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READERS in search of a particular subject will find it useful to bear in mind that the references are in several cases distributed under two or more separate but nearly synonymous headings—such, for instance, as Brain and Cerebral; Heart and Cardiac; Liver and Hepatic; Renal and Kidney; Cancer and Epithelioma, Malignant Disease, New Growth, Sarcoma, etc.; Child and Infant; Bronchocele, Goitre, and Thyroid; Diabetes, Glycosuria and Sugar; Light, Roentgen, Radium, *X* Rays; Status Lymphaticus and Thymus; Eye, Ophthalmia and Vision; Bicycle and Cycle; Motor and Automobile; Association, Institution, and Society; Paris, France; Berlin, Prussia, Germany; Vienna, Austria, etc. To still further assist the reader, subjects dealt with under the various main headings in the JOURNAL have been set out in alphabetical order under their respective headings—for example, "Act Workmen's Compensation," "Correspondence," "Leading Articles," "Literary Notes," etc.; while under "Original Articles," will be found a list of those who have contributed papers on scientific and clinical subjects, with the title of their contributions.

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The Ingleby Lecture

ON

PUERPERAL INFECTION,

*WITH SPECIAL REFERENCE TO VACCINE TREATMENT.**

BY

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It is impossible to cover the whole of the subject of puerperal fever. I propose, therefore, to refer to the incidence of the disease, to some of its types which are fairly distinct, to the cause or causes as far as we know them, to some of the pathological changes, and the treatment, preventive and curative.

Until quite recently there has been great difficulty here in the way of making any study of these cases, because there has been little or no institutional treatment for them. They were, and are, certainly not wanted at the Maternity Hospital. No operating surgeon has ever been anxious to mix these cases with his operation cases: but some time ago now the Women's Hospital at Sparkhill had a ward specially built for the reception of septic cases, and into this we are able to take cases of puerperal fever. We also have an arrangement with the Health Committee of the City Council by which those cases of puerperal fever reported to the medical officer of health which are unable to get any proper attention at home are sent in by him to the Women's Hospital. Into this ward last year 36 cases of puerperal fever were admitted. Cases of some septic condition or other—for example, a parametritis or a pyosalpinx, ultimately following on and due to the confinement—are not included in these 36. They were cases of puerperal fever coming on within a few days of the confinement. In the first three months of this year another 9 cases have been admitted; of these 45 cases 15 have died, 6 of the 15 within three days after admission, 6 on days between the seventh and fourteenth after admission, and 3 on the forty-fifth, fifty-ninth, and fifty fifth day respectively. Even a preliminary examination of the cases shows that the first 6 were cases far too far gone at the time of admission for any treatment to have a chance of success; the second 6 were severe cases in which treatment was tried with very little effect; while the 3 who survived for so long were at death's door many times before they finally succumbed.

I propose to dwell for a short time upon three types of case: (1) Those that are of a mild type and recover easily. (2) Those that are acutely infected and die quickly. (3) Those that are severely infected or ill for a long time, and usually, but not always, recover.

I. *Mild Type.*

In considering the first class—the less severely infected or the mild type—the most noticeable feature about them is that the temperature fell to normal in all but one of them within forty-eight hours after admission; in the one exception the fall was a gradual one, reaching normal on the fourth day. This is really a curious fact when one considers the following information about them. There were 10 cases of this type: we will call the day of confinement in all of them the first day:

1. Fever started on the seventh day, admitted to hospital on the eleventh day with a temperature of 99.6°.
2. Fever started on the third day, admitted to hospital on the twenty-first day with a temperature of 102.6°.
3. Fever started on the fifth day, admitted to hospital on the seventh day with a temperature of 101°.
4. Fever started on the second day, admitted to hospital on the seventh day with a temperature of 100.8°.
5. Fever started on the second day, admitted to hospital on the fourth day with a temperature of 100°.
6. Fever started on the third day, admitted to hospital on the twelfth day with a temperature of 100.6°.
7. Fever started on the twelfth day, admitted to hospital on the seventeenth day with a temperature of 99.8°.
8. Fever started on the third day, admitted to hospital on the seventh day with a temperature of 103.8°.
9. Fever started on the twelfth day, admitted to hospital on the nineteenth day with a temperature of 103.8°.
10. Fever started on the third day, admitted to hospital on the tenth day with a temperature of 99.5°.

The duration of the fever, therefore, extended from two to eighteen days before admission, yet after admission the temperature fell to normal in all of them in practically the same time—namely, about two days. It looks as though in each case the temperature was only waiting for treatment to come down to normal. The symptoms on admission were usually the rise of temperature already mentioned, quickening of the pulse to 100 or up to 120, but not higher; furred tongue; uterus big and tender; lochia usually profuse and foul smelling; constipation; and a general appearance of being ill. Three of the patients had a blunt curetting done the morning after admission: in two of the three some septic retained placenta was found; in the third case the uterus was clean. On admission to hospital the change from a poor, dirty little house, from inefficient attendance, from improper feeding, and in some cases from actual neglect, to a comfortable, warm, clean bed, and to good nursing and feeding; the change from the constant worry and anxiety at home to the general sense of well-being and comfort in the hospital; the change from constipation to a thorough evacuation of the bowels; the change from dirt to absolute cleanliness, helped usually by a gentle antiseptic vaginal douche, and a tonic such as mist. ferri, seems to have been sufficient for a rapid recovery in these cases. We can only assume that the infection is slight, in some cases purely local, and that the resisting powers of the patient only want a little help to bring about a recovery.

II. *Acute Infection: Early Death.*

Early onset of the symptoms, a rise of temperature to 103°–105°, profuse sweats, a pulse of 120 and rising as high as 160, are sufficient to cause grave anxiety. In some of these cases the patient, however, looks fairly well, and except for feeling hot she may be quite comfortable; the pulse has a good volume, the bowels may be acting (but this usually only from treatment), the abdomen is slightly distended but quite soft, palpable, and free from tenderness; there is no uterine tenderness, there is nothing abnormal to be felt in the pelvis, and one may

*Delivered at the Birmingham University.

be inclined to give a hopeful prognosis. In reality the prognosis is very grave: the pulse gets weaker and weaker, the tongue becomes furred, and dry sordes appear on the lips and gums: the nourishment taken becomes less and less, rigors may or may not occur, prostration becomes more marked, the distension of the abdomen increases, constipation gives way to septic diarrhœa with involuntary evacuation, and the patient rapidly sinks from acute toxin poisoning. The rapidly fatal cases at Sparkhill were all in the latest stages of acute infection on admission, and it was impossible to render them immune to the infection; but that these cases are not necessarily fatal, and that they are not naturally bound to follow the distressing course I have briefly outlined, is known to all and is well illustrated by three cases I have seen recently outside the hospital. The history of these cases is as follows:

CASE I.

Mrs. F., patient of Dr. Middleton. Confinement. Confined on November 28th, 1911; normal; baby weighed 6 lb. 15 oz. Temperature rose to 103° on the third day; the uterus was washed out with an antiseptic douche, a turpentine enema was given, and the temperature fell to 101°. Vaginal douches were subsequently given, the bowels were kept open, and tonics were administered. The patient felt better, and for four days the temperature hovered between 99.6° and 101.5°. On the eighth day she had a rigor, the temperature rose to 105°, and she felt very ill. I saw her with Dr. Middleton, and, under an anæsthetic, I took two swabs from the interior of the uterus for subsequent bacterial investigation, and also by exploration satisfied myself that the interior of the uterus did not contain any placental remains. After the rigor the temperature fell the next two days to normal, only to rise on the third day after the rigor to 103°. In the meantime Dr. Mackey had examined the swabs, and reported a profuse and practically pure infection of streptococcus. Of the vaccine he prepared from this 5 minims (containing nearly 30 million streptococci) were injected; in 24 hours her temperature came down to normal and never rose again. A second injection of 35 million was given four days later.

CASE II.

Mrs. H., patient of Dr. L'Estrange Burges. Normal confinement on February 29th, 1912; the temperature normal, and patient going on well till the seventh day, when the temperature rose to 104°. I saw her with Dr. Burges, and carried out the same procedure as in Case I, but, in addition, injected her with 4 minims of the stock vaccine of Case I—that is, with 25 million streptococci; her temperature fell to 101° in the next four hours, but hovered between 101° and 102° for the next two days, and then rose to 103°, when she had an injection of 25 million streptococci in 5 minims of her own vaccine prepared by Dr. Mackey from the swabs I had taken. Her temperature came down again to 101° for two days, and then rose to 104°, when she had 50 million of streptococci in 8 minims of her own vaccine injected. In less than twenty-four hours the temperature fell from 104° to normal and never rose again.

CASE III.

Mrs. F., patient of Dr. Cochrane; second child, normal confinement. Three days later the temperature rose to 104.2°, with pulse of 144. When I saw her she presented the usual signs of an acute infection in the early stages. Since the patient was hardly able to afford the preparation of her own vaccine, a stock vaccine of the streptococcus prepared by Dr. Mackey from a previous case was used, 25, 30, and 35 million streptococci being injected every third day. After the second injection her temperature came down and never again gave any cause for anxiety.

These cases when first seen, especially Case II, resembled in every way the cases which at a later stage have been admitted to Sparkhill only to die in a very short time. In these private cases treatment by vaccines, etc., was begun early in the disease, whereas in the six cases at Sparkhill that died within two or three days after admission they were only admitted to the hospital on the third, fourth, fourth, tenth, sixth, and fifth days respectively of their illness. In addition to the vaccine treatment in the three cases mentioned, attention was paid to the bowels, suitable diet was administered, tonics given, and all of them had the benefit of good nursing. It is, of course, impossible to say for certain that, with the ordinary measures of treatment and without the vaccine, they would have developed the later symptoms such as those of the rapidly fatal cases at Sparkhill, but one cannot overlook the fact that in each of them a rapid and permanent recovery from a very serious condition followed this treatment. Before leaving these acutely infected cases, I must refer briefly to the pathological changes found *post mortem*.

CASE IV.

Mrs. L., aged 28: five previous pregnancies; no miscarriages. Admitted to Sparkhill on May 5th, 1911, with a temperature of 105°, pulse 130. Delivered eleven days previously by a midwife. Two days after delivery she had an attack of acute abdominal pain for which the doctor was sent for; vaginal douches were given and medicine. On the next day she had three rigors. The pain and the rigors continued until her admission to the hospital on the twelfth day, when she was acutely septic and very ill: a most offensive vaginal discharge; no definite abdominal symptoms. On May 7th, two days after admission, Dr. Edge took swabs from her uterus and did a blunt curetting. On the next day her temperature was 101.6° in the morning, but in the evening she had a rigor, and her temperature rose to 105.6°; she had an injection of stock vaccine (25 million streptococci), and her temperature fell to 103° till the next evening, when it rose again to 105°. A second injection of stock vaccine was given, this time 30 million streptococci; her temperature came down for a few hours to 100°, but rose on the next evening to 105.4°, when she died. Dr. Mackey's report on the swabs showed an infection of streptococcus and *Bacillus coli*. A mixed vaccine was prepared, but as the patient was near the end when it was ready it was never injected.

Post-mortem Examination.—Body emaciated, no general peritonitis, but some purulent fluid in the pelvis; uterus large and flabby, like an empty bladder, and containing some old blood clot, but not offensive nor obviously septic; the Fallopian tubes contained pus, the left one being distended, the pus escaping from the fimbriated end when the tube was handled; no thrombosis in the pelvic veins; kidneys large and pale; spleen large, about 10 oz.; liver honeycombed with gas bladders, and the wall of the intestine emphysematous in parts, evidently from a gas-producing bacillus; lungs œdematous; heart extremely flabby, no endocarditis.

CASE V.

Mrs. H. Admitted to the Women's Hospital under Mr. Martin on February 19th. Delivered eight days previously by a midwife, who examined the patient several times before delivery. Placenta expressed without any difficulty. On the second day the patient felt very ill and feverish, having a rigor which lasted a long time, and two days later a doctor was called in who curetted the uterus. She, however, continued feverish and shivering until the eighth day, when she was admitted with a temperature of 104.8°, pulse 140, tongue dry and furred, abdomen tender and distended, uterus tender and somewhat fixed by a tender swelling to the right of the cervix. The interior of the uterus was bluntly curetted without an anæsthetic, and swabbed with pure carbolic, and left with an iodoform gauze drain. Swabs of the uterus were taken before she was curetted, and report showed infection by streptococcus, but a streptococcus not the same as that found in other puerperal cases. A vaccine was prepared, but the patient died before it was ready for injection, her temperature rising the day after admission to 105.4°, when she died.

Post-mortem Examination.—General peritonitis, some purulent fluid in the pelvis, and fibrino-purulent adhesions everywhere; uterus flabby, very friable, contents green and dirty, with blood clots and (?) placenta; the broad ligaments infiltrated, and on cross section honeycombed with pus; the Fallopian tubes, though not much dilated, contain thick yellow pus; the kidneys are congested, their pelves dilated, and they look moderately fatty; liver large, and fatty degeneration; spleen large and soft; lungs congested; heart dilated, no endocarditis.

CASE VI.

Mrs. E., aged 22; married sixteen months; confined on December 18th; normal confinement. On Christmas day acute pain in the abdomen, and on the next day diarrhœa and sickness which persisted profusely for twenty four hours. When seen by Mr. Hewetson on December 27th was very ill and acutely septic, with a pulse of 140; she was given a morphine suppository which stopped the diarrhœa, and was admitted to the Women's Hospital on December 29th. Great pain in the abdomen, chiefly just below the costal margins when taking a deep breath; the sickness was better, there was albuminuria, but no pus in the urine; she was very emaciated, suffering countenance, tongue dry in the middle, heart and lungs normal, some distension of the abdomen with general tenderness, uterus tender but fairly well involuted. She had two enemata on the night after admission with fair results. In spite of treatment she gradually got worse, and died on January 3rd.

Post-mortem Examination. Body pale and thin. Abdomen: General fibrino purulent peritonitis from the pelvis to the diaphragm; uterus empty and not obviously septic; nothing wrong with the tubes, no purulent pelvic cellulitis; kidneys fair; liver large and fatty degeneration well marked. Thorax: Pericardium contains 6 or 8 oz. of thick pus; heart flabby, but no endocarditis; a recent pleurisy over the left lung which is collapsed, no effusion and no abscesses in the lung; right lung adherent in several places, no abscesses, no pleural effusion.

CASE VII.

Mrs. S., aged 26; fourth confinement on September 3rd last year; normal, attended by a midwife. On the second day after confinement had a rigor, became rapidly ill, and was seen by a dispensary doctor on September 7th. I saw her with him on the same day. I found her in the midst of the filthiest and most poverty stricken surroundings, and lying covered where

the skin was exposed by myriads of flies, of which she took not the slightest notice; pulse 148, temperature 104; abdomen distended and tender in the lower part; uterus and broad ligaments very tender; respiration hurried and very difficult. I admitted her to the Women's Hospital at once. She never recovered complete consciousness; her temperature varied from 103 to 105.8; septic diarrhœa supervened, with rapid prostration and death five days after admission.

Post-mortem Examination.—The abdomen contained a few ounces of fluid, but no pus; intestines and stomach were much distended with gas; uterus pale, rather large and soft, its cavity empty, and not very septic looking; in the wall of the uterus there were one or two small abscesses; from the left broad ligament pus was obtained by squeezing, and the left tube contained some semipurulent fluid; the pelvic veins were not thrombosed; the spleen was large and septic; liver large, very soft and fatty degeneration, but no abscesses were seen; the kidneys were pale, large, cortex swollen and very fatty—kidneys typical of septicæmia. Thorax: In both pleural cavities there were some ounces of semipurulent fluid; both lungs showed purulent lymph on their exterior, and both on section showed well-marked œdema and septic pneumonia; the substance of the lungs was very friable, and in both there were numerous small abscesses; the pericardium contained a slight excess of semipurulent fluid, and there was early pericarditis noticeable on right auricular appendix; the heart muscle was pale and fatty, and the cavity showed a large amount of septic-looking clot; the mitral valves showed a few recent small vegetations, and the aorta some aortitis of the aortic sinus.

Reference has already been made to those cases that, although acutely infected and very ill, were in hospital for a long time, and ended usually in recovery. If the histories of these cases are not becoming wearisome to you, I would like, as briefly as possible, to record some of these.

CASE VIII.

Mrs. H., aged 27. Admitted to hospital November 15th, baby born on November 9th; examined once before the membranes ruptured by the nurse attending her, but at the actual birth of the baby no one was present except a neighbour. Dr. Sangster was called in to remove the placenta, followed later by profuse hæmorrhage; she had a rigor the same day, but after this felt well until the third day. On the first day she and her bedclothes were wet through by the rain coming in through the roof. On the third day she began to feel hot, and her temperature remained high until she was sent to the Women's Hospital on November 15th with a temperature of 105°; pulse 144. On admission, abdomen slightly distended, no tenderness, uterus above the brim, profuse septic discharge, tongue furred, patient very anæmic. Next day, on the 16th, the temperature came down to 103 and her pulse to 118; blunt curretting was done, and some small fragments of membrane got away. Before the curetting was done two sterile swabs were taken of the uterine discharge from which to grow cultures; these cultures showed streptococci and *Bacillus coli*. The temperature did not fall until the third day, when it came down to 101.4°. On the evening of the third day she had an injection of her own vaccine, 4 minims. On the fourth day temperature came down to 100.2°, but on the fifth, sixth, and seventh days rose again to 102°, 104°, and 103°. On the seventh day she had another injection of vaccine, 5 minims. Between then and the thirteenth day her temperature was down in the morning to 99.2° and twice to normal, but up in the evening to 102°, and on the twelfth day to 103°. On the thirteenth day another injection of vaccine, 6 minims, was given, after which her temperature hovered above normal day after day for a fortnight. She had two more injections of vaccine, 8 and 9 minims respectively. The next week the temperature was higher in the evening than the previous fortnight; though down to normal in the mornings, and it continued very much in this condition until the forty-ninth day. During all this time the patient complained of pain in the wrist, pain in the legs, and especially in the left ankle. The joints were swollen slightly, acutely tender, but as time went on both the swelling and the tenderness gradually disappeared, except in the left ankle, where a swelling persisted and the tenderness remained acute. Repeated examination of the chest, of the abdomen, and the pelvis failed to elicit any cause for her temperature—the serous effusion round the ankle-joint not being sufficient to account for such an irregular temperature. On the fiftieth day a slight tenderness and swelling was noticed over the back of the sacrum, and on the next day the swelling had increased considerably; an incision was made into it, and a large quantity of pus let out. Her temperature fell the next day to normal.

Her recovery from this time onwards, though *very slow*, was steady. Massage to the left leg and ankle helped her to gradually recover the use of the leg, and for a week before she was discharged to the convalescent home she was able, with some assistance, to put her foot to the ground and hobble about.

This, with the case of Mrs. D. (Case x), are both examples of infection in which quite late in the course of the disease a local abscess forms, the opening of which seems to put an end to the invasion of the tissues by the germs, and to allow of the immunity which they gradually acquire to take effect.

CASE IX.

Mrs. T., aged 28. Delivered at her home on October 31st, at 10 a.m. Fifth pregnancy. The nurse arrived at 8.30; membranes ruptured 9.15; some difficulty in delivery from the size of the head and shoulders. Baby was asphyxiated, and while it was being attended to the placenta was expelled, not intact. After the third stage rather more than the normal loss. On November 2nd temperature was 101° and pulse 120 when the nurse visited her; the bowels had not been moved, and an enema was given. On November 3rd temperature was still up, and she was admitted to Sparkhill at 7 p.m., with a temperature of 102.6°; pulse, 132. Two intrauterine swabs were taken and sent to Dr. Mackey. Cultures showed streptococci, and a vaccine was prepared. For two days after admission her temperature came down to nearly normal, but a smelling, purulent, bloody discharge persisted, so on the fourth day after admission a blunt curetting was done, and a largish piece of septic placenta was removed; her temperature rose to 102.5° on the same evening. The next morning she had an injection of vaccine, 2 minims—that was on the second morning. Temperature kept up till the fourth morning, when it began to fall, and fell in twenty-four hours to normal, and kept so for two days. Sixth day, injection of vaccine, 3 minims. On the seventh day temperature rose to 101°, and remained irregular, up and down, until the thirteenth day. On the tenth day, up to which she had looked and felt well, she complained of pain in the left side of the chest; on examination of her chest I could find slight impairment of the breath sounds at both bases, and diminished movement of the left side of the chest. Pain passed off, and the patient seemed well till the twenty-first day, when she complained again of pain in the left side in the lower axillary region and in the left shoulder, especially marked at end of inspiration. On the twenty-first day, that is, November 27th, she was examined by Dr. Mackey. Movement of left chest much diminished, resonance impaired in front and duller still behind, especially at the base, where the breath sounds were very weak, but breathing not bronchial, though expiration heard better than inspiration. Vocal resonance resembles ægophony, and there is whispering pectoriloquy. No pleural friction heard. Right side normal. On November 28th, or twenty-second day, 6 minims of vaccine, but her temperature remained irregular, between 99.5° and 102°. On December 3rd, the dullness being more marked and increasing, the chest was aspirated; no fluid found. On December 7th aspirated again, and found fluid, and drew off 2 pints of straw-coloured, slightly thickened fluid, after which, from the 6th to the 16th, her temperature was still up at night and down in the morning, varying from normal to 100° and 100.5°. The aspirator was used again on the 16th, and between 3 and 4 oz. more of fluid were drawn off. The fluid contained chains of streptococci similar to those of the uterus. Injections of vaccine on December 2nd, 7th, 12th, and 19th were given, increasing the dose by 1 minim each time, but with no effect on the temperature until after the second aspiration, after which her temperature rose twice, on the 18th and 19th, to over 100°, but afterwards remained normal till December 31st, when she went home feeling quite well, and has remained so. On December 30th Dr. Mackey reported left chest somewhat dull, air entry poor, but breath sounds better heard than formerly, and vocal resonance good. Aspiration in two places, no fluid. The patient all along looked fairly well in spite of her high temperature and quick pulse and effusion into the pleura.

CASE X.

Mrs. D., aged 31. Eighth pregnancy. Admitted January 21st, 1912, to the Maternity Hospital, and confined in the evening of the same day. Before admission she was examined by a midwife and by a doctor. Presentation transverse. On the 20th, at 1 p.m., the membranes ruptured, but no pain; at 11 p.m. a limb presented, and the doctor who was called in sent her to the maternity hospital. She was admitted at 4 a.m. on the 21st. Examination on admission showed an arm presenting; there were no pains, and at 6 o'clock in the morning Dr. Potts did internal version, bringing down a leg. The patient had no more pain till 5 p.m., when sharp, rapid pains came on and the baby was quickly born; placenta delivered in half an hour manually. An intrauterine douche was given. At the end of labour the pulse was 86. There was no tear of the perineum.

January 22nd. Pulse 96; temperature 100.5° F. Patient complained of pain in the right wrist. Vaginal douche twice a day.

On the next day the temperature was higher—over 101°; and the next day it went up to 103°, and she complained of great pain in the right wrist and both legs. No swelling on the joints, which appeared freely movable. Very wheezy in the chest, harsh breath sounds all over the lungs; lochia offensive and scanty. The next day temperature 102°. An intrauterine douche was given, cultures taken from the uterus, and Dr. Thomas Wilson curetted her. A great deal of clot and débris came away. The same night 20 c.cm. polyvalent antistreptococcic serum given in the abdominal wall. The next day the patient seemed a little better, but still had pain in the wrist and the legs. The gauze packing of the curetting was removed and a douche given. Cultures grown showed streptococci.

Two days later, on January 26th, temperature still up to 102°, lochia still offensive, two rigors in the morning; uterus flushed with 5 per cent. hydrogen peroxide.

January 27th. Much the same, cough more troublesome, at left base behind the percussion note is impaired, few crepitations and a pleuritic rub can be heard sometimes.

January 28th. Condition the same, abdomen rather distended but no tenderness, uterine discharge clear, sputum shows pneumococcus. The patient had two rigors yesterday.

January 30th. The patient still holding her own, moist crepitations, pleural friction over the left base. Slight rigor this morning.

January 31st. The patient's aspect not so good, pulse becoming more rapid, abdominal distension increasing.

February 1st. Still a good deal of distension, tenderness in the pelvis, sputum bloodstained, and a tender spot over the left buttock.

February 4th. The patient had a rigor yesterday afternoon, temperature 104.8°, still feeling the effect of it to-day.

February 5th. Condition much the same, left base still dull, breath sounds deficient, abdomen not tender, and the spot on the left buttock less so.

February 6th. An abscess in the left buttock was opened, and 4 oz. of thick pus let out. Cultures of pus showed streptococci and *Bacillus coli*. Left base still dull.

Patient continued about the same, and examination on February 12th showed that the uterus was involuted and no hardness or tenderness in either fornix, breath sounds rather deficient in the left base, nothing else abnormal.

During the next week she had several rigors, and on February 19th she complained of pains in the right leg below the knee, leg tender to the touch, and looking larger than the other.

February 23rd. Leg rather better, otherwise much the same. All this time her temperature was going up and down between 103° and normal.

February 27th. The patient was given Burney Yeo's inhaler with creosote inhalation.

February 28th. Half grain collargol injected into basilic vein; left base behind still dull, breath sounds deficient.

February 29th. Condition much improved, temperature having been practically below 100° for three days.

From now till her discharge a month later, on March 28th, the collargol was systematically administered. The patient progressed almost imperceptibly at first, but afterwards steadily and rapidly, and when she left to go to the convalescent home she was able to walk, and the wound in the back had quite healed.

CASE XI.

Mrs. C., aged 26. First confinement. Patient generally septic. Confined on April 16th, 1911; attended by a midwife, who, as the labour proved difficult, called in Dr. Norton, and with great difficulty she was delivered with forceps. She remained for six days quite well, but on the seventh day she felt ill, hot, and feverish, and on the eighth day she had a rigor and remained in a condition of fever, with several rigors occurring, until admitted on April 28th—that is, the thirteenth day after confinement.

On admission temperature was 103°, abdomen tender, uterus tender with some thickening around it. Patient was nursed, bowels were kept open, and her temperature coming down gradually the first few days I hoped that the induration around the uterus and the cellulitis would absorb of itself, but in the next six days her temperature went gradually up again to 103.5°. I operated on May 9th, making an incision into the cellulitis deposit per vaginam, opening two small collections of pus and draining them. The uterus was explored, and swabs taken for culture and possibly vaccine preparation. For the next six and a half weeks her temperature was up every evening and down every morning up to anything between 99.5 and 102° and down in the morning to normal, sometimes subnormal. The cultures showed pure streptococcus. She had vaccines every fourth day, but that seemed to have no effect upon the fever. The patient's general condition improved a little at first and then remained stationary; all this time she expressed herself as feeling well and free from pain though so weak that she could not sit up in bed. In the seventh week, the rise of temperature at night becoming higher, I made more frequent examinations, and on the forty-sixth day I opened another small abscess behind the uterus. The temperature fell after this, but there was still some evening rise; but gradually she became nearer and nearer to normal, and in another three weeks she was put to sleep out of doors in the garden. For seven more weeks she lay there looking better, feeling better, her temperature up to 99° sometimes at night but normal in the morning, but so weak still that it was impossible for her to get up, and in spite of her feeling and looking better there was no gain in weight, she having become and remaining extremely emaciated. About the middle of August her temperature rose again three or four times in a week to over 101°, and as I was away on my holiday Mr. Hewetson saw her for me, and found some induration in the right groin. He opened this, letting out some pus, on August 24th. Her temperature at once became normal, and remained so for the five more weeks that she remained in hospital.

Her recovery after this was steady, but extremely slow, and even when she left the hospital she was a thin, pale, anxious-looking woman. I saw her a month ago looking and feeling very well. Duration of stay in hospital, five months.

CASE XII.

[illegible] children. Prematurely confined on February 16th, 1911, attended by a neighbour. On the third day was taken ill with shivers, and, getting worse, Dr. Petrie was sent for on February 22nd, and I saw her with him on February 23rd.

Patient was wandering, and in a state of acute sepsis; temperature, 103.3°; sordes on the lips; dry, furred tongue; abdomen tender, but not distended; pulse over 140. At the time I did not expect her to live twenty-four hours, and hesitated about moving her to the hospital for fear that she should die on the way. She had two more rigors in the first twenty-four hours after admission, and an injection of antistreptococcic serum was given, while intrauterine swabs were taken for the purpose of examination and preparation of vaccine. On the third day after admission she had 6 minims of her own vaccine (30 million), and subsequently she had an injection of vaccine every third or fourth day for the next fortnight; but as the rigors persisted and her temperature rose most days to 104° or 105°, and sometimes to 106°, the vaccine treatment was stopped. The cultures made from swabs showed pure streptococci. In the third week she had a rigor every day, her temperature on two occasions going off the chart up to 108.4°. On two other occasions it was up to 106° and 108° respectively. After the vaccine treatment was suspended blood cultures were made, and proved to be sterile. The patient was never completely conscious, and her death was expected every day, but in the fourth week she improved a very little; she only had three rigors, and for two and a half days her temperature was normal. The fifth week she had two rigors, but her temperature on the whole higher, rising on four occasions above 102°, and the patient became more and more prostrate. At the end of the sixth week she began to cough, and her breathing was more laboured. An examination of the chest revealed no definite pneumonia, no definite area of dullness, moist breath sounds. The condition of the lungs did not get any worse, but the patient gradually got weaker and weaker, and died on April 7th.

Post-mortem Examination.—Body well developed. Very anaemic. Abdomen: No peritonitis, though there are some shaggy tags on the caecum and lower end of ileum, as if there had long ago been some local peritonitis; uterus, etc., free and apparently normal; no pelvic cellulitis nor phlebitis. In the interior of the uterus a small projection like the top of a small mushroom from the centre of the fundus covered with a yellow purulent exudate. Liver large, normal colour, no abscesses; kidneys large, pale, subacute parenchymatous nephritis; spleen enlarged. Thorax: No pleural effusion and no adhesions, some yellow lymph on both lungs; lungs infiltrated throughout with nodules as large as small marbles, most of these on section are abscesses and full of dirty pus, some of them are reddish and solid; evidently a septic bronchopneumonia showing infected areas in various stages; the lung between the nodules is singularly unaffected and practically normal; there is no pus in the bronchi, and none of the abscesses appear to actually communicate with a bronchus. Pericardium contains 4 oz. of serum; heart is flabby, no valvular disease.

Microscopical Examination.—The mass at the top of uterus is placenta undergoing organization, shows no evidence of acute inflammation, and contains no micro-organisms. The pus from the lung abscesses is crowded with germs of all sorts, and of types usually found in the air passages, so that although the primary lung infection was probably a metastasis, the majority of the abscesses owe their origin to a dissemination by the smaller tubes, and the contact of the air has allowed the infection to become mixed. There are streptococci and Gram-positive diplococci Gram-negative diplococci like *M. catarrhalis* and short and long Gram-positive diphtheroid germs of all sorts.

From a consideration of these and somewhat similar cases, we learn that even when the temperature has come down to normal, the tongue has cleaned, and all abdominal pain and tenderness have disappeared, unless also the patient gains steadily in strength, puts on weight, and is able to get up, the most careful and continuous care must be taken that any surgical condition, as for example an abscess, will not be overlooked, for in these cases the abscess will form a swelling free from pain, free from tenderness, and free from redness. We learn that on the slightest complaint of any trouble with respiration or any pain in the chest, or with any cough, a careful examination of the chest must be made. We learn that the abscess tends to form in a dependent part of the body, and I think I may add that we learn also that when these surgical conditions supervene during the time that the patient is under vaccine treatment, they are never acute, and if open to surgical treatment are easily cured.

CAUSATION.

When we think of the usual surroundings of the newborn babe, we must be surprised not that there is so much puerperal fever, but that there is not a good deal more. In direct contact with the patient, in direct contact with the doctor's or midwife's hands, in direct contact with any tear or wound that may be inflicted, are, in most of the working-class houses, blankets or sheets or clothes that, even if not describable as dirty, cannot by any stretch of the imagination be called surgically clean. It is surely legitimate to ask why sterilized towels should be placed all round the field of an operation and not around

the field of a delivery, the latter being even more exposed to the risk of infection than the former. We take infinite pains to keep from an operation wound staphylococcus, *Bacillus coli*, *Streptococcus pyogenes*, etc. Do we, can we honestly say that we do, invariably take the same pains to keep them from a cervical or perineal tear in a confinement? The doctor in attendance will invariably tell you that he thoroughly sterilized his hands, that his forceps were boiled, also any sutures and needles that he used, but is there as much attention paid to cleansing the patient as there is to cleansing the doctor's hands? I think it may truly be said that there is not, and, as I shall show you in a few minutes, it is here that the danger lies. Before a difficult forceps case is finished, the hands of the attendant must frequently come into contact with the thighs, vulva, and abdomen of the patient, and although they may be thoroughly sterilized to start with, it is incredible that they remain so to the very end. If we hold the view that puerperal fever is only taken to a case from a previous one, that the causative germ comes into the room on the attendant's hands or instruments, and is not present on or in the patient, then the ordinary method of procedure would be sufficient; but let us examine this causative germ for a few minutes.

I give here the results of the bacteriological examination of the uterine discharge as shown in cultures or cultures and films in 21 cases of puerperal fever, nearly all of which have been under my own care:

1. Pure *Bacillus coli* in cultures and films.
2. Cultures showed pure streptococcus and a few colonies of *Staphylococcus aureus*, sputum crowded with streptococci.
3. Streptococcus and diphtheroid bacillus.
4, 5, and 6. Pure growth of streptococcus in cultures.
7. Cultures showed streptococci and *Bacillus coli* mixed.
8. Profuse and pure culture of *Staphylococcus albus*.
9. Cultures showed *Staphylococcus aureus*. Some doubt as to this causing puerperal rise of temperature. Three days later pus evacuated from Douglas's pouch; cultures from the pus showed streptococcus and *Bacillus coli*. (This was a case of Mr. Martin's.)
10. Cultures showed streptococcus and diphtheroid bacillus, *Bacillus coli* and *Staphylococcus albus*. The swabs were probably contaminated from the vagina. (This was a case of Dr. Edge's that died on the fourth day of peritonitis.)
12. Pure growth of streptococcus in cultures.
13. Pure growth of streptococcus in cultures, also from the pus of a secondary abscess.
14. Cultures showed profuse *Bacillus coli* and few streptococci.
15. Pure growth of streptococcus in cultures.
16. Pure growth of streptococcus in cultures, also from the fluid taken from the pleura.
17. A fine colony of streptococci, but not the same as the streptococci in the other puerperal cases.
18. Few *Bacillus coli*, but chiefly a Gram-negative bacillus in tiny colonies.
19, 20, and 21. Pure growth of streptococcus in cultures.

Dr. Mackey, who has done all the bacteriological investigations, tells me that the streptococcus which is present in 17 of the 21 cases is quite distinct from other streptococci, is the same identically in all these 17, and that in any secondary pus, pleuritic fluid, or sputum, it was identical with that found in the uterine discharge. He also tells me that he has never found it in any other septic cases, and only once has he seen it apart from these puerperal cases, and that was in the cerebro-spinal fluid of a chorea gravidarum.

We suggest that it might be called the *Streptococcus puerperalis*.

Characters of Streptococcus Puerperalis.

It grows freely upon agar, producing opaque colonies which are much larger than any other streptococci; so much so, that after forty-eight hours the colonies might easily be mistaken for those of *Staphylococcus albus*; in broth it produces chains of moderate length, which have little tendency to form clumps or entanglements. Its fermentation tests are as follows: It produces acid and clot in milk, acid in lactose, in glucose, saccharose, and salicin, no change in raffinose, mannite, and inulin. These reactions show that it differs from the *Streptococcus faecalis* in its action on mannite, and from the *Streptococcus pyogenes* by its production of clot in milk. Since this definite streptococcus has been found on bacteriological examination in the uterine discharge in 17 out of 21 cases—that is, in 80 per cent. of the cases—we have a *prima facie* right in assuming that this is the most frequent cause of puerperal fever. It must not, at the same time, be forgotten that cases have been shown to be due to infection by *Bacillus coli*, *Staphylococcus aureus*, and other kinds of streptococci. Since this *Streptococcus puerperalis* is found nowhere practically but in these puerperal cases, it would be foolish to think that doctors or midwives convey the infection to the patient, it would be still more foolish to think that the infection cannot be conveyed from one patient to another. This sounds paradoxical, but it is well known to you that puerperal fever does, and will, occur in isolated cases. A doctor will for a long time be free from a case, then he gets one, and possibly after another very long interval he will get another. If one follow the other closely, if while attending the first the second were infected, it is possible that he might have conveyed the infection from one to the other, but in isolated cases where does the infection come from? A simple explanation, and one that requires, and will get, for its proof or otherwise further investigation, is that this streptococcus, like the *Streptococcus faecalis*, is present in the contents of the bowel, and that the puerperal woman is very susceptible to its action. Efforts will be made to discover and isolate this germ from the faeces. Its presence in the bowel will explain everything, including those cases in which, in spite of many precautions, fever occurs.

In three of the cases reported it was associated with *Bacillus coli*, and it is not difficult to understand how easily the puerperal uterus becomes infected from the rectum. Even the separating bridge of the perineum may be absent at the end of a confinement, so that the passage of the streptococcus from the rectum to the uterus is actually facilitated. That perineal and rectal operations are not followed by infection by this streptococcus we may look upon as due to the fact that all such operation wounds, when there is a possibility of discharge collecting, are drained.

Now it is obvious to everyone that after the confinement is over, the cavity of the uterus, if there is the slightest fault in involution, will remain as an inert bag containing more or less blood clot and serum. Here we have a ready soil in which these streptococci can multiply, a soil, too, that is in direct contact with a surface immediately ready for absorption. This explanation then, although not fully proved, explains both the occasional sporadic nature of the case and also the facility with which one puerperal case will infect another.

Treatment.

Preventive.—There can be little doubt as to the lines that should be followed in order to keep patients free from puerperal fever.

It may be recalled that the *Streptococcus puerperalis* was associated three times with the *Bacillus coli*, the *Bacillus coli* was found alone in one case, a profuse growth of *Bacillus coli* with a few streptococci occurred in another, the *Staphylococcus aureus* in yet another, and lastly, a fine colony of streptococci, unlike the *Streptococcus puerperalis* in another. Bearing these facts in mind, and also the theory that the *Streptococcus puerperalis* is present in the bowel, it will be recognized by all that absolute surgical cleanliness, not only of hands and of instruments, is essential, but equally essential is the absolute surgical cleanliness of the patient's skin. The whole area of the field of delivery should be thoroughly cleaned—the thighs, the vulva, and the abdomen—the hair should be clipped quite short, and if any obstetric operation has to be performed, I think it would be better to shave it off.

Since at the beginning of labour an enema is given to ensure as far as possible that the rectum shall be empty during the delivery of the baby, it follows that the neighbourhood of the anus has recently been infected by contact with the contents of the bowel. It is our especial duty to pay greater attention than we have done to cleansing the region of the anus. However well the rectum is emptied it usually happens that more or less of the bowel contents are expelled in the last part of the second stage of labour. It is wise to have a bowl of solution of mercury biniodide (1 in 1,000) close at hand with some biggish pieces of absorbent wool in it, and as any faecal matter escapes wipe it away thoroughly from front to back with the solution: thus will any possible infection be carried away from the vaginal opening. Care should be taken not to soil one's fingers in doing so—to be successful in this the pieces of

wool should be of large size. Always wear a sterilized gown, and take three or four sterilized towels to place under the patient and over the edges of the turned-up patient's clothes and turned down bedclothes. If there is a nurse in charge beforehand she can prepare the sterilized towels before the stage of labour at which they will be required is reached. We must cleanse our hands before we start cleansing the patient, and after cleaning the patient we must clean our own hands again, and then put on the gown and place our towels ready in position. Some of you will at this stage put on rubber gloves that have been boiled, others will not. If a man has absolute faith in the power he has of sterilizing his hands he may or may not wear gloves; if he has not this faith, then the wearing of gloves or not will make no difference; for in midwifery work above all other it frequently happens that a hole may be torn in the glove, and unless the hand inside it is absolutely sterile the glove will have been useless.

To my mind, the great advantage of rubber gloves in surgical work is that you can by their means protect your hands from sources of infection. The method that will be used for cleansing the skin of the patient you must decide for yourselves. Personally I am a great believer in thorough scrubbing with a sterilized loofah with soap and hot water, followed by vigorous rubbing with a dry, sterilized towel, then a thorough rubbing with methylated spirits, to be followed finally by rubbing with a solution of mercury biniodide (1 in 500) in 75 per cent. of methylated spirits. I think I am right in saying that Mr. Leedham Green's experiments on sterilizing the hands have shown that this method gives the best results.

After what I have said, is there anything else that we can think of that will help in the prevention of puerperal fever?

I do not think it is a dream impossible of fulfilment that every woman at the commencement of labour shall have an injection of the vaccine of a *Streptococcus puerperalis*, thus rendering her immune beforehand to the infection by this germ. This, at any rate, would render her immune in 70 or 80 per cent. of the cases. Further consideration even might lead an enthusiast to inject also a vaccine prepared from the *Bacillus coli*.

It may be said that this elaborate method of sterilized gowns and towels, rubber gloves, and even more, stock vaccines, will involve such an expense that the extremely moderate fee that is received by the practitioner for attending a woman at the most critical period of her life is insufficient to justify one in incurring it. Surely the occurrence of one case of puerperal fever will involve such an expenditure of brain power and of time that this very moderate expenditure in every case is to my mind not only justified but essential. I speak now of the expenditure on the methods of sterilization, and not of the expenditure on stock vaccines. As I have already hinted, this preliminary injection of stock vaccines may be only a dream of mine which may or may not be fulfilled.

Before we leave the question of preventive treatment I may add, although it is hardly necessary to do so, the importance of impressing upon the patient beforehand the importance of a clean, well-aired room, of clean blankets, and clean sheets. If possible, too, the patient should have a good warm bath before labour begins, or as it begins.

Treatment of the Fever when the Temperature Rises.

When the first rise of temperature is in the first forty-eight hours and is only a slight one, up to or just over 100°, when there is no great rise in the pulse-rate, and the patient does not feel very ill, the best thing to do is to wash out the uterus with an antiseptic solution, seeing to it carefully that all the apparatus used is scrupulously clean. In many cases the temperature will fall the next morning and never rise again. If the rise in temperature over 100° persists over two days, or occurs a second time, we must conclude that there is fever more or less severe.

It would be a very good thing if every case of puerperal fever were immediately notified to the medical officer of health, and then institutional treatment will be available for those who cannot possibly afford suitable treatment at home. The majority of these latter will probably be the midwives' cases to which, when the temperature rises, the doctor has been called in. Those who can afford suitable treatment can be immediately treated at home; but immediate notification means immediate treatment for those who cannot so afford it. The number of cases at present notified to the medical officer of health in this city is only a small proportion of the cases that occur. In fact, it is actually less than the number admitted to the ward at Sparkhill.

For any treatment to have a chance of success it must be started early in the disease. What I would advise is this: That the patient be placed on her left side with the knees drawn up, that the doctor, wearing sterilized rubber gloves to protect his own hands from infection, should pass a duck-bill speculum and swab out the vagina with a mild antiseptic solution by bits of wool held in a vulsellum forceps. Having done this he should catch hold of the anterior lip of the cervix with the vulsellum forceps, and pull the uterus a little downwards and forwards so as to expose the external os; a second person will, of course, hold the speculum, and then the doctor, holding the forceps in the right hand, will take a sterilized swab such as I show here, and, taking great care that it does not touch any of the parts on the way, will push it through the os into the interior of the uterus, will draw it out with equal care, and immediately cork it tightly in a sterilized test tube. By bacteriological examination of this swab he has a certain means of ascertaining the nature of the infection. He should then by manual examination try to satisfy himself that the interior of the uterus is clear of any retained placenta or membranes. If there is any doubt of this, holding the cervix as before in the vulsellum forceps, he can pass a blunt curette into the uterus and run it over the whole of the inner surface of the uterus, then swab out the interior with a piece of wool either on a wooden probe or held on long forceps and dipped in the dilute solution of mercury biniodide, and finally insert into the uterus a strip of iodoform gauze to act as a drain. Following on this I think it would be advisable to give the patient an injection of vaccine containing 25 or 30 million of the *Streptococcus puerperalis*.

I do not doubt that very shortly stock vaccines will be prepared from this streptococcus and will be placed on the market.

Believing as I do in the efficacy of a vaccine prepared from the source of the patient's infection, what I may call the patient's own vaccine, I would advise that whenever the patient can afford it, one should be prepared, and an injection of it given as soon as possible. The question of expense must enter into this treatment; the preparation of vaccine involves several hours' work, and can only be done with absolute safety either by or under the immediate supervision of a skilled bacteriologist, and such services must be paid for.

I think I may claim from some of the results in the treatment by this method that I am justified in asking for its adoption. I quoted three severe cases where this treatment was applied early with complete success, and even in those prolonged, drawn-out cases in which the vaccine did not appear to have an immediate curative effect. I would point out that when what I call a surgical condition, such as the formation of an abscess, appeared, it was only accompanied by a slight irregular temperature, by no fresh general septic condition of the patient, and after the abscess was opened the recovery was immediate and complete; whereas, in cases which did not have the vaccine treatment, any fresh surgical condition was accompanied by an increase in the general septic condition of the patient, leading ultimately to a fatal end.

I do not claim for one minute that, if the patient has been profoundly infected by the toxins of these streptococci, and if the infection has been prolonged for some time, it is possible to bring about immunity and recovery by the injection of vaccines; but what I do ask that we should all aim at is that the patient should be given a chance of becoming immune to the infection before her powers of resistance have been too far overcome by the degree and the duration of the infection.

I would like to add here one or two other examples of treatment by this method. Let me give you a case that has come under my care after most of this lecture was written:

CASE XIII.

Mrs. J., aged 25. Confined April 8th, normal confinement, primipara. Had a rigor April 9th, temperature 104.2°. Admitted to the hospital on April 11th. On admission in the night I was rung up by the matron, who told me that the patient was so ill that she did not think she would live till the

morning. I ordered stock vaccine—30 million of the *Streptococcus puerperalis*. When I saw her the next morning her temperature had begun to go down; she was delirious, trying to get out of bed, picking at the bedclothes, dry and almost black tongue, sordes on her lips, pulse that I could hardly count and very feeble, uterus big and tender, abdomen slightly distended and tender, no tear in the perineum. I took swabs of the interior of the uterus. Dr. Mackey reported an infection of a *Streptococcus puerperalis* and *Bacillus coli*. During that day her temperature fell to 101°, but went up again the next day to 104.8°, and she had two rigors. Her temperature remained up until the third day after admission, when she had a dose of her own vaccine, 4 minims, containing 20 million streptococci and 100 million *Bacillus coli*. Her temperature came down rapidly to normal, and has never risen again. Although it was some days before she became quite clear in her mind and before her tongue became clean and moist, she had a second dose of her own vaccine four days later of 25 million streptococci and 120 million *Bacillus coli*. Her temperature remained normal, but on May 5th I noticed a small swelling at the back of the right buttock. The next day I found that this was larger and fluctuating, and under a local anæsthetic I opened it and let out about 1 oz. of pus, there being no rise of temperature; and by this time the patient, who had had altogether four doses of her own vaccine, was expressing herself as feeling very well and anxious to get up. Under ordinary circumstances I would certainly have said when I first saw her that this patient had not a chance of recovery.

Showing the advantage of treatment by the patient's own vaccine as compared with stock vaccine, there is the case of

CASE XIV.

Mrs. T., aged 36. Confined by a midwife; fairly profuse *post-partum* haemorrhage; on second, third, and fourth days had rigors; on the fifth she was seen by Dr. Barber and by myself; temperature 103.6°; in acute septic condition. Admitted to the hospital the next day, and the usual treatment was followed out. Dr. Mackey's report showed that infection was due to *Bacillus coli*, but chiefly to a Gram-negative bacillus in tiny colonies smaller than the streptococcic colonies, which I think I am right in saying that Dr. Mackey said he had never seen before. Her temperature was irregular for the first nine days after admission, but usually varying from 101° to 103°. After the second dose of her own vaccine on the ninth day, containing 60 million *Bacillus coli* and 15 million of the other bacillus, her temperature came down steadily, and, although it subsequently rose twice to 101°, her recovery was continuous and complete.

CASE XV.

A second case, also showing the advantage of her own vaccine, was that of Mrs. P., who was admitted on the fourteenth day after her confinement with all the symptoms of puerperal fever. Cultures showed streptococcus and a few colonies of *Staphylococcus aureus*. On admission she had a bad cough, there were crepitations behind the left apex, and the sputum was crowded with the same streptococci. She had one dose of her own vaccine, containing 20 million streptococci and 200 million staphylococci; her temperature came down to normal and never rose again.

In addition to this treatment by vaccines, none of the ordinary methods of treatment should, if indicated, be neglected: intrauterine douching with dilute antiseptics, iodoform pencils in the vagina if the discharge is offensive, tonics, careful attention to the bowels, and, when necessary, stimulants.

As I have said, I chose the subject because I thought it was one of interest to the majority of medical men. I may say now that I chose it also because I was anxious to impress upon you the possible advantage that your patients may derive from your knowledge of this vaccine treatment. I may have formed my conclusions too hastily, and you may say that they are not warranted by the number of cases investigated. I can only say now that I am going on with these investigations, and further results will be published when they are ready. I chose this subject, too, because it has always seemed to me that the death of a woman in childbirth from puerperal fever is a matter of reproach to the medical profession, and any possible advantage in treatment that may be derived from investigations into all aspects of the disease should be, and will be, I am sure, heartily welcomed by the profession.

Before I close I would appeal to the Central Midwives Board to extend the duration of the course of training for midwives to at least six months. At present it is four months, and, when one thinks of what has to be learnt, this time hardly seems long enough. I would appeal to the doctors to notify their cases immediately, so that the really poor may get institutional treatment as early as possible. I would congratulate the Faculty of Medicine here on the near approach of the time when their students will receive part of their instruction in midwifery in a maternity hospital.

I would express my consciousness of the inadequacies of my lecture: any little merit that there may be in it I owe almost entirely to our bacteriologist, Dr. Mackey. To him I give my deepest thanks. I have also to thank, and I do it with pleasure, my colleagues on the staffs of the Women's and Maternity Hospitals.

THE ETIOLOGY OF TORSION OF THE TESTIS.

By R. W. MURRAY, F.R.C.S.,
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My attention has been directed lately to torsion of the testicle, and without making by any means an exhaustive inquiry, I have endeavoured to learn what I could regarding the etiology of this remarkable complaint.

The liability of an undescended testicle to become suddenly and acutely inflamed was well known to surgeons of old, and, though often unaccounted for, was usually attributed to a blow or a strain.

The chief interest then, as now, was in distinguishing between an inflamed inguinal testicle and a piece of strangulated gut. Percival Pott mentions the case of a young man in whom inflammation of an undescended testicle caused symptoms closely resembling those of a hernia strangulated. The local tenderness was extreme, spread to the abdomen, and was associated with vomiting. It was noticed that the testicle on this side was not in the scrotum. Fomentations were applied and the patient recovered without an operation.

Sir Astley Cooper, in his work, *The Testis*, and Samuel Cooper, in his *Surgical Dictionary*, 1823, both draw attention to the fact that there may be considerable difficulty in distinguishing between an inflamed testicle in the inguinal canal and a strangulated knuckle of bowel. However, the older surgeons had little opportunity of studying the pathology of the living, for until well beyond the middle of the nineteenth century operative interference was confined to minor cases or to those of extreme emergency. Even when strangulation of the bowel occurred operation was invariably postponed until all other measures for obtaining relief had been tried and failed; and as thrombosis due to torsion of the cord, even when unrelieved, very rarely ends fatally, there was in those days no opportunity of determining the cause of the trouble. However, with the dawn of antiseptic surgery more light was thrown upon many obscure problems, for there was much less hesitation in making an exploratory incision. Still, many years passed before it was proved that torsion of the cord or testis was the essential cause of spontaneous inguinal orchitis. Mr. Jacobson, in his admirable article on diseases of the male organs of generation in Holmes's *System of Surgery*, describes the case of a lad 19 years of age, in whom inflammation of an inguinal testis produced symptoms simulating those of strangulated hernia.

The lad came to Mr. Jacobson's out-patient clinic in November, 1879, and was admitted with a view to operation. An incision over the swelling disclosed a gangrenous testicle, and an adjacent black, cyst-like mass was found to be epididymis, with above this the reddish, pulpy, oedematous cord. The cord was divided after being ligatured, and the affected parts removed.

In this case the symptoms had originated without any apparent cause, and in the light of our present knowledge there can be no doubt, though no mention was made of the fact, that it was an instance of thrombosis and gangrene following upon torsion of the cord.

So far as I have been able to ascertain, the first surgeon to describe torsion of the testicle was Professor C. Nicoladini. In the *Archiv für klinische Chirurgie*, 1885, he relates the two following cases:

A man, 62 years of age, was operated upon by Professor Nicoladini in June, 1882, on account of a painful swelling of the right side of the scrotum. The swelling was of recent origin and could not be accounted for. The right side of the scrotum was considerably swollen. It was oedematous, painful, and fluctuated. It was thought suppuration had occurred. On making an incision bloodstained fluid escaped, followed by a testicle and epididymis, which were of a dark plum colour, and at first sight thought to be a piece of strangulated intestine. Further examination showed that this extreme congestion was due to the spermatic cord being twisted like a screw through more than 180 degrees, thus causing thrombosis of the

vessels beyond. The body of the testicle was one-third of the normal size.

The other case was that of a lad 16 years old. He was first seen by Professor Nicoladini on December 28th, 1883, on account of recurring attacks of pain in a testicle retained in the right inguinal region. The pain was occasionally so acute as to cause vomiting. Rest in bed and ice applied locally would relieve the pain, but he wished to be cured permanently. On January 11th, 1884, an operation was performed. Bloodstained fluid was found in the tunica vaginalis, the testis and epididymis were deeply congested and necrotic, due to a twist of the cord through 180 degrees. The testicle was connected with the epididymis by a long mesorchium. Both testis and epididymis were removed.

The article in which these original and extremely interesting observations are recorded deals with the subject in considerable detail, and the following conclusions are arrived at:

1. An inguinal testis or one late to descend into the scrotum is liable to torsion.
2. A slight degree of torsion may correct itself.
3. In severe degrees of torsion necrosis results.

The first surgeon in this country to describe torsion of the testicle was Mr. Thomas Bryant. In February, 1892, he related the following case before the Royal Medical and Chirurgical Society:

In September, 1889, Mr. Bryant saw a boy, aged 15, who had a swelling in his left groin and scrotum, with symptoms suggestive of strangulated hernia. He was a healthy lad, and two days before Mr. Bryant saw him had retired to bed after a long bicycle ride. "He woke his parents up during the night complaining of pain in his scrotum and left groin." During the next two days the local symptoms increased, and as the boy was in great pain it was decided to operate, though the diagnosis of the case was by no means clear. The soft parts were divided down to the tunica vaginalis, when "a glistening coal-black object came into view, which for the moment was thought might be congested bowel. On opening the vaginal sac and laying open half the inguinal canal, much blood escaped, and it became manifest that the black object which had been noticed was the testicle with its cord gorged with blood. On closer examination, it was found that the cord had been twisted upon its axis in the inguinal canal, and that as a result the testis had become strangulated with the epididymis. Three half twists made inwards completely untwisted the cord. As the testicle was warm and therefore viable, it was replaced into the vaginal sac, and the soft parts sutured together. All symptoms at once disappeared. For several weeks subsequently the testicle and cord remained thickened, but this soon disappeared, and later on the testicle atrophied.

Various explanations have been offered as to how and why the testicle and cord may become twisted, but none of them have so far met with anything approaching general acceptance. There is a general consensus of opinion that the most important predisposing cause is an imperfect development of the organ, the body of the gland being separated from the epididymis by a long mesorchium. Another fact of considerable importance is that in about one half of the recorded cases the symptoms of inflammation occurred at the time of puberty. Mr. Corner, in his work, *Diseases of the Male Generative Organs*, deals with this subject very fully. He says:

By going into the history of the cases there can be no doubt about three things: First, the developmental defect; secondly, the changes of puberty; and, thirdly, some muscular effort, which precipitated the onset of the final attack. Sometimes (30 per cent. of known cases) the onset occurred without any attributable cause; even during sleep in 8 per cent. This does not forbid the action of some muscular effort; for instance, the effort may be so slight as to be unnoticed. A case has been recorded in which a man had an attack of pain whenever he crossed his legs in a peculiar way. This muscular force must be divided into two classes: One concerning movement of the legs, and the other the raising of the abdominal pressure, as in straining or lifting. In the first case the testicle is twisted directly; in the second it is twisted indirectly as the cord is expelled from the abdomen by the effort.

Mr. Corner is of opinion that the final strangulation represents the summation of a series of small twists. As the result of an analysis of a number of cases he furnishes us with the following interesting table, which indicates the relative frequency with which torsion of the testis is met with in various periods of life:

1 to 10 years	... ...	20 per cent.
10 to 20 ,,	... ...	47 ,,
20 to 30 ,,	... ...	20 ,,
30 to 40 ,,	... ...	10 ,,
40 to 50 ,,	... ...	2 ,,
50 to 70 ,,	... ...	1 ,,

The figures show very clearly that the majority of the cases occur about, or shortly after, the changes in the testicle and spermatic cord which take place at puberty. Therefore these changes are factors in its production.

Mr. R. W. Taylor, in his *Practical Treatise on Genito-urinary Diseases*, says:

The exciting causes of torsion of the cord are in the main excessive labour and violent and sudden strain. . . . The essential underlying cause of torsion is a long mesorchium.

Mr. H. M. Rigby and Mr. R. J. Howard wrote a very interesting paper on torsion of the testis, which appeared in the *Lancet* (vol. i, 1907). The conclusion they came to was that "the predisposing cause is a congenital abnormality of the attachment of the testis to the spermatic cord. The exciting cause is not certainly known."

In the well-known surgical textbook of Rose and Carless it is stated that the cause of torsion of the testicle still remains unknown.

What, then, may be regarded as ascertained facts are:

1. In the majority of cases the testicle was imperfectly developed, a long mesorchium being a striking defect.
2. In the majority of cases the testicle had not descended to the scrotum.
3. The majority of cases occurred in young persons about the age of puberty.
4. In nearly one-half of the recorded cases no definite reason could be given for the torsion occurring. Not infrequently the symptoms occurred whilst the patient was in bed, and in some cases during sleep.
5. In many instances of acute torsion there had been slight recurrent attacks of pain.
6. In every case operated upon, and where careful examination was made, either the testicle was found to be twisted upon the epididymis, or both testicle and epididymis were twisted upon the cord.
7. In every case in which the testicle has been untwisted and replaced atrophy of the organ has resulted.

All surgeons who have expressed an opinion upon the subject agree that a long mesorchium is the chief predisposing cause, and that in a considerable proportion of cases a blow or strain appears to have been the exciting cause.

It has further been suggested that torsion occurs in an imperfectly descended testicle because of the free mobility which such organs are said to possess. Now, however free the mobility of an inguinal testis, it is not to be compared to that of the normally placed organ during infancy and childhood, which can frequently be seen to travel from the bottom of the scrotum up to the inguinal canal. Yet in spite of this considerable excursion I know of no instance of a child or infant in whom a testicle normally developed and normally placed has ever suffered from torsion. If mobility of the organ played an important part in producing torsion, then surely one would expect it to occur with considerable frequency during childhood.

It is commonly believed that muscular effort is a very important factor, but even supposing that a sudden strain did by some means or other twist an inguinal testis, it is hard to believe that any muscular effort could succeed in suddenly twisting the organ through three or more half turns, and this is what has been found in many cases subjected to operation.

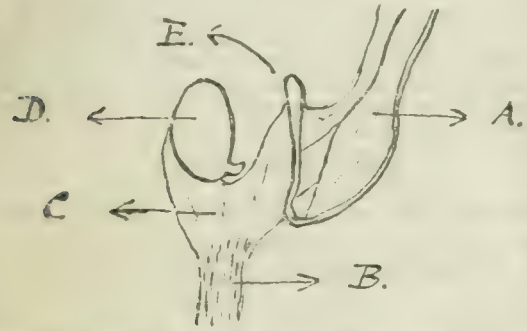
Of course it might be argued that the symptoms calling for operative interference were the summation of many small twists, but to my mind this view fails to carry conviction; besides, even if it be granted that a muscular effort may twist an inguinal testicle, it would only account for a certain number of cases.

A very important fact is that in a large percentage of cases there was no apparent cause at all for the torsion, and in a fair proportion the symptoms occurred during sleep.

It is not as a rule very difficult to criticize adversely the views of others, but it is by no means so easy to offer an alternative explanation which will meet with approval. However, after reviewing what evidence we have, I would suggest the probabilities are that in every case presenting symptoms of torsion of the testicle some degree of torsion of the organ had existed since birth. In other words, torsion of the testicle is of congenital origin and not acquired. I feel confident this is so, and that on this basis all cases can be satisfactorily accounted for.

In nearly every recorded case there has been an imperfect development and an imperfect descent of the testicle, the separation of the body of the organ from the epididymis by a long mesorchium being a constant feature. Now when a testicle so loosely fashioned has to travel from the region of the kidney to the groin, passing through the inguinal canal, it surely is not improbable that during this gubernacular slide some degree of rotation might occur.

The attachment of the gubernaculum to a long mesorchium would certainly add to the probability of torsion occurring during the journey. I have endeavoured to illustrate this in the accompanying diagram.



A, Plica vascularis. B, Gubernaculum. C, Mesorchium. D, Body of testis inverted. E, Epididymis.

When the body of the testicle alone is rotated, or the whole organ twisted upon the cord, the vessels of the mesorchium or of the cord would of necessity be involved; and the more complete the twisting the more precarious would be the vascular supply. If the twist were a slight one—say, merely half a turn—the blood vessels might still be able to deal satisfactorily with a sudden vascular change; but should the twist be one of three or four half turns, then a sudden turgescence of the organ, from whatever cause, would not improbably result in thrombosis.

In the BRITISH MEDICAL JOURNAL, vol. i, 1897, Dr. M. R. Taylor relates a case of torsion of the testis in a newborn child. Nothing abnormal was noticed at the time of birth, but four hours later the nurse noticed that the right testicle was slightly larger than the left, and the skin of the scrotum was discoloured. Two days later the child was given an anaesthetic, and the testicle was removed. It was sent for examination to Mr. C. B. Lockwood, who reported as follows: "The spermatic cord is very thin, and twisted apparently just above the tunica vaginalis. The whole cavity of the tunica vaginalis and the whole testicle and epididymis were full of congested blood. The clot runs ½ in. up the cord as far as the twisted part."

Though the testicle was in the scrotum, this is clearly a case in which intense congestion was due to a congenital twist of the cord, for this is the only reasonable explanation of the clinical symptoms and of the pathological findings. In the case of torsion of an inguinal testis where there is a clear history of a blow or strain, and in which it is believed that the torsion occurred suddenly as the result of the blow or of a muscular effort, it would appear more probable that in such cases some degree of torsion had existed since birth, and that the injury produced a venous engorgement of the organ which, owing to the precarious vascular supply, resulted in thrombosis.

In about 70 per cent. of recorded cases the symptoms have occurred before 20 years of age, and nearly 50 per cent. of them were observed at puberty. It is surely not unreasonable to suppose that, granted some degree of torsion of the vessels supplying the testicle, the sudden vascular changes which are known to take place at this time of life might readily result in excessive congestion and thrombosis. The view I am advocating receives additional support from a fact that in a certain number of cases the trouble originated during sleep. Slight degrees of torsion may be present without producing symptoms, and must have been observed by surgeons when operating for hernia associated with an undescended testicle.

It is of course impossible to advance direct evidence in support of my view, but I would submit that all the circumstantial evidence available makes it appear probable that torsion of the testicle is primarily of congenital origin and not acquired.

ACUTE EPIDIDYMITIS PRODUCED BY MUSCULAR STRAIN.

By J. W. GEARY GRANT, F.R.C.S.Eng.,

I READ with much interest the article in the JOURNAL of April 13th, p. 832, by Dr. Arnold Edwards, describing in a very exhaustive manner two cases which he considers bear out the theory that epididymitis may be caused by strain. The conclusions drawn therefrom are of considerable importance in their medico-legal relations, and are worthy of a somewhat close scrutiny and analysis. For if it be established that a muscular effort or strain can cause epididymitis, then it could quite conceivably follow that so serious a condition as tuberculous testis might owe its origin to the same cause—the sequence being obviously strain, effusion into epididymis, and inflammation upon which tuberculous infection is grafted. I cannot put my hand on the record now, but unless my memory is at fault, I have heard such a case successfully argued in court. From the employer's point of view it is rather a serious position.

I have met with two cases which present considerable similarity to those given with such detail by Dr. Edwards, although I regret that circumstances did not permit of my investigating them so closely as he did, and that the urine was examined in neither.

CASE I.

A. B., aged 39, on Thursday, whilst standing on two joists of a flooring with the feet about 16 in. apart, swung round a plank from the scaffolding, and as he did so "felt a slight sting in the right groin." No squeeze or blow. Pain was felt in groin, not testis; it was so slight that it did not cause him to stop his work, even momentarily. He felt slight soreness in groin, but continued working up to Sunday, when he noticed a swelling in the groin and laid up. On Tuesday the testis commenced to swell. A fortnight ago he got up for two days, but had to return to bed on account of the left testicle swelling.

The globus minor of the right testis was swollen, not hard, and there was evidently an inflammatory condition in process of resolution. The rest of epididymis, body of testis, vas, and cord were perfectly normal.

He never mentioned the condition of the left testis until I observed it for myself. There was a similar swelling of the globus minor of the left epididymis, much firmer and more tender than its fellow. Neither body of testis, vas, or cord was in any way affected. And there can be little doubt that it presented the early stage of the same inflammatory process that was previously existent on the right side. There was no suspicion of any urethral discharge. The urine could not be examined. He was a leading light of his particular religious denomination, and was greatly offended at being asked certain questions, and in fact that he should be examined at all.

I certified the case as one of bilateral epididymitis, cause unknown. But I think that it affords a strong commentary on the inferences that are drawn from the two cases given by Dr. Edwards. Here is a man who meets with "a strain" on Thursday, and all symptoms are latent until Sunday, and only on Tuesday does the epididymis begin to swell. But suppose we admit this doubtful strain as the definite determining cause of the epididymitis on the right side, how can we connect the ensuing attack of epididymitis on the left after a strain in the right groin? Is not the weight of probability that both were due to some general cause—either an unrecognized inflammatory condition in the deep urethra, or a haematogenous infection?

CASE II.

Man, between 20 and 30, dock hobbler, on Wednesday, a fortnight before he came under treatment, as he was finishing work threw down the shute and jumped sideways out of the way; in doing so he felt "a twist on the right side of belly passing round to the groin." The following morning the testicle began to swell, and although he went to work the pain became so severe that he had to give up. The swelling is now subsiding and he has no pain. The globus major of the right epididymis was slightly enlarged and firm in consistence, but was neither stony hard nor craggy in feel. The rest of the testis was normal, as were the vas and cord, and there was no tenderness of the latter either in the scrotum or in the inguinal canal. The orifice of the urethra was perfectly healthy without the suspicion of a discharge. He complained of some tenderness over the lower part of the right side of the abdomen; there was no muscular rigidity. He resumed work in about two weeks after I saw him. No examination of urine was made.

In this case I suggested that in the jump sideways that he made the testicle was squeezed between the thighs or

the thigh and trousers, and there was local trauma that he did not notice. If this be not the explanation, then it is a case which is more suggestive of the origin from strain than any I have seen or read of. It happened as he was finishing work, he went straight home, had pain all the time, and although he made an effort the next morning to go to work, the testis was then swollen and too painful to allow him to continue. This is the sequence I should expect in a true traumatic epididymitis—the immediate onset of pain of some severity, the continuance of pain becoming more acute until the inflammatory process is fully established, and not a latent period of several days without symptoms. In neither of my cases was there any ecchymosis to be made out. This case, I believe, was due to a definite traumatism. The former case I feel just as sure was not.

A few years ago I treated a boy, aged 16 or 17, whose right testis suddenly swelled up in the night. When I saw him the next day body and epididymis formed an indistinguishable mass which was acutely tender, and it resembled a very acute gonorrhoeal epididymitis. I was very doubtful at the time as to whether it was a case of torsion. In a day or two the pain and swelling subsided, but the testis remained permanently atrophied: there was no connexion with mumps to be made out. He had been at gymnasium on the night it came on, but there was no account of any strain whatever. He told me he had no recollection of injuring the testis in any way or of experiencing any pain whilst at the gymnasium. I regret that I took no notes of this case, and merely give it from memory.

The theory of the *coup de fouet* can, I think, be dismissed. The sluggish contraction of the cremaster muscle, when eliciting the cremasteric reflex, and a view of the scattered muscular bands which compose it, when dissecting or performing the radical cure of hernia, will hardly impress one with its powers of striking the testicle a violent blow against the pillars of the ring.

It might be conceivable that in violent straining efforts the blood pressure in the vena cava could be so raised that such veins as those of the pampiniform plexus lying outside the abdomen, and therefore not supported as those are inside, might be ruptured: at the same time, it appears very unlikely. Dr. Edwards's suggestion is that in a violent action of the abdominal muscles the cord is nipped and the veins are compressed by the muscle, whilst the arteries, being more resistant, remain patent, as happens in any form of torsion or strangulation of a viscus. He suggests that the fibres of the rectus do this, but as these are inserted into the pubic and not the iliac crest this is an anatomical impossibility. What Dr. Edwards doubtless means is the action of the arched fibres of the internal oblique and transversalis muscles. Such an action, however, would be so brief, that I find it difficult to believe sufficient congestion could be produced to rupture any of the veins. In one of his cases there was some slight ecchymosis in the groin, but how or why even an extensive haematoma of the cord should cause epididymitis I find it difficult to see. If the bleeding occurred into the epididymis itself then I should expect immediate swelling and pain, which would not pass off rapidly, only to again manifest itself some days later. If it were so slight as not to cause this I cannot see why it should set up inflammation later.

From the very rigorous examination made by Dr. Edwards in his two cases, a urethral origin seems definitely excluded. But can the same be said of a general cause? Dr. Edwards mentions gout, rheumatism, and malaria, but only to dismiss the first two; but orchitis or epididymitis are well known to occur in mumps, typhoid, and other infective diseases, and I have seen epididymitis in pyaemia. I was told the other day of two cases of epididymitis occurring one after the other in members of the same family that were attributed to influenza, and it seems not an improbable assumption that it may occur as the result of a mild infection in some other of these cases of obscure origin quite as probably as from a doubtful trauma.

The one really weak point in Dr. Edwards's two cases and in the first of my two is the delayed onset. The testis, vas, and cord are well supplied with nerves, and are acutely sensitive to any traumatism, and I cannot conceive that such can occur, whether directly or indirectly, without pain of some severity occurring at once and persisting. In my second case this is what happened. The man felt severe pain at once, he left his work, the pain continued to increase, and in the course of twenty-four hours the pain and swelling had fully developed. This, in my opinion, is strongly confirmatory of a traumatic origin. I cannot, however, but think that this was of the nature of a squeeze, and not a strain, and a mistake by the individual as to what exactly happened is quite conceivable.

The idea of strain as a cause is so difficult to imagine as being effective that I should prefer to assume some other unrecognized general condition of the nature of a mild infective process in the other, and that the supposed injury did not stand in the relation of cause and effect.

I have seen two or three cases of undoubtedly gonorrhoeal epididymitis, verified by staining specimens of the pus, which were unblushingly attributed to strains whilst at work. If, therefore, in such cases a history of strain is so frequent, how much more may it be expected where no obvious cause is apparent!

NOTES ON SLEEPING SICKNESS:

SUGGESTIONS AS REGARDS GLAND PUNCTURE AND THE TRAPPING OF TSETSE FLIES.

BY

ANDREW BALFOUR, C.M.G., M.D., B.Sc.,

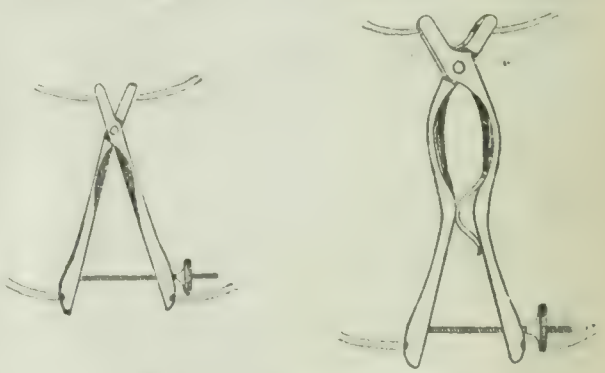
MEMBER SUDAN SLEEPING SICKNESS COMMISSION.

Having just returned from a visit to the Lado district of Mongalla Province in the far southern Sudan, whither, as a member of the Sudan Sleeping Sickness Commission, I accompanied the President, Colonel H. B. Mathias, D.S.O., I would like to direct attention to two points, one of minor interest, the other having an important bearing on the question of prophylaxis.

1. *A Gland Holder.*

I have frequently found that the little operation of gland puncture is by no means so easily performed as might be imagined. This is specially true when one is working unaided and when the suspected glands, though enlarged, are small and comparatively hard. It is frequently difficult to fix the gland, none too easy to pierce its capsule, while sometimes one is apt, when exercising the necessary force, to run the needle right through it, possibly to the danger of one's own finger. Difficulty or failure is all the more exasperating when, as is usually the case, the patient's skin is greasy and slippery, the operator's fingers are in like condition, he himself is bathed in perspiration and worried by flies, and the needle is none too sharp.

It has occurred to me that a little instrument, which may be termed a gland holder or a gland fixer, would be useful. I hope when in London to have one made for me, but the accompanying sketches, for which I am indebted



Two types of proposed gland fixer.

to Mr. George Buchanan, will give an idea of the kind of thing which I think might serve the purpose. It will be seen that, in one form, that intended for a large gland or a mass of glands, it consists of two central curved blades the edges of which can be protected by rubber or leather, and which are intended to close in behind the gland and the skin covering it, thus isolating the gland and obviating any danger to the operator's fingers, or the risk of making two holes instead of one in the patient's skin. The blades

are operated by short handles, the degree of pressure exerted being controlled either by a catch system or a screw. The latter is shown here.

Tapes are attached to the distal extremities of these handles, and they can be carried round the neck and tied together. In order to make the fixation more complete a couple of short metal processes project from the other extremities of the central blades, and are also furnished with tapes. The other form differs only in the central blades being straight, and is not unlike a pair of nut-crackers. It would probably be more generally useful. With this little instrument in position the operator will have both hands free, and should not have to dig more than once at the gland. Aspiration will be easy, and if the first trial is not successful the gland is still there ready for number two.

I have had a rough model made in the Gordon College workshops, and, though not exactly like the instrument it is intended to represent, its use indicates that the latter would be likely to serve the purpose for which it is intended. I fear there may be parts of the neck where it cannot be used, but it could be employed in most situations, and I am inclined to think will fill a want.

2. *Fly Traps.*

Any one who has visited a sleeping sickness area, or indeed any one conversant with the recent literature on the subject, must, I think, have been driven to the conclusion that the crux of the whole matter, so far as prophylaxis is concerned, rests with the destruction of the tsetse fly. The fact that a special entomological commission is proceeding to Rhodesia for the express purpose of increasing our knowledge regarding the tsetse and its habits, shows that this fact is fully recognized. Hitherto efforts have more or less failed to deal effectively with the insect carrier. No natural enemy has been found which might be utilized on a large scale or which promises well; trapping by bird-lime and other sticky preparations has not done much good; tsetsefuges appear to be of little value, while in most places it seems hopeless to try to destroy the pupae on a large scale.

Not long ago I paid a visit to an area under cotton cultivation on the Blue Nile, and saw for the first time the ingenious "Andres-Maire"[1] process for trapping insect pests and especially moths. It consists in using what are called "kiosk" traps, which are like large lanterns standing on legs. The sides are formed of metallic canvas, and thick canvas bands soaked in the liquid which attracts the insects to the traps are suspended in the interior. The moths are attracted by the strong smell of this special proprietary liquid, and flapping against the shutters find a narrow entrance between them and enter the trap. They remain on the bands all night, and in the morning when they want to fly away find they cannot do so owing to the way in which the trap is constructed. A basin filled with water and a little petroleum completes their discomfiture and forms their grave. These traps are said to be very successful, and it seems to me that something on the same lines might be tried in the case of tsetse flies. It should be easy enough to construct a trap into which a hungry tsetse fly could penetrate but out of which a gorged one could not get. As bait, blood might be used—preferably, perhaps, citrated—or fresh pieces of raw meat from cattle or antelope might serve the purpose, and would, I think, act as infallible lures. It should not be difficult, either, to invent a clockwork arrangement in connexion with a small petroleum tank at the top of the trap whereby once in the twenty-four hours—that is, at night—a spray of oil might descend on the occupants of the trap and slay them wholesale. Such traps would be more or less self-acting, while possibly the petroleum tank and spray might be dispensed with altogether and the flies left to the tender mercies of the native attendant responsible for fixing the bait or adding the blood, as presumably he would have to attend nightly to the traps. It would require no great intelligence to do so properly. A little experience would soon show the best way of operating them. They could be placed in the neighbourhood of villages, but sufficiently far away to prevent them merely serving to increase the visits of "fly" to the villages themselves. They could also be placed near watering places and at such other spots—that is, places where native roads cross infected *khors*, etc.—as might seem desirable. I admit this is merely a suggestion, but so far as I can find out it has not hitherto been made, and it seems to me worthy of a trial, for, until we can destroy the tsetse on a large scale, we are, I believe, more or less helpless against the spread of this dread disease, and can only achieve partial results with great difficulty and at very great expense.

A Native Trap.—Since writing the above I have been given some interesting information by Mr. J. W. Sagar, one of the Government inspectors in Southern Kordofan, to whom I mentioned my suggestion about these traps. Formerly the district where Kawalib, a limited "fly" belt, is situated, was under his jurisdiction. The fly is *G. morsitans*, and the belt is quite peculiar. There is no water save that in the wells and what collects during the rains. The tsetse flies are not found near the latter. They haunt the area served by the wells, and are found only in the proximity of rocks and hedges. The belt is about twenty miles long and three or four in breadth. There is no evidence as regards the existence of the flies in any of the adjoining districts. This limited and peculiar distribution is said by the natives to be due to the fact that the fly was intentionally brought here from the river (presumably the Bahr-El-Ghazal) for purposes of revenge! This may or may not be true, and Major Morant's statement, quoted in our second report (pp. 29 and 30), says nothing about such an origin, but certain it is that at the present time the natives trap the fly in gourds containing blood as a bait and then liberate them in spots where the cattle or horses of their enemies are grazing or are collected together. The trap is a spherical gourd with a hole cut in the top. It is half filled with blood and carefully watched. As soon as a number of flies have entered it in quest of food, the native rushes forward and claps his hand over the aperture. He then closes the hole in some more permanent fashion, and carries off the flies in triumph for the future discomfiture of those with whom he has a feud. This native custom would certainly seem to indicate that a blood trap is a feasible method of dealing with one of the greatest pests from which Africa, the land of pests, has ever had to suffer.

[1] Messrs. Andres, Maire, and Co. are an engineering firm in Alexandria, Egypt.

THE NECESSITY FOR THE USE OF COLOUR NAMES IN A TEST FOR COLOUR BLINDNESS.

By F. W. EDRIDGE-GREEN, M.D., F.R.C.S.,
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(From the Institute of Physiology, University College.)

NOTHING, in my opinion, has retarded the knowledge of the subject of colour blindness more than the statement (attributed to Holmgren) that in any test for colour blindness names were not to be used. It was usual to state that on no account must the examinee be asked to name a colour; if any explanation were vouchsafed at all, the writer added the following, which he appeared to regard as final: "When a man matches a colour, he is doing something definite with his hands," or it was stated that a man might know the difference between colours quite well and yet name them wrongly.

I have never come across a man who was a candidate for an employment in which he had to distinguish between red and green lights, and who on examination called green "red" and red "green" through colour ignorance, and who was really able to distinguish between these colours and had a normal colour sense. I believe that I am right in stating that though the Board of Trade has regularly employed a test for colour ignorance, it has never yet found a case in which it has existed. All the tests for colour blindness which have been proposed during the last few years have been naming tests, and those who are best qualified to judge have recognized that the use of names is a necessity. There are, however, many who still adhere to the old statement that names should not be used, and I therefore propose in this article to analyse the difference between matching and naming colours, and to show that the use of colour names is a necessity, and that no test for colour blindness can be efficient which ignores them.

If an examinee be placed before a number of coloured

wools and, having been given a light green wool, be asked to pick out something similar, being told that there are none exactly alike, his mind may work in either of two ways. He may say to himself, "This is a light green wool; I will therefore pick out similar green wools lighter and darker than the test colour." In this case it will be noticed that he will go through the test in exactly the same way as if he had been first asked to name the test colour and had replied, green, and had then been told to pick out other wools with a similar hue of green. He may, however, be chiefly influenced by luminosity, and as no colour names have been mentioned, pick out all the wools of a similar degree of brightness, thereby failing in the test and appearing to be colour blind. When I first commenced the study of colour blindness one of our best known Royal Academicians, famous for his colouring, picked out all the confusion colours to match the test green. On further examination it was quite evident that his colour sense was supernormal, and he correctly and accurately named every one of the confusion colours, but he declared most emphatically that when colour names were not mentioned the similarity between two light colours was greater than two wools of the same hue but different degrees of brightness. I find that many other artists agree with him; in fact, most persons will regard a darker shade of some colour as an entirely different colour; for instance, if we take two yellows, each having the same dominant wave length, the bright one will be called yellow and the second brown, and the latter will not be put with the yellow at all. It is indeed difficult to convince most persons that brown is only a dark shade of yellow.

In a test for colour blindness a person is rejected who confuses or applies the same name to two colours which are plainly distinguished by the normal sighted as different. It should be clearly recognized that the test should show whether the examinee comprehends the nature of a colour—that is to say, that he picks out the colours by their character of greenness. The argument, therefore, that when a person is matching without naming he is doing something definite with his hands is fallacious, because when he is told to pick out green wools similar to that of the test green he is also doing something definite with his hands, only any opportunity of mistake through judging by luminosity instead of colour is avoided.

I have been lately ascertaining the percentages of colour blindness in men, and find that about 6 per cent. are definitely colour blind, whilst 25 per cent. have a diminished colour perception compared with the other 75 per cent. Now the 6 per cent. when examined with my lantern make mistakes between the red, green, and white lights, when they are clearly distinguished as different by the other 94 per cent., and any onlooker would say that they were rightly rejected, and it would not be safe for them to be in command of a ship in which it was necessary for them to distinguish between these three lights. Holmgren estimated the percentage of colour blindness as 3.25 per cent., and he considered that the least degree of colour blindness which could be detected should be a cause of rejection.

Nothing shows the value of colour names better than an examination with my lantern of an educated colour-blind man who has just passed Holmgren's test with the greatest ease. He miscalls red "green" and green "red," and applies either term to yellow, thus not only proving his colour blindness, but showing how absolutely unfit he is to act as an engine-driver or a look-out. Exactly the same applies to the improved Holmgren test, the official test of the Board of Trade, in which two new test colours similar to those used in my Classification Test have been added. Many colour-blind men will pick out the wools to match all five test colours as accurately and easily as a normal-sighted person, so that, after a long, tedious examination, I should not have suspected they were colour blind. On an examination with my lantern, however lasting less than half a minute, red has been called green, nothing or white; white has been called red or green, and green has been called red or white.

It must be noted that this method of matching is different from that in which two colours are put in close juxtaposition and compared. When the latter method is used, and particularly when light of known wave length is employed, very accurate and important information may be obtained. That is to say, two colours which look quite different to the normal sighted appear similar in every respect to the colour blind. When, however, a difference is observed the colour blind may make matches even more accurately than most normal sighted persons. For instance, it is stated that the ordinary dichromic cannot make a match with Rayleigh's apparatus for matching sodium yellow with a mixture of lithium red with thallium green, $\lambda\ 670 + \lambda\ 535 = \lambda\ 589$. I have, however, found that many dichromics are able to make this match as accurately as a normal sighted person, and one dichromic has, in taking a considerable number of observations, less mean deviation from the normal than any other person I have examined. There is also in matching another source of error when there is shortening of the red end of the spectrum. When the shortening is absolute, any number of rays from the shortened portion may be added to one of the factors of the match without altering its appearance, therefore numerous pinks of different luminosity and redness may be regarded as absolutely identical with a given blue, whilst another pink or purple which is clearly bluer to the normal sighted than the colours confused, is easily distinguished by the colour blind, because it contains red rays which are perceptible to him, and which occupy a higher point in the scale than his shortened portion. If the colour-blind be given a large number of coloured objects, they select colours which, whilst appearing different to the normal sighted, appear absolutely identical in hue and shade to them. For instance, many dichromics will, when a skein of yellow-green, and one of orange be intertwined, remark that the two are absolutely identical in every respect. When there is shortening of the red end of the spectrum, a blue and a pink of a lighter shade will also be regarded as identical. Two colours which are different to the normal sighted and appear identical to the colour blind are called pseudo-isochromatic, and numerous pseudo-isochromatic tests have been invented. The examinee has to read a letter of one colour which is surrounded by the colour of confusion. These tests present very many practical difficulties, as will be comprehended from the remarks I have made on the composition of colours. For instance, a pink letter on a blue ground must only contain rays from the shortened portion, and a pink which appeared in every respect similar to the normal sighted, but contained rays of a shorter wave length, is easily distinguished. As cases of colour blindness differ so much in the degree of shortening and absorption, pseudo-isochromatic tables could not be constructed for all; though, when the tables are well constructed, they are useful for the commoner varieties. Naming the colours, however, is a much better test.

It might be thought that when two colours are regarded as identical, it is a matter of pure chance as to which name is given to the colour. Many of those who have now come round to my opinion that the use of colour names is a necessity, hold this opinion, and I wish, therefore, to show that this is not the case, and that the colour blind name colours according to their colour perception, and rarely guess. If they did guess they would know that they were colour blind, and those that are most difficult to test are those who are convinced that they are normal sighted. If, for instance, we take a blue and a pink, which are regarded as identical by a man with shortening of the red end of the spectrum, he will with the greatest assurance declare that both are blue. There is no reason why he should say otherwise, because he does not see the red component of the pink but only the blue. Not a single one of the very large number of people that I have examined of this kind has called the pink other than blue, purple, or violet. It is the same with the orange and yellow-green, both will be called by the dichromic yellow. It is the same with other coloured objects, certain ideas of colour are associated with certain characteristics, and named accordingly. Naming is not haphazard with the colour blind any more than it is with the normal sighted. Another factor which makes naming more important than matching in a test for colour blindness is that simultaneous contrast is increased in the colour blind, and therefore, when two colours are compared in which a difference is perceptible, the difference becomes more marked on comparison. For instance, a trichromic will say that a yellow light placed adjacent to a red one is green, whilst the same yellow placed adjacent to

a green will be called red; this shows how many of the colour blind are able to escape detection when methods of comparison are used. Again, why should a colour-blind person guess or attempt to guess that a red light is visible when he can see nothing, or call a light which appears to him definitely white, green. In cases where he is on the border line of uncertainty, he may guess, but does so in such a hesitating manner that his difficulty is quite obvious to the examiner. When, however, a red light is shown to him which has all the characteristics which he has associated with green, or a green light which has all the characteristics he has associated with red, he names the colour shown without doubt or hesitation. The colour names which I refer to in this paper are those which are clearly distinguished by the normal sighted—red, yellow, green, and blue—and with the use of one or more of these colour names with black and white, all colours can be sufficiently described.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

TAUNTON AND SOMERSET HOSPITAL.

UTERINE FIBROID WITH CHRONIC SALPINGITIS.

(Under the care of Mr. L. H. C. BIRKBECK.)

[Reported by A. CLOUSTON RUSSELL, M.B., Ch.B., Senior House-Surgeon.

THE following case is interesting, as it illustrates how few symptoms may be present notwithstanding extensive pathological change in the body.

E. M. A., single, a spare woman, aged 45, was admitted to the Taunton and Somerset Hospital on October 28th, 1911, complaining of slight enlargement of the abdomen.

She said she had enjoyed the best of health up to three weeks before admission, when she noticed a slight enlargement of the abdomen and began to worry about it; there were no other symptoms whatever. Menstruation was normal.

The abdomen was found to be slightly distended, due to the presence of fluid; it moved freely with respiration, and there was no tenderness anywhere. A small hard mass could be felt situated deeply on the right side of the pelvis. It was diagnosed as fibroid of the uterus. On vaginal examination extensive parametritis was found, the uterus being adherent both to the bladder and to the rectum. The heart beat was rather feeble but regular; there was slight sclerosis of the radial arteries. The pulse was 94 and the temperature 97.2°.

As there was some difficulty about consent to an operation she was simply kept in bed under observation. On November 2nd she suddenly cried out, and her face became ashen. She died in a few minutes, the attack having all the appearance of angina pectoris.

After her death her brother told me that for the past two years she had always slept best when propped up in bed; also that she had been a great walker, covering twenty miles one day within a fortnight of her admission to hospital; she had never complained of any cardiac symptoms. A *post-mortem* examination was made by Dr. Egan and myself, with the following results: The heart wall was flabby and thinned; there was slight sclerosis of the coronary arteries, but no valvular disease. About 1½ pints of ascitic fluid were found in the abdomen. There were small reddish deposits scattered all over the parietal peritoneum, mesentery, intestines, and uterus; slides of these were obtained from the Clinical Research Association, and proved to be of a chronic inflammatory nature; no evidence of tuberculosis could be found. The uterus and appendages, with the bladder and rectum, were bound together in one mass. A fibroid projected from the fundus of the uterus on the right side. The right Fallopian tube was greatly thickened, evidently from chronic inflammation, and widened out into a hydrosalpinx near its fimbriated extremity; the ovary on that side was entirely transformed into a blood cyst the size of a hen's egg. The left tube was chronically thickened and full of caseous material breaking down into pus; a somewhat larger blood cyst represented the left ovary. Both tubes were ulcerated on their external surface, while deposits were numerous upon them and upon the ovaries.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

FRACTURE IN UTERO.

ON May 13th I was sent for to attend a primipara. I found a footling presentation and the cord prolapsed. After prolonged labour a male child was delivered dead. The right leg was bent at almost right angles half way down the shin. The tibia had been fractured and united. Bony union seems to have been good as the bone was quite firm. Over the fracture was a well healed cicatrix of about 1 in. in length. The four smaller toes on the same foot were united into one. There were no other developmental abnormalities. The evidence of fracture and cicatrix was so plain that I cannot think of any other explanation, especially as there was a confirmatory history of the mother having fallen against the edge of a large tub when six and a half months pregnant.

Lisburn. J. L. RENTOUL, M.B.

WIRING THE PATELLA TWICE IN EIGHT WEEKS.

THE case of rewiring the same patella twice in eight months, reported by Mr. Thos. North in the BRITISH MEDICAL JOURNAL for May 25th, and the evident rareness of the incident, make me wish to record a somewhat similar case.

J. S., aged 21 years on the day of the accident, injured his left leg while playing football on December 9th, 1911. I saw him at his home some time after the accident, and found him suffering from a transverse fracture of the left patella, with separation of about ¾ in.; the lower fragment felt very small. As I was unable to persuade his people to have the fracture wired, he was put up in a back splint, with over-extension of the leg, and the fragments approximated by a figure of 8 bandage. On December 17th permission was got to operate; he was removed to the Royal Albert Edward Infirmary, Wigan, and the operation was performed on December 20th. After clearing out some clots the pieces were wired, the lower piece being very small indeed, and the capsule sutured. He did very well, and left the infirmary a fortnight later, wearing a plaster-of-Paris case. About the last week in January the case was removed; union seemed to be good; there was a fair amount of flexion, and he was allowed to go about with a stick.

Early in February, while out walking after a sharp fall of snow, he slipped, and in attempting to recover himself felt the knee give way. He was removed at once to the infirmary, and on February 19th the knee-joint was again opened, the former scar being dissected out. The wires had torn clean through the lower fragment, and this was so injured that it was found impossible to pass further sutures through it; a thick silver wire was therefore passed through the ligamentum patellae below and the muscle above, and brought out at the outer aspect of the joint. This enabled the two fragments to be brought fairly well together, and by carefully tightening the wire the position was maintained.

He was sent home a month later with a back splint and footpiece on, and in April I put on another plaster case, which he still wears. We were much interested as to the condition of the bone on reopening the joint at an interval of eight weeks from the first operation, and were much surprised to find, so far as we could see, no attempt at union, either bony or cartilaginous—in fact, the fragments seem to have been kept together solely by the wire sutures, and yet the man was young, healthy, and vigorous. Several of the members of the staff were present at the second operation, and all agreed that there seemed no sign of attempted repair.

The fractures, as in Mr. North's case, were both the result of indirect violence, and I have been unable to find any record of a similar occurrence in any medical literature to which I have had access.

JOHN BLAIR, M.D.,
Honorary Surgeon, Royal Albert Edward Infirmary, Wigan.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

Resumed Debate on Syphilis.

The discussion was resumed by Major H. C. French, R.A.M.C., who expressed the hope that there would be legislative control of venereal disease, which was a different matter from the State regulation of vice. He described the way in which subjects of syphilis crowded medical institutions and sapped society. In 1854 Dr. Holland estimated that in the United Kingdom there were 1½ millions of persons infected with syphilis each year, and Dr. Mott had stated that 3 to 4 per cent. of cases of syphilis were followed by parasyphilitic affections. Some 11 per cent. of the male private patients of lunatic asylums were syphilitic and 8 per cent. of pauper admissions, while in New York among 300,000 cases of skin disease 11.5 per cent. were affected with syphilis. In Paris it was estimated that of every 100 men 15 were syphilitics. During the past few years the percentage of cases of freshly contracted syphilis in the British army, especially in London and Woolwich, was greater than in that army abroad. That was probably due to the lack of control of the disease in England at its source, as it was not yet notifiable in England, and the patients were not segregated, and so the disease was spread broadcast. The freshly contracted disease should be distinguished from relapsing conditions. There had been recorded 110 epidemics of syphilis, with 3,000 victims who had acquired the disease innocently. Playing kiss-in-the-ring was directly responsible for several cases. In 75 per cent. of cases of syphilis among married women the disease was traced to the husband. In Russia, in villages where prostitution was unknown, the population was ravaged by the spread of congenital syphilis. These facts, together with the numerous miscarriages and abortions, constituted a most important social problem. Recently in Chicago the Church had objected to marry persons without a certificate of good health. Alcohol conduced largely to sexual immorality. He referred to the marked benefit in India following the passing of the Cantonment Act of 1897. He objected to Mr. McDonagh's attribution of the increase of syphilis to intemperance, for of 461 cases of soldiers admitted to hospital in Malta by him for syphilis, 203 were total abstainers. In 1896 the Secretary of State for the Home Department was approached with the request that he would appoint a Departmental Committee to inquire into the prevalence and treatment of venereal diseases in England, but the Government did not think the time had arrived for taking such action, because public opinion was not sufficiently formed. Therefore it was clear that the duty of the profession was to enlighten public opinion and give the correct facts. Very many women suffering from the disease did not have proper treatment for it because of ignorance. India constituted a good guide as to the probable results of proper action. He advocated confidential medical notification of the disease, and medical treatment for short periods in hospital during the early contagious stages. A large amount of syphilis was spread by clandestine prostitution, but the effective control of open prostitution by localization of such women to certain streets would have great benefit. He spoke strongly of the need for drastic suppression of the middle man, who not only fostered the nefarious calling but lived on the income of these women. Solicitation must be checked, and that could be done under the Town Clauses Act, 1847. It had been pointed out in Parliament that a young girl was taught how to find her way to Timbuctoo but not how to avoid Piccadilly Circus. Sufficient beds should be set aside for venereal diseases in every London hospital, and there should be special courses of instruction on the subject for students. In Germany the circumcision of every infant was found to markedly protect against syphilis later in life.

Major Gibbard, R.A.M.C., devoted his attention to the question of treatment. He was very favourably impressed with the results from the use of salvarsan; the fact that the Wassermann reaction was negative after such treatment showed that salvarsan was a specific remedy, and not merely a symptomatic one. He contributed a very carefully prepared analysis of series of cases treated by mercury in a thorough way, and compared them with cases treated by salvarsan. The latter, in turn, were compared with results achieved by the use of neo-salvarsan, of which Professor Ehrlich had sent him a good supply. The convenience, the absence of reactions, and the rapidity of the benefit following neo-salvarsan made it a very desirable substance to use, but it was early yet to make proper comparisons. Professor Ehrlich had recommended that the maximum dose of neo-salvarsan for a man should be 1 gram, and the interval between injections six to eight days. The total given in one course should not exceed 5 to 6 grams.

Sir George Savage dealt with the subject of syphilis in relationship to insanity. He said he had nothing new to contribute, but he would convey the result of the experience of a long life. It was taught quite early that there were certain people in whom syphilis affected the viscera, the bones, the muscles, etc., and other persons in whom the effect fell upon the nervous system. A parallel condition of affairs had been shown to exist in reference to alcohol. It had been pointed out that a frequent associate of mental disorder was arterial sclerosis, sometimes combined with Bright's disease. He had seen cases with a distinct history of syphilis in whom there was ptosis, external strabismus, and mydriasis, which cases got well apparently under treatment, but afterwards developed mental symptoms, and a certain number were known to have died of general paralysis. Slowly it had been forced upon them that the fact must be accepted that there was a definite relationship between syphilis and general paralysis. It was certain that in some syphilitic cases head injury had been an exciting cause of the general paralysis. An interesting question was whether general paralysis could be produced by injury without syphilis. Thirty to forty per cent. of the ordinary population of asylums had some neurotic inheritance, but, taking 100 cases of general paralysis, the proportion with a neurotic tendency was definitely less than that. Another question was as to whether there was a specially dangerous variety of the syphilitic poison. There had been cases recorded in which a woman had been infecting a number of men with syphilis, and in which the proportion of those men who had become general paralytics was quite different from the ordinary proportion. There seemed to be a definite specific degeneration which was more than mere arterial degeneration, affecting also the nervous tissues as well as the arteries. He had been struck with the occurrence of certain forms of mental degeneration associated with syphilis, starting with some local palsy, and in some cases passing off without apparently ending in general paralysis. But a large number of cases of general paralysis started with some local brain lesion. Congenital syphilis might result in general paralysis at 30 to 35 years of age, the person never having himself acquired the disease. In many children of syphilitic parents there was a handicapping from the first, and some were the subjects of what Sir Thomas Clouston called "postponed idiocy."

Dr. Douglas White also bestowed considerable attention on the question of the regulation of vice, pointing out that clandestine indulgence among women had more than doubled in volume. Eighteen was a dangerous age for women, and he did not consider that special hospitals would meet the requirements; the person who acquired the disease naturally did not wish to wear a label which all might see. There was room for much improvement in the teaching of the subject to students. Specialization should be encouraged and posts created for specially qualified persons. He proceeded to give some very informing statistics, and held out a hopeful view if men and women who acquired the disease could be persuaded that it was to their own and everybody's best interest that they should come for early treatment.

Dr. Fremantle supported those who advocated more efficient teaching concerning the disease. He showed that official returns, as evidenced by the case of Prussia, did not represent the true state of affairs, and medical men should rather trust the impressions they derived in a general way in regard to the degree of prevalence. He argued that suppressive methods failed, as did also the institution of weekly medical examinations. In Berlin, despite the thorough measures, there were 16,000 police charges in connexion with brothels every year. He advocated voluntary notification, but that would only embrace

a certain proportion of the cases. The professional or successful business man would do his utmost to avoid notification, because his success was so intimately bound up with his reputation. But a hopeful feature was the possibility of assessing the prevalence of the disease from the operations of the Insurance Act, assuming that a working arrangement could be reached from the medical side.

The debate was adjourned until July 8th.

Reviews.

A PIONEER OF EXPERIMENTAL PHYSIOLOGY.

ALTHOUGH Burdon-Sanderson may perhaps be said to have achieved more by what he was than by what he did, he did so much both directly by his own work, and indirectly by his inspiring influence on his pupils, that he fully deserves a niche in the Temple of British Science. This has been provided for him in the memoir which we owe partly to the pious care of his widow, partly to that of his nephew and niece—Professor J. S. HALDANE and Miss E. SANDERSON HALDANE.[1] Burdon-Sanderson, who was born at Jesmond in 1828, came of a good old stock, even if the tradition that the Burdons or Bourdons came into England with the Conqueror is merely legendary. Part of his childhood and some of his earliest recollections were connected with Biddlestone, which has been regarded as the Osbaldistone of *Rob Roy*. His youth was passed in intimate contact with nature. He was fond of fishing, and the observation of birds was one of his great pleasures. His taste for natural history was early aroused, and the moors about Otterburn gave him ample opportunity for its indulgence. When he was about six years old he read Stanley's book on birds, Captain Cook's voyages, and other works of travel or natural history. When young he had a good voice and sang well, and also played the violin with no mean skill. This was given up when he went to Edinburgh, but his intense love of music never left him, and it gave him relief in his last illness.

He was intended for the law, but all his inclinations were towards the study of medicine. He entered the University of Edinburgh in 1847, and at first threw himself with eagerness into the study of botany. The teachers who chiefly influenced him were Balfour, Goodsir, and Hughes Bennett. Burdon-Sanderson afterwards said that Bennett's most important achievement was the introduction into the Edinburgh school of an exact method of studying the characteristic phenomena of disease. Of the instruments then available the microscope was the most important. In 1841 it had not found its way either into the ward or the consulting room. Although Sharpey and others had illustrated their lectures with microscopical preparations, Bennett was the first to place the instrument in the hands of the student. The high esteem in which Burdon-Sanderson was held by his fellow students is shown by the fact that in 1850–51 he was chosen to be third President of the Royal Medical Society of Edinburgh. In 1851 he took his degree, the subject of his thesis being the metamorphosis of the coloured blood corpuscles; for this he was awarded a gold medal. He then went to Paris, where he worked at organic chemistry with Gerhardt and Wurtz. He also attended lectures on physiology by Claude Bernard, by whom he was greatly influenced. He described Bernard as the most inspiring teacher, the most profound scientific thinker, and the most remarkable experimental physiologist he had ever known. Recollecting the magnificent laboratories of the present day, it is interesting to read that Bernard worked in a cellar and Wurtz in a garret. Burdon-Sanderson did not neglect practical medicine in Paris; he was a regular attendant at the hospitals.

In 1852 he began the battle of life in London. A brief review of his appointments will suffice to show the variety of his experience. He was Medical Registrar and Lecturer on Botany—afterwards on medical jurisprudence at St. Mary's. That he was a botanist in the real sense is shown by the article on vegetable reproduction written by him for Todd's *Cyclopaedia of Anatomy and Physiology* in 1854, which is said by Professor Vines to be the best extant summary in the English language of the state of knowledge at that time. Early in 1856 he was elected Medical Officer of Health for Paddington. He was very active in the discharge of the duties of this post, and although on occasion he withstood Bumble to the face he got on well with his vestry. He engaged in private practice, but his anxiety about the welfare of his patients was too great for his peace of mind. He continued, however, to hold the appointment of Physician to the Middlesex and Brompton Consumption Hospital for some years. In the meantime he had made investigations for the Government on cerebro-spinal meningitis, diphtheria, cattle plague, and cholera. The death of his father having placed him in a more independent financial position he devoted himself to pure science. In the mid-sixties he made experiments on the effects of the respiration on the circulation, and in 1867 he was elected a Fellow of the Royal Society, and was invited to deliver the Croonian Lecture on his experiments before that body. In 1870 came the turning point in his career. On the invitation of Sharpey he was appointed Professor of Practical Physiology and Histology at University College, and in 1871 Professor-Superintendent of the Brown Institute. There he made many of his experiments on infective processes; in this field he was one of the earliest workers in this country. In 1874 he succeeded Sharpey in the Chair of Physiology.

As a teacher of physiology he found his proper sphere of action, and he threw himself whole-heartedly into the work. He made the laboratory the basis of his instruction. The idea came from Sharpey, but to Burdon-Sanderson belongs the credit of carrying the new conception of scientific education into effect. From University College he migrated to Oxford in 1882, where he occupied the newly founded Waynflete Chair of Physiology. At Oxford he was at first met with active opposition, and even persecution, at the hands of obscurantists; but his quiet persistence finally triumphed, and he made Oxford a living medical school. At Oxford he remained for the rest of his life. He became Regius Professor of Medicine in 1895. Not content with his efforts to develop the school in all directions, he continued to pursue original research, and did much work for the furtherance of science.

To our mind the special greatness of Burdon-Sanderson is the large sphere of knowledge which he took for his province. He was not merely a physiologist, but a biologist in the largest sense. He was also a clinical physician, and had had considerable experience in dealing with practical problems of health. All this prevented his ever drifting into the comparatively narrow groove of pure science—a danger which is making itself felt at the present day, when physiology is becoming more and more divorced from medicine, and, in fact, is sometimes taught as a branch of natural science entirely independent of medicine. This is apt to engender indifference, and even something like contempt, for the practical applications of physiological investigation. We want more physiologists of the type of Burdon-Sanderson, who never lost sight of the intimate connexion between the facts of biology and the causation and evidence of disease.

The *Memoir* gives a charming picture of the personality of the man and of his happy married life. The secret of his influence was personal magnetism; he was quick to recognize and encourage promise, but he abhorred anything like superficiality or charlatanism. Nothing less than the exactest truth would satisfy him. Perhaps this is why, in regard to the deeper problems of life, he gave the impression of being reserved. The book also contains a number of papers and addresses on the excitability of plants, the study of physiology, cellular pathology, and the duty of society to the consumptive bread-earner. Altogether it is a simple but adequate record of one of the noblest Englishmen of his time.

BURY'S "DISEASES OF THE NERVOUS SYSTEM."

IN his monograph on *Diseases of the Nervous System*[2] Dr. BURY of Manchester has set himself to write a clinical account of the diseases arranged according to a clinical method of classification. His object has been to enable the student to make his diagnosis on anatomical principles,

[1] *Sir John Burdon-Sanderson: A Memoir by the late Lady Burdon-Sanderson.* Completed and edited by his Nephew and Niece. With a selection from his Papers and Addresses. Oxford: Clarendon Press. 1911. (Med. 8vo, pp. 515. 10s. 6d. net.)

[2] *Diseases of the Nervous System.* By Judson S. Bury, F.R.C.P. University of Manchester Publications, No. lxvi. Manchester: University Press. 1912. (Med. 8vo, pp. 798; 216 figs., 9 plates. 15s. net.)

so far as is possible, with the aid of the results furnished by modern pathological methods. The attempt should always be made, Dr. Bury teaches, to allocate all signs and symptoms of nervous disorders to the particular part of the nervous system that is primarily diseased. He is not a believer in what are called "functional" disorders, holding that even they really rest upon some organic, though at present undemonstrable, lesion of the tissues. Hence, even in the case of "functional" troubles, he encourages the student first to run the position of the lesion to earth, then to consider the nature of the disturbance—whether chemical, vascular, or other—that has interfered with the function in question. The book is divided into twenty-one sections. The first two, fifty pages in length, deal with the general anatomy and physiology of the nervous system, the etiology and general pathology of its disorders. Then come forty pages on the clinical manifestations of nervous diseases, in which the methods of examining patients and applying special tests are described. The next two sections deal with the spastic paralyses, and with paralyses that are flaccid or atrophic. The sixth section contains the intrinsic diseases of the spinal cord in which the signs point to a focal lesion; the seventh, of twenty-five pages, is given to spinal disorders characterized by the presence of pain, including spinal meningitis and compression myelitis. The following sections discuss a great variety of diseases, grouped clinically into those in which equilibrium is disordered, those in which some muscular spasm occurs, intermittent neuroses of all sorts, disorders of speech, diseases of the cranial nerves. Two important sections describe cerebral meningitis and cerebral vascular lesions, and intracranial tumours and abscesses are thoroughly discussed. At the end of the book neurasthenia and hysteria are considered, and there are thirty pages on syphilis of the nervous system—excluding tabes, already dealt with among the disorders of equilibrium, and general paralysis of the insane. There is a brief index.

Dr. Bury writes clearly, and gives a comprehensive but not overloaded account of the various nervous diseases. He adds no references to the literature, and quotes few names or dates; each disorder is considered from the usual points of view—etiology, pathology, symptoms, diagnosis, prognosis, treatment—conscientiously, and with the resources of a great personal experience in the observation of patients with nervous diseases. The result is the production of a thoroughly sound and trustworthy text-book, not too abstruse, straightforward, well suited to the needs of the medical student and the general practitioner, up to date both clinically and also from the point of view of treatment. It is well got up and printed; the illustrations—many of them borrowed from other works—have not been ill chosen. We can cordially recommend Dr. Bury's admirable work to students and medical men who want a good practical book on what is apt to be a complicated and intimidating—and therefore neglected—subject.

WHITLA'S DICTIONARY.

Among the familiar textbooks there is none better known than Whitla's *Dictionary of Treatment*.[3] Probably a very large proportion of the profession throughout the British Isles have consulted its pages in search of hints for the handling of difficult cases, and have not looked in vain. But the treatment of disease has undergone great changes in the last ten years, and the last edition of the dictionary appeared in 1902. Hence the author has set himself the great task of rewriting the book and embodying in it the latest information available in every branch of general and special medicine and surgery, leaving the gynæcological sections in the capable hands of Dr. Robert J. Johnstone of Belfast.

With the adoption of new views on the pathology of many diseases, some of the old remedies have of necessity been superseded. Sir William Whitla has been actively watching the process during the period of change, and it is a pleasant feature of the new edition of his book to find that supersession does not always imply rejection. Many of the time-honoured methods of treatment are as efficacious at the present day as they have been in the past, although some of them cannot be regarded as strictly scientific in principle. In describing the newer forms of treatment he has not failed to record the successes of the older procedures, but he gives clear indication of their relative merits.

It is in respect of diseases due to microbic agency, in which the identity of the microbe has been determined, that therapeutic science has undergone the greatest change. In some of these the application of the new knowledge has reached a point entitling it to general acceptance, but in many others, as will be seen from the author's account, a multitude of counsellors have attained to wisdom but not to agreement. Hence the careful reader will do well to discriminate, and to make use only of those methods which have passed out of the experimental stage and have been received by the profession in other countries as well as in his own. The therapeutic values of vaccine and serum are stated with an equal air of conviction by quotation from many well-qualified observers, and it will, perhaps, be found difficult to determine which of the many guides should be followed.

The possibility of latent microbic infection from hidden inflammatory foci has to be reckoned with in dealing with almost all forms of acute illness. In many instances where palliative treatment was formerly regarded as the limit of possibility, attention has now to be paid to the counteraction or annihilation of a poison, rather than to the immediate relief of the troubles to which it may be giving rise. Even a common cold may be cut short by a timely injection, but in the ordinary routine of practice it may be found well to put the older remedies also in action. Counteraction by means of vaccines in the more obscure diseases, such as chronic arthritis, is somewhat of a leap in the dark, but the polyvalent vaccines have undoubtedly proved efficacious at times. In some of the more desperate maladies, where death appears to be the only outcome, the use of serum and of vaccines would seem to be fully justified, even where the exact conditions are unknown. The success of Flexner's serum in cerebro-spinal fever, although by no means constant, is an illustration of this.

Of the book as a whole we cannot award greater praise than by the remark that the present edition is a worthy successor to those which have preceded it. Tested in various ways, it appears to represent the latest stage of all that is worth knowing on the subject of treatment.

[3] *A Dictionary of Treatment, including Medical and Surgical Therapeutics.* By Sir William Whitla, M.A., M.D., LL.D., Professor of Materia Medica and Therapeutics in Queen's University, Belfast, etc. Fifth edition. 28th thousand. London: Baillière, Tindall, and Cox. 1912. (Cr. 8vo, pp. 1216, 16. net).

NOTES ON BOOKS.

In the latest edition of *Burdett's Hospitals and Charities*[4]—the twenty-third to appear—an attempt is made to meet one of the few criticisms evoked by its predecessors. There is now complete correspondence between the figures dealt with in the commentary part of the work and those given in other sections in regard to individual institutions. The figures, however, still remain somewhat more ancient than is convenient in a reference book of this kind, or than might perhaps be expected in one which never appears until the year whose date it bears is well advanced—in other words, they are in all cases derived from accounts relating not to the year preceding that in which the volume appears, but to the last year but one. One chapter in the commentary deals at considerable length with the National Insurance Act in relation to hospital enterprise; it may be gathered from it that Sir Henry Burdett is disposed to urge hospital governors to exact from the State, in respect of insured persons admitted as in-patients, payment pro rata for their treatment and maintenance, plus 10 per cent. for medical attendance. Both the authorities of hospitals and the public are emphatically warned against accepting or countenancing a system of grants-in-aid. Among other evils, it would lead, it is suggested, to extravagance in management; friction between the governors or the municipalities and the voluntary hospital managers; State representation in the management; and, ultimately, to the extinction of voluntary hospitals and the substitution for them of State hospitals all over the country. This chapter adds greatly to the immediate interest of a volume which has grown to be indispensable.

[4] *Burdett's Hospitals and Charities, 1912.* By Sir Henry Burdett, K.C.B., K.C.V.O. London: The Scientific Press. (Crown 8vo, pp. 952. 10s. 6d. net.)

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

Conclusion of Dr. Cox's Evidence.

On June 25th Dr. Cox was questioned by Mr. Glyn Jones as to the suggestions of the British Medical Association for new legislation. Dr. Cox explained that by its first proposal the Association wished to convey that it was asking for the disclosure of each ingredient of a proprietary medicine and the quantity present, but knowing the difficulties in the way it would probably suffice if the names of the ingredients only were mentioned. At any rate, that would go far to fulfil what was required. The requirement of the Australian law that certain specified drugs should be disclosed when present in proprietary medicines was good as far as it went, but he did not think it went far enough. In the Association's second proposal, as to a warranty, no specific Act of Parliament was referred to. He understood that a label might be a warranty under the Sale of Food and Drugs Act, but that provision appeared to be so very ineffective that the law urgently required alteration. He was aware that the only section of the Act which exempted proprietary medicines was Section 6, but that exemption appeared to be remarkably effective.

Mr. Glyn Jones: Assuming that exemption is removed?

Dr. Cox: That is one of the things we ask for, certainly.

What do you think the effect of that would be? Supposing a customer asks for "Smith's Liver Pills," and he is supplied with them, would he not be getting the article demanded?—We do not think our suggestion for the removal of this exemption is a complete remedy, but if the label is made a warranty, and disclosure of the ingredients is required, as we suggest in our other proposals, then we think the removal of the exemption would be very effective.

Do you know there is a section in the Act now, making a person who applies a false description to an article liable to a penalty?—Yes, but it seems inconsistent with the exemption in Section 6.

Do you know why the clause I have mentioned is not put into force?—I have not the remotest idea.

Mr. Glyn Jones: Neither have I.

Asked whether the British Medical Association had any views as to whether it would be useful to abolish the licensing stamp on proprietary medicines, Dr. Cox said the Association did think that a stamp created a wrong impression among ignorant people, but it realized that revenue must be raised somehow, and there was no prima facie reason why proprietary medicines should not be taxed.

Sir Henry Dalziel asked whether proposals for new legislation submitted were the recommendations of the Council or of the members of the British Medical Association.

Dr. Cox replied that the policy of the Association was formed in a strictly constitutional manner. The Association was probably the most democratic body in the world, and was able to collect the opinions of its members in a way that few other bodies could. This question had been before the Representative Meeting and the Divisions, and it was really the policy of the Association as a whole and not of the Council.

As to the effect upon the proprietary medicine trade of a legislative enactment that the constituents of the medicine should appear upon the label, Dr. Cox said he thought it would be to kill absolutely some of the worst of them. That was the intention of the proposal. Others would not be greatly damaged by it.

Sir Henry Dalziel: You think that is the best way, rather than prohibiting the sale altogether?

Dr. Cox: I think you cannot do that. The prohibition would be avoided in all sorts of ways. The public ought to know what it is paying for.

Mr. Newton: At present the public insist upon having these things?—Oh yes, they like them.

Do you think the public would still refuse to buy if the ingredients were stated?—If the public knew that an article such as the one I mentioned last time, which claimed to cure all infectious diseases in from one to six doses, was composed of nitric acid and sugar of milk, it would realize that the medicine could not do all that was claimed for it.

You think the public is swindled by these things?—I do.

But you think the same representations made in medical papers are not heeded by the doctors?—Doctors are able to discount these statements.

It is a question of the presumed ignorance of the general public?—Very largely. A member of the public has not been trained to test drugs; he can only test them on himself, and a person who does that is usually a bad judge.

The advertisements of proprietary medicines in the BRITISH MEDICAL JOURNAL represent a rather material increment to its revenue. Supposing legislation were passed which practically ended the sale of these articles, would the Association be willing to make the financial sacrifice?—We are not recommending a course of which we should not be willing to bear the consequences.

Would the revenue lost amount to £20,000 a year?—We get a good price for our advertisements, but I should think the loss would be nothing like that. Moreover, many of these proprietary medicines would continue to exist.

Your case is that your readers are able to discriminate and can be trusted, but that the readers of other papers cannot be trusted, and in their interests legislation is necessary?—I think that is the case, putting it quite roughly. Without a medical education you really cannot balance up the claims of preparations. That is what medical training is for; it takes at least five years to learn that.

In reply to a further question, Dr. Cox mentioned the difficulty in regard to advertisements in the JOURNAL in which the Association sometimes found itself, and which could scarcely be avoided: that an advertiser would come into the columns of the JOURNAL, and, after making his reputation with the profession, would drop advertising in the JOURNAL altogether and obtain publicity in another way entirely.

Sir Henry Dalziel: I take it these "puff" articles in the JOURNAL are written after analysis?—Undoubtedly; but they are not "puff" articles in the ordinary sense of the term; they are written in a sober way.

There are obviously some proprietary articles that are being sold on the recommendation of the BRITISH MEDICAL JOURNAL?—Certainly. So long as a legitimate use is made of what we say, we cannot object.

You do not stipulate that no quotation from the JOURNAL shall be made in the lay press?—No: I do not think any stipulation has been made up to now.

Have you any views as to the value of sanatogen?—No; I have never used it myself, but I believe some members of the profession think very highly of it.

Mr. Bathurst: Most members of Parliament take it.

Mr. Lawson: Yes, for neurasthenia.

Dr. Cox: That shows, of course, that it must be valuable—(laughter)—but you must mind the advertiser does not get hold of that statement, sir. (Renewed laughter.)

Sir Henry Dalziel: That is another proprietary article that is recommended by the profession?—Yes; I have carefully defined my position on this point. I am not here to carry on a campaign against proprietary articles as such.

Supposing a patient gets a cough mixture from a doctor that cures him, is there any objection to having its value more widely advertised?—The objection is this: The cough may be due to ten or a dozen different things; the doctor examines the patient and forms an estimate of what it is due to, giving him a prescription for that particular kind of cough. To hand that prescription on to some one else who has another sort of cough is very unscientific and may sometimes be dangerous. Medicine is a most peculiarly individualistic science: you have to treat the individual. That is where the value of the family doctor comes in.

Your point is that no one should have treatment without a doctor's prescription?—That is a counsel of perfection. I recognize that all people could not afford to do that, although it would be the best thing if it could be done.

The Chairman put some questions to Dr. Cox as to the position of the JOURNAL in writing favourably of preparations sold at prices which bore a very remote relation to their cost.

Dr. Cox said he hoped the Committee would call those responsible for other newspapers before it and put to them the same questions, and see if they would meet the Committee to the extent that he had done.

The Chairman said that the reason the Committee had put all these questions to Dr. Cox as to the policy of the JOURNAL was on the principle, *Corruptio optimi pessima*. It was felt that if the BRITISH MEDICAL JOURNAL accepted these advertisements, the position as regards newspapers generally required the most careful consideration.

A letter from the solicitors of a firm whose products were mentioned by Dr. Cox at the last hearing, in connexion with a pamphlet containing the testimonials by medical men sent out with the preparation, was read by the Chairman. It was stated that the testimonials were never used without a signed permission from the medical men concerned, and a copy of the pamphlet was sent to each.

Dr. Cox said he not only accepted that statement, but he thought it was quite clear that when at the previous sitting it was suggested that some of the testimonials were bogus he said he passed no such imputation. He only said he felt sure that some of the medical men had no idea that the pamphlet was going out to the public. It had been brought to his knowledge that he himself had written to this firm, and he certainly only intended that his recommendation should be used as a means of approaching the profession. A phrase in any of the doctors' letters that the firm might make "any use it liked" of the testimonial he took to mean within the bounds of the profession.

The Chairman: I have a letter from the Institute of Hygiene with the name of a very distinguished medical man, Sir William Bennett, at the head. They appear to hold meetings and distribute samples of various products. They have issued certificates of purity, quality, and merit in respect of certain remedies.

Dr. Cox: That is to say people send the remedies for impartial analysis and the institute reports on them. I cannot see there is any objection to that; the proprietors take the risk if it is not a pure article.

The Chairman: Have you ever come across a proprietary drug or synthesis not previously known to the medical profession?—I never have.

Do you say that the greater part of these proprietary medicines have little or no therapeutic power whatever?—Yes, the greater part.

Doctors do prescribe proprietary medicines?—Yes; if a man brings to your knowledge a better combination than you have known, you prescribe it.

Are there any qualified medical men connected with the sale or manufacture of proprietary medicines?—I think not. We should certainly inquire into the position of any such with a view to reporting their conduct to the General Medical Council as being "infamous in a professional respect."

Do you remember instances in which after an interval you have analysed articles recommended by the JOURNAL to see that the composition is the same?—That is not within my knowledge.

Then practically you exercise no censorship over the constitution of the articles advertised in the JOURNAL?—I hope the Committee will see the difficulty. We do not want to commit ourselves to guaranteeing everything advertised in the JOURNAL.

The Chairman suggested that by recommending proprietary articles in the JOURNAL the Association made it difficult or impossible for the General Medical Council in the *Pharmacopœia* to secure the use of an equivalent standard formula instead of a proprietary medicine.

Dr. Cox said there were some proprietary medicines which he personally preferred to any formula in the *Pharmacopœia*; there was something in the method of preparation of some of them that made them more useful. In reply to a further question, the witness said that if a disclosure of the complete formula could not be secured by law, all the drugs that were active might be required to be stated. That would leave the proprietor a great deal of scope as to the method of making up, and he did not think the Association would be content with less. The publication of a list of deleterious drugs would be a step in the right direction.

The Chairman: People buy secret remedies, I suppose, because they are cheaper than medical attendance, and involve less trouble?—I do not think it is because they are cheaper. People think the advertisers have some mysterious cure the profession does not know of. As a rule, secret remedies are not cheaper than medical attendance. In the East End of London you get very good medical attendance for a shilling: you have to pay that for a proprietary medicine.

But it is very much simpler and cheaper to go into a shop and pay 1s. 1½d. for something, and avoid what is to some people the embarrassment of a medical examination and questioning?—That is to say, it involves none of the absolutely essential things.

But rightly or wrongly, is it not a fact that that accounts to a large extent for the great sale of these things?—No, sir; I submit to a large extent that is not the fact, because many of these remedies are very expensive. The prices proprietors get from the public are far higher than the medical profession gets.

They do not get these prices from the poorer classes?—Oh, yes, they do. I have known a labouring man spend the savings of several years on a silver-mounted truss, worth 15s. or 16s., and for which he paid £5 or £6.

Mr. Glyn Jones: May not a person lose part of his day's work in seeing the doctor?—In attending at a hospital he would lose time, but he could call on a doctor in the evening, after working hours.

The Chairman pointed out that, according to a return in 1911, 1½d. medicine stamps were sold to the extent of 31,000,000.

Dr. Cox replied that a very large amount was sold absolutely irrespective of price. People spent money to large amounts on proprietary medicine which they grudged spending on books, clothes, or boots.

Sir Philip Magnus: Or doctors' fees.

Dr. Cox: Doctors' fees, of course; that goes without saying.

The Chairman: What of the effect of the Insurance Act? When people get free medical attendance and free medicines, will that not greatly affect the sale of proprietary medicines?—I think and hope it will; but it will not affect those who buy them, because they think there is some mysterious secret about them.

Mr. Bathurst asked if Dr. Cox thought that the medical profession required such guidance as the advertisements in the JOURNAL were supposed to give them.

The reply was that from an experience as a general practitioner he had found the advertisements useful in bringing to his knowledge preparations that he had not seen before, and which he was prepared to put to the test, sometimes finding them useful.

Surely, after a very long and expensive education, medical men ought to be sufficiently equipped in medical knowledge not to have to depend upon advertisements in high-falutin language?—I suppose they ought, but even medical men are subject to the ordinary weaknesses of human nature, and they can be appealed to through the eye. It apparently served the purpose of the advertiser, and you must allow him some licence. We try to see that the advertisements are not too ridiculous or high-flown. Some readers, of course, would not look at an advertisement couched in such language.

Would it not be possible to provide in the body of the JOURNAL all the information of this kind that it is necessary for the profession to have?—Why should we not make money out of advertisements the same as other people, as long as we can do it with an easy conscience?

In reply to questions as to the Association's proposals for further legislation, and particularly with regard to the suggestion that a false description should be made an offence, Dr. Cox said he had not considered fully whether it should be a civil or criminal offence. The Association felt that merely to touch the pocket might not have the desired effect and that imprisonment might be necessary for the worst cases. If it was more effective that county councils should institute proceedings with the consent of a Government department, instead of placing the responsibility in the first instance with the Government department, he saw no objection to the adoption of that course.

Dr. Cox was not prepared to say that the bulk of the fraud upon the public was in connexion with drugs which purported to treat female ailments or the prevention of conception. A great deal of money was also spent on consumption cures, for example. He agreed that the people who were engaged in the former and more sinister traffic ought to be dealt with very rigorously.

Mr. Newton: Have you ever given a favourable editorial notice of a medicine not advertised in the JOURNAL?—Whether a medicine was advertised or not, if it was sent up for notice the same attention would be given to it. They are sometimes sent up by medical men as well as by the proprietors.

Have you ever given a bad notice of an article advertised?—We have given notices that the advertisers are not satisfied with.

Have you submitted a notice to the advertiser before you put it in?—I cannot say of my own knowledge, but, knowing the editor as I do, I should say it is very highly unlikely.

Dr. Lynch: If a doctor who has qualified after five years' study and who has his patient before him feels called upon to exercise the utmost care and prudence, how is it possible for a person having had no training and having no patient before him to prescribe at large?—It is impossible.

On the question of ethics, was the discovery of chloroform protected or patented?—No.

On the contrary, was it not the endeavour of those who found out the advantages of chloroform to make it as widely known as possible, without thought of reward to themselves?—It has always been the glory of the profession, of which it has been justifiably proud, that there has never been any attempt on the part of the profession to conceal a remedy or a new method of treatment.

Replying to Dr. Chapple, Dr. Cox said there were proprietary medicines to which the profession had no objection: those of which it approved claimed, not medicinal value so much as an art in the combination of drugs. They represented both the art of the doctor in dosage and medicinal value and of the pharmacist in the mixing of the ingredients. The medical profession encouraged every effort on the part of the pharmacist to produce the qualities of stability, compatibility and elegance in the combination of drugs. Many new drugs were of organic origin, and it was difficult to combine them in stable mixtures. To do so called for greater skill on the part of the pharmacist. The policy of the JOURNAL, as far as it could be carried out, was to give space to those preparations which expressed the pharmacist's art in obtaining more satisfactory combinations of drugs which had been proved to be valuable by the profession.

In reply to Mr. Cawley, as to the first proposal of the Association for new legislation, Dr. Cox agreed that the simple statement on the labels of the names, without the quantities, of the ingredients of proprietary medicines would go far to satisfy what was required. It was important to leave no loophole by permitting the name of any ingredient to be omitted.

Mr. Cawley: You think the ingredients should be mentioned?—At least that.

As to the circular accompanying the preparation and bearing the testimonials—with the qualifications but without the names—of medical men, to which reference had already been made, Dr. Cox remarked that if this wrapper reached the doctor he would not necessarily know that the same wrapper was going to the public. He knew many cases where the printed matter accompanying was quite different when the preparation was sent to a medical man from what it was when sent to the public. It was common knowledge to pharmacists, and certainly to the medical profession, that testimonials might be quite properly placed before the medical profession which would not properly be placed before the public.

Dr. Cox replied to further questions by Mr. Lawson as to the policy of the JOURNAL in accepting advertisements, and said that at the risk of seeming persistent he must make it clear that if the JOURNAL were to subject advertisements to extremely severe tests it would be in fact giving a guarantee of the preparation, and that it declined to do.

Mr. Lawson: But when you give an editorial notice you do give a guarantee?—We do not give a recommendation to the public. Of course, in many cases we know it is going to the public.

And that is equivalent to a warranty within the terms of the notice?—Yes, that the article is up to a certain standard; or was found useful in some cases.

Is it your object to confine the advertisement of certain preparations to your columns and not let the lay press have their share?—Oh no. Some may quite legitimately advertise in both.

You claim to dictate to people who advertise, the manner in which they shall advertise elsewhere?—We do not go so far as that; but if it is brought to our notice that exaggerated claims are made elsewhere we say the advertiser must choose between our journal and the others.

Can you conceive an advertisement in the lay press which will not lead at a certain point to self-medication?—Perhaps not, but there are very wide degrees.

What is the difference between a proprietor of a preparation who advertises directly in the lay press and one who advertises with you without indication of the composition of the preparation?—That never happens, because we always have an indication.

But the public does not get an indication?—We urge upon you to bring that about; we know it does not get an indication now.

You do not propose to set up a standard, but you want one set up for you?—Yes, and we would be glad to live up to such a standard. At present for commercial reasons we cannot do all we should like.

At the present time you are not much in advance of the average newspaper proprietor?—We are a very great deal in advance.

This being the conclusion of his examination, Dr. Cox stated that he had a considerable amount of material which he had intended to put before the Committee, but with which he did not propose to trouble them now. He wanted to make it plain that the examples the Association had given of ridiculous and fraudulent claims made for the preparations advertised to the public every day were mere samples from bulk. The Committee could be supplied with any quantity of them. He did not want to give the impression that the two or three ridiculous things he had read out were unusual; he could produce a score as bad or worse. He would hand in as a mere exhibit a typical selection from newspapers of recent date, containing statements that must make every man of the world believe that the advertisers were trading on the ignorance and credulity of the public.

The Chairman: I have to thank you, Dr. Cox, for the very long, careful, and extremely valuable evidence you have given.

Non-Secret Proprietary Remedies.

On June 27th Mr. E. F. Harrison, B.Sc., Ph.C., F.I.C., F.C.S., gave evidence. He said he was an independent analyst, and had been employed by the British Medical Association to make analyses of secret medicines. He was responsible for most of the analyses of proprietary medicines contained in the two books, *Secret Remedies* and *More Secret Remedies*, and was prepared to answer any questions that might be put to him with regard to the analyses. In his thirty years' chemical and pharmaceutical experience he had had occasion to consider the composition, advertisement, and sale of proprietary medicines from various points of view. It might perhaps be useful if he gave the Committee a brief summary of some of the points arising out of the subject-matter of the two books, which in his opinion appeared to show the necessity for further legislation. It was first of all necessary to distinguish between the different classes of proprietary medicines, for most of what he had to say applied to one class only. In the first place, there was a large number of proprietary but non-secret medicines. There was first the class of new chemical substances produced synthetically. These were usually prepared by a patent process, and sold under a protected trade-mark name. As an example of that class he mentioned antipyrin, which was manufactured under a patent and had a trade-mark name. During the life of that patent this was the monopoly of one firm. The patent had expired some years ago, and the article might be made now by any one. It was in the *British Pharmacopœia*, and it might be regarded as a permanent and valuable addition to the materia medica. Other examples were urotropin and aspirin. In these cases the names were registered, but there was no monopoly in the processes by which the chemicals were produced. Urotropin was sold under at least a dozen names. There was also adrenine or epinephrine, the active principle of the suprarenal gland. In this case the process was patented,

but the name was not registered. A large number of proprietary medicines in this class had enriched and been valuable additions to medicine.

In reply to Mr. Newton, the witness said it was the process of manufacture that was patented. The number of proprietary articles in this class was very large. The reputation of a large proportion did not ultimately survive, but a substantial number of them survived and took an established place. The next class consisted of new combinations of old and well-known drugs. As an example of these he mentioned bismuth and pepsin mixtures, emulsions of petroleum and cod-liver oil. Other makers got to know the composition fairly accurately, and manufactured similar articles, sometimes quite as good and sometimes not so good as the original article. As soon as they came into general use formulae were published in the pharmaceutical press and elsewhere. In spite of that the original proprietor nearly always held his own commercially. That was the case to a very remarkable extent, even though the price of the original article was three or four times as much as other people asked for it. For instance, Hewlett's mist. bismuthi was listed at 10s. per pound and similar preparations were sold at 4s. per pound.

The Chairman: That is a fact worth noting in connexion with the provision of medicines under the National Insurance Act.

Mr. Haydn Jones asked if these preparations held their own because of the name.

Mr. Harrison said he thought it was because the original manufacturer had usually discovered some particular feature, or some special method of preparation which might not be shown by analysis.

Mr. Lawson: Is it not also due to the fact that being manufactured on a large scale it is probably more satisfactory than when it is made up casually?—Yes, sometimes, though competing articles are also often made up on a similarly large scale.

The Chairman: In some cases it might happen that a later preparation was really better?—Yes. Mr. Harrison added that this latter class had contributed to some extent to the enrichment of medicine.

Dr. Chapple: Is it not the case that, though the ingredients are published, the method of compounding the ingredients may remain the property of the original manufacturer?—Yes, except in so far as the ingenuity of competitors may find it out.

The Chairman: I suppose they would find it out by the method of trial and error?—Yes.

Mr. Harrison said the third class of proprietary and non-secret medicines consisted of those in which the full formula was disclosed except some trivial detail which was of no importance. Representative preparations of that class were "tabloid" preparations. The full formula was declared on the label, except perhaps some very small quantities of excipients. Special machines were used, but there was no secret in the general method. In all these three classes the fact that the composition was not secret or only partly secret did not prevent the medicine from being a very valuable paying property. There was an enormous capital invested in the production of these things, and very good profits were made. He mentioned this to show that secrecy was not essential to the retention of a valuable property in medicines.

Secret Proprietary Remedies.

Mr. Harrison now came to the large class of proprietary medicines in which the composition was secret, or nearly secret, or at any rate in regard to which no accurate or reliable information was supplied.

The Chairman: Then you regard the secret medicine as a medicine with regard to which no information is given by the manufacturer?—Yes, either no information or very little.

Mr. Harrison said that with regard to this fourth class of secret proprietary medicines the one characteristic which was common to them all was that they were intended for self-medication. The suggestions which were made to the public were, as a rule, strong and misleading. In this they were alike, but otherwise they varied very greatly indeed in their merits, in their price, and in almost every other respect. Having studied the advertisements of this class of medicine for many years he had found there were very few indeed in which considerable misrepresentation was not made. That misrepresentation was either in the nature of exaggerated claims or in some other form. The advertisements were such that it was almost impossible for the proprietor of a secret medicine to obtain a great sale unless exaggerated claims were made. Medicines otherwise innocent were apt to fall into exaggeration, being forced into it by the competition of less scrupulous makers.

Mr. Lawson: You mean that the advertisements must be in the language of advertisements?

Mr. Harrison said he would go a little further than that and say they must be in the language of patent medicine advertisements. (Laughter.) To summarize some of the principal charges which might be made against the worst articles of that kind—and the case for new legislation necessarily rested very largely on what was done in the worst cases—he would say that at present there was nothing to prevent quite ignorant persons without any medical or pharmaceutical qualification from making up a medicine of worthless or even harmful drugs, advertising it widely for the most serious complaints, guaranteeing a cure, and selling it at a price which was quite out of proportion to its cost. Actual misstatements on matters of fact were made freely, as well as statements which were not absolutely false, but were grossly misleading. Mr. Harrison proceeded to prove this statement point by point by quotations from *Secret Remedies* and *More Secret Remedies*. To show the ignorance of manufacturers, for instance, there was a statement that catarrh invariably created pleurisy, asthma, bronchitis, consumption, and various other complaints. On another page was a statement that no progress in medicine had been made for three centuries, and that tigers' tongues, rhinoceroses' horns, crabs' eyes, etc., form part of the materia medica now in vogue with the medical profession; another maker put forward the absurd statements that the white corpuscles of the blood are yeast cells and they accumulate in the brain during disease, that acetic acid is an absolute poison, and that no chemist has been able to analyse alcohol. Several other examples of gross ignorance were given. His next point was that these medicines might be composed of quite worthless ingredients. As illustrations of this he quoted from *Secret Remedies* a preparation which claimed to cure "all kidney diseases" which consisted of sugar only, and another claiming to cure almost everything in one dose which was composed entirely of potato flour.

Mr. Harrison gave instances of dangerous ingredients being contained in proprietary secret remedies, mentioning acetanilide, morphine, strychnine, lobelia, and powdered savin. As regards the serious diseases for which these remedies were put forward, in many cases guaranteeing cures, he gave a long list. Cures were definitely promised for cancer, consumption, diabetes, Bright's disease, and many others. One remedy was described as "a guaranteed cure for all blood diseases; it never fails to cure scrofula, cancerous ulcers, syphilis, gout, dropsy, etc." Another advertised: "Whatever you may be suffering from, don't worry; ——'s preparations are certain to cure you." To illustrate the point that the selling price might be very much in excess of any reasonable proportion of the cost price, Mr. Harrison mentioned that tuberculozyne sold for £2 10s., and the cost of the ingredients was 2½d. He gave instances of false statements being made with reference to the ingredients; for example, a preparation would be said to be purely vegetable, and mineral substances would be found. Statements would be misleading without being positively untrue. Cough pills were said not to contain opium, but analysis showed them to contain morphine, which was the principal constituent of opium. Kaputine was said to be free from a dangerous constituent to be found in other powders; nevertheless it was composed as to 96 per cent. of acetanilide.

In reply to the Chairman, who asked what was the proper dose of acetanilide, the witness said the *Pharmacopoeia* dose, as altered in the present edition, was one to three grains. He next mentioned the variations of the quality and contents of proprietary secret remedies, due apparently to gross carelessness in preparation. Variations might also be made on account of alterations in the law. For instance, a headache powder which contained an ingredient making it illegal for anyone but a qualified

chemist to sell it was made up in one form for grocers and in another for chemists. The witness put in an analysis of Fenning's Fever Cure, mentioned by Dr. Cox; this was the remedy which claimed to cure several infectious diseases in from one to six doses. The medicine was taken in wineglass doses, and contained 1.4 per cent. by measure of nitric acid (*British Pharmacopœia*) flavoured with peppermint—practically 48 minims of strong nitric acid to the bottleful.

The Chairman said the Committee had had this preparation analysed by the Government analyst, and the report stated that the preparation contained 2 per cent. of *British Pharmacopœia* nitric acid.

Mr. Harrison explained that taking into consideration that his figures were by volume the results were practically identical, as the specific gravity of nitric acid was 1.42.

In reply to Sir Philip Magnus, the witness said he did not think any legislation was necessary to deal with proprietary medicines which were more or less fairly described and the ingredients of which were more or less fairly known. He thought that if legislation were to be effective it ought to have reference to secret remedies. It should not prevent sale altogether, although it might be directed to making gross and flagrant abuses impossible, by making it compulsory to declare on the label the names of all the principal ingredients. This would automatically kill the flagrant swindles of perfectly valueless things.

Sir Philip Magnus: Do you think the public would be prevented from purchasing, even if the ingredients were disclosed?—I think they would; the public has access to various sources of information. People might ask the family doctor or chemist, or write to one of those papers that supply information upon almost anything, to find out if a particular preparation was worth anything.

Sir Philip Magnus: They might do that already. Is it not the case that people buy these things because they do not want to consult a medical man? I am not so hopeful that it would have any effect to put the names of the ingredients on the label.

The witness replied that it was a common practice for customers to ask chemists whether advertised proprietary articles are good for various complaints, and if the contents were on the label chemists could express an opinion. At present he could only say, "How can I tell? I do not know what is in it," and the patient went away with the impression that there must be something in the preparation that the doctor or chemist did not know of. The effect of stating the ingredients would be to reduce the sale of the worst articles so much that it would no longer pay the makers to advertise. The better-class productions would be affected in only a minimum degree.

Sir Philip Magnus: Do you suggest that legislation should endeavour to prevent these extremely exaggerated statements?

The Witness: I think it would be possible to prepare a series of specific statements which it should be an offence to make. It might be made an offence to allege that a thing would cure a disease which admittedly could not be so cured, and it might be made the duty of some official department to keep an eye on these things and not leave them quite alone. In addition to the names of the ingredients, it should also be required that the quantities of certain ingredients should be stated. He would include poisons, dangerous drugs like acetanilid and alcohol, so that a patient should not unknowingly imbibe a considerable quantity.

Sir Philip Magnus: You think a Government officer might be empowered to institute proceedings against any manufacturer advertising a medicine which the medical faculty generally well know to be quite incapable of curing the disease it claims to cure?—Certainly, but there are so many difficulties in the way that it would be necessary to limit that to positive and definite statements. In America "misbranding" was made an offence; it was made illegal to state that a remedy would cure a disease if it was known to the medical profession that the disease was incurable in that way. But a case was taken to the Supreme Court, which held that it was a matter of opinion whether a medicine would cure a disease. Since then no prosecutions had been brought.

A prosecution for a deliberately false statement might be brought under the Food and Drugs Act?—Yes, if the exemption of proprietary medicines were withdrawn, the case would be met. The local authority, which takes samples of butter, could take samples of proprietary medicines.

In reply to Dr. Lynch the witness agreed that there were well-defined limits to the amount of information one could get by analysis, especially with regard to vegetable substances. That reservation was not serious, because nearly all the active constituents of drugs were definite substances which could be separated and identified. In Germany there was the greatest activity in the preparation of synthetic drugs. Some of these establishments were of the very highest class with regard to scientific equipment, and a very large amount of scientific knowledge emanated from them. There was at least one establishment in this country where a considerable research laboratory existed. He was convinced from his analyses that some secret remedies were sheer frauds. The public was spending its money, not on anything of real value, but on account of the impressions produced by the advertisements.

Dr. Lynch: Do you think that it would be advisable to absolutely prohibit the assertion that any medicine will cure cancer?

The Witness: I would certainly prohibit it as regards any secret medicine, but it would never do to prohibit it with regard to a substance about which the statement might be made in good faith.

Replying to Dr. Chapple, Mr. Harrison agreed that any chemical substance or any drug must start its career in the hands of a medical man who had observed its effects: the genesis of knowledge of medicine must start with the patient and the skilled observer.

Dr. Chapple: Does not your first suggestion for new legislation include the statement on the label of the quantities as well as the names of the ingredients?

The Witness: I have to distinguish between the opinions of the British Medical Association and my own. My own opinion is that that proposal goes further than is necessary, and might inflict injustice. I would not have the quantities stated except in the case of poisons. If the maker declared the ingredients he would be debarred from making extraordinary claims in his advertisements.

How would the consumer in the East End of London be affected?—I think the knowledge would gradually filter down to the least educated. If the maker had to declare on the label that the ingredients of a preparation were, say, nitric acid and peppermint water, the consumer in the East End, to whom a shilling is a consideration, would ask if he could get it cheaper.

The great mass of the traffic is amongst the poor and ignorant, to whom these exaggerated statements appeal?—I hardly think the great bulk is amongst the poor. The sale is pretty evenly distributed through the whole population.

The Chairman: I have received through the post, as we all do, a pamphlet of a certain secret remedy. I was amazed at the list of testimonials given by people who could be described as members of the upper classes.

The Witness: I think that the more educated classes are as easily gulled as the uneducated.

Mr. Cawley: I think you admit that certain vegetable compounds are incapable of analysis?—Certainly.

Does not that show that even the statement on the outside of the bottle of the ingredients would be ineffective, because it may be said that the compound is made from some root, of which the name is given, and it would be impossible to show that it does not exist in the preparation?—It would not be very difficult for legislation to make it clear that the name given must be a definite drug.

Mr. Harry Lawson asked whether all the patent medicines Mr. Harrison had suggested to the British Medical Association Committee had been examined and reported upon in *Secret Remedies*. The witness replied that not a single one had been eliminated from the list.

Mr. Lawson said that it had been suggested to him that something like 50 per cent. of the remedies dealt with in the book were almost unknown.

Witness replied that some were not very well known, but nothing like the percentage named. He then explained in detail the method in which the remedies to be analysed were selected, the idea being to take representatives of each group.

Mr. Lawson asked how it was that not a single one of

the proprietary medicines advertised in the British Medical Journal appeared in the book.

Mr. Harrison said the remedies advertised in the British Medical Journal came into a very different class.

Mr. Lawson could not understand why such a medicine as Kutnow's Powder was not analysed, and Mr. Harrison replied that he had never looked upon Kutnow's Powder as a secret medicine. In reply to further questions; the witness said he did not desire to interfere with the legitimate profits of those selling genuine proprietary medicines. The publication of the ingredients on the label would enable the chemist to use discrimination in the sale. Mr. Lawson suggested that even if the formula were published on the label the public would be none the wiser, but Mr. Harrison thought it would act as a very great deterrent. He admitted that many secret remedies might be from quite useful formulae.

Mr. Lawson asked what objection he had, therefore, to these useful medicines being made known by advertisement to the public. Mr. Harrison replied that what was made known was "Smith's Pills," not the formula for them.

Mr. Newton asked Mr. Harrison whether he would be prepared to separate secret medicines into different groups of varying value. Mr. Harrison said he would; it would not be difficult with the extremes, but it would be very difficult with those just on the border line. He was prepared to draw up such a list of secret remedies whose suppression should be undertaken, but there would be difficulty in drawing the line.

The Chairman asked the witness if he saw any objection to advertising a preparation containing dilute nitric acid flavoured with peppermint as a fever cure. Mr. Harrison thought it might be called a "fever cure" simply, or, as the word "cure" was open to objection, it might be called a "mixture for fevers." He objected to all secret remedies which were advertised as cures for cancer, consumption, rupture, diabetes, or Bright's disease.

Mr. Newton asked as to the attitude of retail chemists with regard to the sale of proprietary medicines. Could they sell below 1s. 1½d.? Mr. Harrison replied that the majority of the proprietary medicines which had a large sale protected the price. The discount was not very considerable, but it compared tolerably well with other articles sold in the course of trade. Generally speaking, the chemist did not encourage the trade in proprietary medicines.

Mr. Harrison's evidence had not concluded when the Committee adjourned until Thursday, July 4th.

MOTOR CARS FOR MEDICAL MEN.

Cheap Cars.

We are frequently asked to advise members upon the purchase of cheap cars, many of them of American manufacture. We cannot undertake to discriminate between individual patterns, but may make the following general observations. By standardization of all of the parts, by manufacturing in large numbers, and by not varying the patterns in the endeavour to effect, year by year, improvements, the American makers have succeeded in turning out cars which are "cheap"—that is to say, in turning out an article which is good for the price asked for it. But no one who is familiar with the details of a motor car can expect to get for a very low price the best that can be produced, and the difference begins to be felt after the car has had a good deal of wear. The difference in the cost of production of parts which are rapidly machined out of "quick" steel and those which are carefully ground after being hardened, etc., is very great, yet no difference will be observed in their running when new. To give an example, one of our correspondents, himself something of a mechanic, has a 16 horse-power car which is now 8 years old, has been heavily but carefully used, and still runs almost as well as ever. Upon this car only £24 have been expended in renewals in eight years; but this was an expensive car originally, in which every part was made regardless of cost where greater excellence could thus be attained. The makers of this car, to whom motor building was only a subsidiary part of their business, have given up building cars because they would not lower the quality and could not compete in price with the flood of cheap cars; they continue, however, to build a few cars for old customers, but they do not advertise, and have no agents. It may, and no doubt does, answer the purpose of some to buy a cheap car and wear it out; against this we have nothing to say, and indeed we know of instances of the possessors of a high-class car buying a cheap car for rough work in order to spare their other. But it cannot be too plainly understood that the extra cost of a high-class car is not paying merely for the name, but that there has been put into it value in the form of additional highly skilled work and expensive material.

LITERARY NOTES.

The education of epileptic children has always been a matter of considerable difficulty. The very nature of their disease, which prevents them from mingling on an equal footing with other children, renders these little unfortunates totally unfit for the ordinary routine of home or school life; and until the last few months the children of the well-to-do have been in many respects actually worse off than their fellow sufferers in the poorer classes, who could at least gain admittance to homes and institutions where they would have every opportunity of developing whatever powers and capacities they happened to possess. It was to meet the requirements of a hitherto neglected class, therefore, that a school for the epileptic sons of gentlefolks was opened last autumn at the David Lewis Epileptic Colony at Alderley Edge, in Cheshire, of which an interesting account by Dr. Alan McDougall, the director of the colony, has been given in the May number of *The Child*. According to Dr. McDougall, Colthurst House School is the first of its kind ever founded in this country. It is in no sense of the word a sanatorium (dangerous or imbecile children being rigidly excluded), but a real school, where the boys are not only thoroughly well grounded in the ordinary school subjects, but, what is even more important, are trained in self-reliance and other manly virtues, and encouraged to take part in the various games and sports which bulk so largely in the life of the average schoolboy. It is hardly necessary to add that though "coddling" is strictly taboo, the most careful attention is paid to the mental and physical requirements of each individual pupil; whilst even during their sleep the boys are under close supervision, the dormitories being provided with a night attendant fully qualified to deal with any case of sudden illness. The pioneer work done by this establishment cannot be too highly commended, and the success of the experiment gives reason to hope that Colthurst House School is but the precursor of a host of similar institutions scattered throughout the length and breadth of the land. A far more famous, though very different, educational establishment is the great public school of Haileybury, a brief outline of whose history, by the Rev. L. S. Milford, has also appeared in the May number of *The Child*. The same number also contains an excellent article by Dr. Mary Sutton Macy on the upbringing of a child during the first three years of life, and a short account by Miss Elsie M. Zimmern of the new Nursing Training College at Hackney; whilst a delightful study of "The Infant Mind" has been contributed by Miss J. St. Clair Henderson, head mistress of the Acton Lane Schools. Any one who has had experience of the extraordinarily disconcerting reasoning of a small child will sympathize with the anxious mother mentioned by Miss Henderson, who, on being informed by her four year old son that he was drawing God, tried to explain that he could not do so "because no one has seen God, and so we do not know what He is like. 'Oh, well,' replied Jack, calmly going on drawing, 'You'll know all about Him when I'm done!'"

Life, Death, and Immortality is the title of a little book by Dr. W. H. Thomson, Consulting Physician to the Roosevelt Hospital. (New York and London: Funk and Wagnalls Company, 1911.) The position taken up by the author may be gathered from the following sentence: "There is something almost pathetic in the conclusions of Huxley and some of his contemporaries that, because they had shown how man's body had been preceded by connected stages of evolution up to the ape's physical frame, therefore Man was thus accounted for by science! And to this day many are under the delusion that the animal Homo can explain the person Man." The booklet may fairly be described as a plea against the doctrines of materialism. It is somewhat discursively written, and to us it does not seem very convincing in argument. The author becomes more and more theological as he gets further into his subject, and discussions on the Resurrection of the body and Heaven as described in the Bible are outside our province. To some readers, however, the book may appeal.

British Medical Association.

EIGHTIETH ANNUAL MEETING, LIVERPOOL, JULY, 1912.

PROGRAMME OF BUSINESS.

President: Professor ROBERT SAUNDBY, M.D., LL.D., F.R.C.P., Professor of Medicine, University of Birmingham.

President-elect: Sir JAMES BARR, M.D., LL.D., F.R.S.E., Consulting Physician, Royal Infirmary, Liverpool.

Chairman of Representative Meetings: EWEN JOHN MACLEAN, M.D., M.Ch., M.R.C.P.Lond., F.R.S.E., Gynaecologist, Cardiff Infirmary.

Chairman of Council: JAMES ALEXANDER MACDONALD, M.D., LL.D., M.Ch., R.U.I., Honorary Physician, Taunton and Somerset Hospital, Taunton.

Treasurer: EDWIN RAYNER, M.D.Lond., F.R.C.S., Consulting Surgeon, Stockport Infirmary, Stockport.

The Eightieth Annual Meeting of the British Medical Association will be held in Liverpool in July, 1912. The President's Address will be delivered on Tuesday, July 23rd, and the Sections will meet on the three following days. The Annual Representative Meeting will begin on Friday, July 19th, 1912.

The Address in Medicine will be delivered by GEORGE ALEXANDER GIBSON, M.D., D.Sc., LL.D., F.R.C.P.Edin., Physician, Edinburgh Royal Infirmary.

The Address in Surgery will be delivered by FRANK THOMAS PAUL, Ch.M., F.R.C.S., Surgeon, Liverpool Royal Infirmary.

THE SECTIONS.

The scientific business of the Meeting will be conducted in twenty Sections, which will meet on Wednesday, July 24th, Thursday, July 25th, and Friday, July 26th.

The President, Vice-President, and Honorary Secretary of each Section constitute a Committee of Reference for that Section, and exercise the power of inviting, accepting, or declining any paper, and of arranging the order in which accepted papers shall be read. Communications with respect to papers should be addressed to one of the Honorary Secretaries.

A paper read in the Section must not exceed fifteen minutes, and no subsequent speech must exceed ten minutes.

Papers read are the property of the British Medical Association, and cannot be published elsewhere than in the BRITISH MEDICAL JOURNAL *without special permission.*

The following twenty Sections have been authorized by the Council:

ANAESTHETICS.

President: DUDLEY W. BUXTON, M.D., B.S., London.

Vice-Presidents: F. W. BAILEY, M.R.C.S., Liverpool; W. FINGLAND, L.R.C.P., Liverpool; W. J. MCCARDIE, M.B., Birmingham.

Honorary Secretaries: V. C. DE BOINVILLE, M.D., South Grange, Aigburth Road, Liverpool; C. C. BRAINE, F.R.C.S., 26, Wimpole Street, W.

Wednesday, July 24th, 10 a.m.—Discussion on Intravenous Infusion Anaesthesia. To be opened by Mr. FELIX ROOD; followed by Messrs. G. A. H. Barton and V. G. L. Fielden.

11 a.m.—Discussion on the Importance of Affording the Anaesthetist an Opportunity of making a Thorough Examination of the Patient some days previous to a Contemplated Operation, and after the Nature of the Operation has been Disclosed. To be opened by Mr. ALEXANDER WILSON; followed by Messrs. L. Kirby Thomas, J. W. King, and Sydney Haynes.

The following is a *précis* of the paper introductory of the first discussion:

The origin and history of the intravenous infusion method of administration. Earlier types of apparatus and improved forms lately devised. Technique of method now generally employed. Summary of a number of cases. The position this form of anaesthesia occupies and is likely to occupy in the clinical practice of anaesthesia.

The following is a *précis* of the paper introductory of the second discussion:

The advantages claimed are: More accuracy in selecting the anaesthetic or analgesic, and the methods which will best fulfil the purposes of (1) safeguarding the patient by minimizing operative shock, preventing or lessening post-operative effects—that is, acetonaemia, glycosuria, pulmonary complications; (2) produce the best results for the surgeon and so enable him to do the utmost for the patient in the shortest possible time. The methods suitable for special regions and special types of operation may be grouped as: (*a*) Intratracheal insufflation of ether; (*b*) intravenous infusion; (*c*) rectal injection, or irrigation with ether in saline; (*d*) inhalation after alkaloids; (*e*) intrathecal injection; (*f*) various methods of local analgesia. The paper also invites members to state what factors, as a result of their examination, would influence them in selecting one of the above methods.

Thursday, July 25th, 10 a.m.—Discussion on the Comparison of Methods Employed for Inducing Anaesthesia and Analgesia respectively, with Special Reference to After-Effects. To be opened by Mr. C. A. LEEDHAM-GREEN; followed by Messrs. H. M. Page, G. A. H. Barton, and Sydney Haynes.

The following is a *précis* of the opening paper:

(A) Methods: Anaesthesia by (1) ether, (2) chloroform; analgesia by (1) intradural injection, (2) local infiltration, (3) regional.

(B) After-effects—incidence of fatality—respiratory—circulatory. Metabolism—for example, toxaemia. Renal.

Papers:

EHRENFRIED, Dr. (Boston, U.S.A.): The Intratracheal Administration of Ether. Accompanied by a demonstration of an apparatus for the purpose.

KELLY, Mr. R. E.: The Intratracheal Administration of Ether by a Modified Elsberg's Apparatus; with Records of Cases.

Friday, July 26th, 10 a.m.—Discussion on Employment of Alkaloidal Bodies prior to Inhalation. Infusion or Subdural Injection with a view to abrogating Deleterious After-Effects. To be opened by Mr. F. W. BAILEY; followed by Messrs. G. S. Hett, L. Kirkby Thomas, G. A. H. Barton, V. G. L. Fielden, and J. W. King.

The following is a *précis* of the opening paper: Alkaloidal bodies administered before anaesthesia, and their choice. Advisability or otherwise of adopting them in all cases. Periods of administration. After-effects prior, during, and subsequently to complete anaesthesia.

11 a.m.—Paper:

APPERLEY, Dr. W. R. E.: The Effect of Ether and Chloroform on the Liver and Kidneys in Health and in Certain Infective Conditions.

The Committee of the Pathological Museum will devote a section to an exhibition of modern anaesthetic apparatus. The Committee is anxious to gather together a thoroughly representative collection, and invites members to send as soon as possible a list of the exhibits they may desire to make to Dr. Ernest Glynn, Honorary Secretary of the Museum Committee, The University, Liverpool.

ANATOMY.

President: WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., London Hospital Medical School.

Vice-Presidents: D. DOUGLAS-CRAWFORD, M.B., F.R.C.S., Liverpool; Professor A. C. GEDDES, M.D., Dublin; Professor G. ELLIOT SMITH, M.A., M.D., F.R.S., Manchester; A. MACPHAIL, M.B., C.M., London.

Honorary Secretaries: W. P. GOWLAND, M.D., 379, Edge Lane, Liverpool; S. E. WHITNALL, M.A., M.B., The Old Rectory Farm, Kidlington, Oxford.

Members desirous of giving demonstrations or showing exhibits are requested to forward their specimens, apparatus, etc., to the Honorary Local Secretary. A room will be set apart in the University for the purpose. Every care will be taken of such material and it will be returned to the owner after the meeting.

Wednesday, July 24th.—Discussion on Development and Growth of Bone, Normal and Abnormal. To be opened by Sir WILLIAM MACEWEN, F.R.S., F.R.C.S.

Thursday, July 25th.—Papers.

Friday, July 26th.—Discussion (in conjunction with Electro-Therapeutic Section) on the Normal Stomach. To be opened by Dr. HERTZ.

Papers.

BACTERIOLOGY.

President: Professor JAMES RITCHIE, M.A., B.Sc., M.D., Royal College of Physicians Laboratory, Edinburgh.

Vice-Presidents: Professor J. M. BEATTIE, M.A., M.D., University, Sheffield; J. C. G. LEDINGHAM, M.A., D.Sc., M.B., Lister Institute, Chelsea Gardens, S.W.; Professor R. TANNER HEWLETT, M.D., F.R.C.P., King's College, London.

Honorary Secretaries: Professor E. EMRYS-ROBERTS, M.D., University College of South Wales and Monmouthshire, Cardiff; R. S. WILLIAMS, M.B., Hygienic Laboratories, Ashton Hall, University, Liverpool; T. A. JOHNSTON, M.D., 19, De Montfort Street, Leicester.

The following is the provisional programme:

Wednesday, July 24th.—Joint Discussion with the Section of State Medicine on *B. Coli*, its Varieties and the Significance of their Occurrence in Water Supplies. To be introduced by Drs. A. C. HOUSTON, W. G. SAVAGE, R. M. BUCHANAN, and W. WRIGHT.

The following is a synopsis of Dr. HOUSTON's paper:

Introduction: Experiments showing that *B. coli* may be absent from 10,000 c.cm. of a water of known purity and that if $\frac{1}{10000}$ c.cm. of sewage be added to 10,000 c.cm. of sterile water *B. coli* can be isolated from the mixture. Requisites for bacterial tests of pollution: The microbe-indicator should be superabundant in excremental matters; absence, relatively speaking, from pure waters; and a decadent microbe when divorced from the animal body. Negative aspects of the *B. coli* test: A water containing no *B. coli* in 100 c.cm. may be said to be 10 million times less impure than sewage. Positive aspects of the *B. coli* test: standards considered and their advantages and disadvantages fully dealt with. The *B. coli* test as an indicator of the efficiency of purification processes: The *B. coli* test, the best test of the efficiency of a filtration process or of the adequacy of storage or of the perfection of a sterilization process. The *B. coli* test in relation to other bacterial tests: without disparaging other supplemental or corroborative tests, the *B. coli* test may be said to be the "sheet-anchor" of practical water bacteriologists. Objections urged against the value of the *B. coli* test: Objections, real or assumed, considered at some length. Classification of results: The "lactose + indol +" microbes classified according to their presence in 100, 10, 1, 0.1, and lesser amounts of water. The *B. coli* test considered to be of chief value as a quantitatave enumeration of the number of "lactose + indol +" microbes in water. Varieties of *B. coli*: The "lactose + indol +" *B. coli* split up into a number of varieties by the application of various additional tests. Methods: Primary, secondary and tertiary media fully considered. Summary of conclusions.

Thursday, July 25th.—Papers on bacteriological subjects.

Friday, July 26th.—Discussion on the Standardization and Control of Vaccines, to be introduced by Drs. J. EYRE and J. FREEMAN, followed by Drs. L. C. Peel Ritchie, Carmalt Jones, Otto Grünbaum, Ralph Stockman, and others.

DERMATOLOGY.

President: Professor W. G. SMITH, M.D., F.R.C.P., Dublin.

Vice-Presidents: Professor R. A. BOLAM, M.D., M.R.C.P., Newcastle-on-Tyne; H. L. ROBERTS, M.D., Liverpool; G. G. S. STOPFORD-TAYLOR, M.D., Liverpool.

Honorary Secretaries: R. W. MCKENNA, M.A., M.D., 26, Rodney Street, Liverpool; J. E. R. MCDONAGH, F.R.C.S., 19, Harley Street, London, W.; E. B. PURDON, M.B., 60, Packenham Place, Belfast.

The following preliminary arrangements have been made:

Wednesday, July [illegible] Discussion on The Nature, Causation and Treatment of Seborrhœa and Acne. To be opened by Dr. [illegible] Whitfield (London); followed by Drs. Phineas Abraham, A. Fleming, A. J. Hall, R. Sabouraud (Paris), Stopford-Taylor, and J. Goodwin Tomkinson. The following is an abstract of the opening paper:

Seborrhœa is a constitutional condition, and is usually associated with hyperidrosis. It is understood, therefore, that the two errors of secretion are dealt with together. The chief causes of seborrhœa are (1) Adolescence. The sebaceous glands begin to assume their function at puberty and, as in the case of other glands at the beginning of their functional activity, are apt to secrete irregularly. (2) Certain articles of food, especially carbohydrates and fats, increase the secretion of sebaceous material. (3) Alimentary intoxication and irritation of the alimentary tract also increase sebaceous secretion. (4) Hot, stagnant atmosphere with a high percentage of moisture is also a cause. (5) Certain individuals and families are distinguished by a very abundant sebaceous secretion. Upon this excessive and possibly abnormal secretion various infections may be superimposed. The infection of the mouth of the follicle by the microbacillus of Sabouraud is the determining cause of the comedo, which is produced by the successive attempts of the epithelium of the mouth of the follicle to encyst the foreign body. By the superadded infection of the *Staphylococcus pyogenes*, generally the *Staphylococcus pyogenes albus*, suppuration is induced in the follicle with the production of the pustular eruption. On the other hand, free growth of the non-liquefying staphylococcus (*Coccus butyricus*) results in a toxic inflammation of the skin and gives rise to eczematous eruptions. Infection of the horny layer by the bottle bacillus may occur in seborrhœa, and give rise to extensive desquamation, but this organism not uncommonly infects the epidermis in the absence of seborrhœa, when it produces a dry, desquamative catarrh. Treatment may consist of the use of antiseborrhoeic measures (fresh air, *x* rays, diet, certain drugs such as sulphur) and the combating of the infections by the local use of antiseptics or the constitutional immunization by means of appropriate vaccines.

On Thursday, July 25th, and Friday, July 26th, arrangements will be made for the demonstration of cases before the papers are read.

The following papers have been accepted:

DE BEURMANN, Dr. Lucien (Paris). Sporotrichosis.
BUNCH, Dr. J. L. Naevi and their Treatment; based on 2,000 Cases.
MCDONAGH, Mr. A Rational Method of Treating Syphilis.
MEACHEN, Dr. G. Norman. Morbid Conditions of the Nails: A Plea for their more Systematic Study.
SAVATARD, Dr. Louis. (1) Sebaceous Carcinoma and its Relation to Rodent Ulcer. (2) Sarcoma on Lupus Scar Tissue.
TOMKINSON, Dr. J. Goodwin. The Vacuum Electrode in Neurodermatitis.
MADDEN, Professor (Cairo). A Case of Papilliform Lesions (Lymphangiomata?) of the Scrotum, with Multiple Petechial Spots on the Trunk and Limbs.
WALSH, Dr. David. Traumatic Dermatitis and Other Cutaneous Lesions in Relation to Cardio-Vascular Conditions.
STOPFORD-TAYLOR, Dr. Types of Dermatitis Seborrhoeica.
ORAM, Dr. Notes on a Case of Xanthoma.

The Committee of the Pathological Museum has decided to devote a section to Dermatological exhibits, and is anxious to gather together a thoroughly representative collection. Any plates, photographs, casts, microscopical specimens or cultures illustrating rare or interesting cases, or recent research, will be welcomed, but the Committee would like to have as complete an exhibition as possible of the results of treatment with carbon dioxide snow, and also of syphilitic and tuberculous affections of the skin.

Intending contributors are invited to send the list of the exhibits they desire to make to Dr. Ernest Glynn, Secretary of the Museum Committee, The University, Liverpool.

DISEASES OF CHILDREN, INCLUDING ORTHOPAEDICS

President: ROBERT JONES, Ch.M., F.R.C.S.E., Liverpool.

Vice-Presidents: EDRED M. CORNER, M.A., F.R.C.S., London; P. DAVIDSON, M.A., M.B., Liverpool; C. J. MACALISTER, M.D., F.R.C.P., Liverpool; T. H. OPENSHAW, C.M.G., M.S., F.R.C.S., London.

Honorary Secretaries: R. C DUN, M.B., B.Sc., F.R.C.S., 73, Rodney Street, Liverpool; N. P. MARSH, M.B., 7, Abercromby Square, Liverpool; CLIVE RIVIERE, M.D., F.R.C.P., 19, Queen Anne Street, London, W.

The following subjects have been selected for discussion:

Wednesday, July 24th.—Discussion on the After-results of the Major Operations for Tuberculous Disease of Joints. To be opened by Mr. H. J. STILES, F.R.C.S.Edin.; followed by Messrs. A. H. Tubby, R. C. Elmslie, H. S. Clogg, Douglas Drew, E. Grey Turner (Newcastle), H. C. Morton (Clifton), G. H. Edington (Glasgow).

Thursday, July 25th.—(1) Discussion on the Dyspepsias of Childhood after the Age of Infancy. To be opened by Dr. ROBERT HUTCHISON; followed by Drs. Edmund Cautley, Dingwall Fordyce, F. C. Eve, and Mr. Edred Corner.

The following is a syllabus of the opening remarks by Dr. ROBERT HUTCHISON:

Dyspepsia after the period of infancy may be due to disorder of function (1) in the stomach, (2) in the intestine, (3) in the liver. Clinically such disorders often exist in combination. *Gastric Dyspepsia:* It is admitted that dyspepsia from organic disease of the stomach is rare in childhood. It is open to discussion whether gastritis is a possible exception to this rule. Functional gastric disorders may affect (*a*) secretion, (*b*) motility, (*c*) sensibility. The absence of test-meal evidence makes it difficult to dogmatize as to the frequency of disorders of secretion, and more evidence of this sort is much needed, but it is probable that both hyperchlorhydria and achylia occur. It is suggested, however, that the commonest functional affection of the stomach at this period is a defect of motility (atonic dyspepsia). Disorder of sensibility in the direction of a hyperaesthesia (gastralgia) may occur, but in the writer's opinion is not common, and its existence is impossible to prove. *Intestinal Dyspepsia:* This is, perhaps, the commonest form of digestive disorder in childhood, and results in such symptoms as flatulence, colic, constipation and diarrhoea, and "food fever." The pathology of intestinal dyspepsia is obscure. Discussion may be directed to the following hypotheses: (1) That it is due to defect of certain ferments; (2) that it results from the presence of an abnormal intestinal flora; (3) that it is the consequence of a relative excess of one nutritive constituent (carbohydrates) in the food. The writer favours the last of these views. *Hepatic Dyspepsia:* Disorder of the liver may reasonably be inferred when symptoms of dyspepsia occur along with a comparative absence of colouring matter in the stools. It will be generally admitted that this is not an uncommon occurrence in childhood, and its relation to such definite clinical conditions as "acholia," "periodic vomiting," "migraine," and "bilious attacks" is worth discussing. The exact nature of the disorder of liver function in these cases is obscure. Is it the result (1) of a primary functional arrest of bile secretion, or (2) of a temporary overloading of the liver cells with glycogen or fat? The *pros* and *cons* of these views. Mode in which these different basal types of disordered function are combined to make up the well-recognized clinical forms of dyspepsia—for example, "mucous disease." As regards the *etiology* of dyspepsia in childhood, stress must be laid upon the importance of predisposition (congenital neurasthenia, "morbus asthenias") as a factor. It will be suggested that the importance of dental caries is overestimated, and that amongst dietetic causes the chief is an excessive use of carbohydrate foods and slops. The part played by physical and mental overstrain must also be emphasized. In discussing *treatment* the relative importance of general and local treatment must be considered, and it is contended that the former is by far the more important, and involves regulation of the whole life of the child. The writer is convinced of the immense value of "change of air" in treatment, but its *modus operandi* is a subject for discussion. Finally, the two propositions will be laid down that, of medicinal means *aperients*, and of dietetic measures *reduction of carbohydrates*, are a long way the most useful.

(2) Papers:

LAPAGE, Dr. C. Paget. Tuberculous Infection and Tuberculous Disease in Infancy and Childhood.
STOELTZNER, Professor (Halle). Cod-Liver Oil and Phosphorus in the Treatment of Rickets.
ELMSLIE, Mr. R. C. Fibrous and Fibro-Cystic Osteitis.
EDINGTON, Mr. G. H. Imperforate Anus with Peritoneo-Scrotal Orifice.
SIMPSON, Mr. G. C. E., and Mr. Naughton DUNN. On Spasmodic Contraction of the Peroneal Muscles in Flat-foot.
KELLETT SMITH, Mr. J. S. Some Principles in the Treatment of Lateral Curvature of the Spine by Exercise.
EVE, Dr. F. C. A System of Printed Anamnesis Questions for Children Out-patients filled in by the Nurse.
TUBBY, Mr. A. H. A Method of Operating for Webbed Fingers.

Friday, July 26th.—Papers.

ELECTRO-THERAPEUTICS.

President: C. THURSTAN HOLLAND, M.R.C.S., Liverpool.

Vice-Presidents: A. E. BARCLAY, M.A., M.R.C.S., Manchester; DAVID MORGAN, M.B., Liverpool; SAMUEL SLOAN, M.D., F.F.P.S., Glasgow.

Honorary Secretaries: ROBERT KNOX, M.D., 7, Harley Street, London; W. C. ORAM, B.A., M.D., Prospect, Allerton Road, Mossley Hill, Liverpool.

The following are the provisional arrangements:

Wednesday, July 24th.—Address by Professor RUTHERFORD on the Chemical Actions of Radiations. Papers on allied subjects.

Papers:

SMITH, Dr. E. Bellingham (London). The Physiological Action of Radium on Normal Tissues and on Cancer.
SHAW Mr. Ernest H. (London). The Action of Radium and *X* Rays upon Malignant Growths.
FINZI, Dr. N. S. (London). The Type of Case Likely to be Benefited by Radium Treatment.
ARMSTRONG, Dr. W. (Buxton). On the Therapy of the Radio-Oxygen Bath.
HOWLETT, Mr. E. H. (Hull). Standardization of Radium Dosage.

Thursday, July 25th.—Discussion of Ionic Medication, to be opened by Dr. LEWIS JONES (London).

Papers:

HAËNISCH, Dr. (Hamburg). On the *X*-Ray Treatment of Uterine Fibroids.
WEBB, Dr J. Curtiss (London). The Treatment of Haemorrhoids and Other Diseases of the Lower Bowel by Electro-Therapy.
SLOAN, Dr. Samuel (Glasgow). Experiments on the Physics of Medical Ionization.
STONEY, Dr. Ada F. (London). On the Results of Treating Exophthalmic Goitre with *X* Rays.
HERNAMAN-JOHNSON, Dr. F. (Bishop Auckland). An Enquiry into the Causes of Failure of *X*-ray Treatment in Deep-Seated Cancer.
RAYNOR, Dr. A. E. (Preston). The Treatment of Hypertrichosis by *X* Rays.

Friday, July 26th.—Joint discussion, in conjunction with the Section of Anatomy, on the Normal Stomach, to be opened by Dr. A. F. HERTZ (London).

Papers:

JORDAN, Dr. A. C. (London). Peribronchial Phthisis.
SCOTT, Mr. Gilbert (London). Cervical Ribs.
BAILEY, Dr. C. Fred (Brighton). Stereoscopic Radiography as a Routine Practice.
WALSHAM, Dr. Hugh (London). Aortic Aneurysm.
MORTON, Dr. E. Reginald (London). The *X*-ray Diagnosis of Some Forms of Arthritis.

In connexion with the Pathological Museum there will be an Exhibition of Radiographs (negatives and prints) of subjects of special interest; also photographs of cases treated by Electro-therapeutic Methods, *X* Rays and Radium, and members desirous of exhibiting are requested to communicate with Dr. Oram.

GYNAECOLOGY AND OBSTETRICS.

President: Professor HENRY BRIGGS, M.B., F.R.C.S., Liverpool.

Vice-Presidents: W. W. CHIPMAN, M.D., Montreal; JOHN EDWARD GEMMELL, M.B., Liverpool; THOS. BABINGTON GRIMSDALE, B.A., M.B., Liverpool; Professor JOHN BENJAMIN HELLIER, M.D., Leeds; MARY HANNAH FRANCES IVENS, M.B., M.S., Liverpool; JOHN FURNEAUX JORDAN, M.B., F.R.C.S., Birmingham.

Honorary Secretaries: ARTHUR JOHN WALLACE, M.D., 1, Gambier Terrace, Liverpool; Assistant Professor DAVID SHANNON, M.B., 270, Bath Street, Glasgow; BETHEL ALBERT HERBERT SOLOMONS, M.B., Rotunda Hospital, Dublin.

The Committee have arranged to hold two discussions:

(*a*) Joint discussion with the Section of Pathology on Eclampsia. To be opened by (1) Dr. J. W. BALLANTYNE (Etiology); (2) Dr. J. H. TEACHER (Morbid Anatomy);

(3) Sir William Smyly (Therapeutic Applications of recent research on the subject), followed by Dr. F. W. N. Haultain.

The following are abstracts of the opening papers:

1. Dr. J. W. Ballantyne: Etiology of eclampsia; the cause and mode of action of the cause: etiology and pathogenesis; pregnancy is the great cause; the breakdown in the intricate symbiosis of gestation; the strain and the stress of it: the labyrinth of pathogenetic theories; "the reason of the cause and the wherefore of the why"; intrauterine causes and extrauterine causes: placental, decidual, fetal, microbic; renal, hepatic, intestinal, thyroidal, parathyroidal, mammary, reflex; the eclamptic type; the etiological significance of albuminuria gravidarum; albuminuria, the "C.D.Q." of symptomatology in eclampsia; other danger signals; the success-in-treatment arguments in etiology, their value and possible fallacies; conclusions.

2. Professor Teacher: (1) Changes in the liver; a focal necrosis; thrombosis of capillaries; haemorrhages. (2) Changes in the kidneys; cloudy swelling and areas of necrosis and haemorrhage. (3) Changes in other organs. (4) Certain rare cases of eclampsia with suppression of urine due to symmetrical necrosis of the renal cortex.

(*b*) The Results of Treatment of the Inflammatory Diseases of the Uterine Appendages. To be opened by (1) Dr. W. S. A. Griffith (on the Medical Aspects); (2) Mr. Christopher Martin (on the Surgical Aspects), followed by Drs. Munro Kerr, Nigel Stark, and F. W. N. Haultain.

The following is an abstract of Dr. Griffith's paper:

A comparison is made between the medical treatment in vogue before the days of abdominal surgery and at the present time. Reference is made to the new lines of treatment which have followed a more exact knowledge of the etiology and pathology of inflammation in the direction of prevention and of treatment, and the conclusion is arrived at that a large proportion of cases can be successfully treated without operations of mutilation and a large number prevented by the proper application of the principles of disinfection to the seat of primary infection.

In the Pathological Museum a space has been allotted for the exhibition of specimens, microscopic slides, photographs, etc., relating to the Inflammatory Diseases of the Uterine Appendages, and also to Sarcoma of the Uterus. The Committee also invite other specimens of interest, notably those relating to Hydrocephalus, etc.

LARYNGOLOGY AND RHINOLOGY.

President: J. M. Hunt, M.B., Liverpool.

Vice-Presidents: John Bark, F.R.C.S.E., Liverpool; C. E. Bean, F.R.C.S.E., Plymouth; J. E. McDougall, M.B., Liverpool; W. Permewan, M.D., F.R.C.S., Liverpool; R. H. Woods, B.A., M.B., F.R.C.S.I., Dublin.

Honorary Secretaries: Thomas Guthrie, M.A., M.B., F.R.C.S., 155, Rodney Street, Liverpool; G. Seccombe Hett, M.B., F.R.C.S., 8, Wimpole Street, London, W.

The following subjects have been selected for special discussion:

Wednesday, July 24th, 10 a.m.—Discussion: The Differential Diagnosis of Oesophageal Stenoses.

Thursday, July 25th, 10 a.m. (together with the Section of Otology).—Discussion: The Education of the Specialist in Laryngology and Otology.

Friday, July 26th, 10 a.m.—Discussion: The Treatment of Chronic Suppurative Disease of the Ethmoidal Sinuses. To be opened by Professor J. N. Hajek of Vienna.

The following is an abstract of his paper:

For the sake of clearness the subject may be divided as follows: (I) Chronic suppuration combined with hyperplasia. (*a*) The principal feature is polypus formation. Treatment consists in removal of polypi and prevention of relapses. Best method is local cocaine anaesthesia; removal with snare, by avulsion, if possible; removal of base with Grünwald's, Hartmann's, or Hajek's curettes, or Luc's forceps. Causes of relapse: (1) Polypi originating in depths of meatus are overlooked. (2) Bony parts from which the polypi grow are diseased. (3) Polypi originate also from interior of ethmoidal cells. (4) The primary cause of the polypi in many cases is a neglected latent empyema. The treatment always depends upon the particular conditions present. It may include (1) resection of most of the middle turbinated body, (2) removal of the bony base of the polypus, (3) opening of ethmoidal cells and removal of their lining membrane. Cutting instruments only are used, chemical and electric cautery contraindicated. Treatment prolonged; several sittings always required. Quantity of polypi removed at one sitting depends on conditions present. Good view of operative field indispensable. Interval of time necessary between individual operative proceedings. All polypus cases can be cured in course of time if no cause forbids operative treatment. Lack's method, consisting of removal of all polypi at one sitting in chloroform narcosis, may sometimes be considered but not generally employed. Operation difficult in general narcosis; view less good than under cocaine anaesthesia; also, owing to necessity for completing operation at one sitting, it is performed in the absence of knowledge of precise conditions, which is dangerous; last, but not least, all diseased parts cannot be removed at one sitting. (*b*) The principal feature is suppuration. **1.** Ethmoiditis with free discharge. Treatment always dependent on diagnosis after exclusion of other empyemata and freeing of openings of ethmoidal cells. Removal of all polypi and hypertrophic parts of ethmoid generally preceded by resection of middle turbinated body. Precise determination of suppurating cells with probe; opening cells with hook and curette. Details depend on individual conditions in every case. Special care required in region of infundibular cells on account of neighbourhood of orbit and lamina cribrosa. When infundibular cells are placed high external operation is indicated. In opening posterior ethmoidal cells one may begin with anterior cells and gradually proceed backwards, or begin at once with posterior labyrinth. The latter is attacked above in section of middle turbinated body. A high septal deviation, if present, must be previously corrected. As much as possible may be done at each sitting, but only so long as a good view is possible. An interval between sittings is indispensable to allow reaction to subside. Packing after operation should be avoided. Healing is always by flat cicatrization, never by filling up of ethmoidal cells. External method indicated: (1) In cases with high infundibular cells inaccessible from nasal cavity. (2) In cases of very narrow nose with threatening symptoms. (3) In cases complicated by severe frontal sinusitis. (4) In cases in which perforation has occurred choice of operative method depends on nature of case. Slight relapses frequent even after radical operation. **2.** Treatment of closed ethmoiditis. Treatment generally consists in opening prominent portion of dilated ethmoidal cells to obtain free discharge. After opening a large part of bony walls must be removed. Details of treatment decided by findings after investigation with probe. No important difference exists between treatment of diseased single cells and greater part of labyrinth. External operation only necessary if process is complicated by perforation. (II) Treatment of chronic ethmoiditis accompanying ozaena. Operation contraindicated in cases with free discharge. Curettage only for very definite disease of single cells. Cases with threatening complications treated by external operation. (III) Treatment of secondary suppurative disease of the ethmoid (tuberculosis, syphilis, malignant growths) depends upon nature of primary disease.

Foreign and Colonial visitors are cordially invited to attend the meetings of the Section, and to take part in the discussions. Members are invited to contribute any preparations, specimens, or drawings, or any instruments or apparatus pertaining to the work of the Section, which have been designed by themselves, in order that the Committee of the Section may make arrangements to form a special exhibit of such objects. The Committee ask particularly for pathological specimens, drawings, and radiograms illustrating diseases of the oesophagus, including foreign bodies, also for instruments for the diagnosis and treatment of such diseases.

MEDICAL SOCIOLOGY.

President: J. C. McVail, M.D., LL.D., Glasgow.

Vice-Presidents: Thomas Bushby, M.B., Liverpool; Michael Dewar, M.D., Edinburgh; Henry Harvey, M.B., Liverpool; R. W. Henry, B.A., M.D., Leicester.

Honorary Secretaries: A. Gordon Gullan, M.D. M.R.C.P., 37, Rodney Street, Liverpool; J. H. Taylor M.B., 299, Eccles New Road, Salford.

The following discussions have been arranged:

Wednesday, July 24th.—(1) A Public Medical Service under Professional Control. To be opened by Dr. R. R. RENTOUL, followed by Mr. H. A. Ballance, Professor B. Moore, and Drs. R. Wallace Henry, T. J. Verrall, Lauriston Shaw, F. Rees, and Lionel Picton. (2) *Short discussion, limited to one hour:* Reform of Hospital Out-patient Departments. To be opened by Dr. M. DEWAR, followed by Mr. W. Greenwood, and Drs. Parkinson and E. C. Hadley.

Thursday, July 25th.—(1) Administrative Measures Consequent upon the Compulsory Notification of Phthisis. To be opened by Dr. J. C. McVAIL, followed by Drs. Niven, Hope, and Marcus Paterson. (2) *Short discussion, limited to one hour:* Administrative Provisions for the Prevention of Malingering. To be opened by Dr. A. G. GULLAN, followed by Drs. M. Dewar and E. Browne.

Friday, July 26th.—Payment of Medical Services by Capitation *versus* Payment per Attendance under the National Insurance Act. To be opened by Dr. H. HARVEY, followed by Drs. R. P. Cooper, C. G. S. Flemming, E. C. Hadley, A. Stewart, Hall, and J. E. O'Sullivan.

MEDICINE.

President: Professor T. R. GLYNN, M.D., F.R.C.P., Liverpool.

Vice-Presidents: T. R. BRADSHAW, M.D., F.R.C.P., Liverpool; Professor J. MICHELL CLARKE, M.A., M.D., F.R.C.P., Clifton, Bristol; S. H. HABERSHON, M.A., M.D., F.R.C.P., London, W.; J. LLOYD ROBERTS, B.A., B.Sc., M.D., Liverpool.

Honorary Secretaries: JOHN OWEN, M.D., 13, Rodney Street, Liverpool; THEODORE THOMPSON, M.D., F.R.C.P., 94, Portland Place, London, W.; W. H. MAXWELL TELLING, M.D., 29, Park Square, Leeds.

The following programme has been arranged:

Wednesday, July 24th.—Discussion on The Diagnosis and Treatment of Early Cardiac Complications of Rheumatism. To be opened by Dr. DAVID B. LEES (London). The following is an abstract of the opening paper:

(1) "Acute and subacute rheumatism" is a microbic infection, most common and most virulent in childhood, less frequent and usually less virulent in adolescents and young adults. (2) There is but one symptom which is present in every case of the disease. Arthritis, nodules, endocarditis, pericarditis, pleurisy, tonsillitis, erythema, chorea, and all other rheumatic symptoms may be present or absent, but *dilatation of the left ventricle is invariably present.* This dilatation is caused by toxaemia or myocarditis or both combined, and it is a very early symptom. (3) The dilatation can be easily detected by careful percussion rightly performed. It is quite easy to determine accurately the sloping line of dullness of the edge of the left ventricle in the fourth and fifth left interspaces, and that of the right auricle in the fourth right interspace. (4) The first essential for the successful treatment of the cardiac implication of rheumatism is prolonged rest. (5) The second essential is an adequate antirheumatic medication, the most useful form of this being a combination of sodium salicylate and sodium bicarbonate in the proportion of one part of the former to two of the latter, given in adequate and increasing doses. (6) During the treatment by salicylate it is necessary (*a*) to prevent constipation, (*b*) to keep the urine slightly alkaline, (*c*) to stop the medicine when vomiting or other symptom due to salicylate occurs, but to *resume it after a few hours in a dose one-half the size of the dose last given*, and soon to increase the amount as far as possible. (7) When the dilatation (with or without endocarditis) is great, and especially when pericarditis is present, the medicine should be freely given, and an ice-bag should be kept permanently over the precordial region, with due precautions against general chill. Careful nursing is essential. The application of leeches is sometimes beneficial.

Thursday, July 25th.—Discussion on The Pathogenesis, Diagnosis, and Medical Treatment of Gastric Ulcer. To be opened by Sir BERTRAND DAWSON (London).

The following is an abstract of the opening paper:

Throughout the discussion, the terms "mucous ulcer" and "chronic ulcer" will be employed. *Mucous ulcer* is used to denote an ulceration of the mucous membrane. It is usually a subacute condition, tending to heal quickly and completely. Sometimes, however, it progresses rapidly into perforating ulcer, or takes on the characteristics of a chronic lesion. *Chronic ulcer* is meant to denote a condition which involves most or all of the coats of the stomach, and can usually be appreciated by sight and touch without opening the stomach. *Duodenal ulcer* is included in the discussion. The duodenum above the common duct is embryologically, functionally, and pathologically closely related to the stomach, and the problem on the two sides of the pylorus is the same. *Mucous ulcers* are not only associated with the terminal stages of fatal diseases, like septicaemia and Bright's disease, but with curable gastric disorders. They are seen, not only in the *post-mortem* room, but on the operating table. They are produced by the combined effect of (1) Lowered vitality or damage of the mucous membrane; (2) acid juice. Damage may be by local bacterial infection, gastrotoxins, or mechanical injury. (1) Experimental evidence of the effects of bacterial infection, and gastrotoxins. Illustrations of mechanical injury, which may also be a factor in post-operative peptic ulcer. (2) Acid juice is a necessary factor. Ulcers are confined to the hydrochloric acid region of the alimentary canal. Experimental damage alone will not produce them, though in conjunction with acid juice it will. In the human being, the stomach in which mucous ulcers appear may be proved to be the seat of bacterial infection. The relative responsibility of each factor may vary in different cases. Chronic ulcers: Has chronic ulcer a separate origin, or is it developed from the mucous ulcer? Like the mucous ulcer, it exists where the hydrochloric acid juice exists. Its appearance suggests chronic irritation and efforts at repair. Pathological anatomy supports the development of the chronic from the mucous ulcer. The defensive forces of the gastric mucous membrane are considerable, and mucous ulcers heal rapidly. If and when the submucous coat is reached, this specially defensive mechanism disappears. If then the invading force is strong and its progress rapid, acute perforating ulcer occurs, whereas if it is less strong and its progress slow, chronic ulcer develops. That mucous ulcers are multiple, whereas chronic ulcer usually occurs singly; the existence of mucous ulcers over the whole of the stomach, whereas chronic ulcers are usually found in the region of the pylorus; the different age and sex incidence in the two conditions are facts which might be held to support the separate origin of chronic ulcer. The clinical picture of ulcer has altered. Whereas formerly the typical patient was most often a young woman who had pain after food relieved by vomiting, with or without haematemesis, now the patient is more often a man, is usually over 30, and food more often relieves pain than produces it. The change of view is due to surgery. *Contrast* between group of cases diagnosed as ulcer in pre-operative days and group of cases demonstrated as ulcer at operation. Former group presents not only different features, but less consistent features, in comparison with the latter. In the pre-operative group a case here and there came to autopsy for perforation or haemorrhage; the remaining cases recovered, and it was a natural inference that they consisted of ulcers which had healed under treatment. Pain, tenderness, vomiting, haematemesis characterize other conditions besides ulcer, and bleeding need not have a focal origin. *Analysis of causes in the pre-operative group:* Chronic ulcer, as now understood; gastritis, due to food or drink irritation, to intoxications, and to chronic infections, aided in many instances by impaired motility; disordered secretion, set up by distant irritation (in, say, appendix or colon), and associated or not with pyloro- or cardio-spasm. Mucous ulcers are no doubt sometimes present, but they give no special manifestations, and call for no different treatment. They are of interest for what they can lead to if the conditions with which they are associated are not treated. *Clinical pictures illustrating foregoing:* (1) The dyspepsia of the anaemic young woman; (2) gastric symptoms and trouble in the colon; (3) gastric symptoms and the appendix; (4) gastric symptoms and morbid condition of mouth, nose, and pharynx. *The clinical picture of chronic ulcer:* (Developed structural stenosis of the

pylorus is excluded because it gives evidences of its own, and presents no difficulty); objective findings and their value; tenderness, cutaneous hyperaesthesia; size and position of stomach; test supper and breakfast disclosing acid content and motility; bacteriological examination; X ray examination. Haematemesis and melaena need separate consideration because they may occur alone as well as in conjunction with above symptoms. If in conjunction, they make the ulcer picture clearer. Significance of bleeding as an isolated phenomenon in earlier and later life. Occult blood. *Diagnosis:* Systemic disease may wear the guise of stomach disorder, but seldom presents difficulty to the experienced clinician. The conditions that do present difficulty are: (1) Malignant disease of the stomach; (2) infective or toxic gastritis associated with disease of gums, tonsils, pharynx, and nose; (3) gastric disturbance caused by disease of gall-bladder, appendix and colon; (4) hyperchlorhydria of unknown origin. *Treatment:* Treatment, including the indications for gastro-enterostomy.

Friday, July 26th.—Papers.

Buckley, Dr. Charles W. Painful Affections of the Shoulder.
Brooks, Dr. Francis. Cause and Treatment of Certain Cases of Neurasthenia.
Ewart, Dr. William. Demonstration of a More Systematic Posterior Apical Percussion; and of the "Normal Interspinous Dullness" as an Aid to Diagnosis.
Cammidge, Dr. P. J. The Quantitative Regulation of the Diet in Diabetes.
Gibbard, Major T. W., R.A.M.C., and Harrison, Major L. W., R.A.M.C. The Treatment of Syphilis with Salvarsan and Neo-Salvarsan.
Gordon, Dr. W. Further Experience of the Cardiac Sign in Cancer.
Muthu, Dr. C. Some Recent Cases of Pulmonary Tuberculosis Treated by Continuous Antiseptic Inhalation.
Parsons, Dr. C. D. Tuberculin in the Diagnosis and Treatment of Tuberculous Diseases, especially Pulmonary Tuberculosis.
Pearson, Dr. S. Vere. Some Further Experience of Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis.
Walters, Dr. F. R. The Estimation of General Improvement in Pulmonary Tuberculosis.

NAVY, ARMY, AND AMBULANCE.

President: Colonel Damer Harrisson, K.H.S., M.Ch., F.R.C.S.E., Liverpool.

Vice-Presidents: Colonel Guy Carleton Jones, M.D., Director-General of Medical Services Militia of Canada, Department of Militia and Defence, Militia Head Quarters, Ottawa; Surgeon-General W. Babtie, V.C., C.M.G., M.B., L.R.C.P., Deputy Director-General, Army Medical Service, War Office, S.W.; Lieutenant-Colonel N. E. Roberts, M.B., D.P.H., Liverpool; Fleet Surgeon G. T. Collingwood, M.V.O., R.N., Royal Naval College, Osborne, Isle of Wight.

Honorary Secretaries: Captain J. H. P. Graham, M.R.C.S., L.R.C.P., 20, Fenwick Street, Liverpool; Lieutenant-Colonel Nathan Raw, M.D., F.R.S.E., 66, Rodney Street, Liverpool.

The following preliminary programme has been arranged:

Wednesday, July 24th.—Factors affecting the Marching Powers of Troops. To be opened by Captain Dunbar-Walker, R.A.M.C.

Thursday, July 25th.—Eyestrain: its Relation to Gunnery. To be opened by Fleet Surgeon Whitelegge R.N.

Papers:

Wildey, Fleet Surgeon A. G., R.N.: A Suggestion for the More General Use of Iodine in First Aid Treatment of Accidental Wounds.
Jones, Colonel Guy Carleton: The Importance of Medical Tactics.

NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

President: L. R. Oswald, M.B., Glasgow Royal Asylum, Gartnavel, Glasgow.

Vice-Presidents: W. Alexander, M.D., F.R.C.S. Liverpool; F. E. Batten, M.D., F.R.C.P., London, W.; David Blair, M.D., County Asylum, Lancaster; E. S. Reynolds, M.D., F.R.C.P., Manchester.

Honorary Secretaries: W. B. Warrington, M.D., F.R.C.P., 63, Rodney Street, Liverpool; H. Devine, M.D., West Riding Asylum, Wakefield; Purves Stewart, M.A., M.D., F.R.C.P., 94, Harley Street, London, W.

The following programme has been arranged:

Wednesday, July 24th.—Discussion on The Neuroses and Psychoses of the Climacteric: their Prognosis and Treatment. To be opened by Dr. R. Percy Smith (Psychiatry), Dr. C. J. Macalister (General Medicine), and Dr. T. B. Grimsdale (Gynaecology), followed by the President, Dr. Nathan Raw, and others.

The following is a synopsis of Dr. Smith's paper:

The statistics of the Lunacy Commissioners for England and Wales in the sixty-fifth annual report show the climacteric as a cause or associated factor in 8.2 per cent. of all cases admitted to asylums in England and Wales in the years 1907, 1908, and 1909. Mental disorder at the climacteric exists in a larger proportion in the private than in the pauper class, as 11.2 per cent. to 7.8 per cent. In the private class the percentage of climacteric cases is greater than that of senile cases; the opposite prevails in the pauper class. Possibly greater opportunities for introspection and want of occupation account for this greater preponderance in the private class. The percentage of admissions of married women and widows is greater than that of single women; but relatively to the proportion of married and single in the general population there is a greater liability to single women to break down at the climacteric. The age at which climacteric insanity occurs may be from 39 to 59 in the writer's experience, the average age having been 48.9. Heredity of insanity or neuroses has been found in 58 per cent. In 34.7 per cent. of cases at Bethlem Hospital, and 33 per cent. in private practice, there had been previous attacks of insanity. Manic-depressive insanity may recur or begin at the climacteric. Prodromata may be neurotic or definitely mental, or drug habits may arise. Mental disorder at the climacteric is predominantly of the depressive or melancholic type, especially in not first attack cases. In first attacks there is a considerable proportion of cases of delusional insanity, especially of the sexual type. Instances given of various forms of insanity. Maniacal and confusional states are much less common. Primary dementia or general paralysis occur in a few cases. Summary given of cases where operations had led to early menopause, or had been done about the time of impending climacteric. *Prognosis:* Depends largely on the nature of the case. Recovery more likely to occur in patients who have previously suffered from insanity than in first attack cases at the climacteric. Hypochondriacal or agitated melancholia very unfavourable. Delusional insanity ends in chronicity. Insanity occurring at the climacteric after operations very unfavourable. Pre-existing chronic insanity not often ameliorated at the climacteric. *Treatment:* Similar to that adopted for psychoses occurring from other causes. Asylum care usually needed. Administration of ovarian extract does not fulfil expectations. Questions as to the value of transplantation of ovarian tissue and of psycho-analysis.

The following are the headings of Dr. Grimsdale's opening remarks:

Meaning of climacteric. Functions of the ovaries. Effects of removal of ovaries. Grounds for believing in internal secretion. All ductless glands closely connected with sex and with each other. At climacteric one of this group ceases to act and the balance between these glands is upset. The nature of the ovarian secretion unknown. Climacteric symptoms very similar to those of hyperthyroidism. An account of the neuroses usually seen at the climacteric by the gynaecologist.

Paper:

Rentoul, Dr. R. R. The Prevention of Mental Degeneracy.

Thursday, July 25th.—Discussion on Diagnosis and Treatment of Compression Paraplegia. To be opened by Dr. Ernest Reynolds and Sir Victor Horsley, followed by Drs. Risien Russell, Hinds Howell, Grainger Stewart, Grant McAfee, W. B. Warrington, and Messrs. Donald Armour and K. W. Monsarrat.

The following is a synopsis of Dr. Reynolds's remarks:

Definition of compression paraplegia. Causes:—Outside vertebrae: tumours, aneurysm. In vertebrae: trauma, caries, tumours. In membranes: haemorrhage, inflammations (especially cervical pachymeningitis) tubercle, syphilis, tumours, parasites. In cord: tumours. Symptoms: Sensory, motor (including ataxia), trophic, condition

of reflexes. Variation of symptoms due to position of compression and to cause of compression. Differential diagnosis. Diagnosis of cause and diagnosis of site of compression (including affections of cauda equina). Diagnosis from other diseases, such as spastic diplegia from double cerebral lesions (that is, Little's disease). Amyotrophic lateral sclerosis, progressive muscular atrophy, disseminated sclerosis, hysteria (including traumatic hysteria), syphilis of cord, transverse and other forms of myelitis, syringomyelia, haemorrhage in cord. Treatment of compression myelitis. Apart from syphilis and certain cases of tubercle, treatment is generally surgical.

Papers (to be read if time permits):

McDOWALL, Dr. Colin. The Nuclei of the Neutrophile Cell in Acute Insanity.
CLARKE, Dr. Michell. Case of Tumour of the Corpus Callosum (with specimens).

Friday, July 26th.—Papers:

ALEXANDER, Dr. William. On the Nature and Treatment of Epilepsy.
SMITH, Dr. William Maule. On the use of Extract of Brain Tissue in the Treatment of various forms of Insanity.
MACKENZIE, Dr. Ivy, and MARSHALL, Dr. R. M. A Clinical and Pathological Study of some Cases of Dementia Praecox.
NABARRO, Dr. David. The Results of the Wassermann Reaction in 150 Cases of Mental Disease.
CRICHTON-MILLER, Dr. Re-education of the Attentive Control.
RENTOUL, Dr. R. R. The Prevention of Mental Degeneracy (if not taken on Wednesday).
SUCKLING, Dr. C. W. Insanity cured by Nephropexy.

Foreign and Colonial visitors are cordially invited to attend the meetings of the Section, and should they desire to read papers they are requested to send in their names as soon as possible to one of the Honorary Secretaries, giving the titles of their papers for approval by the Committee of Reference.

Members are invited to contribute any preparations, specimens or drawings, or any instruments or apparatus pertaining to the work of the Section, which have been designed by themselves, in order that the Committee of the Section may make arrangements to form a special exhibit of such objects.

Dr. William Alexander extends a cordial invitation to members of the Section to visit the Maghull Colony for Epileptics. Those desirous of making the visit are requested to communicated with Dr. Alexander, 31, Rodney Street, Liverpool.

OPHTHALMOLOGY.

President: EDGAR ATHELSTANE BROWNE, M.Ch., F.R.C.S. Eng., Liverpool.

Vice-Presidents: CHARLES GEORGE LEE, M.R.C.S., Liverpool; ALEXANDER OGILVY, F.R.C.S.Ire., Clifton, Bristol; ANDREW MAITLAND RAMSAY, M.D., F.F.P.S., Glasgow; CHARLES HARTLEY BEDWELL SHEARS, M.R.C.S., Liverpool.

Honorary Secretaries: ARTHUR NIMMO WALKER, B.A., M.D., 45, Rodney Street, Liverpool; ROBERT JESSOP HAMILTON, F.R.C.S.Eng., 82, Rodney Street, Liverpool; CLAUDE ALLEY WORTH, F.R.C.S., 138, Harley Street, London, W.

The following subjects have been selected for discussion:

Wednesday, July 24th.—Irido-cyclitis (special reference to pathology). Mr. G. COATS; Mr. A. W. ORMOND.

The following is a synopsis of Mr. COATS's paper:

The part played by the intestinal canal in the causation of chronic irido-cyclitis will be discussed. A fallacy to be guarded against lies in the great prevalence of constipation and intestinal putrefaction, which would make their association with irido-cyclitis in a certain number of cases not surprising, even though in fact no connexion between the two existed. Cases in which no evidence of any intestinal abnormality or other probable source of infection is discoverable undoubtedly occur. The views of Elschnig, de Schweinitz, and v. Hippel on auto-intoxication will be summarized, and the value of the indican reaction as a test of intestinal putrefaction will be reviewed. The very chronic form of irido-cyclitis which is associated with heterochromia and cataract will be mentioned. Fuchs believes that in these cases some unknown cause first hinders the normal acquisition of pigment in the eye, and then, in later life, gives rise to the irido-cyclitis. The opinion of members will be sought as to whether it is not more probable that the cyclitis is the primary disease, the heterochromia being a secondary phenomenon due to a gradual bleaching of the iris in consequence of the inflammation. It is probably agreed that the cataract is secondary. Some points in connexion with the pathology of sympathetic ophthalmitis will be raised. Price Jones and Browning have stated that the large mononuclear cells of the blood are increased in this disease, and that this may point to its being due to a protozoal infection. The incubation period also is not unlike that of the protozoal disease, syphilis, and the occasional faculty which the noxa of sympathetic irido-cyclitis possesses of remaining latent over a prolonged period and then breaking out into activity, suggests an analogy with the similar latency and recrudescence of the *Spirochaeta pallida* in the tertiary stages of syphilis. On these grounds the administration of salvarsan has been suggested. The experience of members on this method of treatment will be asked, and three cases in which it was carried out will be referred to. The views of Elschnig on the relation of anaphylaxis to sympathetic irido-cyclitis will be submitted to a brief examination. Discussion will be invited on the question how far the histological changes which are usually regarded as characteristic of sympathetic irido-cyclitis are, in fact, diagnostic of that affection, whether they occur only in this disease and in all cases of it. Two examples of a very mild type of sympathetic irido-cyclitis will be quoted, not cases in which, after a threatening onset, the final result was good, but in which from first to last the symptoms in the second eye were trifling. Reports of similar cases would be welcomed.

Thursday, July 25th.—Tuberculin and Serum Therapy. Mr. GEORGE MACKAY; Dr. HILL GRIFFITH; Mr. PEEL RITCHIE.

Friday, July 26th.—Salvarsan. Mr. S. STEPHENSON; Dr. MAITLAND RAMSAY, and Mr. S. H. BROWNING.

The following papers have been accepted:

GROSSMANN, Dr. Board of Trade Standard of Vision.
HINSHELWOOD, Dr. Word Blindness.
POLLACK, Dr. Intra-ocular Haemorrhage.
BRADBURN, Dr. Ocular In-balance and Auditory Affections.

Foreign and Colonial visitors are cordially invited to attend the meetings of the Section.

Members are invited to contribute any cases, preparations, specimens of drawings, or any instruments or apparatus pertaining to the work of the Section, which have been designed by themselves, in order that the Committee of the Section may make arrangements to form a special exhibit of such objects.

OTOLOGY.

President: H. E. JONES, M.R.C.S., Liverpool.

Vice-Presidents: A. H. CHEATLE, F.R.C.S., London, W.; J. K. LOVE, M.D., Glasgow; P. M. YEARSLEY, F.R.C.S., London, W.; HENRY HANNA, M.A., M.B., Belfast.

Honorary Secretaries: E. M. STOCKDALE, M.R.C.S., 67, Rodney Street, Liverpool; W. M. MOLLISON, M.A., M.C., F.R.C.S., Warden's House, Guy's Hospital, London, S.E.; D. L. SEWELL, M.B., B.S., 2, Peter's Square, Manchester.

The following subjects have been selected for special discussion:

Wednesday, July 24th, 10 a.m. — Discussion: Acute Middle-ear Suppuration, its Neglect and Proper Treatment. To be opened by Mr. R. H. WOODS (Dublin); followed by Professor Gustav Alexander (Vienna) and Dr. Claude Rundle (Medical Superintendent, City Hospital, Fazerkelly).

It is hoped that medical officers of fever hospitals and schools will attend this discussion, which is of special interest to them. The following are abstracts of the opening papers:

Mr. R. H. WOODS: Otitis media. Definition. Not an abscess, but inflammation of a mucous tract. Predisposing causes. Pathological conditions in throat and nose. Determining causes. Mechanical ones, particularly nasal douche. Degrees of severity due to microbe and patient. Clinical course in all essentially the same. Physical conditions during progress. Accompanying symptoms. Character of fluid at first and subsequently. Acute and

chronic cases. Fundamental difference between them a bacterial one. Keynote of treatment of acute cases is cleanliness. Neglect of acute otitis still great, even in the case of specific fevers. Summary of results obtained by investigating over 300 cases of measles and scarlatina in the Hardwicke Hospital in 1896. Method of treatment of ears in fevers. Treatment of acute otitis. Myringotomy. Course to be followed when symptoms are unrelieved by that procedure. Cerebral irritation in children. Need for better education of clinical physicians and medical students.

Professor ALEXANDER: (*a*) Etiology and anatomy of acute otitis media suppurativa. (*b*) What are its main symptoms and otoscopic appearances? (*c*) What are its otoscopical findings and the results of hearing tests? (*d*) On what points can dependence be placed for early differential diagnosis? (*e*) What is its typical course? (*f*) In what cases are complete and incomplete recoveries likely to follow? (*g*) What cases tend to become chronic? (*h*) In what cases are intra-aural, extra-cranial, and endocranial complications respectively to be anticipated? (*i*) What are the risks of its neglect? (*j*) What are the principal aims in treatment? The reasons for avoiding too prolonged and too irritating methods of treatment. (*k*) What are the chief points of importance in treatment? (*l*) The alleviation of pain, and the question of early paracentesis. (*m*) What is the best method of drainage? (*n*) Should antiseptics be used? (*o*) In what circumstances should irrigation be used? (*p*) In what circumstances are antiseptic powders to be recommended? (*q*) The use of antiseptic gauze. (*r*) What steps may be taken for improving the hearing, and at what stage may they be commenced? (*s*) What should be the treatment after suppuration has ceased? (*t*) The need of treating the naso-pharynx after otitis media. (*u*) Prophylaxis of the disease. (*v*) What are its characteristics in infants?

Dr. CLAUDE RUNDLE: Percentage incidence in cases of scarlet fever, measles, and diphtheria. Frequency of spontaneous cure. Can otitis be prevented by the removal of post-nasal obstruction during the acute stage of the exanthemata? Intratympanic medication by either route of little value. Removal of tonsils or adenoids an unsafe procedure during the course of acute suppurative otitis media complicating the fevers. Paracentesis not often necessary. Mastoid abscess not a common complication of this condition. Antrotomy occasionally required. Radical mastoid operation probably never justifiable in uncomplicated cases of acute suppurative otitis media. Serum and vaccine therapy.

Thursday, July 25th, 10 a.m.—Joint Discussion with the Section of Laryngology on the Education of the Specialist in Laryngology and Otology. To be opened by Dr. P. WATSON-WILLIAMS.

Foreign and Colonial visitors are cordially invited to attend the meetings of the Section, and should they desire to read papers they are requested to send in their names as soon as possible to the Liverpool Honorary Secretary, giving the titles of their papers for approval by the Committee of Reference.

Members are invited to contribute any preparations, specimens of drawings, or any instruments or apparatus pertaining to the work of the Section, which have been designed by themselves, in order that the Committee of the Section may make arrangements to form a special exhibit of such objects.

PATHOLOGY.

President: Professor WALKER HALL, M.D., The University, Bristol.

Vice-Presidents: A. E. BOYCOTT, M.A., B.Sc., M.D., London; Professor GEORGE DEAN, M.B., The University, Aberdeen; Professor E. E. GLYNN, M.A., M.D., Liverpool; T. S. PEGG STRANGEWAYS, M.A., L.R.C.P., Cambridge.

Honorary Secretaries: D. M. ALEXANDER, M.D., School of Hygiene, The University, Liverpool; PANTLAND HICK, M.D., 21, Rodney Street, Liverpool; J. S. C. DOUGLAS, M.B., Department of Pathology, University, Birmingham.

The following provisional programme has been arranged:

Wednesday, July 24th.—Discussion on Bright's Disease. Professor J. LORRAIN SMITH, F.R.S., will open the discussion with a paper on the morbid anatomy and etiology. Sir CLIFFORD ALLBUTT will deal with the cardio-vascular changes; followed by Professor J. SIMS WOODHEAD, Dr. W. RUSSELL, and Dr. J. F. GASKELL. Dr. F. CRAVEN MOORE will read a paper on the Liver and Metabolic Changes.

Thursday, July 25th.—Joint discussion with the Gynaecological and Obstetrical Section on Eclampsia. To be opened by Dr. J. W. BALLANTYNE in a paper on the etiology of the disease; followed by Dr. J. H. TEACHER, on the morbid anatomy; and by Sir WILLIAM SMYLY, on the clinical application of recent research to treatment.

Friday, July 26th.—The following papers on pathological subjects will be read:

HORDER, Dr. T. J. The Investigation of Puncture Fluids as an Aid to Diagnosis and Treatment.
BOLTON, Dr. C. The Causation of Gastric Ulcer.
MACCLEAN, Dr. H. Some Fallacies in the Routine Testing of Urines.
BARNES, Dr. A. G. Chemical Examination of Faeces in Actual Practice.
WILLIAMS, Dr. O. T. Excretory Functions of the Intestines and their Relations to Disease.
GLYNN, Associate Professor E. Blood Cultures in Disease.

PHARMACOLOGY AND THERAPEUTICS.

President: Professor W. E. DIXON, M.A., M.D., Cambridge.

Vice-Presidents: Professor J. H. ABRAM, M.D., Liverpool: Professor R. J. M. BUCHANAN, M.D., Liverpool; Professor H. J. CAMPBELL, M.D., Bradford; H. J. ROBERTS, M.D., Pen-y-groes, N. Wales.

Honorary Secretaries: O. T. WILLIAMS, M.D., 51a, Rodney Street, Liverpool; Assistant Professor F. J. CHARTERIS, M.B., 400, Great Western Road, Glasgow; Professor J. DUNDON, M.D., F.R.C.S., 3, Camden Place, Cork.

The following is the provisional programme:

Wednesday, July 24th.—Papers:

MARSHALL, Professor C. R. Clinical Experiences with Tetrahydropapaveroline Hydrochloride.
CHARTERIS, Professor F. J. A Comparison of the Value of Arsenious Acid and of Salvarsan in Blood and other Non-syphilitic Diseases.
DIXON, Professor W. E., and RANSOM, Dr. F. Bronchodilatation and its Significance in Asthma.
MACALISTER, Dr. C. J. A Contribution to the Study of Symphytum Officinale.
SAUBERMANN, Dr. (Berlin). The Internal Administration of Radium Emanations.
GOULSTON, Dr. A. Dextrose in the Treatment of Certain Forms of Heart Disease.
WILLIAMS, Dr. O. T. Cod-liver Oil.

Thursday, July 25th.—Discussion on The Treatment of Heart Muscle Affections (apart from Valvular Disease). To be opened by Professor G. A. GIBSON and Professor CUSHNY, followed by Drs. John Hay and A. J. Clarke.

Friday, July 26th.—Discussion on The Rôle of Calcium Salts as Therapeutic Agents. To be opened by Professor BENJAMIN MOORE and Sir JAMES BARR, followed by Professor Gowland Hopkins and R. B. Wild and Drs. A. P. Luff, H. H. Dale, F. Ransom, and G. R. Mines.

The following is an abstract of the opening paper:

Professor BENJAMIN MOORE: The action of calcium may for convenience be considered under two distinct headings, namely, as an active physiological agent acting catalytically or otherwise in the reactions of the cell, and secondly, as a precipitant, either of organic or inorganic substances. As was originally suggested by Ringer in comparing muscular contraction with coagulation and rigor, these two functions are probably closely inter-related, and both are possibly connected with the balance of oxidation processes. According to varying degrees of oxidation, soluble or insoluble calcium salts may be formed, with an accompanying to-and-fro variation of cyclical activity and inactivity, such as is seen in the beating heart. Some light may accordingly be thrown on the problem by considering first the physiological and pathological conditions of calcium salt deposition. There is a close correspondence between the deposition under physiological conditions and that which occurs under many pathological circumstances. In both cases deposition commences in extravascular areas fed only by lymph infiltration when an extravascular region has grown to a certain size and been so excluded from oxygen supply. The deposition is often accompanied by simultaneous deposit of very much reduced bodies, such as cholesterin and the saturated fatty acids, oxalates,

and uric acid. In normal bone formation, an entirely extravascular tissue, namely, cartilage, is first formed, and when this reaches a certain volume, calcium phosphate commences to deposit, then at the irruption stage blood vessels commence to grow in, or cascation and breakdown would occur; but even in the subsequent growth, the calcium phosphate of the Haversian systems is deposited in the lymphatic and extravascular areas around the blood vessels, and it is in old age when oxidation processes are still more reduced that more and more tricalcic phosphate is formed, till the bones become hard and brittle. In pathological conditions the same factors are at work. It is in the centre of caseating masses of tubercle away from blood supply and oxidation that calcification occurs. Again, in aged arteries, or where the vessels of the artery wall have broken down, and blood supply and oxidation have been interfered with, calcification and calcareous plaques begin to appear. It is for this reason also that calcium is the predominant kat-ion in the incompletely oxidized bodies which appear in gout and in renal calculi, such as calcium urate, calcium oxalate, and calcium phosphate. The two factors are the insolubility of these salts of calcium and slow circulation and diminished oxidation. Where there is a slow peripheral circulation and a low capillary pressure leading to a slow and inefficient lymph filtration, then these various calcium deposits tend to form. The part played by calcium salts in the coagulation of blood and of milk is also connected with the formation of insoluble bodies with peculiar properties, although details differ in the two processes. Here the coagulating protein acts as an anion, and in both cases calcium is present in the clot, but in fibrin coagulation the calcium also acts as an activator or co-enzyme to the thrombase. In the activating power of calcium in active processes, such as muscular contraction, there may be a potential coagulation which is reversible and does not proceed beyond a certain stage, merely modifying temporarily the colloidal aggregation and then being balanced and reversed by the automatic cut off in the oxidation, so that an action which might be mechanically compared to the escapement wheel of a clock or watch is produced.

PHYSIOLOGY.

President: Professor J. SMYTH MACDONALD, B.A., L.R.C.P., Sheffield.

Vice-Presidents: Professor A. B. MACALLUM, F.R.S., Toronto; Professor BENJAMIN MOORE, D.Sc., M.R.C.S., Birkenhead; H. M. VERNON, M.D., Oxford; Professor G. N. STEWART, M.D., Cleveland, U.S.A.

Honorary Secretaries: J. A. MILROY, M.A., M.D., Queen's College, Belfast; T. G. BROWN, B.Sc., M.B., The University, Liverpool; F. P. WILSON, M.Sc., M.D., 1A, Rodney Street, Liverpool.

The following provisional programme has been arranged:

Wednesday, July 24th.—Discussion on the Bio-physics and Bio-chemistry of the Neurone, to be opened by Dr. F. W. MOTT, F.R.S., followed by Professor C. S. Sherrington, Professor J. S. Macdonald, Dr. Wakelin Barratt, and Professor A. B. Macallum.

The following is an abstract of the opening paper:

Introduction. The specific energy and durability of the neurone. The present position of the neurone concept. The inferences regarding the structure and functions of the nervous system derived solely from a study of the dead neurone in fixed and stained tissues may be misleading unless correlated with bio-chemical and bio-physical investigation of the living neurone. Experiments and observations relating to vital phenomena of the neurone: (*a*) in the living state; (*b*) after fixation and subsequent staining of nervous tissues. (*a*) Neuronic amœboidism. Professor Harrison's experiments and observations. Nageotte and Marinesco's observations. The examination of living nerve cells by the aid of the ultra-microscope. The changes in luminosity in relation to changes in the colloidal state of the cell. Effects of altered physical and chemical conditions. The absence of neuro-fibrils and Nissl-bodies in the living cell. The neurobion hypothesis of Cajal. Evidence in support thereof by (*a*) examination of the living cell; (*b*) examination of degenerating and regenerating neurones stained by Silver fibril method. The reaction of the neurone after section of the neuraxon as observed after section of nerves—(1) in the central end of the cut nerve; (2) in the very early neo-formative reaction in the neuraxons, separated by two sections of a nerve from the trophic centre and peripheral end (Perroncito); the variation of intensity of neo-formative reaction of the non-myelinated and myelinated nerves (Cajal), also of sensory myelinated and motor myelinated nerves (Marinesco); (3) the alterations in the appearance and thickness of the neuro-fibrils in nerve cells in disease, and induced by experimental variation of temperature to which the animal has been exposed (Cajal). The neurobions form by reciprocal attraction the conductile elements of the neurone. The importance of the laws relating to osmotic pressure, surface tension, and movement of ions in any explanation of the vital phenomena of the cells of the body generally and of the neurone in particular. Application of the physiology of the neurone to pathology. The effect of the neurone of cerebral anæmia—hyperpyrexia, trauma, and shock. Necrobiosis of the neuron in amaurotic idiocy of Jewish children, showing specific bio-physical and bio-chemical changes, due either to an undiscovered toxic condition of the ambient medium, or more probably inborn failure of specific durability owing to a germinal deficiency.

Thursday, July 25th.—Discussion on the Importance of Substances Present in Minute Amount in Food, to be opened by Professor BENJAMIN MOORE, M.A., D.Sc., F.R.S.

The following is an abstract of the opening paper:

It is only in recent times that we have gradually come to realize that there are constituents present in foods often in minute amounts, of which the value cannot be estimated by the heat energy that they contain and can yield on oxidation to the body. This was first shown for the inorganic salts, which were at one time regarded as inert constituents, or even as protein impurities, but are now known to be important activators to the functions of the organic constituents without which these become inert. In the hormones, or internal secretions, organic substances are found, which in minute amounts stimulate and activate in a very specific way definite tissues, and cause changes in nutrition out of all proportion to their mass. The stimulating action of certain extractives from muscle and from yeast form another example, and it would appear to be a general rule especially seen in man that some form of stimulus is almost essential, and that, if abstinence or restriction is practised in one form, some other form must be substituted. The various cereal foods which appear so simple in nature also contain basic bodies in minute quantities which exert a powerful stimulant action upon the nervous tissues, and in their complete withdrawal certain well-marked results appear which are intimately connected with diseases of nutrition. These substances appear to be formed in the peripheral layers, and are removed in certain methods of preparing the cereals, similar bodies are also contained in yeast and legumes, and are probably widely distributed in all the germinative products of plants. The relationship of such bodies to such diseases as beri-beri, and diseases of nutrition in infants and growing animals, is most interesting, and is opening a vast new territory of research.

Discussion on Tissue Respiration, to be opened by Dr. H. E. ROAF, M.D., D.Sc., followed by Dr. H. M. Vernon.

The following is an abstract of the opening paper:

Separation of the problems involved in tissue or fundamental respiration from those of external respiration. The gaseous exchange of the tissues and its relation to the total energy transformations; nature of substances oxidized. Respiratory quotient. Oxygen intake: difference between oxygen tension and total amount of oxygen consumed. Energy transformations under anaerobic conditions. Carbon dioxide output less urgent than oxygen intake. All active processes require an increased oxygen intake, and are followed by an increased carbon dioxide output; certain processes that do not involve energy transformations do not require increased gaseous exchange (kidney filtration and decerebrate rigidity). Intermediate steps not known; various possible intermediate products.

In continuing the discussion Dr. H. M. VERNON will deal principally with the process of oxidation and enzymes.

Friday, July 26th.—Papers:

Sherrington, C. S. Some Causes of Uncertainty in Reflex Reactions.
Vernon, H. M. (1) The Function of Lipoids in Vital Processes. (2) The Bio-chemistry of Respiration.
Milroy, J. A. A Rapid Method for the Estimation of Urea (with demonstration).
Milroy, T. H. Observations in the Production of Apnoea.
Anderson, R. J. Comparative Effects of Training on Animal Activities.
Brown, T. Graham. Remarks on the Mechanics of Progression.

As the programme of the Section is now nearly completed, the Secretaries request that any member desirous of reading a paper will submit it without delay.

STATE MEDICINE AND INDUSTRIAL DISEASES.

President: A. K. Chalmers, M.D., Glasgow.

Vice-Presidents: A. G. R. Cameron, M.B., B.S., D.P.H., Worthing; E. Wm. Hope, D.Sc., M.D., Liverpool; S. Marsden, M.B., D.P.H., D.Sc., M.R.I.A., F.R.S.E., Birkenhead; A. A. Mussen, B.A., M.D., D.P.H., Liverpool; M. J. Oliver, M.B., D.P.H., Roxburghshire.

Honorary Secretaries: T. W. N. Barlow, M.R.C.S., D.P.H., Public Health Office, Wallasey, Cheshire; J. J. Buchan, M.D., D.P.H., Holly Mount, Laurel Road, St. Helens; H. L. Heath, L.M.S.S.A., D.P.H., 65, Fonnereau Road, Ipswich.

The following is the provisional programme:

Wednesday, July 24th.—Discussion on Tuberculosis, in which Drs. Niven (M.O.H. Manchester), Marcus Paterson (Medical Director, Welsh Tuberculosis Fund), Wynne (M.O.H. Wigan), Meredith Young (County M.O.H. Cheshire), G. F. Buchan (M.O.H. Willesden), S. J. C. Holden (Assistant M.O.H. St. Helens), and others will take part.

Thursday, July 25th.—Papers:

Wheatley, Dr. J. H. Children and Dental Disease.
Phillips, Dr. C. H. Isolation in Scarlet Fever.
Bradburne, Dr. A. A. Visual Defects in Children.
Mackintosh, Dr. The Effect of Intramigration on National Health.

Friday, July 26th.—Joint debate on the Rôle of the *Bacillus coli* in Water Supplies. (For details see Section of Bacteriology.)

SURGERY.

President: Professor Rushton Parker, M.B., B.S., F.R.C.S., Liverpool.

Vice-Presidents: H. A. Ballance, M.S., F.R.C.S., Norwich; R. A. Bickersteth, M.A., M.B., F.R.C.S., Liverpool; F. C. Larkin, F.R.C.S., Liverpool; Albert Lucas, F.R.C.S., Birmingham; H. J. Stiles, M.B., F.R.C.S.E., Edinburgh.

Honorary Secretaries: R. W. Murray, F.R.C.S., 15, Rodney Street, Liverpool; G. P. Newbolt, M.B., B.S., F.R.C.S., 5, Gambier Terrace, Liverpool; A. W. Nuthall, Ch.M., F.R.C.S., 3, Calthorpe Road, Edgbaston, Birmingham.

The following subjects have been selected for discussion:

1. The Treatment of Carcinoma of the Rectum, to be opened by Mr. Harrison Cripps, London, followed by Messrs. C. A. Morton, G. Heaton, Sinclair White, W. S. Handley, Lockhart Mummery, Swinford Edwards, Rutherford Morison, W. I. de C. Wheeler, A. Lucas, C. P. Childe, E. Deanesly, L. H. McGavin, J. Blaxland, C. A. Leedham-Green, H. J. Paterson, J. W. Smith, Douglas Drew, David Newman, C. Gordon Watson, A. Don, Peter Daniel, J. Crawford Renton, C. Ryall, J. Howell Evans.

The following is a synopsis of the opening paper: (1) A brief reference to the pathology and histology of rectal growths, attention being called to the relationship of cancer to the innocent polypoid growths. (2) The method of its extension will be considered, with some criticism of recent views as to its early extension along the lymphatics running parallel with the bowel, and the influence these views may have on operative treatment. (3) A reference to the diagnosis of rectal cancer. (4) The selection of cases which in the author's view are suitable for operative treatment. (5) The operative treatment will be considered: palliative, by colotomy; operative, by excision. (6) The two methods of operation will be discussed. The operation by the perineal and sacral route, and the operation by abdominal section. (7) The prevention of stricture after sacral operations. (8) The prognosis as regards recurrence after excision. (9) A table will be put in of a series of cases, and an analysis of this series will be given in other tables having reference to the following points: The age of patients; the proportion in which operative treatment seemed possible; the number treated by excision; the number treated by colotomy; the length of life after colotomy; the number of cases of recurrence, with date of recurrence: the mortality of operation; the cases alive after taking the three years limit without recurrence; the subsequent history of the cases after three years.

2. The Diagnosis and Treatment of Tuberculous Disease of the Urinary Tract. To be opened by Mr. Hurry Fenwick, London, followed by Messrs. D. Newman, W. Bruce Clarke, P. J. Freyer, A. Fullerton, C. A. Leedham-Green, Swinford Edwards, J. Howell Evans, E. Deanesly, Sinclair White, Peter Daniel, A. Young, Hugh Lett, B. J. Ward.

The following is an abstract of the opening paper:

(*a*) Some method is needed to detect latent "closed" renal tubercle; perhaps the Debre and Paraf method (a species of the Wassermann reaction group) will supply this want. (*b*) Sex is a powerful factor in the evolution and progress of the disease, and by a strict separation of the sexes in statistics a truer estimate of the difference between the expectant and operative treatment will be formed. (*c*) In formulating any judgement as to whether operation should be undertaken, allowance must be made for the pauses and remissions which take place in the symptoms in earlier stages of the disease. (*d*) Tuberculin treatment acts as a powerful tonic in patients able to bear it, but never cures them. (*e*) By operative measures 50 per cent. of patients may be cured definitely. (*f*) Short-circuiting of the ureteric streams by ureterostomy or renal drainage is of the greatest value in abolishing the agony of an irreparably destroyed bladder.

The following papers have been accepted, and as many of them will be read as time permits:

Dobson, J. F. The Treatment of Gastric Ulcer by Excision and Partial Gastrectomy.
Don, A. Complete Excision of the Haemorrhoidal Area, with Results of Cases.
McGavin, Lawrie H. Results of Filigree Implantation in Hernia.
Dalziel, J. K. Interstitial Enteritis.
Wheeler, W. I. de C. The Surgery of the Sacro-iliac Joint.
Edington, G. H. Observations on Laceration of Large Arteries.
Newbolt, G. P. Successful Ligature of the First Part of the Left Subclavian Artery for Aneurysm in a Female.
Freyer, P. J. One Thousand Cases of Total Enucleation of the Enlarged Prostate.
Bickersteth, R. A. Obstruction of the Ureter due to (1) Kinking over a Branch of the Renal Artery; (2) Renal Calculus; How the Shape of the Kidney is Differently Affected by these two Conditions.
Clay, John. *X*-Ray Examination of the Urinary Passages.
Paterson, H. J. A Series of One Hundred Consecutive Cases of Acute Appendicitis: Immediate and Remote Results.
Howell, J. The Chief Use of the Peritoneum: A Suggestion.
Ewart, W. Pre-operative Diagnosis of Appendicitis.
Handley, W. S. Trans-articular Operations for Fractures near the Knee and Elbow.

A special meeting of the Section will be held at 2.30 p.m. on Thursday, July 25th, to discuss the report of the Fractures Committee.

TROPICAL MEDICINE.

President: Professor John L. Todd, M.D., McGill University, Montreal.

Vice-Presidents: Fleet Surgeon P. W. Bassett-Smith, C.B., R.N., Royal Naval Hospital, Haslar; W. Carnegie Brown, M.D., M.R.C.P., London; W. T. Prout, M.B., C.M.G., Liverpool; J. W. Watson Stephens, B.A., M.D., School of Tropical Medicine, Liverpool; A. J. Chalmers, M.D., F.R.C.S., London.

Honorary Secretaries: B. Blacklock, M.B., Runcorn Research Laboratories, Crofton Lodge, Runcorn; H. B. G. Newham, M.R.C.S., Director, London School of Tropical Medicine, Albert Dock, London, E.

The following is the provisional programme:

Wednesday, July 24th, 10 a.m.—Papers: (1) Human Trypanosomiasis, (2) Verminous Toxins in Man and Animals.

STEPHENS, Dr. J. W. W. On *T. rhodesiense* (Stephens and Fantham).
WEINBURG, Dr. (Institut Pasteur). Verminous Toxins in Man and Animals.

Thursday, July 25th.—Papers on Leprosy and Leishmaniasis:

DUVAL, Professor Charles (New Orleans). Acid-fast Bacilli from the Human Leprous Lesion.
WILLIAMS, Captain. The Results of Vaccine Treatment of Leprosy.
GABBI, Professor. Leishmaniasis.
PATTON, Dr. W. S. (Madras). Leishmaniasis.

Friday, July 26th, 10 a.m.—Papers on (1) Sanitation of Agricultural Estates in the Tropics; (2) General subjects.
BROWN, Dr. W. Carnegie. Sanitation of Agricultural Estates.
WATSON, Dr. M. (Federated Malay States). (Title not settled.)
MADDEN, Professor F. (Cairo). Lymphangioplasty in Elephantiasis of the Legs.

Honorary Local Treasurer—
THOMAS H. BICKERTON, M.R.C.S.,
88, Rodney Street, Liverpool.

Honorary Local Secretaries—
FRANK H. BARENDT, M.D., F.R.C.S.Eng.,
KARL A. GROSSMANN, M.D., F.R.C.S.Edin.,
W. THELWALL THOMAS, Ch.M., F.R.C.S.,
Liverpool Medical Institution, 114, Mount Pleasant, Liverpool.

PROVISIONAL PROGRAMME.

FRIDAY, JULY 19TH, 1912.
10 a.m.—Annual Representative Meeting.

SATURDAY, JULY 20TH.
9.30 a.m.—Representative Meeting.

MONDAY, JULY 22ND.
9.30 a.m.—Council Meeting.
10 a.m.—Representative Meeting.
7 p.m.—Secretaries' Conference and Dinner.

TUESDAY, JULY 23RD.
9.30 a.m.—Representative Meeting.
2 p.m.—Annual General Meeting.
8.30 p.m.—*Adjourned General Meeting. President's Address.

WEDNESDAY, JULY 24TH.
9 a.m.—Roman Catholic service at the Pro-Cathedral, Copperas Hill.
9 a.m.—Council Meeting.
10 a.m. to 1 p.m.—Sectional Meetings.
12.30 p.m.—Address in Medicine.
2.30 p.m.—*Service at St. Luke's Church.
8 p.m.—*Soirée*, Walker Art Gallery.

THURSDAY, JULY 25TH.
8 a.m.—National Temperance League Breakfast.
10 a.m. to 1 p.m.—Sectional Meetings.
12.30 p.m.—Address in Surgery.
7.30 p.m.—Annual Dinner.

FRIDAY, JULY 26TH.
9 a.m.—Council Meeting.
10 a.m. to 1 p.m.—Sectional Meetings.
2.30 p.m.—*Degree Convocation, Philharmonic Hall.

SATURDAY, JULY 27TH.
Excursions.

* Members are invited to wear academic costume at the following functions: The President's Address on Tuesday evening, July 23rd; the Roman Catholic Service at the Pro-Cathedral on Wednesday morning, July 24th; the Church Service at St. Luke's in the afternoon; and the *soirée* at the Walker Art Gallery the same evening. Also at the Philharmonic Hall, for the Degree Convocation, at 2.30 p.m. on Friday afternoon.

PATHOLOGICAL MUSEUM.

All communications and specimens for the Pathological Museum should be addressed to Dr. Ernest Glynn, Honorary Secretary, Thompson Yates Laboratory, University of Liverpool.

EXCURSIONS AND ENTERTAINMENTS.

THE Excursions Committee in Liverpool is making arrangements for visits to a number of interesting places on Saturday, July 27th. These include the following:

Chester and Eaton Hall.—During the morning this party will visit the cathedral and many places of historic interest in the city of Chester, and after lunch will proceed by steam-launch to Eaton Hall, where they will be entertained at tea by the Duke of Westminster.

Buxton.—The party (limited to 200) going to Buxton will, after a visit to the pump room, baths, and Devonshire Hospital, be entertained at luncheon by the Buxton Medical Society.

Southport.—This party, which is limited to 100, will visit the Infirmary and Botanic and Zoological Gardens during the morning, and will be entertained at lunch by the Southport Medical Society. In the afternoon there will be a garden party at Hesketh Park, by invitation of the Mayor and Mayoress.

Blackpool.—The party, limited to 150, will be entertained at luncheon by the Mayor and Corporation, and visits will be paid to various places of interest both in the morning and in the afternoon.

Llandudno.—Arrangements have been made for a party of 200 to proceed to Llandudno by steamer. They will be received by the Urban District Council and entertained at luncheon.

Isle of Man.—A party, limited to 100, has been invited to visit the Isle of Man, where they will be received by the Mayor and Corporation, and entertained at dinner in the evening. During the earlier part of the day motor tours have been arranged.

Penmaenmawr and Pendyffryn Hall.—A party, limited to 50, has been invited to visit Penmaenmawr, and will be entertained and luncheon at Pendyffryn Hall by Dr. Dobson.

Members desirous of taking part in any of these excursions are requested to make application for tickets to Dr. Francis W. Bailey, 51A, Rodney Street, Liverpool, on or before July 17th.

Tickets will be allotted in priority of application, and it is advisable to mention a second choice of excursion in case all the tickets for the first choice have been taken before application. In many cases the excursions can be prolonged for the week-end.

GOLF.

Members, on presentation of their membership ticket, will be allowed to play on the following links on payment of the usual green fees: Royal Liverpool (Hoylake), Formby, Wallasey, Birkdale, Woolton, West Lancashire, and Ormskirk.

The competition for the Ulster Cup will take place on Thursday, July 25th, on the Hoylake links. Any member wishing to compete should send in his name, club, and lowest handicap, certified by the club secretary, to Dr. A. Nimmo Walker, 45, Rodney Street, Liverpool.

On Friday, July 26th, there will be a golf match between members of the Association residing in Lancashire and Cheshire and the rest of the Association, which will be played at Formby Links. Names should be sent to Dr. Walker as above.

A match for ladies will be arranged between the wives, daughters, and sisters of members belonging to the golf clubs in Lancashire and Cheshire, and to all other golf clubs respectively. Ladies wishing to play are requested to send their names, clubs, and handicaps, certified by the club secretary, to Miss Walker, 45, Rodney Street, Liverpool, before July 12th.

ENTERTAINMENTS.

The Local Entertainments Committee has made arrangements for members to visit various places of interest in the city of Liverpool:

The works of the new Cathedral may be visited on the mornings of Tuesday or Wednesday. On Wednesday afternoon, between 3 p.m. and 5 p.m., parties of 10 at a time will be shown over the offices of the *Liverpool Daily Post and Mercury* and the *Liverpool Courier*. On the same afternoon the White Star Company will receive visitors on board the ss. *Cedric*, and the Allan Line on board the ss. *Corsican*. On the same afternoon the President of the Medical Institution and Mrs. Robert Jones will give a garden party at Druid's Cross, Wavertree. In the evening there will be a *soirée* at the Walker Art Gallery, lent by the Corporation of Liverpool.

On Thursday afternoon a garden party will be given by Dr. C. T. Street at Haydock Lodge Private Asylum, and by Mr. and Mrs. Frank Paul at "The Anchorage," Hoylake. Later in the afternoon the Lord Mayor and Lady Mayoress (Lord and Lady Derby) will give a garden party in the Botanic Gardens. On the same afternoon Mr. Robert Jones and Dr. C. J. Macalister will take a party of 200 visitors to the Liverpool Country Hospital for Children at Heswall. On Thursday the Booth Steamship Company will entertain visitors to tea on board the ss. *Hilary*, which will be arranged to show the mosquito-proof appliances; Messrs. Cammell, Laird and Co. will show visitors over their shipbuilding and ship-repairing yards, where the new Dreadnought *Audacious* and some Argentine destroyers are being built. A visit will be paid by invitation to the estate of the Liverpool Garden Suburbs Tenants Company, and the Mersey Docks and Harbour Board will show a party of visitors over the warehouses and docks. In the evening the annual dinner of the Association takes place, and there will be a performance for ladies of "Mrs. Gorringe's Necklace" at the Royal Court Theatre.

On Friday Lord Derby, the Chancellor of the University of Liverpool, will entertain a number of visitors at luncheon by special invitation at the Town Hall before the ceremony of conferring honorary degrees, which is to take place at 2.30 p.m. at the Philharmonic Hall. Sir William Lever will entertain a party of invited guests to luncheon at Hulme Hall, Port Sunlight, and will entertain a large party to tea in the afternoon and show them over Port Sunlight. Sir James and Lady Barr will give a garden party at Calderstones Park, and the Cunard Steam Ship Company will provide a tender to take the visitors to the *Lusitania* in the river, where they will be entertained at tea.

Arrangements have been made for a trip on the river Mersey on Wednesday afternoon, at the invitation of the Birkenhead Corporation; on Thursday afternoon one of the Wallasey ferry boats will make a similar trip, and visitors will be entertained at tea by Dr. Oldershaw, Mayor of Wallasey.

British Medical Journal.

SATURDAY, JULY 6TH, 1912.

THE PRESENT POSITION.

THE present position in regard to the Insurance Act and the medical profession is that the Chancellor of the Exchequer and the Commissioners have made no material concession since February last to the demands put forward by the British Medical Association. This is the opinion of the State Sickness Insurance Committee, endorsed by the Council of the Association, and will, we do not doubt, be the opinion of the vast majority of those who read the letter addressed to the Association by the Commissioners on June 26th. It is, in fact, pretty clear that it is the opinion also of the Chancellor of the Exchequer and the Commissioners, although the Chairman of the Joint Committee of Commissioners says in the issue of *The National Insurance Weekly* for this week: "We are doing all that is possible to meet them, and I cannot imagine that the medical profession will really stand out." He does not state, however, the grounds for his expectation that the Association in July will reverse the policy it adopted in February after discussions in all parts of the country and long and anxious debate in the Representative Meeting. At the meeting in February the opinion of moderate men prevailed. The course then followed has been keenly discussed from every point of view by meetings of the profession in all parts of the country, consisting of members of the profession engaged in every kind and variety of practice, and the policy of the Association has been endorsed, such criticisms as were made having been almost altogether in the sense that the Association did not then go far enough.

The reply of the Insurance Commissioners to the letter addressed to them on February 29th, setting out, in plain and unmistakable language, in accordance with the instructions of the Special Representative Meeting held during the preceding week, the minimum demands of the Association, was received on June 26th. It was considered by the State Sickness Insurance Committee on that afternoon and again on July 1st. The letter, which embodies a statement by the Chancellor of the Exchequer on the subject of remuneration, is contained in the report to the Divisions and Representative Meeting published in the SUPPLEMENT for this week, and, together with observations by the State Sickness Insurance Committee on the arguments and assertions it contains, forms Part II of that report. Those who have followed the proceedings of the State Sickness Insurance Committee, which have been reported regularly in the JOURNAL, will find that Part I of the report in the main sets out matters with which they will already be familiar. Part II (p. 17), on the "Present Position of the Association with regard to the working of the National Insurance Act," will be that to which the majority of readers will first turn; and Part III (p. 22), on the "Future Action of the Association," should be read along with it, for it presents the alternatives between which the Divisions and the Representative Meeting will have to choose within the next fortnight.

These two parts of the report ought to be read as they stand, for no summary or gloss can give their full effect. They must make the strongest possible appeal to every medical practitioner, for every individual member of the profession must himself make up his mind between the alternatives in order to be able, at the meeting of his Division, to instruct his Representative in the Representative Meeting, with which the final decision rests. To many it seems that the answer given at Midsummer might equally well have been given at Lady Day. Had this been done there would have been no need for the haste which is now inevitable. The points in the letter which possess any savour of novelty are, with one exception, contained in the statement by the Chancellor of the Exchequer in the fifteenth and following paragraphs. They are: First, that the Government recognizes that the aggregate amount devoted to medical benefit must be such as to enable suitable payment to be made for certain extras, including night visits, mileage, and possibly other matters. Secondly, that the Government would be willing to advise Parliament to make extra provision for meeting the cost of medical benefit beyond that originally assumed in the actuarial calculations, which by implication are now admitted to have been based on insufficient data. These are indeed the most important results of the action of the State Sickness Insurance Committee. They are significant admissions, but are immediately qualified by the specific statement that the Government could hold out no hope of such provision being made as would yield for medical remuneration 8s. 6d. per insured person per annum for ordinary medical attendance, not including extra services or the cost of drugs and appliances. To this pronouncement is appended a calculation founded on a number of conjectural estimates, which brings Mr. Lloyd George to the strange conclusion that, were the demands of the profession as to remuneration for its services to be met, it would mean that the ordinary income of a practitioner in an average practice would be not less than £1,100 per annum. Some of the fallacies in this calculation are pointed out in the observations of the Committee, which are published in the report.

The only other new point in the letter is the statement that the Government recognizes that the position of persons possessed of incomes from all sources exceeding £160 a year, who, under Section 1 (3) (*b*), might continue to be insured as voluntary contributors, was a special case, and that as to this the Government would be ready to consider any suggestions the Association might make.

The alternatives presented for the decision of the Divisions of the Association during next week, and the final pronouncement of the Representative Meeting in Liverpool this day fortnight are, on the one hand, to break off, and, on the other, to continue negotiations. In the one alternative the Association will call on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act until such time as the Government has satisfied the Association that its demands will be met. The other will be to comply with Mr. Lloyd George's request to appoint a committee with power to confer with the Commissioners in order to ascertain to what extent the demands of the Association are likely to be met. Such a committee would hear what the Commissioners had to propose, would consider and report on the Regulations as soon as they were made available, and would report to a Special Representative Meeting. The Commissioners recognize that such a committee

could only arrive at a provisional agreement, which would be submitted to the members generally through the local Divisions, and to the Representative Body for ratification, amendment, or rejection.

TUBERCULIN TREATMENT.

THE gradual re-entry of tuberculin into the therapeutic field has called forth a number of guides, of all nations, who desire to point out the way of safety, and the pitfalls of danger, to all those who seek to employ it.

We have recently commented upon the latest works of the kind published in our own country, and a small work[1] from the pen of Dr. Sézary has recently been issued as one of a series of compact volumes dealing with the "actualities of medicine," each containing a study of a special subject in a more or less critical tone indicating the limitations and possibilities of each as far as modern knowledge permits.

Tuberculin treatment has at more than one period been taken up too enthusiastically and dropped too abruptly, and even now there is a manifest tendency in some quarters to vaunt its powers to a far greater extent than the collected evidence of good observers would seem to warrant. By slow degrees a better knowledge of its mode of action has been attained, but at best this knowledge is still limited within narrow bounds; and much of the theory which serves to guide our lines of thought is speculative. Hence it is to the slow and steady accumulation of practical experience that we must look, to enable us to determine the therapeutic value of tuberculin injections. Dr. Sézary gives a very candid account of his own views, and emphasizes the fact that the treatment gives good results in practice which cannot be satisfactorily accounted for in theory. In his hands, and in those of some other observers, the immunity afforded by one strain of tuberculin does not hold good when another strain is introduced, a new process of immunization having to be set up in each case. Immunity so produced does not prevent the development of the tuberculous poison itself if introduced artificially. Its action therefore, Dr. Sézary argues, cannot be called specific. It only helps the natural protective processes to help themselves, and hence is only of value when these processes still maintain their self-protective power.

The experience of observers with regard to the use of injections during periods of tuberculous activity and fever differs widely. Many German writers commend its use under such circumstances, but French schools, for the most part, adopt a more cautious attitude. After a very full account of the methods and technique of calculating and administering the dose, Dr. Sézary passes to the consideration of results, and here again he advises that theoretical considerations should be dismissed from the mind and practical issues alone be regarded. The early case and the chronic consumptive in whose lung the process is quiescent have been found to benefit greatly, but there is abundant evidence to prove that harm rather than good is liable to follow its indiscriminate use in other stages, and especially at the hands of those who have not had abundant experience of the dosage appropriate to the varying degrees of disease.

We may take this opportunity of noticing two inquiries recently made by medical journals—one German,[2] the other Danish[3]—with a view of collecting and correlating the opinions of experts in the respective countries on the merits of tuberculin in phthisis. While the German report consists of diametrically opposed views, and others which might best be described as "hedging," the Danish report reveals several important points on which the leading authorities appear to be unanimous. The questions to which answers were sent by seventeen sanatorium and hospital physicians were as follows: (1) Do you use tuberculin for treatment? (2) What are your indications for this treatment? (3) What results have you obtained? (4) Which preparations do you use and prefer? (5) What doses do you give? (6) Have you adopted ambulatory treatment with tuberculin? and Do you recommend this procedure? While nearly all the answers to the first question were in the affirmative, the indications for the use of this remedy were much limited, and were confined by most of the physicians to such cases as were stationary under sanatorium treatment or showed signs of general toxaemia, such as a tendency to slight rises of temperature, pallor, cyanosis, and tiredness. Tuberculin as a means of reducing a high temperature was not favourably reported on by most, though it was found to have a strikingly febrifugal action in a few cases. Advanced phthisis was not inevitably considered to be a contraindication, providing the disease was not rapidly progressive. At Saugman's sanatorium 5 to 10 per cent. of the patients were treated with tuberculin, and at several other sanatoriums the number of patients thus treated was relatively lower. The results obtained by tuberculin were sometimes astonishingly good; sometimes it was apparently quite inactive; and in several cases its use was followed by complications, such as pleurisy, haemorrhage from the lungs and intestines, and aggravation of pulmonary, laryngeal, and intestinal tuberculosis. Many preparations of tuberculin were in use, including Koch's tuberculin, old and new, bacillary emulsion, endotin, tuberal, and Denys's tuberculin. The question whether tuberculin is suitable for ambulant treatment is answered in the negative with no uncertain voice, and the tale of accidents, which even treatment within the walls of a sanatorium has not been able to avert, is held to indicate that this treatment should be limited to institutions where its every phase may be under close scrutiny and control. Three of the answers admit, however, that treatment with tuberculin may be continued in the patient's home if it has been satisfactorily started at a sanatorium, and if the patient is intelligent. The report, taken as a whole, gives the impression that tuberculin is a two-edged sword, the wielding of which in untrained hands must be followed, sooner or later, by incidents disastrous to the patient and damnatory to the good name of the physician and the remedy. On the other hand, employed by those whose respect for its potency is considerable, tuberculin may effect wonders, astonishing even to the physician.

[1] *Tuberculinothérapie et sérothérapie antituberculeuse.* By Dr. Albert Sézary of the Laënnec Hospital in Paris. Paris: J. B. Baillière et Fils. 1912. (Cr. 8vo, pp. 96. Price 1 fr. 50 c.)

[2] *Med. Klinik*, No. 1, 1910. [3] *Hospitalstidende*, No. 4, 1912.

THE REPORT OF THE STATE SICKNESS INSURANCE COMMITTEE.

THE State Sickness Insurance Committee held its sixteenth meeting on Monday last, and rendered an account of its labours to the Council. The Council, at its meeting on Wednesday, directed the issue of the report on the Insurance Act, embodying an analysis of the present position of the Association thereto, which is published in the SUPPLEMENT for this week. The report—containing as

it does a summary of the events of the last five months, as well as the reply of the Insurance Commissioners to the letter addressed to them setting out the minimum demands of the profession, and a criticism of this reply—is necessarily very voluminous, and its length is increased by the printing of appendices required for reference. In consequence it has been necessary to postpone publication in the SUPPLEMENT of much matter recently received, including a good deal of material already in type. The full programme of the Annual Meeting in Liverpool, including the synopses, so far as received, of papers introducing the discussions in the Sections, which begin on July 24th, is published in the JOURNAL, p. 23, and its length has rendered it necessary to postpone the publication of much other matter. We can only apologize to many correspondents for the postponement of the publication of their communications, which is in the circumstances inevitable.

SANATORIUM BENEFIT.

A MEETING of the medical members of the Advisory Committee with the Insurance Commissioners was held on Wednesday morning, when Sanatorium Benefit was discussed for a couple of hours. The subject was divided into two parts, the provisional arrangements to be at once made, and permanent arrangements, but practically the whole of the discussion was devoted to the former subject. The report to the Representative Meeting, published in the SUPPLEMENT this week, contains a series of paragraphs (76 to 99) on sanatorium benefit in which the recommendations in the interim report of the Departmental Committee on Tuberculosis are analysed and certain recommendations made. These recommendations are necessarily of a somewhat conjectural nature, inasmuch as the regulations for the administration of sanatorium benefit, which is to come into force on Monday week, have not yet been promulgated. These regulations must set out not only the conditions under which persons are to become eligible to enjoy the benefit, but also the conditions and terms of service of the medical profession. In this connexion the importance of fully recognizing the relation of general practitioners to the system which is to be established is insisted upon in the report. The first recommendation is that while the chief tuberculosis officer of the dispensary should be a whole-time officer and confine himself to diagnosis and consultative work, the rest of the staff should, if possible, be formed of local medical practitioners serving on a rota. Another recommendation is to the effect that domiciliary attendance should be given by the tuberculosis officer or any whole-time assistant only as a consultant to the practitioner in attendance. It is also recommended that those requiring attention at the dispensary should be introduced only on the recommendation of the medical practitioner actually in attendance upon the patient, and that the services of the medical practitioner, whether for domiciliary attendance or attendance in a dispensary or sanatorium, should be properly remunerated.

"MORE SECRET REMEDIES."

THE little book issued by the British Medical Association, under the title, *Secret Remedies: What they Cost and What they Contain*, has had a very large sale, and there has been a great demand for a continuation of the work. The field of quackery is so vast that it is impossible to cover it all at once; but, though justice follows the evil-doer with halting step, it generally overtakes him in the end. Inspired by this hope, the Association has steadily, though without haste, pursued its purpose of exposing the pretensions of nostrum vendors. We are sure our readers will be as pleased to learn as we are to announce that a further volume, entitled *More Secret Remedies*,[1] has just been issued. In addition to analyses of a large number of "remedies" for rheumatism, gout, neuralgia, skin affections, nerve tonics and elixirs of life, medicines for coughs and consumption, indigestion and constipation, kidney disease, alcoholism and the tobacco habit, epilepsy, soothing syrups for infants, amenorrhœa, and a variety of other ailments, there are three chapters on general subjects of special interest. These are on unqualified practice through the post, the advertising of proprietary medicines, and the "expert" behind the proprietary medicine. We propose to deal more fully with the volume in an early issue; this brief note is to be regarded merely as an announcement of its publication.

DEPUTY MEDICAL SECRETARY.

AT the meeting of the Council, on July 3rd, Dr. James Neal, of Birmingham, was appointed from a long list of candidates to be Deputy Medical Secretary of the British Medical Association. Dr. Neal, who has been engaged in general practice in Birmingham for twenty years, has long taken great interest in medico-political work, and has done much such work for the British Medical Association. He has been a member of the executive committee of the Central Division of the Birmingham Branch since the reconstitution of the Association, Chairman of the Division, Representative of the Division on the Branch Council, and for the last three years Representative of the Division in the Representative Meeting of the Association. He is also a member of the Central Ethical Committee, a member of the State Sickness Insurance Committee, and was nominated by the Association on the Advisory Committee under the National Insurance Act. Dr. Neal has been for thirteen years Secretary of the Birmingham and District Medical Practitioners' Union.

LORD ROSEBERY ON THE MEDICAL PROFESSION

ON July 1st Lord Rosebery distributed the prizes at the London Hospital Medical College. He took occasion to contrast the medical student of the present day with the types created by Dickens. Lord Rosebery professed to believe that Bob Sawyer and Ben Allen were mere monsters developed by the novelist out of some germ and offered as such to the attention of "the great peripatetic philosopher, Mr. Pickwick." We think that Dickens was merely indulging his natural bent to caricature, and that, although he exaggerated the features, he found the originals of his immortal sketches among the medical students of the early Victorian period. *Pickwick* was published in 1837, and Albert Smith's "Physiology of the London Medical Student" appeared in *Punch* in 1841. Smith knew what he was talking about, for he had been bred to the medical profession, and his picture of the medical student has all the repulsiveness without the humour of that of Dickens. With the Medical Act of 1859 and the enforcement of a larger curriculum there came a change. In the transition period which extended to the Seventies the Bob Sawyer type began to die out, and as examinations were made stricter it became extinct. Another influence leavening the mass that must not be neglected is the increasing degree to which Oxford and Cambridge men entered the profession. Between thirty and forty years ago they were exceptional; now in every London school of any size they are numerous. We believe that at the hospital where Lord Rosebery delivered his speech, of a resident staff of more than thirty one half are Oxford or Cambridge men. Lord Rosebery went on to deplore the passing of the apothecary a "good old name" which he prefers to "general practitioner." We

[1] *More Secret Remedies: What they Cost and What they Contain. Based on Analyses made for the British Medical Association.* London: The British Medical Association. 1912. (Cr. 8vo, pp. 282.) To be obtained through any bookseller, price 1s., or from the offices of the Association, price 1s. 3d. post free.

confess we do not follow the brilliant orator here. "Apothecary" smacks of the shop, and had in fact about the time when Bob Sawyer flourished become a misnomer. Some seventy years ago a protest was made against it, and in a document quoted by Mr. C. R. B. Barrett in his *History of the Society of Apothecaries* there is the following passage: "The Court of Examiners feel that one of the chief evils in the present position of the Apothecary is his name, which has little reference to his actual duties, that he is in fact the Medical Attendant on the large mass of the community, and should be designated the General Practitioner of Medicine." When ladies spoke of "using the 'potecary" they thought of him as a mere tradesman; indeed, there were many, like Lady Chettam in *Middlemarch*, who preferred the ministrations of "a medical man more on a footing with the servants," as for some obscure reason she thought they were often much cleverer. That time is past, and as medicine has grown beyond the bottle of physic, which seems to be Mr. Lloyd George's ideal of medical practice, it has gone upward in the social scale. One good result of this is that general practice now attracts men who, in the early part of the last century, would have thought it beneath them. Lord Rosebery went on to speak of medicine as the noblest secular career in the world, because it is the one and only secular profession which tries, wherever it goes, unselfishly, willingly, earnestly, to give comfort and alleviation to all with whom it deals. But he looks upon it as a forlorn hope, because it never can hope to conquer in the long run, as when one disease has been overcome, another springs up to take its place. "You are fighting," said Lord Rosebery to the students, "with the Angel of Death which must defeat you in the end." To raise the drooping spirits of his hearers after this pessimistic view of medicine, Lord Rosebery went on to say that in all professions it is rare to find a life which can be spent in the complete conquest of obstacles, but doctors are fighting the most heroic fight that is going on in the world, and fighting it not in their own selfish interests, but in the cause of humanity itself. This is true, of course, though more banal than we expect from Lord Rosebery. At this time of struggle against an attempt to buy the services of the doctor in the cheapest market, it may be well to remark that statesmen have a convenient way of forgetting that even doctors are not philanthropists and cannot live on compliments to their profession. Lord Rosebery weighs the great names of history—the Caesars, the Charlemagnes, the Napoleons, the Wellingtons—against Lister, and exclaims, "Does any intelligent human being hesitate as to which side it is that the balance of universal gratitude of mankind is due?" That it is due is certain; but is it paid? Lister was loaded with distinctions in his lifetime; but it surprised not a few persons who would be astonished to hear themselves described as lacking intelligence, that the King should delight to honour a mere doctor. For to most of those who spend themselves in the effort to prevent or suppress disease and to relieve suffering, virtue is its own reward.

THE INSTITUTIONAL USE OF ALCOHOLIC LIQUORS.

In drawing attention to the diminished use of alcohol in hospitals, *The Hospital* has expressed a doubt whether the lessened prescription of alcohol, a diminution it puts at 80 per cent., is justified by results. If it is meant to imply that the ratio of recoveries to deaths and the length of time the patients remain in the wards compare unfavourably with the days of a freer use of alcohol, there can be only one answer. The patients recover at least as satisfactorily, and their average stay in hospital is shorter than in the days of a freer prescription of alcohol. It is suggested that "so-called temperance drinks and more expensive synthetic and chemical stimulants" have taken the place of alcohol. But it is the milk bill and not the drug bill which has increased at the expense of alcohol. In 1862 seven large London hospitals, with 2,254 occupied beds, spent £7,712 on alcoholic liquors; forty years later, with 2,309 occupied beds, they spent £2,925. But in the same time the milk bill rose from £3,026 to £9,035. At Salisbury, in 1865, the alcohol bill was £302 and that for milk £94; forty years later the cost of alcohol was £18, of milk £317. If more expensive synthetic and chemical stimulants are being used the increased cost ought to show in the drug bill. In 1894 the average "surgery and dispensary" expenses at the twelve chief London hospitals was £12.6 per occupied bed; in 1910 it is given as £13.7. But whereas the figures for 1910 include the expenditure on alcohol, those for 1894 do not. As surgical dressings, bandages, instruments, and appliances swell the figures for 1910 there would seem little ground for the assumption that costly drugs have taken the place of alcohol in the hospital armamentarium. As milk has taken the place of alcohol among provisions, so strychnine, one of the cheapest drugs, of which enough to kill a household can be bought for a few coppers, is often used where formerly alcohol would have been employed. That more expensive substances have taken the place of alcohol is far from being proved. *The Hospital* pleads for the addition of beer to the dietary of convalescents, and maintains that it is to be preferred to the "aërated waters flavoured with fruit syrups or the generally indifferently-made cocoa or tea which is served out in most wards." But it is not the convalescent patient who gets aërated waters; it is the sufferer from acute symptoms, with a high temperature and thirst, for which the aërated beverage is a welcome assuager. Tea and cocoa do not make their appearance more often than at breakfast and tea-time, according to the custom of the country. If they are badly made that is due to bad methods, or want of supervision permitting carelessness, and ought to be remedied. If beer were to be substituted for them, at these meals, there would be something like a hunger, or a thirst, strike among the patients. At the mid-day meal, when it is perhaps the custom of the people not in hospitals to take beer, the medical staff has full power to order or withhold it. Hospitals are staffed neither by teetotal enthusiasts nor pro-alcohol advocates, but by men of sane, moderate views. In their hands the prescription of alcohol may safely be left, and we may rest assured that if they see reason to increase the quantity of alcohol their patients are taking they will not be deterred from prescribing it, either by extreme views or sentimental reasons.

THE INHABITANTS OF ANCIENT NUBIA.

Professor Elliot Smith is one of the highest authorities on the human archaeology of ancient Egypt, and in the second volume of the *The Archaeological Survey of Nubia*[1] he gives the results of a laborious investigation of the human remains in that country, which is immediately coterminous with Egypt, and extends from Assuan southwards to Dongola. There are certain anatomical peculiarities which distinguish the bodies found in Nubian cemeteries from those of ancient Egyptians, and the investigation was undertaken with the object of determining the racial characteristics. When Dr. Elliot Smith went to Shellal in October, 1907, to begin the work, more than 2,000 bodies were already awaiting examination, and every day added to their number. Dr. Elliot Smith could snatch only an occasional week from his duties at the Cairo School of Medicine for the work. It was therefore necessary to obtain the services of an anatomist who would live in the camp and give himself up wholly to the investigation. This task was undertaken by Dr. Wood Jones, who made full measurements of almost every body brought to light during the excavations. The report

[1] *The Archaeological Survey of Nubia*. Report for 1907-8. Vol. ii.: Report on the Human Remains. By G. Elliot Smith, M.A., M.D., Ch.M., F.R.S., and F. Wood Jones, M.B., B.Sc. Cairo: National Printing Department. 1910. Price £E.2.

now published is only a summary of field notes and of their impressions of the significance of the results so far obtained. The final conclusions must be left till the study of the collection is complete. It is impossible within the space at our disposal to do more than give a summary of the contents of this magnificent work. A chapter of special interest is that in which Dr. Wood Jones describes the mode of burial and treatment of the body at various periods and in different cemeteries. Dr. Wood Jones also gives accounts of anatomical variations and the determination of the age and sex of skeletons: of general pathology, including diseases of the teeth: and of fractured bones and dislocations. In the examination of some 6,000 bodies no traces of tubercle, syphilis, or rickets were found, but the reader is warned that it cannot be concluded from this that these conditions did not exist. It may legitimately be inferred, however, that they were far rarer than they are to-day; but Dr. Elliot Smith states that he found a typical case of advanced Pott's disease, and several examples of apparent tuberculous disease of the spine were found in Lower Nubia by Dr. Derry, who also came across an instance of malignant disease. It is often said that marks of conservative dentistry are frequently met with in mummies; this is denied by Dr. Wood Jones, who thinks that the statements are probably to be explained by the finding in the oral cavity of pieces of gilt from the facial adornment of the dead. A good many specimens of fractured bones were found. Reference is made to a paper on this subject by Dr. Elliot Smith, which was published in the British Medical Journal of March 28th, 1908, in which some examples of splints were described. Dr. Wood Jones remarks that considering the gravity of fractured femur, and the very bad results that are liable to follow this accident, even to-day, cases found in this investigation show "a remarkably good standard of repair, and they illustrate the fact which comes out again and again in the study of these ancient fractures—that there is a wonderful natural self-adjustment in the processes of the mending of broken bones." Examples of fracture of the leg are rare in Egyptian cemeteries. "The absence of fracture-dislocations of the ankle-joint," says Dr. Wood Jones, "is very striking, and considering the great frequency of this accident to-day, it argues something in the environment of these people very different to that of dwellers in modern cities." The racial problem is discussed by Dr. Elliot Smith and a summary of the literature relating to Nubia by H. W. Beckett appears as an appendix. Another appendix consists of a chemical report on samples of various materials found in Nubia during the progress of the Archæological Survey, by Mr. A. Lucas. A separate volume contains the plates illustrating the work; they are beautifully executed. We have only lightly skimmed the surface of a most interesting and valuable contribution to archæology. All Egyptologists are under a deep debt of gratitude to Dr. Elliot Smith and Dr. Wood Jones for the results of an investigation which, though a labour of love, must nevertheless have involved self-sacrificing devotion to the elucidation of historical and anthropological problems.

THE PROBLEM OF RAT DESTRUCTION.

A method of destroying rats has been devised by Mr. Rodier, of Hawthorn, Victoria, Australia, the general plan of which may be summarized as follows: As many rats as possible are caught alive. All females amongst these are killed, while the males are liberated, being marked in a suitable manner, so that if caught a second time they will not be recounted. If carried out on a large scale this results in there being many more males than females, and a state of polyandry instead of a state of polygamy results. A struggle for the females by the males ensues, and few or no offspring are produced. The males, according to Rodier, persecute the females so that they do not breed, they also kill what young ones are born, and finally, when they largely exceed the females, worry the remaining ones to death. The success of the scheme evidently depends on the truth of these premisses, and, though Mr. Rodier has not proved his point as regards rats, yet he claims he has done so with rabbits in Australia. He asks that his method should be given a fair trial on its merits over a good-sized area of country, and for a term of years. One of the main difficulties in the scheme would seem to be the catching alive of all the rats of a district in the first instance, but, if this were accomplished, even though by no means completely, an excess of male rats would probably act much more quickly than an excess of male rabbits, because the former are much more deadly fighters than the latter.

INSTITUTIONS FOR THE DEAF.

In the course of two lectures recently delivered under the auspices of the National Bureau for Promoting the General Welfare of the Deaf, Dr. Kerr Love put in a strong plea for widening of the scope of institutions for deaf and dumb children. Hospitals, he pointed out, were originally merely houses of refuge; then they became places of treatment for all kinds of medical and surgical diseases, and now they were attaining their highest function, since within their walls were elaborated preventive measures which would control and, to a large extent, distinguish disease. So it must be with institutions for the deaf: they had begun as merely asylums, and now were well conducted educational establishments. But they must develop further: a spirit of research must fill them, and they must help to prevent deafness. The basis of any serious attempt to prevent deafness must be correct classification, and this in its turn should rest, not on the date of the onset of deafness, but on its pathology. For this reason the schedules relating to the admission of children to institutions should record not only the personal and family history of the child, but data derived from careful clinical examination. We gather that in Dr. Kerr Love's view hereditary deafness is comparatively rare. Neither the existence of a deaf and dumb brother or sister, nor of slight deafness among other relatives was, he said, any proof of the heredity of deafness in any given child. With a view to the prevention of acquired deafness, he advised that aural clinics should be established in connexion with the public elementary schools, that otologists should treat aural complications of infectious diseases, and that all forms of meningitis should be notified. The three main causes of acquired deaf-mutism were scarlet fever, measles, and meningitis, and of these the last was the most important. Though public bodies spent large sums on isolating and treating cases of scarlet fever and measles, they seldom thought it worth while to pay for special skill in treating the ear complications of these diseases while the child was in hospital; as a consequence children were often dismissed from isolation hospitals and like places with discharging ears, which, apart from being infectious, tended to give rise later on to distressing and dangerous sequelæ. The result of a series of inquiries he had addressed to the managers of institutions for the deaf both in this country and in the United States and Holland had been to convince him that the data available on the subject of deaf-mutism, including its origin and effects, were very unreliable.

PEMPHIGUS NEONATORUM.

Drs. Wanklyn and Macrory have made a report[1] to the London County Council on an outbreak of a disease

[1] Report to the London County Council, by Dr. Wanklyn and Dr. Macrory, on an outbreak of a disease resembling pemphigus neonatorum [illegible] attended by a certified midwife. London: King and Son. Price 5d.

resembling pemphigus neonatorum. The cases number 16, and 15 occurred in the practice of one midwife during a period of one month. The first of the series of 15 cases attended by the midwife had been also looked after by a woman who had previously nursed a newborn infant which had had blisters on the skin, and this woman's own two children had had "eczema." The midwife had had a sore upon the finger (apparently a phlyctenule) during the early part of the period in which the subsequent 15 cases occurred in her practice. The clinical details of the cases are given very fully. All the infants developed blisters of various sizes in different parts of the body, and four died. The epidemic described is an example of the affection now recognized as a form of impetigo contagiosa. The initial lesion is a vesicle which in older children rapidly dries into a crust, but which in infants becomes a bulla. Such epidemics were common before the days of antiseptic midwifery; sporadic cases are still not infrequent, and small epidemics are recorded from time to time. These cases are like ordinary impetigo contagiosa of streptococcic origin, not staphylococcic as was formerly supposed. With proper technique it is easy to demonstrate streptococcus in the lesions, and infants which die have streptococci in the blood. The report does not contain particulars of any bacteriological investigations which may have been made in the epidemic now described. From the information obtained it seems probable that infection had taken place from child to child by means of the nurse's apron. At one period the midwife had a blister on the finger, as is often the case, and this condition, it is important to recall, sometimes gives rise to puerperal septicaemia or infection in the mother, so that the affection may be a dangerous infectious disease, not only so far as the infant is concerned but also as regards the parent.

BUXTON WATERS.

LAST summer, as has already been duly recorded, the authorities of Buxton determined to make an examination of the precise source of the spa water, and their investigation, among other interesting results, showed that the water in St. Anne's Well represented two distinct springs, one hot and one cold. It was also found that the hot spring was markedly radio-active, and it was determined to utilize it separately. The pump room was extended backwards, so as to bring it closer to the spot at which the spring had been tapped, and the work having been completed the reopening ceremony was performed by the Duke of Devonshire. In the course of the proceedings, Mr. McKower, D.Sc., gave a short account of the radio-activity of the water as determined by his analyses. He believed that it must pass over radium deposits, but it was still a matter for study how such supplies could best be utilized. Other speakers were Dr. William Ewart, of London, who pointed out that Buxton water contained a higher percentage of nitrogen gas than any other known mineral water in this country, Sir James Barr, and Professor McArdle, of Dublin. The new well, which is elliptical in shape, and measures 6 ft. at its longest diameter, is sunk in cement and lined with white Sicilian marble. The basin is some 2 ft. deep, and the water constantly flows through it at the rate of 60 gallons a minute. With a view to securing the effect of the emanation which may be assumed to be evolving from its surface, the water is not covered in, and will be distributed in glasses from the open well.

THE University of Glasgow has conferred the honorary degree of LL.D. upon Sir Hector C. Cameron and Dr. D. J. Mackintosh, of Glasgow.

UNDER the will of the late Mr. William Johnston, of Kelvinside, Glasgow, the Western, Royal, and Victoria Infirmaries in that city each receives bequests for the endowment of beds, the two former £4,000 and the latter £2,000.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

Fifteenth Meeting.

THE fifteenth meeting of the State Sickness Insurance Committee was held on June 27th.

Mr. T. JENNER VERRALL was in the chair, and the members present were: *England and Wales:* Dr. R. M. Beaton (London), Dr. John Brown (Bacup), Dr. T. M. Carter (Westbury-on-Trym), Miss Frances Ivens, M.S. (Liverpool), Dr. Constance Long (London), Mr. James Neal (Birmingham), Dr. F. H. Oldham (Morecambe), Dr. James Pearse (Trowbridge), Dr. F. M. Pope (Leicester), Dr. E. O. Price (Bangor), Dr. Lauriston E. Shaw (London), Dr. W. Johnson Smyth (Bournemouth), Dr. D. G. Thomson (Thorpe, Norwich), Dr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Dr. A. H. Williams (Harrow on the Hill), Mr. D. J. Williams (Llanelly), Mr. E. H. Willock (Croydon). *Scotland:* Dr. J. Adams (Glasgow), Dr. Bruce Goff (Bothwell), Dr. J. Munro Moir (Inverness). *Ireland:* Dr. Mark Cahill (Belfast), Dr. J. S. Darling (Lurgan). *Ex Officio:* Dr. E. J. Maclean (Chairman of Representative Meetings).

Apologies for absence were read from the President (Professor Saundby), Dr. R. E. Howell (Middlesbrough), Dr. R. A. Lyster (Winchester), Dr. S. Hodgson (Salford), and Dr. Dampier Bennett (Dublin).

We are enabled to publish the following account of the proceedings in anticipation of the confirmation of the minutes.

MEDICAL PRACTITIONERS AND PROVISIONAL INSURANCE COMMITTEES.

In reply to various inquiries, the Committee reaffirmed the principle embodied in the letter which it directed to be addressed to the National Health Insurance Commission (England) on May 31st (SUPPLEMENT, p. 600), and in the resolution adopted by the Committee on June 7th (BRITISH MEDICAL JOURNAL, June 15th, p. 1384). The letter to the Commissioners stated that it was "impossible for the Association to assist the Commissioners in the manner indicated—namely, by obtaining from various Provisional Medical Committees of the Association, the names of representatives for the suggested Provisional Insurance Committees, until such time as the Association is satisfied that the minimum demands of the medical profession in regard to the Act are, or will be, conceded." The resolution of June 7th contained the proviso as follows: "That, so far as practitioners are concerned who are members of county or county borough councils, and who are appointed by their councils *qua* members to fill positions which could equally well be filled by laymen and not *qua* medical practitioners to fill positions which could only be filled by medical practitioners, the Committee raises no objection to the acceptance of such appointments." With regard to medical officers of health, the Committee also reaffirmed the view expressed at its meeting on June 20th, in which it called attention to the fact that, as provided by Minute 80 of the Special Representative Meeting of February, 1912, a medical officer of health is not precluded "from giving advice to an Insurance Committee in his professional capacity," though, in accordance with Minute 78 he should not accept office as a member of the Committee.

Later in the meeting Mr. TURNER moved the suspension of standing orders in order to move the rescission of the resolution of the Committee on June 7th above referred to. After discussion Mr. Turner, with the consent of the meeting, withdrew his motion.

INQUIRY INTO EXISTING CONDITIONS OF MEDICAL WORK AND REMUNERATION.

Resolutions were received from five Divisions expressing disapproval of the Committee in promising to give the Insurance Commissioners its assistance in carrying out the actuarial inquiry proposed by the Government and entrusted to Sir William Plender, the actuary selected by the Association.

Dr. JOHN BROWN gave notice that he would at a future meeting move the suspension of standing orders in order to move the rescission of the minute of June 12th promising to give the assistance mentioned.

RESIGNATION OF APPOINTMENTS.

The Secretary of the Leicester and Rutland Provisional Medical Committee reported that resignations of all forms of contributory contract practice in Leicestershire and Rutland were about to be sent in.

ATTENDANCE UPON ACCIDENTS.

An inquiry from the honorary secretary of a Provisional Medical Committee was received asking for more definite information upon the question whether payment for medical attendance covered attendance upon accidents. The Committee resolved to reply that it assumed that the fee of 6s mentioned in the actuaries' report of May, 1911, did not include attendance upon insured persons in respect of accidents, and that it was seeking to safeguard the interests of practitioners in this respect by urging that the regulations should provide that attendance upon insured persons for injuries or disease referred to in Section 11 of the Insurance Act should be made an extra.

SUPPLEMENTARY PLEDGE AND SANATORIUM BENEFIT.

In reply to an inquiry from the Edinburgh Provisional Medical Committee, the Committee stated that the footnote appearing on the supplementary pledge, to the effect that the third paragraph of the pledge did not refer to the administration of sanatorium benefit, was intended to exempt from the operation of that paragraph those medical practitioners at present holding office in sanatoriums, but did not refer to the acceptance of fresh appointments in connexion with sanatorium benefit under the Insurance Act.

ATTENDANCE UPON INSURED HOSPITAL NURSES.

In reply to an inquiry received on behalf of the medical staff of a provincial infirmary, the Committee adopted the following resolution:

> That in the opinion of the Committee, where arrangements are made for attendance upon nurses as insured persons (whether by members of the paid or honorary medical staff of a voluntary hospital or otherwise), care should be taken (i) that such medical practitioners are adequately paid for the treatment of such nurses; and (ii) that the nurses should not be deprived of the right to free choice of doctor, granted them under the Act.

APPOINTMENTS UNDER THE ACT.

In reply to an inquiry, the Committee expressed the opinion that neither the original undertaking nor the supplementary pledge barred practitioners from accepting appointments such as medical inspectorships under the Act before the Association's demands had been conceded, but that the acceptance of such appointments would be contrary to the terms of Minute 78 of the Special Representative Meeting of February, 1912, under which members of the Association were barred from accepting any appointments under the Act.

COMMISSIONERS' REPLY TO THE MINIMUM DEMANDS.

The Committee proceeded to consider the letter from the Joint Committee of Insurance Commissioners received that day. The Committee, after a preliminary discussion, resolved to meet again on July 1st to conclude the discussion of the matter, and draft its report to the Council. The letter, with the observations of the Committee thereon, is published in the SUPPLEMENT, p. 2.

TUBERCULOSIS SCHEME.

A report from the Regulations Subcommittee on the tuberculosis scheme outlined in the interim report of the Departmental Committee on Tuberculosis was received. The report having been discussed and amended the Committee resolved to embody it in the report to the Council (SUPPLEMENT, p. 16.)

Sixteenth Meeting.

The sixteenth meeting of the Committee was held on Monday, July 1st, 1912, at 2 p.m.

Mr. T. JENNER VERRALL was in the chair, and the members present were: *England and Wales:* Dr. R. M. Beaton (London), Dr. John Brown (Bacup), Dr. T. M. Carter (Westbury-on-Trym), Dr. S. Hodgson (Salford), Dr. R. E. Howell (Middlesbrough), Dr. Constance E. Long (London), Dr. R. A. Lyster (Winchester), Mr. James Neal (Birmingham), Dr. F. H. Oldham (Morecambe), Dr. James Pearse (Trowbridge), Dr. E. O. Price (Bangor), Dr. Lauriston E. Shaw (London), Mr. E. B. Turner (London), Dr. A. H. Williams (Harrow-on-the-Hill), Mr. E. H. Willock (Croydon). *Scotland:* Dr. J. Adams (Glasgow). *Ireland:* Dr. Mark Cahill (Belfast). *Ex officio:* Dr. E. J. Maclean (Chairman of Representative Meetings).

Apologies for absence were read from the President (Dr. Saundby), Chairman of Council (Dr. Macdonald), Dr. Munro Moir (Inverness), Dr. Thomson (Thorpe, Norwich), Dr. Todd (Sunderland).

INQUIRY INTO EXISTING CONDITIONS OF MEDICAL WORK AND REMUNERATION.

It was reported that, excluding Cardiff, where the proposal was still under consideration, only six practitioners in the five other towns selected had declined to place their books at the disposal of the actuary. This includes Darwen, as to which there was no information last week.

REPORT TO COUNCIL.

The whole of the time of the Committee, which sat until 8 p.m., was occupied in considering its report to the Council on the work done by the Committee since it was appointed at the Special Representative Meeting at the end of last February.

The report was presented to the Council at its meeting on July 3rd, and after discussion was directed to be submitted to the Divisions and to the Annual Representative Meeting, which assembles in Liverpool on July 19th. The report is published in the SUPPLEMENT for this week.

NEXT MEETING.

The Committee arranged to meet again on Thursday, July 11th.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

Tropical Medicine.

WHEN the vote for the Colonial Office came on last week, the Secretary for the Colonies took the opportunity of making a preliminary statement on the work of his Department. His well-known personal interest in medical studies led the House to expect a full reference to the progress of tropical medicine, and, indeed, he delighted his audience by a most interesting review of this subject. He said:

Our Crown Colonies enjoy, or suffer, not only all the ordinary diseases of the temperate zones, but they add for themselves most of, if not all, the pestilences of the tropics. With the modern advance of medical science we are happily able to look to, and depend more on, prophylaxis than on cure. When American care and genius has turned Panama into a health resort, there need be no limit to our hopes for the future. The discovery of the mosquito as the carrier of malaria, the study of its life-history, and the methods of its destruction, have put a new engine of hygienic progress in the hands of our medical staff. The recent realization that the Stegomyia of yellow fever finds its favourite birthplace in the rejected and rain-filled jam-pot has enabled elementary sanitation greatly to diminish this fell disease. In Ceylon ankylostomiasis (called here the "Cornish tin miners' disease") is being treated by prophylactic methods, and more than one West Indian Government is dealing, or preparing to deal, with the same disease.

Syphilis and Yaws.

Throughout most of our tropical possessions the natives are being dealt with, where and when possible, for the all-pervading and decimating disease of syphilis, both by the old mercurial and by the newer and more successful salvarsan treatment. This drug—till recently known as 606, from the number of the experiments by which it was procured, has occasionally and locally fallen into disrepute owing to some toxic mishaps arising from its arsenical origin, but on the whole its curative effects have been both rapid and permanent. It is not, however, a drug which can be easily exhibited to large numbers of ignorant

natives; its full effect can only be obtained by intravenous injection, a more elaborate and delicate process than that of subcutaneous injection, and, in any case, it is found difficult, without compulsory powers, which do not exist, to retain the native for full and final treatment after the painful symptoms have subsided, but before the cure is complete. I must, however, in relation to salvarsan, mention the extraordinary results obtained with it in Ceylon and Trinidad, in the treatment of a disease known as yaws (or framboesia, from the character of its pustular rash). The experimental use of salvarsan was suggested by the similarity of some of the symptoms to those of syphilis, though the origin and character of the disease is wholly different. We owe the discovery of its effect on yaws to Dr. Strong, of the United States Service in the Philippines, and independently to Professor Castellani, of Ceylon. The credit of the definitive results are due to Dr. Rost, of the German navy, and Drs. Cleaver and Alston, of Trinidad. In the Yaws Hospital in Trinidad, during last year, 500 patients were treated with salvarsan for this complaint, and the cures amounted to close on 100 per cent., so that at last we are able to regard this distressing malady as a curable and preventable disease.

Leprosy: Beri-beri.

In British Guiana experiments on leprosy with nastin and benzoyl chloride, which at one time gave much hope of success, have unfortunately belied their early promise. But in the Federated Malay States the Research Institute at Kuala Lumpur has attained the almost certain diagnosis of the cause of beri-beri. This disease seems to be the product of the consumption by an exclusively rice-eating population of a highly-polished commercial rice, from which, in the process of polishing, the phosphorus pentoxide has been removed with the pericarp. I hardly venture, in the presence of some of my ultra-humanitarian friends, to mention an interesting and conclusive experiment by which you can practically kill a fowl by the prolonged administration of polished rice and revive it with a meal of the missing husk.

Malaria.

Just now I referred to malaria, and I should like in passing to mention the steps which are being taken in the West Indies to deal with this disease. Those of us who have suffered from it (and I am one) are sadly conscious of the weary soaking in quinine till deafness supervenes, and the occasional alternative of arsenic with cumulative discomforts, insufficiently compensated by an improved complexion. In Jamaica and British Guiana antimalarial measures have been vigorously and, on the whole, successfully applied; swamps have been filled; mosquito-infested bush has been cut down; quinine has been imported by the Government and sold at cost price on sugar estates and at the post offices, and on many estates distributed free to the labourers; open drains have been cleaned and stocked with fish to eat the larvae; the empty sardine tins and the broken bottles have been buried or removed; water receptacles have been compulsorily screened from infection, and popular lectures, both on mosquitos and the preventive use of quinine, have been delivered by medical officers and others. The results have well repaid the labour. In British Guiana the recorded cases of malarial treatment were, in 1907, 34,000; in 1911 they were 21,000—a reduction of 38 per cent., which appears to be entirely due to the antimalarial measures which have been taken.

Sleeping Sickness.

But undoubtedly the most anxious problem of the present and the future in tropical medicine is that of sleeping sickness. For many years an obscure and happily not common disease, it has become either more patent or more diffused with the spread of commerce and civilization, bringing, as both of them do, a new and unaccustomed mobility to the native populations. For some years it has been known that this disease was endemic in certain lake-side districts, which were the sole and particular haunt of that species of tsetse fly known as *Glossina palpalis*. The habitat was fortunately not widely diffused, and was dependent upon the contiguity of more or less stagnant water. Drastic, costly, and successful methods were adopted for its eradication; the scrub and bush surrounding the Central and East African lakes was cut down or burnt; not only villages, but whole tribes were removed from the area of infection: the sufferers were [illegible], and, if not cured (for that is as yet a rare and very difficult event), were at least prevented from becoming carriers to their fellows or to the fly. All seemed going well, with a hopeful promise of ultimate eradication, when Nature, as if irate at human control, dashed our hopes through the scientific discovery that *Glossina morsitans*, the most common and most pervasive of tsetse flies, was also a carrier of the infection, and many animals, both wild and domestic, have fallen under the almost proved suspicion of being life-hosts of the deadly trypanosome. The realization of this horrible development has given rise to a too previous demand that all the suspect species of mammals should be ruthlessly destroyed. But the time is not yet, for the proof is not sure. Let me at once protest that my hesitation is not in the interest of so-called big game; indeed, it is quite likely that the infection is equally conveyed by small vermin.

It is true that as a naturalist I should be very loth to exterminate a species which can never be restored. Within the memory of living man the Great Auk has ceased to exist, and, still more remarkable, within a decade the passenger pigeon, which used to cover the United States with a migratory cloud, has been wiped out so completely that only one caged and living specimen is believed to exist to-day. But at the same time I would hesitate at no destruction of wild fauna if and when I was convinced that this holocaust was essential to the elimination of disease. In order to be sure of the facts and to secure scientific guidance for future action, however drastic, I have sent to Nyasaland a Commission of highly trained and distinguished men under the direction and personal supervision of Sir David Bruce. I am receiving from them frequent reports; I am watching the almost daily development of their diagnosis, and I shall shrink from no action which may seem to be dictated by the data of ascertained facts. The Commission which the British South Africa Company has sent to Rhodesia is obtaining valuable results which will materially assist the Commissioners in Nyasaland. But many of the empiric cures suggested by those who are not on the spot appear on consideration to be as bad as the disease. To talk of the extermination of the wild fauna of a subcontinent is to talk wild nonsense. The suggestion is only possible from those who take their natural history and their geography from a school atlas. To give the natives power, permission, and material with which to drive back the game from the neighbourhood of their villages is both possible and desirable, but it carries with it in its train certain dangers. The game, if infected (and that is the only reason for their removal), will then carry with them the trypanosome to some now immune area, and if the natural incubator is removed the fly will be more inclined, and compelled to attack both man and his domestic animals. The Acting Principal Medical Officer of Nyasaland, in his report of last year, said:

> The fly has adapted itself to new conditions, and has learnt to make use of man as its ordinary food where game used to supply its needs.

And as a corollary he asks:

> Why this enormous increase in the numbers of fly in districts where game was plentiful but does not now exist?

It is begging the question to say that when game goes *morsitans* goes. That is the specific inquiry upon which the Commission is engaged. In my present belief civilization will best destroy *morsitans*, not by the removal of the wild game, but by the cultivation of the soil. Many additional precautions can be, and are being, taken pending the results of these inquiries. Some native villages are being moved, others are being amalgamated, because flies are more easily kept down in the *ceinture* of a large settlement. Fly-trapping also may usefully be adopted, as its success has been proved in German East Africa; but I would beg the Committee for a moment to believe with me that heroic measures founded on half knowledge are a mischievous form of human folly. With the establishment of civilization and administration inter-tribal communication increases beyond its ancient wont, and the risk of spreading sleeping sickness is enlarged; so, in the tropics at least, the institution of law and order is

not always a blessing in disguise. West Africa has enjoyed throughout its history an evil reputation in matters of health, but I have recently been able to lay before the House a return based upon statistics for the last nine years showing a most marked improvement in the hygienic conditions of that coast. In spite of outbreaks of plague, yellow fever, and other pestilences, the death-rate of European officials in those nine years has fallen from 21 to 13 per 1,000, and the invaliding-rate rate from 56 to 25 per 1,000. This gratifying improvement is progressive, and is doubtless due both to sanitary care and a more careful mode of life by those whose duties compel them to reside there.

Education and Research.

I cannot leave this matter without at least a few words on the subject of the study and pursuit of tropical medicine in this country. We owe a deep debt to the interest in this science of Mr. Joseph Chamberlain. It was largely due to his encouragement and activity that the Liverpool and London Schools of Tropical Medicine have reached their present status and efficiency. These schools render invaluable services to our colonies by the supply of competent and carefully trained students as recruits to our medical staff—of men who have had the opportunity of instruction in the specific diseases of the tropics, with which they will have to deal; and these schools also undertake a large amount of scientific research in tropical medicine, from the results of which we constantly profit. But the London School is much in want of further funds to extend its beneficent operations. I am glad to say we have recently secured a bequest by Lord Wandsworth of £10,000 for medical research, which has been allocated by Sir William Bennett to the provision of scholarships at the London School, but much more is needed, and I warmly commend this institution to the generosity of the public. During the last few years large sums have been spent in Uganda and Nyasaland in the investigation of tropical diseases there, and contributions have been made from Colonial funds to research work in connexion with Malta fever, liver abscess in Fiji, vomiting sickness in Jamaica, pellagra in the West Indies, and many other cognate matters. Permanent research laboratories have been established in the Federated Malay States, Ceylon, British Guiana, the Leeward Islands, and in Southern Nigeria.

In the Colonial Office itself, during the period of which I am speaking, much progress has been made towards a better knowledge and supervision of these subjects. I have now a permanent Committee to advise me on medical and sanitary matters connected with tropical Africa, containing such distinguished men as Sir Patrick Manson, Sir Ronald Ross, Sir James Fowler, Dr. Thomson (of the Local Government Board), and Professor Simpson.

There is also a Committee of Entomological Research, which was at first limited to tropical Africa, but I am now making arrangements by which the self-governing dominions, India, and the Crown Colonies generally, can avail themselves of its services. And last, but not least, there is the Sleeping Sickness Bureau, which I am about to expand into a bureau dealing with tropical diseases generally, whether of men or of animals. In relation to tropical medicine it is impossible not to record the great loss sustained in the recent death of Sir Rubert Boyce, who rendered great services to the West Indies and to West Africa, or to the impending loss we are to suffer in the retirement of Sir Patrick Manson, who has for many years been the guide, philosopher, and friend of the Colonial Office and the Colonial Service. I make no apology for having detained the Committee at this length on the important subject of medicine, even at the cost of some compression of other matters, which I am still anxious to touch upon.

National Insurance Act.

Tuberculosis Cases.

Mr. Guiney asked the Secretary to the Treasury what arrangements had been made for the examination of tuberculous persons in Ireland who would become contributors under the National Insurance Act on July 15th; what arrangements would be made, if any, with the governing bodies of existing sanatoriums as to payment for treatment of insured persons; and would chronic cases of tuberculosis be dealt with under the provisions of the National Insurance Act. Mr. Masterman answered that negotiations were in progress between the Local Government Board for Ireland and the Irish Insurance Commissioners on the one hand and local authorities and the governing bodies of voluntary organizations on the other, as recommended by the Astor Report. Insured persons suffering from tuberculosis would be qualified to receive sanatorium benefit if recommended by their Insurance Committee, whether the case was chronic or not.

Medical Instructions.

Mr. Wilkie asked the Chancellor of the Exchequer whether he was aware that, under the model rules approved by the National Insurance Commission, insured persons would have to comply with the instructions of the medical attendant as a condition of receiving sickness benefit; and whether, in the event of the doctor reporting that an insured person's illness had been occasioned by the condition of his mouth and teeth, and that he required dental treatment, any provision would be made for the insured person to have such dental treatment in the event of his being unable to afford it, and whether his sickness benefit would be stopped in consequence. Mr. Masterman said that instructions of the kind contemplated in the question would not fall within the meaning of the medical instructions which an insured person must obey as a condition of receiving his medical benefit; nor could a society insist upon an insured person providing any particular kind of treatment at his own expense as a condition of receiving benefits.

Sickness Benefit and the N.H. Leaflet.

Mr. Cassel asked whether the Government were prepared to make good the representation contained in the N.H. leaflet that sickness benefit would be paid to working men at 10s. a week for twenty-six weeks, commencing on the fourth day of sickness, and disablement benefit at 5s. a week afterwards if still incapable of work. Mr. Masterman said that the benefits mentioned were the ordinary benefits of the Act. They were paid first from the funds of the approved society and guaranteed by the National Insurance Fund, unless and until a valuation had disclosed a deficiency. These benefits were as stated in the N.H. leaflet, subject to certain waiting periods and other conditions. These conditions were explained in the official leaflets, of which a list was given on the last page of the N.H. leaflet, and of which supplies could be readily obtained from local Customs and Excise officers.

Mr. Cassel asked the Chancellor of the Exchequer if he would explain why, in the N.H. leaflet recently circulated, the benefits were specified without specifying the waiting periods and without any reference to arrears; and whether he would alter the leaflet so as to summarize the provisions as to waiting periods and arrears in the same manner as the provisions as to benefits, so as to prevent false hopes being raised. Mr. Masterman said that it was expressly stated in the N.H. leaflet that the benefits were "subject to certain waiting periods and other conditions." It was not practicable in a leaflet intended to be of a general character to give particulars of all the provisions of the Act affecting insured persons. Such a leaflet was necessarily of limited dimensions, and laid special emphasis upon what knowledge was immediately required. It would be very difficult to summarize in three or four lines the arrears provisions. It would include a full table of the various reductions which had to be made and the different sickness benefits which would then be given, and all the various conditions as to the amount of arrears the insured person was in.

Apportionment of Medical Fees.

Mr. Gretton asked how it was proposed to pay doctors under the National Insurance Act in cases of hotel staffs who moved in different seasons of the year from one hotel to another, and in cases of domestic servants who were in service in Scotland for six months and moved to England for six months in each year; would the doctor in the district where the employed person commenced the year receive the capitation fee for the whole year, or would the fee be apportioned between the doctors in the various

districts where the employed person might reside during the year; and, if the fee was to be apportioned, would any difference be made between the summer and winter seasons? Mr. Masterman replied that the Act gave full power subject to regulations to the Insurance Committees and medical profession in each district to make such detailed arrangements for dealing with matters of the kind referred to in the question as might be found most expedient and agreeable to all concerned. The Insurance Commissioners would facilitate such arrangements as might be necessary for such purposes between the committees of different districts. It was not to be assumed that doctors would necessarily be paid by capitation fee. If locally preferred a system of payment per attendance might be adopted. Regulations would be laid down, and they were now being discussed by the medical representatives on the Advisory Committee in conjunction with the Insurance Commissioners.

Hospital Attendants.

Mr. Butcher asked the Secretary to the Treasury whether attendants and employees on the staff of private hospitals for the care of the insane, who received from their employers full wages and medical care during illness, and who, if they were suffering from an infectious disease, were at the cost of their employers sent to a hospital for treatment, were compelled to become insured persons under the National Insurance Act; and, if so, whether there were any special approved societies which such attendants and employees could join in order to ensure that they got, under the Act or otherwise, benefits proportionate to the contributions made by them and their employers under the Act. Mr. Masterman replied that the attendants and employees in question were compulsorily insurable. If, however, a custom or practice was shown to the satisfaction of the Commissioners to exist in these particular institutions for the persons employed to receive full remuneration during sickness the Commissioners would make a special order reducing the rate of contribution payable by and in respect of these persons in accordance with the terms and conditions of Section 47 of the Act. If adequate provision was also guaranteed by their employers for sickness and for permanent disablement it might also be possible for such persons to come into some scheme for alternative benefits instead of sickness and disablement benefits under Section 13.

Medical and Sanatorium Benefit.

Last week Lord Heneage raised the question in the Lords and specially dwelt on the apparent inability of the Government to fulfil all its engagements under the Act. He specially drew attention to the published leaflets and asked when the Government would be in a position to guarantee the medical and sanatorium benefits promised. They could not be provided unless an agreement was come to with the medical profession, who seemed to get more irritated every day. Lord Liverpool, who replied for the Government, said that, as to medical benefit, the Government gave an absolute assurance of what was promised in the National Health Leaflet. A doctor would be provided, or in special circumstances a money payment made instead. Negotiations were going on with the doctors. They were of a perfectly friendly character. While they were still in progress it would be inexpedient to make any statement at the risk of prejudicing the result. The negotiations were not likely to be long, and the Government hoped that long before January 15th, when the medical benefits were to come into operation, they would have been successfully concluded. If, however, it should prove impossible to make arrangement with the doctors insured persons would receive an equivalent payment of money. If that sum were 6s. a year, which was the calculation upon which the scheme of the Act was based, each insured person for medical treatment per year would receive 2s. 8d. from his own contribution, 2s. from his employer, and 1s. 4d. from the State. For sanatorium benefit there would be no waiting period. There was no reason, however, to anticipate a sudden rush of insured persons in great numbers claiming treatment. Sanatorium benefit did not mean treatment in sanatoriums alone. It included treatment in hospitals, dispensaries, and through other forms of existing agencies; also treatment in the patients' homes. It was not suggested that institutions for treatment would be available by July 15th to the same extent as in the following year. It was obvious that the first step was to find out in what area of the country buildings were chiefly needed. It was not to be expected that institutions would be built at once, but by means of the 1½ millions provided they could be proceeded with as rapidly as those responsible could carry out the work. From July 15th onward a considerable number of insured persons would begin to receive through the assistance of the insurance fund treatment for tuberculosis which they could not otherwise have obtained.

Lord Lansdowne, the Lord Chancellor, and some others also spoke, and then the matter dropped.

Forcible Feeding was made part of the case against the Home Secretary on Friday in last week, when Lord Robert Cecil moved what was practically a vote of censure on Mr. McKenna. In the course of his speech he said that on the simple principle of equality it seemed impossible to justify the detention in the second division of prisoners who had acted under the orders of those three leaders. The result had been that the prisoners had refused food, and had been forcibly fed. He would not contend that in no circumstances was it right forcibly to feed prisoners. He admitted the immense difficulties in which the authorities were placed. It was possible and even probable that those who had to submit to forcible feeding exaggerated the pain and suffering caused by the operation, and were not always quite fair to those who were engaged in carrying it out: but there could be no doubt that the operation involved extreme discomfort, even when it was carried out with the good will of the person subjected to it, and might degenerate into what must be described as torture. He did not think it likely that any man or woman would be found to undergo the suffering which forcible feeding involved unless they had a very strong motive driving them to act as they did. That motive, he thought, was that they felt profoundly that it was a great injustice that they should not receive the same consideration as was shown towards their leaders. Mr. Keir Hardie took the same line, and said the Home Secretary had alleged on more than one occasion that forcible feeding in itself was not necessarily injurious to health. In refutation of this he read from a letter and memorial dated yesterday, sent by Sir Victor Horsley to the Home Secretary, and signed by 117 medical practitioners, strongly protesting against the forcible feeding to which certain prisoners were at present being subjected. They considered that feeding in cases where the operation was resisted by the patient was accompanied by immediate risk to life, in addition to the danger of permanent damage to health both of body and mind. The alternative to forcible feeding was to make them first-class misdemeanants. Mr. McKenna said it was not a pleasant task for any person to be responsible for carrying out the law at the present time when a number of prisoners declined to take their food in the ordinary way, with the result that the prison authorities were forced to the alternative of either feeding them forcibly or ejecting them from prison. He thought they were bound to take one of those courses, and, like his predecessors in office, he had had to come to the conclusion that the proper course for the Home Office to adopt in the public interest was to administer food forcibly to some of these ladies. He could assure the House that that was a conclusion to which he had come with the greatest reluctance. But the main point of the attack had not been concerned with the question of whether these prisoners should or should not be forcibly fed, but that the Home Secretary in the exercise of his office had advised His Majesty to substitute imprisonment in the first division for another division in the case of Mrs. Pankhurst, and Mr. and Mrs. Pethick Lawrence. It was said that the Home Secretary should at the same time have advised His Majesty to make the same substitution in the case of a whole class of offenders. After a long argument on this point Mr. McKenna dealt with many of the cases individually, and justified the action taken by the Home Office. The debate lasted the whole sitting, and on a division the Home Secretary was supported by a majority of 144, the numbers being 69 for the vote of censure and 213 against it.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

SOUTH WALES AND MONMOUTHSHIRE.

THEIR MAJESTIES AT CARDIFF.

THE King and Queen, during their four days' stay at Cardiff, in addition to public functions, paid private visits to two hospitals. The chief object of the King's presence was the laying of the foundation stone of the Welsh National Museum in Cathays Park, and His Majesty promised that he would in due course revisit Cardiff to open the museum when completed.

The King and Queen on June 26th paid a short visit to the Royal Hamadryad Hospital, where the Superintendent, Fleet-Surgeon Whelan, conducted them over the building. On June 28th they visited King Edward VII Hospital, where they were received by the Chairman, General Lee, and the Chairman of the House Committee, Colonel Bruce Vaughan, and were accompanied in an inspection of the new wards by Dr. Herbert Vachell, Mr. Rhys Griffiths, the resident medical officer, and the matron. The King and Queen were much impressed with the beautiful lighting and decoration of these wards, the King remarking that they were far in advance of any that he had seen. He turned to Mr. W. James Thomas, through whose generosity much of the new block has been erected, and warmly complimented him on his valuable work. He also informed Colonel Vaughan that he had heard of the great amount of work that the Colonel has done on the hospital's behalf. Her Majesty was pleased to accept from Mr. Lynn Thomas, C.B., a gold badge of the Glamorgan Branch of the Red Cross Society, and, as Mr. Thomas pinned it to her dress, she promised to wear it as a souvenir of her visit. Many patients were questioned by Their Majesties, one tiny girl causing some amusement by walking up and saying, "How do you do, Queen?" Another small child would not believe that the King was present, in the absence of the crown. Enormous crowds cheered Their Majesties on their arrival and departure.

MANCHESTER.

THE WAREHOUSEMEN AND CLERKS' ASSOCIATION.

AT a special general meeting of the members of the Manchester Warehousemen and Clerks' Provident Association held last week, the schemes advocated by the directors, which were rejected at the annual meeting in March, were presented in an amended form and adopted. One of the schemes is of interest to medical men, as it deals with members receiving a salary of over £160 a year and employed persons who for any reason cannot participate in the Insurance Act. At present all the members of the association receive medical attendance free from part-time medical officers appointed by the association; these number something like a hundred, and receive 4s. a year for each member on their list, each doctor having a district allotted to him. There have been frequent complaints that members in receipt of as much as £500 or even more a year have used the services of the club doctors, while the low-waged workmen in warehouses are definitely excluded from joining the association. It has been decided that the association shall seek to become an approved society under the Act, when those of its members who were eligible would receive medical attendance through the insurance in some way. For those not eligible for the national insurance, either because they are in receipt of over £160 a year or for any other reason, the present contract system for medical attendance is to be abolished, and they will be allowed to go to any doctor they like, the association paying for medical attendance and medicine any sum not exceeding 3s. 6d. a visit. Under the scheme no extra contribution is to be required from these members. A considerable amount of opposition to this scheme was raised in the meeting, one member complaining that it gave the well-to-do members a preference over the poorer members, inasmuch as the richer members could choose their own doctor, while, he continued, "we poorer ones have to go one behind the other and wait. I can see a poor member going to the appointed doctor at midnight to tell him 'My wife has got pneumonia,' and the doctor replying, 'All right, I'll come in the morning.' Doctors have had a bit of their own way in the past, but now it is time patients had theirs. Both are dependent upon one another, and the one cannot exist without the other." It is evident from these remarks that the members of the association lay great store on free choice of doctor, but it would seem that they think that those members who come under the Insurance Act will only be entitled to medical attendance from specially appointed doctors. The idea apparently is that the medical benefit scheme of the Act will not be worked by the doctors, and that the association will then appoint its own doctors to attend the insured members of the association, while the non-insured members will be free to choose their own doctor. The fact that the present contribution of the non-insured members is not to be raised, and yet fees up to 3s. 6d. per attendance are to be paid to any doctor chosen by these members, rather points to an idea in the minds of the directors that the cost to the association of medical attendance will not be more, or at any rate not appreciably more, than the 4s. a year per member which is the cost at present. The opposition to the scheme evidently arose from the fear that the cost would be considerably more, and that in consequence the whole association would suffer, including the insured members, who would not have the advantage thus accorded to the well-to-do non-insured members. The Chairman put the scheme to the vote amid great opposition, but it was declared to have been carried.

THE ST. MARY'S HOSPITALS, MANCHESTER.

The financial position of the St. Mary's Hospitals continues to give cause for some anxiety to the board of management, as is evident from the report presented to the annual meeting of subscribers held on June 25th, at which the Lord Mayor of Manchester presided. The new building was occupied in April, 1911, by the opening of the children's ward with twenty-five beds, and in July the gynaecological department was opened with accommodation for 85 cases. The Whitworth Street hospital has been reorganized, fifty beds being now used for maternity cases, and accommodation being provided for eleven medical students and twenty-eight midwifery pupils, and as this branch is conveniently situated the out-patient department is retained here, the High Street hospital being better suited for patients that need a longer stay. The number of patients treated during the year was 19,305, and the cost of maintaining the various branches amounted to £11,915, apart from the special expenditure of £3,588 for alterations and refurnishing at the Whitworth Street branch. The opening of the new hospital has caused an increase of £2,253 in upkeep. The total income for the year was £9,640, so that there was a deficit in the income and expenditure account of £2,275. The Women's Guild had been able to collect more than 200,000 pennies from the working classes, and the increase in subscriptions amounted to about £2,000, the total amount received in donations being £40,743. The total received from the patients was £537, which is, roughly, about 6d. from each patient. On the motion of the Lord Mayor, the report was adopted, and Bishop Welldon, in supporting it, said that no one wanted the hospitals to go on the rates, but unless they were better supported by private individuals there would be no alternative. The thanks of the meeting were voted to the board of management, the honorary medical staff, and the ladies' committee for their valuable services during the year, and also to the Lord Mayor for presiding at the meeting.

LONDON.

PROPOSED CONFERENCE ON SANATORIUM BENEFIT.

AT a meeting of the Lambeth Borough Council on June 27th, a report was presented by the Public Health Committee with reference to the parliamentary grants for sanatoriums and tuberculosis dispensaries. A letter was read from the Hampstead Borough Council, stating that this authority was strongly of opinion that in London the provision of tuberculosis dispensaries should be undertaken by the borough councils either singly or in groups. The Holborn Borough Council, in a letter, suggested that a conference of the metropolitan borough councils should be called to discuss the whole question, as it would be of

advantage to secure uniformity of action. The Lambeth Borough Council decided to support the proposal to call a conference, and appointed delegates to attend.

METROPOLITAN CORONERS' DISTRICTS.

The London County Council, on October 11th, 1910 (BRITISH MEDICAL JOURNAL, vol. ii, p. 1180), presented a petition praying that the King would sanction (1) the transfer of the boroughs of Paddington and St. Marylebone from the central to the western coroner's district; (2) the transfer of the parish of St. Luke, Finsbury, from the north-eastern to the central coroner's district; and (3) the adjustment, where necessary, of the boundaries of the various coroners' districts so that they should coincide with the boundaries of the metropolitan boroughs. The Order in Council giving effect to these proposals having now been issued, the Council, on July 2nd, formally assigned the districts as altered as follows: Eastern district, Mr. Wynne Edwin Baxter; north-eastern, Dr. W. Wynn Westcott; central, Mr. Walter Schröder; western, Mr. C. Luxmoore Drew; southern, Mr. George Perceval Wyatt; south-western, Mr. Samuel Ingleby Oddie; south-eastern, Mr. H. R. Oswald. Mr. S. Ingleby Oddie and Mr. C. Luxmoore Drew have appointed Dr. R. Henslowe Wellington and Mr. Arthur D. Cowburn, respectively, as their deputies.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

CONSUMPTION SANATORIUM.

THE Women's National Health Association has acquired the house and estate of Peamount, for the purpose of a sanatorium for tuberculous patients. Acting on behalf of and by request of, such county councils as have already applied, or shall hereafter apply, for their assistance in the matter, pending the time when the county councils are able to take over the work, the association will provide accommodation for persons entitled to sanatorium benefit under the Insurance Act. A grant has been authorized by the Local Government Board for this purpose, with the approval of the Treasury and the concurrence of the Irish National Health Insurance Commissioners. The site is on a slight hill, with the ground sloping in all directions from the house. Though only about eleven miles from Dublin, and about two miles from Lucan station on the Great Southern and Western Railway, yet it is well isolated. The agricultural and farming operations on the estate will give facilities for what is now recognized as part of the remedial treatment for consumption. The existing house is to be used as an administrative building, patients being accommodated in suitable structures which will be erected in close proximity to it as speedily as possible.

MILK SUPPLY OF BELFAST.

The Local Government Board Inspectors, Mr. F. J. MacCarthy and Dr. Brian O'Brien, held an inquiry at the City Hall, Belfast, on June 25th and following days, in reference to the application of the Corporation for an order giving powers to inspect dairies situate outside Belfast County Borough from which milk is supplied to the city. The Corporation suggested that the order should apply to some eighteen rural districts. The application was made under the 19th Section of the Tuberculosis Prevention (Ireland) Act, 1908. The town solicitor said that the daily milk supply to Belfast was about 18,000 gallons, of which 12,000 gallons came from outside dairies; there was evidence that some epidemics were due to this outside milk, and that no serious attempt had been made to carry out the provisions of the Dairies, Cowsheds, and Milkshops Order. It was proposed, if the order was obtained, to warn the inhabitants of the source of their milk supply, and to make representations to the various rural district councils.

Councillor Dr. R. Thomson, J.P., Chairman of the Public Health Committee since May, 1910, said that in 1907 the committee had given instructions to the inspectors to visit and examine cowsheds and dairies in the country sending milk to Belfast; many of the reports received showed that the various arrangements were not sanitary. Objections were raised to these inspections, and in 1909, in consequence of the reports regarding the insanitary condition of two outside district dairies and of the presence of typhoid in these districts, and the outbreak of typhoid fever in the Springfield Road district of Belfast supplied by these dairies, it was resolved to apply for an order under the Act, but owing to the representations of a Local Government Board inspector that the time was inopportune, action was postponed. In 1911 a deputation was sent to the Local Government Board to explain the position. All the committee desired was from time to time to obtain information as to the purity of the milk supply to the city, and the conditions under which it was supplied.

Professor Symmers, Queen's University, was examined as to the samples of milk sent to him for examination.

Dr. Bailie, Medical Superintendent Officer of Health for Belfast, gave evidence of the condition of numerous cowsheds and dairies that he had inspected: for two years he had had considerable difficulty with town dairies, but now they were in a much better condition. He had no doubt that the power of inspection would eventually bring about an improvement in the country dairies.

The inquiry was not concluded.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

GLASGOW OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

ON Friday, June 28th, Professor Whitridge Williams, of Baltimore, delivered an address as Honorary President of the society. Taking as his subject the pernicious vomiting of pregnancy, he grouped the cases into two categories, neurotic and toxaemic, the group of reflex cases, formerly separated, now falling into the first category. The cases could be distinguished by the urinary nitrogen analysis, the percentage of ammonia remaining normal under 5 per cent. in the neurotic group, and rising in the toxaemic cases to 15, 20, or even 40 per cent. The neurotic cases could be absolutely cured by suggestion, the patient being told with confidence that she would get well, and that she need not vomit unless she cared to. The high ammoniarate in the toxaemic cases might be complicated by the effects of starvation or of acidosis, and the latter made chloroform a dangerous anaesthetic in these cases. The treatment in the toxaemic cases included saline infusion and, if need be, operative termination of the pregnancy. In the evening the members dined together under the presidency of Dr. A. W. Russell. The main toasts were proposed by the President, Sir George T. Beatson, and Dr. T. K. Monro.

CALEDONIAN MEDICAL SOCIETY.

The thirty-second annual meeting of the Caledonian Medical Society was held at Stonehaven on June 22nd. This society meets alternately in Scotland and England, and this year Stonehaven was chosen as the meeting place, owing to the present head of the society being Dr. W. A. Macnaughton, Medical Officer of Health for Kincardineshire, who has had the unique distinction of occupying the presidential chair twice the last time twenty years ago. The subject of the president's address was "The Life and Correspondence of Mr. James Grant, Factor of Pitarrow," who combined the businesses of a factor and a smuggler in the picturesque times of the '45. Dr. M. Cameron Blair, Northern Nigeria, was elected president for next year, when the annual meeting is to be held in London. A presentation was made to Dr. Macnaughton by the older members of the society of a fur motor coat and some works of Celtic literature, in recognition of the valuable work he has done for the society since its inception. In the evening the annual dinner was held in the Bay Hotel, when the chair was occupied by Dr. W. A. Macnaughton. Including guests, there were forty present, and among those who proposed or responded to toasts were Emeritus Professor J. G. McKendrick, Provost of Stonehaven; Professor Matthew Hay, Aberdeen; Rev. J. B. Burnett, Stonehaven; Dr. Miller, Fort William; Dr. Waters, Hull; Dr. Gilles, London; Dr. Rorie, Cults; Dr. Greenlees, London, and others.

COMPULSORY NOTIFICATION OF PULMONARY CONSUMPTION.

Regulations have been issued by the Local Government Board providing for the compulsory notification, as from

August 1st next, of cases of pulmonary tuberculosis in Scotland. Since the issue of its first circular on this subject on March 10th, 1906, the Board has been gratified by the action taken by so many local authorities in extending the provisions of the Infectious Disease (Notification) Act, 1889, to this disease. The experience gained in this way has proved that the difficulties anticipated in connexion with the notification of pulmonary tuberculosis do not occur in actual practice. It is now recognized that as an indispensable preliminary to effective and complete preventive measures against the disease, local authorities should have accurate information of the cases existing within their districts. The Board is accordingly satisfied that the time has come when the notification of the disease should be compulsory throughout Scotland.

The regulations made by the Board in the exercise of its powers under the Public Health (Scotland) Act, 1897, provide that every medical practitioner attending on or called in to visit any person shall, within forty-eight hours after first becoming aware that such person is suffering from pulmonary tuberculosis, notify the case to the medical officer of health of the district in which the person is residing, and that every medical practitioner who is a school medical officer shall within the same period notify cases of children whom he has examined by virtue of his appointment to the medical officer of health of the district in which the school is situated. Such notification is not required in the case of any person suffering from pulmonary tuberculosis who is receiving treatment as an in-patient in a sanatorium, or other hospital or institution in which special provision is made for such treatment. Further, a medical practitioner or school medical officer is not required to notify any case of pulmonary tuberculosis which has already, to his knowledge, been notified. The local authority of the district within which the patient is residing must pay the medical practitioner two shillings and sixpence in respect of each notification, but in the case of the school medical officer no fee is payable.

Nothing in the regulations shall have effect so as to require a notification to be transmitted to a medical officer of health in respect of any building, ship, vessel, boat, tent, van, shed, or similar structure belonging to His Majesty the King.

Under Article III (2) a school medical officer is required to notify all cases of pulmonary tuberculosis occurring among children inspected by him. In many cases it will be practicable for the medical officer of health to acquaint the school medical officer with the names of children coming from houses in which cases of pulmonary phthisis have been notified.

Correspondence.

APPENDICITIS AND QUICKNESS.

SIR,—In his first letter Sir George Beatson, writing on "the question of early operation in every case of acute appendicitis," told us that if the operation were done "within twelve hours of the onset of the attack he had no fault to find with that line of action," but in his second letter he says such "line of action" is "unwise." In his next letter he will tell us that it is unwise to operate at any time during the attack, and that all cases must wait—that is, if they live to wait—until an interval operation is performed.

In my last letter I pointed out how impossible it is to tell what is the condition of the appendix in any acute attack—how dangerous its condition may be—and therefore that it is always safer to remove it at once. Mr. Paterson, Mr. Childe, and Dr. Hobhouse all point out the same very important fact in their letters. But I did not for a moment imagine that any surgeon deliberately intended to leave an appendix abscess, without dealing with it by operation, in the expectation that in time he would be able with greater safety to do so, because he considered the pus would thus become much less virulent, and this is the reason given by Sir George Beatson for not operating early in the lecture to which he refers. The risks of such an abscess in the early stage are considerable. All of us who have had much experience have seen lives lost from such abscesses bursting into the peritoneal cavity, and other lives lost from pylephlebitis associated with them, and deaths from septicaemia, with perhaps extensive erosion of the tissues of the iliac fossa and loin, due to the digestive character of the pus, which remained intensely virulent, and fatal cases of mechanical obstruction, due to kinking of coils of small intestine forming the abscess wall. Mr. Makins, in *Burghard's Manual of Operative Surgery*, refers to 59 appendix abscesses, and in connexion with which in no less than 22 cases serious complications were present. In 5 intestinal obstruction, in 6 faecal fistula, in 2 spontaneous opening into the bladder, in 1 into the ureter, in 3 subdiaphragmatic abscess, in 3 empyema, in 1 cerebral abscess, and in 1 pulmonary abscess; 7, or 13.4 per cent., died.

And even if no disaster occurs before the abscess has reached a large size and has approached the anterior abdominal wall, so that the surgeon can cut straight into it without entering the peritoneal cavity—a condition which Sir George Beatson seems to consider desirable (See Lecture, *Lancet*, May 11th, 1912)—we may in opening such an abscess rupture it into the peritoneal cavity, and cause the death of the patient. This has once happened to me, and Murphy of Chicago records two cases under his care. In my own case I had done my best to persuade the patient to allow me to operate at an earlier date, but he would not consent. If now I have to deal with such an advanced abscess I first open the peritoneal cavity and pack it off before I cut into the abscess sac, to make quite sure no leakage occurs into the peritoneum. A few months ago I found pus leaking into the peritoneum from a large appendix abscess as soon as I opened the peritoneal cavity.

I should like to ask Sir George Beatson what evidence he has that pus shut up in an appendix abscess becomes so much less virulent, and that the subsidence of pyrexia and raised pulse-rate and leucocytosis, as he explains in his lecture, indicate this? We all know that in some cases the temperature may drop to normal, and pulse-rate may never have been much raised, and yet when an obvious swelling forms, and is operated on within a few days of the onset of the disease, a considerable collection of pus may be found: are we to imagine that at this early period the pus has lost its virulence? We must also recognize that leucocytosis is not present in every case of even localized suppuration, and therefore that because a leucocytosis persists up to a certain date in the attack, its disappearance is not proof that the pus has become less virulent. Does Sir George Beatson think there is reason to conclude that when leucocytosis ceases no further pus is formed in these cases? I should consider that was very doubtful. We do not yet know why in some cases of localized suppuration there is no leucocytosis, and therefore we are not able to say that it may not disappear also in a certain number of cases, even though the quantity of pus is still increasing, and the pus is still virulent.

It seems to me, then, that in many cases pus which has been walled-in for some time may be very virulent indeed, and as capable of doing harm if it gets into the general peritoneal cavity as it would be if the abscess had been dealt with at an earlier—and, to my mind, safer—period; but, as I said in my first letter, it is very rare to infect the general peritoneal cavity in evacuating an appendix abscess when we operate before the abscess is very large with all the special precautions we take, and in operating on more than 100 cases of appendix abscess I have only twice had evidence that such infection did occur. In one of these it was no more than might lead to protective adhesions in the track of the drainage tube, and in the other very little more, and not enough to be the cause of death. I have several times when operating in acute appendicitis found collections of pus around the appendix which were not walled in at all, but simply confined by the pressure of surrounding coils of distended intestine, and it seems hardly possible to imagine a greater danger than leaving such a collection without operation.

I have not recently come to the conclusion that the safe and wise course is to operate at once on all cases of acute appendicitis, for I have advocated this for the last sixteen years or more, and I discussed the matter very fully in a paper published in the *Bristol Medico-Chirurgical Journal* in 1905. I am sure we all must congratulate Sir George Beatson on his small mortality (even though, as Mr. Paterson estimates, it is about 55 per cent. in the acute

cases), but I think it must be mere fortunate coincidence if he generally leaves the abscess cases for late operation, for in the 59 cases referred to by Mr. Makins, no less than 7 died from complications of such abscesses. I cannot believe that abstinence from operation in an early stage of appendix abscess will give such a small mortality as Sir George Beatson has had in his acute cases, and I cannot help feeling there must be some other factor which has led to his success, which I do not understand, and which perhaps he has not himself correctly estimated, which may account for it.—I am etc.,

Bristol, June 23rd. CHARLES A. MORTON.

FRECKLING AND VISION.

SIR,—With a view to avoiding freckling, I think it would be worth while trying the effect of protecting the eyes by means of coloured glasses or goggles, apart from the protection of the skin from direct and reflected rays. This idea has been suggested to me by the recent work on vision and coloration by Sumner in the States and by a paper of Loeb's on the mechanism of vision, which have been summarized by Dr. Georges Bohn.[1] As far as the mechanism of vision is concerned, Bohn states that images of external objects are formed, not only on the retina, but also on an area of the surface of the cerebrum—the *area striata*. Further, it would appear—in fish, at any rate—that the cerebral visual images are conveyed to the skin. Sumner has been able to reproduce fairly complicated designs on the skin of fishes—the turbot, for instance—by mapping them out on the floor of an aquarium. A black and white chessboard design has thus been reproduced on the skin of a turbot. The reproduction in the fish is not strictly geometrical, but it has been found that the smaller the squares the more accurately is the design reproduced. In the same way circles, and parallel and cross-hatched black and white lines have been reproduced. Results are obtained with black, white, brown, and greys, but not with red and yellow. When the fish is blinded a reproduction of the designs cannot be obtained.

Loeb admits the conveyance of an image in the first place to the brain and thence to the skin. He maps out the path of this transference, for if the optic fibres connecting the retina with the brain and sympathetic fibres from the brain to the skin and pigment cells are divided, nothing happens. The foregoing I am taking from Dr. Bohn's account. But I would point out that *a priori* there is nothing startling in the occurrence of such transference of images when it is borne in mind that the skin and the nervous system are intimately connected and are indeed developed from the same embryonic layer. I have on many occasions insisted on this intimate connexion, but it is not my intention to go into various details of great interest on this point. I want merely to call attention to the possibility of the prevention of freckling, to some extent at least, by the use of coloured goggles. Perhaps if one could cut off some of the actinic rays in this way a result might be obtained. It would not be practical to wear such deeply coloured glasses as those used for ultra-violet and Finsen-light work.

The above ideas may, perhaps, account for some cases of freckling in which the pigmentation is not limited to the exposed parts of the body, but also affects covered and protected parts—that is, by the action of actinic rays on the retinae setting up disturbances in the pigment cells of the skin.

Other factors are no doubt at work. Things are usually not so simple as they appear to be, and Remy de Gourmont put it very well when he said that "Pour expliquer un brin de paille il faudrait démonter l'univers."

Again, coloured glasses might be of use in that rare condition, xeroderma pigmentosum.—I am, etc.,

London, W., June 19th. GEORGE PERNET, M.D.

ARTERIO-SCLEROSIS IN RELATION TO BLOOD PRESSURE.

SIR,—In the BRITISH MEDICAL JOURNAL for June 15th, Dr. R. Thorne Thorne mentions a case in regard to which he makes the somewhat bold statement that it "conclusively proves that the mercury manometer does give a true reading of the arterial blood pressure, quite apart from any local thickening of the brachial artery."

[1] *Mercure de France*, June 1st, 1912, p. 508.

In reality the case which Dr. Thorne cites proves nothing of the kind, and would be actually hard to reconcile with the theory (which, by the way, I disproved in a paper read before the Royal Society of Medicine three years ago) that the mercury manometer (by the method of circular compression) gives a true reading of arterial blood pressure, and is unaffected by the resistance of the arterial wall at the site of compression.

The high reading of 220 mm. in Dr. Thorne's case was probably not solely or even chiefly due to blood pressure, but was the resultant of blood pressure *plus* resistance of the arterial wall, the latter being due to spasm of the muscular coat; and the marked fall of the reading to 120 mm. resulting from Dr. Thorne's therapeutic measures was caused in great part by the relaxation of the spasm and the coincident diminution in resistance of the arterial wall, whereas the actual change of arterial blood pressure was but a small part of the difference between the two readings.

I have notes before me of the case of a man with marked atheroma of superficial arteries in whom I took simultaneous arm and leg readings (both limbs being at the level of the heart). On one occasion the arm reading was 179 and the leg one 176 mm., so that the two were practically identical; whereas a few minutes later the arm reading was 170 and the leg one 219 mm., a difference of 49 mm. If Dr. Thorne had taken successive leg readings in this case he would doubtless have arrived at the erroneous conclusion that there was a rise of pressure of upwards of 40 mm., whereas my results can only be explained by assuming an increased resistance due to arterial spasm of the wall of the leg artery.

That arteries, such as the radial, do vary in size as the result of treatment I have more than once directly observed. I have treated cases, in which the radials have been tightly contracted up, by potassium iodide or guipsine, and have noticed after some days' treatment a distinct softening and increase in size of the artery.

I am unable to agree with Dr. Thorne when he states "if a local arterial thickening will affect the reading of the pressure as given by the mercury manometer, then the latter instrument becomes practically useless to the clinician." Although the manometer reading is influenced by the two factors to which I have alluded, yet its use combined with the examination of the pulse by the trained finger (a method too apt to be neglected in these days of instrumental diagnosis) gives information of real value.—I am, etc.,

London, W., June 20th. OLIVER K. WILLIAMSON.

TINCTURE OF DIGITALIS—ITS POTENCY.

SIR,—In common with Dr. Frederick W. Price, I am astonished that Dr. Alexander Goodall should have found such variation in the potency of tinctures made by chemists of repute. Ten years ago one might have expected to find great variations, but within the past five years so much care has been taken in the preparation of tinctures of the digitalis group that my experience coincides with that of Dr. Price, and I am sure that the variation in potency in tinctures made in the Leeds area by good pharmacists does not exceed 10 per cent. Dr. Goodall tells us that of twenty three tinctures examined by him in the three years ending December, 1911, only twelve were up to the average, while six were under, and, instead of a maximum dose of 15 minims, 18, 20, 22½, 22½, 22½, and 25 minims would be necessary. Five were over average, and the maximum dose would need to be reduced to 4, 7½, 8, 9, and 10 minims respectively.

One would like to know what Dr. Goodall regards as the end point in his experiments on frogs. Must the frogs be quite limp, the peripheral circulation stopped, and all three heart chambers still within the four hours with the 3 minim dose for the 20 gram frog? I ask this because one may find a frog active or with the circulation in the web active, and yet the ventricle is still in systole when the chest is opened.

I am in agreement when he says a standard preparation of tincture of digitalis remains active for twelve months, but cannot be relied upon for a longer period. This I have proved both clinically and experimentally on frogs.—I am, etc.,

Leeds, June 29th. J. GORDON SHARP.

THE PROBLEMS OF ASTHMA.

Sir,—In the review entitled, "The Problems of Asthma" (British Medical Journal, April 27th) it is stated that the pathology of the disease as I had traced it appeared altogether inadequate to explain the attacks described by Brügelmann. On referring to Dr. Brügelmann's treatise (fifth edition, 1910) I found that he described cases which he attributed to a "spasm of the pharyngeal tonsil" (page 13), whatever that may be; and as I had started by defining those on which I commented, it is manifestly unfair to tax me with failure of accounting for a process of which I did not treat at all. I may add that the majority of the patients who came under my notice had previously undergone surgical operations upon the nose or the throat, and had at the time no longer any pharyngeal tonsils.—I am, etc.,

London, W., June 27th. J. B. Berkart.

FORCIBLE FEEDING.

Sir,—I agree with the writers of the letter in the British Medical Journal of June 29th (p. 1516): "It is time that the medical profession, in its corporate capacity, made a protest against the forcible feeding of suffragist and other prisoners." The point at issue between the Home Secretary and the suffrage prisoners concerns their status. They demand recognition as "political offenders." Mr. McKenna persists in treating them as common criminals, although he has admitted the principle underlying their demand by giving first division treatment to the suffrage leaders. The women have refused their consent to imprisonment under degrading conditions, and have adopted the "hunger strike." The reason they do not take their food is political, not pathological, and the appropriate treatment is statesmanship, not a stomach tube. The dilemma of the Home Secretary affords no reason why medical practitioners should depart from accepted rules of conduct and perform unnecessary operations under dangerous conditions. The Home Secretary has ordered forcible feeding. He has instructed medical men to perform operations on patients who resist on principle.

Does the profession accept this position in relation to the Home Secretary? Is it justifiable to perform an operation, however slight, for any reason except the surgical need of the patient?

Your correspondents say: "To us the duty of the gaol surgeon seems clear—to allow the patient to go without food, and in the event of serious symptoms arising to acquaint the superior authorities of the fact."

If the Home Secretary wishes to punish troublesome prisoners, let him find other agents than members of the medical profession. It is misleading to describe as "medical treatment" an operation, surgically unnecessary, performed by physical violence on a resisting patient. Even if the operation were free from risk it would, under such circumstances, be indefensible from a medical standpoint and an outrage from a human one, but artificial feeding under the most favourable circumstances is not devoid of danger when continued for any length of time, and under prison conditions the risk is greatly increased. Abrasions of the mucous membrane occur; the avoidance of septic infection must be difficult or impossible, owing to the struggle, the absence of skilled assistance and hospital equipment, while the passage of food into the lungs or heart failure may cause the death of a patient who is held by force and who resists to the utmost of her power. Sequelae include permanent digestive disturbance from chronic dilatation of the stomach and interference with its secretory and motor functions. Forcible feeding of sane people who resist on principle is altogether different from artificial feeding in hospital or asylum practice, where the patient is either willing to co-operate with the surgeon or, usually, unconscious.

The position of the prison doctors is admittedly difficult. They are Government officials, and they are also members of a profession whose status depends on its maintaining moral independence and on the fact that scientific considerations alone direct treatment.—I am, etc.,

L. Garrett Anderson, M.D., B.S.Lond.

London, W., July 2nd.

Public Health
AND
POOR LAW MEDICAL SERVICES.

POOR LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

The annual general meeting of this association took place at the Council House, Bristol, on June 25th, Surgeon-General Evatt, C.B., was in the chair.

Council's Report: Election of Officers.

The report of the council for the last year, which had been sent to every member through the *Poor Law Medical Officer*, was received and adopted, and likewise the balance sheet, after a few criticisms from Dr. Holder and an explanation of the increased expenditure by the president, and the treasurer, Dr. Napper.

The following officers and council were unanimously elected for 1912–13:

President, Surgeon-General Evatt, C.B.; *Chairman of Council*, Mr. D. B. Balding, F.R.C.S., J.P.; *Treasurer*, Dr. A. Napper; *Honorary Secretary*, Dr. Major Greenwood; *Auditor*, Dr. A. Withers Green. *Council*, Dr. T. Lloyd Brown, Dr. W. Holder, J.P.; Dr. George Jackson, J.P. (Plymouth); Dr. T. Carey Barlow (London); Dr. J. B. Gidley-Moore (Ongar), Dr. A. Withers Green, Dr. W. Brown, Dr. C. Biddle (Merthyr Tydfil), Dr. A. Drury (Halifax), and Dr. C. Thackray Parsons (Fulham).

Poor Law Medical Service as Affected by the National Insurance Act.

Mr. J. J. Simpson, Clerk to the Bristol Board of Guardians, who read a paper on this subject, said that he had been thirty-seven years engaged in Poor Law work, and for thirty-five years had been actively connected with matters relating to the organization of Poor Law officers. The Poor Law medical and general service had hitherto been responsible for the care and maintenance and, in a large number of cases, the treatment and training of some 895,000 poor in England and Wales. Of these roughly 300,000 were in workhouses, infirmaries, homes, and other institutions, 95,000 were lunatics in asylums, and 500,000 were out-door poor who received aid in their own homes. Dividing these in another way, the total number of ordinary adults would be 540,000, children 260,000, and lunatics 95,000. Only a small proportion of women would be assisted in any way by the Insurance Act, and very few of the children, and those only indirectly where they were chargeable because of their parents' illness. Besides the aged and permanently afflicted classes and widows and deserted women and their children, practically all that remained were the unemployed and unemployable, who would not in any way participate in the undoubted benefits which the Act would provide for the artisan and all classes of workers. It might be that in process of time a number of aged men and women might be provided for under the disablement clauses of the Act, but it was quite obvious that none of these now receiving relief or requiring relief within the next few years could secure any of the benefits provided under the Act. There were many things that might interfere with the full enjoyment of the benefit or with its adequacy in preventing need for Poor Law assistance. To begin with, there must be an absolute incapacity for work. If the disabled person was not able to take care of himself and had no friends who would look after him, and in consequence had to enter a workhouse or infirmary or other institution, the payment ceased, except in a few cases. In no case could the guardians obtain any payment. Further, if the disabled person received 5s. a week, was married, and his wife was not able to maintain herself, or if there were children dependent, it would certainly be necessary to resort to the Poor Law for assistance, and should out relief be given the Act provided that benefit up to 5s. weekly was not to be taken into account by the guardians in fixing the relief. The man and wife and family would therefore have to be granted nearly as much relief as at present. The number of aged men relieved, now some 155,000, might in process of time be somewhat reduced. In the case of married couples, where the man had been an employed contributor, he alone was entitled to medical treatment, etc. Probably a fair proportion of the sick men and women, who numbered 50,000, relieved both in the infirmaries and workhouses, and in their own homes (about 31,000 men and 19,000 women) would be under the Insurance Act in future, and would therefore come off the Poor Law. Men who could be treated in their own

homes, and who were of the regularly-employed class should not need much Poor Law assistance, unless their families were very large, as the men would be entitled to medical attendance and medicines and the sick benefit of 10s. a week for twenty-six weeks. This class would not be all covered, because where the sickness was severe, or where much attention and care were required, it would be impossible to procure this at home, and the medical practitioner required to deal with the case and supply medical treatment could not be expected to act as medical attendant and nurse, and in many cases removal to the hospital or infirmary would be essential. Arrears would prevent some portion of all classes from receiving the benefits specified in the Act, and they would continue to be provided by the Poor Law. The able-bodied and healthy men and women, numbering some 30,000, were nearly all of the casually employed class, and like the 10,000 tramps, would not derive benefit. The remaining classes were the widows and their families, deserted women and families, women whose husbands were at sea, or in hospitals, asylums, or prisons, and orphan children, and single women with illegitimate children. The total number of these various classes was some 50,000 in workhouses or other institutions, and about 150,000 receiving out relief, or boarding-out allowances, and a small proportion only would be entitled to the medical, or sickness, or disablement benefits. In the case of sanatorium benefit the number to be helped would not be a large proportion of the Poor Law cases: all help of this kind was to be given apart from Poor Law institutions. As to sick benefit and disablement benefit, it was doubtful if much appreciable diminution would be apparent in the burden of the Poor Law. The maternity benefit should undoubtedly reduce the demands on the guardians. In conclusion it might be noted that the freedom of choice given to each insured person as regards the medical practitioner to attend might have some influence and in time affect Poor Law methods.

Difficulties in the Practice of the Poor Law Medical Officer.

Dr. C. E. S. Flemming (Bradford-on-Avon), in a paper on this subject, drew attention to the various unfavourable conditions under which most Poor Law medical officers were required to work. The method of payment was unsatisfactory, as it did not even bear that ratio to possible attendance that capitation payment did. The amount of payment was also notoriously insufficient. In regard to drugs, the salary of the Poor Law medical officer restricted the use of expensive ones. As to stimulants and food, it was sometimes difficult to procure more than just sufficient to satisfy the consciences of the guardians, but not the needs of Nature. In that direction there might well be considerable improvement. More assistance and skilled nursing were wanted in the treatment of the sick and infirm. Better surroundings for the patients were needed—comfort, cleanliness, warmth, air, and sunshine. There should be some authority to see that these things were provided. Prevention was better than cure, but where prevention had been neglected the State should give the best attention to the poor whose health gave way.

A discussion then took place on both papers.

Dr. Major Greenwood said that they were all much indebted to Mr. Simpson for his able and instructive paper. It was evidently Mr. Simpson's opinion that very little immediate change in the Poor Law Service would be brought about by the Act. This would be lessened if, as was very likely, the medical benefit was abolished. Dr. Flemming had given a very interesting account of much with which every Poor Law medical officer was only too familiar. He agreed with him as to the inefficacy of much of the drug treatment in Poor Law medical practice, and considered one of the greatest defects of the Insurance Act was that it tended to multiply outside the Poor Law much of the drug treatment Dr. Flemming condemned. Care was necessary, as all Poor Law administrators knew well, that Poor Law relief should not be given too freely and too easily.

Dr. Parkinson (Wimborne) spoke of the value of a knowledge of the conditions of the district and place, where applicants for relief resided. Bad housing was complained of, but bad habits of the people were worse.

Dr. Holder (Hull) urged that medical men should go on councils and boards of guardians, the lay members of which were anxious to accept and act on their advice. He thought it possible that the Insurance Act would lessen the number of cases. It would reform the poverty of the nation, and compel those that received benefits partly to pay for them. The contributions of the State would prevent among the poor things going to the pawnshop, and homes being thereby impoverished. The Act must insure the reorganization of the payment of Poor Law medical officers. It would relieve them of some of their work: it saved them from attendance on tuberculosis cases, and would allow a fair amount of time to be given to diagnosis.

On the Necessity of Union among all Medical Officers holding Part-time Appointments.

Dr. Parkinson, in opening a discussion on the subject, said that it was absolutely necessary that general practitioners holding all sorts of appointments should combine to protect themselves from the assault made upon them. There was a danger of part-time men being altogether superseded by whole-time men. He suggested that the several sectional associations of medical men should join together and appoint a committee to decide upon joint action to protect their interests when any section was assailed.

Dr. Major Greenwood said that the tendency to which Dr. Parkinson had drawn attention was detrimental to all general practitioners, and was often bad for the public. The part-time offices enabled practitioners to make a living in districts where otherwise the sparsely scattered population would have no doctor. He moved:

> That this meeting of the Poor Law Medical Officers' Association of England and Wales is in favour of a closer union between all associations of part-time medical officers, and instructs the Council to do all in its power to favour that union.

Dr. Balding (Royston), who seconded, said that good results would certainly attend such a project as that suggested by Dr. Parkinson.

Dr. Macartney (Cinderford) objected to multiplying associations. They had the British Medical Association, which ought to be enough for all they desired.

Dr. Holder pointed out that that no new association was contemplated.

Dr. Major Greenwood, in emphasizing that point, said that no one had more respect for the British Medical Association than he, but it did not understand the interests of part-time men. A union of all part-time medical officers would act as a watch dog on that Association.

Dr. Napper (Cranleigh) strongly supported the proposal.

The resolution was carried almost unanimously.

The proceedings closed with a vote of thanks to the Chairman, and Dr. W. Brown, for the admirable way he had organized the meeting.

Civic Welcome.

The members present were then entertained to tea by the Lord Mayor, who expressed his satisfaction in welcoming the association at Bristol, and his sympathy with their work under so many difficulties.

Dr. Balding and Dr. Skelton briefly acknowledged the courtesy shown by the Lord Mayor.

Annual Dinner.

The annual dinner took place at the Royal Hotel, Bristol, at 7.30 p.m. Among the guests were Mr. H. T. Bolt, President of the Bristol Chamber of Commerce; Alderman G. Pearson, Mr. Holms Gore, Clerk to the Justices; Mr. J. T. Francombe, Chairman of the Bristol Board of Guardians; Mr. Byrt, Vice-Chairman; Mr. J. J. Simpson, Clerk to the Bristol Guardians; Mr. J. A. Coles, Assistant Clerk; and Mr. Seymour Williams, Clerk to the Walmley Guardians.

After the royal toast, Mr. Francombe proposed that of "The Poor Law Medical Officers' Association." He said that Bristol had been specially honoured that week; that morning it had received a visit from the Poor Law chaplains, and now was honoured by the Poor Law medical officers. He did not know which were the better, but did know which were the most carefully listened to. What the doctor said was law in the house. While the medical profession was highly appreciated, nobody appreciated it at its full value.

Dr. Major Greenwood, in responding, said that he desired to express their thanks for the reception given them by the Lord Mayor, and to the Bristol Corporation for allowing them the use of their Council House. The present was a most critical time for the profession, and difficulties had arisen with the Insurance Commissioners which did not seem likely to be surmounted. One great object of their meeting in provincial centres was to rouse their somewhat lethargic brethren there. Self-help was the best help. If they wanted help from the Association, they must help the Association by joining it. The British Medical Association justly claimed that it had within its ranks more than one-half the practitioners of Great

Britain. He was living in hope that a day might come when the Poor Law Medical Officers' Association would embrace more than one-half the Poor Law medical officers in England and Wales.

The toast of "The City and Corporation of Bristol," proposed by the Chairman, was acknowledged by Alderman George Pearson and Mr. W. H. T. Bolt, who said that the doctor was deserving of a fair remuneration, and he believed that if they stuck out they would get it.

Dr. Holder proposed "The Readers of the Papers." He eulogized Dr. Flemming's paper, and spoke of the gratitude and kindly feelings that Poor Law medical officers aroused in the hearts of the poor: it was some compensation for the injustice they often received from other sources. Mr. J. J. Simpson replied, and expressed his appreciation of the attention with which his somewhat technical paper was received.

Dr. Withers Green proposed "The President," who, having expressed his thanks, concluded by proposing the health of Dr. W. Brown, who had so successfully organized their dinner. This was drunk with musical honours.

THE SALARIES OF MEDICAL OFFICERS OF HEALTH.

The council of the Urban District of Bilston, Staffordshire, on June 27th again had under consideration the question of its medical officer's salary, and this time very nearly determined to fall in with the views of the Local Government Board and of many of the ratepayers. In other words the council only rejected by one vote a motion in the form of an amendment which, if accepted, would have committed the council to adding to that salary an amount proportionate to the increase in the medical officer's duties during the past fifteen years. The council was supplied with figures showing that many towns in the neighbourhood were paying proportionately much higher sums to their medical officers, and one councillor summed up the whole situation by suggesting that if the medical officer fifteen years ago was worth £100 per annum, it went without saying that his services must be worth much more to-day. As it happens, the force of such an argument was in the very week of that meeting recognized in a locality not very far from Bilston by the council of the Bucklow Rural District (which has an area containing a population of some 22,000 against Bilston's 25,000) raising its medical officer's salary to £205. This officer, Dr. T. W. H. Garstang, happens to have been appointed much about the same time as Dr. Bailey at Bilston, and his latest increase is the second granted in the course of his tenure of office. It was accorded almost without a dissentient voice on the ground that since he took up office his duties had been materially increased by the same causes as those operative at Bilston.

INFECTIOUS DISEASE IN FLATS.

Hygeia.—Most medical officers of health would urge the removal to an isolation hospital of a child living in a flat which was one of a dozen in the same block. In the event of such a child not being removed, the parents would be advised to keep visitors from the flat, and to see that other persons in the flat did not visit, or mix with any other people. It would hardly appear necessary, however, for the children living in the uninfected flats in the block to be taken away on the off-chance of their meeting inmates of the infected flat while passing through the entrance hall which is common to all the flats.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Degrees.

The following candidates have been approved at the examinations indicated:

First M.B. *Organic Chemistry:* E. Barrard, C. J. A. Buckell, W. S. Dawson, H. K. Denham, H. S. Jeffries, R. S. MacIver, K. A. I. Mackenzie, J. C. Paterson, N. L. Watt, J. F. West. *Human Anatomy and Human Physiology:* H. E. Bamber, G. K. [illegible] S. W. Burridge, W. H. Butcher, G. K. Cowie, R. J. W. A. Cushing, S. C. Dyke, G. T. Gimlette, T. E. Micklem, O. G. Parry-Jones, F. G. L. Scott, H. St. Hill Vertue, B. E. Wall, A. L. Watt, D. M. P. Whitcombe, J. B. Cavenagh.

Second M.B.—*Materia Medica and Pharmacology:* J. D. Bate, G. W. Carte, J. C. Davis, P. G. Doyne, E. W. N. Hobhouse, J. Salmabury, G. P. Selby. *Pathology:* P. G. Doyne, R. C. Fairlamb, A. L. Pearce Gould, D. H. L. Hallett, N. F. Hallows, E. A. Hampton, M. O. Raven, T. O. Thompson, R. F. Venables, [illegible] *Public Health:* F. W. Browne, D. H. L. Hallett, N. F. Hallows, W. L. Hart, V. Jackson, H. G. Morris, E. A. Ramsden, J. Salmabury, E. Scott, G. Stanger, [illegible] L. Birley, A. [illegible] S. B. [illegible]

D.M.—*Part I:* R. S. Agarwal, R. Donald, K. P. Mather, A. H. Tebbutt. *Parts I and II:* L. E. Acomb, W. A. Berry, F. G. Caley, H. K. Fry, L. P. Johnson. *Part II:* W. F. Rhodes, W. P. Watson.

UNIVERSITY OF CAMBRIDGE.

Prizes.

The Raymond Horton-Smith Prize for 1912 has been awarded to V. J. Woolley for a thesis for a degree of the Doctor of Medicine; proximè accessit, Alfred E. Barclay.

Appointment.

Dr. Barclay-Smith has been reappointed University Lecturer in Advanced Human Anatomy.

UNIVERSITY OF LONDON.

Meeting of the Senate.

Meetings of the Senate were held on May 30th and June 12th.

Site for the University.

It was resolved that a committee, consisting of thirteen members, in addition to the official members, be appointed to consider and report on the question of an adequate site for the head quarters of the university, and generally on the question of accommodation from the point of view of the development of the university as a whole, with power to communicate with persons and bodies at their discretion.

Election of Vice-Chancellor.

At the meeting on June 12th Dr. W. P. Herringham, F.R.C.P., was elected Vice-Chancellor for the year 1912, in succession to Sir William Collins, M.D., M.S., and a vote of thanks was accorded to Sir William Collins for the services he had rendered the university during his tenure of office.

Appointment of Representatives.

The following appointments of representatives at the functions indicated were announced:

Royal Sanitary Institute Congress at York: Dr. E. C. Seaton.
Lister Memorial Committee: Sir Alfred Gould, K.C.V.O.
International Congress of Americanists: Dr. C. G. Seligmann.

Boards of Examiners for Internal Students.

Professor W. D. Halliburton, F.R.S., and Professor C. G. Barkla, D.Sc., M.A., have been added to the Board of Examiners in Psychology for the B.Sc., Honours Examination.

University Medal.

The university medal at the M.B., B.S. Examination, May, 1912, has been awarded to Mr. Philip Henry Mitchener, of St. Thomas's Hospital.

UNIVERSITY OF DURHAM.

Degrees.

The following were among the degrees and diplomas conferred at a meeting of Convocation on June 25th:

M.D.—Helen G. Clark, S. F. St.D. Green, D. M. Johnstone, C. G. Kemp, C. F. M. Saint.

M.D. (*for Practitioners of Fifteen Years' Standing*).—W. J. M. Barry, Lilian V. Cooper, C. Corben, A. E. Dodson, E. G. Gibbs-Smith, H. E. Goulden, C. G. Higginson, R. H. King, J. C. McWalter, R. Odell, E. A. B. Poole, J. R. Russell.

M.S.—C. F. M. Saint.

M.B.—J. B. Alderson, Evelyn A. Constable, N. Hodgson, H. L. James, J. Kerr, F. J. Lidderdale, L. G. Pearson, F. Phillips, T. C. Storey, C. J. V. Swahnberg, S. K. Young.

B.S.—O. E. D. Airth, R. G. Badenoch, Evelyn A. Constable, R. C. H. Francis, N. Hodgson, H. L. James, J. Kerr, F. J. Lidderdale, F. Phillips, T. C. Storey, S. K. Young.

D.P.H.—G. B. Harland, W. Mackenzie.

Examinations.

The following candidates have been approved at the examinations indicated:

Second M.B. (*Anatomy and Physiology*).—*H. Evers, J. F. C. Braine, C. C. H. Cull, H. G. B. Dove, Ethne Haigh, R. A. Hooper, Ah Chit Jap, E. Ek Dun Lau, J. E. Measham, C. W. Morris, J. D. Proud, D. O. Richards, H. G. Sparrow, E. J. Tyrrell, H. Williamson.

* Second class honours.

First M.B. (*Elementary Anatomy and Biology, Chemistry and Physics*).—*J. Gilmour, N. Braithwaite, H. C. Broadhurst, W. J. Hooper, G. N. Metzger, R. R. Scott.

Chemistry and Physics.—J. Brumwell, Dorothy E. Butcher, G. A. Clark, R. N. Craig, Mary R. Campbell, W. A. Hewitson, J. Horsley, R. Hunter, J. K. R. Lauderdale, Phyllis Marriott, R. S. Millar, G. F. Philip, W. O. F. Sinclair, K. I. Shalaby.

Elementary Anatomy and Biology.—Stephanie P. L. H. Daniel, C. T. Helsham, D. Heneghan, P. Hickey, R. B. Pirrie, W. A. Tweddle.

* First class honours.

UNIVERSITY OF BIRMINGHAM.

The following candidates have been approved in the examinations indicated:

Final M.B., Ch.B.—G. H. Alabaster, G. E. Elkington, *J. B. Lowe, Violet M. McCready, C. L. Spackman, R. J. T. Thornhill, A. A. Wilkinson.

* Awarded an Ingleby Scholarship of £10 on examination in Midwifery and Diseases of Women.

UNIVERSITY OF DUBLIN.

THE following were among the degrees conferred at a meeting of the Senate on June 29th:

M.D. (*Honoris Causâ*).—G. L. Gubbins.

M.B.—G. Boxwell, A. Chance, F. S. Crean, F. Crosbie, T. G. Hardiman, G. F. C. Healy, C. Kelly, M. M'Knight, M. S. Moore, R. W. Murphy, H. J. Smyly, B. Solomons.

M.B., Ch.B., B.A.O.—O. V. Burgows, A. Chance, J. Colgan, F. S. Crean, H. H. Counihan, R. A. F. Hood, J. H. Grove-White, H. P. Harpur, J. T. D. Higgins, R. Johnson, R. H. C. Lyons, Dorothy K. Milne, A. C. Redelinghuys, R. E. Tottenham, H. G. Trayer.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examination indicated:

THIRD COLLEGE.—R. J. Brookes, R. A. Austin, H. A. S. Deane, G. S. Douglas, J. Lanigan, F. B. McTavish, J. J. O'Connell, H. O'Donoghue, J. J. Reynolds, M. Shipsey, F. M. Taylor.

Passed with honours.

Obituary.

THE LATE DR. C. G. KNIGHT.—Dr. J. S. Prowse (Manchester) writes with reference to Dr. C. G. Knight, whose death through a bicycle accident was mentioned last week, as follows: After starting in practice at Chorlton about two years ago, Dr. Knight became a regular attendant at the meetings of the Manchester (West) Division, and soon took office as Assistant Honorary Secretary. His genuine modesty, frank geniality, and willingness to work, rapidly won for him the respect and affection of those with whom he came into contact. His election, only three weeks ago, to the Senior Honorary Secretaryship was an expression of this general good feeling, and of the trust in him engendered by his loyal co-operation with his colleagues and quiet enthusiasm in the work which has occupied the Division during the troublous times of the past twelve months. As Secretary to the local Provisional Medical Committee he had lately made strenuous efforts to secure a complete response to the appeal for pledges and guarantees. Quiet and retiring in disposition, he yet formed strong convictions, and was well able to uphold them in argument. I have always been impressed by his freedom from bias and his absolute fairness to others. He had in him the promise of a successful career, both as a general practitioner and as a worker in the Division for the good of the medical body. He was a fine example of the best type of young doctors. It is to men of like character to his that we look for carrying on the hard spadework necessary, especially in these critical times, for entrenching and safeguarding the best traditions of the profession. If the backbone of the Association is formed of such men, we need not fear for its future.

Medical News.

AT a meeting of the Society for the Study of Inebriety, at 4 p.m. on Tuesday next at the house of the Medical Society of London, Chandos Street, London, W., the President, Mrs. Mary Scharlieb, M.D., M.S., will give a short address. Afterwards Dr. T. B. Hyslop will deliver a lecture on inebriety and art, illustrated by the epidiascope.

A SPECIAL meeting of the Ophthalmological Society of the United Kingdom will be held on Thursday next at the house of the Medical Society of London at 5 p.m., to consider the question of the amalgamation of the society with the Royal Society of Medicine. An ordinary meeting will be held at 8 p.m., and subsequently the annual general meeting.

THE annual meeting of Fellows of the Royal Society of Medicine was held on July 1st, when the following officers were elected for the session 1912: *President*, Sir Francis H. Champneys, Bart., M.D.; *Honorary Treasurers*, Sir William S. Church, Bart., Sir Henry Morris, Bart.; *Honorary Librarians*, Sir Rickman J. Godlee, Bart., Dr. Norman Moore; *Honorary Secretaries*, Mr. Herbert S. Pendlebury, F.R.C.S., Dr. E. Farquhar Buzzard.

AT the annual meeting of the Society for the Prevention and Cure of Consumption in the County of Durham, on June 29th, the services of its founder and present chairman, Dr. William Robinson, were recognized by the presentation to him of a silver salver. The presentation was made on behalf of workmen and of the governors of the society by Dr. Hubbersty of Sunderland, who said that it was in the course of an address delivered as President of the North of England Branch of the British Medical Association that Dr. Robinson had first put forward the suggestion for the foundation of the society and the establishment of Sanhope Sanatorium. It was opened in May, 1900, and at first had only 12 beds, but since then the accommodation had been raised to 45 beds, and a second sanatorium, one for women and containing 30 beds, has been provided.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on June 21st, Dr. F. J. Allan in the chair. The accounts presented showed the business of the society to be steadily growing, a considerable addition to the funds having been made since the beginning of the year. A cordial vote of thanks was unanimously passed to Dr. F. de Havilland Hall, F.R.C.P., the retiring chairman, now president, for the valuable services he has rendered to the society during the many years he has been connected with it, and in recognition of Dr. Hall's work it was agreed to present a substantial sum to Epsom College as a permanent record of his services. The society now has a large number of votes in Epsom College, and these are given only to members of the Medical Sickness Society or their relatives. Prospectuses and all further particulars of the society on application to Mr. Bertram Sutton, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, W.C.

THE Biennial Health Conference and Exhibition, held in co-operation with the National Health Society, was opened by the Mayor of Westminster on June 24th at the Horticultural Hall, Vincent Square, and lasted until the following Thursday, June 27th. Amongst those present at the opening ceremony were Professor H. R. Kenwood, Mr. H. W. Arnit, Muriel Viscountess Helmsley, and Miss Haldane. As usual, the exhibition contained a large variety of novel and ingenious appliances intended both to lessen the risks of infection and to promote a better observation and understanding of the laws of health. A model disinfectant cupboard, a patent "recumbent invalid lifter," and a street fountain constructed in such a fashion that the most fertile source of infection, the common cup, is rendered unnecessary, were amongst a few of the most noticeable inventions; whilst useful lessons were to be learnt from the lifelike models of good and bad larders, and the exposition of the "filtered-air" system of blinds and ventilators, in which a piece of muslin is stretched across the opening to absorb impurities contained in the air passing in at an open window. Demonstrations of Swedish gymnastics, ju-jitsu, and physical drill were given daily in the hall, and a series of interesting conferences was held in connexion with the exhibition at the London County Council Technical Institute next door.

UNTIL recent years attempts to solve the problem of intemperance could be divided into the repressive and the "free trade in liquor" of trade advocates. The Public House Trust, founded by Earl Grey, has struck out in another direction, and already controls over two hundred and ninety houses, in which non-alcoholic refreshments can be as easily obtained as alcoholic liquors. In a preface to the last report of the Home Counties Public House Trust, Limited, Earl Grey states that the object of the trust is to manage the houses in such a way as would tend by slow and sure degrees to change the tastes and habits of the customers from fuddling their brains and deadening their bodies and impairing their health by alcoholic potations to other tastes more conducive to health and happiness. The managers have no incentive to push the sale of alcoholic drink, for they earn a commission only on the sale of non-alcoholic refreshments. It is stated that in some of the houses 70 per cent. of the trade is in non-alcoholic commodities; and at the Lightship Inn, Beckton, 89,700 meals were served in a twelvemonth. Persons known to be habitual drunkards are refused admittance, whether drunk or sober. Everything is done to make the houses cheerful and as little as possible like the secluded drinking den calling itself a "public" house. Bright pictures hang on the walls instead of brewer's showcards; games and music deter the customers from "boozing," and do not lead to gambling, whilst those in search of food need not go through the rooms or passages where alcohol is sold. Earl Grey says it pays to substitute good food for alcoholic drinks, and if the provision of such houses, managed on such lines, can keep the consumption of alcohol within the bounds of abstemiousness, the days of the too numerous licensed houses, which are neither more nor less than drinking shops, should be numbered.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

DR. STANLEY CARPENTER, 13, Abinger Road, Deptford, S.E., desires to find a home for a medical man incapacitated by chronic malaria who could not pay more than £2 5s. per week.

VENETIAN FEVER.

M. writes: A lady, who six weeks ago stayed fourteen days in Venice, was bitten by mosquitos during the first week of her stay, and during the second week had an evening temperature of 102°, and profuse sweats. She has now been at home for a month, and has had quinine, at first in 5-grain doses four times a day, later in one dose of 15 grains before the temperature went up. She still has an evening temperature of 100° and night sweats. No other cause can be found. No malarial parasite has been found in her blood. Any information as to the nature, cause, or treatment of Venetian fever would be gratefully received.

INCOME TAX.

MEMO, having made his income tax return for the year 1911–12 on the average profits of the three preceding years, subsequently obtained three appointments in the course of the year 1911–12, for which further separate assessments have been made. He wishes to know the proper basis of assessment in such a case.

If "Memo" elects to have his salaries and fees from appointments assessed under Schedule D as part of his professional profits there should, under the arrangement made by the Board of Inland Revenue, be no separate assessment on the receipts from the appointments. The addition of the appointments should be treated precisely as an access of new patients would be, that is, the fees should not affect the current year's liability, but should go to swell the average profits taken as the basis of future charges. If our correspondent wishes to keep his appointments distinct from his general practice for income tax purposes, the proper basis of assessment of the profits of the appointments under Schedule E for the year 1911–12 will be the amount of fees receivable prior to April 5th, 1912.

ANSWERS.

DR. JOS. P. BOLTON (Nottingham) writes: "Arthritis" should search for any source of toxic absorption, especially in mouth, nose, and abdomen. For treatment, salicylate passed in at the negative pole of a continuous current battery, or high-frequency current massage.

DR. BRIDGE writes: In reply to "Arthritis" I can quote my own case, which was one of osteo-arthritis of metatarso-phalangeal joints in both feet. Acting under the advice of Sir William Bennett, I practically cured myself by ionic treatment. Although possibly not strictly of traumatic origin, my troubles were caused by badly fitting boots—that is, there was no rheumatic, gouty, or other taint.

LETTERS, NOTES, ETC.

MEDICAL BARONETS.

DR. CLIFFINGDALE writes: In the JOURNAL for May 25th you were so good as to publish a list, compiled by myself, of Medical Baronets, 1645–1911. I suppose that in such a list, the first, I think, of its kind, mistakes, either of admission or omission, are inevitable. I regret to find the list I refer to contains several such mistakes—some slight, others serious. I shall be glad, therefore, if you will allow me to publish the following corrections, for which I have to thank Dr. R. H. Popham Baker, Dr. James Cameron, Mr. Alban Doran, Sir Dyce Duckworth, Mr. McAdam Eccles, and Lieutenant-Colonel Younge.

(1) Sir George Baker's baronetcy was incorrectly stated to be merged in that of Rhodes. There is no Rhodes baronetcy. The fourth holder of the title adopted the name of Rhodes; consequently, under that name the dignity now exists.

(2) Sir Ernest Burrows is not the *second*, but the *third* baronet of his line.

(3) Sir James Clark's name was spelt not with *e* but with *k* as the terminal letter.

(4) Sir Richard Croft's distinguished patient was *daughter*, not *wife*, of the Prince Regent.

(5) Sir Henry Halford's inherited estate was *Wistow*, not *Winstow*.

(6) Sir James Hay's baronetcy was conferred by *James VI*, not by *James IV*, of Scotland. The error was not the printer's, as suggested by Dr. Cameron, but my own.

(7) Sir James McGrigor's baronetcy is not extinct, as stated, but is held by the head of the distinguished banking firm of Sir C. R. McGrigor and Co., as pointed out by Colonel Younge, who also points out that the first syllable of the patronymic is not *Mac*, but *Mc*.

(8) Sir William Osler's son and heir was born, not in *1900*, but in *1896*.

(9) Sir Hugh Smithson, the "Apothecary-Duke," was not himself a grantee, but a descendant of the grantee, of a baronetcy. His name should, therefore, be transferred from the list of those who acquired to the list of those who inherited the distinction. With regard to his peerage, Cockayne, Clarenceux King of Arms, states that Smithson became Earl of Northumberland, February 7th, 1749; acquired by Act of Parliament the right to the name and arms of Percy, April 12th, 1750; and was created Duke of Northumberland, October 22nd, 1766.

CONUNDRUMS OF DIAGNOSIS.

THE account given of themselves even by intelligent patients is often, as we all know, very puzzling, though it should not be too lightly put aside. An uneducated patient's letter may in itself be a problem which tasks the diagnostic ingenuity of the doctor. We have before us several specimens which have been kindly sent by various readers. One, addressed "To the Doctor," is to the following effect: "Dear Sir, I cant tell you my spaint because I cannot talk plainly. My first pain is went I eat something my bally begines to heir me. I have got very pain in my blally. I care eat nothing because I have got no appertice. My stomach dont boils and it burns me." The man was suffering from indigestion and bad teeth. Another letter, which comes to us from South Africa, runs as follows: "Doctor, Dear Sir, please me so kind I am very sick. I have no money you must give me big bottle. I am very sorry you know for me. I am know it is a post sick fifa. I am very glad my master please me so kind your money I paid for this week is come. I am very poor in the ground. The money I am got it is the halferown my chest is very sick. Please my muster to help for me I am a poor man in the ground you must give me hard pain. I stop now." From this cryptic epistle the unfortunate doctor was expected to make a diagnosis. The faith in the "big bottle" and the insistence on his inability to pay show that our black brother is very like the ordinary white patient. A third letter is from a Kafir, who describes his troubles as follows: "Dear Sir, I trust you will forgive me for trespassing upon your valuable interval will you please sir give me medicine I am sick today the sick commenced to the midnight time. The parts of my sickness which is happened to me my head is sick and plate I mean the end of my tongue in my mouth also cancelling sickness. I have three parts in my body which is not quite convinced and my ears are pain at end of it. The end of it very enthusiasm comes hot breath like the wind of the west that Carbonic Acid Gas just like so sir." The sentence in which the writer says he has three parts in his body which are not quite convinced seems to suggest an imperfect belief in Christian Science. The description of the "enthusiasm" which seems to be the climax of the attack is almost poetical in its vividness. Our correspondents ask for suggestions as to diagnosis and treatment.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed other in initials or numbers.

Presidential Addresses

TO THE

BRANCHES OF THE BRITISH MEDICAL ASSOCIATION.

METROPOLITAN COUNTIES BRANCH.

THE STATE, THE POOR, AND OUR PROFESSION.

By G. E. HASLIP, M.D.Brux., M.R.C.S.,

President of the Metropolitan Counties Branch.

I MUST first thank you most sincerely for the honour you have done me in electing me your President. I can only assure you I will endeavour to follow the example given me by my worthy predecessors in this office, and I know I shall receive from you all every assistance and consideration that I may be able to do my duty in maintaining the dignity of this important Branch of the Association. I should be wanting in respect to two men, who have passed the Rubicon to the Great Unknown since our last annual meeting, if I did not refer to the universal loss by the death of Lord Lister, a great man, the pioneer of a great work, a benefactor to the whole of mankind, the man who has made modern surgery possible; and I also refer to one who was not only respected as a great surgeon, but who had been a great worker in our Association, and a good friend. There is no doubt our late President, Sir Henry Butlin, could be ill spared when he died this year. There was a general feeling that he was wanted in the crisis of our profession, for he was a true fighter, when he knew that justice and right were on his side.

The events of the past year cannot be ignored in any address now given, and I think our profession must be thankful that we made an attempt in 1903 to obtain some combined organization amongst ourselves in the form of a new constitution of the Association. I purposely use the word "attempt" because those who have worked under the present form of the administration fully recognize that our new constitution is far from perfect. Government by our Divisions has failed in many parts to appeal to some individual members; consequently, the Representative Meeting has not always received the confidence of the whole members of the Association.

It must be remembered in any union of men that the active workers consist of 10 per cent., or at the most 20 per cent., of the whole membership. The government of the Association is, therefore, carried on by a minority, who formulate the policy to be pursued. When that policy is successful no one troubles—the passive members remain quiet and peaceful; but when an emergency arises and failure, or even the suspicion of failure, takes the place of success, then you will find a revolt against the executive. This is seen constantly in the various disputes of trade unions, where a ballot often shows the voting against the executive of the union, and although I do not pretend to suggest that anything could possibly alter this feeling, yet I think that we should ask ourselves whether we cannot increase the number of members who will really take an active interest in the work of the Association.

One of my worthy predecessors, Sir Victor Horsley, in his address four years ago, described, with his usual clearness and lucidity, the Divisional atomic autonomy of our Association, and proved unquestionably the advantage of the present system over the old, but I really think that, with the increase of serious questions now developing on the medical-political horizon, we should consider whether the number of atoms (Divisions) forming the molecules—in other words, the Branches of our Association—should not have greater powers extended to them for their own peculiar areas. Advantage has recently been taken of this idea in the work of the Insurance Committee of our Branch, instigated by Dr. Buttar, in which an endeavour has been made to suggest to the Divisions in the metropolitan area the advantages of a united line of action with regard to the National Insurance Act. Whether any further advantage could be taken of this, so that certain resolutions of single Divisions should receive the sanction of the Branch before they are passed to the Representative Meeting, and so lead to a reduction in the number of the numerous resolutions on its agenda, should be considered. It is becoming a serious question whether we are not giving this present machine of the Representative Meeting more than it can carry—whether this meeting can really give the full consideration and attention to some of the questions now asked. Last year, owing to the exceptional crisis in our profession, four Representative Meetings were held within twelve months, and Representative Meetings are expensive luxuries. They cost money and time, and many members ask whether the meetings are really able to deal with all the various questions that are brought before them. Think, again, of the time which is asked from individual members when attending these meetings! A busy man might consent to attend for one or two days and vote upon all questions of policy, but will refuse three or four days' attendance, when he knows he has to listen to a local grievance of one Division, which could have been settled in a Branch Council meeting.

It has also been seriously questioned whether the one centre of the Association must not have recognized branches with paid officials throughout the kingdom to carry out its proper organization, and so perhaps lead to more of a local federation of the Branches; whether more frequent meetings could thus be held at less expense where greater local knowledge would enable the wants of a special Division to be judged. How is it possible for any one in this Branch to have any knowledge enabling it to judge the wants of a Division in Scotland? Finally, there is the necessity for greater facility for a referendum upon the main question of policy of the Association. Personally, I feel sure that had the Council taken a referendum upon a clear definite policy with regard to the acceptance or not of the Insurance Act, it would have given greater confidence to all members, and those who have been against the Act in any form would have been more satisfied. The extraordinary outburst of feeling last December, which some have attributed to every possible cause, was, I believe, due to the awakening of these passive members who had been disfranchised by our rules and regulations, because they do not trouble, or they are not able, to attend the meetings of their Divisions. These questions must be considered, because we have demonstrated our power of organization to the public, and our Association is now recognized as the voice of the profession.

Have we, as a profession, any reason to be grateful for anything in the past that the State has done for us? Has the State assisted our education? Has the State assisted our teachers by founding professorships, to be independent of petty routine work? Until quite recently has the State assisted to carry out original research? Science has generally had to depend upon private support. Lister's discoveries were made, in the first instance, during the spare moments of his other work. Until the last two years did the State endow or build any institution to assist medical teaching? At the present time, I believe, the University of London—if it is ever built—will be built by voluntary contributions. Again, in our degrees and diplomas there is no definite State control. In England there are eleven universities and three medical corporations, in Scotland four universities and three medical corporations, and in Ireland five universities and three corporations, all of which grant degrees and diplomas. Speaking briefly, the whole business is disjointed and without proper central organization; each university and corporation competing against each other with regard to the character of the degree or diploma, the only control being the General Medical Council, the majority of whose members consist of representatives of the various universities and corporations.

We have long agitated in this Association that there should be one State examination before any one is allowed to practise, whether he holds the highest degree or the lowest qualification. We require a one-portal system, one proper constituted body created by the State, to give the final test and examination before any one can practise medicine. We are only asking for that which is recognized in other countries as the hall-mark qualification of the State. The Association has already had drafted and printed a Medical Act Amendment Bill, at a cost of some hundreds of pounds, but I am afraid the last few years

have seen very little progress towards its becoming law.

Further, we consider that the State, having once granted this qualification, should consider it necessary to protect those who have been proved proficient to practise, and should prevent the wholesale selling of quack medicines, and the advertisements of institutes and of all characters of wonderful cures which delude the public; for in this wholesale selling of quack medicines we have a real grievance which Mr. Henry Sewill has ably ventilated. The Council of our Association has also appreciated this injustice when it published *Secret Remedies* with the analyses of the various remedies, and showed that anything could be sold, from simple sugar to the most injurious drug; that the Government stamp is the most expensive item for the proprietor to expend upon his wonderful remedy; that the revenue by stamp duty to the Government is between £300,000 and £400,000 a year, a fact to be remembered when we know that the Government has appointed a Select Commission upon the sale of patent remedies. Alas! Commissions generally lead to nothing, but the fact remains that the price paid by the public for patent medicines sold yearly in the United Kingdom is estimated to be over £2,500,000.

However, all these grievances are well known, and it is not my intention to deal with these injustices, but to bring to your earnest attention the extraordinary changes which are taking place in our relation to the State and to the poor with regard to our professional work and duties.

When in 1905 we read that the late King Edward was pleased to issue a Royal Commission to inquire into the working of the laws relating to the relief of poor patients in the United Kingdom, and to report and consider any changes necessary, we in our profession welcomed the Commission, and anticipated that there would be at last some alteration in our present unsatisfactory system of not only Poor Law administration, but of the unfair and unequal medical treatment of the poor. When after four years the Commission issued the two reports, we hoped that some alteration would take place, and consequently we have been grievously disappointed that the whole question has been postponed: that the present system of medical treatment continues; and that no attempt has been made to assist those who require assistance. Instead the Government brought forward the Insurance Bill, which has since passed into law, and our disappointment was increased when we discovered that, instead of the wonderful health bill which we had hoped would have been built up upon the Majority or Minority Report of the Royal Commission of 1905, and which would have been of truly British origin, the Insurance Act of 1911 bears the well-marked stamp of "Made in Germany."

I have no desire to speak against the object of national insurance, although I must admit there are two distinct sides to this question, for it has been found that compulsory national insurance in Germany has not had a tendency to decrease the sickness-rate, and I believe the sickness-rates of the friendly societies go steadily up, notwithstanding that the death-rate is falling among the members of friendly societies as among the population at large, while writers upon this subject have shown that the sickness-rate—that is, the sick pay drawn—is greater in the centralized national societies, where the members feel they are drawing upon the public purse, and is least in the local lodges and branches of the great orders, in which the local members know that they have jointly to bear the burden. At our last Representative Meeting, one of the Representatives for Edinburgh stated that since the Workmen's Compensation Act had been enforced, the wards of the Edinburgh Infirmary always contained three times as many cases of hysteria and traumatic neurasthenia as before the introduction of this Act. We must, therefore, recognize this peculiar psychological fact.

The Government, in introducing the National Insurance Act to the public in its present form and condition, have attempted to build a house the wrong way; they have started with the roof before providing either a foundation or walls for the Act to rest upon. Our conditions with regard to medical relief differ totally from those of Germany, which took years to develop its insurance scheme, founded upon a basis of State medical service and State and municipal hospitals. Our Government has attempted a somewhat similar scheme, in as many months, upon the basis of nothing except the voluntary medical charities and its own failure as to Poor Law medical relief.

The Chancellor has created his Insurance Act upon our present bad system of "club" practice, and, although he has condemned, in strong language, this practice, yet he has followed the mischievous principle of badly-paid contract work, and finished by giving the majority of the number on the local Insurance Committee to the friendly society members. He should have inquired into the origin of "club practice." The *Lancet's* "Battle of the Clubs" would have shown him that clubs were originally started to afford sick pay and medical attendance to the class immediately above paupers—artisans, labourers, etc. The contributions were arranged so as to provide the doctor something, perhaps, taking an average half of what he would have charged. The clubs have since been extended to a higher class which could and ought to pay better fees. But the contributions are inadequate to pay for modern medical attendance, involving bacteriological investigations of secretions, serum-therapy, and surgical treatment. We know that club fees are so low that medical men cannot do justice to their patients.

I protest most strongly against the National Insurance Act being called a National Health Bill. It was introduced amid the greatest applause, being hailed as the greatest National Health Act of the age. Not only was our own generation to benefit, but future generations would be so improved that disease would become accident. It made special arrangements for tuberculosis—a special amount of money to be spent upon sanatoriums, although authorities state the sum is quite inadequate; we had special maternity benefits, and all promised well, but when we inquired and wanted to read about the other great scourge to humanity, not only to the original sufferer but to his children, what provision do we find for syphilis and venereal diseases? None! Our legislators appear afraid of the disease. Even the word is not mentioned in the Act, and when we read Clause 14, paragraph 4, these words:

> Where under any such rule as aforesaid payment of sickness or disablement benefit is suspended on the ground that the disease or disablement has been caused by the misconduct of the person claiming the benefit, such person shall not thereby become disentitled to medical benefit.

This is a most iniquitous clause. It is cruel, it is wrong, and it stultifies the Act as a national health measure. The ravages of venereal disease now go almost entirely untreated either by the public health or Poor Law medical service, with the exception that the advanced complicated cases enter the workhouse. Yet it is known that, owing to lack of adequate medical treatment, syphilis and gonorrhœa are eventually responsible for a large proportion of the pauperism of disease and insanity.

Dr. Mott, Pathologist to the London County Council, in his reports, expressed the opinion that syphilis is responsible for more insanity than alcoholism, and that it is the cause of practically all the general paralysis of the insane and locomotor ataxy. The Departmental Committee on Physical Degeneration reports that it leads to insanity, idiocy, and other diseases. What will happen under this Act, which takes from a man suffering from a contagious disease all payment of sickness or disablement benefits? It means that the sufferer will do nothing, and doing nothing in these cases means that he will allow the disease to obtain greater hold upon his constitution, and, alas! also seriously affect the future generation.

We know that the ravages of this contagious disease are multiplied, because they are kept secret and the disease neglected. Many even believe that this neglect is so serious that syphilis should become one of the notifiable diseases. Any Act of Parliament, to benefit the nation's health, should give every encouragement to the victims of this disease to be open with their doctors, open with themselves, to obtain proper treatment to get cured. Remember, it is the innocent, in many cases, and not the case-hardened sinner, who suffers most and for whom most can be done. Think, also, what a saving to the nation in money and health if the disease received proper original attention—money saved on future generations of diseased children; and, further, the numerous expensive sequelæ of this disease to the original sufferer if neglected. Further, it

appears to me that it will be an extremely difficult question to determine, in some of the vague nervous diseases having a specific history, whether they have been caused by the misconduct of the person or not.

This system of taking away payment under these circumstances is wrong, and I have been surprised that a stronger outcry was not raised by our profession against this narrow-minded, puritanical policy of Parliament. Recognizing early treatment of tuberculosis to be essential, we neglect syphilis, a disease of the same serious character and danger to our nation's health, and we are to do nothing until it becomes more formidable and more difficult to fight.

Surely the guarantee given by the Government in the Insurance Act for medical attendance is an illusion. There will be many diseases that the doctor will not attempt to treat: the majority—in fact, all the notifiable cases of infectious diseases and lunacy—are already treated in rate-supported institutions, and with regard to hospital treatment, cases requiring the conditions of modern diagnosis and treatment with all the laboratory resources, and the surgical cases requiring operations, must still be treated in institutions supported by private enterprise.

One junior consulting surgeon wrote to the *Times* that he had done 500 major operations, and had seen 10,000 to 12,000 out-patients in one year, and this will continue unless the hospital authorities make a strong protest. Surely this proves that there is a great misapprehension of the real facts of the benefits which are likely to be given by the Insurance Act. The employer of labour, who is to be compulsorily taxed for his workman to obtain medical treatment, knows this, and knows also that he must still subscribe to private institutions if his workmen are to receive proper medical and surgical treatment.

We would welcome any Act that would make life happier, more healthy, more secure for the people, but we have felt that, in the form in which the Act left Parliament, no security was given for the improvement of the precarious lives of millions of people. There are millions unable to maintain themselves, and they receive no help except the Poor Law, nor do those disabled before they have made a certain number of payments, nor those too weak to gain admission to an approved society, nor those too poor to keep up the required payment: jobbing workers also are left out. A certain class who have good wages but are free from income tax will get a good share of the spoil; the benefits it is supposed to give will be given to people who already possess them; it has left alone the thoughtless, the careless, the poorer class of workmen, the casual, the unskilled labourer, the men earning small wages, and lastly, the widow and orphan. Where have the Government assisted them? In the whole of the extensive and expensive machinery necessary for the working of this Act the Government have left the really necessitous severely alone, and it is because they have been left so severely alone, because the two reports of a most thorough and expensive Royal Commission on the Poor Law have been ignored by this Government, that it is our duty, we who know that the present medical treatment of the poor is unjust and unequal, seriously to consider the whole question of medical treatment to the poor, and agree amongst ourselves upon some general scheme of reformation which we can press upon the Government.

Personally, I believe the time has now arrived when the State should give the people "free medical service": that a low wage earner, say of under 20s. in a town and 15s. in the country, or whatever figure is agreed upon, is just as unable to pay any doctor a proper fee for proper medical services to his child or himself as the State has already decided he is unable to pay a proper fee for the education of his children; that the present system of the Poor Law for medical treatment, with its stigma of pauperism, is uncharitable and unfair.

We are confronted, in the present medical treatment of the poor, with the extraordinary amount of overlapping which exists by the four agencies—namely, Poor Law authorities, public health authorities, county councils, and voluntary agencies.

The cost is very great: the expense of the Poor Law administration is over 4 millions, of the public health another 3 millions. *Burdett's Hospitals and Charities* shows that the voluntary hospitals, dispensaries, and convalescent and other homes have an annual expenditure of over 6 millions. Thus we have altogether a total of 13 millions of pounds, and this does not include the expense of the work of the county councils.

Any brief study of our present Poor Law system will demonstrate why it has not been a success. The great report of 1834 contained no recommendation for the treatment of the sick, which was left by the State in a very haphazard condition. I must mention to those who have not read the first year's report of 1835 that the Poor Law Commissioners urged the new boards of guardians to put up the appointments of district medical officers to competition amongst the medical practitioners of the union, and to appoint the man who offered to take the post at the lowest figure. I think this abominable advice accounts for the miserable stipends given to medical officers—some as low as £15 per annum. Yet the State is now surprised that our profession is suspicious, and demands its rights before it works any new scheme.

There is no doubt that the inquisitorial inquiries of the relieving officer are objectionable, and the proof of destitution, followed by the stigma of pauperism, causes many poor persons to abstain from applying for assistance until too late.

In 1848 the Public Health Department was established, but instead of working in any way with the Poor Law, it continued to develop absolutely alone for the treatment of specific diseases, with its own paid officials and doctors; it possesses power of ordering a patient's removal to a State-supported hospital without any stigma of pauperism, a power denied to the Poor Law medical officer.

In 1870 a separate educational authority was established, originally for educational purposes alone, but it now provides medical attendance for the children. In my own Division of Westminster, when the question of school clinics was debated, many of us opposed their adoption, not because we did not recognize their necessity, but because we objected to the limited character of treatment, the speciality of a few diseases, and the addition of another medical charity: in all the discussions upon the treatment of ringworm and eye complaints, very few knew of the thousands and thousands of pounds which had been expended upon the special hospitals for these diseases by the Metropolitan Asylums Board. It was never allowed that any good could be made of our present organization, and everybody appeared horrified when it was suggested that our Poor Law system might be utilized. Now, the State, instead of boldly recognizing the deficiency, again adds something new, and school clinics are one of the latest additions to the already overlapping system for treatment of the poor.

In considering any question of reform of the medical treatment of the poor, we must not forget the extraordinary good work which our profession has so long gratuitously given to the poor and to charity through the voluntary hospital system, but it must be recognized that the endowed and voluntary hospitals are not sufficient for the needs of the sick poor. They provide about 25,000 beds, or but one-fourth of the number of sick beds available in the workhouses and workhouse infirmaries. The voluntary hospitals are chiefly concentrated in London, in a very limited area, and the larger provincial towns, and we know that acute illnesses are chiefly the cases admitted into these hospitals. That people who could afford medical treatment at home or in private institutions take advantage of charity is common knowledge, and I have often wondered how long the present system of government of the voluntary hospitals can exist. Their increasing number and individual growth is so great that the public will soon demand some inquiry into the increasing demands of their different managements. Charity supplies over six millions annually for the upkeep of hospitals, dispensaries, convalescent homes, etc. Can we honestly say we have an ideal state of affairs? Can the present system be defended when we know there is really no co-operation amongst them—worse, no central board of control? Each institution is in competition with its neighbour for subscriptions, advertising the numbers of patients medically treated, and quoting the attendance of the out-patients, one of the greatest iniquities affecting the members of our profession practising in poor neighbourhoods. Recent speeches of Labour members show that the working men

accept hospital treatment not in the form of charity but as their just right.

The coming of the Employers' Liability Act has largely altered the character of an accident. Formerly, a patient meeting with an accident depended upon charity for everything; now the employers must look after those in their service. Consequently charity gives way to the patient's right. Surely, if lodging, food, and wages are his rights and paid for by insurance companies, why should hospitals and the doctors in these hospitals remain the only charity? Hospitals should insist upon receiving a fair grant in case of accidents, and the doctor who helps the patient to regain his health should receive payment in the same way as the lawyer who helps him to gain his money compensation.

We must accept these independent changes in the minds of the people of the day—the whole question of charity has altered, and the sooner our profession realizes the change the better. I believe the whole change in charity started with compulsory education. This was the commencement of the State taking over the paternal patronage of the people and the commencement of the individual to think about his position; and further, I believe, the cause of Socialistic Medicine, if one can use this expression, has been increased by the State recognizing that the child should be in a fit condition of health to attend school, which has made medical inspection necessary; that this should be followed by medical treatment was only a rational corollary. This may enable us to appreciate the strong opposition of our fathers to compulsory education; they saw that this was simply the beginning of the individual responsibility of the parent being taken over by the patronage of the State. I think this cannot be too strongly appreciated by our profession, and I agree with Sir Victor Horsley, that State medical work should not be muddled up with charity, and that the medical profession should receive adequate and proper remuneration for their services to the State.

I agree with the Minority Report of the Poor Law Commission that the constant overlapping and unnecessary expense of the various authorities in the medical treatment of the poor show the need for a united medical service; that the Poor Law and public health authorities should be merged; that the present condition of these two rival authorities is detrimental to the health of the nation, as they are practically without communication with one another, and working on diametrically opposite lines; that there should be a National Medical Service, free to the people. This report shows that the idea is not new. In his evidence before the House of Commons Committee on Medical Poor Relief, 1844 and 1854, Dr. Wallas advocated a system of free public dispensaries all over the kingdom, with complete medical inspection. In Ireland there is a universal dispensary system freely available for the whole wage-earning class, without any stigma of pauperism, and in the Twenty-Second Annual Report of the Poor Law Board, 1869, this was seriously considered by Mr. Goschen. In their evidence before the last Commission of 1905, the chief medical officers of the Local Government Boards of England, Scotland, and Ireland, agree as to the lack of a unified medical service. That free medical service would affect a single member of our profession I do not believe for one moment—it does not necessarily involve gratuitous provision of medical treatment to all applicants. That free medical service will be abused I do not believe. We read of the same arguments against free education—that a large number of schools would be immediately closed when the Act came into operation—and the result has been an increase, a large increase, of private schools.

Again, can any medical man say that compulsory vaccination has been abused? I asked a public vaccinator in a rural district whether his own patients took advantage of free vaccination, and he assured me most emphatically no! and I think we can safely assume that free doctoring will not be abused on any appreciable scale. I believe, however, strongly that in the public interest, as well as the interest of our profession, medical treatment should be given on the lines of private practice, and I have failed to appreciate the reason or necessity why the Minority Report insists upon an all-time service, for surely the treatment of the individual patient is best carried out by the individual doctor; it would not be fair that the man who does not contribute should have any facility given him for choosing his own doctor. He must attend at stated times for his treatment and, when confined to his bed, be satisfied with the doctor sent to him. I see no objection to the suggestion that there should be some transference of the Poor Law service to begin a reorganized public health service. Of course, there must be readjustments, and every opportunity should be given to the older medical officers to resign, before they attempt the new service, in which case fair and just compensation (of, say, two years' salary) should be given. As a matter of equity the State must compensate for loss as a result of new legislation.

Every borough in London or the district should be mapped out into areas or wards, just as we have now under the Poor Law, but probably smaller, and in each area there should be a properly equipped clinical surgery, fitted up in such a manner that the same building would do for a school clinic. At these surgeries the district medical officer would attend at stated times every day, and it might be possible, upon certain other days, for specialists upon various diseases to attend and see the cases referred to them from the medical officer, all receiving a fair, moderate remuneration, as agreed by the Association.

It is distinctly to be understood that the medical officer should be a practitioner residing in the district, and he would, assisted by district nurses, visit the sick unable to attend at the surgery or dispensary in his own area, and those patients unable to receive the proper care and attention in their home surroundings he could order to be removed to the infirmary or—as we shall call them—State-rated hospitals.

The district medical officer would be under the supervision of the medical officer of health, to whom he would make, either daily or weekly, reports as might be necessary, and we would have co-operation established between the two classes—the clinicians and the sanitarians. Further, his care should include the education of the people in his district—how to live, the advantages of fresh air, cleanliness, moderate living in eating and drinking. It is hoped, by the distribution of this knowledge, that sickness will be diminished, and, with this condition, his actual work will become less.

There should be a more equal scale of salary for all medical officers, and the time required of him should not be too great. It is essential that he should not lose his own individuality and become an efficient machine. This is one of the great arguments against the "whole-time service." He should have plenty of time to undertake private practice, and I am sure if proper surroundings and arrangements are given for the medical and surgical work, and every facility for taking advantage of our progressive science, this class of practice will induce some of our better men, keen and interested in their work, and who are tired of the neurotic tendency of some of their better-class patients, to apply for these appointments.

In rural districts, where there is an extended area, all this could also be done in a modified degree; but these districts afford another argument against the whole-time-service man, who would be worn-out by travelling, seeing only a few patients.

To speak of a National Medical Service, as outlined by Dr. Benjamin Moore, I think, is absolutely impracticable for our generation. Whether "The Dawn of the Health Age" will come in the far future, when every one becomes some form of paid official of the Government—either to work for the State or to see that the work is done by another official—I cannot say. However much we may appreciate the bold and clear manner in which he brings forward his views, we must agree that such a system of medical service can only come into existence when Individualism has been absolutely absorbed by Collectivism, and the first person singular ceases to exist.

The last and the greatest problem to be considered is the institutional treatment of the future. This question is, I believe, receiving the attention of our State Sickness Insurance Committee in relation with the Insurance Act, and, in view of this, I hesitate to give my views. But it must be admitted that it is the duty of the State to give a sick man away from his work the best attention to restore him quickly to health. This is purely a business transaction. As we know from the figures of the present Insurance scheme, an increase of one day in the average duration of sickness involves a charge of 1s. 8d. a head on

the Insurance Fund. Therefore it will become imperative for hospital accommodation to be found for insured persons. It must follow from the insidious manner in which the State is slowly and surely taking into its charge various classes of patients, with the monopoly of the care of many diseases, that in the future we shall have three different classes of hospitals:

1. *The State-Rated Hospitals.*—Candidly, I fail to understand the great outcry and objection raised against State-rated hospitals. They exist in the majority of other countries, and they exist here successfully in our fever hospitals, and they would be the hospitals to receive casual cases of urgency, accidents, etc., and the severe cases sent by the district medical officer. They would be used by the teaching medical schools for students, and the increased clinical field opened by the larger number of cases would be advantageous for instruction. They would have the same kind of staff as the present voluntary hospitals, but it would be considerably increased or diminished according to the necessity of each institution. They would be under the management of either the County Council or the Local Government Board, with an Advisory Medical Board, but every member of the staff and visiting staff would receive remuneration for his services. Some of the voluntary hospitals and all the present Poor Law infirmaries could be utilized for these State hospitals, compensation being given to any vested interest taken over. If any out-patient department would be used, it would be of a consultative character of cases sent by the district medical officers or other general practitioners in the neighbourhood.

2. *State Insurance Hospitals* must necessarily follow, as I have said, the Insurance Act if any success is to attend medical benefits. They would be under the management of the local Insurance Medical Committees, and the cases would be attended by the medical attendant to the insured patient. For in these cases, I suppose, it will be necessary for the doctor to remain in attendance: there may or there may not be a resident staff, but I presume medical extras under the Act will include fees in special cases for consulting surgeons or physicians.

3. *Paying Hospitals for Various Classes of Patients.*—This, I believe, will be the true charitable institution of the future, and will still require the energies of those good hospital workers who have done so much in the past and for whom greater work will be open in the future. For we know in the profession the many difficulties in the way of the poorer middle class obtaining proper medical and surgical attendance: we know the many cases willing to pay small fees if only proper provision has been made for them, and which have had to go into the general wards of charitable institutions. So it is hoped that the future will show all benevolent persons the good work they can do by subscribing to assist in the construction of properly equipped private institutions supplying a good maintenance to patients for the lowest possible fees. We know this cannot be done without charitable help, although assisted by the higher fees obtained from the more wealthy patients.

In conclusion, I trust I have said enough to give some food for reflection. That our medical treatment of the poor is not the ideal, or the best; that we must have better co-operation of the various services; that the stigma of pauperism must be taken away from the medical treatment given to the poor. It is the duty of our profession to insist that the best medical treatment should be given to the rich and the poor equally and fairly; personally, I believe this object can only be attained by a free and open united medical service.

And if it is the duty of the State to do all this for the individual, then, I maintain, it is the duty of the individual to do something for the State. If the State makes the individual healthy and strong to maintain his vitality, then it is the duty of the individual to give some portion of his health and strength to maintain the vitality of the State, and the individual must be trained and taught in such a manner that he is able to assist the State. By this he will show discipline and unselfishness. And I go further, and I say, if it is compulsory for the country to give the individual his best vitality, then it should be a compulsory service by which the individual should assist his country at any time to maintain the best vitality of the nation.

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BIRMINGHAM BRANCH.

MODERN SOCIAL CHANGES AND LEGISLATION AS THEY AFFECT THE MEDICAL PROFESSION.

By E. N. NASON, M.D.Camb.,

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If we take the trouble to study the social changes of the past fifty years, we shall find that whenever they interfere with the personal and direct relationship between the doctor and his patient they do harm to both.

In the past the relationship between the doctor and his patient was always direct, and had certain primary objects—the restoration of the patient to present health and usefulness and the giving of help and guidance for the future. Both these objects, although the latter contains the germ of modern preventive medicine, were purely personal between doctor and patient. The patient chose his doctor and paid, or did not pay him, for services rendered, and no third party entered into the arrangement. The ethics of the profession and general regulations of medical practice were founded on this personal tie, and it was accounted a crime as serious as violation of the confessional to divulge any secret communicated or discovered in the course of professional examination. It is, I believe, because modern social methods and legislation take so little account of this personal tie that medical men have been so universally alarmed and so profoundly affected by them.

The Friendly Societies.

If it be true that out of evil good may come, it is equally true that out of intended good evil often arises. It is a perfectly legitimate and indeed laudable act on the part of the individual to provide against certain possible contingencies which might otherwise overwhelm those dependent upon him. And yet insurance against premature death marks the first step in a path which has proved to be full of pitfalls and difficulties for the medical profession. Individual insurance against premature death was naturally followed by both individual and mutual insurance against sickness and accident. But from this most excellent idea have sprung up a whole host of new conditions nearly all inimical to the earlier and higher ideals of medical practice. To this idea the powerful organizations which we have been accustomed to call friendly societies owed their origin, and through them came the dark cloud of sweated contract practice which has overshadowed the profession for so many years. To this idea also may be traced many of the later social measures, like the Workmen's Compensation Act and the National Insurance Act.

Individual insurance against death, sickness, or accident at once introduces a new factor into that previously simple relationship. We have now the interests of the insurer to consider, and his interests are usually antagonistic to those of the insured. The examination of the patient by the doctor, instead of being a preliminary to treatment, may be with no other object than that of protecting the interests of a third party. The relationship ceases to be personal and direct, the physician tends to become the official.

When we consider the effect upon the medical profession of mutual insurance as carried out by the great friendly societies, we find it difficult to over-estimate the amount of injury that has been done. In the early days of the movement, when the majority of those who asked for medical treatment through the friendly societies were really of the very poor, the medical profession in its generosity and not foreseeing the future, offered its help towards making the movement a success. It agreed to treat the members on a charitable basis, and for the sake of simplicity—but, one now sees, very unwisely—accepted a small payment *per capita*.

The result has been that what was at first given in charity was soon claimed as a right, and is now used as an argument against conceding any better terms. Meanwhile the friendly societies have grown enormously in wealth and importance and have perfected their organization, while the medical profession has remained poor and, until quite recent times, almost unorganized.

The friendly societies of to-day, although containing a large proportion of members whose financial position gives them no claim on the charity of the medical profession, have taken full advantage of these facts. Their powerful organization has enabled them to dictate terms to individual medical men, who, from lack of organization, have in many instances been compelled to submit or starve. From time to time attempts have been made to obtain more just and reasonable treatment from these societies, but always with the same result—failure; and always from the same cause—lack of union. From recent utterances by various officials of these societies it is abundantly clear that the same spirit animates them to-day and that they intend to pursue the same policy in the future *if* they have the chance.

Despite the enormously increased wealth of these societies, the improved financial position of the average individual member, the increased cost of living, and the vast increase in the cost and complexity of medical treatment, the payment made to the doctor has alone remained unchanged through all these years. These powerful societies—not realizing the difference between a trade and a profession, between material goods whose quality they can appraise and professional services of whose quality they are not in a position to judge—have always bought in the cheapest market. This policy has done untold harm to the public health and an equal disservice to their own members and to those members of the medical profession who have tried to serve them faithfully. But advantage has been taken of the original terms of agreement in another way. The medical profession, through accepting payment *per capita*, has gradually been forced into the position of itself bearing the sickness and accident insurance risk. Surely this risk ought to be borne by the society, which exists for the purpose of insurance, and is clearly no part of the duty of a healer of the sick.

We have, in fact, been insuring at a premium of 4s. a year a large number of persons to whom no insurance company in the world could afford to offer the same benefit at a lower premium than from 15s. to 25s. according to the age of entry. I have been at some pains to estimate (on the basis of an average term of eleven days' illness per annum, the friendly societies' own estimate, and accepted by the Chancellor of the Exchequer) what sum would insure an individual against the medical cost of such illness, and the figures I have given are the minimum and do not include the cost of treating minor ailments.

Workmen's Compensation Act.

So far the effects that I have mentioned are those which have followed on individual and mutual insurance, but in the Workmen's Compensation Act two new factors are introduced, both of which still further affect medical practice; these two factors are the State and compulsion.

In making the employer liable for compensation in all cases of accident to workmen *even when the employer is in no way to blame*, the State has introduced an entirely new and definitely socialistic principle. In effect, the State compels every employer to insure every person he employs. This introduces a further complication into the relationship between the doctor and the injured person. The State compels the injured man claiming compensation to submit himself for examination at the hands of a medical man whom he has not himself chosen, but who is acting in the interests of the employer. It requires great tact on the part of the employer's doctor to preserve unchanged his friendly relationship with the persons he examines in this capacity, and still greater tact to avoid all sources of friction with those doctors who are responsible for their treatment. In any case some of the cardinal rules regulating medical etiquette have to be by consent abandoned. The employer's doctor will constantly have to visit and examine persons who are under the care of other medical men, and it is quite impossible that this can always, or even usually, be done in consultation with them. When we contemplate the spectacle of a medical man visiting and examining, in the interest of a third person, the patient of another medical man who is not present, and when, in addition, the visit may not be desired by either the patient or his doctor, we have some measure of the extent to which modern social legislation has compelled us to disregard ancient medical rules.

Again, when a compensation claim goes to arbitration, the employer's doctor has to examine the claimant in order to detect any exaggeration or misstatement. He will then have to give evidence in open court on the result of his examination. This is hardly consistent with the Hippocratic oath!

I was once asked by an employer to visit a certain road where he had reason to believe that one of his workmen, who was receiving compensation on account of an old Pott's fracture, was employed in erecting some fencing. I was to watch his performance with a view to giving evidence in an arbitration case which was pending. I need hardly say I declined, but the very request illustrates the fact that the employer looked upon my relationship to the workman as being rather that of a detective than a surgeon. I am afraid that after all there is something to be said for this view, since the surgeon who undertakes to examine in compensation cases should have the eyes of a detective as well as the knowledge of a surgeon if he is to protect the interests of those who employ him.

Human nature remains much the same however much the relationship between doctor and patient may change, so that when a man is confronted with the alternative of 30*s.* a week and hard work or £2 a week and no work at all, the temptation to unduly prolong the disability is occasionally too strong for him. When a man is in several benefit societies this temptation often arises, and is answerable for a large crop of malingerers who are becoming increasingly clever at aping pains they do not suffer and defects which do not exist even in their own imagination.

But there are degrees of malingering and various types of malingerers:

1. There is the unconscious malingerer or the malingerer *malgré lui*. The man who has had a more or less serious injury or illness, and is afterward obsessed with the idea, which is too often fostered and encouraged by his friends, that he will never be the man he was, and in consequence makes no real effort to return to his work. He may have been an exceptionally good workman up to the time of his accident or illness, and not the kind of man one would have expected to shirk work, but it is sometimes extraordinarily difficult to persuade him to so much as attempt any work. This man is not a conscious fraud and, strictly speaking, not a true malingerer, but modern conditions, by removing his chief inducement to work, foster the continuance of the effects of his previous disability. This state of mind his friends may call neurasthenia, and others ergophobia.

2. Then there is the man who has had some sprain, strain, or contusion, with consequent adhesions or stiffening of joint and tendon. In order to remove this disability the stretching or breaking down of these adhesions is necessary, but as there may be some pain in the process, this part of the treatment is put off indefinitely and the man remains idle. The compensation he receives deprives him of the salutary stimulus which the pinch of poverty previously provided.

3. Then there is the man who purposely exaggerates his symptoms. The pain in his back, which began when he was lifting some weight and which was probably more rheumatic than traumatic, is made the excuse for prolonged disability. It is described as being so severe as to make all work impossible, long after its really disabling effects have passed away. This man is a real malingerer and is wilfully defrauding his employer. He is a very common type, but one that it is very difficult to deal with. Under this head may be classed the numerous cases of exaggerated defects of vision. Fortunately these cases, in which the original injury to the eye has usually been of a more or less trivial nature, are not so difficult to detect.

4. Lastly, there is the man who deliberately injures himself or increases or prolongs the effect of an injury by his own act. Such cases are not so rare as might be supposed. I have known cases where a finger has been deliberately injured in order that compensation might be obtained, or more often that the employer might be prevented from putting in force a threatened dismissal. A recent case was that of a man who had a slight injury to the eye. This he prevented from getting well by applying a caustic to the conjunctiva on the lower eyelid. He did this just before his case came on for arbitration, but the fraud was detected, and he was subsequently sentenced at the assizes to six months' hard labour for perjury.

Considering the ease with which a man may assume pain or loss of power, and the great difficulty in disproving his statements when persistently and consistently asserted, I am only surprised that malingering is not more common. The only way to prevent it is to impose a really heavy penalty in any clearly proved case. A man would then be too much afraid of detection to lightly embark on a course of systematic deceit.

After years of experience one comes to scent the malingerer at an early stage of the examination. He usually begins by disclaiming any real desire for compensation, and pours undeserved contempt upon those who do. He draws unfavourable comparison between those who refrain from working when they might, and himself, who is all eagerness to return if only the pain or stiffness would allow him. His lumbar pain is so excruciating that he could not stoop to pick up a sovereign if he saw one lying in the road. His shoulder is so stiff and painful that he could not raise his arm above his head if the accomplishment of this act, which he may have done already in removing his shirt, would bring him a fortune. He complains that the amount of compensation he is getting is not enough to keep him and his family from starving. But he is careful not to mention that he is receiving from 10s. to 20s. a week from various other sources. His symptoms are always exaggerated, and he gives one the impression from the outset that he is on the defensive.

But it is much easier to convince oneself that a man is malingering than to convince a judge or jury, and the majority of these cases have ultimately to be decided by the county court judge. In this process the position of the doctor, who by careful observation has convinced himself that he is dealing with a malingerer, is not an enviable one. After giving his opinion in the witness-box he will have to submit to a severe cross-examination. He may have his opinions directly contradicted by some other medical man, who, with less knowledge of the case or of the man, may have been retained in support of the man's contention. It surely, however, is not the function of the medical witness to champion a cause, but to state facts and such opinions as may legitimately and logically be drawn from them. It cannot be his duty to attempt to bolster up a case by suggesting plausible but pathologically impossible theories, whose fallacy is apparent to any medical man, but which are quite likely to pass undetected by the judge. Unfortunately this is a spectacle only too common, and one that does not enhance the dignity of the profession in the eyes of the public, and goes far to justify the proverbial cynicism or the cynical proverb which runs, "Where doctors differ who is to decide?" One is tempted to answer, not the county court judge, who, to do him justice, is generally well aware of this, and with increasing frequency seeks the aid of a medical assessor. The present custom of appointing permanent assessors attached to districts, for various reasons, has not proved a success. It is far better that an assessor should be appointed specially for each case, so as to enable the judge to obtain the highest expert opinion on the particular case he is trying.

It is quite clear that in the near future there will be urgent need for experts in the art of sifting the real from the assumed or exaggerated, and assessing at their true value the various disabilities for which compensation or sick or accident pay may be claimed. An ideal assessor should have special knowledge of the kind of case which is brought before him. He should have a logical and judicial mind, not easily swayed by sentiment, and should be a man in whose absolute impartiality both sides have complete confidence.

The Midwives Act.

The Midwives Act has been the cause of serious loss in a certain class of general practice. In many districts a large proportion of the midwifery work, which was formerly done by medical men, is now done by registered midwives. Many of these women, though registered and uniformed, are not qualified by any examination, but the Government stamp of registration has hall-marked them in the eyes of the public. No doubt in the end both the profession and the public will gain by the Act, for the former will be spared much trying work and much night work, and the latter will eventually obtain a fairly adequate service at a cheaper rate.

But for the present the doctor is getting about one-tenth of the fees he did, and is saddled with all the difficult and anxious cases, for the majority of which he has not been engaged, and for which, in many cases, he is never paid. People of the lower artisan class do not usually make provision for what after all may not be needed, so that when the need arises, it is usually found that no provision has been made for the doctor's fee. This difficulty might be got over by a properly regulated maternity society, into which small weekly payments could be made in advance, and it could then see that the members had proper attendance at their confinements, and that the doctor, when needed, was not left unpaid. I hope that the maternity benefit in the National Insurance Act will be so worked as to meet this difficulty.

The various Notification Acts place further duties and responsibilities upon the doctor, and still further interfere between him and his patient. The advantage, however, to the community in most cases outweighs the burden placed upon the doctor; but I doubt whether this is true of the Notification of Births Act, where the duty of notification should never have been placed upon the doctor at all.

The National Insurance Act.

In this Act the principle of compulsory insurance is applied to some 14,000,000 persons. It provides for the medical treatment of an enormous number of persons who can and already do provide for their own treatment, but, with the possible exception of the sanatorium benefits, does little or nothing for the very persons who stand most in need of help. It is almost inconceivable that any sane person drafting a bill, whose main object is to provide medical treatment for millions of persons, should do so without consulting the medical profession, on whose willing co-operation the success of the whole scheme depends. I can imagine no more foolish or fatal mistake, nor one the result of which could have been more easily foreseen.

As the bill was first introduced, it would for many of us have done away with private practice altogether, and given to nearly all our work the taint of contract work. Such work must always curtail to some extent the liberty both of the doctor and of the patient, and is altogether alien to the spirit of a profession as distinguished from a trade. If the National Insurance Bill had passed and been accepted by, or forced upon, the profession in its original form, we should have for ever lost our independence, and, as a body, become the slaves of a Government department and the bond slaves of the approved societies. We should have been saddled for all time with contract practice of the very worst type. This result would have been only too probable had there been no British Medical Association. No other body existed, or could have been formed in time to offer an organized and determined resistance to those clauses of the bill which, if carried into effect, would have been equally detrimental to the medical profession and to the public health. This attack from without has brought such unity of aim within the profession as should cause us to be treated in the future with more respect than we have been accustomed to in the past. When has the State ever dealt generously or even fairly with the medical profession? The State, as represented by both political parties, has ever exacted from the profession the maximum of service for the minimum of reward.

The willing horse has been mercilessly worked, but the corn supplied has not increased in quality or quantity, and has never been adequate. To obtain a registrable qualification an increasingly long, arduous, and expensive course of training and an increasingly high standard of efficiency are demanded, but the protection granted is illusory and the privileges little better than worthless. It is, indeed, the public, not the profession, who are protected. Why should a medical man who gives his services gratuitously to a hospital, or serves His Majesty in the navy, be compelled to attend the coroner's court without fee? Why should a medical man be compelled to spend days at the assize court, perhaps many miles from his practice, and then be able to claim only the miserable pittance of £1 1s. a day? A member of my own Division had to attend the last Warwick assizes at a distance of twenty-five miles for this fee, while he was compelled to pay £2 2s. a day to his substitute. Why should a medical man have to supply certain certificates without fee? Why should the State compel a

midwife to call in the aid of a medical man in certain contingencies and yet make no provision for his fee? The truth is the State has always exploited the generosity of the most humane profession, and, like many private individuals, has got the credit for benevolence at the expense of the doctor.

It is of paramount importance, if the new order of things is to secure a real and permanent improvement in the health of the nation, that the terms of service under the Act should be such as to attract men of the highest possible stamp, both as regards intelligence and character. For it must be the object of the State, if it interferes in medical practice, to obtain for those it takes under its charge the best rather than the cheapest medical service, for the best will in the end be the cheapest. If those working under the Act are to be dragooned by a Government department, overworked, underpaid, and their time wasted by vexatious regulations, nothing but harm to the nation can result.

In order that the medical service may be truly efficient the following conditions must be fulfilled:

1. The relationship between the doctor and his patient must not be subject to any interference on the part of the State. It must resemble as closely as possible that obtaining in private practice.

2. Payment must be made for work done, and an end made of *per capita* contract agreements.

3. The doctor must be able to earn from his practice a sufficient income to requite him for his long and expensive course of training and for his hard and trying work, and the many risks it entails.

4. He must be able to do this without such overwork as would exhaust his strength and diminish his interest in individual cases or deprive him of the leisure necessary alike for study and for health.

For that which attracts into the profession the best stamp of men is not so much the hope of material reward as the satisfaction which belongs to the successful conduct of a difficult case; to the many opportunities for doing useful work; to the human fellowship and sympathies which centre round the sick bed; to the close friendships which grow so rapidly and become so firm and lasting between those who share a great anxiety; to the satisfaction to the scientific mind in adding something to the sum of human knowledge, and to the philanthropic mind in taking something from the sum of human suffering.

In the present necessarily heated controversy so much space has been given to the no doubt important question of fees that the far more important question of the health of the nation, which is the profession's true object, has been comparatively neglected.

For, although the doctor who thinks more of his fee than of his patient quickly degenerates from the physician into the charlatan, so, too, will the doctor who is overworked and underpaid soon change from the careful, painstaking physician into the rule-of-thumb empiric, and from the cheerful, willing servant to the grudging slave. You cannot divorce the true interests of the profession from the true interests of the nation; they stand together, or they fall together.

The storm cloud of the present crisis, though dark and threatening, is not without its silver lining. It has brought to the profession a unity of aim which has long been desired but never before reached. It has thrown us back upon first principles. It has taught us that, if our aim is as it should be, and as I believe it always has been, the welfare of the nation, we shall have behind us the support of all that is best in the nation in working out our own salvation.

EAST ANGLIAN BRANCH.

CHANGES IN THE CONCEPTION AND TREATMENT OF INSANITY DURING THE PAST TWENTY-EIGHT YEARS.

By JOHN TURNER, M.B.,

President of the East Anglian Branch; Medical Superintendent of the Essex County Asylum.

I PROPOSE to give a short account of the changes in our conception, classification, and treatment of insanity during the past twenty-eight years—a period of which I am able to speak from personal knowledge.

At the outset I may state that in my opinion, while we have progressed in our general knowledge of the nature and mechanism of insanity, we are not able to record much real progress in our treatment of this disorder. Unquestionably at the present time the insane are better looked after, their lives are rendered more bearable, and many more lead useful and productive lives than formerly. They are encouraged to work, and much care is exercised to find out their capacities in this direction; but when we come to speak of cures, even in the wide sense in which this word is used in asylum reports, I cannot see any progress whatever.

All over England, Germany, France, America, and the whole civilized world, are now numbers of enthusiastic workers, seeking not only to discover the real nature and cause of insanity, but also its cure, and in their attempts towards the cure of insanity they have accumulated facts which have greatly enriched our stores of knowledge in regard not alone to brain structure, but also to its functions.

The keen interest that medical officers generally now take in their work is one of the most hopeful features of the present day. Twenty-eight years ago, although there were brilliant exceptions, too often the superintendent of an asylum was some cultured gentleman, whose opinion on almost any subject but insanity was worth listening to, whilst his junior colleagues, generally chosen for their social or athletic qualities, even if they were interested in their work, produced little to show that such was the case.

We had a very simple and unsatisfactory classification. If a patient was noisy and excited, he suffered from mania; if he were low-spirited, from melancholia. Monomania was recognized by some of the more thoughtful, but did not find a place in the official classification. Patients defective in their habits were demented; the residue were idiots, imbeciles, and general paralytics; the cases, being duly labelled, possessed no further interest. The trouble was that patients would not conform to their labels; the maniac of to-day appeared to-morrow profoundly depressed, or vice versa. Some alienists got over this difficulty by dubbing the most obviously alternating cases *folie circulaire;* others ignored the individual vagaries and stuck to their diagnosis. The idea was almost universally accepted that there were distinct insanities—distinct nosological entities, like typhoid and scarlet fever. Juvenile general paralysis was unknown, and the intimate relationship between general paralysis and syphilis had not received—in England, at all events—much recognition. And yet under these conditions the yearly output of "recoveries" was as large as at present. The average duration of detention was no longer and the death-rate no higher.

But, as I have said, there was a bright side to this picture, for among the few students of insanity were mighty workers in the field of pathology, and it was hopefully expected that pathology would disclose the cause as well as the nature of insanity and afford a clue towards its treatment. One may broadly divide the period under review into three divisions:

I. *The Pathological Period.*

This began many more than twenty-seven years ago, and is identified in the early stages with the names of Griesinger in Germany and Sankey in England, but the study was only languidly pursued in England until in 1889 the appearance of Bevan Lewis's textbook gave it an enormous impetus. His book marks an epoch, and, although some of his deductions are now discredited, there is no doubt of the high scientific value of his researches.

A very important step in the furthering of pathological work was the opening of a laboratory by the London County Council in 1895. Dr. Mott was appointed director, and under his brilliant administration not only has he by his own researches advanced the knowledge of the pathological processes in insanity, especially in relation to the part played by syphilis in the production of general paralysis and tabes, but he has also trained many who have done good work of their own, and in this connexion the name of J. Shaw Bolton stands out prominently. Bolton's researches on the structure of the cerebral cortex are of profound interest. By the careful microscope measurement of the different layers in the cortex

he has reached data which with a high degree of probability establish the part which each plays in cerebral function.

The aim of the pathologists was to establish a definite pathological basis for the different forms of insanity. This they have not yet succeeded in doing, or only to a very limited extent; but in my opinion they have produced evidence in favour of an anatomical basis. There are cogent reasons for Bolton's contention that the lunatic is born, not made, and that all insanity is associated with a deficiency in certain nerve cell layers in the cerebral cortex, or with cells inherently defective in structure.

II. *The Clinical Period.*

This in its modern development is largely associated with the name of Kraepelin, whose cardinal idea is that the different forms of insanity are distinct morphological entities, and that they can be differentiated from one another by the careful study of symptoms.

It is to this school that we owe the idea that mania and melancholia are only phases in one disease—manic-depressive insanity; and although, now that attention has been drawn to it, the great majority of alienists recognize that cases of pure mania or melancholia are practically never met with, yet this does not necessitate the adoption of the view that manic-depressive insanity is a nosological entity.

From Kraepelin also we get the term "dementia praecox," and a graphic and exhaustive account of its symptoms. This subject has dominated the whole world of alienists for the past few years, and has led to torrents of criticism and acrimonious debate. Unquestionably the name has come to stay, but there is still wide divergence as to what exactly it connotes. The abiding merit of Kraepelin's teaching is that it insists on the careful study of cases. We have to differentiate in every direction: excitement is no longer synonymous with mania or depression with melancholia, and so on; and to establish a satisfactory diagnosis of dementia praecox needs the most careful sifting of a large number of symptoms.

Although I have termed this the clinical period, it did not dissociate itself from pathology; it naturally rested on a pathological basis, and vigorously prosecuted a search, not only of the nervous system, but of all the tissues of the body, for evidence in this direction, and during this period clinical pathology came very much to the fore, and important researches were carried out on the blood and other fluids.

III. *The Psychological Period.*

In this, the latest period, associated especially with the names of Freud and Jung, pathology is no longer tolerated. We are distinctly warned by one of its ablest advocates against anatomical conceptions of psychic processes.

There is no doubt that we are greatly indebted to these men, who by their careful studies have let a flood of light upon many of the dark problems of insanity, but they cannot afford to dispense with the work of the anatomist. Each branch—anatomical, clinical, and psychological—is of equal value, and not one alone is capable of yielding the full truth.

According to the psychological school, dissociation of the "ego" or personality is the prime factor at the root of those large classes of cases termed respectively "hysteria" and "dementia praecox." The "ego" is split up and a new complex is formed, working more or less independently of the mutilated ego, and at the same time to a large extent, if not entirely, subconsciously. But although the patient is not clearly conscious of the activities of this newly formed complex, he or she experiences vague feelings of discomfort, dissatisfaction, or of unfulfilled (largely sexual) cravings. There is thus, as it were, a conflict in the individual, whereby the conscious part of the personality seeks by various means, of the nature of subterfuges, to submerge or keep down the painful feelings due to the activities of the split-off complex. Thus we may get what Freud terms a "defence psychosis," giving rise to what appears to the observers as meaningless or incoherent conduct, but which can be shown to be rational in the circumstances, if one can draw the activities of the split-off complex into the light of consciousness, and Freud and his followers claim to be able to cure a number of cases of insanity by this method.

The assumption of the split-off complex necessitates the further assumption of dissociation or disintegration of consciousness, or apperceptive dementia, because, instead of all the mental processes working to one harmonious end, some are drafted off in one direction, some in another. If we translate this into neurological terms we find that there is nothing startlingly new in it. It is the psychological side of dissociation of the nervous channels of the cortex; and it is these channels—or rather the areas which are believed to contain the mechanism for association—which Bolton has shown are most affected in the brains of the insane.

So with all the phenomena occurring in abnormal psychology, we may, so far as they are amenable to scientific treatment, express them in physical terms. And moreover, we may by means of diagrams greatly assist in the furtherance of our conceptions. Diagrams are very valuable aids to clear thought; unless atoms had been symbolized, the atomic theory would never have reached its present full development. There can be no doubt of the high value of the work of Freud, Jung, and their many British followers; but, speaking personally, much that they write is to me unintelligible unless we transfer their conceptions to a physical basis. I can picture a ruptured neurofibril stopping the passage of a nervous impulse, but not a split thought.

These doctrines have great value as a working hypothesis of what occurs, not only in hysteria and dementia praecox, but in every case of insanity, and afford a reasonable explanation of the symptoms in many cases hitherto found to be very baffling to unravel.

According to the view that I in common with some others hold, there is a lack of development, both quantitative and qualitative, varying in degree, of certain of the cortical layers of nerve cells, more especially the pyramidal, in every lunatic, and in every person who is susceptible of lunacy, and no one without this inherent defect can develop idiopathic insanity. In this sense, as Bolton insists, the lunatic is born, not made, and lunacy is an anomaly of nerve cell development. Nevertheless, to excite an attack of insanity in the very large proportion of cases an extrinsic factor is requisite; and, whatever the nature of this may be, it operates by producing a dissociation in the intercommunicating nerve paths connecting or linking together different nerve cell centres, chiefly in the cortex.

I endeavour to classify my cases on this basis, but the more closely one associates with, and the longer one lives with the insane, the more hopeless is the task of trying to sharply mark off one form of insanity from another. Those symptoms which the textbooks tell us are found only in this, we find also in that variety. We must be content to endeavour to appraise the relative value and intensity of the individual symptoms, so as to form some idea of the probable future of the case, and to discover in which niche of our classification it is most "at home."

Treatment.

Scarcely a week goes by without some startling statement in the press that the cure of insanity has been discovered. This generally refers to some procedure, may be of a surgical nature, by which one who is insane can be cured and rendered sane.

But apart from the actual cures for existing insanity, we are inundated with prophylactic measures for the prevention of the spread of insanity and the improvement of the race.

One scheme which finds much favour, not only with the public, but with a certain section of the medical community, is State regulation of marriage, but it is extremely doubtful whether, if practicable, it would in any way meet the case. In the first place, the assumption that the prevention of undesirable marriages would diminish the production of offspring is not very convincing. Probably if marriages were restricted, illicit connexions would increase, resulting in the production under most unfavourable conditions of more illegitimate children, more likely to swell the ranks of the insane. Secondly, if our aim were to produce a kind of prize cattle individual, whose value in the community was determined by his muscular development and physical fitness in general, there might be some reason in controlling marriage if we could thereby also control production.

It takes many sorts to form a flourishing community, and in these days of machinery mere bodily strength is one of the assets most easily dispensed with. The highest qualities of the brain are often found in association with a sickly body. Could we possibly, by legislative measures, contrive that only the physically fit should mate, we should, judging by breeders' experience, produce a stronger and more attractive race; but if this were done at the expense of the mental qualities, the result would be not a gain, but a catastrophe, to any community which achieved it. As a matter of fact, we know practically nothing of any means by which a desirable blend of the physically and mentally fittest is to be arrived at.

All we can reasonably expect is that, by legislative means, we could in some measure prevent patently undesirable or degenerate people from propagating progeny likely to be themselves undesirable or useless. This would be the case if greater facilities were allowed to the authorities of public asylums to detain cases which, although they may not be certifiable on a fixed date, are sure to relapse if discharged. But in this, the only practicable direction, the law insists on the discharge of hundreds of persons yearly, who, returning to their homes, breed, multiply, and relapse into insanity again.

The sterilization of the unfit as a means of stamping out insanity is another measure advocated. It, like the licence to marry, is a scheme which lends itself to newspaper reporters in search of any novel or startling remedy, but it is a measure that is not likely to be seriously entertained in England, for, were it enforced, what could it do towards lessening the incidence of insanity?

The suggestion is founded on deductions arrived at by breeders and students of heredity. But these deductions themselves contain a proof of its futility. What boots it to sterilize the unattractive, imbecile, degenerate, or insane members of a family, and allow the attractive or even the average members to propagate? This is what it would come to: for any taint in a family, so far as we know, does not restrict itself to any one particular branch, or to any particular members of that branch, although these may be the only ones with demonstrable signs of degeneracy—insanity or other nervous abnormalities. As a matter of fact, in the long run the more unfit an individual is to mate the less likely is he or she to leave descendants; the race dies out, and Nature sterilizes for us.

Among the more recent methods of dealing with the insane individual with the object of curing him of his insanity, I shall only mention psychotherapy. This is the latest form of exorcism: only drag out the evil spirit into the light of day, and it will flee from you and you are cured. I have myself had very little personal experience in this form of cure, so that it is not becoming to me to dogmatize on its merits or demerits, but I must confess I am sceptical as to its efficacy in the majority of insane cases, and I do not consider the evidence which has been adduced to show its benefit as at all convincing.

The term is misleading; if there is such a cure it is not psychotherapy. The spoken word, the written word, the gestures and appearance which form the weapons of the psychotherapeutist are as purely material factors as a dose of calomel, and they can only act by the impression they make upon the sensory end organs of the subject; they produce psychical effects, but, as must always be the case, through physical channels. It is not as I imagine the psychologist *qua* psychologist who effects a cure, but a physical alteration in nerve cells. True it is the reason of the psychologist which induces him to apply the remedy, but equally true is it that it is the reason of the practitioner which leads him to prescribe a purgative.

But apart from such etymological cavils there are, even should it be shown that the means is a good one, grave objections to the procedure—namely, its complexity and its duration. The latter removes it quite out of the sphere of practical politics as a routine means of treating all but wealthy or well-to-do patients. In a public lunatic asylum for poor people, at best only a few favoured cases could receive the necessary time and attention which must be expended if it is to be properly carried out. Perhaps then, as I have seen it stated, a case may after six months' zealous attention gratify the physician by showing signs of improvement. Apart from its problematical curative properties, there can be no doubt of the value of this method in investigating some of the most abstruse problems of the disordered mind.

Although it may appear from my account that we have very little to show for the large amount of time spent in investigating insanity from all sides, we are, I think, justified in assuming that we do know more about the subject than twenty-eight years ago.

We are more often able to give more precise scientific reasons in obscure, and not patently maniacal, cases, to show in what respect they are insane, than the dogmatic statements or vague formulae which formerly were so often all we had to offer. It is a step in the right direction. The only way that advance in treatment is possible is by the all round study of the subject. The enormous amount of research work now going on is not labour wasted. To borrow a metaphor used many years ago by Sir George Savage, it is like filling up an enormous pit; countless barrowloads of material are flung in without for a long time showing any effect; but each load tells its tale, and slowly but surely the chasm becomes obliterated.

With the spread of knowledge, not only in the field of insanity, but in other fields of scientific research, it is to be hoped that much of the unnecessary dread which now surrounds the subject may be dissipated, and the stigma now attached to its victims or their relatives removed. This will give treatment a better chance. Now it is the rule for friends to conceal or deny insanity in their relatives, until the disorder has become more or less fixed, chronic, and too severe to treat at home. Doubtless, if incipient nervous breakdowns were fully recognized and promptly cared for, many more recoveries would be recorded, and fewer persons would ultimately become chronic burdens to the State.

We hear a great deal nowadays about the increase of insanity, and the deterioration of the race to be feared; but all insane are not imbeciles or degenerates, and many of those who swell the ranks belong to that large class to which the term "dementia praecox" applies, who often reach adolescent life with the promise of abilities above the average. At the root of the matter in these cases there would seem to be a lack of durability in the nerve cells. These persons have the necessary cerebral mechanism for high mental attributes, but they lack staying power. It is, in my opinion, especially in this class that a recognition of the trouble sufficiently early might in many cases ward off a nervous breakdown.

But this would mean that these persons would have increased facilities for procreating their species. Why not? There are, as I have just said, insane and insane, and doubtless with many it is desirable that they should not beget, but with others, clever but unstable folk, it may be quite otherwise. I believe that the offspring of a clever parent who has had an attack of insanity stands a better chance of becoming a useful member of a community than one whose parents, whilst labelled sane, have not an ounce of intellect between them.

Gregor Mendel's discovery, half a century ago, of the peculiarities of reproduction in culinary peas when crossed, gives us reason to hope that the deductions drawn from his observations and experiments may be applied to human beings, and if so, it is not improbable that the so-called taint of insanity may, under certain conditions, be no insuperable bar to marriage in the possessors; nay, the possessor of such a taint may even be a desirable progenitor if he or she also combines other qualities or factors.

Personally I am no great believer in attempts to control destiny, but anyhow the knowledge that it is possible to breed true in a large percentage of cases from tainted or impure stock is comfortable intelligence, and should be the means of reassuring many troubled minds.

The burden of insanity is the price we pay for progress. All nations taking a foremost place in the world have already, or will have in time, a large number of lunatics. I believe that if England ever does reduce her number to any extent it will be only when she has lost her place in the front rank. Do not misunderstand me: it is not by the lunatic that we as a rule benefit—although there are many exceptions to this statement—but, among families in which lunatics occur are also often to be found men and women of great abilities. In these one may suppose, the proper blend of instability with high attainments which makes for progress. Nature is ceaselessly carrying out experiments, and the lunatics are her failures.

All progress, as we understand the term, is the outcome of the activities of persons of high mental qualities and unstable nervous systems. The possessor of the stable nervous system is the placid bovine individual who is contented with his surroundings; but discontent is the very foundation from which all progress springs.

In conclusion, it appears to me that as the result of the labour expended on the study of insanity we are beginning to realize that insanity is not necessarily the bugbear we thought in the past. All insanity does not imply degeneration: we cannot make progress without that condition of the brain which makes for insanity.

YORKSHIRE BRANCH.

A PLEA FOR HARROGATE AND OTHER ENGLISH HEALTH RESORTS.

BY

CHARLES GIBSON, M.D., J.P.,

President of the Yorkshire Branch; Physician to the Royal Bath Hospital, Harrogate.

In the course of his address, on his installation as President, Dr. Gibson spoke as follows:

Notions of medicine have changed; men now understand physiology and believe in helping Nature in every possible way. How little we really know and how little we merely believe we know it is difficult to say, for simple authority is still largely the guide in ordinary medical practice. Nevertheless, we certainly have at the present time a much deeper insight into the exact character of disease than had our forefathers. We recognize that disease is the penalty paid for the violation of Nature's laws, whether consciously or unconsciously.

While we look upon physiology as the chief foundation of rational medicine, the science of medicine has been said to be the work of art in the field of Nature, but among many members of the profession there has been a want of trust in Nature and an over-trust in art, just as there is in physiology and pharmacology a tendency to deny anything where a scientific explanation cannot be given.

The peculiar and unexplained cures which are often effected by natural mineral waters confirm and justify the practice of spa physicians, and practical experience in the hospital is of more value to the doctor, from the patient's point of view, than any amount of research in the laboratory. The spa doctor does not belittle or dispense with the use of drugs, but uses them only as an adjunct, believing that the patient in most cases has had every advantage to be derived from their use before being sent to the spa.

In times past spa treatment was the subject of considerable scepticism and was regarded as being on the borderland of quackery, and we all know that no quack is worse than the professional quack; but now the spa doctor is recognized as a specialist who co-operates with his medical colleagues and is becoming more understood and looked upon as a valuable collaborator, and balneology is now one of the sections of the Royal Society of Medicine.

Of all the products of Nature or Art, water comes nearest to that universal remedy, that panacea, that elixir of life, so long sought after but as yet undiscovered. A large number of people look for panaceas, thinking that when found life will be easier and its privileges more apparent. Water is necessary for the digestion and solution of food; it is an essential alimentary principle, more necessary to our existence than solid food. Natural mineral waters produce effects far beyond what can be accounted for, either by their chemical composition or the power of their known constituents or by their temperature. As Gustave Monod said:

> These qualities may be due to minimal quantities of the other salts in solution, to continuous synthesis, as described by Gautier, to radio-activity, or to some kindred property to be discovered by the Curies of the future.

At the present time it is believed by many that the presence of radium is the explanation of the therapeutical effects of mineral waters, and we are told radium emanation decreases arterial tension in arterio-sclerosis and increases the activity of the digestive ferments, but may also produce emaciation, albuminuria, and even haematuria.

Radio-activity is one of the many physical and chemical properties of waters which are only partially understood, and requires much careful and patient investigation. In 1905 Sir William Ramsay reported that the old sulphur well in Harrogate was markedly radio-active, and the water is recognized as the most powerful drinking water of its kind. If so much can be attributed to radium, may we not claim something for the subtle influence of barium, which we know is of great value as a heart tonic, and strontium, which aids assimilation and nutrition and improves the appetite, and calcium, which has such an effect on the blood, as well as sulphur, which Aretaeus the Cappadocian prescribed for skin affections and melancholy—that is, black bile—eighteen centuries ago? Who can say what effect these salts have upon the constituents of the water and what effect they have upon metabolism? As we have such an *embarras de richesses* in the Harrogate springs, is it not time they were thoroughly analysed? Our natural mineral waters may be taken for a considerable time without causing disturbance of the stomach or intestines, while distilled water withdraws the salts.

Mineral waters prepared artificially can never, in spite of the closest similarity of chemical composition, equal the natural product. There is always some, perhaps subtle, difference, and in the seemingly slight variation may be the peculiar therapeutic effect of the natural mineral water. We may build up a synthetical baby but we cannot give it life. The chemical and physical properties of mineral waters are not definitely understood, but it is a well known fact that to have their best and most marked effect they should be drunk at their source, the results being much more satisfactory than when they are drunk in bottled form.

The English spas are too frequently neglected by doctors in this country. Troops of patients go to foreign watering places every year. Why should they go? If it be mineral waters they require, they might quite as well, and oftentimes better, have gone to the spa in their own country. In Harrogate we have eighty springs, and no European health resort can equal it in the variety and richness in mineral constituents. In the Bogsfield alone we have thirty-four, no two being exactly alike. Our old sulphur spring is unequalled, our baths unsurpassed, and our sanitation unexcelled.

Surely it is a great gain to the invalid weary with the march of life, or worn with the anxieties of business—perhaps worried with a disordered liver, or restless with shattered nerves—to be able to go to a health resort within, it may be, a few hours of his home and his friends, where he can have the most efficient treatment in one of the most bracing and healthiest spots in England, and have the ablest advice of doctors who understand his habits, his manners, and his ways of life, and to have the advantage to be able to converse in his mother tongue, especially with his doctor, to know that his food is good and wholesome; and where he is under the protection of just laws, and where he can carry a camera if he wishes, and especially where the sanitation is of the best, and where there is no necessity for an after-cure.

In England, until the last few years, we have allowed our mineral waters to remain almost unknown, and, perhaps in consequence, doctors have sent their patients to Continental spas; and patients who have been sent abroad for gout and rheumatism and liver or skin disease, as they grow older object to expatriation, and quite naturally ask their doctor if there is no place in England where they can have treatment, and have the comforts of home life, as well as the society of their friends, and, after being sent to Harrogate, wonder—and wonder naturally—why they were not sent to Harrogate before.

If Harrogate were better known on the Continent, and its merits—its barium, strontium, calcium, lithium, ammonium, in addition to its radio-activity and its sulphur—were properly appreciated, possibly we might have the foreign doctors, if not jealous, recognizing the advantages of our spa, and sending their patients in legions.

Harrogate might be termed a family spa, on account of the extraordinary variety of the waters, as members of the same family might be sent here for quite diverse conditions and different treatment—that is, the father may be sent for gout, the mother for gall stones, the daughter for anaemia or neurasthenia, and the sons for skin or liver

disease, lead poisoning, and so on. Harrogate has the advantage that treatment can be carried out in some cases as well in the winter as in the summer, and our sulphur bath, from its soothing effect in some cases of gouty eczema, etc., has earned the title of the Velvet Bath. In 1626 Dr. Dean wrote concerning one of the first wells:

It dries up the too moist brain, and helps rheums, palsies, cramps, etc. It is good against inveterate headache, megrims, vertigo, epilepsy, convulsions, and the like, cold and moist diseases of the head. It cheers the spirits, strengthens the stomach, and promotes digestion. It's good in black and yellow jaundice and hippo, as also in cachexy and beginning dropsy, seeing it opens obstructions and expels redundant serosities, etc.

This is a formidable list of diseases to be cured by one spring, so that since we multiply that spring by 80 we ought to be able to cure almost any disease to which the flesh is heir.

In 1841 Dr. Granville, author of *The Spas of Germany*, in his *Spas of England*, says:

Among the few really important spas of which England can boast I hold Harrogate to be of such manifest superiority—indeed, I was almost going to say uniqueness—on account of the peculiar nature of its waters (if properly managed), its sulphur mud, now first recommended, and its situation, that I felt anxious to bring all its merits before the general readers more fully than any medical treatise had done before. Harrogate has the elements within itself of becoming a spa of the first magnitude, even to the extent of attracting foreign travellers.

Harrogate, from its position, soil, geological conformation, salubrity, and the beauty of the surrounding country, with its abundance of sunshine, small rainfall, and dry, bracing, breezy air, with its two climates, mild and invigorating, is justly termed the Queen of Watering Places, having home comforts, able physicians, and unequalled sanitation, and rivals the much-vaunted resorts of the Continent.

Harrogate stands pre-eminent to all places in Europe for the extraordinary variety of its mineral springs. It possesses springs analogous to almost all the mineral waters spread over the whole of Europe.

It has stood the test of time and is becoming year by year more popular.

PAROTITIS ASSOCIATED WITH GLYCOSURIA AND ACIDOSIS.

By LAURENCE M. ROUTH, M.B., B.C.Cantab.,
LONDON.

The association of unilateral parotitis with a transient but well-marked glycosuria is a combination of which I can find no trace in medical literature, and may therefore be of interest to place on record. I have permission to record this case from Dr. Harrington Sainsbury and Mr. Stanley Boyd, who kindly asked that I should be associated with them in its management.

The patient, a somewhat stout but active man of 58 years, first complained of swelling in the right parotid region two to three days after a short railway journey in a very crowded carriage on Easter Monday, April 8th, when he had been obliged to stand just by the window, which was open a few inches at the top, in such a position that a direct current of air was thrown on the right side of the face.

When I first saw him, on April 15th, there was definite fullness, but no tenderness over the site of the right parotid gland. There were also two small superficial and non-indurated ulcers on the tongue on the right side, apparently a direct result of the patient nipping his tongue during sleep after removal of his false teeth. There was at the same time slight relaxation of the pharyngeal mucosa, especially on the right side. The ulcers and throat were painted with a solution of iodine. There was then no constitutional disturbance, and the patient complained no further.

A week later he had a feverish chill, with a temperature that reached 102°, a kind of attack to which he is liable. This cold lasted four days, during which there was no advance in the original parotid swelling.

It was not till April 30th that the patient again complained of pain and tenderness over this area. The swelling gradually increased in size, involving also the submaxillary gland on the same side; there was no lymphatic infection. There was considerable pain and constitutional disturbance, the temperature reaching 103° on April 27th. Hot fomentations were then applied two-hourly, and gargling with hot borax solution was practised frequently.

The jaws could be separated only about a third of an inch and the teeth on the right side could not be approximated. There was also much swelling and tenderness in the region of the right tonsil.

On April 28th the condition was worse, breath very foul, and speech well-nigh impossible. As a preliminary to a possible anaesthetic in case of the presence of pus being proved, the urine, which, so far as the patient knew, had always been quite normal, was examined. It was very acid, specific gravity 1038, there was a trace of albumen and a large quantity of sugar shown by a well-marked reduction by Fehling's test. Both acetone and diacetic acid were also present in a well-marked degree; the urine was passed frequently and in large quantities, and there was considerable thirst.

This unlooked-for complication was dealt with by large doses of gentian and soda, and a bottle of Vichy water daily. There was never any tendency to coma, but there was intense restlessness, and sleep was attained only by the use of aspirin, soporifics proving useless.

On April 29th, the temperature still remaining about 102°, the mouth could be opened better, the right tonsil and palate were freely punctured under cocaine, pus being believed to be present; none was found, but the incisions bled freely, and the difficulty in swallowing became less marked, consequently the search for pus through an external incision was postponed. The swollen fauces and partly closed jaws rendered the administration of an anaesthetic undesirable; moreover, there was no clear indication of the locality of any pus; the uvula and tonsil were much displaced to the left; there was a considerable tender swelling of the right cheek, but little or no swelling behind the posterior edge of the ramus of the jaw.

Next day (April 30th) the slight improvement was maintained, though restlessness was still extreme. Both the parotid and submaxillary swellings were rather smaller and less tender. The uvula, which had been pushed completely over to the left side, was now returning to mid line. The urine showed a fall in the specific gravity from 1038 to 1030. The reaction was less acid. Sugar was present to the extent of 6 grains per oz., as demonstrated by fermentation test. Diacetic acid and acetone were still present. The temperature was somewhat lower, but still remained about 101°.

On May 1st more improvement, swelling of parotid less hard, tense, and tender; the submaxillary region was no longer tender, lingual ulcers healed. Urine, specific gravity 1021; just acid in reaction. Sugar 2 grains per ounce. No diacetic acid demonstrated.

On May 2nd: Urine specific gravity 1013, acid in reaction, and still contained a trace of albumen, but no sugar. On the following day examination of the urine gave a similar result. Coincidently the temperature dropped to 99° and did not rise again. The parotid swelling was now very little tender, and the submaxillary gland, which during the height of the attack was swollen, tense, and tender, could no longer be felt.

On May 13th the urine remained free from sugar, the trace of albumen was now no longer present, and the parotid swelling was now unnoticeable except to a critical observer. There was no tenderness. The patient had lost 1 st. in weight.

The case is of interest in showing the coincidence of the glycosuria with the height and extent of the parotid swelling, and the associated marked constitutional disturbance; also the gradual and complete disappearance of the sugar from the urine *pari passu* with the subsidence of symptoms; the fall of the specific gravity of the urine from 1038 to 1013 within four days is noteworthy. At no time in the past had symptoms ever suggested the presence of sugar in the urine, and on several occasions during other ailments the routine examination of urine had shown it to be quite healthy.

Did the parotid inflammation cause some auto-intoxication with secondary effect on the metabolism of the pancreas as a cause of the glycosuria? There is, of course, some functional correlation between the parotid gland and pancreas, in that they both secrete a juice materially aiding in the digestive processes. Or is it that the parotid and submaxillary also secrete some internal secretion, the temporary disorganization of which may cause glycosuria? The fact that the left parotid and submaxillary glands were not involved, and that their internal secretions were therefore intact, would perhaps favour the former view.

With regard to the origin of the parotitis, I am uncertain whether to attribute it to the initial draught, or to an oral infection through Stenson's duct. I rather incline to the former view, owing to the facts that suppuration did not supervene, although at one time it appeared likely, also that there was no lymphatic affection throughout, and that the lingual ulcers had been noticed two or three times previously after biting during sleep without any untoward result.

ELECTRO-CARDIOGRAPHY AND ITS IMPORTANCE IN THE CLINICAL EXAMINATION OF HEART AFFECTIONS.

By THOMAS LEWIS, M.D., M.R.C.P.,*

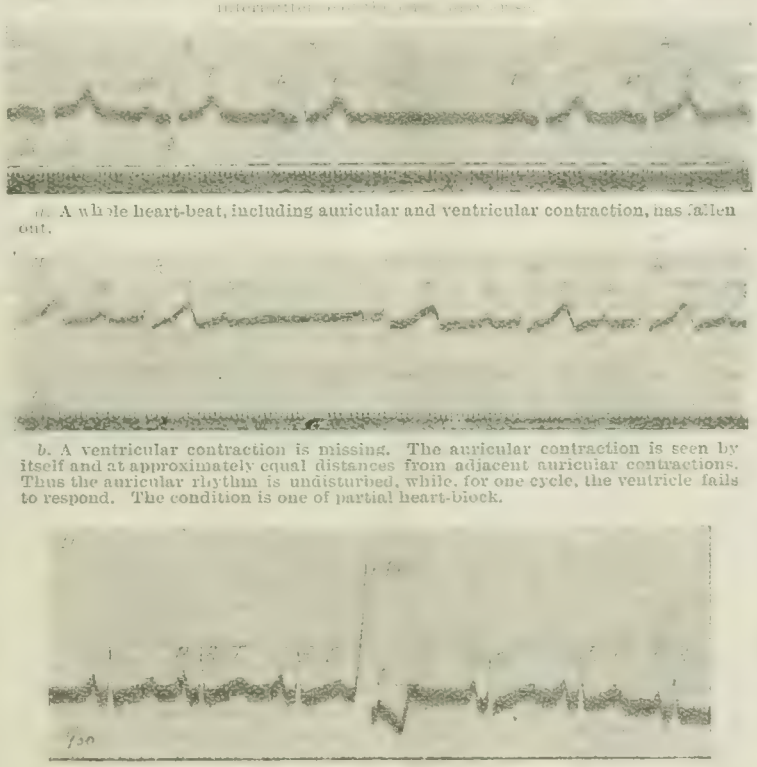
LECTURER IN CARDIAC PATHOLOGY, UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL; PHYSICIAN TO OUT-PATIENTS, CITY OF LONDON HOSPITAL.

(Concluded from vol. i, 1912, page 1162.)

PART III.

The Analysis of Cardiac Irregularities.

In the preceding articles I have dealt almost exclusively with illustrations of the value of electro-cardiography in the examination of hearts which beat regularly. In the present article I propose to describe and illustrate the more important forms of heart irregularity as they are portrayed by this method. Formerly it was customary to class all types of cardiac irregularity together, or at the most to distinguish between "intermittence" and so-called "delirium cordis." To-day our knowledge of arrhythmia of the heart forms one of the most complete chapters of clinical medicine. We are largely indebted to electro-cardiography for this knowledge. We now know that there are a number of different causes of disorderly heart action, and that they have widely different effects upon the circulation and upon the life-histories of the patients in whom they occur. We have learnt that the response of a heart, in which the chamber contractions are disorderly, to therapeutic agents is largely controlled by the nature of the disorder which is present. It is no longer sufficient to speak of this or that heart action as irregular; we must know the form of the irregularity, the part which each heart chamber plays in it, and its site of origin. This information is supplied by the galvanometer.



Figs. 15*a*, *b*, and *c*. Three electro-cardiograms, showing the manners in which

a. A whole heart-beat, including auricular and ventricular contraction, has fallen out.

b. A ventricular contraction is missing. The auricular contraction is seen by itself and at approximately equal distances from adjacent auricular contractions. Thus the auricular rhythm is undisturbed, while, for one cycle, the ventricle fails to respond. The condition is one of partial heart-block.

c. The regular action of the heart (*P*, *R*, and *T*) is disturbed by the appearance of a premature ventricular contraction (*P.B.*). This contraction is represented by an electric curve of anomalous form, because it has started in the right and basal portions of the ventricular muscle, and not on both sides simultaneously, as is usual. The auricular rhythm is again undisturbed; there is no response to the auricular contraction, which falls with the premature beat, but response to succeeding auricular contractions is regular. The premature beat was weak and failed to reach the pulse.

So-called "Intermittence" of the Pulse.

In many patients in whom the radial pulse and heart contract with perfect uniformity for long periods an occasional and isolated disturbance is noticed. The pulse is said to "intermit"—it loses one of the serial beats at intervals. The pause, which interrupts the otherwise perfectly regular pulse, is due to one of three causes:

1. *Whole Heart Silences.*—The pause may be due to a rare phenomenon, the complete loss of a whole heart-beat. During the pause the recorded line runs straight (Fig. 15*a*); no trace of either auricular or ventricular contraction is visible during it. On account of the rarity of the condition, its prognostic significance is at present imperfectly understood. The irregularity is usually vagal in origin.

2. *Dropped Beats.*—The pause contains no ventricular contraction, but an auricular summit *P* is seen at the expected point (Fig. 15*b*). When I say expected point, I mean that the auricular contraction falls at an equal distance between the preceding and succeeding contractions of the same chamber. The auricular rhythm is undisturbed, but a single response of the ventricle is lost.

This form of heart irregularity is not infrequent, and is especially common in patients who are under the influence of drugs of the digitalis series. It also occurs in acute and chronic rheumatic infections, in pneumonia and other conditions. It is due to a deficiency in the functions of the auriculo-ventricular bundle (heart-block), and is in reality an exaggeration of a condition previously described—namely, prolongation of the *P–R* interval. Its significance is the same, and has been discussed in a previous article. It is a grave sign.

3. *Prematurе and Weak Contractions.*—The pause may be occupied by a premature and abnormal contraction of the ventricle.† The premature beat is recognized by its strange shape, and by its falling at a point earlier than might be anticipated. It prevents the response of the ventricle to the succeeding auricular contraction; and this auricular contraction usually falls with the abnormal ventricular beat (Fig. 15*c*). The auricular rhythm is undisturbed, and, after the pause, the ventricle again responds to the succeeding beats of the auricle.

It is often possible, from the form of abnormal beat, to identify the region of the ventricle from which it arises. It may be stated that it comes from the right or basal portions of the ventricle, or from the left or apical portions. The illustration (Fig. 15*c*) is of a beat which has arisen near the right and basal portion of the ventricle.‡

This form of irregularity is extremely common; most adult men of sedentary occupation exhibit it from time to time. It is a disturbance of little consequence. The importance of recognizing it lies chiefly in its possible confusion with the other forms of irregularity.

Coupled and Tripled Beats.

A pulse or apex beat is not infrequently felt, in which the beats appear in groups of two or three. The beats at the apex may be similarly grouped. Such pulses are due to one of two chief causes. If, while the auricle beats regularly, a response of the ventricle to each third auricular contraction is missed, the remaining ventricular contractions necessarily occur in couples. If each fourth beat of the ventricle is missed, the remaining beats occur in groups of three (Fig. 17). Coupled or tripled beating of this kind is the result of heart-block.

Coupling or tripling of beats may be due also to frequent intermittences, resulting from premature contractions. If a premature contraction of the ventricle replaces alternate heart cycles, then a normal beat and a premature beat fall closely together (Fig. 16) and form a couple, separated from

* Work in the tenure of a Beit Memorial Fellowship.

† It may also be occupied by other forms of premature beat, which for the sake of simplicity I shall not consider.

‡ This conclusion is based upon experimental observations.

the next couple by a pause of unusual length. Both normal and premature beats may often be felt and heard at the apex beat, but the premature (or second) beat of the couple may fail to affect the pulse. If the premature beat appears at the wrist the pulse beats are coupled. If it does not, the pulse-rate is half that found at the apex beat. Tripling is produced at the apex when a premature beat replaces each third normal cycle.

The significance of coupled or tripled beating depends upon its causation. If due to heart-block, it is of far more consequence than if due to premature contractions. The difference between the two forms from this point of view has already been discussed.

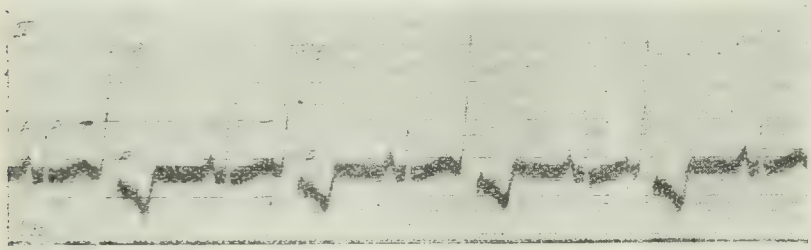


Fig. 16.—Electrocardiogram showing one form of coupling of the heart beats. Each normal cycle (*P*, *R*, and *T*) is closely followed by a premature ventricular contraction (*P*, *R*), which coincides with an auricular beat. These abnormal beats have arisen in the right and basal portions of the ventricle (see Fig. 15 *c*). The premature beats failed to reach the pulse, the rate of which was 51 per minute. The auricular or true heart rate was 101.

Halved Pulse-rate.

If in a patient, whose heart has been beating regularly, the pulse suddenly falls to one half its previous rate, it will be evident from the previous paragraph that the disturbance may be due to the occurrence of premature beats. If such be the cause, the electro-cardiogram will show the weak ventricular contractions. Often they may be discovered by ordinary clinical methods; but not infrequently, when the beats are exceptionally weak, and especially if the heart sounds are indistinct, they cannot be discovered in this manner. *However weak they may be they are always fully displayed by the galvanometer* (Fig. 16).

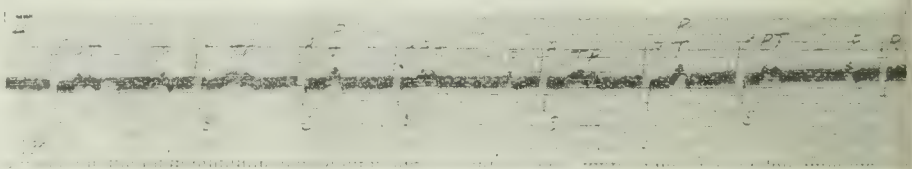


Fig. 17.—Electro-cardiogram showing one form of triple heart beats. All the ventricular beats (*R*, *S*, and *T*) are preceded by auricular beats (*P*); but there is a failure of the response to each fourth auricular contraction. Note that after each long pause, the *P R* interval is short, and as the group of beats proceeds it gradually widens—that is to say, a gradually increasing difficulty in conduction occurs, until finally response fails at the end of each group.

If the pulse-rate falls to half its original rate, the ventricular-rate may also fall to the same extent. In such a case the electro-cardiographic examination usually discovers two auricular contractions for each ventricular beat. Alternate auricular contractions have alone awakened ventricular response. Halving of ventricular rate, produced in this way, is one of the types of bradycardia, two of which were described in a previous article.

Gross Irregularity of the Heart: Auricular Fibrillation.

There are many forms of heart irregularity other than those which I have so far described. It would occupy too great a space were I to attempt their description. I shall consequently confine myself to one further illustration.

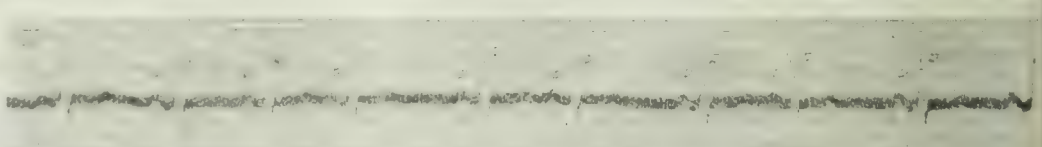


Fig. 18.—An electro-cardiogram from a patient who exhibited gross irregularity of the heart. It shows that the irregularity is of "sinus origin"—that is to say, the heart beats are *generated* irregularly. All the heart chambers are affected in the same manner; each ventricular beat (*R*, *T*) is preceded by an auricular summit (*P*).

In most patients who suffer from heart disease and in whom the pulse is irregular the pulse irregularity is of a gross type. In the examples of disordered action previously described the derangement is of relatively simple form, consisting of "intermittences," halving of rate, or groupings of beats which are repeated from minute to minute. But the heart's action may be so disorderly that the confusion is extreme, so that few of its cycles appear to be of the same length and the beats or pulsations are of varying strength. Such an irregularity may be due on rare occasions to irregular generation of the impulses at the normal site, and the whole heart is then involved in the same irregularity (Fig. 18). Such an irregularity is termed a sinus arrhythmia,* and is of no serious prognostic moment. It may also be due to a complex admixture of premature and normal beats, but this form of disordered action is also rare. In 60 to 70 per cent. of all failing hearts irregularity is the result of a remarkable phenomenon which I described in this Journal three years ago, namely, fibrillation of the auricles. Auricular fibrillation is a condition in which the co-ordinate contraction of the upper chambers is entirely lost; the muscle fibres no longer move together and perform the act of systole, but the walls of the chambers stand in a position of diastole, while fine flickering movements are visible all over their surfaces.† The muscle mass seems to be subdivided into a number of small foci, each of which is contracting independently of the surrounding tissue. The active emptying of the auricles has ceased; they remain always full of blood. That is the mechanical effect of fibrillation; but there is a further and far more important effect. As soon as the co-ordinate contraction is replaced by fibrillation, so soon are the slow and rhythmic impulses which normally stimulate the ventricle lost, and they are replaced by a large number of haphazard impulses which issue from the auricular turmoil. The result is a rapid ventricular action of an extremely gross type.

The importance of fully understanding the mechanism of this pathological condition and appreciating its effects upon the circulation can scarcely be over-emphasized. In rheumatic heart disease it is one, if not the most serious, event in the history of the affection. As a general rule, once it appears it remains until death.‡ The rapid ventricular action which it engenders is immediately felt, and is often the cause of the initial breakdown; for a weakened heart muscle cannot maintain an unduly accelerated rate. Moreover, as a large number of the beats are weak and fail to reach the pulse, a great deal of the excessive work is wasted. The rapid and turbulent action is speedily followed by venous engorgement, and signs of pulmonary and abdominal stasis may soon appear as an immediate result.§ Thus the irregularity is the *cause* of serious circulatory embarrassment, and is not, as was formerly

* Sinus irregularities also include the respiratory irregularities of children, where there is a waxing and waning of rate with each act of breathing.

† Our knowledge of these appearances has resulted from experiment.

‡ In a limited percentage of the cases it occurs in paroxysms, giving rise to a type of paroxysmal tachycardia, which is characterized by periods of gross pulse irregularity.

§ The diastolic position of the auricles and consequent stagnation of blood in them might be supposed to predispose to infarction of the lungs; but so far I have been unable to find clear evidence of it. It may be that clots formed in the auricles while fibrillation is present are less readily detached.

ought, the *result* of such embarrassment. That such is the case is known, for the irregularity appears first; it serves as a warning of future events. Moreover, the circulatory failure is not always immediate; when the heart muscle is stronger it may not show signs of failure until months or years after the onset of the disturbance.

The recognition of the disorder when it is seen—and it is frequently seen by all who practise medicine—is of consequence from several points of view. When, as is so often

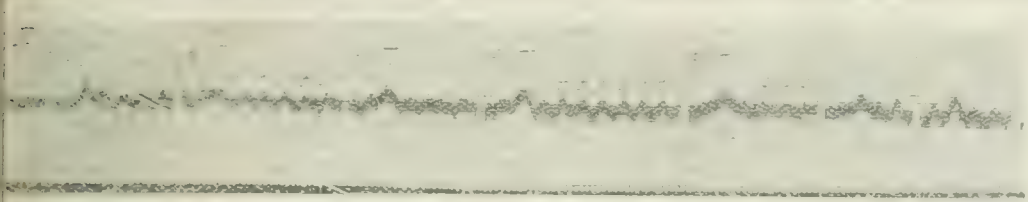


Fig. 19.—An electro cardiogram taken from a case of mitral stenosis: the heart contracted in a grossly irregular fashion. The curve shows that the irregularity was due to auricular fibrillation. The ventricular beats are of the usual form (*R* and *T*); the impulses have consequently come down from a point above the ventricle. The whole curve shows continuous oscillations of large amplitude (the conspicuousness of the oscillations is an indication of auricular hypertrophy), oscillations which, as I have shown, result from the fibrillation of the auricles. There are no *P* summits, representing co-ordinate auricular contraction.

the case, it develops in a case of mitral stenosis, a murmur limited to presystole is no longer audible, for this murmur is dependent upon co-ordinate contraction of the auricle. So it often happens that patients who have exhibited either no diastolic murmur, or only an early diastolic murmur at the apex during life,* are found to have mitral constriction after death.

But its recognition is of chief importance on account of the indications it gives for treatment. These are the cases in which digitalis may be looked to to give its conspicuous reaction. Administered in suitable doses, a great reduction of heart rate and a rapid improvement of the circulatory conditions may be anticipated in a large number of the cases, especially in young subjects. The fibrillation is not abolished, but a check is placed, and may be maintained, upon the number of impulses which reach and stimulate the ventricle. In such cases digitalis brings one of the most successful changes which modern therapeutics can record. Not only does it bring the moribund back to life, but it staves off disaster in those in whom the approach of failure is threatened.

While the disorder may be recognized in a large percentage of cases by ordinary clinical means, its certain and invariable demonstration can only be accomplished electro-cardiographically. The type of curve which it yields is illustrated by the last figure (Fig. 19). The curve was taken from a patient already under the action of digitalis; the ventricular action (*R*, *T*) is consequently relatively slow (the actual rate is 70 per minute; it had been 150). The shape of the ventricular curves (*R*, *T*) indicates the usual spread of the ventricular contraction, the impulses have come from the auricle. True *P* summits are absent, for the auricles are no longer contracting co-ordinately. The *P* summits are replaced by a series of irregular oscillations (*f*, *f*) which may be traced continuously throughout the whole curve. These little oscillations are the result of the perpetual and tumultuous activity in the walls of the auricles. They are the result of "fibrillation" in these chambers.

Summary.

To sum up, galvanometric examination of the heart is important from many points of view. It may give indications of enlargement of the walls of one or other cardiac chamber; it may accurately locate small lesions in the musculature. It informs us when the heart beat starts at the normal impulse centre or away from it; in the last named condition it tells us that the rhythm is no longer under the normal nervous control—a fact which is of fundamental importance in the management of our case; it tells us within certain limits where the new beats have their origin. It gives us a separate record of contraction in auricle and in ventricle, and accurately defines the time relation of contraction in one chamber and the other; thereby it frequently elucidates physical signs which otherwise remain obscure. It provides us with a perfect means of ascertaining the functional efficiency of the auriculo-ventricular bundle, the sole conducting tract upon which the ventricle depends for the reception of impulses which start its contractions. It allows us to differentiate between separate forms of slow and rapid heart action, which are of totally different significance. It provides us with an analysis of every form of cardiac irregularity, an analysis which is unrivalled in its precision by any other method. While the information derived from it relates essentially to the condition of the muscle, the method is often helpful in the diagnosis of lesions of the valves. It brings us into nearer contact with the functions of the heart muscle than does any other clinical method; it is a precise means of studying the heart as a living and moving organ.

The information obtained by electro-cardiography is not, as commonly thought, of purely scientific interest in the analysis of disordered heart action. It has a great and growing value in the practical management of patients. There are few heart cases in which our knowledge is not added to by its employment, and in a steadily increasing percentage facts which are essential if sound prognosis and treatment are to be attempted are elicited. The time is at hand, if it has not already come, when an examination of the heart is incomplete if this new method is neglected.

* Such patients are not infrequently mistaken for aortic cases.

SUBPERIOSTEAL HAEMATOMA.

BY

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SURGEON, WEST HAM AND EASTERN GENERAL HOSPITAL; SURGICAL REGISTRAR, THE CANCER HOSPITAL; HONORARY DEMONSTRATOR OF ANATOMY, MIDDLESEX HOSPITAL.

The two following cases are recorded because they seem to throw some light on the pathology of cases in which formation of new bone is associated with injury to the periosteum.

Case I.

A. P., male, aged 16, came under my care at the West Ham Hospital in January, 1911. He complained of pain in the knee and front of the thigh, which began after a fall on to a rail in November, 1910. The pain was constant, of a dull aching character; it was made worse by exercise, and was relieved by lying down. On the front of the thigh, just below its middle, could be felt a hard irregular swelling. This was fixed to the bone, and was less evident when the knee was forcibly and voluntarily extended. The movements of the knee-joint were not interfered with, and the skin over the swelling was normal. An *x*-ray photograph which was taken showed a deposit of new bone, lamellar in character, and lying for the most part parallel to the shaft of the femur.

An exploratory operation was performed, and an irregular plaque-like mass of rough cancellous bone was found. This was deep to the periosteum and in close contact with the shaft of the femur. The wound was closed, and the limb kept at rest on a splint for three weeks. At the end of that time the mass was considerably smaller, and all pain had ceased. Seven weeks after the operation the mass was scarcely palpable, and a skiagram taken showed nothing but a slight smooth swelling.

Case II.

L. D., female, aged 23, was admitted to the Cancer Hospital under the care of Mr. Jocelyn Swan, to whom I am indebted for permission to publish this case. Her history was as follows:

Seven weeks ago she fell off a counter and severely bruised her left thigh. She was unable to walk for an hour or two, but afterwards resumed work. She began to feel pain directly after the accident, and this drew her attention to a swelling in the thigh. A fortnight after she attended another hospital where an *x*-ray photograph was taken, a diagnosis of sarcoma made, and she was advised to submit to amputation. She was able to walk, but had severe aching pain after prolonged standing. On admission she stated that no increase in the size of the swelling

had been noticed. The middle third of the left thigh was enlarged by a fusiform swelling which was connected with the bone. It measured 6 in. long, and formed a very obvious prominence on the outer and front aspects of the limb. Behind, and more particularly internally, the swelling became ill-defined. There was a sharp demarcation between swelling and normal shaft below, but above the thickness of the soft parts made accurate palpation impossible. The skin over the swelling exhibited some prominent veins. The swelling was painless on palpation, hard, elastic, and of even consistency. The surface was smooth and no pulsation could be detected. No glands could be felt in the groin. There was no history of syphilis or tubercle.

On the evidence afforded by the history, a skiagram and the physical signs, a diagnosis of subperiosteal haematoma was made and confirmed by operation. A large quantity—over a pint—of blood-stained fluid, mixed with gelatinous clots, was evacuated, and a cavity exposed through which passed the shaft of the femur stripped of periosteum and eroded on its surface.

These two cases illustrate a late and early stage of the same lesion—subperiosteal haematoma. In the first case the haematoma was small, and the boy was not seen until a free deposition of bone had taken place. In the second case the haematoma was of large size, and the girl was operated on at a time when bone had only been deposited at the margins of the swelling where periosteum again joined the shaft. Similar cases have been recorded by Bowlby and by Makins and Godlee under the title "Myositis Ossificans Traumatica." Godlee concluded that the essential conditions were, first, an injury to the periosteum, and secondly, an effusion of blood. He deprecated, on these grounds, the use of the term "myositis," and regarded the condition as analogous to the cephalhaematomata of infants.

The evidence afforded by the cases detailed above strongly supports this view, and suggests that operative measures are indicated if the lesion be detected soon after the injury.

REFERENCE.

Proceedings of the Royal Society of Medicine, Surgical Section, April, 1911.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

X RAYS IN SCIATICA.

HOLDING the view that, however tempted one might feel to draw conclusions on the efficacy of a new method of treatment on a small number of cases, one should resist the temptation; yet, while thus waiting for further clinical material to establish a claim, when abstracts from the Continental medical press appear claiming priority in a new method of successful treatment of inveterate disease, one may be justified in speaking, as I recently had occasion to do.[1]

In the Epitome of Current Medical Literature of the BRITISH MEDICAL JOURNAL of October 7th, 1911, an abstract on the above subject opens as follows:

"Cure" is not too positive or definite a term to describe the results of *x*-ray treatment in sciatica, according to Babinski, Charpentier, and Delherm, who report four observations (*Arch. d'électr. méd.*, June 10th, 1911).

From the interesting details which follow it is clear that the four cases of sciatica were all of the most inveterate type, which had resisted every other kind of treatment, including such as those recommended by Dr. W. B. Watson in his instructive article on the diagnosis and treatment of sciatica, which appeared in the BRITISH MEDICAL JOURNAL of April 27th, 1912. The underlying pathological condition in these cases might be safely assumed to be one of varying degrees of dense neoplastic perineuritic adhesions, along particular parts of the tract of the sciatic nerve, the sequelae of previous subacute attacks. The indication for treatment is to set free the adhesions, by the induction of fibrolysis and resolution, to effect which the time-honoured resolvents and counter-irritants, including bee-stings, have had their day.

Four such cases came under my care in the same year as that of the authors' cases reported (1907), two being hospital patients and two in my private practice. One of the latter was referred to me somewhat reluctantly by a general practitioner of Cricklewood, as he admitted, from his superficial knowledge, he had many qualms regarding possible unforeseen evil effects of the *x* rays. Later I was the gratified recipient of a highly congratulatory letter from him. None of these cases have had any recurrence up to date. The tendo Achillis reflex was not elicited by me, though the importance of making this test must be appreciated when, as is shown in the cases of the authors cited, restoration of this function was attained in the course of cure.

There is no doubt that radio-therapy is paying the penalty of neglect and the careless manipulation of practitioners in the past, as well as of the ignorance of its limits, both for good and evil, by earlier users. It is hoped that in time this valuable method will find its legitimate place in the armamentarium of the physician, for such intractable chronic diseases; more so, as laying up in bed, splinting the limb, and the well-known irksome applications, can be entirely dispensed with.

London, W. H. D. MCCULLOCH.

[1] BRITISH MEDICAL JOURNAL, February 24th, 1912.

MINERS' NYSTAGMUS.

IN the issue of the JOURNAL for May 18th, 1912, p. 1127, Dr. Edridge-Green suggests, as the cause of miners' nystagmus, "a necessity for movement of the eye in order to be able to see with the fovea."

In April, 1911, in a thesis for the degree of M.D. at the University of Edinburgh, I put forward a similar suggestion as an explanation of the way in which the darkness of the mine plays its part in the production of coal-miners' nystagmus. My thesis was an endeavour to bring into line the existing, but previously controversial, theories as to the etiology of this interesting malady, and also to break new ground with regard to a determining factor. Briefly summarized, my conclusions were as follows.

In order to maintain central fixation in all positions of the head—that is to say, in order to keep the retinal image of an object upon the fovea centralis—there must be absolutely perfect co-ordination between the six extrinsic ocular muscles. The actions of these muscles are so complicated and, as a general rule, their co-ordination is so perfect, that it is justifiable to assume the presence of a higher cerebral centre—a fixation centre—whose function it is to control automatically the delicate and highly complex impulses sent out to the various muscles by the oculomotor nuclei in order to maintain central fixation.

Miners' nystagmus is a perversion of the function of central fixation due to the conditions under which the coal miner works, but determined by a personal factor which, in the majority of instances, is an error of refraction. The three factors most concerned in producing the disturbance of central fixation evidenced in miners' nystagmus are:

1. Defective illumination in the pits.
2. Insufficient room in which to work, necessitating a cramped or stooping position.
3. Refractive errors on the part of the men.

How these factors, and possibly some others, such as poisoning of the nerve centres by fire-damp, increased atmospheric pressure acting through the vestibular nerve, etc., could work together in causing a perversion of ocular stability was discussed at some length, but here I shall first refer to factor No. 1 (defective illumination), because this has a direct bearing upon Dr. Edridge-Green's recent communication. I wrote as follows:

It is generally recognized by physiologists that the fovea centralis is not so sensitive to a minimal stimulus of white light as the rest of the macula lutea. Consequently, in the blackness of the mines, the miner instinctively moves his eyes so as to bring the feebly illuminated image of the object he wishes to see upon some part of the macula other than the fovea centralis. Now this movement, infinitesimal though it may be, is in itself a departure from central fixation which is very disconcerting to a centre that has been educated to keep the visual image fixed always upon the fovea centralis. In other words, the balance of the fixation centre is disturbed.

With regard to factor No. 2 (insufficient room in which to work) in nearly all pits the miner spends most of his working day in a more or less stooping position, because the thickness of the seam does not permit him to stand

upright. Now, when a man in a stooping position desires to look straight in front he must really place his eyes in a position of elevation (relative to the orbital axes). The maintenance of the eyes in this position of unusual strain produces fatigue of some muscles and not of others, and this again has the effect of throwing the delicate mechanism of central fixation out of balance.

With regard to No. 3, it is well known that, of the miners working under almost identical conditions in a certain seam, only a certain percentage develop nystagmus. This suggests that there is a personal factor to be reckoned with that determines the onset of the disease, and in the investigation of this personal element much assistance can be obtained from a consideration of congenital nystagmus. Briefly, then, children are not born with the function of steady ocular fixation already developed; they have to acquire it by education of a special cerebral centre. If an infant comes into the world with very defective vision (caused, for instance, by corneal or lenticular opacities, or albinism) he goes through life with more or less well-marked nystagmus, for the simple reason that the brain never receives a sufficiently clear visual impression to stimulate the perfect education of this centre. For the same reason, children born with very high refractive errors may also be the subjects of nystagmus; in fact, I have personally investigated seven cases of juvenile nystagmus in which the only apparent cause for the non-development of steady fixation was a high error of refraction. It was a consideration of these cases that induced me to pay particular attention to the refraction in all cases of miners' nystagmus, with the remarkable result that, out of 200 cases of miners' nystagmus examined during the last three years, *I found errors of refraction in upwards of 90 per cent.* Mere coincidence is not a convincing explanation of such a large percentage; nor the suggestion that the Durham miner may be particularly prone to refractive error (though I am at present investigating the latter point). To me it is very fair evidence that refractive error plays its part in perverting the function of ocular fixation in the adult, just as we have seen that it can interfere with the development of this function in the child. In the case of the miner, working under, at best, conditions very disconcerting to his visual functions, the refractive error is the determining factor, the last straw, so to speak, of the burden which the fixation centre has to bear.

ALFRED C. NORMAN.

Durham County and Sunderland Eye Infirmary, Sunderland.

ETIOLOGY OF BERI-BERI.

THE following may be of interest, not that it elucidates the origin of beri-beri, but tends to prove that food is or may be only a predisposing cause in this disease.

The native crew of a ship consisted of Calcutta Indians, twenty-nine deck crew and fifty-two engine-room. Both crews used the same barrel of flour, the same sack of rice, the same meat, vegetables, and water supply, and cooked in the same galley. No complaints were made as to the quality of the stores supplied.

The deck crew were not under medical treatment for the last two months of the voyage. During that time there were six definite cases of beri-beri among the engine-room crew, having the typical signs and symptoms, very rapid pulse, œdema of the legs, loss of knee-jerks, and great muscular weakness. The only difference between the two crews was that the deck crew lived in the upper peak of the forecastle, which was dry; the engine-room crew lived in the lower peak, which was often unavoidably wet. When I left the ship in January there were nine more suspected cases among the engine-room crew, the deck crew remaining untouched.

These cases seem to point to dampness playing a large, if not the largest, part in the causation of this neuritis or disease.

Codsall. H. G. BROWNING, M.B.Birm.

AT the elections to the Belgian Chamber of Representatives on June 2nd, thirteen members of the medical profession were returned. These are Drs. Capelle (Dinant), Heynen (Neufchateau), Terwagne (Antwerp), D'Hauwer (Audenaerde), Peersons (Saint-Nicolas), Peel (Courtrai), V. Delporte (Mons), Delbecck (Roulers), Borginon (Brussels), Branquard (Soignies), Vaudeperre (Antwerp), Lamborelle (Malines), and Van Sande (Termonde).

Reports of Societies.

THE ROYAL SOCIETY.

Thursday, June 27th, 1912.

Sir ARCHIBALD GEIKIE, K.C.B., President, in the Chair

The Intensity of Natural Selection in Man.

PROFESSOR KARL PEARSON, F.R.S., said that the following statement had recently received much currency: A high infant death-rate in a given community implies in general a high death-rate in the next four years of life, while low death-rates at both age-periods are similarly associated. The evidence in support of the statement consisted solely in showing that a bad environment raised both infant and child death-rates. But the statement was not true, even when no correction was made for differential environment, in what was, perhaps, the most important data on the subject, the Registrar-General's ten-year life tables for England and Wales. In three out of four of these tables a rising infant death-rate was associated with a falling child death-rate, and when correction was made for environment there was a substantial *negative* correlation between infant and child death-rates. The point was one of very great importance, because the question of a selective death-rate is the question of whether natural selection —Darwinism—applies to man. The inquiry did not attempt to determine how far the rising infant death-rate was really the cause of the falling child death-rate: its aim was to show that there was no such general rule as that stated. If that rule were a demonstrable truth then it might confidently be asserted that Darwinism did not apply to civilized man. As a matter of fact, other methods of inquiry indicated that at least 60 to 70 cent. of the deaths in civilized human communities were selective—that is, due to the elimination of those with inferior constitutional powers of resistance.

On Negative After-images and Successive Contrast with Pure Spectral Colours.

Mr. A. W. PORTER, F.R.S., and Dr. F. W. EDRIDGE-GREEN read a paper in which an investigation on this subject was reported. A definite portion of the retina was fatigued by steadily gazing at an isolated region included between two definite wave lengths in the Edridge-Green colour perception spectrometer. After the fatiguing light had been viewed for a period of about twenty seconds the eye was turned to a screen on which a spectrum was situated, so that the after-image formed a band running right across the spectrum on the screen and occupying its centre. Experiments were also made with the spectrum replaced by monochromatic bands and on the appearance of the sodium flame after fatigue to various colours. The first point which was evident was the very great importance of the intensity of the light which was used, especially in relation to the reacting light.

1. Very little effect was produced, except when the intensity of the reacting light was the same or less than that of the fatiguing light.
2. The effect was chiefly noticed on the less luminous portions of the spectrum; for instance, after fatigue for yellow there was very little effect in the yellow, but considerable effect in the violet.
3. The after-image is not surrounded by the primary colour.
4. The effect of fatiguing the eye with a monochromatic region produces a uniform grey band across this region, when both fatiguing and reacting lights are of the same intensity.
5. The after-image does not change colour on fading.
6. Violet was the most affected after fatigue for red.
7. An after-image is seen in the absence of all external light.
8. Except after fatigue by a very bright light—as, for instance direct arc through coloured glass—yellow does not change to green after fatigue to red, or to red after fatigue to green. The same is found with the sodium flame, though the after-image was strongly marked on each side of it.
9. The after-image, even in the absence of all external light, is always darker than the surrounding visual field.
10. The complementary to the exciting light is never strengthened in the spectrum on the screen by the after-image.

These facts could not be explained on either the Hering or Young-Helmholtz theories. The explanation on the Edridge-Green theory of colour vision was the same as that given for other facts of simultaneous contrast.

Colour Blindness and the Trichromatic Theory.

Sir W. DE W. ABNEY, F.R.S., described a simple test capable of giving a quantitative measure of the degree of colour blindness which a colour-blind person possessed. By matching a single colour of the spectrum with the colour of the light coming from such a solution as of potassium chromate the degree of colour blindness could be immediately determined. He described also a method by which any displacement of the green or red sensation curves could be measured with great accuracy.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Wednesday, July 3rd, 1912.

Dr. JAMES RITCHIE in the Chair.

Food Requirements of Children.

DR. CHALMERS WATSON, in a paper on this subject, said that little or no information from clinicians was available as to the right standard for children. He had analysed the daily dietaries of eight apparently healthy children in medical families with the following average results: Protein 71 grams, fat 67 grams, carbohydrate 198 grams, giving a total of 1,725 calories. The ages of the children were from 4 to 6 years. This analysis had yielded a higher protein figure than in Atwater's standard for a child of similar age, which, however, was somewhat low, the optimum daily protein for a child of this age being from 60 to 65 grams. The protein was the important element in the diet of a child, and, with regard to its amount, the diathesis of the child had to be considered. In children of gouty diathesis the protein must be kept at or below the average; while in tuberculous children the average amount should be considerably exceeded, and this excess maintained during the whole growing period. That an extra protein diet could modify the functional activity of tissues, and especially of the thyroid gland, was becoming more and more widely accepted. Another important point was the provision of pure unadulterated food. The amount of adulteration of foods was vastly greater than supposed. The bleaching of flour by nitrous oxide fumes, which was illegal in America, was widespread in this country, and it was very desirable here that such flour should be labelled as "bleached." Further, a requisite amount of "hard" food demanding mastication should be provided. He then detailed a variety of one-course meals provided for Edinburgh school children, with data of their composition and cost. Dr. GOODALL said he was a believer in red meat for children, and especially for pining children—the withholding of such food until the age of 6 to 8 years was a bogey. Dr. DINGWALL FORDYCE said that while a tuberculous child could take more milk and more fat than an ordinary child, yet such cases did better on a relatively rich meat diet than on any other. Dr. PORTER emphasized the importance of idiosyncrasy in the diet of children. At the same time he did not regard red meat as a suitable food for young children. The idea of its special virtue in laying on flesh was now exploded, but also it was incompletely absorbed and lent itself to intestinal putrefaction. Dr. FIFE showed that the meals for school children described by Dr. Watson did not exercise the process of mastication; and alluded to excellent results in nutrition and development of children produced by a purely vegetarian diet. Dr. FIFE described a farinaceous food ("poy") used by the Sandwich Islanders, who were a race of splendid and powerful physique. In tug-of-war contests he had seen them easily defeat teams of Europeans (British and Germans). The PRESIDENT alluded to the extravagance of the poor in buying the more costly parts of meat, and to the dangers of tapeworm with a raw meat diet. Children in the stage of active growth demanded a relatively high protein diet. Milk protein was better than meat. Dr. CHALMERS WATSON replied.

Treatment of Cardiac Irregularities.

Dr. W. T. RITCHIE, in a paper on vagus stimulation and paresis in the treatment of cardiac irregularities, pointed out that the action of digitalis was partly a direct one on the heart muscle, and partly an indirect one by stimulating the vagus. Digitalis and strophanthus slowed the heart, strengthened the ventricular beats, depressed the conductivity of the *a–v* bundle, and in small doses depressed the excitability of the heart muscle in a manner comparable to vagus stimulation. All measures that stimulated the vagus ought to prove useful in the treatment of tachycardia, but in many instances they failed. In the treatment of cardiac failure by digitalis the disappearance of extra-systoles was usually coincident with the lessening of dyspnoea, cyanosis, and oedema, and might probably be ascribed to other factors than depression of excitability by vagus stimulation. In auricular fibrillation all forms of vagus stimulation might act beneficially in virtue of their action on the *a–v* bundle. Atropin was useful in partial heart-block. In alternation digitalis might be of service in slowing and strengthening the heart, in abolishing the alternation, and in relieving the patient.

ROYAL SOCIETY OF MEDICINE.

Monday, July 8th, 1912.

Sir HENRY MORRIS, Bart., President, in the Chair.

RESUMED DEBATE ON SYPHILIS.

THE debate on syphilis was reopened by Dr. DEAN, who discussed the question of syphilis as a possible cause of idiocy. Only a small proportion of idiots, he thought, showed the classical signs of congenital syphilis. Still, the view had been put forward by several writers that congenital syphilis was an important cause of idiocy, but it was based on cases in which, though the usual signs of the disease were absent from the child, there was a definite history of syphilis in the parent. A positive Wassermann reaction had been obtained in cases of framboesia, trypanosomiasis, malaria, and certain cases of leprosy; but they were very uncommon diseases here, so that a positive Wassermann reaction practically meant syphilis. In some cases this reaction, being positive, was the only sign of the disease being present. Among 330 patients in an idiot institution on the Continent 15 per cent. showed a positive Wassermann reaction. Among them the later the age at which the examination was made, the less frequently was the Wassermann test positive. He tried to detect symptoms common to all, but only a few cases showed evidence of a gross lesion of the central nervous system. Indeed, such lesions would not be consistent with the continuance of life. General paralysis and tabes seemed to occur chiefly in those in whom the syphilis had been only mild or unnoticed by the patient. Of 204 idiots examined in America by Attwell, 30, or 14.7 per cent., gave a positive Wassermann reaction. Congenital syphilis seemed to be a very important cause of mental deficiency. It would be well if every member of families which included one or more idiots could be examined by the Wassermann test. He recognized three groups: (1) Infants born with marked evidences of syphilis, the brain and other organs showing marked change. As a rule these die within a short time of birth. (2) Children who seemed to be healthy at birth but developed mental defect at or about puberty. They include the juvenile general paralytics. (3) Cases of imbecility and idiocy in whom the positive Wassermann reaction is the sole evidence of the syphilitic origin of the disease. He advocated the institution of the test in the case of all patients at lying-in hospitals.

Dr. J. H. DAUBER reminded the meeting that some fifteen years ago the British Medical Association had urged upon Government the necessity of an inquiry into the prevalence of venereal disease and the best means of checking it, but the Government declined to act. The Association should repeat its suggestion, the present time being specially opportune. The influence of the profession was probably never greater than at present, and recent discoveries in connexion with syphilis had attracted public attention. The medical profession would do justice neither to itself nor to the public if it concerned itself solely with the curative treatment of syphilis. As in the case of malaria, yellow fever, and other like diseases, it must initiate preventive treatment. It was its duty to speak out boldly and insist on the public recognizing that syphilis was a disease more to be dreaded than any other disease except cancer, and even more to be, perhaps, than cancer, since it was liable to be transmitted direct from parent to offspring; on the other hand, it was unlike cancer a preventable disease. Legislature generally moved in response to public opinion, and it was the duty of the profession to help to form that opinion. Leprosy

had been stamped out in the Middle Ages, and syphilis could be stamped out likewise, but not by the unaided efforts of the medical profession. The State should be induced to assume some control over patients suffering from syphilis; it had already done so in regard to tuberculous persons, but the law still left syphilitics free to disseminate their disease as much as they pleased. In Germany marriage within ten years of acquiring syphilis was illegal, and a law making it a criminal offence for a syphilitic man or woman to infect a healthy person would come into force within twelve months; but in Great Britain there was entire absence of legislation, so the power of medical men to check the disease was exceedingly limited. Most venereal cases seen by him at the Hospital for Women, Soho Square, were in innocent women infected by their husbands. Such women should be protected, a risk of syphilis not being part of the bargain of matrimony. Syphilis might be banished altogether if the country were once convinced that it was an unnecessary scourge. The people who chose to regard syphilis as a heaven-imposed penalty for vice must be induced to look at the matter in a practical, scientific manner. The first step should be to demand the inclusion of syphilis in the Infectious Disease Notification Act. Why should it receive preferential treatment? The exact procedure after notification was a matter for future consideration, but it might, perhaps, be somewhat as follows: The medical officer of health or other public authority to whom the notification was made would send a notice to the patient as to the steps he or she must take to avoid infecting others and to get rid of the disease themselves, and they would be told that if the prescribed directions were not carried out penalties would be inflicted. In the case of married persons it might be necessary to inform the infected partner that communication of the disease would be punishable, and possibly even to warn the uninfected partner. Obviously it was most important that child-bearing women should not be infected. Infected persons would have to produce cards showing that they were receiving treatment at the hands of medical men, and only in the case of obstinacy or blank refusal to carry out medical directions would a police summons be issued. Even then there need be no publicity. Few people resented genuine attempts to benefit them, and medical men could do much more by explanation and sympathy than could officialism by coercion. Major Harrison, R.A.M.C., who had had much experience in connexion with the Cantonment Code in India, was insistent on the fact that coercion should be kept as the last resort, and that the first steps in relation to prostitutes should be left in the hands of tactful medical officers rather than of the police. Under notification persuasion and argument would continue to be the chief weapons used by the medical profession, but coercion would be in the background. If there must be sexual immorality, at least let it be cleanly immorality, unaccompanied by a foul penalty, which fell as often on the innocent as on the guilty. In Sweden, a country ever in the van of human endeavour, syphilis was already notifiable, and steps in the same direction would be taken in New York also. Was it not time, therefore, that Great Britain also bestirred itself? No doubt there were difficulties in the way of notification, but they could not be regarded as insuperable difficulties, except by the kind of people who are always ready to go out of their way to look for lions in the path. In the main they were the same difficulties as those which preceded the introduction of the present Infectious Disease Notification Act, in regard to which it was declared that "people would never stand it" and other like statements. If the country were once convinced that the presence of syphilis was detrimental in the highest degree to the health and happiness of the people, it would submit to some discipline and control in connexion with that disease, as in so many others. If the medical profession contented itself with curative treatment and with discussing the dosage of salvarsan and other remedies, it would resemble Nero fiddling while Rome was burning.

Dr. J. B. CANDLER also urged that more attention should be given to the question of prevention on a large scale, rather than discussing the potency of salvarsan or the correct dosage of various mercurial creams. At the London County Asylum, Claybury, the serum and cerebro-spinal fluid of 109 cases of general paralysis were tested, and the serum gave Wassermann positive in 107, and from the cerebro-spinal fluid 109. In many of these cases the clinical diagnosis received *post-mortem* confirmation. In these investigations every care was taken, by means of controls, to guard against error. He and his colleagues had never relied on simple qualitative tests. He warned the profession against modifications of the test, some of which were useless, and pointed out the importance of having suitable extracts.

Dr. BARRETT spoke of the work which had been done in Victoria, Australia, in the effort to diminish the disease. In two series of 100 each relating to patients who had died from various diseases in Melbourne Hospital, one-third showed evidence of syphilis. The help of the ladies and the clergy was obtained, and the press were induced to boldly call venereal diseases by their true names, not "malignant contagious disease" or "the secret disease." He combated the view that prostitution was due to poverty, for Victoria was free from poverty, yet there was a good deal of prostitution: it seemed to be due to the desire to make a living without giving a proper return for it; it was a peculiar aberration of mind, and should be so regarded. In New South Wales a criminal suffering from venereal disease was not released until he was cured of it. He was not enthusiastic about the Contagious Diseases Act, and even if he were, the ladies in Melbourne would not have it, because they insisted on men being treated equally with women. In a Women's Hospital half the operative work was said to be due to gonorrhœa. If syphilis and gonorrhœa were eliminated, one would almost have, medically, a new world to deal with. If it should be the intention of the profession to go to the British Government for measures on the subject, he would be pleased to accompany the deputation and relate what had been done in Australia.

Dr. BERNSTEIN spoke of the success of salvarsan when given to syphilitic mothers, who had been producing a succession of stillbirths; with the result that healthy children were born subsequently to the treatment, and they gave a negative Wassermann reaction. He quoted statistics of cases suffering from various ailments, showing the beneficial effects of salvarsan when syphilis had been the responsible agent. Though many might not be in favour of a general notification of the disease, one would wish to notify many of the cases one saw, such as those in chefs and cooks at restaurants, whose opportunities of carrying the infection were appalling. One would like to see established large central laboratories to which the specimens of blood could be sent for diagnostic purposes. At present the diagnosis of syphilis on the Wassermann reaction had to be done, in great part, by private individuals. But it could not be done at a price which would allow of every man infected with syphilis having it done.

Dr. POWELL (Bombay) thought there must be a difference in the kind of syphilis in various countries. The disease in India seemed to deal with the arteries more than in Europe. In India by far the most common cause of death, apart from violence, was rupture of aneurysm of the aorta, the deaths from this being eight times as numerous as those from heart-valve disease. The disease described in the Old Testament as leprosy was much more like syphilis, as it was characterized by a primary sore in the form of an ulcer, and there was an eruption and, in many cases, a falling-out of hair. He did not agree with Mr. McDonagh that the State supervision of prostitutes had not diminished venereal disease. It was almost impossible for the law to get hold of male syphilitics, and the danger of syphilophobia must not be ignored. He had made *post-mortem* examinations on 11 cases of suicide which were directly due to syphilophobia, owing to too lurid a picture being drawn. When soamin was allowed to cool to 80 or 85 before injection it was followed by rigors, and he now used it at 103 to 110. He asked any one who had a death from salvarsan to examine the heart *post mortem*. Of 7 who had died after atoxyl injections, 5 had striking haemorrhages below the endocardium of the left ventricle.

The PRESIDENT concluded the debate by a general review of the whole subject. On the historical side, Dr. Ashmead had stated that the Japanese race had been saturated with syphilis for 1,300 years, and it had been among the Chinese race since 1024 B.C., and these races, by

their long generational experience, had acquired strong resistance to the germ. It was quite probable that there was syphilis among the American Indians before the arrival there of Columbus, but there were very few deformities from it, because it had been so well treated. The llamas of Peru, and alpaca sheep had apparently the same disease as human beings, and the regulation that the shepherds had to be accompanied by their wives was significant in this connexion. He felt that there was no justification for Mr. Hutchinson regarding Shakespeare as a syphilitic. Time alone could decide whether the use of salvarsan would annihilate tabes and general paralysis. It seemed from Dr. Mott's paper that the milder the symptoms of syphilis, the greater was the tendency of the person to have parasyphilitic affections. He felt that only the most competent and practised workers should be entrusted with investigations such as those concerning the Wassermann reaction. The question of the notification and segregation of syphilitics would soon come under the consideration of a committee of the society, after conference with the Eugenics Education Society. He concluded by paying a high tribute to the value of the debate just terminated.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

AT a meeting on July 2nd, Dr. CONSTANCE LONG, President, in the chair, Dr. FRASER reported upon a case of *Veronal poisoning* in a woman aged 48; she had suffered from insomnia for six years, and during the last six months had been taking veronal. During the ten days before being seen by Dr. Fraser she had taken 120 grains of veronal. She was then comatose, and died eighty-six hours later. While under observation 24 grains of veronal were recovered from the urine. At the autopsy the kidneys were markedly degenerated. Dr. LONG then gave an account of the work of the committees formed by the British Medical Association in connexion with the Insurance Act. Among the items of work accomplished by the State Sickness Insurance Committee was the drawing up of the pledge and of a memorandum with respect to the formation of local Provisional Committees in the different Divisions. The speaker emphasized the importance to women practitioners of becoming members of the local Provisional Committees, and of all members who had not already signed the pledge doing so forthwith. The Committee had also drawn up a scheme of Public Medical Service, which was suggested for adoption should the negotiations between the Chancellor and the profession break down. Miss IVENS, M.S., representing the North of England Association of Registered Medical Women, pointed out the importance of urging all consultants to sign the pledge, and thus to strengthen the hands of the British Medical Association in its difficult task of working out the problems of the Insurance Act as it affects the profession. The words "urgent necessity" in the pledge would be liberally interpreted, so that no patient in real need of treatment would suffer. The sum of 8s. 6d. had been decided on after careful consideration; it was based upon an average of 5½ visits to each insured person at 1s. 6d. a visit. It was also the regulation rate in the Post Office service. The Insurance Act would affect women practitioners very unfavourably unless the income limit were carefully defined, for they would lose as patients many women clerks, shopkeepers, and teachers, who could well afford more than 8s. 6d. a year. The questions which had been raised were further discussed by Drs. EDR. BENHAM, ROBERTS, LEEPER, and LANE-CLAYPON, and the Committee was asked to ascertain the names of registered medical women who had not yet signed the pledge, in order that they might be urged to do so without delay.

UNDER the will of the late Mr. Thomas Stephen Whitaker, of Everthorpe Hall, East Yorkshire, the following medical charities each receive a bequest of £5,000: Victoria Hospital for Children, Chelsea; the Brompton Hospital for Consumption; the London Fever Hospital; Hull Infirmary; Hull and Sculcoats Dispensary. The Norfolk and Lynn Hospital at King's Lynn also benefits to the extent of £1,000.

Reviews.

MECHANICS AND DISEASES OF THE JOINTS.

THE eighteenth fasciculus of Professor KARL VON BARDELEBEN'S great handbook of human anatomy forms the second part of the first section of the second volume.[1] This section treats of the anatomy and mechanics of the joints, and its author is Professor RUDOLF FICK. We reviewed the first part, which included the anatomy of the joints, in our issue of October 15th, 1904, p. 1014. The second part now under notice treats of the general mechanics of the joints and muscles. The author begins by considering the animal kingdom as a whole, and points out that there are no true joints in invertebrates, in which movements between the sections of a limb take place through the simple bending of a flexible portion, and are not accompanied by friction between the ends of segments. Simple as the movements of some true joints may seem, they are not so in reality, for the cartilage covering the bones is not rigid but adaptable, and the actual surfaces alter in contour during movement. In no case are the joint surfaces exact geometrically simple bodies, either in the cadaver or in life. In some joints the curvature of the surface is spiral. For instance, according to Langer, a sagittal section of the lower end of the femur forms a "logarithmic spiral," the peculiarity of which is that while the proportion between the radii of consecutive neighbouring spiral sections increases in a geometrical progression, the angles formed between these same radii only increase in an arithmetical progression. But even this is not exactly true of the knee-joint. Dr. Fick considers in detail the best methods of investigating the action of joints, and all possible ways of producing artificial joint surfaces. As regards atmospheric pressure in encapsuled joints, such as the hip, he points out that during prolonged traction in life negative pressure disappears owing to effusion of fluid from the vessels, which equalizes the pressure within and without the joint. We think that we do not exaggerate when we say that in this book the mechanics of the joints and muscles are approached and considered from every possible standpoint, and with exhaustive thoroughness and accuracy. The book—for it is an important treatise by itself—is a monument of industry and scientific acumen, but it presupposes in the reader a considerable knowledge of mathematical physics, without which a thorough understanding is impossible; yet much useful information may be got from it by those whose mathematical acquirements are but small.

The twentieth fasciculus, which forms the third part, deals with the mechanics of particular joints and muscles, the consideration of which takes up nearly twice as much space. It represents the outcome of twenty years' personal observations, but although this part alone consists of 667 large and closely printed pages, excluding the index and a very complete bibliography, Professor Fick says that it is still incomplete, in the sense that our knowledge of the subject is relatively narrowly limited, and that he cannot give facts on many points, but only offer conjectures or suggest further investigations. The author's modesty does his work less than justice, for we believe that his handbook will become as standard an authority as the work of the brothers Weber was for many years, and that it will be long before it is superseded by further researches and wider knowledge. He does not restrict himself by a narrow interpretation of his title, but goes thoroughly into such questions as the maintenance of the erect position in varying circumstances, and illustrates by figures the conditions of the "normal," the "comfortable," and the rather strained "German military" positions, and the effect of pregnancy on the balance of the body.

After considering the mechanics of each joint, a section is devoted to an investigation of the effects of the action of each and all the muscles acting upon it, and of the amount of force that each muscle separately and then each group of muscles is capable of exerting

[1] *Handbuch der Anatomie und Mechanik der Gelenke, unter Berücksichtigung der bewegenden Muskeln.* Von Rudolf Fick a. ö. Professor und Vorstand des anatomischen Institutes der Universität Innsbruck. Zweiter Teil: Allgemeine Gelenk- und Muskelmechanik. Jena: Gustav Fischer. 1910-11. (Sup. roy. 8vo, pp. 392. Abbn. 350; Tfn. 2. M. 12.) Dritter Teil: Spezielle Gelenk und Muskelmechanik. Mit 218 Teils farbigen Abbildungen im Text und 18 Tafeln. (Preis M. 35, geb. M. 35.50.)

in an average individual. In the case of even so apparently simple a joint as the elbow, which he shows not to be a simple hinge, a very great many factors have to be considered, and in the joints capable of movements of several kinds in many directions the problems which he sets himself to solve are exceedingly complicated. Not only are normal joints considered, but also the conditions affecting the joints in certain abnormal conditions, such as scoliosis, knock-knee, club foot, flat-foot, etc. A good many facts are quoted, giving the strength of ligaments and the force required to dislocate or disorganize a joint.

In the section on the movements of the spinal column in the living will be found an interesting discussion of the so-called serpent-men or boneless men who appear in music halls and such-like places of amusement. This kind of performance is very old, as an ancient Greek drawing shows. Exactly similar drawings are given of a German female acrobat, and most striking photographs of a male contortionist, with a hypothetical skeleton in one of the most extraordinary poses. Dr. Fick says that this extraordinary flexibility is not due to any special looseness of joints so much as to a greatly exaggerated extensibility of the "antagonistic" muscles concerned. In the chapters on the hip-joint there is a very thorough inquiry into the effects of contractions of the joint such as occur in hip disease, and of the compensatory arrangements by which the affected person is enabled to reach the ground with the foot. The author finds fault with the view, which he attributes to many surgeons, that the tilting of the pelvis in such circumstances is effected by flexion of the lumbar spine. In a long and intricate consideration of this question he points out that the movement is in the hip-joint of the sound side, and that the lumbar curvature is secondary. This is no doubt the case, and we should hardly have thought that many surgeons taught otherwise. The sections on the knee are very full, and the "practical remarks" contain an interesting discussion of the anatomy of the various lesions of the knee-joint, including internal derangements. In discussing the ordinary indirect fracture of the patella, he gives the "work" of which the quadriceps is capable as the enormous sum of 142 kilogrammeters. An explanation of the permanent loss of power which so often follows fracture of the patella even when a good result is obtained is given on theoretical grounds, and as Dr. Fick says, it would be interesting to study the conditions more accurately by experiment. We have only been able to touch on a few of the interesting discussions in this book. There are many others on other joints which will well repay close study. The comparative anatomy of the joints is briefly dealt with.

Of the eighteen plates at the end of the volume, seven are excellent reproductions of *x*-ray pictures, with superposable outlines, of the bones, etc., concerned.

It would be a work of supererogation to praise the well-known handbook on *Diseases of the Joints and Spine*,[2] by Mr. HOWARD MARSH, which has been familiar to many generations of students. But the best handbooks become obsolete, and Mr. Marsh has been well advised to publish a third edition, which has been brought well up to date. In this work Mr. GORDON WATSON has been associated with him. New chapters on septic arthritis and on arthritis in specific infective diseases and on intermittent hydrarthrosis and coxa vara have been added. To avoid unduly increasing the size of the book, some of the histories of cases which formed a useful and prominent feature of former editions have had to be omitted, and the advance of knowledge has made it necessary practically to rewrite several other chapters. Thus altered and added to, the book should maintain its place in the estimation of students and practitioners, and continue to be valued and read. Of the illustrations, the excellent coloured frontispiece, which represents tuberculous disease of the synovial membrane of the knee-joint, is most interesting. There are three other coloured plates, and these and the black and white illustrations are all good.

[2] *Diseases of the Joints and Spine.* By Howard Marsh, M.A., M.C.Cantab., F.R.C.S., Master of Downing College, and Professor of Surgery in the University of Cambridge. New and Enlarged Edition, thoroughly revised by the Author and by C. Gordon Watson, F.R.C.S., Surgeon to the Metropolitan Hospital, Assistant Surgeon to St. Bartholomew's Hospital, etc. London: Cassell and Co., Limited. 1910. (Cr. 8vo. pp. 647, plates 12, figs. 100. 10s. 6d.)

DEFECTS OF COLOUR SENSE.

DR. HANS KÖLLNER'S book on the defects of the colour sense[3] is one of the best books on colour blindness that has been written. It is divided into two portions, the first dealing with congenital defects of the colour sense, the second with acquired defects. Köllner gives the percentage of colour blindness at 7 or 8 per cent. of men, or, if slighter defects are included, 10 per cent. The importance of colour names is thoroughly recognized, and in all methods recommended—as, for instance, the lantern and spectral apparatus—they are employed. Holmgren's wool test is severely condemned, and has not been employed in any of the cases related: the method is not even recommended as a subsidiary test. He gives in support of this opinion Nagel's examination of a large number of railway men who had previously passed the Holmgren test. Nagel found 5 per cent. colour blind—that is, a greater number had escaped detection than had been detected. Many facts—as, for instance, that simultaneous contrast is increased in the colour blind—which are of fundamental importance in testing for colour blindness, and which were discovered by Edridge-Green over twenty years ago, are attributed to recent writers. In the division on acquired defects of the colour sense there is a very good section on chromatopsia. The condition of the colour sense in various diseases is stated. A careful comparison is given of the defects in the colour sense found in cases in which the neuro-epithelial layer of the retina is diseased in relation to those cases in which the other systems of neurons, from the retina to the perceptive centres in the brain, are affected. In the first division—that is, where there is disease of the neuro-epithelial layer—there are preponderating (but probably not exclusively) photochemical defects of the colour sense—acquired blue-yellow blindness. There may be a general diminution of sensibility for all colours. Subjective symptoms, flicker, coloured seeing, and positive scotoma are found. There is no relation between the defects of the colour sense and visual acuity. Torpor retinae is found with considerable defect of dark adaptation (hemeralopia). When there is disease of the other neuron layers a gradual diminution of the colour perception is found passing through red-green blindness to total colour blindness. Visual acuity diminishes at the same time and proportionally to the diminution of colour perception. Acquired blue-yellow blindness has not yet been found. Dark adaptation is not as a rule affected, and remains the same as in the normal. The Purkinje phenomenon remains as in the normal. References are given, but might have been more extensive; in those on the subject of the normal colour sense and that of congenital colour blindness on p. 102, not a single reference is made to any work not in the German language. It is true that Edridge-Green's theory of vision and colour vision are both given, but the reference is to the *Berliner klin. Wochenschrift*, 1909.

REFORM IN ANATOMICAL TEACHING.

WE welcome the textbook of *Practical Anatomy*,[4] by two well-known London teachers, Mr. F. G. PARSONS and Dr. WILLIAM WRIGHT, not only for its own sake, but because in it a definite attempt has been made to discard some of the unnecessary details which encumber nearly all manuals of practical anatomy and which the student thinks it his duty to prepare for examination, if not to remember after obtaining his degree. The object of the authors has been to provide a book which shall contain all those anatomical facts which it is essential for a medical student to know, omitting the anatomical information which is not necessary for the student. With this object most teachers would actively sympathize, but differences of opinion would tend to show themselves when it had to be decided what was and what was not essential. On the whole, the authors seem to have hit the happy medium and produced a book which is clearly written, admirably arranged, and which assuredly will be popular with the average student. They lay great stress on the technical methods of displaying the

[3] *Die Störungen des Farbensinnes, ihre Klinische Bedeutung und ihre Diagnose.* Von Dr. Hans Köllner. Berlin: S. Karger. 1912. (Sup. roy. 8vo. pp. 427; Abb. 33; Tfn. 5. M. 17.)

[4] *Practical Anatomy: The Student's Dissecting Manual.* By F. G. Parsons, F.R.C.S., and William Wright, M.B., D.Sc., F.R.C.S.Edg. In two volumes. London: Edward Arnold. 1912. (Demy 8vo. vol. i, pp. 483, figs. 189; vol. ii, pp. 389, figs. 190-352. 8s. 6d. net per vol.)

various structures successfully, and on the positions and relations of structures which experience has shown to be of practical importance. The book is written essentially for men who intend to work conscientiously at the body and see things for themselves—the only satisfactory way of learning anatomy—and will not appeal to those, happily a small number, who dissect as little as possible and trust to home reading to obtain the requisite knowledge of the subject.

There are, however, two or three points to which we should like to refer, for the authors, whilst not omitting some reference to all the really important structures, have, we think, been too brief in certain instances. For example, the pelvic fascia is dismissed in a line or two; only the origin of the levator ani is given, and "it hangs like a curtain from a curtain rod"; though attention is directed to the lymphatics generally, no special account is given of the glands which receive the collectors from the tongue. Moreover, we do not think it right to associate the pyriformis with the levator ani and coccygeus muscles to form a pelvic diaphragm or muscular floor to the pelvis (p. 216), or agree that the levator ani has a large aperture in its anterior portion for the passage of the vagina (p. 233). The name of "levator vaginae," which the authors apply to a part of the levator ani, is usually given, we believe, to a part of the constrictor urethrae muscle.

Apart from these and two or three printer's slips, the book is singularly free from error and ambiguity, and we congratulate the authors on the success which they have achieved. For they have recognized to the full the increasingly practical character of medical education and have written with a clear conception of the requirements of the medical student of to-day. Honestly used, the book will direct him along the path he must travel to be successful, by developing his powers of observation, and the faculty of estimating what he observes at its due value.

There are 322 illustrations in the two volumes, of which some 15 per cent. are repetitions either once, twice, or three times. Although many of them are rough and some unsatisfactory, such as the photographs of the brain sections, they will be found, for the most part, to be of the greatest assistance to the student in his work. They have this further merit that, being simple and effective, they are likely to stimulate the student to make rough sketches of his dissections for himself in a notebook, one of the best possible ways of impressing on the memory the many facts which must be remembered. We cordially recommend the book and wish it a prosperous career.

THE "BRITISH GUIANA MEDICAL ANNUAL."

THE late appearance of the *British Guiana Medical Annual* for 1910[5] (1912) is due, as is explained in the preface, to the illness and absence of the editor. Better late than never, however, and the volume contains the usual wealth of material. In the first part are papers, for example, on enteric fever, midwifery, village sanitation, anthrax, and the nastin treatment of leprosy; then in the second part come clinical notes, and in the third part the *Transactions* of the British Guiana Branch of the British Medical Association for 1909 and 1910; the fourth part contains the public health statistics and medical distribution of the colony. Dr. Ozzard's paper on Village Sanitation in British Guiana is a very important one, dealing in succession with water supply, disposal of faecal matter, and drainage. Though machinery exists in the form of ordinances, yet in actual practice none of these matters are properly carried out, and the sanitary condition of most of the villages is deplorable; such insanitary conditions must largely add to the disease and death-rate of British Guiana generally and keep up the name for unhealthiness which it would seem to possess. Dr. Ozzard believes that everything depends on the village authorities themselves as to whether, as he puts it, they intend to improve the sanitary conditions of their villages or whether they prefer to continue wallowing in the mire. A word from some higher authority, one would imagine, might have the desired effect of stimulating these village worthies. Dr. Ozzard is to be congratulated on his pluck in exposing this unsatisfactory state of affairs, and it is to be hoped that his paper may lead to action. Another paper that merits attention is that by Dr. Wise on the nastin treatment of leprosy. Dr. Wise, after an exhaustive trial of the remedy, concludes that the great majority of cases have not been influenced, some have got considerably worse, while others have improved to such a degree that in three cases the results approximated to a cure. Since the favourable results are so few, longer and wider experience alone will, as Dr. Wise observes, demonstrate whether the cases were instances of natural improvement irrespective of the nastin treatment or whether the injections played an active part in the disappearance of the leprous deposits. Much the same results have been obtained in other parts of the world with the nastin treatment. On the whole they must be looked upon as disappointing. A very good report on the Second International Scientific Conference on Leprosy is furnished by the Hon. J. E. Godfrey, Surgeon-General of British Guiana, and some of the other papers contained in the *Annual* are also very interesting.

[5] *The British Guiana Medical Annual and Record.* Edited by K. S. Wise, M.B., B.Ch., B.Sc., D.P.H. Seventeenth year of issue. Demerara: Printed by the "Argosy" Company, Limited, printers to the Government of British Guiana. 1912. (Demy 8vo, pp. 221. 5s.)

NOTES ON BOOKS.

THE first edition of Dr. CALDER'S *Lectures on Midwifery for Senior Students and Midwives* appeared in 1906. It has been revised, rewritten, and re-illustrated, so that the second edition[6] is practically a new book. It is, taken as a whole, a very good book, a clear and safe guide for the pupil. There are occasional lapses. At p. 211 we read of "Bank's" retraction ring, when Bandl's is obviously meant. At p. 161 the reader is told that dead matter "*develops*" germs; and again at p. 169 that "decomposition *develops* germs." Of course, it is the other way about—germs cause decomposition. There are many illustrations in the text, but these are very unequal in artistic value. Some are Dr. Calder's own, and are frankly diagrams; others are borrowed. Several of them display the accoucheur's hands clothed in india-rubber gloves. The author does not enjoin the use of gloves himself, and in this we agree with him. But, when speaking of the risk to the midwife of cuts, scratches, or pimples on her hands, we think he might have mentioned the safety conferred by an india-rubber finger-stall. We have no doubt that his book will be popular; and it deserves to be.

There are already a fair number of books dealing with gynaecology from the standpoint of nursing, but the author of none of them has attacked his subject so successfully as to leave no room for a rival. For this reason alone *Gynaecological Nursing*,[7] by Dr. ARTHUR E. GILES, would be entitled to consideration, and this it will be found to repay. There are those who cavil at the extent to which the modern nurse is expected to specialize, and at the number of subjects which she is invited to regard as requiring separate and specific study. In such criticism there is doubtless some truth, but in the case of gynaecology Dr. Giles disarms it by showing in his chapters on the anatomy, physiology and pathology of the reproductive organs that there are a good many points with which a woman who is to prove an efficient assistant should be more familiar than are the general run of nurses. The same conclusion may be based likewise on the chapters dealing with the preparation of patients for examinations and operations; with after-treatment; and with complications. To describe complicated subjects briefly, yet adequately, and truthfully yet in simple language, is often a more trying task than to write a complete treatise thereon. And in these respects Dr. Giles's work leaves little to be desired.

Mr. C. H. HAMPSHIRE'S *Volumetric Analysis*[8] is a useful little book on the subject for the use of students. It is written primarily for pharmaceutical students, and the volumetric operations requisite in testing pharmacopoeial chemicals receive particular notice. The systematic arrangement of the matter and the very clear way in which it is dealt with make it an excellent textbook for anyone commencing the study of the subject.

[6] *Lectures on Midwifery for Senior Students and Midwives.* By A. R. Calder, M.B., M.R.C.S. Second edition. London: Baillière, Tindall, and Cox. 1912. (Med. 8vo, pp. 264; figs. 180. 5s. net.)

[7] *Gynaecological Nursing.* By Arthur E. Giles, M.D., B.Sc., F.R.C.S., M.R.C.P. With 41 Illustrations. London: Baillière, Tindall and Cox. 1912. (Crown 8vo, pp. 187. Price 3s. 6d. net.)

[8] *Volumetric Analysis.* For Students of Pharmaceutical and General Chemistry. By Charles H. Hampshire, B.Sc.Lond., A.I.C. London: J. and A. Churchill. 1912. (Crown 8vo, pp. 110; figs. 3. 3s. 6d.)

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

THE ANALYSES IN "SECRET REMEDIES."

On July 4th the examination of Mr. E. F. Harrison by members of the Committee was continued.

In answer to Mr. Glyn Jones, who asked whether the witness had any views with regard to the practice of having on the market identical substances known by varying trade names, Mr. Harrison said he had no definite views, but he recognized there were distinct disadvantages. On the other hand, to attempt to upset the trade-mark rights of these proprietors would be a very big undertaking. The matter was dealt with by societies such as the Pharmaceutical Society, which published a list of names for such articles, which were neither the trade mark nor the long chemical names.

Mr. Glyn Jones asked the witness whether the distinction he had made at the last meeting between the four classes of proprietary medicines—the three non-secret and the one secret class—was not one of a degree of secrecy.

Mr. Harrison thought it was rather more than that. The difference between stating ingredients and stating no ingredients was more than one of degree; it was an absolute difference.

Mr. Glyn Jones: Your Class 3, in which practically all the ingredients are stated, are prescribed by the public for themselves, so that a complete disclosure does not prevent self-medication?

The witness agreed that this was so.

In Hewlett's mist. bismuthi there is a secret not discoverable by analysis for which doctors think it worth while to call upon their patients to pay 6s. a lb. more?—I should not admit that it was not discoverable by analysis.

Would a doctor dispense Hewlett's in preference to his own mixture?—It is often done.

In reply to the Chairman, the witness said there were mixtures of which a full account could not be given by analysis, but he would not like to say the preparation in question was one of these.

Mr. Glyn Jones observed that if a full account had been made public it would have saved the medical profession 6s. a lb. He proceeded to refer to an editorial in the BRITISH MEDICAL JOURNAL of March 23rd last (p. 683), and asked if the witness thought it an accurate or fair description of a soothing syrup which consisted of lemon juice, tincture of saffron, syrup of tolu, and salt, to say it was a mixture containing hydrochloric acid.

Mr. Harrison said that a mixture of salt and lemon juice did actually contain hydrochloric acid. Nevertheless, he did not think the description would have been a fair one if the composition of the syrup had been as suggested.

Might not the statement in the JOURNAL be quite the natural result of analysing a substance without any idea beforehand of its contents? It is found to be acid, chlorides are found, and the assumption is made that the acid is there in the form of hydrochloric acid?—It might be, but that is not the case here. I have never made any such unwarrantable assumption. The chlorine, sodium chloride, and the free acid were determined separately, and the balance, the free acid, represented hydrochloric acid.

In making the point that where his analysis and the statements of proprietors of proprietary medicines as to contents were at variance, he did not impugn the good faith of the proprietors, Mr. Harrison mentioned an instance to show how a proprietor might be under a *boni fide* misapprehension. At page 35 of *Secret Remedies* there was an analysis of the American nostrum, tuberculozyne. The first sample did not contain any trace of copper, and the maker stated that he relied on copper for the efficacy of the preparation. A subsequent sample did contain a trace of copper, and it afterwards appeared that the preparation was imported into this country in iron drums. The merest tyro in chemistry knew that iron would act on a copper solution—the copper would be deposited and the iron would go into solution.

Mr. Glyn Jones: Might not the fact that only one libel action is pending in regard to *Secret Remedies* be accounted for by the fact that, in order to succeed, the proprietors would have to disclose their formulae?—I should think if they could win without disclosing their formulae more might have attempted to do so.

Would not the publication of an analysis and the casting on the maker of the onus of either accepting it by default or doing what he did not want to do, giving his secret away, lead to unfairness?—It might lead to unfairness, but I do not know, as a matter of fact, that if a libel action was brought the proprietor would be compelled to disclose the formula. If he could prove the analysis was wrong in a material particular he would probably win his case.

As to the suggestion that out of 146 preparations mentioned in the first volume of *Secret Remedies*, only 75 were listed by a big firm of wholesale proprietary medicine dealers, Mr. Harrison said there was unquestionably a very large traffic which did not go through the retailers. A large number of these articles were only supplied direct through the post, and it would have been quite unfair and unrepresentative to leave them out. He did not want it to be understood that these had not a large sale; some of them undoubtedly had.

The Chairman ruled out, as not being properly addressed to a non-medical witness, questions by Mr. Glyn Jones as to the source whence medical men derived their knowledge of the therapeutic value of drugs.

As bearing on the question whether the statement on the label of the full ingredients of a preparation would prevent exaggerated claims being made on its behalf, Mr. Glyn Jones called attention to a medicine as to which the statement on the label of the contents was borne out by the analysis in *Secret Remedies*, and on behalf of which very wide claims were made.

Mr. Harrison said the public could bring the matter before a medical man or chemist, and ask whether it was likely to do any good.

Mr. Glyn Jones: Do you think a mixture of sugar and water could be launched at a popular price as a proprietary medicine?—I think it could. I believe a cancer cure which consisted of water without the sugar lived for many years.

The Chairman: Did they not claim it was "electricity dissolved in water"?—Yes.

Mr. Glyn Jones: Do you suggest any State censorship of the claims made in advertisements?—Yes, but I do not mean a censorship in the sense of submitting everything to an official, only that if exaggerated claims were made it should be the duty of some one to deal with the matter.

Mr. Lawson: That is done now by the Public Prosecutor?—Purely theoretically. (Laughter.)

In reply to a further question, the witness said that just as the JOURNAL could not analyse everything offered for advertisement in its columns lest it should be regarded as guaranteeing the article, so the State should not exercise a strict and complete censorship, or it might be regarded as responsible for guaranteeing the quality of every preparation on the market. It should only interfere in flagrant cases, as it notoriously did not now.

In reply to Mr. Bathurst, the witness said it was not possible for alkaloids to pass undetected in the analyses of medicines, because, although it was very difficult to identify some of the lesser known alkaloids completely, there were certain general tests which applied to all, and these it was quite easy to use. He agreed that it would be an advantage if it were impossible to describe a medicine by several names.

Mr. Bathurst: I do not quite see what is the advantage of mentioning the ingredients on the label unless, in all cases and not in the case of poisons only, you indicate the amounts. Surely it would be possible to avoid all liability by introducing infinitesimal amounts of what may be beneficial drugs and larger quantities of drugs having no effect?—In this case the principle of *de minimis non curat lex* would apply; a substance could hardly be deemed to be present if it was there only in infinitesimal quantity. The witness added that from many points of view he would prefer to have the quantities stated on the label, but in his opinion in some cases it would inflict hardship upon manufacturers by giving away a valuable trade secret.

Mr. Bathurst: Has not the public weal to be considered before these small questions of proprietary advantage?—Yes, but a small and unproved advantage to the public could hardly weigh against a definite injustice to the manufacturer. On the other hand, the great advantage to the public of declaring the ingredients is quite fairly set

against the small harm likely to be done to manufacturers.

Should herbalists be dealt with by legislation?—Certainly; I think it is highly desirable.

Would any serious injustice be done if herbalism were treated as a misdemeanour?—I think it would be doing considerable injustice and would be setting up a dangerous principle.

Are there any expert herbalists in the country?—I could not say. If there are, they are exceedingly few.

It is not a profession which the British Medical Association would recognize?—Certainly not: the only persons who are entitled to be called expert herbalists are pharmacists who undergo a long training in the botany of the *materia medica* and who are well versed in herbal drugs.

Sir Henry Dalziel: What was the primary object of publishing *Secret Remedies*?—I think it was simply to inform the public of the composition of typical examples of medicines that have a wide vogue. I understand that about 150,000 copies have been sold.

Have all the large manufacturers accepted your report?—Whether their not having written in protest is to be taken as having accepted is a matter of opinion. As far as I know, none of them did write.

The witness, in reply to a further question, said he had no desire to stamp out all proprietary medicines; there were a large number he had no desire to interfere with.

In reply to Sir Philip Magnus, he said that, although there was no direct evidence that the publication of *Secret Remedies* had lessened the sale of these proprietary remedies, some of those mentioned in the first volume had disappeared, and one could only hope that the book had something to do with it.

The Chairman: You have made more analyses of these medicines than any other analyst?—Probably.

Have you come across any new drug or new synthesis amongst them?—No, except, perhaps, one that might be so described.

Have you come across anything to suggest the expert chemist or scientific pharmacist?—Yes, in some of them, certainly. Some are very well compounded, and many of them—especially the tinctures and tabloids—bear evidence of having been manufactured by a large firm.

But a large number of those in this book appear to be of a kind that could be made by anybody in a back room with a pair of scales, a barrel of drugs, and a water supply?—Undoubtedly.

Dr. Chapple: And without the scales?—Yes. (Laughter.)

The Chairman: You have not come across drugs "discovered by priests in tropical forests"?—No; it is only fair to say that if they were new they might be mistaken for an inert substance, but I only mention that as the barest of possibilities.

There seems to be a constant succession of these proprietary remedies: a new one every week?—Yes, on the average every week.

Would it be correct to deduce that your researches have shown the existence on a large scale of deliberate fraud?—Yes, I do not think that is overstating it.

And the publication of wholly unfounded claims?—Yes.

And this constitutes a grave evil calling for remedial legislation?—Yes, especially in view of the fact that it appears to be getting worse.

In reply to further questions, the witness said there were firms that specialized in this class of production, and various widely advertised specifics frequently emanated from one source.

In France, Germany, and Italy declaration of the formulæ was required by law. He had been informed that the law was not far from being a dead letter in France, because there was very little provision for checking the statements. He did not think that remark applied to Germany, although there, too, the law appeared to be evaded to a considerable extent.

As to the publication of recommendations of proprietary medicines by "analysts," Mr. Harrison explained that there was no legal restriction of the term "analyst" or means of preventing anyone from using the letters "F.C.S.," implying membership of the Chemical Society. The Institute of Chemistry, however, was protected by its charter, and unauthorized persons could not use the letters "F.I.C."

The Chairman: I suppose you realize that you will be quoted as saying, as a result of your evidence here, that precious secrets of a medicinal character are not discoverable by analysis?—I only intended to say that it is possible and that the cases would be exceedingly rare.

The Chairman quoted an advertisement on behalf of Beecham's pills, stating that it was well known that in a vegetable compound many ingredients were impossible of identification by chemical analysis, especially in the case of vegetable ingredients. The advertisement continued: "Beecham's pills cannot be analysed, and all published analyses are hereby pronounced erroneous and misleading." The Chairman asked the witness's opinion on this statement.

Mr. Harrison replied that the correct analysis might be impossible in the sense that, having put the main ingredients into a preparation it would be quite possible to put in very small quantities of twenty or thirty other things which no analyst could disentangle. While not suggesting that ingredients difficult to detect were necessarily worthless, seeing that they might have some medicinal action in modifying other drugs present, he did not think they could be regarded as principal or very important ingredients.

The Chairman: The proprietors of Beecham's pills claim that they put in the remedy half a dozen substances not mentioned in your analysis. Have they any substance of active medicinal value which eludes analysis?—They might have substances which modify to an important extent the action of the aloes and soap, and which elude analysis.

Then to what extent are these analyses in *Secret Remedies* of value?—A large number do not include any vegetable substances, and as to those there is practically no loophole for error or omission. Where there is an extract or other vegetable preparation there is always the possibility of some ingredient not being detected which may have a modifying effect on the action of the drugs. In the case of pills, ingredients of rather more importance might not be detected if present in very small quantities; but, when all these allowances have been made, it only means a very small discount.

Dr. Chapple: Will it not be so small as to have no medicinal significance?—I could not say that in some cases; in others I could.

The Chairman: Would the adding of those other non-discoverable drugs in minute quantities which might have a medicinal value be the result of profound chemical and pharmaceutical knowledge?—No, I do not think so. They may be in some cases survivals from a somewhat earlier time when long prescriptions were more often given.

Are we to infer that chemical or therapeutical knowledge has rather decreased than grown?—Not at all, but some of these have survived.

I am very anxious, if possible, to get a definite statement from you on this matter. Do you state with regard to these analyses that in the case of many it is possible there may be precious and mysterious drugs undiscoverable by analysis?—As far as possible in every case any degree of doubt there may be is suggested by the way the analysis is introduced or by the context. It is very difficult to convey the precise degree of reservation implied. One may be sure in one's own mind and not have positive evidence.

In these qualifications you, as a scientific man, are endeavouring to speak with complete accuracy. You are avoiding anything in the nature of a general statement?—Yes.

Mr. Harrison called the Chairman's attention to page 261 of *More Secret Remedies*, on which was a rather interesting case in point. A formula for Dr. Williams's Pink Pills was given in the first volume, and the formula as published in France by the makers did not represent the formula as sold in England. The differences could not be explained by the limitations of the powers of analysis, and it was evident that the makers' statement did not in the least invalidate the formula obtained by analysis. The makers might make a *bona fide* statement, but the result of actual analysis must be more representative of what a substance was than makers' statements.

The Chairman: Avoiding meticulous, scientific accuracy of statement, for all practical purposes you would say analysis does show the composition except in the case of

pills and substances likely to contain any considerable quantity of vegetable extract, and materials not found would be subsidiary and not active principles?—Almost without exception, any active principle in medicinal quantity could be detected.

There is nothing, then, in your definition of the limits of analysis which qualifies your statement as to the evils of this trade?—Nothing whatever.

Mr. Newton: If a manufacturer desired to impress the public by claiming a secret in his preparation he could, after preparing his medicine, add infinitesimal traces of various substances—traces so minute as not to be discoverable by the most scientific analysis, and therefore, obviously, of the least possible medicinal value?—Yes.

Finally Mr. Harrison put in a memorandum containing examples of the abuse of the Government stamp in the sense of claiming it as a guarantee. He said this was not done nearly as much as it used to be, but the examples were recent ones. The abuse always occurred in connexion with the right to have the name of the manufacturer on the stamp if bought in sufficient quantities. One manufacturer printed the words "Protected by His Majesty's Royal Commissioners," and also exhibited the Royal arms. It was a frequent practice to put the claim in this way: "Owing to the excellence of so-and-so's remedy and to prevent spurious imitations, His Majesty's Honourable Commissioners of Customs have authorised the name of—(here was printed the name and address of the proprietor)—to be printed on the Government stamp."

The Chairman: The Committee are very much obliged to you, Mr. Harrison, for your very interesting and very valuable evidence. They appreciate both the scientific accuracy and, if I may say so, the conscientiousness with which it has been given.

MEDICATED WINES.

Dr. Mary Sturge attended, at the request of the British Medical Association, to give evidence on the subject of medicated wines. She said the accepted definitions of medicated wines as "wines so medicated as to be unfit for use as beverages" did not apply to the widely advertised so-called medicated wines now on the market. She drew attention to the alcoholic strength of these preparations; they were on approximately the same level as port wine, as they contained from 16 to 20 per cent. of alcohol. The coca wines contained the strong alkaloid, cocaine; to others various salts or meat extracts were added. There was also a group of so-called digestive tonics to which peptons had been added. The "fancy" names given avoided any hint that they contained alcohol. She admitted that the word "wine" was used, but she was convinced that the public did not realize the proportion of alcohol present. The British Medical Association urged that as these wines were taken freely by the public the proportion of alcohol should be stated on the label. The advertisements were most attractive and alluring. One stated the wine to be "a natural nerve and brain food."

The Chairman: I take it there is no such thing?

The Witness: I do not see how alcohol, being a nerve depressant and nerve irritant, can be claimed to be a nerve food. Emphasis was also laid in advertisements on the amount of nutriment present, but analysis showed the proportion of meat extract to be nothing approaching that contained in an ordinary cup of beef-tea. The advertisements were misleading—they laid greater stress on the presence of meat extract than the proportion warranted, and they said nothing about the alcohol which was present in such considerable proportions. The witness quoted statements deprecating the widespread use of these wines by the medical profession, magistrates, temperance workers, and others. A magistrate urged that the name and quantity of every ingredient of so-called medicated wines should appear on the label; others of her correspondents stated that the wines were taken by pledged teetotalers, by girls and young women, in the belief that the wines were non-alcoholic, and by children. The witness herself knew of definite cases of inebriety due to taking medicated wines, and ninety members of the medical profession, whom she had circularized, had supplied particulars of other cases. One medical man wrote of "a young lady, 21 years of age, who was found in a condition bordering on delirium tremens. She had been drinking three bottles a day of a widely advertised meat wine." The witness added that cocaine wines seemed to lead to extremely serious consequences and sometimes to death. Medical opinion on this question, she believed, was now almost unanimous, and in support of this statement Dr. Sturge quoted opinions adverse to medicated wines by Dr. Robert Saundby, Sir A. Pearce Gould, Sir James Barr, Dr. G. Sims Woodhead, Dr. Robert Hutchison, and others. An East End doctor wrote of the wide use of these stimulants by the poor.

The witness mentioned the claim in the advertisements of one of these wines that 6,000 medical men had recommended the preparation. A medical man had challenged this statement, and the firm wrote, in the course of a correspondence, as follows: "We should be willing to allow you to call at our works and inspect testimonials, upon the distinct understanding that you will give us an undertaking in writing that no use whatever will be made of the information and none of the medical men will be written to." It was the practice for this firm to send out to the public once or twice a year coupons which, if signed by a doctor, entitled the holder to a free bottle of the preparation. The medical man was put in an awkward position if he felt he ought to refuse to sign the coupons, and it was conceivable that signatures thus obtained might be the "recommendations" referred to in the advertisements. Dr. Sturge said that on behalf of the British Medical Association she suggested that the name and quantity of each constituent of so-called medicated wines should be stated on the label. In her own opinion the interests of the community required that the advertisements should be nearer the truth than they were at present. That the alcoholic content should be stated seemed to be absolutely essential.

Mr. Glyn Jones: Do you take the view that the medical profession should discourage the use of alcohol in the treatment of disease? The witness replied that the object of the profession was to find out scientific evidence on all such points. At present the evidence was strongly against alcohol. As to the prescription of these wines by medical men, the witness said the profession was prone to use new things simply because they were new, but the opinions of medical men generally had materially altered in regard to this matter.

Mr. Glyn Jones called attention to advertisements of whisky, gin, and stout, in the BRITISH MEDICAL JOURNAL, but the witness said that was a different question. These were known to be alcoholic drinks, whereas her point was that the so-called medicated wines were advertised without any hint that they were alcoholic. As to a suggestion that the profession could do a great deal to discourage the use of these wines, the witness said that it could not contend effectively against specious and wide advertising. The profession was doing all it could by refraining from prescribing.

In reply to Dr. Chapple, the witness said she was certain that if a large section of the public knew these wines were alcoholic they would not use them. Replying to Dr. Lynch, she said that the evidence was strong that their use was increasing amongst women. The firms producing the wines reported a growing demand.

IN the July number of *Pearson's Magazine* much prominence is given to an article, "Kill that Fly," which, it is stated, marks the opening of a campaign, or a first campaign—for it ought to be repeated next year—against the house-fly. Clear, accurate, and strikingly illustrated, the article shows how the domestic flies and the blue-bottle are not only dangerous themselves, but danger-signals of neglect in and about houses and stables, neglect which, even without the flies, would not be free from risk.

THE Factory Girls' Country Holiday Fund, to which we have frequently drawn attention, is again asking for support. The object of the fund is to assist young women working in London factories to spend a week or a fortnight in the country. The girls make weekly contributions towards the expense, and the fund provides the balance. The managers have had to make a rule this year that no young woman who has been away for three successive years can be assisted again this year. Those sent will, therefore, be the youngest and poorest of the working girls, many of them being just over school age, whose earnings are very small. Donations may be sent to the honorary secretary, Miss Paget, 28, Campden Hill Square, W.

EPSOM COLLEGE.

THE annual general meeting of Epsom College was held at the office, 37, Soho Square, on Friday, June 28th, when Sir HENRY MORRIS, the Treasurer, was in the chair. There was a large attendance of governors.

Report of Council.

After the announcement by the SECRETARY of the successful candidates for pensionerships and foundation scholarships (particulars of which were advertised in the BRITISH MEDICAL JOURNAL of July 6th, p. 58), the CHAIRMAN submitted the annual report of the council to the governors. In proposing that it be approved, he drew attention to the paragraph which referred to the extraordinary general meeting of the governors held in November last for the express purpose of deleting certain words from By-laws 24 and 16. It was found that by By-law 24 as it then existed it was possible that the school year in September might commence without the full number of foundation scholars, and that the vacancy or vacancies would remain unfilled until the ballot of the following June, and the same was the case with the pensioners owing to By-law 16. This would be obviated in future by the removal of the restriction as to the number of vacancies occurring between the periods mentioned in the By-laws 24 and 16, which the council might fill up before the end of September of any year. With regard to the Royal Medical Foundation, although a great many of the pensionerships and annuities were secured by investments derived from legacies and donations, fifty ordinary pensioners and fifty foundation scholars had to be provided out of the subscriptions and donations to the Royal Medical Foundation, and to do this a sum of nearly £5,000 a year must be obtained through these means. He therefore hoped that the local secretaries would continue to render the fund the advantages hitherto derived from their valuable services, and that other friends of the college would assist to induce those in and out of the profession who are not subscribers to become so. With regard to the school, he was pleased to report that it was in every respect successful. The tone, and discipline, and general work were all excellent, the school games were flourishing, and all the school institutions were in a thriving and robust condition. Last, and not least, the number of boys in the college was the highest on record, and there was a waiting list for entrance. But some governors would ask, if this were the case, was not the college making a good profit on its school account? His answer was, No. There was a profit on the total receipts and expenditure, but to make a profit on the educational work was not an object with the council, their aim being to provide as good an education as it is possible to get in any other secondary school in the country at as cheap a rate as possible to the parents or guardians of the boy. It might be necessary before long to raise the education charges, and, indeed, the matter had more than once been under consideration, but this would be warded off as long as possible, and when done, if done, would not be for the purpose of making a profit or storing up capital.

The report stated that the council had decided to carry out further urgently needed structural alterations at the college. The General Medical Council had added the name of the college to the list of recognized institutions approved of as places at which medical study might be commenced. Attention was drawn to the fact that the thanks of the governors were due to Sir Henry Morris for having so indefatigably urged upon the General Medical Council the expediency and the justice of permitting adequately equipped public schools to be approved as institutions in which the preliminary sciences might be studied, and the time given to such studies counted as part of the first year of the medical curriculum, with the result that many of the great schools of the country had now been duly recognized. For this and many other services which Sir Henry Morris had so freely given to the college, the council proposed that he should be elected a vice-president of the college.

Election of Sir Henry Morris as a Vice-President.

Various formal resolutions having been passed, Sir Henry Morris was elected a vice-president on the motion of Sir WILLIAM CHURCH, the chairman of the council.

BRITISH MEDICAL BENEVOLENT FUND.

AT the June meeting of the Committee 14 cases were considered, and grants amounting to £81 made to eleven of the applicants. Appended is an abstract of the cases relieved:

1. Widow, aged 55, of Lic. Med. Dublin. Quite unprovided for at husband's recent death and children unable to help. Has rented a small flat, and hopes to support herself by taking one or two boarders. Voted £5 (in addition to £5 last month).

2. Daughter, aged 43, of late F.R.C.S. No income, and unable to support herself owing to constant ill-health. Relieved twelve times, £110. Voted £5 (in addition to £2 last month).

3. Daughter, aged 41, of late M.R.C.S. Has supported herself for many years as a shorthand typist, but lost her post a couple of years ago through changes in the firm, and is now dependent on occasional work, which she finds it very difficult to get. Voted £5.

4. Widow, aged 67, of L.F.P.S.Glasg. Only income £10 a year from another charity and health very indifferent. No children. Relieved eight times, £80. Voted £10.

5. Wife, aged 38, of M.R.C.S., L.R.C.P., who has been incapacitated for nearly seven years, but is now just able to take a light post. No income; three children, all dependent. Relieved twice, £15. Voted £10.

6. Widow, aged 68, of M.R.C.S. Since husband's death, more than twenty years ago, has supported herself by taking boarders, but finds increasing difficulties owing to deterioration of the neighbourhood. Relieved six times, £72. Voted £5.

7. Widow, aged 38, of M.R.C.S., L.R.C.P. No income; endeavours to support herself by nursing, but earnings are at present very small. Three children, the youngest only 1 year old. Relieved once, £10. Voted £10.

8. Widow, aged 66, of L.R.C.S. (Edin.). Only income a pension of £30 from another charity. Relieved twice, £24. Voted £6.

9. Widow, aged 54, of M.R.C.S. Has a small income, but asks for help towards expenses incurred by her daughter, who suffers from spinal caries. Relieved once, £5. Voted £5.

10. Daughter, aged 56, of late M.R.C.S. No income, and quite unable to support herself, owing to long-continued ill-health. Relieved six times, £60. Voted £10.

11. Widow, aged 54, of L.R.C.S. (Edin.). Quite unprovided for at husband's death, a year ago, and has only been able to obtain a post for a few months at a nominal salary. Relieved once, £10. Voted £10.

Contributions may be sent to the Honorary Treasurer, Dr. S. West, 15, Wimpole Street, W.

MOTOR CARS FOR MEDICAL MEN.

ELECTRIC LAMPS.

THE employment of electricity for the lamps of motor cars is becoming more general, probably in consequence of recent improvements in the generating apparatus. It is necessary to make some use of accumulators or else the lights would go out as soon as the car stopped, and this increased call upon the accumulators would constitute an inconvenience unless means were provided for charging them. For a long time past dynamos have been upon the market which were intended to charge the accumulator as the car ran; but it was necessary to provide some means of cutting the dynamo out of circuit when the car was running so slowly that the voltage of the dynamo fell below that of the accumulators, otherwise the accumulators would quickly discharge themselves through the dynamo. The means formerly provided were not very reliable, so that this accident sometimes happened, and quite unexpectedly the accumulators were found to be empty. This defect has now been overcome, and several makers provide a cut-out which is trustworthy, and also construct a much lighter and more compact dynamo. The various forms of apparatus differ in detail rather than in principle; for the most part the dynamo lights up the lamps direct when giving a sufficient output, at the same time that it is charging the accumulators, and it has been found possible so to wind the dynamos as to give a fairly constant output through a considerable range of speeds.

There is often a good deal of difficulty, in cars not originally constructed with a view to such an addition, in finding a place to put the dynamo, and still more in providing it with driving gear. We understand that the Argyll Company, foreseeing the considerable employment of electric lighting for cars, is now providing upon its chassis a place to put the dynamo and the means of driving it, so that the electrical plant can be installed at any time with a minimum of work and difficulty.

MOTOR TRICARS.

COUNTRY PRACTITIONER asks for advice as to the qualities which should be possessed by a motor tricar for rough roads in a hilly and very wet country, and for a comparison between the upkeep of such a tricar and a cob and a governess car.

THE ROYAL SOCIETY.

ANNIVERSARY CELEBRATIONS.

THE Royal Society, which is the oldest scientific body in this country, and one of the oldest in Europe, will celebrate the two hundred and fiftieth anniversary of its foundation on July 15th, 16th, 17th, and 18th. On the evening of the first day there will be a reception of delegates in the rooms of the Society at Burlington House. On July 16th there will be a short service at Westminster Abbey. In the afternoon a formal reception of the delegates will take place in the great library of the Society, and in the evening the delegates and other guests will be entertained at dinner by the Society at the Guildhall. On July 17th the Duke and Duchess of Northumberland will give a garden party at Syon House, and in the evening there will be a *conversazione* in the Society's rooms. On July 18th the President, Council, and delegates will be received by the King and Queen at Windsor Castle, where a garden party will be given. On the following day the delegates will be entertained by the Universities of Oxford and Cambridge.

First Beginnings.

As the Royal Society had its origin in a group of scientific men, several of whom were physicians and all of whom were interested in physic, a short history may well find place in a medical journal. It had its beginnings in meetings of "divers worthy persons inquisitive into natural philosophy and other parts of human learning and particularly of what has been called the *New Philosophy* or *Experimental Philosophy*." The suggestion that such meetings should be held for mathematical and physical discussions came from Theodore Haak, a German then resident in London, and they began to be held in 1645 or thereabouts. Among them were Dr. Jonathan Goddard, physician to Cromwell, Dr. Francis Glisson, and Dr. Ent. The meetings were first held in Dr. Goddard's house in Wood Street, because he kept an operator for grinding glasses for telescopes, sometimes at the Bull Head Tavern, Cheapside, sometimes in Gresham College. This is probably the germ of the "Invisible College" referred to by Robert Boyle in his correspondence in 1646 and 1647. Some of the leading members of this small body, having been appointed to posts in Oxford about 1649, formed an offshoot in that university. The Oxford Branch, which called itself the Philosophical Society, remained in constant correspondence with the parent body. Among the members of the Oxford Society were Sir William Petty, Thomas Willis, Jonathan Goddard, Thomas Millington, afterwards President of the College of Physicians, Richard Lower, Christopher Wren, who was an anatomist before he became an architect, the Hon. Robert Boyle, and Robert Hooke. The meetings were held in Wadham College, whose warden at that time was Wilkins, a man of the widest intellectual interests, or in Petty's lodgings. The scientific impulse made itself felt in Oxford for another generation, among its most conspicuous results being the anatomical and physiological researches of Willis, Lower, and Mayow. Then it died away in Oxford, but in London it went on to the formation of the Royal Society, which was founded after the Restoration. The scientific men who started the movement were nicknamed the "Virtuosi," and as one of the first effects of the Royal Society was to foster scepticism in regard to traditional doctrines of all kinds, its members were looked at askance by physicians of the old school. The Civil Wars and the Commonwealth had caused a great upheaval of thought and disregard of traditional opinion, and the laxity of professional restrictions degenerated into unbridled licence.[1] This laxity was fostered by Charles II, who himself took an interest in physical science, and was the actual founder of the Royal Society. He was the patron of several disreputable physicians, and his intellectual scepticism and sense of humour made him probably look upon the new Society with an interest not perhaps unmixed with good-natured contempt. The famous problem which he propounded to the "Virtuosi" as to the comparative weights of a dead and a living fish in water, may be taken as showing his attitude towards them, while pointing a moral to scientific inquirers for all time. Sprat, in his *History of the Royal Society*, well describes the atmosphere in which the Society was generated. "The University," he says, "had at that time many members of its own who had begun a free way of reasoning, and was also frequented by some gentlemen of philosophical minds whom the misfortunes of the kingdom and the security and ease of a retirement among gownsmen had drawn thither. Their first purpose was no more than only the satisfaction of breathing a freer air and of conversing in quiet with one another without being engaged in the passions and madness of that dismal age. . . . For such a candid and unimpassionate company as that was and for such a glorious season, what could have been a fitter subject to pitch upon than natural philosophy? To have been always tossing about some theology question would have been to have made that a private diversion, the success of which they themselves disliked in the public. To have been eternally musing on civil business and the distresses of the country was too melancholy a reflection; it was Nature alone which could pleasantly entertain them in that estate."

When Petty went to Ireland in 1652 as Physician-General to the army, the Society held its meetings at Wadham. In 1659 most of the "Virtuosi" migrated to London, where they were joined by several new associates, among them being Lord Brouncker and John Evelyn, the diarist. In the troubles that followed the resignation of Richard Cromwell, the nascent body was broken up, its place of meeting being converted into quarters for soldiers. After the Restoration the meetings were revived and the attendance increased.

Foundation of the Society.

On November 28th, 1660, a meeting was held at Gresham College, and those present decided to constitute themselves a society for the promotion of experimental philosophy in all its branches. The first journal book of the Society bears that date, and opens with a minute to the effect that "these persons following according to the usuall custom of most of them mett together at Gresham Colledge to heare Mr. Wren's lecture, namely, the Lord Brouncker, Mr. Boyle, Mr. Bruce, Sir Robert Moray, Sir Paul Neile, Dr. Wilkins, Dr. Goddard, Dr. Petty, Mr. Ball, Mr. Rooke, Mr. Wren, Mr. Hill. And after the lecture was ended, they did according to the usuall manner withdrawe for mutuall converse. Where amongst other matters that were discoursed of, something was offered about a designe of founding a Colledge for the promoting of physico-mathematicall experimentall learning." Dr. Wilkins was appointed Chairman, and a list of forty-one persons who were thought likely to join and fit to be members was drawn up. The design of the meeting was approved by the King. On December 10th another meeting was held, at which fifty-five was fixed as the number of the Society, persons of the degree of Baron, Fellows of the College of Physicians, and public professors of mathematics, physic, and natural philosophy of both universities being supernumerary. A president, a secretary, and a register were elected from among the members, and an amanuensis and operator was engaged to carry out the work of the Society. From the very beginning the Society attracted the attention of all the learned men in Europe. In 1661 the King offered to join it, and it received encouragement from many of the great nobles of the realm.

The Charter.

On July 15th, 1662, Charles II granted a Royal Charter which constituted the members a body corporate under the name of "Royal Society." Viscount Brouncker was elected the first president, Dr. Wilkins and Mr. Oldenbury the first secretaries, Mr. Ball treasurer, and 21 "of the most respectable members" the first Council, which met for the first time on May 13th, 1663. This Council, says Dr. Thomson,[2] was empowered by the Charter to nominate during a period of two months what persons they thought proper to be members of the Society. All elections subsequent to that period were to be conducted by the Society in a body, and for admission the votes of two-thirds of the members present were required.

[1] F. J. Payne, *Thomas Sydenham*, Masters of Medicine Series. London, MDCCCC.

[2] *History of the Royal Society, from its Institution to the End of the Eighteenth Century.* By Thomas Thomson, M.D., F.R.S.L. and E., etc. 1812. London: Printed for Robert Baldwin, 47, Paternoster Row.

The Charter, as Sir Benjamin Brodie pointed out in his first presidential address, was especially suited to the genius and character of the English people. He contrasts this with the fact that nearly forty years afterwards the Académie des Sciences—founded by Louis XIV—was placed wholly under the dominion of the Crown.

The Society first held its meetings at Gresham College. After the Great Fire of London the rooms that had been allotted to it were taken over by the City authorities. About the beginning of 1667 Henry Howard, afterwards Duke of Norfolk, invited it to hold its meetings in Arundel House. Moreover he presented to it the Arundel Library, purchased by his grandfather during an embassy to Vienna. It had formerly been part of the library of Mathew Corvinus, King of Hungary, erected by him at Buda in 1485. After his death in 1490, it came into hands of the famous Bilibaldus Pirckeimerus of Nuremberg, the friend of Albrecht Dürer. The Arundel manuscripts were for the most part sold to the British Museum in 1830, for some £3,500, and this money was used for the purchase of scientific books. The MSS. are kept separately in the Museum. In 1673 the Society was invited back to Gresham College by a deputation of the professors and the Mercers' Company. As its apparatus and collection were deposited there, and its operator, Hooke, lived in the building, the offer was accepted. Charles II made it a grant of Chelsea College, which it was intended to convert into a house suitable for the meetings of the Society. Lord Henry Howard had also given it a piece of ground near Arundel House, on which it was proposed to build premises by subscription. Both these projects fell through, and the Society bought a convenient house in Crane Court, Fleet Street, where it continued to hold its meetings until the Government in 1780 gave it apartments in Somerset House, to which its library and apparatus were transferred, and where it continued to meet till 1857, when it removed to Burlington House.

At the Restoration the time was ripe for the foundation of a Society "for improving natural knowledge."[3] Men's minds, so long distracted by political disturbances and civil broils, turned with relief to science, which was then seriously occupying the attention of men of intellect. It is noteworthy that from its earliest days the Society employed the experimental method. For a considerable time after its foundation, experiments were shown at every meeting. A salaried official was appointed whose express duty it was to contrive such experiments as were suitable for demonstration, and to have everything ready for their proper exhibition.

Philosophical Transactions.

In the beginning a principal part of the work of the Society consisted in the maintenance of correspondence with Continental philosophers. From this correspondence sprang the *Philosophical Transactions*. At first these were the work of the secretaries, but subsequently they were issued under the superintendence of a committee.

At its first foundation the Society devoted itself to the pursuit of any branch of knowledge; hence many communications were made on subjects not strictly belonging to the sciences to which it was intended that the attention of the Fellows should be more especially directed. Among their earlier publications there is found for a universal alphabet a dissertation on the Chinese language, a map of Peking with an exact account of the Imperial Palace, sent by a Jesuit missionary, an account of a journey to Aleppo and Tadmor, and of the discovery of tesselated pavements and other Roman antiquities. As Brodie says,[4] there was scarcely any one department of knowledge, whether it be philology, history, antiquities, medicine, geography, political economy, and even metaphysics, which is not to a greater or less extent represented in the *Philosophical Transactions*. But as knowledge grew and division of labour became imperative the Society had to confine itself to its more legitimate pursuit. In 1717 the foundation of the Society of Antiquaries took away one large class of communications. Seventy years later the Linnean Society was founded, and since then a number of others, devoted to various branches of science, have come into existence.

The Society, like every other similar body, has had alternate periods of efficiency and slackness. Thomson points out how greatly the nature of the work done by the Society, and consequently the value of its *Transactions*, have been influenced by the President for the time being. He points to the Presidency of Martin Folkes, who held sway from 1744 to 1752, as a time when a much greater proportion of trivial papers will be found than at any other. During that period Sir John Hill published his *Review of the Work of the Royal Society of London*, in which he ridiculed the labours of the Society with a good deal of somewhat coarse humour. On the whole, the Society has been progressive and has continued to increase in reputation and in numbers.

Medical Founders.

As has been said, medicine had a considerable proportion of representatives among the founders of the Royal Society. Conspicuous among these was William Petty. He was born in 1623 at Rumsey, in Hampshire, and from a very early age showed a genius for mechanics. He was also an apt scholar in languages. When a boy he bound himself apprentice to a ship master, and discovered on his first and only voyage that he was short-sighted, a defect which the skipper treated by the application of a rope's end. He was ill-used by the sailors, and left with a broken leg on the French coast, near Caen. He interested the society of the town by giving an account of his sufferings in Latin. He completed his education at the Jesuits College at Caen. After serving a short time in the Royal Navy he returned to the Continent, where he spent three years, almost entirely in France and the Netherlands. He worked at the schools of Utrecht, Leyden, and Amsterdam, and at the School of Anatomy in Paris, where he made the acquaintance of Thomas Hobbes, with whom, according to Aubrey, he read Vesalius. Through Hobbes he made acquaintance with a number of people distinguished in science and literature. On his return to England he worked for a time at mechanical inventions, and in 1646 he became a member of the Society which had been started by Haak. In 1649 he followed the example of Wilkins and others and removed to Oxford, where he became a doctor in physic. He became a Fellow of Brasenose, according to Thomas Hearne, because "he had cut upp Dogges and taught anatomy in the war." He was appointed deputy to the University Professor of Anatomy, Dr. Clayton. In 1650 his name became known to the whole country by bringing back to life a woman who had been hanged. In 1652 he was appointed Physician-General to the army in Ireland. Petty at once set about reforming the medical service, but he was soon called to a larger sphere of activity in the administration of Ireland. Thenceforth the secluded path of medicine knew him no more. His versatile genius was applied to many problems, and he rose to a high position in the State. He was the first English writer on political economy. Petty, who was the ancestor of the Lansdowne family, died in 1687.[5]

Jonathan Goddard was born at Greenwich about 1617. He was educated at Oxford, but took his medical degrees at Cambridge. In 1646 he became a Fellow of the London College of Physicians. He gained the confidence of Cromwell, with whom he went campaigning in Ireland, and in Scotland as physician-in-chief to the army of the Parliament. In 1651 he was made Warden of Merton College, Oxford. In 1653 he was appointed Gresham Professor of Physic. At the Restoration he was evicted from his office at Oxford, and took up his abode at Gresham College, where he remained till his death in March, 1674–5. He used his laboratory to make experiments for the Royal Society. Antony à Wood says: "When any curious experiment was to be done they made him their drudge till they could obtain to the bottom of it." It may be mentioned that he also used his laboratory for the compounding of secret remedies, the chief of them being "Goddard's drops," or "guttae Anglicanae," the formula of which he is said to have sold to Charles II for £5,000. The medicine was a preparation of ammonia, with the addition of portions of the skull of a person who had been hanged, dried viper, and like substances. It is interesting to read that the compounder of this stuff was for some years a Censor of the College of Physicians. He is said to

[3] The full title is the "Royal Society of London for Improving Natural [illegible]

[4] Brodie, *Works*, Collected and Arranged by Charles Hawkin. Vol. i. London, 1865.

[5] For a most interesting account of this extraordinary man see *The Life of Sir William Petty*, by Lord Edmond Fitzmaurice. London: John Murray. 1895.

have been the first Englishman who made telescopes, and he contributed a number of papers to the Royal Society.

Sir George Ent was born at Sandwich in 1604, and after graduating in Arts at Cambridge he spent five years in the study of medicine at Padua, where he took the M.D. degree in 1636. He was Gulstonian Lecturer to the College of Physicians, of which he was afterwards twice President. He was a great friend of William Harvey, who bequeathed him "all the presses and shelves he pleases to make use of, and £5 to buy him a ring to keep or wear in remembrance of me." Harvey was inclined to postpone publication of his work on the generation of animals for further experiments, but Ent persuaded him to entrust him with the manuscript, and with the great discoverer's permission published it, introducing the work with a dedication. Ent died in 1689.

Thomas Willis, the discoverer of diabetes mellitus and of the circle of blood vessels at the base of the brain which bears his name, was born in 1621, and educated at Oxford, where he graduated in arts in 1642, and in medicine in 1646, becoming Doctor in 1660. After the Restoration he was appointed Sedleian Professor of Natural Philosophy at Oxford. He moved from Oxford to London, and, according to Antony à Wood, "In a very short time he became so noted and so infinitely resorted to for his practice that never any physician went before him, or got more money yearly than he." He died in 1675.

Francis Glisson was born at Rampisham in Dorsetshire in 1597, and educated at Cambridge, where he took the degree of M.D. in 1634. In 1636 he was appointed Regius Professor of Physic, an office which he held till his death in 1677. He was, says Munk, one of that small but illustrious body who instituted a weekly meeting in London for the purpose of promoting inquiries into a natural and experimental philosophy, and which, after the Restoration, being augmented by the accession of several eminent persons, at length issued in the institution of the Royal Society. He was an anatomist, *omnium exactissimus*, according to Boerhaave. He described rickets and the capsule round the vena portae which bears his name. In modern times a remarkable tribute to the value of his scientific work was paid by Virchow.

Sir Thomas Millington was born at Newbury, Berkshire, in 1628. He was educated at Cambridge, but, after graduating in arts there, he migrated to Oxford, where he proceeded Doctor of Medicine in 1659. He was appointed Sedleian Professor of Natural Philosophy in 1675. He was President of the College of Physicians from 1696 till his death on January 5th, 1703–4. He was physician to King William and Queen Mary, and afterwards to Queen Anne. He was an able and very popular physician, and a benefactor to the College, of which he was President.

Christopher Merrett was born at Winchcombe, in Gloucestershire, in 1614. He was educated at Oxford, where he took the M.B. degree in 1636, and was created M.D. in 1642–3. He was an intimate friend of Harvey, who named him keeper of the library and museum which he gave to the College of Physicians. Merrett was involved in a quarrel relative to this appointment with the College, which finally expelled him from the Fellowship. He was one of the original Fellows of the Royal Society, and contributed a number of papers to the *Philosophical Transactions*. He died in 1695.

Richard Lower, though not one of the founders, was an early Fellow, having been elected in 1667. He was born at Tremere, near Bodmin, in Cornwall, about 1631, and was educated at Oxford. He assisted Thomas Willis in his dissections. He graduated Doctor of Medicine in 1665, practised with great success in London, and died on January 17th, 1690–91. In his treatise on the heart there is a chapter on transfusion of blood, which he had practised at Oxford in 1665, and afterwards on a lunatic before the Royal Society.

Medical Presidents.

The Royal Society has had a few medical presidents. That office was held by Sir Hans Sloane from 1727 till 1744, and by Sir John Pringle from 1772 till 1778. In 1858 Sir Benjamin Brodie was elected President, being the first surgeon to be chosen for the post. He held office for four years. There was some talk of making Brodie a peer, but in his first address to the Society he declared that he prized the honour of being its President above any peerage. Huxley, who was for seven years a surgeon in the navy, held the office from 1881 to 1885. Lord Lister was President from 1895 to 1900.

Medical Fellows.

There are, according to the latest list, eighty-three members of the medical profession who are Fellows of the Royal Society. The part doctors have played in its foundation and development is a thing of which the profession has good reason to be proud; nor do we think that the Royal Society can justly be ashamed of its association with medicine. Lapiace opposed the admission of doctors to the Académie des Sciences on the ground that medicine was not a science. This attitude is taken up by certain Fellows at the present day, but the Society continues to welcome representatives of medicine, and it devotes a part of the funds with which it is entrusted for the promotion of research to medical science.

URIC-ACID-FREE DIET IN INOPERABLE CANCER.

We have received the following report from Dr. A. Haig on cases sent to him in response to a request contained in a letter from him published in the JOURNAL in January, 1911. He asked that some inoperable cases of cancer might be sent to the hospitals to which he is attached with a view to testing the effect of one variety of the uric-acid-free diet on their disease. He asked that the cases sent should have a prospect of not less than six months of life.

REPORT.

Of the cases sent to me, practically none fulfilled even these minimum conditions. I took into the Metropolitan Hospital 3, and into the Royal Waterloo Hospital 6 cases, but none of these gave any real hope of success or were worth careful watching. I merely took them in to show them the diet, and let them go home and continue it there, in the hope that if, for any cause, the rate of progress of their disease slowed down the diet might get time to help them. I refused an equal or slightly larger number as being quite hopeless and having only a few weeks to live.

One of the cases in the Metropolitan that appeared most hopeful was a woman sent me by Mr. L. B. Rawling, of St. Bartholomew's, with an inoperable cancer of the right breast. She was supposed to have an expectation of life of several years, but our attention was soon directed to a pain in the left hip, and the rays showed that she had a secondary deposit there; so, like the others, she was merely shown the diet and allowed to go home.

Of the cases at the Waterloo Hospital, one advanced uterine case died after some two months, diet, of course, having no effect, though it certainly lowered blood pressure and helped to diminish pain. One refused to continue the treatment and went home, and the others went home to continue the diet, having learnt to take a certain quantity of nuts and fruit in addition to the beginner's diet. No supervision, however, is possible in such cases.

Two uterine cases, not entered in my notes, which had been carefully examined by my colleagues at the Royal Waterloo Hospital with a view to their treatment by diet, refused treatment, and went home saying that they would rather die with a full inside than an empty.

A month or two after my letter was published, Dr. T. J. Horder wrote [1] and offered to place some of the cases under his care at the Cancer Hospital at my disposal as regards their diet, and I accepted this offer.[2] On going into the details of the diet, however, Dr. Horder came to the conclusion that most of his male patients would leave the hospital rather than go on such a diet, and so it ended in his placing nine women under my care, and Dr. Burd of Upton-on-Severn sent me a case which I obtained leave to take in at the Cancer Hospital, and of each of these cases I will give a short note.

June 15th. Alice M. S., aged 56, carcinoma uteri and hemiplegia—a bedridden and hopeless case. Blood decimal 0.65. Died without getting on to diet.

June 15th. Mary A. S., aged 72, abdominal growth, nature uncertain. I did not treat her.

[1] BRITISH MEDICAL JOURNAL, April 1st, 1911.
[2] Ibid., April 8th, 1911.

June 15th. Agnes R., aged 64, tumour of right orbit. Given aspirin and other drugs to relieve the pain, which was severe, died in one or two months. Never got on correct diet.

June 15th. Minnie B., aged 45, malignant mediastinal glands and small pleural effusion—hopeless case. Went home July 6th.

June 15th. Alice G., aged 47, tumour of anterior thoracic wall. Got on to beginner's diet; was taken off this diet by Dr. Horder while I was away in September, I believe, because she was losing weight and the local condition was thought to be worse. She is still in the hospital and has had various treatments, but there has been no marked alteration on any diet.

June 15th. Alexandra H., aged 47, carcinoma mammae. Got on to beginner's diet for a month or two, but missed her tea greatly and suffered from colds and minor ailments. In October, owing to grumbling and loss of weight, she was given some boiled fowl once a day. Had serum injections, rays and other treatment. Is still in hospital—not much change: not on complete diet.

June 15th. Alice C., aged 49, advanced carcinoma of left breast, seven years' duration; much chronic arthritis, worse the last twelve months; father has chronic rheumatism; blood 0.75. August: Has got on to partial beginner's diet with some tea; she is now able to kneel in chapel for the first time for twenty years. October: Still tea once a day; growth no change; arthritis much better. December: Local condition shows decided improvement; has some fluid in the abdomen (? recurrence there); has never been on complete diet, but her uric acid intake has been greatly reduced; still some tea; is still in hospital. This is a very chronic case, and diet would have a chance here if done properly, but the patient's conduct when outside the hospital and her statement as to the food she takes cannot be depended upon.

July 24th. Amelia J., aged 17, carcinoma of rectum: colotomy has been performed. A hopeless case; went home July 31st.

November 13th. Isabel T., aged 57, malignant tumour of abdomen. Removal was attempted in May last, but found to be impossible. Has very marked rheumatoid joints. (A large percentage of the cases of cancer sent to me had well-marked signs of chronic arthritis.) This patient was too bad to have her diet altered in any way, and she died on December 31st.

October 9th. Mrs. B. (Dr. Burd's case), carcinoma of cervix, advanced, inoperable. Had a severe haemorrhage seven weeks ago. This patient got on to beginner's diet and took some nuts every morning, which helped to regulate her bowels and enabled her to get on with a diminished dose of cascara. She went on fairly for a time and gained a little weight even on this "low" diet, but she had much pain and took aspirin constantly for it. On January 31st, 1912, she had another severe haemorrhage followed by increasing debility and heart failure (partly due to the aspirin). She died in February, 1912, having had some meat since her last haemorrhage.

It will be seen that there is here not one single case which is in any way comparable to the private cases with which I wished to compare it. None of the cases in which their disease gave time for the diet to act ever really got on to it, and the cases in the Cancer Hospital all had some tea, fish, fowl, meat, at intervals; none of them ever got on to the complete nut and fruit diet given below. The private cases with which I wished to compare them got on a completely uric-acid-free diet in a few weeks, and have remained on it ever since. They had as few drugs as possible; often for long periods none.

I do not venture to say that my private cases were "*propter*," but they were certainly "*post*"—that is to say, the diet did no harm. Besides, similar cases have been reported by others, and all now acknowledge that some cases of undoubted carcinoma have got well. I merely suggest that diet may have had something to do with this result, and have been seeking to duplicate these experiences in hospital cases.

My chief reason for suspecting that they might be "*propter*" is the undoubted fact that those nations all over the world that take least uric acid or xanthin in their food have notoriously least gout and rheumatism and also least cancer, and that variations in the quantity of these poisons ingested account for the very marked differences between the largest and smallest cancer incidence in the United Kingdom.

I now see that I was looking for what I wanted in the wrong class; hospital patients are too ignorant and prejudiced to give this diet a fair trial in hospital, and they are too ignorant to provide what is required at home. If my cases are to be duplicated, it must be among the richer and better educated classes.

It takes at least from nine to twelve months to cure gout and rheumatism by diet, and obviously only slow growing cases of cancer, seen early, give any chance of success. In the case of Alice C., whose arthritis got better in two months, this result was only in part due to the diet changes and in part to the warm season and to the increasing fluid in her abdomen, which caused debility with increased alkalinity and solution of urates throughout the body. Nevertheless, if every private case could be put on a nut, fruit, and biscuit diet as soon as the nature of the disease was beyond doubt, we should soon see whether relapses on this diet were less frequent than among those left on ordinary diet in hospitals.

There is a further problem I should have liked to have worked out had it been possible—namely, whether cases of cancer will do better if treated like acute gout or rheumatism on a form of uric-acid-free diet which is rather low in protein and with the administration of solvents of uric acid (several of the above cases had aspirin); or if they will do better when treated like cases of chronic rheumatism or of phthisis on a very full protein diet, and with tonics and stimulants which act as retentives of uric acid. I have generally worked on the former hypothesis, but the experience of the Cancer Hospital, where there is evidently a strong belief in feeding up and gaining weight, seems to be in favour of the latter, and the good effects in some cases of radium and rays, which apparently act as tissue stimulants, is also perhaps in favour of it. On the other hand, cancer is notoriously a disease of the rich and highly fed, though this may be due to introduction of poisons, and quite apart from mere excess of protein, while tubercle flourishes under exactly the opposite conditions—poverty and starvation.[3]

I believe as strongly as ever that the diet which prevents cancer will in some cases be found to cure it, but cases similar to the above give practically no chance of demonstrating this.

The fruit, nut, and biscuit diet for an adult of 130 lb. would contain nuts (chiefly hazels, walnuts, pine kernels and Brazils) about 8 oz. (beginning with 1 oz. or 2 oz. and gradually increasing), fresh fruit almost *ad lib.*, some dried fruit after soaking for about twenty-four hours in cold water. All these are uncooked, but if mixed with cream, honey, etc., many most delightful dishes can easily be made—for example, ground-up nuts, mashed fruit with cream sweetened with honey. The biscuits (now to be obtained from Messrs. Shearn of Tottenham Court Road) supply so much of the necessary protein as has not been got from the nuts and fruit, or rice pudding strengthened with dried milk can be substituted for the biscuit: thus we get—

Quantity.	Substance.	Protein in Grains.
8 oz.	Mixed nuts	544
24 oz.	Fresh fruit	192
4 oz.	Dried fruit	48
7 oz.	Special biscuits	476
		Total... 1,260 grains.

protein, a full diet for a patient of 130 lb. weight.

I use beginner's diet, in which there is much white of egg to replace fish, and curd, cheese, and dried milk to replace meat, as a stepping stone to the fruit, nut, and biscuit diet, and few of the above cases even got on to the beginner's diet completely.

I desire to tender to all those who sent me cases my best thanks, and especially to Dr. Horder for what he did at the Cancer Hospital, as it was obviously no fault of his that the cases placed at my disposal proved to be unsuitable. As, owing to the ignorance and prejudice of the patients, only such and similar cases appear to be available, I conclude that it is useless to attempt to treat a larger number.

My late experiences may, therefore, be said to leave the question where it was, but such indications as I have been able to observe convince me that it is a trail well worth following. My own intention is to pursue it indefatigably, but in the class which is by training more amenable to discipline, and therefore more obedient and intelligent.

NOTE BY DR. T. J. HORDER.

We have also received the following note from Dr. T. J. Horder (Physician to the Cancer Hospital, Fulham):

Dr. Haig's report, so far as it deals with the treatment of cases under my charge at the Cancer Hospital, calls for

[3] BRITISH MEDICAL JOURNAL, 1911, vol. ii, p. 1678.

a few remarks. I regarded it as a moral obligation to assist Dr. Haig in any possible way to test his thesis that a diet of fruit, nuts, and biscuits might cure cancer. The responsibility of supervising the treatment of a number of inoperable cases of malignant disease led me to offer certain cases to Dr. Haig, who treated them as nearly as possible upon the lines which he desired. The results were not, as Dr. Haig admits, favourable to the diet. The notes of the cases, as they stand in the report, call for brief comments:

CASE IV.

Alice G. I took this patient off the diet because she was losing weight rapidly and because the local condition was definitely worse. On a full diet, and with alternate *x*-ray and radium applications given by Dr. Knox, the improvement has been progressive and most satisfactory. A series of photographs shows the steady decrease in the growth, and the general condition of the patient is to-day, twelve months after the experiment with the diet was undertaken, excellent.

CASE VI.

Alice C. This patient had been in hospital for nearly two years before the diet was begun. She illustrates that form of multiple carcinomatosis in which masses of growth appear and disappear without specific treatment of any kind.

Dr. Haig's conclusion is that his thesis has not had a proper test, and I quite agree with him. But I do not think the difficulty has been that "hospital patients are too ignorant and prejudiced to give this diet a fair trial." The real difficulty is to persuade a patient who is losing flesh and becoming physically and mentally depressed that the diet responsible for this is curing the disease. I think it quite possible that Dr. Haig is right in supposing that some private patients will be found in whose minds this apparent (and, to many of us, real) discrepancy may be set aside by the power of their own or their physicians' convictions. It will be interesting to await the results of full trial of the diet in such patients. A still greater problem facing Dr. Haig is how to get his cases sufficiently early to test his diet properly. I think he is apt to forget that, our current views upon the radical treatment of cancer being what they are, the surgeon has prior claim in all cases amenable to excision. Dr. Haig, in common with all others who wish to test a non-surgical means of cure, is naturally anxious to begin early—"as soon as the nature of the disease is beyond doubt." But is Dr. Haig, with his present evidences of the value of his diet treatment, prepared to urge his conviction upon an early case of carcinoma, and to accept the responsibility of the choice between it and the benefits of surgery?

LITERARY NOTES.

In the Literary Supplement of the *Times* of July 4th there is the interesting announcement that early in the autumn Messrs. Henry Sotheran will publish Sir Clements Markham's translation of the celebrated *Coloquios dos Simples e Drogas da India* (1563) of Garcia da Orto, who went out to India in 1534 as physician to his feudal lord, Dom Martin da Sousa, afterwards Governor of Goa, and remained there until his death in 1570. Travelling extensively along the western seaboard of India and in Ceylon, Garcia gathered botanical and pharmaceutical knowledge at first hand wherever he went. He formed a large "physic garden" in Goa, and another in Bombay, on the site now partly occupied by the Victoria Gardens. The *Colloquies* was in all probability the first European book printed in India; it contains the first descriptions of many Indian plants now in widespread medical use, and of their application to such diseases as cholera and dysentery. Clusius, in his *Aromatum Historia*, made a short, unsatisfactory *précis*, and the Italian and French translations are very inferior to the original. Sir Clements Markham has been engaged on his translation from the standard Portuguese edition, at Lisbon and Madrid, for the greater part of three years. On the proposal of Sir George Birdwood the publication is to be under the patronage of the Secretary of State for India. The work, it is added, has more than a scientific interest, for it is enlivened by entertaining anecdotes of the manners and customs of the people among whom Garcia da Orto carried on his researches.

Garden Cities and Town Planning for June contains, among other matter, an article of special interest on the Future of Rosyth, the new naval base on the Firth of Forth. Nine years ago, it is said, the Admiralty promised that the Garden Cities and Town Planning Association should be consulted when the time was ripe for action. Accordingly negotiations have continued from time to time with the idea of establishing a community on garden city lines on that portion of the land which would not be required for naval purposes. The question is how to provide housing accommodation for the workers at Rosyth who, with their families and consequent population, are estimated to number about 10,000 in two years. A town planning scheme would not include the provision of cottages, and the association has always held that the Government which passed the Act should themselves be model landlords and enable their land to be laid out under the provisions of the Act with the utmost regard to the wellbeing of the future dwellers. At Rosyth, says our contemporary, it has an opportunity of being model landlords and of setting the pace for town planning in Scotland.

Apart from actual physical deformity there is, perhaps, no more painful affliction to a sensitive person than stammering; and it is one, moreover, which if neglected in its early stages may very possibly prove a serious obstacle to the success of the child in after-life. Happily, however, even the most stubborn cases are not incurable, and in the June number of *The Child* Mr. J. Bretherton Hadley, himself an inveterate stammerer for many years, has given an interesting account of the methods whereby he has successfully treated himself and numerous fellow-sufferers. Except in cases of genuine organic defect, the whole crux of the matter seems to lie in the restoration of the patient's self-confidence, for he alone can can effect his own cure. "It is not merely a matter of vocal gymnastics, though that is, of course, very important," says Mr. Hadley, "but also of careful supervision and influence in daily domestic life, and of training the mind to think clearly and consecutively before speaking. In confirmed cases there is often a mental hesitancy, born of years of stammering, which requires very patient correction." Bodily health, too, plays a large part in assisting or retarding the cure; and for this reason Mr. Hadley advocates the removal, whilst under treatment, of the child stammerer from school, a step which need have no ill effects upon his education, since three months' tuition, under favourable conditions, should suffice for the permanent cure either of a child or an adult. Defects of speech, however, are not the only disabilities under which many of our school children labour. Dr. H. W. Harding, writing in the same number of *The Child*, points out the close relations which exist between the physique and the mental ability of growing children, and shows the folly and danger of working children beyond their strength. The same number of this excellent periodical also contains a short article by Fr. A. Butler Harris on the treatment of tuberculous children by tuberculin, and a charming account by Sir John Byers of his famous mother, Margaret Byers, foundress of the Victoria College for Women at Belfast.

Dr. William A. Storey (Belfast) writes:

With regret I acknowledge the discovery by Dr. Keenan of still more flies in the *Concise Oxford Dictionary* ointment. The pronunciation of "really" as *rerli* is certainly new to many of us on this side of the Channel. In this month's *Strand Magazine* there is reproduced from *Punch* the following skit entitled "Superior Education":

> Page Boy (to Jeames): Where shall I put this 'ere dish of 'ammonds?
>
> Jeames (with dignity): I'm surprised, Harthur, that at your hage you 'aven't learnt 'ow to pernounce the *har* in harmonds!

Had Harthur said to Jeames, "I really don't know where the dish of 'ammonds has gone," I presume Jeames would have had a convulsive seizure, as the dropping of the *har* twice in one sentence would have been too much for him to stand.

An English gentleman with artistic tastes spoke in most appreciative terms of a certain *drawring*. "Why don't you pronounce it 'drawing'?" asked a Belfast friend of mine. "I *did* say *drawring*," replied the former, with emphasis and assurance.

British Medical Journal.

SATURDAY, JULY 13TH, 1912.

THE ACT IN ACTION.

The National Health Insurance Act comes into operation on Monday next, for the Government has not taken advantage of the proviso giving power to postpone its activities until some subsequent date not later than January 1st, 1913.

An insured person will not become entitled to medical benefit during the first six months after the commencement of the Act, nor to sickness or maternity benefit until twenty-six weeks have elapsed since his entry into insurance. Disablement benefit follows after twenty-six weeks of sickness benefit. An insured person will, however, become entitled to claim sanatorium benefit, which includes treatment in an institution, at a dispensary, or in his own home, on and after Monday next, as is pointed out below.

Few can now doubt, least of all the Insurance Commissioners, that it would have been wiser to postpone the commencement of the Act until the later date. The Insurance Commissioners have had a difficult task, but they cannot be said to have risen to its height. Last January, with statutory powers clearly defined in the Act, they were in a strong position which has now been undermined. They did not grip the essential matters of principle, and for some four months the only products of their labours with which the public became acquainted were some draft regulations of the most formal kind which an experienced conveyancing barrister could have drawn up in a couple of days, and the publication of lists of approved societies.

It is said, and it is easy to believe, that the accumulation of work now in hand is more than the staff, large as it has already become, can cope with, and it is certain that, in spite of the efforts of official lecturers and perhaps partly in consequence of those of an unofficial kind, and in spite of leaflets by the score, the willing part of the public is perplexed to know what it should do next Monday, and despairs of obtaining adequate information from the Customs and Excise officers, to whom, for the relief of Post Office officials, it is now invited to appeal. So long as uncertainty remains with regard to the way in which the promises as to efficient medical benefit are to be fulfilled, so long will the public mind remain disturbed, perplexed, and mildly contemptuous.

The alternatives between which the profession has to choose were stated with the utmost directness in the concluding paragraphs of the report published last week (Supplement, page 23) for the consideration of the Divisions and of the Representative Meeting at Liverpool next week. No one, so far as we have observed, advocates the blind acceptance of the promises vaguely expressed in the statement which the Chancellor of the Exchequer authorized the Commissioners to make in their letter of June 26th (Supplement, page 20). Mr. Ballance, of Norwich, who was chairman of the Representative Meeting in 1909-10, has been moved to issue to members of the Association a fly-leaf asking that at the meetings of Divisions now being held they should not bind the hands of Representatives. His main reason for giving this advice is that at the meeting in Liverpool the Representatives may have information not yet in the possession of members as to the intentions of the Government, as well as information as to the number of those who have signed the pledge, and of the amount of the Central Insurance Defence Fund of the Association. While not suggesting that the profession need flinch from a fight from one end of the country to the other, he expresses the opinion that it will be in a much better position to come to a final decision in September or October. "I only desire," he concludes, "to suggest that the Representatives be not compelled by their instructions to precipitate that fight at once, if, in the light of information which may be in their possession, and which has not previously been in the possession of the Divisions, they believe that the members generally should be given a further opportunity of considering the position before a final decision is made." Mr. Ballance, therefore, is in favour of the second alternative, which nearly approaches the course Mr. Lloyd George asks the Association to adopt.

The other alternative is at once to decline negotiations—a course which will force on the Government one or other of the courses which Mr. Lloyd George admits would not be satisfactory from the public point of view, and would, in his opinion, be less remunerative to the medical profession—namely, to leave the insured to obtain medical attendance, either under other arrangements made by Insurance Committees or by arrangements which they themselves will make by means of the money supplied from the insurance funds.

Since the letter of the Insurance Commissioners was written on June 26th, Mr. Lloyd George has himself addressed to "a medical correspondent" a letter dated July 9th, which has been circulated to the press by the Insurance Commissioners for England. In this new letter Mr. Lloyd George repeats the appeal to the British Medical Association contained in the letter of June 26th from the Commissioners, asking the forthcoming Representative Meeting to appoint a committee with authority to negotiate with him "in a practical spirit." With a want of appreciation of the actualities of the situation not usually numbered among the faults attributed to him by even the most severe of his critics, he expresses surprise "that there is an impression in some quarters that the Government are not desirous of coming to terms with the doctors." This, he says, is entirely wrong. "We have never wavered in our belief that the cordial co-operation of the medical profession is necessary in order that the best results may be obtained from the Insurance Act, and we are prepared to do all in our power to secure that co-operation." His point of view at present seems to be that though he admits, as we believe quite truly, that the country desires that the best medical treatment, preventive and curative, should be provided for the twelve or fourteen million workers who are at once to be insured, he does not dare to ask Parliament to vote the money necessary to pay reasonable remuneration to the medical profession. Mr. Lloyd George does himself less than justice; as a financier he has shown more courage in worse causes.

THE ASSOCIATION AND THE GOVERNMENT.

Efforts are being made in certain sections of the press to saddle on the medical profession the blame for the confusion and uncertainty which exists with regard to the administration of the Insurance scheme, but the examination of a few dates will show where the blame really lies.

The Special Representative Meeting of the British Medical Association stated, or rather restated, the minimum demands of the profession on February 22nd, and the State Sickness Insurance Committee then appointed, at its first meeting on February 28th, directed a letter to be addressed to the Joint Committee of Insurance Commissioners setting out in plain and unmistakable language what these minimum demands were. This letter was received by the Insurance Commissioners on February 29th, and the receipt of a formal acknowledgement was reported to the Committee at its meeting on March 7th. At its meeting on April 11th attention was drawn to a reply by Mr. Masterman, Chairman of the Joint Committee of Commissioners in the House of Commons, to the effect that he did not know that any reply would be sent to the British Medical Association except an acknowledgement, because members of the Association were to be appointed on the Advisory Committee. The Committee then (April 12th) wrote to the Commissioners asking when a detailed answer to the letter of February 29th might be expected. To that there was received on April 15th a reply from the Secretary of the Joint Committee to the effect that the representations of the Association would be carefully considered in connexion with the preparation of the Regulations for the administration of medical benefit, adding words to the same effect as Mr. Masterman's answer in the House of Commons—namely, that the Joint Committee hoped at an early date to obtain in the preparation of these regulations the advice and assistance of the Advisory Committee. Eleven days later (April 26th) the State Sickness Insurance Committee again wrote to the Joint Committee of Commissioners pointing out that while it recognized that those members of the State Sickness Insurance Committee who were also members of the Advisory Committee would be able to give advice and assistance in the preparation of the Regulations, the full Committee was the only body with authority to convey to the Commissioners and to press on their acceptance the terms desired by the medical profession, and that therefore it might become the duty of the Committee to seek a direct conference with the Commissioners in the hope that such arrangements might be made as would be satisfactory and fair to those who would be asked to undertake medical attendance and treatment under the Act. No reply to this communication appears to have been received, but on May 16th the attention of the Committee was drawn to a notification by the Commissioners to the effect that they had appointed a subcommittee to investigate and collect information as to the conditions of remuneration prevailing in general medical practice throughout the United Kingdom, and asking for information or representations from medical or other societies or persons interested. The Committee thereupon (May 16th) wrote to the Joint Committee of Insurance Commissioners, pointing out the fallacy which would arise if such information were regarded as a guide to the remuneration which would be acceptable to the profession in connexion with the Act.

The persistence of the Committee was at length rewarded by a guarded suggestion, received on May 21st from the Joint Committee of Commissioners, to the effect that they hoped to have the benefit of a conference with representatives of the British Medical Association, and two days later, on May 23rd, Sir Robert Morant and Mr. Whitaker, the Chairman and Deputy Chairman of the Commissioners in England, attended a meeting of the State Sickness Insurance Committee, when it appeared that their object in seeking an interview was to induce the Association to sanction the acceptance by medical practitioners of seats on the Provisional Insurance Committees for counties and county boroughs, which the near approach of the fatal day, July 15th, had rendered imperative. The Chairman (Mr. Verrall) pointed out to Sir Robert Morant and his colleague that the Committee were acting under instructions to the effect that no member of the Association should take any office or work under the National Insurance Act, other than that of the Advisory Committee, until such time as the minimum demands of the profession were conceded in the Regulations or in an amending Act. At this interview the first intimation was given, in the statement by Mr. Whitaker, of the proposal to examine the books of medical men in some selected towns, afterwards more fully explained by the Chancellor of the Exchequer in an interview. This interview was not achieved until the State Sickness Insurance Committee, at its meeting on May 30th, had adopted a resolution declaring that, after serious consideration, it had come to the conclusion that the time had arrived when the Insurance Commissioners should be asked to state (1) whether they could or whether they would not formulate regulations to satisfy the demands of the profession forwarded to them by the Committee some three months earlier, and (2) whether, if they could, they were willing to formulate such regulations, or, if they could not, what steps they proposed to take. In the covering letter transmitting the resolution to the Commissioners, the Committee indicated that if it would be any assistance to the Commissioners the Committee was prepared to place itself at the disposal of the Commissioners. This at last brought matters to a point, and the Committee as a deputation had two meetings with the Insurance Commissioners, with Mr. Lloyd George in the chair, on June 7th and June 12th. The only immediate outcome of this deputation was the receipt of a memorandum defining the conditions upon which the investigation into the amount of work and remuneration in the respective towns would be made. Finally, on June 26th, the Joint Committee answered the letter it had received on February 29th, and the Council on July 3rd could but endorse the opinion of the State Sickness Insurance Committee that, taking the document as a whole, no material concession had been made by the Chancellor of the Exchequer since February last to the demands put forward by the Association.

SECRET REMEDIES.

MONTAIGNE summed up his criticism of life in the phrase *L'homme se pipe*—man gulls himself. It is this inherent tendency in man's nature that makes him so ready a prey to impostors and swindlers of all kinds. St. Augustine's statement, *Quod vult, non quod est, credit qui cupit errare*, is true of most men; especially is it true in the matter of health, for to few of us is given the fortitude to look the truth about disease in ourselves, or in those we love, straight in the face. We prefer to believe that which we wish to be, not that which is. Man is also too apt to delude himself in another way. Even the strongest has his moments of depression when curious sensations, to which in his ordinary state he would pay no heed, make themselves felt, as in the watches of the night strange sounds are heard in a house. To these weaknesses the vendor of secret remedies appeals. Such is the credulity of mankind that a nostrum vendor has only to cry his wares with sufficiently "flamboyant mendacity," to

use a phrase of Mr. Justice Eve, to secure purchasers.

It is estimated that two millions and a half sterling is spent yearly on such stuff by the inhabitants of the United Kingdom. What value is received in return for this vast expenditure? A good deal has been done to enlighten the public mind on that point by the publication of *Secret Remedies*, of which about 150,000 copies have been sold, and there is every reason to anticipate that the continuation of that work, which has just been issued under the title, *More Secret Remedies*,[1] will meet with a like success. The book gives the reader the impression of hearing quacks in a market place bawling against each other. To the cynic it is amusing reading; it makes him recall the saying of Galen that the people ask for remedies, and reflect how fully that wish is gratified. To the lover of his kind, however, it is sad to see the credulity of the ignorant imposed upon on so vast a scale. It is not only the ignorant, however, who buy nostrums which they see advertised. There are many who ought to know better, but whose love of mystery and self-conceit leads them to put faith in anything that bears the stamp of unorthodoxy. The state of mind of the public as regards secret remedies is aptly illustrated by a story which has been told before in this JOURNAL, but which, carrying as it does an eternal moral, may well be told again. A vendor of quack medicines was doing a roaring trade at a fair in a Paris suburb, when the police, with a zeal which does not too commonly characterize the agents of the law, proposed to arrest [illegible] charge of unqualified practice. He took them to the rear of his booth, and there exhibited before their astonished eyes an [illegible]e granted by the Medical Faculty of Paris. As they were retiring in some confusion, he begged them not to "expose" him, for he said if the people knew that he was a real doctor his trade would be ruined.

We cannot go over the list of remedies in detail, and, indeed, as the analyses have already appeared in the JOURNAL, this would be a twice-told tale. Attention may, however, be called not only to the extravagance of the claims, but to the ingenuity with which every [illegible] that can possibly influence the ignorant mind is brought to bear to increase the effect. There are testimonials from "M.D.'s" whose names do not appear in the *Medical Register*. Deceptive combinations of letters and vague titles such as "specialist" are used to suggest legitimate qualifications, and distorted or misapplied quotations from medical journals. Unscrupulous use is made of the names of famous physicians to make it appear that they discovered the remedy, or clergymen are made to seem as if they had blessed the wonder-working medicine. The [illegible] be the outcome of years of [illegible] or to be compounded of herbs used by savage tribes, or gathered from the [illegible] In other cases some [illegible] unty of women [illegible] in who professes to have a [illegible] we are told that "nobody but a [illegible] it, and it is offered to [illegible] men is enticed by [illegible] It the quacks are [illegible] lutions of the problems of a [illegible] If but a small part of [illegible]

[illegible] *Contain.* London: [illegible] *To be*

we should have the new heaven and the new earth promised us by the Chancellor of the Exchequer—without the medical "benefits" of his Insurance Act.

In the chapter on unqualified practice through the post an account is given of the way in which the snare is set—not in vain—in the sight of the poor birds whom it is meant to catch. We believe a brisk business is done in the sale of names and addresses of confiding people on the books of one quack firm to another. These persons are bombarded with letters and lists of questions, called "Symptom Forms," in which a great show is made of exhaustive inquiry with a suggestion that the medicines will be selected or modified according to the nature of the disease by an "expert." More and more urgent letters are sent when the object of attack is irresponsive, and probably in this way many at last are netted who at first avoided the lure. It is easy to excite alarm by a mere recital of symptoms. This brings suggestion into play, and there is hardly a condition which the patient cannot discover in himself by much thinking. This is one of the vilest features of the trade. It makes nervous people the victims of quackery, and too often they go the rounds from one system of treatment to another, hope springing eternal in their breasts with the delivery of each new bottle of medicine or with the passage from one system to another—hope doomed, in the vast majority of cases, to disappointment.

It would be folly to deny that quack medicines ever do good. It would be strange indeed if they did not sometimes, as for the most part they are made of materials in common use in medical practice. But it must never be forgotten that, like the razors, sung by Peter Pindar, they are made to *sell*. A testimonial from a well-known person is very useful, and sometimes these are given in all simplicity. Many testimonials, however, are not genuine. Some years ago a member of the French Legislature had the curiosity to try to trace the people whose names were appended to advertised testimonials. In about a dozen cases selected for the purpose the attempt was a failure. The similarity of certain testimonials suggests that they are passed on from one firm to another, and used in a slightly altered form. There is not only the danger of receiving medicines inappropriate and possibly injurious to a particular case, but the evil of establishing the quack remedy habit which leads to certain depletion of the purse and very probable impairment of health. In any case it fosters a state of mind which is destructive of happiness, as well as of efficiency. Even the most highly educated person, ignorant of the laws of physiology, is liable to fall a prey to the wiles of the quack. It is with the wish to show people what they are really buying that these analyses are published. From this book they will see the outrageous disproportion between the cost of the stuff sold and the price at which it is retailed.

The chapter on the advertising of proprietary medicines is of special interest, as it shows the extent to which the lay press is made the vehicle for puffing of nostrums. Selection is carefully exercised in the choice of papers, high-class dailies and monthly reviews showing few or none, while others which make their appeal to more ignorant classes devote a large part of their advertising space to them. Certain religious papers are remarkable for the number of [illegible] which they contain. In connection with this subject we may quote a significant passage from Sir William Osler, who says: "I suppose as a body, clergymen are better educated than

any other, yet they are notorious supporters of all the nostrums and humbuggery with which the daily and religious papers abound: and I find that the further they have wandered from the decrees of the Council of Trent the more apt are they to be steeped in thaumaturgic and Galenical superstition."

It is, we fear, useless to expect any help from the lay press in general in the war against quackery. The newspapers can exercise only the most cursory supervision, if any, over the advertisements of nostrums. Moreover, the control of large groups of newspapers and other periodicals by a few persons creates an almost insuperable obstacle to effective legislation. The effect of the suppression of genuine public opinion in the political sphere caused by this concentration of ownership, was pointed out some years ago by Mr. Winston Churchill. It is easy to foresee how it would operate in organizing resistance to any proposal to restrain the baleful activity of the advertiser of secret remedies. There seems little hope of any real reform; a trade which brings a revenue of between £300,000 and £400,000 is too valuable to the Government to be sacrificed to what many public men would think a Quixotic principle. They would say with Vespasian of the money got from his unsavoury tax, *Non olet*.

In conclusion, we may be allowed once more to recommend *More Secret Remedies* to the attention of the public as well as the profession. Although dealing with a subject surrounded by innumerable difficulties, scarcely any serious attack has been made on the accuracy of the analyses. A still more striking testimony to the value of the book is the discreet silence about it maintained by that large part of the press which flourishes on advertisements of secret remedies.

SANATORIUM BENEFIT NEXT WEEK.

SANATORIUM benefit comes into force on Monday next, July 15th. The State Sickness Insurance Committee, at its meeting on July 11th, recorded its opinion that the terms of Minute 78 of the Special Representative Meeting of February last, which stated that no member of the medical profession should take any office or work under the National Insurance Act, other than that of the Advisory Committee, until such time as the minimum demands of the profession were conceded in the Regulations or an amending Act, debarred members of the profession from making any kind of attendance upon any person under the Act in connexion with sanatorium benefit. At the same time the Committee placed on record its opinion that there was abundant evidence that the question of Minute 78, in its application to sanatorium benefit must come up for consideration at the Annual Representative Meeting. The regulations for sanatorium benefit have not yet been issued, even in draft. It may be possible to excuse this delay on the ground that this benefit is not wholly under the control of the Insurance Commissioners, and it is true that the councils of counties and county boroughs must provide the institution, though on the Insurance Committee falls the duty of selecting the patient. This division of authority is witnessed in the circular letter of the Local Government Board transmitting to county councils a rather long-winded memorandum by the Insurance Commissioners. (See SUPPLEMENT, p. 87.) The Local Government Board in the middle of May sent a circular letter to county councils calling attention to the duties which would shortly be imposed upon them in respect of the treatment of tuberculosis, and some councils have already received reports from their medical officers containing schemes for provisional or permanent organizations or both. The Local Government Board and the Insurance Commissioners alike recognize that the arrangements immediately to be made must be of a provisional nature. This would in any case have been inevitable, as county councils do not possess an adequate amount of sanatorium accommodation, nor, except in a few instances, tuberculosis dispensaries. But if the Commissioners had not wasted so much of the time between February 29th and June 26th, the dates on which they received the letter from the British Medical Association and replied to it, and had come to terms with the profession, the arrangements could easily have been very much more complete. As it is, county councils are advised to do the best they can, and Insurance Committees are told to instruct an insured person who believes himself to be suffering from tuberculosis to go through the following procedure: He is first to apply to the clerk or acting clerk of the Insurance Committee; the clerk is to furnish the applicant with a blank form of medical report, and advise him to take it to his ordinary medical attendant, or any other medical practitioner he may prefer; the applicant is to ask the practitioner to examine him, to fill up the form, and to consent to accept from the Insurance Committee a fee of 5s., which the Commissioners regard "as suitable for this purpose." The report is then to be forwarded to the medical officer of health of the council of the county or county borough, and it is assumed that the council will have consented to appoint this officer to act temporarily as the expert adviser of the Provisional Insurance Committee in dealing with individual applications for sanatorium benefit. The medical officer of health will then be expected to advise the Committee as to the form of treatment most suitable for the case, and the Committee will select those applicants judged most to stand in need of sanatorium benefit, and decide what kind of treatment under the provisions of the Act relating to that form of benefit should be provided. In order to complete, as far as possible, these provisional arrangements, the Insurance Committee is to draw up a scheme of home treatment for the approval of the Local Government Board, and is told that it may make arrangements for treatment by private practitioners in various ways, though the only way specified is that the patient should be authorized to obtain from his own medical attendant such treatment as may have been sanctioned in his case at the cost of the funds of the Insurance Committee. It is greatly to be regretted that the Insurance Commissioners, by their dilatoriness, have brought the matter to this pass, because the interim report of the Departmental Committee contained many excellent features which appealed to the profession, both to those engaged in special practice and to general practitioners, who would have been ready, we have no doubt, to accept the co-operation of the tuberculosis officer as a consultant, and to serve on the medical staff of a dispensary as suggested by the Departmental Committee.

1911-1912.

THE assertion so often and so positively made by medical speakers and writers in our columns, and in those of our contemporaries, that nothing has been gained through the criticisms directed by the British Medical Association against the Insurance Scheme of the Government, makes it worth while to bring together the two following quotations touching the question of remuneration. The one is from the speech made by the Chancellor of the Exchequer in introducing the bill into the House of Commons on May 4th, 1911; the other from a letter addressed by him to "a medical correspondent" and circulated to the press

by the Insurance Commissioners on Tuesday evening, July 9th, 1912:

May 4th, 1911.

I come now to a rather delicate task, because the doctors and the friendly societies are at variance on the subject. The doctors say that they are underpaid. Well, we all say we are underpaid. On the other hand, the friendly societies say, "No, it is just your greed." That is really the quarrel that is going on at the present time, and it has become very acute. In some districts—they are rural districts—the doctor is paid half a crown per head per annum for members of friendly societies. In other districts the amount runs up to 6s. per head per annum, but on the average the doctoring for members of friendly societies is done at 4s. per head per annum. . . . I am on the whole inclined to agree that the doctors have got a case for increased payment, not as much as they ask, something far short of that, but at the same time something very substantial. . . . I suggest that there should be a separation of drugs from the doctor, whose business should be confined to prescribing. . . . In addition to that, I think there ought to be provision for an improvement in the standard of payment to the doctors. Sometimes, no doubt, they are quite adequately paid, but sometimes they certainly are not, and I think financial provision ought to be made in the scheme for raising the level to 4s.

July 9th, 1912.

As regards the subject of remuneration, I have said—and I repeat—that the Government are prepared, as part of a general settlement, to recommend Parliament to increase the amount available for remuneration of those doctors who take part in the formation of panels. It is true that I have had to make clear that I did not expect to be able to meet the demands put forward by the British Medical Association for 8s. 6d. per head exclusive of drugs and of a long list of extras. I feel sure, however, that this demand was put forward without fully realizing what it meant. In private practice, doctors know the amount they receive from those they actually attend, and they find it difficult to realize what would be the effect on their income if they were paid a fixed sum per head per annum in respect of a large section of the population, whether they actually attended them or not. I hope that the inquiry which Sir William Plender is now carrying out will serve to remove this cause of misunderstanding once and for all. . . . I still believe that the most satisfactory way of working the medical service under existing conditions will be by the system of free choice of doctor by patients, with the various safeguards for the profession which were inserted in the Act at the request of the British Medical Association.

With regard to the sentence quoted from the letter of July 9th with reference to the inquiry into the amount of work and remuneration in the six selected towns, we may recall that in the letter addressed to the honorary secretaries of the Divisions within the areas of which the selected towns were included, the State Sickness Insurance Committee stated that it had informed the Chancellor that the inquiry was not of its seeking; that the information obtained as the result of the inquiry would probably be inadequate, and might be misleading; and that the demands of the profession as regards remuneration could not in any way be affected by the results of the inquiry. The report of Sir William Plender, the actuary selected to make the investigation, was submitted to the Chancellor of the Exchequer and to the British Medical Association on Thursday afternoon, July 11th, as we go to press. It has been inserted in the SUPPLEMENT (p. 89).

FRIENDLY SOCIETIES AND THE MEDICAL PROFESSION.

A COURSE once or twice suggested in these columns was adopted with much success at Bromwich on June 21st, an address explanatory of the attitude of the medical profession towards the Insurance Act being delivered by Dr. Cameron Kidd before an audience of members of friendly societies. From the tone of questions subsequently asked, from editorial comments in Worcestershire papers, and from the fact that more than one of them has reproduced the address verbatim, it may be concluded that the address made an excellent impression. After setting forth the medical objections to the Act discussed so often in these columns, he devoted himself to disabusing the minds of his audience of two misconceptions—a belief that the demand for 8s. 6d. a head represents an attempt on the part of the medical profession to obtain twice as much pay as that with which it was formerly contented, and that the notice given of termination of contracts with friendly societies is an attack upon them. In the first connexion, he showed that whatever reasons medical men may ever have had for being content to accept contract patients at 4s. a head had ceased to be operative for many years, and that long before the Insurance Bill was conceived the British Medical Association had been busy working out a scheme to take the place of existing contract practice. That scheme, elaboration of which was practically complete in 1905, included, apart from other matters, a payment of 2d. a week a head, or approximately 8s. 6d. a year. Hence the demand of the medical profession that it should receive this sum under the National Insurance Act represented no new claim. Further work on the scheme in question had been postponed until it was seen what the Government's Insurance Bill proposed, and as its proposal in regard to medical attendance proved one which would work harm not only to the medical profession, but in the long run equal harm to the public itself, the medical profession intended to have nothing to do with it unless the demands it had made were granted. If an agreement between the Government and the profession could not be reached before January 15th, 1913, when the medical benefit came into operation, the profession would again take up the scheme mentioned. In regard to termination of contracts, this was not a voluntary act on the part of the doctors concerned, nor representative of any hostility on the part of the medical profession towards friendly societies. It was a step forced upon the medical profession by the Government itself, which had threatened that if medical men would not accept 6s. a year from it, it would place that sum in the hands of the societies and leave them to deal with the medical profession. The only reply to such a threat was for the medical profession to safeguard itself by cutting its connexion with friendly societies before the date mentioned, and as six months' notice was necessary notice had to be given on July 15th. The delivery of this address was arranged at a meeting of medical men in practice in the locality, and many of them were present to assist in answering the questions raised on its conclusion. We notice as a point of importance that Dr. Kidd was selected to deliver the address, not merely because he has been for a very long time in practice in the district, but also on account of its being well known that he is a strong adherent of the present Government and an advocate of the principle of compulsory insurance.

ST. BARTHOLOMEW'S FIFTY YEARS SINCE.

THE July number of the *St. Bartholomew's Hospital Journal* contains Sir William Church's Midsummer Address to the Abernethian Society, which is a retrospect of St. Bartholomew's and medicine during the last fifty years. He says he is not old enough to remember cattle being brought into Smithfield, but when he joined the hospital the whole of the place now occupied by the railway and the meat markets was "a dreary expanse of neglected ground adorned with the decaying remains of the old cattle and sheep pens." Snow Hill still retained the features described by Dickens, and Farringdon Street was being bored through the slums. He became a dresser under Sir William Lawrence; in those days students paid twenty-five guineas for the privilege of dressing—a perquisite which the surgeons were not very willing to give up. Lawrence, though he would make incisions 6 in. or 9 in. long, without an anæsthetic, for diffuse cellulitis, would not be present at an ovariotomy, thinking the risk to the patient to be too great. All operations, except urgent ones, were done on Saturday afternoons, in a single theatre in which the surgeons took their turn in order of seniority. Sir William Church was afterwards clerk under Sir George Burrows and Dr. Kirkes. All sorts of cases, including typhus and other

acute fevers, were admitted into the general wards. There were no special departments, except that for diseases of women. Although the ophthalmoscope had been introduced, its value in medical diagnosis was not recognized. The laryngoscope was not in use. Electricity was not employed either for diagnosis or for treatment. Sir William Church never saw the thermometer used for clinical purposes in his student days. After he had finished his clerking he became an apprentice to the apothecary of the hospital, Mr. Wood. There were no house-physicians then, and all the medical cases were under the care of the apothecary. Sir William Church's time was taken up with dispensing the hospital formulae to patients. In addition to his other duties Mr. Wood had to see the medical casualties each morning. His methods were rough and ready. According to the time of year he would say: "All who have diarrhoea stand up"; or "All who have a cough stand up." He would then make a rapid tour of inspection among the patients; his eye and judgement were so acute that Sir William Church doubts whether he often passed over a serious case. An amusing sketch is given of some of the old apothecaries of the hospital. The first mention of such a functionary occurs in the account in the journal for 1572, when it was decided that "the said William Weston (the Apothecary) shall have for his wages every yere, so long as he serves this house with poticary ware from May next, XVI^{li}, XIII^{s}, and IIj^{d}, to be paid to him quarterly." In 1614 the apothecary had rooms assigned to him in the hospital and the Apothecaries' shop was instituted. Francis Bernard, who was elected physician to the hospital in 1678, had previously been Apothecary for eighteen years; he was a very learned man, and possessed the largest collection of medical books that had ever been made in England; in addition to the classical tongues he was well acquainted with French, Spanish, and Italian. Thomas Wheeler, who was appointed in 1806 and held office till 1821, was an excellent botanist, and also very learned. Sir Robert Christison says of him that he continued to wear the clothes of the apothecary of the last century, and was chiefly remarkable for his rare familiarity with the works of Hippocrates. "In our occasional controversial conversations he floored Oxon., Cantab., and Edin. alike by quoting long paragraphs in the Greek original from the father of physic, from whom and his disciple we were glad to make our escape by prompt assent." Wheeler was very eccentric, and on one occasion was mistaken for an escaped lunatic. Sir William Church goes on to refer to the change in the appearance of the wards that has taken place under the influence of the nursing staff, and he contrasts the modern nurse with the old type.

ECONOMY IN THE OPERATING THEATRE.

THE contrast between the elaborate arrangements for operations and the large amount of money spent on hospital operating theatres on the one hand, and the conditions under which operations have often to be done for private patients, both in nursing homes and in private houses on the other, must often have struck the hospital surgeon, and probably the public also. It is notorious that the working man, as Mr. Hamilton Whiteford[1] points out in the preface to his little work on the operating theatre in private practice, stands a better chance of aseptic healing if he goes to a modern hospital than a patient belonging to the middle classes who is operated upon in the bedroom of a private house, but many nursing homes, in the larger cities at least, have well-equipped operating theatres. Mr. Whiteford gives an account of a small operating theatre built last year for himself. There are full details as to materials and arrangements and expense. Glass, on account of its liability to fracture, and brass surfaces, because of the waste of labour necessary to keep them polished, were almost entirely dispensed with. In their stead were used iron, aluminium, and painted and plated brass. We are reminded in reading this of an American railroad manager whose first work after taking over the new lines and engines and plant was to paint over all the brightly polished handles and knobs, and thereby save a considerable sum in labour. In Mr. Whiteford's scheme the fancy things are done away with. The floors, instead of terrazzo, are made of cement, which is four times cheaper; it may be added that terrazzo frequently becomes roughened and little bits of marble are chipped out of the floor, whereas good cement, as a rule, becomes smoother the more it is used, and, if carefully laid on a proper foundation, has no greater tendency to fissure. Mr. Whiteford strongly advocates heating by electricity; instead of hot-water troughs under the operating table, an electrical apparatus has been devised which will maintain the heat much more steadily for any length of time. Economy is observed also in the use of solutions. Iodine is the only antiseptic employed. Antiseptic lotions of all kinds are abolished in favour of saline solution. The theory of aseptic surgery is simple, but, as it depends on many people and many factors, its practical application is difficult.

[1] *An Operating Theatre in Private Practice.* By C. Hamilton Whiteford, M.R.C.S., L.R.C.P. London: Harrison and Sons. 1912. (Cr. 8vo, pp. 76. 3s. 6d. net.)

GIFT TO THE WELSH MEDICAL SCHOOL.

IN commemoration of the visit of the King and Queen to King Edward VII Hospital, Cardiff, better known as the Cardiff Infirmary, an anonymous donor has presented 10,000 guineas for the erection of a new physiological block of buildings for the Medical Faculty of the University College of South Wales and Monmouthshire. The total sum required to complete the whole scheme of buildings for the medical school is £50,000, and the donor expresses the hope that other men with means at their disposal will follow his lead. He goes on to say that he has been moved to make the gift in order that the Welsh Medical School might be enabled to take its proper status in research work relating to cancer, tuberculosis, and other serious maladies, and that thus Cardiff may take its proper position and rank with the other great towns in the kingdom in this beneficent branch of scientific investigation. Further, he had been influenced by the feeling that through the completion of the medical school the medical and surgical work at King Edward VII Hospital would be made more valuable to the sufferers who are treated there and in other hospitals of the Principality.

INTERNATIONAL EUGENICS CONGRESS.

THE first International Eugenics Congress will be held at the University of London from the 24th to the 30th of July, under the presidency of Major Leonard Darwin. The meetings will be held in the hall of the University, Imperial Institute Road, South Kensington, S.W. In the list of Vice-Presidents we note the names of Sir Clifford Allbutt, Sir Thomas Barlow, Sir William Church, Sir Rickman J. Godlee, Dr. A. Marie, Sir Henry Morris, and Sir William Osler. A circular has been sent out to all members of eugenic and heredity societies in Europe and America and to many other persons likely to be interested in the Congress. In the meetings and discussions the English, French, German, and Italian languages are to be on an equal footing. An inaugural banquet will take place at the Hotel Cecil on Wednesday, July 24th, at 7 p.m., at which all the officials of the Congress and readers of papers will be the guests of the Entertainments Committee. Members of the Congress can obtain tickets at 7s. 6d. each from the Honorary Secretary, Entertainments Committee, 30, York Terrace, Harley Street, W. Speeches of welcome will be made by the President, the Lord Mayor of London, the Right Hon. A. J. Balfour, and others. The banquet will be followed by a reception, to which all members and associates of the Congress will be invited. The work of the Congress will be distributed among sections as follows:

Biology and eugenics, practical eugenics, education and eugenics: sociology and eugenics, and medical eugenics. Papers ranging over the whole subject will be read and discussed in these sections. There will be an exhibition in connexion with the Congress which will include (1) charts, pedigrees, photographs, and specimens, illustrative of heredity, especially in man; (2) relics of Charles Darwin, Sir Francis Galton, and Gregor Mendel; (3) portraits of notable workers. Many interesting exhibits have been received from America, France, Germany, and all parts of the United Kingdom. Professor von Gruber has sent over from the International Race Hygiene Congress, held in Dresden in 1911, a collection of exhibits representative of German work, and the American Eugenic Record Office, as well as the State Epileptic Colony, New Jersey, are sending exhibits.

AN OLD REMEDY REVIVED.

THE therapeutic virtues of garlic have been at intervals extolled by many writers. Sydenham used it in cases of small-pox, and ancient records tell of its employment in a whole series of complaints. In America it still holds a place for the relief of certain pulmonary diseases, and from Ireland we can now record a strong testimonial[1] in favour of its influence upon tuberculous disease, both pulmonary and general. Dr. William C. Minchin, of Dublin, stirred by an account of a remarkable recovery of a tuberculous bone case in which the cure appeared to be effected by a mixture of soot, butter, and garlic, set himself to study the results of treatment by the sulphide of allyl in tuberculous joint cases. His success in some of the cases quoted appears to have been remarkable, and photographs of patients before and after treatment are given. It has long been known that salts derived from the *Allium sativum* have bactericidal power, but the intense aversion which so many people have to the all-pervading smell of garlic has no doubt rendered their use unpopular. Such cases as those recorded by Dr. Minchin may fairly be claimed as proof that in certain individuals the drug may practically annihilate the activity of tubercle, but he has found that in others, where a strong antipathy to garlic exists, its administration in any form has failed to give relief. The widely extended use of garlic among the lower orders in Italy may perhaps be traced to a therapeutic origin.

LONDON SCHOOL OF TROPICAL MEDICINE.

AT the request of the Right Hon. L. Harcourt, Secretary of State for the Colonies, a committee has been formed to raise funds for the extension and development of the London School of Tropical Medicine. An appeal with that object has been issued by Mr. Austen Chamberlain. In order to provide a modest but adequate endowment fund, to make necessary additions to the laboratories and buildings for the accommodation of the growing number of students, to provide for the active prosecution of research, and to establish a small nursing home for civilians who cannot afford to procure for themselves the special medical and surgical treatment and nursing required in these very special branches of disease, a sum of £100,000 is now required, and it is to raise this sum that the present appeal is made. A meeting of the committee will be held at the Foreign Office on Wednesday, July 17th, at 4 o'clock, with the Right Hon. Austen Chamberlain, M.P., in the chair. We hope in a later issue to deal more fully with this matter, which is of the highest importance from a scientific as well as an imperial point of view. In the meantime we can only express an earnest hope that the appeal will meet with an adequate response.

[1] *The Treatment, Prevention, and Cure of Tuberculosis and Lupus with Allyl Sulphide.* By William C. Minchin, M.D., late Medical Officer to the Kells Union Hospital and Fever Hospital. London: Baillière, Tindall and Cox. 1912. (Cr. 8vo, pp. 96; 4 plates, 1 figure. 2s. 6d. net.)

CREMATION.

CREMATION, as is well known, is far commoner in Japan than in Europe or America. In 1905 the number of bodies disposed of by this method was 348,349; in 1906, 327,517; in 1907, 361,962; in 1908, 377,902; in 1909, 402,329, giving an average for these five years of 363,492. The average number of burials during the same period was 717,927, nearly double that of the cremations. Cremation is cheap in Japan, the cost being from somewhat less than 6s. to 32s. 6d. Mr. Dakers Cameron, of Montreal, having read the article entitled "Progress of Cremation," which appeared in the JOURNAL of April 27th, has been good enough to obtain for us the figures relating to the crematorium in Mount Royal Cemetery, Montreal. This is, as far as our correspondent knows, the only crematorium in Canada. It was opened in 1902, and up to the end of 1911, the number of bodies cremated there was 401. The figures for the several years are as follows: 1902, 3; 1903, 6; 1904, 16; 1905, 19; 1906, 19; 1907, 27; 1908, 52; 1909, 88; 1910, 97; 1911, 74.

PROFESSOR KOCHER, who recently completed the fortieth year of his occupancy of the Chair of Surgery in the University of Bern, has given £3,000 to the Medical Faculty of the University for purposes of medical research.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

National Insurance Act.

Medical Benefit.

SIR PHILIP MAGNUS asked the Chancellor of the Exchequer whether, having regard to the nearness of the date when the National Insurance Act came into operation, he could state what progress had been made in the arrangements for securing the co-operation of members of the medical profession in the working of the Act; and, in the event of the Commissioners failing to meet the requirements of the doctors, what steps he proposed to take to provide medical benefit for insured persons, who would have commenced paying on July 15th for medical attendance under those clauses of Part I of the Act relating to the cure of sickness. Mr. Masterman said he was unable at present to add anything to previous statements made on the subject. The Act promised to all insured persons from January 15th free medical attendance or a monetary equivalent. This promise had been set out in the insurance leaflets, and if the Commissioners found that the medical attendance in any district could not be provided, the alternative which was provided in the Act would be given to all insured persons. The amount in lieu of medical benefit, calculated according to actuarial advice on which the Act was based, was 6s., but he would not commit himself to that amount at present.

In reply to Sir Philip Magnus as to 6s. being sufficient to insure against sickness, Mr. Masterman said it was one and a half times as much as 5,000,000 of the working classes were now paying for medical benefit.

Captain Clive asked whether the right hon. gentleman had completed arrangements to provide medical benefits (doctor and medicine) before issuing the National Health leaflet, in which a guarantee was given that, except in special circumstances, a doctor and medicine would be provided. Mr. Masterman said the National Health leaflet specifically declared that one of the benefits of the Act would consist of "doctor and medicine, or, in special circumstances, money payments instead." The Commissioners would have no difficulty in fulfilling this promise. A strike of the medical profession would be a special circumstance.

Sir Philip Magnus asked the Secretary to the Treasury what steps he proposed to take in the event of the Insurance Commissioners failing to make any agreement with the doctors, and consequently determining to pay each

insured person a fixed sum per annum, say 6s., in lieu of free medical attendance, to secure to the insured contributor efficient medical attendance during sickness after the year's grant of 6s. had been expended on doctor's visits and in payment for drugs. Mr. Masterman said that refusal of the medical profession to make a collective agreement with the Insurance Commissioners would not necessarily entail the consequence specified in the question. Other courses were possible under the Act. In any event the sum of 6s. per head per annum would enable the insured persons to remunerate the doctors who attended them at a considerably higher rate for the same services than they had given them in the past. But it would be premature to discuss various possible alternative schemes to the panel system which was contemplated in the Act.

Asked whether he thought 6s. was the equivalent of free medical attendance and medicine, Mr. Masterman said "the poor insured person in all the great friendly societies has obtained free medical attendance and medicine for an average of something like 4s. per head."

Asked by Lord Helmsley if the 6s. would be given to each person whether he required medical attendance or not, Mr. Masterman replied that he would not commit himself to the sum of 6s. There were other alternatives. There was a possibility, if medical benefits were suspended, that a certain sum would be given to every person whether he required medical attendance or not.

Asked by Mr. Grant whether the Chancellor of the Exchequer clearly asserted from his place in the House that without the co-operation of the medical profession the Act would be ineffective, Mr. Masterman said he did not remember his right hon. friend using those words. Of course, the Government was making every effort to obtain the co-operation of the medical profession on terms compatible with the amount of money which it could ask the House to vote for such a purpose.

Asked by Mr. Banes if the 6s. would be given back to the insured person or put to his credit, Mr. Masterman said that either of those courses was possible. In the last resort, if no other course were possible, 6s., or some sum to which he did not commit himself, would be given to every insured person, which was 9d. for every 4d. he had paid in for medical benefit.

On July 10th Mr. William Peel (Taunton) asked the Secretary to the Treasury whether the insured persons to whom the 6s. must be given in lieu of medical attendance, in the event of the Government being unable to come to an agreement with the doctors, (1) would be expected to form benefit societies in order to secure medical attendance; (2) would they be given the 6s. if they had not consulted a doctor during the year; (3) would they be allowed to spend the 6s. on other matters than medical attendance; and (4) if 1s. 6d. out of the 6s. would be considered to have been given to the insured persons in lieu of free drugs. Mr. Masterman said that if the local Insurance Committee in any district found that adequate medical attendance could not be given by the doctors who offered to serve on a general panel a variety of alternative systems of providing medical benefit might be adopted. If such alternatives proved impracticable or undesirable medical benefit might be suspended. In the event of suspension it would be perfectly open to the insured persons, who would receive monetary equivalent, to make such arrangements for medical attendance and medicine as they had been making for many years past, and they would receive for such arrangements one and a half times the money which they had hitherto usually paid for them.

Mr. William Peel asked for an answer to the last two points of the question (3) and (4). Mr. Masterman said that those and other alternatives were possible. There might be an arrangement come to by which money was handed over to the societies for medical benefit. Up to now every one of the working classes had been able to get medical attendance and drugs for something like 4s. He would now get the same for 2s. 8d. unless the medical payment was suspended.

Mr. William Peel: In order to obtain these benefits, will these people be compelled to form societies on the old lines?—Mr. Masterman: This is a possible alternative. There are dozens of alternatives whereby they will be able to obtain medical attendance under these circumstances.

The Marquess of Tullibardine (Perthshire, W.): Under the Act is not the medical benefit guaranteed? Mr. Masterman: No. Medical benefit or money payment.

Sir P. Magnus (London University) asked what steps the Government proposed to take to exclude those persons possessing an income exceeding £160 a year from free medical treatment who, under the National Insurance Act, are entitled to that benefit, having regard to the statement of the Commissioners in their letter of June 26th that the Government recognize that this is a special case for consideration. Mr. Masterman replied that the Government had undertaken to consider any suggestions put before it in reference to this matter. No such suggestions had as yet been made. It would therefore be premature to make any statement.

Maternity Benefit.

Mr. Rendall asked whether a domestic servant passed child-bearing age could exchange this benefit for an increased sickness, invalidity, or pension benefit. Mr. Masterman replied that there was no power in the Act to substitute other benefits for maternity benefit.

District Nursing.

Mr. Aubrey Herbert asked if district nursing as such would come under the heading of sickness benefit, medical benefit, or whether it would be considered as an additional benefit. Mr. Masterman replied that the Commissioners had not yet prescribed on which specific benefit or benefits any grants made by approved societies or Insurance Committees should be treated as having been expended.

As to the conditions of the grants, Mr. Masterman said that under Section 21 it was lawful for an approved society or Insurance Committee to grant subscriptions or donations in support of district nurses. It was not possible at present to make any statement as to what use they would make of this power.

As to the exemption of these associations, Mr. Masterman said that district nursing associations could not be relieved of their obligations under the Act as employers on the ground that they were in receipt of such grants as those mentioned.

Feeble-minded Rural Workers.

Mr. Bridgeman asked if the Insurance Commissioners had power to make regulations for the exemption from the provisions of the National Insurance Act of rural workers who were feeble-minded, epileptic, infirm, or otherwise only partially capable of earning a livelihood; and, if so, whether they proposed to exercise those powers. Mr. Masterman replied that the Commissioners had no general powers of the kind suggested in the first part of the question. Apart from the special provisions of the Act, such as those relating to outworkers or inmates of institutions, persons who were actually employed must be insured under the ordinary conditions, and the Commissioners had no power to exempt them by regulation. The second part of the question did not therefore arise.

Sanatorium Benefits.

Mr. Godfrey Locker-Lampson asked who would certify that an insured person was suffering from tuberculosis and was a proper case for sanatorium benefit in the event of no arrangement being come to with the medical profession by July 15th; and whether the insured person would have to pay for this certificate himself in addition to his contribution for sanatorium benefit. Mr. Masterman said that the arrangements would depend on local circumstances: in some cases the Insurance Committee would probably arrange that the medical officers of the local authority would certify, and in other cases that a report from the private medical attendant of the patient would be accepted, the Insurance Committee having expert advice on the matter. It was contemplated that the cost of such certificates should be defrayed by the Insurance Committee, where these arrangements were adopted.

Sanatoriums (Ireland).

In reply to Sir John Lonsdale, the Chief Secretary for Ireland said that the Women's National Health Association, acting on behalf of certain county councils, had purchased the Peamount estate, near Lucan, for the purpose of sanatoriums for consumptives, and that a grant for the purchase had been authorized by the Local Government Board and approved by the Treasury. The Local Government Board understood that the Women's National Health

Association was acting in co-operation with the councils of the counties of Leitrim, Meath, Westmeath, and Donegal. The arrangements between the association and county councils in regard to contributions were not yet definitely settled in each case, but whatever conditions were imposed as regards the grants given to the Women's National Health Association and the counties working in co-operation with it would also apply to other counties and voluntary associations working on their behalf. Reports had been made by eminent experts testifying to the good quality of the land and the suitability of the estate for sanatorium purposes, and an independent valuation did not appear to be necessary. The estate had been conveyed to independent trustees. No portion of the money would be used for any other purpose than those for which it was authorized to be used under the Act in question. None would be used by the association for its own purposes.

Women's National Health Association (Ireland).

In reply to Sir John Lonsdale, Mr. Masterman said that upon the recommendation of the Local Government Board for Ireland, the Treasury, after consultation with the Irish Insurance Commission, had approved the grant of a sum not exceeding £25,000 out of moneys available for sanatorium purposes under the Finance Act, 1911, to the Women's National Health Association of Ireland. There were no statutory conditions as to the audit of expenditure out of these grants, which were, in terms of the Finance Act and the National Insurance Act, grants in aid of the institutions to which they were made, but the grants would be made subject to such conditions as would secure their being expended for the purposes for which they were intended. The grant now in question would be issued in instalments, the issue of each instalment after the first being made conditional upon the Local Government Board being satisfied as to the proper application of the preceding instalment, and arrangements would be made for securing that the institutions and services provided out of the grants should be made permanently available for the treatment of tuberculosis. The money would be exclusively devoted to the giving of sanatorium benefit, which would include dispensaries as well as sanatoriums. No part would be devoted to anything outside the sanatorium benefits of the Act.

Asylum Staff.

Colonel Rawson asked whether members of the staff of the Surrey County Asylum, who were already providing for old age by paying at the rate of 3 per cent. on their salary and emoluments under the Superannuation Act of 1909, were obliged to come in under the National Insurance Act, whereas elementary teachers were exempt under the Superannuation Act of 1898. Mr. Masterman said that in such a case it was open to the employing authority to apply to the Commissioners for a certificate of exemption from the compulsory provisions of the Act, on the ground that the terms of employment secured to the employees provision in respect of sickness and disablement on the whole not less favourable than the corresponding benefits under the Act. Unless a certificate was applied for and granted, the employee would come under the general provisions of the Act.

Remuneration during Sickness.

In reply to Mr. Rowntree, the Secretary to the Treasury said that when an employer undertook liability to pay full remuneration to an employee during the first six weeks of illness, the employer would be required to give notice to the Insurance Commissioners on a prescribed form in accordance with regulations which would be published in a few days. Those, however, who employed servants to whom pensions or other substituted benefits under Section 13 might be more suitable than payments during sickness should remember that the payment of lower contributions under the provisions of Section 47 would necessarily penalize their servants as regards such substituted benefits.

Sick Pay.

Mr. Godfrey Locker-Lampson asked whether any sick pay was guaranteed to those persons between 65 and 70 who would have the full contribution conducted from their wages under the National Insurance Act; and, if so, how much. Mr. Masterman said that under Section 49 (3) of the Act, the character of the benefits provided for such persons was left within the discretion of societies. For their guidance the Commissioners had issued a circular, No. A.S. 29, with two alternative schemes of benefits which would be actuarially sound, one giving sick benefits and the other small annual allowances by way of addition to pensions or other allowances the insured person might be receiving from his society or elsewhere. Under the former of these the rate of sick pay would be 6s. a week for thirteen weeks, and 5s. for a further thirteen weeks. There was no statutory guarantee that any one was to be received into any society.

Small-pox Hospitals.—In reply to Sir Francis Lowe, the President of the Local Government Board said that small-pox hospitals were maintained by local authorities, and he did not think it could be said that they were never likely to be again required for the purpose for which they were provided. In recent years such outbreaks as had occurred had been brought under control very promptly, and small-pox hospitals had formed an indispensable part of the machinery required for this purpose. He might say that he had encouraged local authorities to use their small-pox hospitals, subject to suitable safeguards, for the treatment of pulmonary tuberculosis and other purposes, when they were not required for small-pox and when they were suitable.

Dental Treatment in Schools.—In reply to Mr. Watt, the President of the Board of Education said that no grant had hitherto been made in aid of dental treatment in schools, but, under regulations already issued, a grant would be made this year towards the expenditure of local education authorities on medical treatment, which would include dental treatment.

Forcible Feeding.—In reply to Mr. Keir Hardie, Mr. McKenna said the compulsory feeding of prisoners was in each prison carried out by the medical officers, who were always fully qualified medical men. In one or two cases they had had the assistance of medical men not in the prison service, who were also fully qualified. He placed entire confidence in the discretion of these gentlemen and their ability to perform the duties required of them.

Medical Attendance on Indian Women.—In reply to Mr. Joynson-Hicks, the Under Secretary of State for India (Mr. Montagu) said that the number of women in India objecting to treatment by male doctors in public hospitals was no doubt large, but he knew of no figures showing the actual number. Much had already been done to provide female medical aid in women's hospitals for such women by the local authorities in co-operation with the Countess of Dufferin's fund. In 1908 there were in India, including native States, fifty-two lady doctors of the first grade, eighty-seven female assistant surgeons with the Indian qualifications, and 529 female hospital assistants. Later figures were not available.

Deaths from Plague in India. Last week Mr. Montagu informed Mr. Armitage that the total recorded deaths from plague in India (including native States) from 1901 to to 1911 (both inclusive) was, in round numbers, 7½ millions.

Registration of Deaths. A bill has been presented "to amend the law relating to the registration of deaths and to burials" by Mr. George Greenwood, supported by Mr. Atherley-Jones, Sir John Rolleston, Dr. Addison, Mr. Leif Jones, Mr. Gordon Harvey, Mr. Rowlands, Mr. Cecil Harmsworth, Mr. Ponsonby, Mr. Radford, Mr. Manfield, and Mr. Bentham.

Inebriates Bill.—The Inebriates Bill was read a second time on July 9th, and referred to a committee.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

TRINITY COLLEGE MEDICAL SCHOOL.

Bicentenary Celebration.

On Thursday, June 4th, Trinity College, Dublin, began the celebration of the two hundredth anniversary of the foundation of its medical school. The proceedings opened with the reception of the guests and delegates by the Chancellor of the University and the Provost of Trinity College. The reception took place in the Library, which is the college building nearest to the site of the old Anatomy House in which the Medical School was opened 200 years ago. This site was, in the terms of the order setting it apart for the building of a laboratory and anatomical theatre, "at the south-east corner of Ye Physic Garden." The building erected on the site contained rooms for a chemical laboratory, a lecture room, and probably a dissecting room, as well as an upstairs apartment, which was used as a museum.

The Chancellor of the University (Viscount Iveagh, K.P.) and the Provost (Dr. Anthony Traill) entered the library a few minutes before 3 o'clock, preceded by the mace. The guests and delegates were announced individually, and welcomed by the Chancellor and Provost. After the formal reception there was an adjournment to the adjoining Fellows' Garden, where were already assembled many of the delegates' private hosts and a large number of medical graduates of the university, a proportion of whom were visiting Dublin in order to be present at the festival.

Royal College of Surgeons: Honorary Fellowships.

At a meeting of the Royal College of Surgeons on the same day the Honorary Fellowship was conferred on Mr. I. H. Cameron, Professor of Surgery in the University of Toronto; Mr. Robert Jones, of Liverpool; Sir William Macewen, D.Sc., LL.D., F.R.S., Professor of Surgery in Glasgow University; and Sir Henry Morris, Bart.

In the evening the medical graduates of the School of Physic entertained the delegates at dinner in the Round Room of the Mansion House, kindly lent by the Lord Mayor. Mr. Robert H. Woods, F.R.C.S.I., presided, and His Excellency the Lord Lieutenant was seated on his right. There were over 400 present at the dinner. While the guests of the School of Medicine were entertained at the banquet, the Ladies' Committee held a reception at Trinity Hall for the lady guests.

On Friday morning the Provost unveiled a memorial stone to John Stearne, a Senior Fellow of Trinity College and founder of the Royal College of Physicians. This stone is now placed in the portico of the chapel of Trinity College, and is the original which in 1669 was placed over Stearne's tomb at the north side of the old Trinity College Chapel. The delegates then repaired to the Examination Hall, in which Dr. Mahaffy, Principal Historian of Trinity College, delivered an oration on Stearne. Addresses were then presented by delegates from the various universities and other learned bodies, including Kyoto (Japan), Tomsk, St. Petersburg, Moscow, Helsingfors, Vienna, Cairo, Geneva, Ghent, Groningen, Upsala, Stockholm, Christiania, Copenhagen, Bordeaux, Paris, Ann Arbor University of Michigan, Harvard, Pennsylvania, Montreal, Winnipeg, Ontario, Toronto, Punjab, Melbourne, Sydney, and nearly all the universities and colleges of England, Scotland, and Ireland.

The following address was presented by Dr. J. A. Macdonald, Chairman of the Council, on behalf of the British Medical Association:

CANCELLARIO, PRAEPOSITO,
SOCIIS,
UNIVERSITATIS DUBLINENSIS
STUDIOSISSIMAE VETUSTISSIMAE FACUNDISSIMAE
MEDICORUM BRITANNICORUM SODALITAS
IN OMNIBUS TOTIUS IMPERII PARTIBUS
CONSTITUTA
S.P.D.

LIBENTER, viri doctissimi, litteras istas e Collegio vestro SS. Trinitatis missas accepimus, necnon summa erga vos voluntate quod tot annis rite peractis in artibus Aesculapii docendis Scholam illam praeclaram fortunatis auspiciis conditam tanta prudentia perfectam celebrare velitis. Universitati Dublinensi pro temporis opportunitate gratulamur. Quibus celebrationibus admodum delectati vobis maximas gratias agimus qui in hisce studiis commemorandis nos etiam feriarum tam felicium participes esse jubeatis, eoque libentius, quoniam nostra quidem Sodalitas quinque et viginti milibus medicorum in omnibus partibus Britannici Imperii adscriptis nonnullos artibus medicinalibus apud domum antiquam ad ripas Liffae peritiores factos sodalicios communibus conjunctos studiis contineat, partem laetitiae vestrae habere videmur. Tanto desiderio tanta in vos benevolentia vehementer commoti virum bonum doctissimum, Concilio nostro praepositum, in omnibus rebus hujus Sodalitatis diu diligentissime versatum, qui ipse praesens ad nostram amicitiam praestandam feriis vestris intersit, Jacobum Alexandrum Macdonald, M.D., M.Ch., LL.D., legatum destinavimus.

Floreat in aeternum Universitas Dublinensis penitus dilecta honoribus novis novisque inceptis exornata, cujus apud aulas Schola Medicinae bonis viris adjuvantibus ducentos annos humano generi profuit, necnon postea in scientia medicinali augenda et in mortalibus aegris curandis pristina fama conservata obtineat incrementum.

ROBERT SAUNDBY, *Praeses.*
EDWIN RAYNER, *Aerario Praefectus.*
GUY ELLISTON, *Procurator.*

D. Loudinii.
Ante diem duodecimum Kal. Jul. MDCCCCXII A.D.

As the delegates advanced the National Anthem of each country was played on the organ. Telegrams and letters of congratulation were then read from several other universities whose delegates were prevented from attending. In the afternoon a garden party was given by Lord Iveagh in his beautiful grounds near St. Stephen's Green, and in the evening a performance of *She Stoops to Conquer* was given by the Dublin University Dramatic Society. Before the rise of the curtain Dr. Tyrrell, S.F.T.C.D., read as a prologue an ode written for the occasion by Dr. Oliver St. John Gogarty, F.R.C.S.I.

On Saturday morning a bronze medallion of the late Professor Daniel John Cunningham, who was for twenty years Professor of Anatomy in the medical school of the college, was unveiled in the anatomy room by Dr. James Little, Regius Professor. A graceful tribute was paid by him to the work done by Professor Cunningham for the college as well as for the medical school.

Royal College of Physicians.

After this a procession was formed to the Royal College of Physicians. It was headed by the members of the Dublin University Officers' Training Corps, three hundred strong, then came the Fellows of the Royal College of Physicians, Honorary Fellows of the Royal College of Physicians and Royal Academy of Medicine, students and student delegates, graduates of Trinity College, Dublin, guests and delegates, and the staff of the Trinity College, Dublin. The rear was composed of the medical unit of the Officers' Training Corps. The procession marched to the Royal College of Physicians, where the delegates and guests were received by Sir Hawtrey Benson, President, and the Fellows of the College. The Honorary Fellowship was then conferred on Sir Thomas Barlow, Dr. John Mitchell Bruce, Dr. George Alexander Gibson, Sir David McVail, Dr. Robert Saundby, and Dr. William Sydney Thayer (Harvard). Dr. Norman Moore and Dr. James Mackenzie, on whom the Fellowship was also conferred, were unable to be present. Sir Charles B. Ball, Bart., as President, then conferred the Honorary Fellowship of the Royal Academy of Medicine on some of the distinguished visitors.

Honorary Degrees.

In the afternoon honorary degrees of LL.D., M.D., and Sc.D. were conferred in the Examination Hall of Trinity College as follows:

LL.D.

Sir Thomas Boor Crosby, Lord Mayor of London.
Right Hon. Lorcan G. Sherlock, Lord Mayor of Dublin.
Sir J. Hawtrey Benson, President, Royal College of Physicians of Ireland.
Richard Dancer Purefoy, President of the Royal College of Surgeons in Ireland.
Denis Joseph Coffey, President, University College, Dublin.
William Peterson, Principal and Vice-Chancellor, McGill University, Montreal.

M.D.

Sir Thomas Barlow, Bart., President, Royal College of Physicians, London.
Sir John Halliday Croom, Professor of Midwifery, University of Edinburgh.
Sir Rickman J. Godlee, Bart., President of the Royal College of Surgeons of England.
Sir Christopher Nixon, Bart., Vice-Chancellor, National University of Ireland.

Sc.D.

Professor J. George Adami, Professor of Pathology and Bacteriology, McGill University, Montreal.
Professor Raphael Blanchard, Professor of Natural History and Parasitology, University of Paris.
Professor Frederick Orpen Bower, Professor of Botany, University of Glasgow.
Professor Percy Faraday Frankland, Professor of Chemistry, University of Birmingham.
Professor Ernst Fuchs, Professor of Ophthalmology, University of Vienna.
Professor Karl Ritter von Goebel, Professor of Botany, University of Munich.
Professor A. P. Goubaroff, Professor of Gynaecology, University of Moscow.
Professor Allvar Gullstrand, Professor of Ophthalmology, University of Upsala.
Professor Henri Hartmann, Professor of Operative Surgery, University of Paris.
Professor John Newport Langley, Fellow of Trinity College, and Professor of Physiology, University of Cambridge.
Sir William Macewen, Regius Professor of Surgery, Glasgow.
Professor Franklin P. Mall, Professor of Anatomy, Johns Hopkins University, Baltimore.
Charles James Martin, Director Lister Institute of Preventive Medicine.
Professor Alexander Maximow, Professor of Histology and Embryology, Imperial Military Academy of Medicine, St. Petersburg.
Professor Hans H. Meyer, Professor of Pharmacology, University of Vienna.
Count Carl Axel Hampus Mörner, Vice-President, Royal Swedish Academy of Sciences, Stockholm, and Rector of the Caroline Medico-Chirurgical Institute, Stockholm.
Professor Robert Muir, Professor of Pathology, University of Glasgow.
Sir William Osler, Bart., Regius Professor of Medicine, Oxford.
Professor Ivan Petrovic Pavlov, Director of the Physiological Department, Imperial Institute for Experimental Medicine, St. Petersburg.
Professor Hermann Sahli, Professor of Therapeutics, University of Bern.
Professor Ernest Henry Starling, Professor of Physiology, University College, London.
Professor Edgar Fahs Smith, Provost of the University of Pennsylvania.
Professor George Dancer Thane, Professor of Anatomy, University College, London.
Professor Robert Tigerstedt, Professor of Physiology, University of Helsingfors.
Professor J. Whitridge-Williams, Professor of Obstetrics, Johns Hopkins University, Baltimore.

After this a garden party was held in the Fellows' Garden. In the evening a banquet was held in Trinity College, to which the guests, delegates, and their hosts were invited. On Sunday many of the visitors were motored by their hosts to Glendalough and other places of interest in the neighbourhood of Dublin. Fortunately the weather, which up to the beginning of last week had been very bad, both wet and cold, changed completely, and the warmth and sunshine contributed much to the pleasure, if not the success, of the celebrations.

Permanent Memorial of Bicentenary.

A meeting of graduates was held in the Examination Hall, Trinity College, on the afternoon of July 4th to consider the establishment of a permanent memorial of the bicentenary of the Medical School. Mr. Robert Woods, ex-President of the Royal College of Surgeons in Ireland, occupied the chair, and there was a large attendance of graduates.

The chairman, in opening the meeting, spoke of the great advantage of travel to a newly qualified man, since it enabled him to see the work of other men in other countries, and he suggested that a fund should be raised to establish a second Travelling Prize, which would thus benefit not only the Medical School but, indirectly, Ireland at large.

The President of the Royal College of Surgeons (Mr. R. Dancer Purefoy) proposed:

> That it is desirable to establish a permanent memorial of the bicentenary of the Dublin University School of Medicine, and that for this purpose a fund be opened to be called the Bicentenary Memorial Fund.

An influential committee was then appointed to collect subscriptions, with Dr. W. G. Harvey and Dr. R. J. Rowlette as Honorary Secretaries, and Sir Henry Swanzy and Dr. S. Pringle as Honorary Treasurers. To establish a Travelling Prize of £100 a sum of at least £4,000 must be collected, but it is thought that there should be no very great difficulty in raising this amount, and it is impossible to imagine a more suitable memorial of this most successful celebration.

Milk Supply of Belfast.

Further evidence in the inquiry by Mr. F. J. McCarthy and Dr. Brian O'Brien, Local Government Board inspectors, as to the application of the City Council of Belfast to obtain powers to inspect dairies outside the boundaries from which milk is brought into the town, was given by the inspectors who had reported on the dairies, and by Dr. Bailie, Superintendent Medical Officer of Health. Members of the rural district councils involved, who also gave evidence, expressed a fear that inspection by a Belfast inspector would lead to friction. Dr. Bailie argued that the Corporation did not ask for powers of prosecution, but simply of inspection. If anything was found wrong, a report would be made to the veterinary inspector of the rural district; if that failed, to the rural district council; and if that failed, to the Local Government Board. He was confident that the powers would lead to an improvement in the country dairies, as it had in the town dairies. The rural councils feared that they would lose authority in their own districts, though little objection would be taken to a Local Government Board inspector. Dr. Charles O'Neill, J.P., Medical Superintendent Officer for the Castlereagh Rural District Council, said that no complaint had been made as to the working of the Dairies, Cowsheds, and Milkshop Order in his district and contended that there was therefore no need for a city inspector.

Treatment of Tuberculosis.

In a lecture delivered in Dublin under the auspices of the Women's National Health Association, Sir William Osler dealt chiefly with dispensary treatment as illustrated in Oxford. An important part of the work in connexion with the dispensary system was the shelter in which the patients slept at home, usually in the back garden. He also described the dispensary system as carried out in Edinburgh by Dr. Philip, mentioning the farm colony in connexion therewith, and its usefulness in the treatment of the cases. The reduction of the death-rate in Ireland from pulmonary consumption, though considerable, was not, he said, as marked as that in England and Scotland. Dr. Adami, Professor of Pathology in Montreal, who also addressed the meeting, said that the dispensary system was the best, because it was the most direct and the most economical method of treating consumption. His experience had been that those living in the open air in the neighbourhood of their homes had put on more weight and got out of danger sooner than those sent away 60 miles or more to the mountains.

North Down Coronership.

At the adjourned half-yearly meeting of the county council of Down on July 5th Dr. Samuel Wallace (Lisbane, co. Down) was elected coroner, in the room of the late Dr. Robert C. Parke. There was considerable competition for the office, and many well-known practitioners of North Down were candidates. It was only on the third voting that the final decision was made. Dr. Wallace studied in the Queen's College, Belfast, and received the degrees of M.D. and M.Ch. in the old Royal University of Ireland in 1885. He is medical officer of the Kilmood Dispensary District of the Newtownards Union. The new coroner is held in high esteem by his professional brethren, as well as by the public, and is to be heartily congratulated upon his appointment.

Dispensary Doctors on County Councils.

As the result of the sworn inquiry, held at Michelstown, co. Cork, to investigate the charges of neglect of duty in the treatment of his late wife, preferred against Dr. William Hennessey and Nurse Sloan, by Thomas Quicke, of Galbally, the Local Government Board, while exonerating Dr. Hennessey from any dereliction of duty, directed attention to the fact that Dr. Hennessey by becoming a member of the county council had ignored the Local Government Board's general order of 1902, declaring "that no person, who is a member of a county council, shall be qualified to be appointed or to be a paid officer of any union or dispensary district in Ireland." Accordingly the guardians were directed to intimate to Dr. Hennessey that

he must forthwith either vacate his county councillorship or else resign the position of medical officer of the Galbally dispensary district, and that his decision in the matter should be communicated to the department at an early date. The Board added that it entertained the strongest possible objection to Poor Law medical officers interfering in the elections for county and district councillors and Poor Law guardians, except to exercise any statutory right to vote that they might possess. It was decided to adjourn the consideration of the matter for a month, when Dr. Hennessey would be present.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EDINBURGH CORPORATION AND INSURANCE OF ITS EMPLOYEES.

THE Town Council of Edinburgh held a meeting on June 17th to determine whether it should take advantage of the clauses of the National Insurance Act by which such bodies can obtain exemption from the operation of the Act for themselves and their employees, and finally determined by 29 votes to 11 to claim exemption only in respect of the police force. The resolution to this effect was moved by the Treasurer as a result of the report of the Treasurer's Committee, to which the matter had been referred. Its report was opposed to one previously submitted by the Town Clerk and the City Chamberlain, in which the claiming of exemption in respect of several departments in addition to the police was urged on two main grounds. One of these was to the effect that a large majority of such of the city's employees as come under the superannuation scheme established by the city some three years ago had expressed a desire to be exempted, and the other was that the city could provide for them benefits superior to those of the Act at considerably less expense. On this point estimates were put forward showing that if the city paid the employers' contributions the total expenditure involved would be £2,466 per annum, whereas if it remained outside the Act it could provide like, and even superior, benefits for some £1,782; while the employees themselves, by not being obliged to contribute, would save correspondingly. A further resolution was that the Treasurer's Committee should be directed to submit a report as to what in future should be the policy of the Corporation in regard to sick pay. There was a good deal of discussion as to what the sickness experience of the Corporation had been, but it was admitted on both sides that so soon as the Act came into operation the number of employees reporting sick, and the average number daily on the sick list, would probably increase. Suggestions were also forthcoming from both sides to the effect that political motives influenced the views expressed.

EDINBURGH SCHOOL BOARD AND A DENTAL AND EYE CLINIC.

At its meeting on June 25th the Committee on Health of the Edinburgh School Board considered a report by the clerk and medical officer, which stated that the number of children in Edinburgh whose teeth required attention was about 36,000, and that the vision of about 10 per cent. of school children was so defective that treatment was necessary. For treatment of teeth and eyes, provision of spectacles, attention to condition of the skin, the board, it was stated, might establish its own clinic, for the responsibility in these operations was not great. Large numbers of children were affected, and the hospitals in the city were already overburdened with this kind of work and did not desire more. Voluntary effort, it was practically certain, would not meet the necessities of the case. A building of, say, four rooms would be suitable for this purpose—one for the dental operations, one for the optical examinations, one for general purposes, and one for a waiting room. The staff required would be one dental operator (full time), one oculist (one-fifth time), and one nurse for general attendance. It was estimated that this staff would cost £570 per annum—£400 for full-time dentist, £100 for one-fifth time oculist, and £70 for a nurse. Equipment would cost, say—for dental room, £70; oculist's room, £30; and other furnishings for waiting room, etc., £50—in all, £150. The committee recommended that the foregoing proposals should be adopted by the board.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

BRISTOL.

THE visit of the King and Queen to open a new wing of the Royal Infirmary went, as royal visits usually do, without a hitch. The weather was more or less unsatisfactory, and many of the spectators had to suffer for their loyalty by getting wet through. Their Majesties arrived from Cardiff by train at the Joint station, and were received by the Lord Mayor and Lady Mayoress, the Sheriff and Mrs. Bush, the Lord High Steward (the Duke of Beaufort) and the Duchess of Beaufort, the Marquis of Bath, the members for Bristol, and other city officials. The procession being formed after certain presentations, a halt was made at the Council House, where the Lord Mayor was knighted. From thence the procession passed through the city to Clifton. Here a living Union Jack was inspected by the King, and an address was presented to him by the head of Clifton College. Passing on to the Infirmary Their Majesties alighted from their carriage at the new main entrance. They were received by Sir George White (the President) and Lady White, Mr. Philip Vaughan (the Vice-President), who, after presentation, conducted the King and Queen to one of the new wards, which had been fitted up as a reception-room. Here several more presentations were made, amongst others being Dr. A. Prowse, the senior honorary physician, Mr. Paul Bush, C.M.G., the senior honorary surgeon, and Miss Baillie, the matron. The address of the governing body was then read by Mr. Budgett, the secretary, and His Majesty replied. After a prayer from the Bishop of Bristol, the King and Queen, accompanied by the President and representatives of the honorary staff, made a tour of inspection of the premises, and named three wards "King George Ward," "Queen Mary Ward," and "Princess Mary Ward."

The tour was continued to the nurses' garden, and it was intended that the Queen should plant a memorial tree; but this had to be omitted, as the rain was descending too heavily. This completed the tour, and the Royal party then drove to the station. Unfortunately, the rain descended at this moment in torrents, and many of the crowd were thus prevented from seeing the King and Queen, who were within a closed carriage.

The Bristol Royal Infirmary dates from 1736, thus being one of the oldest, if not the oldest, voluntary medical charity in the provinces. The old building, to distinguish it from the new wing just opened, was built in 1784, new wings having been added at various times. It had, however, been felt for a long time that the old building was far from suitable to modern conditions, and the new wing was contemplated soon after the death of King Edward VII. The new wing, which will be devoted entirely to surgery, is shaped like the letter E, the arms forming the ward pavilions, the principal staircase and lift being central, and is connected with the older building, which is on the other side of the road, by a subway. The object of the architect in planning the new wards was to obtain a maximum of light and fresh air with a minimum of dust and noise. There are five large wards to hold 24 beds, with a cubic space of 1,500 ft. for each patient, and each has a large balcony 27 ft. long. Attached also are two small wards for 1 and 2 patients respectively, with a room for the sister and a ward kitchen and larder. [illegible] are also provided near each ward for coal, storing patients' clothes, and linen. The lavatory towers are separated from the main building by cross-ventilation lobbies. On each floor is an eight-bedded ward that can be used for men and women. The three operating rooms are situated at the top of the building, and are lighted from the top as well as the sides, and each has an anæsthetic room, sterilizing room, and washing room. Other rooms are provided

for pathological examinations, for *x* rays, for splints, for coats, and for the staff. The casualty department on the ground floor is entered by an open courtyard from the street. The whole building is heated by hot water, the wards have a central fire, and the electric light has been installed everywhere. For convalescent patients the roof affords a pleasant place, and the garden has also been fitted up, so that one can be used for male, the other for female, patients. The total number of beds added to the institution is 181.

The cost was calculated at £70,000, and it has been stated that this sum has been obtained, but it has not yet been disclosed by what means.

LONDON.

London County Council.

The Reorganization of Medical Inspection and Treatment.

THE Establishment Committee reported to the London County Council on July 2nd with reference to the reorganization of the public health department resolved upon last year (BRITISH MEDICAL JOURNAL, July 29th, 1911, p. 243). The object of the rearrangement was to ascertain whether a system of full time school doctors would be better than part-time officers for securing closer association of the work of medical inspection with that relating to infectious diseases, and more effective co-operation with the medical officers of health of the London boroughs. The Committee stated that the experiment had been tried in a portion of East London, and had proved highly satisfactory. Since August, 1911, it had been necessary, in order to meet the requirements of the Board of Education, to examine the children on their entering school; and, moreover, the record card had been superseded by the more detailed schedule recommended by the Board, the examination of individual children for this reason taking a longer time. Further demands upon the time of the medical staff had also been made in connexion with the examination of "special cases," and to provide for the "reinspection" now required to earn the new grant promised by the Board of Education, as to which the Education Committee reported recently (BRITISH MEDICAL JOURNAL, June 22nd, p. 1452), a considerable increase in the quarter-time staff would be required. The Education Committee, however, recommended an extension of the whole-time system to the whole of London. For the purposes of supervision the metropolis would be divided into four divisions, a divisional medical assistant being attached to each. At present there were three assistant medical officers engaged on work of a supervisory nature, one giving full time, one half-time, and one part time, so that the services of more than two additional medical assistants would be required. Under existing arrangements all examinations relating to infectious diseases were dealt with by one assistant medical officer, and all necessary bacteriological work was done by him, but it was impossible for one officer to cope adequately with this work. It would be an advantage if the examinations of the children in the schools were carried out locally under the superintendence of the divisional medical officers, and any culture tubes inoculated were forwarded to the central offices for bacteriological examination. The assistant medical officer engaged in this work should have the services of a well-trained laboratory assistant, for whom the committee suggested a remuneration of £2 a week. Having regard to the increase of work necessitated by the supervision of playground classes, the examination of children notified as being in contact with tuberculosis, and proposals for the medical supervision of dull and backward children, it was desirable to attach to each division one quarter-time school teacher to assist in some of the routine inspection.

At present pupils at institutions for higher education were periodically examined, and also scholars in trade schools and scholarship candidates. This work had been carried out by part time doctors, but the Education Committee had reported that these arrangements were not completely satisfactory, as some of the school doctors conducting the examinations did not supervise the candidates after allocation to training colleges, secondary schools, etc., and consequently information obtained was not used to the best advantage. If the examinations for the awards and the subsequent inspections were carried out by the same officers, the work would be co-ordinated, greater efficiency would be secured, and a financial saving would be effected. It was proposed that these examinations should be carried out by two full-time medical assistants at salaries of £400 a year, rising to £500. The medical inspection work at special schools had also increased, but as a result of a re-allocation of work in connexion with the new staff arrangements now suggested it would not be necessary, for the present at any rate, to make any addition to the medical staff. It might be necessary, however, to revise the scale of salary attached to the position of the full-time assistant medical officer engaged on this work, which was of a special character.

The Finance Committee, reporting on these proposals, remarked that the Board of Education drew a distinction between (1) routine medical inspection; (2) work ancillary to, or associated with, medical treatment; and (3) medical treatment proper, and no grants were to be made, under the promise recently given in the House of Commons, in respect of routine medical inspection, though the Board, in determining the amount of the grant for medical treatment and ancillary or associated work, would have regard to the character and completeness of the arrangements and degree of efficiency with which medical inspection was carried out. The Finance Committee thought it unsatisfactory that the intentions of the Board were not made clear and definite. Although local authorities were ostensibly left a certain amount of freedom to make provision for this new medical work in their own way, in the end the Board might disapprove the methods adopted and withhold the grant. As regards the present proposals, the ultimate additional annual expenditure was estimated at £4,584; these proposals, however, were by no means exhaustive, and others involving considerable additional outlay might be expected to follow. The total amount now expended annually on medical work in the schools would be: Medical inspection, £31,000; medical treatment, £29,000—a total of £60,000. The present proposals related only to the inspection of school children, which was a compulsory duty; but, as the Board's regulations referred also to medical treatment—an optional service—the Finance Committee thought that the Council's policy in dealing with any proposals for placing the medical treatment of children on a permanent basis should be determined largely by the treatment London received in the allocation of the grant now promised.

The Establishment Committee made a number of recommendations on the lines of its report and incorporated those of the Education Committee, set out in the BRITISH MEDICAL JOURNAL of June 22nd, p. 1452. These were all approved by the Council.

MANCHESTER AND DISTRICT.

The Care of the Feeble-Minded.

AT the annual meeting of the Manchester and Salford Sanitary Association, on July 4th, Mr. T. C. Horsfall presided, and a resolution was carried which set forth the chief objects of the association as being "to spread among the people a knowledge of the laws of health, to promote cleanliness, temperance and thrift, to obtain a purer atmosphere, to improve the dwellings of the poor, and to preserve the lives of their children." Much work has been done to impress on town councils the value of open spaces in towns, and the chairman showed that in Berlin the type of dwelling was so huge that the average number of inhabitants per house was 77, as compared with 8 in London, and that being so it was not surprising to find that the death rate from tuberculosis for people between 15 and 25 years of age was 50 per cent. higher in Berlin than in London, while the general death-rate in Berlin was half as high again as in London. These differences he attributed mainly to the result of the larger amount of open space in London.

Dr. C. H. Melland read an abstract of the Mental Deficiency Bill now before Parliament, and said that those who had to deal with the insane often did not recognize that there was a great deal of difference between the mentally defective and the insane. Only a small number

of authorities had yet adopted the permissive Act of 1899, which allowed them to provide special schools and classes for defective children, and it was only in cases where such schools had been started that the education authorities would be able to keep their eye on the children in their charge. The Chairman said the bill would make it a misdemeanour for a healthy sane man to marry a girl of defective mind and vice versa, but he would like to know how that would affect cases among the well-to-do, where possibly a girl mentally defective had a considerable fortune: there were men willing to marry her for her money, and children were then brought into the world who inherited the weakness. Dr. Melland replied that the duty of notifying defectives was thrown upon Poor Law officers, medical officers of health, and constables, and though children of defective mind, attending a public elementary school, would readily be found out and notified, those not going to such a school might escape notification. It was made illegal for defectives to marry, and the offence would be punishable if parents or guardians connived at it. The difficulty of ascertaining the existence of cases among the well-to-do was admitted. The Chairman said the bill, if it became an Act, ought to co-operate with the best parts of the National Insurance Act. Swiss and German doctors seemed to agree that fresh cases of feeble-mindedness were constantly coming into existence in the case of parents who were alcoholics or who were suffering from lead poisoning, malaria, or diseases caused by licentiousness, but very little was heard of these cases in this country. Miss Dendy had said that alcoholism of parents had nothing to do with mental defect in their children, or, at any rate, was not the cause of it, but this was in direct conflict with the views of doctors and other scientific men on the Continent. Dr. Melland said the Royal Commission took a good deal of evidence on this point, and it seemed to suggest that there was not a very close connexion between feeble-mindedness and drunkenness and bad conditions of life generally, the evidence being rather that the active cause was heredity. By that was meant that it was more the result of inheritance of mental defect from defective forbears than of personal drunkenness or bad conditions of life on the part of the parents.

The meeting closed with a vote of thanks to the Chairman, who suggested that on a future occasion the question of special schools for the feeble-minded should be discussed.

WEST YORKSHIRE.

TYPHOID EPIDEMIC IN BRADFORD.

IN a note on the "Typhoid Epidemic in Bradford," published in the JOURNAL of June 1st, p. 1256, it was stated that "grave dissatisfaction" was "felt among medical men in Bradford as to the initial want of energy shown by the health authority in combating this serious epidemic," and it was stated that for some days after the first cases were notified, the medical officer of health was away from Bradford with a deputation. It was also stated that the city had not appointed a deputy medical officer of health.

In common with other medical officers of health, the Medical Officer of Health of Bradford received a letter, dated June 25th, from the British Medical Association, which contained the following paragraphs:

> In view of the fact that within a very short time some decision must be arrived at which will definitely settle the relation of the profession to the Insurance Act, it is hoped that Medical Officers of Health will use their influence with their Councils to postpone for the present steps being taken to fill any medical appointment for the administration of sanatorium benefit. The filling of such appointments at the present time is bound to be unsatisfactory, as a large number of the best men will feel in honour bound not to apply, and in addition to that it must be apparent that a delay of a few weeks cannot make any serious difference in the position. The Committee quite understands your limitations in this matter as a public servant, but trusts that you will use all the influence you can in the direction above mentioned, not only in the interests of your profession, but in the interests of the public.

In reply to this communication, the Medical Officer of Health for Bradford called attention to the paragraph in the JOURNAL under the heading mentioned, and stated that "there is scarcely a word of truth in the article."

From a report printed in a local newspaper of the meeting of the Public Health Committee of Bradford on May 15th, it appears that the medical officer of health then reported that 61 cases of typhoid fever had been reported to him since May 5th, most of them in a particular district. Of the 61 cases, 42 were known to have consumed milk supplied by a particular vendor. The number of houses invaded was 45, and, of this number, 27 were supplied with the suspected milk. There were 192 houses on the milk round, and in 27 of these (14 per cent.) one or more cases of typhoid fever had then occurred. The vendor's house had been inspected, and it was found that he had been ill from April 13th until May 7th, the diagnosis being gastritis. During his illness the business was carried on by another person who assisted the milk dealer's wife in washing and scalding the cans, the wife also waiting on her husband, whose illness, though obscure, presented nothing inconsistent with the diagnosis of typhoid fever. The milk cans had been scalded and boiled and removed to another house, and the business was being carried on by an assistant who did not come into contact with the infected house. At a meeting of the City Council on June 11th the Chairman of the Health Committee stated that up to that day 134 cases had been notified, and that of this number 106 were known to have consumed milk supplied by this particular vendor; there had been 10 deaths; the epidemic was coming to an end.

It appears from a comparison of reports in the local newspapers that the Medical Officer of Health left Bradford on April 28th with the intention of returning on May 3rd; as he no doubt did so, he was, we assume, in Bradford when the first case was reported to him on May 5th. We desire to express our regret that the contrary should have been stated or implied, and shall be very glad to correct any other inaccuracy in the article of June 1st which the Medical Officer of Health may wish to point out.

Special Correspondence.

BERLIN.

Advertisements of Drugs.—Cholin in Cancer.

THE last Medical Congress in Wiesbaden appointed a special committee to report on inaccurate, misleading, or exaggerated statements contained in advertisements of drugs or preparations published in the professional papers during 1911. The committee, which consisted of Professors Pensoldt, Gottlieb, Heubner, Klemperer, and Schmidt, selected about 1,000 advertisements from the twenty-one most read medical papers of Germany and Austria, and objected to all those in which (1) the ingredients of the remedies were not stated; (2) misleading explanations of their origin, manufacture, or composition were given; (3) there was a great difference between various samples of the same drug; (4) in which a new name was used, although the preparation did not differ greatly from mixtures known before; (5) in which unfounded or misleading assertions as to curative value or harmlessness were made; and (6) those in which the sale was against the interests of patients. The remedies examined on these principles were arranged in three lists. The first contained those remedies which satisfied all claims of the committee; the second those not answering all demands ("negative list"); and the third those as to which a specific opinion could not be given by the committee without exhaustive tests ("dubious list"). The committee stated that it refrained from expressing any opinion as to the value or worthlessness of the remedies, but this intention was not fully realized, for to a certain degree a remedy placed in the so-called negative list is discredited; therefore, a number of chemical manufacturers, whose goods had in some instances long been in the market, appealed to the committee asking the grounds of its objections. At first the committee refused any explanation, but has now expressed its readiness to give any information required.

Professor Werner of Heidelberg has obtained what he describes as encouraging results from the use of cholin in cancer, both in animals and man. He believes that the beneficial results obtained from the use of radio-active substances in the treatment of certain tumours are due to cholin and not to any radio-active effect. His theory is based on the fact that lecithin, which is present in cancerous as in other tissues, is decomposed by radiation,

the products being fatty acids, glycero-phosphoric acid, and cholin. Professor Werner's communication was made to the Natural History Society of Heidelberg. Full details are not available, but it is stated that cholin has been used in some cases where the cancer was in an inaccessible position by intravenous injection.

Correspondence.

TABLES OF STATISTICAL ERROR.

SIR,—Your issue of June 22nd last contains a review of the *Tables of Statistical Error*, recently published by us (*Annals of Trop. Med.*, vol. v, No. 3), and, while we appreciate the friendly tone of the review, we think that there are some points in it which make it necessary (in order to avoid misconception) to add a note on the subject.

In the first place, the problem by which your reviewer illustrates the use of the tables is not, we think, quite the same as that for which the tables were designed. He considers the probability that a *second* sample comes from the same "population" as the first, while the tables are designed for the purpose of considering *first* samples, when the material under consideration obeys the Gaussian or Normal Law or Error, and, as we have stated on page 355, lines 13 to 15, we should calculate the percentage, not for each successive batch of 100, but for the total number examined from the beginning. This would make the value of p in the example given by the reviewer to be $14\frac{1}{7}$. We would then, *in the absence of any definite reason to the contrary*, apply this value in any probability question according to the normal law.

If it is objected that the *normal law* is not likely to meet the majority of cases that turn up in practice, we here touch a point that is very doubtful. We can only say that the consideration of what statistics *do* or *do not* obey the normal law is too complicated to bring before the medical men who have had no mathematical training; and although Professor Karl Pearson has shown that the normal law is less perfectly fulfilled by Nature than is usually supposed, there seems to be no *a priori* reason why a correction should be taken which usually leads to a leptokurtic curve.

Whatever the importance of Professor Pearson's "Generalized Probability Curve" may be, we felt it would hardly be suitable to introduce such difficulties in the way of beginners, although it might have been better, as your reviewer says, to emphasize the dangers for small percentages, particularly in using Tables A (5) and A (6). It should be remembered that it is advisable to submit full details of the experiments ultimately to an expert, in order that the law obeyed should be determined and correct estimates of the error given; but the law should be *plainly* visible in the data given, or be deduced from *a priori* considerations, before it is worth while undertaking the more laborious, and not always very certain correction of Professor Pearson.

We quite admit that for small values of p, say, less than 10 per cent., the normal law is unlikely to hold, but unfortunately it is the nature of scientific research to lead us continually outside the limits of all our existing tables and probably outside all we are likely to publish; and it is not generally possible to state very accurately the limits of their use.

It is not intended that our tables should do away with the necessity of ultimately consulting a specialist, but we think that they may safely be used in the laboratory as a fair guide during the progress of the work, *even for small values of p*. We are, etc.,

RONALD ROSS.
WALTER STOTT.

University of Liverpool, July 1st.

THE ARRIS AND GALE LECTURES ON SHOCK.

SIR,—We wish to thank Mr. Mortimer for his courteous letter and criticism on the above lectures. Mr. Mortimer complains that a definition of shock is not offered until near the end of the lectures, and that then it does not accord with the customary meaning of the word. We are well aware that our conception of the mechanism of shock does not agree with the accepted meaning of the word; it is for this reason that our definition was postponed until we had produced sufficient evidence to support such a definition. We could well have understood a complaint from Mr. Mortimer had this definition been offered at the outset. We endeavoured to show that the end result of shock (that is, collapse) is also an end result of other agencies; that in each case the mechanism of its production being different, the mechanism of its prevention must be different also. Thus, to Mr. Mortimer's simile, "a man is not described as intoxicated when he has drunk one glass of wine," we would add that the first glass of wine is, nevertheless, the first step towards intoxication.

It is these first steps which we submit are of the greatest importance in a study of the mechanism of shock, which starts with the skin incision just as alcoholic intoxication commences with the first glass of wine. Mr. Mortimer could not have selected for us any simile more apt than this one.

With regard to the estimated blood pressure changes, Mr. Mortimer has misrepresented our meaning by a misquotation; for he omitted the context and reproduced in the positive a statement which was originally made in the comparative; an error which entirely masks the object of the lectures. For, whereas it is undoubted that the blood pressure is of great importance, we persist in believing that it is of "vastly greater importance as a symptom or sign of infinitely graver disturbances . . . ," etc.

We quite agree with Mr. Mortimer as to the many factors influencing the blood pressure, and to the skilful interpretation demanded by a study of its variations during surgical operations; it is for this reason we are inclined to agree also that such variations cannot have the slightest significance, pathological or clinical, when estimated "by feeling the pulse." We appreciated the infinite sources of fallacy in our blood pressure readings, and took great pains to prevent such errors from influencing our deductions; and it hardly seems that this labour was justified if Mr. Mortimer can adequately detect these vasomotor variations by "feeling the pulse." With regard to the innervation of the heart, we need only refer Mr. Mortimer to the many charts where the pulse-rate is depicted: we demonstrated numerous instances of the different response of the heart and blood pressure together to peripheral stimuli under different conditions. (We would particularly refer the writer to Chart 28 and to the deductions made therefrom.)

With regard to general anaesthetics: Diagram I refers exclusively to the effect of these on the access of peripheral centripetal stimuli to the important centres; and, as such, it can hardly be called misleading. This diagram does not pretend to deal with the effects of general anaesthetics on the tissues, which would be foreign to the immediate argument. The "sweeping assertions about anaesthetics" can hardly be defended unless they are specified; though it is difficult to see what value interpretations of blood pressure readings during operations can have, until variations attributable to the anaesthetic have been ascertained previously. Thus, though "time and circumstance limited" the amount of evidence we were able to submit, we are unable to regret this *essential* part of our study, or to see reason for withdrawing such deductions as were relevant.

When Mr. Mortimer objects to the classification of the effects of general anaesthetics with those of toxaemias, he must have overlooked the similarity of Charts 38 and 52; these were shown as examples. We are confident also that a further reference to the lectures will convince Mr. Mortimer that he is mistaken in supposing that the value of general anaesthesia in the control of mental shock was overlooked; it was most fully realized in the paragraphs on "Conclusions," "Mental Shock," "Traumatic Shock," "Exophthalmic Goitre," etc. Indeed, it is the realization of the importance of this factor in surgery which has induced one of us repeatedly to advocate elsewhere the restriction of the employment of spinal anaesthesia almost entirely to children, in whom practically no mental shock ever accompanies its use.

We agree with Mr. Mortimer that many of these points would have been more satisfactorily dealt with in greater detail, a fault for which due apology was made, and one which we hope to remedy when our researches are published in full. But we would conclude by asking Mr. Mortimer to believe that the subject has been approached equally from the point of view of the practical anaesthetist as from that of the surgeon; for, where the welfare of a patient is concerned, these two standpoints are the same,

and it is largely from this joint aspect that we are trying to view the general principles of this complicated subject.—We are, etc.,

London, W. H. TYRRELL GRAY.
Birmingham, July 2nd. LEONARD PARSONS.

APPENDICITIS AND QUICKNESS.

SIR,—I would ask Mr. Morton to remember that when I said in a previous communication I had no fault to find with operation within twelve hours of the onset of an attack of acute appendicitis, it was the question of *mortality* that was being discussed. On that point there are no grounds for asserting that harm is done. This, however, does not prove that such a course of action is necessary, and it is because I think it is not so that entitles me to say that it is unwise. My reasons for this opinion are that by following it not only are many errors of diagnosis perpetrated, but it creates the general belief that such a procedure is a necessity—a most erroneous and unfortunate view, because the large majority of cases of acute appendicitis would recover quite satisfactorily under dietetic and other medicinal measures. The advocates of "immediate operation" have no right to claim that all such cases when operated on have been snatched by surgery from the jaws of death. They are nothing of the kind, and are only so in the minds of those who operate and who conjure up all the possible contingencies that might happen but do not do so under proper management.

What, however, is the greatest objection to this doctrine of "immediate operation" is that it is extended indiscriminately to all cases of acute appendicitis irrespective of the time that the disease has existed. It is this, I consider, that is responsible for many of the deaths in operations for acute appendicitis. What I wish to emphasize is that when an acute attack has existed for more than twenty-four hours, unless there are definite symptoms of general suppurative peritonitis, operation is best postponed, as such cases under medical management do well and can be safely brought to the "interval stage," where the operative mortality is *nil*. It ought to be more generally recognized than it is that so long as a case of acute appendicitis is a "localized" one there is no need to fix definitely what is the condition of the appendix. Such cases, if properly managed, will remain localized, even though they do enclose a perforated or even a gangrenous appendix within their barrier of isolating lymph. That this is so my operative experience has abundantly shown me.

The other point I wish strongly to enforce is that the presence of a localized appendicular abscess does not imperatively call for "immediate operation," unless it is pointing. Mr. Morton in his letter says that he did not for a moment imagine that any surgeon deliberately intended to leave an appendix abscess without dealing with it by operation. I thought I had made it abundantly clear in my lecture and in my previous communications that I do leave such abscesses untouched, though not indefinitely. I allow a period that varies with individual cases, but is regulated by pulse, temperature, and blood count, and may range from ten to twenty-one days, before interfering with them, as I find that by so doing the virulence of the pus, as shown by cultures, has diminished, and the cases may be more safely dealt with. Mr. Morton quotes from Mr. Makin's article in *Burghard's Manual of Operative Surgery*, and gives the serious complications detailed by that surgeon in connexion with fifty-nine appendix abscesses. What is the heading of the paragraph from which his quotation is made? It is as follows, and is in large letters: "*Mortality after operations for local abscess.*" Not, it will be noticed, the mortality from local abscess, but the mortality after operation for local abscess. In fact, Mr. Morton furnishes me with valuable confirmatory evidence in favour of the very point I am contending for—namely, that interference with localized appendicular abscess in its acute stage is most disastrous, and sets up a train of complications that are at the root of our heavy mortality statistics in acute appendicitis, and that are the explanation of the tedious convalescence of many of the cases that do recover. My delayed operation in 69 cases of localized abscess was not accompanied by any of the serious complications enumerated by Mr. Makins. Mr. Morton thinks there must be some other factor than delay that has entered into my results. There undoubtedly is, and that is a firm belief in, and the rigid observance of, the careful dietetic and medicinal measures laid down in my paper. The two combined render delay safe, and allow of there being developed those salutary agencies that are most helpful in these toxic cases of acute appendicitis. Into these I cannot enter now, as I have already, Sir, made too heavy demands on your space. The importance of the issues at stake must be my excuse, but I feel that this must be my last communication to the discussion.—I am, etc.,

Glasgow, July 7th. GEORGE THOS. BEATSON.

SIR,—I think the profession are much in Sir George T. Beatson's debt for the attitude which he has taken on this subject, and I feel convinced that the experience of the great majority of general practitioners will agree with his. Briefly, two facts stand out clearly in my mind: (1) The vast majority of cases, if properly treated, get perfectly well without operation. (2) That operating surgeons find in every case pathological conditions which, if left, would end in disaster.

What is the explanation of this? Is it not to be found in the fact that the surgeons have no experience of the medical treatment of appendicitis, and that they underrate the protective resources of the peritoneum?—I am, etc.,

Kirkby Lonsdale, July 1st. T. G. MATHEWS.

SIR,—I have followed the correspondence in your columns on this subject with much interest, and only venture to prolong it because of my disappointment on reading Sir George Beatson's last letter. One hoped that we should have an answer to Mr. Paterson's question as to whether Sir George Beatson would tell us the signs and symptoms which guide him in deciding which cases of appendicitis are to be operated on or left. Sir George ignores this question, and simply restates his opinion that the few cases which he considers must have immediate surgical treatment are "easily recognizable." One asks again, How? In one letter he does "not object" to operation within twelve hours of the onset of an attack, while in another he thinks this treatment neither "good" nor "safe."

He suggests that the rule of operation within twelve hours may result in cases of longer duration being thus treated. Surely Sir George will give other surgeons credit for ascertaining exactly when the attack did start, before operating. One is much interested to know whether the most instructive case reported by Mr. Childe in the JOURNAL of June 22nd is one Sir George would have "treated on its merits."

The more I see of appendicitis, the more am I convinced that the only safe treatment is operation as soon as possible after the onset of the attack. It was very refreshing to read in the same issue, of the 22nd, a letter from a physician supporting this view. I hope that South of the Tweed this will continue to be the method of treatment, and then the surgeon will have fewest regrets and his patients the surest and most rapid recoveries.—I am, etc.,

Leominster, July 3rd. GORDON W. THOMAS.

THE AUTOINOCULATION TEST IN TUBERCULOSIS.

SIR,—I wish to thank Dr. H. W. Crowe for his kind reply to my inquiry. For many years I have studied the question of tuberculosis and its treatment. Being in general practice and having no hospital, it is wellnigh impossible for me to do the opsonic index. I have had it done for me by experts in that line, and from a diagnostic standpoint I have found it accurate and useful. The results of the opsonic index are, in my opinion, not so useful as a guide to treatment.

I have given tuberculin according to Wright's method and according to Wilkinson's. In my hands the latter has given the better results. Thanks to the kindness of Dr. Wilkinson I was able to watch his work at his dispensary in London. Everything in connexion with the dispensary—the cases, the work, and the results—is honest. To my mind Dr. Wilkinson deserves great credit for the work he is doing and for his unending courtesy in explaining his methods to those who wish to learn. All that he asks is

that he be not judged by those who have no personal knowledge of him or his work.

I am accustomed to giving tuberculin in all kinds of cases (pulmonary included), every four days, in some every seven. I even give it in febrile cases and the results have justified my doing so. In these, my "four-day type" of cases, the negative phase can only have lasted two days or so, for my results have shown no indication of harm being done and no continuous rise of temperature, which they would have shown had these doses been given during a negative phase. Taking these facts into consideration, one has still to answer the question, What is the clinical significance of the negative phase?

Much good work has been done in this branch of scientific research, but much has still to be done. To my mind the goal would be reached sooner if each worker did his little bit for the good of the whole, helping and being helped, and leaving the destruction of his brother worker's theories to that ever-watchful law—the survival of the fittest.—I am, etc.,

Lisburn, July 1st. J. L. RENTOUL.

TUBERCULIN TREATMENT.

SIR,—I would like to express my appreciation of the valuable leading article on the above subject in the BRITISH MEDICAL JOURNAL of July 6th. I feel sure it will have the effect of steadying the profession with regard to this very valuable, though powerful, remedy in the treatment, more especially of pulmonary tuberculosis. Dr. Sézary, in his valuable book, *Tuberculinothérapie et sérothérapie antituberculeuse*, gives the results of his own experience, and clearly shows that the effects which are produced by tuberculin, excellent as they are in practice, yet cannot be accounted for in theory. Dr. Sézary has found that the immunity afforded by one strain of tuberculin does not hold good when another strain is used—in fact, the process of immunization in that case has to be started again with the new strain.

In my opinion the whole secret of successful treatment with tuberculin is in the particular strain of bacilli which is used to immunize the patient. I have long held the opinion that the opposite strain of bacilli is necessary to combat the particular infection from which the patient is suffering. Pulmonary tuberculosis, being nearly always caused by human bacilli, requires for its treatment a tuberculin manufactured from bovine bacilli (*Perlsucht*); this tuberculin is much less irritating and not nearly so toxic as other forms; and, moreover, its action is more or less specific in suitable cases of lung tuberculosis; the other forms of tuberculosis, such as enlarged glands, abdominal tuberculosis, and the so-called surgical forms of the disease, being more frequently caused by bovine bacilli, require for their treatment a tuberculin prepared from human tubercle, and the action of tuberculin in this case is certainly, in many cases, marvellous.

Your article, however, has clearly pointed out that tuberculin must be used with great discrimination, and the utmost care must be exercised in its application. After an experience of some thousands of cases of tuberculosis both in hospital and private practice, I have come to the conclusion that tuberculin can only be of service in a small percentage of patients. These cases must be selected with care, and although, as a general rule, the early cases of tuberculosis show the best results, yet even in cases of advanced disease, where the symptoms are of a quiescent character, tuberculin often gives astonishing results. I am convinced, however, that the treatment ought to be carried out only by those physicians who have made a special study of the disease, and who have had experience in the use of this powerful remedy. The patients should be under constant observation, either in an institution or under good home conditions, and the dosage should be so carefully regulated that reactions do not result after the injection of each dose. It is just as necessary for a specialist to inject tuberculin as it is for a specialist to handle important organs like the eye and the ear, and I feel compelled to utter this note of warning in the interests both of the remedy itself and in the interests of the reputation of those physicians who recommend its use, as I feel convinced that it is of the utmost value as a means of treatment, provided it is used with due care and discrimination. I am, etc.,

Liverpool, July 8th. NATHAN RAW.

SIR,—Having had some experience of the treatment of tuberculosis by tuberculin in large doses, as advocated by Dr. Camac Wilkinson, at the Tuberculin Dispensary (of the Tuberculin Dispensary League), 263, Kennington Road, S.E., we should like to record our opinion as to some of the strikingly favourable results of this treatment.

Our experience has extended over periods varying from nearly two years to a few months, and during this time we have been very deeply impressed with, among others, the following points in connexion with the treatment:

1. Over 70 per cent. of the patients are able to continue their usual avocations while under treatment.
2. The absence of any danger to the patient.
3. The diagnosis is made after a careful examination of the patient, of the sputum, and by the exhibition of tuberculin.
4. The results obtained, and which we have seen during our attendance at the dispensary, in cases of pulmonary tuberculosis (even in some late stages of the disease), in lupus, in tuberculous disease of glands, in laryngeal phthisis, in discharging sinuses due to tuberculous diseases of joints, and in pulmonary phthisis in pregnant women, compel us to bear testimony to the efficacy of this system of treatment.—We are, etc.,

ANNIE MCCALL, M.D. (London), JOHN MACKEITH, M.B., C.M. (London), A. D. SERRELL COOKE, M.B., Ch.B. (London), JOHN RENNIE, M.D. (London), R. BRINDLEY MORRIS, M.R.C.S.Eng., L.S.A. (Putney), J. HORNE WILSON, M.D. (London), REGINALD HYDE, M.R.C.S., L.R.C.P. (Kingston-on-Thames), M. T. BULLOCK, M.B., L.R.C.P. and S. (London), J. N. GRIFFITHS, M.B., etc. (Sydney), WILLIAM C. ELLIS, M.D., D.P.H., etc. (Upper Tooting), JOHN F. WALKER, M.B., M.R.C.S. (Southend), F. SILVA JONES, M.B., B.S. (Westcliff), J. ALEX. GENTLE, M.B., C.M. (London), H. HARVEY NORTON, L.R.C.P., M.R.C.S. (London), HENRY APPLETON, M.D. (London), J. H. ACHESON, R.N., M.B., D.P.H. (Lowestoft), H. WOOLCOTT HULL, M.R.C.S., L.R.C.P.Lond. (Southend), M. ASHRUFF, M.B., Ch.B. (Hyderabad, Deccan), F. R. MALLARD, M.R.C.S. (London), W. MCCALL, M.D.Brux., L.M., L.S.A.Lond.

July 9th.

FORCIBLE FEEDING.

SIR,—Respecting the forcible feeding of Suffrage prisoners, a statement by Mr. McKenna appeared on July 4th in certain newspapers purporting to be a reply to a question in the House of Commons put to him by Mr. Goldman in reference to a memorial against the forcible feeding of Suffrage prisoners signed in twenty-four hours by 117 practitioners, and of which we were the secretaries. The Home Secretary's statement was as follows:

> I have received the memorial referred to, but as the memorialists are unable to suggest any alternative method by which prisoners who refuse food can be prevented from committing suicide I am unable to attach much weight to their representations. I may add that I have received another memorial signed by most distinguished medical men stating that feeding by tube, if carried out in accordance with the usual rules of procedure, is neither dangerous nor painful. The compulsory feeding of recalcitrant prisoners is a most unpleasant process, extremely distasteful to those whose duty it is to carry it out, and everything is done by the medical staff of the prisons to avoid it where possible, and, when it is necessary, to guard against any risk to health and to minimize the discomfort to the prisoner.

To this statement we now return the following answer:

Mr. McKenna and Medical Memorialists.

Mr. McKenna's reply to Mr. Goldman is grotesquely misleading. The medical memorialists, who are opposed to the forcible feeding of Suffrage prisoners, have made no such statement, as is suggested by the Home Secretary, on the question of alternative methods of treating all prisoners, and, of course, it is impossible to obtain in a few hours from 117 busy practitioners an answer, such as he alleges he received, to a question of which they had had no notice. Apparently Mr. McKenna is under the impression that any assertion is good enough as an answer for the House of Commons.

Mr. McKenna further adds that he has received an anti-memorial signed by "most distinguished" medical men suggesting that forcible feeding of Suffrage prisoners is

"neither dangerous nor painful." In the interests both of medical truth and the civilized treatment of political prisoners it is Mr. McKenna's duty to publish immediately this anti-memorial and the names of the signatories thereto.

If Mr. McKenna's "most distinguished" but anonymous informants are correct, then they have proved the Home Secretary to have acted with the grossest injustice to some prisoners, and Mr. Ellis Griffith to have made false statements to the House of Commons. For the Home Secretary has released some prisoners and kept others in prison on the following medical grounds, as stated by Mr. Ellis Griffith in the House of Commons on June 26th: A certain number (exact figures not given in *Hansard*) were released by Mr. McKenna because forcible feeding would have been "dangerous to health," and others because after being fed once or twice "it would be a danger to health or life (*sic*), as the case might be, if the treatment were persisted in."

A prison treatment of which such statements are made is not the simple, harmless process Mr. McKenna's nameless advisers allege it to be. Moreover, the actual medical facts of the cases of those persons who have been forcibly fed by Mr. McKenna are being collected, and we shall soon be able to form a just opinion of a violent procedure which has no real relation to the asylum and hospital practice to which it is sometimes compared. In fact, the falsity of this hospital analogy is completely demonstrated by Mr. McKenna himself, for he has admitted that he has been obliged to discharge many of his own cases owing to their health and lives being endangered by his procedures, whereas, of course, lunatics or hospital cases are never so discharged, and certainly not because the artificial feeding administered to them endangers their lives.—We are, etc.,

AGNES SAVILL,
CHARLES MANSELL MOULLIN,
VICTOR HORSLEY,
Secretaries to the Medical Memorial.

July 10th.

THE LIVERPOOL CITY ARMS.

SIR,—In the many excellent articles which have appeared preparatory to the meeting in Liverpool, mention, I think, has not been made of a matter which might possibly interest the student of natural history. I refer to the bird and its mouthful which appear in the City arms. These arms are heraldically described thus:

Argent, a cormorant sable, beaked and legged gules, holding in its beak a branch of sea-weed called laver, inverted, vert.

The cormorant (*Phalocrocorax carbo*) is a bird which formerly inhabited the estuaries of the Ribble and the Mersey. A stuffed specimen is in the Liverpool Town Hall. A variety, now extinct, was known as the "liver," and from the latter bird the town is supposed to have derived its name.

The device in the city shield is very ancient, for although the arms of Liverpool were duly granted in 1797, the bird with a sprig in its mouth is found on a corporation seal made in 1222.

The sprig in the bird's mouth is a bunch of laver (*Porphyra laciniata*), and is supposed to have been the material upon which the bird lived. Laver is a great luxury, and is met with occasionally at a city dinner. When we dine in Liverpool, will our colleagues in that city regale us with a morsel of the delicious vegetable which formed the *pabulum vitae* of the eponymous bird? – I am etc.,

July 5th. S. D. C.

The Services.

PRESENTATION TO LIEUTENANT-COLONEL DE ZOUCHE MARSHALL.

LIEUTENANT-COLONEL J. J. DE ZOUCHE MARSHALL, V.D., on his retirement from the command of the Surrey Medical Unit, which he raised in 1902 as the East Surrey Bearer Company, has been presented with a pair of silver entrée dishes bearing the following inscription: "Presented by the Officers, N.C.O.'s, and Men of the 3rd Home Counties Field Ambulance, R.A.M.C. (T.F.), to Lt.-Col. John J. de Zouche Marshall, V.D., on his relinquishing the command. June, 1912. Geo. A. Edsell, M.D. (Lt.-Col. Commanding), William Argent (Sergt.-Major)."

Public Health AND POOR LAW MEDICAL SERVICES.

DUTIES OF WORKHOUSE AND DISTRICT MEDICAL OFFICERS.

H.—It would appear that our correspondent is a workhouse medical officer, and also a district medical officer. These appointments are quite distinct, and must be paid for separately. With regard to the first, the duties of the medical officer do not extend outside the workhouse, and, as a certain number of children have been transferred to a home, his duties to that extent have been lightened; although it would appear that, owing to additions to the union, he now receives patients that previously could not come under his care. But it does not appear that there has really been any increase of his duties as workhouse medical officer. With regard to the second—the district medical officer—his duties are to attend to any of the outdoor poor in his district. If the home to which these children have been sent lies within his district, it is part of his duty to attend to any of them on receiving a proper order from the relieving officer. In not a few instances boards of guardians have in recent years appointed a special medical officer to attend to such homes, at a special salary; but this is not obligatory. In many cases, as a neighbourhood grows, the district medical officer finds that his work greatly increases, and he may properly ask for a revision of his salary. If the addition to our correspondent's duties caused by having to attend to this home is a considerable increase, he would be justified in asking for such a revision, but it is impossible from the details given to suggest what increment he should ask for.

Universities and Colleges.

UNIVERSITY OF OXFORD.

A New Fellowship.

NOTICE has been given by the authorities of Magdalen College that next Michaelmas term they will make an appointment to an Ordinary Fellowship after an examination having special reference to excellence in medical science.

The person to be elected must have passed all the examinations required by the University of Oxford for the degree of B.A., must be unmarried, and must not be in possession of any ecclesiastical benefice, or of any property, pension, or office tenable for life or during good behaviour, the annual value of which exceeds £300 per annum. The examination, which will begin on Tuesday, October 1st, at 10 a.m., in the College Hall, will include the following:

A. An English essay on a general subject. B. Papers in (1) General Physiology; (2) General Pathology; (3) one of the following special subdivisions of the above subjects—that is, (*a*) Physiological Chemistry, (*b*) the Special Physiology of excitable tissues, bodily movement, circulation, respiration, and secretion, (*c*) the Special Physiology of the nervous system and sense organs, (*d*) Bacteriology and its relation to Disease, (*e*) the Special Pathology of Disease, (*f*) Psychology.

Candidates may offer in addition Chemistry or General Biology, or Human Anatomy (including Embryology), or Histology; they will also be given the opportunity of showing their power of translating from scientific treatises in Latin, French, and German. There will be a viva voce examination of candidates at the discretion of the examiners, but practical work will not form any part of the examination, either in general or additional subjects. Candidates may further submit evidence of research work done by them in the form of papers already published or accepted for publication. All persons who wish to become candidates will be required to give notice *in writing* (1) of their intention to do so, (2) of the special division of Group B 3 which they propose to offer, (3) of their intention, should they wish to do so, to offer either Chemistry, or General Biology, or Human Anatomy, or Histology, to the President of Magdalen College, not later than Saturday, July 20th. All evidence they desire to submit of research work, which must be in the form of published papers or of typewritten copies of MSS. accepted for publication by some scientific journal, must be sent in to the President not later than Saturday, September 28th. All candidates will be required to call upon the President of Magdalen College on Monday, September 30th, between the hours of 6 and 7 p.m., bringing with them testimonials of their fitness to be elected to a Fellowship in the College as a place of "religion, learning, and education." The person elected will be expected to reside for three months during the first year after election, but this residence may be dispensed with for sufficient reason.

Scholarships.

The following awards have been made: The *Theodore Williams Scholarship in Anatomy* to Mr. W. B. Littlejohn, of New College; the *Theodore Williams Scholarship in Physiology* to Mr. Gerald K. Bowes, of Christ Church; the *Theodore Williams Scholarship in Pathology* to Mr. G. E. Beaumont, of University College.

UNIVERSITY OF LONDON.

LONDON HOSPITAL MEDICAL COLLEGE.

THE annual prize-giving ceremony in connexion with the London Hospital Medical College took place on July 1st, under the presidency of the Chairman of the College Board, Mr. W. Douro Hoare. The prizes were distributed by the Chancellor of the University of London, Lord Rosebery, who in the course of the proceedings delivered the address to which allusion was made in our issue for July 6th, p. 38. A report as to the progress of the school was made by its Dean, Dr. William Wright, who said that the average number of students had been more than maintained, while the academic distinctions gained by them at various examinations were above the average. The endowment fund of the College had risen to £7,500, and a grant of £4,300 in respect of the coming year had been received from the Board of Education: acceptance of this sum imposed great obligations and responsibilities, but these were fully appreciated. It had already enabled a number of small reforms to be made in the College, and he hoped the coming year would see more important changes, some of them marking a distinct step forward in medical education in this country. The Dental School had also fulfilled the highest expectations regarding it. It had been equipped on the most modern lines, and its success had been so pronounced that the question of its extension must soon be considered. A garden party in the hospital grounds followed the conclusion of the formal proceedings.

OFFICERS' TRAINING CORPS.

The annual inspection of the contingent took place in Hyde Park on Saturday, June 29th, the inspecting officer being Major-General Cowans, Quartermaster-General to the Forces. The corps paraded at nearly full strength, the Medical Unit being over 200 strong, under Major W. P. Herringham, the Vice-Chancellor of the University. Major Capper was in command of the parade. The inspecting officer expressed himself well pleased with what he had seen; he pointed out that more officers were required for the Special Reserve of Officers, and hoped that during the coming year the number of cadets applying for commissions would be increased.

The annual dinner of the contingent was held on June 28th, at the Great Central Hotel, Major Capper being in the chair. The toast of "The Corps" was proposed by Sir Albert Rollit, and responded to by Majors Charles and Tooth; that of "The Guests" was proposed by Captain Harris, and responded to by Dr. Hill, the Secretary of the Imperial Universities Congress, and by Major Meiklejohn, V.C., of the War Office. Music was supplied by the excellent band of the contingent.

UNIVERSITY OF EDINBURGH.

Honorary Degrees.

AMONG those who received the honorary degree of LL.D. at the graduation ceremony on July 5th were Sir James Porter, Director-General of the Medical Department of the Royal Navy, and Professor Cash, F.R.S., Aberdeen.

UNIVERSITY OF ABERDEEN.

THE following were among the degrees and diplomas conferred at a meeting of the Senate on July 9th:

M.D.—*G. S. Melvin, *J. A. Beattie, R. M. Chance, A. J. Shinnie, D. J. S. Stephen, D. M. Baillie, A. L. E. F. Coleman, H. G. Deans, A. Gray, G. Michie, W. R. C. Middleton, J. Mitchell, H. W. Smith, G. I. T. Stewart.

M.B., Ch.B.—D. S. Badenoch, W. F. Beattie, M. M. Cruickshank, R. E. Dastur, Elizabeth M. Edwards, A. F. Fraser, W. J. S. Ingram, S. W. Lund, E. A. Pearson, A. C. M. Savege, J. Shaw, C. W. Weir, J. Wood.

D.P.H.—J. Brown, E. W. Wood-Mason, H. S. Milne, J. G. Mulcrer.

* "Commendation" for Thesis. † "Honours" for Thesis.

UNIVERSITY OF DURHAM.

THE following candidates have been approved at the examination indicated:

[illegible] M.B. (*all subjects*).—*C. Armstrong, L. G. Cummings, C. N. [illegible], M. H. De J. Harper, C. Jacobs, R. R. [illegible], [illegible] Smith, C. R. Smith, J. C. Spence. *Public Health, Medical Jurisprudence, Pathology, and Elementary Bacteriology*: E. Phillips.

* First class honours.

UNIVERSITY OF LIVERPOOL.

Chair of Bacteriology.

PROFESSOR JAMES MARTIN BEATTIE, M.D., at present Professor of Pathology and Dean of the Medical Faculty in the University of Sheffield, has been appointed Professor of Bacteriology. Professor Beattie has been appointed by the City Council to the office of Bacteriologist for Liverpool, a post involving work similar to that which he has discharged for the last five years at Sheffield.

Fellowships and Scholarships.

Holt Fellowship in Pathology.—H. C. W. Nuttall.

Holt Fellowship in Physiology.—R. Kennon and Robert Geo.

Fellowship in Anatomy.—J. H. Rawlinson and Thelwall Thomas.

Fellowship in Surgical Pathology.—A. A. Rees.

A University scholarship in medicine has been awarded to Ethel Chadwick.

UNIVERSITY OF LEEDS.

Degrees.

THE following were among the degrees conferred at a congregation on June 29th:

M.B., Ch.B.—G. P. Mellis, †L. Dunbar, J. Ferguson, and G. W. L. Kirk.

* First class honours. † Second class honours.

Examinations.

The following candidates have been approved at the examinations indicated:

SECOND M.B., CH.B. (*Part I.*—R. H. Chadwick, D. A. P. Clarke, A. S. Hebblethwaite, C. H. Seville. (*Part II*): Jane Bamford, H. Franklin, H. M. Holt, W. L. Ingham, C. E. Leake, J. Liberman, W. H. Lonen, J. Rosenewige, Jessie Smith, R. S. Topham, Augusta Umanski, and F. Walton.

FINAL M.B., CH.B. (*Part I.*—E. Hesterlow and W. D. A. King.

D.P.H. (*Parts I and II.*—D. F. Dobson. (*Part I only*): G. O. Chambers and A. Dick.

D.P.M. (*Parts I and II.*—J. M. Noyes and E. A. Waldron.

Medico-Legal.

COLLECTORS AND THE WORKMEN'S COMPENSATION ACT.

W., who recently made inquiry at a large insurance office with regard to the insurance of a locumtenent for compensation purposes, was asked by the company whether his collectors were insured. To this he replied in the negative, pointing out that, as his collectors were employed entirely on commission, he did not consider that he was liable. The company replied to the effect that it would be necessary to insure the collectors, as it did not insure part of a staff. Our correspondent asks for definite information on the point.

** We cannot recall a case precisely on all-fours, but we agree with our correspondent that it is very doubtful whether, in the circumstances described, a collector can be said to be a workman. Assuming that a "collector" is a person paid by commission, the question is: Is a person who is paid by commission "employed" within the meaning of the Workmen's Compensation Act, so as to render the doctor liable if the collector meets with an accident? "Workman," within the meaning of the Workmen's Compensation Act, does not "include . . . an outworker . . . but it means any person who has entered into or works under a contract of service with an employer." The fact that a man looks to a certain person for payment of his wages was in an old case held to be *prima facie* evidence that the person is his master; and it has been held that the wages may, for this purpose, consist of payments by commission (*R. v.* Tite, 30 L.J.M.C. 142).

Obituary.

WILLIAM MURRELL, M.D., F.R.C.P.,

SENIOR PHYSICIAN TO THE WESTMINSTER HOSPITAL.

DR. WILLIAM MURRELL, who died on June 28th, had been suffering for many months from signs of heart failure, which necessitated complete rest in February. In the beginning of June, in view of his promotion to the post of Senior Physician to the Hospital—the climax of his professional career—he pluckily insisted upon making an attempt to resume his work, and for three weeks he struggled on. The effort, however, proved beyond his strength, and in all probability hastened his end.

William Murrell, who was born in 1853, was the son of Mr. W. K. Murrell, barrister. His medical education was received at University College, where, after obtaining the diplomas of L.S.A. in 1874 and M.R.C.S.Eng. in 1875, he held the usual resident posts. He was also for a time Resident Clinical Assistant at the Brompton Hospital. Later he was appointed to the staff of Paddington Green Children's Hospital, and for a time was Physician to the North-West London Hospital. In 1877 he became Medical Registrar to the Westminster Hospital for a couple of years, and in 1883 he became Assistant Physician, being promoted to the full staff in 1898. He became M.D. of Brussels in 1879, and F.R.C.P. London in 1883.

The branch of medicine to which he mainly devoted himself was that of pharmacology and therapeutics, in which he attained a wide reputation. He was examiner in materia medica to the Conjoint Board in England, and to the Universities of Edinburgh, Glasgow, and Aberdeen. He was the author of a *Manual on Pharmacology and Therapeutics*, and also edited the 4th edition of Fothergill's

Handbook of Treatment, published in 1897. His most popular work, however, was a little book entitled, *What to Do in Cases of Poisoning*, published originally in 1831, which reached its 11th edition during the present year. He also wrote upon massage, upon the treatment of chronic bronchitis, and on angina pectoris. His book upon forensic medicine and toxicology reached its 6th edition in 1903, and his work on materia medica was published in 1909. In view of his eminence in pharmacology he was elected Lauréat de l'Académie de Médecine de Paris, and Honorary Fellow of the Medico-Chirurgical College of Philadelphia.

His character was marked by shyness and a certain amount of reserve, and in consequence, perhaps, of this, his circle of intimate friends was limited. He was a bachelor, and lived a somewhat secluded life, finding his main occupation in his work. He took a keen interest in the welfare of the Westminster Hospital, and was an assiduous member of the Board of Governors. Even during his last illness he shared in the deliberations of his colleagues in many matters pertaining to the welfare of the hospital. He had long looked forward to becoming Senior Physician to the Hospital, and there is much that is tragic in his fatal illness at the time when his ambitions had just been realized.

RICHARD PARAMORE, M.D.,

LONDON.

We regret to record the sudden death in his sixty-fourth year, in the last week of June, of Dr. Richard Paramore, a general practitioner exceptionally well known among his colleagues in London, and the general public in the Euston district. He was born in Devonport in 1848, and after the completion of his general education was articled to the late Dr. Frederick Row, Surgeon to the Royal Albert Hospital, and Paramore thus gained a useful insight into the conduct of good class general practice, and also laid the foundations of surgical experience. He became a student at Guy's Hospital, and took the diplomas of L.S.A. in 1867, M.R.C.S. in 1872, and M.D.Brussels in 1884. He started practice in Hunter Street—a somewhat bold proceeding, as his age was then only 21—a step which was fully justified by the results. He was exceptionally able in the management of children, and little by little built up an excellent general practice, which he carried on, both at Hunter Street and his residence in Gordon Square, right up to the time of his death. He held several appointments, among them being that of medical officer to the post office, by whose authorities he was greatly esteemed.

Paramore's outlook, both on life and his special occupation, was broad, and he was a member of many professional organizations: The British Medical Association, the Royal Society of Medicine, the Medical Society of London, the Harveian Society, the West London Medico-Chirurgical Society, and the Society for the Study of Inebriety. He contributed occasionally to our columns, and was the author of books entitled *Hints on Health; Sleep;* and *The Influence of Social Habits on Health and Character*. He was a man of very marked individuality of character, and was an interesting companion, with a capacity for the apt quotation of poetry, and such readiness in expressing his ideas as might have led to his attaining distinction in any walk of life. On this point a correspondent writes:

> He was a fine speaker—in fact, he was an orator; and it was a delight to listen to him, especially when he had a good cause at heart. He was generous to a fault, and the world will be the poorer for his loss. No man was ever more eager to help his professional brethren, and his kindness and generosity to the deserving among his patients was immense.

As a specific instance of Dr. Paramore's readiness to devote his time, powers of persuasion, and his energy to the assistance of his friends, may be mentioned the part he played in raising the fund to reimburse the late Dr. W. T. Law for some part of the expense in which he was involved by an action brought against him. Dr. Paramore married in 1875, and is survived by his wife, four sons, and two daughters.

THE next examination of candidates for the Royal Naval Medical Service will be held in London on September 30th and following days. The number of appointments offered for competition will be fifteen. Forms of entry and other information can be obtained on application to the Medical Director-General, Admiralty, S.W.

Medical News.

THE Continental Anglo-American Medical Society will give a luncheon at the Adelphi Hotel, Liverpool, on Thursday, July 25th, at 1.30 p.m. Members of the society intending to be present are requested to communicate with Dr. Leonard Robinson, 28, Rue de Ponthieu, Paris.

THE Irish Medical Schools' and Graduates' Association will give a luncheon at the Exchange Station Hotel, Liverpool, on Wednesday, July 24th, at 1.30 p.m. The president, Dr. H. Macnaughton Jones, will be in the chair. The honorary provincial secretary, Dr. Shepherd Boyd, 7, Springfield Avenue, Harrogate, asks that members intending to be present should notify him as soon as possible.

THE temperance breakfast usually held during the annual meeting of the British Medical Association will take place this year on Thursday, July 25th, at 8.15 a.m., in the Walker Art Gallery. Mr. Alexander Guthrie, J.P., a vice-president of the National Temperance League, will preside, and Dr. F. W. Mott, F.R.S., will deliver an address dealing with one of the aspects of the present attitude of the profession towards the use of alcohol. The proceedings will conclude in time for members to attend the meetings of the sections.

THE London Dermatological Society held its first annual dinner on July 1st, the guest of the evening being Lord Chesterfield. In replying to a toast to the society, proposed by Mr. McAdam Eccles, Dr. Morgan Dockrell, who was in the chair, said that the society, whose objects were educational, consultative, and social, had already proved of great use to many members of the medical profession, and had, he believed, a great future. In the course of the evening the Chesterfield medal was presented to Dr. Bartholomew.

THE number of the *Arena* for July will maintain the reputation of this new monthly for the excellence of its illustrations. The chief article is on Haileybury, which celebrates its jubilee as a public school this year; it has many pictures, and there is a fine photograph of the chapel on the cover. From an article on schools in Japan we learn that in the eight higher-grade secondary schools open to boys preparing for the universities, all maintained by the State, special facilities have recently been arranged for those intending to become medical students. The periodical, though directly addressed to old public school boys, will appeal also to parents who have boys of public school age.

THE time-table of the Oxford Ophthalmological Congress can now be obtained on application to Mr. Sydney Stephenson, 33, Welbeck Street, London, W. It will begin on Thursday next, July 18th, at 10 a.m.: members of the congress can stay at Keble College, the charge for board and lodging being 7s. 6d. a day, and there will be an unofficial dinner on Wednesday evening in Keble Hall. On the mornings of Thursday and Friday, there will be demonstrations in the department of physiology, where a museum has been formed. On Thursday evening there will be operations and demonstrations of cases at the Eye Hospital, and in the evening the Warden of Keble College will preside over the official dinner of the congress in Keble Hall. On Friday afternoon there will be a discussion on coal miner's nystagmus at the Eye Hospital, and on Saturday the members will make an excursion by river to Reading or Henley.

AT the annual meeting of the Stockport, Macclesfield, and East Cheshire Division of the British Medical Association, held at Macclesfield on June 26th, Dr. Hyde Marriott of Stockport, Chairman of the Division, presented to Dr. John Brierley Hughes, the Secretary of the Division, on behalf of its members, a beautiful silver rose bowl, in recognition of the valuable services he had rendered to the Division as secretary for the past five years, and more particularly as a slight acknowledgement of his devotion to and successful discharge of the onerous duties devolving upon him during the past year, especially in connexion with the Insurance Bill. Dr. Hyde Marriott spoke of the hearty response to the appeal by members of the Division and their willingness to show in a marked degree their high appreciation of Dr. Hughes and the able manner in which he had carried out the duties of secretary. Dr. Hughes, in thanking the members of the Division, said that he deeply appreciated all the kind things said of him, and although the work had at times been severe, he felt he had been amply repaid in the unanimity of the members of the Division, by their strong support to the principle of a "united policy" in regard to the Insurance Act.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

DOUBTFUL asks for information or references as to the known or suggested influences of dry rot in a house on the health of the inmates.

H. L. asks as to the use of spermin in epilepsy (adult female), the best method of administration, and the usual dose to begin with.

WHAT IS "NURSERY MILK"?

DR. BRANSBY YULE (London) writes: I shall be glad if you or your readers will tell me what is generally understood by "nursery milk." Up to the present I have been fondly imagining that the term implied that it was milk obtained from one or more special cows. Now, however, I am informed by an official of one of the large milk companies that the term (as used by them) denotes absolutely pure milk, as distinguished from milk to which colouring matter has been added. For my further information he explained that the greater part of all the milk supplied retail in London at the present time contains added colouring matter, a fact of which I was not aware.

MYOTATIC IRRITABILITY.

DR. S. V. SOMEREN BOYD (Fenton, Staffs) writes: In the course of the examination of patients and a large number of new proposals for insurance, I have been in the habit of examining for myotatic irritability as a sign of recent wasting. I very soon found, however, that almost without exception those whose work is muscularly arduous show the sign even where no sign or symptom of disease is present. Colliers especially show very marked muscular irritability, with increased tendon reflexes. Dr. Milne, R.M.O. of the North Staffs Infirmary, tells me that he has observed the sign in almost every patient, ill from any cause, and not especially and only in the diseases we designate as "wasting diseases." I should be glad of information as to the reliability or the reverse of this sign as a test of wasting, as I cannot from my own experience escape the conviction that it is of much less value than our textbooks would lead us to suppose.

ANSWERS.

DR. GIBSON PARKER. There are two institutions in the West of England which might be suitable for the imbecile boy as to whom inquiry is made: (1) The Western Counties Asylum, Starcross, Devon (registered under the Lunacy Acts): Secretary and Superintendent, Mr. E. W. Locke; patients received at 10s. 6d. per week. (2) Stoke Park, near Bristol (for feeble-minded); information can be obtained from the Secretary, National Institutions for Persons requiring Care and Control, 14, Howick Place, Westminster, S.W.; about 12s. weekly.

DR. JOHNSTON-LAVIS (Vittel, Vosges) writes, in reply to "Midlothian" (BRITISH MEDICAL JOURNAL, June 29th, 1912): At Vittel a large number of cases of glycosuria are treated. In the last fortnight four English patients of mine have left with the following results: Dr. T., 2.310 grams of glucose in twenty-four hours' urine fell to *nil* in three weeks' cure; Mr. P., 5.719 grams on arrival, *nil* on departure; Mr. B., 5.671 grams on arrival, after eight days of cure *nil*; Mr. M., 181.5 grams (6 oz.) in twenty-four hours fell to 9.52 grams (66 grains) in twenty-four hours at [illegible] weeks. Besides this, their physiological equilibrium was restored, as shown by the analyses made before and after the cure in my own laboratory. Their general state was markedly improved. These are the usual results we get by treatment at Vittel.

LETTERS, NOTES, ETC.

BRUSSELS MEDICAL GRADUATES' ASSOCIATION.

IT has already been announced in the JOURNAL that the annual meeting and launch party of the Brussels Medical Graduates' Association will take place on Saturday, July 13th. The launch will start from Maidenhead at 12.30 p.m., returning about 8 p.m. The nearest station to Maidenhead Bridge is Taplow, which can be reached by a train leaving Paddington at 11.15 a.m. The launch party will be photographed at Boulter's Lock. Railway fares at reduced rates can be obtained from the Honorary Secretary, Dr. Arthur Haydon, 23, Henrietta Street, Cavendish Square, W.

PLUMBISM.

COMMENTING on the statement by Dr. Arbour Stephens (report of South Wales and Monmouthshire Branch, JOURNAL, June 22nd, p. 1425), Dr. John W. Duncan (Hockley, Birmingham) writes that in all cases of plumbism he has seen the colour of the line was in his judgement best described as purple. In his opinion, white, yellow, and green all come into the colours of the gums, as well as red and blue to produce purple.

LOCAL APPLICATIONS OF TARAXACUM JUICE.

A. D. writes: In 1874 (*Pharm. Journal*) I was struck with the extreme bitterness of one of the common ligulate yellow composites. I have an idea it was once given as a variety of the dandelion (*minus*). It is known as *Aparyia autumnalis*, and may be easily identified from near allies by the bladdery condition of the stalk just under the receptacle. I made a juice according to the official formula; the yield was much less than that of dandelion, but the bitterness was far more intense; whether the juice was as highly charged with mannite I do not know. The season is just coming on when the plant will flower and can be identified. I know Dr. Herbert J. Robson will be seeking to know what particular principle in the dandelion promises to be effective, and it may be that *Aparyia autumnalis* contains a larger supply. However, I send this communication to the JOURNAL, rather than to Dr. Robson, on account of the general interest.

MISS EVIE EVANS, M.B. (Cardiff), writes: In reference to a memorandum by Dr. Herbert Robson in your issue of May 25th on the benefit of taraxacum in "cancer," dandelion juice is reputed a "cure" for "warts." I once applied this remedy to a wart on the hand which projected, as nearly as I can remember, a full quarter of an inch. I rubbed in the juice of every flowering dandelion I saw for many weeks. I noticed no improvement; certainly the wart grew no smaller; finally, however, as I was in the act of applying the juice, the wart suddenly dropped out, leaving a smooth socket. The "root" of the wart was about one-third of its total length. I have never since then seen a wart disappear in this way, nor have I met any one who has seen it. The dandelion may have some action on epithelial tissue over and above the obvious blackening of the epidermis which occurs; its action could be studied more easily on "warts" than on internal "cancers," and a knowledge of its action on an innocent growth might prove to have some bearing on the problem of its action on malignant growths.

A WARNING JUSTIFIED.

A WARNING was published in the BRITISH MEDICAL JOURNAL of June 22nd regarding an individual who in several instances had called upon a medical man stating that he had been appointed president of a local branch of the Boy Scouts' Ambulance Brigade, and had then solicited a subscription. It is of interest to record that at the Surrey Quarter Sessions on July 2nd, William Stanley Reeves, aged 20, described as a painter, pleaded guilty to having obtained by false pretences the sum of 10s. 6d. from Dr. Colby, and 5s. from Mr. Herbert Snell, dentist, both of Woking. From the evidence of the prosecution, it appeared that the prisoner pretended to be a captain of the Woking Boys' Ambulance Brigade, and asked for subscriptions to buy stretchers, as the brigade was going to give a demonstration before the King at Windsor. When arrested the prisoner had a fully loaded six-chamber revolver in his possession. Evidence of three previous convictions against the prisoner was given, and he was sentenced to six months' hard labour.

CORRECTIONS.

IN a note entitled "Midwifery Forceps of Early Eighteenth Century Pattern" by Dr. A. Cordes of Geneva, which appeared in the JOURNAL of June 1st, p. 1276, "Levet" should be "Levret," "Maider" should be "Mülder," and "vecticum" should be "vectium."

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A Lecture
ON
THE OPERATIONS FOR CANCER OF THE TONGUE.

BEING AN APPRECIATION OF THE WORK OF THE LATE SIR HENRY BUTLIN.*

BY
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AT a lecture given here a year ago on the inflammatory conditions of the mouth and tongue which precede cancer, I showed a number of sections under the microscope to illustrate the teaching of Sir Henry Butlin. I propose to-day to review the work by which he advanced the surgery of the tongue, not only by rendering the removal of cancer less unsuccessful, but what is much more important, by describing how the onset of the disease may be anticipated and prevented.

The clinical diagnosis of cancer of the tongue is liable to err in both directions, and Butlin was one of the first to employ the microscope as the essential means of confirming or varying the conclusion reached by clinical observation. Before Butlin's demonstration surgeons had not generally acknowledged the value of the microscope. This may be partly explained by the imperfect preparation of the material to be examined. A glance through the illustrations of microscopic specimens contained in the volumes of the Pathological Society's *Transactions* will give a very good idea of the gradual improvement in pathological histology by which the minute structure came to be demonstrated. In his first communication—in the *Transactions* for 1877—Butlin gave illustrations of an enchondroma of the submaxillary salivary gland which would not be recognized by the present-day student. There is a very marked advance in the next paper—in the Medico-Chirurgical Society's *Transactions*, 1878—in which he gave the first description of chronic superficial glossitis, a name previously used by Fairlie Clarke for the clinical appearances, although Clarke had not made any microscopic examination. Butlin, in his *Sarcoma and Carcinoma*, 1882, more clearly illustrated this most important condition and the changes by which it passed over into epithelioma. In 1879, in the *Proceedings of the Royal Society* and in the *St. Bartholomew's Hospital Reports*, he gave the results of his microscopical examination of the fur on the tongue; the only additions since have been connected with the examination of the micro-organisms contained in the fur, and on this definite knowledge is still lacking.

Butlin commenced operating on the tongue in 1881. In 1883 he noted the value of weak solutions of chromic acid for secondary syphilitic lesions in combination with the administration of mercury. In 1885 appeared the first edition of the *Diseases of the Tongue*, which was translated both into French and German. In 1888 he made an important advance by recommending the cutting out of obstinate gummata and tertiary ulcers. He also described sarcoma of the tongue—a condition so rare that he hesitated to come to general conclusions on the matter. In 1890, as the result of observations on two thyreoglossal tumours of the base of the tongue, he counselled an expectant attitude and a limited operation, in view of the danger, if the thyroid gland be ill-developed, of setting up myxoedema. In 1889 he more fully described the inflammatory conditions preceding cancer. He had come to supplement regularly the conclusions arrived at from his clinical experience by the microscopical examination of the disease after removal.

The importance of the microscopical examination has, however, even yet not been fully accepted. I am sorry to say that its omission in many cases shows a comfortable satisfaction in the all-sufficiency of clinical observation, and, in spite of what has been said for it, that which some call Bioscopy is the one thing often neglected until too late. On the other hand, confusion has been caused by conditions being styled epithelioma which have disappeared under non-operative treatment.

Later on Butlin submitted a number of cases to more thorough examination by Dr. Bashford, assisted by Dr. Murray, of the Imperial Cancer Research, and he described in later communications how many of the conditions he had previously termed precancerous, proved to be cases of early epithelioma. Small indolent ulcerations, apparently quite superficial, exhibited under the microscope epitheliomatous cells descending among the muscle fibres. On the other hand, quite recently within my own experience, the presumptive diagnosis of epithelioma has been corrected by the microscope to angioma, tuberculoma, or simple ulceration.

Butlin's name is most generally connected with the operation at two sittings for the removal of cancer of the tongue, which he began in December, 1895. By it he obtained results far beyond those published by other surgeons; I will emphasize the importance of his method directly. But, after all, it is a method to be adopted for epithelioma—cancer which has already set in: even if the disease is early and the patient remains free from any sign of return of the disease, yet there is always some remnant of anxiety as to the possibility of late recurrence. Now, long before he described this method of operating for epithelioma, Butlin had advocated the excision of patches of leukoplakia, warty and nodular plaques, irritable scars, and indolent ulcers on the tongue, to be followed by a thorough examination of sections under the microscope. And we ought to estimate this excision of patches at a far higher value as preventing cancer. The operation is free from risk; it does not leave a deformity nor impairment of speech, and if after examination the disease proves not to be cancer, all cause of anxiety disappears. Above all things, an excision of the patch completes the diagnosis, and should it be found, however unexpectedly, after an examination of a series of sections, that epithelioma has really begun, then the second stage, the dissection in the neck, can be undertaken without any delay.

The particular grounds for delay in adopting a radical line of treatment formerly were the application of caustics and the undue prolongation of the administration of the mercury and potassium iodide. As to the application of caustics, this practice has not entirely disappeared, and recently instances have come under notice in which this both useless and harmful procedure has appeared to directly excite the onset of cancer. As to the administration of mercury and potassium iodide, Butlin urged that an effect should be evident within ten days, not so much by the relief of symptoms, as by the actual healing and disappearance of the lesion, and when this end has not been attained within three weeks the antisyphilitic remedies should not be continued. The more intensive treatment now practised, whether mercury injection or inunctions, or injections of salvarsan, should have an even more rapid effect, and there should be therefore less excuse for any undue delay. These measures, if they do so at all, produce a decided effect at once. And yet the excising of patches and scars to prevent cancer seems at present to be more neglected. Cases drift on until some large, dangerous, and deforming operation is required. Hence the question of radical treatment is still involved in a vicious circle. The practitioner has only a terrifying operation in view, and to avoid it advises the trial of one treatment after another. Thus the simplest and quickest way of getting rid of the disease is overlooked.

Salvarsan has proved a very important adjuvant to mercury in the treatment of the severe forms of secondary syphilis attacking the mouth and throat. And in combination with a more thorough exhibition of mercury, salvarsan can aid in preventing the development of later syphilitic lesions. It may thus be an indirect means of preventing cancer. But salvarsan has now been given often enough to prove that it has no effect upon the inflammatory lesions which immediately precede cancer, and which Butlin urged should be excised. Its administration in such cases is not only a waste of time, but also diverts attention away from the one means of cure. As there is some small risk in the administration of salvarsan, there is possibly more danger in its administration than the excision of the patch under a general anaesthetic. Radium and light rays appear to have a superficial antiseptic effect, and so afford

* Delivered at the Medical Graduates' College and Polyclinic on June 11th, 1912.

some relief, which does not appear to differ from such as can be more easily attained by painting on a suitable antiseptic fluid at frequent intervals. But in addition to the effect on the surface, both radium and light rays tend to excite the growing margin of true squamous-celled carcinoma and to induce a widespread and rapid infection of the corresponding lymphatic glands, which soften, break down, and develop into large excavations in the neck, or by the spread of the glandular enlargement to the root of the neck and mediastinum produce respiratory obstruction. Meanwhile the primary growth seems to spread rapidly down the mucous membrane of the fauces. Sébilcau has described a case in which a papilloma on the tongue had existed for twenty-five years; on exposure to radium it rapidly became malignant. Other cases have been recorded, or have been heard of, or have come under my direct observation. In spite, therefore, of newer alternatives, we ought to follow Butlin in the excision of any lesion which fails to heal in three weeks after the removal of a tooth, the cessation of smoking, the administration of antisyphilitics, or any other form of treatment.

When on examination an excised patch or ulcer shows that epitheliomatous columns have begun to grow down into the muscle fibres it is necessary in all cases to urge the dissection required to remove the glands from the neck which may possibly have become infected. Repeated instances have occurred of late in which this has not been done, and the disease has shown itself within a year in the corresponding lymphatic glands. If the epithelioma is strictly limited to the tongue on one side and has not encroached upon the middle line or the tip or the front of the floor of the mouth, then the dissection should be done on one side only. In operating one should remove the glands in the submaxillary region without interfering with the mylohyoid muscle or hypoglossal nerve, and one should avoid opening a communication with the mouth behind the mylohyoid by leaving the submaxillary duct and the intrabuccal portion of the salivary gland. It is necessary, however, to remove any prolongation of the submaxillary gland along the facial artery as it turns up over the ramus of the jaw. The submental glands on each side of the middle line should be also excised, unless the disease is far back to one side. Especially in this last case the incision must include the lower end of the parotid gland and the septum of tissue between it and the submaxillary, otherwise infected lymphatic tissue will be left behind; further, the sterno-mastoid muscle must be well retracted so that all deep cervical glands may be dissected from the front of the blood vessels, extending from the mastoid process down to the crossing of the omohyoid. Generally in early cases it is unnecessary to go further. As to a dissection of both anterior triangles it is required when the tip or floor of the mouth in front is involved, and, of course, when the disease lies across the middle line. The wound should be drained from the mastoid angle because of the opening of the parotid capsule and the cutting across of the submaxillary duct.

Then, if only a small patch has been removed from the mouth, the resulting deformity is limited to the scar in the neck. There may be at first a slight weakness of the angle of the mouth, which passes off; if the lowest branch of the facial nerve can be spared this may not occur. The main objection to operating in two stages is the getting of the patient to submit to the second operation. One may avoid this by the aid of a microscopist, who at the operation can prepare a fresh section. Epithelioma being found, the dissection in the neck can be proceeded with.

For cases in which epithelioma has made some progress the removal of a part, a half, or even the whole of the tongue, through the mouth by Whitehead's method, is required. In doing this Butlin preferred the turning of the head to one side in place of Whitehead's half-sitting posture in a rocking chair, or the hanging head position which is attended by so much venous haemorrhage.

The operation through the mouth is contraindicated when the tongue cannot be well freed and the disease brought outside the line of the teeth. Butlin added to the scope and safety of the intrabuccal operation by inserting beforehand a laryngotomy tube. Of course preliminary laryngotomy may be unnecessary when the mouth can be gagged widely open, when the anaesthetic administration goes smoothly and the light is good. I do not know whether any one follows Whitehead in twisting the lingual artery; at any rate, aseptic ligatures are the rule. These ligatures should arrest most of the haemorrhage, and the suturing over of raw surfaces largely controls the subsequent oozing. The additional advantage of suturing in getting primary healing is obvious. One may sometimes obtain a flap of mucous membrane from the floor of the mouth. There is a difference of opinion as to the turning back the tip when half the tongue has been taken away. The raw surface is thus closed over, and the stump is rendered more mobile, but for a time the patients make but an awkward use of it.

Whenever the floor of the mouth is involved to any extent, an intrabuccal operation becomes unsuitable. A submaxillary operation is then required, such as that of Kocher's earlier method, or some modification. For in such cases the infection must be assumed to have spread directly through the mylohyoid and hyoglossus (Cheatle) muscles, also the sublingual and intrabuccal portions of the submaxillary salivary glands are involved.

Both carotid triangles should be dissected out at a second operation, for a crossed infection may be assumed when the floor of the mouth is involved, unless it be far back near the tonsil and quite limited, when the question of dissecting the posterior triangle of the same side may come up for consideration.

To get the patient to submit to these two operations some surgeons have commenced with the neck. Butlin did not follow this, and I may quote a recent case published by Morrestin in which, after he had excised the glands from the neck, the wound became infected from the epithelioma in the mouth, septic thrombosis spread up the internal jugular into the skull and caused the patient's death.

If the patient will probably decline the second operation it is better to do all at once, even although at a somewhat increased risk.

The two additions to the foregoing procedures, which should not be adopted without very good reason, are a division of the cheek and of the jaw. As for the cheek, its division leaves a marked and obvious scar, which may be followed by considerable limitation of movement from the formation of scar tissue in the masseter. A division of the jaw introduces a serious complication. All statistics show a very marked increase in the mortality from it, for it disturbs deglutition and induces pneumonia; also, there is a great tendency to a limited necrosis and a delay in healing.

The division of the jaw in the middle line and the separation of the rami, a procedure connected with the names of Sédillot and Syme, has been resuscitated by Kocher. I hold strongly that one should employ modifications and extensions of Kocher's first method, and only exceptionally follow his second proposal. If the growth has not only invaded the floor but has become even loosely attached to the jaw, then, unfortunately, the jaw must be assumed to have become invaded, and an excision is necessary. The only limited excisions at all satisfactory are those near the symphysis not involving the masseters or internal pterygoids. When towards one side, the excision should include both the horizontal and vertical ramus behind the canine teeth, preserving the genial region, for then the stump of the tongue remains mobile, and the movement of the jaw on the opposite side is not limited.

I will now briefly note the results of operations for the removal of epithelioma. As far as regards the immediate recovery from the operation, Whitehead had no deaths among 50 cases of large excisions of the tongue. The glands in the neck were left untouched, and the majority of the cases died of glandular infection. A few survived to be reckoned as cured, but no sufficient details were published of the microscopical examinations of the disease. In 1894 Butlin gave a clinical lecture on forty-six cases of removal of one half or the whole of the tongue with one fatal result. If we combine the results published by various surgeons since 1900, we arrive at the conclusion that the average mortality from the operation, if all the severe cases are included, is about 25 per cent., that of those who survive the operation more than 10 per cent. remain alive and free from the disease three years after the operation.

Butlin's results were very much better. He calculated

that from 1881 to 1908 he operated upon 200 patients, of whom 20 died of the operation and one was lost sight of. Of those who survived the operation, 47 suffered from recurrence in the mouth, and 44 from recurrence in the glands in the neck without recurrence in the mouth. Two died from a crossed infection of the gland on the opposite side of the neck, in one the cancer reappeared on the opposite border of the tongue, one died of secondary infection of the lungs. In 8 cases the operation was partial or abandoned; 22 were alive and well or had died of some other disease within three years of the operation, 6 being alive and well one year after the operation. There remained 57 who were alive and free from recurrence three years or more after the operation. In brief, Butlin obtained a definite success in 32.76 per cent., with an immediate mortality of 10 per cent.

In 70 cases the disease on the tongue had been removed, and in addition the glands from the neck. Of these, 6 died from the operation, and 24 were alive and well over three years from the operation, or 42 per cent. With these Butlin compared 54 cases in which the glands had not been removed, and they were, on the whole, less severe cases. Yet, owing to the tendency to glandular infection, only 12 were alive and well after three years from the operation, or 29.26 per cent.

Poirier in 1901 commenced to follow Butlin, and in 1907, out of 32 cases, 5 were alive over three years from the operation, or 15.3 per cent. The mortality from the operation is directly proportional to its severity, but there are other complicating factors which add to the mortality among the less severe cases. Practically all the patients are over 40, and the majority over 50; those below 40 are all very malignant cases. Also syphilis, even although its previous manifestations have been slight, has an important influence through the blood vessels of the heart, lungs, and brain, and is responsible for fatalities from heart failure, pneumonia, and cerebral haemorrhage and thrombosis.

The danger of haemorrhage, whether primary or secondary, can practically be avoided if one considers inoperable all cases which would entail interference with the common or internal carotid arteries. The ligature of the external carotid well beyond its origin, or, safer still, the separate ligature of the lingual and facial arteries, avoids any severe primary haemorrhage, and such ligations are free from dangers of secondary haemorrhage, even although there should be suppuration in the wound. The only cases recently reported of death from secondary haemorrhage were due to ulceration into the carotid occasioned by an oesophageal tube kept in for feeding; both occurred on the tenth day after operation.

A ligature and excision of a portion of the internal jugular vein is generally free from the danger of secondary haemorrhage or thrombosis, although the case reported by Morrestin shows that it may occur. But it becomes very dangerous if the internal jugular on the opposite side has already become occluded or compressed.

Recurrence may show itself in the scar of the tongue, in glands beyond the area of the operation, or by a diffuse and general infiltration. In the last case all further operation is definitely contraindicated. If glands begin to enlarge beyond the area previously dissected, for example, in the posterior triangle of the same side, or in the opposite side of the neck, then a further free dissection in the neck may arrest the disease. I can speak of cases which have continued well after such a secondary operation.

Recurrence in the stump of the tongue, whether early or late, is generally unfavourable, and a further operation is usually contraindicated. The sort of case which may be benefited by a secondary operation is one in which there has been extensive leukoplakia, but with only a limited epithelioma. At the first operation as much as possible of the tongue has been preserved to avoid deformity. Then a complete removal of the rest of the tongue along with a thorough dissection in the neck may save the patient.

Inoperable cases are especially relieved by disinfecting the surface of the growth by painting on frequently a non-irritating but powerful antiseptic. I have generally used 1 in 1,000 mercuric cyanide painted on every four hours, and the mouth afterwards washed out with alternatively hydrogen peroxide or potassium permanganate in as strong solution as can be borne.

Radium and light rays have proved disappointing, as mentioned above; they hurry on the glandular enlargement. On the other hand, this does not seem to result from heat induced by the high frequency current. The heat cauterizes the surface and penetrates deeply, but does not cause such a deep slough as the actual cautery, nor does it stimulate excessively the glandular disease. In favourable cases a skinning over of the growth results, to the great relief of the patient.

The application of radium and light rays involves repeated sittings, and I have known great pain and faintness follow. The application of the high frequency current, termed "Diathermy" is done once under an anaesthetic.

To summarize what has been said, the late Sir Henry Butlin taught us that the excision of any persistent patch or indolent ulcer is the means for preventing the onset of cancer of the tongue. The operation is quite safe, is not followed by any deformity, and as soon as the tissue removed has been examined the patient may be assured of his safety. Further, the early excision of an epithelioma of the tongue, followed by excision of the glands in the neck, is for early cases not dangerous, and in Butlin's hands as many as 42 per cent. of such were alive and free from recurrence three years after the operation. If these cases are advised to submit to early operation one will not have to regret that cases reach an advanced stage, when severe, deforming operations become necessary. Yet I might quote any number of single cases, which have been exhibited by various surgeons, alive and well more than three years after such operation.

Sir Henry Butlin made a great advance; there is a need for much more. As he remarked, the majority of cases operated upon die of the disease, and the Registrar-General's statistics state that more than 750 people die annually in England and Wales of cancer of the tongue.

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THE Sixth International Congress of Obstetrics and Gynaecology will be held at Berlin in September next (9th to 13th), under the presidency of Professor Bumm. The principal subjects proposed for discussion are the treatment of peritoneal wounds and the surgical treatment of uterine haemorrhage in pregnancy, childbirth, and after confinement. There will be an exhibition in connexion with the congress.

OXYGENATION AND TUBERCULOSIS.

BY

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In the course of two investigations published by Moore and Stenhouse Williams[1] in 1909 and 1910, it was shown that the growth of the *Bacillus tuberculosis* is arrested when the atmosphere of the culture tube contains 70 per cent. or over of oxygen, and this has been confirmed by a recent series of observations by Adams.[2]

The number of micro-organisms showing this oxyphobic property is very small, for out of a list of twenty-six organisms tested by Moore and Stenhouse Williams only the *Bacillus tuberculosis* and *Bacillus pestis* showed it typically, the organisms of the staphylococcic group being only partially inhibited in their growth. To these organisms the more recent work of Adams adds two from the streptothrix group, namely, actinomyces and mycetoma.

This oxyphobic property is accordingly a somewhat specific characteristic, and the object of this paper is to point out a possible connexion between it and the seats of election of the bacillus of tuberculosis in the body and its modes of growth and dissemination, and also to indicate certain practical applications which lie outside laboratory work.

An attempt has been made by breathing experiments with oxygen, as well as by respiration experiments on experimentally infected animals, to obtain some effects on the rapidity of tuberculous development in the body. These experiments have given negative results, but a paper recently published by Buckmaster and Gardner[3] furnishes an explanation for this failure, by showing that even when oxygen is breathed there is no appreciable increase in the amount of dissolved oxygen in the blood gases.

It is also to be remembered that the seat of growth of the tubercles is only reached after the blood has not only become venous, but when the stream of nutrition has reached the condition of highly venous lymph, and usually in situations when the lymph flow is particularly slow, and the lymph is accordingly at its poorest in oxygen content.

Some other method than oxygen respiration must accordingly be devised for the purpose of bringing more oxygen in contact with the bacilli *in vivo*, such as disturbance of the relative distribution of pressures in the vascular circuit and as between pulmonary and systemic circuits, and by raising the capillary pressure in the tuberculous area, so as to increase lymphatic flow and so carry more oxygen.

It might at first sight seem that the bacillus, by choosing the lung as the favourite seat of its growth in the body, was indicating a preference for a well oxygenated area, but a little consideration of the histological pathology of phthisis, and of the portion of the lung selected in the great majority of cases, supplies convincing proof that this is not the case.

Although the blood is oxygenated in the lungs, the blood coming to the lungs is the most venous in the whole body before it reaches the pulmonary alveoli, and the tubercles containing the bacilli are not situated on the alveolar epithelium or capillaries, but in the lymphatic spaces and about the minute bronchioles in the perivascular spaces.

The pulmonary lymphatics contain lymph which has been separated from very venous blood, and this lymph does not undergo oxygenation in the lungs, so that the favourite situation for the development of tubercles is probably the least oxygenated in the body.

The favourite point of commencement in the lung is, moreover, the apex, where ventilation and movement of the lung tissue is at a minimum, and the lymph flow there is the slowest in the whole organ; the spread of the disease from the apex is usually by the lymphatic channels in a fluid with low oxygen content.

It is of interest to note that in mitral stenosis tuberculosis is very rarely found, whereas it is a frequent cause of death in pulmonary stenosis. Now, mitral stenosis, by introducing a resistance to the blood leaving the pulmonary area, will cause hyporaemia of the lung, with increased pressure in the pulmonary capillaries. This increased capillary pressure in the lung will lead to an increased velocity of lymph flow and correspondingly increased oxygenation in those perilymphatic areas where the bacillus usually commences its work. The opposite condition of stenosis on the right side of the heart leads to a fall in the pressure in the capillaries and pulmonary arterioles and a slower flow of lymph in the lymphatic capillaries fed by them, so giving typically suitable conditions for the growth of the bacillus.

In the lung, therefore, the bacillus selects the least oxygenated areas. The same is seen in the other organs and situations selected by the bacillus in the body. It is always found in lymphatic areas, where the lymph is venous and the flow slow. It is found in lymphatic glands generally, in joints and in cutaneous areas where the flow of blood and lymph are slow. In the lymphatic glands the lymph, already venous and poor in oxygen as taken up at the capillaries, has become still more venous and is moving slowly. In the joints there is an almost extra-vascular area, and the same holds for the serous cavities such as those of the pleurae and peritoneum.

Amongst the organs affected with tubercle in a general infection are the liver and spleen, especially in the lymphatic Malpighian corpuscles of the latter organ. Both these organs are on a secondary system of capillaries supplied chiefly with very venous blood, although the blood supply is a very rich one.

If consideration be paid to the histological character of the tubercle mass as it grows, it is observable that it is a non-vascular mass, which perishes and caseates as it grows in size for lack of oxygen. It is probable that the giant multinucleated cells which it contains owe their form and development to lack of oxygen—at least that is the type of result which is seen when young growing cells are partially asphyxiated. The tubercle bacilli in a tubercle are in a situation where they are in a minimum concentration of oxygen. First of all they are in relationship to the lymphatic system, where outside them the oxygen supply is at its poorest; and then, in addition, they are separated from the lymph by a non-vascular area which increases in size as the tubercle grows. This is a favourable condition of growth, and when the tubercle breaks down the live bacteria are discharged to find new points at which to start more tubercle formation.

The well recognized treatment of tuberculous joints by the hyperaemic method of Bier is interesting from this point of view: the increased capillary pressure leads to increased lymph flow, and so does artificially for the joint what mitral stenosis does for the lung. The beneficial results upon lupus of the Finsen light treatment are also commonly ascribed to the local hyperaemia induced in the affected area. If this be so, it is an additional argument in favour of the view that increased oxygenation of the surrounding lymph is the beneficial agent, for the increased blood supply and blood pressure in the capillaries will lead to increased lymph flow, and hence to increased oxygenation of the affected area.

The treatment of phthisis by open-air methods and by high altitudes is also in accord with this view, upon which the effect obtained would in both cases be due to a common cause—namely, the more efficient ventilation of the lung, and, as a result, increase mechanically of the lymph flow, especially at the apices.

If this view be the correct one, the resistance to blood flow in the systemic circuit, and especially in the capillary portion of the peripheral circulation, ought to be kept low, so as to secure an easy return of the blood to the lungs, while, at the same time, the stimulating effect of the cool air in increasing pulmonary ventilation should be preserved to the utmost, and too much demand upon oxygen in the tissues by excessive work should be avoided. In other words, the patients should rest, or sleep, quite warmly in cool air, in that recumbent position which demands least oxygen for maintenance.

Cold in itself applied to the whole body will not be a benefit but an evil, since it will give no superior oxygen value at that part of the vascular system where it is demanded. This point is experimentally proved by a series of experiments which have recently been carried out by J. G. Thompson, M.B., Ch.B., and the author in collaboration.

Through the kindness of Sir Ronald Ross we were allowed the use of a large cold chamber supplied to

the Tropical School of this university by the generosity of Sir Edwin Durning-Lawrence, Bart. In this chamber we exposed a number of guinea-pigs which had been inoculated with tuberculosis to a temperature of 0° C. to −5° C., while another set were kept in air at ordinary temperatures, and a third set in an atmosphere enriched by oxygen. It was found that the tuberculous lesions developed most rapidly of all in the animals kept in the cold chamber. At that time we were anticipating the opposite result, but there is no doubt whatever in our minds as to the results of the experiments—namely, that keeping in a cold atmosphere does not by itself alone inhibit the growth of the tubercle bacillus, but rather the reverse.

What is, then, the mode of action of the fresh air treatment? There is nothing different in the chemistry of the air, and it would appear as if it administered a purely physical stimulus to increased pulmonary ventilation, due to the reflex nervous effects of the draughts of cold air playing upon the face.

The lassitude due to confinement in heated rooms, and its removal by fanning or movement of the air, have been explained in this way by Leonard Hill, who has shown that the accumulation of carbon dioxide in the air of occupied and heated rooms has nothing to do with the matter. The cooling by convection and evaporation from the skin of the face leads to increased respiration, and removes at once the feeling of lassitude and oppression.

It may next be asked in what way does increased pulmonary ventilation affect the tubercle bacillus, and it may be pointed out that it is not purely by increased uptake of oxygen, for, as has been stated above, animals left even in an atmosphere of oxygen in a resting condition have no more oxygen in their blood than when breathing air, and develop tubercle, as Adams has shown, just as rapidly as other animals in ordinary air.

The other effect is increased movement of the lungs, leading to increased lymph flow, and hence increased rate of oxygen access to the actual site of the tubercle.

It is this action which, in our opinion, gives the beneficial action of the fresh air treatment. Without such a stimulus a patient cannot by voluntary effort in any breathing exercises keep up for any length of time an increased ventilation; he becomes apnoeic, and the respiration diminishes automatically. For this reason some experimentation would appear necessary upon the subject of how best to administer the cool air in drafts or puffs over the face so as to keep up the stimulus most effectually and for the longest period, and as to what alternations are of most advantage in such administrations of fresh air.

The same effects are seen at work in the treatment of phthisis by high altitudes, where the oxygen supply is considerably less than at sea-level. Here the patient is compelled vigorously to ventilate the lungs in order to obtain sufficient oxygen, especially if any light exercise be taken. It is certainly not in this case an enrichment of oxygen. But the changed conditions are such as to give more oxygen locally where it is wanted—namely, in the lymphatic spaces of the lungs where the tubercle bacillus is situated. The over-ventilation alternately distending and collapsing the lung tissues sends a rapid stream of lymph along bearing more oxygen in solution past the tubercles. At a high altitude the cooler air also plays its part in inducing increased ventilation of the lung, and the two effects work together.

If this view be the correct one, the things to be aimed at in treating phthisis are such as will secure increased oxygenation at the site of the tuberculous lesion. This is obtainable by hyperaemia of the affected area and increased lymph flow at that part. In regard to the vascular circuit as a whole, the resistance should be so affected, if possible, that the pressure is increased in the pulmonary capillaries before the alveolar areas are reached, and the systemic circuit should be vaso-dilated, so as to send the blood to the pulmonary region as highly oxygenated as possible. Next, the ventilation in the lung should be increased as much as possible so as to cause a mechanical lymph flow. The body of the patient should be kept warm, and the face, if possible, subjected to rhythmic applications of cool air at such a rate as to stimulate respiration. Exercise should be indulged in to that extent to which it will somewhat stimulate ventilation without loading up the system with unoxidized products by making too great a demand upon oxidation, and this exercise possibly might best be in the open air, alternated with the cold air applications.

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EXPERIENCE OF THE DIORADIN TREATMENT.

A REPORT UPON TEN PATIENTS WHO RECEIVED THE TREATMENT.

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DIORADIN is a combination of chemical substances introduced for the treatment of tuberculous affections by Dr. Szendeffy, of Budapest.

An announcement of its alleged marvellous efficacy was made in the English lay press in May, 1911. Some allusions to its composition were made in the BRITISH MEDICAL JOURNAL at that time.

At the beginning of August Dr. Bernheim came to England. Dr. Bernheim is President of the French Department for the dealing with human tuberculosis and Chief Physician of the French antituberculosis dispensaries, and he came with credentials from the English Ambassador in Paris.

I had the pleasure of a long interview with Dr. Bernheim, and he very kindly provided me with a supply of the dioradin sufficient for the systematic treatment of ten patients.

He assured me that, though he had given several thousands of injections, he had never seen any ill effects, and he was enthusiastic with regard to the beneficial results. In these circumstances I felt that it was my duty to test the method of treatment.

Dioradin is said to contain peptonized iodine, menthol, ethereal solution of radium barium chloride, and almond oil.

It has been said that peptonized iodine is a compound unknown to chemists. Dr. Bernheim explained that the substance indicated is what we term iodo-albumose. Menthol is a stearoptene; it is somewhat loosely described by Dr. Szendeffy as a terpene, but terpenes and stearoptenes are not far apart chemically, both being derived from essential oils. The critic in the BRITISH MEDICAL JOURNAL said that he could not find any terpenes on analysis of dioradin, but recognized the presence of menthol. Radium barium chloride is soluble in ether, and is added in solution. The excipient is almond oil.

Dioradin is an oily fluid, smelling strongly of menthol, with a suggestion of iodoform. Dr. Bernheim told me, however, that iodoform was not present. Dr. Melville found at the Brompton Hospital that dioradin has some radio-activity.

Dioradin is administered by intramuscular injection with aseptic precautions. The dose is 1 c.cm., given daily for thirty days, followed by fifteen more injections on alternate days. If necessary, a further course may be given after a period of rest.

The contraindications to the use of the preparation are said to be disease of the heart or kidneys, but no record of ill results from its use in such cases is given in Dr. Bernheim's report. Symptoms of iodism and diarrhoea call for cessation of treatment, but again the report does not include any examples of these complications, and Dr. Bernheim told me that he had not met with any.

The cases were selected for the treatment with great care, and represented common types of the disease. In all the diagnosis of tuberculous infection was certain; in the 9 cases of pulmonary tuberculosis tubercle bacilli had been found in the sputum, and in the case of tuberculous peritonitis and epididymitis the clinical characters leave no room for doubt as to the diagnosis.

In none of the cases has any ill effect, either general or local, followed the injections. Several patients said that they could taste the injections for some time afterwards, and in one or two cases there was a slight increase of cough after a few days.

Dr. Bernheim gives ten conclusions as a result of his observations of the use of dioradin:

1. It destroys Koch's bacillus. He states that under treatment tubercle bacilli in the sputum become less numerous or disappear altogether.
2. It destroys streptococci.
3. It improves the general condition.
4. It increases the strength of the patient.
5. It increases the weight.
6. It continues to do good in spite of intercurrent affections.
7. It cures tuberculous adenitis.
8. It helps tuberculous laryngitis.
9. It acts locally in pulmonary tuberculosis, suppressing the cough, diminishing the sputum, and removes the fever and night sweats.
10. It regulates the gastric functions.

Cases Treated by Dioradin.

1. *Early Apyrexial Type (Ambulant Afebrile).*

Frank H., aged 19, an engineer's apprentice, was admitted to the Brompton Hospital on August 2nd, 1911.

History.—He had coughed up half a pint of blood in January, 1911, since then slight cough and expectoration had persisted, with three more slight attacks of haemoptysis.

On admission there were signs of infiltration of the apices of the upper and lower lobes of the right lung, with numerous crepitations. There was some impairment of resonance but no crepitation at the left apex. Tubercle bacilli were present in the sputum in large numbers.

The temperature varied between 97° and 98.8° F.

Daily injections of dioradin were commenced on August 5th. He complained at first that some headache followed the injections, but later there was no such complaint.

On August 28th he had gained 2½ lb.; there was practically no cough and no expectoration. The sputum was re-examined, and a few tubercle bacilli were found on the second slide.

The temperature for the last week remained at 97° F. The crepitations at the right apex were no longer audible.

On September 1st he was sent to the sanatorium at Frimley. While at Frimley two more series of injections of dioradin were given, each of fifteen injections on alternate days. He left Frimley in November; the cough persisted, but there was very little sputum. While at Frimley he gained 10 lb. in weight.

On January 5th, 1912, the sputum was examined and found to contain tubercle bacilli.

On May 22nd, 1912, his mother wrote that after leaving Frimley he appeared to be in the best of health and started work (engineering). After three weeks, pyrexia commenced and the sputum increased. He was given light work in the open air. He did not improve and had an attack of haemoptysis, and had been in bed for five weeks.

Recently he has wasted considerably. His temperature varies from 99° to slightly above 101°.

2. *Apyrexial Fibrous Type (Chronic Ambulant Afebrile.)*

James S., aged 39, carman. Admitted to the Brompton Hospital on August 4th.

History.—Haemoptysis (4 oz.) four years ago with a cough lasting about a week. No return of symptoms until April, 1911, since when he has had a cough with expectoration occasionally streaked with blood.

On admission there were signs of infiltration with fibrosis of both lobes of the left lung to the fifth rib in front and the angle of the scapula behind. There was also evidence of infiltration of the apex of the right upper lobe. Tubercle bacilli were present in the sputum on August 5th.

The temperature varied between 98° F. and 99° F., reaching 99° F. on six occasions between August 4th and 14th.

Daily injections of dioradin were commenced on August 14th.

Report on September 1st.—Fewer râles to be heard in the chest. Weight has increased from 9 st. 13 lb. to 10 st. 2½ lb. Cough and expectoration less; tubercle bacilli still present. Temperature usually subnormal, reaching 99° on August 16th and 17th, but not subsequently.

The first course of thirty daily injections of dioradin was completed on September 13th. On that date it was noted that the cough was troublesome, the temperature was steady, the weight had increased by 4¼ lb., and the physical signs were practically unchanged.

Between September 17th and October 12th he had a second course of fifteen injections given on alternate days.

On October 12th it was noted that the added sounds were no more audible at the right apex, though the signs in the left base remained as before. There had been a further gain of weight of 7¼ lb.

On October 17th a course of bacillary emulsion was started (0.00002 c.c.m. to 0.005 c.c.m.).

He left the hospital on November 1st. The notes record that there were no moist sounds audible over the right lung, but that the left lung was in the same condition as on admission. There was no cough; he felt very well and had gained 12 lb. while in the hospital. On January 1st he was still working; he had gained a further 6 lb. in weight, had very little cough or sputum. The sputum, however, still contained tubercle bacilli.

On May 22nd, 1912, he reported that he felt quite well, had no cough to speak of, and brought up very little phlegm.

He had not consulted a doctor since leaving the hospital, and had not taken any medicine.

He is not doing much work owing to the difficulty of obtaining any. A month ago he did a fortnight's hard work, and did not feel any the worse for it. Present weight, 12 st.—an increase of over 2 st. since August last.

3. *Apyrexial Fibrous Type (Ambulant Afebrile).*

Henry H., aged 38, railway guard. Admitted to the Brompton Hospital on June 21st, 1911.

History.—Cough and expectoration for eighteen months; no haemoptysis.

On admission there were signs of infiltration with some excavation and fibrosis of the upper and lower lobes on the right side and of the upper lobe on the left side.

Tubercle bacilli were present in the sputum on June 24th and on August 8th.

The temperature between June 21st and August 5th ranged between 97° F. and 99° F., reaching 99° F. on fourteen occasions. Daily injections of dioradin were commenced on August 5th.

Report on August 28th.—A few fine crackles to be heard at each apex. Between June 21st and August 7th (no special treatment) the weight had increased 10 lb.; since August 7th there had been a further gain of 3 lb.

Tubercle bacilli were present in sputum on September 2nd, but were scanty.

Between August 5th and September 1st the temperature ranged between 97° F. and 98.6° F., never reaching 99° F.

The patient said that he could taste the dioradin a few minutes after the injection, and he thought that it led to a slight increase of the cough.

Since his discharge it has not been found possible to get any information with regard to this patient. Letters elicit no reply.

4. *Apyrexial Fibrous Type (Ambulant Afebrile).*

Ernest W., aged 29, clerk. Admitted to the Brompton Hospital on June 20th, 1911.

History.—Cough, with expectoration and loss of weight persisting since December, 1909.

On admission there were signs of excavation with fibrosis at the apices of both lobes of the right lung, and of slight infiltration of the apex of the upper lobe of the left lung. Tubercle bacilli were found in the sputum on June 27th. From June 20th to August 5th the temperature ranged between 97° and 99° F., reaching or slightly exceeding 99° F. on twenty-three days. On August 5th, when the dioradin treatment was commenced, the cough and expectoration had diminished considerably; there were fewer rales audible in the chest, and the weight had increased 1½ lb.

Report on September 1st.—Cough somewhat increased; no râles heard in the chest. Weight had dropped 1 lb. Temperature 97° to 99° F., reached or exceeded 99° F. on fifteen days—that is, has not been steadied by the injections.

Tubercle bacilli were present in sputum on September 2nd. After 30 daily injections a second course of 15 injections on alternate days was given. On September 18th he was sent to Frimley.

January 20th, 1912. The patient is still at Frimley; he has had to be confined to bed on several occasions on account of pyrexia. The cough was much less, and only troublesome in the early morning; the sputum was reduced to about an ounce and a half per diem. The weight had increased another pound. Tubercle bacilli present in the sputum on January 18th.

February 9th, 1912. He left Frimley. The temperature was normal; sputum about two ounces per diem; weight increased two more pounds; few added sounds were heard over the lungs.

May 22nd, 1912. He reported that he had been fairly well since leaving Frimley, but that he had been feeling seedy for the last few days. The morning temperature varied between 97.2° and 98°, and the evening temperature between 98° and 99°. The sputum was still about one and a half ounces daily. The weight had dropped about 10 lb. The cough had been troublesome, especially after meals, and there had been some vomiting in the evening.

5. *Apyrexial, but with Ready Pyrexial Response (Resting Afebrile Ambulant Febrile).*

Annie E., aged 27. Admitted to the Brompton Hospital on July 28th.

History.—Cough, with some expectoration, since 1909. No haemoptysis.

On admission there were signs of infiltration of both lobes of the left lung, as low as the sixth rib in front and the angle of the scapula behind. There was also some infiltration of the apex of the right upper lobe.

Tubercle bacilli were found in the sputum on July 30th. From July 28th to August 5th the temperature ranged from 98° F. to 99.6° F. Treatment commenced on August 5th.

Report on September 1st.—Cough somewhat increased by the injections, which seemed also to give rise to some giddiness. Weight 1 lb. less than on admission. Temperature 97.6° to 99° F., rather lower than before the injections were given, but is still irregular.

Tubercle bacilli present in sputum on August 15th and September 1st. After the completion of the first course of thirty daily injections a second course of fifteen injections on alternate days was given.

On September 27th the temperature was still slightly irregular, and there was still some cough. The signs in the chest had not altered since admission to the hospital.

The second course was finished on October 4th. After its cessation the temperature became steadier.

She was discharged on October 23rd. The last note records that the right side of the chest was dry, and the left side drier than on admission. Tubercle bacilli were present in the sputum on October 22nd.

Total gain of weight while in hospital was 4½ lb. On January 18th she reported that the cough was worse, and that she had been confined to the house for some weeks; there was a large quantity of sputum, and tubercle bacilli were present. The temperature rose to 100° F. each evening.

Since then letters have not elicited any reply.

6. *Apyrexial, but with Ready Pyrexial Response (Resting Afebrile, Ambulant Febrile).*

Arthur F., aged 19, potter. Admitted to the Brompton Hospital on August 11th.

History.—Cough and expectoration since April, 1911. No haemoptysis. Recently has been living in a cottage in the country and has gained weight.

On admission there was evidence of infiltration of upper and lower lobes of the right lung and of the apex of the upper lobe of the left lung.

Tubercle bacilli were present in the sputum on August 18th. The temperature up to August 20th ranged between 98° F. and 99.8° F.

Daily injections of dioradin were commenced on August 20th.

Report on September 1st.—Physical signs unchanged. Weight gained since admission, 9¾ lb. Tubercle bacilli present in sputum on September 1st. Temperature more irregular since injections were commenced, varying from 98° F. to 100° F. There were no symptoms referable to the injections.

The first course of injections was finished on September 20th. The moist sounds audible in the chest were then fewer than on admission, and the weight had increased 5¾ lb.

A second course of fifteen injections on alternate days was then commenced. This was completed on October 20th. On that date the physical signs remained unchanged; the weight had increased by 3½ lb.; the cough was still troublesome.

He left the hospital on November 10th, having gained another ¾ lb., a total gain of 9¾ lb. since admission. On January 18th, 1912, he reported that the cough was about the same as on discharge, but that the sputum had increased. He had lost 4½ lb. in weight. Tubercle bacilli were still present in the sputum. On May 22nd, 1912, the cough was described as "racking," the sputum had increased, and the weight had dropped 12½ lb. since January.

7. *Pyrexial Type (Resting Febrile).*

Elsie H., aged 19, saleswoman. Admitted to the Brompton Hospital on July 7th, 1911.

History.—Cough and expectoration since January, 1911. Worse for the past month. Sputum occasionally streaked with blood. Father died of pulmonary tuberculosis two years ago; mother tuberculous (Case 8).

On admission there were signs of infiltration of both lobes of the left lung and of the upper lobe of the right lung.

Tubercle bacilli were present in the sputum on July 10th. From July 10th to August 10th the temperature ranged from 98.6° F. to 100° F., 101° F. or 102° F., and the weight fell 4 lb.

On August 10th the physical signs were as on admission.

Daily injections of dioradin were commenced on August 10th. Absolute rest, and Lees's inhalation also.

Report on September 1st.—The physical signs were unchanged. At first the injections caused some headache, but not lately. The cough was easier and she felt better.

Tubercle bacilli were present in the sputum on September 1st. The temperature during the course ranged from 99° F. to 100° F., 101° F. and 102° F.; the injection seemed to have no influence on the pyrexia.

The course of thirty injections was finished on September 8th. During the course the temperature rose frequently to 102° F.; after the last injection the temperature began to fall gradually, reaching normal at about September 16th; on September 18th absolute rest ceased, and on September 25th she got up for one hour.

The disease remained afebrile until she left the hospital for Ventnor on November 27th. While in the hospital she lost 11 lb. in weight, though during the last two months—that is, after the cessation of the dioradin—she gained 3 lb. Tubercle bacilli were present on November 25th.

On January 12th a report from Ventnor said that she was keeping pretty well, though the cough was troublesome.

She remained at Ventnor (St. Catherine's) until March 30th. Since then she has been in the country with friends. The cough is troublesome, and on May 22nd, 1912, she weighed the same as on admission to Brompton. She feels very well, but owing to the cough is unable to do any business.

8. *Pyrexial Type (Resting Febrile).*

Emma H., aged 42, widow. Admitted to the Brompton Hospital on July 14th.

History.—Cough and expectoration since June, 1909. In Victoria Park hospital in 1909, improved. Getting worse since June, 1911. Husband died of pulmonary tuberculosis in March, 1909. Daughter has pulmonary tuberculosis (Case 7).

On admission there were signs of infiltration without softening of both lobes of the left lung and of the upper and lower lobes of the right lung, with some crepitation beneath the right clavicle.

Tubercle bacilli were present in the sputum on July 17th. From July 14th to August 10th the temperature ranged from 98.4° F. to 100° F. or 101° F., and during this period she lost 2½ lb. in weight. Daily injections of dioradin were commenced on August 10th.

Report on September 1st.—Physical signs unchanged. Tubercle bacilli present in sputum on September 1st. Weight stationary. At first the injections caused an increase of the cough and some headache. The cough is still troublesome. The temperature has been somewhat higher since the injections were commenced, seldom reaching normal.

The thirtieth injection was given on September 8th. After cessation of the injections the temperature became somewhat steadier. Signs of excavation gradually developed in the left lung, and on September 27th a definite diagnosis of cavity in the left lung was made. The case now was afebrile when resting, but febrile when the patient got up.

On October 16th it was decided to produce an artificial pneumothorax. Between that date and May 22nd the operation was repeated eight times, 500 to 1,200 c.cm. of nitrogen being introduced on each occasion. The case soon became afebrile; weight increased, and the cough diminished.

Tubercle bacilli were found in the sputum on January 12th, 1912.

On May 22nd the temperature had been normal for weeks. The cough was much less, and the sputum was reduced to 1 oz. per diem. She weighed 10 lb. more than on admission. There were signs of a left hydro-pneumothorax.

Tubercle bacilli were present in the sputum on May 6th. The patient is now at Frimley.

9. *Chronic Fibro-caseous Type (Resting Febrile).*

John McD., aged 35, a labourer, was admitted on June 21st, 1911.

History.—He had had a winter cough for years; this had not disappeared during the last summer. There was free expectoration, but no haemoptysis. There were signs of excavation in the upper part of both lobes of the right lung and of infiltration almost to the base, and also of infiltration of the apices of both lobes on the left side.

The temperature was irregular, rising at first to 102° in the evening, and falling to normal in the morning. After a few days it became steadier, generally reaching 99° in the evening.

During the first month he improved considerably, and at the end no moist sounds were heard over the left lung. Tubercle bacilli were present in the sputum. On August 5th a course of daily injections of dioradin was commenced. After the commencement of the injections the temperature became, and continued, subnormal. The cough remained rather troublesome, and on September 2nd the sputum still contained tubercle bacilli.

Before the course began he had gained 3¾ lb.; afterwards he gained 5¾ lb. more.

A second course of injections on alternate days was commenced on September 7th, but only six injections were given, because he discharged himself from the hospital. There were fewer moist sounds audible in the chest than on admission.

Two days after reaching home he was taken ill with severe pains in the side and high fever. He died on November 6th.

10. *Tuberculous Epididymitis and Peritonitis.*

Reginald T., aged 15, double tuberculous epididymitis and ascitic form of tuberculous peritonitis. No evidence of pulmonary tuberculosis.

A course of injections of dioradin was given between August 14th and September 13th. The temperature, which was intermittent before the course began, swinging from 97° to 100°, was not affected by the injections. The patient could taste the dioradin shortly after each injection, otherwise no immediate or remote effect could be discovered. The local signs of disease showed no change.

On October 2nd laparotomy was performed and 62 oz. of fluid evacuated. After the operation he began to gain weight and left the hospital weighing 25 lb. more than on admission.

On January 17th, 1912, he was found to be not so well—the abdomen had swollen again and there was some albuminuria, arousing suspicion of amyloid disease.

On May 22nd, 1912, his father reported that his general condition had improved in strength and energy. He was able to walk more upright and the legs were less swollen. The intestinal symptoms were less troublesome.

Conclusions.

The claims made on behalf of dioradin may be reviewed seriatim:

1. In one case of pulmonary tuberculosis (No. 1) the tubercle bacilli, which were numerous in the sputum on admission, were difficult to find at the end of a month, but were still present five months later.

In the other eight pulmonary cases the tubercle bacilli were still present in the sputum so long as the patients remained under observation.

2. The action on streptococci was not tested. One patient suffered from acne which was not benefited by the treatment.

3. In six cases improvement was recorded during the treatment. In one of these the improvement has been

maintained (No. 2); four relapsed later (Nos. 1, 4, 5. 6), and of one (No. 3) no subsequent report has been obtained.

In one case there was slight improvement during treatment (No. 9), but the patient died shortly after leaving the hospital.

In three cases (Nos. 7, 8, 10) there was no obvious improvement during the continuance of the treatment.

In none of the cases was there evidence of complete arrest of the disease.

4. The strength improved with the general condition, and the remarks under the last heading may be applied here.

5. Seven patients gained weight during the treatment; one (No. 2) has continued to do so; three lost weight (Nos. 1, 4, and 6) subsequently, and of two there is no further report.

Two patients (7 and 8) lost weight during the treatment, but gained weight subsequently. In the case of tuberculous peritonitis there was a gain in weight after the operation.

6. None of the cases developed intercurrent affections, and this assertion could not be tested.

7. No case of tuberculous adenitis was treated; the case of tuberculous epididymitis and peritonitis did not seem to be influenced by the treatment.

8. No case of tuberculous laryngitis was treated.

9. Evidence of local action was difficult to find. In Case 3 the patient said that he could taste the dioradin a few minutes after the injection, and thought that it slightly increased the cough. In Case 8 it seemed to increase the cough.

In other cases the cough and sputum diminished. In Cases 7 and 8 there was no reduction of the pyrexia during the treatment, but the cases became afebrile after its cessation. In none of the cases were night sweats a prominent feature.

10. It was not possible to recognize any effect, good or bad, upon the gastric functions.

It does not seem to me that any of the cases, though they were treated accurately in accordance with the instructions, can be quoted to justify any claims for the therapeutic efficacy of dioradin.

I have to thank Dr. Hartley for permission to make use of the cases which were under his care, and Dr. Tattersall for his assistance in giving the injections and following up the cases.

ANAESTHESIA BY THE INTRATRACHEAL INSUFFLATION OF ETHER.*

BY

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In the year 1660 Hooke showed that if the mouth of a bellows was tied into an animal's trachea, the chest walls removed, and the lungs extensively punctured, it was possible by inflating the lungs to keep the animal alive in the absence of efficient respiratory movement. Further, in birds whose bones are air sacs in communication with the trachea, it is possible to restore animation after both sides of the thorax had been opened by forcing a draught of air through one of the long bones.

It remained, however, for Meltzer and Auer about eighteen months ago to show that if air is forced under pressure through a tube passed through the glottis without entirely occluding it, life could be maintained without respiratory movements either when these movements were paralysed by curare or rendered ineffectual by opening both sides of the chest.

Though the movements of breathing change the air in the trachea and larger bronchi, the real respiration is an interchange of gases by diffusion. The partial pressure of oxygen in the trachea is greater than the partial pressure in the alveoli, which is again greater than the partial pressure of oxygen in the tissues. For carbon dioxide the exact reverse holds good. Therefore there is always a diffusion of oxygen from the air to the tissues, and a corresponding diffusion of carbon dioxide from the tissues to the atmosphere.

Now if we can supply a continuous stream of air under pressure at the lower end of the trachea, the diffusion of oxygen will go on without respiratory movements. A catheter about half the size of the glottis is passed down the trachea until it reaches the bifurcation. The catheter is connected with a forced draught of air from 10 to 40 mm. Hg pressure, the air having previously been warmed, moistened, and etherized. The excess of air escapes between the catheter and the glottis.

In the experimental surgical laboratories, principally in America, almost incredible operations have been done on dogs by Carrel, Guthrie, Crile, Meltzer and others by using this method of intratracheal insufflation of etherized air—operations such as the complete removal of one or more lobes of the lung, complete division and suture of the thoracic oesophagus, and complete division and suture of the transverse arch of the aorta. To enable the latter to be done a temporary anastomosis was established between the left ventricle and descending aorta, in order to keep the nerve cells of the brain and cord alive during the stitching.

It is to Elsberg of New York that we owe the first apparatus for use on the human subject, and the instrument here illustrated is the Elsberg model, with some slight modifications of my own.

Though invented primarily for use in thoracic surgery and to displace the positive and negative pressure cabinets of Sauerbruch and Meyer, in practice it has been found so useful in other respects that, as a means of maintaining anaesthesia in difficult cases, it possesses advantages found in no other method. Its advantages are:

1. That the current of air at the glottis is outwards. The air enters through the catheter and escapes between the catheter and the opening of the glottis. Against this current no blood, mucus, or vomit can possibly find its way into the air passages, so that in difficult mouth, tongue, jaw, and goitre operations, or cases of intestinal obstruction, there is not the slightest danger of any foreign material gaining entrance to the lungs.

2. That in mouth and neck operations the surgeon is in no way interfered with by the hands of the anaesthetist, for a tube alone connects the patient with the apparatus, which may therefore be placed at any distance from the operating table.

3. That in those diseases where respiration fails life can still be maintained. It is possible to give a dog twice the lethal dose of strychnine and yet keep him alive in spite of the spasm of the respiratory muscles. In a case of myasthenia gravis, reported by Elsberg, where respiration failed on account of paralysis of the respiratory muscles, a patient was kept alive for some twelve hours after all normal respiratory movements had ceased. There is no doubt that in the future, whenever available, this method will replace the present system of artificial respiration by manual means, especially in cases of poisoning and tetanus.

4. That chest surgery now becomes practicable in the absence of either a Sauerbruch or Meyer cabinet.

The apparatus consists of a ¾ horse power electric motor, A, actuating a blower, B, rotating it about 500 times per minute. This blower is a "Hypress" blower, size 00, and is really a vacuum cleaner rotating the wrong way. It produces a blast, not a vacuum. The air from the blower is then passed into the chamber C, where it is freed from its oil and dust by being passed through water. The air is then carried on to the ether chamber, D. This is what motorists would call a surface carburettor. By means of the three taps gearing to one another and connected with the pointer, the air either passes entirely over the surface of the ether when the pointer is at "full," or misses the ether altogether when the pointer is at "0." At any intermediate position only a portion of the air is etherized, the amount depending on the position of the pointer. As a rule, to maintain anaesthesia it should be placed about half-way.

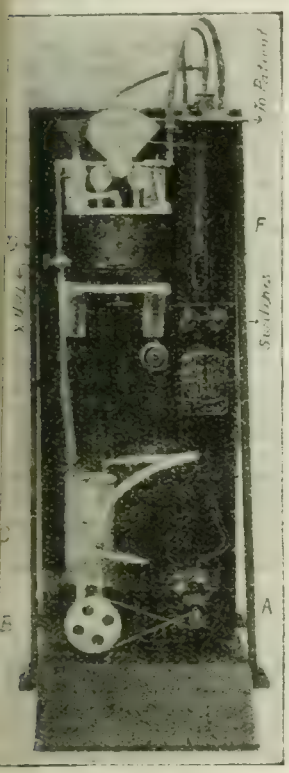
The etherized air from D is warmed and moistened by passing through a coil of lead tubing placed in warm water and containing in the circuit a moistened piece of gauze. This chamber E is kept warm by means of a small electric "hot-plate" controlled by a switch. A manometer and a thermometer are now placed in the

* Read at the Liverpool Medical Institution, April 25th, 1912.

cuit. so that it is possible to see at what pressure and mperature the air enters the lungs.

The patient having been anaesthetized in the ordinary ay. the tracheal catheter is passed. This is an ordinary udé catheter of a size from 18 to 26 French. It should half the diameter of the glottis, and for adult males a o. 22 is suitable.

This catheter is passed by direct laryngoscopy, a hevalier Jackson's instrument, with distal illumination, being used. It is done in a few seconds. If the catheter is too soft a stylet makes its introduction easy. On the catheter are two marks. 12 and 26 cm. from the tip, for it has been found that these distances are the usual distances to the glottis and bifurcation of the trachea respectively from the incisor teeth. As a rule the distance to the glottis is just about half that to the bifurcation, so that if the distance to the glottis is noted the catheter must be passed just as much again in order that its tip should be in the right place. In order to prevent the catheter from being bitten it must be protected by a "bit." I have found that a Smith's gag without the tongue depressor very useful for this purpose, and to prevent the catheter from being coughed out it is attached to this gag by a small bulldog forceps which does not compress its lumen. The catheter is now connected with the current of air and the ether urned on. In order to mainta'n efficient surgical anaesthesia, I find that the pointer should be about half way.



Front view.

The reflex of breathing still goes on, but the movements are light. In deep anaesthesia they are sometimes very light; still, the internal respiration goes on, and the patient's colour remains a healthy pink. The depth of the anaesthesia is judged by the corneal reflex and the reaction to light.

As soon as the operation is finished pure air is turned on, and the ether, so to speak, flushed out. This flushing with air is said by most observers to make the recovery time from anaesthesia very short, and in some of our cases the patients were able to talk rationally within half an hour after the end of the operation.

If there is any cyanosis it means that the catheter is too large, and this is generally also shown by the fact that the manometer reading is too high. A smaller tube will suffice to put this right. As a rule the manometer reading should be from 10 to 40 mm. Hg. This pressure of course should not be absolutely continuous, for this would lead to embarrassment of the heart by not allowing the respiratory pump action on the venous circulation in the thorax, so the anaesthetist three or four times a minute allows the pressure to drop to zero by opening the tap x. In Dr. Janeway's instrument, which I had the pleasure of seeing in New York, this safety valve action is automatically controlled so as to be performed a definite number of times per minute.

The working of the apparatus is very simple. The anaesthetist watches the reflexes and alters his pointer accordingly, whilst two or three times a minute he opens the safety tap to reduce the pressure to zero. If the temperature of the air entering the lungs drops or rises, then a switch operating the electric heater will put it right again, and if the pressure is not correct, then the mere turning of the tap on the blower will raise or lower the pressure at will.



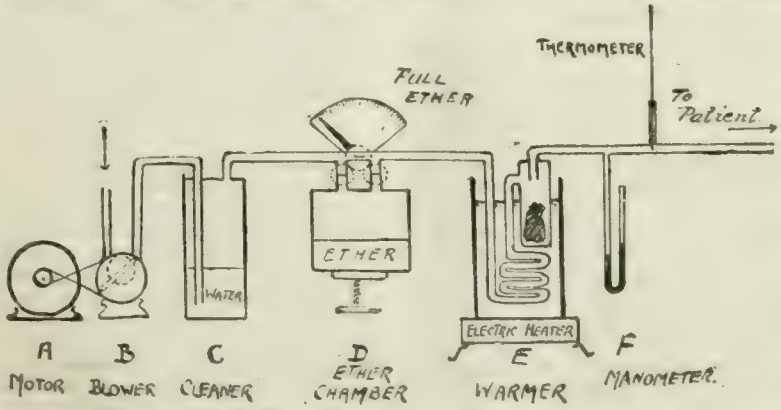
Back view.

In a case of malignant disease of the floor of the mouth, in which 4 in. of the lower jaw had to be removed, the anaesthesia by this apparatus was perfect and uninterrupted, and not the slightest anxiety was felt about blood getting into the pharynx.

In goitre operations it answers admirably. Rarely, if ever, under open ether are these operations unattended by some cyanosis, especially when the trachea is interfered with, but in the two goitre operations in which I have used this apparatus the colour of the patients was excellent during the whole operation.

In both these cases of goitre there was huskiness for a day or two after the operation, but on no other occasion has this after-effect been observed.

I was able to contrast the effect of open ether with the insufflation method in the case of an old man with enlarged prostate. After the preliminary suprapubic cystotomy performed under open ether the patient had bronchitis for some five days, whereas after the second operation, a much longer procedure, performed with insufflation, not the slightest sign of bronchitis was noticeable. Indeed, on passing the tracheal catheter the blast of air cleansed his air passages by blowing a large quantity of sputum into his mouth.



In abdominal operations and in hernia the relaxation of the abdominal muscles is complete, and the reaction time is quicker—that is, if the surgeon wishes the abdominal walls more lax, this is procured in a few seconds by turning on more ether.

So far as a small experience of 25 cases can go, the result of using this apparatus is that patients recover more quickly, the after-effects are lessened, vomiting has only been noticed once, and from the surgeon's point of view the anaesthesia is perfect. Further, the anaesthetist has a greater sense of security, for if at any time he thinks that artificial respiration may be necessary, he has the apparatus ready to hand, and has merely to turn the pointer from "ether" to "air."

My thanks are due to Dr. Janeway, of New York, for

procuring me the "hypress" blower, and for many valuable hints; to Mr. Nesbitt, of the Thompson Yates Laboratories, for making my instrument; and to my colleagues, Messrs. Thelwall Thomas, Bickersteth, Litler Jones, F. Jeans, and H. Woolfenden, for allowing me to anaesthetize some of their patients.

ACUTE EPIPHYSITIS.

BY

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THE cases of which I propose to speak are not strictly cases of acute epiphysitis, but cases of acute juxta-epiphyseal diaphysitis—that is to say, cases of acute osteomyelitis due to pyogenic organisms, and commencing in the soft vascular line where new bone is replacing cartilage, a line which is anatomically part of the diaphysis.

I have chosen this title because, in the first place, this group of cases forms a definite clinical entity quite distinct from the other groups of osteomyelitis, with which I do not intend to deal, and secondly, because acute juxta-epiphyseal diaphysitis, the only accurate name I know for the disease, is too much of a mouthful for everyday use. The term "osteomyelitis" is too vague, for, though it includes this group, it also includes many other conditions.

Acute pyogenic inflammation of the epiphysis itself is so rare that it may be neglected. In the ten years 1901 to 1910 (inclusive) there is, judging from the notes, only one case that might have started in the epiphysis (and this case is doubtful) out of 309 cases of acute epiphysitis. The term, then, though unscientific, is convenient, and in using it I am following the late Mr. Barnard,[1] who in 1903 read a paper under the title "The Relation of Trauma to Acute Epiphysitis."

CAUSATION.

The exciting cause is a pyogenic organism. The organism is usually *Staphylococcus aureus*. Trendel,[2] when dealing with osteomyelitis in general, found staphylococcus, streptococcus, and pneumococcus. In this series we find corresponding results, as follows:

Bacteriological Results in 49 Recent Cases.

	Cases.
Staphylococcus was found in	38
Type not stated	5
Staphylococcus aureus ,, ...	28
Staphylococcus citreus ,, ...	2
Staphylococcus albus ,, ...	3
Streptococcus	7
Mixed streptococcus and staphylococcus was found in	2
Pneumococcus was found in	2

That is, 77 per cent. staphylococcal.

The organisms are carried to the bone by the blood stream. The route by which they reach the blood stream is somewhat debated. Thompson and Miles[3] state that they may get in through septic sores, but that probably they are more often due to sore throats and other infections of the mucous membranes. Dolbey[4] regards sore throats as the commonest source of entry of the organism.

I found a note of a possible source of infection in only 44 cases, but these 44 amounted to 79 per cent. of the cases where any note as to the presence or absence of a source of infection was made. In these cases a septic condition of the skin was by far the most common; there were 36 cases of septic foci in the skin, most of them septic sores, 1 a septic burn; 1 case, in an infant of 2 weeks old, was apparently due to umbilical sepsis; 1 was a boil on the neck, and another multiple superficial abscesses. The other foci found were 2 cases of whitlow, 3 of otorrhoea, and 6 of tonsillitis; but 3 of these latter had also skin sepsis.

It would appear, therefore, that the organisms usually reach the blood by the skin—a conclusion borne out by the predominance of staphylococci as the causative organisms, for if the tonsils were the common site of entrance streptococcal cases should predominate, for they are the organisms usually found in cases of septic tonsillitis. Again, if the intestinal mucosa be the site of entry, why is the *B. coli communis* so rarely the causative organism? Moreover, acute epiphysitis is very much more common in the poorer classes than in the well-to-do. This is usually explained by saying that the better classes are better nourished; but the disease usually attacks healthy-looking, well-nourished children. The children of the better classes play, and are probably nearly as much exposed to injury as the children of the poor; so that the trauma will not, I think, explain this greater frequency in the poor. Septic sores are, however, very much rarer in the well-to-do classes, and, moreover, if children of this class have a more serious septic skin lesion they are so nursed and coddled that they run little risk of trauma, the great predisposing cause. This greater frequency of acute epiphysitis in the poor, then, may be regarded as confirmatory evidence that the source of infection is a septic skin lesion in the great majority of cases.

The first theory that occurs to explain why the organisms in the blood should settle in the juxta-epiphyseal region of a bone and set up acute inflammation there, is that the disease is due to a specific organism which has a predilection for newly formed bone. This view Dolbey[4] adopted in 1906. It is, however, negatived by the fact that several varieties of organism are found, varying presumably with the source of infection. It may be objected that in the cases where organisms other than *Staphylococcus aureus* are found the disease is atypical, and does not truly belong to this group. This is, however, not the case; for in all my streptococcal and pneumococcal cases the notes would lead one to suppose that the cases were quite typical and genuine. There remains one other possibility—that the staphylococci and streptococci are secondary infections, the real causative organism having so far eluded us.

If we examine the known etiological facts, we find as follows:

Sex.

The disease is more common in males than in females. Thompson and Miles[3] give the proportion as 3 to 1. In the series under consideration there were 217 males and 92 females, or 7 to 3.

Age.

Trendel[2] and Moore[5] state that more than half the cases occur between 13 and 17 years. In the cases here considered, 70 per cent. occur between 7 and 17. The age incidence is quite different in the two sexes, a point I shall have to speak of again in relation to trauma. It is often stated that in young infants the disease occurs chiefly in congenital syphilities. I have, however, found little evidence that this is so, and take the view that congenital syphilis is a negligible factor in the etiology of this condition. Albee[6] states that the scrofulous and rheumatic dispositions predispose. I have already stated that this is not true of the scrofulous, as the disease usually appears in healthy subjects, and here I am in agreement with Dolbey.[4] With regard to the rheumatic disposition, I find that in only 3 cases out of 309 is a previous history of rheumatism given.

Trauma.

Trauma has long been recognized as the chief predisposing cause in this condition. I find that although only 30 per cent. of cases gave a history of trauma, if only those cases were taken in which a definite note was made as to trauma, 61 per cent. gave a history of trauma. Trauma of some slight degree is so common in children that the number of cases giving a history of trauma is largely a matter of chance. Nevertheless, that trauma is a very important predisposing cause is shown by the sex and age incidence of the disease.

If trauma be the cause of the greater frequency of the disease in males, as is generally stated, the difference in sex incidence should be *nil* up to 3 years old, up to which age both sexes are equally liable to trauma, and should become more marked as the cases grow older. This is so; for in ten years at this hospital there were 53 cases under 3 years of age, and of these 27 were males and 26 females. Again, boys are most liable to trauma between 7 and 17, and 70 per cent. of cases in them occurred between these ages. Whereas in girls, 69 per cent. of cases occurred before 10 years of age. So that in both sexes the disease is most common when trauma is most common.

Again, if we take the incidence of the disease in limbs we get presumptive evidence of trauma; for in the first few years of life, when the child is practically a quadruped, crawling and falling about on arms and legs equally, the upper limb is affected twenty-five and the lower twenty-six times, whereas in the later years the lower limbs provide the great majority of cases. The tibia and femur alone giving 77 per cent. of the cases between twelve and fifteen.

Admitting, then, that trauma is an important etiological factor, how does it act?

Ollier[7] pointed out that the injuries to the epiphysis may be divided into para-epiphyseal strains, where the epiphysis is partially separated, and para-epiphyseal strains, where the epiphysis is completely separated, but not displaced, and the well-known condition of separated epiphysis, where there is also displacement. As he pointed out, any trauma (for example, a twist) is most likely to affect chiefly the weakest part of the limb—namely, the soft, newly-formed bone. The epiphysis being injured there is a little effusion of blood, a little inflammatory reaction in the stasis of the blood stream, and any organisms circulating in the blood and reaching such a spot will have time to grow and multiply and set up an acute inflammation.

The way in which trauma acts was very lucidly explained by Mr. Barnard[1] in his paper in 1903. He pointed out the gradations of the condition, from the simple para-epiphyseal strain or strain, with its painful spot, but no deformity, and its aching for a few days, but no infection and no pyrexia, to the similar condition with mild infection (or weak resistance on the patient's part) with its symptoms slightly more marked, with pyrexia for a few days, and lastly the typical acute epiphysitis.

The first group of cases we all see, but as a rule they are not recognized unless there is some slight displacement, as in Schaltter's disease. The second group we also often see. The cases which come in as "? epiphysitis," which are watched, and which recover without operative interference, and are then diagnosed as non-articular rheumatism, nearly all, I believe, belong to this group. That this is so is strongly suggested by cases such as the following:

A boy, aged 8, knocked his ankle in July, and had slight pain in it, which made him limp. He was seen at two other hospitals, and the ankle was painted with iodine. In December the ankle began to be painful and swollen, and he came to the London Hospital, and was admitted under Mr. Milne, who opened the lower end of his tibia, and found a localized abscess. The pus from this abscess yielded staphylococci on cultivation.

Nor is this case an isolated example. I have in the course of looking up the notes of acute cases accidentally come across the notes of two cases almost identical with that just quoted.

Trauma, then, will explain why acute epiphysitis always attacks the juxta-epiphyseal regions of bones without any necessity for a specific organism.

It would seem, however, that all cases of acute epiphysitis cannot be put down to trauma. If trauma be such an important causal agent, why do we never see a case of acute epiphysitis following on a separated epiphysis? There were no cases in my 309, so far as I could tell from the notes. Mr. Barnard met this objection by pointing out that acute epiphysitis does, though very rarely, occur in separated epiphyses. Now we see all the cases of separated epiphysis, but only a few of the cases of sprains and strains. In other words, acute epiphysitis is a complication of separated epiphysis, as of any other trauma, but separated epiphysis is so much less common than minor degrees of trauma, that, as one would expect, acute epiphysitis is much less common in the former group.

That this explanation is entirely satisfactory is very doubtful; for if trauma were the all-important cause, then the common sites of acute epiphysitis and of separated epiphysis should coincide. They do not, for it is found that acute epiphysitis is most common in the upper end of the tibia and lower end of the femur; whereas separated epiphysis is most common in the upper end of the femur. Acute epiphysitis is more common in the upper end of the humerus, whereas the lower is that most often separated. In the radius the lower epiphysis is both most often separated and most often inflamed; but separated epiphysis is rare in the radius as compared with the dislocated elbow, which for anatomical reasons takes the place of the separated epiphysis of radius and ulna. Moreover, if cases of over 16 be taken, an age when one would expect all the patients to remember any trauma severe enough to injure an epiphysis, the percentage of history of injury rises, but only up to 65 per cent.

Both Ollier and Barnard admitted that all cases are not due to trauma. Ollier suggested "chill," and Mr. Barnard lowered resistance in the patient, as the other causal factor. Albee[6] states that:

> Spontaneous inflammations of the bones occupy seats of election, corresponding to the points of greatest activity of physiological development. The morbid disposition is, all other things being equal, in direct ratio to the activity of proliferation of anatomical elements.

If we take the lower limb we find the disease most common at the upper epiphysis of the tibia, and the lower of the femur, the most active epiphyses. If we take the upper limb we find the disease most common in the upper epiphysis of the humerus, again the most active epiphysis.

Thompson and Miles attribute the incidence of acute inflammation at the ends of bones, in part at least, to the arrangement of the vessels. The arteries run in the long axis of the bone and end in capillary loops just under the epiphyseal cartilage. It is, however, hard to see why micro-organisms should stick in these loops, and, moreover, this does not account for the disease being limited to the growing age, for the arteries and capillaries retain very much the same arrangement in adult life.

In growing bone vessels spring from these loops and grow vertically upward for a space, then join to form fresh loops. These vessels must at some period form blind alleys into which organisms may easily be driven and entrapped. This is, I believe, the reason why acute inflammation always attacks the juxta-epiphyseal line. The bigger the epiphysis and the more active the growth the more of these bacterial traps there will be and the greater the liability to acute epiphysitis, which explains largely the bone incidence. Now organisms would in this way be entrapped only for a short time and when the loop is completed be driven on again. Unless the organisms be numerous or virulent the patient escapes epiphysitis; but if trauma occurs, with perhaps some effusion of blood and stasis of the blood stream, even a single organism, perhaps, placed at such an advantage may grow and multiply and cause a fulminating disease. It is noticeable that in the bones more rarely affected there is almost always a history of trauma. The disease, then, may be due to any pyogenic organism (generally the staphylococcus, because the site of entry is usually the skin) which settles in the juxta-epiphyseal line for purely mechanical reasons dependent on the anatomy of growing bone. Trauma is an important predisposing cause, but it is by no means essential.

Diagnosis.

There is no need to go fully into the clinical aspect of these cases, every one is so familiar with them. The sudden onset of pain near one joint, the bright eyes and flushed face, the rigors (or, often in babies, fits), the delirium at night, and occasional vomiting, are all familiar features.

The difficulties in diagnosis depend upon the condition of the patient when seen. If there is pus under the periosteum in any large amount, there will be a red, tender, fluctuating swelling. Here the condition has to be distinguished from cellulitis and abscess. If the patient is very ill, with a history of delirium and rigors, or if there is fluid (not necessarily pus) in one of the neighbouring joints, the diagnosis of acute epiphysitis is fairly safe. Very often, however, it is impossible to make a certain diagnosis until the abscess is opened, when the introduction of the finger and the feeling of bare bone immediately settles the diagnosis.

Whether this superficial swelling, caused by pus under the periosteum, will appear early or late depends on whether the initial lesion is peripheral or central. Mr. Barnard aptly compared the site of the initial lesion to the positions on a target. If the initial focus be in the position known as "an outer," the periosteum will be early and chiefly affected; if a "bull's-eye," the early spread will be down the Howship's vertical lacunae, and the medulla will be early and chiefly affected; if a

"magpie," the spread will be about equally distributed between medulla and periosteum. The compact bone is of course affected in all these positions, but owing to its greater density spread does not occur so rapidly through it.

Even when there is no pus under the periosteum, only increased vascularity and thickening, there may be oedema and redness over the affected part. The fluid in the neighbouring joints is often clear, and proves sterile on cultivation.

Even when the joint is full of pus, as it often is, this is usually a secondary infection of a clear effusion of this kind. Sometimes it is due to direct spread, but this is rare, because the thick, comparatively avascular epiphysis forms a formidable barrier to even the most virulent organism; spread under the periosteum, and so under the ligaments into the joint, though more common, is rare, because the periosteum of the epiphysis is very firmly bound down. Direct spread through the epiphysis is only noted twice (apart from the hip) in this series. In the hip-joint, however, the epiphyseal line being within the joint, the pus usually bursts early into the joint. This epiphysis, too, is one often separated by the morbid changes in acute epiphysitis.

If pus be found in the joint of a child, unless there is some obvious mode of infection, it is nearly always due to acute epiphysitis.

We now come to the more difficult cases to diagnose, those in which there is no obvious inflammatory swelling. They are usually mistaken for acute rheumatism. As a rule, the history will put one on the right track. The pain usually started in one joint, and on close inquiry not in but near one joint, and has remained there since. There is often a history of delirium at night, and perhaps of rigors. Where there is a history of delirium and rigors be very loth to diagnose acute rheumatism. Where the pain is always in one joint, and one joint only, be very careful in the search for evidence of acute epiphysitis. Search for a tender spot in the bone near the epiphysis. Sometimes a little discoloured patch, like a bruise, or occasionally like a patch of erythema nodosum, will point to the tender spot.

An early case of acute epiphysitis, especially if in a deep-seated bone, may be very difficult to diagnose; but this difficulty becomes tenfold when (as happened in several cases of this series) the disease has started with pains in two or three or even many joints before finally settling in one.

To meet these cases of great difficulty what assistance have we? A leucocyte count may help us, for in acute epiphysitis it is usually high (20,000 to 30,000 Albee);[8] but in acute rheumatism there is also leucocytosis (the average being 16,000, Cabot).[8] A blood count will often fail us, for in the very acutest cases leucocytosis may be absent, and moreover in acute rheumatism, especially if sodium salicylate has been given, it may be high enough to be confused with that found in the typical acute epiphysitis. The leucocytosis, then, is not to be trusted.

Sodium salicylate usually brings the temperature down, if only for a few hours, in acute epiphysitis, and so may lead to a false sense of security, and the waste of an invaluable day.

Radiography in most cases does not help. In this series where a note of a radiograph was made nothing abnormal could be seen. Ironside Bruce[9] states that "in early stages of osteomyelitis no abnormality of outline or structure can be made out." In mild cases where the focus is early localized, a radiograph may show this focus. Of course, in chronic cases, and in cases which have been progressing for some time, radiography is invaluable.

Rheumatism is not the only thing for which acute epiphysitis may be mistaken. When house-surgeon I insisted on the full duty house-physician taking in a case as "scurvy rickets" which I afterwards had the mortification of taking over, when it was transferred to Mr. Openshaw's care, with several ounces of pus in the medulla and under the periosteum of its radius. When a dresser I well remember a case of Mr. Openshaw of acute epiphysitis of the iliac crest which closely simulated an appendix abscess. He was a boy of 13, taken suddenly ill with pain in the right iliac fossa and admitted with a lump there and a distended abdomen; but he had a history of a fall. He was delirious and he had not been sick (though these cases often are), and he was correctly diagnosed.

Amongst the notes I find a case admitted moribund, which for three weeks had been treated as "enteric fever." It was to this type of case with its high fever and low muttering delirium, that Chaissagnac gave the name of "typhus of the bone."

Occasionally the diagnosis of the position of the lesion is very difficult; this is especially the case when the acetabulum is attacked. A careful history and close examination are the only trustworthy guides to diagnosis.

PROGNOSIS.

The mortality is high—higher than that of enteric fever or pneumonia; much higher than that of acute appendicitis. It was in the ten years 1901 to 1910, 34.6 per cent.

The majority of the cases die from pyaemia, with such lesions as purulent pericarditis, empyema, abscesses in lungs, myocardium, and kidneys, and not infrequently acute endocarditis. Abscesses may occur anywhere, but especially tend to attack other bones. This, as Mr. Barnard pointed out, is probably due to the organisms developing a taste for the "soil" on which they have been growing, or perhaps to the mechanical conditions found in growing bone, to which attention has already been called. Comparatively few cases die of pure toxaemia without *post-mortem* evidence of pyaemic spread.

Secondary haemorrhage accounts for a few deaths. Two out of five cases of severe secondary haemorrhage met with in this series died, in spite of prompt amputation. In most cases the secondary haemorrhage is from the popliteal or a large branch in acute epiphysitis of the lower end of the femur.

Even if the patient escape with his life the outlook is not very bright. The average stay in the hospital is twelve weeks, and few cases are completely healed when discharged. They generally have a discharging sinus for months—at least 49 of the cases of this series were readmitted for sequestrotomy in periods varying from a few months to six years. A case was admitted under Mr. Openshaw last summer with chronic osteomyelitis of the femur, which dated back to an acute epiphysitis thirty-one years ago, and which had been giving trouble on and off since, in spite of many operations in various hospitals. Of nine cases which I have been able to see or hear of, at periods varying from one and a half to nine years after, only two were free from symptoms; but this is misleading, as in several cases the symptoms were the cause of my seeing them. The case of longest duration I heard of accidentally from Westminster Hospital nine years after, and he still had a sinus. This long-continued suppuration, with its risk of lardaceous disease, is not all, for many cases after a long interval of apparent cure suddenly develop signs of Brodie's abscess. I have come across the notes of cases fifteen, twenty-three, and twenty-six years after the primary onset.

In giving a prognosis, the extent and duration of the disease and the general condition of the patient are the chief guides. The age also helps:

The mortality before 1 year is 70 per cent.
The mortality from 1 year to 6 years is 41 per cent.
The mortality from 6 years to 11 years is 30 per cent.
The mortality from 11 years to 20 years is 29 per cent.

The mortality varies also with the organism, being only 14 per cent. in streptococcal cases.

The presence of albuminuria—a condition met with in 13 of the 55 cases (23 per cent.) in which I noted the condition of the urine—is of grave significance. More than half the cases in which it was found died; only one fifth of these cases in which it was not found died. This albuminuria is apparently due to a toxic nephritis rather than to pyaemic abscesses in the kidney.

TREATMENT.

"Many lives and limbs have been lost because the surgeon was content with a diagnosis of periostitis and an incision through the periosteum," so says J. E. Moore, an American surgeon, and it is very true.

In every case where the pus is found under the periosteum in a child, unless the cause of that periostitis is very definitely known, the compact bone should be chiselled away and the medulla explored. If the medulla is not obviously diseased, the surgeon may be content

TABLES SHOWING AGE, SEX, AND BONE INCIDENCE IN 298 CASES OF ACUTE EPIPHYSITIS.

Females.

Age:	0-1.	1-2.	2-3.	3-4.	4-5.	5-6.	6-7.	7-8.	8-9.	9-10.	10-11.	11-12.	12-14.	14-16.	16-18.	18-20.	Total.	Died.
Tibiae: Total	2	—	4	4	—	—	2	3	5	1	2	4	1	1	2	—	31	6
,, Upper end	1	—	1	3	—	—	—	3	2	—	—	2	—	—	2	—	14	4
,, Lower end	1	—	2	1	—	—	2	—	1	1	1	1	1	1	—	—	12	1
Fibula: Upper end	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	0
,, Lower end	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Femur: Total	3	3	1	3	2	1	—	—	2	—	—	2	3	3	1	—	24	10
,, Upper end	—	—	—	—	1	1	—	—	—	—	—	—	—	1	—	—	3	3
,, Head	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	1	1
,, Great trochanter	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
,, Lower end	2	3	1	3	1	—	—	—	1	—	—	2	2	2	1	—	18	7
Ilium	—	—	—	1	—	—	1	—	—	—	—	—	—	—	1	—	3	1
Os calcis	1	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	3	1
Astragalus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Metatarsal	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	0
Phalanx	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Clavicle	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Scapula	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	0
Humerus: Upper end	3	—	2	—	—	—	—	—	1	—	—	—	3	1	—	—	10	4
,, Lower end	1	1	1	—	—	—	—	1	—	—	—	—	—	—	—	—	4	1
Radius: Upper end	1	—	—	—	—	—	—	1	—	—	—	—	—	—	1	—	3	2
,, Lower end	1	1	—	—	—	—	—	1	—	—	—	—	—	—	—	1	4	1
Ulna: Upper end	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	1	0
,, Lower end	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	13	5	8	9	2	3	3	6	8	1	3	6	8	6	5	1	87	27
Deaths	8	2	1	5	1	1	0	2	2	0	0	0	2	2	1	0		

Males.

Tibiae: Total	3	5	3	2	1	8	3	3	2	7	6	3	20	21	10	1	98	43
,, Upper end	1	1	2	1	—	5	2	2	2	4	3	2	11	15	7	1	59	29
,, Lower end	1	3	1	—	1	4	1	1	—	2	2	—	8	3	3	—	29	11
Fibula: Upper end	—	—	—	—	—	—	—	—	1	—	—	—	—	—	1	—	2	0
,, Lower end	—	—	—	1	—	—	—	—	—	—	—	1	—	—	2	—	4	0
Femur: Total	1	1	—	4	1	3	1	5	5	4	1	3	8	9	6	3	53	12
,, Upper end	1	—	—	1	—	—	—	3	3	1	—	1	1	4	3	1	19	5
,, Head	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	2	2
,, Great trochanter	—	—	—	—	—	—	—	—	—	—	—	—	1	2	2	—	5	0
,, Lower end	—	1	—	2	1	1	1	2	2	3	1	2	6	5	3	2	32	6
Ilium	—	—	—	—	—	—	—	1	—	1	1	2	1	2	3	0	11	5
Os calcis	—	—	1	—	—	—	—	—	—	1	—	1	1	1	—	—	5	4
Astragalus	—	—	—	—	—	—	—	—	—	—	1	1	—	—	—	—	2	1
Metatarsal	—	—	—	—	—	—	—	—	—	—	—	—	1	1	—	—	2	1
Phalanx	—	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	1	1
Clavicle	—	1	—	—	—	—	—	1	2	—	—	1	1	—	—	—	6	3
Scapula	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Humerus: Upper end	—	2	3	—	—	—	—	—	—	—	—	—	—	3	1	2	11	6
,, Lower end	—	1	1	1	—	—	—	—	—	—	—	—	2	—	—	—	5	1
Radius: Upper end	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	—	2	0
,, Lower end	—	1	1	1	—	—	—	—	—	—	—	—	1	1	1	—	6	0
Ulna: Upper end	1	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	2	1
,, Lower end	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1	1
Total	6	12	9	9	2	11	4	10	11	12	9	13	37	38	24	6	211	79
Deaths	5	4	5	3	0	7	2	3	5	3	5	1	13	12	8	3		

N.B.—The figures in the bottom line appear at first sight to be incorrect, because several cases come under a general as well as a particular heading; care has been taken to count these figures only once.

with removing a large window in the compact bone, and this window should be as wide as the bone in question, but the medulla should not be gouged out. If the medulla is scraped out the endosteal membrane is removed, and the compact bone, already stripped of its periosteal blood supply, is more likely to die and form a sequestrum (Nichols). If the medulla is diseased, then the compact bone must be removed as far along the shaft as the disease has spread and a little further, and the diseased medulla gouged out. Where the medulla is gouged no overhanging ledges of compact bone must be left: they impede dressing, and usually form sequestra. In the lower end of the femur the periosteum is nearly always stripped off the posterior wall, and this posterior wall should be removed if sequestra are to be avoided.

Where the shaft is found completely, or almost completely, stripped of periosteum, a primary diaphysectomy may be done, or the whole medulla must be widely exposed and gouged out. If the patient's general condition is bad, a diaphysectomy is preferable, as it can be more rapidly done. If, on the other hand, the patient's condition will stand it, the chiselling away of one aspect of the entire shaft with gouging out of the medulla will leave enough compact bone to act as a splint. When the periosteum has formed enough bone to retain a good shape, a secondary diaphysectomy should be done. If the patient's condition is very critical, probably a primary amputation is the most rapid efficient operation, and should be done. It should, however, seldom be necessary.

In this series primary amputation was performed three times, with one death. In the case which died the toe was amputated for osteomyelitis, and at the *post-mortem* examination osteomyelitis of the ileum was found, which was probably primary, osteomyelitis of the phalanges being very rarely primary, though often secondary. This case also had general pyæmia with purulent pericarditis.

If, after efficient initial treatment, the case continues to go downhill, secondary diaphysectomy is worth trying, and if this fails, secondary amputation should be done.

The existence of pyæmic abscesses in either bones or soft tissues is no contraindication to amputation, as in these cases the patient often begins to get the better of his pyæmic foci as soon as the primary focus is removed by amputation. Secondary diaphysectomy sometimes gives very good results, as in a case reported by Scudder,[10] and in several cases here. It is well worth a trial before proceeding to amputation, and may save a useful, though often unsightly, limb. After diaphysectomy, the periosteum should be stitched so as to draw it loosely into position over gauze packing. If, as is usually recommended, it be sewn to the skin, the newly formed bone when it grows is apt to be four or five times its normal width, as a result of the spreading out of the periosteum when the skin retracts.

The chief hope of reducing the mortality centres in early and radical operation. Possibly in the future vaccines may be instrumental in reducing the mortality. In this series only a few cases were treated with vaccines, but the results in these few cases have been anything but encouraging:

Mortality.

General mortality of the series ...	34.6 per cent.
With vaccines, 7 deaths in 16 cases, or a mortality of	43.7 ..

If the cases in which the bone was thoroughly opened up from the first be considered separately, one finds:

Group I.

Without vaccines, 39 deaths in 123 cases, or 31.7 per cent. mortality.

With vaccines, 2 deaths in 6 cases, or 33 per cent. mortality.

If the cases in which at first only the periosteum was opened be taken, one finds:

Group II.

Without vaccines, 50 deaths in 139 cases, or 35.9 per cent. mortality.

With vaccines, 4 deaths in 7 cases, or 57 per cent. mortality.

That the mortality is not higher in the whole of Group II. is due to the fact that in many cases the bone was opened up at a second operation. Possibly the very high mortality of cases treated with vaccines in this group may be due to vaccine treatment having been allowed to replace, instead of supplementing, the more important surgical measures.

In conclusion, I must express my thanks to the surgical staff of the London Hospital for their permission to use the notes from which these figures have been compiled. To Mr. Walton and Mr. Benians I owe my thanks for many suggestions.

The tables on the previous page show the bone, age, and sex incidence in 298 cases.

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APPENDICITIS IN PRIVATE AND PUBLIC HOSPITALS FOR THE INSANE.*

BY

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My excuse for a communication on this physical affection is an attempt to prove, from its rarity in private and public asylums for England, Wales, Scotland, and Ireland, that it is preventable. In the ten years from 1902 to 1911 there are recorded 75 deaths from appendicitis, typhlitis, or perityphlitis, ascertained in the majority of cases by *post-mortem* examination, among the insane detained in all the asylums of England and Wales. It would be instructive to know how many of the 75 were affected before admission into the respective asylums, and how many could have been saved by operation. For the statement that appendicitis is a rare malady in private and public hospitals I have the support of several well-known mental specialists; not only do these give me their assistance, but moreover I have the help of the pathologist to the London County Asylum at Claybury, who states, "I do not believe there has been a single case of appendicitis on the *post-mortem* table at Claybury since I have been pathologist. Consequently, in more than 2,000 *post-mortem* examinations there has been no case." The comparison of the Claybury hospital for the insane with the teaching hospitals of St. Bartholomew's and Guy's for the sane is reliable. For instance, at St. Bartholomew's Hospital 1,645 *post-mortem* examinations were made between 1909 and 1911, and 69 were designated cases of appendicitis. At Guy's Hospital in 1900, of the first 500 *post-mortem* examinations 12 were recorded as appendix cases. I find that at the same hospital there were 8,588 admissions in 1910, and of these admissions 306 were subjects of appendicitis, 187 being under the care of surgeons, while 119 were under the care of physicians. In connexion with the statistical tables from the Lunacy Boards of Scotland, it is believed that formerly death from appendicitis was usually returned as death from peritonitis, but these diseases had no separate heading in the boards' tables of causes of death, and are not yet separately notified. If a case of death from appendicitis were returned it would be placed in the table under diseases of the digestive system; but it has been ascertained that no death in a Scottish asylum has been returned during the past five years as due to appendicitis. In the report of the inspectors of lunatics for Ireland, 1911, typhlitis is grouped among the causes of death; but this table contains no return of the complaint for that year, and there were only 11 cases of peritonitis. The Secretary of the Office of Lunatic Asylums, Dublin Castle, sends me the returns of deaths from typhlitis during the period 1902 to 1910 as follows: 1902, 0; 1903, 1 (male); 1904, 0; 1905, 1 (female); 1906, 0; 1907, 1 (male); 1908, 2 (male and female); 1909, 0; 1910, 0—namely, 5 cases in nine years. The cause was ascertained by *post-mortem* examination, except in one case. The death-rate from appendicitis, as chronicled in the Registrar-General's Report for 1909, shows a slight gradual increase from 1901 to 1909.

The cæcum, with the bud of the appendix, as stated by Quain, grow out together from a straight uniform piece of intestine at the sixth week of intrauterine life. The appendix is an abdominal and persistent anatomical arrangement in the plan of the permanent anchorage of the

* Read at a meeting of the Winchester Division.

intestines. At first a movable piece of intestine of the same structure, the appendix eventually comes to a standstill; and, for all we know to the contrary, is of little further use, for its cavity exhibits a tendency in 25 per cent. to become obliterated. And when we review the anatomy of the outer circle of the intestines, we can imagine that mesenteries here and there—natural stays—are very advantageous. Do they not break off into sections the peristaltic movements of the colon at certain points? Thus the concentrated faeces are carried onward to the outlet by not only a circular squeeze, but also by a detrusor push of contraction similar to the action of micturition. We see in the normal abdominal cavity bends here and turns there, and, if a physical kink can excite an insanity, I am sure there is also associated a neuropathic kink.

It has yet to be ascertained whether short-circuiting of the intestines is as scientific a line of action in constipation and general diseases as the old fashioned aperient treatment, unless it has to be resorted to as a radical line of treatment. Undoubtedly aperients drive muddled ideas and delusions into the closet. No one who has lived in a hospital for the insane for a length of time can contradict me. And that, too, is the reason why I conceive appendicitis is uncommon among the institutional insane. If foul products can be readily expelled from the body by the skill of the asylum physician, how is it the outside physician in charge of the sane population has not yet learnt his lesson of teaching the public the first principles of healthy life to be attained by education rather than by operation?

It is my purpose in this brief communication to emphasize the poisonous consequences of decomposing food, detained and brought to an anchorage in the fermenting vat of the cesspool at the last portion of the intestinal canal. If it is a difficult matter to keep the mouth of the intestinal canal free of septic matter, it is not a difficult operation to rid the tubing of poisonous germs that multiply there. We all know that Epsom salts might answer our object. Now civilization has taught us many things in the medical world: it has certainly taught us comparative pathology. For example, the horse, which persistently has his faeces of a characteristic odour, one day evacuates a foul motion. The teeth are found at fault, and require filing, so that they may meet properly as grinding instruments. The faeces return to their usual odour after this operation, and the balls of motion do not now contain fermenting, half-digested, swollen grains of oats. The domestic fowl emaciates, its feathers droop, and offensive diarrhoea succeeds when there are no teeth in the gizzard from an absence of grit in the run. And in man convulsive seizures, such as epilepsy, are best managed by suitable dieting, rather than by the use of the bromides and other sedative drugs of the *Pharmacopoeia*, which, as chemical restraints, have been stated to encourage degenerative changes.

Of all hospitals I know none where so much attention is given to the action of the intestines as in an institution for the insane. Moreover, the food that is taken into the stomach of an insane person in these hospitals is chiefly of the order consistent in quality and amount with health. The food, too, is of excellent quality, simple and wholesome: not least, it is well prepared by cooking. It is carefully macerated and divided beforehand, and given in this condition to those patients who will not feed themselves; while, on the other hand, it is spoon-fed to those who are without teeth, or who are accustomed to bolt or scramble their food. The indifferent feeders are always personally superintended at meal times. Constipation is never permitted in asylums, and this is the reason why the caecal appendage is less often affected by inflammatory attacks.

If medical men outside insane hospitals could guarantee the condition of a person's bowels beyond hearsay evidence, they would be hideously surprised to find how ignorantly is this essential factor of life carried out. We know of the patient who suffers from noises in the ear and deafness, who quickly returns to normal hearing after two or three days' application of oil and the skilful use of a syringe: and the case of the patient with symptoms of delusions, inclined to mania, in whom the cloud readily begins to lift when a good pill and a smart Epsom draught are given. How readily, too, does he respond to treatment: it is discovered that his rectum was blocked, and before admission we hear that he had been under restraint with such sedatives as chloral, bromides, hyoscin, paraldehyde, sulphonal, and the like.

The voice of the dentist is carrying weight with medical officers of health to an extent that "tooth-brush drill" is becoming a custom in schools. If the mouth of the intestinal tract is often foul, let us imagine what must be the state of affairs lower down. Again, gynaecologists tell us how easily the peritoneum absorbs fluids. Thus auto-intoxication and appendicitis may be explained when intestinal stasis has been prolonged; and especially must inflammation arise when decomposing matter is bottled up in the piece of the intestine called the appendix, just as it occurs in the knuckle of intestine pursed up in a strangulated hernia. Therefore, from an educational point of view in physical hygiene, "intestinal drill" in the school is just as important as "scalp drill" or "toothbrush exercise." If it is difficult to deal with the septic mouths of the insane it is not found difficult to keep their cesspools clean by education. The technique of "intestinal drill" in hospitals for the insane is very judiciously observed, and the mental nurse can notify the condition of the faeces, their odour, colour, appearance, and consistence. Thus the chemistry and bacteriology of the faeces in private and public hospitals for the insane can be made to correspond with the practice of urine analysis. At Earlswood Hospital for Idiots "intestinal drill" is a feature in the management. The operations for chronic constipation or for appendicitis may be very fascinating in the eyes of the surgeon, but to prevent them by "intestinal drill" is the physician's achievement.

GASTRIC ADHESIONS AS A CAUSE OF SUDDEN DEATH.

By G. HAMILTON WINCH, M.B., Ch.B.,
ST. GEORGE'S, SHROPSHIRE.

THE following case is of interest on account of the curious pathological conditions which the autopsy revealed, and partly on account of its relation to the Workmen's Compensation Act. The patient, a coal miner, aged 34, was the subject of an accident on November 30th, 1908. While he was lifting, on that day, a large piece of coal into a truck, it slipped and knocked him backwards against a timber prop, injuring his back and left side. He was quite unable to resume work, and so was immediately taken home in a conveyance. There I attended him about two hours later.

State on Examination.

I found him lying on his back on a couch, with his legs drawn up. He complained of "pain in the stomach and across the back below the shoulder blades." He did not look seriously ill. His pulse was 98, temperature 97° F., and respirations 20. There was no vomiting nor hiccough.

There were no marks of injury on the abdominal wall, it moved well with respiration, and there was no distension. On palpation there was some tenderness in the umbilical region, but no rigidity. Percussion revealed nothing abnormal, and there was no evidence of free fluid in the abdominal cavity.

On his back there were some scratches and a bruise 2 in. in diameter immediately below the inferior angle of the left scapula. No ribs were broken, nor was there any injury to the spinal column.

Careful examination of the circulatory, respiratory, urinary, and nervous systems revealed nothing abnormal. It was carefully explained to the patient and his wife that although there was no evidence of serious injury then, yet there might be some internal injury of which symptoms would appear later. On these grounds the patient was strongly advised to come into the colliery company's hospital, so that his case could be properly watched, and have surgical aid if necessary.

Progress.

This advice was not followed, and he was attended at his own home for the next four weeks. At no time during this period were any untoward symptoms or signs detected, and apparently the case was pursuing an entirely favourable course. At the end of this period the man was very anxious to return to work, but my advice was against his doing so. Nevertheless, in six weeks from the date of his accident he returned to work of his own accord.

Result.

In the course of his first morning at work he told his companions that he "felt better than ever before." Shortly after mid-day he suddenly fell down dead. I was hurriedly called to see him at the pit, but on my arrival found life quite extinct.

This man had received compensation during his period of incapacity, and the question now arose, Was his death

due directly or indirectly to the accident or to a natural cause? By order of the coroner a *post-mortem* examination was made, and at this I was present. In the abdomen small recent adhesions were found between the stomach and spleen, and between the stomach and the pancreas. The pancreas showed evidence of recent inflammation of its posterior surface opposite the spinal column. Nothing else abnormal was found in the body, though a very full and complete examination was made.

The coroner's jury returned a verdict to the effect that this man's death was due to the accident. Its suddenness was probably due to a reflex stoppage of the heart, owing to the stomach dragging on the adhesions.

The case brings out two points:

1. How much care must be taken in dealing with accidents, even when apparently not serious, in view of the difficulties that may arise in regard to compensation.

2. The value of keeping full notes, not only of the injuries, but also of the general physical condition of the workman.

For instance, in this case a thorough clinical examination was made when the patient was first seen, and this enabled one to state definitely that he had no organic disease likely to cause sudden death.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ERYTHEMA NODOSUM AND TUBERCULOSIS.

IN the EPITOME of June 1st there is a note of an article in an American journal bearing on the relationship between erythema nodosum and tuberculosis. The writers of that article quote a case in which erythema nodosum was an early manifestation of tuberculous meningitis. Various writers have pointed out that an association exists between these two maladies, but there seem to be very few records of the eruption appearing almost as a prodromal sign of tuberculous meningitis. I therefore quote the following particulars of such a case:

The patient was a boy, aged 8, who was put to bed because of pains in his legs and general weakness. On examination he was found to be suffering from erythema nodosum, the spots being scattered over the fronts of both legs and extremely tender to the touch. Under appropriate treatment the boy became apparently well in a few days, and was allowed out. A fortnight later I was called again to see him, this time suffering from headache and vomiting. As there was a strong family history of tuberculosis I at once suspected meningitis. In a day or two the typical symptoms became apparent, including retraction of the neck, cephalic cry, and coma. The coma passed off for one full day but returned, and within a week the patient was dead. There was well-marked papillitis of both optic nerves. I did not connect the two troubles at the time, but later reading has convinced me that the occurrence of erythema nodosum as a prelude to tuberculous meningitis is more than a mere coincidence.

Shettleston, N.B. JAMES DUNLOP, M.B.

VIPER BITE.

THE case of viper bite described by Dr. Pendred (June 8th, p. 1291) is very interesting, but the writer's conclusion that the quantity of venom of one animal is not sufficient to kill a full grown man in good health is not fully borne out by facts.

On August 5th, 1909, I was bitten in three places by a viper. At that time I was reading law in the early morning, working hard at my professional duties, and taking much cycling and walking exercise in the course of them, and putting in a couple of hours at carpentry nearly every evening. I had not taken alcohol for months, had reduced my consumption of tobacco by half, was hard as nails and fit to fight for my life. This last was what I had to do after my accident, an account of which by Dr. Edleston appeared in the BRITISH MEDICAL JOURNAL of September 11th, 1909. I am convinced that no one not in the pink of condition would have survived the experience, and that any person in only average condition would have died to a certainty.

I may mention that the last man before myself bitten on Big Moor, Ramsley, was a hard-working tenant farmer, who struggled to the nearest farmhouse two miles away, and died before medical assistance could be obtained. The immediate cause of his death was swelling of the glottis and suffocation following his sucking out the poison from his wounds. A similar swelling of the lips, tongue, and fauces troubled me.

In my opinion the severity of the results of a bite depend upon:

1. The age and condition of health of the person bitten.

2. The amount of poison injected.

3. The season of the year and the condition of the snake. A fasting snake at the beginning of spring, when the weather is cold, or one about to change its skin, is less likely to inflict a dangerous bite than a well-fed snake after a few weeks of hot weather.

4. The length of time which elapses between the time of the accident and that of treatment. When Dr. Edleston saw me, three hours after my accident, the pulse was gone and the heart beats could not be heard, so that another half hour without medical aid would probably have seen me out.

5. Possibly the peculiar characters of some of the reptiles may have a bearing on the question. Men living on the moors, whose forefathers have been there for generations, are strong in the belief that the adders in which the usual markings are deficient or absent, as in the case of mine (which has been preserved), are much more dangerous than normal specimens.

In conclusion, I desire to point out that the possible sequelae are rarely if ever heard of. The most immediate in my own case was dilatation of the heart accompanied by mitral regurgitation. The latter disappeared in about four weeks, but the weakness lasted for more than twice that number of months and caused several fainting fits, one as late as the December following the accident. Another was a transverse grooving of the finger and toe nails, some of which came off entire and caused inconvenience. The last, a red discoloration of the skin, came on some months after and still persists. It began near the shins and over the ulnar processes, and gradually spread, threatening to cover the whole body. Expert advice was sought but was followed by little improvement—indeed, all the six consulted said they had never seen a rash like it. It began to fade when I was on a holiday last year and swam daily in the sea, and has now almost disappeared under a course of hot salt-water baths.

HERBERT PECK,
M.D. etc., Barrister-at-Law, M.O.H.
Chesterfield Rural District.

BORAX AND HONEY FOR BOTTLE TEATS.

ON April 23rd a male infant, aged 3 months, fed naturally from birth, was brought to me for treatment. It had all the signs of gastro-intestinal trouble, and, as the mother did not appear in the best of health, I advised her to wean the child, and put it on an artificial diet which I prescribed. Two days afterwards it was brought again suffering from "fits" in addition to the bowel trouble. On this occasion I made a more minute examination, and discovered that the child had a long ulcerated foreskin, with retained smegma. After this had been thoroughly cleaned up and the mother instructed how to look after it, I thought this would put an end to the "fits." In spite of repeated and most careful examinations, however, both fits and the slimy offensive diarrhœa got worse. I made changes in the diet, gave bismuth and grey powders, and later morphine, but all to no purpose. From the character of the motions and the rapid wasting I now suspected tuberculous trouble, but I could not account for the very frequent fits, and it struck me that the parents were giving the child something other than I had told them. I questioned them closely and frequently on this point without result. It was not until five weeks after the child was first brought to me that the father, in showing me a jar of virol I had advised him to get for the child, casually showed me also a tin of "borax and honey" to put on the child's soothing teat. It struck me at once, when he admitted that they had been using this all along, that this was the cause of the fits, so I put the box in the waste bucket. The father was incredulous, but I warned him to get no more. The

child was having as many as thirty fits in the twenty-four hours, and was at the point of death, but the fits now rapidly diminished in numbers and severity, until in a few days it was quite free from both fits and gastro-intestinal disturbance, and is now perfectly well.

I think it proper to publish this case because the habit of giving this mixture of borax, honey, and glycerine to children in this improper manner is becoming so widespread that chemists get large quantities of cheap honey from California for this purpose and issue the mixture in special tin boxes with "Borax and Honey" printed on the lids. I may say that the child was taken to two hospitals for further advice on different occasions during the time I was attending it. At one hospital the mother was given some pills "like flour" which made the child much worse so she stopped giving them and brought him to me again. It is possible these pills were made of boric acid, with the idea of disinfecting the bowels. At the other hospital the child had a series of violent fits in the out-patients' room necessitating the attentions of the doctor and nurses. The mother told me that she dipped the child's teat in the borax and honey in front of the doctor and gave it to the child. She told me this to justify herself in giving the mixture, as she quite refused at first to believe it was the cause of the illness. I should say that it was their first child, and both the parents were thoroughly worn out with sitting up with him. Since then a woman in the same street has volunteered the information that her baby had fits till it was nine months old and had to be carried about on a pillow. She gave it a soothing teat until about that age, dipped in borax and honey, on the advice of a nurse, and she now thinks she knows what caused the fits. It seems to me that this matter deserves the attention of medical officers of health and district nurses, as well as the general body of medical men.

Liverpool. ANDREW S. MCNEIL, L.R.C.P. and S.E.

UTERUS UNICORNIS FOUND AT AN OPERATION FOR APPENDICITIS.

THE patient, a married woman of 21 years, was sent into the Royal Cornwall Infirmary by Drs. Gadsden and Campbell Horsfall, to whom I am indebted for the history of the case.

Menstruation commenced at 14 years, and was regular and normal, except for slight pain, until November, 1911, when she became pregnant. There is no history of illness of any importance, and she had never had any operation performed upon her. For the last four years she has had slight attacks of abdominal pain, not related to menstruation; these became more frequent after the occurrence of pregnancy, and she had an attack at Christmas, 1911, and another in February, 1912, and another again in March, when she was suddenly seized with severe pain in the right iliac fossa, where a definite tender mass could be palpated. She had frequent vomiting and the temperature was raised. This condition continued until April 18th, when a miscarriage took place, and a fœtus of apparently about seven and a half months was delivered. After this the trouble rapidly subsided, and when she was admitted on April 27th she was free from pain and tenderness and the temperature was normal. As menstruation appeared shortly after, no pelvic examination was made until May 5th, when it was found that the uterus was markedly flexed to the right, but without fixation or any other palpable abnormality. There was no scar upon the abdomen, such as would have been caused by a previous operation.

On May 16th an operation was performed for the removal of the appendix, and the incision was made over the right rectus, so that the pelvic organs might be examined and treated if necessary. The appendix showed obvious signs of old disease, as it was twisted upon itself and firmly adherent to the cæcum and omentum. It was therefore removed in the ordinary way and the pelvis examined.

On the right side the ovary, Fallopian tube, and the broad and round ligaments of the uterus appeared perfectly normal; the uterus, while normal on the right side, was rounded off on the left with a complete absence of the normal lateral angle; the round ligament was completely absent, as was also the ovary; the broad ligament appeared to be represented by a thin fold of peritoneum passing from the lower part of the body of the uterus to the sacrum.

The case seems therefore to be one of congenital defect of at least the upper part of the Müllerian duct, as well as of the genital gland. As the ureter is generally considered to arise from the Wolffian duct it seemed of interest to determine whether the kidney and ureter were functionating normally on the left side in this case, and a chromocystoscopy was accordingly performed, which showed free secretion from both ureters.

The patient made a satisfactory recovery.

LAURENCE C. PANTING, M.D.Oxon., M.R.C.P.Lond., F.R.C.S.Eng.,
Honorary Medical Officer to the Royal Cornwall Infirmary.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

LONDON TEMPERANCE HOSPITAL.

A COMPLICATED CASE OF CONCUSSION OF THE BRAIN TREATED BY LUMBAR PUNCTURE.

(Reported by W. K. IRWIN, M.B., Ch.B., House-Surgeon.)

THE patient in the following case, a girl aged 11, was brought to the casualty department on April 6th, with a history of having fallen from a lamp post (from a height of about six feet).

State on Examination.—There was no definite laceration or hæmatoma of the scalp, but she was absolutely unconscious, and could not be roused either by shaking or shouting; pinching the skin also had no effect. The pupils were widely dilated, the right more than the left, and did not react to light. The pulse was slow, of fair volume, and irregular. The breathing was slow, laboured, and irregular.

Treatment.—I had an ice-bag applied to her head, and kept her under observation in the casualty department for some time, but as the pulse was becoming more irregular and weaker and the respirations were becoming of the Cheyne-Stokes type, I did lumbar puncture in the usual way—using the syringe as a handle to enter the needle, then removing the syringe and allowing the fluid to escape in drops through the needle until 4 drachms of the cerebro-spinal fluid, which was clear and colourless, had been collected.

Progress.—In about ten or fifteen minutes' time, after the lumbar puncture, the pulse and respiration became more regular. She was then put to bed in a quiet corner of a ward, and had ice-bags applied to the head (her temperature at this time was 99.8 and pulse 92). She was also given calomel gr. ii. and a dose of sulphate and carbonate of magnesium the following morning. Such treatment was continued until April 12th, then as there was no improvement, being as deeply comatose as when admitted and complete incontinence continuing, lumbar puncture was again done, five drachms of cerebro-spinal fluid being allowed to escape. This time the withdrawal of the fluid did not seem to have any beneficial effect, and on April 13th the lumbar puncture was repeated and another half ounce of fluid taken off.

Result.—On the following morning (April 14th) there was a great improvement, the patient answering questions and eyes reacting to light, the comatose condition disappearing completely in about a week's time from the date of the last lumbar puncture. On April 27th she was allowed up, and by May 2nd she was able to walk fairly well, the improvement continuing until, on May 16th, the co-ordination was almost normal, and therefore the walk was almost as steady as before the injury. Intelligence was clear. Knee-jerks and muscular power of limbs normal, and no cerebral irritation was present. Two days after her admission it was noted that there was slight, but definite, papillitis of the right eye, but this disappeared, and vision became in all respects normal and co-ordinate, though the right pupil was still larger than the left.

I am indebted to Sir William Collins, honorary surgeon to the hospital, for permission to publish notes of this case.

Reports of Societies.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

Thursday, July 11th, 1912.

Mr. J. B. LAWFORD, President, in the Chair.

Operative Treatment of Glaucoma.

MESSRS. BROOKSBANK JAMES and STROUD HOSFORD, in a paper dealing with operative treatment of glaucoma, recalled a description by Mr. James in 1909 of a method of operating upon all cases of glaucoma by cutting through the sclera from without, after having turned down a preliminary conjunctival flap to cover over the linear wound. Since then the operation had been somewhat elaborated by turning out a piece of sclera by the following method. The conjunctiva having been made anaesthetic, and a few drops of adrenaline solution instilled, a large conjunctival flap was turned downwards to the corneal margin. All further bleeding was now stopped by adrenaline. An incision was next made at the limbus, concentric with the corneal margin, by cutting with the edge of the Graefe knife near its tip, so that the lips of the wound were perpendicular. The paring was proceeded with until a fair depth of wound had been attained. A small puncture was then made, and the aqueous allowed to evacuate itself very slowly. A blunt-pointed Stilling knife was now inserted into this opening, and the wound enlarged throughout its extent. A moderately large iridectomy was then made in the usual way. The operator then proceeded to turn out a piece of sclera from the upper lip or the angles of the wound, endeavouring to ensure that some of the lining membrane was attached to its under surface. This was laid flat on the surface of the adjoining sclera, and held in position by the conjunctival flap being stroked over its surface. The special points in the operation were: (1) The fact that the edges of the scleral incision were perpendicular, not slanting as made by the Graefe or the keratome. (2) It would be noticed that the iris fell backwards much more readily than in an ordinary iridectomy, and did not require the introduction of another instrument into the eyeball to replace it. (3) The scleral flap could be cut by one of two methods. In some of the cases this was done by means of a punch. This, however, was somewhat uncertain, and occasionally punched a piece of sclera clean out, which was not desirable. (4) Another method was to turn outwards by means of scissors or knife a strip from one or both angles of the wound. If this plan were adopted it was better to outline the strip by marking out its limits almost through the whole thickness of the sclera prior to opening the anterior chamber, as the relaxed state of the tissues when the aqueous had escaped rendered the proceeding more difficult. Mr. Hosford said he had carried the method out in all his cases of glaucoma except one, and that he did on the periphery of the iris. Whatever method was employed there was a predilection on the part of the sclera to close up. Ten out of 38 cases so treated closed up. Of the 38, 28 leaked by first intention and 8 of the remaining 10 leaked secondarily. The operation was simple.

THE Society of Comparative Pathology in Paris (Société de pathologie comparée) is organizing an International Congress of Comparative Pathology, to be held in Paris October 17th to 23rd, and the French officials are desirous of obtaining the active co-operation and participation of British pathologists and bacteriologists. The subjects for discussion will range over the whole field of pathology, and will include veterinary and plant pathology. Among the problems already entered for discussion are tuberculosis (pathogenesis), human and avian diphtheria, cancer, variola and vaccinia, parasites common to man and animals, hydrophobia, and the comparative study of the cirrhoses. The Council of the Pathological Section of the Royal Society of Medicine recommends this congress to the support of the members of the section. All desirous of making communications at the congress or taking part in the discussions should communicate with the General Secretary of the Congress, 42, Rue de Villejust, Paris

Reviews.

A SOCIAL FORECAST.

IT is a little difficult to criticize a book which, dealing with a highly complex and controversial subject, presents, without any attempt at more than sympathetic unity, no less than thirteen distinct and individual points of view.[1] *The Great State* is, according to Mr. Wells, a term used "to express the ideal of a social system no longer localized, no longer immediately tied to and conditioned by the cultivation of the land, world-wide in its interests and outlook, and catholic in its tolerance and sympathy—a system of great individual freedom, with a universal understanding among its citizens of a collective thought and purpose." The book is not adequately to be described as a treatise on socialism, although the prevailing tone of thought might lend colour to such a designation: and although one or two of the contributors, notably Lady Warwick and Mr. Chesterton, may certainly be numbered among the faithful. On the other hand, the writers of the Prefatory Note call attention to the fact that neither Sir Ray Lankester, Mr. Haynes, nor Mr. Roger Fry would dream of calling themselves socialists. And they proceed to suggest that the "old and largely fallacious antagonism of socialist and individualist is dissolving out of contemporary thought altogether."

This may strike some readers as a contradiction in terms, but Mr. Taylor, in his essay on the signs discoverable in our present system of the transition to the higher order which he anticipates as its probable outcome, explains that such is not really the case. "It must never be forgotten," he says, "that the end of social organization is to give the greatest amount of freedom to the individual. We will not make out a case for the Great State unless we show that it will make the individual freer than he is under the capitalist system." It is a curious fact that every attempt at collectivist legislation seems to be greeted by a chorus of protest from that section of the community which has been conspicuous for advocacy of the very principles upon which it is based. "This," we are told, "is not socialism, but an approximation to the 'Servile State.'" We read a great deal in this volume about the danger of creating the Servile State in place of that ideal which the writers have in view, but it is not clear how the latter is to be attained without an intervening stage of bureaucracy involving a considerable amount of interference with individual freedom.

One of the most informing contributions is that of Mr. Chiozza Money, dealing with work in the Great State. From an analysis of the facts elicited by the Census of Production, conducted in 1907 by the Board of Trade, Mr. Money deduces that only 45 per cent. of our males over eighteen are direct producers of material commodities. "Is it reasonable," he asks, "that the labours of the remainder of the working population should be needed to transport and to distribute the material production of so small a proportion of our men, aided by a couple of million women and children?" Moreover, Mr. Money adduces evidence to the effect that of the commodities thus produced (averaging in value only some £23 a head of the population), only a small proportion are in respect of material employed or general utility in any way worthy of the available resources of civilization. "I repeat here," he exclaims, "what I have said before, that rubbish-making is our largest industry." Mr. Money contends, not unreasonably, "that the means of production are now so efficient as to make it possible to produce easily much more than we can consume," provided always that labour be "organized without competitive work, and exerted, not for individual profit, but in the output and economic distribution of useful products and services." The idea seems to be and it is taken for granted by the majority of his fellow contributors—that every adult is to contribute to the common task a certain minimum amount of productive or useful service, and to receive in return a sum equivalent to

[1] *The Great State: Essays in Construction.* By H. G. Wells, Frances Evelyn Warwick, L. G. Chiozza Money, E. Ray Lankester, C. J. Bond, E. S. P. Haynes, Cecil Chesterton, Cicely Hamilton, Roger Fry, G. R. S. Taylor, Conrad Noel, Herbert Trench, Hugh P. Vowles. London and New York: Harper and Bros. 1912. (8vo, pp. 379. 6s. net.)

all the necessities of a minimum standard of life. The daily number of hours of compulsory work would obviously vary in accordance with this minimum standard of life; but it is held by most of the contributors that it would be much smaller than that commonly exacted under the present wasteful system. This, it is contended, would leave a large residue of time and energy to be devoted to amateur work of various kinds, the proceeds of which, if remunerative, would be legitimate sources of increased private income. As to the means by which the change is to be brought about, Mr. Money vouchsafes no information; but Mr. Taylor indicates the graduated income tax, with its super-tax on all incomes above a certain figure, as an open sesame to the Great State.

Sir Ray Lankester, writing on the making of new knowledge, finds little hope for science in the prospect of a triumphant democracy, such as, for example, Mr. Cecil Chesterton desires. Niggardly as is the present provision for the needs of original research, he fears that matters may be worse rather than better when the "masses" have ousted the "classes" from the seat of power. He complains of the constant misappropriation of the means for the creation of new knowledge to the comparatively unimportant, because infertile, object of disseminating what is already known. And, waiving his own doubts as to the likelihood that the very large sums required will be available, he proceeds to outline an interesting scheme for the discovery, training, and employment in State institutes of research of those comparatively rare individuals who are by nature adapted to act as genuine investigators. Mr. C. J. Bond contributes an excellent chapter on health and healing in the Great State. "Health," as he rightly insists, "is more than mere existence: it means in its widest sense 'Joy in Life'; it presupposes a capacity of response to the beautiful, the health-giving, the soul-elevating stimuli of the surrounding world." We are glad to find a medical writer emphasizing the necessity of a broader conception of health; the subject of the book is from this point of view strictly medical, since, as Mr. Bond truly says, "the problem of health is linked up with the problem of education on the one hand and the possibilities of social, economic, and industrial reform on the other." We think, however, that many readers will share our own doubts as to the "absolute necessity" of State control of our voluntary hospitals. Change of some sort seems inevitable, in view of the threatened breakdown of the present system of reliance upon charitable bequests and subscriptions, but we should prefer an alternative less menacing to the scientific prestige and independence of these great institutions. If Mr. Roger Fry may be trusted, the æsthetic outlook of the new régime is hardly more exhilarating than the scientific, as forecasted by Sir Ray Lankester. Mr. Fry thinks it doubtful whether the born artist will be able to live by the practice of his vocation. All our pictures are likely to be painted by amateurs. But he consoles himself by the hope of a vast improvement in the practice of applied, as distinct from pure, art, and the reflection that the Great State will be essentially an organization for leisure—out of which art grows. He concludes with the fascinating suggestion that, in some halcyon age to come, society may "choose its poets and painters and philosophers and deep investigators, and make of such men and women a new kind of kings."

MODERN TUNNELLING.

WE have received an interesting work on *Tunnel Shields and the Use of Compressed Air in Subaqueous Works*,[2] by Mr. W. C. COPPERTHWAITE, Bridges Engineer of the London County Council. Mr. Copperthwaite gives an account of all the great tunnel works and the evolution of the compressed air shield and modern methods of tunnel building. His work is illustrated by numerous diagrams and, so far as we can judge, must form a compendium on the subject most useful for the engineer. The chapter on the use of compressed air in engineering work and the care of the health of the workers is particularly well done. Mr. Copperthwaite has made himself familiar with the work done by physiologists on the subject. Concerning caisson disease he writes:

> The experiments of M. Paul Bert and of Dr. Leonard Hill have proved conclusively that this malady is due to the appearance of bubbles of nitrogen in the blood during or after decompression and interfering with the circulation; and that the effects of this release of nitrogen, due to decompression, can be avoided provided that the rate of decompression is not more rapid, or at least not much more rapid, than the rate of dissaturation of the body from nitrogen.

The author is thoroughly acquainted with the fact that the percentage of CO_2 in the air cells of the lungs of any individual is a constant quantity, and the breathing is automatically regulated so as to maintain it: that in compressed air it is no longer the percentage but the absolute pressure which matters—thus at 30 pounds gauge pressure or three times the ordinary pressure, 1 per cent. will represent the equivalent of 3 per cent. in normal air: that such excess of CO_2 in the tunnel works will increase the laboured breathing of men doing heavy muscular work, and therefore must be guarded against as much as anything else which tends to exhaust the men unduly before they are locked out at the end of their shift.

The regulations enforced by the New York State as to length of shifts and periods of locking out are given, as well as the much better recommendations made by Mr. E. W. Moir, of Messrs. Pearson and Co., who has had an unexampled experience of caisson works. It is a pity that his recommendations were not chosen for enforcement if State interference was to come in at all. The general suggestions of the author for regulating the workers are excellent. No one suffering from any temporary illness or anything affecting his normal health is to go into the air chamber. The men must be well fed, be warmly clad before submitting to the cold process of locking out, and exercise their bodies well during the locking out, so as to help the washing out of the excess of nitrogen dissolved in the body. The proper selection of men is insisted on: the weeding out of those with weak hearts or diseased lungs, of gross habit of body, or suffering from alcoholism: the need for weekly medical examinations is pointed out, so that any who show signs of ill-health or loose living may be eliminated. A medical lock for recompression of cases is a necessity. The tunnel must be lit with electricity, and pure air assured. Engineers are now, we believe, fully alive to the value of physiological researches, and the means of making compressed air safe.

DUODENAL ULCER.

WE have waited with interest, and have only had to wait two years, for the second edition of Sir BERKELEY MOYNIHAN'S monograph on *Duodenal Ulcer*.[3] In reviewing the first edition (BRITISH MEDICAL JOURNAL, September 17th, 1910, p. 779), we ventured to anticipate that in his controversy as to the identity of "recurrent severe hyperchlorhydria" and duodenal ulcer, the author, when by his dramatic statements he has compelled a very considerable degree of admissions from his opponents, would "be the first to admit that in matters medical, assertions couched in such uncompromisingly dogmatic terms, imply exceptions." In a discriminating discussion of the distinction between the clinical and the chemical significance of the word "hyperchlorhydria," the author has included what we take to be such an admission, in a flank attack upon critics. Readers of the BRITISH MEDICAL JOURNAL (January 29th, 1910, p. 241) are familiar with the syndrome, described by the term "appendix dyspepsia," here included in an enlarged chapter on differential diagnosis, which also furnishes a more complete examination of the points of dissimilarity between cholelithiasis and duodenal ulcer. The work of Hertz on *x*-ray evidence of enhanced activity of the motor functions of the stomach in cases of duodenal ulcer has been utilized, and his results confirmed. Screen examination, after a bismuth meal, discloses a "characteristic picture," which is of use as contributory evidence in diagnosis.

In the matter of treatment, little new was to be expected. A section on the treatment of melæna neonatorum by direct transfusion of blood, and a paragraph recommending the routine removal of the appendix when operating for

[2] *Tunnel Shields and the Use of Compressed Air in Subaqueous Works.* By William Charles Copperthwaite, M.Inst.C.E. Second edition. London: Constable and Co., Ltd. 1912. (Imp. 8vo, pp. 404; illustrations 260. 31s. 6d. net.)

[3] *Duodenal Ulcer.* By Sir B. G. A. Moynihan. Second edition, enlarged. London and Philadelphia: W. B. Saunders Company. 1912. (Roy. 8vo, pp. 486; figs. 78. 21s. net.)

chronic duodenal ulcer are the most important additions. A detailed statement of cases operated upon furnishes notes of no less than 115 for addition to the previous series of 187. The statistical results of the later series are a little better in every respect than those of the former, so that approximately 83 per cent. of cures can now be claimed, and the operative mortality is less than 2 per cent. No medical man can afford to overlook the clinical data to be found in this book; it should be read, marked, learnt, and inwardly digested.

THORPE'S DICTIONARY OF APPLIED CHEMISTRY.

In the preface to the new edition of Sir EDWARD THORPE'S *Dictionary of Applied Chemistry*[4] it is stated that this edition is practically a new work, and a study of the two volumes which have already appeared shows that this is by no means an overstatement. It is twenty-two years since the first volume of the previous edition appeared, and it is a fact familiar to every one that during the time that has elapsed since then the progress which has been made in every branch of chemistry has been entirely unprecedented; the extension of the applications of chemistry in the manufactures and arts, with which this *Dictionary* is more especially concerned, has been no less remarkable. During this period a new generation of chemists has grown up, so that as a rule those who are best qualified to write about any given branch of applied chemistry are not the same persons as were in that position twenty-two years ago; hence the monographs in this work are to a large extent written by other chemists than those who contributed to the former edition, and it is interesting to notice the names of several women among the contributors. The number of monographs on new subjects is very large; many other articles have been entirely rewritten, and the remainder carefully revised. One inevitable consequence is that the work can no longer be contained in three volumes, and the present edition is to be published in five; the two which are now before us contain nearly 800 pages in each.

It is impossible, in noticing a comprehensive work of this kind, to give any detailed idea of its contents. Manufacturing and other industrial processes, dealt with especially from the side of the chemical changes involved, necessarily form a considerable part of the matter, but a large number of subjects of direct concern to the medical profession are also dealt with. Thus these two volumes (covering from A to Goudang) contain articles on carbohydrates, diastase, aërated mineral waters, and on bread, butter, cheese, brandy, and over forty other articles of food and drink; the drugs dealt with individually number about thirty; Dr. Henry Robinson writes on anaesthetics, general and local; Dr. S. Rideal on disinfectants; and Dr. W. D. Halliburton contributes articles on bile, blood, and bone. Some of the monographs amount to treatises of considerable length; that on analysis, for example, occupies 100 double-column pages. It will be readily understood from what has been said that this work is a complete storehouse of information on a large and varied range of subjects.

DR. SUN YAT SEN.

SUN YAT SEN, the first President of the Chinese Republic, was the first student and the first graduate of the College of Medicine for Chinese in Hong Kong. He was born in 1867 in a village in the extreme south of China, near the Portuguese colony of Macao. His father was a Christian convert, and was employed as a missionary agent by the London Missionary Society. When 18, the son went to the hospital of the Anglo-American Mission in Canton; two years later he joined the Hong Kong College in the year of its foundation, and graduated after a course of five years. He first practised in Macao, and there became associated with the Young China Party; after two years in Macao he went to Canton, but after a short time the failure of an attempt to seize Canton and its arsenal compelled him to become an exile, and for the next fourteen or fifteen years he roamed the world, stirring up his fellow-countrymen in many colonies to free their country from the yoke of the Manchu dynasty. It was at an early stage of this Odyssey that the sensational incident of his kidnapping by the Chinese Embassy in London occurred. Of the success of the recent revolution, of how Sun Yat Sen was elected President of the Chinese Republic, and of how he soon stood aside in what he conceives to be the interests of unity it is not necessary to say anything, since the history is so recent.

Mr. JAMES CANTLIE, who was the inspiring spirit among the founders of the Hong Kong College of Medicine for Chinese, and its Dean until he left Hong Kong in 1896, has known Sun Yat Sen well both during the five years of his studentship in Hong Kong and ever since 1896, but he admits that the book, *Sun Yat Sen and the Awakening of China*,[5] would not have been written but for the help of Mr. SHERIDAN JONES, and it is not easy to distinguish the share of the two authors. We may, perhaps, assume that the opinions are those of Mr. Cantlie, and we find him a most confirmed hero-worshipper. He seems to think no praise too high, and he has at least this justification, that it is true, as he writes, that the forbearance and the patriotic spirit with which the temporary republican government, under Sun's direction, conducted affairs "has gained the approbation and admiration of the whole world." As to the future of the Chinese Republic Mr. Cantlie is optimistic, believing that a Federal Government will form the best link between the several provinces, which in theory and practice have always enjoyed a large measure of autonomy. We gather that Mr. Cantlie is now convinced that the announced determination of the Chinese to put an end to opium smoking and the use of morphine, which seemed to threaten to replace it, is serious and sincere, and will be successful. He believes that the whole country will be opened up to ordinary trade, and that China, much against its inclination, will become a great military power. The book has two portraits of Dr. Sun Yat Sen and numerous other illustrations, all interesting, if not all strictly germane to the text.

NOTES ON BOOKS.

The Science and Art of Dispensing and a Dictionary of Synonyms[6] is the title given to the current issue of the Pharmaceutical Pocket Book. The matter presented does not differ materially from that of previous issues, and, in addition to the subjects mentioned in the title, includes useful chapters on weights and measures, doses, abbreviations used in prescriptions, materia medica, analysis of water, milk, urine, and metallic salts, volumetric analysis, poisons regulations, etc. A great deal of useful practical information is given in the compass of a volume small enough to carry in an inside pocket, and the book should prove scarcely less useful to medical students than to those mainly concerned with pharmaceutical chemistry.

Dr. BINGHAM'S *Words to Wives*[7] is a useful type of book. It is intended to inform them of the ordinary course of pregnancy and parturition, to warn them of the various signs which may indicate a departure from the normal, and the importance of securing promptly skilled advice as to the arrest of the threatened deviation, and especially to impress upon them the importance of surgical cleanliness in themselves and each of their attendants as the one means of obviating the most serious of the accidental dangers to which they are liable. The general plan is well conceived. There are, however, several defects in the execution which will require attention when the opportunity for revision arises. The style is not always clear, and the main purpose of a sentence is sometimes lost by the tagging on of a subsidiary clause. The popular statement of scientific fact in anatomy or physiology may not be easy, but Dr. Bingham gains nothing by making it sometimes inexact. In the rather difficult decision as to how much detail should be left to the patient in the use of simple medicines rather more might have been reserved for the instructions of the personal medical attendant. In the anxiety to impress the patient with what is involved in surgical cleanliness a rather rigid routine has been adopted; and though in fact the technique selected

[4] *A Dictionary of Applied Chemistry.* By Sir Edward Thorpe, C.B., LL.D., F.R.S., assisted by eminent contributors. Vols. I and II. London: Longmans, Green and Co. 1912. (Roy. 8vo., pp. 766 and 794. 45s. per vol.)

[5] *Sun Yat Sen and the Awakening of China.* By J. Cantlie, M.A., M.B., F.R.C.S., and C. S. Jones. London: Jarrold and Sons. 1912. (Demy 8vo, pp. 306. 6s. net.)

[6] *The Science and Art of Dispensing and a Dictionary of Synonyms.* The Pharmaceutical Pocket Book, 1912-13. Edited by John Humphrey. London: The Pharmaceutical Press. 1912. (Fcap. 8vo, pp. 312. 2s. 6d.)

[7] *Words to Wives on Pregnancy and Parturition.* By S. Bingham, M.R.C.S.Eng. London: George Allen and Co., Limited. 1912. (Cr. 8vo, pp. 201. Price 3s. 6d. net.)

does not correspond to that in any hospital with which we are acquainted, it is laid down so definitely that it might conceivably be quoted in support of the idea that any doctor who omitted or altered any part of it had been professionally negligent. In future editions a good deal of simplification should be made. It would be well to omit, *inter alia*, the paragraph on the determination of sex on p. 28. The calculations of the date of pregnancy on pp. 29 and 112 should be made to agree, and the suggestion conveyed on p. 153 that the protest of a lady pupil in London was the origin of the routine cleansing of the vulva before examination in lying-in institutions should be amended.

The fifth volume of *The Prescriber*[8] brings together the issues of this periodical for the year 1911, and gives a good idea of the kind of information with which its editor, Mr. THOMAS STEPHENSON, F.C.S., commonly supplies his readers. Each monthly issue contains some short editorial notes on current questions connected with therapeutics and pharmacology, one or two original articles on the same subjects, then novel prescriptions derived from various sources, abstracts of recent papers in British and foreign journals of direct therapeutic interest, and, finally, some reviews of books and literary notes. The publication must often be found of interest and utility.

Under the title of *Sexual Disease and Its Medical Prevention*[9] has been brought out a new edition of a small book formerly published under the name of *Social Disease and Its Prevention*. Its author, Dr. H. N. ROBSON, suggests that since it has not been found possible to prevent prostitution, either open or secret, serious endeavours should be made to prevent the spread of disease thereby. Both syphilis and gonorrhoea should be thoroughly treated whenever encountered, and sexual hygiene should be taught to young men. In France recruits, he points out, now receive official instruction on the subject of venereal disease.

[8] *The Prescriber*. Vol. v. Edited by Thomas Stephenson, F.R.S.E., F.C.S. Edinburgh: The Prescriber Offices. (Demy 8vo, pp. 330.)

[9] *Sexual Disease and its Medical Prevention*. By Dr. H. N. Robson. Third edition. London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd. 1911. (Crown 8vo, pp. 112. 3s. 6d. net.)

MEDICAL AND SURGICAL APPLIANCES.

A Bed Rest for Orthopnoea.

THERE has been in use for a considerable time at St. George's Hospital a kind of bed rest the merits of which are considered by Dr. William Ewart to be not yet sufficiently known elsewhere. It consists of a four-legged bent wooden frame which, reaching the ground on each side of the bed and arching across it, supports in its centre two horseshoe-shaped sloping surfaces. These lie at



different levels, the lower and much the larger being intended for the elbows and arms of the patient and partly encircling his body, and the upper and smaller serving as a resting-place for his forehead. The latter is removable, and in practice is frequently removed, since many patients find that the lower horseshoe does all that is required. On this the patient rests his arms, and on his arms his head. A decided advantage of this bed rest is that it exercises no pressure or restraint, the degree of possible movement forward being variable with the nearness of the frame. If the patient wants to lie back, he can do so as far as the position of his pillows allows; even if he is lying right down the appliance is still of value as offering a fulcrum by which he can use his arms to alter his position, or to reinforce respiratory movements. Contrariwise, if the patient desires to lean forward, he feels quite safe, even if the bed is tilted for drainage purposes or he is moved down towards its foot. This rest, which was devised by Sister A. E. M. Rowson and patented by her for the benefit of the funds of the hospital, is obtainable from Messrs. J. and A. Carter, New Cavendish Street, W., and certainly is well worth examination by those who have not yet seen it. It is known as the St. George's Hospital Heart Bed Rest, and costs four guineas.

The Harcourt Chloroform Inhaler.

Messrs. Griffin, of Kingsway, London, who are the makers, have issued a pamphlet of 20 pages explanatory of the apparatus. It is pointed out that the Special Chloroform Committee of the British Medical Association, appointed in 1907, proved experimentally and clinically (see Reprint of their Report, issued by the British Medical Association, 429, Strand, W.C., price 1s.) that this apparatus worked efficiently in all cases, reduced the risk of chloroform poisoning to an almost negligible minimum, effected a great saving of chloroform, and by lessening the evaporation of vapour into the operation-room diminished the danger of phosgene gas poisoning. The pamphlet is well illustrated, and will enable the reader to grasp readily the construction and working of the apparatus. The directions given for its use are concise and clear, and to these is added a reprint of Dr. Dudley Buxton's essay upon its use in the surgery. Mr. Harcourt has modified the machine further, so that it can be employed both on the "plenum" or "draw-over" principle, and in association with an oxygen supply, thus extending its use to operations of the mouth and air passages. The falsity of the idea that the inhaler is complicated and difficult to manage is amply demonstrated. The equally important facts are emphasized that the anaesthetist using the Harcourt inhaler is always fully aware of the amount and concentration of the drug he is giving, and retains at all times an absolute control, both of this concentration and the quantity, and can see and hear the movements of the valves which reveal the state of the respiration.

MEDICINAL AND DIETETIC ARTICLES.

Kronenquelle Water.

THE discovery of appreciable quantities of radium in certain natural mineral waters and the probability that it exists in all has done something towards providing an explanation of the superiority which natural waters are generally admitted to possess over artificial imitations resembling them in regard to their principal ingredients. How far this may be a sufficient explanation, or how far the action of certain salts may be modified by the presence of traces of others which accompany them in natural waters, remains still to be decided, but probably few practitioners would hesitate about giving a natural medicinal water preference over an artificial one. Among the natural waters which are bottled and supplied for regular consumption in the patient's home, that of the Kronenquelle, at Obersalzbrunn, Silesia, has long been favourably known. Messrs. Schacht, Warner, and Co. (55, Fore Street, London, E.C.), who are the British agents, have recently submitted samples of this water, and the results of our examination of it are quite satisfactory. It possesses a well-marked alkalinity, the principal constituents being sodium, calcium, and magnesium bicarbonates, with sodium sulphate and smaller quantities of sodium chloride, potassium sulphate, and lithium bicarbonate. The chief use of the water is in diseases depending on insufficient elimination of uric acid, and it has thus a wide field of application.

Sumner's Iodine Tubes.

In commenting recently (BRITISH MEDICAL JOURNAL, March 23rd, 1912, page 678) on Messrs. R. Sumner and Co.'s iodine tubes we referred to a difficulty in dissolving the whole of the iodine when an aqueous solution is desired. The makers have now submitted further specimens of the tubes, containing boric acid in addition to iodine and potassium iodide, and giving directions for the contents to be dissolved as far as possible in a very small quantity of water and then added to a much larger quantity. Our tests with these tubes show that by proceeding in this manner a satisfactory solution is obtained with very little trouble.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

NUMBER OF PATENTED MEDICINES.

On July 11th the Chairman said that the Committee had received a letter from Mr. Temple Franks, the Comptroller-General of Patents, as to the number of letters patent issued with reference to medicinal preparations. From 1861 to 1897, inclusive, 577 such patents had been granted, and all had expired. From 1898 to 1910, inclusive, 688 patents were granted, of which 295 were still unexpired. There had been many applications during 1911 and 1912, but the figures had not been tabulated.

PROPRIETARY ARTICLES IN RELATION TO SEXUAL MATTERS.

Before Dr. Reginald E. Crosse gave evidence as to proprietary medicines and appliances in relation to sexual matters, the Chairman said that, for obvious reasons, the Committee proposed to take such of the evidence as was thought fit in private.

Dr. Crosse said he had been a general practitioner for twenty years, and was now temporarily assisting the British Medical Association, and appeared on behalf of that body. He had given special attention to the question of proprietary medicines, and wished to call attention to the very large amount of advertising there was of such preparations and appliances in regard to sexual matters. He was glad to be able to say, however, that a number of proprietors of newspapers and periodicals declined to accept such advertisements. There was, nevertheless, widespread advertisement of these articles, especially in the Midlands. To show the ramifications of such advertisements the witness quoted the names of a number of publications in which they appeared. They related to remedies for female ailments and irregularities, remedies for venereal diseases, and preparations and appliances for the prevention of conception. On April 13th he took a walk in the neighbourhood of Trafalgar Square and made notes of the exhibits in shop windows. The result was a long list of various preparations and appliances which were exhibited and offered for sale and which were obviously undesirable.

The Chairman intimated that he would ask the witness to indicate on broad lines the evidence he proposed to give, and the Committee would hear it *in camera*.

Dr. Crosse said he proposed to demonstrate that the various preparations and appliances were largely advertised. He would classify them as follows: (1) Remedies for re-establishing menstruation, (2) preparations for procuring abortion, and (3) advertisements of appliances for preventing conception. The first and second classes related to women, and the third class to women and men. He next proposed to refer to the advertisements which had special reference to men; they included "cures" for nervous debility and exhaustion. He would make a special point of "cures" which were advertised for venereal diseases, and of the danger of treatment when undertaken by unqualified persons. In no case would he give evidence on points as to which he was not in possession of documentary proof.

Dr. Crosse's evidence occupied a considerable time, and at its conclusion the press representatives were re-admitted.

DEAFNESS "CURES."

Mr. P. Macleod Yearsley, F.R.C.S., gave evidence on behalf of the British Medical Association as to proprietary medicines and appliances in relation to aural diseases. He said the quack advertisements addressed to sufferers from disease of the ear and its symptoms, especially deafness and tinnitus aurium, might be divided into two groups: (1) Those that promised to cure all forms of deafness "without operation" (and, he might add, without diagnosis) by means of drugs variously applied, and (2) those having for their object the sale of some appliance. The favourite method of these persons was to treat by correspondence, and to charge large sums for worthless plasters, drops, snuffs, and the like. Mr. Yearsley mentioned two or three typical "deafness cures"; these contained vaseline, beeswax, soap, glycerine, oil, and, in one case, oil of turpentine. These were fairly typical of the worthlessness of the "remedies," and some—although at first sight they might appear harmless—were capable of doing considerable mischief. Oil dropped into the ear would tend to become rancid, and so act as an irritant; the preparation containing oil of turpentine would most certainly prove an active irritant. At various times he had seen at his clinic at the Royal Ear Hospital patients with advanced middle-ear deafness, absolutely incurable by any drop treatment, who had been using quack remedies of that sort, with the result that their ear passages were in a condition of severe eczematous inflammation. The majority of these quacks treated by correspondence, but occasionally they had the temerity to accord their victims an interview. Mr. Yearsley quoted instances to show the futility of both methods. A servant girl who came to see him at the hospital had complete nerve deafness due to congenital syphilis and old-standing discharge. She showed him a written "diagnosis" by an "institute" of middle-ear disease with discharge, containing an implied promise to restore the hearing—a promise impossible of fulfilment because the nerve apparatus of both ears was completely destroyed. She had already paid 12 guineas to the institute. This girl's life was seriously endangered by wrong treatment. A man aged 30 consulted him for discharge which had existed since infancy. He had been treated by drops, plasters, snuffs, etc., by an "institute" by correspondence. On examination the ear was found to be full of polypi. The patient had serious mastoid disease, needing operation. Any aural surgeon would have recognized the symptoms described by the patient as indicating dangerous complications. A gentleman aged 70 had spent £21 on treatment by correspondence, and finally sought an interview with the "specialist," who syringed the ears without any previous inspection, causing much pain and increasing the deafness, as well as inducing tinnitus. The witness afterwards saw the case and found both ears blocked with wax, which the inexpert syringing had driven further into the ear. This was removed by proper syringing, with immediate relief to the patient. The harm done by these remedies was partly positive, partly negative. Some of them might do positive harm by acting as irritants, but they worked largely by causing delay of proper treatment appropriately applied after scientific diagnosis. The quack appliances advertised in relation to deafness were mostly vibrators and "artificial ear drums." Vibrator massage was of undoubted value in one or perhaps two forms of deafness, provided it was used with caution and under skilled supervision. But carelessly applied it might do more harm than good, especially if long continued. So-called "artificial drums" were also of value in certain cases, but most of the patterns widely advertised were obsolete and useless, consisting of rubber discs with a metal stem. Sometimes they were put in by the patient and lost, having to be removed under an anaesthetic from ear passages swollen with inflammation and bathed in foul pus. He had seen discharging ears in which rubber drums had been inserted and kept for days; the foul condition of the aural passages was indescribable. A drum placed over a perforation might prevent the escape of discharge, causing further dangerous extension of disease. In ears already discharging they might thus become positive agents for harm. In ears which had been cured they might reinfect by the irritation of their presence. The worthlessness of these appliances was well brought out in *Secret Remedies*; artificial drums, as sold by quacks, cost from one to four guineas the pair. He found in the catalogue of a well known instrument maker the same articles priced at 1s. and 2s.

In reply to the Chairman, the witness said that new advertisements of "deafness cures" were constantly being issued. In one recently advertised, the advertiser offered a reward of £500 if he failed to cure any case within thirty days. These advertisements were especially frequent in the sixpenny and shilling magazines. The same remedies and appliances constantly reappeared under new names.

The Chairman: What do you suggest should be the method of dealing with quacks of this kind?

The Witness: It is rather a difficult matter, but it is a widespread and grave evil, and some legislation is required.

In reply to Dr. Lynch, Mr. Yearsley said that, having regard to the way hopelessly deaf people flew to any cure advertised, it was probable that the vendors made a fairly

good income. From the pamphlets they issued, the proprietors appeared to have very crude ideas as to the anatomy of the ear.

Dr. Lynch: Could you trace the origin and training of such a quack?—That would be rather difficult. Any man with sufficient effrontery, and money enough to advertise, can easily get a little knowledge out of a textbook and proceed. In reply to a further question, Mr. Yearsley said it was curious how many apparently intelligent people would try quack remedies for deafness in preference to being examined by a specialist.

Mr. Cawley: Do you think it would be advisable to impose some prohibition on the use of aliases by vendors?

The witness said he did think so, and added that he agreed with the general suggestions of the British Medical Association: in regard to drugs advertised for the cure of affections of the ear, the ingredients should be stated on the labels. He also thought it would be wise to prohibit treatment by correspondence.

Mr. Lawson asked if all ear-drums were to be condemned, and Mr. Yearsley replied in the negative, observing that it was a question of their application under proper supervision.

Mr. Lawson: Would you prohibit the selling of all appliances not ordered by a surgeon?—Yes; I would go as far as that.

In reply to Mr. Newton, Mr. Yearsley said that oil was scarcely ever used by aural surgeons nowadays.

Mr. Newton suggested that some of the ingredients of the advertised remedies might do good, and that the real difficulty was self-diagnosis. Mr. Yearsley replied that the oils advertised would not be likely to do any good in any form of deafness, but some of their ingredients might be good if used in other ways. As to the stocking of obsolete ear-drums by instrument makers, the witness said that, although these instruments survived, they were practically never sold. He did not think the medical faculty of the whole world, if it held a conference, could suggest any treatment that would be of use in all cases of deafness. There must be examination of the individual patient.

On July 16th the Committee sat *in camera* during the morning to hear further evidence relating to the sale and advertisement of proprietary medicines and appliances in regard to sexual matters.

Proprietary Medicines and Skin Diseases.

In the afternoon Sir Malcolm Morris, consulting surgeon to the skin department of St. Mary's Hospital, gave evidence on behalf of the British Medical Association and of the Dermatological Section of the Royal Society of Medicine, of which section he was President, with regard to proprietary medicines and skin diseases. He had been forty years in practice, the first five as a general practitioner and thirty-five as a specialist in skin diseases. Some proprietary preparations were useful and should not be interfered with. These consisted of really effective remedies, of which the advertisements were in the main legitimate and truthful. To some extent, but not entirely, the formula was known; at any rate, the general principles upon which they were made and the principal ingredients were known, though the method of compounding might not be.

The Chairman: A medical man would not prescribe a proprietary medicine of whose contents he was ignorant?—Not as a rule.

Would he ever?—Yes, they do. I am sorry to say.

Continuing, the witness said there were proprietary remedies which did harm by causing inflammation of the skin. These were extensively advertised as marvellous cures, and he had known many cases in which they had done positive harm.

The Chairman: Would you give us a typical example?

Sir Malcolm said he would rather not mention any particular preparation, because it was unwise to select from a large number any one or two which might be harmful. There were remedies which were useless, and allowed infection to spread. In the case of ringworm, itch, erysipelas, and other infectious skin diseases, many of the proprietary remedies were perfectly useless. He had known cases where an epidemic of ringworm had obtained considerable hold in an elementary school because some useless remedy had been applied. There were also remedies advertised extensively for the treatment of serious diseases, such as cancer of the skin, rodent ulcer, lupus—a tuberculosis of the skin which destroyed it and might ultimately cause loss of life. Remedies used for these diseases had been perfectly useless in preventing their spread, and valuable time in which other remedies might have been applied had been lost, the patients ultimately getting into a terrible condition. In these cases, undoubtedly, great cruelty was inflicted upon innocent people. He had seen a large number of people who had come to hospitals, principally from the country, too late for treatment, and who had died from the worst form of death it was possible to die of. These people had been using proprietary medicines and ointments for years, and had got steadily worse. There were internal remedies for the treatment of skin diseases which produced drug eruptions, and, instead of proving beneficial, had resulted in discomfort and even pain and suffering to the patient. Articles of this class, which contained active drugs, when used without an accurate diagnosis, might have an unfavourable action upon the course of the case; for example, taking a drug which irritated an inflamed kidney when it happened to be coincident with a skin disease. He and his colleagues who were associated with him in giving this evidence felt that the mere publication of the formula would not be sufficient, because the majority of people, especially of the poorer classes, would not understand the formula and would not know whether any drug was present which would be likely in their own particular case to be harmful or not. They also felt that it was not right on general principles for advertisements to state what was not true. He looked to the time when advertisements would only tell the truth.

The Chairman: That would indeed be a happy time.

Mr. Lawson: Mr. Chesterton says exaggeration is the only truth.

Sir Malcolm: I am not a follower of Mr. Chesterton. Continuing, he said that his suggestion was that all remedies should be submitted to a special board of commissioners for analysis, and all advertisements of remedies intended for the treatment of disease should be submitted to the same board, who would act as censors, and forbid as far as possible untruthful advertisements appearing. The Public Prosecutor should act in cases where they did appear. The board of commissioners should consist of three persons—a chemist, who would analyse substances and test the approximate truth of statements made; a medical man of experience; and an independent person, probably a lawyer. His reasons for advancing these suggestions were: (1) That the State recognized a special responsibility for the health of the community; (2) that there was nothing as to which people were so prejudiced as secret remedies; and (3) that the majority of people had no special knowledge enabling them to discriminate between valid and worthless remedies. The public required to be protected against its own ignorance and credulity.

In reply to questions, the witness said he did not object to ointments for the skin so long as they were simple and harmless and untrue claims were not made for them in the advertisements. He had known cases where patients derived benefit from this class of proprietary remedy, but not nearly as often as he had encountered cases where they had done harm. He did not think it would be impossible for a board of censorship to express a definite opinion as to the value of these remedies. He did not take the view that these remedies should be entirely stopped; he used some of them himself.

The Chairman: Do you know of any remedy that could be correctly advertised as "a remedy for all irritating skin diseases"?—There is no such remedy.

Do you think it desirable that the BRITISH MEDICAL JOURNAL should publish such an advertisement, because I have one in those terms before me?—I do not think so.

Do you think it desirable that the *Lancet* should give a long testimonial to an article which describes itself in the way I have indicated?—I do not think it is wise.

Is "wise" quite the word?—I do not think it is right.

Dr. Arthur Whitfield, Physician to the Skin Department, King's College Hospital, gave evidence in agreement with that of Sir Malcolm Morris. Proprietary medicines for the

skin which fell into the "useful" class were secret prescriptions: their use was in forming the ingredients of a medical prescription. He felt strongly that no remedy should be sold with a recommendation as a cure for any disease. It was one thing for a man to say, "This is a good antiseptic," and quite another for him to say, "This is a good ointment for ringworm," because that involved diagnosis by the patient, and the question of diagnosis was the key of the whole situation.

In reply to the Chairman, the witness said he was acquainted with most of the much advertised skin ointments, etc. Not one of them contained anything new, and none of them could be included in the class of useful remedies. He did not think the number of cases in which harm was done by advertised preparations was very large, but when harm was done it was extremely serious. Sufferers from lupus, for instance, were liable to be doomed to lifelong misery if while they were using ineffective ointments it became too late for the simple surgical operation that would cure them.

The witness agreed with Dr. Lynch that there were quite six kinds of eczema, requiring six different forms of treatment.

The Widespread Advertisement of Secret Remedies.

Mr. Henry Sewill, M.R.S.C.S.Eng., who also gave evidence on behalf of the British Medical Association, said his attention was first directed to the evil results of proprietary remedies in 1879, when a case came to his notice of a woman who was suffering from cancer which had become inoperable through delay. She had been treating it herself with a much-advertised ointment. He had come to the conclusion, from a careful examination of the question, extending over many years, that these preparations were fraudulent to a great extent; they inflicted an immense amount of unnecessary suffering, and gave rise to considerable mortality. The remainder of Mr. Sewill's evidence consisted of cuttings from a representative collection of the newspapers of the country, showing how widespread are the advertisements of proprietary medicines. Mr. Sewill said that this collection showed religious papers to be the worst offenders.

ROYAL SOCIETY TWO HUNDRED AND FIFTIETH ANNIVERSARY.

The celebration of the two hundred and fiftieth anniversary of the founding of the Royal Society this week has resulted in a general review of post-Baconian science. The President of the Royal Society, the Prime Minister, the Dean of Westminster, and many of the delegates who attended the celebration held during the week have each spoken of the progress of science as illustrated by the history of the society, and none of them has felt it possible to trace out even the broad lines of progress of any particular branch of science. The difficulty has been not the wealth of detail, but the wealth of grand principles discovered, a wealth making the task of synthesis too great to be attempted in the short space of time available at any sitting.

Reception by President and Fellows.

The essential business of the celebration was crowded into ten short hours on Tuesday. On Monday night the President and the Fellows received their guests informally in the rooms of the Society at Burlington House.

Service in Westminster Abbey.

The first formal recognition of the anniversary, apart from the visit of the President and the Treasurer to the King to present to him the memorial volumes on Saturday, was at noon on Tuesday at Westminster Abbey, when a special service was held. The Dean of Westminster (Bishop Ryle) preached the sermon, taking his text from Esdras, "Truth abounds and is strong for ever." Science, he urged, was truly a revelation, giving them instead of six days of creation a long vista of time, and continuity instead of repeated acts of creation. Truth was one, and the God who revealed Himself in the laws of evolution, of gravitation, and of the conservation of energy was the same God who revealed himself in love, forgiveness, and the gift of immorality. The lesson read was "Let us now praise famous men," and the special hymns "The spacious firmament on high" and "Now thank we all our God." The Fellows joined in neither hymn. With the present Fellows of the society standing at the shrine of their most illustrious dead, one could not but wonder what comments Pepys, their sixth President, would have made on the ceremony. In his *Diary* one might perhaps have read some such passage as "To the Abbey, where the Royal Society did celebrate the two hundred and fiftieth year of their founding, where a brave concourse of Fellows, and among them Arthur Balfour, the late Minister. But, Lord, to think that so brave a concourse should be wholly silent, were it not for one or two of their number, when the choir did sing, 'Now thank we all our God,' which methought a great pity that such men should be so void of music."

Reception of Delegates.

The formal reception of the delegates took place in the afternoon at Burlington House, academic dress being optional, as it was at the Abbey. After formally giving the delegates welcome, Sir Archibald Geikie, the President, traced the origin and early days of the society. With commendable foresight, he said, the early founders had taken advantage of the prevalent spirit of curiosity regarding the secrets of Nature and had gathered round them a company of three times their own number, comprising prominent representatives of the Church, of law, of medicine, of politics, and of the public services. Starting its career with a notable group of physicists and mathematicians, among whom were Robert Boyle and John Wilkins, it had ere long welcomed Isaac Newton into its ranks, published his immortal *Principia*, and annually elected him as its President for nearly a quarter of a century. The physical sciences had all along been strongly represented. It seemed but yesterday that James Clerk Maxwell's voice was heard in these rooms and that Stokes and Kelvin sat in the presidential chair. That the succession of leaders was still well maintained was shown by the presence among them of Lord Rayleigh, Sir William Crookes, Sir J. J. Thomson, Sir Joseph Larmour, and many others. Nor had the biological sciences been less prominent in the work of the society. From the early days of John Ray down to those of Charles Darwin, Hooker, Huxley, and Lister, every branch of biology had been illustrated and advanced by the Fellows. As science knew no restriction of country or language the Royal Society had from its earliest beginning cultivated friendly relations with fellow workers in research all over the world. The first list of original members included the name of Huygens, and between the society and other academies and universities there was close recognition. The confraternity of science, however, reached on that day the climax of its manifestation in their experience when they received delegates from so many countries, who, by their presence, expressed the sympathy and goodwill of the institutions they represented.

The delegates present numbered over 200, and the practice adopted was that a single delegate should speak for not more than three minutes for the institutions of a single country. In the course of the short speeches attention was directed particularly to the international character of the work undertaken by the Royal Society. The German delegates, in addition to their formal addresses, presented the society with a large bronze plaque on which was a civic crown with the inscription:

> Regiae Societati Britannicae illustri scientiarum cultrici et Protectrici CCL Annos Feliciter Peractos pie congratulantur Universitates Germaniae, A.D. MDCCCCXII.

In presenting the address from Aberdeen University, and speaking on behalf of the Scottish delegates, Principal Dr. Adam Smith referred to Sir Archibald Geikie as one of the most beloved and honoured teachers and pioneers of research in Scotland.

Among the delegates was Professor James Geikie, representing Edinburgh University, the brother of the President. There were loud cheers as the professor was officially greeted by his brother.

Banquet.

In the evening the banquet was held at the Guildhall, among the medical men present being Sir T. Barlow, Sir R. J. Godlee, Sir William Osler, Sir T. Clifford Allbutt, Sir Henry Morris, Sir T. Lauder Brunton, Sir William

Macewen, Sir Ronald Ross, Sir W. B. Leishman, Sir J. Crichton-Browne, Sir J. R. Bradford, Professor I. P. Pawlow, Professor A. Crum Brown, Professor C. S. Sherrington, Professor Anderson Stuart, Dr. G. F. H. Nuttall, Dr. A. D. Waller, Dr. F. W. Mott, Mr. H. G. Plimmer, Professor E. H. Starling, and Sir William Ramsay. The toast of the evening was proposed by the PRIME MINISTER. The foundation of the Royal Society, he said, was the most vital, if not the most characteristic, act of Charles II. Whether the early interest which the society took in anatomical research was or was not due to the proclivities of their royal patron he did not know, but there was no doubt that Charles frequently asked the society for its advice. Mr. Asquith referred to the attention paid in the early days of the society to experiment. There was on record, for instance, the account of the man who had had a quantity of sheep's blood let into his body and had found himself much better, but the diarist who described it also described the man in question as being "just a little bit cracked." If one was inclined to laugh, it was a useful corrective to remember that it was under the auspices of Pepys that Newton's *Principia* was produced. Sir ARCHIBALD GEIKIE replied for the Royal Society, and emphasized the fact that the Royal Society had never been in receipt of any direct aid from the State. Viscount MORLEY, of Blackburn, proposed "The Universities at Home and Abroad." Professors PICARD, WALDEYER, and WINKLER replied. The ARCHBISHOP OF CANTERBURY proposed "The Learned Societies in the Old World and the New." Marchese E. PATERNO DI SESSA, Count K. A. H. MORNER, and Dr. ARNOLD HAGUE responded. The toast of "The City of London" was proposed by Principal PETERSON, and replied to by Sir T. VEZEY STRONG.

Entertainments.

On Wednesday the Duke and Duchess of Northumberland gave a garden party to the delegates at Syon House, and in the evening a conversazione was held at Burlington House. On Thursday the King (the Patron of the Society) and the Queen received the President and Council of the Royal Society and the Delegates at Windsor, and on the same afternoon the Fellows attending the celebrations were the guests of Their Majesties at a garden party at Windsor, the Royal reception at Windsor concluding the celebration.

IMPERIAL CANCER RESEARCH FUND.

THE annual meeting of the Imperial Cancer Research Fund was held on Wednesday, July 17th, the Duke of BEDFORD in the chair.

REPORT OF EXECUTIVE COMMITTEE.

The report of the Executive Committee recalled the fact that in the last annual report reference was made to the decision of the Executive Committee to contribute towards the cost of new laboratories which the Royal Colleges of Physicians and Surgeons had offered to provide in their new examination hall, in the form of a premium for a definite period of occupation, or by the payment of an annual rental. As the result of negotiations it was agreed to pay the sum of £5,000 for a period of twenty-one years' tenancy, with the proviso that, should the Royal Colleges for any reason find it necessary to determine the agreement before the expiration of this period, they would recoup the fund for the unexpired period at a proportionate rate to be actuarially calculated. The report continues:

The new laboratories are now completed and occupied, and it is satisfactory to be able to report that the general superintendent and his staff are entirely satisfied with them, and it may be stated that they are a great improvement on those hitherto used.

The lease of the farm at which the larger animals are kept and studied is shortly expiring, and the Chairman of the Committee was asked to negotiate for its renewal. There is little doubt that satisfactory terms will be agreed upon and that this work will continue.

At the meeting of the Executive Committee in March, the Honorary Treasurer handed in his resignation; and in spite of the Committee's request that he would reconsider his decision, Sir Henry Morris did not see his way to continue in office. In consequence, the Committee appointed Sir William Church to act as Treasurer until the meeting of the General Committee. The Committee cannot allow this resignation of Sir Henry Morris to be mentioned without placing on record their cordial appreciation of the immense services he has rendered to the cause of investigation of cancer. It was largely due to his energy and foresight that the fund was originally established, and his constant interest and careful administration of the finances have largely contributed to the sound position which the work has attained. The Executive Committee recommend to the General Committee to appoint Sir William Watson Cheyne, Bart., C.B., F.R.S., as Honorary Treasurer of the fund.

There has been during the year an unavoidable interference with the laboratory researches on account of the transference of the work from the old to the new laboratories, but in spite of this disadvantage the staff have prepared a Fifth Scientific Report which is now ready to be issued. The report consists of the following papers:

1. The Manifestation of Active Resistance to the Growth of Implanted Cancer.
2. The Nature of the Immune Reaction to Transplanted Cancer in the Rat.
3. A Cytological Analysis of the Reaction in Animals Resistant to Implanted Carcinomata.
4. On the Immunizing Power of the Placenta, Blood, Embryonic Skin, Mammary Gland, and Spleen of Different Species against Carcinoma of the Mouse.

During the year the following papers have been issued from the laboratories:

1. Intracerebral Transplantation of Malignant New Growths, *Folia Neurobiologica*, Bd. vi, No. 23, 1912.
2. Present Aspect of some Cancer Problems, *Worken van het Genootschap ter Bevordering van Natur Genees en Heelkunde te Amsterdam*, IIe Serie, Deel vii, Afl. 1, 1912.
3. New Contributions to the Theory of the Individuality of Cancer, *Zeitschrift für Immunitätsforschung und experimentelle Therapie*, December 16th, 1911.
4. Mice Immunized Subcutaneously are Resistant to the Implantation of Cancer in Internal Organs, *Lancet*, July 8th, 1911.
5. Abstract of Lecture before Medical Graduates' College and Polyclinic, *Lancet*, January 21st, 1912.

REPORT OF DIRECTOR OF LABORATORIES.

Dr. Bashford stated in his report that the statistical investigations had been continued in outlying parts of the empire and in India, where from December, 1907, to December, 1911, 2,014 fresh cases were reported, 463 being in vegetarian castes, 1,074 in those living on a mixed diet, while in 477 specific reference to diet was not made. The breeding experiments bearing upon heredity had been continued. From January, 1912, preparations were made in anticipation of the removal from the old to the new laboratories, and no fresh research was undertaken. These precautions enabled the move to be carried out expeditiously the last week in May. Dr. Bashford said the Fifth Scientific Report was concerned with the nature of the resistance which might be artificially produced to the inoculation of cancer and the bearing of the results on the biology of the tumour cell. The following aspects of the question were still under discussion:

1. Whether immunity or resistance can be produced only (*a*) by tumour tissue, or (*b*) the normal tissue of animals of the same species, or (*c*) by both tumours and normal tissue from other species as well.

2. Whether there are two types of immunity to be considered, an active immunity, in the production of which the whole organism reacts, or a second type in which a tumour already existing withdraws some specific foodstuff to such an extent that other growths are starved.

3. Whether the immunity produced by normal tissue is identical in nature with that produced by tumour.

Immunity.

Dr. Bashford pointed out that the papers published in the Fifth Scientific Report were additional evidence that tumour or normal tissue produced immunity only when it was derived from the same species of animal as that on which the test was made, and that the immunity produced by these substances was of the same nature. They demonstrated further that starvation immunity did not exist, and that all the observations so far made could be adequately explained by assuming the presence of an active immunity, in consequence of which the tumour cells were paralysed and rendered unable to obtain from the host the specific scaffolding of connective tissue and blood

vessels necessary for their development. It was shown also that during the development of resistance a reaction was in progress throughout all the connective tissues of the animal, although it was not possible to be sure of its mechanism. The tumours varied among themselves in two remarkable ways—(*a*) as regards their power to induce immunity (auto-immunity) in other animals, and (*b*) in their susceptibility to such immunity. These two factors played the predominating part in the spontaneous cure of transplanted cancer, and when healing did occur it was determined mainly by properties in the tumour cells themselves, by virtue of which they could excite reactions in their new environment inimical to further tumour growth.

Spontaneous Recession of Transplanted Tumours.

The spontaneous recession of transplanted tumours was first observed in the mouse, and it was now well known that it occurred in the rat; during the past year it had also been frequently observed in the case of a tumour of the rabbit which was being propagated in the laboratory. There could, therefore, be no doubt that it was a phenomenon of wide biological significance. Recession took place in spontaneous tumours, however, with much greater rarity, and observations extending throughout the past eight years had shown that in the mouse, among tumours whose malignancy had been demonstrated both clinically and microscopically, it occurred in scarcely 1 per cent. Resemblances could be recognized when the appearances seen during the process in spontaneous tumours were compared with those in propagable growths, and in both instances they suggested that its course was due to a disturbance in the relationship between epithelium and connective tissue, in the course of which the cancer cell, losing its aggressive character, was overpowered by the connective tissue. The study of healing in spontaneous and in transplanted tumours showed that the cure for cancer must be sought by obtaining a fuller knowledge of those properties of the malignant cell which rendered it susceptible to inimical influences and not merely by striving to induce these influences in its environment. The number of spontaneous cures occurring in a transplanted strain was determined by several factors of which some were resident in the tumour cells themselves. One of them was a change taking place in the cells themselves whereby they became more vulnerable to connective tissue invasion and overgrowth which put an end to their existence. This change, or its equivalent, could not yet be induced experimentally, but so far as the process of healing had been followed—for example, after the use of radium or adrenalin, no difference had been detected between it and spontaneous cure. In the case of transplanted tumours, the ultimate result was merely an enhanced frequency of auto-immunization due to the absorption of the tumours in the treated as compared with the control animals. Interference with continuous growth had been obtained only inconstantly and in very moderate degree for tumours naturally exhibiting a tendency to spontaneous healing, and not at all as yet for those reproducing more faithfully the features of natural cancer in their powers of progressive growth and their tendency to produce metastases in the animals inoculated. The differences between the tumour strains at either extreme were, however, differences in degree only, not in kind. From the small beginning with tumours easy of attack and at the bottom of the ladder, as it were, it was to be hoped that advance would be made, stage by stage, till the cells at the top of the ladder—those of the most virulent transplantable tumours and of spontaneous growths—might be rendered susceptible to changes in their environment and liable to extinction through the agency of these changes, even though they could not be made to succumb to direct attack alone. In this conclusion general agreement appeared to have been reached in different parts of the world, and in Germany and France efforts had already been made to obtain an elective action upon the tumour cells in a variety of ways by direct bio-chemical attack. This was a line of investigation which at present urgently required further following up.

Utilization of Foodstuffs by Tumours.

A fresh line of research had been opened up by the observation of certain tumour strains of a very special character, which stored up carbohydrates in a form recognizable microscopically as glycogen, and it was hoped that bio-chemical investigation combined with microscopical examination would throw some light upon the manner in which the tumour cells utilized food substances for their own purposes. As ample opportunity was given for designing and arranging the new laboratories, they are more commodious and better adapted to their purpose than the old, a special feature being that suitable provision was made for bio-chemical investigations. Dr. Bashford concluded with a tribute to the services which the late Sir Henry Butlin rendered to the investigations conducted in the laboratories.

REPORT OF ACTING HONORARY TREASURER.

The report of the Acting Honorary Treasurer for the year ending June 24th, 1912, stated that during that year the income from investments was £4,606 8s. 2d., and from contributions, including legacies, £1,305 10s. 6d. The expenditure on the researches during the same period was £5,988 5s. 9d. Thus the expenditure exceeded the fixed income from investments by £1,381 17s. 7d., and the total income by £76 7s. 1d. It was not satisfactory that the list of subscribers should remain so restricted, only ninety-two persons having sent a contribution. It is essential that the income of the fund should be increased, especially now that the new laboratories are occupied.

Sir WILLIAM CHURCH, in moving the adoption of the report, said the time occupied in the preparation of the Scientific Reports and the interruption of work caused by the removal of the laboratories from the old to the present Examination Hall had prevented any considerable advance being made in fresh lines of research. The breeding experiments had now taken a permanent form, necessitating a statistical survey of the material accumulated yearly. The survey in October, 1911, confirmed in every respect the figures given and opinions expressed as the result of the analysis undertaken in October, 1910, of their cancerous strains of mice, which was published in the Fourth Scientific Report. There were available for study 706 female mice, as compared with 562 in 1910. In those of remote cancerous ancestry, where cancer was not present in either the mother or grandmother, 25 carcinomata of the mamma developed in 283 mice, a percentage of 8.8. In those of recent cancerous ancestry—that was to say, where cancer was present in the mother or grandmother, or in both—71 carcinomata occurred in 423 mice, or 16.8 per cent. It was to be hoped that the numbers at the end of this year would permit of some conclusions to be formed as to how far a hereditary predisposition to the disease exists. Sir William Church, after giving a lucid summary of Dr. Bashford's report, concluded by alluding to the losses they had suffered during the year. Death had removed Sir Julius Wernher, a most liberal supporter of the fund, and Lord Lister, who, although never taking an active part, was fully in accord with the manner in which the work of the fund was carried on. From the General Committee they had lost Mr. Archibald Coats, an original member and generous subscriber. Sir Henry Morris, who had been treasurer since the initiation of the fund, and had done so much by his care and influence to place it in a firm financial position, retired from office, but remained on the General Committee. They also had to deplore the death of Sir Henry Butlin, who to the last gave the committee most valuable assistance from his great pathological and practical knowledge of cancer.

Sir JOHN MCFADYEAN, who seconded the motion, said that our knowledge of cancer formation was much more definite and precise than it was ten years ago, and to that advance of knowledge no institution had contributed more than the Imperial Cancer Research Fund. The aim of investigation was the discovery of the cause of cancer and of the means of preventing and curing the disease. That goal could scarcely be said to be yet in sight; but if it were ever reached, it would not be by accident but by carefully planned researches. The resolution was carried.

Sir W. Watson Cheyne was elected Honorary Treasurer, and Dr. Bulloch was elected a member of the Executive Committee.

The DUKE OF BEDFORD, in reply to a vote of thanks, said the total amount annually subscribed to the fund was £210 3s. 6d. It would be a disgrace to humanity if investigations in this country were to be crippled by want of funds.

LONDON SCHOOL OF TROPICAL MEDICINE.

IT was announced in the JOURNAL of July 13th that an appeal had been issued by a Committee formed at the request of Mr. Lewis Harcourt, Secretary of State for the Colonies, for funds to be applied to the extension and development of the London School of Tropical Medicine. The Right Hon. Austen Chamberlain is the Chairman of the Committee, which includes the Duke of Marlborough, Lord Lansdowne, Lord Crewe, Lord Selborne, Lord Curzon of Kedleston, Lord Iveagh, Lord Strathcona, Lord Mount Stephen, Lord Cowdray, Sir Edward Grey, Mr. Harcourt, Mr. Joseph Chamberlain, Mr. Alfred Lyttelton, Sir J. West Ridgeway, Sir Walter Hely-Hutchinson, the Lord Mayor, General the Hon. Sir R. Talbot, the Hon. N. Charles Rothschild, the Hon. Sir Richard Solomon, Sir Frank Swettenham, Sir Frederick Lugard, Sir Matthew Nathan, Colonel Sir P. Girouard, Sir Patrick Manson, Sir Owen Philipps, Sir W. Bennett, Sir William Treacher, Mr. Astor, M.P., Mr. A. E. Aspinall, Mr. Otto Beit, Mr. James Cantlie, and Mr. R. K. Magor. The sum of £100,000 is needed to provide an adequate endowment fund, to make necessary additions to the laboratories and buildings for the accommodation of the increasing number of students, to provide for the active prosecution of research, and to establish a small nursing home for civilians suffering from tropical diseases who cannot afford to procure for themselves the special treatment and nursing which their condition requires.

It is almost needless to recall to our readers that the school was founded by the Seamen's Hospital Society in 1899 under the auspices of Mr. Joseph Chamberlain, then Colonial Secretary. The school has received the warm support of successive Secretaries of State both for the Colonies and for India. In proof of the practical value of the research work that has been done in the province of tropical disease, Mr. Austen Chamberlain points to the great reduction of malaria in the Federated Malay States, in Hong Kong, and in the zone of the Panama Canal; to the virtual extinction of yellow fever in Havana, and to the diminution of deaths from sleeping sickness in Uganda. He refers also to the fact that during the period from 1904-1911 the invaliding rate among the European officials in British West Africa fell from 63 per 1,000 to 25 per 1,000, and the death-rate from over 27 per 1,000 to less than 14 per 1,000.

In all this work the London School has borne its share as far as its means allowed, but those means are very modest and quite insufficient for its present needs. Some help has been received from the Government and more from public subscriptions. With the money obtained in this way and subsequent public benefactions, buildings have been erected and equipped with the latest scientific appliances, and a library and museum and special wards for the treatment of tropical diseases, which bring up to 50 the number of beds available in the hospital, have been built. The capital expenditure for these purposes has amounted to £45,000. After enumerating other sums of money received from various sources, Mr. Chamberlain goes on to say that additional laboratories and residential quarters for at least 20 more students are urgently required. The number of those who have attended the school has rapidly and satisfactorily increased since its commencement. In 1900 they were 75; in 1911 they were 159, or more than double. Altogether 1,438 students have passed through the school, 692 sent by Government, 512 private students, 61 foreign students, and 173 missionaries. There were 64 entries during the current session, and in view of the activity which is now being shown in the development of the tropics, these figures will no doubt be increased in the near future.

The present laboratories are already overcrowded. In the last ten years the school has sent investigators to the West Indies, East and West Africa, the Soudan, Fiji, Ceylon, Bagdad, and other places. At present a highly qualified expert in each of the departments of protozoology, helminthology, and entomology is attached to the school, but a considerable portion of their time is occupied in tuition work, and it is desired to raise a sufficient sum to enable these appointments to be duplicated, and provision to be made for keeping an expert in each branch continuously at work in the tropics. Moreover, it is felt to be most desirable to make provision for the proper treatment and nursing of men who have been engaged in our rapidly growing colonies, in civil administration, in railway construction, trading companies, plantation work, and mines. Only a relatively small proportion of these are able to meet the expenses of a serious and prolonged illness, and very few of them can bear the cost of a nursing home, and of medical or surgical treatment by the limited number of practitioners in this country who have had the opportunity of becoming experienced in the management of tropical disease. Provision of the kind in view has been made for naval and military officers in the Convalescent Home at Osborne, but there is none at present for the civil administrator or employee whose health has been sacrificed in the government or development of the territories for whose future we have made ourselves responsible.

A meeting was held at the Foreign Office on July 17th, when Mr. CHAMBERLAIN announced that Mr. Otto Beit had promised to contribute £5,000 when the fund reached £20,000. Mr. Waldorf Astor had offered £1,000 if nine other donations of equal amount could be collected, and two days previously Mr. Chamberlain had received the ninth sum of that amount from an anonymous donor. Within the last two or three weeks two or three members of the Committee had collected between £17,000 and £18,000.

Sir EDWARD GREY moved a resolution commending the appeal to all interested in the development of the tropics. This was seconded by Lord CREWE, supported by Professor BLANCHARD of Paris, and carried unanimously.

On the motion of Mr. LEWIS HARCOURT, an Executive Committee was formed to carry out the appeal.

LITERARY NOTES.

IT is generally admitted that to Servetus belongs the honour of having first described the pulmonary circulation. On the occasion of unveiling a monument to that unhappy victim of Calvin's intolerance at Vienne last October, Professor Charles Richet asked: "By what miracle did Servetus, who had not, like Harvey, practised vivisection, who had not, like Vesalius, dissected, who had not, like R. Colombo, taught anatomy, who had not, like Estienne, drawn the human body, upset the doctrines of Galen and of the masters, conceive, explain, and divine that the blood leaves the right ventricle to return, after a long circuit, to the left ventricle?" In the June number of *Janus* Dr. L. Cheinisse, of Paris, takes exception to the statement that Servetus had never dissected. He argues that in the famous passage in the *Christianismi Restitutio* in which the pulmonary circulation is described there is clear proof that he had dissected. He says: "*Ut vero totam animae et spiritus rationem habeas, lector, divinam hic philosophiam adjungam, quam facile intelliges* si in anatome fueris exercitatus." Moreover, Haller says that Servetus was the assistant of Gunther, as Vesalius was. Speaking of him, he says (in his *Bibliotheca Anatomica*): "*Acris ingenii vir, et anatomes minime imperitus, quem J. Guintherus*, secundo a Vesalio loco inter eos discipulos numerat, qui sibi adjumento funerint." Challenged as to his statement, Professor Richet replied by admitting some exaggeration; but he goes on to maintain that Servetus can have dissected very little. "If he dissected," he says, "it could not have been before 1534 nor after 1537, and, as he published his *Geography of Ptolemy* in 1535, he could only have worked on dead bodies in the second half of 1536 (perhaps the whole of 1536). It will be allowed that this is not much to upset the doctrine of the masters and to establish what Vesalius himself, notwithstanding his long investigations, failed to see—the fact that the interventricular septum is imperforate." The arguments on each side are fairly strong, and we must leave readers to form their own conclusions. It has always seemed to us singular that a discovery of such importance should have been buried in a dull theological treatise, as if its author thought so little of it that he was indifferent as to its fate. Flourens, in his *Histoire de la Découverte de la Circulation du Sang*, expresses wonder that the confused writer of so absurd a book as the *Christianismi Restitutio* should, for the few pages when he speaks of the pulmonary circulation, have become admirably lucid. Theologians might, however, have recourse to Touchstone's reply churlish, and "disable the judgement" of scientific men as to works of divinity.

British Medical Journal.

SATURDAY, JULY 29th, 1912

MEDICAL RESEARCH AND COLONIZATION.

As stated in the Journal of July 13th, an appeal was recently issued by a committee formed at the request of Mr. Lewis Harcourt, the Colonial Secretary, on behalf of the London School of Tropical Medicine. The substance of this appeal will be found at p. 131. The Chairman of the Committee is Mr. Austen Chamberlain, whose name will recall the leading part taken by his illustrious father in the foundation of the school and the promotion of research in the domain of tropical diseases. The suggestion came from Sir Patrick Manson, but had it not been taken up by a statesman with a breadth of outlook wide enough to enable him to appreciate its importance, it would have fallen, like so many suggestions for the promotion of science, among the thorns of political strife. It was fortunate indeed for this country that it had at the time a man who recognized that in the prevention of tropical disease lay the best hope of the maintenance and development of a large part of the empire. Here was an object which, while not likely to stir the pulse of the average voter, made strong appeal to all who could see beyond the narrow interests of faction. In founding the school Mr. Chamberlain was inspired by the feeling that this country owed a duty to its tropical and subtropical dependencies and to those who do its work in climes always dangerous and often deadly to Europeans. The Colonial Secretaries who have followed Mr. Chamberlain have shown an active interest in the school—none more so than Mr. Harcourt. The foundation stone of the Albert Dock Hospital, with which the school is connected, was laid on July 15th, 1889, by King George, then Duke of York, who would have shown his continued sympathy with the objects of the school by laying the foundation stone of a new wing on July 17th had not His Majesty, on the advice of his Ministers, given up his intended visit to the East End on that day.

The institution has proved itself worthy of the distinguished auspices under which it began its career. We remember when Sir Patrick Manson delivered his famous lecture at St. George's Hospital, in which he pointed out the urgent need of facing the pathological problem of the tropics. He was then looked upon by the leaders of the profession as a dreamer of dreams, and his suggestions as to the parasitic origin of many tropical diseases were treated as romance. Happier than many scientific pioneers, he has lived to see his dreams come true. He has been able to watch the acceptance of his views and the proof of his theories established by investigators who, drawing inspiration from his teaching, were guided to discoveries of the most far-reaching importance. With the exception of Listerian surgery, there is nothing in the history of medicine that can be compared with the extraordinary development of tropical pathology that has taken place in less than twenty years. The fruits of the labours of the patient investigators who have chosen this as their field of work are already abundant and valuable enough to encourage the confident hope of still greater harvests in future. Taking first malaria, which claims a larger tribute of human life than any other disease, we may quote the striking illustrations given by Mr. Austen Chamberlain. In Klang and Port Swettenham, two towns within the protected Federated Malay States, remedial measures were commenced in 1901. The deaths from malaria were in 1901, 368, and in 1905, 45. In the surrounding districts, where no measures were taken, the deaths for these years were respectively 266 and 351. In Hong Kong remedial measures were commenced in 1901. In that year the admissions to hospital were 1,294, and the deaths 132. In 1905 the admissions were 419, and the deaths 54. In 1904 the United States took over the administration of the zone of the Panama Canal; the deaths from malaria, which in 1906 were 821, had sunk in 1908 to 282. By the persevering destruction of the causes of the disease, Colonel Gorgas has transformed the zone from one of the deadliest spots on the face of the earth to a healthy place. It was not the want of engineering skill that made the French fail in cutting across the isthmus, but the deadly parasites which made labour impossible. The success of the Americans may justly be claimed as a triumph of scientific medicine. In the case of yellow fever the results have been still more remarkable. In the city of Havana, 35,952 persons perished of yellow fever between 1853 and 1900. The United States Government commenced remedial measures in 1900, and in 1907 only one case of yellow fever was reported. In the case of another terrible scourge, sleeping sickness, steps have been taken in Uganda during the last three years to stamp it out. In one district alone an epidemic had destroyed some 200,000 people out of a total population of 300,000. In 1907 the deaths in the kingdom of Uganda numbered less than 4,000, in 1908 they fell to 1,700, and in 1910 to 1,475.

In the work of research which has led to such brilliant results, the London School of Tropical Medicine has borne its share as far as the means at its disposal would allow. But although it has done excellent service in teaching, its activity in the field of investigation has been sadly crippled by want of funds. It has not had the advantage of such lavish benefactions as the Liverpool School, with which it competes in friendly rivalry, has had. This is a reproach to the richest city in the world, but the explanation probably lies not so much in the indifference of Londoners as in the vast size of the capital and the consequent dispersal of the interests of its inhabitants among innumerable different objects.

The School has, indeed, received a considerable amount of support both from the public and from Government. At banquets at which Mr. Chamberlain presided in 1899 and 1905, £21,000 was subscribed, of which the Government contributed £3,530. During the last seven years it has received from the Tropical Diseases Research Fund, formed from contributions from the Imperial Government and the Governments of some colonies and of India, some £13,000 for special work in certain branches of tropical medicine, for which separate laboratories have recently been provided. The private benefactor has also given liberally, and £10,000 bequeathed by the late Lord Wandsworth to Sir William Bennett, to be applied in furtherance of medical research, has been given to the School for the foundation of a scholarship. Some of the Crown Colonies which realize the value of the training given to students

who intend to work in their territories contribute nearly £900 a year.

But in view of the responsibilities created by the addition of new territories in recent years the importance of tropical medicine has largely increased. Each region has its indigenous diseases, and if our dependencies are to be successfully administered the first step is to make them habitable by white men. This can only be done by the acquisition and the application of special knowledge, and it is for this that the School of Tropical Medicine exists. It is for the enlargement of its opportunities of treating the sick and training doctors for tropical practice and investigators who will devote themselves to the acquisition of the knowledge required for the successful warfare against tropical diseases, that the sum of £100,000 is required. It is earnestly to be hoped that the response to Mr. Austen Chamberlain's appeal will be generous: contributors may feel confident that their money will be spent for truly patriotic purposes. If so much has been accomplished in so short a time and with such small means, what may not be hoped from sustained efforts adequately supported? Those who can speak with authority are confident that by human effort the rate of mortality from tropical disease can be greatly reduced, and the strength and efficiency of European residents in unhealthy climates can be sensibly increased. Successful colonization depends before everything on the advance in knowledge of the diseases which are among its most formidable hindrances.

THE PLENDER REPORT.

No one who knows the true feelings of the medical profession will believe that the distaste with which it views the medical side of the insurance scheme would be transformed into hearty approval merely by the concession of its demands as to remuneration. The causes of dissatisfaction lie deeper, and are rooted in the belief that the whole scheme was conceived without adequate knowledge or investigation; but though this is true, nevertheless the question of remuneration has bulked large in the mind of the Chancellor of the Exchequer, no doubt because he has to find the wherewithal. He took up the position that since the medical profession required that the remuneration should be increased above the 6s. allowed for medical attendance and medicine in the actuarial report of May, 1911, he had the right to demand that the profession should provide him first with facts and figures as to contract practice, and secondly, with evidence as to the amount of remuneration now received by the profession from practice among the classes who will come under the Insurance Act. The State Sickness Insurance Committee put the figures it had collected as regards contract practice before the Chancellor of the Exchequer and Commissioners for their use and criticism. But on the second point the British Medical Association had no figures, and the Chancellor of the Exchequer asked the help of the State Sickness Insurance Committee to get these figures. The Committee did not feel justified in refusing its sanction, and the report of the investigator, Sir William Plender, was issued on July 11th, and published in the issue of the SUPPLEMENT for last week. It should be said that the towns were so far agreed towns that three were suggested by the Commissioners and three by the State Sickness Insurance Committee, but that the report was sent to the press by Mr. Lloyd George before the Committee which had helped him to get the figures had had an opportunity of reading it. The text for the report given by the Chancellor was, "I want to ascertain what the doctors are paid at the present moment for the kind of work which they will be expected to do under the Insurance Act."

The State Sickness Insurance Committee, which received Sir William Plender's report only a week before it had itself to report to the Annual Representative Meeting, has had no opportunity of adequately considering it. It, however, appointed a small subcommittee, which has drawn up some preliminary observations, which are published in the SUPPLEMENT of this week, and the report, together with the observations of the subcommittee, will no doubt be considered by the Representative Meeting. As will be seen the Committee finds fully justified the warning it gave last month to the effect that the information obtained as the result of the inquiry would probably be inadequate and might be misleading. We shall here confine ourselves to a few observations on the conduct of the inquiry and the general structure of the report, referring our readers for fuller information to the observations of the subcommittee of the State Sickness Insurance Committee.

In the report two years, 1910 and 1911, are dealt with, but the result in both years is practically the same, and for simplicity it will be convenient to take 1911 only. In the first part of the report three things call for notice. First, the report includes information as to hospitals and other charitable institutions and Poor Law infirmaries, and in the last table (page 91) the figures for these are given for inside the towns as 71,150. Those under the Poor Law should not be included in any calculation as to the Insurance Act, but, as no separate figures are given, the ambiguity presented by the report in this respect cannot be cleared up. Secondly, as to the population, an important factor in the calculations, because the number arrived at is the divisor used in working out the averages, the investigator tells us that the figures have been adjusted to correspond with districts adjoining, or contiguous to, municipal areas. This evidently means that the figure 408,580 includes the "inside" and certain parts of the "outside" areas, but not those shown separately in the second table of the report; it includes the 71,150 in hospitals and Poor Law infirmaries. A third thing hard to understand in the first part is how the number of practitioners is arrived at; usually 265 − 96 = 169, but in the first table the number of practitioners is given as 171.

In this first table, under D, "Public and other Medical Appointments," is a sum of £8,259; of this amount, £2,775, we are told, is included as part-time payment, so that we get a total of £111,133 (£113,908 − 2,775), which, divided by the given population, 408,580 less 71,150 (institutional patients), yield a population of 337,430, giving 6s. 7d. per head of population instead of 5s. 7d., the figure printed in red ink in the original report, in italics in the SUPPLEMENT (p. 90). In getting the 4s. 2d. per head of the population (which the Chancellor pounced on in his speech last Saturday, carefully making no reference to the higher figure of 5s. 7d.) why did the investigator disregard (C) Certificates and Reports, £2,892, (E) Fees for attending Coroners' inquests, etc., £494, and (F) Other items of medical service, £418? The sums received under these heads yielded a total of £3,804. If we take the total of receipts for visits at patients' houses and attendances at surgeries (£82,432), deduct a proportionate amount for bad debts (say £5,615), and add £3,804, we get £80,621; divided by the net population, 337,430, we get 4s. 9d. per head of

population. In the table headed "Gross Remuneration for Residents Outside the Towns," the amount received for attendance and visits is given as £11,853, deducting a proportion of bad debts, say £153, leaves us £11,700: if to this we add (C) certificates and reports, £441, (E) fees for attending coroner's inquests, etc., and (F) other items of medical service, £42, we get a total of £12,183 for work done by the doctors outside the towns, excluding operations, etc.: this sum adds nearly 9d. per head of population inside, and this added to the 4s. 9d. arrived at above, makes the sum of 5s. 6d., not 4s. 2d. We are told, moreover, that Dundee is different from the other towns, because in Dundee (and what is true of Dundee is true of most towns in Scotland) the doctors do not supply medicines to the patients. The investigator tells us that the population of Dundee is 164,937, and a; it has been generally assumed, and the Chancellor of the Exchequer has accepted the assumption, that the price of drugs per person is to be 1s. 6d., we have in Dundee a population of 164,937, and this figure multiplied by 1s. 6d. gives us 247,405 shillings, or 9d. per head of the whole population of the five towns. If we then take the amount found per head from the first table of the report, as 4s. 9d., plus the 9d. received from the residents outside the town, plus the 9d. that should be added for drugs, etc., on account of Dundee per head of the population, we have a total of 6s. 3d. per head of the population as against the investigator's figure of 4s. 2d. Lastly there is this note in the report, namely, "that the above income does not include fees received by non-resident doctors for attending patients inside the areas of the selected towns." Nothing is allowed for this, and there is no way, seeing that the investigator has given us no figures, of arriving at any accurate sum; but if we allow 2d. per head of population—which in all probability is somewhere near the mark—we, on adding this to the 6s. 3d., arrive at a grand total of 6s. 5d. per head of population in these areas, as compared with the investigator's 4s. 2d., quoted by Mr. Lloyd George and his henchmen in the press.

There is no doubt whatever that the payment of a fee is a deterrent to calling in the doctor, and this is abundantly shown when we compare the number of attendances given to patients who will come under the Insurance Act, but are not at present being attended as contract patients, with the results obtained in the careful investigations of the British Medical Association on contract practice which were laid before the Chancellor of the Exchequer for his consideration and criticism. In that report it was clearly shown that the average number of attendances on each patient per annum was 5.5. If, however, we take the investigator's figures for these five towns and add together the attendances 537,185 inside the towns and 25,278 outside the towns and divide them by the true population of 337,430, we find that the average attendance is nearly 1.7. If we take the figure 4s. 2d. per head of population given in the report, though it is an erroneous one, and say that if 1.7 gives 4s. 2d., how much should be given for the increased work which will follow upon these persons becoming insured persons and bring up their attendance to 5.5, as established by the Memorandum of the Association, we find that instead of 8s. 6d. per head, the sum ought to be 13s. 6d. In working out the capitation fee of 8s. 6d. per head in the towns on payments per attendance, the State Sickness Insurance Committee came to the conclusion that 2s. 6d. per visit and medicine and 2s. for consultation and medicine at the surgery was a true equivalent, but they also came to the conclusion that in all probability there would be, in an ordinary doctor's practice, three consultations at the surgery to two domiciliary visits, so that we would have 2 multiplied by 2s. 6d. and 2s. multiplied by 3—altogether 11s. for 5 interviews with the doctor. This would give an average of 2s. 3d. for visits at patient's house and attendance at doctors' surgeries, including medicines; but if we take the figures in the report—namely, £82,432, less bad debts *plus* (C), (E), and (F)—we have a total of £80,621, which divided by 537.185—the number of visits—gives us 3s., compared with 2s. 3d., the equivalent of a capitation rate of 8s. 6d. The Chancellor of the Exchequer said in his speech last Saturday that Sir William Plender's report showed that each doctor, "good, bad, and indifferent," made in these five towns £720 per annum. Now, where does the Chancellor get his £720 from? One would have thought that in a simple matter like this, with the expert help he has at his command, the figure he gave would have been accurate. When he mentions this sum he does not say how he arrives at it. But if from the report itself we take the gross income of the doctors from residents inside and outside the towns, we have, after the deduction of bad debts, a gross income of £136,201: this divided by what appears to be the accurate number of practitioners, namely, 169, gives us, in round figures, £806 for each doctor.

The figures speak for themselves; it is clear that the deductions made by the investigator and accepted by the Chancellor are not substantiated by the report itself. An investigation like this, which could have been carried out in plenty of time before the introduction of the bill, so that the report could have been thoroughly analysed, has been forced through in a time of great stress and hurry, and bears on its face inaccuracies which would condemn any report. The deductions that have been made from it are one-sided and incorrect, and the use made of it by the Chancellor of the Exchequer shows very distinctly that he is willing, without submitting it to thorough inquiry by his own experts, and without waiting to hear the criticisms of the Association, to come to unjust and ungenerous conclusions on a matter vital to the interests of a great profession and to the health of the community.

THE ROYAL SOCIETY AND CHARLES II.

MR. A. C. A. BRETT, in his *History of Charles II and His Court* (Methuen and Co.), quotes the following description given by Cosmo III, Grand Duke of Tuscany, in his *Travels*, of a meeting of the Royal Society in 1664–69: "The President sits in an elbow chair in the middle of the table of the assembly, with his back to the chimney, and has a large silver mace, with the royal arms, lying before him, with which it is customary, for the mace-bearer, or porter of the academy, to walk before him. He has a little wooden mace in his hand, with which he strikes the table when he would command silence. The secretary sits at the head of the table, the others taking seats indifferently on backed wooden seats in two rows; and if any one enter unexpectedly, after the meeting has begun, every one remains seated, nor is his salutation returned, except by the President alone, who acknowledges it by an inclination of the head, that he may not interrupt the person who is speaking on the subject or experiment proposed by the secretary. They observe the custom of speaking to the President uncovered, waiting from him for permission to

be covered." Butler ridiculed the Royal Society in particular and scientific inquiry generally, in the "Elephant in the Moon." The following is his account of their labours:

> These were their learned speculations,
> And all their constant occupations,
> To measure wind, and weigh the air,
> And turn a circle to a square;
> To make a powder of the sun,
> By which all doors should b' undone;
> To find the North-West Passage out,
> Although the farthest way about;
> If chymist from a rose's ashes
> Can raise the rose itself in glasses?
> Whether the line of incidence
> Rise from the object, or the sense?
> To shew th' elixir in a bath
> Of hope, credulity, and faith;
> To explicate, by subtle hints,
> The grain of diamonds and flints,
> And in the braying of an ass
> Find out the treble and the bass;
> If mares neigh alto, and a cow
> A double diapason low.

Charles II was much interested in science, especially in chemistry, natural history, and mechanics. He had a laboratory built for him by a French professor in St. James's Park, and a private "elaboratory" under his closet at Whitehall filled with the "chymical glasses" and other apparatus which puzzled Pepys. There the King spent many hours with Sir Robert Moray. *Evelyn's Diary* is full of references to conversations with the King about clocks, watches, bees, Saturn, the diarist's projects, and many other things. The King kept a menagerie and aviary in St. James's Park, and paid much attention to horticulture. He witnessed, if he did not actually perform, dissections of the human body. In a letter from Sir Charles Lyttleton to Christopher Hatton, dated July 25th, 1676, there is the following passage: "Here is a Welshman who pretends to cure any wound whatsoever in the bowels or any part, except the heart, in a few houres . . . Severale pigges, kidds and chickens have, in the King's presence, been run into the bowells and through the head with knives and hot irons and cured in a short time by this man's medicines." When, as Grammont relates, a lady had the misfortune to be delivered of a child in the ballroom at Whitehall, the little body was carried off before the jesting courtiers to the King's "elaboratory" for examination. Valentine Greatrakes, the Irish "stroker" and faith healer, was invited to work his wonders before the Court in March, 1666. It is related that he did things "beyond the power of Nature." One would like to know what Charles thought of it all. It is perhaps significant that Greatrakes soon afterwards returned to Ireland and gave up his healing manifestations.

PERSISTENCE OF LIFE IN DETACHED TISSUES.

SOME results of an investigation which is being carried on by Dr. Alexis Carrel at the Rockefeller Institute, on the continuation of life in tissues separated from the organism, have been reported by M. Pozzi to the Académie de Médecine in Paris. The results are sufficiently remarkable, but the possibilities which they open up have been greatly exaggerated in some of the newspapers. Last January M. Carrel reported to the Académie that portions of connective tissue, when placed in a suitable medium, could live and develop outside the body for a long period. At the time of that note the longest period for which they had been kept free from microbic infection was fifty days. In his more recent communication M. Carrel relates further and more successful experiments carried out during the ensuing four months. He has made observations on the rapidity of the growth of the detached tissues, on the increase in their size, and on their functional activity. Experiments were made on portions of the heart and blood vessels of the chick from the seventh to the eighteenth day of its development. The small pieces of the tissue removed and the cultures resulting therefrom were washed every third or fourth day for a minute or two in Ringer's solution, and then transferred to another portion of medium. The tissues primarily removed, and the new growth derived from them, underwent thirty-nine to forty-three passages, and some of them were still active at the end of more than four months of life *in vitro*. The fragments of tissue were observed to grow, the rapidity of growth being influenced by slight variations in the composition of the medium in its osmotic pressure, in the temperature, in the quantity of plasma surrounding the tissue, in the form of the culture, and in the frequency of the passages. In some instances the rate of cellular proliferation increased with the age of the cultures. In one experiment during the course of the third month a fragment of heart muscle surrounded itself in sixty hours with a dense layer of cells, which covered a surface sixty-four times greater than itself. At the end of the fourth month the connective tissue cells increased much more rapidly than at any other period. During the first month of the life of the tissues *in vitro* the cells multiplied rapidly at the periphery of the fragments, but after each passage the central part diminished and a number of dead cells were eliminated, so that the total mass diminished. By the beginning of the second month the diminution ceased and increase in size began. Of the 16 cultures made on January 17th 5 survived at the end of the second month, but 1 was killed by infection at the beginning of the third month; the other 4 cultures were still in full activity, and during that month they increased so much in size that it was necessary to divide them, and in this way they gave origin directly or indirectly to more than twenty new cultures; the total amount of the tissue thus obtained was at least fifteen times larger than at the commencement of the third month. After a diminution in the rate of increase during the earlier part of the fourth month it again became rapid, and at the beginning of the fifth month the greater number of the cells were amoeboid and the surface cultures were much larger. Portions of the plasma containing growing cells were detached and fresh cultures made and treated in the same way, whereupon the cells multiplied with great rapidity. In order to study the retention of the functional activity of the tissues fragments of the heart were chosen. Repeating experiments made in December, M. Carrel on January 17th, 1912, commenced a fresh series. He took a fragment of the heart of the embryo chick on the seventh day and placed it in plasma: it quickly surrounded itself with a circle of connective tissue cells, but the pulsations, which at first were regular and strong, diminished after a few days, and for over a month the fragment remained motionless. On February 29th the culture, which had already undergone fourteen passages, was dissected, and the central fragment placed in a new lot of medium. After the fifteenth passage it was observed to contract rhythmically, and the pulsations were as strong and as frequent as on January 17th. They numbered from 120 to 130 a minute. During the months of March and April the fragment continued to beat vigorously from 60 to 120 a minute, but as the growth of connective tissue became more and more active it was necessary before each passage to remove the sheath of new tissue which had formed around the muscle; on April 27th the fragment was beating 92 times a minute, the contractions being regular and moving the whole mass of the tissue and the neighbouring part of the culture. On May 1st, when the pulsations had become feebler, the culture was submitted to its thirty-fifth passage, and in doing this was accidentally destroyed. M. Carrel's general conclusion is that since cultures of connective tissue continue to live and rapidly increase as late as the beginning of the fifth month of their existence *in vitro*, and since a fragment of the heart of the chick beat normally more than three

months after its extirpation, it follows that tissues separate from the organism can be permanently preserved in a living state.

THORIUM "X" POISONING.

In a recent article some account was given of the therapeutic action of thorium X, and of the endeavours at present being made to find a substitute for radium equally efficacious but less costly. Thorium X and actinium appear to possess this qualification. The history of the application of the Roentgen-ray apparatus has unfortunately been marred by cases in which serious damage has been inflicted to the tissues both of the experimenter and of the patient. Greater experience has led to greater caution and to the employment of certain protective arrangements whereby it has been found possible to utilize *x* rays with a fair degree of safety. With the knowledge of the serious dangers attending the use of these rays, it is somewhat surprising that emanations from radio-active substances have proved comparatively harmless; but a case recently reported by Dr. Gudzent[1] shows that some danger exists. A woman, aged 58, had been suffering from chronic arthritis. She was somewhat corpulent, but the internal organs were sound, save that she had complained of some palpitation shortly before admission. At first Dr. Gudzent treated her with iron, arsenic and quinine, together with radium compresses, but no improvement took place. He therefore injected a dose of thorium X solution, representing 900.000 Maché units. The patient complained of pain in the hands after the injection, but otherwise no ill effects were noticed; nine days later 550.000 Maché units were injected, again without any definite improvement. The third injection, this time of 10.000 Maché units of thorium A, was followed by a slight feeling of sickness and rise of temperature, which rapidly disappeared. The leucocytes tended to increase in number after this injection. The results of the injections having been so unsatisfactory, a fourth of 3.000.000 Maché units of thorium X was given. She remained in good general health for three days, and then left the hospital at her own desire. Four days later she sought readmission on account of pains in the abdomen, diarrhœa, and weakness. The temperature rose to 102.8° F. and the pulse-rate was about 105. On the following day a group of lymphatic glands under the sterno-mastoid muscle became inflamed. The diarrhœa persisted, and two days later became blood-stained. The leucocytes sank to 312. Blood was vomited in the night, and, in spite of all the remedies which Dr. Gudzent could apply, the woman died seven days after her admission on the second occasion. It would seem that the thorium X in full dose had given rise to an illness characterized by acute hæmorrhages from the mucous surfaces. Orth and Bickel have found that dogs may be poisoned in the same way. The late onset of symptoms was also noted in the experimental cases. It must further be pointed out that the dose, although high, cannot be regarded as heroic. The same amount has been given many time without harm to other patients, and in animal experiments still higher doses have been tolerated with ease. The patient was, therefore, unusually intolerant to large quantities of the radio-active emanation. Time alone can determine whether this intolerance is of rare occurrence or not. We trust that it may be so.

THE SPECIFICITY OF THE OPSONIC INDEX.

Biological reactions are rarely so specific that none at all is obtainable save with the material toward which the reaction is directed. We know that hæmolysis takes place in the blood of nearly related animals when the hæmolysin is prepared from the blood of one species. But in this case, or in that of the precipitins, it has been ascertained that a positive reaction indicates the nature of the cells dissolved or the protein precipitated. There is therefore biological specificity within narrow limits. The question whether opsonin is specific cannot be decided biologically, since normally the leucocytes of a person or other animal not infected with the bacterium in question act as phagocytes to some of the bacteria. But in so far as opsonin is evidenced by the behaviour of the opsonic index a test of specificity may be applied, and it would then be more rational to speak of the specificity of the opsonic index. In the Dresden Opsonic Laboratory Professor Strubell has worked at this problem, and has brought to light some interesting facts. He has shown that iodides and bromides, which are capable of producing acne, alter the opsonic index of the serum toward staphylococci within fifteen minutes of being taken. The index reaches its lowest point within half an hour or an hour, and gradually returns to the normal level in from six to twenty-four hours, though it may take longer. He states that bromide or iodide acne responds well to staphylococcus vaccine, and that the vaccine prevents the onset of the acne altogether. As to the way which the iodides and bromides act, he shows[1] that it is not merely a salt action. Sodium chloride is incapable of altering the index. Next he determined that such substances as urea can produce the same result. Potassium arseniate raised the opsonic index towards staphylococci and tubercle bacilli in the case of two of his assistants, and some action was obtained in dogs and rabbits treated with salvarsan. It therefore appears that the alteration of the opsonic index is not necessarily the result of a deliberate or accidental dose of the bacterium in question, but that chemical substances which have nothing to do with the bacterium (or, as Professor Strubell calls it, the *opsonogens*) may bring about the same result. The author deduces that the "opsonic resistance" of the serum may be altered by non-specific means. In this he raises a point which is not proven—namely, whether the opsonic index is a measure of the actual resistance of the individual to the bacterium.

THE CONTROL OF NON-NOTIFIABLE INFECTIOUS DISEASES.

When the question of the compulsory notification of certain infectious diseases was being discussed a quarter of a century ago there was a considerable amount of misgiving as to whether the advantages its advocates foresaw would not be outweighed by obvious drawbacks. Experience has falsified the anticipations of those who opposed the measure, and questions now arise as to the diseases to which it may usefully be extended. In a communication recently made to the Royal Academy of Medicine in Ireland Sir John Moore discussed the subject in some detail. It will probably be news even to those who are officially concerned with public health duties in England and Wales to learn that the Infectious Disease (Notification) Act, 1889, is still an adoptive Act in Ireland, and that up to March 31st, 1911, there were twelve urban and sixty-nine rural sanitary districts in that island in which the provisions of the Act were not in force. The Registrar-General for Ireland, in his annual report for 1910, pointed out the desirability of taking measures to limit the spread of the not generally notifiable infective diseases—namely, measles, whooping-cough, influenza, and infective diarrhœa. Sir John Moore would add to this list pneumonia, or, as he prefers to call it, "pneumonic fever"; and he expresses the opinion that pneumococcal infection quite commonly, in fact usually, produces lobar pneumonia in infancy and childhood. In connexion with this he refers to the fact that in the ten-year period 1900–9 the death-rate in Ireland from pneumonia was 0.9 per 1,000 of the estimated population. The measures which Sir John Moore advocates for the control of the non-notifiable

[1] *Berl. klin. Woch.*, May 13th, 1912.

[1] *Berl. klin. Woch.*, June 3rd, 1912.

infectious diseases include their compulsory notification, the medical inspection of school children, and the appointment of female sanitary inspectors. He states that the sanitary staff of the Dublin Corporation already includes six female sanitary subofficers, each one of whom is certificated. If this example were followed by every sanitary authority in the country, he considers that machinery would be available for the early detection of the outbreak of acute infectious disease the value of which it would be hard to estimate in its bearing on the public health of Ireland.

THE DOCTORS AND THE PUBLIC.

THE *Daily News and Leader* of July 17th contains an article which shows how the public mind has been misled by the glosses put on Sir William Plender's report. "We know now," it says, "pretty precisely what the dispute is about." Well, we cannot pretend to say what our contemporary means by "pretty precisely," but judging from the figures in its article it must mean something very far from the truth. Let us take one or two of these "pretty preciselies." First, we are told that Mr. Lloyd George is offering for the medical benefit of every insured person 6s. a year. This figure is not in the Act, but is the actuarial figure upon which medical benefit is based. Recently the Chancellor of the Exchequer was asked on what actuarial calculation the bill was based if the work to be done by the doctors was not known. He refused to answer then, but said he would give the answer to the State Sickness Insurance Committee in time for the Liverpool Meeting or at that meeting. The second "pretty precisely" is that Mr. Lloyd George is "offering an extra payment for maternity cases, operations, and consumption, which the profession estimates at 2s. 6d." This is not the profession's estimate, but Mr. Lloyd George's. He, however, varies this, and says now that these extras would bring in 2s. 6d., and now that they would amount to 1s., but never has he offered 2s. 6d. for extras, unless, indeed, our contemporary has his authority to make the offer. The third "pretty precisely" is that Sir William Plender gives 4s. 6d. as the earnings of the doctors in five towns, but Sir William Plender nowhere mentions 4s. 6d.—he puts down in red ink for the five towns per head of population 5s. 7d.; even this figure is open to criticism, and so is a matter as simple as the number of practitioners in the five towns, for one finds Sir William subtracting 96 from 265 and getting as a result 171. The fourth "pretty precisely" is "the doctors are asking for a total of 12s. 6d." The doctors have asked for 8s. 6d. as a capitation fee without medicine. The very last "pretty precisely" we venture to give is this: "Putting these figures together, we get these conclusions. Upon Mr. George's terms doctors, as a result of the Act, would get 7s. 11d. per head of population." This is really a *very* "pretty precisely." We have tried all combinations of "these figures" and get all sorts of results, but never 7s. 11d. What "these figures" are, heaven only knows. We give them as a new puzzle to our readers: 6s. + 2s. 6d., + 12s. 6d., + 4s. 6d., + 12s. 6d., + 4s. Find the 7s. 11d. We have no doubt the Representative Meeting will come to a right conclusion without any help from the *Daily News and Leader*. All we ask from papers of this class is that they shall make a vigorous attempt to get rid of party bias, and before they rush into print give a few minutes to the study of the subject under discussion.

"KEEPING THE DOOR OPEN."

IT is generally wise to take account of the outside view of those who, while sympathetic towards the claim of the profession for just treatment and adequate remuneration, are yet able to look at the situation with greater impartiality than is possible for members of the profession. The *Times*, in concluding a leading article on the subject of the "Doctors and the Act" in its issue of July 18th, makes the following observations: "At the same time we hope the Representative Meeting will weigh well the choice before them. We can understand a disposition to break off negotiations and bring the farce that has been played on them to an end; but we do not see what there is to gain by it, and a flat refusal to listen to any more proposals would make an unfavourable impression on the public. There is reason to believe that the medical profession, if they remain united, are in a much stronger position, and can control the working of the Act much more effectively than has yet been realized. According to Section 59, the Insurance Committees must contain a certain number of medical men, and two of these must be elected by the local resident practitioners; and the question arises whether an Insurance Committee which did not comply with these conditions would be legally constituted and could legally act. If not, then the administration of the Act would be made impossible by the absence of medical members elected in accordance with the terms of the section, which are definite. The words are 'shall be elected,' not 'may be.' Nor need this happen in every part of the country. If any considerable centres were placed in this position an amending Act would be necessary to end the deadlock. Perhaps this interpretation of the section may be pronounced erroneous, but the formation of 'provisional' committees and the change of attitude towards the medical profession by Mr. Lloyd George fit in very suggestively with the theory that there is something in it, and that the Government know it. We do not point this out in order to urge the British Medical Association to break off negotiations, but for the contrary purpose. If the position is as suggested, they can keep the door open for any proposals the Government may have to make with perfect confidence, provided they remain united. Some time or other terms must be settled: and it looks as if Mr. Lloyd George were preparing at last to make a serious offer. It is high time."

THE TUBERCULIN DISPENSARY LEAGUE.

THE Countess of Mayo presided at the annual meeting of the Tuberculin Dispensary League on July 17th. The honorary secretary (Mrs. Erskine) read the report of the Executive Committee, which stated that the demand for treatment at the chief dispensary, 263, Kennington Road, S.E., was so great that it was only met with difficulty. The Committee claimed that the tuberculin treatment was that best calculated to bring sanatorium benefit within reach of the poor, as it could be given while the patient still attended to his ordinary duties. The medical profession continued to take a great interest in the system. New cases for treatment accepted between May, 1911, and May, 1912, numbered 245. Reports from branches in London and the country were satisfactory. The Committee expressed its thanks to Dr. Camac Wilkinson, and the doctors who were helping him, for their generous aid. The expense of conducting a dispensary was very moderate considering the amount of excellent work accomplished. Dr. Camac Wilkinson presented the medical report, which gave statistics of the number of cases at the various stages of tuberculosis under treatment. In Stages 1 to 2 the results were uniformly successful. In Stage 2 there had been three deaths, but in these instances no single large dose of tuberculin had been given. Mixed infection supervened, and this caused death. All the cases treated with large doses were still living. No deaths had occurred, even at the third or last stage. Dr. Wilkinson claimed that tuberculin had been proved to be beneficial at all stages of the disease. The promoters of the tuberculin treatment did not clamour for the disestablishment of sanatoriums, but urged that this system should be thoroughly tested before large sums were locked up in sanatoriums. The reports were adopted, and the officers of the league re-elected. Dr. Wilkinson said that Mr. Peacock, of the Duchy of Cornwall estates in Lambeth, had promised to erect a new building for the dispensary. The proceedings concluded with a vote of thanks to the

Countess of Mayo for her interest in the league, and for permitting the meeting to be held at her house.

THE BRITISH ASSOCIATION.

The British Association for the Advancement of Science will for the second time hold its annual meeting in Dundee in September. The proceedings will open on the evening of Wednesday, the 4th of that month, when Sir William Ramsay will introduce the new President, Professor E. A. Schäfer, who will take as the subject of his address the nature, origin, and conservation of life. According to the *Times*, which gives a forecast of the work of the meeting, a new departure will be instituted at the forthcoming meeting. Instead of one lecture nominally intended for the intelligent working man, there will be three, open to the inhabitants of Dundee. One of these will be delivered by Professor Benjamin Moore, of Liverpool, who will treat of some bio-chemical subject, with special reference to public health. One of the customary evening discourses will be given by Professor Arthur Keith, Conservator of the Museum of the Royal College of Surgeons of England, who will speak on the antiquity of man. In the Section of Physiology, the President, Professor Leonard Hill, will consider the relative influence of muscular exercise and open air on the bodily functions, and the effect of sedentary, monotonous occupation in confined atmospheres. He hopes to deal with certain new experiments concerning the circulation of the blood, the supposed existence of organic poisons in exhaled air, and the cause of the discomfort felt in crowded rooms. The sectional programme includes a discussion on the relation of mind to body, in which Professor Latta, Sir Thomas Clouston, Dr. J. S. Haldane, and Dr. H. J. Watt are expected to take part. A joint discussion on animal nutrition has been arranged with the agriculturists. The President of the Section of Anthropology, Professor G. Elliot Smith, will probably discuss the evolution of man, considering more especially the determining part played by the growing brain in every stage of man's ancestors among the mammalia. His main theme will be the consideration of the final link in the chain of events which led to the transformation of a simian ancestor into a primitive man. At a later stage Professor R. Anthony, of Paris, will read a paper on the brain of the anthropoid apes and man. Professor Elliot Smith will submit the report of the committee on the physical characters of the ancient Egyptians, and will read two papers, one discussing fresh evidence for early attempts at mummification in Egypt, and a second dealing with the physical characters of the ancient Egyptians of the second and third dynasties. An unusually large number of foreign physiologists is expected to attend the meeting.

We are pleased to be able to announce that Mr. Otto Beit has sent a cheque for £500 to Mr. Strangeways towards an endowment fund for the Research Hospital, Cambridge.

Sir Patrick Manson, M.D., K.C.M.G., F.R.S., will retire from the post of Medical Adviser to the Colonial Office in London on August 15th, and the King has been pleased to give directions for his appointment to be a Knight Grand Cross of the Order of St. Michael and St. George, in recognition of his eminent services in connexion with the investigation of the cause and cure of tropical disease. It has been found necessary to divide the duties hitherto discharged by Sir Patrick Manson, and the Secretary of State for the Colonies has appointed Sir J. Rose Bradford, M.D., K.C.M.G., F.R.S., to be Senior Medical Adviser, and Mr. C. W. Daniels, M.B., M.R.C.P., to be Junior Medical Adviser, to the Colonial Office in London. These appointments will take effect from the date of Sir Patrick Manson's retirement. The Secretary of State has also appointed Mr. W. T. Prout, C.M.G., M.B., late Principal Medical Officer, Sierra Leone, to be Medical Adviser to the Colonial Office in Liverpool.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

Seventeenth Meeting.

The seventeenth meeting of the State Sickness Insurance Committee was held at 10.30 a.m. on July 11th.

Mr. T. Jenner Verrall was in the chair, and the members present were: *England and Wales:* Dr. R. M. Beaton (London), Dr. John Brown (Bacup), Dr. T. M. Carter (Westbury-on-Trym), Dr. S. Hodgson (Salford), Dr. R. E. Howell (Middlesbrough), Miss Frances Ivens, M.S. (Liverpool), Dr. Constance Long (London), Dr. F. H. Oldham (Morecambe), Dr. James Pearse (Trowbridge), Dr. E. O. Price (Bangor), Dr. Lauriston E. Shaw (London), Dr. W. Johnson Smyth (Bournemouth), Dr. D. G. Thomson (Thorpe, Norwich), Mr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Dr. A. H. Williams (Harrow on the Hill), Mr. E. H. Willock (Croydon). *Scotland:* Dr. J. Adams (Glasgow), Dr. Bruce Goff (Bothwell), Dr. R. McKenzie Johnston (Edinburgh), Dr. J. Munro Moir (Inverness). *Ireland:* Dr. Mark Cahill (Belfast), Dr. J. S. Darling (Lurgan). *Ex Officio:* Dr. E. J. Maclean (Chairman of Representative Meetings).

Apologies for absence were read from Dr. J. A. Macdonald (Chairman of Council), Dr. E. Rayner (Treasurer), Dr. Dampier-Bennett (Dublin), Dr. R. A. Lyster (Winchester), Mr. D. J. Williams (Llanelly), and Dr. R. B. Mahon (Ballinrobe).

Administration of Sanatorium Benefit.

The Committee considered the course which should be taken in view of the circular letter of the Local Government Board dated July 16th, covering a memorandum by the Insurance Commissioners (England) with reference to sanatorium benefit. The Committee stated its opinion that Minute 78 of the Special Representative Meeting of February, 1912, barred any kind of attendance upon any person under the Act in connexion with sanatorium benefit, but placed on record the fact that it had obtained evidence that the question of the application of Minute 78 to the administration of sanatorium benefit called for consideration by the forthcoming Annual Representative Meeting.

Provisional Insurance Committees.

After considering several letters and communications with regard to the acceptance by medical practitioners of seats on Provisional Insurance Committees, the Committee resolved that, in view of its decision at its meeting on June 27th, medical practitioners should not accept appointments on Provisional Insurance Committees unless they were members of county or county borough councils, and then only to fill positions which were equally open to lay members.

Resignation of Club Appointments.

After considering several communications with regard to the resignation of contract practice appointments, the Committee expressed the opinion that if the appointments were held on such terms that the medical officer were reappointed every year or half year, such appointments would automatically cease at the end of the period (year or half year), but that as to an appointment held under an agreement subject to notice the Committee could express no opinion without full knowledge of the terms of such agreement.

Action of the Committee.

The Committee received resolutions from the National Medical Union urging the desirability of the medical members of the Advisory Committee at once resigning their positions, and condemning the action of the Chancellor of the Exchequer in suggesting an investigation of the books of private practitioners as inquisitorial; the Committee also received a resolution adopted by the Stockport, Macclesfield, and East Cheshire Division expressing its confidence in the Committee.

COLLIERY APPOINTMENTS.

The position of medical men conducting colliery practices was again considered, and the Committee resolved that in colliery practices where the contracts are made with individuals fortnight by fortnight, the position would be met by the colliery surgeons individually giving an undertaking in writing to the Provisional Medical Committee of the district that they would at the proper time intimate to their patients that after January 15th, 1913, they would only attend insured persons on terms agreed upon by the British Medical Association.

INQUIRY INTO EXISTING CONDITIONS OF MEDICAL WORK AND REMUNERATION.

After the luncheon interval the CHAIRMAN reported that Sir William Plender, the actuary who had undertaken the Government inquiry into medical remuneration in the selected towns, had called upon him during that interval, and had left one copy of his report, and had stated that he was proceeding at once to hand another copy to the Insurance Commissioners. The Deputy Chairman of the Insurance Commissioners had subsequently telephoned stating that the Chancellor of the Exchequer, being desirous of using the figures contained in the report in the speech he was to make at Kennington on the following Saturday (July 13th), intended to issue copies for publication in the press the next day. The Committee approved of the publication of the report in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL for July 13th, and appointed a subcommittee to make a report to the Representative Meeting with respect to Sir William Plender's report, and in the meantime to take any action thereon as might be considered necessary. The subcommittee appointed consisted of the Chairman (Mr. Verrall), Dr. James Pearse, Mr. Turner, and Mr. Willock, with the Medical Secretary.

RESIGNATIONS OF APPOINTMENTS.

The Committee resolved that the question of deciding as to the most suitable date, if any, upon which the resignations of contributory contract practice appointments should be sent in should be referred to the forthcoming Annual Representative Meeting, and that a report as to the number of supplementary pledges signed, and the number of signed forms of resignations of contributory contract practice appointments, with a note of the special circumstances of certain areas, brought up to the latest possible date, should be placed before the Annual Representative Meeting.

In reply to inquiries from several Divisions, the Committee recorded its opinion that it could not authorize the sending in of resignations, and that any Division taking such a step was acting entirely on its own responsibility.

REPLY TO THE COMMISSIONERS.

The Chairman and Medical Secretary were instructed to prepare and forward to the Commissioners a reply to their communication of June 26th dealing with certain points as to which it was felt that further information would be useful.

PUBLIC MEDICAL SERVICE SCHEMES.

A report as to the replies of Divisions with regard to the Public Medical Service Schemes, (A) on the capitation system, and (B) on payment per attendance system, was presented and directed to be submitted to the Annual Representative Meeting.

VOTE OF THANKS.

On the proposition of Mr. TURNER, seconded by Mr. TODD, the Committee unanimously resolved as follows:

> That the Committee expresses its very hearty thanks to its Chairman (Mr. T. Jenner Verrall) for the competent, courteous, and skilful manner in which he has conducted the meetings of the Committee.

In the evening the members of the Committee entertained the chairman at dinner. After the toast of "The King," Dr. MACDONALD, Chairman of Council, who presided, proposed in felicitous terms the health of Mr. VERRALL who acknowledged the compliment in a humorous and characteristic speech. The toast was enthusiastically received. The pleasure of the occasion was increased by recitations from Mr. Turner, Dr. Price, and Dr. Adams, and songs by Mr. Willock and Dr. Carter. *Dulce est desipere in loco.*

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

The National Insurance Act.

Debate on Sanatorium Benefit.

IN answer to a number of questions by Sir R. Baker and Mr. Wright last week, Mr. Masterman said: It is not possible to state with accuracy the number of sanatoriums and dispensaries which will be available by July 15th for the local Insurance Committees. According to the latest information, however, there are some seventy-six institutions designated as sanatoriums in England with about 2,500 beds, while accommodation for tuberculosis cases also exists in a very large number of hospitals, in addition to some fifty-seven tuberculosis dispensaries. Local authorities have for some time past been preparing schemes for the provision of institutions for the treatment of tuberculosis, and, with the co-operation of the Insurance Committees which have now been constituted, these schemes are now being proceeded with. In Scotland the Local Government Board are proceeding with the inspection of the sanatoriums with a view to their approval. In Ireland there are about 700 beds available in sanatoriums, and the provision of the dispensaries is being rapidly pushed on in the several counties.

Mr. Grant then asked if it was proposed to commence sanatorium benefits under the National Insurance Act on and after July 15th: and if it were possible to give sanatorium benefits without the co-operation of the medical profession.

Mr. Masterman said the answer to the first part of the question was in the affirmative. He had no reason to suppose that sanatoriums would reject cases, or that medical practitioners would refuse to attend their ordinary patients merely because they were insured under the Act.

Pressed by a further question, Mr. Masterman said that the Commissioners would give, as provided by the Act, medical benefit or the alternative of money payment.

Mr. Grant asked leave to move the adjournment of the House for the purpose of calling attention to a definite matter of urgent public importance—namely, the inability of the Government to fulfil their pledge to provide sanatorium benefits for every insured person entitled thereto. The hon. member being supported by a large number of members on the Opposition side, leave was granted.

Mr. Grant said he was certain that the House would not have passed the Insurance Act if it had had any doubt whatever that the smallest of the benefits promised would not be abundantly assured. No effort was spared by the Government to make it quite clear to the country that on the first day of the Act coming into operation, those entitled to sanatorium benefits would get them at once. But where now were the sanatoriums, and where were the doctors to look after them? Were they forthcoming? He did not believe the Government had either the sanatoriums or the doctors to work the Act.

The Chancellor of the Exchequer: You hope we have not.

Mr. Grant: On what grounds does the right hon. gentleman say that? He has no right to say it.

The Chancellor of the Exchequer: I have every right to say it.

Mr. Grant: I say he has not. He is saying that which is absolutely false, and I tell him so to his face. (Cheers and cries of "Withdraw.")

Mr. R. Harcourt (appealing to the Chair) asked the Deputy Speaker (Mr. Maclean) whether the language of the hon. member was in order.

The Deputy Speaker: The words "absolutely false" applied to a member of the House are not parliamentary.

Mr. Grant: If I have offended the Chair, I certainly withdraw. Continuing, he said that if any private individual had acted as the Government had done, he would be accused of endeavouring to obtain money by false pretences. The reputation of the House of Commons was involved in this discreditable action. Until the Government carried out, or could assure the House that they could carry out, that which they had promised it was

iniquitous that they should go on with this scheme of taxation.

Mr. Astor said he was glad to have the opportunity to second this motion in order to discuss the kind of treatment which was going to be offered to insured persons in the matter of sanatorium benefit during the next few weeks or months. The Committee which the Chancellor of the Exchequer appointed in February to advise him on the subject of tuberculosis, and of which he was a member, recommended machinery which met with the approval not only of the experts on the Committee, but of experts outside. The two units which they recommended were, first, dispensaries, which were to be the centres of diagnosis, and, secondly, sanatorium and residential institutions. But it was absolutely necessary that the men in charge of the dispensaries should be experts in the diagnosis of tubercle, and unless they got such men they were not going to show any satisfactory results to the insured persons. He did not propose to make a party speech—the question of public health was far too serious for that—though, if he wished to do so, the memoranda on the provisional arrangements to be made would give him ample material for making a strong party speech. For instance, in one of the memoranda there was a paragraph dealing with domiciliary treatment under "hygienic conditions." But suppose the conditions of the insured person's home were not hygienic? How were they going to send the insured persons to sanatoriums that did not exist? There were frequent allusions in the memoranda to negotiations that were going to take place between the local authorities and the local Insurance Committees. Local authorities would not care to go ahead and build institutions until they knew what money was coming to them, and they could only know that when they had negotiated with the committees, so that this scheme would not really begin to be fully developed until these negotiations had gone on for weeks or even months. There was considerable fear among local authorities and ratepayers as to what this was going to cost them. Personally he believed that the money under the Insurance Act was going to be a relief to the ratepayer, but they must make the ratepayer realize that, and until they had made them realize it, they were not going to be able to offer consumptives good sanatorium benefit. He did not advocate the postponement of the Act as a whole. The ball was rolling and they could not stop it now, but the sanatorium benefit should be postponed until it could be given in really first-class form. It was no good telling an insured person to go to a doctor and get a bottle of cod-liver oil. That was not the kind of sanatorium benefit that a man was paying for and was led to expect. This was the moment for the Government to be courageous. Englishmen always liked a candid apology, and if the Government said that they would postpone the sanatorium benefits for six months the country would respect them far more than if they only gave a makeshift second-class benefit. As an alternative equivalent he suggested that the maternity benefit should be antedated.

Mr. Masterman said that in four days' time the country was going to put into operation one of the greatest schemes of social reform ever devised in any country in the world. He thought that the Government were quite right in their decision last autumn to make an exception of the sanatorium benefit and bring what they could of it into force as speedily as possible, although it was idle to suppose that the full machinery could be produced by this July. Under the arrangements for the next six months there would be an expenditure of something like £200,000, and if they only saved 100 lives or 10, or prevented the infection of lives hitherto clean, they could ask the House next January to say that they had taken the right course. Because they could not do all that they wished that was no reason why they should do nothing.

Mr. Astor: The great danger I see is that if you get these cases into the wrong hands and do not get your expert in charge of the dispensaries, you will regret it much longer than you possibly imagine.

Mr. Masterman said that if cod liver oil was given to consumptive patients who were not receiving it at present, and was beneficial to consumptive patients, they would be better off than they would be if sanatorium benefit was postponed. For treatment in dispensaries and domiciliary treatment, over £900,000 a year had been set aside, and if that was not sufficient the bill allowed for a supplement—half from the local authorities and half from the Treasury. Over one hundred local Insurance Committees had been formally constituted, and twenty-one more would be formally constituted before the week was over. In the great bulk of cases representatives of the Insurance Commission had attended the first meetings in order to expound the system of the Astor report and to show how immediate action could be taken in connexion with sanatorium benefit. In most cases subcommittees had been constituted to deal immediately with the tuberculosis patients who were insured persons. A large number of authorities, including most of the county boroughs, had prepared schemes for dealing with tuberculosis, and were only waiting for the formation of the Insurance Committees. All available institutions at present existing for dealing with tuberculosis patients would be immediately utilized by the local Insurance Committees. Temporary accommodation was being devised, and would be established in a very few weeks. Many movable shelters were possessed by the local authorities, and would be put at the disposal of patients, and many authorities were asserting their intention of increasing the number of movable shelters. A large number of dispensaries existed now, and these would be fully utilized by the local authorities and Insurance Committees. The difficulty was not that of building or getting accommodation, but of getting trained tuberculosis officers. New dispensaries would be opened every week, and officers, especially young members of the medical profession who were filled with enthusiasm for this work, would be enrolled in the Government service from time to time. Long before January they would doubtless be able to announce a network of dispensaries all over the country. Domiciliary treatment for insured persons suffering from tuberculosis could begin immediately the case was diagnosed. The immediate system as devised was systematic treatment in the home. There was no question of difference here with the profession. Mr. Astor said that the doctors would not undertake the treatment of tuberculous patients until the medical benefit was settled. That was a libel on the medical profession.

Mr. Astor: I never said anything of the sort.

Mr. Masterman said there was no doubt that, quite apart from the differences that existed, this domiciliary treatment would be put in force immediately. It was impossible to say how many persons would be found suffering from this disease in the next six months. They had set aside £220,000 for the next six months for the treatment and cure of consumption, and the abandonment of this arrangement and the passing of that money to the Insurance Fund would mean inevitably a great amount of suffering.

Mr. Forster said that the reason the benefit could not be given in its entirety was there had not been sufficient time to organize the necessary services. The circular explaining the method of administering the benefit was only issued ten days before it was to come into force. In many places no arrangements at all had been made, and in others they were in a chaotic state. That was the fault, not of the local authorities, but of those who forced the Act into operation without regard to whether or not it was in proper working order. There was a significant sentence in the circular issued by the Insurance Commissioners, in which it was pointed out that no one had any right to receive sanatorium benefit. That sentence was not fair to the Insurance Committees, and ought to be more fully explained. The proviso which had been put in the Act was only intended to guard against giving sanatorium benefit to those who would not be best served by the receipt of it. It was not fair to give the idea that proper treatment might be withheld from those who should have it. The temporary financial arrangement suggested in the memorandum of July 6th, which would give the Insurance Committees £4 5s. per 1,000 of the total population concerned, or rather less than half of the amount which would be available for the provision of sanatorium benefit, had not been justified. In Wiltshire the results of the genuine efforts which had been made to prepare for the coming of the Act into operation had been disappointing. The sum placed at the disposal of the county committee for the provision of sanatorium benefit was

rather less than one-half of the amount to which they were entitled.

Mr. Masterman said that the reason why only about one-half of the normal amount was paid at the outset was that it was only gradually that insured people would become tuberculous. At the time when the Act would come into operation every person who was insured must be employed.

Mr. Forster replied that there were at present 402 notified cases of tuberculosis in Wiltshire, and it was estimated that 200 of those would be cases of uninsured persons. The others would be entitled to sanatorium benefit when the Act came into operation next Monday. He did not see how accommodation in sanatoriums could be provided for some time; yet in the meantime those consumptive persons would have to pay their contributions. Even if the financial provision made by the Government were adequate the Wiltshire committee could not secure more that sixteen beds for tuberculous patients, and ten of those beds would not be available for at least three months. The cottage hospitals and infirmaries in the county would not undertake to work the Act, although they were offered an initial payment of £10,000 and an annual payment of £5,000. Additional accommodation must be provided. Why had no use been made of the £1,500,000 of which the right hon. gentleman had often spoken with much satisfaction? Had any steps been taken to provide sanatoriums in those districts where accommodation could not be got in existing buildings? Where was the sanatorium benefit which occupied such a large part of the Chancellor's platform speeches? The Chancellor said: "The patient would go to a great building in the country where he would get the best nursing, the best doctoring, and the best food, and live practically in a consumptive first-class hotel for three or four months." He asked the Chancellor of the Exchequer where were these first-class hotels? It was cruel to excite false hopes; it was something more than cruel if the Government levied contributions and taxes for benefits which could not be given.

Dr. Addison could not imagine that any sensible man thought the promised sanatoriums could spring up like mushrooms in a night. He had no doubt that the promises of the Chancellor of the Exchequer would be carried out. Examining the figures in relation to Wiltshire, he doubted if 200 out of 402 notified cases would be insured persons on Monday, but in any case on Monday next they would not have made contributions, and therefore if the best form of treatment should not be available, they could not be said to be cheated out of something for which they had paid, because they would have paid nothing. The hon. gentleman spoke of only four beds being available for advanced cases, but it was not likely that the advanced cases would be insured persons. Insured persons on Monday next would not be advanced cases for a considerable time, and when that time arrived there would be abundance of accommodation. Advanced cases he took to mean hopeless cases, cases of persons whose last days should be made as comfortable as possible with prevention of infection, and these cases would not be insured persons on Monday. It did not follow that because well-trained officers could not be supplied all over the country that therefore nothing could be done. He did not think they would be able to provide a sufficient number of properly trained and experienced tuberculosis officers under at least twelve or eighteen months. Expenditure on bricks and mortar was unnecessary until a necessity for the expenditure was shown, and it could not be shown until the patients were in sight, at all events. A great many of these cases would not be clearly diagnosed until the middle of October, and for a large number of cases shelter colonies would be a very good, if not an ideal, form of treatment during the next three months. The whole question was this—was the commencement of sanatorium benefit to be postponed until the series of buildings and the chains of dispensaries and the whole apparatus was in full going order, or were they to begin in a small way and grow? The essential thing was that it should grow in the right way. It could only be built up gradually as agreements were come to between the local Insurance Committee and the local authorities, and they could not begin the Act with a spick and span machinery if they wanted to.

Sir F. Banbury: Begin the contributions gradually.

Dr. Addison said that that was one of those light observations that were very easy to make but very difficult to carry into practice. It would take at least three years to build up the machine, and no responsible Minister of the Government had ever led anybody to suppose otherwise. Those who were unfortunate enough to suffer from tuberculosis in the next six months would get a large amount of assistance. The man who had hitherto paid for his treatment would have it paid for by the Insurance Committee.

Sir P. Magnus urged that, in view of the importance of expert medical advice in the treatment of tuberculosis, the Government should not attempt to put the Act into operation until they had made quite sure that they had secured the services of the best medical practitioners. He could not help thinking, and he said this in no party spirit, that some amount of blame attached to the Chancellor of of the Exchequer and the Secretary to the Treasury for not having yet succeeded in arranging terms with the profession. All members of the profession desired sincerely to co-operate, but they had not been treated in a manner to make it easy for them. It was only a few days ago that their representatives received a reply to a letter they addressed to the Commissioners on February 29th.

Mr. Chiozza Money said there was a differentiation to be made in the position of the medical profession with regard to medical benefit and sanatorium benefit.

Sir P. Magnus said it had been resolved among other things that no registered medical practitioner should give any assistance towards bringing sanatorium benefit or any other benefit of the Act into operation.

Mr. Chiozza Money said that did not represent the present attitude of the medical profession.

Mr. Worthington-Evans said that the duty of administering sanatorium benefit rested primarily with the Insurance Committees, not yet appointed. Provisional Committees there were, and some of these had met, but none had adopted a scheme for administration of sanatorium benefit. He knew of one scheme prepared which, given time for completion, would do immense good, but time was required, and to attempt things in a hurry would cause friction among local authorities and prejudice the working of the Act.

After some observations by Mr. Glyn-Jones (Stepney), the House divided, and the numbers were:

For the motion	...	...	148
Against	...	...	259
Majority	...	...	—111

The announcement of the figures was received with loud Ministerial cheers.

Sanatorium Benefit.

Mr. Godfrey Locker-Lampson asked what remedy an insured person would have if he was not able to obtain the sanatorium benefit for which he had paid. Mr. Masterman replied that if an insured person was dissatisfied with any treatment he received from the Insurance Committee which was responsible for arranging for such treatment he might appeal under Section 67 to the Insurance Commissioners, who might decide the case themselves or authorize a referee to decide such an appeal.

Mr. Hunt asked what did a man have to do if the Commissioners could not give him the sanatorium benefits for which he had paid. Mr. Masterman said he did not think that arose out of the question. In the first place, he would apply to the Insurance Committee, and it was only if the Insurance Committee gave him the wrong treatment or refused to give him the treatment he ought to receive that the appeal lay.

In answer to other questions Mr. Masterman said that sanatorium benefit could be given now, and medical benefit or an alternative equivalent would be given from January.

Mr. Wright asked how many and which of the seventy-six institutions designated as sanatoriums in England, and how many and which hospitals, and with how many and which of the fifty-seven tuberculosis dispensaries had arrangements been made, and by which, local insurance committees for the provision of sanatorium benefit in sanatorium and other institutions as from July 15th, 1912: and further, in which of the above institutions, hospitals, and dispensaries, and to how many insured persons was sanatorium benefit under the National Insurance Act now being administered? Mr. Masterman: No reports had as yet been received from Insurance Committees as to the

institutions with which arrangements were proposed to be made with a view to the treatment of insured persons suffering from tuberculosis, nor as to the numbers of applications which they had received for provision of the benefit.

Mr. Godfrey Locker-Lampson asked the Secretary to the Treasury if he would state on what date and out of what moneys the £4 5s. per 1,000 of the population mentioned in Clause 34 of the Memorandum No. 112. I.C., dealing with the administration of sanatorium benefit, would be paid over to the Provisional Insurance Committees. Also, whether the 1s. 3d. provided for in Clause 16 of the National Insurance Act, in respect of every insured person, would be available for sanatorium benefit for the first year commencing July 15th, 1912.

Mr. Masterman replied that provision would be made to meet expenditure necessarily incurred on sanatorium benefit between now and January next by the Insurance Committees out of the National Insurance Fund. The precise dates of issue would depend upon the moneys from time to time available upon the account of the fund and the requirements of the respective committees. The sum mentioned in the Memorandum 112. I.C. was about half the estimated normal half-year's contributions for sanatorium benefit, and represented the amount which the Commissioners thought would be required in the first half-year for the treatment of insured persons. If more than this sum was required for treatment of such patients, it would be possible to make a further allocation within the amount indicated by the Act.

Medical Benefit.

Mr. Fred Hall (Dulwich) asked how many doctors were now known to be available in connexion with the administration of medical benefit under the National Health Insurance Act, and what was the number of persons which it was estimated would have to be dealt with as regards this section of the benefit?

Mr. Masterman said it was the duty of the local Insurance Committees, under Section 15 of the Act, to make arrangements for local panels of doctors of those who were willing to serve on such panels under regulations made by the Commissioners. Those regulations were now under the consideration of the Advisory Committee, and until they were issued, and the committees had commenced this work it was impossible to state how many doctors would be available in connexion with the administration of medical benefit. If in any district the doctors willing to serve on panels were not such as to provide an adequate medical service, the Insurance Commissioners might authorize the Insurance Committees to make other arrangements, or might themselves make such arrangements as they thought fit. It was estimated that some twelve millions of insured persons would be entitled to medical benefit or a monetary equivalent.

Domestic Servants (Medical Attendance).

Mr. Hunt asked whether, in the case of clubs where a doctor was provided free for all the servants, he could say whether the contributions of these servants would be reduced by the amount which would be required if the services of a doctor were included. Mr. Masterman replied that the Act did not provide for any reduction of contribution in the circumstances described; but the cost of the remuneration of the doctor might be borne by the Insurance Fund, to which insured servants would contribute for medical benefit.

Local Insurance Committees.

Mr. Butcher asked the reasons why, in appointing Provisional Local Insurance Committees, it was found necessary to place on such committees persons living outside of the locality for which the committees were appointed, and in many cases having no connexion with the locality.

Mr. Masterman said that representatives of insured persons on the Insurance Committees now constituted on a provisional basis were selected by the central representative bodies of friendly societies and trade unions, and by the Association of Industrial Insurance Offices. He was not aware of any cases where persons having no connexion with the society had been appointed. In certain cases the persons selected by the bodies mentioned did not actually reside within the boundaries of the area for which the committee acted, but in such cases they were probably officers of friendly societies or other approved societies which were largely operating within the boundary. The large friendly societies had had their say in the matter. So far as he knew the outside persons were nominated.

Mentally Defective School Children.—Mr. Astor asked the President of the Board of Education whether he would state how many of the children attending elementary, secondary, and special schools, respectively, were mentally defective? Mr. Pease replied that he could only give figures relating to children in special schools recognised by the Board of Education for mentally defective. In such schools there were in average attendance for the year 1910-11 10,337 children in England and Wales.

Sight Tests.—Mr. Lynch asked the President of the Board of Trade whether the results obtained by the Committee on Sight Tests had been of a nature to demonstrate the superiority of the lantern test for colour-blindness over the wool test, and whether, seeing that the lantern invented by Dr. Edridge-Green had been found satisfactory by the Admiralty, he could explain why the Board of Trade proposes to adopt another lantern. Mr. Buxton, in reply, said he was not aware that the report of the Departmental Committee on Sight Tests contained any expression of opinion as to whether the wool test or the lantern test was the better test for colour-blindness. In the opinion of the Committee each method was to some extent supplementary to the other. The recommendations of the Committee were at present receiving his careful consideration with a view to giving effect to them as far as possible at the earliest possible date.

Vivisection (Royal Commission).—Mr. Lansbury asked the Home Secretary what steps he proposed taking to give effect to the recommendation of the members of the Royal Commission on Vivisection with regard to the composition of his advisory body; whether in accordance with the said recommendation, no vivisector was now allowed to be a member of that body; and whether, as further recommended by the Commissioners, he had ceased to consult the Society for the Advancement of Medicine by Research in his administration of the Act? Mr. McKenna replied that he was in communication with the Royal Society and the Royal Colleges of Physicians and Surgeons with a view to constituting an advisory body on the lines recommended by the Royal Commission; but until the new arrangement had been made, he was continuing to consult the Society for the Advancement of Medicine by Research.

Grant Medical College, Bombay.—In reply to Mr. Reddy, the Under Secretary of State for India said that the creation of two professorships at the Grant Medical College was in contemplation by the Government of India. Until the proposals were before the Secretary of State, he could not enter into a discussion of the terms of appointment, but that there was nothing novel in debarring professors at medical colleges in India from private practice.

THE *Annals of Tropical Medicine and Parasitology* of May 29th, 1912, Series T. M., Vol. VI, No. 1, B., issued by the Liverpool School of Tropical Medicine, at the University Press, Liverpool (price 5s.), contains, amongst other interesting papers, the following: On the Presence of Leishmania in the digestive tract of *Anopheles maculipennis*, by G. Franchini; the Vitality of, and Changes undergone by, Trypanosomes in the Cadaver of the Animal Host, by Dr. Blacklock; the Development of a Leucocytozoon of Guinea-pigs, by Dr. Ross; Notes on Some Early References to Tropical Diseases, by Dr. Singer; *Parapiothorchis caninus*, the Liver Fluke of the Indian Pariah Dog, by Dr. Stephens; a New Tsetse Fly from British East Africa, by R. Newstead; a Note on Anti-syphilitic Measures in Uganda, by Captain Keane; and the Treatment of Beri beri, by Drs. Thomson and Simpson.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

HOSPITALS AND THE INSURANCE ACT.

Glasgow Voluntary Hospitals and Dispensaries.

DURING the past fortnight a good deal of progress has been made with the view of determining the attitude to be adopted by the voluntary institutions towards insured persons in Glasgow. The genesis of the movement was an informal discussion among the staff of the Royal Infirmary as to the complementary pledge. It was felt that the best plan was to meet representatives of the staffs of the other hospitals, so that a uniform policy might be adopted. With this view the various institutions were requested to send delegates to a private conference, and as a result it was decided that each medical staff should approach the directors of its hospital and find out what attitude the hospital authorities intended to adopt towards insured persons. We understand that in each case the deputation of the staff met with a very favourable and sympathetic reception by the managers. The medical position was frankly explained, and the difficulties of administering the Act were made clear.

We learn that the hospital managers subsequently had a joint conference, to which each hospital sent representatives, and the conference adopted the following line of action. It was recognized that the chief difficulty would arise in the working of the outdoor departments. The conference adopted a motion to the effect that insured persons should not be entitled to free treatment at the outdoor departments unless they were personally introduced by their insurance doctor or sent with a note from him. The outdoor departments, as regards insured persons, are in effect to be kept as consulting departments for difficult cases. Nor would a patient sent by his doctor receive free treatment. The medical practitioners on the outdoor department would communicate with the insured person's doctor who might then carry out the treatment, etc., suggested. Only in cases where special treatment—x rays, light, electrical treatment, etc.—was required would this be given at the hospital. Of course emergency cases would still be treated at the hospital, but would be referred back as soon as possible to the insured person's doctor.

If these suggestions of the delegates are homologated by the managers, as no doubt they will be, the outdoor departments will be relieved of a large amount of abuse. The medical men will have more time to investigate the cases, and the cases are likely to be more worth investigating, so that it is hoped that in the dispensaries, for example, where students attend, the teaching will not suffer. It was found in the case of one dispensary physician that during the past fortnight one quarter of the new patients were persons who would be insured. The treatment of non-insured persons will not be altered. We understand that no decision with regard to sanatorium treatment has been arrived at, but that the indoor patients will practically be treated as before.

Statement by the Staff of the Edinburgh Royal Infirmary.

The Honorary Staff of the Edinburgh Royal Infirmary has submitted the following statement to the managers:

We thank the managers of the infirmary, through you, for granting the request of the honorary staff for this interview.

The object the honorary staff had in view in asking for this conference was to bring under the notice of the managers (1) the changes in the present provisions for medical treatment which will be brought about by the National Insurance Act; (2) the attitude of the medical profession to the Act; and (3) the relations of the staff of this public charity to the profession at large.

Insured Persons and the Royal Infirmary.

It is estimated that one-third of the entire population will be insured, and that of the male population of 16 years and over 75 per cent. will be insured.

Insurance under the Act implies that the State has undertaken to pay for the medical attendance of insured persons. They, as a class, cannot therefore be regarded as objects of charity entitled to make uncontrolled use of the out-patient department of the infirmary.

Further, when insured persons become in-patients, the infirmary, under certain circumstances, may be entitled to a grant towards their maintenance from the Insurance Act funds.

These altered relations have been brought about by the Legislature, and were not sought by the profession. We submit that such changes call for reconsideration of the existing arrangements at the infirmary with a view to adapting these to the altered circumstances.

The Medical Profession, the Act, and the Royal Infirmary.

Another aspect of this question which the staff desire to bring under the notice of the managers is as follows:

The medical profession has decided not to work the medical benefit section of the Act unless certain terms are definitely granted by the Commissioners. The Commissioners and the Government have been so dilatory in deliberating over these terms, that the profession has had to take into consideration the possibility that their demands may not be granted, and to prepare for that eventuality.

It may thus happen:

First, that medical benefit will be suspended, and that the money alloted under the Act for such benefit will be paid over to Approved Societies to make the best terms they can for medical attendance on insured persons.

The profession has decided not to undertake contract work such as this might imply except on such terms as shall be acceptable to the profession, as represented in the Local Medical Committees already elected in every insurance area.

It is a fact that friendly societies are already attempting to get over some of their difficulties by trying to utilize such public medical charities as the infirmary. The members of the profession in Edinburgh, through its local Medical Committee, have strongly impressed upon the honorary staff of the infirmary the necessity of bringing before the notice of the managers the probability of an extension of such action in the future, and they protest against the possibility of this great charity being used to undermine the united action of the profession. The staff fully realizes the seriousness of this possibility, and, sympathizing with their brethren, feel bound to support them by doing everything in their power to prevent its occurrence. Moreover, if such additional work were thrown upon the already over-burdened out-patient departments, they would be quite unable to cope with it.

The *second* possibility is that the Commissioners or friendly societies may profess to provide medical benefit by means of a small body of dissentients from the declared policy of the profession. Were this to happen, your honorary staff are expected by their brethren, and themselves desire, to do everything in their power, both as private consultants and as members of the staff, to discountenance such arrangements.

Sick Poor not Insured.

Apart from insured persons there are many thousands of sick poor to whom the staff will ever be ready and willing to give of its best, as it has done in the past, but the staff strongly represent to the managers that the time has arrived when it is of the first importance that steps should be taken to institute some efficient method of inquiry regarding the position of persons seeking advice at the infirmary. They do not venture at present to propose any definite scheme, but they regard the initiation of such a scheme as urgent.

The whole question of the relation of medical charities to insured persons is being dealt with all over Great Britain, and the staff realize that it would be a very serious matter if, as the result of inaction on the part of the managers, the medical profession in Scotland were to take up an attitude of hostility to the Royal Infirmary.

It is hardly necessary to state to the managers that a large amount of the work done in the infirmary is bestowed on persons recommended by medical men.

The following reply to the statement has been received:

The Royal Infirmary, Edinburgh,
July 15th, 1912.

Sir,

I have to acknowledge receipt of your letter of this date addressed to the Superintendent forwarding the statement with reference to the National Insurance Act signed by the members of the Honorary Staff and which was laid before the Managers at their meeting this afternoon. A report of the conference which took place between the Committee of the Board and the Committee of the Staff on the 5th instant was submitted and considered at the same time.

I am now directed to say that the board sympathizes

with the staff in the difficult position in which they are placed at the present time, but is confident that the staff, while maintaining the fullest loyalty to their professional brethren, will always keep in view the true interests of the sick poor, for whom this great charity exists and is supported.

I am also further directed to say that the Board, after discussion, arrived at the following conclusions:

1. That in present circumstances insured persons being entitled to medical benefits under the Insurance Act should not be treated in the out-patient departments of the hospital except in accident cases, urgent cases, and suitable consultation cases.

2. That the honorary staff shall be entitled to exercise the option (recognized in private practice) to decline to meet any practitioner in consultation should such a course be considered advisable, but always provided that no patient shall be denied immediate advice or treatment if that be requisite on medical grounds.

3. That the question of investigating the circumstances of applicants for the benefits of the hospital by means of almoners or otherwise, is one which will require time and care in consideration, owing to its undoubted complexity. The Managers will, however, give the subject their most careful attention in due course.

I am, Sir,
Your obedient servant,
(Signed) WM. S. CAW,
Treasurer and Clerk.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

MUSEUMS ASSOCIATION.

THE Museums Association held its annual conference in Dublin last week, commencing with a meeting in the theatre of Leinster House on Tuesday morning. The members and visitors received a cordial welcome from the Lord Mayor of Dublin, and from Mr. T. P. Gill on behalf of the Department of Agriculture and Technical Instruction. Count Plunkett, Director of the National Museum, then took the chair, and after welcoming the members of the association, spoke of the great importance of museums in the education of the people and the development of the crafts and industries of a country. Professor Henry Browne, S.J., read a paper on the influence of museums on the reform of classical studies, in the course of which he said that classical education, as our fathers understood it, must be mended or ended. Other papers dealing with the importance of museum education were contributed by Dr. F. A. Lucas (Director, American Museum of Natural History, New York), Mr. Reginald Smith, B.A. (British Museum), and Professor Patten, M.A., Sc.D. (Sheffield University). Trinity College was then visited and the museum shown by Dr. Joly. In the afternoon a visit was paid to the National Gallery, and a garden party was given at the Viceregal Lodge. In the evening there was a largely attended conversazione in the National Museum given by the members of the Dublin branch of the association. On Wednesday numerous papers of interest were read, and in the afternoon visits were paid to the Zoological and Botanic Gardens. In the evening the annual dinner was held at the Gresham Hotel. Count Plunkett, F.S.A., presided, and the Lord Lieutenant was amongst the guests.

CITY AND COUNTY OF DUBLIN SANATORIUM.

At the last meeting of the South Dublin Rural District Council a letter was read from the Dublin Joint Hospital Board, saying that the board had heard with considerable surprise that some members of the Dublin County Council were in favour of allocating the grant obtainable by the County Council under the Finance Act, 1911, and the Insurance Act, 1911, to the full development of the sanatorium at Crooksling. The Dublin Joint Board, being convinced of its claim for the grant allocated to the City and County of Dublin, had for some time considered the urgent necessity for increasing the present accommodation at the sanatorium for early cases of tuberculosis, and of establishing a sanatorium for acute cases as well. Plans for both of these schemes have been drawn up and approved, and on July 3rd a deputation submitted them to the Local Government Board. After consideration of this letter the council adopted a resolution adhering to the opinion that the grant should be entirely applied to the fullest development at the sanatorium at Crooksling, and expressing the opinion that any scheme which did not favour the co operation of all the district authorities of the county with the Corporation of Dublin deserves the most rigorous opposition.

THE NEW PEAMOUNT SANATORIUM.

The announcement that the Women's National Health Association had purchased the Peamount estate, near Lucan, for the purpose of erecting a sanatorium for the treatment of tuberculosis, has raised a storm of protest from the people of the neighbourhood which is somewhat reminiscent of the recent controversy raised with regard to the building of a special wing for consumptives in the grounds of the Hospital for Incurables, Dublin. All kinds of objections are raised: it is stated that the place is low-lying, damp, not suited for consumptives; that there is no permanent water supply; that it is in a thickly populated district; and that the erection of a sanatorium will depreciate the value of the surrounding property and spread the infection of tuberculosis. On the other hand, it is stated on good authority that the house stands 300 ft. above sea level; that the grounds slope gently from the house, and are well sheltered from the north and east; that there is a triple water supply—from a deep well, a spring, and a river, all in the grounds. The fact remains that the place has been purchased and the erection of pavilions is being rapidly pushed forward, so that they may be ready for the reception of patients at an early date.

DUBLIN COUNTY BOROUGH LOCAL MEDICAL COMMITTEE.

In accordance with the resolutions passed at the mass meeting of delegates representing the whole of the Irish medical profession, held at the Mansion House, Dublin, on June 11th, 1912, the Dublin County Borough Local Medical Committee, which has been elected by, and is acting for, the entire local profession, has decided that:

Half a crown be the minimum fee for medical examination for entrance to an approved society.

Relating to matters common to attendance under the National Insurance Act and attendance through societies, inclusive of all services (except midwifery), the annual payment must not be less than 8s. 6d. per member (cost of drugs not included).

In addition, the Dublin County Borough Local Medical Committee is of opinion that 12s. per annum be the rate for attendance on the member of a society, including his family.

IRELAND AND THE SANATORIUM BENEFIT.

Medical men resident in county Tyrone at a meeting on June 29th unanimously passed a resolution to the effect that no medical man should accept any position of profit or emolument, direct or indirect, under the Insurance Act until there had been full compliance with the demands of the medical profession in respect of it. This reaffirmation of principle was due to its being brought to the notice of the meeting that the Women's National Health Association proposed to open sanatoriums forthwith, and that, as in certain areas attempts had already been made to persuade medical men to accept appointments as tuberculosis medical officers, these might be expected to be repeated in Tyrone. The *Irish Times* during the same week contained a letter on the subject signed "Observer." It stated that Lady Aberdeen, through the Women's National Health Association, was apparently to be allowed to select buildings in various parts of the country and turn them into temporary sanatoriums without any sanction whatever from the Local Government Board or the county council. This "Observer" regarded as totally unnecessary, since the county councils were much better fitted to make the necessary arrangements whenever the right time came. At present that time had not come, because an agreement with the medical profession has still to be reached, and until it was reached medical men possessed of adequate knowledge on this particular subject would not accept the appointments. He was aware that a certain number of names had already been sent in for an appointment as sanatorium superintendent, but he believed that there was a misunderstanding on the point, and that the names would be withdrawn so soon as their owners realized that to take part even in tuberculosis work would at present be inimical to the interests alike of the medical profession and themselves.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

WALES.

SANATORIUM BENEFIT IN WALES.

THE Executive Committee of the King Edward VII Welsh National Memorial for the prevention and abolition of tuberculosis met at Shrewsbury on July 12th, with Mr. David Davies, M.P., in the chair. A subcommittee reported that it had invited applications for the appointments of tuberculosis physician and that 57 applications had been received. The subcommittee submitted the names of 22 candidates and 11 appointments were made. It appears that some at least of the applicants were unaware that the advertisement offering these appointments had been refused publication in the BRITISH MEDICAL JOURNAL in accordance with the notification of the State Sickness Insurance Committee of its decision that acceptance of medical appointments in connexion with the administration of sanatorium benefit under the National Insurance Act would be a contravention of Minute 78 of the Special Representative Meeting. Two of the appointed candidates, Dr. C. J. Welch and Dr. D. A. Powell, have in consequence withdrawn, and their loyal action will be highly appreciated by the profession. A letter has been addressed to the other candidates by the Medical Secretary of the Association, drawing their attention to the pronouncement of the Committee with respect to sanatorium benefit, a pronouncement with which they may not have been fully acquainted when they accepted the invitation to apply for the appointments. On July 11th the State Sickness Insurance Committee, after very full consideration, reiterated its opinion that the terms of Minute 78 of the Special Representative Meeting of February last, which stated that no member of the medical profession should take any office or work under the National Insurance Act other than that of the Advisory Committee, until such time as the minimum demands of the profession were conceded in the regulations or in an amending Act, debarred members of the profession from making any kind of attendance upon any person under the Act in connexion with sanatorium benefit, but, at the same time, it put on record its opinion that there was abundant evidence that the question of Minute 78, in its application to sanatoriuum benefit, must come up for consideration at the Annual Representative Meeting. The meeting takes place at the end of this week, and the decision then reached will, we have no doubt, be accepted by all the medical men who were nominated by the Welsh Memorial Committee last week. They have probably been misled owing to the fact that there is apparently no necessary connexion between the Welsh National Memorial and the National Insurance Act, but the funds of the Memorial Committee will be largely derived from those provided under the Act in respect of sanatorium benefit.

KING EDWARD VII HOSPITAL, CARDIFF.

At the meeting of the board of management last week the medical board's resolution to the effect that all its members had signed the British Medical Association's pledge was mentioned. It was explained that this would not affect the treatment of accidents or urgent cases. The question of permitting the attendance at operations of first-aid and other unqualified societies was gone into, and the general feeling of the board was against such permission being given. The gentleman who anonymously gave £10,500 towards the establishing of the new physiological department in connexion with the University College proves to be that very generous supporter of the hospital and college, Mr. W. James Thomas, of Ynishir.

MANCHESTER.

SANATORIUM BENEFIT IN MANCHESTER.

AT a meeting of the Sanitary Committee of the Manchester Corporation, the medical officer of health submitted a report setting forth a provisional scheme for giving effect to the provisions of the National Insurance Act in connexion with sanatorium benefit, and it was resolved that the Special Subcommittee appointed to deal with the question of tuberculosis should be authorized to make arrangements with the authorities of the Manchester Consumption Hospital for the treatment of consumptives, the scheme not being confined to insured persons, though intended in the first instance for them. The full scheme has not yet been published, but it is understood that it includes a proposal for the payment of a salary of about £250 a year to the medical staff of the Consumption Hospital. It has not yet been settled what the outcome of the arrangements with the Consumption Hospital will be, but possibly something may depend on the action of the Representative Meeting with regard to the interpretation to be put on Minute 78 of the Special Representative Meeting of February. The matter is important, as it seems to be not unlikely that arrangements may also be sought with some of the other Manchester hospitals for the treatment of other cases of tuberculosis. The Subcommittee was also instructed to interview the Local Insurance Committee and come to an understanding with it, so that sanatorium benefit might be available from the commencement of the Act on July 15th. In consequence of the difficulties, already reported, as to the appointment of the two medical representatives of the Corporation on the Local Insurance Committee, the Special Committee dealing with the Insurance Act has resolved to postpone the further consideration of the matter for the present.

SALFORD STATISTICS AND THE INSURANCE ACT.

The following figures are gathered partly from the annual report of the Medical Officer of Health for Salford and partly from other sources, and may be of use in the consideration of the possible effects of the Insurance Act on general practice. The population of Salford in the middle of 1911, based on the census, was 231,641, which is some thousands less than had been estimated. Taking the Government estimate that about 12 out of 41 persons will become insured persons and that there are 24 dependents of the insured or persons in similar economic position, and 5 belonging to the middle and upper classes, there will be in Salford in round figures about 67,800 insured persons, 135,600 non-insured, but of the same economic position as the insured, and 28,200 non-insured of the middle and well-to-do classes. In the area of the Salford Division of the British Medical Association there are 131 medical practitioners, but the Division covers not only the area of the Salford borough local Insurance Committee but the whole or parts of three, if not four, separate district insurance committees of the county, with some overlapping with the area of the Manchester Insurance Committee. But in the Salford borough itself there are about 100 medical practitioners, of whom 14 or 15 are either whole-time officials or retired or not engaged in general practice, leaving about 85 resident in the borough engaged in general practice. As the division line between Manchester and Salford is purely artificial, many of the Salford practitioners have numerous patients in Manchester as well as in the surrounding districts, which may be neutralized by Manchester and other practitioners having patients in Salford, but, dividing the population of Salford among the 85 resident general practitioners, each has a possible *clientèle* of 2,725 persons. Of these, 798 will be insured, 1,596 non-insured, but of the same economic position as the insured, and 331 non-insured of the middle classes. These numbers may appear to be very high, but parts of Salford are very congested, and contain a great proportion of the poorer working classes. A considerable number are in medical clubs which pay a capitation fee averaging probably 4s. The outdoor paupers are attended by district medical officers, who are included among the 85 general practitioners.

In connexion with sanatorium benefit the registered deaths in the borough in 1911 included 380 from phthisis and 196 from other forms of tuberculosis, and, taking the ordinary method of calculation, there must be about 1,800, and possibly as many as 2,000, cases of tuberculosis in the borough at any one time. As affecting maternity benefit, there were 6,345 births during the year, and of these 4,671, or 73.6 per cent., were attended by midwives, while 1,674, or only 26.4 per cent., were attended by medical practitioners. There is no arrangement for paying the fees of medical men summoned to the assistance of midwives

similar to that which exists in Manchester, as the Corporation refused to adopt the Manchester scheme, and at present the guardians pay only for persons proved to belong to the poorest classes.

BIRMINGHAM.

RESIGNATION OF PROFESSOR MALINS.

DR. EDWARD MALINS, who has held the chair of midwifery in the University of Birmingham, and previously in Mason College since the year 1894, has tended his resignation. In his letter of resignation Professor Malins expresses his grateful appreciation of the consideration he has constantly received both from the authorities and his colleagues in the conduct of the department he has had in charge. Acknowledging the privileges of citizenship and recognizing its duties and obligations, he at the same time sent a cheque for £1,000 as a contribution towards the general expenses of the university with, to quote his own words, "a profound sense of the many important advantages it offers to the advancement of knowledge and the great capabilities it opens to the future in the highest interests of intellectual and material progress in our midst."

Correspondence.

RESEARCH DEFENCE SOCIETY.

Special Appeal.

SIR,—We are of opinion that experiments on animals in this country should be restricted by law, that the present Act should be efficiently administered, and that the utmost care should be taken to ensure the minimum of pain in these experiments.

Some of the antivivisection societies have lately adopted methods which are grossly offensive to the public interest. They have opened no less than sixty shops in London and elsewhere. Most of these shops have lasted only a few weeks, but they have had time to spread falsehood, prejudice, hatred, and suspicion against scientific research. They have also done harm to small children. It is no light offence to exhibit in public not only brutal cartoons and caricatures, but stuffed animals, tied down for operation, while the truth is carefully concealed that no operation is allowed on any animal in this country except under an anaesthetic.

In this connexion we would remind the public of the unanimous statement of the Royal Commission:

> To represent that animals in this country are wantonly tortured would, in our opinion, be absolutely false.

The excuse is offered, for these shops, that the appliances displayed in the window are actually supplied by the makers. But if the appliances used in our hospitals were displayed in a shop window, with models of human beings tied down for operation, it would be no excuse for such a travesty, to say that the appliance had acually been supplied by the makers.

Some of these societies, having wealth at their disposal, are able to rent shops in the most crowded thoroughfares, or to attract by the very lavish and rather unscrupulous use of money, a large audience. It seems that an effort is being made to work on the mere liking for horrors, real or sham: that no exhibit is too sensational, if it can serve to draw attention and to excite passion.

When we think of the vast multitudes of lives, human and animal, saved from pain, disease, and death by discoveries made through experiments on animals, we cannot believe that the present methods of antivivisection societies are acceptable to sensible and honest people.

The only way to fight these methods is to be constantly publishing the facts of the case put before the Royal Commission and embodied in its final report. The Research Defence Society, in the past twelve months, has given more than a hundred addresses and lantern lectures in all parts of the kingdom, and has distributed more than half a million pamphlets and leaflets. But there is much more work waiting to be done if we had the money for it. We therefore appeal for special donations, to be controlled by the committee of the society, and to be used solely for such purposes of education as public lectures and distribution of literature. All cheques should be crossed "Messrs. Coutts and Co." and made payable to the Honorary Treasurer, Research Defence Society, 21, Ladbroke Square, London, W. We hope and believe that this appeal, in the interest of the public, will be very generously answered. On behalf of the Society, we are, etc.,

DAVID GILL,
President.
SYDNEY HOLLAND,
Chairman of Committee.
ROBERT CECIL.
LUKE FILDES.
WILLIAM RAMSAY.
MARY SCHARLIEB.
F. M. SANDWITH,
Honorary Treasurer.

London, W., July 10th.

APPENDICITIS—AND QUICKNESS.

SIR,—If readers of the JOURNAL will turn to Sir George Beatson's first letter (June 3rd) they will see that it is the question of early operation in appendicitis he is discussing, and not merely the mortality, though, of course, that is the most important consideration. Hence, when he wrote that he had no fault to find with operation in the first twelve hours, the obvious meaning was that he had not. He now tells us why he has. He tells us one reason is because it creates a belief that operation is necessary at that time. This is the belief that many of us would wish created in the minds of all surgeons—and in the minds of general practitioners also. It is quite a mistake to represent the views of those surgeons who advise operation in all acute cases in the way Sir George Beatson does. We do not claim that all cases which recover after early operation "are snatched from the jaws of death." We know quite well that a certain number might recover without operation (but would very likely have a relapse and require operation eventually), but, as Sir George Beatson cannot tell us how to determine the "merits" of the case, we believe that there is too great a risk in leaving a diseased appendix, the exact condition of which Sir George Beatson admits he cannot determine by any clinical signs, for we know how often the appendix is found just ready to infect the general peritoneal cavity, without any protective walling-in, and that even when walled-in, and surrounded by pus, there are many dangers for the patient to face until the abscess is evacuated. I quite agree with Sir George Beatson that it does not matter whether the appendix is perforated or gangrenous if it is walled-in. But who can tell that it is safely walled-in? Even when it is, pus formed around it will certainly need evacuation.

I foretold in my last letter that Sir George Beatson in his next would tell us we had better not operate on any case until the interval stage. He now goes almost as far as this, for he says "that when the acute attack has existed for more than twenty-four hours, unless there are definite symptoms of general suppurative peritonitis, operation is best postponed, as such cases under medical management do well, and can be safely brought to the 'interval stage,' when the operation mortality is *nil*." Of course, the operation mortality is *nil* at this stage, but the question is, Can they all be brought safely to it without operation? Most surgeons would agree that all cannot. Sir George Beatson has now ceased to advise us to judge cases on their "merits." We are now told we are to abstain from operation unless signs of general peritonitis are present. Perhaps such signs constituted in his mind the "merits" of the case; at any rate, he does not seem able to give us any other reliable indication when to operate. It is to be noted that Sir George Beatson writes of a period of twenty-four hours after the onset as the time when we are no longer to undertake operation. He has often told us it should be twelve hours. Has he any definite period in his mind? If so, I would ask, as Mr. Paterson has already done, Why?

With reference to the 59 cases of appendix abscess, quoted by me from Mr. Makins's article, Sir George Beatson says: "I have furnished him with valuable confirmatory evidence in favour of the very point he is contending for—namely, that interference with localized appendix abscess in its acute stage is most disastrous, and sets up a train of complications that are at the root of

our heavy mortality statistics in acute appendicitis. . . ." How Sir George Beatson could get this evidence out of Mr. Makins's article I fail to see. I should have thought the evidence was all the other way. For, evidently, such complications as intestinal obstruction, subdiaphragmatic abscess, etc., were not due to the operation, but occurred because it was not performed earlier, and Mr. Makins points out that "the 'early operation,' if performed as a routine procedure, would lead to the disappearance of practically the whole of the complications which at the present time account for the fatalities which occur; further, that the early operation may be fairly placed in the same category as regards mortality with that performed during a quiescent interval."

But with regard to mortality in operation for appendix abscess, I may say that during the last three and a half years I have operated on 32 cases of appendix abscess with only one death. This was from perforation of the stump of the appendix, during the apparently satisfactory progress of the case. The appendix was gangrenous. This is the only case in which I have ever had leakage of an appendix stump. Up to three and a half years ago I had several deaths in children after operation in acute localized appendicitis, with symptoms like those of late chloroform poisoning. At that time I adopted the suggestion of Mr. Harold Stiles that chloroform should not be given to children in these cases, and have since then always had them anaesthetized with ether by the open method, and have had no death with such symptoms since.

It is most satisfactory that in Sir George Beatson's series of 69 cases of appendix abscess none of the serious complications arose which were present in the 59 cases referred to by Mr. Makins, but I feel sure it was not "dietetic or medicinal measures," as Sir George Beatson suggests, which led to the fortunate result. To put it in a few simple words, it seems to have been just good luck. Does Sir George Beatson wish us to believe that such measures will prevent kinking of coils adherent in the abscess wall, or subdiaphragmatic abscess, or empyema—complications which together make 11 out of the 22, or that they will prevent the occurrence of faecal fistula which existed in six more?—I am, etc.,

Bristol, July 13th. CHARLES A. MORTON.

SIR,—Sir George Beatson, in his reply to my letter, states that "the majority of cases of acute appendicitis can be brought to the interval stage by medicinal treatment without undue risk." That this is true of some cases is indisputable. There are, undoubtedly, two classes of cases—those in which recovery will ensue without operation and those in which it will not. That those in which recovery will not ensue are "small in number," and "easily recognizable," is an opinion which I venture to think is not held by the majority of those with much experience of acute appendicitis. It is because of the difficulty—nay, the impossibility in many instances—of distinguishing between these two classes of cases, that early operation is safer than procrastination.

Sir George assures us of the safety of his teaching, but does not tell us how the cases which may be safely left are "easily recognizable." The question of treatment turns on the possibility of this easy recognition. I asked Sir George a definite question, "Can he, or can he not, judge accurately the condition of the appendix in any given case, and foretell the future course of the disease—whether resolution will occur, or whether gangrene with diffuse general peritonitis will ensue?" To this plain question he has not yet given a plain answer: in his second letter he ignored it, in his third he evaded it by saying that "so long as a case of acute appendicitis is a localized one, there is no need to fix definitely the condition of the appendix." This, I venture to maintain, is begging the whole question. By his statement Sir George claims either that all cases of acute appendicitis are localized, which is not the case, or he claims to be able to say in which cases protective adhesions are present, and in which not. Does Sir George seriously claim such diagnostic skill?

"The advocates of immediate operation," says Sir George, "have no right to claim that all such cases when operated on have been snatched from the jaws of death." Surely no experienced surgeon would make any such preposterous assertion. Undoubtedly some of the patients submitted to early operation would have recovered had no operation been performed; but there remain a certain number in which at operation the appendix is found to be perforated or gangrenous, surrounded perhaps by some free-lying pus, and without any protective lymph formation. Is there any reasonable doubt that in such cases, were no operation performed, the infection would spread, and that a diffuse peritonitis would ensue? Evidently Sir George considers that such cases exist only in the imagination of the surgeon. I have had 14 such cases in my last 50.

Sir George Beatson ignores entirely the risk of infection from the appendix causing pleurisy, pneumonia, hepatic abscess, subphrenic abscess, or pyaemia. But if operation be postponed the risk of these complications supervening is no mere "conjured up contingency." In the days when I practised the expectant treatment I had under my care in one year 4 patients who died from one or other of these causes while waiting for an interval operation.

In the lecture to which he refers Sir George gives figures comparing his mortality-rate with that obtaining in the wards other than his own of the Western Infirmary. In view of these figures it would be interesting to know why Sir George's colleagues are not so impressed with his results as to follow his teaching.—I am, etc.,

London, W., July 13th. HERBERT J. PATERSON.

SIR,—It is not my intention to enter into the controversy on this matter, but as an advocate of the early operation I think the statistics which I am able to present may be of some interest.

My practice is to operate on practically every case of appendicitis that comes under my care. For a time cases of general septic peritonitis with distension were not operated upon, but I now nearly always make a small incision or incisions for drainage only, the removal of the appendix being left to a later date. In cases that are in an extremely toxic state when first seen I may deem it wise to wait for twenty-four hours, until the bowels have been got to move and until a greater or lesser amount of saline has been absorbed, and in cases of localized abscess I may defer the operation for from twelve to twenty-four hours as a matter of convenience. In all other cases the operation is carried out as soon as possible.

I attach great importance to the use of ether administered by the open method, to saline given by intermittent rectal injection or by subcutaneous infusion, and to the early evacuation of the bowels.

In almost every case the appendix is removed as an essential part of the operation.

As junior assistant surgeon I am not in a position to hand patients on, and the series represents nearly all the cases of appendicitis that have come before me. The following table shows the mortality of all my cases arranged under the different years:

TABLE I.

Year.	Total Cases.	Deaths.	Percentage.
Previous to 1907	64	8	12.5
1907	68	8	11.76
1908	89	7	7.86
1909	102	3	2.94
1910	107	2	1.86
1911	131	5	3.81
To end of June, 1912 ...	57	0	—
Total	618	33	5.33

I have made a practice of classifying the cases as shown in the next table, which gives the percentage mortality of the different groups.

Group 8 includes cases of intestinal obstruction which ultimately turn out to be caused by an acute appendicitis, and also cases admitted suffering from pylephlebitis.

In Groups 3, 4, 5, and 6, a certain number of secondary operations have been necessary for the evacuation of pelvic abscesses, intestinal obstruction, etc. These are all

TABLE II.

		Cases.	Deaths.	Per-centage.
Group 1 ...	Acute appendicitis without peritonitis	41	0	—
Group 2 ...	Acute appendicitis with localized peritonitis	115	1	0.86
Group 3 ...	Acute appendicitis with flank or pelvic peritonitis or both	72	3	4.16
Group 4 ...	Acute appendicitis with diffuse peritonitis	32	16	50.0
Group 5 ...	Appendicitis with residual abscess	40	3	7.5
Group 6 ...	Appendicitis with primary localized abscess	169	6	3.55
Group 7 ...	Appendicitis—interval removals	140	0	—
Group 8 ...	Appendicitis with primary complications	9	4	44.0
	Total	618	33	5.33

included in the compilation of the statistics, which therefore represent the mortality of appendicitis together with its complications.

In arriving at a just estimate of the mortality of operations for acute appendicitis it is necessary to deduct the cases operated upon in the quiescent period, and I think also that those in Group 8 ought certainly to be omitted. This leaves us with 469 cases of acute appendicitis with 29 deaths, a mortality of 6.18 per cent. If we also take the view that no patient ought to be allowed to develop general peritonitis, and deduct the 32 examples of this complication, with the 16 deaths, we are left with 437 cases and 13 deaths, a mortality of 2.9 per cent. in a consecutive series of unselected cases of acute appendicitis extending over a period of about ten years.—I am, etc.,

Newcastle, July 16th. G. GREY TURNER.

SIR,—While following the highly interesting correspondence proceeding in the JOURNAL on this subject, I have not observed that much has been said about the course of those cases of severe appendicitis which occurred in practice before the true pathology of the disease was recognized.

Accident brought to my notice a few days ago some fragments of an old notebook which I thought had long been lost. I find fairly clear, though somewhat crude, notes of one severe case, and very short ones of three others, all being acute severe types. Death followed in 3 out of the 4 cases, and no operation was performed in any of them. I regret that in 3 out of the 4 cases the notes are very short and fragmentary, but though no *post-mortem* examination was made, I have no doubt, in looking back, that they all were undoubted cases of appendicitis.

On November 2nd, 1888, I was called at 10 a.m. to A. D., aged 36, a butcher. I found a well-built, strong-looking man, who I ascertained had always previously enjoyed good health. Since late the night before he had been suffering from attacks of abdominal pain, which he attributed to a strain he said he thought he had got while loading a wagon of hay in the afternoon. The pain was of a colicky nature and paroxysmal; the paroxysms had become more violent, and pain was very severe and almost continuous when I saw him. He felt sick but had not vomited. The pain was more marked on the right side of the abdomen, there was a good deal of rigidity all over the abdomen, but most marked on the right side low down. His bowels had been well relieved in the early morning. Turpentine stupes were ordered, and I gave him 15 minims of tinct. chlorof. et morph., to be repeated in three hours if still in pain.

In less than four hours I was again sent for, as the pain was worse. This time my principal, an old practitioner of 70, saw him with me. A distinct fullness with dullness on percussion could be detected in the right iliac region. My diagnosis at my first visit was colic, and was now acute typhlitis, which my principal scoffed at, saying he knew it was a case of peritonitis, follow[illegible] of the bowels. My principal was a good surgeon [illegible] capable practitioner. He now [illegible] should operate, open the abdomen [illegible] found. The friends and patient [illegible] tion of the bowels, which I mentioned to him [illegible] that the lower bowel only had been emptied below the obstruction. The patient steadily grew worse in spite of morphine subcutaneously, enemata, hot applications to abdomen, etc., and died on the fourth day of illness.

F. R., aged 16, draper's assistant, seen by me on May 11th, 1889. Had [illegible] from any definite illness other than colds before. For a few days before I saw him he had suffered from abdominal pain on and off, but not sufficiently severe to confine him to bed. At my first visit in the morning he was suffering from agonizing pain, which was most marked in the right iliac region. Tenderness, with decided lump, could be made out in the same region, and tenderness was marked all over the abdomen. He did not vomit, but felt sick at times. Temperature was 102°, pulse 120. He breathed fast, being afraid to take full breaths; no chest signs. His bowels were confined. Turpentine stupes were applied to the abdomen, and he was given liq. opii sed. with spr. aeth. sulph. co. Nothing was allowed by the mouth but sips of hot milk and water. The opium mixture was given in small but frequent doses, and he retained it. By evening the pain was somewhat relieved, but he did not sleep throughout the ensuing night. May 12th. Easier, dozed most of day, and took liquid nourishment frequently. Pulse 108, temperature 100.2°. He lies in bed with his knees drawn up. Still great tenderness of abdomen. May 13th. No return of severe pain. Still taking opium mixture, but less often. Bowels not open. Temperature 100°, pulse 104°. May 14th. Much better. Temperature 99°. Diminished dose and frequency of opium in mixture. Dose of castor oil, which acted after enema. From this time he steadily improved, and within a fortnight was out for short, gentle walks. I knew him for a year after this, and he had during that time no recurrence.

In 1895 I attended an errand boy, aged 11, for an abdominal attack which came on suddenly and soon showed marked swelling and tenderness in right iliac region. The attack commenced with shivering and sickness and severe abdominal pain, the day before I saw him. On the second day of seeing him I advised that he should be removed to the nearest hospital for operation. His parents refused. On the third day, his bowels not being open, his mother suggested a purgative, which I strictly forbade. His temperature on this (the third) day was 101°, his pulse 120. Pain and tenderness were localized to the right iliac region. He looked very ill. The fourth day, on my visiting him, I saw at once that he was very much worse. I then found signs of acute perforative peritonitis, and ascertained that castor oil in two large doses had been given. He died twenty-four hours after.

In 1896 a neighbouring practitioner asked me to see a case with him of typical acute severe appendicitis, which the previous day had shown signs of commencing peritonitis. The friends from the first refused operation. The patient was a well-built woman of 30; no children; she made a good struggle for two days, and then died without being operated on.

The first two cases occurred in a remote country district twenty miles from a hospital; the last two near London. All the cases were treated in the old way—opium or morphine, semi-starvation, strict rest, enemata for bowels, with two exceptions, one where the aperient was given against orders, the other after the patient had greatly improved. A fatal result in three out of four shows, of course, an appalling, and, I have no doubt, a quite exceptional mortality, not in keeping with the experience of many, but it must be remembered that they were acute severe cases.

The number is obviously far too small to draw any conclusions from, but in the light of my subsequent experience they are, I think, interesting. During the years that have followed I can, by reference to notes, etc., recall 47 cases that I have met with in general practice, either my own or my partner's. Of these, no fewer than 40 were operated on at some stage (many during a quiescent interval), with 1 death, and that one within eighteen hours of the commencement of the attack. The remaining 7, two or three of which were fairly severe, were not operated on and remain well.

The late Mr. H. L. Barnard, in November, 1903, read a paper at the Hunterian Society on appendicectomy. During the discussion which followed, I remember, he referred to his experience when he was a house-physician at the London Hospital several years before. At one time he saw (I forget the exact number) considerably over a dozen consecutive cases of severe appendicitis all recover without any operation.

There appear to be two schools on this question of treatment in appendicitis. The contention of one school is that there are no clinical signs which will enable you in all cases to distinguish between cases requiring operation as soon as the case is seen and those that do not; therefore, says this school, operate practically always from the first. The contention of the other school is that the time when many of these cases are operated on is so unsuitable a time that operation is often the last straw which brings about a fatal result. How are these two divergent views to be reconciled?

I cannot help thinking that the solution of the problem will be found by considering, not so much when the operation shall be done, as by considering how far can

the operation be so shortened and simplified as to produce the minimum amount of shock. Can some simple, yet efficient, operation be devised that, while increasing the safety of the patient for the time, will enable him to tide over the critical period and allow of a more radical operation being done later, when the condition of the patient will allow of it?—I am, etc.,

Bournemouth, July 14th. W. H. BEST.

SIR,—The important correspondence upon this topic has tended to emphasize the present orthodox view, that in cases of diagnosed appendicitis the proper treatment is the removal of the appendix, and that to delay the operation is an inexcusable courting of disaster.

Happily, in a profession like ours, knowledge is best gained by the multiplication of experiences, and I venture therefore, without any apology, to point to some interesting experiences of different treatment.

I think that it should not be so readily assumed that appendicitis will in the majority of cases proceed to the formation of a purulent abscess any more than that tonsillitis will in the majority of cases proceed to a tonsillar abscess. When, therefore, a surgeon gives his statistics of a hundred or more cases of immediate removal of the appendix upon the first diagnosis of appendicitis, with no fatality, it is not logical to assume that there would have resulted a large percentage of appendicular abscesses and some fatalities if an immediate operation had not been performed. What it does prove is that under proper surgical care an inflamed appendix can be safely removed.

Now I have had under my care about a hundred cases of appendicitis, and I have not had one operated upon, and I have not lost one. In several cases I have been warned by keenly experienced surgical colleagues that operation was urgently needed, and that surgery was the only rational treatment. Experience, however, proved that this was not so, and that rational medical treatment is efficacious in a very high percentage of cases of appendicitis.

A very striking case I had was one I saw again only a few weeks ago. He had had very skilled advice, and, as he hesitated about operation, one of the ablest of London's titled consulting physicians was called in consultation, and he confirmed the diagnosis and the recommendation for surgical treatment. This patient is to-day engaged in arduous public toil of a most strenuous and exacting character nearly twelve months from the date of the diagnosis and the confirmed advice of urgent surgical treatment. I think, therefore, there are strong grounds for considering whether appendicitis cases should not be treated more generally by the physician, and not handed over incontinently to the surgeon.—I am, etc.,

London, E.C., July 6th. JOSIAH OLDFIELD.

SIR,—After reading Sir George Thomas Beatson's letter in the BRITISH MEDICAL JOURNAL of June 29th, p. 1514, I am prompted to record my experience of acute appendicitis, inasmuch as it exactly accords with the view of the disease which he so clearly expresses—a view which has apparently suffered much obscuration in the "atmosphere of panic" which, he observes, has been created about the disease.

I am now in my twenty-fifth year of country practice, and I have not yet had a case of acute appendicitis which required operation; and I have not yet had a case which did not get well with treatment, following ordinary therapeutic measures; and I can recall very few cases which were confined to bed for more than a fortnight. I have no precise record of the number of cases I have had; last year, 1911, I had 12 cases; during the six months of this year, curiously, I have not had a case, but, presuming only on 5 cases a year, it is evident that my percentage death-rate is *nil*.

With an experience such as this—and surely it must also be the experience of many others not dwelling in the "atmosphere of panic"—it seems to me nothing short of extraordinary that so many surgeons proclaim a faith which demands immediate operation in every case of acute appendicitis, entailing as this does, under the best of circumstances, a prolonged convalescence, and under less satisfactory circumstances an obituary notice—"appendicitis (after operation)"—which the most optimistic surgeon cannot always regard as being merely *post hoc*.—I am, etc.,

Llansantffraid, July 1st. W. H. LEWIS.

SIR,—It seems a little ungenerous that Sir George Beatson and other advocates of the "wait and see" policy in the surgical treatment of appendicitis, while discussing at length many side-issues, evade the main issue and decline to inform the less enlightened members of the profession of the symptoms or signs by which they determine which cases it is safe to leave and which it is dangerous to leave without immediate operation. It is in the best interests and in accord with the best traditions of the profession that any knowledge which advances our treatment of disease should become common property, so that all may benefit by it.

In the JOURNAL of June 22nd I quoted a case, and gave chapter and verse for it, lest it might have been supposed to be a hypothetical one. I should like to ask Sir George Beatson or any of his followers:

1. Whether in their opinion such a case is safe to leave without immediate operation?

2. If not, by what symptoms or signs they would distinguish it from a case which is safe to leave?

The symptoms and signs in this particular case and the condition demonstrated at operation are given, not from memory, but from notes taken at the time. If they are of opinion that an appendix the size of a small sausage filled with foul pus, surrounded by no adhesions whatever, on the very eve of discharging its contents free into the peritoneal cavity, should not be immediately removed, they must be left to their opinion, and I see little use in prolonging the controversy. If, on the other hand, they are of opinion that such a case should be operated upon at once, then I think they are bound to tell us by what symptoms or signs they would come to such a conclusion and be able to distinguish it from a case that it would be safe to leave till the quiescent period.—I am, etc.,

Southsea, July 13th. CHARLES P. CHILDE, F.R.C.S.

*** We are prepared to receive a reply from Sir George Beatson, but cannot give further space to this correspondence. We are informed that the Medical Society of London propose to devote an evening at the beginning of the new year to the discussion of the question of the merits of the early operation in cases of appendicitis, and that Mr. Edmund Owen, whose letter on May 11th started the correspondence in our columns, will open the discussion at the society.

TINCTURE OF DIGITALIS: ITS POTENCY.

SIR,—I have been interested in the comments which Dr. Price and Dr. Gordon Sharp have been good enough to make on my paper on the potency of digitalis. It occurs to me that the discrepancy between the experience of these observers and my own may be partly explained in two directions—(1) the source of the tinctures, (2) the end-point of the observations.

1. As regards the source of the samples, I fear I did not sufficiently emphasize the fact that they came from the laboratory and not from the warehouse of the manufacturer. It is quite possible that some of the samples were sent for physiological examination because the manufacturer had doubts about the quality of the leaves on other grounds. I know that one firm does send samples for physiological examination before buying the leaves in bulk. The fact remains that these are samples made by chemists of repute according to the directions in the *Pharmacopœia*.

2. The end-point I employ is that the frog must be as dead as Queen Anne within the four hours. If there is any doubt about the frog being dead I test the corneal reflex.

I fail to see how any amount of care in the selection of digitalis leaves will exclude the possibility of an occasional sample being too strong. That is the great danger. If a patient is supplied with a weak sample his medical attendant will in all probability increase the dose. But if a patient is supplied with a too potent sample the practitioner's opportunities of prescribing may cease altogether.—I am, etc.,

Edinburgh, July 6th. ALEXANDER GOODALL.

URIC-ACID-FREE DIET IN INOPERABLE CANCER.

SIR,—Dr. T. J. Horder (BRITISH MEDICAL JOURNAL, July 13th, p. 81) raises one or two questions of the deepest interest, but I wish to point out that there is absolutely no reason to choose between diet and surgery, for both can be used. No one could possibly advise against surgery in the present state of our knowledge. I invariably advise operation in malignant growth, and have done so in several cases which are still alive and well, having been on the uric-acid-free diet since operation, and better had they been on it before operation, as it is well known that this diet diminishes shock and favours the healing of wounds. I do not, however, claim the present immunity of these cases as due to diet, the data are insufficient.

But, if many cases are put on the uric-acid-free diet and are operated on as far as may be possible, we shall be able to judge of their recurrences as contrasted with ordinary cases, and shall thus obtain a measure of the effects of diet. Operated cases are really best for our purpose (provided they live long enough), as the exact nature of the disease is known.

No patient need lose flesh and become physically and mentally depressed, apart from the growth and its effects, for the exact quantity of proteid required in relation to body weight can be given on any diet, and Mrs. B. (BRITISH MEDICAL JOURNAL, 1912, vol. ii, p. 82) gained weight for a time. Dr. Horder might, therefore, have modified the diet by increasing the protein in Alice G., in place of taking her off it entirely; but his difficulty, and mine also, was that these patients were frightened of a diet which was strange to them, and it is useless to argue with hospital patients about protein quantities. Better educated patients can understand that there is no danger of starvation.

I offer these patients the diet that I myself live on, and on some modifications of which I have lived for nearly thirty years. It is the same that is to-day being lived on by hundreds and thousands throughout the world. There is nothing for them to fear, but they have been brought up in the baseless superstition that their present diet, which is not only the cause of cancer but of almost innumerable diseases and sufferings, is the only one on which it is possible to live. Yet the English are the great world travellers, and those who have travelled know well that only a small minority of the human race live as we do.

If any one who has charge of a large number of patients will test the effects of diet in cancer, the question of nutrition can at first be left out of the problem by keeping it the same in all. But, as some cases have been reported in which a diet low in protein appears to have aided recovery, or at least to have prolonged life and diminished suffering from a disease which, like gout, chiefly affects the vigorous and highly nourished, and as a similarly low protein diet is a useful temporary measure in the cure of gout, I think we should regard nutrition as offering a further problem to be worked out after the effect of freedom from uric acid has been investigated. Among others, the late Dr. George Keith, in his *Foods of an Old Physician* (London: Adam and Charles Black; chapter on Cancer, p. 83), says: "I know of no class of cases where the benefit that follows a change of living is so marked, and I am not sure that I know of any in which the change is so difficult to make" —the exact parallel of our present experiences. Dr. Keith follows these remarks by details of some of his own cases, which, if not entirely conclusive, are at least most interesting and suggestive reading; he even persuaded a professional friend to carry out a small research in proper cases, with the result that the duration of life in these cases was undoubtedly prolonged.

Dr. Keith also raises a point (p. 96) of much interest in reference to reports on the prevalence of malignant disease among vegetarian natives of India, a matter which has given rise to much misunderstanding, both with regard to the etiology of cancer and other diseases, and which I may therefore again explain. The fact that these Indian races suffer furnishes no reason whatever for doubting the power of diet either in prevention or cure, for as their food contains various forms of the pulses, which are rich in xanthin, it would be extraordinary if they were free from cancer. As a matter of fact they are not free from it or from other uric acid disease, for vegetarianism is one thing, and freedom from uric acid another and quite different thing.

Dr. Keith's results are all the more valuable because they are empirical, the treatment was not applied with scientific accuracy, and all foods that introduce uric acid were not ruled out, but this only makes the partial success of the low protein diet more remarkable.

As regards cases treated with success by others, Dr. Keith makes two references to the BRITISH MEDICAL JOURNAL, but these are, unfortunately, so indefinite that I have not been able to verify them. I hope some of your readers may be able to do so.—I am, etc.,

London, W., July 16th. ALEXANDER HAIG.

MINERS' NYSTAGMUS.

SIR,—In reference to Dr. A. C. Norman's interesting letter in the BRITISH MEDICAL JOURNAL of July 13th, I may mention that my special point was the reason for movement of the eyes. I have shown that the foveal region is sensitized from the parafoveal regions, and that when there is no visual purple in the fovea it is blind.[1] I have devised several experiments which show the visual purple flowing into the foveal region. The following simple experiment shows this very well: If on awaking in the morning the eyes be directed to a dull, white surface, as, for instance, the ceiling, the region of the yellow spot will appear as an irregular black spot, and light will appear to invade this spot from without inwards. If the eyes be now closed and covered with the hands, purple circles will form round the centre of the field of vision, and gradually contracting reach the centre. When the circle reaches the centre it breaks up into a star-shaped figure and becomes much brighter. It then disappears, and is followed by another contracting circle. Now, it will be noticed that if one eye be opened when the circle has broken up a brilliant rose-coloured star much brighter than any other part will be seen in the centre of the field of vision. If we wait until the star has disappeared before opening an eye the macular region appears as a black spot as before. This shows conclusively that the central portion of the retina is sensitized from the peripheral portions. When the surrounding retina is not stimulated the eye has to be moved in order that the sensitized liquid round the cones should be made by its inertia to flow into the fovea. I find by direct experiment that we can see better with the fovea when light is allowed to fall on the adjacent portions of the retina, and this stops the movement of the eye which occurs even in normal-sighted persons.—I am, etc.,

London, N.W., July 15th. F. W. EDRIDGE-GREEN.

SIR CHARLES BELL AND WATERLOO.

SIR,—The following may be of interest. In *Paul's Letters to His Kinsfolk*, by Sir Walter Scott, 1816, p. 143, one finds:

> The engagement had already commenced. It is said Buonaparte fired the first gun with his own hand, which is at least doubtful. But it is certain he was in full view of the field when the battle began, and remained upon it till no choice was left him but that of death or rapid flight. His first post was a high wooden observatory, which had been constructed when a trigonometrical survey of the country was made by order of the King of the Netherlands some weeks before. But he afterwards removed to the high grounds in front of La Belle Alliance, and finally to the slope upon the road to Brussels.

For this reference I am obliged to a patient with a strong literary bent and an excellent memory.—I am, etc.,

June 19th. W. R. P.

MEDICAL MEN IN THE HEBRIDES.

SIR,—Will you allow a descendant of Mary Bethune to correct some inaccuracies in the letter on medical men in the Hebrides in your issue of June 22nd?

The Beatons, Beatouns, or Betuns, the doctors, were of Skye originally, not of Mull. Their name was MacBane, and when they came into the Lowlands they desired to conceal their Celtic origin and called themselves by a respectable name, to which they had no right unless the original *Bane* from whom they were descended was a Betun who went north, which is not asserted nor likely.

[1] *Hunterian Lectures on Colour Vision*. Kegan Paul and Co. 1911.

The principal doctor, who was Court physician to James I and VI, was not one of this clan of Highland doctors, but was descended from the numerous illegitimate family of the Cardinal.

Mary Betun or Beaton, the Queen's Mary—"Mary Betun and Mary Seton and Mary Carmichael and me" (that is, Mary Fleming or Hamilton)—was the daughter of Sir Robert Betun of Creich, keeper of Falkland Palace and Park, and of Jeannette de Renville, a lady-in-waiting to Marie de Guise, mother of Mary Stuart. She (Mary Betun) was second cousin once removed to James the Archbishop of Glasgow, Queen Mary's counsellor, and of the two young Betuns who helped Mary to escape out Loch Leven.—I am, etc.,

London, W., June 25th. GEORGINA F. MALDEN.

FORCIBLE FEEDING.

SIR,—Mr. McKenna has now forwarded to us the so-called medical counter-memorial in favour of the forcible feeding of Suffrage prisoners, which he stated to the House of Commons he had received, and for the publication of which we pressed.

This counter-memorial is as follows:

The Right Hon. Reginald McKenna.

We the undersigned registered medical practitioners desire to place on record our unanimous opinion that the operation of feeding persons who refuse nourishment in the ordinary way by means of a stomach-tube, or otherwise, is not, if carried out under the usual rules of procedure, either dangerous or painful. Any inconvenience which may arise to the individual operated upon can be at once removed by their taking the food provided in the ordinary manner. It is the duty of the medical officers of His Majesty's prisons to prevent prisoners from attempting, or committing, suicide by starvation, or from injuring their health and strength by declining nourishment; and the only course left for adoption in these cases is to feed such prisoners by the mouth by means of suitable apparatus.

We therefore most respectfully trust that the medical officers who have to carry out these duties, however unpleasant they may be both to the operators and those operated upon, may receive the support and protection of yourself as the Home Secretary and their superior authority.

We beg to remain,
Your obedient servants.

No names are appended to this memorial. Mr. McKenna states that he withholds the names of the signatories lest they should be annoyed.

To Mr. McKenna we have sent the following reply:

July 16th, 1912.

Sir,

In reply to your letter of July 13th and to a brief passage which has appeared to-day in three newspapers, we repeat the protest we have already been obliged to make in our letters of June 30th and July 4th and 10th instant against your repeated and studied misrepresentations of the medical memorial signed in twenty-four hours by 117 practitioners and presented by us on June 27th, for, although you have our subsequent correspondence before you, you state that the medical memorial did not suggest that your practice of forcible feeding should be discontinued merely as regards one particular class.

This is not correct, for, as we reminded you in our first letter on June 30th and again on July 4th and 10th instant, our memorial protested against the forcible feeding of "one particular class of prisoners"—namely, the suffrage prisoners. Further, you say in your letter just received that you have entirely failed so far to ascertain the views of the memorialists on the general question of the treatment of all prisoners—that is, felons—a matter with which, as we have repeatedly informed you, the memorialists did not deal.

Although you thus admit that you have never had any knowledge of the views of the memorialists on this general question, you nevertheless actually made to the House of Commons on July 4th a written statement in answer to Mr. Goldman (and published on July 4th in several papers) in which you represented to the House that you had much knowledge of the views of the memorialists, and that they were unable to make any suggestions on the subject.

In this matter you have thus directly contradicted yourself. We have read the copy of an anti-memorial you have sent us purporting to have been written by certain medical practitioners. It, however, has no value as a medical opinion, since it is unsigned and unsupported by any names of such practitioners. From internal evidence it is obviously official and not medical, for two-thirds of its sentences are your own and taken almost verbatim from your statements in the House of Commons made on the following dates: April 15th and 17th, May 28th, June 20th and 28th and July 2nd, all of the present year (see Hansard).

The first statement in this counter-memorial is as follows: "Feeding persons by means of a stomach tube or otherwise (*sic*) is not, if carried out under the usual rules of procedure (*sic*) either dangerous or painful."

From a medical standpoint this sentence is an evasion of the truth. It does not state what is meant by the words "otherwise" and "usual rules of procedure," and evidently your anti-memorial refers to something which has no resemblance whatever to the forcible feeding practised under your directions in H.M. Prisons, for your practice on the Suffrage prisoners has proved so dangerous to "health and life" that, as stated by Mr. Ellis Griffith in the House of Commons (Hansard, June 26th), you have been compelled to release large numbers of them in order to save their lives, and as you are well aware, you have inflicted by your treatment an incalculable amount of physical pain and mental anguish on your victims.

We note, as everyone must, that you produce no medical evidence in support of the irresponsible statements of your anonymous memorial, or that your forcible feeding of the Suffrage prisoners has been anything else than a dangerous torture.

—We are, etc.,

AGNES SAVILL,
CHAS. MANSELL MOULLIN,
VICTOR HORSLEY,
Secretaries to the Medical Memorial.

London, W., July 17th.

*** It has seemed right to publish the information contained in the above letter, but we cannot undertake to find space for further correspondence on this subject.

Universities and Colleges.

UNIVERSITY OF EDINBURGH.

GRADUATION CEREMONIAL.

ON Friday, July 12th, a graduation ceremonial took place, when the following were among the degrees and diplomas conferred:

HONORARY LL.D.—Professor H. B. Allen, M.D., University of Melbourne: Professor R. Ramsay Wright, M.A., B.Sc., University of Toronto.

M.D.—J. Allison, †F. Armstrong, J. H. Aytoun, ‡D. M. Barcroft, †W. Bell, †G. S. Blandy, †J. C. Boyd, †T. G. Brown, B.Sc., ‡J. A. Campbell, §R. B. Campbell, J. K. M. Dickie, A. M. Elliott, J. S. Elliott, Isabella C. Emslie, R. R. Fasson, †T. Y. Finlay, †J. Fraser, †T. Galbraith, A. W. Gill, J. F. Haegert, †A. G. Hamilton, J. Honeyford, J. J. Jervis, E. Kinmont, ‡L. Kurz, †J. Langwill, P. Lornie, G. H. Lowe, A. Macdonald, J. M'Donald, K. B. MacGlashan, D. Macnair, †A. MacRae, M.A., T. B. Monat, A. B. Pearson, †J. A. Raeburn, Mabel L. Ramsay, †D. G. Robertson, F. F. S. Smith (Capt. I.M.S.), †K. F. Sontagg, T. Stevenson, †T. G. Stewart, †V. F. Usher, †W. O. Welply, T. Wright.

* Commended for Thesis. † Highly commended for Thesis.
‡ Awarded Gold Medal for Thesis.

M.B., CH.M.—Edward George Richards.

M.B., CH.B.—G. M. Adam, W. A. Alexander, T. M. Anderson, S. H. Arthur, A. Baidie, §A. J. Bellantine, B.A., M. L. Bangara, §F. J. H. Begg, R. C. Begg, J. H. Boag, §G. V. Bogle, S. Bolton, J. C. Booth, W. A. Bowie, §W. E. Bullock, A. D. Campbell, S. B. B. Campbell, W. J. Candlish, J. F. Chalmers, S. C. Chatterjee, O. Cook, D. S. Cooper, Effie M. D. Craig, F. W. Craig, J. H. Cuthbert, F. C. Davidson, J. P. Davidson, R. B. Davidson, P. L. Davies, C. G. Deane, Janet S. Doak, D. A. Donald, G. A. C. Douglas, F. B. Dreyer, G. M. Elliott, K. Faderin, R. Fawcitt, A. K. Forbes, H. H. C. Fuller, R. Grant, A. C. V. Green, R. A. Greenwood, J. F. C. Haslam, R. Hay, J. A. Henderson, T. P. Herriot, J. G. Hill, T. H. Herrax, H. D. M. Inrie, Sesi Kapo, W. N. W. Kennedy, Janet S. Laird, J. H. Lamb, J. Lamberton, Christine Larsen, M. B. Lawrie, D. C. Lee, D. P. Lindsay, W. S. Lindsay, S. J. Linzell, Isabella M. Little, N. L. Lochrane, P. C. Lornie, W. H. A. S. Leutit, G. M'Connel, P. K. M'Cowan, W. Macdonald, A. M. Mackay, M. R. M'Kay, J. M'Kerchar, J. C. M'Kerrow, J. W. M'Kinney, Gertrude D. MacLaren, J. S. M'Laren, W. F. M'Lean, D. M'Phail, G. G. Marshall, C. A. Mason, A. W. Mather, A. Mearns, W. Mercer, Sara O'Flynn, S. Osborn, J. L. D. Pawan, H. F. Penman, L. D. Pullon, B.Sc., F. Radcliffe, G. C. Ramsay, R. K. Robertson, A. Romanes, C. M. Rout, A. A. Rutherford, R. B. Rutherford, E. R. Ryner, Dorothy M. Scott, §J. M. D. Scott, E. St. J. Seelly, E. Sharpe, W. M. W. Shepherd, A. W. S. Sichel, J. C. Smith, S. A. Smith, J. E. Snodgrass, R. S. Stevenson, W. R. Stewart, R. K. S. Sutherland, R. H. Tait, M. Teitelmann, G. ap Thomas, C. V. Thornton, W. G. Thwaytes, C. J. Tisdall, J. S. du Toit, G. D. E. Tullis, M. A. Wajid, M.A., B.Sc., C. Walker, R. E. Walker, S. J. A. H. Walshe, F. H. C. Watson, R. R. Watts, B. Whinbren, A. R. Wightman, H. T. Young.

First Class Honours. § Second Class Honours.

B.Sc. (*Public Health*).—L. W. Macpherson, J. W. Senter, and J. R. Stott.

DIPLOMA IN PSYCHOLOGY.—W. Boyd, R. D. Brown, W. L. Martin, G. D. Robertson.

Scholarships and Prizes.

The following awards were intimated:

The Gunning Victoria Jubilee Prize in Anatomy: John Kolbe Milne Dickie, M.D., Ch.B.

The Ettles Scholarship: Samuel Burnside Boyd Campbell, M.B., Ch.B.

The Allan Fellowship in Clinical Medicine and Clinical Surgery: William Ewart Bullock, B.Sc., M.B., Ch.B.

The M'Cosh Graduate's and Medical Bursaries: Disney Hubert Dusch Cran, M.B., Ch.B.

The Beaney Prize in Anatomy and Surgery: Samuel Burnside Boyd Campbell, M.B., Ch.B.

The Mouat Scholarship in the Practice of Physic: Archibald Romanes, M.A., M.B., Ch.B.

The Conan Doyle Prize: Alan William Stuart Sichel, B.A., M.B., Ch.B.

The Annandale Gold Medal in Clinical Surgery: George M'Connell, M.B., Ch.B.

The Buchanan Scholarship in Gynaecology: Gilbert Vere Bogle, B.A., M.B., Ch.B.

The James Scott Scholarship in Midwifery: William Nicol Watson Kennedy, M.B., Ch.B.

The Dorothy Gilfillan Memorial Prize: Janet Stewart Laird, M.B., Ch.B.

The Pattison Prize in Clinical Surgery: Henry James Craig Gibson, M.A.; John Owen Reid—equal.

The Cunningham Memorial Medal in Anatomy: James Elvins M'Cartney.

The Straits Settlements Gold Medal: George Carmichael Low, M.A., M.D., Ch.B.

The Wellcome Medals in the History of Medicine: Gold Medal, James Simpson Rankin; Silver Medal, James Hepburn.

Address by Professor Alexis Thomson.

Professor Alexis Thomson, gave an address in the course of which he said that as promoter it was his privilege to offer some [illegible] advice, and the first instalment must be of a negative order. Do not let them decide in a hurry on their future line of work. Do not let them be tempted to accept an undesirable appointment because there was a salary attached to it. Doctors should beware of salaries. Do not marry until settled in some definite line of work; an early marriage was apt to limit the field of selection of work; a judiciously timed marriage was said to greatly help medical practice. The first positive advice he had to give was to obtain a hospital residency for six or even twelve months. Such an appointment enabled a man to look around, and perhaps find out in which direction he excelled and in what branch of medical work he was most likely to succeed. The association of hospital work tended also to broadmindedness and diminished the tendency to the development of fads. He would suggest that when they did go into practice they should be chary of adopting extreme views on debatable questions, such, for instance, as what is the most appropriate diet for a community, or should indulgence in tobacco or alcohol be abolished or encouraged? He might hint that doctors were on the whole too ready to give advice, whether they knew anything about the subject or not, and he took it to be one reason of the almost universal success of Scottish doctors, especially in England, that they were more reticent, and therefore got the credit of knowing more than they did. They should be cautious in using the words "always" or "never"—they had no place in a medical vocabulary—and particularly chary of adopting, and still more of airing, views which were opposed to the great majority of their professional brethren; above all, avoid identifying themselves with any of the "anti" associations or societies which found favour in the country.

Dealing with the Insurance Act, Professor Thomson said: Living, as we do, in a democratic age, we must deplore the fact that nine-tenths of the national sickness was due to ignorance or folly, and ought to be prevented. Preventable disease was pure waste. Unfortunately the exigencies of our political system were such that, although the supreme importance of the national health was recognized, there was no ministry or department of public health that could advise the Government in framing legislation. Hence it came about that measures, of which the principle was unimpeachable, such as the National Insurance Act, contained provisions detrimental to the moral and material interests of the profession and indirectly thereby to the public, for it could not be too often repeated that the interest of the medical profession and the public act and react in a manner to make these interests practically identical.

During the past five years or so they had as students been trained to recognize and fight disease. They were individualists, self-reliant, and, with the aid of their books and instruments, were prepared for the conflict with disease, but they would not be a month in practice before they realized that there was another side to the doctor's life, namely, his relation to the [illegible] health; in other words, the individualist [illegible] against sociological problems, against laws [illegible] affecting him as a practitioner, in the framing of which he had not had word or say. He could not help thinking that in the last year of their studies they should have some instruction on that aspect of their future careers, not as a subject of examination, but as a matter of counsel and advice, as to their relation to the State and to the public, as a citizen versed in medical affairs. Where, then, were they to turn for such counsel and advice? Fortunately for the profession and the public, there was a body which ten years ago, realizing the increasing community of interest between the legislator and the doctor, formed a branch department devoted to medical politics. He referred to the British Medical Association. In recent years he might say months, this medico political department had been the only means of expressing the organized advice and opinion of the profession on legislation affecting the national health and its curators, the medical profession. He [illegible] therefore, to advise all those who had just been added to the [illegible] of graduates to add membership of the British Medical Association to their armamentarium.

UNIVERSITY OF LIVERPOOL.

Degree Day.

A DEGREE congregation was held on July 6th, in St. George's Hall. The Vice-Chancellor, in opening the proceedings, referred to the loss to the city and university by the death of Dr. Peace, the City Organist. Also of the late Dr. Waters, who together with the late Professor Campbell Brown, was one of the little band of men who succeeded in establishing the University College. They had many rebuffs and disappointments, but they never lost courage: but for them and for what they did those present would not have seen what they saw that day. In congratulating those who were about to graduate the Vice-Chancellor complimented them on being kept in safety during years of peril. They knew how easy it was to make shipwreck, and from many temptations they had been saved. While they gave thanks for their success, let them at the same time remember to give thanks for their safeguarding. Now that they were passing into a new life he asked them to remember three things. In the first place, let them keep the friendships they had made as an abiding possession: if friendships were worth anything they ought to be not only a joy but a strength. In the second place, let them carry and keep the memories of the university to which they belonged. Many conflicts lay before them, and they would tax their strength and endurance. It might help them in their hour of difficulty, wherever they were, to remember they belonged to the university just as much as the university belonged to them. Lastly, he would ask them to carry and keep their ideals. In the midst of the years when they had to bear the burden and strain of life and when they might be tempted to live in the plain and be content with lesser things, it might serve and save them if they could recover and regain the hours of visions and dreams, and would turn their eyes and fix them upon the hills "whence cometh our strength."

The Chair of Pathology.

The appointment of Dr. Ernest Glynn, to succeed the late Sir Rubert Boyce as George Holt Professor of Pathology in the university, is the most popular that could have been made, and the whole university staff and students alike join in congratulations to him on the well-earned promotion. An old student of the university, Dr. Glynn has held every post of honour to which students could elect him. As assistant for many years to Sir Rubert Boyce, he proved himself an excellent teacher, and the evidence of the leading pathologists in the country prove that in research in his subject he has gained a distinguished place. There is no doubt with the added dignity and responsibility of a university chair, the new professor will render conspicuous service to the university in the future. His election creates an interesting record, this being the first occasion on which father and son have been members of the University Senate at the same time. Dr. T. R. Glynn, the Professor of Medicine, has received many congratulations upon the success of his son.

Memorial to Sir Rubert Boyce.

Friends of the late Professor, Sir Rubert Boyce, have offered to bear the expense of the erection of a memorial tablet to his memory in the university buildings. The site has not yet been determined. The natural position would seem to be in the Thompson-Yates laboratories, where Sir Rubert did so much good work.

VICTORIA UNIVERSITY OF MANCHESTER.

THE following candidates have been approved for the degree of M.D.:

†Frances M. Huxley, *Catherine Chisholm, H. Coppock, *Gertrud B. Hickling, *W. Wilson, C. Hibbert, F. H. Lacey, G. F. Wrigley.

† Gold medal. * Commendation.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY council was held on July 11th, Sir R. J. Godlee, Bart., President, in the chair.

Election of Members of Council.

The following four gentlemen were duly elected, by ballot, as members of the Council, on July 4th:

	Number of Votes.
Sir Anthony Alfred Bowlby	507
Sir Frederic Samuel Eve	427
Mr. D'Arcy Power	405
Sir Berkeley George Andrew Moynihan ...	394

Instruments of the late Lord Lister.

The best thanks of the Council were given to the executors of the late Lord Lister for presenting to the College a collection of some of his surgical instruments.

Appointment of Delegates.

Mr. R. Clement Lucas was reappointed the Representative of the College on the Court of Governors of the University of Sheffield for the ensuing three years.

Mr. C. A. Ballance was appointed as delegate to represent the College at the Ninth Otological Congress to be held on August 12th to 17th, in the buildings of the Medical Department of Harvard University.

Election of Officers for the Ensuing Year.

Sir R. J. Godlee was re-elected President.

Mr. C. T. Dent and Mr. G. H. Makins were elected Vice-Presidents.

Appointment of Lecturers.

Hunterian Professors: Arthur Keith (six lectures); Wilfred Batten Lewis Trotter (two lectures); William Wright (two lectures); Joseph Ebenezer Adams (one lecture); Kenneth Macfarlane Walker (one lecture).

Arris and Gale Lecturers: William Blair Bell (two lectures); Charles Gabriel Seligmann (one lecture).

Erasmus Wilson Lecturer: Samuel George Shattock.

Arnott Demonstrator: Arthur Keith.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved at the examination indicated:

Anatomy and Physiology.—J. G. Ackland, W. G. E. Allen, J. Andrew, A. L. Anthony, J. D. Bangay, P. Cheal, H. Collins, E. Coomaraswamy, E. S. Cuthbert, E. I. Davies, G. S. Deane, L. B. de Kretser, S. E. Y. Elliott, C. L. Emerson, M. Fahmy, L. H. Garcés, W. T. Gwynne-Jones, G. H. Haines, D. N. Hardcastle, L. Horsley, G. P. Kidd, N. S. Koch, G. C. Kusumbekar, G. S. Marshall, A. D. Marston, D. S. E. Milligan, W. H. Milligan, E. Morse, A. W. North, T. Owen, C. F. O. Panditheséker, M. Pearson, V. D. Phatek, Isabel Quanbrough, C. H. Savory, J. G. B. Smith, C. S. Staddon, W. F. Stiell, R. R. Sy-Quia, G. S. Terry, D. C. Thomas, C. T. Tresidder, B. M. Tuke, F. H. Vey, J. Victory, W. G. L. Wambeek, F. E. Weerasooria, K. J. F. Westman.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—*Miss E. Budd, *B. Hirson, *Miss M. McMullen, T. S. Ambrose, H. M. Alexander, H. E. Andrews, D. Boland, M. Bradley, J. F. Coffey, T. Curran, E. C. H. Ewart, D. H. Ferris, J. A. Fretton, F. B. Harrison, H. Levison, E. McCarthy, T. F. Moran, C. Murray, J. P. Pegum, C. W. Robinson, J. P. Sheridan, G. C. L. Woodroffe.

THIRD COLLEGE.—*R. J. Brookes, *J. Lanigan, R. A. Austin, H. A. S. Deane, G. S. Douglas, F. B. McTavish, J. J. O'Connell, H. O'Donoghue, J. J. Reynolds, M. Shipsey, F. M. Taylor.

FINAL.—W. L. Adams, P. J. Burke, C. L. Bourke, H. C. A. T. Cannon, W. H. Condell, M. Garry, J. Good, R. M. Gordon, R. F. Griffith, F. Hannigan, M. J. Hillery, J. M. Horan, W. H. Johnston, T. Kennedy, M. Meehan, F. P. McDermott, C. Molan, H. E. O'Brien, A. A. O'Connor, J. C. O'Farrell, A. J. Patterson, D. P. H. Pearson, J. B. Power, S. Punch, M. Quinlan, Miss B. Sieff, V. J. White, G. Young.

*With honours.

Obituary.

THE HON. CHARLES BENJAMIN MOSSE, C.B., C.M.G., Deputy Surgeon-General, A.M.D. (ret.), and late Superintending Medical Officer and M.L.C., Jamaica, died at Oberland, Guernsey, on July 4th, at the age of 82. He obtained the diploma of M.R.C.S.Eng. in 1852, and that of M.R.C.P.Irel. in 1880. He entered the Army Medical Service in 1858, and served in the Expeditionary Force up the River Gambia, West Africa, in June, 1866, when he was present at the assault and capture of the stockaded Mandigo town of Tubarcolong and was mentioned in dispatches. In 1867 he was promoted for valuable services during an epidemic of yellow fever at Bathurst. He served throughout the Ashanti war, 1873–4, being again mentioned in dispatches; he was made a C.B. and received the medal with clasp. He retired from the Army Medical Service in 1876, and became Superintending Medical Officer for Jamaica in June, 1896. He relinquished this post in 1904.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. Marc Sée, formerly Surgeon to the Paris hospitals and member of the Académie de Médecine; Dr. L. Rolland, Senator for the Tarn-et-Garonne; Dr. Augustus Peck Clarke, sometime Professor of Gynaecology and Abdominal Surgery, Dean of the Boston College of Physicians and Surgeons, and Honorary President of the Section of Obstetrics and Gynaecology of the Twelfth International Congress of Medicine held at Moscow in 1897, aged 79; Dr. Imbert-Goubeyre, sometime Professor in the Medical School of Clermont-Ferrand; Dr. Theodor Gies, Professor of Surgery in the University of Rostock, aged 67; Professor Josef Bauer, Director of the First Medical Clinic in the University of Munich, aged 69; Dr. L. Scully, Professor of Surgery in the University of Jassy; Professor Ludwig Bach, Director of the Ophthalmological Clinic at Marburg, aged 46; Dr. Gunning, sometime Professor of Ophthalmology in the Medical Faculty of Amsterdam; and Dr. Karl Kunn, Editor in Chief of the *Wiener klinische Rundschau* and Lecturer on Ophthalmology in the University of Vienna, aged 50.

Public Health AND POOR LAW MEDICAL SERVICES.

SWIMMING BATHS.

NESTOR. There is considerable difference of opinion as to the possibility of infectious diseases or skin affections being spread through the medium of swimming baths. The question was discussed at a meeting of the Medical Officers of Schools Association on February 22nd, 1912, when the Council of the Association was asked to appoint a Committee to consider what steps should be taken to investigate the matter further. The evidence at present appears to be of a negative character. A full account of the discussion will be found in the May number of *School Hygiene*, published by Adlard and Son, 23, Bartholomew Close, E.C.

PRIVATE BURIAL GROUND.

T. E. F. asks: Is there any enactment prohibiting the burial of a body in a rural district, outside a recognized burial ground, if the place of intended burial is more than 100 yards from the nearest house, and if the death has been properly notified to the registrar, and a certificate given by him?

** In Little's *Law of Burial*, third edition, p. 386, it is stated that a dead body may be buried in any private ground beyond a radius of 2 miles from the metropolis, provided: (1) That a nuisance is not thereby created; and (2) that no Order in Council is in force prohibiting burials in the district within which such ground is situate. In such a case, however, it seems from the definition of "burial ground," in Section 7 of the Registration of Burials Act, 1864, that a register must be provided, and the provisions of that Act observed so far as it may be possible to observe them. Section 7 of the 1864 Act provides that the term "burial ground" shall include a vault or other place where any body is buried.

The Services.

ALEXANDER MEMORIAL PRIZE.

THE Alexander Memorial Prize, consisting of £50 and a gold medal, is awarded every third year to the writer of the best essay on a subject connected with military medicine, surgery, or hygiene. The competition is open to executive officers of the Royal Army Medical Corps on full pay, with the exception of the professors and assistant professors of the Royal Army Medical College during their term of office. The subject for the next prize is the following: "The Management in the Field of Mumps, Measles, Scarlet Fever, and Small-pox." The question of treatment need not be considered. No essays should exceed in length about 20,000 words, exclusive of tables, which may be added in the form of appendices. Essays must be sent in to the Secretary of the Prizes Committee, Royal Army Medical College, Grosvenor Road, London, S.W., on or before December 31st, 1914. Each essay to have a motto, and to be accompanied with a sealed envelope bearing the same motto, and containing the name of the competitor.

THE ABOR EXPEDITION.

IN his report describing the recent operations against the Abors on the north-eastern frontier of India, Major-General H. Bower, in referring to the work done by the officers of the Indian Medical Service, says that to the efficient carrying out of sanitary and other medical duties, the comparatively good health and absence of epidemic disease is largely due. He states that Major J. Davidson, Assistant Director, Medical Service, did well in that capacity; that Captain C. W. F. Melville, who acted as staff surgeon and accompanied exploration parties, was a very good officer, and well worthy of advancement. He also stated that the good work done by the following was noticeable: Captain J. S. O'Neill, First Class Sub-assistant Surgeon Mahadeo Parshad, Second Class Senior Sub-assistant Surgeon Niranjan Das. The report also states that Surgeon-Captain J. M. Falkiner, Assam Valley Light Horse, volunteer officer with the Ledum column and Lakhimpur military police, served throughout without remuneration, and that his services are worthy of commendation.

Medico-Legal.

LUNACY RECEPTION ORDERS.

AT Christchurch, on July 12th, Dr. A. B. Batley attended the magisterial court to answer a technical charge brought against him by the Lunacy Commissioners. It was to the effect that a patient who had been resident at his house for between two and three years, and who was subsequently certified and admitted to an asylum, had been insane while he was in Dr. Batley's house, and that therefore a reception order in respect of him should have been obtained. The evidence tendered showed that the belief that the patient must have been insane at the time in question rested on the opinion of two medical men who had seen the patient subsequent to his certification, and on passages in letters that had passed between Dr. Batley and the patient's friends. It was also shown that between the time that the patient left Dr. Batley's house and his admission to an asylum he had been attended by Dr. Batley as the family adviser, and that it was on Dr. Batley's advice that the case was eventually certified and sent to an asylum; also that the patient's friends had not previously regarded him as an insane person, but merely as one physically weak and suffering from mental troubles of a senile order.

When the prosecution's case had closed, counsel for the defence, instructed by Messrs. Le Brasseur and Oakley, on behalf of the London and Counties Medical Protection Society, submitted that no prima facie case had been made out. The professional witnesses for the prosecution had admitted that it was impossible for them to state definitely on what date the patient's lunacy commenced, and that it was a case in which the development of lunacy might have been rapid, and that the opinions they had expressed were merely hypothetical.

The Court, after a short consultation, stated that it was not satisfied that the patient was insane at the time mentioned in the indictment, and therefore dismissed the charge.

SIGNING OF LUNACY CERTIFICATES (SCOTLAND).

D. M. M.—Private patients cannot be received into an asylum, hospital, or licensed house without a reception order made out by a magistrate (in Scotland this is usually granted by the sheriff of the county or his substitute). This order has to be accompanied by two medical certificates under the hands of two medical practitioners, and one of the two certificates must, if practicable, be given by the usual medical attendant of the patient. The foregoing applies to private asylums where patients are admitted on payment for board, etc. In this instance the medical superintendent is not allowed to grant a medical certificate—in the case of only one medical certificate accompanying the patient the rule being that an outside practitioner in the neighbourhood is called in to grant the necessary second certificate. In the case of district or pauper asylums, where the patients are not admitted for "gain," the medical superintendent can sign the second certificate if such is required. It may be mentioned that in the Lunacy (Scotland) Bill, at present before the House of Lords, the following clause appears with reference to the signing of medical certificates:

"8. In order to explain and give full effect to the enactment of Section 13 of the Act of 1866, and with a view to facilitate the action of the Board in dealing with pauper lunatics, it is hereby enacted that the provision of the above-named section relating to the grant of an order on one medical certificate shall be equally applicable in the case of the Board granting their sanction, as in the case of the sheriff granting his order, and shall apply in either case notwithstanding anything contained in the Act of 1857 or any definition of lunatic in the Lunacy (Scotland) Acts, and shall also apply whether the application to the Board is for reception to a house or to the lunatic wards of a poorhouse."

"Board" means the General Board of Commissioners in Lunacy for Scotland. The section only applies to pauper lunatics.

PRINCIPAL AND ASSISTANT.

"Tyro" writes that he has been engaged to act as an assistant in charge of a branch practice in a country district, at a salary of £200 per annum and a house. He finds that the practice is very scattered, and to do the work some mode of conveyance is [illegible]. He thinks it might be done by means of a motor [illegible]. He wishes to know upon whom should fall the [illegible] cost of providing this. He would be quite willing to pay for the upkeep.

If "Tyro" were a partner in the practice, he would be required to pay a share of the cost of providing necessary means of conveyance in proportion to his share of the practice. As he is a paid agent we are advised that it is the duty of the principal to provide all that is necessary for the [illegible].

[illegible] KOCHER, of Bern, has been elected President of the recently founded Swiss Surgical Society. Professor Ghinzi is Vice-President. The society will meet twice a year in the different cantons of the Swiss Confederation in turn.

Medical News.

A COURSE of post-graduate lectures will be given at the London School of Dental Surgery, Leicester Square, during October and November.

THE Lord Mayor of London, Alderman Sir T. B. Crosby, will visit the West London Hospital, Hammersmith, on July 25th, at 5 p.m., when he will be elected an honorary member of the West London Medico-Chirurgical Society, and afterwards inspect the wards of the hospital.

ACCORDING to Reuter the portfolio for native affairs in the new Ministry in New Zealand will be entrusted to Dr. Pomare. Dr. Maui Wiremu Piti Naera Pomare, of Wellington, graduated M.D. at the American Medical Missionary College, Chicago, in 1900.

THE Guild of St. Luke, composed of Catholic medical men, will, by permission of the Council, hold a meeting in the theatre of the Liverpool Medical Institution, on Wednesday, July 24th, at 2 p.m., when a paper will be read on the attitude of the Catholic physician and surgeon to the question of the sterilization of the unfit.

A MEETING of the International League for the Study of Epilepsy will be held at Zurich on September 6th and 7th, 1912. Professor Tamburini of Rome will preside. A number of papers will be read, and amongst those contributing to the work of the league are Drs. Donath (Budapest), Ulrich (Zurich), Binswanger (Jena), Claude (Paris), Mingazzini (Rome), Munson (Craig Colony), Aldren Turner (London), and Muskens (Amsterdam). The address of the secretary of the league is 286, Overtoom, Amsterdam.

AT a meeting in the Burgh Court-room at Clydebank on June 28th, Dr. William Butchart was the recipient of an illuminated address, a silver casket, and a purse of gold, presented to him by his fellow-townsmen in acknowledgement of his work as Superintendent of the Renfrew and Clydebank Joint Hospital, and in various other public capacities. On the same occasion Mrs. Butchart was presented with a silver salver bearing an appropriate inscription.

DR. S. Y. HO, Surgeon-General to the Northern Forces of the Chinese Republic, has addressed to the London Missionary Society a letter of thanks for the work done in the society's hospital at Liao Kau, near Hankow, during the revolution. Dr. Ho states that over one-third of the total wounded northern troops were admitted to the hospital, and that about 90 per cent. were discharged completely recovered. He asserts that by the prompt application of first aid dressings and other treatment, loss of life and limb was reduced to the lowest ratio known in the history of warfare.

The transformation of the Sleeping Sickness Bureau into the Tropical Diseases Bureau, and the transfer of the office to the Imperial Institute, London, have now been carried out, and in October next the sleeping sickness and kala-azar *Bulletins* will give place to the *Tropical Diseases Bulletin*, in which will be published summaries of current literature of tropical and subtropical diseases; a quarterly *Tropical Veterinary Bulletin* will also be issued by the Bureau. Communications should be addressed to the Director, Tropical Diseases Bureau, Imperial Institute, London, S.W.

IT is officially stated that since the establishment of the leper colony at Culion there have been collected in the Philippine Islands and transferred thither approximately 6,000 lepers, of whom about 3,000 came from the island of Cebu. Although Cebu contains only one-tenth of the total population of the Philippines, it has thus furnished nearly one-half of the cases of leprosy. There are now living in the community at Culion over 2,000 lepers. They have recently been organized into a republic, and have elected as their first president Michael Whalen, an American citizen, and the only Celtic leper in the colony.

AT a special meeting of the Ophthalmological Society of the United Kingdom held on July 11th, for the purpose of considering the question of amalgamation with the Royal Society of Medicine, a proposal in favour of amalgamation, unanimously supported by the Council, was put before the meeting. The following amendment was carried by a majority of eleven votes: "That this meeting views with sympathy the proposal to form an Ophthalmological Section of the Royal Society of Medicine, and it is desirous of removing any obstacle thereto, and therefore requests the Council of the Ophthalmological Society to consider the

advisability of so altering its rules that all its meetings may be held each year during the course of one week, as is done by other national ophthalmological societies.

THE Highland Railway has issued a new edition of its *A.B.C. Tourist Guide*. A large number of round journeys are shown to be easily possible from Inverness, Perth, and other of the larger towns within the company's area. The Highland Railway is a very comfortable line, and it may be doubted if any other, either in Great Britain or abroad, permits so much of beauty and historic interest to be seen in the course of a single day. Copies of the guide can be obtained on application to the offices of the railway at Inverness, Glasgow, and Edinburgh, or to its London agent, Messrs. W. T. Hedges, Effingham House, Arundel Street, Strand.

THE ninth study tour of the Association Internationale de Perfectionnement Scientifique (International Scientific Improvement Association), which is under the patronage of the French Government, will take place in August next. The party will meet at Besançon on August 8th. The following is the itinerary: Salzburg, Königsee, Salt Mines of Berchtesgaden, Reichenhall, Tauern, Karawankes, Wochein, Adelsberg Grots, Agram, Danube, Pass of Kazan, Bucarest, Constantinople (Pera-Stamboul-Scutari), Sofia, Belgrade, Fiume, Abbazia (the Nice of the Adriatic), Trieste, the Peninsula of Miramare, Venice. Separation on August 30th at Aix-les-Bains. For full particulars application should be made by letter to "A.P.M.," Office, 12, rue François-Millet, Paris XVIe, or personally on Wednesdays and Saturdays from 3 to 4 p.m.

THE interim report of the Tuberculosis Commission on the Admission of Tuberculous Immigrants to South Africa, published in the *South African Medical Record* for May 25th, expresses the Commission's regret that it has been unable to obtain the evidence of the local representatives in Capetown and the chief shipping companies carrying passengers to South Africa, the invitation tendered to them by the Commission having been declined. The Commissioners recognize the extreme difficulty of any attempt to effect the total exclusion of tuberculous immigrants, and consider any such attempt inadvisable. At the same time they are "very strongly of opinion that every possible and legitimate means of discouraging such immigration should be adopted by the State." There are two prominent objections to the admission of such cases—the danger of their infecting the South African community, and their liability to become a charge upon the State. There are also two serious objections to too vigorous measures for the exclusion of all cases—namely, depriving early cases of the chance of recovering their health by means of the South African climate, and the fact that very drastic measures are apt to give rise to deception. It is also admitted that it is difficult to detect very early cases, even by careful physical examination, or to guarantee that arrested cases are absolutely cured. The Commissioners recommend that the entry of tuberculous immigrants should be confined to ports proclaimed for such entry, and that steps should be taken to detect such cases by medical examination by shipping companies at the port of embarkation and by a Government medical officer at port of arrival, and that "adequate provision should be made for ensuring the provision of separate cabins for tuberculous passengers and for the proper disinfection of such cabins after use."

JUDGING from what was said at the centenary dinner of the Gas Light and Coke Company on June 27th, the fact that coal does "belch forth a wild spirit or breath," or, in other words, yields on distillation an inflammable gas, was first discovered over two hundred years ago, but, like many other facts, had to be rediscovered several times before any particular attention was paid to it. Apparently the first discoverer was the famous Dutch physician, Van Helmont (to whom we owe the word "gas"), and the second, some fifty years later, a Yorkshire cleric named Clayton. These, like some other later "discoverers," seem to have employed the fact chiefly as a means of amusing their friends, so that the first real attempt to employ gas as a means of lighting and warming houses was left to be made by a Cornishman named Murdock. After using gas for some time in his own house he employed it for lighting a factory at Birmingham belonging to a firm in which the famous Watts was a partner. This was in 1796, and within a few years the first foundations of the Gas Light and Coke Company of to-day were laid. Its initiator, however, was not a native of these islands, but one Winzer, a Moravian immigrant, who afterwards called himself Winsor. What a difference the introduction of the use of gas for lighting streets and houses made is somewhat difficult to realize at the present date, but Sir Thomas Crosby, who was present at the dinner, was able to bring it home to some extent by relating facts derived from his recollections of his own early days in Lincolnshire. Both he and the chairman, Mr. Corbet Woodall, seemed to be satisfied that the gas industry still stands on a perfectly sound footing; and probably no one will disagree with them. No doubt gas is not the healthiest form of illuminant for private houses, but its increased use for cooking and allied purposes would largely contribute to the public health. No doubt, coal burnt in open grates as a means of providing hot water and cooking food bulks largely as a factor in the deterioration of the air of all towns.

WE learn from the *New York Medical Journal* that on January 1st, 1912, there were 146 cases of leprosy in the continental United States. Of that number 40 were new cases, which first came under official recognition during the year 1911. This number, however, indicates only a part of the total, as in many States the disease is not notifiable, while in others notification is for various reasons difficult to enforce. There are complete returns from only 18 States, and the District of Columbia: Alabama, 0; California, no report; Connecticut, 1; District of Columbia, 0; Florida, 2; Idaho, 0; Illinois, 0; Indiana, 1; Iowa, 0; Massachusetts, 13; Nebraska, 0; New Jersey, 0; New York, 5; Oregon, 0; Pennsylvania, 3; South Carolina, 0; Utah, 1; Washington, 2; Wisconsin, 1. Leprosy is also notifiable in Hawaii (696), Philippine Islands (2,754), and Porto Rico (28). In comparing this number of 146 lepers reported on January 1st, 1912, with the report of 1901, in which the commission mentioned 278 lepers, 145 of whom were born in the United States, 120 in foreign countries, and 13 in places unknown, our contemporary says it should not be inferred that there is a lessening prevalence of the disease, as the cases reported in 1912 were, with one or two exceptions, under the control of State or local authorities, and no outsiders were mentioned, while of the report of 1901 only 72 lepers were isolated and provided for by the States or cities in which they lived.

A COMPLIMENTARY supper was given by the members of the City Division at the Holborn Restaurant on July 9th to Dr. A. G. Southcombe, who is retiring from the Honorary Secretaryship of the Division after three years' service. Dr. David Ross, Chairman of the Division, presided, and forty members were present. The only other guest was Dr. Alfred Cox, Medical Secretary of the Association. After supper and the honouring of the usual loyal toasts, the Chairman, in proposing the health of the guest of the evening, referred to the exceptional increase that the State insurance scheme had caused in the work of the Honorary Secretary, and to the unobtrusive devotion of Dr. Southcombe to the interests of the Association in general and the City Division in particular. The annual meeting in May last having decided that some recognition of this work should be made, a subcommittee was appointed, and over a hundred members had responded to the appeal, and the results of their generosity were a handsome silver spirit tantalus bearing the following inscription: "Presented to A. G. Southcombe, M.D., in recognition of his services as Honorary Secretary to the City Division of the British Medical Association, 1910–1912," and a dressing case with ivory and silver fittings. Dr. Southcombe said that he was very conscious of all the work that might have been done, and of how much others had done to help the work of the Division and Association. He was glad that the recent reorganization of the Branch area had not necessitated any alteration in the boundaries of the Division, and finally thanked them for their generous testimonial. The toast of "The British Medical Association" was proposed by Dr. Major Greenwood, and acknowledged by Dr. Cox, who expressed his cordial appreciation of the spirit and energy displayed throughout the City Division, and of the sound work which, as nobody knew better than he, had been done by Dr. Southcombe. He wished that all other Divisions might rise to the same level, and referred to the special difficulties of organization in London—difficulties which the City Division was meeting with conspicuous success. He had been particularly impressed by the action taken by the Finsbury Medical Society in holding a public meeting at the Finsbury Town Hall, to which all the townspeople were invited to hear the views and arguments of the profession. Such a proceeding might well be copied in other areas all over the country. Though realizing that an anxious time was before the profession, he was of opinion that the cordial co-operation of the profession was so essential to the success of the Insurance Act that if it remained in its present united condition the fight was bound to end in victory.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are considered to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary is stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

D. P. H. asks for references to recent literature on the pathology of dyspnœa.

KILINDINI wishes to know how he may make a cheap trip to Mombasa and back.

W. E. H. asks for information, especially as to results of vaccine treatment, in the treatment of severe pyorrhœa alveolaris with chronic diarrhœa and great wasting.

F. J. W. desires a good, popular, yet scientific, account of suitable and appetizing dietaries (especially as regards dinners) for middle-class children, between the ages of 9 and 17, at boarding schools.

DR. JAMES CROCKET (Carronshore, Falkirk) asks for suggestions as to what could be done with an intelligent lad of 14 who has lately lost both arms at the shoulder-joint as the result of an accident. What work could he do that would eventually prove a source of livelihood? Is there any institution that would undertake his training?

PHLEBITIS asks for advice in the treatment of an unmarried woman, aged 25, who is anæmic and suffers from phlebitis in both legs. She has been operated upon for floating kidney (right), and complains of pain over the left lower ribs, for which no cause can be found. During the last three months she has been in bed and treated with iron tonics, and for about a fortnight with potassium iodide; she is constipated, and at times has a foul tongue and vomits.

ANSWERS.

INCOME-TAX.

NORTH WALES.—When ascertaining profits for income tax purposes it is, we believe, customary to deduct the exact amount spent on drugs, and not a percentage of the gross receipts.

DUTIES OF A DISTRICT NURSE.

H.—The question referred to by our correspondent frequently arises in connexion with the duties of district nurses. If our correspondent will refer to page 42 of the SUPPLEMENT to the JOURNAL of July 6th, he will find the Model Rules which were approved by the Annual Representative Meeting in 1910, and which should be included in the rules of nursing associations. Special reference is made to the inclusion of medical practi[illegible] on the committees of nursing associations. Our [illegible] be well advised to bring the matter of [illegible] with regard to the treating of his patients, strongly before the committee, at the same time pointing out the danger they run should anything untoward happen to any of the patients so treated without a medical [illegible] intimate that he will refuse to attend any cases so treated in future, giving his reasons for doing so. If no notice is taken of our correspondent's complaints by the local association the matter should be referred to the parent association, to which this local branch is affiliated.

SUBLUXATIONS OF THE HUMERUS.

PALM.—Subluxations of the humerus seem to be stages intermediate between the normal condition and dislocation. The subject is discussed in most of the newer textbooks, for example, Keen's *Surgery* (Saunders and Co., 1907), vol. ii, and Thomson and Miles's *Textbook of Surgery*, 1911, vol. i, but the discussion is limited. In Erichsen's *Surgery*, 10th edition, 1895, mention is made of subluxation forwards. The lesion "has all the signs of subcoracoid dislocation but in a minor degree; it can be [illegible] and as easily slips out again, and the injury is apt to lead to permanent weakness of the shoulder-joint. Treatment consists in reduction and retention of the head of the bone in its place by a carefully moulded leather shoulder cap fitted with a truss spring and pad to press the head of the humerus against the glenoid surface." Erichsen also quotes a case published by Le Gros Clark in which there was "partial dislocation of the head of the humerus behind and below the acromion," but no details are given. Professor Caird in 1896 published a pamphlet in which he described a groove on the head of the humerus due to pressure against the hard posterior edge of the glenoid. He entered into anatomical details to explain the persistence of the displacement. In Treves's *System of Surgery*, 1895, p. 971, will be found the following: "Subspinous dislocation is an exceptional injury; the head of the bone may rest anywhere between the posterior edge of the glenoid cavity and the infraspinous region: the capsule is torn below and the subscapularis is usually completely ruptured." Platt in *Fractures and Dislocations of the Upper Extremity*, 1899, p. 185, says, "Two varieties of subspinous dislocation, subacromial and subspinous, have been described according to the amount of backward displacement." He quotes a case in which the diagnosis could not be made, and it was only when the head of the bone was felt to slip into its place under an anæsthetic that all those present were satisfied that a dislocation had actually existed. Our correspondent will see from these quotations that authors seem to regard subspinous subluxation as a stage in the evolution of subspinous dislocation, and the treatment is essentially the same as that of the grosser lesion. Diagnosis has hitherto been made clinically; careful search in Roentgen ray literature has failed to find any note or picture on the lesion. The only actually known cases of subluxation or partial dislocation backwards are those of Le Gros Clark and Platt and Caird. On the other hand, subspinous dislocation is recognized as one of the classical dislocations of the head of the humerus. In Keen's *Surgery*, 1907, vol. ii, it is stated on the authority of Van Geyer (quoted by Hoffa) that only 30 cases of subspinous and subacromial dislocations are on record (the first description of the latter is attributed to Malgaigne); in the subacromial variety the head penetrates the posterior wall of the capsule and is found beneath and behind the posterior edge of the acromion, in the subspinous variety the head lies further back beneath the spine of the scapula.

LETTERS, NOTES, ETC.

THE LORD MAYOR OF LONDON.

DR. QUINTIN MCLENNAN (Glasgow) writes: I would venture once more to draw the attention of the medical profession over the country to the fact that the present Lord Mayor of London is a medical man. To reach such an honourable position he must have led a very busy and strenuous life, and as his present high office and his personality has reflected great credit and honour upon himself and the medical profession as a whole, I am of opinion that some tangible token of the profession's high esteem for himself, and for his high civic position, should be presented to him before he retires into private life. I hope some of the leaders of medicine will make a move in the direction I have indicated. If this testimonial scheme is set a-going, I will most willingly, and with pleasure, contribute my mite. Such a unique occasion should not be allowed to pass by unnoticed by the followers of the healing art.

FRIENDLY SOCIETIES AND THE MEDICAL PROFESSION.

THE town at which was delivered the address to members of friendly societies summarized at page 88 of our issue for July 13th was Bromsgrove, not Bromwich, as was by a clerical error printed. It should have been made clear that Dr. Kidd was asked by his professional brethren to give the address, partly because he was the senior medical man in the town, and partly because he was considered to be most capable of doing justice to the subject, and, as was said last week, the event proved this anticipation to have been correct. We are assured that political considerations did not weigh with the profession in his selection.

THE CAUSE OF FRECKLING.

DR. F. W. EDRIDGE-GREEN writes: I have read with interest Dr. Pernet's suggestive letter. As the point is one of considerable importance from a scientific point of view, I think that inquiries should be made of those in charge of the blind. If freckling be very uncommon in those who are totally blind, this will afford important support to the proposed explanation.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

President's Address.

DELIVERED AT THE

EIGHTIETH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION,

BY

SIR JAMES BARR, M.D., LL.D., F.R.S.E.,

CONSULTING PHYSICIAN, THE ROYAL INFIRMARY, LIVERPOOL.

"WHAT ARE WE? WHAT ARE WE DOING HERE? WHENCE DO WE COME AND WHITHER DO WE GO?"

My Lord, Ladies and Gentlemen,—My first and most pleasing duty is to extend on my own behalf, and on behalf of all the local members of our profession, a most cordial welcome to all the visitors to this great city. In our efforts to make this annual meeting of the British Medical Association a memorable and successful one we have been much aided by the Lord Mayor and the Corporation, by the Chancellor, Vice-Chancellor, Council and Staff of the Liverpool University, and by many of the citizens of Liverpool and the neighbouring boroughs. The hospitality which I hope you will all find dispensed on a liberal scale is not merely that of the medical profession, but of the citizens of Greater Liverpool and its environment. We are all delighted to see so many eminent medical men in our midst, especially when we know that they have not come to spy out the nakedness of the land. We hope that you will find this a pleasant place to visit, an eminent seat of education, culture, and refinement, and one of the largest seaports in the world where the people go down to the sea in ships. We are quite ready to place before you all the treasures of our storehouse for your admiration, but I am not at liberty to extend to any of you an invitation to take up your permanent residence here, as we are already well supplied, as you will no doubt soon discover, with eminent medical men who hold a pre-eminent position in their profession.

When I was considering what subject I should choose for my presidential address, I chanced to read the Huxley lecture on Life and Consciousness by Henri Bergson. He there asks the questions: "What are we? What are we doing here? Whence do we come and whither do we go?" Without following Bergson's philosophic disquisition as to how life and consciousness permeate matter and as to how they were started on their evolutional career by an original impetus, it occurred to me that these questions might be very appropriately asked of the medical profession. What are we? Can we show any sufficient *raison d'être* for our existence? Are we of sufficient value to individuals and to the State to justify our continued existence as a profession? Is the world any happier for our presence? Are we really an advantage to the higher evolution of the race? No doubt all these questions will be readily answered by ourselves in the affirmative, and, after all, we are, perhaps, in the best position to form a correct judgement on the subject. Moreover, the vast majority of the thinking public will acknowledge the utility of our existence in society as it is at present constituted, though there may be some difference of opinion as to our value. After all, our numbers are largely governed by the demand, and if the public did not require our services we would soon cease to exist. It has been said of us that we subsist on the misery of others, which no doubt is to a certain extent true, though we do not subsist by creating misery but by alleviating it. There is no other profession which has cut the ground so zealously and so successfully from under its own feet, and deprived its members of important sources of income. The practical abolition of typhus, typhoid fever, small-pox, and other infectious diseases has to a considerable extent lessened our revenue. We do not complain of such results, but, on the contrary, we rejoice with those who rejoice, and weep with those who weep. Our aim is not only the cure and alleviation of disease, but also its prevention and the preservation of health. We always give advice in the best interests of our patients—advice often fraught with our own personal disadvantage. On account of our disinterested advice we are trusted by the public; but, unfortunately, our noble self-sacrifice is often not adequately rewarded. The surgeons and specialists are the only members of our profession who have rightly insisted on their services being properly appreciated and adequately requited, and to their great credit I can testify that, in this city, at least, no greed of gain has ever tempted any of them from the path of rectitude.

During the last century or more we have been very busy trying to find out the causes of disease, the best methods of their elimination, and the proper treatment of our patients. We have to a large extent succeeded. A selective death-rate which was, and is, Nature's method of eliminating the unfit has been at least partially suspended by our efforts. Perhaps the majority of the medical profession—a profession still largely permeated by Lamarckian ideas—would readily accept the view of Bergson,[1] "That adaptation to environment is the necessary condition of evolution we do not question for a moment. It is quite evident that a species would disappear should it fail to bend to the conditions of existence which are imposed on it. But it is one thing to recognize that outer circumstances are forces evolution must reckon with, another to claim that they are the directing causes of evolution. This latter theory is that of mechanism. It excludes absolutely the hypothesis of an original impetus—I mean an internal push that has carried life, by more and more complex forms, to higher and higher destinies. Yet this impetus is evident, and a mere glance at fossil species shows us that life need not have evolved at all, or might have evolved only in very restricted limits, if it had chosen the alternative, much more convenient to itself, of becoming ankylosed in its primitive forms." Such ankylosis, Darwin would probably have said, would not only have stopped evolution but would have led to the extinction of the species. Bergson looks upon life as something apart from matter, something which permeates, modifies, and controls matter, and thus he views evolution from the side of life, whereas Darwin looked at evolution from the more materialistic aspect, the adaptation of the living structure and function to meet the requirements of the environment. While the views of Darwin have undergone and are undergoing considerable modifications as the result of the study of heredity which is being so well carried on in the present day, the brilliant scintillations of Bergson's intellect have not yet done more than captivate and stimulate the minds of thoughtful men. Many of us are quite willing, nay, anxious, to place life, consciousness, all the mental attributes, and that even less definable entity, the soul, on a much higher plane than that of the functions of the nervous system, but when the operations of the brain are annulled, as in profound anaesthesia, we are often forced to ask what becomes of these controlling agencies which permeate matter, and raise the intellectual man to his present sphere, so that in knowledge and wisdom he may be aptly described as made in the image of God. "Canst thou by searching find out God? Canst thou find out the Almighty unto perfection?" How far the human intellect, or, as Bergson would prefer, the human intuition, may yet succeed in unravelling many of the mysteries of life we cannot at present say, but I have no doubt that in the process of evolution the human intellect will be carried to a much higher plane than that to which it has at present attained, if, as Mr. Balfour has said, the forces of disintegration do not overcome those of civilization. It is, however, our duty as medical men and as citizens of a great Empire to move in the path of progress, and in every possible way to encourage the higher evolution of the race. Mental speculation is rife and is often ripe with great fruition, but when we come to deal with the stern realities of life we find it difficult or impossible even in our mental attitude to separate life from matter. Huxley said life as we know it is inseparably connected with protoplasm—without protoplasm there can be no life. It is, therefore, important that we should see that the highest form of protoplasm, that capable of starting the individual life and giving rise to the greatest amount of differentiation of structure with the accompanying functions, the germ-plasm, should be of the highest order. An impure germ-plasm cannot tend to the higher evolution of the race no matter under what environment it is developed.

Natural evolution, and the evolution of the art and science of medicine, run on different lines; they are often

mutually opposed except when Nature gets the upper hand, and medical men are blindly following their ideas of natural laws. Nature is lavish in the production of life and prodigal in its destruction; her efforts are directed to the improvement and perfection of the species, she cares nothing for the individuals except to adapt them to the environment. This process of adaptation spells elimination for the unfit, and thus we get the survival of those best suited for their surroundings, and these in their turn produce a vigorous, intellectual, and self-reliant race. Medicine, on the other hand, has been evolved for the benefit of individuals. It does not deal with the unborn, but merely devotes attention to the living. Medical men exist for the benefit of the public, not the public for the advantage of our profession. The interests of the public and of the medical profession run on parallel lines, hence both are apt to take a narrow and very selfish view of man's position in Nature. Each is ever ready to consider what will contribute most to its own immediate advantage without any special regard to futurity. Hence we not infrequently hear such exclamations as "What has posterity done for us? Why should we consider the future of the race? It is sufficient for us to look after our own progeny who have already arrived in this world." It seems sufficient for a good many people to know that they have descended from William the Conqueror, or from some of his mighty men of valour whose virile power they have not yet quite succeeded in dissipating. They are not very particular as to the purity of the germ-plasm which they are handing on to succeeding generations. Medical men are ever more or less successfully adapting the environment to the individual, and giving the weakling an equal chance of survival with the strong; in fact, often a much better chance not only of surviving but of multiplying, because the strong and virile have to take all the risks, not only in supporting themselves but also in maintaining the decadent. We have successfully interfered with the selective death-rate which Nature employed in eliminating the unfit, but, on the other hand, we have made no serious attempt to establish a selective birth-rate so as to prevent the race being carried on by the least worthy citizens. The same maudlin sentimentality which often pervades the public not infrequently affects the medical profession. We have often joined forces with self-constituted moralists in denouncing the falling birth-rate, and have called out for quantity regardless of quality. We readily forget that utility, as long ago pointed out by John Stuart Mill, lies at the basis of all morality. We are also apt to forget that a high birth-rate is practically always associated with a high death-rate, and a low birth-rate with a low death-rate; the former is Nature's method, a method which has always produced a fine race, though very slow in doing so, but with the advance of civilization Nature's method is too crude and barbarous, and, as man rises superior to Nature and obtains more and more control over her laws, such barbarities are replaced by more humane methods.

The spirit of altruism reigns supreme, the highest product of human evolution is shown by sympathy with our fellow-beings in their suffering. We feel compelled by the dictates of conscience to preserve, as far as possible, every human being, no matter how imperfect his intellectual and physical development. Sickness and distress make all flesh akin, but our object should be to prevent such maladies rather than to imagine that they have been sent by Providence. The practitioner of medicine can frequently point out individuals who have been rescued from the grave and restored to health. The duration of life depends not only on the constitution of the individual, but on the care which he has received. In dealing with any particular life, the doctrine of predestination—so far as the human intellect can fathom—must fall to the ground.

The object of our professional existence, so far as the public are concerned, has hitherto been the prevention and cure of disease, the alleviation of human suffering and the prolongation of life. Our medical officers of health have devoted much attention to sanitation, looked after the quality of the food and drink, the air we breathe, and the water we drink: in short, our whole environment. The incidence of infectious diseases has been lessened, and their treatment rendered more effective both for the individual and the community. Practitioners and physicians have employed their energies in the study of diseases in general, their treatment, and, to a certain extent, their prevention. Their failures have not infrequently afforded the surgeons a rich harvest—a harvest which is not likely to be all gathered for a long time yet. The marvellous vitality and wonderfully adaptive powers of the human body enable it to survive innumerable mutilations. The surgeons hold, and rightly hold, that prevention does not come within their sphere, as the inception of disease rarely comes within their purview, but very many surgeons, guided by altruistic feelings of a high order, do look back and consider how such mischief might yet be obviated in the future. They are not content to remove a stone from the bladder or kidney, but do honestly consider, so far as their physiological knowledge carries them, how a recurrence can be prevented.

What are we? What are we doing here? We have often assumed the position of guides, philosophers and friends, but in the main we are individuals who deal with the prevention and treatment of disease, and, to some extent, with the maintenance of health. That is what we are doing, and what we shall continue to do for time immemorial if some of our ignorant legislators, who know nothing and care less about physiological laws, have their way. There are a great many people who think that they can have sixpennyworth of health by the purchase of a bottle of physic. Even the British Government Health Restorer is at a serious discount, as we are led to believe that ninepennyworth of that refreshing fruit can be had for fourpence. Those who put such a low estimate on the position of the medical profession are very apt to grumble when they discover that the health which they have ruthlessly dissipated often cannot be recovered for money. Many of the higher and more intellectual minds in the medical profession have ever refused to be bound within such narrow confines. They have studied humanity, and considered how best to raise it to a higher plane, and how to improve the ancestral patchwork, which in many families shows some scars. Notwithstanding the gross ignorance which is rampant in our Legislature, and the failure of many to perceive the future from the past, there is yet a growing consciousness among the more intellectual members of the community that the present state of matters must not be allowed to continue. We must raise up a vigorous, intelligent, enterprising, self-reliant and healthy race. It is becoming more generally recognized that even that highly differentiated mass of protoplasm, the nervous system, through which the mind operates, is in most perfect working order when a part of a sound body. We come with the tradition of healers both of mind and body, but there must be no hesitation as to whither we go. We must not rest content with the mere treatment of disease, we must instil into the public mind intellectual and physical health. We must continue to deal with the prevention and treatment of disease, but we must also ascend to a higher platform and raise the banner of health with all the fervour of a new religion. The dread of hell-fire which was formerly an even more effective force than the hope of heaven in keeping men in the straight path of moral rectitude, has now almost ceased to be an operating force on human intelligence. Virtue must be followed for its own sake; the idea of the greatest happiness which, according to John Stuart Mill, is the fundamental basis of morality, must be cultivated. We must point out the path along which the moral, intellectual, and physical health of the nation is to be evolved.

If this achievement is to be accomplished we must begin with the unborn. The race must be renewed from the mentally and physically fit, the moral and physical degenerates should not be allowed to take any part in adding to the race. Above all, we must breed for intelligence. The laws of heredity should be widely taught, so that those with hereditary blemishes may consider their moral responsibility in bringing children into the world. It is a question of quality rather than quantity. If every one would consider his moral responsibility to the race rather than his own selfish gratification, in a very few generations we might produce a pure, moral, highly intellectual, and healthy race. Of course, we could not make all equal—there is no such thing in Nature, and never can and never will be, and it is not desirable that such should be—but we could raise the average plane and get rid of the present

decadence. I know that in the expression of these views I am coming into direct conflict with at least some of the churches, of which there are almost as many varieties as there are of human beings. The majority preach in favour of quantity rather than quality; they advocate a high birth-rate regardless of the consequences, and boldly tell you that it is better to be born an imbecile than not to be born at all. They forget the saying of Jesus of Nazareth that it would have been well for this man if he had never been born. With the man-made morality of the Church I can have neither art nor part. There must be a high racial morality based on utility and the greatest happiness, not merely of the individual, but of the race. Medical men, when they are consulted, as they often are, on questions of matrimony and reproduction, incur a very serious responsibility when they encourage the mating of mental and physical weaklings. It is their duty not to pander to the selfish gratification of the individual, but to point out to every one his positive and negative duties to the race. It is generally held nowadays that intelligence, physique, and health are innate and heritable qualities, but morality is largely, if not entirely, an acquired and traditional characteristic. If this be so there will continue to be plenty of work for the clergy for generations yet unborn. The future of the medical craft would seem to be in greater danger than that of the clergy or even of the lawyer, but medicine must be evolved more and more with the demands of the times. The time is now ripe for dealing with mental weaklings, and they will be effectually dealt with in all progressive nations. The conscience of the intellectual in all grades of society is being awakened to the responsibility of individuals to their offspring, and the advanced thought of the intelligent portion of the community will demand something more than treatment from the medical profession. This will place physiology on a higher plane than pathology, and will require an even more advanced study of the laws of health than of the tendencies to degradation and disease. There are none of our medical schools yet efficiently equipped for this teaching, either with teachers or material, but the post-graduate work at the Liverpool University will bear favourable comparison with that of any other school in the kingdom. Such teaching is bound to come, and advanced physiology and biology must lead the way.

In the not far distant future an intelligent public will not rest satisfied with such a state of matters as revealed in the statement in the loyal address of the Royal Society of Medicine to Their Most Excellent Majesties on the occasion of the opening of the Society's new buildings, that,[2] "the vocation of the medical profession is not only to preserve the individual by curing disease, but to improve the health of the nation by promoting hygiene and preventing illness." The reasonable inference from this somewhat belated statement is that health, though not a negligible quantity, is looked upon as chiefly a negative quality obtained by the cure and prevention of disease with a little hygiene thrown in. This conveys no higher ideal than the prayer of a clergyman to be saved from eternal damnation rather than an appeal for the joys of heaven. If the functions of the medical profession, as portrayed in His Majesty's most gracious reply, though much more expansive than those already quoted, be all which are required of his medical advisers, then every dutiful and loyal subject should constantly and fervently pray "God save the King."

The work of Lord Lister, who was a great physiologist, emancipated surgery from the thraldom of tradition, and the great advances which have consequently taken place in that branch of our profession have been the marvel of the age. The progress of medicine during the same period, though noteworthy, has not been so startling. Unfortunately the progress of medicine has been stifled by tradition and by a succession of more or less reputable old gentlemen who, having attained to place and power by accidental circumstances rather than merit, have not seen the necessity for change. There have been, however, many insurgents who have disregarded the trammels of tradition and led the van of progress. The brilliant advances of surgery were rendered possible by the exclusion of pathogenic organisms, by an improvement in the environment; but such methods are not always possible in internal medicine. We must not only pay attention to the environment, but we must raise the defensive forces of the individual, increase his inherent powers of resistance, and, as far as possible, render him immune to disease. We can point to the remarkable work of Edward Jenner in protecting the individual against small-pox, the work of Pasteur on hydrophobia, of Koch on tuberculosis, and more recently the epoch-making work of a Liverpool man, Sir Almroth Wright, on the prevention and treatment of many infectious diseases.

Some of the greatest advances in modern times have been with regard to the prevention and treatment of infectious diseases, and as prevention is generally looked upon as more important than cure the part played by medical officers of health must become more prominent. The improvements which they have effected in sanitation and in the segregation of disease have been of great advantage to individuals, but it is very doubtful whether their efforts have been equally beneficial to the race. We are kept constantly informed of the number of lives which they have saved, or, perhaps, to put it more accurately, of the number of deaths which they have prevented, but they wisely never attempt to trot out the individuals whose lives they are supposed to have saved. Their work is purely environmental, and the only lives which they save are those of susceptible individuals whose resisting power is low and who have not been infected. Once a person has been infected his recovery depends on his own innate powers and on medical treatment. They have largely succeeded in abolishing cholera, typhus, and typhoid fever by getting rid of the sources of infection and thus limiting the incidence of those diseases; but they have in no way added to the immunity of the race or lessened the susceptibility of the individual. With measles, scarlet fever, and whooping-cough and influenza there has been less success, but from the general experience of those diseases by our race, it seems that Nature has gradually established a use-acquirement, and consequently the virulence and fatality of these diseases is becoming much less. Notwithstanding all sanitary improvements, the incidence of diphtheria has actually increased, but by antitoxic treatment the fatality has been greatly lessened. If we could only abolish the tubercle bacillus in these islands we would get rid of tuberculous disease, but we should at the same time raise up a race peculiarly susceptible to this infection—a race of hothouse plants which would not flourish in any other environment. We would thus increase at an even greater rate than we are doing at present, nervous instability, the numbers of insane and feeble-minded. Nature, on the other hand, weeds out those who have not got the innate power of recovery from disease, and by means of the tubercle bacillus and other pathogenic organisms she frequently does this before the reproductive age, so that a check is put on the multiplication of idiots and the feeble-minded. Nature's methods are thus of advantage to the race rather than to the individual.

Regarding venereal disease, Nature has been trying to work out the salvation of the race during the last 500 years by rendering individuals less susceptible to these diseases, but she has not yet succeeded in establishing anything like general immunity. The virulence of these diseases has, no doubt, considerably abated, but their dire effects are still too manifest, and, as Nature's methods are too slow, a determined effort should be made to stamp them out, regardless of the pharisaical hypocrisy of some moralists. The suffering caused to innocent wives and children by these diseases calls aloud for their elimination. Vastly improved methods of treatment are not enough, and a combined international effort should be made to stamp them out. Mr. C. J. Bond says:[3]

> Innate capacity of recovery or resistance to disease on the part of the body cells becomes innate capacity to vary intracellularly when exposed to new conditions introduced by disease organisms. And this capacity to vary, although possessed in different degree by all the individuals of a race that has had sufficient experience of the disease in question, remains latent in such individuals until roused to exercise by exposure to disease. Thus by the exercise of this capacity for intracellular variation on the part of the cell and by the selection of the most appropriate kind of molecular response a new character arises in the cell, that of a capacity to resist reinfection, representing from the point of view of the individual organism a "use-acquirement."
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> Moreover, by so regarding individual reaction to disease, we are bringing the use-acquirement of the immunity reaction into some sort of relationship with the use-acquirement of neural response which we have already seen reason to think is also the

outcome of a process of variation and selection among the intracellular elements in nerve cells.

Just as the latitude of the neural response is determined by the hereditary limits of innate neural capacity, so the latitude of the individual immunity reaction is determined by the extent of the hereditary capacity of recovery or resistance to the disease.

The crude but effective methods of Nature in raising an immune and virile race are being gradually superseded by improvements in the environment, and by the abolition of the pathogenic organisms, so it becomes more and more the duty of the medical profession, while employing every means in its power to preserve the life and health of the individual, to point out to the community its obligations to the future of the race. As Mr. C. J. Bond again says: "The necessity for being immune by nature becomes less as the possibilities of becoming immune by art become greater."

The work of Almroth Wright has been chiefly with pyogenic organisms, typhoid fever, influenza, pneumonia, and tuberculous disease. In the treatment of that extremely fatal disease—pneumonia—vaccine therapy, when properly adjusted, has proved highly efficacious; but there are still some who wait until all other methods have failed before attempting to produce an artificial immunity. I think in the near future the public will become more enlightened in the methods of preventing this dire disease. In dealing with the pneumococcus and other septic organisms in the mouth, surgeons often fail. In my opinion no serious operation should be undertaken in the mouth until the individual be rendered more or less immune to the pathogenic organisms which frequently flourish in the oral cavity. In cases of pyorrhoea alveolaris excellent effects have been achieved with Almroth Wright's parodontal streptococcus vaccine. Septic infection by the mouth and intestinal tract is the forerunner of pernicious anaemia, as long ago pointed out by William Hunter, and when the public become more alive to the dangers of oral sepsis we will see less of this intractable disease.

It will be very difficult to prevent the spread of infectious diseases among children so long as we have overcrowding, defective ventilation, dirt and want of cleanliness in the homes, schools, and public conveyances. However, a great deal can be done, and is being done, for local conditions by looking after the children's teeth, by seeing that their teeth and jaws get plenty of exercise in chewing food, by keeping their mouths and nasal passages as aseptic as possible, and by removing any obstructions, such as adenoids and large tonsils. Every affection of the nose and throat, and, in fact, of the whole digestive tract, should receive immediate medical attention, as it is through these pathways that the rheumatic poison or organism is introduced, also those which produce infantile paralysis and cerebro-spinal fever. By means of school inspection and school clinics the children of all classes of the community will receive at least precautionary treatment.

The infectious diseases to which I have referred merely touch the fringe of preventive medicine, and have comparatively little to do with the health of the community.

I now wish briefly to sketch some of the lines along which progress must proceed, and in doing so I shall deal with some of the functions of the human body, beginning with those of the nervous system. The lower we descend in the animal scale the more simple does the nervous system become, until finally it disappears as a structure though some of its functions remain. In the evolution of the human body the various structures and functions have attained their highest differentiation and most perfect adaptation for the division of labour.

The wonderful complexity of the nervous mechanism as the organ of the mind excites our wonder and admiration, but however far our intelligence enables us to analyse and measure the operations of the mind, it does not carry us very far as to its nature. We may try to find out the nature of life and vital force, and imagine that such is merely the function of protoplasm, but we have not yet succeeded by any synthetic process in the formation of any organic compound, except such as are the degradation products of vital metabolism. We have not succeeded in producing any organized living structure, and are not likely to do so.

In speculations as to the nature of consciousness and of the mind we must often and largely be guided by intuition, because such speculations are incapable of measurement or of any scientific definition, but even the intuition of Bergson does not carry us very far along the path of knowledge when he says:[4] "Instinct is sympathy. If this sympathy could extend its object and also reflect upon itself, it would give us the key to vital operations—just as intelligence, developed and disciplined, guides us into matter. For—we cannot too often repeat it—intelligence and instinct are turned in opposite directions—the former towards inert matter, the latter towards life. Intelligence, by means of science, which is its work, will deliver up to us more and more completely the secret of physical operations; of life it brings us, and, moreover, only claims to bring us, a translation in terms of inertia. It goes all round life, taking from outside the greatest possible number of views of it, drawing it into itself instead of entering into it. But it is to the very inwardness of life that *intuition* leads us. By intuition I mean instinct that has become disinterested, self-conscious, capable of reflecting upon its object and of enlarging it indefinitely."

While ready to agree with Bergson that intellect and intuition run in opposite directions and are often developed at the mutual expense of one another, the scintillations of this genius are more apt to appeal to the metaphysician than to the physician, as the latter has generally to deal with hard facts already made for him. The intellectual scientific man is apt to hold that all phenomena will ultimately be explained in scientific terms, and that even mind and consciousness may be shown to be the highly evolved functions of a highly differentiated nervous protoplasm. On the other hand, intuition leads us to a higher conception of life and consciousness as something more than mere functions of organized material, something apart from matter, but which our intellectual conceptions cannot conceive except in association with matter. Our intuition leads us to look upon mind as a guiding principle which can enter and control matter, a something which can rise to higher spheres, whereas the organized material which it directs and controls returns to inert or degraded matter when the control ceases. Bergson forcibly puts the position for natural instinct as follows:[5]

"When a strong instinct assures the probability of personal survival, they are right not to close their ears to its voice; but if there exist 'souls' capable of an independent life, whence do they come? When, how, and why do they enter this body which we see arise, quite naturally, from a mixed cell derived from the bodies of its two parents? All these questions will remain unanswered, a philosophy of intuition will be a negation of science, will be sooner or later swept away by science, if it does not resolve to see the life of the body just where it really is, on the road that leads to the life of the spirit. But it will then no longer have to do with definite living beings. Life as a whole, from the initial impulsion that thrust it into the world will appear as a wave which rises, and which is opposed by the descending movement of matter."

It is the higher evolution of the intellectual grades of society that we require in the present day. If the moral, intellectual, and physically well-developed members of the community are to have a fair chance of development, their energies must not be entirely dissipated in providing for the progeny of wastrels. Reproduction must proceed from the most worthy. We want quality rather than quantity, but when the quality is good you cannot have too much of a good thing. Dr. Inge, the Dean of St. Paul's, recently said "that the great menace to our civilization was not so much the stationary birth-rate of the upper classes as the great increase among the poor and ill-fed population of our great towns."

Our progress may depend, as Mr. Balfour has said, on the forces of civilization being able to overcome those of disintegration. We have had during the past year many examples of the disruptive forces of society which are not tending to efficiency and to a higher level of civilization, but to a lower average level of intelligence and of general happiness.

During the last half-century there has not only been an absolute but also a relative increase in insanity, and this increase is becoming more and more noticeable among decadent stocks. This of course tends to elimination, and so tends to retain the average level of the population, but much mischief is wrought before this elimination takes

place. The increase of the feeble-minded has recently been so apparent, notwithstanding our defective statistics on this subject, that there is now a loud cry for legislative interference. This class, although their average longevity is not great, are very prolific, and are not guided by any economic considerations; they simply gratify their natural passions without any regard for the consequences, and so start reproduction at an early age. The same proclivity is noticeable among the wastrels, the unemployables, the paupers, and the ne'er-do-wells.

The hard-worked wage earner has no fair chance, as he has not only to support his own progeny, but is taxed almost out of existence to maintain the extravagance of wasteful Governments, and of a sympathetic irrational public. "The right to live" is not a doctrine held by any political economist, but is a doctrine which has been forced upon us by the evolution of sympathy. However, we should not allow our indulgence to degenerate into licence, and while we look after the wastrels of the present generation, and thus gratify our sympathies to our heart's content, we have no moral right to leave a legacy of mental obliquity and of physical decadence to weigh upon the next generation.

The idea that insanity and genius are closely allied has still so strong a hold on the public mind that many would not interfere with the insane in hope that some day they may breed a genius. Those who adhere to this ancient and, in the main, ill-founded belief do not know what constitutes a genius, they ignorantly mistake eccentricity, or uncontrolled and ill-regulated mental activities, for genius. There is not much danger of intellectual visionaries being disturbed in the present day, there are many of them at large, and more knaves than fools among those who batten on an ignorant and trusting public. The higher the intellectual evolution the greater the number of geniuses that are likely to be produced. There must be inherited, innate qualities capable of development: a favourable environment will contribute to such development, but it can never create a genius. You cannot gather grapes from thorns, nor figs from thistles. Dr. Mott says,[6] "No two brains are alike, any more than two faces, but there is a close family resemblance."

There is a tendency in the present day to devote more attention to the morbid manifestations of the brain, to its degenerative changes and the fall from its high estate, than to the consideration of its evolution and development. The neuroses are studied more for their creation than for their elimination. Weird methods of study are encouraged, sensational and erotic tendencies are looked upon as natural rather than as, what they really are, degradation processes. With the elimination of tuberculosis a larger number of unstable nervous individuals reach the reproductive age and hence a number of individuals are produced who early qualify for asylums. It is not any particular form of insanity which is inherited, but a neuropathic tendency which may eventuate in many forms of disease, and this disturbance is often associated with disorders of the intellect. A defective nervous system is often at the basis of imperfect metabolism, with the formation of autogenous poisons, which affect the nerve centres. In this way such diseases as epilepsy and hysteria are transmitted from one generation to another.

Though you may believe that the evolution of the nervous system has been brought about from a primordial cell, there can be no doubt that in this mass of protoplasm both structure and function have reached their highest differentiation. The brain and its nervous connexions are not only the organ of the mind—the organ through which our perceptions, conceptions, free will, and reasoning powers are executed—but this nervous mass has also a controlling and governing influence over all the movements and functions of the body as a whole. It is not alone the defects, but also the stability and higher innate qualities of the brain which are inherited, and these higher qualities are capable of enormous development. Some of our educational authorities act as if they believed the brain to be like a piece of elastic which could be stretched out at the will of the educator, and that all individuals with equal opportunities should develop alike. They are not aware that, although the brains are composed of the same ultimate elements, the quality is variable, and some brains are not even educable. The ductility is different, and where there is no cohesion there can be no ductility. This ignorant plan of affording equal opportunities to all, opportunities of which the vast majority cannot make use, has cost the country an enormous amount of money, money wasted, which for all the good it has done, or ever can do, might as well have been dropped to the bottom of the ocean. What is the use of trying to draw out intelligence where there is none? If you wish to stretch a piece of wire you must first get the wire, and then the ductility will depend on the material; if it be composed of platinum or fine gold the ductility is extremely great, but where there is no tenacity there can be no ductility. The feeble-minded individuals are a growing incubus on the nation, and should be dealt with in the most humane manner by their sterilization or segregation. It is for the nation to decide which method shall be adopted, but the latter will comport best with the general feeling of the community. Dr. Mott again says:[6] "The profound psychical influence of the sexual glands, by reason of their internal secretions during the period of ripening of the germ cells, is beyond all dispute, and the repression of the instinct of propagation, attendant mental dejection, or excitation, is a powerful exciting cause of mental or nervous disorders." However, no surgical procedure has been proposed which would interfere with those internal secretions. There are some who contend that an increase of the celibate population would be a menace to society, but a society which could not cope with such a feeble menace would scarcely be worthy of existence. Moreover, what about the enormous numbers of women, and of men to a less extent, who are forced to live lives of celibacy by the present artificial state of society?

Most of the hereditary nervous diseases could be eliminated and the numerous neuroses could be checked by removing many of the causes that favour their development, and by encouraging the reproduction of the race by individuals with stable nervous systems. For the normal activities of the mental attributes you must undoubtedly have a healthy and properly nourished nervous system. It not infrequently happens that men with brilliant intellects may also have inherited or acquired physical defects, and their will power may be able to control and direct the operations of the mind, but it is within the experience of most intelligent individuals that the best mental work is accomplished when in sound health. An author is not always happy in the expression of his thoughts, and his phrases do not always flow freely, even from a facile pen, when he is not in bodily health. To maintain the brain in healthy working order there must be a free supply of pure, well-oxygenated blood. The brain no doubt retains its activities under less favourable conditions longer than the other organs of the body. The interrelations between the nervous system and the other organs are to the mutual advantage of all. In the differentiation of function the brain, as the most highly evolved part of the body, is the controlling agent over all the other functions. The circulation, the respiration, the digestion, locomotor and reproductive functions are all controlled or regulated by the nervous system. The higher functions of the brain may be active or impaired when the lower ganglia are healthy, hence the imbecile or feeble-minded may have all his animal functions highly developed. But when you have an unstable nervous system the lower functions are generally disturbed, the resisting powers of the individual to disease may be at a low ebb, hence an aberrant intellect is not infrequently associated with tuberculosis. With a healthy brain and body the individual is less prone to succumb to many maladies. For the healthy action of the brain nothing contributes more than the motor activities of the body as well as the active functions of the bodily organs. Life implies change, and in order to maintain a healthy, vigorous mind and body we must not rust out. The functions of the body, like the elasticity of a piece of rubber, become impaired from want of use; the innate qualities of the brain must be developed if it is to exercise the intelligent functions of the mind. Outdoor exercise is most essential in the treatment of the insane, and healthy exercise both of the body and mind must largely contribute to the maintenance of the functions of both. The brain, when subjected to the influence of very high temperature, and to many poisons, cannot properly perform the functions of the mind. The presence of many inorganic salts is just as essential for the discharge of the function of the

brain as for the maintenance of the action of the heart. When we find that various inorganic ions and difference in electrical potential are necessary to the life of the cell, we cannot feel surprised that some think that it will be discovered eventually that life itself is a modification of electrical energy. We are a long way off solving the riddle of life, let alone that or mind. We can analyse and measure many of the attributes of the mind and the functions of the body, but as to where life and soul spring from and whither they go we are still as far as ever from the solution of such problems.

The march of medical science teaches us that not only are infectious diseases and evil hereditary tendencies preventable, but nearly all the ills to which flesh is heir can be more or less obviated while maintaining a high standard of physical health, and the body only subjected to the ordinary processes of wear and tear which are the necessary accompaniments of healthy existence. There is no scope for eternal life in this sphere.

Diseases of the heart are, perhaps, more easily prevented than those of any other organ, but in these days prevention is rarely attempted. Those who are fond of posing as authorities in such matters prefer waiting for the development of the disease, and are then quite prepared to give a learned disquisition on the various arrhythmias. When they have made a graphic illustration of the sequence of events, they vainly imagine that the problem is solved. An observation of a sequence is no evidence of the cause of that sequence. A clear comprehension of the physiology of the heart is of much more importance for a right understanding of the working of that organ in health and disease than any amount of pathology. When it is more generally recognized that free calcium ions are essential for the continued contraction of the cardiac muscle, and that it is necessary to maintain a difference in electrical potential between the salts in the cell and those in which the muscle cell is bathed, then the methods of maintaining the healthy functions of the heart will be better understood. When it is more generally recognized—what I long ago pointed out—that chronic degenerative lesions of the heart and arteries usually arise from causes acting on the periphery we will be better prepared to deal with such lesions when they occur, and, what is of much more importance, prevent their occurrence. What is the good of measuring arterial blood pressure if you be not alive to its importance, and are not prepared to analyse its significance and regulate its effects? Methods of precision are essential in all scientific research, but in the interpretation of the results it is not the instrument, but the man behind the instrument, who makes or mars the observation. Pseudo scientists are prone to think that when research becomes practical it ceases to be scientific, and while holding such views their work is not readily exposed to criticism, as they rarely enter into the domain of practical experience. Such work may carry a man into the highest scientific societies and enable him to pose as a man of more than ordinary intelligence. No doubt knowledge should be acquired for knowledge's sake, virtue is its own reward, but the man who glories in his knowledge because it can be of no use to any human being is not truly scientific, unless indeed he be a "pure" mathematician, which is next door to a metaphysician. The greatest minds that have ever adorned this sphere have never scorned utility. Newton, Young, Lister, and Kelvin were always pleased when their deductions had a practical outcome, when their science came down to the bedrock of common experience and became part of common knowledge. We should encourage the highest developments of the best minds and let every one follow his own bent, in the hope that the collective wisdom or conglomeration of facts may eventually be pieced together for the common good.

The maintenance of an efficient circulation is necessary for the well being of the whole body, and we must be careful that efficiency is attained at the least possible cost of energy, and that the heart is not required to maintain an efficient circulation at the expense of its early dissolution. The innate power of adaptation on the part of the heart to meet any demand for extra work should be used for the benefit of the individual, and not wasted in overcoming unnecessary resistance. The heart is often plied with digitalis, like the back of a horse with a whip, when the proper method would be lighten the load. The high arterial blood pressure engendered by peripheral resistance leads to impairment of the elasticity and nutrition of the vessels. These damaged vessels become the site of calcareous deposits, which still further impair their elasticity. Free calcium ions are absolutely essential for the maintenance of cardiac contraction, but any excess of fixed lime in the circulation increases the viscosity of the blood and thus adds to the work of the heart. A nice adjustment of the electrolytes in the circulation is essential for the efficient working of all the functions of the body.

The advances in chemical biology have been great in recent years, and in this advanced work Liverpool has taken a prominent part, but still further study is requisite. Witness the marvellous effects which the secretions of the ductless glands have on the mental and physical attributes of the human body. In myxoedema the individual is slow in thought and speech, all his mental faculties are at a low ebb, he is neither alert in body or mind, his movements are executed in a slovenly manner, he appears more fitted for a condition of hibernation than for the normal activities of life. On the other hand, in cases of exophthalmic goitre there is a state of unstable equilibrium; the individual is sharp, alert, even vivacious, but easily exhausted both mentally and physically, and is incapable of sustained effort.

In diseases of the pituitary and suprarenal glands there is a great fall in the blood pressure, often so great that the circulation cannot be maintained in the erect posture; while on the other hand excessive activity of these glands may, and no doubt often does, lead to general arteriosclerosis. The important parts played by the red bone marrow, the lymphoid tissue, and the spleen in blood renovation are well known. The simple and malignant diseases of the mammary glands in the female, and the prostate in the male, are largely associated with irritation in their ducts and defective functional activity: the methods of preventing such occurrences will, I am convinced, soon be solved.

In skin diseases the old ideas that irritation may arise from within as well as from without, that a morbid condition of the blood is responsible for many outward manifestations of disease, are often likely to lead to more successful methods of treatment than the present habit of ascribing everything to one or other microbe. It seems to me that both ideas are correct within certain limitations, and one should not be studied to the exclusion of the other.

At this meeting you will hear much, I have no doubt, about the causation of gastric and duodenal ulcers, and a more clear conception of their causes will, I hope, eventually lead to their prevention. The stomach is a long-suffering organ, and it is very fortunate that its varied experience has enabled it to adapt itself to very varied conditions. On previous occasions I have pointed out the parts played by anaemia and deficiency of lime salts, while on the other hand, when calcium is in too great abundance it is apt to induce thickening of the pylorus with consequent obstruction. The insoluble lime soaps are frequent sources of irritation in the intestinal tract. Many affections of the digestive tract are largely questions of dietetics which should receive more attention than they have in the past. Even the surgeons are beginning to recognize that appendicitis is largely a preventable disease, though they cannot be held responsible for the fact that it is often not prevented. Vaccine therapy in many such cases is of great value. Mucous colitis, dysentery, and infantile diarrhoea are more easily prevented than cured, but on these points the public have not yet become sufficiently alive to their own interests. Our medical officer of health in this city has done invaluable work in the supply of pure milk, and in getting rid of that domestic pest, the household fly. The increased prevalence of malignant disease of the alimentary tract is due, as was pointed out by Metchnikoff, to stagnation—a warning which everyone should take to heart.

The commonest cause of gastric catarrh and of cirrhosis of the liver is alcohol, and its control rests with the public rather than with the medical profession. The brunt of the evil effects of alcohol falls primarily on the stomach, liver, lungs, and nervous system; while the teetotaler, in my experience, from eating too much, and from the immoderate consumption of lime salts, more frequently

suffers from arterio-sclerotic changes and chronic diseases of the kidneys. In the causation of diseases of the circulatory system alcohol does not play the prominent part with which it is usually credited, but syphilis is a very potent factor.

The versatile genius of Albert Abrams, who has come all the way from San Francisco to do honour to this meeting of the British Medical Association, has taught us how best to cure intrathoracic aneurysm, and he has shed light on the nature of the cardiac and respiratory reflexes. In the treatment of diseases of the heart and lungs his work does great credit to the New Continent, and he has also given us further insight into methods of prevention. It is usually much better to improve the peripheral circulation and lessen the resistance than to make free use of cardiac tonics. It is much better to prevent heart-block, cardiac arrhythmias, and angina pectoris than to treat them. The classic work of Sydney Ringer, and allied work which is now being carried on at Cambridge by Ralph Mines, have thrown a flood of light on the physiology of the heart, of which practical physicians should not be slow to make use.

We have come from Hippocrates onwards with a long tradition of healing, much of which the public has taken in good faith and usually in blessed ignorance, but whither do we go? My friend Professor Benjamin Moore would say the Dawn of the Health Age is upon us, but I trust the dawn and the noon-day of the future will be much brighter than any picture which he has portrayed. We do not want a race of gently reared, hot-house plants, which his system would imply. We want a race of men. We want to uphold the saying of Disraeli, that "Man is not the creature of circumstances; circumstances are the creatures of man. We are free agents, and man is more powerful than matter." We wish to say with Emerson, "Life must be lived on a higher plane—we must go up to a higher platform, to which we are always invited to ascend; there the whole aspect of things changes."

The profession that has made the greatest strides during the past half-century has been engineering with its allied sciences of physics and mathematics, yet the medical profession has to deal with a much finer piece of mechanism than anything which has ever been constructed by the hands of man. Moreover, we have got the advantage over the engineer in that our machine is a very durable, self-regulating and self-repairing automaton—a machine in the construction of which, fortunately, we have had no say. All we have got to do is to study its mechanism and its functions, to regulate the works, preserve their autonomy and prevent their destruction. On the other hand, a learned member of our profession has recently extolled our labours, and pointed out our difficulties by showing that the works of the human body are covered up, the hatchways battened down, and yet we are expected to find out and set right any defect in the internal machinery. This form of argument would be apropos if our eyesight was the only sense which we possessed, but the physiology of the body is fairly well understood, and methods of arriving at a correct solution of most problems are at hand; the difficulties are in the application of the knowledge which we possess. We cannot too strongly insist on the higher teaching of physiology, but this necessity is not yet generally recognized even by the General Medical Council. In support of the contention that such teaching might not be practical, some readily point to the small modicum of physiological knowledge which some leaders in the medical profession find sufficient for their daily work. To such we can say that the public will not be so ignorant in the future as they have been in the past, and such leaders will soon be covered up as well as their mistakes.

The path of progress which I have tried to point out will in the future devolve on such great associations as the British Medical—associations which have got no selfish interests to serve, but which have only the honour and dignity of the medical profession and the welfare of the public at heart. We often hear such bold statements as that the general medical practitioner is doomed, his occupation has gone, and his livelihood has vanished. Those who thus talk have their heaven *in statu quo*—they think there is no blessedness beyond the maintenance of their own ignorance. In my opinion the future of medicine will rest with enlightened and highly educated general practitioners—men who will look after the health of the community, who will see that mechanism of a high order is produced, and who will see that the machinery of the individual is properly lubricated and not subjected to any unnecessary friction or strain. The enlightened public will look to their medical attendants as guides, philosophers, and friends, both in health and disease.

As has been long advocated by the British Medical Association, we must have a properly regulated State examination, and the vested interests of corporations must not be allowed to prevail against the public weal. Mere examining corporations which have done practically nothing for medical education, and are chiefly engaged in extracting fees from students, should be allowed to retire into obscurity. There is here plenty of good work for an able statesman—a man determined to lead and to prevent the present policy of drift. The work of the medical profession should be such as to attract the brightest youths in the country. We must recognize that the outlook of the medical profession, though at present somewhat dismal, is merely a transition stage which will soon pass away. The sands of time may be running down, but we hope to invert the hourglass, and trust that there may be a grand to-morrow and a bright hereafter.

"Whatsoever thine hand findeth to do, do it with thy might; for there is no work, nor device, nor knowledge, nor wisdom in the grave, whither thou goest."

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Address in Medicine.

DELIVERED AT THE

EIGHTIETH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION

BY

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THE RELATIONS OF THE CIRCULATION.

THE honour of delivering the Address in Medicine which, by the grace of the Council, has fallen to my lot, is the highest distinction, in my judgement, at the disposal of that body. My grateful appreciation of the favour shown to me is attended by the reflection that no privilege can be divested of responsibility; it is my duty to turn this opportunity to a useful purpose, so far as lies in my power. As most of my life work has lain in the observation and investigation of the circulation, it is only to be expected that in a consideration of the problems it presents lies my best hope of practical utility. Another strong influence draws me also in the same direction. Six years ago, at our meeting in Canada, you, Sir, when occupying the position now accorded to me, chose for your subject: "The Circulation viewed from the Periphery." Many problems arising out of your suggestive remarks forced themselves upon my mind while listening to your words problems mostly concerning the manner in which the circulation is brought into relation with the body at large—and to-day it seems fitting, while you preside over us, to make an effort to answer some of the questions springing from your statements and still claiming our attention.

It is possible—nay, even probable—that such an attempt may seem too ambitious; the subject is at once so extensive and so elusive. In the hope, nevertheless, that good may somehow come from honest inquiry, and with the assurance, moreover, that any shortcomings will be leniently judged, my desire is to lead you with me to some of the intricate and perplexing paths in the field of modern medicine. If the pursuit of science be indeed, as we believe it to be, a pilgrimage in quest of truth, it is manifestly incumbent on us to discover what is its nature and where it is enshrined. Modern physiology had its birth in the central facts of the circulation, and numerous researches on that subject during our own epoch—the age of scientific

medicine—have given abundant proof of earnestness in the search.

In considering some of the recent additions to our knowledge, whether gained in the hospital or in the laboratory, it is more than likely that many of the thoughts about to unfold themselves will be to my hearers in no sense novel. Certain are, indeed, current coin; all have for some years been in the air. A certain amount of hesitation in advancing ideas which seem to reflect upon ourselves a flavour of originality is only natural; most of us tremble lest we fall into the ranks of those who, by regarding the "stepping stones of their dead selves" as rocks upon which others are still reposing, become the victims of self-complacency.

The complex mechanism by which the balance of the circulation is maintained has, during the whole modern period, been the subject of untiring research. The student has not been contented with fleeting phantoms, like "a dream within a dream"; he has yearned after facts and has longed to reach down to the bedrock of certainty. Amongst the objects which have aroused the patient enthusiasm of the worker, the connexions between the central and peripheral divisions of the cardio-vascular system, and the relations between the whole of that system and the body at large, have furnished objects of investigation absorbing his energies. In recent years a wealth of reward has been vouchsafed to him.

Nature is not ungenerous. She does not hide herself with the veil of Isis; she is ever willing to reveal her secrets to the humble suitor. Some of the appearances she presents may not be clear at first, but in time their hidden meaning is grasped. The end of the quest can never be gained by incantation; only by dint of patient and ceaseless effort is the goal won. Without facts, often gathered with painful effort, all our arguments are in vain. Do you remember the tradition of Pietro di Medici, unworthy successor of Lorenzo the Magnificent, who ordered Michael Angelo to fashion a statue of snow? The story has aroused the scornful contempt of four centuries, and may be traced in the burning words of Mrs. Browning and Mr. Ruskin. In similar fashion, the man of science who is asked to devote his mind to discussion without permanent truths wherewith to reason, is in the same position as the great sculptor, when he was commanded to carve a figure out of melting material.

The part played by the circulation in the integration of the organism is a natural subject for our thoughts in this city, where the author of the fascinating Silliman Lectures presides over the domain of physiology. The subject must be admitted to be a very large one, as it does not only include the consideration of the connexions of the central and the peripheral portions of the cardio-vascular system, but, as already suggested, the relations of the circulation as a whole to the body at large. It comprises the nature of the actions and reactions continually in operation, and the character of the stimuli and responses likewise constantly at work.

The circulation in all the higher animals may be regarded as based upon, or concerned with, four primary groups of principles. It is based upon mechanical arrangements which form the foundation for all its operations. It requires chemical changes, by which it is maintained, and for which it provides possibilities, by transference of matter. It is modified by glandular secretions, which profoundly alter its mechanism and chemical processes. It is affected by nervous agencies which deeply influence the performance of its functions.

When we gaze upon the long line of being through which the mammal has been evolved we can discern certain different stages of development, physiological no less than morphological. Amongst the simple organisms belonging to the protozoa, physical and chemical agencies alone are required; simple structure and function are alone brought into play; amongst the complex beings constituting the metazoa, glandular and nervous influences make their appearance with ever increasing complexity as we arise in the scale of life elaborate structure and function are necessary.

To which part of the masque of life shall we wend our way in search of observations with which to illustrate the subject? Whithersoever we turn our eyes we can see but a small part of the drama at once. We do not yet stand "upon a Peak in Darien." We can find examples of our meaning in the growth of youth and the decline of age, in conditions of health and states of illness. We shall have occasion, in looking into certain processes which are to occupy our attention, to trace out the development of nervous and glandular agencies in their evolution as well as involution; and it will be necessary for us also to glance briefly in passing at some particular diseases which will be helpful in lighting the path of inquiry.

Many stages of being in the evolution of the mammal are analogous to phases of life in the development of its individual representatives. The analogies involve structure as well as function. In the newly born there is not merely disproportion in the size of different parts and organs as compared with the adult, but there is also difference as regards function. It would serve no useful purpose on this occasion to dwell particularly on the infantile divergences from the normal of adult life as regards size and weight; but it is of importance to linger over certain deviations in function. The heart of the baby, in relation to the weight of its body, is considerably larger—expressed in percentages of total weight it is almost 0.9, as compared with a little over 0.5 in the adult—almost double; even more striking is the fact that the frequency of the heart beat is much greater, being from 130 to 140 per minute—roughly speaking, double that of the adult; the whole circuit of the blood is therefore traversed in a much shorter time—rather more than one-half. It therefore follows that the blood is renewed in the tissues of the baby with greater rapidity than in the adult. The total amount of blood, as compared with body weight, is considerably larger in the baby than in the adult; and as the respiratory work, although increasing absolutely with the growth of the body, is nevertheless relatively greater in early life, the absorption of oxygen is much more active than the production of carbonic acid. Metabolism, as the result, is extremely active within a few days of birth.

The glandular system soon after birth shows some interesting contrasts to the normal of the adult. The lymphatic system is extremely prominent, and the lymph circulation remarkably active. The thymus body increases in size up to the second year; from which point, as a rule, it undergoes retrogressive changes. The thyroid gland is larger in the baby than in the adult; while, on the other hand, the spleen is slightly smaller. This is what might *a priori* be expected; anabolism is in excess of katabolism. The glands which yield an external secretion show variable activities in the baby. The saliva, for example, is very scanty until dentition begins; it is also less active in the digestion of starch than is the case in the adult; on the contrary, the gastric secretion has adequate peptic powers; the pancreatic secretion has active tryptic functions, although the amylolytic power is feeble.

The first epoch of life is marked by the onset of dentition; and it may be held that, until the permanent teeth are nearly complete, this epoch is still existent. During it the infant passes through childhood into adolescence. Soon after the practical termination of the permanent dentition another great epoch of life takes place, and with it a new phase of activity sets in. This is conditioned by the development of the reproductive organs, and results in sexual differentiation, hitherto potential, but now functional. Although "The Salique Law of Nature" shows itself from the earliest period, even at birth, yet the differences between the sexes, especially in respect of external characters, occur in relation to the advent of reproductive possibilities.

From the commencement of this epoch until the end of maturity and the commencement of decline, the changes are so slight as to be almost imperceptible; but in the fifth decennium, in most persons of either sex, alterations both in structure and function become obvious. The general outcome of these changes may be stated in broad terms as a tendency on the part of both sexes towards each other; in other words, there is an approximation in each to a common type. It cannot be doubted that the divergences from such a common type during adolescence, and the return towards it during senescence, are determined by the functional activity of the reproductive glands; the recent work of Geddes and Marshall, although on different lines, gives clear evidence of this fact.

As old age advances, along with a gradual weakening of the muscular and nervous apparatus, there are at once

external and internal changes of the most interesting kind, and the metabolic activity of the body, which in youth not only balanced the daily waste, but added new material, and in adult life was sufficient to meet the demands with ease, becomes so impaired as to be unable to sustain the frame entirely. It is probable that every tissue in the body participates in these retrogressive metamorphoses, but there can be no doubt that the glands, heart, and vessels play the most important part. In the shrinking of the skin, the loss of its appendages, the tendency to calcareous and fatty degenerations, we see the effects of such changes, and about the tenth lustrum certain degrees of a myxoedematous tendency are extremely common. From this point the changes follow with increasing rapidity, until there ensues the final phase, so beautifully decribed by the Hebrew preacher and the Roman poet.

How growth, equilibrium, and decline are related to the circulatory, glandular, and nervous systems, some attempt at explanation will, in the following remarks, be made. The disturbances of the normal processes by the incidence of disease, whereby new chemical and biological problems are involved, will also receive our consideration.

Let me carry you now in thought, before entering upon the glandular mechanism, to some examples of the wonderful nervous influences which preside over the heart and vessels, linking them up with the rest of the body. The whole life of an animal, according to Starling, "may be looked upon as a series of reflex actions." Nowhere is this more obvious than in the relations existing between the nervous and the circulatory apparatus. Of this fact a few simple illustrations may be cited. The idea of profound disorders of circulatory relations through vasomotor disturbances has been gradually growing up since the discovery of the nervous connexions controlling the circulation. The observations of Landois on the reflex origin of anginous pain, and of Nothnagel on its connexion with vasomotor contraction, as well as the more recent work of Pal on vascular crises, furnish sufficient evidence of this proposition. The receptive field, as Sherrington shows, presents a remarkable contrast between the afferent tracts of the somatic and splanchnic realms; there is a wonderful richness in receptors of the former, or exteroceptive, as compared with the remarkable poverty of the latter, or interoceptive field. Mackenzie and Head have taught us how splanchnic impulses reaching the receptive and perceptive centres are referred by them, as the result of their development, to the somatic area. Nowhere is this truth more clearly manifested than in the various degrees of cardiac pain.

Since the early researches of our countryman, Lower, into the nature and cause of dropsy, the matter has been the preoccupation of many an anxious inquirer. One of the first steps in our modern knowledge of this important subject was the discovery by Ranvier that stasis in a limb is followed much more certainly and much more quickly by oedema if the nervous influence of the part be withdrawn. The close association of oedema and glossiness of the skin with neuritis is now universally known, and is of analogous nature. One of the most important contributions within recent years is that of Ninian Bruce, who has shown that the initial dilatation of the vessels in the early stages of inflammation depends upon the influence of the local nerves, and that it probably is of the nature of an axon reflex.

The heart and the vessels are subject to direct and reflex influences, now generally recognized as entering by every channel and flowing from every part of the body. The effects of emotion, such as joy and grief, pleasure and pain, rage and fear, are exerted directly through the action of the upper centres upon the lower. The majority of nervous influences, however, are reflex in their nature. Some of these are restricted in their localization—the receptor, the conductor, the effector consisting in the different parts of a single neurone. Such are obviously the alterations which take place in a local hyperaemia. Between a simple vasomotor reflex like this, on the one hand, and such profound and extensive disturbances as may give the widespread changes of angina pectoris, there is no abrupt transition—simply a complete chain of many links. Let me cite two recently described reflex arrangements. One of the most interesting of these reflex influences is that which we may hold as proved by Stewart in the case of aortic incompetence. The series of brilliant observations upon which he has based his theory has rendered it beyond doubt. Another admirable example of reflex influences recently studied is that suggested by Hill to explain the now generally recognized alteration in the relative arterial pressure of the arm and leg in the same disease. The arterial pressure is normally higher in the leg than in the arm, but the difference of pressure in health is very far exceeded by that which occurs in aortic regurgitation, and for this Hill has suggested that the arterioles of the leg undergo reflex contraction in order to preserve the balance of pressure in the centres at the base of the brain.

The instructive experiments of Cushing, carried out by introducing fluid into the cranial cavity, have taught us, in the most convincing manner, how intimate is the relation between cerebral compression and arterial pressure. Increased intracranial pressure in its advanced stages produces cerebral anaemia, and the centres in the medulla oblongata respond, as is necessary for their very existence, to the stimulus created by want of blood. The vasomotor centre raises the arterial pressure to overcome the compression of the centres, and at the same time the vagus centre is excited, so that the pulse-rate becomes reduced. It is not too much to say that by these valuable investigations Cushing has not only greatly widened our scientific knowledge, but has also profoundly modified our practical management of cerebral diseases. A passing reference may be permitted to the remarkable work of Crile on the state of the circulation, especially of the arterial pressure, in shock, from which we have learnt much. The recent investigations of Gray and Parsons have also assisted greatly in the elucidation of this subject.

Hitherto there has been a tendency to regard the vessels of the heart and the lungs as beyond the influence of the vasomotor system. Until lately, little experimental evidence has been obtained of any vasomotor mechanism in the pulmonary and coronary arteries. The recent investigations of Argyll Campbell, however, show that in the case of both systems the administration of pituitary extract by perfusion causes marked and prolonged constriction. This contraction is by the physiologists regarded as evidence in favour of vasomotor innervation of the arteries. More recently, Brodie and Cullis have proved beyond all possibility of doubt that the coronary arteries have both vaso-constrictor and vaso-dilator nerves, both being derived from the sympathetic system; the former are, as would be expected, the more powerful.

If we desire an instance in which to find an example of the intimate connexion between circulatory and glandular changes, we have not far to seek—it is always to our hand in Graves's disease. Just as in the case of glycosuria, we find hereditary, neurotic, and traumatic factors at work; its invariable association with glandular and circulatory changes, moreover, has long been known. In exophthalmic goitre there are symptoms connected with the digestive system due to catarrhal and hyperaemic conditions; of the glandular system in thyroid enlargement, and less frequent alterations in the thymus, the pituitary, the suprarenal, and the lymphatic glands, as well as the spleen; the blood often reveals the presence of anaemia and, less commonly, of cyanosis, while varying degrees and types of leucocytosis are not infrequently encountered; the circulation does not merely reveal the presence of increased frequency of pulse-rate, but of very varying degrees of arterial pressure, while the heart may manifest considerable dilatation, with or without hypertrophy; the renal conditions may be largely modified, not only by the existence of polyuria, but of albuminuria or of glycosuria; the integumentary system may be the seat of the most multiform rashes, and also of atrophic changes particularly affecting the cutaneous appendages; in the nervous system are to be found remarkable divergences from normal conditions—sensibility diminished, perverted, or increased, motility usually affected in the direction of irritable weakness, with exaggeration of the reflexes and responses, diminution of muscular energy, shown by weakness of the movements and tremulousness of the muscles and disturbances of the delicate processes of co-ordination especially as regards the eye, vasomotor and visceral changes, and, above all, profound alterations in the higher cerebral functions—such are the outstanding features of the affection. It will certainly be useful to look further

into certain matters connected with this interesting disease. A few instances of emotional causes may be given.

Debove tells us of a sailor, who fell into the sea at Marseilles, and thought he was about to be drowned. Almost before he was out of the water he began to show symptoms of Graves's disease. Cléret mentions an instance produced by the sudden and tragic death of a husband. In my own experience similar cases have not been infrequent. A lamplighter, after Saturday evening libations to one of his gods, in whose worship he showed zeal worthy of a better cause, did not wake up sufficiently early on a bright Sunday morning to be on his beat at the appointed hour. Living two miles from the scene of his labours, he ran the whole distance, and then proceeded, in the old fashioned method, to put his lamps out, by using a ladder for each. On the Monday morning he presented himself before me at hospital as an out-patient, and already symptoms of exophthalmic goitre were evident. A washerwoman, while standing at her tub, received a great fright by the roof of her house falling in upon her, and she entered my ward two or three days later with pronounced features of Graves's disease. Traumatic instances are frequent. Delorme, for example, tells us of two officers who on parade fell from their horses on to their heads, and shortly afterwards were victims of the disease. Many reflex causes for the affection have been found. Irritation connected with the mucous membrane of the digestive, respiratory, renal, and reproductive systems plays an undoubted part in causation; when these conditions are relieved, the affection is greatly ameliorated. Are we to regard such emotional traumatic and reflex cases as certainly due to purely nervous causes? By no means.

The facts showing the causal nexus between the thyroid gland and Graves's disease have, in recent years, greatly accumulated. There is not merely the almost constant association of thyroid enlargement with the disease, but there are the further facts that it sometimes follows simple bronchocele, and not infrequently precedes myxoedema. The experimental production of symptoms closely resembling, if not indeed absolutely identical with, Graves's disease in different mammals, and the aggravation of symptoms produced by the administration of thyroid extract, through misdirected zeal, help us greatly in understanding the connexion.

It has long been known that the thymus gland undergoes revivescence in Graves's disease, sometimes adding greatly to the danger of surgical intervention. Some new light has been thrown upon this subject by the investigations of Bircher. He implanted fresh thymus gland into five dogs, and found very definite results. Within twenty-four hours there was excitement and thirst; in three days there was distinct tachycardia; by the fifth day exophthalmos was present; within twenty-eight days there was obvious goitre.

Even the ardent supporter of the nervous origin of the disease admits that, although the structural lesion or the functional disturbance of the thyroid gland is not the cause of all the symptoms, it must be recognized that it plays an important part in the genesis of a great many of them. On the other hand, the keen adherent of a purely glandular cause for the disease is forced to admit that many of the symptoms of the disease, while primarily due to thyroid activity, must be brought about by the intervention of the sympathetic system.

The greatest outflow of the sympathetic fibres from the cord, as has been shown by the investigations of Gaskell and Langley, corresponds remarkably with the position of the greatest number of cells in the intermedio-lateral tract. The intermedio-lateral tract is found at three levels of the spinal cord—the upper cervical; the lower cervical, dorsal and upper lumbar; and the lower sacral region—one of the finest, as it was, alas! one of the latest, contributions made to neurology by Alexander Bruce, showed definite lesions in this tract. Changes in nervous structure have often been described before—neuritis of the cervical sympathetic by several observers; haemorrhage into the floor of the fourth ventricle by Cheadle and Hale White; bulbar haemorrhage with the formation of colloid bodies by Grainger Stewart and myself, as well as many obviously accidental lesions. But it is my pleasant duty to state clearly that the labours of Bruce have thrown a new light on the subject. In a case of the disease he found capillary haemorrhage in the lateral columns of the second, third, and fourth thoracic segments of the cord, with degeneration of the cells of the intermedio-lateral tract of these segments. Now, as Langley has shown, dilatation of the pupil, protrusion of the eyeball, and acceleration of the heart, are produced by stimulating the sympathetic roots of these segments.

The question of causation seems to many observers associated with the rapidity of development. Such instances as those mentioned above, in which the onset was dramatic in its suddenness, have often been considered as too swift in genesis for aught but a nervous cause. The celerity with which analogous symptoms were developed in dogs after the experiments of Bircher has given us new views on this matter.

In almost every respect the group of affections, for the explanation of which our thanks are due to the perspicacity of Gull, stands in direct antithesis to Graves's disease. In the various forms of myxoedema, no matter how produced, we have a group of diseases contrasting most markedly with exophthalmic goitre. While the digestion and the blood may show changes somewhat analogous to those referred to in Graves's disease, there is, on the whole, less tendency to leucocytosis and anaemia. The circulatory symptoms are entirely different, as diminution of the pulse-rate and elevation of the arterial pressure are usually found, and although the heart is often hypertrophic, it has less tendency towards dilatation. Polyuria, albuminuria, and glycosuria may be found in both; but the condition of the skin and subcutaneous textures is distinctly contrasted in the two affections, except in respect of some loss of hair, and even nails, in some cases of Graves's disease. The increased bulk of the subcutaneous tissues, and the singular alteration in consistence exhibited by them, are characteristic points of divergence, while the striking alteration in appearance, resulting in the stolid, squat aspect of myxoedema, as contrasted with the alert and slender appearance of Graves's disease, is most marked. When we enter upon a comparison of the nervous conditions in these two diseases we are quite as much impressed. Instead of the eager nature, and neurotic features of Graves's disease, we have an apathetic character with lethargic appearances in myxoedema.

Thanks to the labours of numerous inquirers, amongst whom Murray especially deserves our grateful acknowledgements, we now have a firm foundation of knowledge for our discussion of the disease. We recognize that in some way it is intimately associated with the condition of the thyroid gland; the exact relations will appear in the sequel. It is clearly understood that the myxoedematous symptoms are dependent upon deficient thyroid activity, which may be the result of arrest of development, occurrence of disease, or surgical adventure.

Ever since the description of acromegaly by Marie, this singular affection has had a remarkable fascination for my mind. The enlargement of the head and extremities—particularly of the lower part of the face, the hands, and the feet; the marvellous adaptations whereby the increased weight of the head is compensated for by a decided hypertrophy of the cervical vertebrae, and that of the lower jaw by a remarkable enlargement of the temporal fossa and ridge; the strange alterations in structure of the internal viscera, which have recently been so thoroughly studied by Geddes; and the striking alterations in the field of vision, even now occupying the attention of Evans and Traquair, have invested this disease with a halo of interest which, notwithstanding the uncouth appearance of the victim, may almost be termed that of romance. When we further consider the most interesting suggestion of the lamented Cunningham, now abundantly verified, that gigantism and acromegaly are the same disease, as it affects early years, before the union of the epiphyses and diaphyses, or adult life, when ossification is complete, we are led to regard the condition as remarkable. We may assume without fear of contradiction that acromegaly is connected with alterations, either structural or functional, in the pituitary body; the exact relation of these to the affection will be subsequently dealt with. In an address given by me to the Medical Society of London some years ago, the processes of adaptation and compensation shown by this interesting disease were fully dealt with; and in a previous address to the Medico-Chirurgical Society of Norwich, the speculation was thrown out that probably

the pituitary body would be found to exert an action upon other glands concerned in growth—further, that certain cells of the gland might be assumed to preside over particular parts of the body. In no other way does it seem to me possible to explain some of the extraordinary cases of local hypertrophy of extremities, which must be regarded as partial gigantism, or localized acromegaly.

The exact method by which the pituitary body regulates growth is still unknown. We shall in a few minutes review the relations between the structure and the function of the gland. In this place it must be allowed that we do not know how it acts. Whether it exerts its influence directly through the vessels, or by means of the vessels and their nerves, or through a power of stimulating or inhibiting other glands, is yet unknown. My own belief has always been that its main effect is a power of stimulating other glands to activity. In this way it seems possible to account for the great strength attendant upon the excessive growth commonly seen in the early phases and for the profound weakness invariably found in its later stages. The very interesting autobiographical sketch by Leonard Mark repeats the experiences, as regards this aspect of the disease, of every one of us who has ever seriously applied himself to the study of the disease.

Another most interesting affection, in which the glandular apparatus participates—may, indeed, be said to play a predominant part—is Addisonism. Ever since the discovery by Addison of the constant relations between pigmentation of the skin, weakness of the circulation, and disturbance of the digestion and morbid changes in the suprarenal glands, this condition has been universally recognized. It is, however, only in our own times that we have learnt in what respect the obvious symptoms are related to the glandular alterations. We now know that, when the usual fibro-caseous changes occur in the whole suprarenal gland, involving its medullary, as well as its cortical portion, there is a complete picture of Addison's disease, with discoloration, low arterial pressure, feeble heart impulse and weak cardiac sounds, digestive disorders, and profound asthenia, showing the three important groups of symptoms. But we are now sufficiently conversant with the affection to know that if there be an alteration of the cortical portion alone, there will be pigmentation only, with little or no change as regards the digestive, circulatory, or nervous systems. That, on the contrary, when the medullary portion is alone involved, there will be great reduction of arterial pressure, attended by loss of tonicity and contractility of the heart, the result of which is profound asthenia.

The opportunities afforded by our new research laboratory in connexion with the medical wards of the Royal Infirmary have enabled us to obtain a very considerable number of electro-cardiograms in exophthalmic goitre, myxoedema, acromegaly, and Addisonism. Some very interesting facts have thus been discovered, which will, in due course, be fully described. All that need be said in this connexion at present is that there appears to be excessive energy along with increased frequency in Graves's disease: diminished electro-motive force, along with reduced frequency, in myxoedema; very variable conditions, according to its stage, in acromegaly; and, from first to last, remarkable loss of energy in Addisonism. There is a natural tendency to scepticism as regards the possibility of measuring the electro-motive force of the heart; but we shall assuredly, before long, be in a position to do so, as we can accurately estimate the resistance of the tissues and approximately the electro-motive energy generated by the cardiac pulsations. It will not be long before this is done in every case.

These affections, each in its own way so full of interest, have been chosen as the main theme of our discussion, for the reason that they furnish excellent opportunities for inquiry into the mode of operation of normal and morbid processes. The application of our new knowledge must now be attempted.

All organs—in fact, all tissues—receive from the blood certain substances, and yield in return others. Every function of the body, even a simple muscular contraction, furnishes material which is restored to the blood; much of this, however, is of the nature of waste. The glands produce special substances, to which alone the name of secretion can be properly applied. All of these glands are now assumed to yield an internal secretion; many, in addition, furnish also an external secretion. As an illustration, let me remark that the external secretion of the pancreas has for a long time been recognized as one of the most potent factors in the primary digestion, but it is only recently that the conception has arisen of internal secretion by the same gland—an internal secretion which is absolutely essential for the maintenance of carbo-hydrate metabolism.

The production of prosecretin by the intestinal mucous glands, discovered by Bayliss and Starling, a substance which, in the presence of acid becomes secretin, and stimulates the flow, both of the pancreatic and biliary secretions, has been the first step in our knowledge of a new chapter of physiological chemistry. Secretin is obviously a substance endowed with the power of influencing tissues and organs other than those from which it is itself derived. As a stimulant or excitant it has received from Starling the name of "hormone." Many glands in the body have the power of producing hormones, and year by year our knowledge of the subject is becoming more extensive and more thorough. Amongst these organs three are intimately concerned with the circulation, and to them let me (even at the risk of being tedious) for a few minutes call your attention.

The thyroid gland has, since the time of Schiff, been recognized to be closely associated with the nutrition of the body. It has been known from experiment that removal of the thyroid gland, and, by clinical observation, that its atrophy, result in conditions strictly analogous: and Schiff, Murray, and other observers have shown that the results of removal could be obviated by grafting portions of the gland. The further discovery that administration, whether by skin or mouth, of thyroid gland or any of its preparations brings about recovery from such affections, has proved the effect of the gland to lie in the production of an internal secretion, as was undoubtedly upheld by Schiff. As the result of a series of experiments on feeding with thyroid, Fordyce is inclined to believe the effect of large doses to be partial inactivity of the gland, which seems to confirm the observations of Carlson, Jacobson, Thompson, Marine, and Leuhart.

The internal secretion of the suprarenal capsules has been more recently discovered. Oliver and Schäfer found that extracts of the suprarenal bodies produced extreme contraction of blood vessels, even in very small doses. The administration of a small amount of suprarenal extract injected into the blood vessels is followed by the production of a rise of arterial pressure, due especially to constriction of the arterioles. The effect is sometimes obscured by stimulation of the cardio-inhibitory centre in the medulla, leading the heart to beat less frequently by impulses passing down the inhibitory nerves. If the vagi have been previously cut, or their action suspended by atropine, the rise of blood pressure may be very great. The effect of such a dose lasts only a few minutes; it may, however, be repeated over and over again. It has been found that the effect is brought about directly by the action of the drug on the muscular tissue of the heart and arteries. There is also stimulation of unstriped muscular fibres in many different situations—the intestinal, vesical, and uterine, as well as of the dilator of the pupil, and of the muscles of the hairs, and of certain glands, for example, the submaxillary. In fact, the results of suprarenal injection closely resemble stimulation of the sympathetic nervous system. But it has been proved that the active substance does not exert its influence upon the sympathetic nervous system itself, but only on the tissues to which the sympathetic nerves are distributed: it produces equally strong effects if these tissues are previously deprived of their sympathetic supply. It is interesting in this connexion to recall that the cells of the suprarenal medulla are developed in the embryo from tissue common to the sympathetic ganglia and to themselves.

In addition to its action upon the arterioles, suprarenal extract increases the tone of the muscular system in general. In excessive doses it produces deleterious results—marked acceleration and augmentation of the heart beat, frequent and shallow respiration, fall of temperature, paralysis of the limbs, especially the posterior extremities, glycosuria, and eventually cessation of respiration—such are the effects of overdoses.

For many years the pituitary body has occupied much of my attention, especially in regard to acromegaly and

its congeners. The structure of the gland has been particularly studied by Andriezen and Herring. The earliest investigations to ascertain whether the pituitary body has any active functions were those of Oliver and Schäfer. They found that aqueous or saline extracts, which did not lose their activity even on boiling, produced rise of arterial pressure by effects upon the peripheral arteries, which are caused to contract strongly. They did not find any marked effect upon the rate of the heart, and they did not observe any difference in action by the different parts of the gland. Howell discovered that the anterior part of the gland has no physiological effect when injected into a vein, while the posterior produced the effects on the vessels described by Oliver and Schäfer. Howell further observed diminution of the rate of pulsation, and found that if a second dose be administered within a certain time after the first the effects are not repeated. Schäfer and Swale Vincent repeated Howell's observations, confirming them in almost every particular, but finding that the diminished frequency of the heart is not constant. Schäfer and Magnus shortly afterwards noticed as one of the results of intravenous injection a marked diuresis. Schäfer further, in association with Herring, discovered that an aqueous extract of the posterior part, including the pars intermedia, has a specific action both upon the vessels and cells of the kidney.

Herring showed that the anterior lobe of the pituitary body has the structure of a gland secreting into blood vessels, and that the posterior is composed of nervous tissue, surrounded and invaded by epithelial cells of the pars intermedia. He stated that this posterior lobe may furnish secretion into blood vessels, but holds that its arrangement and structure suggest a gland pouring its products into the infundibulum, and thence into the ventricles of the brain. He found that extracts of the anterior lobe have no immediate physiological action when injected into blood vessels; that extracts of the posterior lobe of birds and teleostean fishes have an action similar to those in mammals—that is, rise of pressure, expansion of kidney, and diuresis. Herring further set to work to discover the relation between the substance in the pituitary body and the colloid material of the thyroid gland which resembles it. He found that thyroidectomy produced no effect on the anterior lobe of the pituitary gland; but that, in the nervous part of the posterior lobe, and in the laminae forming the floor of the third ventricle, glandular, hyaline, and colloid bodies become very numerous. The significance of these changes is, as yet, unknown.

Halliburton, Candler, and Sikes fully confirmed the observations of Herring as regards the functions of the pituitary body, and were of opinion that the substances in the posterior lobe responsible for the effects are two in number—one pressor, and the other diuretic. As regards vicarious relationship between thyroid and pituitary, they carefully sought for iodine in the latter organ, with negative results. Simpson and Hunter have also attempted to investigate the possible vicarious relationship between the pituitary and thyroid glands, and, so far as the presence of iodine is conclusive, they discovered no trace of iodine in a large number of pituitary bodies, after thyroidectomy.

Argyll Campbell studied the effects of suprarenal and pituitary extract on the blood vessels. He found that suprarenal extract causes marked constriction of all the organs, with the exception of those of the heart and lungs. In the heart it produced slight constriction, and this was more evident in the case of the lungs. Pituitary extract contains at least two substances—one causing contraction, and the other relaxation. Each is capable of producing its characteristic effect on all the arteries, except the renal, where contraction is hardly ever obtained, the result being almost always relaxation.

The functions of the pituitary body formed the subject of the Croonian Lecture of the Royal Society, delivered three years ago by Schafer, in which, after reviewing the various facts which have been mentioned, he described the effects of extirpation—the result of which, up to the date of the lecture, was uniformly death within forty-eight hours. Death was not the direct result of the operation, but was caused apparently by the loss of pituitary secretion. Paulesco, as well as Reford and Cushing, have performed a large number of experiments of this kind. As the result of a long series of feeding operations, Schafer discovered that the use of the anterior lobe favours growth, and apparently the fact of grafting pituitary bodies is similar. He summed up the actions of the pituitary body as follows:

The pituitary body consists of three parts: (1) Anterior, formed of vascular glandular epithelium; (2) intermediate, formed of a less vascular epithelium secreting "colloid"; (3) posterior, consisting mainly of neuroglia, but invaded by the colloid, which passes through it into the infundibulum of the third ventricle. These parts differ from one another in function.

The function of the anterior part is probably related to growth of the skeletal tissues, including cartilage, bone, and connective tissue in general. The chief evidence in favour of this is derived from the fact that hypertrophy of the anterior part is associated with overgrowth of the skeleton and of the connective tissue in growing individuals, and of the connective tissues especially in individuals in whom growth has ceased.

The function of the intermediate part is to produce a "colloid" material which contains active principles or hormones acting upon the heart, blood vessels, and kidneys. Probably there are several such hormones acting upon blood vessels and kidneys independently, and also acting antagonistically, so that, according to circumstances, either a rise or fall of blood pressure, an increased or diminished secretion of urine, may be produced, and the effects on the kidney may be independent of those on the blood vessels. The hormones which appear to be most active are those which produce contraction of the blood vessels in general, with dilatation of the renal vessels and increased activity of renal cells, but there appear to be others which cause constriction of renal vessels and diminished activity of renal cells: the effects of these latter are generally less lasting. There is also usually an inhibitory effect produced on the heart.

Herring showed that in the elasmobranch fishes the secretion is poured directly into the blood vessels. There is no evidence of any direct secretion by the pituitary body into the brain ventricles. This is a most interesting fact, contrasting with the state of matters in the teleosteans.

In a further communication, Simpson and Hunter discovered that complete removal of the thyroid gland does not, even after five or six months, lead to the appearance of iodine in the pituitary body; this does not support the Rogowitsch theory, that in thyroid insufficiency the pituitary vicariously takes on its function.

In studying certain aspects of the mystery of life we are struck by an apparent lack of uniformity in the economy of Nature. At times there is a lavishness of structure and of function which to our present knowledge appears to be almost wasteful. This cannot be better exemplified than in the abundant profusion afforded by the essential reproductive processes of every living being, whether vegetable or animal. On the other hand, Nature appears to work in many directions by methods which indicate a distinct parsimony. This was well shown by Rolleston, who, in his Oxford Address, when applying Newton's statement: "Natura nihil agit frustra; et frustra fit per plura quod fieri potest per pauciora. Natura enim simplex est, et rerum causis superfluis non luxuriat"—pointed out that a law of parsimony may be found in many structures of the body. "She is prodigal in the variety of her adaptations. She is niggard in the invention of new structures." Rolleston suggested that where an organ can be diverted from one purpose and put to discharge another function, Nature will spare herself the expense of forming a new organ, and will adapt the old one to a new use; where she can employ a lowly organized structure, such as elastic tissue, she will spare herself the manufacture of a highly organized structure, such as muscle; where she can utilize matter that would otherwise be wholly refuse, Nature exemplifies this law by turning waste substances to useful account. In our study of glandular processes we find Nature lavish in her general provision, but parsimonious in particular instances at times.

Some of the changes in glandular activity, resulting in excess or defect of secretion, may be caused by processes which, in the light of our present knowledge, appear to be idiopathic; alterations brought about by particular diseases are much more easy to grasp, and a new chapter in pathology has recently been opened by certain discoveries regarding the effects of acute diseases on glandular tissue. Dubois showed that, after inoculations with

cultures of diphtheria and other diseases, marked changes were found in the suprarenal glands. Langlois found, after diphtheria inoculation, that the suprarenal glands were hyperaemic, with diminution of the pressor action. Luksch ascertained, after injection of diphtheria cultures, that the pressor action of extracts from the suprarenal glands was wholly, or almost wholly, absent. Elliot discovered that exhaustion of the suprarenal glands is demonstrated by absence of the yellow staining action with bichromate salts, which was found within thirty-six hours of diphtheria poisoning. Humphrey Rolleston suggested the employment of adrenalin to prevent heart failure in diphtheria, and Meyer also advocated its use in this disease.

James Ritchie and Ninian Bruce have found that many of the sudden deaths which occur in diphtheria and other acute infections are produced by profound changes in the suprarenal glands. After death from the experimental production of diphtheria by inoculation, there is great swelling and hyperaemia of the suprarenal glands, and the medullary portion becomes completely exhausted of adrenalin. The exhaustion is complete in the less acute cases, while in the more acute there is very great diminution in the amount of adrenalin, from a condition of relative suprarenal inadequacy. The presence or absence of adrenalin is easily shown by placing the fresh glands in a solution of potassium bichromate and formalin. If the medullary cells take on a yellow stain, they contain adrenalin; they do not stain at all if adrenalin is absent. No other tissue in the body stains in this way, and the structures which thus react are appropriately termed "chromaffine cells" on account of this peculiar property. This exhaustion of the suprarenal glands is not specific for diphtheria toxaemia; it can also be produced by pneumococcal, streptococcal, staphylococcal, and other toxaemia. It may even be produced by any condition which throws prolonged strain upon the suprarenal gland.

In the lower vertebrates the cortex and medulla of the suprarenal bodies are separate organs. In birds they are irregularly mingled; in mammals alone does the cortex surround the medulla. The origin of the cortex and the medulla is of real import. The development of the medulla is very interesting and important. A very good description of this was furnished by Kohn. At an early stage small masses of cells are to be found on each side of the vertebral column. These cells are all identical. As they increase in size they suddenly divide into two different types. The one type grows slowly and develops into the ganglion cells of the sympathetic ganglia; the other develops more quickly, and shows the yellow staining reaction with bichromate solutions—that is, it assumes the character of "chromaffine tissue cells." The chromaffine cells and the sympathetic ganglion cells may thus be regarded as twins. The greater mass of these chromaffine cells atrophy after birth, but a few remain (1) in the midst of the sympathetic ganglia; (2) as separate masses, the accessory suprarenal bodies; (3) the largest mass remains and forms the medulla of the suprarenal glands; those in the cervical region form a small glandular mass known as the "carotid body." This manner of development is of profound significance in the relations of the suprarenal body and the sympathetic system. In a forthcoming work by Ninian Bruce, from which he has allowed me to quote, many of these interesting points will be found fully described.

There can be no doubt that the effects produced upon the nutrition of the tissues must be through the intervention of the blood vessels, but the further question arises, Is this influence exerted indirectly through nerves, or directly through chemical agencies? We know that the cervical, stellate, superior and inferior mesenteric ganglia may all be removed without death, and it is therefore clear that the tone of the cardio-vascular system does not necessarily depend upon an intact connexion with the sympathetic nervous system. This is universally admitted, and it must be regarded as the basis of all discussions connected with the relationship of the nervous, glandular, and circulatory apparatus. On the other hand, removal of the suprarenal glands proves fatal in twenty-four hours, and it is perfectly clear that, while life is not incompatible with destruction of much of the nervous control of the circulation, the removal of the structures which produce the chemical pressor substance is not compatible with life. We therefore believe the tone of the cardio-vascular mechanism to be influenced by two factors—nervous and chemical. Removal of the nervous factor is not fatal; removal of the chemical is. We are thus able to realize the full significance of exhaustion of the suprarenal glands in diphtheria, and can see how acute heart failure must be the consequence.

The whole subject of glandular affections is rendered still more complex by certain cases in which they are associated together or pass one into another. Such an instance is to be found in the interesting patient described by Murray, labouring at once under acromegaly and exophthalmic goitre; an almost equally interesting case of my own, in which acromegaly was accompanied by myxoedematous features, belongs to the same category; other combinations of similar nature have been recorded and somewhat complicate the whole matter. We now know that it is not uncommon to find Graves's disease ending in myxoedema; this is comparatively easy to explain, since the increased functional activity of the thyroid gland leads in time to loss of function.

Such reflections bring us back to the point from which we started. Are we yet in a position to decide whether the messengers which carry the impulses to the vessels and the tissues are nervous or chemical? We have seen that certain vascular processes are only possible when the vasomotor nerves are intact, but this is qualified by the further fact referred to—that destruction of the great sympathetic ganglia does not of necessity involve complete loss of vascular tone. As the outcome of certain experiments, we know that the action of hormones is direct. Kenneth Mackenzie has proved that the well-marked galactagogue action obtained from the posterior lobe of the pituitary body, and a few other structures, is by means of the direct effect of hormones upon the mammary gland. That it is not through the direct influence of the nervous system is quite clear, and that the nervous influence upon mammary secretion, which is well recognized, is probably an indirect one, operating, not upon the gland through its nerves, but upon the organs which supply stimulants to the blood, is most probable.

The recent investigations of Ascoli and Legnani are of profound interest. These observers removed the pituitary gland from young puppies. In each case two puppies of the same size (as nearly as possible) were selected—one for experiment, the other for control. In many cases the puppies operated on died two or three days afterwards; but, in the few that survived, the results were remarkable. No further growth took place; the puppy remained a puppy. The size of the body, of the head, of the limbs, remained as at the time of the operation. Ossification and dentition were arrested; the bone not only ceased to grow, but showed defective nutrition; while the nourishment of the whole organism suffered, and the animal only gained in fat. Reproductive development was completely arrested, and changes were seen in the spleen, the thymus, the thyroid, and the suprarenals.

Our understanding of the functions of the pituitary gland have been further extended recently by an interesting observation by Rennie, who describes a case of infantilism which was under his observation during three years, and in which it was found that an endothelioma had invaded the pituitary body, destroying the gland, so that very little of its proper structure remained. The patient was sixteen years old—quite undeveloped, with effeminate voice and other features of infantilism. The arterial pressure seemed high, and there was some polyuria, with headache and vomiting. The diagnosis was of a chronic interstitial nephritis. Harvey Cushing has recorded cases of tumour compressing the pituitary gland, in which the symptoms were mainly renal, and chronic interstitial nephritis was suspected.

We have to admit that there are other possibilities of structural or functional alterations through the influence of chemical processes without the intervention of glandular activities. We are forced to allow such possibilities by the consideration that many glandular changes occur without apparent alteration of structure or function elsewhere. As an example of this let me mention that there are pituitary enlargements without acromegaly. Modifications in viscosity and alterations in osmosis cannot be neglected. It is indeed quite possible that growth is conditioned by

the inherent tendencies of the part, and regulated by the special activities of the cells. Some of them become too large in size for the nourishment of their central protoplasm, and therefore it undergoes necrotic changes. Various perversions of ossification prove this. Again, the supply of nourishment for the cell may be deficient in quantity or poor in quality; while, again, it may be too great in amount or too rich in character. On the other hand, there may be divergences from the normal processes of removal, elimination being too active or too sluggish. As yet we know but little of the effects of such changes, yet they have been recognized through histological investigation. The consideration of this subject has led Geddes to believe that many of the changes found in the long series, beginning with achondroplasia at the one end and terminating in gigantism at the other, are brought about by alterations in the nitrogen content of the blood—probably arising from hepatic eccentricities. He has been led to think that the enlargement of the pituitary body in acromegaly is probably to be regarded as a protective process whereby there is an attempt to regulate the disturbances of the tissue changes.

Simple arrest of development, whether antenatal or postnatal, may be sufficient to produce dwarfism; and, on the other hand, accelerated development may in both phases of existence be the first impetus towards gigantism. Whether such effects are due to an inherent tendency implanted on the tissues, directly or indirectly through the glandular or nervous system, no man can yet say.

At any period of life normal growth and decline may be interfered with by agencies either from without or from within. Alterations in the amount of nutriment; changes in powers of assimilation and elimination; the effects of microbes and toxins—all of these require our most careful consideration. The relative importance to be attributed to the different factors in maintaining the equilibration of the tissue processes is necessarily a subject still in its infancy, but none the less meriting our thoughts.

The most interesting facts ascertained some years ago by Dixon as to the effects upon the circulation of extracts from the heart muscle in various conditions of rest and fatigue show how very powerful are the chemical influences at work in the regulation of function.

When we consider some of the arrangements by which the sympathetic system is linked up with the cerebro-spinal axis we can understand how profoundly the central nervous system may be affected by impulses from the periphery and how reciprocal influences are exerted. Let me mention that the grey rami communicantes appear from experimental work to be composed of fibres which take their origin in the vertebral ganglia of the sympathetic, and that these rami probably carry vasomotor impulses to the blood vessels of the cord; we can grasp the profound significance of the connexion. The fibres of the grey rami seem, indeed, to be relay fibres on the outgoing vasomotor path, recurving backwards and carrying impulses to the vascular supply of the central nervous system. They are, therefore, recurrent, like the fibres described by Magendie as re-curving and re-entering the cord with the anterior roots in order to supply the membranes of the cord with sensibility. Langley and Sherrington consider the fibres of the grey rami entirely post-ganglionic—that is, efferent from sympathetic ganglia, but intended for distribution to the cord vessels.

A paper of the greatest interest, by Elliott, appeared last week. Elliott has found that profound nervous influences, such as fright, produce very definite changes in suprarenal secretion. He is led to believe that the suprarenal glands are played upon by the splanchnic nerves in emotional reflexes with delicate adjustment.

Possibly some of my hearers may be inclined to regard the subject of these remarks as purely academic, and of no practical importance in the world of clinical medicine. There could not be a greater mistake. Every observation that has been cited to-day is of the highest value in the treatment of disease; and although our therapeutic measures are still characterized by unavoidable crudeness of means, there can be no doubt that the views of to-day are much more characterized by singleness of aim and simplicity of method than in any previous epoch of the world's history. It is probable that the art of therapeutics will remain for long one of the most difficult branches of scientific investigation. It is complicated by so many cross currents that absolute certainty is difficult of attainment. Many of our views depend on apparent analogies and indirect arguments. Let us for one moment look at the question of the action of drugs on vessels. Can we be certain that they act on muscle fibres directly, or through nerve endings indirectly? Adrenalin is believed to act on nerve endings, because it only, or mainly, causes contraction of vessels with sympathetic innervation, because it acts almost everywhere else where there are sympathetic nerve ends, and because it no longer contracts vessels after large amounts of ergotoxin, while stimulation of the vasomotor constrictor nerves loses effect at the same time. Digitalis, again, is held to act on muscle because it contracts muscles quite irrespective of the character of the nerves going to them, because it acts on many forms of muscle in large doses, and because it continues to contract vessels after ergotoxin has been given in quantities sufficient to prevent any adrenalin action, or any effect from stimulation of the vaso-constrictor nerves. These questions involve what is, after all, simply a balance of probabilities, as is so clearly stated by Cushny.

The employment of thyroid extract in myxoedema is, thanks to the work of Mackenzie, Murray, and many of their successors, so thoroughly established as to require no remark. The influence of this potent substance upon the nutrition of the body must be explained by its action as a hormone. Whether it acts directly upon glands and tissues, or indirectly through the intervention of the nervous system, cannot at present be determined. Suffice it to say that it influences blood distribution and nutritive possibilities in the most powerful manner. From the practical point of view, you will perhaps permit me, while passing by its obvious uses in clear cases of myxoedema and cretinism, to mention the invaluable service which may be obtained from thyroid extract in several conditions which are apt to miss our attention. Minor degrees of thyroid inadequacy are found about the climacteric period, or shortly afterwards. They are often mistaken for cardiac troubles, as they are attended in many instances by breathlessness and palpitation, bradycardia, and (less frequently) tachycardia. Such symptoms, along with slight increase in bulk, are misleading. It has been my fortune to see very many patients answering to this description, and to find that, by the employment of extremely small doses of thyroid extract, complete disappearance of all the disturbances was attained.

In youth, again, it is common to find lack of growth in both sexes. Occasionally we find children, and, still more, youths, stunted in growth, but excellent in form. One such will never, so long as memory lasts, leave the upper surface of my cerebral palimpsest. The son of one of my medical friends was, in his 18th year, 1 in. below 5 ft. in height. He had set his whole mind upon entering Woolwich, for which his one and only chance was just about six months ahead. The family turned to me in deep distress, as they felt that to obtain a growth of 4 in. in six months would be as great a feat as the addition of the proverbial cubit to the stature. By the employment of thyroid extract the youth grew 7 in. in six months, and, as he obtained one of the highest places in the entrance examination for Woolwich, it was obvious that his cerebral functions had been in nowise disturbed by the treatment. Several instances of the same sort—not, however, quite so dramatic—have been under my care; to be quite frank, it must, nevertheless, be confessed that, in some of these boys and girls, even thyroid treatment absolutely fails to produce the desired effect.

Another class of patient in whom we find thyroid extract invaluable consists in children and youths who manifest mild myxoedematous features—they are not for a moment, however, to be regarded as cretinoid. In many of these young people, along with satisfactory growth as regards height, there is rather too much corporeal bulk and rather too little cerebral energy. Under thyroid treatment they become more slender and the sluggishness of the intellectual processes entirely disappears. How these different conditions of hypothyroidism are brought about is often a complete mystery. The infections are in some cases responsible.

Ever since the observations of Oliver and Schäfer upon the suprarenal glands, their substance has been employed by me as the most important remedy in the treatment of

Graves's disease. Various mineral and vegetable substances have, in the past, been administered freely in this disease, and in more recent times the blood of dethyroidized goats has been largely used. This latter substance has in my hands, as in those of Murray, proved to be of about the same value as the *pulvis Olympicus* poured upon us by a racing car on a summer day. But in suprarenal extract we have an agent which may be stated fearlessly to have no rival in the management of this affection. Under its employment the rate of the pulse is reduced, the protrusion of the eyeballs disappears, the thyroid gland diminishes, the tremor, along with every other nervous symptom, vanishes, and the patient is restored to health in a way that we never see under any other method of treatment. No one who knows me will accuse me of aught but the most sympathetic attitude towards modern surgery; but this is one of the affections in which it is my duty solemnly to protest against the *furor operativus* which, in this condition, is in the overwhelming proportion of cases absolutely unjustifiable. It is surely far more scientific, as it is certainly much more successful, to trust to the chemical messenger, or hormone, which has the power of regulating the glandular activity responsible for so much of the clinical picture in Graves's disease, than to risk doubtful surgical adventures.

As to the treatment of acromegaly, we are still on the threshold of inquiry. In some early cases the use of pituitary substance has, in my own hands, been remarkably beneficial; even in later stages, although the effects have not been so striking, much relief has been obtained from a number of the subjective symptoms, while the general condition has been kept stationary. There are, however, many cases—and these are especially of the myxoedematous type already mentioned—in which the employment of thyroid substance furnishes the only means of amelioration. In those instances in which there are features suggestive of a concurrent Graves's disease, suprarenal substance (sometimes along with pituitary gland) is of real use. The action of the pituitary substance upon the blood vessels has, by the way, since the researches of Oliver and Schäfer, helped us enormously in the treatment of certain conditions where the arterial pressure has a tendency to fall. In many instances of pneumonia and other acute diseases, apt to be accompanied by fatal fall of arterial pressure, the hormone obtained from the posterior lobe of the pituitary gland is of the greatest use.

Did time permit, it would be a matter of the highest interest to point out that, during the menopause, many—sometimes all—of the troublesome symptoms then experienced may be removed, or at least relieved, by ovarian substance, while analogous effects are obtained during the corresponding period in men by didymin.

The new conceptions of Addison's disease have, as has been already shown, greatly widened our knowledge of suprarenal functions. We recognize that, as the result of many factors, the suprarenal bodies may be deficient in function. It is certain that pyrexia, from the most varied causes, can abrogate the functions of these glands and bring about even fatal diminution of arterial pressure. In many of these conditions, thanks to the labours of those who have been specially referred to, we now recognize that the use of suprarenal substance, or of adrenalin, will bring about recovery, through supplying the necessary hormone, until the glands are able to resume their functions. In a very large number of affections, therefore, it is absolutely necessary to have recourse to such modern methods of treatment.

Of an excess of suprarenal secretion, we at present know little or nothing; but a suspicion, first publicly voiced by Russell, that over-action of the suprarenal bodies may be responsible for certain cases of arterial degeneration must be referred to, and, as the treatment of such cases by means of thyroid substance—largely antagonistic to suprarenal secretion—has been followed by excellent results, the suggestion appears to be well founded. The experimental production of arterial degeneration in rabbits by adrenalin is a matter requiring further research.

We sometimes speak of pharmacological diagnosis, meaning thereby that, knowing certain diseases to be amenable to particular remedies, we believe that our provisional conclusions are correct if the affections yield to the methods. But the therapeutic touchstone is sometimes misleading inasmuch as our remedies produce effects over a much wider area than we may be inclined to dream of. This in itself shows the uncertainty attending our pharmacological investigations. When we further consider that the agents we employ may act directly or indirectly, we are led to admit that we are only, after all, dealing with fragmentary knowledge or "broken lights."

We have to put to ourselves the important question, How do these powerful agents produce the changes we have traced? We have seen that they act upon many, perhaps all, tissues. Some probably act on the local processes of renewal and removal, and others by their effects on the muscular wall of the vessels; certain undoubtedly act on the tissues, not directly or even by modifying the vessels, but through the sympathetic system. It seems probable that they invoke nervous influences, consisting in waves of molecular disturbance, which bring about changes by liberation or inhibition. The recent work of Elliott, previously referred to, supports this view.

The results of these interesting advances must enhance our hopes of even more valuable additions to our knowledge, theoretical and practical, at a date not far distant. Their consideration opens a vista of infinite possibilities in the explanation of normal functions, the comprehension of morbid processes, and the management of diseased conditions. We are still groping after solid facts in the dusky twilight of the dawn, but we doubt not that the brighter radiance of the day will reveal much that is now hidden from our eyes. All that we can now know, all that we can now do, is the result of modern methods of investigation. Led by the whole trend of our education to set a high value on all honest work that explains the scientific problems and assists the practical treatment of disease, the results obtained by devotion to the three sister studies—physiology, pathology, and pharmacology—are to us of paramount importance. It is not given to us all in equal measure to contribute to the advance of knowledge: we, as clinicians, gladly avail ourselves of the labours of those devoted men who illuminate many vexed questions by their experimental researches.

We are like children on a beach of shifting sands; successive tides mould the form of the shore, gradually washing away, but as steadily building up, the coast of the future. So it is with ourselves: with the constant movement of thought, and the alternate advance and retreat of opinion, there are incessant changes. Contemplating these fluctuations, we are sometimes inclined to be impatient, and to wonder whether, after all, there is a real constructive movement.

But science, ever young, looks with the open eyes of Hope and Faith into the future; and those of us who can possess our souls in patience, trusting her methods, feel the assurance of greater conquests ere long. Recognizing that we live in an age of magnificent achievement, we shall be able, if there be any tendency to disappointment, to say:

> "Shall we not take the ebb, who had the flow?"

For some of us, the curfew of life will soon quiver upon the evening air. It is of the very essence of our being to experience a sense of unfulfilment; to feel that we have, at least in some degree, been unprofitable servants. But, if we have been faithful to our beliefs, and steadfast in our labours, we shall escape the bitter regret of wasted hours and unused opportunities, and we shall enjoy the satisfaction of knowing that, to the best of our powers, we have attempted to extend the knowledge, and increase the welfare, of mankind. Even if we may not witness, in our own time, the ends for which we have struggled, we shall have the consoling prospect that our successors will behold what we have longed to see. In the meantime, let us, in all our doings, walk along the path of safety, through accurate observation, and unprejudiced investigation, wielding fearlessly the spear of Ithuriel in defence of eternal truth.

It is announced by the Museum of Pennsylvania University that Mr. Algot Lange, author of *In the Amazon Jungle* (Putnam), has been chosen to lead the South American expedition which is to spend three years investigating the Indian tribes of the Amazon region and making collections which, it is expected, will be the best of their kind. The expedition will start at the beginning of September.

Address in Surgery.

DELIVERED AT THE

EIGHTIETH ANNUAL MEETING OF THE BRITISH MEDICAL ASSOCIATION,

BY

F. T. PAUL, Ch.M., F.R.C.S.,

CONSULTING SURGEON, LIVERPOOL ROYAL INFIRMARY.

PERSONAL EXPERIENCES IN THE SURGERY OF THE LARGE BOWEL.

When the Committee of the British Medical Association did me the honour to invite me to give the Address in Surgery at this meeting in Liverpool, I at once decided that it would come more within the scope of my powers to ask your kind attention to a record of some of my actual experiences rather than to attempt a more general address. Owing to the immense impetus surgery has received since new fields were opened to us by the beneficent influence of the late Lord Lister's work there is but little ground in the whole range of practical surgery which has not been recently covered by men in the forefront of our profession; but each surgeon evolves personal plans and details in his endeavour to attain success, and it is by comparing notes amongst those with good experience that we may best hope to advance our knowledge and raise the standard of our results. After carefully thinking over the various branches of surgery in which it has been my lot to meet with fairly numerous cases, I came to the conclusion that I would offer you my experiences in the surgery of the large bowel. This would be too wide a subject for a single address if one proposed to travel over the whole range of surgical troubles in this region; but by limiting my remarks to those procedures in which some advance has been made during recent years, and of which I have had a fair personal experience, I hope to keep this address within reasonable limits. This will restrict me to the consideration of cases in which the following operations have been employed:

1. Colotomy.
2. Short-circuiting.
3. Colectomy.
4. Excision of the rectum.

Cancer of the Bowel.

These operations are needed to meet very different pathological conditions, though most of them ultimately present the clinical feature of obstruction. One alone, however, cancer, accounts for more than all the rest put together, and therefore the greater part of my remarks will be concerned with cases of malignant disease—a disease which in the alimentary canal usually first threatens life by mechanically interfering with its functions. We need therefore to consider each case from the two sides, mechanical and pathological, and often it is necessary to direct our treatment to the relief of the mechanical obstruction before we can attempt a cure for the malignant growth. But whether we design to give relief only or to try and obtain a permanent cure, the selection of a particular operation is not merely a matter of clinical experience. The underlying malignancy and the pathological problems involved by it must not be lost sight of, and especially must we take into consideration the varying degrees of malignancy exhibited by cancerous growths in the bowel. On this rests the expectation of life in most of our patients when proper steps are taken to avoid a fatal issue by stenosis. We trust to our surgical instinct, combined with careful clinical investigation into the patient's constitutional condition, to guide us as to his fitness to bear an operation of a certain magnitude, but we must rely entirely on information obtained from pathological [illegible] the real value of the operation and frequently in deciding its limits. Of what use is it to subject a patient to a long and dangerous operation if his prospect of life on recovering from it is little better than he would have obtained by a simple colotomy? Or, again, why undertake an extensive excision of mesentery for the removal of glands which in all probability are not infected?

It is therefore of paramount importance that surgeons should familiarize themselves with the characters of the different kinds of cancer met with in various parts of the body, as so much depends upon the behaviour to be expected from each kind. This is especially true of intestinal cancer. In no other part of the body is there a greater variation in the degree of malignancy than in the bowel.

Spontaneous Cure of Cancer.

In the first place, I am quite convinced that cancer of the bowel may undergo spontaneous cure. It is much more easy to make a statement like this than to prove it, and I doubt if I can offer any really convincing proof. The following are the grounds on which the assertion rests:

1. For over thirty years I have been removing these growths and submitting them to personal microscopic investigation. I am therefore very familiar with their nature and appearance.

2. Many cases having the minute structure of cancer have not recurred, though known to have been removed with an insufficient margin of safety.

3. Malignant disease of the bowel is very rarely removed during the early stage, yet the percentage of cures is remarkably good.

4. The duration of life after colotomy for inoperable cancer of the bowel is often prolonged compared with that in other inoperable cancer cases, whilst a proportion of the cases seen, handled, and passed as malignant get well and the tumour disappears.

Last year I had five cases under observation at the same time, in all of which I had done a laparotomy during the previous seven years and given the opinion that the patients had inoperable cancer—one of the caecum, four of the iliac and pelvic colon. Yet all appeared to have recovered.

In bowel cancer the relative malignancy appears to depend more upon the seed than the soil. Equally good results may be obtained in young and well-nourished subjects as in older people; but fairly constant conditions are found to be associated with each different variety of growth. There are three chief kinds of carcinoma, and a few of sarcoma—the latter being rare, and always of malignant type.

Varieties of Cancer of the Bowel.

The three varieties of carcinoma are:

1. The large soft fungating "encephaloid" type.
2. The small hard "scirrhous" type.
3. The infiltrating "colloid" type.

All may be said to be primarily columnar-celled growths originating in the intestinal glands, and all ulcerate; but they follow different paths of evolution, and attain different degrees of malignancy which it is important to recognize.

The scirrhous variety is always unmistakable. It produces the hard ring stricture of the bowel, and is more common than colloid cancer, but much less frequent than the soft fungating type. This latter may usually be as easily distinguished from the colloid form of growth by the following characters: It is softer to the touch. There is a good deal of fungating growth within the bowel, but generally not much solid infiltration of the bowel wall. There are usually numerous large soft glands in the neighbouring mesentery, which are septic and not malignant. In colloid cancer, on the other hand, there is a hard-edged ulcer with no fungation. There is dense hard infiltration of the bowel wall, often attaining a thickness of from one to two inches, and giving it a solid feel. The glands, if infected, are not soft, but hard and glistening.

Misconceptions Regarding Cancer.

Misconceptions exist regarding the nature of these different tumours. In the first place, some seem to forget that "scirrhous" and "encephaloid" are merely terms of clinical or macroscopic significance, convenient when properly used, but otherwise very misleading. Almost any histological variety of cancer may take on either character without change of cell type. Even in the breast scirrhus does not imply acinous growth, as either round-celled acinous cancer or columnar-celled duct cancer may present this clinical feature. Some speak and write as

though the term "scirrhous" was equivalent to mammary cancer, and consequently that a scirrhous type of cancer in the bowel means a cancer histologically resembling breast cancer. Whereas no form of bowel cancer could be identical with a breast growth, any more than bowel and mammary tissue could be identical. They may and do present similar clinical characteristics, and a hard ring stricture of the colon resembles a breast scirrhus, or a thyroid scirrhus, or any other scirrhus in its hardness, in its tendency to cell degeneration, to slow but inveterate growth, to lymphatic infection, and difficulty in complete eradication; but histologically its affinity is to columnar-celled mucus-secreting epithelium, and not to the specific gland tissue of the breast.

The really important misconception, however, concerns the relative malignancy of the three varieties of cancer. Usually the big, fungating, encephaloid type of growth is regarded as the most malignant; the colloid as being intermediate, and the scirrhous, or ring stricture, as the most benign. This arrangement is entirely wrong and out of accord with clinical experience. The colloid is the most malignant type, the ring stricture comes next, and the fungating type is the best, it being one of the least malignant kinds of cancer met with in the body.



Fig. 1.

It is a clinical fact of considerable importance, to which I have often referred at our local medical society, that the up-growing forms of cancer are essentially less malignant than the down-growing, ulcerating, and shrinking types. Take as examples fungating epithelioma of a warty or cauliflower character on the tongue, larynx, or skin, and compare with much smaller but more infiltrating and ulcerating growths in the same positions. Surely our operation results have always been better, far better, in the former than the latter. Again, in breast cases, take the case of a soft encephaloid looking duct cancer, and compare with a small infiltrating, shrinking scirrhus. The duct cancer, notwithstanding its malignant appearance, will often yield an operation cure, whilst the little simple looking scirrhus turns up again in skin, glands, or internal organs. The duct cancer belongs to the up growing papillomatous class, whilst the scirrhus infiltrates, degenerates, and ulcerates. Papillomatous and villous growths are on the borderline between innocence and malignancy. On the skin they are for the most part quite innocent. In the mouth or larynx we regard them with more suspicion. In the bladder they show a still worse tendency, and in the bowel I doubt if they can be called innocent at all. The familiar rectal polypus is adenomatous or glandular, rather than warty; but there are true papillomata apart from the polypi, and it is these which should always be regarded with grave suspicion.

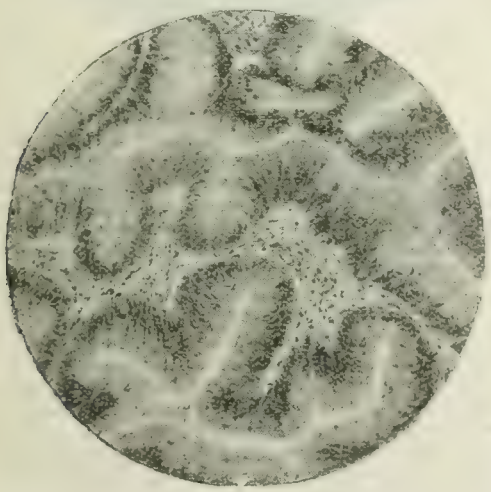


Fig. 2.

Histology of Bowel Cancer.

The large, soft, columnar-celled cancer of the bowel apparently usually begins as a down-growth from the Lieberkühn's follicles, or, rather, we assume that it does, since it shows that appearance at the growing margin of an old malignant ulcer, which may be quite a different matter. But it is certain that in some cases the first growth is an up-growth of papillomatous type, and occasionally this up-growth attains considerable dimensions before any truly malignant down-growth occurs. The latter always presents cells of a cancerous type from the first, but the former have an innocent appearance, and at most could only be regarded as precancerous. Fig. 1 shows the ordinary microscopical picture of columnar-celled cancer of the bowel, whilst Fig. 2 is photographed from a section of a large soft rectal growth, which was mainly villous in type; but it had already taken on infiltrating characters, and though removed it recurred and was fatal. An earlier operation would undoubtedly have been quite successful.

The soft columnar-celled growths attain a higher degree of evolution than the scirrhous or colloid kinds. The cells are long, regularly arranged, and evidently functional. Owing no doubt to the high development attained by them, this form of cancer degenerates slowly, and so produces a bulky growth, and at the same time one which shows but little tendency to disseminate. In the colon it is rather the exception than the rule to meet with infected glands, though they are constantly enlarged from septic absorption. In the rectum gland infection is more frequent, though the characters of the primary growth have little to distinguish them from similar tumours in the colon. The fungating form of cancer is not only the least malignant, but, fortunately, also the most common variety met with in the bowel.

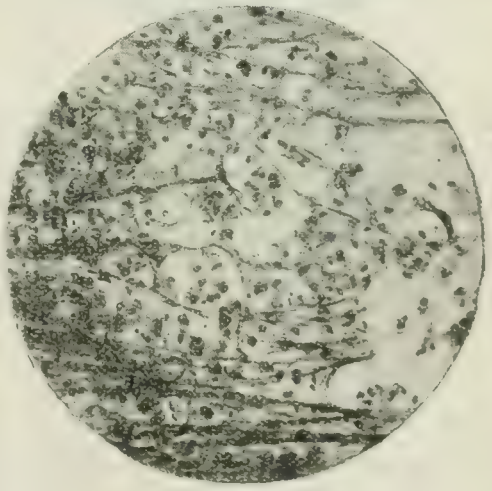


Fig. 3

We have no knowledge of either the colloid or scirrhous growths in villous form, and it may be safely assumed that they always originate as down-growths from the intestinal glands. In colloid cancer the columnar character of the cells is quickly lost, and the highly infiltrating nature of the growth is evident. The older parts undergo a complete colloid change, rendering the appearance almost structureless; but at the growing margin and in all the neighbouring lymph spaces large free cells are seen, rounded in outline, and filled with the characteristic

colloid substance. The lymphatic infection rapidly spreads to both vessels and glands, producing glistening networks and masses of colloid tissue. The peritoneum is also frequently invaded. A very wide distribution of colloid cancer may take place through the lymphatic system, even in distant organs, but I have never seen it carried by the blood vessels. The infiltrating nature of this type of growth is well shown in any section through the muscular coats of the bowel in the neighbourhood of a colloid ulcer (Fig. 3).

The scirrhous variety bears a closer resemblance to the ordinary type of bowel cancer. The stroma is more abundant and more fibrous. The cells are smaller. They frequently retain the columnar type, but are much less pronounced, and not rarely assume characters difficult to distinguish from spheroidal-celled growths. The cells degenerate before attaining the degree of glandular evolution characterizing the soft growths, thus explaining the small bulk of tumour growth in a ring stricture. But they possess marked infiltrating qualities, penetrating all the coats of the bowel, and dotting the peritoneum with shotty nodules. The lymph glands gradually become infected, and not rarely distant organs like the liver also. Ring strictures are not rapidly malignant; but they possess a slow and sure grip, and unfortunately recurrence is more the rule than the exception after excision.

Histologically, most ring strictures present a columnar-celled structure; but some, as in Fig. 4, almost at once

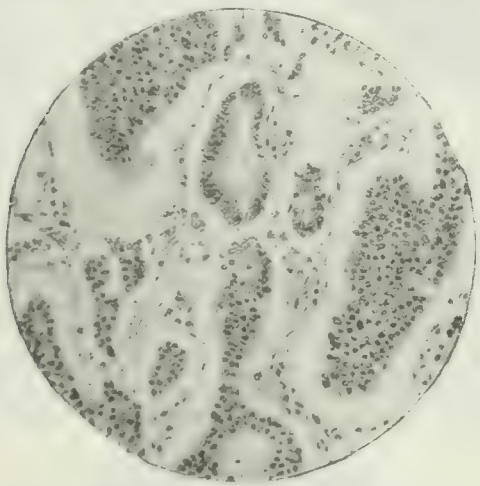


Fig. 4.

take on round-celled characters. In this specimen, though the general appearance is round-celled, the cells at the margin of the growth are seen to be directly replacing those of the glands of the mucous membrane, and in many deeper parts they show a tendency to form imperfect gland tubes again.

The most common sites for the fungating type of growth are the rectum and cæcum, though it often occurs in the sigmoid, and occasionally at any other part of the large bowel. Colloid cancer chiefly selects the rectum, and ring stricture the sigmoid, though neither are limited to these regions.

Epithelioma of the Rectum.

A short reference must be made to the presence of squamous-celled epithelioma in the rectum. This form of growth is often supposed only to occur at the anal margin or on the skin surface; but I have met with five or six cases in which it has originated in the rectum about two inches above the anus. All have occurred in women, and when seen early enough for the point to be decided, the growth has commenced on the anterior aspect of the bowel, but not in the vagina. In such cases the tumour no doubt [illegible] in an embryonic rest of squamous-celled epithelium in the mucous membrane of the lower gut. Epithelioma in this position follows the usual course, showing the same tendency to gland infection and local recurrence that it does in other parts of the body. Histologically, the individual cells are smaller and the "nest cells" less pronounced than in skin growths (see Fig. 5). Quite a contrast to the true anal epithelioma, in which the cells are large and horny.

Sarcoma of the Bowel.

Sarcoma of the large bowel in my practice has been very rare. Some years ago I had a case of small round-celled sarcoma of the rectum in a woman, aged 50, at the Royal Infirmary. It formed a spindle-shaped tumour of the middle third, stricturing the bowel without ulceration, and was recognizable as a sarcoma before microscopical examination. It was excised, but recurred, and the recurrence was fatal within a year. Recently, in private practice, I met with one of those rare examples of melanotic sarcoma of the rectum. It formed a smooth fungating tumour low down on the posterior wall in a male, aged 70. He was not a suitable subject for a radical operation, and did not live long, for the growth proved to be very malignant, and was rapidly and widely disseminated.

I do not refer to one or two cases of congenital malignant growth that I have seen in connexion with the rectum, as they have no bearing on the matter in hand.

Influence of Pathology on Surgery.

If a surgeon when operating takes the foregoing pathological details into consideration they will often influence him considerably in his decision as to the nature and extent of the operation. Thus, if the growth be of the fungating type, recognized by its softness, bulk, situation, character of gland infection, etc., he would on the one hand feel justified in removing the tumour without necessarily interfering with any tissue much beyond the visibly

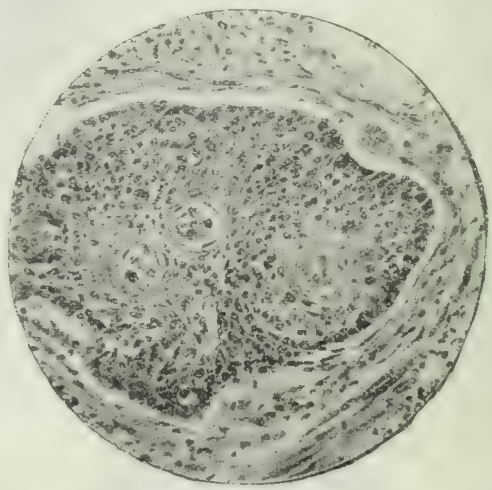


Fig. 5.

affected area; or, on the other hand, if the risk to life seemed too great to allow of this being done, he would be encouraged to hope for a reasonably long period of relief by short-circuiting or colotomy. If the tumour prove to be massive and solid, and especially if there be evident glistening gland or peritoneal infection, or if the growth be in the rectum and can be felt as an abrupt hard-edged ulcer without fungation, then the case is one of colloid cancer, and the outlook would be recognized as discouraging. When a wide and thorough removal appeared warranted it might be undertaken; but as the prospect is never good in colloid cancer, either for excision or temporary measures, less risks to life should be accepted. In the case of ring strictures, always easily recognizable, the indication is to excise more widely than one used to think necessary, and to remember that it is in this type of growth we have the best reasons for following up the path of lymphatic infection.

These rules for my guidance have come to me gradually as the result of practical experience. The first case in which my eyes were opened to the true nature of the large, soft glands so frequently seen in association with fungating cancer of the bowel occurred about twelve years ago. I had removed the cæcum for a growth of this type from a gentleman aged 37, and knowing that I had left several enlarged glands behind gave a bad prognosis. A year later he was so well that I was persuaded to try and complete the cure by removing anything that might have grown since. On reopening the abdomen, all the glands were found to have disappeared. The patient is still living and free from recurrence. This case occurred before those

included in the table. Of course a systematic examination of the glands would have at once afforded the information required, and when one recalls that this is barely twelve years ago, one is struck with the changes and facilities which have come about since. There were no Clinical Research Associations then, and I had to cut all my own sections because I could not get them done to my satisfaction elsewhere. It too frequently happened that though I would cut a section of the primary growth to determine its nature, I would judge the glands on their naked-eye features. After this Dr. Ernest Glynn, now our professor in pathology, undertook to investigate this type of gland for me. He soon showed that however large they might be, the increase in size was very rarely due to secondary growth, but was owing to microbic infection derived from the foul ulcer. In the ring stricture exactly the reverse holds good; microbic infection is slight and unnoticeable, but cancerous deposits are frequent, even though the glands may be very small. In colloid cancer as met in the bowel the glands seem to be almost constantly infected with the growth.

Clinical Features.

Having dealt with the influence of pathology in guiding us as to the nature and extent of an operation undertaken for the cure or relief of malignant disease of the bowel, I must next say a few words regarding the clinical details which bear upon the same point.

The first great line of demarcation in the clinical arrangement of these cases is the presence or absence of complete obstruction at the time they come under a surgeon's observation. In all my earlier experiences, say from 1878 to 1890 or later, complete obstruction with faecal vomiting and meteorism were regarded as necessary preliminaries to an application for surgical aid, and one soon found that any attempt to relieve the obstruction which did not provide for an immediate external escape of the locked-up contents of the bowel was doomed to failure. So constantly fatal were all operations for intestinal obstruction in those days through delay, that one thought very little of the objections to an artificial anus. It was a great event to save life at any cost. Nor should any such feeling of objection encourage us now to risk life for the sake of at once accomplishing a neat and clean surgical procedure. Even short-circuiting seems often to fail when colotomy is at once successful, and I feel sure that whenever there is complete obstruction in the colon a preliminary colotomy is by far the safest course in all those cases in which any form of internal strangulation can be excluded. The one class of case in which I should always wish to make an exception whenever possible is when the obstruction is actually at the ileo-caecal valve, and it is necessary to open the small bowel. There are such decided objections to a faecal fistula connected with the small intestine, and usually such favourable prospects for short-circuiting in this situation, that the additional immediate risk may be accepted unless paresis and collapse have already supervened, when an artificial anus is imperative.

Recognition of Cancer of the Bowel.

Unfortunately we are still without means for recognizing cancer of the bowel in its really early stages. In fact, it sets up no symptoms at this period of its growth which would lead a patient to consult his doctor, except when low down in the rectum. Here it excites irritability, and attracts attention by the presence of blood and mucus, and so often allows an early diagnosis; but higher up we have almost invariably to wait until the growth has begun to impede the passage of faeces before the patient is sufficiently alarmed to seek advice. Large ulcers without marked obstruction are chiefly characterized by intestinal toxaemia, with elevation of temperature, flatulent dyspepsia, loss of flesh, irregular colic with constipation or diarrhoea and mucus and blood in the motions—visible when the growth is low down, occult when higher up. A tumour may frequently be felt. The ring stricture usually causes less disturbance to the general health, but more colic and more obstruction.

An *x*-ray screen view of the behaviour of a bismuth meal is useful if its limitations are recognized. It may inform us as to the site and the amount of constriction, though in regard to the latter atony or tonicity of the bowel must be taken into consideration. In no circumstances can it indicate either the extent or the malignancy of the growth, nor can the ready passage of a bismuth meal be regarded as a contraindication to operation. If the disease is within the reach of the sigmoidoscope this instrument may be of considerable assistance in the diagnosis of growths situated in the pelvic colon, where they frequently escape touch when examined either by the rectum or the abdomen.

When complete obstruction occurs, the disease is most frequently situated in the pelvic or iliac colon, but tight strictures are possible in all parts of the large bowel, even in the caecum. The sudden onset of the final attack of obstruction is not due to any increase in the stricture, but to blockage by some indigestible substance which has been swallowed, and it is remarkable how many patients deny previous symptoms of chronic obstruction. I think that some colic and irregularity must always precede a constriction that can be plugged by an orange pip, but it is not always observed, and I have several times operated upon patients, particularly of the hospital class, who have denied all but the slightest symptoms, though I have found marked hypertrophy of the bowel above the stricture. Much depends upon the natural habit of bowels. Those with a tonic habit get diarrhoea as a result of incomplete obstruction, whilst the atonic type suffer from increased constipation, which they accept as a variation of their normal condition. In the former the site of the stricture is usually readily discovered, as peristalsis is so easily set up in the irritable hypertrophied bowel, and can be traced up to the growth.

Complete obstruction in the lower regions of the alimentary canal is soon accompanied by meteorism. When this occurs, the parts most easy to recognize are the rounded mass of the caecum, the rope-like coils of small bowel, and sometimes the enormous distension of a twisted sigmoid. If the site of an obstruction is not rendered apparent by other means, the behaviour of an enema may give useful information. When it is in the sigmoid region the bowel is irritable, and rarely tolerates more than half a pint, which is rapidly returned. When higher up much more may be injected and retained.

Colotomy for Obstruction.

If the patient when seen is completely obstructed, the abdomen distended, and the general condition bad, it is clear that the simplest form of relief is the most likely to be successful. In such a case abdominal exploration is easily fatal, and a colotomy may be just as easily successful. I have very rarely gone wrong in doing a colotomy under such circumstances. The most serious failure was in not recognizing a twist of the sigmoid in a case which occurred several years ago. I have now had five of these cases. This man, and a boy of 14, died without relief. In the other three—one man and two women—I excised the bowel, and they all recovered. Cases of volvulus of the sigmoid usually give an old history of very difficult constipation, with attacks of partial or complete obstruction, from which they have spontaneously recovered. The final attack is sudden in its onset, accompanied by severe pain, rapid distension, often attaining unusual dimensions, and if not soon relieved dangerous symptoms supervene, due to gangrene of the bowel. The higher up and the more extensive the twist the more rapid and marked the collapse. Age, condition, and history will often distinguish the case from one of malignant stricture; but whenever there remains doubt as to the possibility of internal strangulation being mistaken for cancer exploration is, of course, essential. But in all cases of complete obstruction of the large bowel, whether diagnosed by exploration or otherwise, and in which strangulation is absent, I advise treatment by colotomy in the first instance, in preference to an internal operation. It is immensely less dangerous, and it distinctly lessens the risks of the latter when undertaken after a suitable interval. The only drawback to a colotomy under such circumstances is the increased time occupied before the whole proceeding can be completed, and the necessity for two, or perhaps three, operations in place of one; but since the one would very often be fatal, and the two or three very rarely so, our patients would infinitely prefer the latter course if they understood the whole circumstance.

Having decided upon a colotomy, where should the bowel be opened? I used to say the lower the opening the better, and for a permanent operation this is generally true. But we are discussing a temporary proceeding. The patient is distended, very ill, perhaps old. Probably we do not know exactly where the stricture is except that it is below the caecum, and anyway, we hope that later on we shall be able to open a flat abdomen and comparatively easily remove the obstruction. Always, then, I think, we should decide on a right lumbar operation. It is safe, satisfactory, and out of the way of the future abdominal section. I have now carried out this procedure on many occasions in private as well as hospital practice, and the more experience I have of it the more favourably it appeals to me.

The Operation of Colotomy.

Colotomy was a popular operation when I joined the ranks of surgery. This was before Reeves revived Littré's iliac operation, so that which was done was always Amussat's left or right transverse lumbar operation. Very rarely indeed a Littré might be attempted in cases of imperforate anus. When it was, it was almost always fatal. In 1882, four years after I became a hospital surgeon, Mr. H. A. Reeves, of the London Hospital, advocated a return to the original iliac operation for adults. His view gained support, and after Mr. Harrison Cripps's carefully planned operation was published in 1889, lumbar colotomy rapidly lost favour, and soon apparently passed almost entirely out of notice. In 1890 I recommended the use of the glass intestinal drainage tube as an adjunct to iliac colotomy, and for many years used it in this connexion. Fifteen years ago about 85 per cent. of my colotomies were anterior: but since then I have made more and more use of the lumbar operation, particularly on the right side.

Of all the possible sites which may be selected for opening the colon there are only two of any great practical value, left iliac and right lumbar. The left lumbar operation has its uses, though they are not great, and transverse colotomy may occasionally be desirable. Caecostomy is always an abomination. It is bad from every point of view, except that sometimes it may be said to be absolutely necessary. There is nothing to be said specially against transverse colotomy, but the right lumbar operation gives equal relief, and does not complicate a subsequent abdominal section. Whenever a colotomy is expected to be permanent, and the seat of the obstruction permits, the left iliac operation should be selected. This operation is *per se* free from danger, and yields the best results obtainable. When the patient is very old and exhausted, and in the late stages of obstruction, a lumbar operation, in my judgement, when done with a small incision, is less dangerous than an anterior operation. If such a patient dies, death usually results, not from the operation, but from the continued collapse consequent upon obstruction: but when the operation itself is fatal, death occurs about five days later, owing to failure of the union between the bowel and the parietes. Such failure does not seriously affect an extraperitoneal operation, and hence the lumbar operation has this added safety in old and exhausted subjects. This is almost the only advantage in retaining the left lumbar colotomy. Transverse colotomy, as just stated, is practically unnecessary and very rarely desirable. Right lumbar colotomy, on the other hand, has a wide field for useful application as a means for affording temporary relief in cases of complete obstruction of the colon below the caecum, and as a valuable method of treating certain cases of inflammation and ulceration of the colon.

As regards the technique of these operations, the simpler they are made the better. As in gastro-enterostomy our plates, buttons, and bobbins served to teach us how to do a plain suturing operation properly, so in colotomy one knows now that all we need is to plan and suture well, and the result will be the best. For the past five years or more I have used no mechanical appliance for iliac colotomy. A small oblique incision, from 1½ in. to 2 in. long, is made outside the rectus muscle over the iliac colon. The bowel is picked up and passed along until the highest part available is reached. A small loop is then drawn out of the wound, grasped with Kocher's forceps, and kept in position by an assistant whilst the surgeon fixes it with a continuous Lembert suture of fine green sulpho-chromic gut to the parietal peritoneum and deep aponeurosis (Fig. 6). Having done this, the convexity of the loop is cut off with scissors little by little, suturing the bowel as it is cut to the skin with a haemostatic



Fig. 6.—Colotomy. Deep suture.

buttonhole stitch, still using the green gut (Fig. 7). In this way the wound is contracted so as to provide an opening not exceeding 1 in. to 1¼ in. Too much of the convexity of the bowel should not be cut away. A complete spur with a double-barrelled opening is not desirable.

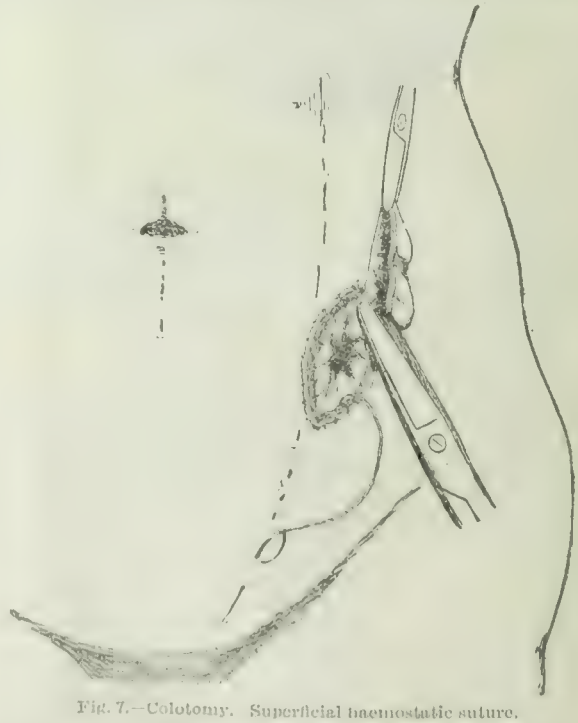


Fig. 7.—Colotomy. Superficial haemostatic suture.

This gives a moist, patulous orifice, with a liability to prolapse, one in which faecal discharges are difficult to control. There should be only one orifice, large enough to comfortably admit a finger, and with a tendency to contract rather than to evert if the patient is to experience comfort with it. Such an artificial anus is incompatible

with a complete spur at first; but as time goes on the spur improves naturally by the wasting of the distal part, and in time becomes perfect.

For many years I have recommended a simple mushroom-shaped aluminium plug to be used in conjunction with iliac colotomy (Fig. 8). It is retained in position by



Fig. 8.

a pad of wool and a detached belt. This still appears to me to be the most efficient form of support and the most useful help towards control, and my patients always use it.

Right lumbar colotomy is now shorn of its terrors by greater familiarity with abdominal operations. When the colon is distended it is easily found on either side. When not distended the peritoneal cavity may, if necessary, be opened for exploration and closed again with but slight detriment to the patient. I always suture the bowel to the skin, as in iliac colotomy, and very rarely attempt to make a spur, since the lumbar operation is almost invariably a temporary measure to be done away with as soon as it safely can be.

The disability resulting from an iliac colotomy is not nearly so great as is so often assumed. If it were, the operation would be robbed of three-fourths of its value. When a satisfactory surgical result has been obtained it only needs a little pluck and a desire to make the best of a disadvantage for any ordinary patient to continue to lead a useful life. I have known a doctor to continue the full work of a general practitioner for years, a ship steward to follow his avocation on a big Cunarder, and a lady with this disability for life to continue to make a charming hostess, and to be the brightest member of her family. With these and many similar examples within my experience I cannot sympathize with the weak-spirited individual who sinks under the misfortune of such a personal discomfort.

As I have already said, the operation of colotomy is practically free from danger, though the conditions for which it has to be undertaken often seriously threaten life, and occasion some *post hoc* fatalities. The only deaths I have met with for some years have been due to obstruction, and not to operation. In some of these fatal cases, I think, perforation, which is not very rare in the late stages of malignant stricture, may have been present. Especially in the old and feeble the paresis, meteorism, and vomiting, really due to perforation, are sometimes accredited to obstruction, and a futile colotomy undertaken. There ought to be no mortality from colotomy in the case of patients in a general condition of health suitable for the operation, and under 65 years of age.

Results of Colotomy.

I have gathered together in a small table such results as appear to me to be interesting and important in those of my cases of colotomy which have been done during the last ten years in private practice. I should have preferred to include the much larger number of hospital patients undertaken during the same years, about three to one, but found it impossible to follow them up satisfactorily. These fairly reflect my experience, and I consider that a small group of cases in which the subsequent history of all is known is far more reliable than a large group in which there must of necessity be many gaps.

As the table shows, I have done colotomy upon 68 patients in private practice during the past ten years. In 44 of these there was no obstruction, or it was chronic in type, and all recovered. In 24 acute obstruction was present, and 9 deaths occurred. These were mostly in old people with vomiting (often faecal), meteorism, and collapse. It is interesting to note that 18 of the cases of complete obstruction were met with during the first period of five years, and accounted for 7 of the 9 deaths; whilst in the remaining period there were only 6 cases with 2 deaths, showing that practitioners are recognizing the importance of earlier surgical treatment. Other points of interest in the table are that right lumbar colotomy accounts for one-fourth of the total number, that cancer of the rectum was the primary trouble in half the cases, and that my statement as to the long duration of life after colotomy for cancer is borne out.

Colotomy.

All cases operated on in private practice, 1901 to 1911 -68 cases; 37 males, 31 females.

Mortality.—Acute obstruction, 24 cases, 9 deaths; without obstruction, 44 cases, no deaths.

1901–6: 33 cases; 18 obstruction, 7 deaths.

1907–11: 35 cases; 6 obstruction, 2 deaths.

Operation.—Iliac 48, right lumbar 17, transverse 2, caecostomy 1.

Disease.—Cancer of rectum 34, sigmoid 15, colon 4, prostate 1, uterus 1, inflammatory 4, cause unknown (chiefly malignant) 9.

Age of Cancer Cases.—Under 30, 1; 30–40, 4; 40–50, 8; 50–60, 23; 60–70, 20; 70–80, 8.

Life after Operation.—Non-malignant, 4: all living, 5, 6, 8, and 10 years. Malignant, 64; 10 living at 8 months, 16 months, 1½, 2¼, 2½, 3½, 4¼, 7¼, 10, 10 years. Malignant, since dead, 54: early, from obstruction, 9: from other causes, 3: recurrence under 1 year, 25: recurrence under 2 years, 8: recurrence under 3 years, 6: recurrence under 4 years, 2; recurrence under 10 years, 1.

Internal Operations.

I now propose to speak of the methods I use for dealing with the disease after the obstruction has been relieved for a sufficient time to enable the patient to bear the more serious internal operation. In a month such a case will usually be in good condition for this, and much on a par with one in whom the exploration is undertaken before obstruction has supervened. When explored the great majority of the cases prove to be cancer, a few are tuberculous disease, a few fibrous stricture, some from acute but more from chronic ulceration. The malignant growths are excised if possible, otherwise short-circuiting is the only available improvement upon colotomy. Tuberculous disease of the caecum may be excised, but the results are not satisfactory. I have only done it in hospital practice, and not at all recently. For tuberculous ulceration lower down in the colon and rectum when severe the best surgical treatment is colotomy. Fibrous strictures vary much in their extent and position, and excision, short-circuiting, or colotomy may be employed in accordance with the special conditions present in each case.

Short-Circuiting.

Short-circuiting for obstructions in the colon is a valuable operation, but as I have not yet carried out Mr. Arbuthnot Lane's views regarding the treatment for intestinal stasis, and as I always excise growths whenever possible, I probably do a smaller proportion of short-circuiting operations than many other surgeons. The technique employed is the same as for gastro-enterostomy—namely, clamps, an external suture of green catgut, and an internal haemostatic suture of the same. The apposition is usually lateral, and when the obstruction is at the ileo-caecal valve the ileum between the new orifice and the valve is puckered by a purse-string suture to direct the contents of the bowel through the new opening. In regard to this operation there are two points upon which it seems to me that emphasis ought to be laid. One is that in cases of obstruction in which paresis of the bowel is present short-circuiting may fail to relieve, while an external faecal fistula will be successful. In practice I have failed with the former, and a day later done the latter with a satisfactory result. I therefore do not recommend short-circuiting operations in the presence of any severe form of obstruction such as is likely to be fatal without immediate relief. The other point is that in my practice I have had the best success when I have cut out of circuit the smallest possible amount of bowel. I therefore usually

short-circuit just round the growth or other obstruction. In non-malignant cases the bowel appears to be quite normal afterwards, and in malignant cases the patients often enjoy a considerable period of comparative comfort.

Short-circuiting is a more pleasant operation for the patient than colotomy, and for this reason may replace it whenever it is feasible to do so; but the latter will always be necessary for inoperable rectal cancer, for dangerous obstruction, and for colitis, and some other ulcerative affections of the colon; so that the former really only comes under consideration in a small proportion of the whole number of cases. During the last ten years I have only short-circuited in twelve of my private patients, and the results are given in the table:

Short-Circuiting.

All cases operated on in private practice, 1901 to 1911—12 cases; 7 males, 5 females.
Mortality.—No deaths.
Operation.—Ileum to colon 8, colon to colon 4.
Disease.—Cancer 7, inflammatory 5.
Age.—2½ to 76 years.

Colectomy.

However good the results of short-circuiting or colotomy may be, we must always wish to excise a malignant tumour of the bowel whenever circumstances permit, and I propose now to deal with the operations planned for the removal of such growths, taking first those situated in the colon, and then those in the rectum.

The caecum and the sigmoid are the most favourable, and fortunately the most frequent, situations for malignant tumours of the colon. The caecal operation is certainly the more extensive of the two, and I used to prefer the sigmoid site, but on the whole I think the caecal cases have done the best, chiefly in the way of the cure being more permanent. A rather liberal interpretation may be placed upon the definition of an operable tumour. The structures about which we are anxious are the ureter and the iliac vessels; the glandular infection; attachment to the parietes and other portions of bowel; and secondary distribution in more distant parts. The ureter is very rarely actually involved, though it may appear that it would be likely to be. The same holds good with the iliac vessels. Attachment to parietal peritoneum, or to portions of small bowel, do not necessarily render the case either inoperable or incurable. Infection of glands has to be considered in the light of the observations made on that subject in the earlier part of this paper. Distant secondary infection, of course, negatives radical operation. Increasing experience has encouraged me to undertake the major operation in more cases of cancer of the colon, and in less cases of cancer of the rectum.

I did my first colectomy by the glass tube method just twenty years ago. At the time of publishing it[1] I narrated six other cases to show how this method had been led up to by previous unfavourable experiences with primary suture and buttons, which proved to be accompanied by a heavy mortality. Since 1892 I have adhered to the same technique, and with very good success. Only at one period, when I imagined I had become clever enough to obtain primary union, did I abandon the tubes and go back to suture. I did one case in this way at the Infirmary and one in private practice. Both died, the latter being the only fatal case in the table, and the former sharing this unenviable distinction with only one other patient. No doubt the time will come when a better method than bringing out the ends of the bowel and draining them by means of glass tubes will be invented; but I doubt if I shall ever again excise tumours of the colon in any other way, as I know this can be undertaken with a very low mortality. The operation is not a pleasant one for the patient, and the cure is delayed, but the final result is good, and after all, that is what should appeal most to us and to our patients.

Author's Operation.

Very shortly I will describe the original operation again. In most cases the tumour will have been located before it is undertaken. If not, a preliminary incision in the middle line below the umbilicus will be necessary, and usually this will not be suitable for the removal of the growth. One needs an incision about 6 in. long, conveniently placed over the position of the bowel to be excised. Having made this, and packed off the neighbouring viscera, the bowel is loosened from its attachment to the neighbouring parietes by an incision in the parietal peritoneum, especially in the caecal and sigmoid regions. By means of an aneurysm needle the mesenteric vessels are then ligatured on the proximal side as far as the character of the glands or size of the tumour indicate to be necessary, and they are clamped with compression forceps on the distal or bowel side. Upon cutting through the mesentery between the ligatures and the forceps, the fold of bowel, usually about a foot in length, is completely loosened, and now hangs out of the abdomen. The cut in the mesentery is sutured with catgut, and the two portions of bowel for about 4 in. beyond where they are to be cut across are also lightly sutured to each other, so that they lie together like the barrels of a gun. (Fig. 9.) This arrangement is carried out in order to render the subsequent clamping of the spur safe from risk of perforation. Next, two intestinal glass drainage tubes are ligatured into the bowel, one above and the other below the growth, and the affected part is cut away. The exposed mucous membrane round the tubes is cleansed and dried. The abdominal wound is sutured, and the ends of the silk ligatures round the tubes are passed through the skin to fix the

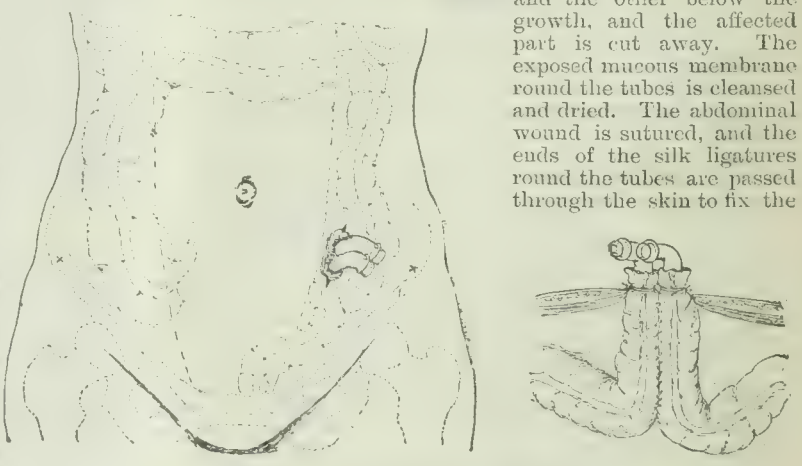


Fig. 9.—Colectomy. Author's operation. May, 1892.

latter securely. (Fig. 9.) Then the stumps of bowel are covered with xeroform powder, the distal tube is plugged with wool, and a thin rubber tube is attached to the proximal to carry off faecal matter. Done in this manner the operation is almost bloodless, and the shock inappreciable.

The tubes remain in for from five to ten days, and the wound takes from three to four weeks to clean up. Then a strong clamp of Dupuytren type is introduced and the long spur is clamped. This requires two days and the healing of the clamped edges will occupy a couple of weeks. Finally, the mucous membrane is separated from the skin, without opening the peritoneal cavity, and sutured with catgut; whilst the skin is brought together with deep mattress sutures of silver wire, which must be retained for some time as leakage with secondary union is perhaps more frequent than primary union. Silver wire is much to be preferred to any other substance for the deep skin sutures.

I have had the operation completed in the Infirmary in a month, but it is a mistake to rush the various stages, and I now always tell my patients it will take quite two months to complete the operation, and that it will be three months before they can expect to be fit for work again.

Mr. Arthur Edmunds, of the Great Northern Central Hospital, suggested an improvement in the technique of this operation as applied to children with intussusception, and my colleague Mr. Woolfenden tells me he has employed it with success. This encouraged me to make a trial of Mr. Edmunds's method in an adult when removing a malignant growth in the pelvic colon involving also a coil of small bowel. The plan is to clamp the bowel in conjunction with the use of the tubes at the first operation. For this purpose the tubes are made of metal and grooved to accommodate the blades of a spring clamp

which cuts through the spur during the first few days. When the tubes are removed the clamp comes away with them, and already there is a way for the faeces to pass along the alimentary canal. To judge from the one case in which I have tried it, I should say this method adds a little to the shock and subsequent toxaemia due to absorption from sloughing tissue, hence I am not prepared to recommend it simply to save time. But when one has to deal with the escape of excoriating liquid faecal matter on the skin surface, as in his cases, and as in excision of the caecum and attached ileum, there is a definitely good reason for its use, and I shall, as opportunity offers, test it in cases in which the small bowel has to be opened on the surface.

Results of Colectomy.

It might be assumed that bowel excised by bringing out the ends and restored by clamping the spur and suturing the opening without detaching it from its surface connexions would differ considerably from the normal and be subject to stricture. Yet this has never occurred in any of my cases, and I have not been called upon to do any further operation to improve the condition of the bowel. On the contrary, I once saw the bowel five years afterwards when operating for another trouble, and in this patient I could not have told that it had ever been touched at all. The entire sigmoid had been removed for gangrenous volvulus, and the ends brought out and clamped as described. On looking at the part, I found neither stricture nor adhesions, nor, indeed, anything to suggest that such an operation had been done. The patient was a young lady, 25 years of age. It may, I think, be safely assumed that no inconvenience will follow this operation when once the artificial anus has been satisfactorily closed.

The table of cases shows that I have undertaken colectomy on 18 private patients during the last ten years. Only one died—the patient in which I foolishly attempted primary suture, an otherwise favourable case of malignant growth in the transverse colon. The remaining 17 were done by the glass tube operation, and all recovered, though some of them were advanced in years. Among the most interesting points noted in the table is the long survival of patients who have been operated on for cancerous growths. Of the 17 cases, 3 were non-malignant, and 14 cancer. Of the latter, 8 are still living, and not known to have recurrence; 2 have died from apoplexy, and 4 have died from recurrent growth at two and a half, three and a half, three and a half, and seven years respectively. It would be difficult to find another group of cancer cases showing such a satisfactory result. I certainly could not match it in any other branch of my work. Beyond the ten years I know of several other cases living and well, but thought it undesirable to complicate the matter by reference to patients outside the period selected.

Colectomy.

All cases operated on in private practice, 1901 to 1911—18 cases; 6 males, 12 females.

Mortality.—1 death (primary suture), 17 recoveries (glass tube operation).

Situation.—Caecum 7, sigmoid 8 (3 volvulus), colon 3.

Age.—20-30, 2; 30-40, 2; 50-60, 8; 60-70, 5; 70-80, 1.

Life after Operation.—Non-malignant: All living 3, 9, and 10 years. Malignant: 8 living ½, 1½, 2½, 3, 3½, 6, 7½, 7½ years; died, recurrence 2½, 3½, 3½, 7 years; died, apoplexy ½, 2½ years.

Excision of Rectum.

There still remains the lowest portion of the large bowel to be dealt with, the rectum, and I do not propose to ask your attention now to any conditions of this part, except those which call for excision. One may sometimes attempt a resection of the rectum for other affections than malignant growths, but too rarely for such cases to have any influence upon our general method of operating. I have, indeed, excised syphilitic strictures, but it is long ago, and now it seems to me that such a serious operation as resection should be reserved for those cases in which the disease will prove fatal if not removed, the rest, if needing it, being treated by iliac colotomy. I have already expressed the view that a well-planned colotomy is not inconsistent with health and reasonable comfort, or with the pursuit of ordinary avocations when a little consideration is extended to the person who has had to suffer this misfortune. If this were more generally admitted, some lives—perhaps many—that are risked and lost would be saved, and many that struggle on to the end in misery would have some comfortable days in store for them. All cases of advanced cancer of the rectum, incurable fibrous stricture from syphilis or other cause, some recto-vesical fistulae, and some tuberculous and other ulcerations should be treated by colotomy.

A Preliminary Colotomy.

It is also sometimes desirable in conjunction with resection. This has not been at all a frequent practice with me, but I am inclined to think it might have been better if I had made it more frequent. Does a preliminary colotomy lessen the risk of excision? Yes, it does. I think this cannot be doubted, and if so one should give great weight to the fact in all the more serious cases. Amongst these I would certainly include the high resections in poor types of patient, especially males in whom the operation is more difficult and the bone is more frequently cut. I would also include all cases in which the double route operation is adopted, especially as a transverse section of the bowel gives a very good form of artificial anus. Not only does a preliminary colotomy lessen the risks of the operation, but it expedites healing, and I consider these good reasons should lead us to make more frequent use of it.

Restoration of the Rectum.

Another general point in which my experience does not coincide with that of most surgeons is regarding the value of retaining any portion of healthy bowel that may be situated below the disease. I have long come to the conclusion that an attempt to retain the anus with more or less of the lower end of the rectum is bad practice. It is more often a source of inefficiency and trouble than an advantage from the functional point of view, while the operator's anxiety to reconstruct a normal passage conduces to local recurrence by restraining his freedom in removing the growth. However carefully one adapts the parts the resulting anus is rarely better, and often not so good as one placed high up at the top portion of the wound beside the sacrum (Fig 10). In this position the bowel comes



Fig. 10.—Excision of rectum, completed.

to the surface with a sharp turn which I believe assists considerably in comfortable retention of the motions in the absence of an expulsive effort.

A third point in which all now agree is the value of retaining the bone. In my earlier cases with Kraske's incision the loss of bone support to the pelvic floor was seriously felt in the frequent occurrence of extensive prolapse. I designed a somewhat uncomfortable spring truss to obviate, or assist in obviating, this trouble, and had to use it in all high resections. Now that the bone is not sacrificed the truss has been given up, for prolapse never occurs when a good union has been obtained.

Excision in Women.

In women it is frequently necessary, and perhaps always desirable, to incise or remove part of the posterior wall of the vagina. This gives such free access to the interior of the pelvis that the posterior incision, as a rule, need not involve the bone at all, being carried up and terminated on the right side of the coccyx. In the male, one cannot

obtain room to excise more than three or four inches of bowel without cutting across the bone. When the disease is higher I continue the incision along the lower half of the right side of the sacrum, and then turn it across the bone at right angles, dividing the bone with long, sharp bone forceps. This permits the whole flap to be turned to the left, and gives good access to the upper portion of the rectum, though not quite so good as when the bone is excised. Bone forceps are to be preferred to the saw, as a smaller incision suffices, and altogether there is less risk of destroying the sources of nutrition to the flap. Rough edges are smoothed away with "nibbling" forceps, and usually a little bone has to be nibbled away from the top right hand corner to accommodate the sacral anus.

The Double Route Operation.

On the introduction of the double route operation I commenced to use it. My first four cases were female patients at the Royal Infirmary, and good subjects, though the growths were bad. They did well, and I was rather favourably impressed. The fifth was a gentleman, aged 51, of neurotic type, operated on in private practice. He died on the sixth day, having suffered first from shock and finally from sepsis. A mortality of 1 in 5 is, perhaps, not excessive for such a terrible clearance of the pelvis, but the first death pulled me up and led me to reconsider the position. On the whole it seemed to me that so extensive an operation was not justified by the circumstances in the average run of cases, though it might be occasionally employed with advantage. It so happens that I have not made use of this operation again since, but that does not mean that I have altogether abandoned it. It has been recommended with an admitted mortality of 30 per cent., which, in my judgement, is preposterous. No operation in the present day could survive such a mortality. But this is not necessary. With due care and proper selection of cases half that death-rate ought to cover our errors in judgement and technique, and then it might be employed for cases of cancer extending high up in the rectum, or in which lymphatic infection was probably taking place, as in colloid growths, or growths in which an extension can be felt spreading up the meso-rectum. After the first two cases I gave up the plan of bringing the pelvic colon down to the anus. It seemed to me safer and better to make use of it for a permanent iliac colotomy, and I think I should always adhere to this view. The double route operation is both easier and less dangerous in women than in men on account of the roominess of the pelvis and the presence of the uterus between the bowel and the bladder. The idea that it is always necessary to remove the whole meso-rectum is an exaggeration. Rectal growths, though more malignant than those in the colon, are not on a par with tongue or breast cancer, and operations planned on similar lines would render surgery accountable for a loss instead of a gain in the average duration of life of our cases of cancer of the rectum.

Ordinary Method of Operating.

My ordinary method of operating is as follows: The rectum having been prepared, the patient is placed in the lithotomy position with a sandbag under the sacrum, and, if a male, a bougie is passed to indicate the position of the urethra. An incision is then made round the anus and on to the coccyx. This wound is deepened into the ischio-rectal fat, and then with scissors the lower part of the rectum with the anus is cut free. The dissection is carried on in front until the prostate is reached, when the bowel is peeled off this organ with the finger until the peritoneum of Douglas's pouch is exposed but not now opened. During this first stage of the operation no dangerous but a good deal of smart haemorrhage and free oozing may take place, yet time must not be expended by laborious searching for and tying innumerable small vessels, most of which bleed only for a short time. The "spouters" are at once clamped; all the rest are checked by stuffing a sponge into the wound on the side cleared whilst one progresses with the other side. Nothing can compete with sponges for this purpose, and nothing but prejudice prevents us from using them. In all mouth and rectal operations I have continued to use sponges with comfort to myself and, I believe, benefit to my patients.

If the patient is a female and the growth in the lower part of the rectum I always cut into the vagina, usually removing more or less of the posterior wall, and here again sponge compression is useful.

When the dissection in either sex has reached the peritoneum and more has to be done, I remove the crutch and turn the patient well over on to the left side with the right leg flexed on the abdomen. The incision is carried as much higher on the right side of the coccyx and sacrum as is necessary. In women, with the vagina open, this usually gives enough room. In men a transverse cut to the left must be made permitting either the separation of the coccyx or the section of the sacrum. The flap containing the bone having been turned to the left, the peritoneum is opened and the bowels packed off with gauze. Then with an aneurysm needle the large vessels of the meso-rectum are tied, and the connexions cut until enough bowel is freed to permit of an artificial anus without tension at the top of the wound. This is the best place for it, as not only is less free bowel necessary for this position, but the sharp turn due to bringing it out posteriorly is a great aid in future control, as is also the firm bony support partly surrounding the new anus. When the necessary amount of bowel is free and brought down, the pack is taken out of the pelvis, and the peritoneum of Douglas's pouch is sutured to the anterior and lateral aspects of the rectum. Then the flap of bone is trimmed and replaced, and the bowel is cut off flush with the skin to which it is fixed by a continuous haemostatic suture of green gut. Two or three very deep sutures of strong salmon gut are passed to close the perineum for two or three inches below the artificial anus, most of the rest of the wound being left open for packing with iodoform gauze (Fig. 10).* In the female, of course, the vagina must be repaired. It heals very well. When the operation is completed a morphine suppository may be introduced before the dressing is applied.

Dangers of the Operation.

The dangers of this operation are shock and sepsis. Shock means loss of blood, and is to be avoided by quick and dexterous operating. The hands should be bare, and sponge compression should be used to stop oozing. Sepsis is rarely dangerous except from sloughing of the lower part of the bowel due to loss of blood supply. This is unusual, but cannot always be guarded against. Fortunately it is rarely serious when it does occur, but it allows the bowel to separate from the top of the wound, and ultimately when the wound is healed the opening is placed lower down, and more in a line with the rest of the rectum, which means less control and more liability to prolapse.

The wound usually heals kindly, though it is not, and with this operation cannot be, aseptic. The pack should be removed the following day, and subsequently wet dressings are the best. Chinosol and aluminium acetate both make excellent lotions. As in all rectal operations, it is important to keep the bowels moving. The old plan of locking them up was the bane of rectal surgery. Plenty of fluid should be given from the first. There is always loss of blood in excising the rectum, and the sooner this loss is made up the less the danger from shock and sepsis.

Selection of Cases.

To be successful in this operation one must not only operate well, and carry out the subsequent treatment with care, but one must also recognize that this is one of those serious undertakings for which a wise discretion must be exercised in the selection of suitable cases. I used to accept almost all the cases which came under my observation, but lately have tended to weed out more and more the less favourable, and give them colotomy instead. Age and constitutional condition are important points, and must be considered together. I have done an extensive excision successfully at 74, and without anxiety, but the subject was of the healthy, wiry type. Too many men and women, especially in the well-to-do class, have by the time they reach 60 destroyed their tissues in various ways, and rendered themselves unfit subjects for an operation which calls for courage and physical fitness, for a capacity to resist shock and septic infection, and to carry on healthy repair for some weeks. From 55 onwards selection should be rigidly practised.

* For Figs. 6, 7, 9, and 10 I have to thank my colleague, Mr. Robert E. Kelly, Assistant Surgeon, Royal Infirmary.

Results of Excision of the Rectum.

Operations for cancer of the rectum are on the whole less favourable than those on the colon. Contrasting the two I should say in excision of the rectum we have more haemorrhage and shock, usually a more difficult operation, less freedom in removal, a larger and more serious wound to heal, and a more malignant type of cancer to deal with. On the whole the results of excision of the rectum are good, but there are reasons why we should expect a slightly higher primary death-rate, and a greater probability of recurrence than in the case of colectomy.

The table shows that during the last ten years I have excised the rectum for cancer in 28 private patients. Two deaths occurred, one the double route operation in a male, the other a high resection in a female. Neither were good subjects, and I should now probably exclude them both, doing a colotomy instead. Of the 28, thirteen are still living at 1, 1, 2, 2½, 3, 3½, 3¼, 5, 6, 6, 7½, 9, and 10 years respectively. Of the remaining 15, twelve died from recurrence after an average duration of life of thirteen months. One died from other cause without recurrence, and two, as stated, died from the operation.

Excision of Rectum.

All cases operated on in private practice, 1901 to 1911—28 cases, all cancer; 15 males, 13 females.

Mortality.—Two deaths (1 double route, male; 1 high resection, female).

Age.—Under 50, 2; 50–60, 13; 60–70, 12; 70–80, 1.

Life after Operation.—Living, 13: 1, 1, 2, 2½, 3, 3½, 3¼, 5, 6, 6, 7½, 9, and 10 years. Died from recurrence, 12. Average duration, 13 months. Died from other cause, 1. Died from operation, 2.

Gentlemen, I offer these results of personal experience with much deference to my fellow surgeons, of whom so many have enjoyed better opportunities and are better fitted to benefit by them than I am. Doubtless some of my views will not meet with your approval, but I hope that here and there some fact or opinion may be found which will prove helpful to others, and this hope is my only justification in submitting to you these experiences in operations on the large bowel.

REFERENCE.

[1] *Liverpool Medico-Chirurgical Journal*, 1895.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

AMYL NITRITE IN CARDIAC DISPLACEMENT.

MR. A. MCK., aged 41, consulted me some weeks ago because of severe attacks of dyspnoea which recurred every two days. He was feeble, and able for very little exertion. The history was that two years ago he had a fluid pleurisy. For this he was tapped behind, with a negative result, and again in the nipple line on the left side, where his doctor drew off 5 oz. of fluid. As a result of the adhesions the heart was anchored much outside its usual position, the apex beat being 2½ in. outside the nipple line. I advised amyl nitrite for the anginal attacks. He used a 5-minim capsule during the next attack. I saw him two days later, and the result has been far greater than I anticipated; in his own words, he felt "as if the heart were being pulled right out." When I examined his heart I found the apex beat just inside the nipple line. For two years he had been unable to stoop, he now was able to bend down and pick a pin from the floor. Before his treatment he had these anginal attacks every two days or so; he has had none since. In my opinion, the amyl nitrite so allowed the heart to act that it broke away from its false moorings. Now under tincture of strophanthus it is fast coming back to its original condition.

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Kelowna, British Columbia.

RIGHT OVARIAN DERMOID.

MRS. X. stated she was suffering from "abscess of the womb" of about ten months' duration. Twelve months previous to the onset of her present symptoms Caesarean section had been performed in a provincial hospital.

There was a foul-smelling yellowish discharge from the vagina. A tumour about the size of an apple was hanging by a pedicle about 1 in. thick from the posterior fornix to the right of the middle line, and surrounding the pedicle at its exit was what felt like a cervix, but owing to the rigidity of the abdominal muscles a thorough examination could not be made. On the posterior aspect of the tumour was a small, hard, sharp mass, the mere touching of which caused the patient exquisite pain.

The patient was admitted, and under a general anaesthetic Professor Cameron found the uterus super-involuted and lying above the tumour at the level of the upper border of the symphysis in a position of retroversion. The hard mass on the posterior aspect of the tumour consisted of several teeth and a quantity of hair. With the écraseur the pedicle with tumour was removed. What appeared to be cervix surrounding the pedicle was granulation tissue. The patient was dismissed well ten days after the operation.

The dermoid had apparently worked its way through the pouch of Douglas on the right side.

I have to thank Professor Cameron for permission to publish this interesting case.

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PERFORATION OF THE TYMPANUM AFTER SYRINGING.

A WOMAN, aged 29, consulted her family physician, telling him she felt "run down." On rising that morning she was aware of a peculiar sensation in the left ear, but there was no pain and she did not feel deaf. The feeling was as if something was in the ear. Two weeks previously she had suffered from sore throat, which was now better.

The doctor syringed her ear. Afterwards she walked about town for some two and a half hours. On her way home in a tramcar she was seized with severe pain in the ear. A yellow watery discharge made its appearance, and the ear became very deaf. That night the pain prevented sleep, and some blood escaped from the ear.

I saw her after this. The pain in the ear had ceased, but a profuse muco-purulent discharge was coming from the canal. Covering the region of the drum there was a white sodden mass of dead epithelium, which was easily removed with the help of a little hydrogen peroxide. It came away in the form of a plug, exposing a large perforation involving the whole of the drum with the exception of Shrapnell's membrane. The handle of the malleus was absent, and the external auditory meatus was narrowed by inflammatory swelling.

With appropriate treatment the inflammation and discharge subsided, but the hearing has remained markedly defective. The patient maintains that the pain, perforation, and subsequent deafness were caused by the force used in syringing.

I communicated with the patient's doctor, who was surprised to hear the sequel to his case. He told me he examined the ear and found the canal a little red and swollen. He saw something which looked like a "crust" lying in the canal.

It is interesting to note that two months previously the patient was under my care, suffering from deafness in the right ear, which was due to an old-standing dry perforation dating from acute otitis media in childhood. At this time the drum of the left ear was frequently examined, and also the hearing, both appearing quite normal.

The explanation, in my opinion, is as follows: In certain cases perforation of the tympanic membrane takes place in a most remarkably insidious manner. The following case illustrates this:

A woman, aged 21, was under my care suffering from discharge from the right ear through an old perforation. The left tympanic membrane appeared in all respects normal. Quite suddenly a discharge appeared from the left meatus, and examination showed a fairly extensive perforation below the handle of the malleus. The drum exhibited only the faintest trace of redness, localized to the handle of the malleus. There was no pain or any other symptom except discharge.

I think the former case was undoubtedly of this character. The perforation was probably already present when her doctor syringed the ear. The "crust" which he saw was probably a pent-up discharge. Forcible syringing, especially if all discharge and cholesteatomatous matter was not removed, would account for an acute condition being set up in the middle ear. The case was probably of a tuberculous nature, although I could find no evidence of tuberculosis.

The case shows the necessity of a thorough examination of an ear before syringing, and of careful examination afterwards, in order to be sure that all discharges have been removed.

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Reviews.

A WELL FILLED LIFE.

IT has become the fashion of recent years for almost every one who has any pretension to social or professional distinction to give to the world the recollections and impressions of his life and times. The interest of such records naturally depends entirely upon the manner of life led by their author. Few of the diarists and memoir writers who have lately flooded the market with their reminiscences can boast a more varied and interesting career than Surgeon-General Sir ANTHONY DICKSON HOME, V.C., K.C.B., whose *Service Memories* has recently appeared under the editorship of Lieutenant-Colonel CHARLES H. MELVILLE, R.A.M.C.[1] Unlike the majority of writers of reminiscences, Sir Anthony Home never intended his memoirs for publication, and yielded to the solicitations of his friends only on condition that whatever profits should accrue from the sale of his book should be devoted to some charitable fund connected with the Royal Army Medical Corps. *Service Memories*, therefore, is merely a series of random jottings, written down at the request of an old friend and brother officer, and strung together by Colonel Melville into one continuous narrative; it does not form anything like a complete life of its distinguished author, or even a full record of his service in almost every quarter of the globe. Indeed, the writer is far more concerned with the account of what he saw than with what he did. It is only from the notes of his editor that are to be gathered, for example, the details of the deed which won him the Victoria Cross (an episode which Sir Anthony passes over in complete silence), and of the extraordinary success of his exertions during the Ashanti war of 1873–4, exertions which, in the opinion of Colonel Melville, contributed largely towards the ultimate success of the British arms. This modesty is one of the chief attractions of a book full of incident and colour, and crowded with recollections of stirring experiences by flood and field.

Born at Dunbar in 1826, Sir Anthony Home graduated M.D. at St. Andrews in 1847, and entered the Army Medical Service in the following year. After three years' service with his regiment in the West Indies, the young surgeon was transferred to Nova Scotia, and from thence to Guernsey, Ireland, and Gibraltar, which latter station he left in August, 1854, to accompany the 8th Hussars to the Crimea. There he remained until the end of the war; and perhaps no part of his reminiscences is more interesting than that in which he bears eloquent testimony to the needless suffering caused in the British lines by the dogged adherence of those in command to the antiquated methods of transport and sanitation which had been employed during the Peninsula war.

Surgeon Home's first experience of active service was quickly followed up by others. Transferred to India at the outbreak of the mutiny, he was present at the relief of Cawnpore and Lucknow. At the latter place he won the Victoria Cross by his heroic defence of the wounded left behind by the relieving column when Havelock finally succeeded in forcing his way into the Residency; and six months after his return to England he was sent to China with the expeditionary force commanded by Lieutenant-General Sir James Hope Grant. Less than a year after the close of the Chinese campaign, Surgeon Home accompanied the troops embarked for Canada in preparation for the threatened war between England and the United States, and, thanks to the peaceful termination of the negotiations between the two countries, was able to visit Baltimore and Washington and see something of the American army in the field. A short period of service in [illegible] was terminated by the Maori war of [illegible] on Home was transferred from Bengal to New Zealand. There he had ample opportunities for studying the methods of warfare in vogue amongst a primitive people, and he does not fail to point out the striking similarity existing between these methods and those employed by the Boers during the last South African war.

With the Maori campaign Sir Anthony Home's reminiscences close, though more than twenty years of work and honours were to elapse between the end of the war and his retirement from the army. We have already mentioned the valuable services which he rendered ten years later when appointed to the forces in Ashanti, services which were rewarded on his return home in 1874 by the K.C.B.

The rest of his term of service, save for a brief interlude as in Cyprus, was spent either in England or in India; and his retirement in 1886 closed a career of singular usefulness and distinction. We venture to prophesy that those to whom the modest record of this career does not appeal will be very few and far between. As the work of one of the few surviving eye-witnesses of the great mid-Victorian wars, the book is of genuine historical value, and the absolute simplicity of its setting is in keeping with the character of a man who combines in his own person the finest qualities of his double profession—the physician and the soldier.

TWO FAMOUS TRIALS.

IN the series of Notable English Trials[2] Mr. G. H. KNOTT's *Trial of William Palmer*,[3] the Rugeley murderer, is the fourth. The book opens with an introduction in which there is a general account of the incidents which led up to the murder, and a short history of William Palmer's previous life. This is further summarized in a table of the leading dates, and there are lists of the judges and of the counsel and witnesses on both sides. Mr. Knott has thought it unnecessary to print the opening of the case for the Crown by the Attorney-General. He gives the evidence for the prosecution, the speech for the defence, the evidence for the defence, the Attorney-General's address to the jury, the charge by Lord Campbell, and in an appendix he prints an extract from the diary of Lord Chief Justice Campbell, a letter purporting to be written to the Lord Chief Justice by the Rev. Thomas Palmer, a brother of the murderer, and short biographical accounts of the judges and counsel. There are also facsimiles of letters by the murderer, and of two pages of his diary. The book is compiled from a verbatim report of the trial published by Mr. Angelo Bennett in 1856 from his shorthand notes, and the author says that he has had the benefit of the professional skill of Dr. William Robertson of Leith, who has read the proofs. It is further enriched by portraits of the Lord Chief Justice, Mr. Baron Alderson, Sir Alexander Cockburn, Mr. Serjeant Shee, and the murderer. So far as all this goes the author has done his work well, but the serious fault is that Mr. Bennett's report appears to be defective, and the author has not filled up the gaps by research elsewhere. For instance, the contemporary numbers of the *Times* might have supplied parts which were omitted. It strikes the reader as strange that the evidence of Dr. Bamford, who attended the deceased, John Parsons Cook, is omitted; yet he appears to have been called, for the Attorney-General (page 234) says "We have it from Dr. Bamford himself." Again, Dr. Harland (who made the *post-mortem* examination) is said to have reported (page 56) with Dr. Monckton on the state of the spinal cord, but this report is not given. The deposition of Mr. Jones, a medical practitioner who was present at the death and gave evidence at the inquest, was read by Mr. Serjeant Shee but is not printed. Further, in the Attorney-General's address he blamed Mr. Serjeant Shee for having protested "on his honour" his conviction of the prisoner's innocence, but in the report of Shee's speech this expression is not to be found; as the story has often been told since, one would like to know what ground was there for the statement that Shee told the jury "on his honour" he was convinced of the prisoner's innocence? The long letter which purports to be from the Rev. Thomas Palmer is spoken of by the author as "the letter we print from Palmer's brother" (page 315) yet in the extract from the diary of Lord Campbell we read "the Rev. T. Palmer has since disclaimed the pamphlet and it is said to have been written by a blackguard barrister." As the pamphlet is most virulent and abusive we do not think it should have been printed if there is any doubt of its genuineness. There are slips which we think the medical collaborator might

[1] *Service Memories*. By Surgeon-General Sir A. D. Home, V.C., K.C.B. Edited by Charles H. Melville, Lieutenant-Colonel, Royal [illegible] Lieutenant-Colonel Volunteer Corps. London: Edward Arnold. 1912. (Med. 8vo, pp. 301. Price 12s. 6d. net.)

[2] Notable English Trials. Edinburgh and London: William Hodge. [illegible]

[3] *The Trial of William Palmer*. Edited by George H. Knott. (Med. 8vo, pp. 320. 5s. net.)

have prevented. For example, Sir Benjamin Brodie is described as Surgeon to "St. James's" Hospital (page 67). We read (page 86) of a mysterious poison mentioned by Professor Christison called "exhetwick." Then we have such an expression as "a little of the excoriation was rubbed off" (page 58). The state of the tongue is not mentioned in Dr. Harland's examination-in-chief, but is made the subject of cross-examination. The alkaloid of nux vomica brucia is spelt all through "bruchsia." On page 78 we hear of the "succulent" contents of the intestine, evidently a mistake for "faeculent." Dr. Todd, the well-known physician of King's College Hospital, is said in a speech for the defence (page 132) to have been "a gentleman whose practice does not appear to have been so much that of a physician as that of a surgeon," the words "physician" and "surgeon" being evidently transposed. On the top of page 116 several words have been left out, perhaps a whole line, so that the passage as printed does not make sense. Besides the omissions to which we have referred we note that of the evidence of Mr. Wetherby, Clerk of the Course; of Mr. Deane, solicitor to the Prince of Wales Insurance Company, which had refused to pay a heavy insurance effected by the prisoner upon the life of his brother Walter; and of the letters from this solicitor which were read in court. These omissions seriously affect the value of the book as a record for the use of those interested in legal medicine, but as a popular account of the trial it may gain by being reduced in length.

The latest volume of the series is the *Annesley Case*,[4] where the question was whether one James Annesley was the son of Lord Altham by his wife Moll Sheffield, natural daughter of the Duke of Buckingham. The story has been in part told by Smollett, and provided the groundwork for Charles Reade's *The Wandering Heir*. Not long after the alleged birth in 1715, Lord Altham and his wife quarrelled, and did not live together again. It seems practically certain that soon after this strange nobleman's death in 1727 his brother (who had taken possession of any property he left) kidnapped the boy and shipped him as an indentured "slave" to the West Indies. In 1741 James was brought home in a ship of Admiral Vernon's squadron, and his cause was taken up by an enthusiastic Scot, Daniel MacKerchen, and the issue came to trial in Dublin in 1743. The case has no medico-legal bearings; its interest is psychological, as an illustration of the fallibilty of human testimony. Many of the witnesses on one side or the other must have been perjured, but others may merely have forgotten. As the trial ended in a verdict for the claimant it might be assumed that it was the defendant's witnesses who swore falsely were it not that the principal witness for the defence, the maid who was with Lady Altham at, before, and after the date of the alleged birth and had denied that it did or could have occurred, was tried for perjury and acquitted. Mr. ANDREW LANG, who has edited the volume and evidently studied the evidence with great care, has written an introduction which is positively malicious to his readers. Again and again he builds up a case which seems convincing, and then in a sentence beginning with a "but" wholly demolishes it. The judges who heard the claimant's case were altogether puzzled by the evidence, and so is Mr. Lang, but his introduction is most entertaining, and as it fills some eighty pages the volume is well worth possessing.

AIR ANALYSIS.

DR. J. S. HALDANE'S *Method of Air Analysis*[5] is an admirably clear description of the apparatus and methods of procedure requisite for the analysis of air for various purposes. It makes no pretence to be a complete treatise on gas analysis, and a general knowledge of the methods of this branch of work and of laboratory manipulation is assumed. The methods described are for the most part devised, wholly or in part, by the author, and have been published in the *Journal of Physiology*, the *Journal of Hygiene*, etc. The operations dealt with are such as are necessary in the examination of the air of mines, of exhaust gases, and of the gases usually requiring to be analysed accurately in connexion with physiological experiments. The larger apparatus first described requires only about 20 c.cm. of air for analysis, and with this quantity the percentages of oxygen, carbon dioxide, methane, etc., can be determined to two decimal places. A smaller portable apparatus, for taking into mines, etc., is also described; by means of this the analysis is made on the spot, about 10 c.cm. of air being employed; the limit of error in this case being about 0.01 per cent. The somewhat elaborate corrections sometimes necessary in order to express results in the most convenient form—as, for example, the "respiratory quotient" in the case of breathed air, or the proportion of "black damp" in the air of a mine—are clearly described. Other chapters are devoted to apparatus and methods for ascertaining the approximate proportions of oxygen and of methane, etc., in air by means of the behaviour of flames; the necessary manipulations for detecting and estimating small proportions, from 0.01 per cent. upwards., of carbon monoxide in air by various blood tests, are also described. To any one likely to be engaged in such tests of air this little book will be most useful, while it can be read with interest by others whose concern is only with the results deduced from the operations described.

NOTES ON BOOKS.

THE eleventh edition of Dr. DORNBLÜTH'S remedies used in modern medicine[6] is in effect a cross between special pharmacopoeias such as those of Martindale and Squire, and the pages on drugs and their use to be found in some visiting lists. There are chapters on prescribing and lists of diseases, with the dietetic and drug treatment commonly found useful in connexion with them, but the greater part of the book deals with the composition and uses of the remedies commonly mentioned in books on therapeutics. The amount of information supplied is large but not always easy to use, since to find a prescription of any given remedy may necessitate prolonged search in default of pre-existing knowledge either of its principal ingredient or most obvious property. Nor will those little versed in chemistry always benefit by the search, since in many cases the explanation of the nature of a proprietary remedy consists of a single word demanding close analysis before any real knowledge can be derived from it; brommethylaminodimethylisovalerylpropyloxyacetat as an explanation of "Quietol" is a case in point.

The effects of mountain climates upon tuberculous disease have been long enough under observation to warrant close scientific criticism. In earlier days the high altitudes were only used on very broad lines for certain well-defined classes of tuberculous lung disease, with the natural result that they sometimes proved to be utterly unsuitable. Closer observation founded on accumulated experience has demonstrated the fact that varying degrees of altitude produce marked difference in normal physiological processes, and these must be taken into account in advising consumptive patients. These points are well set out in a monograph edited by Dr. G. SCHRÖDER of Schömberg,[7] in the Black Forest of Würtemburg, where a very large number of consumptives have been treated in sanatoriums. Voluminous statistics and a good account of the flora and fauna of the district are appended, forming a useful contribution to the steadily accumulating experience of the results of climatic treatment associated with compulsory hygiene.

Dr. VARIS might have done better if he had restricted his book, *A Study of Malaria and Beri-beri*,[8] to the first-named subject. The malarial part of the book shows careful thought and study, and gives the reader a very good description of the disease.

[4] *The Annesley Case.* Edited by A. Lang. (Med. 8vo, pp. 370, illustrations 4. 5s. net.)

[5] *Methods of Air Analysis.* By J. S. Haldane, M.D., LL.D., F.R.S. London: Chas. Griffin and Co., Limited. 1912. (Post 8vo, pp. 140, 24 illustrations. 5s. net.)

[6] *Die Arzneimittel der heutigen Medizin.* Von Dr. Otto Dornblüth in Wiesbaden. Alfte Auflage. Würzburg: Curt Kabitzsch. 1911. (Crown 8vo, pp. 510. M. 7.60.)

[7] *Das Klima von Schömberg*, and its Importance in the Treatment of Chronic Tuberculosis of the Lungs. By Dr. G. Schröder, Superintendent of the new sanatorium at Schömberg, with the assistance of Professor Meyer of Stuttgart and L. Pfeiffer of Schömberg. Würzburg: Curt Kabitzsch. 1912. (Med. 8vo, pp. 140. M.2.)

[8] *A Study of Malaria and Beri-beri.* By S. M. Varis, M.D., C.M.Edin. Allahabad: The Pioneer Press, 1912. (Demy 8vo, pp. 482.)

Nova et Vetera.

SAMUEL PEPYS AND THE ROYAL SOCIETY.

There are many references to the early days of the Royal Society in Pepys's *Diary*. Under date January 9th, 1664–65, he records that he saw the Royal Society "bring their new book, wherein is nobly writ their charter and laws and comes to be signed by the Duke as a Fellow and all the Fellows hands are to be entered there and lie as a monument and the King hath put his with the word Founder." The pious founder was fond of a joke at the expense of the Society. On February 1st, 1663–64, Pepys records:

Gresham College he mightily laughed at for spending time only of weighing of ayre and doing nothing else since they sat.

Pepys's struggles with the orthography of the name of the first President, Lord Brouncker, are amusing. He writes it sometimes Brunker, sometimes Brunkard, sometimes Bruncker; later, when he had doubtless become better acquainted with the noble lord, he learned to spell his name. Pepys was elected a Fellow on February 15th, 1664–65. On that day he records:

With Creed to Gresham College, where I had been by Mr. Povy the last week proposed to be admitted a Member, and was this day admitted by signing a book and being taken by the hand by the President, by Lord Brunkard and some words of admittance said to me. But it is a most acceptable thing to hear their discourse and see their experiments which were this day of the nature of fire and how it goes out in a place where the ayre is not free, and sooner out where the ayre is exhausted which they show by an engine on purpose. After this being done they to the Crowne Taverne behind the 'change, and there my Lord and most of the company to a Club supper; Sir P. Neale [Sir Paul Neile], Sir R. Murrey [Sir Robert Moray, one of the founders of the Society], Dr. Clarke, Dr. Whistler, Dr. Goddard, and others of most eminent worth. Above all, Mr. Boyle to-day was at the meeting, and above him Mr. Hooke, who is the most and promises the least of any man in the world that I ever saw.

In the following month Pepys made a statement to the Society giving an account of what information he had received from the master of the Jersey ship which had been in company with Major Holmes in the Guinea voyage concerning the pendulum watches. On March 1st, 1664–65 is the entry:

And this day I did pay my admission money, 40s., to the Society. Here was very fine discourses and experiments, but I do lacke philosophy enough to understand them, and so cannot remember them.

On November 14th, 1666, Dr. Croone told him that

at the meeting at Gresham College to-night, which it seems they now have every Wednesday again, there was a pretty experiment of the blood of one dogg let out, till he died, into the body of another on one side, while all his own run out on the other side. . . . The first died upon the place, and the other very well, and likely to do well. This did give occasion to many pretty wishes, as of the blood of a Quaker to be let into an Archbishop, and such like; but, as Dr. Croone says, may if it takes, be of very use to man's health, for the amending of bad blood by borrowing from a better body.

On November 16th there is the following entry:

This noon I met with Mr. Hooke, and he tells me the dog which was filled with another dog's blood, at the College the other day is very well, and like to be so as ever, and doubts not its being found of great use to men; and so do Dr. Whistler, who dined with us at the taverne.

Again, on November 28th

Mr. C[illegible]m College, where they meet now weekly [illegible] had good discourse how this late experiment of [illegible] is in perfect good health, may be improved for [illegible]

A year later (November 21st, 1667) we hear of the application of transmission to man. Pepys said the Fell[illegible]

A man [illegible]ttle frantic, that hath been a kind of minister, Dr. Wi[illegible] he hath read for him in his church, that is [illegible] man, that the College (Gresham) have [illegible] some of the blood of a sheep let into his hea[illegible] on Saturday next. They purpose to let [illegible] compute, in what will be [illegible] weeth. They differ in the op[illegible]: some think it may have a [illegible] man by [illegible]ling his blood, oth[illegible]et at all. But the man is a hea[illegible] to give an account who[illegible] [illegible]t in himself, and so may be o[illegible]

This man, we are told by Mr. Wheatley, the learned editor of the immortal diary, was Arthur Coga, who had studied at Cambridge and was said to be a bachelor of divinity. He was indigent, and "looked upon as a very freakish and extravagant man." Dr. King, in a letter to the Hon. Robert Boyle, remarks "that Mr. Coga was about thirty-two years of age; that he spoke Latin well when he was in company which he liked, but that his brain was sometimes a little too warm." The experiment was performed on November 23rd, 1667, by Dr. King at Arundel House, in the presence of many spectators of quality and four or five physicians. Coga wrote a description of his own case in Latin, and when asked why he had not the blood of some other creature instead of that of a sheep transfused into him, answered, "*Sanguis ovis symbolicam quandam facultatem habet cum sanguine Christi, quia Christus et agnus Dei.*" Coga was the first human being in England to be experimented upon; previous experiments were made by the transfusion of the blood of one dog into another.

On November 30th we hear more of Coga. Pepys went to the election of officers on that day, and narrowly escaped an undesired honour. He was—

near being chosen of the Council; but am glad I was not, for I could not have attended, though above all things I could wish it; and do take it as a mighty respect to have been named there.

After the elections he went to a tavern with several of the learned men, where they had much good discourse.

But here above all I was pleased to see the person who had his blood taken out. He speaks well and did this day give the Society a relation thereof in Latin saying that he finds himself much better since and as a new man but he is cracked a little in his head though he speaks very reasonable and very well. He had but 20s. for his suffering it and is to have the same again tried upon him; the first sound man that ever had it tried on him in England and but one that we hear of in France which was a porter hired by the virtuosos.

On March 15th, 1664-65, he records that he went to Gresham College,

where, among other good discourse, there was tried the great poyson of Maccassa upon a dogg, but it had no effect all the time we sat there.

We learn from Birch's *History of the Royal Society*, that an experiment "of trying to poison a dog with some of the Macassar powder in which a needle had been dipped was made, but without success." Again, on April 17-19th, 1665:

We to Gresham College, where we saw some experiments upon a hen, a dogg, and a cat, of the Florence poyson. The first it made for a time drunk, but it come to itself again quickly; the second it made vomit mightily, but no other hurt. The third I did not stay to see the effect of it, being taken out by Povy.

With reference to this passage, Mr. Wheatley quotes from Birch's *History*:

Sir Robert Moray presented the Society from the King with a phial of Florentine poison sent for by his Majesty from Florence, on purpose to have those experiments related of the efficacy thereof, tried by the Society. The poison had little effect upon the kitten.

We hear more of the poison on May 3rd, 1665, when it is recorded in the *Diary*:

And so out to Gresham College, and saw a cat killed with the Duke of Florence's poyson, and saw it proved that the oyle of tobacco drawn by one of the Society do the same effect, and is judged to be the same thing with the poyson both in colour and smell and effect.

Here, again, we learn something more about this from Birch, who says:

Mr. Daniel Coxe read an account of the effects of tobacco-oil distilled in a retort by one drop of which given at the mouth, he had killed a lusty cat, which being opened, smelled strongly of the oil, and the blood of the heart more strongly than the rest. . . . One drop of the Florentine *oglio di tobacco* being again given to a dog, it proved stupefying and vomitive, as before.

Pepys did not like parting with money; we can therefore imagine his feelings when he had to subscribe to building of a house for the Society. On April 2nd, 1668, he says:

With Lord Brouncker to the Royall Society where they were just done, but there I was forced to subscribe to the building of a College and did give forty pounds; and several others did subscribe some greater and some less sums; but several I saw hang off: and I doubt it will spoil the Society for it breeds faction and ill-will and becomes burdensome to some that cannot or would not do it.

On the same day he experimented with an instrument to improve the hearing:

Here to my great content I did try the use of the Otacousticon which was only a great glass bottle broke at the bottom, putting the neck to my care and there I did plainly hear the dashing of the oares of the boats in the Thames to the Arundell Gallery window which without it I could not in the least do and may I believe be improved to a great height which I am mighty glad of.

The apparatus is ridiculed in a contemporary play under the name "Autocousticon," which is said to be "a pair of asses ears and large ones."

Pepys was elected president of the society in 1684, and he held the office for two years. While he speaks of the Fellows as "a set of the finest gentlemen that ever I met withal in my life," he records that on occasion their noble president and others got drunk.

LITERARY NOTES.

THE February number of *Janus* contains a review of Y. Fujikawa's *Short History of Japan*, published in German at Tokyo in 1911. The work appears under the auspices of the Japanese Minister of Instruction. The work deals with periods beginning with mythical times up to 96 B.C. The invention of the healing of diseases is attributed to two deities, Onamuji-no-Mi-Koto and Sukunabikona-no-Mikoto. Disease is caused by divine action, the particular god responsible being Kamino-no-Ke (spirit of the gods); or by devils, evil spirits, or the spirit of a dead man. Morality and neglect, however, were also held to be etiological factors. Sacrifices, prayers, and incantations were used to counteract hostile influence. Later internal medicines were employed. Wounds were dressed by the application of powders and juices. Bleeding was employed, and great use was made of mineral baths and douches. Between 96 B.C. and 709 A.D. Chinese medicine was introduced by way of Korea. Priest healers appeared and taught their art. Pupils were sent to China at the cost of the State to learn medicine. The Code of the Emperor Mommu (702 A.D.) shows that there were then a superior school of medicine, accessible to families from the fifth class upwards, and provincial schools. The course of internal medicine occupied seven years, the other branches shorter periods. A final examination had to be passed in presence of the Minister; successful candidates became ishi or doctors. A few women from 15 to 25 years of age were trained as midwives and surgeons. Then came a period known as "Nara," from the name of the city which was then the capital, and extending from 710 to 784. During that period the priest healer played a large part. A hospital for the sick poor was founded by the Empress Komyo in 758. The Heian period during which Heian (now Kyoto) was the capital, extended from 784 to 1186. Chinese influence predominated. The oldest Japanese medical treatise is the *Ishinho*, written by Yasuhori-Tamba in 892; it is still extant. In it are described various surgical procedures, such as the opening of abscesses with the knife, the application of the actual cautery to ulcers, and the stitching of wounds of the intestine with threads made of the fibre of the mulberry tree. Inflammations were treated by the application of leeches, cold stones or iron, or white of egg. There is record of an operation for atresia of the vagina. Cataract was needled. In the Kamakura period (1187–1333) medicine gained a more important position, and personal observations were recorded. The Muromachi period (1334–1568) was marked by the destruction of buildings, books, and works of art. Nevertheless, some twenty Japanese treatises on medicine are ascribed to this period. In the Azuchi-Momoyana period (1569-1615) we hear of disorders of nutrition, nervous influences and over-pressure as causes of disease. The first Portuguese ship reached Japan in 1542. In 1549 arrived the famous missionary St. Francis Xavier, who brought with him a European doctor, Luis Almeida; he treated the sick gratuitously. From him a Japanese named Pohl learnt something of European medicine. In 1568, after the building of a Catholic Church at Kyoto several missionaries were sent to Japan by Portugal; with them went two physicians, who founded hospitals, treated patients, operated and planted physic gardens. When they were expelled with the missionaries in 1585 two Japanese pupils of the European physicians, Zengoro and Yasenmon, settled at Sakai and practised European medicine. They founded a school, the pupils of which spread abroad the doctrines of the European teachers. In 1597 the Dutch obtained permission to trade with Japan. Some doctors were sent to promote trade under pretext of medical visits. The first physician of the Dutch Company was a German named Caspar Schambergen, who landed in Japan in 1649. He had some pupils, and his school played an important part in Japan. Others followed, and interpreters who had learnt European medicine practised as doctors. Among them may be mentioned Eykin Narabayashi (1643–1711), author of a Japanese translation of the works of Ambroise Paré. For a long time the prohibition to import European books hindered the progress of medicine; this prohibition was withdrawn in 1700 and translations of a number of Dutch, French, and German books (Heister, van Swieten, Boerhaave, Hufeland, Richerand, etc.), were translated. Mohmike introduced vaccination in 1848. Seishu Hanoaka (1760–1833) was the first in Japan who extirpated tumours, amputated limbs, operated for cancer of the tongue and fistula of the anus. Before operating he administered a narcotic potion, which was an infusion of five plants, including datura and aconite. In 1857 some Dutch physicians founded a medical school at Yedo the direction of which was taken over by the Government in 1860. This was the origin of the University of Tokyo. The present period, which goes by the name of Meji, began in 1868. The English doctor Willis, who had played a part in the revolution of 1868, was appointed Professor of Medicine in the Academy of Yedo and Director of the Hospital. Afterwards several professors were invited from Germany. The modern development of scientific medicine in Japan is too well known to require repetition.

The second number (July) of *Bedrock* contains several valuable articles. Among them may be mentioned House Flies, by Dr. G. S. Graham-Smith; Inheritance and Reproduction, by Dr. Archdall Reid; a Note on Legislation for the Control of the Feeble-Minded, by Sir Bryan Donkin; and Psychical Researchers and the Will to Believe, by Dr. Ivor Ll. Tuckett. According to Dr. Tuckett, the will to believe is the solution of the "telepathic puzzle." This, he says, has made men like Sir W. F. Barrett and Sir Oliver Lodge "ready to accept evidence obtained under conditions which they would recognize to be unsound if they had been trained in experimental psychology." Dr. Tuckett goes on to make the following interesting statement:

Professor Sidgwick himself, before he died, appears to have been thoroughly disillusioned about the conclusiveness of the evidence for telepathy. . . . For one day he said to Professor Alexander Macalister (whose authority I have for reproducing the gist of the conversation) that he believed the chief work of the Society for Psychical Research had been the exposure of impostors, and that their best results were mainly negative.

There is, of course, a "will to believe," as we have often said in speaking of alleged signs and wonders. But it should not be forgotten that there is also a will not to believe, against which the scientific mind has to be at least as much on its guard.

The first part of Mr. G. C. Peachey's very interesting *History of St. George's Hospital* (London: John Bale, Sons, and Danielsson, Limited) was reviewed in the JOURNAL of July 16th, 1910. The second part begins with a description of London as it was about the middle of the eighteenth century. He quotes a pseudonymous writer, "Don Manoel Gonzales," who, speaking of doctors, says English physicians seldom get their bread till they have no teeth to eat with. "Those who are eminent among them will not get up at night or at any or every call: but the great grievance against them is the exorbitance of their fees, and the fact that if a physician has been called in, he has continued, though the patient is unable to bear the expense, for no apothecary can administer medicine to a patient who has already been prescribed for by a physician. They scorn any fee but gold, and the surgeons are still more unreasonable, which accounts for the employment of quacks who are cheap and easily obtained." The early history of St. George's Hospital is told in detail, the narrative being based throughout on original authorities. A drawing by Isaac Ware of the hospital as it was in 1736 is reproduced as a frontispiece.

British Medical Journal.

SATURDAY, JULY 27TH, 1912.

THE RACIAL RESPONSIBILITY OF MEDICINE.

Among the privileges enjoyed by members attending the annual meeting at Liverpool to whom Sir James Barr in his presidential address extended a cordial welcome, not the least was that of listening to his suggestive discourse. It was a happy thought to employ the occasion in a review of the general relation of the medical profession to society, and the bearing of the evolutionary conception upon the duties and functions of the medical calling. Not only is the subject one whose present discussion may be considered in a special sense timely, and even indispensable; it is one also in which Sir James Barr has long displayed an active interest, and in dealing with which he finds full scope for the boldness of his thought and the trenchancy of his criticism. He is no *laudator temporis acti;* he sees clearly and says plainly that, alike in things medical and in the world at large, the old order is rapidly changing and in great measure passing away, to give place to a new, and, as we must hope and believe, better order. Taking as his text the question proposed by Henri Bergson as to the human race—"What are we? What are we doing here? Whence do we come, and whither do we go?"—he applies it to that numerically but not intrinsically insignificant fraction of the race of which he is himself a distinguished representative. Granted that, to the vast majority of the thinking public, our existence and utility need no justification, he invites us to join him in looking more deeply into the matter, and in considering what changes may be called for in the spirit and method of our work, in order to render it in the greatest possible degree advantageous to the higher evolution of mankind.

The flippant objection against the medical profession heard once or twice recently, that it subsists by the misery of others, hardly deserves the obvious reply that it is by the alleviation and not by the creation of misery that it subsists. Not only so, but it is to the efforts of our profession that society owes the practical abolition of many of those diseases formerly so prevalent and so fatal, of which typhus, enteric fever, and small-pox are familiar examples. Yet the question has to be faced whether the great and increasing success of curative and preventive medicine has been the unmixed blessing which at first sight it appears to be. By mitigating in various ways the severity of that environmental ordeal to which in ruder ages all members of the race were subjected, we have partially suspended the operation of Nature's method of eliminating the unfit. We have made possible the survival and, what is worse, the multiplication of biologically undesirable types. And, unconsciously yet inevitably, we have done this by subordinating the interests of the race as a whole to our tenderness for the individual.

It has been objected that biological fitness is not necessarily identical with human fitness; and that the assumption that they coincide is an unwarrantable concession to materialism. Sir James Barr has not overlooked this distinction; but, while expressing sympathy with such forms of speculation as postulate the independence of life and consciousness of their physical vehicles, he wisely insists that in dealing with the stern realities of existence the practical inseparability of life and organized matter must at present be assumed. Life, as we know it, is for us, as it was for Huxley, inseparably connected with protoplasm; the problem of rendering possible the highest development of the individual is mainly that of safeguarding the health and purity of the germ plasm from which that development begins.

If, then, as appears undeniable, the development of the art and science of medicine, preventive as well as curative, has brought the profession to some extent into antagonism with racial interests, previously guaranteed by the elimination of the unfit through natural selection, how is the necessary readjustment to be brought about? In Sir James Barr's opinion, by frank admission of the need of a new racial morality, and the consequent responsibility of medicine for the interests of the race, as well as, and in precedence of, those of the individual; for the interests of the unborn, as well as for those of the living. In other words, by a serious attempt to replace by a selective birth-rate that selective death-rate which has been by our aid so largely diminished. Granted that Nature's method was too crude and barbarous, and that its revival is out of the question, the object secured thereby, that the race should not be carried on by its least worthy members, must in some way be attained. Without mitigating our zeal for the prevention of disease by improved sanitation, or for its cure by improved methods of treatment, we are urged to realize that, from the point of view of evolution, these are, after all, secondary matters. Sir James Barr would have us "raise the banner of health with all the fervour of a new religion"—that new religion of eugenics of which the late Sir Francis Galton was a pioneer and an apostle. This imposes upon us the duty of giving serious consideration to the means by which it may be secured that the race shall be renewed from the physically and mentally fit, and not from the weaklings and degenerates. It involves the study and inculcation of the laws of heredity with a view to the full realization by prospective parents of the immense responsibility they incur in bringing children into the world. It involves, on its negative side, a duty of self-restraint upon the part of those who are made aware of their unfitness for such responsibility; and, upon its positive side, the desirability of "breeding for intelligence."

We may agree with the President that universal recognition of and conformity with the requirements consequent upon our knowledge of heredity, even in its present imperfect state, might enable us in a very few generations to "produce a pure, moral, highly intellectual, and healthy race"—a consummation, beyond all manner of doubt, in the highest degree desirable. But how is such universal conformity, or anything remotely approaching thereto, to be brought about? With regard to this very difficult question Sir James Barr maintains a wise reticence; obviously the time for a complete and authoritative reply is not yet. That the time is ripe for dealing with mental weaklings few medical readers will, however, be disposed to deny. Sir James Barr, if we understand him aright, is inclined, so far as the requirements of negative eugenics affect responsible individuals, to rely for their enforcement rather

upon moral suasion and intellectual enlightenment than upon State compulsion—a predilection in which we believe the vast majority of medical men and biologists will heartily concur. The problems of connubial ethics are too delicate and complex to be entrusted to the tender mercies of the present-day legislator, even if adequate solutions were in all cases available, which is far from being the case. There can, however, be no doubt as to the desirability of our qualifying ourselves in all possible ways to assist those who, let us hope with increasing frequency, will seek our advice as to their eligibility for parentage, as well as to take a leading part in impressing upon the public mind and conscience the racial significance of the eugenic point of view.

Sir James Barr is of opinion that the medical practice of the near future will in increasing degree be based upon physiology rather than pathology, and will direct its energies largely to the fortification of the resisting power of the individual to the insidious attacks of disease. In this connexion he pays a well-merited tribute to the work of Sir Almroth Wright. The possibilities of artificial immunization are a tempting sphere for speculation and experiment: for example, it does not seem unduly optimistic to share the President's belief that upon these lines an end might, by determined effort, be made to the ravages of venereal disease.

While applauding the altruistic tendencies of the age as manifested in the care bestowed upon mental and physical weaklings, he sounded a note of warning with regard to the danger of an undue subordination to their welfare of that of the intelligent and the strong. It is time to consider the necessity of limiting the pecuniary and other burdens that, in the interests of the wastrel and the unemployable, are being heaped upon the competent wage-earner and the hard-worked professional man. Similarly, in regard to education, Sir James boldly protests against the fallacy, which seems to underlie much current talk, of assuming that all brains are, in capacity for education, approximately equal, and the vast sums of money wasted in the attempt to make scholars of those in whom the necessary endowment is lacking. Granted that the potentiality of high culture should be zealously sought out and encouraged, it is the height of absurdity to ignore the fact that it is a rare quality.

In concluding an address remarkable for its wealth of ideas and vigour of expression, the President emphasized the need, for success in preventive medicine, of a clear comprehension of physiology, illustrating his point by the indispensability of free calcium ions to the functional efficiency of the cardiac muscle, and the dependence of the health of the heart upon the average level of the arterial blood pressure.

THE ADDRESS IN SURGERY.

MR. PAUL was well inspired when he decided to devote the Address in Surgery to some of his personal experiences of the surgery of the large bowel. During the past few years this region has had a moderately large share of attention from surgeons whose enterprise and ingenuity and courage have yielded results perhaps not so apparently brilliant as those in gastric surgery, but quite as effective in the attainment of the great object—prolonging of life—or at least promotion of the patient's comfort and the relief of suffering. More than twenty years ago Mr. Paul became known as an earnest and original worker in this portion of the field of surgery. During these years these qualities have been tested and worked to the uttermost, and, therefore, now we have the inestimable benefit of the mature ripe judgement and personal experience of one who has had manifold opportunities and possesses the gift of making fullest possible use of these opportunities.

At the outset the scope of the address was restricted to consideration of malignant disease of the great intestine, and especially to those cases calling for the operations of colotomy, short-circuiting, colectomy, excision of rectum. Cancer of the bowel requires to be considered from two points of view—the mechanical and the pathological. It is so frequently the case that the first indications of an abnormal state of the bowel are symptoms of mechanical obstruction, and the obstruction calls urgently for treatment before a cure of the malignant growth can be attempted. After the obstruction has been relieved, the whole question of the radical treatment of the underlying malignancy and its accompanying pathological problems has to be attacked. The success of the attack will depend upon the thoroughness of the investigation into the patient's general constitutional state, the variety and situation of the cancer. Three chief kinds of cancer are recognized—the large, soft, fungating "encephaloid" type; the small, hard "scirrhous" type; and the infiltrating "colloid" type. These types present different degrees of malignancy, and they follow different paths of evolution. It is well to clear the mind of certain misconceptions regarding cancer. These terms "scirrhous" and "encephaloid" are nothing more than convenient clinical terms which can be used in describing cancers anywhere irrespective of histological structure. It would appear also that relative malignancy is a source of confusion. For we are told that the colloid form is the most malignant; the scirrhous or ring tumour comes next; and least malignant of all is the fungating or encephaloid form. The first two types readily give rise to distant glandular infection and metastasis; the last presents glandular involvement also, but chiefly from septic absorption, and so results of operation in the last class may be quite satisfactory even though glands are not all removed. Cancers of the up-growing type, to which the encephaloid belongs, are soft columnar-celled, composed of cells of high development, and evidently functional. These degenerate slowly, forming bulky growths, and show little tendency to disseminate. Cancers of the down-growing type, to which the colloid and scirrhous varieties belong, possess marked infiltrating qualities and ready infection of lymphatic glands. The ring stricture is a scirrhous cancer; it is not rapidly malignant, but its grip is slow and sure, and recurrence is the rule after excision. Recognition of cancer of the bowel is, unfortunately, as difficult a business as it ever was, and is still dependent upon clinical evidences only. In many cases, the ring tumour especially, the first symptoms are those of obstruction; in some, particularly those low in the rectum, the presence of blood and mucus will arouse suspicion; in others, large ulcers without marked obstruction will be characterized by intestinal toxaemia, loss of flesh, irregular colic.

The proper treatment of any case of suspected or proved cancer of the bowel will tax all the powers and drain all the experience of the surgeon. To the operation of colotomy Mr. Paul gives easily the first place as the operation of widest application and greatest usefulness. In all cases of obstruction of the large bowel, whether diagnosed by exploration or otherwise, strangulation being absent, he advises colotomy in the first instance in preference to an

internal operation. It is immensely less dangerous, and it lessens the risks of a radical operation when undertaken at a later period after a suitable interval. It is true that colotomy as a temporary operation may mean prolongation of the illness, and may be the first of two or three operations; but if removing the obstruction and the whole cause of the obstruction in one operation be so often fatal, there can be no doubt which of the two methods patients would prefer if theirs was the decision. As a temporary measure, Mr. Paul strongly advocates the right lumbar operation. His arguments in its favour are sufficiently sound, and his experience sufficiently extensive to demand careful consideration by surgeons. The only other situation where colotomy is to be seriously considered is the left iliac; this is the operation of choice if the opening in the bowel is to be permanent. It was in 1890 that Mr. Paul recommended the glass intestinal drainage tube associated with his name as an adjunct to iliac colotomy, and for many years he employed it frequently. Fifteen years ago about 85 per cent. of his colotomies were anterior, but since then he has made more and more use of the right lumbar operation. It is a common thing to hear doctors and nurses say that they would not submit themselves nor ask any friend to submit to a colotomy with its obnoxiousness and misery and social isolation. Mr. Paul has no sympathy with that kind of talk. He thinks the disability resulting from an iliac colotomy is not nearly so great as is assumed. With a little pluck and the desire to make the best of a bad business, any ordinary patient can continue to lead a useful life. He is a weak-spirited individual who sinks under the misfortune of such a personal discomfort. In Mr. Paul's statistics, drawn from private practice only (hospital patients are notoriously difficult to trace), there are some remarkable figures to show the length of life after colotomy for cancer of the bowel; ten patients were alive at varying intervals from eight months to ten years.

When a reasonable period has elapsed after the primary relief of obstruction by colotomy, further treatment of the disease has to be considered. Short-circuiting may be of great benefit, and may permit the enjoyment of a comparative degree of comfort by relief of the obstructive symptoms. It is essential that this operation shall not be performed when there is paresis of the bowel, and it is also important that as small a section of bowel as possible be cut out of the circuit. But, however good the results of colotomy or short-circuiting may be, the excision of a malignant tumour should be the ideal. The most frequent situations for malignant tumours of the great intestine are the caecum and sigmoid, and these are the most satisfactory to deal with by operation. Mr. Paul's experience has taught him no better method of removing the caecum than that suggested by him in 1892, when the operation was done in two or even three stages. Possibly in the future better methods will be invented so that one operation may suffice; but so far he has had a very low mortality in this method, and failure only came when immediate union of the cut ends of the bowel was attempted.

In [illegible]on of the rectum there are some points of capital importance. A preliminary colotomy greatly lessens the risks of total resection; it should be done in all the more serious cases, and wherever the double route operation is to be performed. The value of retaining any portion of the healthy bowel situated below the disease is seriously questioned, the transposition of the exit of the bowel to a new situation beside the sacrum giving a much more efficient result. Then prolapse is obviated when no bone is sacrificed.

Progress in the surgery of the large bowel during the past quarter of a century may not have been characterized by startling meteoric flights, but it has gone on by a steady march. It is a remarkable tribute to the acumen of surgeons of the early days of colotomy that that operation is elevated to the position of a sound therapeutic measure, and is no longer to be regarded as a confession of failure, an operation of apology. Plainly, much remains to be done; the early recognition of cancer, apart from clinical evidences; the explanation of apparent spontaneous cures; the location of certain kinds of cancer in certain portions of the bowel; the mode of spread of the disease; the readiness or otherwise of metastasis—these and many others are problems awaiting solution. We may not always see the progress that is made, but assuredly we cannot but feel that work of the quality recorded in the address must bring the solutions nearer.

MEDICAL AND SANATORIUM BENEFITS.

THE Annual Representative Meeting, which brought its five days' session in Liverpool to an end on Wednesday, arrived at two decisions of outstanding importance. It expressed its regret that the Government had not acceded to the terms upon which alone the cordial co-operation of the medical profession in supplying medical treatment under the Insurance Act can be obtained, and unhesitatingly adhered to the minimum demands as formulated in the letter addressed to the Insurance Commissioners on February 29th, and since elaborated in interviews with the Chancellor of the Exchequer. It consented to undertake the work of sanatorium benefit subject to safeguards and conditions which are fully set out in the report of the proceedings published in the SUPPLEMENT.

We are quite well aware that the decision as to sanatorium benefit will not be received with unmixed satisfaction by the profession—that indeed it will alarm and anger many. There was ample evidence within the meeting itself that any proposal to give medical services in any form in respect of any part of the Act before the demands of the profession with regard to medical benefit are conceded is extremely distasteful to very many members of the profession. We are quite aware also that some newspapers have in various keys trumpeted the decision abroad as evidence that the profession is weakening in its opposition to the inept system for the administration of medical benefit contained in the insurance scheme which the Government is endeavouring to force upon an unwilling public and a hostile profession. But this conclusion should not be accepted without very full consideration, and when such is given we believe that most level-headed men will realize that the Representative Meeting came to a wise decision.

The Association adheres to the minimum demands forwarded to the Commissioners after the Special Representative Meeting in February. At that time sanatorium benefit was not so prominent; the scheme for its administration, outlined in the Astor report, had not been drafted—it was not until May that the Local Government Board, which is mainly responsible for its administration, issued its preliminary warning—and in February it was still possible to hope that Mr. Lloyd George would not endeavour to snatch a tactical political advantage by bringing technically into force at the earliest possible moment a scheme at present existing, in an inchoate state, only on paper.

The Representative Meeting, after, as has been

said, and as any member may see for himself by referring to the SUPPLEMENT, long and anxious debate, decided that it would be more consonant with the honour and interests and traditions of the profession to consent to work the scheme for the treatment of tuberculosis, to be administered by the county councils in co-operation with the County Insurance Committees, than to refuse to do so in order to win some doubtful advantage of tactical position.

The profession refuses to work the scheme for medical benefit under the Act because it knows it to be unsound in principle, defective in detail, and inimical to the public interest, while at the same time it is sought to impose upon the profession onerous and exacting duties, and to pay sweating terms of remuneration.

The scheme for the treatment of tuberculosis is on a different footing. The public demand for an organized system of preventing and treating tuberculosis has been created by the profession itself, and the majority of the Representatives felt that the profession ought not to put any obstacle in the way of its being efficiently worked from the start. In this connexion, the fact that the scheme has already technically been brought into operation had weight. The conditions of service and the terms of remuneration are not, so far as can be judged, so much below those which the profession would consider suitable as to justify it in refusing to work it on this ground alone. The Representative Meeting, therefore, felt that it was undesirable to allow what may be converted into a good system to fail on account of the withdrawal of the assistance which the profession can alone give, and which, but for the mistakes of politicians and the unsympathetic attitude assumed by the Insurance Commissioners, it would joyfully have given.

It seems to many that the determination to force on public attention this paper system of sanatorium benefit was a political trick designed to put the profession in the wrong. There has been about some of Mr. Lloyd George's recent utterances a tone which has given the impression that he is seeking to force the profession into taking the aggressive against the tuberculosis scheme, with the object of winning for himself the popular sympathy the profession has hitherto enjoyed. A decision to refuse to work the tuberculosis scheme in order to demonstrate against the Insurance Act would from this point of view have been only to play into his hands, and have given him more ammunition for his rhetorical attacks upon the humanity of the medical practitioners.

ANNUAL MEETING NOTES.

PROLEGOMENA.

THERE are both advantages and disadvantages in holding an annual meeting in a great and habitually busy centre of population, and commonly the latter outweigh the former. But at Liverpool the Executive Committee of the Association's hosts have contrived practically to eliminate disadvantages and to accentuate advantages. The general reception room is at St. George's Hall, a kind of Lancastrian Rome to which all roads lead, and since in Liverpool most of these roads are provided with tram lines, access to the general reception room is especially easy. Furthermore, most of the hotels recommended to the notice of members attending the meeting are within a few hundred yards of this same centre, while the lodgings similarly recommended are for the most part almost equally happily chosen in point of affording ready access to the University buildings in which the Sections are meeting. This year, too, the arrangements here secured continuity of the proceedings from first to last. In many previous years the first general meeting was held on a day when it could hardly be attended by others than the elected Representatives of the Association and its honorary officials, because ordinary members had not yet arrived. This year, however, as at Birmingham, the early deliberations of the Representatives were not interrupted by any formality in the way of an annual general meeting, and ordinary members made their first formal bow to their hosts on Tuesday afternoon. The events which then took place are duly recorded in the SUPPLEMENT to this issue. Meantime, however, the Association as a body had been doubly welcomed, first by Sir James Barr, who visited the Representative Meeting on Friday, and bade the Association welcome in the name of the Branch; next by Sir George Petrie, who on Saturday performed the same task on behalf of the Earl of Derby and the Corporation of the City of Liverpool. The welcome accorded by the weather was less frankly cordial. On Sunday and Monday, indeed, there was almost positive evidence that its clerk must be under the direct influence of Mr. Lloyd George. In any case it rained very heavily on those days, and has since done so at intervals. Other minor representatives of Liverpool have, however, fully re-established the balance. The local policeman, for instance, is proving himself almost as encyclopaedic and ready-witted as his London *confrère*, while the ways of the local tramway man have suggested that his studies in the school of Sir Charles Grandison must have been profounder than those of like employees of the London County Council.

OVERSEA DELEGATES.

FOLLOWING the presentation of the foreign and other guests of the Association to the President on Tuesday evening came the introduction of delegates and members of the Oversea Branches. The names of those Branches brought vividly to mind the fact that members of the Association are now to be found in organized groups in practically every part of the world, while the number of delegates amply proved that these meetings are not less attractive to members in distant lands than to those at home. South Africa, for instance, sent eleven delegates, in the persons of Dr. Bush of the Border Branch, Drs. Charles and Jasper Anderson of the Cape of Good Hope Branch, Drs. T. D. Greenlees, F. Hazell, and M. Hewat of the same Branch, Dr. H. Symonds of Griqualand West, and Drs. Beamann, Hunter, Mursell, and Napier, all of whom practise in the Transvaal. Australasia was even more amply represented, since the list included Drs. J. S. Elliot, David Ewart, and A. E. Palmer, from New Zealand; Drs. F. Antill Pockley and William Chisholm, from New South Wales; Dr. A. Stewart, from Brisbane; Drs. R. H. Marten and C. E. Todd, from South Australia; Professor H. B. Allen and Dr. C. G. D. Morier, from Victoria; Drs. H. T. Kelsall and G. D. G. Thorp from West Australia; and Drs. Leslie Latham and Gregory Sprott from Tasmania. The Indian Empire and the countries in its immediate vicinity were also represented: Bombay by Major S. C. Evans, Burma by Captains H. H. G. Knapp, A. Whitmore, and H. A. Williams, all of the Indian Medical Service; Madras by Surgeon-General P. H. Benson and Major W. C. Long, who also belong to the same service; and the Malay States, including the Crown Colonies ranged round Singapore, by Drs James Kirk and W. R. C. Middleton; and Ceylon by Drs. Aldo Castellani and A. J. Chalmers. Representatives of the Far East were also not lacking, Hong Kong sending Dr. J. M. Atkinson, its chief medical officer, and China Drs. J. H. Sanders, F. O. Stedman, and Keyt. There were also delegates from the opposite hemisphere, Canada being well represented by Professor Irvine Cameron of Toronto and Professor H. S. Birkett of Montreal; while the West Indies figured in connexion with

the names of Dr. F. Law of British Guiana and Dr. E. E. Bronstorph of Jamaica.

Foreign Guests.

THE long-established and very popular ceremony of publicly introducing to the President the guests of the Association was performed on Tuesday evening just before Sir James Barr delivered his address. The list of those selected was long, the foreign guests alone numbering between twenty and thirty. Although rather fewer of them than usual were men whose names are familiar as household words to the profession at large, it is at least certain that a greater proportion of them are better known than would be the case if a corresponding number of British specialists were attending a similar meeting abroad. This is because in Great Britain and Ireland no prophet is without honour whatever the country in which he happens to work, and the rank and file of general practitioners are much more familiar with the progress of science abroad and with the names of those who form its vanguard than are men similarly occupied on the Continent. It is a fact in which we take some pride, since, as we have before had occasion to claim, it is in large measure due to the contents of our own columns, including the EPITOME OF CURRENT MEDICAL LITERATURE, which is garnered from all sources. Among them were Professors Blanchard and de Beurmann of Paris; Drs. Hajek and Kahler, both members of the staff of the University of Vienna; Dr. Snellen of Utrecht; Professor Strauss of Amsterdam; Dr. Haenisch, the Hamburg electro-therapeutic specialist; Dr. Harold Seidelin of Mexico; Professor Gabbi of Tripoli; Professor F. Kleine, the well-known worker on sleeping sickness in German East Africa; and Drs. Casey A. Wood and W. Ballinger, both of Chicago. Another guest whose name was duly announced was Professor Rutherford, F.R.S., of Manchester, who had been invited to attend the meeting and open the work of the Section of Electro-Therapeutics by an address on The Chemical Action of Radium.

The Church Services.

THE holding of the special services which habitually form part of the proceedings at the Annual Meeting was deferred until a later date than usual, Wednesday being the day selected. Considering that by this time the meeting was in full progress, and the Catholic service was held at the unconfortably early hour of nine o'clock in the morning, and that the service in the English Church took place at an hour when many visitors were bent on pure amusement, both may be considered to have been well attended.

The Anglican Church service took place at 2.30 p.m. on Wednesday, the sermon being preached by the Right Reverend the Lord Bishop of Liverpool (Dr. Chavasse), who took as his text Acts x 38: "God anointed Jesus of Nazareth with the Holy Ghost and with power: Who went about doing good, and healing all that were oppressed of the devil, for God was with Him." Reared in a medical home, taught from a child to reverence the very name of doctor, knit by the closest ties of relationship with three generations of medical men, he might claim, (said Dr. Chavasse) at least to be in full sympathy with his audience, and to have watched with peculiar interest and wonder, at close quarters, the amazing progress of medical science and surgery during the last half-century. Two of the outstanding features of the revolution that it constituted seemed to him to be: First, the noble spirit of altruism which had led every medical discoverer and inventor to be regardless of his own self-enrichment, and to place freely the result of long years of laborious research or of a moment's inspiration at the service of mankind. And, secondly, the scientific spirit which had killed the conservatism of an older time, and had led the foremost men of medicine to cultivate an openness of mind which recognized the extraordinary complexity of man. Some years ago the medical world, like every department of scientific thought, felt the effect of the advancing wave of materialism which so largely influenced intellectual Europe. That wave, thank God, seemed now to have spent its force and to be on the ebb. To-day the dictum of a great surgeon that "he had never found a soul in the dissecting-room" would no longer be regarded as scientific, or as affording even a shadow of evidence that the soul did not exist. Phenomena, until lately little thought of, had tended to strengthen the teaching of the Christian revelation on such points as the immortality of the soul, and to change hostility into agnosticism or into a sympathy ready to pass into faith. So, too, a fact never wholly lost sight of but too often forgotten, not only by science but by religion, had of late years come again to its own. This was the influence of the mind and spirit over the body. Both religion and science were facing to-day the question of faith-healing, and the existence of that fantastic and amazing cult which called itself Christian Science, but which was "a medley of bad philosophy, confused Christianity, and an ecstatic optimism which cures all evil by denying its existence." Like every heresy which had succeeded in captivating the minds and hearts of good and credulous men and women, Christian Science contained a grain of truth, this being the fact that, given certain conditions, the mind and the spirit could operate on the body with remarkable physical results. But this was no new fact. Ancient and modern history alike bore witness to the curative influence of the mind over the body; and one great task lying before medical science to-day was to investigate the range of this power and the conditions under which it worked. The result of such an inquiry would be pregnant with peculiar blessings to suffering humanity, and regulate and redeem from superstition, imposture, and grievous abuse, one of God's great instruments for the healing of man. This influence of mind over body helped to explain many of the miracles of our Lord, in whom was found in the highest degree and in the most perfect form that commanding personality and those special gifts which had existed in a much lower degree in certain men and women in every age, sometimes by virtue of their spiritual union with God and sometimes by natural endowment. It suggested, too, what every true doctor had known in every age, though he had not always carried the knowledge into practice—namely, that in certain diseases as much attention must be given to the mind and spirit as to the body. The wise application of the physician's knowledge of the influence of the mind on the body was often a necessary condition of successful treatment in the case of certain patients. It reinforced the curative powers of Nature, and it helped sufferers to work out their own deliverances. Speaking on the relations of doctors and clerics, the Bishop said medicine and religion were mutually complementary. I voice, I am sure (he said), the opinion of the vast number of the English clergy when I say that a clergyman cannot be allowed, without danger to the community, to take upon himself pure medical functions. By so doing he travels far outside his authorized commission; he excites the well-deserved resentment and censure of members of the medical profession, and he exposes to the gravest risks the health, and even the life, of those whom he dares to treat. He has his part—and no mean part—in the healing of the sick. He can second by every means in his power the counsels of the doctor. He can support him loyally with his patient, and strengthen that patient's faith in his doctor's person and treatment. In many cases he can do more. Since the mind and spirit affect the body, since hope, and faith, and calmness are powerful factors in a patient's recovery, he can prove a real help in preparing a sick man for a serious operation; in strengthening the will of one who is hovering between life and death, and whose

recovery may hang, to a very great degree, upon his own courage and resolution; and in soothing and upholding by his ministry the spirits of those whose life may depend upon the patience and the strength which comes in its highest form from the vision of the presence of God. The saying of Gassner, of whose power as a faith healer in the middle of the eighteenth century there can be no question, explains his success: "One ought not to acquiesce in pain, but bravely to resist it in faith." The priest of the body should welcome the advent of the priest of the soul as that of an ally, and the priest of the soul should work with loyalty and discrimination with the priest of the body. Each has his function, and together they can accomplish a better and more complete work than if each serves the sick alone. Our Lord Himself was the priest of the body and of the soul. Before concluding, Dr. Chavasse spoke with admiration and thankfulness of the magnificent work now being done by medical missionaries, mentioning more particularly in this connexion the late Theodore Leighton Pennell, who died this year in India after nineteen years' work on the Afghan frontier, and Arthur Jackson, who died at Mukden last year while tending on a plague-stricken people.

The Catholic service was held in the Pro-Cathedral Church of St. Nicholas, Coppers Hill, Mass being celebrated by the Catholic Archbishop of Liverpool, Dr. Thomas Whiteside. The preacher was the Rev. H. Lucas, S.J., who took for his text the words (Mark ix. 43–45), "If thy hand scandalize thee, cut it off," etc. This, he observed, was an unquestionably hard and uncompromising saying, even though expressed in figurative language, but he had chosen it because it gave emphatic expression to a truth which it was most important that all Christians should bear in mind—namely, that pain was not an absolute evil to be shunned at all cost, nor conversely was physical well-being and the absence of pain the chief aim and end of a well-ordered human life. It was part of practical wisdom to recognize man's limitations, and members of the medical profession, who were constantly engaged in a great and laudable work of mercy, would be well advised always to bear in mind that the claims of the immortal soul were of an immeasurably higher order than those of the perishable body. In the recognition of those claims lay, the preacher said, the chief difference between "mere philanthropy" (that is philanthropy divorced from religion) and true Christian charity. The outlook of philanthropy was bounded by the confines of the visible world and of this transient life. But Christian charity, even when engaged in what were called the corporeal works of mercy, could never lose sight of the soul and of its eternal destiny. Christian charity, he continued, sees in pain and ill-health not only no absolute evil, but often a blessing in disguise, and not seldom a blessing of which the guise is extremely thin, inasmuch as the severe castigation of sickness and suffering not infrequently appears to be just the one thing needed to turn the heart to God, and to save the sinner from a far worse fate than that of a few weeks or months or even years of pain. Nor did it therefore follow that to battle against disease was futile and to no purpose. That man should endeavour to do so was plainly in accordance with God's will and quite unmistakably indicated. For, indeed, that softening of the heart which was needed in order that physical ills might become an occasion of spiritual blessings in great measure depended on the efforts made to relieve the sufferer, or at least to lighten the burden that must needs be borne. Father Lucas then briefly touched on the theme that "philanthropy" divorced from religion tended to the exaltation of the community or of the State at the expense of the individual, and of the physically and mentally "fit" at the expense of the so-called "unfit." Finally, a hope was expressed that, in the not too distant future, the city of Liverpool might see, rising in its midst or on its outskirts, a great Catholic hospital in which the consolations of religion and the ministry of the Catholic priesthood and of a Catholic sisterhood might be exercised under more favourable conditions than those of necessity prevailing when the surroundings were predominantly non-Catholic. In such an institution everything possible could be done to inspire the very wreckage and wastage of humanity with the hope that, though they had been found unfit for the struggles of life in an inhospitable world, they might yet be rendered fit for the kingdom of heaven. The address concluded with an appeal on behalf of the Medical Benevolent Fund.

The Representatives.

There is general agreement that at this meeting, as on sundry previous occasions, the elected of the people, or, in other words, the Representatives of the Association, have thoroughly justified their existence. They have awarded themselves some ten hours' penal servitude on each of four separate days, and have exhibited laudable patience in listening to inevitable repetition of argument, and an even more admirable capacity for appreciating fine distinctions. It is satisfactory, therefore, to be able to report that their labours from Friday to Wednesday were not entirely unlightened. Their brief tea-parties in the afternoons have been very cheerful and animated events, and the completion of their first day's work was celebrated by their dining together at the Adelphi Hotel. On Sunday there was to have been a formal excursion, but the weather, as elsewhere indicated, was not inviting, and they broke up into various parties. Some made hurried dashes homewards, others engaged in golf, and a good many went by sea on the chance of catching a glimpse of the beauties of the Menai Straits. It is whispered that one outcome of these various relaxations is that the Representatives have discovered a teller of tales whom they are prepared to back for a considerable stake against any American champion of the same art, and that he hails from Birmingham.

The Presidential Badge.

It will be remembered that on the occasion of the annual meeting in London in 1910 the Metropolitan Counties Branch presented the Association with a presidential badge, and that last year at Birmingham a replica of this was presented to Professor Saundby. A corresponding gift was made this year to Sir James Barr just before he delivered his address. In making the presentation Mr. Thelwall Thomas said that it was intended as a token of regard for Sir James, and of appreciation of the remarkable energy he had displayed as President-elect. Sir James had been their President for half a dozen hours only, but, judging by the headlines which had already appeared in the evening papers, he was likely to make a sensation in his year of office. The medical profession had a very troublous year in front of it, but they felt they had in Sir James a particularly strong man at this time of crisis. Mr. Thomas added, amidst laughter and applause, that although he was presenting Sir James Barr with the replica, he did not intend to hand it over to him. He preferred to deliver it to Lady Barr, and to ask her to wear it as a jewel during Sir James's presidency.

Social Doings.

Any one who manages to take even moderate advantage of the opportunities set before the visitors by the Entertainments Committee should be able to give a comprehensive account of Liverpool, alike from a social point of view and in respect of its attainments as a great port and manufacturing centre. The amount of amusement—including social entertainments, informative occupations, and physical recreations—which commenced on Tuesday, and is still in full swing, is almost bewildering in its variety. To deal with the social side alone, Wednesday saw a garden

party given by the President of the Medical Institute and Mrs. Robert Jones, of Druid's Cross, Wavertree, and on the same evening the general hosts gave a soirée, at which refined equivalents for the Pickwickian boiled leg of mutton and onion sauce were by no means lacking. On Thursday Mr. and Mrs. Frank Paul were at home in the garden of their residence at Hoylake, and Dr. C. C. Street was similarly engaged at Haydock Lodge Private Asylum. Later the same afternoon the Earl and Countess of Derby also gave a garden party at the Botanic Gardens, and a garden party given by Sir James and Lady Barr at Calderstones is still to come. Consideration was on that evening duly paid to probable desire for some means of getting through the hours between dinner and bedtime on the part of members who did not care to attend the Association dinner and of the ladies who were accompanying them. The entertainment provided for them took the form of an admirable performance of *Mrs. Gorringe's Necklace* at the Court Theatre, which was specially opened for the occasion. Meantime and between whiles, thanks to the courtesy of their members, there have been nearly a dozen clubs at which to while away the time and possibly renew one's vigour for further sightseeing by a moment's doze, and golf has been daily very much to the fore.

Ladies.

Arrangements for ladies are working very successfully, a special committee, at whose head is Lady Barr, having provided a variety of occupations for lady visitors only domestically interested in science during the hours that work in the Sections is going on. A certain number of motor cars have been available for short drives in the neighbourhood, most of them taking their passengers to an interesting house known as Speke Hall, whose owner, Miss Watt, has kindly thrown it open on this occasion, while on Friday morning the *Galatea*, a yacht belonging to the Dock Board, is to afford an opportunity of becoming acquainted with the Mersey so far as is possible in the course of a short morning. An equally practical development of the energies of the Ladies' Committee has been the selection of places specially suitable as refreshment rooms for lady visitors from among the remarkable number of places of this order that endeavour to claim the patronage of passers-by that the more central part of the city possesses. Nor has the need for rest been overlooked—writing rooms and other like accommodation being available.

Other Associations.

The Association adhered this year to its practice of according facilities to other closely allied bodies to hold gatherings during the meeting, those which have taken advantage thereof on this occasion being the National Temperance League, the Irish Medical Schools' and Graduates' Association, and the Continental Anglo-American Medical Society. These subsidiary meetings are decidedly popular among attendants at the meetings, and they are certainly of utility to the societies concerned, since other occasions on which any considerable number of actual and possible members find themselves collected in the same town are comparatively rare. The National Temperance League is so very much alive that it seems natural to regard it as a personal entity. This being the case it may probably be rightly described as having attained the position of the oldest inhabitant in respect of annual meetings, since its breakfast party this year is the forty-first annual event of the same order. It took place on Thursday, and we hope to give an account of the occurrences thereat in a later issue. Meantime it need merely be said that the Chairman was Mr. Alexander Guthrie and that the special event of the morning was an address by Dr. Mott. The Irish Medical Schools' and Graduates' Association is now an almost equally constant attendant, and this year fixed its summer general meeting for Wednesday. Having mentioned the adjective "Irish," it need scarcely be said that hospitality formed a feature of the proceedings—so marked a feature, indeed, that it practically concealed the rest of the face. Doubtless, the society managed to get through business of some kind, but for the most of those present the meeting was solely a very cheerful luncheon party at the Exchange Station Hotel, which had been organized by the honorary provincial secretary, Dr. Shepherd Boyd, of Harrogate, and had as chairman Dr. Macnaughton Jones. The third meeting, that held by the Continental Anglo-American Medical Society, was also in the nature of a midday *festa*, which was timed for Thursday on the conclusion of the section work for that day.

The Annual Exhibition.

The Annual Exhibition, which was practically ready for examination as early as 9 o'clock on Tuesday morning, was formally declared open by Sir James Barr at 11.30 on that day, and is now, we trust, receiving an adequate meed of attention on the part of attendants at the meeting. The exhibition covers so wide a field that it serves as a practical illustration of the advertisement pages of our own and all other medical journals. They offer in addition the supreme advantage that one is able to examine at ease, and without fear of importunity to purchase, a carefully selected assortment of everything that is most attractive in the way of new instruments, books, pharmaceutical preparations, surgical appliances, and all other things intended to facilitate medical and surgical work in its various branches. In short, as some one remarked, this exhibition is a mine of new ideas to those who are too much absorbed in the daily cares of practice to have time habitually to study their Journal from end to end. There are many who rightly regard the annual exhibition in this light, and should they have been able to visit that now in progress they will not have been disappointed. In particular they must have been struck by the skill shown by manufacturers in seizing upon every fresh suggestion in the way of treatment and making it promptly available to all those who care to test its merits. They will probably also be disposed to congratulate the officials of the Association responsible for the organization of these exhibitions. It is true that they are now experts in this very special class of undertaking, and it is fortunate that this is the case, for otherwise it would have been impossible for them to transform the only building available in the vicinity of the university into one worthy of its contents. Nothing but its external walls betrayed the fact that only a day or two previously the chief claim of the building to attention had consisted in the fact that it was a very well-marked specimen of an ancient disused warehouse.

Annual Meeting Literature.

The literature which is being handed to members together with their membership card is of an unusually comprehensive character this year, for, apart from copies of the *Daily Journal*, it includes three separate volumes descriptive of Liverpool in one or other of its many guises. One is a freely illustrated publication in pamphlet form dealing with Liverpool as a great port; it is a gift from the Mersey Docks and Harbour Board. A second volume of the same order deals with Liverpool as a specimen of a great city, and traces its rise from early times to its present position. It contains some admirable reproductions of pictures of Liverpool, both as it was in long bygone days and as it appears at the present date; this volume is a gift of the Finance Committee of the Corporation of the city. The third volume may be regarded as the Association's own offspring, its immediate parent being the Handbook Committee formed by Sir James Barr, Mr. Thomas Bickerton, Mr. Charles Larkin, and Mr. Owen T. Williams. An introduction states that its preparation

had to be undertaken and carried through in great haste because the allied volume which it was originally intended to publish, and which was already in the hands of the printer, proved to be unnecessary, owing to the prospective gifts of the two books already mentioned. But we can truthfully say that the haste is most admirably concealed, since the volume is not only well and attractively written, but is well turned out in a neat red cover. Of its many illustrations, two early ones depict a past president of the Association in the person of the late Dr. A. T. H. Waters, and another president who, although he has but recently attained office, must already be familiar both by sight and through his forcible writings to most members of the Association, namely, Sir James Barr. The book itself consists of some six chapters, one tracing the relations of Liverpool with the body which is now its guest, while others deal with Liverpool from the point of view of its medical history and present position in all like connexions. A very attractive chapter on its medical history is from the pen of Mr. Bickerton, while Mr. C. H. Reilly deals succinctly with the University and its medical school. Finally comes an interesting chapter in which Mr. S. T. Adshead reviews town planning in relation to Liverpool, while Mr. J. M. Given adds some considerations on what is, after all, and despite the feats of modern engineers, a leading factor in the whole situation, namely, the geology of the locality.

MESSRS. BURROUGHS WELLCOME AND CO. have distributed to the members present at the Annual Meeting a charmingly got-up booklet on Anglo-Saxon leechcraft. A historical sketch of early English medicine is given, with numerous reproductions of illustrations from Anglo-Saxon manuscripts of the tenth, eleventh, and twelfth centuries. A plan of Liverpool as it was in 1655 makes an effective frontispiece. The book is divided into nine chapters, dealing respectively with the genesis of English medicine, the Anglo-Saxon leech and his practice, Anglo-Saxon medical literature, *Medicinale Anglicum* (or the *Leech Book* of Bald), the *Herbarium* of Apuleius Platonicus, the *Medicina de Quadripedibus* of Sextus Placitus, Anglo-Saxon surgery, Anglo-Saxon pharmacy and herb lore, and Anglo-Saxon methods of healing by charm and incantation. In a prefatory note Mr. Henry S. Wellcome, who, as is well known, has been engaged for many years in researches as to the early methods employed in the healing art among civilized and uncivilized peoples, states that the medico-historical exhibition which he has been organizing for some time past, will be held at the same time as the International Medical Congress in London in 1913. Mr. Wellcome appeals to all who possess objects of historical medical interest to help by lending them so that the exhibition may be thoroughly representative.

THE attendance of members registered up to the time we go to press is 1,400. They are accompanied by 800 ladies.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

THE character and scope of the work of the different Sections will appear from the following short summary of the proceedings. A full report of the discussions and of the various papers read in the Sections will be published in due course.

Wednesday, July 24th, 1912.

SECTION OF ANAESTHETICS.

THE proceedings were opened by the President, Dr. Dudley W. Buxton, who, after welcoming those present, and outlining the matter before the Section, emphasized the importance to anaesthetists of scientific training, and dwelt on the lack of encouragement to the best men to join their ranks, and the disabilities under which many of them laboured. He then called upon Dr. Felix Rood to open a discussion on intravenous infusion anaesthesia. Dr. Rood, after a comparison of the relative safety of chloroform and ether, pointed out the great advances which had taken place in the methods for the administration of ether. The infusion method obviated the necessity of inhaling an irritating vapour, and gave the patient the benefit of a saline infusion as well. He described his apparatus and technique, and quoted a number of cases. He thought the method most valuable where there was pulmonary disease, or shock was present or likely to supervene. Dr. McCardie considered that for operations in and about the mouth ether was best administered by means of Crile's tubes, but in operations on the larynx and on large goitres the intravenous method had advantages. He also considered it useful where haemorrhage or shock were present or anticipated. Mr. Victor Fielden emphasized the difficulties connected with the proper warming of the solution. He asked if any cases of oedema of the lung had supervened upon infusion. He considered the percentage of lung complications quoted by Dr. Rood as occurring after chloroform anaesthesia in foreign clinics were much higher than obtained in this country. Mr. Alexander Wilson regarded it as a disadvantage to have the anaesthetist removed from the region of the head. Dr. Barton's experience of the method had not been an unqualified success, and his cases were therefore limited. Using ether, the type of anaesthesia was no better than that obtained by the open method of inhalation, and after-effects had been worse. Hedonal was a distinctly dangerous anaesthetic; a death had occurred in his practice two hours after operation. In selected cases, and with certain precautions, both anaesthetics would, no doubt, continue to prove of service occasionally. The President said his experience went to show the method was of value: like all new methods it required complete mastery of technique and careful selection of cases: undoubtedly there were special dangers easily avoided by the anaesthetist giving his whole attention to the administration. He considered the statistics of post-chloroform complications quoted by Dr. Rood were vitiated, because the method of administration was not taken into account; by employing a proper method chloroform anaesthesia was produced without chloroform toxaemia. Dr. Rood replied. Mr. Alexander Wilson next opened a discussion on the importance of affording the anaesthetist an opportunity of making a thorough examination of the patient some days previous to operation and after the nature of the operation had been disclosed. He pointed out that the responsibilities of the anaesthetist were now greater than formerly, and that there was a growing tendency to attribute more of the post-operative complications to the effect of the anaesthetic. Many difficulties would be prevented by the more intimate acquaintance of anaesthetist and patient. Mr. Kirkby Thomas agreed with the opener and regretted the apathy of anaesthetists in the matter. Mr. Carter Braine was in sympathy with the proposition; in a quarter of a century's practice he had only been asked to make a previous examination on two or three occasions. He deprecated the administration to patients of drugs previous to operation without consultation with the anaesthetist. Dr. Fingland made some remarks. Mr. Leedham-Green thought the public were only just becoming educated to the necessity for the employment of a skilled anaesthetist and that it would take some time before they realized the importance of a previous consultation with him with its contingent fee. Dr. Mart dealt with the matter from the psychological aspect. Dr. McCardie pleaded for a closer association previous to operation as calculated to reduce the emotional strain on the patient, and quoted from Crile in support of his thesis. The President considered financial considerations of minor importance where such grave responsibilities were involved; whilst fully recognizing that the anaesthetist was only auxiliary to the surgeon, he pointed out that the bulk of these responsibilities fell upon him.

SECTION OF ANATOMY.

IN opening the proceedings in this Section, the President, Professor William Wright, said that they met under the most favourable auspices, in that Sir William Macewen had agreed to open a discussion on that most important subject to anatomists and surgeons—the development and

growth of bone. Sir William, who gave a summary of the important work on which he had been engaged for some years past, discussed particularly the origin of the osteoblast. He believed the osteoblast was derived from a cartilage cell; that cartilage was always present potentially in bone, even when mature; and that when repair took place the development of cartilage preceded the formation of bone. In rickets the projections which occur in long bones, like the tibia, were first of all preformed in cartilage, and subsequently became converted into bone. It was certain, therefore, that old bone could reproduce cartilage; in other words, cartilage was a phase in the reproduction of bone. The speaker then showed a large number of lantern slides illustrating the result of his experiments on the long bones of animals, such as the deer. After removal of a piece of bone in a young animal, there was a rapid filling up of the space by bone, from which it had been argued that the new bone was the result of activity of the periosteum. This was a mistake, and to prove it Sir William removed the whole of a long bone, leaving the periosteum intact, and no reproduction of bone took place. He also gave an account of some interesting experiments which he had made with reference to the growth of bone round rings inserted between the periosteum and the bone. Most textbooks stated that the bone which subsequently grew over the ring came from the periosteum, but the same result was obtained after the periosteum was removed. Professor Geddes, who followed, showed that here, at any rate, deductions from experiments were not in harmony with those obtained from a study of embryos and a consideration of morphological problems. He believed the osteoblast to be *ectodermal* in origin. He first of all emphasized the importance of stains in these observations. Haematoxylin led one wrong. The most useful stains were Bismarck brown, Congo red, Mallory's stain (Sabin): the latter contains fuchsin, and Professor Geddes found that the osteoblast cell stained differently from the cartilage cell—that with Mallory's stain it came out a much brighter red, due to a marked fuchsin-holding capacity which the osteoblastic cell possessed. Taking this fact as a basis, he examined carefully embryos of 10, 9, and 8 micromillimetres in length and found certain migratory cells which he regarded as osteoblasts, and which, proceeding from ectodermal structures, passed through the connective tissue syncytia to the developing periosteum. Thence they passed to reach the potential subperiosteal space, where they congregated in enormous numbers and rapidly proliferated. The rôle of cartilage was to form a scaffolding for the first bone, and as this became strong enough to support itself the cartilage underwent absorption. This scaffolding saved the osteoblasts from the pressure of the surrounding parts. Cartilage was mesodermic; bone was not. What, therefore, was the explanation of Sir William Macewen's contention that bone came from cartilage? There was no difficulty regarding cartilage formation from bone as it came from the connective tissue syncytium of the bone. Professor Paterson, arguing from his observations on the developing sternum, had come to the conclusion that the cause of ossification appeared to be essentially irritation; the agent was an embryonic connective tissue cell, and the process a chemical one, which occurred *in situ*, and was extravascular. Mr. D. Douglas-Crawford said that after frequent observations in hospital he accepted Sir W. Macewen's views on bone growth. After the President had summed up the various points raised in the discussion, Sir William Macewen briefly replied, and the Section adjourned.

Combined Sections of Bacteriology and State Medicine.

An important discussion took place in this session on the means of estimating the suitability of water for drinking purposes. Dr. Chalmers of Glasgow took the chair. Dr. Houston (Metropolitan Water Board, London) showed that typical *B. coli* was present in excremental matter, and might be regarded as indicative of undesirable pollution. He described it as a decadent microbe when outside the animal body, so its presence in water pointed to recent pollution. He found that a standard of pure water could be set up, by condensing samples which showed growth of *B. coli* from 100 c.cm. Impure water could be purified to this standard at a reasonable cost. He laid stress on the importance of not setting up either too severe or too lenient a standard. These standards would be useless if they be not interpreted with discretion, and in relation to local and other conditions, and therefore the verdict of the bacteriological examination should be modified by the results of geographical, topographical, physical, and chemical investigations. The *B. coli* test was the best test for judging the efficiency of any water purification process. It might be regarded as a reliable indication of the presence of possible dangers. Dr. Savage's paper was read by Dr. R. S. Williams, the author being absent. In this communication he stated that *B. coli* was now accepted as an indication of pollution of water. He had set up conditions which a bacterial indicator should fulfil, and examined in detail how far *B. coli* fulfilled them. After discussing the characteristics of coagulating milk, producing indol, fermenting sugars, alcohols, etc., he turned his attention to the atypical variations of the bacillus. The more nearly the organism isolated resembled an excretal typical *B. coli*, the greater was its significance as an indicator of pollution. Dr. Wright (Glasgow) took up the position of the medical officer of health, and in dealing with the value of a bacteriological indicator of water pollution, brought forward statistics in evidence against the assumption of enteric fever being due to contaminated water supplies. He regarded it as being impossible for contamination of a supply in iron pipes with water under high pressure to take place. He also spoke of rural districts with high *B. coli* content in which no enteric fever had existed for many years. Dr. Oliver (Liverpool) challenged both points, and brought forward evidence of the possibility of contamination of water in pipes under pressure. Dr. Willoughby (Eastbourne) asked a few questions. Dr. Stallybrass (Liverpool) raised the question of the dangers of unhygienic housing, apart from water supply, as a cause of enteric, and called attention to the parallelism between pollution of water and incidence of diarrhoea. Drs. Penfold (London), Richard Jones (Festiniog), Ritchie (Edinburgh), and Chalmers (Glasgow) having spoken, and Drs. Houston and Wright having briefly replied, the following resolution was proposed by Dr. Oliver, seconded by Dr. Ritchie, and carried unanimously:

> That this conjoint meeting of the Sections of State Medicine and Bacteriology unanimously desires strongly to urge that no opinion as to the quality of a water for dietetic purposes should be arrived at on bacteriological evidence without a local and topographical inspection of the sources of that supply, made by a competent observer.

Section of Dermatology.

The introductory remarks made by Professor W. G. Smith, President of the Section, dealt with the ways in which dermatology had been enriched by physical science, the discovery of radium being one path, the therapeutic action of the waters of the various spas being another path. Attention was then drawn to the great developments in our knowledge of bio-chemistry—for instance, the proof that had been attained that the factors entering into the immunity problem were of a colloidal nature. Professor Smith looked upon the skin as a greasy colloidal septum, and stated that nothing could be absorbed by the skin which was not of a fatty nature—or, in other words, substances which were only lipoid-soluble. The discussion for the day was on the nature, causation, and treatment of seborrhoea and acne. It was admirably opened by a most lucid paper by Dr. Whitfield, and illustrated by several excellent magic-lantern slides. Seborrhoea was stated to exist without acne, but in every case of acne there was seborrhoea. The word "seborrhoea" was defined "as a secretion which leads to pathological complications." Adolescence was considered the chief cause of seborrhoea. Diet played a large part in producing the excessive secretion, aided by a hot, moist atmosphere and excessive clothing. The production of acne was divided into three stages: (1) The occurrence of seborrhoea; (2) the formation of a horny plug in the mouth of the pilo-sebaceous follicle—the comedo or blackhead; (3) suppuration. In the comedo, which produced no inflammation in the surrounding tissue, Sabouraud's microbacillus was always to be found. Where there was suppuration there was always a marked cellular infiltration in the corium around the comedo, and cultures from

which usually revealed a staphylococcus. Therefore the deduction was drawn that the comedo was due to the microbacillus and the suppuration to the staphylococcus. Brief reference was then made to the treatment of both seborrhoea and acne. Dr. Phineas Abraham was convinced of the rôle played by the constitutional element in the causation of seborrhoea and acne, aided by the bacillary infection. Treatment was fully dealt with, and stress laid on the necessity of always giving some internal medication to overcome the cause of the constitutional defect, be it flatulence or constipation, etc. Diet should be carefully considered, and uncooked fruit or vegetables should be eliminated therefrom. External remedies were necessary, especially sulphur applications, and in all bad cases of acne every pustule should be opened and touched with a needle dipped into camphphenol, and every comedo expressed. Vaccines were regarded as being too much in the experimental stage to warrant a general use thereof. Dr. J. Goodwin Tomkinson agreed to the constitutional rôle played in the production of seborrhoea and acne, assisted by a microbic infection. Local treatment was successful in most cases, provided general treatment was always prescribed. Vaccine treatment was considered unnecessary. Electrolysis in cases in which the sebaceous follicles were extremely patulous—as in rhinophyma—had given excellent results. Dr. R. Sabouraud (whose paper was translated and read by Dr. R. W. McKenna) regarded seborrhoea as a hypersecretion; therefore there was only one variety of seborrhoea—that was, seborrhoea oleosa, and there was no such thing as seborrhoea sicca, and acne was always preceded by seborrhoea. The frequent occurrence of the *Demodex folliculorum* in the comedo played no rôle in the production thereof, but only as a carrier of the microbacillus. Facts had yet to be adduced before the microbacillus could be accused of causing acne. No doubt puberty and some constitutional derangement had a good deal to do with the matter. Pityriasis simplex, or, as it was wrongly named by Hebra, seborrhoea sicca, was probably due to the spore of Malassez (which is a blastomyces), and was not of the same microbic nature as acne and seborrhoea. Sexual activity must play some part in the production of seborrhoea, because of the fact that alopecia, which was a common sequela, never occurred in eunuchs. Not much good had been found to follow the use of vaccines. Dr. Leslie Roberts said he agreed with Dr. Whitfield that seborrhoea should be clearly distinguished from acne. Seborrhoea was essentially epithelial hyperplasia, occurring under the influence of some chemical substance formed within the body, and corresponding with the development of the sexual organs. The various clinical features which were associated with acne were to be attributed to the fermentation set up in the comedo by the presence of the microbacillus and *Micrococcus albus*. He congratulated Dr. Sabouraud on the broad and comprehensive way in which he had treated the subject, but he could not agree with him that seborrhoea was not to be considered as an epithelial exfoliation. In his opinion seborrhoea was a true epithelial exfoliation. Sir Malcolm Morris proposed a vote of thanks to Dr. Whitfield; this was seconded by Dr. Galloway, who added an interesting remark to the discussion in stating that Indian students who came to England for study were, out of proportion to the white population, subject to seborrhoea and acne, probably dependent on our moist climate. Dr. Norman Walker laid emphasis on general treatment, but spoke more warmly than his predecessors upon the value of vaccines, and agreed with Dr. Whitfield that doses of 150 million and upwards should be employed in preference to smaller. Attention was drawn to the dangers which might follow a too energetic treatment with *x* rays.

SECTION OF DISEASES OF CHILDREN.

AFTER the President, Mr. Robert Jones, had welcomed the members of the Association to Liverpool, he called on Mr. H. J. Stiles to read his paper on the after-results of the major operations for tuberculous disease of joints. This was based on the results of 205 resections of large joints, performed at Edinburgh between 1901 and 1911. The reader generally advocated extensive operative interference rather than conservative treatment in these tuberculous cases, arguing that the consequent shortening of the limbs was often a convenience to the patient rather than the reverse. Advice as to the details of operations about and excision of the hip-joint was given, with arguments in favour of obtaining stout ankylosis as a final result; the results of the various operations advised were illustrated by statistics. Particular stress was also laid upon the varieties of after-treatment advocated in different instances, and upon the importance of early diagnosis. Mr. A. H. Tubby complimented Mr. Stiles on his paper, and pointed out that most of his patients were children. In the case of the knee-joint he himself had entirely given up erasion in favour of excision, and he described how he employed the patella in the operation. He expressed some contempt of the nightmare shortening in these cases. In hip-joint disease he held that the disease was acetabular as well as femoral in half the cases—a consideration of the greatest importance. Much help from the use of the *x* rays could often be obtained. Mr. R. C. Elmslie gave the results of his experiences with the patients operated on by other surgeons during the last six years. He pointed out that the late results of many excisions of joints were far from satisfactory, possibly for want of adequate after-treatment. He laid stress on the importance of early diagnosis and adequate early treatment. Mr. E. Grey Turner emphasized the fact that the methods of treatment are often dictated by the means at hand for their employment. With ample hospital accommodation, conservative treatment became possible as well as desirable in most cases, giving an ankylosed joint just as an early operation would. Mr. G. H. Edington agreed that a bony ankylosis was the most desirable result in many of these cases, whether the treatment was conservative and expectant or by operation. Mr. E. M. Corner spoke as an apologist for operative treatment, in spite of the 77 per cent. of deformities resulting from knee-joint operations observed by Mr. Elmslie; he regarded these deformities as inevitable. Mr. R. C. Elmslie produced statistics indicating that expectant treatment gave distinctly better results than operation in the case of the knee. Mr. E. C. Simpson spoke as a compulsory advocate of conservative treatment in most cases; charitable help in the after-treatment was of the greatest practical value. In reply, Mr. H. J. Stiles agreed that conservative treatment, when financially and otherwise practicable, gave admirable results. He agreed that a high degree of skill in the surgeon was demanded for the successful performance of these difficult operations on diseased joints. He believed that the acetabulum was involved in at least 50 per cent. of the cases of hip disease, and that operation should take place before the acetabulum was destroyed. At the close of the day's proceedings Mr. Stiles gave a lantern-slide exhibition, showing skiagrams of ankylosed knees and hips at various periods after operation.

SECTION OF ELECTRO-THERAPEUTICS.

THIS Section, which met under the presidency of Dr. Thurstan Holland, followed the practice of its predecessors of the two last annual meetings and invited a distinguished physicist to deliver the inaugural address. Professor Rutherford, of Manchester University, in the course of an interesting paper, described the chemical effects produced by the radiations from active matter. It was probable, in his opinion, that the therapeutic effects of radium radiations, for example, were the result of the chemical changes brought about in the material which the radiations traversed. This chemical action might result in a dissociation of complex molecules or a building up of complex molecules, or both processes might take place together. He added that the chemical effects produced by the alpha, beta, and gamma rays were almost certainly identical. Such a result was, indeed, only to be expected from the similarity and character of the ionization produced. Consequently it appeared reasonable to suppose that each of these three types of radiation would produce similar therapeutic effects, granting, of course, that account was taken of their great difference in penetrating power. Professor Rutherford proceeded to make some suggestions to medical practitioners as to the utilization of the alpha rays (by means of injections of water charged with radium emanation), and the more extensive use also of the beta rays in

surface conditions. But he severely criticized the practice of introducing the actual radium or thorium salts into the system unprotected. Apart from the poisonous action, at any rate of the latter, the possibilities of ultimate destruction to the surrounding tissues were very serious. The remainder of the morning was devoted to papers dealing more definitely with the clinical aspect of radium. Dr. Ernest Shaw said that he had found malignant tumours undoubtedly diminish in size under the action both of radium and of the *x* rays, and although in a small number of cases there was diminution without this treatment, the proportion was much greater when the treatment was employed. His view was that Nature, in her attempts to check the invading cell of a malignant growth, brought all her inflammatory forces into line, and that radium and the *x* rays, while destroying a certain number of malignant cells outright, acted mainly as a stimulant to the healthy cells of the body to urge them on to still greater inflammatory action. Dr. N. S. Finzi followed with a paper in which he suggested the forms of malignant disease benefited by radium treatment. He urged that radium should be used as a prophylactic in every operation for malignant disease, and that an attempt to obtain a cure should be made in inoperable cases, especially in rapidly growing sarcoma and carcinoma and slowly growing epithelioma, but that rapidly growing epithelioma, except in the earliest stages, should be left severely alone. A short discussion followed, in which several speakers gave their clinical experiences of radium. Dr. William Armstrong, of Buxton, opened up a different side of the radium question in a paper advocating the radio-oxygen bath. He described certain preparations for generating oxygen in the bath from sodium perborate and manganese, which, he said, had placed this therapy on a sound basis. It was specially useful in cardiac and kidney cases in which hypertension was present. Mr. E. H. Howlett, of Hull, read a paper describing the acquirement of a quantity of radium by the corporation of his city. He made some suggestions for a radium standard, which was a necessity if radium treatment was to be given in the large number of cases which, as at Hull, claimed the use of the municipal property.

Section of Gynaecology and Obstetrics.

THE President (Dr. Briggs, Liverpool) welcomed the members of the Section, and in a few introductory remarks rapidly sketched the development of obstetrics and gynaecology, more particularly in the Midlands, and also their present position as a whole. Dr. W. S. A. Griffith (London) then opened, from the medical standpoint, a discussion on the results of treatment of inflammatory disease of the uterine appendages. It developed two main arguments: (1) The necessity for educating the public as to the real nature of the majority of these infections, with the potentialities of infection of an uncured gonorrhoea or gleet; and (2) the immediate arrest of the inflammation, combined with a regimen of rest and immunization. The methods of the older writers (rest, depletion, and resolvents) were reviewed, and the good results that might be obtained from these alone were noted. Modern treatment was discussed under the headings of: (*a*) Thermotherapy: The continuous hot douche gave more relief than the ordinary douche. (*b*) Radium treatment: Appeared useful in subacute and chronic cases; was of no service in acute or purulent conditions or in tuberculous inflammations; had the disadvantage of possibly sterilizing the patient. (*c*) Serums and vaccines: Useful both in gonorrhoeal and non-gonorrhoeal conditions; accurate diagnosis was, however, essential, and could not be made from vulvar or cervical cultures. Vaccines must at all times be subservient to operative interference. (*d*) Chemical disinfection: Excellent results were obtained, particularly when combined with vaccines. Mr. Christopher Martin (Birmingham) opened the discussion from the surgical aspect. He emphasized that the risk must be correlated to the benefit likely to be derived, and that in many cases conservative or even medical treatment might be sufficient. Ovarian inflammation was discussed separately from tubal. He advocated operation in acute ovarian inflammation only when suppuration existed, and then by the vaginal route. Chronic ovarian inflammation was best treated by separation of adhesions and puncture of cysts. The troubles following removal of the ovaries were mentioned and the possibility of helping these by ovarian extract. It was not advisable to remove the ovaries for epilepsy. In tubal inflammations, gonorrhoeal, tuberculous, or septic, the indications for conservative operations—such as separation of adhesions or salpingostomy—were laid down; a coincident curettage was recommended. Care was always necessary to exclude primary appendicitis. If the inflammation were bilateral and indications for removing the tubes were present, the uterus should be removed as well. One ovary should always be left if at all possible. For pyosalpinx a preliminary incision and drainage by the vagina gave the best results. Mortality statistics were given, and the possibility of herniae, sinuses, or fistulae resulting from operation was mentioned. Combined medical and surgical treatment was at all times strongly advised. Dr. Haultain (Edinburgh) was strongly in favour of removal of the ovaries for cases of epilepsy, which, in the first instance, appeared to be associated with menstruation; he had had three complete cures in five cases. Mrs. Scharlieb (London) was convinced that surgery must be called on when the resources of medical treatment were exhausted. The improved results of recent years she attributed to (1) preliminary vaginal incision and drainage of pyosalpinx cases; (2) vaginal drainage through the pouch of Douglas at the time of a radical operation; (3) the removal of the uterus with the tubes. Dr. Amand Routh (London) cordially agreed with the modern Birmingham view, or that expressed by Mr. Martin, as distinguished from the old-time view. He advocated disinfection of the uterine cavity with strong iodine, and in the later stages electric heat and light to the abdomen. The necessity for physiological rest in cases treated by conservative methods was pointed out. He had had good results from gonococcal vaccines, both in acute and chronic cases. He did not consider that an acute pyosalpinx should ever be removed by the abdomen; in many cases vaginal drainage cured without further operation, and pregnancy might follow a bilateral excision of this nature. Sir John Byers (Belfast) congratulated gynaecologists on having reached a stage of stable equilibrium in treatment. He advised vaginal drainage and considered vaccines useful. Professor Hellier (Leeds) reminded members that an operation might be more expedient than invalidism. He mentioned yeast suppositories as a disinfecting agent. Dr. Beckwith-Whitehouse (Birmingham) had found the endometrium in many cases sterile; he had found ovarian grafts useful. Drs. Purslow (Birmingham), Edge (Wolverhampton), Bell (Bradford), Ivens (Liverpool), Gemmell (Liverpool), Burnett (Newcastle), and the President spoke. In replying, Dr. Griffith considered that drainage was always carried much too far; pure gonococcal peritonitis was practically never fatal; he agreed as to the advisability of a rational conservatism. He regarded mere statements of the advantage of removing ovaries in epilepsy or dysmenorrhoea as harmful. Mr. Martin, also replying, said he had never seen hernia from vaginal drainage; he had been unsuccessful with ovarian grafts.

Section of Laryngology and Rhinology.

IN opening the proceedings of this Section the President, Mr. Middlemass Hunt, reviewed shortly the progress that laryngology had made in the city of Liverpool. There were now no fewer than eight men who confined themselves to the treatment of this class of case, and there was now a lectureship in laryngology at the university. There was much, however, that required to be done in the way of provision of beds. Professor O. Kahler, of Freiburg, then read a paper on excision of the oesophagus, which contained much valuable thought and observations, with statistics. It was discussed by Mr. Waggett, who emphasized the necessity of coming to some conclusion as to the diagnosis of oesophageal constriction and the methods to be adopted. He regretted the continued presence in textbooks of the blind passage of a bougie as a diagnostic measure. In these days more advanced and restricted means should be adopted. Dr. Brown Kelly then gave a lantern demonstration showing the passage of bismuth down the oesophagus, and referred to the question of cardiospasm. The term really covered not so much a spasm as an absence of

dilatation, which he considered a failure of nervous mechanism, which he illustrated by reference to experiments upon cats whose vagi had been divided. Dr. Hill, who spoke again later, attacked the theory of a sphincter at the cardiac end of the œsophagus, illustrating his views. Dr. Walker Downie having discussed the relationship of syphilis to œsophagal stenosis, the President expressed an opinion that there would be a difficulty in obtaining a sufficient number of men educated in the passage of an œsophagoscope, and in such cases the use of a bougie was less dangerous than the former. Drs. Moseter, Jobson Horne, Bronner, Hope, Guthrie, Sir StClair Thomson, and Dr. Tilley continued the discussion, which revealed differences of opinion as to the abolition of the bougie as a diagnostic instrument, though most recognized that by its use no exact and certain diagnosis could be made. The proceedings concluded with a paper by Dr. Bronner on some cases of painful ulcer of the mouth of the œsophagus associated with atrophic catarrh of the pharynx, and a demonstration by Dr. Irwin Moore on the panelectroscope of Kahler-Leite.

Section of Medical Sociology.

In opening the proceedings of this Section, the President, Dr. J. C. McVail, commented on the extension within recent years of the relations of the medical profession with public bodies of all kinds, and said that the Section should be one of the most important in the Association. Dr. R. R. Rentoul (Liverpool), in a paper on a Public Medical Service under professional control, expressed himself in favour of the "nationalization of medicine," enumerating the classes of medical men already in the service of the State or municipality. He proceeded to develop a suggestion for a Public Medical Service on the following lines: The Insurance Committees should pay to the doctor the 6s. per insured person received from the Commissioners; this might be increased to 7s. in the case of the Post Office contributors, they requiring more medical attendance. The Insurance Committees should pay a further 2s. 6d. for medicines to doctor or chemist. Each insured person should pay a yearly sum of 5s. to the doctor. This, he calculated, would give the doctors an income of £472 gross in respect of insured persons exclusive of certain extras. Dr. Ferdinand Rees (Wigan), in a paper on the same subject, urged that the problems of the future were community problems, and medicine should be regarded as a national service concerned with the care of the health of the community. He was sorry to see a tendency in the medical profession to subscribe to the syndicalist theory that the members of an industry should control that industry entirely, primarily in the interest of themselves. This was contrary to the communal theory that each industry must be conducted primarily in the interests of the community. Since the working classes, from their inadequate incomes, could not properly remunerate the services of the profession, the State, drawing the funds from the well-to-do, should organize a Public Medical Service. A medical service completely under professional control he looked upon as impossible of realization. Mr. H. A. Ballance (Norwich) gave an account of the Public Medical Service established by the profession in that town, and Dr. Wallace Henry (Leicester) described the system just inaugurated in Leicestershire. Dr. R. J. Irving (Southport) made some suggestions for the working of an ideal system; and Dr. A. G. Gullan (Liverpool), one of the honorary secretaries of the Section, put forward some practical objections to a State medical service. Professor B. Moore (Liverpool) urged that united action on a practical scheme was very necessary if medical benefit under the Insurance Act was to be suspended. Dr. J. H. Taylor (Salford) dealt with the limitations of professional control in a public service, and Dr. Harris (Southport) spoke of difficulties in fixing a fair wage limit. Dr. M. Dewar (Edinburgh) and Mr. William Grisewood, the secretary of the Liverpool Charity Organization Society, contributed papers on the abuse of hospital out-patient departments and the preventive steps required: and Dr. R. R. Rentoul and Dr. Beresford Kingsford contributed to the subsequent discussion.

Section of Medicine.

A discussion was opened by Dr. David Lees (London) on the diagnosis and treatment of early cardiac complications of rheumatism. For the purposes of discussion, he stated the following views, some of which he acknowledged were debatable: (1) Acute and subacute rheumatism is a microbic infection most common and most virulent in childhood, less frequent and usually less virulent in adolescents and young adults. (2) There is but one symptom which is present in every case of the disease. Arthritis, nodules, endocarditis, pericarditis, pleurisy, tonsillitis, erythema, chorea, and all other rheumatic symptoms may be present or absent, but dilatation of the left ventricle is invariably present. The dilatation is caused by toxæmia or myocarditis, or both combined, and it is a very early symptom. (3) The dilatation can be easily detected by careful percussion rightly performed. It is quite easy to determine accurately the sloping line of dullness of the edge of the left ventricle in the fourth and fifth left interspaces and that of the right auricle in the fourth right interspace. (4) The first essential for the successful treatment of the cardiac implication of rheumatism is prolonged rest. (5) The second essential is an adequate antirheumatic medication, the most useful form of this being a combination of sodium salicylate and sodium bicarbonate in the proportion of one part of the former to two of the latter, given in adequate and increasing doses. (6) During the treatment by salicylate it is necessary (*a*) to prevent constipation; (*b*) to keep the urine slightly alkaline; (*c*) to stop the medicine when vomiting or other symptoms due to salicylate occur, but to resume it after a few hours in a dose of one half the size of the dose last given, and soon to increase the amount as far as possible. (7) When the dilatation (with or without endocarditis) is great, and especially when pericarditis is present, the medicine should be freely given, and an ice-bag should be kept permanently over the præcordial region, with due precautions against general chill. Careful nursing is essential. The application of leeches is sometimes beneficial. Dr. Abrams (San Francisco) agreed as to frequency of cardiac dilatation in cases of acute rheumatism, and regarded it as absolutely essential that rheumatism should be treated by efficient doses of salicylate. He considered, however, that salicylate itself was able to produce cardiac dilatation. He emphasized the importance of the vagus nerve in relation to the heart manifestations in acute rheumatism, and whilst disagreeing as to the value of salicylates in them, considered pilocarpin a most valuable drug to counteract the heart failure. Dr. F. J. Poynton (London) said that Dr. Lees's remarks had reminded him of fifteen years ago, when he had the honour of working with him on the subject of acute dilatation of the heart. He thought that much advance had been made since them. He was not convinced of the constancy of dilatation of the left ventricle, nor was he convinced that the treatment of the heart manifestations by salicylates exerted any useful effect. He believed that the bacterial poisons were so subtle that they varied with the tissues in which the lesion occurred, and he thought that salicylate might be specific in some forms and not in others. He pointed out the frequency of mitral stenosis in cases of recurring chorea, and indicated a group of cases in which cardiac rheumatism began as a tachycardia. Dr. Carey Coombs (Bristol) said that the streptococcal theory of rheumatic infection received support from recent experiments on rabbits which he had carried out with Dr. Reginald Miller and Dr. E. H. Kettle. Histological examination had shown that the lesions were similar whatever the organ attacked; that there was no difference between the phenomena produced by five different strains of streptococci; that the type of reaction was essentially similar to that characteristic of human rheumatism. Dr. Frederick Langmead (London) said that out of 2,556 school children he had found rheumatism in between 5 and 6 per cent. Rheumatism was usually undetected in its first attack, and so was untreated. A crippled heart developed insidiously without any striking rheumatic manifestations having been noted. Tonsils were enlarged enough to require operation four times more frequently in rheumatic children than in others, and this suggested the importance of tonsillitis as an evidence of rheumatism and as a possible source of the infection. A crusade against rheumatic fever was urgently required. Dr. F. W. Price (London) urged that the points which conduced to successful treatment were prophylaxis and early diagnosis. Dr. William Hunter regarded the tonsils and nasal passages as

the source of the infection, and thought that attention in treatment should be paid, not so much to the manifestations of the disease as to its cause and mode of entry. After Dr. Halls-Dally (London) and Dr. T. R. Bradshaw (Liverpool) had contributed to the discussion, Dr. Lee replied.

Section of Navy, Army, and Ambulance.

Colonel Damer Harrisson, K.H.S., A.M.S. (T. F.), the President of the Section, in opening the meeting, expressed the great pleasure he felt in being able to welcome not only officers of the naval and army medical services, but also Major-General W. Lindsay, commanding the Territorial Division, and his staff. He then called on Captain N. Dunbar Walker to read his paper on factors affecting the marching powers of troops. Captain Walker's paper contained a general survey of all the complex factors which affect the marching powers of troops. The more important points on which special stress was laid were the following: Age and training, in which connexion it was pointed out that Napoleon insisted on having fully grown men, as he said that "boys merely filled the hospitals." With regard to the load of the soldier, the energy expended by a soldier when marching depended mainly on the load he carried and not on the distance marched. This load should not exceed one-third of the body weight: hence the load of the British soldier, which was at present 59 lb., should be reduced to 47 lb. Another point was water on the march, because if the water lost by evaporation were not replaced, b dy temperature rose, and the man became unnecessarily fatigued, and under unfavourable climatic conditions might even become a victim of heatstroke. Other important points were rests on the march, the absolutely prone position being the most truly useful, and climatic conditions. A high wet-bulb temperature had a very adverse effect on the marching powers of troops, since evaporation of moisture from the skin was impeded. Colonel Damer Harrisson opened the discussion by congratulating Captain Walker on having selected a subject of such general interest. In explanation of the fatigue caused by not being able to march at one's own pace, Colonel Harrisson quoted Professor Macdonald's work in the physiological department at Liverpool. It showed that, in order to avoid fatigue, the flexor and extensor muscles of the thigh must be permitted to relax completely between each pace. Major-General Walter Lindsay, C.B., D.S.O., commanding the West Lancashire Territorial Division, said he had always been mounted, and was not therefore in a position to discuss the marching of infantry, but that he had attended the discussion in the hope of picking up some useful hints for the manœuvres in which his division was about to take part. His men suffered from nearly all the disadvantages which the lecturer had enumerated. The paper had afforded him a great deal of useful information. Surgeon-General W. Babtie, V.C., Deputy Director General, Army Medical Service, referring to the remarks on the age of the soldier, said that our army at home must always contain a number of not fully developed young men. The reservist did good service in South Africa, but in future wars mobilization would probably be rapid and there would not be much time for reservists to go into training. Training in marching, especially marching with the full service load, was all important, because if any article—say ammunition—was not carried, the proper balance of the load was not maintained. While admitting that the present load of the soldier was excessive, he said that the only real reduction which could be effected was by reducing the weight of ammunition carried on the man, which was a question for the general staff to consider. Mr. T. S. Ellis (Consulting Surgeon, Gloucester Infirmary) urged the importance of marching with the feet turned straight to the front. Colonel Adams (commanding North Lancashire Infantry Brigade) spoke of the value of cross-country races in developing the recruits' physique. He also pointed out the great harm caused to immature lads by cigarette smoking. Major Spiller, R.A.M.C., Fleet Surgeon Whitelegge, and Fleet Surgeon Wildey, R.N., also took part in the discussion. Captain Walker then replied. Fleet Surgeon A. G. Wildey, R.N., then read a paper advocating the more general use of iodine in first-aid treatment. It recorded his experience at the Royal Naval Hospital, Chatham, during the year 1911. His practice was in every case of accidental wound, no matter how severe, to flush out the wound immediately with a freshly prepared 2 per cent. alcoholic solution of iodine, followed, in the case of deep wounds, by sterile saline solution. As a result of this form of treatment sepsis had become very rare, even in badly crushed and dirty wounds, and the number of serious cases of injury under treatment had been reduced by 26 per cent., in spite of an increase of 10 per cent. in the number of injuries of all kinds. A bandolier specially designed for carrying iodine and alcohol for the immediate preparation of the 2 per cent. solution was then demonstrated.

Section of Neurology and Psychological Medicine.

The proceedings of the Section of Neurology and Psychological Medicine were opened under the presidency of Dr. Landel Rose Oswald (Glasgow), who, after drawing the attention of the members to the importance of the matters awaiting discussion, called upon Dr. Percy Smith (London) to open the discussion on the neuroses and psychoses of the climacteric, their prognosis and treatment, reserving, he said, his introductory remarks till the end of the session. Dr. Smith then read an able and comprehensive account of the insanities of the climacteric, with reference to authoritative writings, but based mainly upon personal cases at Bethlem Hospital and in private work. Speaking from the psychiatrical point of view, Dr. Smith discussed the usually assigned factors in the light of his own figures. Prognosis and treatment: So far as recovery was concerned, his figures gave a recovery-rate in 42.3 per cent. of Bethlem Hospital cases, and in his private cases 26.4 per cent. in first attack cases and 33 per cent. in not-first attack cases. The treatment, Dr. Smith said, was in no sense different in principle from that which guided the treatment of other forms of mental disease. Dr. C. J. Macalister (Liverpool), who followed and discussed the climacteric psychoses from the point of view of general medicine, dealt with general principles, considering these psychoses as due to metabolic faults, inco-ordinations of function occurring at times of physiological stress. Dr. Grimsdale (Liverpool), presuming, he said, an ignorance of gynæcology in his auditors as profound as his own ignorance of psychiatry, gave an illuminating description of the underlying processes of the menopause. He said that true menopausal symptoms cleared up in one and a half to two years, but that many symptoms referred to this period were not truly menopausal. With regard to treatment, all he would say, quoting Rudyard Kipling, was:

> There are sixty different ways
> Of composing—native lays,
> And every single one of them is right.

In the subsequent discussion Dr. Maule Smith, Dr. Greenlees (London), Dr. Alexander (Liverpool), Dr. Warrington (Liverpool), Dr. Blair (Lancaster), Dr. Devine (Wakefield), and Dr. Purves Stewart (London) took part. The last named, in a few brief words, discussed the neurological aspect of the minor disorders of the climacteric, grouped as cardio-vascular, psychical, and visceral, and gave the results of his experience in the general and drug treatment. Ovarian extract he described as useless and irrational—the mere putting of new wine into old bottles. He said that he had seen good results follow the exhibition of ammonium bromide with valerian.

Section of Ophthalmology.

Mr. George Coats (London) opened the discussion on irido-cyclitis. He entered into the pathology of the disease, and laid stress on the question of autoinfection through intestinal putrefaction. He pointed out the fact that blue eyes were more likely to be affected than those of other colours, but this might be due to a bleaching of the pigment due to the cyclitis. As regards the actual cause, much was left to speculation, especially in the case of sympathetic ophthalmitis. Salvarsan had been tried in 3 cases of this disease which he had treated. In one old case no good came of it, in the second eye considerable improvement resulted, and in the third case some improvement was noticed. According to Elsing, a hyposensitive condition of the eye and some general anomaly was the cause. One of the most marked conditions in sympathetic

mischief was the extremely widespread nature of the disease in the eye. Mr. A. W. Ormond (London) discussed the question from the etiology of the disease, with special reference to gout and rheumatism. Of 1,963 cases of acute rheumatism treated at Guy's during ten years, he had found that so sudden did iritis occur that it was not right to look upon this disease as a cause, but acute rheumatism was often simulated by other disease. Gout had even less claim as a producer of iritis than rheumatism, and if it did cause it it could only be due to toxins, but the probability was that iritis was always due to micro-organisms. Rheumatoid arthritis was quite likely to cause it. After Professor Snellen (Utrecht) had spoken, Mr. C. Worth (London) said that the most important cause of irido-cyclitis was general septic intoxication, and usually from the intestinal tract. He was not convinced of the existence of rheumatic and gouty iritis—in one case he mentioned it was due to the *Bacillus coli* in the urine. Some cases of irido-cyclitis were very apt to be mistaken for chronic glaucoma. Mr. Clegg (Manchester) mentioned a case in which blueness of the iris developed during an attack. Mr. Browning (London) related some cases due to intestinal intoxication, but he had been unable to find the organism in the anterior chamber. In urine he had scarcely ever found an abnormal amount of indican, but this was common in cases of constipation. It was quite certain that if pyorrhoea alveolaris was present the iritis could be cured by getting rid of the pyorrhoea. Mr. Brailey (Brighton) thought that toxins could cause keratitis punctata. Mr. Harrison Butler (Coventry) had no doubt as to the effect of teeth as a cause of irido-cyclitis, though in Palestine, in spite of much oral sepsis, iritis was extremely rare. He did not think that constipation alone was ever a cause of the disease. Tuberculosis was a most important etiological factor, and he considered that practically all cases of phlyctenular conjunctivitis had tubercle in some part of the body. Mr. George Mackay (Edinburgh) thought that the deposit of keratitis punctata in a triangular fashion was really a fallacy, and the spots were deposited everywhere. He thought the *Bacillus coli* was responsible for many cases and gave proof of it in some cases. Mr. Bishop Harman (London) regarded the experimental evidence of rheumatic iritis as inconclusive. These cases looked like cases of general septic infection. He mentioned a case of ruptured sclera without any wound of the conjunctiva in which sympathetic inflammation resulted. Professor Igersheimer (Halle), and Dr. Maitland Ramsay (Glasgow), discussed the presence of defective elimination of the urine. Mr. Coats replied. Dr. Karl Grossmann having read a paper on the Board of Trade standard of vision and discussed various points in regard to vision, Dr. J. W. Barrett mentioned the case of the loss of the P. and O. ss. *Australia* at Port Philip. He said that Australia had altogether given over the Board of Trade tests. Mr. Devereux Marshall (London) commented on the unsatisfactory report of the Board of Trade. Mr. Bickerton (Liverpool) emphasized what Mr. Marshall had said. He thought that it was impossible to demand full normal vision in one eye and half in the other. Mr. Bishop Harman (London) thought that glasses were impossible at sea. Mr. Harrison Butler (Coventry) also said that glasses were impossible. Mr. Claud Worth (London) thought that normal vision was necessary. Vision of Snellen $\frac{6}{9}$ was very low. He dealt with the following points: Marine glasses. ? Spectacles. Holmgren test was cheap. Colours not to be named but only matched. Colour ignorance test superfluous. Light seen in crow's nest ought to be seen before the bridge. What about fog? The Board of Trade report was very unsatisfactory.

SECTION OF OTOLOGY.

THE President (Mr. Hugh E. Jones, of Liverpool) initiated the proceedings by calling attention to the fact that the key-note of the discussion to be held was *Prevention*. He then called on Mr. R. H. Woods (Dublin) to introduce the subject of acute middle-ear suppuration, its neglect and proper treatment. Mr. Woods commenced by defining the condition as a diffuse inflammation of a mucous tract, and not an abscess. The disease was due in most cases to predisposing causes in the naso-pharynx and nose, particularly to obstructive causes such as adenoids. The clinical course in all cases was essentially the same, three stages being recognized—the stage of catarrh, the stage of suppuration, the stage of healing. The degree of severity of the disease in individual cases depended upon two factors—the state of the patient and the microbe involved. He went on to discuss the symptoms and the nature of the fluid found after rupture of the membrane. The nature of the fluid was essentially the same, whether rupture occurred after a few hours or in a few days. He laid great stress upon what he considered to be the fundamental difference between acute and chronic otitis media. Every otitis started as an acute infection, but the chronicity of the condition was determined by whether the infection was a monosepsis or a polysepsis—one type of organism or a mixed infection. In discussing the question of treatment, he emphasized the importance of preventing, by proper cleansing of the external meatus, reinfection of the middle ear from without. If the membrane was bulging, myringotomy should be performed without delay. Should the condition of the patient not improve after this operation, then the necessity of opening up the mastoid antrum was to be considered. Under no circumstances should the radical mastoid operation be performed. Mr. Woods concluded his remarks with an expression of regret that the handling of the middle-ear conditions occurring in the course of the acute specific fevers was not yet properly appreciated by the general physician. Dr. Claude Rundle (Liverpool), who followed, presented the case from the point of view of the fever expert. He called attention to the fact that the percentage of incidence of otitis media following scarlet fever was lower in Liverpool than in any of the hospitals controlled by the Metropolitan Asylums Board or in Manchester. His experience was that in the majority of instances the otorrhoea had ceased about fourteen days before the patient's discharge from hospital. From the point of view of treatment he did not consider the various methods of intratympanic medication justifiable: his experience was that paracentesis was but rarely called for. He did not think that the operation for the removal of tonsils and adenoids was at all justifiable during the acute stage. He had found the exhibition of horse serum very valuable in otitis complicating the acute exanthemata; autogenous vaccines he had tried and found to be quite useless. Extracts from a paper by Professor Alexander of Vienna were then read (in the regrettable absence of the author) by Mr. W. M. Mollison (London). After dealing briefly with the pathology and clinical course of suppurative otitis media, the author proceeded to expound his views as regarded treatment. Symptomatic treatment was described in detail, as also the proper precautions to be undertaken in performing the operation of myringotomy. Professor Alexander's methods for ensuring free drainage were fully set forth. He also declared against any operation for the removal of obstruction during the acute stage of the disease. There followed a clear account of the author's experience with urotropin. He had found that in chronic cases with a fetid discharge the fetor was markedly diminished in a few days, whilst in acute cases the purulent state was generally shortened. He was in favour of administering large doses previous to the mastoid operation to avoid the onset of meningitis. In the discussion which ensued the following took part: Professor Mygind (Copenhagen); Professor Ballenger (Chicago); Mr. Adair Dighton (Liverpool); Dr. W. Milligan (Manchester); Dr. Kerr Love (Glasgow); Dr. Watson-Williams (Bristol), and the President. All the speakers were unanimous in advocating early paracentesis, and in condemning in the strongest possible terms the performance of the radical mastoid operation in the acute stage. Mr. Woods and Dr. Rundle briefly replied. A paper was then read by Dr. William Milligan (Manchester) on the value of decompression operations in intracranial complications of otitic origin, with special reference to the treatment of otitic meningitis. The discussion was continued by the President, Professor Mygind, and Mr. Stockdale (Liverpool). Dr. William Milligan replied.

SECTION OF PATHOLOGY.

UNDER the presidency of Professor Walker Hall (Bristol), the Section settled down to a discussion on Bright's disease, which was opened by Professor Lorrain-Smith (Manchester) with a paper on the morbid anatomy and etiology of the disease. He had made a special study of

the distribution of fibrous tissue in the cortex of the kidney in various forms of Bright's disease, which led him to divide the lesions into two main groups—namely, (1) in which the fibrous tissue is diffused throughout the whole cortex; and (2) in which the fibrosis is found in patches; the former is exemplified in large white kidney. He discussed at length the minute histological changes, and held that circumscribed fibrosis may originate as a typical scarlatinal nephritis. In the unavoidable absence of Sir Clifford Allbutt, his paper was read by the President. He dwelt on the cardio-vascular changes, first attempting, however, to simplify the nomenclature, which was unnecessarily complicated, different names often being used to denote the same lesions. He discussed the condition of "granular kidney," and disbelieved entirely the condition of "potential Bright's disease" of Straus as not being renal in any sense. Hyperpiesis he considered to be a malady not "granular kidney," but resembling it in the increased blood pressure and the proneness to apoplexy, though curable. He commented very adversely on some recent papers by Drs. Batty Shaw and H. French, and appealed to younger pathologists for elucidation of many points. Dr. W. H. Gaskell (London) put forth the results of some past work on the subject, and presented a good workable classification of the different forms of Bright's disease, dividing the lesions up into (1) toxic, (2) inflammatory, and (3) arterial. His renal sections, all done by the freezing method, was very instructive and supported his views on many points. Dr. Craven Moore (Manchester) drew attention to the deficiencies in our knowledge of such disorders of metabolism as may occur in association with destructive lesions of the kidneys. Dr. Sheunan (Edinburgh) discussed also the difficulties of nomenclature, and pointed out that there could be no change solely confined to one part of the renal structure, but that the process was a mixed one, with predominant activity of epithelial, or fibrous, or vascular elements. He pointed out that the pathologist's designation did not always coincide with the clinician's, and laid stress on the fact that the ultimate object of all the work must be the recognition of the diagnosis of the state of disease during life, and appealed for a closer co-operation of the clinician and the pathologist. So great a modesty was exhibited by the clinicians present in their appeal to the pathologists to help them in diagnosis and even in prognosis that Dr. Bernstein (London) was impelled to ask what was the status of a clinician if he was not a pathologist? Dr. de Carle Woodcock (Leeds) joined in the discussion, which was then terminated with a few words from the President. The general impression seemed to be that, though many anatomical facts had been laid before the meeting, much concerning Bright's disease was left untreated, and a great opportunity had been lost of thoroughly threshing out a subject of such extreme importance from every point of view. A well-illustrated paper by Dr. Wilkie (Edinburgh), on the association of chronic duodenal ulcer with morbid conditions of the ileum, appendix, and colon, completed the proceedings of the session.

Section of Pharmacology and Therapeutics.

THE Section of Pharmacology and Therapeutics met in the Physical Chemistry Theatre under the presidency of Professor W. E. Dixon, F.R.S., of Cambridge, who, having welcomed the members present, mentioned with satisfaction that for the first time a journal devoted entirely to experimental therapeutics and pharmacology would be published in this country. Arrangements had been made by which the *Journal of Pharmacology and Experimental Therapeutics*, at present published in America, would be published simultaneously in New York and in Cambridge under the joint editorship of Professor Abel of Baltimore and Professor Cushny of London. Dr. A. Goulston (Exeter) then read a paper upon the effect of dextrose in the treatment of some forms of heart disease. He recorded clinical observations which seemed to show that the benefits of the treatment were only apparent when West Indian cane sugar was used, and did not appear when beet sugar was substituted. Although these substances were clinically indistinguishable, he felt sure that this difference existed. The paper was discussed by the President, Professor F. J. Charteris (Glasgow), and Dr. O. T. Williams (Liverpool). The next paper was one by Dr. O. T. Williams (Liverpool), and dealt with cod-liver oil and its action in phthisis. The author referred at the outset to earlier work in which he had shown the beneficial effect of cod-liver oil upon fat absorption, and on nitrogen absorption, and to the experiments of Dr. Mildred Powell, which showed that unsaturated fatty acids had a marked inhibitory effect upon the growth of the tubercle bacillus. He had investigated the composition in this respect of various preparations in the market. In those preparations which were most effective the unsaturated acids were present in relatively large amounts. Both clinical and experimental evidence was in favour of considering cod-liver oil as a valuable scientific agent in phthisis. The paper was discussed by Professor C. J. Marshall (Dundee), Dr. Gordon Sharp (Leeds), Professor J. H. Abram (Liverpool), Professor F. J. Charteris (Glasgow), and the President. Professor Charteris then read a paper in which he recounted his experiences in the treatment of pernicious anaemia, leukaemia, Hodgkin's disease, and chorea with salvarsan. As a whole, the treatment had proved disappointing, and the results inferior to those obtained with arsenious acid. The paper was discussed by the President and by Professor C. R. Marshall (Dundee). A paper upon clinical experiences with tetrahydropapaveroline hydrochloride was read by Professor Marshall (Dundee). The drug had proved disappointing. It was a less active vasodilator than members of the nitrite series, perhaps because it was too readily oxidized. The paper was discussed by Dr. Gordon Sharp (Leeds) and the President.

Section of Physiology.

THE President, Professor J. S. Macdonald, stated in his opening remarks that, as an old member of the Liverpool Physiology School, he had great pleasure in presiding over the Section. He then showed some very interesting lantern slides concerning the various constituents of the blood; how in serum there was a necessity of supplying some organic acid, and in red blood corpuscles of giving some organic base; that there was apparently a mutual antagonism between these two constituents of the blood. This coincidence was inexplicable to the author, but on account of its great and real interest he thought it suitable to bring before the notice of Professor B. Moore and his co-workers. He gave, in conclusion, a very pretty demonstration of simultaneous contrast. He thought that the explanation of this phenomenon was of the same order as that discovered and expanded by Professor Sherrington—namely, that the central nervous system cannot be stimulated without calling into play certain secondary changes. At the conclusion of his short address he called on Dr. Mott (London) to open the discussion on the bio-physics and bio-chemistry of the neurone. Dr. Mott emphasized the necessity of care in the study of preparation of the nervous system. He held that quite a false idea of the structure of the nervous system was obtained if only stained specimens were studied. All that was to be seen when the fresh living unstained specimen was examined under the microscope was a homogeneous colloidal mass. In the living nerve cell there was no trace either of Nissl granules or fibrilles. When the ultramicroscope was used in the examination some cells were more luminous than others, but this luminosity was variable. He next spoke of the growth of the neurone, paying a warm tribute to the work of Ross Harrison. He then dealt with the results of the degenerative processes. He showed that physical changes took place in connexion with the equilibrium of the cells—that endosmosis occurred. The cell swells up and the Nissl substance was pushed to one side. If the nucleus was extruded the cell would die, if not, it would probably recover. Sometimes a tremendous endosmosis into nucleus instead of the cell itself took place. Dr. Mott believed that here the vital condition of the nuclear membrane was probably changed, due to the lack of oxygen. Pyrexia altered very considerably the granular staining of the cell granules disappear and a homogeneous material took its place. This change was probably due to the precipitation of a neurone globuline. In status epilepticus the cell endosmosis was particularly marked almost an oedema. Dr. Mott did not think that this was due to the fits, but to the temperature and the venous stasis in the brain. In

conclusion, he described a very curious nervous lesion—amaurotic idiocy—found only in Jewish children. This is characterized by a gradual disappearance of the Nissl granules from the periphery of the cell inwards with eventual destruction and disappearance of the cell itself. Professor Sherrington (Liverpool) spoke of the great value of unstained specimens, endorsing the statement of Dr. Mott that Nissl granules and fibrils are to be taken with caution. He allowed, however, that these artefacts do assist in the better understanding of the material from which they are derived. Dr. Wakelin Barratt (Liverpool) discussed the purely mathematical and physical side of the question—the hypothesis of Nernst. Professor Macdonald raised several extremely interesting questions. One was whether there was an importance to be attached to the conception that the central nervous system is insulated from the rest of the body. Another point was the peculiar relationship of the musculature to the central nervous system. This system sends out a certain amount of energy and is also in receipt of energy; therefore, there did not seem to be the same necessity for the liberation of energy by combustion as took place in other tissues. He suggested that the musculature was a kind of energy-pump, which kept the reservoir of the central nervous system full. Professor Macallum (Toronto), who followed, stated that he always felt that too much stress was laid on the study of fixed tissue; structure varied with the fixative reagent used. Surface tension played an all-important rôle in the life-history of the nerve cell. Potassium salts were distributed along the axone, and were absent from the cell body. This same distribution of potassium salts was also found in a number of the lower organisms like *Vorticella*. Every extensible portion of the cytoplasm has potassium condensed in its substance. Disturbances in the surface tension of the nerve cell proper led to a "nipple" reaching the axone; this in turn led to a shifting, be it ever so slight, of the potassium in the axone. Possibly these changes account for the nerve impulse itself. Professor B. Moore (Liverpool) also endorsed the view that great care had to be employed in assessing the value of artefacts. More information was urgently required on the relation of electrolytes to colloids. Surface tension alone could not explain all the differences found. Dr. Haddon (Hawick) spoke on the value of clinical evidence and the great necessity of a further study of the influence of food. Dr. Vernon (Oxford) and Dr. Graham Brown (Liverpool) also spoke, and Dr. Mott (London) replied.

SECTION OF SURGERY.

THE Section of Surgery met in the Medical School under the presidency of Professor Rushton Parker. Professor Parker, in a few words, welcomed the members of the Section, and made reference to the death of Lord Lister, and to the influence of his life and work on the surgical world. He introduced Mr. Harrison Cripps, who initiated the discussion on the treatment of carcinoma of the rectum. Mr. Cripps paid tribute to the workers in this region of surgery, and indicated how much was due to the efforts of British surgeons. Practically the only type of cancer found in the rectum was the adenoid cancer. The relationship between innocent polypoid growths and cancer was much more close than was apparent. There was really no essential difference in structure between the innocent papilloma and the most malignant cancer. But there was a great difference in their mode of growth: an innocent tumour invariably grew outwards or upwards into the lumen of the bowel, while a malignant tumour was characterized by downward growth. In regard to the spread of the disease his view was that lymphatic infection was late, and it is probable that on that fact depended much of the success of operations. He was content, in removing a tumour, if he cut about ¾ in. beyond its margin, and he was not able to follow those pathologists who contended that, on account of distant permeation, nothing but the most extensive operation was of any avail. He was anxious also to enforce his belief that cancer of the rectum should not be diagnosed unless it could be felt by the finger, and he would urge great care, in making examinations per rectum, that the finger should not be forcibly pressed through any constriction. Mr. Harrison Cripps enunciated his definite opinions as to what constituted a satisfactory case for operation. In considering recurrence, he held that if it were to recur at all it should recur within a year, and if a patient passed three years without recurrence he thought that the patient could be assured that recurrence need not be feared. In speaking of the value of colotomy as a palliative operation, he said that his statistics showed that the average duration of life in those patients who refused colotomy was only seven months, whilst in those who accepted the operation it was twenty-two months. Mr. Harrison Cripps's paper was fully illustrated by diagrams and tables of statistics. The debate was carried on in spirited fashion by sixteen members of the Section. Mr. C. A. Morton narrated his experiences of the abdomino-perineal operation, and stated that he had definitely abandoned the Kraske operation. Mr. G. Heaton and Dr. Sinclair White urged the employment of a preliminary colotomy. Mr. Sampson Handley maintained that he had definitely shown that permeation of cancer cells was found 4 in. to 6 in. away from the primary tumour, and he held that on that account the more extensive operation than could be accomplished by the perineal route was justifiable. Mr. C. P. Childe, Mr. C. A. Leedham-Green, Mr. Herbert Paterson, Mr. A. Don, Mr. Jordan Lloyd, Mr. Albert Lucas, Mr. Armstrong of Montreal, Mr. Fullerton and Mr. G. P. Newboldt also contributed to the discussion. In reply, Mr. Harrison Cripps deprecated any thought of rivalry between the perineal and the abdomino-perineal operations. He thought that each case must be judged absolutely on its own merits, with due care in selection of cases, and, above all, on common-sense lines.

SECTION OF TROPICAL MEDICINE.

PROFESSOR TODD, President of the Section, gave no formal address, but after a few introductory remarks of welcome, called upon Dr. Stephens, who dealt with *T. rhodesiense*, and gave in some detail the evidence on which Dr. Fantham and he relied to show that this parasite was a second species of African trypanosome, producing sleeping sickness in man. There were not only morphological differences, but the animal reaction showed that *T. rhodesiense* was characterized by its virulence in the majority of animal species. The serum reactions, and trypanolytic reaction also, showed marked difference. The authors conclude that sleeping sickness in Rhodesia, Nyasaland, and adjoining territories is due to *T. rhodesiense*, that it is not due to a *T. gambiense* recently introduced, and has existed in these territories from time immemorial. A paper on the identity and mode of transmission of trypanosomes, by Professor F. Kleine, was then read in the author's absence by the Secretary. He was of opinion that the period of mutability of trypanosome had passed, and that we had now sharply defined groups, differing in pathogenicity and other biological properties. For example—all attempts to alter the specificity of trypanosomiasis in the body of *Glossina palpalis* have proved fruitless. He insisted on the necessity of uniformity in the experiments, otherwise results were unsatisfactory; and concluded that if certain precautions were taken, failure to infect a particular species of animal subcutaneously meant insusceptibility. He differed in this from the opinion expressed by Dutton, Todd, and Kinghorn. There were difficulties in establishing the identity of various species, and many factors had to be relied upon. It was now definitely established that a fly once infected remained so for the rest of its life. The question of the transmissibility of any species of trypanosome by any species of *Glossina* also requires solution, and many experiments now favoured the view that this was the case. It was now recognized that *Glossina morsitans* was also a transmitter of sleeping sickness. Professor Mesnil, in a paper on *T. gambiense* and *rhodesiense* (read by Dr. Fantham), detailed some experiments supporting the conclusion as to the individuality of these two species. A synopsis of a report by Drs. Kinghorn and York, of trypanosomes infecting swine and domestic stock in Rhodesia, was also read by the Secretary. It was found that at least 37.5 of the local fauna were infected with various forms of trypanosomes, and that double infections were not uncommon. An interesting and instructive paper on the pathology and histology of trypanosomes, by S. B. Wolbach and C. Bruger, Boston,

was read by the President, and illustrated by a series of excellent lantern slides showing the distribution of trypanosomes in various tissues and the lesions which resulted. In the short discussion which followed, Professor Todd discussed the specificity of the two forms of pathogenic organisms, and spoke of the difficulty in defining the characters which should be considered as determining the specificity, and what variation should be considered as constituting a specific difference. Dr. Weinberg (Paris) read a paper on verminous toxins; he had been able to prove that ankylostomes and sclerostomes secreted a toxin which he had obtained in a pure form from the peri-enteric liquid of the parasite. According to his view, helminthiasis was an intoxication, acute or chronic, produced by toxins secreted by the parasite, and microbic and mechanical lesions were of the nature of secondary complications. Dr. Leiper (London) thought that Dr. Weinberg had indicated a new line of investigation. Dr. F. Law (Trinidad) expressed the opinion that clinical phenomena in helminthic diseases were frequently due to toxic absorption, and drew attention to various lesions in ankylostomiasis which might be attributed to the action of toxins. A short note on blood determination in Kantagama's disease by Deputy Inspector-General Bassett-Smith; and a note on copra itch, by Dr. Aldo Castellani (Ceylon), concluded the morning's work.

A MEMORIAL TO LORD LISTER.

THE Presidents of the Royal Society and the Royal College of Surgeons some weeks ago took the necessary steps for the formation of a large and representative Committee for the purpose of establishing a memorial to the late Lord Lister, and a committee was appointed to carry the project into effect. This Committee met on July 22nd at the rooms of the Royal Society, under the chairmanship of Sir Archibald Geikie, President of the Society. Among those present were the Portuguese Minister, Sir Thomas Barlow, Sir Rickman J. Godlee, Dr. J. A. Adams (President Royal Faculty of Physicians and Surgeons, Glasgow), Sir Henry Morris, Sir John Tweedy (Medical Society of London), Professor A. Crum Brown, F.R.S. (President, Linnean Society), Sir William Osler (University of Oxford), Professor W. Thorburn (University of Manchester), Mr. Dennis J. Coffey (National University of Ireland), Right Hon. Sir Joseph Dimsdale (Master of Grocers' Company), Mr. D'Arcy Power, Dr. Hale White, Viscount Iveagh, K.P., the Master of the Rolls, the Dean of Westminster, the Lord Provost of Glasgow, Sir R. Douglas Powell, Sir W. Watson Cheyne, Admiral Sir John Durnford, Surgeon-General Sir A. M. Branfoot, Sir Donald MacAlister, Sir John Rose Bradford, and Mr. Edmund Owen. On the motion of Sir Joseph Dimsdale, seconded by Sir Douglas Powell, the following were appointed an Executive Committee to recommend to a future meeting of the General Committee a scheme for the memorial to Lord Lister, and to organize an appeal for subscriptions: The Archbishop of Canterbury, the Lord Chancellor, Viscount Iveagh, Lord Rayleigh, Lord Rothschild, Lord Alverstone, the Dean of Westminster, the Lord Mayor of London, the Lord Provost of Edinburgh (Sir W. Brown), the Lord Provost of Glasgow (Mr. D. M. Stevenson), the Master of the Rolls, the Right Hon. Lewis Harcourt, M.P., Sir Thomas Barlow, Sir W. Watson Cheyne, Sir Rickman J. Godlee, Bart., Sir Henry Morris, Sir Archibald Geikie, Sir Donald MacAlister, the Hon. Sir Charles Parsons, Sir William Turner, Sir J. Wolfe Barry, Sir John Rose Bradford, Sir Alfred Pearce Gould, Sir Alfred Kempe, the Hon. W. F. D. Smith, Frederick Morris Fry, and Mr. Edmund Owen. On the motion of Sir Donald MacAlister, seconded by Sir James Dewar, the Right Hon. Lord Rothschild and Sir W. Watson Cheyne were appointed Treasurers, and Sir John Rose Bradford was appointed Secretary of the Lister Memorial Committee. A meeting of the Executive Committee was held later, at which the following members were present: Sir Archibald Geikie (Chairman), the Hon. W. F. D. Smith (Deputy Chairman), the Viscount Iveagh, the Dean of Westminster, the Lord Provost of Glasgow, the Master of the Rolls, Sir Thomas Barlow, Sir W. Watson Cheyne, Sir Rickman J. Godlee, Sir Henry Morris, Sir Donald MacAlister, Sir John Rose Bradford, Sir Alfred Kempe, Mr. F. M. Fry, and Mr. Edmund Owen. Proposals for a memorial of an international character were considered, and arrangements made for a public meeting in furtherance of the objects of the memorial, to be held at the Mansion House in October, at which details of the scheme will be announced. Communications for the Treasurers or the Secretary may be addressed to the Royal Society, Burlington House, London, W.

MEDICAL TERMS IN THE NEW ENGLISH DICTIONARY.*

THE third quarterly section of the *New English Dictionary* for 1912 carries the alphabetical rubrics from Sleep to Sniggle, and between these words, as it happens, there are remarkably few strictly medical terms. With the exception of small-pox, smegma, smilax, and sleeping sickness, and perhaps slough, the 127 three-columned pages of the present part are bare of medical words. The only addition to this list which suggests itself to us is Snellen's types, but that is probably excluded as non-naturalized or too much of an eponymous term. Although few in number the words are interesting enough. There is small-pox, for instance, which used to appear as "smallpockes," and was then commonly construed as a plural, a fact which accounts for such expressions as "he had the small pox so much that he was for a time blinded with them." It was for a long time written as two words, with no hyphen, the adjective being employed to distinguish the disease from the pox proper, or great pox. Even now we use the word as signifying either the pustule of the malady or the disease itself, and we place the article before it sometimes and at other times omit it. Small pock, with or without the hyphen, is a rare or obsolete term. Smegma is given as a word not yet naturalized; in Greek it signifies a detergent, soap, or unguent; and it is, of course, specially applied to the sebaceous secretion found under the prepuce. It has also been used for the matter often found in the morning on the lacrymal caruncle and for the sebaceous material on the skin of the new-born infant (more often known as vernix caseosa). Associated words are smectic, meaning detergent, smectis, and smectite, a kind of fuller's earth, and smegmatic, a cleanser. Sleeping-sickness, or sleeping-evil, had once a much wider meaning than that which it now possesses; it was at one time called the sleepy sickness. Smilax is a Greek word, meaning bind-weed; it is now the name given to a species of the large genus of liliaceous plants, which constitutes the sarsaparilla of commerce. A medical writer in 1671 said about it, "it opens the belly and dissolves hard swellings," whilst a non-medical author of some years later said it was one of "the vegetables that Bacchus delighted in." Slough is not, of course, a distinctly medical word, yet it has, both as noun and verb, a very well defined pathological and surgical signification. It is, perhaps, related etymologically to the Low German sluwe, husk, peel, or shell. If there are not many purely medical terms in this part of the *Dictionary*, there are many common words which have medical shades of meaning, and these are all very carefully placed, defined, and illustrated. Let us take, for instance, the word "slow"; it appears with the meaning of "tardy" in the phrase "slow pulse," and with that of "not acute or not rapidly developing into a serious form" in the term "slow fever." Again, there is sluggish, with its two medical meanings of not readily moving (sluggish liver or pulse) and of slow in responding to treatment (sluggish ulcer). The *Dictionary*

* *A New English Dictionary on Historical Principles. Sleep Sniggle.* Vol. ix. By W. A. Craigie, M.A., LL.D. Oxford: At the Clarendon Press, Henry Frowde. Double section. July 1st, 1912. Price 5s.

is always admirable in its fullness in the matter of defining the medical uses of ordinary words. There are some interesting obsolete medical terms. There is the mysterious slibber-sauce, which is defined as "a compound or concoction of a messy, repulsive, or nauseous character, used especially for medicinal purposes": we can well believe it, it sounds nasty. There is slink, an abortive or premature calf or other animal, also the skin or meat obtained from such an abortive animal. The verb (slink) may mean to bring forth young prematurely or abortively, and it is related in some way with sling. Curiously enough the very next word, slip, also means an abortion or to abort, for example, a cow slipping her calf. When we add that under slippery, we find "slippery elm bark" noted, it will be apparent that it is not easy to find omissions in the *Dictionary*.

DOCTORS IN INDIA.

How large a share members of the medical profession have taken in the establishment and expansion of our empire is not generally known, or perhaps we should say, acknowledged. Medicine has been among the greatest influences in the spread of civilization. In all our colonies doctors have at various times taken a very active share in public life. We need only mention South Africa, where Sir Leander Starr Jameson has played so conspicuous a part: Canada, where Sir Charles Tupper, who a few days ago entered on his 91st year, has been Prime Minister, besides holding many other Cabinet offices; Sir John Kirk, who has been Political Agent and Consul-General at Zanzibar; Sir James Logan Campbell, for many years a political leader in New Zealand; China, with which the names of Sir Rutherford Alcock, Sir Halliday Macartney, and Sir Robert Bredon are closely associated; and Sir William MacGregor, now Governor of Queensland, and formerly of Lagos and Newfoundland. But it is in India that doctors have played the most varied parts. It is to Gabriel Boughton, surgeon of the *Hopewell*, that we owe the first charter for English trade in Bengal, and it was through William Hamilton, another surgeon, that the East India Company got the lands of Calcutta and the surrounding country. The *Indian Medical Gazette* for June contains an article of great interest, entitled, "What the Indian Medical Service has done for India." Passing over achievements in the purely medical sphere, and in botany, zoology, and geology, doctors have done memorable work as explorers, political agents, economists, educationists, philologists, ethnologists, and historians. We can mention only a few names. Alexander Hamilton, who accompanied George Bogle on his mission to Tibet in 1774, was one of the first British subjects to visit the forbidden city of Lhasa. Mungo Park, the famous African explorer, was for some time a medical officer in the East India Company's service. J. Z. Holwell, the hero of the siege of Calcutta, and the historian of the terrible episode of the "Black Hole," was a member of the Indian Council, and succeeded Clive as temporary Governor in 1760. Joseph Hume, the once famous Radical M.P., began life as a surgeon in India. Henry Walker Bellew served as Chief Political Officer at Kabul during the second Afghan war in 1878–79, and Sir George Scott Robertson, M.P., was the first European to explore Kafiristan, and was agent in Chitral during the war of 1895. Sir George Birdwood, who joined the Bombay Medical Staff in 1854, was afterwards Curator of the Indian Museum and Special Assistant in the Commerce and Statistical Department of the India Office. To medical men is due the creation of the Forests, Post Office, Mints, Geology, and Telegraph Departments in India. Alexander Gibson was appointed Conservator of Forests in 1847. In 1852 McClelland was appointed Superintendent of Forests in the newly acquired province of Lower Burma; H. F. Clarke Cleghorn was Conservator of Forests, and was the author of works on the forests and gardens of South India, and on the forests of the Punjab and Western Himalaya. John Lindsay Stewart was Conservator of Forests in the Punjab from 1864 till his death in 1873. Francis Day was Inspector-General of Fisheries. Sir William Brooke O'Shaughnessy conducted the first experiments for the introduction of the electric telegraph into India, and was appointed Director-General of Telegraphy in India in 1852, a post he held till his retirement in 1861. James Ranken was Postmaster-General of the North-West Provinces from 1841 till his retirement in 1845. George Paton was Director-General of the Post Office in India from 1861 till he retired in 1864. Elijah Impey was Postmaster-General at Bombay from 1856 till his death in 1868. In education doctors have been prominent. Thomas Alexander Wise founded Hughli College, of which he was first Principal: in 1839 he was appointed Secretary to the Committee of Education, a post corresponding to the present Directorship of Public Education. James Esdaile succeeded Wise as Principal of Hughli College and was subsequently Principal of Dacca College. John Peet was Inspector of Education in the Bombay Presidency from 1856 to 1861. The Assay Department of the Indian Mint has from the beginning to the present day been officered and worked almost wholly by members of the Indian Medical Service. Before the creation of the Veterinary Department most of the work relating to diseases of animals was done by officers of the Indian Medical Service. K. McLeod wrote a *Manual of Diseases of Cattle* which was translated into Bengali. At his suggestion, a grateful patient, Raja Sheo Baksh Bagla, gave the site for the veterinary hospital and school at Belgachia with 30,000 rupees for its erection. In philology, ethnology, and literature, several doctors have done excellent work, the three most distinguished scholars being John Leyden, the friend of Walter Scott, Horace Hayman Wilson, who after his return to England was appointed Boden Professor of Sanskrit at Oxford, and Aloys Sprenger, who is said to have known twenty-five languages. To Indian ethnology and history many valuable contributions have been made by medical officers. Enough has been said to show the wide range of activity of doctors in India outside their professional sphere of work. Their brethren have every reason to be proud of them.

THE PHYSIOLOGY OF THE POET.

WE have received the following communication from Dr. David A. Alexander of Bristol: "Signor Patrizi, upon whose recondite studies you descant (BRITISH MEDICAL JOURNAL, June 29th, 1912, p. 1499), will interest us if he go on from the orator to the iatro-mathematics of the poet. Versification and its plastic measures and modes, why are they so agreeable to us? 'The rhythmising instinct in verse is merely one clause of a law which runs through every manifestation of energy, so universal, that it would appear as if the great heart of Nature beat with a regular systole and diastole' (More, *Shelburne Essays*). Aristotle refers the imitative faculty and the instinct for rhythm or harmony to the depths of our nature. Is it not probable, however, that respiratory rate is that which directly underlies verse? Without employing a stethograph any one may prove to himself that the hexameters he recites in a given time are the number of his respirations. Conversely, the standard of man is the way he breathes and utters himself: and is highest as fixed by Virgil, wielder of the stateliest measure ever moulded by the lips of man." It was stated in the article to which Dr. Alexander refers that Signor Patrizi had already applied what Thomas Campbell calls the "cold material laws" of science to one of Italy's greatest poets. His method of dealing with Leopardi brought a storm of angry criticism about his ears. We have not had the advantage of seeing the book, and cannot therefore give any details. Many

Hallock-Greenewalt, in a reprint from *Poet Lore* for June, 1905, which she kindly sent us, says that one who was at once a great poet and a great musician has shown by scientific analysis that "poetry in such things as music is made of accent, rhythm, tone-colour, intensity, and pitch; all are present in spoken verse." "Some of them," she adds, "as every musician knows, can be measured by mathematical accuracy; some of them cannot." We gather that in the lady's opinion it is the pulse that determines the rhythm of verse. "Physiologically speaking," she says, "imagine the heart of the living world laid bare. Keep in mind the 'exaltation of function' it throws regularly into every one of its parts, and this on an average of seventy-six times a minute. Conceive, if you can, the force with which it pumps a circuit of life through the butterfly, through the panther, so fast, so steadily as seconds are ticked by the clock. See how recurrently it buffets the brain. Is it strange if, with such vigorous instruction, the heart should have taught the head regular recurrence?" She sums up her thesis in the conclusion that "with a lub dub, lub dub, lub dub, every long poem and nearly every important short poem in the English language is written." A German writer has propounded the question why there is so much poetry that deals with drinking and so little that deals with eating. The answer given by Mary Hallock-Greenewalt is that the stimulus of drinking increases the force of the heart's action. "Out of the mouth the heart speaketh." We must leave the physiologists to settle whether it is the poet's respiration rate or his pulse beat that determines the "proud full swell of his great verse"; *non nostrum tantas componere lites.* It has been said that music and sweet poetry agree "as they must needs, the sister and the brother"; and Carlyle says a man may have the poetic gift, but may fail of utterance for lack of a music master in his boyhood. On the other hand, many poets have been indifferent to music, while the most skilled musician among them all, Browning, wrote the most rugged verse. The physiology of the poet yet remains to be written. Cabanis is credited with the opinion that poetry is a disease of the small intestine; and we know the figurative sense in which the word "bowels" is often used in Holy Writ. The fierce indignation which makes verses doubtless often has its origin in the liver, which used to be regarded as the seat of the passions. All this leaves the question pretty much where it was. When the physiologist has applied all his apparatus to the poet, the secret of his inspiration will, we fear, still remain hidden.

THE SPECIFIC INFLUENCE OF X RAYS ON MYOMATOUS TISSUE.

IT is usually assumed that *x* rays exert a curative influence on myomata of the uterus by acting on the ovaries, causing them to degenerate. There is no doubt that *x* rays have a specific action on the ovaries, but gynaecologists have generally denied that they act directly on the cells of myomatous tumours of the uterus. E. Grafenberg considers that the only way to determine the question is to have regard to cases in which *x* rays are employed for uterine myomata when the ovaries are no longer functioning. He relates the case of a patient 60 years of age, in whom the climateric had occurred ten years previously.[1] The uterus was continuous with a hard, irregular tumour, which extended as high as the umbilicus. Anteriorly there were two subserous myomata of the size of a hazel nut. Another myoma of the size of an apple was lying in Douglas's pouch. In nine weeks, in response to *x*-ray treatment, the large myoma had disappeared, and after fourteen weeks, that in Douglas's pouch, as well as the two smaller ones, could not be felt. He considers that the total disappearance of these myomata as a result of *x*-ray treatment cannot be ascribed to the indirect effect on the ovaries, since these organs were undoubtedly incapable of exercising an influence on the growth of myomata after having ceased to be functional for ten years. He therefore comes to the conclusion that the rays acted directly on the myoma cells. In his opinion the fact that removal of the ovaries often fails to cause shrinkage of myomata, whereas *x* rays usually succeed, speaks in favour of a combined direct and indirect action of the *x* rays in those cases in which the ovaries are still functional. He holds that the *x* rays have a specific affinity for sarcoma cells and other connective tissue elements, and therefore finds nothing surprising in the existence of a similar affinity for myoma cells.

[1] *Berl. klin. Woch.*, April 29th, 1912.

PROPOSED FORMATION OF RHODESIAN BRANCH

A MEETING was held at Bulawayo, on May 21st, 1912, at which there were present Dr. Copeland of Essex Vale, Dr. Major Martin of Plumtree, Dr. Smyth of Selukwe, and Drs. Acland, Head, Jameson, Strong, and Townsend of Bulawayo. Dr. Smyth was voted to the chair. Dr. Jameson reported that all the doctors in Bulawayo had expressed themselves in favour of a local Branch being formed, and signified their intention to join. Letters were read from Dr. Darton (Bushtic Mine), Dr. Nielson (Antelope Mine), Dr. Macdonald of Inyati, Dr. Maitland of Gwelo, Dr. Ritchie Brown of Umvuma, Dr. Donaldson of Selukwe, Dr. James Davey of Que Que, and Dr. Wyndham of Bulawayo, approving the idea and regretting inability to attend. The Chairman addressed the meeting on the desirability of the doctors in Rhodesia forming a Branch of the British Medical Association. Later a dinner was held at the Grand Hotel to celebrate the birth of the society. Dr. Macdonald proposed the health of the Branch, coupled with the name of Dr. Smyth, the founder, who suitably replied.

CAMBRIDGE RESEARCH HOSPITAL.

WE are informed that a medical friend who wishes to remain anonymous has just offered to give £150 a year for a period of three years for a research scholarship in connexion with the Cambridge Research Hospital. Mr. Strangeways will be pleased to give particulars to any qualified person who will apply to him at the Research Hospital, Department of Medicine, University of Cambridge. We call special attention to the fact that all three of the research scholarships attached to the hospital have been given by medical men, and nearly all the money subscribed has come either from or through members of the profession. We commend this significant fact to the serious attention of the politicians who are trying to misrepresent the profession before the public as carrying on a war against an ill-considered measure solely for the promotion of their own pecuniary interests.

We understand that the Council of the Royal Society of Medicine has taken steps to form a Section of Ophthalmology and a Section of Tropical Medicine. It is hoped that both these sections will be ready to begin work at the beginning of the next session. It may be well to emphasize the fact that in the formation of these sections nothing antagonistic towards existing societies for the study of these subjects is intended. The Ophthalmological Society, as stated in the BRITISH MEDICAL JOURNAL, at a special meeting held on July 20th (p. 154), passed a resolution to the effect that it viewed with sympathy the proposal to form an Ophthalmological Section of the Royal Society of Medicine, and leading members of both societies are co-operating in the formation of the new sections. In the case of new Fellows who join these sections within the next six months the Council has, we are informed, decided to remit the Fellows' admission fees.

Medical Notes in Parliament.

The National Insurance Act.

British Medical Association.

MR. BOOTH asked the Secretary to the Treasury if he had investigated the circumstances connected with the boycott of Dr. Richards, of Winkleigh, North Devon, and the present condition of his practice and the service of the friendly societies which it included; and what arrangements the Insurance Commissioners intended to make for medical service for such societies if the British Medical Association forbade a practitioner to serve the clubs in question.

Mr. Masterman said that he had nothing to add to the statements made by his right hon. friend the Chancellor of the Exchequer in reply to questions by the hon. gentlemen and others on May 15th. The medical service referred to was not service under the Act, and the Insurance Commissioners had no power to intervene.

Invalided Soldiers and Sailors.

Mr. Pike Pease asked whether a soldier or sailor invalided out of the army or navy after several years' service, who was unable to join an approved society, would have to wait at least three months before being able to obtain any benefits from the Army and Navy Insurance Fund; and, if so, could the Commissioners see their way to remedy this hardship.

Mr. Masterman replied in the negative: a soldier or sailor invalided out of the army or navy would at once be entitled to benefits out of the Army and Navy Insurance Fund after proving that the state of his health was such that he could not obtain admission to an approved society. The Commissioners were now endeavouring to arrange that where a soldier or sailor was discharged in such a state of health that he would clearly be unable to join an approved society, he might be at once admitted to the Army and Navy Insurance Fund on a certificate from the army and navy doctor.

Sanatorium Benefit (Wiltshire).

Mr. Godfrey Locker-Lampson asked the Secretary to the Treasury whether it was estimated that there would be any difference in Wiltshire during the first year of the operation of the National Insurance Act between the amount for sanatorium benefit provided for under the Act and the amount which would actually be allocated to Wiltshire according to the Memorandum No. 112, I.C., recently issued by the Insurance Commissioners; and, if so, whether it was estimated that the actual amount to be allocated to Wiltshire would be less than that provided for under the Act. Mr. Masterman answered that the Act did not provide for any definite allocation of funds for sanatorium benefit for the period from July 15th to the end of the present year, to which alone the allocation proposed in the memorandum applied. The allocation for the first full year after the commencement of the Act would be made in January next, in accordance with the provisions of Sections 16 and 61. He thought the funds would be sufficient, but in any case £220,000 was set aside up to November, and if more was required more would be set aside.

Tuberculosis (Supplies of Cod Liver Oil).

Mr. Fell asked if insured persons suffering from tuberculosis could now obtain supplies of cod liver oil, and, if so, to whom should application be made; and would this benefit be given to Post Office contributors who could not get accepted by an approved society. Mr. Mastermann replied that an insured person suffering from tuberculosis should apply to the local Insurance Committee, who would arrange for treatment suitable to his condition. Sanatorium benefit was not limited to members of approved societies, but could be given by the local Insurance Committees to any persons insured under the Act.

Midwives.

Mr. Rowntree asked whether, under the National Insurance Act, a midwife must be insured whilst she was in attendance on a maternity case. Mr. Mastermann replied that the Commissioners were advised that a midwife who undertook a case on her own account, without any understanding that she should work under a doctor, was not employed under contract of service. In these circumstances she need not be insured.

County Asylum Attendants.

Viscount Wolmer asked the Secretary to the Treasury whether he was aware that up till now attendants in Lancashire county asylums have been entitled to full wages and board when ill, with a pension upon retirement; whether he would therefore instruct the Insurance Commissioners to exempt them from the operation of the National Insurance Act; and whether, in the event of the terms of their employment being altered in order to bring them within the scope of the Act, the Insurance Commissioners would refuse to countenance such a proceeding.

Mr. Masterman said that no formal application for exception of this class of persons had yet been received, and the Insurance Commissioners could not, of course, give a certificate until this was sent. As regards the latter part of the question, the terms of employment, apart from any statutory rights employed persons might possess, were a matter of contract between employer and employed, and the Commissioners would have no right to intervene.

Medical Insurance (Germany).

Mr. Watt asked what was the figure per head of insured persons paid to medical attendants under the German Insurance Acts; and whether that sum included drugs or not.

Mr. Masterman said that he was informed that the average cost to the German sickness insurance societies of medical attendance, exclusive of medicine, was, in 1910, 5s. 10½d. per member. These charges included in some cases the treatment of dependants as well as of insured persons. He agreed that the bare mention of the figures as between the German and English system would not be satisfactory to form a fair comparison. The cost of drugs he would inquire about.

University of London.—Mr. Rowlands asked the President of the Board of Education whether his attention had been called to the resolution recently passed by the London County Council to the effect that the University of London should continue to confer degrees on all British subjects in all Faculties other than medicine on the results of examinations alone; and whether, in view of the hostility to external examinations exhibited by members of the Royal Commission on University Education in London, he would represent to that body, on behalf of his Board, the need there was for continuing the external examinations which had made the reputation of London University. Mr. J. A. Pease said he understood that such a resolution was recently passed by the London County Council. The Government clearly could not make representations to the Royal Commission appointed on their recommendation to advise the Crown upon various questions connected with the University of London. He should add that he must not be taken to accept the statement of the attitude of the Commissioners contained in the second part of the question.

The Mental Deficiency Bill.—The debate on the second reading was resumed on Friday, July 19th, when Mr. Wedgwood moved that the bill be read a second time "this day six months." He did so on the ground that it violated the principle of the liberty of the subject. Under it persons who had committed no crime could be imprisoned for life. Sir Frederick Banbury said the bill would give the Home Secretary excessive power: he would be able to lock up a person as mentally defective and have no more trouble about him. Mr. Goldsmith objected to the creation of a new department and a new staff of officials: he thought that one Board should deal with all mentally deficient persons, as recommended by the Commission. After some speakers had further criticized the bill, Lord Robert Cecil urged that to say broadly that a mentally defective person was not fit to be a parent was going very far. Mr. Hume Williams criticized the finances of the bill as inadequate: £150,000 allocated for dealing with defectives was ludicrously insufficient. Mr. Ellis Griffith, speaking on behalf of the Government, defended the bill. After some other speeches, the House divided, and the second reading was carried by a majority of 223. Only 19 voted against it. An attempt was made to send the bill to a Committee of the whole House, which was defeated by a majority of 175. The bill will be referred to a Standing Committee.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

LONDON COUNTY COUNCIL.

Medical Inspection and Treatment of School Children.

THE results of the conference between the Board of Education and the London County Council (BRITISH MEDICAL JOURNAL, May 25th, p. 1212) as to the future basis of medical inspection and treatment in London were reported by the Children's Care Committee to the Education Committee of the Council on July 17th.

The Care Committee stated that the Board contemplated that the Council's scheme would continue composite in character, and might properly continue to include:

1. Hospitals with which the Council would have agreements on the basis of that now in operation at the London Hospital, where the special arrangements practically constituted a children's treatment centre within the hospital.
2. Voluntary institutions of various kinds, other than hospitals, with which the Council would have agreements.
3. Medical treatment centres conducted on the lines of those now opened at Norwood and Wandsworth, but with certain modifications.

It was understood that the grounds upon which the Board considered such modifications necessary were:

(*a*) That the centres as at present constituted were not sufficiently in touch with the Council's system of medical inspection.
(*b*) That the centres were not sufficiently under the direct supervision of the Council.
(*c*) That they were not available for the further examination of school children referred by the inspecting medical officer, or for the examination of special cases referred by the school nurse, school attendance officer, head teacher, or care committee.
(*d*) That they were not available for the treatment of minor ailments.

The modifications suggested by the Board for the Council's consideration were:

1. The medical staff should be nominated by the committee of local medical practitioners, but appointed by the Council, or, at all events, selected by them for appointment.
2. Whether a centre was or was not owned or rented by a committee of local medical practitioners, the administrative control and supervision of the work in the centre should be vested in the Council.
3. The centres should be available for use in connexion with the Council's system of medical inspection of school children, for the further examination of children, and should provide for the treatment of minor ailments. It was, in the Board's view, essential that provision should be made at the treatment centres for the treatment of minor ailments. The Board recognized that there would be particular treatment centres at which, owing to the exceptional circumstances, such provision would not be required, but it considered that the inclusion of such provision should be the normal arrangement.

The Children's Care Committee stated that generally it acquiesced in these views.

In connexion with any arrangements that might be made with hospitals, the Board stated that it was prepared to regard as satisfactory arrangements such as were in operation at the London Hospital; the arrangements in force at certain other hospitals, which differed not only in degree, but in kind, could not be regarded as satisfactory. If these could be modified so as to bring them into line with the arrangements at the London Hospital, the Board would be prepared to regard them as a satisfactory part of the Council's scheme of treatment; but, failing this, it looked forward to a gradual transfer of the work done at these hospitals to other hospitals where the arrangements were of the London Hospital type, or to medical treatment centres, or to school clinics of various types.

The Board reminded the Council that the problem of the medical treatment of school children could not yet be said to have reached a final solution; that the methods of such treatment were undergoing at the present time somewhat rapid evolution; and that it should, therefore, be clearly understood that the views set out above could only represent what the Board regarded as a reasonably satisfactory way of dealing with the needs of the area at the present time and in the near future.

In dealing with the questions raised by the Board, the Children's Care Committee stated that it would shortly have under consideration the question of the possibility

(1) Of establishing, in connexion with hospitals with which the Council had agreements, a system which would produce the same results as were obtained at the London Hospital; and (2) of making arrangements for reinspection and re-examination of children and the treatment of minor ailments in connexion with certain hospitals with which the Council at present had no agreement.

As regards the medical treatment centres, it would be noticed that the three important respects in which provision was to be made were:

(1) Treatment for affections of the eye and ear, nose, and throat, involving operations, and ringworm cases; (2) the reinspection and re-examination of children; and (3) treatment for minor ailments.

With reference to (1), the Council had already determined the main terms and conditions under which such treatment should be given; but the Committee made further proposals which it thought would meet the additional requirements of the Board.

With regard to (2), it would be possible to arrange with the committees of local practitioners for the centres to be available for use by the Council in connexion with the medical inspection of school children and for the re-examination of children.

The Committee suggested that minor ailments should include discharging ears, external eye diseases — for example, blepharitis and conjunctivitis, skin diseases such as impetigo and sores, and such other conditions as required the daily services of a nurse. It was considered that one nurse working full time could deal with 1,100 cases a year, and that for this number the services of a doctor working on one-half-day a week at a cost of £50 a year would be required. A sum of £100 should be paid for nursing treatment in connexion with each centre. This would cover the services of a nurse at the centre, and also nursing treatment (including dressings, lotions, etc.) to be given in the homes of the children, and all necessary equipment and travelling expenses for the nurses.

For these cases, also, some allowance should be made having regard to the additional cleaning and wear and tear involved in a more extensive use of the premises provided by the local practitioners and to the supply by them of dressings, lotions, etc., for treatment at the centre. Moreover, the premises would be used for the purpose of reinspection and re-examination. This would involve their use on Saturday mornings, for which no provision had been made, and the Committee therefore suggested that a capitation payment of 4d. for minor ailments would be an equitable arrangement in respect of these extra services.

The Committee gave detailed particulars of the number of cases to be dealt with at the centres controlled by medical practitioners at Fulham, Hackney, Islington, Peckham, and St. Pancras, and at the Poplar school treatment centre for ear, nose, and throat affections, ringworm, and minor ailments. The estimated cost of the centres varied from £420 to £950 per annum. It was necessary that some provision should be made in the Lewisham district. It was not possible to arrange for a committee of local medical practitioners to provide a centre in Lewisham, unless a minimum of 1,760 cases was guaranteed, and as the Committee was not satisfied that it was possible to supply this number, it proposed, for the present, to accept an offer which had been made by the Home and Infirmary for Sick Children to provide treatment for 250 children a year suffering from ear, nose, and throat defects. The total annual cost would be £80. It was also proposed to accept an offer by the St. George's Dispensary, Blackfriars, to treat 440 ear, nose, and throat cases. The committee also submitted proposals for the treatment of eye cases at the Fulham, Hackney, Islington, Peckham, Poplar, and St. Pancras centres, and at the Home and Infirmary for Sick Children, Lewisham. The cost of these proposals varied from £55 to £300.

The annual cost of all the schemes described in the report would be £4,672, or £5,527 if the maximum number of cases was treated. The annual cost of the treatment of minor ailments at each centre would be £168 6s. 8d., made up as follows: Nurse and equipment, £100; doctor, £50; capitation payment, 1,100 cases a year at 4d. each,

£18 6s. 8d. The total cost at the eight centres would be £1,346.

The proposals of the Children's Care Committee were adopted without discussion.

LONDON WATER SUPPLY.

We have received the report (dated May 1st, 1912) of Mr. C. Perrin, Water Examiner appointed under the Metropolis Water Act, 1871, on the condition of the London Water Supply during the month of January, 1912. He states that the mean rainfall during that month at twelve stations selected as giving equal representation for all parts of the Thames Basin, was 4.16 inches, being 2.04 inches above the average mean rainfall for that month during the previous twenty-nine years. The average daily natural flow of the Thames at Teddington Weir during the month was 4177.5 million gallons, being 2040.1 million gallons above the daily average for the two preceding years. The maximum daily flow was 6970.3, and the minimum 2442.0 million gallons. The average daily flow of the Lee at Feilde's Weir was 294.759 million gallons, the maximum daily flow 1152.828 million gallons, and the minimum 91.791 million gallons. The general rainfall of the whole valley above Feilde's Weir was 3.42 inches. The following table shows the sources from which water supplied by the Metropolitan Water Board during the month was obtained, the average daily supply from each source, and the relative proportions of the supply from each source:

District.	From the Thames.	From the Lee.	From Springs and Wells.	From Ponds.	Total Supply from all Sources.
Eastern	4,932,360	34,291,200	6,876,100	—	46,099,600
Kent	—	—	19,968,900	—	19,968,900
New River	11,523,700	21,306,600	11,425,500	188,200	44,444,000
Southern	55,401,200	—	594,200	—	55,995,400
Western	56,695,100	—	—	—	56,695,100
Supplies in bulk ...	1,021,355	—	129	—	1,021,484
Total	129,573,655	55,597,800	38,864,829	188,200	224,224,484
Percentage of total supply	57.788	24.795	17.333	0.084	= 100

The total number of supplies furnished during the month within the Water Board's area of supply was 1,105,627. The total supply divided by the number of supplies shows a daily average of 202 gallons for each supply.

Mr. Perrin gives in an appendix the Report on the results of the chemical and bacteriological examination of the London waters for the month of January by Dr. Houston, Director of Water Examinations, Metropolitan Water Board, and also an Advanced Report giving briefly the general chemical and bacteriological results for the month of February, 1912.

LIVERPOOL.

MAGHULL EPILEPTIC COLONY.

AMPLE evidence of the excellent work done at the Home at Maghull was afforded at the annual meeting of subscribers and friends held in the new hall on the Chapel House estate on Saturday, July 6th. Mr. Edward Lawrence presided, and there was a large attendance.

In presenting the annual report Mr. W. Griscwood, the Honorary Secretary and Treasurer, stated that the six homes of the institution were kept practically full. On December 31st, 1912, the inmates comprised 171 males and 140 females (80 children). At the end of the year there were 53 applications for admission in excess of the vacancies. The financial statement for the year was satisfactory, and £2,900 was passed to the estate account. It was hoped (assisted by the promise of a substantial contribution from one who in the past had already taken great interest in the institution) shortly to complete the cost of the proposed home for females at the Chapel House estate. During the last month of the year 74 patients had no attacks; the total number of attacks recorded during 1911 was 36,509, nearly 1,000 less than the previous year with the same number of patients. At the homes patients had the greatest possible security with the greatest possible liberty, and the immunity from injury proved that the liberty was justifiable.

The Chairman, in moving the adoption of the report and accounts, said the work had gone on quietly and steadily. Reliance was placed first on good medical treatment, nursing, and watchful care: secondly, on occupation for the colonists, who realized that this and exercise were essential for their improvement. Excellent provision was made for the education and training of the children in the Chilton Home, and adults were provided for in the evening schools during the winter. Ample provision was also made for the recreation and entertainment of the patients. By the erection in the grounds of the third class home for females, the colony would reach its limit in regard to the number of patients. Dr. Alexander spoke of the necessity for the patients to come to the home early. Of those who were ill less than ten years 12 per cent. were cured, of those who were treated within one year from the onset of the disease 15 per cent. were cured. He hoped that the Maghull Home, which dealt only with sound epileptics, would not come under the Government bill for the feeble-minded, as the managers had no wish that the institution should be classified with lunatic asylums.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

NATIONAL INSURANCE ACT.

Now that the National Insurance Act has come into force reports come from various parts of Ireland of local bodies who object to the Act, and either refuse to work it or claim exemption from it. At a meeting of the Managing Committee of the Cork District Lunatic Asylum strong condemnation of the Act was freely expressed, and the resident medical superintendent was instructed to demand the exemption, as the benefits already given to the staff were far in excess of those provided by the Act. It was finally decided not to have anything to do with the Act. At their last meeting the Chairman of the Joint Committee of the Richmond Lunatic Asylum, Dublin, submitted a report with reference to the negotiations between that committee and the National Insurance Commissioners in respect of the staff of the asylum. The Commissioners had agreed to their exemption, but stipulated that the Joint Committee should guarantee to give superannuation and sickness allowances to its staff to the value of not less than those provided by the Act. The Committee undertook to give £1 per week sickness benefit for three months to male officials and six months to female officials, and also provided for superannuation benefits. The Dublin Corporation has also claimed, and obtained, exemption in preference for a scheme of its own. The Dublin Joint Hospitals Committee has drawn up the following recommendations and forwarded them to the Boards of all the hospitals:

1. That all nurses and probationers should be insured under the Act.
2. That nurses insured under the Act should receive no pay from the hospitals during sickness.
3. That a register should be kept at each hospital of insured patients and the names of their societies for statistical purposes.
4. That the medical staff of the hospitals should understand that it is no part of its duty as such either to give medical certificates to those desirous of entering an insurance society, or certificates of sickness to those attending the hospital.

PROPOSED PUBLIC MEDICAL SERVICE.

In the *Irish Times* of July 5th a correspondent, signing himself "Outsider," suggested that the movement in favour of the establishment of a public medical service, or some analogous means of meeting the needs of the working classes, was not likely to be successful unless medical men unconnected with dispensaries organized themselves and strongly supported it. Medical men in Ireland, with the possible exception of those in Dublin and Belfast, fell into two unequal classes—dispensary medical officers and those who had nothing to do with dispensaries. The

interest of those two classes differed. The former might be strongly tempted to consent to accept a smaller capitation fee than that at present demanded, because such fees would in their case mean an increase of salary unaccompanied by a truly corresponding increase of work. The other class was not thus tempted, because, despite freedom in choice of a doctor, the capitation fees were not likely to come their way, owing to the circumstance that a compulsorily insured person would be able to obtain from a dispensary doctor a red ticket entitling him to free medical attendance, and also a certificate entitling him to the "additional medical benefits," which in Ireland constitute the whole of the medical benefit. On the other hand, if such person went to a non-dispensary doctor, he would get his "additional medical benefits," but would have to pay for his medical attendance.

The Feeble-Minded.

A statement regarding the proposed legislature for the mentally defective, with reasons why the "Mental Deficiency Bill" should be extended to Ireland, has been prepared by Mr. R. R. Leeper, Honorary Secretary of the Irish Division of the Medico-Psychological Association of Great Britain and Ireland. The growing sense of obligation to provide for the mentally defective who do not come within the scope of the lunacy laws is shown by the fact that there are at present three measures for the purpose before Parliament. All these measures were intended to apply to England only, but as the result of action taken by the Scottish authorities, Scotland has been included in the provisions of the Government bill. Ireland, however, is expressly excluded; yet Ireland stands in more urgent need of provision for the classes dealt with than either of the sister countries, there being no legal enactments affecting the mentally defective who are not lunatics, nor any means of dealing with them except the Stewart Institution, which is supported by voluntary subscriptions and cannot provide for more than 100; whereas in both England and Scotland legal provision is made and institutions exist for dealing with several of the classes. The report of the Royal Commission on the Care and Control of the Feeble-minded showed that Ireland is worse off than either of the sister countries, whether as regards the actual numbers of mentally defective persons relative to the population or as regards the proportion of those urgently in need of provision. It was estimated in 1906 that there were in Ireland 25,415 mentally defective persons outside of asylums, and that of these 66 per cent. were in need of immediate provision, as against 44½ per cent. in England and Wales and 34½ per cent. in Scotland. At a special meeting of the Medico-Psychological Association of Great Britain and Ireland, summoned to consider the matter, a resolution was unanimously passed urging the necessity of introducing modifications to the Government bill so as to extend its provisions to Ireland. Ireland has a special claim for generous treatment for the following reasons:

1. Emigration leaves an undue proportion of the senile [illegible] ded class, who are mostly in indigent circumstances, and hence gravitate to workhouses and asylums.

2. The younger feeble-minded often find their way into State or State-aided institutions, such as prisons, inebriate and ordinary reformatories, and their removal from these would reduce [illegible] to some extent on the admission of such persons [illegible] ons, the grant in aid, normally 4s., has been [illegible] and so a still greater burden has been thrown [illegible]

Correspondence.

APPENDICITIS AND QUICKNESS.

Sir,—You have indicated that you would receive a further reply from me in reference to the above subject. All I would say is that, although Mr. Paterson and Mr. Morton imply that I have departed from the original position I took up, I am satisfied that an unprejudiced perusal of what I have written will not bear out this charge. I stated distinctly that I think there is too much surgical interference at the wrong time in acute appendicitis, and that it is responsible for a higher death-rate than we should have. My reasons for this opinion I have given in my communications, and as it does not make a thing plainer to say it twice, I do not propose to repeat them. If this correspondence leads to a full discussion at the Medical Society of London on the rôle of surgery in acute appendicitis, it will have done good, as the subject undoubtedly needs further consideration.—I am, etc.,

Glasgow, July 21st. George Thos. Beatson.

ARTERIO-SCLEROSIS IN RELATION TO BLOOD PRESSURE.

Sir,—Owing to pressure of work I have only just read Dr. Oliver K. Williamson's courteous letter in the Journal of July 6th dealing with a case quoted by me in your issue of June 15th. I think that if Dr. Williamson would read my notes through once again, he will see that my conclusions practically agree with his. After quoting the result of treatment in a case of high blood pressure, I concluded by saying:

> I think this case conclusively proves that the high arterial pressure was due to arterial spasm, and not to the atheroma and sclerosis of the arterial walls.

Dr. Williamson, commenting on this case, says:

> The high reading of 220 mm. in Dr. Thorne's case was probably not solely or even chiefly due to blood pressure, but was the resultant of blood pressure *plus* resistance of the arterial wall, the latter being due to spasm of the muscular coat; and the marked fall of the reading to 120 mm. resulting from Dr. Thorne's therapeutic measures was caused in great part by the relaxation of the spasm and the coincident diminution in resistance to the arterial wall, whereas the actual change of arterial blood pressure was but a small part of the difference between the two readings.

My chief object in publishing my case was to differentiate between localized atheroma or arterial sclerosis and arterial spasm due to contraction of the muscular coat, the latter, in my opinion, being the principal cause of increased arterial blood pressure.—I am, etc.,

Woking, July 17th. R. Thorne Thorne.

THE ARRIS AND GALE LECTURES ON SHOCK.

Sir,—I am gratified that Mr. Tyrrell Gray and Dr. Leonard Parsons should have sent such a full reply to my criticism. It obliges me, however, to ask for further space, a request which the importance of the subject will also justify.

When we learnt Euclid we started with definitions and axioms; then came the laying down of a proposition, then the proof, and finally the triumphant Q.E.D. Thus we knew all along exactly our position and our destination. I do not mind confessing—for I am not singular in this respect—that in reading the lectures as they appeared I did not always find myself in this happy condition. Even on a perusal, when explanations have been given, one has now and then to stop and consider in what sense some familiar term is used. I fear the authors may have hindered the reception of their views by trying to reform the language in accordance with them.

My simile of the intoxicated man was, of course, intended as a *reductio ad absurdum*, to show what may happen when a word is applied in an unusual sense. But the serious way in which it has been taken suggests that the authors, if writing on alcoholism, *would* describe a normal man as intoxicated after he had drunk his first glass. The literal and scientific accuracy of the epithet would not prevent it from being libellous and perplexing!

As regards the worth of pressure tracings, I think any one who may care to make a comparison of my comments with the part to which they refer will acquit me of misrepresenting the authors' views.

As to feeling the pulse, I am very far from imagining that I can thus adequately detect vasomotor variations. Perhaps I ought to have written, "During operations, there often occur variations *so considerable* that they may be detected even by feeling the pulse, which yet do not prove of appreciable pathological significance."

My remark as to the state of the heart was called forth by the apparent lack of attention throughout the consideration of pressure tracings to this very important factor. It is mentioned (p. 939) that the blood pressure varies with increased cardiac output, but, curiously, not that it also varies with diminished cardiac output. If the heart is crippled whether poisoned by excess of chloroform, dilated from respiratory obstruction, affected by some general disorder such as anæmia, the seat of degeneration,

etc., or merely fatigued — it will be apt to fail to respond when the additional task of overcoming arterial constriction is thrown upon it, especially if this be marked or sudden. Consequently a blood pressure which with a normally working heart would be or remain high, will instead be or become low. I would suggest that in this way may be partly explained the drops in Charts 21, 24 (end), 28, 37, 38, 16 *a b*, 52, although I do not wish it to be at all supposed that I exclude other factors, such as those discussed on p. 943.

Diagram I, representing the effects of various blocks on the access of peripheral stimuli to important centres, shows anaesthetics as cutting off stimuli from certain cerebral centres only, and ignores their action in diminishing or modifying stimuli from the peripheral parts of the body. Their effects on nervous structures in general (as I wrote, not on "the tissues," although the latter may include the former) are by no means "foreign to the immediate argument"; these might have been represented by broken lines or circles in addition to the closed line A—B. (See Report of British Medical Association Chloroform Committee, p. 23 and elsewhere.) The vasomotor centre itself (although the most resistant) and its immediate connexions (being protoplasmic structures) cannot be absolutely unaffected.

My remark as to the authors not fully realizing the value of general anaesthetics in eliminating mental shock was written after carefully reading "Conclusions" and "Treatment"; for the employment of anaesthetics for such purpose is left to be inferred rather than directly advised (except in hyperthyroidism), and anaesthetics are so many times described as toxins and accelerators of pressor fatigue, that one is left with an impression that they should be avoided whenever possible. It may be added that the statement that in children practically no mental shock ever accompanies spinal analgesia is not supported by instances given in the paragraph on "Consciousness" (p. 939).

My complaint in regard to the assertions about anaesthetics was not so much that these should have been made as that they have been made although the evidence which may justify them is not explicitly stated. For instance, it is said (p. 942, col. 2) merely that "there is evidence" that the use of ether does not in any way mitigate the afferent impulses to the vasomotor centre. Again, I do not find that the promise (p. 1066, col. 2), "we shall show that in their effects general anaesthetics are to be classed with toxaemias," has been adequately fulfilled, although they are repeatedly so described.

This is no doubt true of anaesthetics, particularly of chloroform when given in excess (absolute overdose) or under unsuitable conditions (relative overdose); but the term does not seem generally applicable, unless indeed the authors have again used a word usually limited to an end-result to denote a complete process, including the very beginning.

One observes, for example (Nos. 24, 26, 27, 30), that whilst subjects were fully under chloroform the variations were still of the pressor type, as long as such might be expected from the nature of the surgical proceedings.

It is very satisfactory to know that the authors realized the desirability of approaching the subject from the standpoint of the practical anaesthetist, but entire success could hardly be expected unless there had been constantly associated with them some one, not only possessing high general qualifications, but also a long and varied experience in personally administering anaesthetics.

In conclusion, I would again assure Mr. Tyrrell Gray and Dr. Parsons that, although I think the lectures might be improved in some points, I have not under-estimated the originality of their researches, by which has been attained a far more coherent and satisfying theory of shock and allied conditions than I believe has ever before been presented.—I am, etc.,

London, S.W., July 18th. J. D. MORTIMER.

AN EARLY RECORD OF SECONDARY SYPHILIS WITH IRITIS.

SIR,—An interesting early mention of this disease is to be found in the unblushing autobiography of the celebrated Italian sculptor, Benvenuto Cellini. It would seem that iritis was not generally recognized as syphilitic by Roman physicians in 1532, two years after the poem of Fracastorius which gave us the name of the disease.

After mentioning the serious and painful affection of the eyes, which, he says, threatened him for a time with blindness, he goes on to say:[1]

"It was true, indeed, that I had got the sickness, but I believe I caught it from that fine young servant girl whom I was keeping when my house was robbed. The French disease, for it was this, remained on me more than four months dormant before it showed itself. Then it broke out all over my body at one instant. It was not like what one commonly observes, but covered my flesh with certain blisters of the size of a sixpence, and rose coloured.

"The doctors would not call it the French disease; albeit I told them why I thought it was this. I went on treating myself according to their methods, but derived no benefit.

"At last I resolved on taking the wood.[2] The result was that at the end of fifty days I was cured and as sound as a fish in the water."

In the above account it is interesting to notice the four months' interval between the time of infection and the spots, and presumably the iritis also.

Knowing as we do that the public now apply the word "blister" to papules as well as to vesicles, it would, perhaps, be hardly safe to assume, whatever the Italian word may be, that Benvenuto Cellini meant to describe a rash which was exclusively vesicular. Still, the description is suggestive of a late secondary eruption.

"The wood" is still in antisyphilitic use in Decoct. sarsae co. and Plummer's pill.—I am, etc.,

Brighton, June 26th. REGINALD JOHN RYLE.

Obituary.

ROBERT T. BOOTH, M.B., B.CH.,

HANKOW.

IT was with deep regret that the news of the death of Dr. Robert T. Booth was received by the people of his native city, Cork, where he passed away, surrounded by his relatives, on June 22nd, 1912, at the early age of thirty-nine years. Dr. Booth was a medical missionary in Hankow, China, and had only returned a few months ago on furlough after an exceedingly trying time during the revolution in that country last year. He organized a relief party, which he led personally under heavy fire, crossed the river to save the wounded soldiers and blind boys of his hospital. Dr. Booth was a member of the Methodist Church, and went to China under the auspices of the Christian Endeavour Societies in Ireland. He received his professional education at Queen's College, Cork. He was one of the most brilliant men of his year, taking many prizes and exhibitions; he was also captain of the college football team. In 1899 he took the degrees of M.B., B.Ch., B.A.O. of the Royal University of Ireland, with high honours. In 1899 he was ordained in Wesley Chapel, and left to take up his new work as colleague to the late Dr. Hodge, who had done so much to build up the medical mission in Hankow. On the death of Dr. Hodge some years after, the responsibility of the work fell on Dr. Booth, who further developed it on the lines laid down by his predecessor. In addition to the enlargement of the hospital, a memorial nurses' home was built. Dr. Booth threw himself heartily into the surgical work of the hospital with an ability which had characterized him from his student days.

During his first furlough he went through a course at the Tropical School in London, and obtained the diploma in tropical medicine and hygiene at Cambridge in 1906. He was the embodiment of physical and mental vigour, a man who knew his work, and was always able to rise to any occasion which the varied experiences of his life demanded of him.

His death came as a surprise to most of his friends, for although he had undergone a minor operation early in June, yet hopes were entertained of a speedy recovery, but untoward symptoms appeared, and, despite all that surgical and medical skill could do, he sank rapidly. He leaves a wife and three young children to mourn his loss.

[1] In the absence of the original, I quote from Symonds's translation.
[2] Symonds in a note has guaiacum or Italian "legno santo."

The following memorial of Dr. Booth's work in connexion with the Red Cross is contributed by Dr. W. H. Graham Aspland, F.R.C.S.E.:

"Having returned from China but two or three days, I cannot express the great shock I felt on reading the fact of the death of Dr. Robert Booth, of Hankow, and, as Vice-President of North China Medical Association, I would like to pay tribute to his memory here in England, such as, I am sure, will be paid by every medical missionary in China. It seems but a few days since I shook hands with him when we separated after our Red Cross work in Hankow and Wuchang. On that occasion it fell to my lot to reply to a toast given by the Central China Red Cross Society to myself, as representing the Northern Branch, and to all time no mention can be made of Red Cross work in China without associating with it the name of Robert T. Booth. We cannot imagine what would have been the results had he not been the life, spirit, and impulse of that work. I can see him now, rushing from one centre to another on his old bicycle, which had but one pedal—the other being a pedal rod only—arranging with merchants and others for empty warehouses and buildings to be converted into hospitals. When I remember that four hospitals had to be opened in one day in order to accommodate the wounded arriving in hundreds, only those who work in China can understand the work devolving upon Booth and his chief, MacWillie. Beyond organization he had his own hospital full, and yet he was always the man to fill the gap when one was made. I venture to assert that no man in Central China will be more missed, and I am equally certain none was more loved and revered. I can imagine the horror and grief which will fill the hearts of all medical missionaries on the Central River when they hear the terrible news of his death. He was Irish and not Scot, but none the less a 'grand man.' Booth was an ideal 'medical missionary.' Medically, nothing but the best would satisfy him. His hospital and dispensaries were not run on loose, slipshod lines, merely making medicine the bait to catch converts; he was up to the latest standards in his own attainments, and his hospital was in keeping with them. His abhorrence was a medical missionary who in fulfilling the missionary side of the work allowed the medical to become rusty and out of date. . . ."

WILLIAM JEFFREY, M.D.,

JEDBURGH.

On July 16th Dr. William Jeffrey, of Jedburgh, passed away at the age of 71, after a strenuous life of forty-seven years as a country practitioner. He was one of the last of an outstanding group of doctors on the Scottish Border who all worthily upheld the dignity and worth of medicine in that classic land. He was the son of a Border doctor, and he was a notable man through all that countryside. Able, active, kindly, shrewd and handsome, he looked and was a gentleman in all his ways. He had also a deep but silent sense of religion and reverence in his nature. He was well read in his profession, as he was in general literature, and his interests were wide. He helped to found a Cottage Hospital at Jedburgh. He could discuss a knotty point in science or morals, as well as the latest discoveries in his profession, and he dearly liked to come into Edinburgh to meet his old medical teachers and friends. He could hold his own with any of them and give as much instruction as he got. He was welcome everywhere—in the cottage and the hall—his keen personality and hearty manner making him very attractive. His life was a happy and busy one, not free from hardships and risks. He would think little of riding twenty miles to see a shepherd's wife among the Cheviots, and back again to catch a train for an Edinburgh professional dinner or a musical concert. His ruddy, cheerful face was a fine contrast to most of our city doctors. Like all country practitioners, he knew human nature well in all its weaknesses, sorrows, and strength. He was a social man in a high degree, and a loyal friend. His ability, width of medical knowledge, and experience gave him confidence in doing his varied medical work, and gained the unbounded trust of his many patients, for his practice was a very large one. The modern specialist in medicine and surgery may well look up to such a general practitioner, whose range of work is so much wider than his own, and who has constantly to meet professional emergencies unknown to him.

So long as we have country doctors like Jeffrey, who have "honour, love, obedience, troops of friends," the future of our profession is safe. He carried out the great traditions of the Edinburgh medical school, when its teachers included Simpson, Syme, Goodsir, Hughes Bennett, and Christison.

Dr. Jeffrey took the degree of M.D. in Edinburgh in 1863, after a distinguished career as a student. He was house-physician to Dr. Warburton Begbie and Dr. Matthews Duncan in the Royal Infirmary of Edinburgh, where the late Professor Rutherford, another Border man, was his fellow resident, and a prosector with Sir William Turner. He leaves a widow, one daughter and two sons—Dr. John Jeffrey, F.R.C.S.E., who succeeds him in his practice, and Dr. George Jeffrey, M.R.C.P.E., both of them men of distinction.

E. D. RITCHIE, M.B., B.C.

We regret to announce the death of Dr. E. D. Ritchie, which occurred at his residence, Chandler's Ford, Hants, on July 6th. For eight months he had borne with the greatest fortitude an incurable internal malady. He watched his own case with the attention he would give to his own patients.

Dr. Ritchie was born at Brighton, September 16th, 1859, and was the youngest son of the late William Ritchie, Advocate-General of Bengal, and Legal Member of the Council of the Governor-General of India. He was educated at Twyford and Winchester, and when he left the latter for Cambridge he was Prefect and Captain of the School Four. He entered Trinity College, Cambridge, in 1878, and rowed in the First Trinity first boat in the following year. He was equally distinguished in sports and in the schools. He gained an Exhibition in Natural Science, and obtained a First Class in the Natural Science Tripos in 1881. He was twice chosen to compete with Oxford for throwing the hammer, and won the event for Cambridge in 1882. In 1883 he entered at St. Thomas's Hospital, and speedily came to the front among the men of his year. He held the posts of both House-Surgeon and House-Physician. He was admitted a member of the Royal College of Surgeons of England in 1885, and graduated M.B., B.C., at Cambridge in the following year. There is no doubt he might have made headway and a name for himself if he had elected to remain in London, but he felt a call to the country, and he settled in 1888 at Yorktown, near Camberley, Surrey. In 1891 he married Miss Lilian Dora Middleton, youngest daughter of the late Rev. F. M. Middleton, R.D., then Vicar of Camberley. After his marriage he moved to the neighbouring village of Blackwater, Hants, where he remained till 1897, when he settled at Chandler's Ford, where he practised until his fatal illness. He was a true gentleman, and never swerved from the straight path of ethics. He had musical tastes, and was fond of hunting. Dr. Ritchie was appreciated as the Honorary Secretary of the Diocesan Choral Association, and encouraged singing amongst the young as preventive of nasal and respiratory affections. As a Chairman of the Winchester Division he won the respect and regard of the members, for in debate he always spoke to the point. He was a strong supporter of the cardinal points of the British Medical Association regarding the Insurance Act. He was laid to rest on July 17th, the funeral being attended by a number of his professional brethren, friends, and patients. Conspicuous among the many wreaths was one from the Winchester Division. The last months of Dr. Ritchie were materially alleviated by the untiring skill and devotion of Mr. H. J. Godwin, Surgeon to the Hants County Hospital and Secretary to the Winchester Division.

Deaths in the Profession Abroad.—Among the members of the medical profession in foreign countries who have recently died are Dr. H. Waitz, surgeon in charge of the Red Cross Hospital at Hamburg, and author of works on nursing, etc., in the sixty-second year of his age; Dr. M. J. Petrunkewitch, medical superintendent of the Twer Government Hospital, and a member of the first Duma; Dr. S. W. Schidlowski, professor in the Army Medical

Academy, St. Petersburg, aged 64; Dr. Jerome H. Waterman, a well-known orthopaedic surgeon of New York, aged 41; Dr. Leon Oppenheimer, the well-known gynaecologist of Wurzburg, aged 71; Dr. J. Brandt, sometime professor of surgery in the Medical Faculty of Klausenburg; Dr. Paul Villemin, son of the investigator who established the infectivity of tuberculosis, surgeon to the Paris hospitals, author of a work on infections, traumatisms, and diatheses, and other contributions to medical literature, aged 51; Professor Ernst Schulze, of Zürich, a very distinguished investigator in the domain of biochemistry, aged 72; Dr. J. Chatin, Professor of Histology in the Paris Faculté des Sciences, and Member of the Académie de Médecine; Dr. Moritz Seidel, Professor of Pharmacology in the University of Jena, aged 75; and Dr. Emilian Kaufmann, Professor of Ear and Nose Diseases in the Czech University of Prague.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examinations indicated:

SECOND M.B. (*Part II.*)—B. P. Allinson, D. Aucutt, K. R. Batra, K. Biggs, A. L. Blunt, O. D. Brownfield, J. Capell, F. Chadwick, P. C. P. Cloake, B.Sc., C. Cooke, J. N. Deacon, C. R. Denny, J. Y. Dent, E. G. Dingley, C. H. Edwards, H. Ellis, J. Fanstone, R. H. Fleming, B.Sc., Annie M. Forster, H. R. Friedlander, G. F. P. Gibbons, E. F. Guy, D. T. Harris, E. E. Herga, S. H. Hodges, R. N. Hunter, C. E. Jenkins, Rosalie Jobson, R. T. Jones, W. A. E. Karunaratne, K. W. Lewis, G. C. Linder, D. G. F. Moore, J. B. Mudge, Kathleen H. Parkinson, O. Parry-Jones, H. R. Partridge, A. H. Pemberton, L. G. Phillips, L. E. Pimm, K. N Purkis, C. S. L. Roberts, Violet I. Russell, P. Sai, E. A. L. Sansom, S. K. Sanyal, W. G. Shakespeare, Edith A. Shaw, G. J. C. Smyth, Elsie Stansfeld, L. F. Strugnell, T. C. Summers, L. H. Terry, J. O. Thomas, G. N. Welsford, J. D. Wilkinson, C. M. Williams, L. H. W. Williams, H. W. S. Wright.

M.D., BRANCH I (*Medicine*).—S. H. Booth, B.S., H. C. R. Darling, B.S., H. S. Furness, B.S., Rose F. Jordan, B.S., T. S. Lukis, B.S. (University Medal), E. G. Perodeau, B.S., C. E. Shattock, B.S., N. Tattersall, B.S., H. A. Treadgold, B.S., H. O. West, B.S., S. Wyard, B.S.

M.D., BRANCH III (*Mental Diseases and Psychology*).—B. Hart, G. E. Peachell, B.S.

M.D., BRANCH IV (*Midwifery and Diseases of Women*).—H. L. Barker, B.S., R. L. E. Downer, B.S., H. B. Foster, G. B. Harland, B.S., G. Maxted, B.S. (University Medal).

M.D., BRANCH V. (*State Medicine*).—W. A. Daley, B.S., B.Sc., W. Scarisbrick, B.S., B.Sc.

M.D., BRANCH VI (*Tropical Medicine*).—Ardeshir K. Contractor, B.S., F. C. McCombie, Dossibai R. C. Patell, B.S., R. O. Sibley.

QUEEN'S UNIVERSITY OF BELFAST.

THE following candidates have been approved at the examinations indicated:

FIRST M.B. (*Chemistry*).—J. Adams, C. Barton, Marion Crawford, J. H. Davison, J. Fegan, J. M. A. Gorman, R. Hall, Arabella C. Kirker, J. G. M. Leyden, J. J. Marner, P. J. Murnane, H. J. O'Prey, W. H. Pedlow, C. A. Whitfield, J. Wilson.

FIRST M.B. (*Physics*).—J. Adams, S. T. Alexander, C. Barton, J. H. Davison, Dorothy I. Dobbin, J. Fegan, Arabella C. Kirker, J. G. M. Leyden, J. J. Marner, T. J. Marner, P. J. Murnane, C. A. Whitfield, J. Wilson.

FIRST M.B. (*Zoology*).—G. V. Allen, C. Barton, W. Bryars, A. G. Campbell, G. Chesney, N. W. Clarke, C. D. Crawford, Marion Crawford, A. C. Dickey, Grace Marion English, F. Ewart, E. Freeman, H. E. Hall, R. Hall, J. A. Harbison, J. H. B. Hogg, Arabella C. Kirker, J. G. M. Leyden, W. M'Bride, R. N. B. M'Cord, N. M'Cullagh, J. P. M'Ginley, B. W. M'Kinney, M. M'Menamin, F. M'Sorley, P. J. M'Sorley, H. E. Magee, J. J. Marner, T. J. Marner, D. Mitchell, F. P. Montgomery, Elizabeth M. Moore, P. J. Murnane, W. Napier, J. O'Kane, M. F. O'Kane, Annie M. Orr, Charlotte Pedlow, W. H. Pedlow, Margaret S. Purce, R. J. Rea, J. A. Ritchie, W. Saunderson, J. Scott, Mary G. Thompson, E. S. G. K. Vance, J. H. Vance, D. R. Wheeler, C. A. Whitfield, F. H. Whyte, J. Wilson, F. P. Woods.

FIRST M.B. (*Botany*).—J. Adams, G. V. Allen, W. Bryars, A. G. Campbell, G. Chesney, N. W. Clarke, C. D. Crawford, J. H. Davison, A. C. Dickey, J. Dunlop, Grace M. English, E. Freeman, A. Gaston, H. E. Hall, J. A. Harbison, J. H. B. Hogg, S. M'Clure Kirk, Arabella C. Kirker, R. N. B. M'Cord, N. M'Cullagh, J. P. M'Ginley, M. M'Menamin, F. M'Sorley, P. J. M'Sorley, H. E. Magee, J. J. Marner, T. J. Marner, R. G. Meyer, D. Mitchell, Elizabeth M. Moore, W. Napier, J. O'Kane, Charlotte Pedlow, W. H. Pedlow, Margaret S. Purce, R. J. Rea, W. Saunderson, Mary G. Thompson, E. S. G. K. Vance, J. H. Vance, D. R. Wheeler, C. A. Whitfield, F. H. Whyte, J. Wilson, F. P. Woods.

SECOND M.B.—J. B. Alexander, E. G. B. Calvin, P. Clarke, T. W. E. Elliott, Mary A. Gallagher, H. D. Graves, S. J. Hutchinson, P. Kane, Mary M. Keirns, T. M'Clurkin, R. G. M'Elney, J. C. M'Millan, H. F. M'Nally, Sylvia Marsh, J. F. Meenan, T. Milling, S. A. D. Montgomery, W. N. Montgomery, A. Porter, F. A. E. Silcock, W. A Thompson, Elizabeth S. Walker, D. K. Watterson. *Passed in Anatomy:* A. W. Bourke, W. Russell. *Passed in Physiology:* J. Cullenan.

THIRD M.B. (*All Subjects*).—N. Beattie, W. M'Meekin Chesney, J. Duffin, A. Fullerton, D. Gaston, Margaret Gorman, W. S. B. Hay, J. F. D. Hunter, W. J. Lascelles, B. Lyons, C. M'Neill M'Cormack, W. M. H. M'Cullagh, F. M'Kibbin, R. N. M'Kinstry, E. B. C. Mayrs, J. J. Murray, M. G. Paul, G. R. B. Purce, G. W. Rea, Elizabeth M. Robb, J. Tate, O. Wilson, W. R. E. Wilson, P. P. Wright. *Passed in Pathology, Medical Jurisprudence, and Hygiene:* R. G. Blair, H. A. Gillespie, T. Grimson, G. E. Hull, W. M'Dermott, J. I. Murnane. *Passed in Pathology and Materia Medica:* F. L. P. G. Bennett, E. U. M'William. *Passed in Medical Jurisprudence and Hygiene:* R. Condy, F. J. Devlin, W. W. Dickson, E. Doherty, E. C. T. Emerson, G. Gordon, W. H. Hardy, D. Jamison, T. B. M'Kee, R. C. M'Millan, E. A. Mallon, J. C. Robb, J. S. Savage, F. A. L. Shields, F. G. Smyth, J. K. Stewart, R. F. Walker, J. Warwick, J. C. Wilson. *Passed in Materia Medica:* H. P. Hall, V. Magee.

FINAL M.B., B.CH., B.A.O.—D. R. Acheson, †J. H. Beverland, Sarah E. Calwell, †S. H. Davison, †S. R. Foster, T. F. S. Fulton, C. L. Gaussen, J. M. Gibson, N. B. Graham, N. C. Graham, J. Hill, T. H. Houston, J. T. Kyle, J. Lyons, R. J. M'Connell, R. M'Culloch, *H. P. Malcolm, †R. Marshall, R. H. Mulholland, W. M. Walker, J. R. White, W. O. Wilson.

* First class honours. † Second class honours.

M.D.—*By Examination:* R. J. Lyttle, *J. M. M'Cloy, J. J. A. G. MacMurtry. *By Thesis:* J. A. Brown, J. Dodd, †V. G. L. Fielden, W. Hanna, †R. Heard, D. J. Jackson, A. Kidd, T. J. S. Moffet, J. W. A. Wilson.

* With commendation. † Recommended for gold medal.

D.P.H.—G. S. Glass, L. C. Johnston, W. W. D. Thomson, R. M. Trotter, B. A. West.

Awards.

In connexion with these examinations the following awards have been made:

FIRST M.B.—First Scholarship, £35, W. Bryars, R. N. B. M'Cord, equal. Second Scholarship, £20, A. C. Dickey, D. Mitchell, equal. Isabella Tod Memorial Scholarship, M. Georgina Thompson.

SECOND M.B.—First Scholarship, £40, and Juliet Symington Gold Medal in Anatomy, E. G. B. Calvert. Second Scholarship, £30, J. C. M'Millan. Third and Fourth Scholarships (divided), £11 13s. 4d. each, S. J. Hutchinson, T. Milling, Elizabeth S. Walker, equal.

THIRD M.B.—First Scholarship, £40, A. Fullerton. Second Scholarship, £30, E. B. C. Mayrs. Third Scholarship, £20, W. S. B. Hay. Fourth Scholarship, £15, G. R. B. Purce.

FOURTH M.B.—Special Scholarship of £20 and Scholarship in Surgery, £30, H. P. Malcolm. Scholarship in Medicine, £30, R. Marshall. Scholarship in Midwifery, £30, J. H. Beverland.

Medical News.

THE total number of students of medicine in the German Universities during the current session is 13,409, as against 11,927 in the summer session of 1911.

SIR FRANCIS RICHARD CRUISE, M.D., left personal estate in the United Kingdom valued at £23,358. He left his collection of books relating to the life and works of Thomas à Kempis to be preserved in the library of the Jesuit Order at Upper Gardiner Street, Dublin.

THE late Alderman Thomas Houghton Waters, M.D., "father" of the medical profession in Liverpool, left estate of the gross value of £24,070, of which £23,788 is net personalty. He left £100 each to the Liverpool Medical Institution and the British Medical Benevolent Fund.

IN his report for the three weeks ending June 15th the Medical Officer for the City of London again draws attention to the unsatisfactory conditions in which frozen pork is imported from China. The carcasses present evidence of merely superficial inspection and of careless butchery. The trachea, oesophagus, and even the rectum are sometimes left *in situ*, and no serious examination of the glands about the neck is made; nor are incisions in the cervical region skewered open before the carcasses are frozen. Hence, when a carcass is seen to have imperfectly examined it must first be thawed out in this country, a course which is prejudicial to it whatever its original suitability for food may have been.

THE Marquis of Crewe, who is president of the Summer School of Town Planning which is to be held at Hampstead Garden Suburb, will give the inaugural address in the Institute Hall on Saturday, August 3rd. The Summer School is being held under the auspices of the London University Extension Board, and the course lasts a fortnight, from the 3rd to the 17th of August. The lectures and demonstrations are intended to be of special value to municipal engineers, architects, and surveyors, but most of the lectures will be of interest to others who are concerned with town planning from the more general aspect of civic and economic progress. Applications to attend the course, or single lectures or excursions, should be addressed to the Honorary Secretary, Summer School of Town Planning, Hampstead Garden Suburb, N.W.

A STRIKING proof of the increased interest on the part of the general public in the important question of sanitary housing is to be found at the Latin-British Exhibition held at the White City, Shepherd's Bush, where the Gidea Park Company, Limited, are exhibiting a six-roomed

specimen cottage, modelled on exactly the same lines as those on the well-known Gidea Park Estate in Essex. This pretty little model, which is furnished throughout in a most artistic fashion by Messrs. Oetzmann, of Hampstead Road, W., has been planned on the most approved principles of modern hygiene, and is a triumph of ingenuity in regard to the saving of time, labour, and expense in the home. Without sacrificing anything of the quaint beauty of the old-world furniture and architecture, the designers have availed themselves to the full of the most recent household appliances, and have thus successfully solved the problem of building a house that is at once beautiful, convenient, and healthy. It may interest our readers to learn that a similar cottage can be built at Gidea Park for the sum of 900 guineas, whilst Messrs. Oetzmann undertake to furnish it down to the smallest details for little more than a quarter of that sum.

FIFTEEN Chinese students, all professing Christians, recently had the degree of Doctor of Medicine conferred upon them by the Union Medical College, Peking. Mr. Liang Shih-yi, who was sent by the President of the Republic as his representative, read a message, in which the President said past history showed that improvement in health depended upon medical science. As the world became more civilized, sanitary measures were improved and medical science spread its influence throughout the world. The college had the worthy object of working for the happiness of this nation, and was sending forth trained doctors to contribute their share towards helping the people to be a healthy nation. As President he would lead the whole nation to acknowledge with gratitude the great work done by the college. This is the second occasion on which students in the college have received their degrees. The principal of the college is Dr. E. J. Stuckey, who was sent out by the London Missionary Society for this work.

THE sixth Pan-American Congress will hold its meeting at Lima in August (3rd to 10th) in connexion with the Latin-American Medical Congress and the Congress of Hygiene, under the patronage of the President of the Republic of Peru. The work of the congress will be divided among eight sections—(1) anatomy and physiology; (2) bacteriology and parasitology; (3) medicine, including (*a*) clinical medicine, therapeutics and symptomatology, (*b*) children's diseases, (*c*) mental and nervous diseases, criminology and legal medicine, (*d*) tropical medicine and epidemiology; (4) surgery, including (*a*) clinical surgery, paediatric surgery, (*b*) eye, ear, nose and throat, (*c*) venereal and urinary diseases, dermatology, (*d*) obstetrics and gynaecology; (5) hygiene, including (*a*) military and naval hygiene, (*b*) tuberculosis, (*c*) health of children, (*d*) alimentation, (*e*) city and rural, professional and school hygiene, (*f*) social and statistical demography, sanitary legislation, (*g*) sanitary technology; (6) physics, chemistry, natural history, pharmacology; (7) veterinary medicine; (8) odontology.

THE annual report of the Medical Officer of Health for the Shanghai Municipality states that the foreign population in October, 1910, was 13,536, and the native population at the same date 488,005; the foreign death-rate was 20.2 per 1,000, and the native 17.5 per 1,000. The principal causes of deaths among the foreign population were small-pox, typhoid fever, scarlet fever, tuberculosis, dysentery, and beri-beri. Among the native population small-pox and tuberculosis accounted for a large number of deaths. There were 304 fatal cases of small-pox, but the Chinese are beginning to appreciate the benefits of vaccination as opposed to inoculation, which they have practised for hundreds of years; 4,608 vaccinations were done during the year. The lessening of the native death-rate from tuberculosis is attributed rather to deaths being hidden or intentionally returned from other causes, owing to dislike of disinfection, than to any marked sanitary amelioration. Something has been done by widely distributing the tuberculosis prevention notice, by a public crier reciting the same to crowds gathered by a bell, and by careful investigation of all cases notified, so as to ensure disinfection of the infected sputum. Plague-infected rats were first discovered in 1908; a complete plague survey of the Settlement was maintained throughout the years 1909 and 1910. Of 19,559 rats found dead during 1910 and brought to the laboratory for examination, 249 were plague-infected. Six fatal cases of plague in man were reported. Over 20,000 specimens were examined in the public health laboratory, and a large number of analyses were made. Two horses are kept for the production of diphtheria antitoxin, and a large amount of Haffkine's plague prophylactic has been made to meet local needs.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

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AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

INCOME TAX AND THE INSURANCE ACT.

A. B. has a salary of £150, with board and lodging, and, in addition, receives a few pounds in the way of fees. He does not wish to come under the Insurance Act, and would prefer, if possible, to pay income tax on a small sum.

*** Our correspondent does not come within the scope either of the income tax or of the Insurance Act. For the purposes of the latter the person employed must receive remuneration "at a rate not exceeding in value £160 a year"; these words clearly require that the value of the board and lodging shall be taken into account, and the remuneration in the present case is therefore clearly over £160 a year. For the purposes of the income tax, however, no account is taken of the rules of board and lodging, and our correspondent is therefore exempt, as having an income under £160 when computed according to the provisions of the income tax.

ANSWERS.

VENETIAN FEVER.

MAJOR R. KENNEDY, R.A.M.C., writes in reply to "M." (BRITISH MEDICAL JOURNAL, July 6th, p. 52): The symptoms suggest Malta fever. Blood should be tested for reaction to *M. melitensis*.

LETTERS, NOTES, ETC.

ABNORMAL DEVELOPMENT OF A PURELY-BRED ENGLISH FEMALE CHILD, AGED 4 YEARS.

DR. J. THOMSON CLARK (London, S.E.) writes: The following note of a case may be of interest:—A.B., female, aged 4 years 1 month, height 112 cm., weight 25 kg., muscular, plump, and intelligent. Breasts: Pendulous, with abundant glandular tissue, firm and elastic to touch; areolæ well developed, pigmented, fully 1 in. in diameter, and showing "Montgomery's" tubercles. Menstruates every month, duration usually three days; colour, smell, etc., in every way similar to periods in adult female; no pain; has to wear diapers. Periods have appeared regularly since birth. Genitals well developed, much "down" on pubes, and several long hairs. No axillary hair. Teeth temporary and normal. Otherwise a rosy-cheeked, perfectly normal child.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *postes restante* letters addressed either in initials or numbers.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICAL SOCIOLOGY.

J. C. McVail, M.D., LL.D., President.

PRESIDENT'S INTRODUCTORY REMARKS.

Dr. J. C. McVail, in some brief introductory remarks, mentioned that the Section of Medical Sociology was one of the youngest within the Association. Within recent years the relation of the medical profession to the outside public had extended very greatly: the profession now came in contact with all manner of public bodies and organizations and all kinds of public questions. In view of this it was felt that not only was there room within the Association for a Section of Medical Sociology, but that it ought to be one of the most important. If the Section remained in being for a hundred years it was unlikely to have greater matters before it for discussion than at the present time.

DISCUSSION ON A PUBLIC MEDICAL SERVICE UNDER PROFESSIONAL CONTROL.

OPENING PAPERS.

I.—Robert R. Rentoul, M.D.,

Liverpool.

A STATE MEDICAL SERVICE.

In the British Medical Journal of June 22nd, 1889, I proposed that we should establish a Public Medical Service, organized, controlled, and worked by doctors. At the annual meeting of the Association held in Leeds in the same year this proposal was referred to all the Branches for discussion and report. Only two Branches, unfortunately, reported in favour of it.

In 1886 I obtained a translation of the German laws relating to national insurance, and came to the conclusion that England must eventually adopt a similar scheme. Since then much water has run under the bridge, and now—after twenty-five years of lost time—we attempt to evolve a service. Personally, I feel it would give better national results if the Government made the employment of all doctors a branch of the civil service. Nationalization of medicine is not so far off as some think. The State or municipalities now appoint and pay doctors to look after the men in the army, navy, and Indian army. The Local Government Board appoints medical officers of health, Poor Law medical officers, and public vaccinators. The Prison Commissioners appoint prison surgeons, and the Lunacy Commissioners see to the appointing—through the county councils—of asylum doctors. The Board of Trade insists that certain ships shall carry surgeons for the treatment of crew and emigrants. The Colonial Office appoints Colonial surgeons; the Home Office, factory surgeons; the Post Office, surgeons for its officials; while the municipalities appoint doctors to fever hospitals and to inspect school children.

It is further suggested that they shall appoint doctors to treat sick school children—and now the Government has agreed to provide some 14,000,000 people with State appointed and paid doctors. Some years ago I collected statistics to show that in 1901 about 7,565,385 persons in the United Kingdom obtained free medical treatment, not including some 6,000,000 quasi-charitable club members, and 541,559 free vaccinations. If 14,000,000 more be added, the proposal to put all medical practice under State and municipal control is not a mere dream, and if we had a system of examination, pay, promotion, and pension such as exists in the army and navy, then the condition of doctors would be greatly improved. I do not suggest that there would not be a fair number of non-State practitioners also.

As regards the chief points bearing upon a Public Medical Service, I suggest:

First. That the Insurance Committees receive from the Insurance Commissioners a sum of money equal to about 6s. per insured person per annum, this to be handed quarterly to the doctor of the insured person. Perhaps this 6s. might be increased to 7s. for each Post Office contributor, old age pensioner, and unemployed, as these will require more treatment.

Secondly. That the Insurance Commissioners give 2s. 6d. per annum to the doctor or chemist who agrees to supply the insured person with medicines. This 2s. 6d. is rather small if we wish to give reliable medicines to the sick public. You may have noticed that the average German allowance is 3s. 8½d. to the chemist. This 6s., *plus* 2s. 6d., would be *the minimum* sum asked for by the British Medical Association. Personally, I think 8s. 6d. is too small, even when extra fees are given for night, Sunday, and holiday work, and for operations. The German doctors at Leipzig have been granted 15s. per member per annum. I would here emphasize my regret that the Council of the British Medical Association did not send commissioners abroad to study and report fully upon the insurance schemes of France, Germany, Austria, and Denmark. The chemists were sufficiently practical to send their representative.

Thirdly. In order to meet Mr. Lloyd George's objection that he cannot, or will not, grant 11s. per member per annum, I would suggest that each insured person pay a yearly sum of 5s. (or about 1d. weekly) to the doctor who treats him or her. In other words—that they pay the amount the better class friendly societies now pay their doctors. These three sums of 6s., 2s. 6d., and 5s. would, with 14,000,000 insured persons, give doctors an annual income of £9,450,000, or £472 gross each, exclusive of confinements, vaccinations, notifications, operations, sanatoriums, etc., these probably totalling from £50 to £100 each doctor yearly.

It is useless to contend that those making under £160 a year cannot pay this sum of about one penny per week. Sir R. Giffen in 1886 estimated that the wages of the working classes had increased by 50 to 100 per cent. during the last fifty years; and that their total yearly income was £622,000,000. We all know that since 1886 their wages have, fortunately, increased and will go on increasing. At the same time the price of their food has decreased by 15 to 20 per cent.; rents having increased. There are other ways by which this 5s. a year could be easily provided. Thus it has been estimated that in England each year £23,00,000 is spent upon tobacco, £44,000,000 on sport, and £175,000,000 on sexual vice. Take, again, the heavy expenditure upon funerals. In 1910, in England and Wales, 483,321 deaths were registered. It would be fair to estimate that these cost, in ground, mourning, and funeral some £24,166,050. Half of this sum might be saved, and more would be saved if each municipality carried out funerals and burials. Why cannot we spend £12,000,000 of this on the living and not on dead bodies, and so establish a splendid system of supplying those earning under £160 a year with efficient medical, surgical, obstetric and dental treatment, and medicines? It is idle for a Chancellor to tell us that he cannot raise sufficient money. Even if he taxed bachelors and sterile marriages he could raise over £15,000,000 a year on a graduated taxation on their incomes. Take, again, the unnecessary expenditure upon alcohol—£162,797,229 during 1911; £5,192,571 more than in 1910. This amounts to £3 11s. 10½d. per head of the population (infant, adult, male and female), or £17 19s. 3½d. per family. What is the use of a Chancellor telling us that he cannot find the money? It is mere insult, mere bluff. If he wanted it for any other class of the community he would readily find it. But the Chancellor has been taught by doctors, unfortunately, that doctors will not object to a little more medical charity from doctors. We, on the other hand, now maintain that the utmost limit of medical charity has been reached—nay, over-reached—and that a sponging public must cease sponging upon doctors. I have estimated that we doctors give, in the form of medical

charity, a sum equal to £8,678,000 yearly to the public—£4,000,000 of this to voluntary hospitals, £1,500,000 in private practice, £3,000,000 to clubs and tontines, £64,700 in free death certificates, and £114,250 in notifying births and in losses due to bad debts. It is painful to read in Sir W. Plender's report that 171 doctors had to pay £1,458 to collectors in collecting part of the £113,980 in income. Yet Mr. Lloyd George has the effrontery to suggest that our present incomes should be further reduced yearly by £2,800,000. How do I prove this? If we estimate that at present the average gross income of a doctor is £350 a year, this, with 20,000 doctors, amounts to £7,000,000; with 14,000,000 insured persons at 6s. this amounts to £4,200,000. Mr. Lloyd George actually alleges we shall get it back out of the "maternity benefit" of 30s.! During 1910, in England and Wales, 897,100 live births were registered; and this, at 30s. each, would give £1,345,000 yearly. But more than half these confinements are conducted only by midwives, and so this will be an additional loss of about £672,000 yearly to doctors. Would the Chancellor agree to repeal the disease and death-dealing Midwives Act?

Fourthly. I propose that each person making under £160 a year subscribes to a Mutual Help Fund, out of which fees for night work, Sunday and Bank Holiday work, operations, loans to the insured in arrears of payment, tickets to convalescent homes, cost of rules, members' books, and salary of secretary should be met. I find that in 1910, in forty-one towns, the working classes gave £122,672 to the Hospital Saturday Fund. These subscriptions should go to support the Mutual Help Fund.

Fifthly. That each medical practitioner shall be appointed a public vaccinator and be paid the usual Government scale of fees; at present boards of guardians have no power to do this.

I claim that if we had such a Public Medical Service we would (1) relieve the voluntary hospitals of the well-to-do classes who now sponge upon these charities, under the plausible untruth that they obtain better treatment there than elsewhere; (2) supply all those making under £160 a year with efficient medical, surgical, obstetric and dental treatment, and medicines; (3) diminish the sick-rate, loss of wages rate, permanently maimed, and the death-rate; (4) lessen the number of quacks, herbalists, bonesetters, midwives, prescribing chemists, clubs, tontines, sixpenny and shilling doctors, and quack medicine vendors; (5) save doctors immense time in bookkeeping, in sending out accounts, bad debts, collectors, and county court claims.

Such a service as this would give each of the 20,000 doctors about £522 yearly, in addition to public and other appointments. And if we can put a stop to the gross abuse of voluntary hospitals, this would add at least £100 a year to each doctor's income. Let us recollect this, that unless we have the active co-operation of the doctors connected with voluntary hospitals, a Public Medical Service will be a ghastly fiasco.

I am told by trade unionists that they have no objection to our receiving 15s. per annum per member. I look on the speeches of some friendly society men as mere political clap-trap.

This is the broad basis of my proposal. There will be a lower income limit for country areas. We cannot give efficient treatment if we do not obtain a Government grant and help from insured persons. I think we should adopt a £160 income limit with a sliding scale of incomes at, say, £60, £80, £100, and £160, the yearly contribution by the insured person to vary with income. Also that if, in the future, a Public Medical Service be a financial success, we might adopt provisions for persons earning up to £250 a year upon a sliding scale of fees. We must watch that our maternity fee shall not be "cut" by midwives, either employed by hospitals, maternity clubs, or acting for themselves. I am told the Insurance Act is looked upon as a State endowment for midwives.

I think all doctors acting under State Insurance should be given all the sick and other benefits free, the payments being made by the State.

Such a Public Medical Service will absorb public vaccination, treatment of school children, district Poor Law medical duties for all these will eventually become 20,000,000 insured persons. The "political doctor" will be the wrecker, for those doctors who look at my proposal through only Tory- or Radical-tinted glasses will not help us.

II.—FERDINAND REES, M.D.,
Wigan.

NATIONAL ORGANIZATION OF THE PROFESSION.

I WISH to put forward certain broad principles in regard to the question before us. In the past the nation has been divided into three estates, and into upper, middle, and lower classes. Universal education is converting these into citizens of one community, with equal rights and opportunities. The problems of the future will be community problems. From this point of view the medical profession is a national service, granted certain rights and privileges, instituted to look after the health of the community. Our difficulties are due to the fact that we are living in a transition period between an individualistic commercial corporation and a communal organization. With the future already indicated, the medical profession must fight against any tendency to preserve private interests, somewhat regardless of the common weal, or else it will certainly come into sharp collision with the interests of an evolving community. *Tempora mutantur et nos mutamur illis* must apply to all. The syndicalist theory that the members of an industry shall entirely control that industry primarily in the interest of themselves is contrary to the communal theory that each industry must be conducted primarily in the interest of the community. It is strange that the medical profession should now be adopting syndicalist thought.

At the present time the question is opportune whether, owing to its privileged position, the duty devolves upon the profession to organize "the provision of medical attendance and medicine for persons unable to pay the ordinary medical charges." If that were so, then the profession, and not the State, should be managing the Poor Law medical service. Medical charges hitherto have been governed by the principle of extracting as much as possible from patients in accordance with their power of paying. Then are we to organize a medical service to extract as much as possible from the working classes, for that is what the provision of a medical service under professional control really means? That is leechcraft with a vengeance, and not likely to ingratiate us with the rest of the community. Why are the working classes unable to pay ordinary medical charges? Plainly because of the inadequacy of their wages. Surely it is fairer, and less derogatory to the profession, for the State to tax wealthy members of the community so as to remunerate the profession for its services. *This* can only be done by the State organizing the medical profession into a national medical service and paying it adequately. It need not be forgotten that the preservation of a medico-political organization would always ensure fairplay from the Government.

This would place the profession in a more dignified position than could be done by any national medical service under professional control for the purpose of extracting as much remuneration as possible from inadequately paid working men. Moreover, it does not seem to me that these latter will be willing at this time of day, after their experience in controlling friendly society sick clubs, to become members of any national medical service completely under the control of the profession.

It seems that, without inflicting hardships on certain members of the community, it is impossible for the profession to obtain adequate remuneration, unless all members of the community contribute in proportion to their wealth to provide a fund from which the profession is to be paid. The suggested payments to our national medical service would bear most hardly on those insured persons least able to pay. On the other hand, if payments were arranged so that all above the Poor Law line could afford to become members without hardship, then the scale of fees would be so low as not to suffice to furnish the necessary fund to adequately remunerate the profession.

The doctors will not be serving the best interests of the community, in preserving the self-respect of its members, if they set up a system which will make any feel that they are objects of charity. To adapt a familiar quotation:

> Charity is twice cursed—
> It curseth him that gives and him that takes.

It puffs up the self-pride of the giver, and destroys the self-respect of the taker. Our charitable hospitals show there is a good deal of truth in the aphorism that "Charity

covers a multitude of sins." Is it not time that the profession ceased to be a competitive trade with its selling of medical goods, with its ledgers, its weekly collectors, and its county court agents? Now things have come to such a pass that our Representative Meeting has been seriously considering the advisability of converting the Association into a registered trade union. Would it not be better for it to become a purely scientific profession, with perfect equipment, however expensive, to enable it to do the best possible work? This can never be brought about by a medical service under professional control, but only by the profession being converted into a national medical service under the control of the Government.

III.—R. WALLACE HENRY, M.D.,

Chairman, Leicestershire and Rutland Public Medical Service.

A PUBLIC MEDICAL SERVICE.

THE subject under discussion is one of vital importance to the medical profession in Leicestershire and Rutland, because 181 out of the 184 men who have been engaged in the past in contract practice have staked their future fortunes on the successful carrying out of a Public Medical Service scheme.

The course of events in these counties has been as follows: Prior to the Special Representative Meeting of February last, the Executive Committee of the Division came to the conclusion (a conclusion which I venture to say has been fully justified) that the differences between the Chancellor of the Exchequer and the profession were so fundamental that an agreement was almost an impossibility, and that it was necessary to decide what steps should be taken when and if negotiations were broken off. Four courses were open: to accept what was offered to us, and say it was "rare and refreshing fruit"; to support the formation of a State medical service; to fight as we so often had fought in the past, not as a united body, but as individuals against forces which were stronger than in the past, because to some extent they were backed by the Government; or, finally, to combine together to form a Public Medical Service which would efficiently provide medical attendance and treatment for that large section of the community which was unable to pay the ordinary medical fees. To take the terms offered lying down was out of the question; to support a State medical service was not, in my opinion, practical politics, nor, if it were, would I support that which at present I believe would be prejudicial to the interests of the public as well as to the profession. Isolated fights carried on by individuals were bound to fail, and we were consequently led to advocate that which the Representative Meeting had approved a year ago, but which it unfortunately laid aside while the Insurance Bill was being discussed—namely, a Public Medical Service controlled by the medical profession. We were the more led to adopt this course because we felt that mere destructive criticism was weak, and that we were bound to offer an alternative course. Medical attendance must be supplied to the needy; if, as was likely, it became necessary to call upon those holding contract appointments to resign them, work must be provided which would give a reasonable chance of securing a living which at the start would not be much, if any, less than formerly. Finally, having so strongly expressed the opinion that 6s. per head was sweated labour for treating insured persons, we would be stultifying ourselves in the eyes of the public were we to continue to treat uninsured persons at 4s. per head and under.

The Division accepted the advice of its Executive, and on its behalf I proposed the resolutions which were unanimously adopted empowering the State Sickness Insurance Committee to deal with questions connected with a Public Medical Service, and instructing the Council to direct the attention of the Divisions to the desirability of preparing a scheme for each area. Knowing the amount of work that had to be done at the central office, having been warned by the Chairman that the words "at once" must be construed very liberally, and believing that the matter was of the greatest urgency, we took it in hand early in March. We had in our possession the old central office scheme, the Norwich rules, the regulations of similar organizations, and the Loughborough scheme, which has been carried on under our own eyes in Leicestershire with conspicuous success. We put before us, as a first principle, that no Public Medical Service could be successful which did not secure the co-operation of practically the whole of the profession, gain the support of the public, and provide for insured and uninsured alike. To obtain the support of the profession it must embody those points which we have insisted upon in our discussions with the Insurance Commissioners, namely, freedom from lay control, free choice of doctor, adequate remuneration, local option as to the method of remuneration, a definite income limit, medical courts of appeal. To obtain the support of the public the rates of payment must be of such a character that their reasonableness could be proved, and it must be possible to show that for the increased fees charged the contributors will obtain a service infinitely superior to that which they have had previously.

Before explaining wherein our scheme differs from the central office scheme, with which I assume you are familiar, I shall state briefly how we secured the support of the local profession. We circulated copies of the committee's proposals to every practitioner in Leicestershire and Rutland, inviting criticism in writing, and asking them to attend a meeting at which the subject would be discussed. This was attended by over 130 men, and, with the exception of one, who did not vote, but who since has become an active worker upon our committees, all stood up in support of the resolution that the committee should proceed with the scheme. We enlarged the committee by co-opting men from those parts of the area which were unrepresented, and we canvassed every man of the 265 residing in the district. The general outlines were approved by all except three. Now came the crucial point: would those who had approved the idea be prepared to take action? If we were to succeed it was essential that every club appointment of a contributory character should be resigned.

We accordingly drafted a resignation form on the lines of that issued by the central office of the Association, dealing alike with insured and uninsured persons. This was signed by all except three, and lists of appointments numbering nearly 800 were forwarded to the secretary. This at once settled the question as to whether the men, as the local press put it, meant business.

Prior to taking public action we formed a Press Committee which issued a statement of reasons why it was necessary to raise the rates of contract work. This produced a good impression, and secured favourable comments from a section of the press which had previously been hostile. This Press Committee is the only body authorized to reply to letters in the daily papers, and we have requested our members to refrain from sending any letters to the papers except through this committee, which I consider one of the most valuable which we have. Although not in general practice, the local profession did me the great honour of electing me their first President, and in that capacity I attended a number of meetings in different parts of the country. The first thing that struck one was the new spirit of friendship and unity which had sprung up where formerly there had been passive, and in some cases active, hostility. Men who for years had not spoken to one another were now working together to make the service a success. The difficulties which were discussed arose under three heads: First, those engaged in practice on the border of the counties were anxious lest men across the border would seize the opportunity to come in and take the appointments resigned. To meet this difficulty we issued a circular to all those in the surrounding counties who did any work in the area of the Division, telling them what we were doing and asking them to pledge themselves not to take any appointments given up, and only to see their contract practice patients within the two counties on the same terms as agreed upon by the service. The response has been of the most satisfactory character, several joining the active staff. Thus we are surrounding ourselves by a ring fence which we trust will be extended. The second difficulty arose over the question of private clubs and collectors, and this for a time seemed likely to cause trouble. An agreement was arrived at that the private clubs at present in existence might be continued, provided that the rates of payment were the same as those agreed upon in the district, that the cards used should be identical with those of the service; in many instances it was agreed that no new members should be enrolled, and that the collector should

only collect from the old members of the clubs. Thus the private club must automatically die out. The third difficulty I raised myself in order that there might be no misunderstanding, namely, the possible introduction of whole-timers. The invariable reply was, "Our patients will stick to us; they are not cattle to be driven about to anybody; we should only lose those whom we would be glad to get rid of." Medical men realized that under the new scale of payments they could afford to lose half of their patients and would yet be as well off as before.

Having, then, secured virtual unanimity, at the close of last month we gave six months' notice of the termination of all club appointments, and the name of every man who had resigned was appended to the resignation form: this had the effect of showing to the public and to the various organizations concerned our strength, and also of preventing men being troubled with visits from club officials asking them to accept appointments which had been resigned by other men. In sending out these resignation forms a covering letter was enclosed, telling the club secretaries of the proposed service, and offering them full information should they desire it, or promising to arrange for a conference if such were wished for. Many letters of inquiry have been received, and several conferences have already been held, with, on the whole, satisfactory results.

The main features of the scheme are the following: The area covered comprises two counties with a population of nearly half a million. It includes persons who are agricultural labourers, quarrymen, colliers, and a large urban factory population. It was obvious, therefore, that different rates of payment, and probably different income limits, would be necessary in different districts; we accordingly subdivided the area of the Division into ten subdivisions, which correspond roughly to one or more Poor Law areas. These were grouped along the railway lines for convenience of meeting. Each subdivision was linked up with the remainder by a Central Committee composed of representatives elected from each subdivision, four from the Executive Committee of the British Medical Association, and representatives from the Leicester and Loughborough Infirmaries. Certain fixed principles were laid down as essentials by the Central Committee embodying the cardinal points of the Association's policy, but otherwise the subdivisions are absolutely autonomous; they appoint their own officers, fix their income limit, arrange—and this is of considerable importance—the method as well as the rate of payment, which may be either on the payment for work done or on the per capita basis; and they are financially autonomous. They can make their own arrangements, with the consciousness that they have at their backs a large organization which will support them, provided that they adhere to the cardinal points. For central working expenses the subdivisions pay not more than 1d. per patient per year to the treasurer of the Central Committee.

The scale of payment is as follows: The rate for insured workers shall be *not less* than 2d. a week, for uninsured persons over sixteen 1½d. a week, and for children 1d. per week, not more than four children to be charged for. After the first year there is an entrance fee of 1s., and there are card fees, etc., which raise the rate to over 9s. per annum. We consider that the conditions of service are so different from those proposed under the National Insurance Act that we can well take them at a lower rate than we would have accepted if working under the Act, being free from lay control. At the same time one must call attention to the fact that these are minimum suggestions, and that as a rule higher rates have been fixed by the subdivisions. If too high a figure is fixed upon, the only result will be the abuse of hospitals will increase, and many who would have come in will be driven to the Poor Law medical men. We have a committee sitting at present considering the position of these very poor people, and in our rules have empowered the subdivisions to consider the formation of an assisted or a charitable section. A scale of extras has been drawn up, and we have upon the staff of the Borough of Leicester Service nearly 70 general practitioners, an aural surgeon, an ophthalmic surgeon, a pathologist, and we shall have in a few days, I anticipate, a panel of dentists who will attend contributors to the service at a fixed charge. We have decided that there shall be no examination on entrance, but each applicant shall sign a declaration stating that he or she is in good health, and that their gross income is under the amount per week agreed upon in the area of the subdivision. Should any applicant be actually suffering from disease, acute or chronic, an entrance fee shall be paid, to go to the credit of the medical man who accepts the patient. In the rural areas it frequently happens that doctors are practising in more than one subdivision area: should this be the case, he may only serve on the committee of the area in which he resides, but must, as regards the patient, conform to the rules of the area in which the patient resides.

We have dissented from the suggestion that collectors shall only be paid by salary; this is, of course, the ideal, and for towns almost the only way, but in widely-scattered, thinly-populated districts it is absolutely impracticable. Moreover, their position as the servants of the Service, and not of an individual, removes, in our opinion, the main objection to their employment upon commission. In order to strengthen our position, no member of the Service, whether he be an honorary or an active member, may meet in consultation any medical practitioner who does not conform to the rules of the Service within the area. We have other methods of defending ourselves under consideration, and when the Service comes into operation in January we shall be, I believe, the best protected organization in the country. We are making the Service as widely known as possible through the press, by notices hung in the surgeries and given to the present and new contributory patients, and we hope to have the rules of the Service made known in the large factories of the town and county. We are out to win, and we are adopting every legal method to secure success.

I believe that our scheme could have been improved had it been possible to insert a rule limiting the number of contract patients which each man could enroll, not to such a figure as that suggested by Dr. Rentoul, which would at once almost double the number of doctors in the district necessary to do the work, but to a reasonable figure. However, the difficulties in the way were too great, and for the time being the question must lie in abeyance; some time I hope the profession generally may adopt a self-denying ordinance, and decline to accept more than a certain number upon their list. Apart from this point, I believe that the Leicestershire and Rutland proposals are the most practicable that have yet been placed before the public, and the most likely to secure for the labourer and the artisan that help to good health which it should be the aim of every medical man who has the best interests of his country at heart to secure for them.

DISCUSSION.

Mr. H. A. Ballance (Norwich) contributed some notes on the Public Medical Service scheme established in Norwich in 1902. He explained that Norwich was the centre of an agricultural community; its population was 120,000, and wages were low. There was only one fairly large industrial concern, and that employed about 3,000 people. There was in Norwich a Medical Institute—a combination of friendly societies for the purpose of obtaining medical benefits—started about thirty years ago, and the contributions to the institute were rather less than those in force in the Public Medical Service. In 1901 a practitioner in another district appeared before the General Medical Council to answer a charge of canvassing in connexion with his post of medical officer to the Liverpool Victoria Legal Friendly Society, with which was associated the National Medical Aid Association. The medical men in Norwich who were doing work for the National Medical Aid Association decided to resign if the local profession could devise another means by which they could see their patients. As a result the Norwich Medical Service was inaugurated, and the patients of these medical men were transferred to it. It was started with 1,500 patients, and altogether about fifteen practitioners consented to form the acting medical staff. The number of patients steadily increased, and from that time not very much had been heard of the National Medical Aid Association in Norwich. It was found necessary to appoint a collector to the service, because it was recognized that the working classes would not attend at a central office to pay their subscriptions, but the collector was forbidden to canvass.

As he was paid a fixed salary, there was no inducement to him to increase the number of patients and thereby his own work as collector. The expenses were at first 30 per cent. of the gross income, but they had been gradually brought down to less than 14 per cent.

The Service was entirely controlled by the medical profession. The subscriber was able to chose his doctor; as a rule he chose one living near him. He was entitled to medical attendance for ordinary ailments for a small weekly sum: he could be attended in his own house if necessary, though, as a rule, he went to the doctor's house, and the only other privilege that the contributor had was the right to lodge complaints. As a matter of fact, complaints had been conspicuous by their absence.

The Norwich Division of the British Medical Association was started a year after the formation of the Service, and took over the control of it. He believed this was the first example of a Division of the Association managing such a service. No one could be on the acting staff of the Service unless he was a member of the Division, and the honorary secretary of the Service was *ex officio* a member of the Executive Committee of the Division. The rules of the Service were drawn up by the Division, and could not be altered except by the Division. No member of the Division could take any fresh contributory contract practice at a lower rate than that of the Public Medical Service. As to the rates charged, it must be remembered that low wages prevailed in Norwich, and the Friendly Societies Institute had a membership of about 11,000 and employed three whole-time medical men. For the Public Medical Service a wage limit had been adopted of 30s. for families and 25s. for single persons. The rates charged were one penny per week for adults, men or women, or 1s. a quarter if paid in advance. Fifty per cent. or more of the contributors paid quarterly. For the first four children 1d. a week each was charged. In 1907—five years after starting the Service—the number of subscribers was 4,700 and the takings £20 a week. It was found that this was as much as one collector could manage, and a second was appointed. In 1911, after ten years, the membership was 7,500 and the takings £30 a week. Although the membership had steadily increased, the withdrawals from the Service each year had been somewhat numerous, and two years ago these were investigated. It was found that withdrawals might in the main be classified as follows: 13 per cent. had left the city; 15 per cent. gave no reason; 10 per cent. had joined friendly societies; 20 per cent. were unable to maintain even the moderate charges made by the Service; 6 per cent. were dissatisfied; 5 per cent. were refused attendance by the doctor, and only 1 per cent. had left the Service to be attended privately. In 1910 an investigation into the number of families containing three or four children was carried out and showed that there were 129 such families, giving a total of 578 persons (wives and children) out of a total of 6,000 subscribers. Hence the service appeared to consist mainly of married persons without families, or with only small ones, of single persons, and a certain number of children admitted alone.

The Service had tended on the whole to raise rates in Norwich, but not to the extent that had been hoped. Private clubs had been turned into it, and persons in no provident society had joined. If contributory contract practice were put on a footing similar to that of the Public Medical Service the conditions under which such work would be done would be far more satisfactory than at present.

Dr. R. J. Irving (Southport) urged that as the poor were unable to pay medical fees and the health of that class was a valuable asset to the State, the State should assume responsibility for the matter. Medical men should form themselves into a service in which there would be no competition for patients, and in which younger members of the profession would be supervised by the more experienced. In such a system specialists should be more widely distributed over the country than they were at present, and be more accessible to every household. This system could only be carried out by abolishing fees and paying an adequate salary. The average income should be between £500 and £600 per annum, instead of the present, say, £350; and medical men should be paid according to experience, starting at £100 when qualified and advancing to £1,200 for seniors. On this basis he had calculated that a national service, more efficient than any proposed by the British Medical Association, could include every person in the kingdom at 6s. per head per annum.

Dr. A. G. Gullan (Liverpool) remarked that there were two ways of looking at this question—(1) the Utopian view, and (2) a view taking regard of the practical possibilities of to-day. It seemed highly improbable that the State would ever run a medical service in the way that Dr. Rees and Dr. Irving would like. As the profession was now fully realizing, the offers of the State in respect of the remuneration of medical service were utterly inadequate. A serious drawback to a State service was that if a man received a certain salary the stimulus to work specially hard in the hope of financial reward would be greatly diminished.

Professor B. Moore (Liverpool) thought the profession in Leicestershire had done right. The crux of the position was to demonstrate to the public what could be done in the way of establishing and equipping a Public Medical Service. One of the most likely things for the Chancellor to do was to do nothing—to let things go on, so that the profession would be faced with the position of the medical benefit being handed over to the Insurance Committees. Only by united action could that position be met. The profession had been divided and had allowed the friendly societies to win victories in the past; now a different policy must prevail. To the ordinary man outside the fact that the profession had accepted such low rates of remuneration in the past made it appear that an unauthorized demand was suddenly being made on the public purse when 8s. 6d. was asked for. It was imperative, therefore, to make it clear that the former rate had been one of charity; it was not a remunerative price, and it was going to cease, whatever Mr. Lloyd George did. The most urgent problem before the profession was the establishment of some sort of public medical service, which would connect a number of things that were absolutely unco-ordinated. The first essential was that these schemes should be as nearly as possible alike, making due allowance for the different character of districts. There must not be examples of cut prices, or the whole thing would be spoilt. The general practitioner must next cut himself away from a number of his preconceived ideas. He had allowed a wide difference to grow up between preventive and curative medicine; he had assumed that he was not a preventive officer, whereas he knew how to do preventive work as well as a medical officer of health. A public medical service ought to be the forerunner of a national scheme. This *impasse* between the profession and the Government could not last for ever; it would be solved one way or another, and it was the business of the profession to see that the best solution was obtained for itself and the public, the two interests being in common. He hoped to see a scheme in which the profession would join without any feeling of hostility or any idea of taking another man's patient from him, and in which it would be the object of every man to keep the community healthy. It was necessary to get a new attitude of mind towards disease. So long as it was merely a question of making money out of medicine nothing would be done.

Dr. J. H. Taylor (Salford) objected that none of the schemes put forward made any provision for co-ordinating preventive and curative services. The subject of discussion was "A Public Medical Service under Professional Control"; he thought the last three words had been somewhat overlooked. No scheme in which the promoters were a closed corporation under the control of the British Medical Association would ever be accepted. The public which found the money would demand a voice in the control, and that was a point the British Medical Association scheme absolutely overlooked. Professional control could not be accomplished without some lay control. Suppose there was a charge of non-attendance, who was to decide it? Neither the approved societies nor the patients would submit to that question being decided entirely by medical men. On questions of medical etiquette he agreed that the profession had the sole right to decide.

Dr. Taylor also referred to the question of the administration of a Public Medical Service. He said that in services conducted by medical men in the past something like a third of the money had been absolutely wasted in administrative expenses. There were provident dispensaries in Lancashire where no less than 45 per cent. of the gross income was spent in administration. The British Medical Association demand of 13s. would not be enough if money was wasted like that in administration. Difficulties of administration constituted one reason why it was desirable that the profession should make some arrangements to work under Insurance Committees where the lay control would be strictly limited and all administrative expenses would be taken by the committees. Under such an arrangement the profession would be very much better off, even with a lower fee to begin with. He thought Dr. Rentoul's suggestion that each insured patient should pay for certain extras was a useful one. If the patient had a direct interest through his pocket the number of unnecessary calls would probably be reduced, although a rate must be fixed that would not prevent patients from getting full medical attendance.

Dr. HARRIS (Southport) spoke of the difficulty of arriving at an income limit for contract services that would not press hardly on some contributors.

DISCUSSION ON REFORM OF HOSPITAL OUT-PATIENT DEPARTMENTS.

OPENING PAPERS.

I. MICHAEL DEWAR, M.D.,

Honorary Secretary of the Edinburgh Branch, British Medical Association.

HOSPITAL REFORM.

IN considering the question of hospital reform, one is faced, after much study and investigation during the past seven or eight years, with the query, Does the abuse or misuse of hospital facilities by the well-to-do, especially in the out-patient departments, really exist? The question is answered in the negative by the majority of hospital managers, on the ground (1) that, as voluntary hospitals are open to all, they cannot discriminate between those who by virtue of poverty are entitled to receive the benefits and those who being well to do, or at least possessed of a sufficient income to pay for medical advice, are not entitled; and (2) that in teaching hospitals it would be dangerous to the welfare of the medical school to diminish in any way the amount of clinical material.

Both of these reasons are to the minds of most general practitioners extremely fragile and attenuated, because, as regards the first reason, it is incomprehensible that any body of managers can for one moment maintain that, because they cannot discriminate between the poor and the well to do, when well-known methods are open to them to enable them to do so, the latter can, if they choose, partake of charitable hospital benefits. As regards the second reason, it is admitted that, as there must be a sufficient supply of clinical material for teaching purposes, there is not so much to say, since a very large proportion of the cases are those which the student will have to deal with in his daily work when he enters into general practice, but it is the general opinion that there are quite enough of these minor cases among the poor who are entitled to go to the out-patient departments for advice and treatment, without overcrowding the rooms with those who are perfectly able to pay the general practitioner or specialist.

There is a strong belief among members of the profession that the real stumbling-block in the minds of hospital managers is their persistent disinclination to interpret the true meaning of the motto of most voluntary hospitals—namely "*Patet omnibus*." There is a very real fallacy, if one may say so, in this motto; at least it is so in the case of the Edinburgh Royal Infirmary, which I know most about. The motto of that institution in its charter is not "*Patet omnibus*," but "*Patet omnibus pauperribus*"—open to all the sick poor. It is not clear how the word "*pauperribus*" came to be dropped, but I have the idea that when the sculptor was inscribing the motto on the stone above the principal doorway of the old infirmary he either found that there was not sufficient room for the three words or he did not realize the significance of the last word. Be that as it may, the error was repeated above the doorway of the new building. This interpretation by our hospital managers of "open to all," irrespective of position or means, is a great injustice to the general practitioners of the whole country, inasmuch as it has developed a system of unfair competition between institutions founded and administered on purely charitable lines and the struggling practitioner, and has gone a long way in sapping and undermining the spirit of independence of the public.

On the other hand, there is sufficient evidence to prove that the misuse of hospital benefits exists to a very large extent. One has only to visit the out-patient departments and observe for one's self. No one can shut his eyes to the fact that there is a very large proportion of apparently well-to-do people, who are earning from 30s. to £2 and £3 and a great deal more a week, sitting in the waiting rooms. For some years a large mass of evidence of such misuse was collected from the members of the hospital staffs of Edinburgh, and what was going on at that time still holds at the present time. I may here be allowed to mention a few of these taken at random.

1. A wealthy merchant in the city attended the out-patient department for some weeks for treatment of a poisoned finger.
2. A wealthy brewer in the city attended the eye department one morning for the removal of a speck of dust on the eye, having passed the doors of several medical men on his way.
3. The owner of a line of steamers attended the throat department a few weeks ago.
4. An elderly gentleman was operated on in the infirmary for cataract, and when leaving he gave £9 as a donation to the funds.
5. A public official with a salary of £800 attended the throat department for a trifling complaint.
6. A man attended the out-patient department, and afterwards presented £100 to the hospital funds.
7. A patient came from London for an opinion. His father was a member of the London Stock Exchange. He stayed in a Princes Street hotel.
8. A well-to-do farmer from Northumberland attended the eye department with a note from his doctor addressed to the specialist at his private residence. Instead of going there he went to the infirmary. On the same day the farmer's son sought advice at the skin department. Both received gratuitous advice.
9. Some time ago two ladies attended the eye department, and were very importunate in demanding early attention. They were only in need of suitable glasses. On being asked when symptoms of discomfort had arisen, they replied that it was during a trip round the world.
10. A large contractor in Kinross-shire sought advice recently at the out-patient department without any note from his doctor. He failed to see the specialist, and after returning home wrote a rude letter complaining of not having received his *personal* attention at the hospital.
11. A builder and contractor, home on holiday from South Africa, attended at one of the out-patient departments.
12. A very smart female consulted a specialist at the hospital, and received advice. As an excuse, the lady said that it was too expensive to go to London every two or three weeks to consult a specialist there.
13. A lady, living in a house with a rental of £120, sent her child with the nurse to the infirmary for treatment at the eye department for some time.
14. A man was ordered a truss by a surgeon, and was given a note to obtain it at infirmary rates. He returned, stating that he had been charged too much. This was found not to be the case. It was afterwards discovered that he owned landed property.
15. Two patients from one surgical ward gave respectively £30 and £25 to the infirmary on leaving. This would have been about sufficient to pay for the treatment outside.
16. A well-dressed young woman, with tailor-made costume and diamond ornament, sought advice as an out-patient. After doing what was necessary, the surgeon made the appropriate suggestion that a subscription be placed in the hospital box. The hint was acted upon.

To further prove the existence of the abuse, I quote the statements of Mr. Scott Finnie, F.S.A.A., of Aberdeen, a well-known authority, published in 1910:

> One or two figures will suffice to indicate the state of affairs in Scotland. In five of the Scottish hospitals the in-patients treated in the year 1889 numbered 21,487. Ten years later the number had increased to 27,320, and last year (1909) they totalled 37,056. In twenty years there has thus been an increase of 15,569 in-patients. The out-patients at the same hospitals have increased more rapidly, having advanced from 81,942 in 1889, to 90,791 in 1899, and 150,603 in 1909. In the Aberdeen Royal Infirmary alone the number of in-patients treated in 1901 had

increased by 27 per cent. over the figures for 1891, and last year the rate of increase over 1891 was 54.21 per cent. The increases in out-patients for the same periods were 376 and 705 per cent. respectively. The relative increases in the combined populations of the city and county of Aberdeen were approximately 9 and 20 per cent. In view of these figures, can it by any possible process of reasoning, or even by any stretch of imagination, be admitted that these increases, at least in the number of out-patients, are due either to inability on the part of the community to pay for medical treatment on the one hand, or to the necessity for obtaining teaching material on the other? It is impossible to attribute these abnormal increases to either of these causes, and, as only on one or other of them can increase disproportionate to the growth of population be justified, the advances are suspiciously suggestive of an abuse of charity.

This misuse of the hospital is particularly felt in the special departments, where a very large number of trifling cases among the better classes, which could be dealt with outside, leads to overcrowding of these departments and puts an unnecessary strain upon the time and patience of the specialists in charge. This overcrowding has been very much exaggerated during recent years by the action of school boards in using the hospitals for the treatment of defective school children. It is quite common for the eye, ear, and throat specialists to be engaged from 11 a.m. to 3 p.m., chiefly with school children. It is well known that while this school treatment was only meant for the necessitous it is gradually extending itself so as to include the fairly well-to-do, and the recent grant to school boards for the treatment of defective school children will tend to accentuate very much the system which has been adopted. It is to be hoped that the school authorities will, instead of continuing the pernicious system of hospital treatment, which is practically a failure, devote the money to the establishment of school clinics or treatment centres having a paid staff of specialists and general practitioners.

A question which is agitating the minds of hospital authorities at the present time is the possible and probable effects of the Insurance Act on hospitals. The Act will probably affect the hospitals in two ways:

1. As 15 millions of people, with a probable increase of at least as many more in a few years, are to be provided with medical, sanatorium, and maternity benefits, the tendency will be to dry up the springs of charity, leading to large State subsidies and consequential inspection and State control. This will involve changes in the management and in the position and conditions of service of the staffs.

2. As 15 millions will in January, 1913, and as many more in subsequent years, be entitled to these benefits, is it likely that insured persons will put themselves to the trouble to seek hospital treatment, as at present, when they will have the privilege of a free choice of doctor for a compulsory and nominal sum of money?

In whatever way it be considered, the outlook is not the brightest or the most happy one for the hospitals.

A movement has been on foot for some time in Edinburgh and elsewhere for the establishment of self-supporting nursing homes for the intermediate class at moderate rates. It has been a long-felt want that, while there were facilities for the poor and the rich, there has been no place to which people of moderate means could go for treatment without sacrificing their independence by accepting charity or incurring an expense which cripples them for years. By the end of this year a paying nursing home of fifty beds, with every up-to-date hospital requirement, at rates of from £1 1s. to £3 3s. per week, will be opened in Edinburgh, where the patients will have the privilege of being attended by their own doctor, and where major operations are required special arrangements will be made whereby the fees for such operations will be within the limits of a moderate purse. Such a movement is one in the right direction in promoting hospital reform, at least in the in-patient departments.

In the event of the medical benefits of the Insurance Act being suspended, a very serious increase of the attendances at the out-patient departments is to be feared. The approved societies, in a desperate attempt to provide medical treatment for the insured, will flood these departments with thousands of patients, regardless of the fact that State-aided persons will be receiving charitable treatment. The only remedy for such a contingency is that hospital staffs be loyal to their brethren and absolutely refuse to treat insured persons in the out-patient departments so long as the suspension of medical benefits continues.

The proposals which seem to me the most desirable for effecting some measure of hospital reform in the out-patient departments may be summarized as follows:

1. A notice—

> This voluntary hospital is for those who are unable to pay for medical or surgical treatment—

should be placed in all out-patient rooms, and in the convalescent rooms of all the wards.

2. An official should be appointed to supervise the applicants for advice or treatment. This could be done by examining the lists of out-patients each day. The occupation, address, and, if necessary, an inquiry as to the rental of the house, would be sufficient in most cases to guide him in his duties. He might not be able to visit all the out-patient departments each day before the patients were seen, but could make a selection. Cases of sudden illness, accident, or emergency would not be inquired into till treated and progressing satisfactorily. No standard of wage or rental is suggested, as each case requires to be separately considered, and much would be left to the judgement of this official, under the advice of the medical officers, especially with regard to medical or surgical eligibility. Experience has shown that doubtful cases do not return when it is known there is an inquiry officer. More is expected from the presence of such an officer as a *moral force* than from any action resulting from his inquiries. This method of inquiry is a matter of administration by the hospital managers, and not one, as has been suggested, to be undertaken by the physicians or surgeons. These are fully occupied in doing their best for the patients and the students.

3. Evidence of suitability, except in emergency cases, should be obtained on two points: (*a*) That the patient cannot pay; (*b*) that the case is suitable for hospital treatment.

4. Urgent cases should be attended on first application, and if eligible should be detained for further treatment, but if ineligible should be referred for treatment elsewhere.

5. Trivial cases, after having been seen to, should be referred elsewhere.

6. On first visit all patients should be seen by a registered medical practitioner.

7. The number of cases to be seen by a medical officer on any one day should be limited.

8. Special hospitals should only treat special cases of their kind.

9. Out-patient departments should be chiefly reserved for consultative purposes, and the cases referred back to the general practitioner with a statement of opinion.

10. Poor Law cases should be referred back to the Poor Law medical officer.

11. There should be co-operation of the hospitals in the same area with each other, and with Public Medical Services and dispensaries, to prevent overlapping. Under the Act this would probably become automatic, as all patients received at the out-patient department would have an explanatory note from the doctor for consultative purposes.

12. Notices should be posted in all out-patient departments calling attention to the Public Medical Service or dispensaries.

Finally, all cases should be seen, as far as possible, daily by the almoner, and, if considered ineligible, referred back to the general practitioner, the Public Medical Service, the dispensaries, or the Poor Law medical officer.

II.—Mr. William Grisewood,

Secretary of the Liverpool Charity Organization Society.

AN INQUIRY AT LIVERPOOL.

The principal cause of the excessive growth of the out-patient department of hospitals has, undoubtedly, been that the opportunity of getting skilled medical advice without payment (except the merely nominal payment of one or two pence for medicine) has proved too great an attraction, not only to those of small means, but even to some who have an income which places them above the need of accepting gratuitous treatment.

The necessity of having a large supply of material for training students at hospitals attached to medical schools has also unduly fostered the growth, and to a certain

extent altered the purpose of this department of hospital work. We find accordingly that at fourteen hospitals and three dispensaries in Liverpool there were in the year 1910 224.000 out-patients making 712.000 attendances.

The estimated population of Liverpool in 1910 was 767.600, so that nearly 30 per cent. of the people of Liverpool obtained gratuitous medical advice through the voluntary medical charities, exclusive of those who were treated under the Poor Law, numbering probably 10 per cent. of the population. These figures are subject to the qualification that some of the patients may attend more than one hospital in a year. Of this there is no information available, no general register being kept. These numbers are startling, but their value can only be estimated when we know whether or not the patients belong to the class of persons who can be regarded as eligible, that is, who are too poor to pay for the services of a doctor.

With a view to throw light upon the actual facts, in the year 1910, at the instance of the Medical Charities Committee of the Liverpool Council of Voluntary Aid, and with the consent of the respective committees, an inquiry was made by the Charity Organization Society into the income of the out-patients attending five of the large Liverpool general hospitals and one special hospital. In one hospital the information already obtained from the patients was tabulated, but no further inquiry was made. In the other hospitals an agent of the society was allowed to supplement on the spot the inquiry made by the hospital official.

Looking at the general results, it may be said at once that no glaring imposition on the part of quite well-to-do people is apparent; but, on the other hand, it is noteworthy that in a large proportion of the cases there is a fair income, about 26 per cent. of the whole having on their own admission over 30s. per week.

In all the hospitals referred to some particulars of the patients are taken, and in some cases questions are asked for the purpose of ascertaining whether the income is such as to render free treatment unnecessary. These questions, however, do not usually elicit the income of the *whole family*, but the wages of the head of the family only, and isolated instances were met with where the weekly income of such members of the family as resided together amounted to £4 12s., £4 2s., £4 11s. 6d., £5 1s. 6d., and £5 7s. respectively.

There were, besides, a number of cases where the income of the whole family placed them beyond the need of charitable aid, and others where self-help was possible and should be encouraged.

The family income of all applicants of five of the hospitals, 2,179 in number, has been classified according to amount, giving the following results:

The cases with an income below 30s. per week were 56 per cent., those with an admitted income of 30s. per week were over 26 per cent.—the extreme cases I have quoted being only a small percentage of the whole—while in 18 per cent. no reliable information could be obtained as to income.

At one hospital on eliciting facts such as those stated regarding the family income, which showed certain patients to be quite unsuitable for free treatment, these patients were told so in a courteous way by the hospital official, and withdrew their application. In one instance a patient offered to contribute a donation at each visit through the box for the purpose. No rigid or severe standard was enforced; indeed a stricter rule might be properly adopted without hardship. The applicant's own statement as to income was taken, and it is quite certain that a further inquiry would disclose a higher income in a great many of the cases. Inquiry also seems needful to ascertain circumstances which should be allowed for in estimating the sufficiency of the family income, such as the regularity of employment, the duration of illness, the number and ages of the family, etc.

Such an inquiry for the purpose of ascertaining the actual facts with regard to the pecuniary means of out-patients and their eligibility for gratuitous medical treatment, according to some standard to be fixed, is an essential preliminary to taking definite action in this matter.

On the establishment of provident dispensaries in Manchester in 1875, certain of the hospitals made arrangements with the Manchester District Provident Society to make inquiry into the eligibility of their out-patients, according to a certain scale of income. The result of the inquiry was that in 1875 42 per cent. were found ineligible, in the following year the percentage had fallen to 24, in 1887 it had fallen to 9, and last year (1911) to 4.58.

Since the figures I have given above were obtained the whole situation has been altered by the passing of the National Insurance Act. The operation of this Act will at once take away the necessity for much of the present hospital help, providing—as it proposes to do—medical treatment, medicine, and a weekly cash allowance during illness for all men, women, and youths over 16 in employment. Under these circumstances the opinion expressed by the British Hospitals Association that insured persons should not be received as out-patients, except in cases of emergency or for consultation, will if acted upon bring about an enormous change. There will still remain, however, men and women not employed, youths under 16 whether employed or not, and young children. I estimate that these will be about 55 per cent. of the present patients.

It must also be borne in mind that while large numbers of school children have been found through the school medical inspection to stand in need of medical treatment, only a small proportion of them have been definitely provided for. Attempts have indeed been made to come to an understanding with certain hospitals, but such arrangements have met with objection, and at present the whole matter is unsettled.

Under the operation of the Insurance Act the income of the hospitals is likely to suffer in regard to the Hospital Saturday Fund, for it is hardly to be anticipated that workmen, who are compelled to provide medical treatment for themselves, will feel called upon to contribute to the same extent as they have done to the Saturday Fund. There is a feeling abroad that the support of the employers may also be expected to fall off. In Liverpool, however, while there have been instances (comparatively few, it should be said) where this has taken place already, my own feeling is that the work of hospitals is recognized as so important a part of charitable effort that it will not lack support, especially if it can be shown that it is still necessary, that it is afforded to the right class of people, and that its voluntary character is being maintained.

Looking to the future, therefore, we may see that, possibly with a diminished income, the hospital outdoor department may still be largely resorted to, and that it will still be necessary to so safeguard its administration that only those are treated gratuitously who are unable to pay for treatment under one or other of the various modes of treatment which will be available in the future.

In considering what remedies should be applied, it is evident that much fuller information as to the means of the family and their ability to pay for medical treatment requires to be obtained. This inquiry and discrimination is needful, not only to preserve the charitable aid afforded by the hospitals from abuse, but also to prevent injury to the patients themselves. The danger of pauperizing the people through unwise charity, of weakening their moral fibre, destroying parental responsibility, etc., are sometimes spoken of as mere bogies that have outlived their time. They are, however, real dangers that cannot be disregarded with impunity. We all desire that the resources of the working man and his family should be increased and their social condition improved in the highest degree possible, but surely we desire this in order that they may be better able to pay their way without dependence on external help, either from the State or voluntary charity. And the best amongst the working classes desire this too. We should not treat lightly such a desire to be independent.

Such an inquiry as I have named might be undertaken in the case of the large hospitals by a special officer who should take down particulars of the case at the hospital, visit the home, and make suitable inquiry to confirm these. Such an officer (called in London an almoner) might further see that the treatment prescribed is carried out, and where there are adverse conditions endeavour to remedy them. When other aid is required in the way of nourishment, warm clothing, change of air, surgical appliances, etc., the almoner might procure these from appropriate charitable agencies, of which the fullest use

should be made, leaving the hospital to confine itself to its own special department. It might be possible to arrange with a district nursing society, where such exists, for a nurse to visit the home and save the patient going to the hospital when his condition makes this undesirable.

Where the individual hospital could not bear the cost of a special officer, the Charity Organization Society, or Guild of Help, which exists in all large towns, might undertake this inquiry, especially where, as in Liverpool, it has a large staff of voluntary friendly visitors. The Liverpool Charity Organization Society also keeps a general register of persons receiving aid from the charities of the city, as agent for the Liverpool Council of Voluntary Aid—a representative body formed over two years ago with the object of bringing the established charities of the city and the various Poor Law guardians and other local bodies into consultation and practical co-operation with each other. It would be a question whether hospital patients should not be included in such a register. If there should be overlapping it would thus be detected.

After inquiry the next most important steps towards reform are to classify the patients, and to settle which are eligible for hospital treatment and which should be referred elsewhere.

1. It will be agreed that the hospitals should undertake (*a*) poor persons unable to pay for treatment, and where the condition of the home is favourable; (*b*) casualties and cases of emergency; (*c*) cases where consultation is sought or operation is necessary, or where the cases are of interest to medical science.

2. It will be further agreed that persons having full ability to pay for treatment should be expected to engage a private doctor, or to take advantage of a club, provident dispensary, or the Public Medical Service it is proposed to establish, according to their incomes.

3. Persons receiving parish relief, and persons in such a state of destitution and with such unfavourable home surroundings as to render their treatment by voluntary charity unlikely to be productive of permanent good—including cases of chronic sickness—would be best left to the parish authorities; such cases as a rule require much other aid besides medical treatment, and the guardians have power, on the recommendation of their medical officer, to give special nourishment, to send convalescent patients to suitable homes, and to supply surgical appliances.

4. There remains the class above the very poor who can afford to make some payment for their treatment but cannot pay all the cost. How to deal with this class is the crucial difficulty of the subject. Shall they be allowed to pay according to their means for the benefits they receive? If the case be one where the special treatment of a hospital is necessary the matter should be capable of arrangement, even if it be considered that payment by patients must be followed by some payment of the medical staff who attend such patients.

Such reform could not be carried out except with the good will of all concerned, but I think the concurrence of the parties when the true conditions are frankly faced may be relied upon. I would venture to suggest that the whole matter should be the subject of a conference between representatives of the British Medical Association, the managers of hospitals (say the British Hospitals Association), and the hospital honorary officers. They might consider the limits of eligibility for free hospital patients, both in and out, and the terms on which other patients should be admitted, and, in case it should be considered proper to receive fees from selected classes of patients, the further question of the remuneration of the hospital staff in regard to such cases.

DISCUSSION.

Dr. R. R. Rentoul, in some comments on the papers, mentioned that conferences such as suggested by Mr. Grisewood had been held more than once. He was afraid medical men, by accepting work at insignificant fees, had brought most of the trouble of abuse of out-patient departments on themselves. Patients did not value that which cost so little. In some parts of Lancashire there was a system by which the family doctor went to the hospital and attended individual patients, and this plan might do something to solve the difficulty.

Dr. Beresford Kingsford (London) asked who were the necessitous classes in a medical sense. There were so many borderland cases. The enormous fees charged by some surgeons drove many middle-class people to the hospitals. The establishment of surgical homes at moderate prices was very necessary, because the expense of nursing homes was prohibitive to many.

DISCUSSION ON ADMINISTRATIVE PROVISIONS FOR THE PREVENTION OF MALINGERING.

OPENING PAPERS.

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MEDICAL TRAINING FOR THE DETECTION OF MALINGERING.

Malingering is a subject of increasing importance to the community at large, and of increasing interest to the medical profession, owing to the growth of legislation during the last ten years, by which the working man under the Workmen's Compensation Act receives benefit when injured, and now by the National Insurance Act sick benefit when ill.

Every member of our profession who is in active practice, whether general practitioner, physician, surgeon, or specialist, will agree that the tendency to malinger and malingering is greatly on the increase. The reason is that the sick and injured working man is now so well protected by law when disabled that the stimulus of the necessity to return to work is to a large extent removed; and if the period of inactivity lasts over some months the desire to work becomes less and less, and the tendency to find an excuse or imagine an ill becomes greater and greater. The words of the Bible that "the labourer is worthy of his hire" have been extended in this twentieth century to "the disabled man is worthy of half-pay"; granted, whilst he *is* disabled, but how often we find the man who has recovered from an injury, or who has never had a serious one, refusing to work! and now under the new Act I have no doubt the same inertia will occur in cases of sickness. The difficulty and importance of making a diagnosis of malingering cannot be over-estimated; and, just as the physician should never diagnose hysteria till he has excluded by most careful examination all forms of organic disease, so should all possible injury and its effects be excluded before the diagnosis of malingering is made. The difficulty of the detection of this condition is greatly enhanced at the present day by the modern press describing in detail ailments and their effect, and by the working man being often well coached up in the symptoms of some brother workman who has been disabled.

The usually accepted definition of malingering is "feigned sickness, in order to avoid duty." This definition, however, is too narrow to meet all the present day requirements. It must be extended to include the words "and obtain pecuniary benefits," and also it must include two other groups of cases—one in which there is true sickness or disablement, but the *cause* of that sickness is feigned, and the other where the sickness or disablement is produced or prolonged in order for the individual to avoid work and so obtain pecuniary benefit. It will be readily understood that the words "to obtain pecuniary benefit" are as important in the definition of to-day as the words "to avoid duty" were formerly. Twenty years ago malingering was chiefly found amongst soldiers who wished to avoid drill and duty; to-day it is commonly found amongst civilians who desire to obtain a monetary gain—compensation, sick pay, etc.

For the sake of convenience and lucidity, I will divide malingering into three distinct groups, with the following definitions:

1. Feigned sickness or pretended disablement in order to avoid duty and obtain pecuniary benefit.
2. Sickness or disablement produced or prolonged by the individual in order to avoid duty and obtain pecuniary benefit.
3. Sickness or disablement in which the cause is feigned (that is, a false cause is given) in order to obtain pecuniary benefit.

Undoubtedly the most difficult cases to eliminate from malingering are those of true traumatic neurasthenia or nervous shock, and it is sometimes very difficult to draw the line of demarcation between these two conditions. Since the Workmen's Compensation Act has come into force whole reams and records of cases of neurasthenia could be published, and the study of true and untrue

traumatic neurasthenia has developed *pari passu;* the latter condition of course being nothing else than malingering. I would enter a strong plea here that the utmost care should be taken in making the diagnosis of either of these conditions, in order that justice may be done.

It must be remembered that in traumatic neurasthenia definite symptoms of neurasthenia or hysteria are to be found; and there is usually a definite history of direct trauma often causing cerebral or spinal concussion; though sometimes this condition follows a psychical disturbance, such as serious fright. Moreover, not infrequently the patient has a neurotic diathesis, or is an alcoholic subject, or is over 50 years of age. To many of these cases there is some definitely localized hyperaesthetic spot, which is quite fixed at the time of examination, and other distinctive manifestations of neurasthenia or hysteria will be found—such as patches of hyperaesthesia or anaesthesia, paralysis or paresis not limited to nerve distribution, tremor of eyelids or hands, hyperaesthesia of scalp, absence of corneal or conjunctival reflexes, psychical disturbances, etc.

In malingering there is one feature which is invariably present—that is, the man is most emphatic of his "inability to work."

To diagnose the condition, the physician must first gain a concise history of the accident and subsequent treatment, and an account of the alleged symptoms, which he will usually find outweigh the history he has just taken, then by a very careful physical examination, and by many tests and observations it will be found that the man is not suffering from any organic or functional disorder. All the medical man's tact and ingenuity are required to detect that the alleged disablement or symptoms described do not in reality exist.

A few of the instances of malingerers which have come under my observation will demonstrate the condition and explain the method of examination better than a long dissertation on the subject.

CASE I.—W., aged 54, a labourer, met with an accident in February, 1907. He was crushed between a wagon and wall. He returned to light work eighteen months later, but after three months stopped, as he said work was causing him vague indefinite pains in the abdomen, especially on stooping, and that work made him sweat. On examination there was marked abdominal obesity due to his recent easy life, and the waistband of his trousers was too tight, so that the three upper buttons could not fasten. No other abnormality existed. This man could not be persuaded to work till the court stopped his compensation. He has worked well since and reduced his weight.

CASE II.—W., aged 26, a collier, was said to have sprained his back lifting a tub of coal. When examined fourteen months later he localized pain in a certain spot in the gluteal region; the spot was apparently excessively tender, but when his attention was withdrawn he did not notice the pressure. He also varied the locality of the tender spot. No other symptoms were present. He had bluffed the insurance representative for months by the vivid description of an injured spine, whereas there was no injury to the spine or lumbar muscles.

CASE III.—L., aged 57 (looked ten years older), complained of spinal injury and inability either to work or to walk, except at a snail's pace. The history showed that months before he had sustained a slight injury to his right leg. For more than [illegible] he drew compensation for alleged injury to his spine. On examination he complained of a tender spot on the spine, [illegible] t varied in locality from the eighth dorsal to the [illegible] l spine (namely, a distance of 3 in.), and when his attention was withdrawn he did not notice pressure on the place which had a moment before caused him to call out and [illegible] room. He walked very slowly, but could give [illegible] that he could not move quickly. He flexed [illegible] when lacing up his boots, picking up a pen from [illegible] off his shirt, but he would not bend his [illegible] I it was suggested that pressure on the [illegible] might cause him to do so, and it did. It is unnecessary to add that all the usual nervous tests were normal.

[illegible] D., aged 50, complained of inability to work after a blow on his head, which lacerated his cheek. On drawing him out in conversation he admitted he would have been better if he had gone back to work six months before, and on testing his sensation with a pin and eyes closed, he told us when he could not feel the prick quite as expertly as when he could feel it.

CASE V. W., aged 48, refused to stand on his right leg, which had been fractured months before and was firmly united, though he walked slowly barefooted across the consulting room floor without any artificial support. He mentioned no pain until asked, and then located it in his right heel; no tenderness [illegible] normal, but he stated he [illegible]

CASE VI. A youth in hospital had severe conjunctivitis and a hard projection in his lower eyelid; on examining the eyelid a thick piece of glass was found carefully tucked in by the patient himself. The only object for so doing seemed to be the desire to prolong his stay in hospital.

CASE VII.—C., aged 30, an engineer, had a lacerated wound on his right leg; it healed well within three weeks, but the scar was continually becoming abraded and small ulcers appeared on it, although he was resting at home. After two months he was told the compensation pay would be stopped in a week as the continued disablement was caused by himself. The ulcers healed at once.

Cases I to V belong to Group 1, and Cases VI and VII to Group 2 of my classification.

Other numerous examples of the many varieties of malingering could be given—for instance, cases in which joints though freely flexible to passive are apparently rigidly fixed to voluntary movement, and cases in which muscles though apparently paralysed readily respond to the faradic current, are so common as not to be worthy of discussion in detail.

Not infrequently constitutional disturbance or organic disease is conveniently stated to be started by accident, and such cases come under Group 3. I have personally known carcinoma of the stomach alleged to be due to lead poisoning; cancer of pylorus, pernicious anaemia, two cases of marked mitral stenosis, atheroma of arteries, advanced phthisis, and well marked secondary syphilis with night headaches, all said to be due to accidents, some comparatively slight. And all these have had to be contested because medical men have given them their support.

The only administrative measures which are capable of preventing the growing evil of malingering are those which entail systematic and searching medical examinations and reports by doctors who are skilled in the work. As regards accident cases, all injured men should be examined shortly after an accident, and then re-examined if the man does not return to work within the time of disablement allotted to him. Periodic re-examination should be made in chronic cases at intervals of about six months.

The medical examinations are best made by special doctors who are well acquainted with such cases, and not the doctor in attendance, for the self-evident reasons that if the club or union doctor tells the man he should return to work, or that he is not as seriously injured as he imagines, only odium and distrust and possible trouble with the officials of the club are the results. The examining doctor should have the following special qualifications:

1. He must possess a wide knowledge of the habits and mode of living of the workers.
2. He must be a keen observer, and must have trained himself to detect by special tests and a very thorough examination the wiles of a man who, instead of helping the doctor, is all the time trying to mislead.
3. For proficiency much experience gained by practice is necessary.
4. Tact. He must know how to gain his evidence without arousing suspicions.
5. He must be specially well versed in all the tests and methods of observation which can be applied to the nervous system, in order to differentiate the true from the false.

These medical examinations should, where possible, be made in consultation with the doctor in charge of the case, and certainly with his cognizance and approval. If the man is attending an out-patient department of a hospital this is usually not possible, but an in-patient should be examined in conjunction with the house-surgeon in charge of the case.

Most accident insurance companies by regular medical examinations of this kind to a large extent prevent the imposition of the malingerer, but there are many cases which drag on until the court stops the compensation.

The new National Insurance Act (1911) practically leaves the detection of malingering in lay hands, and the Chancellor of the Exchequer evidently considers there are no scientific tests worthy of being used. He relies on the self-interest of the fellow members of the friendly societies to detect this fraud, which if excessive in their society will mean depletion of their funds and an extra levy or diminished sick benefits. (Vide paragraph 38, National Insurance Act.) In his book on the National Insurance Act Mr. Lloyd George says:

> You cannot check malingering by doctors' certificates. There is no doctor but will tell you that there are certain diseases in which it is quite impossible to say whether a man is shamming or not. Therefore, you must depend upon each member being almost a detective to spy on his associates. If a society has

such a number of malingerers that it becomes insolvent or bankrupt, what happens is that there is an additional levy, or the benefits are depressed.

Further on the same writer says[2] under the heading, "Purely State Scheme of Insurance would Foster Malingering":

The greatest evil which has to be guarded against in all benefit schemes of this character comes from the danger of malingering. The friendly societies have never been able to suppress it altogether, and no plan which human ingenuity can devise will succeed in stamping it out. The best that can be achieved is the compression of it within limits that will not substantially disarrange or affect the fund of honest men. The most effective check—in fact the only really effective check—upon malingering, is to be found in engaging the self-interest of the workmen themselves in opposition to it.

The Chancellor evidently does realize the importance of malingering, and also that this Act is going to very greatly foster the vice, but he must not expect that malingering can possibly be held in check by the workers themselves. Without deprecating the evidence or information received from members of a friendly society about the habits and actions of a fellow-worker, which will always be of valuable assistance to the medical man in attendance, I still would strongly urge that the decision as to whether a member is malingering or not must always rest with the doctor. For it is impossible to arrive at any judgement or decision without the verdict of a searching scientific medical examination. This must be the case, in order that justice may be administered, and that the innocent may not suffer and the guilty go free. For it is almost a daily occurrence for medical men to find the sympathy of the lay public entirely misplaced, the seriously damaged being judged with suspicion and considered to be magnifying their ailments, whilst the malingerer is thought to be very ill. Growing pains, and the pain of early spinal disease, are frequently misjudged. How is the working man to detect the pseudo-paralytic from the real, the pretended cardiac from the case of valvular disease, or the man who malingers abdominal disorder from the real sufferer?

It is a matter of common knowledge and one that has frequently come under my own observation that the malingerer is often sent to the medical examiner with the opinion that "the case is a very serious one, and has been incapacitated for a considerable time, and that he will probably find that the man is very seriously damaged," and this opinion has been given by some insurance man, a claims manager, or some one else well versed in the ways of the injured working man, and whose sole interest it is to prevent and check malingering. If, therefore, we constantly find the malingerer is able to mislead these experts, how much more easily will he mislead his brethren, even though members of the same friendly society! As stated above, the malingerer frequently gains the sympathy of his associates much more than the bona-fide sick man, and from the very nature of the case this is to be expected, as he parades his alleged infirmity and discusses freely his supposed pain.

I do not agree with Mr. Lloyd George that "there are certain diseases in which it is quite impossible to say whether a man is shamming or not." Also I am very doubtful, knowing the British working man well, how much information will be obtained from him against a fellow-worker, be he malingerer, wastrel, or bona-fide sick. In any case, the medical examination and resulting certificate will be the real means of deciding whether malingering exists in any instance or not and preventing it, and any evidence of the habits or actions of the alleged sick man given to the medical attendant will be welcomed to assist him in arriving at a correct diagnosis. One point I have not yet laid stress on in this paper is that the malingerer will act his part for months at a time. This is borne out by several of my reported cases.

In order to prevent malingering the following administrative measures should be adopted:

1. The detection of malingering must first rest with the medical adviser, who in most cases is most competent to know if organic disease is or is not present. The difficulties he has to contend with will be (*a*) the natural tendency to be sympathetic and therefore lenient with his patient; (*b*) the natural inclination not to quarrel with or offend his patient; and, of course, there is no man who is so quarrelsome and malevolent as the malingerer. On that account the moral support of any evidence from fellow workmen will be of value. The position in all cases must be extremely awkward, and therefore the medical man should be able to obtain the opinion of a special medical examiner when he desires.

2. A panel of medical men specially versed in the detection of these cases should be appointed in each district; these should be special medical examiners.

3. The medical man in attendance should be able to call in a special medical examiner to report on any case in which he suspects malingering, or in which his opinion is in opposition to that of the members or officials of the friendly societies.

4. The members, through the officials of the friendly societies, should be able to ask for a report from a special medical examiner in any case in which they deem it advisable, having first reported to the medical attendant.

By these methods all possibility of friction between the medical man in attendance, the members and officials of the friendly societies, and the invalid or pseudo-invalid himself, will be removed. Justice will be done to all parties concerned by an unbiassed opinion, and the medical attendant will, moreover, be able to obtain skilled advice and assistance in dealing with difficult and doubtful cases. It is only by formulating such administrative provisions in which scientific and skilled examinations of medical men are constantly employed, that the growing evil of malingering and its attendant fraud on the coffers of the friendly societies can be prevented.

References.

[1] *People's Insurance*, by the Right Hon. D. Lloyd George, p. 24.
[2] Ibid., p. 56.

II.—Michael Dewar, M.D.,

Honorary Secretary of the Edinburgh Branch, British Medical Association.

What is exactly meant by the term "malingering" as applied to friendly society and club practice, with which medical men have most to do?

Webster defines the term in the following way: "In the army a malingerer is a soldier who feigns himself sick, or who induces or protracts an illness, in order to avoid doing his duty; hence in general, one who shirks his duty by pretending illness or inability." This is a good enough definition in a general way, and apparently the term, derived from the French words "mal" and "heingre," was invented to apply to such cases in the services, and gradually, and unfortunately for the general practitioner in club practice, the system was adopted by certain members of the societies for the purpose in a great many cases of not only shirking their work and having a lazy time, but of drawing upon the sick benefit funds to enable them to carry this out with a certain degree of comfort.

Prevalence.

Malingering is fairly common and widespread among the wage-earning classes who are members of friendly societies. It is rare, though not unknown, among salaried officials.

Causes.

1. *Remote.*—(*a*) A highly developed and conscientious principle of right and wrong is not a characteristic feature of a large number of working men.

(*b*) A relative inability on the part of the working man to grasp the true meaning of insurance against illness. A great many men do not realize that an undue drain on the funds means higher premiums. On the other hand, there is the mean personal desire, overriding the principle of insurance, to get back to their own pockets as much as they can in return for what they have contributed, or for injury received.

2. *Immediate.*—(*a*) A genuine belief in the continuance of their illness or disability.

(*b*) A fear generated by a previous illness or accident.

(*c*) Laziness, with a desire for a week or two's rest.

Classification.

To my mind there are two classes of malingerers:

1. Those who imagine they are really ill when they are not, who exaggerate minor into major ailments, and who with difficulty are convinced of the trifling nature of their troubles.

2. Those who persistently pretend that they are ill when they know they are not, with the object of lazying, and who practically, when they succeed in carrying it out, compel their brother members to support them during their recurring lazy periods, and their doctor to attend them.

There will always be a certain amount of sympathy with the first class, because from a psychological point of view

they are not altogether to be blamed for being the possessors of a weak mental stamina, often the fault of heredity. With the second class there can be no sympathy, as they are either men who periodically desire to laze on the flimsiest excuse at the expense of their co-members, or who, being members of two or three societies, malinger for the greed of gain. I have a very vivid recollection of a man who was an inspector in a large firm, a member of the sick benefit society attached to the firm, and also a member of two friendly societies. This man, from various causes, pretended to be unable for his work on an average twice a year, for periods of from four to six weeks. During these periods he received his weekly wage of 32s., and sick benefit from the three societies amounting to 34s., in all £3 6s. a week. I knew perfectly well he was malingering, but, owing to the pernicious custom of the society appointment being in the hands of the men themselves, I had some difficulty in putting a stop to the injustice. Ultimately I took my courage in my hands, and asked the manager to suspend his wages when off duty, and at the same time reported to the officials of the three societies that he was a determined malingerer. A little bit of dust followed on this action, but I had the satisfaction of securing the support of the manager and the societies, and the man was cowed. He could not face the odium of being a convicted malingerer, and for the next few years while I was in charge he became a normal member. On making inquiries of my successor, I find that he has almost never been on the sick list for the last twelve years.

Control.

So much for the system; the question is, How can it be controlled?

In considering the matter one is at once faced with the small percentage of genuine cases of illness which may inadvertently be put down as cases of malingering. I have known one or two such cases, but really with ordinary care in diagnosis they may be looked upon as a negligible quantity. It is an admitted fact that malingering does exist to a very large extent for short periods of a few days, when it is extremely difficult to detect it, but when all the collateral circumstances and the previous history known to the doctor are taken into account, it is fairly easy to decide what is and what is not malingering.

To control this despicable habit a good deal could be done by:

1. The friendly societies or approved societies under the Insurance Act.
2. The doctors.

1. As regards the societies, the first desideratum is that the members of societies should realize and be convinced that a system of malingering really exists. A great number will not believe this, and it is only natural, as the good steady men judge others by their own standard, and do not wish to think that any one of their own class will indulge in the habit—a habit which, once begun and successfully carried out, feeds itself, because of the ease with which it can be accomplished under the present system of friendly societies, and by imitation. A few years ago the Twentieth Century Equitable Friendly Society, convinced that there was a large leakage of the funds due to malingering, and having learnt that their medical officers hesitated to denounce and report cases of malingering, owing to the fear of being dismissed by the local lodges, resolved that instead of the local lodges being entrusted with the power of appointing and dismissing their medical officers, the lodges should have the privilege of nomination only, but that the appointments and dismissals should be made by the Grand Lodge itself. This method gave the medical officers a free hand, the fear of being dismissed by the action of local prejudice was removed, and in the following year £5,000 was saved. This is a striking illustration of what can be done by the societies themselves in eradicating or reducing malingering.

The methods of control of malingering under the Workmen's Compensation Act are well known to most of us, as are also those of the friendly societies in the past, and, while they are on somewhat different lines, the best of the two methods may be taken, with one or two further ideas, as a fair scheme by which it may be kept at a minimum under the Insurance Act.

2. Judging from the last thirty-five years' experience of practice, and of nearly twenty-five years' contract practice, I feel sure that, if doctors had a free hand to deal with malingerers, they would soon be an unknown quantity. It has been the fear of being dismissed by local influences that has deterred doctors from acting as they would have liked to act in the past. However, with free choice of doctor in the future and the other safeguards that will be put in force, malingering will have a very small chance of existence.

I propose that there should be:

1. Weekly or fortnightly reports by the local doctors, as in the Compensation Act.
2. The appointment of whole-time working men inspectors.
3. The appointment of whole-time medical referees. Each officer will have control over a very large area or areas, and will only visit special cases at the request of Nos. 1 or 2, or the Insurance Committee, when they have failed to settle matters. These officers should have experience of working class general or contract practice, a good knowledge of the working class temperament, and a fair knowledge of the different kinds of manual labour, and the amount of strength, skill, vision, etc., required for each.
4. A rigid adherence to the restrictions enforced by friendly societies:
   (*a*) Not to be out of their homes after a certain hour.
   (*b*) Not to enter a public house or a place of entertainment.
   (*c*) Not to leave the district without an order.
5. Sick benefit in no case and under no conditions should exceed three-quarters of the average weekly earnings for the preceding six weeks.
6. Reduction of benefit to be made by the masters, their underwriters or the societies, at or without the suggestion of the local doctor or medical referee. (If this action were adopted, the man may appeal to the courts.)

The following comments on this appear appropriate:

1. The weekly certificates by the local doctors should be demanded by those who pay the compensation or benefit, and not by those who receive benefit. These certificates must be paid for separately.

2. Working-men inspectors, with their thorough knowledge of working men, can do, and actually do, a lot of good. There is not much fear of these assuming too much responsibility.

3. The whole-time medical referees are the most important part of the scheme. In the vast majority of cases the men would accept their opinions without question. It is only the few cases that proceed further to court. The medical referees are controlled by public opinion and by the cost to the funds. If the referee makes a mistake, he suffers for it in two ways: (*a*) by the publicity which he incurs, and (*b*) by the extra expense of which he is the cause, in the event of a man sent back to work, dying or relapsing. In my experience there is no ethical difficulty with the local doctors, who are only too glad to see their malingerers getting their reward.

4. The restrictions are exceedingly unpopular and valuable on that account. These should be extended to compensation cases. The working men inspectors and the society officials can apply them.

5. The amount of sick benefit should always be substantially below the earnings.

6. The automatic reduction of benefit at the expiry of a term of weeks is a grave hardship to honest patients. Any new scheme of medical insurance which does not adopt some such plan is a lost opportunity.

The method of reducing benefit should be that adopted under the Compensation Act.

Minor Difficulties and Suggestions.

1. There is a minimum weekly payment under the Workmen's Compensation Act. Boys are able in this way to get their full wages during disablement. Boys rarely malinger, but parents sometimes malinger for them.

2. Farm servants as a rule get full wages for six weeks during illness. Cases of malingering occur occasionally among this class. The opportunity should be taken under the Insurance Act to end the custom, which, though humane, is not sufficiently business-like at the present day, and in the past there has been no means of control.

3. A man may be fit for light work, and not for full work. At light work he may get less money than he would get under compensation or from his society. A great deal of malingering arises from this cause. The difference between the light work wage and the full work wage should be adjusted partially, but not wholly, a difference being left

to hasten the return to full work. This adjustment should fall on the shoulders of the compensation authorities or the societies.

4. In spite of all rules and inspections, cases of malingering will still occur. This is due to the imperfect state of medical knowledge. A man may say he has a sore back: no one can deny it, and working men are well aware of this fact. On this point, however, the local doctor comes in without a rival. He has the necessary knowledge, acute powers of observation, and personal acquaintanceship with his men, and often he succeeds in putting a man back to work when all other means (less than court proceedings) fail.

Illustrative Cases.

1. A man in perfect health, but with one arm, disabled by an old injury, refused to do any work, pleading incapacity. He gave in on being confronted with a one-armed man engaged at work.

2. A man complaining of pain and stiffness in one knee was seen by the referee. The man hobbled painfully into and out of the consulting room with the aid of a stick. There were no objective signs. The referee, after the interview, followed the man part of his way home, and had the good fortune to see him sprinting for a car.

3. A man with a healed fractured thigh refused to leave off using crutches, and complained of much pain and weakness. One day his own doctor, turning the corner of a country lane, met him carrying his crutches and stepping out like a soldier.

The Reverse Side of the Picture.

There is great need for extreme caution in giving a man an adverse verdict. Cases have occurred, and will continue to occur, where there are no objective signs—at least, none appreciable—and where there is every appearance of malingering, in spite of every care and every method of applying tests in examination, and yet death has occurred, perhaps after work has been resumed, and the autopsy has shown that serious disease had actually existed. Such cases must always lead the cautious practitioner to be wary, and, as a consequence, in many cases permits malingering to take place.

III.—Edgar A. Browne, M.Ch.,
Liverpool.

MALINGERERS AND EYE CASES.

As we have no compulsory military service in this country we have been comparatively free from the severe form of ocular malingering that has long been prevalent in Continental nations, but since workmen's compensation became part of the law of the land an accident to the eye has been regarded as an asset which should be carefully exploited. And when there is a slight or no injury to vision a sufficient damage should be alleged to procure a lump sum or a payment of a satisfactory proportion of wage without work for a long period, if not for life.

Certain forms of claim are so common as to lead to the suspicion that traditional methods of deceit are handed down from one performer to another. Among the commonest are the following:

1. The exploitation of an old injury for a recent. Thus a man applied for the reason that, having been injured by a splash of quicklime, he was unable to continue his work in consequence of an eversion of the lid, and dribbling of tears on to his work when he stooped forward. Appearances corroborated his account; he had eversion, a dense conjunctival cicatrix, and a copious discharge on to a book or paper. But when I was informed of the actual date of the lime burn, I was certain that the cicatricial tissue had been in existence for a long period, and I finally made him confess that *some* of the scars came from an attack of anthrax of many years ago. I believe he withdrew his claim, and it was doubtful whether there had been any lime burn at all, but he certainly was very near accomplishing his nefarious object.

Nebulae, congenital amblyopia, old trachoma, closed pupils, are all offered for the persuasion of the credulous.

2. Claims for accidents which have never occurred, or have not inflicted damage on the applicant, or not in the manner asserted. A man who was in a train which stopped abruptly, but without inflicting the slightest damage on any passenger or thing, brought an action to recover a large sum of money for the total loss of the sight of one eye. He deceived a number of medical men, and was only defeated after a two days' trial at the assizes. He had absolutely nothing the matter with him except mendacity.

Another man received a splash of some irritant liquid in the eyes. The left suffered some keratitis, resulting in a leukoma partially covering the pupil. Healing went on smoothly, but about ten months after the accident he professed to go blind in both eyes. No sign or symptom was found of any injury or disease, ocular or cerebral. He could not see anything, not even a bright light nor large objects. He was exceedingly persistent in his statements and a splendid actor, and succeeded in imposing on a great number of people, including members of his own household.

These cases bear all the marks of fraud—total and absolute blindness, not even a glimmer of light, with no corresponding symptoms in the eye, no efficient causation, no real support except the patient's statement.

3. Eyes that have been subject to slight injuries (such as minute scratches near the edge of the cornea), instead of continuing to improve as they do in private patients, become rapidly affected with bad sight when it is certified that the patient is fit to return to work. The amount of deterioration depends upon the quality of the work to be done, and, to make things safe, *both* eyes are affected, though not in the same degree. It need hardly be said that this is a difficult game, as the distinction between distant and near-point vision is a puzzling problem, and the wrong type is apt to be selected.

It is obvious that these cases are entirely medical in character, and cannot be dealt with by the ordinary legal equipment of two solicitors, two barristers, and one judge. It is of small value for barristers to ask expert witnesses questions, when they have no idea of the correctness or inaccuracies of the answers given. It is legal questioning, and the ingrained legal habit of endeavouring to elicit admissions, that lead to what is called a conflict of medical evidence. One of the first reforms needed in dealing with fraudulent claims in regard to injuries to vision is to employ medical experts directly in estimating the causes and consequences of a given accident. At present a patient is examined separately by a medical man on behalf of the employer, and by another medical man on behalf of the patient, and no communication takes place between the two. As a malingerer is generally a much cleverer man than a surgeon, he is likely to succeed in bamboozling the man who believes his statement—he almost always does. The more scientific the examiner the less likely is he to recognize the conjurers' tricks which are adopted by pretenders for sheer purpose of deceit—witness the frauds which were perpetrated on Charcot by his hysterical and deceptive patients.

When the evidence of the two experts is subjected to the treatment of two barristers, who, it must be owned, are working in the dark, it becomes so obscured and mixed up with irrelevant matters that the truth can scarcely be inferred. Thus the simplest of all questions, "What does the man actually see?" appears to be a matter of dispute. This is the result of two causes—one, the barristerial habit of accentuating differences, the other, the different amount of credence placed upon the patient's statement in separate examination. Truth, of course, is more likely to be discovered by co-ordinating the points of agreement than by emphasizing those of difference. Therefore, in all cases where malingering is likely to form an element, the medical examination should be in the nature of a consultation, held at the instance of and for the guidance of the court.

The joint reports with the points of agreement and disagreement classified, would be submitted to the court through the medium of the medical referee, who should, if necessary, take the position of arbitrator between differing medical men, and adviser to the judge. He should be an essential official in all cases where the points to be decided are medical points, and not, as he is at present, only an official *occasionally* employed. All legal questions are properly left to lawyers, who have methods admirably adapted for determining questions of liability, dates of accident, credibility of witnesses, and so forth. But the legal method of question and curtailed answer appears almost as if it had been devised for the purpose of wasting time and obscuring truth. Surely it cannot be difficult for two or more medical men (of ophthalmic skill) to determine what a patient does or does not see. Or if a certain degree of vision (say one-third) is ascertained by one examiner, and if a less degree (say one-tenth) is ascertained by a

second (within the space of a day or two) a medical referee would at once recognize that the second statement was simply negative and fraudulent, and impossible to be received as a basis of an argument. I suggest that the medical referee should be furnished with the medical reports before the trial, and that he should therefore be able to go into court prepared to understand the line of argument of both sides and the genuineness of the facts on which it is founded. I look upon him, not as an occasional addition to the legal staff of the court, but as *the* essential person in these controversial cases. In genuine cases he would be (after a little experience) a great help to the claimant, and in cases of fraud a most powerful aid to justice. The malingerer is one of the pests of society and he should never be permitted to succeed. When he does he not only lays his hand on money to which he is not entitled, but he encourages others to follow in the same course, often to their own disadvantage as regards character for honesty and perhaps even in legal expenses.

DISCUSSION.

In the course of the discussion, Dr. BUSHBY (Liverpool) stated it as his experience that many malingerers selected some disease and read up the symptoms. They became quite expert, and were able to answer questions. He knew of one man who feigned several diseases in turn; he read up his complaints at the public library. This class of malingerer was often detected because he knew so much about his supposed illness.

Dr. R. R. RENTOUL (Liverpool) expressed the opinion that the percentage of malingerers to the working population was very small.

Dr. WALLACE HENRY (Leicester) expressed the same view as regards cases of pretended illness. He thought the principal form of malingering was the one in which the individual who was really sick adopted some means of prolonging his sickness. He hoped that under the National Insurance Act strict regulations would be enforced, and patients disobeying medical orders would be debarred from sick pay. As regards medical referees, in the new Leicester Public Medical Service provision was made for a right of appeal to honorary members of the service, who would give an independent opinion on such matters as these.

Dr. BRASSEY BRIERLEY (Manchester) expressed the opinion that malingering was considerably encouraged, owing to the fact that employers insured their workmen, and so were not financially interested in their absences.

Dr. HENRY HARVEY (Liverpool) was of opinion that payment to medical men on a capitation basis would do very much to stop malingering. He was of opinion that malingering had increased of recent years. He did not agree that employers encouraged malingering, but he thought insurance companies did, because they compounded with a malingerer rather than fight the case.

The PRESIDENT (Dr. J. C. McVail) emphasized the importance of a medical man who was called to a case having an absolutely unprejudiced mind. Otherwise once or twice in his life he would make a mistake which would cause him infinite regret afterwards. These were the difficulties that made medical practice interesting, and medical men had to overcome them by careful observation and by avoiding the practice of giving medical certificates too easily.

DISCUSSION ON CAPITATION PAYMENT VERSUS PAYMENT PER ATTENDANCE UNDER THE NATIONAL INSURANCE ACT.

OPENING PAPERS.

I. HENRY HARVEY, M.D.,
Liverpool.

A CAPITATION SYSTEM.

This subject was discussed and ably reported upon at great length by the Council of the Association in 1911. Since then Divisions and Branches of the British Medical Association and public meetings of the profession have discussed it *ad nauseam*. It has, moreover, formed the subject of the largest and certainly not the least interesting correspondence which has ever appeared in the pages of the BRITISH MEDICAL JOURNAL.

There are many points in connexion with the provision of medical treatment for the working classes upon which we are all fairly well agreed. These are: (1) That some national system of sickness insurance is desirable and inevitable. (2) That the present club system, miserably underpaid and administered without due regard to the dignity and rights of the profession, cannot be tolerated any longer. (3) That a system of salaried whole-time medical officers would not be acceptable. (4) That the control of the acting medical attendants must not be left to the friendly or other similar societies.

What, however, we are not agreed about is the method of remuneration for our services, either under the National Insurance scheme or any of the proposed public medical services. Is it to be so much per head per annum, or so much per attendance, or, as some suggest, a mixture of both? No one can have followed the interesting correspondence in the pages of the BRITISH MEDICAL JOURNAL during the last twelve months without becoming aware of what extremely strong and apparently irreconcilable views are held on these points. Certain considerations appear to me to explain, or at all events to throw some light on, the asperity and divergence of the positions taken up.

To the strong advocates of a system of payment per work done there always loom before their vision two pictures—the one of the miserably underpaid club doctor, his drudgery, his struggles, his heartaches; the other picture of a beautiful Utopia where the doctor would pay as many visits as he chose, or as his conscience on the one hand and the *res angusta domi* on the other might dictate. Members of the profession have too often discussed the matter from a purely academical point of view, quite apart from the distinctly practical position the question now occupies since the passing of the National Insurance Act. I think, too, the fierce—may I be pardoned if I say almost fanatical?—opposition to any form of contract practice which has figured so largely in the JOURNAL and at our meetings is due to the fact that the medical mind, generally speaking, is not accustomed to deal with averages. The essence of contract practice, as of all forms of insurance, is the question of average. It is not a question of whether, say, 10s. per annum will pay you for attending some individual man; but whether, taking 500 average men and averaging the amount of sickness per annum from the best data available, 10s. per annum will offer a fair prospect of proving remunerative.

Some men object to any contract or system of contracts. They talk more or less wildly about "forfeiting our liberty," "taking on a yoke," of "binding ourselves hand and foot." Every visit we pay at a certain given fee is a contract. The visit may be long or short, the matters requiring attention may be few or many, and our directions may be short and simple, or the very opposite may be the case. Every accouchement you attend is a contract. On engagement you have named a fee. The case may be long or very short. You take the risk—you average it. Every public appointment—for example, that of medical officer of health—is a contract. Many serious difficulties may arise in the district during the year, or, on the contrary, things may go very smoothly. The amount of work may vary very greatly. You accept so much per annum for undertaking the work—you, to a certain extent, risk the amount of work. The expression, "degrading nature of contract work," has been used again and again. Now, I say, it is the acceptance of a rate of remuneration and of conditions of service incompatible with good work and with the honourable traditions of our profession, and not the fact of its being contract work, that is degrading.

Let me briefly sum up what has been said for and against a capitation system of payment as contrasted with a payment per attendance.

For a Capitation System.

1. It is the only system for which a Chancellor of the Exchequer can possibly budget in advance. Even if some parts of the Kingdom chose a payment per attendance system they would have to pool the capitation grant and divide it proportionately to work done.

2. Once agree upon a fair sum per head and the system will work almost automatically.

3. No tiresome and complicated book-keeping required.
4. No running up of bills whose ultimate payment is often more than problematical. Consequently no bad debts, county court attendances, or collector's fees. The doctor is also saved the degradation of having to collect his income in sixpences and shillings.
5. His financial interest coincides with a minimum of sickness—that is, the interests of doctor and patient are identical.
6. It is not to the doctor's interest under this system to pay unnecessary "make-weight" calls. I opine that, provided he makes it from the first quite clear, by his actions and demeanour, that he is not slurring over his work, he will not find his contract *clientèle* any more expectant (indeed, often far less so) than his ordinary private patients.
7. Malingering will be at a discount, because it will obviously be in the doctor's interest to take an alert, critical view of all cases where circumstances warrant a suspicion of malingering. A decided but never flippant opinion fearlessly expressed, whenever he has made up his mind, will probably stop further attempts at deception.
8. It will be possible in many cases, and will be economical in the long run, to put in practice a little "preventive medicine" in the course of an unsolicited visit.
9. Early in the year the practitioner will know pretty well what his income from this side of his practice is going to be. The young doctor—aye, and the senior, too—not unseldom knows the financial anxiety and inconvenience which the uncertainty of income gives rise to. It is probably the necessity of adding some little measure of certainty to the uncertain income that has forced so many men to accept the miserable pittance which the friendly societies, taking advantage of the young doctor's needs, have offered.
10. Germany with over a quarter of a century's experience of National Insurance, and after a trial of both systems, has now, I believe, universally adopted the capitation system as being the only one practicable.

The Objections to Capitation.

1. The enormous amount of medical service that will be claimed from us.

Answer. If you look down your daily lists what a comparatively small proportion of your visits are paid to men. The men far more frequently come to your surgery; and a large proportion of these men are the cases of the less serious forms of accident. Assuming twelve days to be the average yearly invalidism among working men, and assuming minor accidents to play rather a large part, I doubt whether the twelve days' invalidism would really average four attendances. Take in conjunction with this the very large number of domestic servants who will be insured under the Act. How comparatively seldom they are ill.

2. A great deal has been said about the sacrifice of freedom once a medical man makes a contract. Dr. Cooper, the protagonist of the "payment per work done" system, says that a capitation system "destroys all independence and initiative," and protests that "he would not become the abject slave of exacting patients for any fee." I see no cause for his first objection. I quite agree with the second remark, only it is irrelevant to the subject.
3. That it favours malingering. I maintain distinctly it is all the other way about.
4. That we are "undertaking an unknown risk," which the State should underwrite. That we are simply "gambling in futures." Surely the common sense, the long experience of practical medical men, and very specially the twenty-eight years' experience of our German brethren, do count for something in arriving at a conclusion of what is an approximately reasonable fee.
5. Dr. Picton says: "A conscientious doctor might be ruined by an epidemic under a capitation system." I am entitled to reply that under a payment per attendance system the conscientious doctor might be ruined should there be no epidemic.
6. That the work will be inferior and perfunctory as in club practice. No! Not if a reasonable price is paid. It will be to the doctor's interest, to put it on no higher ground, to treat his patients with all proper consideration.
7. Dr. Cooper draws a lurid picture of the doctor's life under the proposed National Insurance system if worked on a capitation basis. I answer that we must before acceptance have in the regulations or in our contract: (1) A definite schedule of surgery hours and of hours between which a call will be accepted on contract terms. (2) A definition of night visits—and especially must we insist on payment at the time by the patient, not by the State, of all such night visits and night surgery attendances.
8. One other objection is that payment per capitation is payment in inverse ratio to work done. I simply fail to grasp this.

Payment for Work Done.

Now as to a payment per work done system. How alluring the words sound when one remembers all the work one has done and not been paid for! I am fully alive to the advantages and merits of a payment per work done system. But the old order changes. A National Insurance Act—modified considerably, let us hope—has come to stay, and we have to consider now the possibilities of a payment per work done system under the new order of things. There are very formidable objections.

1. Insuperable difficulty of a Chancellor budgeting for an absolutely unknown and incalculable number of visits.
2. Uncertainty of doctor's income, and, however much the fact may be disguised, the necessity for a good deal of complicated book-keeping, voucher and duplicate voucher signing—to say nothing of inspectors, reference committees, courts of appeal, etc.
3. Varying amount of sickness and still more varying and incalculable amount of attendance required. In the British Medical Journal Supplement of March 16th Dr. B. Hall, with a delicate and incisive satire that, "Like a razor keen, wounds with a touch that's neither felt nor seen," deals with the "Propensity to visit," which he says differs so enormously in different medical men. One doctor always pays three subsequent visits after a confinement; another under like circumstances always attends day after day for a fortnight! How is a Chancellor of the Exchequer to deal with widely different bills presented by gentlemen under precisely similar circumstances? He concludes: "Doctors differ so widely in their visiting propensities that it is impossible for an actuary to work out any scheme on figures that are capricious, unsteady, and altogether incalculable."
4. The only plan possible under the National Insurance Act is a pooling arrangement whereby the man with the strongest propensity for visiting would score disastrously over his more moderate competitors—the patient having no personal interest in checking the doctor's "visiting propensity," rather the contrary.

Amount of Capitation Fee.

The February Special Representative Meeting fixed 8s. 6d. as a minimum capitation fee, not including extras and medicine for members of approved societies. This was quite in accordance with the calculations of a majority of members of the Association as long ago as 1910, when 76 out of 109 Divisions fixed sums varying from 7s. to 10s. 6d., 51 Divisions voting for 10s. or 10s. 6d. The calculations of a Manchester physician[1] give an average of 4.7 attendances per annum in a membership of 17,000 to 23,000. The Contract Practice Report of the British Medical Association, based on the returns of medical clubs all over the country, gives an average attendance to each club member of 4.1 per annum. Dr. Llewellyn Morgan, of this city, has submitted returns of clubs averaging in all 1,165 members. For 1910 the attendance worked out at 2.1 daily visits. Dr. Glyn Morris, of Breckfield Road, gives equally favourable returns. Finally, Dr. Pearse, dealing with carefully analysed returns of 350,000 cases from all parts of the country, finds the average of attendances to be 5.5 per annum.[2]

Various Schemes in the Field.

How will payment per capitation under the National Insurance Act work supposing our negotiations to fail, and a Public Medical Service to be established? There are nine or ten principal schemes in the field: (1) and (2), Schemes A and B of the British Medical Association; (3) the Bristol scheme; (4) the Epsom scheme; (5) Dr. Picton's scheme; (6) Dr. Hamilton of Hawick's scheme; (7) Dr. Ledward of Letchworth's scheme; (8) The National Deposit Friendly Society's scheme; (9) Dr. Rentoul's scheme. All these schemes, except the A scheme of the British Medical Association and possibly Dr. Hamilton's scheme, aim at a payment per attendance. Most of their authors have, however, awaked to the fact that a certain individual pecuniary responsibility must rest on each of the assured; that only by such means can over-attendance, and consequent financial disaster, be guarded against. To my mind, each and any of these schemes is sound only in proportion to the extent in which it recognizes this principle. Are they *workable?* That is another story.

No Government would be induced to underwrite an unknown and incalculable deficit, nor would the overburdened contributors voluntarily provide a fund like that of the National Deposit Friendly Society, seeing that they have been assured over and over again by the Government that their weekly contributions would see them through all sickness and medical attendance. I conclude, therefore, that a capitation system of payment would, under all the circumstances, prove the best workable proposition.

[1] See *The Light of Thirty Years' Provident Dispensary Work on National Insurance.*
[2] Representative Meeting at the Guildhall, London, February, 1912.

II.—P. R. Cooper, M.D., B.Sc., F.R.C.S.,
Bowdon, Lancs.

PAYMENT FOR WORK DONE.

Before the Insurance Bill was introduced to Parliament I advocated a scheme of sickness insurance for the workers of this country to cover the cost of adequate medical attendance upon what I deem to be the only satisfactory basis, namely, *free choice of doctor by patient and payment of doctor in accordance with work done*, as is now customary in general practice. I consider this to be the only satisfactory basis, because it is at present the only practicable method which (1) preserves intact the personal relation between doctor and patient: (2) secures real freedom of choice of doctor by patient and vice versa: (3) pays the doctor in a just degree for the actual amount of work he is called upon to do; (4) enables the doctor to limit his work in accordance with his strength and capacities, so preventing sweating and overtaxing of the medical man. I will discuss each of these heads in some detail.

1. *Preserving Intact the proper Relations between Doctor and Patient.*—By these relations I mean intimate personal knowledge and interest in one's patient and the mutual trust and confidence engendered thereby. It is upon this that the great factor of faith—which is so often our strongest therapeutic ally, and without which all the drugs of the pharmacopoeia may be useless—is founded. For either doctor or patient to be bound to each other for one moment after that faith or trust is destroyed is, in my opinion, detrimental to both. Contract work on a capitation basis *must* bind doctor and patient together for a certain fixed and fairly long period (for example, six to twelve months): that is the essence of the method. The very knowledge that we are so bound is good for neither doctor nor patient, for, rightly or wrongly, the patient is apt to suspect his doctor of treating him cavalierly and to readily consider himself neglected or slighted, whilst the doctor who knows that he is at the mercy of the unlimited caprice of his patients in regard to calls upon his time and skill, and that he has no safeguards whatever against the abuse of his patient's privileges and no remuneration for the excess work, feels that he has a heavy weight around his neck, which places him continually at a disadvantage and often in a most humiliating position, whilst he can scarcely help being prejudiced against those patients who, needfully or not, make the most frequent, prolonged, and exacting demands upon him. As is well known, it is the neurotic type of patient, with probably the least serious real disease, who is the greatest sinner in this respect and who is likely to cause the most trouble and annoyance to the doctor, and it is not surprising that the contract doctor is apt to lose patience and emphasize the neurotic features of his cases, perhaps often to his patient's detriment. Again, people who are constantly being ill and requiring attendance through their own vice, carelessness, or foolish over-indulgence, must also be a constant source of grievance to the doctor, who, under capitation—except for certain specified extras—receives no additional remuneration, however much superfluous work he has to do.

2. *Securing Real Free Choice of Doctor.*—The foregoing considerations apart, a contract which blindly binds doctor and patient for six or twelve months must frequently prove intolerable to both, and the only contract which should exist between them, and which really secures the fundamental cardinal principle of free choice of doctor, is one which is determinable at any moment on either side, as is now the case in general practice. This is, in fact, only feasible on the payment per attendance principle: the moment the attendance ceases payment ceases, and if the patient calls in another doctor the further payment goes, of course, to the latter. It is rare for a doctor to voluntarily relinquish a case during an illness (in nearly twenty years' practice I have only done this three or four times), but circumstances might quite well arise which make it necessary for him to do so, and he should always be free to feel that he can discontinue attendance if he so desires. Often the mere threat of resigning the case is sufficient to check a refractory or disobedient patient, but with this power taken from us we are indeed sorry servants and have little or no authority over our patients left. On the other hand, it is only fair that patients who are not satisfied with our treatment, and think they can do better elsewhere, should be free to change, for if they have lost faith in us we can often do them little good, and it will be impossible to get them to faithfully follow our instructions.

A contract of service which is determinable at any moment on either side cannot, however, be worked satisfactorily on the capitation basis; it would certainly not suit the Insurance Commissioners if we could throw up our contracts whenever attendance became irksome, after having, perhaps, received the capitation fees from these patients for some time without making any previous attendance. Who would then take on the actually sick beneficiary, perhaps now turned chronic ailer, at a small and even partial capitation fee? The only way to secure real freedom of choice of doctor is to have momentarily terminable contracts between patient and doctor and payment per attendance. That such a method is practicable even amongst the insured workers is shown by the success with which it is now employed by the National Deposit Friendly Society and some others.

3. *Payment of Doctor in Just Degree for the Actual Work Done.*—The importance of this matter does not seem to be sufficiently realized even in the medical profession. Medical attendance is a costly affair, and tends to become more and more so. The old placebo methods are fast becoming extinct, and as newer methods come forward based on more radical scientific knowledge (which, however, frequently involves highly complex technical skill and expensive apparatus, reagents, methods, etc.), we shall be most unwise to bind ourselves in advance to treat people to an unlimited extent and undertaking an unlimited expenditure of time and money for a fixed annual fee per head, the amount of which per unit of work done is at present quite incalculable; but knowing as we do now that this fee can never be a large one and must necessarily be less in amount the more work we are called upon to do—that is, payment is in inverse ratio to work done—I think it is quite safe to say that under the capitation system contemplated in the Insurance Act the scientific treatment of disease will be a practical impossibility. In my opinion, the only way to correlate the work with the remuneration so as to make the former efficient is to arrange a fair tariff of fees, with a sufficient allowance for "extras," and to charge accordingly for the work done.

4. *The Ability of the Doctor to Limit his Work in accordance with his Strength and Capacities.*—This is by no means an unimportant matter. I have seen many good doctors stricken down prematurely by over-zeal in their work and through the inordinate demands made upon them by patients. Such men have probably had plenty of warning that they were exceeding their powers, but for various reasons they could not say "No" when sent for, and they have had to pay the penalty. Instead of receiving the sympathy which should be their due for this over-zeal and self-sacrifice they are often jestingly told that "being doctors they should be able to cure themselves." The Insurance Act threatens to place us all in this unenviable position. We cannot say "No" when sent for by those whom we have contracted to attend, however spent we may feel. Nothing short of complete breakdown and actual illness can excuse our attendance, and in that case presumably we should have to find a substitute or pay some forfeit for non-fulfilment of contract. Here, again, momentarily terminable contracts and payment per attendance are the only preventive. The doctor who has more to do than he can manage can then refuse to take any further cases, or if he feels in need of rest and change he can take it without breaking any fixed contract; he is paid for what he has done and another doctor takes over the case and is also paid according to the work he does.

Besides the four heads discussed above, I may just enumerate a few other important points in favour of payment per attendance and against capitation. These are: (5) Maintaining the independence and developing the individuality of the general practitioner. (6) Maintaining and enhancing the status of the profession, and securing the continued entry into our ranks of the best men of the coming generations. (7) Advancing medical science and art, and securing the best medical attendance for the patient in the great majority of cases now and in the future. (8) It is the only method applicable to the charging for "extras." (9) Its adoption would largely obviate the difficulty as to a "wage limit," as it is far

easier to fix a satisfactory tariff of fees for attendance in each district, with a sliding scale for various wage limits, than to adopt a capitation fee which shall satisfy doctors, authorities, and insured, and prove of a lasting nature. (10) With partial payment of fees by the patients themselves—either on the deposit or some other plan—payment per attendance is the best safeguard against malingering—that is, against the abuse of the insurance funds by the work-shy.

On the other hand, the submission of the medical profession in even a considerable proportion of doctors to a contract capitation system at a fixed annual fee means: (1) That the profession really shoulders the insurance risks. Why should we accept a risk which the wealthiest Government in the world is evidently afraid to undertake? (2) That we are continuing a semi-charitable mode of attendance upon those who are no longer entitled thereto. (3) That we are being deprived wholesale of our private patients, just those who at present form the backbone of most of our general practices. (4) That medical men will almost certainly be overworked and underpaid: this means bad work, which in the long run is far more costly and depleting to the insurance fund, besides its deteriorating effect upon the doctors themselves and its injury to the lives and happiness of their patients.

The only arguments which have been urged against payment for work done and in favour of capitation which need at present be considered are: (1) That it is a cumbrous method, and would involve a lot of book-keeping: (2) that it is liable to be abused by medical men, who would put in a good deal of unnecessary attendance.

To the book-keeping bogey I reply that it need not be cumbrous, but that a very simple system of recording visits and returning accounts is quite possible; moreover, a certain amount of book-keeping and checking is absolutely necessary under any system, and would certainly be required for all "extras." A simple voucher system is now actually in use in the National Deposit Friendly Society and gives a modicum of trouble. As to abuse by unnecessary attendances, whilst it is easy to make a gratuitous statement of this kind, it is another thing to substantiate it. We can certainly point out that wherever the method is at present in use it is working satisfactorily to all concerned, and no such abuse of attendance can be proved to exist—indeed, the returns of the National Deposit Friendly Society show that there are fewer days of sickness amongst its members than in any other friendly society, and as there is no complaint of over-attendance, the inference is that fewer medical visits are required, and that the latter are more efficient. No doubt the fact that the patient himself bears some of the cost of medical attendance—that is, through his deposit—makes him keener to get well, and therefore more attentive to his doctor's instructions, and this helps to keep down visits. Still, the patients must be sufficiently cured to return to their work, or they would not go off the sick funds. It has, however, been urged that to make the patient pay part of the fees himself would deter him from seeking medical advice when he really needs it. To obviate this, it would be a simple matter to insist that no sick pay shall be given without a medical certificate saying that the patient was under medical treatment, and this should be renewed once or twice weekly; this would at any rate secure that every case was treated by a doctor, who if the patient refused to carry out his instructions faithfully, would decline to renew the certificate. I can only say, as the result of nearly twenty years of general practice, and of a considerable experience of club work—my own and others—that the method of the National Deposit Friendly Society, which gives the patient free choice of doctor and pays the latter per visit, is infinitely the best, both for the patient and the doctor; it is perfectly workable and economical, and is, in my opinion, the only method which is likely to succeed in regard to the working of the National Insurance Act. I do not say the details of the National Deposit Friendly Society are everything that can be desired, but, even such as they are, they are infinitely preferable to any capitation system which has ever been tried or suggested as within the reach of practical politics.

In conclusion, the plan of payment for medical services on the per attendance or per item plan is the obvious, if not the only, way out of the present deadlock between the Government and the medical profession. The Government will never agree to what *we* consider a fair capitation fee, but they cannot for shame offer us less than 2s. 6d. or 2s. per visit or consultation on a tariff basis, which I presume would be our minimum. It is said the Chancellor of the Exchequer cannot budget for this, and therefore he will never consent to it. That very argument shows the colossal weakness of the capitation offer—namely, that we are asked to undertake all this risk and expense merely to save the Chancellor a little trouble in budgeting. Budgeting in advance is, of course, only possible when we know in advance what the cost will be. We cannot budget for a war, or if we do our prognostications are only too likely to be falsified. Medical practice is war on disease, and we, the nation's trained soldiers in this hard fight, especially when the nation calls us to arms, should at least be indemnified against financial loss or stress, and provided with at least the means for living a cultured, studious, and unhampered existence, such as is necessary for our continued fitness for the fight. I therefore strongly urge the Government to at any rate give the system a trial, if they like naming a sum as a limit of liability for the present.

After a year or two they will then have some real facts and figures to go upon, and if a better system can then be devised, which will prove more satisfactory to all concerned, but particularly to the best interests of the insured themselves, and to the nation as a whole, I am quite certain we are sufficiently patriotic and unselfish to give it the most earnest consideration and the fairest trial. We know, however, that any system based on capitation, or on such a capitation fee as any Government seems likely to offer us, cannot possibly be in the best interests of the insured or the nation, whilst the effect of its wholesale adoption, to the exclusion of private practice, cannot but be destructive to the profession by lowering its status and emoluments, killing its independence, and rendering it practically impossible for medical men to do honest scientific work and to keep themselves fitted, physically and mentally, for the continuance of such work in view of the constantly advancing progress of medical and surgical science and art.

I would make the following practical proposal to Mr. Lloyd George as a compromise honourable and acceptable to both sides, and a way out of the present deadlock, and which will have the additional advantage of being a useful check on malingering. He has agreed to certain "extras," and he has said that he is willing to provide more money for medical benefits. Let him (1) increase his grant from the Government to medical men employed under the Insurance Act to 6s. per head per annum, irrespective of medicine and extras. (2) Agree to each insured person paying into the insurance fund a deposit of 5s. per head, half of this deposit to be returned to them at the end of the year if they have required no medical attendance. In this way, at least, our 8s. 6d. per head, less medicine and extras, would be secured to us, and there would be an extra sum from the 2s. 6d. of those who were actually ill of varying amount, which at any rate would increase with the amount of work required. (3) All this money for medical attendance without any deductions for collection, and without, of course, including extras, would be pooled locally in each insurance area and divideod amongst the medical men employed, in proportion to work done. The Government would, however, have to fot the bill for "extras," and to supply medicines, dressings, vaccines, serums, appliances, etc., in accordance with doctor's orders. (4) A maximum number of visits per individual, to be fixed for "ordinary medical attendance"—say, 1 visit per day, 5 visits per week, 12 per month, 24 per year—or such figures as we determine. Further visits should be deemed "extras," and charged for per item upon an agreed scale. (5) Adequate arrangements should be provided for all patients, whether tuberculous or not, to go to sanatoriums or convalescent homes, to expedite recovery, when the doctor thinks the patient ready and the treatment necessary. Here patients should be trained in clean, healthy living, with view to prevention of disease in future.

By the adoption of such a scheme as this justice would be done to the doctors, and something like an efficient medical service secured for the insured, in which we could all heartily co-operate to the common good and against the common enemies of the race—disease and degeneration.

III.—ALEXANDER STEWART, M.D.,
Pendleton.

THE ADVANTAGE OF A CAPITATION SYSTEM.

THE medical profession has been agitated as never before by the National Insurance Act. There has been endless discussion in the defence of our interests and in maintaining the six cardinal points. There has been much criticism of the policy and work of the Council and of the Association, sometimes in seeming forgetfulness of the immense amount of work accomplished. When I have heard or read these criticisms the sobering question which has arisen in my mind has been, Where would the profession be to-day if the Association did not exist? I feel grateful that it exists to defend our interests, and for the great things it has already achieved.

Of the six cardinal points I have always thought that the two really essential are: (1) An adequate fee for medical services; and (2) free choice of doctor for the insured. We should have in our minds a clear idea of what we mean by a capitation fee and by a fee per attendance. The Association was strangely silent for a long time on the amount of remuneration to be asked for medical services. Not until the bill had become an Act was a figure named which would be considered adequate. This shyness in approaching the question was explained on the ground that the duties to be required of the doctors were not definitely known. The real reason was probably the inherent difficulty of the subject.

We can insure against almost any risk—death, sickness, accident, fire, burglary, loss at sea, and such like. It is a question of premium. To insure against the cost of medical attendance would not be more difficult than against the risks mentioned if we had reliable statistics bearing on the subject. The experience of medical attendance on members of friendly societies is not a trustworthy guide, inasmuch as it has never been undertaken on business principles. Experience of private practice is a no better guide, because the working classes will only send for the doctor when they are compelled by severe sickness, and most of those who cannot pay the fees are not attended by private practitioners at all. The number and duration of the illnesses of an insured person do not affect the finances of life insurance adversely so long as the insured goes on living, but they are important factors in insurance against medical attendance. Illnesses are limited in number and duration only by death, the one event we want most of all to postpone. The claims of the sick upon medical benefit are unlimited and the capacity of the doctor for rendering medical services are supposed to be unlimited also. It is not a fixed quantity like the number of shillings in a sovereign. It is elastic and will stretch to any number of attendances on the individual in a year and all through his life. Therefore the services of the doctor to the insured are not comparable with the one risk of the life insurance company. How are we to gauge the amount of work in medical benefit the insured person will require of us? Have we figures that will help us?

I am able to give a modicum of answer to this question, based upon thirty years' experience as medical officer to a provident dispensary, with the added experience of certain colleagues during the same period. There is a record of 248,056 visits to the members of the dispensary at their own homes and of 230,219 consultations at the dispensary or surgery—a total of 478,275 attendances. The members had free access to the doctor at certain hours, and they received the domiciliary attendance they needed. The average number of interviews each member had with the doctor in every year was 4.7. The members were of both sexes, of all ages, and of all conditions of health—except for the children and the excess of women, probably they would fairly well represent the persons who will be entitled to medical benefit under the Act. The Association has asked for a capitation fee of 8s. 6d. per annum for ordinary medical attendance. At the rate of 4.7 attendances each person this would mean a fee of 1s. 9¼d. per attendance. A fee of 2s. 6d. on a capitation basis would equal 12s. for this number of attendances.

We have been accustomed to the work of the medical charities from our first approaches to the portals of the medical profession. As babes and sucklings of the healing art we have been nourished upon the objects of medical charity and have become saturated with this tradition; and, in imitation to some extent of the work done by the medical charities, we have attended members of the friendly societies, of provident dispensaries, as well as the poorest persons of the community, from motives of compassion and in continuation of the tradition of our student days. Now that the nation is going to provide medical attendance for a third of the population, it is not seemly that we should be asked to do the work except at a just rate of remuneration. In undertaking this arduous work are we to be screwed down to the lowest possible limit of pay? Is our past and present work of compassion to be taken as the basis of our remuneration for doing the work of the State? The Government is promising medical benefits to the insured with both hands. It will prove how much it values the health of the nation by its treatment of the service responsible therefor. Let us continue to hope that the Government will deal justly if not generously with the medical profession. What are the considerations which should weigh with us and with the nation in settling this matter? The following points are germane to a true estimate of the work the doctors will have to do:

1. Persons who have free access to the doctor come to him oftener than if they had to pay a fee each time.
2. The Insurance Act provides medical benefits for young and old, for sick and healthy alike. The friendly societies admit only selected lives.
3. The Act provides medical attendance for women, who need the doctor more than men.
4. The free choice of doctor will increase medical work. People will go to the family doctor when they would refrain from seeking the aid of the "club doctor."
5. Compared with private practice, much additional work will be given, (*a*) by people who now go to the medical charities, (*b*) by those who now suffer and get no medical benefit because of the cost, and their name is legion, and (*c*) by the users of quack medicines—the Act will help to kill this nefarious traffic.

Sir William Plender's report shows that in private practice the average attendance (visits and surgery work) for each person of the community is less than 1½ per annum. My provident dispensary experience shows that with free access to the doctor the people come three times as often—4¾ compared with 1½; and the interviews will be increased in number if the prescriptions have to be signed every time they are repeated. For this work a capitation fee of 8s. 6d. is modest. Extras may increase it a little.

Payment for Medical Services.

Payment per attendance, or for work done, is the ideal of many. The capitation fee has its advocates also. The real question at the bottom of all the discussion would seem to be, how to heal the sick and how to keep the people well. Objections to contract practice are based on the assumption that the insured will come to the doctor at all hours of the day and night for slight and imaginary ailments, and take up the time which should be devoted to the diagnosis and treatment of serious ailments. I have observed that objectors to contract work are inclined to exaggerate the claims insured persons will make upon the doctor. It has been written that a batch of 1,500 insured members would require 50 visits a day besides surgery work. Another recent writer has said that 1,000 members would require 38 visits a day. To the visits have to be added an equal number of consultations, etc., at the surgery, and on this basis each member would see the doctor 24 or 28 times a year, or once a fortnight. This is purely imaginary. It is five times oftener than my provident dispensary experience of 4.7. Fiction of this sort will not help us. Simple fact is all we need.

I believe the feeling against contract practice has its origin in professional experience of the friendly societies and of the inadequacy of the contract fee for club work. But that there is no invincible objection in the profession to contract work is proved by everyday experience. All salaried officers work by contract—medical officers of health and of all public bodies, those who serve in the army and navy, and district Poor Law medical officers. For a vacant salaried post there are many candidates even when the salary is very moderate. And may we not include consulting physicians and surgeons as contract workers? A consultant will come to see a patient with you at a fixed fee, and he does not know beforehand the cost in time and trouble the case will give him. A surgeon will agree to perform an operation for a fee which he will name, and he does not always know how long the opera-

tion will take him nor the length of the after-attendance. The general practitioner will contract to attend a confinement at a fixed fee, and he does not know if he will have to do it in the daytime or at night, or if the labour will last an hour or forty-eight hours. He does not stipulate that the fee should be double if he has to get out of his bed or if he be kept longer than an hour. The fact would appear to be that no one objects to contract work if he thinks the fee will be adequate. It is, therefore, a question of fee, and we shall all agree that for efficient work an adequate fee is necessary. The able advocates of payment per attendance give reasons for the faith that is in them. I venture to believe that their faith is for the most part founded on misconception. One says he prefers this system because he wants to be independent and to be able to refuse to see a patient if he pleases. This sounds well. We like our liberty; but how often in actual practice do we refuse to visit a patient if we believe the fee will be paid? If patients need the doctor, he needs them too. We have often to go on working after we are tired, and if we are so fixed that we cannot respond to a call there and then, it is seldom that a little delay cannot be arranged, or, if not, a friendly neighbour will help us out. It would be in contract practice, as it is in private practice, we would willingly see the patient, at the cost of personal inconvenience, if the fee were adequate. To be able to refuse to see a patient seems an insufficient foundation for so large a superstructure as the system of payment per attendance. Eagerness to attend patients rather than unwillingness is the rule amongst doctors. Has a red lamp never been seen, or red, white, and blue? Name plates are not unknown, fixed in positions in which they cannot be easily overlooked. These things are not meant to hide our existence from the public. Do we not rather by all legitimate means obtrude ourselves upon the public, inasmuch as to say that we are at their "beck and call"? How, then, can we hope to found a system of medical attendance upon a principle which is so rarely acted upon—the principle of being able to refuse to see patients if we like? It is admitted that the Exchequer must budget for the cost of the medical attendance of the insured upon the basis of a capitation grant to be paid over to the local Insurance Committees. It is urged by the advocates of payment per attendance that we should attend the insured members who send for us as private patients and charge the fees to the Insurance Committee. If this were done who would gain? Would the members be better attended? Would the doctors be better paid? If the cost did not exceed the grant it would be well from the committees' point of view. If the cost were greater, the doctors would seem to be doing well, but the bank would fail; and what then? Would the doctors be content with a dividend on their accounts, the remainder to be struck off as bad debts? Or would the Insurance Committee come to the rescue and make up the difference? It would require a strong profession to compel a public authority to levy a new rate. Also the system would mean extraneous work for us. It would not be enough to send in an account "From one date to another, so much," as we do now. Details of every item and of the fee for every item would be asked in every case. I do not envy the doctor poring over this irksome task, and having to prove it and to prove the need for it. It seems to me that this would be a stricter servitude, a more abject "slavery," than it could be to respond to all the unreasonable demands of all the unreasonable patients imaginable.

A friend of mine says payment per attendance would be better for the patient because it would obviate the tendency of contract work to encourage neglect. This is putting the doctor on a level with the patient animal who trots cheerfully along, dragging his load with him, after the bunch of carrots dangling before his nose.

A fatal objection to the system seems to me to be that we would thrive on sickness. The more illness the more work for the doctors and the more pay. It would not be a healthy position. The intention of the Act is to promote the national health. To do that effectively the doctor must have some relationship with the patient beyond the fee for every consultation and visit. The pecuniary relationship is irksome; it does not conduce to the best work; it leaves no elbow room for the full and free exercise of the healing art. The doctor's efforts at preventive work are "cribbed, cabined and confined," the fee for each visit hinders him. With a capitation fee, on the other hand, the position is different, the fee is out of sight, the doctor and patient are allies, they have one aim, and their efforts are not hindered by extraneous distractions. The doctor does not commit the sin of wasting time in ingratiating himself with the patient; he goes straight to the heart of the matter: his one interest is to heal his sick members and to keep them well.

An adequate capitation fee would mean a stable income, capable of increase by work outside the Act. Under this system the doctor's work would be purely professional. To be relieved of dispensing would be itself a boon not readily realized. A record of his work he must keep, but he would be saved the drudgery of all unnecessary book-keeping. And patients are not exacting—they are considerate; they wish to make the doctor's work easy: they are grateful for attention, and show it by their conduct. They willingly submit to rules and regulations, and if they break them it is from ignorance or good-natured thoughtlessness, never from ill will. This is the fruit of my experience of provident dispensary practice. As regards consultation work, the patients come as soon as they feel that they need advice, they are docile and do as they are told: they will come again in a day, two days, or in a week, just as you tell them. They will take physic at your request and as you request, and they will refrain from physic at your behest. The consultation work is pleasant work and under your control; in time you come to know the people under your care, and their ailments for the most part, which makes the work easier. The visiting also is more under control than in private practice. The doctor asks himself, Does the patient's condition call for a visit? not Does he expect me? Can he afford it? nor Will he grudge the cost? The opponents of contract work say the doctor is "at the beck and call of Tom, Dick, and Harry," that he is their servant. That is no more true of contract practice than it is of private practice. Messages out of due time will come when it will be inconvenient to respond to them immediately. Even then patients make all reasonable allowances and the call is not usually so urgent as in private practice, because the obstacle of the fee being absent the contract patient sends for the doctor at the beginning of an illness. Extra calls are not unduly frequent, and night calls are very rare indeed, but to minimize unnecessary visits a small fee should be payable by the patient. If we are to be the servants of the insured, I can only conceive of it as an honourable service. When I hear this "servant" theory mentioned, I am reminded of the words of a clergyman who had been appointed to a new parish, and at the first meeting of his people he said to them, "I am your servant, but you are not my masters." I think it was well put and that it will be true of us under the Insurance Act. At the worst a special visit, day or night, does not cause a tithe of the inconvenience a case of midwifery will give, and most practitioners will cheerfully agree to attend a confinement. I believe we shall also cheerfully attend the insured under the Act on the system of payment by capitation, if we can get a fee that will be adequate to the service rendered. If not, we shall refuse.

But whichever system of payment be adopted, the heart of the profession is sound, and the work will be done to the best of their ability, with the single purpose of faithfully discharging the duties of their high vocation.

IV.—C. E. S. Flemming, M.R.C.S.Eng., L.R.C.P.Lond., Bradford-on-Avon.

In any public medical service the value of payment for work done is immediately affected by the condition of the fund available, whether it is limited or unlimited. If the former, the ultimate result is that your energetic neighbour, who pays more frequent visits than yourself, gets kudos, patients, and part of the fees that should come to you; also, after the attendance given by all the medical men drawing on the fund has amounted in value to the whole of the fund, all attendance afterwards will be given for nothing at all.

Even assuming an unlimited exchequer, the conditions can never be as they are in private practice, for we must of necessity be under a contract to attend when required, and

at a fixed fee; without such a contract no service would work, and it is not for a moment likely that people would pay in advance for attendance that was not assured. And the money being paid by a third party, and the patient's economic instinct being in abeyance, what more check would there be on the patient's want of consideration than under a capitation system of payment? Where will be our vaunted independence? In private practice we are, as a matter of fact—whether we like it or not—practically at the beck and call of every patient that is worth having. However, it appears that our dignity, which is said to be destroyed by contract practice, is satisfied if we know that we shall obtain a fee for each visit, whatever its intrinsic value. Dignity, however, depends not on the method by which our reward is apportioned, but by the manner in which it is offered, requested, or accepted; and independence—which after all in any work that is done for gain must always be relative—is regulated not by the mere existence of a contract, but by its terms. We are told that a man paid by fee will have no temptation to transfer his patients to hospital without sufficient cause, but, if he is subject to such influence, he would be tempted not to transfer them when there *was* sufficient cause, and, as far as the patient is concerned, the last would be worse than the first, for he had better be sent too soon than too late. We are told, further, that if a doctor obtains a fee for each attendance he will be encouraged to devote time to his patient; but surely if a man is actually so influenced he will, knowing that he is to be paid the same fee for each visit, devote his energy to paying more visits, and not to making his visits so long, his examinations so exhaustive as to require less often attendance—he will quite realize that care and skill bring their own penalty.

Is there really any particular satisfaction in fees when we have no means of estimating the actual value of work done for them, and have fees actually any real relation to each several attendance? We charge a certain fee for a visit or a consultation, but in either the mental effort made, the skill used, or the actual result achieved may vary from the valueless to the invaluable; or inversely for the same effort, or skill, or benefit, the patient may pay any fee from a sixpence to a guinea or more. Such an arrangement is not altogether logical, yet it appears that our dignity is satisfied. The fact is that, in dealing with wages, the selfish instinct cannot be excluded, and the closer the wage and the work come together the more this instinct is apparent. For this reason the system of payment by capitation fee is really less open to criticism, and is actually more dignified. In regard to the suggestion that the profession of medicine should be made a whole-time service, how, in the case of general medical practice, can a salary be apportioned to the amount and quality of work done in any better way than by capitation payment? This system of payment has the advantages of a salary, and not the disadvantages that attach to a system of selected medical officers, which in contract practice has been in the past so unanimously condemned. We shall be the insurers, and it will be worth our while to see that those we insure are so looked after that they do not get ill, or if they do get ill that they recover as quickly as possible. We shall have no reason to object to the competition of those who keep the people well or get them quickly well—district nurses, school clinics, hospitals, we shall properly look on as assistants. There will be no regulations, no sense of economy, to prevent patients sending for us in good time, and thus frequently enabling us to cut short illness that might otherwise be long and tedious; no doubt they will sometimes send for us unnecessarily, and we are apt to grumble at their apparently trivial calls, but who is to judge of the necessity? how often do we blame patients for not calling us in earlier? We should remember that this early call is more generally for our own benefit, especially is it so when we are paid by capitation. There is said to be a danger of slackness and neglect under such a system, but this will be as effectually prevented as it is in private practice if we have free choice of doctor, and on the other hand our proposed medical committees will make it much easier for us to proclaim malingering.

The prejudice against this method of remuneration is its old associations with friendly society control, absence of an income limit, selected medical officers and insufficient reward, and of late, since these objections have been prospectively removed, we have another raised—that is the so-called insurance risk. This, however, may be removed to a large extent if we make careful calculations from facts that we can now obtain, and every year's experience will enable us to reduce the risk still more. However, apart from this, surely in all forms of insurance the party who makes the profit takes the risk, and in every contract one party intends to get a benefit while the other intends to make a profit.

Dr. Cooper says that payment per capita is in inverse ratio to work done; his argument would apply equally well to a salary, or even to a fee—given payment by salary, the less work you have to do the greater in proportion is your pay; or given a fixed fee per attendance, the less you do at any given visit again the greater in proportion is your pay. If you receive a fixed sum for attending a man in all his illnesses, the more careful your attendance, the more your skill, the better his health, the less you have to do for the same fee—that is to say, the work done is in inverse ratio to the capitation payment.

DISCUSSION.

Dr. J. E. O'SULLIVAN (Liverpool) condemned cheap contract practice as degrading, and declared himself an opponent of a capitation system. Under a method of payment for work done the medical man would be free to terminate the contract at any time, and the fact that the medical attendant had this independent position made considerably for the better relations of doctor and patient. Payment for work done would prevent malingering. Many contributors under the insurance scheme, not having a clear appreciation of the principles of insurance, would call in the doctor with the idea of getting something for their money; they should, therefore, be required to pay a proportion from their own pockets to check this tendency.

Dr. LL. MORGAN (Liverpool) sketched a proposal for a public medical service which should provide for (1) all contributions to be collected by the approved societies and paid, not directly to medical men, but to the local Medical Committee, which should act as a clearing house; (2) free choice of doctor by patient; and (3) a proportion of the amount collected to be allocated for drugs and dressings either to the medical man or the chemist, as the former elected. All contributors should be divided into classes, thus:

CLASS A.—Single, earning under 18s.; married, earning under 21s. *Contribution:* 6s. per annum from Government; no further contribution. Total, 6s. a year.

CLASS B.—Single, earning over 18s. and under 21s.; married, earning 21s. to 25s. *Contribution:* 6s. per annum from Government and ½d. per week. Total, 8s. a year.

CLASS C.—Single, earning 21s. to 25s.; married, earning 25s. to 30s. *Contribution:* 6s. per annum from Government and 1d. per week. Total, 10s. a year.

CLASS D.—Single, earning over 25s. and under 30s; married, earning over 30s. and under 40s. *Contribution:* 6s. per annum from Government and 1½d. per week. Total, 12s. a year.

All other single contributors 40s. to 60s. a week—should pay in addition to the 6s. from the Government, 2d. a week; total, 14s. a year.

Night visits and special operations, etc., per scale to be agreed.

Continuing, Dr. Morgan said his experience of this class of work in the case of picked lives was that visits worked out at from four to six a year, and for that number of visits the 8s. 6d. asked by the Association was not a high figure. The ideal system was undoubtedly payment for work done, but would any Government face the proper scale? The profession had been doing contract work, not because it paid, but because it was a lure for other patients. The object of affording medical attendance to the wives and families of the insured would not be secured after 1915, when it was the intention of the Government to include these in the scheme. This consideration made it all the more important to get the right basis of remuneration now.

Dr. H. D. LEDWARD (Letchworth) was afraid that the minimum demands of the British Medical Association—8s. 6d. and extras, without medicine—were outside practical politics at present. As the Government said

such a rate of remuneration was impossible, it was not likely that the friendly societies would willingly accept these terms, or that the public generally would agree to a Public Medical Service under professional control in which the contributions were based on the minimum demands. Dr. Ledward made some suggestions (based on the Epsom scheme of Dr. Daniel, but with certain modifications) for securing the limitation of the patient's calls upon the doctor to what was really necessary. The British Medical Association should invite societies wishing to provide medical benefit for their members to form a fund for the payment of accounts for medical attendance upon insured persons out of (*a*) sums paid by the Commissioners to the Committee; (*b*) sums collected by the societies from their members for the purpose of augmenting the above. (He suggested 4s. per member per year for counties in the main rural.) Each member should be supplied with a card stating that he (or she) might consult, when necessary, any registered medical practitioner, and that the Insurance Committee would be responsible for payment up to a fixed scale of fees. The accounts received from the local secretaries each month for medical attendance upon their members should be paid out of the fund formed as above on behalf of each society. At the end of each year two-thirds of any surplus standing in the name of each society should be returned to such society, one-third being retained to be credited to the medical fund of such society for the ensuing year. The practicability of any scheme being adopted on a voluntary basis depended on the profession being able to show to the societies that it would prove more economical than unlimited attendance upon such a capitation fee as the profession would now accept. The figures of the National Deposit Friendly Society were very striking in this connexion. This society actually paid less than the Oddfellows for medical attendance upon its members. He had been surprised to find that there was any relation between a 4s. capitation fee and 2s. 6d. a visit; yet if the member himself had a direct interest in the fund, there was a very close connexion. In 1911 the National Deposit Friendly Society paid £39,000 for medical attendance upon its members, and this worked out at 3s. 4½d. per head. In 1910 the average was 3s. 2½d. The scale of remuneration paid by this society was too low, and the check on attendance was very stringent. In the case of men a quarter of each medical account was paid out of the member's private deposit with the society, and one-third in the case of women. In addition to this there was a limitation of liability depending on the amount of each member's deposit: this could not be accepted in any national scheme. In the scheme suggested by Dr. Ledward the check was not so stringent, and hence it would provide a more adequate service; at the same time it was sufficiently strong to prevent abuse of the fund. In discussing any system of payment per attendance the objection was always raised that there must be some check against abuse on the part of the doctor. It was obvious that if the State agreed to pay for unlimited attendance on a payment per attendance basis, it would be necessary for medical men's accounts to be checked by a Government inspector. This the profession would greatly resent, and it would be most unsatisfactory in practice. In the Association's Scheme B for a Public Medical Service a committee of medical men overlooked other doctors' accounts. That, again, he thought, would be most objectionable and the cause of serious local friction. In the scheme he suggested the conditions of private practice obtained; it was brought home to the individual through his society that he was spending some of his own money when he sought medical attendance, so that the doctor who visited too often would be as unpopular as in ordinary private practice. Objections of a legal nature had been raised to this scheme; it was said that a County Insurance Committee could not legally deal with a fund derived partly from the Commissioners and partly from voluntary sources. He had taken a legal opinion on this point and was informed that so long as the two funds were kept separate they could be dealt with as he suggested.

Dr. Bushby (Liverpool) thought Dr. Morgan's scheme should provide a classification by trades as well as by rate of earnings.

Dr. W. Draper (Gerrard's Cross) spoke of the competition of hospitals and infirmaries in keeping down the rate of remuneration that the general practitioner could obtain.

Dr. L. J. Picton (Crewe) urged that in calculations in this connexion the family should be taken as the unit.

Dr. Fisher expressed his detestation of contract practice, and said he hoped that the outcome of the present struggle would be that a clean sweep would be made of this objectionable system.

Dr. A. G. Gullan (Liverpool) said that if the profession were loyal it would obtain its terms; it only wanted what was fair and right. If the total payment was adequate it did not matter much whether the basis was per head or per attendance, although no doubt payment per attendance would be more satisfactory.

Dr. Bond (Bournemouth) thought capitation was the more feasible plan if the rate were adequate.

The readers of the papers having replied, a hearty vote of thanks was accorded to the President of the Section (Dr. J. C. McVail), on the proposition of Dr. Gullan, seconded by Dr. J. H. Taylor.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

QUININE INJECTIONS FOR PROLAPSUS UTERI.

Referring to a paper by Dr. J. Inglis Parsons, in the *Journal of Obstetrics and Gynaecology of the British Empire*, February, 1910, and a recent review of the same in the British Medical Journal, I should like to record my experience of the operation of injection of quinine sulphate solution into the broad ligaments for prolapse of the uterus.

I have looked through our operation records at Neyoor Hospital for the last few years, and find that we have notes of operative procedure in 16 cases. It is impossible to give satisfactory information as to the results, for in a country district of India the majority of cases cannot be traced as a rule.

Of the 16 cases, 2 were treated by ventrifixation. Both were seen at a later date, and both showed a return of the prolapse to some extent—one only a slight return.

Of the 14 cases treated by quinine injections only 6 have been seen after the operation. One showed a relapse of the condition. The other 5 were successful. Of these the first was seen only a few months after operation, the second fifteen months after operation. The third—a European planter's wife—had a child (about a year subsequent to the operation) after five years of sterility, and had no return of the prolapse after the birth of the child. The fourth (a Eurasian woman) was seen about two years after the operation, without any recurrence having taken place. The fifth was a case of complete procidentia in a native woman. She has had twins and another child since the operation, and is still doing hard constant work as our hospital dhobie (washer-woman). The operation was done five years ago, and there is no sign of prolapse, even after these two labours.

This case certainly speaks well for the Inglis Parsons method.

In conclusion I would like to add that some of our patients have had slight fever for a few days after the injection, accompanied by more or less pain or discomfort, but in no case has there been anything like abscess formation or after-trouble of any kind.

In one case, on the day following the operation, the urine was coloured red by the presence of blood. This, however, disappeared from the urine before night. Probably the ureter had been accidentally punctured, but no ill effects resulted therefrom.

Jas. Davidson, M.D.Edin.

Neyoor, Travancore, S. India.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

DORSET AND WEST HANTS BRANCH.

Chronic Disorders of Digestion.

At the summer meeting of the Branch, held at the County Asylum, Dorchester, on July 3rd, Dr. Gowring, Vice-President, opened a discussion on chronic disorders of digestion. He said the cases of so-called chronic indigestion that did not yield to proper diet and medicinal treatment were probably due to some occult cause that kept the trouble going, or were not due to dyspepsia at all in the ordinary sense of the word. Our ideas and conceptions of chronic digestive disorders needed rearranging. This was proved clinically in the dyspepsia of appendicitis, and by new clinical methods of diagnosis such as the *x*-ray examination after a bismuth meal. Cases were quoted showing some of the causes of chronic digestive disorders. (*a*) Outside the abdomen: empyema of antrum, dyspepsia of phthisis. (*b*) Inside the abdomen: appendix, gall stones, intestinal stasis. A case of this last was shown with some of the typical symptoms, including nodular changes in the breasts. The probable explanation of the production of these symptoms was entered into.

Mr. Unwin mentioned movable kidney as a common cause of chronic indigestion, which was at once relieved by supporting the kidney with a belt.

Dr. Hyla Greves spoke of the advantage of being able to investigate the motor functions of the stomach by the bismuth meal. He quoted two cases in which the *x*-ray examination had been very helpful. The first was a case of dilated stomach from chronic cicatricial contraction of a gastric ulcer. In that case the stomach was not empty in nine hours, the diagnosis was confirmed by operation, and a gastro-enterostomy performed. The patient was now doing very well. The other case was then a middle-aged man with two years' history of dyspepsia and rapid loss of flesh. The *x*-ray examination showed hypermotility of the stomach and bowels; a test meal showed absence of free hydrochloric acid. A diagnosis of carcinoma was made, and confirmed by operation. He had seen two cases of short-circuiting and removal of the colon, but had not been impressed by the results.

Mr. Burrough Cosens had seen a series of skiagrams showing that solid food remained for fifteen or twenty minutes before arriving in the stomach, liquid food passing straight in. He had never seen any unfavourable results follow the *x*-ray examination.

Dr. Saberton had seen cases of intestinal stasis where food remained for twenty-four hours in the ileo-caecal region. He thought these cases would be relieved by short-circuiting.

Mr. Marsh emphasized the importance of the state of the teeth. Many patients got quite well after having their mouths properly attended to.

Dr. Fowler said there was no ill effect from 4 or 6 oz. of bismuth oxychloride; the subnitrate must not be used. While there was no danger to the patient it was necessary for the operator to take every precaution. He strongly advised practitioners not to make the *x*-ray examination without the protection of a tube-box and opaque gloves.

The discussion was continued by several members, and Dr. Gowring, in reply, insisted that cases of intestinal stasis were more common than was usually thought, and the cure was short-circuiting.

Graves's Disease.

Dr. Perdrau read notes of an interesting case of Graves's disease. The patient, a woman aged 29, had had symptoms of the disease for twelve months. Acute signs became manifest when suffering from erysipelas, the neck measurement going up from 11 to 15 in. in a week, and showing daily variations of as much as 2 in. Amelioration set in when the skin affection disappeared, but a few weeks afterwards she became worse again, developed acute epigastric pain, and died within nine days with signs of asphyxia. The skin lesion was treated with tr. iodi.

Dr. Curtis suggested that the exacerbation of the disease was due to absorption of the iodine.

Dr. Hyla Greves did not agree that iodine produced harmful effects; he had seen cases do very well with it. The condition of the gland sometimes varied in an extraordinary manner. Application of *x* rays over a considerable period was generally followed by improvement. He thought it should be tried in most cases of exophthalmic goitre.

Dr. Humphry Davy said he had an experience some thirty years ago, when he tried giving potassium iodide in an acute case. The symptoms were certainly aggravated.

Dr. St. John Harris recalled a case of Graves's disease treated by *x* rays. In a month the patient could walk a mile, and had been quite well ever since.

Dr. Fowler said that about 50 per cent. of cases treated by *x* rays did extremely well. The relief of the distressing nervous symptoms made new women of the patients. On the other hand, some patients found no benefit at all.

Dr. Perdrau replied.

OXFORD, READING, AND MAIDENHEAD BRANCH.

Increase of Appendix Disease.

At the annual meeting, held at the County Hospital, Reading, on July 13th, Sir William Osler, in opening a discussion on the causation of the increase of appendix disease, gave figures showing an increase of the disease in all civilized countries. In this country the mortality had risen from 38 per mille in 1901 to 64 per mille in 1909. In the United States there was a similar increase, but not affecting negroes. In discussing whether the increase was real or apparent, Sir William Osler drew attention to the better diagnosis and the rarity of an anatomically normal appendix. In the sixth decade it was very rare to find a normal appendix. It seemed, therefore, that the disease might occur without a clinical history; but, taking everything into consideration, one must admit that clinically there was an increase in the disease. He confessed to ignorance of the causes of this increase. Appendicitis appeared to be more prevalent in meat-eating countries, but this did not apply to Japan. Canned meat had been suspected, and intestinal parasites, and notably the *Trichocephalus dispar*, were often associated with the disease. The immediate cause was known to be microbic. Two possible influences were at work—namely, dietetic and a diminished power of resistance of the appendix to microbic infection. Through epidemic influences the pyogenic germ might have an increased virulence. It was no special credit to them that the mortality was increasing. Early recognition and operation gave the patient the best chances of recovery; but not every case of "belly-ache" should be submitted to the surgeon.

Mr. Walters argued that the surgeon could exercise a wise discrimination, and that there was more danger in the "belly-ache" than the surgeon. As to causes, he alluded to the rarity of foreign bodies, and suggested that the hard white flour in use might lead to concretions. He had noted the frequent incidence of the attack after hard exercise.

Dr. Collier drew attention to the line of treatment advocated by the older writers—that was to say, watch the case, avoid aperients, and give opium—and quoted Watson, Bristowe, Quain, and Fagge to show that the disease was rarely fatal in those days. He thought there was no doubt about the increased virulence of the disease in modern days, just as in scarlet fever there was a diminished virulence.

Dr. Patterson confessed to twelve attacks in his own person, and was still the proud possessor of his appendix. He thought the bottle-feeding of infants and dental caries had some connexion with the increased incidence of appendicitis.

Dr. Armstrong raised the question of locality, and quoted the figures from various public schools, which showed a marked tendency to the disease in certain schools, as compared with others. The school with the heaviest incidence used frozen meat, which he thought increased the number of *Bacilli coli*.

Dr. Holden held to the evolutionary theory. The appendix was a contracting tube and would tend to still further contract, and therefore be liable to inflammation from concretions.

Mr. Whitelocke gave instances showing the extreme virulence of the disease in children. The appendix in some cases became gangrenous within a few hours of the first symptoms, and nothing but immediate operation could save the patient. He noted that most of the acute cases began with gastric symptoms, which took often twenty-four hours to become localized. In females the pain was often first noticed on the left side.

Dr. Norman Joyce inclined to the opinion that the true cause was the involution of the appendix.

Dr. Secretan remarked on the mechanical aspects of the disease, the infection being often secondary to strangulation or kinking of the appendix.

Dr. Price also dealt with this view; and Dr. Guilford thought one should take a wider view of a disease which was of microbial origin, and swept through Europe in the same way as influenza.

Sir William Osler, in replying, said he did not think the discussion, interesting as it was, had brought them much further on the road. With regard to dental caries, there was much less in America than in this country, but appendicitis was just as common. He thought the influences outside the appendix were important to bear in mind, but they knew nothing to explain the increased frequency of iliac kinking, if that was a real factor. Early recognition was the main problem at the present time.

Subjective Method of Estimating Blood Pressure.

Dr. Armstrong read a paper on the subjective method of estimating blood pressure. He explained the digital, auditory, and visual methods, and ended with a practical demonstration of his own method.

Loss of Memory.

Dr. Turrell read notes of a case of loss of memory occurring in an undergraduate in Oxford. On two occasions the patient had walked some miles into the country, and on coming to himself had no recollection of how he had got there. He was reading history for the final schools, and Dr. Head, to whom Dr. Turrell had sent the patient for his opinion, found that the patient had forgotten the most elementary historical facts. He regarded it as a case of dissociated consciousness, due to worry, a condition which, if lasting many days, might become one of dissociated personality.

Reviews.

AN INDEX OF DIFFERENTIAL DIAGNOSIS.

With every succeeding decade the range of medical knowledge gets wider and wider and no single brain can now pretend to cover the whole field. But the average practitioner is still assumed to be omniscient and to be ready to deal with any and every form of bodily disorder as it arises. He can only do so by appealing to the collective wisdom and experience of specialists as recorded in his works of reference. Systems and cyclopaedias, dictionaries and indices of medicine have hitherto supplied his needs, but they have all of them dealt with disease in general, whereas in the majority of cases it is with regard to diagnosis that initial difficulties are apt to arise. Hence the comprehensive *Index of Differential Diagnosis of Main Symptoms*,[1] recently put forward under the able editorship of Dr. Herbert French, should prove even more acceptable as a ready work of reference than any of its forerunners. Correct interpretation and differentiation of symptoms must precede successful treatment. Many an autopsy has revealed the true cause of some obscure symptom which had never been thought of during life. With the aid of the *Index* the cause of every symptom can be tracked to its possible source, and, although even then its interpretation may be uncertain, it will, at any rate, have been considered.

The list of those who have contributed to the volume will be found to represent many departments of professional experience, and, while some are old and well-tried teachers in their special subjects, the presence of several younger men may be noted, whose names have already become honourably associated with the scientific study of various branches of modern medicine, surgery, and pathology. The number of contributors to so large a work is, however, somewhat small. In future editions it may be thought well to distribute the work over a larger field of writers, but of Dr. French's work both as editor and contributor we cannot speak too highly. His contributions are written in the convincing style which has always characterized the teaching of the great school to which he belongs, while the whole scheme of the work is as practical in use as it is novel in conception.

The arrangement is alphabetical as far as the nomenclature of symptoms is concerned, but a striking feature of the plan, which renders reference easy, is the very copious index of diseases printed in heavy type, and followed by lists of the symptoms which may be associated with each. How complete these lists have been made may be judged from the fact that under the heading of carcinoma, to take a simple instance, there are more than 100 references to the various manifestations of its presence to be found in the text. This remarkable index covers 165 pages, with three columns to a page, and our examination has not revealed any omission of importance.

The numerous illustrations in the book, for the most part reproductions of photographs of individual patients, are of a uniformly high merit, and aid materially in conveying a clear conception of obvious symptoms, especially in nerve lesions. A few excellent coloured illustrations are added, some of them representing more or less familiar conditions, while others showing the morbid appearances seen through the cystoscope and ophthalmoscope, will be found particularly useful by those who are not familiar with the appearance of morbid conditions within the human bladder or the fundus oculi. Actual inspection of cavities by instrumental means has become more frequent of late years, and in future editions of the *Index* we may hope to see reproductions of the views obtained by the bronchoscope, the gastroscope and the sigmoidoscope. The possible extension of diagnostic power by means of electricity, kinematography, and colour photography may enable the teachers of the future to demonstrate some of the evidences of disease which are as yet out of reach, but the work before us may be said to represent the last word as to limits of diagnostic power at the present time.

[1] *An Index of Differential Diagnosis of Main Symptoms.* By Various Writers. Edited by Herbert French, M.A., M.D.Oxon, F.R.C.P.Lond., Assistant Physician to Guy's Hospital. Bristol: John Wright and Sons, Limited; London: Simpkin, Marshall. 1912. (Demy 8vo, pp. 1030; figs. 213; plates 16. 30s. net.)

SEA SICKNESS.

Sea Sickness and Health, by Dr. Joseph Byrne,[2] is a small volume of some 100 pages addressed to those who, like the author, are prone to suffer from this distressing malady when travelling on the high seas. The author's view is that the cause of sea sickness is to be found in disturbances of the mechanism of the semicircular canals, and the results of various experiments are adduced in support of this opinion. That disturbance of the nervous mechanism in the semicircular canals is the chief factor in the production of sea sickness, may be admitted, but the theory does not explain all cases, for instance, those in which swinging and swaying movements on land produce no ill effect, whereas a very small amount of similar movements on board ship at once produces symptoms of the malady.

The directions Dr. Byrne gives for preventing, or reducing to a minimum, the attack are eminently practical, and if all those liable to suffer from the disease would carry them out faithfully a sea voyage would be robbed of most of its inconveniences. We must, however, take exception to the author's recommendations in one important particular. He advises the use of a patent remedy, but does not give us any idea of its composition. He states that it contains no injurious or depressing drugs, and yet tells us that the symptoms of an overdose are restlessness and fidgetiness, and, in the case of children, a pronounced scarlet flush. With this exception we can recommend the book as one containing many useful practical hints for those who travel on board ship.

[2] *Sea Sickness and Health: A Manual for Travellers.* By Joseph Byrne, A.M., M.D., LL.B. London: H. K. Lewis. 1912. (Cr. 8vo, pp. 128. Price 4s. net.)

NOTES ON BOOKS.

To instal science in the kitchen is the object of *Experimental Domestic Science*,[1] by Mr. R. HENRY JONES, of the Harris Institute, Preston. The cook is told how to test milk and estimate the amount of solids liquids contain; the advantages of roasting and baking, boiling, and steaming food are demonstrated: bread-baking is rescued from the rule of thumb, and its phenomena explained; a chapter on elementary chemistry and physics leads to the consideration of water, the use of soap, ventilation, and the hydrostatics of the kitchen boiler and hot water apparatus. An entertaining chapter on common domestic fallacies concludes the book. On too high an intellectual plane for the average cook, the book is one which mistresses might study with advantage. It inculcates the principles of economical and effective cookery, and abounds with useful practical hints. Its study would give an added interest to culinary operations, whilst for young brides, about to embark on housekeeping, it would be an admirable guide.

The Care of Infants and Young Children in Health,[2] by Dr. M. M. BURGESS, is a convenient little book dealing with the ordinary details of nursery hygiene and infant feeding. The language is simple and the subject is treated in an easy and uncomplicated manner which makes it suitable for the use of pupils in evening schools and schools for mothers. The chapter on substitute feeding and the suggested diets for children in the second year should prove valuable to the inexperienced parent. A useful table is given of the hours of sleep required by children at different ages, as well as a section discussing dentition, and showing several easy diagrams by which the number and order of erupting teeth may be remembered.

In his book *The School Nurse*[3] Mr. C. L. LEIPOLDT has provided at a small price and within small compass the information needed by the nurse who has taken up the work of assisting in the medical inspection of school children. She will find in it a description of her duties, and clear directions as to how best to carry them out, as well as of her responsibilities, with wise advice as to how a tactful bearing will minimize the friction bound to arise under circumstances still novel to parents, to children, and to the teaching staff of schools. The book includes sufficient explanation of medical matters to ensure that the nurse may take an intelligent interest in the routine of inspection. The book is by a practised writer, well and clearly expressed, and so interesting as to make an appeal not only to nurses but to all who have the welfare of school children at heart.

The book entitled the therapeutics of Vienna specialists[4] is in general form an encyclopaedia of medicine and surgery, but nearly all the articles are exceedingly brief. Its editor or designer, Dr. OTFRIED O. FELLNER, has had the assistance of over a hundred medical men practising in Vienna, and each of them has written on a subject in which he takes special interest. One idea of the book would appear to be to represent the views of the Vienna school; but from what is stated in the preface to the second edition its success in this direction has been denied. Comparatively small as it is, the book covers a great deal of ground and as a work of reference might prove useful in view of the amount of space devoted to methods of treatment commonly classed under the heading of physicotherapy.

The title of MULZER'S *Therapy of Syphilis*[5] may mislead, for the book only deals with treatment by the organic preparations of arsenic, with special reference to salvarsan. The author gives an impartial summary of the subject, but as the English translation is apparently the work of a layman the merits of the original are frequently obscured by faulty rendering of words. Moreover, the appearance of the translation is somewhat belated, as the German edition bears the date of December, 910, and since then much has been written on the subject of salvarsan. There would appear to be little reason for the publication of an English translation of this book, especially as the translation of Wechselmann's book on the same subject bears the name of the same publisher.

[1] *Experimental Domestic Science.* By R. Henry Jones, M.Sc., F.C.S. London: William Heinemann. 1912. (Cr. 8vo, pp. 245. 75 illustrations. 2s. 6d.

[2] Third edition. London: H. K. Lewis. 1912. (Post 8vo, pp. 90. 1s. net.)

[3] *The School Nurse.* By C. Louis Leipoldt, F.R.C.S.Eng. London: The Scientific Press, Ltd. 1912. (Cr. 8vo, pp. 205; figs. 5. 2s. 6d. net.)

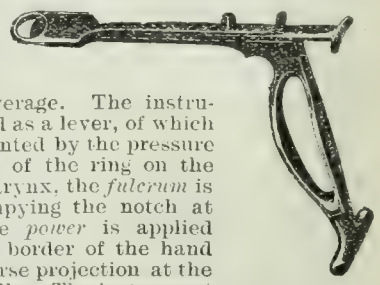
[4] *Die Therapie der Wiener Spezialärzte.* Von Dr. Otfried O. Fellner. Zweite Auflage. Berlin and Vienna: Urban and Schwarzenberg. 1911. (Post 8vo, pp. 678. M. 12.)

[5] *The Therapy of Syphilis: Its Development and Present Position.* By Dr. Paul Mulzer. With a preface by Professor P. Uhlenhuth. English translation by A. Newbold. London: Rebman, Ltd. 1912. (Post 8vo, pp. 260. 6s. net.)

MEDICAL AND SURGICAL APPLIANCES.

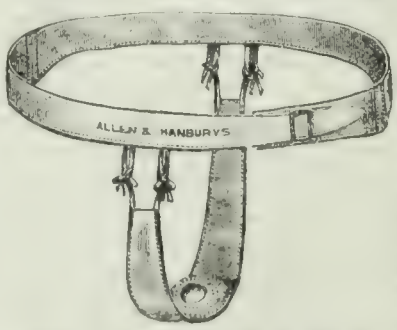
Guillotine for Tonsil Enucleation.

MR. THOMAS GUTHRIE (Liverpool) writes: The guillotine here illustrated has been designed by me to facilitate the removal of the whole tonsil with its capsule by the method first described by Dr. Greenfield Sluder of St. Louis (*Journ. Amer. Med. Assoc.*, July 2nd, 1910, page 60, and March 25th, 1911). It differs from the ordinary so-called "Mackenzie" pattern chiefly in the following respects: (1) The shaft is short and very strong, so as to resist without bending the considerable pressure required. (2) The knife is reversed on its long axis so that the flat surface of the blade faces uppermost (away from the handle) and the bevelled surface downwards (towards the handle). Since the uppermost surface of the ring is applied over the tonsil it is clear that this reversal of the blade will enable it to enter more deeply between the tonsillar capsule and the surrounding areolar tissue, the bevelled surface of the blade tending to dislocate the tonsil from its bed. (3) The handle is designed to permit of the maximum leverage. The instrument may be regarded as a lever, of which the *weight* is represented by the pressure of the upper surface of the ring on the lateral wall of the pharynx, the *fulcrum* is the index finger occupying the notch at the angle, while the *power* is applied mainly by the ulnar border of the hand resting on the transverse projection at the lower end of the handle. The instrument is held in the right hand in removing the right tonsil, and vice versa. (4) The arrangement by which the parts can be detached for cleaning purposes I have borrowed from the guillotine designed by Mr. Hugh E. Jones, a slight modification only having been rendered necessary by the reversal of the blade. The guillotine is made in three sizes, the smallest with circular and the others with oval aperture. The smallest size through which the tonsil can be made to pass should be used. The best results are obtained with the knife edge dull. The instrument has been made for me by Messrs. Mayer and Meltzer, 71, Great Portland Street, London, W.



Pessary for Procidentia Uteri.

DR. LOUISE MCILROY (Glasgow) writes: Occasions sometimes arise, more especially in hospital practice, where elderly patients come for treatment for complete prolapse of the uterus, and are unwilling to undergo an operation. In these cases the pessary made for me by Messrs. Allen and Hanbury has been proved of value. It consists of a double fold of linen about 2½ in. in breadth at its widest portion. In this is inserted a vulcanite ring pessary — varying in size suitable to the patient — which is kept in position by stitching, there being a central opening for the escape of discharge. The ring portion is applied to and fits just inside the vulvar orifice, thus preventing protrusion of the vaginal walls, with consequent drying and infection of the mucous membrane. The whole is kept in position by means of an abdominal band. The linen can be cleansed easily and the pessary removed if boiling is necessary. The whole appliance is simple, and can be adjusted by the patient herself. It has been found of special benefit in cases of ulceration of the prolapsed vaginal walls, where healing is essential before operation is attempted.



EIGHTIETH ANNUAL MEETING
OF THE

British Medical Association.

Held at Liverpool on July 19th, 20th, 22nd, 23rd, 24th 25th, and 26th.

THE SECTIONS.

BRIEF SUMMARY OF PROCEEDINGS.

Section of Anaesthetics.

Thursday, July 25th.

Mr. Leedham-Green opened a discussion on the comparison of methods employed for inducing anaesthesia and analgesia respectively, with special reference to after-effects. He said it was difficult to get reliable statistics as to mortality owing to the multiplicity of drugs, combinations, and methods employed. On the Continent the mortality was given for ether as 1 in 5,000, for chloroform 1 in 2,000. For spinal analgesia Strauss had estimated the mortality as 1 in 2,000; enthusiasm for this method was declining. Chloroform was more toxic than ether, and particularly affected the myocardium, stomach, liver, and, in less degree, the kidneys. The injurious effects of ether were more pronounced on the lungs. Local infiltration analgesia was entirely devoid of danger, and he urged its more general adoption in the debilitated. Dr. Ehrenfried (Boston, U.S.A.) read a paper on the intratracheal insufflation of ether, and demonstrated an apparatus he had employed which combined the advantages of Elsberg's with the greatest simplicity, portability, and cheapness. In using it the movements of respiration were entirely superseded by the mechanism of the apparatus, which was worked by a foot bellows. Mr. R. E. Kelly demonstrated a modified Elsberg apparatus in which the chief difference was that the air was warmed after taking up ether vapour instead of before. It was worked by electricity. He had used it in 35 cases, and allowed a slight respiratory rhythm to be maintained. In addition to its value in intrathoracic cases it was a useful method in operations on the upper air passages and in cases of intestinal obstruction, as aspiration into the trachea was rendered impossible. Dr. Armstrong of Montreal said he had introduced the intratracheal method in his hospital and had experience of 70 cases; he was extremely satisfied with it, and considered there was less after-vomiting; there had been no cases of injury to the trachea due to the presence of the catheter in his practice. Dr. Thompson Rowling read a paper on the administration of vapours of ether and chloroform with oxygen, and demonstrated his apparatus whereby definite percentages of these vapours, alone or in any required combination, might be given. He thought that the alternation of chloroform and ether during anaesthesia tended to obviate post-anaesthetic poisoning. Mr. H. M. Page advocated the use of Crile's nasal tubes, not only for ether but for chloroform. He connected them with the Vernon-Harcourt inhaler for this purpose, and had an attachment for the administration of oxygen at the same time. The President complimented Mr. Leedham-Green on the manner in which he had dealt with a knotty subject. He had dealt out even justice as between analgesia and anaesthesia; it must, however, be remembered that mortality-rates for anaesthesia were derived from the practice of all classes—especially on the Continent, where the administrators were non-expert—whereas spinal analgesia was almost entirely in the hands of distinguished experts. The dosimetric administration of chloroform was unfortunately not always practised; with Dubois's and Vernon-Harcourt's apparatus the death-rate was *nil*. Anaesthetists, before attempting to adopt the intratracheal method, should familiarize themselves with the apparatus and acquire facility in passing the intratracheal catheter. Rectal administration of ether had been mentioned as though it were a new thing, but he introduced it twenty years ago with success. Mr. Leedham-Green, in reply, said he was sceptical of the advantages of intravenous ether. He considered the intratracheal method liable to traumatic ill-effects, and objected to the noise made by the motor in Elsberg's apparatus, which, however, he considered would be of great use in the severer intrathoracic operations.

Friday, July 26th.

Mr. F. W. Bailey opened a discussion on employment of alkaloidal bodies prior to inhalation, infusion, or subdural injection, with a view to abrogating deleterious after-effects. He said that they were all straining to reach perfection in the production of anaesthesia. Having dealt with the physiological effects of the alkaloids usually employed, he expressed a preference for the use of atropine and morphine only, and in small doses; the advantages were in the direction of quiet anaesthesia with less anaesthetic, diminished apprehension on the part of the patient, diminished salivation and consequent lessened tendency to later pulmonary complications; post-anaesthetic pain, excitement, and vomiting were also diminished. He mentioned the contraindications. Mr. Hett dealt with the subject from the point of view of the nose and throat specialist, and, in addition to the narcotic alkaloids, referred to the use of cocaine in combination with anaesthetics. Dr. Barton advocated the use of alkaloids as a routine, with certain exceptions, which he mentioned; the question of dosage was a difficult subject. Mr. Fielden thought cocaine was useful in eye operations and submucous resections. The effects of morphine were variable; some patients were particularly liable to vomiting after its exhibition. Respiratory depression caused by it was sometimes inconvenient where chloroform was the anaesthetic. Dr. McCardie only gave small doses of scopolamine and morphine, and added strychnine in some cases to improve respiration. He thought increased oozing of blood was caused by alkaloids. Mr. Carter Braine drew attention to the difficulty there was in estimating the precise degree of anaesthesia present in patients who had been previously injected; he favoured small doses. Dr. Beresford Kingsford objected to the use of cocaine when chloroform was to be the anaesthetic; he did not always find that scopo-morphine diminished the amount of ether required, and had experienced difficulty in obtaining abdominal relaxation. Dr. Fingland deprecated any preliminary injections. The President considered the method of great value on account of the diminished amount of anaesthetic required, and consequent diminished after-effects; he insisted on the importance of quietude between the injection and the anaesthetic: the combined alkaloids worked together in some respects and mutually antagonized their deleterious effects. Mr. Bailey replied. Dr. A. G. Levy read a paper on a cardiac effect of adrenalin in chloroformized subjects. He gave an account of an investigation he had made on cats, and illustrated his remarks with lantern slides of tracings. His researches went to prove that the injection of adrenalin into the blood stream during very light chloroform anaesthesia invariably caused tachycardia and irregular rhythm, speedily followed by ventricular fibrillation and death; these results did not follow under deep chloroform or under ether anaesthesia. The paper was discussed by the President, Dr. McCardie, and Dr. Ehrenfried. Dr. Levy replied. Dr. R. E. Apperly read a paper on the effect of ether and chloroform on the liver and kidneys in health and in certain infective conditions, and illustrated his remarks with microscopical slides. He had experimented on rabbits, and drew the following conclusions—that chloroform caused greater damage than ether; that a short deep anaesthesia was more harmful than a prolonged light one; that previous glucose feeding was a valuable preventive. The following discussed the paper—the President, Dr. Levy, Dr. Ehrenfried, and Dr. McCardie. Dr. Apperly replied. The President then expressed his indebtedness to the officers of the Section, and to those who had contributed to its work, and formally closed the meeting.

Section of Anatomy.

Thursday, July 25th.

The first communication was made by Professor A. M. Paterson, who showed by a specimen that quite three-quarters of an inch of the inferior vena cava had an intrathoracic course. Professor Peter Thompson next gave a demonstration of the development of the diaphragm. He showed the great changes which take place in the form and constitution of the septum transversum or primary diaphragm, especially the changes from

the relatively thick crescentic mass of the septum in the third week to the thinned-out layer characteristic of the structure at the end of the fourth week. He also showed the "pulmonary ridge" (mall) in the model of a four weeks embryo and its topographical relations. A discussion followed. Dr. Manson (Warrington) demonstrated in the living subject a case of transposition of viscera, and gave details of the family history. Professor Geddes demonstrated (1) an abnormal urinary system, one kidney with two ureters; (2) a case of pseudo-hermaphroditism, and (3) an egg inside an egg (duck). In the discussion which followed, Dr. Gowland gave particulars of a case which he called "true" pseudo-hermaphroditism, a male subject with uterus, broad ligaments, and two testicles. The President and Mr. R. G. Brown gave a communication on the vestigial structures in relation with the epididymis. They had found that the structure of the hydatids of Morgagni in adults was identical in both the stalked and sessile varieties. In one adult, however, tubular structure was found. In two fetal hydatids tubular structure occurred in both. Professor Symington followed with a demonstration of some preparations which admirably illustrated the form of the abdominal and pelvic viscera. Dr. J. S. Dickey demonstrated a series of cross sections through the thorax in a female subject, aged 20, who died of pulmonary haemorrhage. The chief points of interest were, the vertically elongated and hypoplastic condition of the heart and blood vessels, the great elevation of the right auricle above the diaphragm, and the correspondingly greater length of the supradiaphragmatic portion of the inferior vena cava. The posterior mediastinum was markedly compressed from side to side by the emphysematous lungs. Professor R. J. Anderson gave two communications: (*a*) On the varieties of stomach in animals as compared with man, and (*b*) notes on asymmetry. In the former he pointed out that the varieties of stomach in animals had an interesting significance when compared with the variations met with in man. A tubular stomach, an oval stomach, a stomach with hour-glass contraction with a pyloric compartment elongated downwards so as to reach into the pelvis, had often been described. The cricetus had an hour-glass stomach, the stomach of the dolphin three compartments, and phocaena two compartments. The large one had a mucous covering, quite like that of the gullet. The stomach in animals seemed to be largely receptacular. Its glandular functions were additional, and seemed not more important. In the paper on asymmetry Professor Anderson said that this condition was met with in animals, and it was now admitted that a moderate amount of asymmetry, in a bilateral sense, was normal. It was interesting to note that the West African monkeys were left-handed, those of the East part of Eurasia right-handed. It should finally be mentioned that a most interesting and highly appreciated collection of anatomical specimens was arranged in the dissecting room by Professor Paterson and his staff.

SECTION OF BACTERIOLOGY.

Thursday, July 25th.

DR. PENFOLD (London), reading a paper compiled by himself and Dr. Hort, dealt with an investigation of the pyogenetic properties of *B. typhosus*. After criticizing the early work carried out on this subject, he analysed the chief sources of error. The injection of pure distilled water caused a fall in temperature; broth produced fever to a slight extent. Next he showed the characteristic temperature curves induced during the first twenty-four hours by varying quantities of *B. typhosus*, diluted with water to $\frac{1}{250}$ of the rabbit's body weight, and also of constant quantities of bacilli and varying quantities of water. The effect of increased quantities of water on the type of temperature curve was shown to be very marked. He found that the substance causing fever was thermostable, but was readily oxidized. The authors proceeded to give experimental evidence in rabbits, tending to disprove the assertion that the fever was an anaphylactic phenomenon. Professor Ritchie (Edinburgh) stated that what had been brought out by the author's contributions was that the fever of infection by *B. typhosus* was probably not toxic but rather reactive. This had not been recognized on the Continent. After referring to the necessity of proper technique in taking rectal temperatures in laboratory animals, he stated his agreement with Dr. Penfold as to there being no evidence of the anaphylactic nature of the fever. Mr. Armit (London), while agreeing that there was no evidence of the anaphylactic nature of the fever, suggested a doubt whether rabbits could be used to disprove the suggestion. His experience showed that anaphylaxis in rabbits was in the vast majority of cases only evidenced by a fall in blood pressure, and not by the violent signs as seen in guinea-pigs. Professor Ritchie differed from this view. Dr. Penfold replied briefly. Dr. Cruickshank (Dumfries) dealt in some detail with his methods of culturing tubercle bacilli directly from sputum and tissues. He used the antiformin method, but called attention to some causes of failure, due to a want of chlorine production. The preparation of reliable egg media was then described. In all he had obtained satisfactory cultures of tubercle bacilli from sixty sputums, as well as from urine and other fluids and tissues. All the cultures were of the human type. Cultures were exhibited. Professor Ritchie (Edinburgh) emphasized the difficulty of distinguishing artificial tuberculosis in laboratory animals, and especially in the rabbit, and pointed out that macroscopically it was at times impossible to differentiate real tuberculosis from the condition called pseudo-tuberculosis. In regard to the growth of tubercle bacilli on glycerine bouillon, his experience showed that in primary and early secondary cultures difficulty arose, but not so in late secondary cultures. Dr. Henry (Sheffield) considered that sporing organisms, yeast, and moulds were not destroyed by antiformin, and Dr. Ledingham (London) remarked that the use of antiformin had not increased the percentage of positive results markedly. Dr. Cruickshank replied. Dr. Henry (Sheffield), in a paper on the haemophylic micro-organisms producing meningitis, spoke of the similarity of the bacterium to Pfeiffer's influenza bacillus. Professor Ritchie (Edinburgh) regarded it as impossible at present to decide whether this organism was identical with the influenza bacillus or not. Dr. Yates (Sheffield) read a paper on the variations in the morphological characters of bacteria and their reactions with sugars under different conditions, written by himself and Dr. Beattie. He had examined the behaviour of 38 strains of streptococci, 15 of which produced septicaemia, 13 rheumatoid arthritis, and 10 no effect. There were 9 distinct varieties revealed by the sugar reaction in the first group, 6 in the second group, and 5 in the third. Dr. Beattie (Sheffield) amplified the paper. Professor G. Dean (Aberdeen) spoke of the error which used to be made of regarding the filaments as involution forms, and Dr. Penfold threw out some doubt whether there was sufficient evidence to assume that the streptococci dealt with in each set of experiments were all derived from a single strain. Some animated discussion followed on this point. Professor Dean (Aberdeen) read an important paper describing the anatomical and histological characters of the changes met with in a case of endocarditis due to actinomyces.

Friday, July 26th.

Professor Emrys-Roberts (Cardiff), in a paper on Brownian movement, analysed the theory that it was due to the movements of the molecules of water, but came to the conclusion that the surface tension theory was more probable. Marked Brownian movement was obtained in anthrax spores, the surface of which had been altered by boiling in antiformin. Captain Whitmore, I.M.S., described an infective disease occurring in Rangoon almost indistinguishable from glanders, but due to a bacillus differing from *B. mallei* in sundry particulars. Dr. Eyre (London) gave an account of the details which should be attended to in attempting to obtain uniformity in vaccines. His contribution was loudly applauded. He pointed out that some micro-organisms exhibited characteristics which could be detected in some strains and not in others, and therefore it was essential to regard the special germ infecting a person in making a vaccine. Hence he favoured autogenous vaccines, and only advised stock vaccines when the patient's own strain could not be obtained rapidly. He further insisted on the necessity of utilizing virulent organisms which were not removed from the stock further than two cultivations. After discussing the best means of obtaining cultures, he laid stress on the advantages of

having a constant composition of medium, and of employing culture at optimum temperatures. Mechanical shaking, and at times subsequent centrifugalization, had overcome some of the difficulties previously met with in regard to the presence of clumps in the emulsions. While he recognized that the most scientific method of standardization was the gravimetric method, he found that the most handy and usual was the direct enumeration of micro-organisms by Wright's method with stained films mixed with normal blood. In regard to sterilization, mechanical disintegration yielded good results, but heat applied at the lowest efficient temperature was his usual practice. He determined that the vaccines were sterile by diluting with 0.25 per cent. of cresol, and testing; but, having reliance on his method, did not regard it necessary to wait in each case for the result before applying the vaccine. Dr. Freeman (London), in a very clear exposition of his subject, traced the development of vaccine-therapy, which he regarded as depending, logically and in fact, on the blood tests for immunity. He dwelt on the importance of having a specific, objective guide in forming an opinion as to the efficacy of a vaccine. Clinical evidence was not sufficient, and in support of this he recited his experience with a vaccine made of Bordet's bacillus in whooping-cough. On entering into a discussion whether all inoculations had been, and should be, controlled by blood tests, he suggested that previous experience might ofttimes rightly take the place of any special test. But blood tests would be required in the future as in the past in the investigation of new problems. After dilating on the subject of the advantages of blood testing he turned to its disadvantages. Difficulty of technique was not a valid argument against its employment. In regard to supposed fallacies, he offered a reply to those critics like Widal who denied the immunizing action of antibodies like agglutinins. Bactericidal and phagocytic powers of the blood were also protective. In illustrating the specific nature of the opsonic power, he referred to the details of the glanders infection of the late Dr. J. Wells. In conclusion, he spoke of the interpretation of the opsonic index, which, according to some critics, was reliable, but misunderstood in its significance. Dr. Peel Ritchie (Edinburgh) read a paper dealing with the details and advantages of the gravimetric standardization of vaccines. Dr. Carmalt Jones (London) spoke against the application of the opsonic index in practice, and stated that a macroscopic test was the thing to aim at. In regard to clinical signs, he was of opinion that, while Sir Almroth Wright was justified in deliberately neglecting clinical observation, the physician treating the disease could not afford to do this. He called attention to the enormous variations of dose of vaccines, and especially of tuberculin. In conclusion, he demonstrated a new method of preparing vaccines. Dr. Crofton (Dublin) thought that the opsonic index indicated the fluctuations of the heat labile content of serum, but not of the more specific antibodies. Vaccines should be given in increasing doses, if cure was aimed at. Dr. W. J. Wilson (Belfast) demonstrated his gravimetric method of standardizing vaccines. Dr. Cruickshank, Professor Glynn, and Professor Ritchie made a few remarks, and Drs. Eyre and Freeman replied very briefly.

SECTION OF DERMATOLOGY.

Thursday, July 25th.

THE meeting opened with an excellent paper by Dr. Lucien de Beurmann on sporotrichosis. The paper was given in French, but every one could follow, as a verbatim account in English had been prepared by Dr. McKenna. The address was illuminated by lantern slides showing the clinical manifestations of the disease and also its pathology and bacteriology. Cultures of the fungus were also demonstrated. Dr. J. L. Bunch read a paper on the treatment of naevi, based on two thousand cases, and was followed by Dr. Stopford Taylor, who confirmed what the speaker had said, and spoke strongly in favour of liquid air in many forms of naevi. He had noticed the occurrence of an erythematous ring around moles which had been treated with CO_2, and wondered whether the ring was more common in adults or children, and whether it was permanent or not. Dr. Barendt was in favour of treating pigmented moles with electrolysis, and stated that mere removal of the hairs was sufficient. Drs. Goodwin Tomkinson and Savatard spoke in favour of radium in some cases, and the former praised CO_2 in the treatment of naevus verrucosus. Dr. Loxton asked whether CO_2 diminished or increased the tendency to malignancy which pigmented moles were known to possess. Dr. McKenna stated that CO_2 was useless in port wine stains. Dr. Bunch replied that he had not often seen the erythematous ring, but thought its occurrence could be avoided by giving frequent small doses instead of one big dose. Dr. Loxton's question could not be answered, as not sufficient time had elapsed since the treatment under discussion had been in vogue. Dr. Stopford Taylor read a paper on the various types of seborrhoeic dermatitis, which he illuminated with some excellent lantern slides. The speaker considered that seborrhoea of the scalp, dandruff, or pityriasis capitis often preceded an aggravated like condition on other parts of the body, but stated that it had been made responsible for too many of the types of dermatitis, and that there were other factors at work which had been overlooked—namely, too alkaline soaps, indigestion, constipation, etc. Dr. Bunch touched on the difficulties of separating the various types of seborrhoeic dermatitis, and asked the reader if he could draw a sharp line between seborrhoeic dermatitis and seborrhoeic eczema, and between seborrhoea and psoriasis. Dr. Savatard laid emphasis on the implication of the scalp, and that treatment should invariably be directed to this region in every case of seborrhoeic dermatitis. Dr. Taylor replied, and stated that there was so much confusion in the nomenclature of the various types of dermatitis that he could draw no sharp line between the conditions which had been mentioned by Dr. Bunch. Mr. McDonagh, in his paper, made a plea for a rational treatment of syphilis, which was nowadays possible owing to the discovery of the Wassermann reaction. The speaker regarded a positive Wassermann reaction as indicating active syphilis, but held that a negative reaction could no more than signify that the patient was in the latent stage. One of the most important factors in treatment to be taken into account was the individual case, and to remember that there were various grades of resistance to the spirochaetes. Hence the fallacy of the three years' mercurial treatment. Further advances in syphilis could only be made when every observer was his own clinician and own pathologist in his special line. The paper was discussed by Dr. Renshaw and Dr. McKenna. The morning's work concluded with a paper by Dr. Goodwin Tomkinson entitled the vacuum electrode in névrodermite.

Friday, July 26th.

The last session of this Section commenced with a demonstration of cases, after which Professor Madden, of Cairo, described a case of papilliform lesions on the scrotum, associated with petechial spots on the trunk and limbs. He was followed by Dr. David Walsh, who dealt suggestively with traumatic dermatitis and cutaneous lesions in relation to cardio-vascular conditions. A further contribution was one from Dr. Oram dealing with a case of xanthoma multiplex. The patient was one of those shown before the meeting commenced. One of the last contributions, and in some respects the most novel of all, was a paper dealing with onychology as a branch of dermatological science. Its author was Dr. Norman Meachen, who said that he had begun to pay attention to the subject some five years ago. It might be said that affections of the nails were not sufficiently common or important to occupy much attention, but at any rate they deserved attention from dermatologists, if from no other clinicians. Cases sufficiently marked to attract attention by themselves were rare. Among 12,293 patients who had attended his clinic at the Prince of Wales's Hospital and the Blackfriars Skin Hospital since 1906, only 0.17 per cent. presented marked affections of the nails. His study of cases of all degrees of severity had led him to conclude that, except in parasitic and traumatic cases, two tendencies would be found in all cases. The first was a tendency for an affection of the nails to diminish in severity from the thumb towards the little finger; the other was for an affection of one nail to be reproduced by its fellow on the opposite side of the body.

SECTION OF DISEASES OF CHILDREN.

Thursday, July 25th.

THE work began by Mr. E. M. Corner, one of the Vice-Presidents, calling on Dr. R. Hutchison to open a discussion on the dyspepsias of childhood after the age of infancy. The reader began by defining the limits of the subject, excluding various forms of dyspepsia that practically did not occur in children—gastric ulcer, malignant disease, pyloric stenosis. He referred to the difficulty in diagnosis due to the absence of test-meal evidence. Atonia was the commonest cause of dyspepsia in children; it was reasonable to infer that hyperchlorhydria was not rare, that excess or defect of ferments or of certain constituents in the food not infrequently occurred in children, and that the gastric flora might vary widely in certain patients. In a second group of cases Dr. Hutchison placed the dyspepsias due to hepatic disorder; the "mucous disease" of Dr. Eustace Smith might well be due to the combination of gastric atony and hepatic inadequacy. To dental caries he did not attach so much importance in the etiology of dyspepsia as many writers did. In many instances defects in the diet and overpressure at school were responsible for the dyspepsia of children. In treatment change of air came first, change in diet second; overuse of carbohydrates was to be avoided. The most useful drugs were mild purgatives and alkalis; harm might be done by the indiscriminate use of cod-liver oil. Dr. H. R. Hutton referred to the cases in which irregular peristalsis of the stomach, demonstrated by bismuth meals and the use of *x* rays, seemed to be the cause of chronic or irregularly recurring dyspepsia. Want of variation in the diet day by day was a great fault in the feeding of the poor. He believed that flatulence was a most important concomitant of constipation in dyspeptic children; and that petroleum emulsion was an excellent drug here. He agreed that the bolting of food, or of food half-chewed, perhaps due to tenderness in carious teeth, was of great importance, advising rest shortly before meals. He suggested that rheumatism and tubercle were both associated with special forms of indigestion. The diet should not be too fluid; in many cases drinking should be done between meals. Dr. C. P. Lapage referred to the connexion between dyspepsia and tuberculosis of the mesenteric glands, distinguishing this dyspepsia from that associated with periodic vomiting. He also laid stress on the importance of teaching children to chew their food properly. Dr. F. Eve drew attention to the importance of maintaining at its proper level the tone of the muscles of the abdominal wall, particularly in dyspeptic children. He asked whether air-swallowing was as common in children as in adults, and enumerated many of the different symptoms occurring in the dyspepsias of children. Dr. J. Haddon emphasized the importance of food and fresh air in the causation and treatment of dyspepsia, attributing intestinal stasis to bread. The only safe diet was that of Adam—fruit alone. No less important was rest to the nervous system, procured by complete fasts of three days' duration. Appendicitis he described as a nervous reflex. Dr. C. Riviere referred to those cases in which loss of appetite and general nervousness were the main symptoms of dyspepsia, asking how far they could be treated by starvation or by overfeeding. Mr. E. M. Corner discussed the subject from the point of view of the surgeon and bacteriologist, associating appendicitis with dyspepsia and duodenal ulcer. Infective conditions of the ileo caecal region were perhaps the most important part of dyspepsia; and he quoted cases in which the removal of a long and tortuous appendix had cured intractable dyspepsia and constipation of long duration. He attached little importance to the multiple enlarged mesenteric glands habitually found in children. Dr. F. Clayton drew attention to the parallelism between the dyspepsias of adults and of children, attributing to both an organic basis. Dr. R. B. McVittie noted the importance of rest in the treatment of so many child dyspeptics, with separation from injudicious parents, for some weeks. Dr. W. E. Hume asked what should be done when appendicitis supervened in a patient with cyclic vomiting. Dr. R. Hutchison summarized the results of the discussion, deprecating the narrow outlook on the wide problems of children's dyspepsias, answering a number of questions asked. Some few cases of dyspepsia, he thought, might be cured by removal of the appendix. The majority of dyspepsias, whether in children or adults, he held to be functional defects of motility. Mr. A. H. Tubby read a paper on a method of operating for webbed fingers, giving details of the treatment and after-treatment advisable, and the apparatus worn to secure a good result. The operation was to be performed in two stages, the second stage resembling Didot's operation. Mr. E. M. Corner complimented the reader of the paper on having evolved a method of operation that promised so high a measure of success in these difficult cases.

Friday, July 26th.

In the first paper read, Mr. G. E. C. Simpson and Mr. Naughton Dunn described spasmodic contraction of the peroneal muscles in flat-foot, with a number of illustrative cases of peroneal flat-foot, a condition described by the authors as common, and demanding operative treatment. This was followed by a paper on operative and post-operative treatment of spasmodic flat-foot, by Mr. T. R. W. Armour and Mr. Naughton Dunn. Three operations—tenotomy, crushing of the musculo-cutaneous nerve, and transplantation of peroneal tendons—were detailed, and their various merits were considered. The importance of giving sufficient and satisfactory rest to the spastic peroneal muscles was dwelt upon, and the necessity for splinting, movement, and massage was emphasized. The Chairman then called on Dr. Murk Jansen to read his paper on physiological scoliosis. He indicated the various slight curvatures normally found in the human vertebral column; looked at from the front, it showed a tendency of the second and the twelfth dorsal vertebrae to bulge to the left, and of the seventh to bulge to the right. Thus there were three curves in the spinal column in most cases; Dr. Jansen gave statistics showing the frequency with which various forms of scoliosis occurred, enumerating four chief varieties of physiological curvature. The primary asymmetry was that at the twelfth dorsal vertebra, and was to be referred to the crura of the diaphragm and their asymmetrical left-handed insertion. The left inframammillary region, being acted on by the more powerful left diaphragm, moved more amply than the right on inspiration. The etiology of other varieties of curvature was also considered. Physiological scoliosis was finally referred to the biped gait of man. Phylogenetic considerations indicated that infants should not sit up. The next paper, by Mr. Kellett-Smith, was on some principles of the treatment of lateral curvature of the spine by exercise, and was illustrated by a number of excellent lantern slides. The object of these exercises was to correct the deformities entailed by the fixity of the deformed ribs and to strengthen the weak muscles. The best attitude for carrying out these exercises was the all-fours attitude at first; later, various other positions were employed in addition. Dr. A. Mumford described cases in which rheumatic heart disease was combined with spinal curvature; in these he had often noted an improvement of the heart condition when the exercises were temperately employed. Mr. R. C. Elmslie objected to the use of the term "faulty" attitude, substituting for it the term "habitual" attitude. Dr. Jansen and Mr. Kellett-Smith both replied to questions put to them. Mr. R. C. Elmslie then read a paper on fibrous and fibro-cystic osteitis, illustrated by skiagrams in which the stages of regression of such cysts could be traced. The onset of the disease appeared to be always in childhood or adolescence; the first symptom was spontaneous fracture, or pain if there was much osteitis. The differential diagnosis was also discussed at length. Conservative treatment, curetting rather than excision, perhaps with crushing in of parts of the cyst wall, was advised. Mr. G. H. Edington read a note on an unusual malformation of the anus in an infant, treated with temporary success by operation. Mr. W. S. Haughton read a paper on a recent case of Lorenz operation, in which the development of the acetabulum was displayed by the *x* rays over a period of fifteen months. Dr. M. Jansen disagreed with the usual German view that certain bony trabeculae in the head of the femur, for example—develop along lines of tension: they all developed, he believed, in consequence of pressure. Dr. C. P. Lapage read a paper on tuberculous infection and tuberculous disease in infancy and childhood, as tested in the *post-mortem* room by cutaneous

tuberculin reactions and by ordinary clinical examination. Skiagraphy could be of great assistance in the early diagnosis of intrathoracic tuberculosis. The last paper—on a system of printed anamnesis questions for children out-patients—was read by Dr. F. Eve. Each question was so framed as to be answerable by Yes or No. The Chairman briefly wound up the proceedings of the Section, which was attended each day by an audience of forty or fifty.

Section of Electro-Therapeutics.

Thursday, July 25th.

A discussion on the subject of ionic medication was opened by Dr. H. Lewis Jones, who summarized the results of his own experience and those of others as recorded in recent medical literature. The zinc ion and the salicylic ion—the former having a surgical and the latter a medical application—were dealt with in considerable detail. The zinc ion was considered as an agent in the treatment of various chronic ulcers, mucous colitis, haemorrhoids, catarrh of the urethra and vagina, and such comparatively simple conditions as warts and corns. The affections treated by the salicylic ion included mainly the neuralgic group. Dr. Jones expressed the view that the future of medical electricity was bound up with ionic medication. Ionotherapy had the further advantage that it demanded knowledge and skill rather than costly apparatus, and it was therefore pre-eminently the electro-therapeutic method of the general practitioner. In the subsequent discussion, however, it was stated by some speakers that ionic medication was getting beyond the capacity of the general practitioner and was demanding a new class of specialists. Emphatic protests were made against the practice of sending persons untrained in medicine, chiefly women, and without even nursing qualifications, to give ionic treatment under medical direction. The ion also figured in a paper by Dr. Samuel Sloan (Glasgow), who dealt with the physics of the subject, and described an interesting series of personal experiments upon the local effects of the ionization. Most of the remaining time was given over to papers relating to the manifold therapeutic uses of the *x* rays. Dr. Fedor Haenisch (Hamburg) related his experiences of the Roentgen treatment of uterine fibroids and haemorrhagic diseases of the uterus. Of 35 cases of myomata and menorrhagias of different kinds in which *x*-ray treatment was concluded, only 4 were uncured, and in all the cases classified as cured there was a complete cessation of the haemorrhage. The beneficial result began almost always after the second or third series of exposures. In deep *x*-ray treatment they had at hand an excellent therapeutic, and one quite without danger, for suitable cases of myomata and menstrual anomalies. Dr. Ada F. Stoney (London) tabulated the results of 48 cases of exophthalmic goitre treated by means of the *x* rays. Of these, 14 were cured, and most of the remainder improved. Dr. A. E. Rayner (Preston) discussed the value of the *x* rays in the treatment of hypertrichosis, and described his cases and his technique. His own successful experience led him to think that there was no need for the unduly alarmist position that at present prevailed regarding this method of treatment. Dr. F. Hernaman-Johnson (Darlington) read a paper which was in the nature of an inquiry into the causes of failure in *x*-ray treatment. His interesting views, put forward with refreshing originality, defy a rapid summary. He was largely concerned with the question as to whether there existed for every malignant tumour a "critical dosage." If there was anything in the doctrine of critical dosage and of selective action, the cause of failure in dealing with inoperable visceral growths should not be hard to find. The proceedings concluded with a paper by Dr. W. Benham Snow (New York), describing the author's own method of treating prostatitis by the static wave current.

Friday, July 26th.

A combined meeting of the Sections of Electro-Therapeutics and of Anatomy, the President of the latter Section occupying the chair, was held for the purpose of discussing the anatomy of the normal stomach. Dr. A. F. Hertz, in some opening remarks, gave an illustrated description of the average shape, size, and position of the stomach in healthy adults, when empty, when half filled with a standard bismuth meal, and when quite full. He also considered the organ both in the vertical and in the horizontal positions. A comparison of the stomach when filled to different degrees made it evident that it adapted itself by variations in the tone of its muscular coat to the bulk of its contents, so that the intragastric pressure remained constant, and the level of the upper limit of the gastric contents in the erect position did not alter with changes in their bulk. He divided the stomach into a larger cardiac part and a smaller pyloric part. The pyloric antrum, he considered, was not a very constant portion of the stomach. Professor W. Wright (London Hospital) emphasized the fact that in this discussion the last word did not rest with the anatomists, whose observations were always made upon organs which had been subjected to formalin, and thereby to the danger of fallacies. The chief difference between the anatomists and the workers with the *x*-ray methods seemed to refer to the pyloric antrum, and, for his own part, he would have no aversion at all to giving up the pyloric antrum, which he had always regarded as rather vague. Dr. Gowland (Liverpool University) read a note from Professor Paterson and showed diagrams of twenty stomachs. An hour-glass stomach, according to Professor Paterson, was obviously not of necessity pathological, and was frequently met with in the dissecting room. Professor Symington (Belfast) expressed the opinion that the *post-mortem* changes that occurred had to a great extent been exaggerated. After death there was some elevation of the diaphragm and a compensatory retraction of the anterior abdominal wall. Dr. A. E. Barclay (Manchester) thought that the physiology of the stomach should be studied along with the anatomy, and that no proper conception of the one could be got without the other. Dr. Styles (Edinburgh) pointed out the differences which the horizontal as distinct from the vertical position made to the stomach, and Professor Campbell Geddes (Dublin) emphasized certain differences between the male and the female stomach, the position in the female tending to be comparatively low, while in the healthy muscular male it was normally situated at a higher level. A certain number of papers dealing with the *x* rays in diagnosis were then read. Dr. Reginald Morton (West London Hospital) showed a large number of lantern slides illustrating the value of *x* rays in certain forms of arthritis. Dr. A. C. Jordan (Guy's Hospital), in a paper on peribronchial phthisis, arrived at the practical conclusion that the *x*-ray method enabled the disease to be recognized in its early stages, whatever the situation of the lesion. Mr. Gilbert Scott (London Hospital) dealt with the question of cervical ribs, and indicated a technique to be observed in making skiagrams in these cases. Dr. C. F. Bailey (Brighton) advocated stereoscopic radiography as a routine method of examination, and dismissed in detail the various slight objections which have been urged against the method. Finally, Dr. Howard Humphris, Vice-President of the American Electro-Therapeutic Association, described Bergonié's method of electrically stimulating an exercise of the muscles in the treatment of obesity.

Section of Gynaecology and Obstetrics.

Friday, July 26th.

The third day's proceedings were devoted to a series of short papers. Dr. R. W. Johnstone (Edinburgh) showed and described a case of chorio-angioma of the placenta. The tumour occupied the side of an eight months placenta associated with hydramnios; lobules of varying size were joined by well vascularized pedicles. These lobules were covered by undoubted fetal epithelium, both Langhans's layer and syncytial masses being clearly visible. Beneath this covering was a layer of myxomatous tissue enclosing a core of capillary angioma, this latter apparently free from extravasation. Decidual cells were not seen adjacent to the lobules. The pedicles showed definite vessels in a myxomatous stroma. It was probable that an abnormal vascularization of the primitive cotyledons (not later than the third week of intrauterine life) *plus* some obstruction was the cause. Professor Chipman (Montreal) discussed the condition, and Dr. Johnstone replied. Dr. Shannon (Glasgow) related a case of severe concealed accidental haemorrhage treated by Caesarean section and subtotal hysterectomy. Fissures of the peritoneal coat were

noted at operation, and it was suggested that these were due to sudden distension of the uterus. He considered that many such cases died of shock rather than of haemorrhage, and advocated early rupture of the membranes. If severe haemorrhage followed, Caesarean section was the best treatment. Dr. Grimsdale (Liverpool) suggested that salines intravenously were likely to be of service only after ligature of the uterine vessels. Sir John Byers (Belfast) admitted the difficulty of treating such cases, but was not in favour of rupturing the membranes; he advocated Ringer's solution intravenously and morphine. In reply, Dr. Shannon considered that it was irrational to treat shock by stimulating agents while leaving untreated the cause of the shock. Dr. Hedley (London) discussed the creatin excretion in pregnancy, particularly toxaemic pregnancy, and gave original figures showing a great diminution in eclampsia. Sir John Byers (Belfast) read a paper on rashes in the puerperium. Urticarial, sudaminal, erysipelatous, and drug rashes were reviewed. Stress was laid on the relative immunity of puerperal women to scarlet fever, and the necessity for eliminating all possibility of sepsis in cases developing a scarlatiniform rash. Sir William Smyly (Dublin), Drs. Stookes (Liverpool), Beckwith-Whitehouse (Birmingham), Fothergill (Manchester), English (Manchester), Purslow (Birmingham), Cash Reed (Liverpool), Hedley (London), and the President, generally endorsed Sir John Byers's conclusions. Dr. W. E. Fothergill (Manchester) communicated a paper on some developmental errors of puberty. His purpose was to plead for a simpler and more rational classification based on development. The changes that occur at this period in the relation in size of cervix to corpus uteri were detailed and the clinical conditions that might follow enumerated. The menorrhagia of virgins at puberty was traced to the diminished control exercised by an ill-developed musculature. Corroborative evidence was adduced and indications for treatment based on this view given. Dr. Purslow, Professor Chipman, the President, and Drs. Stookes and Hedley spoke, and Dr. Fothergill replied. The proceedings terminated with a vote of thanks to the President (Professor Briggs), proposed by Sir William Smyly and seconded by Sir John Byers. Professor Briggs replied.

COMBINED MEETING OF THE SECTIONS OF LARYNGOLOGY AND RHINOLOGY AND OTOLOGY.

Thursday, July 25th.

On the second day a combined discussion was held by these two allied Sections on the education of the specialist in laryngology and otology. After a few introductory remarks by the President (Mr. J. M. Hunt, Liverpool), the discussion was opened by Professor Holger Mygind (Copenhagen). He reviewed briefly the methods of education in the subjects of laryngology and otology which obtained on the Continent. After giving a list showing the number of teachers in these subjects compared with the number of universities in different European countries, he stated that Germany and Austria were far ahead of all others, both in the number of their teachers and in the standard of teaching attained. He gave a brief survey of the system in vogue, and then proceeded to relate its principal defects. He considered that in many instances the specialist on the Continent was lacking in a good general knowledge of medicine and surgery. Another fault was that too great stress was laid on lectures. As regards the clinical teaching, the assistants in the out-patient departments held their appointments for too short a time, and there were not sufficient highly trained senior assistants to look after the younger men, whilst at the same time there were far too many patients. As a remedy he suggested that there should never be more than twelve students to one teacher, and that more salaried teachers were necessary. He thought that a compulsory qualification before a man could call himself a specialist would protect the public against the man not possessed of the requisite theoretical and practical knowledge. As regards separating the two branches of throat and ear, he did not think that could ever logically be done, though as science developed, the harder would it become for one man to master both subjects. Dr. Watson-Williams (Bristol), who followed, commented on the fact that there were still hospitals in this country where no beds were set apart for the otologist and laryngologist. He maintained that the teaching of laryngology and otology should take a larger place in the student's curriculum, and should be included as compulsory subjects for the final examination. He pleaded for a more adequate equipment in their clinics of well-trained assistants to relieve the chief of the hack-work. Their departments were far behind Germany and Austria, and needed better organization. In educating the specialist he was in favour of instituting a diploma in otology and laryngology. He put forward a scheme whereby that could be obtained after five years' work following qualification, two years to be spent in general medicine and surgery, and three years as assistant in a special clinic. Dr. H. S. Birkett (Montreal) presented the case from the Canadian viewpoint. There was no more dangerous person than the so-called specialist who had no general knowledge. In Canada they could not claim to educate the specialist; all they could do was by post-graduate classes to teach the general practitioner sufficient for his ordinary requirements. He complained that there was no distinction drawn in teaching a man who was absolutely ignorant of the subject and the man who had acquired some specialist knowledge. He advocated a thorough post-graduate course, including a tour abroad among foreign clinics, with an examination at the end of it, for only by examination could they weed out the men who knew from those who did not. Only those possessed of such a diploma should legally be allowed to practise as specialists. An animated discussion followed.

SECTION OF LARYNGOLOGY AND RHINOLOGY.

Friday, July 26th.

The proceedings commenced at 10 a.m. with a paper by Professor Hajek, who has just been appointed to the post lately held by Professor Chiari, upon the treatment of chronic suppurative disease of the ethmoidal sinuses. There was a fair attendance, including, amongst others, Dr. Ballenger of Chicago. The professor considered that the inflammatory trouble commenced in the superficial mucosa, and that the bony involvement was secondary. The operative methods he favoured were intranasal whenever possible. He preferred the snare and evulsion of polypi, as by this means their roots were better removed, and he advised a wait of a few days before further operative interference in cases where the polypi represented a secondary condition. He believed in removal of the whole diseased area at one sitting if the patient could stand it, and if the area as the operative procedure was continued could be seen and examined by probe, the great principle being a free view of the parts. He left the outer wall of the nasal cavity above attachment of the middle turbinate if possible. He next considered the diagnosis between a closed and open empyema. He dealt with the indications for extranasal operative treatment, and finally spoke of the possible fatal results and the means to be adopted to avoid this. Dr. Lambert Lack then read a paper upon the same subject. He discussed also the extranasal and intranasal routes of operative procedure, for he thought that non-operative measures were useless excepting as adjuncts. He thought that polypi were practically always present, and frequently also other tissues were affected. He with all courtesy disagreed entirely with the previous speaker, unless only one cell was affected. He used general anaesthesia with the previous application of cocaine and adrenalin, and used a ring knife to completely remove the ethmoidal region, the most important indication being to avoid directing the cutting edge upwards. His results were upon the whole excellent, but there had been fatalities, which he discussed fairly and fully. He then referred to the indications for external operation, which were in general accord with the previous speaker. Dr. Ballenger, of Chicago, then gave an interesting demonstration of his very free method of ethmoidal exenteration, illustrating his remarks with diagrams and instruments. His results were remarkable. Out of 900 cases there had only been one death, and that was due to a previous latent meningitis. He demonstrated his method of use of instruments, and explained fully the procedure. He objected to packing, and used local anaesthesia. Dr. Mosher then read his paper, and explained his method of curetting the anterior ethmoidal cells, illustrating it by diagrams. He was followed by Dr. Watson-Williams, who referred to his own technique

in this connexion, which was afterwards praised by Dr. Hill, who next spoke, and heartily advocated it. Dr. Woods, of Dublin, and Dr. Tilley then spoke, the latter ably summing up the causes of the difference between Continental and English and American methods; they depended mainly upon national peculiarities, the latter nations preferring one operative interference under a general anaesthesia rather than a continued series of smaller ones under cocaine. He considered that more could be done by intranasal methods than was generally considered possible. Dr. Horne joined in the discussion, and criticized the more radical methods. Drs. Westmacott and Bronner finished the discussion, and Professor Hajek replied, stating that the principle of his treatment was investigation of the precise limits of the disease, and that the exact procedure afterwards adopted depended upon the operator. Dr. Lack also briefly replied.

Section of Medicine.

Thursday, July 25th.

Sir Bertrand Dawson (London), in opening a discussion on the pathogenesis, diagnosis, and medical treatment of gastric ulcer, said that he would consider gastric ulcer under two varieties—"mucous ulcer" and "chronic ulcer." By mucous ulcer he denoted an ulceration of the mucous membrane. It was usually a subacute condition, tending to heal quickly and completely. Sometimes, however, it progressed rapidly into perforating gastric ulcer, or took on the characteristic of a chronic lesion. By chronic ulcer he understood a condition involving most or all the coats of the stomach, usually appreciable by sight and touch without opening the stomach. Duodenal ulcer was included because the duodenum above the common duct was embryologically, functionally, and pathologically closely related to the stomach, and the problem on the two sides of the pylorus was the same. Mucous ulcers were the combined effects of lowered vitality or damage of the mucous membrane, and increased acidity of the gastric juice; the damage might be by local bacterial infection or toxins acting on the epithelial cells or on the lymphoid follicles, or by local haemorrhage or trauma. The clinical resemblance between mucous ulcer and gastritis was very close, and there might be no distinguishing features between them. Chronic ulcer differed clinically from the older descriptions of this condition, and the patient was nowadays more often a man than a woman. As diagnostic features he emphasized pain, tenderness, and acidity. X-ray examination showed that the motility of the stomach was sometimes enhanced. The most important part of treatment was rest in bed accompanied by a diet requiring little motility, and by treatment directed against the acidity—namely, by alkalis. He recommended operative interference if medical treatment failed after two months, if return to work led to recrudescence of the symptoms, if hyperacidity persisted, and if any evidence of stenosis intervened. Professor Saundby (Birmingham) thought that the diagnosis was often very difficult, and that all doubtful cases should be treated as though gastric ulceration existed. Rest in bed he considered of first importance; but the old starvation method was futile, and, as he had insisted for twenty years, feeding by the mouth could be started when the patient was first put into bed. He had little faith in drugs as a curative measure. Radiography was of limited value. Professor Michell Clarke (Bristol) said that the most important advance in knowledge of gastric ulcer was the division into acute or mucous and chronic forms. He remarked on the importance of oral sepsis and the diagnosis from cancer. Dr. William Hunter (London) regarded gastric ulcer as almost invariably due to staphylococcal and streptococcal infection from the mouth. Treatment should be especially directed to the source of infection. Dr. Charles Miller (London) dealt with the histology of the disease. Professor Vaughan Harley (London) had found hyperchlorhydria in nearly all cases. He emphasized the importance of accurate chemical investigation. Volatile acids were increased only if pyloric spasm or obstruction existed, and pepsin was always present in large amount. He believed drugs, especially bismuth subnitrate, were of great use. He considered gastro-enterostomy should play no part in the treatment of uncomplicated cases. The discussion was continued by Dr. Dyson, Dr. McLennan, Dr. Habershon, Mr. Herbert Paterson, Dr. Buchanan, and Dr. Arthur Hertz. Sir Bertrand Dawson then replied.

Friday, July 26th.

The proceedings opened with a demonstration by Dr. Wm. Ewart (London) on a systematic posterior percussion of the apices, and of the "oval interspinous dullness" as an aid to early diagnosis. The normal "oval interspinous dullness" was the corrected edition of the original "interscapular lozenge-shaped dullness" imperfectly described in 1899. The author's previous diagnosis had lacked, he said, the accuracy dependent upon a familiarity with the normal field of percussion. He considers that familiarity is indispensable for the earliest diagnosis of apical tuberculosis by physical signs. For apex diagnosis the most valuable peculiarity of the oval dullness is the normal oscillation of its edges with inspiration and expiration. This affords a standard wherewith to gauge the normal or deficient respiratory activity of the apex. The vicissitudes of the oval dullness under varied respiratory affections is a vast subject, and the mediastinal aspect of the same study is yet more varied in its scope. The practical conclusion he arrives at is that the method is indispensable for efficiency in apical and mediastinal diagnosis. Its practice is a necessity, and this involves the unavoidable adoption of the means which are essential to its success. Dr. P. J. Cammidge (London) read a paper on the quantitative regulation of the diet in diabetes. He holds that the usual method of treating diabetes by excluding carbohydrate foods from the diet and allowing the patient to take as much or as little protein or fatty material as his appetite may dictate is most unsatisfactory and unscientific. The extent of the defect of metabolism must first be experimentally determined, and then the diet must be adjusted according to the energy requirement of the patient, to enable him to have as much choice and variety as possible. He had worked out a system in which the diet was arranged in rations of approximately equal energy value, taking as the basis an average serving of roast beef, which weighed about 3 oz. and yields about 300 calories. The protein and fatty foods in their appropriate rations could then be substituted as circumstances arise, and the patient would take only the amount he required. The object of the treatment is to so arrange the diet that the patient is always working his powers of carbohydrate and protein metabolism at a little below their maximum capacity and is yet receiving sufficient food of a kind that he can utilize. Major T. W. Gibbard, R.A.M.C., and Major L. W. Harrison, R.A.M.C., read a paper on the treatment of syphilis with salvarsan and neo-salvarsan, in which they pointed out that salvarsan treatment had great superiority over purely mercurial treatment. If the cases were diagnosed early by finding the *Spirochaeta pallidum*, and treated directly by salvarsan, the disease might be aborted in nearly every case. Nearly all the deaths recorded after use of salvarsan have been in cases where the technique was bad, or where there had been a gross disregard of the well-known contra-indications. The best results were to be expected from two or three doses of salvarsan combined with intramuscular mercurial injections. Neo-salvarsan was very unstable and required greater care in administration. Four papers were read bearing on the treatment of tuberculosis. Dr. C. Muthu (Wells) dealt with some recent cases of pulmonary tuberculosis treated by continuous antiseptic inhalation. It tends to destroy the vitality of pathogenic organisms, in his opinion. Dr. C. D. Parsons (Gibraltar) read a paper on tuberculin in the diagnosis and treatment of tuberculous diseases, especially in pulmonary tuberculosis. He said he regarded tuberculin as an infallible means of diagnosis, and strongly urged that all cases so diagnosed should be treated by gradually increasing doses of tuberculin. Dr. S. Vere Pearson (Mundesley) gave some further experience of artificial pneumothorax in the treatment of pulmonary cases, and exhibited the apparatus which he employs. Dr. F. R. Walters (Farnham) read a paper on the estimation of general improvement in pulmonary tuberculosis.

Section of Navy Army and Ambulance.

Thursday, July 25th.

Work began with a paper on eyestrain in relation to gunnery, by Fleet Surgeon W. A. Whiteleggo, R.N., who drew attention to (1) ciliary strain, which was mainly

caused by using instruments such as range finders; (2) extrinsic muscular eyestrain, which was caused in the same way; (3) retinal strain, which was mainly caused by glare from the surface of the sea; (4) using the telescope with one eye closed, and (5) living constantly in artificial light were also factors. The effects of eyestrain thus caused might be mild, or actually lead to blindness extreme cases; astigmatism was, of course, one of the main causes of eyestrain. Colonel Damer Harrisson thanked Fleet Surgeon Whitelegge for his paper, and regretted that he was unable to add much to the discussion. Surgeon-General W. Babtie thought the tendency to increase the use of scientfic instruments involved a corresponding increase in eyestrain. The subject had not up to the present received all the attention it deserved, and he hoped that the paper might be the means of inducing others to study the subject. A paper on the treatment of syphilis was then read by Lieutenant-Colonel Nathan Raw, R.A.M.C. (T.F.), who, after a brief account of modern therapeusis, expressed an opinion that an early diagnosis was essential, and this should be made by Burri's Indian ink method, or by dark ground illumination. In the secondary stage of the disease an injection of salvarsan might at first intensify the symptoms. Attention was called to Ehrlich's warning as to the caution necessary in this connexion when the patient was suffering from any form of degeneration of the circulatory or nervous system, or any interference with the functions of the liver or kidneys. In the author's experience salvarsan in congenital syphilis and general paralysis had not been favourable, but in primary and secondary stages it had proved most successful. Mercurial treatment was still, however, also necessary in most cases. In the discussion which followed, Major Smart stated that his experience of salvarsan coincided with that of Lieutenant-Colonel Raw. He thought highly of the Aachen treatment. In England patients suffering from syphilis had to conceal the real nature of their malady, whereas in Aachen they found themselves in a congenial social atmosphere. Surgeon-General Babtie and Fleet Surgeon Whitelegge both spoke of the diminution in the incidence of syphilis in the navy and army, which they ascribed to the spread of education and temperance among the men.

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

Thursday, July 25th.

A MOST valuable discussion, maintained at a high level and animated by opposing views, on the diagnosis and treatment of compressor paraplegia, was opened on the second day of the meeting of the Section of Neurology and Psychological Medicine by Dr. Ernest Reynolds (Manchester) and Sir Victor Horsley (London). Dr. Reynolds dealt with the clinical side of the important symptom-complex, whilst Sir Victor Horsley approached the subject from the point of view of the surgeon called in to relieve the compression. No attempt need be made here to cover the whole ground of Dr. Reynolds's paper, including as it did all the numerous causes of compression of the cord, their symptomatology, and differential diagnosis—first, as amongst each other, and secondly, from other affections of the cord, particularly disseminated sclerosis. Sir Victor Horsley, in his admirably concise paper, described in particular spinal traumata, tumour compression, and caries paraplegia. He pleaded particularly for early diagnosis, with a view to early and successful operative interference, and said just as in cases of cancer no one would await the affection of the glands before operating, so in compression of the cord none should await the onset of paraplegia. Of particular interest was Sir Victor Horsley's account of those cases in which no tumour was found, but only what have been badly described as arachnoidal cysts. Sir Victor Horsley was followed by Dr. Howell, who treated of the pathology of some cases of compression paraplegia. Dr. Howell's paper was illustrated by lantern slides of pathological material, obtained from 9 cases of tumour, 4 of caries, and 1 of pachymeningitis. This paper supplied a pathological explanation of many of the difficulties of diagnosis of the site of the lesion and the frequent discrepancy between the actual site of cord lesion and that of the tumour. Dr. Grainger Stewart followed this by an anatomical exposition of the subject, and Dr. Warrington (Liverpool) then described in detail 3 cases in which operations were performed for the relief of symptoms of compression; the description of the last of these three cases being given by Dr. McAfee. Dr. Batten (London) said that he had been forced to the conclusion that thermo-anaesthesia had no value as a differential point as between extra-medullary and intra-medullary site of lesion, and traversed Sir Victor Horsley's statement that every case of spinal paraplegia due to caries should be the subject of operation. His own experience had shown him that, at any rate so far as children were concerned, operation did harm in most cases; whereas cases treated by rest and suitable medical treatment did well. Dr. Reynolds and Sir Victor Horsley then briefly replied, the latter pointing out to Dr. Batten that the children treated by rest probably relapsed later on in life, and that in any case rest did not cure the disease, whereas surgical procedures did. The day's work was brought to a close by the reading of a paper on the nuclei of the neutrophile cell in acute insanity by Dr. Colin McDowall, of Cheddleton County Asylum, Staffordshire. Unfortunately no discussion ensued upon the reading of this carefully prepared paper, owing to want of time.

Friday, July 26th.

As has become usual since the scope of the Section of Psychological Medicine was widened so as to include neurology two or three years ago, an accumulation of papers remained for discussion on the last day of the meeting. In consequence, papers had to be read hurriedly and their discussion curtailed. Proceedings were opened by Professor J. Michell Clarke (Bristol), who gave a description, illustrated by lantern slides, of a case of tumour of the anterior part of the corpus callosum, extending into the left frontal lobe. The clinical history and pathological findings were valuable in that the case was one which threw some light on the mechanism of motor apraxia. Dr. W. Alexander (Liverpool) then read a paper on the nature and treatment of epilepsy, which included a most interesting account of the therapeutic work carried on at the Maghull Colony and the results of treatment. On a subject of so great magnitude there was naturally a considerable diversity of opinion, both as to the nature and treatment of epilepsy, expressed by those who joined in the discussion. Thus, the oedema of the pia arachnoid found by Dr. Alexander in many cases whilst performing his exploratory operations was not considered to be of essential significance by Dr. Batten (London), who deprecated operations such as that of "fenestration of the dura," carried out at Maghull for the cure or relief of epilepsy. Dr. Oswald (President) and Professor Michell Clarke also considered the diet in epilepsy of great importance, whereas Dr. Alexander said that their experience went to show that no particular diet was necessary or advisable; that meat once a day did no harm, and that a salt-free diet was not generally advisable. Drs. Warrington, Blair, Crichton-Miller, and Charles Williams also contributed to the discussion. Dr. Alexander having briefly replied, Dr. Maule-Smith (Bromsgrove) read a paper on the use of brain extract in the treatment of various forms of insanity, which was not discussed. Dr. Mackenzie (Glasgow) briefly gave a digest of a paper entitled "A Clinical and Pathological Study of some Cases of Dementia Praecox," which was followed by a valuable account of the results obtained by Dr. David Nabarro by the Wassermann reaction in 150 cases of mental disease. Dr. Crichton-Miller consenting to allow his contribution on re-education of the attentive control to be taken as read, Dr. A. T. Schofield read rapidly a paper on psychasthenia and its differentiation from neurasthenia, written by Drs. Schofield, Murray, and Leslie. A vote of thanks to the President brought the meetings of the Section to a close.

SECTION OF OPHTHALMOLOGY.

Thursday, July 25th.

A DISCUSSION on tuberculin in diseases of the eye was opened by Dr. George Mackay (Edinburgh), who first discussed the use of tuberculin in the diagnosis of ocular tuberculosis. The Calmette reaction he considered very dangerous. Von Pirquet's reaction, if it gave a positive reaction, could be taken as correct. The ointment method was not reliable. In Koch's old tuberculin that produced by human or bovine tubercle could be used. The safest

material to use was Koch's new tuberculin. No hard and fast line could be drawn as to the amount of the dose. Too large doses were a mistake. Dr. Peel Ritchie (Edinburgh) explained the methods he had used in the examination of the cases and the treatment. Dr. Hill Griffith (Manchester) described two cases of tuberculosis of the conjunctiva. One patient was employed as a herder of cattle, and had a swelling of the preauricular gland which was full of tubercle bacilli. Tuberculin brought about a complete cure. The other case was that of a boy who did equally well. Dr. Louis Dor (Lyons) had treated 80 cases of interstitial keratitis in four years. Tuberculin should be used as a diagnostic agent. For this he advocated the employment of very small doses until a reaction was obtained. He had never seen any trouble from this method, but the action of it was slow, and should never be discontinued until after at least two months. He regarded the bacillary emulsion (B.E.) as the most satisfactory. Dr. W. B. Marple (New York) said that the treatment of tuberculosis of the choroid had not been very satisfactory. Mr. T. Harrison Butler (Coventry) had used Calmette's reaction largely, and he had seen very bad results and had entirely given it up; it was also most unreliable. To von Pirquet's reaction he considered that about 90 per cent. of adults reacted, and it was obviously unreliable. The old tuberculin reaction he thoroughly believed in. If after three injections at a week's interval no reaction occurred he considered that it was positive that no tuberculosis existed. Of his cases of phlyctenulae he had found that about 70 per cent. had evidence of tuberculosis, and he quite thought that Parinaud's conjunctivitis was of this nature. Mr. Bishop Harman (London) thought they were justified in using injections without relation to the opsonic index. He strongly protested against the idea that all phlyctens were tuberculous. Dr. Mackay, in reply, said that he quite agreed that Parinaud's conjunctivitis was tuberculous, and commented upon the remarks of various speakers. Dr. Hinshelwood (Glasgow) read a paper on the treatment of acquired word blindness. After lesions which produced word blindness the relearning of reading was extremely difficult, but age was a very important factor—the younger the patient the easier would it be. Most cases followed cerebral haemorrhage, but no attempt at re-education should be attempted till all acute symptoms had completely disappeared. Dr. F. W. Edridge-Green quite agreed with the treatment advocated by Dr. Hinshelwood.

Friday, July 26th.

Mr. Sydney Stephenson opened the discussion on salvarsan in the treatment of syphilis. He emphasized the fact that treatment with salvarsan should go hand in hand with the Wassermann reaction. It was a fact that since salvarsan was introduced a certain change had taken place with regard to the disease, and some nerve changes, such as paralysis, which are looked upon as a late tertiary sign, now came on much earlier. When injections were made with perfectly fresh saline, no symptoms of pyrexia were produced. It had been suggested that if there was any affection of the optic nerves salvarsan should be avoided, but clinical evidence was strongly in favour of the fact that it had no deleterious effect on the optic nerve and was perfectly harmless to the eyes. As regards interstitial keratitis it did not appear to be superior to mercury. In irido-cyclitis of secondary syphilis most people agreed that salvarsan acted with great energy and promptitude. Mr. Stephenson thought that the drug was quite harmless as regards the eye, and that it should be given by intravenous injection. Mercury should be continued during the whole course of treatment. Dr. Igersheimer (Halle) had done much experimental work. The great feature of salvarsan was its poisonous effect upon the spirochaetes, but it was not poisonous to human beings. The percentage of negative Wassermann reaction was greatly increased in the cases in which salvarsan was used in combination with mercury. Neo-salvarsan had the great advantage of being very soluble, but in large doses experimentally was very fatal to animals, though they stood small and repeated doses well. Neo-salvarsan had produced far quicker effects in affections of the anterior part of the eye, but he preferred salvarsan when the deeper structures were involved. Dr. W. B. Marple (New York) had used it in interstitial keratitis and in gummatous iritis. He had not seen much good in the former, but it acted better in the latter. Dr. Maitland Ramsay (Glasgow) had used it in 22 cases by intravenous injection. Except in one series of 5 cases treated in one day no general symptoms were seen. In the 5 cases, when vomiting was produced it was probably due to an error in its solution. Neo-salvarsan was much more easily prepared. It became easily oxidized if kept in solution, and was then highly poisonous, therefore any solution used should be quite freshly prepared. Mercury should be used the whole time. Twenty of the cases were chronic and 2 were acute. In the chronic cases 5 were congenital and 15 acquired. It acted far better in acute cases and much more rapidly. He did not think that therapeutically there was any superiority of neo-salvarsan over salvarsan. The best results were seen when mercurial treatment was combined with the other. He doubted very much if salvarsan had any bad effect on the optic nerve, but mercury should always be combined with salvarsan. Mr. S. H. Browning (London) spoke of the action of the drug in sympathetic ophthalmitis. He related two cases in which it did very great good. He spoke of his general experience in syphilis. He laid great stress on the preparation of the patient and of the solution, and he preferred to let it run into the veins by gravity and not by a syringe. Mr. Bishop Harman (London) spoke of the cases he had seen, though he had not given it himself. He thought that most of the accidents were due to errors of preparation. On the whole he had been disappointed in interstitial keratitis. He thought that there were certain risks in its administration. Dr. Nimmo Walker (Liverpool) had seen it used in 4 cases and was still undecided about its value, and was rather sceptical as to its excellent results. Mr. Inglis Pollock (Glasgow) supported Dr. Walker, and said that although some cases showed no bad results, others did. Mr. A. L. Whitehead (Leeds) gave statistics of cases treated. In acute iritis salvarsan was of great use, but in interstitial keratitis he had seen no good result. Mr. Jameson Evans (Birmingham) also related his experience. Dr. T. A. Pockley (Sydney) related the case of a patient who recovered his sight and hearing, and lost his paralysis under salvarsan, but the patient shortly afterwards died. Mr. Stephenson replied, and said that no one had brought evidence of damage done by the drug to the optic nerve whether healthy or diseased. Dr. Inglis Pollock (Glasgow) read a paper on intraocular haemorrhage, and said that it was the veins which caused the bleeding and not the arteries. Mr. C. Worth (London) related some cases in women. Mr. H. Eales (Birmingham) related a case of recurrent haemorrhage in the right eye in a patient who was supposed to be a female, but who was subsequently found to be a male. Two haemorrhages had appeared in the other eye. He thought that these cases were due to vascular abnormalities. Mr. Harrison Butler, Mr. Clegg, and Mr. Batten also spoke. Mr. Bradburn (Southport) read a paper on muscular imbalance and auditory affections: most of these cases were due to labyrinthine disease. Remarks were made by Mr. Worth, Mr. Hill Griffith, and Mr. C. G. Lee. Dr. Bradburn replied. Mr. Jameson Evans demonstrated a photometer, called an optophone.

SECTION OF OTOLOGY.

Friday, July 26th.

THE President made his introductory remarks to a very sparsely attended meeting. A paper on the prevention of deafness in non-suppurative cases was then read by Dr. J. Kerr Love (Glasgow). He wished to include under this heading not only chronic middle-ear catarrh and oto-sclerosis, but also deafness from adenoids, meningitis, syphilis, and true hereditary deafness. The treatment of middle-ear catarrh and oto-sclerosis he characterized as the reproaches of their speciality. The finding of such a cure he considered to be a subject of very great difficulty. Dozens of remedies had walked across the stage and then disappeared. He considered that in investigating them the family history of each case was of the utmost importance, and should be followed back to at least three generations. He then turned to the subject of adenoid growths in young children. Whilst agreeing with the universal success in curing deafness by the removal of adenoids, he thought that further research was necessary into the causes which produced them. Particularly he urged that the hearing of all young children should be systematically tested. He then referred to the ravages of

meningitis in causing deaf-mutism, and suggested that all cases should be made notifiable and should be treated in hospital. He next dealt with syphilitic deafness, which he considered was more common than the Wassermann reaction suggested. For the prevention of syphilitic deafness he suggested the notification of pregnancy, whereby infected parents might be discovered and put under proper treatment. He finally referred to the true hereditary deafness. The prevention of this condition was, unfortunately, a matter of supreme difficulty. The prevention of marriage or the sterilization of the hereditarily deaf were impracticable. The only means was by educating the hereditarily deaf and their relations on the dangers of marriage and intermarriage. In the discussion which ensued Dr. Mygind (Copenhagen), Mr. G. J. Jenkins (London), Mr. Stockdale (Liverpool), Mr. M. Mollison (London), and the President took part. Dr. Kerr Love replied. At the close of the discussion the following resolution was framed, to be submitted to the Council of the Association:

> That having regard to the opinions set forth in the discussion on the neglect of suppurative otitis media—that the acute exanthemata are prolific causes of acquired deafness, and frequently lead to fatal complications—the Section of Otology recommends the appointment of an otologist to all fever hospitals. Further, as the outcome of the discussion on the prevention of deafness, the Section of Otology recommends that the Council uses its influence for the establishment of a eugenics record office in this country where the study of the hereditariness of deafness may be carried out.

A paper was then read by Mr. G. J. Jenkins (London) on the indications for performing Schwartze's operation. The discussion which followed was sustained by Dr. Kerr Love (Glasgow), Mr. Stockdale (Liverpool), Mr. Mollison (London), and the President. Mr. Jenkins replied.

Combined Sections of Pathology, Gynaecology, and Obstetrics.

Thursday, July 25th.

A large gathering of pathologists and obstetricians devoted the morning to a discussion of eclampsia, under the presidency of Professor Briggs (Liverpool). Dr. Ballantyne pointed out that the chief factors in the etiology are pregnancy, especially a first pregnancy, renal and hepatic inadequacy, and possibly certain external influences and internal disturbances which throw a strain upon the kidneys and the nervous system. He regarded the pathogenesis as a toxaemia, probably due to some defect in the normal harmonious symbiosis of fetus and mother. This receives support from the satisfactory results of antitoxaemic treatment. For the further elucidation he looked to a better appreciation of the intricate feto-maternal relations of normal pregnancy. He advocated the stopping of the fits and the continuing of the pregnancy with a living mother and a living fetus. Dr. Teacher (Glasgow) gave a lantern demonstration of the histological changes in the liver and kidney, though he felt that there was no relation between the extent of the anatomical changes and the severity of the fits. Sir William Smyly (Dublin) discussed the treatment. Recognizing atoxaemia, the "ovular" theorists had obtained confirmation and very satisfactory results by rapid removal of the fetus; but the "maternal" theorists had little satisfactory evidence to support their theory in practice. These included the "mammary" theorists, the "gastro-intestinal" theorists. Various supporters of this latter claimed good results from treatment with milk diet, vegetable acids, etc. Others had advocated serum of healthy women, horse serum, and other varieties. A Continental reaction had arisen in support of venesection. Other workers, ascribing the etiology to the minute thromboses formed, had adopted means with a view to prevent formation of such. He next dwelt on symptomatic treatment, with details as to the care of the patient. Owing to the fact that in individual practice a series of cases of little severity might be succeeded by a series of great severity and mortality, it was necessary to fall back on statistics to obtain definite data on which to base results of empirical treatment. He deprecated treatment by *accouchement forcé* as having increased the mortality. The best results hitherto obtained were those accruing from the methods of treatment adopted by Dr. Tweedy and Professor Stroganoff, in the mortality having been reduced in uncomplicated cases to 2 per cent. This included avoidance of external irritation as far as possible, and the control of fits by morphine and chloral hydrate. Professor Walker Hall (Bristol) hoped to find guidance in a better appreciation of the early physiology of the condition. He felt no doubt they would learn much in the future from the bio-chemists. He gave an interesting insight into the work being carried out in his own laboratories on protein ferments, and propounded his idea of a disturbance of balance—an inharmonious relationship—between the fetus and mother in the early stages of pregnancy, with, perhaps, a production of hypersensitiveness in the later stages. Dr. Leith Murray (Liverpool) touched upon the aspect of anaphylaxia. He himself had demonstrated complement fixation in early months of pregnancy, proving the presence of sensitized bodies. But he had no faith in anaphylaxia and did not think it worthy of further mention. He further startled the clinical gynaecologists present by a detailed splitting up of his theoretical toxin of eclampsia into five distinct toxins, and became still more highly theoretical in drawing comparisons with the various theories. Dr. Haultain (Edinburgh) pointed out that despite the mass of debatable material it was evident that there was a consensus of opinion as to facts—namely, that eclampsia was associated with pregnancy, and due to a toxin. He felt certain that it was disposed to by climatic and dietetic causes. In Edinburgh he recently had 14 cases out of 120 pregnancies, as contrasted with the Dublin statistics of 14 cases in 2,000 pregnancies. He found the explanation of this in variation in diet. His treatment was directed to elimination of the poison by the bowel, skin, and blood, coupled with sedative treatment by means of morphine and chloral. In addition he removed what he considered the primary cause by emptying the uterus as soon as possible. Sir John Byers (Belfast) could not support the association of climate and food with the occurrence of eclampsia. Neither had he any faith in diaphoresis or bleeding, and he strongly opposed the emptying of the uterus, but he did uphold the use of morphine in the treatment of the convulsions. He supported Dr. Haultain in his attempts at prophylaxis by constant observation of the pregnant woman. Professor J. M. Munro-Kerr (Glasgow) opposed *accouchement forcé* and supported medicinal treatment. He mentioned the interesting method adopted by the Swedish Government, who, in their almanacs, of which they had the monopoly of publication, gave detailed instructions to pregnant women as to their hygiene. This, he felt sure, had diminished the incidence of eclampsia. Mrs. Scharlieb (London) narrated her experiences in Madras forty years ago. The rice-eating, teetotal natives lived in a moist, warm climate, and the large incidence of eclampsia would entirely disprove the climatic and dietetic theory already put forth. Dr. Sholto Douglas (Birmingham) pointed out that bleeding removed toxins, but, more important still, though not to be explained at present, increased the content of antibody. Dr. Griffiths (London) explained the antagonism of the various treatments discussed by the fact that many cases were mild throughout, whereas others were fatal despite the treatment. Dr. Ballantyne and others replied.

Section of Pathology.

Friday, July 26th.

Dr. Horder read a paper on the investigation of puncture fluids as an aid to diagnosis and treatment, and gave a succinct but comprehensive summary of the value of this method of investigating disease. He classified his remarks as dealing with the puncture of (1) certain cavities (pleura, pericardia, peritoneum, spinal theca, and joints), (2) solid organs, and (3) adventitious states—for example, abscesses, cysts, and new growths. Dr. Purves Stewart (London) criticized the variations from the broad principles which had resulted from the investigation of cerebro-spinal fluids in disease, and Dr. Bernstein commented on the lymphocytosis occasionally found in acute poliomyelitis, whilst Dr. Sherman suggested the possibility of puncturing the inferior vena cava. But Dr. Horder reminded the meeting of the venous plexus on the posterior surface of the lumbar vertebrae, and again of the possibility of mixed infections in tuberculous meningitis. Dr. T. Sherman read a paper, by himself and Dr. Harvey Pirie, on the etiology of dissecting aneurysm, as illustrated

by lantern views, actual rupture of the coats of the aorta in places in which no atheroma existed, with consequent separation of the coats by the effused blood. Dr. C. Bolton, after summarizing his earlier work on the experimental production of gastric ulcer in guinea-pigs and rabbits, proceeded to accentuate the importance of the presence of gastric juice in the production of the gastric necrosis. This could, experimentally, be entirely inhibited by the administration of alkalis to neutralize the gastric juice. Hyperacidity never reached in man a sufficient amount to produce, *per se*, a necrosis, though it was an important predisposing factor. Also he had demonstrated in cats that hyperacidity prolonged considerably the healing of an ulcer. Sir Bertrand Dawson contributed his experiences in gastric ulcer. Dr. H. MacLean read a paper on some fallacies in the routine testing of the urine. He laid stress on the fact that Fehling's solution was the most delicate test for glycosuria. His paper led to a discussion on the importance of a slight glycosuria, and especially of the transitory variety, and on the use of a test meal of 100 grams of glucose. Dr. O. T. Williams discussed next the excretory functions of the intestines and their relations to disease. He thought that faecal concretions were really secretions of the mucosa, and contained much calcium salts and calcium soaps, and drew an analogy with similar findings in mucous colitis. With a few remarks from the President the meeting then terminated.

Section of Pharmacology and Therapeutics.

Thursday, July 25th.

When the Section reassembled on Thursday, under the presidency of Professor W. E. Dixon, F.R.S., Dr. G. A. Gibson (Edinburgh) opened a discussion upon the treatment of heart muscle affections apart from valvular disease, laying stress on the importance of rest, sleep, air, diet. In tachycardia he combined the use of small doses of digitalis with bromides, preferably with calcium bromide. In bradycardia of toxic origin strychnine and belladonna were useful. Colchicum he used in very large doses in cases of a gouty nature. Thyroid extract was indicated in the large heart of mild myxoedema. Suprarenal extract was equally useful in Graves's disease. Professor Cushny (London) confined himself to an account of the investigations at the Mount Vernon Hospital, which he had recently carried out in association with Dr. Mackenzie, upon the action of digitalis, squills, strophanthus, and apocynum. The tincture of digitalis had been found to be the most reliable of these. The preparation used was highly constant, and, when standardized, varied only within 10 per cent. of the normal. In dilution with water the effect of strophanthus was rapidly lost, and there was considerable danger of over-dilution in prescribing. The effect of strychnine, he believed, was most apparent in vasomotor paralysis. The President referred to the association of cardiac degeneration in cases of pituitary disease. In a case of acromegaly upon which he had recently seen a necropsy performed the heart weighed 3 lb. Dr. John Hay (Liverpool) classified the cases into four groups. He had found chloral of immense use. He believed that the danger of this drug had been exaggerated. Dr. F. W. Price (London), Professor H. Johnstone Campbell (Bradford), Dr. Gordon Sharp (Leeds), and Dr. D. W. Samways (Mentone) joined in the discussion. Dr. Gibson and Professor Cushny replied. The next paper was one on *Symphytum officinale*, which was read by Dr. C. J. Macalister and discussed by the President and Dr. Gibson. Then followed a paper on the standardization of cardiac tonics, by Dr. A. T. Clarke (London), the morning's work concluding with a paper in which Dr. F. W. Price (London) dealt with the action of digitalis on blood pressure in man.

Friday, July 26th.

The last meeting was occupied by a discussion upon the rôle of calcium salts as therapeutic agents. Sir James Barr opened the discussion by outlining his views upon the importance of calcium salts in health and disease, and demonstrated the great excess of calcium in several waters from Continental springs as compared with Liverpool water. Professor Benjamin Moore (Liverpool) discussed the cause of calcium deposits in combination with uric and oxalic acids. These deposits were due to insufficient oxidation, and the encouragement of oxidation was the basis of all treatment. Professor Dixon (Cambridge) denied that it was possible materially to alter the calcium content of the blood by oral administration of the drug. Professor R. B. Wild (Manchester) spoke especially of the therapeutic use of calcium. He regarded the action of lime as largely local in the intestine. Dr. G. R. Mines (Cambridge) reviewed the effects of the addition of calcium salts to the environment of isolated tissues. Dr. Blair Bell (Liverpool) believed that calcium absorption was to a great extent regulated by the secretion of the ductless glands. The action in urticaria he believed was due to alteration in cell imbibition. He referred to his view that menstruation was a means of calcium elimination. Dr. F. Ransom (Cambridge) dealt with calcium elimination in diabetes. Professor Wild having shortly replied, the Section then rose.

Section of Physiology.

Thursday, July 25th.

Dr. Graham Brown (Liverpool), in a paper on the mechanics of progression, likened progression to a pendulum swing, in which no work was done from one phase to another, and cited as an example the glide of a bird in flight. The same factors came into play in ordinary pedal progression. The President then called upon Professor B. Moore (Liverpool) to introduce a discussion on the importance of substances present in minute amount in food. He did so by first giving an account of the experiments which had been carried out on the production of neuritis by feeding with polished rice and their relation to beri-beri, and then discussed the genesis of scurvy, dealing particularly with such possible factors as the use of sterilized milk and bread made from bleached flour. In the case of bread, the form in which it was given was not of any great importance when the diet was not a restricted one. The important basic bodies found in the different foodstuffs were not real phosphatides, but might be degradation products of such bodies. Dr. Casimir Funk (London) gave an account of the basic substances isolated by him from rice, yeast, milk, and ox brain. Lime juice probably contained two substances—(1) an antiscorbutic substance and (2) an antineuritic body. Professor Grünbaum (Leeds) spoke of the difficulty of determining the different factors concerned in the poor results obtained by using sterilized milk. Dr. Simpson (Liverpool) stated that it was not a question of one base, but of a series of bases present in yeast. Scurvy was due to a restricted diet, but it would seem to be immaterial whether the food given be fresh or bad food. In his own experiments he found that fresh milk added to the food prevented scurvy, whereas sterilized and boiled milk gave very bad results. Rickets never occurred when the child was fed with fresh milk, unless the mother nursed too long. Fat played a very important part in the cure of this disease. Dr. Vernon (Oxford) described various experiments which suggested that a lipoid in some form was the essential substance. Dr. Pike (Chicago) spoke of the combination of lipoids with certain inorganic bases, and believed that this combination played an important rôle. Professor Thompson (Dublin) did not think that any one substance would prove to be the essential one. He had found that the addition of arginine to a basal diet containing but little protein markedly increased the value of the food. Dr. Haddon (Hawick) spoke at length on the influence of bread on the body, maintaining that the central nervous system wanted salts from fruit alone. Dr. Hewetson (Birmingham) spoke of his experience of scurvy in Rhodesia. He thought that the scurvy experimentally produced differed from that found in South Africa. Efficient tooth-cleansing did a great deal to reduce the amount of scurvy present in his compound. Professor Moore (Liverpool), in his reply, said that the lipoids were closely associated with the nucleoproteins of the nucleus, and that they were among the most active constituents of the cell. Dr. Roaf (London) next opened a discussion on tissue respiration. He stated that certain activities in the body were not accompanied by an increase in the gaseous exchange, and therefore did not apparently involve energy transformations. As examples he quoted kidney filtration (glomerular) and decerebrate rigidity. He also dealt with the differences between the oxygen tension and the total amount of

oxygen consumed. Oxygen tension in tissues, he maintained, was not zero. Dr. Vernon (Oxford), who followed, dealt with the part played by enzymes in the various oxidative processes. Tissues varied in their oxidase content. The presence of intramolecular oxygen was not proved, but the evidence in favour of it was very strong. Professor Bainbridge (Newcastle-on-Tyne) dealt with the gaseous exchange in the resting and active kidney. The evidence in support of the statement that there was no energy transformation in glomerular filtration was insufficient. Professor Milroy (Belfast) discussed the gaseous exchange in apnoea. A careful study of the gaseous exchange in isolated tissues kept as nearly as possible under normal conditions would yield valuable results. Professor Moore (Liverpool) thought that the importance of carbon dioxide had rather been overlooked. He refused to accept the two classes of oxidizing ferments; it was unnecessary to call in the aid of any enzyme to explain the results so far obtained. Drs. Roaf and Vernon briefly replied.

Friday, July 26th.

Professor Bainbridge (Newcastle-on-Tyne), in a paper on the effects of the retention of urine, said the death of the animal took place about the same time, whether the kidneys were actually removed or only the ureters cut. The kidneys possessed no internal secretion which had any influence on the prolongation of life. Death was due to a general upset of the metabolism rather than to the retention of any toxic material. Effects of retention were for the most part on the central nervous system. Dr. Vernon (Oxford) next spoke on the function of lipoids on living tissue, and described their distribution and the influence of ethyl, butyl, and propyl alcohols on the gaseous metabolism and the oxidases in tissues, with particular reference to their narcotic power. His paper was discussed by Dr. Powell White (Manchester), Dr. Mottram (Liverpool), Professor Macallum (Toronto), and Professor Macdonald (Sheffield), and Dr. Vernon replied. Professor Sherrington (Liverpool) then gave an extremely interesting paper on some examples of uncertainty in reflex reactions. He first discussed the conditions of reversal in the reflex reaction in frogs, and next turned to the conditions in the mammal. In this connexion he gave a full description of the experiments carried out by him with Miss Sowton and Dr. Graham Brown. They had found that stimuli which normally produced flexion, if graduated down and rendered mild, gave extension. It was impossible to obtain this reversal in purely spinal animals. He also dealt with the reversal effect produced by stimulation of the cortex. If a cortical point which gave inhibitory relaxation of a flexor was repeatedly stimulated complete reversal of reaction could take place. The existing maps of cortical localization gave but a very imperfect picture. Dr. Graham Brown (Liverpool) described his own observations on reversal of the reflexes with particular reference to spinal reversal. He found that the phenomenon of reversal might occur after deafferentation. Both Professor Sherrington's and Dr. Graham Brown's papers were illustrated by a most excellent series of lantern slides. Professors Macdonald (Sheffield), Thompson (Dublin), and Milroy (Belfast) all spoke of the great value of the contributions, regarding them as of primary importance. Professor Sherrington replied. Dr. J. A. Milroy (Belfast) next gave a communication on a rapid method for the estimation of urea by the utilization of a modified formal titration. Professor Thompson (Dublin) and Dr. Cathcart (Glasgow) discussed the method. Dr. Haddon (Hawick) thought acidity of urine ought to be more studied. Professor Milroy (Belfast) then read a second paper dealing with observations on the production of apnoea. He found that when the vagi were thrown out of action by freezing that the type of apnoea artificially produced was similar to that when vagi were left intact. It was in the recovery from apnoea that the action of the vagi was seen. He further held that the gaseous factor was the main one concerned in the production of apnoea, and that the changes which took place could be wholly explained on physical laws—a constant attempt to obtain gaseous equilibrium. Professor Anderson (Galway) followed with a paper on the comparative effects of training on animal activities. He gave some interesting details on the training of dogs, and mentioned some of the differences which are found in different species. The meeting then concluded by the passage of votes of thanks to the President and the Secretaries.

In the report of Wednesday's proceedings of this Section published last week, the word "nipple" (p. 201, col. 1, line 36) should of course be "ripple."

SECTION OF STATE MEDICINE AND INDUSTRIAL DISEASES.

Thursday, July 25th.

THIS Section was occupied in a joint discussion with the Section of Medical Sociology on the administrative measures in tuberculosis. This was opened by Dr. J. C. McVail, Medical Member of the Scottish Insurance Commission, who spoke as to the administrative measures which would be adopted under the Insurance Act in Scotland. He outlined the duties that would be required of medical officers of health, and gave a summary of the most important measures which had recently been brought in for dealing with tuberculosis. He mentioned that under the Insurance Act £1,250 per annum would be devoted to tuberculosis and £60,000 set apart for a research fund. Besides these measures he instanced the Notification Act as an important step in attempting to control the disease, and laid special stress on the Housing Act, pointing out the supreme importance of improving the homes of the people. On the whole, Dr. McVail's remarks were of a reassuring nature as to the prospect of satisfactorily dealing with tuberculosis from an administrative point of view. A paper by Dr. Niven (M.O.H. Manchester) was read, dealing with new developments of tuberculosis. Dr. Marcus Paterson, Medical Director of the Welsh Tuberculosis Association, followed with an interesting speech from the clinical point of view, in which he stated that he strongly objected to the word "consumption," as he found that patients were frightened by the word, but did not object to be told they were suffering from tuberculosis. In his opinion too much importance was attached to physical signs in the lungs in the diagnosis of early cases of tuberculosis, and he considered that the amount of resistance of the body to the toxins of the disease was much more important than the existence of such physical signs as extensive cavities in the lungs, etc. He attached great importance to physical exercise in the treatment of tuberculosis. In his opinion surgical tuberculosis was much more dangerous to the community than pulmonary tuberculosis, as the same precautions were not exercised in disinfecting tuberculous pus as in dealing with phthisical sputum. He pointed out how much easier it was to prevent infection in patients' homes than in public, as the exhibition of a pocket sputum flask was sufficient to empty a railway carriage, with the result that phthisical patients would not use those receptacles in public. Dr. Rufenacht Walters, Physician to the Crooksbury Sanatorium, Surrey, made some remarks on the clinical aspect of the disease, and on the choice of an institution for cases of pulmonary tuberculosis. He divided cases into a clinical section when there was rise of temperature, pulse, etc., and rest was required, and an ambulant section, when cases could be treated by work and exercise. Dr. F. E. Wynne (M.O.H. Wigan) dealt with the financial side of the question, pointing out how the watchword of the average town councillor was "efficiency and economy," with particular stress laid on the economy. In his opinion a rate of a shilling in the pound would be well and economically spent if thereby we got rid of tuberculosis, notwithstanding Sir James Barr's declaration that the tubercle bacillus was the national bulwark against imbecility and physical degeneracy; but, knowing what he did of the views of the average borough councillor on economy, he had grave fears that the borough councils would refuse to burden the ratepayers even to the extent of a 2½d. rate, which he calculated was the minimum required for any sort of efficient dealing with the problem. Dr. S. J. Holden (Assistant M.O. St. Helens) spoke, and Dr. Crofton (University College, Dublin) advocated a system of universal preventive inoculation against tuberculosis. The general result of the discussion was unfavourable to sanatorium treatment alone, unless combined with an attempt to improve the homes of the patients. Dr. Sergeant (M.O.H.) entered a note of protest against these pessimistic ideas, and gave his verdict in favour of sanatorium treatment and isolation hospitals.

Friday, July 26th.

The President of the Section (Dr. Chalmers) opened the morning's session with a few introductory remarks. Dr.

Erskine Young (Liverpool) read a paper on children and dental disease, in which he stated that after a long experience both as a general practitioner and a dental surgeon, he had come to the conclusion that dental patients were the most ignorant class on the face of the earth. He considered that the whole crux in dealing with children was the exhibition of tact and painlessness. In his opinion the odontologist should be added to the list of medical specialists. Dr. Sim Wallace, Dental Surgeon, London Hospital, stated that he did not agree with Dr. Young's opinions as to exalting dental surgery to a speciality. His idea was to try and do away with the necessity for the dentist by preventing dental disease, and this was to be done by educating medical students in dental hygiene, and bringing home to parents the fact that dental caries was caused by wrong notions as to food. The eating of sweets by children was responsible for 50 per cent. of dental caries, and every penny spent on sugar as a food was a penny wasted. He advocated more proteins and fruit in children's diet, and the reduction to a minimum of carbohydrates. Drs. Buchan (St. Helens) and Mackintosh (London) agreed with Dr. Sim Wallace's views, and Dr. Wynne (Wigan) emphasized the difficulty of altering the food of slum children, owing to the prevailing poverty. In his opinion the most important measure which could be instituted for the improvement of the public health would be a general increase in wages all round. The President, in closing the discussion, spoke about the danger of artificially prepared food, and considered that the novelists were greatly to blame for their insistence on the idea of kind people going about with bags of sweets as a means of pleasing children. A discussion on isolation in scarlet fever was opened by Dr. C. H. Phillips (Medical Superintendent of the Stoke Isolation Hospital) who dwelt upon three points: (1) As to whether the existing form of isolation hospitals were the most suitable for dealing with scarlet fever. In his opinion, until they ceased to mass patients together in large wards and began to classify and segregate each patient, so long would isolation hospitals prove a failure. (2) Whether the usual period of isolation in hospital was too long. He believed that in uncomplicated cases four weeks was quite sufficient. (3) He urged the trial of more outdoor treatment of scarlatina after three weeks of isolation, where no complications existed. Dr. Leslie Rundle, Medical Superintendent, Fazakerley City Hospital, Liverpool, dwelt on the importance of treating cases of infectious diseases aseptically. So long as his nurses were thoroughly trained in complete surgical asepsis he was quite satisfied to treat different kinds of infectious disease in the same ward. As a proof that his system was satisfactory he mentioned that among 900 cases treated during two and a half years at Fazakerley there had been only 2 cases of cross infection. Dr. J. M. Day (Medical Superintendent, City of Dublin Fever Hospital) did not agree with Dr. Rundle's plan of treating different infectious diseases in one ward. He strongly advocated the open-air treatment of scarlet fever. Dr. Mulvany (Portsmouth) also spoke, and the President stated that in his opinion there was a tendency to sacrifice floor space to cubic space in the construction of isolation hospitals. He considered that desquamation should be regarded as at least a potential source of the infection of scarlet fever. On the whole, this discussion confirmed the importance and usefulness of isolation hospitals as opposed to home isolation of infectious diseases, due attention being given to aseptic treatment. The business of the Section concluded with two papers: The effect of intra-migration on national health, by Dr. J. S. Mackintosh; and Visual defects in children, by Mr. A. A. Bradburne.

Section of Surgery.

Thursday, July 25th.

Professor Rushton Parker again presided over a very largely attended meeting of the Section. The ordinary business was preceded by a demonstration by Dr. F. W. Collinson of a portable electric light apparatus for any table used for surgical operations in private practice. The apparatus proved light and readily fixed in a few minutes, and gave a very suitable and powerful light adjustable for all operative purposes. Mr. Hurry Fenwick introduced the discussion on the diagnosis and treatment of tuberculous disease of the urinary tract. He said that two great questions presented themselves at once: Do we find that the kidney is the starting point of tuberculosis of the genito-urinary tract? and is surgical interference curative? The detection of latent "closed" renal tubercle was not yet possible. In investigating the matter it was necessary to keep in mind that the sexes must be dealt with separately, and only by strict separation in statistics could a true estimate of the difference between the expectant and operative treatment be formed. In 92 per cent. of cases bacteriological diagnosis was possible. In women the thickened ureter was easily palpable; the thickening was actual increase in size of the ureteral walls, with patulous orifice, or contraction with pulling up of vesical orifice, the latter form being found in old-standing cases. In men the invasion was more from the genital organs than from the kidney primarily, and thickening of ureter was not so marked. Operative treatment was a much more serious thing in men than in women. Thickened ureters showed no evidence of tubercle, although giant cells were found. On that account there was no reason for following down and removing the whole ureter; it was sufficient to cut it through two or three inches from the kidney pelvis, scoop out the central portion of the tube, ligature, and drop back into the wound. He thought that the less the bladder was touched the better, because in women primary tuberculosis of the bladder did not exist, and in all cases removal of the kidney was frequently followed by cure of any existing bladder lesion. Tuberculin was a useful form of treatment, but it was never curative: he regarded its action as "tonic." In greatly contracted bladder, bringing the ureter out to the loin gave comfort and relief in spite of the great disadvantage of the presence of the tubes. The paper was illustrated by numerous coloured pictures. The discussion was carried on by Mr. Andrew Fullerton, Mr. E. Deanesly, Dr. Sinclair White, who strongly advocated the expectant method of treatment and opposed operation, Mr. Hey Groves, Dr. Temple Thursell (Johannesburg), Dr. Darling (Lurgan), and Mr. Childe. Mr. Hurry Fenwick replied to some points raised in the debate, and emphasized the necessity for removing the kidney when that was the operation of choice, without cutting into it, and so preserving an aseptic wound, without drainage. Mr. W. Sampson Handley read a short paper on transarticular operations for fractures near the knee and elbow. He advocated this method in cases which could not be rectified even after repeated attempts under anaesthesia. Mr. Ballance and Professor Rushton Parker also spoke on the subject. Dr. A. Don described an operation for complete excision of haemorrhoidal area, and gave results of 50 cases. Mr. R. A. Bickersteth read a paper on obstruction of the ureter due to (1) kinking over a branch of the renal artery, and (2) renal calculus. He exhibited specimens, and described his method of preserving them to show the changes produced. Mr. Fullerton and Mr. Ballance contributed to the discussion on the paper.

Special Meeting: Fractures Committee.

In the afternoon a special meeting was held, with Mr. Ballance in the chair, to receive and discuss the report of the Fractures Committee of the Association. The report was presented by Mr. W. J. Greer, Chairman of the Committee, who moved that "the report be referred to the Council for consideration and publication." The motion was seconded by Mr. William Taylor, a member of the Committee. In the discussion which ensued the following gentlemen took part: Mr. C. A. Morton, Mr. Ernest Ward, Dr. Darling, Mr. Hey Groves, Sir Victor Horsley, and Mr. H. A. Ballance. Mr. Hey Groves, in speaking to the report, demonstrated the results of experimental investigation he was conducting on animals in the use of absorbable and non-absorbable intramedullary pegs in the treatment of simple fractures. Sir Victor Horsley regarded the report as one of the best ever produced by the British Medical Association. He was very much gratified to observe that the Committee had clearly stated their legal position, on which they had had competent advice. He thought that the report fully bore out the general trend of opinion towards operative treatment. Mr. Ballance said that the operative treatment aimed at absolutely accurate anatomical reposition of the fractured ends; that was more necessary in some bones than others, and in particular he thought the lower end of the humerus

came into that category. Mr. Herbert Paterson, a member of the Committee, said that it must now be regarded as a superstition that a good functional result might be got if the anatomical result was bad. Mr. Fagge and Mr. Jones Greer replied on behalf of the Committee. Mr. Ballance then put to the meeting the motion of thanks to the Committee and the motion to refer the report to the Council, and both were carried with acclamation.

Friday, July 26th.

On this day there was again a largely attended meeting of the Section, under the chairmanship of Professor Rushton Parker. The sitting was taken up with reading and discussion of papers. The contributions which elicited most debate were those of Mr. P. J. Freyer and Mr. Herbert J. Paterson. Mr. Freyer's paper was "One thousand cases of total resection of the enlarged prostate." He reminded the meeting of his first cases of prostatectomy, published eleven years ago, and he produced letters from three of these patients received a few days before to show that they were still alive and well, though very aged. His mortality had steadily declined with increasing dexterity and experience. Of the first 100 cases he lost 10; in the next 400 the mortality was only 4 per cent. Half of the deaths were due to uraemia. Where the presence of stone complicated the cases the mortality was nearly doubled. From his observations he thought that the adenomatous prostate tended to become cancerous from the irritation of catheterism and of septic infection of bladder. Rapidity of operation was of great importance; latterly the operation had been performed in from two to four minutes in ordinary simple cases, and in from eight to ten minutes in difficult cases. He had no theory to offer as to the function of the gland, nor as to the causes of its enlargement. Full discussion followed the paper, and Mr. Freyer replied to points raised. On the invitation of a member of the Section, he detailed the various steps of his operation. The President expressed the thanks of the Section to Mr. Freyer, and also offered his own personal congratulations on his work. In support of his arguments for immediate operation in all cases of appendicitis, Mr. Herbert J. Paterson presented in a few sentences a series of 100 consecutive cases of acute appendicitis, immediate and remote results. A most lively and spirited debate followed. It was inaugurated by Sir George Beatson, who argued strongly in support of his well-known views that cases of appendicitis seen for the first time by the surgeon on the fourth, fifth, or sixth day of illness, that is, in the "intermediary" stage, should not be operated on immediately, but should be tided over for a few days by medicinal treatment, and then operated on in what would be the quiescent stage, equivalent to the interval operation. Professor Irving Cameron was the only speaker in support of Sir George Beatson's views. All the others, including Mr. Fagge, Mr. W. J. Greer, Mr. C. A. Morton, Mr. Newbolt, and Mr. Cuthbert, spoke emphatically in favour of immediate removal of the appendix. Their position was eloquently and forcibly put by Mr. Stiles. He maintained that it was possible to eliminate some causes of the mortality which undoubtedly prevailed even in the particular class of cases selected by Sir George Beatson. He believed that ether, and not chloroform, should be the anaesthetic, that the appendix should be removed in every case at once, even though very free opening into the peritoneal cavity was required, that stomach lavage should be the only medicinal means employed, and especially so in late appendix cases with intestinal obstruction, and that the peritoneal cavity itself should never be washed out. Other papers read were: The treatment of gastric ulcer by excision and partial gastrectomy, by Mr. J. F. Dobson; the surgery of the sacro iliac joint, by Mr. W. I. de Courcy Wheeler; successful ligature of the first part of the left subclavian artery in a woman, by Mr. G. P. Newbolt, the patient being demonstrated to the Section; the preoperative diagnosis of appendicitis—a demonstration of a dorsal method of examination, by Dr. William Ewart; and observations on the laceration of large arteries, by Dr. George H. Edington.

SECTION OF TROPICAL MEDICINE.

Thursday, July 25th.

THE subject of leprosy was introduced by a paper on acid-fast bacilli from the human leprous lesions by Professor Duval (New Orleans). There may be cultivated, he thinks, from the leprous lesion two types of acid-fast bacilli with distinct characteristics. The same subject was dealt with in a paper by Dr. M. E. Marchoux (Paris), read for him by the Secretary. He described a disease of the rat presenting a remarkable resemblance to leprosy, and in which a bacillus strongly resembling that occurring in leprosy was found. Dr. BAYON (London), in a paper on leprosy cultures, confirmed the observation that the acid-fast organism cultivated from rats caused lesions identical to those of spontaneous rat-leprosy. He had been successful in transmitting leprosy direct from the human being to the rat, causing typical lesions in the spleen and liver, and had carried it on to the second generation. Professor Dean (University of Aberdeen) considered that the present state of affairs in connexion with leprosy was unsatisfactory, and corroborated some of the observations of Dr. Bayon. In view of the confusion which existed as to the causal organisms, he advocated a free interchange of cultures between different workers. Dr. Minett (British Guiana) stated that in British Guiana the results of vaccine, nastin, and benzoyl chlorides had been negative, and agreed with Dr. Bayon that the spontaneous cure of leprosy in the anaesthetic variety was not uncommon, and definite proof of this had been given in 13 cases. The second subject for discussion, Leishmaniasis, was opened by a paper on the kala-azar problem by Captain W. S. Patton, I.M.S. (Madras), who maintained that, despite the recent work done in Italy on flea transmission, the bed-bug was the transmitter of the parasite of Indian Leishmaniasis. A clue to the solution of the kala-azar problem lay in the study of the flagellates of the genus *Herpetomonas*. In his experience the parasite of kala-azar would only develop into a flagellate in the bed-bug. Dr. Row (Bombay), in a paper on experimental facts *re* kala-azar, gave the results of experiments showing (1) that by the subcutaneous injection of the virus of kala-azar from a human source it is possible to induce a cutaneous lesion in a susceptible animal; and (2) that by the subcutaneous injection of a three weeks' old culture of *Leishmania donovani* it is possible to induce a similar lesion; and (3) that parasites resembling those found in the human tissue are found in "fair abundance" in the lesions artificially induced, these parasites being also culturable into flagellates in suitable media. Dr. Fantham (Liverpool), in a paper on some insect flagellates and the problem of the transmission of *Leishmania*, drew attention to the fact that insects such as fleas, lice, and mosquitos, all of which might have been suspected of transmitting *Leishmania*, might harbour natural flagellate protozoa in their digestive tracts. Dr. Bayon gave a short demonstration on the development of *Leishmania*, and Dr. Seidelin (Liverpool) reported the fact that he had recently observed several cases of dermal *Leishmaniasis* in Yucatan, and mentioned that it appeared to be very widespread in the interior of the State. Professor Madden drew attention to the prevalence of a condition in Egypt which he was accustomed to call papilliferous degeneration of the skin, and in which Professor Ferguson had discovered the actual *Leishmania tropica*. Dr. Andrew Balfour, C.M.G. (Khartoum), reported that he had examined a number of bed-bugs, but without result.

Friday, July 26th.

The subject of discussion arranged for the day was the sanitation of agricultural estates in the tropics. A special invitation to be present had been issued to members of mercantile and agricultural firms having interests in the tropics, and a number of representatives were present. A paper by Dr. Malcolm Watson (Federated Malay States) was read by the Secretary. In the paper stress was laid upon the financial aspects of the problem and the necessity for careful inquiry before incurring large expenditure. Laymen of practical experience should be consulted. The measures to be pursued concerning malaria, ankylostomiasis, dysentery, cholera, etc., were considered, and the questions of water supply and housing were discussed. Dr. Carnegie Brown (London) in his paper dwelt on the necessity of a pure water supply and permanent antimalaria measures. He advocated administration of quinine as a prophylactic, and the importance of diet as affecting the prevalence of beri beri was also insisted upon. Dr. F. Law (formerly in British Guiana), in a paper on the same subject,

stated what was being done in British Guiana. Proper latrine arrangements were imperative. Dr. E. P. Minett (British Guiana), in collaboration with Dr. K. S. Wise, read a paper on the disposal of faeces, and stated that in British Guiana the best method was a latrine built over a deep open trench, which was flushed periodically with water. Experiments are also being made with a form of septic tank. The difficulty of obtaining a pure water supply in British Guiana was remarked upon. In the discussion, Lieutenant-Colonel J. K. Ritchie (R.A.M.C.) advocated a practical method of antimalarial prevention, and put forward the administration of 15 grains of quinine weekly as more efficacious than 5 grains daily. Major S. R. Christophers, I.M.S., pointed out that the intensity of malaria in Indian labour communities often depended upon economic stress, and that the rectification of these conditions was the first step in antimalarial measures. Dr. E. P. Minett thought that antimosquito campaigns should be the first line of defence, and quinine the second. Dr. F. Law advocated the daily use of quinine. Captain C. Ryley, I.M.S., gave details of the experimental administration of quinine as a prophylactic; he found that nearly 50 per cent. of the men treated showed infection by the benign tertian parasite. Dr. W. T. Prout, C.M.G. (Liverpool), considered that in regard to tropical infections the measures must be directed against insect-borne diseases. He advocated co-ordination in work of the kind, and the formation of a central sanitary advisory bureau for all the Colonies. After the discussion the members of the Section adjourned to the School of Tropical Medicine, which they inspected under the guidance of Professor Newstead and Dr. J. W. W. Stephens.

THE NATIONAL TEMPERANCE LEAGUE.

The Annual Breakfast.

The National Temperance League gave its annual breakfast party for members of the Association on July 25th, the proceedings taking place in the Waller Art Gallery, under the chairmanship of Mr. Alexander Guthrie. This early morning conference is habitually a success, and the present year's event was no exception to the general rule, the company present numbering over 200. In expressing a welcome on behalf of the league, Mr. Guthrie said that he thought the breakfast afforded an excellent opportunity of bringing an extremely important subject before those who, above all other people, had the power of influencing their fellow men in regard to alcohol and its dangers. Whether they were abstainers themselves or whether they were only amongst "the almost persuaded," they must all equally recognize what an important factor alcohol represented in the national life, and how correspondingly important it was that ripe and right views should be formed in respect of it.

Mr. Guthrie's welcome was supported by Sir James Barr, who, in the course of a brief speech, said there was no doubt in his mind that even at the present day people still took too much alcohol. Nevertheless social England had certainly become more temperate during the last ten years. The amount of alcohol used at large public dinners afforded an example; this being very much less than was wont to be consumed on similar occasions ten years previously. Either the taste for alcohol must be lessening, or people were finding the the strain and struggle of life too much for them unless they were strictly moderate in the use of alcohol. In regard to its use in the treatment of disease, he practically never prescribed it because he believed people prescribed it too much for themselves. He knew no disease from which a patient would not recover better without alcohol than with it. The natural force of disease could be lessened and recovery hastened without taking alcohol. The social aspect of the question, of course, stood on a different footing. A good many people took alcohol simply because they liked it. He was no public mentor, but would say that if people took alcohol let them not take too much. In his own experience the less they took the better.

On the conclusion of breakfast, a formal address on the subject of alcoholism in relation to insanity and crime was delivered by Dr. F. W. Mott, F.R.S., who prefaced his remarks by stating that he was not a total abstainer himself, but favoured all measures which would help to extend temperance. This was because he recognized the great danger, misery, crime, and disease that resulted from its converse. Like Sir James Barr, he believed that temperance reformers ought to exercise tolerance. The league whose guests they were likewise recognized that virtue, a possible instance in point being supplied by the fact that they were meeting in a beautiful gallery which was a gift to the city by a brewer. There was no doubt whatever that great steps towards temperance had been made. Nowadays it was not considered reputable for a man to be drunk or to be seen drunk. This advance had not been due so much to legislation as to the elevation of the public conscience and to the action of public men like their chairman in supporting wise measures brought forward to deal with this great national problem. Eight-and-twenty years ago, when he came to Liverpool, he remembered that there were several excellent *cafés*, a provision in which this city was then quite in advance of London. When he was a medical student it was impossible for them to go anywhere for their meals except to a public house, whereas now there were a number of excellent *cafés* where any one could get good food at a most reasonable cost. That, he believed, had been one of the causes of the fall in the drink bill. Moreover, the views of the medical profession in regard to the therapeutic use of alcohol had greatly changed. When he was a student one of the most eminent physicians used to order large quantities of alcohol, and it was a common thing in certain cases to order a patient half a pint of brandy or a bottle of champagne. Since those days they had found in the hospital that the patients did better if they did not have it, and he himself only ordered it on the very rarest occasions, and made it a rule never to supply it to a patient who had never tasted it before. Correlated with drunkenness were pauperism, insanity, tuberculosis, and certain forms of disease, and this was largely due, in his opinion, to the fact that the casual labourer had to live among the most insanitary and the most unhygienic conditions. One of the great problems before the nation at the present time was how to improve the conditions in question, and Liverpool, he was glad to know, was making a great effort in that direction. Sometimes, however, it was found that while a lot of slum property was pulled down no provision was made elsewhere for the housing of the people. Consequently the rents rose, and men had to pay more than a fifth of their wages in rent, and that, perhaps, when the accommodation was one room for the entire family. Necessarily, then, they were driven somewhere else during their leisure, and thus the children suffered and the women suffered too. If a comparison between inebriety and insanity were necessary he would say that the chronic inebriate was more dangerous to himself and to other people than the chronic lunatic. Some 40 per cent. of all crimes of violence in this country were due to alcoholism, and the cost of detaining people of this class represented an enormous sum. All thinking people were agreed that alcoholism was the cause of their prisons their infirmaries, their workhouses, and their hospitals being filled, but he might say from his experience that there was a steady diminution in the amount of disease due to that source, a hopeful sign of the awakening of the public conscience among the class of people chiefly affected. Dr. Mott then added that from investigations undertaken by him he had formed a conclusion that alcoholism might be regarded as more or less a weed killer, inasmuch as it either killed those susceptible to its influence or brought them into asylums where they were prevented from propagating their species. But if it were a weed killer, might it not also prove to be a weed producer? As for this, an examination of a number of pedigrees collected by him showed that despite the number of other factors that had to be considered, the drunkenness of an individual was usually due to drunkenness in his stock for several generations, and that this was sometimes associated also with epilepsy and insanity.

The proceedings closed with a vote of thanks to the chairman and to Dr. Mott, moved and seconded by Dr. Dudley W. Buxton and Mr. T. H. Bickerton respectively.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

Proprietary Articles in Relation to Sexual Matters.

At the meeting of the Committee on July 23rd the first witness was Lieutenant-Colonel H. Everill, Honorary Secretary of the White Cross League, which, he said, was under the patronage of the Archbishops of Canterbury and York, the Bishop of Kingston being its chairman. The league was engaged in rescue work among young men, and endeavoured to raise the moral tone of the public. The witness then proceeded to give evidence relating to advertisements which had appeared in newspapers relating to the sale of drugs and appliances for procuring abortion, miscarriage, and the prevention of conception. He handed in a number of advertisements which, he said, had been taken from provincial newspapers. He had answered a number of the advertisements and obtained replies, which were of a decidedly objectionable character. A method frequently adopted by advertisers of these drugs and preparations was to send circulars to persons whose marriages were announced in the papers. Circulars were also sent when announcements of births appeared. Witness gave particulars of records kept by the matrons of twenty-one rescue homes. Eighteen of these reports showed that the use of drugs and preventives was very common among young women who entered the homes. The birth-rate, he said, was falling very rapidly, and 50 per cent. of the children born were the offspring of the worst quarter of the community. Five-sixths of the remainder were the children of artisans and the working classes. The evidence of the medical profession showed that the declining birth-rate was chiefly due to the use of preventives. They had an injurious effect on the mothers and also on their children. Unless some steps were taken to prevent the sale of these drugs and preventives, the nation would go from bad to worse and the maintenance of the empire would be seriously threatened.

Replying to Mr. Glyn Jones, witness said that his experience showed that the vendors advertised in fictitious names. When steps were taken to prevent them they went to another locality and commenced business under another name. He had found in some cases in which the names of women alleged to be nurses were given that they were not respectable women, and in other cases in which the advertisers were stated to be doctors the degrees were fictitious degrees. He was aware that there was already an Act in force relating to indecent advertisements, but he wanted the Committee to say that this should be strengthened. The sale of any preparations not guaranteed by the medical profession should be stopped. That was the recommendation of the Joint Select Committee of 1908. In reply to Mr. Newton he said that he did not want to suggest that anything should be done which would hamper the discretion of the medical profession.

Mr. Cawley: Do you suggest that there is any moral danger from these advertisements?

Witness: They lead people to believe that they can get preventive medicines, and so there is illicit intercourse.

Answering Dr. Lynch, the witness said the use of preventive medicines was on the increase. They had cases in their homes of young girls under 14 years of age who had become acquainted with the preparations.

Dr. Lynch: You attribute the decreasing birth-rate to their use?

Witness: The medical profession says that. There is overwhelming evidence.

Replying to the Chairman, witness said the experience of the White Cross League extended over twenty-seven years. From its experience the use of the preparations was a growing evil.

The Practice of the Revenue Commissioners.

Mr. Cyril Herbert Kirby, of Messrs. Neve, Beck, and Kirby, solicitors, of Lime Street, E.C., solicitor to the Chemists' Defence Association, was the next witness. He said that at present it was very difficult for the trade to know what was liable for duty and what was not, and cases were constantly occurring of the Commissioners of Inland Revenue requiring penalties to be paid on the sale of medicines which the trade—and chemists were generally men of intelligence and education—honestly believed were not liable. Often the difficulty was not so much the question whether the preparation was liable, as to whether the Commissioners so regarded it. It was true the Commissioners always informed the trader who asked them whether a particular article was liable to medicine stamp duty. They declined, however, to say whether it came under the exemption or not. He thought it ought not to be necessary for a trader to submit every label, price list, bill, advertisement, etc., to the Commissioners before use, neither did he think it ought to be necessary for the Commissioners to undertake such work. Moreover, they were not always consistent. Some time ago he was engaged in a case in which the Commissioners issued a summons with respect to a label which they had passed as "not liable" a few years before. When the case came on for hearing the letter was produced in which the label was certified "not liable," and the solicitor representing the Commissioners withdrew the case. The witness made no complaint against the Commissioners, who were always fair and generally lenient in their administration of the Acts.

Proceeding to deal with the questions of law as regards the need of medicine stamps, witness referred to the evidence of Sir N. Highmore, and commenting on what were called "dispensing exemptions," quoted the following letter, which was usually sent in reply to an inquiry:

> I am directed by the Board of Inland Revenue to acknowledge the receipt of your letter, and to state that as a concession they will not institute proceedings in cases in which the preparation in question is supplied unstamped to retail chemists for use as a component part of a preparation prepared in accordance with a prescription of a qualified medical practitioner. If used in any other way, the penalties enforced by law have to be enforced. This concession does not extend to a preparation which is sold upon a medical man's order unmixed with any other ingredient or drug, while under the concession each bottle sold unstamped should bear a label worded as follows: "Supplied unstamped for dispensing purposes only and not for sale. If sold in any other manner than as a component part of a medicine prepared in accordance with a prescription of a medical practitioner, the seller will be liable to a penalty." The Board also requires that any printed recommendation or bill used with sales to the public should be omitted, and that the "dispensing label" shall be distinct in colour. If your company wish to avail themselves of the concession, you should forward for the inspection of the Board a specimen "dispensing" label in the terms indicated. I am to add that the Board invariably declines to allow the sales unstamped to medical men of medicines liable to duty.

Dealing with medicated wines, Mr. Kirby said they were divided into two classes "beverages" and "medicines," and whichever class the Commission signified they belonged to they were classed as such. If it was a beverage, they were sold by holders of wine licences, who were not required to hold a medicine licence or affix a medicine stamp. If they were regarded as medicines, the Commissioners did not take proceedings against a chemist who did not hold a licence even though they contained wine. They, however, had to hold a medicine licence and had to affix a medicine stamp. The holding of both licences was never required. In the case of foreign wines the duty was paid at the port of entry, and, so far as the sales were concerned, they regarded the preparation for all purposes as medicine. He understood that the Commissioners regarded it as important to have the preparations properly classified when they required them to be sold as wines, even if such steps reduced the revenue accruing from their sales. With regard to spirituous beverages, he said the Committee was probably aware that Statute 16, George II, ch. 8, sec. 12, contained a provision which the Commissioners regarded as allowing the sale of ordinary tinctures—for example, compound tincture of rhubarb and sweet spirit of nitre—by persons who did not hold spirit licences. The Commissioners did not allow a chemist not holding a spirit licence to sell what they regarded as a spirituous beverage although he held a medicine licence and the preparation was stamped with the medicine stamp. A chemist could sell drugs without a stamp if it was not stated what the drug was for. For instance, headache powders had to bear a stamp, but if only the word "head" was mentioned they were exempt. Referring to proprietary articles, he said some of them required a stamp whereas others did not. Some meat

extracts had to have them because it was said they professed to "cure," yet certain brands of soap which also set out to "prevent and cure" diseases did not bear a stamp.

The Chairman inquired whether the words on the wrappers around the articles came within the provisions of the Acts.

The witness said he had never heard of a prosecution. The Act said, "Wilfully calls on the label." It would depend whether the magistrate considered the wrapper stood for a label.

The Chairman: I would suggest that the reason there have been no prosecutions is because the authorities do not want to add to their burdens.

Witness put forward as a suggestion that persons who advised others through the post ought to be liable to prosecution. That was really a matter for the Apothecaries' Society. He was not aware that the British Medical Association had ever endeavoured to get the society to take such cases up.

Replying to Mr. Bathurst, witness said the Commissioners did not allow the "dispensing exemptions" to doctors. He supposed it was because they were not in the habit of using medicine stamps.

Mr. Bathurst: Supposing a doctor—as many of them do in the country—carries out this own dispensing, he would not be able to supply unstamped articles, like the chemist?

Witness: That is so.

Answering Mr. Glyn Jones, Mr. Kirby said that in the case of packets the stamp was put on the package; that enabled the single articles to be sold without them. He was aware that that provision applied to articles which a chemist himself put up. It would, of course, be difficult in that case to detect any fraud as regards stamping. He had heard of the practice of selling well-known pills in pennyworths, and that had led to prosecutions by the proprietors for fraudulent substitution.

Mr. Glyn Jones: It has been suggested that it would be wise in the case of certain proprietary medicines, where it was known that a dangerous poison was present, that the ingredients should appear on the label. If such ingredients appeared in the Poison Schedule would it not bring about the same result?

The Witness: No, not quite. The practice at present is to put the word "poison" on the label and not name the ingredient.

Mr. Glyn Jones: The word "poison" appears on the wrapper?

Witness: Yes.

Mr. Glyn Jones: Simply that one word, without any reference to what it contains?

Witness: That is so.

Mr. Glyn Jones: Excepting for deciding that the word refers to that particular article on which it appears, the scheduling would do just the same.

Mr. Lynch: Do you think that a stamp conveys a false impression to the public?

Witness: I have heard that said, but I do not know on what grounds.

Mr. Lynch: Have you any suggestions for making the law more effective?

Witness: No. I am not making any suggestions in that sense, except that the regulations might be revised and put into more modern language.

The Chairman: Are you prepared to say that the present state of things constitutes a financial and legal chaos?

Witness: Perhaps that phrase meets it. (Laughter.) He believed the Commissioners could get more revenue if the Act were more properly enforced. He could not say whether the recent increase in the revenue was due to more vigilance on the part of the Commissioners or increased sales. There were some eight or ten works containing formulae of approved medicines, and in them there were about 20,000 mentioned.

The Chairman: There is no one standard; the Commissioners accept a variety of standards from a variety of sources?

Witness: Yes.

Referring to exemptions, witness said he did not think the powers were misused. He thought, however, the Commissioners might enforce the Act more than they did. The foreign medicines were treated in exactly the same way as medicines produced in England.

The Chairman: Then it is not a question of protecting home industries. If the Commissioners "spread their net" a little more they would get more revenue.

The Committee adjourned for the Parliamentary recess.

FIRST INTERNATIONAL EUGENICS CONGRESS.

The First International Eugenics Congress has been held during the last week in London. The proceedings opened on Wednesday, July 24th, with a banquet at the Hotel Cecil, Mr. A. J. Balfour being the principal speaker. In his opening words he justified the holding of the Congress by contending that its duty was to convince the public that the study of eugenics was one of the greatest and most pressing necessities of our day. A useful caution was added. The Congress had got to persuade the ordinary man that the task science had set itself was one of the most difficult and complex it had ever undertaken. Eugenics, he said, depended upon facts which ought not to be difficult to verify: it depended upon premisses whose conclusions followed almost inevitably, and those who roughly or contemptuously put aside all those prophecies of ill to the civilization of the future were bound to give the closest scrutiny to the arguments before they rejected them, and to show when and how and in what particulars they failed to support the conclusions drawn from them. After referring to the differences of opinion existing among men of science, he reminded them that eugenics suffered from the fact that every faddist seized hold of the eugenic problem as the machinery for furthering his own particular method of bringing the millennium upon earth.

Official proceedings opened with the address of the President, Major Leonard Darwin. There was, he said, one agency which had had a great influence in the past—Natural Selection—Nature playing the part of the breeder of cattle refusing to breed from inferior stocks. It seemed as if the forward movement thus engendered had gone on since life first appeared on the earth until recent times when by social methods everything possible had been done to prevent progress being made by these means. He spoke of the danger of interfering with Nature's ways, and said that they must proclaim aloud that to give themselves the satisfaction of succouring their neighbour in distress without at the same time considering the effects likely to be produced by their charity on future generations was to say the least but weakness and folly. Their first effort must be to establish such a moral code as would ensure that the welfare of the unborn should be kept in view in connexion with all questions concerning both the marriage of the individual and the organization of the State. They should hope that the twentieth century would be known in future as the century when the eugenic ideal was accepted as part of the creed of civilization.

The Inheritance of Fecundity.

In the morning session (Thursday) a paper was read by Dr. Raymond Pearl, of the Maine Agricultural Experimental Station, on "The Inheritance of Fecundity," which was characterized by Professor Punnett as the most important paper that would be read at the conference. Dr. Pearl described the results of an investigation into the mode of inheritance of fecundity in the domestic fowl, and showed that while the continued selection over a period of years of highly fecund females failed to bring about any change in average fecundity of the strain used, the character must nevertheless be inherited, since pedigree lines had been inherited which uniformly bred true to definite degrees of fecundity. Differences in degrees of fecundity (number of eggs laid) did not depend upon anatomical differences in respect to the number of visible oocytes in the ovary, and the differential factor on which the variations in fecundity depended must be primarily physiological. Fecundity in the fowl, it was then claimed, was inherited in strict accord with the Mendelian plan, for observed individual variations in fecundity depended essentially upon two separately inherited physiological factors; high fecundity was manifested only when both of the factors were present together in the same individual; either of the factors when present alone caused about the same degree of low fecundity to be manifested; one of the factors was sex-correlated in its

inheritance in such a way that in gametogenesis any gamete bearing the female sex determinant was debarred from bearing one of the fecundity factors, and there was thus a definite and clear-cut segregation of high fecundity from low fecundity. The speaker suggested that the results submitted might offer a method of attacking the same problem for man.

Feeble-Mindedness.

In the afternoon session Professor PUNNETT contended that precise knowledge was at present available for man in relatively few characters. The one instance of eugenic importance that could be brought under immediate control was that of feeble-mindedness. The evidence available suggested that it was a case of single Mendelian inheritance. There was every reason to expect that a policy of strict segregation would rapidly bring about the elimination of this character.

Inheritance of Epilepsy.

In a paper on the inheritance of epilepsy, Dr. D. F. WEEKS, Medical Superintendent of the New Jersey State Village for Epileptics at Skillman, attempted to define what laws epilepsy followed in its return to successive generations and to determine the relation it bore to alcoholism, migraine, paralysis, and other symptoms of lack of neural strength. His conclusions were that the common types of epileptics lacked some element necessary for complete mental development, being in this way comparable with the feeble-minded; that two epileptic parents produced only defectives, mental defect occurring when both parents were either epileptic or feeble-minded; that epilepsy tended in successive generations to form a larger part of the population; that the normal parents of epileptics were not normal but simplex, and had descended from tainted ancestors; that alcohol might be a cause of defect in that more children of alcoholic parents were defective than where alcoholism was not a factor; and that neurotic and other tainted conditions were closely allied with epilepsy. He contended that in the light of present knowledge epilepsy considered by itself was not a Mendelian factor, but that epilepsy and feeble-mindedness were Mendelian factors of the recessive type.

Influence of Age of Parents.

In discussing the influence of the age of the parents on psycho-physical characteristics of the children, Professor ANTONIO MAZZO, Director of the Lunatic Asylum at Turin, contended that the children of youthful parents showed pre-eminently the qualities of youth. Assassins, homicides, those who showed the most complete absence of sentiments of affection and often delusions of persecution gave a proportion of children of aged parents far greater than that furnished by all the other categories of delinquents.

Maternity Statistics.

Mr. HOFFMANN (Statistician of the Prudential Insurance Company of America) opened Friday's meeting with an account of the maternity statistics of Rhode Island. His figures related to the year 1905, and a selection of them can be best presented in a table.

		Per Cent.
Native-born married women	...	71.6 mothers
,, ,,	...	28.4 childless
Foreign-born ,,	...	82.5 mothers
,, ,,	...	17.5 childless
Protestant ,,	...	72.7 mothers
Roman Catholic ,,	...	80.5 ,,
Jewish ,,	...	88.0 ,,

Discussing the question in connexion with the different ages of parenthood, he showed that a similar disproportion was apparent. This must be regarded as the most alarming tendency in American life; it was evidence of physical deterioration, and must have a lasting effect upon national life and character.

Mr. C. B. DAVENPORT, discussing marriage and eugenics, considered the laws limiting freedom of marriage. Three were of biological import—the limitation of relationship between the mates, the limitations in mental capacity of the mates, and limitations of race. There was, he said, biological justification for limiting cousin marriages in so far as they were apt to bring in from both sides of the house the same defect; and while the prohibition of cousin marriages was doubtless a rough eugenic measure, it would be better if it were qualified so as to forbid the marriage of cousins when, in the parental fraternity common to both, there was a case of inability to learn at school, of dementia praecox, of epilepsy, congenital deafness, albinism or cleft palate. While the only way to prevent the reproduction of the feeble-minded was to sterilize or segregate them, it was unwise to refuse marriage to the insane without qualification. Two mentally normal persons who had each an insane parent were more apt to have insane offspring than an insane person who married one in whom there was no taint of insanity. It might be unwise to deny to every person who had shown a tendency to manic depressive, or insanity in its lighter forms, marriage into mentally sound stock. The requirement of a physician's certificate as to bodily soundness demanded by some clergymen in the States was primarily directed towards venereal disease, and certainly had eugenical bearings. When a requirement was made of a certificate that both parties came of mentally and physically sound stock a still more important step in eugenics would have been taken. He advocated strongly that in marriage questions the law should take lessons from biology, and so avert many of the disasters that were feared.

Practical Measures in America.

The session on Friday afternoon was opened by Mr. BLEECKER VAN WAGENEN, who presented the preliminary report of the Committee of the Eugenic Section of the American Breeders' Association to study and report on the best practical means for cutting off the defective germplasm in the human population. In eight of the States of the Union there were laws authorizing or requiring sterilization of certain classes of defectives and degenerates. A considerable quantity of evidence is contained in the report, and the conclusions which the committee regard as indicated are that the sterilization of the adult male by vasectomy is a simple, practicable method of preventing procreation by him without otherwise interfering with his sexual functions, but that it is not certainly permanent, castration only being sure; that sterilization of the adult female by either salpingectomy, ovariotomy, or hysterectomy, or all three, is never wholly free from danger to life or disturbance of other bodily or mental functions; that sterilization of adults by any of these processes did not appear greatly to modify previous sex characteristics and habits; that in females sexual passions were sometimes increased, in males more often they were somewhat mitigated; that there was no probability that in this way sexual immorality would be increased; that knowledge was as yet so limited that only a few types could be safely selected as suitable for compulsory sterilization; that vasectomy might become a eugenic measure of considerable value if practised under the general protection of law, but by persuasion and with the consent of the individual unfitted for parenthood; that the sterilization laws already enacted in the United States would have to undergo vigorous attacks in the highest courts before many more compulsory operations were performed, with the probability that there would eventually be material modifications of them.

Education and Eugenics.

Dr. F. C. S. SCHILLER (Oxford) on Saturday raised the whole question of education and eugenics. He criticized the present educational system, and suggested that it might be practicable to substitute an ideal of general fitness for that of athletic fitness. As society was constituted at present, talent was drained from all the classes to the top, and then tended to be eliminated.

Interchange between the Classes.

On Monday, after drawing attention to the cause of the inferiority of physical and mental characters in the lower social classes, Professor NICEFORO (Naples) claimed that in the mass of men belonging to the superior classes were found a small number of men with inferior qualities, while in the mass of men forming the inferior classes were found a certain number of persons possessing superior characters. It was, he argued, between these two exceptional categories that social exchanges should be made, allowing the best and most capable of the lower stratum to ascend, and compelling the unadapted who were found above to fall to the lower stratum.

M. LUCIEN MARCH, Director of General Statistics in France, considered in this connexion some of the results

of the French census returns of 1906. One of his most important conclusions was that it did not appear that in France casual and unskilled labourers, persons in the receipt of Poor Law relief, and so forth, were especially prolific. But even among the working classes the most highly paid occupations were not those in which were found the greatest number of children. The economic, social, or moral burden of children was a factor bound up in a complex manner, not only with the individual conditions of existence, but also with the transformation of society, progress in manners and customs, and the conception formed of life.

Historical Research.

The most striking paper of the afternoon session was by Sir Frederick Adams Woods on "Some Inter-relations between Eugenics and Historical Research." Arguing from his researches into the records of royal families and of those who had been elected to the Hall of Fame, he said that among 832 members of the various royal families at least 20 exhibited a genius entitling them to rank intellectually with those included in the studies of Galton and Ellis. This percentage was more than twenty thousand times as high as it was among the masses. The figures relating to the Hall of Fame showed that the amount of distinguished relationship was about a thousand times the random expectation. He concluded by making a strong appeal that the human record should be used to contribute to the improvement of the human breed.

Death-rate During Development.

Dr. Corrado Gini, Professor of Statistics in the University of Cagliari, drew attention to the heavy death-rate shown during development by the human race. It did not appear possible, he said, to show any correlation between the frequency of multiple births, of miscarriages, or of stillbirths, nor between the length of life of the offspring and their intellectual capacity and the season of conception. The frequency of stillbirths, however, and the length of life of the offspring showed a clear correlation with the season of birth in the sense that those born in temperate seasons showed a lower rate for stillbirths and a greater length of life. The age of the mother at the time of marriage exercised a decisive influence upon the vitality of the offspring—the greater the age of the mother at the time of marriage, the less being the vitality of the children. The influence of the father's age was less intense, but similar. Persons who died at a more advanced age had children in greater number and endowed with greater length of life, and for some classes of the unfit (mad, consumptives, and suicides) it could be proved beyond question that the number of children born was less and their mortality greater than among married people generally.

Prophylaxis of Syphilis.

Tuesday, the concluding day of the session, was devoted to some points connected with the medical aspect of eugenics.

The session opened with a paper on "The Prophylaxis of Hereditary Syphilis and its Eugenic Action," by Dr. Hallopeau, the Congress, as it had done in a previous discussion on Militarism and Eugenics, emphasizing the view that they should take every possible step to rid the community of the disease. The paper and the discussion did not follow on any very novel lines, the most important practical suggestion being that it would be well for the army practice of giving instruction to the troops as to venereal disease being extended to the Territorials, with a view of spreading accurate knowledge on the subject.

Eugenics, Alcohol, and Insanity.

The papers that followed, dealing with the influence of alcohol, were of more interest, particularly that of Dr. Alfred Mjöen (Kristiania). Starting with the proposition that the injurious effect of an alcoholic beverage upon individuals or races increased from a certain percentage progressively with the increasing contents of alcohol, he advocated the division of alcoholic drinks into classes, the sale of low percentage drinks being encouraged by low duties and that of high percentage being discouraged by high duties. Legislation to that effect, he said, had, after a long struggle, just been carried through the Norwegian Storthing. In the course of the ensuing discussion, Dr. Ploetz said that he intended to use every effort to get similar legislation carried in Germany.

Dr. F. W. Mott discussed "Heredity and Eugenics in Relation to Insanity." He attributed the increase of registered insanity in London to administrative causes, and discussed particularly heredity as a cause of insanity. Among the 20,000 inmates at present resident in the London County Council Asylums, 715 were so closely related as parents and offspring or brothers and sisters. Seeing that the unfit were at present able to survive, it was an important question whether Nature ended or mended degenerate stocks, or whether the lives of neuropathic inheritance had only been partially cut off by the tendency to anticipation. It was urgently necessary to know what was the fate of all the offspring of an insane parent or parents, for there were many facts showing that a disease might be latent and reappear in a stock when the conditions of mating or environment were unfavourable. As a result of an analysis of pedigrees with a dual neuropathic inheritance of paternal and maternal stocks compared with single neuropathic inheritance, he concluded that a child born of neuropathic inheritance in both ancestral stocks stood on an average four times as great a chance of being insane as when only one stock was infected.

Sir George Savage took part in the discussion, and argued that insanity had to be looked on as similar to genius; neither condition bred true. There were forms of insanity that were not transmitted or transmissible. He reminded the members that disease could be bred out: if they eliminated all forms of neurosis they would reduce the world to a dead level of respectability, and make life hardly worth living.

In a paper by Mr. H. E. Jordan it was argued that eugenics ought to find a place in the medical curriculum.

In concluding the Congress, Major Darwin said he was sure he was interpreting the Congress correctly in pleading that the elimination of the feeble-minded was a policy that they felt should be kept in the forefront of their programme. He thought they should give a well-defined meaning to the term "eugenics," and be careful not to neglect that field of heredity which they had undertaken to cultivate for reforms that gave more immediate promise. They had asked themselves the question, Was civilization to be progressive or retrograde? and their decision was that so far as lay within their power it should be progressive. In his opinion the thanks of posterity were due to them.

Several votes of thanks were passed at the conclusion of the Congress, especially to Major Darwin and to Mrs. Gotto.

Appeal by Eugenics Education Society.

As a result of the Congress a letter has been issued by the chief officers of the Congress appealing for funds. It was as follows:

Eugenics Education Society.

The widespread interest aroused by the International Congress makes this an opportune moment to appeal for support for the Eugenics Education Society. Every additional recruit, by joining that society, undoubtedly adds to its financial strength and to its prestige. But, highly desirable as is such an increase of numbers, all our needs are unlikely thus to be met, for an additional expenditure of at least £500 a year is essential in order to render possible what is now immediately and urgently required in the way of additional office accommodation, secretarial assistance, and educational lectures. Surely some of our wealthy and generous fellow-countrymen must see the necessity of establishing the eugenic movement on a permanent basis in order to ensure the progress of the nation, if not to guard against an actual retrograde movement. To them shall we appeal in vain?

The National League for Physical Education and Improvement has recently added four new health leaflets to its well-known series, which has already met with so much appreciation both by public health authorities and by the ever-increasing number of voluntary health workers. One deals with cleanliness in the home, another with fresh air and ventilation, while the other two contain instructions on bringing up breast-fed and bottle-fed infants respectively. The latter were drawn up by the medical subcommittee of the Association of Infant Consultations and Schools for Mothers and by the Metropolitan Branch of the Society of Medical Officers of Health. Specimen copies will be sent on application to the Secretary of the League, 4, Tavistock Square, W.C., if a stamp is enclosed for postage.

BUXTON.

[FROM A SPECIAL CORRESPONDENT.]

RECENT developments at Buxton, including the discovery of a new source of the radio-active water and the re-opening of an enlarged and beautified Pump Room, lent special interest to a visit to this mountain spa which was paid by many members of the Association on July 27th, on the invitation of the Buxton Medical Society. The party left Liverpool with Dr. J. Lloyd Roberts as conductor, and was welcomed on its arrival by Dr. T. B. Flint and Dr. J. Braithwaite, chairman and honorary secretary respectively of the local Reception Committee. Other members of the profession in Buxton who helped to make the brief visit enjoyable were Drs. Armstrong, Buckley, Burt, Cox, Harburn, Hendry, McOscar, Shipton, and Florence Theobalds. The Urban District Council was represented by its chairman, Mr. W. F. Mill, J.P., and by other members and officials.

The first event was an inspection of the enlarged Pump Room. The opening of this was recorded in our columns about a month ago, while the circumstances in which the new spring was discovered were dealt with last December. The water of this new spring has an even temperature of 82° F., and is evidently highly gaseous, and its utilization has not necessitated so complete an alteration of the familiar exterior of the Pump Room as might have been expected. It is in the interior that the change is most striking. Into an open space below the floor level of the Pump Room itself, and quite open to the general view, the water from this fresh source of supply is discharged in a purely natural manner, since pumping or any mechanical force of that kind would impair its properties and prevent more particularly the retention of its radio activity. Sixty gallons of the water rise up every minute through perforations in the floor of its massive elliptical basin, overflow the channel, and pass out through a waste-pipe. Thus the spring water is obtained at its purest, and in the opinion of Dr. Walter Makower, of the physics department of Manchester University, who has been conducting a series of investigations on the subject, the means by which the water is now supplied enables it to keep its radio-active properties as far as possible without loss as it comes up from the springs. Incidentally, it converts the Pump Room into something resembling in principle a radium emanatorium for all those who breathe its atmosphere, whether or not they drink its waters.



The well which contains the water measures about 6 ft. in length, and something under 4 ft. in width and 2 ft. in depth, and the familiar faintly blue tinge of the Buxton spring is shown in relief against its marble. The well chamber, and indeed the Pump Room as a whole, with its mosaic floor and tiled dado, has a very effective colour scheme, and is altogether a worthy shrine of that St. Anne to whom the fountains of Buxton are dedicated, and who "gives health and living great to those who love her most." The arrangement is a delicate combination of Swedish green and creamy white, while the warm staining of the windows and mahogany furniture save it from having too much of what one may call the "simple life" effect. Attendants stand below on a serving landing in the well chamber, and, after filling the rigorously disinfected glasses—although somehow it spoils Pump Room poetry to mention disinfection—place them on the white marble balustrade for visitors. The chalybeate water is supplied in a room at one side of the well chamber.

Having sampled the "Source St. Anne" waters, which are free from what Sam Weller would describe as the flavour of warm flat-irons, and which can be drunk here at their natural temperature just as they issue from the rock, the visitors proceeded to the bathing establishments, inspecting first of all the hot baths. In this department and in the natural baths some eighty-seven different treatments are administered, and of these, of course, the visitors had only time to see a few. But they saw in operation the Russian bath, the douche-massage treatment as administered on the Vichy system, with the patient lying in an immersion bath; the Aix, Tivoli, and other douche methods, and the Plombières douche. The latest treatment to be placed on the programme at Buxton is the Bourbon-Lancy bath for diseases of the heart and blood vessels. The chief manipulation in this system is a bath followed by an under-current douche, massage, manual gymnastics, and mechanical therapeutics generally. It was stated that Buxton is the only spa in the kingdom in which this treatment is given.

A visit was then paid to the natural baths, where, through slabs of perforated marble in the swimming and immersion apartments, public and private, a stream of the thermal water is constantly flowing from the springs. Care was taken to point out the bubbles, said to be due to the radio-active gas, which were constantly rising to the surface. There was only time to glance at the electrical and radiant heat installations, but one or two members of the party sampled the influence of the static machine and put the high-frequency currents to a personal test. The Schnée four-cell bath, used chiefly for sciatica, but also occasionally for rheumatoid cases, was in evidence, as well as appliances for the administration of the sinusoidal and constant currents. One of the several light-bath cabinets was fitted with electric lamps of different colours, so that those dermatologists who believe in the efficacy of rays from isolated portions of the spectrum in microbic diseases of the skin—blue as a sedative, red as an irritant, white as a heat producer—could prescribe accordingly. Another Buxton speciality shown was the peat bath, the peat moorlands adjoining the town having been drawn upon in order to give the advantages of the Continental "*Moorbäder*."

There was time for a call at the Devonshire Hospital, and after testing the echo under a dome which it is said exceeds in circumference St. Peter's or any other in the

world, the visitors went the round among the in-patients. Most of these, who numbered between 250 and 300, were suffering from some form of rheumatoid disease. The new pathological laboratory was inspected, as well as the newly-furnished *x*-ray department, and the various kinds of electro-medical apparatus which are used only as an adjunct to the more specific types of Buxton treatment. The least familiar object among the apparatus, perhaps, was the arthromotor for giving a certain amount of exercise to the muscles of an arthritic patient; this was demonstrated in use.

At the luncheon, which was served in the Palace Hotel, Dr. Flint extended a cordial welcome to the visitors. He said that the Devonshire Hospital, which they had just seen, cured or greatly relieved 86 per cent. of its cases after a three or a six weeks' stay, and although certain exceptional methods of treatment were employed, the main reliance was placed upon the Buxton water and the Buxton air. The baths, to which 95,000 bathers resorted annually, were the property of the town, and, as the water had such curative value, the recent discovery of a new source of supply, giving 50 or 60 gallons per minute, was a fact of considerable medical importance. He mentioned that in the opinion of Dr. Makower, the scientific investigator of the Buxton waters, their supply would compare favourably in point of radio-activity with that of any place of which he was aware in England. Even if the effectiveness of radium emanation in spa water had yet to be conclusively established, and indeed if any person were still sceptical as to hydrotherapy, the air of Buxton remained as an unquestionable boon. All the visitors that day must have noticed the bracing nature of the air, and that was the point which had impressed Dr. Bonniot when he came as the representative of the French Government to investigate the relative values of British health resorts. In conclusion, he proposed a toast to "The British Medical Association," coupling with it the names of Dr. David Walsh and Dr. Lloyd Roberts. Mr. Mill, of the Urban District Council, associated himself with the sentiment, saying that a town such as theirs owed a great deal to members of the medical profession, and they were very pleased to have them there that day to test personally the purity of the water and to get a glimpse of their hills and dales. Dr. David Walsh suitably responded, and bore testimony to the atmosphere, which, he said, had greeted him on his arrival like delicately iced champagne. He was glad to hear that there was scientific justification for the traditional value of the waters—that the seal of science had been impressed upon the Buxton charter. Having in its springs that radio-activity which was the new force to dawn upon modern science, Buxton might consider itself thoroughly up to date, and succeeding chemical analyses only showed how true was the intuition of the Romans, who in their fondness for the thermal waters discovered the Buxton spring. He sketched an amusing picture of the shade of a Roman in his toga being conducted over the baths by the members of the Buxton Medical Society, and the pride of that ancient conqueror on finding how far he had anticipated modern discovery. Dr. J. Lloyd Roberts also responded on behalf of the members of the committee in Liverpool who had been responsible for the arrangements, and Dr. C. G. Lee, of Liverpool, proposed a vote of thanks to the Chairman, Dr. Flint, to which a hearty response was given. The short afternoon was spent in the gardens, tea being served in the Pavilion, and the company returned to Liverpool with the pleasantest recollections of their five hours' visit to the natural capital of the Peak.

BRITISH MEDICAL BENEVOLENT FUND.

At the July meeting twenty-four cases were considered, and grants amounting to £191 made to twenty-one of the applicants. Appended are particulars of the cases relieved:

Widow, aged 49, of L.R.C.P., L.R.C.S.Edin. No income. Two sons, but at present only able to give very slight assistance. Health prevents any attempt at self-support. Relieved nine times, £89. Voted £10.

Widow, aged 47, of M.R.C.S., L.R.C.P. Quite unprovided for at recent death of husband, and proposes to try to establish a boarding house at a seaside resort. Two children, aged 17½ and 8. Voted £10.

Widow, aged 45, of L.S.A. No income. Lost her husband after a short illness a few weeks ago, and is without any means; hopes to support herself by taking paying guests. Voted £10.

Daughter, aged 58, of late M.D.Glasg. Lost her income through the failure of a bank, and is now dependent upon two or three quite small pensions from charitable societies. Has been blind for several years, and has recently been disabled, probably permanently, by a severe fall. Voted £2, and case to be reconsidered at the next meeting.

Wife, aged 61, of M.B.Glasg. Since husband's removal to an asylum five years ago has been helped by relations, who are now obliged to reduce their allowance. Voted £6.

Widow, aged 55, of M.R.C.S., L.R.C.P. Has a house, but is unable either to sell or let it, and her consequent difficulties have been increased by the long and serious illness of her daughter, whose earnings should otherwise be sufficient for the comfortable maintenance of both. Voted £10.

L.R.C.P., L.R.C.S.Edin., aged 58. Has practised for nearly thirty years in a Lancashire town, but is now completely disabled by paralysis and would be destitute but for his wife's income of £1 a week. Voted £18.

Daughter, aged 55, of late L.R.C.P.Edin. No income; unable to earn a living on account of permanent ill-health, and dependent on two younger sisters who have to support themselves. Relieved seven times, £66. Voted £10.

Daughter, aged 55, of late M.R.C.S. No income; receives a home in return for slight services, but is in bad health, and consequently has many unavoidable expenses. Relieved four times, £20. Voted £5.

Widow, aged 76, of M.D.Glasg. Lets lodgings, but finds increasing difficulty in maintaining herself, and children are unable to help. Relieved eight times, £41. Voted £10.

Daughter, aged 67, of late L.R.C.P.Glasg. Supplements a pension of £10 a year by letting lodgings, but is in poor health. Relieved once, £5. Voted £5.

Widow, aged 62, of M.D.St.Andrews. No income, and has supported herself since husband's death by letting lodgings, but finds her receipts decreasing and is in bad health. Relieved eight times, £95. Voted £12.

Daughter, aged 69, of late M.R.C.S. Maintained herself by teaching for forty-three years, but gave up five years ago on account of failing eyesight, and is now dependent on this fund and the help of friends. Relieved four times, £48. Voted, £12.

Daughter, aged 31, of late M.D.Trin.Coll.Dub. No income, and, being a chronic invalid, is dependent on her mother, whose only provision is a few shillings a week. Relieved seven times, £50. Voted £10.

Daughter, aged 65, of late M.R.C.S. Is mentally feeble, and dependent on a brother who can ill afford to help. Relieved six times, £72. Voted £12.

Daughter, aged 55, of late L.R.C.P. Only income a pension of £21 a year from a charitable society, and is not in good health. Relieved four times, £20. Voted £3.

Widow, aged 55, of L.R.C.P., L.R.C.S.Edin. Quite unprovided for at husband's death two years ago, and is endeavouring to establish a small boarding house. No children. Voted £5.

Daughter, aged 65, of late M.R.C.S. No income; receives a home in return for services. Relieved ten times, £144. Voted £12.

Widow, aged 63, of L.R.C.P. No income; children only able to give slight help. Relieved twice, £24. Voted £12.

Widow, aged 71, of M.R.C.S. Only income about 10s. a week, and has to maintain a daughter who is completely incapacitated by arthritis. Relieved twice, £22. Voted £12.

Widow, aged 76, of M.D.Glasg. Has a small income, which is sufficient under ordinary circumstances, but has incurred many expenses during the last eighteen months through the illness and death of a son. Voted £5.

Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole Street, W.

LITERARY NOTES.

Among the portraits acquired by the trustees of the National Portrait Gallery which have recently been placed on exhibition is one of Sir Theodore Turquet de Mayerne, M.D., 1573–1655. The following is the description given:

Physician to Henri IV., James I., Charles I., and Charles II. Writer on medicine and painters' materials: Experimental chemist. Painted about 1630 in the studio of Rubens. Purchased by the Trustees, May, 1912. Placed in Room II. (Register No. 1652). This picture figures in the catalogue of Rubens's effects as Lot 100, "Doctor Maierna." It was subsequently in the Arundel collection, was sold for £115 in 1754 at Dr. Mead's sale, and then passed from Lord Bessborough's collection to Cleveland House. While in Dr. Mead's possession it was engraved in mezzotint by John Simon.

A good account of Mayerne will be found in Dr. Norman Moore's History of Medicine in the British Isles (the FitzPatrick Lectures for 1905–6). Oxford: Clarendon Press.

Messrs. Macmillan and Co. will publish in September the fourth edition of *Anaesthetics and Their Administration*, by Sir Frederic W. Hewitt, M.V.O. In the preparation of this edition, which has been thoroughly revised and brought up to date, the author has been assisted by Dr. Henry Robinson, Anaesthetist to the Samaritan Hospital and to the Cancer Hospital.

British Medical Journal.

SATURDAY, AUGUST 3rd, 1912.

THE ADDRESS IN MEDICINE.

The orator in Medicine at this year's meeting of the Association was singularly happy in his choice of subject. In selecting as his text the relations of the circulation Dr. Gibson gave himself scope for a wide and comprehensive survey of a field of clinical medicine in which through many years he has laboured with assiduity and with conspicuous success. His reputation as an accurate observer and scientific expert in all questions relating to the heart and blood vessels is world-wide, and in his hands the spear of Ithuriel, to which he referred in his address, has retained the brightness of its polish, and throughout the work of his life has been wielded with commendable deftness of touch in the exposure of deceptive methods and the maintenance of accuracy and truth.

After a sketch of the evolution and development of the circulation, Dr. Gibson proceeded to review the normal processes of nature in the growth, equilibrium, and decline of the human body, especially in their intimate relationship to the circulatory, glandular, and nervous systems. Finally, he referred to some of the biological and chemical disturbances which result from the incidence of disease, and selected for the illustration of his argument various disorders in which the association of circulatory, glandular, and nervous changes are conspicuously evident.

The summary given by Dr. Gibson of recent work done in all directions in connexion with the complex mechanism by which the proper balance of the circulation is maintained was crisp and comprehensive, but the portion of his address which will attract most attention, as a brilliant instance of careful investigation and deductive reasoning practically applied to clinical methods, was that concerned with the internal secretions and their influence upon the human economy. The close connexion between glandular changes and circulatory disturbances was dealt with exhaustively, and exophthalmic goitre, myxoedema, acromegaly, and addisonism were quoted as clinical witnesses to the intimacy of that relation.

Though it is true that every tissue in the body receives from the blood certain substances in exchange for others which it returns, the glands produce special products to which alone the name of secretion can accurately be applied. The outcome of glandular activity is a secretory production, internal as well as external, which is largely regulated by excitant or stimulant substances, frequently originated in organs or tissues away from the gland itself, and known, under the name given them by Starling, as "hormones." Well-recognized examples of the influence of internal secretions on the nutrition and functional rectitude of the body are to be found in the results [illegible] in the thyroid gland, suprarenal capsules, or pituitary body. The effects produced upon the tissues by excess or defect of glandular function must be brought about through the intermediary of the blood vessels, but we are still in the dark as to whether this disturbing influence is exerted indirectly through the nervous system or directly by means of chemical changes.

The researches of Dubois and others have proved that one effect of diphtherial and other toxins is to induce exhaustion of the suprarenal glands, and, as an outcome of these investigations, the employment of adrenalin to minimize the risk of heart failure in diphtheria has been advocated. Removal of the suprarenal glands causes death, as Dr. Gibson pointed out, within twenty-four hours, whereas removal of the cervical, stellate, superior and inferior mesenteric ganglia is not necessarily fatal. It would therefore appear likely that "while life is not incompatible with destruction of much of the nervous control of the circulation, the removal of the structures which produce the chemical pressor substance is not compatible with life." The inference would seem to be that the chemical factor is the predominating influence in the preservation of life, but the ascertained facts are still too few to enable any definite pronouncement to be made as to the relative importance of one influence over another in maintaining tissue equilibrium. The subject is one of profound interest, and contains the promise of more important discoveries in the treatment and prevention of disease than almost any other of the many subtle problems which medical science must patiently solve.

It is to this practical application of Dr. Gibson's investigations that the busy practitioner will turn for help and guidance. Nor will he appeal in vain, for Dr. Gibson supplied towards the end of his address the clinical outcome of his academic reflections. He stated with commendable candour that the art of therapeutics, one of the most difficult branches of scientific investigation, was still dominated by crudeness of method and a slavish devotion to historical tradition and empirical romance. This unfortunate state of matters must inevitably continue until the examining bodies of our universities and colleges recognize more clearly than they do now the supreme importance of pharmacology and therapeutics. It is no exaggeration to say that at the present day the average student when he attains his degree or qualifications, and is launched out on the world to practise his art, is deplorably ignorant of the most important element in it, namely, the bedside application of his scientific knowledge to the relief of suffering and the cure of disease. He may have proved himself a brilliant anatomist, an accomplished physiologist, or a skilful pathologist, but as a therapeutist he is, in the vast majority of cases, a tyro possessing only the most elementary knowledge of the value and importance of drugs.

It is somewhat the fashion to belittle the therapeutic efforts of the physician, and to relegate an ever-increasing proportion of sick humanity to surgical methods of cure. But though modern surgery has achieved great triumphs which deserve and receive sympathetic and admiring recognition, there is to-day a tendency to displace the balance between medicine and surgery; the science of the one is an adjunct to the art of the other, and, in the interests of the sick, it cannot be too strongly stated that when the need for an operation arises, the necessity for therapeutic care does not cease. Dr. Gibson laid special emphasis on this aspect of modern medicine in his reference to the treatment of Graves's disease, and there are many other disorders to which his wise and timely warning might equally apply.

In the case of several other affections, Dr. Gibson pointed out the paths which investigation and discovery had opened up for new and promising

methods of therapeutic cure, and adduced many instances wherein their application had proved, in his own experience, either ameliorative or curative. His hopeful anticipation that, though "we are still groping after solid facts in the dusky twilight of the dawn," the tangle of uncertainty regarding many obscure pathological problems is being slowly but certainly unravelled, will find a responsive echo throughout the profession.

His address constitutes one of the most inspiring and illuminating contributions to the proceedings of the British Medical Association which have been made, and we commend its careful perusal to all who have the interests of medical progress at heart, and who believe with the eloquent author that "Science, ever young, looks with the open eyes of hope and faith into the future."

THE CENSUS OF ENGLAND AND WALES.

The first and second volumes of the series of detailed abstracts of the census of 1911 have just been issued.[1] A preliminary report showing the unrevised results of the enumeration in the more important subdivisions of the country was published in June, 1911. The present volumes contain revised figures for the administrative and the Poor Law or registration areas shown in the preliminary report, and include, in addition, statistics of the constituent wards and civil parishes of urban districts and of the constituent civil parishes of rural districts and of registration subdistricts; details of certain other areas and of public institutions are also shown.

The system of publication on the present occasion differs from that adopted in 1901. At that date complete results for each county were published separately, and the series of county volumes was followed by a Summary Volume and a General Report. For this census the results will be presented first in subject volumes relating to the country as a whole, and finally the statistics in these subject volumes will be collated and published for counties or groups of counties. The subject volumes fall into two groups: (*a*) Population statistics, and (*b*) social statistics. The first group is to consist of six volumes —namely, the two, now published, dealing with administrative and Poor Law or registration areas; the third and fourth with parliamentary and ecclesiastical areas respectively; and the fifth with the various kinds of dwellings; the sixth being a general index to all places mentioned in the population tables. The second group will consist of volumes containing statistics of (1) ages and condition as to marriage, (2) tenements, (3) birthplaces, (4) infirmities, (5) occupations and industries, (6) language spoken in Wales and Monmouthshire, and (7) fertility of marriage. It will be seen from this list that the census of 1911 embraced some new subjects of inquiry, and this extension of the scope of the census, coupled with the demand for more detailed tabulation generally, necessarily involves a considerable addition to the work of preparing the statistics.

The population of England and Wales on Sunday, April 2nd, 1911, is now returned as 36,070,492 persons. This number is 4,777 fewer than the unrevised figure previously published, and shows an increase of 3,542,649 over the number living in 1901. Thus, the decennial rate of increase was 10.9 per cent., the lowest recorded in any intercensal period; in 1881-91 the rate was 11.65, and it rose to 12.17 in 1891-1901. The recent decline in the rate of growth is not, however, due to a falling off in the excess of births over deaths, but to an increased loss by excess of emigrants over immigrants; for, although the increase per cent. by births was 3.01 less than in the previous ten years, this deficiency was more than counterbalanced by the fall in the death-rate, and the resulting natural increase by excess of births over deaths was 12.43 per cent. in 1901-11, against 12.39 per cent. in 1891-1901. The numerical difference between the natural increase and the actual increase, which is accounted for as loss by migration, amounted to over 500,000 persons in the past decennium, against only 60,000 in the previous period.

Comparison of the growth of population in England and Wales with that in other countries shows that the increase in the German Empire, 15.2 per cent., in the Netherlands 14.8 per cent., in Switzerland 13.2 per cent., and in Denmark 12.6 per cent., was in excess of the rate of 10.9 per cent. in England and Wales; the United States, with a rate of 21.0 per cent., the Australian Commonwealth with 18.1 per cent., New Zealand with 30.5 per cent., and the Dominion of Canada with 34.1 per cent., are all progressing more rapidly than any European country; while Ceylon and the Union of South Africa show rates of increase slightly below that of Germany; and the Indian Empire, after suffering severely from famine between 1891 and 1901, when the rate of increase fell to 2.5 per cent., has in the last completed intercensal period shown a recovery to 7.1 per cent.

The average density of population in England and Wales is 618 persons per square mile, or one person to 1.04 acre. In the administrative county of London there is an average of 38,680 persons per square mile, in Middlesex 4,848, and in Lancashire 2,554; six other counties have an average of over 1,000, while on the other hand six small counties have an average of fewer than 100. The highest rates of increase of population in the several administrative counties with their associated county boroughs were 42.1 per cent. in Middlesex, 32.8 in Monmouthshire, 30.3 in Glamorganshire, 29.4 in Surrey, 24.6 in Essex, 20.5 in Hertfordshire, 17.4 in Nottinghamshire, and 16.2 in Worcestershire. Decreases were recorded—in London 0.3 per cent., Cumberland 0.4, Carnarvonshire 0.5, Cardiganshire 2.0, Radnorshire 3.0, Montgomeryshire 3.2, and Merionethshire 6.7. In a group of 21 commercial and industrial counties, with an aggregate population of nearly 20 millions, the rate of increase was 11.8 per cent., against 13.4 per cent. in the previous decennium; while in a group of 23 agricultural counties, with an aggregate population of less than 4½ millions, the rate was 6.2, against 1.9 per cent. in 1891-1901.

The growth of the town districts at the expense of the country districts is illustrated in a table which shows that in 1851 the urban and rural populations were approximately equal; by 1881, 67.9 per cent. of the population were living in urban districts, and by 1911 the proportion had risen to 78.1 per cent. It may be observed, however, that the technical division into urban and rural districts, although convenient, does not indicate precisely the proportion of the population living under urban or rural conditions respectively. Many of the small urban districts are centres of agricultural communities, while some of the so-called rural districts are either suburban or mining districts. There were, at the time of the census, 406 urban districts each containing fewer than 5,000 persons, and 255 with populations of between 5,000 and 10,000; the addition of these small urban districts,

[1] Cd. 6258 and 6259. Prices 5s. 4d. and 3s. 7d.

with an aggregate population of upwards of 3 millions, to the rural section of the population would raise the proportion of that section from 22 to 30 per cent. If the towns are grouped according to population it is found that the lowest rate of increase occurs in the smallest towns, and that the rate increases, with slight fluctuations, up to a maximum of 23.3 per cent in the group of 50 towns with populations of between 30,000 and 40,000; above this limit of population the rate of increase shows a tendency to decline, until in the metropolis there is an actual decrease. Taking the towns individually, however, there does not appear to be any general relation between present population and rate of growth; thus, among all the towns of over 50,000 population, the greatest proportional increase was 117.3 per cent., in Southend-on-Sea, with a population of 62,713, and the greatest proportional decrease was 6.7 per cent., in Hastings, with a population of 61,145.

In the whole group of towns with populations exceeding 50,000 the rate of increase in the last decennium was only 8.3 per cent., against 15.3 per cent. in the previous period; but the report points out that "the growth of large urban communities can only be measured by considering jointly the population of the central area and of all its suburbs, whether the latter do or do not happen to be under the same local government as the central area." This applies most strongly to London: in the City itself the resident population declined by 27.0 per cent. between 1901 and 1911; of the metropolitan boroughs all but nine showed varying rates of decrease, the nine exceptions being those boroughs farthest removed from the centre; while in the "outer ring" there was a numerical addition of 684,538 persons to the population, representing an increase of 33.5 per cent. Birmingham, also, within its limits as existing on census day, showed an increase of only 0.5 per cent.; but the extension of its area in November last added 314,369 persons to its population, and the rate of increase within the extended city was 10.7 per cent.

The rural districts as a whole showed an increase of 10.2 per cent., against only 2.9 per cent. in the previous decennium. There is, however, no reason to suppose that this increased growth represents any great agricultural development. In the case of all rural parishes which showed large increase of population inquiries were addressed to the local registration officers, and their replies indicated that a very large proportion of the increase in rural districts was due to the overflow of the town populations, a somewhat smaller proportion to colliery development, and most of the remainder either to manufacturing development or to the erection of institutions.

THE AMENDMENT OF THE MENTAL DEFICIENCY BILL.

THE Mental Deficiency Bill, the Government's measure to make further and better provision with respect to feeble-minded and other mentally defective persons, which was read a second time on July 19th, came before the Standing Committee on Monday, July 29th, and at the outset a statement was made by Mr. McKenna as to a series of amendments which the Government has decided to propose and certain other amendments, proposed by Mr. Leslie Scott, which it intends to accept. Taken together, these amendments put a totally new complexion on the bill.

The essential feature of the Government amendments is that for the Secretary of State, aided by a totally new body of Commissioners as proposed in the bill, there is to be substituted as the central authority a board of control, absorbing the existing Lunacy Commission, to act as a single authority for dealing with lunatics, idiots, feeble-minded persons, and, in short, mental defectives of all kinds.

The Home Secretary, in explaining why he had not adopted this plan in the original draft of the measure, said that the duties of the Lunacy Commissioners consisted of inspecting, reporting, and advising, and did not comprise administrative duties: for instance, asylum plans and regulations of the Commissioners had to be passed by the Home Office. Under the new bill there would be more administrative work. Expenditure and administration, as proposed in the bill, must be under an office represented by a Minister responsible to Parliament. It was out of the question simply to transfer a body such as the Lunacy Commissioners from one department to another. Amalgamation of the Lunacy Commission and the new Commission proposed in the bill was foreshadowed in Clause 62, and what was proposed now was in effect to carry out the amalgamation forthwith.

The original intention was that the Board of Control should consist of not more than fifteen members, twelve being paid. This would have meant that in addition to the existing eight paid lunacy commissioners there would be four new paid members. The salary for these appointments was to be £1,500 a year. The Chairman, the four medical members, and four other paid members, of whom one at least was to be a woman who might or might not be a medical practitioner, were to be appointed by the Home Secretary, and four legal members and the unpaid members, who were not to number more than three, by the Lord Chancellor.

In view of the opposition shown to so large an increase in the number of Commissioners, the Home Secretary proposed a reduction of the paid members to eleven, and a further diminution to nine after the Act had been got into working order. This did not meet the views of the Committee, and the matter was left over for further consideration. An opinion in favour of the new paid Commissioners being medical practitioners with experience as asylum superintendents was expressed, and it was pointed out that unless amendments in the Lunacy Act were made the new Commissioners would not be available as visitors unless they were either barristers or medical men. The general view seemed to be that nine paid Commissioners would be sufficient for all the additional work that the financial provisions under the bill would allow. Mr. Charles Roberts, speaking for the Lunacy Commissioners, said that there was no need for so many as four additional paid Commissioners, and expressed a preference for the appointment of Assistant Commissioners.

The administrative duties imposed by the Act will be carried out by an Executive Committee comprising the Chairman and not more than four paid members of the Board to be appointed by the Home Secretary. It is hoped that at least two of the existing Lunacy Commissioners will be willing to join the Executive Committee, and accept the additional duties involved.

For all the functions in which the Board of Control comes into touch with local authorities, such as the spending of money, the Home Secretary will be the Minister responsible to Parliament. Subject to this parliamentary control over the Commissioners, the County Councils Association has expressed its general support of the bill.

It will be seen that the existing Commissioners will

bring their experience and knowledge to the Board, and, being eight out of fifteen, will exercise a preponderating influence on the general policy of the Board. It will take over all the duties of the existing Commissioners and those now created by the bill. It will report both to the Lord Chancellor and to the Home Secretary, but, as to administration and finance, the Executive Committee will be responsible to the Home Secretary, and so to Parliament.

The existing duties of the Lord Chancellor and the Masters in Lunacy in regard to mentally unsound persons will remain unimpaired.

Mr. McKenna claimed that, as amended, the measure would be found at once simple and practical; it would use the present Commissioners, and set up a single joint authority responsible through a Minister to Parliament.

The amendments put down by Mr. Leslie Scott on behalf of the Unionist Social Reform Committee, and accepted by Mr. McKenna, propose to repeal the Idiots Act, 1886, and incorporate in the bill such of its provisions as are necessary. Mr. McKenna, in accepting this proposal, which was ultimately adopted, stated that it was his intention to preserve the powers of the Idiots Act in a more useful form, and to avoid that Act overlapping the Lunacy Acts on the one hand, and the Mental Deficiency Bill on the other.

It was clear from the discussion which followed that the Committee is disposed to regard favourably the Government's new plan for dealing with the vexed question of the central authority. So far as the British Medical Association is concerned, this plan appears to meet the principal objection levelled at the first draft of the bill—namely, the formation of a second body of Commissioners entirely separate from the existing lunacy authority, and under a different Government department, to deal with one part of a group which from a medical point of view should not be so divided. Expert medical opinion will also be gratified that the present Lunacy Commission will be neither utterly swamped nor destroyed, but perpetuated with reinforcements in the proposed Board of Control, thus securing continuity of practice based on long experience and recognizing the good services done in the past.

Since last we dealt with the matter on the introduction of the bill there has come from various quarters specially interested—such as the Medico-Psychological Association, the National Association for the Feeble-minded, the voluntary institutions for idiots and imbeciles, county councils, and persons interested in local government—an almost unanimous plea for the retention of the Commissioners in Lunacy, suitably reinforced, as the single central authority for the working of the Act, and the Government may be congratulated on the recognition of the strength of this view, though it was surprising to learn from Mr. Charles Roberts (Honorary Commissioner in Lunacy) that the amendments of the Government had not been before the Commissioners in any way.

It was proposed that the definition of mental deficiency (Clause 17) should be dealt with at the earliest possible time after the necessary clauses setting up the central authority had been passed. This was agreed to, subject to the proviso that Clauses 1 to 5 should be taken before the House rises in August, but that Clause 17 shall be postponed till October in order that there may be time to consider the amendments thereto that may be thought desirable in view of the various changes proposed, and generally to consider the bearings of the bill under its new aspect. The feeling against any unnecessary postponement was strikingly strong, and the number of those opposed to the general principles of the bill was insignificant—4 to 21.

The principal criticisms of the Government proposals in Committee were, first, that the Government was setting up a body responsible to two heads; secondly, that the Lunacy Commissioners are already engaged in administration, and the work under the new bill will be practically the same as their present work, and that therefore the proposed Executive Committee could serve no useful purpose and would be an *imperium in imperio*, which would not conduce to good working: thirdly, it was urged that the number of new Commissioners was greater than necessary or desirable, and that assistant Commissioners would be better. Mr. McKenna finally said that he was ready to consider the future reduction of the number of paid Commissioners.

Perhaps the chief defect in the bill as a whole is that it attempts to solve two separate and quite different difficulties by applying to them a single scheme, which thus introduces a fresh element of confusion.

There is no doubt that the main movement in favour of this legislation has sprung from the need of provision for adolescent or young adult persons who have been mentally deficient from birth or an early age. On the other hand, there has been a desire on the part of lunacy authorities to get rid of a number of the chronic senile cases with which asylums tend to become choked, and to provide for them at less expense. This should certainly be tried, but it was not necessary to wait for fresh legislation to enable this to be taken in hand; whereas the needs of the other class of cases are quite different, and could not in practice be met without further powers.

There is an imminent danger that the mentally infirm group may so overload the ship that, financially and otherwise, the true mentally deficient may be crowded out. The money at present available is obviously inadequate if it is to afford provision for senile dements.

Other matters requiring careful attention are the question of providing for voluntary boarders under the bill and the many difficulties that arise in regard to the definition clause both as regards defectives in general and as regards the conditions which make them subject to be dealt with under the Act. Further consideration of this aspect must be deferred.

THE STATE SICKNESS INSURANCE COMMITTEE.

The new State Sickness Insurance Committee appointed by the Representative Body at its meeting in Liverpool is smaller than that appointed in February, but consists for the most part of members of the earlier body. This resemblance will be increased when the two members co-opted on Wednesday take their seats—Dr. Maclean, who was elected a member of the Council by the Representative Body last week, and Dr. Beaton, one of the metropolitan representatives on the Council. The similarity of the first meeting of the new Committee to a meeting of the old was increased by the fact that Mr. Verrall was once more in the chair. Very strong appeals were made to him to act as Chairman of the new Committee, but for reasons which will be found recorded in the report of the meeting published in the Supplement, he did not see his way to consent. While recognizing the force of the reasons he assigned, and deeply grateful to him for the signal services he rendered to the Association and the profession as Chairman of the last Committee, members of the Association will share with members of the present

Committee the regret felt at his decision, a regret made the greater by the very feeling of gratitude to which we have referred. The task of the new Committee will probably be considerably less onerous than that of the last, which so thoroughly paved the way for it, and the large amount of work got through at the first meeting is evidence of this. The Committee spent some time in considering the instructions of the Representative Meeting, and in distinguishing those which called for immediate action. For this purpose a classification was made, which, for the convenience of Divisions and local Medical Committees, will be issued to the secretaries of those bodies. It directed a letter to be addressed to the Insurance Commissioners, transmitting the resolution of the Representative Meeting expressing the regret of the British Medical Association that His Majesty's Government has not acceded to the terms upon which alone the cordial co-operation of the medical profession in supplying medical treatment under the National Insurance Act can be obtained, and had therefore determined to inform the Government that the Association adheres to its minimum demands as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer. The Committee called the attention of those members of Advisory Committees nominated by the British Medical Association to the fact that the time had come when they should send in their resignations to the Commissioners; this has been done or is in process of doing; at the same time it invited all other medical members of these committees also to resign, and it is not anticipated that the attempt now being made to form a cave will meet with much, if any, success. It expressed the clear opinion that, in view of the scope of the resolution passed by the Representative Meeting in connexion with acceptance or retention of seats on Provisional Insurance Committees, it was the deliberate intention of the meeting to ask for the resignation of all members of such committees holding qualifications as medical practitioners, whether they had been appointed in that capacity or in some other capacity. The Committee, however, went on to state that if a special committee for the working of sanatorium benefit only be set up by a local authority there was nothing to prevent medical men taking part in it for the purpose of providing that the work should be carried out in accordance with the wishes of the Association. A notice was drawn up and is printed in a conspicuous place on the first page of the Supplement for this week dealing with this matter, and also with the conditions under which the Association has agreed that work under the sanatorium benefit of the scheme can properly be accepted by loyal members of the profession. The Committee also approved a statement to the public for issue through the press, setting out briefly the position of the profession and the grounds on which it rests. This statement is reproduced in the report of the meeting published in the Supplement. Finally the Committee appointed a small subcommittee to thresh out the numerous suggestions received from the Divisions as to the amendment of the Public Medical Service scheme drawn up by its predecessor, and also in other schemes prepared by individual members of the profession.

THE TUBERCULOSIS CAMPAIGN IN WALES.

An interesting incident in the first meeting of the new State Sickness Insurance Committee was the interview with representatives of the Welsh National Memorial Association. The Representative Meeting, while excepting sanatorium benefit from the resolution calling upon all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the Insurance Act, resolved that before any practitioner undertakes any work in connexion with sanatorium benefit the conditions and duties of such appointment shall be submitted to the Council for its approval. At its meeting in Liverpool on Friday, July 26th, the Council had before it an application from the Welsh members of the Representative Body, asking for the approval of the conditions laid down by the Welsh National Memorial Association. The Council then resolved to send the conditions prescribed by the Representative Meeting to the Executive Committee of the Welsh National Memorial, and at the same time to invite that body to send full details of the conditions and duties of the medical appointments it desired to make. The further conduct of the matter was referred to the State Sickness Insurance Committee, which was requested to meet on July 31st. The Executive of the Welsh Memorial, considering that time, which was of importance to it, would be saved by an interview, deputed its Chairman (Mr. David Davies, M.P.), its Secretary (Mr. Evans), its Medical Director (Dr. Marcus Paterson), and Dr. W. E. Thomas (a member of its Executive Committee and the Representative of the North Glamorgan and Brecknock Division at the Representative Meeting) to interview the Committee. The explanations given will be found in the report of the Committee published in the Supplement; they were of such a nature as to enable the Committee to authorize the publication in the Journal of the advertisement of the Welsh National Memorial Association, which is about to make further appointments. It was stated on behalf of the Memorial Committee that the two gentlemen who, out of loyalty to the Association, had withdrawn after their recent appointment to be tuberculosis physicians would be reappointed if they thought fit to apply. There can be no question that the Welsh scheme, which was initiated immediately after the death of King Edward VII as a national memorial to that monarch, who had always shown the deepest interest in the prevention and treatment of consumption, is well conceived and carefully worked out. It has on this account received the general approval of the profession in Wales. The Memorial Association will undertake the treatment of Welsh patients in sanatoriums and at dispensaries, and it is intended to erect two large sanatoriums, one for South Wales containing 250 beds, and the other for North Wales containing 150 beds. The principality has been cut up into thirteen districts, and a Tuberculosis Dispensary under the immediate direction of a Tuberculosis Physician will be established in each. Owing to the fact that half the population of Wales is accumulated in one corner, the administration of these southern areas must differ from that which will be possible in the sparsely populated mountainous districts of Mid and North Wales. Here the Tuberculosis Physician will have to lead a more or less peripatetic life. The primary duty of the Tuberculosis Physician will be to give his assistance, especially in diagnosis, and in suitable cases to apply treatment by tuberculin injections when the family doctor is not himself in a position to undertake it. Until the South Wales Sanatorium is complete, probably in the course of some two years, the Memorial Association's medical director, Dr. Marcus Paterson, will exercise a general supervision, but subsequently when the local organization has been got into working order, he will become the superintendent of the Southern Sanatorium. The Council of the British Medical Association has delegated to the State Sickness Insurance Committee its duties in respect to the approval of conditions and duties of medical appointments for the administration of sanatorium benefit; by the word "appointment" is to be understood any professional work. Before local schemes can be approved, and work under them accepted by loyal members of the Association, they must be submitted for the consideration of the State Sickness Insurance Committee, which, we may add, will meet again on Thursday, August 8th. Communications on the subject should be addressed to the

Medical Secretary of the British Medical Association, 429, Strand, London, W.C.

PROFESSION OR PARTY.

THE Representative Body was not deterred by the threats of Mr. Masterman, the Chairman of the Joint Committee of Insurance Commissioners, issued on the eve of the meeting in Liverpool, from doing its duty to the profession and discriminating between medical and sanatorium benefit. But such threats might well have had the opposite effect, and may serve to account for the strong language used by the President in condemnation of the Act. As every one knows, Sir James Barr has all along been a steadfast opponent of the scheme, and every one knows also that he is not given to mincing his words. On this occasion, however, they have, owing to the official position he had just assumed, caused some apprehension in the minds of not a few members of the profession, and some letters published in the SUPPLEMENT afford evidence of this. It is always very doubtful whether strong language, though picturesque, ever helps the speaker's cause. We do not think that Mr. Lloyd George, by some of the expressions he has used, such as "wrangling in the sick room," "this is not a doctor's endowment bill," and others of the like kind, has done himself any good with the public, and he has certainly increased the alienation of the profession. It is essential for us all, in order to command the sympathy of the public and to retain the suffrages of a united profession, to avoid any suspicion of a taint of party politics. The profession does not consist of persons holding views of any particular party colour. Far from it. Every shade of opinion on political and social questions has its representatives in our ranks, and every shade is agreed that the scheme for medical benefits under the Insurance Act was badly conceived, and, in spite of certain improvements, remains so defective that it cannot until modified attain the objects desired by the country. The issue is quite clear, and one upon which the whole profession is united. It must not be confused by giving a handle to our opponents to assert that we are actuated in any way by political motives, or that we are to any remote extent relying upon political parties, and not solely on the justice of our cause.

THE REFORM OF OUT-PATIENT DEPARTMENTS.

THE report of the committee, appointed by King Edward's Hospital Fund for London some nineteen months ago, to inquire into the system prevailing in the London hospitals with regard to the admission of out-patients, has at length been issued. Its appearance was expected at a much earlier date, and from what was said on the subject at the distribution meeting of the Fund last December, it was understood that its publication was being delayed owing to the desire of the committee to take into consideration the effect on the question of the National Insurance Act. It would seem, however, that either there must have been a misapprehension on this point, or that the committee changed its mind, since in one of the concluding paragraphs it specifically states that it has not included the possible effect of that Act in its survey of matters, and does not think that it would have been useful to do so, because an inquiry before the Act had come into operation would be of no real value. The report as it stands is signed by Lord Mersey and the Bishop of Stepney, and its form, precise phraseology, and careful documentation, make it a model in its way. Despite its succinctness, however, it is a voluminous document, for the whole subject is treated very comprehensively. Both abuse and misuse of the out-patient departments of London hospitals are admitted; and the objects at which any institution desirous of reforming itself must aim are stated to be: (1) The reduction of numbers, partly by the exclusion of those able to pay for medical treatment or to make provision for it by provident methods, and of those too poor to benefit by it; and partly by the discouragement of the attendance of trivial cases. (2) The development of the consultative side of hospital work, and the encouragement of co-operation with general practitioners and other agencies for medical assistance. (3) The co-ordination of hospital assistance with general charitable work and with the Poor Law and other forms of public assistance. (4) The provision of adequate safeguards for the interests of medical education and the development of medical science. Each of these objects is considered in detail, opinions being expressed as to the precise means by which they can best be attained. These opinions are of much interest for two distinct reasons. The first is that so far King Edward's Hospital Fund for London has never failed to exact sooner or later from the institutions appearing on its distribution list precise compliance with its views, the second is that the views enunciated do not appear to differ either in general principle or materially in detail from those frequently advocated by the Association and in these columns during the past four or five years, and coincide with what may be regarded as the general upshot of the discussion on the same subject at Liverpool. On this point, however, we are unwilling to speak with certainty at the present moment, hoping to recur to the subject at a later date.

THE SEPTIC CRICKET BALL.

A FEW weeks ago an objection was made upon an English cricket ground to an Australian player, on the ground that he had used some powdered resin in order that his fingers might get a firmer and surer hold upon the cricket ball. Without expressing an opinion as to whether this be right or wrong according to the ethics of our great national game, we have no hesitation in saying that for sanitary reasons it is far better than the plan adopted by many of our own bowlers. One of our best professional bowlers wets the tips of his fingers against his tongue every time that he walks from the wicket on his way to take his run before delivering the ball. And we have seen a member of our own profession—an excellent all-round cricketer of the present day—do exactly the same thing. We should have expected him to set a better example. Other bowlers, not finding the surface of the ball quite to their liking, rub it in the dust of some bare patch near the wicket. To this we raise no objection. It takes off the human moisture and grease, and renders the touch more pleasant. The customary licking of his fingers by the bowler is nearly as bad as the licking of the ball itself. Were there a crack or other small raw surface upon the bowler's lip, it would be a perfectly simple thing for the germs of lockjaw which the ball had picked up from the dust of the field—their natural home—or even for the pallid, corkscrew-like microbe of another terrible disease, to find an entrance into the living tissue, and there to establish its loathsome colony.

TUBERCULOSIS IN CATTLE.

AT the annual conference of the Veterinary Association, held in Manchester last week, Professor Delépine read a paper on bovine tuberculosis, in the course of which he said that it was now an accepted proposition that bovine tuberculosis was an infectious disease and not an hereditary disease in the ordinary sense of the term. This was confirmed by statistics relating to the examination of 2½ millions of calves in Germany, Denmark, and France, which showed that only 1 calf out of 3,300 was tuberculous. Statistics were given indicating that the proportion of tuberculous animals increased as age advanced, and it was estimated that in Great Britain alone there were not less than 1,630,000 tuberculous cattle. The

bacilli derived from tuberculous cattle had a higher degree of virulence for cattle and other animals than bacilli occurring in human tuberculosis not of bovine origin. Dealing with the materials most liable to carry infection, he said the milk of cows affected with tuberculosis of the udder almost invariably contained a large number of tubercle bacilli, and it was quite easy experimentally to induce tuberculosis in a calf by feeding it on milk from a cow with tuberculosis of the udder. Older cattle might also be infected by fodder contaminated with infectious dejecta. This commonly happened in stables, and even in the best stables and shippons a cow in an advanced state of tuberculosis was a source of serious danger to the others. It was often supposed that unless cattle were predisposed to infection by being housed in overcrowded, dirty, damp, and otherwise insanitary premises, they were not seriously in danger, but his own observations led him to believe that infection took place not only in confinement, but that cattle, more especially when suffering from intestinal tuberculosis, might infect fields and pastures to a dangerous extent; and, valuable as sanitary housing and other hygienic measures were in reducing the liability to infection, they were only of accessory importance as methods of eradication. Immunization experiments had hitherto failed to fulfil their object, and it was necessary entirely to prevent healthy cattle coming into contact with tuberculous animals or products. All cattle that gave no reaction should be transferred to buildings and pastures free from infective material, and not allowed to mingle with reacting animals, and should be treated again in from three to six months. All new stock, which should be young, should be tested twice at intervals of three months, and during that period should be kept apart from both diseased and sound stock, and should be added to the sound stock only after two negative tuberculin reactions. It was easy to control tuberculosis in a single herd, and there seemed to be no reason why the same could not be done in a well-defined administrative district under a county authority. The chief difficulty was financial; compensation for tuberculous adult animals, even though healthy looking, would certainly have to be allowed. An efficient veterinary staff was necessary, and he believed that a competent inspector, with the assistance of five or six junior veterinary officers, could keep the whole of the cattle in an important county like Lancashire or Cheshire under close supervision. It was important that the work of eradication should not be confined to individual farms scattered among other farms not receiving attention. All the cattle of moderately extensive areas should be dealt with, the importation of cattle from outside being controlled. In the course of an interesting discussion on Professor Delépine's paper, Professor Wilson, of Edinburgh, said he had made tests all over the country, and did not hesitate to say that 40 per cent. of the dairy animals were affected with tuberculosis. On a series of small farms he had found that 56 per cent., and on large farms no fewer than 83 per cent., of the cattle reacted.

SUN SPOTS AND EPIDEMICS.

AN excellent account of the work of Dr. C. M. Richter, of San Francisco, on the relation of various epidemics to barometric pressure and solar activity, communicated from time to time to the Section of Medicine of the American Medical Association or to its *Journal*, was published in a recent number of *La Semaine Médicale*. His earlier papers pointed out that epidemics of pneumonia should not be regarded as depending upon the winter cold, as they were associated with an anticyclonic condition of the atmosphere, occurred as much during the summer as the winter, and were not dependent upon low temperature. On comparing the curves showing the mortality from bronchitis and pneumonia in San Francisco, Chicago, and New Orleans at different quinquennial periods, he showed that the predominance of pneumonia and affections of the respiratory organs corresponded in these cities to anticyclonic periods and not to periods of cold and damp. The lowest mortality from these diseases was found in periods characterized by the absence of high atmospheric pressure. On the other hand, epidemics of infantile cholera in Chicago and New Orleans occurred during periods of great heat, but there was a remarkable absence of anticyclonic conditions during these epidemics. The fact that San Francisco is remarkably free from infantile cholera is attributed to the fact that in that city great heat coincides with high atmospheric pressure; this fact is used to account for the greater prevalence of summer pneumonia in San Francisco than in the other two cities. Dr. Richter argues that a rise in barometric pressure of 3 cm. must force an excess of oxygen into the lungs, and states that there is experimental evidence that the inhalation of an excess of oxygen can produce pneumonia. A further examination of the monthly tables of mortality of the three cities has shown that the epidemics of pneumonia in a series of years correspond to the absence of sun spots. Dr. Richter has collected meteorological observations from many cities in Europe and America for eighty years, 1830 to 1911. Diminished solar activity and high barometric pressure correspond with periods of severe epidemics of influenza and pneumonia, as in 1831–5 and 1889–90. The diminution of sun spots, it is alleged, is accompanied by an augmentation of the ozone in the atmosphere, ozone being produced by the action of the ultra-violet rays, which are most abundant when the solar activity is at a minimum, and Dr. Richter believes that a careful study of meteorological perturbations will enable us to foretell the prevalence of epidemics.

OSTEO-ARTHRITIS IN ANCIENT NUBIA.

WE have received a reprint of a very interesting article on osseous lesions in ancient Egyptians, by Drs. Ruffer and Arnoldo Rietti, which appeared in the *Journal of Pathology and Bacteriology*, vol. 16, 1912. Sir Gaston Maspero, Professor Flinders Petrie, Dr. Keatinge, and Dr. Breccia, placed at their disposal a number of mummies and skeletons, dating from various periods of ancient Egypt. The material came partly from Upper Egypt, partly from Alexandria. At Chatby, near Alexandria, are the tombs of the Macedonian soldiers of Alexander the Great and Ptolemy the First. Summing up the results of their observations, the authors say that the majority of the lesions found in the skeletons of old Egyptians coming from a period extending over more than 3,000 years, were typical of chronic arthritis. The spinal column was most often the seat of disease. It occurred more frequently in old than in young people, and it is significant that the "determinative" of old age in hieroglyphic writing is the picture of a man deformed by chronic arthritis. Attention had already been drawn by Drs. Elliot Smith and Wood Jones, to the frequent occurrence of arthritis deformans, and especially spondylitis deformans in ancient Egypt. Wood Jones attributes this to the conditions of life in the Nile Valley. The present inhabitants of Nubia are also afflicted with the disease, and signs of osteo-arthritic changes occur among modern Egyptians. Dr. Wood Jones's explanation is that every member of a riverside population spends a great part of his life dabbling in the water of the Nile, even at those times of cold weather not at all uncommon during the Nubian winter. Drs. Ruffer and Rietti are not inclined to accept this theory. They argue that as the exposure to wet is the rule among all agricultural, fishing, or hunting people, it cannot be held to account for the apparently greater frequency of osteo-arthritis in Nubia. Their observations at Alexandria show that race cannot have anything to do with the causation of the disease.

and there are also evidences that climate as such has no part in it, for it would be difficult to find a greater contrast between the temperate moist marine climate of Alexandria, with its constant sea breezes, heavy winter rainfalls, mild summer, warm nights, and the Nubian desert climate characterized by scorching days, cold nights, and excessive dryness. Occupation, again, must be set aside, for the Nubians were for the most part agriculturists, while the Alexandrian people were soldiers or city dwellers, and there is no reason why they should have dabbled in water. The Nile did not flow at Alexandria, and the enormous Roman cisterns even now in existence show that water was so precious that there was none to waste, as in Nubia. Even if the Greek soldiers might have contracted the disease from exposure during campaigns, this cannot account for its frequency in town people. A further argument against the theory is that pet animals carefully kept in temples suffered much from the same or a similar disease. The lesions present none of the appearances of tubercle. Except for one very doubtful case, the authors have not come across a single bone showing the lesions typical of that disease, while lesions indicating the presence of rickets or syphilis were completely absent. As regards the teeth, the observations of Drs. Ruffer and Rietti do not bear out the statements of medical historians—even, we may state, of so recent and learned an authority as Neuburger—that the Egyptians were skilled in dentistry. The material examined was scanty, but there was abundant proof of dental disease and none of anything having been done for its relief. It is interesting to note that with few exceptions the crowns of the teeth, save in very old people, are as a rule perfect, showing that the food was was soft, and probably consisted of meat. The toothbrush or other cleansing instrument was used. Deposits of tartar are rare, and as a rule the teeth are beautifully white and clean.

TABES IN WOMEN.

In an essay on tabes in women[1] Drs. Mendel and Tobias of Berlin have collected together the results of extensive researches into the literature of the subject, adding thereto their own observations on 151 cases, made from 1901 to 1910. During this time they met with 279 male tabetics; they find that the figures of forty-one previous writers on the subject show an average of 7.5 male to 1 female case. Among well-to-do women tabes is rare; they had only 12 female patients in their private practice. The age of onset seems much the same in female as in male tabetics; in 72 out of 104 women the first symptoms of tabes appeared between the ages of 31 and 50. Out of 114 of their patients 14 were single, 100 married; of the latter 28 had never borne children and 31 more were childless through the death of their children *in utero* or in infancy. One sterile woman had been thrice married. The authors go very fully into the close connexion that is commonly supposed to exist between syphilitic infection and tabes; Wassermann's reaction was positive in 34 out of 41 of their female tabetics. The authors conclude that 67.4 of their women patients were certainly syphilitic, adding ponderously the apophthegm, *Omnis tabes e lue*, and agreeing with Strümpell that syphilis is a *sine qua non* of tabes. They were able to determine the incubation period of the tabes in 47 cases; it varied from three to thirty years, and averaged fourteen and a quarter years. Their statistics might be interpreted as evidence that antisyphilitic treatment shortens this incubation period, which averaged over sixteen years in 31 untreated women, over eleven years in 12 women who had had a single course of antisyphilitic treatment, and seven and a half years in four women who had received two courses of mercurial treatment. In only 3 out of 115 instances did the history seem to show that a chill or wetting brought the tabes on; trauma appeared as an aggravating cause in 4 others. The first symptoms in 27 out of 97 instances were lightning pains: in 12 others, "rheumatism" in the whole body; in 12 more, eye symptoms. The authors discuss the various signs and symptoms of tabes as illustrated by their own cases, without finding that any one of them that might be met with in men is characteristic of the female sex. Among 113 female tabetics they observed 72 with normal hearts, 4 with aortic reflux, 3 with aortic aneurysm, and 34 with arterio-sclerosis; no fewer than 9 out of 113 of their patients exhibited arthropathy. They find that childbirth proceeds normally in tabetic women, with this exception—that it is rapid and almost entirely painless as a rule. Hysteria is a common complication of tabes in women, and, as other authors have shown, Graves's disease is not rare: Mendel and Tobias have met with three such instances, and with four in which tabes was complicated with paralysis agitans. Comparing tabes in men and tabes in women, they find comparatively little difference in the signs and symptoms it produces in the two sexes. Perhaps men are less likely to get tabes after the age of 40 than are women; women appear to suffer less from ataxy and bladder symptoms than men, to be less liable to gastric crises and optic atrophy, but to suffer more from attacks of tabetic migraine. The prognosis is better for the female tabetic than for the male, for tabes runs a milder course in women.

[1] *Die Tabes der Frauen*, von Kurt Mendel u. Ernst Tobias. Berlin S. Karger. 1912. (Roy. 8vo, pp. 77. M. 2.50.)

DOCTORS AND THE MANUFACTURE OF DRUNKARDS.

A circular issued by the British Women's Temperance Association reiterates the old charge that medical men, by prescribing alcohol, are responsible for the manufacture of drunkards. This is a serious indictment to bring against a body of men who, if not temperance advocates, have done as much to promote temperance and lessen the use of alcohol as probably any other class of the community. The object lesson of the more careful prescription of alcohol by doctors is heard on every temperance platform. If the facts underlying it are derived from hospital practice, they are repeated in private practice by a like restriction in the use of alcohol. For alcohol is prescribed not as a beverage, but as a remedy, with some definite therapeutic end in view. There is, therefore, something of irony in the thought that when the profession has reduced its prescription of alcohol, if not to a minimum to a very low point, it is to be charged with the making of drunkards. The issuers of the circular ask the sympathy and effectual aid of the medical profession. They may be assured of both in any effort to promote temperance: and, in return, it may not be unreasonable nor discourteous to point out that the statements of those whose intelligence and moral feelings have been warped by alcohol are most unreliable, and that to condemn the absent doctor, unable to defend himself, on the word of such persons, is not merely to exhibit a credulity altogether misplaced, but is to do an injustice to a body of men fully as much alive to the importance of temperance and to the well-being of the community as are the members of the British Women's Temperance Association.

The King has been graciously pleased to grant to the British Medical Benevolent Fund the title of Royal, so that it will henceforth be known as the Royal Medical Benevolent Fund. This act of the King's grace towards this long-established and well-deserving charity will be highly appreciated by the medical profession, who well know the beneficent work done by the Fund and its handmaid, the Guild.

ANNUAL MEETING NOTES.

THE ANNUAL REPRESENTATIVE MEETING OF 1912.

LIVERPOOL gave the British Medical Association a hearty welcome, and the profession and city vied with each other to do the members honour. On July 18th contingents began to arrive for the Representative Meeting, and on the morning of July 19th, before the Chairman took the chair, the various rooms of St. George's Hall were humming with life. Genial greetings and warm handshakes told that old friends were meeting once more. As ten o'clock draws near the members crowd into the hall and take their seats. The Chairman's hammer brings a hush over the hall, and the business of one of the most momentous meetings ever held by the medical profession has begun. Over two hundred and sixty men are there, from far-away Orkney and Shetland to Cornwall, from Dublin to Norwich, and from dominions across the seas. These men come fresh from the consideration of grave questions in their Divisions, instructed by them how to vote on matters of vital importance, but with a free hand on secondary subjects.

Under the skilful guidance of the Chairman, motion and rider and amendment are dealt with, and the ordinary reports of Council glide smoothly on, while questions as to maps of Divisions, referendum and postal vote, grouping of Branches, and kindred subjects are discussed and passed until No. 36 on the agenda is reached. It reads: "That it be an instruction to the Council of the Association to seek to obtain the opinion of the Divisions as to the desirability of the Association becoming a registered trade union." The calm has ceased. The smoothly gliding waters begin to toss and tumble. We are, says a member, a trades union in all but name: why not give ourselves the name? Another member tells the meeting that he is old-fashioned, and trade unionism used to stick in his gizzard, but things have changed, and now he is in favour of the Association being registered as a trade union. Dr. Macdonald and other old and trusted leaders of the Association raise a danger signal. Should we identify ourselves with methods which are questionable? Has the meeting considered the legal difficulties of the winding up of the present Association—the question of what would become of the property and the future position of the JOURNAL? Above all, what about the unity of the profession? There is a strong feeling among many members of the Association against trades unionism, and if this rider is carried there will be a disastrous split. This matter has been before the Council of the Association for the last two years; is it worth while causing dissension in our ranks by forcing it at this crisis? Gradually the heat and friction cool down. Wise counsels prevail. A motion to postpone the subject until the next annual meeting is carried, and again we are in calm water, and things sail along easily until the meeting adjourns at 7 o'clock.

Saturday morning at 9.30 sees the members once more in their places. The Chairman proceeds to tell the meeting the order of business, which is listened to in deep silence broken by a burst of applause when he proposes that the meeting should proceed forthwith to the consideration of the business relating to the Insurance Act. How greatly in earnest the members are is shown by their resolve to sit until 10 p.m. if necessary. A pleasant break in the somewhat strenuous mental attitude is given by the advent of the Deputy Lord Mayor of Liverpool (Sir Charles Petrie), who, in the name of the civic authorities of Liverpool, welcomed the Representative Body of the Association.

A few preliminaries and the Chairman is out of the chair; the "House" forms itself into a Committee of the whole, and the Deputy Chairman of Representative Meetings takes the chair. The Treasurer presents his statement of the amount guaranteed to the Central Defence Fund; the sum is found small—a fact accounted for, many members think, by the state of suspense the profession has been in during the weary months since the Insurance Bill was brought in to the House of Commons. There is no doubt, they say, that when the profession comes to the great decision and puts on its armour for the great fight, funds will be forthcoming. It is pointed out also that since the Treasurer's report was of the Central Defence Fund only, no account was taken of the many local Defence Funds, already amounting to at least 50 per cent. of the Central Fund, and it is asked that any future statement should include this sum.

Now the members are face to face with the great question, Shall they or shall they not break off negotiations with the Government? Much discussion goes on about X and Y. X = breaking off; Y = continuing negotiations. Sometimes in the multitude of words counsel gets darkened and the meeting wanders aimlessly, yet feeling its great responsibility and anxious only to do the right for the profession and for the people. Amendments and riders are put and lost, speeches are limited to three minutes, more amendments come and go—then, at long last, X is put, "That the Government be informed that the Association adheres to its minimum demands as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer." The vote is by roll call. The Council has no vote. There is great silence, when the Medical Secretary slowly and clearly calls out the names of Representatives in alphabetical order—a silence broken only by the Aye and No of the members. The tension is slowly and insensibly relaxed when the Representatives notice that only now and again a No comes into a group of Ayes, and when the figures are given—182 Ayes, 20 Noes—there is a great burst of applause. The profession once again declares itself united against the unjust and ungenerous action of a Government bent on exploiting it. United in such a cause members feel they are bound to win, and "greet the unseen with a cheer." The next step is taken quickly. War has been declared, and the ambassadors sent to the Advisory Committees are to withdraw. This will be done with utmost cheerfulness by the members of those Committees representing the British Medical Association. As to the rest, some will come out in loyalty to the profession, some will stay in in loyalty to themselves. It has been ever thus—

> He left us
> Just for a riband to stick in his coat.

Saturday saw Paragraphs i and ii in the great decision X accepted. Paragraph iii still faced the Representative Body—Should or should not sanatorium benefit be included under the "ban"? Here anything may happen. Many Representatives have a free hand as to sanatorium benefit. Would they declare war all along the line, or would they, seeing that sanatorium benefit was already technically in existence, that the remuneration promised was not unreasonably small, and that public opinion was strongly in favour of an organized effort against tuberculosis, consent to work this part of the scheme? This question was fully debated on Monday on the motion that the words "except in regard to sanatorium benefit, provided it is carried on in accordance with the wishes of the Association," be inserted in Paragraph iii of X. When the vote was taken it was found that the Ayes had 137 to the Noes 54—majority 83. Next day, however, when the amendment was, that before these words were added to Paragraph iii they should be referred to the Divisions, the vote was: Against, 105; for, 75—majority, 30. The meeting then adjourned. On Wednesday a feeling of impending disruption hung over the meeting, and anything might have happened. It was seen, however, that the way out was by the road of compromise. Some common ground was necessary on which both parties could unite. From the applause with which arguments of this nature were greeted, it was evident that the meeting desired unity above everything, and ultimately words were found providing that before any practi-

tioner undertakes work in connexion with sanatorium benefit under the Act the conditions and duties of such appointment shall be submitted to the Council for its approval. When this was put it was seen that many who had fought hard for war all along the line, while not able to vote for Paragraph iii as amended, determined not to vote against it, because of the great risk of disruption: so this common ground amendment was carried. Soon afterwards the five days' strenuous work of the Representative Meeting came to a conclusion with a vote of thanks to the Chairman (Dr. Maclean) and to the Chairman of the State Sickness Insurance Committee (Mr. Verrall).

Good work had been done by the Representative Meeting. By breaking off negotiations as to medical benefit, the obligation to make the next move was placed on the Government. By agreeing to work the sanatorium benefit under suitable conditions, the profession showed that, if reasonably treated, it is prepared to act reasonably. By their willingness to give and take and not push for all they wished, the Representatives have shown to themselves and to all the world their solidarity and that desire for sweet reasonableness which will bring the cause of the profession to a triumphant issue.

Honorary Degrees.

A special convocation of the University of Liverpool was held on Friday, July 26th, for the conferment of honorary degrees upon Sir James Barr, President of the British Medical Association; Dr. George Armstrong, Professor of Surgery in McGill University, Montreal; Dr. G. A. Gibson, of Edinburgh; Sir William Macewen, and Mr. F. T. Paul. The convocation, which was presided over by the Chancellor (the Right Honourable the Earl of Derby), was held in the Philharmonic Hall, and a procession was formed of the members of the university, the teaching body, the court and council of the university, representatives of the British Medical Association, the mayors and town clerks of several neighbouring boroughs, and the chairman of the County Council of Lancashire.

In presenting Sir James Barr, Professor Benjamin Moore said:

On behalf of the Senate and Council I present Sir James Barr, President of the British Medical Association, for admission to the Degree of Doctor of Laws of this University.

Sir James Barr is an Irishman, who obtained his training in medical science at a Scottish university by the banks of the Clyde, and since then he has built up a reputation here in Liverpool which has travelled out as widely over the world as the commerce of our port.

His more immediate colleagues in the Royal Infirmary, the School of Medicine of this University, and the medical profession of Liverpool and the surrounding district, appreciate his talents as a leader and are well aware of his ripe knowledge as a physician, his unsurpassed skill in diagnosis, and that exquisite power of observation of the individual case, which have made him a tower of strength as a consultant in the treatment of disease.

His scientific writings in therapeutics, medicine, and sociology, with their remarkable and powerful directness of expression, and wit of conception, are well known in the world of medical science.

To-day we rejoice chiefly in the possession of Sir James Barr as a great public-spirited citizen, who from a never-failing store of energy willingly draws time and power for the best of social services to those great causes of national health and physical fitness which at present exercise so much the public mind.

Evidence of this wide aspect of the life-work of Sir James Barr has been forthcoming during the present week in which he has presided so brilliantly over the most historic meeting which the British Medical Association has ever held.

It has been a fitting consummation to many long years of work for that body, as Secretary and later as President of the Lancashire and Cheshire Branch, as Representative in the Council, and as reader of the Address in Medicine at the Toronto meeting, that Sir James Barr should preside over this meeting of the medical profession in Liverpool at such a momentous time as the present.

In presenting Dr. George Armstrong, Mr. Keith Monsarrat, Dean of the Faculty of Medicine, said:

It is impossible to think of that famous seat of learning, McGill University, without the name of Dr. George Armstrong coming to mind. His achievements as a surgeon are known far beyond the boundaries of the School of Medicine which he so fittingly represents here. He has left his mark on several of the most important advances which surgery has made during this generation. His reputation as a teacher of the art is second to none, and he is held in the highest esteem by the many to whom he has imparted its principles and traditions. We present him as a representative of medicine in Britain beyond the seas; we also present him as a surgeon of great achievement and high repute whom we desire to enrol as an honorary graduate.

I have the honour to present to you George Armstrong for the degree of Doctor of Science, *Honoris Causâ*.

In conferring the degree the Chancellor said that, as the son of an ex-Governor-General of Canada, he was particularly pleased to have the honour of doing so.

In presenting Dr. Gibson, Dr. T. R. Glynn, Professor of Medicine in the University, said:

Among the many physicians at present gathered in Liverpool, there are few more eminent than Dr. George Alexander Gibson, the reader of the Address in Medicine at the meeting of the British Medical Association now being held.

In his capacity of Physician to the Edinburgh Royal Infirmary, as a teacher of medicine, and as an original investigator, he well maintains the high traditions of the great historic school of the Northern metropolis. His reputation is second to none; and his pupils have carried his fame and his practice to all parts of the world. His writings and his activities deal with many of the problems and occupations of medicine, but there are two with which his name is more especially associated, namely, the investigation of the disorders of the heart and the circulation, and the work of the General Medical Council of Education and Registration of the United Kingdom.

In honouring him we honour a physician of the highest type, a worthy representative of those illustrious names that have made the Medical School of Edinburgh one of the most famous in the world.

I have the honour to present to you George Alexander Gibson for the degree of Doctor of Science, *Honoris Causâ*.

In presenting Sir William Macewen, Mr. Monsarrat said:

In presenting Sir William Macewen to you for the Honorary Degree of Doctor of Laws it is our desire to honour one of the greatest of the world's surgeons. The enrichment of a science by contributions of high importance and of an art by methods which become part of its universal practice is a dual service which few men can render. This service Sir William Macewen has rendered to surgery. To him is due much of the present-day treatment of deformity; his researches and their brilliant application founded and established the surgery of the brain. We rejoice to recognize that the same genius which opened these new chapters in the book of surgery is still adding to its fascinating and important pages. In his work we see that combination of originality of thought with power of application which can not only discover a new land but can make of it an ordered state. British surgery has no more distinguished a representative than the Regius Professor of Surgery in the University of Glasgow, and we desire to enrich the records of our university by enrolling him as an honorary graduate.

In presenting Mr. Paul, Mr. Thelwall Thomas, Lecturer on Surgery in the University, said:

In presenting Mr. Paul to you for the Honorary Degree of Doctor of Science we desire to acknowledge the distinguished services he has rendered to the School of Medicine in this city and the obligations under which he has laid the science of surgery in this country. The records of the development of more than one department in our school bear testimony to the former, and many a new method and a new view now assumed into surgical doctrine owe their inception to him.

His work has been notable for an industry which has won the constant admiration of his colleagues and for an insight which has enabled him to throw light on many difficult problems. An alumnus of a famous hospital, he has brought fame to those of the city of his adoption. Of the debt which is owed to him for his long hospital service this is not the occasion to speak. To his honours we desire to add another, that of enrolment on the list of our honorary graduates.

Garden Parties.

Someone suggested early last week that the clerk of the weather must be in the pay of the Chancellor of the Exchequer, and the suggestion seemed to be upborne by Wednesday morning. So soon as the Representative Meeting was over and it became known that the sanatorium benefit had been excluded from the ban otherwise laid upon the National Insurance Act the sun began to shine, and continued to do its duty very decently right up to the conclusion of the proceedings. On the other hand, the change may have been merely a cynical comment on the fact that the Earl of Derby had just announced his intention to abandon the garden party projected by him for Thursday on the ground of the inclemency of the weather. Other like hosts, however,

refused to be discouraged. The first of these were the President of the Liverpool Medical Institution and Mrs. Robert Jones, who in effect played with the official already mentioned the well-known game of "Heads I win, tails you lose," by providing equally well for fair weather or foul. The ample grounds at Druid's Cross were, in short, freely provided with huge Japanese umbrella tents and marquees, and these, though doubtless originally intended as shelters against probable rain, served an equally useful purpose as gathering centres for the numerous guests. A feature of this pleasant Wednesday afternoon was the dancing of the Highland reel by two appropriately costumed young ladies, to music supplied by Piper M'Kay of the King's Scottish Borderers. The *al fresco* hosts on the following day were Mr. and Mrs. Frank Paul, whose party at The Anchorage, Hoylake, was correspondingly successful. Many of their guests travelled out by river via Seacombe, and all got back to Liverpool in comfortable time for the evening's proceedings. Also in progress on the same day was a garden party at Haydock Lodge Private Asylum, given by Dr. C. T. Street. The last event of the same order took place on Friday, when Sir James and Lady Barr were at home in the afternoon at Calderstones Park. There was a huge attendance, but the grounds are very extensive, and presented an opportunity of comparing side by side early English and twentieth century notions of garden planning which were greatly enjoyed by several students of horticulture present.

Other Social Doings.

THE arrangements of the Entertainments Committee aimed at a separation at times of the sheep from the goats, but only at morning amusements did the gatherings amount to anything resembling "pure cultures." The theatrical performance, for instance, though nominally intended solely for ladies, was witnessed by a good many men, and equally enjoyed by both, the piece played being *Mrs. Gorringe's Necklace*. Not only was the acting itself good, but the intervals afforded a pleasant opportunity for interchange of experiences, while about midway through the evening each lady present was presented with a souvenir in the shape of a suitably inscribed box of special chocolates. The annual dinner, of which a full account appears in the SUPPLEMENT to this issue, was also bespeckled, since many women doctors joined their male colleagues on the occasion. The *soirée* given by the local profession, as also the ball on Friday evening, was, of course, intended for both sexes. The former took place on Wednesday evening at the Walker Art Gallery, with its connected buildings, the Reference Library and the Museum. The evening was one of great enjoyment, the collection of pictures alone sufficing to meet all the desires of many of those present. But there were also rare books, collections of Oriental embroideries, and other curios to be examined, bands to listen to, dancing from time to time, refreshment rooms to visit, and last, but not least, some lantern demonstrations. At one of these Dr. Thurstan Holland dealt with Switzerland, and at another, Dr. Karl Grossman with whale hunting off the Faröes; while Professor Stirling of Manchester delivered a lecture on biology and the bioscope. The claims made by him for the bioscope were fully supported by the films shown, which practically covered the whole field of Nature study, beginning as they did with a demonstration of the movements of amœbæ, and ending with an analysis of movements, such as walking and jumping, in which the successive acts were so slowed down that every stage could actually be seen on the screen. The guests were received by the President and Lady Barr, the former remaining until the last guests were departing not long before midnight. The ball at the Philharmonic Hall on Friday proved an equal success, the scene being one of much brilliance, and things moving gaily from start to finish. It is whispered, indeed, that several members of the Association hitherto renowned chiefly for their abilities in the lecture room proved equally successful as demonstrators of the claims to consideration of the Bunny Hug Boston, the One Step Creep, the Elephant's Crawl, the Argentine Tango, and other gyrations that have recently become fashionable. Apart from these public entertainments, much private hospitality was in progress during the week, many of the presidents of sections, for instance, giving dinner and luncheon parties to the readers of papers in their sections and others connected therewith.

Visits to Hospitals.

DURING the week visitors had opportunities of becoming acquainted with most Liverpool hospitals, but more especially the Royal Infirmary and the Dental Hospital, the staff of the latter being at home to all and sundry on Thursday afternoon. It was opened a couple of years ago, and is probably the very finest of such institutions at present anywhere existing. The chief event in this connexion, however, was an inspection of the hospital at Heswall known as the Royal Liverpool Country Hospital for Children. Since at the date of its opening some three years ago it was the only institution of like kind in this country, it is already well known by repute. Probably, however, few of the very large number of visitors who were taken out to it on Thursday afternoon by Mr. Robert Jones and Dr. C. J. Macalister had had a previous opportunity of examining things for themselves, and it is only in such wise that the full value and practicability of a novel idea such as the institution represents can be brought home to most men's minds. This idea is to submit to what is practically open-air treatment all cases of chronic disease in children of a kind usually submitted to hospital treatment, to impose no time limit on their stay, and to allow them to remain until they have either got well or at any rate have materially improved. To this end neither of the two large wards has more than three walls. The side which in ordinary hospitals would be filled by a fourth wall is at Heswell a blank space, which is left unenclosed even in the severest weather. There are, however, one or two small ordinary wards for babies, and for cases which have just undergone operation; while the operation room itself, together with the *x*-ray room and other annexes, is of course built on ordinary lines. The cases treated are chiefly those of infantile paralysis—including various deformities resulting therefrom—spastic paraplegia, rheumatoid arthritis, and tuberculous disease of various kinds, medical and surgical. The afternoon's proceedings included a demonstration by Mr. Robert Jones of several of the most interesting cases under treatment. Among them was a little boy from several of whose lumbar vertebræ Mr. Robert Jones had removed wedge-shaped portions, inserting in their places pieces of tibia, in order to prevent the production of the deformity resulting from lumbar caries. Another institution inspected during the week was Maghull Epileptic Colony, an account of whose annual meeting was given in the letter of our Liverpool correspondent at p. 207 of our issue for July 27th.

Golf Doings.

ONE peculiarity of golf is that its adherents tend to write down as wasted any interval of time which may be regarded as in any wise in the nature of a holiday period, unless some portion thereof is devoted to the royal and antient game. However, they had no reason to complain at Liverpool, where, thanks to the activity of Dr. Nimmo Walker and his coadjutors, they had opportunities, if so disposed, of playing on every afternoon of the week. As many as seven links were at their disposition, all being within easy reach of head quarters. The principal event in this connexion was the competition for the Ulster Cup, which took place at Hoylake, by kind permission

of the Royal Liverpool Golf Club, on Wednesday and Thursday. There were 100 entries for it, but only 78 players actually took out cards, and only 29 returned them. Bogey's score was fixed at 82, and when the cards returned were examined it was found that the winner was Mr. Albert Lucas, of Birmingham, whose card showed 2 up; the next best card was that of Dr. Nathan Raw, of Liverpool, this showing 1 up. We have only space to mention some half a dozen other scores: D. D. F. McIntyre, all square; J. S. Wilson, D. V. Haig, and C. L. Forde, all 1 down; R. A. Bolam and A. Waugh, both 2 down; and G. C. Sandford and G. Heaton, both 3 down. The lowest score was 14 down. A team match, Lancashire and Cheshire *v.* The Rest, was also played. This took place on the links of the Formby Golf Club, the home team winning by 10 matches to 3. A much-appreciated innovation this year was the provision of golf in the mornings for ladies accompanying members to the meetings. Apart from individual play, there was a match, Liverpool and District *v.* The Visitors, which resulted in a win for the local team by 2 matches; and a competition for two prizes presented by the Liverpool Branch. There were 29 entries, Mrs. Mactier, of Wolverhampton, with a handicap of 9, and Miss Monk, of Wigan, with a handicap of 19, tying with net scores of 84 each. On playing off the tie, the first went to Mrs. Mactier and the second to Miss Monk. These special arrangements for ladies were made by Miss Nimmo Walker, play taking place on the links of the West Lancashire Ladies' Golf Club.

Exploring the Mersey.

If anyone left Liverpool without a fair conception of the relation of that city to the River Mersey he can only have himself to blame. For, apart from the booklet on the subject to which reference was made last week under the heading of Annual Meeting Literature, members were afforded ample opportunity of examining things for themselves on three occasions. The first expedition took place on Wednesday, when some 236 visitors spent the afternoon cruising about the river, the vessel placed at their disposal being a "flagship" specially decorated for the occasion. It was one of the steam ferry boats belonging to the Ferries Committee of Birkenhead Corporation, which kindly provided a most hospitable entertainment on board, refreshments being enjoyed under the influence of excellent music supplied by the Birkenhead Borough Silver Band. The first part of the cruise took the visitors down the Rock channel as far as the Seaforth battery on the Liverpool side, where a new dock is being constructed. It was stated that when completed it will be the largest in the world. The boat next crossed over to New Brighton with its *quasi*-Eiffel Tower, and then turned up river as far as Port Sunlight. During this part of the expedition the visitors had a view of the Cunard liner *Lusitania*, and were able to contrast its size and build with those of the two training ships *Conway* and *Indefatigable*. A further contrast was supplied by a distant view of three battered-looking yellow hulks on which are stored explosives well out of reach of navigation. Before landing, the President-elect of the Association, Dr. Hollis, of Brighton, proposed a vote of thanks to the Mayor and Corporation of Birkenhead for their kind hospitality. This was carried by acclamation, and suitably acknowledged by the Mayor, Mr. George Proudman, followed by the Chairman of the Ferries Committee, Alderman Fiddes, and the Vice-Chairman, Captain Nowell. The second expedition was of similar kind, the hosts on this occasion being the Wallasey Corporation, whose medical Mayor, Dr. Oldershaw, together with the Mayoress, remained in the company of their guests throughout the afternoon. The last expedition took place on Friday morning, when the Mersey Docks and Harbour Board took a number of the lady visitors for an ante-prandial cruise in their yacht, the *Galatea*. In addition to these expeditions a splendid opportunity of obtaining a knowledge of the geography of Liverpool and the estuary of the Mersey was afforded by the Royal Liver Friendly Society, whose authorities arranged for visitors to ascend to the roof of their building; it is said to be the highest, and to possess also the largest clock, in the kingdom.

Commercial Liverpool.

As has been the case on some previous occasions, many of the great firms in Liverpool assisted the Executive Committee in doing the honours of their city. Among them were the proprietors of our two contemporaries, the *Liverpool Courier* and the *Liverpool Daily Post*, who made arrangements to show the work involved in the production of a great newspaper. The Cotton Exchange was also thrown open, while at Messrs. Bryant and May's visitors had an opportunity of examining at an early stage of their existence those modern substitutes for the tinder and flint which are domestically so familiar to every one. How cloth and fabrics in general are dyed was demonstrated by Messrs. Johnson Bros., while the processes which sugar undergoes before it puts in a fleeting appearance on the breakfast table were examined at Messrs. Fairrie's. Another opportunity afforded during the course of the meeting, and one likely to be specially appreciated by the trouser-wearing section of the visitors, was a view supplied by Messrs. Ogden of the ceremonies which must be performed before due worship can be paid to Lady Nicotine. In the same connexion, perhaps, should be mentioned the fact that the Mersey Docks and Harbour Board threw open on Thursday and Friday the warehouses and other places at which are stored on their arrival the raw material for commercial undertakings of all kinds.

The High Seas.

It is inconceivable that any one can be ignorant that Liverpool is a great port, though should that fact be momentarily forgotten by a visitor to Liverpool whose peregrinations are confined to the neighbourhood of Lime Street it would be quite comprehensible. The chances of an aberration of this kind being more than temporary were obviated in the case of members of the Association by sundry items on the programme of entertainments, which in the event proved among the most popular of any. They included explorations of the White Star liner *Cedric*, the Allan liner *Corsican*, and the Cunard vessel *Lusitania*. All three were lying out in the stream, the two former being practically ready for departure so far as the ship and crew were concerned, since each was due to sail the following day, the *Cedric* for New York, the *Corsican* for Montreal. Though a considerable proportion of medical men are travellers it was obvious that many of the visitors had never before had an opportunity of exploring an example of the great sea-going hotels constituted by liners of the kind in question, and that they were greatly impressed by their size when viewed from the interior and by the comfort and luxury of the equipment. More interesting still to many members of the Association was the visit paid to a vessel of the Booth Steamer Company, the ss. *Hilary*, this being a passenger vessel which, since it trades to mosquito-infested ports, is provided with anti-mosquito arrangements of a very ingenious kind. An effective contrast to these passenger vessel explorations was afforded by an inspection on Thursday of the ship-building yards of Messrs. Cammell, Laird and Company, of Birkenhead, where a new dreadnought for the British navy and some destroyers for the Argentine Republic were seen in process of construction.

Continental Anglo-American Medical Society.

The annual luncheon of this society was held on Thursday, July 25th, at the Midland Adelphi Hotel, Liverpool, when

over thirty members and their guests were present. The chair was occupied by Sir StClair Thomson, Honorary President of the Society. Among those who accepted the invitations were Sir Bertrand Dawson, K.C.V.O., Professor Birkett (Montreal), Dr. Mosher (Boston, U.S.A.), Professor Robert Saundby, Dr. Ballenger (Chicago), Dr. Dawson Williams, Dr. Ewen J. Maclean, Professor T. R. Glynn, Dr. S. H. Habershon, Mr. J. H. Openshaw, C.M.G., the Editor of the *Lancet*, Dr. de Beurmann (Paris), Dr. Frederick Batten, Dr. J. Lloyd Roberts, Mr. Harold J. Stiles, Dr. Robert Hutchison, Dr. Purves Stewart, Dr. Drury, Dr. W. Kerr, Dr. G. S. Brock (Rome), Dr. Leonard Brown (Pau), Dr. A. W. W. Dowding (Algeciras), Dr. Gairdner (Naples), Dr. Crichton-Miller, Dr. Leonard Robinson (Paris), Dr. D. W. Samways (Mentone), Dr. Sandwith, Dr. Thompson (Brussels), and Dr. Robert Turner (Paris), Honorary Secretary. Sir StClair Thomson proposed the toast of "The King and the President of the United States." Sir Bertrand Dawson, in proposing the toast of "The Society," referred to the useful purpose served by a society composed of medical men practising in all parts of Europe and North Africa. Dr. Sandwith, who replied, said that since the last annual luncheon at Birmingham, the society had sustained the loss of one of its most distinguished honorary Presidents by the death of Lord Lister. The society congratulated Sir StClair Thomson, and felt honoured by the high compliment recently conferred upon him by the King. The Chairman proposed "The Guests," to whom he extended a most cordial welcome. The society published no transactions, but served as a pure bond of fellowship amongst the members, who were scattered over so wide an area. The toast was coupled with the names of Dr. Ewen J. Maclean and Dr. Birkett. In a brief reply Dr. Maclean welcomed the society on behalf of the Annual Meeting of the British Medical Association. Such an organization, he said, was a benefit not only to its own members, but was of great advantage also to all members of the medical profession who desired to send patients abroad. He regarded as extremely useful the list of members of the society, which was before him, giving, as it did, the names of doctors abroad. Dr. Birkett, in his reply to the toast, expressed his thanks and those of his colleagues from across the Atlantic for the kind hospitality of the society. In no other profession did such *camaraderie* exist. They had been welcomed that day not only by the glad eye, but also by the glad hand. The luncheon of the society was undoubtedly one of the most enjoyable functions held during the visit of the British Medical Association to Liverpool.

Irish Medical Schools' and Graduates' Association.

As briefly recorded in these notes last week, the luncheon party and summer meeting of the Irish Medical Schools' and Graduates' Association took place under the chairmanship of Dr. Macnaughton Jones on July 24th at the Royal Exchange Hotel. This was the day on which the Anglican afternoon service was held, so the principal among the many guests, namely, Sir James Barr, was only able to be present at the luncheon party just long enough to make brief acknowledgement of the toast with which his name was coupled, namely, that to the British Medical Association. In proposing this Dr. William Douglas of Goudhurst described the Association as marching steadily onwards from one position to another, and making itself at each step more useful in the eyes of the profession and more respected by the public. The toast to the hosts, proposed by Sir StClair Thomson, was acknowledged from the chair, Dr. Macnaughton Jones remarking that he would have liked to say a word regarding Sir James Barr, but in his absence would only observe that he had well earned the name of "Die-hard" given him in some quarters. Sir James Barr came from a certain spot on the planet which had given birth to many other die-hards, and he need not tell any Irishman what that was. The daily papers had not all described Sir James Barr in complimentary terms, but fortunately, as they all knew, his shoulders were broad enough to bear anything that could be said of him in connexion with the National Insurance Act or in any other relation. Irishmen, in common with their colleagues throughout Great Britain, intended to maintain the principles which had animated the medical profession in the past. Those principles were the outcome of the traditions which the profession had inherited, and the speaker thanked God that medical men of to-day were steadily resolved to hand them on to posterity, despite all legislation to the contrary. When the luncheon party was over and the guests had bidden their adieu, a number of the hosts remained behind for the purpose of holding the summer meeting of the Association, among these being Drs. P. S. Abraham (London), T. Hobbs Crampton (London), Richard Fegan (Harrow), J. F. Heaney (Liverpool), W. Allen (Liverpool), Jocelyn Swan (London), McElligott (Wigan), Bligh (Liverpool), J. A. Macdonald (Taunton), and Shepherd Boyd, the provincial secretary, to whose energies and organizing powers the success of the luncheon party was largely due. It ended in the following resolution being unanimously passed:

> That the best thanks of the Irish Medical Schools' and Graduates' Association are due to the British Medical Association for the stand they have taken in refusing to negotiate further in connexion with the Insurance Act, and also for their great help to the profession in regard to the matter.

The Guild of St. Luke.

Among other meetings held in connexion with the gathering at Liverpool was one of Catholic medical men. It took place on Wednesday under the auspices of the Guild of St. Luke, the special purpose in view being a consideration of the proposals which have been made by eugenists to sterilize the unfit. Papers on the subject were contributed by Dr. A. P. Mooney, of Preston, and Dr. J. J. Hanley, of Hull. The first author stated that the proposal in question implied that society could protect itself against the unfit in no other way than that of sterilization, and with that view he did not agree. The alternative method was to segregate persons whose entire liberty was held to constitute a menace to the future welfare of society, and the only serious argument against it was that it was a costly process, and this was not convincing. As for sterilization, this would not put a stop to vicious practices, and would only affect them from the point of view of procreation. Many mentally infirm persons sprang from perfectly healthy stock, so that sterilization would not altogether stop the birth of mentally defective people. There were also theological objections which he proceeded to record. Dr. Hanley's paper, which was read for him by Dr. Murray Bligh, dealt with the same question almost solely from the point of view of Catholicism. Finally the following resolution was adopted:

> That, in the opinion of this meeting of Catholic medical men of the Guild of St. Luke, the proposals to sterilize the mentally defective members of the community are opposed to every principle of human right and human liberty, and we condemn them unreservedly. In our opinion, the solution of the problem is to be found: (1) In attacking the causes of mental deficiency which lie in the defects of our social organization. (2) In dealing with the education of those mentally defective on Christian and elevating lines. (3) In preventing by segregation, in suitable cases, the multiplication of the unfit. (4) In a judicious use of the influence of medical men in directing attention to the dangers attending the marriage of mentally defective persons and in discountenancing them.

By Land.

The excursions by which the annual meeting week is habitually rounded off were this year so numerous that space does not permit of an attempt to do justice to each of them separately. After a fashion they fell into two groups—land and water expeditions. Among the former

must be placed the expedition to Buxton, which, having a specific medical interest, is the subject of an article on page 256, and those to Pendyffryn Hall, Blackpool, and Southport respectively. The visit to Pendyffryn Hall, which lies not far from Penmaenmawr, was paid on Friday, on the invitation of Dr. and Mrs. Dobson. The party on its arrival at Penmaenmawr, about one o'clock, found carriages awaiting it, and were promptly conveyed to Pendyffryn Hall, where they were received by Dr. and Mrs. Dobson and Dr. Fernside. Luncheon was served in a marquee on the lawn, the afternoon being devoted to a tour of the sanatorium and its beautiful grounds. A feature of the latter which attracted much interest was the arrangement of the walks on something equivalent to the Oertel system, or, in other words, in such fashion as to provide means of taking definitely graduated exercise. The visit to Blackpool, which was arranged by Dr. Rees Jones, its medical officer of health, also took place on Friday. Travelling out by a special train, the visitors first explored the Winter Gardens and various places of amusement which this popular health resort contains, and then reassembled at the Tower, where they were entertained at a late luncheon by those who were their hosts throughout the day—namely, the Mayor, Mr. John Collins, J.P., and the Corporation of Blackpool. After this the party broke up into various sections, several of which found Blackpool so invigorating and enjoyable that they did not get back to Liverpool until a very late hour. The fourth expedition—that to Southport—was one of the Saturday excursions, and one of the most successful thereof. The expedition was arranged by Dr. Swete Evans, secretary of the Southport Medical Society and Southport Division of the British Medical Association, which combined forces to play the part of hosts. After a morning spent in visits to the infirmary and convalescent hospital, the mile-long pier, and the Marine Drive, the guests assembled at the Victoria Hotel for luncheon. This proved a most cheerful *festa*, the provender and the speeches being equally enlivening One of the latter was contributed by the Mayor, who, avowing himself a supporter of Mr. Lloyd George, adjured the guests to return to the fold by quoting:

> Ye fearful saints fresh courage take;
> The clouds ye so much dread
> Are big with mercy and will break
> With blessings on your head.

On these lines, which happened to be coupled with an invitation to a mayoral garden party at Hesketh Park, Nature put its own interpretation by providing before luncheon was over a very fair equivalent for a tropical thunderstorm. Meantime the Medical Secretary had dealt equally aptly both with the quotation and the lighter side of the present situation of medical politics in a speech acknowledging a toast to the visitors.

By Water.

The second or water section of Saturday's doings included three items, though possibly the expedition to Chester should be classed as a hybrid. The true water expeditions were those to Llandudno and the Isle of Man respectively. In view of the weather which had prevailed during a good part of the week it seemed doubtful if these expeditions would fill, but in the event the bold spirits ready to take part in them numbered in the aggregate several hundreds, and Neptune duly acknowledged the compliment by providing a glassy sea for the voyages both out and home. Those bound for Llandudno embarked about eleven o'clock, and arriving at their destination soon after one, received a warm welcome from their hosts, the Town Council, headed by its chairman, Mr. Pierce Jones, J.P. An excellent luncheon soon followed, the toast to the guests drunk on its conclusion being acknowledged by Dr. William Hill, while a corresponding compliment to the hosts was proposed by Surgeon-General Sir William Gubbins. The rest of the afternoon was devoted to a repetition of the open-air treatment of the morning, the ozone on this occasion being administered on the high pressure system. For this purpose a number of residents in the locality, medical and otherwise, brought their motor cars, and took their visitors for Nature-devised switchback drives round the Great Orme and elsewhere. Some of them, it is reported, proved themselves even more daring as drivers than Jehu, the son of Nimshi, but fortunately at least as skilful, so the whole party, greatly exhilarated by its outing, eventually found itself safe and sound on board *La Marguerite*, and got back to Liverpool about 7.30. The expedition to the Isle of Man was on all-fours with that to Llandudno. The day was spent in an exploration by motor car of various places of interest in the island, the guests finally reassembling at about 5.30 p.m., at the Villa Marina Gardens at Douglas, where they were greeted once more by their hosts, the Mayor and Corporation. Dinner followed shortly afterwards, this, for the convenience of the guests, being given by the Mayor and Corporation on the *Empress Queen*. It was attended by His Excellency the Lieutenant-Governor of the island, supported by the President and members of the Manx Medical Society, and duly followed by an exchange of toasts. Finally, the signal "Who's for the shore?" was sounded, the guests getting back to Liverpool well before midnight. The visit to Chester, which was organized by Dr. Jephcott, Secretary of the Chester Medical Society, and Dr. Walsh, practically fell into two parts, the visitors during the morning and at luncheon being the guests of the Chestor Medical Society, and in the afternoon and at tea-time those of the Duke of Westminster. On their arrival at Chester in the morning they were met by members of the Chester Medical Society, including its President, Dr. F. I. Butt, and then divided into two parties, one of which, under the guidance of Dr. Mann, explored the cathedral and attended a beautiful organ recital by Dr. Bridge, while the rest, under the guidance of Dr. Elliott, visited points of historical interest in the city. Eventually both sections met at the Town Hall, where luncheon was served, with the Mayor in the chair. Some toasts followed, that of "The Visitors" being proposed on behalf of the hosts by Dr. Butt and acknowledged by Dr. Harvey, of Liverpool, who shepherded the party throughout the day. After luncheon the visitors betook themselves to the river Dee, where they found a steam yacht ready to convey them to Eaton Hall. On their arrival thereat they were shown the more interesting parts of this well-known residence, and subsequently refreshed with tea. Finally, they reversed the day's route, getting back to Liverpool about 8 p.m., after a singularly happy combination of occupations.

Among the many successful achievements on which the Executive Committee of Liverpool is to be congratulated is its production of a membership card of a kind at once artistic and practical. It was a simple sheet of cardboard folded in two, so as to protect three excellent maps for the guidance of visitors. One of these displayed the main portion of the city and the roads leading thereto, buildings of special importance to visitors being marked in red; a second was an enlargement of the part of the same plan covering the route between the reception room and the university, while the third was a plan of the university itself, showing the precise distribution of the Sections. These are the features justifying the word "practical," while the word "artistic" was rendered equally appropriate by the treatment of the outside fold; this was engraved in classic style and bore at the top a medallion depicting what at first sight seemed to be a Greek temple. Further acquaintance with Liverpool showed that it was a careful reproduction of the south and east aspects of St. George's Hall.

As was mentioned in these notes last week, Liverpool's town planning schemes, actual and possible, formed a chapter in the handbook prepared by the Handbook Committee and presented to each member on his arrival; but Liverpool already has two garden cities in its neighbourhood, and visits to them were duly paid in the course of the week. One of them has been well known for several years under the name of Port Sunlight, the village created for the benefit of its employees by the firm whose soap is sold under that name. Both luncheon and tea parties were given there on Friday by Sir William Lever, while on the previous day Mr. Henry Vivian and Mr. James Moon made members welcome on the estate of the Liverpool Garden Suburbs Tenants Company. A bowling green is among the provisions for recreation, and sundry members essayed their skill at this most ancient of popular games.

The Corporation of the City of Liverpool has long enjoyed a reputation for hospitality, and that it redeemed it to the full in the case of the British Medical Association no members who were present at the Annual Meeting need to be informed. Probably, however, few of them are aware that a very exceptional compliment was paid to them, this consisting in a removal of the wooden flooring which ever since the last occasion on which the Association visited Liverpool has protected the very beautiful pavement of the entrance chamber at St. George's Hall. Despite their many preoccupations most visitors probably found time to observe and to admire it.

We regret to learn that the absence of Dr. T. A. Helme of Manchester from the Representative Meeting and from the meetings of the Council was due to illness.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

The National Insurance Act.

Medical Benefits in Germany.

Mr. Worthington-Evans asked the Secretary to the Treasury whether, as the relations of the doctors with the insurance committees under the German sickness, accident, and invalidity insurance were subject to written contracts, he would publish a copy of such contracts, together with the actual figures of the fees payable thereunder; whether the total cost of medical and sanatorium benefits under the German insurance scheme for sickness, invalidity, and accident insurance amounted to approximately 14s. per insured person per annum, inclusive of drugs and the treatment of the sick in hospitals and in institutions; and whether he could say how much of the 14s. was actually paid to the German doctors. Mr. Masterman said that he was having prepared a paper dealing with the cost of medical benefit in Germany and the scope and nature of medical attendance and treatment there. The paper would give collections of agreements entered into by German doctors and their associations under the German scheme and of the fees payable thereunder. No figures would be of any value without fuller explanations than could be included in an answer to a parliamentary question. He was pushing on the publication as fast as possible.

Cost of Medical Benefit.

Mr. Worthington-Evans asked what was the estimated cost of medical benefit under the National Insurance Act for each insured man and woman, respectively, over 70 years of age until death; and what reserve was to be made out of the weekly contributions payable up to 70 to provide for this benefit. Mr. Masterman replied that the actuarial calculation of the cost of medical benefit was 6s. per insured person throughout life. The reserve at age 70 to provide for the future cost of seven-ninths of medical benefit at this rate was approximately £1 12s., and in the actuarial calculations provision had been made for the accumulation of this reserve in the case of every member surviving to 70.

Tuberculosis Dispensary System.

Sir John Lonsdale asked the Chief Secretary for Ireland if he was aware that in connexion with the proposed tuberculosis dispensary system the medical officers to be appointed were required to have the diploma of public health, and that many of the present dispensary medical officers, although performing the duties of medical officers of health, did not possess this diploma and could not obtain it except upon conditions which in many cases were impracticable; and if, in these circumstances, he would endeavour to arrange that dispensary medical officers might be eligible for appointment as county tuberculosis officers, subject, in the absence of the diploma of health or a bacteriological certificate, to the successful candidates satisfying the Irish Local Government Board by examination as to their fitness for the position. Mr. Birrell answered that medical officers to be appointed in Ireland in connexion with the dispensary system referred to in the question were not required to have a diploma of public health. The necessary qualifications were defined by an Order of the Local Government Board dated July 19th.

Sanatoriums (England).

Mr. Astor asked the President of the Local Government Board if he would state how many sanatoriums there were in England with a minimum of 100 beds and having an extent of ground equal to an average of half an acre per bed. He asked also (1) how many sanatoriums there were in England with less than 100 beds, but having sufficient grounds to enable them, when extended, to provide 100 beds or more, with an average of half an acre per bed; (2) how many inspectors had been appointed for the purpose of inspecting institutions in which persons recommended for sanatorium benefit might be received subject to the approval by the Local Government Board of these institutions; (3) whether he would state how many dispensaries were at the present date prepared to deal with insured persons; how many of such dispensaries had been inspected for approval before July 15th; how many had been approved since that date; (4) how many beds in existing sanatoriums would have been approved and would be empty and available for the reception of insured persons on August 1st; (5) how many sanatoriums had a whole-time medical man in charge; (6) how many sanatoriums had been inspected by the Local Government Board before July 15th with a view to receiving insured persons, how many beds had been so approved; and (7) how many beds were available in existing sanatoriums for the accommodation of insured persons at a rate of about 30s. a week, and how many had been approved. Mr. Burns answered that so far as his information extended, there were in England, at the present time, excluding Poor Law institutions, eight sanatoriums, or other institutions for the treatment of tuberculosis, with 100 beds or more. Of these, two only had an extent of ground of half an acre or more per bed. Complete information as to the extent of ground attached to every existing sanatorium was not available, but there were at least eight in which the area of land was 50 acres or more, although the number of beds was at present less than 100. A new subdepartment of the Local Government Board had been formed to deal with tuberculosis, and the medical staff had been enlarged by the appointment of an additional assistant medical officer and two additional inspectors. This staff was being utilized for the inspection of institutions and for other purposes in connexion with the treatment of tuberculosis, but he anticipated that further additions might be necessary in the near future. There were, according to his information, between fifty and sixty dispensaries in England for the treatment of tuberculosis, and he had no reason to doubt that all these institutions would be prepared to treat insured persons. The National Insurance Act provided that institutions for the treatment of such persons should be approved by the Board, and in its circular letters the Board had drawn attention to this requirement and had stated what information it should receive in connexion with applications for its approval. He had contemplated that any institution desiring

approval would make application accordingly, and he had no doubt that as soon as any arrangements were proposed by the recently constituted Insurance Committees for the treatment of insured persons at dispensaries the authorities of the dispensaries would apply for the necessary approval. At present only two such applications had been received; in one case the dispensary had already been inspected, and he proposed to approve of this institution provisionally for a period of six months. The other application had been received on the previous day, and he had arranged for the dispensary to be inspected at once. He might say, however, that he had complete information as to many of the other dispensaries, and in such cases it would not be necessary to direct an inspection before giving approval for a limited period. The medical officers of many of the existing dispensaries did not fulfil the conditions in respect of salary, etc., recommended for the chief tuberculosis officer in the interim report of the Departmental Committee. The Board had already approved for a period of six months eleven sanatoriums and other residential institutions containing 420 beds, and had communicated with the authorities of seventy-five other institutions containing about 3,500 beds, offering to approve of these institutions for a similar period. He could not say how many beds in these institutions would be available for the reception of insured persons on August 1st. Seventy-one of the existing sanatoriums in England had resident medical officers, but he could not say in how many cases the medical officer devoted the whole of his time to the work of the sanatorium. In some cases the head of the sanatorium was also in private practice. He had complete information as to many of the existing sanatoriums in England, and in such cases it would not be necessary to direct an inspection before giving approval for a limited period. There were about 3,000 beds in existing sanatoriums, for which a charge of 35s. per week or less was made, but he had no information as to the number of these beds which were available for insured persons. He had proposed to issue a circular in January last, urging councils of counties and county boroughs to organize schemes of treatment in dispensaries, sanatoriums, and other institutions, which should be available for the reception of insured persons recommended for sanatorium benefit by Insurance Committees. The issue of that circular was delayed in consequence of the appointment of the Departmental Committee. The Committee made their first report at the end of April, and on May 14th the Local Government Board, after consultation with the Treasury and Insurance Commission, issued a circular letter to councils of counties and county boroughs, commending the Committee's report to their serious consideration, and urging them to ascertain the needs of the areas under their jurisdiction and to formulate schemes. A large number of schemes had been prepared, and, subject to satisfactory financial arrangements, would be brought into operation without unnecessary delay. The moneys available for defraying the cost of treating insured persons were in the hands of Insurance Committees. These bodies had only recently been constituted, and he had suggested to local authorities that they should at once put themselves in communication with the Insurance Committees.

Tuberculosis.

In answer to subsequent questions by Mr. Astor, Mr. Burns said that on July 19th he had furnished the Insurance Commission with a list of forty-five isolation hospitals, which contained at least 838 beds, used for the treatment of tuberculosis, and which he was prepared to approve for a period of six months. He could not say how many of those beds were at present available for the treatment of insured persons. Most of these hospitals had been provided by means of loans sanctioned by the Board, and, generally speaking, he had sufficient information in regard to isolation hospitals to render it unnecessary to direct any further inspection before giving approval for a limited period. At present three hospitals containing seventy-seven beds for the treatment of tuberculosis had been approved for a period of six months.

Mr. Astor asked whether, before giving approval to an institution, the Local Government Board took into consideration the fact whether the doctor in charge of it had a special knowledge of the particular treatment which was necessary. Mr. Burns answered that that would be one of the conditions into which the inspector would examine.

Mr. Hume-Williams then asked whether it was quite clear that the isolation hospital would not be used for both the treatment of tuberculosis and fever at the same time. Mr. Burns replied that he was glad to say that the diminution of infectious disease all over the country had placed at the disposal of nearly all the sanitary authorities a very large number of beds that could be properly used for this particular purpose. They would not be used at the same time for both sets of cases, but the circumstances were such that they could be. He was satisfied that all the medical officers in charge of infectious hospitals or hospitals for tuberculosis were thoroughly qualified to undertake the duties.

Hospitals.

In reply to Mr. Lane-Fox, Mr. Masterman said that there was no provision in the National Insurance Act empowering Insurance Committees to spend money on the building or equipment of hospitals. Under Section 12 it was lawful for an approved society or Insurance Committee to grant such subscriptions or donations as it might think fit to hospitals, dispensaries, and other charitable institutions, and any sums so expended would be treated as expenditure on benefits. Approved societies and committees had also power under Section 12 in certain cases where insured persons were inmates of hospitals or similar institutions to pay sums payable on account of benefits in respect of such persons to the hospital or other institution concerned.

Appointments.

Mr. Astor asked how many local authorities had up to the present time consented to allow their medical officers of health to act temporarily as medical advisers to local Insurance Committees in regard to applications for sanatorium benefit; and how many clerks of Insurance Committees had been appointed up to the present time; how many of such appointments were temporary: and how many were permanent. Mr. Masterman said that the Commissioners had been informed that the Insurance Committees had in most cases appointed subcommittees to deal with the administration of sanatorium benefit, and that these subcommittees were in communication with the county and county borough councils with regard to the arrangements generally, including the arrangements for utilizing the services of medical officers of health. In about thirty cases in England there was definite information that the medical officer of health was already assisting the committee, and he had every reason to hope that the majority of local authorities would be willing to allow their medical officers of health to act temporarily as advisers to the committees. The Commissioners had already received notice of the appointment of clerks to 185 committees, of which 12 were permanent appointments.

The Peamount Sanatorium, co. Dublin.

In reply to Sir J. Lonsdale, Mr. Birrell said that Peamount had been certified by several experts as entirely suitable for a sanatorium before any money was granted for its purchase. It stood in its own grounds of 120 acres, and the nearest neighbours lived from half to three-quarters of a mile away. These people had written to the newspapers repudiating the objections made by some of the residents in the district, who had expressed fears which were entirely at variance with the best medical opinion. The resolution of the Celbridge magistrates had been received by the Local Government Board, but no reply had yet been sent. The purchase of Peamount was sanctioned to meet conditions of great urgency, both the Treasury and the Insurance Commissioners being anxious that sanatorium accommodation should be available as soon as possible after the appointed day. This need could not have been met in time by opening negotiations with the managers of Crooksling Asylum, nor was it the duty of the Local Government Board to do so. Peamount was held by trustees for the purposes of the Insurance Act, and the cost of its maintenance would be met by contributions from the Insurance Committees who used it.

Asked as to priority being given to Lady Aberdeen's Association, Mr. Birrell said it was thought to be of the utmost importance as soon as the appointed day arrived that there should be provision at once available for persons suffering from this disease. It was not a question of standing upon technicalities.

Sir J. Lonsdale: Why was it that the arrangement with regard to the counties as to the provision of accommodation was different? Mr. Birrell said the counties were in a different position. They had to see what accommodation would be required. All parties were anxious that the counties should have every assistance in making their own provision as soon as possible. The great thing was that those counties who wished it might use the Association's accommodation at once. Those counties which availed themselves of the benefit of it would have the amount charged against their share of the capital sum.

Sanatorium Grants (Ireland).

In reply to Mr. Robert Thompson, Mr. Birrell said that if the whole of the Irish share of the grant were distributed between county areas in proportion to population, the share of the city of Belfast would be £12,756, but the amounts immediately to be allocated to each county would necessarily be affected not only by its interest (if any) in the expenditure incurred out of the grant to the Women's National Health Association of Ireland, but also by its interests in any part of the total grant which it might be decided to apply to other general national services. The question of the principles upon which the grant was to be distributed was still under consideration with the Treasury, and he was not yet in a position to make a complete statement on the subject.

In reply to Sir J. Lonsdale, Mr. Birrell said that if the whole of the Irish share were distributed between county areas in proportion to population, the share of the county of Armagh would be £3,958.

Sir J. Lonsdale asked whether a grant of £25,000 having been made to the National Women's Health Association, the share to every county in Ireland would be proportionately reduced. Mr. Birrell answered in the negative; the Health Association was simply acting as the agent of such counties as had asked for its services. There was no question of affecting the grant in any detrimental respect whatever.

Sir J. Lonsdale then asked whether each county in Ireland would have to take the initiative before any grant was made in connexion with sanatoriums.

Mr. Birrell replied that he was happy to say that most of them were taking the initiative. All that had been done was to allot £25,000 to the National Women's Health Association in order to enable provision to be made at once for the work. Those counties which choose to avail themselves of the arrangement to send their patients to this association would be debited with the charge therefor.

In reply to Mr. Lardner, Mr. Birrell said that of the thirty-nine county and county borough councils in Ireland sixteen so far were making their own arrangements for the treatment of tuberculosis, three had handed over the administration of their share of the grant to voluntary associations, while six were keeping the arrangements in their own hands, but were contracting with voluntary associations. The remaining fourteen councils had the subject still under consideration. The Local Government Board was in communication with the Treasury as to the principle which should be adopted in regard to the allocation of the Irish share of the sanatorium grant, and until the amount available from this source for each county area could be definitely ascertained, the councils would not be in a position to consider the final features of their respective schemes.

Veterinary Operations (Anaesthetics).—Last week Mr. Walter Guinness introduced a bill to make further provision to protect animals from cruelty. The object of the bill is to insist that anaesthetics should be used in all operations performed on horses. The bill is backed by Sir J. Banbury, Mr. Baird, Lord Henry Cavendish Bentinck, Sir R. Pole-Carew, Mr. Mills, Mr. Greene, Colonel Lockwood and Sir Charles Rose.

Vaccination.—Mr. Wilkie asked the total number of declarations of conscientious objection to vaccination made in Scotland in the years 1907, 1908, 1909, 1910, and 1911, and also the percentages of these declarations to the births. Mr. McKinnon Wood answered that the numbers and percentages were as follows:

In respect of Births Registered in	Declarations.	Percentage of Births.
1907 ...	7,258 ...	5.6
1908 ...	15,846 ...	12.1
1909 ...	22,746 ...	17.7
1910 ...	26,954 ...	21.7

The corresponding figures for 1911 were not yet available. In reply to Mr. Snowden, the President of the Local Government Board said he had received a copy of a photograph of a child named Mary Jarrett, of Croydon, together with particulars of the case. Dr. Copeman, one of the Board's medical inspectors, had investigated the case and visited the home of the child. He found that the home and the children were dirty, that one of the beds was in a disgusting condition, and that there was evidence that the child had not been properly cared for. In view of these circumstances, and looking to the fact that a number of other children were vaccinated with the same lymph without any ill-effects, he was advised that the illness of the child, Mary Jarrett, could not properly be attributed to vaccination. Since January 1st, 1899, the Local Government Board had received information of four other cases in the Croydon Union in which injury was alleged in consequence of vaccination. In one case the injury was a bromide rash due to the administration of drugs by the mother; another was an attack of whooping-cough which occurred fourteen months after vaccination; in the third case the child appeared to have suffered from generalized vaccinia, an extremely rare complication of vaccination; and in the fourth case from septicaemia. During the period to which these cases relate over 55,000 persons in this union were vaccinated, and no further steps appeared to be necessary.

Mental Deficiency Bill.—In reply to Sir Reginald Pole-Carew the Home Secretary said that the question whether the Mental Deficiency Bill should apply to Ireland was under consideration. The Government saw no objection to its extension, provided such extension was in accordance with the wishes of the Irish representatives.

Vivisection.—Mr. Chancellor asked the Home Secretary if he would state how many of the 5,090 experiments on living animals included in Table IV (A), and how many of the 95,203 experiments included in Table IV (B), in the return for 1911, were actually seen by Dr. Thane and Sir James Russell respectively. Mr. McKenna replied that Dr. Thane witnessed thirty-five of the experiments mentioned in Table IV (A), and Sir James Russell thirty-three. Of the experiments in Table IV (B), Dr. Thane saw twenty-one, and Sir James Russell 202. The number of experiments included in Table IV (B) is 90,113; 95,203 was the total number of experiments in both tables.

THE sixth International Congress of Medical Electrology and Radiology will hold its meeting at Prague. The date has been postponed from July 26th to 31st to October 3rd to 8th.

MANY members of the medical profession will be interested to learn that a Blake Society has been formed. Its principal objects are to draw together admirers of the poet-painter, William Blake, and to encourage the study of his works. The first meeting will be held, by the kindness of Mr. Raymond Unwin, at "Wyldes," North End, Hampstead, which, as Collins's Farm, the home of the Linnells, was a favourite resort of William Blake. Papers will be read by Dr. Greville MacDonald and others. Blake's life presented many curious psychological problems, and nearly all students of Blake are ardent enthusiasts. The secretary of the society is Mr. Thomas Wright, Cowper School, Olney, Bucks, who will be pleased to furnish further particulars.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

SHEFFIELD.

National Insurance Act.

That the medical profession in this district is unanimous in its opposition to the medical provisions of the Act is shown by the following figures: The district includes 345 medical men and, with the exception of 11, all have signed the Association's pledge. The 11 exceptions include only 3 men in general practice in addition to 3 in the service of the local medical aid association. Of those who have given their signatures there are 139 who hold contract appointments and, with a single exception, all have placed their resignations in the hands of the local secretary.

A local guarantee fund is being raised. The Provisional Local Medical Committees feel that the response will be better if the fund be retained under local control. The sum of £500 has been guaranteed to the Central Fund from this district. The aim is to obtain guarantees for £5,000, and of this sum £3,000 has already been raised, although the fund has been in existence less than one week. The staffs of the various hospitals have united to head the list with a guarantee for £1,000. All classes of practitioner are assisting, as are some who have retired.

Recent Changes.

Professor J. M. Beattie, who has been appointed to the new Chair of Bacteriology at Liverpool University, will be missed very much, as, in addition to being Professor of Pathology, he has also been Dean of the Medical Faculty and Honorary Pathologist to both the Infirmary and the Hospital.

At the Royal Infirmary Dr. Dyson has resigned his appointment as Physician, and has been appointed Honorary Consulting Physician. Dr. Dyson's period of active services at the Infirmary has extended over twenty-seven years, and as a recognition of the great value of his services the Weekly Board has recommended that he be allowed beds for such patients as he may desire to send into the institution. Dr. A. E. Barnes has been appointed in his place.

The Royal Hospital has, by the sudden death of Mr. Harry Lockwood, lost its Senior Surgeon. As a surgeon and as a supporter of local cricket and football he was exceedingly popular both with his colleagues and the public.

Dr. Chapman who, in the capacity of Assistant Medical Officer of Health for Tuberculosis, has been organizing the Municipal Tuberculosis Dispensary, will shortly be leaving the city, having been appointed an inspector under the Local Government Board.

The Edgar Allen Institute.

This institution has completed it first year of service. Its work is limited to mechanical and physical treatment of cases sent to the institute by medical men. A large number of cases of sprains, etc., have been restored to working capacity. The medical men present at the annual meeting gave expression to their appreciation of the institute. Mr. Edgar Allen, who is bearing the entire cost of maintenance, is to be heartily congratulated on the results of his endeavours.

MANCHESTER AND DISTRICT.

Sanatorium Benefit in Manchester.

Particulars of the scheme for the giving of sanatorium benefit in Manchester have not yet been made public, but the underlying idea is understood to be to utilize to the fullest possible extent all the existing hospital accommodation that can be spared so as to obviate the necessity of providing new buildings. In the past there has been a great amount of overlapping, but it is hoped to avoid this in future by a system of central management. It is proposed, and the proposal would seem to have been accepted, that the Manchester Royal Infirmary shall set apart three or four wards to be used partly for observation beds, partly for acute cases of tuberculosis and for surgical cases, but not for ordinary cases of chronic phthisis, payment for cases being made by the sanitary authority, with assistance from the Insurance Committee for insured persons on an agreed scale. It is also proposed that a salaried whole-time tuberculosis officer should be appointed to have the supervision of these wards, apparently under the control of those members of the honorary medical and surgical staffs who are willing to have beds in the special wards allotted to them. Whether the honorary staffs will be paid for their work, or are willing to receive payment, remains to be seen. Similar arrangements might, if necessary, be made with other general hospitals. For ordinary cases of consumption, the Consumption Hospital, with its several institutions, will be utilized, the honorary staff receiving salaries of £250 a year each; in addition the Crossley Sanatorium at Delamere will be available. It is also proposed that some institutions that have fallen into disuse, such as the old St. Mary's Hospital in Quay Street, should be used after any necessary structural alterations have been made, and several other institutions and homes of a more or less private character may also find a place in the scheme. A tuberculosis dispensary, possibly in the old St. Mary's Hospital, will be a central feature of the scheme, and the medical officers of the dispensary, who will naturally be the staff of the Consumption Hospital, will advise as to the proper form of treatment to be given to each tuberculous case. Some fear is being expressed that the interests of general practitioners, so far as the domiciliary treatment of tuberculous cases is concerned, are not being sufficiently safeguarded; but, as already stated, the details of the scheme are not yet published, and when the Sanitary Committee and the Insurance Committee have agreed, the arrangements will still require the approval of the Insurance Commissioners, and apparently also of the Local Government Board, under Section 16 of the Act. It is estimated that the Insurance Committee will have at its disposal the sum of £33,000 a year out of money provided under the Act for insured persons, mainly, of course, from the 1s. 3d. per head which the Act allows for the purpose. This sum will not nearly cover the cost of all cases of tuberculosis among insured and non-insured, including dependents of the insured, and it is anticipated that the Manchester rates will have to be called on for a considerable further yearly sum needed for treatment and preventive measures.

BIRMINGHAM AND DISTRICT.

Tuberculosis in Birmingham.

The Public Health and Housing Committee to the Birmingham City Council has reported that the existing accommodation for consumptive patients is quite inadequate. About 5,000 cases of consumption are notified yearly, and there are 1,200 patients on the waiting list for admissions into sanatoriums. At the tuberculosis centre, which was established in March, 1911, about 500 patients attend per week. This centre is about to be removed to the old water department in Broad Street, where the accommodation will consist of departments for men, women, and children, four examination rooms, a room for pathological investigations, and a dispensary. The committee has under consideration a scheme to use the Lyndon End Hospital for women, and a portion of West Heath Hospital for men, as hospitals for advanced cases of tuberculosis of the lungs. The committee proposes to ask the council to appoint Dr. G. Brookes Dixon, the medical officer of the Yardley Road Sanatorium, to the new post of principal sanatorium and tuberculosis officer for the city, under the direction of the medical officer of health, at a salary of £500 per annum, with board and residence. Under the schemes the total sanatorium accommodation will be 283 beds—215 at Yardley Road and 68 at Salterley; and the hospital accommodation 112 beds—40 at Lyndon End and 72 at West Heath. The Finance Committee pointed out that it would be unwise for the corporation to incur the liability for the full charge of these establishments until an assurance of substantial financial aid had been received from the Government; no such assurance has as yet been given. The cost of the Yardley Road extension will be approximately £30,000, and of the institution in Broad Street £3,000.

ACUTE POLIOMYELITIS.

About 150 cases of acute poliomyelitis are known to have occurred in Birmingham during 1911, and it is probable that many abortive or atypical cases passed unrecorded, as compulsory notification of the disease did not commence until January 1st, 1912. Most of the cases occurred during August and September. In view of the probability of the occurrences of further cases during the present summer, the Medical Officer of Health has issued a letter, by the desire of the Public Health and Housing Committee, in order to indicate measures which may prevent the spread of the disease. As there is no doubt that the disease was highly infectious as it occurred in Birmingham, it is desirable to fix a minimum period of quarantine of two weeks for children who have been in contact, provided the patient is effectively isolated. The children affected should be isolated for six weeks. Disinfection of the house and sick-room will be done free of charge by the Health Department. A good deal of evidence has been brought forward to indicate that "carriers" may play an important part in the spread of this disease. If such evidence is obvious in any Birmingham patient, the disinfection should be ordered as in cases of the disease. The letter of the Medical Officer of Health also discusses the difficult problem of the diagnosis of the disease in its early stages.

ANTITUBERCULOSIS EXHIBITION.

An antituberculosis exhibition has been held in the Town Hall from July 3rd to 17th, and was opened on July 3rd by the Lord Mayor of Birmingham. The exhibits were set out in the large hall and in the basement.

The National Association for the Prevention of Consumption sent down a complete series of exhibits to show the prevalence of the disease, and how, in the earlier stages, it can be cured. There were many models of houses, shelters, and sanatoriums. Amongst the last named were interesting models of the Cook Memorial Sanatorium at Romsley Hill, and the Salterley Grange Sanatorium. There were also models which illustrated the good work that had been done in letting more air and sunshine into confined courtyards. The courts before the work was commenced and after its completion were shown. Dr. Douglas Stanley exhibited a large number of specimens of tuberculous human organs illustrating different stages of the disease. There was a photomicrograph of a drop of mucus containing germs of tuberculosis which had been found in a Birmingham street; and there were photographs illustrating various forms of tuberculosis in different stages of illness. Diagrams showed how the common house-fly is a carrier of germs, and how germs multiply in unprotected milk, and so become a danger to child life. In the basement were two models which illustrated better than could any verbal instructions how people living in poor neighbourhoods can make the best of their surroundings. One was the model of a room inhabited by four people of careless and uncleanly habits. The other showed the same room as it might be if it were kept clean. There were also amongst the local exhibits a number of models and charts showing the phthisis death-rate in Birmingham from 1901 to 1910, and illustrating the proportion of deaths from consumption in comparison with other diseases. Lectures by medical men were delivered each evening.

THE GENERAL HOSPITAL.

A bed has been endowed in the hospital as a memorial to the late Mr. William McGregor, founder of the English Football League, and its first member. The endowment of the bed cost £1,250, and this has been subscribed for by the forty clubs in the English League and also by the clubs in the Scottish League.

LONDON.

LONDON COUNTY COUNCIL.

County Medical Officer's Services and the Insurance Committee for London.

THE General Purposes Committee reported to the London County Council on July 30th that it had received a request from the Insurance Committee for the county of London that the Council would consent to the medical officer of health of the county attending meetings of the committee and giving advice and assistance. The committee stated that, while desirous of giving every facility to the Insurance Committee, it was difficult to accede to the request, inasmuch as all the time and energies of the medical officer were necessarily devoted to the work of his office, and especially, at the present time, in connexion with the work of medical inspection of children in public elementary schools. The Council had already appointed as a member of the Insurance Committee Sir Shirley Murphy, the late county medical officer, whose services had been retained by the Council in a consultative capacity until the 31st December, 1914, and the committee felt confident that the great knowledge and experience of public health administration which Sir Shirley Murphy, by his service on the committee, was placing at its disposal, would supply all that the committee required. Further, the Public Health Committee was furnishing the Insurance Committee with all the information at its disposal. After some debate, in which the Chairman of the General Purposes Committee repudiated any suggestion of political animus, the Council decided, on the recommendation of the committee, not to accede to the request.

Appointments to School Medical Work.

Following its decision to appoint in place of 80 part-time school doctors in the Public Health Department 24 full-time medical assistants (5 permanently and 19 temporarily) and 4 additional full-time medical assistants, the Council appointed the following:

Mr. J. G. Forbes, M.A., M.D.Cantab., M.R.C.P.Lond., D.P.H.Cantab., medical assistant in the Public Health Department; Mr. A. W. Sikes, half-time medical officer in the Public Health Department; and Mr. F. W. Higgs, M.D., B.S.Lond., M.R.C.P.Lond., to be medical assistants in the Public Health Department, each at the commencing salary of £500 a year, rising by annual increments of £25 to £600 a year.

Miss J. L. D. Fairfield, M.D.Edin., D.P.H.Lond.; Miss J. R. F. Gilmour, M.B., Ch.B.Glasg., D.P.H.Edin.; Mr. A. J. Malcolm, M.R.C.S.Eng., L.R.C.P.Lond., D.P.H.Cantab.; Mr. G. Chaikin, B.A.Lond., M.R.C.S.Eng., L.R.C.P.Lond.; Mr. H. R. Kidner, M.B.Lond., B.Sc.Lond., D.P.H.Cantab., M.R.C.S.Eng., L.R.C.P.Lond.; and Mr. A. G. L. Reade, M.R.C.S.Eng., L.R.C.P.Lond., to be medical assistants in the Public Health Department, each at a commencing salary of £400 a year, rising by annual increments of £25 to £500 a year.

Mr. A. R. Cowell, Mr. A. M. Davies, Miss J. G. Duncan, Miss M. G. Edis, Mr. R. Green, Miss H. B. Hanson, Mr. C. T. W. Hirsch, Mr. C. F. L. Leipoldt, Miss M. C. Macdonnald, Mr. T. J. T. McHattie, Mr. H. F. Marris, Mr. R. H. Norman, Mr. E. F. Palgrave, Mr. A. J. S. Pinchin, Miss M. Russell, Miss J. A. Scott, Mr. W. J. M. Slowan, Mr. Williams, and Mr. F. T. H. Wood, to be temporarily for one year medical assistants in the Public Health Department, each at a salary of £400 a year.

It was stated that there were in all 306 applications for the various positions.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

THE INSURANCE ACT.

Tipperary.

IN accordance with the decision to set up a system of treatment under the control of the Local Medical Committee, the practitioners of South Tipperary met in Clonmel on July 11th. It was announced that every medical man, except one absent on holidays, had signed the pledge binding himself not to accept any appointment, or to give service to insured persons, except on terms approved by the Local Medical Committee. It was resolved that no arrangement for medical treatment could be entertained till it was decided by the Conjoint Committee of the British Medical Association and Irish Medical Association to open negotiations with insured persons. The decision of the delegates meeting in Dublin on June 11th—"That we refuse to act for any society which does not allow by its rules for 'free choice of doctor,' subject to the consent of the doctor to act"—was approved. The capitation method of remuneration was favoured, and minimum limits fixed for treatment in the event of such being undertaken of (1) insured persons; (2) insured persons and their uninsured dependents. As the arrangements with friendly societies are unsatisfactory, as under stimulation of the Insurance Act the system tends to extend, and as no individual arrangement between any medical man and the society or committee of insured persons will be permitted in future, all medical men holding such appointments

were requested to serve notice terminating existing contracts on January 1st, 1913, and to intimate to the societies that each member was to exercise the right of selecting the doctor from a panel to be obtained from the Secretary of the Executive Committee—Dr. Stephenson, Carrick-on-Suir—on the terms fixed by the Local Medical Committee. The following resolutions were passed:

1. As the fee for examination for entrance to society is to be paid for by the society we are prepared to accept 2s. 6d. per certificate.
2. That the minimum charge for medical attendance for insured persons be 8s. 6d. per capita, and 12s. 6d. for each insured person and his dependents (who are uninsured), subject to the conditions determined by the delegates at their meeting, June 11th, 1912, relative to extra remuneration, and excluded services, midwifery, dressings, medicine, and appliances, etc.
3. That this meeting is of opinion that lay inspection under the Insurance Act of medical registers is highly objectionable, and that the attention of the Conjoint Committee be drawn to the fact. Such lay inspection would reveal professional secrets affecting patients, which have been formerly kept strictly private.

Limerick.

At a fully attended meeting of the medical practitioners of Limerick, the delegates who had been present at the recent meeting of the profession in Dublin submitted a report which was unanimously adopted. A local Medical Committee was then chosen under Clause 62 of the National Insurance Act. The names of four practitioners willing to act on the local Insurance Committee were submitted, and they signed an undertaking to resign when called on to do so by the Conjoint Committee. The secretary read an account of what had been done by the Medical Committee in connexion with contract practice. All the practitioners in Limerick having signed the contract practice undertaking, a circular was recently sent to the various friendly societies informing them that in future the medical attendance on members would be at the rate of 8s. 6d. per member per annum without medicine or extras, an income limit of £2 a week, and medical examination before admission to medical benefits were also mentioned in the circular. The friendly societies held a joint meeting to consider the situation and constituted themselves into a body known as the Limerick United Friendly Societies. Correspondence has since been passing between them and the Medical Committee, with the result that the medical officers to the various societies (numbering seven) have handed in their resignations.

PEAMOUNT SANATORIUM.

The campaign of prejudice and misrepresentation directed against the proposed plan of the Women's National Health Association to erect a sanatorium for consumptives at Peamount, near Lucan, culminated on Sunday afternoon, July 21st. A crowd of men numbering about fifty, arrived at the place armed with pick-axes, crowbars, and hatchets, and in spite of the remonstrance of those in charge proceeded to demolish the buildings which were in the course of erection: one large pavilion which was nearly completed was levelled with the ground, and other damage was done. The threat was made that if the work was proceeded with the same methods would be repeated. Resolutions protesting against the proposed sanatorium have been passed by the Celbridge Board of Guardians, Celbridge No. 2 Council, and by the magistrates of Tallaght Petty Sessions district.

TUBERCULOSIS DISPENSARY FOR MEATH.

The proposal to convert a portion of the old seminary buildings in Navan into a tuberculosis dispensary in connexion with the offer of the Women's National Health Association met with so much opposition that it has been abandoned. It has been decided, provided the sanction of the Local Government Board can be obtained, to make use of the premises known as the small-pox buildings instead. This emergency structure has never been used, and is situated in the workhouse grounds, but is well removed from the main buildings. It is within 200 yards of the town and about 100 yards off the high road. It is private and easily accessible, clear of motor traffic, and should prove admirably suited for the purpose.

ATTENDANCE OF MEDICAL MEN AT INQUESTS.

At an inquest held recently by the Coroner of South Dublin on a boy who was drowned, the coroner refused to accept a verdict of accidental death, as the cause of death was not stated. The foreman said that as there was no medical evidence as to the cause of death, he did not see how he could declare on oath what the child died from. The coroner refused to discuss the matter, and the jury then found a verdict of accidental drowning, adding a rider that in their opinion a medical practitioner should attend all inquests, in order to certify the cause of death. Of late years there seems to have been an increasing tendency for the Coroner of South Dublin to dispense with medical evidence and the performance of a necropsy. This is presumably to save the rates. Another recent innovation is the refusal to pay a fee to the resident medical officer of a hospital for attending and giving evidence at an inquest.

CORK JOINT HOSPITAL BOARD.

At the monthly meeting of this board on July 6th, at the Court House, Cork, the Resident Medical Superintendent of the Streamhill Sanatorium reported that during the past month 16 patients had been admitted to the institution: 15 patients had been discharged, and 56 patients were undergoing treatment, including 4 from co. Kerry. It was decided that in future the minimum rate for paying patients should be 15s. a week, provided they were resident in the contributory area, and it was also suggested that when there were vacant beds patients from adjoining counties should be taken in at a guinea a week, which would pay for their maintenance. The secretary read a letter from the Local Government Board sanctioning a loan of £1,800 for the purpose of erecting a residence for the medical superintendent, out of the unexpended balance of the loan of £3,000 sanctioned by the Treasury in 1909. A letter was also read from the Insurance Commissioners stating that the staff of the institution came within the ordinary provisions of the Act, and would have to be insured. The secretary said that all the members of the staff had signified their intention of not complying with the Act, and it was decided to let the Act take its course with regard to the staff.

THE CARE OF INFANTS.

The Dublin Committee for the Prevention of Infantile Mortality, in its report for the first half of its second year, states that 80 ladies are at present working as voluntary health visitors under its auspices; 30 others have been trained during the winter and are now ready to take up work: 930 mothers and their babies have been visited since last January: 10,800 visits have been paid during that period. 775 bags of coal have been distributed, 400 articles of clothing have been given to the mothers, and 6,585 milk or food tickets have been issued. Under the Early Notification of Births Act the Public Health Department of the Corporation notify each birth to the Secretary of the Committee and a health visitor visits the mother and baby once every ten days for the first 12 months.

Special Correspondence.

PARIS.

The Fight against Old Age.—First Signs of Phthisis.

RECENT experiments carried out by Professor Metchnikoff on intestinal intoxication have again given rise to a hope that old age may be postponed, if not abolished altogether, and that atheroma, cirrhosis, chronic interstitial nephritis may be seen no more if the flora of the large bowel is so adjusted that toxin-producing bacilli are killed by paralactic bacilli from the bowel of the dog. These bacilli appear to have effect on the indol and phenol-producing bacilli, and atheroma and the other diseases enumerated have been said to be the pathological results of these aromatic toxins. These researches on intestinal antisepsis or "contrasepsis" (one organism fighting another) will require many years at least to show any appreciable result on such conditions as above mentioned, were it only for the simple fact that all the conditions require years to develop in any case.

At a recent meeting of the Medical Society of the Hospitals Dr. Sergent spoke of the difficulties frequently met with in diagnosing the very beginning of the disease. The supraclavicular portion of the right apex is most frequently

the site of the initial focus; but, since auscultation in the front is deceptive, but a small area no larger than the head of the stethoscope in the centre of the supraspinous area frequently affords pathological signs. This small area is the real "danger zone," and he is inclined to the opinion that the lesion may almost always be noticed here before other signs can be found in the chest.

VIENNA.

A "Waiting List" for Students of Anatomy.—Election of Professor Weichselbaum as Rector of the University.—A Sick Club Experiment in Vienna.

For some time past there have been continuous complaints from the professors of anatomy and the medical students of Vienna concerning the lack of space and general inconvenience at the Anatomical Institute. This want of proper accommodation is especially felt by those engaged in dissection, the obsolete heating apparatus, and the scarcity both of tables and chairs, and of washing and disinfecting arrangements, making scientific work almost an impossibility. The institute was built five and twenty years ago as temporary quarters for the anatomical department, and since then the number of medical students has increased to such an extent that a continuation of the existing conditions is clearly out of the question. During the last term no less than fifteen hundred students (amongst them many foreigners) applied for permission to dissect at the Institution, and the overcrowding was in consequence so great that it became necessary to call the attention of the authorities to this undesirable state of affairs. Professor Tandler, therefore, in collaboration with his colleagues of the Medical Faculty of Vienna, has introduced a waiting list for the admission of students who wish to study anatomy at the University. Only such as have already worked at the Institute will be admitted during the coming (winter) term, all newcomers being debarred admission if the number of applications exceeds one thousand; whilst foreign students will not be admitted until room has been found for every native applicant. These drastic measures, however, are extremely unpopular with all concerned. Austria has always been proud of her academic "Lernfreiheit," that is, the liberty enjoyed by her students to study where and how they please, and as the students of every Balkan State are obliged to matriculate at Vienna, there being no other university of repute for them nearer home, it will be seen that there are grave political reasons for this universal disapproval of the new rules. It is probable, therefore, that the general dissatisfaction will force the Government to consider the question seriously, and grant a sufficient sum for the erection of a proper building for the accommodation of the anatomical department.

Professor Weichselbaum, the well known pathologist of the Allgemeines Krankenhaus of Vienna, has just been elected Rector Magnificus of the University. The universal esteem enjoyed by this eminent savant is fittingly displayed by his call to the highest post of honour in the scientific republic of our Alma Mater.

An interesting experiment is in progress at the present moment in Vienna, where the medical profession has recently organized a Krankencasse, or sick club, whose members have one and all the right to choose their own doctor. The club is composed of the 800 employees of a large firm, the medical staff being open to any doctor who is willing to give his services on the following terms, namely, a deduction of 50 per cent. from the usual fees paid by the average private middle-class patient (night visits being charged double), whilst the family of every member can claim medical treatment on exactly the same terms. Apart from the benefits of such a system to the patient, who naturally prefers to choose his own medical man, the doctors should also profit, since the rate of payment mentioned above is at least three times larger than the usual club fees, which have hitherto amounted to about 15 per cent. of those obtained in private practice. It should be added that the club funds are supplied by weekly deductions made from the wages of its members, but these are no higher than the usual contributions made to the ordinary sick clubs. It should prove interesting to watch the course of this experiment.

Correspondence.

LIFE INSURANCE.

SIR,—I have been interested in the articles which have appeared in the JOURNAL on the above subject. The choice of an office has given rise to some discussion; several points have been considered, but it is evident that there is still a great lack of knowledge on this important question. The arguments of agents are so carefully guarded that an ordinary individual is unable to see through them, and their importunity often secures business which the policy holder afterwards regrets.

In the first place I strongly advise any one who contemplates taking out an insurance to obtain a copy of Bourne's *Handy Assurance Manual*, price 1s. It gives most valuable information, and a careful study of it will be of great assistance in selecting an office. For instance, some offices charge a higher premium than others, some pay a better bonus, and in some instances this larger bonus is paid by the office which charges a lower premium.

There is one point, however—and a most important one—which I have not found mentioned. I refer to the question of loans. Most men, at some period of their lives, find it a convenience to have a loan. Though many are unaware of it, there is no more simple method of obtaining a loan than from a company with which the borrower is insured.

In most of the insurance prospectuses it is stated that liberal amounts are loaned on the security of the company's policies at a reasonable rate of interest. There is no definite information as to the amount of loan or the rate of interest. It is only when the application is made that these particulars are learnt. The amount that can be borrowed varies to a considerable degree, and may not be in fair comparison to the sum paid in premiums *plus* compound interest. It may be smaller in offices which charge a larger premium. At present it is difficult to estimate this, but policies are issued with guaranteed surrender values, and any office should be in a position to state what proportion of the premiums will be returned as surrender value, and also the proportion of surrender value which will be lent. This should be an amount which, with a year's interest, equals the total surrender value. The amount lent is, of course, always below the surrender value of the policy. This makes the security absolute. It cannot depreciate by a fraction, and is, in this respect, superior to any gilt-edged investment. This being so, it is obvious that the rate of interest should be small. Most insurance companies hold investments which pay them 2½, 3, or 3½ per cent. Even these are liable to depreciate, and in many instances have done so, as evidenced by the large amounts which have been written off investments in recent years.

The average rate of interest earned in most offices is about 4 per cent. If the policy holders were charged this rate upon their loans they would probably feel quite satisfied. Even this rate is not quite fair to them, because the security they give is superior to the average security of the other investments held.

The demands I have received have varied from 6 to 4 per cent. In a proprietary office where shareholders have to make a profit out of the insured such treatment is to be expected, but in a mutual office where all the policy holders are supposed to have an equal interest, it is most unjust. Fancy a firm lending money to outsiders, with an element of risk, at 4 per cent., while at the same time they charge 6 per cent. to their own members whose security is absolute. It borders on the ridiculous.

Some offices will lend sums of £500 at a less rate of interest than they charge for smaller loans. This is, in a mutual office, grossly unjust. It practically penalizes the small policy holders and gives a preference to the rich, who generally hold large assurances. It may be argued that there is more trouble and expense in collecting the interest on small amounts, but as the initial expenses are paid by the borrower, and as the interest has to be sent to the office the cost of collection is covered by the postage, and does not justify an extra one or half per cent.

It is evident from the facts I have narrated that any one who is contemplating an assurance should ascertain from the office he is negotiating with the rate of interest it charges on loans. It is wise to have this in writing, and

even then you are not quite secure. Possessed of the knowledge I have already described, I effected an assurance in an office which gave me a written agreement to charge me 4 per cent. on any loan. When a loan was applied for the amount was paid over after deducting one year's interest, and an intimation was given that future interests must be paid one year in advance. This means that the interest is about £4 3s. per cent. instead of £4.

There is yet another way in which a policy holder may be penalized. The office may fail to allow the income tax, which should certainly be deducted as a routine, so that any policy holder who happens to be unaware that he is entitled to it should not be penalized on account of his ignorance.

Another important point is the method of repayment of these loans. Some offices will accept repayment in instalments, while others refuse to accept any amount short of the whole. This is another instance of giving a preference to the richer man, and is especially unfair in a mutual office. Most offices have a rule not to accept any repayment until the completion of twelve months. Some of them make this rule absolute, but others, in their wisdom, and with the true mutual feeling which should prevail, waive their rule when one of their policy holders requests it. Perhaps it will be better understood if I state several contracts for comparison.

A. Granted a loan, the amount of which was larger than that offered by other offices which had received more in premiums. The rate of interest charged was 4 per cent., payable at the end of each half year. When the demand notes were received for this interest the income tax was duly deducted. Repayment was accepted by instalments. One repayment was accepted before the completion of twelve months, although it was against the rules.

B. Granted a loan of equal amount. The rate of interest charged was stated to be the same, but as a year's interest was deducted from the loan, this increased the rate of interest to £4 3s. per cent. No income tax was deducted. When it was applied for it was at first refused, but after a firm demand it was paid. Repayment by instalment was refused; repayment in full before the completion of twelve months was also refused.

C. Demanded 4½ per cent.

D. Demanded 5 per cent.

E. Demanded 6 per cent.

In the last three cases the rates of interest are so obviously excessive that it is unnecessaary to mention the other disabilities.

If the general public were aware of all these facts they would be in a position to avoid offices which treat them unfairly. I have little doubt that all the companies would soon come into line. But unfortunately there is no means, so far as I am aware, of acquiring such information. It is for this reason that I have written, and I trust that I have made the position quite clear, and that it will be of benefit to many members of the profession who are contemplating insurance.

It is not my purpose to advocate any office, or to decry one. If any of your readers desire further information I shall be pleased to afford it, so far as I am able.—I am, etc.,

J. Lionel Stretton,
Senior Surgeon, Kidderminster Infirmary and Children's Hospital.

ST. KILDA AND NORTHERN AUSTRALIA.

Sir,—Your issue of June 1st contains two articles which I read with the closest attention—one dealing with the projected colonization of Northern Australia, which you entitle "A Great Experiment": the other containing a description of the inhabitants of St. Kilda with reference to their health.

Dealing with the latter first, the report of your correspondent shows that the inhabitants of this almost inaccessible island are of fine physique, and enjoy a remarkable degree of good health, in spite of the absence of any system of sanitation and of the close intermarriage entailed by the smallness and remoteness of the community. Your correspondent expresses surprise at "the lack of very obvious evidence of physical degeneration among the inhabitants," finding only a certain lack of mental alertness in the men—a trait which has probably little "survival value" in their particular surroundings. Degeneration will only take place in an isolated community, when either from lack of food supply, overcrowding, or migration from climatic or other surroundings materially different, it finds itself imperfectly adapted to its present surroundings—for example, in some of the "congested districts" of Connemara, particularly in the islands of Kilkieran Bay, whither the present inhabitants have been driven within historic times from more fertile regions, and where overcrowding in wretched cabins and lack of adequate nourishment obtain, degeneration is marked. Another well-marked example of migration, isolation, and degeneration is to be found in the Alpine valleys which Louis XII repeopled, after the massacre of the Waldensians, with settlers from other parts of France. The Waldensians were a virile race: their successors, after a lapse of 300 years, are mostly cretins.[1] On the other hand, in the Aran Islands in Galway Bay small communities have flourished and still thrive in almost as complete isolation as the St. Kildeans, but the soil is fertile, food supply is sufficient, and doubtless any tendency to overcrowding has been relieved by migration to the mainland. The fact is that, so far from degeneration setting in as a consequence of generations of isolation and intermarriage, the result, both in St. Kilda and the Aran Islands, has been the evolution of types closely allied to and specialized for local conditions. Your correspondent particularly notes that although the male St. Kildeans sometimes visit the mainland, "it never happens that a man returns to his home bringing a wife from other parts." Had any such proceeding become common, it is safe to affirm that "degeneration" would have ere long made its appearance in the island unless the strange women were taken from environments nearly resembling what they would find in St. Kilda—for example, the Hebridean Islands. The community would be set once again the task of re-eliminating imperfectly adaptable elements in its composition before it could regain the equilibrium it now enjoys. This close inbreeding and specialization may perhaps be thought to be peculiar to the more inaccessible islands round our coast. In reality, it is not so at all. Until the industrial era arose, the railway came and rapid urban immigration set in, the country was full of such inbred little communities centring themselves round a little market town, or even confining themselves to the narrow limits of a village or district. It is common enough to find the majority of inhabitants of a hamlet or neighbourhood almost restricted in nomenclature to two or three names, and to find the same names figuring on the local tombstones for two or three centuries. Even at the present day such inbred little groups holding themselves aloof from adjoining communities are not uncommon. I have in mind two fishing villages on the coast of Devon whose inhabitants are regarded to this day by their neighbours in much the same light as the Israelites looked upon the Philistines. The Cladagh—the fishing quarter of Galway—is another and a well-known example of the kind, but there are many more. The observation of years convinces me that individuals of these inbred groups make poor migrants unless their new surroundings closely resemble those from whence they came. Their tissues, cerebral and general, seem lacking in "educability." They acclimatize badly, and the stock tends to undergo rapid degeneration in an alien environment. Doubtless the cases of long inbreeding provide the most striking examples of failure of adaptation to change, but there are many more stocks whose ability to respond to new demands is little more elastic than that exhibited by the specialized types already mentioned. I have endeavoured to show elsewhere[2] that individuals presenting strongly marked traits of the blonde intrusive races which have settled in times past in the British Isles are still limited to a definite group of conditions for the full maintenance of health and physique. These conditions are a dry soil, a low rainfall, plenty of air-space, and a frosty winter. Wherever these racial traits are marked these requirements hold good, even in such remote offshoots of the Nordic race as the Western Kurds, who are a blonde, blue-eyed, dolichocephalic people, speaking an Aryan dialect. Professor von Luschan, who

[1] See Whymper, *Scrambles in the Alps*.
[2] British Medical Journal, 1910; *Clinical Journal*, August 9th, 1911.

occupies the chair of anthropology at Berlin University, and has spent thirty years studying the anthropology of Western Asia, personally informed me last year, in answer to specific inquiries on my part, that Western Kurdistan presents in a marked degree the climatic characters just enumerated, and in this respect differs materially from the rest of Asia Minor.

But, apart from types which have preserved or reverted to more or less pure racial characters and types specialized for this or that locality, there is a large proportion of the nation who belong to neither of these classes, being inextricably hybrid in appearance and descent. It is among the healthy stocks of this last class that greater adaptive powers are to be found. They appear to be richer in the resources of their intracellular elements* when the call is made for adaptive response, an educability of tissue to be attributed apparently to the varied evolutionary experience of their ancestry. The Scots notoriously excel in this power of response to change, and the explanation is doubtless to be found in the early and thorough fusion of racial elements which has taken place in many parts of Scotland, together with the severe pruning of enfeebled stocks, that has resulted from the centuries of strenuous national life in that country. However, you cannot get more power out of a machine than you put into it; and, similarly, you cannot get wider natural adaptive powers out of an individual than those contributed by his ancestry. Of course, a man being a man and not an animal, he can exercise some degree of control over his surroundings, and, to a limited extent, adapt his environment to his own particular requirements. But man's resources in this respect are still very limited. He may be able greatly to reduce the mortality from tropical disease of picked gangs of workers for a limited number of years in a place like Panama, but this does not prove that he can establish there all the conditions necessary to continued reproduction of his race generation by generation without deteriorating. All the evidence of history and the lessons of biology are against it. If the ancestry, however mixed, of a group of individuals were derived from races evolved solely in temperate regions, it is impossible for the descendants of that group to escape eventual degeneration if they attempt sudden settlement in tropical or subtropical regions. Is it imagined that because we can control to some extent the ravages of malaria and similar tropical diseases that we have mastered the thousand and one subtler adverse influences of an environment alien to our race? Time will speedily prove the contrary. To what extent, for instance, can we modify the temperature and humidity of the all-pervading atmosphere which can produce marked effects on migrating stocks even within the compass of the British Isles?

This brings me to my second point—the suggested wholesale colonization of northern Australia with white and preferably British immigrants. When an Australian doctor wrote to me last year informing me that such a scheme was in contemplation I would have found it hard to believe that the teaching of the past could be so utterly set at nought did I not know that the ever-present menace from the north is well calculated to warp the judgement of Australian statesmen and render them willing to embark on what you rightly term "A Great Experiment" in order to create a bulwark against Asiatic invasion. But the whole history of migration teems with evidence against such an experiment proving to be anything but a disastrous failure. Even if adequate adaptation is ultimately achieved, which is improbable, it will only be after a terrible weeding out of unsuitable types with all the distressing phenomena attendant on such a process. A far more likely result of indiscriminate immigration from British sources is a progressive racial enfeeblement, culminating in the fate that sooner or later terminates such a process—domination by another and stronger people.—I am, etc.,

London, N.W. J. S. MACKINTOSH.

* [illegible] "Problems and Outlook of Evolution," by C. J. [illegible], *British Medical Journal*, February 24th, 1912.

THE late Sir William Thornley Stoker, Bart., of Dublin, left estate in the United Kingdom valued at £10,315.

THE Chelsea Hospital for Women has received from the Grocers' Company a donation of £100 to its Rebuilding Fund.

Obituary.

THOMAS KIRKWOOD, M.B., C.M.GLASG.,

NEWCASTLE-UPON-TYNE.

By the death of Dr. Thomas Kirkwood, which took place on July 18th, Newcastle-upon-Tyne has lost one of the most respected of her medical practitioners. Born in Dalry, Ayrshire, in 1850, and for two years in early manhood a certificated assistant in the Glasgow Highland Society's Schools, Dr. Kirkwood renounced the profession of teaching for that of medicine, and became a student of Glasgow University. After graduating in medicine and surgery he practised for several years in Rutherglen. Upwards of a quarter of a century ago he came to Newcastle, where in the West End of the city he added considerably to the practice he had taken over from the family of the late Dr. Scott. Those who had the privilege of knowing Dr. Kirkwood feel that they have lost a true friend. With nothing but a good word for every one, he made no enemies. Few men had the interest of his patients more at heart than he had. He took little active interest in affairs outside his profession. His death came unexpectedly after an operation, and when to his surgical attendants all seemed to be going on well. Mrs. Kirkwood predeceased her husband only a few months ago. One son alone remains. The funeral was attended by a large number of his patients, many of whom were evidently deeply affected, also by many members of the medical profession, especially of the West End, by whom he was held in high esteem.

Public Health AND POOR LAW MEDICAL SERVICES.

DUTIES OF A DISTRICT MEDICAL OFFICER.

IGNORAMUS writes: I am district medical officer, but attendance on the inmates of the casual ward is not included in my bond. There is no official police doctor, and I generally do the police work, but the police avoid all liability for payment by taking their cases to the casual ward and then sending for me from there. What shall I do?

*** We fail to see that our correspondent is called upon to attend at the casual ward on the request of the police. If cases are taken there by the police in order that they may secure medical attendance gratuitously, our correspondent would be justified in declining to give his services.

Medical News.

THE library and offices of the Royal Society of Medicine will be closed from Thursday, August 1st, to Saturday, August 31st, inclusive.

A MEMORIAL to Mr. Asquith in support of the Criminal Law Amendment Bill is in course of signature by medical women; 120 names have already been appended, and others who are willing to sign are asked to communicate with the secretary of the "Pass the Bill Committee," 19, Tothill Street, Westminster.

WE are asked to state that the annual circular asking for information to maintain the correctness of the *Medical Directory* was posted to the members of the medical profession on August 1st, and the volume will be published on December 16th. Messrs. J. and A. Churchill appeal to all medical practitioners to make their returns as quickly as possible.

THE proceeds of the bazaar held in the Drill Hall, Southampton, which was opened by H.R.H. Princess Henry of Battenberg on July 11th, for establishing a home of recovery in Hampshire similar to that which exists in Surrey, exceeded £1,000. This sum will be added to the endowment fund, and is a happy augury of the ultimate success of the venture.

THE proceedings of the International Congress of Obstetrics and Gynæcology in Berlin will commence on Monday, September 9th, when the International Organization Committee meets. The discussions will commence on Tuesday, September 10th, and will continue until the following Thursday. Full information may be had from the Honorary Secretary to the Congress, Dr. E. Martin, Berlin N., 24, Artilleriestr., 18.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following candidates have been approved at the examinations indicated:

Diploma in Ophthalmology.—B. G. S. Acharya, J. McBrowne, A. B. Cluchie, J. N. Daggan, D. V. Giri, W. L. Simpson, A. E. Verrey.
Master of Surgery.—H. S. Souttar.

UNIVERSITY OF LONDON.

MEETING OF THE SENATE.

MEETINGS of the Senate were held on July 10th and 17th.

Recognition of Teachers.

The following were recognized as teachers of the University in the subjects and at the institutions indicated:

St. Bartholomew's Hospital Medical School.—Dr. R. A. Lyster (Forensic Medicine).

St. Thomas's Hospital Medical School.—Dr. Edwin Smith (Forensic Medicine).

Westminster Hospital Medical School.—Dr. David H. de Souza (Clinical Medicine).

Middlesex Hospital.—Dr. James Chambers (Mental Diseases); Dr. Charles E. Lakin (Clinical Medicine); Dr. W. S. Lazarus-Barlow (Pathology); Dr. H. Campbell Thomson (Neurology).

London School of Medicine for Women.—Dr. Fred. Ransom.

King's College Hospital Medical School.—Dr. R. H. Steen (Mental Diseases).

Brompton Hospital for Consumption.—Dr. Charles H. Miller.

London School of Tropical Medicine.—Dr. R. T. Leiper (Helminthology).

Professors and Readers.

The following titles were conferred on teachers of the University on the recommendation of the relevant boards of advisers acting under the terms of Section E 6 of the regulations on University titles (Calendar for 1911-12, pp. 266-275); the institutions and subjects are indicated:

Professors.—Dr. W. M. Bayliss, F.R.S. (University College—General Physiology); Dr. William Bulloch (London Hospital Medical School—Bacteriology); Mr. Leonard E. Hill, F.R.S. (London Hospital Medical College—Physiology); Dr. C. J. Martin, F.R.S. (Lister Institute—Experimental Pathology); Mr. F. G. Parsons (St. Thomas's Hospital Medical School—Anatomy); Dr. A. D. Waller, F.R.S. (Physiological Laboratory of the University—Physiology); Sir A. E. Wright, F.R.S. (St. Mary's Hospital Medical School—Experimental Pathology); Dr. William Wright (London Hospital Medical College—Anatomy).

Readers.—Dr. A. E. Boycott (Guy's Hospital Medical School—Pathology), Dr. G. A. Buckmaster (University College—Applied Physiology), Dr. Winifred C. Cullis (London School of Medicine for Women—Physiology), Mr. L. S. Dudgeon (St. Thomas's Hospital Medical School—Pathology), Dr. J. W. H. Eyre (Guy's Hospital Medical School—Bacteriology), Mr. A. G. R. Foulerton (Middlesex Hospital Medical School—Hygiene and Public Health), Mr. J. A. Gardner (Physiological Laboratory of the University and St. George's Hospital Medical School—Physiological Chemistry), Mr. J. C. G. Ledingham (Lister Institute of Preventive Medicine—Bacteriology), Dr. R. H. A. Plimmer (University College—Physiological Chemistry), Dr. W. G. Ridewood (St. Mary's Hospital Medical School—Zoology), Dr. G. Senter (St. Mary's Hospital Medical School—Chemistry), Mr. Charles Slater (St. George's Hospital Medical School—Bacteriology), Dr. John Wade (Guy's Hospital Medical School—Chemistry).

Lecturers in Physiology.

Dr. S. A. K. Wilson, Professor G. N. Stewart, Mr. G. R. Mines, and Dr. H. E. Roaf have been added to the panel of lecturers in physiology in the University.

Allocation of Grants from the Dixon Fund.

Out of the income arising from the Dixon Legacy Fund for 1912-13, a grant of £150 was made to the Brown Animal Sanatory Institution for researches into leprosy, Jöhne's disease, and toxins and antitoxins, to be carried out by or under the supervision of Mr. F. W. Twort, superintendent of the institution.

D.Sc. Degree (External).

The degree of D.Sc. in Physiology was conferred upon Dr. Joseph Shaw Bolton (University College, London, and University of Leeds) as an external student.

Amendment of Regulations.

It was resolved that, in and after 1915, the regulations for the Second Examination for Medical Degrees, Part II, be amended as follows:

(1) By the substitution of the following for the first paragraph on p. 165 of the Red Book, September, 1911; and for the fourth paragraph on p. 215 of the Blue Book:

Fee.*—The fee is £8 for each entry to the whole examination. For re-examination in pharmacology the fee is £4. For re-examination in anatomy and physiology the fee is £6.

* [The footnote to remain as at present.]

(2) By the substitution of the following for the third paragraph on p. 166 of the Red Book, September, 1911; and for the second paragraph on p. 218 of the Blue Book:

Students are required to pass in anatomy and physiology at one and the same examination. Students who pass in pharmacology and fail in anatomy or physiology, or in both subjects, may, with the approval of the examiners, be credited with success in pharmacology alone, and in that case will not be required to present that subject again. Students who pass in anatomy and physiology and fail in pharmacology may, with the approval of the examiners, present themselves for re-examination in pharmacology only upon payment of the proper fee.

Intercollegiate Courses in Physiology.

The following scheme of intercollegiate advanced work in physiology has been approved for the Honours B.Sc. Examination. The basis of the scheme is the provision of a course consisting of lectures and practical work lasting one term, and involving one half day a week, by each participating college. Internal students of the university are free to attend all the courses.

First Term, October-December, 1912.—Guy's Hospital: (*a*) Respiratory Exchange, by M. S. Pembrey: (*b*) The Chemistry of Blood, by E. L. Kellaway and J. B. Ryffel.

Second Term, January-March, 1913.—University College: Activity of Enzymes and Physiological Chemistry pertaining thereto, by Professor Wm. Bayliss, F.R.S., and R. H. A. Plimmer. St. Bartholomew's Hospital: Central Nervous System or Electro-cardiography, by J. S. Edkins, C. M. Hinds Howell, or E. P. Cumberbatch.

Third Term, May-July, 1913.—King's College: Physiological Chemistry of Nervous and Muscular Tissues, by Professor W. D. Halliburton, F.R.S., and O. Rosenheim. Bedford College: Advanced Physiological Histology, by J. S. Edkins and Miss M. Tweedy.

M.D. (State Medicine) Examination.

Amended regulations have been adopted for the M.D. Branch V. (State Medicine) Examination for Internal and External Students. Copies of the regulations, as amended, will be ready in September next.

Election of Chairmen of Committees.

Dr. S. Russell Wells has been elected Chairman of the Council for External Students, and Sir Alfred Gould, K.C.V.O., M.S., Chairman of the Brown Animal Sanatory Institution Committee.

Admission to Faculty of Medicine.

Dr. W. S. Lazarus-Barlow has been admitted to the Faculty of Medicine.

Appointment of Representatives.

The following have been appointed representatives of the university at the functions indicated: Mr. A. H. Cheatle, F.R.C.S. (Ninth International Otological Congress, to be held at Harvard University August 12-17th, 1912); Sir George Newman, M.D., F.R.S.E., and Dr. Janet Lane-Claypon (Fifteenth International Congress of Hygiene and Demography, Washington, September 23rd-28th, 1912); Dr. Thomas Buzzard, F.R.C.P. (International Congress on the History of Art, Rome, October 16th-21st, 1912).

UNIVERSITY OF MANCHESTER.

The Dixon Mann Bequest.

THE late Dr. John Dixon Mann, who occupied the Chair of Forensic Medicine in the University from 1892 until his death last April, bequeathed to the University the sum of £1,000. The bequest, after payment of legacy duty, has been received from the Executors.

Professor Dixon Mann directed that the legacy should be devoted to the Medical Department of the University, as the Council of the University might think fit. By resolution of the Council, the money has been added to the special fund for the encouragement of Medical Research in the University. The bequest will be of great service in increasing a fund by means of which a very valuable and important work is being carried on.

Examinations.

The following candidates have been approved at the examinations indicated:

FIRST M.B., CH.B. (*Part III, Organic Chemistry and Bio-Chemistry*).—J. H. Albinson, Kathleen L. Cass, R. Colley, E. R. Gilmore, Eva L. Glasier, J. Holker, B. L. Lloyd, R. L. Newell, F. C. Ormrod, J. A. Panton, Nesta H. Perry, Dorothy Potts, C. R. Sandiford, Norah H. Schuster, W. Stansfield, D. M. Sutherland, L. Walton, G. B. Wild, J. C. Williams.

THIRD M.B., CH.B. (*Pharmacology, Therapeutics, and Hygiene*).—Lily Allan, Ada L. Bentz, W. S. Booth, B. Browning, F. Chadwick, J. Fielding, D. T. Harris, J. R. Jagger, O. M. de Jong, E. A. Linell, Clara A. Lomas, K. Maximus, Kate K. May, J. Rothwell, J. R. B. Russell, J. R. Slack, P. Stocks, E. H. Walker.

FINAL (*Forensic Medicine and Toxicology*).—A. Barrett, F. A. Bearn, J. G. Bennett, F. C. Bentz, E. S. Brentnall, C. H. Crawshaw, G. C. Dixon, H. C. Duffy, C. W. Fort, H. S. Gerrard, *† R. B. Gorst, † H. F. Hutchinson, T. B. Kilner, E. Leahy, C. G. Lees, A. H. Macklin, *† L. Newton, T. P. Robertson, H. A. Sandiford, A. V. Stocks, E. Talbot, C. Thompson, F. K. Tomlinson, C. H. Whittall, H. W. F. Williams, S. A. Winstanley, G. W. Wood.

* Passed with distinction.

FINAL (*All Parts*).—W. Barnes, *† R. B. Berry, C. T. G. Bird, A. G. Bryce, C. L. Graham, H. Harrison, † T. P. Kilner, J. A. Lees, A. H. Macklin, P. H. Midgley, *† H. Oliver, F. Oppenheimer, R. P. Stewart, *C. F. White, A. G. Wilkinson.

*Second Class honours. † Passed with distinction in Surgery.

M.D.—A. Sponge.
CH.M.—E. E. Hughes.

UNIVERSITY OF BRISTOL.

THE following candidates have been approved at the examinations indicated:

FIRST M.B., CH.B.—R. B. Britton, J. D'Arcy Champney, A. D. Symons, R. H. Tasker.

FINAL M.B., CH.B.—A. G. T. Fisher, H. W. Goodden, C. H. Hart, V. St.L. Pinnock. *Part I only:* P. E. Christofferson, C. Kingston.

M.D.—J. W. Taylor (with honours).

D.P.H. (*Part I only*).—T. Aubrey, S. Bazalgette, A. H. Finch, W. Pomeroy.

Appointments.

The following appointments have been made:

Demonstrator in Pathology.—J. K. Mouat, M.A.Oxon., M.B., Ch.B. Bristol.

Assistant Curators of the Pathological Museum.—H. Chitty, M.B., M.S.Lond., F.R.C.S., and L. N. Morris, M.B., Ch.B.Bristol, M.R.C.S., L.R.C.P.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A COMITIA was held on Thursday, July 25th, Sir Thomas Barlow, Bart., K.C.V.O., the President, being in the chair.

Membership.

The following gentlemen were admitted Members of the College: Edward Wemyss Browne, L.R.C.P., Capt. I.M.S.; George Dansey-Browning, L.R.C.P., Major R.A.M.C.; Philip Hamill, L.R.C.P.; Alfred Charles Jordan, M.D.Camb., L.R.C.P.; James MacPherson, M.B.Glasg., Capt. I.M.S.; Bernhard Ehrenfried Myers, M.D.Edin., L.R.C.P.; Hugh Ridley Prentice, L.R.C.P.; Matthew John Stewart, M.B. Glasg.; Arnold Walmsley Stott, L.R.C.P.; William Rees Thomas, M.D.Lond.

Licences.

Licences to practise were granted to 102 gentlemen who had passed the requisite examinations.

Diplomas in Public Health.

It was announced that, in conjunction with the Royal College of Surgeons, Diplomas in Public Health had been granted to twenty-one candidates.

Lectures.

The following appointments were announced: *Goulstonian Lectures*, Dr. A. J. Jex-Blake; the *Oliver-Sharpey Lectures*, Dr. Augustus Waller; the *Lumleian Lectures*, Dr. F. de Havilland Hall; the *Croonian Lectures* (1912), Professor C. S. Sherrington (in place of the late Dr. J. Dixon-Mann); the *Fitz-Patrick Lectures*, Dr. C. A. Mercier.

Awards.

The Murchison Memorial Scholarship was awarded to Dr. W. R. Thomas, Mr. Philip Hamill, L.R.C.P., and Mr. E. G. Schlesinger, L.R.C.P., receiving honourable mention.

The Moxon Medal for distinction in Clinical Medicine was awarded to Sir David Ferrier, M.D., F.R.S.

College Officers.

The officers for the ensuing year were elected. The Censors chosen were: Dr. Seymour J. Sharkey, Dr. Samuel H. West, Dr. Percy Kidd, and Dr. William Hale White.

Gift to the College.

Two clinical thermometers, formerly in the possession of Lord Lister, were received from the President of the Royal College of Surgeons of England, and the thanks of the College ordered to be returned to the donor.

Communications.

The following communications were received: (1) From the Secretary of the Royal College of Surgeons of England, reporting proceedings of the Council of the College at meetings held on May 9th, June 13th, and July 11th. (2) From the Registrar of the General Medical Council, dated June 21th, concerning changes in the resolutions of the Council with regard to professional education. (3) From the Dean of the Medical School of St. Bartholomew's Hospital, dated June 29th, concerning the inadequate supply of "subjects" for the teaching of anatomy and physiology. It was resolved to act in concert with the Royal College of Surgeons of England. (4) From B. Berenson, Esq., asking leave to photograph the College portrait of Vesalius. The request was granted.

Reports.

A report was received from the President, as representative of the College at the celebration of two hundred and fiftieth anniversary of the Royal Society.

A report was received from the Treasurer (Sir Dyce Duckworth) as one of the representatives of the College at the [illegible] of the Medical School of Trinity [illegible] The Registrar, Dr. J. A. Ormerod, read the eulogium Latin addresses prepared by himself for presentation on that occasion.

[illegible] received from the representative of the College upon the General Medical Council.

[illegible] the Imperial Cancer Research Fund [illegible] Reports were received and adopted from the Committee of Management. One, dated June 3rd, reported that "the committee . . . had considered the new rules which the General Medical Council had laid down in reference to Diplomas in Public Health, in order that such diplomas may deserve recognition in the *Medical Register*."

The new rules are based on the recommendations of the Public Health Committee of the General Medical Council, modified in some respects as the result of reports by the various examining bodies, including the Royal Colleges, and on which the Committee of Management fully reported on October 17th last.

The Committee has consulted the Examiners in Public Health on various points arising out of the new rules, and after full consideration they now recommend that the new rules of the General Medical Council be adopted by the Royal Colleges for their Diploma in Public Health with one exception, and that is that the period of six months' laboratory instruction for the diploma granted by the Colleges be maintained instead of being reduced to a period of four months, as approved by the General Medical Council.

The total number of hours of laboratory work (240) is to be required in any case, but the Committee of Management is of opinion that it is better that these 240 hours should be extended over the longer period of six months.

II. The Committee recommended that the following institutions, which had been visited by members of the Committee and reported as fulfilling the requirements of the Board, be added to the list of institutions recognized by the Examining Board in England for instruction in the subjects respectively mentioned:

Chemistry and Physics.
King Edward's School, Birmingham.

Chemistry.
Girton College, Cambridge.

Biology.
Sherborne School. (This school is already recognized for Chemistry and Physics.)

The report dated June 25th recommended—

1. That the following institution, which had been visited by a member of the committee and reported as fulfilling the requirements of the Board, be added to the list of institutions recognized by the Examining Board in England for instruction in chemistry and physics: Gresham School, Holt, Norfolk.
2. That Sir Henry Morris, Bart., be appointed the Visitor to the examinations of the Egyptian Medical School for the examinations to be held in December next.
3. That the Colchester Borough Isolation Hospital be added to the list of fever hospitals recognized by the Examining Board in England.

The report dated July 9th recommended that the Barking Isolation Hospital be added to the list of fever hospitals recognized by the Examining Board in England.

Election of Representatives.

Dr. A. P. Herringham was re-elected as representative of the College on the Court of Governors of the University of Sheffield.

Dr. Sidney Martin, F.R.S., was re-elected a representative of the College on the Executive Committee of the Imperial Cancer Research Fund.

Library.

The President drew attention to the publication of the catalogue of the library of the college, which can now be obtained.

After some further formal business, the President dissolved the comitia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of Council was held on July 25th, Sir Rickman J. Godlee, Bart., President, in the chair.

Grant of Diplomas.

Diplomas of Membership were granted to ninety-five candidates found qualified at the recent examinations.

Diplomas in Public Health were granted jointly with the Royal College of Physicians to twenty-one candidates found qualified.

Election of Examiners.

Mr. L. A. Dunn was re-elected a Member of the Court of Examiners. Mr. W. H. Dolamore was elected a Member of the Board of Examiners in Dental Surgery.

List of Fever Hospitals.

It was resolved that the Barking Isolation Hospital be added to the list of fever hospitals recognized by the Examining Board in England.

Bust of the late Lord Lister.

It was determined that a bust of the late Lord Lister should be executed by Sir Thomas Brock, K.C.B., R.A., who was willing to undertake the work.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following candidates have been admitted to the Fellowship:

B. G. S. Acharya, A. W. Bowman, C. J. Brookes, W. F. Buist, H. Drummond, G. F. Fiemer, H. Flecker, D. Heron (Captain I.M.S.), H. Hutson, J. McIntyre, S. N. Mukhopadhyay, J. Murphy, W. Roberts, J. C. Robertson, A. Ryland, N. C. Scott, G. H. Sinclair.

CONJOINT BOARD IN ENGLAND.

Diplomas of L.R.C.P. and M.R.C.S. have been conferred on the undermentioned candidates by the two Colleges concerned:

R. G. S. Acharya, H. C. Attwood, R. E. Barnsley, H. W. Batchelor, B. F. Beatson, W. S. Birch, E. W. Braithwaite, R. O. Bridgman, G. B. Buckley, E. Calvert, G. W. Carte, G. M. Chapman, N. G. Chavasse, J. D. Clarke, K. B. Clarke, R. C. C. Clay, C. G. Colyer, H. F. Comyn, W. A. Cooke, D. C. Cooray, F. C. Cowtan, S. S. Crosse, W. E. Crowther, A. A. M. Davies, D. A. Davies, D. H. Davies, J. W. Dew, I. W. Dickson, L. A. Dingley, W. T. Dobson, W. A. S. Duck, W. G. Engels, G. F. Fawn, *Gertrude M. Flumerfelt, H. W. Goodden, F. A. Grange, D. H. Griffiths, P. D. Hamilton, T. E. Hammond, T. L. Hardy, F. F. T. Hare, H. D. Harrison, G. M. Heiron, W. G. Helsby, H. W. Hills, T. H. Holroyd, F. M. Hughes, W. P. Johnston, J. M. Joly, C. M. Jones, C. C. Kerby, G. B. King, E. T. H. Lea, F. M. Lipscomb, F. McG. Loughnane, V. A. Luna, F. C. McCombie, B. McDermott, H. S. Mason, W. Matthews, G. S. Miller, J. Mitterstiller, W. G. Orchard, R. F. O'Sullivan, P. T. Patel, D. H. Pennant, M. J. Petty, A. Pimm, T. W. W. Powell, P. T. Priestley, E. C. Rayner, J. M. Redding, W. A. Reynolds, F. Roberts, T. E. Roberts, W. R. S. Roberts, A. R. Robertson, R. B. Roe, D. Ross, A. C. Roxburgh, L. T. Rutherford, S. Samuel, W. B. Sanders, E. G. Saunders, D. Scott, M. Scott, C. Sheard, H. J. S. Shields, S. Smith, G. A. Smythe, W. A. Sneath, V. F. Soothill, G. W. Spencer, A. R. Taylor, J. M. Wallace, L. R. Warburton, C. Warner, H. Webb, C. A. Webster, H. M. Whelan, N. T. Whitehead, O. R. L. Wilson, J. A. Wood.

* Under the Medical Act, 1876.

The following candidates have been approved at the examinations undernoted:

First College (*Part I. Chemistry, and Part II. Physics*).—E. B. Alabaster, †R. Ambler, D. H. Anthony, †A. Arias, P. A. Ashcroft, †A. J. Bado, †N. A. H. Barlow, C. J. L. Blair, E. Butler, W. J. Colborne, B. Crossley-Meates, A. T. Dabbous, †L. H. Dardier, †A. V. S. Davies, W. R. Dickinson, A. A. K. C. Doyle, K. M. K. Duff, H. C. Duggan, †A. B. Dunmere, †J. H. C. Eglington, †A. M. El-Mishad, †A. A. H. El-Zeneiny, †H. J. Ewart, W. Farquharson, F. O. Fehrsen, M. R. V. Ford, P. E. F. Frossard, L. N. Glaisby, O. Halsted, J. M. Harrison, J. A. Hill, H. M. Hobson, G. Hoffmeister, C. E. Hopwood, P. G. Horsburgh, W. A. Jackman, W. G. Johnston, F. G. Le Coulliard, W. Marriott, †A. Mishriky, W. W. Newton, †W. D. Pearman, H. L. Pridham, C. N. Ratcliffe, †R. I. Rhys, †G. Richards, J. H. E. Sandford, †R. J. Scarr, †B. L. Skeggs, M. T. Talaat, E. Torday, A. S. Westmorland, *H. M. Wharry, W. H. White, †T. Wilson, †J. H. Wiseman, L. H. Woods, †T. F. Zerolo.

* Passed in Part I only. † Passed in Part II only.

First College (*Part III, Elementary Biology*).—E. Ahmed, C. J. L. Blair, V. H. Butcher, J. L. D. Buxton, H. G. R. Canning, H. H. Castle, E. A. Clegg, A. M. Clément, G. W. Coombes, W. T. Cooper, A. T. Dabbous, W. A. Date, W. H. Dye, P. E. F. Frossard, W. V. Gabe, E. S. Gouda, J. P. J. J. Hagron, M. St. C. Hamilton, F. H. Hyland, E. J. Ishmael, M. Kamil, G. Kinneir, F. W. Lemarechand, W. Marriott, A. Mishriky, G. E. Mullins, W. W. Newton, W. D. Pearman, E. L. Robert, J. A. A. P. Scott, E. Torday, R. A. Walker.

First College (*Part IV, Practical Pharmacy*).—A. Arias, E. R. Bailey, T. B. Bailey, H. S. Baker, P. Banbury, P. L. T. Bennett, G. H. K. Burge, A. T. Dally, W. R. Dickinson, D. M. Dickson, H. M. Drake, G. G. Drummond, E. A. C. Fazan, C. de W. Gibb, C. Gould, A. Griffith-Williams, A. B. Hacking, O. Hairsine, W. Ll. A. Harrison, H. R. W. Husbands, T. J. J. Jeppe, C. C. Kerby, P. R. E. Kirby, A. O. Knight, J. I. F. Knight, R. D. Langdale-Kelham, J. Ll. D. Lewis, S. D. Lodge, J. M. Madarirga, J. M. M. Marshall, G. S. Mather, H. Mather, G. Millar, F. H. Mosse, G. M. Oakden, P. E. H. Patey, J. F. M. Payne, H. Peters, F. Porter-Smith, D. S Pracey, Sydney Jessie S. Reid, T. H. Rhys, S. A. Riddett, G. C. Robinson, G. Robinson, A. B. Rosher, J. Rowland, P. G. Russell, W. H. Sarra, R. J. Scarr, W. W. S. Sharpe, J. B. G. Skelton, C. M. Slaughter, D. M. Smith, P. de S. Smith, M. T. W. Steedman, O. W. D. Steele, J. W. Stretton, H. Taylor, E. W. Terry, F. Tooth, T. R. Trounce, A. A. Watkinson, R. F. Wilkinson, W. E. Wilson.

CONJOINT BOARD IN SCOTLAND.

The following candidates have been approved at the examinations indicated:

First College.—Ethel M. Popplewell, A. W. McGregor, J. F. Kerr, F. J. Jack, C. V. Samwell, S. Swaminathan, J. A. Tolmie, N. J. Laubscher, J. S. Durward, F. B. Macaskie, L. Ghose, R. J. T. Malcolm-Gasper, J. V. R. Rohan, Lizzie O'Flynn.

Second College.—J. Bannerman, W. J. F. Craig, D. C. M. Page, W. Walker, J. W. Gordon, W. D. Bathgate, A. Parker, Y. N. Kadam, S. N. Toulmin, P. Milnes, F. A. V. Denning.

Third College.—W. C. Fraser, R. E. Illingworth, P. L. Manuel, J. M. McLachlan, W. A. S. George, W. S Rorich, J. B. Aickin, T. B. Truter, K. Fraser, J. Ross, J. M. Beyers, A. O. Olaribigbe.

Final.—P. M. Carroll, N. E. Seppelt, C. M. Willmott, T. R. G. Melrose, H. W. McH. Wallace, D. Bharadwaja, A. B. Bull, A. E. Mackenzie, T. Crawford, R. E. Jones, J. F. Peries, F. E. Lowe, G. R. Vohra.

CONJOINT BOARD IN IRELAND.

The following candidates have been approved at the examinations indicated:

Second Class.—J. C. Cunningham, J. C. Fergusson, F. Fitzgibbon, C. E. H. Gater, J. W. E. Graham, J. Hegarty, O. J. M. Kerrigan, W. Lumley, W. G. D. McCall, W. G. McConnell, F. R. H. Mollan, J. O'Brien, V. A. Power, P. O'C. Redmond, L. M. Rowlette, T. Ryan, R. A. Ryan, T. H. Sarsfield, M. A. Sullivan, J. A. Watson, Miss M. F. R. Welply.

D.P.H. (*Both Parts*).—*B. Flood, J. Ghosh, A. A. Gomes, *C. Greer, M. E. Kayton, G. S. Levis, E. C. Mulligan, J. McKeague, N. R. Ussher, W. Venables Williams.

First Fellowship.—J. Ghosh, E. N. H. Gray, F. de C Keogh, W. T. McCurry, D. V. O'Connor, Miss Ma Saw Sa, W. R. Watson.

Final Fellowship.—R. Charles, T. W. Conway, W. Dollin, J. J. Harty, G. J. W. Tierney, R. White.

*Passed with honours.

SOCIETY OF APOTHECARIES OF LONDON.

At the July examinations the following candidates passed in:

Surgery.—*†A. E. Bullock, *†L. M. Ladell, *†M. M. Patterson, †C. E. Reckitt, *†A. J. Tozer.

Medicine.—*†W. H. Broughton, *†A. E. Bullock, †P. M. Masina, †H. Rimington, *H. Robinson.

Forensic Medicine.—E. M. Brand, W. H. Broughton, A. E. Bullock, H. Cox, T. Gibson, W. S. Hyde, P. M. Masina, M. M. Patterson.

Midwifery.—A. E. Bullock, H. H. Fairfax, T. Gibson, D. Havard.

* Section I. † Section II.

Diplomas.

The diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery: A. E. Bullock, L. M. Ladell, and A. J. Tozer.

Medico-Legal.

A WARNING AND RESULT.

On several occasions recently medical practitioners have requested us to publish warnings with regard to a man calling upon them representing himself to be a chiropodist and manicurist, who offered to undertake to manicure the doctor for one year for a fee of one guinea, on the promise to attend regularly. The individual in several instances obtained a fee but never returned. At the Edgware Petty Sessions, on July 25th, James Edward White, described as a male nurse, was charged on a warrant with obtaining the sum of one guinea by false pretences from Dr. H. F. Woods, of Hendon, in the manner indicated. The prisoner's defence, according to the report in the *Hendon and Finchley Times*, appeared to be that the arrangement was that he should call when requested, and that he had received no request. Detective Sergeant Miles, S Division, said that the prisoner was sentenced at Stockport to three months for false pretences, and that there had been one sentence since; he had defrauded from fifty to sixty people in the circumstances described, and had obtained fees varying from 10s. 6d. to £3. The prisoner's wife alleged that the prisoner had deserted her and was living with another woman. The Bench sentenced the prisoner to six months' hard labour.

NOTICE TO TERMINATE AGREEMENT.

S. N. G., we are advised, is probably entitled to one month's notice, but it is doubtful whether he can claim more. His principals would probably contend that their agreement with him was subject to notice on either side to determine, and a court of law would probably take this view in the absence of evidence to the contrary.

The Services.

INDIAN MEDICAL SERVICE.

The result of the July examination was announced on July 27th, 1912. There were thirty-one candidates, the first twelve being admitted as Lieutenants on Probation, with effect from July 27th, 1912.

The names of the successful candidates, with the marks obtained by each out of a possible total of 5,100, are given below, together with their degrees and medical schools:

Name and Order of Merit.	Degrees, etc.	Medical School.	Marks.
1. J. D. Wilson ...	M.B., Ch.B.Edin.	Edinburgh University	3,718
2. L. A. P. Anderson	B.C.Cantab.	Emmanuel College, Cambridge; Addenbrooke's Hospital, Cambridge; St. George's Hospital	3,519
3. W. C. Paton ...	M.B., Ch.B.Edin.	Edinburgh University	3,481
4. J. B. Hance ...	M.B., B.C.Cantab., M.R.C.S., L.R.C.P.	Christ's Hospital, Cambridge; Guy's Hospital	3,389
5. S. Gordon ...	B.C.Cantab., M.R.C.S., L.R.C.P.	Pembroke College, Cambridge; London Hospital	3,316
6. G. Y. Thomson	M.B., B.S.Lond., M.R.C.S., L.R.C.P.	Guy's Hospital	3,274
7. H. K. Rowntree	M.B., B.S.Lond., L.M.S.S.A	Middlesex Hospital	3,268
8. B. F. Eminson	M.B., B.S.Lond.	Charing Cross Hospital	3,216
9. A. Kennedy ...	M.B., B.C.Cantab., M.R.C.S., L.R.C.P.	Cains College, Cambridge; Middlesex Hospital	3,186
10. J. C. John ...	M.B., B.C.Cantab., M.R.C.S., L.R.C.P.	King's College, Cambridge; St. Bartholomew's Hospital	3,172
11. S. D. Ratnagar	L.M.and S.Bombay, L.R.C.P., L.R.C.S.Edin., L.F.P.and S.Glas.	Grant Medical College, Bombay; Edinburgh Infirmary, London Hospital.	3,157
12. C. McIver ...	M.R.C.S., L.R.C.P.	University College Hospital	3,068

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

RHEUMA asks if any member can say what is a safe hypodermic dose of magnesium sulphate for an adult with a stiff rheumatic knee?

OXON writes: Will any reader suggest treatment for an elderly gentleman of active habits, gouty, who suffers from very foul-smelling faeces? There is a good deal of flatulence, but no other sign of dyspepsia. He lives a very simple life, with plenty of exercise. This condition is always worse after an occasional dose of calomel gr iv, which he takes occasionally for headache presumably due to high tension.

R. T. N. asks for advice in the treatment of a lady, aged 60, who has been suffering from diabetes mellitus for eighteen months. The troubles she complains of most are attacks of cramp in the muscles of the legs, thighs, and groins, continuing on and off for two or three hours almost every night. All the usual remedies have been tried without success.

ANSWERS.

F. C. A. B.—Our correspondent will probably find what he wants if he will apply to Mr. H. K. Lewis, of Gower Street.

CANADA.

L. S., MODUS, AND OTHERS.—The latest official information with regard to qualifications for the practice of medicine in Canada is contained in the following publications of the General Medical Council: *Digest of the Laws in the British Empire and Foreign Countries for the Prevention of Medical Practice by other than Legally Qualified Persons* (London: Spottiswoode and Co., 1909, price 1s.), and *Report as to the Conditions under which Medical and Dental Practitioners Registered or Legally Qualified in their own Country may Practise Abroad* (second edition), (London: Spottiswoode and Co., 1911, price 6d.). Medical legislation in Canada is just now in the melting pot, and it is considered probable that Dominion registrations will come into force before the end of the year.

MOMBASA.

MR. H. A. POWELL (St. Stephen's Club, Westminster) writes: In reply to "Kilindini's" (JOURNAL, July 20th) inquiry as to a cheap way to reach Mombasa, I would tell him he must go second class. I am told that the second-class accommodation and company on the Union Castle boats is quite satisfactory. My own experience is limited to the boats of the German East Africa Line, on which I have passed many very happy months between Capetown and Bombay. By these he can make the round trip along both the West Coast of Africa and the Suez Canal. He will also gain the benefits of a more "complete change" by these boats than the English. I mean different company, hours of meals, social habits, etc. A knowledge of German is quite unnecessary. If he is a musician he will enjoy the excellent orchestral and military bands carried on these boats. The hotels at Mombasa are very inferior, and "Kilindini" would do well to get an introduction and put up at the club. This is the time to be in East Africa; in October the temperature becomes much hotter and the "small rains" set in. I shall be very happy to be of any further use to your correspondent if he will address me privately.

LETTERS, NOTES, ETC.

GARLIC IN PULMONARY TUBERCULOSIS.

DR. [illegible] (London) writes: *Re* garlic in pulmonary tuberculosis, etc. I remember the late Dr. George Vivian Poore [illegible] remedy in his wards. Details will be found in his book, *Affection of the Hands, and Other Clinical* [illegible]. In a case under my care, in which the [illegible] marked bronchiectasis with extremely foetid [illegible] found garlic very useful. The genus *allium* [illegible] universally in the dietary of all races—[illegible] leek, and what not. Bread and cheese [illegible] down with the right sort of English beer, [illegible] meal not lightly to be disregarded by the cupeptic.

REBATE ON PETROL DUTY.

MR. P. LOCKHART MUMMERY (London) writes: Since the introduction of the petrol duty it has been the rule for the Board of Customs and Excise to insist on doctors signing the claim for repayment of duty in the presence of the taxing officer. This has necessitated doctors attending at the nearest taxing office, generally at some extremely inconvenient hour, in order to sign a declaration which entitles them to a small sum of money. This was a tiresome and vexatious regulation, and some time ago I approached the Legal Committee of the Royal Automobile Club and requested them to take steps in the matter to get this altered. As the result of their negotiations a letter was received by the club on July 6th, stating among other things that the Board of Customs and Excise "recognized that the regulation might cause inconvenience in certain cases, and, for this reason, no objection would be raised in future to members of the public, who so desired, being relieved of the necessity of having their claims to rebate witnessed by an officer." (See *Royal Automobile Club Journal*, July 19th, 1912.) This, I take it, means that any doctor who chooses to apply to the local taxing officer, will be allowed to sign his declaration for rebate in the presence of any suitable witness, instead of, as heretofore, having to go to the taxing officer for the purpose. I have ventured to write you this letter in order that doctors who may not happen to read the *Royal Automobile Club Journal* may be able to avail themselves of the advantages obtained for them by the Royal Automobile Club.

ERYTHEMA NODOSUM AND TUBERCULOSIS.

DR. J. A. GIBSON (Lancaster) writes: In the JOURNAL of July 20th appears a note from Dr. Dunlop bearing out the relationship between erythema nodosum and tuberculosis. Within the last month I have attended a child whose history is in practically identical terms with that of his case. Three years ago this girl suffered from tuberculous spinal disease, which, after she had worn a jacket for nearly a year, became quiescent, and has never troubled her since, although her health has never been robust. About the middle of last May she had an attack of erythema nodosum, both legs being tender and swollen, with the typical red patches on the front of each. In two or three days this had subsided. On June 20th I was called to her, and found that she had severe headache and sickness. Symptoms of tuberculous meningitis rapidly became more pronounced, and after a state of coma, more or less complete for about ten days, she died on July 7th, her age then being 6½ years. I had read the note in the EPITOME of June 1st, and was interested to find the supposed connexion between the two diseases so speedily verified. I do not know the relationship is of much practical value, but it certainly would seem to be a fact.

REFINEMENTS OF MODERN MIDWIFERY.

X. writes: I am amazed at the present-day refinements in the treatment of midwifery cases. The routine treatment by the more advanced school seems to be as follows: (1) Disinfect the hands with at least three different solutions. (2) Inject, as a prophylactic measure, so many million *Streptococcus puerperalis* and *B. coli*. (3) Shave vulva. (4) Scrub thoroughly with soap and water the patient's hips, thighs, abdomen. (5) Rub the same area vigorously with dry sterilized towels. (6) Rub in methylated spirits. (7) Wash with mercury biniodide (1 in 500) in 75 per cent. of methylated spirits. (8) Adjust sterilized towels. (9) Make two lateral incisions to anticipate perineal laceration. The above is the routine for normal cases; space prevents my giving details for abnormal cases. As against this elaborate routine, let me give the routine treatment practised by a neighbouring doctor of over forty years' standing. He gives a perfunctory rub to his hands, smears his instruments with vaseline, which is provided by the patient, and proceeds to deliver. He never by any chance washes the patient's vulva or thighs, and yet in a large midwifery practice, extending over forty years, he has never had one case of puerperal sepsis. This treatment accords with the advice Dr. Angus Fraser is credited with having given to a class of midwifery students at Aberdeen, "Wash your hands if they are dirty." I cannot vouch for the truth of the story.

A CORRECTION.

IN the Contents of the JOURNAL of July 13th, the title after the name of Dr. A. C. Norman should have been "M.D.Edin.," not "M.B."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF DERMATOLOGY.

Professor W. G. SMITH, M.D., F.R.C.P., President.

PRESIDENT'S INTRODUCTORY REMARKS.

PHYSICS AND BIO-CHEMISTRY IN RELATION TO DERMATOLOGY.

AFTER a few initial observations, the PRESIDENT said:

Upon glancing back over the proceedings of the past few years one can hardly fail to be struck with this thought: Over and above the usual run of clinical cases, demonstrations, and practical communications, it is easy to recognize the growing significance of the application of the principles and methods of two sciences which are cognate not only to our own department, but also to every branch of medical science. I refer to the science of physics and to its younger relative, bio-chemistry, for chemistry is every day becoming more closely allied to molecular physics.

Physical science has recently enriched the practice of dermatology with several highly valuable—nay, indispensable—methods of diagnosis and treatment.

I need only mention radium and radio-therapeutics, *x* rays, Finsen light, high frequency currents, cataphoresis, and lastly CO_2 snow. The therapeutic effects of radium and of *x* rays upon rodent ulcer are most likely, I think, due to alterations in the physico-chemical equilibrium of the cells and tissues exposed to their influence.

The subject of balneology closely concerns us, and science has lately turned its torchlight upon the pharmacology of mineral waters with unexpected and surprising results. The water of the King's Well in Bath has been shown by Sir William Ramsay to contain a relatively enormous amount of neon, one of the so-called inert group of gases. It exists in the atmosphere in an almost incredibly small amount, 1 or 2 parts in 100,000. Yet Ramsay has determined that there is 188 times as much neon in the gas from the King's Spring as there is in an equal volume of atmospheric air. Now it is highly improbable that any therapeutic virtues can lurk in this inactive gas. But it is quite otherwise with the unstable radio-active gas known as "radium emanation," or, as it is more conveniently termed, "niton." It is not only possible but probable that the therapeutic action of the waters of Bath and some other spas may be in part due to this wonderful gas, which is a pregnant storehouse of energy, and a tempting vista is opened up not only to speculation but also to experimental observation. It is not unlikely that allowance may have to be made for loss of radio-activity in the waters of certain springs when they have become stale and altered by transport and storage.

If we turn to bio-chemistry we find that our sphere of knowledge is notably enlarged, and our means of detecting and dealing with morbid conditions are enhanced by the recent investigations upon immunity, vaccines, and serum treatment. Once the doctrine of infective diseases was accepted, it gradually became apparent that no living organism, whether plant or animal, could long exist or withstand the attacks of the innumerable hosts of invading microbes unless the organism possessed or acquired means of self-defence. So it has come to pass that we have learned that although our foes be many yet so are our weapons of resistance and protection, but I cannot now enter upon this attractive topic.

Now all the various substances which take part in immunization are certainly colloids, in a state of solution or emulsion, and no one has yet succeeded in developing immunism by means of a crystalloid. Protoplasm, or cytoplasm, exhibits itself as a colloid "sol" of colloids and crystalloids, rather than as a "gel." Our knowledge of the chemical constitution of normal proteins, which are all colloids, is still too limited to enable us to say much about the nature of immunizing substances. Yet the experiments of F. Obermayer and E. P. Pick go to show that the "aromatic" nucleus in the antigen is of prime importance for the origin and operation of the antibody.

It seems to me beyond doubt that whatever our future views or theories may be upon these difficult subjects, we must invoke for their inner meaning and possible explanation the assistance of organic chemistry, and their scientific investigation will surely be carried on under the auspices of physics and physical chemistry.

I may here remind the Section that, at the meeting in 1904, Dr. Leslie Roberts read an instructive paper on the physico-chemical forces which influence cutaneous reactions; and he would, I am sure, agree with me in the view that greater stress might well be laid upon the physico-chemical properties of the skin. Regarded from such a standpoint, the skin may be defined as a greasy colloidal septum, not continuous, but interrupted by multitudes of fine perforations (openings of sweat and sebaceous glands), and by points of relative weakness—that is, of greater absorbing power (hair follicles). Discrepant and contradictory statements have been published by eminent physiologists in respect of the absorbing powers of the skin, a topic which necessarily interests us all. Yet, surely, the question is comparatively easy to answer. It is, I consider, satisfactorily established that for absorption to occur to any useful extent through the unbroken skin, only substances soluble in or miscible with fats can be relied on. In the current language of the day, we call such substances lipoid-soluble. As examples may be cited certain gases and vapours, especially under pressure; volatile oils; phenol, creosote; liquids such as chloroform and ether, and true fats, particularly when aided by diligent friction. There is no good evidence that a solid hydro-carbon, such as vaseline or paraffin wax, can make its way through the uninjured epidermis; circumstances are, of course, quite different when the epidermis is abraded.

Compared with the other body structures, the skin, and notably its appendages—for example, hair and nails—have very little capacity of swelling or taking up water, or substances soluble in water. Hence we must admit that the effects of mineral waters upon the skin are to be explained upon lines other than that of absorption. Leaving out of sight the secretion of sweat, the impermeability of the epidermis, so far as it is continuous, to water is evidently essential to the maintenance of the proper form of the body, and to the retention of the due amount of water within the organism.

For, if the epidermis were, like gelatine, a hydrophile structure, capable of an indefinite degree of turgor, the fluids within the body would suffice to stretch the integument, enlarge and distort its form, and impoverish the water contents of the inner organs. Conversely, a moist atmosphere—a shower of rain—might introduce an undesirable influx of water, and so our bodily configuration would too readily undergo alterations in conformity with varying meteorological conditions. The skin and its appendages can *ad*sorb a certain amount of water, but cannot *ab*sorb it; and it is just for this reason that these structures resist change so well, and we find in long-buried corpses that the skin and hair may persist for ages in but a slightly altered state.

I have used the word *adsorb*, and am tempted, before I conclude, to make a few remarks upon adsorption—a term which has lately come into general use to denote old and familiar phenomena. As everyday examples I will mention the decolorizing power of finely divided carbon, the occlusion of gases by charcoal and by certain metals, and the imbibition and swelling of gelatine with water.

By adsorption is meant the condensation or concentration of a substance upon the surface of another substance in a different "phase"—for example, of a gas upon a solid, of a liquid upon a solid, or upon another liquid with which it does not mix. This conception of forces which are involved at the limiting surfaces of two different phases of matter has been shown to be of wide significance, and it has been the object of numerous recent investigations.

It includes the somewhat unfamiliar notion of the

importance of surface energy, and it differs essentially from absorption in this respect. Whereas with *absorption* we are concerned with the total mass or volume of the material, with *ad*sorption the action is directly proportional only to the surface extent, and represents a sort of cohesive affinity, different from chemical affinity, between the adsorbent and the thing adsorbed.

There can be no doubt that selective adsorption, often doubtless influenced by electrical attractions, plays a large and important part in the chemical processes of life, and helps to explain many otherwise obscure phenomena.

In the short time at my disposal it is impossible to develop this proposition and show its fruitfulness, and I must fain be content to adduce one or two illustrations of its application to dermatology. If a soap is dissolved in much water it is well known that it is partially hydrolyzed into fatty acid or an acid salt and free alkali. When this hydrolyzed solution, as in washing, is applied to the skin, the fatty acid is selectively adsorbed by the skin—that is, condensed or concentrated upon its surface. Then the remaining solution undergoes further hydrolysis, more alkali splits off, and so the process may go on until equilibrium is established.

Again, in practice we frequently make use of indifferent dusting powders, which often prove grateful and cooling to the skin. Obviously these powders, such as starch or fuller's earth, adsorb the water which issues from the skin, and therefore, in consequence of the large increase of surface due to this fine subdivision of the adsorbent, favour evaporation and practically increase for the time being the superficies of the skin. Unna has taught us that cooling of the body can be attained by covering the skin with a thin layer of gelatine or collodion, and the explanation is similarly to be sought in the consequent enlargement of the surface area of the body. For a colloid solution of gelatine is not a truly homogeneous liquid, but has been shown by the ultra-microscope to be a heterogeneous liquid containing infinitely minute solid particles.

Finally, I can merely remind you of the dominant place which colloids play in the preparation of medicated gelatines, pastes, and liniments.

DISCUSSION ON ACNE AND SEBORRHOEA, THEIR CAUSATION AND TREATMENT.

OPENING PAPERS.

I.—ARTHUR WHITFIELD, M.D., F.R.C.P.,
Physician to the Skin Department, King's College Hospital, London.

The subject chosen for discussion appears to me to be of wide importance, and I feel, therefore, greatly honoured at being asked to open the debate upon it.

I should like to make it quite clear at the beginning of my remarks that I do not claim any originality for the views which I express, and that they are merely the outcome of my study of the work of others combined with my own investigations.

I believe that we shall all agree on the first point which I wish to make, that is, that although seborrhoea may exist without acne, there is no well developed case of true acne in which seborrhoea is not present. I therefore propose to begin my remarks with the discussion of seborrhoea, although I am aware that in the title of the discussion acne is placed first.

Beginning, then, with seborrhoea, we are at once met with the question, What is seborrhoea? Obviously, it is an excessive secretion from the sebaceous glands; but then we only push the question one degree further back, as it is extremely difficult to define what is excess of secretion where the amount is so variable in different individuals and different races. In these circumstances, therefore, I offer you the provisional definition of seborrhoea as a secretion which leads to pathological complications.

It is probable that this excessive secretion of the sebaceous glands is always associated more or less with a hyperidrosis or excessive secretion of the sweat glands as well, and anyone who has studied the anatomical relations of the two sets of glands will at once realize how impossible it is to separate the secretions of the two.

With these few preliminary remarks I propose to pass to the consideration of the causes of seborrhoea.

As to the cause of seborrhoea, I think we must admit that adolescence is a great cause. In the young child the sebaceous glands seem to secrete scarcely at all, but at the time that the mammary glands of the female, the reproductive glands in both sexes, and the facial hair in the male begin to show signs of development, the sebaceous glands also take on an active function, which often becomes excessive. Here we have an analogous state of affairs in the other glands which I have mentioned, the mammary glands of young girls often secrete a little milk, the testicles of boys also commonly secrete rather freely, so that what I may term a physiological spermatorrhoea is extremely common in adolescent males, and I think, therefore, that the seborrhoea of adolescence is nothing but the excessive secretion of a gland which has begun to take up its function, but has not yet attained regularity of action.

This irregularity of action seems to run in families to some extent, as we see that every member, or at least several members of certain families, show this adolescent excess on attaining the age of puberty. It is not comparable with the profuse secretion which occurs in certain races living in hot climates, as in these it does not necessarily lead to pathological complications. During adolescence this excessive secretion may be still further aggravated, and in other individuals an excessive secretion may be produced by certain other factors, which I will now indicate.

One of these factors is undoubtedly diet, and we know that the ingestion of large quantities of starchy, sugary, or fatty foods increases the secretion quite apart from the production of any dyspepsia. A second great cause is to my mind dyspepsia, using the term in the widest possible sense to include any error of function of the alimentary tract. A third is a hot, moist atmosphere, and a fourth is excessive clothing, especially when woollen material is worn next to the skin.

I now turn to the question of acne, and for the purpose of clearness I venture to remind you of the sequence of events. The first step is, as I have said, the occurrence of seborrhoea; the second is the production of the horny plug in the mouth of the pilo-sebaceous follicle, the comedo or blackhead; the third is suppuration, which, as a rule, takes place round only a small proportion of the comedones. This suppuration may be either superficial or deep in type, producing a small pustule beneath the horny layer, without much surrounding infiltration, or it may occur deep in the sebaceous gland, producing the type of lesion known as acne indurata; or again, there may be formed a deep lesion, which I have called the cyst abscess type, in which the production of rather mucoid pus is abundant, and in which opening of the lesion is followed by reaccumulation of pus and not by cure. All of these types may coexist in the same patient, but the cyst abscess type is much the least common, and where it occurs at all is apt to do so in many lesions in the same patient. I show you here a photograph of such a case. In addition to these inflammatory lesions there may occur, of course, a simple stagnation of secretion behind the blocked mouth of the follicle with the production of a sebaceous cyst.

Now, it appears to me that if we want to elucidate the march of events we must study the lesions both by the aid of the microscope and by culture.

If we study first the comedo by horizontal section we find that it is made up of more or less regularly arranged whorls of epithelial cells, between the layers of which we find abundant colonies of Sabouraud's microbacillus. Surrounding this lesion we find no evidence of inflammation, and the conclusion is forced upon us that the first step is the growth in the mouth of the follicle of the microbacillus and that the follicle, irritated by the presence of the bacillus, treats it as the epidermis always treats a non-pyogenic foreign body, that is, by attempting to encyst it. Successive layers of cells are produced by the successive attempts of the follicle to encyst the colonies, and the picture which I now show you results.

If, instead of cutting sections of the excised lesion, we content ourselves with expressing the comedo, making a smear preparation and staining it, we get what appears to be an almost pure culture of the microbacillus with

perhaps a few staphylococci and bottle bacilli, but neither of these will be in the form of abundant colony.

If we attempt culture from the comedo in the air we shall get a rapid growth of the few staphylococci present and no growth of the bacilli, so that the cultural results will in no way represent the true state of affairs. If, on the other hand, we carefully emulsify the comedo and cultivate it by means of a deep shake in glucose agar or otherwise anaërobically, we shall see that a very large number of colonies of the microbacillus and a very small number of colonies of the staphylococcus result. Unfortunately we still have no very suitable medium for the growth of the microbacillus, and, consequently, we may often have great difficulty in separating out the microbacillus, and even when we have done so successfully the bacillus is apt to die out very soon.

Again, if we cut sections of an acne pustule we find in the centre of the horizontal section a macerated comedo containing abundant colonies of the microbacillus, and this comedo is surrounded by a wide lake of pus. In this pus we may find fragments of lanugo hair, epithelial scales, and groups of detached microbacilli, the latter staining usually rather badly. In the pus also, and generally close to the wall of the abscess, we find colonies of staphylococci. I would draw your attention especially to the fact that the staphylococci are found best close to the wall of the abscess, because if one contents oneself with expressing the pus and staining it on a slide one may miss the organism, and, as a matter of fact, I have here a photograph from a case in which I failed to detect the staphylococcus by staining films, and yet the staphylococcus was in active growth, far removed from the comedo and deep in the abscess.

The reason why I lay such stress on this point is that it has been claimed that suppuration takes place in the comedo owing to the action of the microbacillus alone, and this claim is made because it is not possible in every smear to demonstrate the staphylococcus. I think the explanation is that which I have already given, and the same thing has occasionally been found by bacteriologists of the highest technical skill in the case of ordinary staphylococcic abscesses.

If you ask what evidence have I that the microbacillus is not pyogenic for certain individuals, I refer to another part of the same horizontal section, where we find cross sections of comedones in the near neighbourhood of the suppurating lesion, and yet, although they show abundant growth of the microbacillus, they show no sign of purulent inflammation. So that for this case, in which I may remind you again staphylococci were not found in the smears, we find on microscopic examination of sections the following facts: Abundant colonies of the microbacillus without colonies of staphylococci, comedo without inflammation, abundant colonies of the microbacillus *plus* colonies of the staphylococcus, comedo *plus* suppuration.

On these grounds, therefore, I base my belief that the genesis of acne is as follows: (1) Seborrhoea, a non-bacterial abnormality; (2) comedo formation, due to the infection of the mouth of the follicle by the microbacillus of Sabouraud; (3) suppuration round the comedo, due to growth of the *Staphylococcus pyogenes*.

I have limited myself to the staphylococcus as the pyogenic agent because it is so much the most common, but I would remind you that other pyogenic organisms, such as the *Bacillus coli*, have been found, and I see no reason why any pyogenic organism should not occasionally find its way into the mouth of the damaged follicle.

Before I pass on to the treatment of acne, there is one more point on which I should like to touch in a tentative manner, and that is the explanation of the variation in depth of the suppuration, which is so striking in acne cases. This puzzled me for many years, and still does so, but I believe that I have carried the explanation one step further back in referring it to the depth in the follicle at which the comedo is formed. In the superficial pustule it is always easy to see the black head of the comedo right on the surface, but in some of the deeper nodules one cannot see a comedo at all. Nevertheless, if one incises one of these nodes with care one will find buried deep in the sebaceous follicle a central plug which, on horizontal section, proves to be a typical comedo. Patients with this type of acne are generally those with extraordinary patulous follicles, and in addition to their suppurative lesions they usually show gigantic and twin comedones.

Turning now to the treatment of acne, I feel I have already detained you so long that I shall content myself with a short classification of the remedies which I have found of use.

1. *The Treatment of the Seborrhoea.*—Attention to the digestion and general hygiene and a diet low in those substances which I have already indicated as having an action in increasing secretion. The use of the *x* rays as causing temporary suspension of sebaceous activity. The use of caustics such as sulphur (probably acting as sulphuric acid), acids, acetic and hydrochloric, strong alkalis, soft soap.

2. *The Treatment of the Comedo.*—Mechanical extrusion, the *x* rays, and the use of microbacillus vaccines.

3. *The Treatment of the Suppuration.*—Surgical procedures, antiseptics as ointments or fomentations, the use of staphylococcus vaccines.

With regard to the other complications of seborrhoea mentioned in my abstract, I have nothing more to say than that I regard seborrhoeic eczema as a mixture which may be partly an infection of the surface by means of the bottle bacillus and partly a toxic eczema due to the irritation of the skin by the secretions decomposed by various organisms, chief of which is the non-liquefying staphylococcus or *Staphylococcus cutis communis*. I may emphasize the fact that the bottle bacillus does not depend upon a pre-existing seborrhoea to enable it to infect the skin, but may be found causing a pityriasis in the driest skins. Lastly, the so-called seborrhoea sicca is a desquamative affection of the epidermis and has nothing at all to do with seborrhoea.

II.—R. Sabouraud,

Directeur du laboratoire municipal de la Ville de Paris à l'Hôpital St. Louis.

(*Translated by* Dr. R. W. MacKenna.)

Seborrhoea ought to be defined by the characteristic feature of sebaceous hypersecretion. One should never apply this term to epidermic exfoliation. There is therefore only one variety of seborrhoea—that is, seborrhoea oleosa, and there is no such thing as seborrhoea sicca.

Hypersecretion of the sebaceous glands is accompanied by an enlargement of the sebaceous orifices, and by their apparent obstruction by a plug of fatty material, which constitutes on the face what Biett and the older French writers called acne sebacea. Acne sebacea may occur in all degrees of severity up to acne sebacea fluenta, in which the fatty secretion, in a semi-solid condition, may accumulate on the surface of the skin. This is a rare form, met with in the young. In its ordinary variety seborrhoea evolves in the direction of acne with comedones and polymorphic acne. Thus the older writers recognized that a simple seborrhoea always precedes polymorphic acne, acne with comedones, etc.

If we examine the fatty seborrhoeic plug dissolved in cedar-wood oil, we invariably find in it, and sometimes in amazing quantities, the *Demodex folliculorum* of Simon and Gruby. This acarian parasite does not appear to play any pathogenic rôle itself, but the great mobility of its octopedal larva permits of our attributing to it the rôle of a "carrier" in many diseases of the skin. Borrel has accused it of conveying the contagion of leprosy, and that of epithelioma. This rôle is open to question. But the *Demodex* without doubt carries the microbacillus which we invariably find in the fatty seborrhoeic plug, of which the comedo is nothing more than an exaggerated example.

The microbacillus of seborrhoea discovered by Unna and Hodara, who regarded it somewhat narrowly, as the microbe of acne with comedones and polymorphic acne, is really the microbe of seborrhoea oleosa. Each fatty seborrhoeic cylinder is a colony of several million specimens. This organism can be grown, in aërobic cultures, on slightly acid glycero-gelatine, as I showed in 1897, but much better on gelatine covered with a thin film of sterilized butter, as Mauté showed in 1909. Hallé has proved that the microbacillus grows in strictly anaërobic cultures. It appears that to grow it in aërobic cultures one requires to implant particles of the fatty cylinder

sufficiently large to allow of the microbacillus growing anaërobically in their centre.

The rôle of the microbacillus in the production of seborrhoea oleosa and its sequelae (acne with comedones, polymorphic acne, and seborrhoeic alopecia) is not yet experimentally proved. Up to the present this microbe remains the constant feature in all the various localizations and manifestations of seborrhoea oleosa, but it has not been proved to be the cause of the condition. It may be an inactive tenant of the seborrhoeic plug, a view which is still maintained by some writers.

The constant presence of the microbacillus in seborrhoea, and its countless multiplication in the pilo-sebaceous orifices of seborrhoeic people, render improbable the view that it is nothing more than an innocent tenant of the lesions in which it dwells, but one can say no more than this. Those who believe in its etiological rôle in seborrhoea cannot further explain its harmful action than by hypothesis—for example, seborrhoea is caused by the stimulation of secretion set up by its toxins, or may result from the simple mechanical obstruction of the orifice of the gland, since every gland whose duct is closed responds by hypersecretion.

One cannot, further, prove for the moment the part played by the microbacillus in the alopecia which accompanies seborrhoea, and which constitutes the objective type of male baldness. The experiments which I have carried out on the rabbit, the horse, the dog, the sheep, are difficult to interpret. The subcutaneous injection of cultures of the microbacillus soon brings about, even at a distance from the point of injection, patches of alopecia. But alopecia, and even alopecia areata, are frequent in animals after inoculation with different microbes, and this fact prevents us from coming to any definite conclusion.

Every true seborrhoea is microbacillary, but every case of seborrhoea does not evolve into a polymorphic acne. If, then, the microbacillus is the cause of acne, it can at least only produce it with the help of other factors of which we are ignorant. One may, however, say that in polymorphic acne the microbacillus is the one organism which is constant, and that the ordinary organisms of suppuration are far from being always found there, and even may be met with there only in exceptional cases. What Unna has said on this subject is perfectly true.

What we know concerning the remote and immediate causes of acne is as follows: There are for a certainty other more general, but still obscure causes. The fact that the development of acne coincides with puberty in both sexes, and the fact that acne in women is often influenced by the menstrual periods, would seem to indicate a very important relation between the internal secretions of the sexual glands and the development of seborrhoea.

On the scalp, pityriasis simplex, which appears to be caused by the spore of Malassez (which is a blastomyces), is not of the same microbic nature as acne and seborrhoea, but its development on the scalp at the same time as acne of the face led Hebra wrongly to associate pityriasis with seborrhoea under the name of seborrhoea sicca—a title which should be abolished. Puberty would also appear to have some influence upon its development. It begins to appear about the eleventh or twelfth year, and it regularly precedes by six or seven years the development of microbacillary seborrhoea on the scalp. Pityriasis is therefore a pre-seborrhoeic phenomenon. About the fifteenth to the seventeenth year the dry scales become greasy—steatoid pityriasis—and underneath them microbacillary seborrhoea develops.

Steatoid pityriasis and seborrhoea oleosa, of microbacillary origin, of the scalp, are always accompanied by an alopecia, which is chronic and progressive, and which differs in form, frequency, and severity, according to sex—a new proof of the part played by the sexual glands in the production of the phenomena of seborrhoea. Man becomes gradually bald on the vertex, until all the hairs are lost from this region, and this always occurs simultaneously with the evolution and spread of the microbacillary infection and seborrhoea to all the pilo-sebaceous orifices.

In woman this infection is always more diffuse, for it also affects the temporal regions, which escape in man, and it is always less complete. Woman never becomes bald in the same way as man, nor so completely. In her the regrowth of the fallen hair is much more constant. Although, after having been shed and regrown a certain number of times the hair in man ceases to grow again, in woman it continues to grow again almost indefinitely. Besides, in woman, certain hairs are not affected by seborrhoea in so great number that alopecia in woman is either complete or permanent.

It is remarkable to notice that in both sexes seborrhoeic alopecia almost always begins about the 17th year. Between the ages of 17 and 22 one is able to know almost all the men who will become bald, and the women who without becoming bald will shed their hair all their lives.

An experiment seems to verify the important part played by the sexual glands in the causation of seborrhoea. It is the fact put forward by Aristotle in his *Problems:* "Neither suckling, nor woman, nor eunuch becomes bald." I have prosecuted an investigation of this subject with the help of several friends in Constantinople and Cairo. At this moment it is being continued among the Russian Skoptzi, who have almost all emigrated to Bucharest. Actual statistics show that among about 300 eunuchs not a single case of baldness has been met with. This inquiry deserves to be followed up. If the fact enunciated by Aristotle is invariably true the rôle of sexual activity in certain seborrhoeic conditions will have been proved, but it will not have been explained, for there is a large number of men who are not affected with baldness and who are not eunuchs. It remains to discover the mode or the abnormality in the activity of the glands which gives rise to or favours the phenomenon of hyper-seborrhoea. It is possible that the fatty acids secreted by the sebaceous glands are not the same in all people, and that, according to their nature, they permit or hinder the implantation of the microbacillus and its development. But all this has yet to be cleared up.

In this connexion one ought to mention the researches of Jacquet on hyper-seborrhoea in the suckling and even the fetus. It would appear that there is, towards the time of birth, a short-lived activity of the sexual glands and of their adnexae—secretion of milk, mastitis of the newborn—and that the abundant fatty secretions of the skin are accompanied by a fall of hair which ceases when these transitory phenomena cease. But it is not proved that the formation of crusts, which appear to be seborrhoeic, on the scalp of the newborn child is a phenomenon of hypersecretion. It would appear rather to be a symptom of exfoliation. It is, however, possible that we have to deal with two associated phenomena of glandular hypersecretion and surface exfoliation. There are still, however, facts which require further investigation. These appearances in the suckling are not microbic, and their study will enable us to eliminate, according to their author, the rôle of the microbacillus in seborrhoea of the adult. One must always be careful not to come to too rapid conclusions either in one direction or the other. The causal rôle of the microbacillus in seborrhoea is not proved; but, on the other hand, it is not proved that it does not play a part. Its invariable presence in seborrhoea ought to make us suspend every conclusion till we can prove one.

Finally, the sebaceous acne, polymorphic and congestive, of the fifth decade in women, and the sixth decade in men, the acne of involution, so well studied clinically by Schultz of Frankfort, would also appear to demonstrate the action of the sexual glands on acne at the climacteric.

Seborrhoea and acne are also influenced in a very marked way by digestive troubles. The acne of constipation, and the congestive acne of hyperchlorhydria are facts which the practice of the day can verify. But it would appear that in these cases we are dealing with accessory influences, which exert their influence rather to determine the external situation and the objective appearance of the seborrhoeic symptoms than on the intensity of the development of seborrhoea in general.

In my hands at least, Wright's method of vaccination by the injection subcutaneously of dead microbacilli has not given enough appreciable results in cases of acne and seborrhoea.

DISCUSSION.

Dr. PHINEAS ABRAHAM said: I think we must all thank Dr. Whitfield for the very able and comprehensive sum-

mary of the subject which he has given us to-day, and I am sure that with nearly all that he has stated most of us will cordially agree. I am glad, for instance, that he apparently admits a constitutional element in the seborrhoeic condition, and that he considers the absorption of toxins of some importance in the causation of these affections—for it was not so very long ago that seborrhoea and acne were regarded by prominent dermatologists as purely local affections having no relation to any internal derangements. As regards acne, at any rate, I have been for many years convinced that the large majority of cases show definite evidence of some digestive, circulatory, or other functional disturbance. Most of my cases, indeed, have been dyspeptic, constipated, or anaemic—and exacerbations in women, as every one knows, are especially common at the menstrual periods. While we must all accept the rôle played by Unna's and Sabouraud's bacilli—and by the subsequent staphylococcic invasions, in the production of the lesions, as Dr. Whitfield has now so conclusively demonstrated—I for one have long maintained that these micro-organisms will only grow and become pathogenic if the soil has been rendered suitable by the presence within it of some toxin or abnormal substance. It is chiefly, however, in reference to the treatment of acne that I wish to speak to-day. Regarding as I do internal medication in these cases as of no small importance, the large majority of my cases have to take some medicine as well as at the same time to adopt external treatment. In many cases, especially where there is constipation or something wrong with menstruation, an aperient ferruginous bitter mixture is most useful, for example, the usual M. F. A. mixture with nux vomica; in others with flatulence, no constipation, but considerable congestion of the face, the ordinary compound bismuth mixture, and sometimes ichthyol in 5-minim doses, are to be recommended. As Dr. Whitfield has indicated, diet should be considered in these cases. I insist, among other dietetic points, upon the teeth being seen to, no rushing of meals, drinking at the end and not at the beginning of meals, as a rule forbidding strong tea or coffee, nothing very hot or very cold—and, what most of my patients do not like, knocking off, in some cases, all uncooked fruit or uncooked vegetables! In most cases—but not always—I stop all alcoholic drinks. One cannot, however, cure a bad case of acne by these means alone—external remedies must be employed. As Dr. Whitfield says, sulphur is still of great use, either in the old alkaline lotion, or, in most cases, better still, in the form of a compound sulphur ointment. I desire to take this public opportunity of thanking the President of this Section—Dr. Walter Smith—for showing me, many years ago, in 1880, how to treat really bad cases of acne. A relative of mine who suffered from severe indurated acne had been for several years under treatment by two of the greatest authorities of that day, with but little benefit. Dr. Walter Smith happened to be in London at the first International Medical Congress, and he kindly saw the case and advised me to press out the comedones, puncture the pustules, evacuate the contents, and apply to each lesion the smallest possible driplet of pure phenol at the end of a sharply-pointed piece of matchwood, subsequently using the usual sulphur applications, regulating digestion, etc. The result was that in a few months the lady was quite cured. Ever since then I have treated my cases, when possible, on similar lines, and I may say with very great success. In place of pure liquid carbolic acid, I am now using a liquid formed by mixing together crystals of pure carbolic and solid camphor, generally in equal parts or with rather more carbolic acid, say 3 to 2. I find this not too caustic, but quite efficacious. Given the necessary time and trouble, I believe that even the most severe and long-standing cases will yield to this treatment when combined with the other measures to which I have alluded. Such being my experience, and as I have seen so many failures, and indeed disastrous results, under the at present fashionable vaccine therapy, I need hardly say I am not recommending my acne patients to become the subjects of experiment in immunization by vaccines. For, although I admit that some cases have done remarkably well after inoculations, many have been made much worse, and some indeed disfigured for life. I think it will be agreed that the whole question of the vaccine treatment of diseases of the skin is still in the experimental stage, and such being the case I cannot understand why as I am told, some practitioners are advising it in all cases and putting their patients to enormous expense in carrying it out.

Dr. J. Goodwin Tomkinson (Glasgow) said: It would appear that seborrhoea and its sequelae are the result of a combination of factors rather than of one specific cause. The profound changes consequent upon puberty associated with the frequent disregard of dietetic rules and intestinal hygiene and the microbic flora found in the condition should, however, direct us to rational and successful methods of treatment. While a broadly catholic attitude should be maintained towards all therapeutic agents, I think the vast majority of cases of acne vulgaris will yield to local treatment—evacuation of the sebaceous follicles, sulphur baths, and sulphur and salicylic acid ointments, etc.—and appropriate general treatment, which in a large number of cases means a suitable dietary, regulation of the bowels, and the exhibition of haematinics. Vaccine treatment in most if not all cases of acne vulgaris is quite unnecessary. I have been consulted by more than one patient suffering from extensive acne vulgaris formerly under vaccine treatment, where little if any benefit had resulted. However, under such a regimen as that to which I have alluded improvement rapidly ensued. The all-important thing is to ensure the carrying out of the treatment. There are, however, resistant cases which, as every one conversant with *x*-ray therapy knows, are markedly benefited by careful irradiation. In a case of that hypertrophic form of acne rosacea described as rhinophyma, where the dimensions were scarcely such as to warrant surgical interference, the careful electrolysis of the individual follicles was followed by most excellent results, the nose decidedly diminishing in size and improving in shape. We are waiting for a satisfactory classification of those conditions which are included in the term "seborrhoides." I do not find all of these equally responsive to treatment. In a very rebellious psoriasiform seborrhoide—it was not psoriasis—which came under my notice thyroid extract proved the most potent agent in removing what was a very persistent and disagreeable condition.

Dr. Leslie Roberts (Liverpool) agreed that seborrhoea should be clearly distinguished from acne. It was essentially an epithelial hyperplasia occurring under the influence of some chemical substance within the body and corresponding in time of prevalence with the development of the sexual organs. The clinical features associated with acne were due to the fermentation set up in the connected comedo by the microbacillus and *Micrococcus albus*.

Dr. Galloway (London) mentioned that Indian students when living in London were much more subject to seborrhoea and acne than those among whom they were living, probably owing to the moisture of the British climate.

Dr. Norman Walker (Edinburgh) thought systemic treatment of much importance, but regarded vaccine treatment as of much value, strong doses rather than low ones being employed.

ON SPOROTRICHOSIS.

By Dr. Lucien de Beurmann,
Physician to the Hôpital St. Louis, Paris.
(*Translated by* Dr. R. W. MacKenna.)

Sporotrichosis is a new disease. In less than ten years my researches and those of my disciples and collaborators have demonstrated its existence, have studied it thoroughly, and have proved its importance.

Everything, however, points to the fact that sporotrichosis existed before this, but the symptoms were confused with those of syphilis, tuberculosis, and occult infections, etc., which they resembled in external appearance, and from which it was necessary to distinguish them. The essential new thing is this—that we have succeeded in tracing to their true pathogenic source affections which had been erroneously attributed to other

causes, and in having given to the physician the means of curing them readily.

SPOROTRICHOSIS.

Sporotrichosis is an infection common to man and animals. It is caused by filamentous spore-bearing fungi of the genus *Sporotrichum*: *Sporotrichum schenckl*, *Sporotrichum beurmanni* (and its varieties, *Sporotrichum beurmanni* variety *asteroïdes*, *Sporotrichum beurmanni* variety *indicum*), *Sporotrichum jeanselmei*, *Sporotrichum gougeroti*, *Sporotrichum dori*, each parasite serving to define a sporotrichosis of the same name. "There are therefore not *one*, but *several* sporotrichoses."

The variety of sporotrichosis most frequently met with is that which is caused by the *Sporotrichum beurmanni*. Since the first case, published by de Beurmann and Ramond in 1903, more than 200 cases have already been put on record. It has been met with at all ages and in all surroundings. It has been seen in Paris and in most of the provinces of France, and in many countries besides France. In Brazil it has been observed by Lutz and Splendore and by Lindemberg; in the Argentine, by Baliña and Marco del Pont and by Greco; in Madagascar, by Carougeau: in Belgium, by Lerat; in Switzerland, by Jadassohn and Stein, by Bruno Bloch, by Du Bois, by Oltramare, by Dind; in Austria, by O. Krenn and Schrameck; in Germany, by Arndt, by Fielitz; at Strassburg, by A. Wolff and Hügel; in Columbia, by Posada Berrio: in Spain, at Madrid, by E. de Oyarzabal, and at Barcelona, by T. Peyri; in Ceylon, by Castellani; in Tonkin, by Seguin; in Guiana, by Henry; in Italy, by Campana, by C. Vignolo-Lutati, by Curcio, and by Caruccio; at Constantinople, by Menahem Hodara and Fuad Bey; in Croatia, by Slamjer; and finally, in England, by Adamson, by Offenheim, by Walker and Ritchie, etc.

Even in the United States of America the question of sporotrichosis, which had remained in the background, has assumed importance. The two cases of Schenck and of Hektoen-Perkins, and the doubtful case of Brayton, were so far forgotten that Lutz and Splendore, in seeking to identify the parasite which they had found at Sao Paulo in Brazil, did not even know of them. The success of the sporotrichosis of de Beurmann rescued these isolated facts from oblivion, and, thanks to the movement initiated by my researches and those of my disciples, numerous cases of sporotrichosis were discovered in man and in the horse in 1909 and 1910 by Burlew, Trimble, and Shaw, Page and Frothingham, Hyde and Davis, and by Duque of Cuba, etc.

The remarkable work of Page, Frothingham, and Paige has proved that there exists in the United States an indigenous form of sporotrichosis, which affects horses, and which had already been discovered by Carougeau at Madagascar. These writers attribute the disease they have observed to the Sporotrichum of Schenck, and their actual cultures resemble our cultures of the *Sporotrichum beurmanni*, while those which Hektoen sent me in 1906 differ from them considerably.

The question of the relationship of the different varieties of Sporotrichum is a very difficult one, and is too essentially a botanical question to be dealt with here. Let it suffice to say that the *Sporotrichum dori*, which has only been observed once, and of which the cultures have been lost, is in doubt, and perhaps is not a Sporotrichum, while the other Sporotrichs are probably derived from one common parent stock, and may be classed thus:

Sporotrichum schenckl.
Sporotrichum beurmanni.
Sporotrichum beurmanni, variety *asteroïdes* (Splendore).
Sporotrichum beurmanni, variety *indicum* (Castellani). (Culture lost.)
Sporotrichum jeanselmei.
Sporotrichum gougeroti.

The *Sporotrichum schenckl* and the *Sporotrichum beurmanni* are very closely related to each other, and may be regarded either as different varieties of the same parasite or as different species, but we have never been able to fit into the type of *Sporotrichum beurmanni* the specimen cultures of *Sporotrichum schenckl* sent us in 1906 by Hektoen.

I have already pointed out that Carougeau at Madagascar, and then Page, Frothingham, and Paige had described a spontaneous form of sporotrichosis of the horse and mule. Lutz and Splendore discovered at Sao Paulo, in Brazil, the spontaneous sporotrichosis of the rat; and Gougerot and Caraven discovered in Paris spontaneous sporotrichosis in the dog.

The distribution of sporotrichosis is therefore very wide, and it has been found in the most diverse countries and climates. Everything points to its being a malady of universal distribution, and that it will be found in all countries where it is systematically sought after, and that its frequency will be recognized when not only dermatologists, but physicians, surgeons, ophthalmologists, and laryngologists will bear this fungus in mind.

PARASITOLOGY.

The *Sporotrichum beurmanni*, whether we are dealing with cultures from lesions in man or animals, or from the uncultivated sporotrichum found in nature by Gougerot, is filamentous and spore bearing. "Microscopical examination," say Matruchot and Ramond, "enables us to recognize with ease that this fungus has the same mode of fructification as the sporotrichum." The mycelium is creeping (*repens*), fine, measures about 2 μ in diameter, is partitioned, colourless, much branched, and tangled. The spores appear situated along the length of the recumbent filaments, either at their extremities or on branches. They are arranged in cylindrical cuffs, about 10 μ in size, and in glomeruli. As a matter of fact, the spores are really isolated from one another. They arise one by one in variable numbers along the mycelium, but, as a rule, in very large quantity on each segment of the thallus. There is no apparent order in their arrangement.

So long as it remains on the filament the spore appears pear-shaped. It is attached by a very fine sterigma from 1–2 μ in length, and from 0.5 μ in width. When shed the spore is oval. Its dimensions vary from 3–5–6 μ in length, and from 2–3–4 μ in width. "The form, the disposition, the brown colour of the spores, and their fructification in the form of cylindrical cuffs, arranged in bunches at the extremity of the filaments, constitute, together with the original substratum of the fungus, a group of characters which differentiates this variety sharply from all the other sporotrichs." (Matruchot.)

In the tissues and in pus this parasite has quite a different appearance. It assumes a *short oblong form*, which we described in October, 1906. It resembles a thick short bacillus, from 3–5 μ long and 2–3 μ broad, basophilic and finely granular, and surrounded by a very delicate colourless membrane. This short variety, a form degraded by facultative parasitism, is met with in all the lesions in men and animals, even in the epidermic scales. We have demonstrated the transition of this short variety, observed *in vivo*, to the filamentous form of cultures *in vitro*, by practising the autocultivation of sporotrichotic pus on dry plates. From day to day we have watched on these plates the transformation of short forms into fine filamentous stars, which become spore-bearing.

PATHOLOGICAL ANATOMY.

Working with my disciple Gougerot, I made a complete anatomical and histological study of the lesions of sporotrichosis in our first and second communications to the *Annales françaises de dermatologie et de syphiligraphie* (1906–7). Our researches have been completely confirmed by those writers who have devoted attention to this part of the question.

The *Sporotrichum beurmanni* is able to give rise to multiple lesions in the tissues. The most characteristic is the nodule, in which we find three processes, sometimes mixed up in an irregular manner, but most frequently arranged concentrically. "In the centre an abscess containing polynuclear leucocytes and macrophages; in the intermediate zone an area of degenerated epithelioid giant cells and tuberculous follicles, and at the periphery a proliferation of basophile lymph and connective tissue cells or a fibro-cellular infiltration."

The structure of sporotrichomata is, therefore, very closely allied to that of the lesions caused by syphilis, tuberculosis, and by the agents of chronic suppuration, and it resembles sometimes the one, sometimes the other. In an area sufficiently extensive to enable us to judge of all the processes, it is very rarely that we do not see a rough sketch of this diversity, and that we do not find perifollicular vascular engorgement, and dilated capillaries round aggregations of giant cells, which indicate the haematogenous origin of the lesions.

The structure of the sporotrichoma has been found in hemisporosis by Gougerot and Caraven, in the exascoses (blastomycoses) by Queyrat and Laroche, in oidiomycosis by de Beurmann, Gougerot, and Vaucher, in favus nodules by Darier and Hallé, etc. Sporotrichosis has therefore enabled us to fix the general formula of the mycoma, and has made an important contribution to general pathological histology.

Etiology and Pathogenesis.

The etiology and pathogenesis of the sporotrichosis of de Beurmann have been almost entirely elucidated by the memoirs published in collaboration with Gougerot in 1906 and 1907, and by the observations which we have subsequently gathered together.

The *Sporotrichum beurmanni* is met with in *a saprophytic state in nature*, as has been proved by the discovery of two specimens growing wild in the French Alps. It grows on vegetables, living or dead. It may be easily cultivated at all temperatures between 12° and 40° C., the optimum temperature being between 20° and 30° C. The spores can survive temperatures of 0° and 55° plus. At ordinary temperatures they preserve their vitality for years. They are only slightly sensible to the action of the sun's rays and the inclemencies of the weather, and cultures left in the open air are still living after more than a year. The sporotrichum is very hardy; it vegetates on poor soil, such as bark and thorns, and one may find it on salad, on potato, grain, etc. The opportunities for coming into contact with it are, therefore, very frequent. The intermediate agents which may introduce the germs of sporotrichosis into the organism are very varied. One of the chief modes of inoculation is through a wound of the skin or mucous membrane.

All objects soiled with vegetable débris loaded with parasites may inoculate the Sporotrichum if they come in contact with a wound of the skin or mucous membrane. In our case No. XII, the patient, a greengrocer, had received a blow with a coster's awl on the forehead. He had not dressed the wound, and he concealed it under an old cap which usually lay on the fruit and vegetables which filled his barrow.

In the case recorded by de Beurmann, Gastou, and Brodier the patient was a market woman, and the sporotrichum was found on the salad which she was in the habit of selling and picking all day. In the case recorded by Dominici and Duval a gummatous ascending lymphangitis of sporotrichal origin developed as a sequence to a finger cut sustained in peeling a potato. In a case studied with Saint-Girons the parasite was inoculated by a thorn from a barberry bush. As the sporotrichum lives in the soil, a wound contaminated by earth may also be the point of origin of the infection. The development of the parasite on certain living insects, notably on flies, wasps, and ants, warrants the presumption that the bite or sting of these creatures may inoculate man.

We know of several cases in which the animal origin of sporotrichosis has been proved. A patient of Lutz was inoculated by the bite of a rat in Brazil, at Sao Paulo, where Lutz and Splendore have demonstrated the frequency of spontaneous sporotrichosis in the rat. Jeanselme and Paul Chevallier have published a very instructive case of the same kind.

Carougeau has reported the case of a veterinary surgeon who inoculated himself by pricking himself with a bistoury which he had used to open sporotrichotic abscesses in mules and horses affected with the "epizootic equine sporotrichosis of Madagascar." Wyse-Lauzun of Marseilles has quoted a case in which the bite of a parrot was the starting point of the infection.

Since the sporotrichum may, as we have shown, live as a saprophyte in the pharynx of certain people, a "carrier" of the organism may inoculate an insignificant abrasion by wetting it, as is the popular custom, with saliva. The healthy epidermis may act as a portal of entry. The sporotrichum may invade the hair follicles, and may there set up folliculitis, or acne, and thence may gain the lymphatics. (De Beurmann and Gougerot, patient No. VI, and de Beurmann, Gougerot and Laroche.)

A second method of introducing the sporotrichum into the organism is by food. Green vegetables, berries, fruit, flour, wine, preserves, etc., are good culture media for it, and man may become infected by articles of diet partaken of raw or insufficiently cooked. Thanks to the leucocytes, which convey the parasite, it may find its way through the healthy mucosa of the gastro-intestinal track, or through insignificant wounds.

The point of inoculation is sometimes the skin, sometimes a mucous membrane. In the localized gummatous form of lymphatic sporotrichosis, it is generally to be recognized by an initial lesion—abscess, serpiginous or papillary ulceration, analogous to the inoculation of tubercle from without. But the site of inoculation may not be marked by any lesion. In our thirteenth case the point of entry was almost certainly a wound of the wrist, which healed up as a simple wound, and the lymphatic cord, studded with ulcerating gummata, only began at a somewhat higher level.

In disseminated sporotrichosis, which my researches have shown to be the most common variety, the portal of entry had not been suspected until our study of ulcerating sporotrichosis of the mucous membranes. Our patient No. VI, who carried long after the disappearance of his ulceration a saprophytic sporotrichum in his pharynx, had quite a series of attacks of sore throat, which were probably dependent on the presence of the fungus. At that time we imagined that, in his case, the parasites had entered the circulation by the bucco-pharyngeal mucosa, perhaps through the tonsil, unless the sporotrichum, swallowed with the food, had made its way through the gastro-intestinal mucosa, a less resistant barrier than the pavement epithelium of the bucco-pharyngeal cavity. Numerous facts have confirmed this hypothesis.

We have been able to reproduce in animals disseminated and generalized sporotrichosis by introducing the sporotrichum by these two routes, by subcutaneous injection, or by feeding with milk containing the parasite. In order to confirm the possibility of infection in man by the digestive tract, we made a series of cultures and of artificial digestions, proving that the parasite resisted the action of the digestive juices, and that one could recover it in a living and cultivable condition in the faeces of animals which had swallowed it.

The invasion of the organism takes place sometimes along the arterial stream, and sometimes by the lymphatics. In disseminated sporotrichosis the parasite is carried by the arterial blood stream, as the intense histological lesions of the vessels, the study of its histogenesis, and, above all, experiment have proved. Widal and Weill were the first to give direct demonstration of this fact by haemoculture. In the systemic lymphatic form the sporotrichum follows the lymphatic channels, in which it remains localized. In the disseminated form, with multiple lesions, a gumma of haematogenous origin may invade the lymphatics of a limb, and set up a secondary ascending lymphangitis.

The influence of the soil on the development of the sporotrichum is considerable. A healthy and vigorous man seems most often to escape the infection. In spite of the negligence with which most patients dress their wounds, there has been no cause to suspect a family infection, except in one case of Widal and Joltrain. A study of the observations shows that the patient's constitution was almost always below par when the mycosis developed. Most of the patients have been convalescents, overworked or cachectic subjects. The usual cause of the feebleness observed is tuberculosis. One should, therefore, hesitate to rule out sporotrichosis when dealing with a doubtful lesion, because one has found in the patient signs of bacillary infection. Sporotrichosis, like other mycoses, requires for its implantation and development "an enfeebled soil, a condition of lessened resistance, and the *Sporotrichum beurmanni*, a micro-organism of feeble virulence, experimentally, is not able to overcome the resistance of the healthy organism except in exceptional cases." Our experimental researches have proved that the fungus by its toxins sensibilizes the host, and that one must add to this diminution of the resistance of the soil an adaptation of the germ to the medium, and an adaptation of the medium to the germ.

Symptomatology.

Clinical Varieties.

I have tried to determine the symptomatology and to describe the principal clinical forms of sporotrichosis. It is probable that all the lesions which the *Sporotrichum beurmanni* may set up are not yet known. Up till now,

we know that sporotrichosis is far from being a malady which affects the skin alone. It affects the subcutaneous tissue, the corium, and sometimes the epidermis. It invades the lymphatics, and may affect the glands. It injures the mucous membrane, the eye, bone, the articulations, synovial membranes, muscles and viscera, testicles, kidneys, etc.

This multiplicity of forms and of lesions shows that sporotrichoses are of interest not to the dermatologist alone, but to the physician, the surgeon, the laryngologist, the ophthalmologist, etc., and that, far from being rarities reserved for specialists alone, they belong to general pathology and everyday practice.

I shall briefly describe the most frequent varieties.

1. Disseminated gummatous sporotrichosis (de Beurmann and Ramond, 1903; de Beurmann and Gougerot, 1906).

The onset is insidious, and it is almost always an accident which leads to the discovery of the first gummata. Their number is very variable, and may range from 4 to 35, and may even exceed 100.

The first takes origin at any point of the subcutaneous tissue. They are scattered without any systematic arrangement, without any selective localization over the whole body. All regions may be affected, but the head, the scalp, and the extremities of the limbs are often free. Each gummatous nodule has an autonomous evolution which is the same for all. At first it is a little rounded mass, hard, elastic, painless, and movable in the subcutaneous tissue. The mass evolves rapidly in the direction of softening, and in four to six weeks terminates in a characteristic cold abscess. When it undergoes liquefaction it contains a fluid which is at first transparent, viscous, gummy, and with purulent streaks, and later it becomes opaque, thick, and purulent. It does not undergo complete softening, and when it becomes fluctuating we find a central cup-shaped depression, surrounded by a firm and resisting zone, and when its contents are evacuated there remains round the empty pocket a persistent and indurated ring.

The nodes, which have become transformed into little fluctuating abscesses, have not any tendency to open spontaneously, nor to grow in size, nor to disturb the general health. This stationary condition, succeeding to a stage of rapid growth, is quite characteristic. It is accompanied most often by the appearance of new elements, which follow the same evolution as the first, and pass into suppurating lesions.

In this variety of sporotrichosis it is rare for the suppurating gummata to result in an ulceration of the skin. Almost always any ulcerations observed are consecutive to the surgical incision of a small abscess which has not opened spontaneously. The lips of the incision may remain inert, thickened, and slightly rose-coloured. The base of the wound, which is very slightly granular, secretes only a few drops of thick serum, clear or purulent. Or the skin may become thinned out and destroyed, and the linear wound may be transformed into a round syphilitic ulceration, with a slightly granular base, which secretes sero-pus, and the lesion is covered by a thick crust. A purulent collection keeps accumulating under the crust, or in the fistula which tends to cicatrize. At this third stage the disease is characterized by a mixture of gummata in all stages of evolution. Those which have ulcerated sometimes infect the skin around them and give rise to new lesions. As a rule, if the disease is not treated it becomes chronic. The lesions multiply without changing their appearance. Adenopathies may occur, though they are not common. The general condition remains good. To sum up: The disease is polymorphic only in appearance, since the elementary lesion, the sporotrichotic gumma, makes the same.

2. Disseminated subcutaneous gummatous sporotrichosis with ulceration (de Beurmann and Gougerot, 1907).

The subcutaneous gummata, after having passed through the phases which we have just described, become hypodermo-dermic, and destroy the skin by ulceration more or less rapidly, sometimes in twenty days, sometimes in two or three months. Spontaneous sporotrichotic ulcerations have very varied appearances. As a rule they are of large extent. Frequently the ulceration is, at first, no more than a narrow fistula, from which oozes a viscid, colourless, or sometimes reddish pus, or a yellowish serous fluid. The fistula has violaceous edges, loose and irregular, thin, or, on the contrary, swollen. The ulceration involves only a part of the skin loosened by the pus, and the finger can make out through the thin violaceous derma a kind of cup surrounded by indurated edges. It is this which we have called "cup-like softening." If, sometimes, there is only a narrow opening, difficult to see, one may also find "a large wound more or less rounded, whose edges are loose and irregular, and violaceous or brownish-violet in colour, and indented or rectilinear; and whose base, which is sometimes covered with a thin pellicle of pus, bleeds on the slightest touch. The ulceration remains active, or may become covered with a thick, dark crust, under which the pus accumulates, as also in the recesses which the detached skin makes."

A less common variety is the ecthymatous or rupial form of ulceration. The lesion resembles a coccal ecthyma, or certain varieties of tertiary syphilis, or the ulceration of early malignant syphilis.

Adenopathies are rare, but not exceptional. Neglected sporotrichotic ulcerations linger for months, and even for years. Spontaneous healing is slow and inconstant. The cicatrices may resemble tuberculous scars, with a thickened and cheloidal centre, or they may look like syphilitic scars, "fine, smooth, and polycyclic, or surrounded by satellites of pigmented scar tissue." But in most cases they have a special appearance; they are "narrow, irregular, linear, or stellate, often hidden by the incompletely attached tongue-like processes of the old fistula. These processes of pliable skin, irregularly held down by cicatrization, form little teats." A large areola, which is at first brownish-violet in colour and later becomes brownish, surrounds the cicatrix, and persists for several months.

The evolution is slow. Local pain is exceptional. Occasionally there is a little stiffness or sense of fatigue in the limb affected. The general health, which is good at first, alters as time progresses. The patients become paler, and lose flesh, and become fatigued, but they do not give up working.

Sporotrichotic ulcerations are therefore polymorphic, and one often finds in the same patient lesions of very different appearance—"fistulous openings, and large tuberculous-looking ulcerations, with undermined edges and crateriform punched-out ulcers, resembling the breaking down of a syphilitic gumma; ecthymatous or rupial lesions, or lesions like boils, etc."

From the very first we have insisted on "this mixture of lesions of different appearance, which is one of the best clinical signs for the diagnosis of sporotrichosis."

3. Mixed forms are frequent. When sporotrichosis has existed for a long time it presents as a rule a complete clinical picture. Side by side we meet with lesions of different age with different tendencies and different appearances: tuberculous-looking, syphilitic-looking, ecthymatous, rupial and furuncular. We may find associated lesions of the lymphatics, and lesions of the dermis, epidermis, mucous membranes, muscles, osseous tissues, synovial membranes, eyes, epididymis, etc.

We have described large subcutaneous cold abscesses and gummatous lymphangitis, with gummata arranged according to size along the affected limb, as well as involvement of the lymphatic glands. We may further observe in the same patient cutaneous lesions of different forms—papules, vesicles, vesico-pustules, pustules of greater or smaller size, ulcero-crustaceous lesions, lupoid infiltrations, ulcerated or non-ulcerated, which resemble tuberculous lupus, patches of fungating and "weeping" papillae, or verrucose and squamous sporotrichotic lesions which resemble tuberculosis verrucosus, and trichophytoid kerion; epidermic lesions, trichophytoid lesions of the epidermis surrounding an ulceration, the pus from which has inoculated the epidermis, acneiform folliculitis, vesicles, eczematoid or pityriasic patches, pemphigus, ulcerating or papillomatous lesions of the mucosa; lesions of the muscles, bones, synovial membranes resembling syphilitic or tuberculous gummata, etc. It is not necessary to describe in detail each of these lesions, the name of which is alone sufficient to denote its appearance; it is enough that the clinician should know of their existence. Whatever be its situation, its size, or its tendency, "the gumma always remains as the fundamental lesion, and

this constitutes the unifying factor between the different forms of the mycosis."

4. Localized sporotrichosis: Sporotrichotic chancre; Lymphatic sporotrichosis; Sporotrichotic adenitis.

In the localized forms the sporotrichum penetrates by a cutaneous lesion, at the site of which it produces an initial lesion or portal of entry, which we have called the "sporotrichotic chancre." Then it gradually invades the lymphatics, and we find a hard lymphatic cord studded with gummata identical with those of disseminated sporotrichosis—that is, the centripetal gummatous lymphangitis. Sometimes the lymphatic glands of the region react, but the sporotrichotic enlargement of the glands is not constant. The disease remains localized to the region primarily affected. As a general rule, one finds the chancre from which the lymphangitis proceeds, but the lesion of entry may remain undiscovered, and the sporotrichosis may be reduced to a more or less extensive gummatous lymphangitis. More rarely there is no appreciable lymphangitis to be felt, and one is able to determine only the initial lesion and the swelling of the glands. More rarely still, there is no appreciable reaction of the lymphatics or the glands, and the initial lesion is the only manifestation of the disease. These localized forms have been observed on the head and limbs. On the face all points may be affected. The initial lesion resembles those verrucose or papilliform tuberculides which so often mark the entry of the bacillus of Koch. It may be moist and fungating, crusted and protuberant, verrucose and dry.

Two cases of sporotrichosis of the eyelids are known. In one there was a soft and fungous swelling of the lower eyelid; in the other, ulceration of the free border of the upper eyelid and small palpebral intradermic abscesses.

In almost every case a centripetal gummatous lymphangitis with adenitis follows a chancre. In one of our cases a papillomatous patch of secondary infection developed in the neighbourhood of the first lesion.

Ascending Sporotrichotic Lymphangitis of the Limbs.—The lymphatic cord is broad, not very painful, and more or less indurated. In Case No. XIII there was no apparent portal of entry, but most often the lymphatic cord starts from the initial lesion, which is sometimes an ulceration and sometimes a verrucose patch. Along its length one finds cicatrices, abscesses, fistulae, and gummata suppurating or still hard. The glands are generally swollen, and in one case of subacute abscess in the groin Josset-Moure obtained, by inoculating media directly from the gland, pure cultures of *Sporotrichum beurmanni*.

We know also of secondary sporotrichotic lymphangitis. In the course of an old disseminated sporotrichosis it is not infrequent for a suppurating gumma to infect the lymphatics and set up an ascending lymphangitis, presenting the same characters as the others. But there is only one case on record, that of Bonnet, in which sporotrichosis, having commenced as an ascending lymphangitis of the arm, has been disseminated to the rest of the body. "The parasite may therefore, though *this is exceptional*, leap over the barrier of the lymphatic glands, diffuse through the venous circulation, and then be disseminated by the arterial stream all through the organism."

The Extra-cutaneous Localizations of Sporotrichosis.—The extra-cutaneous lesions of sporotrichosis may be isolated, and in that case they are very difficult to identify, but they are almost always associated with subcutaneous and cutaneous gummata, whose presence much facilitates the diagnosis.

Sporotrichosis of the Mucous Membranes.—In our patient No. IV, who had suffered for a considerable time from ecthymatous sporotrichosis with subcutaneous gummata, the whole throat was red and painful, and there was a small, almost indolent, ulcer, covered by a pultaceous slough. A smear on a slide showed very numerous short sporotrichs, and cultivation gave numerous colonies. Several months after the ulceration and the sore throat had healed, the sporotrichum was still found as a saprophyte in the bucco-pharynx. The patient, therefore, continued to be a sporotrichum carrier. One may well suppose that the recurring sore throats to which he was subject before having his first gummata were already sporotrichotic in nature, and were the source of the infection of the blood, and it is certain that a sporotrichotic laryngitis which developed a long time after the disappearance of the angina, had its origin in this saprophytism. In a female patient, whose case was studied by de Beurmann, Gaston, and Brodier, and on whom a *post-mortem* examination was conducted by Letulle and Debré, seven months after the appearance of a cutaneous and subcutaneous gummatous, disseminated, ulcerated, and tuberculoid sporotrichosis, a very painful laryngitis developed rapidly. On laryngoscopic examination the larynx was found to be covered by large papillomatous vegetations. The cutaneous lesions subsided, but the lesions of the mucosa, arrested at first by iodine treatment, gained the bucco-pharynx, the base of the tongue, the velum palati, and all the upper part of the trachea. The invaded surface was projecting, vegetating, and of a dirty yellowish-grey colour, and was covered by muco-pus, but without any false membrane. This granular wound, in spite of its extent, had remained pliable, and the organs affected were neither deformed nor mutilated.

There are, therefore, two varieties of sporotrichosis of the mucous membranes—an erythemato-ulcerating form and an ulcero-vegetating or papillomatous variety. In the presence of lesions of this kind, which formerly did not even excite suspicions of a possible mycosis, one should always make a cultural test.

Sporotrichosis of the Muscles.—Sporotrichotic gummata may develop in muscle like syphilitic gummata. They may be contemporary with cutaneous and subcutaneous gummata, but there are cases in which a muscular gumma was the sole lesion due to sporotrichosis.

Osteo-articular Sporotrichosis.—The localization of sporotrichosis in the bones and joints has rendered it as much a surgical as a medical disease. The lesions may simulate osteo-periostitis of syphilis or chronic osteo-myelitis. A hypertrophic osteitis may be produced. I have seen an abscess, primarily intra-osseous—a true osseous gumma—which was the only manifestation of sporotrichosis. The lesions were situated almost always on the tibia. Three cases of spontaneous fracture, due to sporotrichosis, are on record. The diagnosis of the lesions which we have just enumerated is easy when they are associated with other local manifestations in situations where one is now accustomed to recognize the disease. It is more difficult when the osteitis is isolated. They may remind one of tuberculosis, of osteomyelitis, and syphilis. But there is generally in the appearance, the situation, the very gradual progress of the lesions, some unusual feature which attracts the attention. One may think, when an intra-osseous lesion is in question, of a metastasis from a malignant tumour, and arrive at the conclusion that there is a cancer latent somewhere. It is therefore necessary to look for the *Sporotrichum beurmanni* in all the varieties of subacute and chronic osteitis.

Sporotrichosis of Synovial Membranes.—Sporotrichotic synovitis may resemble acute micrococcal synovitis, subacute gonococcal synovitis, and chronic tuberculous synovitis. In the presence of every synovitis, acute, subacute, and chronic, one ought now to think systematically of a possible mycotic infection.

Articular Sporotrichosis.—Moure has published an excellent case of hydrarthrosis of the knee of sporotrichotic origin, accompanied by an ascending lymphangitis. In a case of Laudouzy and Gougerot there was osteo-arthritis of the elbow. Nothing indicated clinically the mycotic nature of the lesions. Sporotrichotic osteo-arthritis ought, therefore, to be more common than the small number of cases published would seem to indicate. It is probable that the cases recognized would increase in number if surgeons would look for the mycosis in all cases of arthritis, even in those which appear to them to be most manifestly gonococcal, syphilitic, or tuberculous.

In this way one will avoid performing amputations or resections on patients who, thanks to an exact diagnosis, will have recovered in a few weeks by the simple ingestion of iodine.

Is it necessary to recall the fact that the three cases quoted by Duque, and affected with the sporotrichosis of Schenck, had undergone, in the first two cases, a double amputation of the thigh, while the third had had the forearm amputated; that the patient of Jeanselme and Paul Chevallier, affected by the sporotrichosis of Jeanselme, had undergone an amputation of the thigh for sporotrichotic lesions, and that, in spite of these interventions the affection continued to progress, and was only cured by

potassium iodide? These unfortunate examples demonstrate once more the great practical importance of a diagnosis of this mycosis.

Ocular Sporotrichosis.—The ocular varieties of sporotrichosis are multiple. Conjunctival sporotrichosis is almost always primitive. The injected mucosa is studded with follicular granulations which form little yellow points more or less irregular in contour, and from 1 to 2 mm. in diameter. These are in reality little gummata which may ulcerate. Enlargement of the preauricular gland is the rule, and it generally persists for some time. Inoculation of the lacrymal secretion gives cultures of the sporotrichum and confirms the diagnosis.

Sporotrichosis of the Epididymis.—Suppurative sporotrichotic orchi-epididymitis has been observed twice in man. This localization is frequent in the experimental sporotrichosis of the rat, produced by the intraperitoneal inoculation of the *Sporotrichum beurmanni*, and I have shown along with Gougerot that this experimental orchi-epididymitis could be employed in case of need for the diagnosis of sporotrichosis, as it is for that of the infection of glanders.

Renal Sporotrichosis.—There has been a single observation of sporotrichotic pyelonephritis in a human being while pregnant. The diseased kidney was removed, and cultures revealed a sporotrichum. Some months later the patient had a subcutaneous sporotrichotic gumma.

Pulmonary Sporotrichosis.—Only two conclusive observations on pulmonary sporotrichosis, with bacteriological proofs, have been published. It is self-evident that a positive culture from the sputum of a patient does not indicate a sporotrichotic pulmonary lesion, since the fungus may be a saprophytic parasite of the buccopharynx, and contaminate the sputum secondarily. One must only accept as facts those cases demonstrated by direct culture from the visceral focus implicated.

We know how numerous the known localizations of sporotrichosis already are. My *experimental researches*, made in collaboration with my disciples Gougerot and Vaucher, indicate that these situations ought to be still more varied, and that their number will increase as it becomes the custom to look for the sporotrichum in a systematic manner in the lesions of all the organs.

The Evolution of Sporotrichosis.—The evolution of sporotrichosis is almost always very slow and chronic. The general condition, good or only moderate before the mycotic infection, is slightly modified by it, and the cutaneous, muscular or osseous lesions constitute the whole malady. Each of these lesions remains, as a rule, indolent and "cold" during its whole course. Chronic forms of sporotrichosis are much the most frequent. The period of incubation, which is generally latent, is of very variable duration. In one of our patients it was twenty days, and in another three months.

The onset is slow and insidious. The gummata appear one by one, and one only discovers them by accident. Sometimes even the first nodule precedes by several months the appearance of the other lesions. Sometimes it is short, and the eruption of the gummata takes place simultaneously. The progress is generally slow, and the disease is prolonged for months and years if its nature is not recognized and appropriate treatment applied.

Sporotrichosis with Anæmia and Cachexia.—In certain rare cases the pallor, loss of flesh, and condition of fatigue of the patient show the systemic intoxication of the organism. Cases of death are exceptional, and may be due to the invasion of the larynx or to the number and widespread nature of the lesions, but almost always, when the patient succumbs, death is caused by an intercurrent affection, which is most often tuberculosis, and not by sporotrichosis.

Acute Febrile Sporotrichosis, with Successive Outbreaks.—In exceptional cases sporotrichosis may assume the features of an acute infectious disease. It then resembles a coccal septicæmia, with cutaneous metastases. The lesions appear rapidly and simultaneously. The temperature rises to 38° or 39° C.; there are shivering fits, attacks of nausea, and epistaxis. Each outbreak of gummata probably corresponds to a release into the blood stream of the toxines.

Acute Inflammatory Sporotrichomata.—It may also come to pass that in the course of a sporotrichosis which is following its usual evolution one or two lesions only assume the characters of an acute abscess, in contrast to the other slowly developing gummata which the patient presents. The polymorphism of sporotrichosis is therefore very considerable. Like the bacillus of Koch and the treponema of Schaudinn, the *Sporotrichum beurmanni* can give rise to the most different lesions. We must not, therefore, arrest our investigations at a study of the form of the lesions, but endeavour in every case to find out their prime cause. It was in the thorough study of a difficult case that I discovered the *Sporotrichum beurmanni* for the first time, and it was while subsequently looking for this pathogenic agent in a large number of doubtful cases of different appearance that I established the existence of sporotrichosis.

THE DIAGNOSIS OF SPOROTRICHOSIS.

Clinical Diagnosis.

The resemblance of sporotrichosis to the affections whose appearance it imitates is so great that clinical diagnosis is often a matter of difficulty. The gummatous, disseminated, non-ulcerating variety resembles syphilis, tuberculosis, leprosy, and even lipomatosis. The disseminated, gummatous, ulcerating variety resembles tuberculosis. The chancre and the sporotrichotic lymphangitis resemble tuberculosis, syphilis, ecthyma, and even glanders. Sporotrichotic osteitis has been confounded with tuberculous and coccal osteitis, etc. An acute sporotrichoma may be taken for an acute streptococcal abscess, an acute febrile sporotrichosis for a coccal pyæmia, and we quote only the most striking confusions. The mistakes made in time past must have been innumerable. They were all the more inevitable since sporotrichotic lesions rapidly get well under iodides, as tertiary syphilides do, and since they slowly improve under the influence of syrupus iodotannicus, as cutaneous and osseous tuberculosis does. Clinical diagnosis is, however, often possible, and so early as 1906 I made it in my clinic at the Hospital St. Louis.

The following are the characters which permit us to recognize the manifestations of sporotrichosis:

The large number of lesions, contrasting with the preservation of a good general state of health.

Partial cup-shaped softening of a node, which is at first indurated, and of which the centre breaks down.

Slight ulceration, which enlarges secondarily.

Irregular and violaceous edges, almost always undermined, covering subcutaneous recesses, in which pus accumulates.

The contrast between the small area of the ulceration and the size of the gumma from which it arises.

The co-existence of several contiguous ulcerations, separated by a slender bridge of violaceous skin, over one and the same gumma.

Viscous pus, or lemon-yellow serous discharge.

The ease with which autoinoculation occurs.

"Cold" and indolent evolution.

The cicatrization of the skin, in spite of the persistence of an abscess under the cicatrix.

Smooth elastic cicatrices, with irregular edges, and often with denticulation of badly attached cutaneous tags surrounded by a brown pigmented area.

The constant absence of enlarged glands.

If a patient in whom such symptoms have made one suspect sporotrichosis recovers very rapidly under iodine treatment, local and general, the diagnosis is almost certain, and the physician may finally content himself with this clinical quasi-certainty.

Up till now, however, I have only accepted as genuine cases those in which the sporotrichum has been demonstrated bacteriologically. Moreover, the bacteriological diagnosis is so simple, even in the absence of a laboratory, that one can and ought always to make it.

Bacteriological Diagnosis.

Direct examination for the parasite in the pus, and in pieces removed for biopsy, which, at a first glance, would seem to be the most simple and rapid method, is tedious and difficult, for most often the parasites are scarce, and when one discovers the short oblong forms which they assume *in vivo*, one has difficulty in distinguishing them from the débris of broken down leucocytes, or red corpuscles, or degenerated protoplasm. If, as a rule, these parasites are Gram-positive, more often still in man they

have no special selective affinities for dyes, and they are reduced to an "unstainable shadow," acidophile, and which does not stand out in contrast with the rest of the preparation. This direct examination for the parasite is not a practical procedure, but it is wrong to say, as some have made out, that one cannot discover the parasite by direct examination of the pus.

Inoculation is an exceptional diagnostic procedure. It can hardly do more than prove the pathogenic *rôle* of the fungus cultivated. The inoculation is made into the peritoneal cavity of the mouse, or, better, of the male white rat. Shortly after the inoculation a characteristic orchitis develops, in the lesions of which the parasite is very abundant, and very easy to recognize by direct examination and by culture.

1. Culture in the cold on glucose peptone gelatine is the first procedure to which one should always have recourse. My researches with Gougerot have established the principles of the technique of cultivating in the cold on glucose peptone gelatine, by the adoption for sporotrichosis of the results of the brilliant researches of Sabouraud on ringworm. This method of diagnosing sporotrichosis, which is universally adopted to-day, and to which we have been asked to give our names, has placed within the reach of every practitioner, even at a distance from a laboratory, and not provided with a microscope or incubator, the exact diagnosis of sporotrichosis.

The technique is of the simplest.

After washing the skin with tincture of iodine, the closed lesions are punctured with a Pravaz syringe, armed with a long needle, and free from all traces of antiseptics.

In the case of an ulcerated lesion the pus is aspirated into a sterile pipette, without washing or the previous use of any antiseptic. The ulceration having been evacuated is then washed with boiled water. After kneading the ulcer it is of advantage to take a further supply of serum, which should be inoculated into a fresh tube.

The fluids collected are poured over the surface of three tubes of glucose peptone gelatine with the syringe or pipette. The inoculation ought to be a copious one. It ought to amount to at least half a cubic centimetre of pus, and, if it can be managed, a full cubic centimetre in each of the three tubes. The inoculated tubes should be placed erect in such a way that the pus or water of condensation will not wet the cotton-wool with which the tube is closed. It is not necessary to close the tube with an india-rubber cap. The tubes, without rubber caps, are left at the temperature of a room which in winter should as far as possible be warmed, and kept away from the vapour of formalin and other antiseptic agents. The incubator does harm, and should not be employed.

From the fourth to the twelfth day, according to the temperature of the room, the colonies of sporotrichum develop, at first as white, then brownish, then chocolate-brown colonies. They are quite characteristic, in virtue of their colour, and their folds, which are analogous to the folding of the cerebral convolutions, and by the areola which surrounds them. The macroscopic appearance of the culture on glucose peptone gelatine is in itself pathognomonic, without it being necessary to make any microscopical preparation.

It is sufficient once to have seen a culture of the *Sporotrichum beurmanni* to recognize it immediately. It is not necessary to have any special bacteriological knowledge. One can hasten the diagnosis by the artifice of flowing the pus on to the dry glass.

On the day on which the tubes are inoculated it is enough to let a large drop of the pus flow into each of the grooves which are formed at the point of junction of the wall of the tube and the medium, and also on the glass opposite the medium. From the second day onward, without making any preparation, we examine with the microscope, through the wall of the tube, the nascent colonies in all of these grooves. The oblong sporotrichum swells and grows. It sends out filamentous, hyaline prolongations over the wall of the tube. From the fourth day there is formed a parasitic star, more or less ramified, and corolla-like. If one can see these filamentous forms, which are not slow to sporulate, the diagnosis is assured.

2. A second technique is the mycotic sero-diagnosis of Widal and Abrami. Sero-diagnosis is a general method which is applicable not only to the diagnosis of sporotrichosis, but also to that of actinomycosis, and allied mycoses, hemisporosis, etc. It allows us to make an immediate diagnosis the very day we examine the patient, while the cultural method requires several days to give any response. It also allows us to make a diagnosis in a case in which direct examination and culture do not give us any definite result, or in which they cannot be carried out in consequence of the situation of the focus of infection. This method, less simple and less easy than culture in the cold, may still be of great service.

Sero-diagnosis makes use of two techniques:

1. Sporo-agglutination.
2. Mycotic reaction of fixation.

It requires a small laboratory.

1. The technique of sporo-agglutination is that of Widal's sero-diagnosis of typhoid fever. The sole difference is in the preparation of the microbic emulsion, which, in this case, is a homogeneous emulsion of *Sporotrichum beurmanni*, filtered in such a way as to contain only free spores. Marked sporo-agglutination confirms the diagnosis. In practice only the serums of sporotrichotic patients agglutinate at high dilutions—1 in 400 to 1 in 500 on an average.

Sporo-agglutination permits not only the diagnosis of sporotrichosis in the active state, but also the retrospective diagnosis of sporotrichosis. We should bear in mind that the serum of patients affected with other mycoses can agglutinate the spores of the sporotrichum, but at more feeble dilutions than the serum of sporotrichotics, so that these agglutinations do not hinder the diagnosis of sporotrichosis, but serve on the contrary for the diagnosis of a whole group of mycoses, actinomycoses, etc. Even the simple bearers of saprophytic yeasts may react.

2. Mycotic reaction of fixation. Its general technique is that of all the reactions of fixation of Bordet and Gengou, the only particular point being the preparation of the antigen, for which one can utilize all the cultures of the sporotrichum.

The serum of patients affected with certain mycoses (aspergillosis, tinea) does not give fixation of complement with the *Sporotrichum beurmanni* as antigen. On the other hand, the serum of patients affected with actinomycosis, thrush, hemisporosis, discomycosis, gives reactions as strong as the serum of sporotrichotic patients. The reaction of fixation can therefore only give the general diagnosis of mycosis. Its results are less precise than those of sporo-agglutination, but the two procedures lend each other a mutual control.

3. A third technique is the sporotrichotic intradermic reaction. It was discovered by Bruno Bloch of Basle.

Sporotrichosine, prepared and titrated according to our instructions, is a sterilized emulsion of *Sporotrichum beurmanni* in physiological saline. Its injection is, therefore, perfectly harmless. With a Pravaz syringe, about two drops of sporotrichosine are injected into the thickness of the skin of the forearm. In patients with sporotrichosis there is, after the twenty fourth, and especially about the forty-eighth hour, a very decided reaction. To be positive, there should be produced an indurated nodule of at least 5 mm. in diameter, with a broad, reddish oedematous areola, measuring 3 to 7 cm. in diameter.

The indications given by the intradermal reaction must be discussed. A negative reaction permits us to eliminate sporotrichosis. A positive reaction may indicate the diagnosis of sporotrichosis, but never enables us to affirm it with certainty, for it may be positive in patients whose cutaneous lesions are not sporotrichotic. The patient who gives the reaction may be simply a sporotrichum carrier, without sporotrichotic lesions. He may be affected by another mycosis; he may be simply a myco-carrier, and it may even be impossible to discover any fungus about him.

The intradermic reaction can, therefore, only act as an aid in clearing up the diagnosis. It deserves to be employed because of its simplicity, but it cannot be substituted either for sporo-agglutination, or for the fixation reaction of Widal and Abrami, or, above all, for the culture in the cold on glucose peptone gelatine of Sabouraud, in accordance with our technique. This method, which requires neither laboratory nor special knowledge, is that to which we should always have recourse when we suspect sporotrichosis.

Prognosis and Treatment.

When the physician who is acquainted with sporotrichosis has thought of this affection in examining a

doubtful case, when the clinical examination has led him to believe that he has to deal with this affection, and when culture in the cold on glucose peptone gelatine, supported as required by other bacteriological procedures, has confirmed the diagnosis, recovery is as a rule only a matter of days.

As I have pointed out ever since 1906, the evolution and prognosis of sporotrichosis are almost entirely bound up in the diagnosis: the indication is iodide treatment, general and local, and its action is marvellous.

A sporotrichosis undiagnosed lasts, as a rule, for an indefinite period, unless the physician prescribes potassium iodide on the hypothesis that the case is syphilis, or unless he treats the patient by means of syrupus iodo-tannicus, by syrup of the iodide of iron, and by local applications of tincture of iodine to combat a so-called tuberculosis.

A diagnosed sporotrichosis is almost always a very benign affection, which is readily cured in four to eight weeks. The only exceptions to this general rule are furnished by those cases in which the sporotrichum has invaded the mucous membranes of the pharynx and the upper air passages; by those in which the mycosis develops on a cachectic soil, and in particular on a tuberculous soil; and finally by those patients who are intolerant of the iodides.

These cases apart, the treatment of sporotrichosis is very simple. Potassium iodide should be administered internally in increasing doses, as high as 6 grams a day and even more, and the local lesions should be dressed with a weak iodo-iodide solution—Aquae 500 grams, pot. iod. 10 grams, iodi 1 gram. Finally the ulcerated points should be cauterized with tincture of iodine. The prolongation of general treatment for a month after complete apparent recovery is indispensable to prevent relapse and recurrences. When the patients are partially intolerant of iodides, one gives by the mouth the maximum tolerated dose of iodide, lessening the inconvenience of the remedy by the classic artifices of a milk diet, bitters, belladonna, etc., and one completes the dose by using iodide washes. When patients are completely intolerant of the iodides, the succedaneous iodides should be tried; the albuminous iodides—iodo-maisine, sajodin, etc.—by the mouth, and iodine oils, lipiodol, iodipin, etc., in intramuscular injections.

Incision of the abscess is harmful, and surgical treatment—total excision, curetting, destruction by the thermo-cautery, ought never to be employed except in the very rare cases in which the iodo-iodide treatment is impossible.

The physician who knows how to recognize sporotrichosis has, therefore, not only the satisfaction of making an exact and incontestable diagnosis, but he has the much greater satisfaction of being able to reassure his patient as to the future and of prescribing for him a treatment which will cure him with certainty in a few weeks.

THE TREATMENT OF NAEVI, BASED ON MORE THAN TWO THOUSAND CASES.

By J. L. BUNCH, D.Sc., M.D., M.R.C.P.,

Physician in Charge of the Skin Department, Queen's Hospital for Children, late Research Scholar of the British Medical Association.

During the past five years I have treated a large number of naevi, especially at the Queen's Hospital for Children, where more in-patients are annually admitted and more out-patients seen than at any other children's hospital in London, the number of new out-patients last year being well over 32,000.

The older methods of treatment of naevi are well known—excision, the application of caustics, vaccination at the site of the naevus, electrolysis, the cautery, and, more recently, radium and radio-therapy. For certain forms of naevus, in which the naevoid element co-exists with a large amount of lipomatous tissue, the so-called naevo-lipomata, excision is still the quickest and perhaps not an unsatisfactory method of treatment, especially when the swelling is situated elsewhere than on the face, and a linear scar is no disfigurement. If the stitches are removed on the third or fourth day the resulting scar is very slight, and after a few months becomes more or less inappreciable. Caustics, such as nitric acid, I never now employ, nor do I think that it is justifiable to recommend vaccination, since it is impossible to regulate the extent or the character of the resulting scar. Electrolysis is especially suitable for small stellate naevi in adults, who either for reasons of business or pleasure object to any sore place on their face, even for a few days. In such patients it is quite possible to destroy a stellate naevus the size of a small coin at several sittings without causing any even temporary disfigurement which cannot be hidden by a little boracic powder so completely that it will not be noticed. Electrolysis is also well suited for those cases of deep cavernous angiomata which are situated beneath the skin, and cause either no discoloration of the skin, in spite of the swelling, or only a slight purplish tint (of the overlying skin). Electrolysis by means of a bipolar electrode will cause very marked diminution or even disappearance of such tumours, with only small scars where the needles were inserted, and the purplish discoloration on the surface can be removed by other means. I have, however, seen keloid, or rather hypertrophic scarring, follow at the point of insertion of the electrodes, with somewhat unsightly results. This seems more likely to occur when the needles are not coated with shellac to within a short distance of the point.

The cautery I used to employ in a considerable number of cases, but when the naevus is of any considerable size, and presents a raised, red, angiomatous swelling, it is difficult to regulate the heat so that the glowing point does not cut into a biggish vessel or blood space, and cause haemorrhage, which delays the operator and is seldom of benefit to a patient only a few days or weeks old. In the case of small pigmented naevi this trouble does not, of course, arise, and the cautery is for them both rapid and efficacious.

If it is thought necessary to use a local anaesthetic before employing the cautery, I would strongly recommend the subcutaneous injection of eusemin, adrenalin and eucaine, or some such substance, in preference to the use of ethyl chloride, at any rate of some brands, for I have seen a patient's head enveloped in flames when the cautery was used after a naevus on the face had been frozen in this way.

Radio-therapy has been recommended by some dermatologists, but a single dose of x rays sufficient to obliterate a naevus is occasionally followed by ulceration, and repeated doses, used as they sometimes are for intractable port-wine stains on the face, are very likely to lead to disfiguring telangiectases, even if they improve the naevoid condition. Kromayer's quartz lamp has not proved very successful in my hands. It should be applied quite close to the face for ten minutes, and some hours after the application the naevus becomes markedly inflamed and erythematous. Under cooling dressings this condition disappears in about ten days or a fortnight, and the vessels, which have probably thrombosed, tend to shrink and disappear, leaving in favourable cases a condition of the skin which is much paler and whiter than before treatment.

Radium treatment of naevi has the disadvantage of being costly, but with a plaque of two million activity, or even half this activity, some excellent results may be obtained in the case of port-wine stains. Unfortunately, the naevus of this type is usually very large relatively to the size of the radium applicator, and therefore a very lengthy treatment is necessary in order to produce a satisfactory result. For raised angiomata, radium treatment is inferior to the methods of which I am about to speak.

Without question the greatest advance during recent years in the treatment of naevi has been the introduction as therapeutic agents of solid carbon dioxide and liquid air. For rapidity of action, effectiveness, comparative painlessness and cheapness, it will be a long time before we find anything better for treating both superficial and deep naevi, and a somewhat prolonged acquaintance with their use tends to emphasize rather their capabilities than their limitations. The great majority of cases which I have treated have been children, many of them only a few weeks old, and in such patients the painlessness and rapidity of any method is of great importance. The application is of course cold, and a tiny baby will probably cry, but I doubt if it feels any definite pain, and older children will talk and laugh while they are having several naevi, warts, or lupus nodules treated by this method. They say there is some feeling of burning or smarting while the tissues are thawing, but this soon passes off.

When a well-marked, definitely-raised, and circumscribed angioma has to be treated, a single application is seldom sufficient, and I very much prefer to do too little at a first application rather than too much, especially if an eyelid or the buccal mucous membrane is involved. But even if several applications are necessary, it must be remembered that the inconvenience to the patient is very slight, no anaesthetic is necessary, and no dressings beyond some boracic powder or zinc ointment are required. For naevi on the face there is no question that this method is far preferable to any surgical operation; for naevi on the trunk and limbs it might be said that excision is equally good and that the scar does not matter, but I have seen a considerable number of such scars in which naevoid tissue has been left or has recurred, and where either a further excision or treatment by solid carbon dioxide or radium was necessary.

The application to the skin of either liquid air or solid carbon dioxide for a few seconds causes a preliminary freezing of the tissues followed by a well-marked inflammatory reaction, which, according to its intensity, may result only in thrombosis of the superficial vessels and fibro-plastic sclerosis of the epidermal tissues, or any stage between this and complete necrosis. The action differs from that of the cautery or a caustic in that all the tissue elements frozen are not indiscriminately destroyed, and the resulting scarring is, owing to the gradual transformation of the tissue elements into fine fibrous tissue, much more supple and inconspicuous than when these other methods of treatment are employed. Moreover, the exact amount of inflammatory reaction can be controlled, both as regards extent and depth.

There is little appreciable difference in the nature of the inflammatory reaction produced by liquid air and solid carbon dioxide, but inasmuch as the former is very much colder, it can produce the same reaction in a considerably shorter time, and a larger area can be frozen with a single application. In the liquid state air occupies $\frac{1}{800}$ part of its ordinary volume; in other words, if liquid air be vaporized it will expand 800 times, and as the more volatile nitrogen evaporates the temperature rises and the almost colourless liquid assumes a bluish tint—the colour of liquid oxygen—which remains until all the liquid has vaporized. Liquid air boils at −190° C., so its use is especially adapted to those cases where a maximum rapidity of action is necessary and the maximum degree of cold is required in the minimum time. The results obtained in America by Trimble and Dade, Hartzell, Hubbard and others, have caused a large amount of attention to be paid to its possibilities as a therapeutic agent in skin diseases, and have shown how large a field is open for its use. The late Dr. Radcliffe Crocker was the first in this country to show cases successfully treated with liquid air, and, as his assistant, I had the opportunity of watching his results, and during the past five years I have treated a number of cases of angiomata and other skin affections with liquid air. Liquid air is, of course, a fluid which evaporates with great rapidity when exposed to the atmosphere, and it must therefore be contained in a Dewar flask, but in such a flask it can be transported anywhere and remains practically unchanged for many hours. But, inasmuch as it is a fluid, it is not so easy to apply it exactly to a small area; it cannot of course be sprayed on the lesion and it must not be allowed to touch healthy skin. The best way to apply it is to make a swab of absorbent cotton of the same size as the naevus, to attach it to the end of a stick of wood and dip it in the flask of liquid air. The liquid air has a temperature of 190° C. below zero, so freezing of the skin is very rapid. Its action can be regulated both by the time of application and the amount of pressure employed. For a capillary naevus or a port-wine stain firm pressure for five to seven seconds is sufficient, for cavernous angiomata nine to ten seconds is usually necessary. Lupus vulgaris, chronic patches of eczema, or lichen planus can be treated in the same way, and excellent results can be obtained in cases of lupus erythematosus. Naevi often require more than one application; indeed, it is wise to do too little rather than too much, and to be content, in the case of a port-wine stain, with a moderate diminution of the colour after each application of the liquid air. There are unfortunately port-wine stains the colour of which is so intense and which involve the deeper tissues to such an extent that no method at present at our disposal is capable of doing more than diminish the disfigurement without running the danger of unsightly scarring.

Unless several cases can be treated on the same day the expense is quite appreciable, as liquid air costs 15s. a flask, in addition to the cost of a special messenger from the factory. When the naevus is not large and rapidity of freezing is not of importance, a much cheaper method is to use solid carbon dioxide, and this has lately been very extensively employed, not only for naevi, but also for many other skin lesions. The temperature of solid carbon dioxide is only −78.2° C., as compared with −190° C. for liquid air, if not nearly so cold, it can be much more easily handled, it can be made into sticks of any shape to fit a naevus, and it can be prepared rapidly without any special skill being required. A large cylinder of the gas can be bought for a few shillings and will last a long time, or quite small cylinders can be obtained for preparing the substance at a patient's house.

The chief essental about the stick of carbon dioxide when ready for use is that it shall be very hard; in my opinion it should be so hard that it sinks in water, and it can then be cut or moulded to a point so fine that a naevus no bigger than a pin's head can be frozen and removed without any involvement of healthy skin. Naevi of the size of a florin can similarly be treated with a single application, and any lesion between these sizes, however irregular in shape. For larger lesions, two or more applications, approximating but not overlapping, are necessary, and it is then best to use a square stick in order to secure accurate co-aptation of adjoining areas. I find it convenient to have a second smaller stick, pointed at one end, ready to apply to the peripheal irregularities of any naevus larger than an inch in diameter. I make a practice of freezing right up to the edge of the naevus, or even $\frac{1}{16}$ in. beyond it, for nothing is more tedious than having afterwards to go all round the periphery with a fine point, destroying small portions which have been missed at the first freezing. The immediate effect of the application is to make the skin perfectly hard and white, depressed below the surrounding skin proportionately to the amount of pressure which has been applied. This pressure must not, when soft parts underlie the angioma, be greater than that required to press the blood out of the surrounding vessels, and the surface of the skin must be held as tense as possible during the application; where bone immediately underlies the lesion, somewhat firmer pressure may be made, remembering that the depth frozen depends, other factors being the same, upon the amount of pressure applied.

The duration of the freezing necessary can only be estimated from previous experience. In a baby a few days or weeks old a very much shorter time will suffice than in an adult. I find that a second freezing of, say, ten seconds after the tissues have thawed out will produce a greater effect than one continuous freezing of twenty seconds, but in warty growths it is sometimes necessary to give as much as two consecutive freezings of sixty seconds each before a sufficient reaction is produced. The time required for thawing is rather longer than that for freezing; the skin then feels firmer, due to secondary hyperaemia and extravasation of serum, and within an hour or two a vesicle or bulla forms. Unless the application has been extremely short, this vesicle does not become absorbed, and if not repeatedly punctured with aseptic precautions and drained it becomes infected. If possible, therefore, the fluid should be evacuated aseptically each time the bulla fills up, and a pad of sterilized cotton-wool is, under such circumstances, all the dressing required. When, however, such draining cannot be carried out efficiently, a dressing of zinc ointment should be applied until the scab comes away. This takes place in about ten days, and a delicate, smooth and supple cicatrix forms, which is at first pink, but later becomes paler and paler, until it is almost invisible. The resulting scar may at first be slightly depressed below the level of the surrounding skin, according to the nature of the lesion which has been treated and the extent of the freezing, but the scar becomes finally of the same tint as the healthy skin, equally soft and practically inconspicuous.

In the case of cavernous and pigmented hairy naevi and raised localized angiomata, excellent results are also obtained, but more than one application is usually necessary,

and the scar, although delicate in texture and supple, is more conspicuous in proportion to the depth and extent of the original lesion and the number of applications made.

During the past two years and a half I have treated over 2,000 naevi by solid carbon dioxide, apart from other skin diseases. For stellate, capillary, cavernous, and flat pigmented naevi the method is excellent, and gives most satisfactory results. For linear naevus and naevus verrucosus, where there is much thickening and warty growth, it is not so good, but these cases are, of course, very rare. For port-wine stains (*taches de feu*) it depends how far the corium and underlying structures are involved; the most unsatisfactory cases are port-wine stains with a nodular, irregular surface and warty projections, and for these there is no really satisfactory method of treatment. But for the vast majority of naevi there is no more effective, satisfactory, and painless remedy, nor one which gives such uniformly good results.

DISCUSSION.

Dr. STOPFORD-TAYLOR (Liverpool) considered liquid air of much utility in many forms of naevi. When CO_2 was used, he had noted the occurrence of erythematous rings around the moles treated, but did not know whether these occurred more commonly in children than in adults, nor how long they persisted.

Dr. BARENDT (Liverpool), when dealing with pigmented moles, preferred electrolysis; mere removal of the hairs sufficed.

Dr. GOODWIN TOMKINSON (Glasgow) had found CO_2 useful in the treatment of naevus verrucosus.

Dr. SAVATARD (Manchester) had found radium useful in many cases.

Dr. W. A. LOXTON (Birmingham) raised the question of whether the use of CO_2 diminished or increased a certain tendency towards malignancy that pigmented moles admittedly exhibited at times.

Dr. MACKENNA (Liverpool) said he had tried CO_2 in dealing with port-wine stains, but found it useless.

Dr. BUNCH, in his reply, said that the formation of the erythematous ring mentioned could be avoided by using small repeated doses instead of one large dose, but he had not often seen the ring at all. The time that had elapsed since carbonic acid snow was first used was too short to allow of any statement as to its influence on malignancy being made.

TYPES OF DERMATITIS SEBORRHOEICA.

By G. G. S. STOPFORD-TAYLOR, M.D.Durh.,
Physician, Liverpool Skin Hospital.

No single word in dermatology has been responsible for so much confusion of ideas and such pathological errors as "seborrhoea." I am inclined to think that if the word had never come into use our conceptions of many of the inflammatory dermatoses would not to-day have been in a condition which borders on chaos.

A seborrhoeic skin is a greasy skin, due to an admixture of the secretions from the sebaceous and coil glands. Seborrhoea is a functional disorder which may be aggravated possibly by micro-organisms which I believe to be secondary and not causative.

Let us consider for a moment the causes of a greasy or seborrhoeic skin.

1. There is the structurally seborrhoeic skin. (Congenital.)
2. Puberty, an age at which, simultaneously with the awakening into activity of other glandular functions, there is an increase in the activity of the glands of the skin.
3. [illegible] seen in diseases associated with embarrassment of the circulation, as in pulmonary disease. (*b*) Plethora, as in the engorgement of the circulation in the full [illegible] seen as in the free liver.

A seborrhoeic skin forms a suitable home for the development of the organisms found naturally in the skin, and these not only irritate it, but invade the glands and excite them to further activity. Inflammation is the result of repeated or long-continued irritation; yet we hesitate to speak of inflammation of the integument until its clinical signs are apparent. Thus, pityriasis capitis is non-inflammatory. A degree of pityriasis capitis is common to most people. Are we to assume, therefore, that because a patient is suffering from dandruff all coexisting skin affections are dependent upon his scurfy head? And yet we have witnessed at the same time, and in the same patient, an eczema affecting the suboccipital region and lichenoid or papular seborrhoea over the sternum. The association of these conditions is incontestable, but are there not other factors at work?

Let me illustrate. The infant brought to us suffering from a dry and scaly eczema of the scalp and a red and weeping condition of the face—are the repeated irritating applications of a caustic solution, such as soap, to be exonerated and seborrhoea substituted as a cause?

It is admitted by those who know best that the etiology of psoriasis is unknown. When a patient presents himself for treatment must we conclude that seborrhoea is a cause of psoriasis because he has a seborrhoea capitis?

Seborrhoeic Dermatitis.

I have purposely omitted the so-called seborrhoeic eczema and seborrhoeic psoriasis because of the confusion the term "seborrhoea" has created. The same prominence is now given to seborrhoea as a cause of skin affections as was given to gout twenty or thirty years ago.

In our works of pathology of the skin the only pathological difference between psoriasis and seborrhoeic dermatitis is one of oedema. They are both types of inflammation with imperfect cornification, or, in other words, secondary changes in the epidermis.

Treatment.

The disease may be roughly divided into two classes—namely, acute and chronic. Whilst soothing remedies are suitable for the former, stimulant remedies such as sulphur speedily cure the latter.

Cases.

[The author then related a number of cases of seborrhoeic dermatitis psoriasiformis and seborrhoeic dermatitis lichenoides, types which admit of very little, if any, variation during their course, so that little exception could be taken to the nomenclature.

The following is a list of the photographs shown:

1 and 2. Seborrhoea lichenoides. The eruption in this type of disease is essentially papular. The papules may be discrete, arranged linearly, in clusters, or forming circles or segments of circles, but they are not scaly and in no wise enclosed fawn-coloured areas. The attack was acute, and affected upper half of chest and upper arms and shoulders and back as low down as the inferior angles of the scapulae.

3. The eruption in this case is particularly well marked, the papules being discrete or arranged linearly. In the latter the arrangement appears to follow the direction of the lines of cleavage, the papules appearing on the ridges and corresponding to the openings of the sweat or coil glands. The patient was a particularly hairy individual and had a very greasy skin.

4. The papules are arranged in clusters, and discretely. Many are perifollicular, the pores being quite visible.

5 and 6. Discrete and clustered papular eruption affecting the trunk, front, and back. On the back it will be observed that the eruption presents a triangular arrangement with the base upwards. On the front the eruption is most in evidence at the base of the neck and in the groins.

7 and 8. (7) A greasy papular eruption arranged in disc-like forms in front of the chest; and (8) on the shoulders on a more extensive scale, forming several large, irregular, but well-marginated, greasy and scaly areas. This patient volunteered the statement that, although the eruption had troubled him for years, it was always worse when he had an unusual amount of dandruff.

9 and 10. Another patient with a disc-like arrangement of papules in the sternal and interscapular regions, especially greasy.

11 and 12. A papular eruption on the leg assuming ring-like form and clearing in the centre. This is an unusual position for a seborrhoeic dermatitis. The other parts of the body were free.

13. In this case the lesions are for the most part annular. In the middle line and towards the shoulder-joints the rings have become merged into one another, forming large geographical or map-like areas.

14. Shows the back of the same patient. In this the eruption is almost entirely confined to the convexity of the ribs, as if

some other irritant had played a part, to wit, coarse and unwashed flannel.

15. In this case the eruption is for the most part annular, beginning in the spinal region, and then spreading outwards over the convexity of the ribs. The rings in the middle line have also merged into one another, forming map-like areas.

16. A similar case to the former but not so extensive.

17. Annular seborrhoeide. In this you will perceive that the eruption is almost entirely confined to the face, neck, and upper chest. This type is extremely uncommon on the face, and partakes of the appearance of syphilis.

18. Full face of the same patient.

19. In this the eruption is arranged in clusters, but the shoulders and upper part of the back had been irritated by friction with sulphur ointment, so that the disease had lost its distinctive appearance, a dermatitis medicamentosa having taken its place.

20. This type is distinctly papulo-squamous, with a tendency to ring formation. It occurred in a female child.

21. A psoriasiform type of disease which may be considered very rare. A curious arrangement is seen in the eruption following the convexity of the ribs.

22. In this case we have both types of the disease shown, a psoriasiform eruption on the trunk, and a papular eruption over the hips, and a psoriasiform arrangement on the thighs and legs. I have never seen anything like this before.

23. A typical psoriasis affecting for the most part the interscapular region. I have shown this photograph to contrast the different appearances of psoriasis and seborrhoeic dermatitis annularis. The cause of both diseases is unknown.

DISCUSSION.

Dr. Bunch (London) discussed the difficulties of drawing a sharp line between seborrhoeic dermatitis and seborrhoeic eczema, and between seborrhoea and psoriasis.

Dr. Savatard (Manchester) thought that the scalp was invariably implicated in all cases of seborrhoeic dermatitis, and that for this reason it should invariably be included in the treatment.

Dr. Stopford-Taylor replied.

A RATIONAL METHOD OF TREATING SYPHILIS.

By J. E. R. McDonagh, F.R.C.S.

This paper is intended as a plea for a rational treatment of one of the most important diseases which affects mankind. Our shortcomings in the treatment of disease are due to the fact that we pay more attention to the curing of symptoms than we do to eradicating the cause thereof, with the result that if the symptoms reappear we regard such as a fresh attack of the disease rather than a recurrence of the primary infection. How often do we hear that a man has had several attacks of influenza, or again of gonorrhoea! Concerning influenza I am not entitled to speak, but with gonorrhoea the greater percentage of so-called fresh attacks are undoubted recurrences of the primary infection, which we have failed to cure; and no doubt a like analogy exists in the case of influenza. With syphilis we used to go a little further in that we recognized that fresh outbreaks meant recurrences and not fresh attacks. We were not content with the mere disappearance of symptoms, but we advised our patients to take treatment for two to three years, assuring them that if they did so they would be cured of their disease. Men who have had lifelong experience with this method of treatment inform us that over 90 per cent. of cases were really cured.

Now let us think for a moment how a cure was estimated. It was estimated either by the absence of cutaneous manifestations or by the absence of signs typical of a recognized defect—for instance, unequal pupils, loss of knee-jerks, etc. Signs such as just described often point to the defect being a gross one upon which treatment will have little effect, showing that degenerative changes have been going on over a very extended period, which our senses were not trained enough to recognize. As our clinical knowledge increased we became every day more alive to signs dependent upon an old syphilitic infection which were unknown to the old observers; in other words, the sequelae of syphilis have multiplied since the days of Ricord, Fournier, Hutchinson, and others, whose statistics of cures are being continually brought forward, as if they had the same value to-day as when they were first published. Furthermore, no man is capable of diagnosing insidious vascular changes, which lead too often to an untimely death from hemiplegia, aneurysm, etc. Therefore, from clinical evidence alone we were not and never are justified in pronouncing a case cured. Our knowledge concerning late syphilis, apart from our better clinical methods, has had much light thrown upon it by the important serological test which is known as the Wassermann reaction. This test has enabled us to ascertain within certain limits whether a patient is cured or not, and we can use it as a means to regulate our treatment.

In the light of our present knowledge we regard a positive Wassermann reaction as indicating active syphilis. Taking this for the moment to be correct, and putting the test into practice, we find that a large percentage of cases of the so-called cures after mercury give a positive reaction. The minority give a negative, but are we to conclude that such cases are cured? Unfortunately not, since a negative reaction by itself can never more than signify that we are dealing with a latent stage of the disease, or in other words that the spirochaetes are not active enough to cause the formation of a reacting substance, the so-called reagin upon the presence of which a positive Wassermann reaction depends. The position is further complicated by the fact that certain active syphilitic conditions are known for the poor production of reagin which occurs, and which therefore give a negative reaction. The conditions responsible for this are syphilitic infections of the vessels, giving rise clinically to arteriosclerosis with its sequelae aneurysm, hemiplegia, etc., and cerebro-spinal syphilis.

A patient the subject of cerebro-spinal syphilis most frequently seeks advice for headaches which have resisted ordinary treatment. If the patient has had syphilis a Wassermann test is advised, which is not infrequently negative, so the patient may not be treated with antispecific remedies. In such a case an examination of the cerebro-spinal fluid is essential. The following is an illustrative case.

A patient was sent to me for a Wassermann test, which turned out to be negative. His symptoms were persistent headaches, which he had for three years. He had been obliged to give up his work owing to their severity, and he had spent a small fortune on drugs, spas, electrical treatment, and what not, all without avail. The patient had had syphilis six years previously, for which he took treatment regularly for the three prescribed years. An examination of the cerebro-spinal fluid revealed a slight lymphocytosis, slight positive Nonne-Apelt, and a positive Wassermann reaction. The headaches immediately disappeared under salvarsan.

So much for one explanation of a negative Wassermann reaction. Now for another. Antisyphilitic remedies are parasiticidal; should they be employed in too small doses to kill all the organisms, those organisms remaining are crippled or rendered for the time being inactive. So long as the organisms are dormant, the host has no need to form resisting bodies, with the result that the Wassermann reaction becomes negative, and the patient is in the latent stage. To my mind the latent stage of syphilis is extremely important, since the patient, imagining himself cured, may act as he would otherwise not have done—for instance, marry, and then at the critical moment become actively syphilitic again, infect his wife, and thereby run the risk of having syphilitic children.

Furthermore, there is clinical evidence that a patient in the latent stage may be infectious; one need only mention the numerous cases of women with a negative Wassermann reaction who give birth to syphilitic children with not only a positive Wassermann reaction, but with symptoms of the disease. While on the subject of the significance of a negative Wassermann reaction, mention must be made of the few cases which give a negative reaction in spite of active symptoms. This phenomenon is more commonly met with in syphilitic recurrences than during the stage of the primary general infection, and may be accounted for either by the fact that an antireagin substance has been produced, or that the organisms have become serum-fast.

The latter occurrence would explain why the phenomenon is more commonly met with during the recurrent stage, because protozoa go through stages in the body

from which a new race ultimately springs. This new race can probably inherit a strong resisting power, not only against the host (serum) on which it is parasitic, but also against the remedies used to destroy it. It is well known how much harder it is to cure a patient in the recurrent stage than in the primary stage of general infection, although the number of organisms present must be fewer by millions, otherwise why is it so difficult to find spirochaetes in a gumma? The new race or races become mercury and arsenic fast. Bearing this in mind, do you not see how important it is not only to start your treatment early, but also not to let go of it before your patient is absolutely cured?

Passing on now to treatment, I would like to open with the question, How often is the individual case taken into account? You have all noticed how excellently some of your cases responded to mercury and how intractable others were, and how free of symptoms some patients were, and vice versa, but nevertheless it was three years for all alike.

Some people are no doubt immune to syphilis, others nearly immune, and so on, consequently every case must be treated individually, and no laws made as to how many injections are necessary for such and such a case and such and such a stage.

I saw a patient three years ago with a primary sore on the corona, from which I obtained spirochaetes. I advised him to undergo mercurial treatment, but being annoyed at being told he had syphilis he left me, and I did not see him again for eighteen months, when he consulted me for a similar sore he had on the opposite side of the corona; in the meantime he had taken no treatment. The sore developed after the usual incubation period, and from it I obtained spirochaetes in abundance. On both occasions the Wassermann reaction was negative. After one intravenous injection of salvarsan the sore rapidly disappeared; the patient has developed no symptoms since, and the Wassermann reaction has always been negative. Take, again, two cases in the early secondary stage, with symptoms, period from infection the same—the one will require four injections of salvarsan, while the other will need eight.

I have recently had two cases with gummata on the forehead, other factors the same as far as I could judge. With the one I obtained a negative Wassermann reaction after four injections of salvarsan, and with the other the reaction was still positive even after the tenth. Both had ten intramuscular injections of grey oil.

So much for the inability of being able to estimate how much treatment is required beforehand. Now let us pass on to discuss how we can distinguish a latent syphilitic from a cured one, and how we can estimate the amount of treatment requisite for each individual case. The fact was noticed by several observers that a patient with a primary sore and a negative Wassermann reaction not infrequently gave a positive reaction a week after an injection of salvarsan. Then it struck Gennerich of Kiel and Milian of Paris to use the injection as a test in the later stages, with the result that it was frequently found that a syphilitic with a negative Wassermann reaction quickly developed a positive after the so-called provocative injection. These two observers went a stage further and suggested that in treating the disease so many injections should be given until the reaction became permanently negative.

The provocative injection as the test of a cure and of dormant syphilis is extremely useful, but its limits—namely, as to how far it is influenced by the amount of the previous treatment and the period which has elapsed between stopping the treatment and carrying out the test—are not yet definitely fixed. From my own experience, a positive Wassermann reaction is most likely to be obtained about the forty-eighth hour after the injection. It may be delayed until the seventh or even the fourteenth day, and it may not appear on one of these occasions until after the second injection. The first appearance after the second injection occurs in cases poor in reagin—that is, arterial syphilis, cerebro-spinal syphilis, etc. The fourth chart is a typical case in the latent stage which both demonstrates the effect of a provocative injection and the future course after treatment. You can see how important is this provocative injection. Beside the instance just given (Chart 4) let me cite the case of a woman who begets syphilitic children, but herself gives a negative reaction. In such a case a provocative injection will give rise to a positive reaction, showing that the patient is actively syphilitic and needs treatment.

In how many cases has it been the rule to thoroughly treat the mother of infected children?—in no branch of the disease has treatment been more neglected. So far as the regulation of treatment by the Wassermann reaction is concerned, a few words can sum up the position; and these are that so many injections should be given until the reaction is negative on the day of the last injection. Having made some few hundreds of tests with blood withdrawn at frequent intervals after both salvarsan and neosalvarsan, I have been able to form certain rules which guide me in every case.

In the primary stage it is necessary to test the blood forty-eight hours and the fifth day after the first injection, and if positive on either occasion to repeat the injection on the eighth day. Then it is necessary to test the blood weekly and repeat the injections until the Wassermann reaction is negative on the seventh day after the last injection. When this is the case the patient should only be passed when the blood remains negative, tested weekly, for another month.

Unfortunately, it is rare to get a case so early that the reaction does not become positive as the result of an injection. I have seen such, but think it wiser to give a second injection for safety, and a provocative injection six months or a year later.

When the reaction becomes strongly positive after an injection, and in cases in which it is markedly positive before treatment is commenced, no blood tests need be made until before and after the fourth injection, as in my experience four injections are the minimum likely to be required to produce a permanent negative result.

In the so-called tertiary stage, although it may be possible to obtain a negative reaction, the rule is rather the other way, as in several instances I have failed even with nine to twelve injections. Therefore I tell the patient that a cure cannot be guaranteed, but that he may try if he likes; or I generally advise him to undergo two injections with the idea of healing the symptoms, and not to have any more until symptoms reappear. Naturally circumstances alter cases, and the *pros* and *cons* should be gone carefully into in each one. It is impossible to pen what course one would adopt in every case.

When arriving towards the end of treatment, and when all the reactions are negative, and in cases in which the amount of reagin is normally small—namely, cases of arterio-sclerosis, cerebro-spinal syphilis, syphilitic epilepsy, and hemiplegia—each serum should be tested in gradient increasing strengths. The Wassermann reaction done quantitatively is of the highest importance, and in the case of the cerebro-spinal fluid it is imperative.

It sometimes happens that cases nearing the end of treatment—for instance, after the fourth or fifth injection—give a weak positive reaction only between the third and fourth week, which becomes immediately negative within a few hours of repeating the injection. Therefore, before a patient is finally discharged, a test should be carried out between the twenty-first and twenty-eighth day after the last injection. Such cases usually only require one more injection before the treatment is complete.

Patients who have had syphilis and give a negative Wassermann reaction are either cured or in the latent stage, which of the two can only be ascertained by giving a provocative injection of salvarsan and then testing the blood.

If the previous treatment has been recent—that is, only a few months back—the appearance of a positive reaction may be delayed, or, as happened in several of my cases, was positive in the forty-eight hours blood, and negative again on the fifth or even third day, to become only definitely positive on each occasion after the second injection. I have had two cases in which the reaction was not positive at all until after the second injection—cases of arterial syphilis.

Needless to say, I have made several controls on non-syphilitics, and have never been able to obtain a positive Wassermann reaction, even after five injections.

It has been urged that two injections are always sufficient, and that a negative Wassermann reaction almost always results therefrom.

If two injections of salvarsan are given and two months are allowed to elapse before doing a Wassermann test, most cases will give a negative reaction, not because they are cured, but because the treatment has driven them into the latent stage.

The reason I assert that they are in the latent stage is because so many of my cases have returned months later with symptoms, and because still more have given a positive Wassermann reaction. Further, I have often been successful in obtaining a positive reaction after a provocative injection of salvarsan.

I have seen several cases in the secondary stage return with symptoms within four months after having had three and four injections of salvarsan. The question may now be asked, How do you know you have cured your case when the reaction becomes negative, say, after giving six injections?

The following answers seem to me to settle the point: First, the reaction becomes gradually negative; secondly, the reaction becomes negative quicker, that is, after fewer injections in the primary than in the secondary stage; thirdly, a provocative injection some months later is not capable of giving rise to a positive reaction; fourthly, I have recently undertaken some experiments on patients, the subjects of systemic gonococcal infection, with the idea of estimating the action of vaccines on the complement-fixing power of patient's serum, concerning which I shall soon hope to publish full details, in conjunction with Dr. Klein, who has collaborated with me. The conclusions I will mention here, as they have so much bearing upon the question under discussion, and have thrown a new light upon the action of the specific remedies.

In a gonococcal patient who gives a positive complement fixation test, the reaction will become gradually less after vaccine treatment until it becomes quite negative. When it is negative the symptoms have disappeared, and a provocative injection of vaccine some months later will not give rise to a positive reaction. If the vaccines are withheld before the patient is cured, a provocative injection some months later will give rise to a positive reaction.

Again, a patient with a systemic gonococcal infection with a negative complement fixation test will give a positive test after an injection of a vaccine. The reaction is, as in the case of syphilis, most marked about the forty-eighth hour.

You can see what a close similarity exists between vaccine and drug treatment, and that both act, not so much directly upon the organisms, but indirectly in increasing the resistance of the host by stimulating antibody formation. Further, that antibodies will only be formed while there are parasitic organisms present, so that when the test employed for determining the presence of antibody is negative we can assume that the patient is cured.

As you will have noticed, I have mentioned nothing about the relative merits of neo-salvarsan and salvarsan, or discussed the methods of administering them or the doses employed, or the intervals at which the injections should be given, and how great a part mercury should play in completing the treatment. All this has been fully dealt with in my recent article in the British Medical Journal, June 8th, and still more recently in my book, *Salvarsan in Syphilis and Allied Diseases* (Oxford Medical Press).

Briefly resuming, I am anxious to bring out that every case must be treated individually, and no laws made as to how many injections this or that stage of the disease requires. That a case must be treated as early as it is possible, and that the treatment should not be stopped until the patient is cured. That a cure can only be said to occur when the Wassermann reaction is negative within a short interval of stopping treatment. Finally, that the treatment required can be accurately gauged only by making examinations of the blood at frequent intervals after each injection.

Further advances in the knowledge of syphilis—and there are many points on which light has yet to be thrown—can only be made when observers combine the clinical and pathological sides, and every observer is his own clinician and own pathologist in his special line.

Chart I.—*Typical Case in the Primary Stage.*
Two chancres on penis, two on scrotum; no adenitis; date of infection not clear; spirochaetes found.

No. of Injection and Result.		24 Hours After.	48 Hours After.	Fifth Day.
First injection	−	−	+	++
Second injection (8th day after first)	++	−	+	++
Third injection (8th day after second)	++	−	−	−
Fourth injection (8th day after third)	−	−	−	−

The reaction was tested on the 7th, 14th, 21st, and 28th days after the last injection, and was negative on each occasion.

Chart II.—*Typical Case in the Secondary Stage.*
A typical case of early generalized syphilis, rash, sore throat, etc.

No. of Injection and Result.		24 Hours After.	48 Hours After.	Fifth Day.
First injection	+++	+++	+++	+++
Second injection (8th day after first)	+++	+++	+++	+++
Third injection (8th day after second)	++	+++	+++	+++
Fourth injection (8th day after third)	+++	+++	+++	+
Fifth injection (8th day after fourth)	−	+	++	−
Sixth injection (8th day after fifth)	−	−	−	−
Seventh injection (8th day after sixth)	−	−	−	−

The reaction was also found to be negative on the 10th, 14th, and 28th days after the last injection.

Chart III.—*A Responsive Case in the Tertiary Stage.*
The patient contracted syphilis twenty-five years ago, for which he took mercury off and on for four years. For the past five years he had been troubled with cutaneous gummata, which disappeared under mercury and iodides, to quickly reappear after treatment was discontinued. In 1911 the patient had three intramuscular injections of salvarsan, and he came to me for a Wassermann test just after Christmas. There were no symptoms at the time.

No. of Injection and Result.		24 Hours After.	48 Hours After.	Fifth Day.
First injection	+++	+++	+++	+++
Second injection (8th day after first)	+++	+++	+++	+++
Third injection (8th day after second)	+++	++	+++	+++
Fourth injection (8th day after third)	++	+	+	+
Fifth injection (8th day after fourth)	−	−	−	−
Sixth injection (8th day after fifth)	−	−	−	−

Chart IV.—*A Typical Case in the Latent Stage.*
A man aged 29 contracted syphilis five years ago. The attack was very mild, but nevertheless the patient continued his mercury treatment (pills and injections) for four years. A recurrence never appeared. On three different occasions the blood had given a negative Wassermann reaction, but the patient, being anxious to marry, was desirous of an injection of "606" to make things sure.

No. of Injection and Result.		24 Hours After.	48 Hours After.	Fifth Day.	Fourteenth Day.
First injection	−	+	+++	−	
Second injection (8th day after first)	−	+	+++	++	
Third injection (8th day after second)	−	+	+	++	
Fourth injection (8th day after third)	+	+	+	+	+
Fifth injection (21st day after fourth)	+	−	−	−	
Sixth injection (8th day after fifth)	+−	−	−	−	
Seventh injection (8th day after sixth)	−	−	−		

The reaction was also negative on the 7th, 14th, 21st, and 28th days after the last injection.

DISCUSSION.

Dr. A. RENSHAW (Manchester) said that a bactericidal substance in great dilution acted in a positive chemiotactic manner, and since salvarsan was bactericidal, recurrences could be due to the drug not gaining complete access to the tissues. Therefore would a great dilution of salvarsan, given intravenously, withdraw the organisms towards the blood stream where a subsequent injection could act? It was further suggested that varying times should be allowed to elapse between weak and strong injections, so as to withdraw first the superficially situated organisms, then later longer intervals should be allowed for the greater distance to be traversed.

Dr. R. W. MACKENNA (Liverpool) said that in Liverpool they found three injections of salvarsan at the most sufficed, when combined with a vigorous mercurial treatment, to cure their cases; he feared that Mr. McDonagh had needlessly supplied the opponents of salvarsan with an argument against its use by abandoning his original position.

Mr. MCDONAGH, in his reply, thanked Dr. Renshaw for his suggestion, and said that he would put it into practice and report later on. Possibly the patients mentioned by Dr. MacKenna were not really cured, but had merely had their syphilis rendered latent. The opponents of salvarsan had for the most part never employed it, so little heed need be paid to their views.

THE VACUUM ELECTRODE IN NEURODERMITIS.

By J. GOODWIN TOMKINSON, M.D.,

Physician for Skin Diseases to the Out-patient Department and Medical Electrician (Dermatological), Glasgow Western Infirmary.

THE dermatologist's therapeutic resources are not infrequently put to a severe test in combating the intense pruritus which unfortunately accompanies many morbid cutaneous conditions. In recent years the curative and palliative value of *x* rays and of radium in certain itching affections has been recognized, but the application of these potent physical agents is not invariably successful. The value of high-frequency currents in pruritic conditions has not, in my opinion, received that general recognition which it deserves. My attention was directed some years ago to their use by Lacapère in the out-patient department of the Saint Louis Hospital, Paris.

The first case in which I employed the vacuum electrode for the relief of localized intense itching was one of pruritus ani. The patient was a man in the early prime of life. The condition had become chronic and was markedly rebellious to ordinary therapeutic measures. I think I am justified in regarding the case as permanently cured, for after a slight relapse, nine months after the first course of treatment, I have not been again consulted by the patient.

Professor Gaucher, in volume xiv of the *Nouveau traité de médecine et de thérapeutique* (Brouardel et Thoinot), says that the application of high-frequency current is an excellent mode of treating lichen simplex chronicus, as well as all lichenoid thickenings of the skin.

In the affection variously described as lichen simplex chronicus, *névrodermite* (neurodermitis), etc., the most arresting clinical feature is that form of induration to which the names "lichenification" and "lichenization" have been given by the French school. The accompanying itching is of a severe type, often very intense, and doubtless is the most frequent cause of the patient seeking medical advice. The first case of this kind in which I employed the vacuum electrode was that of a young miner. The lesion was situated in the lumbo-sacral region. An ointment of salicylic acid and oil of cade was rubbed in daily, and the vacuum electrode once weekly. The itching soon yielded to the treatment, and in several weeks the plaque disappeared. The patient has not again [illegible]

My second case was that of a merchant about 40 years of age, who had several plaques about the region of the neck and shoulders and a keratotic condition of both palms. I had previously treated his son, a boy aged about 5 years, for xerodermia. The patient was in a depressed condition, having recently lost his wife. During the local treatment he took from time to time such tonics as iron, arsenic, and strychnine. Various preparations of salicylic acid and oil of cade, etc., were employed locally, and eventually ointments of these drugs and accompanying treatment with the glass electrode of low vacuum. The condition was somewhat rebellious to treatment, but ultimately all the body lesions disappeared. The *x* rays, however, with boric acid wet dressings proved most effective in dealing with the palmar condition.

My last case was that of a French lady. Nearly the whole of the neck was encircled by the lesion which also extended on to the right mastoid area. Previous to consulting me she had had *x* rays and radium treatment, and judging from the telangiectases which had replaced portions of the lesion, the treatment had been somewhat heroic. The local treatment consisted of a salicylic acid and oil of cade ointment, the strength of which was progressively increased, and three vacuum electrode sittings weekly. At the commencement of treatment the itching was decidedly distressing, seriously disturbing the patient's rest. It was, however, rapidly alleviated after a few applications of the electrode, and somewhat later the induration began to disappear. The patient is now on a visit to the South of France, and at the time of leaving was almost well. Unfortunately the telangiectases persist. It might be suggested that the induration was part of the result of irradiation. It was, however, undoubtedly that clinical variety known as lichenification, and not the keratotic condition resulting from excessive irradiation. The general treatment consisted of careful regulation of the diet, the exhibition of alkalis, and the free drinking of Vichy water.

To sum up: Careful regulation of the diet, the adoption of that mode of medical treatment suggested by the general condition of the patient, together with the use of ointments of salicylic acid and oil of cade in progressively increasing strength, and the application—sufficient to produce a transitory erythema—of a low vacuum electrode twice or thrice weekly will, I believe, in most, if not all, instances clear up the condition.

PAPILLIFORM LESIONS (LYMPHANGIOMATA) OF THE SCROTUM,

ASSOCIATED WITH MULTIPLE PETECHIAL SPOTS ON THE TRUNK AND LIMBS.

By FRANK COLE MADDEN, M.D.Melb., F.R.C.S.Eng.,

Professor of Surgery, Egyptian Government School of Medicine; Senior Surgeon Kasr-el-Ainy Hospital, Cairo.

THE subject of this peculiar condition was a young Egyptian fellah, Mohamed Amin, aged 23 years, from Minet-el-Gamh, Lower Egypt. He presented an extraordinary appearance, quite new to my experience, which I will endeavour to describe.

Clinical Appearances.

The whole skin of the scrotum was thickly studded with small, succulent, pedunculated elevations, like thick-walled vesicles, purple or mulberry in colour, which were sprouting from the skin of the scrotum, the root of the penis, and the perineum as far back as the anterior margin of the anus. The elevations varied in size from a pin's head to a pea, and presented all shades of colour from that of a morella cherry to a black grape. None of the skin of the scrotum was visible, but it appeared to be normal around the bases of the elevations, on separating them from each other with the finger. The root of the penis was sown with similar excrescences and a few were present on the body of the organ, but not on the glans. The perineum was in a similar condition, but more sparsely covered (Fig. 1). On cutting into the vesicles, which were quite painless and insensitive, a dark haematin stained fluid was discharged, but no fresh blood.

Both thighs as far as the knees were covered with tiny dark purple spots, like subcuticular petechiae, and here and there raised papules of the same colour as the vesicles on the scrotum, which only rarely formed pedunculated elevations. The skin of the back, especially in its lower part and over the gluteal region, was more densely covered with these pigmented points, and a similar condition existed on the abdomen, and extended up as far as the costal margins (Fig. 2). There was an especially dark massing of these spots at the umbilicus, and a few scattered points also occurred on the inner sides of the elbows. These manifestations were apparently simple petechiae in the skin and

under it, with dark haematin staining. The skin generally was dry and rough, and the glands in both axillae and groins were enlarged.

There was no fever at any time, no enlargement of the liver or spleen, and the heart and lungs were healthy; 1,800 c.cm. of

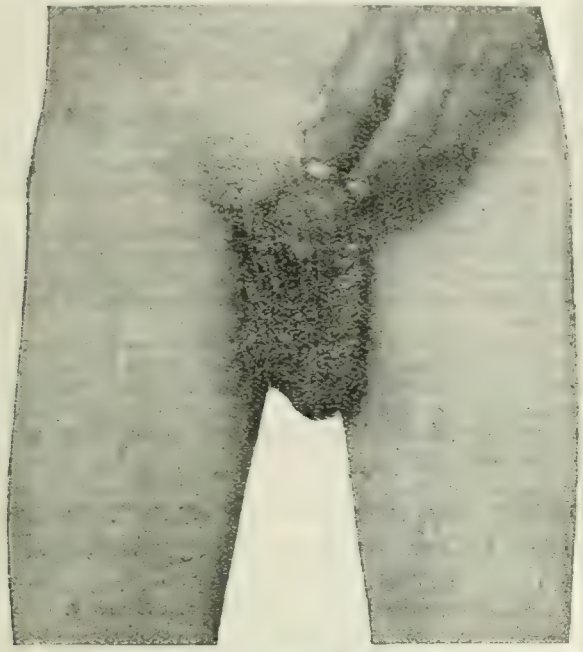


Fig. 1.—Photograph taken on admission to hospital. The characters of the papilliform elevations and their distribution are well seen, and also the outlying papules on the thighs and abdomen. Dark points of pigment are also to be seen on the thighs and abdomen.

urine were passed in twenty-four hours, with a specific gravity of 1018, an acid reaction, and 3.5 per 1,000 of albumen and 1.7 per cent. of urea; no casts or bilharzia ova were found. The albuminuria persisted throughout the treatment, but there was never any anaemia or other evidence of nephritis.

The boy was thin and anaemic, and his blood count, which was kindly done for me by Dr. Anis Onsy, Assistant Professor of Pathology, worked out as follows: White blood corpuscles, 10,250; red blood cells, 2,900,000 per cubic centimetre of blood. Differential count: Polymorphonuclears, 70 per cent.; large mononuclears, 8 per cent.; lymphocytes, 19 per cent.; eosinophiles, 2 per cent.; transitionals, 1 per cent. Two hundred leucocytes were counted. No filarial embryos could be discovered in the blood after repeated examinations.

History.

The patient stated that five years ago he began to notice scattered purplish points on the scrotum, which at first he took to be flea bites. To his surprise, each began to project above the surface of the skin, and in a year's time the scrotum was covered with tiny pedunculated elevations, which gave rise to considerable itching when he became hot. The spots on the thighs and loins appeared three years ago, and spread on to the abdomen. He thought that wherever the fluid from one of the growths fell another developed, and if he cut one off another came in its place. The family history was good, and there was no personal or family history of syphilis.

The diagnosis presented considerable difficulty, as it resembled nothing that any of us had ever seen, and Sir William Osler, who was in Egypt at the time and was good enough to see the case with me, was equally puzzled to decide how to classify it. The peculiar subcuticular spots suggested a blood origin, but this view was not supported by the other symptoms or the examination of the blood; and we had, therefore, to depend upon the pathological examination of the growths themselves to establish a diagnosis.

Pathologist's Report.

Professor A. R. Ferguson, Professor of Pathology, first examined smears from the cut surfaces of the growths, and reported that no definitely specific parasite could be found. The contents comprised: (*a*) A large coccus in considerable numbers; (*b*) a yeast, also abundant and actively budding—a comparatively small yeast; and (*c*) a long slender bacillus rather like *B. lepra*, but not acid-fast. No protozoan parasites were to be made out. A strip of skin was next removed from the centre of the affected scrotum; and it was seen that the deep surface of the skin was quite smooth, but showing through it were many prominent sebaceous glands, forming minute elevations visible through the connective tissue. These elevations did not correspond with the vesicles, which were more superficial, and could not be seen from the under surface. The skin itself was not thickened, and the growths when cut into appeared as thin-walled cavities filled with a dark fluid.

Professor Ferguson made a further report on the microscopical examination of the removed strip as follows: "Herewith a note on the warty condition of the scrotum and a photomicrograph of one of the vesicles—lymphangiomata as I consider them. Numerous film preparations stained by Giemsa's method were examined. No protozoan parasites of any kind were met with. The cells of a small yeast were present on most of the occasions on which films were made. The bacteria present included large diplococci as well as short streptococci, but these all were of accidental and superficial character, and none were found deeply in the substance of the lesion.

"Examined in microscopical sections the lesion is found to consist of enormous numbers of small lymphangiomatous structures, the material in the dilated spaces of which they are composed being apparently coagulated lymph. These little lesions are quite superficial, the skin over them being considerably thinner than elsewhere. They are capped by a layer of keratinized epithelium of greater thickness than that found in parts of the scrotum in which the lymphangiomata are absent. (Fig. 3.)

"Most of the lymphangiomata are composed of about a dozen vascular spaces of irregular size. They are separated from one another by small trabeculae of recent connective tissue. The majority of the spaces contain a homogeneous finely granular material with very few cells, and these are mainly of the small mononuclear variety. Into some of the larger spaces of the lymphangiomata haemorrhage has occurred."

Treatment.

The line of treatment was not very clear, but on Sir William Osler's suggestion a prolonged course of x rays was carried out by Mr. W. M. Colles, Assistant Professor of Chemistry. A soft tube, at 15 cm. distance, was employed, starting with an exposure of five minutes and gradually working up to twelve minutes, without the slightest effect; and finally, at the earnest request of the patient, I excised the whole of the affected area and made

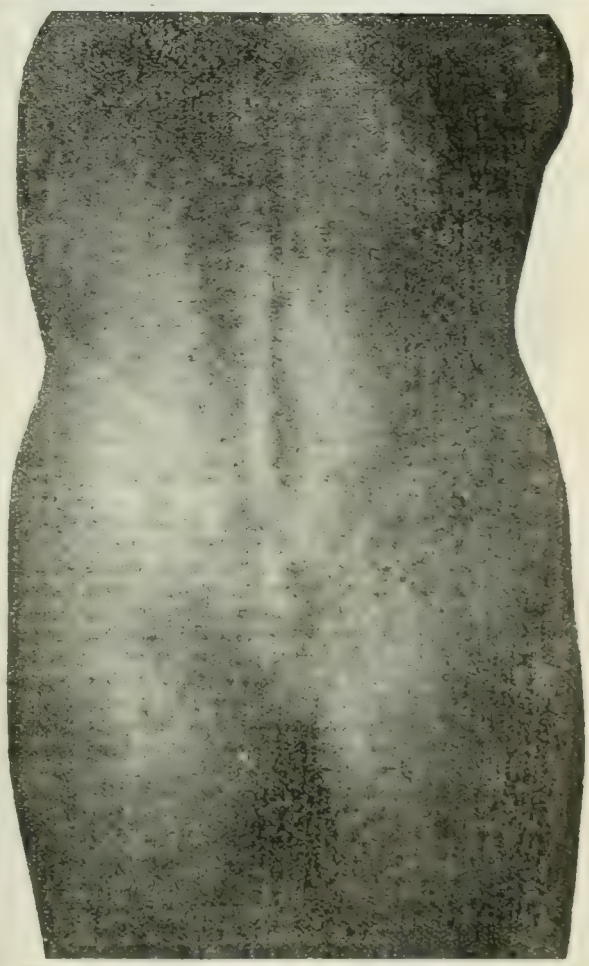


Fig. 2.—Posterior view of the patient, showing the scattered papules; but the main feature is the pigmented petechial spots, which are especially thickly sown over the lumbar and gluteal regions.

him a new scrotum from the surrounding skin of the thighs, perineum, and buttocks. He left hospital three weeks later, there being still a few growths on the

body of the penis. The pigmented spots had somewhat faded during his lengthy stay in hospital, but were otherwise unchanged.

Remarks.

The microscopical examination appears to limit the question of diagnosis to two pathological groups—angioma and lymphangioma, or to one or other of their many varieties. My opportunities of consulting recent modern literature on this and allied subjects is very limited, but in the last edition of Sir Malcolm Morris's *Diseases of the Skin*, pp. 665–670, the main characters of both these conditions are described, thus enabling me to make a comparison between them and the case under discussion.

The photomicrograph furnishes the most convincing diagnostic evidence, as it distinctly shows that the essential part of the lesion consists in epithelial covered vesicles in the superficial layers of the skin, and that these are really new formations of multiple minute lymphangiomata, filled with coagulated lymph and coloured by old haemorrhage that has occurred into some of these spaces.

Having thus stated our case, we may now compare our findings with the other diagnostic possibilities as presented

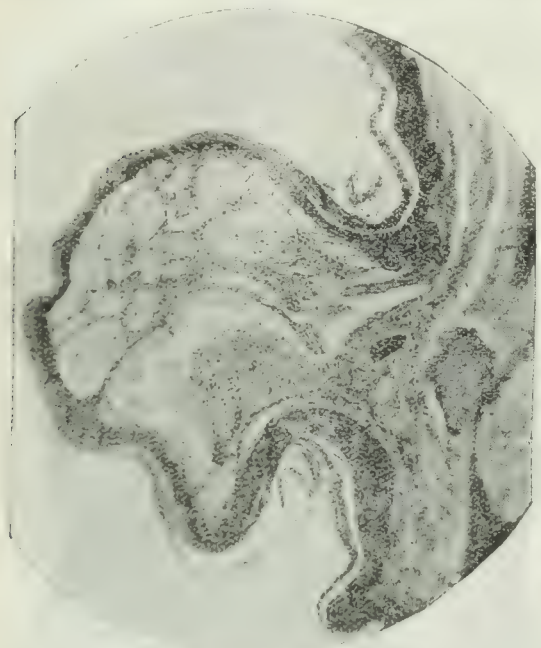


Fig. 3.—Photomicrograph showing the minute microscopical appearances of one of the vesicles. (See text.)

in the work before us. It is therein stated that "angio-keratoma is characterized by the development of capillary telangiectases with small, warty growths on the hands and feet, chiefly on the dorsal aspects. It has been known, however, to occur on the scrotum. The fully-developed lesions are rough on the surface, hard, and sometimes covered with thickened epidermis to resemble warts. Further, this condition is always associated with a marked tendency to chilblains," a condition which is non existent in Egyptians. "The essential feature of angio-keratoma is telangiectases resulting from repeated temporary dilatations of the small blood vessels."

A reference to the description of our case will readily show wherein it differs from angio-keratoma, nor does it bear any resemblance to infective angioma or to angio-fibroma contagiosum tropicus (q.v.). There is, however, much more similarity to lymphangioma. "The ordinary form, lymphangioma circumscripta cutis, is characterized by [illegible] and dilatation of lymph vessels and the formation of new ones in circumscribed areas of the skin. Patches of greater or lesser extent are found covered with elevations [illegible] lets." "They are pale or straw-[illegible] clear alkaline fluid in which a few lymph corpuscles are found." "Bernard holds, as does Bishop, that the disease is primarily one of the lymphatics, and that the appearance of blood is due either to the rupture of capillaries into the lymphatic dilatations, in which case the fluid of the vesicle is pinkish." In our case, however, the pigmentation was a marked feature even allowing for the darker Egyptian skin, and, moreover, the presence of pigmented points, apparently due to haemation, in so many other parts of the skin surface makes it probable that this same pigment was responsible for the pigmentation throughout. The presence of this pigment serves also to distinguish the case from lymphangioma tuberosum multiplex.

It may be that the condition we have described is one of the varieties of haemato-lymphangioma, but we are still at a loss to explain the association, if any, between the pigmented papilliform elevations and the petechial spots so widely distributed elsewhere.

We therefore submit the case for diagnosis to this more experienced tribunal, and trust we have made our description sufficiently clear to enable more highly qualified judges than ourselves to catalogue the case under its proper heading.

My best thanks are due to my friend and colleague, Professor Ferguson, for his careful study of the pathological side of this question, and to Dr. Tewfik Omar, Resident Surgical Officer, and to Dr. Ismail Diaiy, my House-Surgeon, for the excellent notes with which they have provided me

CHRONIC AND RECURRENT MALADIES OF THE SKIN IN RELATION TO HEART DISEASE.

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(Abstract.)

DR. WALSH, speaking from notes only, detailed the results of investigation of a number of chronic and recurrent skin diseases in relation to lesions of the heart. The term "chronic" was applied to any form of skin trouble which had lasted a few months or upwards. The term "recurrent" was applied to cutaneous maladies tending to recur, sometimes with seasonal regularity, sometimes after attacks of acute intercurrent illness, sometimes without obvious cause. A broad exception was made as regards both chronic and recurrent disease, namely, that large group due to obvious and, so to speak, enduring or persistent infection, such as that of scabies, ringworm, syphilis, and tuberculosis; but even in these the course might be much modified by the state of the central circulation. As regards the cardiac defect, the author had only included cases in which the valvular murmurs were, in his opinion, undoubtedly of organic origin, or in which myocardial weakness could be inferred from the physical signs and from a history of influenza or marked disturbance of the general health.

The conclusions drawn from this investigation were, first, that a large proportion of chronic and recurrent skin diseases were associated with grave cardiac trouble. The heart lesion was for the most part valvular, and it appeared to exercise little or no effect upon the skin so long as cardiac compensation was fully maintained.

Thus a cook suffering from long-standing valvular disease of the heart recovers rapidly and physiologically from the traumatism of the kitchen fire so long as the heart muscle is enabled to maintain a healthy balance of the surface circulation. But let the cardiac muscle be weakened by an attack of influenza, a disease specially prone to affect the myocardium, and the cook would promptly develop erythema of the face. The central cardiac defect had been called into play and had disturbed the balance of the cutaneous circulation, with the result that for the normal or physiological reaction of the skin to the heat of the kitchen fire was substituted an abnormal or pathological reaction. The erythema probably drifted into rosacea, which the author regarded as a chronic condition, in this case symptomatic of heart disease. This principle of pathological reaction to mild or moderate traumatism accounted more or less satisfactorily for the onset, the duration, and the recurrence of many skin affections.

Another example was the case of a college athlete, exposed to the traumatism of sun, wind, rain, snow, and other irritants, from which his skin recovered rapidly and completely. In later life a single exposure to the sun might bring on a severe attack of sun dermatitis. Several

instances were quoted in which the acquired pathological reaction to the sun's rays had been apparently due to some abnormality in the cardiac circulation. Cases of recurrent summer dermatitis the author had so far found invariably associated with valvular disease of the heart. The connexion of heart trouble with acute, chronic, and recurrent inflammatory disorders of the skin, if it be established, would be likely to lead to a considerable readjustment of existing views on the etiology, the diagnosis, the prognosis, and the treatment of many cutaneous maladies.

The irritant or exciting cause of the traumatism might be of various kinds. If soda or scouring soap were substituted for the sun's rays, a number of cases of dermatitis associated with central circulatory defect would be found. One woman had a punctate erythematous rash of five or six years' duration. She was the mother of a family the members of which habitually washed their skins with a well-known soap. She alone suffered from dermatitis. The peculiar determining condition in her case appeared to be valvular disease of the heart, presumably set up by an attack of scarlet fever, after a confinement eight years previously. According to the author's view the balance of the surface circulation had been disturbed by the central circulatory defect, and the power of physiological recovery from the traumatism of an irritant soap had been lost in her case, although retained by the rest of the family. The dermatitis in this case might be regarded as a delicate clinical sign of heart disease.

A similar central circulatory defect was present in a large proportion of chronic skin affections of a dry, thickened, or scaly type. The case that formed the starting-point of the present investigation was that of a lad of 17 years, whose legs showed numerous rounded, infiltrated, purplish, scaly patches of lichen planus type. Many of the patches had coalesced, leaving here and there islands of healthy skin. There were numerous small outlying scaly papules. The eruption started from a graze of the shins some eight or nine months previously. The lad's hands were dusky, and he was found to have mitral obstruction. In ordinary circumstances a graze of the kind would have healed up within a fortnight, with little or no treatment. The substitution of a chronic spreading dermatitis for the normal healing process the author regarded as due to the disturbed balance of surface circulation, leading to failure in nutrition and tissue activity, as well as of the phagocytic and other lines of circulatory defence against microbial invasion. In this instance, as in others observed by the author, the clinical evidence of the local pathological reaction to traumatism formed a more delicate test of the cardiac inadequacy than the ordinary signs and symptoms of heart disease, such as shortness of breath, palpitation, dyspepsia, swelling of feet, and the like. In the lad's case the duskiness of the hands which called attention to the circulation was probably independent of the mitral obstruction. In many cases, however, where chronic or recurrent skin diseases had been found associated with organic defects of the heart there had been nothing that in the course of an ordinary clinical investigation in any out-patient department would have suggested the need of an examination of the heart.

The aim of the paper was to substantiate, by means of illustrative cases, the main proposition that, excluding certain groups due to obvious resistant specific infections, a large proportion of chronic and recurrent skin diseases of manifold type, together with a few of sudden onset, are associated with central circulatory defects. To that broad general observation was added the further one that the skin phenomenon appeared to be due to the loss or diminution of the normal reaction against moderate traumatism possessed by the ordinary individual with a sound heart. No attempt had been made to investigate the qualitative changes in the blood as apart from the qualitative changes which might be reasonably assumed to take place in the capillary circulation as a result of defects in the central pumping mechanism. The precise way in which pathological changes in the skin were related to central circulatory disorder was not considered. Generally, it was clearly impossible for a blood stream deficient in amount properly to discharge its duties of nutrition, of phagocytosis, of opsonic attack, in short, its whole wide range of defensive and trophic function. The addition of the element of abnormal capillary circulation, whether in the direction of excess or deficiency, explained why a traumatic influence was suddenly rendered effectual upon an individual previously immune.

Should any general relation of pathological reaction of the skin to traumatism, external or internal, be established in patients suffering from heart disease it would probably afford a key to many obscure points, not only in dermatology, but also in general medical pathology and etiology.

It would, for example, modify our attitude with regard to psoriasis and allied affections. The cases cited seemed to prove a close connexion between chronic psoriasiform diseases and central cardiac defect. Most writers upon dermatology recognized the presence of some systemic defect in psoriasis. In the author's view the essential predisposing condition was in many cases of cardiac origin. The characteristic sites of psoriasis were in regions where the circulation was limited, and, therefore, specially liable to be affected by any weakening of the capillary circulation. Psoriasis was probably identical with seborrhoeic dermatitis, both being due to unidentified organisms which, in the case of psoriasis, were possibly distributed by the circulation, and, in the case of seborrhoeic dermatitis, arose from external infection. In both the circulatory defect seemed to be more or less concerned in the majority of instances. Although the author had found a large proportion of cases of chronic psoriasis connected with heart disease, this did not always occur. However, in psoriasis that was not thus associated, one usually found other evidence of circulatory deficiency, such as pallor, weak pulse, cold extremities, and nails that were dusky, brittle, and curved.

Disturbance of the balance of surface circulation probably explained the irregular action of drugs upon the skin. Nothing was more certain in dermatology than the uncertainty of many remedies which at times undoubtedly exerted a useful action upon cutaneous maladies. It was clear that if the blood were charged with a remedy—say, with a vaccine—it could not exercise its acquired therapeutic powers upon a pathological skin unless presented locally in adequate amount and with free access. Possibly it was to the state of the circulation that one might look for the explanation of the disappointing results that often attend Wright's vaccine treatment, especially when the muddy complexion and weak pulse commonly associated with acne vulgaris was considered. Then, again, Bier's hyperaemic methods depended for their success upon the local reinforcement of the capillary circulation. The cardiac factor also supplied a scientific explanation of the acknowledged value of rest in many skin affections. The value in skin diseases of certain spas and other water-drinking cures, of sea-water injections, and of prolonged baths, probably depend on restoration of the volume of surface circulation.

The practical outcome of the author's observation was manifold. Prognosis, both as to recovery and to recurrence, would largely depend upon the heart condition, and this applied even to such unexpected directions as operation upon lupus, which had recurred again and again in spite of thorough removal in a girl suffering from valvular heart disease.

As to treatment, the practical inference was that if it were wished to secure the full local effect of internal remedies upon the skin they must be combined with methods capable of flushing the skin with an adequate supply of blood. The author for some years past had been in the habit of treating certain skin diseases by attention to the circulation—first, by cardiac tonics, rest, diet, carefully regulated physical exercise, and, secondly, by hot baths, hot air baths, massage, electrical stimulation, and other measures aimed at restoring the balance of the cutaneous circulation.

There is little to be found in medical literature bearing on this subject. Dr. George Dock, in Nothnagel's *Encyclopaedia*,[1] pointed out that circulatory disturbances occurred in the skin even when there was no general venous congestion. The only other article found on the subject was one by Drs. Nevins Hyde and McEwen on the relation of certain dermatoses to each other and to changes in the vascular equilibrium.[2] They referred to certain dermatoses affecting the hands and feet as usually due to vasomotor influences. The author's own observations went further and connected a wide range of cutaneous

maladies with a central circulatory defect. A table giving details of a number of cases was put forward. There would be little difficulty in enlarging the list to an almost indefinite extent. Some additional cases have been kindly contributed by Dr. Norman Meachen and Dr. Halls Dally. Any dermatologist wishing to test these observations has merely to examine the heart in all chronic cases in his hospital and private practice, excluding those due to acne, scabies, syphilis, tuberculosis, and to ringworm, and other coarse fungus. In each of these diseases, however, the severity appeared to be closely dependent on the condition of the heart. In syphilis it should be remembered that one was dosing one's patient with depressant remedies; cases of severe acne and of recurrent lupus after operation had been noted in connexion with valvular disease; in acne, moreover, a weak pulse was commonly present.

Some writers upon dermatology ascribe a large number of skin affections to nerve disorders, including sensory, motor, vasomotor, trophic, and glandular disturbances. The nervous system permeates the whole body, and must, therefore, be more or less intimately concerned in every serious pathological process. Was it not possible that the circulatory was more essential than the nervous element in many skin affections?

Drug eruptions might possibly be determined by circulatory conditions. Damage due to the local deposition of a drug like iodine would clearly be more liable to persist in the absence of a good surface circulation. Morrow had pointed out that many of the drugs that produced eruptions acted specifically upon the nervous system. It might be said with equal force that they depressed the heart and general circulation. The following list might be cited in support of that suggestion: Aconite, acetanilide, antimony, antipyrin, arnica, boric acid, ergot, phenacetin, iodine, bromine, sulphonal, various vaccines and antitoxins.

Finally, the author had noted chronic inflammatory conditions of deeper tissues in patients suffering from combined disease of skin and heart. It had seemed to him that the pathological reaction visible to the eye in the case of the skin might be duplicated in the deeper unseen tissues. In circulatory inadequacy, accordingly, one might possibly find a key to the onset and the duration of various organic troubles as the result of a process not differing essentially from that visible on the surface of the body. The internal organs must obviously be subjected incessantly to traumatism of various kinds, such as those due to diet, to disease products, to drugs, and to many other irritants. In the majority of instances recovery of internal organs took place just as in the skin. In other cases, however, the patient died or drifted into chronic organic disease. Might not this difference in result be dependent on the soundness or otherwise of the central circulatory organ? It was known that patients suffering from organic heart disease might recover rapidly from acute intercurrent maladies such as pneumonia, possibly or probably because they started with good compensation. At any rate, the outlook would be less favourable for a similar patient were the pneumonia associated with influenza or some other acute malady prone to weaken the myocardium.

The author's main conclusions were:

1. That a large number of chronic and recurrent skin eruptions were associated with disease of the heart.

2. That unsuspected organic heart trouble was comparatively common amongst patients attending a skin hospital.

3. That prognosis in skin diseases large depended on the state of the heart.

4. That attention to the circulation was imperatively demanded in a large number of skin affections.

5. That the success or failure of much of our skin therapeusis depended on the attention paid to the circulation.

6. That the circulatory inadequacy which determined the onset and duration of many chronic or recurrent skin eruptions might likewise affect internal organs.

7. That what was called "idiosyncrasy" might in many cases simply describe a pathological reaction, natural or acquired, to moderate traumatism. In this way the irregular incidence of trade and of drug eruptions might in many cases be explained—predisposition simply being another name for central cardiac inadequacy and disturbed balance of capillary circulation.

8. That in all cases of delayed healing or of chronic skin disease the state of the circulation should be carefully investigated.

9. That when it was proposed to administer any drug, such as mercury or arsenic, known to act as an organic irritant, the possession of a normal or a fully compensated central circulation should be regarded as a *sine qua non*.

10. That the delayed healing of wounds and the persistence of inflammatory conditions, external or internal, often afforded a clinical test of cardiac inadequacy more delicate than the shortness of breath, palpitation, and other ordinary evidence described in the textbooks.

11. That the dermatologist who wished to do justice to himself and his patients would have to keep a constant eye upon the heart and its treatment in relation to diseases of the skin.

REFERENCES.

[1] Chapter on Diseases of Heart, p. 516. [2] *Transactions of the American Dermatological Association*, 1904, vol. xxviii, p. 64.

DISCUSSION.

Dr. NORMAN MEACHEN (London) thought dermatologists were apt to neglect routine examination of other systems of the body. Were these habitually examined many other abnormalities would probably be discovered; he had little doubt that Dr. Walsh's views were correct. He had himself not systematically examined the heart in his cases, partly from lack of time, but he intended to do so in future. He was specially interested in the observation that symptoms of heart disease might first be manifest in the skin, as, for instance, in shedding of the hair when no local cause for the defluvium could be discovered, or in failure of the heart to react normally to slight traumatism.

Dr. R. W. MACKENNA (Liverpool) said that during the past ten or fifteen years research in the domain of dermatology had taken a histological or bacteriological line, and the bacteriologist had not invariably led the dermatologist along the right path. It was interesting to be brought face to face with the possibility that perhaps central defects played a larger part in the etiology of chronic skin affections than had previously been suspected. Probably the dermatologist had used his stethoscope too little. In future he intended to examine the heart in all chronic and recurring affections of the skin.

Dr. HALIS DALLY (London), speaking as a physician specially interested in disturbances of the heart and circulation, found Dr. Walsh's ideas stimulating, since previously the work of the cardiologist and dermatologist had not been regarded as connected. Among the patients who presented themselves at his clinic at the National Hospital for Diseases of the Heart those who were the subject of skin disease did not seem to bulk largely, but probably more would be discovered or a history of a chronic or recurring affection be elicited if careful search were made. Certainly a more extended use of the stethoscope by the dermatologist might, as Dr. Walsh had adumbrated, yield a crop of circulatory disorders. It would then remain to work out the exact connexion between the two groups. The speaker then showed the cardiograms of certain cases in his practice which had exhibited cutaneous disorders, probably of circulatory origin.

SYSTEMATIC STUDY OF MORBID CONDITIONS OF THE NAILS.

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IT is not my purpose, nor is it within the scope of this paper, to deal exhaustively with all the different pathological conditions of the nails, but rather to present a few observations, mainly from the clinical standpoint, respecting onychology as a branch of dermatological science.

In the first place, it must be admitted that nail affections are not common. It is quite possible, for instance, to pass several weeks in a large skin clinic without seeing a single case of obvious nail disease. Heller, the greatest living European onychologist, found 48 cases of nail disease in a series of 35,853 patients attending the University Clinic for Skin Diseases at Charlottenburg—that is,

a proportion of 0.13 per cent. My own figures approach these very closely, for out of 12,293 cases seen at the Prince of Wales's Hospital and the Blackfriars Skin Hospital since 1906, 22 cases of nail disease were observed—a proportion of 0.17 per cent. It should be understood that these cases were instances in which the nails were strikingly affected, or in which the patients sought advice solely or chiefly on account of the nails. It is always easy to overlook the small beginnings of disease in any part of the body, and it is easier still to omit the examination of such comparatively unimportant members as the nails.

It may be urged that affections of the nails, unless painful or grossly disfiguring, are not sufficiently common or important to occupy much attention, but in the interest of our patients I think we, as dermatologists, cannot afford to overlook the minutest detail respecting the skin and its appendages. I confess that I did not myself examine the nails of all my patients systematically until some five years ago, since when I have endeavoured to do so, and this determination has been rewarded by the discovery of many interesting conditions that would have otherwise escaped detection.

The great similarity between many of the different affections of the nails has given rise to some confusion as regards their nomenclature, while it has not added to the popularity of the study of nail disease as a whole. Thus, it has been openly stated by the highest authorities that it is impossible to distinguish some forms of such varied diseases as syphilis, psoriasis, eczema, and ringworm as they are prone to affect the nails. In a few cases the difficulty is, no doubt, very great, particularly if it should happen that no other lesions are present upon the skin as a guide or as confirmatory evidence. The late Dr. Radcliffe Crocker used to say that the "same appearances are constantly seen in nails produced by different causes." Is this invariably the case? Can we diagnose the disease from the clinical aspect alone, apart from collateral evidence afforded by an examination of the rest of the cutaneous system, by microscopic and other tests, and by taking into account the personal and family history of the patient? Not always, I think, but in the great majority of cases it will become increasingly possible to do so as the result of prolonged examination and comparison of individual cases.

The commonest actual disease of the nails is undoubtedly eczema, forming about 20 per cent. of the total number. The commonest minor abnormality is longitudinal striation, 95 cases of which I have observed. A certain faint degree of this striation or fluting is physiological, owing to the disposition of the papillae in the nail matrix, a fact first described by Sir Jonathan Hutchinson. This symptom may be much exaggerated, when the condition is known as onychorrhexis. It seems generally to increase with advancing years, and it may be associated with gouty symptoms, as has been pointed out by Sir Dyce Duckworth.

The health of the nails, like that of the rest of the body, depends a good deal upon the care which is bestowed upon them. Rough treatment with knives, scissors, or other instruments, bungling attempts at so-called "manicuring," and the more or less prolonged contact with various irritating substances that give rise to recognized forms of occupation or professional dermatitis, are responsible for a large amount of nail disease, much of which is, therefore, preventable.

The appearance of irregular white spots, popularly known as "gifts," upon the nail-plate is nearly always entirely due to the habit of forcing back the delicate layer of cuticle, which has received the name of eponychium, that projects slightly beyond the posterior nail-fold, and tends to advance over the lunula. This fold of tissue occasionally becomes unsightly, leading to its being pushed back, either slightly under or, more generally, up to and parallel with the edge of the posterior nail-fold. The slight force necessary for this procedure is quite sufficient to interfere with the normal process of cornification in the nail-root, resulting in the formation of the white spots. This explanation of the presence of "leuconychia guttata" is advanced by Heidingsfeld, who believes that there is no evidence that the white areas are due to an infiltration of the interstices between the cells with air, the explanation formerly in vogue. The habit of nail-biting, or onychophagia, is responsible for the conditions that you will see upon the screen.

Trauma.

The effects of trauma in the ordinary sense are well seen in the nails. Seeing that the nail is essentially a protective organ, it endeavours to accommodate itself as best it can to loss of substance of the sensitive finger-tip, sometimes curving over the injured phalanx like a bird's claw. The nails may become curved like a parrot's beak as a result of neglect in trimming them, combined with hard manual labour. Severe crushing and bruising of the distal phalanx may determine the presence of a permanent deformity of the nail, especially a dwarfing of the nail-plate from side to side, a partial or complete disappearance of the nail-plate in accordance with the degree of destruction of the nail-matrix, or the appearance of a bifid or a "gabled" nail, which may be adherent at the sides to the lateral nail-folds. I have seen a series of parallel, transverse markings upon the nail result from the habitual pressure of a knife-blade used for the purpose of pushing back the nail-fold as mentioned above.

Eczema and Psoriasis.

One of the earliest signs of eczema of the nails is the appearance of a number of fine depressions like pin-pricks upon the proximal portion of the lunula, whereas, in the case of psoriasis, a group of minute hyperaemic spots in the same situation may be the first manifestation of the disease. Psoriasis of the nails begins quite as often as a tiny erosion of the nail-plate, either at the side, distal end, or just at the root. Discoloration follows more rapidly in the case of psoriasis than in eczema, while in the latter a roughness and striation, together with irregular thickening, are, perhaps, more commonly seen. Heaping up and separation of the free edge of the nail is another characteristic feature of psoriasis. Heller estimates that about 9 per cent. of psoriatics have their nails affected. It is sometimes very difficult to diagnose the disease when it is localized strictly to the nails, nevertheless the diagnosis can pretty safely be made in the absence of fungus or of evidences of eczema in the immediate vicinity.

Parasitic Affections.

In ringworm of the nails, which is generally supposed to be very rare, but which is probably commoner than usually suspected, the whole of the nail is not often affected, and it is the rule to have only a few or even one of the nails attacked. In a series of cases recently described by Dr. Cranston Low, of Edinburgh, the number of nails affected varied from one to seven. It is a remarkable fact that tinea unguium is always due to the trichophyton and never to the microsporon fungus. Why it is hardly ever seen in children suffering from ringworm of the scalp may be due to the comparative rarity of the large spored fungus in certain localities. The diagnosis, I think, may often be made, or at any rate shrewdly suspected, apart from microscopic examination of portions of nail substance, by (1) the fact that several of the nails may be quite unaffected; (2) discoloration is a marked feature, especially the presence of the three-colour zone, as Dr. Low has pointed out. Thus, at the free margin of the nail it is dark and friable; a little higher up the colour is yellowish and longitudinally striped, while higher up still is a yellowish-red zone, smoother on the surface, representing the spreading edge. Failure to find the fungus upon a first scraping does not necessarily negative the diagnosis if these clinical characteristics be present. Violet and crateriform cultures are the rule. Favus of the nails is still rarer, and this disease generally involves the whole nail-plate. The length of time that some of these cases of onychomycosis last is noteworthy, a duration of forty years and upwards having been recorded.

Syphilis of the Nails.

The nails are affected in several ways in syphilis. The commonest, according to Heller, is the isolated papule of the nail-bed, which is a secondary manifestation, appearing first as a deep red spot in the nail-plate, which soon becomes eroded in a circumscribed fashion in a most characteristic manner. The dry form of onychia, O. sicca syphilitica, consists of a chronic roughening and discoloration, of an inflammatory type, which may make its appearance as late as four or five years after infection.

These kinds of nails cut like dry canes or reeds, as described by E. Kohn. A more deforming infection is the suppurative form of perionychia, which generally begins as a swelling and redness of the whole ungual phalanx, very like a septic paronychia. Ulcerative changes then appear in the nail-plate, as in a case recently described by Mr. McDonagh. Hereditary syphilis also shows itself in the nails, usually by a paronychia or a chronic onychitis.

Trophic and other Affections.

As Parisot has said, "The nails and the epidermis are the mirror which truly reflects the disturbances of nutrition from fevers and constitutional disease." I need only mention here the significance of the transverse marks, ridges, and grooves, described by Beau and Sir Samuel Wilks, indicating that the patient has passed through some severe illness. Such disturbances of the health as a confinement, or an attack of sea sickness, or even the existence of a patch of alopecia areata (Bulkley) may leave their indelible record upon the nail. It was Sir Jonathan Hutchinson who first pointed out that these furrows are always best marked upon the thumb nails, shading off as one passes towards the little finger. I would go further and say that in the majority of cases of nail disease, except the parasitic and traumatic, this tendency will be found, and I have ventured to call it the "law of diminishing intensity." According to this principle, all affections of the nails diminish in severity from without inwards—that is, from the thumb towards the little finger.

Another general rule I have ventured to formulate is the "law of symmetry," according to which it will be found that where a given nail is affected (except parasitically) the corresponding nail on the opposite side will show a similar condition. I have not seen this observation in any text-book or paper upon the subject.

The nails have often suffered severely after injury to certain nerves, such as the median in the forearm (Bowlby) and the superficial peroneal (Hirschberg), atrophy of the nail-plate resulting from the peripheral neuritis induced by the injury. The influence of the nervous and vaso-motor systems in affecting the growth and development of the nail is seen in such affections as myelitis, tabes, syringomyelia, cerebral paralysis, etc., as well as in Raynaud's disease and erythromelalgia. In fact we may say that, apart from mycotic and inflammatory diseases, the greater number of cases of nail disease is found associated with those skin affections in which, as far as our present knowledge goes, neurotrophic or nervous influences are at work.

Mention must be made here of a peculiar form of longitudinal striation and discoloration affecting the whole of the nails, of a very chronic character, where no other part of the skin is affected, and which is often seen in weakly and debilitated subjects. This is a dystrophy which is amenable to the internal administration of arsenic and other tonics. Insomuch as the nails are a part of the general cutaneous system, there is hardly a single skin disease in which the nails may not be affected. One of the worst dystrophies I have ever seen was in a case of epidermolysis bullosa under my care, a photograph of which is to be found in the admirable article on diseases of the nails contributed by Dr. H. G. Adamson to Allbutt and Rolleston's *System of Medicine*, vol. ix.

Regarded from the developmental aspect, it is only natural that the nails and the hair should be affected together. Accordingly, we find that the ungual appendages are affected in about one half of the more serious cases of alopecia areata, and in nearly all the cases of alopecia totalis, whether syphilitic or not.

The Nails in General Diseases.

The union of dermatology with general medicine is well illustrated in the relationship of onychology to many general diseases. We are all familiar with the curved nails of the chronic phthisical patient and the hippocratic finger-tips of the subject with long-standing heart disease. In chronic tuberculosis, as Sir Dyce Duckworth has pointed out, the condition of the nails is one of correlative overgrowth, the nail being thinner and more polished. In acromegaly the nails are not enlarged, but they are hypertrophied in chronic pulmonary osteo arthropathy (Marie's disease). Onychogryphosis has been known to reach a great extent owing to a blockage of the artery supplying the part. In diabetic gangrene the nails may become severely affected, but this is probably a result of the accompanying peripheral neuritis. I have already mentioned some of the systemic nervous diseases in which nail changes are found.

Atrophy of the nail or spooning of the nail-plate (koilonychia) is sometimes seen to follow some severe constitutional disease, especially typhoid fever, measles, influenza, or pneumonia, quite apart from the transverse markings left by these affections.

A marked pallor of the nails may be seen in anaemic conditions, and a remarkable tint of the nails resembling the purplish-white hue visible on the interior of the shell of the hen's egg was described in 1905 by Dr. J. Nevins Hyde, who called the condition the "eggshell nail."

Classification of Nail Diseases.

The following working classification of diseases of the nails, simplified from Heller, I have adopted as being the most practical:

A. CONGENITAL.
B. ACQUIRED.
  I. *Primary.*
    1. Hypertrophy.
    2. Atrophy.
    3. Inflammations.
    4. Parasitic.
    5. Syphilitic.
    6. Traumatic.
    7. Nutritional.
  II. *Secondary to Other Diseases.*
    1. Of the skin: syphilis, eczema, psoriasis, etc.
    2. General diseases.
      (*a*) Nervous, neuro-trophic and vasomotor.
      (*b*) Circulatory.
      (*c*) Diathetic, gout, diabetes, acromegaly, etc.
      (*d*) Blood.
      (*e*) Acute infections.
      (*f*) Senile.

CONCLUSIONS.

Finally, I would submit the following conclusions with regard to nail diseases:

1. That it is difficult to work up an enthusiasm for a comparatively unimportant section of a special branch of medicine; but, nevertheless, onychology as a sub-branch of dermatology is worthy of the serious and earnest attention of those interested in the latter subject.

2. That in every case of skin disease presenting itself for treatment, either at hospital or in private practice, the condition of the nails should be briefly noted at the time of the examination.

3. Were this carried out systematically in every instance, I venture to assert that not only will abnormalities of a most interesting description be frequently found, but also many signs of cutaneous and systemic disease may be hereby discovered.

4. In the great majority of cases of nail disease it is possible to diagnose the morbid condition from careful inspection alone.

5. The two general principles enunciated above—the "law of symmetry" and the "law of diminishing intensity"—are applicable in all cases of nail disease except those due to injury or parasitic causes.

[This paper was illustrated by numerous lantern slides.]

SEBACEOUS CARCINOMA AND ITS RELATION TO RODENT ULCER.

By LOUIS SAVATARD, L.S.A.,
Honorary Assistant Physician, Manchester and Salford Skin Hospital.

IN reporting the two following cases, the point on which I wish to insist is that just as the basal cell carcinoma (rodent ulcer) differs from the prickle cell carcinoma (epithelioma), so the sebaceous carcinoma is distinct from the basal cell carcinoma, clinically and histologically, and that from the cells of the sebaceous glands a rodent ulcer does not and cannot originate. The acinous formation of the cells in rodent ulcer has suggested to some its origin from the sebaceous glands, and such we find indicated in some modern atlases and textbooks of dermatology; but I would submit that this arrangement is determined by the connective tissue amidst which the

growth extends. Though I have seen and treated some 500 cases of cutaneous carcinomata, and have carefully examined many of them, these two following cases alone could be classed as true carcinomata of the sebaceous glands.

Case I.

A married woman, aged 41, was seen at the Cancer Hospital, Manchester, in June, 1900. About four years previously the patient received a blow on the right cheek. Soon after she noticed a small lump forming in that situation. This gradually increased in size. In May, 1900, the patient saw Mr. Walter Whitehead at the Royal Infirmary, Manchester. Mr. Whitehead considered the case to be one of sarcoma of the jaw, and declined to operate, advising her admission to the Cancer Hospital. Latterly the patient had suffered considerable pain, and lost much weight. She was greatly emaciated, and looked considerably older than her years.

There was situated over the right ascending ramus of the jaw a tumour about the size of a hen's egg, very hard, and fixed to the underlying structures, preventing free movement of the jaws. The tumour had broken down in the centre, and from it was discharging a thin, watery exudation. There was paralysis of the right facial nerve.

At the necropsy, some months later, it was found that death was due to tuberculosis, and histological examination of the tumour showed that it was a carcinoma originating in the sebaceous glands—analogous to rodent ulcer. The large sebaceous cells composing the new growth were arranged in alveoli, with fairly dense fibrous tissue between the alveoli and around the growth. Examination under a high power showed these large polyhedral cells, with well-marked nuclei and nucleoli, quite distinct from the columnar basal cells of true rodent ulcer. There was no proliferation of the epidermis, and the upper portion of the corium was not invaded by the new growth.

The clinical appearance also was quite distinct from rodent ulcer, and was so characteristic that I was enabled to recognize clinically, some years later, the same condition in the following case:

Case II.

A man, aged 80, consulted me in July, 1911. He had numerous carcinomata on the face—some eight in number. Over the left ascending ramus of the jaw and extending below and behind the lobe of the left ear was a hard lobulated mass, firmly fixed to the deeper structures (simulating, somewhat, secondary carcinomatous invasion of the cervical glands). The tumour was not ulcerated at the time, though apparently there had been some little discharge previously.

This growth was of five years' duration. There was no pain and no paralysis, though the movement of the jaw was slightly impeded, and the jaw was now becoming more fixed. Histological examination confirmed my diagnosis. The slides showed the characteristic arrangement of the sebaceous cells and surrounding tissue. There was no down-growth from the superficial epithelium and the upper part of the corium was free from new growth.

Here again the clinical appearance was quite distinct from a basal cell carcinoma, though the patient presented true rodent ulcers and a crateriform ulcer (prickle cell carcinoma) on other parts of his face. There was also situated on the left side of the nose a small, raised, yellowish-brown nodule, with a central sebaceous plug, which, according to the patient, resembled the "pimple" from which the sebaceous carcinoma developed. On examination this proved to be a sebaceous adenoma, and I am inclined to believe that the carcinoma might have originated as an adenoma.

As the sebaceous glands are developed from the cells of the outer root sheath (which are themselves basal cells of the surface epithelium, and from which, undoubtedly, the true rodent new growth arises), it is only natural that we should expect to find that a carcinoma developing in these sebaceous cells would be analogous, in mode and rate of growth, to the basal cell carcinoma.

FIBRO-SARCOMA ON LUPUS SCAR TISSUE.

By Louis Savatard, L.S.A.,
Honorary Assistant Physician, Manchester and Salford Skin Hospital.

Though epitheliomata arising on lupus scar tissue are comparatively common, I have not found a recorded case of sarcoma on lupus scars, and think that perhaps a short account of the following case may be of interest:

A man, aged 49, attended the Manchester and Salford Hospital for Diseases of the Skin, under Dr. Brooke, nine years ago, for lupus vulgaris on both sides of the face. There was noted at the time on the right cheek a small epithelioma; the latter apparently disappeared under *x*-ray treatment, and the lupus was so much improved that the patient stopped attending. There had not been produced any apparent dermatitis during the administration of the *x* rays.

Nine years later he again appeared, with traces of lupus on both sides of the face, and a certain amount of sound scar tissue. There was in the left submaxillary region a rapidly growing fungating tumour, arising from dense scar tissue, very hard, and somewhat pedunculated.

I considered the case to be one of epithelioma, and after excision gave the specimen to Dr. Powell White, who I thought might be interested in it. Dr. White reported that the tumour was a fibro-sarcoma, and I am greatly indebted to him for the following histological report:

Report by Charles Powell White, M.D.

The tumour is pedunculated in shape, overhanging the adjacent epidermis. At the margin of the pedicle the epidermis comes to an end, and is not continued over the surface of the tumour. The tumour cells are mostly spindle-shaped, and are of varying sizes. There are several large multinucleated giant cells. Mitotic figures are very numerous. Between the cells is a varying amount of fibrillated intercellular substance. In some parts the amount is so small as to be scarcely visible, while in others it consists of well-formed fibres. Blood vessels are numerous and conspicuous. The tumour is a spindle-celled sarcoma, which has originated apparently in the cutis.

XANTHOMA MULTIPLEX.

By W. C. Oram, M.D.Dub.,
Stewart Medical Scholar, Trinity College, Dublin.

This disease, being somewhat uncommon, a note on an early case, although it presents no unusual points, may prove of some interest.

The patient, a young lady aged about 20, came under my notice a month ago, and has had symptoms of the disease for the past two years.

The lesions are distributed as follows: The palms of the hands and the flexures of the fingers are the most deeply involved, all the more important lines of the skin in these regions being picked out with the characteristic canary-coloured striae. The elbows over the end of each olecranon process show six or seven small yellow tumours about the size of half a pea. Smaller tumours are to be found scattered over the buttocks, and a very minute one upon the front of the right knee. The face and the rest of the body are unaffected, and the colour of the general skin is normal. There are no symptoms of jaundice or diabetes.

The disease causes no inconvenience, except that the lesions in the flexures of the fingers renders them somewhat stiff. Nothing in the family history calls for comment.

Histologically the tumours are composed of accumulations of globules of a fatty nature, the exact composition of which is the subject of some discussion.

The prognosis is not hopeful, most cases tending towards progression. As regards treatment, I have found in this case that a paint, consisting of acid. salicylic. 5j, chrysarobin 3ss, ol. ricini 3ss, collodium flex. ad 5j, suggested by Dr. Leslie Roberts, of Liverpool, when applied to the flexures of the fingers, made them much more supple; it also seems to have made the colour of the striae on the fingers much less intense during the short time that it has been used.

Dr. Wilmot Evans has recorded good results in the treatment of the disease by the *x* rays, and I have applied small, frequently repeated doses to the hands of this patient during the past month, but it is as yet too early to draw any conclusions. On the right elbow, however, I administered a full pastille dose of the rays three weeks ago, after having taken a wax cast of the condition as it existed at the time, and by comparing the cast with the patient's elbow to-day it is evident that a very considerable improvement has resulted, the tumours being less vivid in colour, and presenting a generally withered and atrophied aspect.

Note.—The case above described was one of those demonstrated before the members of the Section during the course of the week. On each of the three days that Section work was in progress the Section of Dermatology held informal meetings for the demonstration of cases half an hour before the reading of papers was timed to commence.

The Children's Country Holiday Fund (treasurer, the Earl of Arran, 18, Buckingham Street, Strand), to whose annual report we recently drew attention, is asking for subscriptions for the current year. A sum of 10s. covers all the expenses of a child during a fortnight, and though the fund is under the auspices of the Bishop of London, questions of creed do not come into consideration when selecting those to be sent away.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE TREATMENT OF SYPHILIS.

MR. D'ARCY POWER, in his article on the treatment of syphilis, recommends the administration of mercury perchloride, and gives two prescriptions for this preparation.

Some years ago I pointed out, and, I believe, proved, that mercury perchloride was one of the least efficient, and indeed, when given in hard water like the London water, often a useless preparation for internal administration. In answer to the question, "What is the best preparation of mercury to be given in syphilis?" I wrote:

> Since each of the numerous preparations of mercury is believed to be of benefit in syphilis, and since the only constant factor in these various preparations is the metal itself, we must suppose that it is the metal itself which is the curative agent, and not any of the substances with which it is combined. This fact suggests the answer that the best preparation of mercury is that which, in safe, unirritating doses, contains the largest quantity of the metal; for if mercury be the enemy of the syphilitic virus it is inconceivable that the very small quantity of the metal contained in the one-sixteenth of a grain of the perchloride can be as useful as the comparatively large quantity contained in a grain of mercury with chalk. This theoretic advantage of preparations containing a large quantity of the metal is also confirmed by experience; for one of the most convincing proofs of the value of mercury in syphilis is its rapid and striking influence over infantile syphilis.

Now in this form of syphilis the hydrarg. cum cretâ is the preparation generally given, and its rapid effect is, I contend, due to the large quantity of the metal circulating in the small body of the infant. Moreover, I have seen patients progress but slowly or not at all while taking corrosive sublimate and who improved rapidly when put on a course of mercury with chalk, or subjected to a course of inunction.

Again, I have seen several cases of severe syphilitic iritis develop while patients were taking corrosive sublimate, and I have seen again and again grave tertiary lesions follow even a prolonged course of preparations containing a small quantity of the metal. But I have never seen such after a prolonged *uninterrupted* course of inunction, or of preparations like mercury with chalk and blue pill. Corrosive sublimate, which is so frequently given in syphilis, is the least efficient form in which to administer mercury internally, for not only does it contain in a safe dose an exceedingly small quantity of the metal, but even this small quantity frequently fails to reach the patient, for when given (as it frequently is) in solution in ordinary water containing lime salts, it is liable to decompose, the mercury becoming precipitated at the sides or on the bottom of the containing vessel. Theoretical considerations, then, as well as practical experience, point to preparations containing a large quantity of the metal as the best for administration in syphilis. But while it is of advantage to have a large quantity of mercury circulating through the tissues of the patient, the quantity must not be so large as to produce salivation, purgation, or any other injurious effects; for when the struggling tissues are injured by mercury or by any other cause, then the enemy triumphs, and the worst forms of syphilis may ensue. It will be seen that the view which I am advocating as the best method of treating syphilis—namely, maximal doses, short of mercurialism, of preparations of mercury containing large quantities of the metal—is a compromise between the old school, which did harm with excessive doses, and a modern school, which believes in minimal doses.

London, W. J. MCNAMARA, M.D.

The [illegible] Universal Cookery and Food Exhibition will be held in the Royal Horticultural Hall, Westminster, from October 29th to November 2nd. The exhibition is devoted solely to exhibits connected with food, cookery, confectionery, and bakery, including new inventions and ideas in cooking, and an international display of trade novelties of a useful and educational character. In the list of patrons we note the names of Sir James Crichton-Browne, Sir Anderson Critchett, and Sir Arthur Downes.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

LEEDS GENERAL INFIRMARY.

A CASE OF ACUTE PUERPERAL INVERSION OF THE UTERUS.

(Recorded by J. B. HELLIER, M.D.Lond., Honorary Obstetric Physician.)

THE patient in the following case, a woman aged 18, was admitted under my care on the evening of March 28th, 1912, having been sent in from a distance of 36 miles. She was a primipara who had been delivered on March 24th, and was suffering from puerperal inversion of the uterus.

There seems to have been some difficulty with the placenta, which was said to have come away in two pieces. There was much *post-partum* hæmorrhage, and she had continued to lose more than the normal amount of lochia cruenta.

State on Admission.—She was blanched, with rapid pulse (128 to 140) and a temperature of 102.5°. The vagina was occupied by the fully inverted uterus, which felt like a large polypus with a pedicle two inches thick. It had a grey, sloughy appearance, and a small fragment of placenta was still adherent. The vagina was full of dirty offensive discharge. The cervix was fully dilated, and the division between vagina and cervix obliterated.

Treatment.—The patient was anæsthetized by intravenous injection of hedonal, about 820 c.cm. of a 75 per cent. solution being allowed to run into the vein at the elbow. After the parts had been disinfected as well as possible with lysol, I reduced the inversion by about 15 minutes' steady manual taxis. At first the uterus felt so large in proportion to the small "pedicle" that success seemed unlikely, but at the end of this time it went back somewhat suddenly. A large Hegar's dilator was introduced to make sure that reduction was complete, and the cavity was packed with iodoform gauze. No special signs of shock followed the reduction.

Result.—As the uterus was already in a condition of septic endometritis, daily irrigation was ordered, and the offensive discharge gradually ceased, but convalescence was complicated by a slight degree of phlebitis with swelling of the left leg. This, however, soon subsided, and she went to the convalescent home, and was thence discharged cured on May 22nd.

COMMENT.

The new anæsthetic, hedonal, answered very well here, and combined anæsthesia with the benefit of saline infusion. There was no difficulty as to the diagnosis, but one must remember how large the puerperal uterus is at this stage, and how lax the vagina. Thus, though the inversion was total, the hand could be passed nine inches into the vagina before the fingers were arrested by the inverted wall of the genital canal. After reduction the fundus reached the navel. I saw a somewhat similar case in November, 1909, in a patient who had been delivered by a midwife five days before; but here three minutes sufficed for the reduction.

I record the case because of the extreme rarity of the condition. Many a man practises for a lifetime without seeing a case, and a distinguished obstetrician of exceptional experience told me recently that he had never seen a case. Knestner says that in the clinic of Braun and Spaeth in Vienna no case occurred in 250,000 deliveries, and Ahfeld saw but one in more than 100,000 labours.[1] This is true of well-ordered lying-in clinics, but a large proportion of the cases have occurred in the practice of midwives. Still, we must be fair to the midwives. If they attend half the cases in a district they are not necessarily to be blamed if they see at least half the inversions. The spontaneous occurrence of inversion is established beyond question. Probably it is often produced by undue traction on the cord for which the accoucheur is not responsible, as in cases where the cord is wound around the neck or entangled in the limbs, or is of abnormal shortness. Dyhrenfurth recorded a case of inversion where the cord measured only 1.4 inches.

It is a curious fact that in 64 cases of *post-mortem* delivery, collected by Reinman, inversion was found in 7. Inversion is now known to be commonest in young primiparae, but I think the case here recorded of inversion at the age of 18 must be amongst the youngest on record.

[1] Veit's *Handbuch d. Gynaecol.*, Band I, S. 383 et seq.

Reviews.

SOCIAL PATHOLOGY.

Under the title *Soziale Pathologie*,[1] Dr. Grotjahn has published a work of which the value and interest will reward the great labour it has involved. In it he has collected the available material to illustrate the double way in which social factors act in the development of disease, and the disease reacts on social and racial problems. The field is enormously wide, yet it is here passed under systematic review with a fullness that has included practically every aspect to which attention has at any time been directed, and the perspective is on the whole so good that the distortions due to the author's national experience are easily noticed and allowed for. The great volume of information gathered under the German system of insurance has naturally contributed much of the material, but the resources of other nations have also been freely drawn upon, and as there is an ample bibliography the book is a store for those wishing to study any particular problem, as well as a chart for those who wish to survey the whole field.

With regard to the system of insurance itself, Dr. Grotjahn seems to have no hesitation, and so far as the book in its socially constructive aspects can be summarized, it may be said that he looks to development of the insurance organization as the road to improvements by which the deleterious action of disease on the validity and heredity of the race may be lessened. Incidentally he points out that the economic change in the position of the doctor is leading to a reduction of that charitable service which the old physicians looked upon as a duty of their office, and which "under a patriarchal system they were in a position to render," but that the profession is beginning to recognize that its members must now give an equivalent for this charitable work in the form of conscious social activity.

The study of each disease is systematized under six points: 1. Frequency, which measures the importance to society as the danger of the condition does that to the individual. 2. Form, the clinical type being the average of the more severe cases only, and socially less important than the abortive cases; with this fact the "carrier" problems have made us familiar. 3. The influence of social factors in production of the disease through such mediums as housing, sanitation, social habit. 4. The reaction of disease on social problems, such as those of population, defence, industry, and degeneration. 5. The influence of medical activities in the prevention of disease and in its remedy. 6. The influence of social measures in preventing and alleviating disease and its consequences. From these points of view each disease has its own characters, but presents also some features common to others of its class, and Dr. Grotjahn has at the end of each section attempted to bring together these general aspects. Under this method the studies of individual conditions all present points of interest, but vary in the amount of the available material and in their sociological importance in a way that indicated so far the selection to be made in a general review.

Tuberculosis is very fully discussed. International statistics are given to illustrate its relations to occupation, housing, and income: for Germany the annual cost, including that of inability to work, is reckoned as equivalent to a tax of not less than 15 marks per family. The fact noted that the absence of provision for dependents, when an insured person is an inmate of a sanatorium, has a serious deterrent effect on early cases, emphasizes the wisdom of the provisions of the British Insurance Act in this respect. The results of the study otherwise are in general conformity with opinion in this country on this subject.

With regard to venereal diseases, the German insurance system, by registering the number of days of total inability to work, affords an index, though certainly not an adequate measure of their frequency. In Leipzig the annual rates per 100,000 for syphilis, gonorrhœa, and soft sore respectively were—for men, 118, 187, 105, with 3,558, 4,301, 2,684 days' unfitness for work; and for women, 239, 81, 39, with 9,682, 3,019, 1,375 days. Horace's line, *Desinat in piscem mulier formosa superne*, sums up the author's suggestion for remedial measures. Abandoning as impractical the idea of any fruit from a movement for individual chastity, he enters on an almost enthusiastic crusade for education in coitus condomatus, and gives very detailed information on its technique. To this measure he returns in a later chapter, when he is discussing the influence of excessive childbearing on the health of women; and though he is by no means oblivious of the social dangers which may follow, he looks more hopefully than we feel justified in doing for the growth of a new ethic which would protect the community from the risks to which the practice would certainly expose it. The results of the official regulation of prostitution the author regards very unfavourably, but he looks upon compulsory hospitalization of venereal patients, so long as they are infective, as a necessary adjunct to any preventive measures.

Under the heading of skin diseases we note the persistence of scabies, which, up to 1901, furnished not less than 3 per cent. of the cases in German public hospitals. The establishment of public baths as a factor in skin hygiene is fully discussed, and the author has no hesitation in acknowledging the indebtedness of Germany to Lieutenant Müller, whose "system" of gymnastics has shown there the possibility of effective bathing with a scanty water supply.

The section on diseases of digestion and metabolism furnishes occasion for an interesting discussion of the relations of dietetic custom to social organization. The improved earnings of the industrial classes have not remedied the tendency to under-nutrition, and the author looks hopefully to legislative re-establishment of an association of the housing of the working class with the possibility of gardening as an essential feature of the town plan of great industrial centres. A recession of the modern industrial development of agriculture seems to him in a certain degree necessary for national safety.

The section of fifty pages on childbirth and diseases of women raises so many points of interest that we select for mention, somewhat unfairly, the suggestion that, owing to the racial worthlessness of twins, multiple pregnancies should be ended artificially as soon as they are diagnosed; and a remark that, in "Yankee" practice, "it is an everyday affair, in spite of the illegality, for the doctor to be asked to procure abortion, a request which the majority of the doctors assent to without more ado."

Infantile diseases and mortality are the subject of a very detailed and comprehensive study which merits attention not only in Germany, where the general infantile mortality is relatively high, but also here. The various remedial experiments are carefully reviewed, but the author regards housing reform as the key to the solution of the problems.

The discussion of nervous and mental disease touches in no superficial way many important topics. The relations of alcoholism to the character and duration of labour and to housing on the one hand, and to degeneration on the other, are elaborately reviewed, and the importance of the influence of the psychopath in religion and politics, art and science is fully recognized. Space, however, makes it impossible to do more than mention these matters, and the points of social interest in surgical affections, cancer, and diseases of the eye and ear must also be passed by to give room for a slightly more extended notice of the final ninety pages of general discussion.

From the chapter on the social value of medical activity a few notes may be made regarding the German insurance system, in which as a factor of social amelioration Grotjahn is a firm believer. In 1909 the sickness scheme embraced 13.4 million persons, and the per head expenditures were approximately: for doctor, 5 marks; medicines, etc., over 3 marks; sick pay, 10 marks; maternity, 0.4 mark; death payments, 0.55 mark; hospitals, just under 3 marks. Under accident insurance the cost of treatment is about half a mark per head, and under invalidity, 1.2 marks. In spite of the well-known low economic status of the German practitioner, the outlays for treatment seem to exceed the scale allowed for in the British Act. Interesting tables are given of the accident experience of different occupations and of the various causes of invalidity in men and women. The author says that from former experience as "Kassenarzt" he thinks that three-fourths of the cases the doctor sees at the

[1] *Soziale Pathologie*: Versuch einer Lehre von den sozialen Beziehungen der menschlichen Krankheiten als Grundlage der sozialen Medizin und der sozialen Hygiene. Von Dr. med. Alfred Grotjahn. Berlin: August Hirschwald. 1912. (Sup. roy. 8vo, pp. 702. M. 18.)

surgery would get well without going to him if they had to pay either the doctor's fee or half the cost of their medicine; and, further, that:

The restriction of medicines to those needed for the longer and more serious illnesses would be an excellent means of rendering the funds healthy, and would restore the dignity of the insurance service and make possible the free choice of doctor, which is on many grounds urgently needed.

The chapter on the rationalization of human reproduction is summed up in the three following propositions:

1. Each married pair has the *duty* of raising as a minimum three children through the fifth year of life. 2. This minimum is to be aimed at even when the constitution of the parents renders defectiveness (minderwertigkeit) of the offspring likely; in this case the minimum is under no circumstances to be exceeded. 3. Each pair which is distinguished by special fitness has the *right* to exceed the minimum by about double, and for each child in excess to receive material compensation to be raised by a tax on single persons and on married pairs whose production is below the minimum.

In the concluding chapter on the social value of hygienic activities, the author passes in brief and tolerant review the various social "movements," even those with which he himself is not in agreement. After the relative import of means and men has again been mentioned, a glance is thrown forward to a millennium in which pathology by its development into orthodietetic, hygiene, and eugenic has achieved its own annihilation.

The elaborate bibliography is scattered through the volume and a sufficient index is provided.

DISEASES OF THE EAR.

DR. WILLIAM MILLIGAN and Dr. WYATT WINGRAVE, in their *Practical Handbook of Diseases of the Ear*,[2] lay particular emphasis upon the importance of the aural surgeon and the clinical pathologist co-operating to ensure accurate diagnosis and efficient treatment. To this end much space has been devoted to full descriptions of the morbid processes underlying affections of the ear, and the authors appear to assume that the general practitioner will be prepared to make routine microscopical examinations of discharges, and so on; the risk in giving such advice is that it may make the ordinary man despair, and deter him from making full use of a very valuable and instructive book. The sections dealing with ear disease from the practical side are well arranged and clearly written. The anatomical descriptions are lucid and adequate and well illustrated. The subject is dealt with in a manner at once comprehensive and thorough. There is an excellent chapter setting forth the different methods to be employed in examining the patient. The various instruments in general use are well described, both verbally and pictorially. The clinical aspects of disease are clearly portrayed, and the advice as to treatment—operative and therapeutic—is sound and in accordance with the best modern practice. Perhaps the best chapters are those dealing with the intracranial complications of middle-ear disease. The authors are strongly in favour of extensive decompression operations in otitic meningitis, whether serous or purulent. Dr. Purves Stewart has contributed an extremely useful chapter in which the part played by diseases of the ear in relation to general medicine is set forth. The last seventy pages are given up to the consideration of diseases of the nose and naso-pharynx so far as they have a special bearing upon diseases of the ear. Three operations for the relief of a deflected septum are described, whilst the various forms of rhinitis and the treatment of them are very fully discussed. The matter and the manner of the presentment of the subjects dealt with are alike excellent; but the perspective is, perhaps, sometimes a little faulty. The suppression of unessential details and the condensation of some needlessly diffuse descriptions would make the book the best of its kind with which we are acquainted.

THE HYGIENE OF THE SKIN.

We have before us two books on the care of the skin and its appendages, each written by a physician of long experience in the treatment of its diseases. Both show, perhaps, a tendency to exaggerate the depth of the ignorance of the average educated man or woman who alone will be likely to read such books. Dr. ALLAN JAMIESON, however, believes that it is too readily assumed that every one can intuitively manage his or her skin, and has therefore written this small book on *The Care of the Skin in Health*.[3] The first part gives a brief but lucid account of the structure of the skin and hair, and of the functions of the skin, since a general conception of these matters is considered necessary in order to appreciate rightly the measures requisite to maintain the skin in health. The rest of the volume deals with the care of the skin, hair, and nails, and gives simple instructions as to diet and clothing. Not every medical man will agree with Dr. Jamieson's view that the use of soap is to be avoided except for the hands or for skin soiled by employment. Dr. Jamieson says that a hot bath (98° or over) should never be taken unless under medical sanction and advice, and a warm bath (85° to 95°) only under exceptional circumstances. As a rule, the temperature of the morning bath should be 56° to 80° F., and a medium temperature of 60° is regarded as an excellent average. Many would consider this too low for cleansing purposes without the use of soap. Detailed directions are given for taking the bath; subsequent massage with a roller belt and a massage glove is advised and the method described. The reader is also told how to trim the nails and how to brush the hair, and the proper way of applying pomade to the hair of the head and to the beard and moustache. The final chapter gives some hints as to clothing, and brief directions as to diet in regard to its bearing on the due conservation of the skin. Dr. Jamieson is a strong advocate of soured milk as a warder-off of the evil effects of advancing age upon the skin.

Dr. PUSEY, in his book on *The Care of the Skin and Hair*,[4] deals first with the structure and functions of the skin. Then follow chapters upon the care of the general health, with simple directions as to diet and exercise, upon baths and bathing, soaps, cosmetic powders, ointments and creams, and short descriptions of the commoner skin diseases. The later part of the book is concerned with the hair, its structure, and with its care in health, and the commoner affections of the hair and scalp. We note that Dr. Pusey does not object to the use of soap for the skin, nor to the hot bath nor to the cold bath. He adheres to what we believe to be a fallacious opinion—namely, that frequent use of water for the scalp is bad for the hair, and that the daily use of water without careful drying is a factor in the production of baldness. It goes without saying that in a book written by Dr. Pusey the information and advice are sound and good, but all the knowledge required by a healthy person for the maintenance of the skin in health could be profitably condensed into a much smaller space. There is much repetition in the book, and there are not a few contradictory statements. On page 163, for example, it is stated that atrophy of the skin, and not seborrhoeic dermatitis, is the chief cause of premature baldness; and, on page 167, that seborrhoeic dermatitis is probably the most important causative factor. Even the short descriptions of such affections as eczema, herpes, moles, milium, xanthoma, chloasma, etc., might have been omitted. It is true that Dr. Pusey disapproves of the mischievous habit of self-medication, and very rightly gives the lay reader no directions for the treatment of these skin troubles. But a person with a healthy skin has really no need to know anything of these affections.

NOTES ON BOOKS.

DR. ALVAH H. DOTY, the Health Officer of the Port of New York, has condensed much valuable matter into a comparatively small space in his book on *Prevention of Infectious Diseases*.[5] It is written from the results of his

[2] *Practical Handbook of the Diseases of the Ear, for Senior Students and Practitioners.* By William Milligan, M.D., and Wyatt Wingrave, M.D. London: [illegible]. 1912. (Cr. 8vo, pp. [illegible].)

[3] *The Care of the Skin in Health.* By W. Allan Jamieson, M.D., F.R.C.P.E., Consulting Physician for Diseases of the Skin, Edinburgh Royal Infirmary. London: Henry Frowde, Hodder and Stoughton. 1912. (Cr. 8vo, pp. 109. 2s. 6d. net.)

[4] *The Care of the Skin and Hair.* By Dr. William Allen Pusey, A.M., M.D., Professor of Dermatology in the University of Illinois. New York and London: D. Appleton and Co. 1912. (Cr. 8vo, pp. 173. 2s. net.)

[5] *Prevention of Infectious Diseases.* By Alvah H. Doty, M.D., Health Officer of the Port of New York. New York and London: D. Appleton and Co. 1911. (10s. 6d. net.)

own experience and observation, and he contends that many current notions as to the causes for the spread of infectious diseases are false and misleading. He accepts the view, now generally adopted in this country, that the closing of schools during epidemics is useless, and should be replaced by a careful daily inspection of school children at such times, carried out by physicians, not by school teachers. The volume contains chapters on small-pox, yellow fever, typhus fever, cholera and plague. Though specially written from the point of view of the port medical officer, each chapter contains most useful guidance for all who may be called upon to deal with outbreaks of these diseases. Nearly one-third of the whole book is devoted to a consideration of disinfection and disinfectants. Dr. Doty does not hesitate to condemn the sale and use of many substances which the public and indeed many sanitarians have erroneously regarded as means to prevent the transmission of infectious diseases. Throughout the book the routine use of the thermometer in detecting the presence of infectious disease is advocated, and in addition a short chapter is devoted entirely to the clinical thermometer as an important factor in the modern inspection of suspects or persons held for observation. The author has carried out a series of tests extending over a period of many years, and including thousands of observations on the temperatures of contacts and suspects; careful attention was paid to all details necessary to secure correct results. Apart from the value of these observations as narrated in this chapter in regard to quarantine work, Dr. Doty has made some interesting investigations concerning variations of temperature in the normal healthy body. The principles upon which sanitary science is founded are clearly expounded in this instructive volume, which forms an excellent contribution to public health literature.

Drs. H. Dominici and A. A. Warden have now issued a reprint of a paper on *The Technique and Results of Radium-Therapy in Malignant Disease*,[6] which was read by Dr. Warden before the Section of Radiology and Medical Electricity at the Annual Meeting, 1910, by way of accompaniment to a demonstration which Dr. Warden then gave on Dr. Dominici's behalf. On that occasion a number of patients were shown, and the reprint contains pictures of the patients before and after treatment. The new edition has been prepared in order to bring up to date the history of the seven cases which were then described as showing such satisfactory and complete local regression as to justify the word "cure." During the time that has since elapsed, though two of the patients are dead, none of them have exhibited either recurrence or metastasis of the growths treated. The two deaths were due, one to acute pneumonia and the other to pulmonary tuberculosis. The growth in one of the cases was lymphadenoma, in two sarcoma, and in four epithelioma.

Popular taste has always been a very variable quantity, and fashions in literature change almost as quickly as fashions in art or music. But there is one type of fiction whose charms never seem to pall; and a good detective story can always be certain of finding an appreciative public. Mr. Charles Ernest Sterrey's novel, *The Voice from the Night*,[7] should therefore be popular amongst that class of readers who love to be amused and excited by thrilling accounts of hairbreadth escapes and unusual adventures. The plot turns on the trial and unjust condemnation of a young doctor for murder, and on the efforts made by the hero, a brother physician and his bosom friend, to track down the real transgressor—a task which takes him as far afield as Venezuela, and nearly costs him his life into the bargain. There is little or no attempt at character drawing, and much of the dialogue is spoilt by the extremely stilted and flowery language in which the personages of the story are apt to indulge in moments of emotion; but the secret is well kept to the end, and the dramatic conclusion proves once more the truth of the old saying, "Who seeks adventures finds blows."

It is difficult exactly to appraise Miss Honnor Morten's book, *Child Nurture*.[8] It is something of a pot-pourri of useful information, sentimental gush, and unsound pathology. The impression which its perusal leaves upon our mind is one of distrust with so much meddling with the young human animal, and the writer does not seem to have come to any very clear conclusions upon many points. The useful information would be more useful if exact references to authorities had been given. The gush—such as the pages of letters from a doting young mother over her "treasure"—might well be spared, and the pathology and much of the domestic medicine are likely to do more harm than good. Nevertheless the book may be useful, but it would have been none the less so had it been boiled down to a third of its present bulk. The author denounces the present system of compulsory education in the United Kingdom, because "The children are forced to go to school between the ages of 5 and 14, not only if they dislike it, but when the parents do not approve": but we are not told what alternative, if any, she has to offer.

[6] *The Technique and Results of Radium-Therapy in Malignant Disease.* By M. Dominici, M.D.Paris, Chef du Service de Pathologie Laboratoire Biologique du Radium, and A. A. Warden, M.D.Glasgow and Paris, Visiting Physician to the Hertford British Hospital, London: J. and A. Churchill. 1912. (Medium 8vo, pp. 29; figs 24. 2s. net.)

[7] *The Voice from the Night.* By Charles Ernest Sterrey. London: George Allen and Co., Ltd., 1912. (Cr. 8vo, pp. 446. 6s.)

[8] *Child Nurture.* A Handbook for Parents and Teachers. By Honnor Morten, author of *The Nursery Nurse's Companion, Consider the Children, Health in the Home Life*, etc. London: Mills and Boon, Limited. 1911. (Post 8vo, pp. 251. 3s. 6d. net.)

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

The seventy-first annual meeting of this association was held on July 11th and 12th at the Guildhall, Gloucester, Dr. James Greig Soutar, of Gloucester, the new President, in the chair.

Presentation to Dr. Hubert Bond.

The first morning was occupied with the business of the association, and the first function in the afternoon was to present to Dr. Hubert Bond, Commissioner in Lunacy, an illuminated testimonial from the members expressing great admiration for his work as Honorary General Secretary of the association for seven years, during which time there had been a great accession of new members.

Vote of Thanks to Retiring President.

The thanks to the outgoing President (Dr. William Dawson, of Dublin) were very cordial, and were proposed and seconded respectively by Dr. McDowall and Dr. Percy Smith, the latter remarking that the association was very fortunate in having had two Commissioners in Lunacy as presidents in succeeding years. Dr. Dawson, in acknowledging, said he was proud to have been President in a year which had seen the initiation of a movement to provide clinics in psychiatry and improve the conditions of service of asylum medical officers in the kingdom.

New President's Address.

Dr. Soutar then took the chair and proceeded to deliver his address. His first words were those of welcome to Gloucestershire and to its city, which was one of pilgrimages. Seventy-one years ago six men met in Gloucestershire and laid the foundation of the present association. He said he could not, in this address, bring to the association fresh tidings from the laboratory, illuminating generalizations from the wards, nor any new theory to replace the old, which had had holes knocked in it by collision with rugged facts. He had not even new views on classification, and would only say that the more detailed it became, the greater seemed to be the practical difficulty in pigeon-holing cases. He proposed, therefore, to confine his remarks to two drifts of opinion which seemed to be at present circling among psychiatrists. The first was that their Continental brethren were outstripping Britons in the study of the speciality. But he thought the validity of that statement might well be examined. He quoted from Sir Thomas Clouston's *The Hygiene of Mind*, and after setting forth the vast range of subjects which required to be studied he again asked the author's query, "Who is sufficient for these things?" The answer was, No person, no people, no period. He believed that when the reckoning was made there would be found, among valued and welcomed contributions in foreign coin, bits of British gold, bearing dates of our own times, of days gone by, and of others yet to come. He recommended the perusal of the historical part of Clouston's article, "The Diploma in Psychiatry," in the *Journal of Mental Science*, April, 1911. Among the members of the society were a large number who were interrogating the function of every organ of the body, stimulated thereto by the suggestion that in many cases the wreck of mind was but a manifestation of antecedent faults in metabolism which

might be found to be remediable or avoidable. But it was not justifiable to go to the State and ask for money to gratify the insatiable inquisitiveness of the scientific mind. Such a request would be met by the scientific inquiry—not, What are your theories, your hypotheses, your speculations, your hopes? but, Upon what already ascertained facts do you base them? If it could be shown that what had been done was justified by its practical utility—that the laboratory and the clinic had furnished knowledge which made for the mental health of the people—then their case was won, and they would have ranged on their side the humanitarian instinct. But had the stage been reached in psychiatry when that could be promised? Were they not rather inspired by hopes than supported by assurances which could be formulated and submitted in a convincing way? He said that the fact that they did not possess the highly equipped State clinics and research laboratories which were to be found elsewhere must not be taken as indicating want of sympathy with research, or as failure to promote treatment, but rather that it had not yet been shown that the benefits from them were commensurate with the financial burden entailed. His remaining word concerned the diploma in psychiatry. It was altogether good that further opportunities should be afforded for study under competent teachers, but it was not possible to include all the subjects which bore on the marring of the mind, and so a selection had to be made for the purposes of this diploma. He thought the idea should not be entertained that these were the only lines which led to effective work in this special line, and he reminded the meeting of the practical-minded general practitioner who, while laying no claim to the title of specialist, was eager and ready to apply the knowledge given to him. He deprecated the diploma being regarded as essential to candidates for the higher appointments, or to him who aspired to consulting practice. The diploma could, at most, be but a sign of a varying degree of acquirement within a narrow range of that wide field of knowledge which was applicable in their work, and it ought not to be considered as the sole passport to success.

On the proposition of Sir GEORGE SAVAGE, seconded by Dr. SYDNEY COUPLAND, the President was heartily thanked for his address.

Appendicitis in Asylums.

Mr. J. F. BRISCOE read a paper entitled Appendicitis in Asylums, which was published in the JOURNAL of July 20th, p. 118.

Sir GEORGE SAVAGE confirmed the view that appendicitis was very uncommon in asylums, and said that during his seventeen years at Bethlem Asylum he saw only one case, and that was in a house-physician. The discussion was continued by Mr. BUCKELL, Dr. PERCY SMITH, Dr. BLAIR, Mr. WALLACE, Mr. HOWELL and Dr. MENZIES; and Mr. BRISCOE replied.

Bacteriology of Diarrhoea and Asylum Dysentery.

Mr. MCKINLEY REID read an exhaustive paper on the bacteriology of over forty cases of diarrhoea, with special reference to asylum dysentery. He divided his cases clinically into four groups: (1) Acute dysentery; (2) chronic dysentery; (3) severe diarrhoea; (4) slight diarrhoea. He reported that from faeces of patients suffering from acute dysentery one or other of two atypical strains of the Flexner bacillus had been isolated on sixteen occasions, and *B. morgan No.* I twice. He detailed the organisms found in the remaining cases, and compared the cultures made from stools with those obtained from organs in fatal cases. He also gave the control results, and the agglutination tests with patients' serums and rabbit Flexner immune serum. He referred to the toxicity of cultures in guinea-pigs, and reviewed the literature on the bacteriology of dysentery. The paper was discussed by Dr. MENZIES, Dr. PORE, and Dr. GOODALL, and the author replied.

Annual Dinner.

The association's annual dinner was held at the Guildhall, Gloucester, when the High Sheriff of Gloucestershire and the Deputy Mayor of Gloucester were present.

The Mental Deficiency Bill.

The Friday sitting was devoted to a discussion on the Mental Deficiency Bill. Dr. HYSLOP, in introducing the discussion, said that legislation was urgently needed for 66,509 of the 149,628 mentally defective persons in England and Wales alone. In Scotland 34.57 per cent. of the defective were estimated as urgently in need of provision, while in Ireland the corresponding figure was 66.06 per cent. The Royal College of Physicians' definition of the feeble-minded was "persons who are capable of earning a living under favourable circumstances, but are incapable, from mental defect existing from birth or from an early age, (*a*) of competing on equal terms with their normal fellows, or (*b*) of managing themselves and their affairs with ordinary prudence." But this he thought hardly sufficient to form a basis for legislation, and it was also apt to cause many misgivings and apprehensions in the public mind, inasmuch as it might include many who might with justice be excluded from the provisions of any bill involving any deprivation of liberty of the subject. In the history of every prophylactic measure adopted for the benefit of the greatest number there had, he said, ever been much opposition and delay, owing to fetish worship of the liberty of the subject. He regarded as one of the most important parts of the bill that dealing with the matter of preventing procreation by the mentally defective. Those who concerned themselves with the problem of degeneration knew that much of the defective-mindedness so prevalent might in the future be obviated. In discussing the marriage laws he expressed the opinion that, just as the habitual drunkard was deprived of his liberty, so the existence of the alcoholic habit should be a bar to matrimony. Temporary and developmental attacks of mental deficiency were still inadequately provided for, and it was necessary to fall back upon the provisions of the Lunacy and Idiots Acts. Dr. Hyslop then proceeded to discuss the question whether the bill was sufficient protection for existing institutions for idiots and imbeciles and for other institutions in which defectives were at present treated. He considered that the liberty of the subject would be as efficiently safeguarded under this bill as it now was under the provisions of the Lunacy Acts and the Idiots Act, and concluded by a detailed reference to administration and economy.

Resolutions.

Dr. WILLIAM DAWSON (ex-President) brought the lengthy discussion to a head by proposing:

> That we, the Medico-Psychological Association of Great Britain and Ireland, cordially endorse the action of our Irish Division in endeavouring to have the provisions of the Mental Deficiency Bill extended to Ireland, and we would urge upon the Government the modifications necessary for that purpose.

He pointed out the great need there was for such provision in Ireland, for in that country there was only one institution for imbeciles and idiots, and that was a voluntary one, able to take only about one hundred patients.

This was seconded by Dr. DRAPES, and carried unanimously.

Dr. MIDDLEMASS proposed and Dr. MACRAE seconded:

> That a deputation, to be chosen by the President, Past-President, and President-elect, be appointed to wait on the Home Secretary and any other Government official whom it is thought desirable to interview, to lay before them the views of the association, so far as they have been expressed, respecting the Mental Deficiency Bill.

The resolution was carried unanimously.

Entertainments.

The social arrangements made by the local members included a pastoral play, *The Fantastics*, at Barnwood House (private asylum).

IN the annual report for the year 1911 the authorities of the Queen's Hospital for Children supply a careful statistical analysis of all cases treated in the wards. The medical cases which recovered and died respectively are classified according to the diseases which they represented, and the surgical cases are similarly treated. Certain conditions, such as empyema, appendicitis, intussusception, and tuberculous peritonitis, are still further analysed, the result being to make the returns relating to in-patient work much more interesting than are those commonly supplied in the annual reports of hospitals.

Nova et Vetera.

MODERN FAITH HEALING.

(Continued from p. 252, Vol. I, 1912.)

THE MARQUIS DE PUYSÉGUR.

Mesmerism did not die with Mesmer. The prophet's somewhat tattered mantle fell on some disciples, but the pure gospel as preached by the Master was modified in development. Not that mysticism was eliminated from it, but the ritual with which the patients around the tub had been impressed was discarded. One of his most fervent disciples was Puységur. A short sketch of his life will enable the reader to understand the character of the man.

Armand-Marie-Jacques de Chastenet, Marquis de Puységur, was the grandson of the Marshal of the same name who fought at Fontenoy. He was born in 1751 or 1752 and in 1768 became an officer in the artillery, where, owing to family interest, he rose more rapidly than was customary at that time. In 1782 he saw service in Spain and acted as Major of the Trenches at the siege of Gibraltar. In 1786 he became Colonel of the regiment and Commandant of the School of Artillery at La Fère. He left the service of his own accord in 1792. He had previously been fascinated by the doctrines of reform which led to the Revolution, but, being a man of moderate character, he took no active part in that upheaval. He went to live on his estate at Buzancy, near Soissons. He was accused of corresponding with his two younger brothers, who were *émigrés*, and was consequently kept in prison at Soissons with his wife and children. How he escaped proscription and the guillotine does not appear. After the Revolution he devoted himself to the service of the members of his family as they came home from foreign countries. He bought back a considerable part of the possessions of his ancestors and divided the whole with his relations. He also sheltered many of the victims of political persecution in France. In 1800 he was named Mayor of Soissons, but resigned the office in 1805. He had married a Mdlle. de Saint James, daughter of the Treasurer-General of the Navy, and with her received a dowry of £48,000. When his wife's father became bankrupt, Puységur returned the whole of this money. On the return of the Bourbons and during the Restoration he received none of the rewards and the distinctions which were showered on the Royalists. The author of his *Life* in the *Biographie Universelle* seems to think that he was badly treated, but it would appear in the first place that he had not asked for anything—and it is well known that in such matters he that does not ask need not expect to receive; and in the second place, from the fact that he lived without molestation in France throughout the Revolution, it may be inferred that his opinions could scarcely have been of a kind that would entitle him to the favourable notice of the representatives of the ancient *régime*. Notwithstanding this he got his promotion to the rank of Lieutenant-General in due order of seniority. At the coronation of Charles X at Rheims, he established himself on a public promenade in a tent which had been used by his father at Fontenoy. It had an inscription inviting all passers by to pay him a visit. The place he chose for camping out in this fashion was very damp and he contracted an illness which carried him off at Buzancy on August 1st, 1825.

To us Puységur is chiefly interesting from his connexion with Mesmer and animal magnetism, to which he devoted a large amount of his time, and on which he wrote many books, beginning with *Mémoires pour servir a l'histoire et a l'établissement du magnétisme animal* (1784). A second edition appeared in 1805. Another work, entitled *Du magnétisme animal considéré dans ses rapports avec diverses branches de la physique*, appeared in 1804 to 1807. It was reprinted in 1820 with notes by David d'Epresmenil. Among the other writings of Puységur are: *Recherches, expériences et observations physiologiques sur l'homme, dans l'état du somnambulisme naturel et dans le somnambulisme provoqué par l'acte magnétique* (1811); *Les Fous les insensés, les maniaques et les frénétiques ne seraient ils que des somnambules désordonnés?* (1812). *Les vérités cheminent, tot ou tard elles arrivent* (1814). He was also the author of numerous articles in the *Bibliothèque du Magnétisme Animal*. This list is sufficient evidence of his literary activity in defence of mesmerism. In addition to this work of propaganda, he was the author of plays: *La Journée des Dupes* (1789); *L'Intérieur d'un Ménage Républicain* (1789); *Le juge bienfaisant* (1799).

There is no doubt that Puységur was a man of true philanthropy, and that he took up animal magnetism in the hope of benefiting his fellow men. On his return from Spain, about 1783, he had followed with his youngest brother the lessons of Mesmer at Paris: he was one of the subscribers who paid 100 louis to be initiated. He proceeded to apply the doctrines on his estate at Buzancy. Transforming his house into a kind of hospital, he treated all the sick who came to him, and as the number became too great for him to touch them all he magnetized an old elm tree in the middle of the village. In two months Puységur is said to have wrought 62 cures, and 300 patients were down for treatment when, at the end of June, he was obliged to join his regiment at Strassburg. It was during this time that he made the discovery of somnambulism, with which his name is identified. Mesmer, indeed, had observed the phenomenon, but does not seem to have perceived in it any significance, and later was vehement in condemnation of it. In Puységur's hands it transformed the method. He gave up the complicated apparatus of the tub and magnetized conductors and substituted for them the use of touches, and especially the exercise of the will. After Mesmer left France, Puységur became the leader of the school, and, owing to his impulse, "societies of harmony" were founded at Strassburg, Metz, Nancy, and elsewhere in France. The Revolution did not interrupt his work. His house remained always open to patients and to refugees. Under the Empire he published new editions of his first writings, and from time to time reports of his chief cures. During the invasion of 1814 he was specially protected from interference by the foreign soldiers.

It is not always easy to understand Puységur's attitude towards animal magnetism. In his *Mémoires pour servir a l'établissement du magnétisme animal*, the preface of which is dated December 28th, 1784, he begins by referring to the conclusions of the commissions, which were given in full in the Journal of January 13th, 1912, p. 79; January 20th, 1912, p. 133; January 27th, 1912, p. 199; February 3rd, 1912, p. 249. These conclusions were that the effects of mesmerism were due to imagination, to imitation, or to the pressure made on certain parts of the body. He goes on to speak of the momentary ridicule with which so important a decision had covered him who had been one of the first to express his conviction of the reality of the effects of animal magnetism. His book is an appeal against the discredit which he evidently feels he has incurred. It is also an apologia for Mesmer, whose triumph he hopes may be hastened by his efforts. On the other hand, in his *Magnétisme animal* (1807) he gives an account of his discipleship under Mesmer, which suggests that he got nothing in exchange for his money. When the prophet of animal magnetism arrived in Paris in 1782, circumstances had prevented Puységur from following the study of physics and chemistry, which he had only skimmed in his youth. At first, when listening to Mesmer, he strove to connect his early knowledge with the new "discovery." At first he was very sceptical:

> With my small knowledge whether prejudice, incredulity, or an idea of the influence exercised on my imagination, I was for a very long time incredulous as to the reality of animal magnetic action. My incredulity went so far that seeing my two brothers produce effects analogous and even the same as those wrought by M. Mesmer two years before me, I was rather tempted to accuse them of quackery or of being the sponsors of a quack than to yield myself to that which I looked upon as a weakness of mind. Seeing nothing in short in all that which recalled the sparks of electricity, and my beloved phosphoric and vitriolic acids, I concluded with entire satisfaction to myself that there was nothing but error and illusion in all that I had seen. Nevertheless, carried away by a multitude then as thoughtless as myself, I agreed to give my hundred louis to follow the course of M. Mesmer in which we were assured he would reveal his secret and the means of doing very extraordinary things. When I say that at the end of the course I was no wiser than before, and believed just as little, is to relate the history of my ninety-nine fellow students. I knew so little about it, that having to leave two days afterwards to pass some time on my estate I went one morning mysteriously to visit M. Mesmer, to ask him how I should go about it to magnetize a tree and by what procedure I should succeed in causing the emanation of my fluid, and I even remember not having got

much enlightenment from him, whether the fault was his or mine.

At Strassburg in 1785 he gave a course of mesmerism which was attended by fifteen or sixteen pupils. He reveals the secret of Mesmer, which he says was discovered by his brother. He says:

It will doubtless surprise people that after six weeks of observations and special interviews with me, none of my disciples had either guessed or seen the means I employed to work the effects of which they had all seen the results. That means so simple indeed will always escape the understanding. There is only a single man who to my knowledge has discovered the procedures of M. Mesmer, the third or fourth time he had seen them used, and that man is my brother, a naval officer known by the name of Chastenet. This perspicacity in him is the more surprising since the nature of his studies and the useful applications which he made of them to matters connected with his profession, allowed him then to perceive reality only in mathematical results. He discovered then, through the chaos of the first tub, the causative principle of their effects. The next day he went to communicate the fact to M. Mesmer. The latter, while trying to hide his surprise, showed much displeasure and still more anxiety as to the bad results that might follow for him as well as for his doctrine of a too premature manifestation of the interpretations that might be made of it. My brother, while approving his motives, promised to keep the most inviolable silence with regard to everything he discovered and observed, and his word was kept by him so religiously that, notwithstanding the intimacy of our mutual affections, he had never confided the matter to me.

Puységur gives an account of some of his "cures." His first case was one of pneumonia. The patient was a peasant, aged 23, who had been ill four days with pain in the side and spitting of blood. Puységur magnetized him, and to his surprise saw the man at the end of a quarter of an hour go peacefully to sleep without convulsions or pain. The narrative goes on:

I pushed the crisis which made him giddy. He spoke and busied himself out loud about his affairs. When I thought his ideas were of a nature to affect him in a severer manner, I stopped them and sought to inspire him with more pleasant ones. No great effort was required for this. Then I saw him content imagining that he was shooting for a prize, dancing at a feast, etc. . . . I encouraged these ideas in him, and in that way I forced him to move about a good deal on his chair, as if he were dancing to a tune, which singing (mentally) I made him repeat aloud. By this means I brought about from that day in the patient an abundant sweating. After an hour of crisis I soothed him and went out of the room. . . . He slept the whole night through, and on the following day, no longer remembering my visit of the evening, he told me of the improved state of his health, etc. . . .

* * * * * * *

The good which I did this patient encouraged several patients to come to consult me. A woman of twenty-four suffering in the lower part of the abdomen for fourteen months after a difficult labour, in less than six minutes experienced a spasm without convulsions or apparent marks of pain. Only when my hand was put near the painful part I saw her shudder slightly; already twice I have made her experience the same effect, the consequences of which leave behind them neither weakness nor unpleasant memory.

Another young man of seventeen found himself tormented the day before yesterday by a very violent fever with a severe headache; I went at once to magnetize him. I was unable to give him any relief the whole day although I used every effort morning and night. Yesterday morning I somewhat relieved [illegible] but as soon as I left him it returned. At last [illegible] in the evening I was able to bring about a peaceful sleep. Nevertheless the night was not good. This morning I produced on him the same salutary effect, but it would be necessary that I should not leave him for his headache begins anew on his awakening as soon as I leave him.

In order to be able to produce on all these poor people a more continuous effect and at the same time not to exhaust myself with fatigue I decided to *Magnetize a tree* according to the procedure [illegible] by M. Mesmer, and after having fastened a cord to it I tried its effect on my patients.

* * * * * * *

A girl of 26 belonging to the neighbourhood, suffering for nine months from fever and continual pain in the kidneys, stomach [illegible], came with all possible devotion to find me [illegible] I sent her to my tree. I made the chain with the two of them. She found herself singularly relieved of all her pains except the fever, etc.

In another letter Puységur says, speaking again of Victor, his first patient, whose case has already been referred to:

[illegible] simple man, this peasant, a tall robust man, aged 25 years, now bent by disease or rather by sorrow, and on [illegible] even more liable to be moved by the agent of Nature, it is with this man I say that I instruct and enlighten myself. When he is in the magnetic state he is no longer a simple-minded (*niais*) peasant, hardly knowing how to answer a question, a being I do not know how to name: I do not require to speak to him. I think in his presence and he understands and answers me. Does anyone come into his room he sees him if *I wish*, speaks to him, tells him things that *I wish* him he should say to him, not always such as I *dictate* them to him but such as the truth requires.

Victor had a hidden sorrow caused by quarrels with his sister about a legacy left by his mother. While in the state of somnambulism the man was able to say where the document was to be found, and at once his face took on "an expression of serenity and joy." Commenting on this case, Puységur says that the man was forced to give him a most important paper, "because he truly and strongly desired to find the means of making the man happy." The thought occurs to him that possibly one can *wish* evil as *strongly* as good, but as to this he says he has no knowledge. He sees, however, that if this were the case animal magnetism might be a formidable weapon in the hands of unscrupulous persons. We know the dread with which Mrs. Eddy regarded what she called "malicious animal magnetism." Puységur asked his subjects themselves when in magnetic crisis for help in this difficulty. All assured him that in that state they preserved their judgement and their reason, and added that they would quickly perceive any evil intentions that might be entertained with regard to them. In that case their health would suffer, and that would cause them at once to awake. Nevertheless, Puységur could not rid himself of some uneasiness as to the possibility of "the most beneficent *discovery* in existence" being abused. He finds comfort in the thought that:

There will always be at least in the employment of animal magnetism the advantage that one has not to fear surprise. One cannot be magnetized *against one's will*, and confidence in a magnetizer must always be a preliminary of the help looked for from it.

In a supplement to the book Puységur says that while it was in the press Victor came to Paris to take charge of one of his brothers on the journey. He said that eight to ten days before his departure from Buzancy he had had a bad fall, and since then had suffered considerably from his head, and had febrile attacks every evening. His indisposition induced Puységur to make him stay in the hope that with the aid of magnetism he would be promptly cured. He threw him into crisis, and the man perceived that his headache would not pass off without bleeding from the nose and mouth. The next day, after he had had a good rest, he told Puységur while in the magnetic state that it was absolutely necessary he should be bled from the left arm. As soon as he was bled from the left arm the head on the same side ceased to trouble him, but he continued to feel pain on the right side. That evening he was again magnetized, and Puységur learnt that his suffering would cease spontaneously after a flow of blood and water, which would come out of his mouth. He indicated the moment when this would happen, and it took place accordingly. Puységur believed the man to be entirely cured, and to assure himself of the fact he magnetized him again, when the man said there still remained blood in his head, and that it was by the nose that he had to get rid of it. He indicated the day when this prediction would be fulfilled. In the meantime, Puységur gave a drawing-room demonstration of the case, but this failed to convince those present. He felt this bitterly, as will be seen from what he says about the matter:

It appeared to me that the opinion of M. de . . . had inspired the ladies with doubts. They believed that they had deceived themselves and my position became very disagreeable. Mgr. the Duke of . . . was a witness of this scene, and in changing his opinion about me I became a contemptible man who had tried to abuse the credulity of the most straightforward man in the world.

Victor was taken to the same house on the day he had foretold that he would bleed from the right nostril. Puységur was coldly received and offered to submit his patient to examination by a surgeon. The surgeon first of all said that he saw pomade in the nose, a moment later he extracted a little dirt which he said was a fatty body. Puységur proceeds:

I was on thorns on account of so insulting an inquiry [it may be remembered he himself had proposed it] to such a point that I could not even laugh with pity at this decision of the doctor.

[He does not tell us what there was to laugh at.] I force my patient to bear everything; they made him open his mouth and finally with the exception of the fatty body nothing was found. At half-past twelve Victor announced that the blood was about to flow. I laid him on the floor, a dish was brought and after very slight efforts (!) the blood came out through the nostril indicated. I hear it said around me that this blood is of a singular character and that for a burst abscess its colour was very pure. [It must be noted that nothing has yet been said about an abscess; and it may here be said once for all that Puységur's descriptions of his cases, besides being extraordinarily diffuse, are so confused that it is difficult to make anything of them.] The doctor confirms this opinion. I answer that I do not know how the blood should be; that probably it cannot be otherwise than it is since it is Nature alone that is ridding itself of it. After the bleeding of the nose came expectoration mixed with a slight quantity of blood, as the patient had foretold, and finally the prediction was completely fulfilled. Between half-past twelve and one all was over. It might seem that after such a fact there was nothing to be done but to seek the cause which had brought it about and that its reality was fully established. Not at all. I see around me the same distrust; there was the greatest unwillingness to question me, and I was confounded by the embarrassed and dissatisfied air of all the witnesses of this scene. Gradually the salon became empty. Madame de . . ., busy over a drawing, said nothing to me. One might have said that I inspired her with the greatest pity. I was about to leave confused, like a juggler when he has missed his trick, when Madame de . . . said to me that Victor, who was still in the magnetic state, had asked for a private interview with her. I went into the other room, and I should never have known anything of this conversation but for another thing that occurred to Victor which I will now relate. M. de . . ., the same who had been so unsuccessful in the experiments made out of curiosity on the Thursday, also asked me for a secret interview with Victor. I consented all the more readily that the truth which guided me did not allow me to fear anything from these things. This second conversation was longer, and when it was finished I woke Victor and went out of the room without being put to the trouble of any confidence, for those present seemed to take no notice of it. It appears to me nevertheless that, even as a simple trick, that which I had done was of a kind to deserve a little applause. However this may be, my man was cured, and that was the thing that chiefly interested me. I did not see him again during that day.

The next day Victor was given permission to go about Paris, and did not turn up that night. It was unkindly suggested that he had got drunk and could not find the house. The prodigal, however, returned in the afternoon. After much questioning he told Puységur that in the two private conversations the suspicion had been expressed that he lied, that he had purposely made his nose bleed, that they had wished to make him open his eyes, that all sorts of means had been used to that end, that it was in vain that he assured them that in the state in which he was he could not lie, that nothing was more true than his heart and his words, that he had not been believed, that they had left him saying that he was a sly customer and many things of that sort; that in short all the torments which he had been made to endure were the sole cause of the state in which he was.

Victor evidently fooled Puységur to the top of his bent. One has to read the story as told by the credulous mesmerist to get an idea of the insolent familiarity with which the peasant treated his master, and the foolish simplicity of the Marquis. Puységur, commenting on the case, makes the significant remark that the history of Victor should be a lesson to every magnetizer not to attempt experiments indiscreetly, and without having taken all possible measures to make them succeed and to establish their genuineness. He says:

> When you present to any one the phenomena of magnetic somnambulism, take care that the persons to whom you communicate that superb experience have already by themselves some preliminary notion of somnambulism, so as not to offer all at once to the incredulity a prodigy too difficult to conceive. . . . Do not expose the experiment to contradictions and efforts at reputation which are only directed to bring it to nought.

In other words, make sure that the persons to whom you show the experiments are believers before they see them. This is sound advice for the purpose, and may be commended to all faith healers of whatever shade. It is the refuge of all practitioners of these occult arts of healing, the essential feature in them all being belief on the part of the patient. To make assurance doubly sure, unbelievers should be kept aloof. It is the presence of unbelievers that is alleged by the spiritualists as the cause of the failure of their manifestations. Mesmer himself accounted for it by the existence of an antimagnetic quality in certain individuals. Puységur says the ablest physicist would be reduced to confusion if he operated before persons who, instead of being attentive to his operations, busied themselves in breaking his machines and his instruments. But to make this argument of any value or the analogy applicable, it must be assumed that want of faith in the people looking on at a physical experiment makes it fail. Physical and chemical experiments will go on quite regardless of "antimagnetic" qualities in the onlookers.

Several other cases are given. There is that of Henry Joseph Claude Joly, aged 19, who had been deaf for ten years. He remained under the hands of Puységur seven days and then went home completely cured. Indeed, so perfect was the cure that, however low was the voice in which he was addressed, he thought people were screaming into his ears. This, in a profane mind, would suggest that he had been too much cured. The interesting part of the narrative is that in a state of somnambulism he told Puységur he had an abscess in the head, and that he would have to suffer much before he could get rid of it. "If it falls into the throat," said the intelligent patient, "I shall die, but if it comes out by the nose I shall be cured." A day or two later he said he felt the abscess dividing, and foretold that he would pass it by the nose on two occasions. After a great deal of trouble he passed by the nose whitish matter of the size of an egg. Further, Joly told them that he no longer suffered from a double hernia, which had caused him much inconvenience, and that since his return he had ceased to wear the double bandage which he always had worn before. It is curious that Puységur says nothing of this rupture, but the mention of it is another instance of the fact, which can be verified in any quack advertisement, that the persons who were cured by these remedies are pathological museums.

Another case is that of Agnes Remont, who, after a terrible fall on to her head into a cellar, had vertigo, convulsions, and a commencement of bleeding of the nose, "which, having stopped, would infallibly have formed a deposit (abscess) in her head." She foretold that she would be cured after three bleedings of the nose, and this prediction came true. Puységur goes on to say that in future it will not be enough for physicians only to make use of their theoretical knowledge. They must, besides, use personal efforts, and it will be from the greater or less perfection of their animal electric machine—in other words, of their faculties—that their success in diseases will depend. This, he affirms, is not done by sorcery or divination, but by means of a sensation peculiar to them. Puységur asks his somnambules about this, especially Joly, who said it was a true sensation that he felt in a part corresponding to the part which suffered in one whom he touched. Joly told him that the hand of the somnambule goes naturally towards the seat of disease in a patient, and he could not be deceived in this any more than he could in carrying his hand to the place in which he himself was suffering. As to the foretelling of sufferings, he said it was more than foreseeing; it ought to be called "foreknowing, or rather forefeeling." "I feel beforehand," he said, "the ill that is going to happen to me, and as I am not far from cure I forefeel pretty nearly the moment of it as being bound to happen at the time when I forefeel that my sufferings will end." This puts one in mind of Bardolph's famous definition of accommodated: "Accommodated, that is, when a man is as they say, accommodated, or when a man is being whereby a' may be thought to be accommodated, which is an excellent thing."

Another case is that of Philip Hubert Violet, a schoolmaster, aged 36 years, who had suffered four years from disease of the chest and a complication of disorders. In magnetic crisis he said a healing work was going on within him; that his oppression at the stomach was caused by an abscess at the pylorus and in the hypochondria, and that his nerves were severely irritated thereby. He had besides an abscess in the chest. He foretold that he would get rid of the abdominal trouble by the bowel, and of that of the chest "by a vomica which he would spit up." These predictions were fulfilled, the matter brought up from the chest being as black as ink, but in a few days he announced that new humours had gathered at the seat of his first disease.

At Puységur's request he wrote a report of his case,

which is so delightful a piece of self-revelation that we give it in full length:

"I have seen during a long time things which have seemed to me so extraordinary in cases of magnetic crises produced by sensations that I have resolved in this crisis in which I now am to set down the facts which have occurred in regard to me, the present, the future, and the result. I say that during the last four years I have consulted a number of physicians who without knowing the source of my ailment have made sexagenarian (*sic*) experiments on my body without succeeding in giving me relief. I say that they have on the contrary fixed the disease more and caused abscesses of the most considerable size. It is in this somnambulistic sleep that I know, that I see, that I distinguish, the causes of this event more surely than any physician could. That is what I dare to say positively.

I say that the first cause of my disease comes from an inflammation of the chest produced by work and anxieties, which only called for emollients. But bleeding, emetics and purgatives were employed, which aggravated the evil, and made the inflammation degenerate into several abscesses of which one vomica was in the lungs, another on the pylorus of the stomach; lastly, another attached to the spleen. They might have employed for this condition diluents and enemas composed of mallow and other narcotics. On the contrary, a different course was pursued. Soap, salt and other astringents were administered; drastic medicines; two cold baths. Finally they restrained my person to dry the nerves and paralyse them. Of all the medicines that have been used, I only see *Ailhaut* powders, which I employed particularly, which guided my abscesses to the point of preventing their increasing. Nevertheless remaining always in a languishing condition, with a hypochondriac affection, since that time till October the 9th last, when the Marquis of Puységur was good enough to receive me at the magnetic treatment. I dare to say that from that time to the 22nd of the said month I have not felt much. It was at that very time that I felt the "ambulist" sleep. On the 25th following, I predicted that I should pass an abscess which was attached to the spleen on the 28th at eight o'clock in the evening precisely. And on the 28th on the Marquis asking as to my condition, I replied positively that on the 30th between eight and nine o'clock in the evening I would pass a vomica; that I feared to renew an effort which had already appeared but had definitely passed off; that afterwards there would remain to me another, the last, but that I should spit it up in the form of pus, that the pains of the nerves would remain and would pass away only in course of time. I say and I affirm that all these effects took place as I have indicated.

I confess that on my return home believing that I was quit of my enemies and never thinking there would be any return, I applied myself during five nights and six days to an occupation contrary to my profession. I was obliged to return to the treatment on November 8th last. I confess that since that time up to to-day, the 16th of the same month, at half-past six o'clock, I have not been able to state positively at what time I should pass the deposit which I have now at the pylorus of the stomach. But at present I say that on the seventeenth between nine and ten o'clock at night, I will pass the larger part of it by evacuation, that if I have the good fortune to vomit, perhaps the remainder will go away thus. Nevertheless in default of that I will spit up the pus and little by little I shall be delivered from that fatal enemy. It would be necessary for my good that I should be in the actual position from the time of evacuations till the next day; that I should be touched a great deal on that day, either by a crisis, or others who have the power. It would be also absolutely necessary that I should take on that day the 17th of the month, two ounces or thereabouts of cream of tartar to which might be joined half an ounce of sugar. This should be taken in the morning with some herb broth. Had I been longer in the crisis I should have no need of this.

There will always remain to me weaknesses of the nerves [illegible] by wind (?) but without disadvantage. I [illegible] than I have done for four years. My [illegible] place next spring. I shall be able in the [illegible] even to work a little without fear. I [illegible] that I look upon my cure as already come about. I repeat and I say that by the sight and sensation I now possess I can distinguish internal maladies as well as external, and thereby judge, pronounce, and immediately [illegible] like these doctors who give prescriptions after they [illegible] information, and often very badly by the deposi- [illegible] have obtained from the patient. The same is not [illegible] in which I am. I can define everything [illegible] . . . It is in consequence of this fact that I have written this in my bed in the magnetic crisis, this day, 16th November, 1784, signed Vielet.

This testimonial is interesting in many ways, not least in its likeness in style to the advertisements of quack [illegible] and the "testimonies" of Christian Science. [illegible] of the French dominie and his ignorance [illegible] an irresistible combination.

We have allowed Puységur and his patients, as far as possible, to speak for themselves. The book from which the quotations are made is apparently a copy printed for private circulation; it is dated December 28th, 1784. The preface is signed in manuscript "Le M.is de Puységur." A supplement, dated February 4th, 1785, bears his name in print. Underneath the signature are *Croyez et voulez*. There are various manuscript corrections and additions to the text of the little book, which rather suggest that they may have been made by the author himself. On this point, however, we have no definite evidence.

ANNUAL REPORT OF THE CHIEF INSPECTOR OF FACTORIES AND WORKSHOPS FOR THE YEAR 1911.*

IF the report for 1911 is somewhat less interesting than some of its predecessors it is none the less a record of work well done by the officials of the Factory Department. Again there is reported a further rise in the number of accidents, a circumstance attributed to the increased volume of manufacture and of industrial activity compared with previous years. The total number of accidents for 1911 was 148,945, compared with 129,550 for 1910 and 124,325 for 1907; the fatal accidents for the same years being respectively 1,182, 1,080, and 1,179. In the textile trades some of the accidents are no doubt due to persons carelessly starting the machinery before assuring themselves that others are clear of danger. There is no evidence to show that insufficient lighting of, or overcrowding in, factories contributed to any appreciable extent to the large number of accidents. An increase in the number of accidents is also reported as having taken place in shipbuilding yards and in docks, and is explained by the greater body of work done in the yards, the larger number of men employed, many of whom were less experienced, and also by the long hours of work. In laundries, too, the number of accidents was larger, probably owing to the long summer of last year, and the pressure of work caused by the festivities connected with the Coronation.

Judging from the space given in the text to the subject, the attention of superintending inspectors of the various divisions had been drawn to the frequency with which blood poisoning follows minor wounds, and to the desirability of factories and workshops being provided with sterilized surgical dressings for wounds. Here is an ample field for insistence upon practical knowledge of ambulance work among factory hands and of an almost unlimited sphere of usefulness for such. Dr. Mackenzie, one of the certifying factory surgeons of the Leeds district, states that since introducing first aid, only one out of 1,000 cases of wounds treated immediately by sterilized dressings and without washing became septic.

It is seldom we hear much of cold storage and ice factories. The occupation is on the whole a healthy one, but in some of the works a larger percentage of the men suffer from rheumatism than in other callings.

Notwithstanding all that has been done to protect women and children from being obliged to carry loads beyond their strength, the number of prosecutions shows that the practice is still followed, and that it is not uncommon to find boys of 14 carrying weights of 60 lb. and more, or wheeling loaded barrows weighing 132 lb. Many of the lads suffer from rupture.

The Principal Lady Inspector in her report dwells upon the relation of dust and tuberculosis, especially in the textile trades. On inquiry into the health of the workers in 9 cotton-waste factories there was found to be an association between the effects of dust and the poor physique of the workers. Dr. Collis found evidence of tuberculous disease in the respiratory passages of females working in lace, and thinks this was probably the indirect result of inhaling finely divided dust shaken out of the lace.

Explosions of dust figure largely in the report, and were due to naked lights firing the dust, to sparking of a magnetic circuit, or the melting of a fuse. From some of the dusty trades sickness among the hands has largely disappeared, owing to improved methods of ventilation, the introduction of exhaust apparatus, and in cement works the use of the rotary kiln. It is an interesting fact that among the cement workers in Great Britain there is nothing like the amount of sickness and acute lung disease which is observed in Germany.

* Wyman and Sons, Fetter Lane, E.C. 1912. Price 2s. 9d.

The number of accidents in electrical generating stations for 1911 was 74 (4 of which were fatal), against 58 for 1910, while the number of electrical accidents in factories other than electrical stations was 290, with 7 deaths, as against 276, with 5 deaths, for 1910. Attention is drawn by the electrical inspector to the means of resuscitating the apparently dead by artificial respiration by Sylvester's method and by the apparatus suggested by Dr. K. A. Fries of Stockholm.

Drs. Legge and Collis deal in detail with the subjects of lead, mercurial, and arsenical poisoning, and with anthrax. An interesting and valuable table is given of the relative frequency of "gassing" of workmen and of the various gases which contributed thereto. Carbon monoxide heads the list—64 casualties with 6 deaths; nitro-benzine 21 with no death; sulphuretted hydrogen 8 cases with 2 deaths. Two of the cases of sulphuretted hydrogen poisoning occurred in the refining of sperm oil during treatment with sodium sulphide.

Each annual report shows that progress is being made in extending the use of leadless paints and in the substitution of wet-rubbing down of painted surfaces for dry sand papering.

Illumination in factories is the subject of a special report by Mr. D. R. Wilson. So far as artificial lighting is concerned, it is maintained that the light should be adequate, the light units being so arranged as to cause no "glare" effects or to produce troublesome shadows. These remarks particularly apply to the artificial lighting of textile factories and the composing rooms in printing works.

Very few changes took place in the staff of the Factory Department during 1911. Miss Patterson, whose long association with the department is well known, and with the high character of whose work we are familiar, retired on her appointment as a National Insurance Commissioner for Scotland. Mr. Shackleton, on taking up a similar appointment for England, vacated his post as Labour Adviser to the Home Office. Through resignation, death, or removal, 129 certifying surgeons' districts became vacant, 12 of which were merged into adjoining districts, the remainder being filled by new appointments.

STATE MEDICAL SERVICE ASSOCIATION.

We are informed that at a meeting held in Liverpool on July 26th it was agreed to form a State Medical Service Association, having for its object the advocacy of a State Medical Service on the following lines:

(*a*) The whole profession to be organized on the lines of other State services now in existence.

(*b*) The entry to the profession to be by one State examination.

(*c*) Each member of the service to be paid an adequate salary, increasing gradually according to length of service and position in the service, and to be entitled to a pension after a specified number of years or in the case of permanent disablement.

(*d*) Members of the public, as far as practicable, to have free choice of doctor, but no doctor to be called upon to have charge of more than a specified number of patients.

(*e*) One of the primary objects of the State service to be to unite preventive and curative medicine.

(*f*) All hospitals to be nationalized and used for the purpose of consultative, operative, and therapeutic work, at the request of and in consultation with the patient's own doctor.

(*g*) The service of the State doctors to be open to every man, woman, or child, rich or poor.

(*h*) The State Medical Service to be administered by a Board of Health under a Minister of Public Health, with Cabinet rank, assisted by expert medical advisers.

The inception of this association was antecedent to the Insurance Act and quite independent of the present difficulties. It is intended that the work of the association shall form a branch of sociological science, and membership is open to all prominent sociologists, both lay and medical.

Any one interested in the matter is invited to communicate with Professor Benjamin Moore, Liverpool, or Mr. Charles A. Parker, F.R.C.S.Ed., 24, Upper Wimpole Street, W.

EXPERIMENTS ON LIVING ANIMALS.

The return showing the number of experiments on living animals during the year 1911 under licences granted under the Act 39 and 40 Vict., c. 77, has just been issued.

England and Wales.

Professor Thane's report contains the names of all "registered places." Six new places were registered for the performance of experiments, and one place was removed from the register during the year. All licensees were restricted to the registered place or places specified on their licences, with the exception of those who were permitted to perform inoculation experiments in places other than a "registered place" with the object of studying outbreaks of disease occurring in remote districts or under circumstances which render it impracticable to perform the experiment in a "registered place." The names of all the persons who held licences during 1911 are given. The total number of licensees was 562. Reports furnished by the licensees show that 135 licensees performed no experiments. The numbers given above include 21 licensees whose licences expired on February 28th, 1911, and of whom 20 returned no experiments in 1911. The number and nature of the experiments returned by each licensee are also stated. The experiments are, as usual, set forth in a table (IV), which is divided into two parts, A and B, for the purpose of separating experiments performed without anaesthetics from experiments in which anaesthetics were used.

Number of Experiments.

The total number of experiments included in Table IV (A) is 5,090. Of these there were performed:

Under licence alone	2,808
Under Certificate C	215
Under Certificate B	1,674
Under Certificate B + EE	393

Table IV (B) is devoted entirely to inoculations, hypodermic injections, and some few other proceedings, performed without anaesthetics. It includes 90,113 experiments, whereof there were performed:

Under Certificate A	89,515
Under Certificate A + E	452
Under Certificate A + F	146

The total nomber of experiments was 95,203, being 528 less than in 1910; there was an increase in the number of experiments included in Table IV (A) of 151, and a decrease of 679 in Table IV (B).

The Use of Anaesthetics.

The larger part of the experiments included in Table IV (A), namely, all performed under licence alone and under Certificate C, 3,023 in number, come under the provision of the Act that the animal must be kept under an anaesthetic during the whole of the experiment, and must, if the pain is likely to continue after the effect of the anaesthetic has ceased, or if any serious injury has been inflicted on the animal, be killed before it recovers from the influence of the anaesthetic.

In the experiments performed under Certificate B, or B linked with EE, 2,067 in number, the initial operations are performed under anaesthetics, from the influence of which the animals are allowed to recover. The operations are required to be performed antiseptically, so that the healing of the wounds shall, as far as possible, take place without pain. If suppuration occurs the animal must be killed. After the healing of the wounds the animals are not neccesarily, or even generally, in pain.

In the event of a subsequent operation being necessary in an experiment performed under Certificate B, or B linked with EE, a condition is attached to the licence requiring all operative procedures to be carried out under anaesthetics of sufficient power to prevent the animal feeling pain; and no observations or stimulations of a character to cause pain are allowed to be made without the animals being anaesthetized.

In no case has a cutting operation more severe than a superficial venesection been allowed to be performed without anaesthetics.

The experiments included in Table IV (B), 90,113 in number, were all performed without anaesthetics. They were mostly inoculations, but a few were feeding experiments, or the administration of various substances by the

mouth or by inhalation, or the abstraction of blood by puncture or simple venesection. In no instance has a certificate dispensing with the use of anaesthetics been allowed for an experiment involving a serious operation. Inoculations into deep parts, involving a preliminary incision in order to expose the part into which the inoculation is to be made, must be performed under anaesthetics.

Professor Thane goes on to say:

It will be seen that the operative procedures in experiments performed under Certificate A, without anaesthetics, are only such as are attended by no considerable, if appreciable, pain. The certificate is, in fact, not required to cover these proceedings, but to allow of the subsequent course of the experiment. The experiment lasts during the whole time from the administration of the drug or injection until the animal recovers from the effects, if any, or dies, or is killed, a period possibly extending over several days or even weeks. The substance administered may give rise to poisoning or set up a condition of disease either of which may lead to a fatal termination. To administer to an animal such a poison as diphtheria toxin, for example, or to induce such a disease as tuberculosis, although it may not be accompanied by acute suffering, is held to be a proceeding "calculated to give pain," and therefore experiments of the kind referred to come within the scope of the Act 39 and 40 Vict., c. 77. The Act provides that, unless a special certificate be obtained, the animal must be kept under an anaesthetic during the whole of the experiment; and it is to allow the animal to be kept without an anaesthetic during the time required for the development of the results of the administration that Certificate A is given and allowed in these cases.

It must not be assumed that the animal is in pain during the whole of this time. In cases of prolonged action of an injected substance, even when ending fatally, the animal is generally apparently well, and takes its food as usual, until a short time before death. The state of illness may last only a very few hours, and in some cases it is not observed at all.

In a very large number of the experiments included in Table IV (B) the results are negative, and the animals suffer no inconvenience whatever from the inoculation. These experiments are therefore entirely painless.

In the event of pain ensuing as the result of an inoculation, a condition attached to the licence requires that the animal shall be killed under anaesthetics as soon as the main result of the experiment has been attained.

Cancer Investigation Experiments.

During the year 1911, 41,025 experiments were performed by 21 licensees at nine institutions in the course of cancer investigations. Of these, 835 are in Table IV (A) and 40,190 in Table IV (B). The latter were almost entirely inoculations into mice.

Experiments for Government and Public Bodies.

A large number of experiments, almost wholly simple inoculations and similar proceedings contained in Table IV (B) were performed either on behalf of official bodies, with a view to the preservation of the public health, or directly for the diagnosis and treatment of disease. Several county councils and municipal corporations have their own laboratories in which bacteriological investigations are carried on, including the necessary tests on living animals; and many others have arrangements by which similar observations are made on their behalf in the laboratories of universities, colleges, and other institutions. A sewage farm is registered as a place in which experiments on living animals may be performed in order that the character of the effluent may be tested by its effects on the health of fish. The Local Government Board and the Board of Agriculture and Fisheries have laboratories which are registered for the performance of experiments having for their object the detection, prevention, and study of diseases of man and animals. In other places experiments have been performed on behalf of the Home Office, the Naval Medical Service, the War Office, the Army Medical Department, the Army Medical Advisory Board, the Army Veterinary Service, the General Post Office, the Local Government Board, the Metropolitan Asylums Board, the Advisory Committee for Plague in India, the Tropical Diseases and Glass-blowers Cataract Committees of the Royal Society.

Seventy-nine licensees report over 21,000 experiments which were performed for Government Departments, County Councils, Municipal Corporations, or other Public Health Authorities; and sixteen licensees performed nearly 13,000 experiments for the preparation and testing of antitoxic sera and vaccines, and for the testing and standardizing of drugs.

Inspections.

During the year the usual inspections of registered places were made by Professor Thane and Sir James Russell. They saw numerous animals under experiment, both of those coming into Table IV (A) and of those coming into Table IV (B). They everywhere found the animals suitably lodged and well cared for and the licensees attentive to the requirements of the Act as well as to the conditions appended to their licences by the Secretary of State.

Irregularities.

The following irregularities occurred during the year:

A licensee who held Certificates B, EE, for experiments on rabbits and dogs, performed similar experiments on cats. He explained that, from the wording of Certificate EE (which is framed in accordance with the requirements of the Act), he thought that he was entitled to experiment on either dogs or cats. The Secretary of State was satisfied that the error was the result of a misconception and allowed the licensee, when he had obtained fresh certificates, to continue the experiments.

A licensee holding Certificate A for inoculations performed experiments in which substances were administered by feeding without that method being indicated in the certificate.

A licensee holding Certificate A for inoculations without an anaesthetic made injections into four animals, for which he should have obtained Certificate B. The injections were not followed by any ill consequence.

A licensee holding Certificates A and B for certain experiments upon birds performed a different experiment upon a rabbit, for which he should have obtained another B. The operation was of a slight character, and no serious injury was done to the animal.

Two licensees holding Certificate A, dispensing with the use of anaesthetics, made injections into animals—in the one case two rabbits and in the other two frogs—which were anaesthetized. According to the Act, the certificate known as B is required in order to allow an animal that has been anaesthetized to recover before the termination of the experiment.

In each of these cases a suitable admonition was addressed to the licensee.

IRELAND.

Sir W. Thornley Stoker reports that in 1911 there were in Ireland 15 registered places; in two of them no person was licensed to perform experiments during the year 1911. Twenty-two licences were in force during the year, of which 20 were in existence at the beginning of the year, and 2 were new licences issued during the year.

Number of Experiments.

The experiments performed were 278 in number: 18 under licence alone and 260 under certificates. Seventeen licensees performed experiments, the number of experiments under each certificate being:

Under Certificate A	...	...	...	227
Under Certificate C	...	...	...	33

Animals Used.

The animals experimented on were as follows: Guinea-pigs, 112; rabbits, 76; frogs, 17; mice 12; pigeons, 2; cattle, 2; dogs, 15; fowl, 4; cats, 10; pigs, 28.

Nature of Experiments.

The experiments were of various descriptions, 67 having been physiological, 10 therapeutical, and 201 pathological. The greater number consisted of hypodermic injections and inoculations. The principal were: investigations of the gases of blood and blood pressure; the movements of respiration, functions of heart and nervous control of heart; haemolytic experiments; nervous and chemical control of digestive glands; study of calf vaccine lymph; medico-legal investigations; the intravenous injection of drugs in disease; the study of the tubercle and diphtheria bacillus; investigations of the action of adrenalin, peptine, and ethyl chloride; experiments on preparation of immune serums and testing virulence of typhoid.

Much good work was accomplished in regard to the study of pathology of diseases of the lower animals, including anthrax, poultry disease, glanders, rabies, braxy, swine fever, swine erysipelas, Johne's disease, and the pathological organisms in milk and in food stuffs.

The work done in Ireland under the Act was, in the inspector's opinion, sincere and well intentioned.

New Investigations.

As was the case last year, the increase in the experiments is to be attributed to the study of new investiga-

tions in the matter of treatment of disease by means of antitoxins, serums, and vaccines, and is therefore of high therapeutic and pathological value as tending to the development of a new and most important knowledge of disease and its treatment.

THE HEALTH OF EGYPT.

The annual report of the Department of Public Health for 1910 has recently been issued. The first part deals with medical administration and the provisions for medical aid.

Hospitals.

The total number of in-patients treated during 1910 in the various Government hospitals (excluding the ophthalmic hospitals) amounted to 37,975, as against 36,787 in 1909; the number of days of treatment amounted to 1,030,206, as against 989,089 in 1909. Out-patients numbered 152,733, while in the Government dispensaries 38,449 persons were attended gratuitously. The difficulty of obtaining suitable hospital attendants remains acute, but it is hoped that an extra money grant will be obtained to effect some improvement in this respect in certain of the provincial hospitals; until provision is made for attracting to this service and training a superior class of attendant the standard of nursing must leave something to be desired.

Pharmacies.

Reference is made to the large number of pharmacies conducted by unqualified men, no less than 51.065 per cent. of the total number coming under this category. The struggle against ambulatory poison sellers in the markets remains ineffective owing to the impossibility of taking action against persons of unknown domicile. The importation of opium diminishes, but the cultivation seems to increase.

Medical Practice.

In the report for the preceding year attention was drawn to the defects in the law on the practice of medicine and allied professions. It is admitted on all hands that some control is essential, and, in fact, voluntary societies have been formed to deal with unprofessional conduct by courts of honour. The principal defects in the present law, which dates from June, 1891, are (1) the absence of any provision for revoking the licence to practise; (2) the absence of a clear statement that the diploma entitles the holder to practise in the country of origin; (3) the absence of any provisions making compulsory the communication to a central authority of change of address. The number of authorizations to practise during 1910 was 171.

Medical Education.

During the year 1910 the 52 students who entered in 1906 were due to acquire their diplomas. Of these 6 had left, 1 was dismissed, 3 had gone to complete their studies in Europe, 20 remained in the school (not having acquired their diplomas), while 22 passed the final examination and received their diplomas.

Lunatic Asylum.

The number of inmates showed an increase of 1,304 in 1910 as against 1,150 in the previous year, and an excess of 297 over the accommodation actually provided. In addition, 327 persons still insane had been discharged, in many cases on account of lack of room.

Ophthalmic Hospitals.

These hospitals continue to do a vast amount of work. During the year 14,342 patients were treated, these cases being selected from 25,514 applicants. About one-quarter of the patients accepted for treatment were children under 10. Over 11,000 operations were performed.

Infantile Mortality.

The severe infantile mortality of 1909 was not repeated in 1910. The excessive mortality in 1909 was due largely to gastro-enteritis, and its varying incidence was closely connected with climatic conditions. Much also depends on the care and intelligence with which infants are nursed and fed. Reference was made in dealing with the report for 1909 to the good work the Lady Cromer Dispensaries were doing; at the two institutions now open 18,366 new cases and 130,000 attendances were registered. The main feature of these dispensaries is the reception and treatment of mothers and children, and the teaching by example and practice of habits of care and cleanliness.

Infectious Diseases.

The chief items of importance noted in connexion with infectious diseases during 1910 were a marked increase in the incidence of plague, chiefly in Upper Egypt, an increase in the incidence of and mortality from measles, and a varying diminution in other infectious diseases.

The cases of plague in 1910 numbered 1,238, with a death-rate of 49.6, as against 513 cases in 1909 with a death-rate of 40.5. The number of cases of small-pox notified during 1910 showed a decrease of over 650 on that of the previous year; 466,990 vaccinations and revaccinations were successfully performed, but the returns from 754 villages had not been received. Typhus fever showed a diminution of nearly 1,000 cases in comparison with the previous year. Measles, as stated above, raged all over Egypt, 7,435 cases being notified, although this number did not represent the total number of cases occurring, as a great many were not reported.

Malaria and Mosquitos.

The solution of the mosquito question in Cairo lies in the completion of the main drainage scheme, the filling of all fosses, and the raising of low-lying basements and other areas liable to infiltration water. Legal provision for the compulsory levelling is needed, for without it many breeding places for mosquitos will continue to exist. Meanwhile, the usual anti-*Culex* measures are being carried out in the special areas where the inhabitants contribute to the cost. In Suez antimalarial work seems to be carried out in a very thorough manner by a small malaria gang, consisting of an overseer and three workmen, co-operating with the landowners, who, under the Governor, have been formed into an antimalarial association. The landowners are mostly poor men, owning small tracts. By arranging for a just contribution of labour between several small landowners assisted by the official gang, quite a number of useful drains have been cut. All irrigation drains near the towns are cleaned by the Public Works Department. Quinine is distributed by the public health inspector when cases are found in his bi-weekly inspection. The result of these measures is bearing fruit, judging by the statistics. The hospital statistics showed an admission-rate of 39, whereas in 1905, before these measures were adopted, it was 95. There were 62 out-patients in 1910, and 405 in 1904.

The Director-General states "that these statistics show an increasing and real improvement, but I think they indicate a better condition of things than actually exists. The good results are very largely due to the fact that antimalarial drainage measures are in the direction of cultivaters' own interests, and may see nothing but good to their lands from the improved drainage."

Sanitary Defence.

Owing to an outbreak of cholera in Russia and in the countries bordering on the Black Sea in 1910, Egypt was exposed to the invasion of this disease on all sides. It was only by a rigid system of inspection and keeping under observation for a limited period persons arriving from infected countries that it was kept under control. The pilgrimage to Mecca began in the end of October, and in December the disease was recognized there. The pilgrim camp at Tor was thoroughly organized, and the medical officers made great efforts to find and observe the pilgrims after their return to Egypt, with the satisfactory result that, according to the returns sent in, every one of the pilgrims notified by Suez to the districts was found.

Water Supply.

The water supply of Cairo has been frequently commented on in the Journal. The convention between the Government and the Cairo Water Company was completed in March, 1910. The arrangement provides for the return to the Nile as the source from which the raw water will be drawn, for sedimentation tanks of liberal extent, for the installation of a mechanical system (Jewell) of filtration, and for reservoirs of ample capacity. It was expected that the installation would be in working order in the early part of the present year

Drainage.

The chief question in relation to the drainage scheme in Cairo of interest to the Public Health Department during the year was that of the surface drainage over an important area of the city. There had been serious difficulties in the satisfactory elaboration of this scheme, and considerable care and ingenuity were required in order to bring it within the minimum limits of general sanitary requirements.

Hygienic Institute and Bacteriological Laboratories.

A large amount of useful work continues to be done in these establishments. The number of examinations in connexion with infectious diseases made in 1910 was 4,075, and of water examinations and analyses over 7,000. The research work done included the investigation of the properties of the serum of the animals used for the preparation of cattle plague serum, the examination of rats from various parts of Egypt, and the enumeration and determination of the fleas carried by them, and the study of a practical method of freeing river water from pathogenic bacteria previous to filtration by means of nascent oxychlorides.

Antiscorpion serum, calf lymph, and antirabic serum are prepared at the laboratory.

Veterinary Department.

During the year 41 cases of rabies were reported as occurring amongst animals. Rabies must now be considered to have permanently established itself in Egypt, and, beyond checking the spread of outbreaks from time to time, nothing more can be hoped for; suppressing it entirely seems almost out of the question with such a large number of wild and semi-wild animals in the country. Poisoning dogs in the neighbourhood of outbreaks and supposed outbreaks has been systematically carried out, but controlling dogs and cats, except in towns, cannot be entertained. In various areas 41,817 dogs were poisoned during the year.

Jewish Method of Slaughtering.

Three races of Jews kill at the abattoir. They are the Karrayeen, the Ashkenas, and the Rabbanyeen. In the Jewish method of cervical bleeding the animal must be secured and thrown down, and the head placed so that it lies upon the horns and nose. The neck is cut by three rapidly executed strokes with a long, exceedingly sharp knife, which must be free from any flaws, and to note this the Khakham tests it with his finger before use, and murmurs: "Let it be blest through me, O God, King of the world, Who strengthenest us in holiness by Thy Command, and Who hast made killing a duty." The animal should, after his throat is cut, move his legs, otherwise its meat is not to be eaten.

The Karrayeen do no inspection in the abattoir. Their qualified butcher only cuts the animal's throat and examines the uterus. If he finds a fetus of any age in it, the animal is Terepha, that is, unfit for Jewish consumption, and the dealer sells it to the Mohammedan butchers. If the uterus is free, the animal is Kosher, that is, fit for Jewish consumption, and is passed without being labelled or stamped. They eat male and female young gamoos* chiefly, and kill about two animals daily. The whole carcass is fit for their consumption.

The Ashkenas inspect the lungs for attachments to the chest wall, as well as for perforations. If the meat is passed, the Khakham writes on the ribs and over the sternum the word "Kosher." They eat the fore parts of cattle and gamoos up the last rib but one. They kill about three or four animals daily, except on Saturdays.

The Rabbanyeen, who do most of the Jewish killing, inspect meat in the abattoir as follows:

When the abdomen is skinned, the animals are laid on their back, and the belly is opened in the Khakham's presence. Then he takes his knife and incises the diaphragm in two places, making two holes, one to admit his hand for examining the right lung, and the other for the left. Then he puts his hand into each side of the thoracic cavity, and feels along the chest wall and the lung surfaces. Any attachment of the lung to the pleura renders the carcass "unclean." If the lungs are free in the chest, as they should naturally be, and the lung consistency is normal, the carcass is announced as Kosher. When the animal is dressed and hung up, the Khakham reinspects the lungs and kidneys. If the kidneys are cystic, the carcass is Terepha. The lungs are then blown up and should be air-proof, otherwise the meat is "unclean." If cysts are found in the lungs, which are filled with air or pure water, or with dry or even hard material, provided that the hard material is not black in colour, and that the taste of the water is sweet and not sour, and that it does not smell, the meat is Kosher. It is then stamped over the breast and on the forelegs. The stamp states in Israelite language that "the meat is fit for the Jews." Also the hearts, lungs, and livers are marked, and the forearms are labelled with pieces of paper in which the day, date, and year is inscribed, according to the Jewish calendar. The Rabbanyeen pass about forty carcasses daily, except on Saturdays. They only kill cattle and rarely kill gamoos and sheep. They never eat the meat of the Ashkenas or that of the Karrayeen. The Ashkenas allow the meat of the Rabbanyeen to be eaten. The Rabbanyeen are allowed only to eat the fore parts of the animal up to the fourth rib.

* Young buffaloes.

MAINTENANCE OF SANATORIUMS.

On July 31st a deputation, representing the County Councils Association, had an interview with Mr. Lloyd George and Mr. Burns to ask for generous financial assistance from Parliament in respect of the maintenance of sanatoriums. The deputation suggested that the Treasury should bear a fixed proportion of the annual cost of maintenance, and put that proportion at 75 per cent. Mr. Mark Sykes said that in the East Riding of Yorkshire the county council was prepared to defray the whole cost of building sanatoriums on condition that 75 per cent. of the maintenance expenses was provided by the central authorities. Mr. Lloyd George made a sympathetic verbal reply, and later on the same day addressed a letter to Mr. Hobhouse, a member of the deputation, in which he pointed out that as regards capital expenditure the Government had provided a sum of £1,500,000 to aid the provision of sanatoriums and other institutions, and that in its circular letter of May 14th the Local Government Board announced that, subject to certain limitations, it would provide three-fifths of the outlay on sanatoriums and four-fifths of the outlay on dispensaries out of this fund. Mr. Lloyd George observed that local authorities were prepared to bear 25 per cent. of the annual cost of maintenance if the remainder were provided from other sources, but asked that this amount should be paid to them direct by the Local Government Board and not through the Insurance Committees. The letter continued as follows:

> Under the Insurance Act an annual sum of about one million is provided for the treatment of insured persons. While the bill was passing through Parliament provisions were inserted for extending sanatorium benefit to dependents of insured, and in view of this the Government consented to bear one-half of any deficit in regard to sanatorium benefit where local authorities undertook the other half.
>
> It is now urged that schemes for the treatment of tuberculosis should relate to the whole community, and that generally they should be organized and carried out by the councils of counties and county boroughs. This extension involves additional outlay, and in view of this the Government have decided to place at the disposal of the Local Government Boards of the three kingdoms annually a sum of money which will represent approximately half the total estimated cost of treating the non-insured persons as well as the dependents of insured persons. This money will be distributed by the Local Government Boards, in pursuance of regulations to be made by those departments, to local authorities which undertake schemes, to be approved by the departments, for the general treatment of tuberculosis in their areas; and provision will be made accordingly for these grants in the estimates of the three departments.
>
> As regards the cost of treating insured persons, the sum already provided under the Insurance Act, which as I have already stated, is about one million pounds, can only pass to local authorities in pursuance of agreements made between them and Insurance Committees. But I have no doubt that Insurance Committees generally will be anxious to deal with the local authority of their area, and the association may rest assured that the Government will do all in their power to secure this.
>
> I should like to take this opportunity of expressing my great appreciation of the way in which county councils and county borough councils have taken up this important work, and I feel sure that, in view of the additional grants I have herein described, they will proceed without delay to formulate and carry out their schemes.

MOTOR CARS FOR MEDICAL MEN.

British Cars in the Grand Prix Motor Race.

With motor racing as a sport our readers have small concern, but there is another aspect of races which does affect them. In a great race the cars are driven to their utmost limit, almost to destruction, as is shown by the large number which break down during the trial: and in a race of a thousand miles run at speeds exceeding sixty miles an hour only a car of the soundest construction has a chance of survival. It is therefore with no little satisfaction that we note that for the first time the honours have been secured by British cars. The race for cars of all sizes was won by a big Peugeot, a big Fiat coming second. But in the class of cars of limited size and power three Sunbeam cars secured the first, second, and third places, and the Arrol Johnston the fifth place. This is a record performance, whilst the Calthorpe, Singer, and Vauxhall cars, though less fortunate, did exceedingly well. Indeed, if the average performance of all the British cars together be taken, it will be found to be better than the average of all the foreign cars. It seemed at one time as if the Sunbeams had a good chance of beating even the big Peugeot and the big Fiat, whilst as a matter of fact the leading Sunbeam did actually secure the third place out of all cars. The pace attained involves the engines running at over 2,000 revolutions a minute, and at times fully 3,000: this will give an idea of the strain to which they, as well as other parts of the car, are exposed.

"Driving to the Common Danger."

It is not very often that we hear of medical men being summoned for offences under the Motor Act, possibly because their cars are usually in their own neighbourhood, and so may be recognized by the police and not stopped. But police prosecutions, which of late appeared to be on the wane, have in some districts undergone recrudescence, and have taken on a yet more undesirable form. In a recent case a car was timed going through a two-mile trap, and a speed of twenty-one miles an hour was alleged. The police, thinking, it may be surmised, that they would hardly secure an effective conviction for so small an infraction of the speed limit, prosecuted the motorist for driving to the common danger, although it was a perfectly open and mostly straight piece of road. This is a more serious offence, and involves endorsement of the licence for the first conviction: moreover, it is a matter of opinion and not of fact. In another case the motorist, the secretary of a motoring organization, had been warned of the existence of the trap and its exact location, he and his companion watching the speedometer all the time in order to keep well within the speed limit. The evidence, which was reported verbatim, was of such a character that one cannot imagine that it would have secured a conviction in any other than a motor case. A speed of twenty-six miles an hour was alleged by police timing at one end only of the trap, or, to be correct, from a side road near one end of the trap. Here, again, the prosecution was for driving to the common danger, and not for exceeding the speed limit. It is well-nigh impossible to offer an effective defence against this form of charge, and it appears that the most careful and oldest driving through a trap of which he is aware is not secure against prosecution and conviction.

The de Dion 9 and 12 h.p. Cars.

J. S.—The 9-h.p. de Dion car, if not overloaded by too heavy a body, is quite capable of dealing with any ordinary steep hill. It is a two-cylinder car with 760 by 90 or 750 by 85 tyres, the same rim taking these two sizes. The 12-h.p. de Dion is a four-cylinder car with tyres of the same size as the smaller car. There is a difference of a full hundredweight in the weight of the chassis, and there would probably be a difference of about half a hundredweight in the bodies. The chief difference in running cost would be in the wear of tyres, for increased weight means increased tyre wear. So far as depreciation of the car goes, there would be little difference. The de Dion cars usually sell well second-hand. The Zenith carburetter is now fitted on a standard, and the lubrication is very simple, means being provided for measuring the quantity of oil in the crank chamber, which is adequate for a long day's run when filled to the proper level.

The Ford Cars.

Dr. T. MacCarthy (Sherborne) writes: It may interest some of your readers to hear of my experience with a four-seated touring model Ford car delivered to me exactly twelve months ago. Miles run, 6,100: total running cost per mile, 1½d., although I have only got sixteen miles per gallon, and have bought three new tyres lately. But for a lot of running with good loads on the very loose roads of last summer, I think I should still be using the original tyres. The discarded ones were cut and burst, none of them being much more than half worn. Barring a little trouble once with a commutator, which had to be turned on a lathe, I have never had a stop for anything but punctures. I can say nothing about the lasting powers of these cars, but mine is as good as when I bought it.

LITERARY NOTES.

The universal popularity of tea with all classes of English society is an odd instance of the inexplicable diversity in national tastes and customs. It is only of recent years, for example, that tea drinking has gained any real hold on the affections of the French people; and even now the habit is confined almost exclusively to the fashionable drawing-rooms of Paris. The delights of "le five o'clock" are as yet unknown either to the bourgeois or the peasant, a fact which is hardly surprising when one remembers that tea originally made its début in France as a medicine. M. Marcel Labbé, writing in the June number of *L'Hygiène*, speaks of Pierre Cressé, who, in a thesis read before the Faculty of Medicine in the year 1657, expatiated on the virtues of tea as a remedy for gout, an opinion which was corroborated a few months later by his colleague, Jean de Mauvillain. Gui Patin, it is true, professed the most utter contempt for the new drug, and laughed at Mazarin for using it; but this scepticism was by no means shared by the majority of his educated fellow countrymen. We learn from Madame de Sévigné that the Princesse de Tarente kept herself in health by drinking a dozen cups of tea every day, whilst it was currently reported that the dying Landgrave of Hesse-Cassel had been miraculously restored to life by the truly heroic remedy of forty cups administered each morning. This belief in the efficacy of the morning dose of tea was shared by Racine, at least during the latter years of his life, as well as by Madame de Maintenon's first husband, the poet Scarron; whilst Huet, the well-known Bishop of Avranches, who retained his mental faculties to an advanced age, declared it to be an invaluable preservative of intellectual power. During the eighteenth century tea became quite a fashionable drink amongst the French nobility; but so little was it known—save in the guise of an unattractive apéritif—to the general public, that it was not until the great Paris Exhibition of 1900, which brought over crowds of strangers from the other side of the Channel, that the English visitor in Paris was able to obtain without difficulty his afternoon cup of tea. Even now, however, England still prides herself upon the superiority of her tea above that of other European nations, a superiority which is claimed with equal justice by France for her delicious bread. This most important article of diet forms the subject of a short article by M. Francis Marre, which also appears in the June number of *L'Hygiène*. The same issue of this excellent magazine contains an interesting account by M. Louis Barthou of the rescue work carried on at La Pouponnière, the home for deserted mothers and their babies at Porchefontaine; whilst Dr. Maurice de Fleury writes on the manifold dangers of the slum dwellings in Paris, and M. Henri Verne contributes an article on the advantages of special series of stamps as a means of collecting money for charitable purposes.

The *New York Medical Journal* states that the new seventh edition of Dr. S. A. Knopf's international prize essay, *Tuberculosis as a Disease of the Masses, and How to Combat It*, has just been translated into French by Dr. Eugène Grenier, of the Bruchesi Tuberculosis Institute of Montreal. The proceeds of the sale of this book will be for the benefit of the institute. The first translation of a former edition into French appeared some years ago in Paris. Dr. Grenier's new French translation represents the twenty-eighth foreign edition, which with the seven American makes thirty-five editions in twenty-four languages which have appeared within the last ten years. They are the American (7), Arabic Bohemian, Brazilian, Bulgarian, Canadian, Chinese (2), Dutch, English, Finnish, French, German, Hebrew, Hindu, Hungarian, Icelandic, Italian (2), Japanese, Mexican, Norwegian, Polish, Russian (2), Serbian, Spanish, Swedish, and Turkish. Since the book was written mainly for the education of the laity, this unusually large circulation speaks well for the world-wide interest of the masses in tuberculosis, for whose benefit the Berlin International Tuberculosis Congress offered and awarded the prize.

British Medical Journal.

SATURDAY, AUGUST 10TH, 1912.

THE SECRET OF MESMER.

In the preface to his book *Mesmerism and Christian Science* the late Mr. Frank Podmore said: "The 11th of August should be observed as a day of humiliation by every learned Society in the civilized world, for on that date in 1784 a Commission, consisting of the most distinguished representatives of Science in the most enlightened capital in Europe, pronounced the rejection of a pregnant scientific discovery—a discovery possibly rivalling in permanent significance all the contributions to the physical sciences made by the two most famous members of the Commission—Lavoisier and Benjamin Franklin." In the BRITISH MEDICAL JOURNAL of January 13th and 20th, 1912, a translation of the full text of this famous report was published; our readers have thus had the opportunity of studying for themselves a document with which, it is clear, some who have written very confidently about it have not taken the trouble to make themselves acquainted. It seems to us that no person of unbiassed mind can read and inwardly digest that report without being convinced of the soundness of its conclusions. It may be remembered that the phenomena observed around Mesmer's tub were after most careful analysis ascribed by the Commissioners to the action of three causes—touch, imitation, and, greatest of all, imagination. How potent an agent is the imagination was freely admitted by Franklin, Lavoisier, and their colleagues. "Doubtless," they said, "the imagination of the patients often has a great influence in the cure of their diseases. The effect of it is only known by a general experience, and has not been determined by positive experiments, but it does not appear that one can doubt about it. It is a well-known adage that faith saves in medicine; this faith is the product of the imagination; then the imagination acts only by mild methods; it is by diffusing calm in all the senses, in re-establishing order in the functions, in stimulating the whole by hope. Hope is the life of man."

What the Commissioners condemned was the goading of the imagination by artificial means to the production of violent convulsions; these "crises," they said, were an evil added to the disease, whatever it might be. They further pointed out that the convulsions were in themselves dangerous, as tending to become habitual, and also to engender similar disorders in others. "These diseases of the nerves, when they are habitual, are the despair of physicians; it is not the function of art to produce them." It is not easy to see why so sane a report should be regarded as humiliating to science, especially as Mr. Podmore himself said that the magnetic fluid was a chimera and Mesmer "was perhaps three parts a charlatan. He had no pretensions to be a thinker; he stole his philosophy ready made from a few belated alchemists; and his entire system of healing was based on a delusion." This is virtually what the French Commissioners said. Why, then, is their report so strongly denounced? Because, we are assured, Mesmer "wrested the privilege of healing from the Churches and gave it to mankind as a universal possession." This precious gift is suggestion—the very thing the Commissioners meant by "imagination." Now, we should be the last to deny the importance of suggestion in the treatment of disease. In that ill-defined force lay the secret of Mesmer. But it was not discovered by him, nor was it given by him to mankind. That the mind, or the spirit, or soul, or whatever we may choose to call the vital principle which "informs" our tenements of clay, exercises a powerful influence on the body is a fact which was put to use in the treatment of disease by the priests of the Asclepieia in ancient Greece and by physicians in every age. Although the motive force itself is obscure and the means of bringing it into play various, the mechanism is simple. Imagination, or "suggestion," sets the will in operation, and it is the restoration of the will power in certain cases of functional disease—so-called "paralysis" of limbs, aphonia, and so forth—that works the cure. Patients in whom movement or other functions have become dormant from disease recover under the influence of a sufficient mental shock; *possunt quia posse videntur*.

But if will power is presented to us as a panacea, we are reminded of the old lady who made her testamentary dispositions on her deathbed, and willed dear John £5,000, dear Mary £10,000, and so forth. When it was delicately pointed out to her that she had not the money, she cheerfully said, "No, but I will it to them." In all but a small corner of the vast and dark territory of disease, the will power, though always useful as a help, has as much effect in the cure, and will be found as empty of solid effect, as the old lady's last will and testament.

Mr. Podmore made a significant admission when he said that "in this study, whether we call it by the name of animal magnetism, hypnotism, or suggestion, the student always finds what he looks for." These words explain not only the belief which has been expressed by many men of great intellectual endowment, but the testimonies of patients, doctors, and others to cures which they imagine they have witnessed. Even in scientific experiments, a great French physiologist was accustomed to impress on his pupils the need of care not to seek for anything lest they should find it.

Elsewhere will be found an account of the work of Mesmer's disciple, the Marquis de Puységur, who at first followed in the footsteps of the master, but afterwards dispensed with the ritual of the tub. He strongly condemned "those unhappy convulsions which have done so much to discredit M. Mesmer's discovery," insisting that the magnetic "crisis" was, on the contrary, "a calm and tranquil state which offers to the seeing eye only the picture of happiness and the peaceful work of Nature in the restoration of health." Puységur accidentally discovered for himself the magnetic trance, or, as we should say, hypnotic sleep, which before him was known to Van Helmont, Athanasius Kircher, and others. While in that state his "subjects" were able to tell the nature of their own and other people's diseases, to prescribe the proper treatment, and to foretell the mode of cure. Puységur seems to have been, like honesty according to Autolycus, a very simple gentleman. He accepted the statements of his subjects with an eager credulity that seems to have stimulated their imaginations to fresh efforts. The conditions from which some of them suffered are unknown to pathology, and the mode of deliverance indicated is equally fanciful. As Mesmer's patients were all victims of "obstruc-

tions," those treated by Puységur traced their sufferings to "abscesses" in the brain, the spleen, and other organs, which they foretold would at a time indicated empty themselves through the nose, ear, or intestine, when immediate cure would take place. In one case an abscess of the hand discharged itself through the ear, finding its way along a channel which the sufferer in magnetic vision saw connecting the little finger with the head!

In regard to the mode of cure, it is significant that the *somnambules* spoke of convulsions, spitting of blood, and bleeding from the nose and so forth. Not infrequently the results seem to have been brought about by the aid of ordinary medicines or venesection; from the nature of the evidence it may safely be assumed that they themselves helped to bring about the fulfilment of their predictions. We need not assume that there was always bad faith in this. The curative processes, if we may so call them, were doubtless sometimes the effect of unconscious self-suggestion. Just how much suggestion, how much self-delusion, how much imposture there was in the manifestations of Puységur's *somnambules* it would be difficult to say. The conditions were all in favour of trickery. Puységur was a grand seigneur with a considerable military reputation, and many of his "subjects" were his own dependents. He was a man of enthusiastic temper; honest himself, he was unsuspicious of others. Most important of all, he knew nothing of medicine; he was therefore unable to appreciate evidence either as to the existence of disease or its cure. Small as his book is, it is full of confusion, repetition, and contradiction. His importance in the history of mesmerism is that he disclosed the secret of "animal magnetism," which was, he says, revealed to him by one of his *somnambules*—to the great displeasure, it is said, of Mesmer. It is expressed in the formula. *Croyez et voulez*, which is written at the end of his booklet. In belief and in the operation of the will quickened into active operation by belief lies the secret of all faith healing, ancient and modern.

IN STATU QUO.

Mr. Lloyd George has selected the *Nation* as the medium for issuing yet another appeal to the medical profession to "wait and see." It is printed in a special medical supplement for which the Editor of the *Nation* disclaims responsibility, stating that it is "entirely conducted by medical men." The article ought, perhaps, rather to be called an appeal from the medical profession to the public, for it is not easy to find in it anything that was not either said by Mr. Lloyd George in his speech at Kennington or embodied in the letter which the Insurance Commissioners addressed to the British Medical Association on June 26th.[1]

In his article Mr. Lloyd George insists on two matters in respect of which he is prepared to meet the profession. He says, first, that when the regulations are issued the profession will find that night visits are put in a different category from day attendances, and there will be protection from frivolous calls; and, secondly, that the regulations will amply safeguard the medical profession from being subjected to a kind of disciplinary jurisdiction exercised by a body of laymen in matters which are peculiar to their own profession. This second statement is merely a paraphrase of the first part of Paragraph xii of the letter of June 26th from the Commissioners, in which it was stated that it was intended that questions purely of professional discipline would be referred to a medical tribunal, and that in regard to complaints affecting doctors on a panel involving questions that were not merely professional full opportunity should be given to the local Medical Committee of the area to consider and report upon any decision arrived at affecting technical medical considerations. With regard to the first point, the statement by the Chancellor embodied in the letter from the Commissioners was to the effect (Paragraph xvi) that the Government recognized "that the aggregate amount devoted to medical benefit must be such as to enable suitable payments to be made for certain extras, including night visits, mileage, especially in country districts, and possibly other matters." In discussing the question of remuneration, in his article, Mr. Lloyd George admits that the financial basis on which the rate of medical remuneration was originally computed was erroneous, and in the letter of June 26th he authorized the statement that, "on full consideration of all the information already in their possession, the Government would be willing, assuming the cordial co-operation of the profession in the working of the Act to be assured, to advise Parliament to make extra provision for meeting the cost of medical benefit beyond that originally assumed in the actuaries' calculations." He now contends that the Plender report proves that the original estimate was not so wide of the mark as some have affirmed, but he states that the report of the Committee appointed by the Insurance Commissioners some months ago to inquire into the question of remuneration will deal not only with the Plender report, but also with all other information "from private persons or from organizations which will further assist them in arriving at a just conclusion." He concludes his article in the *Nation* in the following words: "When the report of that Committee reaches the Commissioners they will be in a position to advise the Government as to what addition (if any) it will be reasonable to make for the remuneration of the profession."

If we were to take Mr. Lloyd George's recent utterance quite literally, it would be fair to contend that, so far from adding anything to what was said in the letter of June 26th, he has really subtracted from it; but we have no desire in any way to complicate the position, and prefer rather to rely on the considered expressions contained in the letter. Mr. Lloyd George, in his article, says that it is his sincere determination to use the machinery of the Insurance Act, not merely as a means of mitigating the evils of the present method of contract practice, but for putting an end to them. He is confident that if the machinery "is properly used by the profession, with the help of the great multitude of people who sympathize with their desire to improve the conditions of medical service in the kingdom, the scandals which have been attendant in many cases upon contract practice will soon be registered among the nightmares of the past." This declaration would carry more conviction if the medical reader could forget the constitution of the local Insurance Committees, which, as Mr. Lloyd George points out in an earlier part of his article, are to administer in each district the part of the Act under which provision for medical attendance is to be made. The medical profession has made up its mind in any event to end these scandals and nightmares. If it is forced into that position it will itself establish a general system, sufficiently elastic in its details to be easily adapted to the special

[1] Supplement, July 6th, pp. 17 to 20.

needs of various localities, for rendering efficient medical services in return for adequate payments. In so doing it would be certain of a very large measure of public support, including that of the best and most thoughtful section of those engaged in medical labour. By very many members of the medical profession such a solution would be infinitely preferred to any plan involving the intrusion of the State and of State officials between them and the people among whom they live and work.

THE INDIAN ROYAL COMMISSION AND THE I.M.S.

THE Royal Commission on the public service in India recently appointed to examine and report on matters in connexion with the Indian Civil Service and other civil services, imperial and provincial, in India, is instructed to give special attention "(1) to the method of recruitment, and the systems of training and probation; (2) to the conditions of service, salary, leave, and pension; and (3) to such limitations as still exist in the employment of non-Europeans, and the working of the existing system of division of services into imperial and provincial; and generally to consider the requirements of the public service, and to recommend such changes as may seem expedient." The Chairman of the Committee is Lord Islington, better known perhaps as Sir John Dickson Poynder, who is retiring from the Governorship of New Zealand. The members include seven Indian civilians, of whom three are natives of India, with the Earl of Ronaldshay, M.P.; Mr. Ramsay Macdonald, M.P.; Sir Valentine Chirol, director of the foreign department of the *Times*; and Mr. H. A. L. Fisher, Fellow of New College, Oxford, and known as an authority on political and foreign history. The Commission, it is understood, will assemble in India in December, and spend altogether some six months in that country with an interval in the spring in London.

The terms of reference would not, at first sight, appear to include a consideration of the Indian Medical Service, which is primarily a military service, although about two-thirds of its members are employed under the civil Governments. But in his speech on the Indian Budget in the House of Commons Mr. Montagu, Parliamentary Under Secretary to the India Office, made it plain that among the matters to be considered by the Commission would be the position of the Indian Medical Service. He pointed out that, like the Indian Civil Service, it is recruited through an examination held only in this country, and he indicated that the Commissioners would be expected to consider whether the medical training which is possible for Indians to receive in their own country was of such value as to justify opening the door of the Indian Medical Service in India, and whether it would be right to open it to subjects of feudatory States. He also said that the Commission would be expected to report on the question whether the existence of an Indian Medical Service prevented the growth of an independent medical profession. In this connexion the Commission will, no doubt, find occasion to consider Lord Morley's proposals for the establishment of an independent medical profession in India, to which we have frequently referred in the JOURNAL, particularly in an article in our issue of February 24th last.

The nature and extent of the work of the civil branch of the Indian Medical Service must therefore come under the consideration of the Commission, and some recommendations will probably be made. We have always held that an independent medical profession in India must maintain itself on its own merits and by its own efforts, and must not in any sense be a Government service, for then it would cease to be "independent." The Commissioners will no doubt consider how far the right to private practice assured to the members of the Indian Medical Service by the Regulating Act (India, 1773, xiii, George IV, cap. 65, Sec. 25) interferes with the private practitioner in some places, but they will, we believe, find that the interference in most places is small. In any case, it would take a fresh Act of Parliament to cancel the rights of the Indian Medical Service, and it would have to be accompanied by a considerable increase in the pay, as this has always been low relatively to that of other services on account of the actual or supposed additions derived from private practice. There is plenty of room in India for both the Indian Medical Service and for an independent medical profession, which will flourish as the demand of the native population for the western system of medicine increases.

THE DRAFT REGULATIONS.

IT was confidently stated a short time ago that the draft Regulations to be made by the Insurance Commissioners for the administration of medical benefit would be issued early this month. We understand that it is not now probable that this intention will be carried out, and that in fact their publication cannot be expected until September. It would appear that the draft Regulations will be accompanied, or, more probably, followed, by the publication of a report by the Insurance Commissioners on the question of remuneration. This report is being prepared for the Commissioners by a committee which has been instructed to take into consideration Sir William Plender's report and all other communications on the subject submitted by organizations or individuals. It is to be hoped that this report will appear at the same time as the Regulations, as otherwise further unnecessary delay must inevitably be caused, since the two subjects, of the services to be rendered and the remuneration to be received, are interdependent. When the draft Regulations have been issued they will be considered by the State Sickness Insurance Committee, acting on its authority from the Council, but it will be difficult for that Committee to make any effective report to the Divisions unless it has also the opportunity of considering the report on remuneration. It seems probable, therefore, that there will be another long delay, but the period will be utilized by the State Sickness Insurance Committee to revise the scheme for a Public Medical Service in the light of the observations of the Divisions and the various plans which have been outlined by correspondents whose letters and papers have appeared in the JOURNAL.

THE AVERAGE RESULTS OF SANATORIUM TREATMENT.

AT a time when the provision of sanatorium treatment is about to be subsidized by the State, no opportunity should be lost of ascertaining the facts that have been observed as to the real benefits to be anticipated from it. Numerous reports are available from sanatoriums in many lands, but they deal for the most part with immediate, rather than with the ultimate, results that have been obtained. Consumption hospitals and sanatoriums can generally show a very high percentage of so-called success in early cases, but the information obtained by the more searching methods of the Charity Organization Society present the case in a somewhat different light. By persistently following up the after-history of their patients year by year

they are able to show that only about 50 per cent. of them are actually fit for work, and, as the number lost sight of only amounts to about 9 per cent. of the whole, it may safely be concluded that the percentage of practical success is fairly represented by the figure stated. It is well that this fact should be carefully considered both by medical and lay authorities who may in the future have to administer the State-aided sanatoriums. In the report[1] embodying the figures here quoted, the society expresses the opinion that the local sanitary authorities, as at present constituted, are in reality in a far better position to administer the "sanatorium benefit" than are the local Insurance Committees. It stated that the detection and selection of cases for treatment is being well done by the tuberculosis dispensaries, and that the system has proved itself worthy of recognition and employment under the new Act. There can be no doubt that the excellent work done by the Charity Organization Society itself will need to be continued if funds are forthcoming to enable it to be carried on as vigorously as heretofore. The obvious reflection will occur to every one that the wholesale provision of sanatoriums, which can at best only achieve a 50 per cent. success in favourable cases, should not be allowed to displace the existing methods of dealing with early tuberculosis, and that therefore the decision to apply a part of the State grant to the maintenance and extension of the good work that they are doing is a wise one.

THE CARE OF CITY CHILDREN IN GERMANY.

Professor A. Baginsky has published an essay[2] in which he describes and criticizes the efforts made in Germany on behalf of the welfare of children under 14 years of age. He points out the advantage of giving special assistance to those coming from necessitous homes, so as to prepare them to meet the future under better conditions. In Berlin and other large cities public assistance is supplemented by private charity and a vast number of institutions and homes for the relief of sick children, orphans and foundlings are to be found, as well as suitable establishments for the treatment of children suffering from lung trouble and tuberculous disease. In the case of infants under 1 year of age much is gained by collecting the mothers into homes, and there, without separating the nursing child from its parent, instructing them in infant care and hygiene. In addition a system of education and supervision in the individual homes is required. He considers that all girls of 18 should pass through a compulsory training in subjects relative to motherhood, and, comparing this service with that of military service for men, maintains its equal national importance. Between the ages of 3 years and 6 years children begin to show the effects of bad feeding and improper sanitary and hygienic conditions in the home. Though not ill, they exhibit a lowered vitality and physical weakness which renders them liable to contract infectious and other microbic diseases. They have a tendency to develop chronic ailments, such as catarrh, adenoids, and rheumatism with its sequelae. The work done for infants ought to be continued by crèches, kindergartens, and open air playgrounds for the benefit of these older children, so that they may grow strong and develop before commencing the strenuous life of the school. The hours of work and play of the school child are regulated by the State, which also determines the amount of physical culture given, and the standard of education and development at each age. The nutrition, cleanliness, and personal care of the child are left in the hands of the parents. If the child is to be kept in a physical condition which will enable it to reach the higher standards, the community must provide meals for the hungry and clothing and boots for those who require them. The health of children in the schools has been improved by the advent of the school doctor, and by the establishment of outdoor or forest schools and schools for the tuberculous, and Professor Baginsky states that these measures may in future be extended to provide accommodation for the weak and backward, the deaf and dumb, the cripple, and the stammerer. The wants of the children have been recognized by the community, and private endeavour has established numbers of open-air playgrounds, holiday colonies, forest schools, and sea-bathing homes, in the desire to help every class of case. He urges that a central office for the welfare and assistance of children should be established in every large city to bring the work done by the State and by the private individual into connexion, to watch over the interests of the young, and to organize the assistance given in such way that no child between infancy and the age of puberty shall suffer needlessly.

[1] The Sanatorium Treatment of Consumption. A Report of the Charity Organization Society's Work in the Years 1902-11.

[2] *Die Wohlfahrtseinrichtungen für Kinder in grossen Städten.* Von Geh. Med.-Rat. Professor Dr. A. Baginsky. Berlin: August Hirschwald. 1911. (Sup. roy. 8vo, pp. 19. M. 40.)

THE FILM AND THE CRISIS.

The cinematograph, it may be admitted, can be made to provide amusement and instruction, often combined, at a comparatively cheap rate. Through it the young idea, lay as well as medical, can be and is being introduced to many of the mysteries of nature and of science. Nothing is made of showing, in a quite short space of time, how a bud becomes a full-blown rose, or a grub a butterfly, or a coccus a colony of cocci, or a maggot a fly, or of displaying the gambols of the trypanosome amongst the red blood corpuscles. An influence for good in these respects, the cinematograph film exercises others no less beneficial in other directions. Has it not provided a new form of entertainment? Has it not brought us almost into touch with a new set of ideas, and, more important still, a new set of performers? Should we without it have known of the existence of the lady who exhibits the latest Paris coiffures and fashions, or experienced the feeling of joy that comes when, the task of turning herself about completed, she permits her fascinating smile to flicker out upon us? Great and good and important as all these advantages may be, there is yet something to be complained of. There is a fly in the ointment. The film has resuscitated the crisis. It has led to a boom in diseases terminating in this manner. Those of us who were novel readers twenty or thirty years ago knew all about the crisis. In the medical lexicon of the authors of that time there was no such word as lysis. The heroine, the hero, the good old man, and his child with the face of an angel, were predoomed to suffer from some form of fever, affecting particularly the brain, which gradually reached its height, and suddenly ended in complete recovery. After a time this disease seemed to have been stamped out. Now, however, it has appeared again, though it seems to be more common in America and Continental countries than here. At least, the majority of films showing cases bear alien names and marks. In many picture theatres it is possible to behold, almost at any hour, an American physician patiently waiting for the crisis in his one and only patient. He is seated on the edge of the bed with the thumb of his left hand on an ulnar artery of the sufferer, while his right is engaged in signing innumerable telegrams, letters, and documents, calling wandering relatives home, always with his surname and his hard-earned title of "doctor." Doubtless the necessity for compressing a complete story into a film running not longer than twenty minutes induced the producer of picture plays to drag the crisis-ending disease from its hiding place. But it was a bad day for the medical profession. Everybody goes to the "picture show" and few fail to see at least one "picture drama" with a crisis in full working order. This induces the belief that by the exercise of a little skill the family doctor can bring about a sudden and miraculous cure in any case to which he may be called. The doctor who

fails is not up to the standard of the physician of the pictures, and is not, therefore, to be depended upon. The director of a well known cinematograph company has been heard to prophesy that "dramatic" films containing a modicum of common-sense are bound some time to be produced. This is a consummation devoutly to be wished, and if the common-sense pushes out the crisis so much the better.

INTERMITTENT SWELLING OF PAROTID GLANDS.

In spite of several recent studies of cases of periodical swelling of one or both parotid glands, its pathology is still obscure and its treatment is most unsatisfactory. Goebel[1] reports the case of a woman, aged 32, who suddenly acquired a red and very painful swelling in front of and behind the right ear, without apparent cause. The patient, whose temperature was normal, was treated with fomentations and warm oil applied locally. The pain disappeared in a fortnight, and the tumour became somewhat harder and smaller. But from time to time the swelling recurred as a result of chills, and five years after the swelling first appeared on the right side, a small, painless swelling began to appear in front of the left ear. Two years later an abscess the size of a walnut formed at this point and was incised and drained. When last seen the patient exhibited two symmetrical, soft, painless tumours, the size of a third of an egg, occupying the position of the parotid glands. Pressure on the right but not on the left tumour caused an immediate flow of clear saliva. Goebel also reported the case of a workman, aged 40, who developed swellings in front of his ears at the age of 25. Subsequently they reappeared about four times a year, and lasted on each occasion from three to fourteen days. Although the openings of Stensen's ducts were patent, pressure on the tumours caused no secretion of saliva. Remouchamp has reported the case of a man, aged 85, who had suffered attacks of chronic inflammation of the salivary glands, attended by pain, since he was 26 years old. The skin was normal over the tumours, which felt like a cluster of closely packed grapes, and yielded on pressure a flow of alkaline saliva, rich in mucin and ptyalin. It also contained pus cells, large nucleated leucocytes, fragments of leucocytes, streptococci, and short Gram-staining rods. A blood count revealed a marked degree of leucocytosis. The patient's father had suffered from the same complaint. In a somewhat similar condition described by Kussmaul the parotid glands swell periodically, becoming suddenly painful and distended. With the escape of fibrinous plugs from the ducts there is a free flow of saliva. Lange[2] relates the case of a Swede, aged 35, who had at the age of 20 undergone treatment for nasal obstruction, headache, and attacks of sneezing. Shortly after contracting syphilis, for which he was treated for between two and three years, he began to suffer from periodical swelling of the parotid glands. The attacks became more frequent, and sometimes followed coughing. The submaxillary and sublingual glands became involved subsequently, and mastication was then difficult and painful. The attacks, which recurred twice a week or oftener, disappeared as quickly as they came, and lasted at first for a quarter of an hour only. Later each attack used to last for several hours. Although the parotid glands were but slightly swollen, they were very painful, even on light pressure. The caruncula sublingualis was very prominent and painful, and Stensen's ducts were patent, saliva being seen to escape readily from them when the tongue was depressed. Potassium iodide was prescribed, as the above condition had developed within a year of the infection with syphilis. But neither this drug nor its combination with quinine had any influence on the [illegible] which also were unaffected by [illegible], and massage. The publication of this case drew from Lüders[3] an interesting account of two similar cases. One of his patients, a merchant, 29 years old, had also contracted syphilis, for which biannual courses of mercurial inunction had been prescribed. A cold which he caught at this time was followed by the development of acute otitis media on the left side. This was followed by perforation of the tympanum, and a profuse discharge of red-stained pus. The left parotid gland was somewhat indurated and swollen, but while it was only slightly painful, the tragus and mastoid process were exquisitely tender. As periodical swelling of the parotid had been observed before the occurrence of the middle-ear disease, the former was not attributed to the latter, but to the syphilis, which had been acquired about a year before the parotid swelling began. This view was, however, dismissed when treatment with mercury and potassium iodide was found to be useless. In the second case, an officer, aged 47, whose denial of infection with syphilis was supported by a negative Wassermann reaction, developed slight inflammation of the right parotid gland when he caught a severe chill as an ensign. Subsequently, this condition recurred from time to time as a result of chills which, however slight, had of late years been sufficient to provoke an attack. Owing to the sense of tension caused by the firm and somewhat painful gland, the patient experienced considerable discomfort, especially when the head was turned to the right. He learnt to massage the swelling several times a day with Bengué's balsam, which caused profuse salivation, and completely reduced the swelling within a day, and sometimes within a few hours. The left parotid gland, which had shown similar but slighter periodical swelling for the past ten years, was treated in the same manner. Doubtless, syphilis may involve the parotid glands, but the above cases were probably due to catarrh of the mucous membrane lining the ducts of the glands. The treatment of such a condition by drugs offers little prospect of success, whereas massage may be effective, if there is obstruction to the flow of saliva either by stenosis or kinking of the salivary ducts. Catheterization of these ducts is a difficult and painful process, against the use of which Lüders is very emphatic. Any attempt to treat the condition by the removal of part or whole of the gland is also to be deprecated, as the risk of wounding the facial nerve outweighs any advantages to be gained from such an operation.

[1] [illegible], September 6th, 1910.
[2] *Deut. med. Woch.*, February 8th, 1912.

NEW OPERATIONS FOR GLAUCOMA.

Glaucoma was regarded as an incurable disease until von Graefe introduced and perfected the operation of iridectomy; this operation has proved of inestimable value in acute glaucoma, but its action in cases of chronic glaucoma has been on the whole disappointing. In many cases, far from effecting a cure, iridectomy has been followed by rapid deterioration of sight. In long-standing examples of chronic glaucoma simplex the iris is very atrophic, and in these cases iridectomy is worse than useless. The exact way in which iridectomy brings about a favourable result is even now not quite clear. In some cases the iridic angle is occluded and the iris root is closely applied to the corneal periphery; it is reasonable to suppose that in such a condition a peripheral iridectomy, by clearing out the iridic angle, may reopen channels of outlet from the eye. But in many glaucomatous eyes the iridic angle gapes widely, and yet iridectomy may be successful. In these cases there is probably, as Thomson Henderson of Nottingham has pointed out, an obstruction in the pectinate ligament, or, as he prefers to call it, the cribriform ligament, caused by sclerosis of its component fibres. Henderson has also shown that the cut iris, being constantly bathed in isotonic lymph, lacks the necessary stimulus towards healing, and consequently

[3] Ibid., March 21st, 1912.

does not cicatrize. The result of this paradox is that the cut surface acts as a wick, and new channels of outflow are opened up by the iridectomy. If, however, the iris be atrophic, this mechanism does not come into full play and the operation is a failure. For some years ophthalmologists have been so fully conscious of the failure and dangers of iridectomy in glaucoma simplex that they have devised new procedures, many of which may be said to be still on trial. One of the first of these methods, dating back to the early days of iridectomy, is de Wecker's sclerotomy. This operation is still recommended, especially in Germany, where at first it met with great opposition. In a really dangerous case, where intraocular haemorrhage is feared and yet something must be done, it is still probably the safest procedure, but the effect produced is often very transient. To obtain a permanent lowering of tension it is necessary in cases where iridectomy is likely to fail to obtain a filtering cicatrix. This can be achieved with certainty by leaving a tag of iris in the wound, but this method may cause general septic infection of the eye or a state of chronic irritation, and therefore cannot be recommended. The safer plan is to perform one of the modern operations. In Lieutenant-Colonel Herbert's first method a wedge-shaped strip of sclera was isolated with a narrow Graefe knife and left *in situ*. The second operation, the small-flap operation, is easier, but probably not so efficient as the wedge method, and many surgeons who have given it a full trial are abandoning it because they find that after a time the wound ceases to filter and heals permanently. The Lagrange operation is difficult and hazardous, but yields good results. The trephining operation seems to be at present the most favourite method of obtaining a filtering cicatrix. Both it and Holth's punch method attain the same object, a piece is completely removed, and the conjunctiva replaced over the hole. By this means permanent drainage between the anterior chamber and the subconjunctival tissues is maintained. Another operation which has been introduced to cure glaucoma is Heine's cyclo-dialysis, which seeks to open up a communication between the anterior chamber and the lymph spaces outside the choroid and ciliary body. Thus the ophthalmologist of to-day has a considerable choice of method, and is no longer confined to iridectomy. But, unfortunately, even though the rise of tension be permanently cured, the essential glaucomatous atrophy of the nerve in many cases slowly progresses till a condition of total amaurosis results.

THE TESTING OF MEDICINAL CHEMICALS FOR ARSENIC.

A supplementary report of the Committee of Reference in Pharmacy to the Pharmacopoeia Committee of the General Medical Council, which has just been published, is entirely devoted to the testing of chemical substances used in medicine for arsenic. The experience of recent years has shown that a very large number of substances may contain traces of this element, the contamination being most commonly derived from sulphuric acid used directly or indirectly at some stage of the production of the chemical. It is not sufficient that the pharmacopoeial requirements should include the absence of arsenic, if only comparatively rough tests for its detection are ordered; none of the tests at present official is well suited for detecting such small quantities of arsenic as are liable to occur; these traces, however, are by no means negligible therapeutically when they exist in substances which may be taken regularly over considerable periods of time. It is therefore necessary to prescribe a test capable of detecting and approximately measuring very minute amounts of arsenic, and to lay down maximum limits for the amount of this substance which shall be permitted in the various chemicals used in medicine. The number of substances for which such limits are proposed in the present report is 109; for the large majority of these the suggested limit is either 2 or 5 parts per million; for liquor magnesii carbonatis it is as little as 0.2 part per million, for ferrum redactum it is 200, for antimonium tartaratum 500, and for other antimony compounds 1,000 parts per million. The test which is adopted is a modification of that of Siebold, and has long been in use for the purpose; it consists in making a solution from the substance under examination in such a way that it contains whatever arsenic may be present, and adding this to zinc and hydrochloric acid in a vessel of prescribed size and form. The evolved gas is purified by passing over lead paper, and is then passed through a cap of paper impregnated with mercuric chloride; a yellow stain on the paper indicates arsenic, and the depth of the stain is approximately proportional to the amount of arsenic present. Directions are given for preparing a "standard stain," representing one-hundredth of a milligram of arsenious oxide (As_2O_3); in testing any chemical a definite stated quantity is employed, and it is required that this quantity shall not give a deeper stain than the standard. The general method is the same as that recommended some years ago in a report to the General Medical Council by Dunstan and Robinson; it has been put into its present form by Mr. C. A. Hill, B.Sc., F.I.C., on behalf of the Committee of Reference in Pharmacy. It appears to meet the requirements of the case fairly well, inasmuch as only very simple apparatus is necessary, and the process itself—although of course requiring careful work—presents no difficulty which would put it out of the reach of any ordinary pharmacist.

SECOND AND THIRD CLASS MUMMIES.

Drs. M. A. Ruffer and A. Rietti have communicated to the Archaeological Society of Alexandria the highly curious results of an examination of two mummies, attributed by Professor Flinders Petrie to the period of the Persian occupation of Egypt (525 to 323 B.C.). We see in this country notices in undertakers' shops indicating that a funeral may be of the first, second, or third class, according to the price. Something of the same sort of discrimination seems to have existed in Egypt, at least at the date indicated. Of the first class, for kings and queens and great men and women, every one has heard and seen a good deal. The first of the mummies now described seems to be an example of a second class embalming. The viscera appear to have been extracted in a very summary way, and the body pickled until the flesh shrank to the bones; the external surface and the internal cavities were then treated with hot gum, the excess being allowed to escape from the interior of the body through a hole in the perineum, afterwards plugged with rags; the limbs, as they were bandaged were made up into a semblance of the human form by packing with more rags. In the mummy examined there would seem to have been disease of the dorsal vertebrae, the nature of which could not be ascertained; the dorsal vertebrae appear to have crumbled during this summary process of embalming, and the embalmer in order to retain the form of the body replaced them by a stick resting just below and behind Poupart's ligament on the right side and on the first rib above. This mummy was of an adult, perhaps aged, for the wisdom teeth were present and many others had been lost during life. The second mummy was evidently an example of third class embalming. It consisted of the skull and a long crate made of the ribs of palm leaf containing the bones of the trunk and limbs thrown casually together, but more or less in place; the bones of the lower limbs were together in the lower part of the crate, but one femur was upside down and on the wrong side, the right shoulder was formed by one iliac bone, the front of the chest by the other, and one scapula was placed upside down to form the left shoulder. The authors believe that this body was first buried in soft moist earth until all the soft parts had

disappeared, and that the bones were then gathered together and roughly placed in the crate, some care, however, being taken to arrange the bones so that in outward shape when bandaged *secundum artem* the whole resembled a human mummy. They consider that it was an example of a cheap mode of preparing bodies for burial resorted to by those who could not or would not afford an expensive form of embalming.

RESTRICTED NASAL RESPIRATION.

For the last five years a series of observations have been made by Dr. E. Kuhn, a staff surgeon in the German army, as to the therapeutic uses of a special form of oro-nasal inhaler, described as a "lung-suction mask."[1] It consists of an ordinary inhaler, covering mouth and nose, but so contrived that the inspiratory flow of air through the nose can be hindered to any desired extent, while the expiratory flow through the mouth is not interfered with. It is claimed for this type of inhaler that rapidity of oxygen intake can be graduated, and that the consequent slowing of the pulmonary circulation and engorgement of the lungs with impure arterial blood must have a beneficial effect in checking the development of tubercle. Over and above this, it may afford relief in catarrhal and bronchitic conditions, and serve to improve the shape of ill-developed or malformed chests. The successful cases recorded and the names of those who advocate this form of treatment command our respect, but it would appear that success depends upon the perseverance with which the inspiratory instructions are carried out. The muscular effort required to overcome the artificial resistance in the inhaler must result in deeper inspiration, and hence in a better filling of the pulmonary air passages. At the same time, the increased inspiratory movements must tend, if continued for long periods, towards greater expansion and development of the chest walls. Whether it is actually necessary to obstruct nasal inspiration in order to bring about these desirable results does not at first sight appear obvious. The use of an oral inhaler or respirator has always been regarded as a simple means of inducing nasal inhalation, especially in cases where some natural obstruction exists, but artificial obstruction of the nasal intake has not as yet found a place among recognized methods of treatment. We are informed that in cases of asthma and spasmodic breathing the method has proved of great service, while the persistent use of the mask has been known to convert a narrow chest into a full one, rendering the subject capable of undertaking military service. Contraindications are mainly the presence of a weak heart or of acute pleurisy. The one is not likely to be benefited by obstructed pulmonary circulation, while the deep inspirations are more than likely to be painful in the other. It is asserted that the rapidity of the lymph flow is expedited by the use of the mask, and that it may therefore be commended in cases in which lymph stasis is present or suspected. Respiratory gymnastics are always irksome after the first novelty of their use has worn off, and they often fail to achieve their full results, owing to want of perseverance. The wearing of an apparatus such as the one described has been found to command unlimited faith on the part of the user, and that, after all, is the main object of many of the more complicated means of relief.

THE SURGERY OF THE LUNG.

Those who are interested in the subject of what surgery of to-day can do for the various affections of the lungs should read the very able papers which Professors A. Fraenkel and W. Korte communicated to the Berlin Medical Society.[2] Fraenkel considers the indications for surgical interference and the chances of success, while Korte deals with the operations and their results. It is impossible to give even a brief survey of these combined papers in a short article without leaving out much which is of importance, for throughout the twenty-six pages which they cover there is scarcely a superfluous line. Fraenkel attributes the chief advances to the marked improvements in the technique of pneumotomy and in the development of compression treatment of the lung. Both authors pay tribute to the value of the Roentgen rays in facilitating diagnosis, and Körte especially shows how useful at times the employment of Sauerbruck's and Brauer's negative and positive pressure chambers or apparatus may be for the purpose of preventing the collapse of the lung when the pleural cavity is opened. Heroic measures, such as the removal of a whole lung for cancer by Kümmel, have not been attended with success; his patient died six days after the operation, and metastases were found *post mortem* in many situations. Lenhartz opened a large cavity in the upper lobe of the lung and removed layer after layer of carcinomatous tissue, completing the treatment with *x*-ray applications. The patient was alive and well one and a half years after the operation. The details in regard to the treatement of abscess of the lung and gangrene show that what used to be regarded as hopeless conditions now under favourable conditions yield to the surgeon's skill. More complicated and yet equally important are the advances achieved in the treatment of bronchiectasis, while the details of the methods adopted in dealing with wounds of the lung show that a proper selection of cases for operation, together with rational operative or conservative treatment, lead to a saving of life. Lastly, brief mention should be made of the treatment of tuberculosis of the lung, both by artificial pneumothorax and by extensive resection of the ribs.

[illegible] ment of Lung Diseases, [illegible] tion. Circulatory Disturb- [illegible] Dr. E. Kuhn. Berlin: [illegible] 24 Abbn. M. 1.)

THE POLITICAL ADVISER TO THE CHINESE PRESIDENT.

DR. GEORGE ERNEST MORRISON, who has been appointed Political Adviser to the President of the Chinese Republic, first became generally known to the European public when he published in 1895 his book, *An Australian in China*. In its subtitle it was described as "a narrative of a quiet journey across China to Burma," and that it was quiet or, indeed, that it was accomplished safely and without any serious delays, marked the author as a traveller of extraordinary energy and unfailing resource, while the way in which the story was told proved him a man of singular modesty. Before this, however, he had become well known in Australia by a journey on foot, before he was 21, across that continent from the Gulf of Carpentaria to Melbourne, a distance of over 2,000 miles. He is a son of the late Dr. George Morrison, of Geelong, Victoria, and had already been an undergraduate of Melbourne University, when in 1883 his adventurous career was checked by a spear wound in New Guinea; the spear head was cut out by Professor John Chiene in Edinburgh in the following year, and in 1887 Morrison graduated M.B., C.M., there. Afterwards he visited the United States, the West Indies, Spain, Morocco, and the Far East. He acted as special correspondent of the *Times* in 1896, when he travelled from Bangkok in Siam to Yunnan city in China and round Tonquin. In 1897 he crossed Manchuria from Stretensk in Siberia to Vladivostok, and in that year settled in Peking as the *Times* correspondent there. In that capacity he has exercised a great influence on European opinion, owing entirely to the accuracy of his information, the breadth of his views, and the prescience of his forecasts. Reuter reports that his appointment to his new office is most popular among all classes of the Chinese, who realize the advantage of securing the services of an officer combining the ability of a statesman with a knowledge of Chinese affairs surpassing that of all foreigners.

THE UNIVERSITY OF WESTERN AUSTRALIA.

Sir Newton Moore, the Agent-General for Western Australia, announces that the Senate of the new University of Western Australia is about to appoint eight professors. The State has, by a special Act of Parliament, provided for an annual minimum expenditure of £13,500 to meet the cost of administration and the general needs of the university. Private munificence is also coming to the assistance of the new institution. Sir Winthrop Hackett, LL.D., who was chairman of the Royal Commission on the establishment of a State university in Western Australia and is now Chancellor of that university, has already fully endowed a Chair of Agriculture, and it is hoped that this example will be followed by others. As organizer of the university the Senate has selected Mr. Hugh Gunn, who carried out successfully a similar work in South Africa, and who is now in the State actively engaged in preparing the ground for the inauguration of the new institution early next year. Perth, the capital of Western Australia, already possesses a Technical College (hitherto affiliated with the University of Adelaide), an astronomical observatory, and a museum and art gallery.

MINERS' NYSTAGMUS.

As the outcome of a discussion on miners' nystagmus (neurosis) held on July 19th during the Oxford Ophthalmological Congress, the following resolution was unanimously passed: "That, in the opinion of the Congress, the character of the illumination is the chief factor in the production of miners' nystagmus, and that a Departmental Committee should be appointed to make inquiries into and to report upon the exact conditions under which the disease occurs."

The Standing Committee of the House of Commons, which, as stated last week, is considering the Government Mental Deficiency Bill, had intended to meet on Tuesday, August 6th, but, owing to difficulty in ensuring a quorum, the next meeting has been postponed until October. The number of amendments of which notice has been given is large.

Medical Notes in Parliament.

National Insurance Act.

Sanatorium Benefit.

In reply to a question by Mr. Astor, Mr. Burns said that the Local Government Board had already issued an order prescribing the manner of domiciliary treatment of insured persons suffering from tuberculosis of which they approved for the purpose of Section 16 (1) (*b*) of the National Insurance Act.

In reply to a further question by Mr. Astor, Mr. Burns said that the Local Government Board had now approved for a period of six months of thirty sanatoriums and other residential institutions, containing 1,172 beds. There were available at this moment four local authorities with special sanatorium accommodation for upwards of 70 beds; 57 local authorities contracted for patients in 200 beds; 93 infectious hospitals with provision for 970 beds; 14 dispensaries run by local authorities; 50 voluntary dispensaries, and a number of other dispensaries and shelters for patients if they applied.

Mr. Astor asked (1) whether it was proposed that the beds available for the purposes of sanatorium benefit in fever and other hospitals should be reserved chiefly for advanced cases of tuberculosis; (2) how many medical men in charge of small-pox, fever, and other hospitals approved by the Local Government Board for the purposes of sanatorium benefit, where it was proposed to treat early cases of consumption, had held appointments or been trained in special institutions for the treatment of tuberculosis; (3) how many of the medical men holding senior appointments in small-pox, fever, and other hospitals, approved for the purposes of sanatorium benefit, came up to the special standard laid down by the Local Government Board (May 14th and July 6th). Mr. Burns said that he was advised that the beds available at isolation hospitals would, in many instances, be used not only for advanced cases, but also for cases requiring short periods of training and treatment and for cases under observation. As regards the medical men who were now in charge of existing institutions, he could not say what were their exact special qualifications, but they all possessed general knowledge of the methods of treatment of tuberculosis, and the Board had only given provisional approval for a period of six months to these institutions.

Sanatoriums in Ireland.

Sir John Lonsdale asked the Chief Secretary under which section of the National Insurance Act a grant for the erection of sanatoriums had been made to the Women's National Health Association; and if he would give the reference to any section of the Act which empowered the Local Government Board to deal with private persons or associations in regard to the erection or provision of sanatoriums, or which prescribed regulations or conditions under which money might be paid to such persons. Mr. Birrell, in answer, referred to Section 64 (1) of the National Insurance Act, 1911. Save as regards the consent of the Treasury, no conditions were attached to the exercise of the discretion of the Local Government Board in distributing the grant in aid of sanatoriums under that section.

In reply to Mr. Devlin, Mr. Masterman said that under Section 64 of the Insurance Act the grant was to be distributed by the Local Government Board for Ireland with the consent of the Treasury, and the Treasury before giving such consent was required to consult with the Insurance Commissioners. The matter was under consideration by the three Departments concerned, and the procedure proposed to be followed would be announced at an early date. He was not in a position to state how many schemes had already been prepared by local authorities and submitted to the Local Government Board.

In reply to Mr. William Redmond, who asked a question as to the position under the National Insurance Act, of the sanatorium established by voluntary effort in County Clare, Mr. Masterman said that if the sanatorium referred to was approved by the Local Government Board for Ireland, it would be competent for Insurance Committees to make arrangements with the managers of the sanatorium for the treatment therein of insured persons suffering from tuberculosis, for which Insurance Committees would make payment. The Local Government Board for Ireland was primarily responsible for the distribution of the capital grant available under Section 16 of the Finance Act, 1911, and Section 64 (1) of the National Insurance Act.

Sanatorium Fund.

Mr. Cassel asked the Chancellor of the Exchequer where an insured person had in the course of the year been resident in the area of three or more Insurance Committees, which committee would be paid 1s. 3d. in respect of such person. Mr. Masterman announced that under Section 61 (1) of the Act all sums available for sanatorium benefit in a county or county borough in any year were to be paid or credited to the Insurance Committee at the commencement of the year, and under this provision it would be necessary to credit the whole 1s. 3d. in the case of each insured person to the Insurance Committee of the area in which he resided at the commencement of the year. The financial adjustments necessary in the case of persons moving from one area to another in the course of the year were still under consideration.

Sick Benefit.

In reply to Lord Robert Cecil, Mr. Masterman said that he was obtaining returns from approved societies and their branches and approved sections as to the number of their members. It was necessary, however, to circularize about 20,000 societies and branches for this purpose, and it was impracticable at present to render complete returns.

Medical Benefits.

Mr. Godfrey Locker-Lampson asked whether the Government had taken into account the provision of a capitation fee for the medical profession in respect of all persons over 70 who had been insured, and all persons in receipt of

disablement allowance who were no longer contributing, and those persons between 50 and 70 who had ceased to contribute, but were not yet 50 per cent. in arrear with their contributions: and whether the actuaries' estimates provided for 6s. a head for doctor and drug expenses in regard to all these cases. Mr. Masterman said that the answer to all these questions was in the affirmative in respect of all persons entering into the National Health Insurance Scheme at ages under 65. The actuaries had been consulted on this point on the information he had.

Hospital Nurses (Ireland).

Mr. John O'Connor asked the Chief Secretary whether he was aware that nuns employed as nurses in workhouse hospitals in Ireland received only about £30 per annum each, out of which they had to clothe and support themselves, and that, in time of illness, they had their own communities to fall back on for medical and other attendance; and whether, under the circumstances, they would be allowed to claim an exemption from contribution under the National Insurance Act. Mr. Masterman stated that if, as would appear from the facts as stated in the question, the nurses were under a contract of service with the workhouse authorities, they must be insured. The Commissioners had no power to allow exemption to any persons unless they were persons qualified for exemption under the terms of Section 2 of the Act.

Sanitary Service of India.—Viscount Midleton asked the Secretary of State for India whether he could make any statement as to the reform in the sanitary service of India which had recently been under consideration; what would be the position of the head of the sanitary service under the new conditions; and when he would be in a position to lay papers on the subject. The Marquess of Crewe said the Government hoped very soon to lay full papers on this subject. The Sanitary Commissioner would be relieved of a great part of his work and would be the independent head of a separate department. The research work, which was under the control of the Sanitary Commissioner, would be placed under the direct authority of the Medical Director-General. On purely technical sanitary matters the Sanitary Commissioner would be not a subordinate but an independent officer, and on questions of administration he would be in the position of chief of staff to the Director-General. It was not possible to divorce the medical service from the sanitary service in India. The local Governments must have a considerable degree of independence in sanitary matters, because they found practically all the money for the work, and because in India associations existed between sanitation and politics to an extent not found elsewhere. It was possible by unwise insistence upon sanitary improvements to run counter to the deep-seated beliefs and prejudices of the population in many parts of India, and in such matters it might be presumed that the local Governments were the best guides. A scheme had been agreed upon with the object of strengthening the local sanitary staff. Nine Deputy Commissioners would be appointed, and for those posts Indians would be eligible. It was hoped that in due course each of the more considerable towns in India would have a health department, presided over by a competent officer, which would place those towns on something like the same level as the great urban communities in this country. It had been arranged that the Government of India would come forward with money pro rata to the sums provided for the purpose locally. The papers to be submitted to Parliament would deal also with the conference held at Bombay concerning malaria and the destruction of mosquitos.

Vivisectional Experiments.—Mr. Chancellor asked whether the irregularities by six licensees referred to in the return of experiments on living animals for 1912 were reported by them or were discovered by the inspectors through [illegible] the 291 experiments which they saw performed, or, in the case of the 94,912 experiments which the inspectors did not see, the Home Office [illegible] solely on the reports of the licensees themselves [illegible] or used any machinery to discover or check [illegible] in case licensees declined to incriminate themselves by reporting them. Mr. McKenna said there were no irregularities in the 291 experiments in which the inspectors witnessed the operations. In one case the irregularity was detected by the inspector seeing the animals (cats) after they had been operated on. In the other cases the irregularities were detected from the reports made or papers written by the licensees. The check upon irregularities, especially any of a serious nature, was afforded by a large number of animals—many thousands—under experiments which were seen by the inspector on his visits after the operation or inoculation.

Lunatics (England and Wales).—Mr. Armitage asked the Home Secretary the total number of lunatics in England and Wales and the proportion they bore to the total population on January 1st in each of the following years: 1851, 1861, 1871, 1881, 1891, 1901, 1911, and 1912. Mr. McKenna answered that the information was given in the following table:

Table showing, for England and Wales, the Total Number of Lunatics, Idiots, and Persons of Unsound Mind on January 1st in each Year, with their Ratio (per 10,000) to the Population.

Year.	Population (at the Time of the Census).	Total Number of Lunatics, etc. (on January 1st).	Ratio (per 10,000) to Population.
1851	17,927,609	16,456	9.13
1861	20,066,224	39,647	19.76
1871	22,712,266	56,755	24.99
1881	25,974,439	73,113	28.15
1891	29,002,525	86,795	29.92
1901	32,527,843	107,944	33.19
1911	36,075,269	133,157	36.91
1912	36,545,076*	135,661	37.12

* Estimated for the middle of the year.

Forcible Feeding.—The Commons spent their Bank Holiday in discussing the Appropriation Bill and the Finance Bill. On the third reading of the former measure Mr. Lansbury found an opportunity for once again raising the question of forcible feeding. He asked the Home Secretary to appoint a committee to consider whether the forcible feeding of suffragist prisoners could not be abolished. The Home Secretary replied at some length, and said that he was glad to inform the House that no one was being forcibly fed at the present time. It was not correct to quote him as having said that in no case was forcible feeding dangerous, and he had frequently advised the exercise of the prerogative for the release of prisoners to whom forcible feeding would be dangerous. Whenever the prison authorities were advised that any serious permanent injury to health would be caused by forcible feeding the practice was discontinued. If forcible feeding were abandoned and prisoners were informed that in no circumstances would they be forcibly fed, every prisoner had only got to announce the intention not to take food to obtain immediate release. He was not able to draw a distinction between suffragist and other prisoners.

Vaccination at Ordnance Factories.—In reply to Mr. Charles Duncan the Secretary of State for War said that vaccination was still insisted on for men who obtained employment in the ordnance factories, subject to the discretion of the medical officer. A man who was disabled in consequence of vaccination did not receive sick pay if he underwent the vaccination as a condition of being taken on. Owing to a misunderstanding of an earlier ruling, it was found in 1908 that a practice of giving pay to men vaccinated on entry was growing up, and the ruling against it was therefore made clear. It was not considered that men who underwent vaccination in order to qualify themselves for employment should do so at the expense of the public. He was considering whether any relaxation of the rule as regards sick pay was possible.

Certificates of Successful Vaccination. In reply to Mr. Ramsay Macdonald, the President of the Local Government Board stated that the total number of certificates of successful vaccination received by vaccination officers during 1910 was 531,567. The proportion of such certificates to the births registered during the year 1910 was 59.3 per cent. The corresponding figures for 1911 were 491,260 and 55.7 per cent.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

MANCHESTER AND DISTRICT.

Medical Reports in Compensation Cases.

At the Manchester County Court last week, before Judge Mellor, a question arose as to the charges made at the Manchester Royal Infirmary for medical reports in cases under the Workmen's Compensation Act. The case was one in which a collier asked for an order against his employers for alleged arrears of compensation payments. The man was an out-patient at the infirmary, and asked the surgeon for a report as to his condition, and was told that he could have a written report on paying the usual fee of a guinea. Mr. Hincheliffe, the solicitor who appeared for the claimant, said the workman and his relatives were too poor to pay such a fee for a report. Sir William Cobbett, who acted as solicitor for the employers, happens to be the chairman of the Board of Management of the infirmary, and he said that most of the surgeons of the infirmary did their work there gratis, and the Board of Management could not expect them to give written reports for the purposes of evidence. In reply to a question by the judge as to whether the fees for reports went to the doctors themselves or to the infirmary, Mr. Hincheliffe said the fees were pocket money for the doctors. Sir William Cobbett said that was a flippant observation, as the board had no right to ask the surgeons to write out these reports, even though the house-surgeon was a paid officer. The judge suggested that if the doctors put a prohibitive fee on such reports it might be impossible for poor people to get reports. Sir William Cobbett said the Board of Management had considered the question over and over again. Ordinary certificates were given, but anything more than that in the nature of a report the medical men would strongly object to, and the board would have to deal with the doctors as a body, and, he added, "they are no unimportant body to deal with, for if you trench upon their privileges they resent it bitterly." The judge acknowledged that the doctors did a great deal of work for nothing, but thought that this was a question affecting the administration of justice. Sir William Cobbett said the doctors at the infirmary were not bound to assist in the administration of justice, except in their capacity as citizens. A medical report was a statement of the evidence that the doctor was prepared to give in court, and no one had any right to ask for that except on the doctor's own terms. Ultimately the judge suggested that poor people in the circumstances of the present applicant could not be expected to pay a guinea for the report they might need, and he thought that reports such as were required might be given for 2s. or 2s. 6d.

It may be convenient here to mention the recent decisions of the Annual Representative Meeting at Liverpool on this matter, which has been under consideration for over a year, and was sent down to all the Divisions so that the Representatives might be instructed on it. Thus the decisions of the Representative Body were only arrived at after the fullest consideration and in strict accordance with constitutional procedure. The Representative Body decided:

1. That the furnishing of certificates in cases of injury to workmen is no part of the duty of members of the honorary or paid medical staffs of voluntary hospitals.
2. That a certificate of attendance of a workman at hospital, containing no information as to the nature of the case, should not be regarded as a medical certificate.
3. That any medical certificate expressing an opinion as to the fitness or unfitness of a patient to follow his employment, or any report on such cases, under the Workmen's Compensation Act, given by any member of the staff of a voluntary hospital whether honorary or paid, should be paid for, and the fee should be received by the medical practitioner who signs the certificate. The minimum fee for a certificate should be 2s. 6d.
4. That in the case of all medical reports under the Workmen's Compensation Act given by the members of the staffs of voluntary hospitals, whether honorary or paid, the fee should not be less than £1 1s.
5. That in the case of all initial examinations, with report, under the Workmen's Compensation Act, given by a practitioner not as a member of the staff of any voluntary hospital, the fee should be not less than 10s. 6d.

It was also decided that the same principles should apply to all cases coming under the Employers' Liability Act or the common law. It is important to note that all certificates or reports which are required by employers must, by special provision of the Workmen's Compensation Act, be paid for by the employers, not by the workmen. The Solicitor of the British Medical Association advises that when a workman presents himself for examination and report for compensation purposes, he should be required to bring a written request from the employer as a guarantee that the examination is at the employer's request, and is not for any other private purpose of the workman. This written request establishes the liability of the employer, and without it the workman should be told that he himself will be held liable to the doctor for payment of the fee.

Infant Mortality in Salford.

Some remarkable figures are given in the annual report of Dr. Tattersall, Medical Officer of Health for Salford, as to the apparent influence of breast feeding on the infant mortality-rate. During the year 1911 the infant mortality reached the high figure of 154 per 1,000 births. This is a large increase on the previous year, when the death-rate was only 131, and is over the average of the preceding five years, which was 145 per 1,000 births. The sole cause of the increase was diarrhœa, which accounted for 257 deaths, and the long-continued dry and hot summer is assigned as the cause of the epidemic, which lasted for ten weeks—from the middle of July to the end of September. The health visitors made efforts to keep the mothers informed as to the special care to be taken with respect to the feeding of their infants during the diarrhœa season, and of the infants born in the year 1910 they carefully watched 4,017 until they were a year old, noting specially how they were fed. The following table shows the death-rates per 1,000 births, classified according to the way in which the infants were fed.

	Births.	Deaths.	Death-rate.
Breast and other food from birth ...	316	51	161.4
Breast 1 month, other food 5 months	102	23	225.5
Breast 2 months, other food 4 months	61	15	245.9
Breast 3 months, other food 3 months	57	9	157.9
Breast 4 months, other food 2 months	51	11	215.7
Breast 5 months, other food 1 month	26	5	192.3
Breast alone	3,060	244	79.7
Other food entirely	296	114	385.1
Child died under one day	—	48	—
Totals	4,017	520	129.9

It will be seen from the above table that among infants fed entirely from the breast the death-rate was only about one-fifth of the rate for infants fed entirely on other food. Under the German Insurance Consolidation Act, 1911, maternity benefit to the amount of the usual sickness pay, that is half the wages, is payable for eight weeks, of which six at least must be after confinement, and nursing money to the amount of half the sickness pay may be given for twelve weeks after confinement provided that breast-feeding is continued for that period.

BIRMINGHAM AND DISTRICT.

The Treatment of Puerperal Fever.

The Governors of the Birmingham and Midland Women's Hospital are undertaking an important scheme of extension in order to meet the City Council's need for a puerperal fever ward and for the better treatment of septic cases. No general hospital likes such cases, but the authorities of the Women's Hospital have decided to assume the responsibility and to make suitable provision for them. The building scheme provides for the erection of a ward and for additions to the nursing home. There will be 25 more beds, and 14 of these will be appropriated to Birmingham

cases of puerperal fever. In return for this consideration the City Council will pay to the hospital £72 a bed per annum—a total of £1,008. That amount is equal to about three-fifths of the actual cost to the hospital. The other 11 beds will be for general septic cases. The operating room has already been erected. The total cost of the new work will probably be about £4,000, and to meet this the governors will make a special public appeal in the autumn.

Physically Defective Persons.

A special subcommittee of the Birmingham Education Committee appointed to inquire into the needs and condition of the cripples of Birmingham has reported that in order to deal properly with the problem involved two steps must be taken—first, suitable arrangements for the support, relief, training, and employment of cripples; second, increased efforts for the development of a healthy environment and mode of life in all parts of the city, coupled with further endeavours to check the spread of tuberculosis. The committee gathered information as to the means and extent of the special industrial training given in other countries. In Germany it was found that there are seventy-seven organizations assisting cripples from various points, and seventy-five different means of earning a livelihood are taught in the various homes. These include for boys, in addition to the usual shoemaking, tailoring, brushmaking, etc., gardening and agriculture, watchmaking, jewellery and filigree work, shorthand, and wood carving. Girls are taught embroidery, lacemaking, sewing and darning, Roentgen ray work, and photography. In Denmark and Norway, as well as in the United States, much the same class of work was taught to cripples. Summarizing these reports, the committee state that the facts which stand out emphasize the necessity for (1) careful and suitable industrial training; (2) labour exchanges for the physically handicapped, to popularize the knowledge of the possibilities of employment for the various types of handicraft, and to collect the necessary information as to suitable openings for individual cases; (3) a central house or workshop, where the collective trades could be followed which cannot be carried on in the home; for example, printing, book-binding, etc. (4) More systematic co-operation and definite co-ordination between the local education authority and the hospitals and medical charities. The committee also suggests the establishment of workshops for cripples.

The committee found that tuberculosis was a more frequent cause of crippling than accident; it accounted for 24.9 per cent. of the cripples in Birmingham, as compared with 16.1 per cent. due to accidents.

Reference is made to what is called post-sanatorium treatment. Night hospitals and work colonies are recommended. In the night hospitals patients would sleep under conditions similar to those in sanatoriums. Such structures need not be costly, and would not necessarily be permanent; open building sites, accessible to trams, might be utilized, free passes being given by the Corporation to patients night and morning. The "work colony" would require careful elaboration. There should be arrangements for work to be done under healthy conditions by those ex-sanatorium patients who would otherwise be obliged to return to work of a pernicious kind or in unsuitable surroundings.

LONDON.

London County Council.

Appointments to School Medical Work.

We are informed that two errors occurred in the list of medical appointments to the Public Health Department of the London County Council issued to the press last week and published in the BRITISH MEDICAL JOURNAL of July 27th (p. 222). In the list of appointments for one year at £400 a year—the third of the three paragraphs in small type—the name of Mr. Creswell Horrocks should appear in place of that of Mr. Reginald Green, and the name of Mr. L. R. Tosswill should be added.

SOUTH WALES AND MONMOUTHSHIRE.

Swansea Hospital.

The ninety-fifth annual general meeting of this hospital was held at Swansea on July 19th. The annual report and financial statement were received and adopted. The in-patients during the past year numbered 1,967 and the out-patients 9,745, both figures showing an increase on any previous returns. The average cost per occupied bed, allowing for out-patients, was £74 9s. 6d. It is gratifying to note that, in spite of the great strikes which paralysed the district earlier in this year, the income has amounted to £10,613, the subscriptions of employées being actually £20 more than in the previous year. The expenditure exceeded the income by £751. Among the donations are sums of £4,000 from Mr. Roger Beck towards the endowment fund and £1,500 from Mr. Glyn Vivian. The building fund's position is not so satisfactory, there being a deficit of £5,221. The new wards and casualty departments are well on the way to completion and the new dispensary is in use. Extensive alterations are in progress in the basement, the kitchens are being remodelled; and a commodious *x*-ray department is being prepared. It is at present proposed to utilize a large part of the basement for the latter purpose, rooms for treatment and surgical purposes being provided for the radiographer. The convalescent home accounts show a deficiency of £300, which is much to be regretted, seeing that such institutions materially reduce the cost per patient in the hospital, as well as hastening recovery.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Insurance Commissioners and Local Medical Committees.

Considerable dissatisfaction is felt in various parts of Ireland at the recent action of the Insurance Commissioners. Some time ago they invited the Conjoint Committee to nominate four doctors for each county from which the Commissioners would select two medical men to act on the local Insurance Committees, but in several instances the Insurance Commissioners have selected medical men whose names were not among those submitted to them. At a meeting of the South Tipperary doctors on July 25th correspondence was read between the Insurance Commissioners and Dr. Power, showing that this had been done, and as a result the doctors who had been appointed immediately intimated their intention of forwarding their resignations to the Commissioners. The meeting expressed its high appreciation of this action. The Secretary of the Irish Medical Association has also written to the Irish Insurance Commissioners requesting information why two doctors in Enniscorthy and Bray, whose names were not put forward by the Conjoint Committee, have been selected.

Cork Sanatorium and Insurance Fund Grant.

At a special meeting of the Cork Sanatorium Committee held on July 20th, Mr. Creagh, a member of the Conjoint Board, brought under the notice of the Board the fact that £145,000 was being distributed throughout Ireland, according to the population, for the purpose of providing sanatoriums and dispensary treatment for tuberculosis under the Insurance Act. Out of this sum they were now taking £25,000 for the Women's National Health Association, and as the population of Cork was one-eleventh of all Ireland, Cork was losing as a result £2,272. The Countess of Aberdeen and the National Health Association had started the building of a sanatorium at Red Mount in Meath, and she had asked the various other counties in Ireland to send patients there under the auspices of the Women's National Health Association. If Her Excellency had got Meath, Westmeath, and other counties that were going in with her to hand over their portions of the grant to finance the institution in County Meath, they in Cork would not say a word against it, but they objected to a portion of their grant in Cork being taken for County Meath. Accordingly the following resolution was passed unanimously:

> That we, the members of the Cork City and County Sanatorium, which represents all the various urban and rural

district councils of the Cork Corporation, protest in the strongest manner possible against any portion of the funds provided by the Finance Act that are coming to Cork City and County out of £145,000 for the purpose of providing sanatorium and dispensary treatment within the county being paid over to finance the Women's National Health Association, and that we ask the County Council and Corporation of Cork to resist to the utmost the grant of £25,000 proposed to be handed over to the Women's National Health Association.

Women's National Health Association and Dispensary Grant.

Throughout the country protests are being made against the proposed grant to the Women's National Health Association for treatment of tuberculosis patients. Ireland as a whole was to get in round numbers under the Finance Act, 1911, the sum of £145,000 for the purpose of erecting sanatoriums and other institutions for the treatment of tuberculosis, and this sum was to be divided among the various counties on the basis of population. But before the people of Ireland were given an opportunity of expressing their views on the matter, the large sum of £25,000 was earmarked for the Women's National Health Association. The ostensible object of this grant was to enable this association to come to the aid of those counties which, for one reason or another, preferred to hand over their money grants and privileges under the Act to the association. It would appear that in addition to this £25,000 this body will receive from certain counties (as Kerry, Westmeath, etc.) the latter's share for building sanatoriums, so that it is impossible to estimate the entire amount of public money which will finally reach the association. The counties which have already erected sanatoriums at the expense of the ratepayers object to the reduction of their grants caused by the earmarking of this £25,000, especially as there is a further £20,000 earmarked as a stand-by in the event of an "epidemic." It appears that the Kerry County Council have decided to take 40 beds in the Peamount Sanatorium, though there is a sanatorium in the adjoining county of Cork, erected three years ago, in which, on the average, there are 20 vacant beds. If the two counties had amalgamated, a large part of the expense of the Kerry wing at Peamount (£70 a bed) might have been saved, in addition to the expense of conveying the patients some 200 miles from Kerry to Dublin.

Tuberculosis Dispensaries.

At the last weekly meeting of the Rathdown Board of Guardians a letter was read from the Wicklow County Council stating that it proposed to use the Bray Dispensary as a tuberculosis dispensary under the provisions of the National Insurance Act, and asking the permission of the board of guardians. The following resolution was passed, protesting against such action:

> That this board of guardians having had under consideration the letter from the County Council of Wicklow, dated 17th inst., with which was enclosed a printed copy of the scheme adopted by that body in connexion with the sanatorium provisions of the National Insurance Act, 1911, and in which it is proposed to employ the existing dispensary at Bray as a tuberculosis dispensary, hereby declines to consent to this proposal, and strongly protests against any attempt being made to use Bray Dispensary in the manner proposed, or any other dispensary under the jurisdiction of this board.

Irish Census Returns.

The census returns for Cork, Monaghan, Armagh, Tyrone, and Donegal have now been issued. In Cork city the population has increased by 551, while in the county the population has decreased by 13,053. Males are in excess of females by about 3,000. In 1901, 1 in 30 of the population was relieved by the Poor Law; the number has now fallen to 1 in 41. In the last ten years over 43,500 people have migrated, and in the last sixty years 545,085—that is, one and a half times the present population. In Monaghan and Armagh the population has fallen by over 3,000 and 5,000 respectively. In the former the proportion of the population relieved by the Poor Law has fallen from 1 in 84 to 1 in 107; and in the latter from 1 in 71 to 1 in 93. The number of emigrants in the last ten years was respectively 4,333 and 8,408. In Tyrone the fall in the population is nearly 8,000, or 5.25 per cent. The number of one-roomed tenements in the county was 1,348; in 180 cases there were 5, 6, or 7 occupants, and there were 42 cases in which the occupants exceeded 7, including 5 cases of 10 persons, 2 cases of 11, and 2 of 12 or more persons in the one room. The number obtaining Poor Law relief has fallen in the last ten years from 1 in 82 to 1 in 107 of the population: 5.3 per cent. of the population were returned as able to speak Irish. In Donegal the population has fallen by over 5,000, equal to a loss of 2.88 per cent. There were 2,735 tenements of one room, of which 529 contained 5, 6, or 7 occupants, and in 142 cases the occupants exceeded 7 in number. The number of those in receipt of Poor Law relief has fallen from 1 in every 138 to 1 in every 170 of the population. The number of persons able to speak the Irish language was 59,313, or 35.2 of the total population; of these, 4,733 could speak "Irish only," and 54,580 could speak Irish and English. In both Tyrone and Donegal males were in excess of females by 800 and 700 respectively.

Charge against a Bonesetter.

A farmer and district councillor was returned for trial last week in the South of Ireland on a charge of causing the death of another farmer, who died on July 17th. From the evidence given at the magisterial inquiry it appeared that the deceased fell from his cart and sustained an injury to his right leg. He was examined by the accused, who stated that the leg was badly broken, and asked for calico, Burgundy pitch, and splints. With these he proceeded to set and dress the leg. The man's condition became worse, and a fortnight later, at the direction of a local nurse, a doctor was called in, who found the patient suffering from blood poisoning, and ordered his removal to the local infirmary, where his leg was amputated on the following day. Two doctors expressed the opinion that tight bandaging, by stopping the circulation, would have caused the condition in which the man's leg was found; and one of them stated that the leg had not been broken. Witnesses stated that the accused was regarded as a skilled bonesetter, and had set bones without fee or reward.

Vaccination Defaulters in County Wexford.

The Enniscorthy Board of Guardians, at its last meeting, refused to take action in connexion with 399 vaccination defaulters, reported by Dr. Delaney in the Clonroche Dispensary District, and unanimously adopted a resolution calling on all the boards of the county to abolish vaccination in their various unions.

Registrar-General's Report.

The Registrar-General's annual report for Ireland for 1911, laid on the table of the House of Commons recently, contains some interesting details concerning cancer and tuberculosis.

Tuberculosis.

The general trend of the Registrar-General's remarks concerning tuberculosis is exceedingly encouraging, although it has to be recognized, unfortunately, that tuberculosis is still at the head of twenty-two principal causes of death in Ireland, and that cancer stands sixth. Since 1904, when the recorded death-rate from tuberculosis was 2.9 per 1,000 of the population, the rate has fallen to 2.2 per 1,000 last year, when there were 9,623 deaths, compared with 10,016 in 1910. There has been a reduction in the yearly number of deaths of 3,071 between 1904 and last year, which represents a percentage of 24. The report expresses the opinion that the decline in the mortality-rate from this disease cannot be dissociated from the foundation of the Women's National Health Association in 1907, whose work and scope is thus summarized:

1. There are about 150 branches, with about 19,000 members, in Ireland.
2. Two garden playgrounds for children have been constructed in the most congested districts of Dublin, out of derelict spaces, and a third is in course of preparation.
3. The establishment of the Collier Memorial Dispensary for the prevention of tuberculosis, which centralizes the work previously carried on by the Dublin Hospital Tuberculosis Committee.
4. The formation of the Dublin Samaritan Committee in connexion with the dispensary, also of several such committees in connexion with different branches.
5. The carrying on of the Allan A. Ryan Home Hospital for tuberculosis patients in the second stage of the disease.
6. The establishment of the preventorium at Sutton.
7. The establishment of the pasteurized milk depôt.
8. The establishment of numerous babies' clubs in Dublin and throughout the country.

Cancer.

Dealing with the question of cancer, the report says that the total number of deaths classified under this title was 3,582 as compared with 3,664 in the previous year. Of these, 1,260 were attributed to carcinoma, 169 to sarcoma, and the remaining 2,153 to cancer or malignant disease undefined. The rate represented by the total was 0.82 per 1,000. With slight variations there has been a fairly steady rise in the rate of cancer mortality since 1901, when it was 0.651 per 1,000. A curious point brought out in the marriage statistics is that the marriages of Roman Catholics represent a rate of 5.17 per 1,000 of the Roman Catholic population, whereas other marriages are equivalent to a rate of 5.91 per 1,000 of the rest of the population. As usual the proportion of illegitimate to legitimate births is very small, being only 2.8 per cent. The death-rate was equivalent to 16.6 per 1,000 of the population, varying in the provinces as follows: 14.0 in Connaught, 15.5 in Munster, 16.8 in Ulster, and 18.5 in Leinster. The highest rate occurred in Dublin County Borough—24.1; and the lowest in Belfast County Borough—namely, 17.0.

Cancer Research.

Mr. Arthur Compton, B.A., M.B., a chemistry student of Queen's College, Galway, has been appointed a member of the staff of the Imperial Cancer Research Fund in London. For his success in the synthesis of complex acridine bases, he was awarded a Science Research Scholarship by the Royal Commissioners for the Exhibition of 1851, which he held for two years at the Pasteur Institute in Paris. Since then he has been attached to the institute as a research assistant up to the present time, and in collaboration with Professor Bertrand has communicated a series of papers on enzymes to the French Academy of Sciences and to other scientific societies in Paris.

Foot and Mouth Disease and the Milk Supply.

Though no new cases of the disease have been reported during the week, the effects of this outbreak may still be serious, as any prolonged drought at the present time would mean a considerable decline in the milk supply of Dublin. This is due to the fact that the milking stock, which gave a supply during the spring and early summer, are now running dry, and while the damp weather produced grass enough to keep them in milk during the early weeks in July, the change of weather which has occurred is likely seriously to interfere with this state of affairs, and owing to the cattle embargo consequent on the outbreak of foot and mouth disease there is no opportunity at present for dairy owners, in the absence of markets, to purchase springers or milch cows to keep up the normal stock of milk which would meet the demands of their regular customers. Last year, during the King's visit, the prolonged drought forced up the price of milk from 1½d. to 2d. per pint, though there was every facility then to buy milch cows. Then fodder was scarce, and the milk supply was not sufficient to meet the demand. Now, however, unless the embargo on cattle is immediately removed, there is no alternative before them, since dairy owners cannot replenish their stock of milking cows, or secure feeding for them under normal conditions, except to increase the price of milk, and if there is no change in the situation, it is difficult to tell how the people will obtain milk, or at what figure the price will stop.

St. John Ambulance Association.

The presentation of medals in connexion with the Dublin Centre of the St. John Ambulance Association took place recently at Lord Iveagh's gardens, St. Stephen's Green, Dublin. The medals were granted by the King in recognition of the services rendered during the Royal visit last year. The duties of the ambulance corps were very arduous owing to the hot weather, as altogether 337 cases were dealt with. Mr. Justice Ross presented medals to the following units of the brigade: St. James's Gate Division, 53 officers and men; Messrs. Jacob's Division, 17 officers and men; City of Dublin Division, 12 officers and men; City of Dublin [illegible] Division, the Lady Superintendent and 5 nurses. The annual competition for Lord Iveagh's challenge cup is to be held on August 17th at Lord Iveagh's grounds.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Derelict Houses in Edinburgh.

A problem of an unusual character is at present confronting the municipal authorities of Edinburgh. In various parts of the city there are empty houses uninhabited and uninhabitable, having been closed by order of the city authorities as unfit for human habitation. When a house is closed by order of the authorities, two alternatives are open to the owners—they may put them in habitable condition and get the closing order annulled, or they may leave the houses tenantless, in which case they quickly become derelict. Over a dozen cases of the latter class are being considered by a subcommittee of the Public Health Committee. Under the Corporation Act of 1901 the Edinburgh Town Council has powers, failing agreement with the owners, to take possession of the uninhabited properties. An interval of three months from the date of the closing order is allowed, but if within that period the property has not been made habitable, the town council may step in, may use the property for various purposes; it may rebuild the houses for letting, or may use the site for baths and washhouses or some other public purpose, or may clear the site and make an open space of it. Compensation must be paid the proprietors under the terms of the Housing of the Working Classes Acts. There are various scales of compensation according to the circumstances of the case. For property in the lowest category the payment only includes the value of the site and the value, if any, of the stone and lime. These powers have not hitherto been utilized.

Another city problem is that of the cleaning of common stairs in tenements of houses, particularly in old properties and densely populated districts. At a recent meeting of the town council it was suggested that the town council might engage a staff to clean the stairs and passages, especially where there were a large number of tenants on one stair. The present custom is for arrangements to be made amongst the tenants to undertake the cleaning in turn, with the result that it is more or less neglected. A remit has been made to the medical officer of health, the sanitary inspector, and the inspector of cleansing to consider the subject and report.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

Personality in Medical Work in India.

A correspondent of a Lahore newspaper has a thoughtful letter on this subject. He writes that letters from Bannu tell of the people of the place spontaneously closing their shops and suspending their business on two days in one week in respectful memory of the two medical missionaries who had laid down their lives, in fulfilment of their duty, in Bannu.

We read, too, of hundreds, some say thousands, of the rough frontiersmen crowding round and into the missionary compound to ask about their friends, and after Dr. Pennell's death petitioning to be allowed a last look at the body of their friend; and as one reads it and knows that many another Englishman lays down his life in this country doing his duty, one wonders that one does not oftener read of such heartfelt expressions of sorrow. One remembers, too, how on the occasion of Dr. Forman's death in Lahore, the inhabitants of the city requested that his body should, on its way to the grave, be carried through the city streets that they might show their sorrow. There are, one believes, many young Englishmen whose characters and work would win this respect if they were given a fair chance, and one remembers, too, that it is on such influence as this that our empire depends. Does the Government give the factor of personal influence a fair chance of playing its part and accomplishing the tremendous work that it can do?

What would have been the careers of Messrs. Barnett and Pennell if, instead of being medical missionaries, they had belonged to the Indian Medical Service? To begin with the younger man. He had spent four years in the country and had spent them all at Bannu. What is the course of a young man in the Indian Medical Service in his first four years? One young Indian Medical Service man of my acquaintance has been connected with six different regiments in four different places in his first two years. Another had six changes in ten

months. The first of these two in his first appointment was rapidly gaining the affections of the men of his regiment, but frequent changes naturally damp a man's personal likings for his fellow men, and by the end of his two years the young Indian Medical Service man has ceased to take an interest in the men, *as* men. He takes an interest in them as cases, but he himself becomes a part of the administrative machine of the Government and the personal factor is almost obliterated. At the end of his two years the young Indian Medical Service doctor will probably hold an acting appointment or two, with the result that at the end of four years he will have been in some ten or twelve different stations. Then he will begin to hold appointments for longer periods. Probably by the end of twenty years he will have held some four substantive appointments, and in holding them and various acting appointments, he will have passed his time in about a dozen more spheres of work. Result, that at the end of his twenty years he will have been in twenty different appointments, but will be a piece of machinery only doing his work well as such, but rarely exercising personal influence or making personal friendships amongst the people of the land.

These facts might well prove food for thought to those responsible for the endless changes which occur in official medical work in India.

Jamaica.

Report on Typhoid Fever.

A recent number of the Jamaica *Gazette* contains a report of the committee appointed by the Governor to investigate and report on the conditions productive of typhoid fever in the city of Kingston and its suburbs. The report is the work of Drs. MacDonald and Turton, with appendices by Dr. Scott, Government Pathologist; Dr. Ker, S.M.O., Jamaica; Dr. Grabham, and Dr. Castle. Dr. MacDonald's report goes into the matter very fully. He deals with all the different factors which in any way may have influenced the spread of the epidemic; these facts he summarizes in the following remarks:

The endemic existence of typhoid in the community is shown over the previous ten years; and while epidemic is not evidenced, there is an increase of endemic incidence dating from 1907, after the earthquake of that year. There has always been a high case mortality, and the incidence of disease has been in excess in women usually occupying a yard room alone, or accompanied by another woman nominally single, and engaged in washing, sewing, or domestic service. Few cases have occurred amongst people of better class, and in most of these cases a suspected source of infection was found amongst the domestic servants, although rarely has this suspicion been absolutely proven. June and November showed in 1911 the most cases, and during the previous ten years these months give the highest percentage of cases. The sanitary condition of premises and the sanitary convenience in most cases have been unsatisfactory, but probably in no greater proportion than in the whole city. The habits of the people and their general appearance are suggestive of easy means of spread of typhoid. Bread among the various food supplies has excited suspicion as a vehicle of infection. Dust is general, and flies and other insect pests have been relatively uncommon. The personal factor in the large majority of cases has been strongly suspected as the means of infection, though the actual proof is rare.

In addition to dealing with the insanitary condition of houses and yards and the habits of the people, Dr. MacDonald considers the food supply, dust, flies, vermin, and the water supply. He states that his investigation of the evidence did not afford many instances in which it seemed probable that the ordinary house-fly or other insect pests acted as carriers of endemic typhoid. It has not been observed that the common pit closet serves as a breeding place for the house-fly; stable manure and soft damp earth, especially if the dampness be due to manurial deposit, form the usual breeding grounds, but domestic refuse of any sort, if damp, affords a home for the larvae.

The mortality-rate in the epidemic under review was high, the case-rate being 42.10 per cent., but this was the death-rate of known cases, and abundant evidence suggested the existence of much typhoid in the community which was never recognized as such. The preventive measures adopted and the departmental routine carried out by the medical and sanitary authorities seem to be thorough. Leaflets of instructions are distributed to all typhoid patients leaving hospital, and a special "carrier" card is given to patients, pointing out that they should report themselves periodically to the medical officer of health, so that the faeces and urine may be examined. The report contains an appendix by Dr. Scott, the Government Bacteriologist, giving the results of the examination of the blood of typhoid patients.

Census of 1911.

The report by the Registrar-General for Jamaica on the results of the census taken on April 3rd, 1911, shows that the population of the island was, including military and shipping, 831,383, and consisted of 397,439 males and 433,944 females (100 males to 109.1 females). These figures showed an increase of 191,892 since the census of 1891. Compared with twenty years ago the increase amounts to 30 per cent. The number of persons to a square mile increased from 143 in 1891 to 186 in 1911. The inhabited dwellings numbered 183,934, an increase of 49,389 since 1891. The average number of persons to an inhabited dwelling was 4.5, as against 4.7 in 1891. The number of persons deaf and dumb, blind, or insane returned showed an increase; 565 persons were returned as deaf and dumb, which is more than twice the number returned in 1891. The number of blind persons returned was 1,740, against 1,226 in 1891. The number of insane persons was 1,605, as against 855 in 1891. Of this number 1,169 are inmates of the lunatic asylum. Another point of interest in the report is a statement of the number of people according to their colour: 1.88 per cent. were white, 19.63 per cent. were coloured, 75.80 per cent. were black, 2 per cent. were East Indian, 0.25 per cent. were Chinese, and 0.35 per cent. were not specified.

Correspondence.

THE ARRIS AND GALE LECTURES ON SHOCK.

Sir,—When we learnt Euclid our studies included the acquisition of certain postulates. Mr. Mortimer's conception of "shock"—and in this he is not singular—is based upon the postulate that "shock" is necessarily associated with, and dependent upon, a low blood pressure: this postulate we have shown to be erroneous (for example, Chart 28, Trace 22, etc.), and, therefore, problems based upon such a postulate must necessarily be fallacious.

We sympathize heartily with Mr. Mortimer when, in the study of the problem of shock, he does not feel in the same happy position as in a study of a problem in Euclid. Our positions are identical—Euclid is an "exact science," and may we suggest that a problem in Euclid is, perhaps, a little more concise and elementary than the problem of shock? Again Mr. Mortimer's position is not singular.

The researches of most distinguished workers, as well as our own observations, both published and unpublished, prove that vasomotor variations during operations are of paramount importance. We hold that this is so, "not only from their own far-reaching effects, but also as a symptom or sign of vastly graver disturbances to the physiology of the subject." Mr. Mortimer should not make the statement that *any* such variations do not prove of "appreciable pathological significance" unless he can prove it; this, we are sure, he cannot do. Mr. Mortimer clearly admits that he personally does not appreciate any significance in vasomotor variations, whose importance we hold to be beyond question. We confess that we are quite unable to understand his attitude.

We are glad to see that Mr. Mortimer considers our lack of attention to the state of the heart was only apparent. With regard to our statement that arterial blood pressure varies with increased cardiac output, when Mr. Mortimer laments the fact that we did not add, as a rider, the very obvious converse, is he appealing to our sense of humour? Further, we refer Mr. Mortimer:

1. To Lecture I, Part I: "Finally, the effects of chloroform on the heart muscle must not be overlooked." They were not.
2. *Dilatation from respiratory obstruction.* Asphyxial signs were in every case noted on the chart and carefully considered.
3. *General disorders* were always noted.
4. *Degenerative changes* were present in two instances, were noted, and formed the basis of important suggestions.

We showed that in health the response of the cardiac rhythm to trauma was in direct relationship with the variations in blood pressure—that is, the resulting sympathetic

response influenced both together. Any failure of the heart to respond to such stimuli (for example, from such causes as are suggested by Mr. Mortimer) must affect this intimate relationship, and would be obvious on the charts. A concurrent study of the respirations assisted in excluding factors (1) and (2). Finally, on every occasion during operations the observations of anaesthetist and surgeon, combined with our own observations, were invariably noted on the original tracings (and in the charts in most instances); these excluded clinically factors (1), (2), (3), and (4), referred to by Mr. Mortimer. When, therefore, Mr. Mortimer suggests that any of these factors were responsible for the drops in pressure to which he refers, the onus of *proof* rests with him.

We agree with Mr. Mortimer that ordinary concentrations of chloroform must affect the action of the heart to some degree, as it probably does in the case of all the tissues, and constitutes the *first step* towards complete poisoning (just as the first glass of wine constitutes the first step towards alcoholic intoxication); but this factor was common to most of the cases we studied, unless otherwise noted. Differences between the tracings, therefore, are due to other causes. These causes we endeavoured to study in their relationship to the mechanism of shock.

Diagram I refers to *complete blocks* to afferent impulses; any action of the anaesthetic agent short of complete paralysis was common to the same tissues in all cases to approximately the same degree, and—we repeat—is foreign to the immediate argument—that is, the *block* to impulses.

Mr. Mortimer says the vasomotor centre "cannot be absolutely unaffected"; he is quite right. In Lecture I, Part II, in the analysis of vasomotor variations in operations on the mastoid (chart not reproduced), Mr. Mortimer will find the words: "Chloroform . . . . *hardly* affected the vasomotor centre."

It is true we did not advise general anaesthesia in the control of mental shock in direct terms, but, as Mr. Mortimer states, left it to be inferred from the prolonged consideration of this subject, because we felt the inference to be so obvious. Examples of the similar action of general anaesthetics to other toxaemias were given in the lectures, and some were referred to in our first letter. Mr. Mortimer still complains. If Mr. Mortimer was left with the impression that general anaesthetics are to be "avoided whenever possible," that is assuredly not our fault, and is a misconception easily remedied by further perusal. We refer Mr. Mortimer to factors A, B, C, D, and E (the *degree* of toxaemia in factor E being of special importance) in "Preventive Treatment" and "Indications for Nerve-blocking"; also to the conclusion of our lectures advising spinal anaesthesia, "particularly in toxaemic children." We believe it unsafe, under certain conditions (vide A, B, C, D, E), to add the toxin of general anaesthesia to an already toxic subject. To use Mr. Mortimer's useful simile once more: Even if one glass of wine does not intoxicate a man, it would surely be unwise to give one glass of wine to a man who was nearly intoxicated with whisky; though this can hardly be said to convey the impression that one glass of wine is to be "avoided whenever possible."

Mr. Mortimer is justified in calling attention to the transient mental disturbance accompanying the lumbar puncture in administering spinal anaesthesia to children. The disturbance is about equal to that of a short fit of temper, and about as harmful (even this is usually absent in children who are in pain or very ill). For this reason we stated, and again affirm, "that *practically* no mental shock ever accompanies its use."

We would like to assure Mr. Mortimer that we accepted the observations of, co-operated with, and have frequently had the benefit of discussion with, capable and experienced anaesthetists during the prosecution of our researches. We do not claim great knowledge ourselves, but, apart from the study of the subject, both of us have given many thousands of anaesthetics in past years. The question of [illegible] are not, of course, in a position to defend; but we refer Mr. Mortimer to the two opening paragraphs of Lecture I and the concluding sentences of Lecture II, as showing that in no sense did we claim or expect "entire success."

Mr. Mortimer complains repeatedly of the absence of adequate proof of various statements, and we reiterate the apology given in the lectures and in our previous letter. But, in addition, we must refer Mr. Mortimer to the opening sentences in Lecture I:

> By these we do not claim to have thoroughly exhausted or completely proved any one aspect of the problem, but rather to have attempted a comprehensive view of the subject from almost every aspect.

(This includes, of course, that of the anaesthetist); also immediately above:

> It is unfortunately only too well known that in scientific research, in common with other researches, direct proof to establish the truth of any central doctrine is not always possible. If, however, we approach the subject from many different standpoints and all these lines of approach converge to meet at one point, then . . . that point or central doctrine is true.

The argument is Professor Henri Bergson's. Our views on the mechanism of shock are not proved, but chemical, clinical, experimental, histological, and therapeutic lines of research all supply considerable evidence in their favour. Consequently we advocate these views as sound in principle.

Mr. Mortimer holds that vasomotor variations "do not prove of appreciable pathological significance": and though we appreciate his generous tribute, it seems clear that if that view is correct, and can be established, not one of our observations or deductions can have one particle of value.—We are, etc.,

London. H. TYRRELL GRAY.
Birmingham. LEONARD PARSONS.
July 30th.

TABLES OF STATISTICAL ERROR.

SIR,—In their important letter in your issue of July 13th Sir Ronald Ross and Mr. Stott refer to some points of such interest that I should be glad to have the opportunity of supplementing their remarks.

As a matter of verbal accuracy, I think the editorial note to which they allude does not state that Sir Ronald Ross and Mr. Stott's valuable tables were constructed for the treatment of precisely the kind of problem mentioned, but for questions *similar* to that problem. As a matter of fact, the laboratory worker, having to deal with that particular problem need not, for the purposes of an approximate test, employ any tables at all. Let him work out the following expression:

$$\frac{p_1 - p_2}{\sqrt{\left(\frac{p_1(1-p_1)}{n_1} + \frac{p_2(1-p_2)}{n_2}\right)}} \quad (1)$$

where n_1 is the number of cells examined in one sample, n_2 the number of cells counted in the second sample, and p_1 and p_2 are the number of large mononuclears divided by the total number counted in each sample. If (1), disregarding the sign of the numerator, is greater in absolute value than 3, it is unlikely that the two samples are from the same population. Naturally this rule is only a rough approximation and subject to many exceptions, but, as Sir Ronald Ross and Mr. Stott observe, a test which would not be adequate when the results are finally weighed in the balance, may be a convenient working rule.

As to the propriety of assuming the so-called normal law, the *rationale* of the matter is not, I think, so difficult to understand or so technical as Sir Ronald Ross and Mr. Stott suggest. For the class of problems here considered the genesis of the normal curve is quite simple. If we know, or *assume*, that the chance of an event happening (for example, the chance of any one cell in a number of cells being a large mononuclear) is p and of its not happening q, where $p + q = 1$, then it is a matter of simple algebra, within the power of most educated men, to show that the chances of getting $n, n-1, n-2, \ldots 0$ successes in n trials are given by the terms of the binomial $(p + q)^n$. If n is large, the arithmetical computation of these terms is very laborious, and it was shown long ago, generations before the birth of modern statistics, that the ordinates of a certain curve, the normal curve, approximate closely to the terms of the binomial. But the reasoning upon which this identification rests supposes that n is large or, for n small, that p and q are not widely different one from another—that is, that $p-q$ or $q-p$ are not large (I am, of course, stating the conditions loosely). The man in the street must see that this is true when he notes that the normal curve is symmetrical, and that if, for instance, p is very small, and n not large, ordinates drawn to scale repre-

senting the magnitude of the terms of the binomial and equidistant one on either side of the tallest ordinate are not sensibly equal in height.

The proper course to adopt in such cases is necessarily a matter for technical discussion, and I hope to publish very shortly a memoir on the subject, which may serve as a basis for such discussion in medical circles. I am only concerned to show here that in its origin the question is not really incomprehensible to the ordinary man.

In conclusion, I should like to refer to a matter I have much at heart. The importance of these mathematical or, if one objects to the arrogance of that term, these arithmetical inquiries, is becoming every day greater to medical men. At present workers are on the horns of a dilemma: they must either publish their results in medical journals, where the mathematical side of the work receives little attention, or in mathematical journals, the readers of which pay no heed to and are incompetent to criticize the medical problems involved. There are not, of course, nearly enough workers to justify an attempt to create a new journal, but there may be enough to form a small society for occasional discussion and mutual criticism. Should there be any others who agree with me on this point, I should be glad to hear from them. I do not think I am taking the honoured name of Sir Ronald Ross in vain when I say that he would cordially approve of such a society.—I am, etc.,

Lister Institute, Statistical Laboratory, July 15th. M. Greenwood, Jun.

TUBERCULIN TREATMENT.

Sir,—I was much interested in the letters called forth by your impartial leading article on tuberculin administration of July 6th. The chief desideratum at present would seem to be to reconcile the conflicting schools of thought on this subject. This is the more important when the recommendations of the Departmental Committee on Tuberculosis are considered. The difficulties of the situation are well shown by Dr. Nathan Raw, who, if I mistake not, some time ago stated that tuberculosis was a very docile disease to treat—I understood him to mean, by means of tuberculin. In his last communication he gives it as his opinion that "tuberculin can only be of service in a small percentage of cases." As I understand that Dr. Nathan Raw has used tuberculin in a large number of cases, his opinion should carry some weight. On the other hand, Dr. Camac Wilkinson believes that tuberculin is a specific which, if given correctly, will cure all cases, supposing they are sufficiently early, and, if I understand him aright, will benefit many if they are sufficiently late. I am convinced that Dr. Wilkinson has had many excellent results from his method of treatment. These divergencies of opinion, however, make it somewhat difficult to come to a definite decision. I think it may be stated, without incurring serious opposition, that tuberculin used in some cases produces marvellous results; it also seems clear that many cases, either because they have become mixed infections, or for other reasons, are not benefited at all; and, finally, there can be no doubt, as one might expect from theoretical considerations, that tuberculin is a two-edged weapon.

My own experience would lead me to suppose that the cases suitable for tuberculin treatment are early cases in which the diagnosis has been made by injecting tuberculin—that is, cases of closed tuberculosis with no sputum, and cases which have become chronic, where there has been much fibrosis, and, of course, often exhibiting a considerable amount of physical signs. All intervening classes of case, where the disease is active, and therefore exhibiting symptoms, are best treated in sanatoriums. In many of these cases it may be possible to commence tuberculin treatment after a period of prolonged rest. It is, of course, the cases just mentioned which most require treatment; they are the ones which tend to go on to a fatal termination; they are the cases which cannot easily be treated with tuberculin. One question which urgently requires to be determined is the wisdom or otherwise of subjecting a large proportion of the population to long courses of tuberculin treatment, in order to prevent a comparatively small number from finally breaking down.

It has occurred to me that the treatment of this disease by tuberculin is not always the same process, and I am inclined to the belief that cases treated with tuberculin, general reactions being ignored, may owe their cure to a different process than those which are treated without producing reactions. Another interesting point to be cleared up is the part sensitiveness plays in producing a cure, and whether by using large doses comparatively early sensitiveness is destroyed, and therefore it might be argued much larger doses would be required to produce any effect. It would seem probable that where a cure is brought about by tuberculin this is produced by the destruction of all tubercle bacilli which happen to be in contact with living tissues. The condition in which tolerance to the poison of the bacillus has been attained in its relation to cure is also of much interest.

I am inclined to think that variations of opinion occur because it is so difficult to reduce cases to a common denominator, and the different schools of thought are not only talking about different cases, but also probably of different phenomena, when discussing the action of tuberculin.—I am, etc.,

Ayrshire Sanatorium, July 13th. Edward E. Prest.

P.S.—In using a remedy like tuberculin there is a tendency to leave out of account the condition of the patient's tissues, which must be all-important, and are the determining factor as to whether benefit or otherwise will accrue.

PREVENTION OF CANCER.

Sir,—Medical observers are agreed that the chief predisposing causes of this disease are chronic irritation and injury. Therefore, if the following rules were observed there should follow considerable diminution in the mortality from cancer which, in the Harrow district, has caused more deaths than tuberculosis during the last five years.

Rules.

1. When warts, moles (especially dark coloured), and other skin growths are exposed to constant irritation they should be immediately removed.

2. Workers who use tar or paraffin are especially liable to hard, warty growths on the hands, forearms, and other exposed parts of skin. Treatment should be sought early for such growths, as they may readily go on to cancer. Sweeps should take daily baths to remove the soot. Workers with x rays should be effectually protected.

3. Avoid excessive smoking, as it predisposes to cancer of the lips, tongue, cheeks, etc. Inhaling cigarette smoke tends to cause cancer of the vocal cords.

4. Avoid irritation of the tongue and cheek by broken, jagged teeth, and of the lips by certain kinds of inferior clay pipes, which leads to cancer.

5. Avoid excessively hot food and drink, which induce cancer of the throat. Fluids and solids should not exceed 100° F. Many people take food and drink at 120° to 150° F.

5A. Avoid taking large quantities of iced drinks and ices, as digestion ceases when the temperature of the stomach is reduced below the normal, which is 98° F.

6. Masticate all food thoroughly, as food imperfectly chewed causes chronic irritation of the alimentary canal, involving the gullet, the entrance and outlet of the stomach, as well as that organ itself, and various parts of the large and small bowels, especially the termination of the former. Cancer of the food tract spreads to the liver, gall bladder, pancreas, etc.

7. Take great care of the back teeth or grinders, and see that all of them are present and in perfect order. Dentists should be employed to make good any deficiences. Money spent on the teeth will bring a greater return than any other investment.

8. Avoid bolting imperfectly masticated food. This bad habit can be cured by not drinking during a meal. Liquids may be drunk in small quantities at the end of a meal, or in larger quantities between meals.

9. Do not delay when cancer is suspected. Early recognition and prompt removal deprives cancer of its terrors. The mutual assistance of the public and the profession is essential to early diagnosis, and a grave responsibility rests on both. Thousands of lives of women suffering from cancer of the womb and of the breast could be saved by early diagnosis and operation.

9A. Avoid constipation. This is to be done by judicious diet and exercise; and should these fail, by physical and medicinal treatment.

10. Avoid the use of alcoholic drinks, as they are a predisposing cause of cancer, and diminish the average prospects of survival by 30 per cent.

11. Circumcision should be performed in early life.

—I am, etc.,

John Fletcher Little,
Medical Officer of Health for Harrow-on-the-Hill.

London, W., July.

DIET IN THE TREATMENT OF CANCER.

Sir,—The efforts of Dr. A. Haig in the uric-acid-free diet treatment of cancer are of great interest and to be commended, but they have been unsuccessful, and, in my

opinion, a fallacy underlies them—namely, that the human organism, as at present constituted in highly civilized communities, can find physiological compensation in a diet of nuts, fruit, and biscuits, especially when the conditions are prejudiced by the presence of disease. Time was, probably, when nuts and fruits formed the greater part, if not the whole, of human sustenance, but for countless generations they have been replaced by meat, fish, and wheatmeal products. On such diet no doubt disease has flourished, and it has been assumed, and correctly, that it was responsible for a large proportion of it. But it is evident that this diet, like any other, may be responsible in different ways—that is, in regard to quality or quantity.

The case of Alice G. in the paper should help us. No one will reckon, on studying Dr. Haig's diet, that it was insufficient in quantity, yet Dr. Horder says: "I took this patient off the diet because she was losing weight rapidly, and because the local condition was definitely worse." Obviously, then, the loss of weight was not due to the quantity—probably far too much—of the food supplied, but to the quality—that is, the assimilability. Alice G. could not assimilate the special diet, because she was ill and her organism was accustomed to one entirely different. But, doubtless, she contracted her disease while on the ordinary diet to which her ancestors were accustomed, so that there must have been some imperfection in that.

Was it quality or quantity? Most likely the latter, for the great majority of people live on it, and by moderation many can attain to extreme old age. Would it not be better, therefore, to treat such cases with ordinary diet, but such an amount only of it as will lead to physiological compensation in the varying conditions of disease? My own limited experience of cancer cases is that the chronic ones are always those of spare people with small appetites. —I am, etc.,

Sheerness, July 17th. HOPE GRANT, F.R.C.S.E.

A STATE BOARD OF HEALTH.

SIR,—I beg to suggest that the time is now ripe for the establishment in this country of a State Board of Health, with a status similar to that of the Admiralty or War Office, a president of Cabinet rank, and a council composed mainly of eminent representatives of the medical profession. The idea is not a new one, but recent events have given it new importance. We are already in the throes of the greatest changes in the history of our profession, and a powerful central authority is required to bring order and harmony out of the present chaotic state of medical affairs. One has only to mention the enormous death-rate from preventable diseases, the want of a uniform standard of examination for admission to the medical profession, the conditions of contract practice, the abuse of hospitals, the colossal advertising and sale of quack medicines, and the deadlock over the Insurance Act, to show the urgent need for co-ordination and organization in the army with which our country is fighting its direst enemy—disease.

The main functions of the proposed board would be:

(1) To advise the Government in matters of legislation affecting the public health or the medical and allied professions.

(2) To control the Public Health Service (including Schools Medical Service) and take all necessary measures for the promotion of the public health.

(3) To control the medical, dental and nursing professions as to education, registration, professional ethics, regulation of practice, restriction of unqualified practice, etc.

(4) To control in similar manner the pharmaceutical profession, and to regulate the advertising and sale of drugs.

(5) To organize the administration of sickness, accident, and invalidity insurance, both compulsory and voluntary.

(6) To control the administration of hospitals, asylums, dispensaries, nursing homes, sanatoriums, and all other medical institutions, either public or private.

(7) To promote research (individual and collective) into the nature, causation, and prevention of disease and the means of its prevention and cure.

These functions, which form a natural and interdependent group, and obviously ought to be correlated under a single authority, are at present discharged (some of them most inadequately) by a host of independent and more or less conflicting boards, councils, and associations which would have to be superseded, modified, or incorporated with the new scheme, according to circumstances.

The new board would have to be assisted by committees and staffs to deal with the various departments of its work, and for this purpose many of the existing authorities could be made use of. Purely medical matters would of course be attended to by purely medical committees.

It seems to me that by the establishment of such a board the medical and allied professions would gain enormously in status and efficiency, and would secure the influence they ought to have, but hitherto have not had, in the counsels of the nation.—I am etc.,

J. E. ESSLEMONT, M.B., Ch.B.

West Southbourne, July 25th.

Dr. H. E. BRUCE PORTER (6, Grosvenor Street, London, W.) writes as one interested in the improvement of food inspection to advocate a Minister of public health with Cabinet rank. "Had there been one," he adds, "at the present time, we should certainly have been spared the fiasco of the Insurance Act. The profession appears to be very united at the present moment, and so pressure might be brought to bear to do something in this direction of a Minister of health."

THE SEPTIC CRICKET BALL.

SIR,—The silly season has evidently begun, in the medical as well as in the lay press. Our hair rises with terror when we think of the awful calamities which may befall us if we indulge in a sporadic game of cricket, and our thanks are due to the writer of the above-named leader for his timely warning.

The majority of bowlers lick the tips of their fingers before delivering the ball, whether professionals or amateurs, but has one single instance ever been recorded where lockjaw has been traced to this rash procedure? We are relieved to hear that there is at least one member of our profession who is not afraid to do likewise, and who does not play the game of cricket as though he were performing an aseptic surgical operation.

As for the "pallid, corkscrew-like microbe of another terrible disease" which may infect us—well, if we limit our risks to its acquaintance on cricket balls, we shall not fare badly. Even a butter merchant can be killed by a thunderbolt.

We do not wish to deny the value of preventive medicine, but for Heaven's sake let us remember that there is a limit in all things. Perhaps an enthusiast would like to see our national game played in sterile overalls, the ball painted with tincture of iodine after every over, and each individual player previously examined for signs of specific disease by a cricketing medical officer of health.—I am, etc.,

Stourbridge, Aug. 5th. G. LOWELL WEBB.

THE FOUNDERS OF THE LIVERPOOL SCHOOL OF MEDICINE.

SIR,—In the *Handbook* of the annual meeting of the Association at Liverpool, p. 95, it is stated—"and the autumn of 1834 saw the Liverpool Institution of Medicine and Surgery formed." May I be allowed to supplement the list of names there given of those first associated with the organization? Dr. Formby on medicine, Mr. Dawson on surgery, Dr. Malins and Mr. Batty on midwifery, Dr. Philp and Dr. Malins on medical jurisprudence.

My father, Samuel Malins, studied at St. Bartholomew's Hospital, became a Member of the Royal College of Surgeons, Doctor of Medicine of the University of Edinburgh, Bachelor of Letters of the University of France. He was an accomplished scholar of the French, German, and Italian languages. His early death, in the year 1843, at the age of 36, closed a career which reasonably afforded a great promise of future success. In justice to his memory, and of those joined with him in this object, I may be pardoned for this brief note. Great changes have taken place since that period, developments which have given the Liverpool School of Medicine so important and distinguished a place in medical education.

I am, etc.,

Birmingham, Aug. 5th. EDWARD MALINS.

THE ANNUAL DINNER.

SIR,—I should be glad if members of the British Medical Association who bought tickets for the Annual Dinner and, on finding they were unable to make use of them, *notified*

me beforehand, will write to Dr. Charles Hill, 13, Rodney Street, Liverpool, in order that he may refund the amounts paid, if this has not been done already.

As far as we know the money has been returned to all who notified me beforehand, and so allowed me to dispose of the tickets, but there may be some who have been overlooked.—I am, etc.,

W. BLAIR BELL,
Honorary Secretary, Dinner Committee.

Liverpool, August 2nd.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following candidates have been approved in the examinations indicated:

FIRST M.B.—E. M. Atkinson, J. A. Birrell, Alethea J. Bolton, Marian N. Bostock, W. W. Brown, L. J. F. Bull, A. W. B. Carless, L. A. Celestin, J. D'A. Champney, C. C. Chesterman, A. H. Clarke, Doris M. Collins, P. N. Cook, J. M. Courtney, R. Coyte, Dorothy T. Daintree, T. M. Davies, M. A. B. Demerdash, Hilda M. Denton, E. de Robillard, K. Dykes, T. G. Dykes, T. S. Evans, G. Fehrsen, J. L. R. Fortier, †A. R. Fuller, W. B. Gabriel, L. Gill, *W. Gover, A. R. Hart, R. B. Hawes, N. N. Haysom, W. B. Heywood-Waddington, E. B. Hickson, F. G. E. Hill, J. C. C. Howe, J. F. Howells, P. Hughes, J. B. Hume, J. W. Hyatt, Helen Ingleby, S. R. Johnston, T. John-Thomas, C. A. Kirton, V. J. F. Lack, H. W. Lewis, N. M. Lewis, R. T. Lewis, A. Lyell-Tayler, M. H. MacKeith, F. C. Mason, B.A., Cecily M. E. Maude, *†R. G. Mayer, †M. W. H. Miles, L. C. Moore, G. Moulson, R. V. Norton, J. H. Oonvala, Margaret S. Palmer, E. F. Peck, J. W. G. Phillips, B. H. Pidcock, †C. V. Pink, H. T. Prys-Jones, W. M. A. Rahman, K. M. Ross, W. R. Rowlands, M. Schwartz, A. Selby-Green, A. Shafeek, R. G. Simpson, G. H. Sims, Lily D. Taylor, A. L. Telling, R. N. Vakil, Lotty Weihermann, J. P. Williams, *†O. Williams, T. P. Williams, A. Williams-Walker, W. Yeoman.

* Awarded distinction in Inorganic Chemistry. † Awarded distinction in General Biology. ‡ Awarded distinction in Physics.

SECOND M.B., PART I (*Organic and Applied Chemistry*).—J. S. Alexander, F. M. Allchin, Hannah K. Alton, R. T. Bailey, G. T. Baker, Ruth Balfour, G. E. Barker, W. R. Barrett, R. V. Bevan, J. W. Bigger, J. A. Binning, E. S. Bowes, H. G. Broadbridge, O. St. L. Campion, L. A. Celestin, Hester M. Church, A. W. Cocking, W. H. Coldwell, R. C. Cooke, T. R. Davies, L. S. Debenham, A. R. Dingley, R. O. Eades, C. Y. Eccles, S. H. Edgar, L. P. L. Edwards, L. W. Evans, R. Fazan, Marjorie E. Franklin, W. L. M. Gabriel, J. W. H. Grice, Grace M. Gulston, A. G. Harsant, M. H. Hassan, N. H. Hill, H. M. Holt, G. P. B. Huddy, S. W. Isaacs, J. P. J. Jenkins, D. B. S. Jones, G. S. L. Kemp, H. Korn, R. P. Langford-Jones, Mildred B. Langley, F. F. Langridge, F. R. Law, H. Lewis, I. H. Lloyd, Katharine Lloyd, D. Loughlin, S. A. S. Malkin, F. K. Marriott, Marie M. A. Moralt, R. G. Morgan, J. K. Muir, S. Muttiah, Eleanor J. Partridge, *B. C. W. Pasco, *A. W. Peeris, R. L. Portway, R. V. Powell, T. E. Roberts, Elisabeth H. Schwab, E. W. Scofield, N. M. Sen-Gupta, W. Steadman, H. G. Stormer, R. Stowers, E. C. Tamplin, A. C. Teuten, M. B. M. Tweed, J. F. Twort, W. J. Vance, S. Vidot, W. J. G. Walker, Josephine L. H. Wallace, J. W. Wayte, W. R. White-Cooper, J. de S. Wijeyeratne, A. F. Wyatt, C. F. B. Wyborn, G. C. N. Younger.

* Awarded a mark of distinction.

UNIVERSITY COLLEGE.

Entrance Scholarships.

The following awards have been made: The *Bucknill Scholarship* (value 135 guineas), C. J. C. Cooke, of the Technical College, Derby. *First Medical Exhibition* (value 55 guineas), E. Sakoschansky, of University College, Nottingham. The *Second Medical Exhibition* (value 55 guineas), T. M. Cunnington, of University College, London, and University College School.

LONDON HOSPITAL MEDICAL SCHOOL.

The following demonstrations will be given during the months of August and September in the clinical theatre at the hospital at 2.15 on each day: Monday, Diseases of the Pleura: Dr. Wall. Tuesday, Diseases giving rise to Morbid Renal Excretion: Dr. Grünbaum. Wednesday, Diseases of Children: Dr. Hutchison. Thursday, Diseases of the Nervous System: Dr. Thompson. Friday, Diseases of the Heart: Dr. Lewis Smith. The demonstrations began on Tuesday, August 6th. Members of the profession will be admitted on presentation of their private cards.

KING'S COLLEGE HOSPITAL.

Scholarships.

The following awards of scholarships and prizes have been made: *The Senior Scholarship*: Mr. J. R. Waddy. *The Tanner Prize*: Mr. H. A. Richards. *The Todd Prize*: Mr. A. S. Wakeley. *Special Clinical Surgery Prize*: Mr. S. Smith. *The Prize in Medicine*: Mr. S. Smith. *The Prize in Surgery*: Mr. S. Smith. *The Prize in Forensic Medicine*: Mr. V. W. Draper.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

Appointments.

The following appointments have been made: Mr. F. Wood-Jones, M.B., B.S., D.Sc.Lond., Demonstrator in Anatomy, St. Thomas's Hospital Medical School, to be Lecturer and Head of the Department of Anatomy in succession to Mr. F. G. Parsons, F.R.C.S., who has resigned. Mr. J. A. Gardner, M.A.Oxon., F.I.C., to be Lecturer in Organic Chemistry and Head of the Department of Chemistry in succession to Miss C. Evans, D.Sc., who has resigned. Miss Widdows, B.Sc., to be Lecturer in Inorganic Chemistry. Miss M. D. Waller, B.Sc., to be Demonstrator in Physics.

Scholarships.

The following scholarships have been awarded: *The St. Dunstan's Medical Exhibition*, value £60, for three or five years, to Miss A. M. Kerr, of the Clapham High School. The *School Scholarship*, value £30, to Miss E. M. Scarborough, of Trinity Hall, Southport. *The Dr. Edith Peachey Phipson Post-Graduate Scholarship*, value £40, to Miss C. L. Houlton, M.B., B.S. Lond.

UNIVERSITY OF SHEFFIELD.

THE Council of the University, at its last meeting, made the following appointments: Mr. Harold Leader, M.B., M.R.C.S., L.R.C.P., to be lecturer in diseases of children; Mr. H. Nield, M.B., Ch.B., to be demonstrator in anatomy; and Mr. E. F. Finch, M.D., F.R.C.S., and Mr. P. A. Reckless, F.R.C.S., to be honorary demonstrators in anatomy.

LONDON SCHOOL OF TROPICAL MEDICINE.

THE following candidates were approved at the examinations held at the end of the 39th session:

*W. P. Chamberlain (Major, U.S. Army), *W. Lapsley (Captain, I.M.S.), *F. C. McCombie, H. Emslie Smith (Captain, I.M.S.), *H. R. Price (Major, I.M.S.), *W. Allen, *S. L. Brohier, *W. J. Geale, J. E. L. Johnston, *A. H. Owen, *B. Spearman, W. F. M. Loughnan (Captain, R.A.M.C.), J. F. Corson, H. B. Rosair, A. R. Neligan, A. C. N. McHattie, J. C. C. Hogan, J. L. Gilks, W. Telfer, N. A. Dyce Sharp, H. B. Blaker, A. Lionel Smith, A. B. Arora, E. S. Marshall, H. Fleming, A. D. J. B. Williams.

* Passed with distinction.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examinations indicated:

FIRST COLLEGE.—Catherine M. Anderson, W. C. Borrie, J. S. M. Conner, E. Dias, W. O'G. Donoghue, P. F. Fairley, C. Harris, T. Jackson, W. P. H. Lightbody, R. MacKinnon, D. R. Nicol, A. A. B. Noble, G. L. Pillans, J. R. B. Robb.

SECOND COLLEGE.—L. Ghose, C. C. Irvine, H. O. Martin, W. M'Alpine, J. M'Farlane, S. Swaminathan, J. Walker.

THIRD COLLEGE.—A. Crawford, R. J. Croxford, G. B. Hanna, J. MacRae, W. A. Rees, J. Remers, C. A. Slaughter, B. S. Thakur.

FINAL.—J. G. Morrin, F. W. White, H. A. Topalia, G. W. Mason, T. N. Wilthew, J. P. Carroll, J. M. Coplans, L. C. Mascarenhas, K. Want, E. C. Hamilton, F. F. Keravalla, P. Walsh.

Obituary.

WILLIAM HODGSON CARRUTHERS, M.D., M.R.C.S.,

HALTON, CHESHIRE.

THE death of Dr. Carruthers, of Halton, a highly-respected member of the profession, occurred with tragic suddenness as he was about to leave his motor car on July 22nd, and the news caused profound sorrow. Dr. Carruthers was one of those men whose personality was of such a kind that he leaves a void that will be extremely difficult to fill. He was of such a lovable, kindly nature that he lived amongst the people and for the people, and although he lived to within two years of the allotted span of life, no one could believe or apprehend any danger as he left his happy home to pursue his ordinary work on that morning. Dr. Carruthers had a very distinguished professional career, never knew what it was to complain about the excessive demands on his time, and was always willing and ready to attend to the many professional calls for his valuable services. He was unselfish to a fault, and was never known to deny his services to the poorest of the poor at any hour day, or night. No one was kinder or more anxious in the exercise of his calling to be of service to his fellow-man, and the world is all the poorer by his demise. Dr. Carruthers was a highly gifted, well-read, cultivated man, and quite up to the time in which he lived in the literature and practice of his calling. When he left to go his rounds, he appeared to be in his usual health, and made no complaint to any member of his family or to any one about him.

Dr. Carruthers was born in Lymm, Cheshire, in December, 1844, and two years later his parents removed to Halton, Cheshire, where he spent the remainder of his life. His father was a well-known and highly popular member of the profession. The subject of this notice received the greater part of his early education at Arnold House, Higher Broughton, Manchester, and in 1862 took

the silver medal of his school for general proficiency. He received the first part of his medical education at the Manchester Medical School, subsequently proceeding to the Rotunda Hospital, Dublin, and Edinburgh University. He qualified M.R.C.S. in 1867, and M.D.Edin. in 1870. He had a very distinguished university career, and after qualifying he filled the important offices of Senior and Junior House-Surgeon and Physicians' Assistant at the Manchester Royal Infirmary. At the expiration of his terms of office he returned to Halton to help his father to conduct a large general practice, for which he was eminently qualified. On the death of his father in 1881 he succeeded to the various appointments — such as Parochial Medical Officer, Public Vaccinator; and subsequently, when the Runcorn Union was divided for sanitary purposes, he was appointed Medical Officer of Health for the Halton and Weston Districts. This appointment subsequently became merged with two other sanitary districts of the union into one much larger area. When the vacancy arose he did not apply for the appointment. He continued to hold all the other appointments up to the time of his death. He was a keen observer and a highly successful practitioner, and for some years past was asked constantly in consultation by his professional brethren all round the district in which he lived. His large and wide experience helped to make him a very acceptable and successful consultant. His annual sanitary reports proved him to be a close, shrewd, and cultivated observer, much in advance of his time.

His remains were carried to their last resting-place at the beautiful churchyard of Aston-by-Sutton amongst the universal sympathy and sorrow of the whole countryside. The whole of the medical men of Runcorn, Frodsham, and surrounding districts attended to show their respect and profound sorrow, and of him it may be truly said that he did not leave a single enemy behind him.

Dr. Carruthers married Miss Mabel Hodgson, of Carlisle, nineteen years ago. The widow and two daughters survive to mourn their sad and irreparable loss. His eldest daughter died four years ago, after a short and acute illness, and this loss was a terrible blow to her devoted father, from which he never recovered. His personal friends recognized that his health was severely shattered, and that from that time his usual buoyant spirits began to droop.

ARTHUR TREHERN NORTON, C.B., F.R.C.S.,

CONSULTING SURGEON TO ST. MARY'S HOSPITAL, LONDON.

WE have to announce with much regret the death, on August 4th, after a serious operation, of Mr. A. T. Norton, consulting surgeon to St. Mary's Hospital, London.

Arthur Treheru Norton, who was born on August 17th, 1841, was the second son of the late Dr. Robert Norton. He was educated at Totteridge Park School and St. Mary's Hospital. He became a member of the Royal College of Surgeons of England in 1862 and a Fellow in 1867, and and in early life was engaged in teaching anatomy. At this period of his career he published books entitled *Osteology for Students*, which reached a second edition, and *The Examiner in Anatomy*.

After serving as Assistant Surgeon he became Surgeon to St. Mary's Hospital and Lecturer on Clinical Surgery in the Medical School. On his retirement from London and from practice to reside near Ashampstead, Berks, he was appointed Consulting Surgeon to the hospital. He took a lively interest in the medical education of women, and was one of the founders of the London School of Medicine for Women. At one time he was an active contributor to the medical periodical press, and was for some years editor in London of the *Medical Press and Circular*.

Mr. Norton became a Licentiate of the Society of Apothecaries of London in 1862, and thirty years later was appointed one of its examiners, a post he retained for six years. In 1901 he became a member of the Court of Assistants, was Warden in 1908–1910, and Master for the year 1910–11; he had represented the Society on the General Medical Council since 1910.

He served with the English ambulance in France during the Franco-German war, and was decorated by the French War Office for his services. From an early date he took a keen interest in ambulance work, was an officer of the Volunteer Medical Staff Corps, and commanded the London Companies. On his retirement in 1897 he was made C.B. He also received the Jubilee Medal and the Volunteer Officers' Decoration, and was an Honorary Associate of the Order of St. John of Jerusalem. He was a member of the War Office Committee which made recommendations with regard to the development of the Volunteer Medical Service.

JAMES McILROY, M.B., C.M. GLASG.,

BALLYCASTLE, CO. ANTRIM.

WIDESPREAD regret was felt throughout North Antrim when it was learnt that on Sunday, July 23th, Dr. James McIlroy had passed away.

Born sixty-six years ago at Mallindobbin, co. Antrim, he was early destined for the medical profession. After a distinguished career at Glasgow University, he graduated M.B., C.M., with commendation in 1867. Shortly after graduation he was appointed Medical Officer to the Castlequarter Dispensary District, and continued to hold this position until 1883, when a deputation from the Ballycastle Board of Guardians invited him to apply for the post of Medical Officer to the Ballycastle Dispensary District which had fallen vacant. He accepted the invitation, and became Medical Officer also to the Ballycastle Workhouse Infirmary and Fever Hospital. He held the posts of Medical Officer to the Royal Irish Constabulary and Post Office in Ballycastle and Armoy and to the Rathlin Lighthouse. In January, 1911, he resigned his dispensary appointment, and in September his workhouse duties. His retirement was due to symptoms of spinal paralysis the result of a carriage accident sustained some years ago while attending to his professional duties. The onset of the symptoms was very insidious, but in spite of every attention on the part of his medical colleagues in London and elsewhere he became gradually unfit for active work. The last six months were shadowed by recurrent attacks of acute cystitis, but during the few weeks preceding his death considerable improvement had set in, and hopes were entertained that he might yet be restored to a measure of good health. An unusually severe attack, however, set in with involvement of the kidneys, and he died within a few hours of its onset.

Dr. McIlroy was a man of exceptional professional abilities, which, together with his striking appearance and charming personality, won for him universal respect and devotion. He was a skilful surgeon and his services were in demand throughout the length and breadth of the county. A staunch Conservative, he nevertheless numbered among his friends those who differed from him in creed and politics. A magistrate for the county, his sympathy was always with the oppressed. His services were given to the poor as willingly as to the rich. He was unfailing in his attention to duty, and his splendid physique rendered him almost immune to illness and fatigue. His death has left a gap in the hearts of the people which it will be difficult if not impossible to fill.

Dr. McIlroy leaves a widow and four daughters, two of whom are members of the medical profession.

Medico-Legal.

MIDWIFERY ATTENDANCE.

T. W. writes that he was engaged to attend a confinement in the case of well-to-do people, some seventy-six miles away from his own residence. He was sent for too early, but waited for six days at the patient's residence. He was then compelled to return home on account of important business, and the patient was delivered a few days later by a local practitioner. He wishes to know whether he is entitled to send in an account for his services until superseded, and would like to be advised as to what charges he should make.

* In such a case the local practitioner might have attended for our correspondent and the fee agreed upon divided. If no fee had been fixed beforehand, our correspondent is entitled to charge the full value of his services in addition to cost incurred up to the time he was superseded. As to what these charges should be, he is the best judge, and should be guided by the custom of the profession in his neighbourhood.

MERCURIAL POISONING AND THE WORKMEN'S COMPENSATION ACT.

A. H.—A workman who believes himself to be suffering from mercurial poisoning contracted in the course of his employment must in order to establish a claim under the Workmen's Compensation Act present himself for examination to the certifying factory surgeon. The defence of the employer in such a case might be to dispute the diagnosis, or to assert that the poisoning was contracted otherwise than in the course of the man's employment. The burden of proof lies on the workman.

Public Health AND POOR LAW MEDICAL SERVICES.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

Letter from the Local Government Board.

At a recent meeting of the Hambledon (Surrey) Board of Guardians, a letter was read from Dr. J. K. Willis, of Cranleigh, pointing out that the relieving officer had referred to him cases of children requiring treatment for enlarged tonsils and adenoids, following the medical inspection carried out in the elementary schools. Such cases had hitherto been treated at the hospitals, but they were not now eligible for treatment at such institutions. He asked if the guardians were prepared to pay a reasonable fee for the treatment of such cases, suggesting 10s. 6d. for the operation and 10s. 6d. for the administering of the anaesthetic. The guardians communicated with the Local Government Board, and received the following reply:

Local Government Board,
Whitehall, S.W.
June 27th, 1912.

Sir,

I am directed by the Local Government Board to acknowledge receipt of your letter of the 8th instant relative to the arrangements in the Hambledon Union for the treatment of children attending elementary schools who require attention on account of enlarged tonsils or adenoids.

In reply the Board ask me to point out that the general responsibility for the administration of Poor Law relief rests with the guardians. They consider that, if an order for medical relief is given by the relieving officer in any case of the kind in which application is made to him, the district medical officer should examine the child, and if he considers that an operation or special treatment is necessary, should report the circumstances to the guardians. It will then rest with the guardians to decide whether the case is one for relief at the cost of the poor rates, and, if so, whether they should authorize the medical officer to proceed at his discretion or should take further advice.

If an operation or special treatment is necessary and is carried out by the medical officer with the approval of the guardians, the Board recognize that, although no fee is legally payable under the regulations, a reasonable gratuity should be paid for the services rendered. The Board would be prepared in this connexion to allow a gratuity of one guinea in respect of each operation for the removal of tonsils and adenoids as suggested by the guardians; but such gratuities should be reported individually for the Board's sanction.

I am, Sir,
Your obedient servant,
(Signed) J. S. Davy, *Assistant Secretary.*

Sir William Chance, Bart., the well-known authority on the Poor Law, and one of the guardians, said he was glad that such an answer had been received from the Local Government Board, because he had always held that boards of guardians had power to give relief in those cases, and that it was quite unnecessary to refer the matter to any other authority. He thought the doctors were justly entitled to the extra remuneration, and he wished the Local Government Board's letter could be published generally, because it showed what the powers of guardians were in the matter.

It was decided to send particulars of the letter to the medical officers of the union.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Colchester Borough.—Dr. W. F. Corfield, the Medical Officer of Health of Colchester, has based his statistics for 1911 upon the census population of 43,463, and not, as is customary, upon the estimated population at the middle of the year. The net birth-rate was 22.4 per 1,000, and the net death-rate 12.4 per 1,000. The infant mortality-rate was equal to 105 per 1,000 births, compared with an average rate of 95 in the previous five years. Early in the year special work was undertaken to try and find out if there were any rats in the district infected with plague. The whole district was divided into eleven divisions, and a rat-catcher employed to visit each in turn. Altogether 348 rats were caught and sent to the laboratory established at Ipswich, where they were examined on behalf of the Local Government Board. All but five showed no signs of plague, and further and more detailed examination gave a negative result even in these five. At a later date 373 more were examined, all negatively. A rat-catcher was also continuously employed by the corporation, and his work, in Dr. Corfield's opinion, has been productive of much good. Before the arrangements were made for sending rats to Ipswich rat virus was supplied free of charge to those applying for it at the Public Health offices.

City of Hereford.—In presenting his annual report for the year 1911, Dr. Miller states that the death-rate for the city was higher than in 1910. The increase was partly owing to intimation of additional deaths of residents outside the city, through the Registrar-General. Although the death-rate was higher than in 1910, the death-rate of children under 1 year was 92 per 1,000 births, compared with a rate of 101 for 1910. In common with other towns the birth-rate is decreasing; it was 19.11, compared with 21.85 during the preceding year, and an average of 22.1 for the five years 1905–10. The death-rate (14.8) was slightly in excess of that for the previous year, but compares favourably with the death rates of other towns of the same size. Phthisis accounted for twenty-two deaths during the year, giving a rate of 0.97, compared with a rate of 1.14 for the previous five years. Action was taken in connexion with the Housing and Town Planning Act in fifty-eight cases—the defects being mainly due to dirty and damp ground-floors and walls and general dilapidation. The water-supply of Hereford seems satisfactory; two new filter beds have been provided which cover an area of 20,000 square feet each. As school medical officer for Hereford, Dr. Miller made eighty-two visits to the various schools in Hereford, examining 828 children. The most prevalent defects found were defective vision, enlarged tonsils, adenoids, decayed teeth, deafness, and verminous heads. Dr. Miller states that the weights and heights of the children of Hereford compare favourably on the whole with the children in urban areas. Any difference in height is very small, and in regard to weight, the greatest difference is slightly over 1 lb. With regard to the treatment of defects, the routine pursued in Hereford was that on the completion of the inspection a list of the defects found was sent to the teacher. After an interval inquiries were made through the teacher in regard to the treatment carried out, and where there had been no treatment a second notice was sent to the parents, and if nothing was done a third notice. The question of providing treatment at a clinic for medical and dental defects is at present under the consideration of the Education Committee, and it is hoped that an arrangement with members of the medical and dental professions may be arrived at.

THE APPOINTMENT OF M.O.H.

Ergot.—We are not aware of any regulation which would prevent the Local Government Board sanctioning the appointment as medical officer of health of a medical practitioner who acted as assistant to another practitioner.

Medical News.

A series of special demonstrations on the administration of tuberculin will be given at the Brompton Hospital for Consumption from September 2nd to September 7th. The fee for the course is two guineas.

A case of plague has occurred in Liverpool. The patient was a boy aged 7 years, admitted to the Royal Infirmary on July 25th, and operated upon for appendicitis. A gland removed from the groin was found to contain the plague bacillus, and this diagnosis has been confirmed on bacteriological examination for the Local Government Board. No information as to the probable source of the infection has been published, but the boy resided in a neighbourhood inhabited by dock labourers.

The Harrogate Corporation has entered into an arrangement with Mr. Arthur Smithells, F.R.S., Professor of Chemistry in the University of Leeds, for a scientific examination of the spa waters. Professor Smithells's work will include much more than an analysis of the various waters, for, with the co-operation of colleagues in the university, a chemical, physical, and geological survey of the whole system of springs will be instituted and a scientific investigation made of various points in connexion with their utilization.

At a meeting of the council of the Metropolitan Hospital Sunday Fund on July 30th, the Lord Mayor (Sir Thomas Crosby) in the chair, the Distribution Committee recommended awards amounting to £52,294, of which sum 7½ per cent. was appropriated to the purchase of surgical appliances and 2½ per cent. to district nursing associations. The other awards ranged from £5,693 downwards, St. George's Hospital receiving a grant of £1,581. The committee was requested to investigate the question of how much ought to be allowed as the average cost of an out-patient at each visit.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are considered to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Attitude, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

E. P. asks for advice in the treatment of an unmarried woman, aged 24 years, who is suffering from angio-neurotic oedema.

REPAYMENT OF PETROL DUTY.

H. L. uses a car principally for pleasure, but partly for visiting patients, and desires to know on what basis he can obtain the abatement of petrol duty.

The authorities will probably be content to accept a declaration that a certain proportion of the petrol used has been consumed while the car was used for the purposes of the profession, the proportion being arrived at on our correspondent's estimate. If objection be taken to this estimate, and no agreement can be arrived at with the excise officer, there seems to be no alternative to keeping a record of the mileage.

ANSWERS.

[illegible] to ladies cycling seems to have been [illegible] the medical profession provided that no [illegible] exceeded.

[illegible] time during which vaccine lymph [illegible] after being stored in sealed tubes [illegible] nature of the place in which the tubes [illegible] absence of light. Vaccine lymph issued [illegible] Government Board to public vaccinators is [illegible] within seven days. In *Vaccination, its [illegible], by Dr. S. Monckton Copeman, [illegible]* le (p. 185) to the "Duration of Activity of [illegible] Calf Lymph." Under favourable conditions vaccine [illegible]ph can be stored and remain active for several [illegible].

CURE IN DIABETES MELLITUS.

[illegible] Newcastle, Lincolnshire writes to recommend "R.T.N." to try the potash [illegible] of grs. xv of [illegible] bed-time; better results may be got [illegible] of grs. x, the first being given after the midday meal and the second at bed-time.

[illegible] SWELLING EVACUATIONS.

[illegible] I beg to suggest a fat-free diet and cachets containing 10 grains of benzo-naphthol with 5 grains of salol three times [illegible].

[illegible] to request [illegible] in the morning to a dose of [illegible] aperient with [illegible] (Martindale).

LETTERS, NOTES, ETC.

[illegible] of the Medical Defence [illegible] Mr. I once again [illegible] one in the Eastern counties [illegible] from either "Dr." George [illegible] for appointment of locum- [illegible] are entering into any con- [illegible] in the hands of these [illegible] hands; or if they have already engaged such, to let me know at once.

AN APPEAL.

WE have received an appeal on behalf of Dr. John Henry [illegible] Dr. [illegible] who graduated M.D. in the [illegible] of Ireland in 1836, is completely incapacitated from professional work by locomotor ataxy, and is almost entirely dependent on the funds of the Medical Sickness Annuity and Life Assurance Society for the maintenance of himself and a large family. His friends are desirous of obtaining for him the possession of a hand-propelled tricycle, which would much brighten his life. A committee has been formed, consisting of Dr. Bird, Castle Street, Bridgwater, Honorary Treasurer; Dr. Routh, Bridgwater; Dr. Berry, Burnham; and Dr. Kelly, also of Burnham, Honorary Secretary.

TUBERCULOUS CASES SENT TO AUSTRALIA.

DR. RICHARD ARTHUR (President, Immigration League of Australasia, Sydney) writes: During the last few years I have seen a large number of cases both of early and late phthisis among immigrants who have come from Great Britain to Australia. These persons allege that they have been advised by doctors to proceed here, as the climate would affect a cure in their cases. Most of these immigrants are lads and young men, and their lot on arrival here is a very unhappy one. They are totally unfit for the hard work of a farm, and they either have to be sent to a consumptive sanatorium or shipped back to England. If what they state about medical advice be true, it is surely very cruel for any medical man to take upon himself the responsibility of sending a patient 12,000 miles from home, where he arrives very often almost penniless, and where he receives a very scant welcome. If these cases are curable, they can be dealt with much more satisfactorily at home, and, if not, it is surely better for them to die surrounded by the care and affection of relatives, than among indifferent strangers who resent having this burden cast upon them. I trust that this warning may do something to prevent such cases being sent to Australia.

CHANGES IN THE CONCEPTION AND TREATMENT OF INSANITY.

DR. A. W. GILCHRIST (Nice) writes: At the Leicester meeting of the British Medical Association in July, 1905, I took part in the discussion on the relationship between heredity and disease (see BRITISH MEDICAL JOURNAL, October 28th, 1905). Dr. Mott, the President of the Section, had requested Mr. Hurst, an authority on the subject of Mendelism, to demonstrate some of his botanical and zoological experiments, and Mr. Bond, in addition to the address in surgery, had presented for our consideration from the same biological point of view a collection of striking pathological observations. It was probably the first occasion on which the discoveries of the Abbot of Brünn had been considered in the light of their relation to problems of medicine. For this reason it was, perhaps, that the subject was so inadequately treated. In any case, no answer was offered then or subsequently, I may add, to the objections I was able to advance. These objections were contained in an article published by Le Dantec in an April number of the *Revue scientifique* of the previous year (April 23rd, 1904). Le Dantec contended that Mendel's law is only applicable to a restricted number of characters of discontinuous heredity. He further looked upon Mendelian inheritance as merely the heredity of diatheses, and therefore deprived of general application. Are such conceptions, then, I asked, destined to exercise a marked and permanent influence on medical theories of heredity, or are they rather, as Le Dantec implies, little more than a temporary revival of Weismannistic faith? The able address which forms the subject of the present letter would seem to prove that this influence was greater than I anticipated.

In spite of the notable progress made generally in medical science during the last quarter of a century, no increase in the relative number of recoveries from insanity is perceptible, Dr. Turner tells us. Nor does the remedial treatment, prophylactic or curative, likely to be adopted in the immediate future, offer a much more encouraging prospect. It is useless, for instance, to sterilize the unfit: we read, "in the long run Nature sterilizes for us." Can any of your readers discover a difference between this Mendelian sterilization (Dr. Turner refers to Gregor Mendel's experiments) and the elimination of the unfit so tragically performed by Natural Selection?

Mendelism is not so wasteful as the methods of natural selection, some will say. Possibly. And is less fatalistic. I think so also. But why assume at all this servile attitude of powerlessness? The leading French pathologists are Lamarckians, and the prominent Americans are Pragmatists; why should we not adopt what was best in the teaching of Herbert Spencer, and boldly claim the power to influence if not to control our higher destinies?

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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Eight lines and under	0	4	0
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An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

ON SPINAL ANAESTHESIA BY STOVAINE.

WITH REMARKS ON 1,000 CASES.

BY

FRANK COLE MADDEN, M.D.Melb., F.R.C.S.Eng.,

PROFESSOR OF SURGERY, EGYPTIAN GOVERNMENT SCHOOL OF MEDICINE; SENIOR SURGEON, KASR-EL-AINY HOSPITAL, CAIRO.

With Notes by

Dr. HASSAN SHAHEEN,

ANAESTHETIST TO THE HOSPITAL.

For rather more than four years it has been our custom at Kasr-el-Ainy Hospital to employ spinal anaesthesia whenever possible; and we have thus arrived at certain definite conclusions with regard to the efficacy of this method of anaesthesia, and, what is perhaps more important, its limitations. Such conclusions drawn from a large number of cases may be interpreted in different ways by different observers, and I am anxious, therefore, to supplement the excellent paper of my colleague, Mr. Owen Richards, published in the British Medical Journal of December 23rd, 1911, by some remarks based upon an experience of 1,000 operations performed in my section under stovaine anaesthesia: a series to be followed in the near future, I believe, by yet another 1,000 special operations from the section of our gynaecological colleague, Dr. Dobbin.

In all that concerns the general application and the technique of the method and its evident advantages and disadvantages, Mr. Richards's paper leaves but little to be said; and I will therefore confine myself to a personal record of my experience in the hope that some new points of interest may be elicited.

The Preparation of Stovaine Employed.

My first cases were anaesthetized by the well-known stovaine and adrenaline solution of Billon (epirenine borate 0.0026, stovaine 0.08, sodium chloride 0.0022, water to 2.00). Of this nearly the whole ampoule is injected in operations on the lower extremities and lower abdomen: but the dose is considerably reduced in operations in and around the perineum, and especially piles and fistulae and perineal operations for stone. For suprapubic cystotomy and lithotrities the larger dose is required; and also in hydrocele, which, though not a severe operation, is often attended with some pain on handling the testicle; this pain may also be present in operations for herniae, especially when any drag is exercised on the neck of a hernial sac prior to its ligature. In growing boys and girls and in old people, particularly when suffering from arterio-sclerosis, the dose must be proportionately reduced.

After the publication of Jonnesco's results in the British Medical Journal of November 14th, 1909, I had his solutions made up for me by Messrs. Parke, Davis and Co. in ampoules; and with these I obtained the best results I have ever had. This was probably due to the freshness of the preparations. With them I was able steadily to reduce the dose of the stovaine until I was obtaining quite perfect results with low anaesthesia when using the weaker solutions that were only intended for high anaesthesia. With these solutions I also carried out a short series of twelve cases of cervical anaesthesia—of which I sent a note to the British Medical Journal of September 24th, 1910—but I do not propose to repeat the experience, as it seems to me quite unnecessarily dangerous.

The most generally applicable Jonnesco solution was that containing stovaine 0.10, strychnine 0.001, water to 1.0, the dose being modified as above described, and the injection being made in the upper part of the lumbar spine or in the space between the last dorsal and the first lumbar vertebra.

When my supply of ampoules was exhausted we had the same solutions made locally, but they were not at all satisfactory, many ampoules failing to produce any anaesthesia at all, and when they did, it was hardly possible to finish a comparatively short operation before sensation returned.

In order to simplify matters from an administrative point of view we decided to adopt the Billon preparation, and this has been the only solution used latterly at Kasr-el-Ainy Hospital; but I am nevertheless of opinion that freshly prepared Jonnesco solution of the above-mentioned formula is the most generally satisfactory.

It is probable, nay, almost certain, that neither the strychnine or the adrenaline are necessary; but undoubtedly, after brandy has been tried and proved ineffective, the best treatment for the sudden faintness and collapse sometimes seen after a stovaine injection is a hypodermic injection of 5 to 10 minims of a 1 in 1,000 adrenaline chloride solution. If a further stimulant is necessary 5 minims of a 1 per cent. solution of strychnine should be given, and this seems to have a more "solid" effect on the heart itself than the adrenaline, which would appear to act especially on the blood pressure. I have had no experience of Barker's stovaine-glucose solution.

Technique.

The whole back from the mid-dorsal spines to the sacrum is painted with iodine, and the injection made with the patient sitting on the edge of the table, the head well down on the chest, the elbows resting on the inner sides of the thighs and the back strongly arched. The injection may be made in any of the spaces from that below the last dorsal vertebra downwards, and the only certain proof of proper entry into the cerebro-spinal space is the flow of clear fluid, which may only run in drops or in a full steady stream. I make the puncture exactly in the middle line and use an ordinary exploring needle without a stilette, and fit it on to an ordinary all-glass (5 c.cm.) syringe. If I feel sure that the needle is properly placed, and still no fluid flows, I then introduce a stilette to clear the point of the needle, if twisting the needle round does not succeed in promoting a flow. It is better to remove the needle altogether or try a higher space than to persist in searching for the right track with the point still buried after two or three failures in different directions. When the flow is satisfactory, the syringe, already charged with the stovaine solution and cleared of air, is fitted on. The cerebro-spinal fluid then flows in by its own pressure, and dilutes the solution by half or even more. This mixture is then slowly injected, and an attempt made to draw back into the syringe another quantity from within the theca. This is again slowly injected, and then the needle with the syringe still attached is slowly withdrawn, and the patient at once placed in the semi-recumbent position, with his head, back, and shoulders well raised on pillows. If the cerebro-spinal pressure is not sufficient to force the fluid into the syringe, it may be assisted by drawing out the piston and exercising suction. It is well, I think, to dilute the stovaine solution with cerebro-spinal fluid before injecting whenever possible, though I must admit that in several cases, in operations in which a large dose of stovaine is not necessary, anaesthesia follows when no mixture has been effected. Further, I must confess that in old men, in whom I was certain that the needle was properly placed but no fluid came out, I have injected stovaine with perfectly successful anaesthesia. But this practice is to be deprecated, as failure is almost certain to occur.

Failure to enter the canal may occur in old men who cannot bend their backs properly, and in whom there may be some bone condition, such as osteo-arthritis, which occludes the already small intervertebral spaces.

In certain cases the injection is given with the patient curled up on his side, and is even easier than in the sitting position. A few drops of fluid very often escape from the puncture, but no dressing is required.

Effects of the Injection.

In most cases, beyond the pain of the prick of the needle in the skin, nothing is felt of the actual puncture; but almost at once tingling and formication commence in one or both legs, followed by a feeling of dead weight, and within a few minutes of the injection sensation is entirely lost or considerably blunted. Rarely a sharp shooting pain runs down one leg immediately on insertion of the needle, presumably from the pricking of a bundle of nerves in the cauda equina.

If the anaesthesia is going to succeed, the operation may be started as soon as the necessary preliminaries are over.

In the majority of cases anaesthesia is absolute and the operation can be completed without any difficulty, the effect, with a full dose of stovaine, beginning to wear off in about an hour. It may last longer, and I have had a case that remained anaesthetic during an operation that lasted 1 hour 40 minutes. As soon as the effect begins to wear off it is better to give a little chloroform—and it really is only a little that is usually required—instead of a second injection, to complete the operation.

The degree of anaesthesia varies considerably. Some fail absolutely (see Mr. Richards's paper). In cases not entirely successful the first incision through the skin is sometimes quite painful, but the subsequent steps of the operation are quite painless. As already mentioned, in operations for hernia the necessary pulling on the peritoneum before ligature above the neck of the sac is often felt, and the handling of the testicle in hydrocele may also give pain. Again, more particularly in hernia operations, it is not infrequently remarked that the suture of the muscle is more liable to be felt than the ligaturing or suturing of any other tissue in the course of the operation.

The anaesthesia usually extends up to the costal margins, thus permitting of operations on liver abscess, if a rib not higher than the eighth is excised, and also on hernias of the linea alba, just below the ensiform cartilage. Abdominal operations, provided they do not involve any handling of the under surface of the diaphragm, can nearly all be done with ease, and the relaxation of the muscles of the abdominal wall is particularly convenient. In cases of acute abdomen, however, I am not at all convinced that stovaine is better than, or as good as, scopolamine and chloroform. With all due deference, I submit that in quite a fair proportion of cases there is shock evidenced by pallor, faintness, nausea, and feeble pulse, in varying degrees, after stovaine injections; and though in our Egyptian experience acute abdomens, almost without exception, reach us in a very hopeless condition, and the selection of an anaesthetic scarcely influences the inevitable fatal issue, as a matter of experience I do not recommend stovaine in such cases. And yet in other situations associated with severe shock—as Mr. Thom has pointed out—good effects have been noted, some of which may, however, be due to the relief from pain afforded by the stovaine injection.

In operations on the perineum, particularly haemorrhoids, fistulae, both urinary and rectal, and perineal operations for stone or bladder conditions, a smaller quantity of stovaine is required to produce anaesthesia than in any other situation. Lithotrity, suprapubic cystotomy, hernia, and hydrocele require proportionately larger doses, but amputations, excisions, and bone operations on the lower extremities may be performed with quite moderate doses.

The patients usually declare that below the level of the anaesthesia the parts are as if dead, yet occasionally some are quite conscious of the handling of the area of operation, but experience no pain at all. In such cases, too, the application of a hot lotion is sometimes quite severely felt.

The General Condition of the Patient during Operation.

Most cases lie perfectly still and placid, and are not upset in any way. Others feel faint or giddy, become very pale and have urgent nausea. If they are sick they are often better at once; but if not, their pallor increases, they have repeated retching, and bring up some mucus, and may have all the usual symptoms of a mild collapse or even definite heart failure. A drink of water may recover the latter, if this is without effect, a dose of brandy is the next and rapid remedy. It is best, however, if these milder measures are not effective, to give a hypodermic of a 1 in 1,000 adrenaline chloride solution, and if necessary, by strychnine. The milder cases recover quickly, but if not, and there are signs of failure and gasping for breath, more active measures by intravenous saline injections, must be continued till a definite improvement takes place. In cases of high anaesthesia this "air hunger" is associated with extreme pallor, is only too often fatal, and on this account stovaine should not be used.

I have had two cases, both in private practice, in which symptoms of complete heart failure came on almost immediately after the injection; and it was only by dint of repeated injections of adrenaline, strychnine, caffeine, and sparteine, with artificial respiration, that I was able to save them and complete the operation. One case was an old full-blooded Turk, with advanced arterio-sclerosis, with an impacted stone in the urethra, who, after his narrow escape, surprised us all by taking French leave and walking out of hospital four hours afterwards. He came back two days later none the worse for his adventure. The second case was an alcoholic subject on whom I was operating for fistula in ano, and, though he had very alarming symptoms for a short time, he very rapidly recovered and had no further trouble.

Another accident happened with an old Egyptian army officer who was very ill with diabetes and a large gangrenous cellulitis all round the anus and ischio-rectal fossa. The operation was almost finished when he collapsed, and it took us all our time to bring him round. We eventually succeeded, and he went on well for nearly a fortnight, when he developed diabetic coma and died. The bad symptoms were, I think, due here to rough handling of the patient, a very heavy man, when lifting him from the lithotomy position back to a recumbent position in bed.

Fatal Cases in this Series.

Dr. Hassan Shaheen, anaesthetist to the hospital, has kindly given me the following notes of three fatal cases that have occurred in my section. Of the first two I cannot speak, as I was not present at the operation, but the third would certainly have been best operated on under chloroform, though he had taken stovaine well at his first operation.

CASE I.—A little boy of 13 was admitted on April 4th, 1911, for ruptured urethra, with considerable extravasation of urine and blood. An injection of 0.04 of stovaine adrenalin was given in the second lumbar space. The patient was rather collapsed, and his condition was unsatisfactory from the beginning. A Cock's puncture was made and the bladder washed out. About five minutes after the injection the boy complained of discomfort in breathing, and his pulse became weak, and, though he improved after brandy, the pulse soon failed again, and in spite of everything he died of heart failure, verified also by the *post-mortem* examination.

The dose may have been too large and the injection too high, but, whatever happened, I am afraid we must consider this fatality as certainly directly due to the anaesthetic.

CASE II was a very feeble patient, admitted for anaemia, ankylostomiasis, and liver abscess. He was very emaciated, with a high pulse rate, 102, and complained of pain in the jaws and pharynx, with difficulty in swallowing. The heart sounds were hardly audible, and he was suffering from diarrhoea. He was operated on on July 14th, 1911. There was oedema behind as high as the third dorsal vertebra. The injection was made in the eleventh dorsal space. Breathing was stopped as soon as the rib was being cut, and then the pulse also. No treatment was of any avail.

Post mortem the heart was found very soft and flabby, and the right side dilated and filled with mixed blood clot. The lungs were very bloodless, and had some oedema at their bases. The liver and kidneys were extremely fatty, the spleen enlarged and cirrhosed, and there were many ankylostoma worms in the mucous membrane of the intestines.

This operation, which was one of urgency, would have been best done under a local anaesthetic, as the patient was in an extremely weak state. I do not think stovaine can be blamed for this fatality; it would probably have occurred with any general anaesthetic.

CASE III.—This man was admitted on November 19th, 1911, and operated on for an abdominal tumour, which turned out to be a twisting of the kidney, in such a way that the ureter lay right across the front of the organ. The ureter was replaced and the appendix also removed. On this occasion he took stovaine quite well. Ten days after the operation he developed a septic temperature, and it was obvious a few days later that the kidney was intensely inflamed; indeed, we found at the operation it had become gangrenous. Eighteen days after the first operation 0.06 stovaine adrenaline was injected into the first lumbar space and the kidney removed, and a large perinephritic abscess evacuated. Just before the completion of the operation the patient suddenly collapsed and died, though everything possible was done, including even massage of the heart through the abdominal incision.

At the necropsy the heart was in a state of fatty degeneration, with a widely dilated right side, full of fluid blood, and the left kidney contained several pyaemic abscesses.

In the first place the kidney should have been removed at the first operation, and no second operation would have

been necessary. Then by an error of judgement we gave him stovaine in the very case where it is not wise to give it, a patient weak from a continued septic fever and pyaemia, and death was entirely due to a sudden collapse, perhaps stovaine-induced, acting on a fatty septic heart. We have had no further fatalities.

The After-effects of Stovaine Anaesthesia.

After a variable time, generally within an hour or two at most, movements of the legs may be made and sensation returns. Pain in the legs is often complained of, and later headache and backache. The legs may sometimes give more trouble than anything else, but usually recover within two days. I have never seen any serious effects from stovaine, though fever, headache, giddiness, backache and retention of urine may persist for some days. Once the dangers at the time of the actual injection itself are over no further trouble is likely to occur.

THE CASE FOR AND AGAINST STOVAINE ANAESTHESIA.

In considering the case for stovaine one is naturally bound to compare it for efficiency and safety with chloroform anaesthesia, and in general terms I think we must look on stovaine as a valuable alternative to (ether or) chloroform in operations on certain definite areas, but as never destined to replace them. It is true that the accidents of stovaine are generally more alarming than dangerous, but when they *do* occur there is a dreadful feeling of helplessness, which is particularly perturbing. We have certain danger signals with chloroform which are well recognized and can be immediately replied to, and moreover the administration of the anaesthetic can be immediately discontinued; whereas in stovaine the danger gives very little warning, if any, and the damage is done and cannot be undone, as, though it is recommended, the withdrawal of a quantity of cerebro-spinal fluid in such an emergency is hardly practicable. It is true that only a very small proportion of cases give rise to the least anxiety, but a method must be judged by its possibilities of danger when the question of a human life is concerned. Profound lowering of blood pressure, heart failure, and "air hunger" are the more serious possibilities to be faced, and these can only be avoided by careful selection of cases, the proper grading of doses to suit individual patients and conditions, and the most careful adoption and retention of appropriate positions, to prevent the dissemination of the drug beyond the limits of safety within the spinal canal.

With increased experience naturally there is a greater certainty and security about our results, but we have not yet that perfect trust and confidence we should have in our anaesthetic in the case of spinal anaesthesia with stovaine (in the solutions we have been accustomed to employ).

Briefly, we have, then, in stovaine a reliable anaesthetic for all operations below the costal margins, but one must not expect too much of it, or employ it without careful consideration, especially in cases where any form of general anaesthetic would be dangerous. Moreover, the fallacy that after the injection is given and anaesthesia established it is no longer necessary to trouble about the patient, must be once and for all dismissed. Just as much care must be exercised in the administration of the drug and in the management of the patient after injection as with chloroform, and when this is done the feeling of satisfaction, after an extensive operation under this form of anaesthesia, when the stovaine has acted perfectly and the after-effects have been almost *nil*, must be experienced to be thoroughly appreciated.

If a somewhat pessimistic note has unconsciously crept into these observations, I am, on the whole, content to leave it so, as a well-intentioned protest against the impression that stovaine is entirely devoid of all danger, and that at worst its only drawback is failure, partial or complete, to produce the requisite degree of anaesthesia.

THE Royal Sanitary Institute has established an examination for smoke inspectors. The first examinations will be held in Manchester in April, and in London in May next. The syllabus can be obtained from the Secretary of the Institute, 90, Buckingham Palace Road, S.W.

COMPLICATIONS FOLLOWING THE ADMINISTRATION OF HEDONAL.

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THE discovery of an ideal anaesthetic with ideal methods of administration is a problem amongst the most important that the medical profession has to solve. Even under the most favourable circumstances fatalities from time to time occur on the operating table, whilst post-operative complications on very many occasions are such as seriously to retard the progress of the patient towards recovery, even if life itself be not sacrificed to such a sequela as pneumonia. Indeed, surgical interference is often reluctantly postponed or abandoned on the ground that the risks of anaesthesia are too great. The recent more extended use of the intravenous infusion of hedonal has roused hopes that an anaesthetic has been found which gives a satisfactory anaesthesia, and at the same time is comparatively free from post-operative complications.

Hedonal has now been administered over 300 times in the Leeds General Infirmary in a great variety of cases, and though it is early yet to speak with authority, the number of complications following the administration of the drug is such as to warrant a record of them, in the hope that means in the future may be found to guard against their occurrence.

I have classified the complications as follows:

1. *Cutaneous.*

(*a*) *Local Oedema.*—The commonest situations for this are the lumbar and gluteal regions. The manifestations vary from a redness of the skin with slight infiltration to a tender brawny oedematous swelling, pitting on pressure. After a variable time the oedema disappears, occasionally leaving a mark as of a severe bruise. In one case this "bruising" extended across the small of the back, and measured, roughly, 12 in. by 4 in. Unless the greatest care were taken, bedsores would readily develop.

(*b*) *Blisters.*—These are most commonly found on the heels or outer side of the foot, but they have also occurred on the chest, abdomen, inner side of the thigh, and elsewhere. They resemble closely in appearance the blister raised by the accidental contact of an unprotected hot-water bottle. As regards the explanation of these phenomena, it is to be remembered that hedonal produces an unusually long anaesthesia. Patients, therefore, are apt to remain in one position too long, and local pressure effects are thereby produced. In some of the cases this was undoubtedly so, but now the nurses are on their guard against this complication and every precaution is taken. In spite of this, however, some examples still occur. The blisters have appeared within an hour or two after operation, and on one occasion before the patient left the theatre. They have appeared in the weakly and robust patient alike. They have occurred more frequently in those cases where there has been a large amount of fluid injected. There seems to be a lowering of the powers of resistance in the tissues and trauma or pressure, even slight and temporary, is the deciding factor. In one case—an operation on the jaw—in which a blister appeared on the chest, it is probable that the pressure of the surgeon's or assistant's elbow was sufficient. In all the cases there is a close analogy with those nervous diseases in which even the most trivial pressure can rapidly produce most alarming results.

2. *Pulmonary.*

(*a*) *Oedema.*—The mere injection of fluid of itself may produce oedema of the lungs, and clearly this liability bears a direct relation to the amount of fluid injected. I have had the opportunity of examining the lungs of a patient who died a few hours after operation where this method of anaesthesia had been used, and the death was attributed to exhaustion. The case was one of impaction of the after-coming head, and before admission to hospital the patient had been subjected to very severe handling. *Post mortem* the lungs were found to be highly oedematous, whilst there was no other abnormality detected in the rest of the viscera by the naked eye or by the microscope. This oedema doubtless occurs in many cases, and

passes off without giving rise to symptoms. It may, however, be attended with real danger, as the following case shows, for the notes of which I am indebted to the House-Surgeon, Mr. Tatlow:

V. S., aged 19: 1,350 c.cm. of 0.75 per cent. solution injected. The patient was operated upon in the morning for inguinal hernia, the administration of the anaesthetic ceasing at about 10 a.m. On his return to the ward from the theatre it was noticed by the nurse in charge that the patient seemed very "chesty." Between noon and 1 p.m. the patient was pale and the extremities cold. At 3 p.m. the temperature was 100.2°, the pulse 120, and the respirations 35. At 5 p.m. the breathing became more laboured, and the patient was distinctly cyanosed. The throat was full of frothy blood-stained mucus, and was swabbed out. Vomiting was induced by mechanical means, and $\frac{1}{100}$ grain of atropine sulphate injected. The patient soon became relieved; consciousness returned at about 9 p.m., and next morning he was practically free from symptoms. The subsequent progress of the case was uneventful.

(*b*) *Pneumonia.*—In preanaesthetic days pneumonia was a well-recognized complication of surgical injuries and operations. With inhalation anaesthesia the risk is considerable, especially after the administration of ether. In my series of cases after the injection of hedonal there have been several in which there has been slight bronchitis for a day or two, and others where a severe attack of pneumonia has followed. There have been three fatal results from this complication.

T. W., aged 20. The patient was a well-built young man accustomed to active out-of-door life. Operation on May 9th for recurrent appendicitis; 1,400 c.cm. of 0.75 per cent. solution used. Almost immediately on his return from the theatre the breathing became embarrassed. The pulse was poor and frequent and there was some cyanosis. The patient came round about twelve hours after operation and soon began to complain of pain in his chest. The temperature was raised, the respirations were 40 per minute, and the pulse continued frequent. For a few days the symptoms persisted with little or no abatement. On May 15th the patient began to expectorate with difficulty. The next day the sputum became offensive, and on May 17th I was asked by Sir Berkeley Moynihan to see the case. The patient was extremely ill and presented the anxious cyanosed aspect of a sufferer from pneumonia. On examination a pleural friction rub was detected over the greater part of the left chest, whilst there was dulness at the base behind on the same side with tubular breathing. There were also signs of a commencing bronchopneumonia in the right lung. During the next few days there was some improvement in the patient's condition and the sputum became less offensive, though the temperature, respirations, and pulse-rate still continued high. At the end of a week the patient again became gravely ill. Physical examination at this time showed that the lower lobe of the right lung was extensively involved. The sputum again became extremely offensive and there was a brisk haemoptysis. For several days the condition of the patient caused considerable anxiety, but subsequently he began to improve, and finally became convalescent. He is now quite well.

A. T., aged 31. Cholecystotomy and choledochotomy; 1,300 c.cm. injected; 3 gr. of hedonal were given two hours before operation. As in the previous case, pulmonary symptoms soon developed, and death ensued on the twelfth day. *Post mortem*: Site of operation healthy. The lungs were in an advanced state of confluent bronchopneumonia and honeycombed with small abscesses. No other noteworthy abnormality was found.

(*c*) *Infarction.*—I have not personally seen this complication, but I have had information of an undoubted case where the embolus was considered to have originated from a thrombus in the vein which was used for the purpose of injection. The complication occurred fourteen days after operation. The patient made a good recovery.

3. *Venous.*

(*a*) *Thrombosis at the Site of Injection.*—In the majority of the cases there has been thrombosis in the vein selected for the infusion, usually the median basilic or median cephalic. In many instances this has been shown by a linear staining of the skin along the course of the vein, which could itself be felt as a thick fibrous cord. The thrombosis apparently extended as far as the junction of the vein with the axillary. With the exception of the case of pulmonary infarction already referred to, this thrombosis does not appear to have had any untoward result. The risk of suppuration is, of course, with the usual antiseptic precautions, infinitesimal.

(*b*) *Thrombosis of the Femoral Vein.*—This is not infrequently met with as a complication of severe illness, and it sometimes follows surgical operation. Thrombosis of the femoral vein has occurred in five of the cases in my series subsequent to the administration of hedonal. I cannot but think that the proportion is too high to be otherwise than in direct causal relationship to this method of inducing anaesthesia. I quote two examples:

K. D., aged 30. Operation for excision of gastric ulcer; 1,610 c.cm. used. This patient was an unusually long time before coming round. Thrombosis of the left femoral appeared on the fourth day. It should be stated that this patient was very anaemic.

A. E. W., aged 34. Appendicectomy: 1,130 c.cm. injected. Thrombosis appeared on the fourteenth day.

(*c*) *Cerebral Thrombosis.*—In one of the cases of severe bronchopneumonia a right-sided hemiplegia with aphasia appeared on the sixth day. The symptoms, however, were only slight and after a few days gradually passed off.

Summary.

The technique employed in all the cases has been substantially the same as that described by Mr. Page in his paper read before the Royal Society of Medicine. The usual rate of flow is from 80 to 150 c.cm. per minute until anaesthesia is produced, when the fluid is allowed to run in drop by drop. The best results have been obtained where anaesthesia has been induced fairly rapidly, and it is found that in these cases less of the solution is required.

There is no doubt that hedonal is a very pleasant anaesthetic. Patients with whom I have discussed the matter who have had experience of ether or chloroform much prefer the newer method. Indeed, I have heard of one who, on being told that he was to have ether, declined operation and left the hospital. There is an absence of the feeling of suffocation which patients naturally dread so much, whilst vomiting as consciousness returns is only exceptionally present. Hedonal also provides an excellent surgical anaesthesia.

On the other hand, it is clear that the injection of a powerful drug in large quantities of fluid is not without a very considerable element of risk. When 1,100 to 1,200 c.cm. have been administered the danger zone has been reached. Practically no complications have occurred where a lesser amount has been employed. The oedema of the lungs which results from an overdosage renders them especially liable to infection from the micro-organisms which are constantly present in the mouth and which may readily be inhaled during the period of unconsciousness. Especial care should therefore be given to antiseptic treatment of the mouth and teeth before operation, whilst subsequently, if a large amount of fluid has been given, the upright position is to be recommended. On the slightest symptom of pulmonary oedema vigorous measures should be taken to secure the clearing of the air passages.

In cases in which there has been severe shock or much previous loss of blood—in those cases, that is, in which treatment by venous infusion might be considered—this method of anaesthesia is clearly of advantage.

That especial directions should be given to the nurses in charge of patients who have been anaesthetized with hedonal follows from what I have already said.

Finally, I wish to express my thanks to the members of the surgical staff for kindly granting me access to their cases.

CONGENITAL SYPHILITIC DEAFNESS TREATED BY SALVARSAN.

By GEORGE NIXON BIGGS, M.B., B.S.,

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THE following case is, I think, of interest, as this form of deafness usually progresses very rapidly in spite of any form of treatment, and usually when the patient has once become deaf no treatment will produce any improvement at all.

A woman aged 22 presented herself on June 8th, 1911, at my out-patient department at the Seamen's Hospital complaining of deafness of five days' duration. Its onset had been sudden, the patient becoming completely deaf within forty-eight hours of the onset of the symptoms. She was brought to the hospital by her mother as she was unable to hear anything herself. Severe tinnitus was present in both ears, but there was no history of vertigo, sickness, or headache. Both tympanic membranes were slightly indrawn and thickened, but there was no fixation of the malleus or impaired mobility of the membrane. Both the nose and throat were normal and no other intracranial nerves were involved. As the patient was

obviously suffering from eye trouble she was seen by my colleague Mr. Bickerton, who reported that old interstitial keratitis was present in both eyes. Bone conduction to all the tuning-forks from C (128 d.v.) to C^5 (1024 d.v.) on both sides was absent, as also was the hearing by air conduction for all the forks from 3 C 16 to C^1 (2048 d.v.). Hearing for the very loud voice, the whisper and acoumeter were absent. A Wassermann reaction was immediately performed, and gave a positive reaction. On June 12th an intravenous injection of 0.6 gram of salvarsan was administered by Mr Porter, the resident medical officer at the hospital. On June 15th the tinnitus was better, and the hearing tests gave the following results: On the left side the conversational voice was just heard, as was also the acoumeter, whilst the C tuning-fork (128 d.v.) could just be heard by bone and air conduction. On the right side the acoumeter and voice could just be heard, and the C fork by bone conduction only. She remained in the same condition on the left side for about four weeks, but the hearing for the acoumeter, voice, and the C fork (128 d.v.) by bone conduction on the right side was lost and never returned.

On July 1st the patient received a second intravenous injection of the same amount of salvarsan, and on July 17th the hearing on the left side was found to be the same as on June 15th.

The patient still continued to improve on the left side, and on September 9th the conversational voice could be heard at 3 in., the acoumeter was just heard, and the patient's bone conduction to the C fork (128 d.v.) was only −20 seconds as compared with the normal, whilst by air conduction it was −40 seconds as compared with the normal. The 1 C 64 and the C^1 C^2 and C^3 forks could just be heard by air conduction.

On September 18th she received a third injection of the same amount of salvarsan intravenously, after which she again improved slightly on the left side, and on October 17th the acoumeter was found to be heard at half an inch and the voice at 5 in., whilst the hearing for the C fork (128 d.v.) by air conduction was now found to be −30 seconds as compared with the normal, that is, an improvement of 10 seconds. The bone conduction for this fork, however, remained the same, that is −20 seconds.

The Wassermann reaction still remains positive in spite of the three injections, and my experience is that it always does so, unless mercurial treatment is administered at the same time.

Unfortunately the right ear fell back after the first injection, but the left ear, as shown by the tests, improved markedly.

Since writing the above notes the patient has had a relapse, the hearing in the left ear completely disappearing again, the patient passing into the same state as when first seen. With inunctions of mercury and large doses of potassium iodide internally the hearing has returned in the left ear, which is now in the same condition as when tested on October 17th. This case, with other cases which I have had under my charge, proves without a possibility of doubt that salvarsan by itself will not cure syphilis, but only the local manifestations of the disease.

LOCAL APPLICATION OF SALVARSAN IN CHRONIC SUPERFICIAL GLOSSITIS.

BY

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PROBABLY the most notable and rapid improvement effected by the intravenous injection of salvarsan is seen in severe or in old-standing ulcerations in the mouth. The following case is instructive in showing that the same may possibly be true of the local application of salvarsan to the mouth, and more especially as it is a case in which there was no history of syphilis, and which got worse under the administration of iodides and mercury.

A. W. D., aged 50, with no history or suspicion of syphilis, suffered with a sore tongue, due to excessive smoking, on and off for twenty years. He had been under occasional medical treatment for his tongue for twelve years.

He came to me on February 15th, 1912, with chronic superficial glossitis, the tongue was fissured and was bald of papillae on most of the left side. Just to the left of the middle line of the dorsum there was a raised circular growth ⅜ in. in diameter surrounded by a sulcus. The growth and substance of the tongue round about were hard. The left margin of the tongue was ulcerated, and there was an ulcer on the dorsum the size of a threepenny-bit. The tongue was so sore and painful that the patient had great difficulty in eating. For two years he had not been able to eat any fruit owing to the pain. His dietary was restricted to the blandest of foods, and those he took with discomfort, but he was still continuing to smoke. Since he came to me he has given up tobacco completely.

I painted the growth with cocaine and snipped it off, and received the following report on it from the Laboratories of Pathology and Public Health: "This small nodule shows thickening of the squamous epithelium, and the processes which dip into the underlying tissue are hypertrophied. Some of these processes give rise to some suspicion. Their outline is indefinite, and in one instance at least there is an appearance of the cells having spread out from the base of the process and they appear to be invading the surrounding tissues. The latter are infiltrated with the small round cells. While entertaining grave suspicions of this growth we cannot say there is conclusive evidence of malignancy." A Wassermann reaction was not done on the score of expense.

The patient was put on potassium iodide and liq. hydrarg. perchlor., working up to 12 grains and 1 drachm respectively three times a day. The places were painted judiciously with chromic acid, picric acid, and once with the acid nitrate of mercury, and an alkaline mouth wash was used frequently every day. By the beginning of April the tongue was worse, the ulcers had increased in size, bled readily, and the patient had great difficulty in eating, and was losing weight and becoming anaemic. I then stopped the biniodide of mercury, and gave him a tonic. The pain became somewhat easier, but the central ulcer, where the growth had been removed, began to proliferate, and became again raised above the surface.

I sent him to Guy's Hospital, where he was seen by Sir Alfred Fripp, with a view to removing the diseased area. I had read in McDonagh's book on *Salvarsan in Syphilis* that salvarsan had been used locally in cases of stomatitis, which is usually due to spirochaetes of all sorts, and that another mouth organism, the fusiform bacillus, disappears with salvarsan. I asked Mr. McDonagh's advice as to how to apply salvarsan locally, and he recommended a strong solution in glycerine. With Sir Alfred Fripp's concurrence, I proposed to give the tongue a short trial with local applications of salvarsan before finally deciding to have it operated on. I dissolved 0.1 gram of salvarsan (this is the smallest quantity made up, and costs 2s. a tube) in half a drachm of water, and added half an ounce of glycerine. On May 7th I swabbed the whole tongue with this, and more especially rubbed it into the ulcers. I gave the bottle of solution to the patient, with some cotton-wool, and instructed him to do the same every hour for ten hours, and under no circumstances to use it next day, but to come back for a fresh dose in three days' time. In three days' time the ulcers were 25 per cent. smaller, and the whole tongue was much improved.

The same treatment was renewed on May 10th, 14th, and 21st. A week later, after these four days of painting with salvarsan, and at the end of three weeks from the commencement of the treatment with salvarsan, all the ulcers were completely healed, the fissures had largely disappeared, and the tongue was moderately healthy looking, completely different from its condition three weeks previously. There was, and still is, some hardness to be felt about the site of the original nodule. A few days later the patient had some slight tenderness and smarting along the left margin of the tongue, and there were two small and very shallow ulcers. On June 1st I gave him another dose of salvarsan to paint his tongue with, and on June 4th they had cleared.

This is the only case in which I have had an opportunity of trying the action of salvarsan locally, and I record it so that others may be induced to try it. There is one point on which I would like specific information, and that is as to how long it takes for salvarsan to oxidize into a poisonous salt of arsenic, and whether the amount used in swabbing the tongue would be deleterious to the patient after oxidization had taken place. The amount used in the above case was roughly 1½ grains, dissolved in ½ ounce of glycerine, and of that quantity only about a half was used in hourly swabbings over ten hours. I was nervous of allowing the patient to use the same solution on the following day. He had no symptoms whatever of arsenical poisoning.

The points to emphasize in the case are:

1. The long standing of the glossitis and the rapid proliferation of the ulcer which had been formed by the removal of the nodule.

2. The condition of the tongue became more acute and painful under the administration of iodide and mercury, although the patient had given up all tobacco for over two months.

3. The patient had been under careful medical treatment on and off for seven years before I saw him, and had given up smoking for short periods. He had improved under these treatments temporarily, but his own confident assertion is that his tongue has never been so comfortable or looked so well for ten years as it is at the present time.

4. The extraordinary rapidity of the improvement of the whole tongue. At the end of one week, and after only two days of salvarsan, the ulcers had diminished to one-quarter their size.

There may possibly be a field for similar treatment of chronic inflammations of the nose as well as the mouth, such as old-standing antrum trouble, and it would be useful to hear the opinion of bacteriologists on this subject.

ACUTE FORMALDEHYDE POISONING.

BY

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FORMALIN, a 40 per cent. solution in water of the gas formaldehyde, acts, when taken internally, as an irritant poison, but its toxicity and the symptomatology are still little known. Of the few cases described in the literature, an imbecile, aged 26, died thirty-two hours after swallowing between 1 and 3 oz. (30 to 89 c.cm.) of a 4 per cent. solution of formaldehyde.[1] Gerlach's patient,[2] a girl, aged 21, survived a dose of 2 to 2½ oz. (60 to 70 c.cm.) of 35 per cent. formaldehyde; and Zorn's case,[3] a man of 44 years, about ½ oz. (15 c.cm.) of a 35 to 40 per cent. solution. Klüber[4] described the symptoms of a man who drank an unknown quantity of formalin and recovered. These last two cases were referred to pretty fully in the BRITISH MEDICAL JOURNAL, 1901, vol. i, EPITOME, Nos. 42 and 300. Levison[5] had a fatal case of a man, aged 60, who lived only twenty minutes after swallowing an unknown quantity (estimated at 2 to 3 oz.) of commercial formalin.

The case now recorded is as follows:

A married man, a brushmaker, aged 63 years, who had been a heavy drinker for about forty years, was off work and drinking on April 15th and 16th, 1912, and left home about 8 a.m. on April 17th without taking any breakfast. He was seen, about 9.15 a.m., when near a well in a public park, to become rapidly ill. He staggered, doubled up over a low railing, and retched viscid mucoid material. He was put on a seat and grew rapidly unconscious, with body stretched out and head bent back over the seat. It is not certain from the description if this was or was not opisthotonus, a condition induced in animals by injection of formalin. The man was supposed by bystanders to be in a "fit," and was laid out on the grass with collar loosened. He was breathing "heavily," with chest heaving and eyes rolling, and was perspiring moderately. Accounts differ about pallor or flushing of the face. No convulsions or twitchings of muscles were noticed, nor was any attention drawn to coldness of hands and face. After being unconscious for about fifteen minutes he gradually became conscious, and when seen by a policeman at 10 a.m. refused to give his name, saying nothing was the matter with him, and denying having drunk from a bottle seen in his pocket. The policeman, after smelling the contents of the bottle, at first had the impression that he could detect the same odour in the man's breath. The man did not again vomit, but was now suffering very severe abdominal pain, causing him at intervals to double up almost on his hands and knees. There was some froth about his mouth, but no discoloration of the lips or mouth was noted. He staggered along with assistance for about 100 yards, then fell to the ground writhing with pain, and relapsed into unconsciousness, from which he did not again emerge.

At 11 a.m. he was admitted to hospital, unconscious, intensely collapsed and almost pulseless. His skin was pale, cold, and clammy. The mouth was opened with a gag, but showed no discoloration, and did not smell of formalin. All reflexes were absent on admission, except the corneal reflex, which was lost also in a few minutes, and respiration stopped. The stomach was washed out, stimulants given, and artificial respiration applied, but death occurred at 11.55 a.m.

On the man's person were found a written message clearly pointing to suicide, and a 6-oz. bottle containing 3½ oz. (108 c.cm.) of formalin, found by analysis by the iodine method to contain 34 per cent. of formaldehyde as well as a little deposit of paraformaldehyde. This was proved to have been given by the Sanitary Department to the man's wife for disinfecting purposes four years previously. She then used at least half the quantity of formalin missing from the bottle. She has the impression that she used about three-quarters, but is not so certain of this. It is unfortunate that the police authorities did not order a *post-mortem* examination, but the information as above given was collected from reliable witnesses.

There can be no doubt that death was in this case due to swallowing a quantity, not exceeding 1 oz., of commercial formalin. The man, though thin, undersized, and probably of low vitality from alcoholism, was not known by family or medical attendant to suffer from any [illegible] disease. He had never had any kind of "shock," [illegible] no history of epilepsy in the family.

In the cases described there seems to have been considerable variation in the symptoms, due probably in part to [illegible]. Here the points of interest are the tendency to vertigo, the unconsciousness, and the greater implication of the respiratory than the circulatory system, all of which occur in most of the cases quoted. The predominance of cerebral symptoms, leading to early death, gave little opportunity for the development of signs of irritation of the kidneys and the alimentary canal, apart from the intense pain in the latter and the initial vomiting. This case confirms the deduction to be drawn from the others that formaldehyde is really a potent poison, probably differing little in degree of toxicity from carbolic acid.

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A SCHEME FOR MEDICAL BENEFIT.*

BY

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BECAUSE we are unanimous in the statement of the conditions we require if we are to work in the Government way, it does not of necessity follow that we think the Government way is the most business-like, efficient, or economical that could be adopted. All we say is that, given the form, we must have certain essential conditions.

The normal form of medical benefit that the framers of the Act undoubtedly contemplate is, of course, contract or club practice. This is the very system that for twenty years and more doctors have been kicking at, and although, granted adequate safeguards and pay, it can be both efficiently and profitably carried out, yet few will be bold enough to say that it constitutes, even under the best auspices, an ideal relation between patient and doctor.

Again, speaking broadly, the Act gives medical benefit to insured persons only, and uninsured women and children have no share. Inasmuch, however, as this measure is "an Act for the prevention and cure of sickness," it is perfectly clear to medical men, and indeed to any one whose mind is informed by biological knowledge, that the best way to attain the object thus indicated in the title of the Act is to make provision first and foremost for the medical care of women and children.

Here, then, are two shortcomings—I should rather say capital errors—of the Act the adoption of contract practice and the exclusion from medical benefit of uninsured women and of children.

The British Medical Association report on club practice a few years ago, and the Majority and Minority Reports of the Poor Law Commissioners all took for granted the inclusion of the dependants, the women and children, in the medical benefits provided by the legislation for which these documents were supposed to pave the way. It is strange that this very proper assumption should have been falsified.

But, it may be asked, very pertinently, suppose women and children are included, how is it possible to provide medical care for all this enormous mass of population? Where is the money to come from? How could it all be done?

Considerations such as these appear to checkmate any attempt at more elaborate and more expensive medical provision. Let us, therefore, survey the board, and see if by some adjustment we cannot achieve victory in the face of defeat.

First, let us consider how doctoring is actually provided for the women and children. They have taken singularly little part in the friendly society movement. Provident dispensaries have certainly made a provision for medical attendance on women and children; but the areas of their success are very local and patchy, and do not extend. Public medical services have made, so far, no very deep or widespread impression on the problem. The National Deposit Friendly Society has the great advantage of offering to any doctor whom the patient may select a payment for work done. Part of the fee is paid from the patient's own deposit and part from the pool to which he

* This paper was prepared for the Section of Medical Sociology of the Annual Meeting at Liverpool, but the author was prevented from reading it by the prolongation of the Representative Meeting, of which he was a member.

also contributes. But when his deposit is exhausted he is out of benefit. So that the scheme is not really an insurance.

All these and many more agencies form a network throughout the country, but a network with such a large mesh that the bulk of the women and children escape it.

There remain the hospitals and private practice.

The hospitals are based on the mediæval idea of charity—all giving for the sake of the good work, and no payment except voluntary gifts in gratitude, and those to the institutions, not the doctors. The hospitals have fulfilled a function which the world can only wonder at and admire, and I think that the average layman can only faintly understand the self-sacrifice still willingly given—and not all for the sake of advertisement—to these ancient institutions. They are so essential still to the nation that the hand of legislation—though it has to some extent, perhaps, undermined their stability—yet dare not touch their fabric.

But the hospitals do not undertake the work of domiciliary treatment.

Private practice remains. There is no relation between doctor and patient which, on the whole, is so mutually satisfactory as that in private practice. There is complete free choice of doctor, and the power of changing medical adviser is only restrained by good feeling and commonsense. Amongst the less well-off classes the chief difficulties are financial.

Now, having reviewed the board, what move can we make which, by effecting a combination of pieces, will retrieve the position?

I think that the grand aim we should set before us is to preserve the essential features of private practice. I venture to think that the whole profession would be well advised to unite in maintaining that relation, not only in the case of women and children, to which I have just been especially referring, but also in that of men.

I would respectfully invite attention to a simple and easily understood scheme which, to all appearance, combines the apparently conflicting requirements of private practice and insured medical benefit.

First, there should be free choice of doctor from the *Medical Register*, subject to the consent of the doctor in each case. Then, as in the National Deposit Friendly Society, there should be payment for work done, on a standard tariff. Contract terms imply the underwriting of the health of the nation by individuals. Medical attendance on these terms must often be either ruinous or rotten.

In regard to the accounts, forms, similar to the fortnightly returns of Poor Law medical officers, should be used. The squares opposite the names could be filled up in a few minutes from day to day. The letter "H" by the convention adopted, indicates a visit to the patient's house; "S" that the patient was seen at the surgery. The extras would also have to be recorded, and the completed form sent at the end of the fortnight to the proper authority. As every entry on the form would have a fixed value, according to the tariff, no further book-keeping would be required.

The Authority,* who would thus be able to record the sums due to the doctors every fortnight, would pay the accounts quarterly. The labour of sending out bills, the worry and expense which often attends their collection, the collector's salaries or percentages, the court fees, and the bad debts, would thus all become things of the past.

Now as to finance from the insured person's point of view. First, I suggest that the money allocated to him in respect of medical benefit under the Act should be pooled, and the pool held by the Authority as a fund for use, as I shall explain.

Next I suggest that the insured person himself be liable to the Authority for the cost of the medical benefit he and his dependants receive, up to a maximum limit per annum, and that this limit should be fixed in relation to his average weekly wage. The financial stability of the scheme depends on correctly fixing that proportion. Only experience in working would determine what it should be. Probably it would be best to begin with a rather high figure and give a rebate, if necessary, of 50 per cent., to those who come too near the poverty line. For instance, subject to that concession, it might be well to fix a man's maximum liability for himself and his family at two weeks' wages in any one year. Beyond this the pooled fund would take on the liability.

Let us see how this would work out in a given case. Take the instance of a man supporting a wife and several children, and let us suppose that he is earning £1 a week. Let us assume further that at present he is in a club, for which he pays a sum which works out at 5d. a week, and that for this he gets, amongst other and more costly benefits, the right to the services of the club doctor for his own illnesses. And suppose, further, that he employed the same, or some other, doctor as the private medical attendant of his wife and family. How would his position compare, under the scheme which I have suggested, with his present one?

In the first place he would lose his right to free medical attendance for himself personally, and he and the members of his family would all be on the same footing. But, to set against this loss, he would gain the limitation of his liability in respect of his family. Whereas in a given year his doctor's bill for his wife and family might at present easily rise to such a sum as £5, under the scheme being considered he would at most be liable for £2. However many or long were the illnesses of himself and his family during the year, the cost beyond that figure would fall on the insurance funds. Supposing, further, that an illness were a long and tedious one, for which his power of paying adequately would, under the present régime, be soon exhausted, under the proposed scheme he would know that the doctor, in continuing to attend, was not doing so out of mere charity, but that he was being paid for everything he was doing on a business footing.

Now, how is the Authority to recover this liability? I suggest it should do so by requiring or inviting the insured person, on effecting insurance, to create a reserve or savings bank fund, earmarked for himself alone, and equal in amount to his maximum liability; and that it should retain itself the right to draw on this reserve in case of the insured or his family receiving medical benefit. Thus the payments required under the Insurance Act and those required by this deposit would replace those he made to his club and to his family doctor under former circumstances.

The reserve could be created by paying the sum down, or by a system of deferred pay, which could be worked by the co-operation of large employers of labour in the case of their employees, or by weekly instalments. I suggest such instalments as would complete the deposit of the reserve in one year, that is to say, weekly instalments of one fifty-second part of the total. In view of the security offered by payment in advance, I think you can afford to give a rebate of one-tenth of the total.

Thus, still considering the case of the working man with £1 a week, his liability would be £2, less one-tenth, that is to say, £1 16s. On effecting insurance he would, in addition to 4d. under the Act, have to pay each week towards his deposit one-fifty-second part of £1 16s., that is to say, 8d. roughly, or shilling in all. Therefore we have arrived at this, that instead of 5d. a week to the club and an unlimited family doctor's bill, he would under this scheme pay 1s. a week during the first year. After that year, supposing there had been no illness, he would revert to the 4d. After illness had exhausted the deposit, he would, if and when at work, be obliged to bring the deposit up to its full figure by again paying the full 1s. a week.

Many families show from time to time, for a lustrum or even a decade, a clean bill of health. During such periods the deposit would grow by the interest it produced in the hands of the Authority, and would afford a provision for the illnesses of later years.

Further, I wish here to recall a suggestion made by Mr. Lloyd George, that members of solvent friendly societies

* *The Authority*: I mean the Board that manages the business, as distinct from the professional part of the scheme. In the present state of affairs we do not know what this will be, so I use a general term. It may be medical or lay, or a combination. I favour the last, with the lay element predominating—on the analogy of a Hospital Board of Governors. It is not undignified to work with a lay board there; why should it be in a wider or national system? The Insurance Committee—like the County Association in military matters—seems a reasonable authority so far as its general status is concerned; but it should have no more to do with actual medical work and control than the County Association has to do with the officers of the army and the discipline of regiments—that is, *nil*. A business body to manage business matters, and a profession to manage its own professional matters, is the ideal to be kept in mind.

should use certain moneys released from their funds by the operation of the Act, towards providing medical benefit for women and children. The capital value of the amount so released is £5 per head. I would endorse that suggestion, and place the interest of that sum each year, automatically, whether there were illness or not, to the member's deposit account.

The deposit account should be the property of the member, held in trust by the Authority. If unexpended it should be returnable to his family at his death, or to the member himself if he left the country.

The broad principle of this scheme would, I think, result in the best features of private and family medical practice being preserved, whilst the irritating features, so far as they are financial, would be largely avoided. Doctors would be paid on a business footing, yet no patient would be liable for more than a moderate fraction of a week's wages at any one time. Therefore there would be no serious reason or excuse for not coming for medical assistance early in illness. A patient now frequently says, "I did not want to start doctoring because I was afraid of a big bill." That fear would be banished under this scheme. There would be deterrent enough to prevent vexatious claims, time-wasters of doctors, and malingering, that canker of friendly society funds; but it would be light enough to be no bar to early betakement to a doctor by women and children, as well as the employed person of whom the Act makes so much.

Further, the apportionment of payment for attendance on insured persons who constantly change their abode, which constitutes a very serious difficulty under the scheme assumed by the Act—namely, capitation—becomes a perfectly simple matter if each doctor is to be paid just what he does according to the tariff. A gipsy or a canal man will be as easy to provide for as the village blacksmith.

The cost of the greater part of the long and serious illnesses would fall on the insurance funds; that of short and trivial illnesses would be borne by the insured themselves.

Excessive attendance by a doctor would not be encouraged or accepted by the patient. Such, I apprehend, are some of the advantages.

Of course, I assume a £2 wage limit. That is necessary to bring the scheme into accordance with the policy of the British Medical Association; but really I cannot see why, were the whole tariff fixed proportionately, a higher wage limit should present any difficulty.

The difficulties are of diverse character, but I group them together chiefly because it seems possible that the solution of them all is to be sought in the same direction.

Difficulties of the Scheme.

(a) Malingering.
(b) Excessive attendance } After the deposit has been
(c) Excessive demands for attendance } exhausted.
(d) Provision for consultations.
(e) Provision for special forms of treatment.
(f) Inspection, necessary under any insurance scheme.

I make the following proposal for dealing with all these with the utmost diffidence. It is merely tentative, and does not necessarily bear an integral relation to the foregoing portions of the scheme.

The proposal involves the formation in each insurance area of a district medical staff, to consist of a body of consultants similar to the staff of a large general hospital. It would be, so to speak, "a hospital without walls," its sphere of work the patients who were referred to it by the doctors practising in the insurance area.

A practitioner would request a consultation with a member of the staff because he desired his assistance or advice in a difficult case, or if the patient was malingering. Again, it might be the patient who desired a second opinion, and the ready means of obtaining a highly skilled and impressively authoritative one which the district medical staff would supply, would obviate many of those cases in which one doctor is asked to supersede another at the present time on totally inadequate grounds.

Also, if the Authority suspected a doctor of over-attending a patient whose account had come on to the pool it might request a consultation. The illness would in that case be a long one, and the consultation would have a medical, as well as a disciplinary, value. The subject is unpleasant, but it has to be faced, as the advocates of payment for work done have been taunted with the difficulty it refers to. May I here say, shortly, that the mere fact of the existence of a system of disciplinary consultations would check the need for their use.

I had hoped to bring into this paper some mention of provision for the higher and special departments of medical work; to suggest that, for instance, a skilled ophthalmic surgeon, as a member of the district medical staff, might hold an eye clinic in a convenient centre, such as a market town, once a week—say, on market day; that his clinical assistants should be two or three general practitioners from the neighbourhood, adequately paid for their afternoon's work; that the interest and efficiency which constant association in work with a colleague of undoubted distinction would bring into their professional lives would be reflected in the rest of their practice; that such arrangements might be developed in other departments of medical work; and that the expert work of school clinics would be more economically and better carried out by such arrangements.

But time does not permit. Still, let me say this, that any scheme requires the creation of a vast mass of machinery, both administrative and clinical, and it is surely in the interests of national economy that this machinery should not pick out merely the insured members of households, but that it should include the women and children. Only so can you begin at the beginning to secure the objects avowed in the title of the Act, "the prevention and cure of sickness."

THE REFORM OF HOSPITAL OUT-PATIENT DEPARTMENTS.*

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I had the privilege of working some eighteen months ago with a committee appointed by the combined Liverpool and Birkenhead Divisions whose duty it was to draw up a report on the working of the out-patient departments, with special reference to the Liverpool medical charities. It is therefore with pleasure that I incorporate in my paper the conclusions arrived at by that committee.

The Majority Report of the Royal Commission on Poor Law states that: The benefits of the voluntary hospitals are largely taken advantage of by the well-to-do classes (Conclusion 8, Part v, chapter i). The report of the Royal Commission on the Poor Law (Scotland), in reference to the city of Edinburgh, states that the low membership of friendly societies amongst a thrifty people can hardly fail to be connected with the large medical charities in Edinburgh. There is practically no attempt on the part of the inhabitants to provide medical aid for themselves on a provident basis.

These recent investigations clearly indicate that a good deal of abuse must be present, a fact to which every general medical practitioner can testify.

In preparing statistics of the seventeen large voluntary hospitals in Liverpool and Bootle, it was found that in the year 1908 the number of out-patients was over 228,000, and the number of attendances over 700,000. The total estimated population of Liverpool and Bootle was 821,644, so that the proportion of one person in every 3.6 (3¾) of the citizens of Liverpool and Bootle sought charitable medical out-relief in 1908, and this was quite exclusive of over 77,000 cases treated under the Poor Law.

Naturally, in the distribution of such an enormous amount of medical charity there is ample room for abuse, and on inquiry as to the measures taken to prevent the abuse it was found that at some hospitals no special precautions were taken at all; at other hospitals it was left to the medical staff; and at other hospitals a clerk, an out-patient Sister, or a dispenser made some inquiries as regards each patient. To any one who has given special attention to the work it means that in Liverpool, I am sorry to say, very little is done to prevent abuse, and in my opinion the only people who think that no abuse, or

* This paper was read in the Section of Medical Sociology of the Annual Meeting at Liverpool, but owing to a misunderstanding was omitted from the report of the proceedings of the Section published in the JOURNAL on August 3rd.

very little, takes place are some of the members of the lay committees of the hospitals.

The out-patients can be divided into six classes:

1. A large number of cases for whose treatment the Poor Law authority are, or should be, responsible.
2. Persons suffering from chronic ailments.
3. Persons whose home conditions will not allow them to reap any commensurate benefit from such treatment.
4. Well-to-do persons who can afford to pay private practitioners.
5. Persons sufficiently well off to be able to join a provident institution or a public medical service.
6. The suitable persons for the out-patient department.

I have not included in this classification the children sent to the out-patient departments by the education authority because I have hope that before many months are over this gross abuse will be entirely swept away.

Class 1. The Poor Law cases ought always to be referred to the Poor Law authority.

Class 2. Persons suffering from chronic ailments; and Class 3, Persons whose home conditions will not allow them to reap any commensurate benefit from such treatment, ought, I consider, to be referred to a reformed Poor Law authority.

Class 4 and Class 5, the well-to-do and persons able to join a provident institution or a public medical service, should also be excluded from the out-patient department.

Class 6 contains the suitable persons for the out-patient department—that is, patients who are not able to pay for adequate treatment—of course making exception for cases of serious accident and of severe sudden illness.

The next question is, What should be the character of the work undertaken by the out-patient department?

I think it is now fairly well agreed that it should be used almost exclusively for (1) casualties, (2) consultations, and (3) cases requiring expensive equipment for the treatment of special diseases and defects.

Under such conditions the work would be so limited as to prevent overlapping between its sphere and that of the Poor Law authority; full scope would be left for private practice and provident effort; the work accomplished by the department would be more valuable and more efficient: it would not entail so arduous a task upon the medical staff; and the funds of the hospital would not be wasted.

At present each hospital is an isolated unit acting without any co-operation with other hospitals. Also when a patient leaves the hospital and arrives home the only evidence that he has been to the hospital is the existence of the wonderful "bottle." These conditions ought not to exist. All the hospitals in any town or city ought to co-operate with one another and also with various outside societies. These outside societies would follow the case up, and would help patients unable to help themselves in securing both proper nourishment and any other assistance for their families that might be necessary. This would give a much better chance of a more speedy recovery for the patient, by ensuring that the advice given at the hospital was fully carried out.

In order to bring about these reforms it is obvious that there must be some official attached to the hospital for the purpose of thoroughly weeding out all the various unsuitable classes to which I have referred; this official would co-operate with the various outside societies in following up the cases to their own homes, and would also help the patients, as far as opportunity allowed, to obtain surgical appliances, letters for convalescent homes, or any other such aid as the staff might consider them to need. Such an official is now known as an almoner, and a properly trained almoner is one who has been trained not only in the work of the out-patient department, but also in the work undertaken by the Charity Organization Society.

When the almoner is weeding out the various applicants for medical charity, she finds that no mere inquiry work, no fixed rate of rent, income, etc., is of much value; every case must be treated on its own merits, and no patient can be considered as an individual alone, but as a member of a family and a part of the community. This entails a great amount of personal work, time, and expenditure; but surely, if it is worth while for a physician or surgeon to devote long hours daily to the arduous task of the treatment of out-patients, it is only right to ensure that the treatment is not granted save to those who cannot afford to pay for it, and, moreover, that it is not rendered inadequate for want of help and care in carrying out the instructions laid down.

One or more almoners ought to be attached to each hospital; in some cases of small hospitals possibly one almoner could serve two hospitals, and all the almoners in any city ought to work in co-operation with one another, so as to avoid overlapping.

Hospitals which do not adopt this system cannot help having their out-patient departments considerably abused, and in cities and towns with more than one hospital there is a great amount of overlapping and inco-ordination, whereby considerable sums of money are wasted or improperly applied and much effort is rendered useless.

I therefore think that it is the primary duty of all hospital committees to take the strongest measures possible to see that the funds entrusted to them for charity are spent for that purpose in the best possible way, and this can only be done by employing one or more almoners as the case may be, and limiting the scope of the work undertaken in the out-patient department to casualties, consultations, and to cases requiring expensive equipment for the treatment of special diseases and defects.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF STATE MEDICINE.

A. K. Chalmers, M.D., President.

PRESIDENT'S INTRODUCTORY REMARKS.

After a few initial observations, including a reference to the fact that the two first meetings of the Section had been held in conjunction with the Sections of Bacteriology and Medical Sociology respectively, Dr. Chalmers said that he would like to take advantage of the occasion to enter a protest against the growing tendency to regard the work of preventive medicine as resulting only in flooding the population with inefficients. He could conceive no more grotesque or inaccurate description of the actual position. It was true that of recent years they had been afforded illustrations of much inefficiency, both mental and physical, and in a way these had been traced to certain groups of population and to definable circumstances. But these did not affect the population as a whole, nor even to a considerable extent, and once these conditions were more clearly understood, the remedy or avoidance might be possible. The whole movement, indeed, had been a forward one, and the future was full of hope. A second remark might be directed to the field of school medical inspection, which he thought was probably to too great an extent pathological rather than physiological in its objective. It was a valuable contribution to knowledge to ascertain in what proportion their children were handicapped physically; but they would reach higher levels if they endeavoured to group the mental equipment of the children, especially of those who were above the average. He hoped a time would come when in conjunction with the teachers the school medical inspector would be able to group children during their school life in accordance with their adaptability to and proficiency in certain forms of future work.

CHILDREN AND DENTAL DISEASES.

I.—R. J. Erskine Young, M.D.,

Dental Officer to the Liverpool Education Committee.

The deplorable dental condition of the poorer classes of society is already too well known to the dental profession, but it was only as recently as 1907 that certain municipal authorities realized this. After due consideration the

dental clinic at Cambridge was begun in July of that year, and in the same month of 1907 the Liverpool Education Committee felt justified in starting a dental clinic with a view to do something to combat the ravages of dental caries among the children of the day industrial schools of Liverpool and that at Hightown (at that time called the truant schools). Applications were duly invited, and the writer of this article was appointed "for three years as an experiment." At the end of that period—namely, October, 1910—my appointment was made permanent, as the clinic was believed to have done sufficient good to justify the step. There are five day industrial schools in this city, and that known as Addison Street Day Industrial School was chosen as being the most central, and a room with a good light was selected for the purpose of dental treatment.

A suitable equipment was provided by the Liverpool Education Subcommittee, and duly supplied to their order by the Dental Manufacturing Company of London. I remember saying at the time that this equipment was a movement to economy. There is an ordinary hospital rack chair, but were it not for the expense I would have much preferred the special children's chair which has been recently placed on the market by the Dental Manufacturing Company. In addition to the chair I have a Columbia engine for the preparation of cavities, bracket table, small "aseptic" cabinet, and the usual hand instruments and accessories.

Having begun with this modest though efficient equipment, I have endeavoured ever since the inception of my clinic to carry into practical effect the motto of "economy and efficiency," both as regards material used and unavoidable renewals and repairs.

The first step taken was to examine the teeth of all the children in all the six schools, and this examination has been repeated four times yearly since that time. On visiting each school the book-keeper makes a note of each child's requirements, as dictated by me after examination of the mouth. The work entailed by such examination is very great, and we have never attempted elaborate charting. Opposite the name of each child are two columns, the first for fillings required and the second for extractions. I rapidly review the mouth and count the number of cavities which can be inexpensively and beneficially filled, and that number is duly noted. I further take into account the number of teeth which are either unsavable, or which would require elaborate treatment, and that number is duly noted under extractions. Between forty and sixty children are examined in a morning, and this is continued thrice weekly for a fortnight. I can in this period examine all the children (about 1,000) attending all the day industrial schools. On the completion of my survey the children are sent to me alphabetically, except those in pain, who are, as far as possible, sent at once.

And now let me refer to actual treatment. I devote three half days of each week to the work, and as my efforts are unremitting the time given has proved ample. Owing to the necessity for economy only the simplest treatment has been adopted, and it largely consists of "cement" and "amalgam" fillings, and where necessary extractions. I am frequently asked, "How much work can you get through in a morning?" I once reached a total of twenty-eight fillings and extractions within one morning's work, but this was owing to exceptional circumstances, and my average morning's work consists of eight to fifteen dental operations. The plan adopted for this clinic in 1907 has worked well, as evidenced by increasing results.

Children and Pain.—The avoidance of pain in dental operating is of course an exceedingly important matter. Where I must extract it is done for the most part painlessly, by means of judicious employment of a local anæsthetic.

The giving of pain would mean not only that the children would be unnecessarily frightened, but the question of parental objection would arise. This brings me to speak of

A Clinic from the Parents' Standpoint.—The view taken by the parents of "dentistry for their children" is one that must be discounted, because of their profound ignorance—ignorance not only about their teeth but their health and education. One of the head teachers told me of a parent who came to the school and stormed and raged at her because her child's hair had been cut. I have doubtless received my share of abuse, and in one or two instances irate and ignorant parents have written to the Director of Education complaining that their child had received dental treatment, and that they did not want it, "because they did not believe in that sort of thing," etc.

I received a message from a child's mother saying "she preferred to see to Mary Jane's teeth herself," which meant not "seeing" to them at all. One tries to educate the parents, but, alas! how little effect it has. What is one to do if "Jimmy's teeth are not to be touched," or "Jemima is to have no teeth out," and yet both children need it badly, and perhaps their health is suffering accordingly. Be this as it may, the Education Committee's instructions are not to carry out treatment where a child's parents object, and this rule is adhered to.

As already said, it is very important to avoid pain, for the giving of pain to the children would in many cases still further alienate the parents' sympathy. In a few cases a parent has expressed gratitude, and I can say that if I meet a mother personally and tell her what is being done, and why, she seems satisfied, especially if I preface my remarks about her son's teeth by saying that "Tommy is a fine boy and inherits his good looks from her."

But this ignorance is, I am sorry to say, not confined to the uneducated classes. I have practised medicine for ten years and dentistry for nine. If (though comparisons are odious) I compare medical with dental patients, I can only say that the ignorance and unreasonableness of educated dental patients often amazes me. And I regret to be compelled to add that this applies in a measure even to members of the medical profession.

My own personal relationship with dental patients is a happy one, but there is, I fear, much more than a grain of truth in the statement that dental patients as a whole are too often unreasonable and ungrateful.

I know a dental surgeon who goes so far as to say that a conscientious, up-to-date, and gentle dental practitioner gives his life's blood in the service of his patients, so great is the physical and mental strain. It is, moreover, a notorious fact that dentists often die in their prime.

The Clinic from the Children's Standpoint.—I fear it must be admitted that, at least at first, the children were very sorry for themselves, and in some cases the child required a great deal of coaxing—much time being lost thereby. But it would appear as though I have gained the young people's confidence in a measure, for I now have very little trouble, and practically never resistance on the part of the child. For the most part the children and I are very good friends, and I believe I can attribute this to the fact that the work is, as a rule, painlessly done by means of a judicious use of local anæsthetics. Thus extractions, "drilling," and removal of nerves can be done without any pain whatever. One must remember, moreover, that the children tell each other, and, I have no doubt, compare their experiences in my dental chair. For instance, one child began to cry before she was touched. I asked her the reason, and she replied, "Tommy said you would stick a fork in my teeth." I promised to stick no fork in her teeth, and her tears ceased forthwith. Before dismissing a child (after treatment) a quite usual question is, "Did I give you pain?" or "Did you feel your teeth coming out?" Almost always the answer came, "No, sir," or "Very little, sir," and the child goes away comforted. The promise of a halfpenny or a penny to buy sweets (!) has an excellent effect. One baby of seven summers had some cavities filled, to which she objected strongly; but a kiss and a coin—chiefly the latter purchased her forgiveness, and we parted quite good friends.

But the success of my clinic does not depend either on jokes, kisses or coins, as will be shown under "Evidence of Appreciation." It is essential to remember that, however desirous one may be to save the children's teeth, one must keep in mind the fact that there is a little sensitive nerve and a little frightened child at the end of each tooth. On the other hand, though one must be tender to the little ones, kindness must not be overdone. For many mistake kindness for weakness and take advantage accordingly.

Evidence of Appreciation on the Children's Part.—Do the children appreciate what I try to do for them? I believe they do, and some say so. I often get a child back after treatment just for inspection, and the following is our usual parting conversation: "Are you sorry you

have had your teeth out?" "No, sir." "Are you glad?" "Yes, sir." One baby of six asked three times in a week if her teeth might be attended to. She was *not* in pain.

A boy of about 10 years old sat down in my dental chair smiling, and said, "I am glad I am going to have my teeth done." After removal of a large molar without pain a youngster said, "It's very fine, sir. No, I am not sorry, sir; I am glad," and he added an expression of appreciation from his mother, which need not be repeated. Another boy brought me a similar message to the effect that "she was very thankful and I was a nice doctor." I know of only one solitary case of the use by an industrial schoolboy of a home-made dentifrice. He remarked to me with much solemnity, "I clean my teeth every morning." I inquired his particular choice in dentifrices. He said, "I use salt and dust." "Dust," I said, "what kind of dust?" "My mother gets it from up the 'chimbley.'" "You mean soot?" "Yes, sir." Salt is sodium chloride and soot is charcoal, an excellent, if gritty, dentifrice!

I trust such incidents of my everyday work will serve to show that the children are beginning to appreciate what I try to do for them, and I hope that their dental education thus begun will bear fruit in the shape of a realization on their part: (1) Of the necessity for care of the teeth after leaving school, and (2) of the fact that our magnificent new dental hospital will welcome them if they have the sense to visit it at regular intervals.

The Clinic from the Writer's Standpoint.—Some years, I fear, will elapse before the great British public will become educated to the fact that the dental surgeon of to-day is a "specialist" in the same sense as the aural or ophthalmic surgeon. Nevertheless it is so. Looking, therefore, at the clinic from this standpoint, I am necessarily biassed in its favour as regards the benefits conferred on the children, not only as far as their teeth are concerned, but with a view to improve their health and stamina. Before the annual general meeting of the British Dental Association held at Liverpool in July, 1910, a paper entitled, "How to Save the Teeth of the Children" (by the writer of this article), was discussed. A dentist practising in London remarked during the discussion that I might have extended the title of it, and called it, "How to Save the Teeth *and Lives* of the Children." Such, indeed, is the Alpha and Omega of this and all other dental clinics. Why do I rarely see the red flannel which used to cover up enlarged and tuberculous glands in the neck? Wherefore the children's improved health and stamina? How comes it that cases of sore throat, headache, and neuralgia are met with only in a minor degree, and these chiefly among the new admissions? There is only one answer, and that is that they are due in a measure—perhaps a considerable measure—to the dental treatment the children have received since 1907. I consider that a conscientious and careful dental surgeon wages a daily and hourly warfare against disease.

Dental Disease and Consumption.—Amongst the most important of the maladies induced by dental disease is that awful "white scourge," tuberculosis. For many years I have held that consumption can be, and *is*, contracted through diseased teeth. Consequently, for every cavity filled, for every septic tooth extracted, we have aimed and struck a deadly blow against possible tuberculosis. Will mothers ever learn that the first tooth of the second set comes at the *back* of the mouth? It is the largest and amongst the most important teeth, and the most frequently diseased. I believe that I have saved hundreds of these first permanent molars of the children since the clinic was begun, and devoutly hope that out of these hundreds I have saved a few children from consumption. I am, however, no faddist, and have no desire to prove a connexion between pediculi and poor teeth, or between cut toes and caries. That is another way of saying that I am not one of those who think that the world revolves round a canine tooth. But I am very sure of this—that the mouth is responsible for a multitude of sins so far as disease is concerned, and it is the destiny of dentistry to combat and to cure them. What has the profession of medicine, and more especially State medicine, done for our national health and well-being? The whole civilized world is familiar with its beneficent and far-reaching effects in the prevention of disease.

Some people affect to scoff at vaccination. But did not Sir William Jenner sound the death knell of small-pox? And what of the work of the late Dr. Koch as regards his comma bacillus and cholera? Need I remind you of the relationship between the Klebs-Löffler bacillus and diphtheria, or of the connexion between the disease-carrying powers of the mosquito and malaria? What is being done daily in the splendidly equipped laboratories of this university with a view to the study of tropical diseases? And I do not require to recall to your minds the work of the late Professor Miller of Berlin and his study of the causes and pathology of dental caries. All this has been accomplished with a view to stamping out disease and the promotion of public health. And when we meet to discuss how to save the teeth of the children this is our object too. We want to anticipate and by early treatment prevent dental disease, and even more so the diseases caused by and secondary to it. So far, school dental clinics have done at least something towards the prevention of disease. Dyspepsia, anaemia, constipation, and general ill health are in many cases the result of diseased or defective teeth, and I have already made reference to the undoubted connexion between diseased teeth and consumption.

Now, in closing, just a word as to the Press and the dental education of the public. At the Birmingham Meeting of this Association last year I accused the Press of affording space for the publication of objectionable matter instead of utilizing their unique position to educate the public about their health. Mr. Editor replies, "My paper must pay"; and this is the explanation. But I must be just: for the *Liverpool Daily Post* and the *Liverpool Evening Express* have both rendered service by publishing educative articles, and thus both of these much appreciated papers have done something, though not nearly enough, towards the dental education of the people, and I should like to see other dailies follow their lead. Why cannot a man take up his pipe and his paper and learn how to keep his body healthy? What he does actually read too often is sordid detail in connexion with the latest divorce case.

My ideal newspaper is an *educative* newspaper. You ask what is my ideal dental clinic. It is one which of course must save the children's teeth in the first place, but I ask a lot more: I want to see dental clinics established in sufficient numbers in our large towns so as not only to cure dental disease, but to prevent the diseases resulting from it. Then it will be a case of State medicine and the profession of dentistry working hand in hand.

II.—J. Sim Wallace, M.D., D.Sc., L.D.S.,
Lecturer on Dental Surgery and Pathology, London Hospital.

In recent years it has been shown that there is no disease so prevalent as dental caries. There are few troubles of longer duration than are those of the teeth, for very frequently they begin in the cradle and only end with the grave. In addition to this it is recognized that dental ailments sooner or later give rise in some form or another to more or less serious maladies. Many widely different diseases, ranging, for example, from dento-alveolar abscess to cancer of the tongue, may result directly from diseased teeth, while those resulting indirectly know no limits. Furthermore, dental diseases frequently interfere with the normal development of the individual. This abnormal development naturally is most marked in the jaws, and it is safe to say that nine-tenths of the ugliness in the lower half of the face, which is so common at the present day, would straightway disappear were normal development not interfered with. The results of dental diseases are not always eradicable by medical treatment, and the amelioration of dento-facial ugliness is tedious, expensive, and most frequently not altogether satisfactory.

These are not the only reasons for directing attention to dental diseases in children. Not so many years ago dental diseases were supposed to be hereditary and practically unpreventable: now they are known to be almost invariably preventable, and the whole outlook on the means of prevention has accordingly been reconsidered. The foregoing considerations make the prevention of dental disease of primary importance, for if we prevent the diseases of the teeth, as we now know we can, many diseases, whether concomitant or consequent, will seldom occur, and the fabulous sums of money which are at present spent on their treatment may be used for far better purposes.

It is not my intention to go into the question at all fully as to how dental disease, and more especially dental caries, may be prevented. That is, perhaps, fairly well known to all who are engaged in the prevention of disease, and I have recently tried briefly, yet sufficiently, to explain this elsewhere.[1] Modern methods of preventing decay in teeth are based on a knowledge of the etiology of the disease. This has been very thoroughly studied, debated, and elucidated by the dental profession: but as a result of a disastrous omission from the medical curriculum, medical students are still kept in the most profound ignorance of the subject. It is now known that dental caries results from the undue lodgement of plaques of micro-organisms, together with fermentable carbohydrates, when the acid formed thereby is protected from the action of the saliva by the impermeability of the mass. This being so, we now recognize a new principle in dietetics—namely, that the food should be of such a nature, or the meals so arranged, that the mouth is left physiologically clean after food is eaten.

All animals, except those kept in captivity by man and subjected or restricted to unhygienic meals like children, have their teeth kept free from disease in this way, and no reasonable individual would say that the meals should be of such a nature or so arranged that the mouth will be kept in an unhygienic state. Yet this is what the dictates of those who have been teaching medical students dietetics have led to, and the deplorable result on the teeth is what no doubt compels this Section to seek to study the subject for itself, and see whether the remedy suggested by the dental profession is correct or not. Now the modern methods of prevention have been as astonishingly successful as the remedy is simple, and the parrot's cry that we will not get people to adopt it, is belied by the fact that we do get people to adopt it, and adopt it most willingly. Certainly, children are enthusiastic in its adoption, especially when fresh fruit after meals is supplied them. Moreover, they undoubtedly would prefer that the money, whether taken from the parents' pocket direct or extracted by the State, should be spent on fruit or some cleansing foodstuff, than that it should be spent on extracting, stopping, or regulating their teeth. In fact, after an experience of more than ten years of modern preventive methods, I can unhesitatingly say that the change to hygienic methods of feeding is welcomed by nine-tenths of the parents, as well as by a like number of the children, and were it not for the erroneous dictates which were established in ignorance of the principles referred to and preached with the assurance bred therefrom, two-thirds of the diseases of the teeth would rapidly vanish without further trouble.

Some of you may be somewhat incredulous, and at one time the great bulk of the dental profession was so, too; but even my claim that not only can caries be prevented, but that by modern methods it can be and has been arrested,[2] has not only been confirmed, but there is now little or no incredulity with regard to it at all. It is, indeed, recognized as obviously true, for it is seen that what takes place occasionally by chance can certainly at times be brought about by design now that we know the *rationale* of the prevention of the disease.

It may be said that modern preventive methods have been tried by set design only by the more intelligent and well-to-do classes, and it has been objected that the poor cannot afford to have their meals arranged in the simple but effective manner that has proved to be such a reliable method of preventing caries. Here it may be admitted that there will at first be some little difficulty. With the poor we can hardly hope to adopt the simple method of finishing a meal with a specially cleansing foodstuff as a routine procedure so long as it is regarded as expensive. Fortunately, however, the limitations which poverty itself enforces do also enforce to a certain extent hygienic foods and methods of feeding, and the fact that the very poorest children have more frequently good teeth than the richest indicates the truth of this assertion.

I would here like to refer to two of the main factors in the causation of dental diseases, and you will notice that the very poor are more generally likely to fare well than those better off. One of the factors in the etiology of caries is the pappy nature of the food which very young children are so frequently compelled to subsist upon. The soaking of bread in milk costs more than they can afford, and, moreover, the preparation of the pap is more troublesome than simply giving a young child a piece of bread to eat. The second point is that the very poor children have but few pennies to spend on sweets. This is an important matter, and, thanks to the excellent work of the medical officer of health for Salop, Dr. James Wheatley,[3] we are able to bring home this truth more effectually now than we ever were before. It is evident, from his statistics, that the eating of sweets by children is responsible for 50 per cent. of the decayed teeth in children at the present day. Think what this means. When accurate statistics have been taken, it has been shown that each school child has, on the average, some five to nine carious teeth. Let us put the average number at six; then a simple calculation leads us to the conclusion that there are some 21 million teeth in a state of ruin simply through eating sweets. It may be said that sugar is a cheap and excellent food for the poor. Statements of this kind are frequently even printed in medical books. But let us analyse the matter. Because of their poverty the poor cannot buy beef, mutton, and other foods of an albuminous nature, they are very largely compelled to get the protein they require from bread; in fact the poor live very largely on bread. For this reason they always tend to get a surfeit of carbohydrate if they get sufficient protein from this source. So we conclude that every penny spent on sugar as a food is practically wasted, or at least is only as justifiable as sending coal to Newcastle.

What is so often wanting in the diet of the very poor is sufficient protein, sufficient fat, and sufficient fresh vegetable juices, all of which are very helpful in keeping the teeth free from caries. But it may be said that our efforts in preventing children eating sweets will be of little avail. They certainly will be of little avail so long as the great authorities on dietetics are flooding the sources of information with reasons for regarding sugar as an important and inexpensive article of diet, ignoring at the same time its disastrous results and failing to indicate how sweets may be eaten without harm resulting. It is also difficult to prevent children after they reach school age from wasting their money on sweets if they have been brought up on pap, for pap-feeding causes a pathological craving for sweets. I have frequently called attention to the fact that children brought up on what we may call the physiological system have not got any marked liking for sugar; rather have they a marked liking for fish, flesh, fruit, and fat. In reference to this point Mr. George Thomson, in calling attention to the fact that the perverted taste for sweets was the cause of a great amount of dental caries, said, "Children who had been properly brought up did not naturally like sweet things, and he had abundant evidence on that point from all parts of the world."[4]

I need not pursue this part of the subject further. Suffice it to say that there are two things required to be done: (1) The fountains of erroneous dictates have got to be dried up; (2) the truth has to be brought home to parents with regard to the proper feeding of children, more especially during the first few years of life. Medical officers of health are in a far better position to do this than dentists, and until it is done the problem of the prevention or treatment of dental disease is utterly hopeless.

Now let us consider the treatment of dental disease in children. Together with the inculcation of true methods of prevention this is very desirable, but treatment is frequently advocated without any regard to prevention beyond toothbrush drill, and few seem to have realized how futile and expensive such a method of procedure is. Roughly speaking, we may calculate that there are some seven million children in Britain between the ages of 3 and 15 who require dental treatment. It is safe to say that on the average six teeth are carious in each child; in addition to this 50 per cent. of these children have their teeth crowded and irregular. Let us assume that it were possible by some prodigious effort to call into existence a sufficient number of dentists qualified to do the work efficiently—that is to say, to restore the teeth, and not simply to mutilate the dental arch by extracting them. Let it further be assumed that it were possible for these dentists to put every child's mouth into thorough repair within three years; we may as well give them three

years to do the work, because even first-rate operators sometimes take a year or two to complete the regulation of the teeth of a child, and it is important that the efficient regulation of teeth should be done, because if it is not throughout life there will be a distinct predisposition to dental caries, oral sepsis, and in later life pyorrhœa alveolaris. Let us assume that all this can be done for £1 per head; that is, 6s. 8d. per annum per child for the first three years—and this is a ridiculously low estimate if the work is to be done fairly thoroughly—then in three years there will have been an expenditure of some £7,000,000. As, when dental treatment is performed without modern preventive measures being taken, 75 per cent. of children require retreatment at the end of one year, at the end of three years, then, the treatment will all require to be recommenced and approximately the same amount voted to be uselessly thrown away, and so on *ad infinitum*. Here let me say that you may bemoan the cost of dental operations. You may, perhaps, get them done, in a way, on the cheap. But I venture to think it will be found that cheap dentistry is painfully dear in the long run.

In the past the well-to-do have chosen to go in for this method of procedure—that is to say, treatment *plus* the toothbrush—but there is no indication that dental disease among the well-to-do has been appreciably reduced. It is certainly not claimed that each successive generation is freer from dental disease because in each successive generation the treatment has been more thoroughly performed and the toothbrush more rigorously insisted upon. Correspondingly there is no evidence that the expenditure on dental treatment in the upper classes has been decreasing. The difficulty, if not impossibility, of raising the funds necessary for treatment has led some to fold their arms and do nothing, but in so doing they are doing a grievous wrong. It is the duty of at least a certain branch of the medical profession to do what they can to *prevent* diseases, and because the treatment of dental diseases cannot be undertaken as fully as they would like, this is no excuse for neglecting their opportunities in the way of prevention. Moreover, it is contended, and with truth, that it is only by prevention that the problem of the eradication of dental disease can be hoped for. Without expense the campaign for the prevention of dental diseases in children may at once be undertaken by medical officers of health. At one time I thought it would be advisable to have some one with expert knowledge of the means of preventing the diseases of the teeth to supervise the dental reports of school and health medical officers, but so long as such men as Dr. Newsholme and Sir George Newman are at the heads of their respective departments this seems unnecessary. To all intents and purposes, then, the knowledge and machinery already exists which is requisite for the prevention of dental disease, and were it not that many medical men regard the diseases of the teeth not as diseases in themselves of appreciable consequence, but rather as a source of originating disease, preventive measures would have been instituted years ago. But now that it is recognized by medical officers of health that "dental caries must be considered as an outward and visible sign of methods of living which produce other and greater harm," such an attitude can no longer be maintained. Gentlemen, some are born great, some achieve greatness, and some have greatness thrust upon them. The State Medical Service was born great because it was born of the idea of prevention. This service will certainly achieve greatness by the work it is doing, and will do, in preventing dental diseases. Assuredly it should not wait till this crowning achievement is thrust upon it. One thing is certain—the greatest triumph of preventive medicine will be in preventing dental and concomitant and consequent diseases, for this includes more than half of the diseases from which man suffers; and though dentists may derive some satisfaction from having elucidated the means of prevention and from having initiated the movement, yet the honour of making the campaign a brilliant and complete success will undoubtedly rest with the medical officers of health of Great Britain.

REFERENCES.

[1] *The Prevention of Dental Caries*, second edition, 1912. [2] Premier Congrès Français de Stomatologie, 1937. [3] Fourth Annual Report of the School Medical Officer to the Education Committee of the Salop County Council. [4] *British Dental Journal*, July 15th, 1912.

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DISCUSSION.

Dr. J. J. Buchan (M.O.H., St. Helens) said that his own personal feeling in the matter was that the view that Dr. Sim Wallace put before them was the correct one. It was futile to expect that the end they wished to attain could be attained by conservative dentistry; it was hopeless, by treatment and retreatment of decayed teeth among children, to deal with the subject of dental disease. The amount of decay in the teeth of children was enormous, and if they allowed the present conditions to continue they would have to face the same difficulty. He could conceive of no sanitary authority being willing to take on treatment on the lines of conservative dentistry. Dr. Sim Wallace had put forward the idea that carbohydrate feeding was the main element in the causation of these diseases. He was not prepared wholly to accept Dr. Wallace's conclusions at present, but in his opinion they were justified in endeavouring to educate the public as to the danger of soft foodstuffs; but the whole subject had not yet been thoroughly worked out.

Dr. J. S. Mackintosh (London) said that the problem lay in a nutshell. In the days when we lived, as a nation, on the products of the land, foodstuffs were of such a simple nature as to require proper mastication, and, in his opinion, the amount of dental disease was due to the change in our national habits as to food.

Dr. F. E. Wynne (Wigan) said that, accepting Dr. Sim Wallace's point of view, it seemed that dental caries was brought down to the underlying cause of all disease—namely, poverty. He would be glad to have suggestions from Dr. Wallace as to how medical officers of health were to improve the diet of the poor in this direction. He himself had not much faith in the possibility of the medical officers of health educating the poorer classes. He intended to confer with the Director of Education in his district as to some means of altering the diet of the children whom they had to feed, and would like to know how they were to get the mothers of the slum population to give the right kind of food to their children. In his opinion the greatest measure for the public health which could be adopted would be a general increase in wages all round.

Dr. Chalmers (President), in closing the discussion, remarked on the danger of artificially prepared foods. Another aspect of the case that occurred to him was that modern novelists were very much to blame for having popularized the idea of good old people going about giving bags of sweets to children, and he thought they ought to cease writing up the value of sugar as a means of pleasing children.

DISCUSSION ON ISOLATION IN SCARLET FEVER.

OPENING PAPER.

By C. H. Phillips, M.D.Durh.,

Medical Superintendent, Stoke Isolation Hospital.

There are three points in the isolation of scarlatina to which I wish to direct your attention and to invite an expression of opinion:

1. Are our hospitals as at present constructed the most suitable buildings for dealing with the disease?
2. Is the period of isolation at present adopted too long?
3. Is it not better to adopt more open-air treatment in dealing with the disease?

Upon the first question I have very decided ideas. Considering that isolation hospitals have been in existence over thirty years, the results expected from them have not been obtained. When first instituted it was confidently expected that by their means this disease would be brought under control, and might possibly become extinct—just as smallpox has become controlled by vaccination; but the number of isolation hospitals erected throughout the country shows that these expectations have not been fulfilled, more especially as they are continually having to be enlarged for increased numbers—and one wonders why this state of

affairs exists. Is it that the disease is one that is better dealt with at home and not requiring isolation, or is it that there is some defect in the construction of our hospitals? I am of opinion that the latter reason is the true one; and until we cease to mass the patients together in large wards and begin to classify and segregate each patient, so long will our hospitals prove a failure, no matter how well ventilated the large wards, with a disease like scarlatina. Where the germs of disease are practically living in the respiratory passages and given off by every breath, patients must of necessity infect each other and mild cases become contaminated with severe cases and complications of all sorts arise.

Isolation hospitals have been earning for themselves very unenviable names owing to this, and it is a condition of things that need not exist if the proper steps are taken. Each patient should be treated as likely to be dangerous to his neighbour, and properly and thoroughly isolated. Then all fear of cross infection ceases, and mild cases can be more readily discharged from hospital and the cost of maintenance lessened. In erecting suitable buildings to carry out this individual isolation the initial outlay may be greater, but the saving on the cost per head for maintenance on each patient and the shorter duration in hospital would pay for this extra outlay.

My second point: Is the period of detention in hospital too long? The answer is that in all mild and uncomplicated cases (that is, having no discharges), four weeks in hospital is quite long enough, and waiting until all desquamation ceases is not required. If the proper and suitable provision has been made for isolating patients and treatment given from commencement to throat and nose and skin of a sufficient character to ensure thorough disinfection of these parts, then the latter stages of desquamation may safely be disregarded.

I do not claim any originality on this question of shortening the period of isolation, but have seen the ill effects and difficulties produced by large crowded wards in my own hospital. By "crowded" I mean two beds in buildings which were meant to have only one and air space per bed limited. I made inquiries from medical superintendents of isolation hospitals throughout Great Britain as to the views held in each hospital on the question of limiting the stay in mild cases. Fifty institutions were communicated with. Twenty-three took no notice of the request. I collected and tabulated the opinions from twenty-seven institutions.

The most pronounced opinion is one given by Dr. Milne, of Dr. Barnardo's Homes, in which he states:

> I do not isolate any cases in any way; they are kept in the general wards of the hospitals, side by side with serious operations, and in the dormitories along with other healthy children; also I do not isolate measles or diphtheria, but rely entirely for scarlatina patients upon treatment by swabbing the throat with 10 per cent. of carbolic oil, and rubbing body all over with pure eucalyptus oil. And I get no return cases, although the children go back to school in ten days.

Dr. Lauder, M.O.H. of Southampton, considers the subject of much medical and public importance, although the conclusions he arrived at are not altogether in accordance with those usually accepted. In an address which was given to the medical men at Southampton in 1904, he pointed out that return cases are not attributable to the peeling condition of the patient, as generally concluded, but to the undetected discharges from mouth, throat, nose, and ears. He bases these remarks on the fact that neither prolonged stay in hospital nor absence of desquamation assist in preventing return cases.

His suggested remedy is the segregation of mild and [illegible] (free from complication) at the end of three weeks, bathe daily, douche throat daily, pass through out bathing station, and todischarge at the end of the fourth week, no matter what the condition with regard to peeling. He also states that further benefit would result from the [illegible] intimed separation of each individual case. His statistics show that mild cases average twenty-eight [illegible], and complicated cases fifty days. Dr. Moore, of Huddersfield, states that in advancing the theory that desquamation may be disregarded as evidence of the infectivity of persons convalescent from scarlatina it is necessary to define what is meant. Particles of epithelium exfoliated from the bodies of persons suffering from an infectious disease, during the infectivity thereof, of course are infectious, just as are all articles of underclothing and bedclothing with which the patient is in contact; but in like manner as these articles may be disinfected when the acute stage of the disease has passed away, so may be disinfected the peeling skin. It is not beyond the resources of medicine to disinfect the surface of the body for practical purposes—that is, the surgeon's idea of absolutely aseptic hands.

Desquamation continues long after convalescence has been completely established and temperature normal for weeks. The infectivity of scarlatina begins before desquamation commences, and may continue long after the process is completed—evidence that it is not essentially associated therewith but independent—that both are mutually independent. Huddersfield's period of isolation is twenty-nine days under the new system; previously the average was 44.3 days.

From sixteen hospitals replies were received to the effect that they could produce no definite evidence that desquamation *per se* was a source of infection, and that too much importance in the past had been attached to desquamation as a source of infection, and that experience did not support the popular view that a desquamating patient was necessarily an infective one.

From five hospitals the replies were of a less definite nature.

Six hospitals still believe in desquamative infection.

The medical superintendent of the Eastern Fever Hospital, Metropolitan Asylums Board, states: "I have been discharging patients while they are still desquamating since the beginning of 1903. Complicated cases and severe cases are seldom fit to leave hospital so soon, but I am certainly prepared to recommend other authorities to sanction the discharge of mild uncomplicated cases at the end of four weeks."

Amongst the six hospitals which still believe desquamation infectious, five have schools of medicine attached to them. Is it not desirable that a systematic attempt should be made at some of these larger institutions to ascertain whether it is not possible to make a reduction in the period of isolation of scarlatina patients? Individual towns have found it a success, why not the towns where universities and schools of medicine exist?

Difficulties will be met with in adopting this limited period of isolation, and will arise chiefly from the views held by the medical profession, who are always reluctant and unwilling to accept any innovation, and until the bulk of the profession can agree to give this system a trial it will be difficult to carry out. The medical profession will have to be relied upon to help to educate the minds of the laity to accept this change of opinion.

Dr. Caiger, who is the writer of the article upon scarlatina in Allbutt's *System of Medicine*, latest edition, on p. 418 states, "Of recent years the infectivity of the cuticle in the later stages of scarlatinal peeling has been seriously questioned, and it is now the common practice of many physicians, whose wide experience entitles them to be heard, practically to ignore the peeling in its later stages and to discharge patients fit in other respects quite irrespective of its progress; and it is probable that for the majority of scarlatinal patients a six weeks' isolation is quite unnecessary, and might be curtailed by one or two weeks."

An expression of opinion like this, coming from a writer of note, is one that might be followed out. If it is possible to reduce the period of isolation, it is certainly a step which ought to be taken in hand at once, both on the patient's account and also on account of the costliness of the longer period of isolation. To bring about this change it may be necessary to make some structural alterations in present buildings, but the cost of this would be met by the lessened cost of maintaining patients. One question to be borne in mind is that the work must be done thoroughly to ensure that return cases are not increased. The system that appears to be most likely to give success is the classifying of cases, and segregating in buildings specially kept for each form of the disease. To the lay mind—and, unfortunately, to the mind of many medical men—scarlatina is a simple disease, which is shown by a little fever, sore throat, and a rash, and runs a definite course of a few days, then peeling, and the patient ought to be quite well. This unfortunately is not the experience of medical superintendents of isolation hospitals, and whether it is that

cases sent into isolation hospitals differ in severity from those kept at home, or whether it is that cases sent in are made worse by being brought into wards which are entirely given up to the treatment of scarlatina, there is the fact that cases sent into hospital differ greatly in severity in many cases, and have frequently some of the symptoms greatly exaggerated, and hence it becomes necessary that a strict division and classification of cases should be carried out—otherwise a mild case may contract some further exaggeration of one or other symptom, especially of throat or nose, and thus unduly prolong the stay in hospital.

A still further need for separate wards for segregation of cases arises from the fact that in most isolation hospitals there are times when doubtful cases are sent in, which afterwards take on scarlatina. All this may appear outside the question of limiting the period of isolation; but I do not consider it so. It is both essential and important that more attention should be given to the classification and separation of all these different cases, and it then becomes possible to keep those that are really only mild cases free from contracting any further form of the disease, and by so doing enable them to be discharged earlier.

If the system of dividing the wards by glass partitions s carried out, giving each bed its own proper amount of air space, the cubicles can easily be thoroughly stoved after the discharge of each patient and kept in proper sanitary condition—a thing impossible in large wards, except at stated intervals.

I agree with the opinions of medical men, whose names I have mentioned, that with isolation properly carried out and suitable treatment given in the early stages of the disease, it is quite possible to allow patients out at the end of four weeks, and that the source of infection does not exist in the desquamating cuticle, but in the discharges from throat and nose, and that it is quite possible to turn out patients free from any infection in either of the two parts last mentioned. But to ensure this there must be greater purity of atmosphere in the wards, and no overcrowding, and more systematic segregation, and more open-air treatment.

Through overcrowding at the hospital of which I have charge, 1,350 patients were sent for convalescence to an empty small-pox hospital, with iron pavilions, in which the air space per bed was limited—not more than 750 ft. The patients practically lived an outdoor life. Sent at the end of the third week, they remained until discharged.

Complications arose in about 1½ per cent. of cases, from want of air space, and earth closets. These cases were returned to the first hospital. There was one death only, and the remainder of the cases did well. And in these cases I do not hesitate to say that they might all have been discharged at the end of the fourth week, but for the unfortunate belief that the desquamating skin was infectious. If they had been discharged at the end of the fourth week the saving to the rates would have been very great.

My third point is a plea for the trial of more outdoor treatment of cases of scarlatina after three weeks of isolation, and where there are no complications. If the patients are warmly clad, I consider that the more time they spend out of doors—either winter or summer, when the weather is fine—the better recovery they make. This has been my experience.

I will conclude my paper—which may contain nothing new to you—by stating that I consider the subject one of much medical and public importance; hence my bringing it before your notice.

DISCUSSION.

Dr. Leslie Rundle (Liverpool) dwelt on the importance of treating infectious diseases aseptically. He said that during the last two and a half years he had treated 900 patients at Fazakerley, and had only had two cases of cross infection, both being cases of scarlet fever. He was accustomed to treat several different kinds of infectious disease in the same ward, and the question might be asked, If all these cases can be treated in one ward, why should they not be treated at home? There could be no doubt, in the light of modern research, that infectious diseases were spread by contact infection, by which he meant any means which involved the transfer of moist particles from one individual to another. He preferred not to multiply wards, and considered that his method of treatment necessitated a very high quality of trained nursing, which could not be expected from a mother nursing her child at home. With regard to fresh air treatment of infectious diseases, he quite agreed with Dr. Phillips's views, and was in the habit of treating scarlet fever in a similar way to tuberculous cases. In his opinion Dr. Milne's home treatment by inunction and throat swabbing was now discredited. He did not believe that the isolation of scarlet fever had proved an absolute failure.

Dr. John Mulvany (Portsmouth) believed it was not desirable in the public interest to extend the accommodation for scarlet fever patients. For the past thirty years vast sums of money had been expended by urban authorities in building isolation hospitals, and yet the disease had not been lessened. He suggested that fully 40 per cent. of cases could be treated quite as well at home; he would reserve isolation hospitals for the children of the poor, particularly those who lived in houses where little means existed for taking aseptic precautions and where sanitary conditions were not conducive to good health.

Dr. John M. Day (Dublin) pointed out that the poison of scarlet fever in 99 per cent. of cases entered by the throat and developed there, and till the throat was quite healthy again the patient was not free from infection; he therefore recommended the removal of enlarged tonsils in convalescent cases before discharge, otherwise he would not guarantee the patient to be free from infection. He was strongly in favour of convalescent homes in the country for scarlet fever. He did not agree with Dr. Rundle's method of treating cases of scarlet fever, measles, etc., in one large ward, but preferred putting different diseases into several small wards. He considered it was quite easy for one nurse to look after more than one small ward, and that there was no risk of cross infection if she used antiseptic precautions. Return cases were often due, in his opinion, to mild cases not sent into hospital, or to clothes put by and not disinfected until the child was ready to leave hospital. He contended that no child should be discharged direct from a scarlatina ward unless the case could be isolated at home.

The President remarked that this question of isolation in scarlet fever was a most important one. Theoretically, one might handle scarlet fever in any way one liked, but practically it could only be handled aseptically. The aseptic method of carrying this out could be done in most private houses, and treatment of scarlet fever was apparently successful, whether one agreed with Dr. Milne or with Dr. Rundle. He thought one of the errors of the Local Government Board was that they laid more emphasis upon the provision of cubic space than on that of floor space in hospitals, but, in his opinion, as the gunner liked to have plenty of space to work his guns, so in dealing with scarlet fever it was more important to have plenty of floor space round their beds than to have cubic space. He regarded desquamation as at least a potential source of infection in scarlet fever.

VISUAL DEFECTS IN CHILDREN:

THEIR MANAGEMENT UNDER MEDICAL INSPECTION.

By A. A. Bradburne, F.R.C.S.Edin.,
Manchester.

The advent of the Medical Inspection Act has brought many problems in its train connected with the management of adolescence. Not the least of such problems pertains to affections of the visual organs. The treatment of ophthalmic affections has for generations past been held to be a branch of medicine which entails special training and experience, and from the nature of the work is reserved for the sphere of the specialist.

Under the scheme of medical inspection inroads are being made into this sphere by men who have at the same time to be well versed in other branches of medicine. It is therefore important, in the interests of inspectors and inspected, that the limits to such inroads should be clearly

defined and recognized. The aim of the Act is, I take it, to first of all detect errors, and secondly to see that they are corrected. From this we are not to infer that both duties are to be carried out by the same individual, as some authorities seem inclined to think. The management of eye cases under the Act should be limited to detection of the common ailments and errors of vision, and only under very special and limited circumstances should attempts at their rectification be asked for or permitted.

The usually adopted method for detection of the visual errors consists in testing the ability to read certain sized letters at some specified distance. Some authorities go further than this and insist on their inspectors possessing sufficient knowledge to correct the visual errors by prescribing glasses.

Both methods are open to objections and criticism. In the first place, inspection dependent upon the ability to read letters or symbols, though a useful measure, is of little value when unsupported by other corroborative means. The child under examination may be nervous, ignorant, or wayward; the letters soon get dirty and discoloured; I have seen them even of a yellowish-brown shade. Again, the source of illumination varies at different schools and according to the time of day or the season of the year, and some letters are more easily read and memorized than others. It is obvious that for any scientific value such tests are absolutely untrustworthy.

The test to be of any value should have the letters printed on a clean white non-reflecting paper, and framed and glazed so as to remain clean. To prevent memorizing, the board should be reversible, having another set on the other side, and it should also be provided with its own illuminant, so that the light standard should be a constant one. The test, however, has one very grave defect which in itself condemns it, and that is, it passes over without detection cases of incipient short sight.

To carry out visual inspection efficiently there is no better method than that which skiascopy affords; the letter test would then be used solely as a means of settling in certain cases whether glasses could be dispensed with, and as to the correctness of those ordered. The shadow test furnishes us with not only a thoroughly reliable, but, with a little practice, a quick and accurate method of determining the nature of the case. It at once detects short sight, spasm of accommodation, reveals promptly the "bar" indicative of astigmatism, the faceted cornea, for which glasses are generally useless, and hence forms a great time saver. It reveals by the slow dragging movement of the shadow high degrees of long sight, and with practice even low degrees can be quickly discovered. It further, by the position of the "corneal reflex," detects want of parallelism of the optic axes such as occurs in squint and latent divergence or convergence.

To obtain the best results the flat mirror is far better than the concave, and the sight hole should be at least 5 mm. in diameter. This method, it is true, necessitates the employment of a darkened room, but with very little difficulty this can generally be obtained in most schools. A portable Argand burner is the most convenient means of obtaining an illuminant.

The medical inspection as regards a child's eyes should consist of, first, an examination in good daylight of the external condition of the eyes; then the letter test should be made under the conditions laid down; and, finally, the eye should be examined by means of the mirror test. At this latter we should reject at once for further examination all cases which show a shadow which moves in an opposite direction to that of the mirror, all cases which show the "bar" of astigmatism, and all cases in which there is any slowing of the mirror movement. When, however, these errors are present in one eye only, the fellow possessing normal vision, I am inclined to think that in many cases we are justified in leaving them alone. This exception does not apply to cases which show a reversal of the shadow, for all such require attention from the fact that the condition may progress. It must be remembered that glasses for the great majority of the children attending the board schools are likely to become an impediment to future employment, and are a constant drain on the [illegible]

[illegible] must always be kept in mind, and in a child who has one normal eye and one with a high refractive error, it is a very open question whether glasses should be ordered at all.

If you give them under such circumstances to young children, you tend to awaken the faculty of binocular vision, which condemns the wearer to use them for the rest of his life. Further, it must not be forgotten that when the faulty eye wears a high correcting cylinder, a strain is thrown on the oblique muscles if the two eyes are to work in complete unison. If binocular vision do not ensue, the only advantage obtained is the prevention of the onset of a "non-use" of the eye developing, which is unlikely, as by the age of six this has, or has not, occurred.

After the nature of the refraction has been ascertained by the mirror test, the question arises as to the standard of vision which would justify us in not ordering glasses. This question cannot be answered definitely, as so much depends upon the "status" of the child; if poor and likely to remain one of the labouring classes, a standard of as low as $\frac{1}{3}$ vision might be allowed to pass unglassed, provided, of course, that the case be not one of short sight. If, however, a clerkship or similar calling form the future outlook, it would be necessary to raise the standard to at least $\frac{6}{9}$ in one eye and $\frac{6}{6}$ in the other.

Cases of astigmatism come under a different category; it is advisable to correct all cases in which the axis of the astigmatism in one or both eyes is oblique, or when it varies in direction in either eye, or when present in one eye and not in the other. The reason for this is the strain which oblique astigmatism makes on the obliques in the interests of binocular vision. Low degrees of astigmatism when at right angles would probably pass the test by the letters, and unless giving rise to symptoms need not be corrected. If symptoms arise they must not be sought for in the eyes alone, but in the effects on the general health and the progress which the child makes at his lessons. A weak, anaemic child, or a mentally backward one, becomes wonderfully transformed when small degrees of astigmatism are properly corrected.

I have said that all cases showing a "myopic" shadow should be refracted under a mydriatic. This will result in many cases of apparent short sight turning out to be "spasm of accommodation"—that is, low degrees of long sight. Now such cases will require glasses for a year or two, not only to prevent the recurrence of the spasm but to lessen the excess of convergence which tends to produce a lengthening of the eyeball when the tunics are at all weak, thus setting up short sight. For the same reason the low spherical error which accompanies compound astigmatism should be also fully corrected to prevent the case developing into one of mixed astigmatism.

Every short-sighted case requires to be fully corrected, and, what is still more important, should be re-examined again in six months' time to ascertain if the case be progressing. If no change be found at the re-examination, the next need only be after an interval of twelve months, which should be repeated yearly for at least three years. Any alteration calls for re-examination in six months. The prescribing of glasses does not end the management of these cases; it is the duty of the inspector to see for himself that the position of the child's desk is at a proper height, that the light is good, the print of the books large and clear, and the general health of each child should be made the special care of the family medical attendant.

I have pointed out that management of eye cases under the Act consists in detection of visual defects and the adoption of appropriate measures for their rectification. This does not entail, as some authorities seem to think, the right to treat them themselves, or, on the other hand, to flood the out-patient department of the hospitals. Many authorities now are adopting the intermediate and wiser plan of employing a part-time specialist, leaving those requiring hospital treatment to attend such places, and placing the simpler cases under the management of the inspectors themselves to deal with. It is this latter aspect of the case which requires consideration—that is, how far is the medical inspector justified in undertaking the treatment of the eye cases he meets with?

Several factors determine the answer to this question, such as the degree of skill and experience of the inspector, the nature of the defect, the amount of time which can be devoted to the work, and the means at his disposal for obtaining more skilled advice. At some schools the

inspectors are expected to prescribe glasses in the course of the rounds at the schools. My own experience of the difficulties associated with the performance of such work, the attendant noises of the teaching going on in the class-rooms, the poorly-lighted stuffy rooms which one has to make shift with for dark rooms, etc., make one hesitate to believe that accurate refraction is possible under such circumstances.

If, from force of circumstances, such as the distance from a local special hospital, the work has to be done, then a special room at specified hours, with leisure to work, should always be insisted upon. Even then there are limits to the work which ought to be justifiably undertaken. The inspector must necessarily be fairly skilled in refraction, and he should only prescribe glasses with which he can obtain normal vision after the mydriatic has passed off.

To this rule there should be no exception. One of the difficulties which crops up in doing refraction work is the use of a mydriatic. Some inspectors instil homatropine and send the children on or refract them the same day. This, to my mind, is absolutely useless. Atropine, in the form of the ointment, is the only reliable method, and this will produce fallacies unless used for at least four or five days three times a day previously.

The subject of the management of visual defects in children includes also the management of the parents, and in many cases it forms a great obstacle. Parental obtuseness arises from prejudice to the wearing of glasses, and objection to interference between them and their children; many consider it a personal slight that any defect should even be suspected in their offspring. Tact and explanatory talk will conquer the majority, but there will always remain a certain number of parents upon whom no argument will prevail, and unless they are confronted with the majesty of the law to compel them the child will become incapacitated or even suffer damage. This is now at the disposal of the education authorities, and it ought to be enforced to the advantage of the children, and the institution of proceedings in a few cases would soon have the effect of showing that the authorities were not to be trifled with. Unfortunately there are some Education Committees who fail to do this, and by so acting are neglecting the duty they owe to the next generation and to the medical men who work under them. The supineness of some bodies has been attributed to the fear of the "vote factor." Personally one can scarcely believe that any right-minded body of men would allow themselves to be biassed by so low a motive. In this brief summary of the subject many other points, I realize, have been omitted, but the majority pertain to the purely technical side of the subject, which calls for consideration by other sections of the profession. One point there is, however, to which I feel I ought to allude, and that is, Why should the benefits which inspection so obviously affords to the youth of this country be limited to the class who attend our board schools? Surely, if efficient vision is necessary to members of the working classes, it is doubly so to those who attend our private schools, where the scholars have to live and learn and become far more dependent on good eyesight than those of any other class. If inspection is compulsory in one class, it ought to be made compulsory for every child, no matter what his station or that of the parents is.

DISCUSSION ON ADMINISTRATIVE MEASURES CONSEQUENT UPON THE COMPULSORY NOTIFICATION OF PHTHISIS.

OPENING PAPERS.

I.—John C. McVail, M.D., LL.D.

It has taken thirty years for Koch's discovery of the bacillus of tuberculosis to yield the fruit of compulsory notification of phthisis, and the object of our discussion is to determine how notification can be best used, alike for the welfare of the infected person and for the protection of those who are exposed to serious danger, whether due to hereditary tendency, or to conditions of life, or to both.

It should be noted that this is not a discussion regarding sanatorium benefit or the Insurance Act, notification of phthisis being independent of that Act. Compulsory notification is a means to an end; it is never an end in itself. Notification will of course be made to the medical officer of health. How is he to exert the powers conferred by the Public Health Acts? In ascertaining the facts of each case it will be very desirable that he shall have before him a good deal more information than is furnished in an ordinary notification certificate. That should be obtainable, under proper terms and conditions, from the medical attendant when there is one. Assuming he has this information, it will be the duty of the medical officer to advise the local authority as to what shall be done with the case.

There are a number of alternatives. The patient may go to a sanatorium, a hospital, or a home; he may be treated in a shelter in a garden at his own home, or be sent into the country to friends where home treatment would be carried out. In making a choice between these alternatives the decision will depend on facts relating to the patient, the household, the house, the available nursing, and the cost. Phthisis is different from all other infectious diseases. In scarlet fever or diphtheria there is usually no hesitation in sending to hospital a patient who is fit for removal, because it is known that he will be out again in six or eight weeks; but in regard to phthisis the feelings of the individual and his friends have to be considered within reasonable limits in determining what is to be done with him. It is one thing to order isolation for a few weeks, and quite another to compel a father or mother to go to a hospital for months with no hope of recovery. Human affections have to be considered.

Another set of facts to be borne in mind will be those relating to the household—that is, to the contacts; their condition as to health, any hereditary tuberculous tendency that may exist, and the family income. The possibility of the patient being kept at home will be considered, and in that connexion one question will be whether he is an insured person entitled to 10s. sick benefit and 5s. disablement benefit afterwards. One assumes that the medical officer of health will want to know the condition of every person in the house, and his measures will depend to some extent upon that. Facts relating to the house itself are important—whether the patient can have a room to himself, or a bed to himself; whether the house is properly ventilated and clean; whether those at home can be trusted to give attention to the patient; the possibilities of nursing—all these details will come up for review. The local authority will have to look to the question of cost, and whether institutions are available—whether a sanatorium exists for cases likely to recover, and an isolation hospital for cases where the risk is to the family. Naturally the cost of removal to an institution will be less when the local authority owns it than when it has to arrange for a weekly payment per case to an outside institution.

In connexion with cost the question will arise of the treatment of the patient at home. This will bring public health authorities face to face with problems that have hardly been before them in the past. In Scotland they have normally confined themselves to the treatment in institutions of suitable cases of infectious disease. Now they will have to consider the question whether they are prepared to pay for treatment of tuberculosis in non-insured persons at home. In my experience they have not given home treatment in scarlet fever or diphtheria or any other infectious disease. But phthisis having been made a notifiable disease, the duty of the public health authority with regard to its control in non-insured persons will be no less onerous than the duty of the Insurance Committees with regard to insured persons. Assuming the number of insured persons suffering from phthisis to be one third of the total, the public health authority will have the other two-thirds to deal with. This at once brings us to the interim report of the Departmental Committee on Tuberculosis, and to the subject of the tuberculosis dispensary and tuberculosis officer. The tuberculosis officer and his staff will have relation not merely to insured persons, but to the whole tuberculous community. The relationship of the Insurance Act to this problem is, briefly, twofold—the Act devotes 1½ millions to sanatoriums, but this grant is in no way confined to insured

persons. The Astor report did not contemplate that the money would be devoted to providing the whole of the cost of institutions, but only, perhaps, three-fifths of the cost per bed. The other factor is the accumulation of 1s. 3d. per annum in respect of every insured person, for administration of sanatorium benefit. This will provide £1,250 per annum for every 20,000 of the insured population. The Insurance Act does something else. A penny per insured person is set aside for research; this will yield about £50,000 or £60,000 per annum, and it will be, I believe, a most valuable aid in the crusade against consumption. Research in the past has not been much encouraged in this country. If a man devotes himself to research in the engineering laboratory he has his reward in the profit that will come to him from a valuable patent, but in the case of medical research the public gets the benefit right away, and the investigator gets little directly.

The Housing Act is a very valuable factor amongst the agencies available for fighting tuberculosis. The Act contains two important sections in this connexion. One is Section 17, which deals with closure of houses; the other is Section 15, which deals with renovation of defective houses not so bad as to require closure. It is the duty of the local authority to examine every working-class house. If there are defects, the owner is to have the opportunity of remedying them, but, if he does not, the local authority is to proceed forthwith, charging the cost against the property. It is empowered to collect the rent for several years to recoup itself for the expenditure.

There is thus a combination of forces attempting to attack tuberculosis in a way it has never been attacked before. One factor is still wanting, and that is legislation with regard to milk, but it is hoped that this will not be long delayed.

II.—James Niven, M.A., M.B.,

M.O.H., Manchester.

By successive orders of the Local Government Board tuberculosis of the lung has been made compulsorily notifiable to medical officers of health, first, when coming to the notice of any medical officer of the Poor Law, then when recognized at a public voluntary institution, and finally, in 1912, when coming to the notice of any medical practitioner. The disease has been definitely declared to be infectious, and the medical officer of health is required to inquire into each individual case notified. Ample powers are given by these orders to local authorities to give to such cases any assistance and materials which their illness may require.

How far the instructions of the Local Government Board are being generally carried out I have no means of knowing. But it would appear from the National Insurance Act (1911) that Parliament does not rely upon all local authorities to carry out unaided the necessary measures of inquiry, treatment, and prevention. For under that Act and the Finance Act (1911) provision is made of £1,500,000 to aid in the construction of sanatoriums for the purposes of such treatment, while a sum estimated at £880,000 is reserved from the insurance funds for the treatment of insured persons and their dependants (sanatorium benefit). This provision should give a powerful impetus to local authorities to take active measures for the reduction of tuberculosis, and no doubt will do so. A Special Committee was appointed on February 22nd, 1912, to report to the Chancellor of the Exchequer on the best mode of expending these sums of money, and more generally on the measures of prevention and treatment required. In this report it is taken for granted that certain measures of precaution will be taken by public health authorities, and it is proposed to establish two new units—the dispensary and the sanatorium. As regards the dispensary, it is necessary to say that, while it is expected to discharge important clinical functions, it is also credited with etiological inquiries which are now discharged by [illegible] officers, and which should be generally [illegible]. Nevertheless, it is possible that in [illegible] will be found necessary that etiological [illegible] to the officers of the dispensary [illegible]. There is to be one dispensary in [illegible] to 200,000 of the population. A [illegible] is to be appointed in connexion with the dispensary, who is to be independent of any other medical man in clinical matters. He will advise local Insurance Committees as to the distribution of sanatorium benefit. The medical officers of sanatoriums are also to have a voice in regard to cases sent to them.

If this proposal is carried out in its entirety, the medical officer of health will have no voice in determining the suitability of cases for institutional treatment, whether insured or not insured. It is expected, however, that a certain amount of elasticity will be observed in regard to the schemes put forward for different localities.

It is not needful to spend time in discussing the details of this report, which all of you have read, no doubt. It is, however, desirable and even necessary to consider the object at which we are all aiming, namely, the suppression of tuberculosis. Public health officers recognize generally the infectious nature of the disease, and the conditions under which it spreads most easily. Such conditions comprise occupations specially injurious to the lungs, as well as those which inflict a severe strain on the constitution generally; feebleness of constitution and previous illnesses; the effects of personal habits; overcrowding; dwellings damp, dark, dirty, or defective in movement of air; exposure to repeated infections; insufficiency of food and clothing.

When a case of tuberculosis is notified to the medical officer of health it is his duty to ascertain these injurious conditions so that they may be as far as practicable removed. He must also ascertain the condition of health of other members of the family, and see that those requiring medical treatment receive it. It is his business to get in touch with persons having suspicious illnesses who have been in intimate contact with the notified case before and after his illness developed. It is eminently his business to determine in what cases removal to an institution is urgent and in what cases it is not urgent, so far as the prevention of infection is concerned. He sees that personal instructions are given with a view to the prevention of infection of other members of the household, and furnishes the materials required so that they may be carried out. He determines the amount of disinfection required and gives instructions accordingly. In doubtful cases he has the expectorations examined. He sees that the patient and his family are assisted as far as practicable. In fact, he carries out practically all the measures assigned to the Public Health Office and dispensary combined. If he does not do so, or is hindered from doing so, the machine creaks directly.

It is of interest to consider what is now being done in connexion with the treatment of tuberculosis in Manchester. In the half-year ending December, 1911, the number of cases of tuberculosis of the lung notified to the medical officer of health by private practitioners numbered between one-fifth and one-sixth of the total, while in the first half of 1912 under the new order they number between one-half and one-third. The greater part of the work in Manchester is carried on at present by public institutions. I estimate that the institutional treatment of tuberculosis in Manchester patients may cost the guardians at present in round figures £26,000; voluntary institutions, £15,000; and the Corporation, £8,000; total, £49,000.

The public health administration costs £5,600, not including the part-time services of a number of officers not specially allotted to tuberculosis. How much is paid to practitioners one has no means of estimating, but it must be a large sum.

The amount of the annual grant under the Insurance Act which falls to come to Manchester may amount to £14,000. Expenditure will be involved, however, where now there is none. The consulting and advisory staff required will cost a considerable sum, and payment will have to be made to physicians who now do the work gratuitously, the more so that responsible duties will be placed upon them for which they are now paid, but will cease to be so.

Payment will have to be made for the treatment of cases of tuberculosis in sanatoriums the expenses of which are now defrayed by charity, since it is anticipated that charitable subscriptions are going to fall off heavily. Payments to medical practitioners will need to be made where now their services are paid for by private fees.

Moreover at the end of six months, when sickness benefit falls due, there will be a great transfer of insured cases from the Poor Law to sanatorium benefit.

It is thus necessary to consider carefully under what conditions sanatorium benefit is conferred. By Section 16 of the National Insurance Act Insurance Committees shall make arrangements, to the satisfaction of the Insurance Commissioners, (*a*) with a view to providing treatment for insured persons suffering from tuberculosis . . . in sanatoriums and other institutions, etc.; (*b*) with a view to providing treatment for such persons otherwise than in sanatoriums, or other institutions, etc.

An insured person shall not be entitled to sanatorium benefit unless the Insurance Committee recommends the case for such benefit.

Although by Subsection (3) the Insurance Committee has some power to postpone the commencement of sanatorium benefit, it will, presumably, have very little power to discriminate between persons in conferring it, otherwise than as concerns their prospects of recovery.

By Section 17 (1) the Insurance Committee for any county or county borough may, if it thinks fit, extend sanatorium benefit to the dependants of insured persons, etc. With reference to this subsection it may be said that it will be very difficult to give sanatorium benefit to an insured person, and to refuse it to a dependant, especially where the question of institutional treatment arises, at all events for more than a limited period.

By Section 17 (2), if in any year the amount available for defraying the expenses of sanatorium benefit is insufficient to meet the estimated expenditure on sanatorium benefit for insured persons and such dependants, the Insurance Committee may, through the Insurance Commissioners, transmit to the Treasury and the council of the county or county borough an account showing the estimated expenditure for the purpose and the amount of the sums available for defraying the expenses of sanatorium benefit, and the Treasury and council may, if they think fit, sanction such expenditure.

By Section 17 (3) the Treasury and the council of the county or county borough sanctioning such expenditure as aforesaid shall thereupon each be liable to make good, in the case of the Treasury out of moneys provided by Parliament, and, in the case of the council of the county or county borough, out of the county fund or borough fund or borough rate, as the case may be, one half of any sums so sanctioned by them and expended by the Insurance Committee on sanatorium benefit for insured persons and their dependants in the course of the year in excess of the amount available for defraying the expenses of the Committee on sanatorium benefit.

It is to be observed that the local community will be called upon to defray much more than half the excess expenditure on tuberculosis, since they are to provide not only for the treatment of insured, but also of non-insured persons. There will not continue to be much option in the matter, since the candidate for municipal honours who declines to pay for sanatorium benefit will have to give his reasons. There is, perhaps, not the same security that the Treasury will continue to defray its half of the excess expenditure on insured persons.

The effect of this section, then, having regard to the previous considerations, is to place on the counties and county boroughs the duty of treating tuberculosis as the infectious disease which it is. The compulsion to do so may not be immediately felt, although, as regards Manchester, the pressure is even now very great, in spite of the large institutional treatment already accorded. But it will be felt very soon, and it may be hoped that local authorities will take up, resolutely and judiciously, the great work which Parliament has laid upon them. They cannot now do so with a full measure of success without being on cordial terms with those to whom the administration of the Insurance Act has been entrusted, whose co-operation will be indispensable.

DISCUSSION.

Dr. Marcus Paterson (Cardiff) declared that one of the first things he would like to see abolished was the word "consumption"; it came to have a stigma. A patient did not mind being called tuberculous, but he hated the word "consumption." There was a tendency to divide tuberculous patients into two classes—the class that would get well, and the class that would die. It would never do to divide them in this way in institutions. Imagine the feelings of a patient if he was drafted into a place from which no one came out alive! Dr. Paterson spoke of the difficulty of drawing a hard-and-fast line in defining an "early" case. Whether a case was an early one depended not so much on the physical signs in the lungs caused by the tubercle bacilli as on the patient's resistance to the toxins caused by the bacilli. He did not look upon the existence of cavities in the lung as being necessarily an evil so long as they were kept empty of caseating débris. He regarded the prevention of tuberculosis as a matter of looking after the growing crop. If the school children could be made and kept healthy, the problem was solved. Care of the children's teeth was most important in this connexion, as chronic indigestion was a fruitful cause of tuberculosis. The housing question was vital in any attack upon tuberculosis. The term "open-air school" might very well disappear. Schools should be properly ventilated and so constructed that it was impossible for the teachers to shut them up.

In regard to treatment of tuberculosis in children, Dr. Paterson remarked that there was a tendency not to take them into sanatoriums. He agreed that they should not be taken into sanatoriums for adults. If they were put with men the children were teased; if they were put with the women the nurses allowed the women to look after them. Children should be sent to sanatoriums for children only.

Dr. Paterson dealt, in conclusion, with the question of the infectivity of tuberculosis as regards those working in sanatoriums. If properly nursed there was no danger. In fourteen years he had never known a single worker in the wards to be infected. In his opinion, surgical tuberculosis was much more dangerous to the community than pulmonary tuberculosis, as the same precautions were not exercised in disinfecting tuberculous pus as in dealing with tuberculous sputum. He felt hopeful about preventive measures against tuberculosis. The most important problem was that of dealing with persons who had to earn their own living when their sputum was infectious. It was comparatively easy to prevent infection in patients' own homes, where sputum could easily be disinfected; but it was quite a different thing in public, where the exhibition of a pocket sputum flask was sufficient to empty a railway carriage, with the result that phthisical patients would not use those receptacles in public.

Dr. F. Rufenacht Walters (Crooksbury Sanatorium, Surrey) said: As all cases of pulmonary tuberculosis are now notifiable, every case in every stage should receive adequate and appropriate treatment. Originally, when sanatoriums were first started, only early cases with limited lesions and very little fever were supposed to be admitted to them, the rest being regarded as incurable, or, at all events, unsuitable for serious treatment. This conception of the functions of a sanatorium, however, has never been freely accepted in this country, and we should now frankly recognize the fact. Instead of adequate treatment for favourable cases and pessimistic temporizing for all the rest, we should set out with the intention of dealing thoroughly with every case in the interests of the patient and of the community. Medical science can do much more for the less favourable cases than was possible twenty years ago, and we have no right to shirk the difficult cases. There should always be two sections in every large sanatorium—a clinical section in which patients who are feverish can be properly nursed and treated, and an ambulant section for those who require graduated exercise and physical training generally.

Attached to the clinical section there should be a pavilion for the less hopeful and presumably incurable cases, whenever the sanatorium is within easy distance of the town or home. Otherwise this should take the form of a nursing home. The object of this is not merely to relieve suffering, but chiefly to prevent further infection at home. Attached to the ambulant section should be a farm colony and workshop, for graduated work. There should be adequate treatment and training for all.

This being accepted, the next point is to discuss the indications for treatment. Dr. Inman has divided cases of pulmonary tuberculosis into four divisions: (*a*) The febrile at rest; (*b*) the afebrile at rest, ambulant febrile; (*c*) ambulant afebrile, febrile at work; (*d*) afebrile even at work. It is, however, unsafe to classify by temperature alone:

pulse-rate and nutrition should also be taken into account. With this modification the indications would be as follows: All those who are febrile when at rest, or in whom there are complications, or a pulse-rate over 90, or extreme malnutrition (say weight more than 10 kilograms below standard or diminishing week by week), require nursing sanatorium conditions. Those who can take exercise without becoming feverish, and without raising the pulse-rate to over 90, and whose nutrition is reasonably good, will require treatment at a dispensary, or in the ambulant section of a sanatorium, or merely suitable quarters in a health camp, or reformed home conditions, according to circumstances.

Examination of the chest will give valuable indications for treatment; but, taken alone, these may be very misleading. Extensive disease with cavitation is not necessarily an indication for rest or a contraindication against hard work; whereas scarcely recognizable lesions with marked fever or much-raised pulse-rate call for careful treatment at rest. As a rule, when there are numerous fine râles or evidence of commencing softening rest is essential. Slight blood-spitting is not necessarily an indication for rest; but recent copious haemoptysis calls for recumbency and care.

3. Cases which can be profitably treated at a dispensary are those whose home conditions either are satisfactory or can be made so; who are free from fever or can be made so by a short course of treatment; who have a pulse-rate below 90; who are not emaciated or who are gaining weight; who are not subject to marked haemoptysis and have not recent softening. Those with marked laryngeal disease require vocal rest, which is more easily obtained in a sanatorium than with dispensary or home treatment. Slight cases awaiting admission to a sanatorium may be treated at a dispensary; graver cases should be treated at home until they can be admitted to the sanatorium, and not be compelled to attend the dispensary in person. When the only indication of tuberculosis is a tuberculin reaction, active treatment is unnecessary: but the home conditions and those of employment should be investigated. Those with definite lesions or symptoms of pulmonary tuberculosis who react freely after tuberculin or other vaccine should be kept at rest for a day or two after each dose, and are therefore better treated in a sanatorium.

4. In order to recognize the existence of slight fever the time of day and the method of taking temperatures are of importance. Most cases of pulmonary tuberculosis are especially feverish sometime between 3 and 8 p.m.; some are only feverish between these hours. In a small proportion of cases the temperature curve is inverse, being higher in the morning than in the afternoon or evening, but this is exceptional. It is not unusual to find a normal or subnormal temperature in the morning and well-marked fever in the late afternoon; so that the best time would usually be after tea-time. To be sure of one's ground, however, the temperature must also be taken early in the day, in order to detect an inverse temperature, and because a temperature of 98.8°, for example, may indicate fever (and therefore the need for rest) if recorded before breakfast time, it would not indicate fever in the afternoon. Then as to method: Axillary and urine temperatures may be disregarded owing to their unreliability. The choice lies between mouth and rectal temperatures. The latter has the advantage for accuracy and speediness. Taking accurate temperatures in the mouth, in any room or place which is not overheated, requires at least a quarter of an hour. Air entering the mouth, or cool air playing on to the cheeks, lowers the temperature of the mouth cavity, so that in order to recognize slight degrees of fever (which are of importance in pulmonary tuberculosis) the mouth must be kept shut with the thermometer *in situ* for twenty minutes and the face protected. An accurate rectal temperature can be taken in five minutes, but necessitates a dressing box for each case. A true rest temperature cannot usually be taken in a dispensary, as it necessitates an hour's recumbency. Consequently examination in a dispensary cannot be very complete or accurate. A temperature of, say, 99.6°, taken immediately after exercise, does not necessarily indicate fever, but a temperature of 99.6°, taken after an hour's rest, is slightly febrile.

5. Every case, without exception, should receive an educational course of treatment (that is, a month or six weeks) in a sanatorium as soon as possible after discovery of the disease, to be followed before the patient returns home by educational domestic hygienic training at home. The latter, though most important, cannot often replace the former, but the two educational courses should be co-ordinated and given by instructors familiar with both. The chief arguments in favour of giving the sanatorium course first are that the training and régime are continuous, instead of being limited to a short time daily; the conditions allow of more thorough training than at home, so that the one serves as an object lesson for the other; moreover, the doctor can make a more complete examination of the case than is possible for a dispensary officer, and can more easily inaugurate tuberculin or other special treatment.

6. Cases requiring prolonged treatment in a sanatorium or health colony are: (*a*) Those in whom there is marked debility or loss of flesh or a much raised pulse-rate. Such cases require rest and feeding up, followed by physical training. (*b*) Relapsing cases. (*c*) Those who become feverish on walking about. (*d*) Febrile cases with extensive lesions.

7. Having regard to the frequency of relapse when patients return to faulty home conditions, definite provision should be made for suitably housing and feeding convalescents returning to work. There are usually fairly definite reasons for the relapse: Either unsuitable diet, dirty quarters, lack of open windows, overcrowding, unsuitable employment, or in a vast number of cases incomplete recovery through insufficient time given for treatment. Whenever a patient leaves a sanatorium, possible causes of relapse should be reviewed and as far as possible corrected; and in many cases the best preventive will be a health camp, in which the patient can be housed and fed under proper conditions out of working hours. Tuberculosis is caused quite as much by non-specific as by specific causes; rational treatment should be directed against both.

Dr. F. E. Wynne (M.O.H., Wigan) said: For the councils of county boroughs this question is very largely a matter of finance. These councils are composed of men quite as humane and not less intelligent than the average. They are elected to serve the interests of a certain section of the rate-paying community. Their constituents are people who will not believe that anything can serve their interests which involves an additional cost to the rates, and the councillor always has his eye on November 1st until he achieves the dignity of the aldermanic bench. There is not an election address issued in the kingdom that does not contain the blessed words "efficiency with economy." Now we here may be convinced that the expenditure of money on the prevention of tuberculosis is going to promote this ideal, but can we induce the councillor who has not our knowledge to make the effort of imagination necessary to realize it, and can we expect him to educate a majority of his constituents to the same level of political sagacity?

It is, at all events, our duty as medical officers to attempt this feat, because there is not the least doubt that, unless the views of our legislators can be altered, adequate administration of sanatorium benefit under the National Insurance Act will involve a considerable burden on local rates, and, as I think, an unfair one. I say an unfair one for the following reasons:

Insured persons can only be adequately protected from tuberculous infection by the elimination of tuberculosis from the whole community. To deal with tuberculosis among the insured alone would be as profitable a task as digging up dandelions in a lawn surrounded by uncultivated fields.

The Interim Report of the Departmental Committee properly and fully recognizes this fact, and lays it down as an essential of any scheme that it must provide for the whole of the tuberculous population.

For these purposes there is a capital sum available of one and a half million and a revenue for maintenance and administration amounting to 1s. 3d. per head of the insured population.

The suggestions of the Interim Report of the Departmental Committee are, that the available capital should be distributed to local Insurance Committees on the basis of providing four-fifths of the capital cost of the establishment

of tuberculosis dispensaries, three-fifths of the capital cost of establishing and equipping sanatoriums, and grants of an amount not specified in aid of the capital cost of altering or adapting existing hospital accommodation.

Now let us take the case of a county borough, having a population of 100,000, which will be expected to provide these things, and from whom the Insurance Committee will but hire them. As near as we can estimate, such a population will contain some 600 tuberculous persons, for all of whom, whether insured or otherwise, sanatorium benefit must eventually be provided. The income available for the administration of this benefit will be some £2,000.

The Departmental Committee estimate that a dispensary should be provided for populations of from 150,000 to 200,000, so that the county borough would have to find at least half the expenses of the dispensary, even if it had a population outside its area equal to its own and ready to co-operate with it. It would have to maintain, according to the estimate of the Departmental Committee, at least twenty beds in curative sanatoriums and local hospitals. In addition to these items, there are payments to medical men for domiciliary treatment. For all this expenditure the local authority will be only partially recouped by the funds in the hands of the Insurance Committee.

Now, what is going to be the amount of this expenditure when the recommendations of the Departmental Committee and the recently formulated demands of the Representative Body of this Association have been fulfilled?

The following estimates are necessarily very rough, but I think this meeting will agree that they are minimal. I have certainly understated the amount of fees payable to medical men for domiciliary treatment, as I have based them on an average of one attendance only per month per insured person, and I have included no payment for the medical officer of health who will have to inaugurate and administer the scheme, because my experience is that every new Act and every new order of a Government Department is piled upon his aching shoulders without any augmentation of his princely salary.

We have, then, the following items of expenditure:

	£
Half the salaries of the tuberculosis officer and his assistant	400
Six medical men working two hours per week at the dispensary	390
Two nurses at £80	160
Clerk dispenser	100
Rents, rates, etc.	100
Drugs, etc., including tuberculin and laboratory requisites	100
Printing, stationery, cleaning, etc.	50

In addition to these sums we have the maintenance of twenty beds, which, taking the figure of £75 per bed per annum, amounts to £1,500, giving a grand total of £4,240.

The maximum contribution available from insurance funds is £2,000, leaving a deficit to be made up from the rates of £2,240. To this we must add interest on capital, depreciation, and various contingent expenses, which will probably bring the amount to be provided out of the rates to at least £3,000 a year—equal in most cases to a rate of 2½d.

Now, I believe that a rate of 1s. in the £ would be well and economically spent if it got rid of tuberculosis, notwithstanding Sir James Barr's declaration the other night that the tubercle bacillus was the national bulwark against imbecility and physical degeneracy, but knowing what I do of the financial condition of many of our county boroughs, and of the view taken on the subject of economy by the average borough councillor, which if short-sighted is natural and inevitable, I have grave fears that our councils will refuse to burden their rates to this extent, and that schemes will accordingly be scamped and inefficient, and the money spent on them accordingly to a large extent wasted.

The prevention of tuberculosis is a national concern, and therefore the expense involved should be met to a greater extent than it will be under this Act by subventions from the national exchequer.

Dr. S. J. C. Holden (St. Helens) said: Much has been said of the machinery for working the tripartite scheme for the prevention of tuberculosis, especially in the matter of buildings, equipment, staff, etc., but little has been said of the patients to be treated under such schemes. The patient is the most important factor, and unless he becomes, or is made, amenable to treatment, the whole scheme fails. How, to some extent, he may be made amenable to treatment, is the object of my paper. I have called the anti-tuberculosis scheme tripartite, in contrast to the dual designation of the Interim Report of the Departmental Committee on Tuberculosis, in order the more easily to divide into classes the types of patients I wish to discuss. Here I may mention the main class under discussion is that of workmen, or breadwinners, who in many cases will be insured persons under the National Insurance Act.

The first class comprises those patients who are early cases, accommodated as far as possible in reparative sanatoriums. These patients must enter such sanatoriums with the knowledge that if they are married men their wives and children will not suffer from want during their absence, which, in most cases, will be prolonged. To a certain extent this is provided for in the National Insurance Act under sickness benefit, but I fear large numbers of these patients will not obtain this benefit owing to irregularity of contribution or non-acceptance by an approved society. The method of deposit contribution would be useless to them, because the relief obtained would last a very short time. Unless monetary provision is made for dependants, many patients will not remain, and therefore pass out to become probably open or advanced cases.

Again, it has often been remarked that excessive comfort accompanied by good feeding, provided in the modern sanatorium, renders the patient in many cases "work-shy." This may to some extent be guarded against by retaining the good feeding, but constructing the sanatorium buildings on the simplest and cheapest plan compatible with efficiency, so that the patient shall not return to his own home in a state of dissatisfaction and unemployable. Also schemes of graduated labour may be looked at from two points of view, either as a means of preventing the patient from becoming "work-shy," and of overcoming self-introspection so common in the idle, or as a method of auto-inoculation, as advocated by Dr. Marcus Paterson. I would advocate that such schemes be confined not merely to agriculture, but that schemes be formulated for utilizing some of the trades of the different inmates. There must at all times be admitted, for example, joiners, painters, tailors, cobblers, etc. Why should these people not be allowed to work on a graduated scale at their own trades, such work to be paid for at rates to be fixed, and the money distributed for the upkeep of the family? The results of their labours would help considerably in the upkeep of the institutions, and enable the patient on his discharge to return to full work without much fear of his breaking down again.

The second class of patients will be those who are able to live at home and continue in their ordinary employment, or, perhaps, in a lighter branch of employment. These will be cared for and treated at the tuberculosis centre, and the class of labour suitable for them defined by the tuberculosis officer. In this class the problem arises, How is change of employment to be provided? This applies to two types of patient. First, the patient who is discharged from the reparative sanatorium and is unable to resume his former occupation because it is too arduous, but can perform a lighter task and remain in good health; secondly, the patient under treatment at the tuberculosis centre, whom the tuberculosis officer decides must change his ordinary occupation for a lighter one if his treatment is to be successful.

I would suggest that there be co-operation between employers of labour, organized charities, and the public health authority of the area for the provision of a selected labour bureau, which could be worked as a branch of the Labour Exchange. Probably an after-care association, as suggested in the Interim Report of the Tuberculosis Committee, would undertake this duty. This bureau could keep a list of occupations found suitable by the tuberculosis officer, and in which vacant situations occur. The tuberculosis officer would decide on the patient fit to fill

the situation. The public health authority would be able to provide many of these situations, mostly of an open-air character, such as assistants in parks, either as park-keepers or gardeners, tram conductors, or in the scavenging department.

In passing, I consider medical officers of health who have been fortunate enough to be appointed medical advisers to local Insurance Committees should always be urging their local committees to take the broadest view of their duties in disbursing the funds at their disposal, especially for the benefit of dependants and, perhaps, in assisting the phthisical patient in obtaining a living wage.

The third and last class comprises those patients whose infectious condition necessitates their isolation in a suitable hospital. If eradication of tuberculosis is to be a success, this last class is the one to be treated most drastically. These are the patients responsible chiefly for the development of tuberculosis in contacts, and I would strongly advocate all interested in the preventive side of the work to follow the lead of my own town, St. Helens, and obtain powers of compulsory isolation. In the St. Helens Corporation Act, 1911, these powers were obtained, and I will endeavour to describe them briefly. If the medical officer is satisfied that a case suffering from pulmonary tuberculosis is in an infectious state, and living under conditions which preclude proper precautions being taken to prevent the spread of infection, he may make application to a court of summary jurisdiction. Such court, upon oral proof, may order the removal of such patient either to a suitable hospital, or if a parochial case to the Poor Law infirmary, three days' notice being given to the patient of this intention. The Corporation may in their discretion make good any financial loss falling upon relatives or dependants of such person. The patient may apply for a rescission order after six weeks' detention. This class of patient would probably never obtain sickness benefit. They are less likely to be admitted into approved societies than the first class, and the prospect of receiving permanent invalidity benefit in their cases, in my opinion, is a product of the imagination. Such cases as these are adequately provided for financially by our local Act.

Dr. W. M. CROFTON (Dublin) laid stress on the importance of house disinfection, which he did not think was fully appreciated by general practitioners. In his opinion, children often got infected by sleeping in rooms where other children had been ill of or died from phthisis. According to Vienna figures, 94 per cent. of children of 14 years were infected with the disease, but only 14 per cent. of those developed it. Therefore, if one could make the 14 per cent. like the 80 per cent., the problem was solved. He believed this could be effected by preventive inoculation with tuberculin. Under ideal conditions, all children should be inoculated, but at any rate all children of tuberculous parents and members of families in which tuberculosis had occurred should be inoculated. Treatment of those who developed the disease could be divided under three headings: (1) Sanatorium treatment; (2) tuberculin; (3) drugs. (1) As to sanatorium treatment: This was, in his opinion, practically useless. Out of 160 cases at Newcastle Sanatorium, co. Wicklow, supposed to be curable, only 14 apparent cures were turned out, the rest having been discharged still excreting tubercle bacilli; 70 per cent. who were discharged "much improved" went back to their homes to infect other people. (2) Treatment by tuberculin: Dr. Dunne, who had great skill and immense experience at the South Dublin Union, got 40 per cent. of improvements, which was a very good result: but the fact that 60 per cent. were not improved showed that tuberculin treatment was inadequate. (3) Drug treatment: In his opinion treatment by creosote in some hands produced far better results than sanatorium treatment. The [illegible] he found, were sulphides or iodides in [illegible] and in his hands the best results [illegible] injections of iodoform dissolved in [illegible] liquid paraffin added. In very early [illegible] as well as iodoform injections, and [illegible] combined treatment all the [illegible] could have been turned out apparently cured, after which they should be sent to convalescent homes to get physically fit. That was the proper function of the present sanatoriums, in his opinion, and all active cases should be treated in hospital.

Dr. R. R. RENTOUL (Liverpool) remarked on the difficulty of dealing with tuberculosis when it was recognized that 20 to 40 per cent. of the cases were undiagnosed. As to the injection of tuberculin, he thought it was not yet proved that it might not have some deleterious effect on other parts of the body which were not tuberculous. Municipal fever hospitals had done so little good that he thought the public would be chary of spending so much money on consumption sanatoriums. It was a pity they could not follow the example of the Board of Agriculture in dealing with swine fever—put an end to the consumptive patient and give compensation to his relatives. If general practitioners could increase their knowledge of the disease it would do far more good than multiplying sanatoriums.

Dr. LLEWELLYN HEATH (Ipswich) thought there was a tendency on the part of the public to allow sanatoriums to dominate their thoughts. Many of the schemes presented to the Local Government Board during the last few months made little or no mention of any care for tuberculous children, which he considered was a serious omission. From the point of view of preventive medicine, their work in regard to the tuberculosis problem consisted of: (1) Dealing with the pre-tuberculous child, when conditions of health and environment were such as to predispose to tuberculous infection; (2) dealing with infected individuals who had reached a condition which rendered them a potential danger to the community. There were very few sanatoriums at the present day for children under the age of 15 suffering from pulmonary tuberculosis. The general excuse was that their admission would mean a tremendous increase in the cost of administration; but even granting this, the best time for such expenditure was at the beginning of life, when there was a chance of getting a good return for the money spent. With regard to surgical tuberculosis in children, the public health service had so far left this severely alone. Provision in England in this respect was lamentably inadequate, both in regard to preventive measures and curative provision. This policy of delay was taxing the hospital accommodation of the country to a serious extent, chiefly on account of the length of time such cases required for their treatment. The work at Sir W. Treloar's homes at Alton illustrated the splendid work that could be done, and the provision, by the joint efforts of public health and education committees, of hospital schools and open-air schools upon these lines would meet a great need. He was extremely pleased that Dr. McVail had referred, though briefly, to the question of the milk supply. That milk from tuberculous cattle was a potential danger would be agreed by all, and present legislation, which practically limited its scope to udder infection, was largely futile, for two reasons: First, because with one exception, the udder was the organ in the cow the least frequently affected with tubercle, and secondly, it was definitely proved that milk from cows suffering from tuberculosis elsewhere than in the udder might contain tubercle bacilli. In addition to this there was the fact that although heating destroyed tubercle bacilli in milk, yet the toxins remained, and Calmette claimed that the use of milk from a tuberculous cow, when it had been heated, acted more or less as a dose of tuberculin, though in unmeasured quantity. Unless the "healthy milk" part of the problem was more vigorously tackled than it had been in the past, they would be neglecting one of the most important measures in their hands.

Dr. BROWN (Bacup) said that they had raised the power of resistance in the great masses of the population in Lancashire, and they wanted to deal with the problem of resistance. He would like the Government to give him 5s. a week for each of his tuberculous patients, to send them to a "sanatorium house" at the sea. He thought it was better to treat patients in their own homes rather than to send them to sanatoriums.

Dr. J. BRASSEY BRIERLEY (Manchester) thought the money should be spent in making every house a sanatorium. There was always some disease cropping up

where there was a family. When a patient went to a sanatorium he put on flesh and did no work, and a man fed up in idleness would not get well. Patients were sent back from sanatoriums to the rooms in which they had lived before they went there, where they found a starving family and insufficient food. In his opinion this was beginning at the wrong end; money should be found to feed poor people and to improve their homes.

Dr. Taylor (Salford) wished to know what were the indications for treating one patient at home and another at a sanatorium.

Dr. Stewart (Queensland) thought Dr. Crofton did not seem to realize that immunization with tuberculin was quite a different thing from the immunization of tuberculosis.

Dr. E. Sergeant (Co. M.O.H., Lancashire) said that he could not agree with the opinions expressed by so many speakers as to the inutility of isolation hospitals, and hence the probable uselessness of sanatoriums; and therefore he wished to enter a protest against such opinions. He had been receiving money from the public for forty years for the institutional treatment of infectious diseases, and his experience had been that the mortality of patients treated in hospital was far less than that of those treated at home. Another point was that in districts protected by isolation hospitals the amount of disease was less than in unprotected districts, and he thought good had been done in modifying the influence of scarlet fever and other infectious diseases. With regard to phthisis, sanitation had been in various ways preventing this disease. Measures had been taken for improving the homes of the people. It was most important to ensure an absolutely clean and pure milk supply, and there should be systematic examination of all cows in districts where phthisis prevailed.

Dr. A. G. Gullan (Liverpool) said he had seen good results from home treatment. This work could be carried out by general practitioners who had not been paid for it up to now, and had not had sufficient time to attend to the cases. They were quite able to deal with those patients who could be treated by them from the commencement of the disease, which he thought would be a great advantage.

Dr. H. Cooper Pattin (Norwich) drew attention to the desirability of providing night shelters in dealing with tuberculosis. These were institutions provided by the local health authorities at which a tuberculous patient who could not have a separate suitable bedroom set apart at home could go and sleep under hygienic conditions. Such shelters were being set up in Canada, and in submitting a scheme for dealing with tuberculosis in his district he had recommended and certainly hoped ultimately to obtain one. Their use in the case of workers, especially single workers, was obvious. They would provide a comparatively cheap and most efficacious adjunct to dispensary and sanatorium treatment.

Dr. Chalmers (President of the Section), in closing the discussion, referred to the importance of the phrasing adopted in the Insurance Act. "Consumption" had been replaced by "tuberculosis," and the practical result would be that, while sanatorium benefit for insured persons would be available chiefly for phthisis, directly sanatorium benefit was extended to the families of insured persons, as might be done on the initiation of a local Insurance Committee, phthisis would be largely replaced by the other forms of tuberculosis. One very obvious advantage of this extension would be that public health administration and the Insurance Commissioners would have common ground in dealing with the tuberculous children to whom Dr. Paterson had referred. Their work would in this sense become more effectively preventive than when directed only to the treatment of those in whom pulmonary symptoms had already developed. In another sense the co-ordination of work was desirable, because, probably for the first time in their history, the aims of public health administration were being assisted by a grant in aid.

THE EFFECTS OF INTRA-MIGRATION ON NATIONAL HEALTH.

By J. Stewart Mackintosh, M.D.Durh., M.R.C.S., L.R.C.P.

By "intra-migration" I mean the uprooting and resettlement within the confines of the British Isles of groups of inhabitants who, until the time of emigration, had been settled for many generations in one district or particular environment. The chief trend of these movements of the population has, of course, been towards urban immigration, but there is also a good deal of drifting of families and individuals up and down the country. It is my purpose to record the result of observation of some of those movements and to suggest that they afford a solution of certain problems of national health hitherto somewhat puzzling, and to urge that national degeneration is not wholly due to permitting the alleged "unfit" to multiply, but that other factors are at work which have not received due recognition.

Attention has been drawn in a recent number of the British Medical Journal to the condition of the small and isolated community inhabiting the island of St. Kilda far out in the Atlantic. It was remarked among other things that though mental intelligence was not high the health of the community was excellent in spite of long isolation, and that in spite of many generations of close inbreeding there was no sign of real degeneration visible. This is probably to be explained by their having migrated from neighbouring islands of the Hebrides and so being already adapted to the climate and social conditions obtaining in St. Kilda, and in having, by reason of their long isolation, effected practically complete elimination of unsuitable types.

Physical degeneration occurs in small communities when they are infiltrated with germ-plasm of damaged quality, or when, having migrated, the environment they have quitted differs materially from that in which they have settled. It is not generally realized that in the days before we changed from being a people mainly pastoral and agricultural to a people mainly industrial—before the rapid, cheap, and multiple means of transit we enjoy at the present day—our rural population consisted largely of small and practically isolated communities, closely inbred, closely specialized for local climatic and social conditions, and therefore resembling the present community of St. Kilda in general characteristics. There can be no doubt that, apart from recurrent visitations of war, famine, and pestilence, our peasantry enjoyed good health, and were on the whole a sturdy virile race. They lived on the soil and on the products of the soil which bred them. Imported and manufactured foodstuffs were practically unknown till recently, for, although such foreign sources of nutriment as the potato began to be known in Tudor times, "imported foodstuffs" has a very different meaning to-day.

The population of the British Isles does not, of course, present anything approaching to uniformity of type, consisting as it does of a small dark race to all intents and purposes aboriginal, which was subsequently infiltrated by successive waves of invading races, mostly blonde in colouring, and differing in physical and mental characteristics. I have endeavoured to show elsewhere that the purer types of these intrusive races found in this country still require an environment approximating to that in which their race evolved; and in the case of blondes a dry soil, low rainfall, open-air life, and dry frosty winter are still necessary for the maintenance of vigorous stocks and for the avoidance of somatic degeneration, these being the conditions obtaining in the Baltic regions in which the blonde Nordic race evolved.

My concern in this paper is, however, not so much with the original elements contributing to the nation as it now stands, as with the various communities undergoing, century after century, evolution in and adaptation to local conditions after the period of large invasions came to an end. In these communities the intrusive element is sometimes preponderant, sometimes the aboriginal, and sometimes it is difficult to say which is in the ascendant, a hybrid showing the mingled elements of aboriginal and intrusive race having established itself. Clear instances of this are to be found, for example, in Ireland, where a common type

has dark hair with white skin and blue or blue-grey eyes. In short, the settling down of the nation to pastoral and agricultural pursuits, after the great invasions ceased with the Norman Conquest, was followed by a steady process of natural selection and specialization for local conditions till after the middle of the nineteenth century, and when such anthropologists as Beddoe, Ripley, and others began to examine the population of the British Isles they were able to indicate a large number of distinctive types recognizable at sight to the trained, or even to the untrained, eye.

I wish to lay particular stress on this local specialization, because I purpose showing that when it is followed by disintegration and migration there is great danger of degeneration of rural-bred stocks if the new environment differs materially from the old. This specialization is most noticeable in the peasant class, but is not peculiar to them, being at times distinctly traceable in the yeomanry, and even occasionally in the upper classes. In contrast with these individuals and stocks of strictly limited adaptabilities there exist elements in the nation of varying aptitudes in the matter of acclimatization—people, one may say, whose cellular structure is readily modified in response to the stimulus of changed surroundings. It is a matter difficult to prove by sheer statistics, but observation suggests that readiness of adaptation to change argues an ancestry derived from many and varied stocks, such as are usually brought together by urban influences.

I will now pass on from abstract considerations to some concrete instances of the effect of migration on localized stocks. My sphere of observation has been mostly situated in the north-west district of London—rising ground with a subsoil of clay, capped at its highest part by a layer of Bagshot sand. The air is bracing and fairly pure, being exposed to the prevalent west and south-west winds blowing up from the Chiltern Hills and country to the south of them. The district has a reputation for being very healthy, but the cold clay subsoil and exposed position appear to favour catarrhs, respiratory troubles, rheumatism, etc., in those predisposed to them, and this is specially noticeable between Christmas and Easter. Being a high-class residential district domestic servants are attracted thither from various parts of the country, and have afforded an excellent field of observation, for they are largely recruited from the specialized communities I have been describing.

Time for this paper being limited, I cannot give a detailed account of the health of all rural types coming to reside in North-West London. For the purpose of illustration, I will select those who have left their native villages in the county of Sussex to take service in Hampstead. Sussex is reputed in the textbooks to be a typical Saxon shire, the original Britons being supposed to have been driven westwards or exterminated by the invaders; but the textbooks are wrong—the anthropology of Sussex is not so simple.

Apart from hybrids from the towns and casual settlers in the country, there are two distinctive Sussex types who present a strong contrast to each other.

Some years ago a lady asked me to examine and treat one of her maids. At the hour appointed I found two girls in my consulting room. On my inquiring which was the patient, one of them, a short, thick-set brunette, indicated her companion, adding, with a laugh, "I don't trouble the doctors much."

The sick girl was of a very different appearance to her fellow servant. Tall and rather slender, with fair hair, blue eyes, white skin, and regular features, she would have served as a typical "English" girl in the original sense of the word. Her complaint was of pains about the face and head, cold hands and feet, digestive discomforts, anaemia—a general sense of misery. These troubles had come upon her since she entered service in London seven months previously, and they were getting worse. She was quite young, and this was her first place, but it was comfortable, her mistress was kind, and she was not homesick. Several weeks before, however, she had gone home for a few days, and by the end of her stay all her symptoms seemed to disappear, but on returning to Hampstead they had come back as bad as ever. She had come to London from a village in the South Downs, not far from the sea. She was one of a large family, but she was the only one away from home. Her parents and brothers and sisters were all living and all strong and healthy.

In course of conversation her little dark-eyed companion, who was cook in the same house, remarked that she also came from Sussex, mentioning a town in the Weald, and adding, with a touch of the friendly contempt the robust are apt to show towards the ailing, that she had been in London over two years, but that the doctors made nothing out of her. Her reiterated and emphatic assertion, coupled with the very marked physical contrast she presented to the girl from the Downs, arrested my attention. The question occurred to me whether it was simple coincidence or whether these two girls represented types respectively adaptable and inadaptable to the environment into which they had migrated: for it must be remembered that the patient maintained that she enjoyed good health until she came to London, that she regained it when she went home, that she came of apparently sound stock, and there was no obvious cause—such as carious teeth, constipation, or a hard situation, to account for her troubles.

However, in the course of several years' practice in North-West London subsequent to the interview just described, I have encountered a number of immigrants from Sussex, and those from the Weald have approximated to this same short, thick-set brunette type whenever they have come of old-established peasant or yeoman stock. Those, on the other hand, bred on the coastal strip which comprises the well-known chalky South Downs are generally fairer in colouring, of a taller, slenderer build, and evidently represent a population strongly infused with the intrusive blonde race. This blonde settlement began probably long before the historic Saxon invasion, for Julius Caesar reported that when he landed in Britain he found Belgae (that is, the blonde race of North Europe) on the coast and the Silures inland, a state of affairs still persisting, apart from the mushroom towns of the Sussex coast.

In the course of two thousand years there has been time for much selective evolution in this coastal population, resulting in the specialization I described at the beginning of this paper, and this holds good but in an intenser degree for the brunette inhabitants of the Weald, for these probably represent a race which has bred *in situ* at least since early neolithic days. The wide stretch of the Weald was little better than a trackless quagmire until quite recent times. It was, therefore, not only difficult for its inhabitants to shift from place to place or for migrants to enter from neighbouring counties, but it also cuts off free access to the coastal strip except by way of the sea. Until, therefore, the county was "opened up" by improved roads, and the advent of the railway encouraged the development of the great coast towns, the population had bred undisturbed through long centuries, and the county may therefore be taken as one highly productive of those specialized types described at the beginning of my paper. My personal observation of these migrants from Sussex, made mostly on domestic servants, but also on men and women in various occupations, has shown me that they tend to polarize round the types represented by the two maids I described just now, and that the short brunette type from the Weald finds that North-West London "suits" her, to use the common expression, while the fairer type from the coast finds it does not, showing a proclivity to catarrhs, rheumatism, neuralgia, anaemia, etc.

I have no doubt whatever that the explanation of the brunette type's freedom from such ailments lies in the fact that she is migrating from the Wealden clay to the London clay, and that the exigencies of domestic service, the somewhat close confinement to the house, etc., are more in accordance with her home habits, whereas the blonder coastal type, having a strong infusion of the intrusive fair race and coming from a highly permeable soil, finds herself in an environment differing materially from that in which her stock has undergone evolution during a number of centuries, particularly in respect of humidity of soil and confinement to the house. I mention this last factor because these girls always fare better as children's nurses with the daily promenade than as house servants, cooks, etc.

Be it noted that this ability to adapt is not a question of the relative soundness of the original stocks. These Wealden types are just as liable as the others to suffer in health if their surroundings do not suit them. One of

them, a cook, told me that when she was 15 her people left their village to take a boarding house for summer visitors in Hayling Island, near Portsmouth, a flat, sandy, treeless expanse surrounded by tidal waters. For the six years she went there she was in constant ill health with anaemia, neuralgia, and indigestion, but on leaving the island to enter service in Hampstead she quickly recovered her health. I have met with many other similar items of evidence that there exists in this country a large number of individuals or stocks who are restricted to a narrow environment if they wish to maintain their health, and tend to degenerate when they migrate. I could, had I time, cite instance after instance of individuals bred on clay finding their health fail on sand or chalk; of east coasters finding the west or south "does not suit them," and so forth. The major issues of Europeans in the tropics, of black races in temperate or cold climates, are patent enough as regards the effect of change of latitude on health, but there are subtler processes at work just as certain in their ultimate results, though at present unrecognized as factors in national health, because they are gentler and less dramatic in their manifestations.

Of course, there is such a thing as acclimatization: it is observable in many of the domestic servants who have formed the main field of my observation. There is the response of the tissues, including the brain with its highest centres, which enables the individual to effect a measure of adaptation to new surroundings, so that many adults enter a period of apparent health after preliminary disturbances brought about by the change. Also many better-class domestics are averse from complaining of any ill health which may be troubling them unless they absolutely break down. But all this only serves the better to mask the ultimate result. If, when marriage takes place and children appear, the immature organism finds itself affected by conditions differing from those in which its ancestry evolved, it is unable to achieve the same measure of acclimatization as the adult. It is notorious, for instance, that European children have to be sent home from tropical countries where their parents can, with reasonable care, maintain sufficient health to carry out their duties.

An analogous process can be observed in the offspring of types such as are represented by my two Sussex girls in respect of such children as "take after" their mothers. The children of the Wealden woman who has made her home on the London clay will probably thrive. Not so those of the girl from the chalk hills. The disharmony will probably first manifest itself in their mucous membranes. In early childhood they will be subject to catarrhs of the respiratory and digestive passages, the recurrent irritation of the former favouring the production of enlarged tonsils and adenoid growths with the train of serious and enduring ills that result from them. The imperfect assimilation of nourishment, the distortion of the frame, the mental hebetude, the ready fatigue of brain and muscle, etc., all tend to the production of a generation inferior at every point to the previous one bred in its proper environment, and in the third generation these evils are accentuated, and degeneration presaging extinction is in sight.

This result of migration is no figment of the imagination. I can state with assurance that it is readily discoverable to anyone who chooses to look for it, especially in the raw new suburbs pushing themselves out over the tracts of London clay that surround the metropolis. I have confined myself to the effects of transference from one county (divisible into two regions) to one district of London, but these effects are but a small part of a complex movement taking place all over the country, the essence of which is the disintegration of small communities of ancient growth, and the reassemblage of their elements under the aegis of modern Industrialism.

The study of provincial types and the factors which have gone to produce and differentiate them has been only tentatively pursued in this country. For a comprehensive and truly scientific treatment of the subject we must go to France.

M. E. Désmolins (the well-known author of *A quoi tient la supériorité des Anglo-Saxons*), in a work entitled *Les Français d'aujourd'hui*, has set forth the results of a thorough and intimate survey of the various provincial types of France. It is founded in part on the work of two earlier French sociologists, Frédéric le Play and Henri de Tourville, and represents the results of more than fifty years' patient and unremitting observation and research. M. Désmolins, in presenting his treatise, displays the brilliance for which French *savants* are famous in dealing with the complicated threads of his subject. The dexterity with which he contrasts the groups of geographical, geological, meteorological, botanical, zoological, social, and religious influences in various parts of France, and their effects in determining distinctive characteristics in the inhabitants of these regions commands the sincerest admiration.

In perusing his book one point in particular struck me—that the migrant in France frequently does not materially alter his method of earning a livelihood when he leaves his own district. Thus the Auvergnat in his natural home in the mountains of Central France is given to petty bargaining, not unmixed with sharp practice, *maquignonnage* as it is called, in the disposal of local stock or produce. When he migrates he becomes a hawker, pedlar, rag-and-bone merchant if poor, but may rise to dealing in second-hand clothing and other goods, or even become a wealthy purveyor of antiques; in short, he takes up any occupation giving scope for his inherited aptitudes. Not only so, but he keeps in touch year by year with his native soil, often returning each summer to work on the farm where he was born. I have seen excursion trains on the Orléans line discharging numbers of these returning emigrants at way-side stations in the Auvergne. There is a regular service to meet the demand at certain seasons of the year. For France there lies in such customs a great bulwark against national degeneration, and as Agriculture has not decayed as with us (although the ties that there connect peasant and yeoman with the soil that bred them have been stretched and not infrequently ruptured), the wholesale detachment which has taken place in this country and in Germany with the advance of Industrialism is a far greater menace to national stamina than anything obtaining in France.

Of course migration from one rural district to another of a materially different soil and climate (though liable to have an adverse effect on families of poor adaptive powers) is of small moment compared to the great central fact of Industrialism—urban immigration.

In recent years we have heard an outcry against the alleged "encouragement of the unfit to multiply." From certain quarters issue forth denunciations of measures directed to improve nurture while neglecting the far higher potence of Nature. The superior power of heredity over environment has been calculated with such nicety that it has been presented to us expressed in terms of decimals. But, apart from other objections, the application of such calculations to the determination of survival-values seems to assume that communities of human beings, such as the population of a large city, are of the same homogeneous character as a shoal of herrings or a flock of sheep. But in both the latter each individual has been evolved under precisely the same environmental influences as the rest of the flock or shoal—influences that will vary in the future as little as they have done in the past. On the other hand, the population of a great city is an assortment of more or less distinctive types or subtypes owing their variety to the selective influence of environments which differ from each other in material factors, seeing that the population of a city has not grown *in situ*, but is largely the result of immigration from various sources. Furthermore, the environment is undergoing unceasing and sometimes rapid change. The individuals, then, of an urban community cannot be classed as good, bad, or indifferent, according to some rigidly conceived standard of fitness or unfitness to survive and propagate. The price of our rapid transition from an agricultural to an industrial nation cannot yet be wholly estimated, for the whole account has not yet been rendered. But one result of this transition has been the disintegration of rural communities, their aggregation in new centres, and the extraction, by a severe process of natural selection, of types who could adapt themselves to industrial exigencies and the climatic and other accessory conditions therewith associated. My point now is that a large proportion of these immigrants, efficient enough in rural occupations, find themselves unsuitable for urban conditions, and therefore tend to somatic deterioration. But are they, then, to be classed as essen-

tially "degenerate" or "unfit"? Is the germ-plasm itself damaged? Is there no hope of regeneration? Are these failures of adaptation to be placed in the same category as the hereditarily insane, the essential epileptic, the deaf mute, the imbecile, the idiot, the moral pervert? In the West of Ireland is a fringe of terrible skin-and-bone country, mountain and moorland thickly strewn with the débris of crumbled summits by the ice that ploughed its way from peak to sea in a forgotten age. In other lands one would expect to find no more sign of habitation than an occasional lonesome farm or shepherd's hut, but here many a gaunt valley is filled with people. These are the notorious Congested Districts—groups of cabins clustering cheek-by-jowl or dotted haphazard over the countryside and inhabited by listless scarecrows clad in rags of rags. Here famine and pestilence hold perennial sway, and only those who have seen the full development of these plague spots in the remoter promontories and peninsulas of Connaught can believe that such places could exist within the confines of the British Isles. The forefathers of these derelicts were thriving peasants driven from their fertile native soil into these wildernesses by the storm and stress that swept over their land in past centuries, the innocent victims of "deeds done long ago, and ill done." One thing alone stirs their breasts with hope—the sound of the Atlantic tides that ebb and flow about their coasts. Beyond it are cousins, brothers, sons who have managed by hook or crook to cross the sea. And have these gone to swell the ranks of the inefficient in other communities? On the contrary, the New World has drawn some of its most hard-working labourers from these same limbos of despair—men who develop a surprising physique and energy as soon as they can enter environmental conditions at all conformable to their physical needs. Some come back to their relatives after a few years of exile, and relapse after a short time into the listless quasi-vagabondage from which they had made their escape.

Professor Karl Pearson tells us "that it is essentially the man who makes his environment, and not the environment which makes the man." I am with Professor Pearson in so far as I believe that this is the task man has undertaken, thereby differentiating himself from the rest of the animal kingdom. But surely it is the collective rather than the individual man who selects the environment. In the case of the working man, it is the leaders to whom he looks for guidance that are at fault. Man has not yet travelled far along the road whose end will not be reached till he has established absolute command over the forces of Nature, and migration or exile afford a ready test of the advance he has made. Indeed, the troubles unknown to the lower animals which beset man even in the most favourable circumstances show the instability of his present equilibrium and the recurrent need of adjusting his balance, although it is this ever-present need that spurs him forward.

Shall those, then, whose specialized talents are in demand for the nonce say to the rest: "Yours are the *bouches inutiles*; you must starve that we may carry the day!"? Is it anything but national improvidence to "scrap" material you cannot use at the moment? We have to breed for environments that undergo continual change. There is a terrible wastage going on of good stuff for the making of a nation through nothing but ignorance—not culpable, perhaps, but sheer ignorance all the same. We have chosen to make ourselves an industrial nation and let our agriculture decay; we have offered industrial work to those who made their living on the soil, luring them into the cities and into environments differing in many respects from those in which they were evolved. The congested districts in Ireland are patches of jetsam swept into the recesses of the land by the tidal waves of conquest and oppression; our city slums have accumulated through the agency of economic currents no less ruthless in their operation or deplorable in their results. There are, of course, a number of true degenerates in our midst. They have undoubtedly been allowed to multiply unduly. Certainly before the great uprootings of localized types occurred a necessary process of elimination of the "unfit" was persistently in operation. But it is wrong to ascribe the present state of affairs wholly to unwise interference with or suspension of natural selection, without distinguishing between the presumably true, germ-plasmic, degeneration of deaf-mutes, imbeciles, congenitally feeble-minded, etc., and those whose stock—good, maybe, in its natural environment—finds itself in disharmony with another. We cannot forthwith, especially amongst our working classes, evolve a type who feels himself, with the Rabbi Ben Ezra—

> Fearless and unperplexed,
> When I wage battle next,
> What weapons to select, what armour to indue.

That will not come till the day of the Superman; meanwhile every migration of man increases in some degree the stress of natural selection, makes increased demands on his adaptive powers.

However great the ingenuity at man's command, it often fails to compensate for an inadequate natural elasticity—to make up, for instance, for the lack of selective weeding in his ancestry by specific disease germs such as tubercle, to which he now finds himself exposed. This is the problem that confronts us. We, as a nation, are not in our origin homogeneous; the development, therefore, of the localized types, such as the Sussex examples I have described, may depend not merely upon seclusion and specialization, but also upon inherited aptitudes for this or that environment derived from other distinctive primary races that have gone in past times to make up the British people.

I have gone elsewhere into what these races are and how their respective evolutions affect the different types of the nation as we see them to-day. I wish now to emphasize that the nation, at present, is not a complete compound (in the chemical sense) of its primitive elements: it is largely an intimate mixture constantly forming, it is true, amalgams between one or more of its original component parts, but with a co-existing tendency to their segregating out as generation succeeds generation. Once this complex nature of the community is grasped, it will be apparent that we must be very chary of accepting mathematically calculated deductions as to the relative power of heredity and environment which do not take this complexity into account. In point of fact, a multitude of diseases arise from an inherited tendency manifesting itself in one environment and not in another, the two factors being, therefore, interdependent and inseparable. Prominent amongst such diseases are the various forms of tuberculosis. For instance, the cow is only subject to tubercle when it is shut up in a dark, ill-ventilated cowshed, it being naturally a wanderer in search of pasture. Similarly there are many human beings only subject to tubercle when living in unsuitable conditions. Tubercle is a common disease, and its mode of selection of its victims is often such as appeals powerfully to sentiment. But there are others just as fatal to the national physique, though more stealthy in action and less vivid in their immediate claim on public sympathy. Attempts have been made to correlate racial or physical types with tendency to this or that disease, such as the proclivity of blondes to rheumatism, heart disease, tonsillitis, and of brunettes to cancer, nervous diseases, phthisis; but, having established such correlations, we must advance further, and ascertain if possible why, or in what environments, these morbid proclivities are excited, and how they are modified by change of surroundings. In a paper read before the Hampstead Medical Society in November, 1910, published subsequently in the *Clinical Journal* of August 9th, 1911, I made certain suggestions and recorded certain observations in this connexion, but to arrive at any practical result extensive co-operative research is necessary; and I think that with the help of such a body as the Anthropometric Committee or through widespread individual enterprise statistics of the highest value to the health of the nation could be compiled.

Now, if the aim of eugenics be to improve the stamina of the race by restricting reproduction to "sound" stocks, can it not include in its aim the securing to such stocks the environment they severally require, or of discouraging migration into surroundings calculated to cause somatic as opposed to germ plasmic degeneration? As a companion to the old saw, "One man's meat is another man's poison," it might well be said that one man's garden is another man's graveyard. Regarding the larger question of emigration beyond the seas, available information all

goes to confirm the truth of the principles I have laid down in this paper. In the *Eugenics Review* of January, 1911, is a paper by Major Woodruff, M.D., of the United States Army, entitled "The Eugenics of Migrants," in which I was interested to observe how closely, though quite independently, we had been working on parallel lines. He deals, of course, with European migrations to the American continent and tropics, and depicts very clearly how severely the stress of natural selection falls on the stream of emigrants from Europe representative of innumerable racial types or subtypes. He puts the case succinctly in saying that

> every character, such as colour and size, must be beneficial and of survival value. . . . Now it generally happens that a character which is of indispensable value in one environment may be so injurious in another that migrants promptly perish.

Of course there are varying degrees of stress, and, as Major Woodruff expresses it, the very slowness of change may allow "evolution of new varieties by survival of the variations fittest for the new environment."

All environments are naturally in a state of flux, and the organisms which they condition must be continually varying, generation by generation, to meet the change taking place, but these processes are commonly very gradual. The case is altered when migration takes place, and the greater the change the more immediate and dire is the effect on the migrating organism. Major Woodruff has been for years observing how this biological law has affected European colonization in America and the tropics,* and I, unaware till recently of his work, have been noting its operation in the shifting of population within the borders of the British Isles. Here the process is more subtle and less apparent to the casual eye, but that is all the difference. It is just as certain in its ultimate results if the stock cannot keep pace with the change by producing adaptable variations, or, in mixed strains, by producing a sufficiency of segregating adaptables, and any rapid change in the national pursuits must be followed by degenerative phenomena.

Can the study of adaptability in the individual help us in any way to solve our social problems? I think so. Man, as man, walks by knowledge rather than by instinct, and any addition to his knowledge should help him to increase the stability of his equilibrium. He is not bound, as the animals are, wholly to submit to change in the cosmic forces that impinge upon him. He can think, and from thinking act to survive. Pascal's famous saying,

> L'homme n'est qu'un roseau le plus faible de la nature, mais c'est un roseau pensant,

has lost nothing of its force and truth in the light of modern biology.

It is firmly established that blondes undergo inevitable somatic degeneration in cities. Then it is time to discourage their immigration. We cannot afford to lose them as a national asset. Their natural courage and energy they have inherited from their "Nordic" strain has contributed largely to the place we hold in the world. Let us pay more discerning and individual attention to the environment of children; it is they who are hardest hit by unsuitable conditions. Let us note how, following the centripetal force exerted by the city, a centrifugal movement is setting in, how the suburbs are attenuating, as successive rings and satellites form round the main orb along with increasing facilities of transit. Whither this movement is tending and what opportunities we are losing day by day the future will show, but some degree of intelligent anticipation is even now possible. Perhaps it may be to the ultimate advantage of the nation to pass through the ordeal of urban life and emerge by the centrifugal movement I mentioned just now with tissues better armed against disease; but the price to be paid for such a consummation is a terrible one. The time is possibly ripe for checking the reproduction of stocks whose germ-plasm is hopelessly bankrupt, but there are many more, apparently insolvent, who could with intelligent management be made to yield an increase, and how large is this class cannot be determined until the last word has been said on the peculiar relation of man to his environment.

My object has been to urge that although misdirected humanitarianism may favour the multiplication of the essentially degenerate, the chief cause of national deterioration is not to be found here, but in the operation of factors hitherto imperfectly recognized. We must realize that we have drifted into conditions which have upset not merely those whose foothold was already precarious, but also a large section whose stance was firm through many centuries of national life, who have greatly contributed to our former national character of solidity and strength. Nowadays we prize the samples of craftsmanship our grandparents consigned to the lumber-room. We search the waste heaps of abandoned mines for the rare and once unsuspected metals they may yield. Shall a future day find us raking over the débris of what once were virile stocks, to recover that which gave us our former pride of place, or which would meet our need in some new phase of national life?

Again a "great and exceeding bitter cry" has gone forth from Esau the man of the field, the "red" man who must live with the sunshine and the wind. The cry is as of old against Jacob, the sojourner in tents, the lover of the indoor life, the natural city-dweller of to-day. For once again Edom has been beguiled into yielding his birthright for the mess of pottage. Once more he has compromised himself by marrying the daughters of Heth, and our streets are filled with a horde of mixed origin who know no pride of race.

This will prove a stumbling-block for those who cry "Back to the land." Unless they exert the utmost care and discernment, unlooked-for troubles will arise and the reality prove other than they anticipated. To hope to recover the good old British stocks by indiscriminately planting out "on the land" the slum-denizens of our towns is as vain a quest as to turn barndoor fowls loose on the moors and expect them to breed grouse.

Before, then, any drastic measures are undertaken to remedy the state of affairs into which we have drifted, let us make sure that we have taken all our bearings, calculated all the impinging forces with which we may have to deal, remembering that now as heretofore

> Science moves but slowly, slowly
> Creeping on from point to point,

and that

> Knowledge comes, but wisdom lingers.

* See his books on *Tropical Light* and *Expansion of Races*, published by Rebman and Co.

SECTION OF ELECTRO-THERAPEUTICS AND RADIOLOGY.

CHARLES THURSTAN HOLLAND, M.R.C.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

IN a few sentences the PRESIDENT outlined the business of the Section, welcomed the members on behalf of the Liverpool radiologists, extending a special welcome to their distinguished visitor from abroad, Dr. Fedor Haenisch of Hamburg, and called attention to the large exhibition of radiographs in the Pathological Museum, and to the fact that the radiographic departments of the various hospitals would be open for inspection each day of the meeting. He then called upon Professor Rutherford to deliver the opening address.*

THE CHEMICAL EFFECTS PRODUCED BY THE RADIATIONS FROM ACTIVE MATTER.

By ERNEST RUTHERFORD, F.R.S.,
Langworthy Professor and Director of Physical Laboratories, University of Manchester.

I HAVE chosen the title of my address, "The chemical effects produced by the radiations from active matter," because it appeared to me a subject of fundamental importance in the consideration of the therapeutic effects of the radiations from radium and other radio-active substances, and one that might prove of interest to members of this Section. It is well known that the highly active substances in ordinary medical use—for example, radium and its emanation, and the thorium derivatives, mesothorium, together with radio-thorium—emit alpha, beta, and

* In arranging the report of the proceedings for publication, the papers have been grouped according to the more or less distinct division of subjects which occupied the attention of the Section—namely, radium therapeutics, *x*-ray therapeutics, medical electricity proper, and finally, radiography. Therefore, the order in which the papers are printed is not necessarily that in which they were read.

gamma rays. The alpha rays are positively charged atoms of helium projected with a velocity of about 10,000 miles a second, the beta rays are negatively charged electrons projected with a velocity approaching that of light, while the gamma rays appear to be a type of very penetrating $\varkappa$ rays. The corresponding types of radiation emitted by the radio-active substances mentioned above are identical in character, and do not differ much in penetrating power. It is, consequently, certain that, for equal relative intensities, the beta rays—for example, from radium or its emanation—would produce similar effects, whether physical, chemical, or physiological, to the corresponding radiation from a preparation of mesothorium. We should not expect to obtain reactions with the radiations from radium that would not equally well be shown by the corresponding radiations from a preparation of mesothorium.

It is of importance to bear in mind the relative penetrating power and the relative energy of these three types of radiation. It is difficult to give definite values to the distance of penetration in a given substance, since the alpha and beta types of rays are heterogeneous—that is, they consist of particles projected at different speeds. This is especially the case for the beta rays, where the soft rays may be from ten to fifty times more easily absorbed than the more penetrating rays.

Considering as an example a *thin* film of radium in equilibrium, about 90 per cent. of the total energy of the radiation emitted is in the form of alpha rays, about 5 per cent. in the form of beta rays, and 5 per cent. in the form of gamma rays. The alpha rays are completely stopped in $\frac{1}{10}$ mm. of aluminium, the beta rays are nearly stopped in 5 mm. of aluminium, while the gamma rays are only half absorbed in passing through 7 cm. of aluminium. In the case of ordinary tissue the thickness for complete absorption is two to three times greater than in aluminium. It follows from this that over the distance of penetration of alpha rays, the total energy absorbed in the form of alpha, beta, and gamma rays is about in the ratio 100,000 : 100 : 1. This enormous difference in the relative energy of the three types absorbed by a thin layer of matter must be borne in mind in comparing the relative effects produced by the alpha, beta, or gamma rays under certain experimental conditions.

A large number of observations have been made on the chemical effects produced by the radiations from radium or its emanation. The chemical effects due to the alpha rays are far more marked than for beta or gamma rays. Using large quantities of radium, marked chemical effects are produced by the alpha rays in the course of a few hours or days. These are best shown by adding radium emanation to a solution when the alpha rays have full play, or by using a very thin-walled glass tube into which purified emanation is compressed. I have here such a tube containing the emanation from about 50 mg. of radium, and its walls are so thin that the alpha rays readily pass through with little absorption. With this tube we can readily illustrate the brilliant luminosity exerted by the alpha rays in willemite or zinc sulphide; and also the definite range of the alpha rays in air before they are stopped. The rapid production of ozone from the oxygen of the atmosphere is clearly evidenced by the strong odour. The alpha rays also produce nitrogen oxide in the air. Such an emanation tube rapidly oxidizes a lead or aluminium plate brought near it, no doubt due to the ozone produced. If plunged in water it dissociates it at a rapid rate with the appearance of hydrogen or oxygen. The dissociation of water by the alpha rays is so rapid that about 200 c.cm. of hydrogen and oxygen are produced from a solution of 1 gram of radium per week. Marked chemical actions are produced by the emanation in many substances. For example, Ramsay and Cameron showed that HCl was split up into H and Cl, while CO_2 was decomposed into CO, O, and partly into carbon. The emanation rapidly decomposes the grease of stopcocks with the evolution of CO_2, and generally has a marked dissociating action on organic compounds. For example, in the course of some experiments of Dr. Boltwood and the writer, a large quantity of emanation was placed in a glass tube coated with solid paraffin. On opening the [illegible] found that a large quantity [illegible] the paraffin had completely [illegible] as in chemical and physical properties. Examples of this kind could easily be multiplied. It is now known that the alpha rays exert a marked action on haemoglobin and uric acid.

One of the most interesting properties of the alpha rays is the rapid coloration of glass and of certain kinds of mica. This is well evidenced by the beautiful pleochroic halos observed in mica. Joly has shown that these coloured halos are produced by the action of the alpha rays over geologic ages from a minute radio-active nucleus. These halos, which have been studied in great detail and with great skill by Joly, show in an unmistakable manner the range of the alpha rays from the different alpha ray products in the thorium or uranium nucleus. The coloration of glass or mica is no doubt the result of chemical changes brought about by the radiations, but the exact explanation is not yet quite clear.

The chemical effects of the beta and gamma rays have not been studied in the same detail as for the alpha rays, as long exposures to the radiation are required to produce marked effects. In general, however, there appears to be no definite evidence that the chemical changes produced by beta and gamma rays would not equally and far more rapidly be brought about by alpha rays. As far as observation has gone, the beta and gamma rays are able to dissociate complex molecules in much the same manner as the alpha rays; but the effects for a given quantity of radium are on a much smaller scale than for the alpha rays, on account of the much greater relative energy of the former.

The evidence so far available indicates that the radiations exert a strong dissociating action on complex molecules, and break them down into simpler forms. At the same time, under suitable conditions, there appears to be a reverse action. For example, hydrogen and oxygen recombine under the influence of the rays to form water while in the presence of oxygen, and many substances are oxidized. There appears to be no doubt that the chemical effects of the radiations are closely connected with the ionization which is known to be produced in gases and liquids, and probably also in solids. In the case of water the rate of production of hydrogen and oxygen is very nearly that to be expected if the ionization of each atom led to its dissociation. It is still doubtful whether this dissociation is connected directly with the production of ions or is a secondary effect following the act of ionization. The ionization produced by the alpha, beta, or gamma rays is similar in type, though differing widely in intensity and distribution. It seems reasonable to suppose that wherever ionization is produced in complex molecules by either of the three types of radiation, similar chemical effects are produced.

It is of interest to consider the distribution of the ionization due to each type of radiation. This is shown in a beautiful manner by some experiments that have been recently carried out by C. T. R. Wilson. In these experiments the trail of a single alpha or beta particle in passing through a gas is made visible to the eye by the condensation of water drops round the ions by the sudden expansion of moist air.

[Professor Rutherford here showed some photographs, in the first of which was seen the trail of the alpha particle, which travelled in most cases in nearly a straight line, but only occasionally showed a marked deflection due to an encounter of a specially violent nature with an atom. The number of ions produced per centimetre of air (about 20,000), he said, was so great that the individual drops appeared to coalesce into a continuous band. The case of a beta particle was very different. It did not travel in a straight line, but was deflected from its path by its encounters with atoms. Only a few ions were produced per centimetre of air, and these were clearly shown by the isolated drops outlining the path of the beta particle. He also showed the photograph obtained by Wilson of the distribution of the ionization produced by the passage of $\varkappa$ rays through air. Bragg had long maintained that the $\varkappa$ rays did not ionize themselves, but that the ionization was due to the beta particles which they liberated from the atoms of matter traversed. This was clearly shown in the photograph, and the tortuous paths due to scattering pursued by the beta particles were beautifully brought out. The gamma rays showed similar effects to $\varkappa$ rays, only the beta particles liberated from the atoms were much swifter and travelled a much greater distance before they were stopped.]

Continuing, Professor Rutherford said: The ionization per unit path, whether due to an alpha or beta particle, increases as the velocity diminishes, and becomes far more marked near the end of its range. We should consequently expect a low speed particle to produce relatively more chemical action per unit path than a high speed one. Since, however, the high speed beta particle ultimately decreases in velocity and becomes a slow speed beta particle, the total ionization and consequent chemical action due to the latter is much greater than for a slow speed beta particle. There is some evidence to show that the chemical action relative to ionization is more effective when the alpha or beta particles are near the end of their path.

When we take into account the marked chemical actions that are produced by the radiations from active matter, it seems probable that the therapeutic effects of these radiations must be a result of the chemical changes brought about in the material the radiations traverse. This chemical action may result in a dissociation of complex molecules or the building up of complex molecules, or both may proceed together. While the ultimate causes of the changes observed are to be ascribed to definite chemical action, such chemical actions, no doubt, often result in physical changes in the material—for example, in the change of viscosity or surface tension of the fluids. These secondary effects probably often play a considerable part in the effects observed.

The chemical effects produced by the alpha, beta, and gamma rays, so far as they have been studied, appear to be very similar. Such a result is to be expected from the similarity and character of the ionization produced. We should consequently expect that each of these three types of radiation should produce very similar therapeutic effects when account is taken for equal intensities of the ionization produced in a given region. We should certainly anticipate that the effect of beta rays and gamma rays should be identical, for the ionization and chemical actions are in both cases due to high speed electrons. There may be in some cases slight differences between the effects of *x* and gamma rays. Sir J. J. Thomson, in his lecture to the Section two years ago, drew attention to the fact that *x* rays possess the property of setting up strong intense characteristic radiations in the substances on which they fall. On account of their small penetrating power this effect is far more marked for *x* than for gamma rays, and may result in special cases in marked variations of the intensity of radiations at different parts of a non-homogeneous material. While in the present state of our knowledge it is difficult to make definite statements on this question, there is certainly strong reason for believing that the physical and chemical effects produced by the three types of radiation are very similar. It is possible, however, that in some cases certain differences may arise on account of the enormous ionization along the path of the alpha particle compared with that of the high speed beta particle.

In comparing the therapeutic effects of the three radiations account must always be taken of the wide difference in the penetrating power of the radiations, and the enormous difference in their relative chemical action at any given point. When these factors are allowed for, numerous investigations indicate that the bactericidal effect of the alpha rays is similar to that produced by beta rays. This has been drawn attention to by Miss Chambers and Russ in studying the bactericidal action of the rays from radium. It is of the highest importance in all cases to take account of the difference of penetration and ionization produced by the three types of radiation. We should expect, for example, the effect of the alpha rays to be confined to within $\frac{1}{10}$ mm. of the surface radiated. The effect of the beta rays may extend for about a centimetre, and the gamma rays through the whole organism. The property of radium of emitting a radio-active emanation of comparatively long period, which is readily soluble in water, makes it a comparatively simple matter to utilize the effects of the alpha rays, not only on the surface, but throughout a considerable volume. This can be done by injection of water charged with emanation. There is every reason to believe that the emanation itself is quite innocuous, and that the effects produced are due almost entirely to the alpha rays emitted from it, which have far more energy than the beta and gamma rays. No doubt, water solutions of thorium X and other active products would be equally serviceable. It would, however, appear highly undesirable to introduce unprotected the actual radium or thorium salts in the system. Apart from the poisonous action, at any rate of the latter, these may remain permanently in the system and ultimately destroy the tissues surrounding them. For this reason, the use of solutions of the radium emanation and of thorium X have very great advantages for the purposes of experiment. The method of applying the radiations to be employed will, of course, largely depend on conditions. In some cases a thin alpha ray tube may be very effective, or a wire made active by exposure to the radium or thorium emanation. In other cases the beta and gamma radiation from radium or mesothorium may be employed, or a solution containing the radium emanation or its active deposit may be introduced.

At the conclusion of Professor Rutherford's address,

Dr. W. Deane Butcher said: It is the custom of the Electro-Therapeutic Section to ask some distinguished physicist to open its proceedings, and thus to mark the more intimate relationship between physico-therapy and science. We are fortunate on this occasion in our choice, for Professor Rutherford is the discoverer—may we not say the god-father?—of the ever-increasing radium family. He is no less fortunate in seeing the discoveries which have immortalized his name so promptly utilized for the benefit of mankind. I ask you to accord a most hearty vote of thanks to Professor Rutherford for the address to which we have all listened with so much pleasure.

The vote of thanks was accorded by acclamation.

DISCUSSION ON RAY THERAPEUTICS IN MALIGNANT DISEASE.

OPENING PAPERS.

I.—Ernest H. Shaw, M.R.C.P.,

Director of Clinical Pathology, Great Northern Central Hospital.

THE ACTION OF RADIUM AND *X* RAYS ON MALIGNANT GROWTHS.

It has been my privilege to examine many cases of malignant disease undergoing treatment by *x* rays and radium, and in many instances I have examined histological sections of the growths at intervals during this treatment for the purpose of studying the effects of the rays on the tissues. My earlier experience was gained during my association with Dr. Finzi at the Metropolitan Hospital; since then I have worked on cases with Dr. Robert Knox at the Great Northern Central Hospital. Observations have been made on cases of carcinoma of the breast, lip, skin, etc., and sarcoma of glands, abdominal wall, and other regions. The uniformity in the character of the histological changes discovered makes it unnecessary to give more than a few illustrative descriptions.

1. In a case of carcinoma of the breast of an aged woman a recurrence was treated first with *x* rays and afterwards with radium. The tumour and glands were reduced very much in size. The patient died suddenly from some other lesion, and material was obtained *post mortem* for histological investigation. Microscopic sections of the remains of the tumour showed a small spheroidal-celled carcinoma with a well-formed fibrous matrix; the cells stained well, and were seen running in narrow columns from the main mass into the surrounding fatty tissue. Another section showed fibrous tissue free from growth, which looked as if all the cells had been destroyed and replaced by fibrous tissue. A lymphatic gland showed growth with a very scanty amount of fibrous tissue, while a nodule in the liver showed cellular growth with partial necrosis. It is worthy of note that the nodule of growth which was exposed to the action of the rays was very fibrous, whilst the other deposits which were further away were poorly supplied with this tissue. Also the nodule in the liver, which was at some distance from the rays, contained a necrotic patch. In another case of recurrent carcinoma numerous nodules appeared in the skin about the scar shortly after an amputation of the breast. The woman was only 32 years of age, and, owing to the rapidity of recurrence and extent of the disease, no further operation was attempted. *X* rays were applied and the nodules of growth decreased in size in a remarkable manner, but they afterwards grew larger again. At the same time other nodules appeared,

and a large area ultimately became affected. Certain nodules were localized and at varying periods removed in order to ascertain what changes were taking place as a result of the application of the *x* rays. Microscopically the primary growth was a spheroidal-celled carcinoma with much fibrous tissue. The nodules showed exactly the same type of growth, the malignant cells were small and round, and lay in small groups in a dense network of fibrous tissue. They were well stained, and extended right into the papillae. No necrotic cells were to be seen. Numerous small round inflammatory cells lay amongst the cancer cells.

2. In a case of recurrent carcinoma of the skin repeated application of radium caused great shrinkage of the growth. Numerous small pieces were removed at intervals and examined microscopically. They showed a large amount of fibrous tissue in places; it varied in character, being in the form of fibrillated bundles in some parts and dense structureless or "hyaline" tissue in others. The cells of the growth stained well on the whole, but some were badly stained and necrotic. Small round inflammatory cells were plentiful.

3. A gentleman, aged about 50 years, had a large, flat ulcerating growth in the right tonsillar region, which also extended on to the soft palate. A very extensive operation would have been required to expose and remove the growth, which was a squamous-celled carcinoma. Radium was applied to the growth by Dr. Knox, and the growth decreased in extent in a remarkable manner; in a short time it had apparently disappeared. Later, however, a small recurrence appeared and was removed. Sections of this showed a very small piece of carcinoma surrounded by much fibrous tissue and small round inflammatory cells. Much of the fibrous tissue was of the "hyaline" variety. A second recurrence was removed, and showed the same fibrous and cellular changes. This patient is still well and free from any obvious signs of growth, twelve months from the date when he was first examined.

4. A man, aged 50 years, had a large mass of growth in the neck. Part of it was removed together with a piece of the internal jugular vein. It proved to be a small round-celled sarcoma. Treatment by *x* rays was followed by a temporary decrease in size of the main mass, but the patient ultimately died with large masses of growth in the neck and thorax. Microscopic sections of various parts of the growth showed round-celled sarcoma with very little fibrous change. A hard gland in the neck, which had been exposed to the action of the *x* rays, showed increase of fibrous tissue and necrosis of the central part of the growth. The peripheral cells stained quite well.

5. In a case of carcinoma of the breast of a woman aged 60 years, *x* rays were first applied with the object of softening and breaking down the tumour, and this was followed by the application of radium. The growth was hard and fixed to the skin and nipple. Under treatment it gradually became smaller, and Dr. Knox informs me that it ultimately disappeared. A small nodule was removed from the skin over the tumour towards the end of the treatment and microscopic sections prepared. They showed a large-celled carcinoma in small amount, the cells stained well in some groups and badly in others, while other groups were represented by a granular necrotic mass. Fibrous tissue was abundant, some of it being "hyaline" in character. Small round inflammatory cells were distributed throughout the tumour. The squamous epithelium on the surface stained well in all parts.

On reviewing the changes described above, one finds that they include: round-celled inflammatory infiltration, formation of fibrous tissue in varying amount and density, and necrosis of tumour cells. Now what are we to infer from these changes? Can we attribute them to the action of *x* rays and radium? Before answering this question, I must make the following remarks: From long experience and the examination of microscopic sections of all kinds of tumours, I can affirm with every degree of confidence that all the above changes are seen repeatedly in tumours that have not been exposed to the action of *x* rays or radium. My interpretation of such changes is that they are due to reactive inflammatory processes on the part of the body tissues in their attempt to check and ultimately overcome the cells of the tumour. The fibrous changes, for instance, are very commonly seen in breast carcinoma, especially in that variety described as "scirrhus." In this one sees large masses of this substance in the more central and therefore the oldest part of the tumour. Round celled infiltration is very common at the growing margin of a malignant growth. This may be taken to be due partly to the irritative action of the tumour cells on the surrounding healthy tissues and partly as a result of septic infection. The latter is always seen in cases of new growth of such exposed surfaces as the skin, tongue, rectum, and cervix uteri. Necrosis of parts of a malignant growth is a common feature; at an ulcerated surface sepsis is an evident exciting cause, but in the central parts of a tumour one must look for some other cause in many cases. The one that suggests itself is deficient supply of blood. With these facts before us we must not say that the changes seen in tumours after treatment by *x* rays and radium are due to those rays alone. They are not specific changes. The necrosis of tumour cells which occurs after treatment by *x* rays and radium may be caused by such rays, but we must remember that necrosis occurs apart from such treatment.

Malignant tumours undoubtedly diminish in size under the action of *x* rays and radium, but so they do without this treatment—in a small number of cases certainly, but they do. But the proportion of tumours which diminish under treatment is much greater than the proportion which do not. And then there is the fact that some growths actually disappear. This is a great encouragement to you all to persevere in the use of *x* rays and radium. Why does the tumour decrease in size? Are the cells destroyed and absorbed, or is it due to the action of the contracting fibrous tissue? I think both these causes are at work. They occur both in untreated and treated cases, but, as we know, they occur in a much greater number of treated cases.

Finally, I would summarize briefly as follows: Nature in her attempts to check and destroy the invading cells of a malignant growth brings all her inflammatory forces into line. *X* rays and radium act by destroying a certain number of malignant cells outright, but they act mainly as a stimulant to the healthy cells of the body to urge them on to still greater inflammatory activity.

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THE FORMS OF MALIGNANT DISEASE BENEFITED BY RADIUM TREATMENT.

RADIUM may be used in malignant disease in three different ways:

1. To prevent recurrence after operation.
2. To attempt to obtain a cure.
3. To relieve symptoms and prolong life.

1. In my opinion radium rays—at any rate, filtered radium rays—have *some* beneficial action on every growth if applied in a sufficiently early stage and in large enough doses, though on some types of growth their action is much more marked than on others. This leads to the view that they should be employed in every case of an operation for neoplasm as a preventive measure against recurrence: for any little deposit which the surgeon leaves behind will naturally be in an early stage of its development, and at the period of the disease at which an operation is undertaken the resistance of the patient will not have been very greatly lowered. Naturally all this applies with redoubled emphasis in the case of those growths which are affected readily by radium treatment in the later stages.

The radium is best applied in tubes at the time of the operation, these being left in the wound for a definite number of hours, and a subsequent external application being given five or six weeks afterwards.

2. I must first of all dismiss rodent ulcer with the remark that its disappearance is obtained in almost every case with very great certainty, no discomfort, and the absolute minimum of scarring.

In attempting to obtain a cure in the more malignant forms of growth we generally, if we fail in this, succeed in obtaining relief, but the methods used are not quite the same if there is no opportunity of obtaining a cure. The measures in the first instance will be far more drastic, and there will be no hesitation in utilizing the caustic as well as the selective actions of radium. In dealing with the result obtained it is necessary to remember the conditions under which we are working. Surgery, by the position which it has established for itself in the treatment of this disease, must still be regarded as the chief means of combating and dealing with it, so that practically every case we treat with radium is inoperable, and therefore at a far later stage than that at which the surgeon sees it. This is even more important than might appear at first sight, for, in my opinion, radium depends for its effect to a large extent on a vital reaction of the healthy tissues, and this, in the later stages of the disease, is missing. It is true that radium can be used as a caustic—that is to say, so large a dose can be given to part of a growth as actually to cause its destruction—but when dealing with the region

where the growth is spreading into healthy tissues this is inadvisable and the dose is regulated, so that the neoplastic cells are destroyed, while the healthy tissue cells are left intact. In dealing with such cases, however, one is in much the same position as if in a tuberculosis sanatorium one got nothing but hopelessly advanced cases to treat, and only the marvellous efficacy of the radium rays makes the treatment under such conditions possible at all.

The whole principle of the treatment is based on this fact—that the cells of a growth are more easily destroyed by the radium rays than the healthy cells, or, rather, that after an irradiation which is not excessive some change takes place, causing the growth cells to disappear and the healthy cells to remain. In the earlier stages of the disease all growths are more easily destroyed by the rays than the healthy tissues; but the amount of difference varies considerably with the nature of the growth, and its histological character furnishes a very good indication as to what results one may expect. The other factors which we have to take into consideration are the condition of the patient, the position of the growth, its accessibility to the rays, the extent to which it has spread, and the presence or absence of secondary deposits. It is obviously impossible to benefit by local treatment like this a patient in whom the disease has become generalized, though, if there is one solitary secondary deposit, and it seems unlikely that there are others, there is no reason why one should not attempt to obtain a cure.

From what I have said it will be understood that much larger growths of some varieties can be benefited than of others. Except in squamous epitheliomata the types of growth most readily influenced by the radium rays are those which grow most rapidly, and this is unfortunate, because these same cases are also the most likely to have secondary deposits. The most easily influenced growth of all is the round-celled sarcoma, and some of the cases which are described by some pathologists as endothelioma and by others as glandular epitheliomata, are almost as readily influenced. Rapidly growing glandular carcinomata are also often amenable to the treatment. When we come to epitheliomata we find that the rapidly growing ones, such as those of the vulva and of the tongue, are the least favourable, while those more slowly growing are often very beneficially influenced.

The question as to whether any operable cases should be treated is a very thorny subject. It is recognized that in some rapidly growing forms of malignant disease the surgeon can hope for very little after an operation, and it is his duty in these cases to consider whether the patient's chances of benefit may not be greater after radium treatment. In a rapidly growing squamous epithelioma of the tongue or vulva radium will not be of any use, but in a round-celled sarcoma it is quite a different matter, and incomplete surgical removal may simply spread the disease. In the more slowly growing cases the surgeon's results are good enough, but would probably be improved by prophylactic radium treatment.

In an inoperable case we have to consider whether radium is the best treatment, and, if so, whether we shall apply it in an attempt to obtain a cure or only to obtain relief. In certain forms of recurrence after operation where the disease appears localized—I refer especially to carcinoma of the breast—we know that there is at the same time a deep recurrence, and even though we may be almost certain of getting rid of the local trouble, we must be very careful about undertaking these cases, because an insufficient dose may be applied to a deeper deposit, and this might have the effect of accelerating instead of retarding its growth. For this reason I generally prefer, in dealing with recurrent breast cases, to use filtered *x* rays, which are less effective, but of which I can be sure to give a fair dose to the deposits that almost certainly exist in the mediastinum. In some of these cases, however, one has been able, by means of radium, to obtain so extremely marked a relief from pain, that it can be usefully employed in this way.

3. When it is a question of obtaining relief only and no cure can be thought of, it will often be found better, instead of giving a big dose every five or six weeks, to give a succession of small doses every day or every few days. In these cases, unless there is an open ulcer, care must be taken not to use the caustic dose of the rays. Many cases undertaken with the possibility of a cure will come under this heading, for a growth can often be got rid of for months or years, but we cannot talk of a cure if it subsequently recurs. My longest case at present has been well for over three years, and I started treating him soon after I commenced to use radium. Dominici has a case which has now been well for about five years.

All these remarks apply to the use of filtered radium radiations, the filter generally being 2 mm. of platinum; but in the case of rodent ulcer only ½ mm. of platinum.

Conclusions.

1. That radium should be used in every operation for malignant disease as a prophylactic.

2. That an attempt to obtain a cure should be made in inoperable cases, especially of rapidly growing sarcomata and carcinomata and slowly growing epitheliomata, as even if a cure is not obtained, marked relief is given.

3. That rapidly growing epitheliomata, except in the earliest stages, should be left severely alone.

4. That in rapidly growing neoplasms which are still operable, consideration should be given to the usual surgical results, and if these are bad, that radium should be tried when the type of growth is one readily influenced by the rays.

5. That the most readily influenced growths are the round-celled sarcomata, rapidly growing glandular carcinomata and endotheliomata, and slowly growing epitheliomata.

DISCUSSION.

Dr. Robert Knox (London) agreed in the main with Dr. Finzi, although his own results, particularly in cases of rodent ulcer, had not been quite so successful. Several cases had done very well, while others for some reason did not respond at all, but went from bad to worse. Endothelioma on two or three occasions responded fairly well, and one case which was treated two or three years previously remained well to-day. Lupus and leucoplakia were fairly amenable. Dr. Shaw had referred to two cases which the speaker had treated with radium, one being an epithelioma of the tonsil, affecting the soft palate, in a gentleman aged 50 years. Fortunately, they were able to get sections of this growth on three occasions—before treatment, in the middle of treatment, and towards the end of treatment. Prolonged radium treatment applied to the tonsil and externally to the enlarged glands resulted in the clearing up of the growth. There was some recurrence, and radium was again applied, with, he believed, although he had not seen the patient for three months, quite satisfactory results. The operation, had it taken place, would have been a very extensive one, and as a result of radium treatment in its stead the man had enjoyed at least one year of comparative comfort and good health, and so far as he knew at present was perfectly well. The other case, one of carcinoma of the breast, was treated with the *x* rays extensively and for a long period. Radium was afterwards applied, and the effect of the radium superadded to the *x* rays was a much more rapid clearing up than that obtained with the *x* rays alone. The percentage of cases in which good results were obtained by means of the radium treatment was necessarily small because the majority of cases submitted were hopeless from any point of view at the beginning. But he was very doubtful indeed about tackling an early case of carcinoma with radium alone. His usual attitude under such circumstances was to recommend operation and prophylactic treatment by means of the *x* rays or radium. If the patient should refuse operation, of course, the matter was different. At the present time surgery in malignant disease offered the best chance if the case was treated early.

Dr. C. F. Bailey (Brighton) cited a case within his own experience to suggest that there might be types of malignant disease more readily affected than others by *x*-ray and radium treatment. Certainly he had found that, in hospital cases more particularly, a course of treatment identical with that which had been successful elsewhere was not successful at all. Twenty years previously a lady, who was now about 60 years of age, noticed a lump in her breast, and for fifteen years that lump remained of about the same size. She avoided the idea of operation until, five years previously, it commenced

to grow. Within eighteen months she consulted a London surgeon, who advised immediate operation. A large operation was carried out—indeed, the breast was removed. Every vestige of the growth was supposed to have been taken away, and the pathological investigation pronounced it to be an ordinary scirrhus. It recurred within about a year, and six months later the patient again consulted the same surgeon, who then said that it was inoperable. Large masses of bands the size of a hen's egg extended towards the clavicle. The patient was sent down to the speaker at Brighton for such treatment as could be given her. He started treatment about two years ago, and since then the lady had been in comparatively good health. Various nodules made their appearance, and these, on being treated with radium, vanished. The main point, however, was that off and on, with intervals during which the case seemed to be quiescent, a hard type of *x* rays, generally equivalent to those obtained with a 4 to 5 in. spark-gap, were given. He always used hard rays projected through the thinnest of aluminium filters with two layers of tungstate lint, and for measurement he used the Sabouraud and later on the Hampson method. There was a certain amount of pigmentation of the skin, but never any dermatitis, and after two years the patient was in practically the same condition as she was before she had any operation. As time went on it showed that they were really obtaining some value in the work they did with regard to these cases. It was useless, however, to play about with *x* ray and radium radiations on dead tissue. The proper course was an operation to remove the mass of malignant growth, and afterwards the ray-therapeutist should be allowed to work at the underlying tissues where, in all probability, microscopic masses of cancer were growing. In rodent ulcer radium had proved very successful for a time, but a good many cases seemed to recur. Curiously enough, the old cases which were treated with the *x* rays in the early days, when, lacking as they did precise knowledge, the rays were poured in upon the ulcer, had not recurred. He had also been successful in a case of keloid, which had been operated on a number of times during seven or eight years. The surgeon who consulted with him agreed that the keloid should be removed, and that a large dose of *x* rays should be applied to the absolutely bare wound. The keloid had not recurred at all in this instance, although the operation had taken place three years previously.

Dr. FRANK FOWLER (Bournemouth) suggested, with regard to the case mentioned by the last speaker of a scirrhus of the breast which had remained without growing for fifteen years, that it might have been treated by means of the *x* rays with advantage. The speaker used a harder tube than the one employed by Dr. Bailey. His tube, indeed, was as hard as it could run; he used a filter of a quarter of a millimetre of aluminium, and found his technique sufficient invariably to prevent recurrence. He described also how in a breast case he "rayed" from many different directions—from the front, from behind, through the axilla, etc.—and working with this method, he could say that he had not seen any of his patients die from mediastinal growth.

Mr. J. HALL EDWARDS (Birmingham) remarked that little new light had been thrown upon this question during the last five or six years. He had hoped that they would have heard something fresh, and would thus have been in a better position to treat their cases. The statement had been made in Dr. Finzi's paper that the cure of rodent ulcer was obtained in almost every case with great certainty by means of radium. This was not the fact. Small [illegible] in their early stages could be cured clinically [illegible] but in nearly every instance they returned sooner or later. If they returned sooner, they might be cured a second time, but on the third or fourth recurrence [illegible] radium would do them any good. Even in the smallest rodent ulcers, such as those occurring in the corner of the eye, if the bone was attacked, it was almost impossible to achieve a cure. There seemed to be no new suggestion as to the various methods of treating these cases. It always appeared to him that from the striking results obtainable with radium in a certain number of instances there ought to be still better results in a far greater number. Certain cases, quite apart from any hard-and-fast rules as to the microscopical appearances of the tumour, were, for some reason or other, generally benefited by *x* rays and radium. He had seen some cases which had certainly been relieved, the relief persisting through a good number of years. In one case a patient lived in comfort for four years longer than she would have done without *x* ray treatment. It was disappointing to have got so far and not to be able to get further. Having obtained such results, it seemed to him that they should be able to obtain much better ones.

Dr. ERNEST SHAW, replying upon the discussion, referred to Dr. Finzi's remark that cases of malignant disease ought to be subjected to doses of radium or of the *x* rays before operation. That was a very good thing, but before it was put into practice it ought to be decided how long these cases were going to be kept about in an unoperated condition. He did not think that Dr. Finzi meant that they should be kept about for weeks before operation, but that point should be made clear. When once a malignant growth was diagnosed as such and an operation was decided on, that operation should be undertaken practically immediately. An interesting point in the discussion had reference to the case of carcinoma of the breast noted for fifteen years, after which an operation was performed. He did not believe that the case was a carcinoma to start with. He had seen a good many cases of breast tumours. One was, perhaps, the size of the breast itself and just lately had begun to change. So that he thought the right procedure—that is, immediate removal—was followed in that case. It had been suggested that the forming of fibrous material was due to the action of *x* rays or radium, but one so often saw this particular action taking place in tumours which had not been exposed to these rays that the question must for the present be left open. Mr. Hall-Edwards was rather pessimistic as to the cure of rodent ulcer. It was certainly too strong a statement to make that all rodent ulcers were cured. After treatment they disappeared, even if only to recur, but it was quite worth while going on with these ray-therapies, especially when the ulcer occupied certain situations, rather than to fly to the knife in every case.

Dr. N. S. FINZI, also replying, said that Dr. Shaw was labouring under some misapprehension. All that he (the speaker) had suggested was that at the time of the operation when the growth had been removed the radium tubes should be left in the wound. That disposed of any idea that he wanted to treat growths before operation. Radium-therapy as a substitute for operation on operable growths was only urged in that class of cases in which the surgeon's results were so unfortunate that the percentage of success was down to one or two. It was acknowledged by the surgeons that rapidly growing sarcomas were extremely unfavourable cases, and it was here that he suggested the use of radium instead of an operation. Of course, in considering the abandonment of the operation, each case must be discussed on its merits. Dr. Shaw had referred to the long duration of breast tumours. The speaker had seen one which had been going on for nineteen years, and another for twenty-three years, both of them being cases of undoubted carcinoma. He owed an apology with regard to what he had said about rodent ulcer. He should have said, not that its *cure* was obtained in almost every case, but that its *disappearance* was obtained. In the cases he had treated he had failed once only. This patient, half of whose face was eaten away, was 85 years of age, lived at a considerable distance, and could not come up regularly for treatment. The other cases so far had not recurred. He strongly disapproved of the suggestion that cases in which there was a large amount of growth should have part of the growth removed by the surgeon before treatment. If a growth were removed and its growing edge were cut through, the lymphatic spaces were opened, and the risk of metastasis was enormously increased. In cases with a large amount of growth such a growth was an excellent medium in which to insert the radium. In applying radium advantage could be taken of its caustic action, and the dose could be regulated so that the edge of the growth received only a small amount of the rays. Mr. Hall Edwards seemed to have forgotten

that they were not discussing results: in his paper he had limited himself to discussing the forms of growth for which radium was suitable. As far as his own experience went, his results with radium were far better than his results with the *x* rays. Dr. Knox had referred to the quickened action when radium superseded the *x* rays on a particular part. The difference was possibly due not to the sum of both, but to the radium, and if radium were applied upon one nodule and the *x* rays upon another it would be noted, generally, how much more rapid was the disappearance of the nodule in the former case. With regard to Professor Rutherford's address that morning, it ought to be said that the clinical results did not quite correspond with what the physicists expected of them. The treatment of carcinoma with radium rays had certainly been revolutionized since they employed the penetrating rays, which were chiefly gamma rays. The results were much better than those which followed the employment of the whole of the radium rays.

Professor Rutherford, in reply to Dr. Finzi's last remark, reiterated his contention that the rays were the same in kind, although the beta rays would act on the surface, while the gamma rays penetrated to a depth. He was fairly confident that there could be no real distinction between the beta and gamma rays apart from this difference of penetration, and, the physical action being so similar, it was nothing short of wonderful if there was much clinical difference. Under conditions in which about the same amount of energy was absorbed one would expect in all cases the beta and gamma rays to produce the same effects. There might, of course, be differences in local treatment due entirely to differences in intensity. But it seemed to him an enormous gain if it could be shown definitely that under comparable conditions the beta and gamma rays produced the same result. Progress must be very slow if a different virtue appertained to each different arrangement, and he doubted whether that was really the case.

AN INQUIRY INTO THE CAUSES OF FAILURE OF X-RAY TREATMENT IN DEEP-SEATED CANCER.

By Francis Hernaman-Johnson, M.D.,
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In the course of a paper read before this Section at Birmingham last year,[1] Dr. Reginald Morton advanced the view that such Roentgen rays as penetrate more than about 1 cm. into the tissues are practically without therapeutic value. This opinion was presumably based upon the clinical experience of the writer, but previously to the Birmingham Meeting well-known physicists had also cast doubt on the efficacy of the harder radiations as remedial agents. Again, Dr. Deane Butcher, speaking of radium, deemed it unlikely that by any system of filtering we can destroy, or even greatly retard, deep-seated malignant growths. It is true that during the subsequent discussion some speakers controverted these views; but, on the whole, the tendency during the past two years has been to take a somewhat gloomy view of the prospects of radiotherapy in cancerous tumours not situated near the surface of the body.

The results of *x*-ray treatment of superficial epitheliomata, and notably of rodent ulcer, are, on the whole, at least as satisfactory as those obtained by any other method, whereas in the case of neoplasms lying at a depth of some centimetres the benefit obtained is usually small. The difference is not, however, so great as might at first sight appear; for, on the one hand, relapse is common in rodents, and they sometimes refuse to heal even temporarily; while, on the other, it is possible to find in the literature not a few instances of great improvement following the administration of *x* rays in deep-seated disease. Despite the fact that its malignancy is chiefly local, rodent ulcer is generally admitted to be as truly cancerous as, let us say, a carcinoma of the colon. Relapse in a rodent is believed to be due to the fact that the malignant cells of its deeper parts have not been killed; if, therefore, we inquire into the possible causes of relapse in rodents after apparent cure by rays, we may hope to shed some light on the comparative failure of similar treatment in more deeply seated disease. It is at least certain that if we cannot learn how to deal effectively with cells at a depth of a few millimetres it would be futile to expect to influence those at a distance from the surface ten times as great.

In the first place, why do *x* rays cause a rodent to heal even temporarily? The usual theory is this: X rays are, to a certain extent, injurious to all cells. Malignant cells are of lower vitality than normal cells; hence, a dose from which normal cells can recover may prove fatal to cancer cells. The action is thus held to be similar to that of carbon-dioxide snow, or, as Dr. Bashford put it in an article now famous through the daily press, *x* rays and radium are the best caustics known, but still simply caustics. Such a view is worthy of the days when all the phenomena of absorption and secretion were held to be explicable by the ordinary laws of diffusion and osmosis. No known caustic can produce at one and the same time stimulation and depression; yet this is accomplished by *x* rays. In the case of a chronic varicose ulcer we see an action wholly stimulating. A surface epithelioma not yet ulcerated shows under rays a gradual absorption, chiefly due to depression and death of malignant cells. A healing rodent displays to us both these processes simultaneously—destruction of cancer cells proceeding coincidently with increased activity of normal epithelial and connective tissue elements.

If we accept the biological view of the cancer cell, regarding it as a reversion to an earlier type, its behaviour under Roentgen irradiation is seen to be only what might be expected from what we know of the effects of radioactivity on cell life in general.

Roentgen rays, even in minute doses, are injurious to young cells, or to cells retaining the peculiarities of extreme youth. A man may be rendered sterile without any discomfort or injury to the skin of the scrotum. The growing kittens in a cat's womb may be killed without even causing the hair of the mother to fall out, or in any way inconveniencing her. Now, the cancer cell is a cell which has resumed certain embryonic characters. It has become simple in structure and function, tends to divide and subdivide with great rapidity, and, like the fertilized ovum from which it sprang, seeks to live upon its immediate surroundings. According to the views of Mr. Hastings Gilford, as set forth in a recent work,[2] such cells are the subjects of a regressive variation. They are prematurely senile, and therefore present a kind of anarchic caricature of their infancy. Why *x* rays should be destructive to embryonic cells it is not my purpose to discuss; but it is because the cancer cell is of this type that the *x* ray seeks it out amid its normal brethren—seeks it as definitely as quinine does the parasite of malaria, or mercury the spirochaete of syphilis. Quinine, if too much is given, will kill the patient, as also will mercury; yet we do not therefore deny the selective action of these remedies on the causative organisms of malaria and syphilis. Absolute selection does not exist in medicine; but the action of *x* rays on embryonic cells is as truly selective as any known to therapeutics. It must be borne in mind, however, that malignant tumours differ in the degree to which their cells approach the embryonic type, and consequently vary in their susceptibility to ray treatment.

I have dwelt on the doctrine of reversion to embryonic type because it seems to me that it furnishes us with a clue to the therapeutic action of *x* rays in cancer, rheumatoid arthritis, spinal cord degenerations, leukaemia, and other maladies classed by Gilford among "disorders of post-natal growth and development." In rheumatoid arthritis, for example, connective tissue is destroyed by rays, because it is senile or pseudo-embryonic in nature, and its presence is pathological; in cancer the growth of new connective tissue is stimulated by the same agent, as in this case it constitutes a natural means of defence. Not only has this theory enabled me to fortify an instinctive belief in the selective action of *x* rays by sound biological arguments, but it has also allowed me to banish from my mind the fear of actually stimulating deep-lying cells by insufficient dosage. This has been suggested as a possible cause of failure by well-known authorities—notably, Professor Rowntree.[3] That moderate doses of *x* rays have a stimulating effect on normal tissues is, fortunately, beyond doubt; but it does not follow that very

small doses will have a similar effect on malignant cells. Approaching the matter from the clinical side, I have endeavoured to determine the smallest dose of rays which would benefit a rodent ulcer: and I have seen distinct improvement from the employment of only one-fifth of a milliampère of secondary current for seven minutes twice weekly, the anticathode being 25 cm. from the skin. Biological experiment also tends to discredit the deep-stimulation theory as an explanation of therapeutic failure. Dr. J. F. Gaskell, in the course of a paper read last year before the Royal Society,[4] states that even very small doses of *x* rays have a retarding effect on the cell mitosis of developing chicks. It is true that a chronic Roentgen dermatitis may become malignant, but in this case the skin is first broken; the influences at work are not limited to *x* rays, and bacterial toxins may in reality be the exciting cause.* On the whole, it appears fairly evident that the Roentgen dosage received by the deeper parts of a tumour, though it may not be enough altogether to inhibit the growth of cancer cells, certainly does not increase their vitality.

In every case of rodent ulcer which heals satisfactorily on the surface it is probable that the superficial cancerous tissue has been killed, and sufficient rays have reached the deeper malignant cells to hold their proliferating activity in check during the actual course of treatment. But in many instances the dosage received is insufficient actually to kill these cells, and relapse inevitably follows. That the mitosis of embryonic cells can be inhibited for long periods without permanently damaging them is a matter beyond doubt. Dr. Gaskell, in the paper above referred to, tells us that for each day of development there is a certain *critical dose* which kills the embryo; whereas from anything less than this it will, in time, recover. This critical dose varies with what is known as the *mitotic index*, this being the number of divisions per 1,000 cells occurring in a given time. As the index diminishes, so does the critical dose. Instances are on record of radiologists who have been sterile for months or years,[5] but who have quickly recovered so soon as they took proper measures of protection. Moreover, even with deliberate intention, it is often difficult or impossible permanently to sterilize women not near the menopause.

If I am right in believing that *x* rays depress cancer cells because they have become embryonic in type, then the above-quoted experiments and observations may help to explain the cause of failure or relapse in some cases of cancer. We shall not, I think, exceed the bounds of legitimate hypothesis if we assume that for the cells of any given tumour there exists a critical dosage of *x* rays from which they are unable to recover. This dosage will vary according to the mitotic index of the growth concerned. The mitotic index, again, will differ in various tumours, even such as closely resemble each other from a clinical standpoint, and will not remain a constant even for the same tumour. I use the term "critical dosage" rather than "critical dose," because the amount need not necessarily be all delivered at one sitting; whichever term is used, the idea to be conveyed is one of definite quantity within a definite time. Thus, the determination of the number, strength, and frequency of irradiations is seen to be a matter of the utmost importance: for a dosage below that which is critical for the cells of a given tumour will never kill these cells, no matter if it be administered for months or even years.

To treat a rodent ulcer with unfiltered rays from a medium tube is to invite failure, for the surface receives a bombardment wholly disproportionate to that sustained by the deeper layers. Not only are numerous soft rays emitted from the anticathode, but a vast number of *adventitious primaries* are given off as a result of electrons striking on the glass of the bulb. All these are highly active physiologically within narrow limits, and as a consequence the ulcer heals rapidly on the surface. Cessation of treatment will almost certainly be followed by relapse, while persistence will result in surface irritation.

No case of rodent ulcer should relapse because the deeper layers have received a relatively feeble dose of rays. Bulbs can be obtained whose radiation, after being filtered through 2 mm. of aluminium, will penetrate at least 3 to 4 cm. of tissue before falling to half value, and they can be excited by any good modern coil worked from the main. The fall in value at a depth of 1 cm. is so trifling that it may be disregarded. It may be objected that these very hard rays are lacking in therapeutic value. But Finzi and others have proved that this is by no means the case, and I have myself brought about the healing of a patch of psoriasis after having passed such filtered rays through 2 cm. of water, at the same time carefully excluding all possibility of secondary ray effects. One must remember that the blood contains an appreciable amount of iron, the secondary radiation of which is highly active at short ranges. The trouble with very penetrating rays is not so much that they are inactive therapeutically as that a large proportion of their energy passes right through the lesion and is lost. By applying the principles of secondary ray therapy, this waste energy may be trapped and made to do work where it is most needed. For the past year I have employed in the treatment of rodent ulcer hard filtered rays intensified by the specific secondary radiation from silver or zinc, and am well pleased with the results so far; but it is as yet much too early to form any conclusion as to whether this modified technique materially reduces the tendency to relapse. In the meantime I am not unmindful of the possibility that, even though we convey a critical dose of rays to every cancer cell in a given tumour, we may not thereby cure the disease. For it is conceivable that, at any rate in a proportion of cases, some irritant remains which continually provokes fresh normal cells to premature senile degeneration.

To attack the problem of the treatment of deep-seated cancer by observations on rodent ulcer is open to any one possessing an *x*-ray apparatus. Another method, recently made possible by the success of Carrel and Burrows, in the growing of cancerous and other tissues[6] *in vitro*, requires the collaboration of a skilled pathologist. By the irradiation of living neoplasms under experimental conditions outside the body, we should be able to ascertain:

1. The minimum dosage required permanently to stop growth.
2. Whether recovery is complete from any dosage less than this.
3. Whether the minimum dosage varies according to the rate of growth.

Put in other words, does there exist for every malignant tumour a "critical dosage," and, if so, is it determined in all cases by the "mitotic index" of the tumour concerned?

By the coincident exposure to *x* rays of normal tissues and their malignant derivatives, it may be possible to obtain direct experimental proof of specific vulnerability in cancer cells. From this it is but a step to the determination of the maximum depth at which an efficient dose can be delivered without permanent injury to superjacent healthy structures.

Whatever the result of such experiments, they would teach us to regard malignant tumours from a dynamical rather than a statical point of view. A cancer is a cell-mass moving along a line of growth, and developing kinetic energy according to its mass and its velocity. Clinical similarity between two growths is recognized by radiologists to be no guarantee of similar reaction to treatment. This is looked upon as puzzling; but if the kinetic energy of one tumour were proved to be in reality twice that of its apparent fellow, difference of behaviour could no longer be regarded as an anomaly.

Meanwhile, we, as physicians practising a speciality, are called on to do our best for inoperable or recurrent cases of internal cancer. Knowing what we do of the relative susceptibility of the cancer cell to *x* rays, we may assume that a dose equal to half or even one-quarter the maximum which can be tolerated by the integument is still effective as a depressant to such cells. Existing methods enable us to give this amount at a depth of between 3 and 4 cm., even when only one skin path is available. But we may often reach a deep-seated lesion by two or more such paths. It is my own practice to irradiate with two tubes connected in parallel, and so placed that their normal rays either meet at right angles or are in opposition. A "cross-fire" effect is thus obtained. The anticathode should be not

* According to Clifford, cancer may be a tumour or a minor variation. In the latter case the inherent degenerative tendency is manifested only when called into play by a definite environmental stimulus. Any unfavourable influence—bacterial, chemical, mechanical, electrical—may suffice to start predisposed cells on a downward course.

less than 35 or 40 cm. from the surface of the body, so that for practical purposes we may disregard loss of energy owing to divergence of the incident rays after they enter the tissues.

In treating rodent ulcers we can look out for and deal with small relapses, and there is little likelihood of dissemination. But in cancers of the viscera we cannot see what is going on, and it is therefore necessary always to give the largest amount of *x* rays which the skin will stand. *The risk of metastasis can be forestalled only by a careful study of the sites peculiar to each form of cancer, and by their prophylactic irradiation.*

When very stout subjects are concerned, the hardest existing bulb is not always capable of delivering an effective dose to an internal tumour without grave injury to the skin. We must therefore demand from the makers an increase in the penetrative power of their tubes. Although it is theoretically possible to construct tubes of much higher penetration, yet the practical difficulties in the way of increase are very considerable. Personally I am of opinion that if tubes were made longer, of thicker glass, and with a wide space between the cathode and the walls, it would be possible to drive them at very high voltage without causing sparks to travel outside and break the glass. We should aim at a penetration at least double the maximum now attainable, and for this an equivalent spark-gap of 18 in. to 20 in. will be necessary. Having obtained rays of such extreme hardness, we must learn how to utilize their energy to the best advantage. If I have hitherto referred only briefly to the use of secondary rays, it is because my time is limited and I have fully discussed the matter elsewhere.[7] By the introduction of heavy atoms into tumour cells it is possible actually to produce a greater physiological disturbance at a depth of 2 cm. than at the surface itself. Wassermann claims that he has succeeded in introducing selenium atoms into malignant cells without seriously affecting normal cells: when this can be accomplished easily and safely the problem of *x*-ray dosage in deep-seated cancer may be considered as solved.

Granting that the physiological action of *x* rays on the tissues is increased by the presence of heavy elements, the converse should also hold good. The diminution of the iron content of the skin by adrenaline prior to deep irradiation is therefore a procedure resting on a sound theoretical basis.

In dealing with inoperable visceral growths, it is our plain duty to seek to remove any probable cause of failure. If there be anything in the doctrines of selective action and critical dosage, such a cause is not hard to find. In any case, until we have learnt how to irradiate a gastric carcinoma as thoroughly and as fearlessly as if it were a rodent ulcer, we have no right to conclude that to benefit the former is beyond the power of our art.

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THE STANDARDIZATION OF RADIUM DOSAGE.

By E. H. Howlett, F.R.C.S.,

Surgeon, Hull Royal Infirmary.

Radium is used therapeutically in two forms: (1) As a solid, (2) as an emanation.

In this country little is known of its employment as an emanation, so I shall confine my remarks to the first form—the solid bromide of radium.

Given a case of lupus or rodent ulcer, the question which at once presents itself to the mind is, "What is the correct dose to administer?" It seems a simple question, but when one consults the various recorded cases that have been successfully treated, the quantity of radium has varied, also the duration of the exposure, and yet each method has effected a cure or improvement.

Wickham and Degrais, in their excellent work on radium therapeutics, at p. 8 say, "It is not sufficient to say that an apparatus contains 0.05 of the salt with an activity of 500,000 units. We must show what issues from it." Further, on p. 114, we have the report of a case of rodent ulcer treated by an applicator containing 0.03 eg. of radium bromide for three and three-quarter hours.

Compare this with a rodent treated by Ross MacDonald and published in the British Medical Journal of December 9th, 1911. Here 250 mg. were applied for twenty-four hours through a 2½ mm. platinum screen. The result in the two cases was apparent cure, but the dose employed by the two operators was widely different. So we might go on multiplying examples and making confusion worse confounded.

Dr. Dawson Turner, in the *Lancet* of December 25th, 1909, and again in his little book on *Radium, its Physics and Therapeutics*, has suggested the adoption of a standard, and for his own use has taken 1 mg. applied for one hour.

If it is necessary to have a definite standard to work to, why has it not already been adopted? The answer, I think, lies in the fact that the number of workers with radium is small, also that each operator working with his own apparatus gets to know its value and unconsciously works to a standard.

This is most unsatisfactory, and it has been brought very forcibly before me in my own work in the city of Hull. Here we are in an unique position. Some two years ago a medical man wrote to the local papers deploring the death-rate from cancer and extolling the curative powers of radium. This letter caught on, and by the next post the editor received a postal order for sixpence, the widow's mite, towards a fund for the purchasing of radium for the public use of the city. Money poured in, and in a short time about £1,000 was received and placed at the disposal of the editor for the purchase of radium. Once purchased, the next problem was how to employ it, and this was solved by handing it over to the Corporation for the benefit of the public. The city Corporation are at the present time the holders, and are prepared to lend it free, in the case of the necessitous poor, or for a small fee in the case of the well-to-do.

On behalf of the Royal Infirmary I have made use of this offer, and once a week have borrowed the town supply for the use of Infirmary patients—with what results is another story. Suffice it to say that I am thoroughly impressed with the powers of radium, and have seen more promising results from its use than from any of the several methods of treatment that have been adopted in the past, such as *x* rays, electrolysis, tuberculin, and snow; but in cases of advanced cancer I am a sceptic, as it has failed in my hands miserably.

There was no dearth of cases, as may be readily imagined; but when it came to the use of the applicators trouble began, as they all varied in the quantity and quality of the radium present. Again, it was not possible always to use the same applicator on the same patient; therefore some sort of general standard was a necessity if any work was to be done.

I adopted the following as a standard—namely, 1 eg. or 10 mg. of radium bromide at 500,000, acting for one hour. It may be argued that this is a rough standard, yet at the same time it has proved a very useful one. Now in treating a case one has merely to order the number of standards, and the house-surgeon can employ any one of the applicators at his disposal.

Such a standard, too, is of the greatest help to any practitioner who wishes to borrow from the Corporation. Whether it is an advantage to the public that radium can be employed by any practitioner, or whether it is better to limit its application to a few specialists, is a point that time will probably settle. My own view is that after a time the practitioner will give up its use, as soon as the novelty has worn off, and will send his cases to the specialist. What has been done in Hull may readily be done in any town in the kingdom, and it may be that our example will be followed, and that we shall have corporations all over the country with a supply of radium for the use of the public.

The question of a standard is not so simple as it would at first thought appear. We have to take into consideration the employment of screens and protecting devices, such as silver tubes, in both of which cases the quality of the rays varies. It is also necessary to consider the special rays formed by the action of radium on a metal.

Although there are difficulties, they are not insurmountable, and I will bring my short paper to a close by suggesting that a small committee be formed to work out the subject.

DISCUSSION.

Mr. W. Deane Butcher said that, talking with Professor Rutherford at the Brussels Congress a year or two ago, he found that physicist to agree with him that an international standard might well consist of the amount of pure metallic radium per square centimetre of applicator. It would be fairly intelligible if patients were treated with an applicator measuring a certain number of square centimetres with so much standard metallic radium per square centimetre. It would be far better to give in units the exact quantity of the metallic radium content than to speak of activities in terms of millions. The only factors requiring to be known were the exact quantity of metallic radium and the exact area of the applicator, if flat, or its exact volume, if a capsule.

Dr. Finzi thought that such a standard as Dr. Deane Butcher suggested would be useful in the case of a flat applicator, but that it would be difficult to determine in the case of a capsule. He agreed that all radium measurements should be made in terms of pure metallic radium.

Dr. W. Holder (Hull) asked whether there was not already in existence a sufficient and convenient standard by which metallic radium could be measured.

Dr. Howlett, in reply, quite endorsed what Dr. Deane Butcher had said with regard to the great necessity for the formation of some sort of standard to work to. If the public action that had taken place in Hull were followed throughout the country—and it was quite possible that it would be—it was the more important that some simple form of standard should be adopted. The difficulties involved in the framing of such a standard were considerable, and for that reason it required the assistance of both mathematical and scientific experts.

Mr. Deane Butcher suggested that it would be an advantage if a small committee could be brought together to formulate some such standard.

THE THERAPY OF THE RADIO-OXYGEN BATH.

By William Armstrong, M.R.C.S.,
Buxton.

In Germany and in the United States of America both the radio-oxygen and the oxygen bath are being largely used with excellent results. Unfortunately, the oxygen bath was originally administered by means of artificially manufactured gas. The coefficient of absorption of water for such chemically inert oxygen (soluble only to a very small degree in water) is practically negligible, and there is no real impregnation of the water with the oxygen, which is driven through at high pressure, and fails to obtain lodgement on the skin.

In 1904 Sarason conceived the idea of directly generating oxygen in the bath itself, and used this with remarkable success. In 1906 Zeulzer recorded cases showing oxidizing properties influencing the skin metabolism, and also reported great relief to neuralgic pains, lauding its analgesic action. In 1907 Biedert wrote that the oxygen bath regulated, strengthened, and quieted the heart. Munk and Laqueur found it very helpful in cases of tabes. Franze and Pochlmann noted diminution of pulse frequency, lessening of pulse tension, and a general sedative effect on the nervous system, and spoke of brilliant results in severe cases of polyneuritis. Wintemitz wrote enthusiastically of the nascent oxygen bath, saying that this was not in any way to be compared with that charged with atmospheric oxygen; the former having much stronger conductive powers, the nascent oxygen bubbles being smaller and more closely deposited, thus setting up a much more effective excitation of the nerve periphery. He observed that the pulse frequency lessened, that the skin became pale, and that active rhythmic contraction of the skin capillaries took place; that the blood pressure fell (which he considered to be due to dilatation of the muscle vessels as demonstrated by Carl Ludwig), and that the increased activity of the peripheral heart sustained the central heart. He quoted excellent results in nervous and organic heart troubles, and in various general nervous affections. Tornai records a rise both in haemoglobin percentage and in the number of red corpuscles.

Naumann reported very good results in bronchial asthma; patients who complained of dyspnoea, precordial anxiety, vertigo, and palpitation in the CO_2 bath being quite free from these symptoms in the oxygen bath. Sommer, Meugest, Frankl, Meuller, and Dumster lay stress on the refreshing, stimulating, and at the same time sedative effect of this treatment.

My own experience covers the administration of over 600 oxygen baths, of nearly 2,000 radio-oxygen baths, of about 500 Nauheim oxygen baths, and of some 100 Schwalbach or effervescing iron baths, substituting oxygen for CO_2.

Whatever can be claimed for the simple oxygen bath can be urged still more strongly for the radio-oxygen bath. In the latter there is much increased efficacy in cases of gout, rheumatism, neuritis, and arthritis, as the radium emanation greatly stimulates the output of body waste by lungs, skin, kidneys, and bowels. Some of my radio-oxygen baths have been given with artificially produced radium water and others with the natural radioactive water of Buxton.

The Preparation of the Bath.

Radio-active water of a strength of from 5 to 50 Maché units per litre is provided. A white powder (perborate of soda which has locked up in itself 11 per cent. of available oxygen) is sprinkled over the surface of the bath, followed by a second powder, the catalyzer (the key which unlocks the oxygen door of the perborate), which consists of one or other of the salts of manganese. Effervescence begins at once, and millions of most minute bubbles of oxygen are evolved, the process going on for from twenty to twenty-five minutes. Sarason and Morganstern's preparations have been used, but the most effective and the least expensive is "radiozone," skilfully devised by Wright of Buxton. This gives off in each bath from 35 to 40 pints of freshly evolved nascent oxygen.

Temperature.—The bath may be given from 98° down to 88° F. At the higher temperatures it is most effective in insomnia and restlessness; at the lower ones in increased arterial tension.

Duration.—From ten to twenty-five minutes, commencing with a short bath and gradually increasing the length of immersion. The bath is formed into a mild alkaline hydrogen dioxide solution, in which the liberated oxygen develops a disinfecting and oxidizing action on the skin.

Action of Radio-oxygen Bath.

1. The radio-oxygen bath acts directly on the skin and its sensory nerve endings; indirectly on the heart, vascular system, nervous system, kidneys, and blood.
2. It gives an inhalation of radium emanation and oxygen, a portion of the gas being given off as ozone, a form in which its chemical activity is highly intensified.
3. While it does not alter the size of the normal heart, or the pulse-rate or tension of healthy individuals, yet when there is organic or functional heart affection or arterio-sclerosis it diminishes increased heart volume, with a corresponding reduction of pulse-rate and blood pressure; it augments the rhythmic contractions of the skin capillaries (the pulsation of "Hutchison's" peripheral heart), with simultaneous dilatation of the vessels in the muscles.
4. It causes collective mechanical irritation of the nerve terminals of the skin by which, reflexly, the heart is steadied and strengthened.
5. It brings about increased diuresis (Rogovin says oxygen has a specific action on the kidneys).
6. Encourages skin respiration.
7. Produces abatement of insomnia, wakefulness, hyperexcitability, tachycardia, dyspnoea, and lessening of respiratory disturbances.
8. It has a marked analgesic influence, greatly relieving the pain of rheumatism, gout, neuritis, and arthritis.
9. In Basedow's disease it reduces the abnormally augmented metabolism, the amount of nitrogen excretion being lessened, and the quantity of urinary salts increased.
10. Its effects include the reduction of skin hyperaemia, hypersensibility, and irritation.

Therapeutic Indications.

1. Cardio-neuroses with tachycardia and arrhythmia, especially those of the post-influenzal type.

2. Organic heart troubles with hypertension.
3. Arterio-sclerosis (except in the latest stages).
4. Angina pectoris (during intervals between attacks).
5. Bright's disease and high arterial tension.
6. Arthritis: gout, rheumatism, neuralgia, neuritis, polyneuritis, neurasthenia, hysteria, functional neuroses.
7. The nervous affections of the menopause.
8. Various dermatoses, urticaria and pruritus.
9. Basedow's disease.

Contra-indications.

Low arterial tension.
Advanced arterio-sclerosis.
Acute gout and rheumatism.
Valvular heart disease with insufficient compensation.
Fatty heart.

Undoubtedly the most important field for the radio-oxygen bath is that of early arterio-sclerosis and increased arterial tension. I believe that during recent years, coincident with the decrease in acute "plus formation" gout and the marked increase in irregular "minus excretion" gout, there has been a distinct increase in the actual number of cases of arterial hypertension; but whether this be true or no, there are now many more such cases detected than formerly, largely owing to the provision of accurate recording instruments. If physicians, especially at spas, fail to note this indication, they may easily administer treatment which puts up the blood pressure with most unfortunate results. In arterio-sclerosis the oxygen bath seems to exert a mild gymnastic effect on the vessel walls, which opposes the progress of the disease and relieves the heart. The addition of oxygen to natural radio-active waters not only enhances their normal efficacy but also makes for much greater safety in their administration. "Accidents" at bathing stations have mostly been due to excessive arterial tension, especially in elderly patients.

The effervescing saline bath, known as the "Nauheim," the ingredients of which are salt, calcium chloride, and carbonic acid, frequently, in my experience, raises blood pressure, and I strongly advocate the use in hypertension cases, where the salines are thought necessary, of oxygen instead of CO_2. In conclusion, I would emphasize the following points:

1. The oxygen bath has been proved by many distinguished observers to exert a marked influence in the treatment of disease.
2. By its tonic action on the heart and the simultaneous reduction of blood pressure its use is definitely indicated in those cardiac and kidney cases where hypertension is present.
3. Through its remarkably tonic and soothing action on the vasomotor nervous system and especially its definite effect in producing calm natural sleep, it is of great value in the important group of functional neuroses, especially those of the climacteric.
4. By its blanching and sedative action on the skin, it is of considerable service in many hyperaemic and irritable skin affections, especially the various dermatoses.
5. The radio-oxygen bath (by reason of the effects of radium emanation in greatly increasing the output of body toxins through the lungs, skin, and kidneys) possesses much greater efficiency in gout, rheumatism, arthritis, neuritis, and auto-intoxication than the oxygen bath alone.
6. The natural radio-active waters, such as those of Buxton, Bath, Wildbad, and Gastein, can by this simple addition be made much more effective in the treatment of many troublesome ailments.
7. This combination is of exceptional value in cases of gout and allied diseases in which there is increased blood pressure, takes away the risk of giving mineral baths to such cases, and makes an ideal bath for elderly and delicate patients.
8. The "Nauheim" effervescing saline baths show greatly improved results where hypertension is present from the substitution of the radio-oxygen for CO_2.
9. The Schwalbach (or effervescing iron) bath, so efficacious in utero-ovarian troubles, is more effective with oxygen than CO_2 on account of the soothing tonic effect of the former—a matter of great importance in cases where the sympathetic nervous system is so often hypersensitive and disordered.
10. The substitution of oxygen for CO_2 avoids the tendency of the latter to produce dyspnoea, vertigo, precordial anxiety, and palpitation due to inhalation of carbon dioxide.
11. The inhalation of the radio-oxygen emanation from the surface of the bath is especially helpful in asthma and other respiratory troubles, and generally in all diseases amenable to radio-oxygen therapy.
12. The evidence points to the conclusion that the radio-oxygen bath has a prolonged, not a transitory, influence on troubles connected with the circulation.

This treatment can be carried out in any house where there is a bathroom; either as the radio-oxygen bath, or as the oxygen bath alone.

DISCUSSION.

Dr. N. S. Finzi (London) said that he had no experience of the radio-oxygen bath, but radium emanation in solution in the treatment of arthritis and chronic gout was certainly effective, especially in advanced and crippled conditions. He protested against the charges made by some makers for the hire of their radio-apparatus. In one case he calculated that the hire of an apparatus giving 10,000 Maché units yielded a return of 7,000 per cent. per annum to its maker. He thought also that makers of such apparatus should state the exact amount of its radium content.

Dr. G. E. Bowker (Bath) asked whether the use of oxygen in the manner indicated would not displace the precious gases, such as "niton" or radium emanation, which Sir William Ramsay had found in considerable quantities in the waters of Bath. The oxygen would be obtained at the expense of the radio-activity. He questioned also whether some benefit was not derivable from the nitrogen in the gas, containing as it did a large amount of neon.

Professor E. Rutherford (Manchester University) asked what definite evidence there was that the radio-activity was responsible for the benefits of the baths. It seemed to him that proof was lacking that the beneficial effect of the waters was due to radium. Had they ever eliminated the emanation from the water and then attempted to use the water therapeutically? In view of the advertisement which radio-active spas were receiving, the public had a right to know by definite experiments whether the effects of the Bath and Buxton waters were really connected with their radio-activity or were due to less sensational forces.

Dr. F. Hernaman-Johnson (Darlington) had seen good effects from radium water, particularly in neurasthenic cases, but in one case at least some amount of gastro-intestinal irritation afterwards occurred, although whether or not this was due to the treatment he could not say.

Dr. Armstrong replied.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SUDDEN DEATH IN AORTIC STENOSIS.

H. W. R., aged 18, carter's boy, who had been apparently in perfect health and had never required medical attendance, dropped dead on May 13th. Death, which was quite instantaneous, was not preceded by a meal or any severe exertion. The only premonitory symptom seems to have been a transient syncopal attack about two hours before, from which he quickly recovered, going on with his work as usual.

The only lesion found *post mortem* was that the aortic valve segments were somewhat thickened and slightly nodular, but not seriously deformed or at all adherent to each other; the orifice would only admit the tip of the index finger. There was no evidence of regurgitation, and the valve held water quite well. The heart was not enlarged, and the muscle appeared quite healthy. There was no sign of any vegetations likely to cause embolism. It appeared that he had applied for entry as a stoker in the Royal Navy on April 10th, and was rejected. I wrote to the examining officer, Staff Surgeon Adrian Forrester, who reported that he had found a systolic murmur in the aortic area, and also in the mitral region, which could be heard outwards nearly to the mid-axillary line. The lad's physique and general health were good.

I think the case worthy of record, as aortic stenosis is not common at such an early age, and does not usually cause sudden death without previous symptoms. Moreover, there was a complete absence in the history of any previous rheumatism or illness of any kind. The amount of stenosis and alteration of the valve segments was quite slight, and did not appear sufficient to account for such a sudden syncope.

Penshurst, Kent. W. Charrington Wood, M.D.Lond., F.R.C.S.Eng.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

HONG KONG AND CHINA BRANCH.

AT a meeting of this Branch held on April 12th, Dr. C. FORSYTH, President, in the chair, Lieutenant E. C. LAMBKIN, R.A.M.C., read a paper on *The Treatment of Syphilis by Salvarsan*. Referring to the great volume of literature constantly appearing on this subject, he pointed out the importance in the service in diminishing the duration of treatment and putting the patients on active duty in as short a time as possible. The number of cases dealt with was 33, only 30 of which he would refer to, as the 3 had only had one injection each in the course of the last week. The total number of injections was fifty-three. Some of the cases were in the earliest stage; some in the secondary and tertiary stages. The routine was to give an intravenous injection of 0.4 to 0.45 gram, and repeat the dose in three or four weeks, using an alkaline solution of the drug. In primary cases the chancre generally healed in eight days, and lesions about the mouth healed in four days. The process of healing was best described as "drying up." The method of preparation of the dose was described. For convenience three doses, or a multiple of three, were prepared at the same time, each dose measuring 300 c.cm., or about 10 fluid ounces. A wide bore short needle with finger rest was used, and the solution run in by aid of gravity in special apparatus. In only 3 cases had there been any severe reaction, the symptoms being headache, vomiting and pyrexia (temperature 103°), and restlessness. These symptoms appeared two or three hours after injection, and passed off before night. In each of these cases ordinary distilled water had been used, but since then the water had been redistilled a few hours before use, and no recurrence of symptoms of reaction had been noticed. Stress was laid on the precautions to ensure success—that the dose should not exceed 0.4 gram; it should be injected slowly, and plenty of liquid used; the reaction must not be acid. The average number of days in hospital in these cases was 17 days, and the average number of days for a similar set of cases treated with mercury alone was 41 days. Lieutenant Lambkin gave a summary of the latest scheme for treatment of cases of syphilis in the army, including examination of the blood for Wassermann's reaction at the outset, and at the end of three months. Lieutenant-Colonel GORDON HALL gave some of his experiences of using the drug in the early days of its introduction, when he treated 300 cases in Scotland both intramuscularly and intravenously, and referred to the danger of "encapsulation" of the drug preventing patients getting an adequate dose in the system at the time. Lieutenant ARTHUR drew attention to the fact that by intravenous method of administration the time taken was about half an hour, whereas by suspending the drug in prepared olive oil and injecting intramuscularly no encapsulation occurred, and the time required was only two and a half minutes for each case. Dr. STEDMAN gave his experiences with injecting with a syringe with a three-way stopcock as supplied by Down Bros., each injection taking about twenty to twenty-five minutes. Fleet Surgeon STALKARTT stated the routine in the Royal Naval Hospital at Plymouth, where, after finding a positive Wassermann reaction, an intravenous injection was followed by a second one in ten days, and the patient discharged. Dr. MARTYN LOMB referred to the necessity for using the intramuscular injection in the out-patient departments of London hospitals, where there was not available accommodation to take the patients as in-patients. This plan had so far worked well at Guy's Hospital without any serious sequelæ. Dr. FORSYTH mentioned a case at present under his care which had so far resisted treatment with salvarsan. He thanked Lieutenant Lambkin for his most interesting paper.

The HONORARY SECRETARY read a letter from Dr. Bell, the P.C.M.O., asking for an expression of opinion on a reported case of *Persistent catarrh and irritation of the nasal and bronchial mucous membrane*, which was attributed by the patient to be due to emanations from flowering privet on the hillside. Dr. STEDMAN, under whose treatment the case had been, said that he did not favour the view that privet was the direct cause. Other members were of opinion that there was not sufficient evidence to state that privet was the cause, and the Honorary Secretary was directed to reply to this effect.

Reports of Societies.

OXFORD OPHTHALMOLOGICAL CONGRESS.

BRIGHT weather favoured the meeting of the Oxford Ophthalmological Congress held at Keble College, Oxford, on July 18th and 19th last. The programme was of an interesting nature, although perhaps a little crowded. It secured, at all events, a busy time for those who attended, many of whom came from overseas. American visitors included Dr. Miles Standish (Boston), Dr. H. F. Hansell (Philadelphia), Dr. W. B. Marple (New York), Dr. Andrews (Santa Barbara, Cal.), Dr. Green (Dayton, Ohio), and Dr. W. Likley Simpson (Memphis, Ten.). Canada was represented by Dr. Hanford McKee, of Montreal. From the Continent of Europe came Dr. H. Coppez (Brussels), Professor Straub (Amsterdam), Dr. Brandès (Antwerp), Dr. van Lint (Brussels), Dr. R. Liebrecht (Hamburg), Dr. Verrey (Lausanne), and others. In the Department of Human Anatomy and Physiology (kindly lent for the purpose by Professors Thomson and Gotch) addresses were delivered by Professor Straub, Dr. W. B. Marple, Dr. Hanford McKee, Dr. Thomson Henderson (Nottingham), and Dr. S. E. Whitnall (Oxford). All were distinguished by commendable brevity. The professional museum contained many objects of interest, chief among which were 250 paintings of the fundi of mammalian and reptilian eyes executed by Mr. A. W. Head. An album which contained photographs of the artist engaged in making sketches of the eyes of the cobra, the boa constrictor, and other fearsome animals excited no little amusement. The exhibits of Dr. H. S. ELWORTHY, of Ebbw Vale, call for a word of separate mention. They dealt mainly with geological specimens connected with mines and mining. Dr. Elworthy also showed various ingenious methods of measuring light below ground, as well as colour tests for estimating colour in mines. The commercial museum contained the latest things in the way of surgical instruments, optical appliances, microtomes, and so forth, exhibited by firms of good standing. The most interesting feature of this department was, perhaps, Gullstrand's demonstrating ophthalmoscope, an instrument whereby an image of the fundus oculi, singularly free from reflexes, can be readily obtained, even by an unskilled observer. A series of clinical cases was shown at the Eye Hospital. On July 19th an animated discussion on the nystagmus of miners, opened by Dr. T. HARRISON BUTLER, of Leamington, took place at the Oxford Eye Hospital. Among the speakers may be mentioned the names of Dr. T. LLEWELLYN (Bargoed), Dr. J. COURT (Staveley), Dr. H. S. ELWORTHY, Dr. H. TOMLIN (Shirebrook), Mr. B. CRIDLAND (Wolverhampton), Mr. J. J. EVANS (Birmingham), Mr. R. J. COULTER (Newport), Mr. N. C. RIDLEY (Leicester), Mr. H. H. FOLKER (Hanley), Dr. S. MCMURRAY (Stoke-upon-Trent), Dr. A. C. NORMAN (Sunderland), and Mr. STANLEY RISELEY (Sheffield). A resolution adopted was published in the JOURNAL of August 10th, p. 331. The official dinner, held on July 18th, was presided over by the Warden of Keble College. Other social arrangements included a garden party at New College, and visits to the various colleges. Altogether the meeting was as instructive from the scientific as it was enjoyable from the social side.

THE Baths Committee have recommended the Bath City Council to lease the whole of the bathing establishments and Roman remains to the Radium Development Syndicate, with which Sir William Ramsay is connected. It is proposed to give the syndicate the exclusive right to use and develop the mineral waters and to apply to Parliament for the necessary powers. On the other hand, the syndicate offers to spend a quarter of a million sterling upon the development of the baths.

Reviews.

THE MEDICAL SCHOOL OF TRINITY COLLEGE, DUBLIN.

An account of the rise and development of the Medical School of Trinity College, Dublin, was given in the British Medical Journal of June 8th, 1912, p. 1305. In this work[1] Dr. Kirkpatrick travels over the same ground, but, of course, much more thoroughly and in much greater detail. The book has evidently been compiled with the most scrupulous regard to accuracy. The author has had access to the college registers and to the documents connected with the school, and he has as far as possible acknowledged the sources of his information in the text and in the notes.

The foundation of Trinity College, the relation thereto of Trinity Hall, and the part played by Stearne in the development of the study of physic in Dublin, have already been told in the Journal. Dr. Kirkpatrick gives brief biographical sketches of the most prominent men in the medical school from the seventeenth century to the present time. This gives the book a human interest, and makes the dry bones of history live. For instance, we are introduced to Dr. John Helsham, who was the first professor of natural and experimental philosophy in the college, and one of the original professors when the medical school was opened. He was afterwards Professor of Physic, and President of the College of Physicians. He was a member of the group of friends who used to meet at the house of Dr. Delany, among whom were Swift and Stella. Helsham was physician to Swift, who gives the following description of him in a letter to Pope, dated Dublin, February 13th, 1728–9:

> Here an ingenious good-humoured Physician, a fine gentleman, an excellent scholar, easy in his fortunes, kind to every Body, hath abundance of Friends, entertains them often and liberally. They pass the evening with him at cards, with plenty of good meat and wine, eight or a dozen together; he loves them all, and they him: he hath twenty of them at command. If one of them dies it is no more than Poor *Tom!* He geteth another or taketh up with the rest, and is no more moved than at the loss of his cat: he offendeth no Body, is easy with every Body—is not this the true happy man?

Swift elsewhere describes him as "the most eminent Physician of this city or Kingdom."

Another man who had much to do with the development of the school was George Cleghorn, who, in 1761, was appointed to the new office of Lecturer in Anatomy. The college had already an anatomical museum, to which, between 1730 and 1760, several interesting specimens were added. One of these was the skeleton of Cornelius Magrath, a giant, who during life had suffered from acromegaly, and died in 1760 at the age of 24. He was 7 ft. 8 in. high, and his hands are said to have been as large as a middling shoulder of mutton. An interesting circumstance connected with this giant is that he had for some time been under some kind of treatment at the hands of Bishop Berkeley, and it was afterwards stated that his great height was the result of experiments made upon him by the famous philosopher, who was curious to learn whether it was in the power of art to increase the human stature. The story of how his body was got for the college is worth telling. When Robert Robinson, who was Professor of Anatomy at the time, heard of the giant's death, he said to his class:

> Gentlemen,—I have been told that some of you in your zeal have contemplated the carrying off of the body. I most earnestly beg of you not to think of such a thing. But if you should be so carried away with your desire for knowledge that thus against my express wish you persist in doing so, I would have you remember that if you take only the body there is no law whereby you can be touched, but if you take so much as a rag or a stocking with it, it is a hanging matter.

Acting on this pretty broad hint, the students attended the wake, and drugged the mourners' whisky. When all were asleep the body was carried off to the college. Next morning the friends came to the Provost and indignantly demanded the return of the corpse. The Provost sent for Robinson, who assured him that so great was the diligence of the students that the body was already dissected. The authority for the story, Dr. Beatty, was told by his father, who had been a student at the time of the incident, that he met Robinson on his way from the Provost's house, and that he stopped at intervals chuckling to himself, "Divil a knife's in him yet!" Cleghorn was a Scot, and had been under the tuition of Alexander Monro at Edinburgh. He was one of the five students who founded the Royal Medical Society of Edinburgh. His influence gave a considerable impetus to the growth of the Dublin school. Of James Macartney, whose teaching of anatomy raised the number of students to an unprecedented height, some account was given in the article to which reference was made. We may quote an example of his characteristic outspokenness. When people's minds were agitated by the Burke and Hare murders, he said, in a letter to the papers:

> I do not think that the upper and middle class have understood the effects of their own conduct when they take part in impeding the progress of dissection. Nor does it seem wise to discountenance the practice by which many of them are supplied with artificial teeth and hair. Very many of the upper ranks carry in their mouths teeth which have been buried in the hospital fields.

A more conciliatory method of meeting the opposition was his offering his own body for dissection. He drew up a document to that effect and induced a number of notable persons besides himself to sign.

Clinical teaching was revolutionized by Robert James Graves, not only in Dublin, but elsewhere. Stokes and he made the Dublin school famous throughout the world. Of other names we need only mention those of Banks, Macalister, M'Dowel, Samuel Haughton, Robert William Smith, Edward Hallaran Bennett, which are sufficient to shed lustre on any school. The teaching staff of the present day is fully worthy of the reputation built up for the college by the labours of these men.

The history of all medical corporations and schools seems to be one of incessant wrangling over alleged rights and privileges, and every suggested reform or advance has been fought against to the last ditch. But for a few large-minded men here and there who see above and beyond the narrow interests of a particular corporation or school, progress would be made impossible by these jealous quarrels. Nowhere have these been more bitter than in Dublin, but nowhere has the victory of good sense over obstructiveness in the end been more decisive.

Dr. Kirkpatrick is admirably frank in his narrative, but his spirit is eminently fair and judicial, and he speaks without violence even when the occasion is sufficient to provoke strong language. He has traced the growth of the Dublin School of Physic from its humble origins through the many years that it had to struggle for life up to the present time, when it is recognized as one of the great centres of medical education. He has fully proved his contention that the title of the "Silent Sister" so often given to Trinity College is not justified in the case of the school of physic.

[1] *History of the Medical Teaching of Trinity College, Dublin, and of the School of Physic in Ireland.* By T. Percy C. Kirkpatrick, M.D., M.R.I.A., Fellow and Registrar of the Royal College of Physicians of Ireland. Dublin: Hana and Neale. 1912. (Med. 8vo, pp. 375; 3 illustrations. 7s. 6d. net.)

MICROSCOPIC ANATOMY.

The new edition of *Quain's Anatomy*, which is being edited by Professors Schäfer, Symington, and Bryce, has been enriched by the publication of *Microscopic Anatomy*, by Professor Schäfer.[2] It is rather an affectation to call this Part I of Vol. ii, for it is a book which contains 739 pages, 21 coloured plates, and 1,001 illustrations, which tell 1,001 tales—a volume in itself of most goodly proportions, and it stands as the most authoritative and best English textbook of histology.

The subject matter has been rearranged and rewritten, and a large number of new figures added. A number of the admirable coloured figures of human tissues and organs made by Professor Schotta have been reproduced by lithography. The wealth of beautiful illustrations adds enormously to the interest and value of the book.

The section on the vascular system has been contributed by Professor Gustave Mann, and contains much matter of interest. Thus, after reading the discussion of the origin of the lymphatics, we find, Professor Mann concludes:

> That lymph vessels grow out from the lymph-sacs, which are themselves originally formed from venous plexuses; they are

[2] *Quain's Elements of Anatomy.* Eleventh edition. Edited by E. A. Schäfer, J. Symington, and T. H. Bryce. In four volumes. Vol. ii, Part I: *Microscopic Anatomy.* By Professor E. A. Schäfer, LL.D., Sc.D., M.D., F.R.S. London: Longmans, Green, and Co. 1912. (Roy. 8vo, pp. 750; figs. 1,001, plates 21. 25s. net.)

in no way assisted in their formation by pre-existing peripheral tissue-clefts. . . . The balance of evidence appears to favour the view that the lymphatic system is a series of vessels lined by endothelium which arise from separated portions of veins and eventually again open into the venous system.

In dealing with the protoplasm of the cell, Professor Schäfer gives an excellent summary of Hardy's work on colloid suspensions. "We may," he says, "conceive cell protoplasm to be made up of infinitesimal particles of colloid material suspended in a watery solution of electrolytes, with which the colloid may enter into loose combination." These particles become aggregated or disaggregated by various agencies—electrical, chemical, or mechanical—and such aggregation determines structural and functional modification within the cytoplasm. "The proof that such changes do actually occur in urine was furnished by Greely, who showed that the protoplasm of protozoa exhibits structural changes during life in response to variations in temperature and chemical changes of the circumjacent fluid, as well as to the electrical current, which are strictly comparable to the changes described by Hardy in colloidal solutions." These changes are intimately associated with such vital manifestations as amœboid and ciliary movement. An untouched photograph of a living leucocyte of triton is given, showing the reticular structure of the protoplasm. The warning as to the artefacts, which may be produced by the use of electrolytes as hardening and fixing reagent might have been put with advantage in heavy in place of small print. In regard to artefacts, we cannot help suspecting that the axon of nerve fibres is not a fibrillated structure, as figured and described by all histologists, but a homogeneous fluid substance which is fibrillated by the fixing reagents.

In the section on the blood we find that Professor Schäfer regards the blood platelets as minute cells, and not as product of burst red corpuscles or chemical precipitates from the plasma. In his discussion on the islets of Langerhans, he concludes in favour of the view that they are a separate kind of tissue, and not a stage in the life of the ordinary alveolar tissue of the pancreas. We note some interesting delineations of the pancreatic cells before and after provocation of the secretion by application of acid to the mucous membrane of the duodenum.

We can recommend this volume strongly to any one who wants a more extensive knowledge than that given in Professor Schäfer's *Essentials of Histology*. To turn over the pages and look at the beautiful figures is an education in itself, and must give pleasure to any one who wants to extend, or merely to refresh, his knowledge of the minute anatomy of the body.

TEXTBOOKS OF DISEASES OF CHILDREN.

In Dr. Reginald Miller's book, the *Medical Diseases of Children*,[3] an immense amount of information is packed into a relatively small space. No matter of importance appears to have been omitted, and the book, on this ground alone, is worthy of commendation. The author calls special attention to the fact that in the section on infectious diseases he has in some instances classified the infective processes according to the infective organisms. In the stage to which bacteriology has at present reached, such an arrangement is not free from some practical disadvantages. In any case it is not always possible at the outset to know the particular organism responsible; such a knowledge, indeed, is ordinarily only obtained after other details have been investigated and settled. Again, the symptoms which infection of any organ by one of several bacteria may produce may be clinically so nearly identical that only bacteriological examination can decide. In empyema, for example, the early symptoms at least may be practically the same with the pneumococcus, the staphylococcus, the streptococcus, or even the *Bacillus coli*. The nature of the infecting organism may only be determined by an investigation of the pus. The time may come when a bacterial basis of classification will be advantageous in a textbook, but it can hardly be said yet to have arrived. In his chapter on pneumococcal infections Dr. Miller is reduced to the clumsy term "pneumococcal pneumonia" when dealing with the lung affections due to the invasion of the pneumococcus. This pneumococcal pneumonia, according to the author, includes the types that are ordinarily known as "lobar pneumonia" and "primary bronchopneumonia." He states that much of the difference of opinion that has arisen as to the proportional frequency of lobar and lobular pneumonias in infancy is due to an insufficient recognition of the primary type of bronchopneumonia. Now, it may be said that, in spite of the able advocacy of Dr. West, only a small minority of authorities on children's diseases accept the reality of this primary bronchopneumonia, and most of those who might admit its occasional occurrence would deny the frequency the author ascribes to it. The *post-mortem* evidence he alludes to is insufficient to prove his contention and is open to a different interpretation. Bronchopneumonia, or, as the author prefers to call it, "consecutive or post-bronchitic pneumonia," is relegated to a much later section of the work, that on diseases of the respiratory system; but the author is obliged to admit that "a small proportion" of such pneumonias are due to the pneumococcus; whether the opinion as to the infrequency of the pneumococcus in such conditions be correct or not, and it is open to doubt, the dislocation illustrates the point made above as to the inconveniences that attend a bacterial classification. In the chapter on "the rheumatic infections," he writes: "We must here take for granted that rheumatism is a bacterial disease, a point admitted on practically all sides." The acceptance of the bacterial origin of rheumatism is not perhaps so universal as the author supposes, despite the excellent work of Poynton, Paine, Carey Coombs, and others. In treating of rheumatic subcutaneous nodules, he mentions a haemorrhagic form which appears over the bony prominences of the back. Here a reference might have been given to some place where a fuller description of such nodules is to be found; they must be unknown to many well acquainted with subcutaneous nodules of the ordinary types. As to the haemorrhagic forms of arthritis, pericarditis, and pleurisy which the author associates with haemorrhagic nodules, incontrovertible evidence should be produced before their purely rheumatic origin is accepted. That a large percentage, perhaps a majority, of cases of chorea are associated with symptoms of a rheumatic order will not be disputed, but this does not seem sufficient justification for placing chorea amongst the rheumatic infections, for the question whether rheumatism is the sole and only cause of chorea does not, as the author agrees, "admit of an absolutely certain answer." The ordinary conception of what constitutes chorea, too, will have to be extended if "latent chorea" be accepted as an appropriate designation for all the nervous symptoms the author includes under it. The work is well got up, and the very numerous small photographs are a valuable and helpful addition to the text.

Dr. Kassowitz, in his *Praktische Kinderheilkunde*,[4] has supplied a very interesting volume on the diseases of children. In the course of the thirty-six lectures it contains, the whole ground from the medical side is well covered, and the style is readable and interesting. The book differs materially from the ordinary textbook, because, as the author states in his preface, he does not always find himself able to swim with the stream in matters of opinion. As we read the lectures we have little doubt that he loves an argument for its own sake, and the passages in which he defends his own excursions against the stream are ably written and are amongst the most interesting in the book. It is hard work to fight against established opinion, and we do not think that Dr. Kassowitz has much chance of seeing his views either on infant feeding or on the treatment of diphtheria gain general acceptance, but as he writes from a vast clinical experience, his suggestions cannot but be provocative of thought, and it may well be that opinion will move in his direction even if it never travels all the way with him. He is a determined advocate of the system of giving to children from the earliest weeks only five meals in twenty-four hours. Clinically he finds that on

[3] *The Medical Diseases of Children.* By Reginald Miller, M.D. Lond. . . . Great Ormond Street, Children's . . . Hospital, late . . . Children's Hospital, Great . . . Physician to the . . . Hospital. London: Bailliere, Tindall and Cox, Limited. 1911. (8vo, . . . pp. . . .)

[4] *Praktische Kinderheilkunde in 36 Vorlesungen für Studierende und Aerzte.* Von Professor Dr. M. Kassowitz. Berlin: Julius Springer. (Sup. roy. 8vo, pp. 664; 44 illustrations. M. 18.)

this system the babies put on weight more quickly and are much less subject to nutritional disturbances than on the more ordinary system; these effects, he states, are very clearly seen in institutions where it can be tried on a large scale. A minor advantage of the method is that mothers are more easily persuaded to suckle their babies when fewer feeds are demanded. With regard to cow's milk, he recommends a dilution with an equal part of water for the first six to eight weeks, but never more. Indeed, the five-meal-a day system obviously makes too great dilution of the milk impossible. The author gives a testimonial to condensed sweetened milk as an infant food where no safe supply of cow's milk is available, and he has in former years seen infants fed, for the first six months of life, only on such foods without the production of rickets. He strongly opposes the too early adoption of a so-called strengthening diet; meat juices and eggs he considers harmful until nearly the end of the third half-year, and in many cases unnecessary until the end of the second year. In this connexion he quotes Voit's opinion that protein can be added to the body more readily by a diet containing a medium quantity of protein and much non-nitrogenous food than by a large quantity of protein and little non-nitrogenous food. Many English workers will agree with the author's view as to the harmfulness of alcohol for children, even in such diseases as infantile diarrhoea, in which it has been most widely employed. Three of the lectures deal with rickets, one of them with the author's well-known theory of causation. He altogether discards the view that the disease is caused by digestive abnormalities or diminution in the quantity of lime salts, and holds that it is due to irritation by poisons which enter the body through the respiratory tract. The well-marked seasonal curve, the occurrence of rickets even in breast-fed infants if they are kept in stuffy rooms with hermetically closed windows, the improvement which follows when they are taken into the open air, and the prevalence of rickets amongst animals in confinement, are the main facts which suggest the respiratory tract as the way of entrance of the poison. With such a theory of causation treatment by diet becomes useless. The author's belief in phosphorus given in small doses as a specific in the treatment of rickets is also well known, and this volume brings out clearly the large mass of experience upon which his opinion is based. When as many as 10,000 children with rickets come for treatment yearly at the clinic, often from considerable distances, there can be no doubt as to the faith which the system inspires. He will have nothing to do with any remains of a belief that dentition is the cause of symptoms such as diarrhoea, over-excitability, cough, or convulsions which may occur coincidentally with it; and he would have members of the profession stand firmly against the theory, which undoubtedly dies hard. A very large part of the book is given up to the infectious fevers, beginning with a chapter dealing generally with questions of incubation and immunity. He recommends not school but class closure for a week for any case of scarlet fever.

Dr. Herman B. Sheffield, of New York, in *Modern Diagnosis and Treatment of Diseases of Children*,[5] has added another to the large number of textbooks upon the diseases of children for students and for practitioners of medicine. We are not sure that we share the author's views as to the unsatisfactory nature of the textbooks already in existence, or believe that it is possible within the space of 600 pages to traverse by any new route the whole ground of medicine and surgery in their relation to children's diseases. In the preface we are told that—

> the time-worn, stereotyped, verbatim quotations of different authors and the customary over-abundance of illustrations of fads and fancies of enterprising tradesmen—which so conveniently help to "pad" a great many of our textbooks—have been eliminated.

Now, while we cannot agree that such a description fits a very large number of excellent textbooks in the English language, at the same time we gladly acknowledge that the author has succeeded in condensing a very large amount of information into a comparatively small compass. The book contains some reference to almost every diseased condition which has been met with in children, and special chapters are devoted to physical diagnosis and semeiology, general and special therapeutics, congenital malformations and mental diseases, while the whole is illustrated by no fewer than 207 illustrations. With so much attempted and so little space at the author's disposal, it is not surprising that in some instances that which is rare or of less importance seems to have obtained an undue prominence at the expense of that which is of great and common interest. Where the subject of empyema is dismissed in a few paragraphs it seems unnecessary to find room for two photographs, each occupying the greater part of a page, of the condition of the thoracic and abdominal organs. On the whole, however, the author has been remarkably successful in avoiding such discrepancies, and the great majority of the illustrations, especially those to which Dr. Sheffield's own name is attached, are well chosen and of great service to the text. The book is written with vigour, although in a style to which in England we are, perhaps, less used than in America. "Verily," the author exclaims in a final outburst, "considering the baleful acts of omission and commission in infant feeding, one is amazed by the ever-swelling hordes of youthful humanity that have apparently escaped the clutches of ignorance—and death. Merciful Nature!" The author's teaching in a few instances is unusual, but on the whole it is clear and sound, while the recommendations as to treatment are comparatively full, and prescriptions are given both in the metric system and in the system in vogue in this country.

The second edition of the textbook of *Diseases of Infants and Children*,[6] by Dr. Chapin and Dr. Pisek, of New York, retains in all essentials the characters of the first. The plan of the book is that which is followed in a very large number of manuals dealing with the same subject. Special features are the inclusion of articles upon "special examinations," the "signs of illness in infancy," and on "the commoner surgical diseases." The book, as a whole, maintains a high standard, and is well written. It is profusely illustrated with photographs, most of which are well reproduced. The colour prints, however, illustrating the varieties of rash in the exanthemata are crude, and can be of little value. The chapter upon breast-feeding is perhaps the least satisfactory. It fails to indicate how closely the supply of milk, in the first weeks of lactation, depends upon the physiological stimulus of the vigorous sucking of the child. It is recommended that during the first few weeks of life, when the nursing mother has little milk, a small amount of food may be given from the bottle immediately after nursing, a practice which is only too liable to defeat its own object, and result in the insufficient development of lactation. Again, it is recommended to give one bottle a day to every nursing infant from the third month onward, so that it shall be trained to its use. The principles of substitute feeding are well and fully explained. In the treatment of intussusception an attempt at reduction by fluid injection is recommended. There is no mention of the frequency with which oedema occurs in children, apart from nephritis, in chronic alimentary disorders, or in general miliary tuberculosis.

The new edition of Carpenter's *Golden Rules for Diseases of Children*,[7] edited by Dr. Bellingham Smith, can be carried in the waistcoat pocket. The amount of knowledge that can be condensed into a work of the size is necessarily very limited. Still, that it has reached a fourth edition is some proof that it has been of service to many. In this edition the section on skin diseases has been omitted, thus allowing of some expansion of others. Although the amount of information on each complaint is scanty, yet the various items included would seem to have been selected with care and skill. The little work will prove of the greater service the more it induces its readers to consult the larger and more adequate treatises.

[5] *Modern Diagnosis and Treatment of Diseases in Children.* By H. B. Sheffield, M.D. Philadelphia: F. A. Davies and Co. London: S. Phillips. 1911. (Roy. 8vo, pp. 651; figs. 207. 19s. net.)

[6] *Diseases of Infants and Children.* By H. D. Chapin, A.M., M.D., and G. R. Pisek, M.D. Second edition. London: Baillière, Tindall and Cox. 1912. (Royal 8vo, pp. 657; figs. 185. 18s. net.)

[7] *Golden Rules for Diseases of Infants and Children.* By George Carpenter, M.D. Golden Rules Series, No. XI. Fourth edition. Revised and partly rewritten by E. Bellingham Smith, M.D., B.S. Bristol: John Wright and Sons, Limited. 1910. (Demy 32mo, pp. 124. 1s.)

NOTES ON BOOKS.

Nearly eighteen years have passed since the first publication of *Wheeler's Handbook of Medicine*,[1] and in the fourth edition, which has now appeared, little remains of Wheeler's own writing. This volume, like its immediate predecessor, has been prepared by Dr. W. R. Jack of the Western Infirmary, Glasgow. Though the ground covered has been extended (articles on tropical diseases, immunity, and the various intoxications being now included) Wheeler's desire to correlate symptoms with anatomy and physiology seems to have been kept in mind. In effect, it is a volume midway between a cram-book and a treatise, and being an excellent specimen of its kind may be found useful not only by students, but by practitioners whose library does not include a thoroughly modern treatise on medicine.

In the preface to the first edition of his book on impotence in the male Dr. Orlowski gave as his reason for adding to the literature of the subject a desire to emphasize the importance of hypertrophy of the colliculus in the pathology of impotence, and the value of cauterization in its treatment. The second and enlarged edition[2] is dedicated to the memory of Tallemand, whose work, the author states, was unknown to him when his first edition was published in 1907. Besides the causes, diagnosis, and treatment of "colliculitis," the anatomy and physiology of the male generative organs, the several forms of impotence, and sexual neurasthenia are dealt with, and there is also a short chapter on male sterility.

The third edition of Dr. Chalmers Mitchell's *Outlines of Biology*[3] has been revised and supplemented by Mr. G. P. Mudge. Many chapters are new, others have been either rewritten or amplified, and the number of illustrations has been largely increased. The histology of the animal tissues is dealt with in a more detailed manner than formerly. Problems relating to adaptation and inheritance are lightly touched upon. As an elementary textbook it is of value to the medical student, but it is to be hoped that if new editions are called for the process of amplification will not be further continued. Primarily intended for candidates preparing for the first examination of the Conjoint Board, the preface tells us that "in large measure it will also meet the requirements of students preparing for other examinations, such as the First Medical of London University and of Durham University." This may be true, but it seems unnecessary for even such students to learn the facts of "tigroid bodies," "neurochondria," and the "reticulum of Golgi," to mention but a few cases. This is surely overloading the work required from a first year's student. This tendency to "stiffening up" should not be continued indefinitely. Professional biologists must learn to discriminate between the amount of biological knowledge required from medical students in their first and third years, and between medical students and those who intend to become professors of pure science. The present edition, though overloaded in parts with too much detail, is in other respects quite useful. It can with confidence be recommended to a student.

The science of eugenics seems to possess a curious fascination for many of our latter-day novelists. In his new book *The Hidden Fear*[4] Mr. James Blyth has chosen as his theme the possibility of the transmission of insanity from father to child, a theory which nearly wrecks the happiness of his heroine and her lover, a genteelly diabolical baronet. How Winifred, the enthusiastic pupil of an eccentric professor who believes madness to be caused by the presence of certain bacilli in the blood, is released from her self-imposed celibacy it would be hardly fair to relate. It suffices to say that the professor's theory collapses at the crucial moment, and the "hidden fear" vanishes before the sound of wedding bells. The book seems more or less of a pretext for the airing of Mr. Blyth's views on vivisection and the treatment of lunatics; but the interest of the story is well sustained, and the character of the conscientious heroine is well worked out.

[illegible] *Medicine*. By William R. Jack, B.Sc., M.D. [illegible]: E. and S. Livingstone. 1912. (Cr. 8vo.

[illegible] Dr. P. Orlowski, Berlin. Zweite [illegible]. Svo. pp. 168; 22 figures in

[illegible] Mitchell, F.R.S., LL.D., [illegible]. P. Mudge, A.R.C.S. [illegible] Ltd. 1911. (Post 8vo.

[illegible] by James Blyth. London: F. V. [illegible] 8vo, pp. 311. 6s.).

Nova et Vetera.

THE CHARITABLE PHYSITIAN.

If the happiness of a medical author be measured by the rapidity with which editions of his work are demanded, Philbert Guybert, Escuyer, Docteur Regent en la Faculté de Médecine à Paris, surely achieved felicity. His tract, *Le Médecin Charitable*, which gave a friendly byname to the author himself, was first issued about 1623, and sold for one or two sous, but by the extensions successively demanded it was so "revised, corrected, and augmented" by the author, that before his death in 1633 it had expanded into a volume of more than five hundred pages, under the title, *Toutes les Oeuvres Charitables de Philbert Guybert*. An English edition,[1] confined to the matter of the earlier French issues, appeared in 1639, and a Latin version of the whole was published in 1649. The title page of the Latin edition tells us that it had already a hundred French editions, and fresh reprints continued to appear for many years subsequently not only in Paris, but in Lyons, Rouen, and Troyes. This popularity was a sign of the times rather than a warrant of intrinsic merit, and is only intelligible when we recall the circumstances of the medical Paris of that period.

The population of Paris in the seventeenth century numbered about half a million. At the head of its medical service were fully a hundred physicians, incorporated in the Faculty of Medicine, and endowed with the privilege of practice in Paris. Raw drugs, imported by the épiciers, were prepared, compounded, and administered by the apothecaries, who formed a higher branch of the same guild, and who had a considerable financial interest both in the polypharmaceutical marvels of the Arab materia medica and in the newer inorganic remedies which the recent development of chemistry was placing at the disposal of the enterprising physician. Between prescribing and administering treatment was a debated territory which led to constant controversy between the different medical corporations, and the lawyers, the Parliament of Paris, were frequently called in to adjudicate on various claims advanced by one or other party. In 1622 a decision of this kind had emphasized the authority of the Faculty over the apothecaries by enjoining that in their inspection of the shops of the guild members the authorities of the apothecaries should be accompanied by two doctors, professors of pharmacy. Ten years later the apothecaries were again worsted by a decree which allowed the épiciers to keep not only simple drugs, but the well known compositions, mithridate, theriac, alkermes, and hyacinth.

The apothecaries had evoked the resentment of the Faculty not only by direct resistance to its authority but by overt association with those physicians from schools outside Paris who made a direct attack on the monopoly of its practice. At this time the attack centred in the bureau of Theophrastus Renaudot, with regard to whom it is difficult to decide whether he was really a charlatan or merely an innovator. Renaudot, who had graduated in Montpellier, settled in Paris in 1612 under the protection of Richelieu and with a nominal appointment as physician to Louis XIII. He set up the first *bureau d'adresse*, a registry office for servants, houses, and other things of exchange, and this rapidly developed into a great establishment by the addition of a loan office and charitable consultations for the poor which a system of treatment by correspondence extended to the absent. In 1631 he became the first journalist of the *Gazette*, which gave him his nickname, "Le Gazetier," and with a supplement which was often devoted to the praise of antimony he was the pioneer of medical journalism. The students of the Faculty, unknown to their masters, frequented his consultations, and he fitted up a chemical laboratory and rallied the apothecaries round him. His success in these enterprises was so great that Richelieu made him "Commissaire général des pauvres, maitre et intendant général des bureaux d'adresse de France" and "Historiographe de la couronne." After the death of Richelieu in 1642, Renaudot's success was changed to defeat, and the Faculty

[1] *The Charitable Physitian, with the Charitable Apothecary.* Written in French by Philbert Guibert, and by him, after many severall editions, reviewed, corrected, amended, and augmented, and now faithfully translated into English for the benefit of the Kingdome By I. W. London; T. Harper. 1639.

pushed far its triumphs against him and all who had art or part in his enterprises.

Therapy also was at the time a source of bitter controversies. Within the Faculty there was a strong movement away from the Arabian pharmacy, with its grapeshot of mithridate and theriac, and its magic of bezoar and alkermes and hyacinth, toward a simpler system based on purgation, by bleeding and clyster and senna, and though some of the less orthodox members were coquetting with the newer chemical remedies, especially with antimony as a vomitory, the majority found in the simple pharmacy the opportunity of dealing a subtle blow at the apothecaries by teaching the patients to prepare the remedies for themselves. It was with an informally avowed approval of the Faculty that Guybert issued *Le Médecin Charitable*, in which the directions for a domestic pharmacy were carefully laid down. Of its efficacy as against the apothecaries we get a vivid picture from Guy Patin who refers to it time and again. Writing to Spon in 1649 he says, "If you would hinder the apothecaries of your town trying on anything against you, you must remind them of the *Médecin Charitable* with which while it cost but a sou or two we have ruined the apothecaries of Paris. . . . I may say in all truth that they should not take apprentices, their trade being so dry that no one now cares to touch it. . . . The people of Paris are so accustomed to this economy that it is not the apothecary they now call in, they send at once for the physician, and although from the poverty of the time there are some who do not pay at all well we have at least this advantage that we are called first."



Le Médecin Charitable gives somewhat over a hundred receipts, of which a full third are for purgatives in one form or other. After fifteen purgative clysters we note with interest three nutritives. Pat for the poor reads, "Take a chopin of good milk boiled with two ounces of good white sugar and mix in the yolks of two eggs." The tale of purgatives is quickly resumed in suppositories and laxative soups and ptisanes. Senna is the backbone of this materia medica, and as it was often falsified by other leaves, "bon sené" is always mentioned. The price of the best senna was 40 sous a pound. Suppositories were prepared from 2 oz. of common honey, boiled to the consistency of a solid electuary. This, after adding a little salt, was poured on greased paper and rolled with the oiled hand into a suppository "of the size of the ring finger and six or seven fingerbreadths long for adults and three or four for the young." In the English edition this direction as to size is omitted, and we might infer that the English physician of the time was less anxious than his French colleague to maintain the *mens sana in corpore recti* were it not that various other abbreviations and divergences, such as "water" for "*vin blanc*," suggest an explanation arising out of the difficulties that always face the faithful translator. Pessaries of cotton, silk, linen, or carded wool, impregnated with drugs and enveloped in smooth linen, were soaked in water, wine, juice, or suitable liquid. *Pour provoquer les mois*, they were prepared from mercurialis, and, to arrest them, from knotgrass, plantain, cinquefoil, and other herbs.

Injections were used for various purposes, those for acute gonorrhœa, of whey or barley water, or, where there was pain, freshly drawn cow's milk, being on the lines of the best treatment of that affection prior to the antiseptic era. Various compresses and other remedies are described, sleep being secured by taking eight or ten lettuces or five or six handfuls of vine leaves or poppy heads and making a decoction with which for a quarter or half an hour the legs and feet were washed, beginning with the legs. The tract closes with a list of the necessary instruments, including two syringes, each with its large and small nozzles, of ivory for the household, and of box for lending to the poor. For the apothecary the sting of *Le Médecin Charitable* lay not so much in the revealing of his formulas as in giving the cost of each preparation in a marginal note. In the price list of medicines which soon followed, the cost of the fire is charged as well as the price of the drugs; but small store was set by the skill of the trained pharmacist, though the poor man had to serve ten years before he could open shop for himself. This price list, which was the first supplement Guybert was called on to issue, gives a catalogue of about two hundred simples and many compounds. The pound used contains 16 oz., and the drachm 72 grains. Bezoar is most costly, its price being 24 livres an ounce, and it alone is honoured by an annotation. This reads: "The grain does not come to a sou and is no use; it is a pure abuse." In the English edition the price of bezoar is £2 10s. Civet and fine musk are quoted per drachm at 50 sous, while the finest rhubarb and hypocistis cost respectively 45 and 50 livres a pound. Fragments of precious stone, amethyst, emerald, and even the renowned hyacinth, needed for the electuary of gems, were cheap, costing from 8 to 10 sous an ounce.

Two years after the first appearance of *Le Médecin Charitable*, a much more elaborate treatise on the procedures of pharmacy was issued with the title *L'Apotiquaire Charitable*, and afterwards two special tracts on the preparation of jellies and of confections. From these we

mention only the change in the signification of blanc manger, which was made from capon, hen and calf's foot, of which the jelly was mixed with white breadcrumb and sweet almonds, infused and strained. In the English edition the first three tracts are translated along with a tract on embalming, with which Guybert completed his personal work, leaving the poor apothecary little hold on the citizens of Paris either alive or dead. The preface to *L'Apotiquaire* says that *Le Médecin* had been well received, not only in France but among foreigners, who had turned it into their tongues for the good of their nation, but the English and Latin versions alone have here been accessible.

The acceptance accorded to the initial efforts of Guybert encouraged him not only to develop his original plan as we have seen, but to extend it by ancillary treatises. Several of these were reprints, such as those of Mizauld on senna and on the medication of fruit trees, and also Alain's tract on plague, which had been issued in 1606, and Savot's translation of Galen on bleeding. These were brought up to date by annotation. Gui Patin wrote a tract on the conservation of health, which was added in the seventeenth edition; of it he says to Spon (November 11th, 1644): "I wonder who could have said to you that I was the author of the little tract on the Conservation of Health which is appended to the Charitable Physician; it is not worth your looking at. I prepared it some time ago at the request of the worthy Charitable Physician himself M. Guybert, who had capped me and who asked me to make it as popular as I could so that he might add it to his book. . . . If I can ever find leisure I shall try to revise the tract and make it a little better than it is; meantime, I pray you, do me the charity to say to no one that I wrote it for I am ashamed of it myself." Patin also wrote the annotations, and we may suspect that his energies were engaged less from loyalty to his senior than from love of a fight with his "chers ennemis," the apothecaries of Paris.

The ancillary tracts contain many points of interest, of which, to avoid too wide divergence from the main theme, only two will be quoted. In the tract on plague two antidotes are recommended—wine, "which by its subtility passes easily, and by its strength restores promptly the spirits, comforts the heart and other noble parts"; and the "electuary of the three adverbs" *cito*, *longe*, *tarde*, which may be Englished with verbs as *wend wide*, and *wait*—that is, get away as soon as you can, go as far as you can, and stay away as long as you can. Mizauld's tract on an "Agreeable method and easy to have fruits, etc., which purge gently and kindly, and by means of which one may give remedies in various diseases without difficulty and without disgust," contains one piquant quotation from Jean Lang, against fruit thieves. "I have never," he says, "known cantharides serve better than if you put the powder in apples, plums, figs, peaches, and other fine fruits on the bushes, drawing back the skin and then closing it over the powder so that it is not noticeable; for when the thieves steal the fruit and eat it, they have such pain and difficulty that it reveals their pilfering, and is like a just punishment of their misdeeds." Humour in making the punishment fit the crime finds a worthy prototype in this agreeable method and easy of medicining plants and fruits. There is an engraved portrait of Guybert in the Latin edition, of which there is a copy in the Library of the Royal College of Surgeons of England, which also possesses a copy of the English edition, typographically more interesting than the others.

R. C. B.

THE West London Hospital has received an anonymous donation of £3,000.

[redacted] for the first International Eugenics [redacted] London last week, were printed beforehand, with an English translation of those written in other languages, and were issued in a volume for the use of [redacted]. This volume has now been [redacted] is entitled *Problems in* [redacted] the Eugenics Education Society, [redacted], W.C. Price 8s. 6d. net. [redacted] extracts of papers read [redacted] edition, have also been [redacted] are published at the [redacted].

THE RELATIONS OF PHYSICIAN, PHARMACIST, AND PATIENT.

SOME important ethical questions are discussed by Mr. J. Rutherford Hill in a paper read during the recent British Pharmaceutical Conference at Edinburgh. For the purposes of the argument the complete separation of the functions of the prescriber and the dispenser is assumed as the ideal arrangement, the dispensing physician and the prescribing pharmacist being left out of account, and the main points made may be summarized as follows:

The right of the prescriber to suggest to his patient the name of a dispenser, or to object to one mentioned by the patient, is conceded on condition that it is exercised with regard solely to the interests of the patient and not in a spirit of mere favouritism or personal predilection. Any attempt to coerce the patient by means of private formulae or code prescriptions to resort to a particular pharmacist is condemned, as also, of course, any corrupt agreement or understanding between prescriber and dispenser. The practice of leaving the patient free to choose any dispenser he may prefer is extolled as, wherever practicable, the one to be adopted in the interest of all parties concerned.

In illustration of the obligation of the prescriber to refrain from hasty or ill-judged criticism of the work of the dispenser, Mr. Hill cited the case of a physician who condemned a silver nitrate lotion because, on dilution with tap water, it did not become milky. The lotion, condemned in the hearing of the patient, was in the event proved by the dispenser to be correct, the failure to become noticeably milky on dilution being due to the smallness of the percentage of chlorine in the tap water. The prescriber, therefore, found himself in the unpleasant position of having to apologize to the pharmacist, and to explain to the patient that his own strictures had been without justification. It is pointed out that, had the prescriber given the dispenser the chance to justify his work before condemning it to the patient, he would have acted more wisely as well as more conformably to the golden rule. Another case recorded by Mr. Hill is an instructive example of the kind of relations between prescriber and dispenser which are to be sedulously avoided. Damages were claimed by a pharmacist against a physician who had alleged wrong dispensing of a prescription in terms amounting to a criminal charge. In the court of first instance the claim of the dispenser was disallowed on the ground of privilege. On appeal the judgement was reversed, the court ruling that, while the prescriber has a certain right and duty to see that his patient obtains the proper medicine, there is no relationship of contract between prescriber and dispenser, and no privilege similar to that between master and servant can be claimed. Substantial damages were awarded to the pharmacist on the ground of slander.

In discussing the question of the ownership of prescriptions, Mr. Hill indicates two evils arising out of the prevalent custom of leaving them at the free disposal of patients. In the first place, as we all know, prescriptions are handed from one friend to another supposed to be suffering from the same ailment. This may be an injury to the friend, and is an obvious injustice to the prescriber. In the second place, a prescription may be dispensed an indefinite number of times, which is not only unfair to the medical practitioner but often disastrous to the patient. Mr. Hill suggests that this is a matter for conference and arrangement between prescribers and dispensers. Another point of some importance in Mr. Hill's paper is the stress laid on the confidential nature of the prescription. Thus, a pharmacist is not, in his opinion, at liberty to answer questions asked by the patient or his friends as to the ingredients of a given medicine or the malady for which it is prescribed; still less to criticize its appropriateness or to suggest anything he may consider better. Any knowledge which comes to the dispenser in his professional capacity is to be regarded as confidential, and under no circumstances to be divulged.

The practice of exploiting a physician's prescription by recommending it to others is very rightly and strongly condemned. Nor is a dispenser at liberty to give a copy even to the patient himself, except when the prescriber is inaccessible for the time being, or under circumstances which he may be expected to approve.

It must happen sometimes that a pharmacist has a

prescription brought to him which irresistibly suggests to his mind that some oversight has occurred on the part of the prescriber. The ingredients may be incompatible, the dose dangerous, or the directions absurd. Mr. Hill insists that no sign of any such difficulty must be given to the patient. Wherever possible the prescriber should at once be referred to, and the telephone will in many cases afford an obvious solution of the problem. Any deviation from the exact terms of the prescription, made on his own account by the dispenser, should at once be reported by him to the prescriber. This rule, of course, applies not merely to alterations made by way of correcting a presumed error on the part of the prescriber, but also to any substitution that on emergency may be unavoidable on account of the absence from the dispenser's stock of some ingredient of a given prescription.

In his penultimate paragraphs the writer, in emphasizing the duty of his colleagues to supply the articles prescribed in their highest quality, purity, and potency, points out that the maintenance of the principle of purity in medicine is one of the prime objects of the British Pharmaceutical Conference, and suggests the advisability of its exercising the disciplinary powers which this article implies. He further observes that the Pharmaceutical Society, despite the statutory powers at its disposal, at present possesses no adequate disciplinary control over its members in relation to most of the points to which he calls attention.

Medical readers will not fail to sympathize with Mr. Hill and his colleagues of the British Pharmaceutical Conference in their desire to formulate and render fully effective the ethical principles conducive to the highest interests of their art and the dignity of their calling. Nor do we think that many will take exception to the spirit or, indeed, the details of Mr. Hill's interpretation of the mutual responsibilities of the physician, the pharmacist, and the patient. The objections to the indefinite repetition of a given prescription and the dangers attending such a course are dealt with in a letter, published elsewhere in this issue, from a pharmacist who suggests that a prescription should bear a distinct statement forbidding repetition without a further order. The objections and risks might be minimized by the addition of words indicating a date beyond which its dispensing was not authorized by the prescriber.

LITERARY NOTES.

The August number of the *Arena* well maintains the deserved reputation which this magazine has already won for itself. Among the articles of special interest is one on the chapel windows at King's College, Cambridge, by Mr. A. Hamilton Thompson; another on the Chamonix Aiguilles, by Mr. George D. Abraham, a recognized authority on mountaineering, is especially remarkable owing to the beauty of the reproductions of photographs taken on the spot by the author. There is an illustrated article on Rossall School, while other articles particularly likely to interest readers who are connected with the public schools are "Public Schools at the Range," and "Lawn Tennis at the Public Schools." There is a very racy article on "Reminiscences of Oxford Journalism" by a former editor of *The Isis*. "The Tonbridge School Mission" is the first of a series of brief articles dealing with the social service work of the public schools.

Now that the study of entomology has come to have such a direct bearing on the causation of disease, it may not be out of place to call the attention of our readers to a work entitled *Genera Insectorum*, published by a committee of entomologists, under the editorship of P. Wytsman. Since the days of Linnaeus, but especially since 1850, most of the orders of insects have been minutely studied by specialists, whose labours are buried in a multitude of monographs, reviews, and so forth. These works being generally published in the transactions and annals of scientific societies of various countries and in different languages, are so scattered that they are practically inaccessible in large part to the majority of students. The object of the publication is to consolidate in one work in a condensed form all these scattered contributions. Each family of insects is dealt with separately in a distinct fasciculus, with its own pagination, so that supplements can be issued later as demand arises. Each fasciculus is published in the native language of the author—English, German, or French. Other languages are excluded. The illustrations are both plain and coloured. Fasciculi 1 to 130 have already appeared. Specimen pages and plates may be had free, post paid. For further information application should be made to P. Wytsman, Quatre Bras, Tervueren (Belgium).

SCIENCE NOTES.

In a lecture at the Imperial College of Science Mr. Clifford Dobell recently gave an account of the work on the production of strains of trypanosomes without kineto-nuclei, which was initiated by Werbitzski in 1910. It is to a certain extent a direct result of Ehrlich's well-known chemo-therapeutical researches. Werbitzski was engaged in investigating the effect of various chemicals, particularly dyes, upon trypanosomes when he made the startling discovery that after treatment with certain of these substances the trypanosomes lost their kineto-nuclei. The trypanosomes did not appear to be otherwise much affected as they were no whit less active, and continued to multiply in the animal in which they were being cultivated. Not only so, but after being passed through a series of animals, and being subjected to the same treatment in each a strain was eventually produced at the fifteenth passage, which had permanently lost its kineto-nucleus. This process was continued by Kudicke, who carried it on to the 115th passage, and found that undoubtedly a permanent strain had been produced, differing from the original only in lacking a kineto-nucleus. Unwilling to credit these astonishing results, Laveran undertook to repeat the experiments, but his work, done partly in conjunction with Roudsky, has served only to confirm Werbitzski's statements. The substances which produce this remarkable alteration are what Ehrlich terms "ortho-quinoids," double ring compounds of the form of diphenylmethane and diphenylamine, and their names are acridin, pyronin, and oxazin. No other substances have been found to produce the same effect. These dyes first stain the kineto-nucleus, then kill it, and cause its absorption. The process appears to be one of what may be termed "antoxidation," for it is restrained in the presence of potassium cyanide. These results do not apply only to one species of trypanosome. They were originally observed in the case of *Trypanosoma brucei*, but they have been found to occur also with *T. gambiense*, *T. lewisi*, and several other species. Whatever their significance, there can be no doubt that they are of very great importance to experimental zoology, and are further evidence of the remarkable results which are attending investigations along chemo-therapeutic lines.

It is a well-known fact that it is difficult to be absolutely certain of the identity of the cholera organism. In many cases vibrios differing essentially from the cholera vibrio have been isolated from the faeces of patients presenting all the clinical symptoms of cholera, while on the other hand in cases of true cholera much variation has been encountered in the organisms isolated. These difficulties are emphasized in the recent report from Alexandria by Crendiropoulo.[1] He undertook the bacteriological examination of persons landing in Alexandria from countries infected with cholera, and in the course of his work isolated 63 strains of vibrio, of which 52 were thoroughly dealt with. As a result of this investigation he forms the general conclusion that none of the diagnostic tests at present in use are absolutely specific. Some of them, however, are more reliable than others, and amongst the most constant he would place complement fixation and agglutination. Other characters, such as virulence for the pigeon, liquefaction of gelatine, coagulation of milk, production of haemolysins and the indol reaction are either inconstant or common to all vibrios. Basing his opinion on this experience, taken in conjunction with that of others, he suggests as the most desirable administrative measure that all carriers of vibrios, agglutinable or not, coming from epidemic centres, should be held suspect, but that on the other hand the presence of vibrios in the faeces should not be considered of serious import provided the persons do not come from an infected region.

[1] Rapport sur l'éxamen des selles des voyageurs provenant des pays infectés de cholera. Conseil sanitaire, maritime et quarantenaire d'Egypte. 1912.

British Medical Journal.

SATURDAY, AUGUST 17th, 1912.

SIGHT TESTS IN THE MERCANTILE MARINE.

In June, 1910, a Committee was appointed by the Board of Trade to inquire into the question of what degree of colour blindness or defective form-vision in persons holding responsible positions at sea would cause them to be incompetent to discharge their duties, and to advise whether any alterations were desirable in the Board of Trade sight tests at present in force for persons serving in the merchant service or in fishing vessels. Many meetings were held and much evidence was brought forward both by seamen, ophthalmic surgeons, scientists, and also by some scientific men who themselves suffered from defects of colour vision.

The report it has now issued is in many respects a disappointing document. As was pointed out at the time of its appointment, both in these columns and by some of our contemporaries, notably *The Shipping Gazette*, the Committee in large part consisted of those who were responsible for the introduction of the wool test in 1894, and those who were definitely associated with it and advocated it. The Imperial Merchant Service Guild, in fact, refused to give evidence because of the constitution of the Committee.

From 1877 until 1894 the Board of Trade was content with the lantern and coloured cards, but, on the recommendation of the Royal Society, Holmgren's wool test was substituted for the others, and in 1909 two new skeins were added to the three (green, pink, and red) of the Holmgren test—namely, a light purple and a yellow—which were the same colours as used in the Edridge-Green classification test; but inasmuch as the confusion colours of the Edridge-Green test corresponding to these wools were not likewise added, it is rather doubtful if this modification really made any material improvement. The wool test as used by the Board entirely depended on the principle of matching, for the use of names was not allowed; it was carried out by examiners who possessed no medical or scientific training, and who for the most part consisted of masters of merchant ships and "clerical officers in mercantile marine offices." If a candidate appealed he was examined by scientists, but not by any one possessing medical knowledge. In 1909 the Board decided to raise the standard of the form vision test and to have each eye tested separately; this had not previously been done, so that a man with only one seeing eye could quite well get through. This new test will not come into force until 1914.

In considering the question as to the success or otherwise of the old tests the Committee makes the statement that the Board of Trade is not aware of the occurrence of any casualty which could be traced to defective vision, but it must be remembered that the Board has consistently refused to examine the sight of the look-out men in ships which have come into collision. This fact very largely discounts the statement made by the Commissioners in their report that "we have examined a large number of reports of Board of Trade inquiries, and the result of our examination has confirmed the view that *no official evidence exists* [italics our own] of casualties due to this cause." The report admits that out of 40,000 examinations 48 officers were found to be serving at a time when their colour vision was so defective as to make them dangerous. That this number should be found out by the official test, which is discredited by so many observers, is surely bad enough. "Apart, however, from these results we have no conclusive evidence placed before us of any case in which either a defective candidate has been passed or a competent officer rejected on examination for a certificate of competency for the Mercantile Marine." The Board of Trade seems to have forgotten the case of Mr. Trattles, who was many times passed and many times rejected by the examiners; it was not until after the lapse of years that a decision as to whether he was colour blind or not was really reached. It is admitted that since the 1894 tests have come into use there have been on an average 100 cases of collision a year attributed to "bad look-out." This brings to mind the case of a railway engine driver who had so much shortening of the red end of the spectrum that he was unable to see the red light if there was any haze at all. He twice ran his train past a red signal, and after inquiry was fined for being drunk, as it was assumed that this must have been the case, as otherwise he would have seen the light!

The report admits that possibly the present method does not exclude all dangerous persons, and that it is not proved that no accidents have been caused in this way, "since it has not been the practice in conducting inquiries into the cause of casualties to test the vision of the persons implicated." The Committee considers that this should in future be done, and if the recommendation is carried out it will be a great step towards elucidating these cases of "bad look-out." No doubt a shockingly bad look-out is sometimes kept in ships, or even no look-out at all, as occurred a year ago, when a steamer ran down a boat at anchor in broad daylight and three or four men were drowned. Here it was proved that there was no look-out, and that the man steering in the wheel-house could not possibly see where he was going. This case is mentioned as evidence that there is no desire to cast doubt on the assertion that many accidents are caused by mere laxness or carelessness in the look-out, but a large number classified as such are more probably due to defective eyesight.

It has been urged by Edridge-Green and others that a test for colour blindness which excludes the use of colour names and which relies on matching only is valueless, but the Committee states that the great advantage of the wool test is that it can be carried out without the naming of a single colour. Owing, however, to the fact that the test must be carried out in daylight, when the eye of the candidate is not in a dark-adapted condition as it would be at sea during the night, and to the fact that the test object is far too large to detect cases of central scotomata, the Committee expresses the opinion that a lantern test should be associated with the wool test.

Having considered the merits of many test lanterns, it has failed to be satisfied with any, and has itself invented another. One of the advantages claimed is

that this new lantern can be used by non-expert examiners, but the employment of such examiners at all is strongly to be deprecated. In this lantern a paraffin lamp is chosen "because it is the lamp used in the majority of ships." Considering that almost every steamship above the size of a coaster uses electric lights, and that there are very few sailing ships left, this is an extraordinary statement. In the Royal Navy nothing above the size of a picket boat uses anything else than electric light for navigation purposes except in case of emergency. "Such a source of light" (that is, a paraffin lamp) "does not, of course," the report states, "give a pure white, and a candidate may therefore easily call a light seen through the white glass red." But in order to ensure that he does not make this mistake, "his attention should be drawn at this preliminary stage to this fact, and the difference between the bright (that is, white) and red lights should be emphasized" while the largest aperture is being used. Now there are many colour-blind people who would know by the luminosity of a light whether it were a "bright" light or a red one if shown first one and then the other, and as, for the benefit of the "non-expert examiner," modifying glasses are excluded, the luminosity remains constant, and only the size of the aperture is varied. Such a lantern will stand at once condemned in the eyes of all those who have really studied this useful test. Even if a candidate calls "a red light green or vice versa" and is rejected thereby, the Committee think that an appeal might be allowed, but there ought to be no loss of time in hearing the appeal. If the Committee's lantern is to be used in the way suggested, it is, perhaps, just as well that the wools should be retained. "When these tests have been in use for a certain number of years, the results of the two methods should be compared, and the question of dispensing with one or the other could be considered." Most persons of experience have, we believe, long been convinced that the wool test is a thoroughly bad one, and that the lantern test used by an expert is not only good enough to detect the dangerous cases, but will not reject slight cases of colour blindness of no practical importance.

The fallacies of the wool test are recognized in the Royal Navy, and years more are not necessary to demonstrate their imperfections for the mercantile marine. It is not so much the slight cases of colour defect passed by this test, though very often they are rejected, but the gross cases frequently passed which it is important to find out.

We are glad to observe that the Committee has recommended that an ophthalmic surgeon should be added to the present body of examiners in appeal cases. This is one of the most useful results of the Committee's work and deliberations. The recommendation that the colour ignorance test should be abolished is also good; it assumed that a person whose intelligence was sufficiently good to make him a candidate for a ship's officer might yet be so ignorant that he would not know what red and green were. "No candidate has ever failed to pass this test." Of course not; a colour-blind person might well not know the difference, but it is quite certain that no one else could fail to have this knowledge.

It is to be hoped that the Imperial Merchant Service Guild, which has done so much good work in the past, will not be satisfied until the eyesight of candidates is examined by ophthalmic surgeons instead of by lay examiners who have no expert knowledge.

TUBERCULOSIS, COMPULSORY NOTIFICATION, AND SANATORIUM BENEFIT.

While the Representative Body was working out the policy which was to guide the conduct of the members of the British Medical Association in reference to sanatorium benefit, certain aspects of the question were being discussed by the Section of State Medicine from the administrative side. The Chairman in opening the discussion, which is reported this week, said that it was not concerned with sanatorium benefit or the Insurance Act, notification of phthisis being independent of the Act. But can we separate notification as a first step from the object of notification—the treatment and possible cure of the phthisical patient, and the prevention of infection? As Dr. McVail said further on—rather in contradiction to his former statement—"compulsory notification is a means to an end, it is never an end in itself." This is the only line that can be taken, and was that taken by all the subsequent speakers.

The discussion was marked by great variety of opinion, and it was evident that, so far as the patient was concerned, doubt and darkness hung round his future. On some things there was unanimity, as that the environment of the patient must be altered, that overcrowding and insufficient ventilation must cease, and that damp, dark, and dirty dwellings, with scarcity of good food, were potent factors in the production of consumption, and that there was still a crying need for a good supply of pure milk. Legislation for this last has long been promised by the Local Government Board, but seems as far from attainment as ever. Nevertheless, until the home of the patient and his surroundings are cared for and a good milk supply made available, tuberculosis dispensaries, special hospitals, sanatoriums, and all the rest of the improved paraphernalia but tinker with the subject. We want instead a vigorous and rational attempt to prevent tuberculosis by going to the root of the matter.

While throughout the profession there are differences of opinion as to the wisdom of the decision come to at the Representative Meeting in regard to the working of sanatorium benefit, there will be no lack of loyalty to the policy adopted by the Association nor of goodwill in the carrying out of the work to be done in respect of the administration of sanatorium benefit, so long as the State Sickness Insurance Committee, to which the duty has been delegated, sees to it that the conditions and safeguards are faithfully adhered to. Medical practitioners are just as firmly pledged to the cardinal points as regards sanatorium benefit as they are to those affecting medical benefit, and they are convinced that unless the Local Government Board deals fairly and honourably by them, winning their cordial goodwill and sympathy, the sanatorium benefit will not be successful.

In considering the relation of the medical practitioners to the working of the sanatorium benefit it seems usually to be assumed that the report of the Astor Committee has laid down the general plan. Now, it is not easy to forget the unfortunate and unsatisfactory fact that it contained no representative of the men who were actually fighting this disease, and that some of its members can have had very little practical acquaintance with its treatment or prevention. Nor is confidence increased when we find that the tendency is rather to push the general practitioner into the background and put the work into the hands of whole-time medical

officers attached to the dispensaries. Some apprehension naturally arises also that not only the general control but also the supervision and even the administration of treatment may drift into the hands of the medical officers of health, who, owing to the unnecessary haste with which sanatorium benefit had been brought into force, are now in many places acting temporarily as tuberculosis officers. It appears, indeed, pretty clear from the tone of the papers read in the Section of State Medicine that the medical officer of health is an exceedingly important personage in the carrying out of sanatorium benefit. He will want to know the condition of every person residing in the house of a phthisical patient. He must see that those requiring medical treatment receive it, and by him personal instructions are given with a view to the prevention of infection of other members of the household. "In doubtful cases he is to have the expectoration examined," and so on.

If, however, we turn to the Local Government Board's General Order for Domiciliary Treatment of Tuberculosis, we find under Article II that the medical practitioner has got work assigned to him. He is to attend on the patient at his home, give instructions, keep on a card a continuous clinical history of the case, submit this card to the consulting officer at specified times, at least every three months send a full report of each patient, confer with the consulting officer with regard to all his patients, and finally now and again inform the medical officer of health as to the sanitary conditions generally under which patients are living, and give his opinion as to whether the medical officer of health should take action thereon.

The specimen card given under Article III sets out thirty-five different entries to be made on one side, some of them easily answered, others taking time and needing consideration; on the other side there is a temperature chart, and notes of pulse, weight, sputum, rest, exercise, and treatment by tuberculin or otherwise are to be made. This is no inconsiderable list of varied duties. Nothing is said about the payment for all this work, which is the more remarkable when it is recommended that a fee of 5s. should be paid for a medical report on an applicant for sanatorium benefit. We await with interest an announcement in regard to the fees the Local Government Board considers should be paid. We thus have the domiciliary, the dispensary, and the sanatorium units of service. The position the British Medical Association has taken up in regard to the sanatorium benefit is (1) that the remunerations shall be adequate for the work done. (2) That no whole-time tuberculosis officer or assistant shall give domiciliary attendance except as a consultant. (3) That the work of the "Chief Tuberculosis Officer" shall be confined to diagnostic and consultative work at the dispensary, and that the rest of the staff of the dispensary shall, as far as possible, be formed of medical practitioners serving on a rota. (4) That there shall be free choice of doctor. (5) That patients should be given attention at the dispensary only on the recommendation of their medical attendant and (6) that the general medical profession shall have adequate representation on consultative and voluntary care committees. From this position the profession will not recede. The [illegible] by insidiously advancing this and that as temporary expedients the authorities may entangle the general medical profession in work under conditions which will weaken its main position. These temporary conditions will have a tendency to become permanent and should be watched with the most [illegible]

HOSPITAL RESIDENTS AND THE INSURANCE ACT.

DR. A. G. BATEMAN, General Secretary of the Medical Defence Union, states that the Union is about to deal with a case raising the point whether hospital residents (medical officers, house-physicians, and house-surgeons), whose honorarium with board and lodging does not exceed £160 a year, are liable to compulsory insurance under Part I of the National Insurance Act. Dr. Bateman asks that hospital residents should let him know whether they have been required by their boards of management to take up cards of insurance, and whether in such cases any deduction for stamps has been made from their remuneration. Dr. Bateman adds that it is hoped that some arrangement may be made by which medical officers, who cannot be said to require the benefits under the Act, will be exempted from its provisions. In the SUPPLEMENT for July 13th was published a letter, dated June 29th, addressed by the National Health Insurance Commission for England to a resident medical officer of the General Hospital, Nottingham, in which the Commissioners stated that resident medical officers appeared to be liable to compulsory insurance under Part I, where the rate of remuneration did not exceed £160 a year. It was added that in the calculation of remuneration the value of board and lodging provided should be taken into account, but no account would be taken of private income, although if such private income, not dependent on the personal exertions of the recipient, amounted to £26 a year, it would entitle him to obtain a certificate of exemption. It was pointed out, however, that if he obtained such a certificate it would not relieve the hospital board from the liability to pay the employer's share of the contribution. It is to be hoped that the information asked for by the Medical Defence Union will be furnished, for the point is one which ought to be settled. The Commissioners appear disposed to interpret the Act in the strictest possible way, and we observe that they have recently decided that professional football players are engaged in manual labour, and must, therefore, be compulsorily insured, whatever their earnings. The information for which Dr. Bateman asks should be addressed to him at the Medical Defence Union, 4, Trafalgar Square, London, W.C.

DEVELOPMENT OF THE HUMAN NOSE AND LARYNX.

IN recent numbers of the *Journal of Anatomy and Physiology* there have appeared a series of papers by Mr. J. Ernest Frazer, Lecturer on Anatomy at St. Mary's Hospital, which throw an entirely new light on obscure problems connected with the development of the human nose, pharynx, and larynx. Although Mr. Frazer's researches are illustrated by drawings of models reconstructed from microscopic sections, the accompanying letterpress is so terse and so packed with fact that the novelty and importance of his discoveries may easily be overlooked. Mr. Frazer has demonstrated that the part of the cavity of the larynx which lies above the level of the true vocal cords (suprarinal part) is totally different in origin and nature from the part which lies below (infrarinal part). The suprarinal cavity of the larynx is really part of the pharynx, which is enclosed by the upgrowth during the second month of development of secondary processes, which form a new entrance to the larynx, the orifice between the aryteno-epiglottidean folds. The rima glottidis and true vocal cords represent the original orifice to the pulmonary tract. Certain of Mr. Frazer's observations on the development of the larynx help to explain a not uncommon and yet very remarkable condition seen in some children at birth. In such children every attempt at suckling is attended by a fit of threatened suffocation. After death—for the condition is always fatal—it is found that the œsophagus is divided into two parts—the upper part ending blindly behind the trachea, while the lower part commences by

an opening placed on the posterior wall of the trachea. Milk can only reach the stomach by passing through the larynx and trachea—an impossible route. Mr. Frazer's researches show that in the human embryo during the later part of the first month and earlier part of the second month the primary orifice to the pulmonary system undergoes a migration forwards. It is during the migration that the hinder part of the pharynx is divided so as to form the trachea in front and the upper part of the œsophagus behind. The strange anomaly just described is produced by an irregular division of the hinder part of the pharynx during embryonic life. Sir Morell Mackenzie collected over 70 cases of congenital atresia of the œsophagus of the nature here described; Professor Keith has recorded several cases lately, and a number of examples are preserved in the Museum of the Royal College of Surgeons of England. The condition invariably ends in death from starvation. This anomaly is one which is worthy of the attention of the surgeon, for such children are usually strong and otherwise well. Amongst other points which have been illuminated by Mr. Frazer's researches may be cited the presence of a part of the pituitary body in the pharynx and the peristence of the embryonic stalk of the pituitary outgrowth on the posterior border of the nasal septum—a condition recently recorded in a child by Mr. A. R. Tweedie. Mr. Frazer has shown, too, that the Eustachian tube is much more complex in its origin than is usually supposed; it is really an included part of the pharynx, not the modification of a single branchial or visceral cleft. Surgeons who are puzzled to explain the various anomalies found in connexion with the nose and throat will do well to consult the papers here cited, for they are teeming with original and absolutely trustworthy observation.

MEDICAL CONGRESS ON LABOUR ACCIDENTS AT DÜSSELDORF.

The third International Congress on Labour Accidents held last week at Düsseldorf was attended by some three hundred physicians and surgeons from all parts of Europe. It was engaged for five days in the discussion of questions relative to industrial diseases and injuries. The programme, which contained over eighty entries, was arranged by a committee appointed by the second international congress held at Rome three years ago. Among the leading European authorities on that committee are Dr. Marbaix (Antwerp), Professor Tscherning (Copenhagen), Dr. Liniger (Düsseldorf), Dr. T. M. Legge (London), Professor Sir Thomas Oliver (Newcastle), Dr. Desjardins (Paris), Dr. Kooperberg (Amsterdam), Dr. Bernacchi (Milan), Dr. Waegner (Charkow), Professor Ackermann (Stockholm), and Dr. Dollinger (Budapest). At a reception in the Royal Government Palace, Dr. Kruse, in the name of the Government of the Rhine Province, who welcomed the Congress, said that it was of immediate importance to a State which, like Germany, was directly concerned with the results of accidents to its workmen. The President (Dr. Thiem, of Kottbus), in acknowledging the courtesy of the Government and the city, said that the fundamental idea was to make the injured workman fit for efficient service as soon as possible. The scheme of work before the Congress covered a wide field, including, *inter alia*, consideration of the Compensation Acts in force in the various countries, insurance against special trade diseases, importance of early functional treatment, vascular diseases and accidents, and methods to be adopted in examining the injured. Dr. Liniger, Medical Director of the Rhine Province, to whom much of the credit for the success of the arrangements for the Congress was due, read the first paper; it dealt with the initial treatment of industrial accidents. He recommended immediate notification and immediate attention, and that where the slightest doubt existed there should be an immediate consultation, presumably with a State officer. While insisting on the need for the specialist expert, both as regards diagnosis and treatment, he urged that the ordinary practitioner ought to be encouraged to feel that he was being helped, not brushed aside. After discussing the administrative as well as the medical aspects of early functional treatment, particularly of fractures and dislocations, he insisted on the importance of giving due consideration to the patient's state of mind and endeavouring to secure his co-operation. Among a group of special papers dealing with details in the treatment of fractures was one by Professor Bardenheuer (Cologne), who demonstrated in certain typical cases how by a system of bandages, weights, and pulleys it was possible to put the bone in its normal position, and to restore to the limb its normal function by making active and passive movements possible soon after the accident. Dr. Steinmann (Berne) explained his manner of using strong needles inserted into the bone so as to provide points at which pulls might be applied independently of adhesive bands. Dr. Waegner (Charkow) urged that cases of fracture of the femur should be treated in a hospital where time, skill, and appliances could be brought to bear, in order to obtain both a perfect anatomical union and a good functional result. Emphasis was laid on this latter aspect of surgical results by a series of contributions on functional treatment. Dr. Lucas-Championnière (Paris) said that, as a consequence of medical routine, and in some measure also of the French law which restrained an injured workman from commencing work until a complete cure had been effected, but most of all through the influence of "compensation," the defects of non-movement treatment had become glaringly obvious. For restoration of function a certain degree of movement must follow on the heels of the accident, but he uttered a warning against rash enforced movements after a period of fixation. He was disposed to advocate payment of a bonus for quick recovery of function after an accident. Dr. F. De Marbaix (Antwerp) in discussing recovery from wrist displacements, shoulder dislocations, and fracture of the femur, quoted hospital results to show the efficacy and necessity of movement treatment. Dr. Bum (Vienna) drew a distinction between an anatomical and a functional cure, and said that while treatment must favour the rapid and regular formation of callus, muscular atrophy, fixation of tendons, and ankylosis of articulations had to be strenuously withstood. Basing his remarks upon large experience in the suturing of tendons, Dr. James R. Kerr (St. Helens, Lancashire), in a contribution on early functional treatment, recognized the economic importance of returning the victims of industrial accident to a fit state and as soon as possible to their normal employment; but, while acknowledging the immense possibilities of functional treatment, said that after-treatment frequently proved futile unless the previous treatment had been efficient. In cases of tendon division there was involved the probability of the loss of the highly specialized hand of the skilled artisan. Accordingly the restoration of function must be the surgeon's primary consideration, and he must not permit himself to believe that any amount of after-attention would atone for disregard of the best methods of operative repair. Another contribution from England was by Dr. Frank Shufflebotham, medical referee under the Workmen's Compensation Act for the North Staffordshire District, who discussed the importance of early functional treatment in cases of contusions and sprains of the back. His experience indicated, in many cases, unsatisfactory treatment and undue length of period of disablement. If functional treatment, resting on a reasonably accurate diagnosis, were pushed, good results would follow. In a paper on traumatic neuritis, Dr. Moody (Stoke-on-Trent) examined the probability of the determining cause being of germ origin. He stated the results of some experiments in the application of the ionic treatment to such

cases, and particularly of the electrolytic introduction of salicylic and zinc ions in lumbago and carbuncle. Most of the papers presented to the Congress were of a specialized order, some dealing with diseases belonging to particular industries, others examining the relations that may exist between accident and disease, and therefore concerned with medico-legal questions. When so many men of experience meet to interchange views on subjects in which all are engaged and in earnest there cannot fail to be most valuable outcomes. There is, however, more than the mere giving and receiving of results. There is an atmosphere and an enthusiasm which affect not merely the members of the congress but also the general public. Representatives of Switzerland stated that the importance of the questions that concern these international congresses is so fully appreciated in that country that industrial accidents and diseases will henceforth form an essential subject in a graduating course in medicine, and special lectureships will be established to meet the requirement. The city of Düsseldorf not only helped the Congress by providing adequate accommodation, but offered such entertainments as are to be had at the Great Exhibition of Cities, at the Zoological Gardens, music in the town hall, a free car service, and a six hours' trip on the Rhine. It was decided that the fourth International Congress be held in Paris in 1914. Dr. James R. Kerr (St. Helens, Lancs.) was elected to represent England on the International Committee.

RADIO-ACTIVE BATHS.

In the course of the proceedings of the Section of Electro-Therapeutics at Liverpool, radio-active baths came, incidentally, under discussion, and Professor Rutherford, whose authority in connexion with radio-active substances will be universally recognized, pertinently asked what definite evidence there was that the benefits derived from the baths were due to radio-activity. In France, as in this country also, the surgical possibilities of radium have attracted chief attention, but in Germany and Austria its value in disorders of a medical kind has been studied, the emanation being mainly used for the purpose. It was, however, first employed for the preparation of radio-active baths, the theorists being influenced by the consideration that since radium emanation is exceeding soluble, the alpha rays would thus be allowed full play, and the clinicians, by the knowledge that certain natural waters of admitted therapeutic value had recently been proved to be radio-active. Artificial radio-active baths soon obtained a great vogue, their alleged value being attributed to absorption of alpha rays through the skin. Before long, however, the physicists pointed out that if the baths in fact did do good, such benefit could not be due to cutaneous absorption, because, owing to the readiness with which alpha rays are stopped by very thin layers of water, it was very doubtful [illegible] material quantity ever reached the skin. [illegible] f the bath then took up the position that the baths did good owing to pulmonary absorption of rays from the surface of the water. Professor Lazarus, at a meeting of the Berlin Medical Society early this year, admitted that the physicists' objections to the theory of cutaneous absorption were well founded, and maintained that the theory of pulmonary absorption was also untenable. In an investigation conducted with Wick he had found that the accumulated radio-activity of the air immediately over the water of certain naturally radio-active springs was exceedingly small even when the time limit of the experiments was prolonged for a period many times greater than the duration of a bath. In view of this and the other physical considerations and of the fact that the radio-activity of artificial baths never equals that of many well known natural waters, he suggested that there was no theoretical justification for their employment while clear clinical evidence of their value had yet to be produced. In Germany, though artificially radio-active baths are no longer generally esteemed, there is still a very general belief in the therapeutic importance of emanation in internal medicine, though there is much difference of opinion as to the most effective method of introducing it into the system. Lazarus and other investigators appear to regard its introduction through the intestine, dissolved in water, or through the lungs by inhalation, as equally effective provided the dosage in either case is adequate.

EXPLOSIONS IN COAL MINES.

THE recent lamentable disaster at the Cadeby coal mine has lent added importance to the preparations now being made at Eskmeals, on the coast of Cumberland, for experiments on a large scale as to the causes and propagation of explosions in coal mines. For some months past a small committee appointed by the Home Secretary has been preparing the way for a more thorough investigation than any yet undertaken. In a recent report the committee referred to the well-known fact that coal dust alone without any inflammable gas may be fired and propagate a violent explosion along the dusty galleries of a mine. This much has been established by laboratory experiments, but several questions have arisen which can only be settled by experiments on a scale approaching the scale of Nature. The Government has therefore accepted the offer of the Mining Association of Great Britain to lend experimental plant and apparatus, and a consultative committee, consisting of members of the Royal Commission on Mines and the Mining Association, has acquired a plot of land at Eskmeals, not far from Messrs. Vickers's gun range. The land is open to the sea, but on the other sides is quite surrounded by sand hills, and is sufficiently distant from any dwellings to allow of large-scale experiments without risk of danger or annoyance from the concussion or noise of the explosions. Every possible precaution is being taken to prevent danger to those engaged in the experiments: they will be able by means of electricity to work at a distance from the galleries in splinter-proof shelters and behind sand hills. The site has been connected with the Furness Railway, and laboratories, workshops, and plant for making gas and electricity have been fitted up. The galleries, which will represent a mine, consist of some hundreds of yards of boiler-plate tubes, one length of about 800 ft. being 7 ft. 6 in. in diameter, with a second length of 450 ft. 3 ft. 2 in. in diameter, and a third length of nearly 200 ft. 1 ft. in diameter. These can be connected together as required, and there is space enough to erect other galleries of such diameter as may be necessary. The galleries will be fitted with various recording instruments and apparatus for introducing inflammable gases either in bulk or in "blowers," while shelves and ledges are provided which can be strewed with coal dust. Electric wires can be carried from splinter-proof shelters to any part of the galleries to start an explosion. Thus a gas mixture may be fired in one of the smaller tubes and the flame propagated into the larger dust-strewn tube or a blower of ignited gas may be sent into what will represent a dusty road of a mine, while currents of air may be passed along the galleries to represent the draught in a mine. Various kinds of coal dust will be used and its inflammability tested, and apparatus is provided which will allow clouds of coal dust mixed with air to be driven through flames or over electric arcs, or heated platinum wires whose temperature may be measured. Experiments will be made with mixtures of coal dust with inert stone dust to see how far an explosion may be modified by such inert dust. Experiments on a laboratory scale with inert stone dusts seem to promise very satisfactory results, but doubts have been raised whether, on a large scale and with various

amounts of firedamp present, the stone dust may not favour explosions. The velocities and pressures set up by explosions of firedamp or of dust or mixtures of the two will be measured and tests made as to how far the explosions can jump over lengths of gallery which have been well watered or strewn with inert dust or otherwise treated. One of the most important points to determine is how an explosion once started can be checked or its range limited before it raises the fine dust and sends the flame through all the galleries of the mine. It is hoped that after the investigations now contemplated have been carried out the Government may see the advantage of maintaining the station for further experiments and research.

A SCHEME THAT FAILED.

It may be recollected that on February 29th last every medical man within a wide area of West Yorkshire, comprising Stanningley, Pudsey, Farsley, Rodley, and Calverley, who had any club patients gave notice that his services as medical officer of the society would not be available after June 30th. This course was taken owing to a general feeling that contract work on the then existing lines was unsatisfactory, both to the patients and to the doctors, and to the latter extremely distasteful. In April a deputation of the officials of the friendly societies waited upon the doctors, asking them to withdraw their resignation and to make some other arrangements. The doctors expressed their willingness to continue the work until the medical benefits under the National Insurance Act might come into force on an arrangement having for its basis the terms of the National Deposit Friendly Society. This was refused point blank, and the matter was not even referred to the respective societies for their decision, the deputation evidently considering the suggestion not worthy of consideration. An attempt was next made to induce the members to submit to a scheme for a whole-time medical service, the payment of the medical officer to be at the rate of 3s. yearly for each member. The utmost confidence was expressed that such service could readily be established, but only about 2,000 out of the 5,000 members consented to it. A Friendly Societies Council was, however, formed to represent these 2,000 members. It was found impossible to fill the post locally; but during June the body which calls itself the "National Insurance Medical Association" came to the rescue, and Dr. C. F. Knight of Edinburgh by letter introduced to the secretary of the local Friendly Societies Council Dr. Lachlan Macdonald of the Island of Eigg. In an interview published in the *Pudsey and Stanningley News* of August 2nd the friendly societies' secretary stated: "Satisfactory terms were arranged and an agreement made out, service to commence on August 1st." An inspired announcement that this post had been filled was made in the press while the Representative Meeting was sitting in Liverpool; this was timed, no doubt, to strike terror in the mind of medical men who contemplated similar resignations. The appointed day came and passed, however, and Dr. Macdonald had not reached Stanningley; nevertheless the secretary of the local Friendly Societies Council expressed himself "optimistic"; "he was expecting the doctor every minute." This expectation, however, was not fulfilled, and no explanation seems to have been offered at Stanningley. This is afforded by the *Aberdeen Daily Journal*, which in its issue on August 7th published a short report of an interview with Dr. Macdonald on his arrival at Mallaig from Glasgow. It appears from this that he had in fact left the Island of Eigg with the intention of going to Stanningley to interview the secretary of the friendly societies there, but when passing through Glasgow he ascertained from medical friends the actual state of the case, and did not continue his journey to Stanningley. Dr. Macdonald is to be congratulated on his final decision. The officials of the friendly societies in the district now no doubt regret the way in which they rushed into print, and it is to be noted that the president of the local Friendly Societies Council resigned in June, not indeed because his "interest and enthusiasm in the movement had diminished," but because he found it necessary to reduce his duties to avoid a breakdown in health.

A LIQUOR DISPENSARY SYSTEM.

Mr. Arthur Sherwell, M.P., has prepared for the Temperance Legislation League an account of the South Carolina "liquor dispensary system," which, although not in the opinion of the league the best form of disinterested management of the liquor traffic, and inferior in Mr. Sherwell's opinion to the Gothenburg system, presents certain points of interest. The system was originally established in South Carolina in 1893 as a State monopoly under centralized management and control; "on" sales were abolished, and it was enacted that alcoholic liquor could only be purchased in sealed packages or bottles for consumption off the premises. The minimum quantity of spirits allowed to be sold was one half-pint. The monopoly had a two-fold aim: (1) To reduce the evils of the liquor traffic in the areas in which public opinion required its continuance, by taking it out of private hands; and (2) to retain the whole of the profits for State and municipal purposes. The right of local veto was preserved. The system had certain undeniable advantages. It abolished bar-drinking, and substantially reduced the number of places where spirits were allowed to be sold; it also reduced the hours of sale; prohibited sales to minors, and abolished sales on credit. Among the defects of the system was a failure to recognize the principle of local management and control, apart from the right of veto; this led to a stereotyped rigidity of administration and a disregard of local requirements. The law was openly evaded in Charleston, the largest town in the State, by the establishment of illicit bars, and under the "spoils system" the centralized administration led to abuses. Some six years ago the State monopoly was abolished, and a system of local management and control, subject to certain statutory requirements and to State supervision and audit, was introduced, the right of local option being retained. South Carolina is a sparsely populated State, containing a population of about a million and a half, with only two towns of any importance, Charleston with 58,833 inhabitants, and Columbia with 26,319. The new system of local dispensaries was established in six counties in the State, containing a population of 275,000. In these six counties there are now 42 dispensaries, more than half being in or near Columbia or Charleston. The gross sales are under half a million sterling, representing an annual expenditure of £1 16s. a head; the nett profit is less than 28 per cent. on the gross sales. The sales, however, include those of certain beer bottling companies acting under a special licence. In 1892, under the system of private licence, South Carolina had 613 bar-rooms. In 1899, under the State monopoly system, these 613 bar-rooms had been replaced by 92 dispensaries. At the present time there are only 42 dispensaries in the State—namely, 27 for the sale of spirits only, 9 for the sale of spirits and beer, and 6 for the sale of beer. Three of the dispensaries were established last year. In spite of certain drawbacks which Mr. Sherwell recognizes in the system, he concludes by stating that "it is not seriously disputed in South Carolina that it is an important advance upon the system of private licence, and, in addition to the elimination of all inducement on the part of the liquor-seller to push the sale of alcohol, and a complete change in the character of the drink shops, it has the very great merit of destroying the influence of the saloon in politics."

MEDICINE AND THE PEERAGE.

The Committee of Privileges of the House of Lords recently gave a decision possessing a certain interest for the medical profession. It related to three baronies dating back respectively to the years 1313, 1322, and 1487. At the end of the Tudor period these baronies had become united in one holder, who was attainted of high treason. He left no children, and his brother, who was heir, was also attainted of high treason about the same time. In consequence his son could not inherit the baronies and they fell into abeyance. It was common for titles which had fallen into abeyance owing to the attainder of their last holder to be revived in the next or other early succeeding reign, but in this case no attempt seems to have been made to get the baronies revived, possibly owing to the fact that the individual whose uncle and father were both attainted was survived by no brothers nor by any male offspring. In the ordinary course, therefore, these baronies would have been not only in abeyance but extinct, but in the case of two of them there is clear evidence that their early holders were called upon by the reigning monarch of the time to sit in Parliament as peers thereof. In the case of such baronies the titles are descendible to heirs general—that is to say, they may be inherited by female in default of male children. In the former case, however, the law recognizes no seniority of birth, so there may be not one heir—the eldest surviving son—but a number of heirs corresponding to the number of daughters. Such heirs are co-heirs, and it rests with the monarch to assign such barony or other rank to which of them he pleases. In the present case the individual whose uncle and father were both attainted, and who but for this fact would have held the three baronies, though he left no male offspring, did leave four daughters, who were co-heirs to the baronies in abeyance. They all married in turn, but only the second is known to be represented by descendants in the present generation. Three of these, a year or two ago, submitted to the House of Lords a claim to be recognized as heirs of the dormant baronies, and these claims the Committee of Privileges decided to be proved in regard to the baronies of Burgh and Cobham. It therefore now rests with His Majesty to decide whether he shall reverse the bill of attainder which threw these baronies into abeyance, and, if so, which two of the three co-heirs he shall select. In strict law they all three stand on the same footing, but as two of them inherit their claims through elder children of the original co-heir than the third, it seems not unlikely that these two, if any, will be selected. If so, the medical profession would have a second representative in the House of Lords, since one of the two co-heirs in question is Dr. Reginald Gervase Alexander, of Halifax, who, after graduating B.A.Camb. in 1874, took the degree of M.D. at Edinburgh in 1881. He is now, after many years' service on the active staffs, Consulting Physician both to Bradford Royal Infirmary and Halifax Royal Infirmary. He was also an early worker in the field of preventive medicine, especially in regard to tuberculosis. An additional point of interest is that of his two sons the elder has already joined the ranks of medicine, so that the medical profession may well hope that the Royal prerogative will be exercised in the manner indicated.

SIR PATRICK MANSON.

Sir Patrick Manson, G.C.M.G., who recently retired from the acting medical staff of the Seamen's Hospital Society, which he joined in 1892, has been appointed consulting physician. His resolve to give up active service to the hospital was received with the greatest regret by his colleagues on the board of management, but it is some satisfaction to know that he will retain his position as senior teacher in the London School of Tropical Medicine. He will not, however, take any active part in the work during the next twelve months, which it is his intention to spend abroad, part of the time in Ceylon, where his son-in-law (Dr. Philip Bahar) is engaged as a research scholar of the school. In his capacity as medical adviser to the Colonial Office, Sir Patrick Manson represented to Mr. Joseph Chamberlain, who was then Secretary of State for the Colonies, the importance of establishing a school of tropical medicine in London. The school was opened on October 1st, 1899, with accommodation for twelve students. His energy and enthusiasm brought the school into existence, and his inspiring influence as a teacher and organizer of research led to the rapid development with which all are familiar. When the new wing which is now in course of construction is complete, there will be accommodation for 100 students in the large laboratory, 20 in the entomological laboratory, and 15 in the general laboratory for helminthology and protozoology. There are in addition other laboratories for advanced students. All this Sir Patrick Manson has lived to see accomplished in the short period of a little over twelve years.

THE RECENT CASE OF PLAGUE IN LIVERPOOL.

A case of plague in a child was admitted into the Royal Infirmary on July 24th with a diagnosis of appendicitis; the pulse was 130, temperature 103°, and he was delirious. There was a tense swelling over Poupart's ligament. A diagnosis was made before operation of acute disease of the iliac bone; the operation was performed at midnight on Wednesday, July 24th. When the incision was made three small haemorrhagic glands were discovered; there was no pus under the swelling or in the glands. A gland was removed, and a small portion of it was sent in a sterile test tube to the laboratory. On the following day it was examined in the course of the ordinary routine work by smears of the gland tissue stained with methylene blue, and cultures were made on nasgar. The smears showed numerous Gram-negative bacilli with characteristic bipolar stainings, and the cultures also had an appearance so typical of plague, that on Saturday Professor Ernest Glynn, Bacteriologist to the Royal Infirmary, advised immediate removal of the child to an isolation hospital without waiting for confirmation of the cultures by animal inoculation. Three rats were inoculated subcutaneously on July 27th with varying doses of the culture, and all died in two days with the usual characteristics of plague. The detection of plague bacilli in rats is more difficult than in human beings, because rats are occasionally infected with an organism (*B. pseudo-tuberculosis rodentium*) which resembles *B. pestis* in many particulars. The presence of a primary bubo and of pleural effusion is more characteristic of an infection of *Bacillus pestis*. It is also more virulent to rats than *B. tuberculosis rodentium*. It is generally believed that the latter organism can further be distinguished from *B. pestis* by the fact that it readily ferments iso-dulcite, decolorizes malachite green broth, and produces an alkaline reaction in litmus milk. It is interesting to note in this case that the boy had never been out of Liverpool. He had been in contact with relatives who lived a considerable distance from his home at the north end of the city. In the street in which the relatives lived an infected rat was discovered, and it was thought that the infection was conveyed by fleas, as the boy showed evidence of flea bites on his body. He has been treated with serum and is making a good recovery. Every precaution has been taken to prevent the spread of the disease; the boy's family has been isolated and all connected kept in close supervision by the health authorities. The examination of rats throughout the neighbourhood and docks is being systematically pursued by the health department.

The Lord Mayor of London, Sir Thomas Crosby, M.D., was entertained on August 13th at a banquet at the Grand Cercle, Aix-les-Bains, by the Aix Medical Society. Sir Thomas Crosby was welcomed by Dr. Goddard, president of the Society, and M. Blanc, Mayor of Aix-les-Bains. Among those present were Professors Chauffard and Faure (Paris), Professor Stockman (Glasgow), Dr. Hunter Tod and Dr. McCann (London), Dr. Jonesco (Bucharest), Dr. Suarez de Mendoza (Madrid), Dr. Gubb (Aix-les-Bains), and many other French and foreign persons of distinction.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

National Insurance Act.

County Insurance Committees.

In reply to Mr. Lundon, the Secretary to the Treasury said that it was not compulsory on county insurance committees to form subcommittees for the purpose of the Act as far as sanatorium benefits were concerned.

Mr. Lundon then asked the Secretary to the Treasury how long the county health committees as they were at present constituted would last; when would the various approved societies get the power of nominating their real representatives; and if honorary members of an approved society could act on such committees if duly selected by the insured members of the society to which they belonged. Mr. Masterman said the persons who were made members of Insurance Committees by the various orders setting up the Committees would hold office until the date on which it was declared by the Insurance Commissioners that an Insurance Committee had been duly constituted for the county or county borough, or until July 15th, 1913, whichever date was the earlier. The Orders, however, in each case reserved power to replace the persons who were now representing insured persons on the committees by persons duly appointed under paragraph (*a*) of Subsection (1) of Section 59 of the Act, as soon as an appointment could be properly made under that provision. The reply to the last part of the question was in the affirmative.

Mr. Lundon also asked whether county Insurance Committees had anything whatever to say in the erection of sanatoriums or even dispensaries; would such questions lie in the hands of the various county councils; and, if so, what procedure would be adopted in places and districts where the latter would not take up the work. Mr. Masterman replied that sanatoriums and dispensaries might be provided by county councils and other local authorities, or by voluntary agencies. It was no part of the duty of the Insurance Committees to provide such institutions. In the event of there being no sanatoriums or no dispensaries in the committee's own district, the committee could make arrangements with local authorities or persons managing such institutions elsewhere.

Medical Benefit.

Captain Clay asked the Chancellor of the Exchequer whether an insured person would be able to choose the doctor he wished to be attended by, or whether, in order to obtain medical treatment, he would be compelled to be attended by a doctor who agreed to serve under the National Insurance Act, whether he had confidence in that doctor or not. Mr. Masterman replied that Section 15 of the Act provided for free choice of doctor by the insured person from a panel composed of all the doctors in any district who wished to work under the Act. An insured person, under Section 15 (3), might be allowed to make his own arrangements for medical attendance, and to receive a contribution from the Insurance Committee towards the cost of medical attendance.

Sanatorium Benefit.

Mr. James Mason asked the Secretary to the Treasury whether, in the administration of the National Insurance Act, preference would be given to schemes incorporating existing approved sanatoriums rather than to schemes which arranged for new sanatoriums in the same locality. Mr. Burns, who replied, said that the Local Government Board had urged upon local authorities the importance of utilizing existing institutions so far as practicable.

Mr. James Mason then asked the Secretary to the Treasury whether, in the administration of the National Insurance Act, in the event of an existing sanatorium being utilized, a grant would be made in return for all beds put at the disposal of the Insurance Committees, or only for the purpose of entirely new accommodation. Mr. Burns said that the main object of the capital grant was to stimulate the provision of additional sanatoriums, and he was not prepared to specify the particular circumstances in which an application for a grant in respect of an existing institution would be entertained.

Mr. Cassel asked the Chancellor of the Exchequer whether, in view of the fact that it had been decided to make sanatorium treatment available for all persons whether insured or not, and the injustice of making insured persons pay for benefits which uninsured persons also received, he would consider the advisability of doing away with sanatorium benefit under the National Insurance Act, 1911, and substituting other benefits, such as paying sickness benefit from the first day of illness, sanatorium benefit being made available under a national scheme for all persons alike. Mr. Lloyd George said that the question stated the case rather more broadly than the facts warranted. The matter depended on the conditions of administration of the grant, which the county councils had not yet submitted. In the absence as yet of any definite proposals on this point he was not in a position to give an answer to the question.

Mr. Cassel asked whether any insured person in England had yet received sanatorium benefit, and, if so, approximately how many persons had received such benefit. Mr. Masterman said that arrangements had been made by a number of Insurance Committees for the immediate administration of sanatorium benefit and he had no doubt that some cases had already been dealt with, but he was not in a position to give any estimate of the approximate number.

Expenditure on Sanatoriums.

Mr. Rupert Gwynne asked what would be the position of an Insurance Committee which, acting under its statutory obligation in providing sanatorium benefit, exceeded the sums at its disposal; would the committee be personally liable for the excess of expenditure, or would there be a reduction of sanatorium benefit or a levy on all insured persons in the area after the next valuation. Mr. Masterman answered that it would be the business of the Insurance Committees so to arrange their expenditure as to keep within the limits of the funds which they would have available. The alternatives referred to in the question would not therefore arise. Any excess in regard to the expenditure of one year would be carried over and debited to another year.

Sanatoriums (Ireland).

In reply to Mr. Devlin, Mr. Birrell said that the following institutions had been approved by the Local Government Board for Ireland: Sanatorium at Heatherside, established by the Cork Joint Hospital Board; sanatorium at Crooksling, established by the Dublin Joint Hospital Board; the Royal National Hospital for Consumptives at Newcastle, co. Wicklow; and the Forster Green Sanatorium at Newtownbreda, co. Down.

In reply to Mr. William Redmond, Mr. Birrell said that the Local Government Board had invited the county councils in Ireland to formulate schemes for the treatment of tuberculosis in their respective areas in connexion with the sanatorium grant. Except as regards the fact of the appointment of a committee to consider questions arising out of the grant, the Board had no information as to the progress made in county Clare. In the absence of details, no definite reply could be given as to the position of the Ennis Sanatorium in relation to the sanatorium grant, but no contribution would be made to a voluntary association merely on the strength of past expenditure.

Peamount Sanatorium, Dublin.

In reply to Sir John Lonsdale, Mr. Birrell said that the buildings in course of construction at Peamount had been carefully examined by one of the Local Government Board's inspectors. All the arrangements had been planned and were being carried out in accordance with the

most up-to-date and approved methods of sanatorium treatment. The sanction of the Local Government Board would continue to be required to the various forms of equipment.

Tuberculosis Grant (Ireland).

In reply to Mr. John O'Connor, Mr. Birrell said that paragraphs 35 to 38 of the Report of the Departmental Committee related to England and Wales and not to Ireland, and that the committee clearly recognized that the recommendations referred to in the question either would not be applicable to Ireland or would require considerable modification before being applied, having regard to the special circumstances of this country and to the absence of county medical officers of health. Copies of the report were furnished by the Local Government Board to all county authorities, and the services of the Board's medical inspectors were placed at the disposal of the councils, and had been generally used. The Local Government Board in Ireland was following the general lines suggested by the Departmental Committee and had not formulated any scheme of its own for acceptance by the county councils. The Board was prepared to make contributions from the sanatorium grant for any county scheme which made adequate provision for the treatment of tuberculosis.

Sanatorium Benefit in Scottish Highlands.

In reply to Mr. Bennett-Goldney, Mr. Masterman said that the whole question of medical benefit in the Highlands was being considered by a Departmental Commission appointed by the Treasury, pending whose report the Scottish Insurance Commissioners could express no opinion.

Insurance Act Amendment Bill.

A Bill to amend the National Insurance Act, 1911, with respect to the valuation of approved societies having insured members in various parts of the United Kingdom, was introduced by Mr. Wilkie on July 30th. The Bill is supported by Mr. O'Grady, Mr. John Ward, Mr. Hodge, Mr. Bowerman, Mr. Joyce, and Mr. Tyson Wilson.

Disease Attributed to Moulds.—In reply to Mr. Albert Smith, the Home Secretary said that he had received a report from the factory inspector, from which it appeared that some few weeks ago certain weavers in a Burnley factory were attacked by an unusual cough which affected their breathing. The shed was a dry one, ventilated by six exhaust fans, and the general conditions were good. In order to investigate the matter, the firm at once called in experts, who expressed the opinion that the outbreak was due to some mouldy sago in the size used in dressing the warps, causing mildew in the shed. In accordance with their advice, the mill was closed and thoroughly disinfected by the local authorities. The sago was now being specially treated to prevent the development of mildew and the warps damped by a solution of carbolic acid, with the result that a decided improvement had already taken place. A very similar outbreak occurred in a factory in Colne in the spring of 1911, which was also traced to mildew on the warps. After proper treatment and disinfection of the premises no further trouble occurred.

Hygiene on Shipboard. Mr. Peto asked the President of the Board of Trade if he would state how many medical officers to the Board were acting at each of the various seaports in the United Kingdom; whether anything was done by them in supervising, during the construction of new vessels, the nature of the accommodation to be provided for the officers and crews, in order that such accommodation shall be adequate in space, ventilation, and in other matters ensuring proper hygienic conditions and eliminating any risks of subsequent insanitary conditions arising; and whether he proposed to appoint any further medical officers to deal with these matters. Mr. Robertson replied that the Marine Department of the Board of Trade had two salaried medical officers at Liverpool, and one each at London, Glasgow, and Queenstown. At other ports, such as Belfast, Bristol, Larne, Londonderry, Plymouth, and Southampton, local medical practitioners were employed as occasion required. The inspection of the spaces required on ships for the accommodation of the officers and crew was not made by these medical officers, but by the Board's staff of salaried ship engineers and nautical surveyors. The whole question of strengthening the survey staff was receiving the careful consideration of the Board of Trade.

Naval Hospital Accommodation (Harwich).—Captain Clive asked the First Lord of the Admiralty whether he was aware that the hospital accommodation at Harwich, which was said to be sufficient for one officer and eight seamen, consisted of two rooms, in one of which there was one bed and no other furniture, and in the other two beds, a table, and two chairs; that neither of these rooms appeared to have been papered, distempered, or painted for many years; that under the window of one of them there was a heap of stable manure, and that to this room an officer was recently taken to be operated on for appendicitis; and whether, seeing that Harwich was now a naval base, he would see that proper and sufficient hospital accommodation was provided. Dr. Macnamara replied that there were no naval sick quarters proper at Harwich. As at other places along the coast, there was an arrangement under which temporary accommodation was placed at their disposal as occasion arose. In the case in question a young officer was brought in very seriously ill with appendicitis. An immediate operation was necessary, and it was quite impossible to move the patient to more suitable accommodation. The operation was performed successfully and the young officer, who was doing well, had been removed to other quarters. The question of the medical arrangements at Harwich was receiving attention. They were not naval quarters; they were what he might call emergency quarters. He was not prepared to quarrel with the statement made.

Quarantine for Small-Pox.—Mr. George Roberts asked the Secretary for the Colonies whether his attention had been drawn to the fact that nearly 160 steerage passengers bound for Canada on board the *Pretorian* were put on the quarantine island in consequence of 2 cases of small-pox having been diagnosed, in spite of the fact that all these steerage passengers had been examined for marks of vaccination a few days previously, and that those whose marks were not satisfactory were vaccinated; and whether he proposed making representations to the public health authorities of Canada on the matter. Mr. Harcourt said that he had received a complaint to this effect, and had communicated it to the Canadian Government.

Forcible Feeding in Prison.—In reply to Mr. Lansbury, the Home Secretary said that Miss Alice Waters had been released from prison on July 23rd. She was fed by tube once, having for forty-eight hours refused to take food. She resisted, and became hysterical, and her release was recommended on account of her nervous excitement. After the order for her release was notified to her she calmed down and took food. On her reception in prison she was described as being in fair physical health. In reply to Mr. W. E. Harvey, Mr. McKenna said that a man would have been released under the same conditions, that is if he had become hysterical.

Housing of the Working Classes (No. 2) Bill. This Bill, introduced under the ten minutes rule last week, proposes to use State credit for the purpose of housing the working classes by means of loans at a low rate of interest. The bill was introduced by Mr. Montague Barlow, and supported by Mr. Joynson-Hicks, Lord Robert Cecil, Mr. Frederick Edwin Smith, Sir Arthur Griffith-Boscawen, Mr. Astor, Mr. Guinness, Colonel Kyffin-Taylor, Mr. Baird, Mr. Norton-Griffiths, Mr. George Gibbs, and Major Dalrymple White.

The Adjournment of both Houses of Parliament took place last week on the Wednesday, and October 7th was fixed for the reassembling of Parliament. The House of Commons will on that day discuss the report on the *Titanic* disaster, and afterwards consider the Prime Minister's motion for the appointment of an additional judge. The Royal Assent to 129 Bills was announced in the House of Lords.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

The Chair of Medicine in the University of Aberdeen.

Dr. Ashley Watson Mackintosh has been appointed by the Crown, on the recommendation of the Secretary for Scotland, to be Regius Professor of Medicine in the University of Aberdeen, in the vacancy caused by the resignation of Dr. D. W. Finlay. Dr. Mackintosh, who is an Aberdeen student, graduated M.A. with double first-class honours in 1888, and M.B., C.M. (1893), and M.D. (1896), in both cases with the highest honours. He is a physician and lecturer on clinical medicine at the Aberdeen Royal Infirmary. His contributions to medical literature have dealt chiefly with neurology.

Post-Graduate Courses in Glasgow.

Hitherto the Western Infirmary has not undertaken regular post-graduate courses, but some of the physicians have arranged to give post-graduate clinical courses next month. The work has been so arranged that special aspects of clinical medicine will be discussed by each physician. Professor Stockman will devote attention to rheumatic affections, Dr. Wm. MacLennan and Dr. Barclay Ness to gastric disorders and nervous diseases, and Dr. Wylie Nicol to diseases of the skin. The meetings will be held from 9 to 10.30 a.m., and the first will take place in Professor Stockman's wards on Tuesday, September 3rd.

The Edinburgh Royal Infirmary.

At the meeting of the managers of the Edinburgh Royal Infirmary on August 5th a letter was read from Professor Greenfield intimating that as he was retiring from the Professorship of Clinical Medicine in the University, he would resign his position as Consulting Physician to the Infirmary. The Chairman expressed the managers' thanks to Professor Greenfield for his services during the past thirty-one years, and it was left to Sir J. O. Affleck to draft a minute in connexion with Professor Greenfield's retirement which takes place early in September. A communication was read from the University Court asking the managers to appoint temporarily a lecturer in Clinical Medicine from the medical staff of the Infirmary, in view of the fact that the University Court will have under consideration the question of the institution of a special Professorship in Clinical Medicine, the holder to be placed in charge of the wards which were under Professor Greenfield. The matter was remitted to the Medical Managers Committee. At the same meeting the managers adopted a minute with reference to the resignation of Mr. J. M. Cotterill, Senior Surgeon of the Infirmary, recording their obligation to him in giving so freely and so willingly of his time and thought to the institution for nearly thirty years, and appointing him a consulting surgeon. A portrait of Mr. Cotterill subscribed for by a number of his former students, who desired to present it to the infirmary, was accepted by the board.

The Motto of the Edinburgh Royal Infirmary.

A correspondent has drawn attention to an error in the spelling of *pauperibus* which, in Dr. Dewar's paper, published in the Journal of August 3rd, p. 218, appears with two r's. The author now desires to express contrition for the error, and has sent the following additional information with regard to the history of the motto of the Edinburgh Royal Infirmary:

As regards the history of the motto, I may say that the words in the Charter granted by George II in 1736, are in English, and that the Latin motto and crest was designed by Dr. John Clark in 1749. The Charter goes on to state "for the maintenance and cure of *sick poor* in North Britain." Again, "a subscription has now produced a fund of about three thousand pounds sterling, the interest whereof . . . is to be applied for erecting a house in Edinburgh, wherein *poor sick* properly recommended from any part of the country, who are not absolutely incurable, are to be taken care of by the Royal College of Physicians of Edinburgh, and some of the most skilful chirurgeons," etc.

Supplies from Scotland were found insufficient for the undertaking. The managers, therefore, appealed to England, Ireland, and the British Plantations, and consequently ordered that the *sick* should be admitted (not otherwise excepted by the rules of the house) as patients from whatever country or nation they should come. It is evident that the motto "patet omnibus" inscribed on the gateway meant that the Infirmary was open to *all sick poor* from whatever country or nation they should come, and that the motto should be "patet omnibus pauperibus," hence my argument. It is needless to say that the word "pauperibus" in Latin is mine, and that its absence has been the cause of the disagreement between the managers and the profession.

The British Dental Association.

The thirty-second annual general meeting of the British Dental Association was held in Glasgow from August 7th to 10th. Twenty-five years have elapsed since the association last met in Glasgow. The discussions took place in the anatomy department of the University. After Professor T. H. Bryce had welcomed the members on behalf of the University, Mr. Rees Price was inducted as President, and in his inaugural address drew attention to the pitiable position in which the defective drafting of certain clauses in the Education Act (Scotland) had landed the educational authorities. Practically all that was obtained by the present system of medical inspection of school children was a mere record of the various diseased conditions of body and teeth, as no provision could be made for alleviating or treating the defects or diseases discovered. The educational authorities were fully alive to the necessity of following up the detection of disease by preventive or curative treatment, but, owing to the defective draftsmanship of various clauses in the Act, they were unable to determine whether it gave them power to undertake treatment. The Education Committee of the Privy Council was unable to determine the meaning of the Act, and apparently the only course open, failing the passing of an amending Act, was to obtain the verdict of the Law Courts in a friendly action. The Government had allocated to Scotland a proportion of the special grant in aid of medical treatment, but even if the greater portion of this £900 so coming to Glasgow was devoted to dental treatment it would not be sufficient. Most of the other scientific papers were of interest only to dentists, but Professor Bryce gave an illustrated lecture on the teeth of prehistoric man, and Dr. J. H. Nichol a demonstration with lantern slides on the treatment of hare-lip and cleft palate. The social side of this conference was well looked after. There was a reception by the Lord Provost and Corporation, and the Royal Faculty of Physicians and Surgeons also entertained the association.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Medical Superintendents of Tuberculosis Dispensaries.

The county councils of Antrim and Down and of Belfast are taking steps to establish dispensaries in connexion with the National Insurance Act, and the Down Council has already appointed a medical superintendent. This appointment was made on August 9th, the successful candidate being Dr. John R. Gillespie, formerly of Newry, but recently Assistant Medical Officer of Health for Hampshire. At a meeting in Belfast on August 6th the Antrim County Council nominated a special committee which will advertise the appointment in Antrim. In Belfast a scheme is under consideration designed to complete the work of existing institutions. It appears that at present the treatment of tuberculosis is costing the ratepayers £18,000 a year.

The Peamount Sanatorium.

Dr. Joseph Daniel, who for two years acted as medical attendant to tuberculous patients receiving home treatment under the supervision of the Dublin Hospitals Tuberculosis Committee, and who, since November, 1911, has been assistant medical officer at the P. L. Collier Memorial Dispensary, has been appointed temporary medical officer to the Peamount Sanatorium; and Miss C. H. Brennan, who has been matron at the Allan A. Ryan Home Hospital for Consumption for the last two years, has been appointed matron.

Limerick Doctors and the Insurance Act.

At a meeting of the Limerick City Insurance Committee last week a provisional scheme for the administration of

sanatorium benefits under the National Health Insurance Act was approved. Dr. W. Fogerty said that the Limerick Doctors' Committee had held a meeting the previous night, and agreed that they would be willing to give their services in attending tuberculous patients for a capitation fee of 5s. per week, or £1 a month, the visits to number one or two each week, as found necessary. The fee would be for attendance at their homes, and would also include medical certificates to the committee of the progress of tuberculous patients under the charge of the medical attendants. The committee unanimously accepted the proposal; it was pointed out that, on the authority of Dr. Maguire, medical commissioner, there were 300 tuberculous patients in the city, though all these would not necessarily be insured persons. It was stated that between twelve to fourteen thousand persons in the city were insured under the Act.

Census Returns for Dublin.

The census returns for the city and county of Dublin published last week contain some interesting figures. In the city the population has increased by over 14,000, or 4.87 per cent. The number of tenements of one room was 21,133; there were 5, 6, or 7 occupants in 4,609 cases, and in 643 cases the occupants exceeded 7 in number, including 45 cases of 10 persons, 16 cases of 11 persons, and 5 of 12 or more persons in the room. There was a slight fall in the number of persons receiving Poor Law relief since the last census from 1 in every 30 of the population to 1 in every 32. The number of pupils attending school in the city according to the census of 1901 was 46,535, in 1911 the number returned was 46,936. In the county of Dublin the population has increased by nearly 12,000; this increase has occurred about equally in the rural and urban districts in contrast to the rest of Ireland, where any increase that has taken place has been almost entirely confined to the urban at the expense of the rural districts. The number of one-roomed tenements was 2,844, comprising 382 cases in which there were 5, 6, or 7 occupants, and 51 in which the occupants exceeded 7 in number, including 6 cases of 10 persons, one case of 11, and one of 12 or more persons in the one room. The number of those receiving Poor Law relief has fallen from 1 in every 50 of the population to 1 in every 57. The number of pupils attending school has risen from 24,071 in 1901 to 26,539 in 1911. The number of emigrants during the last ten years shows a further decrease of slightly over 1,000, but this compares unfavourably with the decrease of over 14,000 in the previous decade. In both the city and county the females are in excess of males by 9,500 and 5,000 respectively. The increase in the population and the decrease in emigration are satisfactory, but other points in the report do not make such pleasant reading. The number of one-roomed tenements in both city and county is excessive, as also the number of people living in these rooms. The decrease in the number of those receiving Poor Law relief is very small, and compares unfavourably with the decrease seen in the returns of most of the other counties of Ireland. The figures for school attendance have remained practically stationary in the city, and show a very small increase in the county. Only 360 children are returned as boarded out from the city, and only 90 from the county; both of these figures are miserably small.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

MANCHESTER AND DISTRICT.

Sanatorium Benefit in Manchester.

The Manchester Sanitary Committee has adopted a memorandum setting forth the arrangements suggested for giving sanatorium benefit. It was stated that the complete scheme would involve the appointment of tuberculosis officers in connexion with a central dispensary or dispensaries, the provision of 150 beds for early cases, 150 beds for more advanced cases and also beds for surgical tuberculosis, which are provisionally put down at 64. It was suggested that no capital expenditure would be necessary at present but that advantage should be taken of existing institutions, and as far as possible of their staffs, that so far as the treatment of phthisis is concerned the dispensary of the Consumption Hospital should be used as the chief central dispensary, and that the existing staff of physicians should be utilized, with the appointment of "the necessary number of whole-time officers in connexion with the Public Health Department of the Corporation." So far as immediate arrangements are concerned it is not proposed to grant sanatorium benefit to dependants, and this almost excludes from immediate consideration surgical tuberculosis. It was advised that provisional arrangements should be made for three months between the local Insurance Committee and the Board of the Consumption Hospital. The quarterly sum estimated for current expenses is put at £550, and of this the local Insurance Committee is to find half and the board of the Consumption Hospital the other half. As sanatorium benefit is only just now beginning, it is advised that only half of the quarter's retaining fees should be paid in the present quarter. This amounts to £156 5s., which is at the rate of £250 a year to each of the five medical officers of the Consumption Hospital. The Insurance Committee will have at its disposal for the first quarter £1,550, and, in addition to the two above-mentioned payments, it is suggested that it should set aside £500 "for services and treatment by practitioners," and another £500 to provide for the treatment of 28 cases for twelve weeks each at the Crossley Sanatorium at 30s. a week each; the remainder of the money, it is thought, will be required for sundry expenses. It is stated that "no assistance will be available in the treatment of advanced cases, the cost of which will fall entirely on the Corporation, at all events at first." Forms will be provided for cases receiving treatment, whether at dispensaries or at their own homes, by a practitioner or tuberculosis medical officer or in a sanatorium, so that their condition and progress may be reported in a uniform manner. Circulars and instructions are to be distributed, urging the necessity of obtaining immediate advice in cases of suspicious illness. The approval of the Local Government Board to the arrangements must be obtained before the physicians at at the Consumption Hospital can be definitely appointed. The report concludes: "It should be clearly understood that we are now in a position to provide dispensary services, treatment in a sanatorium, and treatment in a hospital, with the consent of the Local Government Board and of the local Insurance Committee. All that is necessary is that the formalities required by the Act shall be complied with."

The suggestions of the Sanitary Committee outlined above came before the City Council on August 7th, and a motion was made to refer them back for further consideration. This was lost by only a few votes, and the report of the committee was approved. It will now be sent for final approval to the Local Government Board.

Correspondence.

EXPERIENCE OF THE "DIORADIN" TREATMENT.

SIR,—In the number of 20th July of your scientific review there appeared an article by our distinguished fellow member, Dr. Cecil Wall, Doctor of the London Hospital, on the treament of Tuberculosis by "Dioradin." In the course of this study, Dr. Wall refers to the conclusions of a communication I made, in March 1911, to the "Société Internationale de la Tuberculose" on this mode of treatment and cites himself ten cases of Tuberculosis treated by "Dioradin." Although he does not contest the exactness of my conclusions, Dr. Wall would appear to affirm that "Dioradin" does not exercise a direct and specific action on the general nutrition and on the toxines of the Koch bacillus. Thereupon I do not at all share our learned fellow-member's way of looking at the matter, and I can prove to him, by his own observations, that my works reflect the exact and scrupulous expression of scientific truth.

First of all, to which group of consumptives did the patients submitted by Dr. Wall to iodine radium therapia belong? All, without distinction, had arrived at the third degree of tuberculosis, most of them had wide spread lesions (cavities or infiltrations), all numerous tubercle

bacilli in the sputum, some had fever and were in a state of profound physiological misery. But, in spite of these very bad pathological conditions, most of the patients observed by Dr. Wall increased in weight (which is a proof of the amelioration of the nutrition), the Koch bacilli diminished or disappeared, during or after the injections of "Dioradin," the cough and expectoration decreased.

In six cases improvement was noticed during the treatment; in one improvement had been maintained; four relapsed later on; and no subsequent report was obtained of another.

Therefore, out of ten patients, one of them completely cachectic, all had arrived at the last degree and represented such grave cases that none of them were justifiable for iodine-radium therapia, but they nevertheless benefited, to a certain extent, by this therapeutic method! However, as I remarked in my first efforts, and Dr. Szendeffy had affirmed it before me, "Dioradin" ought only to be used in tubercular cases of the first and second degree or on consumptives of the third degree who are in an excellent general condition. I have said, and repeated, that "Dioradin" will not work miracles, that it was counter-advised in all cases of ultimate or complicated tuberculosis, and exactly those grave cases have been chosen by Dr. Wall for his first experiments!

Since my first communication, eighteen months ago, of which Dr. Wall speaks, I have made another on the same subject to the French Congress of Medicine (Lyons, October, 1911), further to the recent International Tuberculosis Congress (Rome, April, 1912), and am now preparing a fourth account, accompanied by conclusive documents for the next congress. On the other hand, numerous communications from different distinguished fellow members have appeared on the same subject. Dr. Diamantberger, Head Physician of the Anti-tubercular Dispensary of the 9th Arrondissement, Paris; Dr. Hervé, Head Physician of the Sanatorium des Pins (France); Dr. Orlow, St. Petersburg; Dr. Brandaleone, Surgeon of Beach Hospital, New York; Dr. Atkinson Stoney, Surgeon of the Dublin Hospitals; Dr. Fritz Neumann, Physician of the Anti-tubercular Clinique of the German Hospital, New York; Professor Gerlóczy, Budapest; Dr. Spiridon Kanellis, Athens; Dr. Troche, Warmbrunn (Silicia), and many others have reported their observations on tuberculous patients treated, improved, or cured by "Dioradin." But most of these phthisiologists, like myself, have employed chemico-therapia on tubercular patients susceptible of improvement or cure but not on cachectics.

Only Dr. Wels, Sanatorium Physician, New York, experimented expressly with "Dioradin" under the same conditions as Dr. Cecil Wall—that is, he took thirty febrile tubercular patients, which had reached the third stage of the illness. However, the learned American physician concluded that "Dioradin" used under these unfavourable circumstances had nevertheless given 30 per cent. of improvements in absolutely hopeless cases.

But these ultimate cases should not be chosen for experiment. If Dr. Wall would take up his researches again by treating ten, twenty, or thirty consumptives of the first or second degree, I am convinced he would obtain the same results as other clinical physicians, and that he would rally with the same conclusions.

Since my personal works and those of Dr. Szendeffy, several German authors have made analogous attempts with chemico therapia. They have used iodine associated with methylene blue. Dr. Meissen, Head Physician of the Hohenhonnef Sanatorium and Prof. Strauss have treated cases of phthisis or lupus by intramuscular injections and have obtained the best results by that iodine therapia.

In a few weeks I shall be in a position to communicate to you new conclusions of a work being terminated, which will contain more than 500 observations made by myself or other colleagues and, Dr. Wall, after having read this new documented account, will be convinced that chemico therapia, employed with discernment, is capable of rendering the greatest services in the treatment of tuberculosis. It is not a question of an empiric method, but of a therapeutic which reposes on solid and precise scientific bases.

I should feel very much obliged to the Editor if he would kindly insert this open letter in the British Medical Journal, and in that anticipation I present to him my warmest thanks.

Dr. S. Bernheim,
President of the "Oeuvre de la Tuberculose Humaine."
Paris, July 27th, 1912.

TUBERCULIN TREATMENT.

Sir,—The best test of the value of tuberculin is surely to be found in cases which admit of direct observation—cases of lupus, of laryngeal tuberculosis, and of sinuses leading to tuberculous foci in glands, bones, etc., which, left to themselves, refuse to heal.

If Dr. Prest (August 10th, p. 339) would come to my dispensary for a single month his eyes would be opened, and I think he would trust rather to the methods which I have constantly advocated for the treatment of tuberculosis than to investigations which have led to the opinion "that tuberculin can only be of service in a small percentage of cases." He would also see that "cases where the disease is active, and therefore exhibiting symptoms," are best treated with tuberculin, provided the active disease is tuberculosis. I feel sure that three months at my dispensary would alter Dr. Prest's views, seeing that every medical man who has worked at my dispensary for a month has become a convert.

Dr. Prest is not likely to understand the value of tuberculin until he has used large doses. Dr. Nathan Raw never uses large doses, hence tuberculin treatment has been a failure in his hands. This explains the discrepancy between our respective conclusions upon the value of tuberculin, and no argument can decide between conflicting opinions except the argument of experience and facts.—I am, etc.,

W. Camac Wilkinson, M.D., F.R.C.P.,
London, N.W., Aug. 10th. Director, Tuberculin Dispensary.

P.S.—Dr. Prest might refer to p. 100, British Medical Journal, July 13th, 1912.

THE REPETITION OF PRESCRIPTIONS.

Sir,—Surely the moment is opportune, now that the Select Committee on the Sale of Patent Medicines is sitting, for the position in regard to dispensing of the medical man and pharmacist to be thoroughly ventilated. In your endeavours to check the abuses of this trade you have the hearty co-operation of the ethical dispensing chemist, but from the pharmacist who does not live on physicians' prescriptions you can only reasonably expect a jealous opposition. Leaving the first out of consideration, except as a model of what we all might become, we find that we have doctors doing work for which they are largely untrained and, by reason of their exhausting responsibility, unsuited, and chemists selling some articles, of which, perhaps, they are ashamed and venturing almost perforce into the dangerous realm of prescribing.

We have to live, and when prescriptions come not we must use our wits to find profitable business. The ideal, surely, is for the doctor to prescribe and the chemist dispense, and to my mind there is only one real difficulty in the way, and that is the "*repeat prescription*."

I have dispensed to-night one written on September 9th, 1895, which had 27 chemists' stamps upon it. I have had it several times—allowing, say, 5 to each dispenser, making 135 bottles of medicine, for which the doctor obtained one fee. I have also a prescription written by a locumtenent for a gout patient about five years ago, still being dispensed, for which I contend the doctor has received no fee.

I do not wonder that doctors are loath to give up dispensing in order that they may control this great abuse of their prescriptions. But is this the only way they can control it? English law says that the prescription belongs to the patient who pays the fee, but the doctor who writes it has the power to say how many times it may be dispensed, and if some writing like the following were printed at the top it would have the binding force of an agreement:

This prescription is given upon the understanding that it is for present indications only, and that it is not to be repeated more times than I order.

The above should be printed and under his own signature, the doctor should write how many bottles he wished supplied, and when it was only one, the pharmacist should

keep the prescription, and if two or three, he should write under his stamp "once" and the date, etc. If the doctor wished to give an open prescription he could use a paper without any such wording on. I do not think there would be any trouble in getting chemists to do their part in this, for in nine cases out of ten, when they refused to repeat a prescription, they would have a fresh one to take the place of the refusal.

There remains the question of the cost, but that need not trouble us, for we now dispense at 8d., 9d., and 10d. a bottle, and if we do it so finely now that business is lean, it would be easier still when the volume was more.

I am writing to this journal because I feel the onus is on the doctors for the initiative in this matter; until they are convinced that it is to their interests to give up dispensing, nothing can be done by the pharmacist.

This is a time of unrest for the medical profession, and it is just as bad for the chemist, and if you want to check our trade in patent medicines, put further restrictions on our counter-prescribing, and give us no dispensing, we shall be nothing but a disappearing quantity, but if an honourable understanding is reached we can present a united front.—I am, etc.,

PERCY NOWELL,
Pharmacist.

Harrogate, N.W., July 15th.

DIET IN THE CAUSATION OF ACNE AND BOILS.

SIR,—I have read the report in the JOURNAL of August 10th of the discussion upon acne and seborrhoea in the Section of Dermatology, at the annual meeting at Liverpool, and was interested to note the importance placed upon diet and the staphylococcus in the etiology of acne by Dr. Arthur Whitfield. It may be worth while to place on record that eggs are a frequent cause of acne or of boils (also caused by the staphylococcus). The consumption of two or three eggs, however cooked, in some subjects is followed within thirty-six hours by an attack of acne or by one or two boils; and I have known cases where abstention from eggs has resulted within a fortnight in freedom from boils, crops of which had previously succeeded one another without a break.—I am, etc.,

THOS. E. FRANCIS, M.D.Lond., D.P.H.

Llanelly, Aug. 10th.

DOCTORS IN INDIA.

SIR,—Will you allow me to add a few names to the list contained in the interesting article on "Doctors in India" that appeared in your issue of July 27th last?

At the outbreak of the Sepoy Mutiny Dr. Stewart Clark held the office of Postmaster-General of the North-West Provinces, and rendered services of the greatest importance in keeping communications open during the critical time that followed. He was also a distinguished administrator in other civil departments. He was a native of Braemar, and a life of him published in 1898—oddly and inaccurately written by his widow—received a notice in the BRITISH MEDICAL JOURNAL. Dr. John Forbes Watson, a native of Strathdon, and, I believe, a cousin of Stewart Clark, was the leading authority of his day on the industrial materials of India, especially its textile fabrics, and his writings on these subjects are classical. After his retirement from life in India he held the office of Director of the Indian Museum in London. In the obituary notice of Watson that appeared in your pages he is ranked with Sir William Jones and the other great figures of early British India. Among living Indian doctors, Sir George Watt seems to have followed in the footsteps of Forbes Watson, and is distinguished for his writings on various products of India.

Lieutenant-Colonel Ranking, late of the Indian Medical Service, a distinguished Oriental scholar, is Lecturer on Persian in the University of Oxford.—I am, etc.,

JAMES NEIL, M.D.

Oxford, Aug. 8th.

THE ARRIS AND GALE LECTURES ON SHOCK.

It seems to be for more than one reason time that this correspondence should cease, so I will only express my regret that the authors do not understand my position and criticisms, and that no one else has joined in the discussion, and my surprise that claimants to accuracy should assign to me remarkable opinions of the existence of which I have been hitherto unconscious! For example, I am now told that I do not appreciate any significance in vasomotor variations (without reservation), whereas I merely suggested in my first letter (and gave my reasons for so doing) that they are not *necessarily and always* of great importance.—I am, etc.,

J. D. MORTIMER.

London, S.W., Aug. 10th.

Medico-Legal.

CORONERS' INQUIRIES.

A CORRESPONDENT has sent three questions as to the conduct of coroners' inquests, the nature of which will sufficiently appear from the following replies:

1. The mere fact that the deceased was a member of a society to which our correspondent was surgeon would not make it imperative that he should be called to give evidence as to the cause of death. Speaking generally, the coroner should call as medical witness the one who was, in his opinion, best qualified by his knowledge of the facts to give evidence as to the cause of death. In the case of a sudden death, where presumably no doctor had been actually attending the deceased, the one first called in immediately after death would seem to be the most valuable witness, especially if a *post-mortem* examination were necessary.

2. There is no statutory right under the Coroners Act to travelling expenses, but by Section 25 of that Act, "The local authority for a county or borough from time to time may make, and when made may alter and vary, a schedule of fees, allowances, and disbursements, which, on the holding of an inquest, may lawfully be paid and made by the coroner holding such inquest (other than the fees payable to medical witnesses in pursuance of this Act)." Most, if not all, local authorities have drawn up such a schedule, and it generally provides for payment for mileage or travelling expenses for witnesses. It would certainly be unusual if there was no provision for paying mileage in our correspondent's case, and an application from the medical practitioners of the district to the local authority would probably lead to an amendment of the schedule; this the local authority can do without legislation. We assume that the coroner had no authority to pay mileage or travelling expenses. If he had such authority and refused to exercise it in favour of our correspondent, we should be much interested in learning what reason he alleged for his refusal. The police would appear to have no duty to convey the medical witness to the place of inquest.

3. Unless the police were acting for the coroner, and under his orders, in requesting our correspondent to examine the body, the coroner would not incur any liability, or be under any obligation to call him as a witness at the inquest. In that case our correspondent's remedy is against the police, who asked him to undertake the examination. If, however, the police were acting with the coroner's authority the coroner was morally, if not legally, bound to call our correspondent. In any similar case in future the best and safest course would be to decline to do anything in the matter until the coroner issues his summons to attend the inquest. Our correspondent would then be sure at least of getting his fee of one guinea. Unless special provision is made for it in the schedule of the local authority, the coroner has no power to pay for the doctor's expenses in going to examine the body. The Government auditor would surcharge the amount so paid, and the coroner would have to refund it out of his own pocket. But, as we have pointed out, the doctor can protect himself by declining to examine the body until a summons to attend and give evidence at the inquest is actually issued or promised. Of course, no medical practitioner can be ordered by the police or any one else (except, possibly, the coroner in his summons to attend and give evidence at the inquest) to examine a dead body; and if he does examine it in pursuance of the coroner's order his right to one guinea is unquestionable, and probably he could establish his strict legal right to two guineas on the ground that he had made a *post-mortem* examination. We do not, however, advise medical witnesses to press for the two guineas unless they have made a *post-mortem* examination in the ordinary medical sense, including an examination of the brain and viscera.

ANOTHER correspondent sends us a note of a case in which the verdict of a coroner's jury was that the patient "died suddenly, whilst bathing, from natural causes, probably heart failure, due to indigestion and dilatation of the stomach." The patient was a man aged 20. Our correspondent informs us that no medical man was called at the inquest.

Without a full knowledge of the facts placed before the jury, it is impossible to say how far they were justified in their conjecture as to the "probable" cause of death. It is conceivable that the sudden death was witnessed by one or more persons, whose account of the circumstances proved that it was not caused by drowning. The jury may there have had sufficient evidence to negative the one cause other than natural which there was any reason for suspecting. When, however, they proceed to assign a probable definite cause, they must have had some medical basis of the case, or else they were acting on pure conjecture. It is possible that the deceased may have suffered from

"indigestion and dilatation of the stomach," for which he had been medically attended, and the nature of his illness may have been known to his relatives and communicated by them to the jury, thus supplying some ground for the guess in the verdict. All this is conjecture on our part, but, in the complete absence of information as to the facts of the case, we can do no more.

If there was no medical history communicated to the jury, their boldness in conjecturing "dilatation of the stomach" indicates over-confidence in their own judgement. In any case, their verdict can hardly be regarded as satisfactory by the Registrar-General. A *post-mortem* examination by a medical practitioner would have placed the verdict on a proper basis of fact, or expert opinion, instead of the conjectures of a jury of laymen.

CANDIDATURE OF COUNTY COUNCILLOR FOR CORONERSHIP.

AMIL.—A county council will in the near future elect a coroner for one of its divisions. A., who is a member of the council, contemplates resigning his seat and become a candidate for the office. Is there any legal barrier against the council electing A. to the coronership?

*** We do not think there is any legal barrier to the course proposed to be taken by A., and we rather think it has been taken more than once in previous elections to coronerships. Protests—informal in any case—have been made in some cases, but not as far as we know with success. Nor does the question ever appear to have been tested in the law courts or even by appeal to the Home Secretary. Probably the would-be protestant was advised that he could not hope to sustain his objection as a question of strict law. The Local Government Act, 1888, which is the only statute dealing expressly with this point, merely directs that the county council shall appoint "a fit person not being a county alderman or a county councillor." This appears to have been strictly construed as applying only to the position of the person elected at the time of his actual election. If the object of the restriction in the Act was to prevent the possibility of a seat on the council being improperly used as a lever to procure an appointment in the gift of the council, it cannot be said to be very effective. Perhaps, however, the object was merely to prevent the two offices being held simultaneously by the same person. That, at all events, appears to be its only effect in practice.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

M.B., B.C.—A. M. Bodkin, J. S. Burn, J. W. H. Chun, M. Donaldson, R. Ellis, J. R. Marrack, C. H. G. Philp, E. Rayner.
M.B.—W. Broughton-Alcock.
B.C.—A. E. Bonny, J. W. Dew, W. J. Fison, E. F. W. Grellier, J. M. Jarvie, W. L. Johnson, C. B. Wainwright, L. M. Weeks, H. F. Wilson, C. R. Wright.

MANCHESTER UNIVERSITY.

Munificent Legacy.

UNDER the will of the late Mr. John Hall, of St. Leonard's-on-Sea, brother of the late Sir Samuel Hall, whose estate has been valued for probate at £44,978, the sum of £40,000 has been left to accumulate at compound interest and to be devoted on the death of the survivor of his two nieces to the foundation of two professorships and various scholarships at the Victoria University, Manchester. The sum of £20,000 is to be for the founding of a Samuel Hall Professorship in Chemistry, £15,000 for a Samuel Hall Professorship in Philosophy, £2,500 for not less than two Samuel Hall Scholarships in Chemistry, and £2,500 for not more than two Samuel Hall Scholarships in Philosophy, all to be held on such terms and conditions as the Council of the University with the consent of the testator's trustees may determine. The Professor of Philosophy is to deliver once in each year a free public lecture to be called the "Hall Oration of Philosophy" on the study of philosophy. In addition to the above, the residue of the testator's property will go to the Victoria University for John Hall Scholarships in such scientific subjects as the council and the trustees may decide.

QUEEN'S UNIVERSITY, BELFAST.

THE Executive Committee of the Better Equipment Fund in connexion with the university has obtained the offer of 74 acres for an athletic field for £10,100. The place is known as New Forge, and for some 2,000 feet is bounded by a canal, so that it will be possible to engage in boating as well as other sports; it stretches on the west towards the Malone Road. Formerly it was used as a polo ground. Lord Deramore has offered to sell the fee simple, and the athletic field committee, which has been searching for a suitable site for some years, strongly recommends the acceptance of the offer; £9,500 of the purchase money has been already raised, and the balance can be obtained from the Better Equipment Fund.

APOTHECARIES' HALL, IRELAND.

THE following candidates have been approved in all subjects of the examinations indicated:

FIRST HALL.—S. Stritch, S. Ram Rao, D. Campbell.
SECOND HALL.—S. Ram Rao, C. A. Kynvett-Hoff, D. Campbell.
FINAL.—C. D. Downing, J. A. M'Conochie, M. Keogh.

Public Health AND POOR LAW MEDICAL SERVICES.

DISTRICTS OF POOR LAW OFFICERS.

J. S. C. writes that he is a district medical officer, and under his contract with the guardians certain parishes are allotted to him by name. Another parish for the purpose of rating is included with these, but is not mentioned in his contract, but he is constantly receiving orders to attend paupers in the latter parish. He asks whether he would be within his rights in refusing to attend these cases on the ground that the said parish is not mentioned in his contract.

*** Under the Poor Law orders a district medical officer on his appointment must have allotted to him a specially defined district. His contract should clearly denote this, and according to the same orders he cannot be required by the guardians to attend any cases residing outside that district. If our correspondent's facts are correct—he should make quite certain that they are—he would be justified in declining to attend the cases he demurs to under his contract.

Obituary.

DR. THOMAS LAWES ROGERS died on August 7th, at his residence in Eltham, at the age of 83. He was the third son of Mr. J. W. G. Rogers, of Alvediston, Wilts. He received his medical education at St. Bartholomew's Hospital, and took the diploma of M.R.C.S.Eng. in 1853. After acting as assistant medical officer to the Rainhill County Lunatic Asylum, Lancashire, for a year, he joined the first b ttalion of the Coldstream Guards, and served throughout the Crimean War; he received the medal and clasp for his services. In 1858 he retired from the army and became medical superintendent of the Rainhill County Asylum. In 1860 he took the diploma of M.R.C.P.Lond., having taken the degree of M.D. St. Andrews in 1857. He was president of the Psychological Section of the annual meeting of the British Medical Association at Liverpool in 1883, and retired from his appointment at the asylum five years later. He afterwards did much work for the Charity Organization Society, and for the Workshops for the Blind of Kent. He joined the committee of management of the Seamen's Hospital Society in 1893, and thereafter took a most active part in the work of the society. He was one of the most regular in attendance at the board of management and at various subcommittees until his health gave way in 1909, after sixteen years of service. He then became a vice-president of the society. On the occasion of the foundation of the London School of Tropical Medicine, in 1898–9, he was a member of the committee which met at the Colonial Office to arrange the details; he was also a member of the building committee, and rendered much assistance in regard to the construction of the laboratories. He was a sanitarian with very pronounced views, and the operating theatres in both hospitals were remodelled on his advice. A memorial service was held in Eltham Parish Church on August 9th, and the funeral took place on the following day in the old churchyard.

WE regret to record the death of Dr. JAMES MILLER, of St. James Terrace, Glasgow. An Edinburgh graduate, Dr. Miller spent some years in studying sanatorium work in Nordrach-on-Dee and other places, and thereafter for a short time practised in Manchester. Some five years ago he settled in Glasgow as successor to Dr. Anderson Robertson, who relinquished his practice to enter the church. Soon afterwards Dr. Miller was attacked with enteric fever, but on his health being re-established he rapidly acquired an extensive practice. He devoted himself very largely to vaccine treatment, and was the leading exponent of Wright's methods in Glasgow. His services were in

much demand, and in several communications to the local medical societies he brought forward many interesting records which showed the benefit obtainable by vaccine treatment. Dr. Miller had just returned from a holiday when he was seized with an illness for which unfortunately an operation proved of no avail.

Deputy-Surgeon S. B. Roe, C.B., who had been in failing health for some months, died at his residence, Ballyconnell House, Cavan, on July 22nd, at the age of 82. He was the son of Mr. George Roe of Ballyconnell, and graduated A.B. with first class honours in classics at Trinity College, Dublin, and M.B. in 1855. He joined the 92nd Gordon Highlanders in the same year, and served with that regiment as Assistant Surgeon, Surgeon, and Surgeon-Major until 1882. During this period he went through the Crimean campaign, the Indian Mutiny, and the Afghan war of 1879–80. During the last mentioned campaign he took part in the action of Ali Khal and the operations around Kabul and Sherpur and the Kandahar march. For his services in this war he received the medal with two clasps and the bronze star. He served in the South African war of 1881, and in that year was made C.B. He was Principal Medical Officer of the South-Eastern District in 1885, and of the Madras District in 1886–90. After retiring from the service he settled in the place of his birth, and became Deputy Lieutenant for County Cavan; he was High Sheriff for the county in 1892–3. He was one of the three members nominated by the grand jury to serve on the county council, and for many years took an active share in the work of the county. He took much interest in the affairs of the Church of Ireland in his own neighbourhood, and succeeded in winning the affection and esteem of all with whom he came in contact in Cavan. At the petty sessions held at Ballyconnell after his decease the court adjourned as a mark of respect, and the clerk was directed to forward to Surgeon-General Roe's relatives an expression of its regret and its sense of the great loss which the Ballyconnell district had sustained by his death.

The weather in Switzerland has so far this season been very changeable and cold. Snow has fallen to the 5,500 ft. level within the last few days, an unusual event in mid August.

The party organized by the German Central Committee for Educational Travel to visit America will comprise about 250 German practitioners, who will leave Hamburg on September 7th. During the ten days the voyage will last lectures will be given on board.

In a series of studies on plague by McCoy and Chapin of the Public Health and Marine Hospital Service of the United States of America (Bulletin 53) a peculiar plague-like disease occurring amongst rodents is described. It is due to a bacterium which the authors have already described in a preliminary note, and named the *Bacterium tularense*. They now report that they have isolated the organism from guinea-pigs inoculated with material from three naturally-infected ground squirrels and have recovered it on several occasions from guinea-pigs dead after inoculation from cultures. So far the organism has only been cultivated on special media. As a general rule the serum of naturally or artificially immune animals agglutinates the organism, while that of healthy susceptible animals does not; while agglutinating serum binds complement in the presence of specific antigen. The subacute or chronic lesions of this peculiar disease have a resemblance in some way to tuberculosis.

In the *Transvaal Medical Journal* for May, 1912, Dr. Watkins Pitchford, Government Bacteriologist and Pathologist, gives a good description of scurvy as seen in South Africa. His paper was read at the Thirteenth South African Medical Congress, 1912, in the Pathological Section. Dr. Pitchford states that in South Africa in modern times, scurvy appears as an endemic disease which occasionally [illegible] epidemic proportions. It has been, and is, very [illegible] with the mining industry, and a few [illegible] in an accentuated form in the mining [illegible] experience the disease [illegible] in severity, but Dr. [illegible] that until its true nature is universally [illegible] all are agreed upon a certain and [illegible] must remain as a perpetual [illegible] that colony. The symptoms [illegible] seen in other parts of the [illegible] Dr. Pitchford [illegible] to classify the disease as one of a group of [illegible] which cannot be defined more accurately than as a "dietetic cachexia."

Letters, Notes, and Answers.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

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☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

E. R. P. asks for advice in the treatment of a typical case of angio-neurotic oedema in a young woman aged 24 years.

R. G. H. asks for suggestions for the treatment of styes in the eyelids in a boy, aged 13, otherwise perfectly healthy; the condition has been going on for about eighteen months.

Cymro asks for advice in the treatment of neuritis brought on by fatigue (carrying a heavy bag), in a middle-aged subject, otherwise in perfect health; certain movements of the arm are very painful.

Tubercle would be grateful for information as to what places in South Africa would be most suitable for a case of pulmonary tuberculosis with tendency to bronchial catarrh. The disease is practically quiescent, and the temperature is normal. He asks also for opinions as to the climate of Victoria, Australia, and of Arizona for such a case.

Motor Bicycles.

A correspondent asks for advice in the selection of a motor bicycle suitable for a medical man, easy to understand and to use in slow traffic and capable of climbing moderate hills. He desires to find a light machine, and one which will not compel the user to run alongside it before it starts.

ANSWERS.

Forward.—The ortol test for milk is for distinguishing milk which has been heated above 80° C. from raw milk. It consists in adding to a few c.c.m. of the milk one drop of a dilute hydrogen peroxide solution, and a small quantity of a solution of ortol (a chemical chiefly used in photography as a developer). With raw milk a deep red colour is produced, but milk which has been heated above 80° gives no colour.

T. writes, in answer to "R. T. N.": Firm pressure around the thigh or upon the great sciatic nerve sometimes gives relief in cramp, which is often associated with some irritation of the stomach or of the intestines. Sodae bicarb., 3 grains, in a cup of warm water at bedtime I have found beneficial; strict attention to the bowels is necessary.

The Lighting of Schools.

I. (H. W.).—The whole subject of artificial illumination, gas and electrical, for schools and colleges is dealt with by many authorities in three sections of the volume of *The Illuminating Engineer* for 1911, pages 153–166, 203–242, and 289–298. The separate parts could probably be obtained on application to the secretary of the Illuminating Engineering Society, 32, Victoria Street, Westminster, S.W. This discussion, to which medical, educational, and engineering authorities contributed, was summarized in the British Medical Journal of March 25th, 1912. The respective merits of gas and electricity, as well as other illuminants, in schools are fully canvassed in a large volume entitled *Modern School Buildings*, by Felix Clay (London: B. T. Batsford, 1906).

LETTERS, NOTES, ETC.

A Correction.

In the report published in the Journal on Mothersill's Seasick Remedy, it was stated, owing to an error in transcription, that the weight of the contents of each capsule was 11½ grains. This was the weight found of the contents of the three capsules of each kind. The same error occurs on the second line of p. 233 of *More Secret Remedies*.

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FURTHER EXPERIENCE OF THE SPECIFIC CURATIVE ACTION IN AMOEBIC DISEASE OF HYPODERMIC INJECTIONS OF SOLUBLE SALTS OF EMETINE.

BY

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PROFESSOR OF PATHOLOGY, CALCUTTA.

IN the BRITISH MEDICAL JOURNAL of June 22nd* last I recorded cases illustrative of acute and chronic amoebic dysentery and acute hepatitis respectively in patients who were unable to take ipecacuanha by the mouth, but were rapidly cured by subcutaneous injections of soluble salts of emetine, without the production of vomiting or marked nausea, which are such serious drawbacks to the use of full doses of ipecacuanha by the mouth. During the two months which have elapsed since that note was written I have had frequent opportunities of using the new treatment in suitable cases, thanks mainly to the kindness of my I.M.S. colleagues in the different Calcutta hospitals, to whom I tender my best thanks. The results have been more than confirmatory of my first very favourable impressions, and leave no possible doubt as to the great practical importance of the discovery. Some of them are, indeed, so surprising that they must be seen to be fully appreciated, as words can convey but a feeble impression of the rapidity and completeness of the recoveries effected in very grave cases. In dealing with the more extensive material now available it will be well to classify the cases into different clinical groups.

I.—*Extremely Acute Amoebic Dysentery with Marked Thickening and Tenderness of the Bowel and High Leucocytosis.*

The most serious form of amoebic dysentery is a primary attack, or an acute exacerbation of a chronic one, in which parts of the large bowel can be felt through the abdominal wall as very tender, greatly thickened, rounded or sausage-shaped masses, showing that the whole thickness of the gut is involved, including the peritoneal coat, and nearly always accompanied by an extreme leucocytosis of from 30,000 to 50,000 per cubic millimetre. The prognosis in these cases is exceedingly grave, as gangrene, perforative peritonitis, or post colic abscess are frequent fatal complications. I find I have earlier notes of 13 such cases with leucocyte counts of from 25,000 to 49,250, 7 of which proved fatal within a few days, 4 were taken away in a dying condition by their relatives, and only 2, or 15 per cent. recovered, in spite of ipecacuanha having been given in quantities of 30 to 60 grains or more a day. The fact is that sufficient ipecacuanha cannot be administered quickly enough by the mouth to save more than a very small percentage of such cases. The following are examples of this class treated by emetine salts hypodermically.

CASE I.

Native male, aged 30, admitted to my ward for cholera with a history of having passed fifteen stools in the last twelve hours, the last containing blood. Specific gravity of blood 1059, blood pressure 112. On examining the stools no cholera organisms were found either microscopically or on culture, but very numerous small amoebae were present. The abdomen was distended and the caecum could be felt as a greatly thickened mass, extending into the hypogastrium and very tender to the touch, while the sigmoid showed less marked, but similar, changes. He gave a history of three previous attacks of dysentery, the last being one month ago. Hypodermic injections of emetine hydrobromide were at once begun, and the progress of the case, together with the leucocyte counts, can be seen at a glance at the accompanying table.

	First Day.	Second Day.	Third Day.	Fourth Day.
Number of stools—				
Day	9	3	2	1
Night	1	2	1	1
Emetine hydrobromide	1 gr.	1½ gr.	1 gr.	Ip. 40 gr.
Mucus	Much	*Nil*	*Nil*	*Nil*
Blood	Much	*Nil*	*Nil*	*Nil*
Amoebae	Numerous	*Nil*	—	—
Leucocytes	30,050	22,500	12,250	9,250
Ratio to red	1 to 206	1 to 308	1 to 469	1 to 651
Polynuclears	90.8	84.4	72.4	52.8

The blood and mucus and the amoebae had disappeared from the stools in twenty-four hours, and by the fourth day the whole of the thickening and tenderness of the caecum and sigmoid, as well as the leucocytosis, had vanished, and the patient was convalescent. Further progress was uneventful, and he was discharged cured eleven days after his admission.

CASE II.

Native male, aged 24, admitted to my ward for cholera in the collapse stage at 7 p.m. with a specific gravity of 1064 and a blood pressure of only 50 mm. He was given four pints of hypertonic saline intravenously on admission, and required two subcutaneous ones of one pint each during the night. On the following morning he had recovered well from the collapse, but the stools showed thick blood and mucus, and microscopically very numerous young amoebae were present, together with cholera vibrios, the latter being obtained in pure culture, proving a mixed infection to be present. The descending colon and sigmoid flexure were greatly thickened and tender. At 1 p.m. he passed a stool containing a number of black shreddy sloughs, such as Ewart found to be a sure sign of fatal gangrenous dysentery, together with some white ones containing amoebae. Emetine treatment was at once begun, with the result shown in the following table:

	First Day.	Second Day.	Third Day.	Fourth Day.	Fifth Day.
Number of stools—					
Day	—	9	4	3	1
Night	15	0	2	3	0
Emetine HBr	*Nil*	1½ gr.	1 gr.	1 gr.	Ip. 40 gr.
Mucus	Choleraic	Much	*Nil*	*Nil*	*Nil*
Blood	Choleraic	Much	*Nil*	*Nil*	*Nil*
Amoebae	—	Numerous	*Nil*	—	—
Leucocytes	—	32,500	12,000	—	8,750
Ratio to red	—	1 to 171	1 to 457	—	1 to 553
Polynuclears	—	89.8	73.2	—	60.8

By the fourth day all tenderness and thickening of the large bowel, as well as the leucocytosis, had disappeared, and the patient was convalescent, being discharged cured at the end of seven days in hospital, and was seen two weeks later quite free from all dysenteric symptoms. He had thus been cured of sloughing amoebic dysentery coincident with a fairly severe attack of cholera.

Cases I and II are very good examples of the acutest form of amoebic dysentery in which the disease was cut short, and both great thickening of the bowel and an extreme degree of leucocytosis cleared up within three or four days, very great improvement having been apparent within twenty-four to forty-eight hours, under treatment with from 1 to 1½ grains of emetine hydrobromide daily, an equivalent of 90 to 135 grains of ipecacuanha. The chances of the recovery of either of them under ipecacuanha treatment by the mouth would have been very small. In the next case, although emetine failed to save the patient's life, yet even more convincing evidence of the specific action of the drug was obtained.

CASE III.—*Fatal Gangrenous Amoebic Dysentery, in which the Amoebic Infection was Destroyed within Sixty Hours by Emetine Injections.*

Native male, aged 45, and a confirmed opium eater, taking about 30 grains a day, admitted for dysentery of twelve days' duration, having had another attack a month before. Passing about twenty very foul stools a day with blood and mucus containing numerous amoebae. Abdomen somewhat distended and marked thickening and acute tenderness of the large bowel from the caecum to the splenic flexure, but most marked in the right iliac fossa, and a high degree of leucocytosis. Progress:

	First Day.	Second Day.	Third Day.
Number of stools—			
Day	4	11	2
Night	15	4	—
Emetine hydrobromide	1½ gr.	2 gr.	*Nil*
Mucus	Much	Less	Trace
Blood	Much	Less	*Nil*
Amoebae	Numerous	Numerous	*Nil*
Leucocytes	22,250	16,000	14,250
Ratio to red	1 to 263	—	—
Polynuclears	88.4	81.6	82.0

* In the former paper, for "Docker, I.M.S.," read "Docker, A.M.S."

Three ½-grain doses of emetine were given the first day and he appeared to be rather better in the evening. The next morning he was passing more frequent stools again, so two 1-grain doses were given hypodermically, each equal to 90 grains of ipecacuanha, without any apparent depression and no nausea or vomiting. The washings of the stools of the first twenty-four hours showed a cupful of large raw-meat-like sloughs, and those of the second twenty-four hours were similar, but smaller and less blood-stained. The second night, after the two 1-grain doses of emetine, he had only four small stools containing a very little thin mucus faintly streaked with blood, while the morning stool was watery brown faecal, with only a minute trace of white mucus and quite free from amoebae. In spite, however, of large doses of opium, he had been unable to get any sleep, and suffered much from the great restlessness of opium eaters, being worn-out, cold, and clammy. The tenderness and thickening of the large bowel had disappeared except in the right iliac fossa, where they were as marked as before, so I recognized that local peritonitis, with either a post-caecal abscess or gangrene, must be present, for which nothing more could be done, and he died on the evening of the same day. A *post-mortem* examination was obtained, which revealed most extensive amoebic ulceration affecting the whole length of the large intestine, although the rectum was but slightly involved. The caput coli was gangrenous, with little but the peritoneal coat remaining, while inflammatory recent lymph on the surface bound it loosely to the ileum. A prolonged microscopical examination of scrapings of the ulcers in various parts of the bowel failed to reveal a single living amoeba, and sections through the walls of some of the more recent ulcers stained with haematoxylin showed not a single parasite, although they are ordinarily quite easily demonstrated by either of these methods. Thus, in spite of the terrible acuteness and extent of the lesions, every single amoeba appears to have been killed by the 3½ grains of emetine injected subcutaneously during the two and a half days he was in hospital, and thus the failure to save this opium-eating patient furnished the most conclusive evidence of the specific nature of the new method of treatment, and fully explained the apparently miraculous recoveries recorded in Cases I and II.

II.—*Moderately Acute Amoebic Dysentery Rapidly Cured by Emetine.*

Case IV and V are typical of acute amoebic dysentery, such as usually yield to full doses of ipecacuanha in time, but which are much more rapidly and certainly cured by the new treatment, and with far less suffering to the patient. For this common class the new method will be a great boon.

CASE IV.

A native female, aged 28, admitted for acute dysentery of fifteen days' duration and passing such numerous stools of pure blood and mucus that the bed-pan had to be kept constantly by her. Tenderness and thickening of the caecum extending into the hypogastrium, and restlessness were present. Numerous amoebae were found in the stools. After three days' treatment with ipecacuanha by the mouth the symptoms and great frequency of the stools and local signs remained the same, and I was asked to treat her with emetine. Two ½-grain doses were given the first day, and the next morning the stools were much less frequent and contained faecal matter, while her general condition had much improved. Two more ½-grain doses were given that day, and during the following night, that is from thirty-six to forty-eight hours after the first dose, not a single stool was passed, nor did she have any more dysenteric motions during the subsequent eight days before she was discharged cured. The thickening and tenderness of the caecum also rapidly disappeared.

CASE V.

A native male, aged 30, admitted for acute dysentery of fifteen days' duration, with pain in the abdomen, but no marked thickening of the bowel, and passing ten to twelve stools of blood and mucus daily, containing numerous active amoebae. After two days' treatment with ipecacuanha in 25-grain doses no improvement was apparent and the stools contained much blood, so emetine was injected in ½-grain doses twice daily for three days. By the end of that time the stools had been reduced to four soft yellow faecal ones a day, with no blood or mucus and free from amoebae, while the abdominal pain had disappeared. The leucocytes had also fallen from 12,750 to 6,250, and steady convalescence ensued.

III.—*Chronic Amoebic Dysentery Rapidly Cured by Emetine.*

The patient with dysentery of three and a half years' duration recorded in my first paper as rapidly cured by emetine, has continued free from all dysenteric symptoms. One further case belonging to this class may here be mentioned.

CASE VI.—*Chronic Amoebic Dysentery of Six Months' Duration Rapidly Cured by Emetine.*

A Eurasian, aged 25, was admitted to my ward with a history of having passed four or five stools, containing blood and mucus, daily for six months. He had slight tenderness over the caecum, but no thickening could be felt. Leucocytes 12,000 per c.mm. Stools of pure blood and mucus were being passed, containing very numerous active amoebae, as many as six or eight being seen in some fields of the microscope. Half a grain of emetine was injected once a day for three days, after which ipecacuanha 20 grains was given every evening. Twenty-four hours after the first dose of emetine the stools were free from blood or mucus and no amoebae could be found. No further signs of dysentery ensued during the seven days he was in hospital, and I saw him three weeks later, when he was still keeping quite well.

IV.—*Acute Hepatitis Threatening Liver Abscess Formation Cured by Emetine.*

The remarkable effects of ipecacuanha in preventing liver abscess by curing both acute and chronic hepatitis, which was demonstrated by me in 1907, has been repeatedly confirmed by other workers, including a recent paper in the *Journal of the London School of Tropical Medicine*. In my first note on the emetine treatment I recorded an example of the rapid action of the new method in a patient who could not take ipecacuanha by the mouth, and two further cases are now added.

CASE VII.

A native male, aged 17, admitted with very acute hepatitis with marked enlargement and extreme tenderness of the lower border of the liver. An evening rise of temperature to 101 F. had persisted for ten days, in spite of 30 grains of ipecacuanha daily during the last four evenings. Two ½-grain injections of emetine were now given, and within eight hours of the first dose the tenderness had remarkably decreased, and on the following day the temperature became normal and remained so for four days. It then rose again in the evenings, and *x* rays showed a shadow suggestive of liver abscess. A needle was passed into the lower part of the right pleura and a little purulent lymph was drawn off. Ipecacuanha was persisted with and the condition cleared up entirely without any further operative procedures being necessary. The beneficial effect of a single grain of emetine in the early acute stage of this case was very striking.

CASE VIII.

A European male, aged 29, was admitted for acute hepatitis with intermittent fever, and 20-grain doses of ipecacuanha were given every evening. As the fever and hepatic pain persisted for five days the liver was explored for pus under an anaesthetic, but with a negative result. Emetine hydrobromide was now injected daily in ½-grain doses, and the temperature at once fell to normal and the pain subsided. Ipecacuanha was reverted to after four days, but the improvement was less marked than under the emetine, so the daily ½ grain dose of the latter was recommenced, and at once rapid improvement set in, going on to complete convalescence after a few doses, and accompanied by a fall in the previously high leucocyte count.

V.—*Amoebic Abscesses of the Liver and Spleen Cured by Aspiration and Emetine Injections.*

As early as 1902 I showed that unopened amoebic abscesses of the liver are, in the great majority of cases, sterile as regards bacteria, and therefore suggested removing the pus by aspiration, and injecting soluble salts of quinine into the cavity to kill the amoebae in the wall of the abscess, in the place of the exhausting open operation with prolonged drainage. Later, I advised in addition the continued administration of full doses of ipecacuanha after any form of operation on such abscesses. This method is being used with increasing success in Calcutta at the present time, although it fails in some cases. The proof afforded in my recent paper that soluble salts of emetine rapidly kill the amoeba of dysentery when used in much higher dilutions than the quinine salts, clearly indicates the former drug as the more efficient one for the purpose just mentioned. Moreover, the evidence above recorded in this paper, to show that emetine can be given in sufficient doses to kill off rapidly all the amoebae in the greatly thickened wall of the large bowel in acute dysentery, made it highly probable that it would act equally well on the parasites in the walls of amoebic abscesses of the liver. The following remarkable case will show that this is actually the case.

CASE IX.—*Acute Amoebic Dysentery with Multiple Liver Abscesses, in which all the Amoebae in the Latter were Killed by Subcutaneous Injections of Emetine.*

A native male, aged 30, was admitted in a very low state for severe dysentery of two months' duration. I examined the stools and failed to find any amoebae, but as he was not improving ½ grain doses of emetine were injected twice on two consecutive days, making a total of 2 grains in all. The dysenteric stools decreased in number and much improved in character, but he remained in a low condition, and died twenty-six hours after the last injection. At the *post-mortem*

examination I found extensive ulcers of the amoebic type throughout the large bowel, but, with the exception of one extensive sloughing one in the caecum, their bases were clean and smooth and their edges overhanging, as if they had recently lost the usual tawny yellow gelatinous infiltration. The cause of death was found to be very numerous small recent amoebic abscesses of the liver from ¼ in. to 2 in. in diameter, scarcely a square inch of the cut surfaces being free from them. The pus from several of them proved sterile as regards bacteria on culture. I spent a long time examining scrapings from the walls of a number of the abscesses, but failed to find a single living amoeba, although in similar cases I had always been able to detect them with the greatest ease. On adding to the pus a little watery methyl-blue a few unstained granular degenerate amoeba-like cells were found, similar to amoebae which have been subjected for a short time to the action of a very dilute solution of emetine. These observations left no doubt in my mind that every amoeba in the liver had been killed by the emetine injected subcutaneously during life, as the body was fresh and the temperature very favourable for the preservation of the parasites. Moreover, sections of the walls of some of the smaller abscesses stained with haematoxylin also showed no amoebae, although they are readily demonstrated in this way when emetine has not been used in the treatment.

This case, taken with No. III above recorded, appear to me to afford strong evidence that emetine salts administered hypodermically in sufficient doses will kill all the amoebae in both the intestinal and liver abscess walls, and thus explains the extraordinary results recorded in this and my former paper, and affords good hope of even more uniform success in the treatment of the deadly and widespread amoebic infections when the new method is fully worked out and the most useful and safe doses ascertained. The following cases will serve to prove that emetine is also of great value in the treatment of amoebic abscesses of the liver and spleen, and is likely in the near future to save a large proportion of these unfortunate patients from the surgeon's knife.

CASE X.—*Epigastric Liver Abscess Cured by Aspiration and Emetine Injections after Failure of the Quinine Treatment.*

A native lad, aged 15, admitted for a liver abscess bulging in the epigastric region. Six ounces of liver pus were removed by aspiration, and 1 oz. of saline containing 10 grains of the soluble bihydrochloride of quinine injected into the cavity, and the puncture sealed with collodion. Intermittent fever continued and the abscess cavity refilled within four days. A second aspiration was now done, 8 oz. of liver pus being removed, and 1 grain of emetine hyrobromide, dissolved in 2 oz. of sterile salt solution, was injected into the cavity. The emetine salt was also injected subcutaneously in ½-grain doses every morning for four days, and again on the sixth day. In addition, 10 grains of ipecacuanha were given by the mouth every evening. After two days the temperature fell to normal and never again rose above 99 F. The abscess cavity steadily contracted and the tissues became firm, and he was discharged cured just under one month after the emetine injection, having been detained under observation to make sure that the abscess did not refill. This case is one which would, in all probability, have done well by the open operation, as the abscess was a comparatively small one, but the rapid subsidence of the fever, and cessation of formation of pus under the influence of emetine was very striking.

CASE XI.—*Right Lobe Liver Abscess Cured by Aspiration and Injection of Emetine.*

A native male, aged 30, admitted for liver abscess following dysentery six months before. On aspirating through a lower right intercostal space, 8 oz. of typical liver abscess pus were withdrawn and 1 grain of emetine hydrobromide dissolved in 2 oz. of sterile salt solution injected into the cavity and the puncture wound sealed with collodion. Half-grain doses of emetine were injected subcutaneously on each of the four following mornings and 25 grains of ipecacuanha given in the evenings, my supply of emetine being then very limited. The temperature rapidly fell to normal, but on three occasions during the next thirteen days it reached 100° F. in the evening. At the end of this time the liver was normal in size and there were no signs of further collection of pus, but to make quite sure a second exploration under an anaesthetic was now performed, with a negative result, and subsequent convalescence was only interrupted by a mild attack of benign tertian malaria.

In addition to the above cases, a third, very similar to No. XI, has done equally well, but it is yet too early to be certain of his permanent cure. On the other hand, in two others the pus obtained at the time of aspiration and injection of emetine was found on culture to contain large numbers of staphylococci, and consequently the abscesses had to be opened and drained, with ultimate recovery. I have previously pointed out, in connexion with my method of treating amoebic liver abscesses by aspiration and injection into the cavities of soluble quinine salts, that such a plan should only be persisted with if the pus is free from marked secondary bacterial infection, as is the case in 80 per cent. in my experience.

Amoebic Liver Abscesses Cured by Aspiration and Subcutaneous Injections of Emetine.

In two other cases, one of which is still under observation, liver abscess pus was evacuated by aspiration and emetine injected subcutaneously, but not into the abscess cavity. In one the emetine injections were given for acute hepatitis, which greatly improved, but, as leucocytosis persisted, the liver was explored and several ounces of pus withdrawn, after which steady convalescence ensued and the leucocytosis disappeared. In the other the emetine injections were commenced two days after the aspiration of liver pus, with an equally happy result. A single aspiration so exceptionally cures such cases that these two successive recoveries are in all probability due to the action of the subcutaneous injections of emetine in destroying the amoebae in the walls of the liver abscesses, so it may eventually prove unnecessary to inject the drug into the cavities; although in view of the harmlessness of the procedure, and the certainty that it will kill the parasites in the superficial parts of the lining membrane, it is advisable to do so in the present state of our knowledge.

CASE XII.—*Amoebic Abscess of the Spleen Cured by Aspiration and Emetine Injections.*

A native male, aged 32, admitted with enlargement of the spleen to 2 in. below the left costal margin and a tender prominence of the lower ribs, with redness of the skin over it. On exploration 8 oz. of thick reddish pus and blood, closely resembling that of amoebic liver abscesses, were withdrawn. Three days later there was evidence of refilling of the cavity, so a second aspiration of 4 oz. was performed, and this time 1 grain of emetine hydrobromide in 2 oz. of water was injected. I examined the pus microscopically, and found amoebae to be present, while it was sterile on culture for bacteria. On each of the next two days half a grain of emetine was injected subcutaneously, but the temperature once more rose, and six days after the second aspiration there was again slight bulging. A third aspiration was now done, but only a little pus and much blood was obtained, and a grain of emetine hydrobromide was again injected into the cavity, and two more ½-grain doses given subcutaneously. The temperature finally fell to normal two days later, and the abscess did not again refill, but complete recovery ensued.

This case is of great interest, both on account of the rarity of amoebic abscess of the spleen and because of its successful treatment by the new method; for when opened they are liable to heal very slowly and to leave obstinate sinuses. It was for this reason that a repetition of the emetine injection into the cavity was carried out, with the fortunate results recorded.

Taken as a whole, the cases above detailed of amoebic abscesses of the liver and spleen treated by emetine injections are full of promise. If further experience should confirm them a new era will be commenced in the treatment of this very serious and fatal disease, for the causative parasite can be destroyed by injections of emetine salts into the abscess cavities, after very thorough evacuation of their contents by aspiration, and subcutaneous injections of the same drug will kill the organisms in the deeper layers of the abscess wall through the blood stream (as well as in any latent amoebic ulcers in the large bowel which may have produced the liver trouble), and thus the necessity of resorting to the much more serious and exhausting open operation and prolonged drainage, with the almost inevitable secondary bacterial infection of the wound in damp hot climates, may be largely done away with, greatly to the comfort and benefit of the patients.

The Disappearance of Leucocytosis as Evidence of the Cure of an Amoebic Abscess of the Liver.

When using the above method it is often difficult to decide if the abscess is completely cured, or if some pus has again accumulated, necessitating a further aspiration. Here leucocyte counts are of great value, for I have frequently found that if an original actual or relative leucocytosis has not disappeared within about a fortnight after an aspiration, pus will usually be again found on exploring; while if the original increase in the white corpuscles has vanished, the abscess is really cured, and further aspirations are negative, although usually harmless.

Dosage.

Either the hydrochloride or the hydrobromide of emetine are equally useful, the former being the more soluble, while the latter requires about 2 c.cm. of sterile water or saline to dissolve it. At first I chiefly used ½-grain

doses, but now very seldom employ less than half a grain at a time, and often give as much as two-thirds, the equivalent of 60 grains of ipecacuanha, and have twice injected 1-grain doses subcutaneously without any vomiting or depression, but such a quantity is only required in extremely acute amoebic dysentery. The salts can be safely boiled for a very short time, but it is better to dissolve them in sterile saline, or to boil the solution first and then add the emetine salt. I have arranged with Messrs. Burroughs and Wellcome to put up the drugs, both as tabloids and already dissolved in sealed ampoules, while Messrs. Parke, Davis are also supplying them in the latter form.

The Value of Emetine Treatment in the Differential Diagnosis of Amoebic from other Varieties of Dysentery.

The extraordinary rapidity with which very marked improvement follows the subcutaneous injections of ½-grain doses of emetine is of the greatest diagnostic importance, for cases of bacillary dysentery and other non-amoebic causes of the presence of blood and mucus in the stools are not, in my present experience, materially affected by the drug, although it has done no harm in them. Thus, in a case of chronic bacillary dysentery complicating kala-azar, emetine injections had no effect, and the disease steadily progressed to a fatal termination. Again, I was asked to treat with emetine a case of suspected amoebic dysentery with six to seven stools of blood and mucus daily. On examination the patient pointed to the caecal region as the seat of pain, and clinically I also thought the case to be probably amoebic, so injected ½-grain doses of emetine hydrobromide daily for three days, without the slightest effect on the number or character of the stools. I twice examined the stools for amoebae, with negative results, while cultures failed to separate any bacilli which would clump with either Shiga or Flexner serum. The rectum was then examined, and cancer detected high up. The failure of adequate subcutaneous doses of emetine to produce marked improvement within two or three days is, then, very strong evidence that the disease is not of amoebic origin. This specific action of emetine salts in amoebic disease alone is of the greatest interest and importance. Ever since I was the first to recognize the frequent occurrence of amoebic dysentery in India and to demonstrate that living amoebae are always present in scrapings of the walls of large tropical liver abscesses, I have never doubted the pathogenic action of these parasites. In my experience, whenever active amoebae of the *histolytica* type, including the variety described by Noc and shown by Grieg to be the common one in India, have been found in dysenteric stools (and I have almost invariably found this form only), the disease has eventually proved amenable to full doses of ipecacuanha, if not too acute or far advanced. Still, facilities and time for the microscopic examination of the stools of the large number of dysentery cases which often have to be dealt with in the tropics, are seldom available, so a simple and harmless clinical method of differentiating amoebic from other forms, such as is now furnished by the emetine treatment, is clearly of the greatest practical importance, and will also lead to the early adoption of suitable treatment in those cases, which prove not to be amoebic in nature. Moreover, it will allow of more rapid advances in our knowledge of the distribution of the two great classes of dysenteries than can be furnished by the very limited number of workers available for bacteriological researches on this subject in the tropics. We may, perhaps, also hope to hear no more doubts as to the existence of amoebic dysentery as a separate entity, such as were expressed in a recent editorial in a leading Indian medical journal.

Conclusion.

We have, then, in my method of the subcutaneous [illegible] salts of emetine a specific treatment [illegible]s and amoebic dysentery, which is so [illegible]ial in the latter as to be also of great [illegible]e between that and other causes of the [illegible] in the stools. Yet, strange to [illegible]y probably the most active [illegible] of medicine, not excluding quinine and salvarsan, has for long been thrown away by those who manner their faith in ipecacuanha sine emetina.

GRANULE-SHEDDING IN TRYPANOSOMA GAMBIENSE.

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The "infective granule" in trypanosomiasis has been described by Major W. B. Fry, R.A.M.C.[1] Major Fry kindly demonstrated to me the presence of these bodies in experimental trypanosomiasis in animals, and I have continued investigations on similar lines here. As I am unaware of observations having been made on the "granule" of *Trypanosoma gambiense* in human trypanosomiasis, the following notes may be of interest.

Blood and gland puncture wet preparations from cases of sleeping sickness have been examined by the dark ground method, and the results confirmed by vital staining.

"Granules" are present in the trypanosomes—usually three or four in number. They are small, circular, highly refractile bodies, obviously within the trypanosome, and constantly swinging backwards and forwards in its long axis, the wriggling or lashing of the host causing these movements. When the energy of the trypanosome diminishes, it may be observed that the granules do not swing to and fro synchronously with its movements but perceptibly later; apparently there is an interval for the transmission of a wave, the granules lying more or less free within the envelope of the trypanosome. This activity of the granules gradually increases in the wet preparation, and is further exaggerated if the trypanosome becomes anchored by the posterior pole and exhibits lashing movements of the body and flagellum; the granules are then seen to be perpetually dancing in every direction within the body, sometimes impinging on the cell membrane and rebounding from it. I do not suggest that the trypanosome is actually trying to discharge the granule by its movements, but the process appears very purposeful, and the granules seem as if they were anxious to get free. Finally the granule succeeds in its efforts and shoots out into the surrounding medium; it has been noticed that, before being shed, the granule in many instances approaches the surface, and may actually bulge out the covering membrane.

In older preparations the trypanosomes begin to show signs of fatigue and later of degeneration; this may be due to change of temperature, but is probably the effect of the powerful light to which they are exposed. They move sluggishly and sometimes become swollen and bloated. At the same time the granules exhibit changes, both in number and size. Instead of what may be regarded as the normal three or four granules of *T. gambiense* there may be five or six; frequently one or two are larger than the others, and sometimes there are very small granules in pairs closely apposed and connected in some way, as they move in unison and the transmitted wave affects them together. (The questions arise: Is this multiplicity due to fission? and is it only the larger granules that are concerned with a reproductive process?) At this stage granules may still be extruded, but when the trypanosome becomes even less active, extrusion is very uncommon. A later stage is reached when a trypanosome loses its natural form, swells up and becomes almost circular, while still showing one or two granules which it is unable to extrude. On the other hand, a trypanosome may be seen normal in form but quite inert and not containing any granules; it would seem, however, to be exceedingly rare for a trypanosome to discharge all its granules.

The occurrence of granule shedding is quite distinct, but is, I believe, relatively uncommon in normal circumstances. It is exceedingly easy to be deceived, as in these preparations there are countless dancing bodies—haemoconia and leucocyte granules, which impinge on the trypanosome, and are flung away by its lashing movements; also it is possible for these particles to adhere temporarily to the envelope of the trypanosome, and be detached at any time by some forcible movement. The objection may be raised, How can one ever be sure of extrusion of a "granule" if this fallacy be admitted? This, however, can be met by pointing out that, if particles should adhere to the trypanosome, they cannot swing to and fro in its long axis. Again, the larger granules have been seen to escape from a mori-

hund trypanosome which was quite incapable of forcibly detaching particles, as its movements were of the feeblest character. A useful standard is to recognize extrusion of a granule only after the trypanosome has been under observation for some time and the swinging of the granules carefully watched.

When free in the wet preparation the granule seems to be rather larger than the small particles known as blood dust. It shows two forms—one circular, the other pear-shaped—not unlike a common form of poikilocyte in stained blood films. The explanation of this seems to be that it is actually pear-shaped, but when looked at "end-on" a circular appearance is presented, as the base of the pear-shaped body is nearer the observer's eye. There is more than sufficient depth of fluid between the slide and cover-slip of a wet preparation for a small body like the granule to turn over on itself; therefore, if the granule, while circling in the free fluid, turns from the "end-on" position to a direction parallel with the slide, it displays its long diameter and is seen to be pyriform. It seems improbable that it actually changes its form so rapidly.

In the granule immediately after extrusion there appears to be no flagellum, but later it is indicated, though in gland puncture preparations it is indistinct. A point in favour of the existence of a flagellum is that very frequently there is to be seen a minute particle of blood dust, apparently attached to the granule by a short invisible filament; for some time the particle follows all the movements of the granule, but is afterwards left behind. This seems as if the particle had been attached temporarily to the flagellum, which was too delicate to show up clearly in the space intervening between the granule and the particle.

The difference from blood dust, leucocyte particles, etc., is clearly brought out by focussing. When the granule is slightly out of focus there is seen to be a very much greater disturbance of the medium round about it.

Motility is distinct. The granule may be carried along in the various currents and eddies encountered in wet preparations, but at other times it moves across or against the stream, and in open lacunae where there are no obvious currents it may be seen to progress across the field in any direction.

The dark ground illumination gives a better picture of the granule within the trypanosome, but the vital staining method suggested by Balfour[2] demonstrates the extruded granule much more clearly. By this means the granule within the trypanosome shows as a dark-coloured dot against the clearer cytoplasm, but the free granule, even in its earliest stages, stains well, and is seen as the small motile pyriform body turning over on itself. A flagellum appears soon after extrusion, and is a more distinct feature than in the dark ground preparations; this gives the granule the appearance on a very small scale of a tadpole with a short tail. I have never seen a flagellum showing undulations. It has been noted in a case with very scanty trypanosomes and granules that one granule lying close to a trypanosome had a well-defined short flagellum; this is evidence in favour of its early development, as it is highly probable that the granule had been recently extruded and sufficient time had not elapsed for the granule to move far away from the parent trypanosome, while the latter contained only one granule and was very sluggish, bearing a close resemblance to trypanosomes seen in the dark ground after they had extruded granules.

Motility is made very evident by vital staining, and frequently a granule has been watched making its way over half the diameter of a field.

Fresh blood preparations from various animals have been examined by vital staining, and observations made as to the presence or absence of the granule. A few of these cases may be quoted:

1. A rat, inoculated with a drop of gland juice, was examined on the eighth day; five slides were prepared, but in a prolonged search no granules were seen. This rat did not become infected.

2. Mule sent for examination as nagana was suspected. Blood examination by the ordinary method was negative on more than one occasion. After a long search through many slides (vital stain preparations) one very suggestive, though non-flagellated, granule was seen, but no trypanosomes. In view of this granule I suspected strongly that the case was positive, and the following day, after many examinations, a trypanosome was found with an actively motile flagellated granule in the same field. This case may almost be said to have been diagnosed by the discovery of the granule at the first examination.

3. Monkey infected with *T. gambiense*. At an early stage of the case five wet preparations were made; only one trypanosome was seen, but motile granules were present in all the five slides.

4. Mule suffering from epizootic lymphangitis; granules were not seen.

In gland puncture vital stain preparations from man motile granules were never seen in a case that did not prove positive by the discovery of a trypanosome.

Granules have been found in fluid obtained by puncture of internal organs—liver, spleen, and lungs—but the number to be seen in such preparation does not seem to bear a definite relation to the severity of the gland infection. It is, I think, probable that the granule undergoes development in the internal organs, and suggestive forms have been seen. Some phenomena have also been noted after treatment. Further observations are to be made on these points.

Summary.

1. The "infective granule" of trypanosomiasis occurs in *T. gambiense* in cases of sleeping sickness.

2. Granule shedding has been observed, and the free granule seen in lymph glands and internal organs—liver, spleen, and lung.

3. The granule is at first pyriform, but develops a flagellum. It is actively motile, and can be distinguished from "blood dust."

References.

[1] Fry, *Proc. Roy. Soc.*, July, 1911. [2] Balfour, British Medical Journal, February 17th, 1912.

THE RESULTS OF SANATORIUM TREATMENT.

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In this communication we record the results of treatment and the after-histories of 1,102 patients, who passed through Kelling Sanatorium between January, 1903, and March, 1910. We think certain other facts elicited from this number of patients are also worth publishing.

Our patients have been drawn from all parts of England and Wales and the Isle of Man, but more than half of the total number came from London and Norfolk. They belonged to the wage-earning classes, and their admission to the sanatorium depended solely upon their inability to pay the fees of private institutions and upon their being certified as medically suitable. It scarcely need be said that applications for treatment have always exceeded our number of available beds, and that we have never been without a formidably long waiting list. The following information was obtained from these 1,102 patients.

Age and Occupation.

Their average age at the time of the first observed symptom of their malady was 25 years and 10 months; 718, or about 65 per cent., were town-dwellers; 384, or about 34 per cent., were country-dwellers. As regards their employment: Of the 707 men, 71.7 per cent. worked indoors, while 28.3 per cent. worked out of doors. The 372 women were, practically speaking, all employed indoors.

Family History.

A family history of pulmonary tuberculosis in the direct line was obtained from 459, or 41.6 per cent.; 363 patients stated that they had been exposed to the risk of infection from other consumptives, and 37 had occupied infected houses.

Personal History.

The vital importance of proper treatment in the very earliest stages of their disease is our reason for calling attention to the following notes.

The average time allowed to elapse between the first manifestation of the disease and application being made for sanatorium treatment was one year and six months

The average interval between the first symptom and the giving up of work was ten months.

Furthermore, in the case of 80 patients, there were records of an antecedent tuberculosis, not of the lungs necessarily, which had disappeared from two to thirty years previously. In regard to 428 patients who have died, we find that the average length of time from the date of the first observed symptom to that of death was three years and four months.

On the point of the delay in seeking sanatorium treatment after symptoms of pulmonary tuberculosis have manifested themselves, we made some further inquiries in the cases of 170 patients, all of whom had been ill for a year or more before coming into the sanatorium; 68 were not aware of the true significance of their symptoms, and did not seek advice; 87 were more or less prompt in seeking advice, but radical measures were not adopted in the first instance. While many of this number were sent to convalescent homes or elsewhere for change of air, others were only supplied with medicine at home. In 12 cases it is clear that the nature of the malady was not diagnosed. The remaining 3 patients refused to undergo treatment when advised.

The above statements are partly based on what occurred several years ago, when the exact value of sanatorium treatment was not fully recognized in this country, and when the prime importance of early treatment was not appreciated. During later years a larger proportion of our patients have sought admission in the early stages of the disease, and there is noticeable an ever-increasing desire on the patients' parts to get into a sanatorium as soon as they are declared to have consumption. But even so, the vast majority of our inmates were obviously ill and had unmistakable physical signs of disease in one or both lungs. In the few exceptions the diagnosis was settled by the presence of tubercle bacilli in the sputum, or in a very few instances solely by the occurrence of definite haemoptysis. Some twelve persons altogether were judged not to be suffering from pulmonary tuberculosis, and are not included in this account.

Treatment and Results.

The 1,102 patients were classified as follows, according to the severity and stage of their affection on admission:

Class I (Turban) ...	...	445, or 40.3 per cent.
Class II ...	...	256, or 23.2 ,,
Class III ...	...	401, or 36.3 ,,

We would draw attention to the point that less than half of our patients were taken in hand while their malady was in a favourable stage for obtaining the best results.

The average length of stay in the sanatorium was for each patient a few days over twelve weeks. We had not commenced the use of tuberculin, but graduated labour has been a part of the routine of the patient's day since 1903.

Results of Treatment.

	Total Number Discharged.	Alive.			Dead.	Not Heard of.
		Fit to Work.	Unfit to Work.	Total.		
Class I ...	445	289 (64.9 %)	54 (12.1 %)	343 (77 %)	75 (16.8 %)	27 (6 %)
Class II ...	256	107 (41.7 %)	38 (14.8 %)	145 (56.6 %)	102 (39.8 %)	9 (3.5 %)
Class III...	401	75 (18.7 %)	51 (12.7 %)	126 (31.4 %)	263 (65.8 %)	12 (2.9 %)
All classes	1,102	471	143	614 (55.7 %)	440 (39.9 %)	48 (4.3 %)

The above table includes all patients discharged from the sanatorium during the years 1903 to 1910. A certain proportion of the patients therefore have only been out of the institution a little more than a year, while with others the interval since their discharge ranges up to [illegible].

Effects of Indoor and Outdoor Occupations on Discharged Patients.

Of the patients who returned to work on leaving the sanatorium, 61.4 per cent. resumed their former work, 38.6 per cent. took up new work. Dealing only with Class I patients, we ascertained at the end of 1910:

Of patients resuming their former outdoor occupations 80 per cent. were still able to work.

Patients resuming their former indoor occupations, 76 per cent. were still able to work.

Patients who had been formerly employed indoors and who after sanatorium treatment took up outdoor employment, 78 per cent. were still able to work.

So far as the above figures warrant the drawing of any conclusion, it would appear that there is little to choose between outdoor work and indoor work for the discharged patient, but it must be pointed out that the indoor occupations to which our patients returned were of the less injurious kinds. Everything possible was done to prevent them from returning to unhealthy factories and shops. Those who did return to indoor work have been encouraged to observe sanatorium principles as fully as possible. In fairness to the outdoor life it must also be remembered that the clerk or factory hand is at a great disadvantage in attempting outdoor work, for which special training is usually needed.

But the test by which the real value of sanatorium treatment is judged must be the durability of recoveries. In the next table we show the percentages of our patients who were alive at the end of each successive year after their discharge.

	Class I only.	All Classes.
	Per cent.	Per cent.
Living 1 year after discharge	89.5	69.9
Living 2 years ,,	81.5	59.6
Living 3 ,, ,,	71.7	49.2
Living 4 ,, ,,	70.3	45.7
Living 5 ,, ,,	67.0	44.3
Living 6 ,, ,,	64.0	42.1
Living 7 ,, ,,	64.0	40.9

It will be seen that the first three years after treatment are the crucial period. The patients who survive that space of time possess a greater expectation of maintaining their ascendancy over the malady.

During the first triennium after residence in sanatorium there died: Class I, 28.2 per cent.; all classes, 50.7 per cent.

During the second triennium: Class I, 7.7 per cent.; all classes, 7.1 per cent.

We are convinced that the results of the sanatorium treatment of pulmonary tuberculosis promise to become better and better. Attention must be concentrated on the early diagnosis of the disease, and we welcome the advent of dispensaries where facilities will exist for this purpose. Experience has shown that the early consumptive does not discover himself, but must be actively sought out, and that for this work the service of an expert is required. At present the applicant for admission to a sanatorium is provided with a form certifying to the presence of more or less glaring physical signs in his chest. We should aim instead at utilizing our sanatoriums for patients certified to have no physical signs of lung destruction.

A SOMEWHAT belated report by the Inspector-General on the condition of the hospitals for the insane in Western Australia for 1910 has reached us recently. On December 31st, 1910, there were 798 persons certified insane in the State, an increase of 14 on the previous year. The population of the State in 1910 was 288,743, so that the rate of insane to sane was: Males, 1 to 296, or 3.37 per 1,000; females, 1 to 534, or 1.83 per 1,000; total, 1 to 364, or 2.74 per 1,000. Compared with the other Australian States, Western Australia has the lowest insanity-rate, with the exception of Southern Australia. Alcohol and venereal diseases are assigned as the principal causes of insanity, but heredity is stated also to play an important part. The forms of insanity most prevalent were delusional insanity, mania, dementia, and general paralysis of the insane. The recovery-rate was good 92 out of 212 admissions. The maintenance-rate seems to compare very favourably with the rate in this country—namely, £38 5s. 1d. a head per annum. When patients' fees and receipts from farm produce is deducted, the actual cost is reduced to £33 0s. 1d. per patient.

A NOTE UPON THE USE OF ANTIFORMIN IN SPUTUM EXAMINATION,

AND ON STAINING METHODS FOR THE DEMONSTRATION OF TUBERCLE BACILLI.

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SINCE the routine examination of sputum as a means of diagnosis for tubercle became a universal practice, it has been recognized that diagnosis might be rendered more precise by some satisfactory method of rendering the sputum homogeneous, and dissolving the non-tuberculous elements therein contained. For this purpose such reagents as caustic alkalis, hydrogen peroxide, etc., were tried with a certain measure of success. The procedure of Ellermann and Erlandsen (1908), which consisted in autodigestion of the sputum in the presence of dilute sodium carbonate, and subsequent treatment with dilute sodium hydrate, was shown by careful workers (Jörgensen, 1910) to give results superior to those obtained with antiformin, but, nevertheless, the introduction of this latter reagent must be regarded as the chief recent advance in this branch of study. Antiformin is a proprietary substance which is made up of equal parts of caustic soda 15 per cent., and liquor sodae chlorinatae. It was first used in breweries for cleansing vats and for general disinfection. It is a very powerful solvent of organic substances, rapidly causing the disintegration and solution of such materials as pus, mucus, connective tissues, faeces, and hair. Waxes and waxy substances alone resist its action. Uhlenhuth and Xylander (1909) studied its solvent and its germicidal powers, and published the description of a method for its application to the investigation of tuberculous material. They found that, whereas other bacteria dissolved in the reagent as rapidly as sugar in water, tubercle bacilli retained their vitality in a 20 per cent. solution for twelve to twenty-four hours, and continued to exhibit their characteristic form and staining reactions for eight days.

Uhlenhuth made use of a 20 or 25 per cent. dilution of antiformin. This was added to sputum in equal bulk. The mixture was well shaken and incubated at 37° C. for six to twelve hours. Then after centrifugalization the deposit was examined for tubercle bacilli in the ordinary way.

Lorenz (1911) used the same strength of antiformin, but heated the mixture over a flame, thus rendering the sputum more rapidly homogeneous. Haserodt (1909) shook up the sputum and antiformin mixture, after it had become homogeneous, with ligroin, and placed the mixture in a water bath at 60° C. The lighter fluid rising to the top, carried with it the tubercle bacilli, which collected at the zone of junction between the two layers of fluid. For this method no centrifuge is required.

When rapid concentration of tubercle bacilli in sputum is required, Hammerl's method (1909) is satisfactory. One part of sputum is shaken up with two parts of a 1 per cent. solution of caustic potash in strong ammonia. The mixture is incubated for half an hour, being shaken up from time to time. Then, after the addition of one part of acetone, to lower the specific gravity of the liquid, it is centrifugalized and the sediment examined. This method I have tried in a number of cases with good results. By this means, however, tubercle bacilli are rapidly killed, and therefore the method cannot be used for the purpose of obtaining pure cultures of tubercle. Antiformin, which does not kill tubercle bacilli if used in sufficient dilution, is well adapted for such cultural purposes.

In the routine work of the Lister Institute, the sample of sputum is mixed with an equal quantity of a 30 per cent. solution of antiformin, and the mixture is incubated overnight at 37° C. After centrifugalization, the supernatant fluid is poured away and replaced by an equal bulk of normal saline solution. This is shaken up with the deposit, and the mixture again centrifugalized. Films from the deposit thus washed adhere better to the slide than those prepared after one centrifugalization only.

The antiformin is diluted for use with distilled water. It was suggested by Beitzke (1910) that the use of tap water for this purpose might introduce a fallacy, owing to the occasional presence in such water of acid-fast bacilli. Organisms of this type have been found on water taps at the Lister Institute.

Results Obtained with the Antiformin Method.

Since March, 1911, all sputa received at the institute and found negative on direct examination have been treated with antiformin in the manner described above and further investigated. The number of examinations has been relatively large, and it has therefore been thought that statistics based upon these data would possess sufficient value to justify this note.

The number of sputa received for investigation during thirteen months has been 2,273. On direct examination 622 were found to be positive. The remaining 1,651 specimens, which gave negative results on direct examination, were treated with antiformin, and further investigation showed the presence of tubercle bacilli in 9 cases. The percentage of cases found positive on direct examination was thus 27.36, and the percentage of all positive cases 27.76. The cases found positive only after they had been treated with antiformin amounted to 0.4 per cent. of the total number of sputa investigated, and to 0.54 per cent. of those found negative on direct examination. The figure 0.54 may be described more concisely as the improvement percentage.

Comparison with Other Observations.

Other observers have obtained much higher percentages of improvement with the use of antiformin than that shown by our figures. Shortly after the introduction of the method, Meyer (1909) published a report upon the examination of 114 samples of sputum. Fifteen were found positive on direct examination. The remaining 99 samples were treated with antiformin, and further investigations revealed the presence of tubercle bacilli in 14 cases. Other contributions to the literature of this subject, too numerous to be cited in detail, give improvement percentages ranging from 10 to 35. Schneider (1912) has recently made a comparative study of some of the principal modifications of the antiformin method, and has obtained such improvement percentages as 17.5 and 22.8. He recommends the use of 15 per cent. antiformin, and that the examination be made as soon as possible after the material has become homogeneous. For the demonstration of bacilli, when very few are present, he considers the method of Lorenz the most satisfactory. Upon methods involving the use of ligroin and allied substances he reports unfavourably, being of opinion that such materials have a detrimental effect upon the staining powers of acid-fast bacilli.

In order to reconcile the results obtained at the Lister Institute with those quoted above, it is necessary to consider the procedure that is followed here. Care is taken in the first instance to select a suitable portion of the sputum for examination. The film prepared from this is examined, if need be, for four minutes. In the majority of cases tubercle bacilli, if present, are discovered within the first half-minute, but in a number of cases they are only detected after three or four minutes' search. Moreover, in two of the nine cases in which they were not found until after antiformin treatment, reference back to the original film showed the presence of one or two bacilli. The slides prepared from material which has been treated with antiformin are examined with no less care than the original film. Here bacilli, if present, were usually found in large numbers, but in one instance they were only discovered after a protracted search. In this connexion it is interesting to note the work of Meyer, who investigated the twenty-four hours' sputum of a number of sanatorium patients, and found in some cases such small numbers as two, four, or six bacilli.

No paper previously published upon the subject deals with such a large number of specimens as the present one, and the results of these observations appear to show that the greater the care expended upon the examination of the direct film, the less will be the apparent gain with the use of antiformin. This does not detract from the value of the antiformin method, as an improvement percentage as low as 0.54 involves an approximation to complete precision, which is of importance when the number of specimens examined is large.

Summary.

By means of treating with 25 per cent. antiformin 1,651 samples of sputum found negative as a result of the direct examination, it was possible to demonstrate the presence of tubercle bacilli in 9 cases, that is to say, in 0.54 per cent.

of cases. This figure, though small in comparison with those obtained by other workers, is large enough to justify the use of this reagent when a large number of specimens are examined. The discrepancy between these results and others is possibly due to the detailed care which is expended upon the direct examination.

STAINING METHODS.

A comparative study of the efficacy of certain staining methods for tubercle as applied to sputa has been carried out with a series of about 200 sputa. The methods dealt with have been those of Much, Herman, and Gasis.

Much's Method (1907) is a modification of Gram's method. Of the three different processes described by Much the following has been used. The fixed film is treated for a few minutes with hot carbol-methyl-violet solution (10 c.cm. of hot saturated alcoholic solution of methyl violet in 100 c.cm. of 2 per cent. carbolic acid). The slide is washed, and treated with Lugol's iodine for one minute, 5 per cent. hydrochloric acid for one minute, 3 per cent. hydrochloric acid for ten seconds, and a mixture of acetone and absolute alcohol in equal parts to complete the decolorization. One per cent. neutral red may be used as a counterstain.

Herman's Method (1908).—The stain, a 3 per cent. solution of crystal violet in 95 per cent. alcohol, and the mordant, 1 per cent. ammonium carbonate solution, are kept in separate bottles, and mixed for use in the proportion of 1 to 3. The fixed film is stained with this mixture over a small flame for a few minutes. The slide is washed, transferred to 10 per cent. nitric acid, and then to absolute alcohol. Herman does not use a counterstain, but in the present investigation a 0.3 per cent. chrysoidin solution has been found of service.

Gasis's Method (1907).—Corrosive sublimate crystals amounting to the size of a pea are boiled in about 5 c.cm. of a 1 per cent. eosin solution (eosin 1 gram, absolute alcohol 5 c.cm., distilled water 95 c.cm.). The hot stain is filtered on to the slide, and staining over the flame is allowed to proceed for two minutes. The slide is washed and then decolorized with alkaline potassium iodide solution (potassium iodide 1 gram, sodium hydrate 0.5 gram, 50 per cent. alcohol 100 c.cm.) and with absolute alcohol. Acid methylene blue is used as a counterstain.

Much claims that by the use of his method it is possible to demonstrate tubercle bacilli which are not shown in preparations stained by the Ziehl-Neelsen method. This granular non-acid-fast type of tubercle bacillus has been investigated by a number of workers, who have demonstrated its presence in tuberculous matter where no acid-fast bacilli of the ordinary type were to be found. Much also describes granules, visible in preparations stained by his method, but not seen in Ziehl-Neelsen slides, which are capable of causing tuberculous disease when inoculated into guinea-pigs.

Herman's method has been in use for a number of years, and its author claims that it is superior to the Ziehl-Neelsen method. He lays stress upon the advantage of using ammonium carbonate as a mordant, and states that in preparations stained by this process there are seen not only the bacilli which can be shown by the Ziehl-Neelsen method, but also the granules and granular bacilli described by Much.

Gasis's method differs essentially from the foregoing in that it is based upon the alkali-fast and not the acid-fast property of these organisms. It is stated that the alkali-fastness is due to a nucleo-protein and not to a waxy component of the bacillus. The method was first introduced for the purpose of demonstrating tubercle bacilli in the urine, and the claim was made that in urinary sediments so stained, morphological characters distinguishing these organisms from smegma bacilli were rendered obvious.

Application of Staining Methods to Sputum Examination.

A series of 206 sputa were investigated by the methods of Ziehl-Neelsen and Herman. One hundred specimens were examined also by Much's method, and in 48 of the cases Gasis's process was also employed.

No. of	Results with		
	Herman.	Much.	Gasis.
[illegible]	[illegible]	1	[illegible]
[illegible]	[illegible]	20	[illegible]
48	[illegible]	[illegible]	9

If the Ziehl-Neelsen figures be regarded as expressing 100 per cent. of accuracy, it is found that the other methods—Herman's, Much's and Gasis's—give respectively the figures 100, 96.66, and 69.23, indicative of their relative accuracy.

Gasis's method is the most unsatisfactory. The reagents are unstable, and require to be freshly prepared at the time of use, the staining process is troublesome and requires careful watching, and the results are uncertain, as the figures show. It possesses, however, considerable scientific interest, due to the peculiar biochemical reaction which underlies it. Bacilli stained by this means have a rose-pink tint. The outline is well defined, and there is frequently to be seen some degree of granularity and of irregular vacuolation.

Much's method is not suitable for the direct examination of sputum, owing to the fact that a large number of Gram-positive cocci and bacilli other than tubercle take up the stain. This renders the process of search so troublesome that the routine use of the method for sputum diagnosis is not to be recommended. Tubercle bacilli so stained possess a highly granular character, and assume at times a streptococcal type, while free granules of the Much type are occasionally to be seen. The examination of the present series of films from sputum did not, however, afford any independent evidence of the existence of a type of tubercle bacillus demonstrable by this method which would not be shown more satisfactorily when stained according to Ziehl-Neelsen. The impression derived from a study of these specimens was rather that the marked granularity of tubercle bacilli on the Much-stained films was an artefact due to the nature of the staining reaction employed.

Herman's method is the only one of the three which can be compared with that of Ziehl-Neelsen for ease, utility, and efficiency. The necessity for keeping the solutions of ammonium carbonate and of crystal violet separate until they are required for use introduces a slight complication, which leaves the Ziehl-Neelsen method as the easiest, as it certainly remains the most efficient, process at our command. It is largely a matter of individual taste whether it is more desirable to search for violet bacilli upon a yellow ground, as with slides stained by Herman's method, or for red bacilli on a blue ground, as with Ziehl-Neelsen; but when the eye has become trained to one method, it requires to be educated afresh before equally satisfactory results are obtained with slides stained otherwise. Bacilli stained according to Herman present interesting morphological characters. Their outline is often irregular and granularity is well marked. Metachromatic spore-like granules were frequently noted, and branching forms were observed on two occasions.

An interesting account of various methods of staining tubercle bacilli, describing the earliest processes, which possess now a purely historical interest, and giving a comparative study of the efficiency of the recent methods, has recently been published by Böhm (1912). This author considers the method of Gasis interesting but unreliable, and finds the Ziehl-Neelsen method superior to all others.

The results detailed above show that the Ziehl-Neelsen method, which has stood the test of time, remains the most suitable of all for the detection of tubercle bacilli in urine. Next to it comes the method of Herman, almost as simple, quite as easy of execution, and giving equally good results. Much's method is not suitable for direct investigation of sputum, and the method of Gasis is both difficult and unreliable.

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THE Port of Karachi is to be opened, in addition to Bombay, for the embarkation of pilgrims to Hedjaz, from the current year. A camp is to be constructed for the accommodation of pilgrims and a Protector of Pilgrims will be permanently appointed.

THE PIKRIN METHOD OF STAINING TUBERCLE BACILLI.

By HORACE WILSON, M.D., B.S.Lond.,
HAYES, MIDDLESEX.

The pikrin method of staining tubercle bacilli, as set forth by Spengler,[1] is worthy of more frequent employment in clinical work in this country. In simplicity it is not inferior to the Ziehl-Neelsen method, and, when carefully applied, it has a more far-reaching range of utility. I have found it far superior to the Ziehl-Neelsen method when applied to the examination of urinary sediments.

It is claimed for it that bacilli deprived of their waxy coating can be detected by this means, and also that degenerate, "splitter," or spore forms may be recognized when unstained by the Ziehl-Neelsen method. As these spore formations under suitable conditions may develop into active virulent tubercle bacilli, it is of the utmost importance to recognize them in sputum from the point of view of infectiveness of a patient. This the pikrin method enables us to do. In support of this contention I would cite a few details of a case in point.

In 1910 Mr. X., who in 1908 had suffered from pneumonia with seven months convalescence, and who had expectorated ever since, noticed his sputum tinged with blood and a slight morning cough. He consulted Dr. T. N. Kelynack, who, suspecting a tuberculous focus, sent him to Crooksbury Sanatorium for observation. He remained a fortnight, during which time I examined his sputum carefully ten times. By the Ziehl-Neelsen method a negative result was obtained eight times. The ninth and tenth times, by the pikrin method, degenerate tubercle bacilli and "splitter" forms were found in fair numbers. Von Pirquet's reaction was extremely well marked, and finally the diagnosis was clinched by a marked reaction to Koch's O.T.

In ordinary clinical work, had the Ziehl-Neelsen method of staining alone been employed, the result would have been negative, whereas the pikrin method would have demonstrated tubercle bacilli.

Regarding the pikrin method in genito-urinary tuberculosis, I have found the yellow counterstain with the ordinary yellowish film shows up the bacilli far more readily than if any method is used which employs methylene blue as a counterstain, and degenerate and splitter forms, which are commoner in urinary sediments than well-developed bacilli, are more easily differentiated.

The centrifuged deposit, being pipetted on to a slide, is dried in a current of warm air some distance from the flame; and the film, which must be thin, then fixed by passing it a few times through the flame of the spirit lamp, taking care that it does not char. It is then stained carefully, without much heat, by the pikrin method. The bacilli appear bright red on a lemon-coloured ground, and, if present, are more perceptible than by any other method. In my opinion, it is the best stain for urinary residues in which the tubercle bacillus is suspected.

Spengler's method is simple, and is conducted as follows:

Having made a suitable film as above—

1. Stain with carbol fuchsin, warm, but without too much heat.
2. Pour off the stain without washing.
3. Pour on picric acid alcohol (consisting of equal parts of saturated solution of picric acid and absolute alcohol); after three seconds—
4. Wash with 60 per cent. alcohol.
5. Treat with 15 per cent. nitric acid till yellow (thirty seconds).
6. Wash again with 60 per cent. alcohol.
7. Counterstain with picric acid alcohol till lemon-coloured.
8. Wash with distilled water and dry gently at a low heat.

With a little practice this will be found an easy and quick method, and the extra time involved in the staining will be more than compensated by the ease with which the bacilli are found if present, and the consequent less time spent at the microscope. This applies particularly to urinary sediments.

[1] *Deut. med. Woch.*, February 28th, 1907, No. 9.

THE Belgian company which maintains a line of steamers to the Congo has arranged in future to pay its medical officers on a sliding scale: during the first year of service the rate will be 300 francs a month, during the second 350 francs, and during the third 400 francs. An engagement may, however, be made for six months only, such period covering three voyages.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

COMBINED SECTIONS OF LARYNGOLOGY AND RHINOLOGY AND OTOLOGY.

Mr. MIDDLEMASS HUNT, President of the Section of Laryngology, in the Chair.

DISCUSSION ON THE EDUCATION OF THE SPECIALIST IN LARYNGOLOGY AND OTOLOGY.

OPENING PAPERS.

I.—HOLGER MYGIND, M.D.,
Copenhagen.

THE EDUCATION OF THE SPECIALIST ON THE CONTINENT.

I INTEND to deal with the matter by giving first a short survey of the education of the specialist in our two branches of the medical profession as it is at present on the Continent. I shall then point out the defects which I think exist, and suggest their remedies, concluding by touching on the questions of qualification for these two specialities, and of their combination or separation.

There is, of course, no uniform education for the whole Continent, the difference between the various countries being great.

The Continental countries may be divided into three groups according to the extent in which the two specialities are officially taught:

1. Those in which oto-laryngology is officially taught at all, or nearly all the universities of each country;
2. Those in which this is only the case in some of the universities; and
3. Those in which there is no official teaching at all.

I speak of oto-laryngology, and not of otology and laryngology as two separated specialities, for they are united at most Continental universities, and also practised in combination by most Continental specialists. There were, for instance, in Germany in 1909, altogether 463 specialists who practised both otology and laryngology; 50 were otologists only; 68 practised laryngology alone; and 21 practised otology and ophthalmology combined.

But when dividing the Continental countries in these three groups we must remember that the number of universities in a country teaching oto-laryngology is not the sole expression of the development of the education in our branch of the healing art. In France and Italy, for instance, the standard of teaching is high at some universities, to the benefit of the whole country.

There are in Europe, altogether, a little over 100 universities, if we include the *Ecoles Préparatoires de Médecine* of France.

The table on p. 414 shows that Germany is far ahead of any other country as to the number of professorships in oto-laryngology, there being altogether nineteen universities with twenty-four chairs, five universities having each one chair for otology and one for laryngology—Berlin, Freiburg, Königsberg, Munich, and Würzburg. At all the other German universities the two specialities are taught together. This is also the case at nearly all the other Continental universities. The exceptions are the following: In Austria-Hungary there are three universities—Budapest, Prague, and Vienna—and in Italy one—Naples—where the two specialities are separated. In

Table Showing the Number of Professorships and Lectureships in Oto-laryngology at the Different Continental Universities, the Teachers of Each University being Generally Divided into Two Classes—Ordinary Professors, Extraordinary Professors, and Lecturers.

	No. of Universities.	No. of Teachers.	
GROUP I.			
Germany	19	24	8 O.P.; 16 E.P.
Austria-Hungary ...	9	7	1 O.P.; 6 E.P.
Scandinavian countries	5	5	1 O.P.; 2 E.P.; 1 L.
Holland	5	4	1 O.P.; 3 E.P.
Switzerland	5	3	1 O.P.; 2 E.P
Roumania	1	1	1 O.P.
GROUP II.			
Italy	20	8	3 O.P.; 5 E.P.
France	20	5	5 E.P.
Spain	10	5	5 E.P.
Belgium	4	1	1 O.P.
GROUP III.			
Russia	8	0	—
Greece	1	0	—
Portugal	1	0	—
Total	103	63	

O.P.=Ordinary professorships. E.P.=Extraordinary professorships. L.=Lecturerships.

Leyden (Holland) there is an ordinary professorship in otology combined with ophthalmology, and an extraordinary professorship in rhino-laryngology.

The highest standard of education of the specialist in oto-laryngology is undoubtedly also to be found in Germany. Austria is, however, not far behind, and to Austria is due the honour of having first introduced a system of teaching through the lectures and demonstrations given by the famous pioneers of laryngology in the middle of the last century, a system followed later by Politzer. Thousands of specialists in oto-laryngology from all countries have received an important part of their education from the famous teachers of Vienna and their successors.

Although there is no regular system of education in oto-laryngology in Germany or Austria, we may divide the practical education into three stages, through which the specialist generally passes both in these two countries and in most other Continental countries.

1. *The first stage:* The preliminary education which each medical student receives at the university. It is compulsory in most Continental countries, and extends over a period of one term.

2. *The second stage* is represented by the education which many future specialists receive, after having left the university, at one of the numerous post-graduate courses, which nearly every university and many hospitals offer, and which are given either by professors or by privat-docents attached to the university. In Austria they are, according to Frey, divided into six different kinds: (*a*) Clinical diagnosis and treatment, (*b*) functional tests, (*c*) bedside work, (*d*) surgical practice on the cadaver, (*e*) practical treatment and minor operations in out-patient department, (*f*) demonstrations and lectures on normal and pathological anatomy, histology and physiology, to which quite lately has been added (*g*) pathology and diagnosis of labyrinthine diseases.

3. *The third stage* in the education the future specialist receives as assistant at a special clinic attached generally to a university or a general hospital. At most Continental clinics one or a few of the assistants receive a salary, which, however, generally is small. A special hospital for diseases of the ear and the throat is a very rare thing on the Continent.

This third stage of the education is undoubtedly the back-bone of the whole education of the specialist, and it is only a rare exception that a medical man on the Continent nowadays is universally recognised as a specialist without having been for some time assistant at a public clinic. In Germany and Austria, and also in some other Continental countries, so much stress is laid upon this part of the education that one often meets specialists of considerable scientific reputation remaining assistants at a special clinic for a considerable number of years, in order to stand a good chance when a chair in oto-laryngology is vacant at a university.

After having been appointed assistant for a considerable period at a special clinic, and after having given proofs of scientific ability—in Germany an officially approved dissertation must be printed—the specialist may have in Germany, Austria, and Italy, the title of privat-docent conferred upon him by the university. This gives him the right of teaching at the university, and enrols him in that high, and by no means numerous, class of specialists from whom the professors are chosen.

In Italy, where the privat-docents are obliged to give a lecture and a practical demonstration before being nominated, there is, besides, another qualification, as students can select oto-laryngology for their final examination, and receive a certificate, which, however, gives them no special right.

It was originally my intention to go into further details, but I consider this superfluous since the excellent articles written by different Continental specialists have appeared in the *Journal of Laryngology*.

The Defects in the Continental Education.

I. *The Preliminary Education.*—There are, I daresay, some who will not agree with me in calling the instruction which the student receives in oto-laryngology at the university the first stage in the education of the specialist. But I think it is so, and, furthermore, I think it is an important part. For the mind of the student when young is much more open to receive lasting impressions, and in my experience many of the specialist's shortcomings are due to defects in his very first training.

(*a*) One not uncommon fault which the student acquires is superficiality in the examination of the patient. This fault is undoubtedly in many cases due to the teacher not having sufficient time to take each pupil individually and teach him all the details he should observe, because the number of pupils is often too great.

(*b*) Another fault connected with the preliminary courses at many universities is, I believe, the too great stress laid upon lectures. There are nowadays so many excellent textbooks that the student is able to acquire sufficient theoretical knowledge through these, and the exceedingly short time at command can be better used for practical work and especially in more detailed instruction.

(*c*) These preliminary courses do not end in a compulsory examination anywhere except in Germany. It is, however, only nominal there, as the examination is conducted by professors of surgery or medicine.

II. *Post-Graduate Courses.*—I think there is no defect worth mentioning, in that generally there is no overcrowding of pupils, the number in most places being strictly limited. But excellent as they generally are, they cannot, of course, represent a sufficient education for a medical man who intends to settle down as a specialist, as unfortunately many believe.

III. *The Education Received as Assistant at a Public Special Clinic.*—(*a*) The assistants have often, before entering the clinic, a very scanty general medical education, especially in surgery, one of the foundation stones of our specialities.

(*b*) The appointment as assistant is often of too short duration; many future specialists only work at a public clinic for some months.

(*c*) The great majority of public polyclinics or out-patient departments of hospitals are overcrowded with patients, and have comparatively very few well-trained senior assistants. There is, therefore, very often neither time for a thorough examination of the patients nor opportunity for control of the junior assistants by the superintending specialist or by the senior assistants. The cases are, besides, often badly recorded in the case-books, which is the more unfortunate as the same patient is often not treated by the same assistant throughout. I believe these defects of public clinics are very frequent and a very serious drawback to a thorough education of the specialist, and detrimental, of course, also to the patients, who, to be sure, often recover *post* and not *propter* the treatment received.

(*d*) Finally, many clinics in which medical men receive education as specialists have the defect that there are no wards attached to them, the student thus missing the opportunity of seeing more serious cases and larger operations

The defects of the education of the specialist in oto-laryngology which I have just mentioned are, with the exception of the superficial work done at many poly-clinics, not very serious. Anyhow, they do not prevent a young medical man who aims high from getting a thoroughly good education; but there is on the Continent, as everywhere, no regular system of education, the result being that many try to get through their special education as quickly as possible.

Remedies for These Defects of Education.

1. As far as the preliminary education at the university is concerned, I should lay stress upon—

(*a*) A more thorough and more individual teaching of the young student. This is only possible when the number of pupils is limited to ten or twelve to each teacher. In many cases, therefore, the professor must have experienced assistants at his disposal. Thoroughness in examination of the patient is, according to my experience, best taught by letting the beginner study a drumhead and describe all the details he observes. The drumhead has the advantage that the area to be examined is strictly limited and small, and that there are fixed landmarks in relation to which it is possible to localize every little detail minutely.

(*b*) I should further emphasize the importance of principally demonstrating to the student at first only ordinary cases. The student is often too much inclined to look out for rare or "interesting" cases.

(*c*) Above all, a few cases examined and followed thoroughly teach the student to observe and give him better experience than a great number of cases examined superficially.

(*d*) Lastly, I should point out the desirability of a compulsory final examination of each medical student at the university, conducted by the professor who occupies the chair of the speciality.

2. As to the post-graduate courses, I think the only thing to be desired is that they should be supported materially by the university or by the State, thus enabling instruction to be given gratuitously to as many as possible. This movement is already far advanced in Germany.

3. As to the remedies for the defects connected with the education of the specialist at its third stage—that is, when he is appointed as assistant at a special clinic—I think that:

(*a*) No medical man should commence his service as assistant at a special clinic without having been appointed, after his qualification as a practitioner, for at least one and a half years at a general hospital, of which time nine months should have been spent in a surgical department.

(*b*) After having entered as an assistant at a special clinic the minimum service should be one year. This time ought not to be considered sufficient unless the clinic works daily and has wards connected with it.

(*c*) Further, in each special clinic which serves for the instruction of the future specialist a sufficient number of salaried senior assistants should be appointed in proportion to the number of patients admitted. I think it is nowadays indispensable to have at least some salaried assistants at a clinic: they generally do more work and do it more thoroughly than non-paid assistants.

(*d*) Lastly, each such clinic should have wards attached to it for reasons I have stated before.

Qualification of the Specialist in Oto-laryngology.

The status privat-docent in Germany, Austria, and Italy is undoubtedly an excellent means of raising the standard of our speciality and for giving the medical man the stamp of a high-class specialist. In countries where a similar rank does not exist it must undoubtedly be a thing to be desired, but would, of course, take different forms in the various countries. I will not therefore go further into this subject.

Another, and different, question is, Ought there to be a diploma, compulsory or voluntary, representing the minimum required of a medical man intending to practise as a specialist in laryngology and otology?

A voluntary diploma of this sort would not, I think, be desirable, as it would be likely to give the bearer of it a high-class stamp, although the demands only represented a minimum.

I may mention that there is at present a scheme under debate in Sweden by which the Swedish Medical Association would grant specialists a sort of diploma by letting a board examine whether a member possesses sufficient education to entitle him to call himself a specialist. If the would-be specialist satisfied the demands, which should not be specified, each applicant's case being treated specially, he would be allowed to advertise himself as specialist in the papers in the manner recognized by the Swedish Medical Association.

No doubt the problem would be most easily solved by the medical organizations of each country taking the matter into its hands. But I doubt whether it would be the best solution of the question. To my mind a compulsory diploma, granted either by the university or by a special board, would be preferable.

The principal advantage of such a compulsory diploma would be that it would protect the public from such specialists as nowadays set up to practise—in some countries to a greater extent than others—without having sufficient theoretical and practical knowledge of their speciality.

I will only add that I think we have to-day got an opportunity of pushing the question of qualification further by asking Dr. Watson-Williams to take it up either at the International Medical Congress in London next year, or at the International Laryngological and Otological Congresses to be held in Copenhagen in 1915.

We must, however, not be blind to the fact that there are several practical difficulties in the way of the solution of this question; amongst them I should especially mention the necessity of all specialities working together.

As is probably well known, the question of combination or separation of laryngology and otology has been discussed much in Germany during the last couple of years—and the discussion has often been rather warm—without any agreement having been reached. One of the reasons of the disagreement is that these two specialities can never be entirely separated, as every otologist must have some knowledge of laryngology, and vice versa. Another cause of disagreement is that the question of separation or combination is to a great extent a practical one, which must be differently considered according to different circumstances. In smaller towns they will probably always be practised in combination, and it will always be difficult to obtain two chairs at smaller universities, or two departments at smaller hospitals. I think, however, that the greater the development is of the two specialities, the greater will the difficulty be for one man to master them both; and the time will surely come when they will be practised separately by most specialists, and taught separately at most universities.

II.—P. Watson-Williams, M.D.Lond.,

Lecturer on Otology, Rhinology, and Laryngology at the University of Bristol, and in Charge of the Departments for Throat, Nose, and Ear at the Bristol Royal Infirmary.

The education of the specialist in otology and laryngology demands our careful consideration if we are to serve our time and generation to the utmost advantage, for this, not self-interest, must be our dominant and guiding principle. That this question is exercising the minds of our specialist *confrères* far and wide is manifest from the valuable series of authoritative articles on the same topic from Denmark, Germany, Austria, France, Italy, etc., which have been published in the *Journal of Laryngology*: and I may recall to your minds other thoughtful papers, particularly that by Shambaugh of Chicago.

We are fortunate in having secured the co-operation of such distinguished international representatives of our specialist *confrères* as Professors Mygind and Birkett, and as they address you on the subject of our discussion as regards the continents of Europe and America I will confine myself to the position in Great Britain and Ireland.

Most of the more important hospitals associated with medical schools, as well as many other hospitals without teaching clinics, have now instituted departments in charge of specialists. In Ireland usually and in England occasionally our special branches are still associated with ophthalmology: but excluding Ireland, and also hospitals where the special work remains in the hands of general surgeons, I find that there are at least 55 British hospitals where, in all, 713 beds are set apart for throat,

nose, and ear cases, and in many hospitals the accommodation will shortly be increased. This fact alone suffices to prove that, by a general consensus of professional opinion, laryngology and otology are now regarded as special departments, separable from general medicine and surgery in the same sense as ophthalmology and gynaecology, although as yet there is a marked disparity in the position accorded to our speciality in various centres of medical work. What a contrast to the conditions that obtained but a few short years ago!

Antipathy to further specialism lingers yet in the minds of some physicians and surgeons, forgetful that they, the internal physicians on the one hand and pure surgeons on the other, are but specialists who demonstrate the universally recognized advantages of division of labour. And the pure pathologist of to-day does not contribute less to the advance of medicine and surgery because he specializes.

Most of the British special clinics, if under-equipped, are constituted on a sound basis; but in striking contrast are the one or two university clinics, where our *confrères*, men of high distinction in our speciality, have only the arduous out-patient clinics, with no beds allotted to them, and are thus forced to hand over to the general surgeon cases requiring admission for operation. Why a specialist should be made "a hewer of wood and drawer of water" to the surgeon it is difficult to imagine.

Again, in one or two hospitals with a special clinic I find that patients are not regularly referred to the specialist unless they are able to go first to the special out-patient clinic. Apart from the absurdity of providing at considerable cost a special department under the charge of a specialist, and then making it a matter of chance whether the very cases most urgently needing special experience ever reach the special department, these extraordinary regulations unfortunately retard the development of the special department, the material is not used to the best advantage, while the patient's interests may suffer thereby.

One can but grieve at the loss that such hampering regulations must involve, and not to laryngology alone, since a forward step in any restricted field of medical observation redounds sooner or later to the advantage of medicine and surgery generally, for all branches are but members of one body growing towards the light, yet nourished and sustained from one common source.

Now, although the position shows great advances, there yet remains much to be desired, and our medical colleagues, once convinced that our claims are well founded, will undoubtedly assist our endeavours to improve the position. But first we must know our own minds, and we may ask ourselves: What more do we want and why do we want it? My reply is that we want:

1. The due recognition of the sphere of otology and laryngology in the students' curriculum.
2. The more complete organization and equipment of the special departments in many of our teaching clinics.
3. Systematic post-graduate training of practitioners who desire to become specialists, with a distinctive degree or qualification for those who have rendered themselves worthy of such distinction.

The more one considers the subject of our discussion, the more certain does it appear that each one of these points is involved in the others.

Let us take these points seriatim.

1. *Training of Medical Students.*

Even yet medical practitioners are frequently sent forth as qualified men without adequate elementary training in diseases of the nose, throat, and ear, despite the fact that the curriculum has been extended for the express purpose of meeting this well-known defect. Special subjects should always be separately represented on the faculties of the universities and teaching schools by the heads of the departments concerned.

It is not quite fair to the student to insist on a paper acquaintance with a large number of surgical procedures which he can hardly ever utilize, and send him out into practice to lament his inability to deal with cases which come before him almost daily. Several universities in this country do insist on students attending a special clinic; others do not even go this far. But unless modern methods of professional examination are to be applied to the special branches, the student is practically invited, and sometimes compelled, to confine his serious attentions to those subjects which will help him to graduate. In the Universities of St. Andrews, the National University of Ireland, and the Conjoint Board in Ireland of the Royal Colleges of Physicians and Surgeons are, I believe, the only corporations where such a definite clinical course is obligatory *as well as examination by specialists.* Edinburgh, one of the most advanced centres as regards our speciality, with its splendidly organized teaching clinic, second to none in the United Kingdom, allows its candidates for graduation at the university a choice between pediatrics and oto-laryngology. One may well ask why both are not required? Students should be both trained and examined by teachers who possess as thorough knowledge of otology and laryngology, as we expect of the teachers and examiners in medicine, surgery, or gynaecology.

2. *Inadequate Equipment.*

Now when I speak of the inadequate equipment of so many of the existing special departments I do not refer to the provision of instruments nor to the lack of skill of those in charge of them. But, speaking generally, far too much "hack work" is thrown on the specialist in charge of a clinic for want of trained assistants. It is not very unusual to find that the part-time assistance of a frequently changing house-surgeon, who has had no more training than usually falls to the lot of a newly qualified man, has to suffice in this country, even when the amount of material necessitates the provision of *trained* assistants if the specialist in charge is to have adequate opportunities either for training students and practitioners, or for original investigation and research. In these respects we are for the most part lamentably behind Germany and Austria and some other foreign clinics.

Now the training of students and the better organization of special departments are not the immediate subject of our discussion, yet they constitute strong reasons for setting our house in order and determining what a specialist should connote.

3. *The Education of the Specialist.*

Let us consider the education of the practitioner who desires to restrict his practice to laryngology or otology or both, and aims at the charge of a special clinic.

The original charter of the Royal College of Physicians states that the reason for their incorporation was to "check men who profess physic rather from avarice than in good faith to the damage of credulous people." Why, then, should a member of the profession be free to assume a title which is intended to convey to his medical colleagues and to the public at large that he has acquired special knowledge and experience, unless he has had that amount of training that fairly entitles him to do so? Yet three months' work in a special clinic, and even less elementary training, is sometimes the sole credential of the self-styled specialist!

Physicians and surgeons cannot guard their titles as implying special experience in their own spheres, but they do safeguard their respective special degrees and diplomas, which not only their colleagues, but also the general public, apprise; and it is a question for our serious consideration whether or not we should do well to copy their example by affording facilities for a qualified practitioner taking a higher qualification in his speciality after a course of post-graduate study and practice *parallel* to that required of the consulting physician or the general surgeon.

Nothing is more obvious than that the greatest contributions to the recent progress of medical work in any field have generally come from those who have had large opportunities for practical experience in relatively restricted fields of observation; and as a hospital clinic—medical, surgical, or special—affords peculiar opportunities for scientific investigations and advancement of knowledge, those who hold office should regard their posts as trusts, and as far as possible render themselves competent to make such opportunities fruitful, not for themselves only, but for the credit of their school, for the benefit of the profession, and for the sake of humanity at large. The consulting physician and the surgeon have determined for themselves the particular training that will best fit them

for medical or surgical clinics. Why should not we as specialists do likewise?

No one could be more opposed to too early or too narrow specialism than I am, for it is certain that a sound upbringing in medicine and surgery is the only safe foundation for any special branch. But the tendency is to make another speciality, general surgery, the academic test of fitness in laryngology, while medicine, and even systematic training in our department, is made a secondary consideration, with a consequent danger of our becoming too exclusively surgical. Our kingdom cannot be divided into medicine or surgery, and we must divest our minds of the prejudice for ranging under one or two banners, for it is essential to the continued development of our own special branches on sound lines that they should be superstructures, broad-based on the whole range of general medicine, lest we exemplify the old Indian proverb: "A surgeon who is no physician is like a bird with one wing."

Those who specialize in laryngology and otology should have the advantage of a thorough acquaintance with the acquired anatomical facts and the physiology and pathology of the ear, nose, and throat, including the relationship and bearing of other territories on these regions—for example, diseases of the nervous system and the eye—with the history and development of operative measures, as well as wide clinical experience in the diagnosis and current methods of treatment of diseases of the ear, nose, and throat, and when the practitioner has undergone the requisite course of special training he should have the opportunity of proving his proficiency.

It is unwise to prolong unduly the probationary period leading up to an examination; our aim should be to ensure that a specialist has been properly trained in his department, and then leave him to develop by personal experience and make his own reputation. Hence before a candidate can present himself *at least* two years should elapse after qualifying for practice, and, in addition to one year devoted to general hospital practice, one year at least should be spent in attending regularly and exclusively recognized special clinics and courses in practical and theoretical special anatomy and physiology, etc. Possibly it might be considered wise to extend the period to five years' post-graduate experience before the special qualification was conferred, in which case no further examination but the presentation of a thesis should suffice.

The examination should be as thorough as that required for the higher medical or surgical degrees. For example:

First day: Three hours' paper on special anatomy (including embryology) and physiology.
Oral examination on specimens, and anatomical dissections, etc.

Second day: Three hours' paper on laryngology, rhinology, and otology.
Three hours' paper on general medicine, surgery, and pathology in relation to the special branches.

Third day: Examination and report on at least one ear, one nose, and one throat case.
Viva voce examination, demonstration of clinical methods of examination of patients, etc.

A system of post-graduate education should encourage the advancement as well as the acquirement of knowledge, wherefore full provision should be made for the original thinker.* I would suggest, therefore, as an alternative, that any candidate, having been qualified five years and who has held office in or who has regularly attended recognized special clinics for three years, might present an original research or thesis, which, if considered of sufficient merit, should exempt from a part or the whole of the examination at the discretion of the examining board.

I must touch on the vexed question of keeping apart or linking together otology and laryngology, for while of course they are separable specialities, the nose is an everlasting highway between them. Neither an otologist or laryngologist can afford to leave out of consideration the ear, nose, or throat, and to attempt to keep these branches apart when we are dealing with education would be like asking the chemist to abjure physics, and vice versa. The chemists and physicists do not merge because a knowledge of both chemistry and physics is the essential basis for a common academic degree, so shall we find that the fuller and more scientific training of the otologist and laryngologist in common will constitute the surest means of ensuring further specialization within our own territory.

But if the prevailing tendency to combine otology and laryngology persists, it will be due to factors far stronger and more deeply rooted than a common academic qualification.

As far as I can ascertain, the only examining body which hitherto has afforded opportunities for the examination of post-graduates who desire to specialize in laryngology and otology is the Royal College of Surgeons of Edinburgh. For their Fellowship each candidate is required to undergo examination in one special branch of surgery in addition to general surgery.

I gather that the examination extends over three days—namely:

First day: Two hours' paper on general surgery.
Two hours' paper on the candidate's special subject.

Second day: Two clinical cases in general surgery and cases on the special subjects are investigated by the candidate, who is subsequently examined viva voce on the result of his investigation. He is also questioned on the uses of various instruments.

Third day: A viva voce examination on general surgery, and on the special subject, when specimens are exhibited and described.

The time devoted to the special subject is about the same as that to general surgery.

While this is certainly a liberal move in the direction of providing a post-graduate qualification in the various specialities comprised in their list, it is open to criticism.

First.—There are no regulations laid down beyond requiring that the candidates shall have attained the age of 25, and shall have been engaged in practice for at least two years. Beyond that, the sole test is the ability of the candidate to satisfy the examiners in general surgery and in his special subject. Surely it is of far greater importance that the candidate should have worked for a specified period in special clinics; the examination merely serves to prove that he has used his opportunities intelligently. Again, the examination in special subjects should be more thorough than that of the F.R.C.S.E. For instance, recently one candidate had for his two cases a laryngeal carcinoma and a maxillary antral suppuration, no ear case at all, while another candidate had one ear case and one nose case, but no throat case.

Secondly.—The examination presupposes that laryngology and otology are subsidiary departments of general surgery, whereas they should be broad based on medicine as well as surgery, and our speciality to-day owes much to the leavening influence of those whose earlier practice has been medical rather than purely surgical.

A much sounder principle, in my opinion, is that adopted by the University of London, which now grants an M.S. in Odontology open to their Bachelors of Surgery. The fact of a candidate having the B.S.Lond. is sufficient evidence of a thorough knowledge of the principles of general surgery, as far as can be secured by any examinational tests. We may commend also the further regulation that the candidate for the M.S. may submit a thesis or published work embodying the result of independent research, and that if this thesis be judged of sufficient excellence, the candidate may be exempted from a part or the whole of the written examination. The tendency of some universities to grant diplomas in special subjects is, I think, to be deprecated; the course of special training and the examinational tests should be so thorough as to be worthy of a degree ranking with an M.D. or M.Ch., or a Mastership in Dental Surgery.

When we are accorded a proper share in the training of medical students, are duly represented on the board of studies at the universities and schools, and our speciality figures as a unit in the medical faculties, with organized and systematized post-graduate education, with opportunities for acquiring a distinctive qualification, we shall no longer be persuaded that the best preparation for a laryngologist and otologist is training to pass an examination on the details of prostatectomy, gastro-intestinal surgery, and almost everything but what pertains to an exact knowledge of our own territory, which is to be "picked up" as he wends his way.

*This would enable existing specialists of large experience to obtain the qualification.

III.—HERBERT S. BIRKETT, M.D.,

Professor of Oto-Laryngology, McGill University, Montreal.

THAT this subject has interested the profession for many years past is evident from the numerous contributions by writers on the status of specialism in its relation to general medicine, and of the specialists themselves, and I believe the time is now opportune for the medical profession to give expression to their ideas upon the subject, and especially through the medium of such an important body as the British Medical Association. I therefore wish to congratulate the Committee upon the selection of this subject for debate, and trust that the result will be to suggest lines along which the best ideals may be carried out and the object consummated later.

We all realize at the outset the truth of Osler's remarks as to "the danger of attempting to manufacture rapidly a highly complex structure from ill-seasoned material."

> The speedy success he continues which often comes from the cultivation of a speciality is a strong incentive to young men to adopt early a particular line of work. How frequently are we consulted by sucklings in our ranks as to the most likely branch in which to succeed, or a student, with the brazen assurance which only ignorance can give, announces that he intends to be an otologist or a laryngologist. No more dangerous members of our profession exist than those born into it, so to speak, as specialists. Without any broad foundation in physiology or pathology, and ignorant of the great processes of disease, no amount of technical skill can hide from the keen eyes of colleagues defects which too often require the arts of the charlatan to screen from the public.[1]

With this broad introduction to our subject, I will proceed to give in detail what is being done in the Dominion of Canada and the United States of America. In Canada we do not for one moment consider the question of educating the specialist in otology or laryngology, because the amount of material at the disposal of the various teaching bodies does not permit of it. Nevertheless, in McGill University at Montreal we have a post-graduate course—and this is the only university in Canada giving post-graduate work—the purpose of which is to instruct those practitioners who wish to be informed of all that is new in medicine and surgery; but in otology and laryngology nothing more than the rudiments in those branches are taught, and in such a manner that the physician is enabled to recognize what is normal and what is pathological in these special departments. Absolutely no attempt is made to carry the physician further than to better fit himself for the general practice of medicine.

The course begins at the close of the regular session, and is continued for about two months. The cases are drawn from the two large general hospitals—namely, the Royal Victoria and the Montreal General, which have over 500 beds between them, and out-patient departments in these special clinics, which have an attendance of 9,000 patients yearly. Attention is drawn to these particulars merely to show that while Canada is beginning in a small way to instruct the post-graduate, she is as yet not able to undertake the more important training of the specialist.

In the United States of America post-graduate teaching received its birth in the city of New York over thirty years ago, owing largely to the efforts of the late Dr. St. John Roosa. From this beginning it has increased enormously, so that at the present time there is not a city of any size where medical education is carried on which has not its separate and distinct post-graduate institution. To our American colleagues, therefore, is due the credit of first establishing post-graduate work, which, although not perfect, yet is showing marked rapidity of improvement.

The courses of instruction in otology and laryngology, having for their object the education of the specialist, vary considerably in the methods of teaching as well as in the amount of time allotted. To describe in detail the courses given in the various institutions whose curricula I have carefully p[illegible] would be wearisome, to say the least of it, so I will content myself with describing the courses as given in the largest medical centres, for it is there the post-graduate teaching is best carried out. The work may [illegible]

In the study of the anatomy of the special regions plenty of material is provided for the carrying out of [illegible] physiological and pathological studies are [illegible] laboratories under proper supervision. From this groundwork the post-graduate passes to clinical instruction in the out-patient department, and, having become more familiar with diseased conditions, takes up a course of operative work on the cadaver. As the student progresses he is given the position of "clinical assistant" in the department, thus enabling him to carry out much of the minor work, and at the same time affording him the opportunity to assist in the major operations. In some of the best institutions a position as resident is available to the more promising student, which allows him still further to widen his experience. The length of time allotted to these courses varies in the better institutions from six months to one year. At the close of one year's tuition the student is given a certificate of proficiency, but only after having passed a severe examination.

From this description it is evident that the ideal course of training of the specialist has not been reached. It is to be noted, for instance, that in these post-graduate courses no distinction is drawn between the teaching of the physician whose knowledge of the special subject is practically a negative quantity and the physician who has already acquired the preliminary training as to methods of examination, etc. The former is practically an undergraduate in these subjects, and no proper provision is made for his teaching. It is this individual who, having acquired a most meagre training, extending from six weeks to three months, is the most dangerous individual in the community, and who brings discredit upon specialism at large. This danger is increased by the issuing of a certificate, which is promptly displayed in his office, announcing that he has reached the position of a specialist.

The question naturally arises as to how the conditions may be met, and the foundation for the future more correctly laid. This, in my opinion, lies with the teaching of these subjects in the medical education of the undergraduate. In McGill University, in particular, where the course of study is, and has been for the past six years, one of five years of eight months each, the student in his fourth year is taught nothing but what is normal in these regions, beginning with anatomical demonstrations and dissections. Following this, the normal tests for hearing are demonstrated and carried out by the students individually. Then they are taught the use of the instruments for examination of these regions of purely normal conditions, in so far as they are met with in the out-patients' clinic.

In the fifth year the student deals with pathological conditions of the more common variety, which are exemplified in the patients themselves and in pathological specimens. The work is carried out in small groups of six men each, and not less than two demonstrations of one hour's duration each are given weekly continuously during the whole of each session. At the close of the session a clinical examination for the fourth-year student is held, and in the case of the fifth year both a written and oral examination is exacted. The work in these departments is obligatory.

I feel that such courses of instruction very well meet the needs of the general practitioner. If the medical teaching bodies would follow such a course, insisting upon otology and laryngology being compulsory subjects, it would make the way much clearer and simpler for the education of the specialist in these departments. In the Dominion of Canada the various provincial licensing boards not only demand attendance upon the subject during the student's career at college, but also have an examination upon them for the licence to practise. In many of the colleges and universities of the United States of America otology and laryngology are made elective subjects instead of compulsory, and it is at this very point that post-graduate teaching signally fails.

Having laid the foundation work of an embryonic specialist, I will now state what I consider to be best in the preparing of the specialist of the future.

A graduate who studies to be a specialist in any line needs also the education which will give him depth, background, and the historical significance of civilization and life in general, such as one might expect to find in a graduate in Arts. He should graduate from the best medical university. After graduation he should become a resident of a large general hospital, with the idea of not only enlarging his knowledge of medicine and surgery, but also of having his mind properly trained in thoroughness and detail. After one year of such training he should

engage in general practice for a couple of years for the purpose not only of becoming self-reliant, but also for the purpose of knowing human nature more intimately, which certainly cannot be obtained in hospital routine to the same degree.

The foregoing would, in my opinion, be an admirable foundation for the future specialist. If such be the beginning, how should the training be continued? In this portion of the subject I am in accord with Shambaugh,[2] of Chicago, who has written two very able papers on this matter, and whose views I quote somewhat at length. This training should be as much in the fundamental sciences of his speciality as in the clinical side. That is, special courses in embryology, physiology, and pathology should be taken up and studied for one year, and the only places in which this work can properly be done are those universities and colleges in which adequate facilities are afforded by well-equipped laboratories. This work should be put on the basis of genuine graduate work leading to the granting by the university of a higher degree, the degree of Doctor of Philosophy in Medicine. The offering of such courses, even by one or two of our best-equipped universities, and the granting of a higher degree, would serve to stimulate higher ideals and better preparation in the physicians all over the country entering the practice of specialities. These courses could readily be followed out during the two years which the individual would be engaged in general practice. It would be the means of keeping him fully occupied at a very critical period of his professional life, and at the same time considerably reducing the period of time allotted to his preliminary preparation.

Subsequent to this the would-be specialist should spend one year in acquiring the clinical side of his work at one of the well-recognized post-graduate schools. This work should be rounded off by a visit of several months to British and European centres, whereby his mental horizon would be enlarged through acquaintance with the work of those, and the individuals themselves, who are the representative men in their own respective countries.

Whilst such a plan as the foregoing might be followed by a few who have the best interests of the profession as well as their own at heart, yet there is, and will be, a larger number of medical men who, wishing to enter this special field of work, will do so by the shortest route and quickest method. It is these latter whom not only the profession but the laity must fear and suffer as a consequence of their ill-matured training. How can such be prevented? It can only be done in one way, and that is by legislation. If the term "specialist" implies, in the mind of the profession as well as the laity, a higher education, then it seems to me only right that those who make use of such a title should prove their qualifications by examination before a properly qualified board.

One more suggestion, in conclusion. The multiplicity of special societies, as is found particularly in the United States of America, is a distinct impediment rather than an assistance in promoting the advancement of our speciality. One really good association for those doing work in otology and laryngology, meeting once a year, would give ample opportunity for the presentation and discussion of all that is new and important in the progress of our speciality. Such an association could be attended by all those who are interested in this field of work, whether they are recognized as members prepared to take an active part in the discussion of the various subjects or not. The multiplicity of special societies simply tends to stimulate the filling of literature with statements which add nothing new, and which have for their purpose chiefly the advertising of the writer.

REFERENCES.
[1] Osler, "Remarks on Specialism," *Boston Med. and Surg. Journal*, 1892. [2] George E. Shambaugh, "The Preparation of the Specialist," *Journal of the American Medical Association*, 1907.

DISCUSSION.

Mr. T. Mark Hovell (London) considered it essential that examination in laryngology and otology should form part of the final examination, and that it was a grave retrogressive step to separate in hospital practice the departments for treating affections of the throat, nose, and ear. As regards the education of the specialist in laryngology and otology, in addition to a sound general education it was essential that he should be well qualified in all special subjects and especially in ophthalmology, dermatology, gynaecology, and bacteriology. A knowledge of gynaecology would enable the cases of throat trouble due to the reflex irritation of pelvic disorder to be detected and referred to a specialist in that department. In support of this he cited several cases as examples in which treatment by a gynaecologist had relieved disorders of the throat and even of the ear. Mr. Hovell concluded that, broadly, without some knowledge of such special subjects the laryngologist was apt to be too microscopic.

Mr. F. H. Westmacott (Manchester) said that they had to consider (1) the education in special subjects for those about to engage in general practice, and (2) those who intended to devote their lives to the special practice of the regions of the ear, nose, and throat. For the former a compulsory attendance at a recognized clinic to examine cases and attend demonstrations was all that was necessary, provided questions were asked in these subjects at the final examination for a degree. He should be trained to the use of instruments of diagnosis, and learn to recognize the normal from pathological appearance of the various organs. For the specialist the requirements were: (*a*) A higher degree; (*b*) a residence in a general hospital as house-surgeon and house-physician; (*c*) a thorough knowledge of the anatomy and physiology of the nose, throat, and ear, acquired by the study of skilful preparations and dissections; (*d*) a close and intimate study of cases in a clinic of large dimensions and variety of cases, operations, and after-treatment. He could say without fear of contradiction that this training could only be obtained in the clinics of the larger university towns on the Continent. From personal knowledge he had learned that one must go through the higher special training in a place where all the material could be collated and systematically dealt with. He thought the question of a special degree was quite impracticable and unnecessary. Practical training, and not theoretical, was what they required. In this country there were no clinics where first-rate men could devote the necessary time to hospital teaching, owing to the large size of their private practice, and they had not an adequate staff of highly-trained assistants or the number of cases and materials to carry out the education required. This was possible abroad, owing to the chairs at universities in these subjects. The work for teaching a student and that for a specialist were widely different; while the former could and ought to be carried out in every medical school, the latter was possible only in a few selected places.

Dr. Jobson Horne (London) argued that it was not necessary nowadays for the embryo specialist to go abroad. He thought that anatomy and histology were of prime importance. They were somewhat handicapped in this country by having to deal with people who had hardened their hearts against specialists. Instead of granting a certificate, he was in favour of the student having to write a thesis. It was time that they set to work to break up the notion that any one was fit to do throat, nose, and ear work. He thought that all specialists should be examined by the State before being allowed to assume the title.

Mr. Robert Woods (Dublin) suggested that while the professional education of the specialist was of the highest importance, the education of the student's eyes and fingers in a physical laboratory or workshop should not be lost sight of. This matter was of even greater importance in the case of the oto-laryngologist than the ordinary practitioner. The student could then before he entered for medicine at all educate his tactile and muscular senses, and acquire a practical knowledge of the properties of matter in a way that must prove of the greatest advantage in the practice of a branch of the profession which was essentially a manipulative one.

Dr. William Permewan (Liverpool) agreed with other speakers that England was far behind most other countries in the teaching of oto-laryngology. They were in a condition of utter chaos in this country. Apart from the question of higher degrees, and making their subjects compulsory in qualifying examinations, the position of the

specialist was still in some hospitals extremely difficult and anomalous. The position of the specialist should be on exactly the same plane as that of the general surgeons and physicians. He was inclined to favour a compulsory examination by specialists before admitting men to the fold.

Sir ST CLAIR THOMSON (London) said that Dr. Mygind's paper again showed how well organized oto-laryngology was in Germany, and how in this country they still muddled on in the old way. But they must accept this country and its ways as they found them: the national habit was to evolve slowly, and he himself had much less faith in examination and legislation than in slow and steady evolution. Dr. Watson-Williams's proposals were ideal, but he asked too much. He himself was not a crusty conservative in this matter; he felt strongly that progress should be pushed on, but that it was best done by their own personal exertion and their corporate life. They could do much by showing that they were neither physicians nor surgeons, but a combination of both; that they were not mere tradesmen; that they were doing sound and scientific work in their schools, hospitals, and medical societies, and that they did not shirk work, either in private or in hospital. They should insist on the importance and dignity of their calling by demanding beds and a proper equipment in the hospitals they were attached to, and by urging the necessity of training and examining all students in oto-laryngology before giving them a diploma. Until they had raised their own standard and dignity, and until they insisted on the absolute necessity of oto-laryngology for all pass examinations, he thought it unreasonable to put forth a demand for a separate and particular examination for a specialist. They must first improve themselves and their work, and the material out of which specialists were made, before they tried to mark them off by examination.

Mr. GEORGE JACKSON (Plymouth) said that he had drawn attention to this subject in the General Medical Council when he was a member of that body. In reports of various examinations it was the rarest thing to have any questions asked in either otology or laryngology. At present examinations were conducted too much on the Chinese system. No one could obtain a diploma in a German university without showing, by production of his notebooks, the work he had done in the various laboratories and clinics. There were great objections to the multiplication of diplomas. Already there were examinations by various bodies for a diploma or degree in psychiatry, so that after a time a man would have to be passing no end of examinations, which would absorb more time than it was possible for the ordinary man to devote to the subject. He could not therefore agree with the introducer of the discussion as to the necessity of a special diploma or degree.

Dr. DAN MACKENZIE (London) said that the subject divided itself into two parts—first of all, the education of the medical student in their speciality; and, secondly, the education of the specialist himself. As regards the former, it should not be forgotten that what he should be taught was to recognize the occurrence of the dangerous symptoms. For example, there were few or no general practitioners who realized the meaning of vertigo in a case of chronic middle-ear suppuration. These were the matters to which the students' attention should be directed, and not to details of treatment or to manipulative measures. With regard to the training of the pure specialist, the speaker, after some hesitation, had arrived at the conclusion that examinations and specialist degrees were unnecessary in this country. There was no great abuse of public confidence by pseudo-specialists in Britain, and until there was they could not approach the General Medical Council with a resolution asking them to make such qualifications compulsory. Turning to the education of the specialist in this country, he agreed with the speakers who said that it was not so poor as Mr. Westmacott had made out. The speaker had participated in the organization of the teaching at the special hospital with which he was connected, and efforts had been made to make this teaching thorough and careful. Of late the classes had been arranged so as to conduct the practitioner from the elementary to the more advanced stages of their art, and, judging from the students who attended, these methods of instruction seemed to be pretty well appreciated.

Dr. WALKER DOWNIE (Glasgow) said that reference had been made by several speakers as to the desirability of including laryngology and otology amongst the compulsory subjects in the medical curriculum. Was it not the case that, by a recent ordinance of the General Medical Council, those two subjects had been placed under the category of compulsory subjects? In Glasgow, where, up till now, attendance on a course of instruction in laryngology had been optional, fully 90 per cent. of those presenting themselves for the degree examination at the university had attended a course of practical instruction in laryngology. Henceforward attendance by the students on a course of instruction in laryngology, and also in otology, was to be compulsory, and so that important point had already been attained.

The PRESIDENT of the Laryngological Section, Mr. Middlemass Hunt (Liverpool), thought that the establishment of paid assistantships or fellowships in connexion with the various clinics throughout the country would enable men to devote a longer time to training themselves before entering on special practice. The short time which many gave at present was largely a question of expense. Men could not get the prolonged training advocated by the openers of the discussion unless they possessed private means. He did not think the examination test was reliable as to a man's fitness for practical work, and he deprecated the multiplication of diplomas and degrees.

Dr. HERBERT TILLEY (London) thought the evolution of the ideal specialist entailed the co-operation of so many factors that one could scarcely hope these would all be secured by any cut and dried curriculum and still less by legislation. He agreed with Sir StClair Thomson that the specialist was born, not made, and for any special line in medicine or surgery to secure the respect of the general profession, those who elected to work in it must necessarily have had a good training in general medicine and surgery, and then by their own good work so advance the knowledge in their speciality that they would command the honour and goodwill of the general profession. Speaking from personal experience, he said that the two to three years which he spent in general medicine and surgery, after leaving his hospital, had proved to be of incalculable value in enabling him to view any special case in true perspective. In University College Hospital, London, each student was compelled to work for three months in the ear and throat and other special departments, so that they, at least, might learn to know how to examine a case, familiarize themselves with instruments and apparatus, and above all recognize the difference between the normal and pathological. It soon became evident to the teacher which of the students had a natural liking for the work or were possessed of manipulative skill, and from these he chose his assistants, who afterwards might give their attention solely to this special work.

Mr. WAGGETT (London) wished to associate himself with Sir StClair Thomson in expressing the view that the genuine expert specialist was made not by diploma but by a process of natural selection, and he thought that the committees which nominated for hospital appointments formed the chief instrument for the advancement of that natural process. The bulk of their work upon the throat and ear was such as could and should be dealt with by any fully qualified practitioner, and it was of the utmost importance that the test in these subjects in the pass examinations should be genuine, just as for a long time had been the case in obstetrics and ophthalmology. If the general practitioner acquired a knowledge of these particular subjects he would see to it that the pseudo specialist would in the future have but little field for practice. It was, therefore, in the education of the medical student, and not in the creation of a fresh "honours" diploma, that the solution of the problem would be found.

Mr. MACLEOD YEARSLEY (London) said that before reaching the ideal of Dr. Watson-Williams much spade work

had to be done and much ground to be prepared. It seemed to him that the question, in this country at any rate, was largely one of evolution, and, if they were to educate adequately those of their students who were to become the specialists of the future, they must begin by training those who intended to be general practitioners only. For this otology and laryngology must be made compulsory subjects and must be included in examinations for qualification. The teaching should be confined to such general principles as would make the student to realize the importance of the specialities and enable him to make a decent diagnosis and know when to seek help. This would not add greatly to the already heavily-burdened curriculum, but it would have the advantage of coming at the best time, when the student's mind was plastic and more open to receive and retain impressions. This would be better than post-graduate teaching, which, in this country, was open only to those who had time and money to devote to it. Once it was appreciated that instruction in oto-laryngology was an indispensable part of the education of a general practitioner, and the necessity for such education was recognized by the licensing bodies, the way for the education of the specialist would become more easy.

Dr. ANDREW WYLIE (London) did not think that several of the speakers understood that the subjects of laryngology and otology were compulsory in the medical curriculum, and therefore those laryngologists who did not get a proper position in their hospitals should demand it. The teaching of the special subjects in London and, he hoped, in the provinces was excellent—in fact, superior to that abroad. Their clinics were excellent and their material ample. He personally had not found better clinics either in Berlin, Vienna, or Paris, but in this country they were very defective in their pathological departments. This defect was due to their being handicapped by neurotic Governments. *Post-mortem* examinations should be compulsory on all cases in which the surgeon desired them.

The PRESIDENT of the Otological Section, Mr. Hugh Jones (Liverpool), agreed with Mr. Woods that the training of the eye and hand were of very great importance.

REPLIES.

Dr. MYGIND, in his reply, said that it had been his experience that the practical education of the specialists in oto-laryngology in many English polyclinics was excellent, and many foreign specialists had, like himself, received an important part of their education here. If there were serious defects to mend, he thought it important to begin reform work in the education of the student.

Dr. WATSON-WILLIAMS expressed his gratification at the unanimity of opinions elicited on the more important matters submitted for discussion, although on some points in his paper some misapprehension had arisen. Dr. Permewan had summarized in one sentence the purport of his opening remarks—namely, that the specialist should be placed on the same footing as the physician and surgeon. The question of having a distinctive qualification required further consideration, and indeed was a minor matter compared with the importance of ensuring full and systematic training. But at the present moment the University of London, for instance, enabled its graduates to take their further and full degree in many special subjects—namely, State medicine, gynaecology, mental diseases, pathology, odontology—and the principle might be extended to their own special branches. At any rate, in this country the only way of getting regulations laid down governing a course of study was through a university or other corporate body granting degrees or diplomas. It had been suggested that requiring five years to elapse after qualifying for practice before the distinctive qualification of a specialist was conferred would involve the candidate in too much expense. But he would point out that if the tentative suggestions he had made were adopted the candidate would still have the same opportunities for practice as he had now, and he could pass all his examinations, if he wished, two years only after becoming qualified. He (the speaker) felt, however, that it might be advisable to ask for fuller clinical experience, and, after all, it was not so very unreasonable to expect general medical and surgical experience, and the acquirement of a masterly knowledge of the speciality should extend in all to five years before a practitioner obtained a specialist's highest qualification, particularly if scientific research and investigation was to take the place of examination.

Dr. BIRKETT said that he was delighted to learn from the reading of the papers that there existed a unanimity of opinion regarding the foundation work of the future specialist. He felt that the fundamental principle in the education of the specialist was the medical education of the student himself. Regarding the opinion expressed against legislation, it must be borne in mind that this was only meant to apply to Canada, and the idea was to protect the profession against those individuals of good standing who saw fit to enter this special field of work by an extremely short route.

SECTION OF OTOLOGY.

Mr. HUGH E. JONES, M.R.C.S., President.

PRESIDENT'S INTRODUCTORY REMARKS

IN welcoming the members of the Section, the President called attention to the subjects which had been set down for discussion, and pointed out that the keynote of them all was *prevention*—the prevention of deafness or the prevention of the sequelae of acute otitis media. In the latter discussion it was interesting to them to have the collaboration of a fever man. He wished to take this opportunity to advocate some sort of scheme for forming a collection of material upon which young otologists could work. The committee of the Royal Society of Medicine were considering this question. It was of the utmost importance that every young otologist should have material to work on. He wished to extend a particular welcome to their visitors from overseas who were attending the work of the Section.

DISCUSSION ON ACUTE SUPPURATIVE OTITIS MEDIA, ITS NEGLECT AND PROPER TREATMENT.

OPENING PAPERS.

I.—ROBERT H. WOODS, M.B., F.R.C.S.I.,

Surgeon for the Throat, Nose, and Ear to Sir Patrick Dun's Hospital, Dublin.

WHEN speaking of acute suppurative otitis media, or as it is still frequently called, acute abscess in the middle ear, it is well to remember that we are dealing, not with a true abscess, but purulent inflammation of an epithelial tract of a highly specialized nature, and following a complex course, in the middle of a dense bone.

It is safe to say that nearly, if not quite, all middle-ear inflammations result from direct infection by continuity of tissue from the naso-pharynx along the Eustachian tube. Time does not permit that I should say anything about determining causes.

Otitis media may be of any degree of severity. The variety of the microbe, its virulence, and the power of resistance of the patient, form three factors capable of producing effects that may vary from a hardly discernible blush, slowly entering, and, after many days, modestly retreating, to a fulminating blaze that disorganizes the organ of hearing within a few hours.

Whatever cause may have started the infection, the clinical course pursued by the disease is for all purposes a constant one, varying only in one highly important respect—namely, severity. This severity is invariably directly proportional to the rapidity of the onset.

The first effect is to produce an erythema of the petrous epithelium, including under that term not only the tympanic cavity and membrane, but an indefinite amount of the mastoid cells. As the process advances, the next effect of note is that the outer end of the Eustachian tube where it lies in the bony canal becomes choked. Air is now no longer supplied to the tympanic cavity; there is

nothing to compensate for the air absorption by the walls, more active now than normally on account of the dilatation of the vessels, a negative pressure is established in the cavity, and the membrane becomes retracted. The effect of this negative pressure is to superpose on the active hyperæmia of the inflammation a passive one, which, according to the doctrine of Bier, must be beneficial. This retraction, however, is only observable in very slow cases, and may be regarded as absent in the more rapid ones. Serum exudes from the epithelium into the cavity, the negative pressure is relieved, the drum reverts to its original position, and, finally, a positive intratympanic pressure is established, the membrane being bulged out towards the meatus. The positive pressure tends to cause a passive anæmia of the walls, which to some slight extent counteracts the active hyperæmia, and must therefore be regarded as a bad influence, helping the invasion by suppressing the inflammatory process by which that invasion is combated. As the secretion of the fluid continues, one or other of two things must happen—either the fluid leaks slowly away through the Eustachian tube, or if, as is the rule, the choking is too complete to permit this, the intratympanic pressure increases until rupture of the membrane relieves it by giving exit to the fluid into the external meatus.

The two most common accompanying symptoms of this process are pain and fever, their degree depending on the acuteness of the attack. These should abate, or entirely subside, when rupture takes place.

It must be borne in mind that, varying with the severity of the attack, the length of time occupied by this sequence of events varies within wide limits. Days may be occupied in approaching any given stage: matters at that stage may come to a halt, and the process subside again, leaving the patient none the worse. Or, on the other hand, the whole category may be gone through in a few hours. I have seen a tympanic membrane appear perfectly normal one morning, and on the next found it, not merely perforated, but destroyed. These fulminating processes are only met with in acute febrile disorders, especially measles and scarlatina.

If we examine the fluid shortly after rupture of the membrane, though it may occasionally contain flaky muco-pus, we usually find it of a serous character, showing but few bacteria, and not many pus cells. It does not appear to matter much whether rupture takes place soon after the beginning of an attack, or is delayed for days by its mildness, the character of the fluid is, except in the fulminating cases, generally the same. In a day or two the serous fluid changes to muco-pus, showing large quantities of bacteria and pus cells under the microscope. The discharge, then, if the case is left untreated, persists an indefinite time, and may, when subsequently examined, be found to contain bacteria of many kinds; and according to the length of that time it is classified in the old and useful, if somewhat inaccurate, way, of acute and chronic.

The question as to what is the essential difference between an acute and a chronic otitis media is one of the highest practical importance. Why is it that, of a number of cases beginning in precisely the same way, and apparently due to the same cause, some should heal kindly enough, and others persist to imperil the patient's life?

In other words, what constitutes chronicity in otitis? The view most commonly held is that the difference is one of degree. That, owing to some defect in the patient's defence, the infection which originally started the otitis obtains in some cases a firmer and more deep seated hold than in others. That, after the first flush of resentment on the part of the body, a kind of truce is established in which tolerance of the invaders is, as it were, set off against their active hostility. That, in other words, it is an arrangement come to without any third party intervention between the invaders and the body invaded. That the pathological tissue changes associated with chronicity which form the entrenchments behind which the invaders find themselves sufficiently strong to exact such terms, are a first effect of the struggle. There is much to be said for this view, especially if we allow as indeed we must that such effects as necrosis of the ossicles may take place within a few hours of the start of the process. But, in addition to permanent pathological tissue changes in the tympanic cavity, acute and chronic otitis differ from one another in the character of the discharge. Acute otitis usually has but a single type of bacterium present, while in chronic otitis one commonly finds a variety of forms of micro-organic life. On the view of its nature above expressed these are the effects of chronicity; and it is true that, if chronicity is once taken for granted, the wonder would be if the discharge remained a pure culture.

It is now sixteen years since this subject first engaged my serious attention. I was at that time attached to the Hardwicke Fever Hospital. As a result of my work there, I concluded that this view of the nature of chronicity was not correct. My experience since that time confirms me in that belief. I believe that the bacterial contrast between acute and chronic otitis is no mere accident, but that it constitutes, or at any rate causes, the fundamental and essential difference between the two classes; that an acute otitis is caused by one organism, a chronic by several: that every otitis is acute to start with, and only becomes chronic as a result of direct infection from without at some moment in the history of the case after rupture of the membrane: that the original infection, if not aided and abetted, subsides like an acute cold in the head as the virulence of the microbe decreases and the resistance of the patient mounts. If, however, in the course of an acute otitis the discharge lying in the external meatus becomes contaminated with casual dirt, it is inevitable that new infections should spread through the warm and moist pabulum to the tympanic cavity and its adnexa, and that many varieties of organisms should be introduced where only one existed originally. These then prolong the process; and, even admitting that some of them may be combated and destroyed, it will not happen to all at the same time, and is not likely to happen to saprophytic organisms at any time. There will always be some left to carry on the evil work until, as always happens when epithelium lies long in contact with pus, degeneration takes place, a cultivated tolerance of the invaders is induced, and true chronicity is established.

If this view is correct, it should follow that chronicity is a preventable condition, and if chronicity can with certainty be prevented on this assumption it is strong proof of its truth—in fact, the only possible proof. Both these propositions are in my judgement and experience quite true.

As already mentioned, being greatly impressed with the ravages made by chronic suppurative ear disease, especially in connexion with acute specific fevers, I in 1896 undertook an investigation into the matter during an epidemic of measles and scarlatina in the Hardwicke Hospital, Dublin. In five months I had watched considerably over 300 cases. In every case a daily examination was made and the condition of the ears noted. The first 100 cases or so were only observed. No interference was made with the treatment, or rather want of treatment, then in vogue. My reports are to be found in the *Dublin Journal of Medical Science*, January, 1893. Though I have—as is, perhaps, not unnatural—modified some of the views I then expressed, my main conclusions were, I believe, correct.

I observed that most of the cases followed clinical courses precisely parallel with the ordinary otitis media from so-called "cold," some advancing to a certain point and subsiding again without necessarily suppurating, others, after an indefinite time, ending in a rupture of the membrane, which might heal kindly enough after discharging for a week or two. But I also saw a considerable minority of cases where destruction of the membrane took place—a phenomenon not met with in ordinary otitis. In all such cases the destructive process was amazingly rapid, occupying at most only a matter of hours. In all cases microscopically examined only a single organism was found immediately after discharge appeared. For all these reasons I therefore concluded that the otitis of scarlatina, of measles, and of the ordinary acute variety, were all essentially the same process, and that the destruction of the membrane was only the effect of bacteria of exceptionally high virulence in a patient whose resistance was exceptionally low.

I further concluded that the essential difference between acute and chronic otitis media is that between monosepsis and polysepsis, and gave it as my opinion that,

It requires, in an ordinary case, little more than elementary cleanliness in order, by preventing this epi-infection, to ensure

that the inflammation may subside and the membrane heal in a few weeks, leaving the patient little, if any, the worse in health or hearing.

I then recommended the following routine treatment for the ears in all cases of eruptive fevers: "On admission every patient's ears are to be cleansed by syringing with carbolic lotion 1 in 60. If suppuration occurs the discharge is to be removed by syringing twice daily, or more frequently if profuse. Boric powder is then to be insufflated or boralcohol instilled." These recommendations have ever since been carried out in the Hardwicke, with what results I shall let the present physicians to that establishment speak.

Dr. J. B. Coleman, C.M.G., writes me on May 9th, 1912:

> Since the epidemics of measles and scarlatina during the winter months of 1896-7, during which you made a daily examination of the ears in the Hardwicke Fever Hospital, I have followed the lines of treatment recommended by you with the most satisfactory results. In *all* cases early and systematic cleansing of the external ear passages is carried out. In cases in which suppuration occurs it subsides rapidly under treatment with gentle syringing with alkaline lotion, followed by instillation of boric alcohol drops. Of late years I cannot call to mind a single case in which the patient left the hospital with the ears "running." No later than last week I pointed out this fact to the students, and, on appealing to an experienced sister in the ward, she corroborated my statement.

Dr. O'Carroll, Senior Physician, endorses Dr. Coleman's statement as to results, and adds the interesting clinical point, that while in measles patients generally give the attendant some reason to suspect when the ear is becoming involved, in scarlatina they are so sick and sore about the throat that no complaint is made, and the discharge appears without premonitory symptoms.

Even an *advocatus diaboli* would hardly assume that the great number of cases, averaging hundreds annually, treated in a large fever hospital like the Hardwicke of late years have been different in type or that the improvement in their ear lesions was due to some accident outside the treatment. The conclusion is forced on one that the great change wrought in these patients since the treatment above referred to was adopted, is proof of the correctness of the theory on which that treatment was based.

Whilst the change from monosepsis to polysepsis must be regarded as the cause of acute otitis becoming chronic, it must not be forgotten that it is possible for a single infection to be chronic from the first. Acute necrosis of the ossicles and tuberculous disease are both examples. But they are rather illustrations of the ambiguity of the term "chronic" than exceptions to the rule just now laid down. Of the former we can say that effects of such severity are rare, and are not connoted by the term "otitis media," and that it is really an acute monoseptic infection complicated by the presence of a foreign body, the necrosed bone. As to the latter, tuberculous otitis is never acute. If it were it would have a better chance of curing itself. The essential reason for the chronicity of tubercle is that it excites little or no resentment in the invaded tissues, and the defensive powers of the body are not called into play with sufficient vigour to beat off the infection. We may proceed a step further, and say that if an infection is acute (that is to say, of a kind that excites the resentment of the tissues as evidenced by inflammation) there is a strong presumption that, in a fair stand-up fight between the invaders and the protective mechanism of the body, it ought not to become chronic, and that if it does so the "ring" has not been fairly kept. Of course, an infection may be mixed, and this will contribute to its severity, but ought not to determine its chronicity unless we assume it to be *ab initio* polyseptic within the meaning of the term as applied here.

Any tendency, therefore, to regard things as at their worst when pus appears must be combated. Though it is true that the ear is septic, and

> All the king's horses and all the king's men
> Cannot make the organ aseptic again,

we can prevent it from becoming polyseptic, and one devil is preferable to seven. This, then, should be the keynote in all treatment in acute otitis—to recognize that the process is initially a monoseptic one, and that the one thing necessary to bring about a cure, or rather to permit cure, is to prevent polysepsis.

It will be sufficient to indicate in the broadest way how this should be done. First, the discharge should be removed from the meatus by efficient syringing with sterile water, if slightly alkaline so much the better, as the muco-pus will come away somewhat more readily. This may be repeated as often as the discharge appears at the external meatus, but three or four times a day is usually enough. After careful syringing the ear should be dried. Then—twice daily—after syringing and drying, the meatus should be filled with some antiseptic, either in the form of a lotion, or a powder, such as boric acid. Personally, I use boralcohol, which is a saturated solution of boric acid in 40 per cent. to 45 per cent. alcohol. There is only one drug commonly prescribed as an ear lotion against which I have a prejudice, and that is peroxide of hydrogen. This, if used in any but the mildest strength, is apt, by infiltrating the tissues and then liberating its oxygen, to cause a surgical emphysema, which may lead to dangerous dissemination of the infection. Children have a great tendency to put their fingers in their ears when they feel discharge there. I believe this to be a most fruitful cause of polysepsis, but the danger may be averted by tying a cotton or linen cap over the auricle.

As to the management of acute otitis media: In mild and slowly progressive cases, characterized by little or no febrile disturbance, slight pain, with injection along the handle of the malleus, and without bulging of the membrane, it will be sufficient to keep the patient in an even temperature, administer a purge, and for local treatment apply moist heat, either by Leiter's tubes covered with moist gauze, or by the more homely and equally efficient method of getting the patient to hold the ear for a quarter of an hour or so over a large jug of boiling water, the mouth of which has been covered with several layers of flannel.

The application of warmth is always soothing to pain, and to this is no doubt due the popularity of instillations of warm oil in the ear in such cases, but the principle of putting any decomposable material into a meatus where discharge may subsequently appear is obviously a wrong one, and is inexcusable when an effect as good, if not better, may be had by the more cleanly methods already indicated. If, however, warm drops are demanded, glycerine and water in equal parts may be used. This fluid will not decompose, and its influence is in the direction of antisepsis.

I do not think there is much, if any, advantage to be gained by administering drugs, but sodium salicylate and its derivatives are popular remedies, and there is not much to be said against them.

If the membrane is bulging, myringotomy should at once be performed by a linear incision behind and below the handle of the malleus. In strong-minded adults this may be done without a general anaesthetic; no local anaesthetic yet devised renders an incision into an inflamed membrane painless. But children, and those who shrink from even a momentary pain, should be put to sleep; nitrous oxide is quite suitable. The operation is both simple and safe, and only needs proficiency enough in the use of the forehead mirror and speculum to be able to see what goes on.

When exit has been provided for the intratympanic fluid the course of acute otitis is a simple and perfectly definite one. The pain subsides and the temperature drops in a very short time, at most a few hours. But if this does not happen it ought not to be taken for granted that the wound in the membrane is too small. Valuable time is sometimes wasted in repeating myringotomies. It ought rather to be assumed that the tympanic cavity is not the part of the temporal bone chiefly affected. If the mastoid is oedematous, this will of course be obvious, but the assumption should be made irrespective of whether the soft tissues over the mastoid process show signs of inflammation or not. The next step should be to open up the mastoid antrum, and see that proper drainage is provided. Diploitis should be followed, and if doubt exists as to the health of the meninges, the middle and posterior fossae should be opened—a perfectly safe procedure if no violence is done to the dura. For reasons above indicated, if not as a matter of ritual, the operation and subsequent dressing should be carried out with scrupulous technique. Complete healing, both of the membrane and of the wound, may in such a case be expected in a week or two. The radical operation should never be undertaken in a monoseptic case.

In acute otitis media intracranial complications are rare, but when they happen they generally assume the hopeless form of acute diffuse leptomeningitis.

In children with acute otitis there are frequently symptoms of cerebral irritation, which subside when the membrane ruptures or is incised. How far such symptoms are due to local extension of the inflammation is a doubtful point. There can be no doubt that one factor contributing to intracranial extensions is a positive pressure of infected fluid in the tympanic cavity, and for this reason, if for no other, early myringotomy is indicated in every such case.

In conclusion, let me say the proper handling of uncomplicated otitis in acute fevers ought to be as much a matter for clinical physicians as for otologists, but I fear that their education in the subject, as well as that of the practitioners they are helping to turn out, still leaves much to be desired.

II.—CLAUDE RUNDLE, M.D.,

Superintendent, Fazakerley Hospital, Liverpool.

THOSE of us who have to deal with acute suppurative otitis media occurring in the course of the exanthemata have to confess that the measures which they employ for the treatment of this condition are largely palliative or expectant. We are agreed that a complication so fraught with danger to the subsequent welfare of the individual should have the advantage of any operative or therapeutic measure which you may commend to us, and it is with this object in view that I have accepted your invitation, Sir, to take part in this discussion.

One word as to the frequency of otitis media in the course of the exanthemata. The proportional incidence in all cases of scarlet fever in the Fever Hospitals of the Metropolitan Asylums Board is 15 per cent., at the Liverpool Fazakerley Hospital 9 per cent. The more favourable result obtained at the latter hospital is, in my opinion, entirely due to the absence of routine throat and nose treatment during the acute stages of the disease. Again, of 85 cases of otorrhoea occurring among scarlet fever patients at the Fazakerley Hospital during the year 1911, 70 had undergone spontaneous recovery, with a complete cessation of the discharge for a period of at least fourteen days before leaving hospital. The corresponding figures for measles are 15 and 12 respectively. These facts are of interest in view of the demand for post-nasal and tympanic interference made by Knyvett Gordon and others. Permit me to say at once that I employ no routine measures for the treatment of acute suppurative otitis media occurring in the course of the exanthemata, either therapeutic or operative, other than those to which I refer subsequently. Intratympanic medication, by either route, has not justified the trouble which it entails, and comparative returns suggest that routine syringing may even prolong the course of the subsequent otorrhoea.

The methods of treatment at our disposal fall under three headings:

1. Palliative.
2. Operative.
3. Therapeutic.

Palliative treatment I need not refer to, except to remind you that ear trouble in the course of the fevers has usually a painless onset and that paracentesis is rarely called for.

Operative interference may be considered under two headings—first, the removal of tonsils and adenoids; secondly, operations upon the mastoid bone. I am strongly of opinion that removal of post-nasal obstruction by surgical interference during the early stages of one or other of the infectious diseases of childhood is a totally unjustifiable procedure. Virulent strains of streptococci are present in the faucial and pharyngeal tissues of all cases of scarlet fever, and the Klebs-Loeffler bacillus is to be found in at least 20 per cent. of them. I cannot think that we are justified in deliberately offering a large extent of raw and injured surface to the purposes of these organisms. Removal of tonsils and adenoids is occasionally required for the relief of dangerous obstruction to respiration in the early stages of the fevers, but should, I think, be never undertaken, either as a measure of prophylaxis or treatment, in regard to acute otitis media complicating the first few weeks of scarlet fever.

I am anxious to hear your views more particularly as to the proceeding which you would recommend where acute otitis media supervenes late in the course of scarlet fever—that is, when active throat trouble has subsided. Would you at this stage advise the immediate removal of tonsillar and post-nasal obstruction, or would you postpone this procedure as a measure for the cure of subsequent otorrhoea? Having in view the frequency of spontaneous recovery and the undesirability of surgical interference with the pharyngeal tissues during the course of the exanthemata, my practice is to undertake removal of adenoids and tonsils only in those instances where patients cannot be relied upon to continue under the observation of an aural surgeon after discharge from hospital.

It is probably agreed that retention of pus in the antrum in this condition indicates the necessity for antrotomy—that is, Schwartze's operation—or, as an alternative, the operation of Heath. I have had no experience of the latter procedure. I personally never perform the radical mastoid operation in the acute stage of otitis media unless signs are present of intracranial disease. Simple incision of the mastoid is all that we are justified in doing, unless a route is required to guide us to the source of the intracranial trouble. When, on the other hand, mastoid complications supervene upon an otorrhoea of some weeks' standing, then I think it is incumbent upon us to perform the complete operation.

Horse serum—preferably diphtheria antitoxin serum—has, I think, a distinct value in otitis media complicating the acute stages of the fevers. It is difficult to exclude the factor of coincidence in these cases, but there can be no question that a marked improvement in the degree of pharyngeal inflammation is the immediate result of the injection of sufficiently large doses of serum, and I am of opinion that the muco-periosteum of the middle ear and antrum shares in the partial immunity obtained. Where acute suppurative otitis media is the result of direct extension through the Eustachian tube, and is associated with an infective inflammation of the pharyngeal tissues, it is my belief that the free exhibition of serum is of greater value than the combined effects of other measures.

The preparation of an autogenous vaccine from a discharge presenting so complex a flora as that met with in otorrhoea is a matter of some difficulty. My experience of "stock" or autogenous vaccines has not encouraged me to continue their use.

III.—Herr Professor Dr. GUSTAV ALEXANDER,*

University of Vienna.

(ABSTRACT.)

Etiology and Anatomy.

As regards the etiology of otitis media, Professor Alexander said that all the exciting causes of suppuration had been found sometimes in pure culture and sometimes in the form of a mixed infection.

In all cases in which the tympanic cavity was infected through the tube the mucous membrane first swelled so as to cause obstruction of the tube; the swelling thence spread over the membrane of the middle ear and the tympanic membrane. The middle ear, the attic, and the antrum, and in many cases the air cells of the mastoid became filled with a viscid exudate. Later suppuration set in accompanied by a massive exudation into the cavities of the middle ear. Finally the pus broke through the tympanic membrane, and escaped externally. At the end of a week, as a rule, the secretion of pus became mixed with mucus; more mucus and less pus would be secreted, and, finally, in a few weeks, complete resolution would have occurred.

Symptoms.

The most prominent at the beginning of the disease was a sudden violent pain in the ear. The patient became restless and could not sleep. Deafness was pronounced at first, but in uncomplicated cases hearing would return to the normal at the end of the disease. As a rule fever would be found at the onset, but this would subside with the perforation of the membrane.

Otoscopical examination would reveal swelling and redness of the membrana tympani, either the whole membrane

* This paper was read, in the absence of the author, by Mr. W. M. Mollison, M.S., F.R.C.S.

being involved or only a portion of it. The extensive formation of vesicles might also be observed. A perforation might be expected when a circumscribed yellow point was seen on the membrane coupled with very marked bulging. Sometimes after removal of the secretion it would be impossible to see the site of a perforation, but it could generally be recognized by watching the spot whence any further secretion came or by aspirating with Siegle's speculum. The size of the perforation was variable, being widest in the fulminating type of the disease met with complicating the exanthemata, particularly scarlet fever.

Diagnosis.

Diagnosis could usually be made without special difficulty in the first stages of the disease from the symptoms and otoscopical examination.

Professor Alexander then entered fully into a description of the usual course of the disease and the variations in that course which might be encountered, together with a detailed account of the more common complications. He continued: If the acute otitis were not treated the dangers of pus retention and its consequences would have to be reckoned with. The pus became stagnant, and this led to eczema of the auditory canal and inflammatory swelling of the lining of the meatus, besides granulations round the margin of the perforation which blocked its free opening. There was no doubt that on this account some cases of purulent mastoiditis were caused mechanically by the stagnation of pus in the cavities of the middle ear. The pus might exert considerable pressure on the walls of the tympanic cavity till finally the tegmen became involved and an extradural abscess and meningitis resulted. In other cases pressure was particularly great on the lateral wall of the labyrinth, so that spontaneous nystagmus and even vertigo were observed.

If suppurative otitis media were neglected the hearing was always greatly diminished, and would remain so even after healing. Frequently a long catarrhal stage followed the spontaneous healing of a neglected case. Organization of the middle-ear exudate was followed by the formation of connective tissue bands; the chronic adhesive process thus set up caused degeneration of the organ of Corti and a consequent labyrinthine deafness.

Treatment.

He confined himself in the first stage to a purely symptomatic local treatment. Violent earache could often be considerably alleviated by instillations of 3 to 5 per cent. carbolic glycerine. With a wide auditory canal, where there was no fear of stenosis from epithelial maceration, one might also instil warm (40° C.) solution of aluminium acetate. Instillations of cocaine, novocain, and alypin were good, but the effects merely temporary. The local application of cold—for example, ice-bag, Leiter's tubes—was to be recommended during the early stages, whereas he found haemagogues of no help. He always ordered rest in bed and a good evacuation of the bowels, whilst alcohol, strong coffee, and tea were forbidden. If the pain and fever were intense it was advisable not to wait for spontaneous perforation, but to undertake paracentesis at once. For this purpose he made use of the lance-pointed needle mounted on Politzer's handle. He made his incision as long as possible close behind the umbo, unless there were indications of an immediate spontaneous perforation, when the paracentesis should be done in that spot. Paracentesis was indicated when conservative measures failed to give relief. There should be no hesitation in performing the operation, and it was better to do it in doubtful cases than to delay doing it. If such aseptic precautions as the ear would allow were observed there was no danger in the operation, whereas delay might lead to even fatal complications. For anaesthetizing purposes he recommended a novocain adrenalin solution (1 c.cm. of 20 per cent. novocain or alypin solution heated to 40° C. mixed with five drops of the ordinary adrenalin solution, also previously warmed). The fluid should be left in the external auditory canal for ten to fifteen minutes. As an alternative instillations of 5 to 10 per cent. aqueous solutions of cocaine with five drops of adrenalin solution (1 per cent.) could be recommended.

If pure pus were evacuated through the paracentesis wound it suggested that the operation had been left till too late, and that already there was a condition of acute empyema of the middle ear. Immediately after the operation he introduced strips of gauze which had been previously dipped into a warm solution of aluminium acetate or 1 per cent. alsol into the auditory canal without previously washing it. A damp dressing was then applied to the ear, and the patient put to bed. In favourable cases a profuse purulent secretion from the external auditory canal should be observed within the next few hours, and there would no longer be any pain. Within three to five days the temperature would return to normal.

If the perforation were situated at the top of a nipple-like protuberance of membrane, the opening would sometimes become temporarily agglutinated, and signs of pus retention would result. The nipple-like projection must then be well opened again with the paracentesis needle.

There were a number of different ways to avoid retention and stagnation of the pus. Very successful were damp dressings of aluminium acetate or 20 per cent. alsol, renewed every twenty-four hours. A damp strip of gauze was inserted into the external auditory canal, and would generally at the end of twenty-four hours be found infiltrated with pus. Absorbent gauze strips or strips impregnated with antiseptics might be employed. The gauze strips might be changed by the persons in attendance on the patient, using small forceps which had previously been sterilized. The strips should be renewed at regular intervals according to the amount of the secretion. Pus must not be allowed to accumulate behind the gauze strip. He considered that syringing was only necessary if the secretion were ropy and thick; he used sterilized water at 38° to 40° C. The insufflation of antiseptic powders was entirely superfluous when secretion was copious.

The gauze strips were an advantage, as the progress of the patient could be observed without a daily visit. Normally by the end of the first week the secretion should have become ropy, and the gauze would then no longer suffice. He then advised the application of hydrogen peroxide (3 to 6 vols. per cent.) to the ear two or three times a day. Pus could be removed from the tympanic cavity two or three times a week by politzerization and subsequent cleansing of the auditory canal with wool tampons soaked in perhydrol. The blowing in of air caused rapid improvement in the hearing.

Special care should be taken in treating the external auditory canal, as an eczematous condition would increase the purulent stagnation in the middle ear. In the latest stages he advised daily politzerization until the hearing was permanently good. The gauze he kept in till the perforation was entirely closed, which generally occurred within a few days of the cessation of the purulent secretion. It was advisable to keep the external meatus closed with a pledget of cotton-wool for some weeks after the healing of the disease.

The prevention of subsequent attacks of otitis media was best ensured by maintaining a free passage through the posterior nares and naso-pharynx and restoring the normal condition of the pharyngeal tubal orifice.

As regards the treatment of otitis at the age of suckling, it was essentially the same as at a later age. Early paracentesis was important, as otherwise one might be surprised by the early and spontaneous onset of a severe cerebral complex of symptoms (meningism), or even by purulent meningitis. Free drainage through the external auditory canal must be carefully attended to. He recommended frequent paracentesis if the case ran a prolonged course. Exuberant granulations must be removed. When the otitis had subsided, it would frequently be necessary to remove the tonsils and adenoids.

Professor Dr. Alexander then communicated the results of some experiments conducted by Dr. G. Dintenfass, of Vienna, on the use of urotropin in suppurative otitis media. He said:

Bearing in mind the intimate relationship between the subarachnoid space and the lymph spaces of the ear, Dintenfass gave urotropin to patients suffering from purulent otitis in various stages, and tried to recover urotropin or one of its dissociation products—formaldehyde—from the ear discharge; 0.5 gram (7½ grains) of urotropin were given four to six times a day by the mouth, and the discharges were collected in sterile glass tubes and

examined. In the majority of cases it was possible to demonstrate formaldehyde in the discharge from the ear. In all, 90 cases were examined. The conclusions arrived at were:

1. That in chronic suppurative otitis media a fetid purulent secretion became non-fetid within two or three days, except when necrosis of bone was present. The quantity of the discharge diminished quickly. In many cases eight days were sufficient to stop all discharge of a purulent nature. If no effect were noted after one week of treatment, it was best to stop it at once.

2. That in acute otitis media the duration of the purulent stage was greatly shortened, so that the course of the disease was hastened by 50 per cent. In recurring middle-ear inflammation, the attacks were also shortened considerably, and in the exanthemata the prophylactic administration of urotropin was very useful to prevent ear complications if started as early as possible. In all cases large doses must be given—2 to 6 grams had been given without ill effect. Children required ½ gram doses twice daily, adults four to six times daily. If the purulent discharge became serous the drug might be stopped.

No effect was noted in suppurative wounds after the radical mastoid operation.

Before mastoid operations urotropin might be given for prophylactic reasons (against post-operative meningitis). He also recommended its use in cases of meningitis of otitic origin.

He had found autogenous vaccines of more use than the stock vaccines. In no case could they be used as a substitute for operation. They simply had their place as part of the post-operative treatment.

DISCUSSION.

Professor HOLGER MYGIND (Copenhagen) said that opinions as to the proper treatment of acute otitis media had always been different, perhaps principally because the vast majority of cases of this disease recovered completely without treatment. According to the speaker's experience, which extended over a long period, the inflammation of the tympanic cavity might be stopped at its first stage by putting the patient to bed and making him perspire. As soon as the posterior part of the drumhead bulged forward a large incision ought to be made, and this little operation was better done too frequently than limited—as Politzer had advocated—to rare cases. As soon as the drum was perforated, the speaker had for many years used only the introduction into the auditory meatus of a sterilized plug of cotton. The patient was then advised to remove the plug as soon as it was soaked with secretion, and apply a new one with a sterilized instrument. He had collected a great number of cases, and proved statistically that patients recovered more quickly and suffered less from complications when treated by this method than by the instillation of antiseptic fluids or syringing.

Professor WM. L. BALLENGER (Chicago) was much interested in Mr. Woods's presentation of the cause of acuity and chronicity. Though chronic inflammation was attended by polybacterial flora, it did not necessarily follow that this was the cause; it might be a phenomenon incidental to some pre-existing condition which was the predisposing cause, the mixed infection being an accessory cause. He had observed in nasal infection that if there was no obstructive lesion the inflammation was usually acute, whereas if obstructive lesions were present the inflammation tended strongly to become chronic in type. The same principle applied to otitis media. The chronicity depended not only upon the polybacterial flora, but also upon a greater degree of Eustachian obstruction from enlarged and inflamed adenoids. As to the treatment, a 10 per cent. solution of carbolic acid in glycerine dropped into the meatus daily would in the first or catarrhal stage abort the process. If there was bulging of the membrana tympani incision must be performed. After purulent discharge was established he placed a small strip of sterile gauze into the meatus, the distal touching the perforation, the proximal end in the concha. The gauze should not be folded in the meatus, as that would interfere with drainage, and drainage at this stage of the disease was of primo importance. Personally, he employed the dry method of treatment. The meatus was mopped with several small cotton-wool applications, or until the cotton remained dry. He then inserted the gauze strip or wick, renewing it while the discharge was profuse two or three times daily, after that once daily. He used no powders or liquids. He occasionally resorted to measures calculated to promote the reactions of inflammation. If, as Adami had shown, the reactions of inflammation were (*a*) increased hyperaemia, (*b*) increased nutrition, and (*c*) increased leucocytosis, they were physiological processes excited by bacterial stress, for the purpose of overcoming the bacterial invasion. Unfortunately, the reactions were usually inadequate, hence it became their duty to use such measures as would promote the reactions of inflammation, and thus abort the bacterial activity. Among the measures useful for this purpose were leeches, artificial leeches, scarification, counter-irritation, heat, etc. Leeches had frequently been of the greatest value in aborting an early otitis and mastoiditis.

Mr. ADAIR DIGHTON (Liverpool) could not agree that at the present time myringotomy in every case of acute otitis media with a bulging drum membrane was necessary. Recently he had treated a number of these cases by painting the Eustachian tube, under the guidance of the naso-pharyngoscope, with a weak solution of silver nitrate, and had found this equally satisfactory, as one painting usually had the desired effect of relieving the pain and terminating the disease. If one painting was not sufficient he had found a second painting all that was required. As to Mr. Woods's treatment in cases that had perforated, he would like to suggest that by means of dry cleaning of the ear with cotton-wool mops, and placing the patient in such a position that he lay upon the diseased ear, drainage by means of gravity was favoured. All the good results of cleansing and drainage were thus retained with none of the obvious dangers of syringing a discharging ear. He had had a splint constructed for the purpose of compelling the patient to lie upon the diseased side, which so far had yielded very good results. He thought that the postural treatment was only common sense, as in the position of the patient on the diseased side all pus would drain by gravity through the perforation, and would leave the mastoid antrum unaffected. Also there would be less danger of a unilateral otitis media developing into a bilateral otitis media by extension via the Eustachian tubes and naso-pharynx, as would be likely to happen if the patient were allowed to be on the healthy side with the diseased ear uppermost.

Dr. WM. MILLIGAN (Manchester) said that he fully endorsed Mr. Woods's statement to the effect that acute suppurative otitis media was a monomicrobic infection, whereas in chronic conditions a variety of organisms were present. A mixed infection he therefore considered to be evidence of chronicity. The underlying idea in the treatment of acute suppurative otitis media should be the provision of free drainage with a minimum amount of interference. The principle of physiological rest to the inflamed organ should not be lost sight of. He was an advocate of the performance of an early paracentesis the moment objective evidence of bulging of the membrana tympani appeared. He agreed with Professor Mygind that it was better to perform a paracentesis too early than too late. He had never seen any damage by a paracentesis, whereas he had seen a great deal of damage done from the want of one. He was in favour of dry dressings, as he considered the tissues, when suppurating, were already in a water-logged condition, and therefore the use of fluid remedies tended to increase the already existing oedema. A continuance of discharge for any length of time after the provision of free drainage he considered to be evidence that the posterior end of the middle-ear cleft was infected. This might be entirely unaccompanied by any evidence of tension or of external indications of mastoid disease—in other words, the antral mucous membrane was infected and required the same free drainage as had already been provided for the cavity of the middle ear. Under such circumstances, he was strongly in favour of the performance of a simple opening of the antrum to drain the posterior end of the middle-ear cleft. He regarded this operation as an extremely important one, not only with the idea of cutting the disease short, but also of preserving audition. He could not see what possible effect

painting the naso-pharyngeal end of the Eustachian tube with nitrate of silver could have. The inflammatory process in these cases invaded the whole tubo-tympanic axis, and for practical purposes the Eustachian tube was sealed up as the result of swelling of its mucous membrane.

Dr. Kerr Love (Glasgow) thought the principles on which treatment should be based were apt to be lost sight of in the details of the treatment. To him it seemed that opinion and discussion should range round the following points: (1) When to open the membrane; (2) whether syringing or treatment by the dry method was the better practice; (3) whether inflation should be practised after opening the membrane, and if so, how soon; (4) when interference with the naso-pharynx was justifiable after myringotomy. He thought syringing was undesirable, because in any case the fluid did not reach through the membrane to the middle ear. He thought syringing should be avoided, and that even blowing the nose should be done by one side only, the other side being open. No operation on the naso-pharynx was justifiable during the acute stage of the middle-ear suppuration.

Dr. Watson-Williams (Bristol) considered that the general consensus of opinion was essentially early and efficient drainage. After alluding to the value of various local applications, he desired to associate himself with the view that early myringotomy was desirable if the inflammatory trouble was not obviously transient. No harm could result from this simple procedure, and it frequently proved invaluable; but if there was evidence of mastoiditis they were only carrying their principles of early and efficient drainage to a logical conclusion by opening up the mastoid cells and antrum. Without being unduly precipitate, he had no hesitation in advocating the simple mastoid operation (Schwartze) being performed relatively early; otherwise delay might deprive the patient of a chance of recovering with good hearing power, or even subject him to the gravest risk of meningitis and a fatal termination. He of course deprecated anything in the nature of a complete radical operation in the class of case under discussion unless very exceptional and complicating conditions made it imperative, but it was better to perform the simple Schwartze operation too early than subject the patient to unnecessary and grave risks by undue hesitancy.

Professor Holger Mygind, speaking for the second time, said that though very conservative towards radical operation, his indications for simple mastoid operations were very wide. The operation was combined with very little risk compared with the risk of intracranial complications. Surgeons often waited until swelling or tenderness of the mastoid process appeared, but these objective symptoms were absent in a great minority of cases, and especially comparatively frequently absent in cases of intracranial complications, which, therefore, were operated on too late. The simple mastoid operation ought to be done very thoroughly. It was not sufficient alone to open the antrum mastoideum, every cell filled with pus ought to be opened and every softened bony tissue removed; destruction of bone was not infrequently found in the depth under normal tissue. In a long series of cases he had used secondary suture and healing under blood-clot with very satisfactory results.

The President, in summing up, remarked that there was a consensus of opinion in favour of performing early paracentesis. The principles of the wet and dry methods of treatment had been clearly set forth by the various speakers. He himself had found with Professor Alexander that gauze drains were extremely useful so long as they could absorb the discharge, but when the pus became thick they had to fall back on syringing. The meeting was unanimous in regard to the question of the right time for removing tonsils and adenoids in cases of acute otitis, and also in regard to the advisability of opening the antrum in suitable cases. With reference to Professor Mygind's operation of secondary suture after the incomplete mastoid operation, he himself had found that the period of filling up was very prolonged, and so he had adopted a similar procedure with good results. Every one seemed to be agreed against performing the radical operation in acute cases of otitis.

Replies.

Mr. Woods, in reply, said that, in regard to Mr. Adair Dighton's method of treatment with silver nitrate, he must agree with Dr. Milligan that it was quite futile. There was not much to be said in regard to posture; it seemed to him to make very little difference either way. He thought that the discussion on the comparative merits of the wet and dry methods of treatment was somewhat laboured. The important thing was to keep the middle ear monoseptic; how that was to be done was a matter of secondary importance. His own opinion was that washing out was more likely to prevent decomposition. Syringing was done not with the object of washing out the middle-ear cavities, but to remove pus from the meatus, and thus prevent decomposition and infection of the middle ear. As regards the radical operation in the early stages of acute otitis, it was of course monstrous; it should never be done in a monoseptic case.

Dr. Rundle, in reply, associated himself particularly with the observations of Professor Mygind and Dr. Milligan, and expressed his gratification that so many expert otologists were in sympathy with the expectant views of those in charge of fever hospitals.

ON THE VALUE OF DECOMPRESSIVE OPERATIONS IN INTRACRANIAL COMPLICATIONS OF OTITIC ORIGIN:

WITH SPECIAL REFERENCE TO THE TREATMENT OF OTITIC MENINGITIS.

By William Milligan, M.D.,
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One of the most important problems confronting the aural surgeon to-day is the successful treatment of otitic meningitis. Up to the present time the mortality from purulent meningitis (otitic) has been, roughly speaking, 100 per cent.

It is true that sporadic cases of recovery following operation have from time to time been recorded, but the successful cases have been so few and far between as only to accentuate the heavy mortality of the disease.

Surgical technique, although it has been able more or less successfully to cope with sepsis in most parts of the body, has so far achieved but few triumphs in the treatment of purulent meningitis. How is this? In seeking for an explanation we have to consider:

1. The special anatomical relations of the parts affected.
2. The practical difficulty of securing and maintaining efficient drainage; and
3. The particular mode of death from meningitis.

In all cases of purulent meningitis the amount of cerebro-spinal fluid within the skull cap is enormously increased as the result of bacterial infection of the pia arachnoid membranes, with a consequent increase of intracranial pressure. The skull cap being an unyielding structure and incapable of expansion, causes this increased pressure to react upon the more yielding intracranial contents, chief among which are the cerebral vessels, both arteries and veins. Hence a gradually progressive anaemia is induced, with resulting paralysis of such vital nerve centres as the cardiac and respiratory. The fatal issue is due not so much to the presence of sepsis as to the direct mechanical effects of increased intracranial pressure.

Granting that this is so, how are we to counteract this increasing pressure so as to permit the protective efforts of Nature sufficient time to overcome the effects of acute toxaemia and degeneration of nerve tissue. Naturally the first thing is to make an early and an accurate diagnosis of the existence of meningitis. I must frankly admit that of various intracranial complications of purulent otitis media, the one I have found the most difficult to diagnose is meningitis—not, of course, when all the cardinal symptoms are present and in full bloom, when a mistake is hardly possible, and when, unfortunately, the patient is practically beyond relief, but in its early stages, when

there are few leading symptoms, and when the pathological process is fairly localized. Although it is true we classify meningitis for clinical purposes as serous or purulent and acute or chronic, the one stage runs so imperceptibly into the other that it is better, from the surgical point of view at any rate, to regard the pathological process as one, and not as made up of various separate entities.

I do not regard any case as a case of purulent meningitis unless bacteria are found in the cerebro-spinal fluid either microscopically or in culture films. Certainly a diagnosis of purulent meningitis must not be made merely on the evidence of turbid cerebro-spinal fluid, as turbidity is quite common in what is usually termed "serous meningitis," a phase of the pathological process which I regard, however, as the forerunner of the purulent type.

The earliest clinical symptoms of purulent meningitis are:

1. Increase of blood pressure.
2. Papilloedema.
3. Persistent headache.

The presence of these symptoms should at once put the clinician upon his guard, and direct his attention to a systematic and chemical analysis of the cerebro spinal fluid. Time does not permit of my saying more than that the normal reaction of cerebro-spinal fluid is alkaline, but that as purulency is induced the reaction changes and becomes acid. Moreover, the copper-reducing substance in normal cerebro-spinal fluid, now generally admitted to be of the nature of a dextrose, in the presence of bacterial invasion rapidly disappears. Failure to reduce the copper of Fehling's solution is therefore a most important and accurate indication of the presence of incipient meningitis. From the clinical point of view the presence of an acid reaction, the failure of the cerebro-spinal fluid to reduce Fehling's solution, the presence of albumen and of an excess of globulin, even in the absence of demonstrable organisms, indicates the existence of a definite bacterial invasion of the meninges and calls for immediate operation to thwart the advent of increased intracranial pressure with development of fatal paralytic phenomena.

This brings us now to the consideration of the type of surgical treatment required, for no other treatment is of the slightest value.

The elimination of the primary focus of infection is naturally the first step, either by the performance of a complete post-aural operation, or a complete post-aural operation *plus* a labyrinthectomy should labyrinthine symptoms be present, followed immediately by an extensive decompressive operation either in the temporo-sphenoidal or the cerebellar area—more usually the latter, as most of the cases are due to infection of the meninges in the posterior fossa.

My personal experience of decompressive operations is not great—in all 12 cases. Of these 12 cases, 4 were undertaken when the patient was *in extremis*, and all proved fatal. Of the remaining 8 cases, 5 died and 3 recovered, the percentage of recoveries being thus only a little over 26 per cent. This recovery percentage, low as it certainly is, will doubtless become higher as the means of making an early diagnosis are more appreciated and better known, while I am optimistic enough to believe that the treatment of early cases of purulent meningitis will shortly become a successful surgical procedure.

To secure relief from the rapidly increasing intracranial pressure, which, as has already been pointed out, is the great danger to life, it is necessary to do more than perform repeated lumbar puncture with or without continuous drainage. It is necessary to remove a considerable area of the skull cap and to freely incise the brain membranes. In the temporo-sphenoidal region either a "flap" or an "intermuscular" operation, preferably the former, may be performed.

An area of bone at least 1½ in. square is removed immediately above the external auditory meatus, the dura incised and the pia arachnoid opened.

The pressure within the skull cap at once crowds the brain through the opening thus made, and this undoubtedly interferes with the much desired drainage. By slipping strands of gauze or pieces of rubber tissue between the dura and the brain, a very fair system of drainage may, however, be secured and maintained.

In the cases upon which I have operated, I have removed the dura, corresponding with the bone wound, entirely. A certain amount of herniation has invariably resulted, but in general terms the larger the bone wound the less the hernia. In the cerebellar region the opening may be made between the curved lines of the occipital bone, being made as low as possible to secure freer drainage and to avoid wounding the lateral sinus. The amount of cerebro-spinal fluid which escapes varies with the stage of the pathological process and the virulence of the bacterial invasion. Lately, Haynes of New York has suggested drainage of the "cisterna magna," and carries out the operation as follows: The head of the patient is completely shaved, and the skin prepared in the ordinary way. The patient lies upon the operating table upon his face, with a firm sand pillow under his shoulders, so that his neck is extended. An incision in the middle line and down to the bone is made from the occipital protuberance to the spinous process of the atlas. After the soft tissues have been drawn aside, an opening is made with a ⅝ in. trephine one inch above the "foramen magnum," and a triangle of the intervening bone removed with cutting forceps. The now bulging dura is carefully incised, quite a small opening being made at first. The pia arachnoid is similarly opened. The cerebro-spinal fluid, being under great tension, spurts out. Should the blood pressure fall too rapidly, the flow is temporarily checked. The incision is then carefully enlarged, and a rubber drainage tube inserted into the "cisterna magna," between the lateral lobes of the cerebellum. Haynes claims that, by adopting this procedure, the best drainage is secured, and that no cerebellar hernia results.

In acute oedematous conditions of the brain following the presence of cerebral or cerebellar abscess marked relief will be afforded if in addition to opening and draining the abscess the brain be extensively decompressed. The tendency in the past has been to make rather too small openings through the skull cap. Practical experience, however, has demonstrated that in order to ward off the fatal effects of increased intracranial pressure large openings should be made and continuous drainage maintained.

The following are the details of three successful cases operated on by the author.

Case I.

E. B., female, aged 11, was admitted to hospital with a history of long-continued discharge from the left ear, and of recent headache and vomiting. She had had a severe attack of measles at the age of 5, and since that time had been delicate. On admission her temperature was 102° F.; pulse 140; respirations 30. She was very drowsy, and could only be roused by shouting. No facial paralysis. Nystagmus upon looking to left side; pupils equal and dilated, reacted sluggishly. Well-marked bilateral optic neuritis. Tongue dry and coated. *Tache cérébrale* well marked. Knee-jerks equal, but very sluggish. Plantar reflex Babinski in type. Well marked Kernig's sign. Rigidity of neck muscles. Cerebro-spinal fluid turbid; bacteria (streptococci) present.

Operation. Left mastoid antrum opened. Contained a very foul cholesteatoma. Lateral sinus bulged into wound on opening, contained no thrombus. Middle fossa exposed, and dura found to bulge at once into trephine opening. No abscess in temporo-sphenoidal lobe. A disc of bone was then removed between the curved lines of the occipital bone. Dura found to present a yellow coloration. On being incised pus welled out, nearly half an ounce being collected. Found to swarm with streptococci. Dura corresponding to trephine opening entirely removed, and strips of gauze passed under it into the pia arachnoid space. Continuous drainage was in this way maintained. A considerable hernia of the temporo-sphenoidal lobe and of the cerebellum developed. After all acute symptoms had subsided hernia reduced by pressure with a lead plate and an elastic bandage.

Case II.

E. L., female, aged 16, had suffered from right-sided purulent otitis media for ten years. The patient was admitted to hospital complaining of severe occipital headache, frequent attacks of sickness, and constant vertigo. Pulse-rate 54, temperature 96.4° F., respirations 14. Well-marked cerebellar nystagmus and slight papilloedema were present.

A radical mastoid operation was performed, followed by exposure of the cerebellum through the posterior mastoid wall. One and a half ounces of pus were evacuated. For two days there was marked relief, after which headache returned accompanied by marked retraction of the head and stiffness of the neck muscles. A decompression operation was then performed, a large opening being made between the curved lines of the occipital bone and as low down as possible. On removal of bone the dura, which appeared to be of a yellowish colour, bulged through the trephine opening. It was very carefully incised. Pus at once flowed out, almost half an ounce being collected. Bacteriologically it was found to swarm with streptococci. The area of dura mater corresponding to the trephine opening was removed and strips of gauze inserted

between the dura and the cerebellum. The patient suffered severely from shock, but gradually recovered. A fairly large cerebellar hernia formed, which after the subsidence of all urgent symptoms was successfully reduced by pressure with a lead plate and an elastic bandage. A good although somewhat slow recovery was made, and seven weeks after the decompressive operation the patient resumed her occupation, that of a messenger, and has remained steadily at work ever since. Her mental condition appears to be quite normal.

Case III.

W. H., male, aged 10, admitted with history of a fall followed by dizziness, headache, nausea, and slow cerebration. When two years old he had an attack of measles; the right ear had suppurated since. On admission to hospital no evidence of injury to skull cap was found, but he had a sprained wrist. Temperature 98° F., pulse 90. The patient was in a very dazed condition, very deaf, and mentally very slow. No paralysis was found present. Nystagmus was well marked, and was both vertical and horizontal. Optic neuritis well marked upon both sides, more especially, however, upon the right side. Knee-jerks sluggish; no Babinski, no Kernig.

Radical mastoid operation performed; very little pus found in antrum. Middle fossa exposed and temporo-sphenoidal lobe explored; no pus found, large quantity of cerebro-spinal fluid escaped. For a few days marked improvement, followed, however, by relapse and very slow cerebration.

Decompressive operation performed over cerebellum. Dura opened and a large quantity of cerebro-spinal fluid drained away. Fluid turbid and contained bacteria (streptococci and staphylococci). Dura entirely removed and gauze drains inserted. Hernia of cerebellum treated by pressure with lead plate. Recovery.

DISCUSSION.

Professor Holger Mygind (Copenhagen) had been deeply interested in Dr. Milligan's paper, the treatment of otitic meningitis having occurred comparatively frequently in his hospital practice, and he had up to the present operated on a comparatively large number of patients, of which about one-fourth had recovered. He agreed entirely with Dr. Milligan that the diagnosis was very difficult; in fact, there was only one means of ascertaining it—lumbar puncture with the production of a turbid fluid containing polynuclear cells in excess. In the cases he had seen recover through operation, bacteria were not always present, and if they did not consider these cases as being purulent meningitis, the mortality of otitic meningitis was much heavier. He had, however, seen fatal cases of otitic meningitis where bacteria were absent at first, although the cerebro-spinal fluid was very turbid. Dr. Milligan's statement of progressive arterial tension and of the failure of the cerebro-spinal fluid to reduce copper and the acid reaction were very interesting, and he would certainly try this means of diagnosis in future. As to the operative treatment, the free opening of the dura and the free drainage of the arachnoid space rested on sound surgical principles, and he had used this method of treatment in his first series of cases. He had, however, had such hard struggles against prolapse of the brain, and had read such sad experiences that he had been more conservative lately, and he did not generally open the dura, except when there were signs of pachymeningitis externa or interna or suspicion of abscess of the brain. He merely exposed the dura for inspection by means of a large craniotomy opening of the same size and form as Dr. Milligan suggested. He had become more and more convinced that the radical removal of this primary focus was the principal thing to do; this included frequently the opening of the labyrinth, and he therefore always performed the radical operation in order to be able to inspect the labyrinthine wall thoroughly. They were, however, still in the experimental stage of the question of the operative treatment of otitic meningitis, and he considered Dr. Milligan's paper a valuable contribution to the final solution of the question.

Mr. E. Malcolm Stockdale (Liverpool) said that his experience of the treatment of otitic meningitis by repeated lumbar punctures was limited to a small number of cases, but none of these had recovered. He related the case of a boy he had operated upon some years before for septic thrombosis of the lateral sinus involving the jugular vein, and in which there was extensive necrosis of the occipital bone. At the time of operation he performed lumbar puncture, drawing off clear fluid; during the following week this was done on two subsequent occasions. Each specimen was examined by the pathologist to the Liverpool Eye and Ear Infirmary, and reported to contain micrococci, a culture yielding staphylococci. The third specimen was examined immediately after withdrawal, optic neuritis being present, more marked on the side of the lesion, there being also twitchings of the arms and legs. Temperature 103.4°. It was decided to drain the subarachnoid space at once. This was done by incising the dura mater in the middle and posterior fossae. The cerebellum at once began to bulge into the wound, and a hernia formed. Later this burst spontaneously, and was excised. The boy made an excellent recovery.

Dr. Milligan, in reply, could not agree with Professor Mygind in the diagnosis of suppurative meningitis. Some of the cases he would have called serous, and not purulent, meningitis. If bacteria themselves were not found in the cerebro-spinal fluid, then at least evidence of their presence ought to be discovered. A discussion on this subject was very useful; for instance, he did not agree with not opening the dura. He personally had seen no bad results from herniation of brain substance. He thought that if early operation could be attempted they ought to expect marked success in treating cases of suppurative meningitis.

DISCUSSION ON THE PREVENTION OF DEAFNESS IN NON-SUPPURATIVE CASES.

OPENING PAPER.

By J. Kerr Love, M.D.,
Aural Surgeon, Glasgow Royal Infirmary.

I refer to the fact that deafness is but a symptom merely to define the scope of this paper, which, if it be true to its title, must deal with the prevention of all forms of deafness which are not associated with suppuration. At once the mind even of the trained otologist flies to chronic aural catarrh and oto-sclerosis, but the subject is much bigger than these names indicate. I reckon that, in addition to these diseases, I must include deafness from post-nasal adenoids, from meningitis, from syphilitic disease, and true hereditary deafness.

Chronic Aural Catarrh and Oto-sclerosis.

The confusion which still exists in the diagnosis of chronic aural catarrh and oto-sclerosis makes any indication for preventive measures extremely difficult. Some surgeons scarcely ever see oto-sclerosis, some meet it very often, most consider it hereditary; many think chronic aural catarrh hereditary also; some think oto-sclerosis syphilitic, others believe in no such connexion. I have never seen a positive Wassermann reaction in a case. Some observers think the disease commences in the nose and throat like chronic aural catarrh, and that the middle and internal ears are only secondarily affected. Most of us have considered the absence of any nasal or naso-pharyngeal affection to be one of the features which distinguish oto-sclerosis from chronic nasal catarrh. Now I have not mentioned all the differences of opinion which exist about these two diseases, and I do not wish to provoke discussion on the differences. I have indicated these differences of opinion to call attention to the fact that the diseases need further study with a view to their prevention. We cannot cure them. They are the reproach of our speciality. Fibrolysin, high frequency currents, pneumo-massage, potassium iodide, intra-tympanic operations, and a dozen other remedies have walked across the stage, and most of them have disappeared. We are still looking for the means of cure for these two conditions. Reputations built on the invention of a new instrument or the booming of a new drug wax and wane, and we seem about as far as ever from a real solution of how to cure chronic non-suppurative deafness in the adult.

It is not because investigators are not in earnest in the quest that the solution has not been found. I believe the solution to be very difficult. But alongside the pathological and clinical work being done in this field we want, I think, very careful observation of the family histories of cases of chronic deafness in the adult. Every case of chronic deafness should be followed whenever possible through at least three generations, so that the place of heredity in the production of these cases may be determined. The adventitious factors in the etiology of these

two diseases may be numerous. When they are catalogued in textbooks on diseases of the ear these factors are so differently mixed that the impression one gets is that authors in their difficulty include a little of every local and general condition. And then, to make sure that nothing has escaped, hereditary predisposition is added. Is there any remedy for this but accurate records of individual cases and of family histories?

Adenoids.

The case is different with adenoid deafness in the young child. I do not mean to say that there is no hereditary element here, but we have a tangible cause, the removal of which early in life is usually followed by the complete restoration of hearing. The success of this operation in restoring hearing has been so great, and is so uniform that the study of the cause of the growths has not been seriously attempted. Most of what we have in the way of study is really speculation or guess work. But even here prevention would be better than cure. It is not often in the practice of medicine that we get success so uniform in the treatment of a condition the cause of which is so obscure as we do in the treatment of post-nasal adenoids. Great as this success is, I feel sure that the future of our patients would be even better did we know how to prevent the occurrence of these growths altogether.

In this connexion, points for discussion which seem to me important are:

1. The influence of heredity in the production of post-nasal adenoids.
2. The influence of the various methods of feeding children in the production of these growths.
3. The influence of catarrhal processes in their production.

The belief held by some otologists that much of the deafness of adult life has its foundation in the nasal, and especially the post-nasal, obstruction of childhood makes it incumbent on an Association like ours to keep before those interested in the young the duty of testing the hearing of every young child. The best agency through which this can be done at present is the school authority. If it be true that most adult deafness of the non-suppurative type begins in the nasal obstruction of childhood, then every school child should have his hearing tested, and every case of slightly defective hearing should be medically or surgically treated, even if the deafness be not great enough to interfere with educational progress.

Meningitis.

Ten thousand children die annually in England alone from the various forms of meningitis, and a large number of those who do not die are made quite deaf, and yet this disease, or rather the various diseases which go under the name of meningitis, are not notifiable except when meningitis is epidemic and is called by the special name of cerebro-spinal fever. Now practically all forms of meningitis are due to infection, and when the disease causes deafness at all it causes it in such a high degree and at such an early age that dumbness results. There are over 5,000 children at present being educated in special schools for the deaf in Great Britain, and it is probable that at least a fifth of these are deaf from meningitis. As these 5,000 children represent about a fifth of the deaf-mutes in the community, it is probable that there are 5,000 deaf-mutes in Britain to-day whose deafness is due to meningitis. I should therefore press for the notification and treatment in hospital of all cases of meningitis occurring in childhood, whether tuberculous, epidemic, or sporadic. These cases cannot be studied in the home, and for the most part they occur in houses of such a poor type that they should not be treated there.

Syphilis.

I could easily spend the whole of the time allotted to this paper on syphilitic deafness. This is usually non-suppurative. For the past six months I have been engaged taking the bloods of 100 deaf children, and Dr. Carl Browning has been carrying out the examination of most of these bloods by the Wassermann test or reaction. The inquiry is not yet finished, but the following indication may be given of the direction in which conclusions will ultimately be drawn

1. Syphilis in the parent may cause congenital deafness in the children, and probably does so to a greater extent than the Wassermann reaction discovers. Congenital syphilitic deafness is often all that remains of dead or dying syphilitic taint, the presence of which is not discoverable by any chemical or biological test at present in our possession.

2. Syphilis in the parent is a common cause of the death of the child at or before birth and, later in the family history, of the appearance of deafness in the children who have survived. This deafness, which tends to come on about the second decade of life, is usually associated with keratitis, and this combination has nearly always a positive Wassermann reaction. There are, however, exceptions to this rule.

For the prevention of congenital syphilis we must have, I think, something like the notification of pregnancy. This needs no special legislation. Under the Insurance Act maternity benefit will be claimed for all pregnancies which approach anything like the full term, and the occurrence of a stillborn child will be certified, along with the probable cause of the death of the child. It should be possible to anticipate the disasters of deafness and blindness which occur in the later members of a syphilitic family by putting the parents under treatment and so preventing the deafness. In dealing with congenital syphilis and in attempting to prevent the deafness due to it we must throw aside the curtain that has screened it so long, and discuss it not only amongst ourselves but with educated laymen as an ordinary infectious disease, the specific cause of which is known and the prevention of which is possible only by dealing with it at its source—the blood of the father and mother.

True Hereditary Deafness in Children.

The last type of deafness I mean to deal with is true hereditary deafness occurring in children. If the definition of hereditary deafness be made strictly scientific this class is found not to be very large—probably less than 10 per cent. of the deaf and dumb. The proof of heredity must rest on deaf-mutism having been hereditary, and on its having occurred either in the direct line or in some collateral branch of the family. The occurrence of deaf brothers and sisters is not by itself of much importance, and the occurrence of hardness of hearing is of even less importance. At present we are like strangers who have only for guidance placards on which is printed: "This way to the Show." When we get there we have a catalogue handed us when we want a stud book. If we are to have anything done towards preventing hereditary deafness, we must have an agency like the Eugenics Record Office of the United States, where we may study the history of deaf families through several generations. My own feeling is that true hereditary deafness thus studied will be found to follow Mendelian lines. Whatever theory of heredity would be found to fit hereditary deafness, three methods may be adopted for controlling it.

1. *The Prevention of the Marriage of the Hereditarily Deaf.*—This is rendered impracticable by the fact that it would be useless unless the prohibition were extended to the hearing members of the deaf families, who transmit the defect with the same certainty as the deaf members.

2. *The Sterilization of the Hereditarily Deaf.*—Apart from the fact that public feeling would be against this step, the same objection must be urged against it as has been advanced against the prevention of marriage. It would be useless unless the hearing members of the fraternity were included.

3. *The Education of the Hereditarily Deaf and of their Relatives on the Dangers of Marriage and of Intermarriage.*—Now that the deaf and dumb are kept at school till the age of 16, and are in many cases under some kind of after-care agency for several years later, much good may be done by education on the dangers I have hinted at.

Some three years ago a discussion took place at the Royal Society of Medicine on heredity and disease. The discussion lasted for four weeks—one night each week—and although many of the leading members of our profession took part in it, the heredity of deafness was never mentioned. The discussion included tuberculosis, insanity, cancer, and a dozen other diseases, not one of which offered a field of observation equal to that of deafness. It included eye colour, coat colour, albinism, and many other characteristics which were not strictly diseased characters, and none of which has the human significance which deafness has. Now, I do not mean to settle here whether or not true hereditary deafness is a diseased condition at all, but there is no doubt that congenital deafness is often hereditary, and I suspect that heredity plays an important part in the production of deafness which is not congenital, and yet it would seem that we as individuals or as a profession hardly interest ourselves in this important subject.

DISCUSSION.

Professor Holger Mygind (Copenhagen) said that so far as the treatment of oto-sclerosis was concerned, his experience was that it was very often complicated with chronic catarrh of the middle ear and with catarrh of the upper respiratory tract, and that there were a good many cases where local treatment, and especially treatment with inflation of air through the Eustachian catheter, was of use, and many patients returned year after year to be treated. As to the question of epidemic cerebro-spinal meningitis, he could recall the fact that he had found in Denmark that cases of acquired deaf-mutism were collected in a limited district during a short period, and that the causes often were reported as brain fever, typhoid fever, pneumonia, etc. This fact was most easily explained by the existence of small epidemics of cerebro-spinal meningitis. In a few cases it was possible to prevent total deafness by using pilocarpin subcutaneously at an early stage. While hereditary syphilis was a not infrequent cause of deafness at puberty it was very rarely the cause of congenital deafness. As to the prevention of marriages between people with congenital or hereditary deafness, etc., he thought that medical men ought not to act the part of Providence. Altogether, little could be done to prevent non-suppurative diseases of the ear, except when caused by adenoids, which, he agreed with Dr. Kerr Love, were hereditary, or by catarrhal diseases. As to suppurative diseases of the ear, the matter was quite different. Here the field of prevention was large, and what he thought would be an important step in this direction was the appointment of competent otologists at all fever hospitals to treat suppuration of the middle ear caused especially by scarlet fever and measles, which often not only produced deafness but also chronic suppuration, which comparatively frequently ended with fatal intracranial complications.

Mr. G. J. Jenkins (London) remarked that heredity played so many tricks that he could not help regarding it as a dubious factor. Whole families might have oto-sclerosis, and yet not a single ancestor could be traced with a similar condition. Generations might be passed over. He thought that the remarks of Dr. Mygind as to the prevention of marriage should be borne in mind.

Mr. E. Malcolm Stockdale (Liverpool) said that cases of deafness due to congenital syphilis coming under his care had been so advanced that treatment was hopeless. He would like to hear from Dr. Love whether treatment could prevent these cases from advancing. In his experience oto-sclerosis was not due to syphilis, but was always associated with the condition usually known as chronic middle-ear catarrh. After or with the removal of adenoids it was important to treat nasal obstruction, which was frequently present.

Mr. W. M. Mollison (London) did not think that adenoids were hereditary. Their effects were due largely to the catarrh of the naso-pharynx or nose consequent on mouth breathing. This mouth breathing was to a great extent imitative. It was striking to notice that the parents and friends of most children who suffered from mouth-breathing and its attendant evils brought to the out-patient departments of London hospitals were themselves mouth-breathers. All children suffered from adenoids: it was a matter of training to make children breathe through the nose.

Dr. Mygind (Copenhagen), speaking a second time, disagreed with the previous speaker, and thought that the fact that children with adenoids often had parents who were mouth-breathers was strong evidence in support of the theory that adenoids were hereditary.

The President thought that adenoids were probably hereditary, but it must not be forgotten that nearly every child had adenoids. He had been much interested at one time in observing the signs of degeneracy among persons attending his out-patient department. He found that about 75 per cent. of the total showed stigmata to a greater or less degree. Though he might seem to be wandering somewhat beyond the scope of the discussion, as regards the ear, he thought that degeneracy had a distinct bearing on the subject under review. In cases he had observed, the stigmata in the main appeared to take the form of a mixture of oto-sclerosis, catarrh, and nerve deafness. It was a very elusive condition, and could not be placed definitely under either of these three heads. Deafness was very prevalent among criminals, prostitutes, and such like. How could the principles of Mendelism be applied to deafness? One particular factor could not be picked out. As regards the treatment of chronic middle-ear catarrh, he thought that 80 per cent. of patients must be improved in his out-patient clinic. Though he often was unable to detect any improvement at all in their hearing, even the reverse, he could not explain otherwise why they should continue to attend for months at a time, unless at any rate they thought that they were getting better.

Dr. Mygind (Copenhagen), speaking for the third time, remarked that as regards the appointment of skilled otologists to fever hospitals, a recommendation to that effect had been made in Denmark some years before, and it was also their custom to distribute printed papers, giving directions to patients as to the treatment of discharges from the ear.

Dr. Kerr Love, in replying, agreed with Professor Mygind that it was very necessary to have an expert otologist on the staff of every fever hospital. Continuing, he said that it was necessary to discriminate very clearly between the true hereditary deafness and the deafness of degeneracy. The true hereditary deaf bore no other stigmata. He had come to the conclusion that oto-sclerosis and middle-ear catarrh were in all probability associated conditions, and that the one was rarely seen without the other. In answer to Mr. Stockdale, he said that he had so far done very little with salvarsan in improving deafness.

Resolution.

At the close of the discussion on Dr. Kerr Love's paper it was resolved by the Section to forward the following resolution to the Council of the Association:

> That the Section of Otology, having regard to the opinions expressed in the discussion on the subject of acute suppurative otitis media that the acute exanthemata are prolific causes of acquired deafness and frequently lead to fatal complications, recommend the appointment of an otologist to all fever hospitals. Further, as the outcome of the discussion on the prevention of deafness, the Section recommends that the Council uses its influence for the establishment of a Eugenics Record Office in this country, where the study of the hereditariness of deafness can be carried out.

THE INDICATIONS FOR THE SCHWARTZE OPERATION.

By G. J. Jenkins, F.R.C.S.,
Assistant Aural Surgeon, King's College Hospital.

This subject, suggested by our most esteemed President, and which I have the honour to bring forward for your consideration, is one of great importance and interest. It is beset with difficulties of various kinds, and I would be satisfied if my communication should help on scientific research that ultimately might enable us to deal more satisfactorily with a certain group of cases.

The Schwartze operation was originally performed to allow of free drainage of the posterior parts of the middle-ear tract in acute mastoiditis. The operation is so designed that these parts may be reached without injury of the tympanic membrane or ossicles, and without involving the external auditory meatus.

No doubt, the good effect of the procedure in this acute mastoiditis is largely due to the free drainage, but at the same time the permanent good result must in some cases be due to the incidental removal of severely damaged tissue. Sufficient importance has not been attached to this incidental effect of the operation until more or less recent years, and possibly for this reason the operation has not been used as often as it might have been in some subacute or even chronic septic affections of the middle-ear tract. I am sure that all of us have met conditions that might be described as subacute or chronic which could be treated most satisfactorily by this operation. It is the object of this paper to help to gather together the indications for this operation in those conditions which have, until more or less recently, been treated expectantly until

a complete post-aural operation has become necessary, or have been treated by the complete post-aural operation when a Schwartze operation would have been sufficient to remove the disease and at the same time preserve better hearing than follows complete post-aural operation at its best.

Having recognized that in performing this operation we have in view not only the free drainage of the infected regions, but also the removal of permanently damaged tissue, the usefulness of the operation seems to be extended. The parts that may be exposed by this method are, briefly, the mastoid and the walls of the antrum and posterior part of the attic. Obviously, then, this surgical method cannot reach any lesion affecting the lower part of the tympanic cavity or its contents, except in so far as by opening the antrum we provide somewhat better means of treating this region.

The operation can only be indicated, then, in those cases in which the auditory apparatus has not been seriously damaged.

To understand the possibilities of and the clinical indications for this operation it is necessary to have some idea of the parts, more particularly the osseous, which become seriously affected by septic infections of the middle-ear tract.

In most cases of infection of the middle-ear region the pathological process is confined to the lining membrane of the cavities. In, however, very acute infections, such as occur in association with the infective fevers, there is often a bone necrosis produced. The outer antral wall and the descending process of the incus are most commonly so affected. The outer attic wall, and other parts affected by bony lesion, I believe, are more usually affected secondarily, and not usually in the primary stage of the infection of the tract.

In many cases of acute infection of the middle-ear tract the attic and antrum escape entirely. We are not at present concerned with such conditions.

If, however, the infection reaches the attic and antrum then there may be more serious consequences.

First, let us consider what may happen when the pathological process is more or less confined to the lining membrane in this general infection of the middle-ear tract. If there should be a cellular mastoid then the symptoms and signs of acute mastoiditis would be expected.

Occasionally when the subject is very resistant to the infection this condition runs a subacute course. The signs and symptoms of middle-ear inflammation may almost disappear, but slight and indefinite pain over the mastoid and the occipital region, some very slight tenderness of the mastoid and slight rise of temperature in the evening indicate that these parts have not recovered from the infection. There may be no oedema over the mastoid. In the few cases of this condition that have come under my observation it has seemed advisable to open the antrum as well as the air cells.

It is also probable, from evidence at operation, that there may be infection of the antrum of a cellular mastoid without general symptoms of the mastoid cells.

Should such a lining membrane affection occur with the diploetic or infantile type of mastoid there is every possibility, and I think probability, of resolution without operation, should there be free drainage into the middle ear and the external auditory meatus.

If, however, the drainage is interfered with by adhesions, etc., there is a localized septic condition in contact with the outer attic and antrum walls. This shows itself as a redness and swelling of the superior and postero-superior part of the wall of the external auditory meatus close to the tympanic membrane. This condition will not be confused with the bulging postero-superior wall of the meatus seen in the early stage of very severe infections.

The condition now referred to becomes more definite as the more acute signs disappear. The acute stage is usually a comparatively mild one, and very often there is no perforation of the membrane. The patient may or may not have a slight evening rise in temperature and complain of uneasiness in the ear and of some deafness. Some of these cases recover spontaneously, but others, if left alone, progress until a perforation occurs and a fistula is established between the attic or the antrum and the external auditory meatus.

Recently I have performed the Schwartze operation on two such cases before perforation had occurred, carefully chiselling away the posterior part of the outer attic wall, and in one I found a bead of pus in relation to the outer attic wall, but in the other only signs of local inflammation. Both cases recovered completely and the hearing was satisfactory.

Secondly, let us consider those acute septic infections with which there are lesions of the bony outer wall of the antrum and possibly attic.

A primary lesion of the bone probably requires a very severe infection for its cause, such as occurs with the specific fevers, more particularly scarlet fever and measles. It is more particularly in this class of cases that the anatomy of the mastoid has important bearing on the progress of the case. You are familiar with the work of Mr. Arthur Cheatle on this subject, and I shall make use of the descriptions which he has given to the various anatomical types.

Projecting towards the antral cavity from the outer wall there is a group of fine processes of bone enclosing long narrow spaces called the fetal antral cells. This anatomical condition sometimes extends to the posterior part of the outer attic wall. It is not difficult to understand that when a severe inflammation of the lining membrane occurs in this region the swelling leads to strangulation of the nutrient vessels, ultimately causing necrosis of this region in part or in whole. Most of us have some time removed the mass of bone forming the outer antrum wall as a sequestrum.

In an acute virulent infection of the antrum there is the liability to this necrosis. If the necrosed mass should be large (dependent on the extent of the distribution of the vessels from the antral wall), or if the mastoid should happen to be cellular, then there are the coarse external signs of acute mastoiditis, and the usual incomplete post-aural operation is done.

If, however, there should be a dense outer antral wall, dense external to the fetal cells, as in the infantile or diploëtic type, then the external signs are very slight or even absent. In such cases there is usually to be seen a bulging of the postero-superior part of the mastoid wall, with or without perforation of the tympanic membrane. With general signs and symptoms such a condition is sufficient to justify the Schwartze operation.

If there should happen to be sufficient drainage of the attic and antrum by an early perforation of the tympanic membrane this localized meatal swelling may not occur.

Should the patient escape internal ear and intracranial complications, it is possible, by the discharges escaping into the external auditory meatus either by the perforation of the tympanic membrane or of the outer attic wall, for the condition known as chronic otorrhoea to be established, and it is obvious that such a condition is not in the least likely to recover spontaneously. The necrosis in the outer antral wall may or may not be extensive, but in whatever degree it will be a persistent cause of purulent discharge. I do not propose to describe the clinical course of such cases, but to consider the possibilities of recognizing clinically the presence of this pathological condition.

What are the indications of a chronic otorrhoea dependent upon severe septic injury of the walls of the antrum or attic? The following seem to me the most important:

(*a*) The history of a severe septic infection of the middle-ear tract, such as may be associated with scarlet fever or measles.

(*b*) The position of the perforation of the tympanic membrane is usually posterior, superior, or through the outer attic wall.

(*c*) If the perforation is large enough, by means of Peters's magnifying modification of Siegle's exhausting speculum it is possible sometimes to see the pus coming down as it is extracted from the attic or the antrum.

(*d*) The persistence of a perforation when all discharge has apparently ceased, and the recurrence of discharge after a period of quiescence.

(*e*) Lastly, a diploëtic or infantile mastoid.

If the mastoid be cellular and an acute infection occurs there would be an acute mastoiditis, but if the mastoid be diploëtic or infantile and the patient escape a cranial or internal ear affection there is the possibility of chronic otorrhoea being established. Further evidence of the

importance of this infantile or diploëtic mastoid in relation to chronic otorrhœa is its almost constant presence in those cases which we regard as requiring the complete post-aural operation.

We have the following methods of investigating the anatomical type of the mastoid:

1. By *x*-ray photography.
2. By condition of the mastoid on the other side if there has been an operation on that side.
3. Transillumination.

It will be seen that there are difficulties in the way of all these means of investigation, but technique has advanced considerably with *x*-ray work, and we are now obtaining more or less reliable information. I have tried a transillumination instrument, but, so far, the results have been unsatisfactory, possibly from defective instrument. Even without this information regarding the anatomy of the mastoid, I would be inclined to say that if there is a history of severe infection, and there are the signs mentioned above, and the usual expectant treatment has been carried out thoroughly for some time—say, three to six months—I would perform the Schwartze operation.

I have given a time limit for expectant treatment, but herein lies the difficulty in treating such cases. Three months seems a sufficient time for the lining membrane disease of the milder type of infection to clear up, and I do not think there is any urgency for operative interference in the cases in which there has been more severe damage at the onset. I believe that most of the damage (especially bone injury), if not all, is done in the earliest stage of the infection, and that though there is no object in waiting if we could be sure of the presence of the severe injury, there is at the same time no further harm done if the ear condition is treated expectantly for a short period. It would not be wise to allow a purulent discharge to bathe indefinitely the hitherto more or less uninjured ossicles, as there would always be the danger of a further active inflammation which might do further damage.

It may seem that in the above a line has been drawn too sharply between the milder and severer forms of infection, but the definite clinical course of the severe infection associated with the specific fever, I think, justifies the classification. It is obvious that the two forms must approach one another, both as to the degree of virulence of infection and as to the clinical course.

Fistula of the attic or antrum opening into the external auditory meatus, when the hearing is good, is a condition which gives otologists some difficulty.

No doubt many of these cases might have been prevented by a Schwartze operation in the early stage when the local signs of inflammation of the outer walls of these cavities were in evidence.

Such a fistula implies a cavity shut off more or less completely from the rest of the middle-ear tract. This space may be reached by the incomplete post-aural operation by carefully removing the outer attic wall.

My experience has been that the operation is not always satisfactory, and that the results have been better in the early than in the longer established cases, and better in actively discharging than in the dry cases.

The subject is a broad one, with many difficulties, and I am fully conscious of the imperfections of my treatment of it in this short paper, but hope this may serve to plead for a more scientific foundation for our treatment of "chronic otorrhœa" and certain subacute inflammatory processes of the middle-ear tract.

DISCUSSION.

Dr. Kerr Love (Glasgow) said that the longer he worked at mastoids the more did he fall back for guidance in individual cases on an indefinable instinct rather than a set table of indications. If there was any doubt about the condition of an antrum it should invariably be opened, and then the condition found would determine what further treatment was necessary.

Mr. E. Malcolm Stockdale (Liverpool) thought that in certain cases it was difficult to decide when the antrum should be opened. He was of opinion that if the discharge was so profuse that it could not possibly be secreted by the tympanum a mastoid operation was indicated. In chronic cases the naso-pharynx should first receive attention. If the discharge did not soon cease, then a mastoid operation was advisable, but the tympanum should be preserved unless damaged beyond recovery.

Mr. W. M. Mollison (London) agreed with Mr. Jenkins that cases of acute mastoiditis with a drum of normal appearance were extremely rare. He had seen two cases, both in children of a few months of age. He had found transillumination of little practical value. He did not feel that the amount of the discharge was any indication at all for or against operation.

The President thought that too much operating had been done without proper classification of the cases suitable for one or other operative procedure. His experience also was that cases of acute mastoiditis without any perforation of the membrane were very few. He had always found it difficult to determine the condition of the incus before operation, so that there was an element of doubt in many cases whether the Schwartze or the radical operation should be done. He would like to know how much interference with the movements of the ossicles there would be after removal of the outer wall of the attic. In investigating a case the exhausting speculum was invaluable. He thought that a great deal more work would have to be done before *x*-ray readings of the mastoid were properly understood. Little information could be gathered from transillumination or from other measures which had from time to time been tried. Antrotomy was far and away the most reliable method.

Mr. Jenkins, in replying, again emphasized the value of the Schwartze operation in removing diseased tissue as well as providing free drainage. He thought that the amount of the discharge was no indication at all of the area of the parts affected. He had been practising lately a further method of investigation—namely, by the probe—but as yet he had not learnt very much from it and its passage was both difficult and painful.

SECTION OF NAVY, ARMY, AND AMBULANCE.

Colonel Damer Harrisson, K.H.S., A.M.S. (T.F.), President.

PRESIDENT'S INTRODUCTORY REMARKS.

The President limited his opening remarks to according a brief welcome to members of the Section, especially to a number of combatant officers of the regular forces who were attending the meeting of the Section by invitation. It was the first time, he believed, on which the proceedings of the Section had been thus attended.

FACTORS AFFECTING THE MARCHING POWERS OF TROOPS.

By Captain N. Dunbar Walker, Royal Army Medical Corps.

It has been said that the two most important military operations in which a soldier has to take part are marching and "sitting still." It is the former of the two with which I am to deal. De Ternay opens his treatise on tactics in the following manner:

> If one classifies military acquirements regarding their relative degree of importance, marching is unquestionably the most essential part of the great art of war.[1]

Marching has been described as—

> The very purport of the existence of the foot soldier, the Alpha and Omega of his being.[2]

These are quotations which express an essential truth, and could be paralleled by similar remarks from the pages of military writers of all ages. At the present day the increased mobility of armies, due to improvements in mechanical transport, has only resulted in greater demands on the marching powers of the soldier. At the same time it must be remembered that in peace time the

average man has to rely more and more on mechanical means of movement—bicycles, etc.—and he is becoming, therefore, less and less accustomed to the natural methods of progression. Before going further it will be advantageous to define what is meant by marching, and I cannot do better than quote Colonel Melville, who says that marching is

> walking; wearing certain clothes in a certain manner, carrying a certain load distributed on the body in a certain manner, as a unit in a body of men; at a pace regulated by the average physical conformation of the mass, not by the individual peculiarities of any one of its component units.[3]

In examining the factors affecting the marching power of troops, I will begin first with the individual, and throughout this paper I shall of course take the private soldier in the ranks of an infantry battalion as the typical unit.

As regards age: For the ordinary work of marching the older the man is, within limits, the better. Napoleon acknowledged the truth of this statement when he said, "I must have grown men; boys only serve to fill the hospitals and encumber the roadsides." The reservists in South Africa rendered a good account of themselves, and showed that within the ordinary limits of military age, say up to 35, their marching powers were not impaired. On the other hand, insufficient age has a very serious effect, and this is a disadvantage of a voluntary system of service like ours. The lad of 18 is not fully developed, and requires very careful training if he is not to run the risk of a breakdown under the strain of marching.

As regards physique: The man of average height is the best marcher, and as long as weight is not disproportionate to height it may be disregarded.

Men who have developed, since enlistment, certain abnormalities of the body or its organs—such as pronounced flat-foot or a fatty heart—must be weeded out before a campaign. The former defect, if bad, absolutely incapacitates a man almost at once, while the latter renders the soldier liable to heat-stroke.

Occupation prior to enlistment is not of great importance in our army, though in general it may be anticipated that the countryman would be a better marcher than the townsman. With reservists this factor would probably prove of considerable importance, especially in the earlier weeks of a campaign, and it is desirable to make the early marches of the strategic concentration as short as possible for the sake of a large number of men whose occupations and lack of training have unfitted them for strenuous physical exertion.

As regards training: We must remember that although marching is essentially a physical exercise, the efficiency of the soldier in this respect is greatly influenced by moral considerations, and the moral side of marching must not be forgotten in carrying out the training of the soldier. First, marching should be almost a habit. Von der Goltz has pointed out that

> An exertion which by previous experience a soldier[4] has learnt to regard as anything but extraordinary, he endures far more easily than one quite strange to him. If the fatiguing march exercises and the long marches in peace time were discontinued, the army would lose by degrees the standard for measuring what human nature can endure without prejudice, if only a little good-will be present.

Even on service during the military operation of "sitting still" practice in marching must not be omitted. In several of the Duke of Wellington's orders in the Peninsular war it is evident he considers this of great importance. The following were two such orders:

> G.A.O. Badajoz, 31st of October, 1809.
>
> 3. The Commander of the Forces requests the officers commanding divisions will make a distance of not less than three leagues in marching order twice a week.[5]

> G.O. Madrid, 22nd of August, 1812.
>
> The Commander of the Forces requests that the several Divisions of Infantry be marched the distance of between six and eight miles every third morning at dawn of the day, and that the regiments may be exercised in some of the manœuvres ordered for the troops, every day on which they are not marched as above ordered.[6]

The Japanese in Manchuria were also particularly careful to keep the men fit during the long halts, running exercises of the nature of games being the chief method.

Another very important factor is regimental *esprit de corps*, and there are many battalions where the tradition that the men of such and such a battalion never fall out has kept men in the ranks. On the other hand, this spirit may lead to trouble, as men have been known to march until they have fallen down in the ranks rather than fall out. Music is well known not only for its effect upon cadency but as a real stimulant. The confidence of men in their leaders has often a striking effect, and the devotion of Stonewall Jackson's men is a modern instance of this. To march to the sound of cannon is inspiriting; on the other hand, there are depressing influences to be thought of, such as the sight of stragglers from units in front, and in the Franco-German war the Germans took particular care to remove such men as soon as possible.

I come now to consider actual instruction in marching, which is the most important factor of all. A man may be in first class training and yet not be able to walk in the most economical manner, and again, a man may be an excellent walker and yet unable to march satisfactorily when loaded. As in all physical education, efficiency can only be achieved by actual practice, and training in marching should be begun as early as possible in the soldier's career. The progression of the training should be not merely in the length of the march but also in the weight carried, and this last is a point that does not always receive the attention it deserves, as it is rare to find men being exercised carrying full loads, including their ammunition. Many factors in marching are largely dependent upon military considerations, such as the design and weight of the load carried, and also the pace, the halts, food supply, etc.

A study of marching from a medical point of view enables one to point out the most advantageous ways of arranging these factors, but at times everything must bow to military considerations. I will proceed to indicate how these factors may best be dealt with to produce the most efficient marching, not forgetting that exceptional circumstances require exceptional treatment.

As regards clothing and accoutrements, all interference with the movements of the chest and with the dissipation of heat should be avoided as far as possible, and these points must be remembered in designing both. Perhaps the most important articles of clothing are the soldier's footgear, and from personal experience I can say that the ammunition boot, if properly cared for, is a very serviceable article. There is one criticism I should like to offer about this boot. The quarter does not appear to come high enough up the ankle, and when putties are worn it is sometimes difficult to fix them round the top of the quarter, with the result that there is a tendency for the puttie to slip up, leaving a space between the top of the boot and the bottom of the puttie. Badly-designed accoutrements will greatly interfere with efficiency. The weight carried should be distributed symmetrically and placed as near as possible to the centre of gravity of the body, but it must be remembered that the heaviest piece of the soldier's equipment—his rifle—must always be carried asymmetrically on one side or other of the body.

From personal experience I consider the present British web equipment to be the best equipment known.

As the amount of energy expended on a march is directly proportioned to the total weight transported by the men, it is most important to keep the actual load as light as possible. It has been laid down that only one-third of the total body weight should be carried, and this would seem to be a very sound rule. The official weight the soldier at present has to carry is 59 lb. odd, which includes his clothing. If we take 10 st. as the weight of the average soldier, then he is expected to carry 12 lb. over the third of his body weight. I have worn the web equipment on two separate experimental marches: in the first march on Salisbury plain I carried a weight of 51 lb., and the party covered 137 miles at an average of 12½ miles per day; on the second occasion the march took place round Dartmoor, and I only carried 39 lb., the party covering a distance of 162 miles at an average of 14¾ miles per day. The difference in weight is accounted for by the fact that no ammunition was carried on the second march. Looking back on these marches, I have no hesitation in saying that the second march, even with its greater average distance, and much more hilly terrain, was child's play to the first. I feel certain that many men will be found incapable of carrying the present load and that the weight must be lightened in some way or other, so that the load carried

should be little more than 47 lb., or one-third of the 10 st. man's body weight. If not, the best part of the marching power of our troops will be absorbed in bearing the weight of their packs.

On an ordinary march the amount of food carried is immaterial, and, indeed, any well-nourished man should be able to march twenty miles or more without eating, but it is essential that he should start in the morning with a good breakfast. During marching over long periods the food question becomes extremely important, and the problem of proper feeding on such marches will be simplified with the introduction of travelling kitchens. With regard to water, since the regulation of body temperature under ordinary marching conditions is affected far more by evaporation of moisture than by any other factor, it is imperative that water loss on the march should be replaced, and the contents (1¼ pints) of our present pattern water-bottle should be sufficient to do so for the ordinary march of fourteen miles in a temperate climate. Nothing conduces to efficiency in marching more than the maintenance of a regular pace. This applies not so much to the pace of the individual as of the unit, and this again depends primarily on the size of the column. Different nations require to march at different paces. During the march from Kabul to Kandahar, "when the Highlanders led the column, the Gurkhas were worn out by their efforts to keep up, and when the Gurkhas were in front the pace became generally so slow as to fatigue the Europeans and Sikhs."[7] The greater the force of troops marching together the greater will be the difficulty and fatigue involved in covering a given distance, and so the larger the force the more necessary is it to enforce march discipline. Further, the regularity of the pace is affected by the nature of the country traversed.

As regards the time of starting, if the weather be at all warm it is, of course, important to make the best use of the morning hours, but it is almost equally necessary to avoid the other extreme of a start so early as to interfere with the men's rest and their morning meal. The march is interrupted by periods of rest, termed halts, the number, distribution, and duration of which are most important. The short halt soon after starting to enable men to adjust their equipment and to attend to the calls of Nature should never be neglected. The hourly halt may be looked upon merely as a punctuation to break the monotony of the march, but the long mid-day halt is on an entirely different footing. When the men have plenty of time to rest, it should be made as complete as possible, all weights being taken off and the men encouraged to lie down; in no other way can they rest all over. This was the practice of Craufurd's Light Division in the Peninsula, and Stonewall Jackson always liked to see his men lie down, saying, "A man rests all over when he lies down."[8] It is just as necessary to break a long march by intercalating days of rest as it is to have rest periods during the daily march, and unless such rest days are arranged for, troops will be knocked up very soon by what becomes a chronic forced march. The tendency to move troops at night means loss of sleep, and if continued becomes a very serious factor, as nothing makes men so "jumpy" as want of sleep.

The billet is better than the bivouac, for, as Von Schellendorff says, "the better the troops are housed the more perfect will be their rest";[9] and Von der Goltz considers that a few bad nights passed without necessity in the open "may well do as much harm as an unfavourable action."

Lastly, we come to the effect of external conditions. Since evaporation is the chief means by which the body of a marching soldier gets rid of the heat generated by the work he is performing, the degree of relative humidity in the air becomes a most important factor, which may be fairly safely gauged by reading the wet-bulb thermometer. On service special precautions should be taken whenever the relative humidity appears high. Evaporation from the body is also affected by the fact that, as the men have to march in large groups, the actual relative humidity around them is raised. Every means should be adopted of increasing the available evaporating surface, coats should be opened, and, if military exigencies allow, the men should march with open ranks. Rain and a head wind will impede troops marching, the former by adding to the weight to be carried and the latter by actual resistance. Roads slippery from frost or greasy mud add enormously to the difficulties of economical progression. Napoleon described the fifth element as "mud"; but in the East it is more often dust and sand with which troops have to contend, the former affecting the men rather by increasing their thirst and causing discomforts than by impeding their movements. Apart from the state of the roads, the kind of country to be traversed has to be considered; valleys and country heavily wooded prevent the free circulation of air, and many of the deep lanes of England offend in the same way. The most important factor of terrain is the ratio of ascent to level. Besides the actual extra work entailed in ascending in a hilly country, it must be remembered that since the men shorten their pace in ascending and lengthen it in descending, the result upon a column of men is a series of harassing checks.

It is important that the staff arrangements dealing with logistics should be efficient, since "a soldier's fatigue is caused less by the fact of his having travelled a certain distance than by the length of time he is kept under arms." Here the soldier is also dependent upon his commanding officer; as Lord Wolseley has said, "fussy and fidgety commanding officers are prone to turn their commands out earlier than necessary";[10] and upon such apparently insignificant details the success of a march may depend. I have endeavoured to indicate the more important factors affecting the marching powers of troops, but in such a short paper on so wide a subject it has been impossible to enter into detail. It is a subject worthy of study by medical officers, and I hope the remarks I have offered will serve as a basis for a helpful discussion.

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DISCUSSION.

Colonel Damer Harrisson, K.H.S., A.M.S. (T.F.), President of the Section, opened the discussion by congratulating Captain Dunbar Walker on having chosen a subject which was of such general interest to all officers of the Regular and Territorial Army. The fact that men unable to step out at their own pace speedily became fatigued had recently been scientifically explained by Professor Macdonald's researches in the physiological department of the University of Liverpool. These investigations had shown that in order to walk comfortably the flexor and extensor muscles of the thigh must be completely relaxed between each pace and that this could only take place when a man was using the length of stride which suited his length of limb. If he was obliged to step short the muscles could not relax fully and he soon became fatigued.

Major-General W. Lindsay, C.B., D.S.O., commanding the West Lancashire Territorial Division, said that he was rather in the position of a humble learner, because he was and had been throughout his service a mounted officer, so that the endurance of the infantry soldier had not come under his close personal observation when he was holding junior rank—that is, at the time when he would really have learnt the minutiae of the matter. As the commanding officer of a Territorial division he was much interested in the discussion. The Territorial infantry soldier suffered from nearly all the disadvantages touched on by Captain Walker—bad boots, youth, want of practice in marching, etc. Had the discussion taken place a month hence, after he had seen the behaviour of his young soldiers, he might have had more points to bring forward. He had, however, learnt much from the excellent paper which he had just heard.

Surgeon-General W. Babtie, V.C., Deputy Director-General, Army Medical Service, said he would like to make a few remarks on some of the points raised in the paper. The first of these was in regard to age. Captain Walker had quoted Napoleon's saying that "men and not boys" were wanted, and had also referred to the good service of the reservists in South Africa. While agreeing with the

latter remark it must be remembered that the conditions of service obtaining in South Africa were not likely to be reproduced in a European war, as in this case mobilization would be rapidly carried out and the reservist would be at the front in a very short time without having time to become accustomed to active service conditions. He therefore thought that the age of the soldier was of less importance than his training, and that a youth of 19 who was in full training would be better than a reservist of, say, 27 who had followed a sedentary occupation for a couple of years after leaving the colours. When training for marching it was important that the full load should be carried, for the equipment had been designed to ensure correct balancing of the service load; if, then, any component—for example, the ammunition—were not carried the balance was destroyed, and the training lost much of its value to the soldier. With reference to flat-foot any acquired form of flat-foot was a serious hindrance to marching, and would render a man unfit for soldiering. On the other hand, among agricultural labourers it was not uncommon to find a form of flat-foot which in no way interfered with walking. This was a point for the medical examiner of recruits to bear in mind. Captain Walker had referred to *esprit de corps* as a factor in preventing men from falling out. It was quite open to question whether in many cases this *esprit de corps* did not result in more harm than good. In some corps in which this feeling was strongly developed, no men would fall out for perhaps the first three days of a march—all struggled on in spite of minor ailments. At the end of the third or fourth day a large number of men—say, 15 per cent. of the unit—would be obliged to fall out, and would remain incapacitated for some days, thus suddenly crippling the fighting force of the unit. He thought that the proper *esprit de corps* was that which taught the men to keep themselves fit for any duty, and that one of the most important points which should be impressed on the men was to recognize and take steps to remedy any minor ailment at once, before it had become a serious one. Music had been referred to as an aid to marching, but Mr. Fahey, an old soldier, in one of his recent articles in the *Journal of the Royal Army Medical Corps*, had pointed out that on a rough road or going uphill music only worried the men, as they could not possibly keep step in time with it. The most important factor affecting the marching of troops was the weight carried, and they must be prepared to do one of two things, either reduce the load to the soldier's carrying capacity, or so train him that he would be able to carry without undue strain the weight which it was essential to his efficiency he should carry on his person. It was hardly necessary, in Liverpool, at the time of the summer meeting, to insist on the importance of weight carried, for if any of them happened to visit Aintree they were not likely to back the horse carrying the top weight, unless they knew that it had been trained to carry this weight. Training was really the point, but not the whole point, for if the soldier was overloaded he would be tempted to get rid of some of his load by throwing away the things he thought he could best spare, and naturally the first of these was his ammunition. They ought also to be able to state in exact terms how the extra weight affected his efficiency as a soldier, but so far no one had been able to devise a formula for this, since the factors were too many and too complex.

Mr. T. S. Ellis (Gloucester) urged the importance of [illegible] with the feet in a position according with their [illegible]y. Walking was really the movement of a heavy [illegible] a hinged base, the hinges being at the knee, at [illegible] and at the heads of metatarsal bones. These [illegible] would be arranged transversely to the line of [illegible], and not obliquely, as happens when the toes [illegible]ed.

Colonel Adam, Commanding the North Lancashire Infantry Brigade, drew attention to the value of cross-country running in light clothing as an adjuvant to route marching under service conditions. Most recruits joined the army at about 18 years of age often in a badly [illegible]l condition; but a man could not be regarded [illegible]own till he attained the age of 25. During the intervening years his physical development along natural lines, and free from the restraint of military postures, should be aided as far as possible. In regard to weight carried, in South Africa a great mistake was made in serving out 6-lb. tins of "bully beef"; these were speedily thrown away on account of the extra weight which one man had to carry. In regard to dress, it was important that in a hot country the helmet should shade the man's face; if not, he got sunburnt, and at night his face smarted and he could not sleep. The high collar of the jacket should be done away with and a rolled collar substituted. Cigarette smoking should be discouraged in every possible way by commanding officers.

Captain Dunbar Walker, in reply, said that he objected to the puttie owing to the injurious effects of unevenly distributed pressure. The puttie could certainly be put on carefully and the pressure would then be evenly distributed, but if breeches with continuations, as worn by all native troops, were introduced the objections would probably be removed. With regard to the weight carried by the soldier in days gone by there was very little information. According to Fortescue the load of a grenadier in 1762 was 63 lb. 3 oz. In the Peninsular war the Light Division during their march to Talavera carried between 50 lb. and 60 lb., but this fact had been disputed. In the old days the men certainly carried more in the way of shelter and food, a blanket, and very often three days' rations, being included in the weight of the knapsack, but it must be remembered that the pouches contained only sixty rounds of ammunition. It was the large number of rounds now carried which was the determining factor of the total weight burdening the soldier. Surgeon-General Babtie had emphasized the tendency of mechanical transport to increase the distances required to be covered by the men. It might, however, be used to render them assistance. Mechanical transport occupied considerably less road space than horsed vehicles, hence extra wagons might be provided to carry part of the men's packs or some of the ammunition. Music must certainly be used judiciously, for, as had been pointed by Dr. Leitenstorfer, harm might be done if, as frequently happened, men were called to attention and ranks closed while, with band playing they marched through the narrow streets and over the cobble-stones of some village or town. With reference to Mr. Ellis's observations, if one considered the movements of the centre of gravity of the body, an explanation would be found of the natural tendency to turn out the feet slightly during walking. In marching the weight of the body was constantly being transferred from one foot to the other, and as a consequence the centre of gravity had imparted to it a swaying motion in a direction at right angles to the line of progression. When both feet were on the ground (period of double support) the centre of gravity was vertically above the line of progression, but immediately the weight of the body was supported entirely on one foot (period of single support), say the right, and this supporting leg was vertical, the centre of gravity moved sideways to its maximum distance (12 mm.) on the right of the line of progression. As the left leg passed to the front the centre of gravity gradually swung to the left. If the left foot were placed on the ground with its long axis parallel to the line of progression, the resultant direction of motion of the centre of gravity would pass obliquely across the foot. If, on the other hand, the foot were slightly everted, the long axis of the foot would lie directly in the line of motion of the centre of gravity. This produced a much more stable equilibrium. The spread of the feet was all the more necessary when the momentum of the centre of gravity was increased by the presence of a load on a man's back. Only the other day Mr. Tubby, at a meeting of the United Services Medical Society, when speaking of walking, made the following statement:

> The inner borders (of the feet) should make an angle with the median plane of not more than 25 degrees.

He agreed with Colonel Adam that when a recruit joined, the first thing required was that the man be well fed; indeed, senior medical officers would like to see a recruit do very little work for at least three months. Cross-country running, to which both General Babtie and Colonel Adam had alluded, was an excellent form of exercise, especially when carried out under arrangements such as were described by Captain Kentish in a recent number of

the *Army Review*, but, as General Babtie was careful to point out, nothing could really take the place of actual practice in marching itself. There was no doubt that by training, *the thirst of habit*, as pointed out by Colonel Melville, could be largely eliminated, but in the case of *the thirst of necessity* one was dealing with Nature's expression of the system's demand for water lost from the body by evaporation, and this must be replaced. During a forced march careful attention to this point was necessary, and in the German Field Service Regulations, and in our old "Combined Training, 1905," instructions were given as to the advisability of sending on word to the villages through which the column was to pass to have by the roadside buckets of water, etc., so that the men could replenish their supply. As regards preparation of the feet, on the Continent foot-cloths, which were an excellent form of foot-covering, were in general use. It must further be remembered that a dirty foot was an unsound foot. Solutions had been recommended for bathing the feet, such as a 10 per cent. solution of chromic acid—which, however, must be weakened if the feet were excoriated—or a 30 per cent. solution of formalin. On the marches to which reference had been made in his paper, a powder employed in the German army was used, consisting of salicylic acid 3 parts, talc 87 parts, starch 10 parts. It appeared to be an excellent recipe.

A SUGGESTION FOR THE MORE GENERAL USE OF IODINE IN FIRST-AID TREATMENT OF ACCIDENTAL WOUNDS.

By A. G. Wildey,
Fleet Surgeon, R.N.

The use of an alcoholic solution of iodine for sterilizing the skin, both before and after surgical operations, is a method very widely adopted, and as a routine practice is thoroughly satisfactory. The immediate application of such a solution to all accidental wounds, from simple abrasions to compound fractures and penetrating wounds of joints, is less generally recognized as one of the most simple and reliable means of avoiding sepsis and of preventing tetanus.

The experience gained during the past eighteen months in the Surgical Section of the Royal Naval Hospital, Chatham, convinces me that in this solution we have an invaluable form of treatment. During this period all compound fractures have been thoroughly flushed out with the tincture, or with a 2 per cent. solution of iodine in rectified spirit, as soon as possible after admission. Many of these cases have been exceptionally severe. They include compound comminuted fractures of the skull and many crushing injuries to bone and joint caused by machinery accidents, both afloat and in the naval dockyard.

The results have been surprisingly satisfactory, sepsis being practically unknown. Particularly noticeable is the aseptic course in cases of badly crushed hands and feet—cases that under other methods of treatment are so commonly followed by septic trouble.

Very gratifying results have been obtained in minor injuries occurring in H.M. Dockyard, Chatham, where the application of iodine solution to all accidental wounds is a routine practice. Fleet Surgeon Bradshaw, the senior medical officer of that establishment, has kindly permitted me to quote some of his statistics. His returns show a decrease of over 26 per cent. in the number of cases placed on the hurt list in the year 1911 as compared with 1910, although the cases of minor injury receiving treatment but not placed on the hurt list totalled nearly 10 per cent. more. The routine of immediate iodine application had been in use for only nine months of the year 1911. To this treatment a large share of the credit for the decrease in the number of cases requiring to be placed on the hurt list must be given for the immunity from septic sequelae it has secured. When we consider the fact that a total of 14,961 cases of injury were under treatment during the past year, and that wounds formed the great majority of them, it will be conceded that we are not drawing conclusions from insufficient material.

The bactericidal action of iodine in alcohol and its value as compared with other antiseptics has occupied the attention of many able investigators. The questions as to how far the efficiency of the treatment is due to direct bactericidal qualities of the iodine, to the penetrating powers of the alcohol, to the astringent action of the combined drugs, or to the stimulating effects upon the phagocytes, are outside the purport of this paper, which aims at emphasizing the practical advantages of the method in all first-aid dressings. One has only to remember the terrible sequelae which too often follow the most trivial abrasions to realize how urgently we need some simple non-poisonous application which can be safely used as a domestic remedy. How frequently do we find tetanus a fatal termination to apparently insignificant injuries! The football-player and the cyclist too often fall victims to this, the most appalling of wound infections; and yet we have in iodine solution, if promptly applied, a ready means of prevention.

Unfortunately, it appears to be a popular conception that iodine, since it is labelled a "counter-irritant," must in any form of application produce irritation; and so generally held is this idea, that many practitioners hesitate to apply iodine to an abraded surface, and few fail to show some astonishment, and even alarm, when it is suggested to them that compound fractures should be freely drenched with a tincture so long associated with the production of some degree of inflammation. In practice, however, we find the 2 per cent. alcoholic solution free from all harmful consequences. Deep wounds and compound fractures, after preliminary cleaning, are well swilled for a minute or so with the solution, and then thoroughly washed out with saline solution.

In cases of sutured skin wounds, abrasions, blisters, and local injuries of minor degree, the iodine is allowed to dry on, and in these superficial injuries it is often unnecessary to apply any dressings, an occasional reapplication of the solution being all that is required to keep the part dry and aseptic.

In my experience of this method of treatment symptoms of iodism have never occurred. The usefulness of the solution extends beyond its application to injured tissues. It forms a ready means of sterilizing the hands of the operator or dresser in emergency work. Wooden, porous, and plaster of Paris splints, where they are unavoidably exposed to some soiling from discharges, can be kept apparently aseptic by daily paintings with iodine. It is difficult to over-estimate the value of this in practice in cases where the reapplication of splints or other fixation apparatus may be an exceedingly troublesome and possibly disastrous undertaking.

In advocating iodine solution as a local application for general use by all intelligent enough to render first aid, some of its many advantages over the more commonly employed antiseptics may be emphasized. Its distinctive colour and general properties make it almost impossible to be confounded with other drugs. It is practically non-poisonous. It is conducive to a more general adoption of a "dry" treatment of wounds, and its use as a domestic remedy must tend to abolish the wet rag, the bread poultice, and all the other sodden and septic household dressings.

For first-aid work, military, naval, or ambulance, iodine is the ideal antiseptic. To get the best results the solution should be freshly made, and this is the chief difficulty connected with its more general use, and particularly with its use in the field.

In the Royal Navy iodine is being supplied dry, in tubes, to be dissolved in alcohol as required. This, while suitable to the service afloat, is not thoroughly practicable for field or ambulance work, nor is it handy enough for popular use. Some method by which a glass capsule or a glass tube containing a strong solution of iodine can be quickly crushed within a vessel containing a sufficiency of alcohol, thus forming immediately the required 2 per cent. solution, would satisfy most requirements; and if this vessel be a collapsible tube holding a quantity sufficient for one application, the fact that a collapsible tube permits the contents to be forcibly expelled is an additional advantage.

These tubes can be carried like cartridges in a bandolier. When the 2 per cent. solution is required the glass capsule contained within the collapsible tube is broken by moderate pressure of the finger and thumb, the strong solution is

released to mix with the alcohol which is free in the tube. The capsule should have a thin gauze wrap to retain fragments of broken glass and so to prevent them from blocking up the nozzle of the tube. The iodine being freed only when it is required for use, the corrosive action of iodine on the metal does not occur.

A bandolier and belt fitted for these tubes and for the service pattern sheathed hypodermic syringe and rubber capped bottles for various hypodermic solutions has been made to my design,* and may perhaps prove a useful addition to the equipment of a medical officer in the field or in general ambulance work. An efficient and very economical method of applying iodine solution is by means of a spray producer. For hospital work an ordinary throat spray apparatus will be found to effect a surprising economy of solution, since there is no wastage in swabs, etc. For field and ambulance work a special spray producer, with metal bellows, has been designed† to be carried hooked to the waist belt.

No doubt more simple methods for preparing and for carrying the solution will be suggested when its general utility becomes more widely recognized—when all who may be called upon to render first aid and all whose occupation or recreation daily exposes them to the risk of accidental wounds will demand to have this antiseptic ready to hand in a convenient form—in a form that is practically harmless, yet a powerful antidote to that most dangerous source of sepsis—the domestic first-aid dressing—the wet pocket-handkerchief!

DISCUSSION.

Colonel DAMER HARRISSON thanked Fleet Surgeon Wildey for having drawn attention to the value of iodine in first aid work.

Lieutenant-Colonel R. JACKSON said that up to the present he had always relied on mercury biniodide as an antiseptic in the treatment of accidental injuries, and had been quite satisfied with the results obtained. He had used iodine for sterilizing the skin but had never used it in the interior of wounds.

Mr. T. S. ELLIS (Gloucester) said that the old household remedy of covering the wound with a piece of clean linen and placing a layer of linen dipped in turpentine over this, and wrapping brown paper round the whole, yielded very good results; in fact, he did not think that one made enough use of paper as a first-aid dressing.

Fleet Surgeon WILDEY, in reply, said that while he admitted the antiseptic properties of mercury it must be remembered that mercury was extremely poisonous and could hardly be allowed in ordinary households on the off-chance of an accident occurring. To illustrate the value of iodine he quoted a case in which a man, while employed in coaling ship, sustained a severe compound fracture of the thigh, the ends of the broken femur were protruding and particles of coal were embedded in the bone. The surgeon on duty immediately drenched the parts with a fresh 2 per cent. alcoholic solution of iodine and sent the man to hospital where a Lane's plate was applied and the wound closed; this healed by primary union and the femur became united as if the case had been one of simple fracture. To avoid the trouble of making fresh solutions of iodine the liniment could be diluted to 2 per cent. strength; this acted in a satisfactory manner.

EYESTRAIN IN THE ROYAL NAVY:

WITH REFERENCE TO GUNNERY AND OTHER RATINGS.

By W. A. WHITELEGGE, M.D., B.A.,
Fleet Surgeon, R.N.

This subject is an intensely interesting and important one, but I am afraid that the remarks which I shall make on its causes and effects must necessarily be brief.

Asthenopia, or eyestrain, is defined as a symptom or group of symptoms, the result of straining some part of the visual apparatus. The varieties of eyestrain are:

1. Ciliary strain, or strain of the ciliary muscle.
2. Muscular eyestrain, or strain of the extrinsic muscles of the eye, as the recti.
3. Retinal asthenopia, or strain of the retina, *retinal tire*.

Ciliary strain is due to relaxation of the strained ciliary muscle, and this may be due to prolonged use of the eye, such as gazing at small objects in a bright light, or from the use of microscopes, telescopes, range finders, or binoculars. In using any of these instruments, the ciliary muscle is thrown into a state of contraction, followed by exhaustion and dilatation. This contraction may also be due to irritation of the conjunctivae from particles of dust, irritating gases, and exposure to the wind causing watering of the eyes. Spasm of the ciliary muscle accompanied with a contracted pupil from associated spasm of the sphincter of the iris, caused by direct or indirect irritation of the third nerve, may be due to the use of powerful telescopes or strong magnifying glasses. In powerful telescopes the field of vision is small, and although there is magnification of the object looked at, there is severe strain thrown on the ciliary muscle.

Muscular Eyestrain.—This condition is due to strain of the extrinsic muscles of the eye, and may be caused by the use of the eye in range finders, giving rise to symptoms of heterophoria. I will allude to its causes when dealing with range finders.

Retinal Eyestrain.—Strain of the retina and its connexions. The main cause of this is "glare." We are all familiar with the uncomfortable sensation when a bright light shines directly into the eyes, making us "blink"; and, again, with the sensation of sneezing when we suddenly pass from a dark room into bright sunshine. The uncomfortable "glare" from the surface of the sea, or from roads in bright sunlight, is well known. It is experienced in countries where the surface of the ground is white and the atmosphere clear; it is met with in the arctic and antarctic regions, from snow. It is not necessary to have light shining in front of the line of vision to experience eyestrain from glare; in fact, the light may be directly behind.

Under artificial conditions the most severe form of glare is experienced when a bright light is situated in a direct line between the eye and the object observed, such as when we meet a brilliant acetylene lamp on, say, a motor car, shining into our eyes.

The eye is extremely sensitive to extremes of illumination, and adapts itself to them (retinal adaptation). For instance, small print may be read by the light from a match or in strong tropical sunlight without any difficulty.

In ordinary natural circumstances glare is caused by strong reflected light upwards into the eye from the surface of the ground or from the surface of the sea, and this is increased by the use of glasses or telescopes, thereby flooding the retina with diffuse light, which is detrimental to acuity of vision.

In ordinary conditions it is diffuse light which enters the eye, because the sun or other source of light is above the observer; and the eye is protected from the direct rays by the eyebrow, the eyelids, and headgear. With telescopes, the eye is protected from direct rays by the india rubber eye-piece in heavy guns, and with the ordinary telescopes by the eye fitting close to the obturator.

When looking at a target in bright sunlight the reflected light obscures the contrast between the target and the surface of the sea, and the lower the angle of incidence of the rays the more difficult it becomes to see the target clearly.

Again, reflected rays fall on the retina in the neighbourhood of their image, and thereby diminish the sharpness of vision and give rise to the condition known as diffusion. This diffusion exists in every eye, and we become aware of it when looking at small distant objects for a length of time.

The eye has a regulator against the influence of light in the iris, which acts as a diaphragm, thus diminishing the size of the pupil aperture when the rays of light are increased; but the function of the iris has a limit, and cannot act as a shutter in a camera. In other words, the power of the iris is not sufficient to prevent the bad effects of superfluous illumination in the retina which follow exposure to bright light.

When the iris is insufficient to prevent the intensity of incident light we experience glare, and in extreme cases

* Made by Messrs. Down Brothers.
† Made by Rogers, Strand, London.

changes in the retina. These changes, believed to be chemical changes in the visual purple, cause loss of function and even destruction of the structural elements, and it is debatable whether the intensity of light or some form of energy in the incident rays is the cause of glare. In my humble opinion it may be due to both.

The ultra-violet rays are believed to effect chemical changes in the retina, and much attention is now being given to the real function of these rays. It is generally accepted that very few, if any, of these rays enter the eye fundus, as they are absorbed in the crystalline lens, which acts as a protector.

In considering the symptoms of the eyestrain due to "glare," discomfort is met with in the milder forms which, if prolonged, causes pain. This is due to screwing up of the eyes and puckering up of the brows, and this prolonged contraction is in itself painful. Parsons, in an article on the physiology of the eye, says "that puckering of the brow is specially liable to cause pain by squeezing the supra-orbital nerve against the frontal bone."

Painful impressions induced by stimulation of one branch of a nerve are liable to spread and be referred to other branches of the same nerve. Hence it is that pain is referred to many other areas supplied by branches of the fifth cranial nerve—the iris, ciliary body, and choroid. The pain may also be due to intense constriction of the iris or to irritation of the sensory nerves of the cornea or choroid.

In acute forms of eyestrain from "glare" pain is the principal symptom complained of, and comes on after a certain time, especially when using a telescope in a strong light when the sun is low in the sky, at from 15 to 20 degrees, that being the angle which admits a large number of reflected rays into the eye.

Among motor drivers eyestrain is well known, especially after a long drive on a dusty road facing the sun, the reflected rays consequently shining into the eyes of the driver. Night blindness is known to have followed in several instances.

Range Finders.—There is no doubt that range finders do produce eyestrain, and I have gained this information from many officers in the army and navy who have had very considerable experience in using these very delicate and powerful instruments.

To take the "Barr and Stroud" range finder as an example. In this form of range finder both eyes are in use at the same time, and looking through different power lenses. This gives rise to strain in the ciliary muscles, and at the same time in the extrinsic muscles which are all engaged. In addition there is the vibration of the ship, which puts a certain amount of strain on all the muscles of the body, the movement of the ship, the long ranges, reflection of light from the surface of the sea, "glare," and the speed of the ship, all of which tend to strain the eye and give rise to various forms of discomfort, distress, and other phenomena.

The following are some of the symptoms met with in this form of eyestrain: Pain in both eyes and sensation as if the eyes are being "dragged apart," pain in the eyeball, headache, photophobia, mistiness, double vision, difficulty in seeing objects with one eye closed, exophoria, esophoria, and hyperphoria, inability to use an ordinary telescope or binoculars—all these sensations may last for a considerable time, and cause great distress.

In regard to this form of eyestrain, I think that it is due to strain of the internal and external muscles of the eye, and that "glare" from a physiological standpoint may be ignored, or at any rate is not the main factor in causing the eyestrain.

The range finder is one of the most interesting as well as one of the most essential of optical instruments used in modern gunnery. I have already mentioned the various forms of heterophoria or muscle-balance errors that may arise from its use. These muscle-balance errors are:

1. Exophoria—the eyes turn outwards; due to insufficiency of the internal rectus.
2. Esophoria—the eye turns inwards; due to insufficiency of the external rectus.
3. Hyperphoria—one eye tends to be on a higher level than the other; due to insufficiency of the superior or inferior rectus.

Now insufficiency of a muscle due to relative weakness means that a particular muscle is relatively weaker than its opponent, so that in "static" and "dynamic" vision extra impulses have to pass to that muscle in order to produce perfect vision. An insufficient muscle is not necessarily weak. It is insufficient because its opponent, through spasm or preponderance, is "too efficient." Hence, in the case of insufficiency of the internal muscles, although they may be insufficient for convergence, they may be able to take their part in associated movements of the eye to either side.

In range finders there is a tendency to produce this condition, and on testing with a Maddox rod this is easily demonstrated.

Many of these muscle-balance errors arise from the use of range finders, and the eye which is looking at distant objects is generally affected, causing double vision, which may only last for a short period, or may be permanent. These errors may be mistaken for accommodative asthenopia, squint, nystagmus, etc.

Now in esophoria there is insufficiency of the external rectus, due to spasm or preponderance of the internal rectus, and this is what gives rise to the sensation known as "dragging apart" of the eyes, so often met with in those who use range finders for a time.

Another symptom is that when testing with Harman's diaphragm test, the letters are said to be "dancing about." This condition was admirably described in a paper on cases of esophoria not caused by refractive errors, in the *Lancet* of October 23rd, 1910, by Mr. Reginald Morrell.

I came across a case on April 25th of the latter form of esophoria in a leading seaman, gun-layer second class, aged 29.

Vision for distance with Snellen's test types, R.V. $\frac{6}{6}$, L.V. $\frac{6}{12}$. Retinoscopy: no error of refraction, media clear, fundus normal. Tested with Maddox rod, esophoria, with Harman's diaphragm test, the letters were "dancing about." He had no pain, but when reading for some time his eyes got tired, and the letters jumped about. He attributed this to using a range finder some three years ago; he used the right eye for shooting. The "dancing about of the letters" was relieved by placing a convex lens −1.50 D. sph. in front of the left eye.

It may be argued that this was a case of early presbyopia, but as only one eye was affected, and that eye was not the "master eye," which I think, as a rule, shows signs of presbyopia earlier than the eye not constantly used, I do not think so. There was no visible nystagmus and no history of any nervous affection. If this had been a case of "retinal tire," the letters would not be "dancing about." I might also mention that there was no history of alcoholism.

The differences in the lenses in a range finder undoubtedly give rise to eyestrain, and account for nearly all the phenomena and inconvenience which prolonged use of these instruments are prone to cause. The heterophoria from the use of range finders is most interesting from a clinical point of view, and the strain on the internal and external muscles of the eye must be very severe. For all who use range finders and have had much practice with these instruments, it is necessary to warn them of the distress that is liable to follow, not to mention the various sequels. The adjustments necessary for binocular vision are practically impossible when using a range finder. But there must be an inequality in the two eyes, and the effort to produce binocular vision may easily give rise to central symptoms, which are nearly always functional, such as headache, sickness, sleeplessness, migraine, and a symptom generally not noticed—polyuria.

I have already alluded to muscle-balance errors, such as heterophoria and strain of the ciliary muscle.

The principal troubles arising from the use of range finders may be divided into peripheral and central. In the former, pain at the back of the eye is one of the most commonly met with. Another is pain at the nape of the neck, which is often met with in cases of heterophoria, and in the majority of those who use range finders is the principal symptom complained of.

"*Eye.*"—In considering good shooting we have to take into account "eye." Robert Doyne in an article on "Eye in Sport," in the British Medical Journal of December 24th, 1910, offers some very useful information, and arrives at the conclusion that there is a "master eye," and that this is gained by experience.

Now in examining men's eyesight I have come across this "master eye," and therefore I entirely agree with

him, but the time at my disposal will not permit of going deeply into the subject. A "master eye" such as he speaks of can only be gained by long experience and training, entailing the most careful use of various instruments, but without good vision and constant practice this "master eye" cannot be acquired.

I will now refer to anisometropia in which the refraction is different in each eye. It is comparatively common among those who use telescopes and range finders for long periods—namely, signal ratings.

There is an analogous condition, often met with, where there is a difference between the acuity of vision in the two eyes not due to errors of refraction, changes in the fundus or media. It is due to the so-called "master eye."

I tested by means of Snellen's test types for distance twenty-five men in a clear light.

The following were the results of the examination:

All read $\frac{6}{6}$ at 6 metres in both eyes.
All used the right eye for adjusting the telescope.
3 read $\frac{6}{6}$ at 6 metres in both eyes. Hypermetropia.
1 ,, $\frac{6}{6}$ at 6 metres in both eyes. Hypermetropia.
6 ,, $\frac{6}{6}$ at 6 metres in the right eye, and $\frac{6}{9}$ in the left eye.
6 ,, $\frac{6}{6}$ at 6 metres in the right eye, and $\frac{6}{12}$ in the left eye.
5 ,, $\frac{6}{6}$ at 6 metres in the right eye, and $\frac{6}{18}$ in the left eye.
1 ,, $\frac{6}{6}$ at 6 metres in the right eye, and $\frac{6}{24}$ in the left eye.
2 ,, $\frac{6}{6}$ at 6 metres in the right eye, and $\frac{6}{36}$ in the left eye.
1 ,, $\frac{6}{6}$ at 6 metres in the right eye, and $\frac{6}{60}$ in the left eye.

Those who read $\frac{6}{6}$ in both eyes were hypermetropic, and by retinoscopy were not astigmatic. All the others had no errors of refraction.

The causes of eyestrain among gunnery ratings are:

1. "Glare" from the surface of the sea.
2. The use of powerful telescopes for prolonged periods.
3. The neglect of proper adjustment of the telescope.
4. Using the telescope with one eye closed.
5. Living in a ship in artificial light (electric).
6. Long-range firing (indirectly).

Modern telescopes, binoculars, and range finders are all fitted with high power lenses reaching as high as 35 dioptres, which in itself is a great strain on the normal eye, especially in a strong light.

The want of proper adjustment of the telescope or wrongly spaced binoculars is a very common error, and it is very difficult to impress on men the fact that in using high power glasses the eye can accommodate itself to a higher adjustment than is necessary, and the stronger the magnification the easier it is to increase the error.

With a view to remedying this error experiments were made with the telescopic sights marked in dioptres, so that men, having been given their correction for refraction, could adjust the sight accordingly; but these were not found to be satisfactory. The condition of light and the atmospheric changes were found to interfere with the supposed contraction, and the necessary adjustment of the telescope did not coincide with the correction for errors of refraction under all circumstances. It was found more satisfactory to instruct men to use their own correction when adjusting a telescopic sight.

Using a Telescope with One Eye Closed.—This is a very common cause of eyestrain, and it is very difficult to impress upon men its disadvantages. To prevent this, and to accustom men to keep both eyes open when using a telescope, a shade over the eye not applied to the glass would prove to be efficient, and tend to train the observer to prevent eyestrain from this cause.

Living in Artificial Light (Electric).—This is perhaps the most common cause of eyestrain among all ratings in the navy. In nearly all modern warships men have to live a considerable time in artificial light between decks. It is obvious that artificial light is absolutely necessary, and the electric light is found to be the most useful form of illuminant. The quantity of light is generally sufficient, but the distribution and situation of the lamps leaves much to desired. For instance, in many spaces there are no overhead lamps, and all light has to come from the bulkhead lamps, which are fitted at a height of about 4 ft. from the deck.

Overhead Light.—In mess decks, too, very often the principal illumination comes from lamps fitted into the sides of the deck, and there is little or no overhead light. This is obviously a frequent cause of eyestrain, as the light falls either in front of or behind the observer. To any one familiar with ship life the attitude assumed by men while reading by the aid of artificial light is sufficient to prove this.

Naked incandescent lamps are undoubtedly a cause of eyestrain. Every lamp should be protected with a shade, and Mr. Treacher Collins recommends the use of amber-coloured glass as the best form of shade to prevent eyestrain. Amethyst-tinted glass is equally efficient as a protector to the eyesight. They both absorb some of the ultra-violet rays, which are well known to cause eyestrain.

Lead-glazed lamps are also very useful. In all forms of lamp the filament should not be visible. The form of the filament plays a material part in the illuminating power, but should always be shaded.

The Effects of Eyestrain.

The effects of eyestrain may be divided into two groups: (1) the mild, (2) severe. (1) Mere dazzling, attributable to extra diffusion of light over the retina, producing discomfort and eventually pain. (2) Those which are more severe are due to intense bright light causing blurred spots, or "negative after-image," which is usually temporary, but may persist, and it is then known as a "scotoma." This may be followed by anatomical changes in the retina, pigmentation of the macula, night blindness, and, in extreme cases, actual blindness.

In my experience the cases of eyestrain are for the most part of a mild character, but the effects last for a long time. In many cases which I have come across the victim complains of pain in the eyes from reading, especially at night, and I can call to mind several where the effects of eyestrain are permanent.

I have refrained from giving astigmatism as a cause of eyestrain, and the time at my disposal will not permit of my dealing with it *in extenso*, but before concluding I should like to refer to this error as a cause of eyestrain, especially hypermetropic astigmatism, which is well known to give rise to asthenopia. This is greatly increased if the error is asymmetrical in one eye or unequal in both eyes. Myopic astigmatism, on the other hand, usually produces defective vision which is manifest.

It is a recognized fact that the larger the error the easier it is to detect astigmatism, and the converse is also true—namely, the smaller the error the harder it is to demonstrate and the more likely it is to be overlooked and the after-effects worse. Men suffering from eyestrain seldom show serious defective vision, as estimated by Snellen's test types, and therefore subjective symptoms are the indications for a searching examination of the eye.

THE TREATMENT OF SYPHILIS BY SALVARSAN.

By Lieutenant-Colonel Nathan Raw, R.A.M.C. (T.F.)

Lieutenant-Colonel Nathan Raw related the clinical history of 15 cases in which he had used salvarsan by the intravenous method. As a result of his experience, he came to the conclusion that salvarsan was a most valuable remedy in the treatment of the disease in the primary stage. In the secondary stage very rapid improvement followed the use of the drug, whilst in diseases of the nervous system the result of syphilis salvarsan did not appear to be of much value. He had used it in the treatment of general paralysis, but had seen no favourable result; in fact, in one case he thought the disease was aggravated. He was of opinion, however, that a certain proportion of cases required mercury too for the cure, and he preferred to give injections of mercury after salvarsan had been used; he was strongly in favour of the inunction treatment by mercury, and for cases in the secondary stage of the disease this treatment seemed to be the best. There could be no question that salvarsan was a most potent and valuable remedy in the treatment of syphilis, but it was necessary to select cases which would be benefited by it, and he could not possibly see that any good would result in the treatment of congenital syphilis, or in those diseases of the nervous system such as locomotor ataxia or general paralysis, as in those cases permanent destruction of the nervous system had already taken place.

DISCUSSION.

Major D. Smart, R.A.M.C. (T.F.) (Liverpool), said that he had used salvarsan in 60 hospital cases and in 6 private

cases. He agreed with Lieutenant-Colonel Raw as to its beneficial effects on skin lesions, chancres, mucous patches, and rupia, but had not seen any benefit in old lesions of the nervous system. His experience had been confined to the intravenous method. Many surgeons complained of the difficulty experienced in inserting the needle into the vein; this difficulty, he thought, was due to using a blunt needle, and could be obviated by using a fresh needle for each case. Mercury must be employed in combination with salvarsan, and for preference strictly according to the Aix-la-Chapelle formula, as he considered this method to be far superior to the injection treatment.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF "THYMUS DEATH."

Early one morning in April of this year I was summoned to see F. H., aged 4 months, who was said to have been taken suddenly ill and to be dying. On arrival at the house I found the infant (whom I had known previously to be a perfectly healthy nursling) dead. He was not yet cold, there was no rigor mortis, the lips were markedly cyanosed, and some yellowish (blood-stained?) froth exuded from the nostrils. There were no other external signs of note.

The mother's story at the inquest which was ordered was to the effect that she put the child to the breast at 7.30 a.m., that he seemed perfectly well and played with her and her husband for a time; then while she was in the process of dressing him he suddenly stretched himself and gasped a little, and turned his eyes upwards. A neighbour whom she called in said she thought the child was dying or dead, and came for me. The mother stated on oath that neither she nor her husband went to sleep after she had fed the baby at 7.30 a.m.

By order of the coroner I made a *post-mortem* examination. On removal of the sternum and cartilages the thymus was seen to be greatly enlarged, concealing practically the whole pericardium, and extending nearly the whole length of the sternum. There was some excess of free fluid in the left pleural cavity, and the left lung was engorged with blood, as were the left pleura and lung, but to a less degree. There was no sign of pleurisy or pneumonia. The air passages were perfectly patent, no foreign matter being present. Examination of all other organs showed them to be normal.

The jury returned a verdict in accordance with my evidence, that death was due to the thymus enlargement solely, this being a recognized, albeit uncommon, cause of sudden death.

Stafford. A. E. Hodder, M.B., B.C.Cantab.

HYPOSPADIAS—AN UNUSUAL CASE OF GANGRENE.

The following case appears of interest, particularly with regard to the occurrence of an acute spreading gangrene commencing in the penis of a patient aged 45, the subject of hypospadias. At the first visit he complained of somewhat vague symptoms, including general malaise, occasional shivering, profuse sweating, and loss of appetite. There was no rise of temperature, and the pulse was normal. He admitted a fairly free use of alcohol for about a week previous, and as he appeared rather debilitated his present state was no doubt due in good measure to this. On the third day of attendance he complained of some difficulty in passing urine, also some smarting pain on the right side of the body of the penis. On examination, the patient was found to be the subject of hypospadias, the meatus being about ¾ in. in front of the scrotum and the organ rather under-developed. There was some swelling, and on the right side of the penis a small circular facet-like area with inflammatory reaction around. The urine contained some albumen, no sugar. The following morning there was much swelling of the penis, and around the small area referred to on the right side the tissues had become gangrenous. Very rapidly practically the whole organ became the seat of a spreading moist gangrene.

The abdominal wall was very soon invaded by the process, two large gangrenous areas appearing on either side about midway between the umbilicus and anterior superior spines. The abdominal discoloration reached eventually almost as high as the umbilicus in front. The spread on the lateral aspects was very extensive, reaching on the left side as high up as the axilla, and on the right to a level with the nipple.

The patient died on the morning of the fifth day from the appearance of gangrene. The temperature throughout was normal; pulse eventually very rapid and thready. Fluid from a large bulla on the lower part of the abdominal wall was sent for bacteriological examination. No micro-organisms of any kind were found by direct examination of stained films made from the fluid, and cultivation, both aërobic and anaërobic, failed to demonstrate the presence of any organisms. Bathing the surface immediately around the bulla with a lysol solution may have sterilized the fluid as it escaped, although this does not seem too probable, as nothing could be got even from direct films stained.

Kinlochleven, Argyllshire, N.B. J. G. McDougall, M.B.Ed.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

CHURCH MISSIONARY SOCIETY'S HOSPITAL, AMRITSAR.

(Two Cases reported by Somerton Clark, F.R.C.S.Edin.)

Case I.—*Strangulated Infantile Hernia.*

The patient in the following case, a Sikh male child, aged 2 years 1 month, was admitted on March 26th, 1912, with a history to the following effect:

During the past eight months the child had had a swelling in the right scrotum which alternately ascended and descended. During the past ten days it had been constipated, and during the last five days it had had vomiting and fever.

The obstruction became complete twenty-four hours before the child was brought to hospital. The scrotum was red, heavy, and as large as a man's fist.

Operation.—An incision 3 in. long was made into the scrotal skin, which was much thickened and very vascular. The sac consisted of two distinct outer layers as thick as the leather and rubber of a football. The third layer was thin, and contained a loop of bowel firmly adherent to the testis and loosely adherent to the inguinal canal. When the adhesions to the testis were separated, a bare area the size of a shilling was exposed on the small gut, which was indurated. As invagination was impossible, 2 in. of intestine were excised, and the ends of the small intestine united with linen thread. The abdomen was filled with double saline solution. The sac was litagured and the ring closed after with two sutures. The pulse was barely perceptible and the lips pale, so double saline was given by the rectum and into both axillae.

Progress was uninterrupted, and the child left hospital on the tenth day.

Case II.—*Hydatid of the Neck.*

The patient in this case was a Mohammedan female, aged 16 years, who was admitted on April 6th, 1912. She complained of a swelling in the neck which was especially marked below the left sterno-mastoid. It had existed for two and a half years, and gave rise to dysphonia, dyspnoea, and dysphagia.

On April 9th, 1912, a transverse incision 1 in. long was made through the left sterno-mastoid, and on pressure hydatids escaped. On further pressure the mother cyst was invaginated and removed.

The cavity of the tumour extended behind the larynx and trachea.

The patient left hospital three days later, relieved of her symptoms.

Reviews.

ORTHOPAEDIC SURGERY.

It is fifteen years since Tubby's *Deformities* was reviewed in these pages,[1] and during that time a good deal of progress has been made in orthopaedics, as in other branches of surgery, so that a new edition[2] is as necessary as it is welcome. Wisely, as we think, Mr. Tubby has decided to follow American and Continental custom and include in orthopaedics those diseases of the bones and joints with which all orthopaedic surgeons have so much to do. This widening of the scope of the book has necessitated its enlargement, and accordingly it now appears in two volumes instead of one, and so much of it is rewritten that it might pass for a new book instead of a second edition. The first edition was arranged mainly on a regional basis, while in the present issue the subjects are grouped according to etiology and pathology. The book is divided into ten sections, and there are four appendices upon various subjects; but, unlike most German orthopaedic works, there is no section devoted to the setting forth of the principles upon which orthopaedic instruments should be designed and made, and no detailed consideration of the many materials that may be used by the surgeon in the course of treatment or the technique of their application. This is, we think, a pity, but Mr. Tubby is not singular among English-speaking surgeons in leaving out so much of the handicraft of orthopaedics. Surgeons in the great cities may perhaps leave these matters to the instrument makers, but instructions on the choice, preparation, and use of orthopaedic appliances of all kinds are desirable for readers who are remote from instrument-makers' shops. Mr. Tubby, like many others, states that Andry formed the word "orthopaedia" from ορθος and παις, but Andry distinctly states that he formed it from ορθος and the diminutive, παιδιον, following Claude Quillet, who in 1656 wrote a poem, *Callipaedia*, "upon the method of getting beautiful children." The point is perhaps microscopic, but it is as well to be accurate in etymology, since we heard a highly-placed member of the medical profession only the other day publicly give the derivation as from ορθος and *pes*, thus debasing orthopaedics to something akin to chiropody, whereas, as Mr. Tubby truly says, it "is no narrow speciality to be limited by the custom of one nation or another, but is a most important branch of surgical science, and worthy of the closest attention." The truth of this statement will be apparent to any one who merely glances at the 1800 pages contained in these two volumes, wherein not only the ripe experience of the author but the results of a very wide survey of British and foreign methods is set forth and their value appraised.

The short articles on cervical ribs and on torticollis are clear, and their conclusions sound, and the four chapters devoted to the much-debated subject of scoliosis contain as much as can usefully be written on the practical treatment of that subject, summing up the many and various views as to etiology and treatment. There is weight in the author's plea for a greater consideration in this country of mechanical correction of scoliosis, a form of treatment which has been carried to a great length in Germany and Switzerland, and is capable of giving good results. There is a very useful section on affections of muscles, tendons, bursae, and fasciae, and the five sections on diseases of the bones and joints occupy nearly two-thirds of the second volume. The author speaks favourably of Bier's hyperaemic treatment, and of tuberculin in surgical tuberculosis. These sections form an adequate treatise on their subject.

As was to be expected of one of the authors of the [illegible] *Paralyses*, the section on this subject is very complete and interesting. We note that a more favourable [illegible] of tendon transplantation than is held by some surgeons of experience.

The volumes are copiously and well illustrated. There are full indexes of subjects and of authors referred to, and the indexes to both volumes are printed in each, a plan which much facilitates reference. Full and useful bibliographies of some subjects are given. Altogether the second edition of *Deformities* is worthy of the reputation of its author and of British orthopaedic surgery.

[1] [illegible] 7, p. 921

[illegible] *A Text-*
[illegible] F.R.C.S.
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[illegible] 1487

SKIAGRAPHY OF THE NASAL SINUSES.

Despite the large number of books relating to diseases of the ear, nose, and throat, the literature of the subject in the English language is by no means rich in monographs dealing with *The Skiagraphy of the Accessory Nasal Sinuses*.[3] During the last four years Dr. Logan Turner and Dr. W. G. Porter have employed the *x* rays as a routine method of examination in cases of accessory sinus disease, and having obtained much useful information and practical assistance in their work from this method of examination, have placed on record their experience in a volume which undoubtedly should prove useful to others who are interested in the same branch of surgery. When noticing in these columns Dr. P. H. Gerber's monograph *Die Komplikationen der Stirnhöhlenentzündungen*[4] and Dr. A. Kuttner's atlas, *Die entzündlichen Nebenhöhlenerkrankungen der Nase im Röntgenbild*,[5] we emphasized the difficulties frequently met with in accurate diagnosis of the diseases of the accessory nasal sinuses by means of the ordinary clinical methods, and the uncertainty at times experienced in dealing with the sinuses surgically owing to an imperfect acquaintance with their actual size and their exact anatomical relations to one another. We further drew attention to the valuable assistance afforded by an examination with the *x* rays. It is a matter of common experience, as Dr. Logan Turner and Dr. Porter point out, that cases of frontal, ethmoidal, sphenoidal, and even of maxillary sinus suppuration are met with from time to time, in which the surgeon is not able to make up his mind regarding the condition of the sinus without first carrying out some small intranasal surgical procedure, such as the removal of the middle turbinated bone in order to catheterize the frontal sinus, to open the ethmoidal and sphenoidal cavities, or the puncturing and washing out of the antrum of Highmore for diagnostic purposes alone. By means of the *x* rays it is possible, in some cases at any rate, to arrive at a correct diagnosis when in doubt without such preliminary investigation and with advantage not only to the patient but also to the surgeon, who can thereby obtain information regarding the size and relation of the suspected cavity with which he may be called upon to deal.

The object of the volume is to demonstrate this fact, and to endeavour to simplify the interpretion of what must be regarded by many as a somewhat complicated skiagram of the head. The authors have achieved their object in a volume containing 45 pages of descriptive text and 40 plates of excellent skiagrams. In the selection of apparatus and technique they have followed Dr. Kuttner, and have employed the "Rotax" instrument supplied by the Sanatas Electrical Company of Berlin. The interpretation of the skiagrams is naturally a chapter in itself, and is followed by sections dealing with the development of the sinuses, the anatomical configuration and relations of the sinuses in the adult from a clinical standpoint, the skiagram in disease, and the skiagram in estimating the result of treatment. The authors arrive at the following, amongst other general conclusions, regarding the value of skiagraphy in accessory sinus disease.

Skiagraphy is a valuable aid in the study of the development of the air cavities, and is the only method by which it is possible to determine in the living, and without any operative interference, the existence of all the air sinuses. By means of the skiagrams it is possible to define the size of the frontal sinuses, the position of the inter-sinus septum, the presence of subsidiary partitions in the cavity, and a supraorbital extension of the sinus. To some extent, the relation of the sinus to the anterior ethmoidal cells can also be determined. It follows that from the anatomical knowledge thus derived the surgeon is in a better position to decide the operative treatment which

[illegible] *Accessory Nasal Sinuses*. By A. Logan Turner, M.D., F.R.C.S.E., F.R.S.E., and W. G. Porter, M.B., B.Sc., F.R.C.S.E. Edinburgh and London: W. Green and Sons. 1912. (Med. 4to, pp. 45, plates 40. 10s. 6d. net.)

[3] British Medical Journal, 1909, 1, p. 23.

[4] Ibid., 1910, 1, p. 575.

should be carried out upon a diseased frontal sinus, and, to a lesser extent, also upon the ethmoidal cells. Skiagraphy may also be of anatomical assistance prior to operations upon the maxillary and sphenoidal sinuses. The diagnostic value of skiagraphy is greatest in connexion with disease in the frontal and ethmoidal sinuses. In children, in whom it is commonly inexpedient or impossible to carry out intranasal diagnostic procedures, it will prove of undoubted advantage to obtain a skiagram of the sinuses. The skiagram may be usefully employed for ascertaining the size of dental cysts occupying the maxillary sinus, in determining the origin of choanal polypi, and for assisting us in defining the limitations of malignant growths in the sinuses, as well as for detecting foreign bodies. It is also of service in determining the effect of treatment upon the inflammatory affections of the accessory sinuses.

The authors draw attention to the limitations of skiagraphy as an aid to diagnosis of the exact nature of the pathological contents of a sinus or of the degree of inflammatory change which has taken place in its mucous membrane.

It would not be generous to take exception to the arrangement of a volume which, if not the first, is one of the first attempts to popularize in the English language a most valuable aid in elucidating some of the most obscure problems in surgery, but some would possibly have preferred the plates to have been inserted to face the text they illustrate instead of being placed together at the end of the volume. The plates are well printed and give a detailed representation of the sinuses as seen by radiography in the skull and in the living person both in health and disease.

INTRA-VITAM STAINING.

Professor Edwin Goldmann[6] described the main results of his experiments with intra-vitam staining, in a paper read by him before the Royal Society and reported in the British Medical Journal of March 23rd, 1912, p. 670 (see also p. 745 of the following issue). He has now published a full account of his methods and results. He injected 0.5 per cent. to 1 per cent. watery solutions of pyrrhol-blue, isanamin-blue, etc., either subcutaneously or intravascularly into mice or rats under various conditions of health and disease, and studied their organs histologically at varying periods after injection. A dose of 1 c.cm. per 20 grams body weight was sufficient to cause the stain to be diffused in a few minutes throughout the whole body. The stain is taken up by specific cells which he now calls *histiogene Wanderzellen*, in preference to his former name of "pyrrhol-cells." He regards them as phagocytes and tissue-builders: they take up not only foreign bodies, but also leucocytes and erythrocytes, and various nutritive substances. They are usually round, but can change their form to suit their environment, and sometimes become spindle-shaped or oblong, often forming anastomoses with each other. They have a large nucleus rich in chromatin, and a firmly granulated protoplasm. The granules of the protoplasm take up the stain. The distribution of these cells in the different organs is interesting. In the stomach, for instance, they are very numerous in the pylorus, but towards the cardiac end much fewer. They are present in the peritoneal fluid, and increase considerably in number after irritation of or injury to the peritoneum. In the omentum they are found chiefly in the neighbourhood of the vessels. They congregate in numbers round a wound or a growing tumour. In the gravid uterus the serous coat contains a dense layer of these cells, especially in that part where the ecto-placental conus has already begun to develop. Here it could be distinctly observed that the cells gave off granules to the primitive *Anlage* of the embryo. Goldmann is convinced that the cells originating in the serosa, which penetrate the wall of the uterus, provide nourishment to the embryo in its very early stage by means of the vitally-stained cells. Later on, when the placenta is fully formed, other ways are opened up; at this stage the placenta acts as a protecting filter, and the fetus remains free from the stain injected into the mother. The vitally-stained cells in a tuberculous nodule become much paler some weeks after the infection has taken place. In proportion as the number of bacilli increase, the stain becomes more and more diffused in the protoplasm, till at last the granular structure disappears; this is held to be due to the deleterious effect on the cells of invasion by the bacilli. The nucleus, however, still takes the stain after the granules disappear. Goldmann thinks that the destruction of the granules deprives the cells of the power of amoeboid movement, and he observed that as their capacity for binding the vital stain decreased, their capacity for showing fat stains increased. He believes that the vital stains are bound by a fat albumen substance, and that, if this substance is broken up, the fat is expelled and the vital stain cannot be retained. He thinks this is the key to the difference in the behaviour of the fat stains towards intracellular and extracellular fat.

The work contains a good bibliography and beautiful coloured plates, which enhance its value.

[6] *Studien zur Biologie der bösartigen Neubildungen.* By Professor Dr. Edwin Goldmann. Nine engravings and 26 plates. (8vo. 1911. M.8·; also *Neue Untersuchungen über die acussere und innere Sekretion des gesunden und kranken Organismus im Lichte der vitalen Faerbung.* By Professor Dr. Goldmann. Three engravings and 59 plates. Tübingen: Laupp'schen Buchhandlung. 1912.

CLIMATE IN DISEASES OF CHILDREN.

Dr. Wachenheim, of New York, is probably right in claiming that his book on the *Climatic Treatment of Children*[7] is the first on the subject, though the late Professor Simon, of Paris, wrote a work on spas for children some twenty years or more ago. Save in respect of tuberculosis, and to a lesser degree rheumatism, the question of climate in the treatment of children's diseases has not received sufficient attention, and has been mainly restricted to children known in ordinary phraseology as delicate. In a preliminary chapter on general principles Dr. Wachenheim deals at some length with the main essentials of climatology in relation to health and disease, and the possible advantages and the limitations of this means of treatment. When dealing with the subject of "sensible" temperatures it might have been well if he had included some instruction for roughly calculating these from a consideration of the ordinary thermometric reading along with the atmospheric humidity. There is a long chapter on the climatology of temperate North America, and a shorter one on health resorts, which contains brief description of the climates, giving the maximum and minimum temperatures, the altitude, the average rainfall, the prevalent winds, etc., of most of the known resorts, not only in America, but in England, the Continent, Egypt, and the West Indies. In addition, he treats of the advantages and drawbacks attaching to the sea voyages to be undertaken in reaching some of these places, and considers that the benefits of such voyages have been exaggerated. In a chapter on the climatic management of normal children, he deals not only with atmospheric conditions, but with such subjects as housing, warming, ventilation, clothing, bathing, etc. He justly condemns the so-called "hardening" methods by means of which imperfectly clad infants and children are exposed to all the vicissitudes of a changeable climate, with the result that they are caused a totally unnecessary amount of suffering, and are not unlikely to contract dangerous pulmonary and intestinal disorders. The remaining chapters are on the climatic aspects of constitutional diseases, visceral diseases, and scrofulosis and tuberculosis. As might be expected, the book is more likely to be of service to American practitioners than others, but there is much in it that cannot fail to interest readers on this side of the Atlantic.

NOTES ON BOOKS.

The authoress of *Modern Methods in Nursing*[8] has had an unusually wide experience of her occupation, since she has been a matron both at Addenbrooke's Hospital and at two large American institutions. Her book covers a correspondingly wide field, and deals with considerable success with practically all the subjects which candidates for certificates in general nursing have to study. It is suitably illustrated, and has a very extensive index.

[7] *The Climatic Treatment of Children.* By Frederick L. Wachenheim, M.D., Chief of Clinic, Children's Department, Mount Sinai Hospital Dispensary, New York. London and New York: Rebman, Limited. 1911. (Demy 8vo, pp. 400. 6s. 6d.)

[8] *Modern Methods in Nursing.* By Georgina J. Sanders. Philadelphia and London: W. B. Saunders Company. 1912. (Demy 8vo, pp. 881, illustrations 228. 12s. net.).

The thirty-third volume of the *Transactions of the College of Physicians of Philadelphia*[9] contains, in addition to the ordinary contents of such volumes, an account of various papers read before the college during the year ending December 31st, 1911. Among the twenty-eight papers in the volume is one by Lawrence Flick reviewing a tuberculosis campaign which has been going on in Pennsylvania during the past ten years or so. His conclusion would seem to be that hope lies less in the curative treatment of individual cases than in the isolation of all advanced cases and the careful instruction of patients in an early stage as to how to avoid infecting their neighbours. The question of how far surgery can really be useful in chronic constipation is considered by Dr. J. G. Clark, who seems to be of opinion that there is plenty of room for surgery in this direction, but that it offers no field for the novice. Certain angeioneurotic phenomena in and around joints are described by S. S. Cohen as being frequently mistaken for gout and rheumatism; radium is dealt with by W. S. Newcomet, who appears to regard it as at any rate a very useful palliative in many cases of inoperable cancer, especially those connected with the uterus and the mouth.

We received early this month a copy of *The Medical Who's Who, 1912*.[10] The publishers inform us that they communicated with everybody without exception on the *Medical Register*, but that a large number of communications were returned marked "Gone away," "Not to be found," or "Dead." On a rough calculation the volume contains between three and four thousand names. The *Medical Register* for 1912 contains 40,913 names: allowing 6,000 for registered practitioners resident outside the United Kingdom—a liberal allowance—it is evident that this volume is not an adequate directory of the medical profession. It may be doubted whether the addition of a note on the recreations enjoyed by individual practitioners adds anything to the value of the entries; to many it will probably seem superfluous. The publishers state that since going to press a number of forms have been returned filled up, and that these will be dealt with in the 1913 edition. If it is to gain general confidence the book must, we apprehend, be entirely remodelled.

Though Mrs. Beeton still reigns as the authority on matters of cookery and household management, every year sees an increase in the numerous imitators who endeavour, with varying success, to follow in her footsteps. Miss WINIFRED STUART GIBBS, however, has struck out a new line in her most excellent little book on *Food for the Invalid and the Convalescent*.[11] She has had the advantage of five years' experience as adviser on diet to the New York Association for Improving the Condition of the Poor, and instead of confining her attention to the actual preparation of meals, she has bestowed no little care and attention on the equally important question of the prices and relative dietetic values of different foodstuffs, and the best and most economical means of keeping them fresh and untainted before consumption. A number of simple but attractive bills of fare are appended for the use of families, invalids, and children of varying ages. The recipes are so simple and so explicit that the proper preparation of a nourishing meal for persons of every age and condition should no longer present any terrors; and the book should prove as welcome to the busy housewife as to the social or [illegible]ry worker for whom it is primarily intended.

In a scientific romance, *The Triuniverse*,[12] the author of [illegible] graphic description of the startling [illegible] all the inhabitants of this planet in [illegible] of the present century. An inextricable con[illegible] of the heavenly bodies is to culminate in an [illegible] of the sun; and the earth itself will only be [illegible] superhuman exertions of a professor [illegible] disciple. The story, for the most [illegible] told in a series of dialogues in which the professor [illegible] to his friend at great length the whole doctrine [illegible] verse, that is, the threefold nature (form, life, [illegible]. It is a clever book, though its [illegible] the kind that commends itself at first sight to the casual reader: but those who like their fiction to combine instruction with amusement should find food for thought in this strange romance of the future.

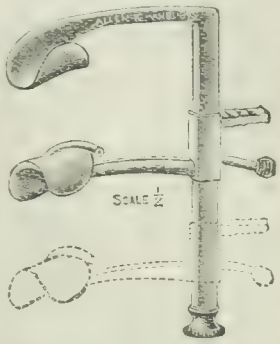
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MEDICAL AND SURGICAL APPLIANCES.

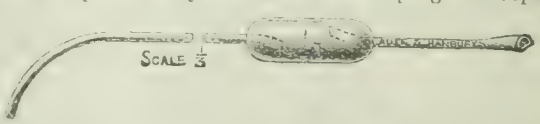
A Mouth Gag.

MESSRS. ALLEN AND HANBURYS (Wigmore Street, W.) have made for Dr. Hugh R. Phillips (Anaesthetist, Italian Hospital, and West End Hospital for Nervous Diseases) a gag, a modification of a continental pattern, which is illustrated in the accompanying diagram. Dr. Phillips finds it specially useful in cases about the mouth or throat where it is necessary to keep up the administration of the anaesthetic. It is advisable to open the mouth with an ordinary gag to the extent required, and then place this one in position. It takes up little room, and is not in the way of the operator, as it fits closely to the cheek; by the tube attachment can be made to a Junker apparatus.



Laryngeal Mucous Catheter.

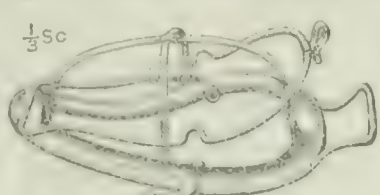
Dr. E. MARSHALL COWELL (Croydon) writes: Probably the commonest cause of failure in the treatment of asphyxia neonatorum is the omission to clear the upper air-way before performing artificial respiration. The amount of mucus aspirated during the premature respirations which occur in fetal distress is often surprising. A metal catheter having a slightly bulbous end has been in use for years at Queen Charlotte's Lying-in Hospital.



Since I have failed to find such an instrument in any catalogue, Messrs. Allen and Hanburys, Ltd., have made for me the modification shown in the illustration. The advantage of the trap here introduced is that there is no fear of mucus reaching the operator's mouth, and also that adequate aspiration followed by insufflation of the lungs can be performed with a single passage of the catheter.

Schimmelbusch Mask with Oxygen Tubes.

Dr. FRANCIS E. SHIPWAY (London) writes: It is very often necessary or desirable during the administration of ether or chloroform to give a continuous supply of oxygen, and the appended sketch shows a modified Schimmelbusch mask which fulfils this requirement more completely and with more convenience than any with which I am acquainted. It consists essentially of a folding guttered mask with the handle at the lower end and a small tube let into the frame on either side. It has been in constant use for twelve months, and has proved especially serviceable in operations about the face and neck. It has the following advantages: (1) It is light, folds up, and is easily portable. (2) The oxygen is delivered opposite the mouth. (3) The tubes for the administration of oxygen or chloroform from a Junker's apparatus are small and out of the way of the operator. (4) The handle is of help in holding the mask and in keeping the chin forward. (5) The anaesthetist has the choice of two tubes to which to attach the tubing from an oxygen cylinder, so that on whichever side the head rests the tubing is not in the way. (6) If chloroform is being administered a Junker's apparatus can be attached to the tube and an oxygen cylinder to the other. (7) It is well adapted for ophthalmic operations. The mask has been made for me by Messrs. Down Brothers, Ltd., St. Thomas's Street, London, who have taken much care in carrying out my instructions.



THE HISTORY OF MEDICINE.

[First Notice.]

Professor Neuburger is one of the recognized authorities on the history of medicine, and his work, of which the first volume, translated by Dr. Ernest Playfair, is before us, is already a classic on the subject.* Sir William Osler, who contributes a preface to the English edition, calls attention to the fact that within the past twenty years there has been a remarkable revival of interest in the history of medicine. Chairs or lectureships have been established in Continental and American universities, and societies devoted to the subject have been started. There are three or four journals devoted to medical history, and the literature has been enriched by innumerable monographs and articles. In this country the study is, perhaps, less cultivated, yet the history of the evolution of medical knowledge is of fascinating interest and contains many a lesson that might be profitable to the most modern of practitioners.

Neuburger's first volume records the growth of medical art to the Renascence. The translation of the second volume, dealing with the modern developments of medicine, is to be issued shortly.

The book has been planned and constructed in all its details with true German thoroughness; it tells all that can be known about the medicine of antiquity and the Middle Ages. The first section, on primitive medicine, is of especial interest. The art of healing is traced back to its very beginning in the instinct of animals.

Heated animals refresh themselves in cold water, warm their stiffened limbs in the sun and destroy irritating parasites. Cats and dogs lick their wounds; dogs eat grass to excite vomiting. A dog with a broken bone runs on three legs, holding the broken one so that it may set without appreciable shortening. Monkeys seek to check the flow of blood by application of the paw, and are adept in the extraction of foreign bodies such as thorns. The medicine of animals, moreover, is not confined to self-help, but extends at times to the help of others, particularly in dealing with the young.

From the primitive actions of scratching, rubbing, or pressure, moistening of wounds with saliva by sucking them, and other purposeful reflex and instinctive actions, highly differentiated methods of treatment have been evolved—as, for instance, massage. Among the earliest practices in the healing art are naturally the manipulations used to aid in childbirth and the attention given to young children. Surgery dates from the use of instruments in extracting foreign bodies, the opening of abscesses, scarification, and blood-letting. Experience showed that some wounds were mortal, while recovery from others might be expected to take place naturally, or might be promoted by simple measures. Certain members of a tribe would display special dexterity and acquire a reputation as healers, and the author assumes that by the transmission of their experience to successors a class of practitioners would come into existence. He refers to the fact that trephined skulls from the Neolithic period have been found in most European countries, in Algiers, the Canaries, North America, Mexico, Peru, and the Argentine. Cicatrized trephine holes in many of these skulls prove that the operation had sometimes been performed two or three times on the same person. Other traces of prehistoric surgery are found in circumcision, which must have been performed with a sharp-edged flint. The remaining bones of Neolithic man show in many cases distinct traces of disease and injury.

Thus fractures of various bones (some healed almost without deformity), injuries (from flint arrowheads), ankylosis, inflammatory processes, caries, necrosis, and rickets have been described.

In graves belonging to the Bronze Age the remains show the marks of injury and arthritis deformans. Diseases of which the cause was not visible were attributed to magic or the operation of evil spirits, and from this general concept there arose the notion that there were specific spirits which caused different diseases. Sometimes it was thought that the disease was caused by possession, that is, by the occupation of the sick man's body by spirits of dead men or of demoniacal animals. With all this superstition it is not a little remarkable, as is pointed out by the author, that amongst many races of very low civilization, natural causes of disease are admitted, such as unhealthy winds, unsuitable food, over-exertion of body, heredity in the case of leprosy and epilepsy, and, most striking of all, "infection" in tuberculosis of the lungs. The demoniacal and magical etiology of disease gave rise to modes of treatment directed to combating evil spirits by spells, angry deities by propitiatory rites and sacrifice, and maleficent magic by counter magic. Hence the witch doctors were looked upon not only as healers of disease but as prophets having power to influence the elements, to ensure success in battle, and to foretell the future. In their treatment the obscure influence which we call "suggestion" naturally held the chief part. This was put in operation by amulets, such as pieces of bone trephined from the skull after death, the teeth of animals, the vertebrae of snakes, and so forth. The magical procedure employed by the prehistoric healers seems to have consisted in religious observances, such as sacrifice, prayer, fumigation, purification, and fasting, as well as in spells and exorcisms directed to the casting out of demons and the transference of disease. With these were joined rational measures, like massage and blood-letting, baths and diet; these, again, were transformed into ritual observances. The amulet is the oldest prophylactic, and seems to express the belief that the portions of another body endow the possessor with their functions, and in that way reinforce their natural healing powers. From the original devouring of organs, such as the testicles, the brain, the marrow, and so forth, was derived the simpler custom of merely wearing on the body portions of animals immune against poison or rare, polished or odoriferous objects.

Mesopotamia seems to have been the nursery, if not actually the cradle, of all culture. From the scanty fragments of Babylonio-Assyrian medicine which have come down to us it may be gathered that it had a theurgico-empirical character. Prayers, spells, and amulets were largely used, but therapeutic measures were also employed. Polypharmacy was in great vogue, and something akin to patent medicines with fancy names, such as medicine of the Sun God, dog's tongue, and skin of the yellow snake, were used. Among external applications may be mentioned inunction, friction with oil, enemas, baths, affusion with cold water, and cupping. Blood-letting was also employed. It is probable that astrology was used in prognosis, and that different anatomical regions were placed under the dominion of the signs of the zodiac. Vast records of omens were collected by the priests. In these animals played a large part, such as the sudden appearance of one in a house, meetings with dogs or calves, the flight of birds, and so forth. Remains of these superstitious beliefs may still be found at the present day. The collection of omens, which constituted a considerable portion of the library of Sardanapalus, grandson of Sennacherib, King of Assyria (668–626 B.C.), led to a collection of observations on disease. Thus in time there grew up a kind of official clinical record which, used at first for the purpose of prophecy, was employed later as a means of prognosis. The Mesopotamian doctors were a part of the priesthood, but it is probable that there were also independent exorcisers, cuppers, and layers on of plasters, who were subordinate to the physician. In exactly the same way surgeons and barbers were subordinate to the monks who practised medicine in the Middle Ages. Hence it is not, perhaps, rash to conjecture that in this way arose the subordination of the surgeon to the physician, which continued into modern times.

Egypt, which in antiquity was thought to be the birthplace of all wisdom, had a great reputation for medicine. It was considered as the healthiest of all countries, and, like a modern health resort, it swarmed with doctors. Medical practice was highly specialized. Egyptian doctors anticipated one of the most "modern" fads—that disease is to be cured chiefly by fasting. Neuburger places the era of the highest development of Egyptian medicine about 2000 B.C. In the Egyptian view the art of healing was supernatural in origin, and a number of gods stood in close relationship to medicine. Thoth or Hermes, symbolized by dog apes and dog-headed men, and the ibis were the special gods of medicine. The physician belonged to the priesthood—that is to say, to the class which had a

* *History of Medicine.* By Dr. Max Neuburger, Professor of Medical History in the Imperial University of Vienna. Translated by Ernest Playfair, M.B., M.R.C.P. In two volumes. Vol. I. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, Warwick Square, E.C. 1910. (Imp. 8vo, pp. 414. 25s.)

monopoly of learning. Medicine was taught in the schools connected with the temples, among the most celebrated being those of Memphis and Thebes. The pupils received practical as well as theoretical instruction, opportunity being afforded by the number of patients who sought care in the temples, while the physician priests also visited the sick in their own houses. The system had the advantage that regular education was assured, and it may perhaps be inferred that quackery was resented. On the other hand, science being confined to the priestly order, was held fast in the trammels of theology. It is significant of the decline of Egyptian medicine that, whereas in the oldest documents pharmaceutical remedies prevail, though forms of prayer are given, in those of later date magical formulae and incantations predominate. Magical sentences accompanied the preparation of drugs, or were spoken by the patient while taking them, just as we have seen a good Catholic make the sign of the cross over a dose of physic.

The Egyptians had a large and varied pharmacopoeia derived from the vegetable, animal, and mineral kingdoms. The forms in which medicines were given or applied were draughts, electuaries, masticatories and gargles, snuffs, inhalations, salves, plasters, poultices, injections, suppositories, enemas, and fumigations. Of the surgery of the Egyptians little is known, but there is proof that they operated on tumours, and they had a high reputation for ophthalmic surgery. In mummies well united fractures have been found, as well as fractures showing overlapping of the fragments to a considerable extent. Even in the present day the *x* ray shows that this kind of thing occurs to an extent which a few years ago was unsuspected. The lancet and cautery were in use for operations. Hygiene and prophylaxis ranked high among the Egyptians, who paid great attention to the care of their children. Neuburger says that they also knew a good deal about dentistry, crowning, and gold stopping, but recent researches do not seem to bear out this statement.

In ancient Persia, disease was regarded as the work of Ahriman the devil, and the treatment was directed to the ejectment of the evil spirit from the body. Treatment by the knife was not unknown, and in the regulations concerning permission to practise the healing art great stress was laid upon operative dexterity: only one who had successfully performed three operations upon unbelievers was allowed to exercise his craft upon those of the true faith. It was the law that if a man first operated on a heretic and the patient died, he was allowed to operate a second time also on an unbeliever, and if death followed he had a third chance. If that, too, proved fatal, he was unfit for practice for ever. If any one who had failed in this test dared to practise, and lost a patient as the result of unskilful treatment, his offence was looked upon as a premeditated murder. We have no right to regard this regulation of medical practice as too Draconian, since it is not so long ago since one of the pioneers of ovariotomy in this country, having lost his first three patients in succession, was threatened by a colleague with an inquest if another fatality occurred. The doctrine of Zoroaster was a cult of spiritual and bodily cleanliness. Much, however, that we commend as hygienic in these old Oriental codes of health was so but secondarily, and sprang primarily from religious motives. When, for instance, we find purification, washing, and isolation of the sick practised, we must remember that this is rather evidence of a belief in demons than a foreshadowing of antiseptics. A stern consequence of the belief of "uncleanness" in disease was the isolation of the incurable.

The descriptions of disease in the Bible are fragmentary, and it is difficult to identify the morbid conditions to which reference is made. The cure of disease was looked for through prayer and sacrifice; but diet and drugs, baths, salves, and fumigations were also employed. Of surgical measures circumcision is the only one mentioned. Oil, wine, and balsam were used in dressing wounds, and bandages were applied to broken limbs. Physicians are several times mentioned, and were held in high esteem.

Three epochs are to be distinguished in Indian medicine: 1. The Vedic, extending from the first migration of the Hindus into the Punjab to about 800 B.C. 2. The Brahministic, in which the priestly caste was dominant, representing the Indian Middle Ages. 3. The Arabic, commencing about 1000 A.D. From the Vedas it is seen that the most ancient Indian medicine has its foundation in theurgy. There are traces of empirical knowledge of disease, the action of herbs, the use of cold water, and some primitive surgery. In later Vedic times the physicians formed an independent class, and to a certain extent were in opposition to the Brahmins. The Vedas were familiar with the extraction of arrows, the dressing of wounds, artificial limbs, and castration, and they recognized a number of diseases, among them scrofula, vertigo, dropsy, epilepsy, gout, heart disease, jaundice, and hemiplegia. They used means to produce abortion, and to favour conception, and made a large use of aphrodisiacs, a characteristic of Indian medicine even at the present day.

Neuburger epitomizes Chinese medicine in the statement that its central doctrine is that the human body with its powers is, down to the minutest details, a reflection of the phenomena of Nature in the universe. Dissection being forbidden, the Chinese notion as to the structure of the human frame is mostly fanciful. The Emperor Kang-Hi (1662–1723) caused a translation of the anatomy of Pierre Dionis to be made by the Jesuit Perennin, but this attempt to introduce Western anatomy was defeated by the native doctors. The most minute attention is given to the pulse, which is considered a sufficient indication for the diagnosis of the nature and site of the disease. Chinese medicine is rich in the department of therapeutics. The belief that in Nature there exists a remedy for every ill has led to the trial of every imaginable substance, of vegetable and animal, and, to a less extent, mineral origin. To the Chinese Western medicine owes the use of rhubarb. Mercury has been used in syphilis for centuries. Animal extracts are used—liver, lungs, and kidneys of different animals being given for diseases of these organs, the semen of young men or nerve tissues of animals for conditions of weakness, the testicles of animals for impotence, and placenta to assist childbirth. Prophylactic inoculation for small-pox has been practised in China at least since the eleventh century. A special feature of Chinese treatment is acupuncture, which is used in painful and inflammatory conditions. The idea is that the body is permeated by a system of tubes, and that this procedure allows harmful materials to escape. Owing to ignorance of anatomy surgery is quite primitive, but massage is much practised. The Chinese produced general anaesthesia by narcotic extracts in ancient times. It is even said that a physician named Hoatho in the third century performed amputation, trephining, and other major operations under anaesthetics. Before the introduction of European culture into Japan, China was to that country the source of science and religion indirectly by way of Corea.

Among the Aztecs the art of medicine was mainly empirical, but it is noteworthy that the ancient Mexicans had hospitals, particularly for wounded soldiers, and institutions for the incurable. They also had botanic gardens, with large numbers of medicinal plants. The Spanish Conquistadores were struck by the surgical skill of the Mexicans. In spite of many analogies with the East, no connexion between Oriental and Mexican medicine has been traced. Among the other American civilizations medicine was less developed. Among the Peruvians in particular it was mystic, and exercised by priest physicians.

THE HENRY PHIPPS TUBERCULOSIS INSTITUTE, PHILADELPHIA.

The sixth annual report of the Henry Phipps Institute for the study, treatment, and prevention of tuberculosis has been issued. It really embraces two years' work—from February, 1908, to February, 1910. Early in 1910 the institute, which was founded and is maintained by Mr. Henry Phipps, was placed under the control of the University of Pennsylvania. Dr. Lawrence Flick, who had organized and directed its destinies from the beginning, having resigned, the institute was reorganized to some extent in order to meet the requirements incident to its use as a teaching institution, while still retaining its character as a research agency.

One of the purposes of the Phipps Institute is to gather clinical and sociological data relating to tuberculosis. The clinical part of the report deals with a great variety of

conditions which have been observed in tuberculous patients. The three races showing the highest proportion of patients attending the institutes are the Celtic (27.7 per cent.), the Jewish (20.3 per cent.), and the Teuton (19.8 per cent.). From the records of 3,551 patients, it appears that the average number of persons in each of these patients' houses was 5.82; the average number of sleeping rooms was 3.24, and of beds 3.97. A source of contagion could be found in over 60 per cent. of nearly 6,000 cases. Out of 5,895 cases treated, 3,475 were males and 2,420 females. Regarding the parts of the lungs in which tuberculosis began, an interesting table is given, showing that out of 5,895 cases 3,691 began in the right apex, 1,073 in the left; in 1,076 cases the lung first attacked could not be determined; in 28 cases the examination was incomplete, and 27 cases were not tuberculosis of the lungs. Sputum containing tubercle bacilli occurred in 2,187 and was absent in 1,253 out of the number examined (3,440). The frequency of gastric disturbances in tuberculosis is well shown, nearly one-half of 4,436 patients giving a previous history of gastric disturbance. The results of treatment, so far as the arrest of the disease, improvement, etc., are concerned, are given, and also the results in weight, making a very creditable showing, especially when the advanced stage of the disease and the poor living conditions of most of the patients are considered. A table is given of the comparative results in patients who gave a history of alcoholism and those who denied such a history. The results seem to be much better in the case of the abstainers. The great majority of the patients applying for treatment had passed the incipient stage of the disease.

There is a pathological report on the cases on which necropsies were performed. In a paper on the relation of intestinal absorption to pulmonary anthracosis, Dr. C. M. Montgomery relates experiments carried out on guinea-pigs. Villaret, in 1862, claimed that he had produced anthracosis of the lungs in animals through the intestinal route, finding the lungs anthracotic in rabbits that had received carbon mixed in food over a period of six hours. Calmette believed that he had demonstrated that most cases of pulmonary tuberculosis are the result of the penetration of the bacilli through the intestinal walls. As a result of his experiments, Dr. Montgomery says that the alimentary route has failed to lead to pulmonary anthracosis in guinea-pigs. Intestinal absorption of inert particles has been demonstrated by proper experiments, but only after the repeated ingestion of amounts far in excess of those entering the alimentary tract under normal conditions. Particles absorbed from the intestinal tract have been found in the intestines and mesenteric glands, but in no other organs.

Dr. J. Douglas Blackwood contributes an article on the ophthalmo-tuberculin reaction, and as the result of his investigations on a considerable number of cases, has arrived at the following conclusions:

1. No injurious results have been observed in any of the eyes tested by this method.
2. Cases in which the previous lesion was healed have a negative reaction.
3. There may be a recurrence of the reaction upon the lighting up of pleurisy.
4. The severity of the reaction has no relation to the extent of the pulmonary involvement.
5. The reaction is of service, on account of its simplicity in demonstrating the presence of a tuberculous lesion which cannot be demonstrated clinically.
6. Negative reactions occur in rapidly progressing cases.
7. The degree of the reaction has not proved, in these cases, to be of any great value as a prognostic index.

The concluding paper in the report is one by Dr. E. Burville Holmes on the finding of alleged tubercle bacilli in the blood. After referring to the studies of Rosenberger—who read a paper before the Pathological Society of Philadelphia in 1909—and to the articles of Forsyth and of Hewat and Sutherland in the BRITISH MEDICAL JOURNAL in 1909, Dr. Holmes states that his observations on fifty cases of tuberculosis which form the basis of his paper were uniformly negative, with one exception. The one patient in whose blood acid-fast organisms were found presented no physical signs whatever. Her history, slight cough extending over a period of a few months, with loss of weight and feeling of fatigue, however, were regarded as suspicious. She did not respond to the tuberculin test. In a blood smear two separate groups, one of five and one of three acid-fast organisms, were found. They were by no means typical of the tubercle bacillus. Dr. Holmes thinks it clear that the tubercle bacilli do not constantly circulate in the blood of tuberculous patients, though they are occasionally present, as shown by the inoculation experiments of Lieberminster.

The report, with its statistical material, along with the papers alluded to, is a valuable contribution to the study of tuberculosis, and in a well-equipped institute such as this, with such a large number of cases coming up for treatment, the collection of such data cannot fail to be very helpful to other investigators.

LITERARY NOTES

WE have received a copy of a pamphlet entitled *The Shakespeare Myth*, which is described in a covering letter as "from the eminent pen" of Sir Edwin Durning Lawrence. The wielder of the eminent pen in question is in the matter of Bacon a "whole hogger." It is even asserted that besides Shakespeare's plays, the English authorized version of the Bible flowed "from the pen, or at least from the editorship" of Bacon. Of the curious learning with which this sweeping thesis is supported a single example may suffice. "Honorificabilitudine," which occurs, in the plural, in *Love's Labour's Lost*, is said to "give us the Masonic number 287, and really tells us with the most absolute mechanical certainty that the plays were Francis Bacon's orphan children." Such virtue is there in one long word! Clearly the pages of this journal cannot be opened to the discussion of the "Bacon is Shakespeare" hypothesis, but as Sir E. Durning Lawrence, who has presented to every public library a copy of a book with this title which he wrote a few years ago, has now made a still more broadcast distribution of his pamphlet, it seems proper to say that Dr. R. W. Leftwich has written a brief refutation, *Bacon is not Shakespeare* (London: Simpkin, Marshall. 6d.). It is very effectively done, but we must content ourselves with extracting the information that the long word transcribed above was used by Dante.

In view of the horror with which dissection was regarded by most people in the sixteenth century—as it still is by not a few at the present day—the following passage from the life of Saint Francis de Sales, by M. Human, which is quoted in the *Chronique Médicale* of April 15th, 1912, may be interesting. Francis of Sales, who was born on August 21st, 1567, had been sent by his father, the Lord de Boisy, to Padua in 1587 to study law. There he was seized with dyspeptic disturbances, accompanied by insomnia, anorexia, and extreme emaciation. Finally, says the author, this state of langnor became complicated by a violent and continuous fever, accompanied by dysentery and general rheumatism. He was given over by the doctors, and warned of the imminent danger in which he was by his tutor, who asked his intentions in regard to his funeral. "My dear master," he answered, "I leave the care of all that to your affection, which is well known to me. I have only one favour to ask—that is, that my body should be given for dissection to the medical students." "What! my dear son," said the tutor, "that would be a dishonour to your family." "Pardon me, my dear master," replied the sick man, "if I do not agree with you. It will be a great consolation to me in dying to think if I have been during my life an unprofitable servant, I shall at least be of some use after my death by supplying to the students of medicine a subject on which they can work without having bought it at the cost of fighting and murder." The students of Padua in those days had many fierce and bloody fights in their efforts to procure bodies for dissection. Earlier in the century the immortal Vesalius did not disdain to play the part of resurrection man.

Père Renard, S.J., has lately published a book, entitled *Arthropodes Pathogènes et Transmission de Maladies*, which is intended to be a popular treatise on the part played by insects in the conveyance of disease. The work is published by M. Charles Bulens, 75, rue Terre-Neuve, Brussels.

British Medical Journal.

SATURDAY, AUGUST 24TH, 1912.

THE EXPERIMENTAL CHEMOTHERAPY OF CANCER.

The failure by the methods of immunity to influence growing transplanted tumours or to prevent spontaneous neoplasms in animals, and, on the other hand, the brilliant results that attended Ehrlich's endeavours to elaborate chemical compounds which, when introduced into the body, selected and killed parasites without exerting a lethal effect on the organs, naturally incited investigators to an attempt to construct compounds which might be selective of and noxious to tumour cells, and yet at the same time have a minimum toxicity to normal tissues. The problem is exceedingly difficult, and if it is to be solved on these lines at all we must possess infinitely more knowledge of the excessively minute chemical differences between a normal and a malignant cell. Such differences as are known to exist at present are quite inconstant. The greater avidity for oxygen and foodstuffs, on which Ehrlich has laid such stress, though perhaps admissible in the case of rapidly growing experimental tumours, does not apply with any great force to the more slowly growing cancers in human beings. On that theory of greater avidity the recent investigations of v. Wassermann[1] and his colleagues were built. After numerous attempts, these observers chose a compound composed of selenium and eosin, which, when introduced into the caudal vein of tumour-mice by repeated injections, produced a liquefaction of the tumour substance with subsequent absorption of the fluid products. The details of preparation of this substance and its exact composition were withheld at the time, probably because of the fact that, owing to its extreme instability, the investigators were unable always by the same technique to produce the same active drug. The numbers of animals used, in view of the lethal effects produced by the drug itself and the occurrence of spontaneous healing, probably did not warrant the conclusion that the chemical compound was selective of the tumour cells; and it is possible that the favourable effects produced on the tumour are explicable by interference with its vascular supply owing to chemical thrombosis or some such phenomenon. Still, giving due weight to objections of that kind, it must be admitted that the results are sufficiently striking to open up a new field in the chemotherapy of tumours.

At the time when v. Wassermann made his communication many others were engaged on the same task, including some who were experimenting with selenium and tellurium, the two substances that v. Wassermann employed. The work of one of these investigators, Neuberg, in collaboration with Caspari and Löhe, has just been published.[2] The characteristics of malignant tumours that have impressed these observers most are the rapid growth and the still more rapid disintegration of cells. However true the latter may be in respect of inoculated tumours of mice and rats, on which their work has chiefly been done, or even in respect of spontaneous tumours in these small animals, yet it is by no means an outstanding feature in the malignant tumours in higher animals, and researches in the chemotherapy of cancer can be only of academic interest if they do not put a true value on this autolysis of neoplasms. The autolysis occurring in tumours is considered by Neuberg to be an evidence of abnormal ferment activity, and for proof of the presence of these abnormal cell enzymes he depends largely on the investigations of others, whose conclusions are to be accepted with considerable caution. Neuberg, from previous work of his own, came to the conclusion that the action of radium in cancer was not a direct one on the tumour substances, but indirect on their enzymes, and his present researches began with an attempt to find metallic substances capable of producing in this manner an increased autolysis in tumours. The salts of heavy metals are typical precipitants of proteins, and their introduction into the body was at first without useful result because this characteristic had been called into play long before they reached the tumour substance. The difficult part of the problem was accordingly to give these presumably autolysing substances such a form that, when they were introduced into the body, they would be arrested and broken down only in the neoplasm. Furthermore, these desirable tumour-selective substances must have the least possible toxicity for the rest of the organism. Colloidal salts of the metals might prove more useful than organic compounds, but it is not clear from the communication whether the preparations introduced were colloidal in form or only became so after introduction into the body. After laborious trials of various organic compounds of the metals, these investigators claim to have elaborated tumour-selective substances from bases of copper, cobalt, silver, gold, platinum, iridium, ruthenium, osmium, palladium, and rhodium, but it is to be regretted that no details are given of the exact constitution or mode of preparation of any of their active constituents.

The experiments were conducted on mouse carcinoma, at first exclusively, but after considerable improvement of the active substances a broader application was made. At first the preparations were injected subcutaneously, with the result that frequently a doubtful retrogression of the tumours with occasional flaccidity was produced. The malignant process was, however, retarded, and the animals lived longer than usual, though energetic growth of the tumour later was the rule. When, however, v. Wassermann's paper appeared advocating injections of tumour-selective substances into the blood stream, they at once adopted this technique, and found that their preparations, which previously had given only moderate results, became exceedingly active when introduced directly into the circulation. All the compounds they employed did not act equally favourably and speedily, but none of them was altogether inactive. Compounds from copper, tin, platinum, and especially cobalt and silver, were found to give the best results. The results of injection rapidly made themselves evident, and deposits of the metals in an amorphous form could afterwards be demonstrated in the broken-down tumours. Several injections had to be given to produce complete cure of the tumours. That such cures were not to be attributed to spontaneous absorption, which is of great frequency in some strains, was established by rigorous controls

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with untreated tumour-bearing mice. In their control experiments they found that spontaneous absorption was extremely rare in their various strains, and they submit that even if it did operate in some of the cases injected with their substances, yet the outstanding phenomenon was the rapid effect following the administration of the drugs. A table is given showing the quantity of metal in the preparations per gram of body weight; this quantity varies from 0.075 mg. of platinum to 1 mg. of cobalt for a mouse weighing 15 grams.

Caspari described the effects of the substances. When they were injected into the caudal vein of tumour mice, an extreme pallor of the visible vascular parts—the ears, nose, and paws—was instantly produced, and if such a mouse was killed at the time, it would be seen that the vessels in the tumour were extraordinarily dilated and full of blood. The capillaries had apparently lost their tone and blood extravasations, microscopic and macroscopic, could be found in the tumour. In extreme cases it would seem as if the mouse had bled into its own tumour. The other part of the body was in marked contrast, and the vessels there were small and contracted. The first effect after injection was a strictly localized bleeding in or about the tumour, and the intensity of the effect produced was the greater the more numerous the blood vessels in the vicinity of the tumour. It was found that the lethal dose of substances was greater in the case of tumour mice than in healthy mice on which the toxicity was determined, and the neoplasm would thus seem to act as a magnet in withdrawing the active principles from the general circulation. Softening after injection of the substances occurred without exception in every malignant tumour. Frequently, only two hours were sufficient to make the effect clear, but it was always evident during the first twenty-four hours. At the end of that time the largest part of the tumour was completely softened—it had become a flaccid sac. There were still to be felt in the interior, apparently floating in the fluid part, more or less hard nodules, which slipped away from the palpating finger. The wall of the sac felt firm, and frequently little swellings could be detected on its inner side. So long as this condition was present, complete healing could not be obtained; in fact, such hardness was a certain sign that if treatment was suspended the growth would advance. If the injections were repeated, the nodules gradually vanished, the wall of the sac softened, and eventually became a delicate transparent membrane, which could not be kept intact on dissection. When this stage was reached, perhaps after many injections, the animal could be regarded as cured, and microscopic examination showed necrosis of the tumour remains without a trace of any intact cancer cells amongst the débris. The membrane contracted to a cordlike structure, which remained for weeks, and even months, before it entirely disappeared.

Such a favourable result did not always follow. Many of the animals, before the preparation of the substances was improved, died from the effects of the injection. All the preparations were poisonous, and they found, as did Wassermann with his eosin-selenium compound, that the effective and the lethal doses were uncomfortably near each other. The results became the more unsatisfactory the further they got from the lethal dose, and as a matter of fact they found that too low a dose, so far from destroying the tumour, actually stimulated it to quicker growth. Again, a large percentage of the animals died from the absorption of the degeneration products of the tumours. Treatment had all the while to be forced, because a pause for a single day allowed extension of the growth. Sometimes, too, owing to the rupture of the sac, the escaped fluid contents became septic through involvement of the skin, and the animal died from suppurative processes. Further, even after considerable practice, only a relatively small number of injections could be made into the caudal vein of the mouse. Thus twelve injections would generally be inadequate if the mass of the tumour were a quarter of the body weight. Treatment had often to be broken off on this account: injections into the femoral vein were tried, but though the technical difficulties were not great, the animals did not stand this procedure well. In such cases subcutaneous injections of sodium iodide were found to retard the growth for three or four months, and even occasionally to produce entire destruction of the neoplasm.

The investigations were extended to rat sarcoma, which was found to be quite as easily influenced as mouse carcinoma. The technique of intravenous injection was, however, more difficult in the rat. As the toxicity of the substances was greater for the rat than for the mouse, only one-half the dose of metal per gram of body weight on the mouse scale could be employed. On the other hand, the dangers arising from absorption of liquefied tumour products were minimized, because 2 or 3 c.cm. of the fluid could be removed daily by means of a sterile cannula. Further, an interruption of the treatment did not allow a recrudescence of the growth, as in the case of mouse carcinoma, for the effect of an injection lasted for several days. Considerable extravasations of blood into the tumours took place, and after one or two injections tumours the size of an orange were more or less liquefied.

The chief interest lies in the results of the treatment of spontaneous tumours. Four such tumours in mice were investigated. In one of these, which died after the first injection, there was considerable effusion of blood into the tumour, with a liquefaction of its central portion. In another there was marked softening of a large mammary tumour two hours after injection. In a third a large prominent mammary tumour became bluish-red in colour after the first injection, an indication that haemorrhage had taken place into it, and soon afterwards the skin became tense and fluctuation was evident. The animal died of asphyxia from compression of the trachea after a week of treatment, and though the tumour had not by that time completely disappeared, sections showed that the greater portion was fluid, whilst the rest was a necrotic, blood-stained mass. A fourth spontaneous tumour reacted scarcely at all, and remained extremely hard. On histological examination it proved to be a cellular fibroma benign in character. This is worth noticing, because benign tumours do not usually exhibit the tendency to break down; and, as the observers add, "it is only in tumours in which autolysis is natural that we can expect results from these preparations."

They had the further opportunity of testing the action of these substances on a poodle dog, which had a large number of mammary tumours, varying in size from a hazel nut to an orange, which were found to be cystic adeno-carcinomata. The dog was found to be more sensitive than the rat to the toxic effect of the drug. It received on two successive days one-half of the lethal dose on the mouse scale. Unfortunately it had contracted distemper, to which it succumbed in six days, but it is probable that the end was hastened by the rapid destruction of the tumours, which far exceeded expectations. The destruction of tumour progressed till the death of the

animal, and at the autopsy 70 c.cm. of thick brownish fluid was removed from the tumour area. It cannot be said that the results of treatment in the case of spontaneous tumours were perfect, but they are evidence of the activity of the substances which further experience may enhance.

MENTAL DEFICIENTS AND THE COMMUNITY.

THE Mental Deficiency Bill of the Government has for the most part met with the approval of those who are interested in the social welfare of the people, because in its main outline it seemed to provide for the better care and protection of the feeble-minded themselves while seeking to diminish the evil by cutting off one important source from which such persons are derived. It appears, however, that there is an exception to this attitude. At the recent meeting of the Roman Catholic Congress at Norwich the following resolution was unanimously passed:

> That, while recognizing the grave evils that arise from the unprotected condition of the feeble-minded, and desiring to see them dealt with by legislation in such manner as amply to satisfy the religious needs of the patients, this Congress of Catholics protests against the Mental Deficiency Bill now before Parliament as contrary to Christian morals and elementary human rights, and calls for its immediate withdrawal for reconsideration.

To be told that a bill which is contrary to Christian morals and elementary human rights should be withdrawn for reconsideration makes it difficult to think that the drafters of the resolution had a whole-hearted belief in their case. We turn, therefore, to the papers[1] read by Prior McNabb of Leicester and Dr. Mooney of Preston in support of the resolution, with a desire to learn their fundamental attitude towards the problem of the feeble-minded, how they think it should be met, and how they would suggest the bill should be amended when withdrawn, as they propose, for reconsideration. We are in no way committed to the verbal inspiration of the bill, and, indeed, it seems to us that in regard to the definitions of defectives some modifications are desirable, and also in regard to the conditions which are to make defectives subject to be dealt with under the bill. Suggestions for improving the bill in these or other respects would be welcome, for it is admittedly difficult to cover by legal terminology all the cases that it is desirable should be covered without at the same time including cases which it is not intended to bring within the scope of the measure. It is with regret that it must be said that we look in vain for help of this kind. Of vigorous denunciation there is plenty, but of genuine temperate endeavour to deal with difficulties on broad and practical lines very little.

For example, we read that compulsory permanent control means life imprisonment, and that from this there would be no appeal. The provisions in the bill to safeguard the individual or to secure the frequent revision of his case are not explained, nor is any attempt made to describe the sort of arrangements intended to provide, and how entirely such institutions now in existence differ from the idea of a prison. But shirk it as he will, each speaker has come later to admit the essential principle. One case should be no compulsion except in rare and extreme cases, the other that segregation may be necessary in many cases, but these must admit of no doubt, and it must be in nowise a punishment. Why, then, do they not help us by showing how these objects may be attained instead of proclaiming the whole bill immoral? The two statements are really inconsistent.

There is much declamation also in regard to so-called "natural rights," which seems to imply the moral and civil right of the individual to perform any natural act without let or hindrance. The country, it is said, is asked to sanction a law which would deprive men and women of the natural right of marriage; the use of the broad term men and women without any qualification or restriction such as appears in the bill seems calculated to raise prejudice, but, be this as it may, the question the speakers ought to answer is, Do not they also mean by the segregation, which they admit is necessary in many cases, and by the protection under legislation which the resolution concedes, the restriction of the right to marry? What else than a restriction of the right of the woman is the proposal of Dr. Mooney to make it punishable for a man to make a feeble-minded woman a mother? Are the objectors prepared to maintain the view that feeble-minded persons should have unrestricted liberty to marry and bring offspring into the world?

The truth is that underlying this plea of natural right there is a fundamental confusion of ideas which was thoroughly analysed and elucidated by Professor Huxley in 1890 in an essay on *Natural and Political Rights*. In that essay he pointed out that natural rights are founded on the law of Nature, and the law of Nature is not a command to do or refrain from doing anything. It contains in reality nothing but a statement of that which a given being tends to do under the circumstances of its existence. The natural right, deduced from such a law of Nature, is simply a way of stating the fact; and there is, in the nature of things, no reason why a being possessed of such and such tendencies to action should not carry them into effect. On the other hand, there are rights expressed in moral laws and civil laws restraining each individual from acts which are hurtful and encouraging those which are beneficial to the polity of which he is a member. The crucial difference between the "law of Nature" with its consequent "natural rights" and moral or civil laws lies in this: that consistent and thoroughgoing action, based upon the law of Nature and the natural rights which flow from it, may tend to benefit the individual at the expense of all other individuals, whose needs and desires are of the same kind.

In segregating the feeble-minded society does not seek to punish them, but to protect itself and to protect them. The bill does much to save these unfortunate individuals from punishment which they are so apt to incur owing to their inability to face the stress of life, and which they do not deserve owing to their inherent instability of character. To characterize the bill as not charity but revenge merely proves a failure to grasp its aims and objects.

In addition to the misapprehensions dealt with above, there are one or two misrepresentations which ought to be corrected. One of the speakers stated that sterilization may easily get the sanction of law under the terms of this bill. This statement is no doubt based on Clause 17 (1) (*e*), which merely defines one of the conditions which may render a defective subject to be dealt with under the bill —that is to say, brings an individual under the other provisions of the bill, which contain not a single word about unsexing any one. To state, then, that this may be made to mean the unsexing

[1] *Eastern Daily Press*, August 5th, 1912.

of men and women is to twist words out of their natural and obvious meaning. Sterilization may or may not be a wise or desirable method of dealing with the problem, but, as it is not proposed in the bill, it is not fair to attack the bill on that score.

The Prior seems to be much disturbed by the growing influence of the Eugenics Society and the teachings of the late Sir Francis Galton, so much so that he is led to exaggerate not a little what they have accomplished, though undoubtedly the movement of public opinion in the direction they desire is a fact with which the Prior must reckon. But again this is no reason why their aims should be misrepresented; and, judging by their authorized publications, there is no excuse for saying that what they propose is nothing less than Malthusianism, or that they continue to think the human race will improve by methods of race suicide. The eugenists are to-day mainly searching for fuller knowledge, and to instil the idea of a newer and wider evolutional morality—namely, that in our duty to our neighbour we must henceforth include our duty to posterity.

THE PREVENTION OF THE SEQUELAE OF MIDDLE-EAR SUPPURATION.

The Section of Otology is to be congratulated upon selecting for discussion a topic of such general interest as the treatment of acute middle-ear suppuration, for the disastrous results which may attend its neglect make it imperative that such means of prevention as we have at our disposal should be recognized both by the profession and by the general public. The unanimity of opinion expressed by the various speakers on all the main points at issue cannot fail to strike any reader of the report which is published in this issue. It is true that the vexed question as to which method of treatment after natural or surgical perforation of the membrane—the wet or the dry—is the better has not been settled, but the majority of those taking part in the discussion seemed to be in favour of some such procedure as was described by Professor Gustav Alexander of Vienna—that is, to keep a gauze drain, either dry or soaked in some antiseptic solution, in the auditory canal so long as the discharge is thin, and to follow this by gentle syringing when the discharge becomes thickened by excess of mucus. All the speakers were agreed on the necessity of immediate myringotomy of a bulging membrane, and that if there were any doubt as to the condition of the antrum it should be promptly explored by means of the Schwartze operation. The performance of the radical mastoid operation on an ear in the acute stage of suppuration met with universal condemnation. The details of treatment are largely a matter of individual preference once the general principles upon which they are based are thoroughly understood—namely, the provision of free drainage and the subsequent prevention of the entrance of infective matter into the ear from without. The communication by Professor Alexander as to the value of urotropin administered internally in preventing further infection by the blood stream is worthy of serious attention and well illustrates the modern method of attacking disease from all points. Much valuable material as to the prevention of chronic middle-ear suppuration supervening on the acute attack was contained in the paper by Dr. Robert Woods. His experience at the Hardwicke Fever Hospital, Dublin, led him to formulate the theory that the fundamental difference between the acute and the chronic processes lies in this—that the former is a pure monoseptic infection, while the latter is a mixed infection, characterized by the presence of a large variety of organisms. He draws the conclusion that the chronic state can be avoided by preventing secondary infection whilst the ear is still in the condition, as it were, of an open wound. He quotes the figures of the Hardwicke Hospital to show that adequate sterilization of the external auditory canal is sufficient in the majority of instances to prevent the occurrence of chronic otorrhoea with all its possible sequelae. Whether his theory is pathologically correct or not matters little when its practicable application yields the excellent results he is able to report. Dr. Claude Rundle, who also spoke from experience at a fever hospital, raised some interesting practical points. He avoids routine treatment of the throat and naso-pharynx in scarlet fever and measles, and to this attributes the relatively low incidence of otitis at the Fazakerley Hospital. His figures certainly suggest that in this particular instance the hand of man can do more harm in trying to fetter Dame Nature than in leaving that wayward person to take her own way. Dr. Rundle also considers that the otitis occurring in the acute stage of an exanthem is as a general rule mild, rarely calling for any surgical interference, and usually quickly subsiding. The Section adopted a resolution asking the Council of the Association to use its influence to secure the appointment of skilled otologists to the staffs of fever hospitals. This does not imply that under the present conditions the ears of patients in fever hospitals are not skilfully tended; we have only to read Dr. Rundle's paper to see that such a charge would be groundless, but Dr. Woods's paper proves that much valuable work might be done by otologists at fever hospitals—work of a scientific nature which could only be achieved by men who have had a special training. Many cases, in spite of the greatest care in hospital, must be discharged with still persisting otorrhoea, which, if untreated, may end in some fatal complication. Professor Holger Mygind told the meeting that some years ago a similar proposal was carried into effect in Sweden, where also leaflets showing the danger of leaving discharging ears untreated are distributed to the public. No one who has seen the frequency of the disease, or the ravages due to its neglect, could consider such a crusade out of place in this country.

TYPHUS FEVER.

Typhus fever is a disease which is fortunately unfamiliar to most medical practitioners in this country, although it still occurs in certain large centres of population. It is widely distributed throughout the whole of Central Europe, and especially in Poland and the surrounding districts. In addition it is common in Northern Africa, in India, China, Mexico, and some parts of the United States. On the other hand, it is practically unknown in Australia, New Zealand, and tropical Africa. In all the countries in which it occurs it shows a curious tendency to be confined more or less to endemic centres, where it breaks out from time to time into epidemics of considerable severity. It is a disease which presents many features of unusual interest, both clinically and hygienically, and it has of late been the subject of extensive study, more especially in regard to its origin and causation. An interesting summary of present knowledge on the subject has recently been published by the Office International d'Hygiène Publique (*Bulletin* T. IV. 5), and it may be worth while to refer briefly to some of the more important points dealt with in that publication. In the first place there is the remarkable age incidence of the disease, which is most frequent between the ages of 15 to 30. Hitherto it has been believed that infants are rarely attacked, but Nicolle and Conseil, in the early part of this year, showed that this is not altogether the case, the real fact being that in infants the disease is so mild that it easily escapes notice, and as, in any case, the typical symptoms are not exhibited, the diagnosis is apt to be missed. This in itself is a remarkable fact, and must greatly increase the difficulties of prophylaxis. It is worth noting that in this respect

typhus presents a striking analogy with yellow fever. The seasonal incidence—namely, winter and spring—is also of some interest, and is probably correlated with the increased tendency to overcrowding during the colder seasons, as well as with the bionomics of the natural "carrier." With regard to the causal organism we are obliged to confess that it still remains in that fast-diminishing class labelled "unknown." Naturally bacteriology has had something to say in the matter, and from time to time a whole host of weird and wonderful bacteria have been announced as in some way connected with the origin of the disease. Perhaps the most remarkable of these discoveries was that of Thoinot and Calmette, who found in the blood and in the urine of typhus patients filaments of what they considered to be a mould. Even as long ago as 1860, however, micrococci were described by Hallier, and we find in this JOURNAL in 1893 a reference to spirilla by Mott and Blohre. Amongst the other remarkable organisms may be mentioned the filamented cocci of Lewaschew (1892), the diplococci of Dubief and Bruhl (1894), the piroplasma of Gotschlich (1903), and the rod-like bacilli of Rabinowitsch (1909). On the other hand, entirely negative results have been obtained by Anderson and Goldberger (1909), and by Nicolle and Conseil (1912). These references will give some idea of the wide diversity of opinion which has prevailed until the last few years. On the experimental side something much more definite has been accomplished, thanks chiefly to Nicolle and his collaborators in Tunis, and to a number of American workers. The two most outstanding results have been the demonstration that the disease can be transmitted experimentally, not only from man to man, but also to monkeys, and that the natural agent of transmission is the common body-louse. It was shown as early as 1900 by Moczukowski, he himself being the subject of experiment, that injection of the blood of a typhus patient into a healthy person gave rise to the disease. This observation has since been confirmed by several independent authorities. Experiments on animals, however, were unsuccessful until 1909, when Nicolle was able to infect a macaque monkey, which displayed all the clinical signs of the disease, including the eruption. This monkey, it may be added, was infected from a chimpanzee which had itself been experimentally infected, and the result demonstrated that the infective agent was present in the blood on the day of the eruption and at least two days before. It was also shown that the infectivity of the blood persists for a considerable time after the appearance of the eruption, in fact for the whole of the febrile period and for some time during convalescence. The chief results of the American workers have been to show that the disease known as "tabardillo" in Mexico and "Rocky Mountain spotted fever" in the United States is identical with the Old World typhus fever. They were also the first to show that the infective virus does not pass through a Berkefeld filter, and that it is located principally in the leucocytes. It was found, too, that although the virus was retained by the filter, yet the filtered serum was able to confer immunity on an inoculated animal. With regard to the natural mode of transmission of the disease, it is now almost exactly three years since Nicolle and his colleagues announced the discovery that lice are the carriers. On this point they have since obtained ample experimental evidence, which has been confirmed by the American workers. Ricketts and Wilder made the further remarkable discovery that the second generation of progeny of infected lice, although not themselves infective, appeared to be able to confer a certain degree of immunity. Finally, with regard to prophylaxis, apart from the ordinary hygienic measures which immediately suggest themselves, it has been shown that the blood serum of convalescents can confer a high degree of immunity upon persons exposed to infection, a property which might on occasion serve as a very useful preventive measure. It is thus clear that, although the actual disease producer still remains unknown, we have arrived at most of the more important biological facts in regard to what was till recently a most puzzling disease.

CONTROL OF MINERAL WATERS IN FRANCE.

ONE of the duties imposed by the French State on the Académie Nationale de Médecine, to give it its full title, is to examine applications for licences to trade in France in a mineral water, either at the place where it rises or by exportation or importation. If satisfied that the conditions under which the water is piped and collected are good and that the analysis submitted is correct, the Academy authorizes the issue of a licence, usually for a period of thirty years, and subject to the continuous observance of certain conditions. The Academy delegates the duty of investigating the claims of any new spring to a standing committee of nine of its members. The points to which the committee gives particular attention are the mineral constitution of the water, the analysis submitted being checked in the Academy's chemical laboratory, and the effectiveness of the means taken to collect the water so as to obviate risks of accidental contamination. The committee reports to a plenary session of the Academy, when a vote is taken. If the vote be in favour of the water, a licence is granted subject to certain general conditions which the Academy has laid down for its guidance; among these are that the water must be bottled at the spring, and that it must not be artificially aërated. At one of its last meetings before the holidays the Academy had before it a large batch of such reports. In fourteen cases it authorized the issue of a licence subject to the conditions mentioned above. Of these new springs, three were at Vittel and two at Vals. In the case of one application for a licence for a Spanish water it was refused on the ground that the water could have no therapeutic property. In the case of one French spring a special temporary authorization was given, but in respect of another the Academy was evidently puzzled. Thirteen years ago it had authorized a licence for the sale of the water as a mineral water. The proprietor now asked for its recognition as a table water. The Academy objected that there was no legal definition of a table water, and that it could not be expected to stultify itself by altering the designation of the water. It, however, authorized the use of another spring in the same place, which contains a fairly large proportion of sodium bicarbonate. The number of mineral water springs in France is already enormous, and how many of them are profitable to the communities or companies that own them is unknown. Not a few of them are in reality, though the Academy cannot define the term, table waters to which the weary traveller turns in the belief that the Academy does in fact exercise an effective control over their collection and bottling.

THE VIRUS OF FOOT AND MOUTH DISEASE.

THE present extensive outbreak of foot and mouth disease in this country has called attention once again to this rather remarkable disease. As in so many other cases, its etiology has been to a great extent a bacteriological mystery, the classical methods of the past thirty years having apparently proved unsatisfactory. For some reason or other, however, it has not attracted so much attention as many another disease of no greater importance; but even twenty-seven years ago Klein discovered a coccus which he isolated from the vesicles of diseased animals. He was able to cultivate this organism, and to cause infection with it. At this point, however, his investigations were allowed to drop. Eleven years later Schottelius and Kurth both obtained similar results with an organism which they considered to be a streptococcus. Here, again,

the work was not carried to any greater length. More recently Siegel has undertaken what is probably the most extensive series of investigations on this disease. Starting in 1896, he made experiments along numerous lines, but was faced with failure at every turn. His experiments having on this account been interrupted and discontinued several times, he eventually came to the conclusion that previous assumptions with regard to the nature of the causal organisms would require alteration. Starting afresh, he was able to announce in 1906 the discovery of coccoid organisms which occurred in the vesicles as well as the blood of infected animals. These were also obtained from the blood of infected animals even before the appearance of the eruption. With some difficulty these organisms were cultivated first in liquid media and later, after subculture, on ordinary agar. The growth was slow and scanty, but, once established, there was little difficulty in making further subcultures. It was found, however, that the strains cultivated from severe acute cases died out somewhat rapidly, whereas those from chronic cases were much more resistant and, in addition, retained their virulence to a greater degree. With these strains, even when subcultured as many as sixty times, he was able to produce infection in healthy animals both by the mouth and by subcutaneous or intravenous injection. Although in some cases the results were equivocal, a sufficiently large number of animals so treated displayed the typical signs and symptoms of the disease to leave no doubt in the observer's mind that he had actually succeeded in isolating its real cause. These results were challenged by Ostertag, but without much justification. With regard to the nature of the organisms, Siegel refers to them occasionally as *diplococci*, but much more frequently as *Cytorrhyctes*, and from this it may be assumed that he is inclined to regard them as protozoa, or rather as chlamydozoa. If such be the case we may expect that some sort of life-history remains to be evolved. On this point, however, Siegel has no comment to make. The forms in culture are apparently absolutely identical with those met with in the blood. Nicolaus, who has confirmed Siegel's observations on the occurrence and culture of these organisms, makes special note of the fact that each coccus appears to be composed of a large number of much smaller bodies. These investigations give the impression of being quite reliable, but pending further independent confirmation it may be advisable to reserve judgement.

THE SURVIVAL OF NERVE CELLS.

Further evidence of the persistence of life and of a certain power of growth in highly organized tissues is afforded by some recent experiments on nervous structure, and M. Henneguy, Professor of Comparative Embryology at the Collège de France, last month gave a short summary to the Academy of Medicine of the observations that have been made. In 1910 Harrison, who had been at work on the subject for three years, reported that he had obtained outgrowths from nerve fibres and fragments of cranial ganglia from the tadpole kept in a drop of coagulated lymph from the frog; he observed long hyalin filaments resembling embryonic nerve fibres pushing their way into the lymph. During 1910 and 1911 Legendre and Minot communicated to the Société de Biologie a series of notes on the conservation of the cells of spinal ganglion outside the organism. The experiments were made by placing the cells of adult dogs and rabbits in defibrinated blood of the same animal. The preparations were kept at a temperature of 39 C., and constantly agitated by bubbling oxygen through them. The agitation and oxygen were used in order to prevent the accumulation of the products of metabolism in the neighbourhood of the cells. Under these conditions these observers noted the formation of processes which were often more or less deformed. The preparations might be cooled, and when the temperature was again raised to 39 C. growth would be restarted. About the same time Ramon y Cajal observed the formation of lobulations and protoplasmic buds by spinal ganglion cells simply kept in a moist chamber. In 1911 Burrows extended Harrison's experiments by placing tissue from the embryo chick in the coagulated plasma of adult fowls. He observed nerve fibres start from the morsel of nerve tissue and grow into the plasma. M. Henneguy was impelled to put this short history on record by a paper read before the Academy earlier in the month by Marinesco and Minea, who had succeeded in obtaining growths from fragments of nervous tissue taken from the rabbit and dog and preserved at a temperature of 37 C. in plasma of the same animals. For the first twenty-four hours no change was observed, then from one or more parts of the edge of the fragment short, fine filaments formed and grew in thickness and length for eight or nine days. After that growth ceased and the filaments formed broke up.

MEDICAL APPOINTMENTS IN THE EAST.

The article on medical appointments in the East, published May 23rd last, which was reproduced in several Far East newspapers, has brought us certain letters, some from old stagers and others from men whose experience of medical life in the Eastern tropics, either in Government service or as employees of companies, does not extend beyond a year or so. Summed up, the evidence all goes to show that numerous grounds for more or less legitimate discontent exist, and that the probability of matters being improved would be considerably increased by all medical men already resident in the East joining the local Division of the British Medical Association and making a point of inducing all newcomers to do likewise. An interchange of experiences at local meetings would serve to bring various sources of discontent into true focus and eventually suggest those in respect of which common action might usefully be taken. Meantime, it is clear that, though a good many medical men whose physical and mental temperament suits them to grapple successfully with the special difficulties of life in hot and only semi-civilized countries eventually find themselves in satisfactory positions, a larger proportion than should be of those who go out regret their choice of a sphere of labour, and either continue in it against their inclination or abandon it after comparatively brief experience. Some of the reasons for this state of affairs are fairly plain. Many men accept appointments on rubber, tea, and other estates without thoroughly informing themselves as to the nature of the work they are undertaking or the conditions in which they will live, even so far as to realize the purchasing power of the salary offered them. They also conclude that "free quarters" necessarily means a furnished house suitable for a man and a young wife, and that "private practice allowed" means that such practice is always available and remunerative. Others are men who would find an isolated medical life little to their taste either at home or abroad, and regard all its drawbacks as the outcome of their own immediate environment. Finally, there are a few who expect to get to the top of the tree forthwith, and are naturally disappointed. Up to the present a medical appointment on an estate is not every man's job; many of the companies running them are still in a struggling stage, and necessarily endeavour to keep expenses down to the lowest possible point; the home managers of others have small conception of the discomfort in which the employees live, and many, though beginning to recognize the importance of medicine in commercial undertakings, are still disposed to regard medical men as well paid when they receive the salaries such as are usually paid to young men employed in ordinary executive billets in the same enterprises. It is the latter belief in particular that the profession must first set itself to combat.

SLEEPING SICKNESS TRYPANOSOME IN ANTELOPES.

In the BRITISH MEDICAL JOURNAL of April 27th, 1912 (p. 969), a somewhat lengthy reference was made to the discovery that in Northern Rhodesia various species of wild game serve as a reservoir for human trypanosomes (*T. rhodesiense*), and we ventured to suggest that an analogous condition would probably be found to exist in Uganda. As a matter of fact this suggestion had already been forestalled a fortnight earlier in a communication by Dr. H. L. Duke read before the Royal Society, but which at that time had not been published. Dr. Duke's experiments were conducted almost simultaneously with those of Kinghorn and Yorke in Rhodesia, and in September last he first obtained evidence that a particular species of antelope, Situtunga (*Tragelaphas spekei*), on Damba Island was naturally infected with human trypanosomes (*T. gambiense*). In November he was able to confirm this observation. None of the other animals examined—and these included the waterbuck, bushbuck, hippopotamus, and buffalo—were found to harbour *T. gambiense*, nor, with one exception, any form of trypanosome. The Situtunga, however, were infected with *T. uniforme* and *T. ingens* (in addition to the human form), and this fact, necessitating as it did repeated inoculation experiments, rendered diagnosis and identification much more tedious than in the case of *T. rhodesiense*, where identification could be established on morphological grounds alone. From these observations we may therefore conclude that the continued infectivity of the tsetse flies on Damba Island is to be explained by the fact that the Situtunga are acting as reservoir hosts, and it may be expected, although no positive evidence is yet forthcoming, that on the mainland the various species of antelope are playing a similar part. Having regard to the fact that the Royal Society Commission showed that the waterbuck, bushbuck, and reedbuck could be readily infected with strains of *T. gambiense*, such a supposition appears to be quite justifiable. It seems well to note a point remarked on by Fraser and Duke in an earlier communication, namely, that the antelopes infected by the Commission remained infective for over a year without developing any sign of sleeping sickness, either clinically or pathologically. A further communication by Dr. Duke, confirming his diagnosis of *T. gambiense*, was read before the Royal Society on June 6th.

THE GALVANOMETRIC DETERMINATION OF UREA IN URINE.

WUNDER described in 1909 a simple method of determining quantitatively the concentration of electrolytes and of urea in human urine by means of the galvanometer. It was carried out by allowing a constant current from five accumulators to pass through a hypodermic syringe kept at 15° C. From the direct readings of the galvanometer (milliampèremeter) the observer could calculate the salt content of the urine by using an empirical formula; by comparison of the specific weights of the concentration of electrolytes found from the specific weight of the urine, the concentration of the non-conductors (practically of urea) could be calculated. Wunder has recently discussed the limitation of error of this method.[1] The urea content of urine as measured by this method was compared with the values found by the determination of the N content (Kjeldahl). When the galvanometric determination was carried out at 15° C. the urea values were about 8 per cent. too low in normal urines, but practically correct when carried out at 37° C. In pathological urines the readings at 15° C. were about 13 per cent. too high. The values determined at 17° C. corresponded to those found by Kjeldahl. The error was found to be due to the presence in urine of a larger quantity of non-chloride conductors than is usually accepted. According to Vierordt the normal value of sodium chloride is 1.1 per cent., and of non-chlorides 0.8 per cent. instead of 0.48 per cent., the percentage usually given. This accounts for the error being greater at the lower temperature. At 16° C. it is negligible. After analysing all his data Wunder asserts that under normal conditions the galvanometric examination of urine at 16° C. yields within a few minutes reliable results in regard to electrolytes and non-conductors, and that when there is marked retention or excessive excretion of sodium chloride, the method, combined with a chemical chloride determination, is the simplest and most rapid way of ascertaining the electrolyte and urea content of urine.

[1] *Münch. med. Woch.*, May 14th, 1912.

THE NEW CAPITAL OF INDIA.

THE Delhi Town Planning Committee has very carefully studied the site known as the Durbar area, and has had an opportunity of seeing the ground after a heavy fall of rain. The ground has also been under the observation of the special sanitary officer attached to the committee and of the Sanitary Commissioner with the Government of India. It is understood that after consultation with these officers and after study of the data collected in regard to flood and subsoil water and of other general considerations of importance, such as the extent of the land required, the committee has come to the conclusion that so much of this area is unsuitable for the purpose that the amount remaining will be insufficient for the requirements of an imperial city. The site which commends itself to the committee is the area to the south of Delhi and west of the more ancient cities; it offers a combination of conditions favourable to health and good drainage, together with the aesthetic advantage of fine views over the present city of Delhi and the monuments of the Delhis of the past. The committee has drawn up a comprehensive "lay out" plan of the new capital, which, it is understood, has been accepted. A small local government will now be created at Delhi, and the preparation of the projects will be taken in hand. The experts were assisted by officers of the Indian Public Works Department, and the Government of India has decided to invite architects and others residing in India to submit competitive designs for residences of officials of various grades at Delhi. A committee, assisted by the consulting architect to the Government of India, will examine the designs, and liberal premiums will be awarded to successful competitors. One of the conditions of the competition will be that the competitor shall certify that his designs and drawings were prepared in India by him or under his direct supervision. The drawings will be publicly exhibited after the committee has made its award. It is hoped by the early construction of a number of permanent residences from designs selected at this competition to reduce expenditure on the provision of temporary quarters. The Delhi Municipal Committee has applied to the Punjab Government for the services of an Indian Medical Service officer as health officer for Delhi, to whom definite executive responsibilities could be entrusted. It is proposed to give him an establishment costing two lakhs of rupees annually, with a view to introducing a more sanitary state of affairs than now prevails in the city that is to be the capital.

PROFESSOR SEWAKI, of Tokio, has made a compound of urea and quinine which, he states in the *Sei-i-Kwai Medical Journal*, possesses very marked analgesic properties. A 2 per cent. solution injected subcutaneously produces complete local anaesthesia in from five to seven minutes. The compound, to which he has given the name "unusitsin," also acts as an antiseptic, so that solutions can be kept indefinitely.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

DECREASE OF INSANITY IN BELFAST.

DR. GRAHAM has recently issued his report on the Belfast District Lunatic Asylum for 1911. Of the patients admitted during the year 90 were males and 134 females; the numbers under treatment were 675 males and 799 females. There were 41 deaths in males and 63 in females, and the discharges were—males 53 and females 77. Dr. Graham draws attention to the pleasing fact that the admissions were 17 per cent. fewer than those of the previous year, and is of opinion that we have at last reached a turning point in the increase of mental disorders. He gives the credit to the better general hygiene, the progress in preventive medicine, and the social amelioration of the poorer classes. The interests of sanity are better safeguarded than before, and the beneficent effects are to be looked for in the lessened numbers claiming admission to asylums. He hopes that the Mental Deficiency Bill will be extended to Ireland; the villa colony system, on which the new asylum at Purdysburn is being built, is admirably suited to meet the requirements of such a bill. The great benefit of out-door farm work is insisted on, and the improvement due to the villa colony system is described. The cost per head is one of the lowest. Dr. Dawson, the inspector of lunatics, remarks that at his visit 1,001 patients out of a total of 1,186 were engaged in some sort of work.

TUBERCULOSIS SANATORIUMS.

At a meeting of the Roscommon County Council last week it was unanimously decided to erect a sanatorium for the county and to appoint a medical officer at £400 a year, his duties to be confined to looking after the patients in the sanatorium. At the last meeting of the Dublin Joint Hospital Board a surveyor was appointed to prepare the bills of quantities for the additions to the Sanatorium for Consumption at Crooksling. The total cost of the Crooksling scheme will be about £30,000, and it is expected that the institution will be in full working order in six months. The Dublin County Council has resolved to ask the Local Government Board to hold an inquiry to elicit the views of the different districts, in the hope of arriving at a decision equitable to all parties.

POISON BOTTLES.

The following changes have been made by the Lord Lieutenant and Privy Council in the regulations regarding the sale of poisons; the words "not to be taken" must be printed on the label, and the bottle or other container must be rendered distinguishable by touch from ordinary bottles or containers.

The Coroner for the City of Dublin held an inquest at Jervis Street Hospital last week concerning the death of a man, aged 68, who died in the hospital on August 14th. It appeared from the evidence that the patient, who had been in the hospital for some time suffering from heart disease, and in an extremely weak condition for some days previously, was given a dose, supposed to be house mixture, by a nurse at 7 o'clock. Later, the house-surgeon was called, and found that the man had vomited; his pupils were contracted, and his pulse weak. The stomach was washed out, and the customary measures were resorted to in order to restore the patient, but he succumbed in about an hour. It was found that the dose given was taken from a bottle containing creolin, instead of from that containing house mixture. The pharmacist of the hospital stated that the disinfectant in the bottle was supplied by a wholesale house in tins, and that he put it in the bottle. It was not a scheduled poison, and was only labelled for precautionary purposes. The jury found that the patient died from taking creosotic acid or some other constituent of tar oil, administered by mistake for another medicine, exonerated the nurse from all blame, and suggested that all bottles containing other than medicines intended for patients should have some distinctive mark, either of colour or shape.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

ANNUAL REPORT OF THE MEDICAL OFFICER OF HEALTH FOR EDINBURGH.

THE annual report of the Public Health Department of the City of Edinburgh for the year 1911 has just been issued. In his introductory letter Dr. Maxwell Williamson urges the necessity for a more frequent census of the population. He points out that, according to the ordinary methods of calculation, the population of Edinburgh ought to have been 365,543, but the census returns show that the actual population was 320,769. The death rate was 14.4 per 1,000, the lowest death-rate ever recorded in Edinburgh. The number of notifications of infectious disease, excluding phthisis and cerebro-spinal meningitis, gave a ratio of 6.1 per 1,000 of the population, as against 7.1 in 1910 and during several preceding years. There were 1,075 cases of scarlet fever with 24 deaths, as against 1,512 with 42 deaths in 1910. Attention is called to the comparative immunity which Edinburgh has enjoyed for some years past from enteric fever. During 1911 only 31 cases were notified, 7 of which occurred in a close in the Canongate, where were a number of insanitary dwellings, now closed as unfit for occupancy. Thirty years ago there occurred in one year over 600 cases with 70 deaths; in 1911 only 31 with 3 deaths.

Infant Mortality.

Under the Notification of Births Act 283 ladies visit the poorer classes of the city to advise as to the rearing of infants in the early months of their lives. During 1911 the infant mortality-rate was 115 per 1,000 births. The question of supplying milk free of cost to mothers in the poorer districts, where infantile mortality is so excessive and where there is difficulty in procuring a sufficiency of nourishment, is, it is said, one for very serious consideration.

Phthisis.

The number of notifications of phthisis during the year was considerably in excess of those at any previous period. This was probably due to the activity of the Victoria Dispensary; its authorities have been carrying out an examination of the relations of patients who come under care, and in consequence a larger proportion of persons affected with the disease in its initial stage have been the subjects of notification. The notifications under 14 years of age were almost exactly double the number in the previous year. The phthisis death-rate during 1911 was 1.22 per 1,000, the same figure as during the preceding five years; this rate was the third lowest among the eight large centres of population in Scotland. The demand for the reception of advanced cases was constantly in excess of the accommodation provided. Six additional open-air shelters were provided for male patients, but additional accommodation will be required for female patients. A special report on the question of treating phthisis in all stages is now in the hands of the Public Health Committee.

Population.

Between 1901 and 1911 the male population diminished by 1,398, while the female increased by 4,257. The net increase is only 0.9 per cent., as contrasted with 15 per cent., which would have been the rate of increase of the estimated population calculated on the rate obtaining during the decade 1891–1901. Thus the progress of the population has experienced a serious check, and the fact is emphasized by contrasting the rates of increase in other large towns in Scotland. In Greenock the rate of increase between 1901 and 1911 was 9.0, in Paisley 6.4, in Aberdeen 6.2, in Perth 5.5, in Leith 3.9, in Dundee 1.21, and in Glasgow 1.1. There were 71,323 houses inhabited, and 5,346 unoccupied habitable houses.

Births, Marriages, and Deaths.

There were 2,850 marriages, as compared with 2,730 in 1910 and 2,795 in 1909. The birth-rate for the year was 21.2 per 1,000 of the population, the lowest yet attained. There were 103.9 girls to every 100 boys, and the percentage of illegitimate to the total births was 9.28.

The death-rate mentioned—namely, 14.4 per 1,000 persons living—is the lowest of any of the large towns

of Scotland. The death-rate of Edinburgh in 1861 was 23.15, in 1871 it was 27.86, in 1881 it was 18.86, in 1891 it was 20.12, in 1901 it was 17.77, and in 1911 it was 14.4. The infectious diseases death-rate, excluding phthisis, was 0.86 per 1,000.

Poor-Law Administration in Glasgow.

The statistical report by the Inspector of Poor to the Parish Council of Glasgow for the six months ending May 13th, furnishes some interesting figures. The applications for relief during the six months the report covers numbered 13,889, and 2,789 of the cases were new.

Much good work is done by the Children's Relief Committee; under the Children Act proceedings were taken against 302 persons. Of these 209 were charged with desertion, 24 with ill-treating and neglecting their children. The Children Act 1908, Part I Infant Life Protection, works well in Glasgow and strict supervision is exercised by the Infant Protection Visitor, who paid 965 visits. In connexion with advertisements appearing in the Glasgow newspapers, the proprietors of these papers refer those answering the advertisements to the parish authorities who make inquiries as to the suitability of the guardians. No fewer than 55 undesirable guardians were prevented from taking charge of infants during the half-year. In all 2,559 persons belonging to the parish of Glasgow were confined in asylum or boarded out; 1,033 cases of phthisis were treated with 189 deaths.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

PORTSMOUTH.

Memorial to the late Dr. C. C. Claremont.

A handsome tablet of Sicilian marble with gilt Mosaic border has been placed in the main corridor of the Royal Portsmouth Hospital. This position in a building where he did excellent work for many years is most appropriate. It bears the following inscription:

To the Memory of
Claude Clarke Claremont, M.D., B.S.Lond.
Born 11th June, 1854. Died 30th April, 1911.
He was actively engaged in the work of this Hospital
for many years and filled successively the offices of
House-Surgeon, Out-Patient Medical Officer,
Assistant Physician and Physician.
A trusted adviser. An enthusiastic worker.
A man much beloved and highly esteemed.
As a token of their sincere regard and in remembrance
of a beloved comrade, his colleagues and friends
have placed this tablet.

MANCHESTER AND DISTRICT.

The Early Notification of Births Act.

About eighteen months ago the Sanitary Committee of the Manchester Corporation passed a resolution recommending the City Council to adopt the Early Notification of Births Act for Manchester. This was strongly opposed by the medical profession generally, and the Joint Committee of the Manchester and Salford Divisions of the British Medical Association circularized the members of the City Council, pointing out the objections to the adoption of the Act. As a result the Council rejected the recommendation of the Sanitary Committee by a majority, and it was thought at the time that the matter was finally disposed of. But a few weeks ago the Sanitary Committee, in accordance with a request of the Infant Life Preservation Subcommittee, again resolved to recommend the Act, and instructed the Town Clerk to take the necessary steps. The matter was considered in a preliminary form at its meeting on the question will only be discussed finally early in September. In the meantime the Joint Committee of the British Medical Association on the Infant Life Preservation Subcommittee examined fully the objections of the profession to the obligations which the Act imposes on medical practitioners. Apparently this has not altered the opinion of the subcommittee, which has reaffirmed its recommendation. It is understood that opposition will again be raised in the Council meeting, as a considerable number of members of the Council agree with the profession in opposing the adoption of the Act.

WALES.

The Toning of Milk.

In his quarterly report to the Monmouthshire County Council, Mr. D. R. Thompson, analyst, stated that twenty-two of the samples of milk taken were found to be adulterated, in all these cases the proportion of fat was deficient, but only in one case was it shown that water had been added. The custom would now appear to be to add separated milk in place of water, a practice known as "toning." It is possible to carry out this practice on a large scale, because the official standard of fat is 3 per cent. If the percentage of fat in milk of average composition be taken as 3.48, the margin allowed admits a fairly liberal addition of separated milk.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

The Annual Indian Medical Service Dinner at Simla.

The annual dinner of the Indian Medical Service was held at the United Service Club, Simla, on June 24th. There were present Surgeon-General Sir C. P. Lukis, in the chair; Colonels Lyons, Bamber, Hendley; Lieutenant-Colonels H. Smith, Garvie, Wilkinson, Seton, James, Blenkinsopp, Carr, White, and Browning Smith; Majors Granger, Gibbs, Robertson, Jay Gould, Austin Smith, and Bennett; Captains McKendrick, Patterson, C. Melville, S. Webb, Lister, Leonard, Tressider, Munro, Needham, Mills, Barrow, M. Puri, H. Crossle, and Grisemont. The guests were General Sir Robert Scallon, Surgeon-General Sloggett, and Colonel Firth.

Indian Research Fund Association.

In the course of his budget speech last cold weather, Sir Harcourt Butler announced the establishment of "The Indian Research Fund Association." The Government of India have now drawn up rules and regulations for its working. Its objects are declared to be the prosecution and assistance of research, the propagation of knowledge, and experimental measures generally in connexion with the causation, mode of spread, and prevention of communicable diseases. The governing body constituted as follows: President, the Hon. Member of the Governor-General's Council in the Department of Education; Members: the Secretary to the Government of India (Department of Education), the Director-General, Indian Medical Service, and Sanitary Commissioner with the Government of India, the Director of the Central Research Institute (Kasauli), the Statistical Officer to the Government of India in the Medical and Sanitary Departments, the officer in charge of the Malaria Bureau, with the Assistant or Under Secretary to the Government of India in the Department of Education as secretary. The members of the association are of two classes—permanent members and temporary.

The permanent members are the president and members of the governing body, and every donor of Rs. 500 and upwards.

Temporary members are members of the working committee, and every subscriber of Rs. 100 and upwards annually. The governing body will appoint a "scientific advisory board," of whom not less than three are to be members of the governing body, to examine all proposals in connexion with the scientific objects of the association. The scientific objects of the association are to be carried out with the aid of the "working committees," appointed by, and working under, the direction of the "scientific advisory board."

A general meeting of the association is to be held once in every year as soon as possible after the preparation of the annual accounts.

Medical Mission Hospitals.

The Victoria Hospital, Benares, belongs to the Zenana Bible and Medical Mission, and is superintended by Miss Janet M. C. Gray, L.R.C.P. and S.Edin. The patients are exclusively women and children: 485 in-patients and 4,387 out-patients were treated and 149 surgical operations performed during the year 1911. The training of native nurses is an important part of the work of the hospital.

The Ballard Memorial Hospital, Janupur, belongs to the same society, and may be considered a branch of the Benares institution: 129 indoor and 3,271 outdoor patients were treated in 1911, and 29 operations performed. The great majority of patients treated in both hospitals are Hindus, but a considerable number of Mohammedans and Christians attend. Religious exercises constitute a prominent part of the work.

Snake-bite Treatment in the Central Provinces.

According to a recent report, the number of deaths due to snake-bite in the Central Provinces is stated to have been 1,244 during 1911, notwithstanding efforts to popularize the Lauder Brunton method of prevention. Colonel Dennys, the Inspector-General of Civil Hospitals, has investigated the history of the potassium permanganate treatment in the Provinces, and he reports that, of the total number of cases in the last six years, there were only 5 which can be looked upon "as more or less authentic cases of bites by *poisonous snakes* treated by the Lauder Brunton method alone." Even in these instances, Colonel Dennys adds, it is not absolutely certain that recovery was solely due to the treatment. The experiments at the Bombay Bacteriological Laboratory to test the efficacy of the permanganate have also proved most discouraging, and the Inspector-General does not recommend the adoption of measures for extending the use of the lancets. The Chief Commissioner concurs in this view, and considers that, while experiments may be continued at places already provided with the apparatus, it would not be advisable to advocate a more extensive use of treatment of such doubtful value. It might be added that it is highly desirable that the whole question should be removed from the region of doubt. If the potassium permanganate treatment is useless, an authoritative statement to that effect would prevent the existence of illusions as to its efficacy.

Women Doctors for India.

At a meeting of the Countess of Dufferin Fund Central Committee, and of the Victoria Memorial Scholarship Fund Executive Committee, held recently at the Viceregal Lodge, Simla, the scheme for a women's medical service in India was further discussed. The leading Parsee journal has criticized unfavourably the scheme of the Government of India for organizing a service of women doctors for India on the lines of the Indian Medical Service. It points out that the Parsee community has always been forward in recognizing the need for the extension of medical relief and medical aid in India, and has equally readily acknowledged the need for a service of women doctors in a country where the traditions of centuries and the instinctive conservatism of the people have hitherto made the female portion extremely reluctant to resort to hospitals and dispensaries for medical advice. The institution of a few well-paid appointments carrying attractive emoluments and the freedom of private practice will not, it is contended, meet the need. It goes on to say that—

> Those who have had any insight into the working of the present Indian Medical Service know the difficulties and dangers attendant upon a system under which men entirely unfamiliar with Indian conditions come out with academic qualifications in medicine to work as doctors in hospitals and surgeons in civil stations. Would these difficulties and dangers be any the less—nay, would they not be aggravated a hundredfold—in the case of English lady doctors who may be attracted, not under the most favourable of circumstances, to the chances of service so far away from home? What we want is not the organization of a corps of a limited number of lady doctors from England who may make a rich living out of their high salaries and a flourishing practice amongst the upper classes of Indian society, but the institution of a large number of Indian medical women—maybe under the control of the Indian Medical Service—who may be in a position to carry medical aid and relief to that large class of Indian women who are reluctant to take advantage of hospitals managed by male doctors.

Correspondence.

THE BEZOAR STONE.

Sir,—The price of bezoar, as quoted by Guibert, absurdly low. Any one who could have bought it £2 10s. would have speedily made a fortune, for the bezo stone is extremely rare. It is found, according to so naturalists, in the hearts of stags, and is said by Bonti to be the alvine concretion of goats or gazelles; b others, according to Serapion—extremely cunni naturalists—say that it is found in the stomach, or rath the omasum, of the animal they call Cervicapra. Avenzoa however, gives the true account of its origin:

> That, says he, is best which is found in the East, near t eyes of stags. Great stags, in those countries, eat serpents make them strong, and before they receive any hurt from the run into streams of water, and go into it so far that it com up to their heads; this habit they have from natural instin and there they continue without tasting the water (for if th should drink it they would immediately die) till their ey begin to trickle; this liquor, which oozes out under their e lids, thickens and coagulates, and continues running till increases to the bigness of a chestnut or a nut. When the stags find the force of the poison spent, they come out of t water, and return to their usual haunts; and this substan growing by degrees as hard as a stone, at last, by freque rubbing, it falls off.

Is it any wonder that this substance was almost priceles as a medicament; and can any one doubt Abdalanarac wh he records that the palace of Corduba was given for one these stones? Friar Bacon was a firm believer in t virtues of bezoar, but though he was profligate a reckless in his expenditure on scientific material, a ruined himself thereby, I never heard that he purchas a bezoar. It was doubtless beyond his means. The o drug that approached the bezoar stone in value was t jewel called actites, that is found in an eagle's nest. has rings with little stones within, and if tied to t arm and left side prevents premature delivery, and brin love between a man and his wife.—I am, etc.,

Wn. Channel and Bay, Aug. 17th. Chas. Mercier

EXPERIENCE OF THE "DIORADIN" TREATMEN

Sir,—I regret that Dr. Bernheim considers that the t to which I submitted the dioradin treatment was unfa In my report I gave the type and stage of the disease each case: I selected different types so that the ma claims in favour of dioradin might be tested. It seem to me to be necessary that the diagnosis should ha been proved by the discovery of tubercle bacilli in t sputum.

I have read two of Dr. Bernheim's communications that of March, 1911, made to the Société Internationale la Tuberculose, and that read at the French Medical C gress on October 24th, 1911. Though the clinical deta are scanty I cannot but conclude that many, if not mo of the cases of proved pulmonary tuberculosis recorded Dr. Bernheim as evidence of the success of the tre ment were examples of the disease in a stage quite advanced as those selected by me.

The improvement during the treatment is ascribed Dr. Bernheim to the dioradin, but it is so common to t that patients admitted into hospital improve marke without any special treatment that I feel quite unable accept evidence of temporary improvement in favoura circumstances as proof of the specific curative action the preparation. Dr. Bernheim is doubtless familiar w what Professor Rénon terms "the normal coefficient improvement" of tuberculous patients when they placed under any special treatment, whatever its natu provided that it is not actually harmful. M. Laumon translates this into figures, showing that any new spe treatment is able to claim 65 to 71 per cent. of ca cured or improved and 35 to 29 per cent. stationary worse.

MM. Matthieu and Dobrovici showed the wonde efficacy of daily hypodermic injections of 1 c.cm. normal saline solution if combined with a certain amo of therapeutic suggestion.

I await anxiously the promised communication of Bernheim, and I trust that more details will be given t have been included in the reports published hithe

I think that if dioradin acts specifically in the cure of tuberculosis, Dr. Bernheim will be able to produce records of cases showing:

1. Conclusive evidence of tuberculosis at the beginning of the treatment.
2. The type and stage of the disease.
3. Any factors that may have contributed to the improvement other than the injections of dioradin.
4. The evidence of improvement or cure.
5. Evidence that the improvement has been maintained for a period at the least longer than three months.

I hope, for instance, to learn the subsequent history of the patients treated by Dr. Bernheim between September, 1910, and January, 1911, and published by him in his first communication in March, 1911. In the second communication of October, 1911, Dr. Bernheim only alludes briefly to these patients, saying that all remain well save three; of the three, one had died, though the date of the death is not given: the original report of this case records very satisfactory improvement up to February 27th. The other two still had tubercle bacilli in the sputum, but further details are not provided.

A few cases well reported and showing persistent improvement over a considerable period of time would do more to tempt me to test the treatment again than the long series of records stating that tuberculous patients had a number of dioradin injections and were better at the end of one, two, or three months.

At present my own experience of its use leaves me sceptical as to its value, and Dr. Bernheim's published reports so often fail to give the information necessary to form a judgement that my scepticism has not been shaken by them.

Nothing would give me greater pleasure than the discovery of a cure for tuberculosis, but nothing is more repugnant to me than the raising of false hopes in unfortunate sufferers from this disease. If Dr. Bernheim wishes to persuade his colleagues of the specific curative action of dioradin, I think that he should explain fully "the solid and precise scientific base on which the therapeutic method reposes," and produce proofs that a series of cases treated by it had improved, not only at first, but had maintained the improvement for a year or more.

I am, etc.,

London, W., Aug. 19th. CECIL WALL.

ORGANISMS CULTIVATED FROM THE LESIONS OF HUMAN LEPROSY.

SIR,—In a paper entitled "A Critical Study of the Organisms Cultivated from the Lesions of Human Leprosy, with a Consideration of their Etiological Significance," in the *Journal of Infectious Diseases*, 1912, xi, pages 116 to 139, Duval and Wellman have incurred some inaccuracies which I wish to rectify.

On page 125 it is distinctly stated on two occasions that my culture of leprosy is chromogenic. This I cannot confirm; the culture belongs to the so-called "tubercle" group; it is a moist, ivory-white, slow-growing wrinkled growth, to the naked eye practically indistinguishable from avian tubercle. It might exceptionally produce pigment, but that so rarely that it cannot be considered as characteristic. Another organism, such as *B. phlei*, or the acid-fast bacillus in milk by Tobler, and Nabarro, and from dung by Moeller, to which group of saprophytes Duval's culture also belongs.

Duval and Wellman mention several animal experiments carried out with my culture. The time of observation (two months) is too short to allow a definite opinion to be arrived at. Moreover, as Professor Duval stated in a letter dated May 10th, 1912, that the animals he sent him died out, there is no possibility of knowing whether the authors were working with living tubercle.

To this must be added that their agglutination tests were carried out with a strain of my culture which I have repeatedly call "chromogenic." Moreover, for a year and a half I have not seen my culture in the state in which it has been placed on the market; it must, therefore, be left an open question whether they were working with my strain at all.

A remarkable fact in these agglutination tables is also that the "tubercle" group (human, bovine, avian tuberculosis) does not agglutinate in a constant or at least falling ratio, as is to be expected in any "group" reaction. This is quite clearly shown in the serological tests done by several workers under Much, of which a short summary can be found in the *Transactions of the Society of Tropical Medicine*, 1912 (p. 175). I made the same observation in the course of my complement absorption tests; in fact, it is extremely difficult, or nearly impossible, so far to differentiate satisfactorily bovine from human tubercle, even if the antigens are properly titrated before use. On the other hand, we find in Duval and Wellman's experiments that a leper serum agglutinates 1 in 40 with human and 1 in 10 with bovine tubercle; another, 1 in 20 with human, but 1 in 80 with bovine; another, again, 1 in 150 with human and 1 in 40 with bovine tubercle culture emulsion. It would seem that something was wrong with the bacterial emulsions used, otherwise they would have given more constant results. This is such a well-known fact to any one who has tried to differentiate the "tubercle" group by means of serological tests that it need not be insisted upon.

Further, in the same paper (p. 120) it is stated that the branching, filamentary and diphtheroid organisms which Kedrowsky and also Bayon have recovered from cases of leprosy are contaminators. This may or may not be the case, time alone will show the correctness or otherwise of our views. The fact remains that Kedrowsky's and also Bayon's strains are capable of producing in rats and mice visceral lesions indistinguishable microscopically from those occurring in spontaneous visceral leprosy of rats and human beings, and different *toto coelo* from anything that can be produced by any other similar bacterium. Neither Clegg's, Duval's, or Rost's culture have succeeded in producing anything but the lesions that could equally well result after injection of saprophytic bacteria of the Grassberger or Moeller's dung "bacillus" group.

I have refrained so far from publishing elaborate descriptions of my microscopical sections, and have preferred to demonstrate them to societies and meetings. On every occasion the general opinion was that the specimens demonstrated were absolutely unlike anything seen before. I refer to the discussions at the meeting of the Society of Tropical Medicine on February 16th, 1912 (*Transactions*, pp. 195 and 199), and at the British Medical Association meeting in Liverpool this year.

In another paper (which, however, I only know from the summary given in the *Journal of Tropical Medicine*, 1912, No. 14, p. 221) Duval and Wellman appear to consider that the culture of *B. leprae* on placental extract agar is an original method of their own. Kedrowsky, however, fully published the process in 1901 (*Archiv für Hygiene*, xxxvii, p. 55).

Moreover, we are informed in this paper that the authors have succeeded in cultivating on placental-extract-agar the acid-fast organism of rat leprosy. Seeing that Duval's first human lepra culture has so far been unable to produce any leprous lesions in animals, and shows all the characteristics of a saprophytic acid-fast (growth at room temperature on simple gelatine, experimental animal lesions, extremely easy to regain even on common agar after injection into animals), it would be advisable to await the results of conclusive animal experiments before considering the organism to be a culture of lepra murium.

In conclusion, I should like to call attention to a short paper by Dr. MacLeod in the *Proceedings of the Royal Society of Medicine* (Dermatol. Sect., 1912, v, 142–144) on a case of maculo-anaesthetic leprosy in a woman, aged 25. The bacterial extract mentioned in this paper can now be supplied free of expense in sufficient quantities, for trial on selected cases, by applying to me at the Lister Institute.

I am, etc.,

H. BAYON,

London, S.W., Aug. 14th. Beit Memorial Research Fellow.

THE INTERIM REPORT ON TUBERCULOSIS.

SIR,—The action of the recent meeting of Representatives in regard to the administration of the so-called sanatorium benefit may be most praiseworthy from the public point of view; but it is to be hoped that it will not be taken by the public as a professional and scientific endorsement of the Government policy as outlined in the Interim Report of the Departmental Committee on Tuberculosis, commonly quoted by the name of its chairman as the Astor report.

At a moment when there appears some chance of a national attack upon the roots of the disease a Governmental Committee recommends a vigorous lopping of the twigs and branches. It is as if, when a surgical operation is absolutely and urgently necessary, the physician should recommend sedatives and anodynes. It looks as if, paralysed by the magnitude of its task, and afraid of unpopularity if it suggested the proper remedy for this national evil, the Committee had fallen back upon the same old palliatives which have proved so inefficacious for the past half-century.

There is absolutely nothing novel and nothing with a national aspect in the whole of this report from beginning to end, and the calculations as to expense and numbers of beds requisite are ridiculous. There are over 50,000 deaths annually in the country from pulmonary tuberculosis, and the report states on page 26:

> Some 9,000 beds would seem to be required for the purposes of observation, treatment, education, and isolation. . . . How many of these 9,000 beds will require to be provided depends upon the number of available beds already in existence which are not now being utilized for the treatment of tuberculosis.

What good purpose can be served by such an inadequate estimation as this? It is easy to predict the bad results which will follow as a result of the wave of bitter disappointment which will sweep over the country after the ignominious failure of such a puerile scheme.

For each death annually from pulmonary phthisis there exist at least three cases in an open infective condition who are a danger to their fellow countrymen. The disease can only be properly tackled when these dangerous patients are segregated from the healthy. This means the provision of 150,000 to 160,000 beds, or, better put, institutional accommodation for 150,000 to 160,000 people, at a capital cost of about 15 million pounds. This is what the Government ought to be told, instead of being lulled to sleep with a fable about 9,000 beds. The sooner the 15 millions are raised and the problem properly attacked, the more economical will the result be to the nation. The treatment on such lines of the problem of tuberculosis is a sound financial proposition for any nation, however large the outlay may seem to be at first sight. In various ways the nation is spending treble as much to-day in methods which foster tuberculosis and cause it to flourish.

The keynote of the report is the early diagnosis and treatment of tuberculosis, and from the preventive point of view the note is an utterly false one; no disease ever was, or ever will be, eradicated by treatment of cases, early or late. It is the late cases which ebb and flow in a ceaseless tide in and out of the gates of our workhouses and hospitals which propagate and maintain tuberculosis. The first essential in any crusade against tuberculosis is the reform of our Poor Law, and provision for proper care of those unfortunates who, strange to say, are wholly missed by the Insurance Act, or, if included, given least relief under it.

There is no reasonable attempt made in the report to show how the present muddle of Government officials, under Board of Education, Board of Trade, and Local Government Board, should be organized into one effective unit under a Board of Health, and then extended to fight against dangerous cases of this infectious disease. There are only directions given for the perpetration of an additional muddle in the shape of cordons of cheap dispensaries all over the country.

It is about time that some one told the Government that the early cases require usually no more treatment than plenty of good food and release from unsuitable work so as to give time for rest and exercise in the open air. Under such conditions the vast proportion of them will do as well and often better under their own practitioner than in a sanatorium, and he also can instruct them in domestic hygiene just as well as a dispensary official or visitor.

If such an early case should become openly infectious, and commence to discharge sputum laden with bacilli, it is worse than folly to continue to treat it in any private residence, and more especially in the dwellings of the poor. The only proper place for such a case is an isolation ward, for it is such cases which spread the disease broadcast. The lamentable fad of hygienic tuition for such cases is one of the most dangerous heresies of our time. Any one who has observed such cases, and studied how in a hundred ways in family life, or in a crowded workshop working with the same tools as healthy workmen, they can spread the disease in spite of all hygienic teaching, will agree that there is only one thing to be done with them, and that is segregation.

At paragraph 16 on page 10 of this report, no less than six classes of pulmonary tuberculosis cases are given, which illustrates the antiquated character of the report. For purposes of a national campaign there are only two classes of consumptives, namely, those which are at a non-infectious stage, which should be treated at home, by their own doctor, and those which are infectious, which should be promptly and compulsorily removed to an isolation centre (call it what you will), and retained there until no longer infectious. It is scarcely credible that this report of a committee to advise the Government as to the prevention of tuberculosis, does not even make a suggestion as to the more serious infective cases of its fifth and sixth classes.

Ineffectual attempts at curing instead of concerted scientific effort towards prevention, dominate the whole report, the all-important dispensaries, on which the greater part of the national and municipal funds are advised to be expended appear to be scarcely distinguishable from our present failures, called out-patient departments; there are to be offices, general waiting rooms, committee rooms, consulting rooms, and dressing rooms, and it is only in a secondary and casual way that what might have been deemed the most essential thing of all is mentioned, namely, bacteriological examination.

As the Edinburgh system, invented by one of the signatories to the report, is written so largely over the whole document, it would surely be of some interest to collect information as to the rate of decline of death-rate from pulmonary tuberculosis in Edinburgh as compared with similar Scottish cities before and since the introduction of the dispensary system for which so much novelty is claimed. The death-rate curve has been falling everywhere, but if there is anything of great importance in this dispensary idea then the Edinburgh curve should show a break at the period of its introduction from which onward the fall should be more rapid than in similar cities.

Before all this Government and municipal money is spent, can we have the curves, say, for Edinburgh and Aberdeen, plotted alongside each other, from 1860 or 1870 down to the present date? The scale on which these dispensaries are to be provided is laid down at one to every 150,000 to 200,000 of population. On the usual basis as the numbers of phthisical cases in the population, this will correspond to 1,000 cases in actual attendance at each dispensary at any given time, without including any other forms of tuberculosis. Assigning one visit per week for each patient, this means about 140 cases to be seen daily, and this is to be accomplished by one whole-time chief tuberculosis officer, with one or more assistant tuberculosis officers; also the adaptation and equipment of a house for this amount of hospital work (including, one is left to suppose, all the offices mentioned above) is, it is stated, to cost not more than £250. One is left in some doubt as to whether it can be done, even with public money. A similar failure to think out the magnitude of the problem is to be found in every page of this remarkable report. Considerations of space prevent the possibility of dealing with them all, but the calculations on p. 18 as to required facilities for dealing with tuberculous children are ludicrous. After making much of the fact that some provision has been made at present—namely, 180 places in open-air schools for tuberculosis, and 750 places in general open-air schools for the whole country—the report calmly suggests that 250 additional beds are required for phthisical children for the whole country. When it is remembered that there are between seven and eight million school children, and that, according to one of the signatories to this very report, Sir George Newman, 1 per cent. of these children are tuberculous, this means at least 30,000 phthisical children if only one in three affected is set down as a pulmonary case, so that 250 beds seems an absurd want of adequate provision. Perhaps a more striking way of putting the matter is that it means about five beds for the City of Liverpool. For surgical cases of tuberculosis in children 2,000 additional beds are set down for the whole country, a slightly larger, but again utterly inadequate, provision, as even a cursory examination

of reports of school medical officers will convince any one who cares to inquire into the matter.

It is right that our profession should under proper conditions set its skill at the command of the nation, but it should also demand from the scientific point of view the right of criticism and reconstruction of anything purporting to be a national scheme. A careful examination will soon demonstrate the futility of this hotch-potch report, and cause the substitution of something scientific in its stead.—I am, etc.,

Liverpool, August 5th. BENJAMIN MOORE.

THE PANCREATIC TREATMENT OF CANCER.

SIR,—With reference to this—the enzyme or pancreatic treatment of malignant disease—an editorial in your pages of June 15th, 1907, contains these words: "We have not, however, been so fortunate as to find a single case of cure even in the limited sense is which that word is used by surgeons. We should be glad, therefore, to be referred to the authoritative reports in question." This invitation has been accepted by me elsewhere regarding the case first published by Captain F. W. Lambelle, M.D., R.A.M.C., in the *Journal of the Army Medical Corps*, vol. xiv, pp. 316–18, 1910, and afterwards given with the subsequent history by me in *The Enzyme Treatment of Cancer* (1911, pp. 209–11); but, strange and wonderful to say, although full particulars of this case with six photographs were given more than nine months ago, to the present day no single medical man, official cancer researcher, or medical editor has expressed the smallest interest in this instance of undoubted cure. Under the treatment employed by Captain Lambelle, the remains of the tumour, a "round-celled" sarcoma, twice recurrent after surgical operation, sloughed out more than three years ago. To be precise, the greater portions of these remains were lifted out of their bed by means of a pair of ordinary dissecting forceps on July 15th, 1909, the "patient making an excellent recovery." Under date August 16th I have just heard from the patient for the second time within the last twelve months. He describes himself as going on all right and as "in the pink of condition." As elsewhere written, the case is open to the severest investigation, and this has been invited, but, to all appearance, in vain. The world has not changed since the days of Galileo, and still, like a certain Horky (who wrote a book to disprove Galileo's finds, a book which no one now reads), there are many people—an incredible number, in fact—who would rather die themselves than admit the truth.

There is another case of cure which was published still earlier by Dr. Charles C. Scott in the *General Practitioner* of December 21st, 1907, pp. 803–5, and, at all events on January 16th, 1912, the patient was still living and free from malignant disease. The cancerous nature of the tumour in this instance has been doubted, for no other reason that I can find than that the treatment did what it was intended to do. There was a surgical diagnosis of the highest class after an exploratory operation, and, speaking scientifically, I should always prefer to believe such a diagnosis of cancer, especially if confirmed by subsequent proper pancreatic treatment, than any microscopical pathological examination alone.

For the first time in the history of the pancreatic treatment of cancer preparations of optimum strengths, injections of trypsin (1,250 units) and of amylopsin (500 units), which fulfil in every respect the scientific requirements of the treatment, were put on sale in April, 1912, by a celebrated firm of specialists in ferment preparations, but the sole inquiry I have received concerning them in this country was from a relation of a patient suffering from cancer of the liver as to "whether or not the treatment was dangerous to the patient." Of course it was pointed out that it was the tumour, not any possible treatment, which was "dangerous."

Possibly you have forgotten—it is more than five years ago—that the words quoted above from your pages of June, 1907, ever appeared there. But all the evidences for the truth of the case of recurrent sarcoma are in existence; they will bear any test; they cannot be explained away; and, perhaps because these evidences will bear examination, no medical "authority" dare undertake their examination. Presumably this is "medical science" in 1912. But things are moving, and it does not appear likely that the medical profession will have long to wait before witnessing other astounding evidences of the possibilities and potentialities of the new "1912" injections, as I term them.—I am, etc.,

Edinburgh, Aug. 18th. J. BEARD.

TUBERCULIN TREATMENT.

SIR,—The letters which have recently appeared as the outcome of your leading article upon tuberculin treatment in the issue of July 6th have been very interesting. Dr. Edward E. Prest's letter causes me to ask for the hospitality of your columns to add one idea to those which he puts forward with regard to the cure of pulmonary tuberculosis.

Dr. Prest says: "It may be stated without incurring serious opposition that tuberculin used in some cases produces marvellous results." This is undoubtedly true, and the same may be said to be so in many cases subjected to the ordinary sanatorium treatment. Yet many cases derive little or no benefit from either. The question is, Why should this be so?

In a large experience during the past fifteen years I find very many cases of pulmonary tuberculosis which not only derive benefit, but even get quite well under the treatment by allyl sulphide when both the above-mentioned treatments have failed utterly. In your issue of July 13th last (p. 90) you have kindly criticized my little book on the subject.

There are, however, some cases of pulmonary tuberculosis which allyl sulphide also will not benefit, although this drug is a specific in all tuberculous lesions in accessible situations or in those which can be rendered accessible. Thus amputation for tuberculous disease in such situations as the leg, foot, arm, hand, testicle, etc., are altogether unnecessary, as every case gets well under this treatment. Allyl sulphide, although most penetrating to the deeper tissues when locally applied and a most powerful germicide, specially selective in the case of the tubercle bacillus, will not be curative even in a local case which is accessible if there is "shut-away fluid" which protects the bacilli; whereas if one or more sinuses exist and the fluid is flowing, every accessible case is quickly curable. This leads one to think that the pulmonary cases also in which no benefit arises from treatment are most probably those in which there is "shut-away fluid" in the lungs. By "shut-away fluid" I wish to describe stagnant fluid having no exit, and which fluid acts quite differently to flowing fluid, even when very profuse. It seems unreasonable to expect to sterilize the contents of a cavity in the lungs containing stagnant fluid which is shut away and which protects the bacilli from such treatments as already mentioned. I have formed a strong opinion that when the profession attacks the "shut-away fluid" in the treatment of tuberculous diseases it will then hold the key to the successful treatment of all cases of tuberculosis in a reasonable stage.

To further support this idea we must consider the great successes which frequently follow treatment by the formation of artificial pneumothorax; it owes its virtues, I have no doubt, to the fact that the pressure exerted upon the lung expresses the "shut-away fluid" therefrom. A happy combination of these treatments appears to me to be rational.—I am, etc.,

Dublin, Aug. 13th. WM. C. MINCHIN, M.D.

TECHNICAL ASSISTANCE FOR BRANCH SECRETARIES.

SIR,—I desire to point out that very efficient trained medical clerks can be found in the ranks of pensioned N.C.O.'s, R.A.M.C. These men are quite accustomed to all administrative clerical duties and would be of real use to overworked secretaries. As they have pensions their stipends would not be excessive. I should say, further, that there are retired army medical officers, say those retired at twenty years' service, who would make excellent aids to secretaries of larger Branches. The N.C.O. clerks would be heard of by application to the R.A.M.C. Dépôt at Aldershot, and I imagine the Majors R.A.M. Corps, now acting as staff officers in the Territorial Force, would know of comrades willing to be secretaries, or perhaps themselves undertake the work when their appointments ceased

with the Territorial Force. Every administrative question that is likely to arise in civil medical administration has arisen in the past thirty years within the army. I strongly advise all Branch officers to read the Army Medical Regulations as showing official lines of work.—I am, etc.,

GEORGE J. H. EVATT, M.D.,
Surgeon-General (Retired).

Junior United Service Club, London, S.W., Aug. 18th.

Special Correspondence.

PARIS.

Meningitis produced by Infection of Peripheral Nerves.—Bacteriology of Cancrum Oris.—Absence of Blood Platelets in Purpura Haemorrhagica.—Vacuolar Osteitis following Trauma.—Senile Deformity of the Carpus.

DR. LEVADITI has recently reported some experiments in which he injected an emulsion of the tonsils of an ape (*Cynomologus*) affected with infantile paralysis into the median nerve of another ape. Three days afterwards the animal developed paresis of the upper limbs, convulsions, salivation, nystagmus, and deviation of the head. It died on the fifth day from acute menigitis, due to a Gram-positive diplococcus. An emulsion of the brain and spinal cord was injected into the median nerve of another ape, and again meningitis supervened. Dr. Levaditi was able to trace the infection from the nerve to the meninges along the lymphatic spaces of the nerves, and thence across the nerve ganglia and the roots to the meninges.

At a recent meeting of the Medical Society of the Paris Hospitals Dr. Zuber described a "fuso-spirillum" found in three cases of noma (cancrum oris). They were seen in smear preparations and in sections, though cultures were not obtained. The organism was seen in the subcutaneous adipose tissue stained by the Gram process. Dr. Zuber suggested arsenobenzol as a possible remedy. Dr. Guillard said that in his experience the thermocautery and pure carbolic afforded a satisfactory means of checking the disease.

Drs. Le Sourd and Pagniez have reported to the same society a case of purpura haemorrhagica in which blood platelets were completely absent; the blood clot showed no tendency to contract. Examination by the centrifuge demonstrated the total absence of blood platelets and their reappearance as the patient's condition improved. Normal clotting was obtained by adding blood platelets of a healthy individual to the purpuric patient's blood, thus, as the authors hold, demonstrating the part played by blood platelets in coagulation.

M. Mauclaire recently reported to the Surgical Society a case of vacuolar osteitis in a man aged 23, who received a blow on the tibia. Swelling occurred at the seat of injury, but the patient was able to walk about until suddenly one day, in the street, the bone snapped about the middle of the diaphysis. The treatment used was that for a simple fracture, and complete recovery resulted with good union. There was no history of syphilis, nor was there any suspicion of its existence. Tuberculous disease was also absent. Mauclaire has collected a series of 80 cases of this kind designated under different names, such as osseous cysts, bone swelling, and vacuolar osteitis.

Professor Marie and Dr. Léri have described a deformity of the hand in old people which they believe to have been hitherto unrecorded. It consists in a protuberance on the dorsal surface at the bases of the second and third metacarpal bones and of the os magnum, trapezoid, and trapezius. In the Salpêtrière Hospital Professor Marie has noted this deformity to be marked in 4 per cent. and noticeable in 12.5 per cent. of people over 70 years of age. The authors believe it to be due to chronic rheumatic nodules.

DR. WILLIAM GRANT of Blantyre was recently presented with a purse of sovereigns and a silver epergne, with a gold bangle for Mrs. Grant, in recognition of his services to the cause of education in the county of Lanark. He was a member of the Blantyre School Board from 1876 until last year, when he retired, and for fourteen years was its chairman.

Obituary.

C. E. HUTT, M.R.C.S., L.R.C.P.,

LATE CHAIRMAN OF THE NORTH MIDDLESEX DIVISION, BRITISH MEDICAL ASSOCIATION.

CHARLES EDWARD HUTT, M.R.C.S., L.R.C.P., who died on August 13th, aged 47, at Tottenham, was a son of the late Canon Hutt, of Hockwold-Wilton, Norfolk. He was educated at Haileybury and St. Bartholomew's, obtained his diplomas in 1888, and became Resident Medical Officer at Hertford Infirmary. In 1896 he commenced practice in Tottenham. He was one of the founders of the North-East London Clinical Society, and had served the offices of Secretary and President. He was Chairman of the North Middlesex Division, 1905.

To a past generation of Rugby footballers he was well known as a "Bart.'s" and Blackheath three-quarter. He also represented his hospital in the Quarter Mile and 220 Yards at the United Hospital Sports.

His greatest claim to recognition is the enormous amount of work he did for the Association. He was Chairman of Division in 1905, a member of the Metropolitan Branch Council, and a member of the executive of the Division for eight years.

It has been said that to know Hutt was to love him. The writer, who had the privilege of being intimately associated with him in medico-political work for ten years, realizes how very true that is. Whatever he did he did with an earnestness of purpose that was the admiration of all, and an example to all of what may be accomplished in a Division by continuous and unostentatious work; for Hutt never advertised himself. Many men with great names in the Association have not done half the work that he has. The present standing of the North Middlesex Division is due in a very great measure to him, his advice being always sought in important crises, of which lately there have been many.

He was always cheerful, always ready to do anything, to dare anything, if a brother practitioner might be helped thereby. Most practitioners in North Middlesex will remember specific instances of this quality of his. His is a loss that is felt by every one in the Division, and the sympathy of all is very deep and sincere for his wife and family.

J. R. FULLER,
Senior Representative, North Middlesex Division.

JOHN RAND, F.R.C.S.,

FORMERLY OF DULWICH.

IT is with much regret that we have to record the death of Mr. John Rand, F.R.C.S., at his residence at Surbiton, on August 7th, aged 76, after a somewhat prolonged and distressing illness due to renal disease and ailments incidental to his age. John Rand was born at Layham, Suffolk, on March 7th, 1836. He was educated at Wickham Market and Ipswich Schools, and on leaving school became apprentice to Mr. Hare, of Great Baddow, with whom he remained two years; he then entered Guy's Hospital, and took the diploma of M.R.C.S., and L.S.A. in 1858. In 1859 he was House-Surgeon to Mr. Hilton, and House-Physician to Dr. Addison. He went with the Comte de Paris to Paris, and studied at the hospitals there. He used to describe in a graphic manner how the tonsil guillotine was there rather dramatically used by its inventor. His contemporaries said that John Rand had many views on surgery in advance of his times, and would have made a name in surgery if circumstances had allowed him to devote himself to it. He first settled and practised at Walton-on-the-Naze and Felixstowe, where he took over the practice of Dr. Grimwood. While there he was an ardent volunteer, being a good rifle shot. He married in May, 1860, Miss Fanny Hicks, of Great Holland Hall, Essex, by whom he had three sons, and one daughter.

In 1868 he was attacked by double pleurisy, and on his recovery the late Sir William Gull advised him to give up country practice; during his convalescence he worked for, and took the diploma of F.R.C.S.Eng. (1869). In this year he joined Mr. E. Reynolds Ray, of Dulwich, and was his partner for fourteen years. Afterwards he continued

to practise in Dulwich, and had Dr. G. B. Batten as partner from 1887 until his retirement nine years later.

The great esteem in which John Rand was held by his friends and patients was shown by the presentation to him of his portrait. As an instance of his kindly influence we may quote what one of his patients then said, "On many occasions his cheerful countenance had been sufficient to dissipate the idea of illness at all." John Rand was equally esteemed by his medical contemporaries in the neighbourhood: he was a much beloved and most genial member of the Sydenham District Medical Society, of which he was twice president. He was a good speaker and his ready and good-natured wit made him a favourite at all meetings. His quiet, courteous manner endeared him to a very large circle. Professionally he was most level-headed and reliable, and his opinion was constantly sought in consultation by other practitioners. He was conservative, and not quick to take up new methods or drugs, but when convinced of their value he used them with thoroughness. In 1886 he helped to start, though he was never a medical officer of it, the East Dulwich Provident Dispensary, which is now one of the best managed, largest, and most useful of such dispensaries in the United Kingdom. He acted for two years as the first Representative of the Norwood Division of the British Medical Association. After his retirement he went with his wife on a trip to India to visit his son, who was in the next year so sadly murdered at Poona on the night of Queen Victoria's Jubilee. While in India he took up golf, which he played with much zest until within eighteen months of his death. He lived, after he retired, first at Raynes Park and then at Surbiton, at which latter place he did much useful work as one of the governing committee of the cottage hospital. He was buried in the beautiful churchyard of St. Mary, Long Ditton, on August 10th. Both his partners testify that they never had a cross word, or even a hint of trouble from their dear partner, John Rand, and no obituary notice can give any idea of the charm of manner, kindliness of spirit, and absolute dependableness which made "honest John Rand" so beloved of his patients and brethren, who now sympathize sincerely with his widow and family.

T. F. GARDNER, M.D.Dûrh., M.R.C.P.Lond.,

PHYSICIAN TO THE ROYAL VICTORIA AND WEST HANTS HOSPITAL, BOURNEMOUTH.

DR. T. FRED. GARDNER, of Bournemouth, died on August 1st of cerebral haemorrhage, after only a few hours' illness. He had just recently returned home after a holiday in the Engadine, and his sudden death comes as a great shock not only to his sorrowing family, but to a large circle of friends and patients by whom he was much esteemed. He has been cut off in the prime of his days, and has been removed from a busy and strenuous professional life. He received his medical education at University College, London, and took the diplomas of L.R.C.P., M.R.C.S., L.S.A. in 1883. He became a member of the Royal College of Physicians in 1899, and graduated M.D.Durham in 1902.

He went to Bournemouth nearly thirty years ago as resident medical officer to the small hospital which then existed. On giving up that appointment he settled in the town, and speedily built up an extensive practice. His patients were very devoted to him, and relied implicitly on his skill and knowledge. He had a very bright and cheery manner, which enabled him to win his way to the hearts of those under his care, and behind this there was great [illegible] skill and a wide acquaintance with therapeutic [illegible]. He kept himself thoroughly abreast of the times, and was well versed in the newest lines of treatment.

Having for some years acted as Surgeon on the staff of the Royal Victoria Hospital, the institution which had [illegible] Hospital, and of which he had been Resident Medical Officer, he resigned that appointment, and turned his attention to medical work. He was then offered the post of Physician to the Royal [illegible] Hants Hospital, an institution which [illegible] in the eastern part of the town, where he lived, and where a large population was springing up. These two hospitals are now amalgamated, and Dr. Gardner took an active part in the negotiations which culminated in the union. Dr. Gardner was a member of the British Medical Association, and had been President of the Dorset and West Hants Branch. He had also served the office of President of the Bournemouth Medical Society, and of the Balneological and Climatological Section of the Royal Society of Medicine.

In the midst of his busy professional life there was little opportunity for his taking part in other work, but he was a devoted member of the church of St. John's, Boscombe, and gave up a considerable part of his time for some years to duties in connexion with that parish.

His death will be deeply regretted by all members of the profession in the town, and the most sincere sympathy is felt for his family in their sudden bereavement. He leaves a widow, a son—now a medical student—and a daughter to mourn his loss.

J. J. CHARLES, M.D., D.Sc.,

FORMERLY PROFESSOR OF ANATOMY AND PHYSIOLOGY, QUEEN'S COLLEGE, CORK.

THE death occurred at Portrush on August 10th of Professor John James Charles. He was born in 1845, the eldest son of the late Dr. David H. Charles, J.P., of Cookstown. He entered Queen's College, Belfast, and there began a collegiate course of remarkable distinction. A scholar of his college, he gained two first honours, and was awarded two gold medals in the B.A. examination of the Queen's University of Ireland, and achieved a similar success when he obtained the degree of Master of Arts. His professional course was also a brilliant one, and he became a Doctor of Medicine in 1865. After working in University College, London, Edinburgh University (where for a period he was Assistant Lecturer on Natural Science), Paris, Bonn, and Berlin, he was in 1869 appointed Demonstrator of and Lecturer in Anatomy at the Queen's College, Belfast. In 1875 he was appointed to the Chair of Anatomy and Physiology in Queen's College, Cork, a position which he filled with distinction until his retirement in 1907. In 1882 the degree of Doctor of Science was bestowed upon him by the Queen's University. Professor Charles acted for a considerable time as Examiner in Physiology for the old Royal University of Ireland, of which he was a Fellow. He was also a Fellow of the Royal Society of Edinburgh.

At the Annual Meeting of the British Medical Association at Portsmouth in 1899 he was President of the Section of Anatomy and Physiology, and delivered an interesting and comprehensive address on recent advances in physiology. He contributed also papers on various physiological subjects to the *Journal of Anatomy and Physiology*.

JOHN WADE, D.Sc., F.I.C., F.C.S.,

READER IN CHEMISTRY, UNIVERSITY OF LONDON; LECTURER ON CHEMISTRY TO GUY'S HOSPITAL.

WE regret to learn of the death of Dr. John Wade, which took place at the Cottage Hospital, Sevenoaks, on August 15th last. He had been out cycling in the neighbourhood of Otford, and in rounding a corner of a lane came in contact with a cart approaching in the opposite direction; the shaft of the cart struck him violently in the left chest, fracturing four of the upper ribs. He was removed to Sevenoaks, and after the first week gave good promise of recovery; pneumonia supervened, the crisis passed, and he was already promising recovery, when he suddenly died of pulmonary embolism.

John Wade was born at Deptford in 1864; on leaving Ashe's School, Hatcham, he worked as Laboratory Assistant at Guy's Hospital to the late Sir Thomas Stevenson. Later he was appointed Demonstrator of Chemistry, and, on the retirement of Mr. Groves, became Lecturer in that science, taking the degree of D.Sc.Lond. in 1902. His contributions to the *Transactions* of the Chemical Society were many, and included: The constitution of the metallic cyanides as deduced from synthetic interactions; The constitution of hydrogen cyanide (1902); Ethyl ether; The influence of water and alcohol on its boiling point (with H. Finnemore, B.Sc.- 1909); Influence of water on the boiling point of ethyl alcohol at pressures above and below atmospheric pressure (with R. W. Merriman, M.A. 1911); Apparatus for the maintenance of constant pressures above and below the atmospheric pressure; Application of fractional distillation (with R. W. Merriman, M.A.—1911);

The correction of the specific gravity of liquids for the buoyancy of air (with R. W. Merriman, M.A.—1909). His research on the destruction of rodents and ship disinfection was published in a report of the Local Government Board. His book, *Introduction to Organic Chemistry*, passed through many editions, and was translated into foreign languages.

Though largely occupied in teaching and research, Dr. Wade took a keen interest in the affairs of the University of London, and, as a member of the Senate, he will be greatly missed. He was a keen champion of the external side of the university, and pointed out to the Royal Commission on University Teaching in London how, without the facilities offered by the external side, he would never have been able to attain the position he held in the scientific world. He was strongly opposed to the project of concentrating preliminary science teaching at South Kensington, and the abandonment of that scheme was largely owing to his influence; he maintained that the local teaching of science subjects at the medical schools was to their material advantage, and was not, as they had presupposed, carried on at a pecuniary loss. He, too, was strongly of the opinion that science subjects are best taught to small classes under direct personal supervision rather than in a great institution such as the one then projected.

We would offer his widow, his family, and his numerous friends our sincere condolence. His teaching will be a great loss to Guy's, and both staff and students will lament the loss of his able, genial, and kindly personality.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following candidate has been approved at the examination indicated:

M.S. (*Branch I, Surgery*).—John Philip Buckley, University of Cambridge, and Victoria University of Manchester.

UNIVERSITY OF ABERDEEN.

GILCHRIST BEQUEST.

DR. ALFRED GILCHRIST bequeathed his estate, subject to his widow's interest, to the University Court for the establishment of two bursaries, one in arts, and the other in medicine, and two endowed lectures to be given free to the general public, the one on the progress and present aspects of medical science by the Professor of Materia Medica, and the other on the progress and present aspects of educational science, by the Lecturer on Education.

Medico-Legal.

MEDICAL ETIQUETTE.

AT the last Bedford Assizes was tried an action for libel and slander involving several points of medical interest. Both the plaintiff and defendant were medical practitioners, and the alleged offences consisted in a communication by the defendant to one of the plaintiff's patients of the contents of a letter which the defendant had sent to the plaintiff concerning the supersession in the case of the former by the latter. It was held that the words used in making the communication amounted to a statement that, in consequence of the plaintiff's conduct, his colleagues would refuse to meet him, and that as such allegation constituted an attack upon him in respect of his occupation, it justified, unless well founded, more than nominal damages. The plaintiff, who was represented by counsel instructed by Messrs. le Brasseur and Oakley on behalf of the London and Counties Medical Protection Society, was awarded £50 damages and costs.

The case turned largely on what is the accepted rule of conduct for a practitioner who finds himself in attendance, either in an emergency or at the beginning of a new illness, on a patient whose name is on the books of another practitioner in the same locality. On behalf of the plaintiff, it was argued that the rule is for the superseding practitioner, so soon as the immediate need for his services are over, to suggest to the patient his retirement in favour of the former medical attendant, but that if the patient requests him to remain in charge, he is at liberty to do so and need take no further step in the matter. On behalf of the defendant, it was urged that, though a medical man is at liberty to attend upon the patient of another practitioner if the patient definitely asks him to do so, it is the duty of such medical practitioner not only to suggest retiring as soon as an emergency is over, but also, if this course is declined, to write a note explaining the circumstances to the superseded practitioner.

The evidence in favour of the plaintiff's view included that of Dr. Major Greenwood, while the contrary view was supported by Dr. Bateman.

In the course of his summing-up, Lord Coleridge pointed out to the special jury the value to the public of professional etiquette in the present and other connexions, but said there must always be border-line cases, and no hard-and-fast rule could well be laid down. If, for instance, a medical man had not been in actual attendance on a given patient for, say, five years, there could be no occasion for the new medical man to communicate with the old one. If, however, the old one had been in attendance, say, five days previously, it was clearly the duty of the new one to communicate with him. The witnesses had left it uncertain what was the common view of the medical profession, and possibly the jury would consider that the plaintiff should have made the communication in the present instance, but infraction of a rule of etiquette or acting on an erroneous view thereof could hardly in itself be held to entitle a person to say that the erring practitioner was not a gentleman and that other medical men in the town would not associate with him.

The jury eventually gave the verdict already mentioned.

INSURANCE ACT.

PROSECUTION OF EMPLOYER.

THE first case in which an employer has been prosecuted for failing to comply with the provisions of the Insurance Act in regard to the contributions to be paid by the employer was heard at the Lambeth Police Courts on August 20th. The defendant was Mr. Hurlock, draper and clothier of Walworth Road, Vice-President of the Walworth Liberal and Radical Association, and formerly Mayor of St. Albans, where he resides. He was defended by the Insurance Tax Resistance Society which had instructed Mr. Jellicoe. Mr. Travers Humphreys, who conducted the prosecution which was instituted by the Insurance Commissioners, said that if by reason of the failure of employers to pay their proper contributions the insurance fund did not reach the expected standard, the result might be that insured persons might receive lower benefits than they otherwise would. No person was entitled to sickness benefit until twenty-six contributions had been paid and the defendant's failure to pay his contributions had the effect of keeping his employees out of benefit for a longer period than would otherwise be the case. If the refusal continued over a year the insured person would only be entitled to a reduced rate of benefit. Under Section 69, the penalty for each offence was a fine not exceeding £10. The summonses were in respect of three persons and were in identical form.

An inspector appointed by the National Insurance Commissioners stated, in evidence, that on August 1st he had called at Mr. Hurlock's premises, and had been shown eighty insurance cards, none of which were stamped.

The defence was, in the main, that liability on the part of the contributor did not arise until the insurer (the Crown) had performed all conditions which the Insurance Commissioners ought to perform properly to administer the Act. The Commissioners had not fixed any time for the payment of contributions, yet it was urged against the defendant that the contributions become payable on every weekly pay day after July 15th. Substantially, no provision for sanatorium or medical benefit had been made at the time the information was laid, and it could not have been the intention of the legislature to make non-payment weekly an offence, whether the insurer was able to provide medical and sanatorium benefit or not.

Mr. Lawrence George Brock, Under Secretary to the Insurance Commissioners, who was subpœnaed by the defence, stated that the regulations governing medical benefit only existed in a draft form. He could not give a definite date for their issue, but it would probably be in the third or fourth week in September. Neither could he produce regulations as to sanatorium benefit, because none had been made.

The magistrate, in giving his decision, said that he had not to decide whether or not the Government or the Insurance Commissioners had or had not made arrangements for administering the benefits under the Act: the point he had to decide was whether the contributions had been made as they ought to have been made. They had not been made, not owing to inadvertence but because it was deliberately intended not to carry out the intentions of the Act. He imposed a penalty of £5 upon each of the three summonses, with £5 5s. costs on the first, and made an order for the payment of the contributions. In reply to a request to state a case for the High Court, the magistrate said that if an application were made in writing he would consider it.

The Services.

MEDICAL MOBILIZATION STORES IN INDIA.

THE Government of India has sanctioned the scheme for the formation of a central store in each of the nine divisions, in which will be stored all the field hospital equipment, field medical store depôts, and the medical stores of general hospitals allotted to the division.

Medical News.

DR. SIDNEY MATTHEWS, public vaccinator for the Crawley District, has received the Government grant for successful vaccination.

THE portrait of Guybert, published on August 17th in illustration of the article on the Charitable Physitian, was reproduced, by permission, from a print in the possession of the Royal College of Physicians of London.

THE International League for the Study of Epilepsy will meet at Zurich on September 6th and 7th. The first meeting will take place at 9 a.m. on September 6th in the Swiss Institute for Epileptics.

THE Local Government Boards in England and Ireland have issued orders adding acute poliomyelitis and cerebro-spinal fever to the diseases which must in all cases be notified under the provisions of the Notification Act.

A CONGRESS on the care of infants, organized by the German Society for the Protection of Infants, is to be held in Darmstadt from September 20th to 22nd. Among the subjects to be discussed are the education of infants' nurses and the instruction which should be given in girls' schools in relation to the care of infants.

IT was stated last week that at the Third International Congress on Industrial Accidents held recently at Düsseldorf Dr. James R. Kerr was appointed a member of the International Committee. It ought to have been added that Dr. F. Shufflebotham of Newcastle-under-Lyme was also elected to be a member of that committee.

MESSRS. THOMAS COOK AND SON have arranged to conduct a party to Berlin to attend the sixth International Congress of Obstetrics and Gynaecology. The party will leave London on Saturday evening, September 7th, and will arrive in Berlin on the afternoon of the following day, in time for the opening meeting of the Congress on September 9th. The party will leave Berlin on the return journey to London on September 14th. The fare of 11 guineas includes second class travelling to and from Berlin and hotel accommodation there.

THE inangural meeting of the newly-formed Section of Ophthalmology of the Royal Society of Medicine will be held on Wednesday, October 23rd, at 8.30 p.m. All registered medical practitioners are eligible as members of this section. The council of the society has resolved to offer special terms to new members of this section who also become fellows of the society. These terms can be obtained on application to the secretary of the society. Only those whose applications for either fellowship or membership have been received on or before October 5th and have been accepted by the councils of the section and of the society will be qualified to take part in the inaugural meeting.

OWING to the munificence of a private donor a school for research and clinical instruction in diseases of the chest has been established in connexion with the Royal Hospital for Diseases of the Chest, City Road, London. The new building of the hospital is equipped with pathological and [illegible]gical laboratories, a radiographic [illegible]ent, and lecture room, and provided with modern [illegible]s. An introductory lecture will be given about the middle of October, and it is intended to issue a full syllabus towards the end of September. Arrangements [illegible]de for demonstrations in recent methods of [illegible] treatment, including the administration of tuberculin. Further information can be obtained from the Acting Dean, Dr. Barty King, Royal Hospital for Diseases of the Chest, City Road, London, E.C.

SINCE it has been shown that beri-beri is produced by the continuous consumption of white polished rice and not by the [illegible] hand milled rice, many attempts [illegible] examine the nature of the substance [illegible] milling which [illegible] in the last [illegible] *Tropical Medicine and Parasitology*, [illegible]mpson, and Webster, [illegible] of the subject and [illegible] isolation from rice [illegible] into base, which was [illegible] th polyneuritis produced [illegible] on to relate the [illegible] with [illegible]. Having [illegible] [illegible] and curative [illegible] prepared, which in [illegible]le and very rapid [illegible] not complete.

Letters, Notes, and Answers.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

SALWERKHTIMAH asks whether the number of sweat glands and hair follicles with which an infant is born increases with the growth of the body.

ANSWERS.

FLYPAD.—We are informed that the Wilson flypads are made by Mr. Archdale Wilson, Hamilton, Canada.

IN reply to "E. P.," who asks for advice in the treatment of an adult suffering from angio-neurotic oedema, "T. M." would suggest a course of ichthyol, 5 to 10 grains thrice daily, in pill. "H. J. T." suggests the following: Ferri ammon. citratis, gr. x; syr. cascar. sag., ♏ v to ♏ x; ammon. bromide, gr. x; sp. chloroform. ♏ xx; inf. calumb., ʒ j; t.d.s.

IN the answer to "L. S." in the JOURNAL of August 3rd, p. 284, as to practice in Canada, the prices of the publications of the General Medical Council given were those of earlier editions. The reference should read: *Digest of the Laws in the British Empire and Foreign Countries for the Prevention of Medical Practice by other than Legally Qualified Persons* (2s. 6d.), and *Report as to the Conditions under which Medical and Dental Practitioners Registered or Legally Qualified in their own Country may Practise Abroad* (fourth edition, price 1s.). Both are published by Spottiswoode and Co.

LETTERS, NOTES, ETC.

THE individual who goes about selling sparking plugs at various prices, or some one else who imitates his method, appears now to be working the North of England.

ADMINISTRATIVE MEASURES CONSEQUENT ON THE COMPULSORY NOTIFICATION OF PHTHISIS.

IN the report published last week of the discussion on this subject in the Section of State Medicine the remarks made by Dr. John Brown (p. 365) were incorrectly reported. The points he desired to make were that, after thirty-four years' experience in Lancashire, he finds: (1) That, as in scarlet fever, small-pox, etc., the type of consumption is far more mild and amenable to treatment. (2) This is due to better housing and better living and greater resistance. (3) Tubercle bacilli are ever present in all our crowded towns, in our milk, food, etc., but less virulent and our resistance is much greater. (4) That we can and do cure cases in the houses of the people. (5) That the house of the consumptive is to be the sanatorium, and for an allowance of 5s. he could for that sum, or even less, get the house, and his committee would pay the extra. In this way the patient would be cured under conditions which would be that under which he earns his food. Also his family would have better conditions for health.

CYCLONIER PUNCTURE REMEDY.

THE Cyclonier puncture remedy has been brought to our notice by Messrs. Christy and Co. (4, Old Swan Lane, London, E.C.). It is a fine grey powder which is poured through the valve of the tyre into the inner tube; a small amount of water is then poured through the valve. The tyre is inflated and the wheel revolved for about a minute. If a puncture has occurred, the solution in the inner tube oozes through the opening and becomes hard, and the puncture is thus repaired. A trial of some weeks appears to prove that a repair thus effected lasts well; further, in a tyre so treated, a subsequent small puncture does not seem to be followed by deflation. The inventors state that the solution does not injure the inner tube, but rather helps to preserve it, and that the effect lasts for two years. The cost of the material sufficient for [illegible] wheels of a bicycle is 2s. 6d.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to [illegible] Medical Association at the General Post Office, London. [illegible]ility will be accepted for any such remittance not so [illegible]

[illegible] be delivered, addressed to the Manager, [illegible] forenoon than the first post on Wednesday morning [illegible], if not paid for at the time, should be [illegible]

[illegible] rule of the Post Office to receive *notes* [illegible] letters addressed either in initials or numbers.

THE FUNCTIONAL AND HISTOLOGICAL EFFECTS OF INTRANEURAL AND INTRAGANGLIONIC INJECTIONS OF ALCOHOL.

BY

OTTO MAY, M.D.Cantab., M.R.C.P.Lond.,

[illegible] BEIT RESEARCH FELLOW.

(From the Research Department, University College Hospital [illegible] Medical School.)

Since its introduction by Schlösser[1] in 1903, the injection of alcohol into nerves for the treatment of neuralgia and other painful conditions has become a well-established therapeutic measure. In his earlier paper[2] he recommended its use, not only for sensory, but also for motor and mixed nerves, especially the facial in "tic convulsif," and the sciatic in "sciatica." In the case of motor and mixed nerves, however, he aimed, not at actual penetration, but only at injection into the neighbourhood of the nerve, a procedure which produced a paralysis lasting only half an hour to one hour. In a later paper[3] he states that 80 per cent. alcohol applied locally to a nerve-trunk produced degeneration and absorption of all parts except the neurilemma. He gives no details of the histological

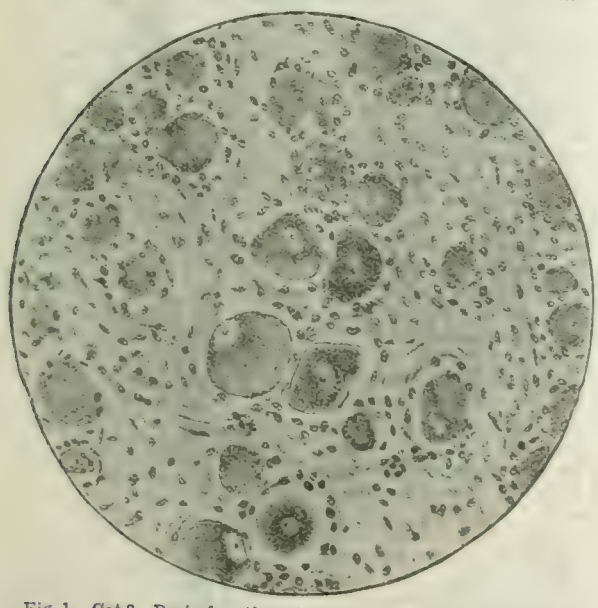


Fig. 1.—Cat 2. Part of section of Gasserian ganglion (polychrome blue), showing chromatolysis of some of the cells. (Drawn under ⅛ in. objective.)

examination, nor any statement as to how deeply the penetration had occurred. In this same paper he gives statistics of 202 cases, including 38 of sciatica and 9 of tic convulsif (all the latter recurred in three to seven months), and adds a warning as to the danger of producing motor paralysis.

The only other experimental work on the subject which has come under my notice is that of Finkelnburg,[4] who injected 0.5 to 1.5 c.cm. of 60 to 80 per cent. alcohol into the sciatics of dogs. A complete paralysis of the corresponding muscles was produced, remaining marked for months. Microscopically, an almost complete degeneration of the nerve bundles was found. If the injections were made only into the neighbourhood of the exposed nerve and the wound closed, well-marked motor weakness resulted, lasting several days. Examined by the Marchi method after fourteen to twenty-one days, the outermost bundles of the nerves showed a high degree of degeneration; in the central parts there was considerable black "stippling"; in addition, further off, were some slight haemorrhages under the sheath. The axones do not appear to have been examined.

The present paper deals with the functional and histological results obtained by alcohol injections into various nerves and ganglia. The experiments may be divided into three groups, as follows:

1. Injections into a pure sensory nerve—the infraorbital.
2. Injections into the Gasserian ganglion.
3. Injections into mixed nerves—the sciatic and the anterior crural.

The animals employed were, with one exception, cats. In all cases they were fully anaesthetized during the operations, which were carried out with strict antiseptic precautions. The nerve or ganglion was exposed* by careful dissection, and the alcohol injected obliquely from a syringe fitted with a fine needle. The excess of fluid was lightly mopped out, and the wound closed.

Histological Stains Employed.

1. For a general survey, extent of fibrosis, etc.—(*a*) Delafield haematoxylin and eosin, (*b*) Weigert haematein and Van Gieson.
2. For nerve cells—Unna's polychrome blue method.
3. For the medullary sheaths—Marchi's method, counterstained, in some cases, by Mann's eosin and methyl blue mixture.
4. For the axones—Cajal's and Bielschowsky's silver impregnation methods.

GROUP I.—INJECTIONS INTO THE INFRAORBITAL NERVE.

Four experiments of this nature were performed, as follows:

EXPERIMENT 1.—Cat. Floor of right orbit exposed, and 0.5 c.cm. of 80 per cent. alcohol injected into (*a*) the infraorbital nerve.



Fig. 2.—Cat 2. Section of part of infraorbital nerve from the floor of the orbit (haematein and Van Gieson) (photograph × 40), showing the bundles of degenerated nerve fibres embedded in newly formed fibrous tissue.

The animal was again anaesthetized seventeen days later, and both infraorbital nerves stimulated by the faradic current at their points of exit from the foramina. No difference could be detected in the result on the two sides. The animal was then killed and the nerves, etc., examined as below:

Macroscopically, a tract of haemorrhage was seen on one of the branches of the nerve on the floor of the orbit.

Microscopically, no obvious changes were found either in the Gasserian ganglion, or in the parts of the infraorbital nerve central and peripheral to the point of injection. Sections at the site of haemorrhage showed a considerable amount of blood lying round the bundles of the nerve, but no obvious change in the bundles themselves.

The intracerebral roots of the nerve showed no trace of degeneration.

EXPERIMENT 2.—Cat. Experiment as in 1.

Twenty-one days later the animal was again anaesthetized and both infraorbital nerves stimulated. The left produced the usual reflex quickening of respiration, the right practically no effect.

The *post-mortem* examination showed that the nerve in the floor of the orbit was embedded in dense fibrous tissue firmly adherent to the bony floor.

Microscopically, the results were as follows:

(*a*) *Gasserian Ganglion.*—Some groups of cells showed definite chromatolysis, with eccentricity or disappearance of nucleus,

* Except in Experiments 3 and 14, in which the alcohol was injected without preliminary dissection.

breaking up of the chromatin granules, etc. (Fig. 1). These cells were chiefly in the part of the ganglion adjacent to the middle division, but some were scattered among other groups of cells.

(*b*) *The part of the infraorbital nerve in the scar* showed great fibrosis with implication of the bundles to varying degrees and corresponding destruction of nerve fibres (Fig. 2).

(*c*) *Proximal* to this the nerve was apparently normal (both axones and sheath).

(*d*) *Distal* to the scar the nerve was completely degenerated; no normal fibres could be seen, and the axones had practically entirely disappeared. There was great proliferation of the nuclei of the sheath.

(*e*) *The intracerebral roots* showed no degeneration.

EXPERIMENT 3.—Cat; 0.5 c.cm. of absolute alcohol injected through the skin into the left infraorbital foramen (under ether anaesthesia).

On the following day there was some protraction (paralysis) of the corresponding nictitating membrane, which passed off in the course of a day or two. No other symptoms were noticed.

Nineteen days later the animal was anaesthetized with ether and both infraorbital nerves exposed distally. On faradic stimulation the effect on respiration seemed less marked on the left side than on the right.

Macroscopically nothing abnormal could be seen.

Microscopically the results were as follows:

(*a*) *Gasserian Ganglion.*—Some cells showed eccentricity of nuclei and disappearance of chromatin; none, however, had the shrunken, deeply stained appearance characteristic of complete destruction.

(*b*) *Infraorbital Nerve.*—In the anterior part of the floor of the orbit it showed, by Marchi's method, degeneration of the majority of its fibres; some had, however, escaped, and showed the normal appearance. In some of the former group the degeneration appeared incomplete stretches of normal medulla with scattered globules of black-staining fat. The proximal part of the nerve at the sphenoidal fissure showed no degeneration.

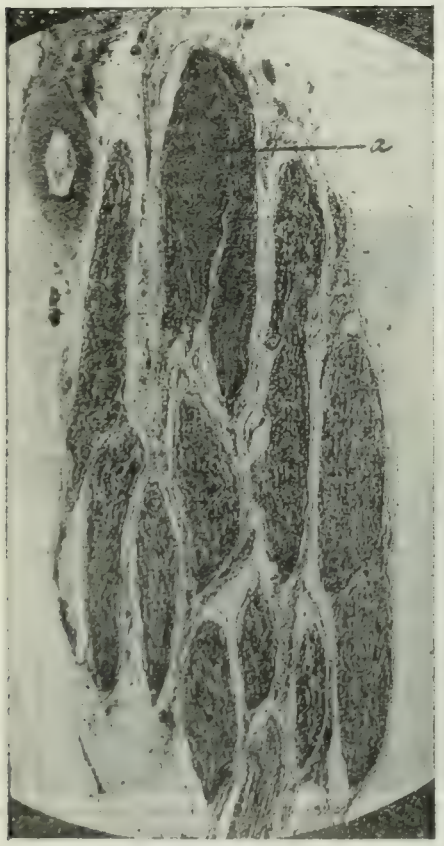


Fig. 3.—Cat 4. Section of part of infraorbital nerve from the floor of the orbit (haematein and Van Gieson (photograph × 40), showing destruction of the nerve bundles without much fibrosis; one bundle (*a*) has, however, almost entirely escaped.

(*c*) *The brain-stem* showed no degeneration.

EXPERIMENT 4. Cat. Procedure as in (3); symptoms identical.

Twenty days later the animal was anaesthetized with ether, and both infraorbital nerves stimulated as in (3). No definite difference could be observed that is, respiration appeared to be quickened in both cases.

Macroscopically, no obvious change.

Microscopically, the results were as follows:

(*a*) *Gasserian Ganglion.*—Changes practically identical with those in Animal 3.

(*b*) *Infraorbital Nerve.*

1. Branches emerging from the foramen. By Marchi's method these showed a very considerable amount of degeneration with some normal fibres left. These nerves were very difficult to tease, due apparently to an increase of [illegible]

2. In [illegible] of floor of orbit. Sections stained by haematein [illegible] Van Gieson showed destruction of the [illegible] increase of fibrous tissue and [illegible] infiltration. One bundle had, however, [illegible] Fig. 3).

3. The nerve just central to 2. Examined by Marchi's method, many of the fibres showed the junction of the pathological and the normal parts (Fig. 4)—that is, the distal part showed numerous black globules, getting gradually less as the fibre was traced centrally, until a normal medullary sheath was reached. There were more completely normal fibres here than in the more distal part—that is, the alcohol effect had spread back unevenly, having extended further along some fibres than others.

(*c*) *The brain-stem* showed no degeneration.

In considering the results obtained in these four experiments one is struck by the fact that in No. 1 the nervous structures completely escaped injury. Apparently the needle entered the nerve, producing the haemorrhage described, but then must have slipped out of it before any alcohol had entered. This is an accident which presumably occurs not infrequently in clinical work, in those cases in which the alcohol fails to relieve the pain, or relieves it only for a very short time. In the three other experiments a considerable effect was produced in each case—a more or less complete degeneration of the peripheral part of the infraorbital nerve. In No. 2, in which the alcohol was injected by the "open method"—that is, after exposure of the nerve by operation—the degeneration was complete, and the whole nerve was found imbedded in dense new fibrous tissue. In 3 and 4, in which the injection was made by the method employed clinically, the degeneration was not complete, though quite considerable in extent. In none, however, had the degeneration "ascended"; the nerve proximal to the part affected by direct contact of the alcohol was in each case normal. The Gasserian ganglion showed a similar change in all three cases—chromatolysis in some groups of cells, but no sign of actual cell death; in other words, no cells exhibited the shrunken, deformed, deeply-staining appearance suggestive of complete destruction. In harmony with this, there was total absence of change in the proximal roots of the trigeminal nerve, both extra- and intracerebral.

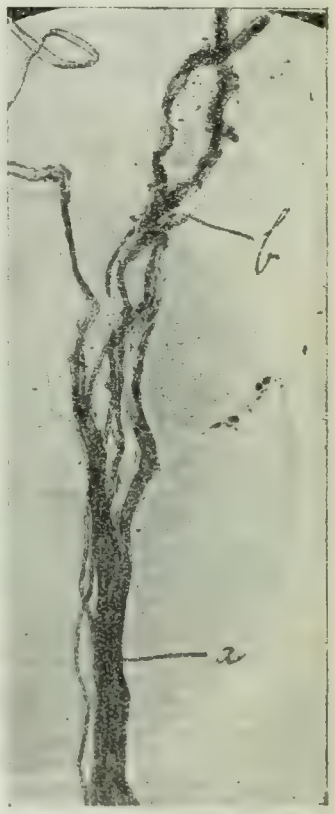


Fig. 4.—Cat 4. Some teased fibres of the infraorbital nerve (Marchi) (photograph × 80), showing the junction of the normal part (*a*) with the degenerated part (*b*).

The conditions resulting from such injections may be summarized as a local destruction of fibres by the alcohol, with some consequent chromatolytic change in their cells, but without any ascending degeneration or nerve-cell necrosis. Such conditions are comparatively favourable to regeneration, as will be shown below, and this chemical section of the nerve is probably followed more quickly by regeneration than is mechanical section, or, better, resection of part of the nerve.

GROUP II. INJECTIONS INTO THE GASSERIAN GANGLION.

The four following experiments were performed:

EXPERIMENT 5. Cat. Left Gasserian ganglion exposed by the temporal route, and injected with about 0.75 c.cm. of 80 per cent. alcohol.

Seven days later the animal was killed, and the brain perfused *in situ* with formol Muller.

Microscopically, the results were as follows:

(*a*) *Left Gasserian Ganglion.* Sections were stained both by polychrome blue and by haematein-Van-Gieson. The most marked change was in the part free from nerve cells, that is,

These operations were kindly performed for me by Sir Victor Horsley, to whom my best thanks are due.

the commencement of the division into the three main branches. Here were small haemorrhages, and patches of round-celled infiltration, with obvious destruction of nerve fibres. This was most marked at the base of the middle division, the superior and inferior being barely affected. The nerve cells, by comparison with the normal side, showed little change. Most sections quite unaltered, but a few showed marked shrinkage and dark uniform staining, suggestive of destruction.

(b) Trunk of Middle Division.—Marchi staining showed a considerable amount of early sheath degeneration, the medulla being broken up into large dark-brown blocks, many of which contained fine black granules. There were also a few normal fibres left. Cajal staining showed a marked degree of "axolysis" in the majority of fibres.

(c) Trunk of Inferior Division.—Most fibres were normal, only a few showing a slight grade of degeneration.

The superior division was not examined.

(d) The brain-stem showed a considerable amount of degeneration in the spinal root of the trigeminal; the mesencephalic root appeared normal.

EXPERIMENT 6.—Cat. Operation as in (5). No symptoms resulted.

Eighteen days later the animal was killed, and the brain perfused with formol-Müller.

Microscopically, the results were as follows:

(a) Left Gasserian Ganglion.—Here again the cells were surprisingly little affected, most of them looking quite normal, or showing moderate chromatolysis (Fig. 5). Only a few appeared to have undergone actual necrosis. As in (5), there was considerable destruction of fibres, with patches of round-celled infiltration and fibrosis.

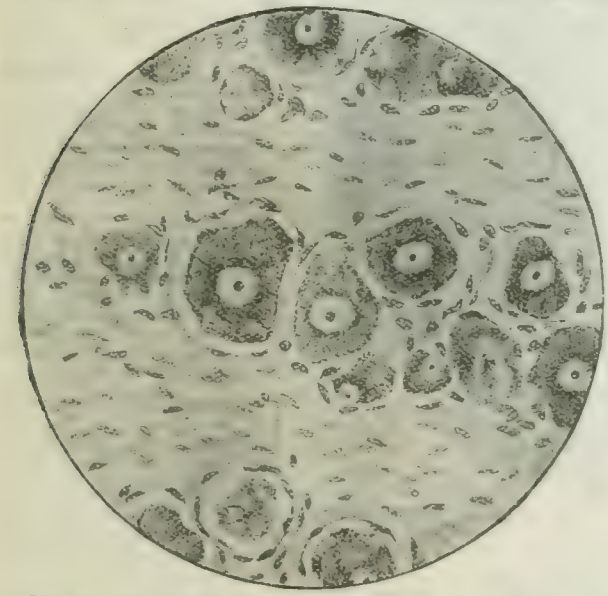


Fig. 5.—Cat 6. Part of section of Gasserian ganglion (polychrome blue), showing many normal cells. (Drawn under $\frac{1}{6}$ in. objective.)

(b) Trunk of Middle Division.—Many bundles had undergone complete degeneration, but a few had escaped.

(c) Trunk of Inferior Division.—This showed almost complete degeneration (Marchi and Bielschowsky), only a few fibres having escaped.

The superior division was not examined.

(d) The Brain-stem.—The spinal root of the trigeminal showed practically complete degeneration (Fig. 6). A few degenerated fibres were present also in the mesencephalic root of the nerve.

EXPERIMENT 7.—Cat. Operation as in (5), except that absolute alcohol was used instead of 80 per cent. No symptoms were observed.

Sixteen days later the animal was killed and the brain perfused with formol-Müller.

Microscopically, the results were as follows:

(a) Left Gasserian Ganglion.—Here again the most obvious change was in the commencement of the main divisions, a large part of the middle and a smaller part of the inferior trunk showing disorganization. The cell changes were similar to those in Cat 6, that is, the majority apparently normal, but some showing the shrinkage, distortion, and deep staining suggestive of destruction. The ganglion as a whole showed only slight fibrosis but considerable round-celled infiltration with one or two patches of necrosis.

(b) Trunk of Middle Division.—Most of the fibres showed marked degeneration, a few normal ones being scattered between these.

(c) Trunk of Inferior Division.—Most of the fibres were normal, only a few showing degeneration.

(d) The Brain-stem.—The spinal root of the trigeminal showed marked degeneration, but not so complete as in 6. The mesencephalic root showed only slight degeneration.

Recently Wilfred Harris[5] has published a paper giving an account of several cases of tic douloureux treated by injections of alcohol into the Gasserian ganglion through the foramen ovale. He states that there is clinical evidence of practically complete destruction of the ganglion as a result of a single injection. The experiments recorded above hardly support this contention. In not one of these was there anything approaching this result; in each case a very large number of cells remained histologically normal. Sections of the ganglion showed definite changes, but the effect on the fibres seemed relatively more marked than on the cells. Thus, in Experiment 5 the middle division was largely degenerated, in Experiment 6 the middle and inferior divisions, and in Experiment 7 chiefly the middle division.

A very striking feature in each of these was the considerable amount of degeneration found in the spinal root of the trigeminal. This was quite out of proportion to the extent of cell destruction in the ganglion. In Experiment 6 the root was practically completely degenerated, while the majority of cells appeared to have escaped. The explanation of this fact is not at first sight obvious. Experiments 1–4 in Section I show that damage to the axones peripheral to the cells does not produce retrograde degeneration in the central processes constituting

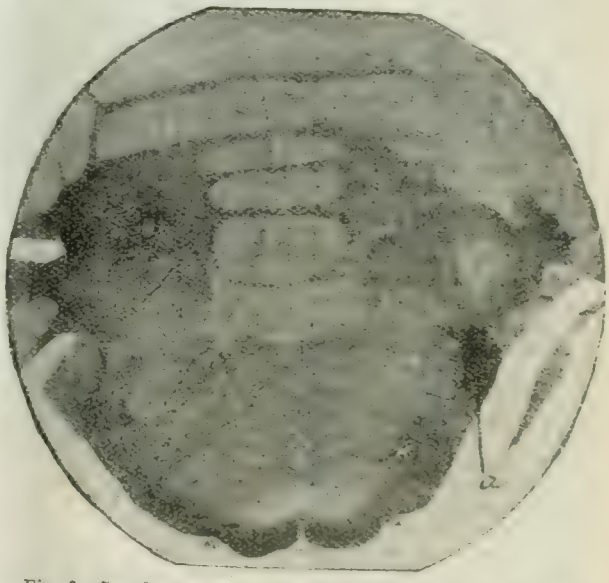


Fig. 6.—Cat 6. Section of upper part of medulla (Marchi) (photograph × 5), showing the complete degeneration of the spinal root of the trigeminal (a).

the spinal root. Hence, in the absence of complete cell destruction, we are driven to the conclusion that the alcohol must have passed centrally and reached the proximal root of the nerve without actually infiltrating the whole ganglion. In other words, it must tend to creep along the superficial parts of the ganglion under its fibrous sheath, apparently following the line of least resistance. In order to investigate this manner of spread more clearly, it was decided to repeat the experiment on a larger animal in which the structures approximated more closely in size to those of man. For this purpose the following experiment was performed on a young goat, nearly full-grown:

EXPERIMENT 8.—Goat. Right Gasserian ganglion exposed by the temporal route, and injected with about 0.75 c.cm. of absolute alcohol.

Eighteen days later the right eye showed very pronounced "neurotrophic" changes: a marked keratitis and conjunctivitis. The animal was killed, and the brain perfused *in situ* with formol-Müller.

Macroscopically, the right ganglion was found apparently much larger than the left, this increase being due to a large amount of new fibrous tissue surrounding it, and rendering it adherent to adjoining structures.

Microscopically, the results were as follows:

(a) Right Gasserian Ganglion.—Sections showed a fair number of profoundly altered cells, but here, again, the large majority appeared normal. In the neighbourhood of the destroyed cells there were patches of fibrosis and round-celled infiltration.

(b) Trunk of the Superior Division.—Stained by the Marchi and Cajal methods, this showed a considerable amount of degeneration, amounting to perhaps half its fibres.

(*c*) *Trunk of the Middle Division.*—This showed only a few degenerated fibres.

(*d*) *Trunk of the Inferior Division.*—This was practically free from degeneration.

(*e*) *The Root of the Trigeminal* (proximal to the ganglion).—This showed very considerable degeneration, amounting to at least half its fibres.

(*f*) *The Brain-Stem.*—Here the appearances confirmed (*e*). The spinal root showed wide degeneration, amounting in the pons to approximately half its fibres. Further back, in the medulla, this proportion diminished, so that at the level of the pyramidal decussation it was about a quarter of the whole.

This experiment confirms the conclusion arrived at from the results of Nos. 5–7, that the alcohol when injected into the ganglion tends to spread centrally to the proximal root without destroying the larger number of cells *en route*. The amount of "central" degeneration was undoubtedly far in excess of the sum total in the three peripheral trunks, and disproportionate to the cell destruction. This raises the interesting question: Are these fibres of the spinal root capable of regeneration? It is usually held that such is not the case, that fibres in the central nervous system, even those of exogenous origin, do not undergo complete regeneration. If this is true, then from the therapeutic point of view a complete section, mechanical or chemical, of the root of the trigeminal nerve proximal to its ganglion, should be equivalent to removal of the Gasserian ganglion itself. I am at present engaged in trying to elucidate how far this is true—to what extent regeneration can occur in the cord after section of posterior roots, etc. Clinical experience is against the view that simple section of the trigeminal nerve proximal to the ganglion is as effective as removal of the latter; the possibility must not be lost sight of, that pain impulses might be carried into the brain by fibres only imperfectly regenerated—for example, fibres which consist of an axone without a morphologically perfect medullary sheath.

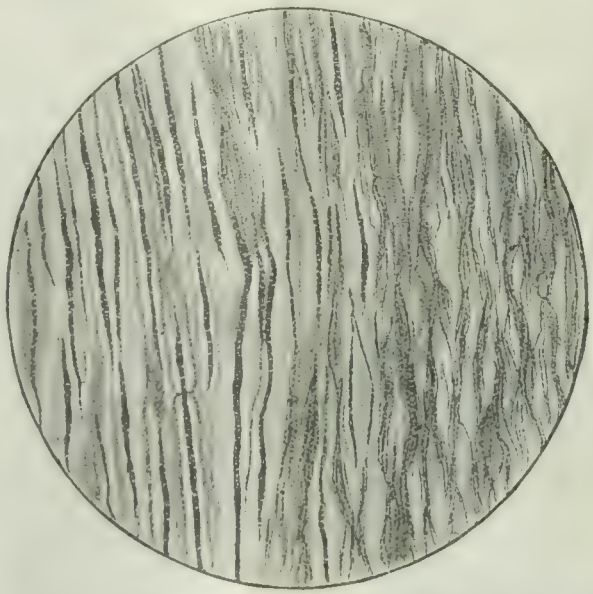


Fig. 8.—Cat 13. Section of left posterior tibial nerve (Cajal stain); on the left of the section are seen the normal axones, and on the right the fine, newly regenerated ones. (Drawn under $\frac{1}{8}$ in. objective.)

GROUP III.—INJECTIONS INTO MIXED MOTOR AND SENSORY NERVES.

Eight such experiments were performed, of which the following is a brief summary:

EXPERIMENT 9.—June 28th, 1910. Cat. 0.5 c.cm. 80 per cent. alcohol injected into left sciatic in lower part of thigh; 0.5 c.cm. normal saline similarly into right sciatic.

Immediately after operation both hind legs were weak, so that the cat was plantigrade, with both heels to the ground and a tendency to turn the foot over in walking.

July 1st. Right leg practically well; left leg *in statu quo*.



July 27th. Left leg still definitely plantigrade; no sign of recovery. (Cf. photograph, Fig. 7.)

August 12th. Left leg beginning to recover, the heel being slightly raised in walking.

September 27th. (Ninety one days after operation.) Complete recovery of left leg.

At autopsy no macroscopic change was seen in the nerve. By the Marchi method, a few fibres of the left posterior tibial nerve showed some fine black granules, but most were normal. The rest of the tissues were not examined.

EXPERIMENT 10.—June 30th, 1910. Cat. 1 c.cm. 90 per cent. alcohol injected into left sciatic nerve in mid-thigh.

July 1st. Cat walks with left heel to ground. (Cf. Experiment 9.)

August 3rd. Still in same condition.

August 12th. Leg showing definite improvement; heel beginning to be raised in walking.

August 26th. Walking is now almost normal.

September 26th. (Eighty-eight days after operation.) No difference between the two legs. Cat killed: weights of the two gastrocnemii equal (10.5 grams). Macroscopically, the left sciatic nerve looked normal; no inflammatory adhesions were present.

By Marchi method, the left position tibial nerve showed some bundles quite healthy, while in others there were slight remains of degeneration in the presence of fine black granules, lying for the most part in "phagocytic" cells between the fibres. The sciatic trunk showed numerous patches of round-celled infiltration, chiefly at the periphery of the bundles; the fibres themselves looked normal.

EXPERIMENT 11.—July 18th, 1910. Cat. 0.75 c.cm. 50 per cent. alcohol injected into left sciatic in mid-thigh. No weakness of the leg was produced, the animal walking quite well on the following day. It was kept eighteen days without developing any symptoms, and was then killed.

EXPERIMENT 12.—October 26th, 1910. Cat. 0.5 c.cm. 80 per cent. alcohol injected into left sciatic in mid-thigh.

October 28th. Cat limps slightly, with left heel lower than right.

November 7th. Weakness less marked.

November 14th (nineteen days after operation). No difference observable in the two hind legs. Killed. No macroscopic change in the nerve.

Microscopically, there was scattered degeneration in both the peroneal and posterior tibial nerves, involving only a minority of the fibres. The axonal staining showed most axones to be normal, but a few were broken up into irregular fragments.

EXPERIMENT 13.—November 3rd, 1910. Cat. 1 c.cm. 90 per cent. alcohol injected into and around left sciatic nerve in mid-thigh.

November 7th. Marked ataxia of left hind-leg; left foot is dragged, and the animal tends to walk with the foot turned over, so that the dorsum is in contact with the ground.

December 8th. The calf muscles are greatly wasted.

December 18th. The walking has improved, though the wasting of the calf muscles is still very marked.

January 6th, 1911. The cat walks well, without any obvious ataxia.

Sixty-four days after operation, the left gastrocnemius, tested by Leduc's current (6), showed *partial* "reaction of degeneration." Killed. Right gastrocnemius 30.4 grams; left gastrocnemius 19.4 grams.

Microscopically, the results were as follows:

(*a*) *Left sciatic* (above injection, Cajal stain), quite normal.

(*b*) *Left posterior tibial*: Cajal: A patch at periphery of normal large axones; the larger part of the nerve showed disappearance of these, with a few fragments of debris and numerous *fine new regenerating axones* (Fig. 8). Marchi: Marked advanced degeneration in the greater part of the nerve; a few normal fibres were, however, present.

EXPERIMENT 14.—June 1st, 1911. Cat. 1 c.cm. 90 per cent. alcohol injected into and around left sciatic nerve in mid-thigh. Very little appeared to have penetrated the nerve.

June 6th. Wound healing well, but cat shows no symptoms at all from the injection.

June 7th (six days after operation). Killed. No macroscopic changes found in the nerve or muscles. No microscopic examination made.

EXPERIMENT 15.—June 1st, 1911. Cat. 1 c.cm. 90 per cent. alcohol injected into and around left anterior crural nerve just above Poupart's ligament.

June 4th. Marked weakness of the quadriceps extensor of the left thigh.

August 1st. (Sixty-one days after operation). Very marked wasting and weakness of these muscles.

The cat was anæsthetized and the left rectus femoris examined with Leduc's current. It showed the typical "reaction of degeneration" (complete).[3] Faradic stimulation

of the trunk of the anterior crural nerve produced no contraction of the muscles. Killed. Weight of right quadriceps, 48 grams; weight of left quadriceps, 20 grams.

Microscopically, the results were as follows:

(*a*) *The Anterior Crural Trunk.*—At the site of injection the nerve showed profound changes—a massive new formation of fibrous tissue, with patches of round-celled infiltration, involving and destroying the greater proportion of the nerve fibres (Fig. 9). A few fibres had escaped, at any rate in these particular sections, but the destruction was very extensive—a veritable "nerve cirrhosis." Above this point, Cajal and Marchi preparations showed a practically normal nerve; the process is a local disorganization, not leading to any ascending change.

(*b*) *The distal branches* (by Marchi, Cajal, and Bielschowsky methods) showed active preparation for regeneration: the long nucleated protoplasmic columns (the "apotrophic cells" of Marinesco), without, however, any new axones. It looked as though the marked fibrosis at the site of injection had delayed regeneration, so that the process was slower than, for example, that after successful primary nerve suture.

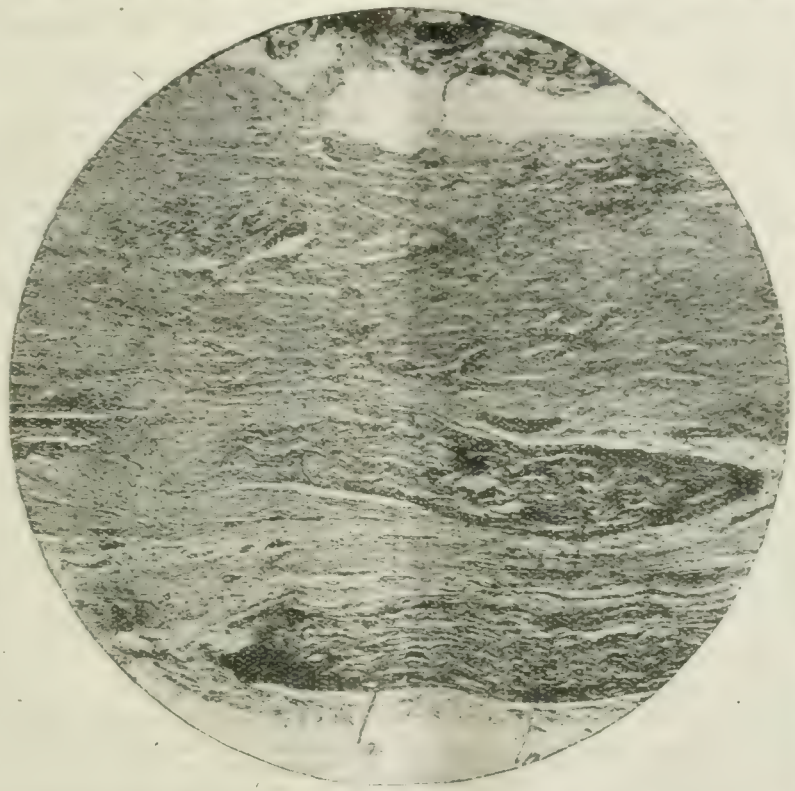


Fig. 9.—Cat 15. Section of the anterior crural nerve at the site of injection (haematein and Van Gieson's [illegible]), showing profound disorganization of the nerve, with great fibrosis. Two bundles of fibres which have escaped complete destruction are marked (*a*).

Experiment 16.—June 6th, 1911. Cat. 0.5 c.cm. *absolute* alcohol injected into and around the left sciatic nerve in mid-thigh.

July 8th. Marked plantigrade gait of left hind foot, with tendency to walk with the dorsum of foot to the ground.

July 26th. Weakness and wasting of the left calf muscles still very marked (fifty days after operation). The cat was anaesthetized, and the left gastrocnemius examined with the Leduc current. It showed complete "reaction of degeneration." There was no muscular response to faradic stimulation of the sciatic trunk either above or below the site of injection. The animal was then killed. Weight of right gastrocnemius, 23.2 grams; weight of left gastrocnemius, 8.5 grams.

Microscopically, the results were as follows:

(*a*) *The sciatic trunk* at the site of injection: the changes were practically identical with those found in the preceding experiment—that is, great fibrosis both between and in the nerve bundles. There were also the remains of numerous haemorrhages in both these situations.

Immediately above this point Cajal preparations showed greater regeneration activity, axones splitting up into complex bundles of fine fibrils, etc. (Fig. 10). Further up the appearances were entirely those of a normal nerve—that is, there was no trace of any ascending degeneration.

(*b*) *The peripheral branches* showed no new axones: that is, here again the fibrosis has proved a severe obstacle to the down-growth of new axones from the proximal part. They showed the usual appearances of late Wallerian degeneration—the presence of numerous comparatively fine fat granules, some lying free, others contained in the protoplasm of the invading phagocytes.

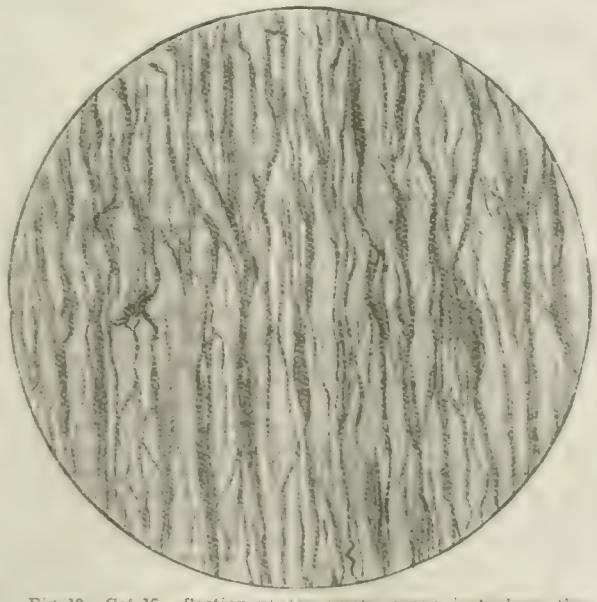


Fig. 10.—Cat 16. Section [illegible] nerve [illegible] the point of injection (Cajal stain), shows the axones splitting up into complex bundles of fibrils, phase of active regeneration. (Drawn under ⅛ in. objective.)

A striking feature brought out by a consideration of these experiments is, as in Group I, the variability of the results. Thus, in Nos. 11 and 14 the injection produced no obvious effect, in No. 12 only a slight transitory weakness, while in 9, 10, 13, 15, 16 the functional results were severe and more lasting. The technique was, as far as possible, identical in all these experiments, but the strength of alcohol used was not always the same. In No. 11 it was only 50 per cent., which may partially account for the lack of disturbance produced. On the other hand, in both 9 and 14 it was 90 per cent., yet the effects in these two cases afford a striking contrast. There can be not the slightest doubt that the explanation lies very largely in the difficulty of ensuring adequate penetration of the nerve by the alcohol. The texture of the nerve in question has an obvious bearing on this point. The cat's sciatic is composed of several bundles held lightly together by loose connective tissue; such a nerve is more difficult to infiltrate successfully than one of a more compact structure—for example, the posterior tibial. Further, if this difficulty is so prominent when the nerve is exposed by dissection, it becomes still more so when the injection is made through a skin puncture, as is the usual clinical method. On the other hand, when the injection is made into a bony canal (as in the case of the three divisions of the trigeminal), or into a space bounded by dense fibrous structures (as in the case of the Gasserian ganglion), it may well be that the alcohol, by remaining longer in contact with the nerve or ganglion, may produce comparatively more effect, even though little had penetrated during the actual injection.

The muscles supplied by the nerves operated upon in Experiments 9, 10, 13, 15, 16, showed the usual atrophic changes, identical with those following mechanical section of the nerve. It is interesting to note, however, the fairly rapid recovery which can ensue. Thus, in Experiment 10 this was complete when the animal was killed after

eighty-eight days. The gastrocnemius muscle weighed the same as that on the control side, and reacted equally well. Moreover, the animal had lost all trace of the limp which was so prominent for some weeks after the operation. Unfortunately, the histological examination was incomplete, as the branches to the gastrocnemius were not examined to see how far they had suffered and how far recovery was due to a true nerve regeneration. In Experiments 13, 15, and 16, however, the investigations were more complete; in 13 (sixty-four days) regeneration was shown histologically to be well advanced, and the muscles had so far recovered that, examined by the Leduc current, they reacted in a manner quite different from the typical reaction of degeneration. In 15 (sixty-one days) and 16 (fifty days) regeneration was much less advanced. In neither of these could any new axones be found in the peripheral branches, and the muscles gave the complete R.D. It is probable that this backwardness, contrasted with 13, is dependent on the greater degree of fibrosis produced by the alcohol in the former, the fibrous tissue forming, as I have found in other experiments, an effective barrier against the downgrowth of the regenerating axones. There is every reason to believe, however, that in due time complete recovery of power would occur in all muscles which had been paralysed by such injections. In other words, there does not seem to be any real danger of *permanent* paralysis in these cases, though in man the time taken for complete recovery might be a matter of a year or more. This is a matter of some interest, in view of the cases of peroneal paralysis recorded by Schlösser and others (v.s.) following the treatment of sciatica by these means, though such a procedure is, I fancy, no longer likely to be advocated at the present time.

Conclusions.

1. Alcohol, injected into the trunk of a peripheral nerve, produces a more or less complete local necrosis of the nerve at the point of injection.

2. The change is not an "ascending" one, the nerve above the point of injection remaining normal; the cells of origin of the fibres may show some degree of chromatolysis, but do not exhibit signs of permanent injury.

3. The conditions produced by such injection are more favourable to regeneration than those resulting from simple section without suture. The anatomical continuity of the nerve trunk favours rapid regeneration, though this is to some extent retarded by the fibrosis which occurs to a greater or less extent in every case of alcohol injection.

4. It is apparently impossible by a single injection of alcohol to produce complete necrosis of the Gasserian ganglion, its dense texture preventing complete infiltration. The alcohol tends to find its way under the sheath of the ganglion towards the proximal root, which is affected to a greater degree than the actual ganglionic cells.

References.

[1] Schlösser, *Klin. Monatsblatt f. Augenheilkunde*, 1903, Bd. 41 (2), s. 244. [2] Ibid., *Verhandlung d. Deutscher Ophthal. Gesellsch.*, Heidelberg, September, 1905. [3] Ibid., *Verhandlung des Congresses f. Innere Medicin*, Wiesbaden, 1907, s. 49. [4] Finkelnburg, Ibid. [5] W. Harris, *Lancet*, 1912, vol. i. p. 218. [6] O. May, *Brain*, 1911, vol. xxxiv, p. 272.

GREY HAIR ASSOCIATED WITH NERVE LESIONS.

By G. LENTHAL CHEATLE.

In previous papers[1] I have pointed out that when the sites of the points of incidence and areas of occupation are taken into consideration, then there is reason to believe a nervous influence exists which can induce greyness of hair, at least in some cases. The particular cases to which I drew attention were of two classes.

Class 1. Persons having had grey patches of hair ever since they could remember.

Class 2. Persons who gradually become grey with advancing age. This class of case must again be subdivided into:

(*a*) The occurrence of patches of grey hair, which gradually fuse with the general greyness of the scalp and beard.

(*b*) The gradual appearance of scattered grey hairs beginning in the temporal regions. In this subdivision there is an absence of patches.

It is those cases in Class 1, and (*a*) of Class 2, which show by the points of incidence a nervous genetic influence. In Class 1 the grey patches are often hereditary as well.

In the present article I wish to indicate a large class of cases which acquire greyness of hair in association with other nerve lesions, and therefore probably connected with nervous changes.

Fig. 1 shows the nerve lesions on the right side of a case of Sir Victor Horsley's, to whom I owe my thanks for allowing me to publish it. The clear area on the forehead and frontal region of this scalp was anaesthetic, the skin was bleached and the hair was grey. The dotted area posterior to it was hyperaesthetic and the hair was not grey. In both areas there was slight overlapping of the left side, which otherwise was normal with regard to sensation and the colour of the hair. The case suffered from leucoderma.

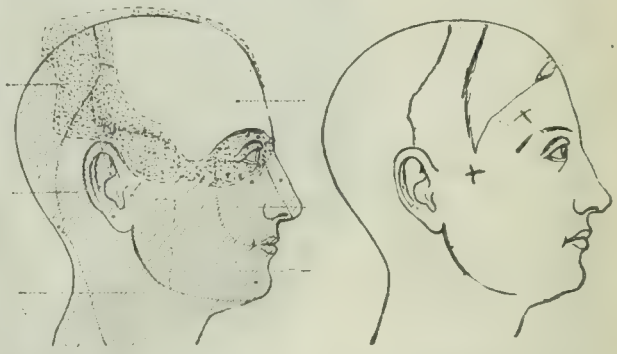


Fig. 1.

Fig. 2.

Fig. 2 shows the state of things in a case of my own, an out-patient of King's College Hospital, aged 36 years. A subcutaneous neurofibroma growing on each of the sites marked by a cross on the cheek and forehead of the right side, and which were noticed about the same time ten years ago, when the hair also began to grow grey.

The state of the greyness of hair was as follows: On the mid-orbital maximum point of Dr. Henry Head, there was a patch of normal brown colour, which appeared as an island in the completely grey V-shaped area seen in Fig. 2, behind which, and limited behind by the posterior boundary of the fifth nerve, was an area of scattered grey hairs. There was no disturbance of sensation. Tactile, heat, cold, and pain sensations were normal.

It would be of immense theoretical and practical interest to discuss the state of greyness of hair, together with the protopathic nerve influence described by Dr. Head. The discussion would be very discursive, owing to the fact that our knowledge is not sufficient to enable us to state what makes hair appear grey; and although one may have opinions upon the subject they are not sufficiently matured for dogmatic pronouncement.

All I want to do now is to show that here is an epithelial change in state, which takes place *pari passu* with a change in the nervous system, and, therefore, probably due to it.

Although greyness of hair is of itself an unimportant epithelial change, it appears at a time of life common to another and important epithelial change namely, cancer. The genesis and etiology of an unimportant change in a tissue may illuminate the genesis and etiology of an important change in the same tissue.

I am, at any rate, assuming a correct attitude in saying that because a nerve influence can be shown at work in the genesis of one epithelial change, it ought, therefore, to be considered in the genesis and etiology of another epithelial change that is, cancer.

Greyness of hair may be said to be a degenerative change and cancer a proliferative change. The proliferative change in cancer can hardly be considered an object lesson in regeneration; its products are nearer degeneration products, so far as size, shape, and function of the cells are concerned.

Reference.

[1] "The Incidence of the Hair's Greyness," BRITISH MEDICAL JOURNAL, July 22nd, 1905. "The Mental Nerve Area and its Relation to Greyness of Hair," BRITISH MEDICAL JOURNAL, July 4th, 1908.

THE TREATMENT OF TABETIC ATAXIA.

BY

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In a short paper which appeared in the BRITISH MEDICAL JOURNAL of August 26th, 1911, I demonstrated clinically the beneficial effects I had obtained in tabes dorsalis, even when marked ataxia had occurred, from systematic practice of the exercises designed by Frenkel of Heiden for restoring the power of co-ordinate movement.

Since then I have received many inquiries respecting the treatment and also on points not included in my former communication. It is gratifying to find so much interest evinced in this successful method, offered by the Frenkel system, of mitigating the unhappy condition of patients suffering from this disabling affection. Yet the correspondence also shows that there still exists a good deal of misapprehension regarding the nature and practical application of the exercises, as well as the training through which the patient must go to produce the results desired. It is to these considerations that I propose more particularly to address myself on the present occasion.

It may be stated at once that the Frenkel system does not consist of a series of gymnastic exercises which the patient can be set to perform each day from a list supplied to him with directions for doing them. It consists of a series of definitely directed movements made in different positions of the body with specific objects in view, under the immediate direction of a physician, who must, of course, have made himself acquainted with the aim and object of each movement used, a knowledge which can only be gained by careful study and reflection.

The degrees and forms of ataxia met with in different patients suffering from tabes being very diverse, the physician has, after first carefully determining the precise nature and extent of the disturbances present, to choose the most suitable exercises and adapt their sequence as well as their duration and intensity to the individual requirements of the case.

The most serious disablement of the ataxic patient being usually the loss to a greater or less extent of co-ordinative power in the lower extremities, the greater number of the exercises are designed for the purpose of enabling him to regain control over these various movements. Others of a different kind are intended to restore lost power over the movements of the trunk and upper extremities.

The exercises designed for restoring control over movements of the lower extremities comprise: (*a*) Those which are practised in a recumbent position while the influence of gravitation and the necessity of maintaining the equilibrium of the body are in abeyance; (*b*) those practised in the erect posture, consisting of walking exercises of various kinds; (*c*) those which combine various movements and evolutions carried on during walking, such as turning, sitting down, etc.; and (*d*) those which are done in the sitting position. The most numerous of these exercises are those of the first class, of which there are ninety-four, while of the walking movements there are twenty-eight. The physician is, therefore, well provided with an ample series from which to make a selection suitable for the patient.

The exercises taken while the patient rests in bed or on a couch consist of those practised without apparatus, which are far the most important, and those in which apparatus is used. The former are subdivided into six groups, each of which has for its aim a certain definite object. Thus the first is devoted to the practice of general movements of the limbs, and consists of flexion, extension, adduction, and abduction, the heel resting on the bed during their performance in order to economize muscular force as much as possible, the range of movement in these exercises being considerable. In the second group the limb exercised is raised from off the bed while flexion and extension movements are performed, and the patient is practised in touching definite portions of the resting limb with the heel of the limb being exercised. In these exercises we have a combination of balancing the quasi-suspended limb and the performance of movements at the joints. This series leads to another group designed to develop a maximum degree of co-ordination with a minimum of muscular contraction. A large group of exercises are arranged to teach the patient to perform, first, similar and, secondly, dissimilar movements at the same time with both limbs. Finally, there are exercises involving high degrees of co-ordination which are rendered more and more difficult by reducing the amplitudes of the movements.

During the practice of these exercises the patient follows closely the movements of his limbs with his eyes. As soon, however, as he has learnt to control his movements somewhat it is of considerable importance to practise him in doing some of the exercises with his eyes closed in order to develop sensory control.

If the ataxia be very great, co-ordinative exercises are useless at first, and one has to be content with practising simple contractile movements of single muscles or groups of muscles having similar functions, limiting the movements to a single joint, as the toes, foot, leg, and thigh.

The exercises practised in bed with apparatus are of less importance than those previously mentioned, but are often useful for home practice, the apparatus, which is very simple, taking the place of the physician's hand in focussing the movements of the limbs.

It must ever be remembered that to the tabetic patient all exercises are very tiring, owing to much energy being uselessly expended in attempts at co-ordination; they are also a considerable strain on the attention. It is therefore imperative that they be practised only for a few minutes at a time, and frequent rests taken during the practice hour. For these reasons it is most advantageous for the physician to instruct two or three patients alternately, so that the first, having done a short turn, may rest till each of the others has had his spell, after which the first begins again. In this way even four patients may receive in successive turns as much practice in one hour as is desirable for them to have at a single sitting. It is usually found convenient to practise exercises in the recumbent position during the forenoon, leaving the afternoon free for practising exercises in the erect posture when the degree of ataxia permits.

Appliances Required for Exercises in the Erect Posture.

Exercises in the erect posture should be practised in a room or corridor of sufficient length to render it unnecessary for the patient to have to turn round frequently—which is difficult for the tabetic to do—and of sufficient width to permit the patient with an attendant on either side of him to move freely. The exercise track which I have constructed at Eversley Sanatorium is about 60 ft. long by 7 ft. wide. Along it at intervals are placed chairs for the patients to rest whenever fatigued.

On the floor is a strip of linoleum a yard wide, on which is painted a plain black stripe 21 cm. wide. Along one side of this is another narrower stripe 11 cm. broad, and beyond it are two other stripes also 21 and 11 cm. wide respectively, on which are painted in white transverse lines at fixed distances, thus dividing these two long stripes into sections which represent full steps, three-quarter, half, and quarter steps. The full step is 63 cm. long, the three-quarter step 45.5 cm., the half step 30.5 cm., and the quarter step 15 cm. These two cross-barred stripes present the appearance of a ladder depicted on a flat surface.

On a second piece of linoleum are drawn in duplicate eight pairs of footprints, those of the one row being figured in the reverse direction to those of the other row. The distance between the heel outline of the one footprint and that of the next is 35 cm.; each pair of footprints shows the feet at an angle of about 40 degrees. The width of each row is 31 cm.

Down the centre of a third and wider piece of linoleum are outlined, in pairs, the anterior portion of the foot at distances of quarter steps from one another, and from the central pair a series of curved lines at distances of quarter steps from one another are drawn on either side; the whole arrangement of the diagram is in the form of a Geneva cross. It is used for the purpose of instructing patients in taking steps in different directions at word of command.

On a fourth piece of linoleum is depicted the outlines of footprints in four different directions having a common centre for the heel. This diagram is used to instruct the patient how to turn by the right or the left.

A stair consisting of four steps having each a rise of 12 cm. and a tread of 35 cm. On one side is a strong handrail.

A strong chair on which the patient can practise systematically sitting down and rising up completes the necessary appliances.

Method of Instruction.

Before attempting to supervise the instruction of a patient in these exercises the physician must make himself acquainted with the mechanism of the normal movements

of the human body as a whole, and of its several parts, also of the sequence of events involved in each given movement. He must likewise acquaint himself with the deviations from the normal exhibited by the tabetic patient in his attempts to effect definite movements. The combination of movements which occur, for example, in locomotion, having been acquired in childhood, are so automatically performed by us in after-years, that we are not conscious of the various movements our bodies go through when we take a step, or when we do the apparently simple act of sitting down on a chair. Yet each of these are complicated acts involving several regular sequential movements of the trunk and lower limbs which the tabetic patient has to learn afresh to enable him to perform them properly. Thoroughness in teaching and in learning the details of the movements made in the various acts we do in everyday life is essential when impressions have to be made upon and accumulated by fresh neurones unaffected by the disease, and faulty methods of movement acquired during the course of the disease have to be eradicated.

The first track on which the patient is practised in walking exercises, after he has been well grounded in the method of taking a step, is the plain broad stripe. Little heed is given to the length of step in the first instance, but attention is concentrated upon the method of taking it. If the ataxia is only moderately severe one attendant may be sufficient, but he must always be at the patient's side though not touching him, ready to give him support, if required, by catching him under the arm, as tabetic patients are very liable to fall or twist an ankle suddenly and without any previous warning. Such an accident, even if the patient be not hurt, is very disconcerting, increases his feeling of insecurity and makes him nervous, so that he cannot concentrate his attention on the exercise he is doing. The attendant's duty is, therefore, to carefully and closely watch the patient, while that of the physician is to instruct him in the exercise and correct the faults he makes.

The clothes worn by the patient should be light, and he can well dispense with a coat, as the exertion of taking only a few steps usually makes him feel hot. He should wear strong laced boots, with broad non-slipping rubber or felt soles, to support his ankles and give him stability.

The patient should practise walking exercises only for a few minutes at a time owing to the fatigue both of body and mind which rapidly supervenes, and should stop on the occurrence of the first signs of fatigue. The best indication of this is increased action of the heart. His pulse should therefore be taken at frequent intervals to see that it is not unduly rapid (not over 120 to 130 per minute), and, if it is, he should rest on a chair till it is again normal before resuming the exercises. While he is resting another patient is put through a turn; a third, and even a fourth, may with advantage be thus exercised alternately, as this has the salutary effect of stimulating their endeavours to vie with one another in doing the exercises well, and so leads to progress. At the beginning the work is uphill, and little progress seems to be made for awhile; but, with persistent practice and careful attention on the part of both physician and patient, improvement will in due course be noticeable. The tabetic patient has a marked tendency to take his steps too quickly, to stamp his foot down forcibly, and to rotate his leg and foot outwards; these are points which have to be carefully corrected. He must be taught to keep his eyes fixed closely on the movements of his feet and legs, till he gains a certain amount of control over them.

The next [illegible] instruction is to teach the patient to take steps of definite length. For this purpose the broad stripe on the floorcloth divided into steps, half-steps, and quarter-steps is used. The patient should always begin with half-steps, these being the easiest for him. They are practised in a forward direction and to the side; the latter is the simpler movement. The former is practised first by stepping out with one foot and bringing the other up to it [illegible]ly, by swinging the second foot forward beyond the first progression-steps. Quarter-steps are next practised, then three-quarter steps, and finally full steps, which are the most difficult. Having acquired a certain degree of proficiency in taking these various steps, the patient is then ready to practise steps of different lengths or mixed steps, changing from about half to quarter, three-quarter, or full steps at the direction of the physician. He is also practised in taking single steps backwards and in taking steps forwards while his eyes are directed to some object in front of him, and with his arms in various positions, so that he is unable to observe the position of his feet and their movements.

The paired footprints represented on the second and third pieces of linoleum are used especially for patients in the early stages of the disease, when only slight ataxia is present, likewise at the end of a course of treatment, to teach precision of action and taking steps in different directions voluntarily or at word of command, the patient being required to put his foot down exactly and accurately on the points indicated. To use them he requires to be able to maintain his equilibrium well, to balance himself on one leg, and to move his limbs definitely at will.

In the movements of every-day life changing direction—in other words, the act of turning—sitting down, and rising from a chair, and ascending and descending stairs, are very important. It would occupy too much space here to describe the various stages we unconsciously go through in doing these simple acts and the difficulties the tabetic patient encounters in attempting them, consequent upon his loss of power of co-ordinating the actions of the various muscles and groups of muscles concerned in them. Thorough instruction and practice in all the details of the movements should never be omitted. The fourth diagram, the short flight of stairs, and a chair, are, therefore, important equipments for the Frenkel treatment. The patient should be taught these movements concurrently with the walking exercises as early in the course as possible.

After considerable progress has been made in walking on the broad stripe, the still more difficult task of doing walking exercises on the narrow stripe, which is about the same width as the sole of the patient's boots, is begun; also standing and walking exercises with bent knees. A variety of exercises in walking is practised by patients in groups of three or four together for the purpose of teaching them to time the movements of their limbs, which is a matter of considerable importance when walking in frequented places.

Exercises in the sitting position are chiefly used conjointly with those practised in bed in cases where the loss of co-ordination is considerable. They are chiefly directed towards teaching the patient such actions as raising the thigh with the knee flexed, and putting the foot down on a footprint drawn on the floor so that the whole of the sole shall touch the ground. Movements of adduction are also practised in this position to correct the outward throw of the knees so common in ataxic cases.

An important question in regard to the Frenkel treatment is, When should it be begun? The answer is undoubtedly on the earliest manifestations of symptoms of ataxia occurring. At this time the loss of articular muscular and cutaneous sensibility is comparatively slight; hence the chance of regaining the maximum co-ordinative power over movements of the limbs is greatest. The greater the loss of sensation, the longer and more difficult will be the treatment. But so long as some sensibility remains in the limbs improvement may confidently be looked for from the treatment. Even in advanced cases unexpectedly good results may often be obtained. The more experience I have of the treatment, the more convinced I am of its beneficial effects in the great majority of cases. The hopes it offers to the patient of regaining much of the co-ordinative power he has lost and of thus improving his condition should certainly be pointed out to him by his medical attendant.

The duration of the treatment depends not only on the degree of ataxia present, but also on the natural aptitude of the patient and the determination with which he sets himself to his cure. The longer the exercises are continued, the more certain and lasting is the improvement produced. It is unfortunate for many that the treatment cannot be carried out at home or in conjunction with the patient's ordinary avocation in life, since it requires his undivided attention for a certain time, at least till some progress has been made. This inconvenience might be reduced somewhat, and much benefit derived if persons suffering from this affection were to devote their holidays to the treatment.

A NOTE ON THE MORPHOLOGY OF A STRAIN OF TRYPANOSOMA EQUIPERDUM.

BY

WARRINGTON YORKE, M.D. AND B. BLACKLOCK, M.D.

FROM THE RUNCORN RESEARCH LABORATORIES.

NEARLY a year ago, in examining stained films of our strains of trypanosomes, one of us observed in the blood of a guinea-pig short, stumpy forms of parasite which had the macronucleus displaced towards the posterior end. The guinea-pig was infected with a laboratory strain of dourine, which had been received from Geheimrath Professor Uhlenhuth in Berlin in 1907.

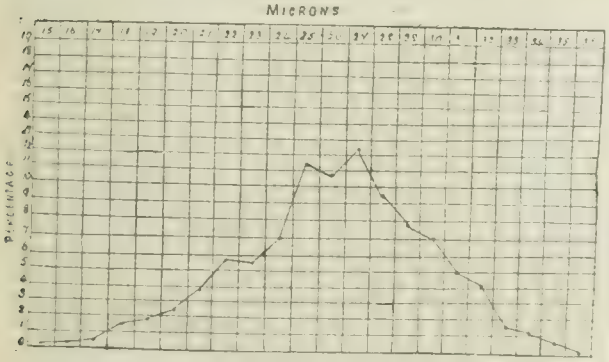
Recently in connexion with some work on "attachment" we had occasion to obtain a fresh supply of dourine virus, and we are indebted to Professor Schilling for his kindness in sending us a rat infected with *T. equiperdum* and for giving its origin. This strain was obtained by Professor Schilling from the Gesundheitsamt in Berlin, and has been preserved in his laboratory for many years.

Examination of this strain also revealed the presence of stumpy parasites having the posterior position of the nucleus. The following are some of the chief morphological characters of this strain.

Morphology of the Trypanosomes.

Between long thin forms with free flagellum and short, stumpy forms without free flagellum there is a variety of intermediate forms.

A thousand parasites drawn and measured in a white rat over a period of eight days before its death had an average length of 26.7 μ. The longest trypanosome found measured 36 μ, and the shortest 15 μ. The percentage incidence according to length in microns is shown on the



A thousand examples of *T. equiperdum* in white rat on eight days.

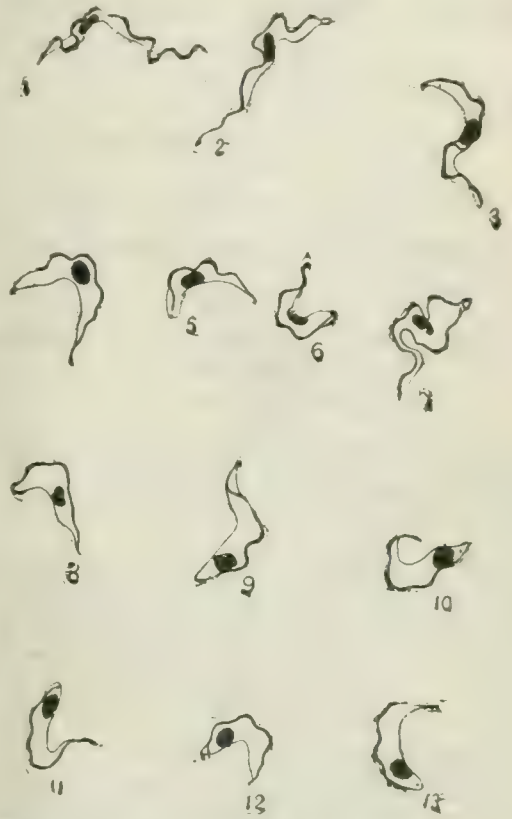
Table showing Percentage Measurements of 1,000 Examples.

Parasites Measuring less than 24 μ.	Parasites Measuring between 24 μ and 30 μ.	Parasites Measuring 30 μ and over.
21.8	58.5	19.7

chart by means of a curve, and also in the table. From these it will be observed that the trypanosome is fairly long, and that most of the parasites lie between 24 μ and 30 μ.

Forms in which the Nucleus is Posterior to the Centre.

The forms of parasite in which the nucleus is observed to lie posterior to the centre are the short, stumpy parasites which have little or no free flagellum. These forms are found in animals when the parasites are fairly numerous; they have been observed in rabbits, guinea-pigs, and rats—the only animals so far experimented with. The nucleus varies in position from being just posterior to the centre of the parasite to being close beside the blepharoplast. Various positions which the nucleus may occupy are shown in the parasites depicted in the figure, the forms there represented being drawn from a film



Figs. 1 and 2.—Long slender forms.
Figs. 3 and 4.—Intermediate forms.
Figs. 5 and 6.—Short forms with central nucleus.
Fig. 7.—Dividing form.
Fig. 8.—Short form with nucleus slightly anterior to centre.
Figs. 9 to 13.—Posterior nuclear forms.

The magnification of the original drawings was 2,000 diameters; for reproduction here they have been reduced to half their original size.

taken from the blood of a guinea-pig. In the white rat of 1,000 trypanosomes drawn, 38 had a definitely posterior position of the nucleus. Many of the parasites have very marked granules.

STUMPF (*Monatsschrift f. Geb. u. Gyn.*, May, 1912, p. 640) exhibited at a meeting of the Breslau Gynaecological Society the organs of a woman, aged 23, who had used vaginal injections daily for some time as the periods had ceased for three months. A few hours after the last injection symptoms of acute peritonitis set in. Abdominal section was performed, and the peritoneal cavity was found to contain a great quantity of turbid serum and some white crumb-like bodies. The uterus was as big as in the fourth month. The patient died twenty-four hours later. *Post-mortem* examination showed that not only the vagina but the cervix were free from disease. When the uterine cavity and the Fallopian tubes were laid open the endometrium was found to be converted into a tough, grey substance 2 to 3 mm. thick and odourless. This change had involved the entire mucous membrane of both tubes up to the fimbriae, and was due to some chemical in solution which had entered the upper part of the genital canal and also passed into the peritoneal cavity, apparently acting on the serous membrane in the same way and precipitating albumen in its tissues. Inflammatory changes were detected in the deeper part of the endometrium. On analysis the nature of the solution could not be defined, nor were any septic germs detected. It seems certain that fluids are sometimes injected into the peritoneal cavity when the vaginal douche is employed, but the explanation of this accident is not clear. There is probably something abnormal about the uterus and tubes, allowing the passage of fluid injected, perhaps, with but little force.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF ELECTRO-THERAPEUTICS AND RADIOLOGY.

CHARLES THURSTAN HOLLAND, M.R.C.S., President.

ON THE X-RAY TREATMENT OF UTERINE FIBROIDS.

By G. FEDOR HAENISCH,

Hamburg.

[NOTE.—The unit X to which the author refers in speaking of the dosage of *x* rays given in his cases is the unit of the Kienböck quantitometer. A dose of 10 X units is equal to the Sabouraud tint "B," or to 5 Holzknecht units, the erythema dose. 2 X=1 H.]

It affords me particular pleasure to respond to the invitation which I have had the honour to receive from you, namely, to relate my experiences of the Roentgen treatment of uterine fibroids and haemorrhagic diseases of the uterus, etc. I do so all the more willingly because I have an impression that the treatment of these conditions by this method in England has not taken the place it deserves to do. I hope that it may possibly be my good fortune to assist in establishing the just recognition *x*-ray treatment of myomata should have.

On account of the short time at my disposal I must omit any account of the historical evolution of this therapy or even any comprehensive review of the literature on the subject. Again, very full articles dealing with the subject have already been published, and also during the coming year special attention is to be given to it in London.

My own work dates back to the end of the year 1908. I am able to give an account of 50 cases of myomata and menorrhagias of different kinds. Of these, 15 cases are still being treated or are only recently improving. Of the remaining 35, 4 more cases fall out of the record as, owing to various reasons, they received only an incomplete treatment. One of these, after two sittings, was found by a further gynaecological examination to be a mistaken diagnosis (an ovarian cyst). There remain, therefore, 31 cases, of which 4 still remain uncured. Briefly, they are as follows:

No. 1. A woman, aged 49, sent for treatment on account of a left-sided myoma. The patient was also suffering from a right-sided hydrosalpinx. After four series of 5 to 7 X had been given, over a period of 2½ months, the menses ceased and the pain diminished, but the tumour increased in size. A laparotomy was performed and a large ovarian and uterine carcinoma [illegible].

No. 2. A patient, aged 39, sent for treatment on account of [illegible] bleeding. Three series of 5 to 9 X were given during [illegible] without any influence on the haemorrhage. An operation was performed.

No. 3. A woman, aged 59, suffering from a fibroid of many years' duration. The growth was the size of a man's head, and had recently caused considerable haemorrhage. After prolonged intensive raying there was distinct diminution of the tumour and cessation of the bleeding. After a year the latter recommenced. Further *x*-ray treatment being given without the desired effect. This patient had for a long time refused a vaginal examination. She afterwards consented, and a large pedunculated submucous myoma was discovered. An operation was performed, and later the patient, unfortunately, died.

No. 4. [illegible] menstrual haemorrhage. Four series of 7 to 8 X were given over a period of three months without any influence on the bleeding. Treatment [illegible].

Of these four cases, then, one concerned a comparatively young woman, one an unrecognized carcinoma, and another a submucous myoma which was not diagnosed owing to incomplete gynaecological examination. The failure in the last case I am unable to explain, for the patient did not persevere with the treatment.

Of the other 27 cases, 3 are considerably improved, and 24 have remained cured for periods varying between 3 months and 3¼ years. Seven of these patients have remained well for 2½ to 3½ years, 10 for 1 to 2½ years, 5 for ½ to 1 year, and 2 for 3 months. These dates are up to June, 1912.

Of these 24 cases, I had to deal with 5 large or medium-sized, actively growing myomata, with complications due to the heart, bladder, or rectum, but without marked haemorrhage. Their ages varied from 49½ to 54 years.

Eleven patients had excessive myoma haemorrhage as an indication for treatment. Of these women, 6 had fibroids reaching beyond the umbilicus. Ages varied between 45 to 54 years. There was one exception only, the age being 38.

Two women were rayed on account of dysmenorrhoea, accompanied by small fibroids. Ages 46 and 50.

Two patients were rayed for climacteric bleeding. Ages 48 and 52.

There were two cases of metritic preclimacteric haemorrhage. Ages 50 and 52.

Lastly, one case, a lady 50 years of age, was rayed in order to terminate a prolonged climacteric.

Referring to the patients classified as improved, one, aged 50, was suffering from a myoma of long duration with excessive haemorrhage. The tumour diminished not inconsiderably; the haemorrhage after some of the series was absent, but began again in an irregular manner, often in only small amounts. The general health remained good.

The other two cases comprised an unmarried woman of 40 and a woman, aged 49, suffering from dysmenorrhoea. The former improved as regards the amount of pain and haemorrhage to such an extent that she did not desire to have further treatment. The second came for treatment at irregular intervals, and, although the severe bleeding disappeared, she still had haemorrhage, but at longer intervals.

In all cases classified as cured there is a complete cessation of the haemorrhage, and in those in which there had been disturbances due to the myoma a disappearance of the complications. Of the 18 patients with more or less large fibroids, the final examination by the gynaecologist showed that in 4 cases the tumour had entirely disappeared, in 10 the verdict was either that the tumour was substantially diminished, much diminished, or had almost disappeared. Of 4 cases I have no reliable record.

The result in those cases which were beneficially influenced by the treatment began almost always after the second or third series of exposures—that is, after a dose of 20 to 25 X. The bleeding stopped altogether or was only extremely slight, the discomfort was relieved, the discharge ceased, the general conditions improved, etc. When this was the case the raying was regularly proceeded with for a second, third, or fourth series, according to the requirements of the case, the large fibroids especially requiring a number of series. Only in one case have I been able to produce a satisfactory result with no more than two series; the total dose was 16½ X. This patient still remains well after two and a half years. On an average four to six series were necessary, the total dosage amounting to 50–60 X.

Of these same 31 cases, I was able to detect skin changes in 16; mostly only slight reddening, which quickly vanished. On four occasions the reaction was distinct. And twice a slightly moist dermatitis occurred.

In these last two cases, which were amongst the first treated, telangiectases developed in the course of a year or more. With these exceptions, I have never seen more than slight pigmentation result after the treatment.

As regards my technique, I use an induction coil with a Wehnelt break, a water-cooled tube, more recently a Müller "Rapid" tube. Penetration: 6 to 8 Walter or 7 to 9 Bauer, with a current of 1½ to 2 milliampères. Formerly I used as much as 3 milliampères. The filters in the early years consisted of four layers of chamois leather, or four layers with the addition of a layer of tinfoil. Latterly I have used thick sole leather or 1 mm. thickness of aluminium, with an addition of one to two layers of chamois leather.

Each series comprises four sittings, which are given on four consecutive days, preferably beginning immediately after the menses. A sitting lasts from five to six minutes.

The skin focus distance is 36 cm. Slight compression is used by means of the compression cylinder and a loofah pad.

During each series a total dose of 5 to 10 X Kienböck is reached. In the later stages of the treatment the series often consist of three instead of four sittings. Between the series I allow fourteen to twenty-one days to elapse. When the tumours are very large, or, in special cases, when rapid effect is necessary, I treat in several directions—namely, both sides, the centre, and just recently also through the back.

In undertaking this treatment it is necessary to have a complete mastery of the Roentgen technique, not only generally, but also in its application to deeper situations. Just as important is the correct selection of suitable cases. This has now been generally agreed upon as a result of the work done by many investigators during the last few years. In every case it is absolutely necessary that a gynaecologist should have made a thorough examination in order to eliminate a mistake in diagnosis, which would, of course, entail unnecessary treatment. In certain cases it is advisable microscopically to examine the tissue removed by the curette or to dilate and investigate the uterine cavity. In other words, the radiologist should have the diagnosis and later condition confirmed by a gynaecologist. On the other hand, should the gynaecologist undertake the treatment, then it is his duty to thoroughly acquaint himself with the general physical and biological properties of the *x* rays and also the necessary special technique. For the purpose of acquiring this, a so-called holiday course of *x*-ray work is about as useful as a holiday course in bimanual examination would be to a radiologist.

The indications for the Roentgen therapy are as follows: (1) Fibroids occurring before or during the climacteric, with or without pressure complications, such as those affecting the heart, bladder, or rectum; (2) in haemorrhage due to fibroids; (3) for climacteric haemorrhage; (4) for metritic bleeding before or after the climacteric; (5) to relieve dysmenorrhoea and other climacteric troubles.

The age of the patient is a particularly important factor. The older they are—that is, the nearer they approach 50 years of age or more—the more favourable is the result: it is attained more quickly and is more lasting. The younger the patient is below 45, proportionally longer is the treatment and the greater the uncertainty of the result. One is also more likely to meet with a recurrence. In my opinion women under 40 should not be rayed for the treatment of these conditions. Apart from the uncertainty of the result and a possibility of a recurrence, it is not to be denied that the intense raying required may damage the cells of the ovary, and subsequently, in cases of incomplete sterility, produce a source of danger in the development of the fetus.

Further considerations are the size of the tumour, the position, and the rate of growth. The smaller the fibroid the more favourable is the influence, although, as my own cases show, even a tumour reaching as far as the ribs is by no means a contraindication for the treatment, providing it is not of too long duration. It is hardly possible to cause the disappearance of a large hard tumour which has existed for ten to twenty years, although this may occasionally diminish and the complications may be relieved. Generally speaking, however, the large, old myomata do not lend themselves to favourable treatment. The length of raying for the skin is also a serious consideration. As regards the situation of the myoma, the interstitial and the intramural are the most easily influenced. Most authorities agree that the treating of submucous and pedunculated fibroids is absolutely contraindicated. I saw excessive bleeding follow in one of these cases after transient improvement had been attained. An immediate operation was necessary.

Opinions are divided as to whether very anaemic women who are also weak from the same cause should be submitted to Roentgen treatment. As it is undoubtedly true that at the commencement of the treatment the bleeding will be increased, Albers-Schoenberg's warning may be understood, especially as two fatal results have been recorded. Against this view, however, I and other authors can testify to the excellent results obtained in these very cases, in which an operation would be a grave risk. All those under treatment require particular supervision during the menstrual period.

There is also want of agreement as to whether the cases which have previously suffered from peritonitis or disease of the appendages are suitable for Roentgen therapy, on account of the possibility of it causing a recrudescence of the old trouble. In view of my experience I would rather omit them from the list of suitable patients, principally for the reason that I regard the diagnosis as being somewhat uncertain, and that the possibility of malignant disease cannot always be excluded.

Myomata with softening, with suppuration, or with gangrene should not be rayed. It is also better to refuse all cases of doubtful diagnosis. Especially good are the results in medium-sized myomata about the time of the climacteric, in cases of prolonged menopause due to a fibroid, in climacteric bleeding and pain when there is no myoma, and also in post-climacteric haemorrhage.

In the majority of cases a complete amenorrhoea is produced, in a few a scanty flow remains. Dysmenorrhoeic cases are improved with great certainty. That the fibroids will diminish in most instances has already been stated, some disappear. A minority, on the other hand, appear to be refractory to the treatment. If there is no improvement after the customary time, then it is better to break off the treatment. With a proper selection of the patient, however, the number of these cases should be very rare.

Special stress must be laid on the rapid improvement of the general health. In some cases I saw rapid disappearance of nervous symptoms, mental depression, misery, and discontent. The constipation which frequently accompanies the large tumours, improves with extraordinary rapidity. The heart strain is relieved, incidental vomiting, nausea, and feeling of heaviness disappear. The haemoglobin percentage of the blood increases

Sometime the patients complain at the commencement of the treatment of lassitude, headache, giddiness, and insomnia, but these complications soon disappear. I found it advisable not to treat patients after they have partaken of a heavy meal. The first sign of favourable influence to be observed is either an early or late onset of the menses or the failure of the bleeding, or its more watery character. Briefly, the character of menstruation alters. There is slight increase in the subjective sensation of heat. The violent disturbances such as may occur after operation do not appear to take place. I myself have never seen them, neither have I seen any pathological obesity produced in any of the older cases. Whether this is due to a gradual onset of the climacteric or to the influence of an internal secretion it is impossible to say.

The recently suggested curtailing of the length of treatment, even down to one day, I am unable to recommend. I must also issue a warning against great increase in dosage. When I am able to produce good and lasting results with 80 X Kienböck, I cannot persuade myself to increase to 1,000 X, especially as we do not know what damage these enormous doses will produce in the alimentary tract and its glands, even with the most accurate use of the cross-fire method, although the skin at the time may not show changes. We do not know the possible effect of such masses of well filtered hard rays. (Speder.)

The diminution of the tumour and the cessation of the bleeding are in the first place to be attributed to the damage of the ovaries, but there is undoubtedly also a direct influence on the myoma itself. Reduction in size of the myoma has been known to occur without the production of amenorrhoea, also in cases when the menopause has already occurred. Histological examination also substantiates this view. To suggest that it is due to psychical influences is ridiculous, as I pointed out at the beginning of 1909 in Berlin.

From this practical knowledge, which has been gained solely in my private institute—and amongst the patients, I may mention, have been the wives of some of my colleagues—I am urged to express the conviction that in the deep *x*-ray treatment we have an excellent and dangerless therapeutic remedy for suitable cases of myomata and menstrual anomalies.

It is now only necessary to extend the experience and to be more precise in the diagnosis and selection of cases

for a safe middle course to be adopted in the technique. Then a refusal to give this method a trial will become no longer possible or justifiable.

DISCUSSION.

Dr. Samuel Sloan (Glasgow), speaking of the tendency for fibroids to be treated by surgery entirely, suggested that surgery was invading this province, as well as others, rather too thoroughly. Dr. Haenisch's statement that these tumours practically disappeared under *x*-ray treatment was most satisfactory, and there was no doubt that his communication would lead to developments in the future.

Dr. W. B. Snow (New York) said that he had been using the *x* rays in these cases for about six years, and in a large number of instances the results were quite as uniformly good as those obtained by more drastic methods. He had not met with some of the experiences to which the author had referred—for example, he did not think he had ever seen an increased haemorrhage upon treatment. It was difficult to trace out the history of this method, but Gibson appeared to be the first to call attention to it in 1904, and remarked that the great diminution of haemorrhage was the first feature to be noted. Usually there was almost a cessation of the bleeding after the first few treatments. He agreed in general with the author's classification of cases to which this treatment was best adapted, but his experience of subserous cases was rather more favourable than the paper suggested. In one case he obtained, not only a disappearance of the small fibroma, but also of the large bulk of the tumour in the uterus. The case had so far recovered that the gynaecologist who referred it to him had stated that not only were the smaller tumours nearly gone, but the uterus was nearly normal in size. The result had been a uniform improvement in all cases treated, with one exception. The treatment in that one case was maintained for nearly three months, and the very large fibroid showed a diminution in its circumference of about 2 in., but not more. The speaker felt that the prognosis was good if this treatment were adopted. No class of work was giving better results at the present time than the treatment of fibromata by means of the *x* rays.

Dr. C. Thurstan Holland (Liverpool) said that he feared the prospects of the treatment in this country must be considered in the light of the conservatism of their gynaecological friends. The speaker had never had any actual experience of the treatment of large fibroids in this manner, but he had tried the *x* rays in cases of dysmenorrhoea. He followed Bordier's technique as closely as he could, and it was remarkably successful. Chronic invalids were turned into healthy women without any risk to themselves or any difficulty in treatment.

Dr. Haenisch, in reply, said that he had had no time to give any detailed account of the histories of the cases, with their points of difference, which had been cured. One of the most remarkable cases was that of a lady, 45 to 48 years of age, who had been in bed for ten years with continual haemorrhage. It was impossible to operate on that woman, but the result with the *x* rays was wonderful. Within two or three months she was much better, the fibroid disappeared, amenorrhoea set in. The bedridden invalid of ten years was out of bed within five months and had remained well. As to the history of this treatment, it was first discovered by a German called Deutsch, and was then taken up by French workers, such as Laquerrière and Foveau de Courcelles. Afterwards it became more thoroughly established in Germany. It was true in answer to Dr. Thurstan Holland that they had had a big struggle in order to get these patients from the gynaecologists, but the latter had to submit to the inevitable. Dr. Snow had found no increase of the bleeding on treatment. At one of their society meetings in Germany when this question was discussed it was found that experiences were fairly evenly divided in this respect. Half the radiotherapeutists had seen it, the other half had not. In both his fatal cases there was very severe haemorrhage, and the bleeding after the first series of sittings was so severe that it was necessary to operate. In another case, however, when there was also an immense amount of bleeding after the first treatment, and when the bleeding on the occasion of the next menses was also very heavy, the treatment was followed up, and the result was a cure with no recurrence.

ON THE RESULTS OF TREATING EXOPHTHALMIC GOITRE WITH X RAYS.

By Florence Ada Stoney, M.D., B.S.,
Rayologist, New Hospital for Women, London.

[*Abridged.*]

There is nothing new in my method of treatment of exophthalmic goitre beyond what many other *x*-ray workers have carried out. Our President, Dr. Thurstan Holland, is one of the pioneers in this line.

It is to me rather terrible to see these patients subjected to operation, where the risks are considerable, and shock in their nervous state always very severe and sometimes fatal; whereas by the simple procedure of putting the patient on a couch, and exposing each lobe of the thyroid alternately to a vacuum tube, the dose can be accurately regulated, and a complete cure obtained more slowly but with certainty. It is almost as bad to see them lingering in chronic ill health under ordinary medical treatment when one knows *x* rays can cure them.

I give a small dose each time (less than enough to turn the Sabouraud pastille), about seven to ten minutes, according to the tube. The anode is 6 in. from the skin, which is protected with four layers of blanket. One-half to 1 milliampère of current is run through the secondary.

If an acute case, I expose generally twice a week for a month, stop a fortnight, and then start again. In chronic cases once a week is sufficient. I do get some dermatitis, but with care nothing serious, and in acute cases the rays must be pushed hard to overcome the disease. That, indeed, has been the difficulty with my acute hospital cases: that I sometimes could not give them the rays when they most needed them, as when they are taken into the hospital they leave my charge and come under other doctors, who often cut off the *x* rays altogether just when I think the patient needs them most, or in other ways do not carry out my methods, and to my thinking delay the recovery of the patient unnecessarily. The ideal thing would be to have hospital beds under my own charge, and to administer the *x* rays from a trolley brought to each bedside. The treatment cannot be hurried, and in a severe case it takes six to eight months, including the intervals when the rays have to be stopped for a time, and this is a difficulty with many patients, especially those living at a distance, and to whom, when they are working women, the time and money for fares is a serious consideration. Private cases are more satisfactory, as the home circumstances are better and the patients are more able to understand the importance of continuing treatment as long as is necessary.

I first began *x*-ray treatment for exophthalmic goitre in April, 1908, and since then I have had 48 cases—10 in private practice and 38 at the New Hospital for Women, Euston Road, London. Of these 48 cases, 7 gave up too early to test the use of the treatment. The remaining 41 cases were of all kinds, including the very acute form seen in young adults, and the more chronic conditions found in older women. Some were early cases; many had lasted for years under general medical treatment.

Of the 41 patients, 14 are now completely cured and living their ordinary lives; some have remained cured for over two years, and most of them are working hard. I have seen or heard from all these except two within the last month, and those two I saw about six months ago. One writes, "I am splendidly fit"; another, "I am in the best of health and spirits"; a third, "I am in better health than I have been for years, though working very hard"; one patient told me, "*X* rays made a new woman of me," and so on.

Twenty-two cases have derived great benefit, and improved so much as to be able to live an ordinary life, doing their daily work though still showing slight symptoms; of these, four are still under treatment and continue to

improve. Four were unsatisfactory and showed only slight improvement, one being imbecile, one in the menopause, and the other two being unable to come the long distance to hospital to continue treatment. One could not be taken as an in-patient, and when the other was thus taken she passed out of my charge into that of another doctor, who stopped the rays.

Only one case has not done well. The condition was very acute and showed but little improvement, owing to worry, poor lodgings, and insufficient food. From 136 her pulse only came down to 112 under treatment. Unfortunately, she left my care and went home to Edinburgh, where she was induced to have the goitre operated upon, and from this she died within twelve hours.

This is the only case which has died. Thus, of my 41 cases 36 have been enabled to resume their ordinary lives, that is, 87.8 per cent.; 4 were somewhat better, and only one has not done well.

While I believe that the sufficient atrophy of the thyroid gland by *x* rays is the main factor in these results, still, other means are useful adjuncts. Though the more chronic cases can go on working and yet be cured by *x* rays, yet in very acute cases, where the heart is much dilated, almost entire rest in bed is absolutely necessary for some weeks. It is also very difficult to cure a patient who has constant worry, is overworked, and insufficiently fed. Those patients also who are being poisoned by pyorrhœa and dental caries must have these attended to. It is a great help to have tonsils and adenoids removed when enlarged. The disappointing results some *x*-ray workers have got in this disease are, I believe, due to want of attention to these subsidiary details.

The more rest, quiet, and good feeding a patient has, the quicker is the response. It is a very good rule to lie down for fifteen hours out of the twenty-four, but some of my cases had had rest and good feeding for months and years, and yet did not make a real stride towards health until *x*-ray treatment was added, when they immediately began to improve. Other cases had to continue working hard all the time, and yet recovered.

Under the rays the pulse will certainly come down to normal, the dilatation of the heart and the murmurs will disappear, unless there has been antecedent valvular disease, generally due to rheumatic fever.

The goitre in many cases disappears, but in others only decreases in size, and remains to some degree prominent. The exophthalmos nearly always becomes quite right, though often not for some months after all other symptoms have disappeared. Tremor and perspiration are slow to yield, but do so eventually. One patient had brown perspiration until nearly well, when it disappeared. The state of fear and of nervous apprehension improves from the very beginning. As palpitation stops, so sound sleep returns. The weight is a good indication of the general condition. It goes down as the patients get worse, and rises as their general condition improves.

The personal history includes rheumatic fever more often than anything else; the family history generally discloses some other near relative, with either exophthalmic goitre or myxœdema. Diabetes and epilepsy also are common.

The onset often follows a time of great strain or overwork, occasionally following the shock of operation.

Many cases of slight long-continued debility are unrecognized cases of mild exophthalmic goitre, the only indication of which may be an habitually quick pulse, say 88 to 90, or a slight fullness in the neck, or more rarely first seen in the staring eyes, or in fine tremor of the hands and the nervous manner. I was greatly struck by one out-patient who had completely tired out my ingenuity to improve her by ordinary medical methods, and who responded at once to a few *x*-ray exposures, so that I have not seen her again since.

These early cases are cured with a few treatments. Long treatment is only required where the case is very acute, where rest is unattainable, or where the case is of long standing, as in most of those I have treated.

It is difficult to tabulate results in such a disease. The pulse, for instance, is very deceptive; a patient having a pulse of 80 at home will often, when seen at hospital, rise to 112, but until she can stand an interview with the doctor without rise of pulse-rate, I do not consider her really cured. Then, again, one of the very noticeable features is the sense of well-being, which is the first change noticed by the patient and comes on quite early, after only a few treatments. Especially does the patient value the pervading feeling of quietude and loss of nervousness, and the ability to stand the small household worries with equanimity.

Twenty of the patients were married women, twenty-eight unmarried, nineteen were doing domestic work in their own homes, nine were servants, and the remainder variously employed. In age they ranged from 17 to 63, the younger cases tending to be the more acute and urgent.

The author here gave a detailed description of some typical cases, of which the following are two.

My first case, aged 25, was an extremely bad one. She was desperately ill and going rapidly downhill for three years, in spite of long rests in the hospital and ordinary heart tonics; she returned time after time, weak and ill, for further rest. She made a bound in the right direction as soon as *x* rays were begun, five weeks of *x*-ray treatment doing much more for her than months in bed. She had about forty treatments, extending over eighteen months, and working in a factory nearly all the time. Now, four and a quarter years later, she remains perfectly well, except for well compensated mitral regurgitation. Pulse 72, regular and strong; no exophthalmos, no tremor; goitre just perceptible.

Case 8, who also has heart disease, I have known for nine years—six years before the rays were started and three since. For the first six years she was shaky and ill, with a heart which had tumultuous rapid action (100 to 120) and was greatly dilated. She always had dyspnœa. She often fainted, even in bed. The *x* rays acted like magic, although she had no goitre. In less than one month her heart was quieter than it had been for six years; and in three months under the rays exophthalmos and twitching had disappeared; the heart was almost normal in size, acting quietly and regularly, about 95; no dyspnœa, and feeling wonderfully well. She has had no treatment for eighteen months, and now earns her own living. She has no dyspnœa, no goitre, no exophthalmos, no tremor. Pulse 72, steady, and feeling really very well.

The fact that surgeons are submitting cases of exophthalmic goitre to numerous operations—some having as many as five—at great risk, and the fact that there is a review in the British Medical Journal even this month (July) which states that "Roentgen rays have never been shown to be of any use at all in exophthalmic goitre," indicate that those of us who have had actual experience of the excellent results which can follow *x*-ray treatment for this disease should let their results be known.

I used to dislike having cases of exophthalmic goitre especially in the out-patient department, where it is impossible for the patients to continue earning their living and to follow a treatment which consists of unlimited rest and feeding up, which might have to continue for months. Even if taken into hospital and discharged as alleviated, one knew in the bottom of one's mind that very little had been accomplished in most cases, and that the patient would be very shortly as bad as ever. But now, by the help of *x* rays, the scene is quite changed. The patient who comes up with palpitations and exophthalmos—a weak, twitching, emaciated, anxious object—becomes day by day more placid, and happy, and fat, till she attains to a sense of well-being and is again able to enjoy life. This is accomplished in many cases while the patient continues to work very hard, so that now there is no class of patient I more delight to see. They demand time and care and trouble, but one can say with certainty that one knows exactly the treatment required, and that it will restore them to health if properly carried out. They will generally remain a nervous type, but that must be accepted, unless one risk an overdose, causing too much atrophy of the thyroid, so that myxœdema results. The aim is to cause just sufficient atrophy of the thyroid to leave a healthy amount of secretion and no more.

I have been treating these cases with *x* rays now for four and a quarter years, and am more and more convinced that it is *the* treatment of the future.

I think it is quite possible many neurasthenics whose symptoms resemble in certain respects cases of mild exophthalmic goitre would greatly benefit and be rendered more placid by having their thyroid secretion diminished, but so far I have not attempted this.

Epilepsy also, from its close association with exophthalmic goitre, might be worth submitting to the rays.

Table showing Results in 48 Cases of Exophthalmic Goitre treated with X Rays by Dr. Florence Stoney.

No. of Case and Initials.	Age.	Pulse.		Exophthalmos.		Goitre.		Tremor.		Result.
		First.	Last.	First.	Last.	First.	Last.	First.	Last.	
1908.										
1. B.	25	136	72	+	0	+	Slight	+	0	Well.
2. H.	23	136	80	+	[illegible]	+	0	+	0	Well a year ago.
3. W.	26	122	112	—	—	+	—	+	—	Gave up after eight treatments.
1909.										
4. C.	38	123	120	—	—	+	—	+	—	Gave up after three treatments.
5. W.	24	120	—	—	—	+	—	+	—	Gave up after two treatments.
6. D.	46	136	84	+	Slight	+	0	+	0	Better than for years.
7. W.	17	80	80	+	0	+	0	—	0	Better; dysmenorrhœa less; ten treatments.
8. B.	33	124	72	+	0	0	0	+	0	Remarkably well.
9. S.	30	120	80	0	0	+	0	+	Slight	Well eighteen months later.
1910.										
10. E.	20	132	86	0	—	—	—	+	0	Better in self; fourteen treatments.
11. W.	39	132	92	+	0	+	Softer	+	—	Much better.
12. S.	29	132	80	+	Slight	+	Slight	+	Slight	Much better; fourteen treatments.*
13. R.	24	110	96	+	0	+	Less	—	—	Much better; twelve treatments.
14. P.	37	132	96	+	Less	0	0	+	+	Teeth bad, feels better.
15. W.	28	148	140	0	—	+	—	+	—	Gave up after two treatments.
16. H.	41	136	88	0	—	+	—	+	—	Eight treatments.
17. B.	33	120	96	0	[illegible]	+	Less	+	0	Better; back at work.
18. F.	45	112	80	+	Less	0	0	—	—	Gave up after three treatments.
19. R.	18	160	120	0	0	+	+	+	+	†
20. P.	26	136	96	+	Less	+	Less	+	Less	Going on well.
21. T.	41	148	100	+	Slight	+	Slight	+	0	Was well a year later.
22. W.	30	100	72	+	Less	0	0	—	—	Better.
1911.										
23. B.	39	120	84	+	0	+	2½" less	+	0	Feels quite well.‡
24. H.	49	132	100	+	+	+	+	+	+	§
25. H.	24	136	72	+	Less	+	0	+	Slight	Feels well; working.
26. L.	54	134	84	+	Less	0	0	+	+	Better; still under treatment.
27. K.	33	108	96	0	0	+	Slight	+	0	Working; morbus cordis.
28. B.	24	136	112	+	0	+	Less	+	0	Very well.
29. H.	39	116	72	0	0	+	Slight	+	0	Working; morbus cordis.
30. G.	63	96	[illegible]	[illegible]	0	+	Less	+	Less	Better.
31. S.	28	120	60	+	0	+	0	0	0	Heart very irregular; not working.
32. B.	44	120	88	0	—	+	—	0	0	Six weeks' treatment; much better.
33. B.	36	128	100	+	—	+	—	+	—	Gave up after three treatments.
34. S.	22	136	120	0	0	+	0	+	0	Epileptic fits completely stopped.‖
35. M.	18	136	120	0	0	+	+	+	+	Died from operation in Edinburgh.
36. D.	34	180	84	0	0	+	Slight	+	0	Quite well.
37. W.	24	141	92	+	Slight	+	0	+	0	Nearly well; still under treatment.
38. B.	53	92	72	0	0	+	0	0	0	Well.
39. C.	38	108	80	0	0	+	Slight	+	0	Perfectly well.¶
40. B.	27	116	104	+	0	+	Less	+	Slight	Better; still under treatment; teeth bad.
41. W.	33	120	106	0	0	+	+	+	+	Not done well; tuberculo.
42. C.	26	100	80	0	0	+	+	0	0	Better; still under treatment.
43. S.	39	140	104	+	—	+	—	+	0	Too ill to continue to come for treatment; six treatments.**
1912.										
44. T.	42	116	104	+	Less	+	Less	+	Less	Acute; better; still under treatment.
45. L.	24	92	92	+	—	0	—	+	—	Gave up after four treatments.
46. C.	36	124	128	0	[illegible]	+	—	+	—	Very dizzy; gave up after four treatments.
47. H.	19	138	112	+	+	+	1" less	+	Less	Acute; better; still under treatment; tonsils huge.††
48. W.	51	136	84	0	[illegible]	0	0	0	0	Feels rather better; still under treatment.

[illegible] ... [illegible] ... [illegible] ... [

SUMMARY.

Cases Cured (14).

No. of Case.	No. of Treatments.	Time Continued Well Since.	No. of Case.	No. of Treatments.	Time Continued Well Since.
1	40	2½ years	38	30	9 months
6	42	2½ ,,	39	16	8 ,,
11	30	2 ,,	36	26	7 ,,
8	42	18 months	17	21	7 ,,
7	10	18 ,,	23	24	2 ,,
9	40	15 ,,	25	50	1 ,,
28	14	14 ,,	37	50	Just finished.

Much Improved (22).

No. of Case.	No. of Treatments.	Present Condition.
30 ...	16	Underfed; still nervous.
29 ...	25	Morbus cordis; depressed; working too hard; otherwise well.
32 ...	6	Probably well.
34 ...	14	Pulse rapid, and still nervous when treatment stopped; no fits.
2 ...	20	Pulse rapid when overworked.
12 ...	14	Working; tremor again; two children seriously ill.
14 ...	20	Nervous; overworked.
21 ...	30	All symptoms slightly.
27 ...	25	Morbus cordis; nervous when overworked (sister died from operation on goître).
24 ...	12	Heart still irregular; went to the country before cured; can now walk five miles (eighteen months later).
20 ...	20	Gone to the country; slowly improving.
19 ...	15	Gave up before cured; had all symptoms still; factory work for two years.
3 ...	8	Much better when treatment stopped; not seen since.
10 ...	14	Not seen since.
22 ...		,, ,,
...	12	,, ,,
16 ...	8	,, ,,
40 ...	30	Under treatment still.
42 ...	10	,, ,,
47 ...	15	,, ,,
44 ...	15	,, ,,
26 ...	6	,, ,,

Some Improvement (4).

Case 43.—Had six treatments, then went from under my care. Five months later still a marked case.
Case 48.—Menopause and worry.
Case 41.—Imbecile; dental caries.
Case 31.—Only irregular heart now; is in hospital.

A Little Better (1).

Case 35.—Very acute, overworked and in lodgings (pulse came down from 136 to 112; died from operation).

Gave Up (7).

Case 46.—Received 4 treatments.
Case 4.—Received 3 ,,
Case 15.—Received 2 ,,
Case 18.—Received 5 ,,
Case 33.—Received 3 treatments.
Case 45.—Received 4 ,,
Case 5.—Received 2 ,,

DISCUSSION.

Dr. H. LEWIS JONES (London) congratulated Dr. Stoney upon a valuable contribution to the literature of the subject. For the most part, the references in literature to the treatment of exophthalmic goître by the *x* rays were fragmentary, and the treatment itself appeared also to have been of a fragmentary kind, patients having come for a little while, and, after obtaining some small improvement, having discontinued it and disappeared.

Dr. WILLIAM MITCHELL (Bradford) said that Dr. Stoney's experiences coincided with his own. He had treated a number of cases by means of the *x* rays, and his results had been uniformly good. In all of them he found that the pulse-rate came down very rapidly, the tremors disappeared, and a general feeling of well-being succeeded and increased.

Dr. W. B. SNOW (New York) commented upon the excellent manner in which the reports were made in this paper. From such careful records they could make their own calculations. The speaker's own experience had been exactly the same as the author's, and the reason for the uniformly good results was sufficiently clear when they reflected that the influence of the Roentgen rays on the thyroid was inhibitory, and that the lessened secretion of the thyroid abated the symptoms and arrested the progress of the disease. He had not confined his treatment to the *x* rays, but he had had uniform results in his early cases with the static wave current, which was a valuable means of dealing with the symptoms of hyperthyroidation. One symptom that in his experience always remained was the exophthalmos. There was no disappearance of the protruding eyeball, although all the other symptoms might disappear and the patient's recovery otherwise be complete. A further feature of this line of treatment was the marked improvement in the general nutrition. A new method which had come very much into favour as an aid in the early treatment of these cases, particularly for the reduction of the tachycardia, was mechanical vibration applied between the seventh cervical and the first dorsal vertebrae for a period of five minutes. It was remarkable to what a degree the pulse-rate would be lowered after the first treatment, and, moreover, the lowered rate would persist.

Dr. F. HOWARD HUMPHRIS (London) added his testimony to the value of this treatment. His experience of it had dated from 1904, and his first case was that of a lady aged about 50 years. The tremor was so great that she was unable to feed herself. She also stated that her mother had died of this complaint at her own age. After six months' treatment she could not only feed herself but was able to go for a sea voyage. She returned later for further irradiation, and two years afterwards was symptomatically cured, with the exception of the size of the gland, which remained about the same. This result had frequently been observed since—that the nervous symptoms disappeared, while the size of the growth seemed to give rise to no inconvenience.

Dr. JAMES METCALFE (Bradford) suggested the value of a solution of hydrofluoric acid. He found that by giving an exophthalmic patient a dilute hydrofluoric acid dose of 10 or 20 minims in a glass of water three times a day the effect was very good. It was possible, undoubtedly, to cure the exophthalmos by this line of treatment, but he noticed that if the *x*-ray treatment of the goitre were combined with it the result was more rapid than if either treatment were taken alone.

Mr. GILBERT SCOTT (London Hospital) said that the actual dosage in these cases should be given. To say that treatment was administered twice a week was vague. He was hoping for something more definite in this respect. He had found comparatively heavy doses yield such good results that in view of the saving of time, and of the greater likelihood of getting hold of the patients for a few large doses than for a great number of small ones, he was inclined to that method. He used the Sabouraud tint pastille dose, with a filter consisting of ½ mm. of aluminium, at a set distance of 7 cm. from the anode. If the Sabouraud "B" were given once a week to start with, this filter being interposed, he thought the gain in rapidity with which the results were arrived at would be considerable.

Dr. A. E. RAYNER (Preston) asked whether Dr. Stoney had made a practice of exposing the whole of the gland at once, or whether any portion had been shielded from the effects of the rays. He was struck by the considerable variation in the number of doses given in these cases. If the whole gland were exposed many times, it seemed to him that there was some risk of the complete atrophy of its function.

Dr. STONEY, replying upon the discussion, said that although exophthalmos had been mentioned as the one

symptom which persisted after all the others had disappeared, it would be found on reference to her statistics that in ten of her cases the exophthalmos had absolutely disappeared, and that in seven others it had diminished, while in four it was described as "slight." The exophthalmos sometimes recurred after a time, and the same remark applied to the goitre. She had never tried mechanical vibration. As to dosage, it was her practice to give much less than the Sabouraud "B"—not more than half that dose—and to put the tube quite 6 in. away. The number of doses to be given depended largely upon the patient's social condition. If the patient continued at her work much more energy was required in order to effect a cure.

THE TREATMENT OF HYPERTRICHOSIS WITH X RAYS.*

By ARTHUR ERNEST RAYNER, M.D.,

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WE have probably all realized that it is not the most serious or dangerous or even the most painful conditions that produce the most mental worry or anxiety in our patients, and most of us must occasionally have been puzzled by the obsession of some patients over what may to us appear a trifling matter. I do not think that anything causes more distress—leading in many cases to a condition of neurasthenia, and in a few to what it is no exaggeration to term a monomania—than facial and cosmetic disfigurements, of which hypertrichosis in women is one of the most frequent and at the same time one of the most difficult to treat with complete safety and satisfaction.

The number and variety of methods, all more or less useless, that have been practised in the past, and the large number of quack preparations advertised, is proof that there is still no recognized safe and legitimate method of cure (that is, of permanent epilation) in hypertrichosis.

The expedients of pulling out the hairs by forceps, the use of scissors, of the razor, and of chemical depilatories (for which latter, extravagant and entirely untruthful claims are constantly advertised in lay papers circulating in every grade of society), are all temporary only, and all are more or less objectionable, inasmuch as the individual hairs grow again but thicker, stronger, and often darker than before; and frequently the treatment causes some slight pigmentation of the skin surrounding the hair follicles. The chemical depilatories almost invariably set up also some skin irritation.

Electrolysis has been practised since 1875, and is, as of course we all know, if carefully and properly performed, highly satisfactory in a limited class of cases, and, I must add, entirely unsatisfactory in other classes. In those cases:

(*a*) Of hypertrichosis in which a comparatively small number of hairs varying from those that are fairly thick and strong to really strong bristly hairs, and in which the hairs do not grow very thickly and closely together, or in such numbers as to constitute an actual beard, electrolysis is in my opinion the safest and the most certain method of permanent cure. I should describe two other classes of cases, however, in which electrolysis is quite unsatisfactory.

(*b*) Those (generally from 20 to 35 or 40 years of age) in whom there is an abundant growth of close, soft, downy hairs, which may affect the upper lip and the edges of the chin only, or which may affect the whole of the lower part of the face, and

(*c*) Those (generally from about 35 onwards) in whom there is a widespread thick growth of stout, strong hairs, which frequently approaches in appearance the beard of a man.

In these two latter types—(*b*) and (*c*)—electrolysis is not only inefficient but it positively exaggerates the evil. It is practically impossible to remove such an enormous number of hairs when planted very closely together, and unfortunately the stimulation of the electric current with the subsequent increase of blood supply due to the slight reaction, has the distressing effect of actually increasing the hair growth in both strength and numbers, so that the hair may be actually growing thicker and stronger whilst treatment by electrolysis is going on. In my opinion electrolysis in these widespread growths is always unjustifiable.

The idea of employing the *x* rays in such conditions was first put into practice by Schiff and Freund as early as 1898, following their successful treatment of a naevus in which there was some hair growth. We have all, no doubt, been struck by the permanent epilation which we have frequently effected as a by-result in the treatment of lupus and other skin conditions, and in some of these cases certainly the cosmetic result has been excellent. There has been no visible correlated atrophy, telangiectasis, or pigmentation of the skin. The difficulty, of course, is always to *ensure* such a happy result with certainty. Most of the attempts at *x*-ray treatment of hypertrichosis in the early days ended in disaster, and many cases were followed by burns, scars, atrophy, telangiectasis, pigmentation, and a curious senile appearance of wrinkling and shrinking of the skin. Following these bad results, the method fell into disuse and discredit for practically ten years. Then, with the increased knowledge of the effects produced by rays of varying penetration, and of methods of accurate measurement and dosage, and more particularly filtration, Noiré, in October, 1908, published results of a method of treatment in which he gave *x*-ray exposures, producing the "B" tint on the pastille, and used a filter of aluminium 0.4 mm. thick at a distance of 4 cm. from the skin of the patient. He gave this dose to each area under treatment, at intervals of fifteen days, on six successive occasions—that is, occupying ninety days, by which time, he said, all hairs had fallen out. After this he gave two more (that is, three in all) exposures, each at intervals of a month. After that he gave a rest for the skin to recover from any reaction, during which he found a slight regrowth of hair (that is, after even eight exposures of Sab. B!), equivalent to one-tenth of total original hairs. After that he gave two or three more applications in all—that is, a total of eleven to twelve applications for each area treated, the length of time occupied by this treatment being eight months to one year. Noiré did not claim that all the results were final, but that they were far better than anything previously attained. The scepticism which still exists, however, as regards the *x*-ray treatment of this condition is shown by Dr. Morton's note in the *Medical Annual* of 1911:

> Notwithstanding the safer method devised by Noiré (see *Medical Annual*, 1910), the *x*-ray treatment of hypertrichosis does not seem to be gaining ground. The hair follicles being normal structures, by the time these are destroyed other structures of a normal character are bound to suffer also. The immediate effect is a parchment like condition of the skin, which has anything but a normal appearance, and after some months, or even a year or so, there is a probability of telangiectases appearing, which are not preferable to the original condition. Rice frankly states that the *x*-ray treatment is a failure. Our own belief is that the only safe way to bring about a satisfactory epilation by the *x* rays that will be permanent and not unsightly is by a prolonged course of short applications from a hard tube, and a filter that will cut off all those rays likely to produce dermatitis. This belief is based on observations made in the course of a long experience in treating chronic and malignant cases. It is doubtful if patients would go through so much for the sake of removing a few superfluous hairs. Even with this method the risk of producing the withered senile appearance of the skin is not entirely absent.

And by this abstract from Musser and Kelly's *Dictionary of Treatment* in 1912:

> In spite of its apparent theoretic adaptation, radiation is neither a satisfactory nor a successful method for the permanent removal of healthy hair. In order to effect permanent epilation in this condition it is necessary to produce either partial or complete atrophy of the comparatively healthy follicles, which implies a similar effect upon the associated sebaceous glands. In any instance, success is impossible without a very close approach to the limit of safety, and while results have occasionally been successful, they are uncertain and unreliable if the treatment be kept well within safe limits. While rather extensively employed abroad, conservative American dermatologists do not regard radiation as justifiable in the treatment of hypertrichosis, except in an occasional case, for special reasons.

I can only say that my experience leads me to be rather more sanguine.

I had hoped to show you 4 cases to-day, but have only been able to bring 3, as one patient is at present away from the district. Two of the cases are of young women whom I treated for moustaches, in each instance fairly thick and close. Unfortunately, I began both these cases before I had seen Noiré's paper, and I did not at first benefit by the knowledge of his technique, and used filters which I now know were too thin, and therefore did not avoid on some occasions very smart erythema.

* The [illegible] cases [illegible] in detail were introduced to the Section and inspected by the members.

In the first case, that of Miss C., a young brunette who had a small black moustache of close, soft hairs, I began treatment on November 30th, 1909 (that is, two and a half years ago). I have given the right side of the lip fourteen exposures of the full Sab. B dose, and the left side of the lip only eleven such doses. The first five doses were given at intervals of from two to three weeks, then a rest of three and a half months; after that at intervals of from one to four months; the exposures extended from November, 1909, to April, 1912. At first I used filters of four layers of bowler felt, then of aluminium 0.25 mm. thick, but on one occasion got such very marked erythema that I very soon stoped that; since then I have used filters 0.5 mm. thick, and have never since had any alarming erythema, only just a slight reaction. There are still remaining a few short shafts of hairs of low vitality, but I think you will agree that on the whole, especially considering the thin filters used and the erythema occasionally produced, the result is very satisfactory. There are no telangiectases or other marks, and the girl's appearance is very much improved.

In the second case, Miss E. had a marked moustache, which had been stimulated by the use of depilatories. I have given twelve exposures on the right half of the lip, and eleven on the left half. As in the previous case, I used filters of felt on two of these occasions, of 0.25 mm. of aluminium on four, and 0.5 mm. aluminium on six occasions. I began treatment on July 26th, 1910, and it extended at intervals up to June, 1911, though I have given two final exposures in April and May, 1912. Here I got some moderate erythema, but not nearly so much as in the last case. There is a small telangiectasis on the mucous membrane of the lip, which I shall attempt to remove by CO_2 snow or by the electric needle; beyond this the result, as I think you will agree, is good. Here, again, her appearance is very greatly improved. The telangiectasis on the lip indicates what one would expect—that the mucous membrane of the lip is more tender than the skin, and, therefore, I shall in future shield the mucous membrane by shaped strips of lead.

The third case is that of a middle-aged woman, whom I first saw with practically a full, short beard. It had been made worse by depilatories and had grown very rapidly worse during a course of electrolysis by a quack, evidently being much stimulated by the reaction. She was in a low, nervous condition in consequence when I first saw her on February 23rd, 1912. I divided the hair-bearing portion of the face into six areas by cutting shapes in triple sheets of lead foil, (1) right cheek, (2) left cheek, (3) right half upper lip and chin, (4) left half ditto, (5) right half neck, (6) left half neck. These lead sheets I kept, afterwards fixing at subsequent exposures each sheet on its own corresponding area when that area came to be treated again. The edges of the lead sheets were fixed to the surrounding skin by strips of adhesive rubber plaster. Each area has had six exposures up to date, of which, however, you only see the effect of five, because the sixth was given only last week. The first two doses were given at intervals of fifteen days; all the others at intervals of twenty-one days. A filter of 0.5 mm. aluminium has always been used, and, as stated, the rest of the skin of the face has been cut off from each area under treatment by shapes cut out of thick lead foil. All the softer thinner hairs had fallen off in May, but a few thick wiry hairs remained. After an interval the hair returned, and I began to treat again in July, so that you see this patient only one-third of the way through treatment and with a regrowth of peladic hair, which, of course, will again fall out with the exposures to come. She has some faint temporary erythema shown at the edges of the lead masks, but this will disappear in time. There is no sign of atrophy, etc.

Technique.—I use a 6 to 7 in. bulb tube with a current of from 1 to 2 milliampères from a Simon electrolytic interrupter, and a 12-in. Newton intensified coil. The anode of the tube is always 15 cm. from the skin. The pastille and the aluminum filter are 7½ cm. from the anode and from the skin, and I do not cover the pastille by the filter, but cut out a little square notch in the filter, which allows the pastille to be exposed direct to the rays, hence the skin only gets rays given off from the tube sufficient to "turn" the pastille *minus* all those soft rays cut out by the filter. The pastille is "turned" in from seven to eight minutes by a tube of 5 to 6 penetration on the Benoist scale. When treating a moustache I have sometimes exposed the whole of the right and left sides of the lip at once, and sometimes have treated each half separately. Up to now the latter has been the most successful, although it takes twice as much time and trouble, but I have never yet been satisfied with any of the means I have adopted to bring the whole lip—from one extreme to the other—into one straight flat surface, which could be evenly treated by one and the same *x*-ray exposure. I have used pads of wool, lint, gamgee tissue, etc., packed between the under-surface of the lip and the front of the alveolus of the upper jaw, but they have a habit of slipping down during the exposure and are not very reliable. In my next case I shall use a bridge of celluloid or fibre made from a mould in the same way as a tooth-plate, so that the under concave surface of the bridge shall fit on the front of the alveolus, and the upper flat surface shall pad up the under surface of the lip into one flat straight line, and I shall in future always shield the mucous membrane of the lip by strips of lead.

I do not claim that these are perfect results, but I think they are satisfactory and better than could have been attained by any other method, and I think they show that there is no need for the unduly alarmist position that at present prevails regarding this method of treatment. I shall go on with the method, but I shall never again use a filter of less than 0.5 mm. aluminium, I shall shield the lips, and I shall always give a good interval (from one to three months) for the skin to recover after the first fall of hair. I am encouraged to believe that the treatment of hypertrichosis by the *x* rays will be found a safe and permanent method of treatment.

THE X-RAY DIAGNOSIS IN SOME FORMS OF ARTHRITIS.

By Reginald Morton, M.D., F.R.C.S.Edin.,
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(*With Special Plate.*)

So far as I am aware, none of the papers presented at this Section have dealt with the subject of arthritis in any special way, and yet it is sometimes a complaint on the part of some medical men that an *x*-ray examination of an obscure case of joint trouble is frequently unsatisfactory—not always without some justification.

With the help of recent advances in medical knowledge and improvements in *x*-ray technique, I feel sure we may claim to be now in a position to be of some real assistance in the differential diagnosis of the various forms of arthritis, even to the extent of entirely separating conditions that until quite recently were looked upon as merely stages of the same pathological condition. Of course, in a paper of this kind, one can only outline the subject very briefly, but I hope to be able to indicate the chief points of difference and so make a kind of working basis. It should be said, however, that cases will arise at times where it is a matter of extreme difficulty to make a positive diagnosis using every method at our disposal, but no doubt these will tend to get fewer in the future. If we consult various textbooks on medicine and surgery, even in those of quite recent date, it is usual to find "rheumatoid arthritis," "osteo-arthritis," "arthritis deformans," and perhaps one or two other terms, used as synonyms of one and the same disease. "Arthritis deformans" is a term that ought to be abolished; it conveys nothing as to the nature of the condition producing the deformity. With the object of keeping this paper within reasonable limits, I propose to confine myself to pointing out the essential differences between rheumatoid arthritis and osteo-arthritis, though I shall show some examples of other forms of arthritis by way of emphasizing their characteristic differences.

It is now very generally assumed that the real cause of most forms of arthritis is the action of a chemical substance upon one or other of the structures that make up the joint, and that this chemical substance is a bacterial product. Whether this substance is produced locally in the joint, or at a distance and conveyed to the joint by the circulation, is a matter of controversy; both views have many able and ardent supporters, and we as radiographers

may well leave them to fight it out. I feel quite sure, however, that the micro-organism producing rheumatoid arthritis is different from that causing osteo-arthritis, but I believe it to be possible to have a mixed infection, when, of course, it becomes difficult to class the case under one or other heading.

I am indebted to Mr. W. McAdam Eccles for the following working definition of rheumatoid arthritis: "An arthritis affecting many joints, but chiefly the smaller ones, occurring usually in the female sex, and always due to the absorption of a toxin."

In view of the existing uncertainty as to whether the toxin originates in or at a distance from the joint, it might be better to substitute the word "action" for "absorption," but this point is one of small importance.

The changes in the articular cartilages form probably the most striking feature of these two diseases, as well as a valuable means of differentiating between them. These differences also support the theory that the chemical substance or toxin producing the changes must be of a different character in each case, and have its origin in a different variety of micro-organism.

In rheumatoid arthritis the earliest and most characteristic change that we can detect radiographically is that of absorption of the articular cartilages, and this is apparent to us in the diminution of the normal interval between the ends of the bones that make up the affected joint. It is also quite apparent to any one if a corresponding radiograph of a normal joint is at hand for comparison. Even in what appears to be a very early case this absorption may have advanced so far as to give the appearance that the bony surfaces are actually in contact. As it is among the smaller joints that we find most cases of this disease, those of the hands and feet are well adapted for study. Fig. 2 is of the hands of a young female adult, who had been under observation for about eight months. Looking along the metacarpo-phalangeal joints it will be seen that the joint spaces are reduced in width irregularly, practically none in the fore and middle fingers, while those of the ring and little fingers are only partially narrowed. Similar changes are to be seen in several of the other joints in both hands, and are roughly symmetrical. This is a comparatively recent case of rheumatoid arthritis, but Fig. 4 is one of longer standing, and is to show the ulnar deflection of the fingers that so frequently happens when this disease attacks the hands. Fig. 1 is a normal hand for comparison.

Now let us examine Fig. 6. While the joint spaces are reduced, they are only partially so, and the spacing between the metacarpo-phalangeal joints, for instance, is more or less even. This is a case of osteo-arthritis of many years' standing. We, of course, know that there are serious cartilaginous changes in this disease, but absorption is not so marked as in rheumatoid arthritis. The cartilage becomes fibrillated or otherwise disintegrated, but not so rapidly removed by absorption. It will be noticed that there is no ulnar deflection of the fingers in this case.

Corresponding changes are to be seen in the knee-joints shown in Figs. 10 and 11, No. 9 being normal. The absorption of cartilage is also well seen in Fig. 14, affecting the interphalangeal joints of the toes. Fig. 15 illustrates a remarkable case of deformity accompanying rheumatoid arthritis. The patient's other foot was deformed in practically the same way.

Erosion of the articular ends of the phalanges is well shown in Fig. 2, notably the first interphalangeal joint of the right forefinger and that of the left ring finger. There is a notable absence of this erosion in Fig. 6 (osteo-arthritis), and for the sake of clearness a joint from each of these two cases is shown life-size in Figs. 3 and 7. This erosion is not a constant feature of rheumatoid arthritis any more than it is constantly absent in osteo-arthritis, but the general rule holds good. So far as my observations go, it might be said that while both these forms of arthritis are slowly destructive in varying degrees, we see more effort at repair in osteo-arthritis than in the rheumatoid form. The evidence of this is to be found in the formation of osteophytes, the increased density of some of the affected bones, and the condensation (eburnation) that takes place on the articular surfaces as the cartilage gets worn away.

This formation of osteophytes also forms a useful differentiation between these diseases. Speaking generally, these are always present in osteo-arthritis, and they are mostly absent in the rheumatoid form. When present in the latter condition they are always close to the articular border. This brings to mind another point of difference, which is that in rheumatoid arthritis it is that part of the bone represented by the epiphysis that is mostly attacked. Osteo-arthritis does not confine itself to the epiphyseal portion in anything like the same way. In Figs. 6 and 7 these bony outgrowths are seen on the phalanges well away from the articular ends. The "lipping" of the articular borders so common in osteo-arthritis is due to the ossification, or at least calcification, of fragments of the articular cartilage that get pushed out from between the bones as a result of disintegration and pressure. It is well shown in Fig. 11.

Fig. 5 is a case of rheumatoid arthritis of the left carpus, showing absorption of cartilage and slight osteophytic formation. This case was originally thought to be tuberculous, the two diseases frequently bearing a strong resemblance, clinically and radiographically. The black markings around the bases of the fourth and fifth metacarpal bones of the right hand are the fragments of a steel pen that had been driven in fourteen years before. The injury was so trifling at the time, and as it gave no symptoms afterwards, it was only with difficulty that the accident was remembered.

Fig. 8 illustrates rheumatoid changes in the shoulder. The most striking feature is the high position of the head of the humerus relatively to the glenoid fossa and the acromion. This is due to the absorption of the articular cartilages, and also to the disappearance of the sub-acromial bursa. In some cases the head of the humerus is so high up as to give the appearance of articulating with the under side of the acromion.

Fig. 12 shows very beautifully the radiographic changes in Charcot's disease. Absorption and destruction, as well as ossification, or at least calcification, of the disintegrated cartilage are well seen. A large osteophyte is seen attached to the tibia also; but while similar changes, in the abstract, are seen in the other diseases, the characters are so vastly different that there is little risk of confusion. Moreover, the gross destruction of the ligaments and subsequent dislocation found in Charcot's disease are seldom, if ever, equalled in rheumatoid arthritis or osteo-arthritis. The dislocation of the toe in Fig. 15 is of course severe, but in no other respect is there any resemblance to Charcot's disease.

A more or less constant feature of rheumatoid arthritis is the absorption of cancellous tissue at the ends of the bones that make up the affected joints. It is, however, not always present, and it must be remembered that this thinning of the trabeculae practically always follows disuse after comparatively short periods of time in a perfectly healthy bone. In rheumatoid arthritis the normal functions of the joint are partially or perhaps completely suspended, if only to avoid the discomfort caused by movement. It thus comes to be a very pertinent question as to how far the rarefaction is the result of the disuse and how much of it is really part of the disease.

In Fig. 2 this rarefaction is by no means uniform with the degree of joint mischief, except along the bases of the metacarpal bones of both hands. Some of the interphalangeal joints that are seriously affected show little or none in the bones comprising them.

There is practically no rarefaction in the bones of Fig. 6, a case of osteo-arthritis, nor is it at all apparent in the left carpus of Fig. 5, a case of rheumatoid arthritis. On the other hand, cases are seen somewhat frequently where the rarefaction of the cancellous tissue exists to such an extent as to give reason to believe it constitutes a more or less important feature of the disease.

Fig. 16 shows the general appearance of tuberculous disease affecting the tarsus. It will be noticed that there is no narrowing of the joint spaces and no attempt at the formation of osteophytes. There is, however, very extensive rarefaction of the cancellous tissue, and the lime salts have been removed to such an extent that it is impossible to get a clear radiograph of the part. This form of arthritis is seldom likely to be confused with rheumatoid arthritis or osteo-arthritis in the present state of our knowledge, this will be the more easily understood if this figure is compared with some of the others.

DR. REGINALD MORTON: X-RAY DIAGNOSIS IN SOME FORMS OF ARTHRITIS.



FIG. 1.—Normal.



FIG. 2.—Rheumatoid arthritis.

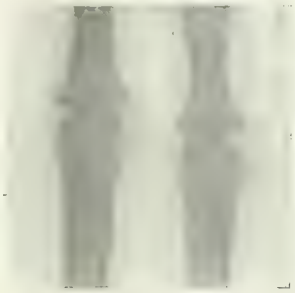


FIG. 3.—Rheumatoid arthritis.



FIG. 4.—Rheumatoid arthritis.

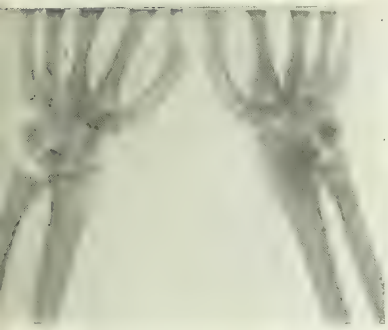


FIG. 5.—Rheumatoid arthritis.



FIG. 6.—Osteo-arthritis.

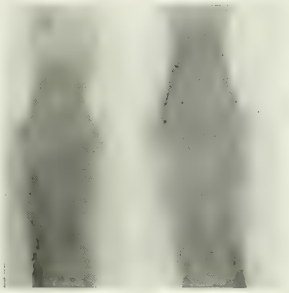


FIG. 7.—Osteo-arthritis.



FIG. 8.—Rheumatoid arthritis.



FIG. 9.—Normal.



FIG. 10.—Rheumatoid arthritis.



FIG. 11.—Osteo-arthritis.



FIG. 12.—Charcot's disease.

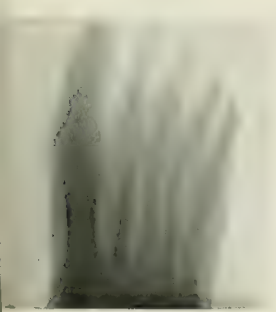


FIG. 13.—Normal.

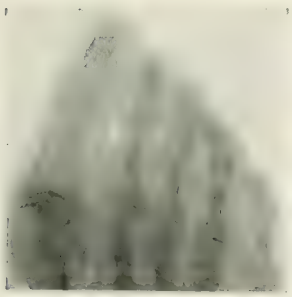


FIG. 14.—Rheumatoid arthritis.



FIG. 15.—Rheumatoid arthritis.

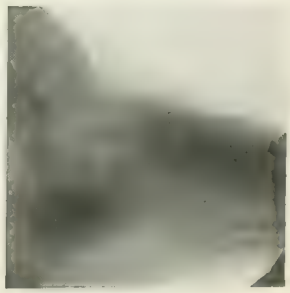


FIG. 16.—Tuberculous.



Fig. 1.—Skiagram of the lungs of a healthy man, aged 47, killed by an accident. A number of calcareous nodules at the roots, and another mass at the left apex, which is the seat of obsolete tuberculous disease. Arching strands of fibrous tissue may be traced from the ascending branch of the left bronchus to the apex, showing the two lesions to be continuous. Tr., trachea; R.B., L.B., right and left bronchus; *a*, *d*, ascending and descending branches of the left bronchus; *c*, calcareous nodules at the root and at the left apex; F., thick strands of fibrous tissue. (See text.)



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Fig. 3.—Skiagram of the chest of a man aged 25. Taken from the front. The physical signs were slight, and were confined to the left apex. The extensive peribronchial disease had evaded detection. There are numerous calcareous nodules at both roots.



Fig. 5.—Skiagram of a girl of 12 (the same subject as Figs. 6, 7, and 8), showing peribronchial mottling on the right side (P), and linear shadows (fibrous tissue around air tubes) on the left. At this time there were no physical signs of disease in the chest, and no symptoms pointing to lung mischief. (See text.)

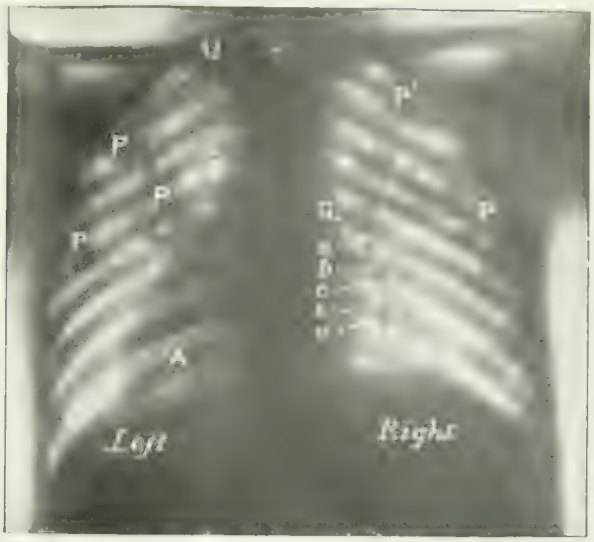


Fig. 6.—Skiagram in the same subject as Fig. 5, taken 1½ years later. The disease had advanced considerably on the right side, and there was now a large wedge-shaped patch of peribronchial phthisis on the left side. (See text.) G, Tuberculous glands; P, P', patches of peribronchial phthisis; A, air tubes surrounded by an excess of fibrous tissue; *r*, commencing involvement of left apex; *a*, *b*, *c*, *d*, *e*, tuberculous nodules in right lower lobe; *v*, section of a blood vessel, cut across. (Compare Figs. 7 and 8, which are lettered to correspond.)

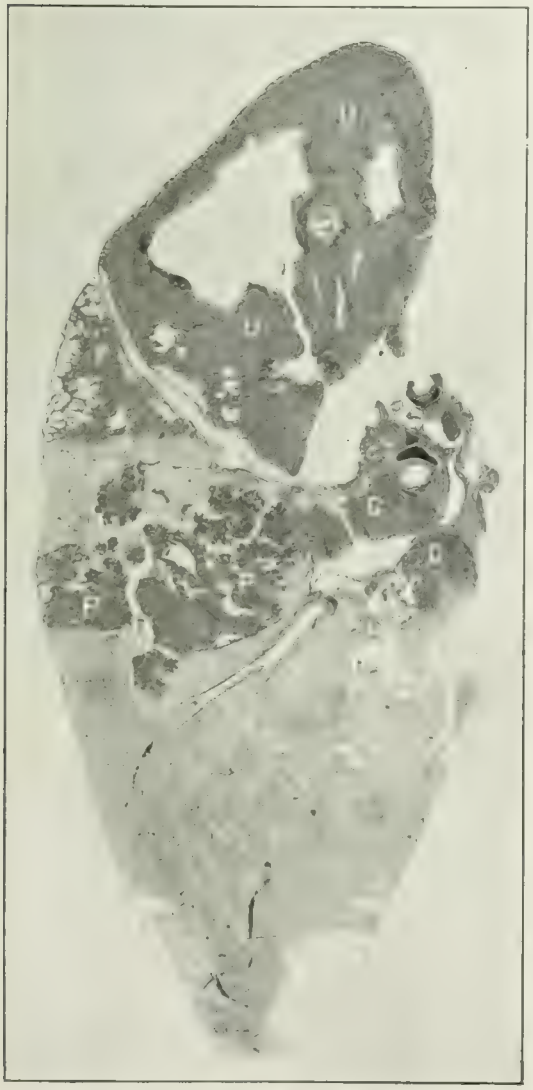


Fig. 7.—Section through entire left lung in the subject of Figs. 5 and 6, cut by a large microtome after hardening in formalin and embedding in paraffin. Stained with Bismarck brown. (Other sections were stained by Van Gieson's method, and others with carbol fuchsine and methylene blue to show the distribution of tubercle bacilli.) Lettering to correspond with Fig. 6 (P, G, and A). U, Upper lobe destroyed by disease C, cartilage of air tube. Full description in text.



Fig. 8.—Section through the entire right lung in the subject of Figs. 5, 6, and 7. *a*, P, P', *a*, *b*, *c*, *d*, *e*, *v*, lettered to correspond with Fig. 6. Fully described in text. C, Cartilage of air tubes.

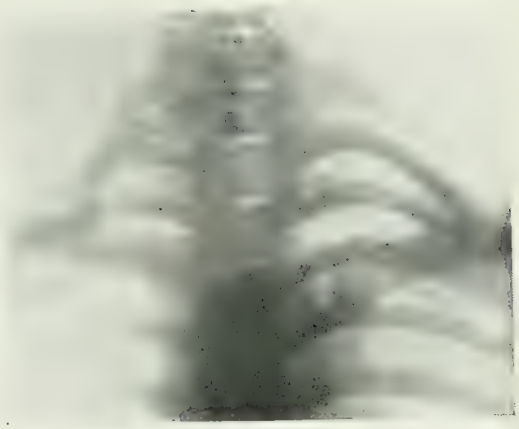


Fig. 1.—True and false cervical ribs.

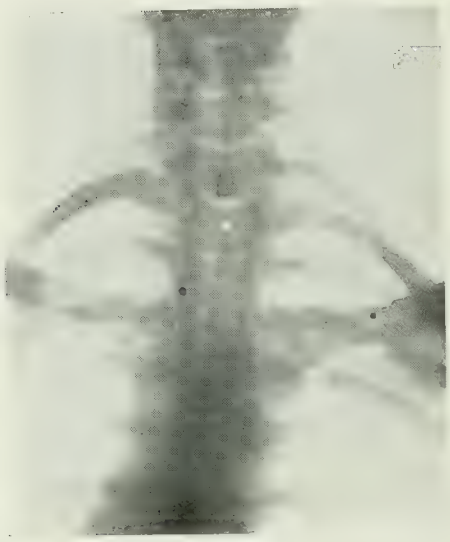


Fig. 2.—Bilateral complete cervical ribs appearing as first ribs.

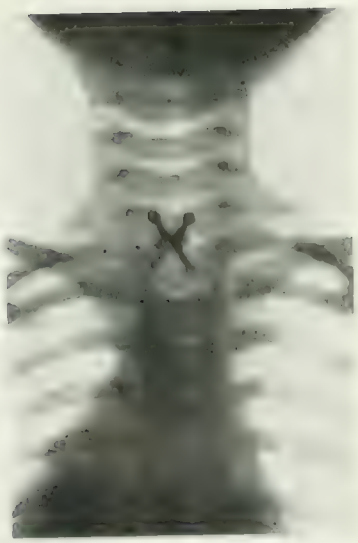


Fig. 3.—Infantile cervical ribs, bilateral.



Fig. 4. Infantile cervical ribs bilateral.

CERVICAL RIBS.

By Gilbert Scott, M.R.C.S., L.R.C.P.,
Medical Officer in Charge of the Radiographic Department, London Hospital.

(*With Special Plate.*)

Nowadays cervical ribs and other bone abnormalities of the thoracic inlet may be considered to be comparatively common, their diagnosis having been rendered easy of recent years by the aid of radiographic examination.

But since this means of diagnosis has been available, I am afraid accessory ribs have come in for more than their share of blame for causing symptoms of which they may be innocent.

Each case should be thoroughly investigated before giving a verdict of guilty, for it must be remembered that there are many who go through this world with well developed cervical ribs, and yet suffer no inconvenience whatever from them. There are, on the other hand, many who show no evidence of these ribs, and yet have typical pressure symptoms.

In fact, I believe if it were possible to collect and record all cases in which this condition were present, it would be found that cervical ribs of themselves rarely cause trouble. One realizes that this question of the causation of symptoms is of a somewhat complex nature.

However, I do not propose to discuss this question in this paper, but to restrict myself to the radiographic appearances of these accessory ribs.

There are two main types one comes across:

1. The "true" cervical rib.
2. The false or "buttress" variety.

The "true" cervical rib articulates with a normal sized seventh cervical transverse process, and is apparently developed separately from it. It varies greatly in size—from a mere stump to a fully developed rib, united, like a first rib, by cartilage to the sternum. The more usual type, however, is the incomplete.

In some cases the rib is markedly crooked or twisted, this being possibly due to the pressure of vessels or nerves during early development.

The "sub-divided" is a rare form in which a well-developed rib is divided into one or more parts, possibly from the same cause.

The extremity of these true cervical ribs may sometimes be seen fixed by bone to the first rib, or may be quite free or "floating."

The second type—namely, the false or "buttress" cervical rib—appears in the skiagram as a true enlargement of the seventh cervical transverse process, and unlike the "true" variety.

Hence I have given the term "false" to this type, but according to Dr. Wingate Todd, of Manchester, who has dissected a number of these cases, this is not a true enlargement. What appears as an abnormally developed transverse process is really an ill-developed cervical rib fused to a normal size process. One comes across a great variation in size of these processes (in skiagram) in different individuals, and if Dr. Todd's deductions are correct, the question arises as to whether, strictly speaking, one ought not to classify all these enlargements as cervical ribs.

One sees a great variation in size of the transverse processes of the lumbar vertebrae. Therefore one might reasonably expect to find a true enlargement of the transverse processes of the cervical vertebrae without the appearance being necessarily due to this fusion of a rudimentary rib. If so, I cannot see how it is possible to distinguish the two radiographically.

For the sake of convenience I will retain the term "false" cervical rib. The word "buttress" is descriptive of this type. A broad base is fixed to the body of the seventh cervical vertebra. Its extremity may be blunt or pointed, and in some cases, as with the "true," there may be bony union between it and the first rib.

In this type also the size varies, and it is difficult to define how large this process has to be to be classed as abnormal. Fusion of a true accessory rib to its transverse process forms a buttress variety.

The "true" and "false" may be unilateral or bilateral, or both varieties may be present in the same patient.

It is as well to mention here that very often there is present a taut fibrous or ligamentous band—of course, not seen in the skiagram—stretching like a violin string from the tip of either variety to one of the thoracic ribs, usually the first, or even the sternum. This band is apt to cause severe pressure symptoms.

Rudimentary thoracic ribs are by no means uncommon, and they are often mistaken for the cervical variety. It is often quite impossible to distinguish between the two; so in all cases where there is a rudimentary rib present the vertebrae cephalad to it should be counted. A method of doing this will be mentioned later.

The placing of a lead shot, as a landmark, on the spinous process of the seventh cervical vertebra previous to taking of the skiagram is not to be recommended, as one cannot be certain that the landmark is really on this process.

As in all radiographic work, the most difficult and important part of the examination is the correct reading of the skiagram.

It is helpful to remember that the transverse processes of the first dorsal as a rule have an upward tendency, while those of the seventh cervical are usually set at right angles or have a downward direction in relation to their vertebra. However, this is not invariably true.

A condition which may lead to an incorrect diagnosis is where a complete true cervical rib is present on both sides, these being taken for normal first ribs.

There are a few points of technique which should be observed in the taking of skiagrams of these cases, to minimize the possibility of error in diagnosis.

1. There should be no rotation of the bodies of the cervical vertebrae.
2. The tube must be accurately centred, the focal ray passing through the thyroid prominence or Adam's apple; this brings the centre well above the clavicles.
3. The plate should be in close apposition with the cervical spinous processes. This is not always easy, on account of the prominence of the occiput.
4. No movement of the patient—the patient holding his breath during exposure.

If these points are not observed, the amount of distortion will be considerable, rendering the correct reading of the skiagram more difficult.

In all cases where there is any abnormality in the bony configuration at the upper limit of the thorax, a stereoscopic view should be taken. It is astonishing what a different idea one obtains of the length and direction of an accessory rib by this method of examination. These points may have an important bearing on the case.

There may be some difficulty in demonstrating how many vertebrae lie cephalad to a rudimentary rib; the chin of the patient often obliterates the upper cervical vertebrae in the skiagram taken antero-posteriorly.

The following is a method to overcome this difficulty:

A lead shot is fixed on the skin about the mid-cervical region. Radiographs are then taken in the lateral and antero-posterior position, the tube being carefully centred in each view over the lead shot.

From the lateral view it will be easy to note over which vertebra the shot lies. This will give you a "known" vertebra in the antero-posterior radiograph.

The Infantile Cervical Rib.

Little mention has been made of the presence of cervical ribs in children. This is no doubt due to the fact that they seldom give rise to pressure symptoms in early life. It is remarkable how frequently the skiagrams show this rudimentary rib present in children. And it is only necessary to be on the look-out for infantile cervical ribs to realize how common they are.

It is quite usual to see them in radiographs taken for the localization of foreign bodies in the throat. They can be seen at a very early age; in fact their presence may be detected in the fetus. They appear as an opaque patch in the region of the seventh cervical transverse process. They are usually bilateral, symmetrical, and may be of the "true" or "false" variety. In most instances these infantile cervical ribs tend to become more dense and defined as the child grows. However, I have reasons for suspecting that there are some cases where these ribs tend to become less opaque, and may even disappear as the patient approaches puberty, but I have not yet sufficient evidence on this point to do more than mention my suspicions. If this absorption really takes place it is a very unusual and difficult process to account for.

PERIBRONCHIAL PHTHISIS.

By Alfred C. Jordan, M.D., M.R.C.P.,
Medical Radiographer, Guy's Hospital, and Royal Hospital for Diseases of the Chest.

(*With Special Plate.*)

In the *Practitioner* for February, 1912, I gave an account of peribronchial phthisis, and showed that phthisis is not, as ordinarily supposed, a disease of the apices of the lungs, but is, in the majority of cases, a disease of the roots in the first instance. I supported my contention with figures, illustrations, and arguments, which seemed to me irrefutable, and although my paper aroused much comment, I may say that most of the opinions have been favourable to my views, the adverse criticisms consisting, for the most part, of expressions of doubt as to my statements of fact, for example, as to the frequency with which phthisis starts at the hilus. Some admit that phthisis may start at the hilus in the case of children, but they give no reason for presupposing a different pathology for adults.

Space prevents my repeating the facts and arguments of my former paper on this subject, and I trust that those interested will take an opportunity of referring to it. I may say, however, that I showed that in all "healthy" lungs there are shadows at the hilus, consisting of blotches and radiating lines, which are pathological in origin, being due to obsolete tuberculous infection, and to the reaction set up in the tissues to render the tubercle inert.

I am now in a position to amplify my proofs and to offer evidence which seems to me absolutely conclusive.

With the help of Mr. Mahon I have made a radiographic examination of 36 "healthy" lungs from the *post-mortem* room; most were obtained in cases of accidental death. No selection was made; when the lungs were incised in the usual way by the pathologist and were passed as "healthy" they were conveyed to the radiography department and there examined. The ages run from 4½ to 72 years.*

They show that there can be very few persons above the age of 6 years who have escaped calcareous deposit in the lungs. In the great majority of the cases (25 cases out of 36) there were gross deposits of calcareous matter in the bronchial glands or elsewhere; in the rest there were small calcareous fragments, and in many there was a large excess of fibrous tissue arranged in thick strands or sheaths around the main branches of the bronchi.

The calcareous deposits represent obsolete tuberculosis, and the fibrous tissue around the air tubes represents healed tuberculous bronchopneumonia.

A large number of sections of the hilus shadows of some of these "healthy" lungs has been cut and stained by Mr. Mahon; they indicate beyond the possibility of doubt that these shadows are tuberculous in nature. The appearances in some cases are practically indistinguishable from those shown in sections of an ordinary case of very chronic phthisis. There are typical tuberculous bronchopneumonic patches with small round cells and large endothelioid plates, there are extensive tracts of dense fibrous tissue, and there are the calcareous patches already referred to.

A positive tubercle reaction is obtained, by the most delicate test, in 94 per cent. of all children between the ages of 11 and 14 and in most adults. The presence of actual foci of tuberculous bronchopneumonia or of tuberculous glands in the roots of the lungs may readily account for this. The glands and other structures at the hilus have to deal with a continuous tuberculous invasion throughout life. Many are able to cope with the invasion, but in the case of some the tissues are not able to offer effective resistance, or the tissues are receiving a greater number of tubercle bacilli than they can destroy; these become the subjects of pulmonary tuberculosis.

In every case the invasion takes place by way of the hilus. In my former paper I showed that in at least 40 per cent. of cases of phthisis the disease commences as definite peribronchial mottling. From the hilus the disease spreads in all directions, but most rapidly along the ascending and descending branch of the main bronchus. Sooner or later the disease reaches the apex (by way of the ascending bronchiole); it then extends rapidly at the apex, so that very soon the apex appears, clinically, to be the chief seat of the invasion. Very often no physical signs are obtained until the apex has become infected, the disease at the hilus being so deeply placed as to escape detection from without.

In about 20 per cent. of cases of phthisis the tuberculous infection travels up along the main ascending bronchiole to the apex at an early stage, and the disease progresses at the apex, while the track of the infection from the root heals, leaving only an excess of fibrous tissue around the ascending bronchiole. These are the purely apical cases of phthisis. Under favourable conditions the apical lesion may heal, too. This is very well illustrated by the case shown in Fig. 1, taken from the lungs of a healthy man, aged 47, who was killed by a motor bus. Dr. Herbert French, who carried out the *post-mortem* examination, noticed a healed phthisical lesion at the left apex. Thereupon he sent the specimen round to me, when the interesting state of affairs shown in Fig. 1 was found. The left bronchus (L.B.) divides into an ascending branch (*a*) and a descending branch (*d*); from the ascending branch fibrous strands may be traced in an arching course up to the left apex. The continuity of the lesion at the hilus with that at the apex is thus clearly demonstrated.

These calcareous deposits are found not only in lungs after removal from the body; in examining the lungs of healthy persons it is almost always easy to demonstrate the presence of calcareous deposits at the roots, and often elsewhere along the larger air tubes. Fig. 2 (a skiagram of the chest of a boy of 11 who had from time to time shown slight symptoms suggestive of phthisis) is a good instance of this; no active tuberculous disease is shown, but there is abundant evidence of old tuberculous infection, which the patient, luckily for himself, has been able to meet by the formation of fibrous tissue around all the main air tubes and numerous calcareous deposits along the course of the principal bronchioles.

In my former paper I referred to "fibroid phthisis" and to "chronic fibrosis" as though they were merely the most chronic cases of pulmonary tuberculosis of the peribronchial type, in which much fibrous tissue is formed in an attempt to limit the tuberculous invasion. I stated further that bronchiectasis is usually indistinguishable, radiographically, from "fibroid phthisis," bronchiectasis being, apparently, merely a special form of "fibroid phthisis" in which the air tubes have become dilated. This has been taken to amount to an assertion that chronic fibrosis is always necessarily due to tuberculosis. I am not in a position, however, to make so unqualified a statement, though I am fully convinced that this is the case in the vast majority of instances. Now and then an attack of acute pneumonia in a previously healthy person leads to a form of chronic fibrosis, which appears to be non-tuberculous at the outset, although eventually tubercle bacilli are very likely to appear in the sputum. The distribution of the lesions in such a case may be found atypical on *x*-ray examination.

The fact has long been recognized that there are cases of phthisis in which physical signs of disease are very hard to find, although clinically the patient presents the typical picture of pulmonary tuberculosis, and there are plenty of tubercle bacilli in the sputum. Thus the late Dr. Samuel Gee[1]: "The absence of physical signs of disease, in some cases of slowly progressive pulmonary consumption, ending in death, is most remarkable." The explanation is now obvious: these are cases of peribronchial phthisis. Again,[2] "In any case of phthisis the disease is more extensive than the physical signs would seem to indicate." The peribronchial portion of the affection evades detection from without. We are now able, with the aid of radiography, to assess the actual extent of the disease—an advance of the first importance.

As a typical instance of the inability of the physical examination of the chest to determine the distribution of phthisis in some cases, Fig. 3 is hard to beat. The physical signs were found (by an eminent and most trustworthy physician) to be confined to the right apex, and to consist of a very slight impairment of the percussion note and a few crepitations after coughing. The fluorescent screen, however, showed extensive tuberculous bronchopneumonic mottling radiating from both roots in all directions. There are numerous calcareous nodules throughout the affected parts, and the track of the principal air tubes is clearly marked out. In this case (as

* The series of skiagrams was exhibited in the Pathological Museum.

usual in peribronchial phthisis) the main disease escaped detection altogether, the slight affection which had reached the apex being the only part accessible to the stethoscope.

The most exacting critics of my former paper have said, "Show me a typical case of peribronchial phthisis in the *post-mortem* room, and demonstrate its nature to me." If these critics had given much thought to the matter they would have seen that their demand must be very difficult to satisfy. Patients do not die of peribronchial phthisis while it is in the typical stage. The disease extends continuously in all directions, but most rapidly along the main air tubes. When it has reached the apex it advances with great rapidity in this region; at death the whole of both lungs is full of tuberculous disease, with caseous patches, breaking-down cavities, etc. Fig. 4 affords a good instance of this. The patient, a boy of 16, lived six months after the skiagram, showing typical peribronchial phthisis, was obtained. When eventually he died there was extensive disease of the whole of both lungs, with cavities at the apices and large fibrous and caseous masses in all lobes. The physical signs, at the time the skiagram was taken, were slight, consisting of râles at the right apex and a few at the left apex; occasional bronchial breathing and bronchophony at the right apex.

An early case of peribronchial phthisis could only be obtained for *post-mortem* examination by the merest accident—for example, if a patient were killed accidentally after an *x*-ray examination had been made, and were brought back to the same hospital for the *post-mortem* examination. It is clear that an observer might wait a lifetime for such a contingency.

The fates have not been wholly unkind, however; by good fortune an opportunity has occurred of obtaining a case for examination in a fairly typical stage. There was extensive tuberculous ulceration of the intestines, and the patient died of this before the pulmonary condition had advanced beyond recognition. The case is of such importance that I propose giving a detailed account of it.

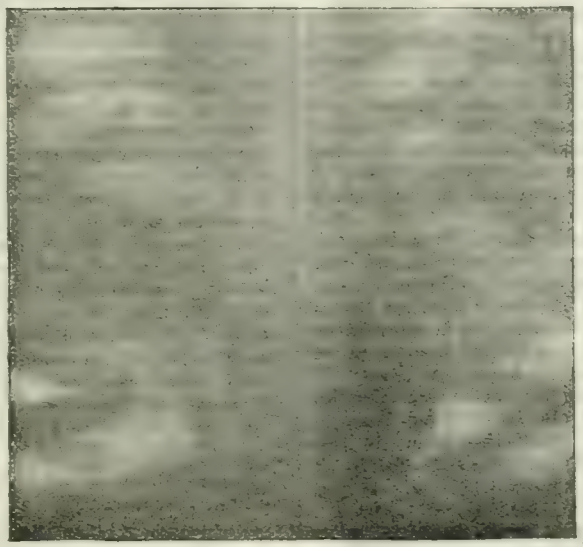


Fig. 4.—Typical peribronchial phthisis in a boy aged 16. When he died, six months later, there was extensive tuberculous disease of the whole of both lungs. (See description in text.)

A girl of 12 began to have occasional abdominal pain and to lose flesh in April, 1910. There was no cough at this time, and there were no physical signs of disease in the chest or abdomen.

The *x*-ray examination revealed the presence of a well-marked patch of peribronchial phthisis at the right root, with blotches radiating from the root upward and outward. Fine mottling extended up almost to the apex, but the actual apex was clear. On the left side linear shadows were shown radiating from the root upward and outward, but at this stage there was practically no mottling on the left side (Fig. 5). She was discharged eleven weeks later slightly improved; no diagnosis had been made clinically, and no abnormal signs were discovered in the chest. The von Pirquet test gave a positive result.

In June, 1911, she was readmitted in much the same condition. Still no signs could be detected except by the *x* rays, which showed that the disease had extended slightly in the right lung, while the left lung now showed well-marked peribronchial mottling, extending up nearly (but not quite) to the apex.

On January 7th, 1912, she was again admitted, under the care of Dr. G. Newton Pitt, for diarrhoea and vomiting, with headache and abdominal pain. The vomiting ceased at once, and it was thought at first that indigestion might explain the whole of the symptoms. The girl did not improve, however; she continued to waste, and to suffer from abdominal pain. The physical signs in the chest were very indefinite; a slight difference in note between the apices, sometimes the one, sometimes the other being thought to be affected; occasional râles at one or other apex, or lower down. The temperature was hectic in character.

An *x*-ray examination was made again on January 16th, 1912 (Fig. 6). It showed considerable progress in the pulmonary disease on both sides. The disease was still peribronchial in character, but the mottling was now extending to the apices.

From this time she continued to go downhill, losing weight, with an irregular hectic temperature. No sputum was obtainable, and swabs from the throat failed to reveal the presence of tubercle bacilli. The faeces were found to contain tubercle bacilli, however, on February 8th. Soon it became evident that the girl was the subject of tuberculous ulceration of the intestines. The physical signs in the chest became more extensive, but they were very variable and puzzling to the end. This is usual in peribronchial phthisis, for the main lesion is too deep in the chest to be accessible to percussion and auscultation. For several weeks she lingered on, the disease progressing steadily both in the lungs and in the intestines. She died on April 2nd, 1912.

For the notes of the *post-mortem* examination I am indebted to Dr. H. C. Cameron: "The body was wasted; the cervical glands were enlarged, not caseating. The right pleura showed evidence of former pleurisy over both lungs, but no marked fibrosis or thickening at the apex or elsewhere. I was asked to leave the lungs as little disturbed as possible; therefore I only made a few cuts into the left lung. The lungs had scattered through them many small nodules which could be appreciated by palpation with a gritty feeling, such as is commonly found in tuberculous extension along the bronchi to the smallest ramifications from a caseous gland. The glands at the bifurcation of the trachea and at the root of the left lung were exposed; they contained tubercles, but were not extensively caseous. The large bronchi were full of purulent secretion, and their walls were thick and indurated. There was considerable distension of their lumen; the finer divisions of the bronchi were obviously infiltrated with tuberculous material. In the left upper lobe were several large cavities and caseous masses. A bronchial trunk which passed to the left lobe was dissected out. The left lower lobe contained only a few tubercles. The bronchus showed marked bronchiectatic dilatations. A piece was cut for the microscope. The small intestines showed confluent ulceration with much infiltration of the wall for 2 or 3 ft. above the ileo-caecal valve, and scattered ulcers for 5 ft. further. There were six ulcerated patches in the large intestine. The liver showed considerable perihepatitis. There was also perisplenitis. The abdominal lymphatic glands were enlarged, but there was no old caseation."

The lungs were hardened in formalin. Through the courtesy of Mr. G. L. Cheatle and of Drs. J. C. Briscoe and A. Whitfield I was able to have sections cut through the entire lungs in Mr. Cheatle's pathology laboratory, King's College. This work was carried out most successfully by Mr. Stephen J. Mitchell, and the comparison between the sections and the last skiagram is most interesting, although the disease had advanced considerably in the interval. (Skiagram taken January 16th; child died April 2nd.)

The sections were stained by Van Gieson's method, a few being stained in other ways—with carbol fuchsin and methylene blue to demonstrate the presence and distribution of tubercle bacilli; with Bismarck brown to obtain single-tint sections suitable for reproduction by the half-tone process.

About one in twelve sections was kept: thus a complete series of representative sections was obtained through each lung.* The skiagram gives a kind of composite picture of many sections.

With a little care it is easy to compare the skiagram with the sections, point by point. Any part of any section can then be examined under the microscope, and the exact histological condition ascertained. At the hilus we find enlarged glands (G, Figs. 7 and 8); they are surrounded by dense fibrous tissue. On the right side (Fig. 8) a broad band of fibrous tissue extends from the hilus outward through the middle lobe to the periphery, where there is a large patch of tuberculous bronchopneumonia in various stages of fibrous and caseous change. Throughout the irregular broad fibrous band between the hilus and the periphery there are numerous fragments of divided bronchiolar cartilage and tuberculous foci, and it is quite clear that the fibrous tissue is the end state.

* The series of sections was exhibited in the Pathological Museum.

Following from the right hilus obliquely upward there is continuous extension to the periphery of the upper lobe, where there is a large tuberculous patch (P', Figs. 6 and 8). This patch is far more advanced in the sections than in the skiagram, being to a large extent reduced to a caseous and purulent state. Tuberculous mottling extends in the skiagram up along the second intercostal space, almost to the apex. In the sections the apex is actually the seat of considerable tuberculous disease, though the main lesion of the upper lobe is still at the periphery well below the apex. The continuity of the disease from the hilus to the apex is obvious in the skiagram, and becomes equally obvious in the sections when these are examined in series.

The sections through the lower lobe show dilated air tubes with great excess of fibrous tissue around them, and five definite small tuberculous areas, each one of which is faithfully reproduced in the skiagram (*a*, *b*, *c*, *d*, *e*, Figs. 6 and 8).

In the left lung the disease commenced later (see Figs. 4 and 5), but advanced far more rapidly, so that the comparison between the skiagram and the sections is less easy. We have the dark hilus blotches, consisting of enlarged glands, and dilated air tubes surrounded by a great excess of dense fibrous tissue; a large wedge-shaped tuberculous area extending in a radial fashion from the hilus to the periphery, and involving the entire upper half of the left lower lobe (P, Figs. 6 and 7).

The left upper lobe is almost completely destroyed in the sections, though it shows merely an early stage of tuberculous mottling in the skiagram taken eleven weeks previously. This illustrates the rapid rate at which pulmonary tuberculosis is apt to advance at the apex once it has gained a foothold there. The lower half of the left lung remained almost normal to the end, showing only the dilated air tubes surrounded by an excess of fibrous tissue (A, Figs. 6 and 7) and one or two small tuberculous patches (T, Fig. 7).

Thus the last link in the chain of evidence for peribronchial phthisis has been forged; a well-marked case has been examined pathologically and histologically, and absolute proof has been offered for the contention that a very important form of phthisis is that which commences at the roots and spreads thence in a radial manner in all directions, but most rapidly along the larger air tubes.

The results of the examination by the *x* rays and the microscope of a large number of "healthy" lungs leads to the incontrovertible conclusion that the hilus is the ordinary place of entry of the tuberculous lesion in pulmonary phthisis, and that the ordinary route to the apex is along the air tubes from the hilus.

The reason the apex has hitherto been considered to be the starting place of the disease is due chiefly to two facts: First, that physical signs of phthisis are easily detected at the apex, where the diseased part is close beneath the surface, while the hilus is placed deep in the chest and has a considerable thickness of healthy lung over it in the important early stages; secondly, that the disease, once it has extended to the apex, is apt to advance very rapidly in this region, while the disease at the hilus is far more apt to undergo cure with the formation of calcareous deposits and of fibrous tissue around the air tubes.

The practical importance of the conclusions is paramount. The *x*-ray method enables the disease to be recognized in its early stages, wherever the situation of the lesions. The bacteriological diagnosis is then obtained in confirmation of the *x*-ray findings, and the patient is placed under appropriate treatment. On the whole the peribronchial form of phthisis is more chronic and more apt to undergo cure by calcareous and fibrous change than is the apical form.

Finally, the recognition of the nature and meaning of the so-called "normal hilus shadow" renders the *x* ray examination of the lungs rational, and clears up a great many discrepancies and difficulties of interpretation and diagnosis.

REFERENCES.

[1] *Medical Lectures and Aphorisms*, Aphorism 19, p. 241. [2] Ibid., Aphorism 2, p. 230.

DISCUSSION.

DR. A. E. BARCLAY (Manchester) said that it was rather a curious coincidence that the same subject was being discussed that morning in the Section of Diseases of Children. As a result of clinical and *x*-ray screen examination in 200 cases during the last two years at the Children's Hospital in Manchester, Dr. C. P. Lapage gave the opinion that phthisis in children began at the roots in every case and not at the apices. In not a single case of these tuberculous lungs was there anything but a root infection; indeed, he believed there was nothing near the apices save in such cases as those in which the apices were extensively involved in a general infection. In adults the phenomenon seemed to be not anything like so universal as Dr. Jordan maintained; although there were undoubtedly a certain number of cases which began at the roots, it by no means followed that all cases did so.

DISCUSSION ON IONIC MEDICATION.

OPENING PAPER.

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IONIC medication has now been before us a practical method of treating disease for five years or so, and I think it will be useful to devote this discussion to a consideration of the actual results which have been achieved so far.

The principles of ionic medication and the technique of its application are now becoming familiar to most of us, but no attempt has yet been made to catalogue the gains which have been recorded.

Two ions in particular have been very much used—the zinc ion and the salicylic ion; the first of these having surgical, and the second having medical, applications.

Other ions which have given results deserving consideration are those of chlorine and of iodine. A few instances of the usefulness of several other ions, the most recent of these being radium, have also come to hand. We see from this short list that there remains a vast number of ions whose possibilities have not yet been explored.

It is not claimed that the particular examples I am able to bring forward do more than illustrate the field of successful ionic treatment; and I hope that in the course of the discussion new instances of the usefulness of ionic medication may be brought to light.

The cases I shall report are either gathered from my own experience or have been recorded in the medical journals. Time will only allow a few words for each.

The Zinc Ion.

The conditions in which the zinc ion has been a success include the following:

Simple chronic ulcer of the leg.
Bedsore ulcerations.
Rectal ulceration.
Mucous colitis.
Haemorrhoids.
Anal fissure.
Ulceration in the mouth.
Pyorrhoea alveolaris.
Ulceration in the nose.
Sinuses.
Urethritis.
Gynaecological conditions.
Sycosis, furuncle, acne.
Warts, corns.
Lupus.
Rodent ulcer.

Chronic Ulcer of the Leg. Doyle[1] has reported the cure of seven cases of this kind by ionic applications. Besides zinc, he mentions silver and copper as ions appropriate for the purpose, but without indicating any special preference for either.

Finzi[2] also has reported a number of cases, and mentions that one ulcer of ten years' duration healed after a single application of zinc ions, the healing process occupying eight weeks. No other applications were used except vaseline, and the patients continued at their ordinary work. He compared zinc with copper by treating one half of an ulcer with each, and found that the part treated with zinc ions healed much more quickly than that to which the copper was applied. He also compared the results with different strengths of the application, and found the best results with applications of 2½ milliampères per square centimetre for from two to four minutes.

Bedsores. I have had two cases of bedsore which healed quickly. One was in the usual position, and the

other was on the heel, and followed *post-partum* thrombosis of the leg. This case had been refractory to all kinds of treatment, but rapidly became healthy, and healed soundly after the ionization was commenced.

Rectal Ulceration.—Wallis and Bruce[3] have recorded five cases of ulcerative proctitis successfully treated by zinc ionization. In view of the intractable character of this form of ulceration, the advantages of the ionic method are very valuable. They had tried silver nitrate solutions of a strength of 2 per cent., but found they caused much pain. In the discussion following this paper other rectal conditions were mentioned in which ionic medication with zinc had given good results.

Mucous Colitis.—Curtis Webb[4] has recorded six cases of ulcerative colitis in which ionization had given him successes, but he had used silver nitrate in a strength of one part in a thousand, and had not found that any pain was caused by solutions of that strength.

Haemorrhoids.—Bokenham[5] has reported 21 cases of the treatment of piles by ionization with amalgamated zinc needles, using currents of from 10 to 25 milliampères, and with successful results in all the cases.

Anal Fissure.—Doyle[1] has recorded the cure of anal fissure by zinc ions. The patient, an electrician, was being treated for a chronic ulcer of the leg by zinc ions, and observing the success of the method, mentioned his anal fissure. This was treated by a zinc rod wrapped in lint soaked with zinc chloride, and carefully applied by the aid of a speculum, with a current of 15 milliampères for twelve minutes. A week later the ulcer was very much reduced in size, and was ionized again. Ten days later the ulcer was healed.

Ulceration of the Buccal Cavity.—In a patient suffering from disseminated sclerosis, who had a troublesome chronic ulcer of the cheek and gum, I have observed rapid healing from zinc ionization, and in another case with ulceration of the inside of the cheek of tuberculous nature healing was obtained, though not very rapidly.

Pyorrhoea Alveolaris.—In this condition some very satisfactory results have been obtained by my friend Mr. Ernest Sturridge, who tells me that he has found zinc to be decidedly superior to the other ions he has tried. Success in the treatment of this disease needs a high degree of skill in dental work, as it is all-important to know the character of the suppurating pockets, and the best means of bringing the zinc ions into all parts of these tiny sinuses.

Nasal Cavities.—I have also seen three chronic sores of the nasal cavities heal quickly under zinc ions. Two of these simulated lupus, but were probably staphylococcal rather than tuberculous. The third was an ulcer just within the nose in a middle-aged lady; it has persisted for several months, and healed at once after a single treatment. Two years previously the same patient had had an ulcer, resembling a rodent ulcer, of the outer side of the nose, which was permanently cured in the same way.

Corneal Ulceration.—I have reported[6] a short series of cases of Mooren's ulcer of the cornea successfully treated by zinc ions, and Traquair[7] has written an important paper on the treatment of purulent keratitis by zinc ions, with notes of 27 cases.

Sinus and Fistula.—The treatment of sinuses by ionization is difficult, because to obtain success it is necessary that the ions shall be conveyed to every part of the suppurating surface; if any part, however small, escapes the disinfecting action of the zinc ions there will be a reinfection of the sinus from this undisinfected part. Thus, in a case of chronic suppuration of the antrum which I treated in conjunction with Mr. Harmer, the ionization was followed by the almost complete disappearance of the streptococci in the discharge, but these returned and the treatment was dropped. When a sinus is long and narrow, and especially when it is of irregular contour, it is extremely difficult to succeed except after frequent repetitions. To treat a sinus with success the applications must be long and strong, and should be repeated several times at intervals of two or three days. If one is lucky a single application may suffice, but this is a rare experience.

Marques and Pappon[8] have reported three successful cases of fistula in connexion with the lower jaw. The applications were of 20 milliampères of one hour's duration, and were repeated every seven days. From four to six applications were made, and in each case the zinc ionization brought to a close a troublesome condition which had lasted for two years or more.

Urethritis.—Fenwick[9] has reported two cases of gleet cured by zinc ionization. A zinc rod wrapped with fine lint wetted with a 2 per cent. solution of zinc sulphate was used and 2 milliampères of current were passed for ten minutes. The zinc rod was introduced through a cannula, and the cannula was then withdrawn. The urethra was cleaned with swabs beforehand. In one case three applications caused the discharge to disappear. It had lasted for two years, and in the second case in which 5 milliampères were used a result was obtained after five applications, the disease having lasted one year.

Gynaecological Conditions.—In 1894 Dr. Margaret Cleaves[10] recommended the treatment of vaginitis, leucorrhoea, and other conditions by means of a special douche electrode and medicated solutions, mentioning in particular those of mercury and copper and hydrastine. This is the earliest suggestion of ionic medication in gynaecology, and is worthy of being recorded. More recently Sloan[11] has published a full account of ionic medication in gynaecology, and enumerates a number of instances in which he has proved the utility of the method. He uses zinc ions for the most part. Curtis Webb[12] has also written on this branch of work, and recommends ionic treatment with zinc in leucorrhoea, endometritis, subinvolution, etc. Somerville[13] has recorded cases of successful treatment in endometritis with the use of copper ions.

Skin Affections.—In superficial infections such as acne, furuncle, sycosis, ionization is useful. Puncture with a zinc needle is the best procedure, and has been recommended by Leduc in boils and carbuncles. Ringworm of the non-hairy parts can be effectively treated by zinc ionization. It is useful also in ringworm of the scalp, and an application is soon followed by a growth of healthy hair. There is a difficulty, however, which tends to spoil the value of the procedure, and that is that a few follicles are likely to escape the penetration of the zinc owing to being blocked by secretion, and these may preserve the fungus and lead to relapse. Probably careful preliminary washings of the scalp with ether soap would reduce the frequency of recurrence, especially if combined with repetitions of the treatment at short intervals.

Riddell[14] has described his procedure for the treatment of ringworm with mercuric ions from a solution of mercuric chloride or iodide; he gives applications of forty-five minutes two or three times a week, and describes his treatment as safe, rapid, and certain.

Warts and corns are removed by zinc ionization. For warts the quickest method is to transfix them with a zinc needle. A current of one milliampère for one minute is sufficient for small warts. For larger ones this is repeated with the needle inserted a second time at right angles to the first transfixion. The needle should pierce the lowest levels of the epidermis, close to the surface of the cutis vera. I have found this procedure quite successful in warts of the hands, of the face and scalp, and of the penis. In the latter I have also ionized percutaneously, without the needle, and with completely satisfactory results. A friend of mine has used mercuric chloride in venereal warts about the vulva with prompt results. For corns a similar procedure with a zinc needle is useful, even for the large corns of the sole of the foot. In both corns and warts a lotion of zinc sulphate (1 per cent.) may be used with advantage for some days before and after ionization, particularly with corns.

A word or two as to the nature of a corn. A corn is usually described as a callosity or thickening of the epidermis produced by the pressure or friction of a boot, but in my opinion a corn is more than this. Callosities produced by friction are common enough on the toes, and often give no trouble for months together. It is when they change in character, begin to grow fast, and become tender to pressure that the patient finds he has a "corn." I consider the change to be due to the invasion of the callosity by a skin organism, and the effects of zinc ionization and of zinc lotions are to disinfect the corn and so to reconvert it into a harmless callosity.

Magnesium ions appear to be a specific against certain kinds of warts. In a short note published by myself and Flavelle[15] some years ago I gave instances of the disappearance of warts after magnesium ionization, and

recently Marques[16] has published an interesting corroboration. In a patient with many warts on the backs of both hands he applied magnesium ionization for one hand only, with the result that the warts on that hand all disappeared. On the other hand some warts were excised, some were painted with silver nitrate, and some were left alone; these latter survived, and those excised or treated with caustics left scars, so that the author concludes with the opinion that the magnesium ionization had given the most satisfactory results.

Lupus.—Stopford-Taylor and Mackenna[17] have advanced the treatment of this disease by their method of zinc ionization. As a preliminary they rub the affected part with liquor potassae to denude the lupus nodules of epidermis, and then proceed to ionization with zinc, applying the current for from ten to twenty minutes, and repeating the process if needed after a fortnight's interval.

Rodent Ulcer.—Although we know now that many cases of rodent ulcer are refractory to zinc ionization, the fact remains that cures have been obtained by many workers, especially in early cases. I am not able to say that two different affections are confounded together under the name of rodent ulcer, but I think this is quite probable, and I am now in the habit of selecting only certain cases of rodent ulcer for treatment with zinc ions. With these I obtain successful results quickly. This is the general experience. G. Little[18] has recorded a short series of cases of cure of rodent ulcer by zinc ions, but it is probable that for the present at least the treatment of rodent ulcer by zinc ions should be reserved for selected cases.

The Salicylic Ion.

The conditions in which the salicylic ion has proved useful include the following:

1. Perineuritis and neuralgia:
   - (*a*) Trigeminal.
   - (*b*) Great occipital.
   - (*c*) External cutaneous of thigh.
   - (*d*) Brachial plexus.
   - (*e*) Sciatica.
2. Painful affections of muscular and fibrous tissues:
   - (*a*) Lumbago.
   - (*b*) Sprains, acute and chronic.
   - (*c*) Spondylitis deformans.
3. Arthritis:
   - (*a*) Gouty.
   - (*b*) Rheumatic.

Trigeminal Perineuritis.—I have had a number of complete successes in the treatment of this condition with salicylic ions, and in general the results are so good that probably this has been the experience of all who have tried it. It will be sufficient to mention the names of Leduc (1905),[19] Verney,[20] Desplats,[21] Morin,[22] Cirera Salse,[23] Dawson Turner,[24] as having published cases of this kind. In my experience it does not answer in cases of neuralgia after herpes zoster, although I have known it to do so in one instance, in which the neuralgia seemed to be a mere survival or habit of neuralgia, left behind when all active mischief had subsided.

Perineuritis of the Great Occipital.—I would like to relate an interesting case of this condition which yielded rapidly to salicylic ionization. The patient was a medical man, and he was stooping down and straining to strap a portmanteau when he felt a sharp pain at the back of the head. As this persisted and gave trouble, he came to see me on his return to England. The distribution of the pain and the tender area clearly indicated the great occipital nerve of the right side, and it appeared highly probable that the trunk of the nerve had been pinched by the fibres of the trapezius muscle, which the nerve pierces, and that this had been the starting-point of a gouty neuritis.

Neuritis of External Cutaneous Nerve of Thigh.—A perineuritis of this nerve gives rise to pain and numbness of the upper and outer surface of the thigh, and the condition has been called "meralgia paraesthetica." Morton[25] has recorded three cases, and Muller[26] a very interesting one, in which the cause of the symptoms was discovered to be the pressure of a badly fitting corset. The case I wish to mention was also certainly due to the pressure of a corset, and was accompanied by paroxysms of very severe pain. The interesting point of the case consists in the fact that it yielded rapidly to salicylic ionization, after having remained almost uninfluenced by a long course of simple electrical treatment.

Brachial Neuritis.—Salicylic ions are useful in this condition.

Sciatica.—Salicylic ionization has been used with success in sciatica, but seems to need very long and strong applications. Although I have used it with advantage on several occasions, my experience so far has not been brilliant, possibly owing to inadequate treatment of the cases. Wullyamoz[27] has reported 18 cases, with success in 17. He used currents of 200 milliampères, and applications lasting for an hour or an hour and a half! This, then, seems to be the proper mode of treating sciatica by ionization.

The Fibrous Tissues.—In various painful conditions which may perhaps be grouped under the general but inelegant term of "fibrositis," salicylic ionization has repeatedly shown its value. Thus in lumbago, in chronic sprains, in the condition called "tennis elbow," it can be applied with great advantage. In recent sprains the true effect is often to give immediate relief. In spondylitis deformans it has seemed to me to exercise great influence for good, relieving the stiffness and the neuralgic pains as nothing else will. In the chronic synovitis of rheumatoid arthritis it usually reduces the swelling and relieves the pain. In acute rheumatism Wullyamoz[28] has found salicylic ionization valuable. In episcleritis (gouty or rheumatic) Leduc[29] has reported an immediate good effect, and in one case of this kind of a gouty nature I have observed an immediate improvement after salicylic ionization of the cheek and temple, when the eyeball was too sore and tender to allow of a direct application of the electrode.

Gouty Arthritis.—In the arthritis of subacute and chronic gout I have had several instances of great benefit from salicylic ionization, so that I consider this condition as one of those best suited for this form of treatment. The ions of lithium and of iodine have also been used in the treatment of these conditions. A good deal has been written on the treatment of gouty conditions by various ions. Edison's[30] name may be mentioned as one of the earliest experimenters. Delherm[31] has discussed the introduction of lithium, and Bergonie and Roques[32] that of the introduction of salicylic ions into the body.

Rheumatic.—It is difficult to discriminate between the various forms of rheumatic and rheumatoid arthritis met with in practice. Owing to the chronic nature of many of these conditions they have been submitted to ionic applications in large numbers. The prospects of relief in many of them are slender, and in the absence of accurate diagnosis the reports of the results obtained are not at present of any particular value. The favourite ions have been the salicylic, the iodine, and the chlorine ions, also the ion of lithium. At the present time matters are not ripe for a systematic examination of the results obtained, and we must wait for a more extended experience of the ionic treatment of the forms of chronic arthritis before the best methods of treating them by ionic medication can be formulated.

Bailey[33] in 1910 presented before this Section an analysis of cases treated by iodine ionization which is a valuable contribution to our knowledge of the subject, and many other writers have touched upon it, so that in time the subject of the treatment of chronic arthritis by ionic methods may be most advantageously considered. I venture to suggest it as an admirable subject for discussion before this Section at the annual meeting in 1913, and as our time is short I will pass on to the rest of my survey.

The Chlorine Ion.

Chlorine ions have been shown by Leduc to have an action in softening fibrous and cicatricial tissue, and this property has very valuable applications. It is useful for:

- Scars after severe burn.
- Operation scars.
- Old ankylosed joints.
- Dupuytren's contraction.
- Corneal opacities.

Leduc has also insisted that it can be used with advantage to soften pleural adhesions, and by that means to relieve scoliosis when this has come on after severe pleurisy or empyema in young people.

In employing chlorine ions for treatment we do not rely upon the introduction from without of a medicament so

much as upon the effect of the current in producing a change in the distribution of the ions of the body. Sodium chloride being the most abundant of the soluble saline constituents of the body, it is clear that the introduction of a small amount of chlorine ions could not of itself make much difference. Moreover, the administration of sodium chloride by the mouth has no influence upon scar tissue.

Nevertheless, it is the case that ionization with a negative pole saturated with salt solution has the action ascribed to it by Leduc. As might be expected, it requires large currents and long applications to alter the relative distributions of chlorine and of sodium sufficiently to produce an appreciable effect. Leduc, for example, mentions cases in which currents of 70, 80, or 100 milliampères were used, with durations of the treatments up to an hour, and when these currents can be applied and borne, the results of chlorine ionization are satisfactory.

It is interesting to recall a now almost forgotten method of treating stricture of the urethra by electrolysis with the negative pole. It was claimed that the stricture was softened and dilated without any injury to the mucous membrane, and in the light of what we know now of the effects of chlorine ions, it is highly probable that they were the active agents in causing the disappearance of strictures when they were treated by electrolysis.

In regard to chlorine ionization, I will not do more than just note the fact that I have had good results in all the states just enumerated, but only one success in Dupuytren's contraction. Isolated cases of good results in this interesting condition have been recorded, but success is by no means certain. It would be a valuable contribution to this discussion if any member present could give us a personal experience of success in the treatment of some cases of this condition. In some of them, at least, the contraction in the palmar fascia is only part of a more extensive fibrosis—for instance, Heberden's nodes may be associated with Dupuytren's contraction.

Desfosses and Martinet[34] have recorded a number of cases in which the sclerolytic action of ionic treatment has given good results, and some of Leduc's cases have been of a strikingly successful character.

The good results which have been recognized as following applications of constant current in various forms of sclerosis of the fibrous tissues, in the removal of effusions, in the softening of inflammatory tumours, enlarged glands, etc., are probably instances of the sclerolytic action of chlorine. Those who are interested in the history of medical electricity will find an interesting chapter on this subject in Erb's *Electro-Therapeutics*, with references to older authorities. At that time the effects were considered to be instances of the "catalytic" effect of electricity.

The Iodine Ion.

The effects of iodine ions are said by Leduc[35] to be very similar to those of chlorine, but that the iodine ion is less well borne than that of chlorine, and that this tends to neutralize any advantages which the iodine ion might otherwise possess. He suggests that an application of the iodine ion may be interpolated between every two or three chlorine ionizations in cases which are not responding well to the treatment.

The Radium Ion.

We may also spare a moment to consider ionization with radium, because the ease with which traces of radium can be detected has provided us with useful proof of the penetration of ions introduced through the skin. Haret[36] has reported the cure of a sarcoma of the scapula by radium ionization, and has also given the results of experiments on animals made to determine the depth to which radium was caused to penetrate by ionization.

The experiments were made upon the legs of calves, and a penetration to a depth of 9 cm. was established. This was the case even when the circulation in the part had been arrested by ligatures.

Radium ionization has been used by Haret[37] for naevus of the lip, for sarcoma, and for certain other conditions. The results in the naevus are reported as excellent, and in the sarcoma to have led to its disappearance after *x* rays had failed.

In conclusion, we may just consider some of the other ions which may one day be used. The thiosulphate ion has been used by Laborderie and others[38] for sciatica. The chromic ion might probably be used with advantage in those conditions of the tongue for which it has been tried by simple painting on. Some of the aniline dyes may come to have a value. Arsenic has been used by Betton Massey. Lactic or butyric acids may prove useful in lupus. Apart from the ions suggested at the outset for medical use by Leduc, we have shown very little originality or inventive capacity in the discovery of new ions. We owe Leduc a very great debt of gratitude for the completeness with which he has equipped us for the attacking of disease by ionic medication. If I have quoted his writings but little in this review of ionic work, it is because we all are acquainted with them and habitually rely on them as the foundation upon which we are helping to build the edifice of ionic medication.

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DISCUSSION.

Dr. SAMUEL SLOAN (Glasgow) said that the stage at which it was at all necessary to discuss the advantages of ionic medication had passed. The treatment had justified itself. As a gynaecologist he had had the opportunity of seeing its application to pelvic disease, and his experience had been gratifying. He expressed the opinion, however, that what the general practitioner wanted more than this was to know the "how" and the "why" of this treatment. By diffusion alone any ion could be made to enter the tissues, and not simply into the tissues to which it was being applied, but into the circulation also. But he had demonstrated that if the electric current were applied in one case and diffusion alone in another, the speed with which the ion—iodine—would reach the mouth from the vagina was very much greater in the former than in the latter. He suggested as an explanation of the benefit derived from ionization in such cases as arthritis and sciatica that this benefit was due, not to the local ionization, but to the interpolar migration of the normal ions of the tissues. In cases in which there was stasis of the circulation it was well known that calcium salts were apt to be deposited. Here the mere passing of the galvanic current would bring from the kathodal side of the calcium zone the phosphoric acid ion, which would dissolve the precipitated calcium, just as would a flushing of the part with blood by virtue of the phosphoric acid in it.

Dr. W. J. TURRELL (Oxford) dealt with the subject from the point of view of the general practitioner. The successes in his own experience had far exceeded his most sanguine expectations. In general practice since December, 1910, he had treated 191 cases, so that he could speak with some claim to practical knowledge. The opener of the discussion had not drawn attention to the untoward events which occasionally followed treatment. In one case a strong, muscular man, an undergraduate, who was being treated for an old injury to the muscle of his thigh, said while under treatment that he felt faint, and immediately afterwards threw back his head and ceased breathing. The current was only 30 milliampères, and was distributed over a large surface. There was dilatation of the pupil, and to all intents and purposes the man was dead. After three or

four minutes' artificial respiration one or two gasps were forthcoming, and presently he came round, with nothing worse than a headache next day. With regard to the practice of ionization, the speaker was of opinion that it would tend to drift out of the hands of the general practitioner and would become a specialized treatment. To do a case properly was a matter of an hour, and the general practitioner could scarcely spare the time, especially when, as inevitably happened, cases were sent to him from his colleagues. The medical man who practised ionization would become in the course of time a local specialist. Coming to details of his procedure, he said that when he started he had the idea that better results were to be obtained by means of big pads, but after further experience he realized that the size of the active pad must depend upon the area affected -- that is, the area of pain. Lumbago, for example, would necessitate a large pad, and "tennis elbow" a small one. He wished to ask Dr. Lewis Jones to what extent he believed in preliminary treatment before applying ionization. Some workers recommended the application of radiant heat or of hot air. He found it useful in any case to give the patient something to do so that the capillaries might be dilated. He believed strongly, especially in cases of traumatism, in vibratory massage applied immediately after treatment. Leduc had said that chlorine had the effect of softening the tissues after injury, and therefore it was right in theory to apply vibratory massage at once while the tissues were in the softened condition. In cases of sprained ankle he had found benefit result from ionization, and in tic douloureux he had been successful in cases of two years' standing. In several cases of facial neuralgia, which had lasted for about ten days, and for which drugs had been given, immediate cure resulted from ionization, and the patient slept during the night following treatment. It was also of value in pruritus. In one case in which there was an itching patch on the inner side of the thigh, and in which all the remedies he could think of had been tried unavailingly, one treatment with 100 milliampères, using the salicylic ion, had availed, and there had been no recurrence. He had cured chilblains very satisfactorily. One case in particular had yielded in a remarkable manner to the chlorine ion. Chronic ulcer of the leg of five years' duration, treated in chlorine baths, was cured after about ten treatments. The results in traumatisms had also been good. As to the future of the treatment, he deprecated the manner in which it was managed at certain hydros. Some assistant without medical training treated a case for about twenty minutes at a set amount of current. But only those who had actually treated cases could tell what the dosage ought to be. One Irish lady with some trouble or other cried out at a current of 30 milliampères, while, on the other hand, an old gentleman, treated for arthritis with a current of 90 milliampères, said that the effect was very soothing and that he felt inclined to go to sleep. This gouty old gentleman, by the way, was sent to him by a brother practitioner with a history of having had thirty attacks of gout—probably this was an exaggeration—and at each attack the gout had affected his feet. Subsequently to the treatment he had another attack of gout, not on this occasion in his feet, but in his arms. Finally, the speaker raised the question as to the extent to which diathermy was likely to displace treatment by ionization.

Dr. C. F. Bailey (Brighton) said that they were all rather too much inclined to take up a particular treatment and to run it for all it was worth. The object of their work should rather be to find out what was the best treatment for any particular affection. There were certain conditions for which each method of treatment was pre-eminently fitted. He thought that any one who had had much experience of the therapeutics of naevus would agree that the proper treatment for that condition was carbon dioxide freezing. There were certain conditions, again, which lent themselves more particularly to ionization. These conditions in his own practice had been deep joint affections, and these he had largely treated with iodine ions and also with radiant heat. Reference had been made in the paper to some work of the speaker's which was brought before the Section two years ago, when he counselled a combination treatment of radiant heat and ionization.[1] He was inclined to go back a little from his position with regard to the extreme importance of radiant heat in this connexion, for he had treated a good many cases at the hospital without radiant heat and the results had been fairly good. Nevertheless, his impression was that radiant heat combined with iodine ionization was distinctly valuable if the worker could carry it out. It seemed to him that a wrong idea as to the mechanics of ionization was prevalent. It was usual to think of it in the terms of bullets being projected into the joint or part. Rather should they think of some force exercising concussion upon a bag full of bullets, and by displacing one bullet causing a commotion throughout the mass, or, in other words, influencing the whole of the structures between the electrodes. The nature of that commotion must be extremely doubtful when, for instance, the galvanic current passed through the jumble of ions. They could have but little idea when they started off an iodine ion as to how it would eventuate. It might be stopped quite early in its course. But they knew that by gradually forcing iodine ions in the tissues they did obtain their result. It would be well, he thought, to concentrate on the best treatment for a particular condition, and not to try to make one particular treatment fit everything that came before them. Some remarks had been made about the sensation factor. The speaker thought that this was quite useless during ionization—so useless as to make it gravely doubtful whether they ought to go on increasing the current in the absence of sensation. Such a procedure would be injudicious. Some people seemed to have little or no sensation for the electric current. In one case with which he had to deal the current started at 5 milliampères, and was raised to 50 without any complaint from the patient. Evidently he did not feel a current of 50 milliampères, even when it was raised to that intensity within so short a space of time as a minute or two. In that case the temptation, if one relied upon sensation, would be to go on. People were extremely variable in the amount of current that they could endure.

Dr. Frank Fowler (Bournemouth) remarked that he had had a good many failures in the ionization treatment of patients who were brought to him for sciatica, but a little investigation showed that very frequently he was treating the wrong part. The patient might have complained of the back of the knee-joint or the thigh, when, as a matter of fact, the trouble originated as lumbago. He had had much more success in most of his sciatica cases when he had treated them high up. He had used diathermy also, and had found that an extraordinary amount of heat could be got through the electrodes. The active hyperaemia produced by the diathermy was of much value.

Dr. A. E. Barclay (Manchester) said that there seemed to be a certain amount of idiosyncrasy to electrical treatment. He had known patients who, except for some local condition, were perfectly well and strong turn faint on being subjected to the four-cell bath. The same subjects after perhaps a year would show exactly the same symptoms on any attempted repetition of the treatment. Evidently they were unable to stand the electrical current at all. He had found a condition of shock in patients upon whom he was carrying out zinc ionization with only 30 milliampères of current; in other cases there was no effect at all at this intensity, and the liability to shock appeared to be quite irrespective of the patient's robustness. With regard to the comparative value of ionization and other forms of treatment in the case of small warts, he had found that with the zinc needle and with a powerful current given under an anaesthetic these were erased in a manner much more effective than was the case with carbon dioxide snow.

Dr. G. E. Bowker (Bath) drew attention to the question of unqualified persons as dispensers of ionic treatment. Ladies who had had no hospital training and no experience of nursing were, after three months' study of the technique of ionic medication in London, sent down into the provinces as experts. The consequence was that yet another type of unqualified practitioner was in the field.

[1] British Medical Journal, August 27th, 1910, p. 518.

He thought that this practice should be opposed in the strongest way by the authorities on this subject. How could a person with only three months' training in the technique of ionic medication be qualified for the purpose? It was answered that she had merely to carry out the doctor's orders. Yes; but what happened was that the practitioner, knowing of the results which had been obtained with chlorine, iodine, etc., told that individual to give the ionic treatment of chlorine or iodine, as the case might be, and she carried it out in whatever manner she thought fit.

Dr. F. Howard Humphris (London) agreed with the last speaker as to the inadvisability of supporting any unqualified person using ionic medication, but he thought any opposition in the present state of the law would merely be futile, and the alteration of the law would not be an easy matter. He desired to ask the author of the opening paper in what percentage of the cases in which he gave ionic medication he expected success. The author had requested particulars of ionic medication in Dupuytren's contraction. He (the speaker) had treated four cases, and in one only was there marked improvement. As to technique, the hand was immersed in a saturated salt solution, and about 40 milliampères was allowed to flow for 60 minutes. Since Dr. Bailey, two years ago, drew attention to the use of radiant heat as precedent to ionic medication, he had used it on several occasions, and while he could not bear testimony as to an increase in the beneficial results from an administration of the light before ionization, it did appear to have the effect of adding to the comfort of the patient and of enabling the practitioner to attain the requisite dose in a shorter period of time. Thiosinamin had been lately used as an ionic medicament in cases of stricture, enlarged prostrate, and in scar tissue, and in view of its sclerolytic action it was quite possible that its administration might be followed by good results. In erosion of the os in cervical endometritis cupric ionization had proved to be a satisfactory treatment. The tissues at the time of application might be seen to be stained with the green oxychloride of copper, and a few days later the parts presented a much more healthy appearance. No discussion on ionic medication was complete without mention of Betton Massey, who had used this method over a wide range of treatment—from the most trivial cases up to the grave condition of inoperable cancer. Idiosyncrasy with regard to this treatment must be admitted, and, indeed, it would be difficult to imagine it otherwise.

Dr. H. Lewis Jones, replying upon the whole discussion, said that he had hoped that they might have had a few more practical results brought before them that morning. He agreed with Dr. Turrell that the mere piling in of the current in all the surrounding area was not likely to have any particular merit. Of the value of radiant heat as an adjunct to ionization, his experience was not great enough to enable him to give a useful opinion. He did not use any adjunct. After all, the ion was the thing upon the merits of which they had to depend. As to sciatica, who was there who had not many failures to chronicle? It was easy to see that there was bound to be a certain amount of failure. Some little time previously a patient came to him for sciatica when the real trouble was an abscess in the gluteal region. In another case, again, it turned out to be an inflammation or abscess of the buttock. He could multiply such instances. With regard to the treatment for chilblains, he found that simple stimulation with interrupted currents was so satisfactory in all cases that he had not tried ionization. The question had been asked as to the relative merits of diathermy and ionization. Well, here they came to the fork in the road. The medical electrician of the future would have the choice of the ionic method on the one hand, and of the thermal method on the other. Diathermy was a method of warming the tissues which might in time have good results. Ionic electricity was one thing; the non-ionic or thermal method was quite another. He agreed with what had been said as to the gross abuse of ionic medication at the present time. He was constantly seeing people who had had ionic medication, and with whom, owing to the fact that it had not been carried out efficiently and sometimes not even intelligently, it had been fruitless. Only a fortnight previously he was asked to see a lady who was suffering from a good deal of trouble and pain in the back of her neck. Ionic medication had been carried out, and the nurse who had done it accompanied the patient. On inquiring how the ionic medication had been practised, he found that in the middle of each application the nurse had reversed the current, with the idea that it would be more effective if it were sent through both ways! The case was one of chronic neuralgia of the great occipital nerve. He was of opinion that the only electrical treatment with which nurses should be entrusted was simple faradic applications. As to the percentage of cases in which he expected success in ionic medication, he could make no statement. It all depended upon the choice of the cases. But he would have liked to have heard more of the results of the treatment of Dupuytren's contraction, which was a tough proposition. In conclusion, he read a note which had been sent him by Mr. Ernest Sturridge, L.D.S.Eng., on the subject of ionization from the dental aspect. Mr. Sturridge stated that for the treatment of pyorrhoea alveolaris, many forms of gingivitis, and chronic alveolar abscesses, he had found zinc, copper, and iodine ions most effective. Bad cases of pyorrhoea yielded almost immediately to treatment with zinc ions, which should be introduced into the affected periodontal membrane by passing a small spear-shaped electrode of zinc or platinum into the pockets and interspaces of the teeth with a 5 per cent. solution of zinc chloride. The current strength necessary was from 3 to 5 milliampères, which most patients tolerated, and the penetration of ions with an electrode of such small area and cross-section was very great. Iodine ions introduced with a (cathode) platinum electrode were also very effective in treating pyorrhoea. Mr. Sturridge added that he had used this method of treating pyorrhoea alveolaris for a number of years, and had found it the only reliable means of curing the disease. He did not wish to be understood as claiming that ionization alone would cure pyorrhoea; there were many other details of treatment of a purely dental nature which were just as essential. But with the aid of ionic medication they had the most effective means of treating the disease yet placed at their disposal.

THE PHYSICS OF IONIC MEDICATION.

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(Abstract.)

After stating that his success with ionic medication in gynaecological affections had induced him to spend his leisure time upon an investigation into the physics of the subject, Dr. Sloan summarized the important points which he had set himself to elucidate. They were:

1. To what distance, measured in millimetres, does a given current in a given time cause penetration of the ions into the tissues?
2. May this be modified by modifications in the application of the current?
3. What is the total quantity of ionic material actually introduced from a therapeutic dose?
4. What, if any, chemical change does the ion introduced undergo after penetration?
5. How is it disposed of after its introduction?
6. How does the ionic material act? If it is an antiseptic before introduction, has it the same property after it is introduced into the tissues?
7. Does it pass into and through the tissues as in diffusion—that is, mainly by channels—or does it enter also into the interior of the individual cells during its electric propulsion?

To some of these points he had definite answers to give. In the case of others, he had still much work to do before satisfying himself as to the proper answer. He had limited himself to copper, his best therapeutic results in gynaecology having been obtained from the copper ion.

In order to clear the ground, he emphasized the fact that ionic medication was not electrolysis. "Whilst in both processes electro-chemical decomposition is taking place, electrolysis deals with what is taking place at the *plus* and *minus* electrodes; ionic medication proper deals with what is taking place near to the electrodes

only. Or, to put it in another way, electrolysis deals with the migration of ions *to* the electrodes; ionic medication with the migration of ions *from* the electrodes; the general term ionization including both of these processes and also the ionic migration which is going on throughout the whole of the interpolar tract." Nor was it only in the local effect that the two processes mentioned were dissimilar. Whereas the amount of the electrolization was measured exactly and only by the quantity of the ion or ions which might be deposited at a given pole, the results in the case of the ionic medication were determined by the depth of penetration of *a* particular ion into the tissues, and by the quantity of this special ionic material which had been driven on. Hitherto it had been assumed that this latter would be the same in amount as would be the total deposited at the opposite pole, and this error seemed to prevail up to the present moment. Early in his investigation he suspected that it would fall much short of this; and so he had found to be the case. Electrolysis thus gave no indication as to the extent of penetration of the ions into organic tissues, or of the quantity so moved on, and he had to determine these by actual experiments.

The author then described minutely how his experiments had been carried out. He had endeavoured to ascertain, in the first place, what was the effect of the ions on the nearest to living material—namely, gelatine and fresh white of egg. In a number of U tubes the osmotic diffusion was tested, and also the combined effect of diffusion and ionic penetration, under two or more different conditions. The extent of diffusion in the tube in which osmotic diffusion alone was tested was greater in depth and in total quantity where a denser solution was employed, and the penetration in the case of a denser medium—white of egg, for instance, as compared with gelatine—was much less in the limb where the white of egg had been boiled for ten minutes than in the other where it had been boiled for five minutes only. In the former, after two hours, the amount of penetration was 1.5 mm.; in the latter, 3 mm. In the case of combined diffusion and electric penetration, however, after the same time, and with a total quantity of current equal to 100 coulombs, in the hard-boiled albumen limb the penetration was 4 mm., and in the soft-boiled limb, with the same *plus* pole, the extent of penetration was 5½ mm. The purely electric penetration—2.5 mm. in each case—was thus apparently in no way influenced by the rigidity of the resistance of the medium. In all experiments the voltage employed was 48; the solution was usually 1 per cent. of $CuCl_2 2H_2O$, and in each tube in this experiment the electrodes at the positive pole were of platinum wire.

He detailed a striking experiment in this connexion. In two tubes the material used was a piece of the wall of the fresh stomach of an ox, the animal having been killed a few hours only before the experiment. In each case the $CuCl_2$ solution was applied to a circular piece of the mucous surface, and the depths of penetration in the case of the U tubes and of the ox stomach experiment were quite comparable. In the U tube the combined diffusion and electric forces caused a penetration of 5½ mm. in the less firmly boiled egg albumen; 4 mm. in the albumen which had been boiled for twice as long a time; and in the case of the dense tissue of the ox stomach, after a current of 5 milliampères for five hours, 3 mm. In the case of diffusion only, the soft-boiled albumen gave a penetration of 3 mm.; the hard boiled, 1.5 mm.; and in the case of the dense stomach wall absolutely no copper had penetrated into the tissue after five hours' exposure to diffusion. Calculating 90 to 100 coulombs as equal to about five gynaecological doses, the total extent of penetration at each therapeutic application might be reckoned as ranging between ½ mm. to 1 mm. according to the resistance of the tissue treated. The inference which he had drawn from a number of experiments was that, whilst the electric penetration for a therapeutic dose varied from ½ to 1 mm., the actual quantity of the copper ion introduced electrically with a similar dose, namely, about 20 coulombs, might be reckoned as about 1 mg. Many more experiments would have to be made before a law could be formulated for each ion, but the figures he had stated might be taken as not very wide of the actual amount. The quantity of copper deposited at the negative pole, on the other hand, according to Faraday's law, for 20 coulombs, which he was taking as a fair gynaecological dose, should amount to many times this if there were no other ion present, namely, about 6.6 mg. He added that this quantity per one therapeutic dose must be understood to be the amount electrically introduced where a non-soluble electrode, such as platinum or carbon, had been employed, and did not include the diffusion quantity which, as already seen, was largely dependent on the medium through which diffusion had taken place.

Dr. Sloan also addressed himself to the inquiry as to the chemical change, if any, which the copper ion underwent after penetration. When employing gelatine alone as the medium the $CuCl_2$ seemed to pass in simply as $CuCl_2$. But since the tissues of the human body could not be considered simply as gelatine, he set himself to find out what became of $CuCl_2$ when mixed with white of egg and with the juice of fresh meat. Though these two admixtures gave different results, they agreed in this, that the copper no longer remained part of an inorganic compound, but became an atom of a complex organic molecule, ceasing in both cases to give some of the usual reactions of inorganic copper. The copper thus did not enter into combination with the inorganic material in the tissues forming insoluble phosphate of copper, at least to the extent that might be supposed. After relating his experiments in this particular, Dr. Sloan continued: "The generally received notion that during the ionic penetration of copper, the oxychloride was formed, is only, I now find, in part correct. Clinically I know that this substance is deposited upon the eroded surface of the cervix uteri; but my recent investigations cause me to believe that little, if any, of this oxychloride enters into the tissues; and also that it is less readily formed if a platinum or carbon electrode be used instead of a copper one."

With regard to the antiseptic action of copper in its organic form, he gave details of a test which showed that an albuminate of copper was at least as powerful an antiseptic as the same proportion of the inorganic salt. One point only then remained for consideration—namely, Does the electrically driven ion enter into the protoplasm of the cells of the tissues? In answer to this he quoted from a letter received from the microscopist who examined the stomach section for him: "The metal has passed through the mucous membrane and the submucous tissue, and has lodged in the tissue of the muscle below. The metal is exceedingly finely divided and is manifestly lodged *in* the tissue, not simply deposited on it—that is, the metal is intracellular, not simply intercellular."

DISCUSSION.

Dr. H. LEWIS JONES (London) expressed the thanks of the Section to Dr. Sloan for a paper that had entailed a large amount of original investigation. He could not usefully criticize it off-hand. A most useful subject was opened up to consideration as to the degree of penetration of the different ions and as to what happened to them after penetration. No doubt the different ions did penetrate to varying depths, but one of the difficulties was that the atomic weight of some of them, lithium (7.0) for example, was so extremely small that it was exceedingly difficult to identify them afterwards. It was useful to know that the copper was not at once put out of action in the form of an insoluble phosphate, and ionic workers had to learn, partly from experiments such as these, but of course to an even greater extent from clinical results, what effect exactly was obtained from the use of metals like copper in ionic medication.

NON-OPERATIVE TREATMENT OF PROSTATITIS.

By WILLIAM BENHAM SNOW, M.D.,

New York.

(Abstract.)

BEFORE describing his own non-operative method for the treatment of prostatitis by means of the static-wave current, Dr. SNOW referred to the great frequency of this affection in the male population and to the principal subjective symptoms, these including impotency, neurasthenia, frequent micturition, difficulty in voiding urine, sciatica, and discomfort in the lumbar region and on the inner sides of the thighs. Of the 210 cases that had come under his

observation during the past twelve years, 25 per cent. had been neurasthenics, and these, except in a few long-standing cases, had been promptly cured by the relief of the local condition. In 10 per cent. of the cases of sciatica that had come before him, the pressure of an enlarged prostate gland had been found to be the offending cause.

The *modus operandi* of the application of the static-wave current in the treatment of prostatitis was the same as in the treatment of other inflammatory conditions. The effect upon the tissues was entirely a mechanical one, without electrolytic or thermic action. When applied in the depression between the two lobes of the gland at the rectal site, it caused a contraction of the whole substance of both glands. The current was so administered with regulation of the rate of discharge at the spark-gap that the periods of contraction alternated with the periods of rest at a rate, approximately, of 120 to 180 per minute. When the condition was acute and the gland tender upon manipulation, the use of too long a spark-gap entailed a contraction effect which was more intense than could be endured. In acute cases, when the gland was too sensitive at the outset to pass an electrode, if the electrode was placed against the gland and the treatment commenced with a short spark-gap, it would be found that the electrode could be pushed gradually into position during the process of the treatment, and that before the twenty minutes were over—the usual period of administration—the electrode could be passed well against the prostate. The spark-gap could be lengthened from time to time during administration until the end of the treatment. After the first few daily treatments in acute cases, the congestion would be so far relieved with the reduction in size of the gland that it would be possible to start the subsequent treatments with a spark-gap fully four inches in length. In the relatively early cases characterized by a marked degree of tenderness and infiltration, reduction was very rapid, the gland often being reduced to the normal size within a week or ten days; whereas in the chronic condition the reduction to normal might take place in the course of two or three months, the treatment being given on alternate days.

He described the method of action of the current in these cases as the induction of successive contraction and release, exercising the cellular structures for twenty minutes to force out through the lymph spaces the accumulated products of inflammation, relieving stasis, and restoring the circulation of the blood throughout the structures of the gland. The effect did not produce that irritation of the gland which followed from its manipulation by the finger in prostatic massage. The static current acted chiefly upon the infiltration, and forced out through the lymphatic channels the products of inflammation which comprised the infiltrate without causing irritation and without expressing the normal secretions of the gland. No other electrical current would produce this effect, for no current other than the static wave would produce the same diffused mechanical effects as had often been demonstrated in the treatment of other inflammations. The electrodes employed were either of the common style of rectal electrode first used by the author, or the larger cylindrical one later introduced by him.

In the concluding portion of his paper Dr. Snow dealt with the effects arising from the relief of the inflammation. Impotency was relieved in most patients after a few treatments. The neurasthenic, except in a few long-standing cases, was a changed man within a month, often within the first week. The condition of vesical irritation associated with prostatitis was promptly relieved in most cases. When complications were present in the form of chronic dilatation of the bladder, involvement of the deep urethra, or enlargement anteriorly of the veru montanum, other treatment would be necessary. In cases in which persistent vesical symptoms were associated with prostatitis, a careful urethroscopic or cystoscopic examination, or both, as well as accurate urinalysis, would usually disclose the cause. A class of cases which had a marked hyperaesthesia of the prostate gland without enlargement had been of unusual interest to the writer. Most of these cases were associated with a degree of mental disturbance which was more or less promptly relieved by the same method of treatment. The wave current after a few weeks relieved the painful or sensitive condition on manipulation, as evidenced on the introduction of the electrode, and was followed by or associated with the disappearance of the psychic condition.

After quoting Dr. G. K. Swinburne of New York, who was an authority in the treatment of the condition under consideration, and who emphasized the value of the static-wave current except in some late cases of prostatic hypertrophy with or without inflammatory exudate, which were uninfluenced by the current, Dr. Snow stated that these observations on the treatment of prostatitis were based upon the treatment by himself of upwards of 210 cases, of whom more than 200 were completely relieved of the prostatic inflammation and associated symptoms. The effects were not temporary, but permanent in nearly all cases.

ELECTRICITY IN THE TREATMENT OF OBESITY.

By Francis Howard Humphris, M.D., F.R.C.P.Edin.,
Vice-President, American Electro-Therapeutic Association.

(*Abstract.*)

Dr. Humphris defined obesity as "a state of disordered metabolism, accompanied by superfluous adipose deposits and various functional disturbances." Among predisposing causes he instanced heredity, certain diseased blood conditions, sedentary habits at middle age, and—although by no means universally characteristic of obese people—eating and drinking to excess. Whatever the cause, it must be looked upon pathologically as a case of deficient or delayed oxidation—those parts of food elements which should nominally be converted into CO_2 and water being stored up in the tissues as fat. The gravity of the disease lay in the fact that in the corpulent person the liver and heart were often enlarged and infiltrated with fat, the lungs were usually small, and blood changes might occur to such an extent as to be visible to the naked eye. Hence such symptoms arose as palpitation and dyspnœa, and there might be a feeling of faintness on exertion, or a sensation of choking or of fullness in the chest.

Before describing the method of weight reduction by electricity, mention was made of the methods of massage, Turkish and radiant-heat baths, drugs, and diet. Massage had a great reputation for the cure of obesity, but, although in certain cases amelioration by this means was probable, the long duration of the treatment alone spoke against its efficacy. Doubtless it was a useful adjunct to other forms of treatment. Turkish baths and light baths *per se* the author considered to be wellnigh useless as weight reducers, while drugs, such as thyroid, iodine, and fucus vesiculosus, had their uses and their dangers, and should only be taken under careful medical advice and supervision. The same advice applied to the reduction of weight by diet, and the author referred to textbooks on obesity and on general medicine containing full particulars of the methods of Banting, Ebstein, Salisbury, and others.

Coming to the electrical method, the author said that since 1909, when Professor Bergonié read a paper before the Académie des Sciences upon the employment of electricity in order to provoke an exercise or stimulation of the muscles of the body towards a general therapeutic end, he had had the opportunity of seeing M. Bergonié at work, and of studying and practising his methods. The axiom upon which the treatment was based was thus stated: The proper use of any organ increases the vitality peculiar to such organ, and also influences the vitality of the entire organization. This general law was demonstrated particularly in the case of the muscular system. Active exercise, on the one hand, strengthened the muscles concerned, and, on the other hand, combated the conditions in which combustion was insufficient, such as in obesity, diabetes; or incomplete, as in the uric acid diathesis. The muscles were contracted by electric stimulation some one hundred times a minute, the aim being exercise without fatigue—a long-sought desideratum which, it would be admitted, was of the greatest therapeutic value.

The current selected for the purpose was derived from what might be termed an induction coil, or a coarse-wire faradic, the co-efficient of transformation being two or three (that is, four volts in the primary and eight or twelve in the secondary). The current was rhythmically interrupted and reversed by means of a metronome about

one hundred times a minute, the aim being to obtain muscular contractions of maximum strength with a minimum of sensation. To accomplish this aim the waves induced by the make and break of the current must be regular, equal, and synchronous. Therefore it was necessary that the interrupter should act in a perfectly even manner, and the old-fashioned simple ribbon interrupter, weighted at its extremity with a piece of iron, seemed to give the greatest satisfaction. An indispensable condition to the obtaining of painless, energetic muscular contractions was the non-visibility of any spark, even if the room were darkened. A condenser of suitable capacity was of primary importance. In practice, the main commercial direct current was led through a resistance bank of lamps and through a circular wire rheostat; a voltmeter and an ampèremeter were put in circuit, and the current was led to the coil. It was varied by means of the wire rheostat until there was no sparking at the interrupter, and the requisite purity of tone in the musical note of the interrupter was obtained. The quantity of current was quite considerable, an average reading being C. = 2 A. 55, and E. = 24 V., the expenditure of energy in the primary being over 61 watts.

After showing oscillographic tracings to demonstrate the purity and clearness of the curve when current and interrupter were working harmoniously, the author described the metronome with which the current was interrupted on its way to the patient. The metronome was the most simple and practical apparatus for obtaining the rhythmic inversion of the current at each interruption so as to give a regular and painless stimulation. In practice the rate which produced the best results and which was most comfortable to the patient was when the metronome was regulated to 100 to 120 interruptions per minute. Having passed through the metronome, the current reached a wall-plate, and from this it was distributed to the various electrodes. The electrodes employed were of two kinds—stationary and movable. The former, in metal, took the form of a semi-reclining chair, of which they constituted the seat and back, two forming the seat and two the back, each electrode being covered with a towel wrung out of warm water. The movable electrodes, also of metal, were semi-cylindrical pieces, varying in surface, form, curve, etc., and were placed with the intervening warm, wet towel on the thigh, under the calf (resting on a special support), on the abdomen, and on the arms—twelve electrodes in all. The total surface covered by these electrodes was very large, and might, in some very fat people, even be 10,000 square centimetres, which would work out, with a 50-milliampère current, at 0.01 milliampère per square centimetre. The resistance offered by the body varied considerably, but Professor Bergonié had measured it, with all the electrodes well applied and well dampened, at less than 200 ohms. The movable electrodes were held in position either by means of rubber bracelets or by sacks of sand placed on the lower limbs and abdomen of the patient, exercising a considerable pressure. The pressure was of some advantage in keeping the electrodes in good contact, in spite of muscular contraction, and in giving more work to the muscles when they contracted. Some fat people could thus be laden with the sacks up to 200 lb. without an appreciable diminution in the electrically stimulated movements. It was best to begin with a treatment of twenty minutes, increasing by five minutes daily, until forty or forty-five minutes daily was reached.

After pointing out the obvious fact that patients undergoing this treatment should be under continual medical supervision, the author dealt with its effects. The patient, he said, began to lose weight from the first, and a feeling of alertness, of lightness, and general well-being replaced the lethargy from which he had suffered. The effect on the general health was marked from the first, and seemed to be almost out of proportion to the number of pounds lost. In very stout people the treatment should last a month or six weeks, during which time he had seen 20 lb. to 30 lb., and in one case 40 lb., lost, the patients feeling in capital health and spirits all the time. The diet varied with the individual, but prima facie with so much animal combustion, it should mainly consist of fruit, vegetables, and salad; in fact, it might be said that, with the aid of the current, "one eats oneself and takes a little salad with it." The rate of loss to be aimed at for the sake of permanence was 2½ to 3½ lb. per week, and, as a general rule, he advised a total reduction of 10 per cent. at one series of treatment. One of several reasons for advocating the slow rate of reduction was that, when fat was rapidly reduced, it tended to return; whereas the slower the rate, the more permanent was the effect.

Finally, he dealt with the question that was so constantly arising—namely, the action of this treatment on the heart. In this respect it could only be beneficial. The subject had been ably handled by Dr. W. Hampson in a paper read before the Electro-Therapeutical Section of the Royal Society of Medicine, and published in the *Transactions* in March, 1912, and to this he referred them, contenting himself only with the statement that the reduction of weight in this method of treatment was one of the most valuable adjuvants to the treatments of circulatory diseases that they possessed.

THE CONTROL OF THE HEART BEAT BY MEANS OF CONTRACTIONS OF MUSCLES ELECTRICALLY STIMULATED.

By W. HAMPSON, M.A., L.M.S.S.A.Lond.,

Medical Officer in Charge of the Electrical and X-Ray Department, Queen's Hospital for Children, and St. John's Hospital for Diseases of the Skin.

VOLUNTARY muscular exercise, as a form of treatment for heart lesions, has, on the system of Dr. Schott, obtained a well-established position in medicine.

Involuntary exercise of muscles under the stimulus of the electric current can be made to yield some special advantages of great value which are not obtainable by voluntary exercise.

Briefly, the treatment is a special modification in several directions of the use of the Bergonié apparatus for repeated simultaneous stimulation of the large muscles of the body. Electrodes of large surface are held in firm contact with the front and back of the thigh, with the calves, the two sides of the abdomen, and the back. A faradic current of moderate tension is passed through all the electrodes simultaneously at short intervals, so that all the muscles treated make intermittent contractions which, in consequence of the nature of the current and the conducting surfaces, are moderate and painless.

As a method of treating special groups of weak and wasted muscles, intermittent electrical stimulation has been extensively employed by Dr. Lewis Jones at St. Bartholomew's Hospital, and, after his example, at the Queen's Hospital for Children by myself, and elsewhere. In the system now being described, however, not only is the stimulation general, being applied to as many of the large muscles as can conveniently be stimulated together, but a special arrangement is made for the timing of the stimuli, the makes and breaks being governed by a metronome, which can be set at any desired speed.

When it is wished to make the patient's heart beat more slowly the metronome is set so that the muscle stimulations occur at a slightly slower rate than the pulsations of the patient's heart, and the latter in a few minutes begin to synchronize with the former. When synchronization is well established the metronome speed is further lowered a few beats per minute, and before long the heart picks up the reduced rate. By persevering in this way the operator brings down the pulsation of an over-rapid heart to a rate that is at or near the normal.

The pulse is at the same time made stronger and more regular, the patient experiences a sense of well-being, rest, and relief from distress, which lasts for several hours after the treatment is over, and, in particular, difficulty of breathing is diminished or removed.

After a course of treatment the heart acquires a better habit of its own when not under treatment, and a heart which was dilated not only acquires a pulse which is stronger and slower, but also undergoes appreciable contraction.

Patients who have formerly been obliged each season to take a course at Nauheim prefer, after experiencing the results of this treatment, to stay at home with the help of the electrical control.

The *rationale* of the treatment is briefly this: The heart is assisted in its work of making the blood circulate by a temporary conversion of the large muscles of the body

into subsidiary hearts. Its work is thereby better done, while it is itself doing less work. The circulation of the whole body is improved, while the heart is in a partially resting state.

Every contraction of a muscle causes the squeezing of everything squeezable within its boundaries—that is to say, the veins and lymphatics. Squeezing a vein tends to empty it, and as it is provided with valves which allow fluids to pass in one direction only, it is emptied in that direction, namely, towards the heart. Thus, when all the large muscles contract simultaneously, the moving blood and lymph cause a wave of fluid pressure to move towards the heart. Successive contractions produce successive waves of fluid pressure. In ordinary exercises, such as walking, rowing, or cricketing, this action takes place with beneficial results; but without that particular effect which is the subject of this paper. For in such actions the fluid-pressure waves resulting from muscle contractions, though helpful to the circulation, are often irregular, often masked by the waves due to other actions, and seldom have a definite time-relation to the contractions of the heart.

But when the fluid-pressure waves due to simultaneous muscle contractions arrive regularly in the great veins leading to the heart at periods a little later than the unregulated heart-beats, that part of the stimulus to the heart which depends upon the pressure in these veins is modified in its timing, and the heart contracts a little later than it otherwise would do, so as to obtain the full benefit of this assistance at each contraction.

This slowing is further promoted by the circulation improvement, which diminishes that part of the stimulus to rapid action which depends upon the fact that the circulation is poor and the tissues in need of more blood.

The circulation itself is improved not only by the direct action of the muscle contractions in thrusting blood forward, but also by the negative action of keeping the veins emptied in front of the capillaries. Thus the blood passes more easily through the tissues, and this again reduces the working pressure in the arteries, against which the heart has to pump.

The whole body and all the organs, including the heart itself, thus get the benefit of a better supply of blood, while the heart is doing less work to maintain the circulation.

This improved blood supply to the heart muscle, combined with its partial resting, puts the organ in the most favourable position for recovering its strength and tone.

The method seems to offer a possibility of restoration from operation shock or incomplete drowning where the case has gone so far as to make present methods useless. It is in vain that oxygen-bearing air is supplied to the lungs by artificial respiration when there is no blood passing through them to be aërated. But even when the contractions of the heart have entirely ceased, it may be possible by this agency to get a certain quantity of blood to flow through the entirely passive heart and through the lungs as well, thus supplying the tissues with oxygen until the heart begins, under the influence of this very direct stimulus, to resume its functions.

The method must be applied with great care. The heart must be carefully watched and the electrical stimuli timed in relation to the varying pulse-rate. The contractions must also be so gentle as not to make a large total amount of work; otherwise the tissue fatigue thus produced will itself form a stimulus to excessive efforts on the part of the heart.

STEREOSCOPIC RADIOGRAPHY AS A ROUTINE METHOD OF EXAMINATION.

By C. F. BAILEY, M.D., M.R.C.P.,

Assistant Physician and Medical Officer in Charge of Electrical Department, Sussex County Hospital, Brighton.

(Abstract.)

THE author said that his paper was merely a collection of suggestions as to method and apparatus of a simple character which he had found useful. Most of the suggestions had been made before, and most of the apparatus was primarily the invention of other radiographers. The difficulties of interpreting an ordinary radiograph and the errors into which an observer might fall were the result of various factors.

Disadvantages of the Ordinary Radiograph.

1. Every single radiograph was not a picture in the true sense of the word, but rather a series of shadows of structures having different opacities for the *x* rays.

2. These shadows might overlap one another, might cross one another, or by juxtaposition quite alter one another's characteristics.

3. Their size and definition in relation to the structures which produced them might be profoundly modified by such conditions as distance from plate or tube, and position or composition of the substance itself.

4. These shadows were all seen as if on one plane, and it was solely by his judgement that the reader of the radiograph reasoned out the form and size of the object producing the shadow, and its distance and position.

The stereoscopic radiograph eliminated most of these difficulties, for in addition to length and breadth it had thickness or depth. The heterogeneous jumble of shadows or absences of shadow in one plane was reduced to something more like the objects which produced them.

Objections to Stereography.

The reasons why stereoscopic radiography was not universal were:

1. That a certain number of individuals appeared to have no faculty of stereoscopic vision.
2. That many radiographers, having become accustomed to certain difficulties of interpretation turning up regularly, held that stereoscopy was unnecessary and that it gave little assistance in the avoidance of familiar "traps."
3. That expense and trouble were doubled.
4. That special viewing apparatus was necessary, or, if an ordinary stereoscope were used, that the photographs had to be reduced in size, with consequent loss of value.

As to the first objection, the proportion of one-eyed individuals was quite small. Any one who could see moderately well with each eye separately was able, with a little practice, to combine the two stereoscopic elements.

As to the second objection, the radiographer, even though himself familiar with the "traps," should be able to demonstrate clearly to the surgeon the reasons for his diagnosis.

Two Exposures on One Plate.

The third objection was dealt with at greater length. With a little care it was as easy to take two photographs side by side on an *x*-ray plate as to take one. Each half of the plate in turn, of course, must be guarded by sheet lead. On a 12 in. by 10 in. plate, a radiograph of almost any desired part could be taken on each half, and with this method the exposure was the only manipulation that had to be duplicated. In stereoscopic radiography rapid exposures were sometimes essential and always an advantage. With a 15 in. coil passing 12 milliampères through a satisfactory 8 in. tube, the distance from anticathode to plate being 24 in., the exposure for an ordinary renal picture was quite 15 seconds. If an intensifying screen were used the 15-second exposure was reduced to one second or less, but in that case over-exposure was risky. When such a screen was used he found extra-rapid photographic plates the more suitable, but his own preference was to take two stereoscopic pictures on an *x*-ray plate without an intensifying screen, the patient holding a deep breath during each exposure. He examined the part first with an ordinary fluorescent screen (using a low current on the primary) in order to be sure that all he wished to have on the radiograph would be covered by the half of a 12 in. by 10 in. plate. He used a wooden frame with lead covering, and with a 10 in. by 6 in. opening at the centre, this corresponding to the area of the half of the plate. The tube was placed beneath the couch, and with the help of Dr. Ironside Bruce's pointer he caused this frame, adjusted with sand-bags over the part, to be centred upon the required area. The screen examination completed, the plate was placed in the frame and an exposure made upon the half of it with full current. It was then shifted along the frame so that the other half was ready for exposure, and at the same time the *x*-ray tube carrier was moved not more than 6 cm. in the same direction as the plate, and the process repeated. The movement of tube and plate in the same direction was necessary to accurate binocular perspective; and although such perspective was not essential for ordinary diagnostic purposes, it was as well to work to a definite and correct method.

Satisfactory stereographs could be made with the patient

in the upright position by placing the leaded frame in the screen carrier of the epidiascope or chassis instead of the screen, and then clamping the carrier tight, the plate being kept steady by a renal air-bag, held in apposition by cords crossing it, to which were attached sand-bag weights. The method was not perfectly suited to the abdominal photography of bismuth meals. He found vibration the greatest trouble, and he suggested that if the manufacturers could produce a double tube with a device for sending the current at will through either of two anticathodes a few centimetres apart, the drawback of tube vibration would be eliminated. A simple plate-changer acting in about one-fifth of a second would also be a great boon, especially if it were portable and could readily be adjusted to any desired position. In this connexion he discussed the relative advantages of the fold-over plate-changer and the side-to-side "tunnel" plate-changer, used in America.

Viewing Apparatus.

The objection to stereoscopy on the ground of expense and trouble of special viewing apparatus was, he thought, due to the difficulty of dissociating eye convergence from accommodation. The only condition was that the observer should receive on the corresponding portions of each retina a clear visual impression from one of the stereoscopic pictures and one only. In his own stereographs the right eye must see the left-hand picture and the left eye the right-hand picture. In order to fulfil this condition the eyes must converge—that is, the observer must very slightly squint—but the accommodation must not be allowed to alter with convergence or the combined picture would be out of focus. To assist those who had not the knack of converging the eyes without altering the accommodation, he showed an aid to stereoscopy in the shape of a perforated card which could be held at arm's length, 6 ft. away from the two stereoscopic negatives or prints. The right eye being closed, the left eye framed the right-hand picture in the opening of the card, and then, with no change of position, the left eye was closed and the right eye similarly framed the left-hand picture. If both eyes were now directed to the opening in the card, the two pictures would be seen framed by that aperture, and combined into one stereoscopic image.

Stereoscopic radiography (Dr. Bailey said in conclusion) was more particularly of value in all those cases in which radiographs could not be taken in two directions at right angles to each other, and even if this were possible a stereoscopic instead of an ordinary image in the two directions would make diagnosis much easier. As to cost, the more accurate information which was made available by stereoscopic means led eventually to a saving in plates and in other respects. He predicted that, the value of the stereoscopic picture from the diagnostic point of view being so greatly superior to that of the simple radiograph, stereoscopy in time to come would be carried out in every case as a matter of course.

DISCUSSION ON RAY THERAPEUTICS IN MALIGNANT DISEASE.

A Correction.

THERE is an error in the report of the remarks made by Dr. Frank Fowler in this discussion (BRITISH MEDICAL JOURNAL, August 17th, page 376). Dr. Fowler said that he found his technique generally sufficient to prevent local recurrence, and not as reported.

TO commemorate the great services of Dr. Magnan to the Saint Anne's Asylum, Paris, from the direction of which he has recently retired, the city of Paris has resolved that the block which has been under his direct charge since 1867 shall in future bear his name.

ANY one who has undertaken to act as guide to a motor car on a tour will know that, though he may have got on very well while on country roads, he has often been nonplussed to find the way through a town. The Automobile Association, realizing this, has commenced the preparation of a number of guide cards through towns in England. They are based upon the ordnance survey, and, in addition to indicating the best roads through a town, show also other main roads apt to be encumbered by traffic, and therefore to be avoided by the motorist. Copies can be obtained by members from the head and branch offices of the association and from the patrols on duty outside the towns.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE TREATMENT OF SYPHILIS.

I HAVE read with much interest Dr. McNamara's note (page 310) on the treatment of syphilis with grey powder and mercury perchloride. I quite agree with him that grey powder combined with ½ or 1 grain of pulv. ipecac. co. is a sovereign remedy for the treatment of specific disease in children, but when he goes on to state that perchloride is only a drug of secondary importance in syphilis of the adult, then I beg distinctly to join issue with him.

That the perchloride in the form of the official liq. hydrarg. perchlor., containing only $\frac{1}{16}$ grain in the drachm, is not an efficient remedy in the treatment of syphilis, is due to two causes: (1) The dose (℥j of the official liquor, the one usually administered) is not large enough to produce any marked effect on an adult patient suffering from this disease; (2) the drug, if administered alone in efficient doses, very soon upsets the stomach, and then the syphilis rapidly gets worse, as the patient vomits his mercury and at the same time is debilitated by the loss of his food.

To prevent vomiting mercury perchloride should never be given alone, but always in combination with ammonium chloride and potassium chlorate. The solution which I use is of the strength of 1 grain to ℥j of distilled water, and the prescription, which I have long used with splendid results for adult male patients, is as follows:

℞ Liq. hydrarg. perchlor. concent.	...	℥ss.
Potassium chlorate	...	℥jss.
Ammonium chloride	...	℥iijss.
Tinct. card. co.	...	℥j
Simple syrup	...	℥j
Aq.	...	ad ℥viij

Sig. Tablespoonful in a little water thrice daily 30 minutes after food.

The dose is thus ¼ grain perchloride three times daily, and I have never seen this quantity upset the stomach. Female patients cannot, however, tolerate so much, and my usual practice is to give them just half that quantity ($\frac{1}{8}$ grain), which I have never found to disagree with them.

South Shields. JOHN BAIN, M.D.

THE TREATMENT OF STYES.

IN reply to a query in this JOURNAL asking for suggestions as to treatment of the above condition, I beg to put forward the following scheme of treatment:

The general treatment consists in putting the patient under as good hygienic conditions as possible, including an abundant supply of fresh air both day and night, attention to diet, and a course of tonic treatment. For children I have found syr. ferri phosph. ♏ xv in half an ounce of water quite satisfactory.

The local treatment depends largely on the state of the disease. If acute, hot boracic fomentations are very effective; they should be applied every four hours. An alternative to these dressings is the hot pad made by one layer of white lint and three of flannel covered on the outer (flannel) side with oiled silk. The whole pad is then wrung out with hot water and applied as an ordinary fomentation. If the case is somewhat advanced, the following method of procedure is indicated: (*a*) The eyelids are bathed every four hours with the lotion of boric acid gr. x, borax gr. v, glycerine ♏ x, in an ounce of water, and all crusts and discharge are thoroughly removed. (*b*) The conjunctival sacs are irrigated with the same lotion every four hours, and guttae argyrol 5 per cent. afterwards dropped in the sacs three times a day. (*c*) The following ointment is applied three times a day to the eyelids: Hydrarg. oxid. flav. gr. ij, paraf. moll. ad ℥ j.

The special treatment consists in taking a specimen of the pus and having a vaccine prepared and injecting the patient at intervals. This line of treatment, I think, is clearly indicated when the condition has gone on for some considerable time, and resists all general and local treatment.

I have made no attempt to describe any alternative methods of treatment, but have confined myself to one definite scheme.

J. B. H. HOLROYD, M.R.C.S.Eng., L.R.C.P.Lond.,
Senior House-Surgeon, Birmingham and Midland Eye Hospital, Birmingham.

Reviews.

SIR HENRY BUTLIN'S LECTURES ON THE PARASITE OF CANCER.

Sir Henry Butlin in the last months of his life prepared three lectures embodying his mature views as to the pathogeny of cancer. Two of these were delivered at the Royal College of Surgeons of England, but as the author, though present, was not strong enough to deliver them, they were read for him by Mr. R. H. Paramore. They were published in this Journal on November 25th and December 7th, 1911. The third lecture was never delivered. It was published in this Journal on April 27th, 1912.

The three lectures have now been collected by Mr. Paramore and published in a small volume with an introduction which Sir Henry Butlin left behind him, and an appendix to the second lecture containing matter omitted at the time of its delivery and first publication.[1] In his introduction Sir Henry Butlin wrote that the discussion of the origin of the cancer cell was beyond the scope of his lectures: "I maintain only that the cancer cell is an independent species of organism—an absolutely new species—consisting of a single cell." Further on he said: "A parasite of external origin, whether small or large, whether benign or malign, whether it be animal or vegetable, will not explain the phenomena of cancer as they occur in man and animals, and that is the reason why a large number of investigators, including the clinical pathologists, have abandoned the search for it." Apparently the lectures contained most of what he wished to say, for the introduction contains the following pathetic paragraph: "As my strength is rapidly drawing to a close, I may not be able to speak of all the phenomena of cancer in relation to my theory. They are not many, and are for the most part quite subordinate."

The volume has the title, *Three Lectures on Unicellula Cancri, the Parasite of Cancer.* The publishers might have given it a better dress; the page is squat, the illustrations not too well printed, and the whole appearance of the volume somewhat mean.

THE MAKING OF MODERN SURGERY.

The author tell us in the preface that this book[2] is partly the outcome of "a desire to make some reparation for too hard words spoken of the surgical profession some years ago." As the surgical profession was not one penny the worse for Dr. Saleeby's denunciations, we do not see that the explanation was needed. The object of the book, we gather, is the enlightenment of the public mind as to the advances made in the science and art of surgery since the discoveries of Pasteur paved the way for the work of Lister and his followers. We agree that the time has come when the public should know and understand the principles underlying the revolution that has been effected in surgery during the last forty-five years. But we wish that the author had more fully realized his responsibility in writing such a treatise for the layman who has no experience of his own to help him to distinguish between fact and mere flight of the imagination. Dr. Saleeby has, it seems to us, allowed himself far too much freedom in the field of speculation and in dreams of a Utopian future, so that a great deal of his book contains matter which to the man with no special knowledge is likely to be misleading. Such a one would infer that, armed, as we undoubtedly are, with extensive knowledge of the exciting causes of disease—particularly that portion thereof which comes under the eye and hand of the surgeon—it is only supreme indifference on the one hand and vested interests on the other which prevent us from stamping out these diseases for good and all. Dr. Saleeby takes no thought of opinions contrary to his own. His utter lack of anything approaching to a sense of practicability, to say nothing of humour, may be instanced by the solemn statement that a house-surgeon, in dealing with a case of appendicitis, may devote himself to making a leucocyte count every four hours day and night that he may know when to send for his chief! We wonder how many chiefs would appreciate such scientific devotion and such absence of clinical perception.

Dr. Saleeby gives a brief account of surgery as it was before the dawn of the Listerian era, including therein the introduction of anaesthetics. He then devotes chapters to a general review of the nature of microbes, to the introductory work of Pasteur, to the gradual evolution by Lister of the antiseptic method, and the development from that of modern surgical technique. Throughout these chapters he is apt to wander from the point and to burst into tirades over the scandalous neglect of school children instead of keeping to the history of the subject, which he might have made more interesting and at the same time considerably fuller. He next discusses the application of antiseptic and aseptic methods in the practice of midwifery, and lays stress on the vast diminution of maternal mortality in the puerperium which has resulted therefrom. This is as it should be, but again our author is not satisfied with a dignified recital of impressive facts. He must perforce seek to impress his readers by the methods of the sensational newspaper. In one breath he descants upon the horrors he has seen in "the most famous slum in the empire," where are to be found "the worst imaginable conditions for maternity, vastly worse from the Listerian point of view than anything to be found amongst savages or animals," whilst in another he tells that he has never seen a case of puerperal septicaemia or pyaemia in his life! That is certainly a magnificent tribute to Lister, but does it not rather discount the author's subsequent eloquence upon the imperative necessity for putting into practice an idea of his which we may best describe as a maternity pension with nursing, etc., thrown in?

Dr. Saleeby next turns his attention to Listerism and war. He takes the opportunity—unnecessarily, in our opinion, in a work such as this ought to be—to air his views upon "that hideous and futile business" the South African war, and then proceeds to describe how very much superior the Japanese arrangements were in the war with Russia, "by far the most colossal campaign in history," both in dealing with wounds and disease, to those employed in any previous war. In the absence of the publication of any official figures by the Japanese War Office, we should have thought it would have been advisable to be somewhat less vociferous in praise of them and in condemnation of this country. He deplores the ignorance and stupidity of our soldiers and sailors, officers and men alike; but he forgets to mention that at Aldershot there is now an admirable school of sanitation where instruction is given not to officers only, but to picked men from every unit in the command.

Surveying the surgery of the present day, Dr. Saleeby gives an account of his own experiences as a patient and traces the genesis of the modern nurse. We cannot quite see why a chapter on surgery and alcohol is included, especially as sentences reminiscent of the temperance platform are scattered at frequent intervals elsewhere throughout the book.

The final chapters deal with the future opened up by the acceptance of aseptic principles and all that this entails. And it is in these chapters more than anywhere else that we think Dr. Saleeby shoots most wide of the mark. With his views on the Insurance Act and on the manifold shortcomings of general practitioners we have no concern; we need only say that they are scarcely calculated to raise the profession in the estimation of the general public. A point on which he lays stress is that at present the hospitals take no part whatever in the prevention of disease. To begin with, this is largely untrue, inasmuch as much research work into the means of prevention is carried out at the great hospitals. Apart from that, how is a hospital ever to *prevent* disease? Our author does not say. We must take exception also to the author's too sanguine forecasts as to the elimination of surgical diseases in the future. He tells the innocent public that a decade of proper milk supervision would see the end of tuberculosis in all its surgical forms, and in a large measure of the pulmonary forms as well. Not content with that, he confidently asserts that cancer will soon be controlled and totally eradicated. We do not expect to find such statements in a book for the education of the public

[1] *Three Lectures on Unicellula Cancri, the Parasite of Cancer.* By the late Sir Henry Butlin, Bart. Edited by R. H. Paramore. London: H. K. Lewis. 1912. (Cr. 8vo, figures 19, pp. 108.)

[2] *Modern Surgery and its Making.* A Tribute to Listerism. By C. W. Saleeby, M.D., F.R.S.E. London: Herbert and Daniel. 1911. (Med. 8vo, pp. 368. Price 10s. 6d. net.)

written by a man who wishes to be known as one of the teachers of the people. He is very insistent on the duty that lies on the profession to act up to the title of "Doctor," and teach the multitude in health matters much more than they do. With this we fully agree, but we cannot recommend Dr. Saleeby's book, least of all to those for whom it is designed—the lay public.

A CANDID CLINICIAN ON KIDNEY DISEASE.

IF it be true that the more one learns the less one knows, it should follow that the laborious study of any one subject must lead to large experience and little actual knowledge. It would be difficult to name any subject to vie with that of renal disease in this respect. From early times to the present, the main clinical results of kidney mischief have been clearly recognized, but as to the mechanical or chemical means by which these results are brought about, no common understanding has ever been arrived at, and now, more than ever, the efforts of the experimental pathologists are engaged on the elucidation of the problem. The clinician must take the symptoms as he finds them and endeavour to modify the discomfort of his patients by what means he may, but he is beset at every turn by a blank wall of ignorance as to the exact process he has to combat. The rules laid down in textbooks may be followed with advantage, and to the uninitiated these rules would appear to cover the whole ground, so far as the patient is concerned. If, like the author whose work lies before us, they have had long experience of the many aspects and phases of this group of diseases, they will doubtless confess, with Dr. HERRINGHAM, that they can offer no satisfactory explanation of many of the phenomena with which they have to deal. A few only would have the courage to make such a clean breast of it as he has, but it is not given to many to study the clinical aspect of disease year by year in the wards of a great London hospital. Dr. Herringham has given freely of his own personal convictions, many of them differing somewhat from the commonly accepted views, in the volume on *Kidney Diseases*[3] he has contributed to the well-known series of Oxford Medical Publications.

In his opening chapters he discusses the renal secretion in health and disease, and shows by comparison of the opinions of trustworthy observers how little actual agreement has been arrived at. The duplex nature of albuminuria has been minutely studied by very many competent chemists and physicians, but little is as yet actually known about it. The appearance of albumen in the urine of young adults has been widely observed and described. Reference is made to a great number of these observations and descriptions, but unanimity as to its causation is wanting. Haematuria and haemoglobinuria present many clinical puzzles, and the only explanation which commends itself at the present time involves the assumption of some haemolytic body in the blood serum which becomes active under certain conditions, such as exposure to cold, etc. That form of systemic poison which has been called uraemia affords a vast subject for discussion, but up to the present time the sum of actual knowledge has not been greatly enlarged. Of the whole book it may be said that it should be of great interest to the clinical pathologist, presenting, as it does, many new standpoints from which to review the whole field of kidney disease, but it cannot be said to do more than this.

The stimulation of thought on any difficult subject may always tend towards the gradual removal of the difficulties. Dr. Herringham, for instance, advocates the probability of a common origin for all forms of nephritis, and argues his case with great ability. Others may follow out this line of thought and by the light of further observation and experiment be enabled to point out a means for annihilating the poison at the outset. Experiment and experience must go hand in hand if progress is to be made, and such a record of personal experience as lies before us suggests many further lines of advance for the experimental pathologist to pursue. A few chapters are devoted to the influence of renal disorders in relation to gynaecological problems, and these are dealt with very fully by Dr. Herbert Williamson. The book may be commended to the notice of all who have a special interest in the study of kidney disease, but it will not, perhaps, appeal with equal force to those who have to deal with its treatment.

[3] W. P. Herringham, M.D., F.R.C.P., Physician [illegible] With Chapters on Renal Diseases [illegible] son, M.D., F.R.C.P., Assistant [illegible] Johnson's Hospital, etc. Oxford Medical Publications. Oxford University Press, Henry Frowde and Hodder and Stoughton. 1912. (Demy 8vo, pp. 394; [illegible])

MEDICAL DICTIONARIES.

AMERICAN dictionary makers are increasing the debt which English-speaking members of the medical profession owe to them for the many excellent medical dictionaries they produce and for the rapidity with which revised editions are brought out. It was only the other day that we had occasion to notice the sixth edition of Dr. GEORGE M. GOULD'S wonderful *Pocket Medical Dictionary*, which, by reason of its small size and immense vocabulary, is a most convenient desk book. We now desire to call attention to two new medical dictionaries of larger but still handy size.

The first edition of the *Illustrated Medical Dictionary*,[4] by Dr. W. A. NEWMAN DORLAND, was published in 1900. It was revised in 1901, 1903, 1906, and 1909, and was, in addition, several times reprinted. These facts are sufficient evidence of its popularity. It has now undergone a thorough revision, and the sixth edition contains 7,000 new words. The number of lines on a page has been increased by twelve, and in this way no material addition has been made to the bulk of the volume. The new edition thus retains one of the merits of the old, that it is convenient in size and weight; in this edition title words, unless proper names, are not given a capital letter, but are printed in heavy type. We have tested the vocabulary as far as possible and find it very complete; the definitions are short but adequate. A posological and therapeutic table has been added to this edition, which will be found useful, but we doubt whether as much can be said for some of the illustrations on thick plate paper. They increase the bulk of the volume without in all cases increasing its value as a work of ready reference.

The *Practical Medical Dictionary*,[5] compiled by Dr. T. L. STEDMAN, editor of the *Twentieth Century Practice of Medicine* and of the *Medical Record* of New York, is a rather thicker volume with a larger page. The work of compilation and correction must have been laborious, and we can well believe that, as the editor says in some sympathetic words of thanks addressed to his wife and his publishers, it has taken years. It is impossible in the ordinary sense to review a dictionary, for, as Dr. Stedman says in his preface, it is not intended for consecutive reading, though, as he also says, some have claimed to find pleasure, and many have certainly been beguiled into spending much time in turning from page to page in search of analogies. The merits of a dictionary can only be tested by constant use, and a reviewer is reduced to making a few chance shots, to test completeness, and to indicating any special qualities. As to the chance shots, we can only say that no one of ours has failed. As to the special qualities, we may note the practice of giving under a word with many applications a list of each with a definition; an example is afforded by the word "cyst," where after a brief general definition there follows a list of cysts occupying a column and a half. Dr. Stedman spells "hemorrhage" and "edema," giving the diphthongs also, but justifying their omission on two grounds: first, that Italian and Spanish, the most direct descendants of Latin, have dropped them; and, secondly, that English also has dropped them by universal consent in some words (equal, economy). It is difficult to resist this argument, at any rate for words which have come to us through the Latin. If we yield so much, where afterwards are we to draw the line? He also spells "orthopedics" and "pediatrics," words which illustrate the risks of the concession owing to what Dr. Stedman stigmatizes as "the deplorable tendency to eliminate Greek from the curriculum of preparatory schools and colleges." Dr. Stedman is, however, some-

[4] *The Illustrated Medical Dictionary.* By W. A. Newman Dorland, A.M., M.D., Member of Committee on Nomenclature and Classification of Diseases of the American Medical Association. Sixth edition, revised and enlarged. London and Philadelphia: W. B. Saunders Company. 1911. (Med. 8vo, pp. 986. 19s. net.)

[5] *A Practical Medical Dictionary.* By Thomas Lathrop Stedman, A.M., M.D. London: Henry Frowde, Hodder and Stoughton. 1911. (Roy. 8vo, pp. 1000, illustrated, with thumb index. 21s. net.)

thing of a purist, and would have us use "oothecectomy" in place of "ovariotomy," though he gives both words, and even ventures on "scolecoiditis" for "appendicitis," "tho' with faint hope of the suggestion being adopted." A feature which is probably novel, as we do not remember noticing it in any other medical dictionary, is the introduction, in their proper alphabetical place, of brief notices of the principal spas of Europe and America; this is a useful innovation. In this dictionary also title words, unless proper names, are not given a capital letter. We may here also ask whether some of the pictures are not superfluous. All modern lexicographers are compelled to use abbreviations and conventional signs in order to save space. Experience seems to prove it to be necessary to warn the user of a new dictionary that he ought to read the author's preface and give some little time to the table of abbreviations and signs. Otherwise the dictionary may be unjustly criticized, and its merits may fail to be properly appreciated, and its usefulness diminished.

DENTAL REPORTS.

AMONG the original communications in the *Annual Reports for 1911*[6] of the Royal Dental Hospital of London is an instructive article on periodontal disease by Mr. J. F. COLYER. The public, including ourselves when our teeth go wrong, must sympathize with Mr. Wilton Thew. He reports "some experiments in the production of anaesthesia of the dental pulp by intradentinal injection," an article for which the author was awarded the Storer-Bennett Scholarship. "Painless dentistry" may be no more than an ideal, and it is too often the motto of the empiric; none the less, Mr. Thew is right when he states that

> It is quite unnecessary to dilate upon the desirability of performing all dental operations in a painless manner when possible. To overcome the patient's fear of pain is to remove, perhaps, the most potent cause of neglect of the mouth—among the educated classes at any rate—and should be an aim of the dentist second only to the doing of sound work.

Mr. J. Howard Mummery dilates on the greatest theme associated with our dentition in a review of the history of dental caries and the present position of the question. He is hopeful, and deprecates adverse criticisms of Tomes's, Miller's, and other odontologists' theories and researches. He prophesies that we shall "in due time be able to prevent this all-prevalent disease," and insists that when that good time comes we shall have to remember that our advances were rendered possible by the labours of those investigators. In the meantime we must sigh when we note the beautiful pearly-white teeth in the crania of primitive folk in museums, and earnestly hope that younger investigators, improving on Miller, will teach us how to rival the extinct Tasmanians and prehistoric men by retaining till old age our teeth in their primitive soundness and whiteness. Dr. Dudley Buxton's article on teaching of anaesthetics for dental students is of general interest. Mr. J. G. Turner contributes a highly original note, covering hardly two pages, on the value of teeth, in which he lays stress on the fact that children can go on for a year or more with very few milk teeth after carious molars have been removed, and thrive, though edentulous, till the permanent teeth erupt. The dentist may extract every tooth for an adult of any age; nutrition improves at once, and is maintained, and the body powers are kept at a normal level, until six months or a year later the patient becomes the proud possessor of a set of teeth. Edentulous gums, when entirely free from carious teeth and defective artificial contrivances, grow tough and are capable of dealing with all ordinary food. Natural teeth in part decayed may, even though still competent for mastication, induce ill health, being bearers of sepsis. An aseptic mouth is the correct ideal: "asepsis first, teeth afterwards," is Mr. Turner's motto. Of course, it is the principle on which is based the use of tooth-powder and the extraction of carious molars. The perils of malignant disease of the tongue, we may add, should be borne in mind by elderly persons who would rather retain a carious lower molar than have it extracted. The *Reports* include several interesting articles, purely special in character.

[6] *The Royal Dental Hospital of London: Annual Reports for 1911.* London: John Bale, Sons, and Danielsson, Ltd. 1912. (Roy. 8vo, pp. 184; numerous illustrations. 5s. net.)

THE EXTRA PHARMACOPOEIA.

THE fifteenth edition of MARTINDALE and WESTCOTT'S *Extra Pharmacopoeia*[7] contains so much matter that it has been found necessary to divide it into two volumes. The first of these contains most of the information for which we have been accustomed to turn to the book, and, although it consists of over 1300 pages, it remains of convenient size for the hand and could fairly easily be carried in the pocket. The second volume contains chapters on the analysis of medicines, physiological standardization, organotherapy, health resorts, bacteriological notes, notes on the analysis of milk, water, urine, etc., and much other matter, and is about one-third the size of the first. One of the most useful features of this well-known work has always been the brief abstracts of recent papers on the therapeutic use of the various drugs and preparations mentioned, with references to the originals; in the new edition this feature is well maintained, the newly added abstracts numbering, according to the preface, nearly 2,500. There appears to be some danger, however, of the authors reducing rather than increasing the value of the book by attempting to include too much; it should be recognized that it is impossible for one book to contain all the information required by physician and pharmacist, even in the most condensed form. The developments of medicine doubtless necessitate a continual increase in the contents of such a book as this, but there appears no reason for adding, for example, even a short chapter on soap-making, with equations representing the chemical changes. Some ten pages are given to a summary of the "standard bread" agitation, with the Local Government Board's reports on bleaching of flour, etc. The authors thus express their own view on the subject:

> Without intending to be too dogmatic, and with obvious limitations in the direction of preference in taste, digestibility, habit of life, etc., we are much inclined to the view that "whole-meal" bread is the real "staff of life," and we are of opinion that a case has been made out for its advocacy by the profession.

The matter is also referred to in the preface, and the extraordinary statement is made that "the average loaf appears to be void of Gluten and *ergo* moisture"! Under "formalin" attention is rightly drawn to the confusion which results when dilutions are ordered, if it is not made clear whether the percentage stated is to be the percentage of real formaldehyde, or of formalin (that is, 40 per cent. solution of formaldehyde); unfortunately, the advice given is very imperfectly acted upon; and in subsequent paragraphs on the disinfection of rooms it is stated that "Potassium Permanganate 50 gm. may be added to Formalin 100 c.c."—which is clear, and "the Formanganate Disinfector consists of 16 ounces of Formalin solution (37 to 40 per cent.) and," etc.—which contains the very ambiguity referred to. A little later we read: "Formaldehyde Tablets for internal administration contain 'Formalin' (*i.e.*, Paraform) ¼ grain," whereas ¼ grain of paraform really represents ⅛ grain of formalin. The sense is sometimes obscured by improper punctuation or inappropriate use of dashes—for example, the following sentence under "Acidum Carbonicum" is far from clear:

> In the gaseous condition an admixture in small proportion to Oxygen, and mixtures of Oxygen and Air have been advised for inhalation to stimulate expiration, and act as a cardiac stimulant.

Some misprints are to be found, as in the statement that acid. hydrochloric "conic." acts on aluminium to produce "AlCl," or that aldehyde combines with sodium "bisulphate." It is hardly necessary to say, however, that, in spite of these and other faults to which it has seemed worth while to call attention owing to the great popularity of the work, it will continue to be one of very great usefulness.

NOTES ON BOOKS.

SOME eight years ago a company of gentlemen associated themselves together for the purpose of studying the causes, nature, and prevention of grouse disease. The result of the inquiry, in which the services of pathologists and biologists were enlisted, was published a year ago in two

[7] *The Extra Pharmacopoeia of Martindale and Westcott.* Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B.Lond., D.P.H. Fifteenth edition. In two volumes. London: H. K. Lewis, 136, Gower Street, W.C. 1912. (16mo, pp. 1345 and 378. 21s.)

sumptuous volumes, price 2 guineas. Another volume, bearing the title, *The Grouse in Health and in Disease, being the popular edition of the Report of the Inquiry on Grouse Disease*,[8] has now been published at the price of 12s. 6d. It is edited by Mr. A. S. LESLIE, Secretary of the Committee, with the assistance of Dr. A. E. SHIPLEY, F.R.S. In preparing the popular edition many chapters in the earlier part of the book have been simplified and shortened, as have also many sections of the second part, which deals with the diseases of grouse, but a chapter has been added to show how far the observations in the laboratory have been confirmed by observations on the moor. The third part, which deals chiefly with the management of grouse moors, and is of direct practical interest to moor owners, has been reprinted almost without alteration. The popular edition is illustrated by 21 plates and a number of figures in the text. It is dedicated to the gamekeepers on the grouse moors of Great Britain, and should be read with interest by all members of that intelligent and observant calling.

We are not surprised to learn that a second edition has already been called for of Dr. RENDLE SHORT'S *The New Physiology in Surgical and General Practice*,[9] a book of which we were able to speak very favourably when reviewing the first edition last December (p. 1479). The author has utilized his opportunity to introduce references to some new points, and to add a new chapter on the growth of bone.

Dr. OSCAR JENNINGS has written very agreeably a short book entitled *Le Bain Turco-Romain*.[10] It falls naturally into two parts—the first historical, the second dealing with the modern applications of the hot-air bath, with its accessory massage and douches. He calls it a compilation, but it is this and something more, for he has clearly had a good deal of experience of the value of this bath in the minor errors of metabolism which afflict city dwellers and in what Sir Spencer Wells called "cachexia londinensis." The mistake commonly made, as Dr. Jennings perceives, is to take the Turkish bath too seriously, to go into too hot rooms, and to spend too long a time in them. Such a bath is exhausting, whereas a short bath, staying long enough in a hot room to ensure copious perspiration, following this by a warm douche or needle bath cooled down to outdoor temperature, and that, again, by a rest in the horizontal position for half an hour or less, is refreshing. M. Lucas-Championnière has written a preface for the book, in which he gives expression to his well-known views as to the importance of physical methods in the treatment of many chronic disorders, and for the relief of the later effects of injuries of the limbs.

Dr. MCKAIL'S *Public Health Chemistry and Bacteriology*[11] is intended as a companion to a course of laboratory work. The author states in the introduction that "the accumulation of scraps of knowledge derived from the parent sciences, under the heading of public health chemistry and bacteriology, is justifiable only on the score of convenience and the importance of economizing the student's time." It is certainly wise thus to impress on those taking such a course of work for the diploma of public health, that the four months' work demanded, comprising 120 hours each at chemistry and bacteriology, does not suffice for the acquisition of more than a slight acquaintance with the subject, and that long attention to such work and experience in it are necessary to constitute any one an expert. Necessarily such a book as this covers a wide field and does not delve deeply into any one part of it; the work is based on the author's actual experience in teaching these subjects, and will be found a very useful volume for the purpose for which it is intended.

[8] *The Grouse in Health and in Disease, being the popular edition of the Report of the Committee of Inquiry on Grouse Disease.* Edited by A. S. Leslie, Secretary of the Committee, assisted by Dr. A. E. Shipley, F.R.S. London: Smith, Elder and Co. 1912. (Roy. 8vo, pp. 492; plates 21, figs. 30. 12s. 6d. net.)

[9] *The New Physiology in Surgical and General Practice.* By [illegible] M.D., B.S., B.Sc. Lond., F.R.C.S. Eng., Honorary Surgical Registrar, Bristol Royal Infirmary; Senior Demonstrator of Physiology, University of Bristol. Second Edition, Revised and Enlarged. Bristol: John Wright and Sons; London: Simpkin, Marshall, Hamilton, Kent, and Co. 1912. (Cr. 8vo, pp. 256. 5s. net.)

[10] *Le Bain Turco-Romain: ses applications hygiéniques et thérapeutiques étude médico-historique.* Par le Docteur Oscar Jennings, de la Faculté de Médecine de Paris. Préface du Docteur J. Lucas-Championnière. Paris: [illegible] Frères. 1912. (Med. 8vo, pp. 69. 2 fr. 50c.)

[11] *Public Health Chemistry and Bacteriology: a Handbook for D.P.H. Students.* By David McKail, M.D.Glasg., D.P.H. Camb., F.R.F.P.S.G. Bristol: John Wright and Sons, Ltd.; London: Simpkin, Marshall, Hamilton, Kent, and Co., Ltd. 1912. (Crown 8vo, pp. 416. 6s. 6d. net.)

INFANT MORTALITY AND STILLBIRTHS.

A COMPREHENSIVE report has recently been issued by the Royal Statistical Society, which deserves to be studied by every one who seeks to draw conclusions from statistics of infant mortality, more particularly if it is desired to draw comparisons between the statistics of this and other countries. It is the "Report of the Special Committee appointed by the Council of the Royal Statistical Society to inquire into the systems adopted in different countries for the registration of births (including stillbirths) and deaths with reference to infantile mortality."

The method adopted for obtaining the necessary information was to send inquiry forms to all the registration officers of the civilized states of the world. The number of inquiries sent out was 136, and the number of replies received was 103, and it is rather surprising to find that amongst the states from which no reply was received were five within the British Empire, including the provinces of British Columbia and Quebec. There were also no replies from five states within the German Empire, twelve states of the United States of America, and ten other foreign states, including Russia, China, and Brazil. But although not complete, the information is sufficient for most practical purposes. The form of inquiry is given in an appendix, and the answers are tabulated with copious notes, so that the answers given by any country to any question can be found without difficulty.

History and Practice of Registration in General.

Table I gives the dates for each country of the earliest records based on their present registration systems. All, with two exceptions, commence in the last century. The two exceptions are Sweden (1749) and Finland (1751). Half a century later France, Norway, and Denmark adopted their present systems. England and Wales made no attempt at universal compulsory registration of births or deaths until thirty-eight years later (1838); Scotland only in 1855; and Ireland not until 1864.

But it would be quite wrong to assume that there was no registration at all in any of these countries before their present systems were adopted. Thus as long ago as 1538 registration of baptisms and funerals was established in England, the records being kept by the lay clergy. In London weekly "bills of mortality" were published as far back as 1517, but do not appear to have been based on any medical evidence as to the causes of death. Moreover, only those baptisms and funerals which were conducted by clergy of the Established Church were recorded. All others were ignored. This state of things continued down to 1838, when civil registration was established. But even then the system was not completely compulsory until the passing of the Births and Deaths Registration Act (1874). No material change has been made in the United Kingdom since the latter date, except that under the "Notification of Births Act (1907)," which only applies to those sanitary districts which have "adopted" it, the duty of declaring the birth is extended to the father of the child (including an illegitimate child), if residing in the house at the time of the birth, and to any person in attendance on the mother at the birth or within six hours after the birth. The Act applies to stillbirths of twenty-eight weeks uterine gestation.

In England and Wales a body may be legally buried without any permit from the registration authority, provided that the person who buries or performs any funeral or religious service for the burial of the body afterwards gives written notice to the registrar. And in most other countries it has been found necessary to sanction or condone such unregistered deaths in special circumstances. The report approves of the regulation in force in Anhalt, where, in special cases, burial is allowed without a registrar's permit on the authority of the chief of the local police; that officer reports the fact at once to the registrar. In England and Wales, we may point out, such a special case would be dealt with by the coroner, who has all the machinery of the police to enable him to get at the facts, and possesses far greater and more elastic powers than any police in the world, except, perhaps, the Russian secret police. The report, however, expressly excludes consideration of the coroner's procedure.

In several of the United States undertakers are bound to see that all registration formalities are fully observed. In

another—Indiana—the duty of declaring a death is imposed on the medical practitioner last attending the deceased person, on pain of a fine and the forfeiture of his right to be paid for his professional services to the deceased!

Stillbirths.

By far the most important and instructive part of the report is that which deals with stillbirths. Not only is the meaning attached to the term "stillbirth" very different in different countries, but the practice with regard to registering differs—no registration of stillbirths being required or even allowed in the United Kingdom or in many of the overseas dominions and colonies, while in almost all other countries registration takes place under the general law applying to all births and deaths.

The Cape of Good Hope sets a laudable example to the Mother Country, inasmuch as the law defines "birth" (registrable) as meaning and including the birth of any *viable* child, whether such child be living or dead at the time of birth; and by regulations the following definitions are in force:

"Stillbirth" means the delivery of a formed child which has not shown any sign of life after complete birth.

"Formed child" means any fetus at such a stage of development as to be readily recognized by any uninstructed person as a human child.

"Complete birth" means the body of the child is entirely outside the mother, but does not include either the division of the umbilical cord or the delivery of the after-birth.

"Sign of life" means the performance of any physiological sign of life, such as breathing, crying, movement, pulsation, or the like, seen or heard, after complete birth.

It is obvious that if stillbirths are registered as deaths the figures for infantile mortality will be larger than if they are excluded. The confusion thus introduced into all comparative statistics relating to infantile mortality and kindred studies is naturally the aspect which most concerns the Royal Statistical Society. But we may point out in passing that the English registration law, in absolutely ignoring stillbirths, is open to the very serious medico-legal criticism, to which we drew attention nearly twelve years ago in the last of a series of articles on death certification.[1] Facilities for crime afforded by the English practice were there fully set out, and some striking expressions of opinion quoted from the report of the Select Committee on Death Certification, 1893.

The report of the Royal Statistical Society draws attention to the fact that no legislature in any country has ventured to define "stillbirth," even for legal purposes, and the only guidance in England or elsewhere to those whom it may concern is contained in the regulations made by the various statistical offices. It strongly recommends that an international definition of "stillbirth" should be adopted, and that stillbirths should be registered. In England the Registrar-General has quite lately adopted the definition given by the Central Midwives Board:

A child is to be deemed stillborn if after complete birth it has not breathed or shown any sign of life.

This is a very good working definition for midwives, but insufficient for scientific, statistical, or legal purposes. It does not determine at what stage of development a fetus becomes "a child," and it does not determine what may or may not be regarded as a "sign of life"—other than breathing.

The chairman of the committee, in his memorandum forming part of the report, points out that, as medical men are aware, a child may be born alive and capable of being kept alive, and yet die without making any respiratory effort in the absence of appropriate treatment. On the other hand, in prolonged labour it is known that the child may make a respiratory effort before the mouth is outside the mother's body—certainly before the child is wholly outside—and yet may die before birth is completed. Accordingly the chairman suggests that the test of life should be that the heart acts, and that the following definitions might be adopted universally:

A "stillborn" child means a child born after a period of gestation of not less than seven lunar months (twenty-eight weeks), whose heart has ceased to function before the whole of the body (including the head and limbs) has been completely extruded from the body of the mother; and a "stillbirth" means the birth of a stillborn child.

[1] British Medical Journal, December 15th, 1900, p. 1736.

The objection to this definition, in our opinion, is that the test of life—the acting of the heart—is not so easily applied, and would probably never be directly applied by any but skilled midwives, and could not, in the absence of breathing or movements, be checked by unprofessional onlookers. Again, would a *post-mortem* examination throw any light upon the question whether the heart had ceased acting before or immediately after birth, except indeed by inference from the appearances of the lungs? We must confess that we prefer the phrasing of the regulation we have already quoted as that of the Cape of Good Hope—"any physiological sign of life, such as breathing, crying, movement, pulsation, or the like"—which of course includes action of the heart.

The object of the limitation, "After a period of gestation of not less than seven lunar months (twenty-eight weeks)," is to draw a definite line between abortions or miscarriages on the one hand and registrable births on the other; and the line is drawn at twenty-eight weeks because at that period it is considered that the child is viable.

As to the period of gestation at which the product of conception is held to become capable of registration as a birth ("still" or otherwise) there is a great lack of uniformity. In some countries (Japan, for instance) it is four months; in others, nothing less than the ninth month. And in France and Holland, even children born alive but dying before registration (for which a period of three days is allowed) are counted stillborn (!) for registration purposes.

The chairman's proposed definition adopts the earliest period at which the fetus is generally recognized as viable, and in this he is following the recommendation of the Select Committee (1893). But he makes no suggestion, any more than did this committee, for meeting the practical difficulty—namely, that every fetus, of whatever stage, would have to be examined *post mortem* by a medical practitioner, in order that an authoritative answer should be given to the question, Is it under or over the limiting period of twenty-eight weeks, or whatever it may be? As we asked, twelve years ago, in the article to which we have referred:

If the burial is to be permitted without a medical certificate up to a certain period, how is the registrar or the burial authority to be satisfied as to the period reached in any given case?

Statistical Methods.

With regard to statistical methods, the conclusions of the report are:

1. That stillbirths should be tabulated separately, such tabulation to include, *if necessary*—

   (*a*) The number of children born alive but registered as dead.

   (*b*) The numbers born in each successive week or month after the prescribed (earliest) time for registrable stillbirths.

2. That for general use the infantile mortality-rate should be calculated from—

   (*a*) The births of children born alive, including, *if necessary*, those born alive but registered dead.

   (*b*) The number of deaths during the first year of life of children born alive, including, *if necessary*, the children "presented dead." "Presented dead" appears to mean born alive, but dying before the birth is "declared" to the registration authority, and within the period (three days in France) allowed by law for such declaration.

The statistics published as usual at this season by the *Semaine Médicale* show that there are this year in France 8,688 medical students, as compared with 8,779 last year. This diminution is entirely due to the French students, as the number of foreign students (1,301) has increased by 12. Only a very small proportion—not more than about 4 per cent.—of the foreign students proceed to a degree, a fact which appears to prove that they visit the French schools purely for purposes of instruction. Russia furnished the largest number of foreign students (849). Bulgaria came next (64), and Roumania third (57). Servia sent 12 students, and Greece 26. It appears, therefore, that Russia and the Balkan States furnish three-fourths of the foreign medical students in France.

THE HISTORY OF MEDICINE.*

[SECOND NOTICE.]

NEUBURGER deals at great length with medicine in classic antiquity. Greece inherited the Oriental tradition, but moulded it to the fashion of its own thought by the exercise of its free practical spirit. It is seen in its perfection in the collection of writings which bears the name of Hippocrates. These were not the beginning, but the completion of Greek medical science, which contained the germ of all future developments. A full account is given of the cult of Asclepios, which combined all influences—situation, scenery, springs (hot and mineral) baths and so forth, with hygienic precautions, and dietetic observances, prayer and sacrifice, and everything likely to rouse the patient's expectation of a cure to the highest point. Included among these influences was the sight of costly votive offerings, and what we should call testimonials—singularly recalling the records of modern quackery—of "cures" effected. The visions which came to the patients in the watches of the night in the temple had to be interpreted by skilled priests, and the treatment enjoined by the gods was dietetic and gymnastic, but mainly psychotherapeutic. From Homer's time there is mention of lay doctors independent of the temples. From very early times there was an organized medical service of official doctors, who were paid a fixed salary and had to attend the poor gratuitously, make the sanitary arrangements when epidemics threatened, and give evidence before judges. Lycurgus instituted medical corps for armies and fleets, and Greek physicians held posts as doctors at foreign courts. There were three types of physician—the regularly trained one, working with an assistant; the master; the amateur. Only those who had undergone a course, practical and theoretical, under a recognized master ranked as properly qualified physicians. This diploma was essential in the case of official doctors. There were medical homes in which paying patients could be treated, and others kept up by the community for the official doctors. Naturally there was much quackery and traffic in secret remedies of a dangerous kind. The commencements of medical theory are clearly traced, the humoral pathology being the starting-point.

Passing over several centuries, we come to the great school of Alexandria. The most striking advance made there was in anatomy. This was owing to the fact that dissection of the human subject was encouraged under the Ptolemies. Herophilus, who flourished under the first two Ptolemies, is the chief representative of Alexandrian medicine. He was an investigator in anatomy and physiology, and also wrote works on the treatment of disease. His mental outlook may be gathered from the famous phrase, "The most perfect physician is he who distinguishes between the possible and the impossible." Another famous anatomist and physiologist was Erasistratus. Regarding disease as essentially a disturbance of normal functions, he directed his attention chiefly to the investigation of symptoms—that is to say, functional disturbances, seeking to determine their exciting causes as well as the seat of the mischief. His aim was to treat disease etiologically, and always individually. His principle of simplification was in sharp contrast with the polypharmacy of his time, which made routine use of most complicated mixtures. He greatly disliked bloodletting and purgation, and placed his chief reliance on diet, fasting, rest or movement, exercise, baths, friction, and, when necessary, mild purgatives, enemas, and emetics. He exercised a powerful influence on the development of the art of healing, and, as the author points out, even in later times the trend of medical thought has come into line with his lucid views.

Greek medicine did not strike root in Rome until the coming of Asclepiades of Prusa, whose work was discussed with such wealth of learning and such keen critical insight by Sir Clifford Allbutt in his FitzPatrick Lectures on Greek Medicine in Rome,† that no detailed reference is needed here. Asclepiades was the friend of Cicero, Atticus, Mark Antony, and other leading Romans, and his success was undoubtedly due largely to his personal qualities and to his use of simple and natural remedies, diet, regulated exercise, massage, baths, and, it may be added, music in mental cases. He was sparing in the use of internal medication. His methods were derived from the Hippocratic writings and the Greek gymnastic schools; from this it will be seen that there is nothing novel in the various dietetic and "drugless cures" of the present day. Doubtless suggestion and mental influence, as in all these systems, played a large part.

Passing to the encyclopaedists, the author deals with Celsus and Pliny. The position of Celsus is remarkable, since although it is acknowledged that his book is the best account of ancient medicine we have, he was not a professional physician. There can be no doubt, however, that he had studied medicine practically, and had learnt much from his own observations. He was a man of very independent mind, and did not bow the knee to authority. In surgery he was particularly good, and from him we can gather what had been done to advance surgical science by the Alexandrian school. Pliny's book is a farrago of folk medicine and old wives' superstitions, but it covers so much ground and includes so much quaint lore that for centuries it was a storehouse for physicians. One very remarkable feature in the book is the enormous part that animal extracts of every conceivable kind played in ancient medicine. Pliny is available in the fine translations of Philemon Holland to the English reader, who, however, must be on his guard against the antimedical bias which inspires everything he says about doctors or their art.

Neuburger devotes much space to Galen, who has writ his name so large in the history of medicine. He held sway over the minds of men almost up to modern times. He was a man of true scientific mind as his writings prove, but everywhere shows himself a theorizer rather than an observer in his descriptions of disease. He had also a large element of quackery in his nature, and is apt to boast of his cures, and even of the arts by which he impressed himself on the minds of his patients. How well he understood human nature is shown by his saying, *Populus remedia cupit*. To satisfy this desire he added greatly to the number of drugs in use. His age coincided with the beginning of the period of decadence of medicine. In Rome any one could call himself a physician; medicine, therefore, became a hunting ground for all sorts of pretenders. Yet the right of citizenship had been granted to all physicians by Julius Caesar, and freedom from taxation and other liability were conceded by Augustus and other Emperors.

The devastations wrought by epidemics, which the medical knowledge of these days was powerless to control, naturally led people to pin their faith on priests and sorcerers, and this tendency was fostered by the growth of Christianity. Neuburger, however, holds that Christianity had not the unfavourable effect on medical science that is frequently attributed to it. It was, indeed, at first distrustful of natural medicine, and used exorcism as the chief weapon against disease. But as the Church gradually applied ancient and natural philosophy to its own purposes, the prejudice against medicine began to wane. The works of the Fathers show that many of them were intimately acquainted with medical works. In hygienic matters their opposition to luxury and vice, especially in such matters as excessive bathing, led to teaching unfavourable to the general care of the body. Although Christian dogmatism at the beginning was a drag on inquiry, the charity that was its distinctive character sowed a seed that was to prove highly advantageous to medicine. In the Hippocratic oath, which may be taken to represent the highest ethical standard of antiquity, the physician is enjoined to refuse to give his aid to the incurable. On the other hand, Christianity made it a moral duty for a doctor to give the benefit of his skill even in such cases. This naturally gave an impulse towards investigation. The foundation of hospitals in Caesarea, Rome, Jerusalem, and elsewhere had a like effect. With the fall of Rome medicine was overwhelmed in the ruin and sought shelter in monasteries, where it remained for about a thousand years. It was, however, preserved in what may be called a fossilized form in the Byzantine East.

* *History of Medicine*. By Dr. Max Neuburger, Professor of Medical History in the University of Vienna. Translated by Ernest Playfair, M.B. Vol. I. London: Henry Frowde, Oxford University Press, Hodder and Stoughton, Warwick Square, E.C. 1910. (pp. 656.)

† BRITISH MEDICAL JOURNAL, November 20th, 1909, p. 1449; November 27th, 1909, p. 1514; December 4th, 1909, p. 1598.

Of medicine in the Talmud, which may be taken to represent the knowledge of the Jews from the second to the sixth century, a short but sufficient account is given. The work is encyclopaedic, and the medical lore scattered through it is abundant but unsystematic and often obscure. Neuburger, however, thinks that in view of the great esteem in which Jewish physicians were held in the Middle Ages, much may possibly have been added to the general stock of medical knowledge from the Talmud.

At Byzantine and Arabic medicine, which together handed down the knowledge of antiquity to the Middle Ages, we can only glance. Byzantine medical literature, as Neuburger says, is a mass made up of extracts from the classic writings, "culminating in encyclopaedic compilations which differ from one another less in contents than in exhaustiveness and greater or less independence of criticism." The Arabs also based their medicine on the Greeks, whose teachings they followed with too blind a regard for authority. Arabic science "represents a process of digestion, not one of generation." In pharmacy and dietetics, however, they were independent of Greek influence, and in this domain they made important additions to knowledge. They founded hospitals which had regular medical staffs and were used for clinical teaching. There was some kind of examination system, but in practice it seems to have been laxly applied. At any rate, there is abundant evidence that quackery was very prevalent.

While waiting for the second volume of this monumental work we take leave to congratulate Professor Neuburger on his achievement. The most cursory reader cannot fail to be struck by the vast range of his learning and the largeness of his historical and philosophic outlook, and close study reveals its minute accuracy of detail. Nor is the book over-weighted with erudition; it is eminently readable. We commend it heartily to all interested in the history of medicine. A word of praise is due to the translator, who has performed his laborious task faithfully and well.

THE PROCEEDINGS OF THE INTERNATIONAL OPIUM CONFERENCE AT THE HAGUE.

I.

The proceedings of the International Opium Conference, which was held at the Hague in December and January, 1911–12, have at length been published. Although Sir Edward Grey informed the House of Commons on June 6th that a report prepared by the British plenipotentiaries was in preparation and would be laid before Parliament, no such report has as yet been made public. The Convention signed by the twelve Powers represented at the Conference was laid on the table of the House last February, but for the discussions which led to the adoption of the Convention and the amendments which were made or rejected we have to turn to the official *procès-verbaux* for information. We are thus enabled to ascertain for the first time the policy formulated by the British Government, through its four plenipotentiaries, the amount of support or opposition encountered by them, and the extent to which their advocacy succeeded. Many questions of the highest importance in medicine, pharmacology, and pharmacy came under review, as well as problems in international law of a far-reaching character.

The first two sessions were occupied with formal matters. Bishop Brent (an American delegate) was elected chairman. Rules of procedure were adopted, and three committees were formed. At the third session definitions of "raw opium" and "prepared opium," formulated by the Technical Committee presided over by Sir William Collins, and consisting of some ten members of the Conference possessing medical or chemical qualifications, were agreed to.

"Raw opium" was defined as "the spontaneously coagulated juice obtained from the capsules of the *Papaver somniferum*, and which has only been submitted to the manipulations necessary for packing and transport."

By "prepared opium" is understood "the product of raw opium obtained by a series of special operations, especially by dissolving, boiling, roasting, and fermentation, designed to transform it into an extract suitable for consumption; prepared opium includes dross and all other residues remaining when opium has been smoked."

This rather difficult differentiation was requisite because certain nations make a grave distinction between raw opium on the one hand and that which is prepared for smoking on the other, and sought to apply different measures of restriction to the two cases respectively.

Raw Opium.

The tentative programme for the consideration of the Conference had been put forward by the United States Government, and appeal was on more than one occasion made to Dr. Hamilton Wright (who led that deputation on the elevation of Bishop Brent to the chair) to submit resolutions based on the American programme. There appears to have been some hesitation to comply with this request, and the British delegation frequently stepped into the breach. Thus the first resolution was moved by Sir Cecil Clementi Smith in these words:

> That this Conference is of opinion that effective national laws and regulations to control the production and distribution of raw opium should be adopted by each of the participating Governments.

In the discussion which ensued upon this resolution, Sir William Meyer, another British delegate, put in a long document indicating the policy of the Indian Government, on whose behalf especially he undertook to speak. He regarded the prohibition of opium in India for all except medical purposes as quite impossible, and dwelt on its value for bowel complaints, malaria, and in diseases of the young and of the aged. At the next sitting, Dr. Wu-Lien-Teh, of China, criticized Sir William Meyer's views on the therapeutics of opium, and said:

> No medical student would stand much chance of passing his examination at the hands of, say, our learned friend, Sir W. Collins, if he were to recommend opium in preference to quinine to cure malaria.

This brought up Sir William Collins, who said that

> while observing perfect loyalty to his delegation and to Sir William Meyer, he must dissociate himself from the suggestion that at the present time medical science would regard opium as a cure for malaria. He was at one with the French and Chinese delegations on that matter. He would, however, like to add that it was undoubtedly the case that thousands of the population of India never throughout their lives came in contact with a medical man. He had yet to learn that opium was less beneficent in cases in which its legitimate use was required because it did not happen to be prescribed by a medical man. The distinction, therefore, between the medical and the non-medical uses of opium was not quite as simple as was often supposed. He would fall back on the distinction drawn by His Excellency Jonkheer van Swinderen at the opening of the Conference between the beneficent services of opium, which the speaker would be most unwilling to be deprived of, and the evil or maleficent use of opium, which he believed it was the unanimous desire to restrict, and, indeed, to suppress.

Dr. Hamilton Wright agreed with these views, and averred that

> the conclusions reached by the Royal Commission of 1895 on this subject are held by the medical profession to be entirely erroneous.

A further proposal to limit the number of places for the import and export of raw opium encountered the opposition of Germany alone, Herr Delbrück making a statement on behalf of his delegation to that effect. M. Cremer, first Dutch delegate, while paying homage to free trade, regarded the case of opium as calling for restrictive measures; and Sir William Collins added that

> he recognized they were dealing with a special industry, fraught with serious danger to mankind, calling for special treatment, and in the interests of humanity he supported this proposal. He recalled the words of Mr. John Morley in the British House of Commons—namely, that "His Majesty's Government would say they would agree to any plan for the restriction of the consumption of opium brought forward in good faith, even though it might cost us some sacrifice."

The German opposition was later on accommodated by inserting words enabling each Government, in limiting places of import and export, to have "due regard to its own commercial conditions," and by removing the requirement of marking the packages from those containing less than 5 kilograms. It was further resolved that each participating Government should prohibit the import or export of raw opium by other than duly authorized persons.

Anti-opium Remedies.

M. T'ang Kuo-an, of China, and M. Cremer raised the question of restrictions on so-called anti-opium remedies:

this was referred to the Technical Committee, whereupon Sir WILLIAM COLLINS observed that

To report upon medicaments which were anti-opium remedies was a very difficult thing for this Conference to undertake. Was the Conference to set to work to propound certain remedies for the opium habit? If so, he would keep an open mind, but at present he knew of only one remedy for the opium habit—to give it up. In so far as these so-called remedies contained morphine and cocaine, they would be dealt with in a later chapter.

Prepared Opium.

In regard to prepared opium, which formed the subject of the second chapter of the Convention, the discussion explains how it came about that a sort of double-barrelled provision was made, dealing in the one case with those Powers which were ready to embark on an immediate policy of prohibition, and on the other with those Powers which were only prepared to inaugurate a policy of restriction. It appears that Portugal was the determing factor in the latter category, and that she was specially concerned on behalf of her colony of Macao; Persia also was indisposed to come into line with the policy of early suppression.

Morphine and Cocaine.

At the seventh session Sir WILLIAM COLLINS, on behalf of the Technical Committee, brought up the following recommendation:

That whatever regulations are applied to the manufacture, importation, sale, or exportation of morphine, cocaine, and their respective salts, should be similarly applied to medicinal opium, and all preparations (official or non-official) containing more than 0.2 per cent. of morphine, or more than 0.1 per cent. of cocaine, and also to the following—namely, heroine, its salts, and preparations containing more than 0.1 per cent. of heroine, and codeine, its salts, and preparations containing more than 0.4 per cent. of codeine.

This resolution, with the omission of codeine, which was the subject of an animated discussion at a later session, appears as Article 14 in the third chapter of the Convention. Sir CECIL SMITH, who continued to lead the British delegation up to the Christmas recess, emphasized the importance attached by his Government to the proposed restrictions on morphine and cocaine, thus following up a resolution carried by the Shanghai Commission. Sir Cecil said Great Britain regarded a drastic dealing with this part of the question as a condition precedent to entering upon this Conference. Dr. HAMILTON WRIGHT urged that restriction should also be made applicable to injecting syringes, but Dr. GRUNENWALD (Germany) and Sir WILLIAM COLLINS pointed out that syringes were not in themselves noxious, and that it would be best to concentrate attention on the guilty fluid with which they might be charged.

At the next session Sir WILLIAM COLLINS, on behalf of the British delegation, moved the following resolution, which was carried:

That each participating Government undertakes, by pharmacy laws or regulations, to confine to medical and legitimate purposes the manufacture, sale, and use of morphine, cocaine, and their respective salts, and to co-operate with other Governments in preventing their use for other purposes.

Referring to the many thousands of ounces of morphine mentioned by Dr. Wu Lien Teh as being imported into China, he said:

He asked himself what was the amount of morphine which was required for strictly medical purposes? As a contribution to an answer to that question he had ascertained from one of the largest hospitals in London that in treating some 3,000 in-patients and 130,000 out-patients a year they used 4½ oz. of morphine and 12 lb. 11 oz. of opium. It was also interesting to find that twenty years ago the same hospital used 1 lb. 1 oz. of morphine and 22½ lb. of opium in one year, showing a reduction of opium by almost one-half and of morphine by about three-fourths. This was doubtless owing to the introduction of new synthetic medicines, which had largely replaced the use of opium and morphine.

Dr. HAMILTON WRIGHT confirmed these statements, and the resolution was carried unanimously. Various detailed methods for giving effect to the policy thus adopted were submitted by Mr. MAX MÜLLER on behalf of the British delegation; he stated that without such restriction and regulation of the morphine and cocaine trade, "their principal object in coming to the Conference would have been defeated"; he read from their instructions certain paragraphs indicating the stringency of Customs regulations which His Majesty's Government favoured. At this stage Dr. GRUNENWALD, on behalf of Germany, accepted, with trifling amendments, the British proposals in reference to morphine and cocaine.

The French delegation, through M. GUESDE, sought to bring in the question of alcohol, which, it was alleged, since the decrease of the use of opium in the Far East, had become "a social danger of prime importance," but this was not pressed. The American delegation also unsuccessfully advocated restrictive regulations in regard to Indian hemp drugs.

At the eleventh session the Redaction Committee, which was composed of M. Guesde (chairman), Sir William Collins, M. Delbrück, M. Van Deventer, and M. Savinski (with the assistance of M. Asser), presented the draft Convention, which represented the resolutions as passed by the Conference in article form, and with the necessary protocols and operative provisions.

Codeine.

At the twelfth session the Conference was plunged into a learned discussion on the question whether the alkaloid codeine (methyl morphine) should or should not be named in the Convention as one of the drugs against whose abuse restriction should be prescribed. Dr. KERP, of the Kaiserliche Gesundheitsamt, Berlin, proposed on behalf of Germany to strike out codeine, "notwithstanding meticulous investigations," he said he had not been able to find a single publication proving it to be a stupefying drug, or liable to set up a habit or mania. Dr. Kerp paid a tribute to "his dear colleagues Dr. Wu and Mr. Finger," whose investigations "inspired in him the most lively interest"; but he remained unconvinced of their scientific value, and challenged the Technical Committee to quote a single published case. Sir WILLIAM COLLINS, in reply, said:

The Committee was aware that the evidence of codeine as a drug liable to similar abuse to that which had been established in the case of morphine and cocaine was not as strong as in their case. There nevertheless was evidence contained in the works of Professor Cushny and Dr. Harrington Sainsbury to the effect that codeine was, though to a less extent, a drug of addiction. Moreover, in India, in the Straits Settlements, and Hong Kong, not only morphine and codeine, but all the other alkaloids of opium, said to be some twenty in number, had been the subject of enactments.

At a later session Dr. KERP renewed his protest against the inclusion of codeine, when the following was put in by Sir WILLIAM COLLINS:

I cannot agree with the statement made by our honourable and learned colleague Dr. Kerp at the twelfth session to the effect that, notwithstanding minute researches, he had been unable to find reference to a single case of codeine habit in medical publications. Indeed, before we separated for the Christmas holidays I had the honour of furnishing our colleague with a reference to a case of codeinism and codeine mania in a German medical journal in 1905, recorded by Mr. Pelz, a case in which the victim took up to 70 or 100 codeine pills a day, and who had, notwithstanding the pharmacy laws in force in Germany, possessed himself of thousands of such pills. Sir Lauder Brunton, while also agreeing as to the relative rarity of this addiction in Europe, has supplied me with other references in German literature, and with very little trouble I have discovered yet others. Moreover, in the *Times* (January 2nd, 1912), referring to the price of drugs, I happened to find this statement: "Codeine is another very largely used narcotic." For the sake of unanimity he was prepared to surrender codeine, "but it must not be held, as far as we are concerned, that it is done because codeinism and codeine mania are unknown to medical literature."

Mr. FINGER quoted laws of the American States in which codeine was included as a habit-forming drug.

Our experience (he said) leads us to believe that codeine improperly used is a menace in common with other drugs of this character.

Dr. WU stated that in his experience in Penang, morphinists resorted to codeine when they were precluded from using morphine, and cited cases from Pollak, Sparkling, and Crothers. Russia alone supported the German amendment, but as unanimity was essential the specific inclusion of codeine was dropped in view of a power contained in Article 14 of the Convention to add any other alkaloid of opium or any new derivative of morphine or cocaine which should be proved to be liable to similar abuse, or productive of like ill-effects.

Morphine Content of Opium.

At the thirteenth session a proposal by MIRZA MAHMOUD KHAN on behalf of Persia to suppress the

production of all opium containing less than 9 per cent. of morphine was opposed by Sir William Meyer on behalf of India, whose opium averages 7½ per cent. of morphine. The proposal was supported by the United States delegates, who urged that opium should be restricted to purely medical purposes, and that since medicinal opium was opium which contained 10 per cent. of morphine, the Persian proposal was corollary to this end.

Adjournment.

On December 22nd, after holding fourteen sessions, the Conference rose for the Christmas holidays, but not before it had authorized the Redaction Committee to submit to the full Conference additional articles dealing with adhesion, coming into force (*mise en vigueur*), denunciation, etc., required to complete the final form of the Convention.

The delegates appear to have separated under the impression that their labours were practically completed. The new developments which occurred after the recess, and the delicate and difficult international questions which they involved, will be dealt with in the next article.

(*To be continued.*)

PRELIMINARY REPORT ON THE FORCIBLE FEEDING OF SUFFRAGE PRISONERS.

BY

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AND

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Danger and Pain.

It has been stated by the Home Secretary that the practice of forcible feeding is unattended by danger or pain. We have carefully considered the written statements of 102 of the suffrage prisoners, of whom 90 have been subjected to the operation of forcible feeding; we have personally examined a large number of these prisoners after their release, and we have communicated with the physicians who have attended those prisoners whose condition on release necessitated medical care. The facts thus elicited give the direct negative to the Home Secretary's assertion that forcible feeding, as carried out in His Majesty's prisons, is neither dangerous nor painful. We are confident that were the details of the statements we have read and cases we have examined fully known to the profession this practice, which consists, in fact, of a severe physical and mental torture, could no longer be carried out in prisons of the twentieth century.

Forcible feeding has been carried out by nasal and by oesophageal tubes, and by the feeding cup. The feeding cup method is frequently forcibly administered solely by the wardresses, without the supervision of a qualified medical practitioner. In the majority of cases the feeding has, on principle, been resisted to such a degree that two doctors and four to six wardresses were required for each operation, and in several instances the officials were held at bay for periods varying from ten minutes to over an hour. But it is to be observed that even in many cases where no resistance was offered, great pain was experienced under the operation. In these circumstances it is not surprising that many prisoners state that after one operation of forcible feeding they experienced more serious symptoms and pain than after several days' starvation. One prisoner we examined (K. M.), a strong woman of fine physique, was so seriously injured by only one feeding that she had to be removed to hospital after it; and she is but typical of a considerable number.

The suffrage prisoners, it should be noted in passing, have never hunger struck to shorten their sentences, but only to obtain equality of prison treatment for prisoners convicted of like offences, and for justice in observance by the prison officers of the prison rules, especially 234*a* granted by Mr. Churchill when Home Secretary, but withheld for some time or in part by Mr. McKenna.

According to the Home Secretary, forcible feeding was instituted by him to keep the suffrage prisoners in health, and also to prevent them bringing about remission of their sentences, for which, however, they have never hunger struck. But in the large majority of the cases it has had precisely the opposite effect. Mr. Ellis Griffith admitted in the House of Commons that on one day (June 26th, 1912), from three prisons (Holloway, Maidstone, and Winson Green, Birmingham), no fewer than twenty-two prisoners had to be released and placed under the care of their friends in order to save their lives. Again, at the commencement of the hunger strike, twelve prisoners were immediately released, upon whom forcible feeding was never attempted, because the doctors of the prison were afraid to risk the operation upon them. Further, out of a total of 102 cases of prisoners who joined in the hunger strike we have investigated, forty-six were released long before the termination of their sentences, because their health had been so rapidly reduced as to alarm the medical officers. In many cases the forcible feeding with the nasal or oesophageal tubes had been carried so far that the condition of the prisoners was so enfeebled thereby as to compel the authorities to release them under the care of a special attendant, who accompanied them to their homes, and remained with them until the assistance of their friends could be obtained.

It is therefore not correct to say, as the Home Secretary did in the House of Commons, that he ordered his forcible feeding in order to preserve the health of his prisoners.

No Danger to Life or Health when Prisoner does not Resist.

The Home Secretary, further, has repeatedly stated (especially *Hansard*, May 20th, 1912): "There is no danger to life or health from the process of feeding by tube. Where there is any danger, it arises from the violent resistance sometimes offered by the prisoners." And Mr. Ellis Griffith stated, in reference to a particular case: "If she suffered any pain, it was due entirely to the violent resistance she offered to what was necessary medical treatment."

These statements are not borne out by our investigations. One example out of several will suffice to illustrate this point.

M. F., a skilled trained nurse, never resisted the operation. At Easter she was fed twice daily for eight days. The pain endured surpassed that of any nasal operations she had undergone in previous years, and she lost 13 lb. in weight. The "privileges" of the prison rules demanded being granted by the Home Secretary, the hunger strike ended. She regained her health, and felt quite strong and well when a second hunger strike began in June. On the second day of the forcible feeding she had to be discharged on "medical grounds." The pain caused by the forcible passage of the tube through her nose caused a collapse after each feed, and on account of the palpitation and cardiac irregularity set up the doctors considered further feeding too "dangerous to health" to be persisted in. This also is a type of many similar cases.

Physical Injuries Inflicted on Prisoners.

During the struggle before the feeding, prisoners were held down by force, flung on the floor, tied to chairs and iron bedsteads. As might be expected, severe bruises were thus inflicted. The prisoners, however, did not complain of these. They regarded them as the inevitable consequences of political war.

Forcible feeding by the oesophageal or nasal tube cannot be performed without risk of mechanical injury to the nose and throat. Injuries to the nose were especially common, owing chiefly to the lack of previous examination and skill in operating. Though the medical officers were informed in several cases that the nasal passage was known to be blocked and narrowed by previous injury, no examination was made. The prisoners were usually flung down or tied and held while the tube was pushed up the nostrils. The intense pain so produced often forced uncontrollable screams from the prisoners. In most cases local frontal headache, earache, and trigeminal neuralgia supervened, besides severe gastric pain, which lasted throughout the forcible feeding, preventing sleep. One says:

"After each feeding it (the nasal pain) gets worse, so that it becomes the refinement of torture to have the tube forced through." The nasal mucous membrane was frequently lacerated, as evidenced by bleeding of the nose and swallowing of blood from the back of the nose. Sometimes the tube had to be pushed up the nostrils three to five times before a passage could be forced.

In several such cases bleeding continued for some days; in one case it recurred for ten days. In another case an abscess followed, with intense pain over the frontal region, which lasted for weeks after release. Swelling of the

mucous membrane of the nose and pharynx developed almost invariably; it was accompanied by Eustachian pain, and frequently this was succeeded by severe pain over the entire area of distribution of the fifth nerve. This trigeminal pain continued as long as the forcible feeding was continued. The equally invariable pharyngitis, which was obviously of septic origin, lasted in certain cases for some time after the release of the prisoner. When the oesophageal tube was employed the mouth was wrenched open by pulling the head back by the hair over the edge of a chair, forcing down the chin, and inserting the gag between the teeth. Naturally, in this process the lips, inside of the cheeks, and gums were frequently bruised, sometimes bleeding and sore to touch for days after. In a number of cases, when the wardresses attempted to forcibly feed with a cup, they endeavoured to make the prisoner open her mouth by sawing the edge of the cup along the gums. In one case a cup with a broken edge was used and caused laceration and severe pain.

Accidents.

The danger of forcible feeding is increased by the accidents liable to accompany the passage of tubes down the nose or throat. In several instances the oesophageal tube was passed into the larynx. Even in cases who did not offer resistance great pain and suffocation was caused by the clumsy use of the nasal tube, when it coiled up in the back of the throat or came out of the mouth and then had to be reinserted several times. The severe choking and vomiting which sometimes accompanied the passage of the tube led to danger from the entrance of food into the larynx.

The injection of food into the lung actually occurred in the case of one unresisting prisoner, in whom the operation immediately caused severe choking, and vomiting was followed by persistent coughing. All night the patient could not sleep or lie down on account of great pain in the side of the chest. She was hurriedly released next day, so ill that the authorities discharging her obliged her to sign a statement that she left the prison at her own risk. On her arrival at home she was found to be very ill, suffering from pneumonia and pleurisy due to the food passed into the lung. Being, fortunately, a young and strong woman, she escaped with her life.

Effects on the Circulatory System.

In a large number of the written statements we find that after the feeding violent palpitation occurred, frequently so severe as to prevent sleep. In certain cases it would appear that the cardiac nerve mechanism was profoundly affected, for a degree of irregularity of the cardiac rhythm is reported even by the physicians attending released prisoners. In some cases who had never previously suffered from any heart trouble this irregularity continued to occur for some weeks after release, in spite of rest in bed under medical care. Giddiness, faintness, and weakness were frequent symptoms. Collapse took place in many cases after but few (two to four) attempts at forcible feeding. The prisoners became icy cold and had to be removed to the hospital cells and surrounded with hot bottles. In most of the cases who came under our personal observation and under the care of other physicians the temperature remained subnormal (96.4 to 97.4) for some weeks after release, even although the time was spent in bed with careful feeding and other medical treatment.

Effects of Forcible Feeding on the Stomach and Alimentary System.

The well-known principles and precautions for correct artificial feeding were not observed in the prison forcible feeding. Into the completely empty and contracted stomachs of patients who had fasted for variable periods (usually twenty-four to forty-eight hours), the officials (*a*) *rapidly* poured (*b*) large quantities of (*c*) often *cold* liquid. Such a procedure, as is well recognized in hospital practice, inevitably causes pain, often agonizing, with distension and ballooning of the stomach, as well as spasm of the muscular wall of the organ. As a necessary consequence, regurgitation and vomiting followed in by far the large majority of the cases. The following statement may be quoted as a typical example:

In Birmingham (May 29th) I was fed by nasal tube. Knowing what to expect I braced up my nerves and sat quietly in the chair, instead of struggling and fighting against it, as I had done in Newcastle. The passage of the tube through the nose caused me but little inconvenience this time, but its further passage caused me to retch, vomit, shake and suffocate to such an extent that in the struggle for air I raised my body till I stood upright, in spite of three or four wardresses holding me down, after which I sank back in the chair exhausted. When the tube was withdrawn I seemed to be afflicted with chronic asthma, and could only breathe in short gasps. To take a deep breath caused me excruciating pain. Two wardresses helped me back to my cell, where I lay in agony, the pain becoming worse every moment. I vomited milk, which eventually became tinged with blood, etc.

When vomiting did not occur, the majority of prisoners suffered acutely from the severe pain of the sudden distension of the stomach.

Every prisoner has suffered from indigestion—pain, distension, heartburn, nausea and sickness. All the medical certificates we have before us from practitioners who have examined prisoners after release include these facts. The following certificate is typical:

At midnight on July 1st I was called to see Miss R., and found her just recovering from an attack of pain, so severe as to collapse her, after attempting to take food on her return from Holloway. I put her on the very lightest nourishment in very small quantities, and otherwise found it necessary to treat her as a complete invalid for some days.

Vomiting often continued for hours after the operation of forcible feeding. The nutritive value of such "ordinary medical treatment," as it has been termed by the Home Secretary, was, of course, in the majority of cases, *nil*, and in many cases life had to be saved, not by forcible feeding, but by the prompt release and restoration of the prisoner to her friends and to legitimate medical treatment. Vomiting was not, as has been alleged in Ministerial statements, brought on by resistance. One of the worst cases was that of a married woman beyond middle life, who made no resistance at all. The following is an abbreviation of her statement:

After the first feeding by the nasal tube she was locked in her cell, and felt as if she would go mad with pain in the ears, running of the nose, and vomiting all through a sleepless night. On the following day she was gagged (though not resisting) and fed by the oesophageal tube, which caused her extreme pain and faintness. The throat bled, and she vomited profusely. She fell exhausted on the bed, and was left alone in her cell, where she vomited at intervals all the morning. In the afternoon the feeding process was actually again begun, when suddenly the heart appeared to stop beating. The tube was immediately pulled out, but the patient fainted. She vomited incessantly during the night, feeling intensely ill with a swollen sore throat. In the morning she was released by urgent order of the Home Secretary, and was removed to a nursing home, where she slowly recovered strength until after some days she could be removed to her home. In this, as in many others, no respite of the feeding or any medical treatment were given.

That such malpractices and torture could be meted out to prisoners by medical officers we should have believed impossible at the present day had we not numerous cases of the kind before us.

As may be readily understood, the severe indigestion set up by forcible feeding led to other troubles of the bowel. However incredible it may seem, it is a fact that in Holloway Prison the prisoners were locked up in their cells for three to four hours consecutively, by order, it is stated, of the prison doctors, thus being prevented from access to the lavatories at a time when most required. In very many cases dyspepsia has continued for weeks or months after release.

General Inanition.

Medical practitioners who knew certain prisoners before their imprisonment and examined them after release report the supervention of anaemia with considerable loss of weight. One lost 13 lb. in eight days of forcible feeding, another 9 lb. in five days, another 8 lb. in a fortnight, while others report a loss of 9 lb., of 1 st., and 2 st. during the term of imprisonment. This is not surprising when one remembers what has been already pointed out in the description of the effects upon the alimentary canal. As the majority of the prisoners vomited up so much of the liquid administered to them, anaemia and decrease in weight were necessary consequences. This result of prison forcible feeding is directly contrary to the results of tube feeding when used as a form of medical treatment in asylum and hospital practice.

Effects on the Nervous System.

Every physician who has examined the released suffrage prisoners agrees that in the majority of cases by far the most serious effects of the treatment by forcible feeding fall upon the nervous system. The younger prisoners escape with the least serious effects, but in those over 30 years of age the nervous symptoms are more marked and more lasting. Before enumerating the symptoms, we desire to point out that the suffrage prisoners enter prison in a totally different state of mind to that which is met with in asylum practice, to which the condition of treatment has been compared. These women are normal individuals who go to prison as political offenders; they are protesting against what is, to them, an unjust anomaly, and they assert in consequence that they should not be treated as common felons. With the keen sense of suffering political injustice rankling in their minds, they determine on the hunger strike, not to obtain release, as has been asserted, but to obtain equal treatment in prison during the term of their sentences for prisoners convicted of like offences, or to obtain from the authorities the due observance of the prison rules.

We are not here concerned to discuss the right or wrong of the political methods of the militant suffragist. We merely point out that on admission the prisoners are in a normal mental condition, which cannot be said of the patients who refuse food in the asylums. We have personally examined a number of the released prisoners, we have obtained medical certificates from the physicians who have attended others immediately on release, we have questioned the friends, and we have carefully considered the statements of those who have not come under medical care until some time after their release. In the evidence we have personally examined, and in the certificates afforded us by other physicians, there is certainly no evidence of "hysteria"—using that much abused word in the sense of exaggerated or excessive display of emotion. On the contrary, the suffrage prisoners have invariably described their experiences with precision and restraint, deprecating their own share of suffering, and minimizing what they have themselves endured. They only expressed themselves with feeling when relating the sufferings of their friends and the repulsive conditions of the prison.

We may group the effects on the nervous system under the following headings: (*a*) Symptoms on release from prison; (*b*) mental condition during imprisonment.

(a) Symptoms on Release from Prison.

Undoubtedly the strain on the nervous system was in every case extremely severe. In general terms, the younger and stronger the physique of the prisoner, the less the torture told on the general condition. On the other hand, the better the physique of the patient, the longer she was compelled to endure the feeding, and hence it happened that in several women a state of acute delirium set in, after a long period of courageous endurance, ended only by a hurried release. They can remember nothing of the last twelve hours in prison, the mind being a blank except for the recollection of a sudden consciousness that the doctor and wardresses were surrounding the bed and promising immediate release. For weeks afterwards sleep was broken and disturbed by horrible nightmares and dreams. These patients were on the verge of acute neurasthenia, apathetic and indifferent to matters of interest and importance. In the older patients who had been released at an earlier stage of the forcible feeding, there was a constant feeling of apprehension, with the same symptoms of broken sleep and painful dreams. In others, the characteristic symptoms of neurasthenia were present: inability to concentrate the attention on the simplest matter, loss of memory, hyper-sensitiveness to sounds, great fatigue, and general muscular weakness. In others, again, the following physical signs predominated: Weak pulse, irregular at intervals, dyspepsia, pruritus, and vasomotor instability, all indicating profound disturbance of the system generally. In many cases, under efficient medical care, the nervous system recuperated by means of a maximum of sleep. The patient would be drowsy all day, and sleep for fourteen to sixteen hours out of the twenty-four during the first week after release was not uncommon. In none of the cases seen by us or by other physicians, nor in the written statements, have we found any mental condition resembling the introspective or irrelevant ramblings met with so constantly in the average self centred neurasthenic of the textbooks and the consulting room. These patients, without in any way exalting their experiences, regarded them as horrors which must be borne for the sake of the political and moral principle for which they were undergone.

Further physical signs of cerebro-spinal neurasthenia were present in the large majority of the cases examined. The knee reflexes were exaggerated. The patients were readily startled and easily fatigued. In some cases the extreme pain, headache, and neuralgia, which had been started by the passage of the tubes, remained as troublesome symptoms. Most were unable to concentrate their attention on professional work for months after. Many patients were kept in bed for a month: some had tremors, and for several weeks were scarcely able to walk.

In one case an attack of functional paralysis of the upper part of the body on the right side followed the sixth attempt at forcible feeding. The patient describes it thus: "The whole of my face and the upper part of my body became rigid, and though I was quite unable to move or speak, it was fearfully painful to be touched. I had great difficulty in breathing. Later in the evening the doctor told me that he could not stop feeding me on account of this attack. They attempted to feed me next morning, but, after several attempts, found it impossible to get the tube down my throat. The same symptoms of paralysis occurred. I was released later in the same day."

Severe retching occurred in every case. In a large number of cases there was frequent vomiting, even when the patient felt too weak to resist the operation, and was suffering only from nervous exhaustion. A few prisoners describe a condition of nervous prostration, with breathlessness, lasting from a few hours to several days. In one case, although the patient took her food in the ordinary way after the first attempt at forcible feeding, the horror of the recollection of the operation, combined with the effects of the shock and pain, reduced her to this condition.

(b) Mental Condition during Prison.

To the physical torture of forcible feeding the prison officials in many cases added the intellectual torture of solitary confinement, and to this was added the mental anguish caused by hearing the cries, choking, and struggles of their friends. When there were many cases selected by the medical officers or the Home Secretary for forcible feeding, this mental torture was prolonged for several hours twice and sometimes three times daily. With a nervous system already overwrought by this ordeal, each prisoner faced her own struggle. On an average, the resistance could only be overcome by the united services of four to six wardresses and two doctors. After the insertion of the tube the patient often fell into a state of collapse, from which she had scarcely emerged before the terrible noise and groans of the next feeding time began again. Many robust and healthy-minded women, whom no one could term neurotic, state that they feared they were going mad; they could not sleep, and many felt suicide would be preferable. The terror was accentuated by the fact that in most of the prisons for the greater part of the time of imprisonment they were locked up in their cells of solitary confinement, and left all day and night with the thought of the past and the dread of the future ordeal always before them.

One prisoner whom we interviewed, and whom we can certify as possessing a normal mental condition, writes:

As the hour for forced feeding drew near I could not help being deeply agitated, and I used to stand or sit, or walk about in a state of horrible suspense with my heart thumping against my ribs and listening to the footsteps of the doctors and wardresses as they walked to and fro and passed from cell to cell, and the groans and cries of those who were being fed, until at last the steps paused at my door . . . my turn had come.

A skilled trained nurse writes:

I will say nothing of the mental misery which accompanies such experiences, because this is indescribable.

Another writes thus:

From 4.30 until 8.30 I heard the most awful screams and yells coming from the cells. I had never heard human beings being tortured before, and I shall never forget it. I sat on my chair with my fingers in my ears for the greater part of that endless four hours. My heart was going like a hammer, and the suspense of it all was terrible.

One prisoner had to be dismissed to her home immediately after only a single feeding, because the acute nervous symptoms which followed the operation led the prison officials to fear a

complete mental breakdown, and to release her immediately in charge of two attendants, although she had only served twelve days of a four months' sentence.

The wonder is that so many of the prisoners retained their sanity. Neurologists, however, will understand what consequences may develop in the future.

Many points in this matter of forcible feeding of political prisoners and prison discipline and prison hygiene have a direct medical bearing, but cannot be now considered. In the present one of forcible feeding the importance of sterilization of the tubes after each case is obvious, and where a number of patients with septic conditions of the nose, throat, and mouth, phthisis, etc., are herded together in a prison, the danger of infection cannot be exaggerated. Full details of what steps were sometimes taken by the officials in the different prisons cannot be ascertained, but that many prisoners were forcibly fed, one after another, with tubes not sterilized between each case, and by doctors and assistants with unwashed hands, was observed by eye witnesses as well as by those forcibly fed. Naturally a great deal of infection of the nose and throat occurred.

In the light of the facts enumerated in this briefly summarized paper the position of the medical profession in regard to forcible feeding of suffrage prisoners must be considered anew. We cannot believe that any of our colleagues will agree that this form of prison torture is justly described in Mr. McKenna's words as "necessary medical treatment" or "ordinary medical practice."

LITERARY NOTES.

SUNSHINE and air have long been recognized as potent factors in the cure of consumption, but it has been reserved for the disciples of the art of heliotherapy to discover and make use of the healing properties of the sun in cases of surgical tuberculosis. An interesting account of this method of treatment is to be found in the July number of *The Child*, which contains a description by Miss Gertrude Austin of her visit to Dr. Rollier's clinics at Leysin and an enthusiastic account of the merits of heliotherapy in the treatment of tuberculous and rickety children. The subject of open-air schools is treated in the same number of *The Child* both by Dr. Alan Warner and by Dr. D. M. Taylor. The number also contains a short account, by Mrs. Price Hughes and Sister Hope, of another valuable ally in the struggle to preserve the health of the rising generation amongst the labouring classes, namely, the Kingsway crèche; Dr. F. J. Poynton has contributed an article on the diagnosis of appendicitis in children, and the Rev. Cecil Grant writes on the advantages of the co-education of boys and girls.

In a series entitled "Some Royal Deathbeds" a short account of the last hours of Henry VIII was given (May 28th, 1910, p. 1303). The following extracts from a much fuller account, taken from Richard Davey's *The Nine Days' Queen* (Methuen and Co.), may be interesting to some of our readers:

> On the night of Wednesday, January 27th, 1547, Henry Tudor lay dying. . . . The once puissant and magnificent Henry VIII, King of England, France, and Ireland, and Defender of the [illegible] of deformed flesh, eaten up and dis[illegible] of awful disorders, gout, cancer of [illegible]m, ulcers, and dropsy. So swollen were the miserable man's hands, arms, and legs, that he could only move with great pain, and then only with the aid of a mechanical contrivance. . . . Though little over 56 years of age, the dying Monarch's hair had turned quite white, and his beard, formerly so well trimmed, had grown scant and straggling. His [illegible] proportion to the broad, bloated [illegible]nt's enormous mask, but they [illegible]tter. The dying king had been unusually irritable throughout the weary day. At times indeed he was delirious, but on the whole his mind remained fairly [illegible] on he awakened out of [illegible] cup of white wine, [illegible] ordered again, the result, perhaps, of the draught of wine, and shouted "Monks, monks!" . . . Three times, too, and very distinctly, he cried out the name "Nan Boleyn." After that he kept his eyes fixed on a [illegible] so, it may be, his fancy [illegible] of his murdered wife. This outburst of feverish excitement was followed by a lull, and presently the king grew calmer, and fell into a profound slumber. . . . The physicians in attendance upon the king were Dr. Wendy and Dr. Owen, who had brought the Prince of Wales into the world, and who subsequently assisted at the deathbeds of Edward VI and Mary. With them was Dr. John Gale, the king's surgeon-in-ordinary, who had waited upon Henry and his army when in France. . . . Between seven and eight in the evening of 27th January, Sir Anthony Denny, who had been watching his master very closely, thought he perceived signs that the end was approaching. Stooping over him, he whispered into the dying ear a message especially dreadful to one who, like Henry, held the mere mention of death in horror, warning him that his hour was very near, and that "it was meet for him to review his past life, and seek God's mercy through Jesus Christ." The king, although in great agony, evidently understood what Denny had said, and is reported to have answered that he would suffer no ecclesiastic near him but Cranmer, who was immediately sent for. . . . He found the king almost speechless, but in full possession of his faculties, and exhorted him, in a few words, to repent him of his sins and "to place his trust in Christ only." Henry pressed the churchman's hand, and muttering the significant words "All is lost!" immediately expired.

SCIENCE NOTES.

A SERIES of three papers on the infectious disorder of bees, commonly called the Isle of Wight disease, are published by Drs. H. B. Fantham and Annie Porter in the *Annals of Tropical Medicine and Parasitology*, bearing date July 31st. They deal respectively with the general history of the disease, for which the name "microsporidiosis" is proposed, with the morphology and life-history of *Nosema apis*, the microsporidian protozoon to which it is due, and with the methods of dissemination. The spore may be taken up by a healthy bee with honey or pollen from a flower previously visited by an infected bee, or from infected comb, or when cleaning an infected bee with the mouth, as is their communal custom. The spore reaches the chyle-stomach, the main digestive organ of the bee, where its wall is softened; the contained sporoplasm protrudes a polar filament which serves for a short time as an organ of attachment, but is presently rejected. The sporoplasm comes out of the sporocyst, and as a binucleate amœbula creeps about on the epithelial surface of the chyle-stomach, and soon gives origin to daughter amœbula. These enter the epithelial cells and grow and multiply. This stage of multiplication is most dangerous to the host, for the number of parasites may be so great that the bee is killed by their destructive effect on the epithelial coat of the chyle-stomach. If the bee survives, the parasites form spores which are highly resistant to outside conditions, and can live for some time without losing their power of infecting healthy bees. These two stages of *Nosema apis*, the stage of rapid multiplication in the host, and the stage of the resistant spore, which can survive in the outside world, are characters which it has in common with other protozoal parasites, such as the coccidia fatal to grouse, poultry, and cattle. As the bee may be killed by the immense number of parasites produced during the period of multiplication, so young grouse may be killed in the multiplying stage of *Eimeria avium*. As the spores are extremely light they can be carried to considerable distances by wind, and may be deposited on flowers or in water; bees, it appears, dislike cold water, and will prefer to drink water that has been warmed by exposure, though less clean; drinking places favoured by bees may thus become heavily infected. Ants and wax moths, both of which visit hives, may harbour spores, though the spores do not appear to develop in them. Mason bees and wasps may become infected and die. A certain number of honey bees survive an attack of the disease and then act as carriers, so that a "cured" hive in or near an apiary may be a source of serious danger. A queen bee may be infected, and there is some evidence that the ovaries may harbour the parasite; if so, the disease may be congenital. The authors attach much importance to the observation that though *Nosema* is primarily an intestinal parasite, it is occasionally found in the hæmocœlic fluid. This they look on as an indication that its potentialities as a deadly organism may increase. Its congener *Nosema bombycis* is capable of attacking any and every tissue of the silkworm, and if *Nosema apis* develops a like power it will be a more deadly enemy of the bee than it is to-day. This is cold comfort for bee keepers.

British Medical Journal.

SATURDAY, AUGUST 31st, 1912.

THE PRESENT POSITION OF THE OPIUM QUESTION.

Evidence is forthcoming from various sources that "the opium question," using that designation in the widest sense, is likely again to occupy public attention in the near future. Reports have been current that one of the unfortunate accompaniments of the wonderful revolution which China has undergone has been an increased cultivation of the poppy in some of the provinces of the republic. It is not easy to get trustworthy information in regard to this matter, as is, indeed, the case with other questions connected with the internal government of China since the overthrow of the Manchu dynasty. Dr. Morrison, till lately the correspondent at Pekin of the *Times* and now the political adviser to the President of the new republic, has, by his recent communication to the press, disabused our minds of much of the pessimism which has prevailed as to the good intentions and good faith of those in control of the new Government. We are glad to see also that from reports of missionaries the accounts of the recrudescence of opium cultivation in Hunan appear to have been greatly exaggerated.

Meanwhile we hear that Indian opium merchants are glutted with stocks of opium at Shanghai, the distribution of which the provincial mandarins are indisposed to allow, thus defying the agreements entered into with Great Britain. The merchants, while appealing to the Government to press the central authorities at Pekin to induce the provincial governors to remove their embargo, are yet more earnest in their demand that purchases by them from India may be arrested and the production of Indian opium for Chinese consumption brought to an end. In this last appeal the reformers of China, the merchants engaged in the Indo-Chinese opium traffic, and the anti-opium societies would appear to be at one.

The Under Secretary for India, in presenting the Indian Budget to the House of Commons on July 30th, showed a surplus of £2,000,000 derived from opium sales, although the exports to China since the agreement of 1907 have progressively declined. Mr. Montagu, however, refused "at present" to reduce further the area under the poppy in India, which now stands at 200,000 acres. He argued that this area would suffice to produce 23,500 chests of opium, "of which 12,500 chests were required for Indian consumption."

Meanwhile, a telegram from Simla of August 22nd indicates that important changes "in their internal opium policy" are about to be made by the Government of India. It appears, however, that what is in contemplation is more severe repression of opium smoking, in pursuance of the official view of the Indian Government—for which we are unaware that there is any scientific warrant—that smoking the drug is far more pernicious than any other form of consumption. New rules are also to be promulgated in regard to "the sale of morphine and allied opium compounds."

Outside India, we have in the Far East other aspects of the opium question to consider. In British North Borneo, as appeared from Sir West Ridgeway's speech to the fifty-ninth half-yearly meeting of the company on July 11th, the principal source of the company's revenue is derived "from the farms, or, in other words, the licences to sell intoxicating liquors and to import and sell opium, etc." The Secretary of State has urged that, as in the case of the Straits Settlements, this lucrative business should become a monopoly under the direct management of the Government of the State. Whether such policy will necessarily operate in the direction of restriction is an arguable question, and it is conceivable that reasons of State may be urged, in time to come, for not limiting the output to medical or legitimate requirements.

Mr. Harcourt dealt with the opium traffic in his statement in Committee of Supply, in regard to the Colonies, on June 27th. He said that in the matter of opium some advance had been made, though not as great as was desired by some. The difference was not as to the goal or the road, but only as to the pace, and he expressed the opinion that the most important articles of the Convention drawn up by the Opium Conference at the Hague were those dealing with morphine, cocaine, and similar drugs, providing for an international control by the Powers over the manufacture, sale, and export of those poisons. He held that until these "even more deadly vices of morphine and cocaine" could be checked, "it would be unwise to proceed further to the desired goal of the total cessation of the opium habit."

Medical men who have studied the opium habit, whether the mode of exhibition be by ingestion, injection, or inhalation, are satisfied that the essential nature and results of the evil are the same, and we gathered from a perusal of the International Convention which was signed at the Hague last January that recognition was given by it to two cardinal considerations. The first was that the proper control of these drugs of addiction is a matter transcending national limitations and demanding international co-operation; and the second, that all drugs which possess this insidious and enslaving property (in whatever form administered) should, by reason of the social evils to which they conduce, be subjected to such control.

From answers given in the House on June 4th and 6th we were led to expect that a report was forthcoming on behalf of the British delegates at the Hague. In the absence of such report we are furnishing our readers with an account of the proceedings at that Conference, which have just been published. It will supplement the article which appeared in the Journal on February 3rd, 1912, p. 261, and which dealt with the results of the Conference as embodied in the Convention.

EXPERIMENTAL ACUTE ANTERIOR POLIOMYELITIS.

Investigations have been carried out during the past two years by Neustaedter and Thro,[1] based on the observations that acute anterior poliomyelitis is mainly a disease of early childhood; that it is most prevalent in the dry and dusty seasons of the year; that its distribution is independent of local conditions; and that it successively attacks children of the same family, or children of different families living under the same roof. With the further knowledge

[1] *Deut. med. Woch.*, April 11th, 1912.

that the virus of the disease has been transmitted from one ape to another by inoculation from the nasal mucous membranes of apes already suffering from the disease, the writers suspected the transmission of the disease by dust, and its entry into the body by the respiratory tract.

During the last few years a number of different observers—Flexner, Kling, Landsteiner, and Levaditi among others—have detected the virus, by inoculation tests, in the nasal and buccal mucosae and in the tonsils of fatal human cases of the disease. The virus has similarly been found in the nasal and buccal cavities of patients with poliomyelitis of the meningitic and abortive types in which no paralysis has occurred. In Neustaedter and Thro's experiments the dust taken from the rooms of patients in whom paralysis had existed for from two days to six months was suspended in physiological saline solution, and was treated by filtration and other procedures designed to remove all other germs than those of acute anterior poliomyelitis from the filtrate. The apes successfully inoculated were numbered 4 and 5. No. 4 was inoculated with 5 c.cm. of the filtrate, which was injected into the left lateral ventricle. Perfect health was apparently maintained till the seventh day, when the animal became nervous, morose, and dull. Next day its right fore paw was paralysed; but the symptoms of general malaise had disappeared, and, with the exception of the paralysis, complete recovery was made. No. 5 was injected with a filtrate of dust taken from another patient's room, 5 c.cm. of the filtered saline solution being injected into the spinal canal and 8 c.cm. into the subcutaneous tissues. The ape became very ill six days later, and on the seventh day the right fore paw was paralysed and the hind limbs showed paraparesis, the left hind limb being most seriously involved. The patellar and plantar reflexes were absent, and the animal could hardly move. But it could still chew and swallow its food; its cervical muscles were not rigid, and the pupils were normal. Fluid withdrawn from the spinal canal by lumbar puncture on two occasions was scanty and gelatinous. The ape was killed on the eighth day, when the following conditions were observed at the necropsy: Marked hyperaemia in the lumbar and cervical regions of the spinal cord and great dilatation of the vessels supplying the cerebral cortex and spinal cord. Sections of the cord showed deep-red, punctate areas in the anterior horns. In both lobes of the left lung there were congested areas and the spleen was firm and distended. The microscopic examination of the central nervous system revealed a diffuse infiltration with round cells in the lumbar and cervical regions of the spinal cord, where large epithelial cells and lymphocytes were also present. These changes were most marked in the anterior and posterior horns and the anterior longitudinal sulcus. Some shining and swollen ganglion cells were seen, and there was marked gliosis, which is a characteristic feature of acute anterior poliomyelitis. Emulsions, made from the brain and spinal cord of this ape, were injected into the spinal canals and subcutaneous tissues of apes Nos. 4 and 6. No. 4, which had already been infected, became very ill at once, but it recovered in a day, only to develop paralysis of all its limbs and its neck on the seventh day. Death followed five days later. Ape No. 6 developed paraplegia on the fourteenth day, and on the fifteenth day all its limbs were paralysed. The necropsy performed on both these apes showed a condition similar to, but even more pronounced than, that shown by ape No. 5. The writers finally describe a number of control experiments which proved that the disease thus produced in apes was not caused by accidental infection or other errors in technique, and that its virus can exist in dust.

Kling, Wernstedt, and Petersson have gone further, and shown that the virus is constantly found in the mucus of the small intestine in fatal cases after death, and in the washings from the large intestine taken during life. How does it get from the nose and mouth to the intestine? In the saliva, it seems natural to answer; and the capacity of the virus to survive in the stomach and small intestine of a rhesus monkey for over two hours has been proved quite recently by Flexner, Clark, and Dochez.[1] It is unnecessary to dwell on the importance of these experiments in proving the need for disinfection of the dejecta of patients with acute anterior poliomyelitis.

Still more recently Clark[2] has investigated the action of subdural injections of epinephrin in experimental poliomyelitis. Epinephrin is a powerful vasoconstrictor, and, as the local lesions of poliomyelitis in the spinal cord are characterized by very marked vascular changes, haemorrhages, and circumvascular cellular infiltration, it seemed reasonable to suppose that the subdural injection of epinephrin might control the severity of these vascular manifestations, and so of the local lesions in the cord also. His experiments, made on rhesus monkeys with experimental acute anterior poliomyelitis, gave distinctly encouraging results. Epinephrin is not, of course, a curative drug in the sense of acting upon or neutralizing the virus of poliomyelitis. But it produces an improvement—often a very marked improvement—in the muscular tone of the paralysed muscles and in the respiratory movements, and, in severe cases, prolongs life for several hours, or even days. It appears possible that its injection in suitable doses might save the lives of human beings with severe and ascending forms of acute poliomyelitis—forms resembling acute Landry's paralysis, so-called, and ending by asphyxia when the inflammatory process reaches the level of origin of the phrenic nerves in the upper cervical region of the cord.

ANNUAL REPORT ON LUNACY.

THE growth of insanity, its varieties, causes, treatment and prevention; the housing and care of the insane; the expenditure of public moneys and the administrative functions exercised by the three great departments concerned with the certified insane in this country are all matters of more than medical interest. So far as is at present possible, all of these matters will be found admirably arranged and discussed by the Lunacy Commissioners for England and Wales in their successive annual reports, the latest and sixty-sixth of which[3] has recently been published. Some, however, are of particular interest to the public, and of these the growth or increase of insanity is of first importance.

The actual gross number of the insane in the country at any time is, of course, easy of access; but, owing to a variety of causes—the division of authority among three departments, and the consequent inadequacy of statistical information, and also to the fact that there is always a large uncertified reserve of insane and imbecile people among the

[1] *Journ. American Med. Assoc.*, July 27th, 1912.
[2] Ibid., August 3rd, 1912.
[3] The Sixty-sixth Report of the Commissioners in Lunacy. 1912. London: Wyman and Sons or Eyre and Spottiswoode; Edinburgh: Oliver and Boyd. Price 9d.

population at large—the great question of whether or no insanity is actually increasing or decreasing still escapes complete and conclusive solution. There are not wanting, however, in this last report signs to which the Commissioners draw attention which forcibly suggest that "occurring insanity" is not increasing, although the actual numbers of the insane, and even the proportion of the certified insane to the population at large, steadily augment year by year.

Turning to the actual figures, there were 135,661 certified insane persons in England and Wales on January 1st, 1912, whereas there were 133,157 on January 1st, 1911, giving an increase for the year 1911 of 2,504. This increase may be compared with that of 2,604 for the previous year, or with the average annual increase of 2,335 for the five years ended December 31st, 1911. It will be noted that, although the increase for 1911 was 169 above the average for the quinquennial period, it was exactly 100 below that for 1910: this decrease, however, is attributed by the Commissioners to a decrease of 109 in the outdoor pauper lunatic class, probably due to the operation of the Old Age Pensions Act, which has enabled certain of the class to dispense with Poor Law assistance. As bearing on the question of the increase of insanity, therefore, this decrease may be discounted. With regard to the proportion of the insane to general population, it may be recalled that on January 1st, 1859, there were 36,762 insane persons known to be under care, giving a ratio to population of 18.67 per 10,000; whereas on January 1st, 1912, the ratio had risen to 37.12 per 10,000—that is, the ratio for all insane had increased in these fifty-three years by 98.8 per cent. Last year the Commissioners gave the ratio to estimated population on January 1st, 1911, as 36.4 per 10,000, or 1 insane in every 275 of population. The Census returns of 1911, however, show that the correct ratio was 36.82 per 10,000. The figures of January 1st, 1912, give, as already said, a ratio of 37.12 per 10,000—that is, an increase of ratio for the year 1911 of 0.3 per cent.—or, otherwise expressed, 1 insane person in every 269 of population.

At first sight these figures do not appear very hopeful, but the Commissioners, when they discuss a much surer index—namely, the admission, and particularly the first admission, rates to population—show that there has been of late years an actual decline both in the proportion to population of those admitted to care and in the proportion of those admissions to the total numbers under care. Thus, they say, "the ratio of admissions to population, which in 1869 was 4.71 (per 10,000), was 6.06 in 1911—an increase of 28.7 per cent.; whereas in 1902 the admissions for that year gave an increase of this ratio, of 6.93, each succeeding year in the decade showing a decrease in the rate."

They add that, "It is somewhat encouraging to find that whereas the advance in population between the estimated average of 1902-6 and that of 1907-11 is 5.3 per cent., and on the same basis of comparison the number of insane under care shows an increase of 9.6 per cent., there has, as regards the numbers admitted to care, been no increase at all, but an actual decline."

Another significant fact is that the ratio of those admitted to the total numbers under care has fallen during the past ten years from 26.5 per cent. to 20.5 per cent. It has, of course, to be conceded that the statistics with regard to "first admissions" have not the same value as would the statistics relating to "first attacks." Unfortunately there are no official statistics embracing the total number of first-attack cases, although the Lunacy Commissioners have collected information regarding first attacks in respect of persons admitted into institutions for the insane since 1876. Nevertheless, the facts outlined above lead one to believe with some confidence that there are no grounds for presuming the "tide of degeneracy" imagined by some to be flooding our population, and that in respect to the actual growth of insanity we are in no worse case than we have ever been. It may further be hoped that a careful comparison of the Lunacy Commissioners' statistics with those of the census of last year (an inquiry which ought to yield valuable results to a competent statistician) will confirm Mr. Noel Humphrey's conclusion of some years ago that the apparent increase of insanity is due in the main to two causes—accumulation within asylums and increasing drafts upon the "uncertified reserve."

The annual report contains many matters of great interest which must be passed by here, or reserved for our subsequent digest of the Lunacy Commissioners' statistics, which will form Part II of the report. In the meantime attention should be drawn to the large increase in the output by asylum officers of valuable scientific work, brief descriptions of which are printed in the supplement to Part I.

THE TUBERCULOSIS SCHEME AND SANATORIUM BENEFIT.

From the confused position brought about by the ill-considered haste with which, in order to bring sanatorium benefit under the Insurance Act technically into force, a big national scheme for dealing with tuberculosis has been thrust upon the three countries—for the Principality of Wales, by a combination of good luck and good guidance, has taken occasion by the forelock—two things seem in these last weeks to have emerged. The first is that county councils are seriously turning themselves to the devising of schemes, being much encouraged thereto by the prospect that a large part of the necessary expenditure will be defrayed from sources other than the rates. The second is that the Local Government Board appears to have set its face against the proposals of medical officers of health that they should be constituted consulting medical officers for tuberculosis, to take charge of the whole system, therapeutic as well as preventive. As to the first matter, there can be no doubt that the county councils have the support of public opinion, and that they will have the support of medical opinion and the certainty of the general and cordial co-operation of the profession if the schemes evolved are so framed as, in its opinion, to afford a reasonably good prospect of ultimate success and a proper recognition of the services which the general body of the profession has rendered, and will be in a position still more effectively to render, under better conditions, in the future. The success of the scheme will be endangered if an attempt be made to subject the whole to the direct control of the department of the medical officer of health. That official may properly act as adviser of the council on general administrative questions arising with respect to those matters in which the campaign against tuberculosis demands the assistance of the ordinary public health machinery. Owing, however, to the resolve of influential members of the Government to institute sanatorium benefit under the Insurance Act at once, before the machinery for combating tuberculosis in all its forms in all classes of the population could be devised, much less got into working order, the Local Government Board sanctioned, as a temporary expedient, the addition to the duties of the medical officer of health of those of the special county official proposed by the Astor report, to be called chief tuberculosis

officer. The perpetuation of this temporary expedient as a permanent system has, we observed, been desired by some medical officers of health. The proposal has produced a feeling of amazement in the medical profession, well acquainted with the complexity of the problems of diagnosis which arise, as Sir William Osler has forcibly pointed out, and with the long, patient, and intimate attention to matters of therapeutic detail demanded. It must also have caused some surprise to members of county councils who have supposed that the time of their medical officers was already very fully occupied in the discharge of their multifarious duties. Nobody, lay or medical, can doubt that if a comprehensive tuberculosis scheme is to be properly worked in any county or county borough, it will demand all the time and energies of the most diligent and even enthusiastic tuberculosis officer. Co-ordination there must be, but the extrusion of the general practitioner and of the hospital physician and surgeon must seem, to any one who knows the A B C of the problem, a merely fantastic suggestion. The inception of these schemes all over the country affords to general practitioners an unsurpassed opportunity of displaying their powers of organization and of adaptation to circumstances, qualities which they have always shown themselves to possess in a conspicuous degree. In the SUPPLEMENT will be found an article recalling the decisions of the Annual Representative Meeting on this matter, and the steps taken by the State Sickness Insurance Committee with the view of giving that guidance to the profession which it was instructed to afford. The refusal so far of the Government to recognize the legitimate demands of the profession with respect to the general medical benefit proposed to be given by the Insurance Act has thrust upon the profession the obligation to be ready with an organized public medical service. Of this, the tuberculosis service must be in intimate association, for it can only be efficiently carried out by and through the general practitioners of the country. Of course, the treatment of tuberculosis, like other departments of practical therapeutics, has not been standing still, and any medical man who has not specialized on the subject may readily admit that he has something to learn. As Sir James Paget said, we are all of us every day and to the last days of our lives learning—always students with open minds. The man who never reads, never studies other men's methods, if such there be in so progressive a profession as medicine, must very soon become fossilized. The county tuberculosis officer, if the right sort of man, if carefully selected and adequately trained and diligent to keep himself abreast of all advances, will be a welcome addition to our forces; if he degenerate into a mere official doing routine work in an office he will be useless, or worse than useless, for he will be a benumbing instead of a stimulating influence. Of all professions medicine, and of all departments of medicine therapeutics, would suffer most from being cast into the mould of an official stereotype. It requires some effort on the part of a medical man who has reached middle age to put his mind back to where the best of us were a generation ago. The advance from year to year has been slow, but a generation has produced a revolution. The progress has been due to the liberty to think, and to try, and to criticize. It is the fear of losing this liberty, upon which we all know progress to be dependent, that has lain at the root of the distrust with which so large a majority of the profession has regarded the National Insurance Scheme.

X − M = O.

The prosperous town of Llanelly, hitherto known to the outside world for its tin-plates and three-cornered contested elections, is now having thrust upon it notoriety in another way. As a relaxation from its arduous labours in politics and in the rolling of plates to be squeezed into the shape of frying pans and other baser articles of domestic utility it is asked to turn its attention to squeezing the medical profession into its domestic mould. Certain persons calling themselves "Workers"—we will call them x, as they modestly withhold their names and are therefore an unknown quantity—propose to establish for the benefit of the inhabitants of the town and district a "Workers' Medical Association" for the purpose of exploiting the medical profession, in order, among other advantages, to make, as it would seem, a profit, the destination of which is not stated. The circular[1] this self-constituted committee has issued, if not, as some suppose, a practical joke devised to amuse the town in the reaction after the election, is a piece of consummate effrontery. The Workers' Association, guided by x, is to provide medicine and medical attendance—observe the order of ideas—for workmen's dependants, and to give non-married workmen certain privileges. The only privilege mentioned is the privilege of subscribing 4d. a month, which goes to swell the balance the destination of which is not stated. The married workers are to pay 1s. a month, and in return "we" are to own a dispensary with a tame dispenser as watch-dog on the premises, and a doctor tied up somewhere within an area to be determined by x. "Our" present medical officers are expected to accept the scheme, but with simple guile x winds up with what it conceives to be a very terrible threat. "If not, we anticipate that our selected medical officers will be the medical practitioners on the panel, and will receive each insured person's support." We will not stop to seek the exact meaning of this obscure sentence; let it suffice that it is obviously a menace. The balance sheet is of engaging simplicity: £1,200 a year for the drugs, dressings, dispensaries and pocket dispenser, and £2,000 for the tethered doctors—balance of profit, £916 13s. 4d. The workers of Llanelly, as they call themselves—we do not know with how much justification—must have taken Mr. Lloyd George's dictum—that doctors are not good men of business—too absolutely. There is a mean between a good man of business and a candidate for an imbecile asylum. Why should any sane set of men accept a bargain so one-sided? $x + m =$ £916 3s. 4d. where m is the medical profession in Llanelly; $x - m = O$. And so it has turned out. The medical men have promptly and unanimously stated that they will have nothing to do with the "scheme." But there is a serious and rather depressing side to this sort of thing. It shows that people calling themselves workers have either entirely failed to understand the attitude and the purpose of the medical profession, or, in the other alternative, fancy that the real workers fail to understand. The medical men of Llanelly, in their unanimous resolution refusing to entertain the scheme, have emphasized this aspect of the matter. They affirm that as members of the British Medical Association they could not accept any such scheme—any scheme which extends and aggravates the evil system of contract practice in its very worst form, that system best known to the profession under the general term, "medical aid associations." The lesson given by the prompt action of the medical men in Llanelly will not be lost on the profession in other districts. We have rather dwelt on the humorous absurdity of this preposterous "scheme." But in other places other schemes may be presented by more astute persons in a less crude shape. By this Llanelly attempt to apply the thick—or may we say the obtuse?—end of the wedge, the profession everywhere will be put the more keenly on its guard to resist from the first any and every attempt to insert the acuter extremity. It will absolutely, and as one man, refuse to permit the Insurance Act to be used, either directly or indirectly, to fasten on it the degrading conditions of practice, which it has resolved in any event to bring finally to an end.

[1] See page 516.

THE ALKALINE WATERS OF THE LONDON BASIN

If a curved line be drawn through the County of Essex from Barking in the South-West to Dedham, three miles from the mouth of the River Stour in the North-East, it is found, as Dr. Thresh showed in 1901, that the waters derived from the chalk on the east of this line, save at the Purfleet outcrop, are soft, whilst those on the west of it are hard. Dr. Thresh now offers an explanation of this observation, based upon a large number of analyses and experiments.[1] The hard waters have the usual characters of chalk waters, contain very little salt, and are free from sodium carbonate; whilst the soft waters contain more or less salt and sodium carbonate. The marked difference of the water from wells, perhaps not more than a mile apart, suggested at first a fault in the strata, but Dr. Thresh thinks that when the carbonic acid gas in the water has been exhausted by dissolving the chalk, the water no longer opens up fissures, and the chalk being compressed by the sand and clay above it, becomes dense and impervious to water. But why should water separated by this obstacle differ so markedly? Dr. Thresh's experiments go far to show that the difference is due to the chemical action of the Thanet sand, aided by the brine of sea-water, which, Dr. Thresh's analyses indicate, is finding its way into the inland water supplies of Eastern Essex. In a laboratory experiment water of 57 degrees of hardness, passed through sand obtained near Chelmsford, yielded in some samples 54 degrees, in others only 7 degrees of hardness. After use, the sand loses its power of abstracting the calcium salts, and with them the hardness from the water; but the softening power of the sand can be restored by treating it with brine. Hence, Dr. Thresh suggests, the stratum of Thanet sand through which the water filters on its way to the surface, after passing through the chalk, removes the calcium salts. After a time its power to do this is lost; the sand, in fact, becomes saturated with the calcium it has exchanged for the alkaline salts it has given up. Brine sweeps the chalk out of the sand and renews its softening properties; and sea-water has the same effect. Dr. Thresh bases his opinion that sea-water is subterraneously reaching the inland waters of Essex upon the facts that in many places the deeper the borings the more salty is the water, and that by mixing the chalk-water with sea-water and filtering the mixture through Thanet sand found in Essex a water identical with the soft waters of Essex is obtained. Dr. Thresh appeals for help in this investigation. "My time for such work," he says, "is not only limited but scrappy." It is greatly to the credit of a busy county medical officer that he can find time for such a research, which, as he truly says, has a more than local interest.

PROTEIN IN NUTRITION.

Major McCay has extended his investigations on the dietaries of the gaols of Bengal to those of the United Provinces.[2] Journeys of 500 to 800 miles have had to be taken in order to collect the material for the work which has been done in the laboratories at Calcutta. His aim has been to determine experimentally the nutritive value of the diets at present in use in the gaols and to work out the coefficients of protein and carbohydrate absorption of the different food materials entering into these dietaries. He has shown how great is the loss of protein by the faeces when inferior vegetable foodstuffs are made use of, and how, therefore, the gross value in protein of such foodstuffs cannot be made the basis of a diet. In observations on the urine and faeces of Europeans and natives of India respectively there is nothing more striking than the low percentage of nitrogen in the urine of the latter as compared with the former, and the small quantity of faeces in the case of the European compared with the large mass of faeces passed by the native of India, in which 4 to 7 grams of nitrogen may be lost per diem. The diet must be arranged, not on the gross chemical composition, but on the amount of protein utilizable. From the data obtained Major McCay has been able to frame new dietaries of practically identical value, and suitable, according to availability of foodstuffs, at different times of the year—a most important and useful piece of work. From the facts collected "there would appear to be abundant evidence that, other things being equal, diet is the all-important factor in determining the degree of physical development and general well-being of a people, and that with a low level of nitrogenous interchange deficient stamina, morally and physically, must be expected." We look forward to the publication of Major McCay's book, announced to appear in the International Series of Medical Monographs (Arnold). In this we shall expect to find summarized the fruits of all his researches on the influence of a high protein value in diet, and the counterblast to the teaching of Chittenden, who would put us all on the low protein scale. Sir Almroth Wright, when Professor at Netley, did much to stimulate the enthusiasm and work of the younger generation, and he must feel proud at the continuous production of fruitful research which has followed.

HOSPITAL EXPENDITURE.

The outstanding fact in the statistical analysis[3] of the ordinary expenditure of 107 metropolitan hospitals for the year 1911, published by King Edward's Hospital Fund for London, is that for the first time since 1903 no decrease is shown in the average cost per bed; in fact, in every one of the many different classes of institution there is a certain increase under this heading. For instance, at fifteen larger general hospitals in 1910 the average cost per bed was £78 14s. 11d., while in 1911 it was £79 6s. 2d. The net outcome is an increased expenditure of some £7,000. Considering how very large is the aggregate outlay of the 107 institutions in question, this is not a large sum in itself, but may be regarded as indicative of the direction in which the wind is blowing. The hospitals, taken as a whole, had effected by the beginning of last year pretty nearly all the economies that are possible, and if they are able to maintain the cost per bed at approximately the level of last year they will do well. This, of course, does not imply that at no hospital is further economy of a desirable kind possible, for in some cases the variations from the mean, upwards and downwards, at institutions of the same class is very considerable. The general sources of increased expenditure appear to be a rise in the outlay under the heading of "surgery and dispensary," in "salaries and wages," and in the cost of provisions. As special and costly treatments are constantly being introduced into practice it is almost inevitable that there shall be a tendency towards increase of expenditure under the first heading, while increases in salary and wages are not unnatural. In regard to the cost of provisions, the authorities of hospitals are only a little less helpless than are private householders. Still, they must be regarded as emerging from the fray with the provision merchants very successfully, since on an average they feed their patients throughout the year for about 8s. 9d. a week a head, against the 10s. 6d. which was commonly regarded as quite a small housekeeper's allowance even before prices began to go up a few years ago. But all institutions are not equally successful in this respect. A little calculation,

[1] *The Alkaline Waters of the London Basin.* By John C. Thresh, M.D., D.Sc., Medical Officer of Health to the Essex County Council.

[2] *Investigations into the Jail Dietaries of the United Provinces.* By Major D. McCay, M.B., M.R.C.P., I.M.S. Scientific Memoirs by Officers of the Medical and Sanitary Department of the Government of India. New series, No. 48. Calcutta: Superintendent Government Printing, India. 1911. (Dble. sup. roy., pp. 200. Rs. 1.12.0, or 3s.)

[3] Statistical Report on the Ordinary Expenditure of One Hundred and Seven London Hospitals for the Year 1911. Published for the Fund by Spottiswoode, 5, New Street Square. Post free, 1s. 3d.

for instance, shows that of two institutions doing similar work and having almost exactly the same number of beds occupied throughout the year, one spent as little as 7s. 2d. a week for the food of each patient, and the other as much as 10s. 5d. Some explanation of such differences may possibly be found in the last table of the volume. It exhibits some remarkable variations in the prices that were being paid for sundry articles on the last day of 1911. For new laid eggs one institution was paying only 9s. a gross, and another 20s. One was paying 7s. a hundredweight for rice, against 26s. paid for the same quantity elsewhere. For a hundredweight of potatoes the price being paid by one institution was only 3s., and by another 9s. Other examples are 1½d. for a pound of fish against 8d. a pound; 1s. 3¾d. for a fowl, against 4s. a fowl; 10½d. a hundredweight of ice, against 4s. a hundredweight; 1s. 3d. a dozen syphons of mineral water, against 3s. 6d. a dozen. There are equally marked variations in regard to articles coming under the two headings, "surgery and dispensary" and "domestic." One institution, for instance, was paying for bismuth carbonate only 3s. a pound, and another 12s. 9d.; methylated spirit was costing one institution 1s. 7d. a gallon, and another 4s. 8d. The towels at one hospital were costing 3¾d. each; at another 1s. 9d. each. Even in the matter of scrubbing brushes there were great differences, one institution paying for them 3s. a dozen, and another 15s. for the same number. In ordinary domestic life these differences could hardly be equalled by shopping, on the one hand, at the stalls in the New Cut, and, on the other, in the neighbourhood of Piccadilly.

PARAFFIN AS A MOTOR FUEL.

The high price of petrol, which is not likely, so far as can be foreseen, to be reduced in the near future, has stimulated experiment in the direction of using cheaper and heavier paraffin as a substitute. The difficulties of so doing are several. A good explosive mixture of paraffin and air is only attainable by raising the paraffin spray to a temperature not easily reached by the means available for heating a carburettor, and this same fact renders starting from the cold wellnigh impossible. Hence the earlier attempts to solve the problem took the direction of starting upon petrol, and then when the engine was heated up changing to paraffin. Other attempts have been made by simply mixing some proportion of paraffin with the petrol, but the amount which can so be added is not very large, the starting difficulty becoming serious so soon as the specific gravity of the mixture is much raised. An endeavour has recently been made on somewhat different lines in a carburettor, known as the bi-fuel carburettor, which has two jets, one for petrol and one for paraffin; these are intended to be used simultaneously, means being provided for varying the relative proportions transmitted by the two jets. It is stated that this carburettor has been in use for three months, and has covered a distance of 4,000 miles with perfectly satisfactory results. The data given as to its performance in respect of economy and efficiency are not, however, at present sufficient to enable a judgement to be passed upon it, nor do trials appear to have been made under independent official observation. The difficulty of obtaining at all speeds a proper admixture of air and petrol vapour has led to the introduction of endless patterns of carburettors, none of which has so far proved its superiority sufficiently to monopolize the market. With paraffin the exact proportion of air is even more vital than with petrol, so that a serious difficulty would seem to stand in the way of success. But we are not without hope that, whether or not the difficulty has yet been overcome by any device, some day it may be. Another alternative suggested, and to some extent tried, is the use of a commercial alcohol on which it is quite possible to run an engine. But unless the Excise would give facilities for the use of, say, a cheap potato spirit, upon which only a small duty or no duty had to be paid, this would present no economy. So, though we may be very discontented with the present price of petrol, there seems nothing for it but to watch the course of experiment and hope for better things. Not long ago some of the petrol producing companies urged upon motorists the use of "taxibus," a slightly heavier petrol, about 2d. a gallon cheaper than the lighter petrol. This suggestion was acted upon to some extent, but the companies thereupon raised the price of "taxibus" spirit—to private consumers, at all events.

INTERNATIONAL CONFERENCE ON MEDICAL EDUCATION.

The International Committee for Post-graduate Medical Education proposes to hold a conference in London during the International Medical Congress in August, 1913, to discuss questions affecting medical and post-graduate medical education. It is suggested that the conference shall deal first with general and then with particular considerations. Under the first head, the two subjects selected are the regular course of medical education up to graduation, including the provisions of the minimum curriculum and examinations. The other subject suggested is the relation of university education to post-graduate courses and the present condition of post-graduate education. The topics suggested for the discussion under the second main head are the necessity for reform in technical medical instruction and the institution of regular courses of such instruction in the university and post-graduate courses. The other subject is the importance of social medicine as a subject for instruction both to the medical student and the post-graduate. The subjects will be introduced by speakers nominated by the International Committee. Its office is at the Kaiserin Friedrich-Haus, Berlin N.W. 6, Luisenplatz 2–4.

PLAGUE IN THE HIBERNATING MARMOT.

A very interesting account of the behaviour of plague germs in marmots during hibernation is given by Drs. Dujardin-Beaumetz and E. Mosny in a note presented to a meeting of the Academy of Sciences of Paris on July 22nd, 1912.[1] They confirm the belief that there is an ancient and important permanent focus of plague in the Transbaikal regions and Mongolia. It has been known for some time now that trappers and others who handle marmots or tarbagans (*Arctomys bobac*) in these regions for their fur have been liable to acquire a disease locally known as the *Maladie des tarbagans*, and now Teherkassoff has demonstrated that this is really plague. If the marmots keep the disease going in the same way as rats and ground squirrels do in other parts of the world, there must be some means of bridging over the Arctic winter. The authors, therefore, tried some experiments on hibernating marmots to see how far they were susceptible to the plague bacilli. They found that the evolution of the germ in such animals was delayed, one of them surviving, for example, for as much as four months under the unfavourable conditions for hibernation which existed in the laboratory. A similar state of affairs has also been noted with regard to tuberculosis and trypanosomiasis. Blanchard and Blatin observed that certain animals very sensible in the waking state to the different pathogenic trypanosomes are, on the contrary, during hibernation absolutely immune. Dujardin-Beaumetz and Mosny think that this persistence of the virus in the marmot through its hibernating period explains the survival of the plague in the endemic foci in Mongolia and the regions of Astrakhan.

[1] *La Semaine Médicale*, August 14th, 1912.

MEDICAL ADMINISTRATION IN THE PHILIPPINE ISLES.

The annual report of the Bureau of Health, the twelfth since the American occupation of the Philippine Isles, covers the period from July 1st, 1910, to June 30th, 1911. The number of births reported in Manila during the year was 9,180, giving a rate of 39.16 per 1,000 in a population of 234,409, but among the poorer classes the necessity for registration is not appreciated and many births remain unknown to the authorities until a sanitary inspector accidentally discovers that the population has increased. The death-rate, based upon the permanent population, is 33.22 per 1,000. A very large proportion—nearly half—of the deaths in Manila were registered without medical attendance. Several years ago the Bureau of Health began a campaign of education in matters pertaining to the care of infants. A special bulletin was prepared dealing with the value of proper feeding, and evidently was widely read, for since then the consumption of milk in the city has increased probably 500 per cent., and nearly all is used as food for infants. Still infantile mortality does not diminish. Beri-beri has ceased to occur in Government institutions since unpolished was substituted for polished rice. The last case of plague occurred in 1906. A corps of sixteen ratcatchers is constantly employed, and the rats are sent to the Bureau of Science to be examined. Cholera was prevalent, and 6,649 cases occurred, with a mortality-rate ranging from 60 to 88.83 per cent. in the different provinces. At each station of the Bureau of Health in Manila there is at least one midwife to attend the poor, and the Philippine Medical School has a free obstetrical service and sends out native trained nurses to instruct the mothers in the care of their newborn children. A small pamphlet, setting forth the uses of simple remedies, is supplied to the municipalities, and packages containing medicines and medical supplies for use where there are no qualified physicians and no properly equipped drug stores are sold to the district authorities. During the year 1,167,984 vaccinations were performed. The report deals at some length with the water supply, the improvement of low-lying lands, the cigar industry, and the regulations for the sanitary control of cigar factories.

DR. LUCAS-CHAMPIONNIERE.

Some years ago the friends and pupils of Dr. J. Lucas-Championnière formed a committee, with the late Lord Lister as honorary president, to present a medallion portrait to their friend and master on his promotion to the grade of Commander in the Legion of Honour. The medallion was made by Dr. Paul Richer, an old house-surgeon of M. Lucas-Championnière, but for some reason—possibly the conscientious dilatoriness of the artist—the actual presentation did not take place until recently, when Professor Guyon, president of the committee, was able, in handing to M. Lucas-Championnière a gold copy of the medallion, to congratulate him also on his election to the Institute. The medal shows on the obverse a very characteristic bust of the recipient, while on the reverse, which has the motto *Motu vita*, he appears again, manipulating an injury about the knee; above these figures the artist has introduced a group of runners, with a reference to the great interest that M. Lucas-Championnière has taken in the modern revival of athletic sports in France. M. Guyon, in making the presentation, referred to the fact that M. Lucas-Championnière had been a pupil of Lister in Glasgow, and had returned impressed by the certainty which the antiseptic system had given to surgery. "Having seen that vision of the liberation of surgery," M. Guyon said, addressing M. Lucas-Championnière, "your resolution was quickly taken. You resolved to devote yourself entirely to the new surgery. The method of Pasteur which brought safety to surgery opened a wide horizon to you, and the bright hopes with which you set out you have lived to realize. You have remained faithful to that ideal, and you have lived to be recognized as an apostle of 'the surgery which cures.'"

MODERN EDUCATION.

Those who wish to estimate the extent and significance of the change which modern conditions are producing in our conception of the right aims and methods of education, will find the study of an essay, recently published, by Professor Heck, on *Mental Discipline and Educational Values*,[1] very profitable. The traditional view, based on the obsolete "faculty" psychology, has been that the aim of education should be to strengthen the mind, as the body may be strengthened, by general exercise, and that all the power so acquired will be available for any and every purpose. The intrinsic value of the knowledge imparted in education becomes from this point of view an almost negligible consideration. The fallacies of this theory of "formal discipline" are admirably exposed by Professor Heck, who supports by experimental and anatomical testimony his contention that thinking is, in the main, specific, and that capacities acquired by training in one subject or direction are only to a slight degree transferable to another, even under the most favourable conditions. While insisting that, in the determination of the curriculum, utility shall be the paramount question, Professor Heck has no difficulty in showing that useful subjects may be so taught as to be in the true sense educational. The bearing of his views on recent proposals for specializing, to some extent at least, the teaching of medical students in respect of the instruction given in the preliminary sciences will not be overlooked.

We regret to have to announce the death on August 21st of Sir William Japp Sinclair, Professor of Obstetrics and Gynaecology in the Victoria University of Manchester, at the age of 66. We hope to publish an obituary notice in an early issue.

The death, on August 26th, in his 62nd year, of Mr. Clinton Dent, will cause great regret to a very wide circle of friends and old pupils. He was Surgeon to St. George's Hospital and a Vice-President of the Royal College of Surgeons of England. Since 1904 he had been Chief Surgeon to the Metropolitan Police. We propose to publish some notice of his career in an early issue.

[1] *Mental Discipline and Educational Values.* By W. H. Heck, M.A. London and New York: John Lane. 1912. (Cr. 8vo, pp. 208. 3s 6d. net.)

The sixth International Congress of Obstetrics and Gynaecology, to be held in Berlin under the patronage of the Empress of Germany and under the presidency of Professor E. Bumm of the Charité Hospital, will, as already announced, continue from September 9th to 13th. The festival inauguration will take place on Monday, September 9th, in the House of Parliament, when addresses from the representatives of the Government, the public authorities, and the delegates will be given. In the evening there will be a reception in the garden of the House of Parliament by the German Obstetrical Society. On the following day the first discussion on the treatment of wounds of the peritoneum will commence; the various referees will make their reports and several papers will be read. The same evening there will be a reception of the congress by the President. On Wednesday the first discussion will be continued; and that on the second subject, the surgical treatment of uterine bleeding during pregnancy, delivery, and childbed, will be opened. That evening a reception will be given by the City of Berlin in the Town Hall. Thursday will be devoted to individual communications, and on Friday there will be various demonstrations by different members of the congress at the Charité Hospital. Each morning there will be operations in the different clinics, to which all members of the congress are invited. Dr. E. Martin, Artilleriestrasse 18, is the General Secretary.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS]

WALES.

A COMMITTEE—how constituted does not appear—has recently taken in hand the formation of a "Llanelly and District Workers' Medical Association." Llanelly is one of the chief centres of the tin-plate industry of South Wales, and the population has increased very rapidly. Between the census of 1901 and that of 1911 the population of the town itself increased, in round numbers, from 25,000 to 32,000, and of the surrounding district from 24,000 to 27,000. The area proposed to be managed by the "Workers' Medical Association" now contains, therefore, some 60,000 souls. Wages are good, and those earned by the more skilled workmen among the highest in Great Britain. The scheme propounded by the committee was embodied in a handbill distributed broadcast among workmen in the town and district. It is as follows:

The Proposed Scheme for Llanelly and District Workers' Medical Association.

1. The main object of this association is to provide medicine and medical attendance for all workmen's dependents in the first place, and to give non-married workmen certain privileges for their co-operation.

2. That under this scheme we do not call for an increased subscription over the one shilling per month which we now contribute, for which we will own as working men a dispensary or dispensaries, as we shall determine, engaging the necessary dispensers, and also have full control, "through our Committee,"* over the number of doctors who will be engaged, of whom we suggest one should be a lady doctor specially qualified to treat maternity cases.

3. That we emphasize the fact that all our medical practitioners must co-operate in all serious cases, and shall reside in the district determined by the Committee.

4. We also trust that our present medical officers will see their way clear to accept our scheme. If not, we anticipate that our selected medical officers will be the medical practitioners on the panel and will receive each insured person's support.

5. FINANCIAL ESTIMATE:—

		£	s.	d.
5,500 Workmen, with dependents, at 1s. per month	...	3 [illegible]	0	0
2,500 Workmen, without dependents, at 4d. per month	...	[illegible]	13	4
8,000 Estimated number of workmen.	Total income	4,116	13	4

		£	s.	d.
[illegible]				
[illegible] dressings	... ...	1,500	0	0
[illegible]	... ...	200	0	0
[illegible]	... ...	3,000	0	0
	Total ...	5,200	0	0

		£	s.	d.
Income	... ...	[illegible]	13	4
Expenditure	... ...	[illegible]	0	0
Balance	... ...	916	13	4

When the scheme was made public, a meeting of the medical practitioners was at once called, and was held on Tuesday, August 27th. At this meeting the following resolution was unanimously adopted:

> That as members of the British Medical Association we cannot entertain any scheme such as the one suggested by the so-called Llanelly and District Workers' Medical Association.

Further reference to this matter will be found elsewhere (p. 512).

LONDON.

LONDON COUNTY COUNCIL.

The Mental Deficiency Bill.

The London County Council, before adjourning for the [illegible] authorized the Parliamentary Committee [illegible] amendments in the Mental Deficiency Bill, [illegible] the Committee has issued a report summarizing [illegible] views of the various committees of the Council interested with regard to the measure.

Education.

The Education Committee, in an exhaustive report, mentioned the steps that have been taken in London already to deal with mentally defective children. In March, 1891, the School Board decided to establish special schools for those children who, by reason of physical and mental defect, could not be taught "in the ordinary standards or by ordinary methods." In addition to providing special schools, the late authority urged upon the Board of Education from time to time the desirability of legislation on the subject, and the Elementary Education (Defective and Epileptic Children) Act, 1899, was the outcome. Approximately 1 per cent. of the elementary school pupils fell within the definition of "defective" laid down by the Act of 1899; this measure did not give sufficient powers for dealing adequately with the mentally defective, because it was a permissive one, it lacked powers of compulsion as regards residential treatment, and its powers did not extend beyond the age of 16 years. It had also been thought desirable that a single central authority should control and care for the mentally defective in order to avoid overlapping of authorities and conflicting medical certificates, and that an adequate measure of financial assistance from the Imperial Exchequer should accompany any extension of administrative machinery. On March 31st, 1911, there were 90 schools for the mentally defective in London, with accommodation for 6,632 children. The number on the roll on the date named was 7,142, with an average attendance of 5,983. Twelve of these schools were specially fitted up for the instruction of elder boys only, and mixed classes were taught in the remainder. The total cost of maintenance for the year 1910–11 was £66,530, or £99,480 if capital charges were included.

The Committee consider that the clause in the Mental Deficiency Bill rendering certain defective children liable to institutional treatment for an indefinite period after leaving the special school might in some instances cause parents to object to the admission of their children to special schools. Thus an increased number of parents might become actively hostile to special school treatment. On the other hand, the segregation of certain defectives in institutions and the prohibition of marriage with a defective should tend to diminish the number of children requiring treatment in special schools. The Education Committee did not think even the somewhat elaborate definition in the bill of the term "defectives" sufficiently wide, because epileptics and persons with dual defects did not come specifically within the category. Neither were morally defective educable children under 16, or other educable children who required residential treatment included as defectives, and such children could not therefore be compulsorily detained in institutions—a point on which the Council had laid considerable stress. Clause 24, which made it permissive for an education authority to deal with defectives under the bill, the Committee thought should be a compulsory clause. As to Clause 25, providing that parents or guardians of defectives under 21 might place them in institutions for defectives or under guardianship, upon the certificate of a duly qualified medical practitioner and that such defective might be retained after the age of 21, the Committee did not consider sufficient safeguards were provided, in that a certificate of only one medical practitioner was necessary and that the local authority had no power under the clause. It should be amended to provide for notification to the local authority of any action taken in this respect.

Finance.

With reference to the clause providing for a Government grant of £150,000 towards the cost of the measure, the Parliamentary Committee pointed out that, according to the figures furnished to the Royal Commission on the Care and Control of the Feeble-minded, the total number of defective persons was about 1 per cent. of the population; about one-half was already provided for by asylums, etc., and rather less than half of the remainder required to be dealt with. On this basis there would be in London some 9,000 persons to be provided for, but the proportion of the Government grant would only supply about 7s. a week in respect of 930 persons, or roughly one-tenth of the number of persons concerned. It appeared to the Committee that the Government grant must of necessity be increased ultimately. The obligation of local authorities to provide accommodation for defectives was to cease if the contribution from Imperial funds did not reach a certain amount, but on this point the Finance Committee

* The quotation marks are in the original.

expressed the opinion that, notwithstanding the limitation of the obligation imposed on local authorities, it was difficult to see how, in practice, the local authority could avoid exercising its full powers under the bill by withholding institutional treatment with regard to all known defectives requiring treatment, even failing the prescribed minimum Treasury contribution. The Committee suggested that steps should be taken to secure that the Government contribution towards institutional treatment should be forthcoming in respect of every defective person so dealt with. The present average weekly cost (including debt charges) of dealing with pauper lunatics in London was 15s. 2d., and the cost of dealing with a mentally defective person would be about the same, so that it appeared very doubtful whether a grant of 7s. a week a person would be sufficient to meet one-half the cost, as recommended by the Royal Commission.

Amendments to be Sought.

The Asylums Committee was of opinion that amendments should be sought in the bill (1) to define what was to constitute residence for the purpose of ascertaining the chargeability of a mentally defective person; (2) to provide that in no case should a judicial authority be empowered to make an order for the detention of a mentally defective person unless such person had been medically examined; (3) to make it clear whether all institutions, including those provided by local athorities, were to be certified; (4) to provide that the clause making it a misdemeanour for any person to intermarry or attempt to intermarry with a defective, or connive at such a marriage, should apply only to defectives who were subject to be dealt with under the bill. The Parliamentary Committee agreed with the first three points, but considered it undesirable to take the action suggested in (4). The Committee saw no reason why, if a defective came within the terms of the definition in the bill, intermarriage should be allowed even if the defective was not liable to be dealt with under the bill.

The Parliamentary Committee will seek amendments of the Mental Deficiency Bill as follows:

1. That the provision of special schools for defective children should be compulsory.
2. That the scope of the bill should be extended to include epileptics, persons with dual defects, etc.
3. That the local education authority should be empowered to require the local authority to deal with defectives attaining the age of 16.
4. That the local education authority should retain the supervision of defective children up to the age of 18.

On these proposed amendments the Finance Committee issued some observations. It stated that as to the first, so far as London was concerned, the machinery existed and was now being used for discovering what children of school age were defective. If the Act of 1899 were made compulsory, no additional financial responsibility would be placed upon the Council beyond that involved in exercising to the full its present optional powers. The second amendment had for its object the inclusion of certain classes of defectives in the scope of the bill. Should it be found that these children could only be dealt with satisfactorily by institutional treatment, the cost to the Council would probably amount to from £40 to £50 a child, including debt charges, according to the size and character of the school, or a total of £24,000 to £30,000 a year, exclusive of capital charges. It was proposed apparently to recommend the inclusion of adult defectives within the scope of the measure. In the Report of the Royal Commission on the Feeble-minded, it was stated that about 1 in 1,000 of the population was a sane epileptic, so that on this basis in the County of London there might be between 5,000 and 6,000 of these cases. Applying the figures of the cost of maintenance of lunatics (about 15s. a week), the Council's expenditure for, say, 4,000 epileptics would reach perhaps £150,000 a year; and if the Government's grant of 7s. a week were paid, the net charge falling upon the Council would be reduced to, say, £80,000.

As regards the desire of the Education Committee to preserve supervision over defective children up to the age of 18 years, this might involve periodical visits to some 2,000 persons annually. It was unlikely that the supervision could be satisfactorily carried out with the existing staff, and additional expenditure, without doubt, would be incurred. The amount would depend on whether it would be possible to utilize the services of a lay inspectorate, leaving a medical inspection for doubtful cases, or whether in each and every case the inspection should be made by a doctor. If the former method were adopted the expense would probably be from £750 to £1,000 a year. The effect of the proposals might be to throw upon the Council additional yearly expenditure of any amount from about £87,000 to about £191,000.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Medical Conditions in the Highlands.

The committee recently appointed by the Treasury to inquire into the adequacy of the medical service in the Highlands and Islands of Scotland has commenced its meetings. The committee consists of Sir John A. Dewar, Bart., Chairman; the Marchioness of Tullibardine, Mr. J. Cullen Grierson, Dr. McVail, Dr. Leslie Mackenzie, Mr. Andrew Lindsay, Dr. Miller, Mr. Orrocks, and Dr. Robertson, Senior Inspector of Schools. The first meeting was held in Edinburgh on August 15th. The committee had before it the representatives of the various central authorities, including Government departments, that are more distinctly in touch with the problem under investigation. Witnesses were present from the Local Government Board, the Registrar-General's department, and the Lighthouse Commissioners. Dr. Norman Walker, the Direct Representative of the medical profession in Scotland on the General Medical Council, also gave evidence. Extremely interesting was the evidence given, more especially as regards not only the number of doctors and nurses employed in the Highlands and Islands, the very high percentage of uncertified deaths in certain parishes, and the burden of rates, but also in regard to the low salary of the doctor, the frequently unsatisfactory character of the residence provided, and the insecurity of tenure under the parish council. The function of the Local Government Board and the question of fuller co-ordination between the various authorities in charge of medical work, as well as the inadequacy of the present grant of £20,000 for medical relief, etc., were under review.

On August 19th, 20th, and 21st, the committee held sittings in Inverness for the purpose of hearing further evidence. Evidence was given on the first day by representatives of the medical profession, including the medical officers of health for Inverness-shire and Ross and Cromarty; by Dr. J. Munro Moir, as Secretary for the Northern Counties of Scotland Branch of the British Medical Association; and by medical practitioners from certain of the more sparsely peopled and difficult parishes in the east of Inverness-shire and Ross-shire—these included Dr. Leach (Beauly), Dr. Macdonald (Glen Urquhart), Dr. Macdonald (Foyers). Several of the witnesses, who had long experience of family practice, were able to give the committee most valuable evidence as regards the difficulties and expense of travel. They described the inability of many people in the poorer parts to pay fees in any way adequate to the expenditure of time and money involved in providing even very modified medical attendance, and the consequent disinclination on the part of the poor, but proud, to call in a doctor except in the extremest cases and often when it was too late. The supply of doctors, nurses, and hospitals, and means of communication by telephone and otherwise, and travelling facilities, the position of the parish medical officer as regards income, residence, and security of tenure, were among the subjects discussed as bearing upon the adequacy of the existing medical service.

On August 20th the committee heard evidence with reference to the responsibilities of the public authorities operating in Inverness-shire and Ross-shire. On this point full evidence was given by the Mackintosh of Mackintosh, Lord Lieutenant of Inverness-shire, and Lord Lovat. The evidence went to show that the burden of local rates was already so heavy that any addition thereto would involve grave financial consequences, and that therefore the only fair and feasible means for the providing funds for the betterment of the whole medical situation in the Highlands and Islands is by a special Government

subvention. Conditions as to local proportionate contribution, on which the Government grants are usually given, were criticized as not taking due account of the financial difficulties peculiar to the Highlands. Considerable time was devoted to the question of so modifying the weekly contributions under the Insurance Act as would make it possible for the medical benefits thereof to be available for the peoples of the Highlands, the large majority of whom are outside the compulsory section of the Act. In addition to the witnesses already mentioned, the following gave evidence: Sir Arthur Campbell-Orde, Captain Ellice (Invergarry), Dr. Adam (Dingwall), Dr. Wallace (Ullapool), Dr. Johnston (Fort Augustus), Dr. MacDonald (Laggan), and Mr. F. Mackintosh (Laggan).

At the committee meeting on August 21st the greater part of the day was devoted to the collection of information as to the prevalence of tuberculosis, and the means that have been adopted for the treatment of cases. The evidence went to show that, especially on the western seaboard, phthisis is one of the most important difficulties to be faced in connexion with the question of adequate medical attendance in the Highlands, not only in regard to the early detection of the malady, but to the adequate treatment of it after detection. Among the witnesses was Colonel Stewart Mackenzie of Seaforth, the founder of the Seaforth Sanatorium, a free institution, built on the most modern lines at a cost of £10,000 for the treatment of phthisical cases from the County of Ross and Cromarty, and having special provision for the Island of Lewis, with which the Seaforth family have a historical connexion.

Dr. MacLean, the resident medical superintendent of the institution, made observations on the feasibility of establishing a system for detecting the earlier stages of phthisis by the appointment of a tuberculosis officer, who would co-operate with the local medical practitioners. At present, he said, the majority of cases brought under his observation were too advanced for complete recovery.

Witnesses were also examined from the remote parish of Lochbroom, the second largest in Scotland, which presents some of the most outstanding problems in connexion with medical provision, more particularly the Coigach division of the parish. The case for the distant part of the country was presented by John MacLean, a representative crofter, 70 years of age. He maintained that the arrangements for medical attendance in his district were far from being adequate. Evidence was given by Mr. Grant of Glenmoriston as to the necessity of improving the facilities for prompt medical attendance in that remote Highland glen. Other witnesses examined were Mr. J. S. Henderson, Chairman of the Parish Council of Lochbroom; Mr. MacLeod, Vice-Chairman of the Insurance Committee of Ross-shire, and Mr. Mackenzie, Garve.

On August 24th the committee held a sitting in Thurso. Evidence was heard from representatives of the outlying and sparsely populated districts of the County of Caithness, where the problem of adequate medical service is in many cases as difficult as in the more mountainous and roadless Western Highlands. The majority of the witnesses were medical practitioners, many of whom had long experience of practice in these rural parts, and who, therefore, were able to supply useful information as to the difficulties of bringing medical attendance within the reach of distant homesteads, more particularly in the severe snow-storms which are so prevalent in that region in winter. It was quite evident that the remuneration for such hardships as the medical practitioner endures in these circumstances is inadequate, and a strong plea was put forward for adding by some means to the present fund for emoluments, in order to encourage increased attendance, in some cases inadequate to the standard of medical attendance demanded by modern public opinion. One or two of the medical witnesses, whose practice extends to Farr, Sutherlandshire, gave evidence as to the difficulties peculiar to that extensive parish, which for some time has presented special problems to the authorities responsible for medical inspection. The witnesses examined were: Dr. Dick (Medical Officer of Health for the County), Dr. Meade (Lybster), Dr. Kennedy (Dunbeath), Dr. Duffus (Canisbay), Dr. Macgregor (Castletown), Drs. Asher, Durrant, and MacLennan (Thurso). Dr. Charles MacPherson, Deputy-Commissioner of Lunacy, who had many years' experience as a medical practitioner in the Highlands, also gave evidence, and valuable suggestions as to the line of possible amelioration of existing conditions.

The committee had a meeting on August 26th, at Kirkwall. Information was given both by medical practitioners and witnesses representative of various classes of the people as to the difficulties experienced in endeavouring to provide medical attendance for the comparatively well populated islands widely separated by seas which are frequently dangerous. At the same time, many of the islands, even when constituted a parish, can seldom offer emoluments sufficiently attractive to retain the services of an efficient doctor. The Orcadian, the committee were assured, is most willing to pay what fees he can. Another cause advanced as responsible for frequent changes of doctors was the want or unsatisfactory character of the residences. It was averred that the frequency of changes in the medical services is highly detrimental to the public welfare, but that it cannot be remedied by an appeal to the parish funds, which in most cases are already overburdened. In connexion with efforts of parish councils to secure medical service, it was stated that some years ago resource was had to appointing women doctors, in the expectation that they would be better satisfied with the conditions as to income, but they also found the circumstances uncongenial and the hardships of travel by sea and land, especially in the winter time, too severe. Accordingly, they abandoned the field of practice to the stronger sex. The advantage of having trained nurses, more particularly in the less accessible parts, and of having a system of communication by telephone between them and the doctors, was pressed by several witnesses. Accounts were also given of a service of medical clubs in use in some of the parishes, and of the changes, mainly for the better, that have taken place in the health of the people in recent years, including the gradual disappearance of pulmonary tuberculosis. It was stated, however, that advantage is taken of the conscientious objection clause to such an extent that nowadays less than half the infants are vaccinated. The witnesses examined were: Dr. Heddle, M.O.H. Orkney; Dr. Bell, M.O.H. Kirkwall; Dr. Sinclair, Kirkwall; Dr. Lees, Stromness; Dr. Park, Sanday; Dr. May MacNeill, Holm; Mr. Johnston, Conbister, Orkney; Mr. Tulloch, Eday; Mr. Gibson, Ronsay; and Mr. Garrioch, Randall.

Edinburgh Post-Graduate Courses in Medicine.

The Edinburgh post-graduate courses in medicine organized in connexion with the University and Royal Colleges are again this year very well attended. The executive committee has catered somewhat more for the specialist than in previous years. While a considerable number of medical men doing general practice are glad to attend classes upon newer methods of examination and diagnosis or clinics upon everyday complaints, there is also a very numerous body composed of men who either take a special interest in some particular branch of medicine, or who are anxious to pass from general into a more restricted line of practice. The latter class always form a large proportion of those who attend a post-graduate course and desire to concentrate their attention in some definite direction. It is to these that the Edinburgh courses will specially appeal this year.

In July a course dealing with the diseases and defects, mental and bodily, of young children was conducted by the staff of the Royal Hospital for Sick Children, supplemented by various skin, ear, and eye clinics in the Royal Infirmary, and mental clinics at the Larbert Institution for Imbecile Children. This course was designed primarily for medical inspectors of school children, and was well attended.

In August the usual course dealing with the diagnostic methods of internal medicine was held, and its popularity is indicated by the fact that the number of applications was considerably in excess of the twenty-five places to which the attendance was restricted. A special feature of the August course was a system of instruction in connexion with the Royal Victoria Hospital and Dispensary to meet the requirements of those applying for tuberculosis appointments; here, again, the demand for places was in excess of the number that could be taken.

In September the surgical course, in which there are

twenty-five places, has been full for some time, and it has been found necessary to arrange for duplication of certain classes. A strictly limited course designed for specialists on diseases of the ear, nose, and throat has also received its full complement. On the other hand, the somewhat loosely grouped clinics and classes arranged to attract the general practitioner who wishes to spend two or four weeks in a medical school, seeing a little of everything, has not drawn quite such large numbers this year as previously. This fact very probably finds an explanation in the natural desire of the practitioner to economize both in money and mental energy until affairs on the medico-political horizon have assumed a more definite and satisfactory aspect than they display at present.

Professor Lorrain Smith.

Dr. J. Lorrain Smith, F.R.S., Professor of Pathology in the Victoria University of Manchester, has been appointed to the Chair of Pathology in the University of Edinburgh, vacant by the resignation of Professor Greenfield. The new professor had a highly distinguished career at the Universities of Edinburgh, Oxford, Cambridge, Strassburg, and Copenhagen, and, before going to Manchester, was Professor of Pathology in Queen's College, Belfast. It is understood to be likely that his election will be followed by the appointment of a professor of bacteriology.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

Sanatorium Benefit.

At a recent meeting of the County Meath Insurance Committee a letter was read from the Women's National Health Association stating that it could take a certain number of patients recommended by the Committee into the Allan A. Ryan Home Hospital, which had been approved by the Local Government Board for this purpose, until Peamount is ready for the reception of patients. The letter also stated that it was hoped that Peamount would be ready for the reception of patients in about a fortnight. A second letter was read saying that, on the unanimous recommendation of the Medical Subcommittee, the Association had appointed Dr. F. Warren (Navan) as medical superintendent of the tuberculosis dispensaries in County Meath. After a prolonged discussion on a resolution from the Meath Medical Association, relative to the fees payable to the profession for services under the Act, the following resolution was carried by 10 votes to 4:

> That, subject to the approval of the National Health Insurance Commissioners, the following to be the scale of fees payable by this Committee to medical practitioners in this county for services under the National Insurance Act: Fee for reporting to our tuberculosis officer cases of tuberculosis in insured persons who are not entitled to free medical attendance, £1 1s.; fee for each domiciliary visit to insured patients who are getting home treatment, 5s.

At the last meeting of the Celbridge No. 2 Council a letter was read from the council's solicitors regarding the question of obtaining an injunction against the building of a tuberculosis sanatorium at Peamount. They pointed out that in the case of a public nuisance, such as this is alleged to be, the remedy was by indictment or by proceedings for injunction in the name and with the fiat of the Attorney-General. The chairman said that the letter simply meant that they could not get an injunction without the sanction of the Attorney-General, and he was very unlikely to give it. The clerk said that a petition was being signed by the people of Celbridge.

Some uneasiness is being expressed regarding the appointments of county medical officers to work the tuberculosis scheme under the Insurance Act. The Local Government Board requires

> that a candidate, to qualify for the position, should have six months' experience, either as resident in a sanatorium or undergo a course of lectures for a similar period at an approved tuberculosis dispensary, or otherwise satisfy them that he possesses special knowledge in the diagnosis and treatment of tuberculosis.

It is this last method of qualification that is causing uneasiness among the medical profession throughout the country. The appointment of county medical officers is left in the hands of the county councils, and it is said that these bodies have so far shown no inclination to get the best men for the posts. The fact that the Women's National Health Association gives certificates for a fortnight's course of attendance at their tuberculosis dispensaries has raised the fear that this certificate may be considered as sufficient proof of special knowledge. One suggestion that has been made is that any doctor who obtains one of these appointments should be required to take out a six months' course before taking up his duties.

Galway County Medical Committee.

At a largely attended meeting of this committee held at the Railway Hotel, Galway, last week, with Dr. Kinkead in the chair, it was decided to support the demands made by the Conjoint Committee of Medical Practitioners at the meeting held in Dublin on August 11th. Discussing the proposed appointment of a tuberculosis superintendent for the County of Galway, much dissatisfaction was expressed at the arrangements made, and a resolution on the subject was adopted. The committee decided to refuse certificates for sanatorium benefit at the fees arranged by the County Council without consulting the Medical Committee. All the medical practitioners in the county except seven have signed an undertaking not to do this work until terms are arranged.

Ambulance Competition.

The annual competition for the Dublin Ambulance Challenge Cup was held last week in the grounds of Lord Iveagh's House in St. Stephen's Green, Dublin, under the auspices of the St. John Ambulance Association. Eight teams competed. The test work set was to treat a man supposed to have fallen 18 ft. from a ladder, and to have received severe injuries to the head and body. The competing teams had to diagnose the injuries and treat them on the spot, and prepare the man for hospital. Messrs. Jacob and Co. gave a set of medals to be presented to the winning team, and the Dublin Centre of the Association gave another set of medals to be awarded to the runners up. The winners were Messrs. Jacob's No. 1 team with 214 marks out of a possible 250. St. James's Gate team were a good second with 211 marks. The Belfast Fire Brigade, who won the cup last year, were third with 186 marks.

Fever Epidemic in Tobercurry.

An outbreak of typhoid fever in the town of Tobercurry has reached such serious proportions that the ratepayers held a special meeting to consider the alarming condition of affairs. It appears that the typhoid cases admitted to hospital up to the middle of August numbered 44 (32 from the town and 12 from the surrounding districts), and as the accommodation provided for such cases in the local hospital has proved inadequate, a number of the patients have had to be sent to the County Fever Hospital at Sligo. The cost of the epidemic has been about £20 for each patient on the average, so that the outbreak has already entailed a charge on the rates of the union of close on £900. A memorial to this effect was drawn up at the meeting and forwarded to the board of guardians, who discussed the matter at length at their last meeting, along with a report from the medical officer, pointing out how serious such an epidemic was in a small town like Tobercurry, and urging the District Council to immediate action. Nothing, however, was done at the meeting. The epidemic has been traced to contamination of the water, due, it is believed, to the defective sewerage system in the town. An outbreak occurred also in the summer of 1910.

Charge Against a Doctor.

A sworn inquiry was recently held by Dr. T. J. Browne, Medical Inspector of the Local Government Board, into a charge brought against Dr. Kirby, Medical Officer of the Kilsallaghan Dispensary District, by a dispensary patient named Catherine Ennis and her mother. The charge was that Dr. Kirby caused the loss of an eye to Catherine Ennis by introducing into the interior of the eye a button-hook when examining it. The child met with an accident to her eye on May 2nd, and on May 4th Dr. Kirby attended, on the presentation of a ticket; he used the button-hook to evert the upper lid, and finding no apparent injury of a serious nature, gave the mother some tablets from which to make a lotion to bathe the eye; he did not see or hear

of the case again. On May 10th, as the child was worse, the mother took her to Dr. Cuffe, who ordered her to hospital, where it was found necessary to remove the eye, owing to the presence of a foreign body in it. The Local Government Board, in giving its decision on the evidence, state as follows:

They are of opinion that if the button-hook had been used in the manner stated both by Mrs. Ennis and the child, it would have caused the latter such an amount of pain as would have caused her to cry out and complain, and they think that the fact that she did not scream or complain is confirmatory of the testimony of the medical officer, and that the complaint alleging improper use of the button-hook in the examination of the eye must be regarded as having broken down.

The Board considers, however, that the doctor should have paid a second visit to the patient in view of the history of the accident and the persistence of pain at intervals for two days without apparent adequate cause.

Correspondence.

MEDICAL APPOINTMENTS IN THE EAST.

SIR,—I hope your short article under this heading in the JOURNAL of August 24th will lead many medical men already resident in the tropics to join their local Division of the British Medical Association, and to remember the motto, *L'union fait la force*. The local secretaries of such Divisions would be very helpful if they could advise the profession upon the minimum amount of salary necessary to British new-comers into their districts. For instance, should the initial pay for an unmarried medical man be £400 a year or more, in addition to travelling expenses out and home, a house and other necessaries? What are the possibilities of increasing the income by private practice?

The "tenderfoot" has usually to decide in this country whether he will accept the offer of a company to look after its employees in an unknown land, and is often ignorant of what terms he should make with his employers, and, even if he is not allowed time to undergo three months' tuition at the London or Liverpool School of Tropical Medicine, he would be wise to put himself into communication with the officials of one of those schools, where he might find some one who knows the locality to which he is attracted, and where he will certainly find many who are acquainted with the difficulties he will have to face.

Wise directors of rubber and tea estates already compel their newly-fledged medical officers to attend a short course at a tropical school, in order to obtain some elementary knowledge of the diseases they will have to treat in the East, and of the methods of prevention of disease among the coolies and others, and I venture to hope that the day is not far distant when all companies trading in the tropics will make this the rule and not the exception.

May I add that young men, before leaving England, in order to increase their acquaintance with tropical complaints, should consider the advisability of becoming Fellows of the Society of Tropical Medicine and Hygiene, which now numbers more than 600, or of joining the Tropical Section, shortly to be formed, of the Royal Society of Medicine?—I am, etc.,

London, W., Aug. 26th. F. M. SANDWITH, M.D.

MENTAL DEFICIENTS AND THE COMMUNITY.

SIR,—Your article on mental deficients and the community, in the BRITISH MEDICAL JOURNAL of August 24th, deals with issues of supreme importance to the individual and the community which, unfortunately, are too little known and too little discussed by the public at large. I must ask your permission, therefore (being one of the writers of the papers you criticize), to say something about the question and your observations on it.

I should first of all like to point out that you were at some disadvantage in your criticism, as you had only seen, apparently, the summaries of the papers published in the *Eastern Daily Press*—admirable summaries so far as they go, but necessarily incomplete and leaving out much material that explains what you describe as "vigorous denunciation in plenty," and specifies the particular features of the bill that called this "denunciation" forth. The full papers would have shown you, furthermore, that we are fully alive to the need for action, that we approve of action being taken upon lines suggested by us and partly covered by the bill, and that our objection to the bill rested upon certain fundamental considerations which we endeavoured to set forth.

It seems to me that some of the differences between your valuation of the bill and my own can be explained by the fact that we look at it from different points of view. To you it is entirely a question of social hygiene; to me it is that and something more. I was not content to measure its value by the standard of eugenics only; I considered it also from the point of view of the citizen in its effect upon individual liberty, and what I regard as its serious menace to human rights.

Notwithstanding your condemnation of our action in calling for the withdrawal of the bill for further consideration, I am glad to remark that you, too, have an uneasy feeling that the bill is dangerous. You say:

We are in no way committed to the verbal inspiration of the bill, and, indeed, it seems to us that in regard to the definitions of defectives some modifications are desirable, and also in regard to the conditions which are to make defectives subject to be dealt with under the bill.

Precisely. That is our contention. For these points are the very essence of the bill. Its main purpose is to make a class of mentally deficient persons and to define the conditions which are to make them subject to its provisions. Upon these two points all the other machinery of the bill depends. If these points are unsatisfactory—and they are, indeed, most unsatisfactory—then the whole bill is unsatisfactory and needs reconsidering. They are not points that can or that ought to be settled in Committee. A parliamentary committee is the last place in the world to determine them. The definitions and conditions must be the work of experts. In making them regard must be had to the purpose for which they will be used. They are not intended merely to guide medical men to a diagnosis. They are the grounds upon which human beings are to be deprived of liberty. Consequently they must be clear and definite, not vague and general. Although the number of mentally defective persons in this country is only a small percentage of the whole population, it would be a grave social and political danger to make laws for their detention before there is an unmistakable definition to mark them out. The present definitions are ridiculously vague. As an example I will take the definition of "feeble-minded persons" as given in the bill, so that your readers may judge for themselves of its character. It runs as follows:

Feeble-minded persons; that is to say, persons who may be capable of earning their living under favourable circumstances, but are incapable, through mental defect existing from birth or an early age,

(1) Of competing on equal terms with their fellows, or
(2) Of managing themselves or their affairs with ordinary prudence.

Now, it does not take much reflection to see that this is a most uncertain and dangerous basis upon which to commit any one to a house of detention. It is to my mind an aggravation of its unsuitability that it leaves to medical men the responsibility of acting upon it. It is unfair to the persons for whom it is intended. But it is unfair also to medical men to make them act as judges to settle whether a person does or does not come within the definition. It is true that the commitment order must be made by a county court judge, police or stipendiary magistrate, or a justice of the peace. But, I ask, what special qualifications have any of these parties to form a conclusion? In this case they are not dealing with persons of unsound mind, with idiots or imbeciles. They are dealing with borderland cases, with those variations from the mean human type that are as near the healthy minded as the unsound minded, and it will be in many cases an invidious and dangerous responsibility, both for medical men and the judicial authority, to determine whether the persons in question shall lose their freedom. Speaking not only as a medical man but as a citizen, I say that these facts make the bill a grave threat against liberty, a menace to human rights. Moreover, the bill places in the hands of local authorities and their inspectors, and in the hands of relatives and friends, the power to set in motion the machinery that shall send a suspected person, after an examination which may be held in private by the judicial authorities I have specified, to be confined for life.

You object to my use of the word "prison"; you rebuke me for not explaining the safeguards which the bill provides; you demur to my not explaining the nature of the institutions which are intended. Well, Sir, what is a prison? Its essential character is that you cannot get out of it. And a person committed to any institution under this bill cannot get out of it. There are provisions in the bill for the apprehension of any unfortunate that does escape. As regards safeguards, will you tell me what they are worth? If two medical men certify under the vague definitions of this bill that a person is mentally defective, what safeguards are going to do that person any good? Mental defect is incurable; the house of detention will not mend the mental condition, and it will only be by the frank admission that two medical men and a justice of the peace have made a mistake that a person once committed can ever be released. As regards your other point, if I did not specify the character of the institutions in which the mentally defective are to be confined, it is because the bill does not describe them—at least, it only mentions one institution, the workhouse!

You made a great point of our use of the words "natural right," and you settle to your own satisfaction the character of a natural right by a reference to Professor Huxley. Well, Sir, you must allow me to say that I do not accept Professor Huxley's description at all. It is one of those begging-the-question descriptions that begins upon an unsubstantial foundation. "Natural rights are founded upon a law of Nature." But how far does that take us? Must we not first understand and define what we mean by "Nature" and what we mean by a "law of Nature"? As far as I can follow your account of it, a "law of Nature" determines that a man will do—what a man will do. I regard a natural right as something much more definite and firmly established. My point of view is quite different from the one you suggest. Man is created by God for a definite end. To secure that end he is endowed with certain faculties. The exercise of these faculties in accordance with God's law is a right inherent in his nature. This right is a natural right, and so long as it is exercised in accordance with God's law there is no power that has authority to interfere. Such rights are the right to live, the right to freedom, to marriage, to worship, and so on. Now there is no "fundamental confusion of ideas" here. The confusion does not begin till you leave God and His creative purpose out of account. And so we say that this bill in assailing the natural rights of men is transcending the power of the State and is immoral.

Of course you will say that society has its rights also. The Catholic agrees. Indeed, he puts the right of society on a basis similar to individual right. He holds that society is ordained by God for the perfecting of human life. He admits that society has some control of and limiting power over individual rights. But individual rights, although thus limited by the rights of society, are not overborne by them. Society has no power to nullify a natural right. For this reason the Catholic is jealous of State interference. He seeks to keep such interference within its proper limits. And in this case, where the State seeks to prevent the procreation of children by certain of its citizens on the grounds of social hygiene, the Catholic objects. He demurs to the authority of the State in this matter and for this end. It is true that he admits certain circumstances under which marriage may be forbidden. Marriage is ordained by God for the continuance of the human race. It is the joining together of men and women who are capable of undertaking the responsibilities of the married state and of parentage. For this reason imbecility is what we would call a diriment impediment to marriage. In such a case the State would be justified in taking measures to prevent the procreation of children, otherwise we deny its authority. On the other hand, if it can be shown that for the protection and care of persons who suffer from mental ill health it is necessary that they should be nursed and cared for and that they should be provided with properly equipped homes, we regard it as lawful that they should be kept in such homes. But this must be done in the interests of the individual rather than in the interests of society. It must be done for the care of the infirm, and not for the express purpose of preventing them from marrying and procreating children. You may argue that that amounts to the same thing as the proposals of the bill. To that I should not agree, for our point of view would affect the class of people so treated, the nature of the homes in which they would be placed, and the treatment they would receive there. It would, for instance, entirely delete Clause 17 (1) (*e*) from the bill.

We object, again, to the compulsory character of the bill. Experience shows that compulsion is not necessary in a great many instances. If a home is made for those poor people who are unable to find a home with their own people they would be very slow to leave it. The fact is that this compulsory character of the bill would affect the poor and no one else. It would drag from homes where they are well and kindly cared for many a child dearer to its mother than the sound children. You are very wroth with me for suggesting that one of the provisions of the bill—Clause 17 (1) (*e*)—may easily be made to mean the unsexing by sterilization of feeble-minded persons. Well, I am quite unrepentant. You say that I "twist words out of their obvious and natural meaning." What are the words that I so abuse? Clause 17 (1) (*e*) ordains that there shall be dealt with under this Act all those "in whose case it is desirable in the interests of the community that they should be deprived of the opportunity of procreating children."

This is the first time in English law that the prevention of procreation has been made the purpose of an Act of Parliament. In view of the fact that we have a school of eugenists who are practising and advocating the sterilization of the unfit, it does not seem a big leap from the prevention of procreation in one way to the prevention of procreation in another way. If it is lawful to prevent the procreation of children, it will not be difficult to familiarize the public mind with methods of doing it. And as we intend to fight in the most vigorous fashion against this pagan and revolting proposal, we begin our struggle where the eugenists begin their propaganda—that is, in Clause 17 (1) (*e*) of this bill.

Finally, you do not say a word about the futility of these proposals as a means of getting rid of mental defect. The majority of mentally defective children are not the children of mentally deficient parents. I refer you for an illustration of this fact to the tables in Dr. Shuttleworth's book on mentally deficient children. And I repeat what I said in my paper, that the elimination of mentally defective children will be effected, not by confining mentally defective people in institutions, but by remedying those defects in our social organization that breed poverty, disease, and unhealthy living. It will be effected by raising the morality of the race, by a recognition of the evil of sin. It will be effected by the recognition of the obligations of justice and charity imposed by Divine law, and forgotten by so many people for whom this life is the beginning and the end of all things, and who, logically enough, endeavour to have all those things which afford them pleasure, and give them what they call "a good time" on earth.—I am, etc.,

Preston, Aug. 27th. ALEX. P. MOONEY.

OPERATIONS FOR GLAUCOMA.

SIR,—I shall be obliged if you will kindly give me space to answer Dr. Fergus's letter on "Operations for Glaucoma," which appeared in your issue of June 22nd, 1912.

The letter is so full of inaccuracies that I hardly know where to begin. I shall select the less important first and leave those of graver moment till the last.

1. Dr. Fergus states that when he broke through his rule of waiting for publication till he had time to be sure of his results, he did so on the strength of a letter from Mr. Sydney Stephenson, received from that gentleman in March or April, 1910; whereas in *The Ophthalmoscope* for February, 1910, Dr. Fergus attributed the written invitation to Mr. Doyne, and gave the date as 1909.

2. Later in his letter Dr. Fergus states that he demonstrated his operation at Oxford in the summer of 1910, whilst in *The Ophthalmoscope* for February, 1910, he correctly gave the date of this demonstration as 1909.

3. Dr. Fergus states that I was in Great Britain in 1910, and that I did *not return to Madras till the summer of 1910*. The facts are that I was at home on leave in 1908, that I returned to Madras in June, 1909, that *I was in Madras throughout 1910*, and did not leave it till May,

1911, when I went home to read papers on trephining at Oxford, Birmingham, and London.

4. Dr. Fergus goes on to say: "So far as I am informed, he" (Colonel Elliot) "did not begin this operation" (that is, trephining) "till his return home in the autumn of 1910"; whereas Dr. Fergus, writing in *The Opthalmoscope* for February, 1910, devoted three pages of that paper to my article on trephining, which had been published in December, 1909 (*Ophthalmoscope*, vol. vii, pp. 804 et seq., and vol. viii, pp. 74 to 77). It would appear that he has forgotten the facts of the case in the interval.

5. Arguing from these erroneous data, Dr. Fergus concludes his letter by saying: "These being the facts, it would appear that I used this operation nearly a year before Colonel Elliot did." Now, according to his own statement (*The Ophthalmoscope*, February, 1910), Dr. Fergus did his first operation of trephining "on February 5th, 1909." He appears to refer to my letter published in *The Ophthalmoscope* of April, 1910, so he has presumably read it, and in that letter I stated that my first trephining was performed on August 2nd, 1909. The exact period of precedence in time was therefore just short of seven months, and not "*nearly a year*," as stated by Dr. Fergus.

Even now I have not exhausted the list of minor inaccuracies whereby Dr. Fergus's first letter plunges the question he raises into confusion.

A week later, in your issue of June 29th, "he desires to correct two errors of date." It is not clear whether he means what he says, or whether he really means "two sets of errors of dates." Whichever alternative one adopts in the attempt to reconcile his statements with the known facts of the case, one simply finds the confusion deepen. Possibly he will furnish a further erratum at a later date. It would have greatly simplified matters if he had been accurate in the beginning. I should not, however, have drawn attention to these minor inaccuracies but for the fact that there are two important questions in the background, whose existence would have made most writers very careful of their facts, and especially of their numerical facts, before plunging into print. These two questions are both raised in the first paragraph of Dr. Fergus's first letter, and any one who reads the statements therein made will obviously draw two inferences therefrom.

They will be led to believe, first, that the operation which I have advocated, and which has been attributed to me by Sir Henry Swanzy and by many others, is identical with that "introduced into ophthalmic practice in the autumn of 1909" by Dr. Fergus; and secondly, that I have frankly admitted such a claim. I wish most emphatically to deny that either of these inferences is correct, and I shall support my denial by references, with chapter and verse given, to the deliberately written and publicly made statements by Dr. Fergus and by myself.

I. I shall take first what Dr. Fergus describes as my "frank admission of his priority." In *The Ophthalmoscope* of December, 1909, I published "A preliminary note on a new operative procedure for the establishment of a filtering cicatrix in the treatment of glaucoma." In the February (1910) number of the same paper Dr. Fergus wrote complaining that the operation I had described was the one he had put forward and demonstrated at the Oxford Ophthalmological Congress and at the Belfast meeting of the British Medical Association, both in the year 1909. I replied to him in the April (1910) number of the same journal, and I think I may say that my contentions received universal acceptance. One thing at least is certain, that, though his present letter clearly shows that Dr. Fergus had read that communication, he made no attempt to answer a single one of my statements until his letter appeared in your issue of June 22nd, 1912—that is to say, more than two years later. My contentions were: (1) That my work had been done in absolute independence of that of Dr. Fergus, whose name even was unknown to me until this discussion began. (2) That the operation which I had performed since August, 1909, and which I had described in *The Ophthalmoscope* of December, 1909, was, in important respects, widely different from that which Dr. Fergus had described as his own in *The Ophthalmoscope* of February, 1910. That is a matter I shall deal with more at length under the next heading. (3) That, though Dr. Fergus had used a trephine for glaucoma seven months before I had done so, I had not only had this device before my mind more than a year before Dr. Fergus had used it, or, according to his own admission, even thought of it, but I had freely discussed it then with medical officers in India and with at least one ophthalmologist in England. (4) That, as Sydney Stephenson had shown in *The Ophthalmoscope* of February, 1910, that in the use of the trephine for glaucoma we had both been anticipated by Robertson over a third of a century before, and again in the interval by Blanco and by Frolich, it was, under the circumstances, futile to discuss the question of priority.

Any of your readers who will refer to the three numbers of *The Ophthalmoscope* I have quoted (vol. vii, pp. 804 to 806, and vol. viii, pp. 74 to 76, and pp. 312 to 315) will be able to satisfy themselves that I have given a fair and accurate account of the correspondence. My admission of priority was an admission naturally made that Dr. Fergus had *used a trephine in the treatment of glaucoma* seven months before I had. It involved absolutely nothing more, and the limitations were clearly and expressly stated. I lay so much stress on this because I do not think that this is the impression that Dr. Fergus's letter of June 22nd will convey to your readers. In any case I have once again made my position perfectly clear.

II. I now come to the real contention of Dr. Fergus's letter—namely, that the operation which I have advocated, and which has been called mine by Sir Henry Swanzy and others, is identical with the operation "introduced into ophthalmic practice in the autumn of 1909" by Dr. Freeland Fergus. I dealt with this matter most unequivocably in my letter to *The Ophthalmoscope* of April, 1910, in which I wrote:

> When Dr. Fergus says that the operation which I described in *The Ophthalmoscope* is "precisely the same as that which he has now done for some time for the relief of glaucoma," I regret that I cannot agree with him, but it is a matter we both must leave to ophthalmic surgeons. . . .

I shall first deal with my own operation. My earliest communication on the subject appeared in *The Ophthalmoscope* of December, 1909. I take the following extracts from it:

> The spot selected for trephining should be as close to the limbus as possible, and should be prepared, if necessary, by scraping down with the scissor points to the sclerotic coat.

And again:

> The one danger met with has been that of making the trephine hole too far out, and thus tapping the suprachoroidal space instead of the anterior chamber. If this is done, the anterior chamber does not empty, the tension is not well lowered, and, if any effort is made to excise the bulging uveal coat, a vitreous loss will occur.

The whole paper clearly shows that my object was to tap the anterior chamber and to drain it into the subconjunctival tissue, whilst carefully avoiding interference with the uveal coat. Even when iridectomy was considered necessary, my advice was for "only a tiny peripheral button-hole."

In my letter to *The Ophthalmoscope* of April, 1910, I wrote:

> Dr. Fergus began by doing a simple trephining, and went on to add an operative cyclodialysis. *I have kept to simple trephining throughout*, with the exception of a very few cases in which I found myself unable thereby to tap the chamber freely. In such cases I thrust a fine curette into the chamber, keeping it close to the sclerotic coat. I had no idea at the time that any one else had done this, *nor did the procedure find favour with me*. I may add that subsequent experience (and I have now operated on 140 cases with the trephine) has shown me that, with proper care, one can almost always enter the chamber and *tap it freely by trephining alone*.

Again, in a paper on the operative treatment of glaucoma, published in *The Ophthalmoscope* of July, 1910, I wrote:

> Dr. Fergus began by performing a simple trephining, but gave it up and combined with it a cyclodialysis. *I have kept steadily to the simple operation*. If the operator allows his trephine aperture to be placed too far away from the limbus, he will enter the supraciliary space instead of tapping the chamber. The result will be that he will not establish a free communication between the chamber and the subconjunctival space. If he then considers tapping of the chamber a necessity, he must burrow his way close to the scleral coat into the chamber, or, in other words, he must add a cyclodialysis to his operation; and this is what Dr. Fergus has done. The simple method obviously recommends itself for clean, neat working, and for simplicity. That it is easy to enter the chamber in the way I have described, is proved by the fact that a few mornings ago I trephined six eyes in half an hour, reaching the anterior chamber and finishing the operation easily each time in five minutes.

Again, in a paper published in the American journal *Ophthalmology*, April, 1911, I summarized my remarks in the following words:

In conclusion it may be permissible to repeat that the operation which the writer has practised and has endeavoured to introduce to the notice of the profession, is that of *simple* trephining. The motive is to reach, tap, and subconjunctivally drain the anterior chamber, with a minimum of injury to the structures of the eyeball. To this end the sclera is trephined as far forwards as possible, the ciliary body is avoided, the chamber is entered directly by the trephine, and the iris is only dealt with if it shows a tendency to block the trephine hole and so interfere with filtration.

Those of your readers who have been sufficiently interested to peruse the three papers which I read during my visit to England in 1911 (*Ophthalmological Society's Transactions*, vol. xxxi, 1911, pp. 230 to 245; *The Ophthalmoscope*, August, 1911, pp. 567 to 579; a communication read at the Oxford Ophthalmological Congress on July 13th, 1911, and British Medical Journal, November, 4th, 1911; a paper read before the Section of Ophthalmology at Birmingham), will know that I have kept steadily to the lines on which I started. One short quotation from the last-named paper may be permitted:

Once the trephining is accomplished and the chamber is opened, the amount of interference with the contents of the eye is minimal.

Not merely have I *kept steadily to simple trephining*, but I have developed an operative technique whereby the operation I advocate may be easily and safely performed. The latest development in this technique was fully described by me in the paper I read at Oxford, when I not only explained my method of splitting the cornea, but demonstrated it on animals' eyes to a large number of those who attended the Congress. This little manœuvre enables the surgeon to enter the anterior chamber directly in every single eye he trephines. It has thus simplified simple trephining.

I now turn to Dr. Fergus's published utterances, and I submit that on them alone his case must stand or fall. According to his own statements these are:

i. A demonstration of his method at the Oxford Ophthalmological Congress of 1909 (July 15th and 16th);

ii. A paper read at Belfast before the Section of Ophthalmology of the British Medical Association, held on July 30th, 1909, and described by him as "the only communication that I have yet officially made on what I regard as a modification of a very useful and important operation for glaucoma" (that is, Lagrange's operation); and

iii. An article in *The Ophthalmoscope* for February, 1910, in answer to my paper published in the December, 1909, number of the same journal.

I do not think the above facts can be disputed. What, then, was the operation which, in Dr. Fergus's words in his letter in your issue of June 22nd, he "performed in the autumn of 1909," and "introduced into ophthalmic practice in the autumn of 1909"? We may fairly answer these questions by Dr. Fergus's deliberately written statements in his letter of February, 1910. If we may not, then words cease to have any significance. He wrote:

Mr. E. Treacher Collins very properly said, in the discussion at Belfast (July 30th, 1909), that my operation, as now performed, was not merely a trephining, but was also a cyclodialysis. *I have combined the trephining with cyclodialysis since the month of March, 1909. I do not remember to have performed a simple trephining since that time.*

Speaking of the Oxford meeting (July 15th and 16th, 1909), he wrote:

I said that my so-called operation was but a modification of the one devised by Lagrange, and thereafter I operated, using a trephine somewhat like Bowman's, *and an ordinary iris repositor.*

Again, speaking of the Belfast meeting (July 30th, 1909), he wrote:

Any one interested in the matter will find from the report of the meeting that I there also mentioned the conjunctival flap, the removal of a piece of the sclera with the trephine, *and the introduction of the repositor.*

Again, toward the close of his February, 1910, letter to *The Ophthalmoscope*, Dr. Fergus wrote:

The only addition which I have made to Lagrange's procedure is that *I invariably pass a repositor between the sclera and the ciliary body and iris into the anterior chamber.*

Lastly, speaking of myself, he wrote: "He raises what I call the bogey of the ciliary body. The above italics are all my own.

Right through Dr. Fergus's accounts of what happened at Oxford and at Belfast in 1909, and of the views he publicly held in February, 1910, runs the distinct and unqualified utterance that the operation he was advocating was a combination of "trephining with cyclodialysis." He made it clear that he had turned his back on "simple trephining" in March, 1909, that is to say, in less than three months after he had begun trephining at all. On the other hand, my advocacy has throughout been for the operation of *simple trephining*, devised, practised, and elaborated by myself in the most absolute independence of Dr. Fergus. How, then, can he say that the operation assigned to me is the one he "performed in the autumn of 1909," or the one he "introduced into ophthalmic practice in the autumn of 1909"? Both statements appear to me to be obviously incorrect, and in direct contradiction of his own deliberately written words.

Dr. Fergus can hardly claim that these matters have not been brought to his notice before, for his present letter would seem to show that he had read my answer to him in the April, 1910, number of *The Ophthalmoscope*. Any of your readers who will peruse those two letters will have little doubt that I made my points quite clear on that occasion.

In conclusion I pass on to consider the light in which unprejudiced, critical, and skilled observers have regarded the question which Dr. Fergus has now raised.

In the same number of *The Ophthalmoscope* (February, 1910), which contained Dr. Fergus's letter from which I have been quoting so freely, Sydney Stephenson reviewed *The Trephine in the Treatment of Glaucoma*, and in doing so he wrote:

When we come to examine a little more closely the proposals of Fergus and Elliot we find considerable difference in the operations they advocate;

and again:

Although Fergus regards his operation as a mere modification of the sclerectomy devised by Lagrange, yet it obviously bears an even closer resemblance to Heine's cyclodialysis, in which the ligamentum pectinatum is broken through by means of a spatula, etc.

He goes on to point out that Heine's objective was the establishment of a permanent communication between the anterior chamber and the suprachoroidal space. Later again in the same article he wrote:

Elliot aims at establishing a permanent filtering cicatrix between the anterior chamber and the subconjunctival space;

and again:

Elliot . . . aims at allowing the trephine to cut its way into the anterior chamber.

In the July number of *The Ophthalmoscope* of the same year Dr. Arthur J. Ballantyne reviewed *The Newer Operations for Glaucoma* in an article which displayed such a wide range of reading and such breadth of treatment that it may be called classic. In that article he showed that he also had clearly appreciated the difference between Dr. Fergus's operation and my own. Others, too, who have dealt with the subject, including Temple Smith, Lang, and Hime, have taken the same view of the case.

When Dr. Fergus endeavoured (*Ophthalmoscope*, February, 1910) to throw ridicule on my fear of any interference with the ciliary body, and at the same time claimed that my operation was precisely the same as his own, I wrote (ibid., April, 1910):

I regret that I cannot agree with him, but it is a matter we both must leave to ophthalmic surgeons. . . . Dr. Freeland Fergus can hardly claim a right to "run with the hare and hunt with the hounds." If he gave up simple trephining *he gave it up.* Whether he was well advised to do so is a question I should not venture to dogmatize on. Time and a review of our results in the future will best decide that question.

It would appear that time and experience, to which I appealed, have given their verdict; for, whilst I and those who have practised simple trephining in my clinic, and not a few in other parts of the world as well, have made this operation our standard one for nearly every type of glaucoma, Dr. Freeland Fergus now writes (British Medical Journal, June 22nd, 1912): "I hope . . . to discuss substitutes for *iridectomy, which still is to me the standard operation.*" (The italics are my own.)

I have not hitherto put forward any formal claim in connexion with the operation which I have advocated so often and so widely during the last three years, and I should not have thought of doing so now had the letter in your columns emanated from any one else but Dr. Fergus. —I am, etc.,

R. H. ELLIOT,
Lieutenant-Colonel, I.M.S.

Shawfield, Egmore, Madras,
July 15th.

THE INTERIM REPORT ON TUBERCULOSIS.

SIR,—In the JOURNAL of August 24th there are two interesting articles dealing with the treatment of tuberculosis. At a time when it is proposed that large sums of public money should be spent on fighting this disease, such communications require very careful consideration.

In the paper by Drs. F. W. Burton-Fanning and W. J. Fanning on The Results of Sanatorium Treatment, it is stated that 65 per cent. of the patients were town-dwellers, 34 per cent. country-dwellers. At first glance, the deduction is obvious. The disease is one of town-dwellers. But, in order to make the figures of value, further information is needed:

1. Of the total population of England and Wales what is the proportion of town-dwellers as compared with country-dwellers? Unless this fact is given, the figures may be purely misleading.
2. The classification is not detailed enough. Under which heading come the patients who live in the country and go in, daily, to work in a town, or those who live in small country towns? Such cases should be removed into a separate list, as "semi-urban," and the statistics for the two main classes, then consisting of cases correctly described as urban or rural, would afford basis for accurate deduction of facts.

The next statement is that "a family history of tuberculosis in the direct line was obtained from 459 cases, or 41.6 per cent." Presumably, this is meant to show a certain degree of hereditary tendency. But, in order to make hereditary figures of value, much more detailed information is needed. It must be definitely stated that every patient was questioned in exactly the same manner; information is needed as to which relationships are included; if uncles and aunts are included, the number of each must be given for each case, and these numbers duly considered in working out the results.

The statement that 363 patients stated that they had been exposed to infection is hardly worth recording, because, of the population under consideration, practically all are exposed to infection, whether recognized or unrecognized.

The value of the table given as to results is largely vitiated by the fact stated—that the time since discharge varies from "little more than a year" up to "eight years." In order to obtain data on which to base reliable deductions, cases must be classified as to the year of discharge.

The only way in which we can ascertain the true value of sanatorium treatment is by ascertaining the correlation between the "expectation of life" of patients treated in sanatoriums and patients treated by other methods. Many men who have had experience of the tuberculous outside sanatoriums would be inclined to think that if they had kept records they would have had as good results to show as the depressing results shown in the figures here given. At present our main need is for data, accurately kept, on a scientific basis, on which to base our conclusions. So far we are working in the dark.

The letter by Dr. Benjamin Moore also shows the same crying need for data. It is taken for granted that patients "in an open infective condition" are "a danger to their fellow countrymen." They may be. But a case has yet to be recorded giving definite proof of the event. It is at least possible that such infection only takes place in childhood, and the shielding of the children from infection would be less costly than the suggested segregation of some 160,000 people.

Later on in the letter the question of the provision for the tuberculous children is discussed. Again we need data. The results of *post-mortem* and x-ray work confirm the findings of the various tuberculin tests to the effect that, in the poorer classes, the vast majority of children are infected. But until we have accurate records in regard to these children, extending over a number of years, it is unwise to be dogmatic in regard to the steps which should be taken when such steps involve the expenditure of large sums of public money. We need that the school medical officers shall report in detail on these large numbers of tuberculous children, stating at what ages these diagnoses were made; how such children progressed under the circumstances of school life; what evidences of tuberculosis were still present when the children left school; and, above all, whether the severity of the infection in childhood is any gauge of the likelihood of serious disease in early adult life.

Dr. Moore very justly condemns the using of the Edinburgh figures without comparison with other towns. In other words, more data are needed.

It is earnestly to be hoped that every official employed in connexion with the new scheme will realize that the accurate collection and recording of data is second in importance to no part of his work.—I am, etc.,

MARY H. WILLIAMS.

Colwall, Malvern, Aug. 26th.

SIR,—One likes enthusiasm, but reason better, and I would like to protest against the spirit of Professor Moore's bitter onslaught. He complains that there is "nothing novel and nothing with a national aspect in the whole report from beginning to end." Actually there is a strikingly novel feature, both in the report and in the action the Government has taken, one which can hardly escape the notice of any one studying either. Reading the report one is struck by the large powers to deal with tuberculosis already in the hands of local authorities. County councils, sanitary, Poor Law, and educational authorities have been empowered in the past to deal both with the seed and the soil, by town-planning Acts, pure milk supplies, power over unhealthy occupations, and even to treat those infected by domiciliary or institutional methods. If they chose. The novel feature is that now bodies are created *ad hoc*, and the "mays" become "musts." Enough laws had been passed to do it all, but, as is so often the case, they had been neglected because those whose duty it should have been to act on them have been either opposed or unsympathetic. Now a national aspect is placed on the matter by the Government actually getting something done, and this on the advice of a commission including so many of our own leaders in the consumption crusade. The scheme is not sufficient to attain its ends—but is it reasonable to expect it to emerge, like Athena, fully armed at birth? Why not regard it as what it is, a beginning? Is it reasonable or profitable to jeer at a Government because it starts with the foundations and in a carping, sneering spirit jibe them that there is no roof on? I do not recall any imprecation being hurled through our JOURNAL at the head of the last Unionist Government because in twenty years of unrestrained power they did nothing in the matter. It is not calculated to encourage other Governments to tackle similar problems, but rather to slack on. Professor Moore, for instance, pours scorn on the 9,000 beds which are to be provided—as a beginning—as early as possible. He demands 150,000 at a cost of £15,000,000. If necessary we should all like them, but could Mr. Lloyd George get the money? How interested we should be in the new taxes or naval economies necessary. And this would be only one point in substituting "something scientific" for a "lopping of twigs and branches" in the present "hotch-potch" scheme. The "something scientific" of Professor Moore is not even outlined by him, but in addition to the beds it would, to be effective, have to include the abolition of all slums, and the rehousing of the greater part of the nation, the provision of the means of a comfortable life for all; a minimum wage would have to be accompanied by some guard against the increase being, as past increases have been, swallowed up in higher rents and dearer living; it would have to abolish unhealthy occupations, and provide a minimum allowance for the unemployed and their dependants, buy up the tuberculous cows, and provide a State medical service. These would be merely elementary principles in the scheme, for the non production of which we are to ridicule Mr. George. "Something scientific" is a good phrase, and about as useful as is the reference to the "unfortunates" missed by the Act without explaining that they could only have been brought in by a non-contributory scheme, which would not have passed the Commons or the Lords. Should we not rather be thankful

that a Government has at last made national action compulsory, and provided the money, without which there could be no beginning?

Is it nothing to us as practical men that a start has been made; that there is for the first time a grant of about 1½ millions and an income of about 1 million available, and certain to grow; that the employers' contributions are to form a fund ear-marked to be used as loans to help corporations to adopt the Town Planning Act; that the State pays us for treatment and provides our latest fashion—tuberculin—free of cost to ourselves, gives us 9,000 beds, etc., and proposes to build up an expert staff to assist us? Compare the progress we can now make—thanks to the Act—with what we have been able to do in the past; look twenty years back and twenty years forward, and we shall be more chary of beheading the Government because it has only done what it could and not attempted the impossible.

One is quite in agreement with Professor Moore: his expenditure would be a good paying investment for the nation; but the nation does not know it, and would simply end any party that attempted to act so far in advance of public opinion, and we should get nothing done.

Professor Moore is an advocate of a State Medical Service; so am I, and I have offered his committee any services I can give; but it will have to have a beginning, and I hope when it is started that our critics will remember what it is—a beginning—and not tear us up because it is incomplete.—I am, etc.,

Grimsby, Aug. 24th. S. W. Swindells.

TUBERCULOSIS AND THE SOIL.

Sir,—As an apparent reduction in the death-rate from tuberculosis in Ireland is credited to recent propaganda work, and as this error might mislead many medical men to overestimate the value of like work, I would like to place some facts before your readers.

Up to five or six years ago the characteristic of Irish tenancies in land was the great number of men whose holdings comprised only seven or eight acres. Irish land as to the agricultural industry comprised the grazing lands: (1) Large tracts of pasture lands on which herds of cattle were fed, fattened, and exported to the English markets; (2) the agricultural holdings, which were partly in pasture and partly under crops; an enormous number of these holdings were not more than seven to ten acres. It was the tenants of these who kept the cows and bred the cattle which were sold to the grazing middlemen, who, buying them at one to two years old, kept them on the grazing lands.

In the later part of the seventeenth century a custom arose amongst the small Irish tenants and cottiers on small holdings of "burning the land." When going to convert one of the fields on the holding in pasture into a tillage field, the first work to be done by these toilers of the spade (who were the cowkeepers and breeders of cattle in Ireland) was, when they had the grass sod turned, to burn it, and with the ash to manure the crop to be planted. In this way any pastures infected by tuberculous cows were sterilized when put under crops. In parts of the country the custom continued down to 1860. But from the harm to the fertility of the soil this custom was said to cause, the landlords prosecuted every tenant who dared to "burn the land," and the custom, once extensive, was destroyed.

After the famine enormous numbers of these small tenants were evicted, their houses razed, and the lands used for grazing purposes. These lands are now again being divided up into small holdings by the Estate Commissioners and by the Congested Districts Board, and it is only two months ago that I heard a farmer decry the value of one of these large tracts, his reason being that it was land which before the evictions "used to be burnt." In these old days typhus fever was common, the majority of the people lived in one-roomed cabins, the population of Ireland was quadruple its present, yet the people were physically a strong virile race, and consumption was rare.

I shall describe a typical tenant farmer of my own district before and after the recent land change. He held 7 acres of land; he had 3 acres under tillage and 4 under grass. He kept a cow, sometimes two. The cow was pastured all the year on the land except during snow or hard frost. From November 1st to April she was housed at night, and fed on hay or straw and roots; the cowhouse was within 4 yards of the door of the living house, and formed one side of the yard in which pigs and the working mare were housed. In the centre of the yard was the dung heap—the sewage cleansing of all the animals. This was put out every spring to manure the tillage land, or, perhaps, to top-dress an acre of grass, to obtain a meadow. A tuberculous cow, by her excreta being used for manure and deposited on pastures, was bound to cause infection of the land. Amongst the very poor a custom, which even yet exists, of collecting the dry cow droppings from grazing land and carrying them home to use as fuel, helped to prevent infection of the rich man's pastures. Ireland was given over to King Ox, and even the wells, loughs, and ponds were not held sacred from his presence. Intestinal tuberculosis became common.

The land agitation led to the State purchase of Irish lands. My typical farmer has benefited. With a sense of security and a freedom from land value inspectors who appraised land values and raised rentals "from the prosperous" (sanitary) look of the tenant's house, he has now twenty acres of land; he is using artificial manures, and, instructed by a Department of Agriculture inspector, goes in for a rotation of crops. But before additional land was given him.

From this man's infected pasture the calves bred on it carried tuberculosis when sold: the children who used the milk became infected. I maintain that the comparative freedom of Irish people in an age of insanitation and starvation and dirt was due to their burning the land, and thus unconsciously doing the greatest preventive work possible. The discontinuance of this practice gave us the infected pastures, and the work commenced seven years ago of taking these people out of these places, giving them more land—land not cultured with the sewage of man and animals for seven generations—building them new homes, giving them freedom to improve their dwellings, which heedless of any education or lecturers they have voluntarily done, the building of labourers' cottages, the work of the Department of Agriculture in providing healthy bulls, all tend to a reduction of the incidence of tuberculosis. Not all the lectures, all the talk, all the educational theory in the world can rid us of the infected pasture. The Irish way—sod it, burn the sod, and put a crop on it—is the only perfect way.

In this agricultural district, when a child is brought to me with enlarged glands my first question is, "which of the cows had the sore teat?" And I would say that all preventive work is but filing on the edge until we attack infected pastures, and I would suggest that all farmers should be made to keep a stock book, which should be produced at all fairs and auctions, so that cattle sold or bought should be entered in these books, so as to enable us to trace cattle transfers. So that if an animal was discovered it could be traced from any part of the British Isles to the pasture it was calved on. That would be real preventive work.—I am, etc.,

Oranmore, co. Galway, Aug. 3rd. C. H. Foley, M.B.

TUBERCULIN TREATMENT.

Sir,—I am afraid Dr. Camac Wilkinson has completely misunderstood me, in that he imagines that I look upon the administration of tuberculin in any sceptical spirit. I have been of opinion for the last eight years that the cure of tuberculosis was brought about by means of tuberculin, which might be derived from the patient's own lesions, or might be injected from without, but I have always tried to bear in mind that whilst tuberculin has curative powers, it is also the cause of the symptoms of the disease: to bring to an end such symptoms is one of the objects of treatment. Curiously enough, three of my old patients visited me yesterday, all of whom had been treated at periods varying from two to three and a half years ago with tuberculin, and each by a different method. One, which was an advanced case, with extensive laryngeal ulceration, was treated by Koch's intensive method: she has been in good health since her discharge and able to do all her work. The second was a similar case, in the third stage, with laryngeal disease: she was treated by means of bovine bacillary emulsion by the mouth, a slight reaction occurring after each dose. She also is in excellent health.

and has a healthy baby, 13 months old, born since leaving the sanatorium. The third was a girl, a much more favourable type of case, who had suffered from night sweats, followed by haemoptysis. She was treated with bovine bacillary emulsion, about 0.0005 c.cm., given at intervals of a week. She may be said to be cured, and has been working continuously in a hosiery factory for the last two years. I may say at the present time, except in a few cases, though commencing with a small dose, I endeavour to increase it as far as possible without producing reactions.

I should like very much to be able to spend a month at Dr. Wilkinson's dispensary, where, on my too short visit, I was received with extreme courtesy. Unfortunately Dr. Wilkinson was away on that occasion, but what I chiefly wished to indicate in my letter was that the cases we get here are not suitable for tuberculin dispensary treatment, but are the cases which are difficult to treat by any means. When I mentioned small doses, I was desirous of trying to find out whether it was safer in difficult cases to begin with a relatively large or relatively small dose.

That all is not plain sailing in this matter is clear from the following: Dr. Wilkinson is an enthusiast, and has probably accomplished much by his enthusiasm; if, now, we turn to the *Lancet*, April 27th, 1912, p. 1114, Dr. Arthur Latham states that the use of tuberculin "is not attended with dramatic effects, except in occasional examples of febrile disease, or laryngeal tuberculosis." In the BRITISH MEDICAL JOURNAL, September 16th, 1911, p. 636, a summary of the work of Dr. J. B. Hawes, and Cleaveland Floyd is given, where, amongst much that is instructive, they record their experience with two series of patients attending the Good Samaritan Day Camp, one series treated with, the other without tuberculin. The series represented similar kinds of cases as far as possible. The authors say that about the same number of patients relapsed without being treated with tuberculin as with it, but in a shorter time. Some of those who received the highest doses relapsed, while those who received smaller amounts remained well. In the BRITISH MEDICAL JOURNAL, July 6th, 1912, p. 35, the physicians at certain sanatoriums are stated to have said that tuberculin is unsuitable for ambulant treatment.

It was owing to these conflicting views that I suggested it might be well to reduce cases to a common denominator. The difference in the ideas of sanatorium physicians and doctors at dispensaries is probably due to the different type of case dealt with.

The question of producing toxin toleration at the same time as the disease is progressing is a matter to be carefully considered, as there seems little doubt the disease may be spreading, whereas the symptoms may not be acute, and one may go on giving large doses of tuberculin which are really doing harm without being aware of the fact, these patients apparently having lost their sensitiveness without being cured. Such results are produced after long years of chronic disease, and such cases may tolerate large doses of tuberculin without very obvious harm.

A book which throws a different light on this subject is that of Professor Suhli, of Berne, a matter into which I cannot enter more at length.

The mistake in treating this disease is the idea that all cases must require the same treatment; thus, in the early days of sanatoriums all cases were expected to be benefited by exposure of all kinds—a method which tended to weed out cases most requiring treatment. Then came graduated labour, to be followed by a similar therapeutic agent, tuberculin. It, of course, should be remembered that cases able to take violent exercise or tuberculin easily have a relatively good prognosis.—I am, etc.,

Ayrshire Sanatorium, Aug. 17th. EDWARD E. PRIEST.

SEA WATER INJECTIONS IN SUMMER DIARRHOEA.

SIR,—The statistical report of the ambulatory patients of the Quinton Polyclinic for Treatment by Isotonized Sea-water from July 1st to December 31st, 1911, which has just been issued, is of a good deal of interest, as it allows us to examine fairly and impartially the merits of Quinton's sea-water cure, which was rather extensively boomed last summer. The report is almost entirely occupied by short abstracts of each case treated. I think the medical men concerned are to be congratulated on giving such full tables of cases, and putting them so perfectly fairly, and thus enabling us to judge whether there is any virtue in the treatment or no. The following extract from the report shows that the authors do not make for it any ridiculous and exaggerated claims, claims that do so much harm by raising hopes that are never realized.

Coming to the actual cases treated in the Poland Street institution during the epidemic, they naturally range from the comparatively slight attacks of gastro-enteritis to those cases actually *in articulo* when sent. A considerable proportion of the cases were of the graver type, death having actually occurred in the waiting-room in the interval before consultation. A certain proportion of the infants was referred to the institution by medical men as hopeless. Precisely in many of the graver cases the curative values of isotonized sea-water were best demonstrated. It is useless to compute percentages in these cases from case-mortality only; segregation into grave, acute, and mild cases is readily misleading. Therefore there is given in the text of the report a sufficient indication of the character of the clinical symptoms in all instances; and as a basis of comparison in general it may be noted that the epidemic in various provincial towns was of a very severe character.

Some of the medical officers of health who visited the polyclinic spoke of a mortality in their own areas of over 50 per cent.

Stress is laid on the fact that the great majority of these cases were ambulatory, and therefore lacking in the collateral aids of sufficient or appropriate food, hygienic surroundings, or adequate nursing, such as hospital-treated infants are fortunate to receive. Further, the distance traversed in many instances twice daily was, in the hot weather, an additional embargo on recovery.

The statistical table contains, among other matter, brief details of 263 examples of gastro-enteritis in which the time of commencement of the disease before treatment is stated. Of these only 19 were of a duration of under one week, averaging four days, and 244 had a duration of from one week to ten months, averaging over one month each—that is, the vast majority of the cases could not by any possibility be quoted as examples of severe acute gastro-enteritis, but were of the chronic or subacute variety. Now it is not in these chronic cases that we get the high death-rate; it is in the rapid, severe, acute instances that the terrible mortality-rate occurs, and it is in these that the results of treatment must be carefully scrutinized, to enable us to form a just and correct opinion.

On examining the 19 acute cases, one finds that there are very few of real cholera infantum, the disease in which the mortality-rate is so high. I can only find 8 (87*a*, 111*a*, 31*c*, 133*a*. 157*a*, 147*d*, 127*r*, 27*e*) which were really bad, and even these were not all of the most severe type. Of these 8, 3 were cured, 3 improved 1 died, and 1 was sent to a hospital, and there is no record of what happened to it. Of the remaining 11, in 2 there is no record as to results, and the other 9—none of them very bad, most of them quite mild cases—were all improved or got quite well. There is nothing very startling in these figures. I think by our ordinary methods of treatment, including the use of sterilized normal salt solution, either per rectum or subcutaneously, just as good results could be obtained. At any rate, the number of severe cases is far too small on which to found any generalization.

Of the 244 cases of over a week's duration, information as to the effect of treatment is given in 230. Of these, 15 died, in 11 there was no improvement, and the remainder were improved or cured. I think that we may with great probability consider that some of the 14 who ceased to attend, and of whom there is no information, also died.

Taking the two sets of cases together (those of short duration, and those of over one week) it does not appear to me that there is any reason to hope that in sea-water injections anything fresh of importance has been discovered, or that we have added anything of value to our methods of treatment. Saline infusion would give just as good results, and this without the necessity of going to the expense of founding sea-water dispensaries.

If at any time it could be shown that really severe acute gastro-enteritis, which leads to collapse and even death in a few hours, or a day or two at most, were cured by these injections in any fair proportion of cases, then one might alter one's opinion; but this has not been demonstrated in this report.—I am, etc.,

L. A. PARRY, M.D., F.R.C.S.,
Assistant Surgeon,
Hove, August 9th. Children's Hospital, Brighton.

IODINE IN FIRST-AID TREATMENT.

Sir,—May I endorse Fleet Surgeon Wildey's experience, detailed in the Journal of August 24th, as to the value of iodine in first-aid treatment of wounds, as it was seeing his methods at Chatham Hospital which led me to follow his example?

In this ship, where I am in charge of 2,000 men in the Third Destroyer Flotilla, every wound or abrasion which comes under my notice, however trivial, is painted immediately with 2½ per cent. solution of iodine in rectified spirit. I do not remember any cases of sepsis since this routine was commenced eight months ago, and the time spent on the sick list is very appreciably shortened in consequence.

I have also found it useful in the numerous cases of boils which seem incident to ship life. The surrounding area of skin is painted every two or three days with the solution, which prevents what frequently becomes a crop of boils by infection of the surrounding skin from the original focus of infection.—I am, etc.,

Harold Huskinson,
Fleet Surgeon, R.N.

H.M.S. *Blenheim*, Home Fleet, Aug. 25th.

MEDICAL SCIENCE AND WEIGHTS AND MEASURES: A PROTEST.

Sir,—Those who have taken the trouble to spend three hours in learning metric measures, and to use them, often add three years to their life by casting aside the ridiculously cumbersome British Standard Weights and Measures. That uneducated people should still enjoy using a mediæval system of weights and measures is not so incomprehensible — they have some excuse for their laziness. That, however, a scientific profession like medicine, which prides itself upon its culture and precision, should still hang to the complicated and uncertain British Standard Weights and Measures, is incredible and incomprehensible. But when, in addition, members of our profession make a hotch-potch of both systems, their action verges on the criminal. Often, Sir, also in your pages we come across such incongruities.

But, as an unparalleled example of such muddles, may I take for illustration the interesting, and otherwise valuable, paper of Dr. W. C. Swayne in the *Proceedings of the Royal Society of Medicine* for June, 1912, on the Clinical Significance of Acidosis in Pregnancy. Let me quote from page 320:*

> The total urea excretion is found by the hypobromide method. The total excretion in *grains* per diem multiplied by 0.0303 gives the number of *grammes* of nitrogen passed as urea. To find the nitrogen passed as ammonia 25 *c.c.* of urine are shaken up with about 2 *dr.* of solution of potassium oxalate (strength 15 *gr.* to the *oz.*) to clear the urine and precipitate calcium salts. The solution is neutralized; 10 *c.c.* of 40 *per cent.* formalin are neutralized. These two are shaken together. . . .
>
> The solution is then titrated against a *decinormal* solution of caustic soda; then, the number of cubic centimetres of caustic soda multiplied by the ounces of urine passed in *twenty-four hours* multiplied by 0.0016, gives the *grammes* of ammonia nitrogen, and from this the *percentage* of ammonia nitrogen . . . . etc.

Now, Sir, we are in the habit of making twelve to eighteen complete quantitative analyses of urine in a day in my laboratory at Vittel during the season, and when I brought in this paper of Dr. Swayne to my analyst our emotions ranged between homicide and suicide. From the former we were saved by distance from the culprit, and from black despair and the latter we were relieved by the thought that, at any rate, such a state of things could not occur in France. All I wonder is that Dr. Swayne did not complete his puzzle by introducing a furlong, a firkin, an Irish ell, and two thermometric scales or other incongruities.

I often have analyses from patients in England made by the Clinical Research Association, and on complaining about the results being presented as *grains per gallon* the secretary wrote me a plaintive letter saying that of course all their researches were made by metric measures, but the ignorance of English medical men was such that they had to convert them to standard measures.

Now, Sir, I appeal to you to use your influence as editor to put a stop to this, and to have used a clear abbreviation in all papers that pass your approval. Let all contributors stick to one or the other, but discourage the use of "standard" measures in a scientific paper; and let me beg and supplicate that any mixture of the two be absolutely stopped. Also it is *very* necessary to be rigid as regard abbreviation: let gm. stand for gram and gr. for grain, as it is often impossible to know when reading an article which is meant.

May I conclude by saying that one of the principal reasons for which English investigators are not quoted and credited by foreign workers is that the latter cannot afford the time and patience to master our ridiculously complicated so-called "standard weights and measures"?—I am, etc.,

Vittel, Vosges, July 31st. H. J. Johnston-Lavis.

* The italics are mine.

THE INDIAN MEDICAL SERVICE.

Sir,—In a leading article on the Royal Commission and the Indian Medical Service you have expressed a desire to see the continuance of the Indian Medical Service as at present constituted. May I call your attention to the following points?

1. The Indian Medical Service is primarily a military service, whose officers are lent to the civil medical department, fill only its higher grades, and have to vacate their posts at any moment when required for military purposes.
2. About 92 per cent. of its members are non-Indians.
3. This system has been condemned by high civil and military authorities in India.
4. The Indian National Congress at its annual meetings has asked for the creation of a separate civil medical service, with its ranks to be filled by the best qualified from the profession at large, and has shown how this would lead to increased efficiency and saving.
5. Recruiting in this country alone prevents many Indians from gaining admission into it.
6. Necessity of filling all important posts, even temporarily, with service men leads to the appointment of incompetent officers.
7. Medical skill and ability and long service are useless for promotion unless accompanied by a military qualification.

—I am, etc.,

Richmond, S.W., Aug. 15th. V. P. Gonsalves.

OPPORTUNITIES FOR STUDY IN AUSTRIA.

Sir,—In a recent number of the Journal I read an account, from your correspondent in Vienna, of the very limited facilities provided for dissecting by the anatomical institute of the medical faculty of the Vienna University, which is visited by so many English-speaking students and physicians every year. I have wondered why so many men prefer the limited advantages of the faculty in Vienna, when they could enjoy almost ideal chances for scientific work and medical education at the Imperial University in Innsbruck.

Thousands of English-speaking people visit Innsbruck every year; many spend a winter there. They come for mountain-climbing or the winter sports. But none of them seem to realize that Innsbruck possesses a university that, at least in its medical faculty, may challenge comparison with the best that any other German or Austrian seat of learning has to offer.

Of the many English and Americans who spend a year at the University of Vienna, there is a large number, unfortunately, who come only with the idea of increasing their professional importance at home by a semester or two in the Austrian capital. They enrol themselves in a number of courses, which they attend irregularly; their previous medical training and their imperfect knowledge of German make it almost impossible for them to profit by the instruction offered; and they fill up the places in the laboratories and lecture-rooms, which are already overcrowded, to the great disgust of the Austrian students themselves. After some nine months, they receive some sort of document certifying that they have been enrolled in certain courses. This class of English-speaking student is the despair of the Viennese professors; and the Austrian students do not love them over much.

There is, however, another class of English-speaking students and younger physicians in Vienna, both English and American. They are really able men—men who have made many sacrifices in order to spend a year or more in completing their medical education in Vienna, or in the pursuit of some definite scientific aim. Such men, as I have been often told, are a delight to their professors; and they find in the Austrian students and colleges firm friends and courteous hosts. But, even if they know

German well, they are handicapped by the fact that laboratories, lecture-rooms, and clinics are overcrowded. Above all, they often fail to secure the one thing for which they have come so far—namely, the personal contact with their teachers—and, according to your correspondent, they have not even a chance to dissect properly. Professor Hochstetter, the Professor of Anatomy at Vienna, who was for many years in Innsbruck, told one of my Innsbruck friends that his work in Vienna was often most discouraging. He had some 500 students inscribed in his dissecting course, and he had only places at his tables and material enough for 150. So that during an entire semester more than half his men never had any chance to dissect at all. The most that they could do was to watch the more fortunate of their colleagues.

The conditions at Innsbruck are quite different. The dissecting rooms are large: there is a place for each and every enrolled student. We have about 200 students in all. This means that there are never more than 80 or 100 men engaged in dissecting. Each man is required to make three preparations during each winter semester. Otherwise, he does not receive the *testat* of the professor at the end of the year, and his semester is lost so far as his dissecting goes. We have a prosector and four assistants, who are always in the rooms. And Professor R. Fick spends at least a few minutes with every man in the room every day. From 2 until 7 o'clock the professor works with his students, and the student learns often more in the five or ten minutes during which Professor Fick criticizes his work, asks questions, and makes friendly suggestions, than in many hours of study with his anatomical atlas.

Conditions are the same in the chemical and physiological laboratories. Nowhere is the number of students so great that the professor is unable to give personal attention to each man for at least some minutes during every period of work. The clinics, too, are not overcrowded. For example, in the interne clinic the students are divided into groups of four, each group in charge of one of the clinical assistants. Each semester these groups spend two hours of the afternoon five times a week in visiting some ward, where they are given practical instruction in the examination of patients, the making of blood or urine tests, and the like.

For men already qualified who are anxious to pursue some definite scientific work the circumstances are even more favourable. There is plenty of room, and the professors have not only time enough, but are also more than kind in their willingness to help any one who wishes to work in their clinics or laboratories. And one can be sure of meeting one's chief almost every day and of finding in him not only an inspiring teacher but also a friend. Innsbruck is one of the few German or Austrian universities that I know in which the professors are not merely content with their official relation to their advanced students, but invite such advanced students to their houses and welcome them to their tables.

It is often urged that in Vienna the clinical material is unusually large and varied. This is not always so. Many of the surgical clinics, for example, are small, set in some circumscribed area of the large city, and drawing their material from this area alone. In Innsbruck the Allgemeines Krankenhaus draws its material from all Tyrol. Cases come from all ends and corners of the country and are much more widely representative than those of a Viennese clinic. Especially is this the case in the surgical clinic, and in Professor von Haberer, the university has a surgeon of exceptional ability; not only a great master of his art, but a great teacher as well, whose lecture-rooms are always crowded and whose operations it is a never-failing delight to watch.

When one considers the natural beauty of Innsbruck, [illegible] for winter sports, for mountain-climbing, and [illegible] arduous but quite as attractive excursions, it is [illegible] and why those English-speaking medical [illegible] to get the most out of their years [illegible] all themselves under the Innsbruck faculty instead of spending their time in Vienna.

I have lived for five years in Innsbruck, and have been [illegible] faculty for the last three, so that I [illegible] knowledge in this matter, and I [illegible] any service to any medical men who [illegible] lying at a German university and who are discouraged by the conditions that must for some time continue to prevail at the University of Vienna.

Of course, Innsbruck is no place for the mere idler or for any one who is unwilling to confess to such gaps in his medical knowledge and training as many of us possess. But for the man who is in earnest, who is anxious to spend his time to the best advantage, and is not afraid of thorough work, who knows a little German and wants to learn more, who loves the mountains and the delight of living among them, even if he does not climb them—for him Innsbruck is an ideal habitation. And in the Innsbruck University he will find a kindly Alma Mater.—I am, etc.,

JOHN RATHBONE OLIVER.

Schloss Felsegg, Wiltenerberg 3, bei Innsbruck, Tyrol, Austria, Aug. 7th.

THE REPETITION OF PRESCRIPTIONS.

SIR,—In your issue dated August 17th there is a very excellent letter on the above subject by Mr. Percy Noweli, who signs himself Pharmacist. I congratulate the writer on ventilating a much vexed question. It is open to the consultants to lead the way in some such manner as this: A patient attends for an opinion; the prescription is in due course written but, instead of being given to the patient, is posted direct to the patient's doctor, a copy being retained for future reference in the consultant's note or prescription book. It rests entirely with the medical practitioner how many "repeats" the patient gets. There are exceptions to every rule, and in the present case they resolve themselves into the following classes:

(*a*) Those patients who are on the point of travelling abroad.
(*b*) Those moving about without fixed address or fixed doctor.
(*c*) The few who have no local doctor.
(*d*) The few (and under this rule a diminishing few) who insist on their visit to the consultant being kept from their local medical man.
(*e*) The few who demand their prescription as a sort of natural birthright.

To all these a prescription can be given, but headed in some such guarded manner as:

Instructions to Chemists.

No repeat after.....date.

Or

Not to be repeated more than.....times.

I am, etc.,

JOHN A. SWINDALE, M.D.

Whitchurch, Hants, Aug. 26th.

EUGENICS IN THE "ANATOMY OF MELANCHOLY."

SIR,—We know "there is nothing new under the sun," but in no respect does this trite aphorism seem more true than in reference to the "new" science of eugenics—the "baby science" some have called it with its "new-fangled" proposals, as the *Church Times* puts it. I enclose an extract—300 years old—from the *Anatomy of Melancholy* of Robert Burton, a divine who dabbled in medicine in the seventeenth century, where the whole thing, including the sterilization of the unfit, is put in a nutshell, and is, moreover, mentioned as being a thing of the past even in those old days.

CAUSES OF MELANCHOLY.

Subsec. vi. Parents a cause by propagation.

So many several ways are we plagued and punished for our fathers' defaults; in so much that (as Fernelius truly saith) "*it is the greatest part of our felicity to be well born: and it were happy for humane kind, if only such parents, as are sound of body and mind, should be suffered to marry.*" An husbandman will sow none but the best and choicest seed upon his land; he will not rear a bull or an horse, except he be right shapen in all his parts, or permit him to cover a mare, except he be well assured of his breed; we make choice of the best rams for our sheep, rear the neatest kine, and keep the best dogs; "*quanto id diligentius in procreandis liberis observandum?*" and how careful then should we be in begetting of our children? In former time, some countreys have been so chary in this behalf, so stern, that, if a child were crooked or deformed in body or mind, they made him away; so did the Indians of old (by the relation of Curtius), and many other well-governed commonwealths, according to the discipline of those times. Heretofore, in Scotland, (saith Hect. Boethius) "*if any were visited with the falling sickness, madness, gout, leprosie, or any such dangerous disease, which was likely to be propagated from the father to the son, he was instantly yelded; a woman kept from all company of men: and if*

by chance, having some such disease, she were found to be with child, she with her brood were buried alive"; and this was done for the common good, lest the whole nation should be injured or corrupted. A severe doom, you will say, and not to be used amongst Christians, yet more to be looked into than it is. For now, by our too much facility in this kind, in giving way for all, to marry that will, too much liberty and indulgence in tolerating all sorts, there is a vast confusion of hereditary diseases, no family secure, no man almost free from some grievous infirmity or other. When no choice is had, but still the eldest must marry, as so many stallions of the race; or, if rich, be they fools or dizzards, lame or maimed, unable, intemperate, dissolute, exhaust through riot (as he said) "*jure hereditario sapere jubentur*"; they must be wise and able by inheritance; it comes to pass that our generation is corrupt; we have many weak persons, both in body and mind, many feral diseases raging amongst us, crazed families, "*parentes peremptores*": our fathers bad; and we are like to be worse.—BURTON: *Anatomy of Melancholy*, Part I, Sec. 2, Mem. 1, Subsec. vi.

"In former time," "Heretofore in Scotland," among "the Indians of old," are the phrases used in describing the theory and practice of eugenics by this writer just 300 years ago.

And notice how then, as now, the more extreme proposals, the logical outcome of the theory, were regarded as a little too extreme by the moderate men: "A severe doom, you will say, and not to be used amongst Christians, *yet more to be looked into than it is.*"

Well, three centuries have passed since Burton noted that "our generation is corrupt; we have many weak persons both in body and mind," and also that "there is a vast confusion of hereditary diseases, no family secure, no man almost free," so panic seems unnecessary, and it may relieve some to find that there is evidently nothing new in the present propaganda.—I am, etc.,

August 26th. ANTIQUARY.

THE HISTORY OF MEDICINE.

SIR,—I should like to congratulate you on the idea of having articles in the JOURNAL such as your first on "The History of Medicine." There is no subject on which we are more ignorant. It was a revelation to me, and made me think with Solomon that there was nothing new under the sun; but the writer of that article has done scant justice to the Egyptians when he says, "Egyptian doctors anticipated one of the most 'modern' fads—that disease is cured chiefly by fasting." What follows, indeed, proves what I say; and, whether the "modern" profession continue to call fasting a fad and pay so little attention to the lessons to be derived from history, it surely will be astonished to learn how much the Egyptians attempted by their practice 2,000 years before Christ, and that Hippocrates himself may have benefited by the records they left behind them.

A few articles on the practice of Hippocrates, whose writings remain as a mine of wealth in which even the "modern" physician may dig with advantage, would be most opportune, as well as some account of his medical ethics.—I am, etc.,

Hawick, Aug. 26th. JOHN HADDON, M.D.

Obituary.

THE LATE PROFESSOR J. J. CHARLES.

"ONE OF HIS OLD PUPILS" writes: The announcement of the death of the late Professor J. J. Charles, noted in your columns last week, caused a great shock, and has produced a feeling of the deepest regret to those of his numerous personal friends who have already seen it, as it will to those, including a very large number of his former pupils, who are too far distant to have as yet learned of it. Numerous expressions of regret and of sympathy with his relatives have already appeared in the medical and lay press, and convey to some extent how widespread is the feeling of sorrow. This has been especially marked in the city of Cork, where so many years of his useful life were spent in teaching, and where, in consequence, his work is best known and appreciated. An effort will here be made to bear some testimony, however inadequate it may be, to his personal merits and worth.

In October, 1875, he succeeded Professor Joseph H. Corbett in the Chair of Anatomy and Physiology in Queen's College, Cork. This position he held till his retirement in 1907. During the active period of his life Professor Charles made numerous contributions to medical and scientific literature, amongst which may be mentioned the following, which he contributed to the *Journal of Anatomy and Physiology*: Researches on the Gases of the Bile (1882); On the Mode of Propagation of Nervous Impulses (1879); and The Causes of the Entrance of Oxygen into the Blood in the Lungs. It is, however, of his personal character and teaching that it is here desired to make special mention.

He was an exceedingly fine character and a striking personality—tall, of commanding figure, and dignified bearing. Owing to his retiring and rather sensitive disposition, the real character of the man was known only to those who became intimate with him. He was above all things strictly honourable, straightforward, and reliable. He hated anything underhand or hypocritical. As a friend he was kindly, sympathetic, and absolutely trustworthy. Notwithstanding his sensitive nature, he was remarkably tenacious of purpose, and when he took up a position on any matter he was not easily shaken. This probably accounted for the fact that if he once became prejudiced against any person it was not easy to alter his opinion. This was his only marked weakness, as he was of a most charitable disposition, giving assistance in many instances in a quiet and unostentatious manner.

It was, however, as a teacher that Charles excelled and will be best remembered. His methods were very thorough and impressive. Following on the lines of his great teacher, Redfern, his teaching of anatomy was exceptionally good. He had little belief in the utility of mounted preparations or illustrations, but placed his faith in topographical anatomy as learnt in the dissecting-room, where probably he was seen at his best. He went around from one table to another imparting information, asking questions, and pointing out mistakes. This teaching was most highly valued by his best pupils. In recent years he devoted the greater part of his time to the teaching of physiology, owing to the increased demand made by its progress. As a lecturer, though not specially eloquent, he was very clear and impressive, and paid great attention to detail. The success of his teaching has been very great, as could be testified by hundreds of his former pupils, many of whom have gained high distinctions in the profession in various parts of the world.

He was largely responsible for the continued success of the Medical School of Queen's College, Cork, at a time when the welfare and even the existence of the college as a whole was seriously threatened in many ways. That he took a deep interest in its future success is proved by his having on his retirement given to the governing body of the college a special donation for the establishment of the Charles Gold Medal, to be awarded in alternate years in advanced histology and physiology and in advanced anatomy respectively.

Professor Charles was married twice—first in 1873 to Harriett M. Godfrey, and in 1880 to Georgina E. Smith. His eldest son, Godfrey, the only child of his first marriage, was a very brilliant and distinguished student of Queen's College, Cork, and entered the Indian Medical Service, where he would undoubtedly have earned high distinction, but died at an early age. The memory of this son is perpetuated in the North Charitable Infirmary by a memorial tablet in the "Godfrey Charles Ward," which was so named by the trustees in consequence of their having received from his father a special and liberal donation to the institution. He is survived by four sons and three daughters. His widow, children, and relatives, amongst whom is included his youngest brother and former pupil, Sir R. Havelock Charles, K.C.V.O., may rest assured that in mourning his loss they have the deepest sympathy of his late colleagues, innumerable former pupils, and all his old associates.

HUBERT DUNBAR SHEPHERD, M.B., Ch.B., F.R.C.S.,

SURGEON TO THE CHILDREN'S HOSPITAL, DERBY.

IT is with great regret that we have to announce the death of Dr. Hubert Dunbar Shepherd, which took place on Monday, August 12th, at his residence in Derby, after a short and sudden illness. Dr. Shepherd was a native of Wigan, being the second son of Dr. C. D. Shepherd, Consulting Surgeon to the Wigan Infirmary. He graduated M.B., Ch.B., in 1900, and took the Fellowship of the Royal

College of Surgeons in 1903. He was House-Surgeon and Surgical Tutor to Professor Annandale in the Royal Infirmary, House-Surgeon to Mr. Stiles at the Royal Hospital for Sick Children, Senior Demonstrator of Anatomy in the New School of Medicine, Edinburgh. He was also elected President of the Royal Medical Society in 1903. He went to Derby about seven years ago as partner to Dr. Parry Jones. He became Surgeon to the Derbyshire Sick Children's Hospital. In intellectual capacity Dr. Shepherd was equalled by very few students of his own time, while in originality of mind he was pre-eminent. Well fitted to conduct original research, he did good work in the anatomical laboratory, though his published papers were few, that on cranio-cerebral topography, in collaboration with Professor R. J. A. Berry (BRITISH MEDICAL JOURNAL, 1904), being, perhaps, the best known. Dr. Shepherd was still in the early thirties when he died, leaving a young widow and two daughters, the younger being only one month old. To these and to his other relatives our sympathy is offered.

D. C. L. F.

WILLIAM CLAPTON, F.R.C.S.

THE death of Mr. William Clapton, F.R.C.S., took place at Canterbury on August 20th, at the age of 78. He was born at Stamford, a member of a large family, and his father had no thought of enabling him to enter the medical profession, as in the case of his elder brother: it was only by indomitable perseverance that he gained his desire. He was educated at Christ's Hospital—first at Hertford and then in London—and thus began his connexion with the City of London, which was to be his sphere of active work for many days to come: the somewhat Spartan régime of his school days enabled him to endure many a hardship in the accomplishment of his purpose. When his school days were over he was apprenticed by his father to an apothecary in London, and in recollections of those early days of drudgery he used to tell of the rhyme with which he would be taunted by the street boys:

> O Salts and Senna, you would not do for me:
> I'd rather go to Jericho than a doctor's boy I'd be.

He had not much spare time and very little spare cash, but he used often to employ his meal times in running for books to a library in order to improve his education, and had to buy his own candles in order to sit up to read them. Gibbon, Grote, and Adam Smith were authors whose works were devoured by young Clapton: memory was so retentive that he could repeat the whole of "Paradise Regained," as well as the whole of the Psalms in the Prayer Book version. Thus by pluck and perseverance he prepared himself for a professional career, and eventually entered St. Thomas's Hospital then situated at London Bridge.

Very soon after he had obtained the diploma of M.R.C.S. (1857) he began practice in the City of London, where he continued until his retirement some few years ago. For most of the time he was in Queen Street, E.C.; for many years he was medical officer of the British Equitable Assurance Company, and his shrewd advice was highly valued by the directorate of that company. He was long secretary of the City of London Medical Book Society, and identified himself with the general interests of the profession in the City. Besides this, he threw himself into the many activities associated with city life, and for ten years represented the Vintry ward on the Court of Common Council. He was a most sociable man and had a large circle of friends.

On his retirement from practice he settled at Canterbury in order that he might attend the Cathedral services. Although a very strict protestant, he was very fond of a good musical service, and it was a great delight to him to be close to the great cathedral. For some years he was churchwarden at St. Stephen's Church, Canterbury, as he had been previously at other churches. He took part in many kinds of social and philanthropic work at Canterbury, in which he was actively engaged until a few weeks before his death.

IT is with regret that we have to record the death of Dr. JOHN THEODORE ABBOTT, of Tunbridge Wells, on August 4th, at the early age of 46. Dr. Abbott came of an old Irish family which settled in co. Tipperary in the time of Cromwell. He was a son of the late Surgeon-Major Abbott, of the Army Medical Service, and was educated at Bedford and Trinity College, Dublin. He took the diplomas of L.R.C.P.I. and L.M. in 1887, and in 1899 became F.R.C.S.I. After a brief period in London, Dr. Abbott settled over twenty years ago in Tunbridge Wells, and speedily by his skill, kindliness, and lovable personality built up a very extensive practice. He was never, however, very strong physically, and the tax of a heavy practice told upon him severely at times. For this reason he was compelled to resign his seat on the Tunbridge Wells Town Council and other public bodies in which he was interested. He was a keen surgeon, one of the earliest motorists in England, and an able member of the Council of the Irish Medical Graduates' Association. The news of his unexpectedly sudden death came as a great shock to the large circle of friends his kindly, unselfish, useful life had gathered around him. He leaves a widow and one son.

WE regret to record the death of Dr. HOWELL WHITE, of Corwen, Merionethshire, as the result of a riding accident. He was in his 61st year, and had resided in Corwen for about thirty-eight years. He received his medical education in Edinburgh, and graduated M.B., C.M.Edin. in 1877; he took the M.R.C.S.Eng. in the same year, and the D.P.H.Camb., 1891. He first went to Corwen as assistant to the late Dr. Jones, subsequently became his partner, and eventually succeeded him. He was Medical Officer of Health for Edeyrnion district, Certifying Factory Surgeon, and medical officer to the Post Office; he was also medical officer to many friendly societies. He showed himself very loyal to the policy of the British Medical Association in respect to the insurance scheme, was a guarantor to the Insurance Defence Fund, had signed the undertaking and supplementary pledge, and had signed also his resignation of his club appointments. Dr. White was very popular in the district, both with his patients and colleagues.

THE death of Dr. W. RICHARDSON RICE at the comparatively early age of 53 leaves a gap in the medical ranks at Coventry which will not be easily filled. Dr. Rice had a successful career at Trinity College, Dublin, acquiring there the degree of M.A., and subsequently those of M.B. and M.D. In 1889 Dr. Rice entered into partnership with Mr. Masser, of Longford, but this connexion did not last long, and he then settled in practice at Gosford Green, where he resided until the time of his lamented death. Having obtained a Poor Law appointment, and possessing in an exceptional degree the gift of public speaking, he soon became a prominent figure, both politically and medico-politically, and he materially assisted in the attempt to bring the rules of the provident dispensary into line with the wishes of the majority of the profession. Dr. Rice was a successful lecturer and examiner for the St. John Ambulance Society, and, until the three years preceding his death, when ill health compelled his retirement, was prominent in his discussions of political and social questions. Dr. Rice married a granddaughter of the late Mr. William Pridmore, a well-known citizen of Coventry and Stoke, but leaves no family.

Universities and Colleges.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—R. V. Martin, *P. M. Másiná, *J. G. Ogle, *J. E. Robertson-Ross, †O. W. D. Steel, B. W. F. Wood.

MEDICINE.—*R. Jones, R. V. Martin, *J. G. Ogle, †M. M. Patterson, *J. E. Robertson-Ross, *B. W. F. Wood.

* Sections I and II. † Section I.

FORENSIC MEDICINE.—R. Jones, J. E. Robertson-Ross, B. W. F. Wood.

MIDWIFERY.—P. M. Másiná, J. E. Robertson-Ross, R. A. Robinson, O. W. D. Steel, B. W. F. Wood.

The diploma of the Society has been granted to Messrs. R. V. Martin, P. M. Másiná, M. M. Patterson, J. E. Robertson-Ross, and B. W. F. Wood.

Medico-Legal.

INSURANCE ACT.

Prosecution of Employer.

Two other prosecutions of an employer for failing to comply with the provisions of the Insurance Act in regard to the contributions payable by him have been heard in the London District since the case reported last week. At Woolwich Police Court, on August 21st, Mr. A. T. Westbrook, baker and confectioner, of Eltham, was defended by the Insurance Act Protection Society, represented by Mr. Jellicoe, whose contentions were similar to those in the first case. The prosecution was conducted by Mr. Travers Humphreys. The magistrate held that no question of contract arose whether medical benefit had or had not been carried into effect. He imposed a penalty of £5, with five guineas costs, or fourteen days' imprisonment, on the first summons, and a fine of 20s., with 2s. costs, or seven days' imprisonment, on each of two other summonses. He consented to state a case.

The second case was heard at the North London Police Court on August 22nd, the defendant being Mr. William Slate, a builder of Islington, for whom Mr. Jellicoe appeared. There were in all eight summonses, and the magistrate on one summons imposed the full penalty of £10, with five guineas costs, or twenty-one days' imprisonment, and upon all the other seven summonses a fine of 1s., with 2s. costs: he also, under Section 69, ordered the defendant to pay the arrears—namely, 7d. a week in respect of each workman.

Mr. Hurlock, whose case was reported in the last number of the JOURNAL, has decided to appeal against the decision.

WORKMEN'S COMPENSATION ACT.

Accident or Heart Disease?

In a case recently heard at the Glasgow Sheriff's Court, it was alleged that a man had sustained injury to his heart owing to his using heavy hammers weighing from 7 to 21 lb. It came out in evidence that when engaged at his ordinary work he used these hammers, but on the day of his death he had merely been hammering some metal sheathings for a short time. Subsequently, while holding the metal with tongs for some time, he complained of a pain in his breast and then fell back. He died in hospital a few hours later. The Sheriff-Substitute, who sat with a medical assessor, in dismissing a claim for compensation, said: "It is hopeless to attribute the death in these circumstances to accident. It is almost certain that if the rupture had been due to accident death would have been instantaneous, due to a tear of an artery and an outburst of blood. Moreover, the unfortunate man was really resting at the time, and not engaged in heavy or any work. The medical assessor thinks death was due to disease, not accident, and I feel reluctantly bound to agree."

Medical News.

SIR JOSEPH FAYRER, Bart., M.D., F.R.C.S.E. (late P.A.M.C.), Superintendent of the Royal Infirmary of Edinburgh, has been made a Knight of Grace.

THE Argyll sleeve valve engine is about to be applied to marine work as well as to motor cycles.

DR. HERBERT JONES, M.O.H. for the Herefordshire Combined District, one of the fourteen medical members who retained their seats on the Advisory Committee, has now sent in his resignation.

THE Honorary Secretary to the medical staff of the Swansea General Hospital has informed the Board of Management that all the members of the honorary active medical staff, and all the members of the consulting staff with one exception, have signed the pledge issued by the British Medical Association with special reference to the treatment of insured persons in any voluntary medical charity.

THE National Brotherhood Council is about to publish in a volume the addresses on temperance delivered by various members of the British Medical Association during the annual meeting at Birmingham in July, 1911. Among the speakers were Sir T. S. Clouston, Sir Victor Horsley, Sir Alexander Simpson, and Professors Murdoch Cameron, Sims Woodhead, and Hellier. The volume will be entitled *Fifty Doctors Against Alcohol: a Call to National Defence.*

IT has been arranged to open in November a preliminary school in connexion with the training school for midwives and monthly nurses at Queen Charlotte's Hospital, London. Candidates will have the opportunity of a month's preliminary training under the supervision of a sister in charge, and of attending lectures on elementary anatomy and physiology, and receiving instruction in sick-room cookery, and such details of practical nursing as can be taught before actual attendance on patients and infants.

THE late Professor Lombroso offered every second year in connexion with the *Archiv. d'Anthropologia Criminale* a prize of Fr. 500 for the best work in connexion with criminal anthropology. His family have now offered to the Organization Committee of the Eighth International Congress of Criminal Anthropology a prize of Fr. 1,000 for the best work reported to the congress which is to be held in Budapest in the summer of 1914. The prize is open to persons of any nationality, and the work must have been done between 1911 and 1914. Further information can be obtained from Professor Dr. G. Aschaffenburg, Coln-Lindenthal, Stadtwaldgürtel 30.

IT is recorded in a recent issue of *Paris Médical* that in the course of the restoration of the parish church of the village of Balbronn, in Alsace, the tomb of the noble and valiant Jean de Mittelhausen, who died in 1564, was opened. With him had been buried his artificial arm, made of steel, and still in a state of preservation sufficiently perfect to make it easy to appreciate the skill with which it was constructed. It consists of three parts with hinges corresponding to the elbow and wrist; the forearm could be moved through an angle of 90 degrees, and a toothed wheel and catch enabled it to be fixed in any intermediate position. By pressing on a button at the wrist the forearm was extended again. The hand is described as a mechanical marvel. The three phalanges of the four fingers were all movable, and were made to move on pressing a button in the palm. The thumb was made to move independently of the fingers. This ingenious example of the instrument maker's art has now been placed in the museum established in the old palace of the Rohans in Strassburg.

IN a report to the British South Africa Company on sleeping sickness in Northern Rhodesia to February, 1912 Dr. May, the Principal Medical Officer, in discussing the human trypanosome of the Luangwa valley, states that there are three possibilities: (1) That it may be a modified *T. gambiense;* (2) that it may be a modified animal trypanosome; and (3) that it may be a new species. The fact that up to the present the disease has been encountered chiefly on or near the main traffic routes from endemic areas known to be infected by *T. gambiense* is, he believes, a point in favour of a close relationship between the two infections. The fact that there is a different intermediate host and certain differences in morphology and virulence can possibly be accounted for by the adaptation of the organism to its surroundings. In Dr. May's opinion, the more important work which it remains for the Commission to do comprises: (1) Further study of game and domestic animal trypanosomiasis; (2) plateau transmission work; (3) experiments as to the transmitting power of other blood-sucking insects- for example, ticks, floor maggots, mosquitos, tabanids, stomoxys, etc.; (4) the investigation of the identity of the trypanosome.

NEAR Dingwall, on August 26th, a young girl and a woman were killed, and another woman severely injured by a shock of electricity. The Dingwall supply of electricity is produced at Raven's Park, Achterneed, some six miles away, and the current is taken to Dingwall on an overhead copper wire, which passes through the farm of Fodderty. Behind the farm-house the wire runs on wooden standards, passing through a small belt of trees. About 9.30 a.m. on August 26th, owing to the storm, a branch of one of the adjacent trees fell on to the wire, causing a short circuit, following which the wire fused, broke, and fell to the ground, where one end of it lay in the grass, sending out showers of sparks. Minnie Ross, the 11-year-old daughter of Mr. Ross, foreman on the farm, was returning from the fields. No witnesses were about at the time, but it appears she must have gone off the road to see where the sparks were coming from. She had evidently placed her left foot on the wire, as her boot was burned quite through, and the flesh charred to the bone. Her right hand also must have come in contact with the wire, as it was badly charred. Mrs. Grant, who was summoned by a boy who had seen the girl fall, immediately ran to the girl, and had apparently gripped her round the shoulders and breast; she shared the same fate, though she does not seem to have touched the live wire, as no marks were visible. Mrs. Ross, the girl's mother, came next, and seized the wire to pull it clear, and she also got the current through her body. A man hearing screams came to the rescue, and seeing Mrs. Ross move, grasped her skirts and pulled her clear; she immediately turned on her side, and the natural colour gradually returned to her face, which, as in the case of the others, had turned a dark livid hue. Medical aid was summoned, but the girl and Mrs. Grant were dead.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

M. T. B. asks how a "double chin" may be cured by massage.

OLD STEYNE asks for advice in the choice of a small ice machine, capable of making about 2 lb. of ice, for use in India.

T. asks what minimum wall space should be allowed per patient in a sanatorium of modern construction, where the wards are to accommodate thirteen patients each.

INCOME TAX.

A CORRESPONDENT, who is in practice abroad, has taken a house in this country in his wife's name, in which his family reside for three months a year, and he himself for a similar period each second year. The only income of husband and wife is the professional income arising abroad. He asks whether he is liable to income tax in this country.

*** The profits of the foreign practice are not liable to British income tax as such. The only question that could arise would be as to the liability to assessment for sums remitted to this country. The sole ground of assessment of such remittances would be that the practice is a foreign "possession," and professional profits have never been regarded as coming within this description. Moreover, in the special circumstances our correspondent cannot be said to reside in this country himself, so as to be liable to the income tax, and his wife would certainly not be chargeable on the sums sent to her out of the profits of the practice.

ANSWERS.

DR. EDWARD JEPSON (Durham) writes: If "Tubercle" will only think of Western Canada instead of South Africa he will derive much greater satisfaction from the result. I have been to Canada and Davos Platz and Madeira, and feel very confident that Western Canada gives something like hope for the consumptive in the quiescent stage. Some patients of mine went to Western Canada two years ago, and the result has been highly satisfactory. The climate of the British Isles is not suitable for consumptives, and it is deplorable to contemplate the money about to be wasted on sanatoriums under the National Insurance Act.

TREATMENT OF NEURITIS.

DR. G. VIGERS WORTHINGTON (Llandrindod Wells) writes, in answer to "Cymro's" inquiries in the BRITISH MEDICAL JOURNAL of August 17th as to the treatment of neuritis: In all probability the neuritis is the first and perhaps the only evidence of a gouty condition, the fatigue being the factor which determined the deposit in the affected nerve. The treatment should be both *general* course of waters and diet, taken preferably at some spa of known service in such conditions; and *local*—the arm should be kept in a sling and treated with applications of hot air (Tyrnauer or Greville [illegible] or [illegible]phoresis (salicylic followed by iodine ions); [illegible] *cataphoresis* is often more effective if immediately preceded by the heat applications. Of drugs, perhaps aspirin is the best, followed later by potassium iodide with or without [illegible] salicylate, and finally a general tonic containing arsenic and strychnine.

LETTERS, NOTES, ETC.

HOLIDAY, Post Restante, Armagh, Ireland, has loose copies of the BRITISH MEDICAL JOURNAL from January 1st, 1907, to July 31st, 1912, which he would like to dispose of for the benefit of [illegible] charities.

BREECH PRESENTATIONS.

DR. FRANCIS PAIN (Allora, Queensland) writes: In regard to Dr. Ilott's memorandum (June 1st) on three successive breech presentations, I beg to record that we can beat that here. There is a woman here who has had seven children. The first six were girls, and were all born breech first; the seventh was a boy, and was born head first. She says the last labour was the worst of the lot. I attended her myself, and all the children are alive and well.

SCARLATINA INFECTION.

DR. J. REID (London, W.C.) writes: The discussion in the BRITISH MEDICAL JOURNAL of August 17th recalls the fact that I failed to trace the cause of an isolated case of scarlatina in a London district, except to two peeling cases discharged from a north country isolation hospital, with whom the child played. Theories often affect only their propounders. Those who, like myself, have looked on scarlatina as running a course of about six weeks, may expect a serum to cut short the disease. Desquamation, as complete as in scarlet fever, may take place in a few days.

EFFECT OF SCOPOLAMINE AND MORPHINE IN LABOUR ON THE CHILD.

GERALD S. SAMUELSON (Mia Mia, Bangalow, R.R.) writes: Concerning the effect of morph. c. hyoscy. used in labour upon the infant. Eliminating cases of pelvic, footling, and transverse presentation, I have never seen any effect whatever upon the infant, though I have used at least one injection of ¼ and $\frac{1}{150}$ grain respectively in each of my last 120 cases of cephalic presentation. Of these, 98 were delivered under chloroform, also, in 43 instances, with the aid of instruments. These figures include 3 twin births and 4 dead children. One patient received in all morph. hydrochlor. gr.j, and hyoscy. hydrobrom. $\frac{1}{75}$ gr. I was called in when away from home, and the messenger who went for chloroform broke the bottle on his midnight ride. This was a primipara, the presentation posterior cephalic; delivery was instrumental.

MERCURY PERCHLORIDE IN OPHTHALMIA NEONATORUM.

DR. D. N. COOPER (London) writes: It is not generally known that in the prevention of ophthalmia neonatorum mercury perchloride in the strength of 1 in 4,000 to 6,000 has no rival. The solution must be prepared to the exact strength, and not by guesswork, and the nurse can be instructed to use it freely by instilling it into the eye and wiping it over the face and head, the only precaution being not to let it run into the mouth or let the infant lick his hand or suck it after wiping it over the face. I have used it for the last three years with unfailing success, and never regretted giving up the nitrate or acetate of silver. It can be used as long as there is suspicion of an angry look about the eye, but I have never had occasion to use it after the third day—in the majority of cases not after the first day.

MEDICAL FEES IN 1700.

DR. S. D. CLIPPINGDALE (London) writes: Mr. Lloyd George, in drafting his Insurance Bill, did not consider it necessary to consult the doctors. With regard to remuneration, if he had looked up the literature of the subject, he would have obtained some useful hints. For instance, in a work published in 1700, entitled *Cordial Comfort for the Sick and Diseased*, I find the following: "To a graduate in physick, his due is about ten shillings, though he commonly expects or demands twenty. Those that are only licensed physicians, their due is no more than six shillings and eightpence, though they commonly demand ten shillings. A surgeon's fee is twelve pence a mile, be his journey far or near; ten groats to set a bone broke or out of joint; and for letting of blood one shilling; the cutting off or amputation of any limb is five pounds; but there is no settled price for the cure."

RHEUMATISM AND PHTHISIS.

AGARICUS, who has come across a statement, often made—we do not know on what authority—that consumption does not affect the rheumatic, writes that he formerly on several occasions produced rheumatic conditions of ankles and feet by a regular daily breakfast of *Agaricus atramentarius*, stewed. This fungus is so much like a mushroom, grilled, fried, or stewed, that he suggests that mushroom should be tried in its place. He mentions the case of a gardener who had rheumatic pains in his calf muscles from time to time (cured by tincture of iron) associated with his habit of eating uncooked mushrooms. The cramps disappeared entirely when he gave up the habit. Our correspondent suggests that a daily breakfast of mushrooms, or of *Agaricus atramentarius*, should be tried for a week or two, and the effects noted in cases of phthisis.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

LONDON: SATURDAY, SEPTEMBER 7TH, 1912.

EDUCATIONAL NUMBER, SESSIONS 1912-1913.

THE PROFESSION OF MEDICINE.

THE object of the Educational Number of the BRITISH MEDICAL JOURNAL is to give to young men and women and their parents or guardians information as to the medical curriculum and the medical schools and colleges in which the necessary instruction may be received, and as to the regulations of the universities and colleges which grant degrees or diplomas entitling the holder to be registered on the *Medical Register*. The General Medical Council is responsible under the Medical Acts for maintaining the accuracy of the *Medical Register*, and publishes a revised edition early in each year.

The first Medical Act, that of 1858, is entitled "an Act to regulate the qualifications of practitioners in medicine and surgery," and the preamble states that it was passed because "it is expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners." It provides that any person who shall wilfully and falsely pretend to be or take or use the name or title of a physician, doctor of medicine, licentiate in medicine and surgery, bachelor of medicine, surgeon, general practitioner, or apothecary, or any name, title, addition, or description implying that he is registered under the Act, or that he is recognized by law as a physician, or surgeon, or licentiate in medicine and surgery, or a practitioner in medicine, or an apothecary, shall, upon a summary conviction for any such offence, pay a sum not exceeding twenty pounds.

The amending Act of 1886 contains a clause stating what are the general privileges of registered persons. They are entitled to practise medicine, surgery, and midwifery in the United Kingdom, and (subject to any local law)[1] in any other part of His Majesty's dominions, and to recover in due course of law in respect of such practice any expenses, charges in respect of medicaments or other appliances, or any fees to which they may be entitled. It should be at once added, however, that the penal provisions of the medical Acts are, as must be well known to most persons through the ordinary sources of information, quite insufficient to prevent the practice of medicine by unqualified persons.

Originally the scope of this annual Educational Number did not extend beyond giving information under the above heads—that is to say, it was for the most part confined to information as to the course which must be followed in order to obtain a registrable qualification. Its scope has, however, been extended from time to time to include some account of the various public services open to registered medical practitioners as well as of the special courses of instruction and special examinations required in respect of the majority of them. This extension, though convenient to inquirers, nevertheless presents, from another point of view, one very distinct drawback. In such a compilation it is very difficult to avoid making statements which may, by the incautious, be interpreted as embodying an opinion as to the paths in medicine likely to afford the best travelling, and the use of expressions which may be taken as implying a belief that the careers of those who this year or next begin the study of medicine are full of promise. We desire it distinctly to be understood that nothing in this issue is intended to bear either interpretation. At the present time no one could give sound advice on the one point or make anything approaching a reasonably safe prophecy on the other.

For many years past the conditions of medicine as a profession have been gradually changing, and recent developments both in science and in social economy threaten to change it still more radically and even more rapidly.

It is true that medicine possesses attractions which no conceivable change can ever entirely eliminate; it must always appeal to men of scientific mind and to those inspired with a desire to exercise among their fellows the most practical of all religions. But when this much has been conceded, it should be added that it is quite uncertain for how much longer men of scientific mind who practise medicine and surgery will find their hands entirely free. Fight as the profession may and will, there is too much room to fear that the trend of legislation will, as it does, tend to place the practice of medicine increasingly under bureaucratic control of more or less open kind. The same tendency has already clipped the wings of the altruist, who finds his opportunities diminished by the iron hand of officialism, not always clothed in a velvet glove. It is difficult to feel any certainty as to what line of practice will in the future prove most pleasant to a man either of ambitious or independent mind. Unless those who enter the medical profession in the near future are possessed of considerable private means, it is easy to believe that they will eventually find that they have no cause to congratulate themselves on their choice of a career.

Even as things are, medicine is a much less remunerative profession than many people suppose. The possession by medical men of carriages and motor cars, perhaps, helps to create a delusion on

[1] Such local laws exist in the dominions, and in all, or nearly all, colonies.

this point; they are not luxuries but necessities, and their cost is to be reckoned amongst the charges which must be deducted from the gross in order to arrive at the net income. The delusion is fostered also by forgetfulness of the fact that a considerable proportion of medical men are not entirely dependent on their professional incomes. Some men enter medicine because they like work of a scientific kind, and are independent of its financial outcome; while many others are persons to whom their earnings are certainly of importance, but by no means their sole source of income.

There are, of course, members of the profession whose annual earnings are considerable, and a few of whom it may be said that they derive a large revenue from the practice of their profession; but it is the income of the average man that has to be considered, and it is certain that the average man makes no more than just about enough to pay his way as a member of an ostensibly well-to-do section of society.

In making this statement we are not overlooking the fact that the world has recently been informed that the average income of a medical man is £700 a year. But, admitting for the moment the accuracy of this statement, what can be the practical value of an estimate of this kind? The combined incomes of any two given individuals may equal £14 a week, but this does not mean that each of them can dispose of £7 a week. Neither does it mean that because ten medical men together make £7,000 each year each practitioner has an income of about £13 a week. The chances are that one or two are popular practitioners, earning, perhaps, two or three thousand a year, and the rest are struggling to keep up appearances and educate a family on £300 or £400 a year.

In any case, it is certain that, taking into consideration the length and expense of a medical education, the amount of industry and brain power necessary to obtain a qualification to practise, and the ceaseless labour that medical practice imposes, the financial results are very poor.

Private Practice.

As every one knows, the lines of work pursued by medical men vary greatly in different cases. Of all medical students a large proportion probably hope to develop into consultants or specialists, but sooner or later they learn that it is only to the few that a career of this kind is in fact open. Even in the case of an exceptionally brilliant student success involves years of weary waiting, during which not even a bare living is made from practice; in fact, only those who have private means can as a rule afford to wait. Moreover, the result is in any and every case extremely uncertain.

Despite, therefore, the apparent wealth of choice, the average newly qualified man has to elect between private general or family practice and an official career. Most men necessarily choose the former, if only for the reason that the number of posts in the public services is very limited.

For many years past the medical profession has been steadily attacking the causes of the best understood diseases, one result being that even the man in the street now knows what preventive medicine means, and appreciates its value. So, too, does the private practitioner as a citizen, while as a man of science he naturally exults in the achievements of the profession to which he belongs. On the other hand, as a person who has to pay bills, there are probably times when he must feel disposed to regret the restriction of the field of medicine and the continual growth of philanthropic institutions of a medical kind.

On the top of all this has come the Insurance Act. What will be the final result of a measure so revolutionary in its effect on medicine as a means of livelihood no one can at present foretell with certainty. But, assuming for the moment that it is eventually brought successfully into working order, the prospect is by no means reassuring for the majority of those who have nothing but private practice before them. If it is a success, it will be difficult, if not impossible, to prevent an extension of the system upwards. Will private practitioners, in that case, be able to continue to maintain their position? It is to be feared that, little by little, they will find themselves swept into a kind of universal medical service, in which there will be considerable restriction of thought and action without any counterbalancing advantage in the way of generous pay. Nor, in such case, will the private practitioner's present patients have reason to congratulate themselves, for, though there is room for linking up institutional treatment of one kind and another for their benefit, the substitution of official for personal service can never be satisfactory to them. On the whole, therefore, the outlook for those who must necessarily look to private practice—and they are the majority—is not encouraging.

Public Services.[2]

Medical Officers of Health.—There are a great many medical officers of health in this country, and, taken together, they form a kind of Public Service; but, although the work they do is national, they are appointed and paid, not by the State but by county and municipal councils and other like authorities. In fact, the only connexion between the various appointments is that, if the public authorities making them wish to receive back a portion of the expenditure on the salaries paid, every fresh medical officer must on appointment be approved by the Local Government Board. Hence there is no general standard of remuneration, nor as a rule any fixity of tenure: for financial promotion an officer must usually trust either to the fair-mindedness of his authority or to success in obtaining in competition with his fellows some better paid post elsewhere.

The majority of all medical officers of health are part-time officers engaged also in private practice; the salaries they receive range from £25 or less up to—in exceptional instances—£150 or more. Hence, for the most part the position of a medical officer of health can hardly be regarded as a definite alternative to engaging in general or specialist practice of a clinical order. The State, it is true, maintains a small staff of full-time officers, who work under the Local Government Boards of England, Scotland, and Ireland, but these appointments are not open to general competition. County and municipal councils also employ one or more whole-time officers, who receive inclusive salaries ranging from about £250 a year to, in a very few instances, £1,000 or over. Formerly medical officers of health were employed solely on duties connected with general sanitation and the prevention of epidemic disease, but recent legislation and the passage of various adoptive and other Acts have greatly increased their duties. Owing to one cause or another, competition for appointments in this service has grown increasingly acute during the past few years, and whether the increase of work to which allusion has been made will lead to any

[2] See also page 578.

diminution thereof still remains to be seen. Meantime, the effect has been to encourage authorities to offer salaries which are commonly modest and often inadequate.

Medical Inspection of Schools.—The passage of the Education (Medical Inspection) Act some five years ago led to the creation of a kind of service formed by school medical officers. There are a considerable number of them, but the majority are only part-time officers, and form a service which, except in regard to the duties performed, is practically on all-fours with the Public Health Service. Furthermore, the Board of Education has adopted the policy of correlating the work with that of medical officers of health, and has succeeded to such an extent that the two services may practically be regarded as one.

Tuberculosis Officers.—The sanatorium benefit of the National Insurance Act has indirectly imposed the necessity of the employment of a number of medical men as tuberculosis officers. These, when appointed, will form a kind of new public service, but not one likely to be regarded as offering a permanent career to more than quite a limited number of men.

Poor Law Medical Officers.—The number of medical men employed as district medical officers, or in other capacities, under the Poor Law is large, and they form what is in some respects more of a real service than any of those already mentioned. On the other hand, such service has still less claim to be regarded as an alternative to independent practice, since it contains very few whole-time officers, and the vast majority merely take charge of the paupers within their district as a branch of their private work. Since the publication of the report of the Royal Commission on the Poor Law it has been officially recognized that the majority of all medical officers in the Poor Law Service are "paid salaries miserably inadequate" to the work demanded, the part-time posts being taken only "to keep somebody else out," and the great majority of the not very numerous whole-time appointments only for the sake of gaining a little experience before settling down in practice. The office of Medical Superintendent of the large Poor Law infirmaries constitutes an exception, but the total number of such appointments is small. Furthermore, the Poor Law Medical Service should perhaps be regarded as an expiring service, for if the National Insurance Act proves successful there will be fewer Poor Law patients; and, as Poor Law medical officers are indirectly paid by capitation fees, their net income will tend to shrink.

Prison Work.—The Home Office maintains a staff of medical men to attend to the health of prisoners and their guardians. The undertaking of such work affords a definite career, but on turning to page 581 it will be seen that the service is a very small one and the rates of remuneration not attractive.

Asylum Work.—The care of the insane gives employment to a much larger number of medical men, and in the upper ranks is better paid. There is no system of promotion from one grade to another nor from one asylum to another, and, as will be seen on turning to page 575, the work is of a kind which would not appeal to or suit the capacities of most medical men as a permanent occupation.

The Military Services.—When all is said and done, it is found that, apart from a few scattered posts under various Government departments not hitherto mentioned, including the Foreign Office, the only services which offer a distinct and lifelong career to all who enter them are the Medical Department of the Royal Navy, the Royal Army Medical Corps, and the Indian Medical Service. Each of these offers financial advantages as compared with the prospects before most general practitioners (though for sundry reasons it is not to every student that the careers they offer would appeal). The West African Medical Staff is also entitled to be classed with these services, though it is too small to offer possibilities to more than a quite trifling percentage of the men who annually enter the medical profession. Information with respect to all of these services will be found in the pages of this issue.

Other Possibilities.

Apart from the careers hitherto considered, a certain number of other possibilities lie before newly-qualified men.

An increasing number of these never attempt to practise their profession, but, once qualified, devote themselves to some pure science connected with it. To make this course satisfactory, the individual must, of course, be mentally fitted for such a life, and since the remuneration to be gained is commonly very small, it is highly desirable that he should have private means at his back.

The newly-qualified man can also turn his thoughts towards gaining a livelihood in the Colonies. In the smaller dependencies or Crown Colonies this almost necessarily involves obtaining one of the appointments which the Colonial Office occasionally has to fill, for in few of them is there any real opening for European medical men other than those who live partly by private practice, partly by performing various duties for the local Governments. As to the large self-governing Dominions, it must be remembered that Canada and Australasia have large medical schools, and annually turn out a great number of well-qualified men, whose local knowledge and connexions give them a certain advantage over newcomers.

There are also appointments to be obtained under commercial organizations in tropical countries, but their acceptance entails both physical and financial risks, to which some further reference is incidentally made in an article at page 573.

Another possibility is to settle in some foreign health resort or other centre frequented by English-speaking visitors. This usually entails acquiring a foreign licence to practise, and consequently additional study for a varying period.

Choice of a Medical Qualification.

A medical student in this country unfortunately has a very wide choice with reference to the body from which he will eventually seek his qualification for registration. He will be well advised, however, to seek it from a university, and should have very clear reasons for taking any other course. Despite the fact that hundreds of medical men hold diplomas and not degrees, that of degree holders many never proceed beyond the Bachelorhood, and that many specialists, and especially surgeons, object to being addressed as "Doctor," the public takes it for granted that every properly qualified medical man must necessarily be an M.D., and if explanations ever become necessary in the case of individuals, it is disposed to receive them with a certain tincture of incredulity. Furthermore, universities have so multiplied of late years that the difficulty of obtaining a degree is no greater than that of acquiring a diploma; indeed, it may sometimes be less if the student has entered a school conducted by the medical faculty of a university, and is thus throughout his career in contact with those who will eventually take part in his examination. The fact

that the degree seeker has to matriculate does not affect the question materially, because in any case a prospective medical student has to pass an examination in general education, and between an examination called a matriculation examination and one called a preliminary examination in arts there is usually no practical difference. Indeed, the only distinct exception to this rule is the Matriculation Examination of London University, which from one cause and another has become a crammer's examination, or, in other words, one of a kind which the average boy from the higher forms of a public school can hardly be expected to pass unless specially prepared for it. There is one small class of men to whom the seeking of a university degree need not be advised—namely, students who enter the medical profession solely with a view to obtaining a commission in the Medical Department of one of the Military Services. In none of these is the possession of a degree of any particular advantage, while in all of them the prospect of rising high or of retiring on a good pension may materially be increased by entering young. Hence a candidate for these services may well choose whatever route towards a legal qualification may seem to him quickest and cheapest, with a view to being in a position to compete for an appointment at the earliest possible moment.

Cost of Education.

It is not easy to compare precisely the cost of medical education at the various medical schools. The fees of universities for degrees are generally lower than those of bodies which grant only diplomas, but in either case such fees are a very small part of the total expenses. The fees for teaching and hospital privileges range from under £100 to about £150, while the cost of living varies considerably, being higher in London and Oxford than in Aberdeen or Dublin. All comparisons are vitiated, however, by the varying length of time that students take to obtain a qualification. In no case can this be less than five years, since the official curriculum necessarily extends over that period, and official statistics prove that the time actually occupied is habitually very much greater, even in the case of able and industrious students. They show, in fact, that the average time that elapses between registration as a student and the acquirement of a first degree or diploma is only three weeks less than seven years. Hence no parent can well feel ill-used if he finds his son on his hands for that period, and he should esteem himself fortunate if meanwhile he does not have to supply a total of more than £1,000.

Esprit de Corps.

It has been recognized by most medical men for many years past, and has recently been made conspicuously evident to all, that readiness to join hands for the common good is essential for the protection of medicine as a profession. Hence every young medical man should make a point of joining any medical societies in his neighbourhood, and especially those which aim at protecting professional interests and in maintaining good relations between practitioners. The British Medical Association supplies this need. It possesses in every district of the United Kingdom, and in nearly all parts of the British Empire, a local Division, which holds meetings for the discussion both of scientific subjects and of those social and political matters which affect the material interests of the profession. A medical man or woman joining one of the Divisions becomes entitled to all the privileges and advantages of the central organization of the British Medical Association.

THE GENERAL MEDICAL COUNCIL.

The curriculum through which a student of medicine or of dentistry must pass is determined in its general features by the General Medical Council, which holds its sessions at its head quarters in London (299, Oxford Street, London, W.), and has branch offices in Scotland (54, George Square, Edinburgh), and in Ireland (35, Dawson Street, Dublin).

The Council prescribes and from time to time varies the terms upon which aspirants shall be recognized as medical students, the education which they must receive, the minimum number of years for which it must be carried on, and the general nature of the examinations by which its proficiency shall finally be tested by the universities and corporations which have authority to issue degrees, diplomas, and licences, entitling the holder legally to practise as a medical man or as a dentist.

Regulations in respect of these matters have been compiled, and a summary follows of those which have more particular application to the intending medical student; it should be carefully studied. The primarily important things to note about the regulations are that they entail (1) the production of proof of a certain degree of proficiency in subjects of preliminary or general education: (2) application for registration as a medical student either at the head-quarter office in London or at one of the branch offices in Edinburgh and Dublin, although this latter requirement is not invariably enforced.

Preliminary Education.

The subjects of which proof of efficient knowledge must be produced by applicants for registration as medical students are as follows:

(1) *English*: Grammar; paraphrasing; composition; questions on English history and geography.
(2) *Latin*: Grammar; translation into English from unprescribed Latin books; translation into Latin of a continuous English passage, and of short idiomatic English sentences. In the case of natives of India or other Oriental countries, whose vernacular is other than English, a classical Oriental language may be accepted as equivalent to Latin.
(3) *Mathematics*: Arithmetic; algebra, including easy quadratic equations; geometry, including the subject matter of Euclid, Books i, ii, and iii, and simple deductions.
(4) One of the following subjects:
(*a*) *Greek*: Grammar; translation into English from unprescribed Greek books; translation into Greek of short idiomatic English sentences; or
(*b*) *A modern language*: Grammar; translation into English from unprescribed books; translation of a continuous English passage, and of short idiomatic English sentences.

The Council considers it a sufficient testimonial of proficiency in these subjects if the applicant can show that he holds a degree in arts of any university of the United Kingdom or of the Colonies or of such other universities as may from time to time be recognized for the purpose, or has passed one or other of the following tests, provided that examinations in the required subjects have been included therein.

I.—University Examinations held in the United Kingdom.

A.

Final Examination for a Degree in Arts or Science of any University in the United Kingdom.

B.

In all cases it must be certified that all the required subjects have been passed.

University of Oxford.—Junior Local Examinations.[1,4,5] Senior Local Examinations.[1,5] Higher Local Examinations. Responsions.[6] Moderations.

University of Cambridge.—Junior Local Examinations.[1,4,5] Senior Local Examinations.[1,5] Higher Local Examinations. Previous Examination. General Examination.

[1] A special leaflet showing the Council's requirements will be sent on application.
[2] For particulars see Regulations issued by the Board.
[3] If deficient in Latin, or Greek, or a modern language, these subjects may be passed separately, with this exception, all the subjects must be passed at one and the same time.
[4] The subjects must be passed by the candidate at one and the same time.
[5] Certificate to be endorsed as fulfilling the Council's requirements.
[6] Certificate [illegible] others showing that the required mathematical subjects have been passed.
[7] [illegible] required subjects to be passed at not more than two Examinations.
[8] To include (*a*) English Language and Literature; (*b*) Latin; (*c*) Mathematics; (*d*) Greek or a modern language; and (*e*) and (*f*) any two other subjects as set out in the Regulations of the Board.
[9] Certificate to include the required subjects.

Oxford and Cambridge Schools' Examination Board.—Higher Certificate Examinations.[2] The School (or Leaving) Certificate Examination.[2]

University of Durham.—Matriculation Examination of the Faculties of Medicine, Science, Letters, and Music.[3]

University of London.—Matriculation Examination.[3] Senior School Examination.[3]

Victoria University of Manchester, University of Liverpool, University of Leeds, and University of Sheffield Joint Matriculation Board.—Matriculation Examination.[3 9] Senior School Certificate.[4 5]

University of Birmingham.—Matriculation Examination.[3] Senior School Leaving Certificate.[3]

University of Bristol.—Matriculation Examination.[3]

University of Wales.—Matriculation Examination.[4]

Universities of Scotland. Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Medicine and Surgery.[7] Preliminary Examination of the Joint Board of Examiners of the Scottish Universities for Graduation in Arts or Science.

University of St. Andrews.—Final Examination for the Diploma of L.L.A.

University of Dublin.—(*a*) Junior Freshman Term Examination, exclusive of Trigonometry. (*b*) Special Preliminary Examination to be held in March, the standard and subjects of which shall be those of a Junior Freshman Examination, exclusive of Trigonometry. (*c*) Junior Exhibition Examination on obtaining marks of sufficient merit in the subjects of (*a*) or (*b*). (*d*) Examinations for the First, Second, Third, or Fourth Year in Arts.[5]

Queen's University of Belfast.—Matriculation Examination.[4]

National University of Ireland.—Matriculation Examination.[4]

II.—GOVERNMENT EXAMINATIONS HELD IN THE UNITED KINGDOM.

Scottish Education Department.—Leaving Certificate Examinations: passes in Lower Grade.[7] Leaving Certificate Examinations. Intermediate Certificate.[4]

Intermediate Education Board of Ireland.—Middle Grade Examination.[4] Senior Grade Examination.

Central Welsh Board.—Senior Certificate Examinations.

III.—EXAMINATIONS BY CHARTERED BODIES HELD IN THE UNITED KINGDOM.

College of Preceptors. Examinations for First-class Certificates.[7] Preliminary Examination for Medical Students.[4]

Educational Institute of Scotland.—Preliminary Medical Examination.[4]

Royal College of Physicians and Surgeons in Ireland.—Preliminary Examination.[4]

Certain examinations held by authorities not within the United Kingdom are also recognized. Information as to these can be obtained on application at any of the three offices of the Council.

REGISTRATION OF MEDICAL STUDENTS.

In addition to showing that he has passed one of these examinations, any person applying for registration as a medical student must (1) produce satisfactory evidence that he has attained the age of 16 years; (2) show that he has commenced medical study at a university or school of medicine, or at a teaching institution recognized by one of the licensing bodies and approved by the Council. The commencement of professional study will not be reckoned as dating earlier than fifteen days before the date of registration.

Application for registration should be addressed to the Registrar for the division of the United Kingdom in which the applicant is residing—England and Wales, or Scotland, or Ireland. It must be made on a special form, which can be obtained on application at the offices either of the General Medical Council itself or of one of the various licensing bodies and medical schools, and when forwarded it should be accompanied by the certificates as to age and general education.

The regulations with regard to registration apply equally to medical and dental students, with the exception that in the case of the latter pupilage with a registered dental practitioner may be regarded as a commencement of professional study, and that applications for registration should be addressed to the London office only.

PROFESSIONAL EDUCATION.

The rule is that it is only from the date which appears against his name in the *Students' Register* that the medical student's career officially begins; thereafter five years must pass before he can present himself for the final examination for any diploma which entitles its lawful possessor to registration as a qualified medical practitioner under the Medical Acts.

There are, however, certain important exceptions to this rule: thus (1) to meet the circumstances brought about by the dates at which sessions of the medical schools commence and end, the close of the fifth year may be reckoned as occurring at the expiration of fifty-seven months from the date of registration. (2) Graduates in arts or science of any university recognized by the Medical Council, who have spent a year in the study of physics, chemistry, and biology, and have passed an examination in these subjects for the degrees in question, may be held to have completed the first of the requisite five years. (3) The Council will accept as six months of that year six months passed subsequent to obtaining a certificate in general education, as a student of chemistry, physics, or biology at any teaching institution recognized by a licensing body and approved by itself. In any case the period of five years must be one of bona fide study, and during its course education in the following subjects must be pursued and examinations passed:

(i) Physics, including the Elementary Mechanics of Solids and Fluids, and the rudiments of Heat, Light, and Electricity.
(ii) Chemistry, including the principles of the science, and the details which bear on the study of Medicine.
(iii) Elementary Biology.
(iv) Anatomy.
(v) Physiology.
(vi) Materia Medica and Pharmacy.
(vii) Pathology.
(viii) Pharmacology and Therapeutics.
(ix) Medicine, including Medical Anatomy and Clinical Medicine.
(x) Surgery, including Surgical Anatomy and Clinical Surgery.
(xi) Midwifery, including Diseases peculiar to Women and to newborn Children.
(xii) Theory and Practice of Vaccination.
(xiii) Forensic Medicine.
(xiv) Hygiene.
(xv) Mental Disease.
(xvi) Anaesthetics.

As regards these subjects, it should be noted that the Council has recently decided that the practical study of Subject (xi) shall not commence until the student has held the offices of Clinical Clerk and Surgical Dresser, and it has defined the way in which the work is to be done. It also now recommends licensing bodies to require of candidates at their final examinations evidence of instruction in the administration of anaesthetics and in infectious diseases, and of sedulous attention in hospital wards, out-patient departments, and *post-mortem* rooms, as clerks and the like.

Wherever the first of the five years is spent, the next three must be passed at one of the schools of medicine recognized by any of the licensing bodies enumerated in the schedule to the Medical Act of 1858. The final or fifth year the Council recommends should be devoted to clinical work at any public hospital or dispensary at home or abroad which is recognized by any of the licensing bodies.

SPECIAL CONSIDERATIONS.

The requirements of the General Medical Council in respect of the education of those who desire to enter the medical profession have now been given in sufficient detail, but before leaving this part of the subject the steps which the aspirant should take may finally be rehearsed in their due order:

(1) Pass an examination in arts;
(2) Enter himself at a medical school or other scientific institution recognized by the Council;
(3) Get himself registered as a medical student;
(4) Study for a minimum of five years certain prescribed subjects;
(5) Meanwhile pass sundry intermediate examinations, and, finally, at the end of the fifth year, one which will entitle him to receive at the hands of a licensing body a legal authority to practise.

The Arts Certificate.—There are, however, other important considerations; thus, it is not a matter of indifference what certificate of proficiency in general education, or arts, the student obtains. The General Medical Council, it is true, will accept any of those which have been mentioned at p. 536, and this, too, is the case with practically all the college corporations in England, Scotland, and Ireland. But all the licensing bodies are not equally accommodating: some of the universities require that their own ordinary matriculation should be passed, others have special matriculation examinations for those wishing to join their medical faculty, and a third and larger number will accept any arts degree and certain matriculation examinations, as well as several other of the tests entered in the Council's list.

The first thing, therefore, the future medical student should, if possible, decide is at what degrees or diplomas he intends to aim, and then find out what arts certificate will be required. If he cannot decide the question in advance, the best course probably would be to matriculate at London University, choosing as two of his optional subjects Latin and one other language, so as to meet the requirements of the General Medical Council with respect

to general education. It is a troublesome examination in some respects, but, as now rearranged, gives a wide choice of subjects, and has the advantage of being accepted as sufficient testimony to general education by a larger number of bodies than is any other analogous examination.

The Minimum Period.—Another point to remember is that the period of five years mentioned is a minimum; a good deal more will almost certainly be required even by the man of good abilities and reasonable industry. Besides these qualities, a student to obtain a registrable qualification in the minimum period of five years, or fifty-seven months, must have a considerable amount of good luck; in other words, he must keep in good health through every term, and never fail at a single examination. Otherwise it is almost inevitable that his career as a student should be prolonged for a greater or smaller number of months beyond the possible minimum. Thus, for instance, a student before presenting himself for any examination has to get what is called "signed up" for the subjects covered by that examination; this means that his teachers have to certify that he has attended the required number of lectures or classes in the subjects in question. If, however, the student happens to be ill during the term when such lectures or classes are taking place, he may miss a sufficient number of them to make it impossible for him to be "signed up." Then, again, should a student fail to satisfy the examiners at some examination, he cannot present himself again for re-examination for at least three months. This fact generally entails further consequences, because, apart from the student's success at the next stage in his career being imperilled by his having to give up some time to restudying the subjects in which he has failed, the Examining Boards in the majority of instances insist upon a definite interval elapsing between a student passing one examination and his presenting himself for that which should follow it. Then, again, many Boards refuse to recognize lectures and classes which have been attended at a date anterior to that at which the student has passed the requisite examination in earlier subjects. Failure at an examination may thus not only mean deferment of the date of examinations, but deferment of the commencement of the student's study of certain subjects. It is thus exceedingly easy for a student to fail to qualify in five years, and, as a matter of fact, the vast majority of students take very much longer than that period.

Furthermore, in speaking of the minimum period, it is to be remembered that that time is only sufficient to gain a registrable qualification, such as a Bachelorship of Medicine or Surgery or a diploma of one of the Royal Colleges. These are quite sufficient for the purposes of general practice, or for entering the Services, etc., but those who wish to take a higher qualification—for instance, the F.R.C.S.Eng.—must prolong their work for another year or more. So, too, must in some cases they who desire to convert their Bachelorship into an M.D. This may entail further formal examination, but at some universities the M.D. is obtainable on presentation of a thesis when the Bachelor has attained a certain age, and has practised his profession for a certain number of years. However, a student's career proper may be considered, perhaps, to have ended at the time he obtains his first registrable qualification, for while preparing himself for any further tests he can, and usually does, hold some junior appointment which, more or less, covers his expenses.

The Normal Course.

In conclusion, it may be convenient to sketch the general fashion in which the student will pass his five years or more, but discussion of this need not be prolonged, because once a student has entered at a school, and chosen the degrees or diplomas at which he wishes to aim, the dean of the school will guide his steps in every particular.

Whatever the precise final goal, the path thereto is in all cases identical in broad outline. Practically it is divided into three stages, the conclusion of each being marked by an appropriate examination. In the first stage the student acquires a more or less extensive knowledge of the preliminary sciences — chemistry, physics, and biology; in the second he studies anatomy and physiology; and the third he devotes to the real work of his future life—medicine and surgery and their branches. During each of these stages the student must attend not less than the prescribed number of lectures and classes to ensure getting "signed up" in the subjects of the stage, and also do a very considerable amount of practical work. As for the examinations at the end of the stages, these are known by different titles by different examining bodies, but "preliminary science," "intermediate," and "final" are in common use. Some bodies demand that the student should pass in all the subjects of one stage at one time; others allow the candidate to present himself in each of the subjects separately, thus multiplying the actual number of examinations, but limiting their scope. There are also differences in the requirements of the different licensing bodies as to the length of each stage, but practically all demand that the second shall be longer than the first, and the third not shorter than the second. By the length of the allotted stage the candidate may gauge the comparative importance the licensing body attaches to the subjects within the stage and the difficulty of the tests it will impose, and he may feel certain that the time allotted is none too much.

In any case it should be the aim of the student to get through his first two stages as quickly as his abilities and the regulations will allow; and, as a rule, he should have completed the first stage by the end of his first year, and may hope to complete the second stage not later than the end of his third year. He will then have two years in which to prepare for his final examination, and it will prove a very crowded period, for he has to get into it not only medicine, surgery, and midwifery proper, but many other allied subjects, such as pathology and bacteriology, forensic medicine, gynaecology, and therapeutics. In the first of the final two years he may be able to complete his formal lectures, and thus have the fifth year for entirely practical work and private study; during these two years, too, he will take part in the work of his hospital by holding clerkships and dresserships in the wards and out-patient department for the periods laid down by the licensing bodies. Then, at length, after perhaps a few weeks of special coaching, he will be ready to present himself for his final examination, which the regulations of most bodies will allow him to divide into two or more parts. The final examination passed in its entirety, he will be able to claim registration as a qualified medical practitioner at the hands of the General Medical Council, and become an independent personage. There is still room for him to continue a student's career if he will, for, apart from the higher qualifications to which reference has been made, it may seem to him worth while to devote time to acquiring greater knowledge of some particular branch of medicine, such as ophthalmology or laryngology, or to undergo the courses of study necessary to obtain a diploma of special proficiency in questions of public health (page 576) or in tropical medicine (page 573). Points such as these, however, the student will be fully capable of deciding for himself when he has reached the stage to which our account has now brought him.

The next matters to be considered, therefore, are the requirements in detail of the different licensing bodies, and what they have to offer in the way of degrees and diplomas.

The English Universities.

THERE are now eleven universities in England and Wales, and ten of them have fully developed medical faculties, of which an account is here given. The exception is the University of Wales, whose constituent colleges are those of Aberystwith, Bangor, and Cardiff. It is in a position to grant degrees, and has laid down a six years' curriculum for candidates for the M.B. degree, but the arrangements of its Medical Faculty are not yet quite complete. It already provides, however, at the School of Medicine at Cardiff—of which an account will be found at page 559—thorough training in the work of the first three or four years.

UNIVERSITY OF OXFORD.

THE professional degrees conferred by this university are those of Bachelor of Medicine (B.M.), Bachelor of Surgery (B.Ch.), Doctor of Medicine (D.M.), and Master of Surgery (M.Ch.). It also grants a diploma in State Medicine and a diploma in Ophthalmology. On receiving the B.M. the candidate is entitled to registration by the General Medical

Council. In favourable circumstances this degree and the B.Ch. may be obtained in six or seven years from matriculation. Before receiving either, however, the candidate must have taken a degree in arts (B.A.), for which three years' residence within the university is necessary. This, however, does not necessarily mean deferment of professional study for that period: for some of the subjects chosen for the final stage of the arts course may be the same as those in which examinations would in any case have to be passed for the medical degrees.

THE B.A. DEGREE.

A candidate may obtain the B.A. degree in either of the following ways:

(*a*) By passing Responsions (or one of the examinations which are accepted as equivalent), Moderations, a Scripture examination, or, in the event of a candidate objecting, an examination in some substituted book; and the Final Pass School in three subjects, two of which may be the same as two in the preliminary examinations in natural science.[1]

(*b*) By passing Responsions, an additional subject in Responsions, the Scripture examination, some of the preliminary examinations in the Natural Science School,[1] or the Preliminary Examination and the School of Jurisprudence, or the Honour School of Mathematics in the first public examination; and one of the final honour examinations.

Responsions and the additional subject may be passed before a candidate is a member of the university;[2] Moderations and Scripture can be passed in or after the second term; the final pass school may be taken any time after Moderations; a final honour school may be taken at the end of the third or within the fourth academical year—that is, twelve or sixteen terms respectively; the preliminary examinations of the Natural Science School may be taken as soon as Responsions have been passed.

PROFESSIONAL DEGREES.

To obtain the B.M., B.Ch. degrees the candidate must first pass in four of the subjects of the Preliminary Examination of the Natural Science School—namely, physics, chemistry, zoology, and botany.

He then has two further examinations to pass—the First M.B. and the Second M.B. These take place twice a year, the first on the Thursday, the second on the Wednesday, of the eighth week of Michaelmas and Trinity terms. Every candidate at the First M.B. is examined in human anatomy and also in physiology and in organic chemistry, unless he has previously taken a first or second class in the two latter subjects in the Natural Science School. Once he has passed this examination, he can, on production of certain certificates, be examined as soon as he pleases in pathology, forensic medicine, and hygiene, materia medica, and pharmacology[3] (subjects of the second examination), but cannot present himself for the remaining subjects—medicine, surgery, and midwifery—until the twenty-fourth term from the date of his matriculation, and not until a period of at least twenty-two months have elapsed from the date of his passing the first examination, and he must take all the three subjects at one and the same time.

D.M. AND M.CH. DEGREES.

A Bachelor of Medicine who wishes to proceed to the M.D. must have entered his thirty-ninth term and must present a dissertation for approval by the appointed examiners. If a candidate for the M.Ch., he must have entered his twenty-seventh term and must pass an examination which is held in June.

TEACHING.

The several colleges provide their undergraduate members with tutors for all examinations up to the B.A. degree. In addition, the university provides certain courses of instruction, including lectures, demonstrations, and practical work, which cover all the subjects of the Preliminary Examination and First M.B., and in part those of the Final Examination. For the diploma in State Medicine and the diploma in Ophthalmology certain of the courses can be taken in Oxford.

SCHOLARSHIPS.

The several colleges grant scholarships of £80 a year, tenable for four years, in natural science, chemistry, physics, and biology. Exhibitions of varying value are also awarded in these subjects. Particulars can be obtained on application to the college tutors. A Radcliffe Travelling Fellowship of £200 a year, tenable for three years, is conferred annually; candidates must have taken the B.M. degree. A Philip Walker Studentship in Pathology of £200 a year, tenable for two years, is awarded biennially for the encouragement of research in pathology, as also are the Relleston Memorial Prize, for research in natural science (including pathology), and the C. Theodore Williams Scholarships in Anatomy and Physiology, and in Pathology, of the value of £50 each, tenable for two years.

FEES.

An annual fee of £2 10s. is paid to the university for the first four years, being reduced to £1 when the B.A. has been taken. For the degree the fees are—the B.A., £7 10s.; the B.M. and B.Ch., £14; the D.M., £25; the M.Ch., £12. College fees, varying in amount, are paid for the first four years of membership and in taking degrees. Tuition fees vary from £21 to £30. The minimum annual cost of living during the three university terms may be regarded as not less than £120.

UNIVERSITY OF CAMBRIDGE.

THE professional degrees given by this university are those of Bachelor of Medicine (M.B.) and Bachelor of Surgery (B.C.), which entitle the possessor to admission to the *Register* by the General Medical Council, and the higher degrees of Doctor of Medicine and Master of Surgery. It also grants diplomas in State Medicine and Tropical Medicine to persons who are registered medical practitioners, but not necessarily graduates of the university.[4] A candidate for the M.B., B.C. degrees need not possess a degree in arts: it is sufficient if he has passed the *previous examination* or some other examination accepted by the university as its equivalent.

PROFESSIONAL EXAMINATIONS.

To obtain the M.B., the candidate must pass three examinations, of which the latter two take place twice a year—in Michaelmas and Easter terms; those who are finally successful receive the B.C. degree without further examination.

First M.B. or Preliminary Examination in Science.—These comprise (1) chemistry, (2) physics, (3) elementary biology. The parts may be taken together or separately. In either case the candidate before admission to examination must have satisfied the requirements in respect of the *previous examination*, paid the matriculation fee, and entered on his first or some later term of residence. The examination is held three times a year—in October, December, and June.

Second M.B.—This examination, which cannot be passed until the first examination has been completed, comprises Part I, human anatomy and physiology: Part II, elementary pharmacology, including pharmaceutical chemistry and the elements of general pathology. No one may enter Part II unless he has passed Part I. The candidate must be signed up in both subjects and have dissected for six months.

Third M.B.—This is divided into two parts, to neither of which is the candidate admitted until he has passed the examinations previously mentioned. A candidate for the first part, which deals with surgery and midwifery, must be signed up in these subjects and have completed two years of hospital practice.

Before admission to the second part the candidate must have completed five years of medical study and be duly signed up in all subjects. He must also possess certificates showing that he has fulfilled all the recommendations as well as the requirements of the General Medical Council. The examination consists of principles and practice of physic, pathology, and pharmacology.

Act for the M.B.—Before receiving his degree, a candidate who has been successful at the Final M.B. has to write a thesis. This he reads in public on an assigned day, and is then questioned concerning it and other subjects of medicine by the Regius Professor of Medicine. If approved at this test he is then certified as having

[1] The four subjects of the medical preliminary examinations are four of the subjects in the natural science preliminary, and can be commenced directly after passing Responsions.

[2] Membership is constituted by matriculation and by becoming a member of a college or hall, or a non-collegiate student.

[3] A candidate who passed in materia medica and pharmacy under the old regulations in the First Examination before April 14th, 1909, is exempt from the examination in materia medica and pharmacology in the second examination.

[4] See pp. 576 and 574.

"kept the Act" satisfactorily, and in due course receives his degree. Medical degrees may be taken in absence, the candidate sending a thesis to the Regius Professor of Physic which is laid before the Board.

THE HIGHER DEGREES.

The M.D. degree may be taken by an M.B. of three years' standing after keeping a further Act and writing a short extemporary essay, in which he may deal at his choice with either medicine, physiology, pathology, or State medicine. The M.C. degree may be granted to a candidate who has qualified for the B.C. at least three years previously; he is then examined in pathology, surgery, surgical anatomy, and surgical operations, or submits books or writings of his own which constitute original and meritorious contributions to the science and art of surgery.

FEES.

In addition to college fees, tutorial fees, and the expenses of living, the following examination fees are payable: First M.B., £4 4s.; Second M.B., £4 4s.; Third M.B., £9 9s. For schedules referring to the examinations, lists of schools recognized by the university, and other information, application should be made to the University Registrar.

UNIVERSITY OF LONDON.

UNDER the regulations of the University of London, the degrees obtainable in the Faculty of Medicine are those of Bachelor of Medicine and Surgery, Master of Surgery in two branches, and Doctor of Medicine in six different branches. The university has its own matriculation examination, and this is of so peculiar a kind that candidates should secure and carefully study the booklets relating to it.

In no circumstances is a degree granted to any one in less than three years after the date at which he passed the Matriculation Examination or obtained registration in some other way, and unless they are already registered medical practitioners of a certain age and standing, all students must pass not less than five and a half years in professional study subsequent to matriculation. Four and a half of those years must be passed at one or more of the medical institutions or schools at home and abroad recognized by the university for the purpose; and not less than one school of the university itself.

PROFESSIONAL EXAMINATION.

M.B., B.S.—There are three examinations, the two last being subdivided.

The First Examination, which takes place twice in each year, covers inorganic chemistry, general biology, and physics, there being two papers, a practical test and a possible viva voce test in each subject. The names of successful candidates are placed in alphabetical order, with a note as to any subject in which a candidate has distinguished himself.

The Second Examination, Part I, also takes place twice a year, usually in March and July. It cannot be passed within six months of the passing of the First Examination. It covers organic and applied chemistry, the candidate's knowledge being tested as in the earlier examination. It is a pass examination, but a mark of distinction may be won.

The Second Examination, Part II, also takes place twice a year, about the same dates. Candidates must have passed the First Examination at least eighteen months previously, and also have passed Part I of the Second Examination for Medical Degrees. The subjects of examination are anatomy, physiology, and pharmacology, the tests being written, oral, and practical. Candidates who fail in one subject may offer themselves for re-examination in that subject alone if the examiners think fit. After passing this examination a candidate may, if he please, enter in the following year for the degree of B.Sc. (Honours) in physiology or human anatomy and morphology, provided he has completed a course of study approved for that examination in a school or under a recognized teacher of the university.

The Third M.B., B.S. Examination takes place twice a year—in October and May. No candidate is admitted to it within three academic years from the date of his completing the Second Examination.

The subjects are medicine (including therapeutics and mental diseases), pathology, forensic medicine and hygiene, surgery, and midwifery and diseases of women. They may be divided into two groups, one comprising medicine, pathology, forensic medicine and hygiene, and the other surgery and midwifery and diseases of women. Either group may be taken first at the option of the candidate, or the groups may be taken together. Only candidates who show a competent knowledge of all the subjects comprising a group are passed. There is no separate examination held for honours, but in the list of successful candidates the names are divided into an honours list and a pass list, in each of which the names are placed in alphabetical order, and a university medal may be awarded the candidate who has most distinguished himself in the whole examination.

THE HIGHER DEGREES.

M.D.—An examination for the M.D. is held twice yearly—in December and July. Every candidate must have passed the examination for the M.B., B.S., unless he became M.B. before May, 1904. He may present himself for examination in any one of the following branches: (1) Medicine, (2) pathology, (3) mental diseases, (4) midwifery and diseases of women, (5) State medicine, (6) tropical medicine; and, if he wishes, may pass also in another branch at a subsequent examination. The period that must elapse between acquiring the M.B. and sitting for the M.D. in any branch varies with the nature of the candidate's previous work between one year and two years, and in all cases evidence must be afforded of special study of the subject chosen, whatever the branch; both written and practical examinations must be passed, though exemptions can be obtained from the former in exceptional circumstances.

Branch 1 is a paper on Pathology, and in Branches 2, 3, and 4 a paper in Medicine, while in Branch 2 a Laboratory Examination is substituted for the Clinical Examination held in the other branches.

In any branch of the M.D. Examination a gold medal of the value of £20 may be awarded.

M.S.—The regulations with regard to the Mastership in Surgery are of a corresponding kind, but there are only two branches in which it may be obtained—General Surgery and Dental Surgery.

FEES.

For Matriculation: £2 for each entry.

First Examination: £5 for each entry to the whole examination. For re-examination in one subject the fee is £2.

Second Examination, Part I: £2 for the first and each subsequent entry.

Second Examination, Part II: £8 for each entry to the whole examination. For re-examination in one subject the fee is £4.

M.B., B.S. Examination: £10 for each entry to the whole examination, and £5 for examination or re-examination in either group.

M.D. and M.S. Examinations: £20, and £10 on re-examination.

UNIVERSITY OF DURHAM.

To its own graduates, who may be of either sex, this university grants the degrees of Bachelor and Doctor of Medicine (M.B. and M.D.) and Bachelor and Master of Surgery (B.S. and M.S.); it also grants special degrees and diplomas in State Medicine, Psychiatry, and Dental Surgery.[1] To become a graduate, however, at the university it is not necessary to pass the major portion of the five years' curriculum within its precincts, or even to commence that period by matriculation. It is sufficient if, before he presents himself for his final examination, the candidate has passed at least one year in study at the University of Durham College of Medicine, including the practice of the Royal Victoria Infirmary in the same city. The earlier examinations may be passed while a student elsewhere, but not less than a year must elapse between the time that the student satisfies the requirements of the university as regards matriculation and his presenting himself for the Final M.B., B.S. Examination.

[1] See pp. 577 and 585.

MATRICULATION.

The university has its own matriculation examination, but accepts the following as an equivalent:

A degree of arts of any university in the British Empire.
The examination for Responsions of the University of Oxford.
The Previous Examination of the University of Cambridge.
The Matriculation Examination or the School Leaving Examination of the University of London.
The Preliminary Examination of the Joint Board of the Scottish universities.
The Joint Matriculation Examination of the Victoria University of Manchester, the University of Liverpool, the University of Leeds, and the University of Sheffield.
The Matriculation Examination of the University of Wales.
The Preliminary Examination of the University of Birmingham.
The Senior Local Examination of the University of Oxford, provided the subjects required by the university are included.
The Senior Local Examination of the University of Cambridge, provided the subjects required by the university are included.
The Higher Certificate Examination of the Joint Examination Board of the Universities of Oxford and Cambridge, provided the subjects required by the university are included.
The Leaving Certificate of the higher grade of the Scottish Education Department, provided the subjects required by the university are included.
The Senior Certificate or the Honour Certificate Examination of the Central Welsh Board, provided the subjects required by the university are included.

In addition, those who have satisfied the requirements of the General Medical Council, as regards general education, by some test other than one of the above, will be exempted from matriculation, provided that they satisfy the Durham examiners in any three of the subjects set by the Durham Matriculation Examination, exclusive of religious instruction and elementary mathematics. One of the three subjects must be in a language other than English.

PROFESSIONAL EXAMINATIONS.

There are four professional examinations for the M.B., B.S. degrees. They are held twice a year—in March and June. The first deals with elementary anatomy and biology, chemistry, and physics; the second with anatomy and physiology; the third with pathology, materia medica and pharmacy, elementary bacteriology, medical jurisprudence, and public health. At the Final M.B., B.S., the candidate is examined in medicine and clinical and psychological medicine; surgery and clinical surgery; midwifery and diseases of women and children; clinical and practical gynaecology.

M.D.—A Bachelor of Medicine who wishes to proceed to this higher degree must be of at least two years' standing, and satisfy the university that he knows either Greek or German. He then submits a typewritten essay dealing with original work or observation of his own, and is examined in its subject. If the candidate is not an M.B. of the university, he must be a practitioner of fifteen years' standing and submit to special tests.[1]

B.S.—A candidate for this degree must have passed the examination for the M.B. of the university, and have attended courses on operative surgery and regional anatomy. He must then perform operations on the dead body before the examiners.

M.S.—Candidates for this degree must, like those for the M.D., satisfy the authorities as to their knowledge of Greek or German, and must have been engaged in practice for at least two years subsequent to becoming B.S. Durham. They are submitted to an examination which covers the whole range of surgical knowledge.

FEES.

The following fees are payable: Matriculation or its equivalent, £1 10s.;—First, Second, and Third M.B. Examinations, each £5; Final M.B., £10; M.D., B.S., and M.S., £5 for each examination and £6 6s. for each degree. Further information respecting the examinations and degrees may be obtained from Professor Howden, at the University of Durham College of Medicine, Newcastle-on-Tyne.

VICTORIA UNIVERSITY OF MANCHESTER.

THIS university grants the four ordinary degrees in medicine and surgery, M.B. and Ch.B and M.D. and Ch.M.; a diploma and a degree (B.Sc.) in public health; a certificate in factory and in school hygiene; a diploma in psychological medicine; and a degree and diploma in dental surgery. Candidates for degrees must pass the special Matriculation Examination prescribed by the Faculty of Medicine (or some equivalent examination accepted in lieu thereof; see the prospectus of the Joint Matriculation Board), and study at the university itself for at least two years of the five years' curriculum, one such year being subsequent to the passing of the First M.B. Examination. The Matriculation Examination comprises (1) Latin, (2) mathematics, (3) the English language, its literature and history; (4) English history; (5) two subjects at choice, one of which must be a language approved by the Joint Board, the other being elementary mechanics, *or* physics, chemistry, geography, natural history, *or* botany. It is held in July and September.

[1] See pp. 571 and 577.

PROFESSIONAL EXAMINATIONS.

M.B., Ch.B.—There are four examinations for this degree. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. At all examinations the subjects, or groups of subjects, prescribed can be taken separately or together, as the candidate pleases. The First M.B. is divided into Part 1, inorganic chemistry and physics; Part 2, biology (including animal and vegetable morphology, physiology, and laboratory work); Part 3, elementary organic chemistry and bio-chemistry. The parts may be taken separately or together. At the Second M.B. the candidate is examined in anatomy and physiology; at the Third in pathology, hygiene, and pharmacology and therapeutics (including materia medica and practical pharmacy). The Final Examination includes medicine, systematic and clinical (separate papers being given on mental diseases), and diseases of children, surgery (systematic, clinical, and practical, with a separate paper on ophthalmology), obstetrics and gynaecology, and forensic medicine and toxicology.

M.D.—A candidate for this degree must be an M.B. of at least one year's standing. He has a choice between presenting an original dissertation or undergoing a written (practical and clinical) examination in medicine, and a written and practical examination in pathology, and one other subject to be selected by the candidate.

Ch.M.—A candidate must have held, since becoming Ch.B., and for not less than six months, an appointment in a public institution affording opportunity for the study of practical surgery, and produce certificates of having attended certain courses of study. The examination comprises the general field of surgery, including ophthalmology and bacteriology.

FEES FOR EXAMINATIONS.

The following fees are payable: Matriculation, £2: on readmission, £1 10s. Each M.B. examination, £5: on readmission, after failure, £2. M.D., including the conferring of the degree, £10. Ch.M., £5 each for the examination and degree. Application for further information should be addressed to the Dean of the Medical Faculty.

UNIVERSITY OF BIRMINGHAM.

THIS university confers the ordinary medical and surgical degrees—M.B., Ch.B., M.D., and Ch.M.—and also diplomas and degrees in State medicine and dentistry. It has a plan, too, by which, extending his study to six instead of five years, the M.B., Ch.B. candidate may become a Bachelor in Science as well. Of the five years' curriculum, the first four must be spent, as a rule, at the university itself, the fifth being passed at any approved school or schools. Occasionally, however, the Senate will reduce the period of enforced residence to three years and exempt from the First M.B. those who have passed elsewhere an examination considered to be its equivalent.

All students in the Medical Faculty must (1) either matriculate in mathematics, in chemistry or experimental mechanics, in the English language and literature and history, and in Latin, and one other foreign language; or (2) show that they have passed an examination deemed an equivalent elsewhere. Subject to certain provisos, the following are at present thus regarded:

(*a*) The Previous Examination of the University of Cambridge if it includes the "additional subjects." (*b*) Responsions of the University of Oxford, except in mathematics. (*c*) The

Matriculation Examination of a recognized university. (*d*) The Higher Certificate of the Oxford and Cambridge Boards. (*e*) The Oxford or Cambridge Senior Local Examination.

PROFESSIONAL EXAMINATIONS.

The candidate for the M.B., Ch.B. degrees has five examinations to pass. In the second and final examinations the candidate must pass in all the prescribed subjects or undergo the whole examination again.

First M.B.—This deals with chemistry, physics, and elementary biology; it may be passed before the student commences residence at the university, provided the regulations as to matriculation have been met.

Second M.B.—This deals with anatomy and physiology, and the student must pass in both simultaneously.

Third M.B.—This deals with pathology and bacteriology, materia medica, and practical pharmacy.

Fourth M.B.—This takes place at the end of the fourth year, the subjects being forensic medicine, toxicology, public health, and therapeutics.

Final M.B.—This comprises medicine, surgery, midwifery and diseases of women, ophthalmology, and mental diseases. The candidate, in addition to more ordinary certificates, must be prepared with a certificate of having acted as a *post-mortem* clerk for three months, and received special instruction in anaesthetics and clinical instruction in diseases peculiar to women, asylum ward work, and ophthalmology. In respect to the latter he must show that he has learnt refraction work. He also has to present to the examiners reports drawn up by himself on six gynaecological cases, and certificates drawn up by himself regarding four actual cases of lunacy, and notes respecting two others.

M.D.—An ordinary candidate for this degree must be an M.B., Ch.B. of not less than one year's standing. He presents an original thesis for approval, and then passes a general examination in the principles and practice of medicine. From the latter the Board of Examiners may exempt a candidate whose thesis is of exceptional merit. The regulations respecting the Ch.M. are of the same general character. Subject to certain requirements as regards special research or other post-graduate study, the graduates of other universities may obtain the M.D. and Ch.M. in the same way as the holders of the Birmingham M.B., Ch.B.

FEES.

The fee for matriculation is £2, and that for each of the first four professional examinations the same amount. M.B., Ch.B. degree fee, £8; M.D. and Ch.M. examination, £10 each. For further particulars application should be made to the Dean of the Medical Faculty.

UNIVERSITY OF LEEDS.

THE degrees granted in the Medical Faculty of this university are Bachelor of Medicine and Bachelor of Surgery (M.B. and Ch.B.), Doctor of Medicine (M.D.), and Master of Surgery (Ch.M.). It also gives diplomas in public health, psychology, and two degrees in dental surgery.

Candidates for the M.B. must have attended courses of instruction approved by the university for not less than five years, two at least of such years having been passed in the university subsequently to the date of passing the first examination. They must also have matriculated by satisfying the examiners in (1) English (language or literature); (2) English history; (3) mathematics; (4) Latin; (5) two of the following, one of which must be a language: (*a*) Greek, (*b*) French, (*c*) German, (*d*) some other modern language approved by the Board, (*e*) either mechanics or physics, (*f*) chemistry, (*g*) geography, (*h*) natural history. Exemption from the examination may be granted to applicants holding certificates of having passed examinations of a standard deemed by the Matriculation Board to be at least equal to the Board's examination.

PROFESSIONAL EXAMINATIONS.

The examinations for the M.B., Ch.B. number three. The first deals with (1) physics and chemistry, (2) biology. In each subject laboratory work is included, but the two parts can be taken separately. For neither can the candidate present himself until after matriculation, and at least two or three terms' approved work in the respective subjects indicated.

Second M.B.—This may be taken in two parts, (*a*) anatomy and physiology, including practical work; (*b*) materia medica and pharmacy, including actual compounding of drugs. The candidate's certificates must show, among other things, that he has dissected during at least five terms.

Final M.B.—This may be divided into three parts. The first part, pathology and bacteriology, may be taken at the end of the tenth term; the second part, forensic medicine and public health, and the third part, medicine, surgery, and obstetrics, cannot be taken before the end of the fifth year; and before being admitted to the examination in its subjects the candidate, in addition to ordinary certificates, must produce proof that he has done both intern and extern maternity work, and received clinical instruction in gynaecology, and in eye, skin, or laryngeal diseases, and in the administration of anaesthetics. This division covers all branches of surgery, medicine (including mental diseases and diseases of children), and obstetrics and gynaecology. Passages for translation from French and German are included in the papers on medicine. First and second class honours may be obtained in this division.

M.D.—A candidate for this degree must be an M.B., B.Ch. of at least one year's standing. He presents a dissertation embodying the results of personal observation or original research, and, if this is approved, passes an examination which consists in the writing of an extemporary essay, and answering questions on the history of medicine and the subject of his dissertation.

Ch.M.—The candidate for this degree must have been admitted to the M.B., Ch.B. not less than a year previously, and during that time must have held for at least six months a surgical appointment in a public institution affording full opportunity for the study of practical surgery. In addition he must have attended certain special courses, including one on ophthalmology and one on bacteriology; he is then examined in the subject of surgery in all its branches.

FEES.

The matriculation fee is £2, and on readmission £1. For each of the other examinations £5, and £2 on readmission. On conferment of the degree of Ch.M. £5 is payable, the same remark applying to the M.D. degree.

UNIVERSITY OF LIVERPOOL.

THIS university, besides granting degrees in medicine (M.B. and M.D.) and in surgery (Ch.B. and Ch.M.), gives a degree in dental surgery (B.D.S.) and a degree in hygiene (M.H.). Diplomas are awarded in dental surgery, tropical medicine, public health, and ophthalmic surgery. For the degrees no study is recognized anterior to matriculation and registration as a medical student.

MATRICULATION.

The Matriculation Examination is governed by the Joint Matriculation Board, 24, Dover Street, Manchester, which accepts the tests of several other bodies as its equivalent. These include the Matriculation of London University, the Senior Local Examination of Oxford and Cambridge, the Higher Certificate of the Joint Oxford and Cambridge Board, the Leaving Certificate of the Scottish Education Department, and the Senior Certificate of the Central Welsh Board. Of the five years' curriculum, not less than two must be passed in the university itself, one such year being subsequent to the date of passing the First M.B. Examination.

PROFESSIONAL EXAMINATIONS.

Candidates for the M.B., Ch.B. degrees have three examinations to pass, the first including (1) chemistry, inorganic and organic; (2) biology, including zoology and botany; (3) physics. Section 2 may be taken alone or passed in conjunction with Sections 1 and 3.

Second M.B.—This test covers (1) anatomy and physiology, including physiological chemistry and histology, and (2) materia medica, pharmacy, and pharmacology; these two sections may be taken separately.

Final M.B.—This examination deals with six subjects, which may be taken all together or divided into three parts, the first consisting of (1) pathology and morbid anatomy; the second of (2) therapeutics, and (3) forensic medicine, toxicology, and public health; the third of

(4) obstetrics and diseases of women, (5) surgery, including ophthalmology, (6) medicine, including mental diseases and diseases of children.

M.D. and Ch.M.—Candidates for these degrees must have received the M.B. and Ch.B. at least a year previously. The M.D. candidate submits an approved dissertation covering original work, the M.Ch. candidate undergoing an examination in all subjects of surgery, including ophthalmology. Other information concerning the diplomas of this university and its medical school will be found on page 574.

UNIVERSITY OF SHEFFIELD.

The degrees of this university (M.B., Ch.B., and M.D. and Ch.M.) and the diploma in public health are open to candidates of either sex. Candidates for a degree must have matriculated in the university or have passed such other examination as may be recognized for this purpose by the university, and sanctioned by the Joint Matriculation Board. The subjects required by the General Medical Council must be included in the Matriculation Examination or its recognized substitute.

Professional Examinations.

A candidate for the degrees of M.B., Ch.B. must produce certificates that he will have attained the age of 21 years on the day of graduation; that he has pursued the courses of study required by the university regulations during a period of not less than five years subsequently to the date of his registration as a medical student by the General Medical Council, three of such years at least having been passed in the university, one at least being subsequent to the passing of the first examination. He or she has eventually to pass the following examinations in due order:

First Examination.—The subjects are chemistry, physics, and biology. The examination is divided into two parts: (*a*) Chemistry, physics, (*b*) biology; and candidates may pass in each part separately. The intermediate examination in science—chemistry, physics, and biology—will, on payment of the required additional fee, be accepted instead of this examination. Candidates on presenting themselves for this examination are required to furnish certificates of having attended for not less than one year approved courses of instruction after matriculation and registration as medical students in: (i) Chemistry, inorganic and organic. (ii) Physics. (iii) Biology.

Second Examination.—The subjects are anatomy, physiology, materia medica, and pharmacy. The examination is divided into two parts, (*a*) anatomy and physiology, and (*b*) materia medica and pharmacy; and candidates may pass in either part separately. The candidate must have completed the third winter session of professional study, must have passed the First Examination, and must have attended (1) lectures on anatomy, and dissections during five terms; (2) lectures on physiology during four terms, practical, experimental, and chemical physiology during four terms, and histology during one term; and (3) materia medica and pharmacy, including practical instruction approved by the university, for one term.

Final Examination.—The subjects are divided into two parts—namely, (A) forensic medicine and toxicology, public health, pathology, and morbid anatomy; and (B) medicine, including pharmacology and therapeutics, mental diseases, and diseases of children, surgery, obstetrics, and gynaecology. Candidates may present themselves for examination in both parts on the same occasion or separately, but Part A may not be passed before the completion of the fourth year of study. Candidates for the whole examination, or for Part B, must have completed the fifth year of study.

M.D.—Candidates for the degree of Doctor of Medicine must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, must present a thesis embodying observations in some subject approved by the Professor of Medicine, and must pass an examination in the principles and practice of medicine.

Ch.M.—Candidates for the degree of Master in Surgery must have passed the examination for the degrees of M.B., Ch.B. at least one year previously, and must, since taking the degrees of M.B., Ch.B., have held for not less than six months a surgical appointment in a public hospital or other public institution affording full opportunity for the study of practical surgery. The subjects of examination are systematic, clinical, and operative surgery, surgical anatomy, surgical pathology, and bacteriology.

Other information concerning this university will be found in the section devoted to Provincial Medical Schools.

UNIVERSITY OF BRISTOL.

This university grants the four ordinary degrees in medicine and surgery, M.B. and Ch.B. and M.D. (the M.D. may be taken in State Medicine) and Ch.M.; a diploma (D.P.H.) is granted in public health: and a degree and diploma in dental surgery. Candidates for degrees must pass the special Matriculation Examination prescribed by the Faculty of Medicine (or some equivalent examination accepted in lieu thereof; see the Regulations for Matriculation), and study at the university itself for at least three years of the five and a half years' curriculum, two such years being subsequent to the passing of the Second M.B. Examination. The Matriculation Examination comprises (1) Latin, (2) mathematics, (3) the English language, its literature and history; (4) two subjects at choice, one of which must be a language, Greek, French, German, or some other modern language approved by the Joint Board, and the other either elementary mechanics, chemistry, geography, or natural history. It is held in July and September.

Professional Examinations.

M.B., Ch.B.—There are three examinations for this degree. They must be passed in proper order, and before admission to them the candidate must be duly certified as having attended in the subjects involved. The First M.B. comprises chemistry, physics, botany, and zoology. The Second M.B. comprises organic chemistry, elementary anatomy (Part I), advanced anatomy, physiology (Part I). The two groups may be taken separately or together. The Final Examination includes materia medica and pharmacy, pharmacology and therapeutics, general pathology, morbid anatomy and bacteriology (Part I), special pathology, forensic medicine, toxicology and public health, obstetrics (including diseases of women), surgery (systematic, clinical, practical, and operative), medicine (systematic, clinical, and practical), including mental diseases (Part II). The two groups may be taken separately or together. First and second class honours may be obtained by a candidate whose work is deemed of sufficient merit, but cannot be awarded to one who has recorded against him a failure at any examination after the First M.B.

M.D.—A candidate for this degree must be an M.B. and Ch.B. of at least two years' standing. He has a choice between presenting an original dissertation, undergoing a general examination in medicine (including medical anatomy, medical pathology and bacteriology, systematic and clinical medicine), or passing an examination in State medicine.

Ch.M.—A candidate must have attended, since becoming M.B., Ch.B., and for not less than two years, a public institution affording opportunity for the study of practical surgery, and produce certificates to that effect: the candidate shall be required to pass a general examination in surgery (including surgical anatomy, surgical pathology and bacteriology, operative and clinical surgery), and to present a dissertation in some department of surgery. He must be of two years' standing as an M.B., Ch.B.

Fees for Examination.

Applications for information should be addressed to the Dean of the Medical Faculty.

English Medical Corporations.

There are three medical corporations in England, the Royal College of Physicians, the Royal College of Surgeons, and the Society of Apothecaries of London. The first two combine for certain purposes to form what is known as the "Conjoint Board." Details concerning this body, its component colleges, and the third licensing body here follow.

THE CONJOINT BOARD.

This body deals with the qualifications of all candidates for the Licence of the Royal College of Physicians of London and for the Membership of the Royal College of Surgeons of England. It prescribes for them certain periods of study, and recommends those who satisfy it for the licence and diploma of Membership respectively. The successful candidate is then entitled to admission to the *Medical Register* as an M.R.C.S.Eng., L.R.C.P.Lond. It performs the same task in connexion with diplomas in State medicine and tropical diseases jointly issued by the two colleges in question. It obliges all candidates to pass one of a large number of examinations which it considers satisfactory tests of general education, and thereafter to pass five years in professional study at a recognized medical school, allowing, however, six months to be spent at any institution which may be recognized by the Board as giving efficient education in chemistry and physics. A list of such institutions, as also of the tests accepted in regard to general education, can be obtained from the Secretary of the Board at Examination Hall, Queen Square, Bloomsbury, W.C.

Professional Examinations.

There are three examinations for the Conjoint diploma, or M.R.C.S., L.R.C.P., which are commonly known as First College, Second College, and Final.

First College.—This examination is in four parts: (1) Chemistry, (2) physics, (3) elementary biology, (4) practical pharmacy.

A candidate must present himself for examination in Parts I and II together until he has reached the required standard to pass in both, or in one of these parts, but he will not be allowed to pass in one part unless he obtains at the same time half the number of marks required to pass in the other part. A candidate may take Parts III and IV separately, or he may present himself for the whole examination at one time.

Before admission to either part the candidate must show that he has undergone certain courses of theoretical and practical instruction, but these courses need not be completed within one year, nor need they run concurrently, and they may be commenced or attended before the candidate passes the required preliminary examination in general education. A candidate referred in any part or parts will not be admitted to re-examination for three months. If referred in chemistry, physics, or biology he must produce evidence of further instruction. Those who are already graduates in medicine, or who have passed an examination in the same subjects before a university board for a degree in medicine, may obtain exemption from re-examination in those subjects at this examination.

Second College.—This examination deals with anatomy and physiology, and both subjects must be passed at the same time. A candidate must have attended at a recognized medical school lectures on anatomy, physiology, and a course of practical physiology and histology, and have dissected for twelve months during the ordinary sessions. The study of anatomy and physiology before passing in two of the first three parts of the first examination is not recognized. If rejected, a candidate, before being admitted to re-examination, must continue his studies at a recognized medical school for not less than three months.

Final College.—This examination consists of three parts: Part I, medicine, including medical anatomy, pathology, practical pharmacy,[1] therapeutics, forensic medicine, and public health; Part II, surgery, including pathology, surgical anatomy, and the use of surgical appliances; Part III, midwifery and gynaecology. The examination may be passed at one time or in each part separately. Evidence of attendance at courses of instruction in the subjects of the three parts must be produced, and also of having conducted twenty labours. A candidate will be [illegible] to Parts I, II, and III of the Third or Final [illegible]ion at the expiration of two years (twenty-four months) from the date of passing the Second Examination, and on production of the required certificates of study, [illegible]ded that the examination is not completed before the [illegible] and five summer [illegible] ing the Preliminary Examination. A rejected candidate must produce evidence of further instruction during three months.

Note.—A person holding a Colonial, Indian, or foreign qualification which entitles him to practise in the country where such qualification has been obtained is, after a course of study and examination equivalent to those required by the Regulations of the two Royal Colleges, admissible to the Second and Third or Final Examinations without any interval. Members of an English, Scottish, or Irish university are under certain conditions eligible for admission to the Third or Final Examination two years after passing at their university the subjects included in the First and Second Examinations of the Board.

A Doctor or Bachelor of Medicine or Surgery of an Indian, Colonial, or foreign university recognized for the purpose, who shall have passed at his university in the subjects of the First and Second Examinations will be eligible for admission to the Third or Final Examinations two years after passing in the said subjects.

Fees.

First examination, £10 10s. Re-examination, Parts I and II, £3 3s.; Parts III and IV, each £2 2s. Second examination, £10 10s. Re-examination, £6 6s. Third examination, £21. Re-examination, Part I. Medicine, £5 5s.; practical pharmacy, £2 2s. Part II, surgery, £5 5s. Part III, midwifery and diseases of women, £3 3s. Members of an English, Scottish, or Irish university, £5 5s. For the diplomas, £36 15s.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

This College has three grades—its Licentiates, its Members, and its Fellows. The Licence is only issued through the Conjoint Board, as already stated, unless the candidate commenced professional studies before October, 1884. Its Membership is only granted to those who have passed the final examinations for the Licence; or those who are registered practitioners and graduates of a recognized university: in any case they must be persons over 25 years of age, who do not practise in partnership, dispense medicines, or engage in trade. Candidates are examined in pathology and the practice of physic, partly in writing and partly viva voce. Those under 40 are also examined in Latin, and either Greek, French, or German. The examination fee is £6 6s., the Membership fee being £42, or the difference between that sum and what the candidate has already paid if a Licentiate. The body of Fellows is maintained by election from among the Members.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

This College has two grades—Members and Fellows. The Members are admitted as stated in the section dealing with the Conjoint Board. The Fellowship is granted after examination to persons at least 25 years of age who have been engaged in professional studies for six years. There are two examinations—the first in anatomy and physiology, which may be passed after the third winter session; the second, chiefly directed to surgery, which may be passed after six years of professional study. Candidates must pass the Final Examination of the Examining Board in England and be admitted Members of the College before admission to the Second Examination for the Fellowship, except in the case of graduates in medicine and surgery of not less than four years' standing of universities recognized by the College for the purpose, who are required to attend for one year the surgical practice of a general hospital recognized by the College after obtaining their degrees. The College also issues a diploma in dentistry.[2]

Fees.—At first examination: £5 5s. At second examination: £12 12s. Diploma fee: Members, £3 3s.; non-members, £13 13s.

SOCIETY OF APOTHECARIES OF LONDON.

This body confers a registrable diploma in medicine, surgery, and midwifery, now known as the L.M.S.S.A. There are nominally only two examinations, but both are subdivided.

Primary Examination.—Part I includes elementary biology, chemistry, chemical physics, practical chemistry, pharmacy, and before passing it the candidate must have undergone certain courses of tuition. Part II includes anatomy, physiology, and histology. This examination cannot be passed before the completion of twelve months'

[1] Candidates who have [illegible] passed in practical pharmacy will not be re-examined in that [illegible]t at the Third Examination.

[2] See p. 584.

practical anatomy, with demonstrations. These subjects cannot be taken separately, except in the event of the candidate having previously passed in one. Candidates will be excused any or all the subjects of the primary examination on producing evidence that they have passed equivalent examinations before an examining body recognized by the Society. Candidates referred in anatomy will be required to produce evidence of further work in the dissecting-room before being admitted to re-examination.

Final Examination.—This is divided into two sections, the first section being again subdivided into three parts. The first part includes the principles and practice of surgery, surgical pathology, operative manipulation, surgical anatomy, instruments and appliances. Part II includes: (*a*) The principles and practice of medicine (including therapeutics, pharmacology, and prescriptions), pathology, and morbid histology; (*b*) forensic medicine, hygiene, theory and practice of vaccination, and mental diseases. Part III: Midwifery, gynaecology, and diseases of newborn children, obstetric instruments and appliances. A candidate cannot present himself for this section before the expiration of forty-five months, during which time not less than three winter sessions and two summer sessions must have been passed at one or more of the medical schools connected with a general hospital recognized by the Society. Section 2 consists of clinical surgery and clinical medicine and medical anatomy, and a candidate before appearing at it must have completed five years of medical study.

FEES.

Primary examination, £5 5s.; final, £15 15s. Further information may be obtained from the Secretary, Court of Examiners, Apothecaries' Hall, Blackfriars, E.C. It is worth noting that Licentiates of this Society are eligible for admission to its membership, a position conferring the advantages commonly accompanying membership of a city guild. Information on this point should be sought from the Clerk of the Society at its Hall, Blackfriars.

The Scottish Universities.

THERE are in Scotland four universities, each of them possessing a faculty of medicine, and having the right to confer degrees which admit the holder to the *Medical Register*. In essential points the regulations in their medical faculties for undergraduates are on all-fours with one another, so that an account can be given of all of them together.

The universities in question are, of course, those of Edinburgh, Glasgow, Aberdeen, and St. Andrews, and in point of standing and repute it is not easy to differentiate between them. What provision each of the cities in which these universities are situated makes for the education of medical students will be found in the section on Medical Schools in Scotland; here it need merely be said that degrees in medicine from Scotland as a whole have always enjoyed an excellent repute.

The degrees granted in medicine and surgery to candidates of either sex are four in number—Bachelor of Medicine (M.B.), Bachelor of Surgery (Ch.B.), Doctor of Medicine (M.D.), Master of Surgery (Ch.M.). The two former are not separably obtainable one from the other. Besides these degrees a diploma in tropical medicine and hygiene is obtainable from the University of Edinburgh, as also a diploma in psychiatry. As for public health, registrable degrees in this subject are granted both by the University of Edinburgh and that of Glasgow, while diplomas in public health may be obtained from the universities of St. Andrews and Aberdeen. Information as to these will be found in the appropriate sections dealing respectively with preventive medicine and tropical medicine.

MATRICULATION.

Matriculation is effected by signing the statutory declaration, or *sponsio academica*, and paying a fee of £1 1s., but to make it effective enrolment as a student at some class of the university is necessary; moreover, to make matriculation a step to a degree a preliminary examination must be passed. This for medical students is an examination in English, Latin, elementary mathematics, and either Greek or French or German. Candidates are required to pass in all these subjects, either at one or at not more than two examinations, but they can present themselves as often as they please. These preliminary examinations are held twice a year—in spring and autumn—and in point of standard are believed to correspond to that set at the examinations for the Lower Certificate of the Oxford and Cambridge Schools Examination Board. The universities accept as the equivalent of the preliminary examination a large number of corresponding tests held by other bodies. The fee is 10s. 6d. Compliance with the regulations of the General Medical Council as to registration as set forth on p. 536 is necessary.

PROFESSIONAL EDUCATION.

The regulations as regards the subjects to be studied comply in all respects with the requirements and recommendations of the General Medical Council, and in addition necessitate definite study for stated periods of diseases of children, of the larynx, ear and nose, of the skin, of ophthalmology, and of mental diseases.

In respect of midwifery, the student must either conduct personally twenty-five cases of labour or attend a lying-in clinic for three months, and personally conduct twelve deliveries. He must also attend the medical and surgical practice of a hospital recognized for the purpose for at least three years. In each of the prescribed subjects of study the student must attend one or more courses of definite length, those in the more important subjects lasting not less than five months, and in the minor subjects half that time. In respect of these courses certificates must be obtained showing that the student has not only attended the courses regularly, but has duly performed the work of the class.

Out of the necessary five years of medical study, not less than two must be spent at the university whose degrees the student hopes to obtain, and the balance at any place officially recognized for such purpose. In each academic year there are two sessions—one lasting from the beginning of October to the middle of March, and the other from the middle of April to the end of June.

PROFESSIONAL EXAMINATIONS.

The distinctive feature of the Scottish curriculum is that, though nominally there are only four examinations, each of these may be, and habitually is, split up by the student into sections. Hence, a student may complete some stage of his career during the course of nearly every session. Thus, by the end of the first winter session the student may get rid of physics and chemistry. At the end of the first summer session he can finish with botany and zoology, and with anatomy and physiology at the end of the second. Practical materia medica may be taken at any period of examination after the necessary course of instruction has been attended. Pathology and materia medica he will pass at the end of the third year, and so on, until the Final Examination at the end of the fifth summer session in clinical medicine, clinical surgery, and clinical gynaecology. At each examination the candidate may pass "with distinction," and a record is kept of the merit displayed, so that, when the time comes for the candidate to graduate, one who has done well throughout can be declared as graduating with first or second class honours. A further point in the system is that the student's own teachers commonly take some part in his examination.

Of the four examinations, the first deals with physics, botany, zoology, and chemistry; the second with anatomy and physiology; the third with materia medica and pathology; the fourth with medicine and surgery (clinical and systematic), midwifery, forensic medicine, and public health, and clinical gynaecology. The first three examinations are held three times a year; the final twice a year.

Exemption from the first professional examination can be obtained by candidates who have passed an examination at any recognized university in its subjects qualifying for a degree in science or in arts. Before appearing for examination at the stated periods the student must have attended the necessary course of lectures in each subject and have satisfied the examiners in all the subjects of the previous examination. When a candidate presents himself for an examination in several of its parts, but is not successful in all of them, he is credited at the next examination with those subjects in which he has previously been approved.

The Higher Degrees.

It is open to those who are already M.B., Ch.B. to proceed either to the M.D. or the Ch.M. A candidate for the former must have been engaged for not less than one year at work in the medical wards of a hospital or in scientific research in a recognized laboratory or in the Naval or Military Medical Services, or have been at least two years in general practice, and he must be 24 years of age. He has to write a thesis on any subject not exclusively surgical, and is examined in clinical medicine and in some one or other of its special departments. The regulations for candidates for the Ch.M. are of a corresponding character, a period of surgical work in a hospital or elsewhere being substituted for medical work, and his thesis being on a surgical rather than a medical subject. He is examined in surgical anatomy, clinical surgery, operative surgery, and in some of the special departments of surgery.

Fees.

It is estimated that the class examination and other fees for the M.B., Ch.B. come altogether to £150, the separate fees included in this calculation being as follows:

	£	s.	d.
Preliminary Examination ...	0	10	6
First Professional	6	6	0
Second Professional	5	5	0
Third Professional	4	4	0
Finals	7	7	0

Re-entry in any subject in which the candidate has failed entails a fresh payment of £1 1s. Candidates for the M.D. and Ch.M. pay £15 15s., and on re-entry £5 5s.

More detailed information with regard to the University of Edinburgh can be obtained from the *Medical Programme*, price 2d., which is published by Mr. Thin, 55, South Bridge, Edinburgh, or on application to the Dean of the Faculty of Medicine. Similar information about Glasgow should be sought from the Assistant Clerk, Matriculation Office, Glasgow. With regard to Aberdeen, application may be made to the Secretary of the Medical Faculty, Marischal College. In respect of St. Andrews, information can be obtained either from the Secretary of the University or, alternatively, the Secretary of the United College, St. Andrews, or the Secretary of University College, Dundee, these being the two constituent colleges of the University of St. Andrews.

Finally, it should be mentioned that, in connexion with all the Scottish universities, including St. Andrews, there are valuable bursaries and scholarships, some information as to which will be found in the article on Medical Schools.

The Scottish Corporations.

There are three medical corporations in Scotland—the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Their licences can be separately obtained only by persons who are already in possession of a recognized qualification in surgery in the case of the College of Physicians, and in medicine in the case of the College of Surgeons and the Faculty of Physicians and Surgeons of Glasgow. All others must submit to the examinations held by the Conjoint Board which the three corporations have combined to form. Details concerning this Board and its component colleges follow. The conditions on which their higher qualifications are granted will be found set forth separately in connexion with each corporation.

THE CONJOINT BOARD IN SCOTLAND.

This body has charge of all questions connected with candidates for the Conjoint Licences of the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow. Those who are approved at its examinations are entitled to registration and to the initials denoting the Licences of the three bodies concerned, namely, L.R.C.P.Edin., L.R.C.S.Edin., and the L.R.F.P.S.Glasg. It requires all candidates to comply with the regulations of the General Medical Council as regards registration of medical students set forth on page 536, and to pass a preliminary examination in arts.

It has an examination of its own of this character, which is conducted for it by the Educational Institute of Scotland, but is prepared to accept any of the educational tests approved by the General Medical Council, a list of which will be found on page 537.

Professional Curriculum.

Subject to the passage of the preliminary examination for registration as a medical student, the candidate must pass not less than five years in medical study, each comprising a winter and a summer session. On this point and all others connected with the curriculum the regulations of the Board are in keeping with the recommendations and requirements of the General Medical Council as already set forth. The Board does not exact that candidates shall pursue their study at any particular place, and is prepared to accept certificates of having attended the necessary courses from any recognized medical school.

Its examinations are four in number, each of them being held six times every year—four times in Edinburgh and twice in Glasgow; and it is open to candidates to present themselves for examination either at one place or the other. The first examination deals with physics, chemistry, and elementary biology; the second with anatomy and physiology, including histology; the third with pathology and materia medica, including pharmacy; and the final with (1) medicine, including therapeutics, medical anatomy, and clinical medicine; (2) surgery, including surgical anatomy, clinical surgery, and diseases and injuries of the eyes; (3) midwifery and diseases of women and of newborn children; (4) medical jurisprudence and hygiene. Candidates may also be examined on diseases of children, diseases of the ear and throat, insanity, vaccination, etc.

These examinations must be passed in due order, and before admission to any of them the candidate must supply certificates showing that he has completed the due periods of study of their subjects. On the other hand, the examinations, other than the final examinations, can be broken up by the student and each of the subjects taken separately. If a candidate takes up several subjects of an examination or the whole of the subjects at one time but fails in some of them, he is credited at the next examination with those subjects in which he has been approved. As regards the final examination, a candidate can present himself in medical jurisprudence and public health at any time after completion of the previous examination and of his study of these subjects; but in medicine, surgery, and midwifery a candidate cannot present himself until the completion of five years' study, and must enter therefor conjointly.

Finally, it should be mentioned that a person who holds a qualification from a recognized university conferring a legal right to practise in the country from which it was obtained and granted after courses of study and examination deemed by the Board to be the equivalent of its own, may be exempted from the three earlier examinations in whole or in part, particularly in such cases as are recognized for registration on the Colonial List of the British *Medical Register*; but to no examination can a candidate be admitted within three months of his rejection by some other licensing body.

Fees.

It is estimated that the total cost of lectures and fees for the conjoint examinations is about £152. The separate examination fees are as follows: Preliminary, £1; First, Second, and Third Professional, £5 each; and the Final, £15. On re-entry for all divisions of the first three professional examinations payment of £3 is required, and on re-entry for the Final Examination, £5. Smaller payments are necessary when re-entry is only in one or two subjects.

Information concerning this Board should be sought either from Mr. James Robertson, solicitor, 54, George Square, Edinburgh, or from Mr. Alexander Duncan, B.A., LL.D., Faculty Hall, St. Vincent Street, Glasgow.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

This College has two grades—its Licence and its Fellowship. Licentiates may be of either sex, but for the

Fellowship women are not eligible. As an original qualification the Licence is only granted after fulfilment of the regulations of the Conjoint Board, but as an additional qualification can be obtained by those already possessed of a registrable qualification in medicine. In this case the candidate has to pass a written, oral, and clinical examination in surgery and surgical anatomy, and may be asked to operate on the dead body. The fee is £15 15s., of which £10 10s. are returned to unsuccessful candidates. On due cause being shown, a special examination may be granted, the fee being £20, of which £10 is returned to a candidate if he is not approved.

Candidates for the Fellowship must be not less than 25 years of age, and have been in practice subsequent to registration for at least two years, and must hold either a surgical degree from a university recognized for that purpose by the College, or an approved diploma obtained as the result of an examination which includes surgery as well as medicine. Candidates are examined in surgery, including clinical and operative surgery, surgical anatomy, and one other subject which they may choose from among the following: Ophthalmology, laryngology, including aural and nasal surgery, dental surgery, advanced midwifery with obstetric surgery, gynaecology, surgical pathology and operative surgery, and advanced anatomy. The examination is written, oral, and clinical or practical. A candidate who desires to be examined must give one month's notice, his application for admission being supported by two Fellows of the College, one of whom must be resident in Edinburgh, or, in default, by testimonials obtained specially for the purpose.

Licentiates of the College pay £35, and others £45. For further information application should be made to the Clerk of the College, Mr. D. L. Eadie, 54, George Square, Edinburgh.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

THIS College has three grades—Licentiateship, Membership, and Fellowship; to the two latter women are not admissible. The regulations applying to candidates for the Licentiateship have already been generally indicated. If desirous of receiving it apart from those of the other two corporations, they must be holders of a surgical qualification recognized by the College, and must pass an examination corresponding to the medical part of the Final Examination of the Conjoint Board, and conditioned in the same way, and also an examination in materia medica. The fee for examination is 15 guineas, a special examination being obtainable on due cause being shown, and on payment of 5 guineas extra. Ordinary examinations take place monthly on the first Wednesday, except in September and October. A candidate for the Membership must be either a Licentiate of a Royal College of Physicians or a graduate in medicine of a British or Irish university, and in either case not less than 24 years of age. He is examined in medicine and therapeutics, and in one further subject at his choice. This may be either (*a*) one of the departments of medicine specially professed; (*b*) psychology; (*c*) general pathology and morbid anatomy; (*d*) medical jurisprudence; (*e*) public health; (*f*) midwifery; (*g*) gynaecology; (*h*) diseases of children; or (*i*) tropical medicine. Licentiates of the College pay £21, others £36 15s. A candidate who is not less than 40 years of age, and who has been in practice not less than ten years, may be exempted from part or all of the examination, provided he is highly distinguished for his scientific attainments. The latter is held quarterly, and application for admission to it must be made a month previous to its date. For the Fellowship, the candidate must have been a member of the College for at least three years, and, if accepted, pays fees amounting altogether to a little less than £65. Any further details required can be obtained on application to the Secretary of the College.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THIS body possesses two classes—Licentiates and Fellows. The regulations applying to the former correspond with those respecting candidates for the Licence of the Royal College of Surgeons of Edinburgh. Candidates for the single Licence are examined in surgery (including clinical surgery and surgical anatomy). The fee is £15 15s., and examinations are held quarterly. Candidates for the Fellowship must be qualified medical men of not less than two years' standing and 24 years of age. Candidates approved at this examination are then eligible for election as Fellows. The Faculty can also elect two Fellows annually without previously submitting them to examination, provided they "have highly distinguished themselves in medical science or practice." They must be of not less than ten years' standing and 40 years of age. Further information can be obtained from Mr. A. Duncan, B.A., LL.D., Faculty Hall, St. Vincent Street, Glasgow.

The Irish Universities.

THE opportunities in Ireland for acquiring medical and surgical degrees are ample, for there are nominally three and practically five universities, each possessed of a medical faculty. These are the University of Dublin, usually known as Trinity College, Dublin, the Queen's University of Belfast, and the National University of Ireland. The two former teach students, examine them, and grant or withhold decrees accordingly; while the third is by way of being an academic body only, inasmuch as its practical work is divided up among three constituent colleges. One of these is University College, Cork, another University College, Galway, and the third University College, Dublin. The regulations of all these universities in respect of medical degrees are given in the following sections; while specific information as to the arrangements for the education of medical students made at each of them will be found in the section relating to Irish Medical Schools.

UNIVERSITY OF DUBLIN.

THIS university, better known, perhaps, as Trinity College, Dublin, grants two degrees in medicine (M.B. and M.D.), two in surgery (B.Ch. and M.Ch.), two in midwifery (B.A.O. and M.A.O.), and diplomas in the same subjects and in public health. It also confers two degrees in dentistry. Its degrees it only grants to those who, besides having passed the Professional Examination, have graduated in arts.

PROFESSIONAL EXAMINATIONS.

A candidate for the Final Examination for the M.B., B.Ch., and B.A.O. degrees must be a matriculated student of at least five years' standing, and though he need not have taken his degree in arts before admission to the Professional Examination, he cannot take his medical degrees until he has been admitted a B.A. As a rule, at least three years of his medical study must be pursued at the university, but the Board has power to accept one year at a recognized London or Edinburgh hospital as the equivalent of one year's attendance at a recognized Dublin hospital, or two years at a recognized country or Colonial hospital as one year of metropolitan work. The examinations which he has to pass are the Preliminary Scientific, Intermediate Medical, and the Final, and of course before admission to any of them he must be duly signed up as regards study in the subjects involved.

Preliminary Scientific.—This covers (*a*) chemistry and physics, (*b*) botany and zoology; the two divisions may be taken together or at different times.

Intermediate Medical.—This is divided into two parts: (*a*) Anatomy, physiology, and histology; (*b*) applied anatomy and applied physiology. The two parts may be taken separately, but in each part all subjects must be passed at one time.

Final Examination.—Part I: Hygiene and medical jurisprudence, pathology, materia medica, and therapeutics. *Part II:* (*a*) Midwifery, gynaecology (clinical, paper, and viva voce); (*b*) medicine, clinical medicine, and mental diseases; (*c*) surgery in all branches, including clinical ophthalmology. The three sections of Part II may be divided, any two being taken at one examination, and the third later. In either case the full curriculum must have been completed, nor can the final subject be taken until at least the end of the fifth year.

M.D.—The candidate must have passed all the qualifying examinations in medicine, surgery, and midwifery, and

have taken, or have been qualified to take, the degree of B.A. three years previously. He must read a thesis before the Regius Professor of Physic.

M.Ch.—The candidate must be a B.Ch. of not less than three years' standing, and have been engaged in practice for two years. Graduates of ten years' standing may be given a special examination.

M.A.O.—The candidate must have passed the qualifying examination in medicine, surgery, and midwifery. The examination is specially directed to obstetrics and practical gynaecology.

For the university diplomas mentioned the candidate must have completed two years in arts and five in medical studies. The examination and courses required are the same as for the degrees.

FEES.

Matriculation, 5s.: M.B., B.Ch., B.A.O., £17; M.D., £13; M.Ch., £11; M.A.O., £5; L.M., L.Ch., L.A.O., £11. Further information may be obtained from the Registrar of the School of Physic, University of Dublin.

QUEEN'S UNIVERSITY, BELFAST.

THE degrees granted by the Medical Faculty of this university are as follows: Bachelor of Medicine (M.B.), Bachelor of Surgery (B.Ch.), Bachelor of Obstetrics (B.A.O.), Doctor of Medicine (M.D.), Master of Surgery (M.Ch.), Master of Obstetrics (M.A.O.). The university also confers a diploma in Public Health. The first three degrees mentioned serve as a qualification for admission to the *Medical Register*, and are not granted separately. In addition to matriculating and passing his professional examinations, a candidate for these degrees must have passed three of the regulation five years as a student at the Belfast School of Medicine.

PROFESSIONAL EXAMINATIONS.

The examinations for the M.B., B.Ch., B.A.O. are four in number. The first deals with: (1) Inorganic, Organic, and Practical Chemistry, (2) Experimental and Practical Physics, (3) Botany and Practical Botany, (4) Zoology and Practical Zoology. It is divided into two parts, of which Botany and Zoology form one. The Second Examination covers Anatomy and Physiology, and may be taken at the end of the second year of the student's career. The Third Examination includes: (1) Pathology, (2) Materia Medica, Pharmacology, and Therapeutics, (3) Medical Jurisprudence, and (4) Hygiene. To be valid a certificate in regard to the study of the subjects of this examination must show that the work has been done subject to passing the First Examination.

The Final Examination includes: (1) Medicine, (2) Surgery, (3) Midwifery, (4) Ophthalmology and Otology. The student may pass in all subjects at once at the end of his fifth year, or he may divide the examination into two parts—namely, (1) Systematic, (2) Clinical, Practical, and Oral. The first part may be taken at the end of the fourth year, but for the second part the candidate may not present himself until the end of his fifth year. No certificate in regard to study of the subjects of this examination will be valid unless the work was done subsequent to passage in all the subjects of the Second Examination.

THE HIGHER DEGREES.

Candidates for the degree of Doctor of Medicine must be graduates in Medicine of at least three years' standing, unless they hold also a degree of the university in Arts or Science. In that case a standing of two academic years will suffice. Moreover, candidates must be able to show that the interval has been passed in the pursuit of such courses of study or practical work as may be prescribed. The degree may be conferred either (*a*) after a formal examination, or (*b*) in recognition of the merits of a thesis or of some piece of original study or research carried out by the candidate, followed by an oral or other examination in its subject. When an ordinary examination is imposed it will include (1) a written paper on the principles and practice of medicine, (2) a commentary on a selected clinical case, (3) a clinical and viva voce examination, and (4) a written paper and clinical or practical and viva voce examination of a subject chosen from the following list: (1) Human Anatomy, including Embryology, (2) Physiology, (3) Pathology, (4) Pharmacology and Therapeutics, (5) Sanitary Science and Public Health, (6) Forensic Medicine and Toxicology, (7) Mental Diseases. The regulations for the degrees of M.Ch. and M.A.O. are of the same general nature.

NATIONAL UNIVERSITY OF IRELAND.

THE National University of Ireland carries on most of its educational work through three constituent colleges, one in Dublin, one in Cork, and one in Galway. Each of these provides a full medical curriculum, and all candidates for the medical degrees of the university must pass three of their five years of study at one or other of them. These years do not count except after matriculation or recognition as a student of the Medical Faculty obtained in some other fashion. The candidates at each constituent college are examined thereat by the university, and a common standard of education is secured by all courses of instruction and the regulations concerning them having to be approved by the Board of Studies of the University. In addition to the ordinary degrees in medicine and surgery, the university grants those of Bachelor and Master of Obstetrics, Bachelor and Master in Public Health, and Bachelor and Master in Dental Surgery, as well as diplomas in Public Health and in Mental Diseases.

PROFESSIONAL EXAMINATIONS.

There are four examinations. The first, which should be passed at the end of the first year, includes Part A (Chemistry and Physics) and Part B (Botany and Zoology), which parts candidates may take separately or together. At the end of the second year they should pass in Anatomy and Physiology; and at the end of the fourth year in Pathology, Materia Medica and Therapeutics, Hygiene and Public Health, Forensic Medicine, and Toxicology. The final examination is divided into three parts, each of which may be taken separately—namely, (*a*) Medicine, including Mental Diseases; (*b*) Surgery, including Ophthalmology and Otology; (*c*) Midwifery and Gynaecology.

The higher degrees are obtainable either by examination or on presentation of an approved work, but in each case not less than three years must have elapsed since the candidate acquired the corresponding degree of Bachelor. Information as to the arrangements of each of the constituent colleges will be found in the section relating to Irish Medical Schools.

The Irish Corporations.

THERE are in Ireland, as in London, three licensing bodies other than the Medical Faculties of Universities, and, just as in London, there are two Royal Colleges of Physicians and Surgeons and an Apothecaries' Hall. The similarity is still more complete, for in Ireland also the two colleges have formed a Conjoint Board, as in London, which is responsible for the recommendation of candidates to the two bodies for their respective licences. The Apothecaries' Hall gives its Licence separately. The Conjoint Board also holds examinations for the diploma in Public Health granted by the two colleges.

THE CONJOINT BOARD IN IRELAND.

THIS body requires of candidates the passage either of its own preliminary examination in the subject of general education or proof that the candidate has passed one of the tests accepted by the General Medical Council.

PROFESSIONAL EXAMINATIONS.

There are four professional examinations, the first of which cannot be passed earlier than the end of the first winter session, nor the fourth before the conclusion of full five years of medical study, and before being admitted to any of them the candidate must show that he has studied the different subjects in practice and theory for the requisite periods, certificates to this effect being accepted from the authorities of most of the recognized medical schools at home and abroad. The first and second examinations deal respectively with (*a*) chemistry and physics, and (*b*) biology; and (*a*) anatomy, and (*b*) physiology and histology. All parts of these examinations, as also of the

following one, which deals with (*a*) pathology, (*b*) materia medica, pharmacy, and therapeutics, (*c*) public health and forensic medicine, may be taken separately.

Final Examination.—This is divided into three divisions, which cannot be completed until at least four years have passed in medical studies other than those for the first examination, and five years, at least, since the beginning of the curriculum. The divisions are (*a*) medicine, including fevers, mental diseases, and diseases of children; (*b*) surgery, including ophthalmic and operative surgery; (*c*) midwifery, including diseases of women and newborn children, and the theory and practice of vaccination. Candidates are recommended to present themselves in all the subjects of the Final Examination at one time, but a candidate at or after the end of the fourth year may present himself in any one of the divisions (*a*), (*b*), or (*c*), provided he has completed his curriculum as far as concerns the division in which he presents himself.

Fees.—Preliminary Examination, £2 2s.; re-examination, £1 1s. First Professional Examination, £15 15s.; second, £10 10s.; Third, £9 9s.; Final, £6 6s.; re-examination fee is £2 2s. for each division.

Further information can be obtained from Mr. Alfred Miller, Secretary of the Committee of Management, Royal College of Surgeons, 123, St. Stephen's Green, Dublin.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THOSE whose names already appear on the *Medical Register* can obtain the separate Licence in Medicine of this College, and its Licence in Midwifery. In either case an examination has to be passed in the subjects indicated, questions on midwifery, hygiene, and jurisprudence being included in the examination for the Licence in Medicine. For the Licence in Midwifery practitioners of over five years' standing are exempted from examination by printed questions. The other grades of the College are Members and Fellows. The former are admitted after an examination which is open to all university graduates in medicine and Licentiates in medicine of Royal Colleges of Physicians, and deals with the general subjects of medicine. Fellows are selected, by vote, from among the Members.

Fees.—For the Licence in Medicine, 15 guineas; for the Licence in Midwifery, 5 guineas; or 16 guineas for both if they are taken within an interval of a month. Special examinations cost in each case 5 guineas extra. For the Membership, 20 guineas to a Licentiate of the College; 35 guineas to others; a special examination costing 10 guineas extra. The Fellowship £35, in addition to stamp duty, £25. Information as to special examinations and other points can be obtained from the Registrar, the Royal College of Physicians, Kildare Street, Dublin.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THIS body, besides granting a Licence in Surgery, admits those possessed of registrable surgical qualifications to its Fellowship under certain conditions. Its Licence is usually granted conjointly with that of the College of Physicians, but it is given separately to holders of a registrable qualification in medicine, provided that the College is satisfied that adequate courses of study have been pursued, and provided its own professional examination is passed. This examination is held on its behalf by the Conjoint Board, and is identical with the ordinary surgical portion of the examinations imposed by that body.

The Fellowship.—Candidates for the Fellowship must pass two examinations, of which the first is in anatomy (including dissections), physiology, and histology; and the second in surgery (including surgical anatomy) and pathology. Both examinations are partly written, partly practical, and partly viva voce; while the final examination includes the performance of operations. All subjects of either examination must be passed at one time, and to neither can a candidate be admitted who has been rejected in any of its subjects by any other licensing body within three months. Candidates are not admitted to the Primary Examination except on evidence that they have already passed an examination in anatomy, physiology, and histology, held by some university or other body whose degrees or licences entitle the holder to admission to the *Register*; if, however, the candidate is a person whose name is on the Colonial or foreign medical *Register*, at the discretion of the Council. Candidates for the Final Examination must be over 25 years of age, produce a certificate of general good conduct signed by two or more Fellows of the College, and, if successful, must make a declaration before admission to the effect that they do not conduct dispensing practices, and will not do so as long as they are Fellows.

Fees.—Candidates for the Licence pay 5 guineas for examination, which sum, if they pass, is counted as part of the fee payable on admission to the Licence, this being 25 guineas. Candidates for the Fellowship pay 5 guineas for each examination, the total of 10 guineas being reckoned as part of the fee payable on admission to the Fellowship. That fee is 25 guineas in the case of those who are already Licentiates, and 40 guineas in the case of others.

APOTHECARIES' HALL OF IRELAND.

A DIPLOMA is granted by this Hall which entitles the holder to be registered as a practitioner of medicine, surgery, and midwifery, and confers also the privileges of an apothecary. Two periods of dissection, each not less than six months, must be included, and twenty-seven months of hospital attendance, or its equivalent. Three professional examinations have to be passed; they are held quarterly. The Primary Examination deals with biology, physics, and chemistry, practical and theoretical; the Intermediate Examination is in practical anatomy and physiology, and histology and materia medica. A candidate who has passed tests in any of the subjects of these examinations before another licensing body is exempt from further examination in such subjects. The Final Examination deals with medicine, medical and surgical pathology, medical jurisprudence and hygiene, pharmacy, surgery, ophthalmology, midwifery, and gynaecology. The Hall's own examination in all these subjects must be passed, except in the case of candidates who have already been admitted to the *Register*. These are only examined in subjects not covered by their previous qualifications. Women candidates are eligible.

Fees.—Primary Examination, £5 5s.; Intermediate Examination, £10 10s.; Final Examination, £15 15s.; Final alone, when the others have been passed elsewhere, £21.

Application for other information should be made to the Registrar, 40, Mary Street, Dublin.

MEDICAL SCHOOLS AND COLLEGES.

LONDON.

APART from post-graduate and other special schools, the medical schools of London number as many as fourteen, including in the count two institutions which provide education only in the preliminary and intermediate subjects, under the title of "university centres."

Little guidance can be given in these columns as to choice of one school rather than another, for such choice must depend largely on personal factors. In a general way, however, it may be said that while to the student of to-day it may, perhaps, be almost a matter of indifference to what school he belongs, there is often in after-life a certain advantage in having been an alumnus at one of the more celebrated schools. On the other hand, at the smaller schools more opportunities, perhaps, present themselves to the average man for obtaining student appointments, and especially the coveted posts of house-physician and house-surgeon.

Information as to the fees at the different schools, and the scholarships, prizes, and junior appointments which they offer, will be found in the following pages, and should be carefully studied by those who have no personal reason for preferring one to the other. The courses which they provide are fundamentally the same, and in all of them the arrangements made are such as to meet the requirements of students of every class—of those who are aiming at the diplomas of the Conjoint Board or the Apothecaries' Society not less than of those who have London or other university degrees in view. At all, too, as has been said, special facilities are offered to men who have commenced their professional education at the older universities, Oxford and Cambridge. Apart from these facts, the only point to which attention can usefully be directed

is that on personal inquiry and investigation reason may perhaps be found for regarding the teaching accommodation and general arrangements for students at some schools as superior to those at others. Those who propose to enter a London school should note carefully what is said respecting London students in the opening pages of this issue.

St. Bartholomew's.

This institution fills one side of Smithfield and Giltspur Street, sharing with the Post Office buildings a large island of ground separated practically from all other buildings: it is on the edge of the City, and easily reached from all parts of London. The hospital contains 750 beds. Extensive new buildings, opened in July, 1907, occupy part of the ground acquired from the old Bluecoat School, and these materially enhance the attractions of the place as one of medical study. The library and the chemical, physical, biological, and physiological laboratories have now at their side a very large building, which includes club rooms for the Students' Union, a writing room, luncheon and dining halls, new quarters for the resident staff, and an out-patient department and accommodation for special departments of such large size as to be unsurpassed by any hospital in the kingdom. During the year 1909 a second block of new buildings was completed. These form the pathological department, and include, in addition to a new and extensive *post-mortem* room, large and well-equipped laboratories for clinical pathology, pathological histology, bacteriology, and chemical pathology, altogether forming the most complete pathological department in the country. Within the precincts of the hospital also there is a residential college for a large number of students. The Students' Union owns, moreover, grounds of some 10 acres in extent for recreative purposes at Winchmore Hill, which is easily accessible from the hospital.

Special classes are held for students preparing for the Preliminary Scientific and other examinations for the M.B., M.D. of the Universities of London, Oxford, and Cambridge, and for the higher surgical degrees at the same universities, including the M.S.Lond., F.R.C.S., M.Ch.Oxon., and M.C.Cantab. Special laboratory instruction for the D.P.H. of Cambridge, Oxford, Durham, and London is also given.

Appointments.—Clinical clerks to the physicians and to the physician-accoucheur, and dressers to the surgeons and in the casualty department, are chosen from the students; clerks and dressers are also selected from the students to attend in the out-patient rooms, in the special departments (Ophthalmic, Orthopaedic, Gynaecological, Laryngological, Aural, Dermatological, Electrical, and Dental) and in the *post-mortem* room. Chief assistants and clinical assistants are selected from qualified men appointed yearly to help in the special departments just named. Ten house-physicians and ten house-surgeons are appointed annually. During their first six months of office they act as "Junior" house-physicians and house-surgeons, and receive a salary of £25 a year. During their second six months they become "Senior" house-physicians and house-surgeons, and are provided with rooms by the hospital authorities, and receive a salary of £80 a year. A resident Midwifery assistant, an Ophthalmic house-surgeon, and a house-surgeon for diseases of the throat, nose, and ear are appointed every six months, and are provided with rooms and receive a salary of £80 a year. Two Assistant anaesthetists are appointed annually, and receive salaries of £120 and £100 a year respectively. An Extern Midwifery assistant is appointed every three months, and receives a salary of £80 a year.

Scholarships.—Five entrance scholarships will be awarded after an examination to be held on September 23rd, 1912, and following days. The subjects of examination and conditions of eligibility for these scholarships are: (1) Two scholarships, value £75 each, in not fewer than two nor more than three of the following subjects—Chemistry, Physics, Botany, Zoology, Physiology, and Anatomy, limited to students under 25 years of age who have not entered on the medical or surgical practice of any London medical school. (2) One scholarship, value £150, in not fewer than three of the following subjects: Chemistry, Physics, Botany, Zoology, and Physiology, limited to students [illegible] have not entered on the medical or [illegible] London medical school. (3) The entrance scholarship in Arts, of the value of £100, will be given in Latin and Mathematics, with one other language—Greek, French, or German. (4) The Jeaffreson Exhibition in Mathematics, Latin, and one other language—Greek, French, or German—and of the value of £50. The value of the scholarships and prizes is over £1,000 annually.

Further information and a handbook can be obtained on application to the Dean of the Medical School, St. Bartholomew's Hospital.

Charing Cross.

This school, with its hospital, is situated in the very centre of London, and is easily accessible from all parts. It is within a few minutes' walk of the University of London laboratories at King's College. Its courses of instruction are specially designed to meet the requirements for the University of London degrees, the diplomas of the Royal Colleges, and the final studies of other universities. The hospital, with its convalescent home at Limpsfield, contains 200 beds. Over 2,000 cases pass through its wards each year, and some 24,000 out-patients and casualties are treated. There are special departments for all classes of work.

The school, alike in the interests of educational efficiency and in accordance with one of the chief recommendations of the University of London—of which it is a constituent college—has now an arrangement whereby its students can carry out their work in the primary and intermediate portions of their studies in the laboratories of the University of London (King's College), and situated within a few minutes' walk of the hospital. It enables its students to get the best university education from a large professional and teaching staff in their earlier studies, while still allowing them to take advantage of their own school for social and collegiate purposes.

As a further result of this reorganization the school has now exceptionally large and commodious laboratories for the final studies. A large laboratory, capable of accommodating up to 100 students, is available for general pathological work, demonstrations, and research, under the charge of the Lecturer and Assistant Lecturer of Pathology. Systematic demonstrations covering the whole range of pathology are arranged daily throughout each session between 10 a.m. and 5 p.m. Good departments are also available for other final subjects of bacteriology, chemical pathology, materia medica, toxicology, public health, and operative surgery, and also for research work by post-graduates. The school has recently adapted an exceptionally fine series of its departments for purposes of these studies, and the University of London has taken over these for their departments of public health and bacteriology in King's College, as their "University Laboratories of Public Health and Bacteriology," and have transferred to them their full professorial and teaching staff.

The museum contains over 4,000 specimens, and has recently received a notable collection of over 700 gynaecological specimens, "The Cuthbert Lockyer Collection," from one of the members of its hospital and school staff.

The library contains the latest editions of the usual textbooks and the chief medical periodicals. The Students' Club Union includes reading and smoking rooms, cloak-room, refreshment room, etc., in which extensive alterations have recently taken place, adding greatly to the social comfort of the students.

Appointments.—Demonstratorships and assistant demonstratorships are open to students of the school. Medical, surgical, and obstetric registrars to the hospital are appointed annually. Six house-physicians, six house-surgeons, and two resident obstetric officers are appointed each year after competitive examination. They are provided with board and residence in the hospital. Clinical clerks and dressers are appointed in all the general and special departments of the hospital, and arrangements are also made for students who have not entered for the entire medical curriculum to hold these posts. Every student holds in turn the post of pathological assistant and assists at the autopsies, and on the completion of his clinical appointments takes up the duty for three months of pathological clerk in the clinical laboratory under the immediate supervision of the bacteriologist. The above appointments are open without any additional fee.

Fees. Sessional payments of 17 guineas for the winter session and 8 guineas for the summer session for London University and other university students, and 15 guineas and 7 guineas respectively for Conjoint Board students

with an entrance fee of 10 guineas; or a total composition fee for five and a half years' tuition of 120 guineas in the case of London University students, and of 110 guineas for five years' tuition for the Conjoint Board students. Special facilities are offered for students and post-graduates desiring to take up particular classes or work in the wards and special departments of the hospital for longer or shorter periods. The fees are those of the classes attended or in accordance with the period and character of hospital attendance desired. Students and graduates entering for these shorter courses are eligible for the various resident and assistant appointments in the hospital. The above fees are absolutely inclusive, with the exception of vaccination, dispensing, and fever hospital attendance, which have to be taken outside the school.

All information regarding scholarships, prizes, etc., or any further information desired, may be had of the Dean (Dr. William Hunter, F.R.C.P.), the Medical School, Charing Cross Hospital, London, W.C.

ST. GEORGE'S.

THIS school is at Hyde Park Corner, and is carried on in connexion with St. George's Hospital, an institution having a service of 436 beds, of which 100 are at the convalescent hospital founded by Atkinson Morley at Wimbledon. It provides for the instruction of its students in the preliminary and intermediate subjects of the curriculum at the teaching centres of London University established at King's College and University College. The school at Hyde Park Corner is devoted entirely to the teaching of clinical subjects, great attention being paid by the members of the staff to individual teaching. A number of special courses are given, in which the requirements of university and all other examinations receive careful attention.

The St. George's Hospital Club consists of an amalgamation club, with smoking and luncheon rooms on the hospital premises, and other students' clubs, with an athletic ground at Wimbledon. Students have the advantage of a well-filled library of medical and scientific books. A register of accredited apartments, and a list of medical men and others willing to receive St. George's men as boarders, may be seen on application to the Dean.

Appointments.—Dresserships to the surgeons and clinical clerkships to the physicians are open without fee to all students of the hospital. There is a large number of resident appointments, which may be held for six, twelve, or eighteen months, and are open without fee to every perpetual student of the hospital, and are made strictly in accordance with the merits of the candidates. Besides this, after the student has held a house appointment, the following are, among others, open to him: Medical registrarship at £200 per annum; surgical registrarship at £200 per annum; curatorship of the museum at £200 per annum; assistant curatorship at £100 per annum; obstetric assistantship, resident, at £50 per annum; the post of resident anaesthetist at £100 per annum; the post of senior anaesthetist at £50 per annum; the posts (2) of junior anaesthetists, each at £30 per annum.

Scholarships.—Two university entrance scholarships in anatomy and physiology (70 guineas and £50) are awarded at the commencement of each winter session. The William Brown Exhibition of the value of £100 per annum (tenable for two years) is awarded by examination to a perpetual pupil of the hospital every second year. The William Brown Exhibition of £40 (tenable for three years) is awarded by examination to a perpetual pupil of the hospital every third year. Other prizes to the value of £200 are awarded annually to the students of the hospital.

Fees.—First year (preliminary science or first conjoint) £26 5s., or £21, according to course. Second and third years, £63 in two equal instalments. For the course of clinical study, in the fourth and subsequent years, entrance fee, £10 10s.; annual composition fee, £31 10s. No entrance fee is payable by St. George's students who have studied at King's and University Colleges.

Further information may be obtained from the Dean of the Medical School.

GUY'S.

THE hospital contains 617 beds in constant occupation; an additional 50 beds have been opened on the medical side of the hospital. Thirty-three beds are set apart for diseases of the eye, and 40 for the most urgent and interesting medical cases, which form the subjects of the weekly clinical lectures. There is a special ward of 32 beds for the reception of cases of diseases of women and for cases of difficult labour. Beds are also allotted to the throat and ear departments, to the orthopaedic department, and to the department for the treatment of diseases of the genito-urinary system.

The medical college fronts the east gate of the hospital, providing accommodation for 60 resident students. This contains a dining-hall, reading-rooms, a library of general literature, and a gymnasium for the use of the residents and of the members of the Clubs' Union. The athletic ground at Honor Oak Park is reached from the hospital in twenty minutes. The new Gordon Museum of Pathology, the Wills Library, and the school buildings in general afford unrivalled opportunities for a liberal education and for research. Special classes are held for the Preliminary Scientific and Intermediate M.B. examinations of the University of London and for the first F.R.C.S.Eng. Special teaching is provided to meet the requirements of the Universities of London, Oxford, and Cambridge in general pathology and pharmacology.

Appointments.—All appointments are given to students without extra payment, and according to the merits of the candidates, as determined by a committee of the medical staff. Sixteen out-patient officers, 8 house-physicians, 20 assistant house-surgeons, 8 house-surgeons, 2 ophthalmic house-surgeons, and 9 resident obstetric assistants, are appointed annually. The house-physicians and house-surgeons, obstetric residents and ophthalmic house-surgeons, hold office for six months each, and receive free board and lodging in the college. Every student is provided with rooms and commons in the hospital during the period of his "take in" as dresser. In addition to the clerkships and dresserships in the medical and surgical wards, students are appointed to the posts of clinical assistant, dresser, or clerk in the special departments of ophthalmology, laryngology, gynaecology, diseases of children, diseases of the nervous system, dermatology, otology, electricity, anaesthetics, and dentistry. More than 150 additional appointments have been added to the list of those annually open to students of the hospital, the majority of them being in the special departments.

Scholarships, Prizes, etc.—There are two entrance scholarships in Arts; one of the value of £100 open to candidates under 20 years of age, and one of £50 open to candidates under 25. Subjects: English, Latin, Arithmetic, Algebra, Euclid, and either Greek, French, or German. Three open scholarships in Science: One of £150 and one of £60, open to candidates under 25, and one of £50 to university students who have completed their study of Anatomy and Physiology. Subjects: Anatomy, Physiology, Chemistry, Practical Chemistry, Biology, and Physics. These examinations begin on September 23rd; names must be sent in on or before September 14th. Junior prizes for general efficiency, £20, £15, £10; Hilton prize for Dissection, £5; Michael Harris prize for Anatomy, £10; Sands-Cox Scholarship for Physiology, £15 for three years; Wooldridge Memorial prize for Physiology, £10; Beaney prize for Pathology, £34; Treasurer's gold medal in Medicine, Treasurer's gold medal in Surgery, and the Golding-Bird gold medal and scholarship for Bacteriology (£20) are awarded annually after competitive examination. The Gull Studentship in Pathology and the Beaney Scholarship in Materia Medica, of the annual value of £150 and £31 10s. respectively, are awarded without examination to enable research to be carried on in these subjects. An Arthur Durham Travelling Scholarship of £160 is awarded triennially.

Fees.—An annual composition fee is paid by all students until a registrable qualification is obtained. Further information may be obtained from the Dean of the Medical School.

KING'S COLLEGE HOSPITAL.

THE medical school carried on in connexion with this institution deals, as do the sister institutions at Westminster and University College Hospitals, with the advanced or final subjects of the medical curriculum. The arrangements for education in these subjects are very complete. The hospital contains over 200 beds, its in-patients numbering about 3,000 and its out-patients about 16,000 every year. In addition, a considerable number of midwifery cases are attended yearly. There are also special departments for diseases of women and children, ophthalmology, otology, laryngology, dermatology, and

dental surgery; pathological and vaccine departments are also included.

Appointments.—Fourteen resident medical and surgical officers are appointed yearly, as well as dressers and clerks in the wards, out-patient departments, *post-mortem* room, and special departments. Each of the special departments has also a senior clinical assistant, and there are six registrars, most of whom receive salaries or honorariums. There is also a Union Club, which combines athletics, music, and other societies connected with the school, and provides also a common room.

Fees.—The composition fee is 75 guineas if paid in one sum, or 77 guineas in two instalments, one of 41 guineas at entrance and the other of 36 guineas at the commencement of the second year. These fees include three years' membership of the Clubs and Societies Union. The prospectus of the school can be obtained on application to its Secretary.

THE LONDON.

THIS hospital (which contains 922 beds) and its medical college and dental school are in the Mile End Road, Whitechapel. All the arrangements are complete and modern. The college athletic club is at Highams Park, and is open to all members of the Clubs' Union. Special classes for the first and second M.B.Lond., the primary and final Fellowships, and other examinations are held. Those for the final and primary F.R.C.S. commence early in September. A special course for the D.P.H. will commence at the beginning of the winter session. A residential hostel on hospital ground has been opened for the convenience of students who wish to live near the wards and casualty departments.

Appointments.—The salaried appointments open to students are those of medical registrars (3), surgical registrars (3), obstetric registrar, medical, surgical, and obstetric tutors; senior dressers to out-patients; clinical assistants in the medical, surgical, ophthalmic, aural, light and skin, orthopaedic, and electrical departments. There are also 2 accoucheurs, 5 resident house-physicians, and 8 resident house-surgeons, 7 receiving-room officers, 2 emergency officers, 1 assistant director of the Pathological Institute, and 3 pathological assistants. Also paid and unpaid clinical assistants in the various special departments. In addition there are numerous assistantships and clerkships, and dresserships in the various departments.

Scholarships and Prizes.—The following is a list of scholarships: *At Entrance:* Price Scholarship in Science, [illegible] and Physiology, £60; Entrance Scholarship [illegible]0; Epsom Scholarship, £125; Buxton Scholarship [illegible] 10s. *After Entrance:* Anatomy and Physiology [illegible]0, £25; Lethe by Prizes, £20; Scholarships in Clinical [illegible] Obstetrics, £20 each; Duckworth Nelson [illegible] Sutton Prize, £20; Sir [illegible] Prizes, £9; Dressers' Prizes, £40; Practical Anatomy Prizes, £10; Douro Hoare Prize, £5; Wynne Baxter Prize, £5 5s. The London Hospital Medical College and the Eliza Ann Alston Medical Research [illegible] amount to over £21,000.

Fees.—Full course, entrance fee, 20 guineas; annual fee 30 guineas, commencing with second year.

Full information may be obtained from the Dean at the London Hospital Medical College, Mile End, E.

ST. MARY'S.

THIS school and its hospital are situated in Praed Street, in the neighbourhood of the residential districts of Paddington, Bayswater, and North Kensington, and is thus [illegible]ally convenient to students who wish to reside in the [illegible] of approved lodgings is [illegible]hool.

[illegible] site from [illegible]ently acquired at Park [illegible] now in use, and is easily accessible from [illegible]

[illegible]n acres in area, and provides ample [illegible]e various athletic clubs; the pavilion is large and well equipped.

The hospital at present contains 301 beds, of which 31, [illegible] wing, are devoted to treatment by [illegible]ion. This wing also contains the department for Therapeutic Inoculation, which consists of a large block of consulting-rooms, waiting-rooms, and laboratories under the direction of Sir Almroth Wright.

The out-patient department, situated on the ground floor, has been in use for some years, and an additional operating theatre has recently been opened. During the present year the Casualty department has been rebuilt, and more accommodation provided.

The Medical School provides complete courses in the preliminary and intermediate subjects of the curriculum which are recognized by the University of London as apppoved courses for internal students.

Students may join in October, January, or April.

The departments of biology, chemistry, anatomy, physiology, and pathology are under the direction of full-time lecturers, and special courses are provided twice yearly for the Primary F.R.C.S.

In addition special tuition is provided for the Intermediate and Final Examinations of the Universities of Oxford, Cambridge, and London, and for the Final F.R.C.S.

All clinical appointments in the hospital are free to students of the school, the term of office in each case being of four months' duration, and the resident medical officers are chosen by competitive examination. Six house-physicians, six house-surgeons, four obstetric officers, two resident medical officers to the inoculation wards, and two resident anaesthetists are appointed each year, and receive board and residence in the hospital.

A large number of salaried appointments are open annually to qualified students, including those of medical registrar, surgical registrar, casualty physician, casualty house-surgeon, assistant curator, together with several demonstratorships.

In the Inoculation Department there are nine assistantships the salaries of which amount to £1,600 per annum.

In appointing to these posts preference is given to students of St. Mary's.

Scholarships.—There are Entrance Scholarships in Natural Science. One of £100, one of £50, one of £25, and two University Scholarships of £52 10s. awarded annually by competitive examination in September.

Fees.—The composition fee for students is £140 if paid in one sum, or £145 if paid in four instalments. University students who have completed their examinations in anatomy and physiology are admitted on payment of a composition fee of 65 guineas (£68 5s.) paid in one sum, or 70 guineas (£73 10s.) if paid in two annual instalments. University students, prior to completing their examination in anatomy and physiology, pay an annual fee of 25 guineas (£26 5s.). Separate courses of lectures, laboratory work, or hospital practice may be taken.

The School Calendar and full information can be obtained from the Secretary, St. Mary's Hospital Medical School, Paddington, W.

THE MIDDLESEX.

THE school and its hospital are in Mortimer Street, W., and close to Oxford Circus, Goodge Street and Portland Road stations. There is a residential college for a limited number of students overlooking the hospital garden, a gymnasium within the precincts of the hospital, and an athletic ground within easy distance. The hospital contains 440 beds, including a wing containing 90 beds for patients suffering from cancer, and special cancer investigation laboratories. The hospital offers unrivalled opportunities for the study of this disease, both in its clinical and pathological aspects. In connexion with the investigation laboratories, there are several valuable scholarships awarded.

There are special wards for maternity and gynaecological cases, and for diseases of the skin and eye.

There is a clinical laboratory under the charge of a director, where all bacteriological, chemical, and microscopical examinations of material from the wards, operating theatres, and out-patient department are carried out. Senior students are eligible for clerkships in this laboratory, and every facility is given for original investigation.

In the electro-therapeutical department special attention is given to the treatment of lupus and cancer by the *x* ray, and opportunities are afforded to students wishing to become acquainted with the use of the apparatus employed in this method of treatment.

Appointments.—Twenty resident appointments are open annually for competition among students of the hospital. The officers reside and board in the residential college free

of expense. There are two Casualty medical and two Casualty surgical officers appointed annually. Eight house-surgeons are appointed every year at intervals of two months, after examination; six house-physicians are also appointed annually at similar intervals. An Obstetric house-surgeon is appointed every six months. In the Out-patient departments the appointments are: Clerk and dresser to the physicians and surgeons to out-patients; clerk in the departments for Diseases of the Skin and Nervous Diseases; dresser to the department for Diseases of Women, to the ophthalmic surgeon, to the Throat and Ear department, and to the dental surgeon. There are also extern midwifery clerks and *post-mortem* clerks. The appointments are so arranged that every student may, during his course, hold all the Out-patient and In-patient clerkships and dresserships. Each student must have held an Out-patient clerkship and dresserships before being eligible to hold In-patient clerkships or dresserships. No student can be appointed to any of these offices until he has passed the Second Examination of the Examining Board in England or its equivalent. Non-resident qualified clinical assistants are appointed in the Medical, Surgical, Skin, Neurological, Ophthalmic, Throat and Ear, Children's, and Electro-Therapeutical Out-patient departments.

Scholarships.—Three Entrance Scholarships, value £100, £50, and £25 respectively, are open to students commencing their medical studies in April or October, 1912. An annual Entrance Scholarship, of the value of £50, is open to students of the Universities of Oxford and Cambridge who have completed the curriculum for, or passed the examinations in, anatomy and physiology. The examination for these scholarships will take place on September 23rd, 24th, and 25th. Application for admission must be made on or before September 14th. Students joining the school in the previous April are eligible. The *Freer Lucas Scholarship*, value £126, is annually awarded on the nomination of the head master to a pupil of Epsom College who has passed the first examination for medical degrees (Preliminary Scientific Examination). There is also a scholarship, value £50, awarded annually to students from New Zealand. In addition to the Entrance Scholarships there are a number of other valuable scholarships, prizes, and exhibitions open to students of the hospital, including the *Broderip Scholarships*, value £60 and £40; *Lyell Gold Medal and Scholarship*, value £55 5s.; *Freeman Scholarship*, value £30; *John Murray Gold Medal and Scholarship*, value £25; *Hetley Clinical Prize*, value £25; *Leopold Hudson Prize*, value 11 guineas; and the *Second Year's Exhibition*, value 10 guineas.

Fees.—The composition fee for students taking the London University degree is 145 guineas, or by five equal annual instalments of £32 11s. For those who have passed the first examination for medical degrees (Preliminary Scientific) the fee is 120 guineas, or by four equal annual instalments of £34 2s. 6d. Students taking the Conjoint Board diploma pay 135 guineas, or by five equal annual instalments of £30 9s. Students who have passed the First Professional Examination (chemistry, physics, and biology) pay 115 guineas, or by four equal annual instalments of £32 16s. 3d. For members of universities and others who have completed their anatomical and physiological studies the fee is 70 guineas, or by three equal annual instalments of £26 5s. Students who intend to take the dental diploma pay 54 guineas, or by two equal annual instalments of £31 10s. For those who have completed the Preliminary Scientific Examination the fee is 46 guineas, or by two equal annual instalments of £27 6s.

Further information may be obtained on application to the Dean.

ST. THOMAS'S.

THIS school, and the hospital in connexion with which it works, is situated in Lambeth, the joint buildings on the Thames facing the Houses of Parliament, and forming one of the well-known architectural features of London.

The school buildings are separated from the hospital by a quadrangle on which there are cricket practice nets for the use of the students, and comprise numerous theatres, laboratories, and class-rooms well adapted for the modern teaching of large bodies of students in the subjects of the medical curriculum. A splendid library and reading room and a complete museum are open to all students from 9 a.m. to 5 p.m.; Saturdays, 2 p.m. The club premises contain a dining-room and smoking and reading room supplied with daily and illustrated weekly papers, and a gymnasium. A cloak-room with lockers, and a lavatory with bath-rooms, are in the main school building. Students are thus able to spend the whole day at school. Good meals are obtainable at a moderate tariff, with facilities for exercise and recreation. The sports ground of more than nine acres in extent is at Chiswick. It can be reached in forty minutes from the hospital; it is admirably adapted for football, cricket, lawn tennis, and athletic sports. It is provided with a pavilion where refreshments can be obtained.

The hospital contains 604 beds, and in addition to the ordinary provisions of a great hospital has connected with its out-patient department two large well-ventilated clinical theatres provided with ample sitting accommodation, so that large numbers of students are enabled to follow closely the practice and teaching of the out-patient staff. There is another clinical theatre, centrally situated, so as to facilitate the illustration of lectures by patients from the wards and out-patient room; it is arranged also for lantern demonstrations. The maternity ward, containing 20 beds, affords students full facilities for maternity training, under supervision, within the precincts of the hospital. This obviates any necessity for seeking instruction elsewhere, and fully prepares the student for the extern maternity practice of the hospital district. The revised regulations of the examining bodies can thus be fully complied with.

Appointments.—All hospital appointments are open to students without charge. A resident assistant physician and a resident assistant surgeon are appointed annually at a salary of £100 each, with board and lodging. Two hospital registrars, at an annual salary of £100 each, are appointed yearly. The tenure of these offices may be renewed for a term not exceeding two years. Eight resident casualty officers and anaesthetists are appointed every six months. An obstetric tutor and registrar is appointed each year at an annual salary of £50. Four house-physicians, four house-surgeons, two obstetric house-physicians, two ophthalmic house-surgeons, and eight clinical assistants in the special departments are appointed every three months, and hold office for six months if recommended for re-election. Clinical clerkships and dresserships to the in-patient and out-patient departments are available to the number of 400 each year.

Scholarships.—There are five entrance scholarships offered: Two in Arts, giving one year's free tuition; one of £150 and one of £60, in Chemistry, Physics, and Biology, for students who have not received instruction in Anatomy or Physiology; one of £50 in any two of the following subjects: Anatomy, Physiology, or Chemistry, for students who have completed their examinations in Anatomy and Physiology, for a medical degree in any of the universities of the United Kingdom and have not entered as students in any London medical school. Numerous scholarships, prizes, and medals are open for competition throughout the whole career of a student, including a Fellowship of £100 given by the Salters' Company for research in Pharmacology, and the Louis Jenner Research Scholarship of the annual value of £60 for Pathological research.

Fees.—The entrance fee for second year's students is 20 guineas; for third year's students 10 guineas. The annual composition fee is 30 guineas. For Preliminary Science students the fee is 15 guineas. No extra charges are made for materials required in practical courses. Special courses of instruction are given for various examinations, and a register of lodgings is kept at the school. A list of medical practitioners, clergymen, and others who receive students is also available. Further information may be obtained from the Secretary of the School, St. Thomas's Hospital, Albert Embankment, S.E.

UNIVERSITY COLLEGE HOSPITAL.

THE school, which forms part of the Corporation of University College Hospital, is in immediate proximity to the hospital in University Street and opposite University College. Its work is carried out in a building erected through the munificence of the late Sir Donald Curric, and opened in September, 1907.

The medical school comprises departments of medicine and clinical medicine, surgery and clinical surgery, midwifery and gynaecology, pathology including morbid anatomy, clinical pathology and bacteriology, forensic medicine, mental physiology and mental diseases, dental surgery, practical pharmacy, and other departments for the study of special diseases, such as those of the eye,

skin, ear, and throat, and for instruction in anaesthetics, electro-therapeutics, and radiography.

The school thus provides the final course of study for the degrees of the Universities of London, Oxford, Cambridge, and Durham, and for the diplomas of the Royal Colleges of Physicians and Surgeons, and the Licence of the Society of Apothecaries. Special bacteriological classes are also held in preparation for the various diplomas of public health.

Each of the departments is also equipped for more advanced work, and provides facilities for research.

A student may enter the medical school at the commencement of his career, in which case he will pursue his preliminary and intermediate studies at the University of London, University College, and his final studies in the school.

He may also enter the school for the final studies after having completed his preliminary and intermediate studies at any recognized university or school.

Scholarships.—The following scholarships and prizes are open to competition: Two *Entrance Exhibitions* of 80 guineas each, awarded after a competitive examination in anatomy, physiology, and pathology; *Graham Scholarship* of a sum not exceeding £200 per annum; the *Atkinson Morley Scholarship* of £45 a year for three years, awarded after examination in the theory and practice of surgery; the *Atchison Scholarship* of £55 a year for two years for proficiency in pathology and surgery; the *Filliter Exhibition* in pathology of £30; *Graham Gold Medal* for research work; four *Fellowes Medals* in clinical medicine; *Liston Medals* in clinical surgery; the *Bruce Medal* in pathology and surgery; two *Tuke Medals* in pathology, and the *Erichsen Prize* for practical surgery.

Appointments.—All the appointments at the hospital are reserved for students of the school, the dresserships and clerkships being open, of course, to those who have still to qualify. The qualified appointments, in addition to a number of posts as house-physicians and house-surgeons and obstetric assistants, include the appointments of resident medical officer, surgical registrar, obstetric registrar, casualty medical officers, casualty surgical officers, assistant in ear, nose, and throat department, assistant in ophthalmic department, registrar in anaesthetic department, and deputy anaesthetists.

Fees.—The fee for the full course of final studies at the school is 80 guineas if paid in one sum, or 82 guineas if paid in two instalments.

WESTMINSTER.

THIS school, with its hospital, situated in Broad Sanctuary, opposite Westminster Abbey, provides for the education of its students in the preliminary and intermediate subjects of the medical curriculum at the teaching centre of the University of London, established at King's College. The rest of the work is done in the school buildings near the hospital, which contains upwards of 200 beds, and affords most ample facilities for instruction in all branches of medicine and surgery.

Appointments.—A medical and surgical registrar are appointed annually, each with a salary of £50. Two house-physicians, three house-surgeons, one assistant house-physician, one assistant house-surgeon, and a resident obstetric assistant are appointed after examination and are provided with rooms and commons, except the assistant house-physician and the assistant house-surgeon, who are provided with commons only. The assistant house-physician after three months' service becomes house-physician for a further period of six months, and the assistant house-surgeon, after two months' service, becomes house-surgeon for a further period of six months. Clinical assistants to the assistant physicians and assistant surgeons, and to the officers in charge of special departments, are appointed from among qualified students. Every student must perform the duties of out-patient dresser for four months, and afterwards hold the office of in-patient dresser for four months. He is also required to serve two terms of four months each as medical clinical clerk to in-patient physician and one term as gynaecological clinical clerk. Two pathological clerks are appointed every four months to assist in the *post-mortem* room. No student is eligible as an in-patient dresser or clinical clerk until he has passed the second examination of the Conjoint Board, or an equivalent examination. Clerks and dressers in the special departments of hospital practice are periodically appointed. So far as vacancies permit, students of other hospitals are admitted to in-patients' dresserships or clerkships.

Scholarships.—The following scholarships are offered for competition during the year 1912-13: In the summer session two natural science scholarships, £60 and £30 (and again in July, 1913). In the winter session two scholarships in anatomy and physiology, £50 each. In the spring two scholarships in anatomy and physiology, £50 each; one science scholarship, £40.

Fees.—The annual composition fee is 25 guineas, and an entrance fee of 15 guineas is payable by every student, including scholars. Under certain conditions 10 guineas of the entrance fee is returnable on qualification. Special terms are given to the sons of medical men. These fees include subscriptions for membership of the Clubs' Union.

Further information can be obtained on application to the Dean at the Westminster Hospital Medical School, Caxton Street, Westminster, S.W.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN.

THIS school is carried on at 8, Hunter Street, Brunswick Square, in connexion with the Royal Free Hospital, and it is, like all the other London schools which have so far been mentioned, one of the constituent schools of the Medical Faculty of London University. The new school buildings, among the best of their kind, were completed in 1900 at a cost, with equipment, of over £35,000. The laboratories are large and well lighted, and are fully equipped for the first and second medical examination courses of the University of London. A large library and common room are provided for the use of the students, and sets of chambers to accommodate seventeen students.

The hospital has 165 beds, all of which are available for clinical instruction. There are also separate departments for gynaecology and obstetrics, and diseases of the eye, ear, and skin. Instruction is given in anaesthetics, bacteriology, etc., in addition to the ordinary clinical lectures and demonstrations and tutorial classes. Students also attend the practice of one of the fever hospitals of the Metropolitan Asylums Board, and receive special instruction in lunacy at Bethlem Hospital; they are also admitted to the practice of a number of special hospitals.

The work of the school includes preparation for the M.B., B.S.Lond., the diplomas of the Royal Colleges of England and of the Conjoint Boards of Scotland and Ireland, and the Society of Apothecaries, London; also for the greater part of the course required by the University of Durham and the other universities of England which admit women to their degrees, and the University of Glasgow; also for the medical school and general hospital course for dental students.

Appointments. Qualified students of the school can obtain appointments as house-physician and house-surgeon, obstetric assistants, surgical and medical registrars, anaesthetists, medical electrician, radiographer, curators of the school and hospital museums, and clinical assistants and demonstrators in various subjects.

Scholarships.—The Isabel Thorne Entrance Scholarship value £30, and the St. Dunstan's Medical Examination value £60 a year for three years, extendible to five years, are offered for competition in each year. The Bostock Scholarship, value £60 a year for two or four years, is awarded by the Reid Trustees on the result of an examination held in May by the University of London. The holder of the scholarship must enter the London School of Medicine for Women. The Agnes Guthrie Bursary for Dental Students, value £60, is awarded each year. The John Byron Bursary of £20 a year for two years, the Helen Prideaux Prize of £40, the Mabel Webb Research Scholarship of £30 for two years, the Fanny Butler Scholarship of £14 10s. a year for four years, together with many other scholarships and prizes, are offered on sundry conditions. Various missionary societies also offer scholarships on certain conditions, and assist ladies who wish to go to India and other countries as medical missionaries.

Fees.—University of London and diplomas of Royal Colleges of England, first medical examination course, £25; course for second and third medical examinations, £135; course after second medical examination, £90. Composition fee for course of study for other qualifications, £140.

Full particulars as to curriculum and scholarships can be obtained from the Secretary, Miss L. M. Brooks, 8, Hunter Street, W.C.

KING'S COLLEGE.

SINCE the incorporation of King's College in the University of London, the instruction given to medical students is carried out there in the classes of the Faculty of Science (Medical Division), and deals only with the subjects of the preliminary and intermediate parts of the curriculum. King's College Hospital (which see) is now a separate institution, and the studies for the final examinations are carried out there.

A special class for the Matriculation Examination will commence on September 26th. Classes for the science subjects are held by the Professors of the Science Faculty of King's College, and students avail themselves of their laboratories.

There is a large athletic ground at Wormwood Scrubbs, managed by the Students' Union Society.

Scholarships.—The entrance scholarships are: 1. Two to four Warneford Scholarships, each £25 for four years: subjects—mathematics, classics, divinity. 2. One Sambrooke Exhibition of £25 for two years, open; subjects of examination—mathematics, elementary physics, inorganic chemistry, botany, and biology. The holders of the preceding awards must proceed to King's College Hospital. 3. Rabbeth Scholarship, value £20, in July, for best evidence of early scientific training.

Fees.—Information as to fees should be obtained from the Dean of the Medical Division of the Faculty of Science at the College. He attends daily, except Saturday, for the purpose of receiving students and their friends.

For conditions of scholarships and subjects of examinations apply to the Dean or the Secretary, King's College, who will send a full prospectus post free.

UNIVERSITY COLLEGE.

THIS institution, one of the principal component parts of the University of London, possesses a Faculty of Medical Sciences whose work covers all the subjects included in the group commonly known as the preliminary medical sciences—namely, physics, chemistry, botany, and zoology; and also the intermediate medical sciences—namely, anatomy, physiology, and pharmacology. The Department of Hygiene and Public Health prepares for the diplomas in public health of the Royal Colleges and of the various universities. Research work is undertaken in all the above-named departments, as well as in pathological chemistry and experimental neurology, the work of which is entirely post-graduate. It undertakes the education of students in all the subjects mentioned, leaving them free to complete their education in the strictly professional subjects—medicine, surgery, and the like—at any one of the recognized schools of advanced medical studies. The work is somewhat differently arranged, accordingly as whether the student has in view the degrees of the University of London or the diplomas of the Royal Colleges. In either case the whole work to be done is broken up into courses devised to meet the requirements of different examinations, and students can join the College for any of them. The general arrangements for the benefit of students include membership of the Union Society, with its gymnasium and athletic ground. There is also a collegiate residence for about forty students at Ealing.

Scholarships.—The scholarships and exhibitions obtainable include the Bucknill Scholarship, value 135 guineas, in chemistry, physics, botany, and zoology (the successful student must complete his work at University College Hospital Medical School), and two entrance exhibitions on the same subject, each of the value of 55 guineas.

Fees.—The fees for the courses covering the work of the First Examination for medical degrees of the University of London, and in both parts of the Second Examination amount to 86 guineas. The fees for the courses covering the corresponding examinations held by the Conjoint Board in England come together to 79 guineas. These fees may be broken up into payments for the different courses which it may be desired to take out, but do not cover tuition for more than a stated period.

A handbook specially relating to this faculty may be obtained on application to the Provost of University College.

COOKE'S SCHOOL.

THIS school is prepared to admit to its supplementary work all who may wish to join the same, but in regard to its curriculum work it does not receive more than half a dozen students in the course of the year; these have special advantages, both as regards anatomy and physiology. The fees, we are informed, are but slightly in excess of current charges. The operations of surgery are performed on the dead body. Such courses are recognized for army promotion, for the Indian Medical Service, etc.

The school, which is open all the year round, possesses a good collection of anatomical models, physiological and chemical apparatus, and gentlemen preparing for the higher examinations (F.R.C.S.Eng., M.B.Cambridge, Oxford, London, etc.) receive special instruction in the more difficult subjects. Other information may be obtained from the Secretary on the school premises, Handel Street, W.C.

THE PROVINCES.

THERE are in England and Wales, not counting London, ten medical schools, each, with one exception, supplying instruction in the full medical curriculum. Accounts of them here follow, these being placed more or less roughly in the order of their foundation. In several cases there is appended information concerning other hospitals than those directly connected with the school in question; such hospitals, officially and unofficially, play a part in the education which the students of the school receive, and in any case serve as places of additional or post-graduate study.

OXFORD AND CAMBRIDGE.

THE medical schools of these ancient seats of learning play a very important part in medical education. At both there are unsurpassed opportunities for obtaining a good knowledge of the preliminary sciences and of anatomy and physiology, and the same might be said with equal, if not greater, truth in respect of pathology. All the laboratories are very completely equipped, and the teaching staffs most distinguished. Each of these schools provides a full medical curriculum, and there is no essential reason why the student should not complete his career at either of them, but this is not commonly done. The local hospitals are comparatively small, so the authorities encourage the students, so soon as they have completed the earlier examinations, to join some London school, and thus spend the time of their preparation for the final examination in a city where the opportunities for gaining clinical knowledge are greater and more varied. Most of the London schools make for such students special arrangements, information as to which can be obtained from the respective Deans.

UNIVERSITY OF DURHAM COLLEGE OF MEDICINE.

THIS, the Medical School of the Faculty of Medicine of the University of Durham, is in the neighbouring city, Newcastle-on-Tyne. Its classes and lectures are arranged to meet the requirements of the university in all the degrees which the latter grants, and also those of the other examining bodies. The students do their work in the preliminary sciences at Armstrong College, also part of the university, and then carry on their studies in the new Royal Victoria Infirmary, an institution with over 400 beds and special accommodation for the benefit of students. In a new wing of the school itself there are the departments of bacteriology and physiology. There are also in this wing a gymnasium and a set of rooms for the use of the Students' Union.

Appointments.—Assistant demonstrators of anatomy and prosectors for the professor of anatomy, assistant physiologists, pathological assistants, assistants to the dental surgeon, and assistants in the eye department, throat and ear department, and department for skin diseases, are elected annually. Four times in the year clinical clerks and dressers are appointed for three months.

Scholarships.—A University of Durham Scholarship, value £100, for proficiency in arts, open annually at the beginning of the winter session to intending students. The Pear Scholarship, value £150, for proficiency in arts (when vacant). The Dickinson Memorial Scholarship, interest of £400, with a gold medal, for medicine, surgery, midwifery, and pathology, open to perpetual students in their fifth year. The Tulloch Scholarship, interest of £40 annually, for anatomy, physiology, and chemistry, for students at the end of their second year. The Charlton Memorial Scholarship, interest of £700 annually, open to full students entered for the class of medicine, at the end of

their fourth or fifth winter. The Gibb Scholarship, interest of £500 annually, for pathology, at end of summer session. The Goyder Memorial Scholarship, proceeds of £325; subjects: Clinical medicine and clinical surgery. Luke Armstrong Memorial Scholarship, proceeds of £580, for best essay in some subject in comparative pathology. The Stephen Scott Scholarship in Surgery, interest on £1,000 annually. The Heath Scholarship in Surgery, interest on £4,000, awarded every other year. First award in 1896.

Fees.—The composition fee for the university course is 72 guineas. Other information should be sought from the Secretary of the School at Newcastle.

Other Hospitals.—(1) In the *Hospital for Sick Children* there are 76 beds, besides an isolated block for infectious and doubtful cases. The practice of the hospital is open free to all students or qualified practitioners. The number of in-patients average about 900 a year. The out-patient department is distinct from the hospital, being carried on in buildings erected in the central part of the city. The number of out-patients in 1910 was 10,854. (2) At the *Infirmary for Diseases of the Eye* there are 20 beds. Its out-patients number 6,600 annually. Clinical instruction is given daily from 11 a.m. to 1 p.m.

BIRMINGHAM.

THE Medical School in this city is carried on by the Medical Faculty of the University of Birmingham, its students having an adequate number of good laboratories, class-rooms, and other necessaries devoted to their use by the university. The clinical work is done at the General and Queen's Hospitals, which are amalgamated for this purpose. Together they have upwards of 500 beds for medical, surgical, and special cases, and with an array of special departments of all kinds, including a large maternity department. Clinical instruction is given in the wards and out-patient and special departments daily, and formal clinical lectures delivered weekly throughout the winter and summer sessions. Special tutorial classes are also held alike for the degrees of Birmingham and some other universities and for the diplomas of Corporations.

Appointments.—The large number of appointments open to past or other students include the following:—At the General Hospital: One resident medical officer, salary £100 a year. One resident surgical officer, salary £100 a year. One resident pathologist, salary £50 a year. Two non-resident casualty assistant physicians, salary £50 a year. Three non-resident surgical casualty officers, salary £50 a year. Two non-resident anaesthetists, salary £50 a year. Four house-surgeons, office tenable for nine months, £50 a year. One house-surgeon to the gynaecological and one to the ophthalmic and aural departments, each tenable for six months, £50 a year. Three house-physicians, post tenable for six months, £50 a year. One resident medical officer at the Jaffray Branch Hospital, salary £150 a year. One resident assistant at the Jaffray Branch Hospital, tenable for three months. At the Queen's Hospital: Three house-physicians and three house-surgeons (post vacant in January and April). One obstetric and ophthalmic house-surgeon (post vacant in April and October). These appointments are tenable for six months. Salaries at the rate of £50 per annum, with board, lodging, and washing. One resident dresser, tenable for three months; candidates must previously have attended all their lectures, etc., and need not be qualified. At the Maternity Hospital: One house-surgeon, salary £50 a year. At the City Workhouse and Workhouse Infirmary: Five resident medical officers. At the Birmingham General and Branch Dispensaries: Twelve resident surgeons. At the Birmingham Lunatic Asylums: Five assistant medical officers. At the City Fever Hospitals: Three assistant medical officers. At the Children's Hospital: One resident surgical officer, one resident medical officer. At the Birmingham and Midland Eye Hospital: Three resident surgeons. At the Orthopaedic and Spinal Hospital: Two clinical assistants (non-resident). At the Ear and Throat Hospital: One house-surgeon, £70 a year; four clinical assistants (non resident). There are also four non-resident Poor Law appointments in the gift of the Board of Guardians.

There are numerous money and other awards for students of sufficient merit, among them being the following: the *Watter Myers Travelling Studentship* of £150; the *Sands-Cox Scholarship* of £42 (an entrance scholarship in the Faculty of Medicine, awarded on matriculation marks); four *Queen's Scholarships* of £10 10s. each, awarded annually at the second, third, fourth, and final university examinations respectively; one or more *Sydenham Scholarships*, allotted on entrance to students who are the sons of deceased medical men. The *Ingleby Scholarship* of £10 for proficiency in midwifery and diseases of women. There is also an entrance scholarship of £37 10s. for students proceeding to a degree in dental surgery, besides prizes in money for successful class work by senior and junior students.

Fees.—The composition fee is £85. This covers all the work required for the degrees of Birmingham and some other universities, and for the ordinary qualifications of licensing corporations, but not the additional courses required for the Fellowship of the Royal College of Surgeons of England, the diploma and degrees of the university in State medicine and some other special work. Other information should be sought from the Dean of the Medical Faculty.

MANCHESTER.

THE staff of the Medical School in this city constitutes the Medical Faculty of the Victoria University, all the arrangements for the instruction of students, both in their earlier and their later studies, being of an elaborate nature. The clinical work of the undergraduates is done chiefly in connexion with the Royal Infirmary, an institution which itself contains about 592 beds, and has associated with it a large convalescent home and the Royal Lunatic Asylum at Cheadle. Instruction in practical gynaecology and midwifery is given at the Royal Infirmary and the St. Mary's Hospitals.

Appointments.—The following are among the appointments open to past and present students of this school in connexion with its arrangements for clinical tuition: A surgical registrar, at £75 per annum; a pathological registrar, at £100 per annum; a medical registrar, at £75 per annum; a surgical tutor, at £30 per annum; a director of the clinical laboratory, at £200 per annum, and two assistant directors at £75 and £40 respectively; assistant medical officer, at £105 per annum; three assistant surgical officers, each at £35 per annum; assistant medical officer, Aural department, at 50 guineas per annum; five anaesthetists, at £50 per annum each: medical officers for radiography and electricity, £100 per annum; medical officer for home patients, one year, £150 per annum; resident medical officer, one year, £150 per annum; ditto, at Cheadle, one year, £150 per annum; resident surgical officer, one year, £150 per annum; two resident medical officers for Central Branch, £100 per annum; accident room house-surgeon, six months, £100 per annum; an assistant medical officer at the Convalescent Hospital at Cheadle, appointed every six months, at a salary of £80 per annum; eight senior and eight junior house-surgeons and ten house-physicians, appointed during the year for a term of six months. Resident officers are appointed to the Gynaecological, the Eye, and the Ear and Throat departments every six months. Four or more clinical clerks are attached to each physician and assistant physician, and four or more dressers to each surgeon and assistant surgeon, to the Gynaecological surgeon and assistant Gynaecological surgeon, to the Ophthalmic surgeon, and to the surgeon for the Ear and Throat department, and four or more clerks to the Pathologist, two clerks to the Director of the Clinical Laboratory, and a number of clerks, not exceeding six, are appointed to assist the medical officer for home patients. Accident-room dressers will be appointed every three months, three senior dressers and twelve or more junior dressers.

Entrance and other Scholarships.—The following are among the scholarships obtainable by students of the school: *Rogers and Seaton Scholarships* in Arts (in alternate years), £40 per annum, tenable for two years. Two *Dalton* (entrance) Scholarships in Mathematics, tenable for two years, value £40, one being awarded annually, except in such years as a Cartwright Scholarship is awarded. *Cartwright Scholarship*, £35 per annum, tenable for three years. Three *Hulme*, of £35, one being awarded annually for proficiency in subjects of general education. They are tenable for three years. Two *James Gaskill Scholarships* of £35, tenable for two years, one being awarded annually for proficiency in the branches of Mechanics and Chemistry. A *Dora Muir Scholarship*, £30 per annum, tenable for three years, and open to the competition of women students only. This is awarded triennially; next competition in May, 1914. *Sir J. P. Kay-Shuttleworth Scholarship*, £30 per annum, tenable for three years, open to the competition of scholars from Sedbergh

School, Giggleswick School, and Burnley Grammar School. Subjects: Mathematics, Chemistry, and Mechanics. *Dreschfeld Memorial Scholarship*, value £30, awarded annually on the results of the Matriculation Examination. A *Theodores Modern Languages Exhibition*, £20, awarded annually. Two *Dauntesey Medical Scholarships*, value £45 and £35, tenable for one year, for candidates who have not commenced the second year of study leading to a medical qualification. Subjects: Zoology, Botany, and Chemistry. Two *Entrance Scholarships in Medicine*, value £100, awarded annually for proficiency in Arts or Science respectively. Two *Research Fellowships in Public Health* of £50 each, awarded annually. *Tom Jones Exhibition in Anatomy*: £25, offered annually. *Robert Platt Physiological Exhibitions*: Two, about £15 each, offered annually. A *Robert Platt Physiological Scholarship* of £50, tenable for two years. A *Robert Platt Zoological and Botanical Scholarship*, £50. A *Leech Fellowship* of £100 for original research after graduation. A *Graduate Scholarship in Medicine*: One of £25, tenable for one year, awarded annually for proficiency shown at Final M.B. Examination. The *Tom Jones Memorial Surgical Scholarship*: Value £100, tenable for one year, awarded usually triennially; next award in September, 1913. The *Turner Medical Scholarship*: Value £20, awarded annually for proficiency in certain subjects of the Final M.B., Ch.B. Examination. The *John Henry Agnew Scholarship* of £30, awarded annually for proficiency in the Diseases of Children. The *Bradley Memorial Scholarship* in Clinical Surgery of £20. The *Ashby Memorial Scholarship*, tenable for one year (£100), for research in the Diseases of Children; offered biennially; next award, 1915. *Sidney Renshaw Exhibition in Physiology*: One, offered annually.

Fees.—The composition fee for the university courses in medicine is 70 guineas, payable in three instalments of 30, 20, and 20 guineas, but this sum does not include the fee to cover the work required for the First M.B. Examination. This is £25, payable in one sum. A prospectus and further information about the school and scholarships may be obtained on application to the Registrar.

Other Hospitals.

1. The *Royal Eye Hospital* contains 160 beds, but 30 of them have been closed pending an increase in income. Clinical instruction is given to students.

2. *The Manchester Northern Hospital for Women and Children*, situated in Cheetham Hill Road, near the centre of the town, containing 70 beds and cots. Out-patients are seen daily at 9 a.m.

3. The well-known *Hospital for Children* at Pendlebury, near Manchester, contains 168 beds, and 24 beds at the Convalescent Home, St. Anne's-on-the-Sea. The visiting staff see out-patients daily at the Out-patient Department, Gartside Street, Manchester, at 9.30 a.m., and visit the hospital daily. The practice of the hospital and out-patient department is free to students accompanying the visiting medical and surgical staff.

4. *St. Mary's Hospital for Diseases of Women and Children.*—There are 111 beds at the High Street Branch, 86 being for gynaecological cases and 25 for children. The Whitworth Street West Branch has 50 maternity beds, and also an out-patient department. In the out-patient department students are taught the various methods of examination and diagnosis, and the use of gynaecological apparatus, while in the wards they have an opportunity of becoming familiar with the diagnosis and treatment of graver cases, and of witnessing more important gynaecological and obstetrical operations. The number of maternity cases attended annually is over 4,500. The hospital possesses a library, presented by the late Dr. Radford, consisting of nearly 5,000 volumes, chiefly on subjects connected with obstetrics and gynaecology. There is also a museum, containing a large number of pathological specimens, and a valuable collection of deformed pelves, casts, obstetric instruments, and anatomical models. The gynaecological practice of the hospital is free to fourth and fifth years' students. The fees for the midwifery practice are £8 8s. per month. Only twelve students are received at one time, thus allowing each one ample opportunity of attending the number of cases of labour required by the examining bodies. Application must be made to the Secretary at the Hospital.

LIVERPOOL.

THE Medical School of this city is part of the university, and, owing to the enlightened liberality of several men of wealth, is particularly well provided with special laboratories, as well as with ordinary spacious and well-equipped class-rooms and laboratories for the instruction of students proceeding to medical degrees and diplomas in special and ordinary subjects. All the laboratories and other rooms are situated close to one another and intercommunicate, together forming large blocks of buildings. The anatomical department is very complete, and includes a large and well-stocked museum and a well-lighted dissecting-room on the upper floor measuring 70 ft. by 40 ft. The departments of physiology and pathology are accommodated in the block provided by the generosity of the late Rev. Thompson Yates. Comparatively recent additions are the Johnston laboratories for experimental medicine and bio-chemistry, and the building for surgery, ophthalmology, materia medica, and toxicology. The work of the students at the later periods of their study is arranged upon equally satisfactory lines, the teaching hospitals, of which an account is given below, having amalgamated to form the clinical school of the university.

Appointments.—The nature of the appointments open to past and other students at this school will be gathered from the account which follows of the hospitals forming its clinical department.

Scholarships.—The awards made each year to successful students total over £1,000. They include the following: Two *Holt Fellowships* of £100, one in Pathology, the other in Physiology; a *Robert Gee Fellowship* in Anatomy, value £100; an *Alexander Fellowship* for Research in Pathology; a *Johnston Colonial Fellowship* in Pathology, Bacteriology, and Bio-Chemistry; a *John W. Garratt International Fellowship* in Physiology, Pathology, and Bio-Chemistry; an *Ethel Boyce Fellowship* in Gynaecology and Pathology, and a *Thelwall Thomas Fellowship* in Surgical Pathology, all of the value of £100; a University Scholarship of £25, awarded on the results of the Second M.B. Examinations; a University Scholarship of £20 for Dental Students; two *Lyon Jones Scholarships*, of the value of £21 each for two years, one for the junior and the other for senior students; the *Derby Exhibition* of £15; the *Clinical School Exhibition* of £15; the *Torr Gold Medal* in Anatomy; the *George Holt Medal* in Physiology; the *Kanthack Medal* in Pathology; the *Robert Gee Prize*; two *Robert Gee Entrance Scholarships*, value £25 per annum for two years; *Orthodontia Prize*; two *Dental Operating Prizes*; *Ash's Prize* in Dental Surgery; and other Entrance Scholarships.

Fees.—Information as to the fees paid for the courses of instruction provided by the school should be sought from the Dean of the Medical Faculty.

The Clinical School.

The following hospitals form the clinical school of the university:

1. The *Royal Infirmary* contains altogether some 300 beds, and is immediately adjacent to the university: it covers in its work all branches of clinical study. The wards are arranged in separate clinics, with a physician or surgeon, and a resident medical or surgical officer attached to each; each clinic having a "clinical room," in which to interview patients and conduct microscopical and chemical tests. The assistant physicians and assistant surgeons conduct the medical and surgical out-patient department, and take charge of the wards in the absence of the physicians and surgeons. There are four theatres for surgical operations and one for clinical lectures, and there is a theatre and a laboratory for morbid anatomy. There are two electrical rooms, with three Roentgen-ray installations and a high-frequency apparatus, and there are provisions for the employment of various kinds of baths. There is also a room for the medical and surgical registrars, and for the records kept by them. There is a special laboratory for the investigation of morbid products, and another for the investigation of cancer. Separate cloak-room accommodation is provided for women students. The eight resident medical and surgical officers have each their own bedroom and private sitting-room, in addition to common rooms for meals and recreation. Two senior students are appointed resident casualty officers. They attend to accident cases brought to the hospital, accompany the ambulance, and help in the clinical work. A large waiting-room is set apart for the use of students, for whom there is, besides, ample cloak-room and lavatory accommodation.

2. The *David Lewis Northern Hospital*, possessing 246 beds, is situated in Great Howard Street. There are three surgical and two medical clinics and a large out-patient department with suitable rooms for examination and an operation theatre. A fully-equipped clinical laboratory provides means for clinical investigation and research, in addition to those afforded in the clinical rooms of the various wards. Among the other departments is one for

electro-therapeutics and *x*-ray examination, and one for orthopaedic exercise and gymnastics. Excellent accommodation is available for students, including a common room and cloak-room. In the common room is a reference library for the use of students. Facilities are offered for post-graduate work. The five resident medical officers receive salaries at the rate of £60 per annum; they each possess a separate bedroom and sitting-room, in addition to a common room for meals.

3. The *Royal Southern Hospital* contains over 200 beds, and is fully equipped for clinical instruction. There are three medical and three surgical clinics. Various changes have been carried out recently, in particular the opening of a new clinical laboratory for chemical and bacteriological work close to the site of the pathological laboratory. The electrical department has been reorganized, and a new and complete installation for *x*-ray work and light treatment has been made. A resident pathologist has been appointed to conduct investigation in connexion with the hospital work and to instruct the students. The hospital is easily accessible from all parts of the city.

4. The *Stanley Hospital* contains 106 beds, divided into two medical and two surgical clinics. There are two modern operating theatres and a well-equipped clinical room and gynaecological ward. The resident house-surgeons are appointed periodically at salaries ranging from £60 to £90 per annum. There is a large out-patient clinic in each of the special departments of Ophthalmology and Laryngology. The large Medical and Surgical Out-patient departments provide a considerable amount of clinical material. There is a complete *x*-ray installation.

5. The *Infirmary for Children* has 88 beds and a large out-patient department. Students are admitted to the practice of the hospital for periods of three months, such practice including attendance both in the wards and the out-patient clinics. Students are invited to become out-patient clerks for a period of three months during the fifth year, and to attend two afternoons each week at 2.30.

6. The *Hospital for Women* contains 55 beds. Students who take their course of clinical gynaecology in the hospital receive instruction in the wards and out-patient department. The honorary surgeons attend daily at 1 p.m.

7. The *Eye and Ear Infirmary* contains 65 beds. Evening courses of lectures on refraction and ophthalmoscopy and diseases of the ear are delivered during the winter months by the honorary medical staff. Students who take out their course of clinical ophthalmology in the hospital receive clinical instruction in the out-patient department. The surgeons attend daily at 1.30.

8. *St. Paul's Eye Hospital* contains 65 beds. The surgeons attend daily at 1.30. Complete arrangements are made for instruction in clinical ophthalmology to students for periods of three months.

9. *St. George's Hospital for Diseases of the Skin* has a large dermatological out-patient clinic. Demonstrations are given by the honorary medical staff on Mondays, Tuesdays, and Wednesdays, at 12.30.

Leeds.

The School of Medicine—which is open to both male and female students—in this city forms the teaching centre of the Medical Faculty of the University of Leeds, and is situated in immediate proximity to the General Infirmary, where students sufficiently advanced receive their clinical instruction. The buildings were opened in 1894, and contain excellent dissecting-rooms, several well-arranged laboratories for physiology, pathology, and bacteriology, three lecture theatres, and several similar class-rooms. In addition there are a library and reading room and two museums, one being devoted to pathology and the other to anatomy. The comfort of the students is secured by a common room and refectory in which they can take meals. It is estimated by the authorities that the approximate cost of medical education to a student in this university is £195, *plus*, of course, the expenses of living during the five years covered by the curriculum. The General Infirmary has over 482 beds in constant use, and includes gynaecological and ophthalmic wards and a large out-patient department. The Ida Semi-convalescent Hospital and Robert Arthington Hospital, Cookridge, attached to the infirmary, has over 40 beds. The West Riding Lunatic Asylum at Wakefield is also open for the study of mental diseases. Students can, in addition, attend the practice of the Leeds Public Dispensary (where the practical instruction in dental subjects is also given), the City Fever Hospitals (100 beds), the Hospital for Women and Children, and the Leeds Maternity Hospital.

Appointments.—Senior anaesthetist, £50; five anaesthetists, £25 each; medical tutor and surgical tutor, at £125 each per annum. The resident medical and surgical officers, each at £150 per annum. The casualty officer, at £125 per annum. The resident ophthalmic officer, at £100 per annum. A resident obstetric officer at £50 is attached to the gynaecological ward and an extensive external maternity department. A resident medical officer is appointed every six months for the Ida Semi-convalescent Hospital (honorarium £30). Six house-physicians, each holding office for six months, and seven house-surgeons holding office for six months. Physicians' clerks and surgeons' dressers are appointed for six months; ophthalmic and aural dressers, gynaecological ward clerks, gynaecological out-patient clerks, maternity clerks, assistant physicians' clerks, laryngological clerks, and assistant surgeons' dressers, assistant ophthalmic surgeons' dressers, dressers in the casualty room, *post-mortem* clerks and laboratory assistants for three months. A clinical pathologist (£300 per annum), together with an assistant clinical pathologist (£150), has charge of the pathological laboratory. Appointments are also open to students at the Leeds Public Dispensary (three resident medical officers, with salaries commencing at £80), at the Hospital for Women (house-surgeon, honorarium £120, and anaesthetist £25), and at the West Riding Asylums.

Scholarships.—The university awards annually a scholarship on the results of the July Matriculation Examination in the form of a free admission to the lectures and classes given in the university, which are covered by the composition fee. The infirmary also awards a scholarship on the results of the first examination, of the value of 40 guineas, in the form of a free admission to the clinical teaching of the infirmary.

Fees.—The composition fee for the university course is £73 2s. 6d. (for students who have passed the second examination, £48 16s. 6d.), and for the clinical work at the infirmary, £42.

Further information can be obtained from the Academic Subdean, School of Medicine, Leeds.

Sheffield.

In this city the Medical School is one of the departments of the university, being conducted and controlled by its Medical Faculty, and occupying the entire north wing of the quadrangle of the university buildings overlooking Weston Park. The laboratories and lecture rooms connected with the subjects of the first and second examinations—namely, chemistry, physics, biology, anatomy, and physiology—are, both as regards structural arrangements and scientific equipment, on the most modern and complete lines. No expense has been spared in the matter of apparatus for teaching or research work, and the facilities for practical study in these subjects are as excellent as all the other arrangements of the school.

For students of pathology and bacteriology there are laboratories replete with everything necessary for the most advanced work, and a large pathological museum, which is open daily. In addition, there is a museum devoted to materia medica specimens and a large library and reading room. There are a number of recreation, athletic, and other societies, all under the management of an annually elected students' representative council, and large and comfortable common rooms both for men and women students.

In the university buildings there is a refectory open to all students of the school, in which luncheon, dinner, and other meals may be obtained at extremely moderate prices. A university journal, *Florcamus*, edited by a joint committee of the staff and students, is published each term. The ordinary clinical work of the school is done at the Royal Infirmary and Royal Hospital, which have amalgamated for the purpose of clinical instruction. Between them they provide 510 beds for the treatment of medical, surgical, and special cases, each having both an in patient and out-patient department for diseases of the eye.

In addition, the Royal Infirmary has special departments

for the treatment of diseases of the skin and ear, with beds assigned to them; whilst at the Royal Hospital there are special out-patient departments for diseases of the throat, ear, skin, orthopaedics, and mental diseases. During the last year nearly 7,000 patients passed through the wards of the two institutions, while those attending as out-patients numbered over 32,000. The medical and surgical staffs attend daily, and give clinical instruction in the wards and out-patient rooms. Clinical lectures in medicine and surgery are given weekly. Instruction in the practical administration of anaesthetics is given at either institution by the anaesthetists, and the *post-mortem* examinations at both institutions are in charge of the Professor of Pathology, and afford ample material for study of this subject. In addition, the students have the advantage of being able to attend the practice of the *Jessop Hospital for Diseases of Women*, an institution which takes in yearly about 750 gynaecological patients and about 450 cases of confinement, and has as well large out-patient clinics for both classes of patient, the external maternity work numbering about 700 cases a year. Special courses on fever are given at the City Fever Hospitals (570 beds), and on mental diseases at the South Yorkshire Asylum (1,610 beds).

Appointments.—The following appointments are open to all students who have passed their examinations in anatomy and physiology: (1) Casualty dresserships, (2) surgical dresserships, (3) medical clerkships, (4) pathological clerkships, (5) ophthalmic clerkships, (6) clerk to the skin department, etc. Except in the case of casualty dressers, these appointments are made for three months, commencing on the first day of October, January, April, and July. The casualty dresserships last two months, beginning on the first of any month. All students are required to hold them, and to have attended the tutorial classes for casualty dressers, before being eligible for any other of the above appointments.

Scholarships.—*Entrance Medical Scholarship*, value £122, open to both sexes. Two *Town Trustees' Scholarships*, each of the value of £50, tenable for three years, for boys or girls under the age of 19 years, who have been educated in a Sheffield secondary school for a period not less than two years immediately preceding the examination. Four *Town Trustees' Scholarships*, value £50, for boys or girls under 19 years of age, educated in any school in Sheffield, secondary or otherwise. *Town Trustees' Fellowship*, value £75, tenable for one year. *Mechanics' Institute Scholarship*, value £50, tenable for one year, and renewable for a second year. The *Frederick Clifford Scholarship*, value about £50, tenable for two years. *Kaye Scholarship*, for proficiency in anatomy and physiology, value £22 10s. Gold and bronze medals are also awarded for proficiency in various subjects.

Fees.—The composition fee of £80, payable in three instalments, covers attendance on all the courses of lectures and practical classes, except pharmacy, vaccination, and instruction in anaesthetics, required for a degree course in the university, or for the ordinary qualifications in medicine and surgery of the Examining Boards. It does not include clinical work or practical instruction in mental diseases, diseases of women, and infectious diseases. The fee for the clinical work is £12 in one sum, *plus* £6 6s. for mental diseases, fevers, and anaesthetics.

BRISTOL.

THE school is carried on by the Faculty of Medicine of the university, and provides full instruction for all its degrees and diplomas. The greater part of the lecture and laboratory work has been transferred to the new wing, which is admirably equipped in every way for the purpose. The allied hospitals (Bristol Royal Infirmary and Bristol General Hospital) have between them 470 beds and extensive out-patient departments, special clinics for diseases of women and children, and those of the eye, throat, and ear, in addition to arrangements for dental work and large outdoor maternity departments. At each of these institutions there are well-arranged pathological departments, comprising large pathological museums, *post-mortem* rooms, and laboratories for morbid anatomy. There are also laboratories for work in clinical pathology, bacteriology, and cytology, in which special instruction is given in these subjects. Departments are provided and well equipped for *x*-ray work, both for diagnosis and treatment, the various forms of electrical treatment including high-frequency currents, electric baths, Finsen light treatment, and massage.

The students of the school have also the advantage of attending the practice of the Royal Hospital for Sick Children and Women, containing 104 beds, and that of the Bristol Eye Hospital, with 40 beds. The total number of beds available for clinical instruction is therefore upwards of 600. Excellent facilities are thus afforded to students for obtaining a wide and thorough acquaintance with all branches of medical and surgical work. Each student has the opportunity of personally studying a large number of cases and acquiring practical skill in diagnosis and treatment. All classes are open to women.

Appointments.—A. Undergraduate:—Clinical clerkships, dresserships, also ophthalmic, obstetric, and pathological clerkships, are tenable at the Bristol Royal Infirmary and the Bristol General Hospital. In these institutions the dressers reside in rotation free of charge. B. Post-graduate:—At the Bristol Royal Infirmary: Two house surgeons, £100 each per annum; two house physicians, £100: resident obstetric and ophthalmic house-surgeon, £75; throat, nose, and ear house-surgeon, £75: casualty officer, £50; dental house-surgeon, £100. All these appointments are made for twelve months, except that of casualty officer, which is for six months. From the resident officers a senior resident officer is appointed at an additional salary of £30. At the Bristol General Hospital: Senior house-surgeon, £150 per annum: casualty house-surgeon, £100 per annum, if another resident appointment has been previously held: two house-physicians, £80 per annum: house-surgeon, £80 per annum; dental house-surgeon, £200 per annum. All these appointments are for six months, except that of senior house-surgeon, which is for three years, and that of dental house-surgeon, which is for two years.

Scholarships.—The following are among the scholarships and other awards open to students of the school: Two *Martin Memorial Pathological Scholarships*, of £10 each; the *Tibbits Memorial Prize*, value 9 guineas, for proficiency in practical surgery; the committee's Gold and Silver Medals for fifth-year students for general proficiency; the *Augustin Prichard Prize*, value 7 guineas, for proficiency in anatomy: the *Henry Clark Prize*, value 11 guineas, for general proficiency; the *Crosby Leonard Prize*, value 7 guineas, for proficiency in surgery: the *Sugg Surgical Prize*, a gold medal and 7 guineas: the *Sugg Medical Prize*, a gold medal and 7 guineas; the *Henry Marshall Prize*, value £12, for dressers; the *H. M. Clarke Scholarship*, value £15, for proficiency in surgery; the *Sanders Scholarship*, value £22 10s., for general proficiency.

Fees.—The composition fee for all the courses required for the medical curriculum, including hospital practice, is 140 guineas.

CARDIFF.

THE school in this city is carried on by the University College of South Wales and Monmouthshire, and devotes itself principally to training students during the first three or four years of the medical curriculum, all classes being open to women students. The courses of instruction given are recognized by all licensing bodies in Great Britain, and, after passing the tests corresponding to the first three years of the curriculum, the student can complete his course, for whatever degree he is aiming at, in London or elsewhere. Besides this, there is an arrangement with the Managing Committee of the infirmary by which students at the school can take advantage of the opportunities for acquiring experience afforded in the wards of this large, well-ordered hospital. Hence many students, especially from Wales and Monmouthshire, find it convenient to avail themselves of the advantages of being able to pursue the earlier part of their medical curriculum near home. They can also obtain instruction in the administration of anaesthetics, and with a little additional work can qualify for the B.Sc. degree of the University of Wales. This degree includes the subjects which comprise the first three years of a medical student's curriculum, and it (or the B.A.) is a compulsory degree for those students who propose to sit for the M.B., Ch.B., of the University of Wales. There is also a department of public health, in which all the work for diplomas in State medicine, whether for the University of Wales or other Examining Boards, can be done. A Chair of Pathology and Bacteriology has been established, and it is intended to offer facilities for the study of the subjects of the fourth year of the medical curriculum.

Post-graduate vacation courses are carried on in association with the Cardiff Infirmary.

Scholarships.—There is a considerable number of scholarships connected with the college, and open to students of the School of Medicine, information as to which can be obtained on application.

Fees.—The composition fee for the three years' courses required for students proceeding to the degrees of the University of London is £63; that for the two years' courses for students proceeding to a diploma of the licensing corporations being £41 10s. The composition fee for D.P.H. classes is £30. Further information may be obtained on application to the Dean of the Faculty of Medicine, or to the Registrar of the College.

SCOTLAND.

As will be gathered from the following paragraphs, the facilities for acquiring a medical education in Scotland are very ample, whether the student be proceeding to a university degree or to a diploma. To the descriptions of its different medical centres is in some cases added an account of hospitals which either play an official part in the education given to students as yet unqualified or offer valuable opportunities for post-graduation work.

ABERDEEN.

THE school is conducted by the Faculty of Medicine. This comprises twelve chairs, from which instruction is given in all the main branches of medical science—namely, botany, zoology, physics, chemistry, anatomy, physiology, materia medica, pathology, forensic medicine, surgery, medicine, and midwifery. Special opportunities for practical instruction are afforded in the laboratories and museums attached to these departments.

Clinical instruction is obtained in the Royal Infirmary (accommodating 230 patients), the Royal Lunatic Asylum (700 patients), the Sick Children's Hospital (85 patients), the City Fever Hospital (100 patients), the General Dispensary, Maternity, and Vaccine Institution (10,000 out-patients annually), and the Ophthalmic Institution (1,600 patients annually). Courses of practical instruction are given in diseases of children at the Sick Children's Hospital; in fevers at the City Fever Hospital; in insanity at the Royal Asylum; in diseases of ear, nose, and throat at the Dispensary; in diseases of the eye at the Infirmary and Eye Institution; in diseases of the skin at the Royal Infirmary.

Bursaries.—Scholarships and Fellowships, to the number of fifty and of the annual value of £1,180, may be held by students of medicine in this university. They range from £8 to £100 per annum, and are tenable in most cases for two or three years.

Fees.—The fee for each university course is, as a general rule, £4 4s.; and for a second attendance £3 3s. Matriculation fee, both sessions, £1 1s.; summer session alone, 10s. 6d. Royal Infirmary, perpetual fee, £6; or, first year, £3 10s.; second year, £3. The winter session begins on October 10th.

EDINBURGH.

THERE are three Schools of Medicine: the School of the University, the School of Medicine of the Royal Colleges, Edinburgh, and the Edinburgh School of Medicine for Women.

THE UNIVERSITY SCHOOL.—This school, of course, furnishes a full curriculum, and, in addition to other resources of the university, has the following means for practical instruction: Royal Botanic Garden, Herbarium, and Museum; Zoological Laboratory and Museum of Science and Art; Physical Laboratory; Chemical Laboratories; Dissecting-room, Bone-room, and Anatomical Museum; Physiological Laboratory; Medical Jurisprudence Laboratories; John Usher Institute of Public Health; Materia Medica Museum and Laboratory; *Post-mortem* Department of the Royal Infirmary and University Pathological and Bacteriological Laboratory; Tutorial Classes of Practice of Physic, of Clinical Medicine, and Clinical Surgery, Surgery, and Midwifery; and the practice of the hospitals, of which some account is given on p. 561.

Fees.—The sessional fee for zoology, botany, chemistry, anatomy lectures, physiology, pathology, materia medica, medical jurisprudence, surgery, medicine, midwifery and gynæcology, clinical surgery (winter), clinical medicine (winter), is £4 4s. each. Second course £3 3s. Third free. A perpetual ticket taken at the beginning of the first year is £6 6s. Physics, practical chemistry, advanced practical physiology, practical pathology, clinical surgery (summer), clinical medicine (summer), practical anatomy (winter), operative surgery, obstetric operations, practical materia medica, including pharmacy, pathological bacteriology, experimental pharmacology, vertebrate morphology and comparative embryology, are £3 3s. Practical botany (besides garden fee of 5s.), elementary practical zoology, practical physiology (experimental), practical physiology (histological), practical botany (advanced), practical zoology (advanced), practical anatomy (summer), anthropology, anatomy demonstrations, diseases of children, diseases of the eye, diseases of the larynx, ear, and nose, diseases of tropical climates, clinical instruction on diseases of the skin, regional anatomy, physiological chemistry, invertebrate zoology, organic chemistry, mental diseases, £2 2s. Applied anatomy (medical and surgical), £1 1s. Vaccination, £1 1s.

Scholarships.—In connexion with the University of Edinburgh and its Medical Faculty there is a very large number of funds for the assistance of students by means of bursaries, scholarships, exhibitions, and money awards from the beginning to end of their undergraduate career. In addition there are funds which help those who have taken a first degree in medicine and surgery to continue at work as research students. The value of these very numerous awards, and the conditions attaching to them, are so varied that it would hardly be possible to give an adequate account of them within the limits of space at disposal, and at the best such an account would be somewhat confusing to those studying the subject for the first time. The purpose of this issue of the JOURNAL will therefore best be fulfilled by merely pointing out that no other university is in a better, even if in as good, a position to smooth the financial path of earnest students, and by referring those interested to the prospectus relating to the Medical Faculty for detailed information.

THE SCHOOL OF MEDICINE.—This School of Medicine is composed of lecturers licensed by the Royal College of Physicians and the Royal College of Surgeons, and also recognized by the university through their *licentia docendi*, who, for the sake of convenience, lecture in separate buildings near at hand to the Royal Infirmary. The lecturers form one body, are all subject to the same rules and regulations, and enjoy the same privileges. A constitution and set of regulations have been drawn up, in virtue of which a medical corporation has been formed, recognized by both Royal Colleges; the government of the school is placed in the hands of a governing board consisting of five members elected by the Royal College of Physicians, of five members elected by the Royal College of Surgeons, and of five members elected by the lecturers in the school. This board, with the assistance of the standing committees of the school, supervises the whole management, and specially the maintenance of the efficiency and discipline of the school. The different buildings at present utilized for the purposes of lecturing are the following: (1) Surgeons' Hall, Nicolson Street; (2) New School, Bristo Street; (3) Nicolson Square; (4) Marshall Street; and other places. The teaching is similar to that of the Scottish universities, and the students receive similar certificates at the close of each session. The courses on the special subjects not included in the curriculum of the Examining Boards are also conducted by teachers specially qualified in each branch, and have for the last quarter of a century formed a special feature of the school. The fees payable for class and other instruction, and including the sums payable on admission to the examination of the Conjoint Board for the triple qualification, amount to about £115. The Calendar, giving full information regarding classes and fees, can be obtained gratis on application to the Dean of the School, 11, Bristo Place, Edinburgh.

THE EDINBURGH SCHOOL OF MEDICINE FOR WOMEN.—The Edinburgh School of Medicine for Women provides all the classes required for a complete curriculum. The classes qualify for the university degree in medicine, for the diploma of the Royal Colleges, and for the triple qualification. The lecturers of the school are specially recognized by the Court of Edinburgh University for the education of women who propose taking the degree in medicine of the

University of Edinburgh. Most of the classes are held in Surgeons' Hall. The office of the school and a sitting-room and other conveniences are provided in the same building for the use of the women students. The clinical instruction of the students is conducted in the wards of the Royal Infirmary specially set apart for the purpose, in the Royal Hospital for Sick Children, in the City Hospital for Infectious Diseases, at Bangour Asylum, and at the various public dispensaries. The fees and the regulations as to the course of study are the same as for pupils at the School for Male Students. Further particulars are obtainable from the Dean of the School of Medicine for Women, Surgeons' Hall, Edinburgh.

Clinical Hospitals.

1 *Edinburgh Royal Infirmary.*—There are over 900 beds and 80 at the Convalescent House at Corstorphine. The average number of patients admitted yearly is over 12,000, and the out-patients are correspondingly numerous. Instruction is given in all the special departments of medicine and surgery, in gynaecology, eye, ear, throat, and nose affections, diseases of skin, dental work (extraction, stopping, and artificial cases), the administration of anaesthetics, electro-therapeutics, hydro-therapeutics, and *x*-ray work, etc. Women are admitted and receive special and separate tuition on both the medical and surgical sides. Nine resident physicians and eleven resident surgeons (three of whom are entirely set apart for the out-patient department) are appointed every six months. They live in the hospital free of charge. They must be registered. Thirty non-resident clinical assistants are also appointed for six months in the various departments. The physicians and surgeons appoint their own clerks and dressers, and assistants in the pathological department are appointed by the pathologist. Fees: one month, £1 1s.; three months, £2 2s; six months, £4 4s.; one year, £6 6s.; perpetual ticket, £12 if paid in one sum, or £12 12s. if by separate payments.

2. *Royal Victoria Hospital for Consumption.*—Excellent opportunity is afforded for the study of tuberculosis and the Edinburgh antituberculosis system. Special clinics by the staff are arranged from time to time, both in the hospital, which contains about 100 beds, and at the Royal Victoria Dispensary for Consumption, 26, Lauriston Place, close to the university. The number in attendance at these clinics is limited. The Royal Victoria Hospital Farm Colony may also be visited.

3. *Royal Edinburgh Hospital for Sick Children.*—The hospital is in Sciennes Road, about seven minutes' walk from the Medical School and Royal Infirmary. It contains over 120 available beds. There are some 2,275 in-patients and about 8,000 new out-patients yearly. The out-patient department is conducted in a building adjoining the hospital, and is well equipped. Systematic clinical courses of instruction, which qualify for the university and other examinations, are given at various times throughout the year by the ordinary physicians and surgeons. Students may enter at any time. Four resident appointments are made half-yearly. Further information should be sought from the Registrar of the Hospital.

4. *Edinburgh Eye, Ear, and Throat Infirmary.*—Open daily at 6, Cambridge Street, at 1 p.m., for eye diseases; on Monday, Thursday, and Saturday at 12, and on Tuesday and Friday at 4, for ear, nose, and throat diseases. There is a small infirmary of ten beds in male and female wards. In-patients, 132; out-patients, 5,311.

5. *Edinburgh Royal Maternity and Simpson Memorial Hospital* has 44 beds, about 615 in-patients and 756 out-patients yearly. A nursing home in Leith is worked in connexion with the hospital, and annually supervises the deliveries of some hundreds of out-patients. Daily clinics are given by the physicians and assistant physicians. Two house-surgeons are on duty, one being appointed each quarter. *Fees:* The hospital fee is £4 4s. per month. Students can also attend the hospital and take out their cases in connexion with a number of associated dispensaries.

6. *Edinburgh City Hospital for Infectious Diseases* at Colinton Mains contains 600 beds, a large number of which are available for teaching purposes. Some 3,500 patients passed through the wards in 1910. Qualifying courses of instruction are given by the Consulting Physician and the Medical Superintendent during the winter and summer sessions. The fee is £1 1s.

7. *Royal Asylum, Morningside, Edinburgh.*—There is a clinical field of 400 beds at "The West House," comprising all the wards except those for private patients. Students have the opportunity of personally coming in contact with and examining the cases, so as to learn the modes of dealing with patients suffering from mental disease; they are exercised in diagnosis and the drawing up of certificates, the aim being to enable them to recognize its early stages, to distinguish its varieties, to adopt suitable treatment, and to advise the relatives as to sending the patient to an asylum. There is a systematic course of lectures and clinical demonstrations extending during the summer session (fee £2 2s.). During the winter months there is a weekly ward visit and clinic on Saturdays at 9.30 a.m. open to members of the class, and facilities are given for case-taking and for original research on subjects connected with insanity in the laboratory of the asylum.

8. *Edinburgh District Asylum, Bangour Village.*—The asylum for the City of Edinburgh has over 900 beds, all of which are available for teaching purposes. Systematic courses of lectures and clinical demonstrations, for men and for women students, are given during the summer session at Surgeons' Hall and the village asylum, qualifying for all examinations. The fee is £2 2s. Resident clinical assistants are annually appointed from members of the class.

GLASGOW.

THERE are five medical schools in this city: the two schools of the university, one of which (Queen Margaret College) is for women students; St. Mungo's College (the school of the Royal Infirmary), Anderson's College, and the Western Medical School.

THE UNIVERSITY SCHOOL FOR MEN.—The whole course of study required for graduation at the University of Glasgow can be passed here. Besides work of a practical and clinical kind in the hospitals, practical courses are conducted in the laboratories of the following departments: Surgery, Pathology, Public Health, Pharmacy, Physiology, Anatomy, Chemistry, Zoology, Physics, and Botany, the Botanic Garden and the Hunterian Museum being also open to students. New buildings and equipments have been provided for botany at a cost of £20,000, for practical anatomy at £14,000, for operative surgery at £9,900, as well as for pathology, while very large additions, costing nearly £12,000, have been made to the Chemistry Laboratory, rendering it probably the most extensive in Scotland. New class-rooms and laboratories have been erected for the departments of Physiology, Materia Medica, and Medical Jurisprudence and Public Health, costing, with equipment, upwards of £60,000. The university has of late been making efforts to extend and improve the accommodation, especially the laboratories, of the medical departments, to strengthen the teaching staff, and to encourage post-graduate and research work. Three very extensive general hospitals in the city afford exceptional opportunities for clinical instruction—namely, the Western Infirmary (595 beds), near the university, and attended by the bulk of the men students; the Royal Infirmary (600 beds); and the Victoria Infirmary (260 beds); while the Royal Asylum (460 beds), the Royal Hospital for Sick Children (74 beds), the Maternity Hospital (34 beds), the Glasgow Eye Infirmary (100 beds), the fever hospitals at Belvidere (680 beds), and Ruchill (540 beds), and other institutions afford facilities for the practical study of special branches.

Bursaries.—Bursaries confined to the Medical Faculty amount in annual value to about £1,000, while bursaries in any Faculty, amounting to about the same annual sum, may be held by students of medicine, a number of both sets being open to women. Several valuable scholarships may be held by medical students who have graduated in Arts. Some of the bursaries are described below.

Fees.—The matriculation fee for each year is £1 1s. In most cases the fee for each university class is £4 4s., but in some cases it is £3 3s. For hospital attendance students pay an entrance fee of £10 10s. at the Western Infirmary, with an additional fee of £3 3s. for each winter and £2 2s. for each summer clinical course; at the Royal Infirmary the fees are somewhat similar. The university fee for the

four professional examinations is £23 2s. (£6 6s. for each of the first and second examinations, and £5 5s. for each of the third and fourth). For the whole curriculum, the fees for matriculation, class attendance, hospital attendance, and professional examinations, amount to £150.

For further information apply to the Registrar, Glasgow University.

BURSARIES.—The following bursaries are open to undergraduates of both sexes: The *Gibson Bursary*, annual value £36, tenable for four years. This is open to medical students who are preparing for service as medical missionaries in connexion with the Church of Scotland, and will be awarded to the eligible candidate who has gained the highest number of marks in the First Professional Examination. One *Logan Bursary*, annual value £16, tenable for four years; appointment by the Senate. Next vacancy, 1913. The *Mackintosh Mental Science Bursary* in medicine, of the value of £31, is awarded annually to the student (of either sex) attending the class of insanity who stands first in an examination in that subject, to be held in June—the bursar to continue the practical study of the subject to the satisfaction of the Faculty of Medicine. The *Gardiner Bursary*, annual value £14, tenable for two years, will be awarded after the autumn professional examination to the candidate who has passed in physiology at the Second Professional Examination, and whose aggregate of marks in that subject and in chemistry and physics of the First Professional Examination is the highest. Next vacancy, 1913. The following are tenable in any faculty: Two *Pratt Bursaries* (each £20 and tenable for four years), both open in 1913; and two *Taylor Bursaries* (each £10, tenable for four years), one open in 1913 and the other in 1914. Three *Armauh Bursaries* (£52 each), one open in 1912 to students taking honours in mental philosophy in the Final Examination for the degree of M.A., tenable for three years. *Andrew and Bethia Stewart Bursaries* (£50 each, tenable for three years); one is vacant in 1912; candidates must have taken the M.A. degree of Glasgow. There is a special examination. Nine *Glasgow Highland Society's Bursaries*, for students of Highland descent, of the annual value of £25, and tenable for five years: probably two will be vacant in 1913. The Carnegie Trust for the Universities of Scotland is empowered to pay the whole or part of the university ordinary class fees of students of Scottish birth or extraction, under conditions given in the *University Calendar*. The *Dobbie Smith Gold Medal* is awarded for the best essay on a prescribed subject within the science of botany. The *Brunton Memorial Prize* of £10 is awarded annually to the most distinguished graduate in medicine of the year. The University Commissioners issued an ordinance to make regulations for the admission of women to certain bursaries, scholarships, and fellowships. Scholarships and fellowships are offered by the Carnegie Trust in science and medicine for post-graduate study. There are also four *McCunn Medical Research Scholarships* (£100 for one year) for graduates in medicine of the Scottish Universities.

QUEEN MARGARET COLLEGE.—In this, the Women's Medical School of the University of Glasgow, the courses of study, degrees, regulations, fees, etc., are the same as for men. Women students have their own buildings, with class-rooms, reading-room, library, etc. They are taught in some classes apart from male students, in others together with them, but in either case have all the rights and privileges of university students. Their clinical studies are taken in the Royal Infirmary, where wards containing 358 beds are available for their use, and in its dispensary; also in the Royal Hospital for Sick Children, the Glasgow Ear Hospital, the Royal Asylum, Gartnavel; the Ophthalmic Institution, the City of Glasgow Fever Hospitals, Belvidere and Ruchill, and the Glasgow Maternity and Women's Hospital.

Scholarship.—The *Arthur Scholarship*, annual value £20, tenable for three years. Open to competition by medical students in first year at the First Professional Examination in each year. This scholarship is the gift of Mrs. Arthur, of Barnsley, and is restricted to women medical students.

Board for Students.—A house of residence for women students, Queen Margaret Hall, is situated near the college. The charge for board and residence is from 17s. 6d. to 25s. 6d. per week, according to accommodation. Full information can be obtained from the Mistress, Queen Margaret College, or from the Warden, Queen Margaret Hall, Bute Gardens, Glasgow.

ST. MUNGO'S COLLEGE.—This is the Medical School of the Royal Infirmary, which is the largest in Glasgow. The infirmary is situated in Cathedral Square, Castle Street, and has easy communication with every part of the city. St. Mungo's College is in the infirmary grounds.

The infirmary has (including the ophthalmic department) over 620 beds, the average number occupied in 1911 being over 600. When the reconstruction of the infirmary, long in progress, is completed, it will have about 700 beds. There are special beds and wards for diseases of women, of the throat, nose and ear, venereal diseases, burns, and septic cases.

At the outdoor department the attendances in 1911 numbered over 180,000. In addition to the large medical and surgical departments, there are departments for special diseases—namely, diseases of women, of the throat and nose, of the ear, of the eye, of the skin, and of the teeth. A fully equipped electrical pavilion was opened a few years ago, and year by year the latest and most approved apparatus for diagnosis and treatment has been added. Wards are set apart for the teaching of women students.

Appointments.—Five house-physicians and ten house-surgeons, having a legal qualification in medicine and surgery, who board in the hospital free of charge, are appointed every six months. Clerks and dressers are appointed by the physicians and surgeons. As a large number of cases of acute diseases and accidents of a varied character are received, these appointments are very valuable and desirable.

Fees.—The fees for hospital attendance, including clinical lectures and tutorial instruction, attendance at the outdoor department, at the pathological department, *post-mortem* examinations, and the use of the museum, which has not long since been rearranged and catalogued, are as follows: 1. Hospital attendance, outdoor department, etc.: For perpetual ticket, in one payment, £7; for season tickets, six months, £2 2s., three months, £1 1s. Separate payments amounting to £7 7s. entitle a student to a perpetual ticket on return of previous season tickets. 2. Clinical instruction for six months, £3 10s.; for three months, £1 15s.

ANDERSON'S COLLEGE.—This school provides education in all subjects of the five years' curriculum. The hospital practice and clinical lectures are provided in Western or Royal Infirmary; pathology in Western or Royal Infirmary; vaccination and dispensary practice in Western or Royal Infirmary Dispensary. These classes are recognized by all the licensing corporations in the United Kingdom, and also by the Universities of London, Durham, Glasgow, and Edinburgh (the latter two under certain conditions which are stated in the school *Calendar*). The courses (lectures and laboratory) in public health are also recognized by the Scottish Licensing Board, Queen's University of Belfast, the Irish Colleges, and the University of Cambridge.

The school buildings are situated in Dumbarton Road, immediately to the west of the entrance of the Western Infirmary, within two minutes' walk of that institution, and four minutes' walk of the university.

Class Fees.—For each course of lectures (anatomy, ophthalmic medicine and surgery, aural surgery, diseases of throat and nose, and mental diseases excepted), first session £2 2s.; second session (in Anderson's College), £1 1s. For practical classes (except anatomy, chemistry, and public health), namely, botany, zoology, physiology, pharmacy, operative surgery—first session, £2 2s.; second session, £2 2s. Anatomy class fees, winter: First session, lectures and practical anatomy, £5 5s.; practical anatomy alone, £2 2s. Second session, lectures and practical anatomy, £5 5s.; practical anatomy alone, £2 2s. Third session, practical anatomy, £1 1s. Summer: Regional course or dental course (each including nervous system), and practical anatomy, £3 3s.; regional course, or dental course alone, £2 2s.; practical anatomy alone, £1 11s. 6d.; osteology and practical anatomy, £2 12s. 6d.; osteology alone, £1 11s. 6d. Chemistry: Lectures, £2 2s.; practical chemistry, £3 3s. Botany and zoology: Reduced fees for lectures with laboratory work in botany or in zoology, during same summer session, £3 3s. For lecture class or practical class separately, in botany or in zoology, during the same summer session, £3 3s. For lecture class or practical class separately in botany or in zoology, £2 2s. Ophthalmic medicine and surgery (including hospital practice), aural surgery, diseases of throat and nose, and mental diseases: Fee for each course, £1 1s. Public Health Laboratory: Fee for six months' course, including lectures, £12 12s. Western Infirmary. Fees: For hospital attendance, £10 10s.; for clinical instruction, winter session, £3 3s.; summer session, £2 2s. Students who have completed the clinical course elsewhere are permitted to enter for a six months' course at the hospital only on payment

of a fee of £2 2s. Pathology, £4 4s. Practical pathology, £3 3s. Pathology demonstrations only, £1 1s. Vaccination fee, £1 1s. Royal Infirmary.—Fees: Hospital practice and clinical instruction, first year, £10 10s.; second year, £10 10s.; afterwards free. Six months, £6 6s.; three months, £4 4s. Pathology, both courses, £4 4s. Vaccination fee, £1 1s. Attendance at the dispensaries of the Western and Royal Infirmaries is included in the hospital fee. Eye Infirmary.—Fee: Hospital practice and clinical instruction, including lectures at the college, six months, £1 1s. The session opens on Monday, October 14th, 1912.

The Carnegie Trust pays the fees of students at Anderson's College on conditions regarding which particulars may be obtained from the Secretary, Carnegie Trust Offices, Edinburgh.

A Calendar will be sent on receipt of a post-card by the Secretary to the Medical Faculty, Anderson's College Medical School, Glasgow W., who will forward any further information which may be desired.

GLASGOW WESTERN MEDICAL SCHOOL.—This school, which is situated in University Avenue, faces the principal entrance to the university, and is not far from the Western Infirmary. The subjects in which it affords instruction by means of lectures and demonstrations are chemistry, anatomy, medicine, surgery, ophthalmology, dermatology, midwifery, and gynæcology. Some of the classes qualify for the medical degrees of the university, and also for the diplomas of the Scottish Conjoint Board. The fee for most of the subjects is £2 2s. There is no matriculation fee. Further particulars relating to the school can be obtained from its Secretary, Mr. J. N. Morton, 58, Bath Street, Glasgow.

Clinical Hospitals.

1. The *Royal Infirmary.*—Some notes respecting this institution have been given in connexion with its Medical School.

2. *Glasgow Western Infirmary.*—This hospital adjoins the University of Glasgow, and has 600 beds. The clinical courses are given by the physicians and surgeons, each of whom conducts a separate class, and students may attend whichever they select at the beginning of the session. Special instruction is given to junior students by tutors or assistants, and clinical clerks and dressers are selected from the members of the class. Special wards are set apart for diseases of women and for diseases of the skin. In the out-patient departments there are special clinics for diseases of women and for diseases of the throat, ear, and teeth, etc. All the courses of clinical instruction are recognized at the University of Glasgow and other Boards in the kingdom. Fifteen resident assistants are appointed annually without fee from those who have completed their course. *Fees.*—(1) Every student must pay a fee of £10 10s. for hospital attendance, and this is kept quite apart from the fees for clinical instruction. (2) Every student pays £2 2s. for each summer and £3 3s. for each winter session of clinical instruction, or such other fees as may be fixed from time to time by the managers in conjunction with the University Court. (3) Students who have completed their clinical course elsewhere are permitted to enter for a six months' course of the hospital only, on payment of a fee of £2 2s. The in-patients average over 9,000; the out-patients nearly 40,000.

3. *Glasgow Eye Infirmary.*—This infirmary is situated at 174, Berkeley Street, and 80, Charlotte Street, and has 104 beds. Dispensaries open daily at 12.30 p.m. Operations performed on Monday and Wednesday at 10 a.m. and 2 p.m., and Friday at 9 a.m. and 2 p.m. Students' fees for six months, 1 guinea. In-patients, about 1,600; out-patients, about 28,000.

4. *Royal Hospital for Sick Children.*—This hospital, containing over 100 beds (26 of which are at the country branch at Drumchapel), and devoted to the non-infectious diseases of children, is open for clinical instruction, as also is the out-patient department in West Graham Street. Students, by paying a fee of £1 1s., are entitled to the practice of the hospital and dispensary for twelve months from the term of entry. The in-patients number about 1,100 yearly, and the out-patients about 14,000, involving over 50,000 attendances. A new building capable of accommodating some 200 in-patients is in course of erection.

5. *Glasgow Hospital for Diseases of the Ear, Nose, and Throat.*—This institution has 12 beds and a large out-patient department, the latter being open daily and attended by over 3,000 patients annually. Classes for practical work in connexion with the university lectures on the ear, nose, and throat are held during both the winter and summer sessions, and prizes are awarded.

ST. ANDREWS AND DUNDEE.

THE medical departments in these two teaching centres cater specially for students proceeding to the degrees of the University of St. Andrews, but admit, we understand, other students as well. In the former city the United College provides education in all subjects of the first two years. In Dundee, University College provides for the needs of students from the beginning to the end of the five years' curriculum. Its buildings are modern, and contain laboratories and workrooms for anatomy, physiology, materia medica, pathology, ophthalmology, public health, medicine, surgery, and gynæcology. The clinical work of the school is facilitated by the institutions below described. The class fees are 4 guineas for systematic classes and 3 guineas for practical classes. The hospital ticket is £1 1s. for three months, £3 3s. a year, or perpetual £10 in one sum or £10 10s. in instalments. Added up, the fees for the curriculum amount to about 100 guineas. In connexion with both institutions there are bursaries and scholarships of considerable value, which are awarded after competitive examination. Information as to these can be obtained either from the Secretary of the University of St. Andrews or the Secretary of one or the other college. Information regarding the clinical facilities may be obtained from Professor Kynoch, Dundee, Dean of the Medical Faculty.

Dundee Royal Infirmary.—The infirmary contains 400 beds, with special wards for the treatment of diseases of children, of eye diseases, and of diseases of the ear and throat. Five resident and one non-resident qualified assistants are appointed annually. Clinical clerks and dressers are attached to the physicians and surgeons, and students are appointed to assist in the *post-mortem* room. Out-patients are seen daily at 9 a.m. There is an intern and extern maternity department connected with the infirmary. The instruction given at the infirmary is recognized for purposes of graduation by all the Scottish universities, the University of London, the University of Cambridge, the Royal University of Ireland, and by the Royal Colleges of England and Scotland. Further information on application to the Medical Superintendent.

Dundee District Asylum.—The appointments include two qualified resident assistants and two resident clinical clerks. Clinical instruction is given.

IRELAND.

THERE is a choice of six schools for those prosecuting their medical studies in Ireland, and for clinical instruction the choice is equally satisfactory and varied, though the hospitals themselves are comparatively small. Some account of the schools follows:

THE SCHOOL OF PHYSIC.

This school is in Dublin, and is carried on under the joint auspices of the University of Dublin and of the Royal College of Physicians in Ireland; the King's professors of institutes of medicine, practice of medicine, materia medica, and midwifery being appointed by the latter.

Clinical instruction is given at Sir Patrick Dun's Hospital, and some twelve other metropolitan hospitals, infirmaries, and asylums are recognized by the Board.

THE SCHOOLS OF SURGERY.

These are schools carried on in Dublin under the supervision and control of the Council of the Royal College of Surgeons. They are formed of the college's own school, combined with two famous old medical schools—Carmichael and Ledwich; they are attached to the college by charter. The buildings contain spacious dissecting-rooms, one set apart for lady students, and special pathological, bacteriological, public health, chemical, and pharmaceutical laboratories. Advantage can be taken of the lectures and instruction afforded by students otherwise unconnected with the college.

Prizes.—Among the prizes annually awarded are: The Barker Anatomical Prize (£26 5s.); the Carmichael Scholarship (£15); the Mayne Scholarship (£8); the Gold Medal in Surgery, and the Stoney Memorial Gold Medal in Anatomy; class prizes of £2 and £1, accompanied by silver medals, will also be given in each subject.

The next session begins October 15th, terminating March 31st, whilst summer lectures and classes commence on April 1st and are carried on until June 30th. A prospectus can be obtained post free on application to the Registrar, Royal College of Surgeons, Dublin.

University College, Dublin.

This is one of the constituent colleges of the National University of Ireland, and at present conducts its work at buildings on St. Stephen's Green, at those formerly occupied by the Cecilia Street School of Medicine, and at the University Buildings in Earlsfort Terrace. Its permanent home is not yet ready. It possesses a good library, and the arrangements for the teaching of medical students from beginning to end of the curriculum are adequate. The teaching staff is numerous, and through it the college is connected with many of the hospitals of the city. Students, however, are allowed to pursue their studies at any of the hospitals which are recognized as a clinical school. Some account of these is given in this section under the heading of "Other Educational Facilities."

Belfast.

The Medical School is part of the Faculty of Medicine of Queen's University, Belfast, and provides a complete medical curriculum for all purposes. The laboratories in connexion with the departments of biology, chemistry, physiology, pathology, anatomy, physics, and materia medica are all excellent, and there is a Students' Union which gives students the advantage of dining-rooms, reading-rooms, a library, and various recreation rooms. Women are eligible as students. Clinical instruction is given at the Royal Victoria Hospital, which was rebuilt a few years ago and has 300 beds, and the Mater Infirmorum Hospital, which has 150 beds. Other hospitals open to the students of the university are: The Maternity Hospital, the Ulster Hospital for Women and Children, the Hospital for Sick Children, the Ophthalmic Hospital, the Benn Ulster Eye, Ear, and Throat Hospital, the Union Infirmary and Fever Hospital, the Fever Hospital, Purdysburn, the District Lunatic Asylum, the Samaritan Hospital, Forster Green Hospital for Diseases of the Chest, and the Belfast Hospital for Skin Diseases.

Scholarships.—(1) Six Foundation Entrance Scholarships, from £20 to £40 each; (2) sixteen Professional Scholarships, value from £15 to £40 each; (3) one Hutchinson Stewart Scholarship, £12, in mental diseases; (4) one Mackay Wilson Scholarship, £100, awarded triennially; (5) Isabella [illegible] Scholarship, tenable for three years, awarded to a student; (6) numerous sessional prizes, a graduate research fund open to all graduates of more than three years' standing. Gold medals are awarded at M.D. examination.

Fees.—The cost of the curriculum intended for students proceeding to the degrees of the Queen's University of Belfast is, approximately, £105. This includes examination fees and a perpetual ticket for attendance at the Royal Victoria Hospital or the Mater Infirmorum Hospital, but not fees for the special hospitals. The course for the Conjoint Board costs about the same amount. A pamphlet with full information can be obtained on application to the Secretary, Queen's University, Belfast.

University College, Cork.

This institution, formerly known as Queen's College, is one of the constituent colleges of the new National University. It holds examinations for all the faculties of that university, in addition to continuing the work which it has hitherto performed, namely, that of providing for the needs of medical students at all [illegible]. Its first aim is to fit students for [illegible] university, but students proceeding to the Conjoint Boards of England, Scotland, or Ireland, the Society of Apothecaries of London, or the Apothecaries' Hall of Ireland, or London University, can arrange the courses of lectures which they attend, and the order in which they attend them, to meet the requirements of those bodies. Certificates of attendance at the college courses are also accepted by the University of Cambridge. Clinical instruction is given at the North and South Infirmaries (each 100 beds) and at the Cork Union Hospital (1,200 beds). Students can also attend the Mercy Hospital (60 beds), the County and City of Cork Lying-in-Hospital, the Maternity, the Hospital for Diseases of Women and Children, the Fever Hospital, the Ophthalmic and Aural Hospital, and the Eglington Lunatic Asylum. The session extends from October to June inclusive. The college contains laboratories in the departments of biology, chemistry, physiology, pathology, and materia medica and pharmacy, and there are a botanic garden and plant-houses in the grounds.

Scholarships.—Over £4,000 is available annually for scholarships in the college. Particulars as to each of them can be obtained on application to the Registrar.

Fees.—The fees for the lectures and hospital attendances required by the National University of Ireland course, including examination fees, come to about £120. Further information can be found in the college regulations, or obtained on application to the Registrar.

University College, Galway.

This institution, to which further reference is made at p. 548, is one of the constituent colleges of the National University of Ireland, and includes Faculties of Arts, Science, Law, Engineering, and Medicine. Candidates for degrees in medicine must reside for three years. For the remaining two years certificates from any recognized medical school are accepted. The college buildings are well lighted and well ventilated, and contain dissecting-rooms, an anatomical theatre, and laboratories for the study of physiology, chemistry, physics, and other departments of medical science. For pathology and chemistry new laboratories are in process of construction. It has good grounds surrounding it, and there are many arrangements, such as a library and an athletic union, for the benefit of those belonging to the Medical Faculty, as well as for students in other departments of the college. The clinical teaching, which is recognized as qualifying not only for the degrees of the National University, but for those of London University and the diplomas of the various colleges in the three kingdoms, is carried on at the Galway County Hospital, the Galway Union Hospital, and the Galway Fever Hospital. The former is a general hospital, and at the two latter students have ample opportunities of studying zymotic and chronic diseases. The Union Hospital has a special ward for diseases of children. The college entrance scholarships number fourteen, and range in value from £30 to £25 each. They are open to all students, including those of the Faculty of Medicine. For students in their second, third, and fourth years, two scholarships are in each year reserved for those belonging to the Faculty of Medicine. Further information as to these scholarships, and as to fees for hospital attendance, laboratory work, and lectures, and all other items of the medical curriculum, can be obtained on application to the Registrar at the College.

Other Educational Facilities.

Some account may also be given of the many hospitals in and around Dublin which, officially or unofficially, take a share in the educational work of this centre of medical study, and also afford opportunities to post-graduate students.

Sir Patrick Dun's Hospital.

This hospital, situate in Grand Canal Street, is connected with and close to the school of physic of the University of Dublin, but its practice is open to students of medicine attending other schools, and its certificates are recognized by the National University of Ireland and the Royal College of Surgeons in England, Scotland, and Ireland. Clinical instruction is given daily by the physicians and surgeons, and special classes for students commencing their studies are held during October, November, and December. They embrace the elements of medicine and surgery, including note-taking. The operating theatre is thoroughly in accord with the requirements of modern surgery. Clinical teaching on the diseases of women is given twice a week, and in the special wing devoted to fever cases regular clinical instruction is given throughout the winter and summer sessions. Pathological and bacteriological demonstrations are given on Fridays during the winter and summer sessions in the new pathological laboratory. Special

arrangements have been made for practical and theoretical instruction in the administration of anaesthetics. A department for the treatment of throat, nose, and ear diseases affords instruction in these subjects, and in the use of the laryngoscope and otoscope. There is also a department for dentistry. In the *x*-ray department opportunities are given the members of the hospital class of seeing the various applications of the *x* rays to the diagnosis and treatment of injury and disease. The out-patient departments are similarly useful. Special demonstrations are given upon diseases of the skin.

Appointments.—A resident surgeon, with salary, is appointed annually, and five resident pupils each half-year; six surgical dressers and six clinical clerks each month.

Prizes.—The Haughton clinical medals and prizes, value about £15 each, in medicine and surgery, are awarded annually, other candidates who show special merit being given certificates.

Fees.—The fees are: Winter and summer session, together, £12 12s. Winter session only (six months), £8 8s. Summer session only (three months), £5 5s. Other information can be obtained from the Honorary Secretary to the Medical Staff of the Hospital.

Richmond, Whitworth, and Hardwicke Hospitals.

Of these combined hospitals, Richmond deals with surgical work, Whitworth with medical, and Hardwicke with fever cases. Together they contain over 300 beds, and have special clinics for diseases of the eye, ear, throat and nose, and for diseases of women. The Truss Establishment, for the distribution of trusses to the ruptured poor of Ireland, is connected with these hospitals. A fully equipped pathological laboratory has been opened and a new mortuary built. The Richmond Lunatic Asylum, containing 1,200 patients, is close by, affording facility for the study of mental diseases.

Appointments.—A resident physician and a resident surgeon are elected half-yearly, and receive a salary. Twelve resident clinical clerks are elected quarterly. These appointments are not only open to students of these hospitals, but also to students of other hospitals and to qualified doctors.

Further information can be obtained from the Honorary Secretary and Treasurer, R. Travers Smith, M.D., 20, Lower Fitzwilliam Street.

Adelaide Medical and Surgical Hospitals.

The hospitals contain 140 beds. A house-surgeon and a house-physician, resident and salaried, are appointed yearly, and four resident pupils are selected half-yearly. Further particulars may be obtained on application to the Secretary of the Hospital, or to any of the members of the medical staff.

Royal City of Dublin Hospital.

This hospital, in addition to the general medical and surgical wards, contains special wards for ophthalmic and aural cases, diseases of women, and diseases of children. There is also an isolated building for the reception of infectious cases. An entirely new operation theatre has been constructed in accordance with the most modern surgical requirements. Roentgen-ray and lupus lamp departments have been installed. Special instruction is given in the administration of anaesthetics, and certificates are awarded to students taking out this course.

Appointments.—Clinical clerks to the physicians and dressers to the surgeons are appointed from the most deserving of the class, and certificates awarded for the faithful performance of their duties. Medical and surgical resident pupils are appointed, and special certificates awarded if merited. A resident medical officer is appointed annually.

For further particulars application should be made to the Honorary Secretary of the Medical Board at the Hospital.

Mater Misericordiae Hospital.

This hospital contains 345 beds, and is open at all hours for the reception of accidents and urgent cases. Clinical instruction is given by the physicians and surgeons at 9 a.m. daily. A course of clinical instruction on fever is given during the winter and summer sessions. A certificate of attendance upon this course, to meet the requirements of the licensing bodies, may be obtained. Ophthalmic surgery is taught in the special wards and in the dispensary. Surgical operations are performed daily at 11 o'clock. Connected with the hospital are extensive dispensaries, which afford valuable opportunities for the study of general medical and surgical diseases and accidents. Instruction is given on pathology and bacteriology. Leonard prizes will be offered for competition annually. Certificates of attendance are recognized by all the universities and licensing bodies in the United Kingdom. Private wards have been opened for the reception of medical and surgical cases. A training school and a home for trained nurses have been opened in connexion with the hospital. For further particulars see prospectus.

Fees.—Nine months, £12 12s.; six winter months, £8 8s.; three summer months, £5 5s. Entries can be made with any of the physicians or surgeons, or with the Registrar, Dr. Martin Dempsey, 35, Merrion Square.

Mercer's Hospital.

This is situated in the centre of Dublin, in the immediate vicinity of the Schools of Surgery of the Royal College of Surgeons, the Catholic University School of Medicine, and within five minutes' walk of Trinity College. It contains 120 beds for medical and surgical cases, and arrangements have been made with the medical officers of Cork Street Fever Hospital whereby all students of this hospital are entitled to attend the clinical instruction of that institution, and become eligible for the posts of resident pupils, etc. There is a large out-patient department, and a special department for diseases peculiar to women. There are also special wards for the treatment and study of children's diseases. During the past few years the hospital has undergone extensive alterations in order to bring it up to modern requirements.

Appointments.—A house-surgeon is appointed annually. Five resident pupils, each for six months, and clinical clerks and dressers are appointed monthly from amongst the most deserving members of the class.

Fees.—Winter, six months, £8 8s.; summer, three months, £5 5s.; nine months, £12 12s.

Further particulars can be obtained from the Honorary Secretary of the Medical Board.

The Rotunda Hospital.

This institution consists of two distinct hospitals, and is the largest combined maternity and gynaecological hospital in the British Empire. Nearly 3,000 patients are admitted annually to the hospital, and more than 2,000 cases of confinement are attended annually at the patients' own homes, whilst over 14,000 patients are attended in the out-patient department. A pathological laboratory is one of the important features of the hospital. The clinical instruction given includes daily lectures and practical demonstrations in midwifery, gynaecology, and cystoscopy. Students also conduct its maternity cases and assist at all operations, both obstetrical and gynaecological. Qualified practitioners who reside in the hospital for more than one month are allowed to perform operations. A diploma is granted to pupils on their passing an examination after a period of six months' attendance on the practice of the hospital. Paid clinical clerks are selected (by examination) from amongst qualified men who have obtained the hospital diploma. The residential quarters in the hospital for both men and women students have within the last few years undergone complete renovation, and afford comfortable accommodation. The grounds of the hospital contain grass courts for lawn tennis and croquet. Pupils can enter at any time for a period of one month or longer. The hospital offers exceptional opportunities for qualified practitioners of any nationality who desire to take out a course of post-graduate instruction.

Fees.—Intern pupils: Six months, £21; three months, £12 12s.; two months, £9 9s.; one month, £6 6s. Extern pupils: Six months, £10 10s.

Royal Victoria Eye and Ear Hospital.

This hospital, situated in Adelaide Road, Dublin, is an amalgamation of two institutions which formerly gave special instruction in ophthalmology separately—namely, St. Mark's Ophthalmic Hospital and the National Eye and Ear Infirmary. The combined institution, which was opened in February, 1904, contains 82 beds. Clinical instruction in diseases of the eye, including refraction, and the use of the ophthalmoscope, is given daily, and students

attend the operations, which are performed as occasion requires. Instruction in aural surgery is also given daily. Special classes for practical instruction in the use of the ophthalmoscope, etc., and for the demonstration of cases, are formed from time to time. A detached out-patient department, specially designed to meet all the requirements of eye, ear, nose, and throat patients, and complete in every respect for the cure and demonstration of their diseases, has been erected and is now in occupation. It is believed that this department is one of the most complete of its kind in existence.

CLINICAL HOSPITALS IN ENGLAND.

THERE are a great many hospitals in the United Kingdom which, though not connected with any medical school, open their doors either to those who have yet to become qualified, to those who are doing post-graduation work, or to both. The facilities they offer for gaining practical clinical experience are very great, and should not be overlooked. Their honorary staffs commonly make a point of giving what instruction opportunity offers; and at those which are situated in the larger towns there are often appointments as clinical assistants to be obtained. In addition, they all have to offer, at shorter or longer intervals, appointments in the way of resident medical officerships, house-physicianships, and house-surgeoncies. These are usually paid offices, which may be held for periods varying from six months to a year. Notices of the vacancies as they occur appear in our columns, and there is rarely any lack of candidates, since the holder is placed in a particularly favourable position for gaining either general or special experience. An account of some which are situated in London and the provinces here follows, reference to those in large medical centres other than London being made in the accounts given of the Medical Schools in Scotland, Ireland, and the provinces respectively.

LONDON.

GENERAL HOSPITALS.

Great Northern Central Hospital, Holloway Road, N.—This hospital is recognized by the Examining Board in England of the Royal Colleges of Physicians and Surgeons as a place of study during the fifth year of the medical curriculum. The hospital contains 185 beds, all of which are at present available for occupation (that is, no beds empty for want of funds). The large rectangular and circular wards, each of which contains 20 beds and 4 cots, the operation theatre, and an additional out-patient department, general and special, and the pathological departments, have all been erected since 1887. A second operation theatre and a new surgery block containing two observation wards, patients' waiting hall, examining rooms, and surgery proper, were opened in 1906. There is also an electrical department, and a children's ward containing 15 cots. Medical practitioners are invited to attend the general and special practice of the hospital. Clinical assistants (qualified), clinical clerks, and pathological clerks are appointed in the general and special departments, and may receive certificates at the end of their terms of office. There are one resident medical officer, three house-surgeons, two house-physicians, a pathologist, and five anæsthetists. Full particulars concerning these appointments can be obtained from the Honorary Secretary of the Medical Committee. Owing to the development of tube railways and electric trams the hospital is now one of the most accessible in London.

London Temperance Hospital.—The hospital in Hampstead Road contains 100 beds. The medical and surgical [illegible] ts and practitioners. There are [illegible] appointments (vacancies in which, when they occur, are advertised in the JOURNAL). The principal are those of surgical and medical registrars, pathologist and bacteriologist, anæsthetist, radiographer, resident medical officer, one assistant medical officer, and assistant house-surgeon. From time to time clinical classes are held by members of the staff.

[illegible]iety.—Dreadnought Hospital, Greenwich, 250 beds. Albert Dock Hospital, 50 beds. Dispensary in the East India Dock Road, and at Gravesend. The London School of Clinical Medicine is attached to the first [illegible] and the London School of Tropical Medicine to the latter. Reference to the opportunities which these institutions afford for general clinical study and for obtaining special instruction in the diseases of tropical climates will be found at pages 573 and 574 respectively.

West London Hospital.—The hospital possesses some 160 beds, and, besides having a large out-patient department, the work of which is subdivided among the different special branches of medicine and surgery, it treats annually between two and three thousand in-patients. The excellent opportunity it affords for clinical study will be found fully described at page 572 in the article on Post-Graduate work.

Prince of Wales's General Hospital, Tottenham, N.—Full information as to the attractions of this hospital as a place for clinical study, and as to the manner in which its valuable resources are utilized, will be found at page 573 in the article on Post-Graduate work. The district in which the hospital is situated has been growing rapidly of late years, and attendance in its various departments annually increases.

CHILDREN'S HOSPITALS.

The Hospital for Sick Children, Great Ormond Street, W.C. (Medical School recognized by the University of London for the Study of Children's Diseases), contains 240 beds, divided into 96 medical, 106 surgical, and 38 for special and infectious cases, besides 36 beds at the Convalescent Branch, Highgate. The hospital having been recognized by the Conjoint Board for England as a place where, under the new curriculum, six months of the fifth year may be spent in clinical work, the practice is arranged to meet this need, and is open to students who have completed four years of medical study, and also to qualified medical men. The sessions are of ten weeks' duration, and begin in October, January, and March. Appointments are made every three months to eight medical clerkships and eight surgical clerkships. Lectures or demonstrations, given once or twice every week during both winter and summer sessions, are open free of charge to medical practitioners. Fees for hospital practice: One month, 2 guineas; three months, 5 guineas; perpetual ticket, 10 guineas. Special for clinical clerks, £1 1s. for three months. Certificates of attendance are granted. Special post-graduate courses are held. Prospectuses and further information will be forwarded on application to the Dean at the Hospital.

Paddington Green Children's Hospital, Paddington Green, London, W.—Number of beds, 46; average number of beds daily occupied, 36; average number of in-patients, 782; average number of out-patients, 8,196. Daily attendance of the medical and surgical staff. There are six clinical assistants. There is a convalescent home attached to the hospital at Fair View, Slough, with accommodation for 16 children in the winter and 24 in the summer months.

East London Hospital for Children, Shadwell.—The hospital contains 120 cots. Two house-surgeons and two house-physicians (holding office for six months) are appointed annually. This hospital is recognized by the Conjoint Board for England as a place of instruction for students at which six months of their fifth year may be spent in clinical work. The following opportunities for the study of the diseases of childhood are offered to gentlemen who have completed four years of medical study, and to those who are already qualified: The practice of the hospital (in the out-patient department) is open to students every day (except Saturdays), at such hours as the physicians or surgeons for the day are attending. The in-patient practice is open to students holding clerkships or dresserships in the hospital, and to students not holding appointments during the attendance of the physicians and surgeons. A certain number of clinical clerks and dressers are appointed every three months to each physician and surgeon. They are eligible for reappointment at the end of three months. Additional information may be obtained on application to the Secretary at the Hospital.

The Queen's Hospital for Children, Hackney Road, Bethnal Green.—This hospital, formerly known as the North-Eastern, has 134 beds in London and 30 at the seaside branch at Bexhill, which is known as "Little Folks'" Home. The in-patients in 1911 numbered 2,060, of whom 843 were children under 2 years of age; out-patients.

32,992; new cases, 78,842 attendances. There are special Dental, Eye, Skin, Ear, Nose, and Throat, and Roentgen-rays Departments. The institution offers plenty of facilities for medical and surgical study of all kinds. A course of post-graduate lectures and demonstrations, open free of charge to qualified medical men and women, will be given by members of the visiting staffs weekly from October to March. Detailed information can be obtained on application to the Secretary.

The Belgrave Hospital for Children.—The hospital has accommodation for 40 children and a very extensive out-patient service. The proportion of very young children to the total number treated is high. Medical and surgical out-patients are seen at 9.30 on Mondays, Tuesdays, Thursdays, and Fridays. Clinical assistants to the out-patient staff are appointed from time to time.

Lying-in Hospitals and Hospitals for Women.

Queen Charlotte's Lying-in Hospital.—This hospital, situated in Marylebone Road, receives over 1,800 patients annually, besides having a large out-patient department. Medical students and qualified practitioners are received, and on account of the large number of primiparous cases—nearly one-half of the total admissions—have unusual opportunities of seeing obstetric complications and operative midwifery. Clinical laboratory instruction is given. Certificates of attendance at this hospital are recognized by all universities, colleges, and licensing bodies. There is a residential college opposite the hospital and in telephonic communication with it. *Fees:* Those attending the practice of the hospital, in order to conduct the number of cases they are required to attend by the licensing bodies, pay a fee of £8 8s. for a course of four weeks. Those who attend only for the preliminary instruction in midwifery now required by the General Medical Council pay £5 5s. for a calendar month. Students are accommodated at the residential college adjoining the hospital. Terms for residence and full board, 30s. per week.

Samaritan Free Hospital for Women, Marylebone Road, N.W.—The Samaritan Hospital treats diseases peculiar to women only. It has 56 beds. It receives qualified practitioners as clinical assistants in both in-patient and out-patient departments: fee, £3 3s. per quarter. Further particulars can be obtained from the Secretary.

Ophthalmic Hospitals.

Royal London Ophthalmic Hospital (Moorfields Eye Hospital), City Road, E.C.—This hospital contains 138 beds, and treats annually about 2,100 in-patients and 50,000 out-patients. Operations are performed daily from 10 a.m. to 1 p.m., and four surgeons attend on each day. Students are admitted to the practice of the hospital. *Fees:* For six months, £3 3s.; perpetual, £5 5s. Courses of instruction in the following subjects are given each term: (1) Examination of the eye; (2) the use of the ophthalmoscope; (3) errors of refraction; (4) external diseases of the eye; (5) surgical anatomy of the eye; (6) motor anomalies; (7) pathology of the eye; (8) practical pathology; (9) bacteriology; (10) operative surgery; (11) classes for *x*-ray work; (12) clinical lectures. A composition fee of £10 10s. will entitle students of the hospital to a perpetual ticket, and will admit them once to all the above lectures and demonstrations, except the classes on practical pathology, bacteriology, operative surgery, and *x*-ray work. Students of the hospital are eligible for the offices of house-surgeon, refraction assistants, or clinical and junior assistants. Junior assistants are appointed every three months. Any further information desired can be obtained on application to the Secretary.

Royal Westminster Ophthalmic Hospital, King William Street, West Strand.—The hospital, modernized throughout, contains 40 beds, a large out-patient department, a lecture-room, and a well-equipped pathological laboratory. The practice is open to practitioners and students from 1 to 4 p.m. daily. Special instruction is given in the pathology, diagnosis, and treatment of eye affections, including the operations on the eye, the treatment of errors of refraction, and the use of the ophthalmoscope. *Fees:* Six months, £3 3s.; perpetual, £5 5s. Shorter periods of instruction can be arranged. For further particulars apply to the Secretary at the Hospital.

Royal Eye Hospital, St. George's Circus, Southwark, S.E.—This hospital contains 40 beds and 2 cots. The out-patients number over 28,000 yearly. Operations are performed and patients seen daily at 9 a.m. and 2 p.m. Qualified practitioners and students are admitted to the practice of the hospital. Courses of instruction in ophthalmology are given during the summer and winter sessions. Fee for each course, £2 2s.: including three months' hospital practice, £3 3s. Qualified students of the hospital are eligible for the offices of registrar and house-surgeon; they may also be appointed clinical assistants for six months, and are eligible for re-election. Further particulars may be obtained from the Secretary at the Hospital.

Central London Ophthalmic Hospital, Gray's Inn Road, W.C.—This hospital has 26 beds and possesses facilities for clinical teaching daily. Last year there were 370 in-patients and 13,470 out-patients (entailing 30,051 attendances). Classes of instruction in the various branches of ophthalmology are held during the winter session commencing in October. Towards the end of the year the institution will be removed to entirely new and equipped premises, at the corner of Judd Street and Hunter Street, about five minutes' walk from the present site. The out-patient work begins at 1 o'clock, and operations are performed daily between 1 and 4 o'clock. *Fees:* A composition fee of £5 5s. will entitle students to a perpetual ticket, and £3 3s. to three months' hospital practice, and either fee will admit students to the ophthalmoscope and refraction classes.

Fever and Small-pox Hospitals.

Students are admitted to study at the Fever and Small-pox Hospitals of the Metropolitan Asylums Board after they have completed the third year of medical education, provided they have held the offices of clinical clerk and dresser, and have obtained the sanction of the authorities of the medical school to which they belong. The minimum duration of the course of study at the fever hospitals is two months, and the ordinary course of study at the small-pox hospitals consists of three demonstrations. At the fever hospitals the student must attend two days a week, and a third attendance is allowed, which may be taken at the convenience of the student, either in the morning or afternoon. To enable him to do this, an afternoon class is held once a week at those hospitals which have morning classes, and a morning class once a week where students are now received only in the afternoon. A register of students and the number of attendances of each individual is duly kept at each hospital. At the small-pox hospitals the dates and times of demonstrations are notified to students who have entered for a course. They must abide by the rules laid down as to disinfection and other matters, and must satisfy the Board of Management that they are sufficiently protected against small-pox by vaccination or otherwise. A certificate signed by the medical superintendent of the hospital at which attendance is made, and countersigned by the Clerk to the Board, is granted to a student when he has satisfactorily completed the course of study. Qualified medical men are admitted under similar terms and conditions, except that the sanction of the authorities of the medical school is not required in their case, and that they may attend the small-pox demonstrations without payment of a fee. Courses of instruction in the diagnosis and treatment of fevers are held three times a year at most hospitals, beginning in January, May, and October respectively, and other courses are usually arranged to commence in February, August, and November respectively. Information as to the classes is furnished to each of the recognized medical schools in the metropolis. Courses in connexion with small-pox are held from time to time as circumstances permit.

Fees.—Fever hospitals, two months, £3 3s., and £1 1s. for every additional month; small-pox hospitals, £1 1s. for the course of three demonstrations, but qualified medical men and students who may be receiving, or who may have received during the previous six months, instruction in fevers at the Board's hospitals may attend without payment of a fee.

Chest Hospitals.

Hospital for Consumption and Diseases of the Chest, Brompton.—The hospital has been recognized by the

Conjoint Board for England as a place where six months of the fifth year may be spent in clinical work. It is also one of the institutions belonging to the London Post-Graduate Association. There are 333 beds in the two buildings constituting the hospital, and a special throat department, as well as an open-air sanatorium at Frimley with 150 beds. Pupils are admitted to the in-patient and out-patient practice of the hospital and to the laboratories. Courses of lectures and demonstrations are given during each term on Wednesdays at 4 p.m. Clinical assistants, who must be qualified men and perpetual students of the hospital, are appointed to the assistant physicians in the out-patient department for periods of six months. The fee for the practice of the hospital is £1 1s. for each month, or £2 2s for each period of three months, or a perpetual fee of £5 5s. The charge for one month's study in the clinical laboratory is 5 guineas.

City of London Hospital for Diseases of the Chest, Victoria Park.—There are 175 beds. The practice of the hospital, both as regards in-patients and out-patients, is open to students and medical practitioners. Certificates of attendance in the medical practice of this hospital are recognized by the London University, the Conjoint Board, and the Society of Apothecaries. Information as to medical instruction can be obtained on application to the Secretary to the Medical Committee at the Hospital.

Royal Hospital for Diseases of the Chest, City Road.—This hospital has recently been provided with a new building equipped with modern laboratories, a radiographic department, and a lecture-room provided with an episcope, electro-cardiograph, and other apparatus. The intention is to utilize it as a school of research and clinical instruction in diseases of the chest, and arrangements are being made for practical demonstrations in the most recent methods of diagnosis and treatment of pulmonary tuberculosis for the benefit of medical practitioners desirous of qualifying themselves for sanatorium and tuberculosis posts. It is expected that the institution will be ready to receive students early in October, and meantime fuller information can be obtained from the Acting Dean, Dr. Barty King.

THROAT AND EAR HOSPITALS.

The Metropolitan Ear, Nose, and Throat Hospitals (1838) (Incorporated).—This hospital is situated in Fitzroy Square. The out patient department is open daily at 2.30 p.m. to practitioners and students for acquiring clinical instruction and technical knowledge. Operations are performed on in-patients on Tuesdays, Wednesdays, Thursdays, and Fridays, at 10 a.m. Fee for one month's attendance at the hospital, £1 1s., and for three months £2 2s. During the forthcoming session demonstrations will be given by members of the staff on the pathology and treatment of diseases of the ear and respiratory passages. Short practical classes will also be held in clinical pathology and surgical anatomy. Weekly clinical lectures are given by the staff on the special diseases treated at the hospital; the date, time, and subject of these lectures are previously announced in this JOURNAL. The lectures are free to all medical practitioners and students.

Royal Ear Hospital, Dean Street, Soho, W.—Courses in diseases of the ear and nose are given by members of the staff throughout the teaching year. The teaching is of a practical character, and clinical assistants are appointed. Ten clinics are held every week. The operation days are Tuesdays, Thursdays, and Fridays. Students are charged 1 guinea for six weeks' attendance and instruction. For full particulars address the Honorary Secretary of the Medical Board, Royal Ear Hospital, Dean Street, Soho.

Hospital for Diseases of the Throat, Golden Square, London, W.—The hospital contains 75 beds for in-patients. There is an annual out-patient attendance of over 50,000. Operations are performed every morning (except on Mondays). Practitioners and medical students are admitted to the practice of the hospital at a fee of 5 guineas for three months, 7 guineas for six months, or 10 guineas for perpetual studentship. The courses may commence at any date. Special terms are granted to medical men in actual practice who can only attend the hospital once or twice weekly. Clinical instruction is given daily in the out patient department from 2 to 5 p.m., on Tuesdays and Fridays from 6.30 to 9 p.m., and on Mondays at 9 a.m. Systematic courses of lectures, with clinical and pathological demonstrations, are given in the winter session, and are free to students of the hospital. From amongst the students are selected junior clinical assistants, to assist the member of the staff to whom each is appointed. Application for further information should be addressed to Mr. George W. Badgerow, F.R.C.S., the Honorary Secretary to the Medical Staff.

Central London Throat and Ear Hospital, Gray's Inn Road.—The hospital contains accommodation for 30 in-patients, and, in addition to new operating theatres, has a very extensive out-patient department (between 40,000 and 50,000 attendances yearly), which is open daily to all medical practitioners and students. Fee for six weeks' attendance, 2 guineas. There are frequent vacancies on the staff of clinical assistants; fees, for three months' clinical assistantship, 5 guineas; for six months, 8 guineas; perpetual, 10 guineas. Courses of practical instruction are in progress all the year round. They consist of (1) preliminary lessons on methods of examination, instruments, etc.; and (2) systematic lecture-demonstrations of a more advanced character. The fees are from 1 guinea upwards, but the classes are free to clinical assistants. Operative Surgery classes are held at intervals. Operations on in-patients and out-patients are performed on Mondays, Tuesdays, Wednesdays, Thursdays, and Fridays at 9 a.m. (minor operations out-patients); 2 p.m. (major operations in-patients). In the newly equipped laboratory considerable attention is given to scientific work, particularly with regard to the pathology and bacteriology of the diseases of the ear and upper respiratory passages. Full particulars will be supplied on application to the Dean at the Hospital.

MISCELLANEOUS SPECIAL HOSPITALS.

Bethlem Royal Hospital.—At this hospital for mental diseases, in St. George's Road, Southwark, two resident house-physicians are appointed twice a year for six months from recently qualified medical students. Students of general hospitals and qualified medical men are allowed to attend for clinical instruction for three months on payment of a fee. Post-graduate courses are given from time to time.

St. Peter's Hospital for Stone and Urinary Diseases, Henrietta Street, Covent Garden.—Qualified medical men and students are admitted free to the practice of this hospital, which contains 32 beds, and has a large out-patient attendance (41,484 for 1911). New cases, 3,636. Operations are performed and consultations held on Wednesdays and Fridays at 2. Clinical instruction is given regularly by members of the staff. In-patients admitted in 1911, 448.

St. John's Hospital for Diseases of the Skin.—The out-patient practice (at 49, Leicester Square, W.C.) is open free to any member of the medical profession every week-day, from 2 to 4 p.m., on presentation of his card to the medical officer in attendance. The *x*-ray department is in operation on Tuesday, Wednesday, and Thursday from 2 to 4 p.m. Chesterfield lectures are given free, October to May, on Thursdays, at 6 o'clock. In connexion with these lectures a practical course is given in the laboratory, comprising microscopic examinations of sections, hair examination, staining, etc., during the summer. The Chesterfield Silver Medal is competed for annually in the month of June. The in-patient department, with 36 beds, is at 262, Uxbridge Road, W. Further particulars may be obtained from the Secretary-Superintendent, 49, Leicester Square, W.C.

The Hospital for Diseases of the Skin, 52, Stamford Street, Blackfriars, S.E. This hospital was founded in 1841 as a special school for the study of diseases of the skin. Its practice is free to practitioners and students. It is open daily for out patients at 1 p.m. Last year 5,627 cases were seen and 14,154 attendances made. Practical courses of cutaneous histo pathology and on the diagnosis and treatment of diseases of the skin and syphilis are held at frequent intervals. There are fully-equipped pathological and light departments. Clinical assistants are appointed from time to time.

National Hospital for the Paralysed and Epileptic, Queen Square, Bloomsbury. This hospital, with the Finchley Branch, contains 200 beds and cots. The in-

patient, out-patient practice, and lectures are open to students and practitioners on payment of the fee of 1 guinea for three months. Lectures and demonstrations are given on Tuesdays and Fridays, at 3.30, in three courses—spring, summer, and winter—and the physicians for out-patients attend every Monday, Tuesday, Wednesday, and Friday at 2. Surgical operations are performed on Tuesdays and Fridays at 9. The hospital is a school of the University of London, and has been recognized by the Conjoint Board of England as one of the places where part of the fifth year of study may be spent. The physicians for in-patients attend at 2.15 on Monday, Tuesday, Wednesday, and Friday. Clinical clerks are appointed for three months. Communications regarding clinical clerkships, lectures, and hospital practice should be addressed to the Secretary at the Hospital.

THE PROVINCES.

IT is the practice at a great many of the larger county and other hospitals in the provinces to offer facilities for instruction in their wards to medical students, who are usually treated as the pupils either of the resident officers or of the honorary medical staff. In some cases they pay fees, in others they receive an honorarium for the services they render as dressers, and in like capacities. A list of these and some allied institutions follows.

BATH.

Royal United Hospital.—The hospital contains 130 beds, and is recognized by the Royal Colleges of Physicians and Surgeons as a medical school. It contains a library and an excellent museum, in which are a large number of interesting specimens, both in pathology and comparative anatomy. Fees for attendance: Twelve months, £10 10s.; six months, £5 5s. (Temporary pupils can also, by permission of the honorary staff, attend the practice of the hospital by the payment of £1 1s. for each month.) Instruction in practical pharmacy for three months, £3 3s. Further particulars can be obtained on application to the Secretary.

BRADFORD.

Bradford Royal Infirmary.—The hospital contains 210 beds. Non-resident pupils are received, and have every opportunity of acquiring a practical knowledge of their profession under the superintendence of a resident surgical officer, three house-surgeons, and a house-physician. One year's attendance is recognized by the Examining Boards. *Fee:* Perpetual, £10 10s.

BRIGHTON.

The Royal Sussex County Hospital.—The hospital contains 195 beds (135 surgical, 60 medical), with separate ward for children and separate blocks for diseases of women and for cases requiring isolation; and the Out-patient Department is attended by 1,100 to 1,300 patients weekly. It is recognized by the Conjoint Board as a hospital where part of a course of dispensing may be taken. Pupils are admitted to the clinical teaching. There is also a Pathological and Bacteriological Department. Further information may be obtained from the House-Surgeon.

CANTERBURY.

Kent and Canterbury Hospital.—The hospital contains 91 beds. Over 700 in-patients and 1,200 out-patients attend every year. Lectures are delivered weekly during term time on Practical Medicine and Surgery to the students of St. Augustine's Missionary College.

DERBY.

Derbyshire Royal Infirmary.—The infirmary has beds for 256 patients. Pupils are admitted to the in and out practice at a fee of £10 10s. a year.

DEVONPORT.

Royal Albert Hospital and Eye Infirmary.—The hospital contains 50 beds in the general wards, 13 additional beds for emergency cases only, and 2 home wards for the accommodation of private patients on payment. A course of practical pharmacy is given by the dispenser on payment of a fee of £5 5s.; pupils of the medical staff can attend this course on payment of £2 2s. The number of in-patients treated during the twelve months ended September 30th, 1911, was 834. In the casualty department first aid was given to 2,233 persons, and in addition 700 minor surgical and 347 dental cases received treatment. The out-patients treated in the ophthalmic department numbered 909.

EXETER.

Royal Devon and Exeter Hospital.—The hospital contains 200 beds, including a special ward for children. There are a library, museum, pathological department, and *post-mortem* rooms. A new operating theatre was opened in 1906, and an electrical treatment department in 1907. Attendance on the practice at this hospital qualifies for all the Examining Boards. Arrangements are made by which students can attend midwifery. For further particulars apply to the Secretary.

West of England Eye Infirmary.—This infirmary contains 64 beds. Arrangements can be made for students at the Exeter Hospital to attend the practice of the Eye Infirmary.

GLOUCESTER.

Gloucestershire Royal Infirmary and Eye Institution.—The hospital contains 140 beds. Resident and non-resident pupils are admitted by the General Committee on the recommendation of a member of the Medical Board. Each pupil pays in advance £10 for the first half-year and £5 for every subsequent quarter, or portion of a quarter, of a year. Each resident pupil has board and lodging in the house, for which he pays in advance 26 guineas for the first half-year, and 13 guineas for every subsequent quarter, or portion of a quarter, of a year. Each pupil pays in advance to the house-surgeon a fee of £5 5s. for instruction, and a further fee of £3 3s. for every subsequent year or portion of a year. One year spent at this hospital, after passing a preliminary examination, is recognized by the Conjoint Board.

LEICESTER.

Leicester Infirmary.—In this infirmary there are 270 beds, of which some 260 are in constant use. Of these beds, 42 are in a special annexe known as the Children's Hospital. There are six resident medical officers, and in addition two resident clinical assistants are appointed every six months, an honorarium of £10 10s. being given at the end of their term of office, in addition to board and apartments (particulars on application to the House Governors and Secretary). The work of the hospital, especially on the surgical side, is very extensive, four operating theatres being in use. There is also a large out-patient department; it is fitted with rooms for the accommodation of the members of the staff in charge of the various special departments, and is a complete and well-equipped building. A new south-east wing has recently been erected at a cost of £20,000. It contains three wards, each accommodating 30 patients. In addition, there are side wards to each floor (a two-bed and a one-bed ward) for observation and for delirious cases, and clinical laboratories. An electric lift conveys patients from top to bottom. The X-Ray Department has recently been remodelled and equipped with new apparatus. A Pathological Department has been introduced. A sum of £100,000 has been expended on the reconstruction of the institution during a period of seven years, and the infirmary is now thoroughly modernized and efficient. Plans are now in course of preparation for improvements to the Children's Hospital and the construction of an additional floor containing 22 cots. A special feature is being made of the balcony system. The cost is estimated at £3,500, and includes the provision of a central sterilizing plant in place of the present theatre plant.

LINCOLN.

County Hospital.—The hospital contains 110 beds. The house-surgeon is allowed to take two pupils, on terms arranged between the weekly board, himself, and the pupils. A fee of not less than £10 10s. is paid by every pupil to the hospital. The house-surgeon is responsible for the conduct of his pupils. The pupils remain in the hospital only when occupied in performing or observing the actual work of the hospital.

NORTHAMPTON.

General Hospital.—There are 166 beds and a large out-patient department. Out-pupils are received, and have every opportunity of acquiring a practical knowledge of their profession. Instruction is also given in anatomy,

materia medica, and pharmacy. Non-resident pupils are taken at a fee of £10 10s. annually.

NORWICH.

Norfolk and Norwich Hospital.—The hospital contains 226 beds. Students (non-resident) are admitted according to the following scale: For three months, £3 3s.; for six months, £5 5s.; as permanent students, £8 8s. The resident officers are a house-physician, resident surgical officer, two house-surgeons, and a casualty officer.

NOTTINGHAM.

General Hospital.—The hospital contains 254 beds. The honorary staff introduce pupils to witness the practice of the hospital on payment of £10 10s. annually in advance. The pupils receive instruction from the resident medical officers.

PORTSMOUTH.

Royal Portsmouth Hospital.—150 beds. One year's attendance is recognized by the Examining Boards. For particulars as to fees, application should be made to the Secretary.

SOUTHAMPTON.

Royal South Hants and Southampton Hospital.—The number of beds is 130. The in-patients number about 2,200 a year, the out-patients about 7,000. Large additions to buildings, including new isolation wards, new operating room, a new ward block and a steam laundry, new night casualty receiving room and nurses' homes for 44 nurses have been completed. Attendance at this hospital is recognized by the Conjoint Board.

STAFFORD.

Staffordshire General Infirmary.—There are 77 beds. The pupils of medical practitioners, resident in the county of Stafford, are allowed to attend the medical and surgical practice of the infirmary, and to be present at operations. The pupils of the officers of the institution are admitted to these privileges gratuitously, those of other practitioners on payment of £10 10s. by each pupil.

North Staffordshire Infirmary.—The infirmary has accommodation for 216 patients, including children's wards, eye department, and electrical and *x* ray departments. The attendance of pupils in this infirmary is recognized by all the Examining Boards. Particulars as to fees, etc., may be obtained from the Secretary and House-Governor of the Infirmary, Hartshill, Stoke-on-Trent.

WINCHESTER.

Royal Hampshire County Hospital.—The hospital contains 108 beds. The physicians and surgeons are allowed to introduce a certain number of pupils; the resident medical officers may also receive a pupil, for whose maintenance a certain sum, to be fixed by the committee, is payable annually in advance. Pupils of medical men not on the staff of the hospital may, with the consent of the committee, become out-pupils and attend the practice of the hospital, under the direction of the resident medical officer, on payment of £10 10s. for one year, or £21 for unlimited attendance.

WOLVERHAMPTON.

Wolverhampton and Staffordshire General Hospital.—There are 200 beds. It is recognized by the University of London, the Royal Colleges of Physicians and Surgeons, and other Examining Boards. The in-patients number 3,147, and out-patients 23,976. The operating theatre, pathological laboratory, and *post-mortem* room are new and well equipped. Special departments for children, gynæcology, ear, throat, and nose diseases, electro-therapeutic and *x*-ray departments. There is an excellent library. The resident officers are a resident medical officer, resident surgical officer, two house-surgeons. Pupils are allowed to witness the whole of the practice of the hospital and to be present at operations, and have every opportunity of acquiring a practical knowledge of their profession. *Fees:* £3 3s. a quarter, £10 10s. the first year, £5 5s. subsequent years. A course of practical pharmacy, dispenser. *Fees:* £3 3s. for three [illegible] should be made to the Secretary of the Medical Committee.

YORK.

York County Hospital.—The hospital contains 150 beds, including children's ward, eye department, and *x*-ray apparatus. Non-resident pupils may be introduced by the honorary medical and surgical officers, or by the resident staff (which consists of a house-physician and a house-surgeon) on terms to be arranged with the honorary staff. Pupils visit the wards with the members of the honorary staff (the house-physician and house-surgeon are present at the operations and necropsies), and are instructed in the elements of minor surgery in the casualty department. The in-patients number about 1,400 annually, and the out-patients 11,000, who make 44,000 attendances. Further particulars may be obtained from the Senior Resident Officer.

MEDICAL EDUCATION OF WOMEN.

WOMEN are admitted to the medical examinations of the following qualifying bodies: All the universities of Great Britain, with the exception of Oxford and Cambridge; the Royal College of Physicians, London, and the Royal College of Surgeons, England; the Society of Apothecaries of London; the Conjoint Colleges of Scotland and of Ireland.

The regulations of each differ considerably, so that it is necessary for a student to decide, before beginning her course, which degree or diploma she will aim at obtaining. The ordinary regulations of the General Medical Council (see page 536) must be observed, and women can pursue their education either at certain schools only open to women, or at ordinary schools where they do their work more or less in common with men students.

The schools which admit women only are the London (Royal Free Hospital) School of Medicine for Women, which is one of the constituent schools of the Medical Faculty of the University of London; the Edinburgh School of Medicine for Women (see page 560), and Queen Margaret College, Glasgow (see page 562). Women are also admitted to the schools of medicine conducted in connexion with the Universities of Dublin, Durham, Liverpool, Manchester, Birmingham, Leeds, Sheffield, Bristol, and Aberdeen; St. Mungo's College, Glasgow, the Schools of Surgery of the Royal College of Surgeons in Ireland and of the National University of Ireland in Dublin, Cork, and Galway. Two years of the medical curriculum can be taken by women students at the United College, St. Andrews, and the remaining three at University College, Dundee, where the whole five years can be passed if desired. Women can also attend classes for the first three years of the medical curriculum at University College, Cardiff.

Year by year the openings for women who adopt a medical career have increased, and the field open to their energies is now wide. Women hold many appointments as resident medical officers in hospitals for women and children all over the country, and are eligible for appointments in some general hospitals, and in a large number of sanatoriums, infirmaries, fever hospitals, and asylums. Many medical women are also engaged in public health and school inspection work.

As regards the London School of Medicine for Women, particulars will be found at p. 554 in the article on London Medical Schools.

DEGREES FOR PRACTITIONERS.

AT one time it was almost the universal custom for medical students educated in London not to seek a university degree, and as that custom still prevails to a considerable extent, a very large proportion of medical men in actual practice in England possess diplomas to practise but not degrees in medicine. The question whether a medical man not known to be a pure surgeon should be addressed as "Doctor" or "Mr." is one which the general public has settled, as it settles most things, for itself and according to its own view of the proprieties; but, nevertheless, those who have not taken a degree often regret their inability to sign themselves "M.D." and that they have no legal title to the term "Doctor." Hence, some universities have issued special regulations under which the degree of M.D. is granted to practitioners of a certain standing under special conditions. The regulations of these universities are stated briefly in the following paragraphs. The University of Brussels also grants the degree of M.D. to practitioners after examination, without restriction as to

residence or curriculum. It is not, however, a registrable degree when it has been obtained subsequently to June, 1886.

UNIVERSITY OF LONDON.

Registered medical practitioners who have passed the First Examination for medical degrees and the Second Examination for medical degrees, Part I. may proceed to the Second Examination for medical degrees, Part II. and M.B., B.S. Examinations without observing the intervals prescribed by the regulations on producing certificates that they have gone through the required course of study at a school of the university; subject to the proviso that no degree of the university can in any circumstances be granted by examination to any one in less than three years after passing the Matriculation Examination or after admission by the university of the candidate's right to exemption therefrom.

UNIVERSITY OF DURHAM.

The degree of M.D. is granted by the University of Durham to registered practitioners of not less than fifteen years' standing, who have been qualified and in practice or that period, upon the following conditions without residence: The candidate must be 40 years of age, and must produce a certificate of moral character from three registered medical practitioners. Should he not have passed previously to the professional examination in virtue of which his name was placed on the *Register* an examination in arts, he is examined in classics and mathematics; if otherwise, he is required to translate into English passages from any one of the following Latin authors: Caesar *De Bello Gallico* (first three books), Virgil, *Æneid* (first three books), or Celsus (first three books).

Professional Examination.—The candidate must pass an examination in the following subjects: (i) Principles and practice of medicine, including psychological medicine, hygiene, and therapeutics; (ii) principles and practice of surgery; (iii) midwifery and diseases of women and children; (iv) pathology, medical and surgical; (v) anatomy, medical and surgical; (vi) medical jurisprudence and toxicology. The examination is conducted by means of printed papers, clinically and viva voce, at the College of Medicine, Northumberland Road, Newcastle, and in the Royal Victoria Infirmary, Newcastle. The classical portion of the examination may be taken separately from the professional on payment of a portion (£10 10s.) of the full fee.

Foreign and Colonial Practitioners.—Natives of India or the British Colonies are placed on the same footing as natives of Great Britain. Natives of India must produce evidence from an Indian university that they have passed within one year an examination in Latin.

Fees.—The inclusive fee is 50 guineas; if a candidate fail to pass, 20 guineas are retained, but if he present himself again, 40 guineas only are required.

Dates, etc. The examinations are held twice a year, towards the end of March and of June. Notice, accompanied by the fee and certificates, must be sent to Professor Howden, Secretary of the University of Durham College of Medicine, Newcastle-on-Tyne, at least twenty eight days before the commencement of the examination.

UNIVERSITY OF BRUSSELS.

This university grants its M.D. to such foreign candidates as are already duly qualified in medicine and surgery in their own countries, provided they pass the three examinations imposed. These must be passed in due order, but if desired may be passed without any formal interlude, the time covered in the latter case being ten or twelve days. They are viva voce examinations, the language used being French. There is, however, an official interpreter present whose services are at the disposition of candidates; besides this, the examiners commonly speak the English language. At their desire candidates may also undergo written tests on payment of an extra fee of £1 for each test, but such written examination does not exempt them from the viva voce examination.

Examinations.—Of the three examinations, the first Doctorate covers general medicine, materia medica and pharmacology, general surgery, and the theory of midwifery. The second covers general therapeutics, pathology and morbid anatomy (including microscopy), special and general therapeutics, the special branches of surgery, and mental diseases. The third covers public health, medical jurisprudence, clinical medicine and surgery, operative surgery (including the performance of some of the commoner operations on the dead subject), ophthalmology, midwifery (including obstetric operations on a model), regional anatomy (with dissection), and bacteriology. The examinations commence on the first Tuesday in November, December, March and May, and the second Tuesday in June.

Fees.—The fees aggregate to £22; they are paid in advance, but those for any examinations to which a candidate has not been admitted are returned to him. A rejected candidate may be examined three months later on repayment of the examination fee, provided his second appearance takes place in the course of the same academic year; otherwise the matriculation fee (£8 12s.) must be paid again. Any fee paid includes the right to attend any lectures delivered in connexion with the subjects of the examination to which it relates. Other information can be obtained either from the Secretary of the University, 14, Rue des Sols, Brussels, or from Dr. Arthur Haydon, Honorary Secretary of the Brussels Medical Graduates' Association, 23, Henrietta Street, Cavendish Square.

POST-GRADUATION STUDY.

THE value, and in some circumstances even the necessity, of post-graduation study is now so generally recognized that there is no occasion to dilate upon it here. The need for some means of acquiring direct knowledge of the technique of the new branches which are constantly springing up is indeed so generally felt among otherwise experienced practitioners, that several institutions designed solely for their benefit have been at work now for some years. Of these institutions some account follows. Beyond this it need merely be said that in most medical centres it is now exceptional for one or more courses for qualified men not to be held once or more often during the year: that most of the institutions mentioned in the section on Clinical Hospitals make special arrangements for the benefit of qualified men desirous of studying work of the kind undertaken within their wards; and that valuable adjuncts to post-graduation study exist in the shape of the Library of the British Medical Association—one specially rich in recent works—of the libraries of the several universities, and in those of the Royal College of Surgeons of England and of the Royal Colleges of Physicians in London and in Edinburgh.

A further reference to some of the special courses will be found at page 586.

LONDON POST-GRADUATE ASSOCIATION.

The wealth of London in material for clinical study is, of course, enormous, and the object with which the London Post-Graduate Association was started, now many years ago, was to throw open to the general body of medical practitioners all that is most useful and attractive in it.

To fulfil this purpose it entered into arrangements with the principal medical schools of London and with the administrators of the leading special hospitals of such a nature that it is now able to issue a ticket which admits the holder to all the clinical instruction provided in these institutions. Armed with this ticket, a medical man can enter freely any of the institutions concerned, becoming to all intents and purposes one of their students, and having as much right to visit their wards and attend in their out-patient department as if he were once more in his salad days and back within the familiar walls of his old school. He can thus get as much clinical instruction in the wards and in the special and general out-patient departments as he pleases, and the operating theatres and the *post-mortem* rooms are equally open to him.

The fact that one ticket admits him to so many hospitals is a decided advantage, for if interested in one particular branch of the work, he can follow that up throughout the day in different institutions, instead of having to limit his study of it to one or two days a week. A further useful point in the system is that it affords practitioners an opportunity of becoming acquainted with the different methods of a large number of specialists, and

of noting the different ways in which men all equally eminent in their particular line deal with cases much of the same type; there could be no better way, indeed, of getting abreast with the results of modern research and into touch with current thought in medicine and surgery than by attending various hospitals with the help of a ticket from this association.

The institutions thrown open are, among general hospitals, Charing Cross, Guy's, King's College Hospital, St. George's, St. Mary's, St. Thomas's, and University College and Westminster. Among special hospitals, the Brompton Hospital for Diseases of the Chest, the Hospital for Sick Children (Great Ormond Street), the National Hospital for the Paralysed and Epileptic, the Royal London Ophthalmic Hospital, and the London School of Tropical Medicine, St. Mark's Hospital for Diseases of the Rectum, and the Medical Graduates' College and Polyclinic. The fee for a ticket lasting three months is £10 10s., while for £15 15s. one for six months is issued.

Further particulars about this association can be obtained from the Secretary, London Post-Graduate Association, 20, Hanover Square, London, W.; if application is made in person, the visit should be paid between the hours of 10.30 a.m. and 1 p.m.

London Medical Graduates' College and Polyclinic.

This institution, familiarly known as the Polyclinic, opened its doors some thirteen years ago, its work being arranged on quite original lines. The soundness of these became very early apparent, and large numbers of practitioners now attend the classes and avail themselves of the various forms of instruction which the college offers.

The work is carried on in a building in central London which is well arranged and readily accessible from all quarters. It stands at the corner of Chenies and Ridgmount Streets, its postal address being 22, Chenies Street, W.C. This latter street runs at right angles to Tottenham Court Road, crossing Gower Street. The ground floor of the college is given up to the class-rooms, which are furnished with various appliances for clinical instruction. When occasion requires the partitions between adjacent rooms can be removed, and a lecture-room of fine proportions thus provided. On the first floor is a library, a reading-room, and the consultation theatre, and on the upper floor is found an excellent laboratory for bacteriology and clinical pathology, each table being provided with its own set of reagents and test tubes and its Bunsen burner. Besides these rooms there is in the basement an important annexe in the shape of a dark room so arranged that twelve patients can be examined simultaneously, but separately from each other, with the ophthalmoscope, laryngoscope, or other instruments of precision. An adjoining room is fitted with appliances for instruction in ophthalmic cases, such as type tests, working models of eyes, stereoscopes, lenses, etc.

Another important part of the college is the museum, situated at the side of the building and devoted to clinical illustrations. Portraits and models of diseased conditions find their place here, and the newest medical and surgical instruments and appliances of all kinds, which can be examined at any time, form a marked feature of this department of the college. The museum has been enriched by a unique collection of valuable pictures of disease, especially skin diseases, most of which are painted from life, together with many other specimens of rare clinical value, which have been placed at the service of the Polyclinic by Sir Jonathan Hutchinson, F.R.S., and the museum has been appropriately named after him the Hutchinson Museum.

Perhaps, however, the most characteristic feature of the school is the system of consultations and clinical demonstrations. These take place every afternoon at four o'clock, and patients attend them either at the invitation of the management, or they may be brought by practitioners who are members of the school. Besides the excellent opportunities for teaching which these consultations afford, they provide occasion for discussing difficulties and studying exceptional forms of disease by the most recent methods of diagnosis. Notes are taken of the cases, and are supplemented on occasion by photographs or other portraits of the rarer morbid conditions.

On Mondays, Tuesdays, Wednesdays, and Thursdays of each session, at 5.15 p.m., formal lectures are delivered on medicine, surgery, and their branches, while at the same hour on Fridays the resident pathologist gives an occasional pathological demonstration.

An annual payment of 1 guinea admits to the consultations and lectures, and secures the use of the reading-room, museum, and library; subscribers also receive the *Polyclinic Journal*, which is published every month.

Of practical classes there are four sessions in the year, each lasting six weeks, while a vacation course extending over three weeks takes place in August.

These classes include such special subjects as clinical pathology, haematology, cyto-diagnosis, opsonins, bacterial vaccines, ophthalmoscopy, retinoscopy, laryngology, rhinology, otology, sigmoidoscopy, cystoscopy, intestinal surgery, graphic methods in cardiac disease, and the examination of the gastric contents, etc. Private personal instruction in these and other subjects may also be obtained, and all forms of clinical and pathological investigations are undertaken in the laboratory.

Provision is also made for those who are reading for the higher qualifications, special tutorial classes being conducted for this purpose. Full particulars of all the work done may be obtained on application to the Medical Superintendent, 22, Chenies Street, W.C.

West London Post-Graduate College.

The work of this institution is carried on at the West London Hospital, the first in London to devote its clinical material solely to the instruction of qualified medical men. The college started in 1895, and the present building was opened in 1901; it is provided with lecture, reading, writing, and class rooms, and accommodation of all sorts for the convenience of post-graduate students. In the last five years the yearly entry has averaged over 220.

As for ward work, the students accompany the senior staff on their visits to the wards at 2.30 p.m. daily, and also go round with the resident medical officers in the morning. Out-patient work begins at 2.15 p.m. This department is large, and affords ample facilities for post-graduates to see and examine patients. There are the usual special departments dealing with diseases of the eye, ear, throat, nose, skin, orthopaedics, *x*-ray work, electrotherapeutics, gynaecology, and medical diseases of children. Post-graduates are appointed to act as clinical assistants for three or six months. There is no charge to members of the college. Practical classes are held in medicine, general practical surgery, intestinal surgery, surface anatomy, and blood and urine analysis, cystoscopy, venereal disease, tropical diseases, retinoscopy, ophthalmic operative surgery, and, finally, in operative surgery. The size of the classes is limited so as to ensure that each student shall have full opportunities of gaining experience in methods of examination and treatment.

Operations take place at 2 p.m. daily, the surgeons often availing themselves of the assistance of the post-graduates, and in any case making arrangements so that they can readily see what is going on. The anaesthetists give instruction in the administration of different anaesthetics, including spinal analgesia, on the operating days, students being allowed to administer them under supervision, while special classes are held in each session.

The pathological laboratory is in charge of a pathologist who attends every day. In bacteriology and microscopy special instruction is given on three mornings a week, the students working at other times under the general guidance of the pathologist.

Demonstrations are given every day in the morning by the assistant physicians, assistant surgeons, and by the medical and surgical registrars in practical medicine and surgery. Lectures of a practical kind are given daily (except Saturday and Sunday) at 5 p.m.

The arrangements of the college may be said to be equally suited to those who are preparing themselves for examination for the higher degrees and diplomas, to the needs of officers in the different services on study leave, who attend in large numbers, and to those medical men in ordinary practice who desire to get themselves up to date in general medicine and surgery, or to make a special study of some particular branch of work. The college, it may be noted, is in a residential quarter, and there are plenty of good lodgings in its neighbourhood.

The fees are as follows: Hospital practice, including all ordinary demonstrations and lectures, £1 1s. for one week, £3 3s. for one month, £4 4s. for six weeks, £6 6s. for three months, £10 10s. for six months, £15 15s. for one year, and £30 for a life ticket. Every year in August there is a special vacation class lasting four weeks, for which the fee is £3 3s. Three months' instruction in the administration of anæsthetics costs £3 3s. Subscriptions for any course can be taken out from any date. The certificates of the school are recognized by the Admiralty, the War Office, the Colonial Office, the India Office, and the University of London (for higher degrees).

All communications concerning the school should be addressed to the Dean, Mr. L. A. Bidwell, or the Vice-Dean, Mr. D. Armour, Post-Graduate College, West London Hospital, Hammersmith, W., from whom also a full prospectus can be obtained by any person holding a medical qualification.

The London School of Clinical Medicine (Post-Graduate), Seamen's Hospital, Greenwich, S.E.

The school buildings, lecture rooms, operative surgery class-rooms, pathological laboratories, museum, library, etc., are in the Seamen's Hospital at Greenwich. The whole hospital of 250 beds, with its out-patient departments, is open to students from 10 a.m. till 5 p.m.

Medical, surgical, and special department in-patient clinics are held every afternoon except Saturday by the senior members of the staff, whilst out-patients are demonstrated daily in the forenoon in the medical, surgical, and special departments by the assistant physicians and assistant surgeons. Operations are performed daily both in the in-patient and out-patient theatres. A series of lectures are delivered each session in the afternoon by specially-invited lecturers, Emeritus lecturers, members of the staff of the Seamen's Hospital, and by members of the staff of the hospitals affiliated to the school. Practical classes are arranged each session in the following subjects: The practice of medicine, diseases of the nervous system, medical diseases of women, medical diseases of children, diseases of the skin, practice of surgery, operative surgery, diseases of the eye, diseases of throat, nose, and ear, surgical diseases and women, midwifery and gynæcology, surgical diseases of children, pathology, clinical pathology, bacteriology, surgical and medical pathology, hygiene and public health; the administration of anæsthetics, radiography, mental diseases.

Two sessions of five months (October-February) and four months (April-July) are held in each year. The session's work is arranged so as to enable individual students to join the demonstrations, etc., at any time during the session.

Affiliated to the London School of Clinical Medicine for the purposes of extension of the variety of clinical material and teaching are the Royal Waterloo Hospital for Children and Women, the Miller General Hospital, Greenwich, and the Bethlem Royal Hospital for Mental Diseases. These hospitals are directly linked to the Dreadnought both by rail and by tram. The supply of material affords exceptional facilities for practical instruction in operative surgery and in pathology. There is also a wide field for the study of venereal diseases, on which special clinics are given, and there is a department with open-air wards for the treatment of tuberculosis. Every variety of disease may be studied in the wards and out-patient rooms of the Seamen's Hospital and at the affiliated hospitals. The certificates of the school are recognized by the University of London (for the higher degree), the Admiralty and the War Office, the India Office and the Colonial Office.

Appointments.—There are a medical superintendent, surgical and medical registrars, two house physicians, and two house-surgeons at the Seamen's Hospital, Greenwich. The pay of these officers varies from £50 to £150.

Prospectuses, lists of special lectures, and other particulars can be obtained on application to the Dean at the School.

North East London Post-Graduate College.

The head quarters of this post-graduate school are situated at the Prince of Wales's General Hospital, which is in the midst of what is now a densely-populated neighbourhood containing about a quarter of a million inhabitants. It contains 125 beds, and its precise situation is South Tottenham, N., where it is within a few minutes' walk of South Tottenham Station on the Midland Railway, Seven Sisters Station on the Great Eastern Railway, and Tottenham Hale on the Great Eastern main line. It is also readily accessible from Finsbury Park and Hackney by electric tram passing the hospital door, and by corresponding means may be reached easily from Dalston, Edmonton, Hackney, and other parts of North London.

The college is recognized by the Admiralty and the India Office for the purposes of study leave, and by the University of London as a place for advanced study for the M.D. and M.S. degree; the course of practical teaching of bacteriology is approved by the University of Cambridge for its D.P.H. diploma, and there are ample arrangements for the convenience of men who are thus working, or who are general practitioners desirous of getting themselves into touch with modern methods. There is provided for their use a reading and writing room, and they can obtain afternoon tea and receive telephonic messages; similarly there is a reference and lending library for their benefit, and a museum and pathological laboratory in which they can work. The hospital as a whole certainly affords excellent facilities to qualified medical practitioners who wish to take part for a time in the work of an active general hospital, or to obtain special instruction in the several branches of medicine and surgery, since it is open to them to study diseases of the eye, ear, throat, nose, skin, fevers, children's diseases, psychological medicine, dental surgery, radiography and the application of electricity in disease, and the administration of anæsthetics. Throughout the sessions into which the year's work is divided, clinics, lectures, and demonstrations are given by members of the teaching staff in the lecture-room, in the wards, in the various out-patient departments, and in certain affiliated institutions. Operations are performed every afternoon of the week except Saturday. Special classes are arranged in modern methods of the investigation and treatment of diseases of the lungs and heart, gynæcology, diseases of children; diseases of the throat, nose, and ear; diagnosis of diseases of the nervous system, ophthalmoscopy and refraction, diseases of the skin, abdominal surgery, surgical anatomy, surgery of the urogenital tract, radiography, anæsthetics, bacteriology, clinical pathology, vaccine therapy, pathological chemistry, and medical electricity. In all these classes the numbers are carefully limited, so as to give every member full opportunity for work.

As for fees, these are as follows: One guinea for a three months' course of study in any one department, which may be began at any time; a fee of 3 guineas admits to the whole practice of the hospital for a similar term (one month, 2 guineas), and a perpetual ticket for the practice of the hospital may be obtained on payment of a fee of 10 guineas. Clinical assistants are appointed in the various departments. A certificate, signed by the staff, may be obtained at the end of three months' hospital attendance. A vacation course is held in September, beginning this year on the 16th inst., the fee for which is 2 guineas. The winter session will be opened towards the end of October by Sir Almroth Wright.

Additional information about the college and its work can be obtained on application to the Dean of the Post-Graduate College, 142, Harley Street, London, W., who will also supply a prospectus, a syllabus of the lectures and demonstrations to be given during the next formal session, and a syllabus of the ensuing vacation course.

TROPICAL MEDICINE.

There are Schools of Tropical Medicine in London and Liverpool, and several examining bodies have instituted diplomas or degrees in the subject. The Colonial Office now expects all nominees for the Colonial Medical Service to pass through one or other of the two schools mentioned before their appointments are confirmed, and commercial firms engaged in tropical enterprise commonly demand from medical applicants for employment corresponding evidence of special knowledge. Information with regard to these schools and diplomas and degrees follows.

Diplomas and Degrees.

London University.—Tropical medicine is one of the six branches in which the M.D. degree may be obtained, the regulations relating to the curriculum and examination corresponding to those applying to the other branches.

London Conjoint Board.—This body grants a diploma in tropical medicine to candidates after an examination usually held in the months of April and October. Ordinary candidates must present evidence of having attended, subsequently to obtaining a registrable qualification in medicine, surgery, and midwifery, (1) practical instruction in bacteriology, parasitology, medical zoology, and haematology in a laboratory recognized for this purpose during not less than six months; (2) instruction in hygiene applicable to tropical countries; (3) the clinical practice of a hospital recognized for the study of tropical diseases during not less than six months. These conditions may be modified in the case of candidates who have had practical experience in tropical countries deemed likely to have furnished them with the same kind of training. The fee for admission to the examination is £9 9s.

University of Edinburgh.—This university grants a diploma in tropical medicine and hygiene after an examination which is usually held twice a year. It is, however, only open to those who are graduates of the university in medicine and surgery. In addition to this the candidates must show that they have attended approved courses of instruction in practical bacteriology (including the pathogenic micro-organisms of tropical diseases), in diseases of tropical climates (including the zoological characters and life-history of disease-carrying insects), in tropical hygiene, and in clinical study of tropical diseases. They must possess, too, certificates of efficiency in the conduct of *post-mortem* examinations. The examination is in the four subjects indicated, the fee for each part being £1 1s.

University of Liverpool.—A diploma in tropical medicine is given by this university to students who have been through the courses provided by the Liverpool School of Tropical Medicine, and have passed the examination held twice yearly by the university examiners. The examination lasts three days, and consists (1) of three papers dealing with tropical medicine, tropical pathology, and tropical sanitation and entomology respectively; (2) of a clinical examination; and (3) of an oral examination. The results are declared as soon as possible afterwards. Further information can be obtained from the Dean of the Faculty of Medicine, University of Liverpool.

University of Cambridge.—This university grants a diploma in Tropical Medicine and Hygiene to any person whose name has been on the *Medical Register* for not less than a year, provided that he passes the examination of the university in this subject. Previous to admission to the examination, however, he must produce approved evidence that he has studied pathology (including parasitology and bacteriology in relation to tropical diseases), clinical medicine, and surgery at a hospital for tropical diseases, and hygiene and methods of sanitation applicable to tropical climates.

The examination deals with the following subjects:

1. The methods of pathological and bacteriological investigation. The examination of the blood. The characters, diagnosis, and life-history of animal and vegetable parasites. The [illegible] tion, chemical and microscopic, of poisonous or contaminated foods and waters.

2. The origin, pathology, propagation, distribution, preven- [illegible] symptoms, diagnosis, and treatment of the epidemic, [illegible] and other diseases of tropical climates, including [illegible] blackwater fever; trypanosomiasis; relapsing fever; [illegible]; plague; tetanus; beri-beri; dysentery [illegible], cholera, enteric fever, Malta fever, and [illegible] [illegible] [illegible]

examination held by the university at the end of each term for its diplomas in tropical medicine are given a certificate of attendance if the latter has been satisfactory.

For research students there is most excellent accommodation at the laboratories of the school in the university, and also in the research laboratories of the school at Runcorn, sixteen miles distant from the city.

Since it was instituted the school has dispatched to the tropics twenty-seven scientific expeditions, many of the workers having been taken from among its students. The work done by them has been published in twenty-one special memoirs, with many plates and figures, besides textbooks and numerous articles in the scientific press. From the beginning of 1907, however, the memoirs have been succeeded by the *Annals of Tropical Medicine and Parasitology*. These are published by the Committee for the school, and its pages are open to outside contributors.

Fees.—The fee for the full course of instruction is £13 13s., with an extra charge of 10s. 6d. for the use of a microscope if required. The fee for the Diploma Examination is £5 5s., and that for the Advanced Course is £4 4s. A prospectus and further information about the school may be obtained on application to the Secretary, 10B, Exchange Buildings, Liverpool.

PSYCHOLOGICAL MEDICINE.

THERE has been a definite outcome from the work of the Royal Commission on the Care and Control of the Feeble-minded, and one result is a considerable widening of the horizon before those who devote themselves to the treatment of mental disease. Under its recent developments psychological medicine forms a distinct career of a kind which is attractive to many medical men. It cannot as yet be regarded as a "service," as those who at present follow it, if not occupied in private asylums, are in the employ of various independent county and other councils. The formation of a general service, so far as the public asylums are concerned, seems not very unlikely, and the attractions of the work as a career will then be increased. In public asylums pensions are granted on a contributory basis, after a certain length of service.

As for the study of mental diseases, this has long been a compulsory subject in the medical curriculum, lectures and attendances at a recognized asylum being necessary before a diploma or a qualification from a university can be granted—and the same now applies to the examinations for diploma at the combined colleges; but the method in which the instruction is given has of late years greatly improved, and the facilities which exist for its pursuit are now very considerable.

Moreover, in London and some of the larger university towns instruction in pure psychology, as apart from the therapeutic study of mental disease, is now to be obtained. Impetus was given to the whole subject by the adoption by the University of London of mental diseases as one of the branches of medicine in which an M.D. can be obtained, and several allied bodies, such as the Universities of Edinburgh and Leeds, are now granting diplomas in psychiatry. Moreover, the Royal College of Physicians, which recently had under consideration the propriety of instituting an examination in the whole subject of psychology and psychiatry by way of emphasizing its importance, has now drawn up a definite scheme for the realization of this plan.

Reference may also be made to the Medico-Psychological Association of Great Britain and Ireland, which grants a certificate to candidates who have gone through a prescribed course of instruction, and pass an examination—held periodically in London, Scotland, or Ireland—which is designed to test the candidate's knowledge of mental disease and his ability to undertake the care and treatment of an insane person. The association considers that all practitioners should have a competent knowledge of the subject, and that the holding of such a certificate is of particular advantage to those who hope to obtain appointments in the Prison, the Poor Law, and other services. Only registered medical practitioners are eligible for the certificate, but it is not necessary that candidates should be registered, or even qualified, before presenting themselves for examination. They may take the examination before graduation, but they will not receive the certificate until they possess a registrable qualification. The examinations qualify for the Gaskell Prize, value £30; and £10 10s. and a bronze medal are offered by the same association to asylum assistant medical officers for the best dissertation on any clinical or pathological subject relating to insanity. The Hack Tuke Memorial Prize is also awarded for an essay upon a subject connected with insanity.

To revert to the financial and allied attractions of the pursuit of psychological medicine, it may be said that, as compared with those of other "services" and other branches of medicine, they must be regarded as, on the whole, not inconsiderable. The emoluments are generally fair, and in the senior posts distinctly good. In private asylum practice large sums are made, though to procure these returns a correspondingly large sum must usually be invested. As a rule, a man recently qualified takes an appointment as a junior assistant medical officer in a county asylum or lunatic hospital, and for this he gets from £100 to £150 a year, with all extras besides. If he is fortunate, he becomes in time the senior assistant, and his income rises to about £300 a year (in good counties), besides apartments, living and washing. In many asylums provision is made for the senior assistant to be married if he wishes, and to have suitable quarters. At this point he is likely to stay some time. When the opportunity occurs, he becomes a candidate for a medical superintendentship, and his yearly income may then, if he is successful, be anything from £500 to £1,500 a year. Not every man, however, is suited to asylum practice. The life is one of responsibility, and as much of the work done is directly subject to the exigencies of lay committees and Government officials, it is, especially in the higher grades, often of a worrying nature. For men of certain types of character in the junior grades there is, too, a danger that they may allow themselves to be beguiled too much by the amenities of asylum life, and fall also into the habit of devoting insufficient time to the scientific aspects of their work, however much attention they pay to its routine. Such a man may easily let valuable opportunities slip away and become a chronic "A.M.O.," unfit for the duties of any other position either in or outside an asylum. There is, too, a certain amount of luck in obtaining the higher positions in lunacy work, but the possession of first-class qualifications, a reputation for loyalty and straightness, and a real capacity and liking for the work, both in its scientific and practical aspects, are all factors which go to spell success. Most asylums are now provided with laboratories and operating theatres, and there is a general disposition now in the governing bodies to expect scientific work from the junior staff. Recent advances in bacteriology have materially changed the views formerly held as to the causation and the morbid anatomy of insanity, and no one can be considered qualified to undertake the treatment of this disease who has not studied the modern methods of research. In many asylums there are special appointments for bacteriologists and pathologists, and some of these positions are now held by men of prime eminence at salaries corresponding with their high position. The importance of the study of psychology and of mental physiology should be insisted upon, because the reproach formerly urged that this branch of medicine was neglected, or only dealt with in a purely commercial spirit, is rapidly being removed under recent efforts to place the whole subject on a sound scientific basis.

The ultimate referees in all matters relating to the personal care and the property of mentally afflicted patients are the Lord Chancellor and the Lunacy Commissioners. The medical representatives on the Lunacy Commission are as a rule (but not invariably) selected from superintendents of asylums, and the same applies to the Chancery visitors, who are medical men engaged, in conjunction with certain barristers, in regulating the money affairs of people of unsound mind.

Under a bill introduced in the House of Commons it is proposed to increase the number both of medical and legal commissioners, so that all the classes of "weak-minded" persons comprehended in the new scheme may be brought under the supervision of the Central Authority.

PREVENTIVE MEDICINE.

THE division of medicine variously known as Sanitary Science, or State, Public Health, or Preventive Medicine, offers a career to men to whom any other path in the profession of medicine might prove distasteful, and it is all the more attractive because both its scope and the importance attached to it are increasing year by year. Despite this fact, the position of medical officers of health as a whole is not quite satisfactory, inasmuch as a large number of those holding the smaller appointments or a combination of small districts are only appointed year by year, and are liable to be dismissed if they do not please those who can influence the local authorities. This must often be the case, for if a medical officer of health does his duty he will be forced at times to tread on the toes of landlords, manufacturers, and other persons of local importance. There are, however, many appointments in connexion with the larger towns and under the county councils which are both permanent and well paid as compared with many other forms of medical work, and in other respects of an attractive character. It should be added, too, that the Local Government Board itself has a staff of medical inspectors whose initial salary is £500 a year.

Public health work, of course, is of quite a special character, and it is desirable that any one who wishes to adopt it as a career should turn to it comparatively early, though not before he has obtained some experience of the work of a general practitioner. In any case, it is essential that he should obtain a diploma in Public Health, and the choice of diplomas now open is very large. Having done this, the next best step is to try to obtain an assistantship to an officer in charge of a large borough or district, or an appointment as a school medical officer—that is, a medical inspectorship under the education authority of some area. This work does not necessarily demand anything more than knowledge already in the possession of most practitioners—namely, quick recognition of physical defects in young people, an intimacy with the conditions of school life itself to produce or increase them, and ability to ascertain precisely the condition of eyes, and ears, and throats. Nevertheless, under the lead of the Board of Education, the county and other authorities which have posts as school medical officers in their gift commonly place the work of school medical inspection in the hands of the medical officer of health, and supply him, if they think necessary, with an assistant, who shares his general duties or devotes himself entirely to school inspection, and such officer is usually expected to hold the D.P.H. The value of these appointments is not usually very great, but often they lead on to appointment as medical officer of health. The pay offered is commonly between £250 and £300 a year, but some authorities of large districts are paying their principal school medical officer a very much higher salary.

In their general nature the examinations of all the bodies which grant diplomas in Public Health are the same, though they differ somewhat in their reputed difficulty. All of them aim at excluding any candidate who does not appear to have a thorough knowledge of his work in theory and in practice, for the regulations of the General Medical Council demand that the granting of a diploma in Sanitary Science, State Medicine, or Public Health shall be proof of the "possession of a distinctively high proficiency, scientific and practical, in all the branches of study which concern the public health." The tests, in short, are supposed to constitute an honour and not a mere pass examination. As regards the special tuition required, it is now easy to obtain this in practically every centre of medical education, and at almost every medical school of any importance. It is desirable to note in this connexion that the chemical and bacteriological examinations for many of the health diplomas are so practical, and the time allowed so short, that unless a candidate—even though familiar with the duties of M.O.H.—has a considerable amount of the manipulative dexterity only to be acquired by ample work in a laboratory, he would not be likely to satisfy the examiners.

The regulations of the General Medical Council require that every candidate (subsequent to obtaining a registrable qualification in medicine and surgery) shall have passed through a stated curriculum in the subjects of sanitary science. This must last not less than nine calendar months, and include four months' study in a laboratory in which chemistry, bacteriology, and the pathology of diseases of animals transmissible to man are taught, six months' practice study of the duties involved by public heath administration, and attendance at least twice weekly for three months on the practice of a hospital for infectious diseases, at which instruction is given in methods of administration. These rules do not apply to practitioners registered or entitled to be registered before January 1st, 1890, while that regarding six months' practical study of public health administration is waived in the case of a candidate who has himself been in charge of a sanitary district with a population of not less than 15,000, for a period of not less than three years. The study in question must be passed under the personal supervision of a medical officer possessing certain definite facilities for affording it, these being carefully described in the regulations. The period may be reduced to three months in the case of a candidate who has undergone a corresponding period of study in the public health department of a recognized medical school, or who has been resident medical officer at a hospital for infectious diseases with accommodation for 100 patients for not less than three months. The laboratory study must include at least 240 hours' work, not more than half being devoted to practical chemistry. The examinations imposed by the diploma-granting bodies must extend over not less than four days, one at least being devoted to practical work in the laboratory, and one to practical examination in, and reporting on, subjects within the duties of a medical officer of health, including those of a school medical officer.

The steps which examining bodies take to ascertain the candidate's fitness for a diploma are in all cases much the same, though the order in which the subjects are taken is not always identical. Practically all of them divide the examination subjects into two parts, which are usually taken by candidates at more or less widely separate dates. Many of the bodies also have an age clause not allowing the candidate to complete the examinations until he is two or three years older than the average newly-qualified man. The general rule is to place in the First Examination such subjects as chemistry and physics (in relation to the air, water, food), ventilation, the sanitation of houses, principles of architecture, of sanitary engineering, geology in relation to the same, bacteriology in all its relations, and the pathology of human and epizootic diseases. Two or more papers are devoted to such subjects, this being followed by a corresponding number of practical examinations in the laboratory, at one of which the candidates will have to complete an analysis of a specimen of water, discover the impurity in some specimens of air, identify the adulteration in some food specimens, and the like. The other laboratory examination will probably be given up to the preparation of bacteriological specimens, the identification of cultures and parasites, and other tests of practical knowledge of bacteriology; as a rule a viva voce on the work done follows. In the second part are commonly included two or more papers dealing with sanitary law, epidemiology, vital statistics, the management of hospitals, and all other general questions which affect the public health. The practical examination in this part commonly consists in drawing up a report on the sanitary construction and condition of some actual building or habitation, the whole being followed, perhaps, by a clinical examination in a fever hospital, and nearly always by a viva voce test in which the candidate is called upon to explain the use of apparatus shown him, express an opinion of specimens of food and answer offhand queries as to the established practice concerning various points of sanitary administration, including school work. As has been stated, however, there are variations among the Examining Bodies which, though possibly not great in themselves, may be quite enough materially to increase or diminish the difficulty of passing examinations which many Boards seriously endeavour to make a proof of really high proficiency. Every candidate, therefore, should, when he has settled what diploma or degree in State Medicine he wishes to obtain, seek the schedule relating to it from the authority concerned. He will find most of these mentioned in the concluding paragraphs of this section.

CONJOINT BOARD IN ENGLAND.—This body holds an examination on behalf of the Royal College of Physicians

and the Royal College of Surgeons. It usually takes place in January and July of each year, a fee of 6 guineas being payable for each of its two parts if the candidates are diplomates of the two Colleges concerned, and 10 guineas for each part to others. Candidates before admission to Part II must be aged at least 24 years.

UNIVERSITY OF OXFORD.—The diploma given by this body is open to all persons who possess a registrable qualification in medicine and surgery. The examination is held twice annually, and is divided into two parts, the fee for each being £5.

UNIVERSITY OF CAMBRIDGE.—This university also gives its diplomas to all persons who possess a registrable qualification in medicine, surgery, and midwifery. The fee for each of the two parts is 6 guineas. Special courses of instruction are given at Cambridge for these examinations, though the work done at other institutions is accepted. Inquiries about the diploma should be addressed to the Secretary to the State Medicine Syndicate, the Chemical Laboratory, Pembroke Street, Cambridge.

UNIVERSITY OF LIVERPOOL.—The university grants a degree in Hygiene (M.H.) and a diploma in Public Health (D.P.H.) to candidates who take out the courses of instruction at the university, or otherwise qualify themselves according to regulations. The examinations are held twice yearly—in January and July. The prospectus of the Department of Public Health may be obtained on application to the Dean of the Faculty of Medicine.

LONDON UNIVERSITY.—Graduates of London University can obtain a registrable Public Health qualification by passing Branch 5 (State Medicine), one of the six branches of medicine out of which candidates for the M.D. degree of this university can select their special subject.

UNIVERSITY OF DURHAM.—A diploma in Public Health and two degrees in the same subject (Bachelor of Hygiene, B.Hy., and Doctor of Hygiene, D.Hy.) are granted by the University of Durham. The conditions applying to the examination of candidates for the diploma and for the B.Hy. are practically identical, except that the degree candidate must be a graduate in medicine of a recognized university and have performed his three months' work at comparative pathology and bacteriology and his three months' work at chemistry at Newcastle-on-Tyne. The regulations regarding education for the D.P.H. are in accordance with the new rules of the General Medical Council. The fee for the examination is 10 guineas. A B.Hy. who wishes to proceed to the Doctorship must have engaged in public health administration, or in research work relating to public health, for two years subsequent to the date of his acquirement of the former, and submit a thesis on some subject on hygiene for approval.

VICTORIA UNIVERSITY OF MANCHESTER.—Both a degree and diploma are granted by this university, the former being known as the B.Sc. in Public Health, and there are also certificates in factory hygiene and in school hygiene. The diploma is open to all candidates possessing a registrable qualification in medicine, the examination fee being 5 guineas for each of the two parts of the examination. They can obtain their instruction in the public health laboratories of the university. Candidates for the B.Sc. must be graduates in medicine of Manchester or some other university recognized for the purpose. They must have studied certain approved subjects in the university for not less than two years after graduation, and devote a third year to work in two of its scientific departments. They also have to pass the D.P.H. examination, attaining a special standard in it. Full particulars of the courses of study and the fees for the same are given in the prospectus of the Department of Public Health issued by the university.

UNIVERSITY OF BIRMINGHAM.—A diploma may be obtained from this university by all persons registered under the Medical Act, the fees being £5 for each part of the examination. They must, however, unless old students of Birmingham, receive their instruction in the necessary subjects at the hands of the university itself. The university also grants a degree in Public Health (B.Sc. in Public Health), candidates for which must be graduates in medicine of the university, must attend a course of geology, and pass an examination of a higher standard than that for the diploma.

UNIVERSITY OF LEEDS.—A diploma is given by this university, and special courses of instruction are provided, which are available for candidates for any diploma in State Medicine. The fees for such instruction are 10 guineas for the practical work in sanitation under the medical officer of health of the city; 5 guineas for each laboratory course, and to those who have not before been students of the university, a fee of 1 guinea for registration.

UNIVERSITY OF SHEFFIELD.—A diploma is granted by this university, the regulations concerning it being on all fours with those of the General Medical Council. As elsewhere, there are two examinations which must be passed in turn. The university provides laboratory and other facilities for the study of public health, accepts certificates from other bodies, but requires that the practical work in chemistry, bacteriology, and pathology shall be taken in the university.

UNIVERSITY OF BRISTOL.—This university grants a diploma in Public Health, the examination in respect of it being, as usual, divided into two parts. In connexion with the medical school conducted by the university, special arrangements have been made for the training of candidates in all branches of public health work, the total fees amounting to 27 guineas.

UNIVERSITY OF EDINBURGH.—Two degrees in science in the Department of Public Health—B.Sc. and D.Sc.—are here given. Candidates must be graduates in medicine of this or some other university. Those proceeding to the higher degree must have held the B.Sc. in the same subject for at least five years, and submit an approved thesis, and must pass an examination. The fee for the B.Sc. examination is £3 3s. for each part. The examinations are held in March and July. Six months must elapse between the first part and the second.

UNIVERSITY OF ABERDEEN.—A diploma in Public Health is granted by this university to graduates in medicine, the regulations entailing, besides laboratory work and instruction in public health administration, six months' attendance at an infectious hospital containing not less than 50 beds, and special instruction in the drawing and interpretation of plans. Those who are graduates of some university other than Aberdeen must attend certain of the courses on the subject of public health provided by the university. The fee for the examination is 5 guineas.

UNIVERSITY OF ST. ANDREWS.—A diploma is granted by this university to its own medical graduates and those of other universities. There are two examinations, the fee for each being 5 guineas.

UNIVERSITY OF GLASGOW.—Two degrees in science, as applied to State Medicine, are granted by the university—the B.Sc. Public Health and the D.Sc. Public Health. Candidates for B.Sc. must be graduates in medicine, and, if they have not already done so, must matriculate at Glasgow for the year in which they appear for examination. They have to follow certain courses of study, some of which must necessarily be taken out in the public health laboratory of Glasgow University. A candidate for the D.Sc. Public Health must have obtained the B.Sc. Public Health.

CONJOINT BOARD IN SCOTLAND.—This body examines candidates for a diploma in Public Health, granted by the Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow conjointly. The examination takes place in Glasgow or Edinburgh, and is held twice a year—in October and May. The fee for each of its two parts is £6 6s. It is open to all candidates holding a registrable qualification for over a year who have taken out the required curriculum. Applications for examination in Edinburgh should be sent to Mr. James Robertson, solicitor, 54, George Square, Edinburgh; and in Glasgow to Mr. Alexander Duncan, B.A., LL.D., 242, St. Vincent Street, Glasgow, not later than fourteen days before the examination day. The regulations and synopses of subjects may be had on application to either of these gentlemen, or may be found in the *Calendar of the School of Medicine of the Royal Colleges, Edinburgh*, issued gratis by the Dean of the School, 11, Bristo Place, Edinburgh.

UNIVERSITY OF DUBLIN.—Candidates for the diploma in Public Health of this university must be registered medical practitioners. Examinations are held in December, March, and June, a full syllabus concerning them being obtainable from the Registrar of the School of Physic, Dublin.

QUEEN'S UNIVERSITY, BELFAST.—A diploma in Public Health is granted to all legally qualified practitioners who have satisfied the special requirements of the General Medical Council and have passed two examinations.

NATIONAL UNIVERSITY OF IRELAND.—The regulations of this university have in view the granting both of a diploma and degrees in Public Health. The latter are not open to other than matriculated students at one or other of the university's constituent colleges.

CONJOINT BOARD IN IRELAND.—This body holds an examination on behalf of the two Royal Colleges of Physicians and Surgeons, which together grant a diploma in Public Health. The fee for examination is £10 10s., a special examination being obtainable for an extra fee of £15 15s. Further information can be obtained on application to Mr. Alfred Miller, Secretary of the Committee of Management, 123, St. Stephen's Green, Dublin.

THE PUBLIC SERVICES.

THE ROYAL NAVY, THE ARMY, AND THE INDIAN MEDICAL SERVICES.

GENERAL REGULATIONS.

THE following are the general rules governing admission to these services:

All candidates must be between the ages of 21 and 28 years, must possess registrable qualifications to practise medicine and surgery in Great Britain and Ireland, and must be adjudged by the Medical Board appointed for the purpose to be physically fit for service before being admitted to the entrance examination. This examination takes place before permission is accorded to compete at the entrance examinations. Special attention is given to the candidate's power of vision. A moderate degree of myopia is not considered a disqualification, provided that it can be corrected by glasses so as to secure adequate vision for the performance of operations, and that no organic disease of the eye exists.

Testimony has also to be furnished, or is sought by the authority concerned, with regard to the candidate's moral and general character, and the Secretary of State in each service reserves the right to refuse permission to compete to any candidate he pleases.

As the prospect of a medical officer in any of these services attaining to the highest administrative grades depends to a large extent upon the regulations with regard to compulsory retirement at the age of 55 (if below a certain grade at that age), there is a distinct advantage in entering at as early an age as possible.

The attractions of the Royal Army Medical Corps were materially increased a few years ago, and in addition to improvements in pay the service now offers considerable scope for the work of a man who is prepared to make a special study of some one or other branch of medicine or surgery. Those who enter the Indian Medical Service often have unequalled opportunities for scientific work and practical surgery and medicine of the highest kind, but the service as a career has been for several years somewhat under a cloud, owing to a feeling of uncertainty as to the effect of certain actual and threatened changes in administrative detail on the financial prospects of its members. As for the medical department of the Royal Navy, administrative reforms were introduced last year, and should tend to render the service more attractive to men of ability and industry. From this service and from the Royal Army Medical Corps it is possible for an officer to retire with a gratuity of £1,000 while still under the age of 30. It is a point to be remembered, especially by those who initially have not sufficient capital with which to establish themselves in private practice. Indeed, so far as the Royal Navy is concerned, it may be possible for an officer to retire after only four years' full-pay service, and when only about 26 years of age, with a gratuity of £500.

ROYAL NAVY MEDICAL SERVICE.

THE regulations for admission of candidates to this service, beyond those indicated in the foregoing paragraph, require the production of proof that the candidate is of pure European descent, the son either of natural-born British subjects, or of parents naturalized in the United Kingdom, and the filling in by the candidate of certain declaration forms as to his health, previous appointments, and readiness to serve; the documents concerned have to be transmitted to the Medical Director-General, the Admiralty, London, S.W., and, if approved, the candidate is permitted to compete for a vacancy.

Candidates are examined in the following subjects: (*a*) Medicine, including medical pathology and therapeutics; (*b*) surgery, including surgical pathology and clinical surgery. The examination is partly written and partly practical, marks being allotted under the following scheme:

Medicine.		*Surgery.*	
Paper	400	Paper	400
Clinical	400	Clinical	400
Oral	400	Oral	400
	1,200		1,200

No candidate is considered eligible who obtains less than 50 per cent. of marks in each subject. The examination is held in London, and occupies four days.

The Admiralty also has power to admit annually, without competition, not more than six candidates specially recommended by the governing bodies of certain Colonial universities. In all cases candidates have to pass an examination as to physical soundness.

A candidate successful at the entrance examination is appointed as acting surgeon in the Royal Navy, and required to undergo certain courses of instruction which last six months. At the end of the courses the acting surgeons are examined, and those who pass are given commissions as surgeons in the Royal Navy, their commissions dating from the day of passing the entrance examination. The number of marks gained at the two examinations combined determine the seniority of a candidate amid the surgeons of his batch. An acting surgeon who fails to qualify is allowed a second trial at the next examination, but draws no pay meanwhile. Should he again fail, his connexion with the navy ends.

Every surgeon is required to undergo a post-graduate course of six months' duration at the Naval Medical School before promotion to the rank of staff surgeon. During this course he lives at the Royal Naval College, Greenwich, and draws full pay. An examination follows, and the fashion in which an officer acquits himself thereat is of the greatest importance to him. If he obtains 75 per cent. of full marks he is given a first-class certificate, and becomes eligible for an advance of twelve months' seniority, and for eighteen months' seniority should he get 85 per cent. of marks, and thus receive a special certificate. On the other hand, if he obtains less than 50 per cent. he is rejected, and if he fails a second time he has to leave the navy at the end of eight years' full pay service, and cannot be granted a gratuity on retirement of more than £500, instead of the £1,000 usually drawn by a surgeon who qualifies and wishes to retire at this period.

In addition to this compulsory course there is a voluntary course lasting three months at the same school for officers of not less than fourteen years' seniority, while other courses of instruction, each lasting about six weeks, in such subjects as bacteriology, clinical pathology, and skiagraphy, are arranged at the naval hospitals at the three home ports for the benefit of medical officers of ships and naval establishments at these ports. There are no formal examinations at the end of these courses, but they have a certain bearing on the progress of officers, as reports concerning them are transmitted to head quarters.

Promotion.

A surgeon is ordinarily promoted to the rank of staff surgeon at the end of eight years' full-pay service, provided that he has passed the necessary examination, has served three years at sea, and is recommended by the Director-General. After a further eight years as a staff surgeon he is promoted to the rank of fleet surgeon, on corresponding conditions. Promotion above the rank of fleet surgeon is purely by selection.

Pay and Allowances.

The following is the scale of full pay:

	s.	£ s. d.	
Surgeon on entry ...	14 a day	255 10 0	a year.
After 2 years ...	15 ,,	273 15 0	,,
,, 4 ,, ...	17 ,,	310 5 0	,,
,, 6 ,, ...	18 ,,	328 10 0	,,
Staff Surgeon ...	20 ,,	365 0 0	,,
After 2 years ...	21 ,,	383 5 0	,,
,, 4 ,, ...	24 ,,	438 0 0	,,
,, 6 ,, ...	25 ,,	456 5 0	,,
Fleet Surgeon ...	27 ,,	492 15 0	,,
After 2 years ...	28 ,,	511 0 0	,,
,, 4 ,, ...	30 ,,	547 10 0	,,
,, 6 ,, ...	31 ,,	565 15 0	,,
,, 8 ,, ...	33 ,,	602 5 0	,,
,, 10 ,, ...	35 ,,	638 15 0	,,
Deputy Surgeon-General	45 ,,	821 5 0	,,
Surgeon-General	(salary)	1,300 0 0	,,
The Director-General	,,	1,800 0 0	,,
Deputy Director-General	,,	1,100 0 0	,,
Assistants to Director-General		750 0 0	,,

A certain number of officers receive, besides full pay, "charge pay" ranging from 10s. a day down to 2s. 6d. when employed in certain positions. Furthermore, all medical officers below the rank of Surgeon-General and not employed in the office of the Director-General receive either quarters, rations, fuel, and lighting for themselves and their authorized servant, or allowance in lieu thereof.

Half-Pay.

As the Medical Department of the Navy is now below its full strength and is never overmanned, it is very much rarer for a medical officer fit for duty to be unemployed than it is for an officer belonging to the executive branch. Nevertheless, the liability to be placed on half-pay is not to be overlooked.

Retirement.

After four years' full-pay service a surgeon may withdraw and join the Reserve of Naval Medical Officers. On doing so he receives a gratuity of £500, retains his rank and uniform, and if he agrees to remain in the Reserve for four years receives a retaining fee of £25 per annum. At the end of this period he can re-engage for a further four years on the same terms, but after that he is retired altogether.

Voluntary withdrawal is also permitted, if the Lords of the Admiralty approve, to officers after eight, twelve, and sixteen years' full-pay service, the retiring officer receiving a gratuity. An officer being a Fleet Surgeon of twenty years' service may similarly retire, and then receives retired pay.

Retirement is compulsory in the case of ordinary officers at 55, or at any age, if the officer has not been on full-pay service for three years in any one rank, or after continuous non-employment for four years in any two ranks combined.

The following are the amounts ordinarily paid on retirement:

Rank.	Gratuities.	Daily.	Yearly.
	£ s. d.	£ s. d.	£ s. d.
Surgeon, Staff Surgeon, and Fleet Surgeon:			
After 4 years' full-pay service	500 0 0	—	—
,, 8 ,, ,,	1,000 0 0	—	—
,, 12 ,, ,,	1,500 0 0	—	—
,, 16 ,, ,,	2,250 0 0	—	—
Fleet Surgeon:			
After 20 years' service ...	—	1 0 0	365 0 0
,, 24 ,, ...	—	1 2 6	410 12 6
,, 27 ,, ...	—	1 5 0	456 5 0
,, 30 ,, ...	—	1 10 0	547 10 0
Deputy Surgeon-General ...	—	1 15 0	638 15 0
Surgeon-General ...	—	2 0 0	730 0 0

If an officer retires or withdraws on a gratuity, his widow and children lose the claim to a pension or compassionate allowance which they would otherwise possess.

ROYAL ARMY MEDICAL CORPS.

A CANDIDATE qualified as stated in the paragraph on page 578 must fill up a form of application and declaration, which can be obtained on application to the Director-General, Army Medical Service, War Office, London, S.W., and submit it to the Director-General in sufficient time to permit of reference to the medical school in which the candidate completed his course as a medical student.

If accepted as a candidate he undergoes an examination as to health and physical fitness, paying a fee of £1, and if passed is then entitled to take part in the next competition for admission to the service. Such competitions usually take place twice a year—in January and July—each being held in London and lasting four days.

All the competitors are examined by the Examining Board in medicine and surgery; the tests in these subjects are of a clinical and practical character, partly written and partly oral. Marks are allotted under the following scheme:

	Maximum Marks.
Medicine (written).	
A. Examination and report upon a medical case	125
B. Commentary upon a case in medicine ...	100
Medicine (oral).	
A. Clinical cases	100
B. Medical pathology	75
Surgery (written).	
A. Examination and report upon a surgical case	100
B. Commentary upon a case in surgery ...	125
Surgery (oral).	
A. Clinical surgery and pathology (including diseases of the eye)	75
B. Operative surgery and bandaging (including surgical instruments and appliances)	100
Total marks	800

A candidate who holds Certificate A or B of the Officers' Training Corps may have credited to him one or two per cent. of the total marks obtainable.

Successful competitors are appointed lieutenants on probation, and then undergo two courses of instruction at the Royal Army Medical College and at Aldershot respectively. Each ends in an examination, and candidate's seniority is determined by the aggregate of his marks at the three examinations. Should a candidate fail to pass either the second or third examination, he is given a second trial. If then successful, he is placed at the bottom of his batch. If unsuccessful, his connexion with the Service ends forthwith. If, however, a lieutenant on probation is seconded in order to hold appointment at a civil hospital, he retains the place in the list which he gained at the entrance examination, and has merely to qualify at the remaining examinations when in course of time he goes up for them.

An officer finally accepted is eligible for promotion to the rank of captain after three and a half years' service, and to that of major after twelve years' service; in both cases a promotion examination has to be passed. The first and third promotion examinations are mainly technical, while the second, that for promotion to major, includes professional as well as military subjects. Above the rank of major promotion is by selection from among those who have qualified for such promotion by passing an examination.

The rates of pay and allowances for officers are at present as follows, but the allowance rates vary slightly from time to time. In addition, specialist pay and charge pay are given under certain conditions:

	£ s. d.
Lieutenant	325 19 2½
Captain	372 1 9
And after seven years' full-pay service ...	399 9 5
And after ten years' full-pay service ...	472 9 5
Major	583 9 7
Major, after three years' service as such ...	629 2 1
Lieutenant-Colonel	711 4 7
Lieutenant-Colonel, after three years' service as such	802 9 7
Colonel	1,008 16 1
Surgeon-General	1,447 16 3
Deputy Director-General	1,500 0 0
Director-General	2,000 0 0

While in India the pay is in rupees, a lieutenant receiving 420 rupees a month.

Retirement.

An officer of more than three, but not less than six, years' service may be permitted to join the Reserve. In such case he receives £25 a year, and has the option of returning up to a certain number of years. After five years' service as a captain he may retire with a gratuity of £1,000; after three years as a major, with a gratuity of £1,500, and after six years in that rank, with a gratuity of £2,500. A major of twenty years' service receives a

pension of £1 a day, the rate in higher ranks gradually rising to £2 a day in the case of a surgeon-general.

Retirement is compulsory on reaching the age of 55, unless he is above the rank of lieutenant-colonel; he may then remain a few years longer. Retirement on the pension or gratuity equivalent to his grade and length of service may be imposed on any officer not promoted in the ordinary course owing to his failure to pass the necessary examination or other like cause.

Exchanges between officers of the Royal Army Medical Corps and the Indian Medical Service are occasionally permitted, subject to the officers having less than seven years' service and other conditions.

The regulations as regards pensions and compassionate allowances to widows and other dependents of officers are the same in the case of officers of the Royal Army Medical Corps as in the case of ordinary officers. There is, in addition, an army medical officers' widows' annuity fund on mutual assurance principles.

INDIAN MEDICAL SERVICE.

A CANDIDATE for this service must be a natural-born subject of His Majesty, of European or East Indian descent, and the general rules mentioned in the paragraph on page 578 apply to him; he must make his application for permission to compete for a commission on a prescribed form. The accompanying certificates must include one showing that the candidate has studied in an ophthalmic hospital or ophthalmic department for not less than three months, the work including refraction. If allowed to compete he pays a fee of £1, and is then examined in the following subjects:

	Marks.
1. Medicine, including therapeutics	1,200
2. Surgery, including diseases of the eye...	1,200
3. Applied anatomy and physiology	600
4. Pathology and bacteriology	900
5. Midwifery and diseases of women and children ...	600
6. Materia medica, pharmacology, and toxicology ...	600

The examinations in medicine and surgery are in part practical, and include operations on the dead body, the application of surgical apparatus, and the examination of medical and surgical patients at the bedside. As regards the subjects of the examination, no syllabus is issued, the questions put being such as to test the candidate's general knowledge of them. Copies of papers set at previous examinations can, however, be obtained on application. No candidate is permitted to compete more than three times. A successful candidate is given an acting commission as a lieutenant, and receives 14s. a day as pay and quarters, or an allowance in lieu thereof. He then (after two months' leave) attends courses lasting about two months each at the Royal Army Medical College, Millbank, and at Aldershot respectively, and on conclusion of each is examined in its subjects. He must obtain not less than 50 per cent. of the total possible marks. If he fails to do so on a second chance being given him his acting commission is cancelled. The position of a candidate in his batch is determined by the aggregate of his marks at the entrance and other examinations. These matters complete, the candidate is sent to India, usually in a troopship. Occasionally an officer is allowed to defer his departure in order to sit for some professional examination or take up a resident appointment at a civil hospital for a time. But in such case he does not draw service pay for more than two months of such period.

On his arrival in India an officer serves for two years with troops, and is then eligible for an appointment on the civil side if he wishes to transfer from the military department. On the civil side there are several hundred appointments which together cover all the work done by medical men in this country. The titles of most of them and the pay granted are shown in the table at the foot of this page. But, although he may hold a civil appointment, an officer remains liable to be employed on military duty in case of necessity. Private practice is usually allowed. All officers must pass the lower standard examination in Hindustani, and until they do so are ineligible for staff pay.

Promotion.

Even if he transfers to the civil side of the service an officer still bears a military title, and is promoted at the same rate as those who remain on the military side. Thus a lieutenant may be promoted to captain on completion of three years' full-pay service from date of first commission: but after completing eighteen months' service, and before promotion to the rank of captain, he will be required to pass an examination in military law and military medical organization. A captain is promoted to major on completion of twelve years' full-pay service, but this promotion may be accelerated by not more than six months in the case of officers who fulfil certain specified conditions. A major is promoted to lieutenant-colonel on completion of eight years' full-pay service in the rank of major. All promotions from the rank of lieutenant-colonel to that of colonel, and from the rank of colonel to that of surgeon-general, are by selection for ability and merit.

Pay and Allowance.[1]

The following are the monthly rates of Indian pay drawn by officers of the Indian Medical Service when employed on the military side.

Rank.	Unemployed Pay.	Grade Pay.	Staff Pay.	In Officiating Medical Charge of a Regiment.	In Permanent Medical Charge of a Regiment.
	Rs.	Rs.	Rs.	Rs.	Rs.
Lieutenant	420	350	150	425	500
Captain	475	400	150	475	550
,, after 5 years' service... ...	475	450	150	525	600
,, after 7 years' service... ...	—	500	150	575	650
,, after 10 years' service... ...	—	550	150	625	700
Major	—	650	150	725	800
,, after 15 years' service... ...	—	750	150	825	900
Lieutenant-Colonel	—	900	350	1,075	1,250
,, ,, after 25 years' service	—	900	400	1,100	1,300
,, ,, specially selected for increased pay ...	—	1,000	400	1,200	1,400

NOTES.—(*a*) Unemployed pay is drawn by officers of less than 7 years' service who are not holding officiating or substantive charge of native regiments. Officers of more than 7 years' service draw grade pay alone when unemployed. Staff pay is the pay of a command, and is drawn in addition to grade pay. (*b*) Horse allowance is granted to officers in substantive charge of cavalry regiments at the rate of Rs.90 a month to lieutenant-colonels and majors, and Rs. 60 a month to captains and lieutenants.

[1] Under present arrangements officers of the Indian Medical Service who are not statutory natives of India receive exchange compensation allowance to compensate them for the fall of the value of the rupee. The allowance consists of an addition to their salaries (subject to certain limitations) equal to half the difference between their salaries converted at (1) 1s. 6d. the rupee, and (2) the average market rate for each quarter.

Principal Civil Appointments.	Approximate Number of Appointments in Each Class.	Salary per Mensem. When held by a Lieutenant-Colonel.	When held by a Major.	When held by a Captain.	When held by a Lieutenant.
		Rs.	Rs.	Rs.	Rs.
Inspectors-General of Civil Hospitals	6	2,250-2,500			
Sanitary Commissioner with Government of India	1	2,000-2,500			
Inspectors-General of Prisons ...	8	1,500-2,000			
Principals of Medical Colleges	[illegible]	1,650-1,800	1,200-1,700		
[illegible]	32	1,500-1,650	1,050-1,150	800-950	750
Sanitary Commissioners	8	1,250-1,800			
[illegible]	17	1,450-1,600	1,000-1,100	750-900	700
[illegible]	11	1,500-1,600	1,050-1,150	700-900	650
Superintendents [illegible] Asylums	6	1,400-1,550	1,050-1,150	700-900	650
[illegible]	51	1,500-1,550	850-1,150	600-800	550
[illegible]	57	1,300-1,450	850-950	600-750	550
[illegible]	171	1,200-1,350	750-850	500-650	450
[illegible]	1	...	...	600-750	550
Officers [illegible]		1,450	1,000-1,100	750-900	700

Leave Rules.

(The paragraphs in small type apply only to officers in military employ.)

Officers below the rank of colonel may be granted:

1. Privilege leave under such regulations as may from time to time be in force.
2. Leave out of India, for no longer period than one year, capable of extension to two years' absence from duty, on the following pay:

On first appointment	...£250 a year.
After the commencement of the 10th year's service for pension	... 300 ,,
Ditto, ditto, 15th ditto	... 450 ,,
Ditto, ditto, 20th ditto	... 600 ,,
Ditto, ditto, 25th ditto	... 700 ,,

3. Leave in India, but for the period of one year only, on full military pay, and half the staff salary of appointment.

No extension of leave involving absence from duty for more than two years, whether taken in or out of India, can be granted, except on specially urgent grounds and without pay.

An officer unable on account of the state of his health to return to duty within the maximum period of two years' absence (unless, as under the foregoing paragraph, he is specially granted an extension of leave without pay) is placed on temporary half-pay or the retired list, as the circumstances of the case may require. An officer is also liable to be placed on half-pay or the retired list should his health require an undue amount of leave, whether in or out of India.

Leave may be granted at any time, but solely at the discretion of the civil or military authorities in India under whom an officer may be serving.

Extra furlough may be granted to officers desirous of pursuing special courses of study at the rate of one month's furlough for each year's service up to twelve months in all.

Retiring Pensions and Half-Pay.

Officers are allowed to retire on pension on completing 17 years' service, the amount they receive varying with the precise number of years they have served. The lowest rate for 17 years' service is £300 per annum, and the rate for 30 years £700 per annum. The increases in pension for each additional year's service over 17 are somewhat higher in the last 5 than in the first 8 of the 13 years between the shortest and longest periods of pensionable service. Service for pension reckons from date of first commission, and includes all leave taken under the rules quoted.

Additional pensions for wounds and injuries received in action or in the performance of military duty are awarded to officers of the Indian Medical Service on the same terms as to combatant officers of the Indian Army.

All officers of the rank of lieutenant-colonel and major are placed on the retired list on attaining the age of 55 years; the greatest age to which any officer can serve being 62.

Family Pensions.

The claims to pensions of widows and families of officers are treated under the provisions of such Royal Warrant regulating the grant of pensions to the widows and families of British officers as may be in force at the time being. The widows and families of officers are also entitled to pensions under the Indian Service Family Pension Regulations, for the benefits of which all officers must, as a condition of their appointment, subscribe from the date of their arrival in India, except in the case of natives of India, for whom it is optional.

PRISON MEDICAL SERVICE.

THE prison department consists of two branches—the convict service and the local prison service. These are now practically amalgamated, and the officers of each branch are freely interchangeable. Candidates for the medical staff are approved by the Secretary of State for the Home Office on the recommendation of the Prison Commissioners. The Chairman of the Board is Sir Evelyn Ruggles-Brise, K.C.B. Application for employment may be made to the Board on a special form, which can be obtained from the Secretary, Prison Commission, Home Office, London, S.W.

In the smaller prisons the medical officer is usually a local practitioner, but in the larger the members of the medical staff are required to give their whole time to the service.

The number of vacancies is not large and the rate of promotion is at present very slow.

In the case of those required to give their whole time to the service the appointment in the first instance is to the post of deputy medical officer, and from the seniors of this rank the medical officers are selected as vacancies occur. The deputy medical officers are paid £250 yearly, rising to £300, with unfurnished quarters. The whole-time medical officers are paid £300, rising to £550, with unfurnished quarters. There are fifteen deputy medical officers and fifteen whole-time and forty-six part-time medical officers.

APPOINTMENTS UNDER THE COLONIAL OFFICE.

MEDICAL appointments are from time to time filled up by the Colonial Office in the following Colonies and Protectorates: British Guiana, Jamaica, Trinidad, Windward Islands, Leeward Islands, Barbados, British Honduras, the Bahamas, Bermuda, Fiji, Sierra Leone, Gambia, Gold Coast, Northern and Southern Nigeria, East Africa and Uganda Protectorates, Nyasaland, Somaliland, Ceylon, Straits Settlements, the Federated Malay States, Hong Kong, Wei-hai-Wei, Mauritius, Seychelles, Cyprus, Gibraltar, St. Helena, and the Falkland Islands. In Ceylon, Jamaica, and Mauritius vacancies are almost always filled locally by the appointment of qualified native candidates. As a rule officers are required on appointment to undergo a three months' course of instruction at the London or Liverpool School of Tropical Medicine, and to obtain a certificate of proficiency before taking up their appointment. In addition to the ordinary medical appointments, vacancies also occasionally, though very rarely, occur, for which specialists are required—for example, to take charge of a lunatic asylum.

All candidates for ordinary medical appointments must be between the ages of 23 and 35.[1] Preference is given to those who have held junior appointments on the staffs of hospitals. Testimonials to character and professional competence are required, and every officer before being appointed must be medically examined by one of the consulting physicians of the Colonial Office. A pamphlet giving a good deal of information as to the various posts is published. Copies can be obtained on application by letter to the Assistant Private Secretary, the Colonial Office, Downing Street, S.W.

The nominal value of the appointments in the gift of the Colonial Office varies very considerably; but, as a general rule, it will be found on close examination that the rates of pay correspond in real value pretty closely when questions of climate, opportunities for private practice, the cost of living, and the actual work demanded are taken into consideration. The posts to which the lower salaries are attached commonly involve work which can be regarded as merely an adjunct to ordinary private practice, while high pay means either few opportunities for practice, an undesirable climate, or work of a special character demanding high administrative ability. Taken as a whole, all these appointments may be put down as offering their occupant the opportunity of gaining his livelihood, and possibly saving a little money, in a fashion which will test his abilities to the full.

In some respects the most important appointments are those to membership of the West African Medical Staff. This is a regular service somewhat on the lines of the Indian Medical Service; the rates of pay in the higher grade are fairly satisfactory as compared with the cost of living on the coast; the opportunities for scientific practice of medicine are ample, and at the end of every year's work an officer can return to England for several months' leave. A separate pamphlet setting forth the emoluments and general conditions of service is published, and can be obtained in the same fashion as that already mentioned.

Besides these appointments under the various Colonial governments, a large number of men are employed in the Colonies and Protectorates as medical officers of mining and other companies carrying on their operations in various parts of the tropics. Much care should be exercised in

[1] In the case of East and West Africa preference will be given to candidates who are over 25 years of age. In the case of Fiji, preference will be given to candidates who are under 30.

accepting these appointments, and any prospective candidate should read the articles on the subject published in our issues for May 25th, 1912, and August 24th, 1912.

PRACTICE IN BRITISH COLONIES.

THE following notes supply a general indication of the requirements which must be satisfied by those desirous of practising in the Colonies on the strength of qualifications received from licensing bodies in the United Kingdom. Personal inquiry should, however, always be made on the point.

CANADA.

Throughout practically the whole of Canada admission to registration is a necessary preliminary to practice, but at present the conditions on which such admission can be obtained vary in each province, each being a law unto itself in this matter. Before the end of the current year, however, it is expected that a general medical council for the whole of the Dominion will have been formed, and that admission to the register established by it will enable a medical man to practise in any part of the country. A law authorizing such Federal medical council passed the two Federal Houses of Legislation in 1911, and since then most of the Provincial Houses have modified their own adapted laws accordingly. But until all have done so matters will remain very much as they are. The regulations of each province with regard to the registration of practitioners from the United Kingdom are, at the moment of writing, as stated in the following paragraphs. A fee for registration, it is to be noted, is always imposed, this varying between £5 and £20, and a further fee may have to be paid if any examination has to be passed. Information on these points and others should be sought from the registrar of the province in which any practitioner from this country proposes to settle.

Quebec.—A Register is maintained by the Provincial Medical Board, which has its seat in Montreal. It has power to issue a licence to practise to any person who can afford proof of good conduct and that his name is on the *Medical Register* of the United Kingdom in virtue of having undergone a period of five years' study, during the course of which he was uninterruptedly resident in the United Kingdom.

Nova Scotia.—The medical authority is the Provincial Medical Board, 241, Pleasant Street, Halifax. Applicants for admission to its Register on the strength of British qualifications must produce (1) the diplomas entitling them to registration in the United Kingdom; (2) a certificate from the Registrar of the General Medical Council showing that his name is on the *Register*, and that no charge is pending against him; (3) a recent and certified photograph as evidence of identity; (4) a certificate of age; (5) satisfactory evidence of good character. To such Register any person is admissible who is duly registered by the General Medical Council of Great Britain.

Prince Edward Island.—The medical government of this province is in the hands of a council selected from among the members of the Medical Society of Prince Edward Island. This council maintains a Register, and will admit to it, on payment of the required fee, any person who is duly registered by the General Medical Council in Great Britain. The council has its office at Grafton Street, Charlottetown.

Ontario. The authority in medical matters is the Council of the College of Physicians and Surgeons of Ontario, whose registration office is at 170, University Avenue, Toronto. The law leaves it optional to this council to admit to registration any person who is duly registered in Great Britain, or who is otherwise authorized to practise medicine, surgery, and midwifery in the United Kingdom. Its working rule at present is to admit practitioners who have been five years in active practice after admission on the *Register* of the General Medical Council on their passing the intermediate and final examinations for the M.B. degree of the University of Toronto. Those who have not been five years in practice must pass all the examinations.

British Columbia. The governing body is the Medical Council of British Columbia, which has its seat at Victoria, and keeps a Medical Register. A practitioner who affords proof of good conduct, and can show that he was registered in Great Britain or Ireland previous to June 30th, 1887, may obtain admission to the provincial register in return for a fee which, according to the medical Act of the colony, must not exceed 100 dollars. Otherwise he must pass a "satisfactory examination touching his fitness to practise as a physician or surgeon," as well as pay the aforesaid registration fee. The examinations in question appear to consist of four or five written questions in anatomy, chemistry, and public health, materia medica and therapeutics, medical jurisprudence, midwifery and diseases of women and children, physiology, surgery, the theory and practice of medicine and medical pathology. So far as can be gathered from the nature of the questions set on a recent occasion, the examination is not one which an ordinary well-informed practitioner would be likely to fail to pass.

Manitoba.—The medical authority is the College of Physicians and Surgeons of Manitoba. It has its seat at Winnipeg, and maintains a Register to which it at present admits medical men whose names are registered in the United Kingdom and who are of good standing.

Alberta and Saskatchewan.—These are the names of two provinces created by dividing up between them a large part of all the country formerly known as the North-Western Territories. In each of them a Medical Act has been passed and brought into existence the College of Physicians and Surgeons of the Province of Alberta, and the College of Physicians and Surgeons of the Province of Saskatchewan. Each of them maintains a Register, to which a medical man with qualifications derived from the United Kingdom may obtain admission on passing an examination "touching his fitness and capacity to practise medicine, surgery, and midwifery." The Alberta College is at the capital of the Province, Edmonton, and the Saskatchewan College is at Regina.

New Brunswick.—A Register is maintained by the Council of Physicians and Surgeons of New Brunswick, which has its seat at St. John. In the regulations respecting candidates for admission to the Register which this council has laid down, previous admission to the *Medical Register* in Great Britain and Ireland is not specifically mentioned as a qualification for admission to the Register in New Brunswick. On the other hand, any medical man who holds qualifications entitling him to the *Register* in Great Britain would appear to be able to meet all the conditions mentioned, provided that the preliminary examination in general education passed by him previous to commencing the study of medicine has been the matriculation of some university, or that it has been an examination including in its subjects English arithmetic, algebra, geometry, Latin, elementary chemistry elementary mechanics, history, geography, and two of the following languages: Greek, French, and German.

AUSTRALASIA.

In Australia and New Zealand admission to the Register is accorded to those who can supply proof that they are registered in the United Kingdom, that they are of good repute, and that they are the rightful owners of the documents which they present.

SOUTH AFRICA.

Admission to the Register is a necessary preliminary to practice in all the four States of the Union of South Africa—Cape Colony, Natal, the Transvaal, and Orange River Colony. It may be obtained by any medical man registered, or entitled to be registered, in the United Kingdom, on his payment of varying fees and his production of proof of his possession of the necessary diplomas. In each case application for admission to the Register should be addressed to the secretary of the medical council concerned. Registration, or, more accurately speaking, a licence to practise, is also necessary in Rhodesia, and is granted by the Administrator of Rhodesia at Salisbury, on practically the same terms as is registration in any of the four localities mentioned.

CROWN COLONIES.

In the Crown Colonies, including Ceylon, the Straits Settlements, Mauritius, British Guiana, and the West Indian Islands, and many other of the smaller British possessions scattered throughout the world, no difficulty is raised to the practice of medicine and admission to the

Register if one is kept, in the case of any medical man who is in a position to prove his qualification to registration under the Medical Act of 1858.[1]

PRACTICE IN FOREIGN COUNTRIES.

THE following notes give some indication of the conditions under which medical men possessing British degrees or diplomas may obtain permission to practise in foreign countries.[1]

FOREIGN STATES.

Austria.—It is necessary to pass the State examination, or to obtain a university degree in medicine, a necessary preliminary to which is naturalization as an Austrian subject. Recognition of foreign diplomas may be obtained on passing certain examinations.

Belgium.—Permission to practise must be obtained by foreign practitioners through a duly appointed medical board. To obtain it is a matter of extreme difficulty.

Bulgaria.—Foreign medical graduates must pass a viva voce examination conducted in the Bulgarian language.

Denmark.—Foreigners are allowed no privilege in respect of exemption from examination.

Egypt.—Permission to practise is accorded by the Director-General of the Sanitary Department to registered British practitioners upon proof of identity and a certificate of good character from the British Consul-General.

France.—The degree of M.D. must be obtained by examination before a French faculty (Paris, Montpelier, Nancy, Bordeaux, Lyons, Lille, or Toulouse). This regulation applies to Algiers also. The degree, moreover, confers the right to practise only if it has been obtained on precisely the same conditions as those to which French students are subject.

Germany.—Any person may practise medicine in this country, but does so at his own peril unless he has passed the *Staats-Examen*. The latter alone confers recognition as a legal medical practitioner, and must be passed even by those who are already graduates of German universities. It takes place every year in November, and can be held by a medical board of examiners at any German university. The application of a candidate for admission to the examination must be accompanied by certificates of admission to the university from a German public school, and of at least nine half-yearly terms of medical study at a German university. The Government reserves to itself the right to exempt from this examination men of medical distinction under certain conditions, but the latter have no application to foreign medical men. Very occasionally also certificates of study at other than German universities and medical schools are accepted in lieu of some of the courses imposed on candidates.

Greece.—A State examination must be passed, but graduates of foreign schools may take their examination in French or German, and if of a certain standing in their own country may be exempted altogether.

Holland.—Foreigners are required to pass the State examination, but registered English medical men are entitled to exemption from part of it.

Hungary.—An English diploma does not entitle its owner to practise, but recognition of British qualifications may sometimes be obtained.

Italy.—This country, which has always been disposed to make things easy for foreign practitioners, now accords to those whose names are on the *Register* kept by the General Medical Council the right of admission to the Italian Register.

Monaco.—In virtue of the reciprocity in the matter of recognition of medical degrees and diplomas now existing between Italy and Monaco, the following British qualifications are, for the purposes of medical practice in the Principality of Monaco, considered equivalent to the French Diploma of Medicine: The degree of Doctor of Medicine of the University of "the United Kingdom of Great Britain," and the diplomas of Fellows of the Royal Colleges of Surgeons and Physicians of London, Edinburgh, Dublin, and of the Faculty of Physicians and Surgeons of Glasgow. Every application for leave to practise must be accompanied by the diplomas of the applicant or by copies of those documents certified as correct either by a Consul of the Principality or by the Mayor of Monaco. The applicants must enter into an undertaking to live in the Principality and to practise their profession during the whole or part of the months of May, June, July, August, September, and October, agreeably to Article 1 of the Ordinance of May 29th, 1894.

Norway.—The State examination must be passed. The Government may, however, grant permission in individual cases to persons who produce satisfactory evidence that they possess the requisite knowledge.

Portugal.—The State examination must be passed.

Roumania.—The State examination must be passed by all applicants.

Russia.—Foreign medical men must pass a comprehensive examination at the Medical Academy of St. Petersburg or one of the universities of Russia, and must know Russian. Those who have not a B.A. degree must pass an examination in general education, and in Greek and Latin.

Servia.—No permission to practise can be obtained by any one other than a Servian subject, irrespective of examinations.

South America.—All the foreign States in the South American continent require a medical man who seeks permission to practise to pass an examination conducted in Spanish, irrespective of any degrees or diplomas which he may hold.

Spain.—The regulations in this country have varied a good deal, the present position being that foreign medical men must qualify in the same way as Spaniards, or, at all events, must pass an examination before the medical faculty of a Spanish college and be recommended by it for the grant of a permission to practise. Temporary permission to practise seems, however, often to be accorded.

Sweden.—The State examination must be passed. Some reduction in the length of the curriculum may be granted.

Switzerland.—A qualified English practitioner desiring to practise in Switzerland, even if only among his countrymen, is required to pass the Federal Examination in that country. The degree of Doctor of Medicine does not give the right to practise. The Federal Examination may be passed at Basle, Zürich, or Berne in German, and at Geneva or Lausanne in French. The applicant is advised to obtain from one of his teachers or some persons of recognized scientific eminence in this country an introduction to a professor at the university at which he proposes to pass the examination. It would also be well for him to call upon the Rector of the University.

The United States.—Each of the States has its own laws and regulations: some of them will admit any man to the Register who holds a diploma or degree wherever obtained; the majority require the candidate for registration to submit to an examination. Attempts to bring about reciprocity between the States have long been in progress. Changes are frequent, and any one proposing to practise in America should address special inquiries to the Medical Board of the State in which he desires to settle for information as to the regulations in force.

Turkey.—A viva voce examination in the chief branches of medicine and surgery must be passed at Constantinople (fee, about £20). Before being admitted to the examination the candidate must present a diploma from a medical school recognized by the Government of the country in which it is situated.

[1] *The Digest of Laws in the British Empire and Foreign Countries*, published by the General Medical Council (to be obtained through any bookseller, price 1s.), may also be consulted.

Dental Surgery.

ACCORDING to the regulations of the General Medical Council, candidates for registrable qualifications in Dental Surgery must produce certificates of having been engaged during four years in professional studies, and of having received two years' instruction in mechanical dentistry from a registered practitioner, or at some dental hospital where instruction is given in this subject. One year's bonâ-fide apprenticeship with a registered dental practitioner, or one year's instruction at a dental hospital, after being registered as a dental student, may be counted one of the four years of professional study. The two years of instruction in mechanical dentistry, or any part of them, may be taken by the medical student either before or after his

registration as a student; but no year of such mechanical instruction will be counted as one of the four years of professional study unless taken after registration. As regards preliminary examination and registration, dental students are subject to the same regulations as medical students, but professional study may commence by pupilage with a registered dental practitioner.

As regards registrable qualifications, candidates can obtain either diplomas or degrees at the hands of a large number of bodies, some account of which follows, while they have an even larger choice in the matter of places of technical education. The following is a list of some of them:

In London:
(1) The Royal Dental Hospital of London, Leicester Square.
(2) The National Dental Hospital and College, Great Portland Street, W.
(3) The Dental School of Guy's Hospital.
(4) The Dental School of the London Hospital.

In the Provinces, at schools connected with:
(1) The University of Sheffield.
(2) The Victoria University of Manchester.
(3) The University of Liverpool.
(4) The University of Leeds.
(5) The Devon and Exeter Dental Hospital.
(6) The University of Bristol.
(7) The University of Birmingham.

In Scotland at:
(1) The Incorporated Edinburgh Dental Hospital and School.
(2) Glasgow Royal Infirmary.
(3) The Incorporated Glasgow Dental Hospital and School.

In Ireland at:
(1) The Dental Hospital of Dublin.
(2) Trinity College, Dublin.

DIPLOMAS AND DEGREES.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THIS body grants a diploma to candidates who pass three successive examinations, to which they are admitted on production of the following certificates:

Before the First Examination.—Of having received instruction at an institution registered for the purpose in chemistry, physics, and practical chemistry.

Before the Second.—Of having been engaged during a period of not less than two years in acquiring a practical familiarity with the details of mechanical dentistry.

Of registration as a dental student.

Of having attended at a recognized dental hospital and school (*a*) a course of lectures on dental metallurgy; (*b*) a course of practical dental metallurgy; (*c*) a course of lectures on dental mechanics; (*d*) a course of practical dental mechanics, including the manufacture and adjustment of six dentures and six crowns.

Before the Third.—Of having been engaged during four years in the acquirement of professional knowledge subsequent to the date of registration as a dental student.

Of having attended at a recognized dental hospital and school (*a*) a course of dental anatomy and physiology; (*b*) a separate course of dental histology, including the preparation of microscopical sections; (*c*) a course of dental surgery; (*d*) a separate course of practical dental surgery; (*e*) a course of not less than five lectures on the surgery of the mouth; (*f*) a course of dental bacteriology; (*g*) a course of dental materia medica; (*h*) a course of instruction in the administration of such anæsthetics as are in common use in dental surgery.

Of having attended at a recognized dental hospital, or in the dental department of a recognized general hospital, the practice of dental surgery during two years.

Of having attended at a recognized medical school (*a*) a course of lectures on anatomy, (*b*) a course of lectures on physiology, [illegible] course of physiology, (*d*) a course of [illegible] (*e*) a course of lectures on medicine; [illegible] to be attended after the completion of courses (*a*) and (*b*).

Of having performed dissection at a recognized medical school during [illegible] twelve months.

Of having attended at a recognized hospital or hospitals the practice of surgery and clinical lectures on surgery for twelve months during the ordinary sessions.

Of being 21 years of age.

The first examination is identical with Parts I and II of the First Examination of the Conjoint Board for medical students, and exemption from it may be obtained under corresponding circumstances.

The second examination deals with (Part I) mechanical dentistry and (Part II) dental metallurgy. Candidates who have passed the previous examination may present themselves for the two parts separately or for the whole examination at one time on production of the certificates already specified. A great deal of practical work is included in this examination.

The third examination covers (1) general anatomy and physiology, general pathology and surgery; (2) dental anatomy and physiology, dental pathology and surgery, and practical dental surgery. This examination is partly written, partly practical, and partly oral, and in Section II candidates may be examined practically:

(*a*) On the treatment of dental caries, and may be required to prepare and fill cavities with gold or plastic filling or material, or to do any other operation in dental surgery.
(*b*) On the mechanical and surgical treatment of the various irregularities of children's teeth.

Candidates who have passed the Second Examination at least six months previously may present themselves for the two parts separately, or they may take the whole examination at one time. But they may not proceed to Part II until they have passed Part I.

Candidates who have passed the Second Examination of the Examining Board in England, or produce evidence of having passed the examination in anatomy and physiology required for a degree or other qualification in medicine or surgery registrable under the Medical Act of 1886, are exempted from re-examination in those subjects in Section I.

Candidates who are members of the college, or who have passed the examination in surgery of the Examining Board in England, or who produce evidence of having passed the examination in surgery for a degree or other qualification in medicine or surgery registrable under the Medical Act of 1886, are exempted from examination in surgery and pathology in Section I.

The holders of certain degrees or licences in dental surgery recognized by the college are admitted to the second and third examinations together, without passing the Preliminary Science Examination, provided they produce evidence (*a*) of having passed a satisfactory Preliminary Examination in general education, (*b*) of having completed the curriculum of professional study required by the regulations, (*c*) of having passed the required Professional Examinations for their degree or licence in dental surgery. The following are the degrees and licence at present thus recognized: D.D.S. University of Harvard, D.D.S. University of Pennsylvania, D.D.S. University of Michigan, Licence of the Dental Board of Victoria. Special regulations apply to holders of registered diplomas in the Colonies.

Fees.—The fee for the diploma in Dental Surgery is 20 guineas, payable in certain instalments.

Further information may be obtained from the Secretary of the Examining Board in England, Examination Hall, Queen Square, Bloomsbury, London, W.C.

UNIVERSITY OF BIRMINGHAM.

Degrees in dentistry—namely, Bachelor and Master of Dental Surgery (B.D.S. and M.D.S.) and a diploma in Dental Surgery (L.D.S.)—are granted by the University of Birmingham. All candidates for degrees must pass the same Matriculation Examination as that required from candidates for medical degrees. The degree of Bachelor of Dental Surgery is not conferred upon any candidate who has not obtained the Licence in Dental Surgery of the university or from some body legally entitled to confer such qualification. The candidate is not eligible for the degree until a period of twelve months has elapsed from the passing of his examination for the Licence in Dental Surgery, and must produce evidence of having undergone certain courses of instruction additional to those required for the diploma. He is then admitted to an examination covering dental physiology and pathology and dental surgery and prosthetic dentistry, both from a theoretic and clinical standpoint. Promotion to the grade of Master is accorded on the production of an approved thesis.

The regulations concerning candidates for the diploma are comparable to those of other licence-granting bodies, such as the Royal College of Surgeons of England, but

examination in the subjects of the curriculum is divided into four sections.

University of Leeds.

The degrees of Bachelor of Dental Surgery (B.Ch.D. and Master of Dental Surgery (M.Ch.D.) are granted by this university, and also a diploma. Candidates for the degree of Bachelor of Dental Surgery must have passed the Matriculation Examination or its equivalent, and have pursued thereafter approved courses of study for not less than five academic years, two of such years at least having been passed in the university subsequently to the date of passing Parts I and II of the First Examination, and such period of pupilage or hospital attendance, or both, as may be prescribed by the regulations of the university. Three examinations—First, Second, and Final—must be passed. The First Examination, which is held twice a year, covers (1) physics, chemistry; (2) biology; (3) dental mechanics and dental metallurgy. Candidates are allowed to take each part separately.

The subjects of the Second Examination are: Anatomy, physiology, dental anatomy and physiology, dental materia medica. The subjects of the Final Examination are: Dental surgery, dental pathology and bacteriology, operative dental surgery, medicine and surgery. Candidates are required, before presenting themselves for the Final Examination, to have passed the First Examination not less than two years previously, to have passed the Second Examination not less than six months previously, and to have attended courses of instruction in accordance with the regulations of the university.

Candidates for the diploma must have attended courses of instruction approved by the university extending over not less than four years, and have completed a pupilage of three years. They have to pass three examinations, besides one in general education. The first deals with chemistry and physics. For the next they cannot present themselves until the third year of their pupilage; it deals with dental metallurgy and dental mechanics. The Final Examination consists of two parts—Part I: Anatomy, physiology, dental anatomy and physiology. Part II: Surgery, dental surgery, pathology and bacteriology, operative dental surgery (practical), dental materia medica, and therapeutics.

Fees.—The composition fee for the requisite courses for the B.Ch.D. is £65; and for the D.D.S., £60. A prospectus containing full information may be obtained on application to the Academic Sub-Dean of the Faculty of Medicine.

Victoria University of Manchester.

The degrees of Bachelor of Dental Surgery (B.D.S.) and Master of Dental Surgery (M.D.S.) are granted by this university, and also a diploma. Candidates for the degree are required to pass the Matriculation Examition as for the Faculty of Medicine, and pass four examinations.

First Examination.—Before admission candidates must produce evidence that they have attended at least one year's course in each of the subjects of the examinations: (*a*) Chemistry, Inorganic; (*b*) Physics; (*c*) Zoology; (*d*) Elementary Organic Chemistry and Bio-Chemistry. They may be passed separately.

Second Examination.—Candidates for this must show that they have attended the Prosthetic Laboratory Work of an approved dental hospital for at least two years and attended courses in each of the subjects of the examinations, which are: (*a*) Dental Mechanics; (*b*) Dental Metallurgy.

Third Examination.—Candidates before admission must have duly attended in each of its subjects: (*a*) Anatomy; (*b*) Physiology and Histology; (*c*) Dental Anatomy (Human and Comparative), and Dental Histology.

Final Examination.—This comprises: (*a*) Surgery; (*b*) Pathology; (*c*) Dental Surgery and Pathology, and Dental Materia Medica; (*d*) Dental Prosthetics; (*e*) Orthodontia; (*f*) Operative Dentistry; and admission to it depends on the candidate having made the required number of attendances at the classes and practical work.

To proceed to the higher degree of Master of Dental Surgery the candidate must be of not less than one year's standing as a Bachelor, and either present an approved thesis or pass an examination in some group of dental subjects.

The courses and examinations for the diploma are of the same general nature and arranged in much the same fashion, but for the two years' prosthetic laboratory work apprenticeship to a regular dentist may be substituted; while for the final examination orthodontia and dental pathology and materia medica are omitted.

University of Liverpool.

This university grants a Licence in Dental Surgery (L.D.S.) and two degrees in the same subject (B.D.S. and M.D.S.), the management of the curriculum being in the hands of the Board of Dental Studies. The new Dental Hospital (opened in March, 1910) is in close proximity to the university, and is completely equipped for clinical instruction. Application for further information should be made to the Secretary of the Board at the University.

University of Durham.

This university grants a Licence in Dental Surgery. The regulations as to the curriculum to be followed by candidates are in keeping with those of other dental licensing bodies, but examinations in the subjects of study, which include dental bacteriology and anaesthetics, are broken up into four. Before the date of the final examination the candidate must have undergone three years' pupilage in mechanical dentistry with a registered dentist.

University of Bristol.

This university grants two degrees (B.D.S. and M.D.S.), and a Licence (L.D.S.) in Dental Surgery, and has also made comprehensive arrangements for the dental education of candidates. The course for the degree lasts five years; that for the diploma one year less. In either case the candidates must be registered dental students, but those for the diploma need not matriculate. The fees for the B.D.S. curriculum amount to 190 guineas, and to 163 guineas for the diploma curriculum.

Royal College of Surgeons in Edinburgh.

This body grants a diploma in Dental Surgery, and imposes on candidates two examinations. The only special point about the regulations is that before admission to the second examination a candidate must afford proof that he has undergone instruction in mechanical dentistry, either as a registered dental student or otherwise, for not less than three years. The fees for examination and diploma amount altogether to 15 guineas.

Royal College of Surgeons in Ireland.

This body grants a diploma in Dental Surgery, for which candidates have to pass two examinations. At the first examination the subjects are: (A) Physics and chemistry, including practical chemistry and metallurgy; (B) General anatomy, physiology and histology; and dental anatomy, physiology, and histology. The two groups may be taken together or separately. At the second, or final examination, the subjects are general pathology, medicine, and surgery, dental surgery and dental pathology, with the materia medica and therapeutics applicable to dental surgery, dental mechanics and metallurgy, and orthodontia. The candidate must pass in all subjects on one occasion. Candidates who have within the previous three months been rejected by any licensing body in the subjects of the examination for which they are presenting themselves are not admitted thereto.

From certain subjects of each of the examinations candidates are exempted who have previously passed in those subjects examinations held by various bodies recognized for this purpose. Those fully qualified in general surgery may also have remission made in the time for which they must devote themselves to technical studies.

The total sum payable for examinations and diplomas is £21.

National University of Ireland.

The scheme of work of this university includes the granting of two degrees in Dental Surgery. For the lower degree—the Bachelorship—four examinations will have to be passed, and, in addition to other requirements, the candidate must have been apprenticed to a registered dentist for a period of not less than two years. Candidates for the Mastership must have held the lower degree for at least three years.

OPENING OF THE WINTER SESSION IN THE MEDICAL SCHOOLS.

At most of the medical schools in London, the provinces, and Ireland, work for the winter session will commence on Tuesday, October 1st. At Edinburgh, October 8th is the date chosen; at Aberdeen, October 10th; and at Glasgow and Dundee, October 14th. Comparatively few schools will mark the opening of the new medical year by any special ceremony or dinner. The exceptions, so far as information concerning them has reached us, will be found noted below:

ST. BARTHOLOMEW'S HOSPITAL.—An old students' dinner in the Great Hall on October 1st. Chairman, Dr. Lewis Jones; Honorary Secretary, Mr. Waring.

CHARING CROSS.—A distribution of prizes by the Right Rev. the Lord Bishop of Peterborough and the Lady Mary Glyn on Wednesday, October 2nd, at 3.30 p.m.

ST. GEORGE'S HOSPITAL.—On October 1st, distribution of prizes and an inaugural address on "The Present Duty of the Medical Citizen," by Mr. H. B. Grimsdale. In the evening a dinner at the Prince's Restaurant, Piccadilly. Chairman, Dr. F. C. Penrose; Honorary Secretaries, Mr. Norman Bennett and Dr. A. J. Jex-Blake.

GUY'S HOSPITAL.—A conversazione will be given by the Pupils' Physical Society on October 4th, the work of the school commencing on October 1st.

THE LONDON HOSPITAL.—On October 1st a reception by the Dean and Staff in the College Library from 3 p.m. to 4 p.m.; at 4 p.m., delivery of the Schorstein Memorial Lecture by Professor T. Wardrop Griffith in the Anatomical Theatre. In the evening a dinner at the Savoy Hotel, Strand. Chairman, Mr. Jonathan Hutchinson; Honorary Secretaries, Dr. Lewis Smith and Mr. Frank Kidd.

LONDON SCHOOL OF MEDICINE FOR WOMEN.—On October 1st an introductory address on "Common Sense," by Miss Jane Walker, M.D.

KING'S COLLEGE HOSPITAL.—On October 1st a dinner at the Waldorf Hotel. Chairman, Professor Norman Dalton; Honorary Secretary, Mr. F. F. Burghard.

THE MIDDLESEX HOSPITAL.—On October 1st a prize distribution by Sir Charles Wyndham, at 3 p.m., and a short address on "The Genius of the Infinitely Little," by Dr. W. S. Lazarus-Barlow. In the evening a dinner at the Trocadero. Chairman, Dr. H. Campbell-Thomson.

ST. MARY'S HOSPITAL.—On October 1st a distribution of prizes and a short address by the Lord Mayor. The same evening a dinner at the Prince's Restaurant. Chairman, Dr. W. J. Gow; Honorary Secretary, Mr. Warren Low.

ST. THOMAS'S HOSPITAL. An old students' dinner on October 1st at the Hotel Cecil. Chairman, the Right Hon. the Lord Mayor, Sir Thomas Boor Crosby; Honorary Secretaries, Dr. L. S. T. Burrell and Mr. C. M. Poll.

WESTMINSTER.—A dinner on Thursday, October 3rd, at the Waldorf Hotel. Mr. W. G. Spencer in the chair; Honorary Secretary, Dr. Carmalt Jones.

UNIVERSITY COLLEGE HOSPITAL.—On Wednesday, October 2nd, a dinner at the Café Royal, Regent Street. Chairman, Sir Rickman Godlee, Bart.; Honorary Secretaries, Dr. A. W. H. Gray and Mr. J. Herbert Parsons.

UNIVERSITY OF BIRMINGHAM.—On October 1st a conversazione will be given by the Dean and Faculty of Medicine.

UNIVERSITY OF MANCHESTER.—On October 1st an introductory address on "Universities and Medical Education," by Dr. H. D. Rolleston.

UNIVERSITY OF LEEDS. On October 1st an inaugural address by Sir Alfred Keogh, K.C.B. In the evening a dinner at Queen's Hotel. Honorary Secretaries, Dr. Frobisher and Mr. Collinson.

POST-GRADUATE WORK.

Current Courses.

A GENERAL account of the opportunities afforded to post-graduate students in London, the provinces, and elsewhere, has already been given in the sections headed Post-graduation Study and Clinical Hospitals, but it may be well to add that at a considerable number of medical schools special courses intended for men who are not only already qualified but already in practice are either now in progress or will commence very shortly. We give below information respecting those to which our attention has been drawn.

St. Bartholomew's Hospital.—At St. Bartholomew's Hospital, where a post-graduate class recently concluded, another one began this week, and will last until September 17th. The arrangements include hospital practice and tuition in the various special departments, as also practical demonstration regarding diseases of the blood, electrical and *x*-ray work, methods of examining the contents of the stomach, vaccine and serum treatment, the exercises used in orthopaedic work; also classes in diseases of the eye, ear, throat, and gynaecological and electro-therapeutic departments. Further information can be obtained from the Dean at the hospital.

Royal Hospital for Diseases of the Chest, City Road.—The introductory lecture of a course of instruction in diseases of the chest and modern methods of dealing with them, including the administration of tuberculin, is to be given about the middle of October. Further information will be found at page 568.

North-East London Post-Graduate College.—A vacation course is to be held at this college, lasting a fortnight (September 16th to September 27th), the work being mainly devoted to practical instruction in the diagnosis and treatment of tuberculosis by modern methods. The fee is £2 2s. The address of the Dean is 142, Harley Street.

Edinburgh.—Post-graduate courses held in connexion with the University and the Royal Colleges have been in progress since early in July, and will not be at an end until the last few days of the current month. The work in July was mainly devoted to subjects of special interest to school medical officers; that in August dealt largely with the diagnosis and treatment of tuberculosis by modern methods, while the classes now going on cover three distinct fields. One is intended for those whose special subject is surgery, and includes both operative surgery and clinical surgery and pathology and applied anatomy; the second is for those specializing in diseases of the ear, nose, and throat: while the third is a general course, divisible, if desired, into two independent fortnights. It is intended more especially for private practitioners who desire to acquaint themselves with modern methods of dealing with diseases of various kinds. Practical courses in haematology, ophthalmoscopy, *x*-ray work, and diagnosis by means of the microscope are included, and clinical work in neurology, diseases of the skin, eye, ear, nose, throat, and zymotic disorders is also being done. Arrangements have been made whereby those attending this September course can obtain board and lodging in one of the residences of the University Hall. They are also eligible for temporary membership of the University Union. The address of the Secretary is The University New Buildings, Edinburgh.

Glasgow Royal Infirmary.—Post-graduate classes have already commenced, and will be in progress up to the end of the month. The subjects dealt with are clinical medicine, surgery, and gynaecology, diseases of the nose, throat, and oesophagus, of the ear, eye, and skin; of the bladder and urethra, the administration of anaesthetics, and electro-therapeutics. Surgical and gynaecological diagnosis, as also operative surgery, will all be treated separately. Further information can be obtained from the Medical Superintendent of the Infirmary, Dr. Thom.

Glasgow Western Infirmary.—A clinical course in general medicine, neurology, and dermatology will be in progress throughout the present month. The arrangements provide against lectures clashing in regard to the hour of their delivery. The post-graduate course in practical bacteriology and pathology will not commence until about the middle of October.

Dublin.—A three weeks' post-graduate course held under the authority of the President and Council of the Royal College of Surgeons in Ireland will commence on September 23rd. With the object of enabling those who attend it to see as much as possible of the work of the Dublin school during the time at their disposal, all the general hospitals of the city and a variety of special hospitals have been included in the arrangements. The whole of the course can be taken together or all the time devoted to one or more special subjects. The fee for the surgical part is 3 guineas, for the medical part 2 guineas, and for a single special part 1 guinea. The address of the secretary is the Royal College of Surgeons, St. Stephen's Green, Dublin.

Medical News.

PROFESSOR WILHELM WUNDT, the distinguished physiologist of Leipzig, celebrated his 80th birthday on August 16th.

THE All-India Sanitary Conference, which Sir Harcourt Butler initiated at Bombay last November, will meet in Madras this year early in the winter. The draft agenda has been circulated.

FRANKFURT is to have a university of its own. The sum of £355,600 having been subscribed, it follows that the King of Prussia will give a formal consent and the university will be built. A Governmental grant will place the new university on a sound financial basis.

THE French Urological Association will hold its sixteenth congress in Paris on October 10th and two following days under the presidency of Professor Guyon. The principal question proposed for discussion is a comparison of the results of the various treatments of tuberculosis of the kidney.

THE course of practical training for meat inspectors at the Royal Sanitary Institute will begin on Friday, October 4th, and that for school teachers, health visitors, and school nurses on Monday, September 30th. Further particulars can be obtained on application to the Secretary, 90, Buckingham Palace Road, London, S.W.

IN a dispatch addressed to the Secretary of State for Foreign Affairs by the Sirdar of the Egyptian Army in regard to the military operations in the South-Eastern Sudan from January to March, 1912, the name of Captain W. Byam, Royal Army Medical Corps, is mentioned "for his gallantry in attending to the wounded under fire."

THE Saxon Medical Disciplinary Court (Aerztlicher Gerichtshof) has determed that the use of the description, "Specialist in tuberculous diseases," is not permissible. This decision is based on the consideration that the public would have to make its own diagnosis of a tuberculous affection in selecting the practitioner for this purpose, and it is incapable of doing this. The court has no objection to a medical practitioner describing himself as specialist in diseases of particular organs, but it regards it contrary to the interest of the medical profession for the description of specialist applying to any pathological condition.

THE fourth International Congress of Physical Education will be held at Rome in October (24th to 27th). The programme of discussions is as follows: The organization of physical education as a preparation for military service: a rational method of physical training in primary, middle, and secondary schools: the value of sports in physical education, and their physiological limitations: the physical education of woman in relation with her function in the family and in society: respiratory gymnastics and choral singing in schools: open-air schools: the physical exercises suitable for the prophylaxis of tuberculosis.

SERIOUS objection has been taken by some medical men to the action of the income-tax authorities of Munich in raising the assessment of the individual incomes of the practitioners after they have made their full returns. In one case the increase is reported to have been as much as £750. Apart from the fact that the individuals concerned are unwilling to pay the taxes on an income which is larger than their real one, this protest is based on what, it is contended, is the unfounded assumption that the return has been made with the intention of defrauding the revenue. It has been suggested that all medical men whose assessments have been altered will combine together and refuse to pay the increased taxes.

AT Gillingham, in Dorsetshire, on Thursday, August 29th, a meeting was held for the purpose of hearing an exposition by Drs. Morgan, Hanly, and Rutter, the three medical men practising in this small town of 3,000 inhabitants, of the grounds for the present attitude taken up by the medical profession towards the National Insurance Act. The proceedings corresponded closely with those at Bromsgrove, which were recorded in our issue for July 13th. As there is undoubtedly still much misconception on the part of the public as to the relations of the Act to the medical profession these meetings are certainly of utility, especially if steps are taken to emphasize the non-political character of the medical objections to the Act by selecting as chairman some well-known adherent of the Government.

IN his report for the year 1910, Dr. Philip, the Medical Officer of Health for Colombo, states that the year was unusually cool and dry. The health of the population, as indicated by the mortality statistics, was remarkably good; the crude death-rate, 28.8, reckoned on the corrected population, was the lowest recorded since the registration of deaths was placed on a satisfactory footing. The number of deaths from each of the principal causes was below the average. The number of births registered in Colombo was 4,819, giving a rate of 24.9 per 1,000 living. The infant mortality-rate was 295 per 1,000 births, the rate for 1910 being the lowest on record. The principal causes of infant deaths were convulsions, debility, diarrhoea and tetanus—all pointing to ignorance or lack of care on the part of the mothers, and indicating the necessity for extending the system of domiciliary visitation by health visitors instituted a year or two ago. From a table of the principal causes of death in each race in 1910, it appears that enteric fever heads the list for Europeans; pneumonia and phthisis for Burghers; pneumonia and phthisis for Cingalese; pneumonia for Tamils and Malays, and phthisis for Moors. Reference is made in the report to the occurrence of a type of fever which is locally known as "drainage fever," owing to a suspected relation to the drainage operations at Colombo. A circular letter was sent to all those practising in the neighbourhood, and the opinion of the majority was that there was no distinct type of fever in Colombo associated with the drainage operations. Most of them appeared to think that the cases of so-called "drainage fever" were in reality cases of abortive or modified enteric fever or paratyphoid, or Rogers's seven day fever, or septic sore throat, and that they were in no way associated with the drainage operations. There were 654 deaths from phthisis during the year, giving a death-rate of 3.57 per 1,000, the lowest rate since 1905.

Medico-Legal.

WORKMEN'S COMPENSATION CASES.

A CASE at Newcastle (April 12th) illustrates the hardship which the Workmen's Compensation Act sometimes imposes upon medical practitioners who are summoned as witnesses. Dr. Shepherd (South Shields), who was called to give evidence for the applicant, said: "I was brought here on a subpœna by the solicitor for the applicant, and I have foregone several important engagements. I have been here nearly all day, and yet I understand I can be given no guarantee that I will be paid."

Judge Greenwell: If that is so I shall certainly not ask Dr. Shepherd to give evidence. It is very unfair for professional men to be brought here on a subpœna and be expected to give evidence without some reasonable guarantee that they will be paid for what they do.

Dr. Shepherd: I am very sorry to have had to mention it to your Honour, but it is not as if I had been required for a few minutes only.

His Honour: It is a most improper thing to happen, and you have done quite right to mention it.

Counsel for applicant assured His Honour that that was the first he heard of this, and since he could not have Dr. Shepherd's evidence he must close his case there.

His Honour accepted Mr. Edgar's assurance, and added that Dr. Shepherd, having been brought from South Shields to Newcastle on a subpœna, certainly had a cause of action if he did not get his expenses. Whether that action lay against the solicitor it was not for him to say.

Alleged Worry from Medical Examinations.

In a compensation case at Nottingham (April 19th) it appeared that a stable boy named Harwood was employed by Mr. Hickling in June, 1909, at a wage of 6s. a week, which by March, 1910, had increased to 10s. a week. On March 29th he met with an accident through the bolting of a horse, which resulted in a fall and his being admitted to the Nottingham General Hospital. The result was that he was unable to do more than very light work. Up to November he was paid 10s. a week compensation, and from November to March 30th 5s. a week. On April 4th his father, who was in the same employment, was given notice, and the applicant left with him.

Dr. Hogarth said that the boy was in a critical condition when in the hospital, and the spleen had to be removed. In his opinion he would be unable to do any other than light work. The insurance company had considerably worried the boy, and his nervous condition had been made worse by being continually examined by the doctor for the insurance company. Dr. Neil spoke to examining the boy with Dr. Hogarth, and to arriving at the same conclusion. Dr. Snell was then called by Mr. Campion, and said that in his opinion Harwood was quite able to do full work. Both parties subsequently agreed to an award of £100 and costs.

Public Health AND POOR LAW MEDICAL SERVICES.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Ilkeston Borough.—The population of Ilkeston at the last census was 31,673. This is the number, and not the estimated population at the middle of the year, on which the Medical Officer of Health, Dr. J. J. Tobin, bases his statistics for 1911. The crude birth-rate was 32.6 per 1,000, and the net death-rate 15.4 per 1,000. The infant mortality-rate was 152 per 1,000 births—higher than in 1910, but considerably lower than that which has prevailed in some previous years, a circumstance which may in part be attributed to the labours of Dr. Marion Archibald, the assistant medical officer of health, and of the lady health visitor who is employed by the corporation. For some time past cases of consumption have been treated, in the absence of cases of other diseases, at the corporation fever hospital and in shelters. Very good results have been obtained, more especially with school children, who began to thrive at once, and to gain in weight week by week. So promising were the results, that a field adjoining the hospital was purchased in order to develop the scheme, which, however, is now in abeyance in view of the provision which is to be made for tuberculous patients through the Insurance Act. There are still a large number of privy and pail closets in the town, though the general policy of the corporation is to extend the system of water carriage throughout the borough. The scavenging of house refuse is carried out by contract at the rate of 4s. 9d. a house per annum. No mention is made in the report of the destruction of the contents of the ashpits or of the privies. In a town of the size of Ilkeston the former should be got rid of by means of a destructor.

RESIGNATION OF APPOINTMENTS.

R. M. asks: What is the custom with respect to notice of resignation—the time a medical officer of health must give the local authority when he wishes to resign if no time is stated in original agreement when appointment was made? Is it one or three months? Do the same conditions apply to Poor Law appointments—for example, the medical officer of a workhouse, or do the Poor Law Orders state a period of time?

* * Article XIV of the General Order of the Local Government Board, dated December 13th, 1910, with respect to the appointment of medical officers of health is as follows: "A person shall not be appointed who does not agree to give at least one month's notice previous to resigning the office, or to forfeit such sum as may be agreed upon as liquidated damages." A Poor Law medical officer is also required to give one month's notice of his intention to resign his office.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

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2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

G. P. asks whether there would be any risk in giving thyroid gland extract to a girl of 18 who is of short stature and wishes to increase her growth. He asks what dose should be given.

DR. WILKINS (Glenridding) writes: I have a patient, aged 16, who has developed striæ albicantes, on both knees, during the wasting which followed a long series of abscesses. I should be glad to know if this is very unusual, as I have never seen such a case.

TEETH GRINDING.

PERPLEXED asks for advice in the treatment of a man, apparently in robust health, aged 35, who grinds his teeth during sleep; he is unaware that he does this. The bowels are regular and motions natural to all appearance. Last illnesses, dysentery twelve years, and fistula eight years, ago; both thoroughly cured.

ANSWERS.

STICKY FLY PAPERS.

MAJOR F. J. W. PORTER, R.A.M.C.—Martindale and Westcott's *Extra Pharmacopœia* (fifteenth edition, 1912) contains the following: *Viscum album*—Mistletoe (Loranthacae). The berries are said to be emetic and purgative. The plant contains visein, a kind of bird lime—Japanese birdlime—which has been used as a plaster and has been largely employed for making sticky fly-papers.

TUBERCULIN.

OLD FOGEY.—The following works might meet our correspondent's requirements: *Tuberculin Treatment.* By C. Riviere, M.D.Lond., F.R.C.P., and E. Morland, M.B., B.Sc.Lond., M.D.Berne. Oxford Medical Publications. London: Henry Frowde and Hodder and Stoughton. 1912. 5s. net. (Review published May 11th, 1912, p. 1077.) *Tuberculin in the Diagnosis and Treatment of Tuberculosis.* By W. Camac Wilkinson, B.A.Syd., M.D.Lond., F.R.C.P. (Weber-Parkes Prize Essay, 1909). Second edition. London: James Nisbet and Co. 1912. 21s. net. (Review published May 11th, 1912, p. 1077.) *Sahli's Tuberculin Treatment, including a Discussion of the Nature and Action of Tuberculin and of Immunity to Tuberculosis.* By Dr. H. Sahli. Translated from the third German edition by W. B. Christopherson. With an introductory note by E. Morland. London: John Bale, Sons, and Danielsson, Limited. 1912. 7s. 6d. net. (Review published May 11th, 1912, p. 1078.)

LETTERS, NOTES, ETC.

MARCHING.

J. R. F. writes: It has always been a puzzle to me to explain why it has never been recognized that the motion of the feet in walking is not directly in the line of progression, but the whole leg is circumducted with the hip-joint as the centre. This fact can readily be noted if the observer is stationed at a considerable height (100 ft. or more) vertically over the walker. Of course, also, there is flexion at the same time of the hip, knee, and ankle. To say that a much more stable equilibrium is gained by everting the foot is the purest nonsense, as is evident to any one who has done épée or foil practice. Moreover, it is surely obvious to the meanest capacity that the threefold arch of the foot is placed at a mechanical disadvantage if the foot is everted.

PUTTIES.

LIEUTENANT-COLONEL G. H. YOUNGE, F.R.C.S.I., R.A.M.C. (R.P.), writes: In the extremely interesting paper by Captain N. Dunbar Walker, R.A.M.C., and the discussion which followed, on Factors Affecting the Marching Powers of Troops, the service puttie was objected to "owing to the injurious effects of unevenly distributed pressure." This objection applied strongly to the old straight service puttie, which had to be applied with three or four reverses. During long marches the uneven pressure from the reverses became so irksome, if not actually painful, as to be a distinct handicap to some at least of the men. May I point out that this can be easily obviated by using Fox's spiral putties? They fit evenly and firmly without any reverse, maintain a moderate, uniform and pleasant elastic pressure, and are distinctly more comfortable than any other form of leg-wear I have ever tried.

A RUN OF TWINS.

DR. W. B. DOVE (Leatherhead) writes: Perhaps the following series of cases is sufficiently interesting to record: Between May 22nd and July 3rd of this year I attended three consecutive cases of twin births. In the first both children were healthy males, in the second both were healthy females, in the third only one was alive—a girl—the other had died apparently about the fifth month, and was almost completely macerated except for the legs. A week after this last case I was called in by a colleague to examine a patient with him, and we agreed that the case was one of ectopic gestation. This patient was operated on, and a "twin ectopic gestation" was found.

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An Address

ON

THE NATURE, ORIGIN, AND MAINTENANCE OF LIFE.

DELIVERED AT THE MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, HELD AT DUNDEE, SEPTEMBER 4TH TO 9TH, 1912.

BY

E. A. SCHÄFER, LL.D., D.Sc., M.D., F.R.S.,

PROFESSOR OF PHYSIOLOGY IN THE UNIVERSITY OF EDINBURGH; PRESIDENT OF THE ASSOCIATION.

[AFTER some introductory remarks Professor Schäfer proceeded:]

Everybody knows, or thinks he knows, what life is; at least, we are all acquainted with its ordinary, obvious manifestations. It would therefore seem that it should not be difficult to find an exact definition.

Definition.

The quest has nevertheless baffled the most acute thinkers. Herbert Spencer devoted two chapters of his *Principles of Biology* to the discussion of the attempts at definition which had up to that date been proposed, and himself suggested another. But at the end of it all he is constrained to admit that no expression had been found which would embrace all the known manifestations of animate, and at the same time exclude those of admittedly inanimate, objects.

The ordinary dictionary definition of life is "the state of living." Dastre, following Claude Bernard, defines it as "the sum total of the phenomena common to all living beings."[1] Both of these definitions are, however, of the same character as Sydney Smith's definition of an archdeacon as "a person who performs archidiaconal functions." I am not myself proposing to take up your time by attempting to grapple with a task which has proved too great for the intellectual giants of philosophy, and I have the less disposition to do so because recent advances in knowledge have suggested the probability that the dividing line between animate and inanimate matter is less sharp than it has hitherto been regarded, so that the difficulty of finding an inclusive definition is correspondingly increased.

As a mere word, "life" is interesting in the fact that it is one of those abstract terms which has no direct antithesis; although probably most persons would regard "death" in that light. A little consideration will show that this is not the case. "Death" implies the pre-existence of "life"; there are physiological grounds for regarding death as a phenomenon of life—it is the completion, the last act of life. We cannot speak of a non-living object as *possessing* death in the sense that we speak of a living object as *possessing* life. The adjective "dead" is, it is true, applied in a popular sense antithetically to objects which have never possessed life; as in the proverbial expression "as dead as a door-nail." But in the strict sense such application is not justifiable, since the use of the terms "dead" and "living" implies either in the past or in the present the possession of the recognized properties of living matter. On the other hand, the expressions *living* and *lifeless*, *animate* and *inanimate*, furnish terms which are undoubtedly antithetical. Strictly and literally, the words *animate* and *inanimate* express the presence or absence of "soul" and not infrequently we find the terms "life" and "soul" erroneously employed as if identical.

Life not Identical with Soul.

But it is hardly necessary for me to state that the remarks I have to make regarding "life" must not be taken to apply to the conception to which the word "soul" is attached. The fact that the formation of such a conception is only possible in connexion with life, and that the growth and elaboration of the conception has only been possible as the result of the most complex processes of life in the most complex of living organisms, has doubtless led to a belief in the identity of life with soul. But unless the use of the expression "soul" is extended to a degree which would deprive it of all special significance, the distinction between these terms must be strictly maintained.

Problems of Life are Problems of Matter.

For the problems of life are essentially problems of matter; we cannot conceive of life in the scientific sense as existing apart from matter. The phenomena of life are investigated, and can only be investigated, by the same methods as all other phenomena of matter, and the general results of such investigations tend to show that living beings are governed by laws identical with those which govern inanimate matter. The more we study the manifestations of life, the more we become convinced of the truth of this statement, and the less we are disposed to call in the aid of a special and unknown form of energy to explain those manifestations.

Phenomena Indicative of Life: Movement.

The most obvious manifestation of life is "spontaneous" movement. We see a man, a dog, a bird move, and we know that they are alive. We place a drop of pond water under the microscope, and see numberless particles rapidly moving within it; we affirm that it swarms with "life." We notice a small mass of clear slime changing its shape, throwing out projections of its structureless substance, creeping from one part of the field of the microscope to another. We recognize that the slime is living; we give it a name—*Amoeba limax*—the slug amoeba. We observe similar movements in individual cells of our own body; in the white corpuscles of our blood, in connective tissue cells, in growing nerve cells, in young cells everywhere. We denote the similarity between these movements and those of the amoeba by employing the descriptive term "amoeboid" for both. We regard such movements as indicative of the possession of "life"; nothing seems more justifiable than such an inference.

Similarity of Movements in Living and Non-Living Matter.

But physicists[2] show us movements of a precisely similar character in substances which no one by any stretch of imagination can regard as living; movements of oil-drops, of organic and inorganic mixtures, even of mercury globules, which are indistinguishable in their character from those of the living organisms we have been studying—movements which can only be described by the same term "amoeboid," yet obviously produced as the result of purely physical and chemical reactions causing changes in surface tension of the fluids under examination.[3] It is therefore certain that such movements are not specifically "vital," that their presence does not necessarily denote "life." And when we investigate closely even such active movements as those of a vibratile cilium or a phenomenon so closely identified with life as the contraction of a muscle, we find that these present so many analogies with amoeboid movements as to render it certain that they are fundamentally of the same character and produced in much the same manner.[4] Nor can we for a moment doubt that the complex actions which are characteristic of the more highly differentiated organisms have been developed in the course of evolution from the simple movements characterizing the activity of undifferentiated protoplasm—movements which can themselves, as we have seen, be perfectly imitated by non-living material. The chain of evidence regarding this particular manifestation of life—movement—is complete. Whether exhibited as the amoeboid movement of the proteus animalcule or of the white corpuscle of our blood, as the ciliary motion of the infusorian or of the ciliated cell, as the contraction of a muscle under the governance of the will, or as the throbbing of the human heart responsive to every emotion of the mind, we cannot but conclude that it is alike subject

[1] *La vie et la mort*, English translation by W. J. Greenstreet, 1911, p. 54.

[2] G. Quincke, *Annal. d. Physik u. Chem.*, 1870 and 1888.

[3] The causation not only of movements but of various other manifestations of life by alterations in surface tension of living substance is ably dealt with by A. B. Macallum in a recent article in Asher and Spiro's *Ergebnisse der Physiologie*, 1911. Macallum has described an accumulation of potassium salts at the more active surfaces of the protoplasm of many cells, and correlates this with the production of cell activity by the effect of such accumulation upon the surface tension. The literature of the subject will be found in this article.

[4] G. F. Fitzgerald (*Brit. Assoc. Reports*, 1898, and *Scient. Trans. Roy. Dublin Society*, 1898) arrived at this conclusion with regard to muscle from purely physical considerations.

to and produced in conformity with the general laws of matter, by agencies resembling those which cause movements in lifeless material.[5]

It will perhaps be contended that the resemblances between the movements of living and non-living matter may be only superficial, and that the conclusion regarding their identity to which we are led will be dissipated when we endeavour to penetrate more deeply into the working of living substance. For can we not recognize along with the possession of movement the presence of other phenomena which are equally characteristic of life and with which non-living material is not endowed?

Assimilation and Disassimilation.

Prominent among the characteristic phenomena of life are the processes of assimilation and disassimilation, the taking in of food and its elaboration.[6] These surely, it may be thought, are not shared by matter which is not endowed with life. Unfortunately for this argument, similar processes occur characteristically in situations which no one would think of associating with the presence of life. A striking example of this is afforded by the osmotic phenomena presented by solutions separated from one another by semipermeable membranes or films, a condition which is precisely that which is constantly found in living matter.[7]

Chemical Phenomena Accompanying Life.

It is not so long ago that the chemistry of organic matter was thought to be entirely different from that of inorganic substances. But the line between inorganic and organic chemistry, which up to the middle of the last century appeared sharp, subsequently became misty and has now disappeared. Similarly the chemistry of living organisms, which is now a recognized branch of organic chemistry, but used to be considered as so much outside the domain of the chemist that it could only be dealt with by those whose special business it was to study "vital" processes, is passing every day more out of the hands of the biologist and into those of the pure chemist.

Identity of Physical and Chemical Processes in Living and Non-Living Matter.

Somewhat more than half a century ago Thomas Graham published his epoch-making observations relating to the properties of matter in the colloidal state: observations which are proving all-important in assisting our comprehension of the properties of living substance. For it is becoming every day more apparent that the chemistry and physics of the living organism are essentially the chemistry and physics of nitrogenous colloids. Living substance or protoplasm always, in fact, takes the form of a colloidal solution. In this solution the colloids are associated with crystalloids (electrolytes), which are either free in the solution or attached to the molecules of the colloids. Surrounding and enclosing the living substance thus constituted of both colloid and crystalloid material is a film, probably also formed of colloid, but which may have a lipoid substratum associated with it (Overton). This film serves the purpose of an osmotic membrane, permitting of exchanges by diffusion between the colloidal solution constituting the protoplasm and the circumambient medium in which it lives. Other similar films or membranes occur in the interior of protoplasm. These films have in many cases specific characters, both physical and chemical, thus favouring the diffusion of special kinds of material into and out of the protoplasm, and from one part of the protoplasm to another. It is the changes produced under these physical conditions, associated with those caused by active chemical agents formed within protoplasm and known as *enzymes*, that effect assimilation and disassimilation. Quite similar changes can be produced outside the body (*in vitro*) by the employment of methods of a purely physical and chemical nature. It is true that we are not yet familiar with all the intermediate stages of transformation of the materials which are taken in by a living body into the materials which are given out from it. But since the initial processes and the final results are the same as they would be on the assumption that the changes are brought about in conformity with the known laws of chemistry and physics, we may fairly conclude that all changes in living substance are brought about by ordinary chemical and physical forces.

Similarity of Processes of Growth and Reproduction in Living and Non-Living Matter.

Should it be contended that growth and reproduction are properties possessed only by living bodies, and constitute a test by which we may differentiate between life and non-life, between the animate and inanimate creation, it must be replied that no contention can be more fallacious. Inorganic crystals grow and multiply, and reproduce their like, given a supply of the requisite pabulum. In most cases for each kind of crystal there is, as with living organisms, a limit of growth which is not exceeded, and further increase of the crystalline matter results, not in further increase in size, but in multiplication of similar crystals. Leduc has shown that the growth and division of artificial colloids of an inorganic nature, when placed in an appropriate medium, present singular resemblances to the phenomena of the growth and division of living organisms. Even so complex a process as the division of a cell-nucleus by karyokinesis as a preliminary to the multiplication of the cell by division—a phenomenon which would prima facie have seemed, and has been commonly regarded as, a distinctive manifestation of the life of the cell—can be imitated with solutions of a simple inorganic salt, such as sodium chloride, containing a suspension of carbon particles: which arrange and rearrange themselves under the influence of the movements of the electrolytes in a manner indistinguishable from that adopted by the particles of chromatin in a dividing nucleus. And in the process of sexual reproduction, the researches of J. Loeb and others upon the ova of the sea-urchin have proved that we can no longer consider such an apparently vital phenomenon as the fertilization of the egg as being the result of living material brought to it by the spermatozoon, since it is possible to start the process of division of the ovum and the resulting formation of cells, and ultimately of all the tissues and organs—in short, to bring about the development of the whole body—if a simple chemical reagent is substituted for the male element in the process of fertilization. Indeed, even a mechanical or electrical stimulus may suffice to start development.

The Question of Vitalism and Vital Force.

Kurz und gut, as the Germans say, vitalism as a working hypothesis has not only had its foundations undermined, but most of the superstructure has toppled over, and if any difficulties of explanation still persist, we are justified in assuming that the cause is to be found in our imperfect knowledge of the constitution and working of living material. At the best, vitalism explains nothing, and the term "vital force" is an expression of ignorance which can bring us no further along the path of knowledge. Nor is the problem in any way advanced by substituting for the term "vitalism" "neo-vitalism," and for "vital force" "biotic energy."[8] "New presbyter is but old priest writ large."

Possibility of the Synthesis of Living Matter.

Further, in its chemical composition we are no longer compelled to consider living substance as possessing infinite complexity, as was thought to be the case when chemists first began to break up the proteins of the body into their simpler constituents. The researches of Miescher, which have been continued and elaborated by Kossel and his pupils, have acquainted us with the fact

[5] "Vital spontaneity, so readily accepted by persons ignorant of biology, is disproved by the whole history of science. Every vital manifestation is a response to a stimulus, a provoked phenomenon. It is unnecessary to say this is also the case with brute bodies, since that is precisely the foundation of the great principle of the inertia of matter. It is plain that it is also as applicable to living as to inanimate matter."—Dastre, op. cit., p. 280.

[6] "The terms "assimilation" and "disassimilation" express the physical and chemical changes which occur within protoplasm as the result of the intake of nutrient material from the circumambient [illegible] transformation into waste products which [illegible] medium; the whole cycle of these [illegible] the term "metabolism."

Leduc, *The Mechanism of Life*, English translation by W. Deane Butcher, 1911) has given many illustrations of this statement. In the report of the meeting of 1857 in Dundee is a paper by Dr. J. D. Heaton (On Simulations of Vegetable Growths by Mineral Substances) dealing with the same class of phenomena. See also J. Hall Edwards's address to Birmingham and Midland Institute, November, 1911. The conditions of osmosis in cells have been especially studied by Hamburger (*Osmotischer Druck und Ionenlehre*, Wiesbaden, 1902-4).

[7] B. Moore, in *Recent Advances in Physiology*, 1906; Moore and Roaf, Ibid.; and *Further Advances in Physiology*, 1909. Moore lays especial stress on the transformations of energy which occur in protoplasm. See on the question of vitalism Gley (*Revue Scientifique*, 1911) and D'Arcy Thompson (Address to Section D at Portsmouth, 1911).

that a body so important for the nutritive and reproductive functions of the cell as the nucleus—which may be said, indeed, to represent the quintessence of cell life—possesses a chemical constitution of no very great complexity, so that we may even hope some day to see the material which composes it prepared synthetically. And when we consider that the nucleus is not only itself formed of living substance, but is capable of causing other living substance to be built up—is, in fact, the directing agent in all the principal chemical changes which take place within the living cell, it must be admitted that we are a long step forward in our knowledge of the chemical basis of life. That it is the *form* of nuclear matter rather than its chemical and molecular structure which is the important factor in nuclear activity cannot be supposed. The form of nuclei, as every microscopist knows, varies infinitely, and there are numerous living organisms in which the nuclear matter is without form, appearing simply as granules distributed in the protoplasm. Not that the form assumed and the transformations undergone by the nucleus are without importance; but it is none the less true that even in an amorphous condition the material which in the ordinary cell takes the form of a "nucleus" may, in simpler organisms which have not in the process of evolution become complete cells, fulfil functions in many respects similar to those fulfilled by the nucleus of the more differentiated organism.

A similar anticipation regarding the probability of eventual synthetic production may be made for the proteins of the cell substance. Considerable progress in this direction has, indeed, already been made by Emil Fischer, who has for many years been engaged in the task of building up the nitrogenous combinations which enter into the formation of the complex molecule of protein. It is satisfactory to know that the significance of the work both of Fischer and of Kossel in this field of biological chemistry has been recognized by the award to each of these distinguished chemists of a Nobel prize.

Chemical Constitution of Living Substance.

The elements composing living substance are few in number. Those which are constantly present are carbon, hydrogen, oxygen, and nitrogen. With these, both in nuclear matter and also, but to a less degree, in the more diffuse living material which we know as protoplasm, phosphorus is always associated. "Ohne Phosphor kein Gedank" is an accepted aphorism; "Ohne Phosphor kein Leben" is equally true. Moreover, a large proportion, rarely less than 70 per cent., of water appears essential for any manifestation of life, although not in all cases necessary for its continuance, since organisms are known which will bear the loss of the greater part if not the whole of the water they contain without permanent impairment of their vitality. The presence of certain inorganic salts is no less essential, chief amongst them being sodium chloride and calcium salts, magnesium, potassium, and iron. The combination of these elements into a colloidal compound represents the chemical basis of life; and when the chemist succeeds in building up this compound it will without doubt be found to exhibit the phenomena which we are in the habit of associating with the term "life."[9]

Source of Life. The Possibility of Spontaneous Generation.

The above considerations seem to point to the conclusion that the possibility of the production of life—that is, of living material—is not so remote as has been generally assumed. Since the experiments of Pasteur, few have ventured to affirm a belief in the spontaneous generation of bacteria and monads and other micro-organisms, although before his time this was by many believed to be of universal occurrence. My esteemed friend Dr. Charlton Bastian is, so far as I am aware, the only scientific man of eminence who still adheres to the old creed, and Dr. Bastian, in spite of numerous experiments and the publication of many books and papers, has not hitherto succeeded in winning over any converts to his opinion. I am myself so entirely convinced of the accuracy of the results which Pasteur obtained—are they not within the daily and hourly experience of every one who deals with the sterilization of organic solutions?—that I do not hesitate to believe, if living torulae or mycelia are exhibited to me in flasks which had been subjected to prolonged boiling after being hermetically sealed, that there has been some fallacy either in the premisses or in the carrying out of the operation. The appearance of organisms in such flasks would not furnish to my mind proof that they were the result of spontaneous generation. Assuming no fault in manipulation or fallacy in observation, I should find it simpler to believe that the germs of such organisms have resisted the effects of prolonged heat than that they became generated spontaneously. If spontaneous generation is possible, we cannot expect it to take the form of living beings which show so marked a degree of differentiation, both structural and functional, as the organisms which are described as making their appearance in these experimental flasks.[10] Nor should we expect the spontaneous generation of living substance of any kind to occur in a fluid the organic constituents of which have been so altered by heat that they can retain no sort of chemical resemblance to the organic constituents of living matter. If the formation of life—of living substance—is possible at the present day—and for my own part I see no reason to doubt it—a boiled infusion of organic matter—and still less of inorganic matter—is the last place in which to look for it. Our mistrust of such evidence as has yet been brought forward need not, however, preclude us from admitting the possibility of the formation of living from non-living substance.[11]

Life a Product of Evolution.

Setting aside, as devoid of scientific foundation, the idea of immediate supernatural intervention in the first production of life, we are not only justified in believing, but compelled to believe, that living matter must have owed its origin to causes similar in character to those which have been instrumental in producing all other forms of matter in the universe; in other words, to a process of gradual evolution.[12] But it has been customary of late amongst biologists to shelve the investigation of the mode of origin of life by evolution from non-living matter by relegating its solution to some former condition of the earth's history, when, it is assumed, opportunities were accidentally favourable for the passage of inanimate matter into animate; such opportunities, it is also assumed, having never since recurred and being never likely to recur.[13]

Various eminent scientific men have even supposed that life has not actually originated upon our globe, but has been brought to it from another planet or from another stellar system. Some of my audience may still remember the controversy that was excited when the theory of the origin of terrestrial life by the intermediation of a meteorite was propounded by Sir William Thomson in his Presidential Address at the meeting of this association in Edinburgh in 1871. To this "meteorite" theory[14] the apparently fatal objection was raised that it would take some sixty million years for a meteorite to travel from the

[9] The most recent account of the chemistry of protoplasm is that by Botazzi (Das Cytoplasma u. die Körpersäfte) in Winterstein's *Handb. d. vergl. Physiologie*, Bd. I, 1912. The literature is given in this article.

[10] It is fair to point out that Dr. Bastian suggests that the formation of ultramicroscopic living particles may precede the appearance of the microscopic organisms which he describes.—*The Origin of Life*, 1911, p. 65.

[11] The present position of the subject is succinctly stated by Dr. Chalmers Mitchell in his article on "Abiogenesis" in the *Encyclopædia Britannica*. Dr. Mitchell adds: "It may be that in the progress of science it may yet be possible to construct living protoplasm from non-living material. The refutation of abiogenesis has no further bearing on this possibility than to make it probable that if protoplasm ultimately be formed in the laboratory, it will be by a series of steps, the earlier steps being the formation of some substance, or substances, now unknown, which are not protoplasm. Such intermediate stages may have existed in the past." And Huxley, in his Presidential Address at Liverpool in 1870, says: "But though I cannot express this conviction" (that is, of the impossibility of the occurrence of abiogenesis, as exemplified by the appearance of organisms in hermetically sealed and sterilized flasks) "too strongly, I must carefully guard myself against the supposition that I intend to suggest that no such thing as abiogenesis ever has taken place in the past or ever will take place in the future. With organic chemistry, molecular physics, and physiology yet in their infancy and every day making prodigious strides, I think it would be the height of presumption for any man to say that the conditions under which matter assumes the properties we call 'vital' may not, some day, be artificially brought together."

[12] The arguments in favour of this proposition have been arrayed by Meldola in his Herbert Spencer Lecture, 1910, pp. 16-24. Meldola leaves the question open whether such evolution has occurred only in past years or is also taking place now. He concludes that whereas certain carbon compounds have survived by reason of possessing extreme stability, others—the precursors of living matter—survived owing to the possession of extreme lability and adaptability to variable conditions of environment. A similar suggestion was previously made by Lockyer, *Inorganic Evolution*, 1900, pp. 169, 170.

[13] T. H. Huxley, Presidential Address, 1870; A. B. Macallum, "On the Origin of Life on the Globe," in *Trans. Canadian Institute*, VIII.

[14] First suggested, according to Dastre, by de Salles-Guyon (Dastre, op. cit., p. 252). The theory received the support of Helmholtz.

nearest stellar system to our earth, and it is inconceivable that any kind of life could be maintained during such a period. Even from the nearest planet 150 years would be necessary, and the heating of the meteorite in passing through our atmosphere and at its impact with the earth would, in all probability, destroy any life which might have existed within it. A cognate theory, that of *cosmic panspermia*, assumes that life may exist and may have existed indefinitely in cosmic dust in the interstellar spaces (Richter, 1865; Cohn, 1872), and may with this dust fall slowly to the earth without undergoing the heating which is experienced by a meteorite. Arrhenius,[15] who adopts this theory, states that if living germs were carried through the ether by luminous and other radiations, the time necessary for their transportation from our globe to the nearest stellar system would be only nine thousand years, and to Mars only twenty days!

But the acceptance of such theories of the arrival of life on the earth does not bring us any nearer to a conception of its actual mode of origin: on the contrary, it merely serves to banish the investigation of the question to some conveniently inaccessible corner of the universe, and leaves us in the unsatisfactory position of affirming not only that we have no knowledge as to the mode of origin of life—which is unfortunately true—but that we never can acquire such knowledge—which it is to be hoped is not true.[16] Knowing what we know, and believing what we believe, as to the part played by evolution in the development of terrestrial matter, we are, I think (without denying the possibility of the existence of life in other parts of the universe[17]), justified in regarding these cosmic theories as inherently improbable—at least in comparison with the solution of the problem which the evolutionary hypothesis offers.[18]

The Evolutionary Hypothesis as Applied to the Origin of Life.

I assume that the majority of my audience have at least a general idea of the scope of this hypothesis, the general acceptance of which has within the last sixty years altered the whole aspect, not only of biology, but of every other branch of natural science, including astronomy, geology, physics, and chemistry.[19] To those who have not this familiarity I would recommend the perusal of a little book by Professor Judd, entitled *The Coming of Evolution*, which has recently appeared as one of the Cambridge manuals. I know of no similar book in which the subject is as clearly and succinctly treated. Although the author nowhere expresses the opinion that the actual origin of life on the earth has arisen by evolution from non-living matter, it is impossible to read either this or any similar exposition in which the essential unity of the evolutionary process is insisted upon without concluding that the origin of life must have been due to the same process, this process being, without exception, continuous, and admitting of no gap at any part of its course. Looking, therefore, at the evolution of living matter by the light which is shed upon it from the study of the evolution of matter in general, we are led to regard it as having been produced, not by a sudden alteration, whether exerted by natural or supernatural agency, but by a gradual process of change from material which was lifeless, through material on the borderland between inanimate and animate, to material which has all the characteristics to which we attach the term "life." So far from expecting a sudden leap from an inorganic, or at least an unorganized, into an organic and organized condition, from an entirely inanimate substance to a completely animate state of being, should we not rather expect a gradual procession of changes from inorganic to organic matter, through stages of gradually increasing complexity until material which can be termed "living" is attained? And in place of looking for the production of fully formed living organisms in hermetically sealed flasks, should we not rather search Nature herself, under natural conditions, for evidence of the existence, either in the past or in the present, of transitional forms between living and non-living matter?

The difficulty, nay the impossibility, of obtaining evidence of such evolution from the past history of the globe is obvious. Both the hypothetical transitional material and the living material which was originally evolved from it may, as Macallum has suggested, have taken the form of diffused ultramicroscopic particles of living substance:[20] and even if they were not diffused but aggregated into masses, these masses could have been physically nothing more than colloidal watery slime which would leave no impress upon any geological formation. Myriads of years may have elapsed before some sort of skeleton in the shape of calcareous or siliceous spicules began to evolve itself, and thus enabled "life," which must already have possessed a prolonged existence, to make any sort of geological record. It follows that in attempting to pursue the evolution of living matter to its beginning in terrestrial history we can only expect to be confronted with a blank wall of nescience.

The problem would appear to be hopeless of ultimate solution if we are rigidly confined to the supposition that the evolution of life has only occurred once in the past history of the globe. But are we justified in assuming that at one period only, and as it were by a fortunate and fortuitous concomitation of substance and circumstance, living matter became evolved out of non-living matter—life became established? Is there any valid reason to conclude that at some previous period of its history our earth was more favourably circumstanced for the production of life than it is now?[21] I have vainly sought for such reason, and if none be forthcoming the conclusion forces itself upon us that the evolution of non-living into living substance has happened more than once—and we can be by no means sure that it may not be happening still.

It is true that up to the present there is no evidence of such happening: no process of transition has hitherto been observed. But, on the other hand, is it not equally true that the kind of evidence which would be of any real value in determining this question has not hitherto been looked for? We may be certain that if life is being produced from non-living substance it will be life of a far simpler character than any that has yet been observed—in material which we shall be uncertain whether to call animate or inanimate, even if we are able to detect it at all, and which we may not be able to visualize physically even after we have become convinced of its existence.[22] But we can look with the mind's eye and follow in imagination the transformation which non-living matter may have undergone and may still be undergoing to produce living substance. No principle of evolution is better founded than that insisted upon by Sir Charles Lyell, justly termed by Huxley "the greatest geologist of his time," that we must interpret the past history of our globe by the present; that we must seek for an explanation of what has happened by the study of what is happening; that, given similar circumstances, what has occurred at one time will probably occur at another. The

[20] There still exist, in fact, forms of life which the microscope cannot show us (E. A. Minchin, Presidential Address to Quekett Club, 1911), and germs which are capable of passing through the pores of a Chamberland filter.

[21] Chalmers Mitchell (article Life, *Encycl. Brit.*, eleventh edition) writes as follows: "It has been suggested from time to time that conditions very unlike those now existing were necessary for the first appearance of life, and must be repeated if living matter is to be reproduced artificially. No support for such a view can be derived from observation of the existing conditions of life." Cf. also J. Butler [illegible]

[22] "Spontaneous generation of life could only be perceptually demonstrated by filling up the long terms of a series between the complex forms of inorganic and the simplest forms of organic substance. Were this done it is quite possible that we should be unable to say [illegible] considering the vagueness of our definitions of life) where life began or ended."—K. Pearson, *Grammar of Science*, second edition, 1900, p. 350.

process of evolution is universal. The inorganic materials of the globe are continually undergoing transition. New chemical combinations are constantly being formed and old ones broken up; new elements are making their appearance and old elements disappearing.[23] Well may we ask ourselves why the production of living matter alone should be subject to other laws than those which have produced, and are producing, the various forms of non-living matter; why what has happened may not happen? If living matter has been evolved from lifeless in the past, we are justified in accepting the conclusion that its evolution is possible in the present and in the future. Indeed, we are not only justified in accepting this conclusion, we are forced to accept it. When or where such change from non-living to living matter may first have occurred, when or where it may have continued, when or where it may still be occurring, are problems as difficult as they are interesting, but we have no right to assume that they are insoluble.

Since living matter always contains water as its most abundant constituent, and since the first living organisms recognizable as such in the geological series were aquatic, it has generally been assumed that life must first have made its appearance in the depths of the ocean.[24] Is it, however, certain that the assumption that life originated in the sea is correct? Is not the land surface of our globe quite as likely to have been the nidus for the evolutionary transformation of non-living into living material as the waters which surround it? Within this soil almost any chemical transformation may occur. It is subjected much more than matters dissolved in sea-water to those fluctuations of moisture, temperature, electricity, and luminosity which are potent in producing chemical changes. But whether life, in the form of a simple slimy colloid, originated in the depths of the sea or on the surface of the land, it would be equally impossible for the geologist to trace its beginnings, and, were it still becoming evolved in the same situations, it would be almost as impossible for the microscopist to follow its evolution. We are therefore not likely to obtain direct evidence regarding such a transformation of non-living into living matter in Nature, even if it is occurring under our eyes.

An obvious objection to the idea that the production of living matter from non-living has happened more than once is that, had this been the case, the geological record should reveal more than one palaeontological series. This objection assumes that evolution would in every case take an exactly similar course and proceed to the same goal—an assumption which is, to say the least, improbable. If, as might well be the case, in any other palaeontological series than the one with which we are acquainted the process of evolution of living beings did not proceed beyond Protista, there would be no obvious geological evidence regarding it; such evidence would only be discoverable by a carefully directed search made with that particular object in view.[25] I would not by any means minimize the difficulties which attend the suggestion that the evolution of life may have occurred more than once, or may still be happening, but, on the other hand, it must not be ignored that those which attend the assumption that the production of life has occurred once only are equally serious. Indeed, had the idea of the possibility of a multiple evolution of living substance been first in the field, I doubt if the prevalent belief, regarding a single fortuitous production of life upon the globe would have become established among biologists—so much are we liable to be influenced by the impressions we receive in scientific childhood!

[23] See On the production of elements, W. Crookes, Address to Section B, Brit. Assoc., 1886; T. Preston, *Nature*, vol. lx, p. 180; J. J. Thomson, *Phil. Mag.*, 1897, p. 311; Norman Lockyer, op. cit., 1900; G. Darwin, Pres. Addr. Brit. Assoc., 1905.

[24] For arguments in favour of the first appearance of life having been in the sea, see A. B. Macallum, the Palaeochemistry of the Ocean, *Trans. Canad. Instit.*, 1903-4.

[25] Lankester (Art. "Protozoa," *Encycl. Brit.*, tenth edition) conceives that the first protoplasm fed on the antecedent steps in its own evolution. F. J. Allen (*Brit. Assoc. Reports*, 1895) comes to the conclusion that living substance is probably constantly being produced, but that this fails to make itself evident owing to the substance being seized and assimilated by existing organisms. He believes that "in accounting for the first origin of life on this earth it is not necessary that, as Pflüger assumed, the planet should have been at a former period a glowing fire-ball." He "prefers to believe that the circumstances which support life would also favour its origin." And elsewhere: "Life is not an extraordinary phenomenon, not even an importation from some other sphere, but rather the actual outcome of circumstances on this earth."

Further Course of Evolution of Life.

Assuming the evolution of living matter to have occurred—whether once only or more frequently matters not for the moment—and in the form suggested, namely, as a mass of colloidal slime possessing the property of assimilation, and therefore of growth, reproduction would follow as a matter of course. For all material of this physical nature—fluid or semi-fluid in character—has a tendency to undergo subdivision when its bulk exceeds a certain size. The subdivision may be into equal or nearly equal parts, or it may take the form of buds. In either case every separated part would resemble the parent in chemical and physical properties, and would equally possess the property of taking in and assimilating suitable material from its liquid environment, growing in bulk and reproducing its like by subdivision. *Omne vivum e vivo.* In this way from any beginning of living material a primitive form of life would spread, and would gradually people the globe. The establishment of life being once effected, all forms of organization follow under the inevitable laws of evolution. *C'est que le premier pas qui coûte.*

We can trace in imagination the segregation of a more highly phosphorized portion of the primitive living matter, which we may now consider to have become more akin to the protoplasm of organisms with which we are familiar. This more phosphorized portion might not for myriads of generations take the form of a definite nucleus, but it would be composed of material having a composition and qualities similar to those of the nucleus of a cell. Prominent among these qualities is that of catalysis—the function of effecting profound chemical changes in other material in contact with it without itself undergoing permanent change. This catalytic function may have been exercised directly by the living substance, or may have been carried on through the agency of the enzymes already mentioned, which are also of a colloid nature, but of simpler constitution than itself, and which differ from the catalytic agents employed by the chemist in the fact that they produce their effects at a relatively low temperature. In the course of evolution special enzymes would become developed for adaptation to special conditions of life, and with the appearance of these and other modifications, a process of differentiation of primitive living matter into individuals with definite specific characters gradually became established. We can conceive of the production in this way from originally undifferentiated living substance of simple differentiated organisms comparable to the lowest forms of Protista. But how long it may have taken to arrive at this stage we have no means of ascertaining. To judge from the evidence afforded by the evolution of higher organisms it would seem that a vast period of time would be necessary for even this amount of organization to establish itself.

Formation of the Nucleated Cell.

The next important phase in the process of evolution would be the segregation and moulding of the diffused or irregularly aggregated nuclear matter into a definite nucleus around which all the chemical activity of the organism will in future be centred. Whether this change were due to a slow and gradual process of segregation or of the nature of a jump, such as Nature does occasionally make, the result would be the advancement of the living organism to the condition of a complete nucleated cell; a material advance not only in organization, but—still more important—in potentiality for future development. Life is now embodied in the cell, and every living being evolved from this will itself be either a cell or a cell aggregate. *Omnis cellula e cellula.*

Establishment of Sexual Differences.

After the appearance of a nucleus—but how long after it is impossible to conjecture—another phenomenon appeared upon the scene in the occasional exchange of nuclear substance between cells. In this manner became established the process of sexual reproduction. Such exchange in the unicellular Protista might and may occur between any two cells forming the species, but in the multicellular Metazoa it became—like other functions—specialized in particular cells. The result of the exchange is rejuvenescence; associated with an increased tendency to subdivide and to produce new individuals. This is due to the introduction of a stimulating or catalytic chemical agent into the cell which is to be rejuvenated, as is proved by the experi-

ments of Loeb already alluded to. It is true that the chemical material introduced into the germ cell in the ordinary process of its fertilization by the sperm cell is usually accompanied by the introduction of definite morphological elements which blend with others already contained within the germ cell, and it is believed that the transmission of such morphological elements of the parental nuclei is related to the transmission of parental qualities. But we must not be blind to the possibility that these transmitted qualities may be connected with specific chemical characters of the transmitted elements: in other words, that heredity also is one of the questions the eventual solution of which we must look to the chemist to provide.

Aggregate Life.

So far we have been chiefly considering life as it is found in the simplest forms of living substance, organisms for the most part entirely microscopic and neither distinctively animal nor vegetable, which were grouped together by Haeckel as a separate kingdom of animated nature—that of Protista. But persons unfamiliar with the microscope are not in the habit of associating the term "life" with microscopic organisms, whether these take the form of cells or of minute portions of living substance which have not yet attained to that dignity. We most of us speak and think of life as it occurs in ourselves and other animals with which we are familiar: and as we find it in the plants around us. We recognize it in these by the possession of certain properties—movement, nutrition, growth, and reproduction. We are not aware by intuition, nor can we ascertain without the employment of the microscope, that we and all the higher living beings, whether animal or vegetable, are entirely formed of aggregates of nucleated cells, each microscopic and each possessing its own life. Nor could we suspect by intuition that what we term our life is not a single indivisible property, capable of being blown out with a puff like the flame of a candle; but is the aggregate of the lives of many millions of living cells of which the body is composed. It is but a short while ago that this cell constitution was discovered: it occurred within the lifetime, even within the memory, of some who are still with us. What a marvellous distance we have travelled since then in the path of knowledge of living organisms! The strides which were made in the advance of the mechanical sciences during the nineteenth century, which is generally considered to mark that century as an age of unexampled progress, are as nothing in comparison with those made in the domain of biology, and their interest is entirely dwarfed by that which is aroused by the facts relating to the phenomena of life which have accumulated within the same period. And not the least remarkable of these facts is the discovery of the cell structure of plants and animals!

Evolution of the Cell Aggregate.

Let us consider how cell aggregates came to be evolved from organisms consisting of single cells. Two methods are possible, namely: (1) the adhesion of a number of originally separate individuals; (2) the subdivision of a single individual without the products of its subdivision breaking loose from one another. No doubt this last is the manner whereby the cell aggregate was originally formed, since it is that by which it is still produced, and we know that the life-history of the individual is an epitome of that of the species. Such aggregates were in the beginning solid; the cells in contact with one another and even in continuity; subsequently a space or cavity became formed in the interior of the mass, which was thus converted into a hollow sphere. All the cells of the aggregate were at first perfectly similar in structure and in function; there was no subdivision of labour. All would take part in effecting locomotion; all would receive stimuli from outside; all would take in and digest nutrient matter, which would then be passed into the cavity of the sphere to serve as a common store of nourishment. Such organisms are still found, and constitute the lowest types of Metazoa. Later, one part of the hollow sphere became dimpled to form a cup; the cavity of the sphere became correspondingly altered in shape. With this change in structure differentiation of function between the cells covering the outside and those lining the inside of the cup made its appearance. Those on the outside subserved locomotor functions and received and transmitted from cell to cell stimuli, physical or chemical, received by the organism; while those on the inside, being freed from such functions, tended to specialize in the direction of the inception and digestion of nutrient material; which, passing from them into the cavity of the invaginated sphere, served for the nourishment of all the cells composing the organism. The further course of evolution produced many changes of form and ever-increasing complexity of the cavity thus produced by simple invagination. Some of the cell aggregates settled down to a sedentary life, becoming plant-like in appearance and to some extent in habit. Such organisms, complex in form but simple in structure, are the sponges. Their several parts are not, as in the higher Metazoa, closely interdependent: the destruction of any one part, however extensive, does not either immediately or ultimately involve death of the rest: all parts function separately, although doubtless mutually benefiting by their conjunction, if only by slow diffusion of nutrient fluid throughout the mass. There is already some differentiation in these organisms, but the absence of a nervous system prevents any general co-ordination, and the individual cells are largely independent of one another.

Our own life, like that of all the higher animals, is an *aggregate life*—the life of the whole is the life of the individual cells. The life of some of these cells can be put an end to, the rest may continue to live; this is, in fact, happening every moment of our lives. The cells which cover the surface of our body, which form the scarf-skin and the hairs and nails, are constantly dying and the dead cells are rubbed off or cut away, their place being taken by others supplied from living layers beneath. But the death of these cells does not affect the vitality of the body as a whole. They serve merely as a protection, or an ornamental covering, but are otherwise not material to our existence. On the other hand, if a few cells, such as those nerve cells under the influence of which respiration is carried on, are destroyed or injured, within a minute or two the whole living machine comes to a standstill, so that to the bystander the patient is dead; even the doctor will pronounce life to be extinct. But this pronouncement is correct only in a special sense. What has happened is that, owing to the cessation of respiration, the supply of oxygen to the tissues is cut off. And since the manifestations of life cease without this supply, the animal or patient appears to be dead. If, however, within a short period we supply the needed oxygen to the tissues requiring it, all the manifestations of life reappear.

It is only some cells which lose their vitality at the moment of so-called "general death." Many cells of the body retain their individual life under suitable circumstances long after the rest of the body is dead. Notable among these are muscle cells. MacWilliam showed that the muscle cells of the blood vessels give indications of life several days after an animal has been killed. The muscle cells of the heart in mammals have been revived and caused to beat regularly and strongly many hours after apparent death. In man this result has been obtained as many as eighteen hours after life had been pronounced extinct (Kuliabko); in animals after days had elapsed. Waller has shown that indications of life can be elicited from various tissues many hours and even days after general death. Sherrington observed the white corpuscles of the blood to be active when kept in a suitable nutrient fluid weeks after removal from the blood vessels. A French histologist, Jolly, has found that the white corpuscles of the frog, if kept in a cool place and under suitable conditions, show at the end of a year all the ordinary manifestations of life. Carrell and Burrows have observed activity and growth to continue for long periods in the isolated cells of a number of tissues and organs kept under observation in a suitable medium. Carrell has succeeded in substituting entire organs obtained after death from one animal for those of another of the same species, and has thereby opened up a field of surgical treatment the limit of which cannot yet be descried. It is a well-established fact that any part of the body can be maintained alive for hours isolated from the rest if perfused with serum (Kronecker, frog heart) or with an oxygenated solution of salts in certain proportions (Ringer). Such revival and prolongation of the life of separated organs is an ordinary procedure in laboratories of physiology. Like all the other instances enumerated, it is based on the fact that

the individual cells of an organ have a life of their own which is largely independent, so that they will continue in suitable circumstances to live, although the rest of the body to which they belonged may be dead.

But some cells, and the organs which are formed of them, are more necessary to maintain the life of the aggregate than others, on account of the nature of the functions which have become specialized in them. This is the case with the nerve cells of the respiratory centre, since they preside over the movements which are necessary to effect oxygenation of the blood. It is also true for the cells which compose the heart, since this serves to pump oxygenated blood to all other cells of the body; without such blood most cells soon cease to live. Hence we examine respiration and heart to determine if life is present: when one or both of these are at a standstill we know that life cannot be maintained. These are not the only organs necessary for the maintenance of life, but the loss of others can be borne longer, since the functions which they subserve, although useful or even essential to the organism, can be dispensed with for a time. The life of some cells is therefore more, of others less, necessary for maintaining the life of the rest. On the other hand, the cells composing certain organs have in the course of evolution ceased to be necessary, and their continued existence may even be harmful. Wiedersheim has enumerated more than a hundred of these organs in the human body. Doubtless Nature is doing her best to get rid of them for us, and our descendants will some day have ceased to possess a vermiform appendix or a pharyngeal tonsil; until that epoch arrives we must rely for their removal on the more rapid methods of surgery!

Maintenance of the Life of the Cell Aggregate in the Higher Animals: Co-ordinating Mechanisms.

We have seen that in the simplest multicellular organisms, where one cell of the aggregate differs but little from another, the conditions for the maintenance of the life of the whole are nearly as simple as those for individual cells. But the life of a cell aggregate such as composes the bodies of the higher animals is maintained not only by the conditions for the maintenance of the life of the individual cell being kept favourable, but also by the co-ordination of the varied activities of the cells which form the aggregate. Whereas in the lowest Metazoa all cells of the aggregate are alike in structure and function and perform and share everything in common, in higher animals (and for that matter in the higher plants also) the cells have become specialized, and each is only adapted for the performance of a particular function. Thus the cells of the gastric glands are only adapted for the secretion of gastric juice, the cells of the villi for the absorption of digested matters from the intestine, the cells of the kidney for the removal of waste products and superfluous water from the blood, those of the heart for pumping blood through the vessels. Each of these cells has its individual life and performs its individual functions. But unless there were some sort of co-operation and subordination to the needs of the body generally, there would be sometimes too little, sometimes too much gastric juice secreted; sometimes too tardy, sometimes too rapid an absorption from the intestine; sometimes too little, sometimes too much blood pumped into the arteries, and so on. As the result of such lack of co-operation the life of the whole would cease to be normal, and would eventually cease to be maintained.

We have already seen what are the conditions which are favourable for the maintenance of life of the individual cell, no matter where situated. The principal condition is that it must be bathed by a nutrient fluid of suitable and constant composition. In higher animals this fluid is the lymph which bathes the tissue elements, and is itself constantly supplied with fresh nutriment and oxygen by the blood. Some tissue cells are directly bathed by blood; and in invertebrates, in which there is no special system of lymph vessels, all the tissues are thus nourished. All cells both take from and give to the blood, but not the same materials or to an equal extent. Some, such as the absorbing cells of the villi, almost exclusively give; others, such as the cells of the renal tubules, almost exclusively take. Nevertheless, the resultant of all the give and take throughout the body serves to maintain the composition of the blood constant under all circumstances. In this way the first condition of the maintenance of the life of the aggregate is fulfilled by insuring that the life of the individual cells composing it is kept normal.

The second essential condition for the maintenance of life of the cell aggregate is the co-ordination of its parts and the due regulation of their activity, so that they may work together for the benefit of the whole. In the animal body this is effected in two ways: First, through the nervous system; and secondly, by the action of specific chemical substances which are formed in certain organs and carried by the blood to other parts of the body, the cells of which they excite to activity. These substances have received the general designation of "hormones" (ὁρμάω, to stir up), a term introduced by Professor Starling. Their action, and indeed their very existence, has only been recognized of late years, although the part which they play in the physiology of animals appears to be only second in importance to that of the nervous system itself; indeed, maintenance of life may become impossible in the absence of certain of these hormones.

Part played by Nervous System in the Maintenance of Aggregate Life: Evolution of a Nervous System.

Before we consider the manner in which the nervous system serves to co-ordinate the life of the cell aggregate, let us see how it has become evolved.

The first step in the process was taken when certain of the cells of the external layer became specially sensitive to stimuli from outside, whether caused by mechanical impressions (tactile and auditory stimuli) or impressions of light and darkness (visual stimuli) or chemical impressions. The effects of such impressions were probably at first simply communicated to adjacent cells and spread from cell to cell throughout the mass. An advance was made when the more impressionable cells threw out branching feelers amongst the other cells of the organism. Such feelers would convey the effects of stimuli with greater rapidity and directness to distant parts. They may at first have been retractile, in this respect resembling the long pseudopodia of certain Rhizopoda. When they became fixed they would be potential nerve fibres and would represent the beginning of a nervous system. Even yet (as Ross Harrison has shown), in the course of development of nerve fibres, each fibre makes its first appearance as an amœboid cell process which is at first retractile, but gradually grows into the position it is eventually to occupy and in which it will become fixed.

In the further course of evolution a certain number of these specialized cells of the external layer sank below the general surface, partly perhaps for protection, partly for better nutrition: they became nerve cells. They remained connected with the surface by a prolongation which became an afferent or sensory nerve fibre, and through its termination between the cells of the general surface continued to receive the effects of external impressions; on the other hand, they continued to transmit these impressions to other, more distant cells by their efferent prolongations. In the further course of evolution the nervous system thus laid down became differentiated into distinct *afferent*, *efferent*, and *intermediary* portions. Once established, such a nervous system, however simple, must dominate the organism, since it would furnish a mechanism whereby the individual cells would work together more effectually for the mutual benefit of the whole.

It is the development of the nervous system, although not proceeding in all classes along exactly the same lines, which is the most prominent feature of the evolution of the Metazoa. By and through it all impressions reaching the organism from the outside are translated into contraction or some other form of cell activity. Its formation has been the means of causing the complete divergence of the world of animals from the world of plants, none of which possess any trace of a nervous system. Plants react, it is true, to external impressions, and these impressions produce profound changes, and even comparatively rapid and energetic movements, in parts distant from the point of application of the stimulus—as in the well-known instance of the sensitive plant. But the impressions are in all cases propagated directly from cell to cell—not through the agency of nerve fibres; and in the absence of anything corresponding to a nervous system it is not possible to suppose that any plant can ever acquire the

least glimmer of intelligence. In animals, on the other hand, from a slight original modification of certain cells has directly proceeded in the course of evolution the elaborate structure of the nervous system, with all its varied and complex functions, which reach their culmination in the workings of the human intellect. "What a piece of work is a man! How noble in reason! How infinite in faculty! In form and moving how express and admirable! In action how like an angel! In apprehension how like a god!" But lest he be elated with his psychical achievements, let him remember that they are but the result of the acquisition by a few cells in a remote ancestor of a slightly greater tendency to react to an external stimulus, so that these cells were brought into closer touch with the outer world; while, on the other hand, by extending beyond the circumscribed area to which their neighbours remained restricted, they gradually acquired a dominating influence over the rest. These dominating cells became nerve cells, and now not only furnish the means for transmission of impressions from one part of the organism to another, but in the progress of time have become the seat of perception and conscious sensation, of the formation and association of ideas, of memory, volition, and all the manifestations of the mind!

Regulation of Movements by the Nervous System: Voluntary Movements.

The most conspicuous part played by the nervous system in the phenomena of life is that which produces and regulates the general movements of the body—movements brought about by the so-called voluntary muscles. These movements are actually the result of impressions imparted to sensory or afferent nerves at the periphery—for example, in the skin or in the several organs of special sense; the effect of these impressions may not be immediate, but can be stored for an indefinite time in certain cells of the nervous system. The regulation of movements—whether they occur instantly after reception of the peripheral impression or result after a certain lapse of time, whether they are accompanied by conscious sensation or are of a purely reflex and unconscious character—is an intricate process, and the conditions of their co-ordination are of a complex nature involving not merely the causation of contraction of certain muscles, but also the prevention of contraction of others. For our present knowledge of these conditions we are largely indebted to the researches of Professor Sherrington.

Involuntary Movements.

A less conspicuous but no less important part played by the nervous system is that by which the contractions of involuntary muscles are regulated. Under normal circumstances these are always independent of consciousness, but their regulation is brought about in much the same way as is that of the contractions of voluntary muscles—namely, as the result of impressions received at the periphery. These are transmitted by afferent fibres to the central nervous system, and from the latter other impulses are sent down, mostly along the nerves of the sympathetic or autonomic system of nerves, which either stimulate or prevent contraction of the involuntary muscles. Many involuntary muscles have a natural tendency to continuous or rhythmic contraction which is quite independent of the central nervous system; in this case the effect of impulses received from the latter is merely to increase or diminish the amount of such contraction.

Effects of Emotions.

An example of this double effect is observed in connexion with the heart, which, although it can contract regularly and rhythmically when cut off from the nervous system and even if removed from the body, is normally stimulated to increased activity by impulses coming from [illegible] through the sympathetic, or to [illegible] activity by others coming through the vagus. It is due to the readiness by which the action of the heart is influenced in these opposite ways by the spread of impulses generated during the nerve storms which we term "emotions," that in the language of poetry, and even of every day, the word "heart" has become synonymous with the emotions themselves.

The involuntary muscle of the arteries has its action similarly balanced. When its contraction is increased, the size of the vessels is lessened and they deliver less blood; the parts they supply accordingly become pale in colour. On the other hand, when the contraction is diminished, the vessels enlarge and deliver more blood; the parts which they supply become correspondingly ruddy. These changes in the arteries, like the effects upon the heart, may also be produced under the influence of emotions. Thus "blushing" is a purely physiological phenomenon due to diminished action of the muscular tissue of the arteries, whilst the pallor produced by fright is caused by an increased contraction of that tissue. Apart, however, from these conspicuous effects, there is constantly proceeding a less apparent but not less important balancing action between the two sets of nerve fibres distributed to heart and blood vessels, which are influenced in one direction or another by every sensation which we experience, and even by impressions of which we may be wholly unconscious, such as those which occur during sleep or anaesthesia, or which affect our otherwise insensitive internal organs.

Regulation of Secretion by the Nervous System.

A further instance of nerve regulation is seen in secreting glands. Not all glands are thus regulated, at least, not directly, but in those which are, the effects are striking. Their regulation is of the same general nature as that exercised upon involuntary muscle, but it influences the chemical activities of the gland cells and the outpouring of secretion from them. By means of this regulation a secretion can be produced or arrested, increased or diminished. As with muscle, a suitable balance is in this way maintained, and the activity of the glands is adapted to the requirements of the organism. Most of the digestive glands are thus influenced, as are the skin glands which secrete sweat.

Regulation of Body Temperature.

And by the action of the nervous system upon the skin glands, together with its effect in increasing or diminishing the blood supply to the cutaneous blood vessels, the temperature of our blood is regulated and is kept at the point best suited for maintenance of the life and activity of the tissues.

Effects of Emotions on Secretion.

The action of the nervous system upon the secretion of glands is strikingly exemplified, as in the case of its action upon the heart and blood vessels by the effects of the emotions. Thus an emotion of one kind—such as the anticipation of food—will cause saliva to flow, "the mouth to water"; whereas an emotion of another kind, such as fear or anxiety, will stop the secretion, causing the "tongue to cleave unto the roof of the mouth," and rendering speech difficult or impossible. Such arrest of the salivary secretion also makes the swallowing of dry food difficult; advantage of this fact is taken in the "ordeal by rice," which used to be employed in the East for the detection of criminals.

Regulation by Chemical Agents: Hormones: Internal Secretions.

The activities of the cells constituting our bodies are controlled, as already mentioned, in another way than through the nervous system—namely, by chemical agents (hormones) circulating in the blood. Many of these are produced by special glandular organs, known as internally secreting glands. The ordinary secreting glands pour their secretions on the exterior of the body, or on a surface communicating with the exterior; the internally secreting glands pass the materials which they produce directly into the blood. In this fluid the hormones are carried to distant organs. Their influence upon an organ may be essential to the proper performance of its functions, or may be merely ancillary to it. In the former case removal of the internally secreting gland which produces the hormone, or its destruction by disease, may prove fatal to the organism.

Suprarenals.

This is the case with the suprarenal capsules: small glands which are adjacent to the kidneys, although having no physiological connexion with these organs. A Guy's physician, Dr. Addison, in the middle of the last century showed that a certain affection, almost always fatal, since known by his name, is associated with disease of the

suprarenal capsules. A short time after this observation a French physiologist, Brown-Séquard, found that animals from which the suprarenal capsules are removed rarely survive the operation for more than a few days. In the concluding decade of the last century interest in these bodies was revived by the discovery that they are constantly yielding to the blood a chemical agent (or hormone) which stimulates the contractions of the heart and arteries, and assists in the promotion of every action which is brought about through the sympathetic nervous system (Langley). In this manner the importance of their integrity has been explained, although we have still much to learn regarding their functions.

Thyroid.

Another instance of an internally secreting gland which is essential to life, or at least to its maintenance in a normal condition, is the thyroid. The association of imperfect development or disease of the thyroid with disorders of nutrition and inactivity of the nervous system is well ascertained. The form of idiocy known as cretinism and the affection termed myxoedema are both associated with deficiency of its secretion; somewhat similar conditions to these are produced by the surgical removal of the gland. The symptoms are alleviated or cured by the administration of its juice. On the other hand, enlargement of the thyroid, accompanied by increase of its secretion, produces symptoms of nervous excitation, and similar symptoms are caused by excessive administration of the glandular substance by the mouth. From these observations it is inferred that the juice contains hormones which help to regulate the nutrition of the body and serve to stimulate the nervous system, for the higher functions of which they appear to be essential. To quote M. Gley, to whose researches we owe much of our knowledge regarding the functions of this organ: "La genèse et l'exercice des plus hautes facultés de l'homme sont conditionnés par l'action purement chimique d'un produit de sécrétion. Que les psychologues méditent ces faits!"

Parathyroids.

The case of the parathyroid glandules is still more remarkable. These organs were discovered by Sandström in 1880. They are four minute bodies, each no larger than a pin's head, imbedded in the thyroid. Small as they are, their internal secretion possesses hormones which exert a powerful influence upon the nervous system. If they are completely removed, a complex of symptoms, technically known as "tetany," is liable to occur, which is always serious and may be fatal. Like the hormones of the thyroid itself, therefore, those of the parathyroids produce effects upon the nervous system, to which they are carried by the blood; although the effects are of a different kind.

Pituitary.

Another internally secreting gland which has evoked considerable interest during the last few years is the pituitary body. This is a small structure no larger than a cobnut attached to the base of the brain. It is mainly composed of glandular cells. Its removal has been found (by most observers) to be fatal—often within two or three days. Its hypertrophy, when occurring during the general growth of the body, is attended by an undue development of the skeleton, so that the stature tends to assume gigantic proportions. When the hypertrophy occurs after growth is completed, the extremities—namely, the hands and feet, and the bones of the face—are mainly affected; hence the condition has been termed "acromegaly" (enlargement of extremities). The association of this condition with affections of the pituitary was pointed out in 1885 by a distinguished French physician, Dr. Pierre Marie. Both "giants" and "acromegalists" are almost invariably found to have an enlarged pituitary. The enlargement is generally confined to one part—the anterior lobe—and we conclude that this produces hormones which stimulate the growth of the body generally and of the skeleton in particular. The remainder of the pituitary is different in structure from the anterior lobe and has a different function. From it hormones can be extracted which, like those of the suprarenal capsule, although not exactly in the same manner, influence the contraction of the heart and arteries. Its extracts are also instrumental in promoting the secretion of certain glands. When injected into the blood they cause a free secretion of water from the kidneys and of milk from the mammary glands, neither of which organs are directly influenced (as most other glands are) through the nervous system. Doubtless under natural conditions these organs are stimulated to activity by hormones which are produced in the pituitary and which pass from this into the blood.

The internally secreting glands which have been mentioned (thyroid, parathyroid, suprarenal, pituitary) have, so far as is known, no other function than that of producing chemical substances of this character for the influencing of other organs, to which they are conveyed by the blood. It is interesting to observe that these glands are all of very small size, none being larger than a walnut, and some—the parathyroids—almost microscopic. In spite of this, they are essential to the proper maintenance of the life of the body, and the total removal of any of them by disease or operation is in most cases speedily fatal.

Pancreas.

There are, however, organs in the body yielding internal secretions to the blood in the shape of hormones, but exercising at the same times other functions. A striking instance is furnished by the pancreas, the secretion of which is the most important of the digestive juices. This—the pancreatic juice—forms the external secretion of the gland, and is poured into the intestine, where its action upon the food as it passes out from the stomach has long been recognized. It was, however, discovered in 1889 by von Mering and Minkowski that the pancreas also furnishes an internal secretion, containing a hormone which is passed from the pancreas into the blood, by which it is carried first to the liver and afterwards to the body generally. This hormone is essential to the proper utilization of carbohydrates in the organism. It is well known that the carbohydrates of the food are converted into grape sugar and circulate in this form in the blood, which always contains a certain amount; the blood conveys it to all the cells of the body, and they utilize it as fuel. If, owing to disease of the pancreas or as the result of its removal by surgical procedure, its internal secretion is not available, sugar is no longer properly utilized by the cells of the body and tends to accumulate in the blood; from the blood the excess passes off by the kidneys, producing diabetes.

Duodenum.

Another instance of an internal secretion furnished by an organ which is devoted largely to other functions is the "pro-secretin" found in the cells lining the duodenum. When the acid gastric juice comes into contact with these cells it converts the pro-secretin into "secretin." This is a hormone which is passed into the blood and circulates with that fluid. It has a specific effect on the externally secreting cells of the pancreas, and causes the rapid outpouring of pancreatic juice into the intestine. This effect is similar to that of the hormones of the pituitary body upon the cells of the kidney and mammary gland. It was discovered by Bayliss and Starling.

Internal Secretions of the Reproductive Organs.

The reproductive glands furnish in many respects the most interesting example of organs which—besides their ordinary products, the germ cells and sperm cells (ova and spermatozoa)—form hormones which circulate in the blood and effect changes in cells of distant parts of the body. It is through these hormones that the secondary sexual characters, such as the comb and tail of the cock, the mane of the lion, the horns of the stage, the beard and enlarged larynx of a man, are produced, as well as the many differences in form and structure of the body which are characteristic of the sexes. The dependence of these so-called secondary sexual characters upon the state of development of the reproductive organs has been recognized from time immemorial, but has usually been ascribed to influences produced through the nervous system, and it is only in recent years that the changes have been shown to be brought about by the agency of internal secretions and hormones, passed from the reproductive glands into the circulating blood.[26]

Chemical Nature of Hormones.

It has been possible in only one or two instances to

[26] The evidence is to be found in F. H. A. Marshall, *The Physiology of Reproduction*, 1911.

prepare and isolate the hormones of the internal secretions in a sufficient condition of purity to subject them to analysis, but enough is known about them to indicate that they are organic bodies of a not very complex nature, far simpler than proteins and even than enzymes. Those which have been studied are all dialyzable, are readily soluble in water but insoluble in alcohol, and are not destroyed by boiling. One at least—that of the medulla of the suprarenal capsule—has been prepared synthetically, and when their exact chemical nature has been somewhat better elucidated it will probably not be difficult to obtain others in the same way.

From the above it is clear that not only is a co-ordination through the nervous system necessary in order that life shall be maintained in a normal condition, but a chemical co-ordination is no less essential. These may be independent of one another; but, on the other hand, they may react upon one another. For it can be shown that the production of some at least of the hormones is under the influence of the nervous system (Biedl, Asher, Elliott); whilst, as we have seen, some of the functions of the nervous system are dependent upon hormones.

Protective Chemical Mechanisms: Toxins and Antitoxins.

Time will not permit me to refer in any but the briefest manner to the protective mechanisms which the cell aggregate has evolved for its defence against disease, especially disease produced by parasitic micro-organisms. These, which belong with few exceptions to the Protista, are without doubt the most formidable enemies which the multicellular Metazoa, to which all the higher animal organisms belong, have to contend against. To such micro-organisms are due *inter alia* all diseases which are liable to become epidemic, such as anthrax and rinderpest in cattle, distemper in dogs and cats, small-pox, scarlet fever, measles, and sleeping sickness in man. The advances of modern medicine have shown that the symptoms of these diseases—the disturbances of nutrition, the temperature, the lassitude or excitement, and other nervous disturbances—are the effects of chemical poisons (*toxins*) produced by the micro-organisms and acting deleteriously upon the tissues of the body. The tissues, on the other hand, endeavour to counteract these effects by producing other chemical substances destructive to the micro-organisms or antagonistic to their action; these are known as *antibodies*. Sometimes the protection takes the form of a subtle alteration in the living substance of the cells which renders them for a long time, or even permanently, insusceptible (immune) to the action of the poison. Sometimes certain cells of the body, such as the white corpuscles of the blood, eat the invading micro-organisms and destroy them bodily by the action of chemical agents within their protoplasm. The result of an illness thus depends upon the result of the struggle between these opposing forces—the micro-organisms on the one hand and the cells of the body on the other—both of which fight with chemical weapons. If the cells of the body do not succeed in destroying the invading organisms it is certain that the invaders will in the long run destroy them, for in this combat no quarter is given. Fortunately we have been able, by the aid of animal experimentation, to acquire some knowledge of the manner in which we are attacked by micro-organisms and of the methods which the cells of our body adopt to repel the attack, and the knowledge is now extensively utilized to assist our defence. For this purpose protective serums or antitoxins, which have been formed in the blood of other animals, are employed to supplement the action of those which our own cells produce.

Parasitic Nature of Diseases.

It is not too much to assert that the knowledge of the parasitic origin of so many diseases, and of the chemical agents which on the one hand cause, and on the other combat, their symptoms, has transformed medicine from a mere art practised empirically into a real science based upon experiment. The transformation has opened out an illimitable vista of possibilities in the direction, not only of cure, but, more important still, of prevention. It has taken place within the memory of most of us who are here present. And only last February the world was mourning the death of one of the greatest of its benefactors—a former President of this Association[27]—who, by applying this knowledge to the practice of surgery, was instrumental, even in his own lifetime, in saving more lives than were destroyed in all the bloody wars of the nineteenth century!

Senescence and Death.

The question has been debated whether, if all accidental modes of destruction of the life of the cell could be eliminated, there would remain a possibility of individual cell life, and even of aggregate cell life, continuing indefinitely; in other words, Are the phenomena of senescence and death a natural and necessary sequence to the existence of life? To most of my audience it will appear that the subject is not open to debate. But some physiologists (for example, Metchnikoff) hold that the condition of senescence is itself abnormal; that old age is a form of disease, or is due to disease, and, theoretically at least, is capable of being eliminated. We have already seen that individual cell life, such as that of the white blood corpuscles and of the cells of many tissues, can, under suitable conditions, be prolonged for days or weeks or months after general death. Unicellular organisms kept under suitable conditions of nutrition have been observed to carry on their functions normally for prolonged periods and to show no degeneration such as would accompany senescence. They give rise by division to others of the same kind, which also, under favourable conditions, continue to live, to all appearance indefinitely. But these instances, although they indicate that in the simplest forms of organization existence may be greatly extended without signs of decay, do not furnish conclusive evidence of indefinite prolongation of life. Most of the cells which constitute the body, after a period of growth and activity, sometimes more, sometimes less prolonged, eventually undergo atrophy and cease to perform satisfactorily the functions which are allotted to them. And when we consider the body as a whole we find that in every case the life of the aggregate consists of a definite cycle of changes which, after passing through the stages of growth and maturity, always leads to senescence, and finally terminates in death. The only exception is in the reproductive cells, in which the processes of maturation and fertilization result in rejuvenescence, so that instead of the usual downward change towards senescence, the fertilized ovum obtains a new lease of life, which is carried on into the new-formed organism. The latter again itself ultimately forms reproductive cells, and thus the life of the species is continued. It is only in the sense of its propagation in this way from one generation to another that we can speak of the indefinite continuance of life. We can only be immortal through our descendants!

Average Duration of Life and Possibility of its Prolongation.

The individuals of every species of animal appear to have an average duration of existence.[28] Some species are known the individuals of which live only for a few hours, whilst others survive for a hundred years.[29] In man himself the average length of life would probably be greater than the three score and ten years allotted to him by the Psalmist if we could eliminate the results of disease and accident; when these results are included it falls far short of that period. If the terms of life given in the purely mythological part of the Old Testament were credible, man would in the early stages of his history have possessed a remarkable power of resisting age and disease. But, although many here present were brought up to believe in their literal veracity, such records are no longer accepted even by the most orthodox of theologians, and the nine hundred odd years with which Adam and his immediate descendants are credited, culminating in the nine hundred and sixty-nine of Methuselah, have been relegated, with the account of Creation and the Deluge, to their proper position in literature. When we come to the Hebrew Patriarchs we notice a considerable diminution to have taken place in what the insurance offices term

[27] Lord Lister was President at Liverpool in 1896.

[28] This was regarded by Buffon as related to the period of growth, but the ratio is certainly not constant. The subject is discussed by Ray Lankester in an early work: *On Comparative Longevity in Man and Animals*, 1870.

[29] The approximately regular periods of longevity of different species of animals furnishes a strong argument against the theory that the decay of old age is an accidental phenomenon comparable with disease.

the "expectation of life." Abraham is described as having lived only to 175 years, Joseph and Joshua to 110, Moses to 120: even at that age "his eye was not dim nor his natural force abated." We cannot say that under ideal conditions all these terms are impossible; indeed, Metchnikoff is disposed to regard them as probable; for great ages are still occasionally recorded, although it is doubtful if any as considerable as these are ever substantiated. That the expectation of life was better then than now would be inferred from the apologetic tone adopted by Jacob when questioned by Pharaoh as to his age: "The days of the years of my pilgrimage are a hundred and thirty years; few and evil have the days of the years of my life been, and have not attained unto the days of the years of the life of my fathers in the days of their pilgrimage." David, to whom, before the advent of the modern statistician, we owe the idea that seventy years is to be regarded as the normal period of life,[30] is himself merely stated to have "died in a good old age." The periods recorded for the Kings show a considerable falling-off as compared with the Patriarchs: but not a few were cut off by violent deaths, and many lived lives which were not ideal. Amongst eminent Greeks and Romans few very long lives are recorded, and the same is true of historical persons in mediæval and modern history. It is a long life that lasts much beyond eighty; three such linked together carry us far back into history. Mankind is in this respect more favoured than most mammals, although a few of these surpass the period of man's existence.[31] Strange that the brevity of human life should be a favourite theme of preacher and poet when the actual term of his "erring pilgrimage" is greater than that of most of his fellow creatures!

The End of Life.

The modern applications of the principles of preventive medicine and hygiene are no doubt operating to lengthen the average life. But even if the ravages of disease could be altogether eliminated it is certain that at any rate the fixed cells of our body must eventually grow old and ultimately cease to function; when this happens to cells which are essential to the life of the organism, general death must result. This will always remain the universal law, from which there is no escape. "All that lives must die, passing through nature to eternity."

Such natural death unaccelerated by disease—is not death by disease as unnatural as death by accident?—should be a quiet, painless phenomenon, unattended by violent change. As Dastre expresses it, "The need of death should appear at the end of life, just as the need of sleep appears at the end of the day." The change has been led gradually up to by an orderly succession of phases, and is itself the last manifestation of life. Were we all certain of a quiet passing—were we sure that there would be "no moaning of the bar when we go out to sea"—we could anticipate the coming of death after a ripe old age without apprehension. And if ever the time shall arrive when man will have learnt to regard this change as a simple physiological process, as natural as the oncoming of sleep, the approach of the fatal shears will be as generally welcomed as it is now abhorred. Such a day is still distant; we can hardly say that its dawning is visible. Let us at least hope that, in the manner depicted by Dürer in his well-known etching, the sunshine which science irradiates may eventually put to flight the melancholy which hovers, bat-like, over the termination of our lives, and which even the anticipation of a future happier existence has not hitherto succeeded in dispersing.

[30] The expectation of life of a healthy man of fifty is still reckoned at about twenty years.

[31] "Hominis ævum cæterorum animalium omnium superat præter admodum paucorum."—Francis Bacon, *Historia vitæ et mortis*, 1657.

THE diagonal braking system introduced by Argylls, Limited, acts, we are informed, equally and simultaneously on all four wheels, and not on two of them; the effect is claimed to be an even pull without "dithering" or any tendency to skid.

THE ninth International Otological Congress was held in Boston, Mass., on August 12th to 16th, under the presidency of Dr. Clarence J. Blake. The number of practitioners who attended was 410, of whom 25 were official representatives of foreign countries. The next congress will be held at Halle in Germany in 1915 under the presidency of Dr. Alfred Denker.

An Address

THE INFLUENCE OF MUSCULAR EXERCISE AND OPEN AIR ON THE BODILY FUNCTIONS.

DELIVERED AT THE PHYSIOLOGICAL SECTION OF THE BRITISH ASSOCIATION.

BY

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LAST year the distinguished President of this Section raised us to the contemplation of the workings of the soul. I ask you to accompany me in the consideration of nothing higher than a stuffy room. Every one thinks that he suffers in an ill-ventilated room owing to some change in the chemical quality of the air, be it want of oxygen, or excess of carbon dioxide, the addition of some exhaled organic poison, or the destruction of some subtle property by passage of the air over steam-coils or other heating or conducting apparatus. We hear of "devitalized" or "dead" air, and of "tinned" or "potted" air of the battleship. The good effects of open-air treatment, sea and mountain air, are no less generally ascribed to the chemical purity of the air. In reality the health-giving properties are those of temperature, light, movement, and relative moisture of the surrounding atmosphere; and leaving on one side those gross chemical impurities which arise in mines and in some manufacturing processes, and the question of bacterial infection, the alterations in chemical composition of the air in buildings where people crowd together and suffer from the effects of ill ventilation have nothing to do with the causation of these effects.

Satisfied with the maintenance of a specious standard of chemical purity, the public has acquiesced in the elevation of sky-scrapers and the sinking of cavernous places of business. Many have thus become cave-dwellers, confined for most of their waking and sleeping hours in windless places, artificially lit, monotonously warmed. The sun is cut off by the shadow of tall buildings and by smoke—the sun, the energizer of the world, the giver of all things which bring joy to the heart of man, the fitting object of worship of our forefathers.

The ventilating and heating engineer hitherto has followed a great illusion in thinking that the main objects to be attained in our dwellings and places of business are chemical purity of the air and a uniform draughtless summer temperature.

Life is the reaction of the living substance to the ceaseless play of the environment. Biotic energy arises from the transformation of those other forms of energy—heat, light, sound, etc.—which beat upon the transformer, the living substance (B. Moore). Thus, when all the avenues of sense are closed, the central nervous system is no longer aroused and consciousness lapses. The patient who lost one labyrinth by disease, and, to escape unendurable vertigo, had the other removed by operation, was quite unable to guide his movements or realize his position in the dark. Rising from bed one night, he collapsed on the floor and remained there helpless till succour arrived.

A sense organ is not stimulated unless there is a change of rate in the transference of energy; and this to be effectual must occur in most cases with considerable quickness. If a weak agent is to stimulate, its application must be abrupt (Sherrington). Thus the slow changes of barometric pressure on the body-surface originate no skin sensations, though such changes of pressure, if applied suddenly, are much above the threshold value for touch. A touch excited by constant mechanical pressure of slight intensity fades quickly below the threshold of sensation. Thus the almost unbearable discomfort which a child feels on putting on for the first time a "natural" wool vest fades away and is no longer noticed with continual wear. Thomas à Becket soon must have become oblivious to his hair

shirt, and even to its harbingers. It is not the wind which God tempers to the shorn lamb, but the skin of the lamb to the wind. The inflow of sensations keeps us active and alive and all the organs working in their appointed functions. The cutaneous sensations are of the highest importance. The salt and sand of wind-driven sea air particularly act on the skin, and through it braces the whole body. The changing play of wind, of light, cold, and warmth stimulate the activity and health of mind and body. Monotony of sedentary occupation and of an overwarm still atmosphere endured for long working hours destroys vigour and happiness, and brings about the atrophy of disuse. We hear a great deal of the degeneration of the race brought about by city life, but observation shows us that a drayman, navvy, or policeman can live in London, or other big city, strong and vigorous, and no less so than in the country. The brain worker, too, can keep himself perfectly fit if his hours of sedentary employment are not too long, and he balances these by open-air exercise. The horses stabled, worked, and fed in London are as fine as any in the world; they do not live in windless rooms heated by radiators.

The hardy men of the North were evolved to stand the vagaries of climate—cold and warmth—a starved or full belly have been their changing lot. The full belly and the warm sun have expanded them in lazy comfort; the cold and the starvation have braced them to action. Modern civilization has withdrawn many of us from the struggle with the rigors of Nature; we seek for and mostly obtain the comfort of a full belly, and expand all the time in the warm atmosphere afforded us by clothes, wind-protected dwellings, and artificial heat—particularly so in the winter, when the health of the business man deteriorates. Cold is not comfortable, neither is hunger; therefore we are led to ascribe many of our ills to exposure to cold, and seek to make ourselves strong by what is termed good living. I maintain that the bracing effect of cold is of supreme importance to health and happiness; that we become soft and flabby, and less resistant to the attacks of infecting bacteria in the winter, not because of the cold, but because of our excessive precautions to preserve ourselves from cold; that the prime cause of "cold" or "chill" is not really exposure to cold, but to the overheated and confined air of rooms, factories, and meeting-places. Seven hundred and eleven survivors were saved from the *Titanic* after hours of exposure to cold. Many were insufficiently clad, and others wet to the skin. Only one died after reaching the *Carpathia*, and he three hours after being picked up. Those who died perished from actual cooling of the body. Exposure to cold did not cause in the survivors the diseases commonly attributed to cold.

Conditions of city and factory life diminish the physical and nervous energy, and reduce many from the vigorous health and perfectness of bodily functions which a wild animal possesses to a more secure, but poorer and far less happy, form of existence. The ill-chosen diet, the monotonous and sedentary nature of daily work, the windless uniformity of atmosphere, above all, the neglect of vigorous muscular exercise in the open air and exposure to the winds and light of heaven—all these, together with the difficulties in the way of living a normal sexual life, go to make the pale, undeveloped, neurotic, and joyless citizen. Nurture in unnatural surroundings, not Nature's birthmark, moulds the criminal and the wastrel. The environment of childhood and youth is at fault rather than the stock; the children who are taken away and trained to be sailors, those sent to agricultural pursuits in the Colonies, those who become soldiers, may develop a physique and bodily health and vigour in striking contrast to their brothers who become clerks, shop assistants, and compositors.

Too much stress cannot be put on the importance of muscular exercise in regard to health, beauty, and happiness. Each muscle fills with blood as it relaxes, and expels this blood on past the venous valves during contraction. Each muscle, together with the venous valves, forms a pump to the circulatory system. It is the function of the heart to deliver the blood to the capillaries, and the function of the muscles—visceral, respiratory, and skeletal—to bring it back to the heart. The circulation is contrived for a restless mobile animal; every vessel is arranged so that muscular movement furthers the flow of blood.

The pressure of the blood in the veins and arteries under the influence of gravity varies with every change of posture. The respiratory pump, too, has a profound influence on the circulation. Active exercise, such as is taken in a game of football, entails endless changes of posture, varying compressive actions—one with another struggling in the rough and tumble of the game—forcible contractions and relaxations of the muscles, and a vastly increased pulmonary ventilation; at the same time the heart's action is accelerated and augmented and the arterial supply controlled by the vasomotor system. The influence of gravity, which tends to cause the fluids of the body to sink into the lower parts, is counteracted; the liver is rhythmically squeezed like a sponge by the powerful respiratory movements, which not only pump the blood through the abdominal viscera, but thoroughly massage these organs, and kneading these with the omentum clean the peritoneal cavity and prevent constipation. At the same time the surplus food metabolic products, such as sugar and fat, stored in the liver, are consumed in the production of energy, and the organs swept with a rapid stream of blood containing other products of muscular metabolism which are necessary to the inter-relation of chemical action. The output of energy is increased very greatly; a resting man may expend 2,000 calories per diem; one bicycling hard for most of the day expended 8,000 calories, of which only 4,000 was covered by the food eaten.

Such figures show how fat is taken off from the body by exercise, for the other 4,000 calories comes from the consumption of surplus food products stored in the tissues. While resting a man breathes some 7 litres of air, and uses 300 c.cm. of oxygen per minute, against 140 litres and 3,000 c.cm. while doing very hard labour. The call of the muscles for oxygen through such waste products as lactic acid impels the formation of red corpuscles and haemoglobin. The products of muscular metabolism in other ways not yet fully defined modify the metabolism of the whole body.

Exposure to cold, cold baths, and cold winds has a like effect, accelerating the heart and increasing the heat production, the activity of the muscles, the output of energy, the pulmonary ventilation, and intake of oxygen and food. In contrast with the soft, pot-bellied, over-fed city man, the hard, wiry fisherman trained to endurance has no superfluity of fat or tissue fluid. His blood volume has a high relative value in proportion to the mass of his body. His superficial veins are confined between a taut skin and muscles, hard as in a racehorse trained to perfection. Thus the adequacy of the cutaneous circulation and loss of heat by radiation rather than by sweating is assured. His fat is of a higher melting-point, hardened by exposure to cold. In him less blood is derived to other parts, such as adipose tissue, skin, and viscera. He uses up the oxygen in the arterial blood more completely and with greater efficiency; for the output of each unit of energy his heart has to circulate much less blood (Kreogh); his blood is sent in full volume by the well-balanced activity of his vasomotor system to the moving parts. Owing to the perfect co-ordination of his muscles, trained to the work, and the efficient action of his skin and cutaneous circulation—the radiator of the body—he performs the work with far greater economy and less fatigue. The untrained man may obtain 12 per cent. of his energy output as work, against 30 per cent., or perhaps even 50 per cent., obtained by the trained athlete. Hence the failure and risk suffered by the city man who rushes straight from his office to climb the Alps. On the other hand, the energetic man of business or brain worker is kept by his work in a state of nervous tension. He considers alternative lines of action, but scarcely moves. He may be intensely excited, but the natural muscular response does not follow. His heart is accelerated, and his blood pressure raised, but neither muscular movements and accompanying changes of posture, nor the respiratory pump materially aid the circulation. The activity of his brain demands a rapid flow of blood, and his heart has to do the circulatory work, as he sits still or stands at his desk, against the influence of gravity. Hence a high blood pressure is maintained for long periods at a time by vaso-constriction of the arteries in the lower parts of the body and increased action of the heart; hence, perhaps, arise those degenerative changes in the circulatory system which affect some men tireless in their mental activity.

We know that the bench-worker who stands on one leg for long hours a day may suffer from degeneration and varicosity of the veins in that leg. Long continued high arterial pressure, with systolic and diastolic pressures approximately the same, entails a stretched arterial wall, and this must impede the circulation in the vaso vasorum, the flow of tissue lymph in, and nutrition of, the wall. Since his sedentary occupation reduces the metabolism and heat production of his body very greatly, the business man requires a warmer atmosphere to work in. If the atmosphere is too warm it reduces his metabolism and pulmonary ventilation still further; thus he works in a vicious circle. Exhausting work causes the consumption of certain active principles—for example, adrenalin, and the reparation of these must be from the food. To acquire certain of the rarer principles expended in the manifestation of nervous energy more food may have to be eaten by the sedentary worker than can be digested and metabolized. His digestive organs lack the kneading and massage, the rapid circulation and oxidation of foodstuffs which is given by muscular exercise. Hence arise the digestive and metabolic ailments so common to brain workers.

Mr. Robert Milne informs me that of the thousands of children which have passed through Barnardo's Homes—there are 9,000 in the homes at any one time—not one after entering the institution and passing under its regimen and the care of his father, Dr. Milne, has developed appendicitis. Daily exercise and play, adequate rest, a regular simple diet, have ensured their immunity from this infection. It pays to keep a horse healthy and efficient; it no less pays to keep men healthy. I recently investigated the case of clerks employed in a great place of business, whose working hours are from 9 a.m. to 6 p.m. on three days, and 7 a.m. to 9 p.m. on the other three days of each week, and, working such overtime, they make £1 to £2 a week; these clerks worked in a confined space—forty to fifty of them in 8,200 cubic feet, lit with thirty electric lamps, cramped for room, and overheated in warm summer days. It is not with the chemical purity of the air of such an office that fault is to be found, for fans and large openings ensured this sufficiently. These clerks suffered from their long hours of monotonous and sedentary occupation, and from the artificial light, and the windless, overwarm, and moist atmosphere. Many a girl cashier has worked from 8 to 8.30, and on Saturdays from 8 to 10, and then has had to balance her books, and leave perhaps after midnight on Sunday morning. Her office is away in the background—confined, windless, artificially lit. The Shops Act has given a little relief from these hours. What, I ask, is the use of the State spending a million a year on sanatoriums and tuberculin dispensaries, when those very conditions of work continue which lessen the immunity and increase the infection of the workers?

The jute industry in this town of Dundee is carried out almost wholly by female and boy labour. "The average wages for women are below 12s. in eight processes, and above 12s., but under 18s., for the remaining five processes." The infant mortality has been over 170 per 1,000. The Social Union of Dundee reported in 1905 that of 885 children born to 240 working mothers, no fewer than 520, or 59 per cent., died—and almost all of them were under 5 years of age. The life of these mothers was divided between the jute factory and the one-roomed tenement. Looking such conditions squarely in the face, I say it would be more humane for the State to legalize the exposure of every other newborn infant on the hillside rather than allow children to be slowly done to death. The conditions, as given in the report, contravene those rights of motherhood which the meanest wild animal can claim.

Isolation hospitals, sputum-pots, and antispitting regulations will not stamp out tuberculosis. Such means are like shutting the door of the stable when the horse has escaped. Flügge has shown that tubercle bacilli are spread by the droplets of saliva which are carried out as an invisible spray when we speak, sing, cough, sneeze. Sputum-pots cannot control this. The saliva of cases of phthisis may teem with the bacilli. The tuberculin reaction tests carried out by Hamburger and Monti in Vienna show that 94 per cent. of all children aged 11 to 14 have been infected with tubercle. In most the infection is a mere temporary indisposition. I believe that the conditions of exhausting work and amusement in confined and overheated atmospheres, together with ill-regulated feeding, determine largely whether the infection, which almost none can escape, become serious or not. Karl Pearson suggests that the death statistics afford no proof of the utility of sanatorium or tuberculin dispensaries, for during the very years in which such treatment has been in vogue, the fall in the mortality from tuberculosis has become less relatively to the fall in general mortality. He opines that the race is gradually becoming immune to tubercle, and hence the declination in the mortality curve is becoming flattened out—that Nature is paramount as the determinant of tuberculosis, not nurture. From a statistical inquiry into the incidence of tuberculosis in husband and wife and parent and child, Pearson concludes that exposure to infection as in married couples is of little importance, while inborn immunity or diathesis is a chief determinant. Admitting the value of his critical inquiries and the importance of diathesis, I would point out that in the last few years the rush and excitement of modern city life has increased, together with the confinement of workers to sedentary occupations in artificially lit, warm, windless atmospheres. The same conditions pertain to places of amusement, eating-houses, tube railways, etc.

Central heating, gas radiators, and other contrivances are now displacing the old open fire and chimney. This change greatly improves the economical consumption of coal and the light and cleanliness of the atmosphere. But in so far as it promotes monotonous, windless, warm atmospheres, it is wholly against the health and vigour of the nation. The open fire and wide chimney ensure ventilation, the indrawing of cold outside air, streaky air—restless currents at different temperatures, which strike the sensory nerves in the skin and prevent monotony and weariness of spirit. By the old open fires we were heated with radiant heat. The air in the rooms was drawn in cool and varied in temperature. The radiator and hot-air system give us a deadly uniformly heated air—the very conditions we find most unsupportable on a close summer's day.

In Labrador and Newfoundland, Dr. Wakefield tells me, the mortality of the fisherfolk from tuberculosis is very heavy. It is generally acknowledged to be 4 per 1,000 of the population per annum, against 1.52 for England and Wales. Some of the Labrador doctors talk of 7 and even 8 per 1,000 in certain districts. The general death-rate is a low one. The fishermen fish off shore, work for many hours a day in the fishing season, and live with their families on shore in one-roomed shanties. These shanties are built of wood, the crannies are "stogged" with moss, and the windows nailed up, so that ventilation is very imperfect. They are heated by stoves and kept at a very high temperature—for example, 80 F. Outside in the winter the temperature may be 30 below freezing. The women stay inside the shanties almost all their time, and the tuberculosis rate is somewhat higher in them. The main food is white bread, tea stewed in the pot till black, fish occasionally, a little margarine, and molasses. The fish is boiled and the water thrown away. Game has become scarce in recent years; old, dark-coloured flour—spoken of with disfavour—has been replaced by white flour. In consequence of this diet beri-beri has become rife to a most serious extent, and the hospitals are full of cases. Martin Flack and I have found by our feeding experiments that rats, mice, and pigeons cannot be maintained on white bread and water, but can live on wholemeal, or on white bread in which we incorporate an extract of the sharps and bran in sufficient amount. Recent work has shown the vital importance of certain active principles present in the outer layers of wheat, rice, etc., and in milk, meat, etc., which are destroyed by heating to 120 C. A diet of white bread or polished rice and tinned food sterilized by heat is the cause of beri-beri. The metabolism is endangered by the artificial methods of treating foods now in vogue. As to the prevalency of tuberculosis in Labrador, we have to consider the intermarriage, the bad diet, the over-rigorous work of the fishermen, the overheating of and infection in the shanties. Dr. Wakefield has slept with four other travellers in a shanty with father, mother, and ten children. In some there is scarcely room on the floor to lie down. The shanties are heated with a stove on which pots boil all the time; water runs

down the windows. The patients are ignorant, and spit everywhere—on bed, floor, and walls. In the schools the heat and smell is most marked to one coming in from the outside air. In one school 50 cubic feet per child is the allowance of space. The children are eating all day long, and are kept in close, hot confinement. They suffer very badly from decay of the teeth. Whole families are swept off with tuberculosis, and the child who leaves home early may escape, while the rest of a family dies. Here, then, we have people living in the wildest and least populated of lands with the purest atmosphere suffering from all those ill results which are found in the worst city slums—tuberculosis, beri-beri, and decayed teeth.

The bad diet probably impels the people to conserve their body heat and live in the over-warm, confined atmosphere, just as our pigeons fed on white bread sit, with their feathers out, huddled together to keep each other warm.

The metabolism, circulation, respiration, and expansion of the lung are all reduced. The warm, moist atmosphere lessens the evaporation from the respiratory tract, and therefore the transudation of tissue lymph and activity of the ciliated epithelium. The unexpanded parts of the lung are not swept with blood. Everything favours a lodgement of the bacilli, and lessens the defences on which immunity depends. In the mouth, too, the immune properties of the saliva are neutralized by the continual presence of food, and the temperature of the mouth is kept at a higher level, which favours bacterial growth. Lieutenant Siem informs me that recently in Northern Norway there has been the same notable increase in tuberculosis. The old cottage fireplaces with wide chimneys have been replaced with American stoves. In olden days most of the heat went up the chimney, and the people were warmed by radiant heat. Now the room is heated to a uniform moist heat. The Norwegians nail up the windows and never open them during the winter. At Lofoten, the great fishing centre, motor boats have replaced the old open sailing and row boats. The cabin in the motor boat is very confined, covered in with water-tight deck, heated by the engine, crowded with a dozen workers. When in harbour the fishermen used to occupy ill-fitted shanties, through which the wind blew freely; now, to save rent, they sleep in the motor-boat cabins.

Here, again, we have massive infection, and the reduction of the defensive mechanisms by the influence of the warm, moist atmosphere.

The Norwegian fishermen feed on brown bread, boiled fish, salt mutton, margarine, and drink, when in money, beer and schnapps; there is no gross deficiency in diet, as in Labrador, and beri-beri does not attack them. They return home to their villages and longshore fishing when the season is over. The one new condition which is common to the two districts is confinement in stove-heated, windless atmospheres. In old days the men were crowded together, but in open boats or in draughty shanties, and had nothing but little cooking stoves.

The conditions of great cities tend to confine the worker in the office all day, and to the heated atmosphere of club, cinema show, or music-hall in the evening. The height of houses prevents the town dweller from being blown upon by the wind, and, missing the exhilarating stimulus of the cool, moving air, he repels the dull uniformity of existence by tobacco and by alcohol, or by indulgence in food, for example, sweets, which are everywhere to his hand, and by the nervous excitement of business and amusement. He works, he eats, and is amused in warm, windless atmospheres, and suffers from a feeble circulation, a shallow respiration, a disordered digestion, and a slow rate of metabolism.

Many of the employments of modern days are detestable in their long hours of confinement and monotony. Men go up and down in a lift all day, and girls in the bloom of youth are set down in tobacco stalls in underground stations, and their health and beauty there fade, while even the bl[illegible] are free to bask in the sun. In factories the [illegible] feed machines, or reproduce the same small piece of an article day after day. There is no art, or change, no pleasure in contrivance and accomplishment. T[illegible] the fireman, even the sewerman, face difficulties, changing risks, and are developed as men of character and strength. Contrast the sailor with the steward on a steamer, the drayman outside with the clerk inside who checks the goods delivered at some city office, the butcher and the tailor, the seamstress and the market woman, and one sees the enormous difference which a confined occupation makes. Monotonous sedentary employment makes for unhappiness because the inherited functional needs of the human body are neglected, and education—when the outside field of interest is narrowed—intensifies the sensitivity to the bodily conditions. The sensations arising within the body—proprioceptive sensations—come to have too large a share in consciousness in comparison with exteroceptive. In place of considering the lilies how they grow, or musing on the beauty and motions of the heavenly bodies, the sedentary worker in the smoke-befouled atmosphere, with the limited activity and horizon of an office and a disturbed digestion, tends to become confined to the inward consideration of his own viscera and their motions.

Many of the educated daughters of the well-to-do are no less confined at home; they are the flotsam and jetsam cast up from the tide in which all others struggle for existence—their lives are no less monotonous than the sweated sempstress or clerk. They become filled with "vapours," and some seek excitement not in the cannon's mouth, but in breaking windows, playing with fire, and hunger strikes. The dull monotony of idle social functions, shopping, and amusement, no less than that of sedentary work and an asexual life, impels to a simulated struggle—a theatrical performance, the parts of which are studied from the historical romances of revolution. Each man, woman, and child in the world must find the wherewithal for living, food, raiment, warmth, and housing, or must die or get some other to find it for him. It seems to me as if the world is conducted as if ten men were on an island—a microcosm—and five sought for the necessaries of life, hunted for food, built shelters and fires, made clothes of skins, while the other five strung necklaces of shells, made loin-cloths of butterfly wings, gambled with knuckle-bones, drew comic pictures in the sand, or carved out of clay frightening demons, and so beguiled from the first five the larger share of their wealth. In this land of factories, while the many are confined to mean streets and wretched houses, possessing no sufficiency of baths and clean clothing, and are ill fed, they work all day long, not to fashion for themselves better houses and clothing, but to make those unnecessaries such as "the fluff" of women's apparel, and a thousand trifles which relieve the monotony of the idle and bemuse their own minds.

The discovery of radium and its disintegration as a source of energy has enabled the physicist to extend Lord Kelvin's estimate of the world's age from some thirty to a thousand million years. Arthur Keith does not hesitate to give a million of these years to man's evolution. Karl Pearson speaks of hundreds of thousands of years. The form of the human skull, the brain capacity of man, his skill as evidenced by stone implements and cave drawings of animals in action, was the same tens of thousands of years ago as now. For ages primitive man lived as a wild animal in tropical climes, discovered how to make fire, clothe himself in skins, build shelters, and so enable himself to wander over the temperate and arctic zones. Finally, in the last few score of years, he has made houses draughtless with glass windows, fitted them with stoves and radiators, and every kind of device to protect himself from cold, while he occupies himself in the sedentary pursuits and amusements of a city life. How much better, to those who know the boundless horizon of life, to be a frontiersman and enjoy the struggle, with body hardened, perfectly fit, attuned to Nature, than to be a cashier, condemned to the occupation of a sunless, windless, pay-box. The city child, however, nurtured and educated in confinement, knows not the largeness and wonders of Nature, is used to the streets with their ceaseless movement and romantic play of artificial light after dark, and does not need the commiseration of the country mouse any more than the beetle who lives in the dark and mounted burrows of his heap. But while outdoor work disciplines the body of the countryman into health, the town man needs the conscious attention and acquired educated control of his life to give him any full measure of health and happiness.

Experimental evidence is strongly in favour of my argument that the chemical purity of the air is of no importance. Analyses show that the oxygen in the

worst-ventilated school-room, chapel, or theatre is never lessened by more than 1 per cent. of an atmosphere; the ventilation through chink and cranny, chimney, door and window, and the porous brick wall, suffices to prevent a greater diminution. So long as there is present a partial pressure of oxygen sufficient to change the haemoglobin of the venous blood into oxyhaemoglobin there can arise no lack of oxygen.

At sea-level the pressure of oxygen in the pulmonary alveolar air is about 100 mm. Hg. Exposed to only half this pressure the haemoglobin is more than 80 per cent. saturated with oxygen.

In noted health resorts of the Swiss mountains the barometer stands at such a height that the concentration of oxygen is far less than in the more ventilated room. On the high plateau of the Andes there are great cities: Potosi with a hundred thousand inhabitants is at 4,165 metres, and the partial pressure of oxygen there is about 13 per cent. of an atmosphere in place of 71 per cent. at sea-level; railways and mines have been worked up to altitudes of 14,000 to 15,000 ft. At Potosi girls dance half the night, and toreadors display their skill in the ring. On the slopes of the Himalayas shepherds take their flocks to altitudes of 18,000 ft. No disturbance is felt by the inhabitants or those who reach these great altitudes slowly and by easy stages. The only disability to a normal man is diminished power for severe exertion, but a greater risk arises from want of oxygen to cases of heart disease, pneumonia, and in chloroform anaesthesia at these high altitudes. The newcomer who is carried by the railway in a few hours to the top of Pike's Peak or the Andes may suffer severely from mountain sickness, especially on exertion, and the cause of this is want of oxygen. Acclimatization is brought about in a few days' time. The pulmonary ventilation increases, the bronchial tubes dilate, the circulation becomes more rapid. The increased pulmonary ventilation lowers the partial pressure of carbon dioxide in the blood and pulmonary air, and this contributes to the maintenance of an adequate partial pressure of oxygen. Haldane and Douglas say that the percentage of red corpuscles and total quantity of the haemoglobin increases, and maintain that the oxygen is actively secreted by the lung into the blood, but the C method by which their determinations have been made has not met with unqualified acceptance. If waste products, which arise from oxygen want, alter the combining power of haemoglobin, this alteration may not persist in shed blood; for these products may disappear when the blood is exposed to air. Owing to the combining power of haemoglobin the respiratory exchange and metabolism of an animal within wide limits is independent of the partial pressure of oxygen. On the other hand, the process of combustion is dependent not on the pressure but on the percentage of oxygen. Thus the aeroplanist may become seized with altitude sickness from oxygen want, while his gas engine continues to carry him to loftier heights.

The partial pressure of oxygen in a mine at a depth of 3,000 ft. is considerably higher than at sea-level, and if the percentage is reduced to 17, while the firing of fire-damp and coal dust is impossible, there need be in the alveolar air of the lungs no lower pressure of oxygen than at sea-level. Thus the simplest method of preventing explosions in coal mines is that proposed by J. Harger—namely, to ventilate them with air containing 17 per cent. of oxygen.[1] There is little doubt that all the great mine explosions have been caused by the enforcement of a high degree of chemical purity of the air. In the old days, when ventilation was bad, there were no great dust explosions. Mr. W. H. Chambers, general manager of the Cadeby mine, where the recent disastrous explosion occurred, with the authority of his great and long practical experience of fiery mines, told me that the spontaneous combustion of coal and the danger of explosion can be wholly met by adequate diminution in ventilation. The fires can be choked out while the miners can still breathe and work. The Coal Mines Regulation Act enforces that a place shall not be in a fit state for working or passing therein if the air contains either less than 19 per cent. of oxygen or more than 1¼ per cent. of carbon dioxide. A mine liable to spontaneous combustion of coal may be exempted from this regulation by order of the Secretary of State.

The regulations impel the provision of such a ventilation current that the percentage of oxygen is sufficient for the spread of dust explosions along the intake airways, with the disastrous results so frequently recorded. If the mine were ventilated with air containing 17 per cent. of oxygen in sufficient volume to keep the miners cool and fresh, not only would explosions be prevented, but the mines could be safely worked and illuminated with electricity, and miners' nystagmus prevented, for this is due to the dim light of the safety lamp. The problem possibly may be solved by purifying and cooling the return air, and mixing and circulating this with a sufficiency of fresh air.

Owing to the fact that the percentage of CO_2 is the usual test of ventilation, and that only a very few parts per 10,000 in excess of fresh air are permitted by the English Factory Acts, it is generally supposed that CO_2 is a poison, and that any considerable excess has a deleterious effect on the human body. No supposition could be further from the truth.

The percentage of CO_2 in the worst ventilated room does not rise above 0.5 per cent., or at the outside 1 per cent. It is impossible that any excess of CO_2 should enter into our bodies when we breathe such air, for whatever the percentage of CO_2 in the atmosphere may be, that in the pulmonary air is kept constant at about 5 to 6 per cent. of an atmosphere—by the action of the respiratory centre. It is the concentration of CO_2 which rules the respiratory centre, and to such purpose as to keep the concentration both in the lungs and in the blood uniform (Haldane), the only result from breathing air containing 0.5 to 1 per cent. of CO_2 is an inappreciable increase in the ventilation of the lungs. The very same thing happens when we take gentle exercise and produce more CO_2 in our bodies.

At each breath we rebreathe into our lungs the air in the nose and large air tubes (the dead-space air), and about one-third of the air which is breathed in by a man at rest in dead-space air. Thus, no man breathes in pure outside air into his lungs. When a child goes to sleep with its head partly buried under the bed-clothes, and in a cradle confined by curtains, he rebreathes the expired air to a still greater extent, and so with all animals that snuggle together for warmth's sake. Not only the newborn babe sleeping against its mother's breast, but pigs in a sty, young rabbits, rats, and mice clustered together in their nests, young chicks under the brooding hen, all alike breathe a far higher percentage than that allowed by the Factory Acts.

To rebreathe one's own breath is a natural and inevitable performance, and to breathe some of the air exhaled by another is the common lot of men who, like animals, have to crowd together and husband their heat in fighting the inclemency of the weather.

In the Albion Brewery we analysed on three different days the air of the room where the CO_2 generated in the vats is compressed and bottled as liquid carbonic acid. We found from 0.14 to 0.93 per cent. of CO_2 in the atmosphere of that room. The men who were filling the cylinders and turning the taps on and off to allow escape of air must often breathe more than this. The men engaged in this occupation worked twelve-hour shifts, having their meals in the room. Some had followed the same employment for eighteen years, and without detriment to their health. It is only when the higher concentrations of CO_2 are breathed, such as 3 to 4 per cent. of an atmosphere, that the respiration is increased, so that it is noticeable to the resting individual; but percentages over 1 per cent. diminish the power to do muscular work, for the excess of CO_2 produced by the work adds its effect to that of the excess in the air, and the difficulty of co-ordinating the breathing to the work in hand is increased.

Haldane and Priestley found that with a pressure of 2 per cent. of an atmosphere of CO_2 in the inspired air the pulmonary ventilation of a man at rest was increased 50 per cent., with 3 per cent. about 100 per cent., with 4 per cent. about 200 per cent., with 5 per cent. about 300 per cent., and with 6 per cent. about 500 per cent. With the last, panting is severe, while with 3 per cent. it is unnoticed until muscular work is done, when the panting is increased 100 per cent. more than usual. With more than 6 per cent. the distress is very great, and headache, flushing, and sweating occur.

Divers who work in diving dress and men who work in compressed air caissons constantly do heavy and continuous labour in concentrations of CO_2 higher than 1 per cent. of an atmosphere, and so long as the CO_2 is kept below 2 to 3 per cent. they are capable of carrying out efficient work.

In the case of workers in compressed air it is important to bear in mind that the effect of the CO_2 on the breathing depends on the partial pressure and not on the percentage of this gas in the air breathed.

By a series of observations made on rats confined in cages fitted with small ill-ventilated sleeping chambers, we have found that the temperature and humidity of the air—not the percentage of carbon dioxide or oxygen—determines whether the animals stay inside the sleeping room or come outside. When the air is cold they like to stay inside, even when the carbon dioxide rises to 4 to 5 per cent. of an atmosphere. When the sleeping chamber is made too hot and moist they come outside.

The sanitarian says it is necessary to keep the CO_2 below 0.01 per cent., so that the organic poisons may not collect to a harmful extent. The evil smell of crowded rooms is accepted as unequivocal evidence of the existence of such. He pays much attention to this and little or none to the heat and moisture of the air. The smell arises from the secretions of the skin, soiled clothes, etc. The smell is only sensed by and excites disgust in one who comes to it from the outside air. He who is inside and helps to make the "fugg" is both wholly unaware of and unaffected by it. Flügge points out, with justice, that while we naturally avoid any smell that excites disgust and puts us off our appetite, yet the offensive quality of the smell does not prove its poisonous nature. For the smell of the trade or food of one man may be horrible and loathsome to another not used to such.

The sight of a slaughterer and the smell of dead meat may be loathly to the sensitive poet, but the slaughterer is none the less healthy. The clang and jar of an engineer's workshop may be unendurable to a highly strung artist or author, but the artificers miss the stoppage of the noisy clatter. The stench of glue-works, fried-fish shops, soap and bone-manure works, middens, sewers, become as nothing to those engaged in such, and the lives of the workers are in no wise shortened by the stench they endure. The nose ceases to respond to the uniformity of the impulse, and the stench clearly does not betoken in any of these cases the existence of a chemical organic poison. On descending into a sewer, after the first ten minutes the nose ceases to smell the stench; the air therein is usually found to be far freer from bacteria than the air in a school-room or tenement.

If we turn to foodstuffs we recognize that the smell of alcohol and of Stilton or Camembert cheese is horrible to a child, while the smell of putrid fish—the meal of the Siberian native—excites no less disgust in an epicure, who welcomes the cheese. Among the hardiest and healthiest of men are the North Sea fishermen, who sleep in the cabins of trawlers reeking with fish and oil, and for the sake of warmth shut themselves up until the lamp may go out from want of oxygen. The stench of such surroundings may effectually put the sensitive, untrained brain worker off his appetite, but the robust health of the fisherman proves that this effect is nervous in origin, and not due to a chemical organic poison in the air.

Ventilation cannot get rid of the source of a smell, while it may easily distribute the evil smell through a house. As Pettenkofer says, if there is a dung-heap in a room, it must be removed. It is no good trying to blow away the smell.

Flügge and his school bring convincing evidence to show that a stuffy atmosphere is stuffy owing to heat stagnation, and that the smell has nothing to do with the origin of the discomfort felt by those who endure it. The inhabitants of reeking hovels in the country do not suffer from chronic ill health, unless want of nourishment, open-air exercise, or sleep come into play. Town workers who take no exercise in the fresh air are pale, anaemic, listless. Sheltered by houses they are far less exposed to winds, and live day and night in a warm, confined atmosphere.

The widespread belief in the presence of organic poisons in the expired air is mainly based on the statements of Brown-Séquard and d'Arsonval, statements wholly unsubstantiated by the most trustworthy workers in Europe and America. These statements have done very great mischief to the cause of hygiene, for they led ventilating engineers and the public to seek after chemical purity, and neglect the attainment of adequate coolness and movement of the air. It was stated that the condensation water obtained from expired air is poisonous when injected into animals. The evidence on which this statement is based is not only not worthy of credence, but is absurd—for example, condensation water has been injected into a mouse in a quantity equivalent to injecting 5 kilograms into a man weighing 60 kilograms. No proper controls were carried out. It is recognized now that any distilled water contaminated by bacterial products may have a toxic effect. Flack and I have for fourteen weeks kept guinea-pigs and rats confined together in a box and poorly ventilated, so that they breathed air containing 0.5 to 1.0 per cent. of CO_2. The guinea-pigs proved wholly free from anaphylactic shock on injecting rat's serum. Therefore they were not sensitized by breathing the exhaled breath of the rats for many weeks, and we are certain that no foreign protein substance is absorbed in this way. It has been proved by others, and by us, that animals so confined do well so long as they are well fed and their cages kept clean, light, cool, and dry. It is wholly untrue that they are poisoned by breathing each other's breath. The only danger arises from droplet contagion in cases of infective disease.

To study the relative effect of the temperature and chemical purity of the atmosphere I constructed a small experimental chamber of wood fitted with large glass observation windows and rendered air-tight.

On one side of the chamber were fixed two small electric heaters, and a tin containing water was placed on these in order to saturate the air with water vapour. On another side of the chamber was placed a large radiator, through which cold water could be circulated when required, so as to cool the chamber. In the roof were fixed three electric fans, one big and two small, by means of which the air of the chamber could be stirred. The chamber held approximately 3 cm. of air. In one class of experiments we shut within the chamber seven or eight students for about half an hour, and observed the effect of the confined atmosphere upon them. We kept them until the CO_2 reached 3 to 4 per cent., and the oxygen had fallen from 17 to 16 per cent. The wet-bulb temperature rose meanwhile to about 80° to 85° F., and the dry bulb a degree or two higher. The students went in chatting and laughing, but by-and-by, as the temperature rose, they ceased to talk and their faces became flushed and moist. To relieve the monotony of the experiment we have watched them trying to light a cigarette, and, puzzled by their matches going out, borrowing others only in vain. They had not sensed the diminution of oxygen, which fell below 17 per cent. Their breathing was deepened by the high percentage of CO_2, but no headache occurred in any of them from the short exposure. Their discomfort was relieved to an astonishing extent by putting on the electric fans placed in the roof. Whilst the air was kept stirred the students were not affected by the oppressive atmosphere. They begged for the fans to be put on when they were cut off. The same old stale air containing 3 to 4 per cent. CO_2 and 16 to 17 per cent. O_2 was whirled, but the movement of the air gave relief, because the air was 80° to 85° F. (wet bulb), while the air enmeshed in their clothes in contact with their skin was 98° to 99° F. (wet bulb). If we outside breathed through a tube the air in the chamber we felt none of the discomfort which was being experienced by those shut up inside. Similarly, if one of those in the chamber breathed through a tube the pure air outside he was not relieved.

R. A. Rowlands and H. B. Walker carried out a large number of observations in the chamber, each acting as subject in turn.

They recorded the effect on the respiratory ventilation and on the pulse-rate both when resting and when working. The work consisted in pulling a 20-kilogram weight about 1 metre high by means of a pulley and rope.

In some of the experiments the exhaled carbonic acid was absorbed, and in others carbonic acid was put into the chamber. The subjects inside could not tell when the gas was introduced, not even if the percentage were suddenly raised by 2. The introduction of this amount of the gas made no sensible difference to them, but increased their pulmonary ventilation.

In every one of the experiments they suffered from the heat, and the putting on of the fans gave great relief, and in particular diminished the pulse-rate during and after the working periods. The relief became much greater

when cold water was circulated through the radiator and the temperature of the chamber lowered 10 F.

The subjects wore only a vest, pants, and shoes in most of these experiments. When they wore their ordinary clothing the effect on the frequency of the pulse was more marked and the discomfort from heat and moisture much greater.

I have made observations on men dressed in the Fleuss rescue apparatus for use in mines, and exposed in a chamber to 120 F. dry bulb and 95° F. wet bulb. The skin temperature rises to the rectal temperature and the pulse is greatly accelerated—for example, to 150—and there arises danger of heat-stroke. The conditions are greatly relieved by interposing on the inspiratory tube of the apparatus a cooler filled with carbonic acid snow. The cool inspired air lowers the frequency of the heart and makes it possible for the men to do some work at 95° F. wet bulb, and to endure this temperature for two hours.

The observations made by Pembrey and Collis on the weaving-mill operatives at Darwen show that the skin of the face may be 4° to 13° F. higher in the mill when the wet bulb is 71° F. than at home when the wet bulb temperature is about 55° F. The tendency of the warm, humid atmosphere of the mill is to establish a more uniform temperature of the body as a whole (surface and deep temperatures), and to throw a tax upon the power of accommodation as indicated by the rapid pulse and low blood pressure.

The mill workers are wet with the steam blown into the sheds, their clothes and bodies are moist, and the long hours of exposure to such uncomfortable conditions are most deleterious to physical vigour and happiness. The operatives asked that they might be allowed to work without steam injectors and with diminished ventilation, so that the mill rooms became saturated with moisture evaporated from the bodies of the operatives. The old regulations, while forbidding more than 6 parts in 10,000 CO_2, put no limit to the wet-bulb temperature, and this often became excessive on hot summer days. The operatives were quite right. Less ventilation and a lower wet bulb is far better than ample ventilation and a high wet bulb. The permissible limit of CO_2 has now been raised to 11 parts in 10,000, and the wet-bulb temperature is to be controlled within reasonable limits.

The efficiency of workers in mills, mines, tunnels, stoke-holes, etc., is vastly increased by the provision of a sufficient draught of cool and relatively dry air, so as to prevent overtaxing of the heat-regulating mechanism. Mr. F. Green informs me that by means of forced draught the stoke-hole of an Orient steamer is rendered the coolest place when the ship is in the tropics.

The electric fan has vastly improved the conditions of the worker in the tropics. I would suggest that each clerk should have a fan just as much as a lamp on his desk. It will pay the employer to supply fans.

In the modern battleship men are confined very largely to places artificially lit and ventilated by air driven in by fans through ventilating shafts. The heat and moisture derived from the bodies of the men, from the engines, from cooking ranges, etc., lead to a high degree of relative moisture, and thus all parts of the ironwork inside are coated with granulated cork to hold the condensed moisture and prevent dripping.

The air smells with the manifold smells of oil, cooking, human bodies, etc., and the fresh air driven in by fans through the metal conduits takes up the smell of these, and is spoken of by the officers with disparagement as "tinned" or "potted" air. This air is heated when required by being made to pass over radiators. Many of the officers' cabins and offices for clerks, typewriters, etc., in the centre of a battleship have no portholes, and are only lit and ventilated by artificial means. The steel nature of the structure prevents the diffusion of air which takes place so freely through the brick walls of a house. The men in their sleeping quarters are very closely confined, and as the openings of the air conduits are placed in the roof between the hammocks, the men next to such openings receive a cold draught, and are likely to shut the openings. To sleep in a warm moist "fugg" would not much matter if the men were actively engaged for many hours of the day on deck and there exposed to the open air and the rigours of sea and weather. In the modern warship most of the crew work for many hours under deck, and some of the men may scarcely come on deck for weeks or even months. Considering the conditions which pertain, it seems to be of the utmost importance that all the men in a battleship should be inspected at short intervals by the medical officers so that cases of tuberculosis may be weeded out in their incipiency. The men of every rating should do deck drill for some part of every day. In the Norwegian navy every man, cooks and all, must do gymnastic drill on deck once a day. In the case of our navy, with voluntary service, the men should welcome this in their own interest.

In a destroyer visited by me twelve men occupied quarters containing about 1,700 cubic feet of air. There was a stove with iron pipe for chimney, from which fumes of combustion must leak when in use, and a fan which would not work. When the men are shut down the moisture is such that boots, etc., go mouldy, and the water drips off the structure. The cooling effect of the sea-water washing over the steel shell of the boat is beneficial in keeping down the temperature in these confined and ill-ventilated quarters. On the manœuvring platform in the engine-room the wet-bulb temperature reaches a very high degree owing to the slight escape of steam round the turbines. Commander Domvile was kind enough to send me the wet and dry bulb temperatures taken there on a number of days. The wet bulb was found to be never below 80° F., sometimes reached 95° and even 98° F. It is impossible for officers to work at these temperatures without straining the heat-regulating mechanism of the body and diminishing their health and working capacity. If such wet-bulb temperatures are unavoidable, means should be provided, such as fans, which would alleviate the discomfort and fatigue caused thereby. A supply of compressed air fitted with a nozzle might be arranged and used occasionally to douche the body with cool air. I have tried this plan and found it very effectual, and can recommend the compressed-air bath as the substitute for a bracing cold wind.

The suitability of the clothing is of the greatest importance, not only to the comfort but to the efficiency of man as a working machine—for example, power of soldiers to march. On a still day the body is confined by the clothes as if by a chamber of stagnant air, for the air is enclosed in the meshes of the clothes and the layer in contact with the skin becomes heated to body temperature and saturated with moisture.

The observations of Pembrey show that himself and four soldiers, marching in drill order on a moderately warm day, lost more water and retained more water in their clothes than on another similar day when they worked with no jacket on. The average figures were: Loss of moisture 1,600, against 1,200 grams, and water retained in clothes 254, against 109 grams. With no jacket the pulse was, on the average, increased 28 against 41 in drill order, and rectal temperature 1° against 1.5° F. The taking off of the jacket or throwing open of the jacket and vest very greatly increase the physiological economy of a march. It is absurd that on a hot summer day Boy Scouts should march with a coloured scarf knotted round their necks. Nothing should be worn for ornament or smartness which increases the difficulty of keeping down the body temperature. The power to march and the efficiency of an army depend on prevention of heart stagnation and avoidance of fatigue of the heart.

I conclude, then, that all the efforts of the heating and ventilating engineer should be directed towards cooling the air in crowded places and cooling the bodies of the people by setting the air in motion by means of fans. In a crowded room the air confined between the bodies and clothes of the people is almost warmed up to body temperature and saturated with moisture, so that cooling of the body by radiation, convection, and evaporation becomes reduced to a minimum. The strain on the heat-regulating mechanism tells on the heart. The pulse is accelerated, the blood is sent in increased volume to the skin, and circulates there in far greater volume, while less goes through the viscera and brain. As the surface temperature rises, the cutaneous vessels dilate, the veins become filled, the arteries may become small in volume, and the blood pressure low, the heart is fatigued by the extra work thrown upon it. The influence of the heat stagnation is shown by the great acceleration of the pulse when work is

done and the slower rate at which the pulse returns to its former rate on resting.

The increased percentage of carbonic acid and diminution of oxygen which has been found to exist in badly ventilated churches, schools, theatres, barracks, is such that it can have no effect upon the incidence of respiratory disease and higher death-rate, which statistical evidence has shown to exist among persons living in crowded and unventilated rooms. The conditions of temperature, moisture, and windless atmosphere in such places primarily diminishes the heat loss, and secondarily the heat production—that is, the activity of the occupants, together with total volume of air breathed, oxygen taken in and food eaten. The whole metabolism of the body is thus run at a lower plane, and the nervous system and tone of the body is unstimulated by the monotonous, warm, and motionless air. If hard work has to be done it is done under conditions of strain. The number of pathogenic organisms is increased in such places, and these two conditions run together—diminished immunity and increased mass influence of infecting bacteria.

The volume of blood passing through, and of water vapour evaporated from, the respiratory mucous membrane must have a great influence on the mechanisms which protect this tract from bacterial infection. While too wet an atmosphere lessens evaporation, a hot dry atmosphere dries up the mucous membrane. As the immunizing powers depend on the passage of blood plasma into the tissue spaces, it is clear that a proper degree of moisture is important. The temperature, too, must have a great influence on the scavenger activity of the ciliated epithelium and leucocytes in the mucous membrane of the nose.

In the warm, moist atmosphere of a crowded place the infection from spray sneezed coughed, or spoken out is enormous. On passing out from such an atmosphere into cold moist air the respiratory mucous membrane of the nose is suddenly chilled, the blood vessels constricted, and the defensive mechanism of cilia and leucocyte checked. Hence the prevalence of colds in the winter. In the summer the infection is far less. We are far more exposed to moving air, and the sudden transition from a warm to a cold atmosphere does not occur. We believe that infection is largely determined by (1) the mass influence of the infecting agent: (2) the shallow breathing and diminished evaporation from, and flow of tissue lymph through, the respiratory tract, in warm, moist confined air. Colds are not caught by exposure to cold *per se*, as is shown by the experience of arctic explorers, sailors, shipwrecked passengers, etc.

We have very great inherent powers of withstanding exposure to cold. The bodily mechanisms become trained and set to maintain the body heat by habitual exposure to open-air life. The risk lies in overheating our dwellings and overclothing our bodies, so that the mechanisms engaged in resisting infection become enfeebled, and no longer able to meet the sudden transition from the warm atmosphere of our rooms to the chill outside air of winter. The dark and gloomy days of winter confine us within doors, and, by reducing our activity and exposure to open air, depress the metabolism; the influence of smoke and fog, gloom of house and streets, cavernous places of business and dark dwellings, intensify the depression. The immunity to a cold after an infection lasts but a short while, and when children return, after the summer holidays, to school and damp, chill autumn days, infection runs around. The history of hospital gangrene and its abolition by the aseptic methods of Lister likewise the history of insect-borne disease—show the great importance of cleanliness in crowded and much occupied rooms. The essentials required of any good system of ventilation are, then, (1) movement, coolness, proper degree of relative moisture of the air; (2) reduction of the mass influence of pathogenic bacteria. The chemical purity of the air is of very minor importance, and will be adequately insured by attendance to the essentials.

As the prevention of spray (saliva) infection by ventilation is impossible in crowded places, it behoves us to maintain our immunity at a high level. We may seek to diminish the spray output of those infected with colds by teaching them to cough, sneeze, and talk with a handkerchief held in front of the mouth, or to stay at home until the acute stage is past.

In all these matters nurture is of the greatest importance, as well as Nature. A man is born with physical and mental capacities small or great, with inherited characteristics, with more or less immunity to certain diseases, with a tendency to longevity of life or the opposite; but his comfort and happiness in life, the small or full development of his physical and mental capacities, his immunity, and his longevity of life are undoubtedly determined to a vast extent by nurture.

By nurture—use the word in its widest sense to include all the defensive methods of sanitary science—plague, yellow fever, malaria, sleeping sickness, cholera, hospital-gangrene, etc., can be prevented by eliminating the infecting cause; small-pox and typhoid by this means, and also by vaccination: and most of the other ills which flesh is supposed to be heir to can be kept from troubling by approximating to the rules of life which a wild animal has to follow in the matter of a simple and often spare diet, hard exercise, and exposure to the open air.

There is nothing more fallacious than the supposition commonly held that over-feeding and over-coddling indoors promote health. The two together derange the natural functions of the body. He who seeks to save his life will lose it.

The body of a newborn babe is a glorious and perfect machine, the heritage of millions of years of evolution.

> Not in entire forgetfulness,
> And not in utter nakedness,
> But trailing clouds of glory do we come.
> . . . . .
> Shades of the prison house begin to close
> Upon the growing Boy.

The ill-conditioned body, anaemic complexion, and undersized muscles, or the fat and gross habit, the decay of the teeth, the disordered digestion, the nervous irritability and unhappiness are the result of "Nurture"—not Nature.

In institutions children may be disciplined to vigorous health. After leaving school they are set adrift to face monotonous work in confined places, amusement in music-halls and cinema shows in place of manly exercise in the open air, injudicious diet, alcohol, and tobacco—everything which the trainer of an athlete would repel.

> And custom lie upon him with a weight
> Heavy as frost, and deep almost as life.

REFERENCE.
1 *Trans. Inst. of Mining Engineers*, 1912.

THE Italian Minister of Posts and Telegraphs has appointed a commission to study the effects of the telephone service in relation to hygiene.

DR. LÉON LABBÉ, member of the French Senate, in speaking of the number of victims of professional duty in the French Army Medical Service, says that in the last eighty years 548 medical officers have been killed in battle, while 399 have died of plague, yellow fever, typhoid, and cholera. In the Crimea the French army lost 18.22 per cent. of its medical officers, while the loss of combatant officers was 14.17 per cent. In the Mexican expedition the army lost 20 per cent. of its medical officers and 4 per cent. of its combatant officers from yellow fever.

A YEAR ago, at the suggestion of the Italian Minister of Public Instruction, a commission was appointed to study the question of publishing the complete writings of Leonardo da Vinci. The first step was to obtain photographic reproductions of all the material preserved in Italy and other countries in public and private libraries. Commendatore Gino Modigliani has offered a sum of £4,000 towards the expenses of this undertaking. Leonardo was an anatomist as well as an artist and an engineer; and it is held by some that he anticipated much of the original work in anatomy which is usually attributed to Vesalius.

THE first meeting of the International Paediatric Association will be held in Paris, the opening day being fixed for October 7th. Two questions are proposed for discussion: infantile anaemias and forms of acute poliomyelitis. Each discussion will be opened by four reports, as follows:—Infantile anaemias: (*a*) digestive origin (Czerny); (*b*) chronic infective diseases (Benvendorff); (*c*) parasites of the blood (Jemma); (*d*) anaemias in general (Tixier). Acute poliomyelitis: (*a*) epidemiology (Wickmann); (*b*) pathological anatomy and experimental research (Zapper); (*c*) symptomatology (Müller); (*d*) surgical treatment (Ombrédanne).

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF ANAESTHETICS.

Dudley W. Buxton, M.D., B.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

In welcoming both our visitors and the members of the British Medical Association to the Section of Anaesthetics it seems pertinent that I should say a few words about the work which lies before us and upon the subject of the present position of anaesthetics.

Although attempts were made in this country, within a few years of the application of ether and chloroform to the purposes of surgery, to evolve scientific method out of the chaos of empiric handicraft—and the name of John Snow must always stand pre-eminent in this connexion—yet comparatively little progress was made to this end. Alike were the methods of producing anaesthesia jejune, and the attitude of our profession was unsympathetic towards serious workers among those who specialized as anaesthetists. While facilities and rewards were provided for younger men working in the newer branches of medicine and surgery, in anaesthesia research passed into the hands of the physiologists, the surgeons, and the physicists, although, fortunately for us, it was by them ably and strenuously pushed forward. The action of the British Medical Association stands out conspicuously in this regard and merits to the full the gratitude of anaesthetists. It has been this body which from the earliest days of anaesthesia has granted money and extended encouragement to those who sought to unravel some of the secrets of our calling. You all know that committees have been formed from time to time and have been munificently financed by our Association, and every effort has been made to increase our knowledge both of the science and of the art of anaesthesia. In spite of all the research which has been undertaken, we see that, even to-day, our methods in many ways are crude, and in many instances our individual knowledge is below the standard which obtains in kindred branches of surgery. We still labour under many disabilities, while those privileges which should exist as our right are accorded only to individuals in token of recognition of personal distinction. An item in our programme—the discussion upon the advantages of an anaesthetist having facilities granted him for studying his patient before giving the anaesthetic—is germane in this connexion. It is a detriment alike to the patient and to the operator, as well as to the anaesthetist, that the latter should be divorced from personal relations with the public. The confidence of the patient gained enables the anaesthetist to bring about a more perfect anaesthesia, to avoid risks, and to adopt the best and safest choice of his method. To the failures or ineptitudes of those who administer anaesthetics without possessing an adequate grounding in the science which should always underlie the art, we owe the confusing multiplicity of methods and the evanescent uses of anaesthetics which are, alas, only too common.

We have during the next few days to discuss some recently adopted methods, such as intravenous infusion of drugs, the intratracheal insufflation of anaesthetics, and the mixed method of giving alkaloidal substances before general anaesthetics. We have also to discuss the rival plans, those which are inhalational and those called local analgesia, spinal analgesia, although these are essentially but variants of the root principle of nerve blocking or regional analgesia. All thoughtful anaesthetists must welcome each and every addition to our armamentarium, but equally must they recognize the dangers incident to the hasty adoption of whatever is new, as if novelty itself were proof of superiority. It is natural that the enthusiasm which is engendered in the discoverer of a fresh method should lead him to regard it as a panacea against the defects and dangers of all methods of inducing unconsciousness to pain. It is, however, necessary that such enthusiasm should be brushed aside and its glamour discounted when we consider the evidence for and against each fresh claimant in the anaesthetic arena. Hence is the value of such meetings as the present. We come here to learn what has been the experience of others and to criticize impartially the claims advanced. I deprecate the attitude of some persons who, without any adequate knowledge, and even without any personal experience of modern methods, express unstinted disapproval of those which have not come within their purview; indeed, this is as dangerous to the advancement of our science as its antithesis—the perfervid praise of methods the value of which has been as yet inadequately tested. In my own experience each new method sooner or later shows itself to possess some merits and too often to involve inherent drawbacks, so that, although I make a practice of trying all things, I do not anticipate the finding of perfection; indeed, it seems to me that the chiefest duties of the expert anaesthetist, after he has perfected himself in all current methods, consist in his selection not only of the drug to be used, but of the method of its application. Whether he conducts a regional and local anaesthesia, a spinal analgesia, an intravenous infusion of ether, an inhalation of ether by an open method, or the use of chloroform by a dosimetric system, such as that by the Harcourt inhaler, he is obliged to study his patient, first, as a pathological subject; secondly, from his psychological side; and, thirdly, he has to consider which method, when two or more are safe, will enable the operator to do the best work and do it with the greatest celerity and attention to detail. Technical skill in anaesthesia, as in general surgery, is of the utmost importance, but it must always stand second to diagnosis and prognosis.

By diagnosis in connexion with anaesthesia I mean the power of grasping those features in the case which call for a particular method and drug; and by prognosis I wish to connote the looking beyond the period occupied by the actual anaesthetization on to the after-effects brought about by the subtile interaction of drugs and tissues. At one time we were invited to believe that spinal and other forms of regional analgesia removed such consequential perils; alas, at present we know that the *lapis divinus* which shall transmute the base metal of our present dangerous methods into one which is freed alike from peril and distress has yet to be discovered. The experience of countries in which there has been no specialization in anaesthesia, and therefore no experts, has demonstrated the advantage which may accrue from such restricted practice. Technique, as I have said, with patience may be acquired, but the real knowledge essential for the greater problems of anaesthesia require, it seems to me, years of patience and experience and a whole-time service. I spoke of our disabilities. May I advert to one which stands in the forefront and seriously impedes the knowledge of our art? It is the lack of status suffered by the anaesthetist and the inadequacy of his rewards. Very few men commencing practice as an anaesthetist can afford to devote the time to research which should be a *sine qua non* for beginners. He obtains a hospital appointment or forms the nucleus of a *clientèle*, which latter is too often originated in a kindly wish on the part of those who desire to help a friend without any relation to the aspirant's knowledge or skill; he then embarks upon money-getting, and neglects or cannot achieve experimental research. In this respect the young anaesthetist is more hardly placed than are the medical or surgical men of his year. For them there are teaching or other posts, themselves stepping-stones to preferment in their special lines of work; for him there are none. It may be said that the specialty of anaesthetics is too narrow for its being placed in association with the wider subjects comprised in medicine. This statement cannot be accepted by those who are conversant with the subject, or who have followed the advances made during the past few decades. That these advances have not been greater is due in no small

measure to the fact that comparatively few of the ablest students will submit to the equivocal position in which an anaesthetist is often placed, nor will they devote time, energy, and money for research in a subject which is only now emerging into the goodwill of the public and shaking itself free from being a mere craft practised by those whose inclinations have been thwarted in other directions. Happily to-day the more enlightened members of our profession recognize the valuable aid which the scientific anaesthetist can give, and so extend to him the same treatment as to others who are masters of their craft. It is, then, for us anaesthetists to prove by our devotion to the scientific side of anaesthesia that we regard our specialty as one worthy of men's esteem, and this we can best do by research, patient interrogation of Nature under test conditions rather than by mere tabulation of cases, since only in this way can be eliminated the unknown factors which for ever baulk us when we confine ourselves to observations made within a few hours of giving an anaesthetic. It may be that very few can undertake this work: but to those few I say their energy and labour will meet with great reward—not, perhaps, financial success, but that better success which consists in having extended the knowledge of their calling, and, incidentally, of having trained themselves in methods of accuracy and thought, and of having widened their own outlook.

DISCUSSION ON INTRAVENOUS INFUSION ANAESTHESIA.

OPENING PAPER.

By FELIX ROOD, M.B., B.S.Durh.,
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RECENTLY considerable attention has been devoted to the question as to what extent the administration of anaesthetic drugs may be responsible for serious symptoms, or even death, occurring in patients several days after the operation. Unfortunately the symptoms which arise from an acid intoxication are identical with whose which may be the result of septic absorption, so that it is frequently impossible to say whether a given case is acid toxaemia or septic toxaemia or a combination of the two. Although unanimity upon this question is far from having been reached, one may venture to express the opinion that many anaesthetists would hesitate to administer chloroform in cases of acute or chronic septic processes in the young, in states of inanition, or in diabetes.

The increasing importance which is being attached to the possibilities of acidosis has naturally led to greater attention being directed to the use of ether, as this drug is undoubtedly less apt to produce this complication than is chloroform. It was soon found that the closed inhaler was by no means so indispensable as had been supposed. The administration of ether by the open method so long familiar in America proved to be comparatively easy and in a high degree satisfactory. A further great improvement in the technique of the open ether anaesthesia was the discovery that by the combination of the actions of certain narcotics and of atropine with that of ether an anaesthesia could be produced which possessed all the advantages of chloroform anaesthesia and none of its special dangers.

In regard to the safety of the patient during the operation, in regard to post-anaesthetic acidosis, and, finally, in regard to post-anaesthetic gastric and pulmonary complications, this method gives results which are on the whole decidedly better than those of chloroform. It is probable that this opinion would be most likely to meet with opposition in relation to post-anaesthetic lung complications. That it is not altogether unsupported by evidence is shown by the records given in the next column from some of the German surgical clinics.

These figures show an advantage on the side of ether so great as to be unmistakable. Excellent though this method of giving of ether is, there are certain inherent defects in any method of administration through the respiratory tract. Although in most cases the results obtained by inhalation are good, cases very frequently do arise in which the objections to this method are of very great importance. An attempt may, perhaps, be made

Anaesthesia Produced by Chloroform.

Surgeon.	Number of Laparotomies.	Percentage of Lung Complications.
Korte...	3,909	7.2
Czerny	1,302	3.9
Kummel	1,754	2.5
Trendelenburg	1,829	5.4
Anaesthesia Produced by Ether (Open Method).		
Krönlein	1,409	0.56

here to enumerate some of the more obvious difficulties necessarily contingent upon the use of what may be called the respiratory method. In the first case, one is limited to the use of highly-volatile substances, and it is probable that if solubility rather than volatility is the physical factor required, the number of available drugs may be greatly increased—and we know that already drugs other than ether and chloroform are being employed for this purpose.

Secondly, the respiratory method must always in essence be indirect. The anaesthetic is absorbed from the vapour introduced into the air passages, so that the dose actually entering the blood is rendered variable by the notorious variability with which it enters the chest, being subject to all the accidents of laryngeal spasm, respiratory spasm, and of variations in the depth and energy of respiration. Furthermore, even supposing the vapour to be regularly introduced, its absorption must be influenced by the variations in pressure to which it is exposed, and by the presence of mucus, the secretion of which it tends to excite.

Thirdly, the exposure of a very large surface of the respiratory tract to an irritating vapour must be regarded as a disadvantage and danger. To any one who has inhaled a breath of a strong vapour of ether it must always be a source of surprise that serious complications are not always produced by a long anaesthesia, as we know they sometimes are.

Fourthly, it is clear that to produce anaesthesia the anaesthetic must be introduced into the blood and maintained there at a certain percentage. Any further amount present in the body will act as a reservoir upon which the patient will continue to draw after the administration has been stopped. We know from experience only too well that during the course of an anaesthetic the patient may develop respiratory obstruction, and continue fatally to absorb the chloroform which is shut up in his lungs.

Fifthly, in operations upon the mouth, jaws, or pharynx, the difficulties of the surgeon, in the nature of the case, quite great enough, are much increased by his having to share the field of operation with the anaesthetist. And it not infrequently happens that the surgeon or the anaesthetist has to be content with a less degree of technical perfection than he would have attained if he had not been embarrassed by the necessities of the other.

It is clear that if the direct administration of the anaesthetic by the blood can be safely effected, it disposes of all these difficulties. The injection of anaesthetic drugs dissolved in saline was used experimentally upon animals by several observers before Burghardt introduced its use in man. His striking successes encouraged others to follow, and in April of last year, at the Berlin Surgical Congress, Kummel was able to report 90 cases. He spoke of the method with the warmest praise, and said that patients, especially the old and feeble, frequently left the table in a much better condition than they came to it; they quickly recovered from the anaesthetic, and in no case of the 90 did post-anaesthetic vomiting occur.

Technique of the Method.

Ether is soluble in saline to the extent that 100 volumes of normal saline solution dissolves 10.8 volumes of ether. This, it may be said at once, is a true solution; it is not an emulsion or suspension. So that for purposes of anaesthesia a 10 per cent. solution of ether can easily be prepared. Originally a 5 per cent. solution of ether was used, but it has been found by experience that a 6, 7, or 8 per cent. solution may be employed with safety as occasion

requires. The method originally adopted for the introduction of this ether saline was one of interrupted flow, enough of the solution to produce anaesthesia being run in, then the administration was stopped until the patient showed signs of coming round, when a further supply was introduced, and so on.

There are two very obvious disadvantages to this technique. First, the interruption of the flow brings with it a tendency for the blood to coagulate in the cannula and so to obstruct the flow of ether saline. The other objection which is inherent in any discontinuous administration is that a greater percentage of anaesthetic is introduced into the blood at certain times than is required to produce adequate anaesthesia. This principle has been so fully emphasized by those to whom we owe the introduction of the Vernon Harcourt inhaler that it is not necessary to labour it further here.

In order to get over these difficulties two changes have been made in the technique:

1. A variation in the strength of ether saline, according to the individual needs of the patient.
2. The establishment of a continuous flow of ether saline, with minute graduation of the rate and amount of the inflowing stream.

A variation in the percentage of ether used is an advantage in that it tends to reduce the total amount of fluid injected. Some of the earlier observers used a 10 per cent. solution of ether, but found that this concentration occasionally produced a transient haemoglobinuria. Speaking from personal experience, slight haemoglobinuria occurred in a few cases after the use of 10 per cent. solution, but if the percentage of ether remained below 8 per cent. no haemoglobinuria occurred, nor could any deleterious effect upon the corpuscles be detected in specimens of blood taken at frequent intervals during and after anaesthesia.

In this connexion a rather interesting fact was observed. It was found that although a 10 per cent. ether solution sometimes produced haemoglobinuria if this strength was used throughout the operation, if the infusion was began with a weaker solution, say 5 per cent., then the strength rapidly increased to 10 per cent., no such result occurred. This phenomenon rather suggests that the haemolysis produced by the strong solution takes place just at the beginning of the operation in the vein, close to the cannula, where the concentration of the ether is comparatively high, before it becomes diluted by mixing with a large volume of blood. If this were not so it is difficult to see why the haemoglobinuria is slight; one would suppose that if a solution mixed with blood were capable of destroying a few corpuscles it would destroy them all.

A continuous flow of solution was originally obtained by the use of two reservoirs, one containing ether solution and the other saline, linked together so that when the ether was turned off the saline could be turned on. This, of course, maintained the continuity of the stream and got over the difficulty of the blood clotting in the cannula, but all the objections coincident upon the use of an interrupted dose of anaesthetic were still present. An explanation of the method by which the stream of ether saline is graduated and delivered continuously involves a description of the apparatus employed.

This consists of a reservoir, suspended about 8 ft. from the ground, to contain a supply of the ether saline solution. This reservoir is connected by a rubber tube to a regulating chamber which also acts as an indicator of the amount and rate of flow. This regulator is constructed upon the well-known principle of a motor lubricator. The fluid runs through a pipette passed through a cork in the upper extremity of a glass bulb. The stream then falls through the centre of this bulb, and finally leaves it by an aperture at the lower end. Just below the bulb a tap is placed by means of which the rate of flow is regulated. Although if the fluid is only drifting slowly through the regulator the continuity of the stream is interrupted, the pressure from the upper reservoir is nevertheless transmitted by the cushion of air contained in the regulator. Leaving the regulator, the fluid passes on to a warming chamber, and then on to the cannula which is introduced into a vein.

The apparatus is perhaps a little complicated, but this is, I think, not altogether a disadvantage. It can easily be taken to pieces and sterilized by boiling. In a method such as this, which entirely depends for its safety and efficiency in attention to details and the most rigid asepsis, simplification at the expense of accuracy might easily lead to its adoption under more or less adverse circumstances with considerably greater peril to the patient than would be the case if some more orthodox method of anaesthesia were employed. For it is obvious that to attempt a surgical proceeding of this sort, involving as it does opening of the cardio-vascular system, without sufficient assistance and every facility for asepsis, is to court disaster.

Induction of Anaesthesia.

The general preparation of the patient is the same as for inhalation anaesthesia. With regard to the special preparation, the question arises as to the advisability or otherwise of giving certain alkaloidal bodies previous to operation, with the view of insuring the greater comfort of the patient before and after anaesthesia and a better general condition during operation. If good results are to be obtained with this method of giving ether, it is always necessary to give a full dose of atropine sulphate previously to stop the secretion of mucus, otherwise salivation frequently occurs with all its ensuing train of difficulties, if not dangers.

The judicious combination of morphine and scopolamine with the preliminary atropine injection undoubtedly improves the anaesthesia and after-effect. But the discussion of the point brings out very clearly how difficult it is to attempt to establish a routine combination of anaesthetics or narcotics.

These last mentioned drugs are powerful poisons and require to be given with the same degree of foresight before a surgical operation as they do during the course of a medical case. In certain selected cases the most excellent results are obtained by the use of morphine and scopolamine, separately or together, while in other unsuitable ones they may be responsible for the very gravest danger. The best results are undoubtedly obtained with this method of giving ether if the patients are previously prepared by a carefully selected combination of alkaloids.

After the preparation of the patient the next question that arises is the actual induction of anaesthesia. In order to effect this the cannula of the apparatus must be introduced into a suitable vein. For this purpose either a glass cannula or a sharp, hollow steel or nickel needle may be employed. A certain difference of opinion exists as to whether it is better to plunge a sharp metal needle directly into the vein, or to cut down and isolate the vein and tie in a glass cannula. Here again I think it is a question of individual cases—if the vein can be well seen and the operation is likely to be short, with little movement of the patient, then it is quite easy and very convenient to use a sharp needle directly into the vein; but if, on the other hand, the vein is covered by subcutaneous fat, or the patient is very emaciated or the position is likely to be altered during operation, then it is certainly preferable to expose the vein under a little local anaesthetic and tie in a glass cannula, as nothing is so trying as leakage into the subcutaneous tissue during an operation, and this state of affairs necessitates cutting down and changing from the metal to the glass cannula during the operation under much greater difficulty than is the case if this is done calmly before the operation starts. So I think it fair to say that the glass cannula tied into the vein is more certain, although in selected cases the needle may be more spectacular. A cannula having been introduced by one means or another into a vein, preferably the median basilic or cephalic, the solution is allowed to flow in steadily; in other words, the tap of the apparatus is turned full on, until anaesthesia is obtained in two and a half to three minutes. The ordinary signs of surgical anaesthesia occur; when this state has been established a little experiment for each case will show the minimum amount required to maintain this condition and the apparatus can be set to deliver this amount.

There is little to be said as regards management of the case; it is similar to an inhalation anaesthesia, more or less being given according to the needs of the patient as they arise. Of course, a free airway must be maintained with the same care as with other forms of general anaesthesia. It may, perhaps, be pointed out in this connexion that although undoubtedly a safe method, it is far from being an automatic one.

The time which elapses before consciousness is regained varies with the composition of the preliminary hypodermic injection: if neither morphine nor hyoscine has been given recovery is extremely rapid, patients coming round

almost as quickly as from nitrous oxide gas; but if for any reason a long sleep after the operation is required, it can be procured by the administration of the aforesaid drugs.

Surgical anaesthesia can usually be obtained in about two and a half to three minutes; of course, this is only an average time—children and weakly individuals go under quicker, while others of a more robust type naturally take longer. The induction is usually quiet, especially so if hypnotics have been given beforehand. If excitement does take place, it is more easily controlled than with inhalation methods, because the continued introduction of the ether is not hindered by the respiratory spasm which accompanies the struggling, and the well-known dangers of a rapid induction by chloroform do not apply in the case of ether. The extreme flexibility of the anaesthesia produced by infusion is one of its chief recommendations. The patient can be transferred from deep to light anaesthesia in a period of time that can almost be counted in seconds. This, to my mind, is the chief objection to some of the other compounds used for infusion; the anaesthesia is not flexible, and it is necessary to work throughout the operation at the greatest depth of anaesthesia required.

With regard to the safety of ether infusion, we know statistically that ether is a safe drug; we also know that saline infusion, aseptically carried out, is not attended with danger. So that really we are not dealing with quite a novel method, and consequently we have other grounds besides the actual number of cases already collected for assuming the safety of the proceeding. Personally, I have never had any cause for anxiety when using this method, and have never seen any accident other than an overdose, which was immediately recovered from on turning off the ether. I think that the degree of muscular relaxation given by the infusion anaesthesia is precisely the same as that obtained with ether by any other method, and depends upon the depth of anaesthesia and the amount given. It is impossible to say the relaxation is equal to that given by spinal anaesthesia when stovaine is employed for the purpose, but it is certainly equal to that given by other inhalation anaesthetics.

The following is a summary of cases up to the present date carried out upon the principle which has just been described. The great majority of the cases have been collected from the records of University College Hospital; and I am indebted to the kindness of my colleagues for permission to uses their cases as well as my own for the purposes of this paper:

No. of Cases	Operation.	Induction.		After-effects: Vomiting.
		Time.	Excitement.	
		Minutes.		
198	Abdominal	2-4	2	3
76	Head and neck	2-4	3	2
4	Thorax	2-4	—	1
19	Other operations	2-4	—	0
297				5

Amount of Anaesthetic.—About 1 pint per hour; in the shorter cases relatively more, as more of the anaesthetic solution is always used in the first than succeeding hours.

Course of Anaesthesia. Smooth and regular; no tendency to cyanosis.

Period of Unconsciousness after Operation.—Varied from a few minutes to three hours, depending upon whether narcotics had been previously given.

It is sometimes a little difficult to see the relative uses and disadvantages of a new medical or surgical method in their true perspective; and it seems that one of the most important questions connected with the subject is a careful consideration of the indications for the employment of this method of anaesthesia. Perhaps it would be well to enumerate shortly the advantages of this method:

1. Absences of deleterious after-effects both gastric and pulmonary.
2. Introduction of a quantity of saline fluid, by means of which shock may be either combated or prevented.
3. Absence of pulmonary irritation.
4. In certain cases the separation of the spheres of activity of the surgeon and anaesthetist.

Infusion anaesthesia is undoubtedly more complicated than other methods, and it hardly seems expedient to urge its use as a general rule unless there are definite indications. In hospital, with every facility at hand, it is, perhaps, a different matter; but for an ordinary case, say a hernia in a healthy adult, it would hardly be indicated in the absence of special circumstances, such as a previous anaesthetic with unusually severe after-effects.

The probable length of the operation is another factor to be considered; for infusion anaesthesia the ideal length is one and a half hours or under, for during the longer operation, lasting two or three hours, especially if upon larger and muscular individuals, several pints of solution may be required.

Apart from some of the general benefits mentioned above, which may be regarded in the light of a luxury and not a necessity, it is quite certain that the best results are obtained in those cases in which the patients are very bad previously to the operation—for instance, in cases of ruptured gastric or duodenal ulcer, acute appendix, intraperitoneal haemorrhage, or severe accidents these patients frequently leave the table in a much better condition than they came to it, and I think that it is safe to say that several of the patients recorded above owed their lives to the infusion.

In long operations involving much shock, I think the problem must be decided upon the merits of each individual case, and rather turns upon the question of how much fluid it will be necessary to inject, so that while the infusion might be adopted with great benefit for a combined abdominal perineal operation in a frail woman, equal advantages might not be gained for the same operation upon a plethoric and muscular man. This method is a very convenient one for certain operations about the head and neck, especially for those patients who are already in a feeble and emaciated condition. But, undoubtedly, the infusion brings about a greater tendency to oozing of blood; consequently, there are certain objections to its use for such cases as removal of the Gasserian ganglion, etc., where a little extra haemorrhage may materially affect the successful issue of the operation.

Although this method of anaesthesia has not been long in general use, it has been subjected to a fairly extensive trial, and I think I may justly say that all those who have had any extensive experience of the method speak of it with the warmest praise, and it seems probable that it will take its place as one of the recognized methods of inducing surgical anaesthesia.

DISCUSSION.

Dr. W. J. McCardie (General Hospital, Birmingham) said: With regard to the difficulties which arise from obstruction in or about the upper air passages during operations on the mouth, and for which advantage is claimed for the intravenous method, all of them, except those which affect the epiglottis and glottis, can be prevented by the use of Crile's tubes. In these operations on or about the mouth I find that difficulties in the glottic region rarely arise; but in operations on the larynx, or possibly large goitres, I think that intravenous anaesthesia offers considerable advantage. I agree that the method may be best for cases of shock or haemorrhage, in which the injection of saline fluid greatly helps.

Dr. Victor Fielden (Royal Victoria Hospital, Belfast) regretted that Dr. Rood had not shown the apparatus he used, for he had found that on introducing warm ether-saline solution into the chamber so much ether evaporated that the injection consisted of little more than saline solution. The proper heating of the ether solution was important. Had Dr. Rood seen any cases of oedema of the lung? The percentage of lung complications after chloroform quoted by Dr. Rood from Continental sources seemed to be very high.

Mr. Alexander Wilson, F.R.C.S. (Manchester), pointed out the disadvantages that might occur in the way of respiratory embarrassment through the surgeon having uninterrupted access to the upper respiratory passages.

Dr. G. A. H. Barton (Hampstead General Hospital) said: From the first I was much impressed by the potentialities of the intravenous infusion method of administering

anaesthetics. It gave me much pleasure, therefore, to listen to Mr. Rood's paper, read at the Royal Society of Medicine in the early part of the year, and I resolved to give the method a trial in my practice, and I had hoped by now to have had a sufficiently long list of successful cases to justify me in joining in a chorus of approval of the method. I regret to say the success has not been altogether unqualified, and the list is consequently only a short one. It may, perhaps, be none the less interesting and instructive on that account.

A few words first as to the apparatus and method adopted. Whilst admiring the perfection of Mr. Rood's apparatus, I found it too expensive and cumbersome for my purpose. Looking for something lighter, more generally adaptable, and less expensive, I found it in Mr. Page's hedonal apparatus, to which I added a warming chamber for use with ether. In practice I have found one disadvantage in Mr. Page's apparatus: though designed for boiling, its construction does not conveniently allow this method of sterilization. The glass parts are very apt to break; the original washers are made of a material which is disintegrated in the process; finally, a certain amount of fur is apt to be deposited on the interior of the reservoir. Having regard to the risks and delay involved, I have for the most part sterilized the apparatus by filling the reservoir with 1 in 20 carbolic and slowly running it through, afterwards washing out with sterile water, and boiling the cannula and last length of tubing only.

There is one minor inconvenience about the intravenous method which militates against its general use in hospital, where there is usually a long list of operations to be got through—that is the little preliminary operation necessary before the infusion can start. I have generally considered myself lucky if I have the patient ready for the surgeon within ten minutes of his being put on the table. To obviate some of this delay I have on a few occasions attempted to canalize the vein with a sharp needle without dissection. When the veins are prominent this may be done, but even then I have found that later on there is a chance of the sharp point fouling the walls of the vein and causing further delay or abandonment of the method. To prevent this I have had made for me a needle of larger bore than Bailie's and having an inner blunt cannula, which can be thrust beyond the point when the needle is *in situ*. This answers very well in many cases, but there will always remain a good proportion in which, owing to the veins not standing out well, it will be best to dissect them out.

To the intravenous infusion of ether there is, to my mind, another rather serious drawback—that is, the impossibility of infusing at blood heat. Wherever I have tried to do this the ether has bubbled out of the solution at an uncontrollable rate. In my first case the infusion had to be stopped half an hour before the completion of the operation, owing to the amount of ether vapour that suddenly got into the last section of tubing. Very fortunately, thanks to the preliminary injection of scopomorphine, the operation was easily concluded without any further anaesthetic being required. I cannot help but think that the infusion directly into the blood stream of large quantities of fluid below body temperature must have a depressing effect, especially in long operations involving some shock. However, I am ready to admit that this has not been particularly brought out by my own cases. I have only noticed two points bearing on this question. Of my 13 cases, 3 complained of pain in the arm directly the infusion started; whether this was due to its relative coldness I cannot say, but I suspect it. The other point is that during the recovery from the anaesthetic three patients either complained of feeling cold or looked and felt cold and pinched. In hardly any case did the patient appear stimulated during the administration as one would expect from a combination of ether anaesthesia with saline infusion.

A word as to the strength of the solution. I started by using 7½ per cent. solution in the first 4 cases. Afterwards I used a 6½ per cent. except in 1 case, a fragile woman, where I used a 5 per cent., and a very big, stout man, where I reverted to the 7½ per cent. In all the cases the induction was satisfactory, and there was no struggling of any consequence. The time was generally from three to seven minutes, and the amount varied from 200 c.cm. to 600 c.cm. As regards the anaesthesia, it was absolutely satisfactory in 8 cases. In 5 there was some clenching of jaw and retraction of tongue or laryngeal spasm, causing cyanosis; in 1 case oxygen had to be administered. In one or two cases there was some rigidity or slight movements, and in one a tendency to retch during the operation, but this was for a parotid tumour pressing on the pharynx, and the nature of the operation no doubt accounted for the retching. Take the cases all round, I may say that the anaesthesia gave the surgeons complete satisfaction.

I will now deal with recovery and after-effects. Here, I regret to say, the picture is not so pleasing. As one of the chief advantages of intravenous infusion was held to be the abolition of after-effects, my experience has, I regret to say, caused me some disappointment.

In 3 cases the recovery was excellent, and there was no vomiting or after-effects of any kind. In 3 there was a little faintness, coldness, or trifling vomiting during the recovery. In 6 cases vomiting gave a good deal of trouble, and the curious part was that in the majority of these patients the recovery appeared to be excellent, and when I saw them from one to three hours after the operation they made no complaint, and yet afterwards had more or less severe vomiting lasting for several hours, and accompanied in some cases by headache. One or two patients have complained of pain at the site of infusion, but I am glad to say there has been no real trouble with any of the arms.

In 3 cases there were serious after-effects, but how far due to the method it is difficult to say. One was a thyroidectomy for Graves's disease. She was very ill and extremely excitable. Forty-eight hours after she developed symptoms pointing to a low type of pneumonia, though no physical signs were discovered in her chest; her condition precluded a thorough examination. Ultimately she recovered after being in very grave danger. The condition came on very suddenly and the possibility of pulmonary embolism was considered. Mr. Colledge, under whose care the patient was, kindly gave me a full account of her progress, and concluded by saying, "I think the anaesthetic should be acquitted." In one patient haematuria supervened the day following operation. It was very free, clots forming in the bladder, and lasted forty-eight hours, but the patient seemed none the worse for it.

My last case brought the method into some little disrepute with the surgeon, Mr. Jackson Clarke, and caused us to hold our hand. No doubt the anaesthetic was to blame, but I doubt whether the particular method of administration had anything to do with it. However, it was the second case in a very short series in which there was haematuria—real haematuria, not haemoglobinuria. The operation was plating an ununited fracture of femur. The patient was a big, fat man of 61, pale and flabby. He had been operated upon three months previously, when I gave him scopomorphine and C.E., and he did very well. His urine had been examined, and he was not suspected of any renal disease, though very possibly his kidneys may have been somewhat cirrhosed. He had a preliminary injection of scopomorphine and was infused for two hours with a little over 2 litres of a 7½ per cent. solution. The anaesthesia was excellent. The pulse was rather poor and his colour at first rather dusky and later pale. He got rather cold towards the end. He vomited for twenty hours after the operation and then got suppression of urine and haematuria. For eight days the daily quantity of urine varied from ℥j to ℥vi only, and then gradually increased. During five of these days he was sick from two to five times daily. No doubt he had an acute nephritis. Eventually he recovered sufficiently to leave hospital.

On the whole, I am convinced that the after-results of scopomorphine and open ether are decidedly superior to those of the method under discussion. I trust I shall not be going beyond the limits of the subject under discussion if I make a brief reference to my experience with hedonal. This has been limited to 10 cases. The inductions were for the most part quiet and satisfactory, in two or three instances I noted the slight transitory duskiness which has been observed by others, but the majority simply seemed to fall into a quiet natural sleep from which in many cases they were partially roused by the application of the surgeon's knife, as shown by slight reflex movements, generally quickly abolished by increasing the rate of flow.

In one case, although the patient seemed well under, her movements were continuous throughout the operation, were not abolished by increasing the flow, and required restraining. In spite of the apparent lightness of anaesthesia, this patient took twelve hours to recover consciousness, and was drowsy the whole of the next day. In another case, a big woman weighing over 16 st., 1,050 c.cm. were infused in nineteen minutes without producing complete anaesthesia. The operation was concluded under the influence of C.E. mixture, a very little being required. In two other cases I have had to conclude with C.E. mixture; in one the cannula came out of the vein whilst the

patient was being turned on to his face, and in the other the supply of hedonal solution ran short. The amount required was again quite trifling.

On the whole, with the exception of a few cases where there were slight early movements due to an insufficient amount of the drug having been administered, the anaesthesia was characterized by great quietude and muscular relaxation. The respirations were particularly quiet, jaw relaxed, and tongue inclined to fall back. Hedonal must, I think, cause some depression of the respiratory centre, as any obstruction to the airway excites no response, and the laryngeal reflex is lost early. As regards the corneal reflex, I generally aimed at keeping it present, but was not always entirely successful. Very little change was noted in the pulse. In one severe abdominal operation in a bad subject I was pleased to note entire absence of shock. The main feature about hedonal infusion is the slowness of recovery from its effects. Three of the cases took about twelve hours before recovering consciousness. This was looked upon as an advantage in certain orthopaedic cases involving, as a rule, much post-operative pain. On the whole, however, I regard it as a grave disadvantage, as in the nature of things the anaesthetist cannot remain on the spot all these hours. In only one case was there a little vomiting. In the cases which had to be supplemented with C.E. there was much restlessness.

In one case the temperature gradually rose during the first twenty-four hours to 102°, at which level it remained for twenty-four hours and then gradually fell: there was nothing to account for this from the surgical point of view. In one of the cases which took twelve hours to recover the pulse during this period was extraordinarily rapid and rather weak, causing some anxiety. She was a very delicate child, and the pulse had been quick before and during the operation.

The majority of the patients caused no anxiety during the recovery stage and woke up feeling quite comfortable, as though from a refreshing slumber.

The last case calls for special notice, although, in the limits of time available, it is impossible to go into it fully. Briefly, the facts are these:

The patient was an ill-nourished tailor who had lately been on strike. There was no complaint of cough, and his respirations and temperature were normal; nothing was noted amiss with his lungs. Pulse was, of course, rather poor. Operation was opening and draining both frontal sinuses, the posterior nares being first plugged with a sponge. The induction was very quiet; in three and a half minutes and after the infusion of 400 c.cm. he appeared to be under. Rate of flow was slowed down, and at the end of five minutes he had had nearly 500 c.cm., and operation was commenced. The rate was now cut down to slowest possible, and remained at that. It was apparently one of the quietest and best anaesthesias I had had. The only adverse point about it was that his colour was dusky throughout. I attributed this at the time to the post-nasal plug and a towel over the mouth causing some obstruction. The operation lasted one and a half hours; 1,000 c.cm. were infused in all. A quarter of an hour before the termination of the operation I ceased the infusion and administered oxygen, which speedily improved his colour. No blood got into his air passages during the operation; the post-nasal plug was removed at its termination. I left him still unconscious, but apparently in good condition. He died two hours after without regaining consciousness. Without entering into all the details, the principal facts elicited at the autopsy were that the lungs were absolutely studded with small miliary tubercles and his air passages contained a quantity of fluid blood. This was not churned up and frothy, as it would have been if any effort had been made to overcome the obstruction, nor was the slightest attempt made to cough it up. I do not consider that death was due to an overdose of hedonal, but the depression of the respiratory centre and the delayed recovery (present in all these cases) were important factors in this unfortunate occurrence.

To sum up, this brief experience has led me to certain conclusions. The intravenous method is a good one, and I think may yet replace the inhalation method, but not with the drugs at present in use. Ether offers no special advantages either in regard to the type of anaesthesia or the after-effects. Hedonal is dangerous—quite as dangerous, I think, as chloroform, if not more so—owing to respiratory depression and delayed recovery. It should never be used in cutting operations on the upper air passages, nor, I think, in feeble subjects or those suffering from any disease of the respiratory system. When used the flow should be cut down to the slowest drops as soon as the patient is apparently asleep, and only increased when necessary to prevent reflex movements. The corneal reflex should never be abolished. In selected cases I think both will continue to be of value. But before the intravenous method supersedes the inspiratory one some anaesthetic will have to be found combining the safety of ether with the many advantages of hedonal.

The President said: My experience goes to show that the method of infusing ether and saline intravenously is a valuable one when employed with circumspection. Like all new methods, it requires a complete mastery of its technique, as well as a very careful selection of cases for its use. Undoubtedly, there are dangers peculiar to it, but these are capable of being avoided when the administrator is on the look-out for them and knows how to prevent them. It is essential that the anaesthetist should give the whole of his attention throughout the narcosis, even more so than in the case of other methods. The obvious advantage of infusing ether, rather than such drugs as hedonal, is that its effects are fugacious, while hedonal and its congeners induce a drugged condition, from which the patient cannot be aroused rapidly if circumstances arise rendering this desirable. With ether, also, it is easier to vary the depth of the narcosis according to the exigencies of the operation—for example, increasing shock. Mr. Rood has mentioned the serious post-operative effects sometimes ensuing upon chloroformization, and has given statistics collected from various sources. The value of such figures is, however, very slight, unless the statistics include in their purview the actual methods of administration employed and the actual quantity and strength of the vapour administered. Many, if not most, of the cases in which such complications ensued were the result of chloroform toxaemia and not of chloroform anaesthesia. Such sequelae can be minimized or abrogated, if only such an amount is given as will ensure anaesthesia and fall short of toxaemia.

DISCUSSION ON THE EXAMINATION OF PATIENTS BY ANAESTHETISTS.

OPENING PAPER.

By Alexander Wilson, F.R.C.S.,
Anaesthetist to Manchester Royal Infirmary.

I am sure it will be readily admitted that the advances in modern surgery, especially the practice of rigid aseptic surgery, have made the task of the anaesthetist harder and increased his responsibilities.

Not only are his duties more arduous from the extensive nature of the operations performed, but his opportunities of observation and freedom of action while at work are curtailed.

Where formerly during an operation a full view of the patient and area of operation was possible, now he is fortunate if he has free access to the patient's head. Too often even this is securely concealed under a sterile towel, and the necessarily somewhat septic anaesthetist, sitting at arm's length, can assure himself of the continued existence of the patient by the flapping of the valve of some inhaler and the pulse felt at the facial or temporal artery.

Further, increasing knowledge tends to saddle the anaesthetic and its administrator with the responsibility for sundry serious after-effects the real production of which is still uncertain. In addition, new anaesthetic agents have been introduced and new methods evolved for the administration of old ones.

The whole subject of anaesthetics and their administration has become more complicated, the choice has become greater. The methods have increased in number and variety. In these circumstances it is only by seeing the patient before operation that the anaesthetist can do the best for him.

DISCUSSION.

Mr. L. Kirkby Thomas (Birmingham and Midland Hospital for Women) said: The opener of this discussion has dealt most succinctly with the various reasons for affording the anaesthetist an opportunity of seeing and examining the patient previous to operation. To me it is almost incredible that any one who has had much to do with the administration of anaesthetics can fail to appreciate the importance of the subject under discussion—so incredible that I ask the question, Why is

it that the anaesthetist does not, as a routine procedure, see the patient before he comes to the operating table? The reason for this seems to me to come under two headings—(1) the attitude of the medical public, (2) apathy on the part of the anaesthetist. The following incident illustrates the first of these conditions:

A few weeks ago I mentioned to a practitioner, whose patient I had been anaesthetizing, that this discussion was going to take place, and that I thoroughly believed in it. He became quite indignant, saying that he knew his patient, that the surgeon had seen him, and that they were quite competent to decide whether he was a fit subject for an anaesthetic or not. I attempted to smooth his ruffled feelings by explaining that I did not question his competency or that of the surgeon, but that there was something more in the administration of anaesthetics than the mere question as to the fitness or not of the patient to take an anaesthetic. He seemed rather struck with the idea, and I left him ruminating thereon.

This incident is not an isolated one; it represents the attitude taken by large numbers of general practitioners, and is largely due, in my opinion, to what I stated as my second heading—apathy on the part of the anaesthetist. As long as we are content to be called in to give anaesthetics in cases of which, as often as not, we know nothing till the operating table is reached, so long will the really scientific administration of anaesthetics be retarded, and there will be, even in the most skilled hands, a certain percentage not only of preventable fatalities, immediate or remote, but also of cases in which a better anaesthesia might have been obtained for the particular operation in hand. I do not for a moment ignore the fact that in many instances there are factors which preclude the possibility of our examining patients before operation—emergency in particular—but I also think there is a still greater number of cases in which a little tact and insistence on the part of the anaesthetists would enable us to examine our patient before operation, to the benefit of all concerned, and I welcome this discussion as a means by which we can put before the profession at large our reasons for, and ideas on, this important subject. The first advantage to be gained consists in making the acquaintance of the patient, apart altogether from what may be the best manner of administration. As is well known, many patients are in far greater dread of the anaesthetic than the operation itself, and I am sure that a quiet talk with the man whom they know is going to anaesthetize them brings them to the operating table with a confidence which would not otherwise be the case—a state of things very much to be desired. The next thing that appeals to me concerns the preliminary injection of drugs. I have no doubt, in my own mind, as to the benefit derived from an injection of scopomorphine before operation. The patient comes to the table in a state of comparative calm, less anaesthetic is required, a more even anaesthesia is obtained, and after-vomiting is undoubtedly less frequent. This, at any rate, is the general opinion I have formed as the result of my own observation. I think, however, that the dose of scopomorphine to be given is also important—a routine quantity is impossible—in every case the amount to be given should be carefully considered, not only in relation to the patient's idiosyncrasy, but also with regard to the operation in hand, and here I think the anaesthetist's experience should often be of service both to the practitioner in charge of the case and to the surgeon who is about to operate. The maximum dose I use is $\frac{1}{4}$ grain of morphine and $\frac{1}{150}$ grain of scopolamine, and, speaking generally, children should have one-twelfth of this, old people, debilitated and anaemic women one-half. As regards special conditions, quite small doses should be given in cases with organic heart disease, renal mischief, and for thyroid operations. Cases in which the Trendelenburg position is likely to be assumed for any length of time should also be given a small dose—one-third to one-half of the maximum—as the tendency to lividity and respiratory trouble is increased by the drugs, and I have had several cases of this kind which have caused me considerable anxiety. In my experience, the best time for this preliminary injection is an hour before operation, and I have yet to see the case in which, inhalation anaesthesia having been decided on, a preliminary dose of scopomorphine is contraindicated. I have advised the intrathecal anaesthesia chiefly in cases of chronic bronchitis and alcoholics for operations below the level of the ribs, including ovariotomies, hysterectomies, hernial repair, resection of intestine etc. So far I have no failures to relate as regards the efficiency of the anaesthesia produced, and the after-effects have been practically *nil*, being, in fact, limited to a little sickness a few hours after operation in 5 per cent. cases. I have always used tropacocaine 5 per cent. in normal saline solution, and have found this answered admirably. The anaesthesia lasts from one to two hours, and it has not been necessary to resort to a second injection or to use any other anaesthetic.

Mr. C. CARTER BRAINE (Charing Cross Hospital) thoroughly agreed with all the points mentioned by Mr. Kirkby Thomas. During almost a quarter of a century's work as anaesthetist he had only been called in two or three instances to examine his patient before anaesthetizing him. On several occasions other individuals had been called in to advise upon the anaesthetic to be administered, but the anaesthetist himself who had all the responsibility had been neglected. Again, it was frequently the practice of the operator or the general practitioner to administer drugs—morphine, scopolamine, strophanthus, etc.—before the administration, and not even to acquaint the administrator of the fact, and it was only when the anaesthetist found the administration departing from the normal and his patient getting into an alarming condition that he was acquainted with the fact that his patient had been drugged previously. The amount of morphine administered previous to the anaesthetic was frequently excessive.

Mr. C. A. LEEDHAM-GREEN (Birmingham) said: At the present time the public is only just getting educated to the importance of having the services of a skilled anaesthetist, and I am inclined to think it will take some further time before it regards it as necessary that a preliminary consultation, with its contingent fee, should take place. It has been suggested that a surgeon is not justified in administering drugs to his patient previous to operation, except after consultation with the anaesthetist. With this proposition I am afraid I am unable to agree.

Mr. W. DAKIN MART (Sheffield Royal Infirmary) said: I quite agree with what has been said about the previous examination of the patient, but I consider that one of the most important matters is to gain his confidence, and whenever possible I make a point of having a quite friendly talk with him, and so gain his confidence and take away his nervousness. In this manner I am sure the administration of the anaesthetic works with much greater smoothness.

Dr. W. J. MCCARDIE (General Hospital, Birmingham) said: Crile, who has done so much to broaden our views on anaesthesia, says that the stored-up energy of the body may be discharged by physical injury, emotional excitation, or physical exertion. Now we must very seriously consider this state of emotional excitation. The surgeon and anaesthetist do not attach anything like enough importance to it, and should study to treat and reassure the patient psychically for days beforehand, and to remove the emotional strain immediately before operation by the administration of sedative drugs. Crile believes that what he calls noci-associations can and should be removed, and the patient put in a state of anoci-association. He says that the management of a patient up to the point of anaesthesia should be only by those surgeons and nurses who are humanitarian psychologists, and that the anaesthetist should be even more of a psychologist, and preferably a woman, because of her sympathetic consideration. Now these are weighty words and worthy of our gravest attention, and with them I firmly agree. Crile says further: As to the choice of an anaesthetic, anoci-association may be further helped by administering the pleasant nitrous oxide instead of the suffocating ether, and telling him that, therefore, there will be little or no after-effect.

Dr. DUDLEY BUXTON (President) said he was fully convinced that the advantages following the admission of the anaesthetist into the counsels of those who were preparing a patient for an operation greatly outweighed the hypothetical objections raised by some of the speakers. In the "dark ages," when any one, a young house-surgeon, a nurse, or another, was jobbed in to give the anaesthetic,

(save the mark!) the anaesthetist was naturally a negligible quantity, and the attitude of the surgeon was one which, intentionally or not, was intended to keep the anaesthetist in his place. This attitude remained among a few, but most of the surgeons of the present day were keenly alive to the advantages of working with men of their own status possessing special knowledge and expert experience in their own line. The more numerous the opportunities the anaesthetist enjoyed of studying the patient, the more valuable did his advice become. Mr. Wilson had shown very fully one aspect of this, and had dealt with the important matter of the selection of the appropriate drug, and the most suitable method of exhibiting it under diverse conditions of the patient and operation. No such accurate choice could be made unless the anaesthetist either had the facilities extended to him for examining the patient some days before the administration, or had enjoyed the advantage of a consultation with the surgeon and family doctor engaged in the case. Another and most important aspect of the matter was that such a system enabled the anaesthetist to win the confidence of the patient, and to make him or her realize that he (the anaesthetist) knew his business, and was devoting himself earnestly to achieve the best results in the interests of the patient. The dread of being confronted by a stranger, who would hold their lives in his hand, was a natural and very real one to most patients, and this must militate against the harmonious working out a satisfactory narcosis, of which fear or "funk" constituted no slight danger. This feeling of apprehension or panic would be absent; if the patient had acquired confidence in the anaesthetist, the latter would be regarded as a friend, not a foe. To the anaesthetist himself the advantage must be great in every way, since he would have had the opportunity of studying at first hand the environing circumstances of the problem—a satisfactory and safe narcosis—presented to him; also, if he could discount the patient's fears his task had been shorn of much of its difficulty. The difficulty which had been mentioned about fees was really more theoretical than real. When the public realized that they were receiving substantial benefit from the professional services of the anaesthetist they would be as ready to pay for them as they were in the case of his surgical colleague. Indeed, if no fee were forthcoming, the speaker was sure that the anaesthetist's pride in his work would make him ready to forego monetary reward provided there existed adequate reasons for such a concession. The highly-trained scientific man who had adopted anaesthetics as his speciality was at least as worthy of reward as any other specialist of similar attainments and hospital service. The public were seldom made aware that the anaesthetist's work was of a nature which needed both scientific training, research, and wide experience, but when this was pointed out they were reassured and were prepared to pay for the benefit which they recognized was a real one. The result of this work made the anaesthetist of greater value to the surgeon, since it compelled the anaesthetist to recognize that given the patient's safety, his duty was to facilitate the surgeon's operations, since anaesthetics were essentially ancillary to surgery and their use or abuse could help to make or mar an operation. The speaker was sure that when the system suggested was carried out as a routine measure, the trinity of interests—that of the patient, that of the surgeon, and that of the scientific anaesthetist—would individually and collectively be promoted.

A COMPARISON OF METHODS EMPLOYED FOR INDUCING ANAESTHESIA AND ANALGESIA RESPECTIVELY.

OPENING PAPERS.

I. C. A. Leedham-Green, F.R.C.S.,
Surgeon to Queen's Hospital, Birmingham.

We have reached a period when the interest in the further development of anaesthesia is again keen, for in recent times a number of entirely new and interesting methods have been advocated, the value of which, however, has not yet been fully established. Little wonder, therefore, that at this time the opinions of anaesthetists vary widely, and, indeed, are often conflicting.

Although I appreciated the compliment of being asked to open this morning's discussion, I at once saw that the task of producing a passable criticism of the comparative value of the various forms of anaesthesia was no easy one. I did not, however, expect to find it quite so difficult as it has proved. The fact is that, although the subject we are to discuss to-day is full of practical interest for all of us, it is one in which it is exceedingly difficult to obtain reliable data on which to base a comparison.

For instance, let us attempt to answer the first item in our comparison—What is the mortality of the various forms of anaesthesia? A few years ago, when practically all operations were done under a general anaesthesia produced by the inhalation of chloroform, ether, or a mixture of these, it was not difficult to give a statistical comparison which would be accepted by most surgeons as fairly accurately representing the facts. To-day any such comparison is rendered much more difficult, for not only have entirely new forms of anaesthesia been introduced, but even the old ones have been so altered, both by the introduction of different modes of administration and the increasing use of a combination or sequence of anaesthetics, that the critic finds it exceedingly difficult to collect satisfactory statistics on which to base his report.

Yet such figures must be forthcoming before definite conclusions can be arrived at. I have endeavoured, both by an exhaustive study of the literature and a widespread personal inquiry, to collect such figures, but though a study of them has helped to strengthen or weaken previous impressions, they are for the most part far too limited to be worthy of serious consideration.

We cannot hope to prove or disprove the supposed danger of a method of anaesthesia by quoting the statistics from any single clinic.

We want figures on a large scale from several sources if we are to avoid serious errors.

Among the most reliable statistics, based upon large numbers of anaesthesias, are those published by Gurlt, who at the instigation of the German Surgical Society made a careful inquiry on this point, and for seven years (1891–1897) collected and analysed the figures from a number of the large Continental hospitals. The total number of anaesthesias reported upon was 330,000, and of them chloroform gave a mortality of 1 in 2,075 cases, and ether 1 in 5,112.

Comparing these figures with a large number of statistics which I have obtained from several hospitals in London and the provinces, I find that the death rate for chloroform in England seems to be a little higher, and that for ether considerably lower, than that given by Gurlt. Be this as it may, there is no doubt that chloroform is six or seven times as dangerous as ether, and as at present administered in most of our large hospitals is attended by very serious risk to life—so serious that a very grave responsibility rests upon those who use it as a routine anaesthetic.

That this is so when chloroform is administered in the old-fashioned drop method has long been known, but does it hold good when the dosimetric method of administration is followed? Probably not, but that is a point upon which I shall be very glad to have more information. Up to the present I have been unable to find reliable statistical evidence that dosimetric administration, whether combined with oxygen or not, has been followed by a marked diminution in mortality.

This was also the conclusion which Neuber came to from a study of the results of 70,000 anaesthesias collected by him in 1909. The mortality came out practically the same as that given by Gurlt—namely, for chloroform, 1 in 2,060, and for ether, 1 in 5,930. That is to say, the widespread use of Roth Dräger's dosimetric apparatus had not been followed by any appreciable lowering of the mortality.

Notwithstanding the large amount of literature which has appeared on the subject of spinal anaesthesia, we seem still far from knowing the true value of this method. At present, in spite of the numerous collective investigations, it is difficult to form even a rough idea of the mortality attending its use, the published statistics differ so

enormously, ranging from 1 in 200 (Hohmeier) and 1 in 17,847 (Thomaschewski). The true mortality probably corresponds to about the statistics given by Strauss—namely, 1 in 2,524, and Crelaujak 1 in 2,086. This being so, it would seem that the method has practically the same mortality as chloroform.

From very extensive reading on the subject, and as the result of personal inquiries, I think there can be no doubt that spinal anaesthesia is slowly declining in favour. And, although there are some surgeons of the highest repute who still regard it as the best form of anaesthesia for general use, and who are able to point to huge numbers of successful operations carried out under its influence, yet the wave of enthusiasm for the method seems to be receding.

A longer experience of it has shown that, whilst it has undeniable advantages in certain cases, its use as a routine anaesthetic is accompanied by serious disadvantages.

Apart from the question of risk to life, the method from time to time gives rise to a number of distressing after-effects, such as intense and long-continued headache, severe collapse, temporary paralysis of the ocular muscles, the bladder, rectum, etc. Albuminuria, which so frequently follows the administration of chloroform and ether, is also exceedingly common after spinal anaesthesia, especially after the use of stovaine, according to Schwertz in 78 per cent. of all cases. This albuminuria, which is accompanied by a slight necrosis and desquamation of the renal epithelium, is, however, of a transient nature and of little clinical significance. A certain number of nervous disturbances, such as neuralgia, headache, vertigo, and epilepsy have also been recorded as developing several months after spinal injection.

Severe after-effects are certainly rare, and many surgeons, like myself, can point to several years' experience of this method without ever meeting untoward results. But the fact that these severe and permanent after-effects do sometimes occur, and occur in the practice of those whose technique is irreproachable, must have consideration, and, as far as I am concerned, it has caused me to give up the method, save for exceptional cases—an attitude which finds an increasing number of supporters.

The method is indicated in major operations upon the legs and lower part of the trunk in aged and feeble patients who suffer from chronic alcoholism, nephritis, diabetes, and chronic respiratory trouble. For such patients I prefer it to all other forms of anaesthesia.

The unconsciousness of anaesthesia is often likened to that of natural sleep. Unfortunately the resemblance is but superficial. The sleep of Nature is a period in which reparative processes go on in the cells of the body; in that of anaesthesia, on the contrary, much destruction takes place. All the anaesthetics we employ are protoplasmic poisons injurious to cell life. The toxic effect varies not only according to the dose and concentration of the drug, but also according to the vitality of the cells.

By reducing the amount of anaesthetic given to the minimum necessary to obtain the desired effect, and by shortening the duration of the narcosis as far as possible, we are able to diminish its deleterious effects to a marked degree, but we cannot avoid inflicting a certain appreciable injury on the organism as a whole. Still greater is this injurious effect when the resistant power of the cells has been already reduced by the action of septic toxins or other causes.

It is true that, as a general rule, the constitutional disturbance caused by an anaesthetic is but slight and readily escapes the notice of the unobservant, and, provided the patient is reasonably healthy, no serious effects are likely to follow. But, on the other hand, again and again the recovery of a patient seems to hang upon a hair, and the slightest adverse influence is sufficient to turn the scale. One sees this especially in the aged, the cachectic, and the anaemic, where the recuperative powers are notoriously low, as well as in the alcoholic, the nephritic, and the obese. In these and many other types the success or failure of the operation may depend on the nature of the anaesthetic and its mode of administration.

Of the general anaesthetics, there is no doubt that chloroform is decidedly the most toxic and the most frequently followed by serious after-effects as a result of this cellular degeneration. Its injurious effect upon the myocardium and the muscular tissue generally, upon the stomach and mucous membrane, the liver and other viscera, is too well known to need further reference here. There is, however, an impression in England that chloroform affects the kidneys less severely than ether does, and that it is therefore a preferable anaesthetic for patients suffering from renal inadequacy. This is a mistake: both of these anaesthetics affect the renal tissues adversely, producing degeneration and necrosis of the epithelium. But ether does so to a less degree than chloroform, and is therefore to be preferred when the choice is limited to these two drugs. The only organs which seem to be more seriously affected by ether than chloroform are those of the respiratory system. The vapour of ether has a decidedly irritating action on the mucous membrane lining the air passages, and formerly, when it was customary to give this anaesthetic as a highly concentrated vapour by means of a closed apparatus, respiratory troubles (bronchitis and bronchopneumonia) were frequent, and often led to a fatal issue. Now that it is usual to give it freely mixed with air or oxygen, and also to check the salivary and mucous secretions by a preliminary dose of scopolamine or atropine, the irritating action of the ether is greatly reduced, and respiratory troubles following its use are but rarely seen.

In the hope of still further reducing this possible trouble it has been recently advocated that the ether be given either by the rectum (an old method mentioned by Pirogoff in 1847 and long since discarded) or intravenously, by means of 5 per cent. solution of ether in saline fluid. Personally, I think it exceedingly doubtful whether either of these methods is of real practical value, the chief advantage claimed for each being the avoidance of the irritating action of the anaesthetic upon the respiratory tract of patients who are specially sensitive. Unfortunately, however, the greater part of the ether, however administered, is eliminated through the lungs, so that it is doubtful whether the small advantage gained in this way compensates for the many obvious objections to both of these methods.

It would, of course, be absurd to ascribe all the parenchymatous degeneration and metabolic disturbances following an operation solely to the anaesthetic. Many other factors contribute to these results, such as the presence of septic and other poisons in the blood. But the unfavourable influence of these toxins is undoubtedly exaggerated by the action of the anaesthetic, which lowers the power of resistance generally.

The last few years have witnessed a revival of interest in local anaesthesia, thanks to the work of Reclus, Schleich, Braun, and others. The technique has been so improved that a large proportion of even major surgical operations can be performed under its influence, not only without pain to the patient but often with greater ease to the surgeon than is possible under general anaesthesia. As it is almost the only form of anaesthesia which can be said to be devoid of danger, it seems somewhat of a reproach that so little use is made of it in this country. I may say, as some evidence of its value and scope, that in the first half of last year I find that I performed 40 per cent. of all my operations at the Queen's Hospital under its influence. The method is, of course, only applicable to certain operations. It can rarely be employed for intra-abdominal ones, and is unsatisfactory where the tissues are extensively inflamed. Moreover, the majority of patients prefer to be unconscious at an operation, wishing neither to feel nor to know what is done. On the other hand, the advantage of using a method which produces no impairment to the vitality of the organism is so great, especially when dealing with severely debilitated patients, that I would strongly urge its more general adoption.

In short, it seems to me that our principal task now is, on the one hand, to enlarge as far as is prudent the field of those methods of anaesthesia which may reasonably be considered free from all danger, and, on the other hand, more sharply to define the indications which call for the use of those anaesthetics which, however valuable, are unavoidably associated with a certain risk to life.

II.—ALBERT EHRENFRIED, M.D.,
Surgeon, Consumptives Hospital, Boston, U.S.A.

THE INTRATRACHEAL INSUFFLATION OF ETHER.

IT is now about three years since Meltzer and Auer first introduced the method of etherization by intratracheal insufflation, and sufficient time has elapsed for us to be able to give the procedure a definite place in surgery. I wish to speak merely of my own experience with the method. In the fall of 1909 I called on Carrel at the Rockefeller Institute with regard to some vascular experimental work which Dr. W. M. Boothby and I had undertaken, and he showed me his apparatus. This laboratory apparatus, modified so as to be efficiently controlled by the foot of the assistant, we adopted for routine use on animals, on account of the ease with which it is managed, the fact that no etherizer is needed, and chiefly because since we have used it in place of cone ether we have had practically no ether mortality.

After considerable experience with its use on animals, I became interested in the application of this principle of anaesthesia to human subjects, particularly in reference to my surgical work at the Boston Consumptives Hospital. Up to this time a few successful but desultory cases had been reported by Charles A. Elsberg, a New York surgeon who had been interested in the method by its discoverers, and who had evolved a rather complicated apparatus for its conduct. I felt that if the principle were to receive widespread acceptance it would have to be rendered as simple as possible, and, with simplification as the basic idea, I designed and built the apparatus which I showed at a clinical meeting of the Boston City Hospital, March 16th, 1911, and described, with a report of several successful cases, in the *Boston Medical and Surgical Journal* for April 13th, and later at the annual meeting of the Massachusetts Medical Society in June. With added experience various modifications have suggested themselves, and I present here to-day the perfected apparatus, as made for me by the Geo. P. Pilling and Sons Company of Philadelphia.

The apparatus consists of a Wolff bottle with three necks, sitting within a copper water-jacket, which is filled with hot water, and a foot bellows. By means of cocks on the outside of the jacket, the stream of air from the bellows can be carried either through the hot water, over the top of the ether (contained in the Wolff bottle), or can be made to bubble through the ether when a particularly strong vapour is desired. Air and ether vapour can be mixed in any proportion. Connected with the delivery end of the apparatus is a safety valve and pressure regulator consisting of a bottle of mercury, into which a tube is plunged. The depth of the tube in the mercury, which is adjustable, represents the maximum of pressure which is allowed with the apparatus; if, for any reason, such as spasm of the glottis, the pressure should rise, the valve "blows off" automatically, and danger from interstitial emphysema is avoided. In our early experience we employed a dial manometer registering in millimetres of mercury, to record the pressure, but the pressure bottle answers as well for all practical purposes. The apparatus is provided with a device to filter the air and to prevent droplets of condensed ether being carried over into the larynx. A clamp prevents the stoppers from becoming loose or blowing out of the bottle. The air or mixture is supplied at a practically constant temperature of about ten degrees above room temperature; if the operation is to last over three-quarters of an hour, the contents of the water jacket may be readily replaced.

The simplicity of the thing is apparent. The original apparatus of Elsberg has certain drawbacks: it is cumbersome and expensive, depends upon an electric current for its motive force, and requires an electrical as well as an anaesthetic expert to run it. My apparatus, on the contrary, is portable, simple to operate, and of low cost, yet it is safe and efficient, and can be used anywhere that ether is given. In two of my cases the apparatus was run successfully by men who had never seen it before.

In addition it has some minor points of advantage over other machines: it can, on occasion, deliver a highly concentrated ether vapour; it is provided with a filter to prevent the possibility of any droplets of ether vapour which have condensed in passage through the tube being carried into the lungs; it is provided with a safety valve by which the intrathoracic pressure can be controlled, and which acts as a positive safeguard against any injurio[illegible] on the lung tissue. This last appliance I consider of essential importance, particularly for men who are using the apparatus without much previous experience, as several fatalities from interstitial emphysema have come to my notice. Spasm of the glottis is apt to appear when patients are going under and whenever the concentration of the ether vapour is increased. At such times the safety valve blows off, and releases what might become a dangerous intrathoracic pressure.

For an intratracheal tube one can use either a soft rubber or French lisle catheter. I prefer the latter because it is smoother and its walls are thinner in proportion to its diameter. It should be rendered pliable by being soaked in hot water before using. It is pushed in gently until resistance is felt, and is then withdrawn about a half-inch. The proper size for an adult is 21 French. The tubes should be sterilized by boiling, as formaldehyde or chemical disinfectants may cause local irritation. Specially constructed tubes have been designed for the purpose, but I find that they possess no practical advantage over the catheter.

The chief drawback to the general application of this method of anaesthesia has been the difficulty in introducing the tube. After having tried various methods, all of which turned out to be unsatisfactory, I have followed a suggestion of Dr. F. J. Cotton, and made an introducer, a laryngeal forceps with sleeves attached for grasping the tube near its extremity, similar in principle to the introducer of Doyen. After considerable pains to produce the proper curve—working on frozen sections and cadavers—I have evolved an instrument which one can learn to guide into the larnyx in a matter of seconds, with the mouth gag in place and the left forefinger on the epiglottis, without the necessity of using a head mirror or electric illumination, or changing the position of the patient on the table.

For use with the soft rubber tube, I have adopted, with modifications, the introducer of Cotton and Boothby, which is a cannula made on the same curve as my forceps, through which the catheter is pushed. By means of either of these introducers any one should be able to acquire facility in passing the tube. This method has superseded all others in the hands of those using intratracheal anaesthesia in Boston.

When I first tried out this form of anaesthesia it had never before, to my knowledge, been used on human beings except by Dr. Elsberg. But my experience of its advantages in animal surgical work made me confident that it could be successfully adapted to human surgery, and I have never regretted having employed it. In a personal series of over 25 cases I have met no unpleasant experience. On a few occasions there has been difficulty in inserting the tube—to be accounted for by the fact that the patient was not sufficiently etherized—but with the tube once in place the rest has been easy. The patient sleeps calmly, with completely suspended respiration, or breathing a few times per minute, depending on the volume of air delivered at the bifurcation of the bronchi, but maintaining good colour and a good pulse. I have had patients under as long as one and a half hours. Breathing is resumed immediately the tube is withdrawn. No patient of mine has ever suffered any ill result from the use of this method. Recovery has been smooth, with little or no vomiting, and there has been no complaint of interference with the phonation from pressure of the tube against the vocal cords, or pulmonary complications of any sort.

The first indication for the use of this method is, of course, in thoracic surgery, and here it is bound to supersede the negative pressure cabinet of the pioneer, Sauerbruch, partly on account of its simplicity and adaptability, and partly on the wider margin of safety which it offers. For recent researches of Auer and Meltzer have shown that under the differential pressure method with the thorax open, air goes in and out of the thorax with respiration through the opening rather than through the trachea, which offers greater resistance, and the only portion of the lung which functionates is the lower lobe, which is in contact with the diaphragm. If this lobe is dislocated from its normal position, the patient is likely to die. With intratracheal insufflation the normal respiratory interchange is maintained whether or not the chest wall is intact.

When the thorax is opened the lung may be permitted

to collapse sufficiently to take it away from the chest wall and out of the field of manipulation (either by lowering the pressure at the bellows or by partly withdrawing the tube), and at the end of the operation the lung may be redistended so as to drive out the air in the thoracic cavity and bring visceral and parietal pleura together, while the chest wall is being sewed up (by increasing the pressure, by inserting the tube farther into the trachea, or by pinching the trachea so as to obstruct the back flow). And with this method, as compared with the differential pressure cabinets, there are no bands of elastic constriction about neck or abdomen, and the anaesthetist has free access to the patient's face and mouth without interfering with the pressure. The operator works under normal conditions, and his field is not limited by apparatus; the anaesthetist may remain at some distance from the patient. If the heart stops beating from any cause, the most efficient form of artificial respiration apparatus is immediately at hand. The apparatus is not complicated by machinery which is likely to balk the operator, and with it there is no danger.

This form of anaesthesia has also a considerable scope of application outside the field for which it was originally designed. In operations upon the face, mouth, and neck, it has obvious advantages. The operating field is unobstructed; run at a low pressure, it will insure adequate ventilation of the lungs and obviate the possibility of aspiration of mucus or blood, and thus lessen the frequency of secondary pneumonia following face and mouth operations in the elderly.

My series includes amputation of the tongue for cancer, deep dissections of the neck, dissections of the tonsil, operations about the larynx, as well as the intrathoracic work for which it is primarily designed. The operator is at first somewhat disconcerted by the appearance of the patient, who lies upon the table motionless, with suspended respiration, and without making a sound, but this is overcome by the comfort of knowing that the patient is bound to get sufficient air under all circumstances, that a minimum of ether is being used, that there will be little or no after-sickness, and that no foreign matter can be aspirated into the lungs. The air passages are kept dry of mucus, and inhalation of mucus, blood, or vomitus is prevented by the return current of air about the tube. No more ether is used than is needed within the lung; the ether vapour is washed out with air as soon as the anaesthesia is over, and therefore recovery is rapid; the chance of excess ether or ether-laden mucus getting into the stomach is slight—accordingly recovery is gentle. The tongue and jaw do not have to be held, and there is no danger of the glottis falling back and closing the trachea. Added to this is the great convenience, in operations about the face, neck, and thorax, of not being hampered by the close presence and constant ministrations of the anaesthetist.

Since I operated for the first time in Boston under this form of anaesthesia, on February 23rd, 1911, the method has created a considerable interest and has been widely adopted, not only for thoracic work, but for head and neck work as well. The cases upon which it has been used in and about Boston number well over 100, and this series, with the 200 cases which Dr. Elsberg reported a year ago, establish the procedure on a firm basis.

The anaesthesia should be conducted or supervised by a responsible anaesthetist. There is no better training, of course, than to use the apparatus on animals, to acquire familiarity with it, before employing it on the human subject. For instance, a few thoracotomies on cats will give one excellent opportunity for direct observation of its effect on the lung. And the fewer the complications of the apparatus the easier will it be to learn its control.

In closing, I want to say only that this method of anaesthesia promises much. It not only opens up the field of thoracic surgery to the general surgeon, but it solves the anaesthetic problem with regards to extensive face, mouth, and neck dissections. The technique of its application should be mastered by all who may be called upon to do this class of surgery. Its general adoption will evidently be slow; meanwhile, it should be employed with discretion, but it is of undoubted value, and eventually its use will be widespread.

III.—Robert E. Kelly, M.D., B.Sc., F.R.C.S.,

Assistant Surgeon to the Royal Infirmary, Liverpool.

I have used intratracheal insufflation for the past three months in various diseases, and on patients varying from the age of 10 to the age of 60.

My cases, 35 in number, include the following:

Operations on the head and neck: Partial excision of the lower jaw; excision of the upper jaw; hemi-excision of the tongue; removal of an epulis; thyroidectomies; removal of malignant glands in the neck.

Operations on the thorax: Excision of breast.

Operations on the abdomen: Gastro-enterostomies; cholecystostomies; ileo-sigmoidostomy; appendicectomies; herniae; excision of rectum; operation for fistula; kidney operations.

Operations on the extremities: Amputation through the thigh.

The above form a representative group of the cases occurring in a general surgical clinic. The practical procedure is as follows:

The patient is anaesthetized by the open ether method, having generally been given a preliminary injection of $\frac{1}{100}$ grain atropine. When the patient is well under, the tracheal catheter is passed.

It is sometimes difficult to see the glottis, especially in patients with prominent upper teeth, but so far I have not failed to pass the catheter down the trachea. At the moment of insertion there is a spasm of the glottis, with coughing, if the patient is not quite under. This spasm is momentary, and passes off as the stream of air enters the trachea. Should there be any mucus in the trachea the returning blast of air will immediately dislodge it. In patients with bronchitis, this clearing out of the trachea appears to be very beneficial.

For the first few moments, when there is spasm and coughing, I keep the pressure low and the percentage of ether high until the onset of regular breathing and the disappearance of the light reflex. I then raise the pressure to about 25–30 mm. Hg and drop the strength of ether to half or three-quarters. It is then possible to maintain the patient in a condition of anaesthesia somewhere between the loss to light and the sluggish corneal reflex.

The breathing is particularly light, and sometimes can only be appreciated by the rhythmic swish of the outgoing air current.

An attempt at a cough, a contracted pupil, a quick response to a touch of the cornea, or a prolonged inspiration mean, of course, too little ether, whilst a loss to light or touch indicates that the ether strength is too high. But the control over the latter is so exact that it is quite easy to maintain the constant depth of anaesthesia desired. I would like to refer to the feeling of absolute safety one has in working this machine, since on the slightest difficulty the putting back of the ether pointer to zero at once converts the instrument into a perfect artificial respiratory apparatus.

Meltzer originally stated that it was impossible to kill a dog by this method of anaesthesia, but he has since modified this statement. In order to kill the animal it is necessary to continue the insufflation for ten hours after all respiratory movements have ceased. It follows, therefore, that so long as even the slightest respiratory movements continue the patient is quite safe, and in any case there are no operations on the human subject which would last as long as ten hours.

When once the skin incision has been made, the amount of ether may be lessened until the operator reaches the parietal peritoneum or wishes to suture the skin at the end of the operation.

To demonstrate the impossibility of blood, mucus, or vomit getting past the glottis, I may mention the fact that by giving a dog an emulsion of charcoal and making it vomit under anaesthesia by an injection of apomorphine, not the slightest particle of charcoal made its way into the trachea, whereas with an ordinary anaesthesia, despite the greatest care taken to prevent it by posture or mopping, some charcoal always found its way into the air passages.

During the course of the anaesthesia the condition of the patient is all that could be desired. The colour is always a rosy pink, the pulse remains good, and no anxiety is felt about what is sometimes called by the Americans the "death space."

In order to give the heart as little to do as possible, the

pressure is dropped every few seconds to zero, so as to allow the great thoracic veins to fill. This turning on and off of this tap is all that one has to do. On no occasion has there been any vomiting during the insufflation. When the operation is over the ether is turned off and the lungs flushed with pure air. This is said to make the recovery time quicker. I have noticed this in some of my cases, but it does not seem to be constant.

After the tube is removed ordinary breathing ensues after a short interval.

As regards after-effects. Vomiting is extremely rare, and ether bronchitis did not occur in any of my 35 cases.

In an old man with enlarged prostate, with bleeding into the bladder, a suprapubic was done by the open ether method and the bladder merely drained, his condition being too bad for the radical operation. This small operation lasting only a few minutes, was followed by bronchitis lasting some days. Later, the prostate was removed under insufflation. No bronchitis followed.

A woman was admitted with acute intestinal obstruction, the result of strangulation in a large umbilical hernia. Her condition was so critical that a general anaesthetic was out of the question. Under local anaesthesia, therefore, I merely opened the first coil of dilated gut that presented. She gradually recovered from the intestinal obstruction. She was extremely fat, suffered from mitral disease and chronic bronchitis, and the umbilical hernia, which even now was as large as a football, was further complicated by a faecal fistula on its summit. Under insufflation the fistula was closed, a lateral anastomosis effected, and the edges of the ring overlapped—a prolonged operation lasting over one hour. Her chest condition was rather improved than otherwise after this long operation.

I feel satisfied that this method does no harm to the delicate mucous membrane of the trachea, and that it may be beneficial in patients whose breathing is difficult, or whose trachea is impeded by muco-pus.

Now as to the possible dangers: It is possible that if the catheter is rough, and during its introduction tears up the mucous membrane, there might be a danger of surgical emphysema.

With regard to ordinary emphysema, we must remember that the pressure as indicated by the manometer is not the pressure in the alveoli, for probably an increase of 10 mm. at the apparatus may only mean an increase of 1 mm. actually in the lungs, for the return is perfectly free. Moreover, a man blowing a cornet, or coughing strongly, may raise his thoracic pressure up to 160 mm. Hg, and this is far in excess of that ordinarily used, the average pressure being somewhere between 10 and 40 mm. Hg, and this measured by the apparatus, and therefore in excess of the pressure in the lungs.

The next danger is the introduction of the tube into the pharynx instead of into the trachea. It is for this reason that I practise the visual rather than the tactile method of introducing the catheter. One must see the glottis, and see that the catheter is correctly passed, otherwise there will always be the uncertainty that it has not been correctly introduced. By means of a Chevalier Jackson's direct laryngoscope this little operation is quite easy after a little practice. I always pass the catheter on a probe which almost fills its lumen, and I can then feel the grip of the glottis when I am withdrawing the probe. This, of course, would not occur if the instrument were in the oesophagus.

If the pressure of the air is too great, air may find its way into the stomach, but this may be obviated by the passage of a stomach tube, which may be left in during the whole of the insufflation, and does not interfere with the method. It has not, however, been necessary in any of my cases.

DISCUSSION.

Professor Armstrong (Montreal) said: I have introduced the method of intratracheal insufflation into my hospital practice, and have used it altogether in some seventy operations with eminently satisfactory results to patient and operator alike. I find that operations on the lung are greatly facilitated. If it is required to pass the hand round any portion of lung between it and the chest wall, all that is necessary is to lower the pressure at which the stream of etherized air is delivered and the lung immediately recedes. This manipulation being completed, pressure is raised, and the lung distends till it comes in contact with the thoracic parietes again. Owing to the pressure at which the apparatus is worked, there is always a stream of air pouring out of the trachea between its walls and the catheter. The force of this effectually prevents aspiration of any foreign matters into the trachea; hence this method is of great value in operations in the oral or nasal cavities and upon patients who are the subjects of acute intestinal obstruction with constant vomiting. I also think the method has advantages in operations on large goitres, when the trachea is frequently compressed and respiratory troubles are apt to occur during enucleation. On the whole, I find that after-sickness is lessened by the insufflation method. I have never seen any ill results arise from the passage of the catheter within the trachea. In one case in which this method was adopted the patient was suffering at the time of operation from bronchitis and appeared to be benefited rather than otherwise. The noise made by the electric motor is certainly a source of annoyance whilst operating.

Mr. S. Thompson Rowling (Anaesthetist, Leeds General Infirmary) said: The ideal state of anaesthesia is one of quiet breathing and muscular relaxation, with safety. There has been a long controversy on the respective merits of ether and chloroform as general anaesthetics to bring about this ideal state of anaesthesia. Without entering into this discussion, it will suffice to sum up the situation by the general conclusion that both anaesthetics have advantages and disadvantages, and that a combination of both has advantages over either separately (see Report on the Routine Use by the Open Method of a Mixture of Ether and Chloroform; Hewitt and Bloomfeld, *Reports on the State of Science*, 1909). The combination is physiologically sound, and clinically is found to stand the test of experience. The beginning of the administration with a mixture of ether and chloroform is less nauseous to the patient than with ether alone, and less dangerous than with chloroform alone; the stage succeeding loss of consciousness until deep narcosis is reached is the most dangerous of the administration, and should be met by giving the safer anaesthetic, ether; after deep narcosis is obtained a combination of ether and chloroform, or chloroform alone, is preferable to ether by itself. The great difficulty in using such a succession has been that the methods of administration of the two anaesthetics are different—for ether an inhaler, for chloroform a mask. The use of one or both in any proportion during the same administration is not practicable unless a uniform method of administration for both anaesthetics is used.

In the apparatus now shown this principle is fulfilled: both anaesthetics are obtained in the same way, each is vaporized by a stream of oxygen gas, and carried over to the patient in the form of vapour, and the stream of gas can be directed through either ether or chloroform or through both in any proportion by the turning of a tap. But it is found that an approximately definite percentage of vapour is given off in either case—of ether 40 per cent., of chloroform 20 per cent.; this percentage varies somewhat, chiefly with the temperature, but not sufficiently to materially affect the result. We thus get the basis for a calculation of the percentage administration in either case. These percentages—ether 40 per cent., chloroform 20 per cent.—are modified and reduced to the patient's requirements by the use of a special form of slotted angle-piece, which admits fresh air as a diluent. The angle-piece is attached to the face-piece, and has a rubber bag connected to the end distal to the slot, and into which the vaporized anaesthetic is received.

The further calculation is based on the fact that the normal respiration-rate is 10 litres per minute, and that the vaporized anaesthetic is admitted to the bag at a definite known rate per minute. As an example: When 1 litre per minute of ether vapour is admitted to the bag, and the air slot is so opened that the patient's breathing just fails to move the bag (that is, that there is no rebreathing), the patient will be breathing 1 litre of ether vapour *plus* 9 litres of fresh air. The percentage of ether vapour is thus reduced by nine tenths, and the percentage of ether vapour breathed is one-tenth of 40 per cent. = 4 per cent.

By closing the air slot completely, the full 40 per cent. of ether vapour will be given and the bag will fill, but if the slot is left slightly open it will be found that the bag remains at the same fullness; it does not get more distended, and therefore as much is escaping as is being introduced; but one litre is being introduced, and this litre (40 per cent. of ether vapour) is now being diluted half and half—that is, to 20 per cent.; therefore, with the slot slightly open, the patient is breathing a 20 per cent. ether vapour.

With the slot more open, more fresh air is admitted, and the percentage of vapour falls from 20 to 16, 12, 8, and 4 per cent., this last being one tenth of 40 per cent., and corresponding to the

position when the bag fails to move and the litre of ether vapour is being diluted with nine-tenths of fresh air.

With chloroform the percentage per litre is 20 per cent., but if only ½ litre is admitted this 20 per cent. is reduced to 5 per cent.; a reduction on precisely the same lines as for ether vapour is effected by the slotted angle-piece, the amounts being 2½, 2, 1½, 1, and ½ per cent., and corresponding to 20, 16, 12, 8, and 4 per cent. of ether.

It will be noted that these figures bear the proportion

$$\frac{8 \text{ ether}}{1 \text{ chloroform}},$$

and this is their approximate physiological strength. Thus, when the rate of flow through chloroform does not exceed ½-litre per minute, there is a maximum of 2.5 per cent. vapour, with the slot almost closed, and a working range of from ½ per cent. (slot open to no movement of bag) and 2 per cent. (slot four-tenths closed). When diluted with an equal rate of bubbling through ether, the rate may be increased to ½ litre, still giving the same percentage of chloroform, because diluted half and half. The percentage of ½ litre of ether is 5, 4, 3, 2, and 1 per cent., and corresponds to 2½, 2, 1½, 1, and ½ per cent. chloroform, according to the position of the air slot, and this is the rate used at first, to obtain unconsciousness. After this, ether vapour alone is used until deep narcosis is obtained, with the slot nearly closed, and in this way a liberal use of the powerful respiratory stimulant action of carbon dioxide may be made at the period when it is most needed—the dangerous period attending the early stage of deep anaesthesia. With oxygen this is possible without cyanosis, and the combination of ether, oxygen, and carbon dioxide is the safest that can be used. Subsequently, to *maintain* narcosis, a combination of ether and chloroform, or chloroform alone, may be used with safety.

In Appendix 3, Report of Committee on Anaesthetics, 1910, by Hewitt and Waller, the conclusions are: "We conclude with certainty that the intensity of the chloroform effect is greater than normal at a lower percentage of oxygen, less than normal at a higher percentage of oxygen," and "Oxygen has an influence antagonistic to chloroform."

Oxygen, therefore, increases the safety of chloroform administration, and in this apparatus it is always present in slight excess.

Oxygen also prevents cyanosis and gives a quiet, regular breathing, even with ether vapour, somewhat allied to that of a chloroform narcosis, and helps to abolish rigidity; it is also physiologically antagonistic to carbon dioxide, and enables the anaesthetist to use a high percentage of carbon dioxide as a respiratory stimulant in the early dangerous stage of deep narcosis, without cyanosis; it is also a powerful restorative when given in excess, and is always ready in case of emergency.

By the use of the rubber bag, full advantage may be taken of the powerful respiratory stimulant carbon dioxide, and oxygen apnoea is entirely eliminated.

The method enables the anaesthetist to use to the full the advantages of both ether and chloroform during an administration, and at the same time to modify and largely diminish the dangers of each. It gives an approximately definite percentage of ether and chloroform vapours throughout the administration. The administration is regular and continuous and the vapours are warm (76° F. on entering the bag). Oxygen is continuously administered in small excess, and is available in large excess at any moment in case of danger; its presence diminishes the danger of the administration; it causes quicker breathing and lessens rigidity, and it enables ether to be used more freely, and approximates the type of anaesthesia to that of chloroform.

The powerful respiratory stimulant carbon dioxide can be made full use of without inducing cyanosis, and oxygen apnoea is eliminated. The wide bore of the angle-piece relieves respiratory strain and its simplicity makes it easy to sterilize. The method is based on scientific principles and yet is essentially practical. Lastly, the above theoretical advantages are amply fulfilled in clinical experience. The method has been used in many hundreds of cases with success.

Mr. H. M. PAGE (Guy's Hospital) said: Dr. George Crile's method of anaesthetizing by means of nasal tubes was devised for preventing blood from entering the larynx in mouth operations, and for removing the anaesthetist well out of the way of the surgeon and his assistants, and for facilitating asepsis in operations on the neck by the patient's mouth and face being covered up. Dr. Crile devised this method for the use of ether, but I have for the last three years been in the habit of connecting the nasal tubes to a Vernon Harcourt inhaler, and thus giving chloroform where, from the presence of marked emphysema, bronchitis, and thickened vessels, I have considered this drug to be the better. In either case I use oxygen continuously, and have had an attachment added for this purpose, and when ether is being used I now have a coil of copper tubing running through a hot-water chamber, as in the instrument now made for me by Messrs. Down Bros. An opiate with the addition of atropine or scopolamine and atropine must be previously administered. The pharynx and upper part of the laryngeal opening is cocainized by a 2 per cent. solution when the patient is unconscious.

I induce anaesthesia by chloroform or a chloroform and ether mixture, as I find that I get more time for passing the tubes, packing, etc. I have also had a gag made for me which opens very wide, as I have found that the ordinary gag does not give sufficient room for packing comfortably in edentulous patients. In my experience the main point in this method is the packing of the pharynx. It must be done thoroughly, but with care not to compress the nasal tubes, special attention being given to the sides of the pharynx. How the packing is done is of more importance than the quantity used. I have found that a narrow sterilized gauze roll, 1½ to 2 inches, is the best for the purpose. I have had to repack the throat twice on account of faulty packing causing commencing cyanosis; one case I packed with my left hand owing to having a sore finger on my right, and on the other occasion I packed with a glove on—I am not accustomed to the use of india-rubber gloves. On one of these occasions our President was present.

The whole tongue can be removed by this method, but if the tonsil or pillars of the fauces are involved I prefer to use one of the other methods of anaesthesia, as the packing is inclined to get in the way of the surgeon. I have had some trouble from nasal obstruction, but have never failed to get over this difficulty either by using a smaller tube on one side, or more often by slightly dilating the passage. The patient recovers with great rapidity from the anaesthesia, always has a good coughing reflex, and is generally moving and almost conscious before leaving the operating table. In the large majority of cases shock is absent or very slight; in fact, I have only known one case in which decided shock was present, and this case made an uninterrupted recovery. The anaesthetist is altogether out of the way of the surgeon and his assistants when using this method.

My own cases and results in malignant disease are as follows:

	No. of Cases.
Excision of tongue, complete	2
,, half of tongue	5
,, half of tongue, part of lower jaw, and glands of neck ...	1
,, half of tongue, part of floor of mouth, and glands of neck	1
,, half of tongue and part of floor of mouth	-
,, malignant glands of the neck ...	15
,, epithelioma of lip and cheek ...	1
,, carcinoma of cheek	1
,, lower jaw (sarcoma) ...	1
,, malignant growth and fulguration in mouth and neck	3
	33

Of two of these cases I have only made a note that they left the theatre in very good condition and have not noted the ultimate result; but, personally, I am quite sure that they recovered, as I have followed all my cases and have no knowledge of a death. All the rest of the cases made an uninterrupted recovery, except one case in which death occurred suddenly on the fifth day after operation from cerebral hemorrhage. There was no lung trouble. The common carotid artery had been tied.

I am trying to trace the two mentioned above.

A good many other cases besides mine have been operated on at Guy's Hospital under this method of anaesthesia, but I have only been able to find one death recorded as following the use of Crile's tubes. The case was not mine, and I know nothing of the condition of the patient before operation. There was nasal stenosis, and only one tube was used, which appeared to give sufficient air. The whole tongue, part of the floor of the mouth, and the glands on both sides of the neck were removed at one sitting. The patient died a few days after, from bronchitis. Ether was the anaesthetic employed. Dr. H. R. Phillips has kindly

allowed me to include the cases of malignant disease in which he has used this method, which are as follows:

	No. of Cases.
Excision of part of tongue	1
,, part of tongue and glands of neck ...	2
,, part of tongue and part of lower jaw	2
Scraping malignant disease of lower jaw ...	2
	7

All of these cases made an uninterrupted recovery.

Both Dr. Phillips and I have used this method in other cases, but I have confined my remarks to malignant disease. Finally, I would state that in suitable cases I prefer this method to any other in dealing with malignant disease of the mouth and neck, both from the point of view of the patient and the surgeon, and also because the anaesthetist, once the packing is properly done, has no fear of the haemorrhage, nor is he troubled by reflex effects, and shock, as a general rule, is absent or very slight.

The PRESIDENT (Dr. Dudley Buxton) was glad to say that Mr. Leedham-Green had dealt out even justice as between analgesia and anaesthesia. Statistics were not always reliable, and everybody was apt to think his own method was the best, but the really best method was the one which worked out best in the hands of others, skilled and unskilled. All the figures upon chloroform mortality were vitiated by including administrations by the inexperienced. On the other hand, the figures given of spinal analgesia mortality were those of experts, and the comparison between the two was hardly fair. Another factor was that a dosimetric method was used in spinal analgesia, whereas the chloroform method employed was comparatively seldom dosimetric. The Dubois and Vernon Harcourt apparatus had no deaths. The Roth-Dräger had some deaths because, although the apparatus was dosimetric, it was capable of giving very high percentage vapours of chloroform, and hence gave no substantial safeguards against overdosage. He did not agree with Mr. Leedham-Green's statement that there were no deaths in regional analgesia—cases had been recorded in which its employment had certainly contributed towards the fatality, although the result was attributed to that curious condition termed "status lymphaticus." Emotional and psychological reasons called for general anaesthesia, and indicated also the employment of a preliminary narcotic. In reference to remarks of Dr. Ehrenfried and Mr. Kelly, he thought a good deal of practice in the intratracheal method was necessary before anaesthetists attempted it on the human subject. He was inclined to think that pulmonary after-effects from intravenous ether were less than after inhalation. Rectal etherization, to which Mr. Leedham-Green had referred, had been introduced in London by the speaker twenty years ago, and his apparatus had been apparently overlooked and his results ignored, for practically identical apparatus had been reinvented and published in medical papers in other countries under the names of the gentlemen who had adopted the practice. The after-effects attributed to ether when that anaesthetic was employed in the inhalational methods were extraordinarily good, when it was remembered that the anaesthetic was commonly used in a reckless way. Deaths had been recorded in the United States, but these were clearly due to failure of the heart arising through furious struggling, incident in some cases to faulty methods of administration. Post-operative ether sequelae were more numerous, but even these had to be carefully scrutinized before they were shown to be the sole result of ether. As he had pointed out in opening a discussion before the Society of Anaesthetists in 1900, the so-called ether pneumonia was a common catarrhal condition due to neglect of the commonest rules of surgical hygiene, or, as Hoelscher had demonstrated, to aspiration of buccal mucus and condensed ether vapour into the air passages. When atropinized a patient was immune from this danger. The main advantage of the modernized "open" method of etherization was that it gave the patient a less concentrated vapour of ether, and, as a result, he was saved from ether toxaemia. The skilled anaesthetist could safeguard his patient from most of the after-dangers of general anaesthetics, but, unfortunately, no skill could safeguard patients for whom local or spinal analgesia had been employed, from the psychic shock which, as Crile had shown, was so prejudicial. Of course, persons differed widely in this regard, but whether they revealed their sensations or not, it had been pretty clearly shown by experiment that the central nervous system was not protected from damage by the use of analgesics. The after-effects of the insufflation of ether by the intratracheal method were as yet unknown, as the number of cases recorded were comparatively few. So far it promised well in suitable cases and in the hands of experts. He congratulated Dr. Ehrenfried and Mr. Kelly upon their apparatuses, which were certainly less cumbersome than the older forms.

Mr. LEEDHAM-GREEN, in reply, said he still doubted the advantages of the intravenous method. He was much interested in the apparatus shown by Drs. Kelly and Ehrenfried, and thought them very useful for severer operations on the lungs. He did not think the passage of a large catheter into the trachea an unirritating procedure. He was afraid that its long-continued presence in the trachea would militate against its frequent use in ordinary head and neck operations. He agreed that the noise of the electric motor was disturbing.

DISCUSSION ON THE USE OF ALKALOIDAL BODIES PRIOR TO INHALATION.

OPENING PAPER.

By FRANCIS W. BAILEY, M.R.C.S., L.R.C.P.,
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I PROPOSE that we should ask ourselves in the first place, Why is it we as anaesthetists have called in the aid of drugs, or a combination of drugs, to assist us in producing a state of anaesthesia other than that which is usually obtained by inhaling the vapour of ether, chloroform, ethyl chloride, or nitrous oxide gas, or by methods which obtain more rarely in this country—namely, infusion or subdural injection anaesthesia?

Is it not because we not only in this country but in all countries are tending to place the administration of anaesthetics in the hands of specially appointed persons more often than heretofore, and that these individuals are always straining for perfection? Let it not be imagined that it is because we are looking out for something new, or for a desire for experimenting, because the field for this is somewhat limited in the branch of medicine which we are practising. Perhaps it may be with a view to abrogating the dissatisfaction which arises with regard to anaesthetic methods in some clinics, and we welcome any little help, which is better than none.

Or, let me ask you once more, Is it a reversion to type? is it a revival of narcotic fashion? For a reply turn over the pages of England's immortal bard, and there we find that Shakespeare makes frequent allusion to anaesthetic draughts, and further back again, Homer mentions the anaesthetic effects of nepenthe; but we must not dwell upon the past—the present and the possibilities of the future are before us.

The narcotic effects of opium were well known to the older surgeons of pre-anaesthetic days, and it seems to me that the technique of the present-day anaesthetist is a combination of the methods adopted before the discovery of anaesthesia with those methods and means elaborated since the discovery of anaesthesia, both tending to make a component whole which some day may lead us to our ideal.

Most, I might almost say the majority, of my work in the administration of anaesthetics in conjunction with the introduction of alkaloidal bodies into the system by hypodermic or other means, has been done with a combination of atropine and morphine, or atropine alone drugs which, in my opinion, are safer to use than many of the proprietary preparations whose virtues are extolled by the manufacturing chemist for the clinician's use. That which may be proved to be

experimentally true in the laboratory does not always appear to be advantageous to the anaesthetist or clinical practitioner.

We know well the virtues and influences of our old and tried friends atropine and morphine, and to these may be added the the hyoscine preparation known as scopolamine. It is to these I would apply the term "alkaloidal bodies"; these should be the drugs of our choice. With regard to atropine, we must remember that the three great vital centres are markedly affected by its administration. Briefly, the respiratory centre is powerfully stimulated both in frequency and extent of movements, subsequently it is paralysed by poisonous doses. One of the most striking actions of atropine is paralysis of the peripheral terminations of the vagus in the heart; in other words, the abolition of the inhibitory action of the vagus. To what extent this action of atropine occurs, if it occurs at all in the doses usually given previous to the administration of an anaesthetic, I am not prepared to say, but this I will say, we should not lose sight of the possibilities of its action being present after administration, as shown, it may be, by the rise of the pulse-rate to, it may be, twice its previous rate after a full dose.

Another point with regard to the atropinized vagus is that the terminations of this nerve in walls of the bronchi are paralysed; thus the tension of the muscular coats of the bronchi is diminished, and as a result the air current is facilitated. I shall have more to say upon this later on. The vasomotor centre for a time is stimulated and then depressed; the systemic arteries are first contracted and the blood pressure raised; subsequently the vessels are relaxed and the pressure lowered. Lastly, atropine paralyses the chorda tympani in the submaxillary gland, but remember that sympathetic secretion can be obtained, the sympathetic remaining unaffected and the vessels of the gland dilate as usual under stimulation.

With regard to the action of morphine, I do not intend to elaborate upon the action of this well-known drug, except to say that morphine slows the pulse-rate, impairs respiratory movements, and renders respiration shallow and acts as a vaso-dilator, but these effects are only pronounced in large doses.

With regard to scopolamine, we get similar action to that of atropine with large doses.

I must crave indulgence for having traversed facts well known to all, but I wished to present a vivid picture of what we are doing to the human frame by introducing drugs previous to anaesthesia. We are not anaesthetizing a normal patient, so to speak, but one more or less in a narcotic state, and one not answering, it may be, to all the laws appertaining to the physiology of the human subject. Just imagine you are driving a motor car in which the brakes are inoperative, and the only means of stopping the car is by running off or shutting off the petrol supply—there is danger ahead which you may not easily control. One most important decision is the drug or drugs to be selected and the dose to the administered, and whether it should be full, medium, or small, we must always bear in mind that there is such a condition as idiosyncrasy, a drug tolerance; cases must be known to all present to day of, for example, belladonna poisoning occuring even after the application to the skin of the liniment, and if such a reaction will take place in a patient in a non-anaesthetic condition, we must ever be aware of the possibility of it occurring, it may be, with more alarming symptoms to a patient in an anaesthetic condition, suffering, it may be, from debilitating disease or surgical shock. As regards the dose given, age incidence counts for much; clinically we know that atropine is well borne by children, but more care has to be exercised in the exhibition of morphine, and I doubt very much the wisdom of using the latter drug previous to anaesthesia in the case of children. I am an advocate for what I would call a moderate dose, because I believe alarming symptoms may arise during anaesthesia from overdrugging; these I will mention when considering the disadvantages of the method.

With regard to scopolamine, there are some—and perhaps it may be rightly so too—who see some use in this drug as a preliminary; but may we not obtain all we want by the use of atropine alone or in combination with morphine? It is doubtful whether polypharmacy is to be encouraged previous to the induction of anaesthesia. I have always thought the simpler the methods and apparatus we use in anaesthesia, the greater the safety of the patient and the less the difficulties of the administrator.

Let me now put before you a few of the advantages of the preliminary administration of an alkaloidal body previous to the induction of anaesthesia; but we must not lose sight of the fact that there are also disadvantages.

First, it undoubtedly economizes the amount of ether and chloroform which is used in some cases, but not in all, but this, I take it, as professional men we should not consider. In cases of intradural anaesthesia when consciousness is not abolished it is of decided use. In nervous patients and alcoholic individuals, who are usually the most difficult to deal with at the induction stage, we should advocate its use. In these cases, too, when the course of the anaesthesia might not be uniform or smooth, it certainly assists in the direction we desire—a quiet and even anaesthesia. Some patients are prone to salivate, others will not, in spite of the absence or presence of the administration of atropine; but in cases when we can atropinize a patient previous to administration, there is no doubt that there is an advantage in a preliminary dose of an alkaloidal body. I always like to hear a patient say, "I am thirsty," or "My mouth is dry," on coming into the anaesthetic room, for then I am sure I am dealing with a patient in an atropinized condition, and then I hope to see diminished secretion of saliva, and consequently diminished risk of lung complications, which is brought about by saliva and mucus *plus* ether trickling down the trachea into the bronchi. In some cases, too, there is an advantage in a preliminary soporific effect being obtained—for example, cases in which there might be pain after an operation, or pronounced excitement sometimes amounting to delirium, which might not have happened had there been a previous administration of atropine or morphine. One extremely important advantage obtained is the decrease of post-operative vomiting. So much for the advantages; I will now recapitulate some of the disadvantages.

The preliminary administration of an alkaloidal body may and does sometimes fail to produce the desired effect. In the case of old people, who usually are easily anaesthetized and take very little anaesthetic, and those with calcified cartilages or emphysematous chests, it appears to me doubtful whether it is advantageous to give atropine—and certainly I would not advocate morphine; the respiratory movements are impaired, and I have noticed on some occasions respirations of a Cheyne-Stokes character—I take it, due to a depressed centre being stimulated from time to time by an accumulation of asphyxial blood. It may be found that it is necessary sometimes to give an anaesthetic to patients suffering from renal trouble—it might be albuminuria in a marked degree; in my opinion it would be inadvisable to administer an alkaloidal body of any description because, should a diminished output of renal secretion occur, with an alkaloidal body *plus* ether, chloroform, etc., we should be only increasing the possibility of, so to speak, putting the kidney machinery out of gear. I think this is a point we should like to hear discussed. As to the wisdom of exhibiting morphine in bronchitis, this, too, is debatable, for we should depress respiration if we give it in doses which would produce any perceptible systemic action. Respiratory depression is also liable to take place in anaemic subjects or those suffering from a wasting disease such as tuberculosis, which might require operative interference. It must be remembered that the combined action of these drugs is much greater than the sum of their separate actions could be, so that if any unfortunate reaction is produced we do not know what the precise cause may be; you can easily realize that a full dose of scopolamine-morphine administration might cause death from paralysis of respiration, and that artificial respiration and all means of stimulation would be ineffective. So that there are contraindications in all conditions whereby the respiratory centre is depressed, or likely to be depressed through prolonged anaesthesia, or indirectly by shock or haemorrhage or severe cardiac lesions.

It is almost impossible to foresee all the conditions which may be caused by deviation from the normal; but when any of them are there and we have injected an alkaloidal body it is beyond our further control, and every additional narcotic complicates anaesthesia. Scopolamine, or, for that matter, morphine and atropine, do not help us much in producing muscular relaxation in either intra-

dural or intravenous anaesthesia. It is just doubtful, in my mind, as to whether we are wise in aiming at producing a long after-sleep, and so interfering with expulsive expiratory efforts which may take place during returning consciousness. Are we not helping, by keeping the patient quiet and in a recumbent position, to produce pulmonary oedema? The thirst and dryness of the throat produced in some patients by atropine are very distressing, and produce discomfort—a condition of affairs very undesirable in the case of stomach or bowel operations. The question as to whether we may produce fatty degeneration in some organs of the body I leave to other members of this Section to discuss. Although I cannot speak definitely, I should say its rarity eliminates any gravity which may be attached to it. In the case of intradural anaesthesia the previous administration of strychnine sulphate, it is admitted, I believe, overcomes the dangers of respiratory paralysis.

I do not advocate complete narcosis by alkaloidal drugs previous to anaesthesia produced by one or other methods, with a view to doing away with the fright or positive terror of operations which few if any patients have in the present day, because I have so rarely come across, in all my experience, a patient who cannot be reassured, or whose confidence cannot be obtained previously by the surgeon or the anaesthetist.

If we aim at complete narcosis we must give large doses, say, $\frac{1}{50}$ grain of atrophine, or a $\frac{1}{4}$ grain of morphine, and I have come across cases where one used to give what I might call heroic doses, and where we used to get respiratory embarrassment, causing discomfort to the patient and anxiety to the anaesthetist. When big doses are given it is difficult sometimes for the anaesthetist to tell whether the patient is under the anaesthetic or under the drug administered. So that I would suggest not any larger quantity in the case of atropine than will be sufficient to diminish vagus action. We find it difficult sometimes to abolish reflex effects altogether during anaesthesia: this is to be noticed in deep gall-stone operations, chiefly bearing on respiration, when grunting expirations may occur.

As for its assistance in rapid induction, I think a penalty is to be paid, so to speak, in that there is some disturbance in the smoothness of the subsequent anaesthesia.

With regard to the routine administration of alkaloidal bodies previous to ordinary anaesthesa in all cases, I think I have placed before you sufficient facts to prove that there are certain contraindications; there are cases in which no advantage is gained and some cases in which it may be a disadvantage.

As to the technique of administration, the desired effect will not be obtained unless the drug is given, say, half an hour to three-quarters of an hour previous to operation; this is the ideal, but it is not always possible in an active clinic; the dose should be moderate—$\frac{1}{100}$ grain of atropine, $\frac{1}{4}$ grain of morphine, and $\frac{1}{200}$ grain scopolamine.

In conclusion, let me state that the administration of alkaloidal bodies previous to anaesthesia is a welcome addition to the anaesthetist's armamentarium in most cases. Some advantages we do admittedly derive from their injection; such are: diminished salivary secretion at the induction stage, a quiet and even anaesthesia at the complete stage, and diminished vomiting on returning consciousness; still, many of these can be obtained without them by expertness on the part of the anaesthetist and by judicious choice of the anaesthetic given.

DISCUSSION.

Mr. G. Stuccombe Hett (London) said: I propose to discuss this matter mainly in its practical aspects and from the point of view of a surgeon engaged in operations upon the nose and throat. In my practice one may say that in all, or practically all, operations alkaloids take a part in the production of anaesthesia. Of these, of course, cocaine is the chief and the one most frequently used, either alone or in combination with one or more of the others. Many operations, such as submucous resections and operations on the nasal sinuses, are performed under local anaesthesia, and in these I have been struck by the advantage to the patient of a preliminary injection of a combination of the narcotic alkaloids. It avoids mental depression during the operation, and, whereas formerly many patients who seemed to be recovering well from the operation, fell after the lapse of a few days into a condition which I may term "traumatic neurasthenia." I now find, since using a preliminary injection of alkaloids, that this condition is rare. I like the injection to be given to the patient on the operating table, and the nasal packing to be done at the same time. He is then left to rest quietly, and I frequently find him asleep on my arrival to operate. I have never seen this injection followed by any respiratory failure. Some of my operations are conveniently performed under ether given intravenously, and in these the preliminary injection of alkaloids is of great value. I regard atropine rather as an aid to the surgeon than as a narcotic; in enucleation of tonsils it is very useful in abolishing reflexes, which are apt to ensue in the course of this operation. I refer to laryngeal spasm and inhibition of the heart. On the other hand, I do not think the administration of scopomorphine advisable in these cases or in operations on adenoids. No undesirable after-effects have followed the use of any of these alkaloids in my practice.

Dr. G. A. H. Barton (Hampstead General Hospital) said: Owing to lack of time I have been unable to make a complete analysis of cases in which I have used scopolamine and morphine as a preliminary to anaesthesia. My remarks will therefore be brief and general. The drugs mentioned have been the ones chiefly employed. I have occasionally used atropine, either in addition to or in place of one or both of these drugs. I believe it has little or no narcotic effect, and that scopolamine is equally effectual in preventing secretion of mucus. I started the use of these drugs some three years ago in a tentative way, first in abdominal cases in order to get more relaxation whilst using open ether as the anaesthetic. I understand that some surgeons consider they have an opposite effect or tend to cause rigidity, but this is quite contrary to my experience once the patient is really anaesthetized, though I am willing to admit that in some cases during induction and first few minutes of anaesthesia there has been a good deal of rigidity—not more, however, than there frequently is during the early stages of simple ether anaesthetization. Later I took to using scopomorphine as a preliminary to thyroidectomy and the use of the endoscope by the oral route, in order to diminish the secretion of mucus and the troublesome reflex cough so frequently present. So satisfied was I with the advantages of the method that I soon adopted it as a routine in all surgical operations on adults, provided no contraindications were present. The drugs used have been either Burroughs and Wellcome's tabloids of morphine sulphate and hyoscine hydrobromide or Riedel's scopomorphine, and I cannot say that I have observed much difference in action between them. The most suitable time for injection I find to be one hour before operation, though, of course, it has not always been possible to secure anything like accuracy in this in hospital work. The dose has generally been left to the discretion of the house-surgeon, usually $\frac{1}{100}$ gr. of scopolamine and $\frac{1}{4}$ gr. or $\frac{1}{3}$ gr. of morphine. The question of dosage is an important and difficult one. In dealing with these powerful alkaloids one has to be cautious. I have been impressed by the variable condition of patients on their arrival in the theatre; with the same dose some will be very drowsy, others apparently hardly affected. Every patient would seem to have his own appropriate dose, which unfortunately, in the majority of cases, one can only guess at. I well remember years ago having to anaesthetize a lady whom I knew well. It was before these preliminary injections came into vogue. She had been suffering for several weeks from an extremely painful malady, but, being a diabetic, operation had been delayed. To relieve her pain morphine had been given up to doses of 1 gr. hypodermically, but on this losing its effect, hyoscine was given, and at the time of operation I was aware that $\frac{1}{100}$ gr. of hyoscine would send her soundly to sleep in a very few minutes. I had therefore no difficulty in dealing with this case. Scarcely any ether was required, and the results were in every way perfect. I might here mention that the effects of hyoscine or scopolamine, as it is variously called, are much more rapidly produced than those of morphine and pass off more quickly.

In the vast majority of cases patients arrive on the operating table drowsy and placid. The operation has lost its terror for them. The induction of anaesthesia is generally rapid and devoid of struggling. Here and there, of course, one comes across an individual upon whom morphine acts as an excitant, and then there is perhaps much struggling, with rigidity and delayed induction. During anaesthesia I have particularly noticed two points: one is the almost entire absence of shock during the severest operations, and the other is the placid, quiet breathing, with absence of all coughing, retching, or straining, which obtains with even the lightest anaesthesia accompanied by a brisk corneal reflex. A great advantage of the method is that it enables good anaesthetic results to be obtained with a minimum quantity of the safe open ether. I have frequently used less than 4 oz. in operations lasting an hour. I practically now never give chloroform alone except in a Junker's inhaler, and not often then.

Owing to the small quantity of anaesthetic used, the after-effects are generally negligible. The patient frequently sleeps peacefully but not too heavily, and has all his reflexes present. There is seldom any vomiting on awaking; when it does occur, I have found it more frequently on the day following the operation. With an experience now of some hundreds of cases, I cannot recall any in which any deleterious effects attributable to the alkaloids have appeared either before, during, or after operation. As to contraindications, I do not think they are many. I should avoid the method in children and some old and feeble subjects, also in those with kidney disease or advanced disease of the lungs. Owing to the respiratory depression caused, I have so far not used it in operations involving haemorrhage into the air passages. Of omnopon I have no experience. Theoretically there seems to me no advantage in giving all the alkaloids of opium, many of which are deleterious without being narcotic.

Mr. VICTOR FIELDEN (Royal Victoria Hospital, Belfast) referred to the use of cocaine, morphine, scopolamine, and atropine. His use of cocaine was confined to operations upon the eye, nose, and throat. For iridectomies and extractions of cataract the preliminary instillation of a drop of solution of cocaine into the conjunctival sac was of great utility in avoidance of such a deep degree of anaesthesia, whilst for nasal cases it was equally efficacious. Morphine, atropine, and scopolamine, alone or combined, were of great service in the vast majority of cases during the operation by diminishing the amount of anaesthetics required, and later by prolonging the sleep, with diminution of after-effects; but the difficulty one met with was the impossibility of diagnosing beforehand those cases which could not stand morphine, etc., even in small doses. The weakening of the respiration was demonstrated when the Harcourt inhaler was in use by the diminished movement of the inspiratory valves, requiring watchfulness on the part of the anaesthetist. With ether, morphine and atropine possessed the advantage of diminishing greatly or completely the secretion of mucus in the respiratory tract.

Dr. W. J. MCCARDIE (General Hospital, Birmingham) said: According to Honigmann's dictum, two drugs which act in the same direction accentuate the effect of each other, and smaller doses of each are needed to produce the equivalent effect of one of them. Again, the combination of scopolamine and morphine with an inhalation anaesthetic much lessens the dose of all three drugs needed to produce a given effect, so that the total toxic effect of anaesthesia is much diminished. This is a great advantage of combining alkaloids with a general anaesthetic. Another very valuable effect is the production of *dryness* of the mucous membranes of the respiratory and alimentary tracts by which respiratory and stomachic after-effects are greatly lessened. What is the best proportion in which to combine scopolamine and morphine? Schneiderlin's and Korff's proportion is $\frac{1}{100}$ to $\frac{1}{4}$ grain, and this still seems to be the standard proportion. For myself, I think that less morphine is often advisable, because it depresses respiration so much, though if ether is being given this "damping down" effect is generally advantageous. My own standard dose is $\frac{1}{200}$ to $\frac{1}{3}$ grain, and I rarely exceed $\frac{1}{100}$ to $\frac{1}{4}$ grain. The determination, experimentally, of the best proportion of scopolamine and morphine would be very useful, especially such a proportion as would not cause marked enfeeblement of respiration. I have used hyoscine ($\frac{1}{200}$ grain) combined with liq. strychninae (m v) in several cases where I have feared the effect of morphine, and have found generally a sufficiently calmative action, and that the patient's colour was florid and his respiration stimulated. The free venous dilatation and consequent oozing caused by scopolamine and morphine is a serious drawback to its use in delicate operations—for example, eye operations and those on the nasal septum. The use of these sedative drugs enables the operator to begin earlier and the anaesthetist to stop the administration sooner.

Mr. C. CARTER BRAINE (Charing Cross Hospital) said: On the whole I have been favourably impressed with the previous injection of atropine, morphine, and scopolamine. In my practice I have not used more than $\frac{1}{4}$ grain of morphine, and I consider that there is a tendency to give too much of this drug. It is very difficult to recognize the difference between anaesthesia and slumber when these alkaloidal bodies are used, and this difficulty is fully recognized when teaching students to administer anaesthetics; they are very liable to permit the patient to pass from anaesthesia to sleep, and in the absence of all eye symptoms wherewith to rectify this error I find it difficult to point out when this change is taking place. The anaesthetist should always be informed when any of these alkaloids have been injected prior to his advent, and should not be left to find out the fact for himself by the behaviour of the patient under the anaesthetic. In some instances I have thought that the action of morphine has been increased by the anaesthetic, and I should like to know whether this has been the experience of any of my colleagues.

Dr. A. BERESFORD KINGSFORD (University College Hospital) said: I always dislike the use of cocaine in cases for which chloroform is likely to be wanted, because of the depression frequently seen when this combination of drugs is employed. With regard to the hypodermic injection of morphine and scopolamine some time before operation, I find the effects vary greatly in different cases. Some patients are very sleepy, others are quite wide-awake, but all seem comfortable. I regard this, therefore, as a merciful procedure, very suitable for nervous people. Some patients require but little anaesthetic after the hypodermic injection, but in other cases not only may ether have to be given as liberally as possible, but recourse to chloroform may be necessary for a time in order to secure full abdominal relaxation, as, for instance, in cases of Wertheim's operation. Then some cyanosis is prone to appear, in spite of a good airway and some administration of oxygen. If the oxygen is given more freely in these cases there is some tendency to arrest of respiration—especially when the character of the surgical procedures suddenly alters—an event which is inconvenient and does not look well, though it is, perhaps, never alarming to the anaesthetist. A minor drawback of the administration of morphine and scopolamine is that it increases the difficulty of demonstrating the stages of anaesthesia to students, on account of the sluggishness of pupils, etc., thereby entailed.

Dr. WM. FINGLAND (Liverpool Royal Infirmary) said: For my part, I deprecate the preliminary injection of alkaloids as an adjuvant to anaesthesia *in toto*, and consider their use a reproach to the anaesthetist, who should be able to accomplish his purpose quite easily without their aid. There is no objection, perhaps, to the administration occasionally of atropine for the sake of its drying effect on mucous membrane, and morphine may sometimes be advisable in abdominal operations for the sake of the post-operative ease and quiet it ensures.

The PRESIDENT said: I cannot see eye to eye with Mr. Fingland as regards this method, for my experience has convinced me of its great value. It lessens the amount of anaesthetic required, and so diminishes the liability to after-effects. It is also very valuable in the case of extremely nervous people, a type that I still find sufficiently abundant in London. After administering the alkaloids, it is of the utmost importance to lay stress on the necessity

for absolute quietude in the patient's environment until the time comes for the administration of the anaesthetic. Scopolamine has been alleged by some to be a dangerous drug, and it has been said that the combined action of the alkaloids is greater than the sum of their separate actions. With this I do not quite agree. In some directions they work together, but in others they antagonize, and I believe that in respect of many of their deleterious effects they are antagonistic. All three together form a most valued combination. When any one of the three is omitted the effects for good are lessened, while the power for evil is increased. It is essential that each patient's condition should be studied and the appropriate combination and dose of drug decided upon. As the question of the advisability of using cocaine in conjunction with chloroform has been raised, I would remind the meeting that Brown-Séquard proved the liability to inhibition of the heart through strong vapours—for example, chloroform impinging upon the mucous membrane of the nose—and that cocaine used by Obalinski's method previous to the administration is believed to abolish this nasal reflex by blocking the path of afferent stimuli. No doubt, however, the best plan is to avoid such perilously strong chloroform vapour.

Mr. Bailey, in reply, said he thought the discussion had brought out the fact that anaesthetists were on the right lines in using these preliminary injections. There still, however, seemed to be difference of opinion as to dosage generally and considerable difficulty in arriving at the suitable dosage for individual patients.

THE EFFECT OF CHLOROFORM AND ETHER ON THE LIVER AND KIDNEYS IN HEALTH, AND ITS SIGNIFICANCE IN CERTAIN INFECTIVE CONDITIONS.

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During the past two years I have had an opportunity of seeing two fatal cases of post-anaesthetic acid intoxication and a number of other cases in which such a condition has, in my opinion, been largely instrumental, or assisted in conjunction with some other malady, in bringing about a fatal termination.

Many fatal cases have been reported in recent years; but when the total of anaesthetics administered daily is taken into consideration the number is exceedingly small, even allowing for those cases where the characteristic symptoms may be masked and the condition undiagnosed. But between these fatal cases of post-anaesthetic acidosis and those in which no symptoms of acidosis appear there are an enormous number in which symptoms more or less severe show themselves and retard the patient's recovery, and some in which they assist, in combination with a weak heart or the shock of a severe operation, in causing death.

Guthrie, in his original paper in 1893 on acid intoxication following the administration of chloroform, believed that the metabolic functions of the liver were upset by some pre-existent disease, and that the anaesthetic acting as a poison was the "last straw," causing the onset of an acid intoxication. That this pre-existent disease is present in the shape of some acute infection—an acute appendicitis being the most common—in a large proportion of reported fatal cases will be shown by an investigation of the recent literature on the subject.

Beesly in 1906 proved that in every acute infective condition there was an accompanying acute acetonuria. This acetonuria is but an indication of an interference with the normal functions of the liver, particularly the metabolism of fats. He also showed that it was in those cases in which there was an acute acetonuria that symptoms of acidosis were likely to appear after an administration of chloroform; so that, in acute infective conditions at least, we have Guthrie's condition fulfilled—that is, that the liver cells are already damaged when the chloroform is administered and the patient predisposed to acid intoxication.

I have sections of the liver of a patient who died of a general streptococcal infection, the fatty changes in which are almost indistinguishable from those produced by chloroform.

It should be borne in mind that the amount of acetone in the urine is no criterion of the amount of damage done to the liver either by some infection or by the anaesthetic, as its elimination may be defective, owing, possibly, to damage done to the renal epithelium as well as to the liver cells, so that a small amount of acetone in the urine may indicate much damage done with defective excretion of acetone, while a large amount of acetonuria may mean little damage done but rapid elimination of the acetone.

The experimental work done for this paper had for its object the determination of the extent and nature of the injury done to the cells of the liver and kidneys, by an acute infection, by chloroform and ether, the significance of a combination of the two, and finally a short series of experiments were done with the object of showing the value of glucose in combating the symptoms caused by such charges.

After the first series of animals, experiments with ether were discontinued, as the results obtained were almost negative and merely bore out work which had already been very fully done.

In the first series of experiments (Table I) twenty-one large healthy rabbits were used. Chloroform in doses varying from ½ c.cm. up to 4 c.cm. was given subcutaneously, and in arriving at conclusions the proportion between the weight of the animal and the dose given was taken into consideration.

Table I.—*Injections of Chloroform and Ether.*

No.	Dose.	Date of Death.	Liver.		Kidney.
			Necrosis	Fatty Degeneration.	Fatty Degeneration.
1	½ c.cm. chloroform	Killed 3rd day	–	+	Slight.
2	½ c.cm. chloroform	Killed 5th day	+	+	Slight
3	1 c.cm. chloroform	Died 2nd day	+	+	+
4	1 c.cm. chloroform	Died 3rd day	+	+	+
5	1 c.cm. chloroform	Killed 4th day	+	+	+
6	1 c.cm. chloroform	Killed 5th day	+	+	+
7	1 c.cm. chloroform	Died 2nd day	–	+	+
8	1 c.cm. chloroform	Died 2nd day	+	+	+
9	1 c.cm. chloroform	Died 1st day	–	+	–
10	1 c.cm. chloroform	Killed 4th day	+	+	+
11	1.5 c.cm. chloroform	Died 2nd day	+	+	+
12	1.5 c.cm. chloroform	Died 4th day	+	+	+
13	2 c.cm. chloroform	Died 2nd day	–	+	+
14	2 c.cm. chloroform	Killed 4th day	+	+	+
15	2 c.cm. chloroform	Died 3rd day	+	+	+
16	2 c.cm. chloroform	Died 3rd day	+	+	+
17	2 c.cm. chloroform	Died 1st day	–	Slight	Slight.
18	3 c.cm. chloroform	Killed 5th day	+	+	Slight.
19	3 c.cm. chloroform	Died 2nd day	+	+	+
20	4 c.cm. chloroform	Killed 5th day	+	+	Slight.
21	4 c.cm. chloroform	Killed 5th day	+	+	+
1	3 c.cm. and 4 c.cm. ether	Killed 1st day after 2nd dose	–	–	–
2	4 c.cm. and 4 c.cm. ether	Killed 4th day after 2nd dose	–	Very slight	Slight.
3	5 c.cm. and 6 c.cm. ether	Killed 1st day after 2nd dose	–		–
4	6 c.cm. and 6 c.cm. ether	Killed 4th day after 2nd dose	–	Slight	Slight.

The train of symptoms following the injection was the same in all cases. Anaesthesia varying from a mere drowsiness to deep narcosis lasting as long as forty minutes came on after each injection, the animals recovering completely in two to three hours, and taking their food as usual. In about twenty-five to forty-eight hours after the injection they began to get drowsy, and twelve out of the

twenty-one died in from forty-eight to ninety hours. The remaining animals recovered from this drowsiness and were killed about twenty-four hours later, when they were well on the road to recovery.

In every case the animals lost weight fairly rapidly, one weighing 2,110 grams losing as much as 250 grams in forty-eight hours; ½ c.cm. of chloroform did not appear to be a lethal dose in animals of over 1,000 grams weight, neither of those receiving this dose showing any serious symptoms of subsequent intoxication, whereas five out of eight given 1 c.cm. and four out of five given 2 c.cm. died. It is curious that only one animal given 3 c.cm. or over out of four died.

Chloroform prepared from acetone, methyl alcohol and ethyl alcohol was used, but no definite difference was noted in their actions. Some of the animals were killed with chloroform and the remainder by a blow on the head. The liver and kidneys were removed at once in each case.

Macroscopically, the liver in most of the animals appeared pale, and in some the patches of fatty degeneration and necrosis could be plainly seen. The kidney appeared normal. The stomach was distended with freshly ingested food in every case.

Microscopically, frozen and paraffin sections were cut of the liver and kidneys of every animal, the former being stained with haematoxylin and Sudan III or Scharlach R., and the paraffin sections with haematoxylin and eosin or haematoxylin alone.

In the liver there was marked fatty degeneration in every specimen and in many definite necrosis at the centre of the lobules. The typical picture was as follows: A few healthy cells could be seen immediately around the central vein of the lobule, and outside this, occupying the centre of the lobule, the cells appeared necrosed and the normal structure completely altered, the cells being broken and the nuclei often irregular. Many fat globules were to be seen in the necrosed area. The middle third of the lobule was occupied by cells loaded with fat globules of varying size, the larger droplets being towards the periphery; outside this again were comparatively healthy cells, forming the peripheral zone of the lobule, though these cells nearest the fatty zone were very granular, and in the paraffin sections were vacuolated, the granules seeming to be very minute fat droplets. In some few specimens there was no necrosis, and the fat then occupied the centre of the lobule, while in others there was little fat and the lobule was almost entirely necrosed, the fatty change seeming to be a precursor of the necrotic changes.

In the kidneys there were definite pathological changes in every specimen. Nearly all showed marked fatty degeneration in the epithelium of the loops of Henle, and in some this was also present in the convoluted and collecting tubules. In other specimens the epithelium of the tubules was much swollen in the frozen sections, presenting all the appearance of well-marked cloudy swelling, while the paraffin sections of the same specimens showed the epithelium to be minutely vacuolated, particularly in the loops of Henle, the part of the kidney to be first and most severely injured. In no specimens were the glomeruli at all affected. The amount of chloroform given did not bear any definite relationship to the amount of damage done, the most marked changes seeming to be produced, however, by doses of about 1 c.cm. per 1,000 grams of the animal's weight.

In addition to the above, four rabbits of practically the same weight (Table I) were given respectively 3, 4, 5, and 6 c.cm. of *ether* subcutaneously. After recovering from the initial anaesthesia they appeared perfectly well and remained so. Three days later they were given a second dose. Again they completely recovered from the anaesthesia, and remained perfectly well, in fact they all gained a little weight. The day after the second injection two of the animals were killed, and the other two four days later.

Macroscopically, the liver and kidneys appeared normal.

Microscopically.—In the liver there were a few fat globules seen towards the centre of the lobules in two specimens, and in the paraffin sections of these a few of the cells were a little vacuolated. There was some congestion. The changes, however, were insignificant in comparison with the chloroform specimens. In no specimen was there any necrosis.

In the kidney a few minute globules of fat were seen in the epithelial cells of the convoluted tubules and loops of Henle, and in these specimens there were a few minute vacuoles in the paraffin sections in the same position. There was cloudy swelling present.

In the second series of experiments eight animals were used. Six rabbits were given chloroform by inhalation and two ether. Of those given chloroform, one was given half an hour of anaesthesia, one an hour, and the remainder half an hour daily for six, ten, thirteen, and fourteen days respectively. Two animals died under the anaesthetic during the sixth and the tenth administration. The rest were killed by chloroform two days after the last administration, and the liver and [illegible] diately removed. In each case the anaest[illegible] induced under a bell-jar, and maintained by [illegible] chloroform sprinked on a small piece of lint. O[illegible] animals given ether, one was given six, and [illegible] fourteen, half-hour administrations as above. T[illegible] tion was made under a bell-jar, and anaesthesia [illegible] maintained by ether on an open mask.

The liver and kidneys of all these animals appeared normal on removal.

Microscopically.—The liver of all the [illegible] chloroform exhibited definite fatty degenc[illegible] lobules, but particularly in [illegible] only slov[illegible] which had one hour's continuous anaesthesia, and that from the animal which had ten half-hours. The necrosis was very slight, and confined to a few cells round the central veins of the lobules.

In the kidneys there was fatty degeneration, more or less marked, in all the specimens except one, curiously enough that being from the animals which had had the greatest number of administrations.

The changes were chiefly noticeable in the loops of Henle and around the collecting tubules. In one specimen it was very marked in the convoluted tubules.

In the specimens from the animals given ether inhalations the liver was congested and the capillaries ve[illegible] towards the centre of the lobules, the cells appear[illegible] what granular in this position. There was not fat or necrosis.

The kidneys appeared practically normal.

TABLE II.—*Inhalations of Chloroform and Eth[illegible]*

No.	Dose.	Date of Death.	Liver.		Kidney.
			Necrosis.	Fatty Degeneration.	Fatty Degeneration.
1	Half an hour chloroform	Died 1st day	–	+	+
2	1 hour chloroform	Killed 2nd day	+	+	+
3	6 half-hours chloroform	Died under chloroform	–	+	+
4	10 half-hours chloroform	Died under chloroform	+	+	+
5	13 half-hours chloroform	Killed 1st day	–	+	+
6	14 half-hours chloroform	Killed 1st day	–	+	–
7	6 half-hours ether	Killed 1st day	–	–	–
8	14 half-hours ether	Killed 1st day	–	–	–

In the third series of experiments (Table III. p. 626) 13 animals were infected intraperitoneally: 1 with a pure culture of streptococci; 4 with a pure culture of *B. coli*: 6 with pus taken from an appendix abscess (containing streptococci and *B. coli*): 2 with pus from an abscess (containing streptococci and staphylococci).

In addition, four of the above rabbits were given ½ c.cm. of chloroform subcutaneously on the day subsequent to infection. Some difficulty was experienced in producing an extensive infection of the peritoneal cavity by injection of emulsions of pure cultures of streptococci and *Bacillus coli*, but pus taken direct from an abscess was eventually injected and proved the better method. All the above animals developed general peritonitis, with the exception of the last two of the series—that is, those injected with a mixed infection of streptococci and staphylococci. In both of these animals there was a large localized abscess.

In all the animals, save one, which had had chloroform as well as being infected, fatty and necrotic degenerative changes occurred in the liver and kidneys, the microscopical appearance being similar to that in the first series (Table I). The dose of chloroform given in each case was a non-lethal one, and the degenerative changes were more severe than one would have expected had the animal had chloro[illegible] alone. In those animals which had peritoneal infection alone, the microscopical changes were as follows:

In the liver there was marked dilatation of the capillaries towards the centre of the lobules and the cells appeared swollen, and in three specimens there were definite fatty degenerative changes. In addition, however, in the frozen sections the cells in the central part of the lobule appear[illegible] granules which stained rather darkly. In t[illegible] of the granules had disappeared and those [illegible] minutely vacuolated, giving the centre of the lobule a [illegible] appearance.

TABLE III.—*Infection and Infection + Chloroform.*

No.	Injected with.	Date of Death.	P.M. Findings.	Effects.	
				Liver.	Kidney.
1	Streptococci	Died 3rd day	General peritonitis	Fatty degeneration	Fatty degeneration.
*2	*B. coli*	Died 2nd day	General peritonitis	Granular change	Cloudy swelling.
3	*B. coli*	Died 2nd day	General peritonitis	Fatty degeneration	Fatty degeneration.
*4	*B. coli*	Killed 2nd day	Peritonitis and abscess	Granular change	Granular change of epithelial cells.
*5	*B. coli* + ½ c.cm. CHCl3	Died 2nd day	General peritonitis	Granular change	Cloudy swelling.
*6	Pus from app.	Killed 5th day	General peritonitis	Granular change	Cloudy swelling.
*7	Pus from app.	Died 1st day	General peritonitis	Granular change; some fat	Cloudy swelling.
*8	Pus from app.	Died 4th day	General peritonitis	Granular change	Cloudy swelling.
*9	Pus from app.	Died 3rd day	General peritonitis	Granular change	Cloudy swelling.
10	Pus from app. + ½ c.cm. CHCl3	Died 2nd day	General peritonitis	Fatty degeneration; necrosis	Fatty degeneration.
11	Pus from app. + ½ c.cm. CHCl3	Died 2nd day	General peritonitis	Fatty degeneration; necrosis	Fatty degeneration.
12	†Pus + ½ c.cm. CHCl3	Killed 3rd day	Abdominal abscess	Fatty degeneration; necrosis	Fatty degeneration.
†13	†Pus	Killed 3rd day	Abdominal abscess	Granular change	Cloudy swelling.

* In these specimens the cells of the inner portion of the liver lobule in the frozen sections appeared to be crowded with granules. In the paraffin sections there were extensive minute vacuolations in the place of the granules, the cells having a broken appearance. The renal epithelium showed the same phenomenon to a less marked extent.
† Streptococci and staphylococci.

It would appear that this granular condition represents a transitional stage in the formation of fat in the cell, as comparisons with specimens where both fatty and granular changes occur reveals the fact that this change is best seen in those cells in close proximity to the advancing line of fatty degeneration.

In the kidney there was well-marked cloudy swelling in nearly every specimen and granular changes in the epithelial cells, similar to that described in the liver cells, in two or three specimens. Definite fatty degeneration was seen in the loops of Henle in two cases.

The foregoing series of experiments, although admittedly fragmentary and incomplete, serve to bring out some points which may be of help to the anaesthetist, particularly as regards choice of anaesthetics.

They show us that chloroform has not only a profound effect on the cells of the liver—a fact which has frequently been shown—but that it has an almost equally harmful effect on the cells lining the tubules of the kidney—a fact which has never been sufficiently emphasized. The damage done to the kidney seems to me of perhaps even greater import than that done to the liver. For the chloroform not only acts on the liver cells and interferes with the metabolism of fats, thereby throwing out into the blood the poisonous fatty acids which cause an acid intoxication, but by its injury to the kidney cells interferes very seriously with their chief means of excretion. They show also that ether, even in very large doses, does not have this harmful action on the cells of the liver and kidney to anything like the same extent.

The fact that the damage done in those animals which had subcutaneous injections was much greater than in those which had inhalations would seem to indicate that the higher the percentage of chloroform in the blood the greater its harmful effects, so that a few minutes' very deep anaesthesia may do more damage than an hour's light anaesthesia, emphasizing the importance to the anaesthetist of giving the minimum dose of chloroform to his patient consistent with the requirements of the surgeon.

The inhalation experiments are of particular interest as showing the extraordinary amount of damage done by a comparatively short chloroform anaesthesia, one hour's anaesthesia producing extensive necrotic changes in the liver lobules, in addition to well-marked fatty degeneration in liver and kidneys. It will also be seen that fatty degeneration was present in the liver of every animal given chloroform in this series, and in the kidney in every case save one. No change whatever occurred in either of the animals given ether. It is not suggested for one moment that chloroform should be discarded as an anaesthetic, as some American writers would seem to suggest, but it is of the utmost importance that those of us who use it constantly should fully realize the harm that this powerful drug may do, and administer it in minimum doses.

In those animals whose peritoneal cavities were infected considerable difficulty was experienced in producing a peritonitis by injection of emulsions of cultures of streptococci and *B. coli*, and in only the few given in Table III was there any success, and it was not until injections of pus taken direct from an abscess were injected that there was any certainty of a result. It will be seen that in only two of the animals did a definite fatty degeneration occur in the liver and kidneys, but in all the others definite degenerative changes did occur, as described above, the liver cells appearing to be loaded with small granules in the frozen sections, but in the paraffin sections the same cells were vacuolated and had a broken appearance in the central part of the lobule. Four animals in the above series were of particular interest—that is, Nos. 8, 9, 10 and 11 (Table III). All were given an injection of pus from the same appendix abscess (containing streptococci and *B. coli*) on the same day. On the day following the two animals which appeared the least ill were given a non-lethal dose of ½ c.cm. of chloroform. These two animals died on the second day after the injection of pus, while the two which did not have the chloroform lived to the end of the third and the fourth day respectively.

Having obtained the fact, therefore, that acute infections, at any rate of the peritoneum, do cause definite degenerative changes in the liver, and changes, though less marked, in the kidney, it seems of importance that in cases of this kind chloroform should not be given unless absolutely necessary, on account of its harmful effects on the same organs, and that ether, which has not the same harmful action, should be used whenever possible.

Glucose has now for some time been given to counteract the evil after-effects of chloroform, and I have long since proved its value in my own practice, but the series of experiments in Table IV will prove of interest (see p. 627).

Ten rabbits were all given 1 c.cm. of chloroform subcutaneously, five of them having been fed with glucose the day previous to injection, and some was mixed with their food on subsequent days. Of those which had no glucose, three died, and the other two were extremely ill, while none of those given glucose died, nor did they appear ill at any time.

It is curious that very little difference was found in the amount of damage done in the liver and kidney cells between those which had had glucose and those which had not, except that in the former the areas of fatty degeneration were mapped out definitely, while in the latter the areas of degeneration blended gradually with the healthy cells around.

TABLE IV.—*Chloroform and Chloroform + Glucose.*

No.	Dose.	Date of Death.	Fatty Degeneration.	
			Liver.	Kidney.
1	1 c.cm. chloroform + glucose	Killed 5th day	+	Slight
2	1 c.cm. chloroform + glucose	Killed 3rd day	+	Slight
3	1 c.cm. chloroform + glucose	Killed 3rd day	+	+
4	1 c.cm. chloroform + glucose	Killed 4th day	+	+
5	1 c.cm. chloroform + glucose	Killed 4th day	+	+
6	1 c.cm. chloroform alone	Killed 5th day	+	+
7	1 c.cm. chloroform alone	Died 2nd day	+	+
8	1 c.cm. chloroform alone	Died 2nd day	+	+
9	1 c.cm. chloroform alone	Died 3rd day	+	+
10	1 c.cm. chloroform alone	Killed 4th day	+	+

Finally, I have to thank Mr. Foulerton, of the Middlesex Hospital Clinical Laboratory, for kindly injecting some of the animals for me, and Mr. Hillier for much help and advice; also Dr. Lakin and Dr. Strickland Goodall for checking my interpretation of some specimens, and Mr. Annison for doing many sections.

DISCUSSION.

Dr. LEVY (London) said that the inhalation experiments of Mr. Apperly had the greater clinical significance. He was rather at a loss to understand the cause of death in some of these inhalation cases; for instance, No. 1 in Table II, as he was not aware of any parallel observations in other animals—for example, cats and dogs.

Dr. A. EHRENFRIED (Boston, U.S.A.) said that some research on similar lines had been done in America. Acidosis was, however, rare in that country owing to the more general use of ether. He thought there was always a greater risk of its occurrence when a second administration of an anaesthetic followed within a few days, and for this reason always counselled the allowance of a considerable interval between two operations on the same patient.

Dr. MCCARDIE (Birmingham) was glad to hear that Mr. Apperly's statement that he had found no difference in the action of chloroform prepared from methyl alcohol, methylated spirit, and acetone agreed with general clinical experience. There seemed to be four varieties of chloroform poisoning: (1) Ordinary delayed chloroform poisoning, especially in the young; (2) acute yellow atrophy of the liver, especially during parturition; (3) the haemorrhagic variety, with obstruction of blood in the liver and haematuria and longer course; (4) cases in which there was urinary suppression. He asked if Mr. Apperly had seen in his researches on animals evidence of the existence of any of these types. He himself feared the remote action of chloroform as much or even more than its immediate danger.

The PRESIDENT pointed out that a number of factors, clinical and experimental, interfered in drawing definite conclusions. Some animals were particularly liable to the fatty changes described, so he thought that such experiments should be conducted with other animals as well as rabbits; cats and dogs would, perhaps, have been better. Rabbits were particularly liable to asphyxiation during anaesthesia. He thought caution was necessary before adopting these results in clinical work. He asked if the rabbits were wild, how they had been fed, and had any change been made in their life routine shortly antecedent to the experiments. A good deal of experimental work had been done with regard to this subject, and recently some valuable papers had appeared in the *Johns Hopkins Bulletin* and elsewhere. In all these researches, as well, so he gathered, as in that of Mr. Apperly, no sufficient care was taken to avoid high percentage vapours being inhaled. It was too often forgotten that it was the concentration of the vapour which counted, even more than the actual amount entering the tissues. It was definitely proved by Strassburg and the earlier workers that chloroform toxaemia would in some persons produce fatty changes; it was yet to be shown whether chloroform narcosis conducted by dosimetry ever produced this result. The premature deaths of rabbits numbered 3, 4, 7, 8, and especially 9 and 17, seemed to the speaker to indicate that these animals had been subjected to vapours of toxic concentration, unless other determining causes of death were at work.

Mr. APPERLY, in reply, said that acetone always appeared in the urine after the administration of anaesthetics, and being more rapidly secreted after ether appeared in greater abundance in samples of the urine. In his experiments he had not noticed the four clinical types mentioned by Dr. McCardie. His rabbits were wild rabbits which had been in captivity for a long period, and no recent changes in diet or routine of life had been made previous to the experiments. He had killed and examined the organs of several similar rabbits as controls, but had never found the changes in them which were present in those the subjects of the experiments.

A CARDIAC EFFECT OF ADRENALIN IN CHLOROFORMED SUBJECTS.

By A. GOODMAN LEVY, M.D., M.R.C.P.,

Physician to Out-Patients, City of London Hospital for Diseases of the Chest.

In the course of some investigations upon the heart beat in animals under chloroform I have found that adrenalin exerts a very pronounced cardiac effect, and one that has an important clinical significance.

Adrenalin belongs to a group of substances which are styled by pharmacologists "sympathomimetic," of which the action is limited to structures which are innervated by fibres of the sympathetic system. This action is originated in the terminations of the sympathetic distribution, and it results in a rise of blood pressure, mainly caused by vaso-constriction in those vessels in which the constrictor fibres predominate, but also reinforced through stimulation of the augmentor nerves of the heart, which is thereby accelerated and caused to beat with increased force. This direct cardiac action is apt to be overlooked, for it is obscured by the more obvious vaso-constrictor effect, but there is good reason for attributing to it and to it alone the abnormal condition which arises when adrenalin is injected into the blood of an animal under chloroform.

If a small dose of adrenalin chloride, say, half a minim of the commercial 1 in 1.000 solution, be injected into a vein of a cat fully under the influence of chloroform, a well-marked rise of blood pressure will be indicated by a manometer connected with the circulation. If the dose of adrenalin be sufficiently small and the anaesthesia be sufficiently deep, then the heart may be found to continue to beat perfectly regularly; more frequently, however, as the adrenalin effect develops, the heart passes into an irregular condition of a remarkable type. The obvious features of this condition are a rapid succession of small beats, about 300 per minute, the individual beats being sometimes almost equal in size and in time incidence, sometimes more irregular and interrupted by pauses of short duration. Electrocardiographic tracings demonstrate that this irregularity is one of a singularly complex type. In fact, it frequently happens that not a single normal beat can be found in the sequence, which consists entirely of ventricular extrasystoles; that is to say, the contraction impulses arise in the ventricles themselves and not in sequence to auricular contractions. Moreover, the ventricular contractions are propagated, not from one but from many points of origin in both the right and left ventricles, constituting a condition which may be defined technically as a multiple extrasystolic ventricular tachycardia. After the effect of the adrenalin, which, as is well known, is only temporary, has worn off, the heart quiets down and the beat eventually becomes regular once more.

If the same injection be made into an animal only lightly anaesthetized with chloroform the resulting reaction is ultimately more intense; it is, in fact, almost

invariably fatal. To ensure the success of such an experiment the vapour must be reduced below 1 per cent., the corneal reflex being retained and active. We will presume the heart, under such conditions, to be beating with a normal, regular rhythm when half a minim of solution of adrenalin chloride is injected into a vein; the heart passes, as before, into an intensely irregular condition of the type previously described. The final result is, however, different, for before the action of the adrenalin has worn off, and whilst the blood pressure is still abnormally high, the heart, with a startling suddenness, ceases to propel blood into the arterial system, and in a graphic record the blood pressure is seen to sink to zero in the precipitate fashion shown in the tracing (Fig. 1). This is an almost invariable effect. What has happened is this: Up to the moment of the collapse of the circulation the ventricles have been contracting in a chaotic sequence of irregular beats, but each beat is still a *co-ordinate* beat; each ventricle contracts as a whole and expels its contents. The irregularity then advances a step further; the individual muscle bundles of the ventricles, which interlace in many directions, commence to contract *independently* and in sequence, the beat is no longer co-ordinate, and as a consequence the ventricles cease to exercise an active function. The ventricles are now said to be "fibrillating"; the electrocardiogram shows a sudden and characteristic change in form; the contraction impulses are still generated, but they are totally disorganized.

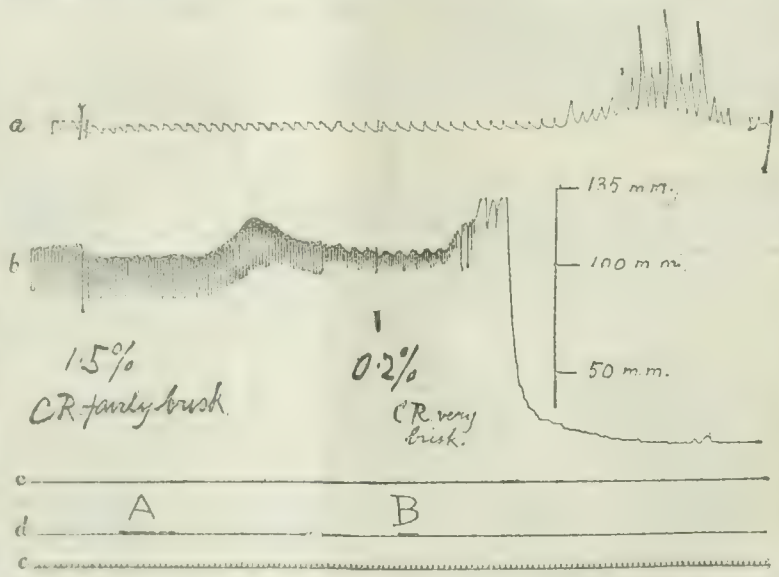


Fig. 1.—*a*, Respiration curve, registered from thoracic movements. *b*, Blood pressure curve, registered by mercury manometer. *c*, Level of zero pressure. *d*, Signal line; each signal mark indicates an intravenous injection of ½ minim of 1 in 1,000 adrenalin solution diluted to 1 in 20,000. *e*, Time marker, indicating intervals of one second. The vertical scale indicates blood pressure levels. The tracing represents the effect of two consecutive injections of adrenalin (A and B) into the same cat under different depths of chloroform narcosis; A, under 1·5 per cent. chloroform; B, under 0·2 per cent. chloroform. The result of A is a rise of pressure only, the heart beat remaining regular. The result of B is likewise a rise of pressure, but with it the heart beat becomes small, rapid (300 per minute), and irregular, and finally ceases abruptly. This cardiac collapse occurs some eighteen seconds after the termination of the injection, and the respiratory movements, after passing through an exaggerated phase, cease also some thirty-eight seconds later.

The physiological effect of ventricular fibrillation is very different from that of auricular fibrillation—the heart can continue to function in the absence of the auricular systole—in the absence of the ventricular systole the circulation naturally comes to a standstill. Ventricular fibrillation in cats is generally permanent and ends in death of the heart from asphyxia of its tissues, but exceptionally spontaneous recovery occurs, and this may be temporary, culminating in a second collapse (Fig. 2, p. 629), or it may terminate more favourably in a regular beat and permanent recovery. The prospect of recovery is greater when the doses of adrenalin are very small: the smallest dose I have so far found efficient in a cat has been one-fifth of a minim, and in this case recovery ensued.

The respiratory phenomena in connexion with this form of heart failure are noteworthy—the bulbar centres, which are not depressed as from a full dose of chloroform, are suddenly emptied of blood, and the anaemia stimulates the respiratory centre powerfully; a number of deep gasps are taken and then the respiration ceases (Fig. 1). The respiratory centre, however, is not yet *dead*: it has not been killed by excess of chloroform: spontaneous respirations may arise later, and can be almost invariably evoked by artificial respiration, and the late persistence of respiratory effort in the absence of heart action is a marked feature in many of these deaths.

In animals not under the influence of any anaesthetic adrenalin does not, in my experience, produce irregularities of the nature I have just described, and under other I have employed very much larger doses of adrenalin than those which react under chloroform, up to 5 minims of the 1 in 1,000 solution, in fact, with the result that lesser degrees of irregularities were exceptionally observed, and never fibrillation.

In concluding this brief account of experimental work I may remark that I have here merely skirted the fringe of the subject of cardiac irregularities under chloroform, and I must refer those who desire further information to such notes as have already been published on this subject.[1] I have, however, been prompted to anticipate a more complete account by reason of evidence that has recently come to light that this particular reaction of adrenalin under chloroform has an important clinical bearing, as I shall now proceed to show.

The symptomatic effects of an adrenalin reaction in a person lightly under the influence of chloroform may be portrayed as follows: Within a few seconds of the injection the pulse accelerates with a raised tension; it becomes more rapid, is less readily felt owing to diminished excursion, and it may or may not be perceptibly irregular at the wrist; a few temporary pauses may be noted, and then the heart suddenly ceases beating; the pupils dilate widely, and intense pallor supervenes. Respiratory phenomena then follow, a few deep breaths being taken, and then the respirations cease also. A few spasmodic efforts at respiration may be made, or even a short term of regular breathing may be induced by artificial respiration, but the heart still remains impotent. The heart may, however, recover temporarily, still with a small and rapid beat, only to fail once more, and in this way the pulse may be briefly felt *after* the respiratory collapse has occurred. If the cardiac recovery is well sustained the respiration is restored also, only to fail again with the second collapse of the heart. In more favourable cases the heart eventually becomes regular, the breathing is restored permanently, and all goes well.

My attention was first directed to the chloroform-adrenalin reaction in man by a communication made by Dr. Blumfeld, and published in the *Proceedings of the Royal Society of Medicine*, February 3rd, 1911, Anaesthetic Section.

In this case an injection of adrenalin was made into the mucous membrane of the nasal septum, the proposed operation being a submucous resection of a deviated septum. The amount injected was 6 minims of a 1 in 4,000 solution, which is the equivalent of 1½ minims of the commercial 1 in 1,000 solution. The anaesthetic was a chloroform and ether mixture; no anaesthetic was being administered at the moment of injection, and the patient's anaesthesia was light. Sudden pallor and respiratory failure rapidly followed the injection, the pupils dilated, and for a minute or so the patient's condition was serious, but he recovered completely. The condition of the pulse was not noted.

This experience was confirmed by others who took part in the discussion on Dr. Blumfeld's paper, and, further, two fatalities under similar circumstances were referred to. In one of these cases, briefly reported, death followed the injection of a little adrenalin into the tonsils of a patient

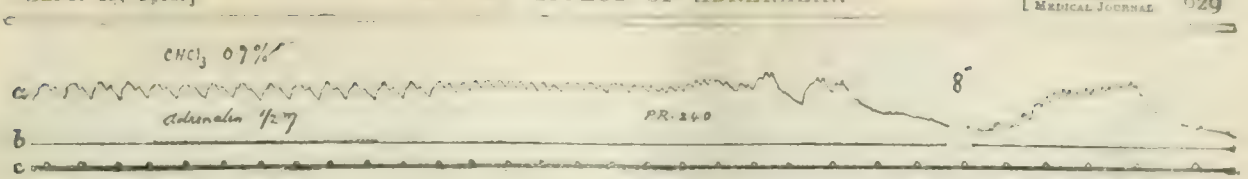


Fig. 2.—*a*, Blood pressure curve registered by Hürtle manometer. *b*, Signal line and level of zero pressure. *c*, Time marker indicating seconds. The gap in the tracing represents an interval of eight seconds. The Hürtle manometer affords a more correct interpretation of the heart beats than the mercury manometer. The drum is moving more rapidly than in Fig. 1, and the character of the individual beats is thus made more distinct. The tracing represents the effect of the injection of ½ minim of 1 in 1,000 adrenalin solution diluted to 1 in 20,000. At the time of injection the heart was beating in pairs (bigeminal beat). The change in the character of the heart beat is well shown. Ventricular fibrillation with total cessation of the heart's action occurs about fourteen seconds after the injection, but in this case temporary recovery occurs eleven seconds later, the gap in the tracing representing a period of eight seconds, during which the heart is inactive. The heart is still irregular on recovery, and fibrillation recurs in four seconds, from which the heart does not this time recover.

under chloroform, but of this case I have not been able to obtain further information. The second case was mentioned by Dr. A. L. Flemming, who has kindly sent me further particulars, and these I will give in a later part of this paper.

In the BRITISH MEDICAL JOURNAL of February 24th, 1912, there appeared an article by Mr. B. Seymour Jones on anaesthesia for submucous resection of the septum. Mr. Jones has a record of some 100 cases in which adrenalin was injected (in conjunction with cocaine) into several sites on the septum, for the usual purpose of rendering the seat of operation bloodless, the total amount of adrenalin on completion of all the injections being 12 minims. The anaesthetic was a chloroform-ether mixture, and the injections were made when the patient was "barely unconscious." I gather that a not infrequent result of the injection was an "intermittent beating associated with a pulse of a weak and feeble character," and three cases are particularly quoted to illustrate the alarming effects of a sudden absorption of adrenalin. In each of these cases the symptoms noted were intense pallor, cessation of respiration, and dilated pupils; in one case the pulse was felt for, but was not found; in all permanent recovery ensued. In one of these instances the injection consisted of a few drops of adrenalin in ½ c.cm. of normal saline without cocaine. No serious effects were noted in a series of 500 cases in which similar injections were made for operation without any general anaesthetic.

There can be no doubt that in all the foregoing cases the ventricles fibrillated; doubtless the large proportion of recoveries recorded is largely due to a small quantity only of adrenalin passing into the circulation, but their number is remarkable when we take into consideration the deadly nature of the condition of ventricular fibrillation. At one time it was an open physiological question whether fibrillating ventricles ever recovered their normal beat, but the chloroform experiments above referred to definitely settle this question in the affirmative so far as the cat is concerned, although recovery is exceptional. It is evident from these clinical cases that the human heart has a greater capacity for recovery than has the feline heart, but at the same time I have no doubt that this capacity is made to appear greater than it really is through failure to report fatal cases. Apart from the two fatal cases referred to above, I know of none published. Private inquiry has, however, proved more fruitful. Thus:

Surgeon No. 1 had been accustomed to plug the nostrils with adrenalin twenty minutes *prior* to the administration of chloroform for submucous resection of the septum; he had met with no circulatory difficulties whatever.

Surgeon No. 2 had been accustomed to *inject* adrenalin for the same operation when the patient was lightly under chloroform; and with him my inquiries ceased, as it was unnecessary to pursue them further. This gentleman had "two cases of rapid death after the injection of adrenalin into the nasal septum in cases under chloroform. Both were puny adolescents, one male and one female. In the male a positive diagnosis of status lymphaticus was made; in the female I believe this was not the case." Both cases were lightly anaesthetized, and in both the symptoms were similar. These were as follows: The ischaemia of the septum appeared to spread to the lips and circumoral region, the heart beat violently and rapidly, the pupils became widely dilated, and deep sighing respirations were followed by cessation of breathing. The time relations of these symptoms were apparently not accurately noted, except in so far as that they certainly almost immediately followed the injection. The quantity of adrenalin injected was "a very few drops" of 1 in 4,000 solution with 2 to 3 per cent. novocain. In reply to further questions, he proceeds:

"The peculiar thing is that the very great majority have not shown the slightest disturbance on injection; are some cases especially susceptible? I have been inclined to believe that in the dangerous cases the injection has got directly into the circulation through a small vessel. There is a network of veins at the lower anterior part of the septum in the *submucous* tissue, but one endeavours to inject under the perichondrium, where there are no vessels."

These two cases[*] afford absolute confirmation of the occurrence of the adrenalin death in human subjects, and that with doses which are extraordinarily small compared with the lethal doses in the cat, having due regard to the relative blood volumes. That the reaction only occurs exceptionally in a series of cases, all treated alike, may be subject to one of two explanations: (*a*) Presuming adrenalin to be readily absorbed in all cases from submucous tissues, then the reaction may be said to occur in persons abnormally sensitive to small doses; (*b*) presuming all persons to be equally sensitive to small doses, then the exceptional results may be referred to accidental direct injection into a small vein.

It is difficult to decide definitely on either of these alternatives, and I can only here make a few brief remarks appertaining to this subject. It is well known that on subcutaneous injection adrenalin is, in the generality of instances, only very slowly absorbed, owing to the local vaso-constriction produced; it appears, however, to be certain, from the symptoms entailed, that adrenalin is rapidly absorbed when injected into the gums for dental purposes,[2] and it is asserted that vaso-dilator fibres predominate in the gums, at least that they do so in the dog, and hence the adrenalin would have a better chance of absorption. I cannot discuss this further, but will proceed to quote a case communicated to me by Dr. de Prendeville, which appears to support the absorption theory. The patient was under C.E. mixture, and, contrary to usual custom, the nose had not been packed with cocaine and adrenalin. The surgeon suddenly remembered this, and sprayed some 1 in 1,000 adrenalin solution into either nostril. Within fifteen seconds of this a typical train of symptoms occurred, and the patient was pulseless for two minutes, but she eventually recovered. In this case there can be no question, I presume, of puncture of tissues, and the result is probably due to surface absorption alone.

Apart from this question of absorption, it stands to reason that the reaction is favoured when the needle punctures a vein or venous plexus and the drug passes directly into the circulation, and we must be content to leave the problems of absorption and susceptibility to a certain extent open questions for the present.

The operation of resection of the septum and similar ones on the naso-pharynx are peculiarly liable to exhibit bad results from adrenalin injections owing to well-defined reasons: (1) Chloroform or a mixture containing chloroform is employed in order to obviate unnecessary congestion; (2) a light anaesthesia is insisted upon, so that the coughing and swallowing reflexes may be maintained, and frequently to enable the operation to be performed in the upright position. The anaesthesia further tends to become light owing to interruption of the administration during the process of injection; (3) the vascular condition of the regions in question is favourable to absorption. There is, however, another procedure involving the use of adrenalin from which I should anticipate a heavy death roll when chloroform has been

[*] A precisely similar fatality is reported in the *Leicester Mercury* of August 19th, 1912.

the anaesthetic, and that is the intravenous injection of adrenalin for the treatment of shock. In such conditions the patient is naturally encouraged to "come round," and considerable quantities of adrenalin may be injected; thus one authority speaks of the injection of 5 c.cm. at a time of a 1 in 20,000 dilution, which is the equivalent of 7 minims of 1 in 1,000 solution; and in this connexion it must be borne in mind that it is the mass of the drug injected that mainly counts, and not the dilution in which it is introduced, for the principal dilution occurs in the blood itself. Under certain circumstances certainly, the susceptibility to ventricular fibrillation is markedly reduced—for example, after a prolonged administration of chloroform, or after some severe form of operation—but the fact remains that published fatalities are far to seek. Possibly the reaction may not be noted in a moribund patient, the adrenalin effect being confused with shock effects, and very probably such fatalities as occur are never published even when recognized. I am, however, able to present to you the details of one case of death in this category. Dr. Flemming writes as follows:

> This case was one of appendix abscess, left too long, with consequent toxaemia. The anaesthetic was chiefly open ether, but chloroform was also used for the induction. After the operation, which was a hurried one, it was obvious that the patient was going to die within an hour or two, but death occurred suddenly within two or three minutes of the injection, made at the surgeon's request, of 1 minim of adrenalin solution (1 in 1,000). The injection was intramuscular, into the deltoid. Before injection the patient was pale, with shallow breathing, 40 per minute, and with a rapid, small, but regular pulse, about 160 per minute. Upon injection there was a change noticed in thirty seconds—the pulse felt fuller, and the individual beats better defined for about half a minute, but after the improvement had been noted for a very brief period there was a sudden deep inspiration, followed, after an interval of some ten seconds, by another, and there occurred, at the same time apparently, sudden cessation of the pulse. All these phenomena occurred so quickly and so took me by surprise that I can only give you my impressions as noted afterwards.

There can be no doubt that the needle in this case penetrated a vein; and here, again, the dose (1 minim) is remarkable for its smallness. It is notable that chloroform was used only for the induction, but the operation being a hurried one, it had not been eliminated, and remained in a low concentration in the body when the injection was made.

I conclude that the adrenalin reaction occurs in human beings as readily, and perhaps more readily, than it does in cats, and that if commensurate doses were given, it would occur at least as frequently.

I have already mentioned that experimental work excludes ether from participation in the adrenalin reaction, but it is a matter of conjecture that the reaction may be modified in the case of C.E. mixtures, for it is conceivable that with the combined anaesthetics adrenalin may react during a deeper degree of narcosis than with chloroform alone, for the chloroform effect upon the heart would be dependent upon the partial tension of the chloroform vapour only, and the combined anaesthetic effect would be out of proportion to this. It is further probable that under such circumstances the respiratory centre, being more depressed, would react to sudden anaemia in a less intense degree.

The conclusion to be drawn is that it is unsafe to inject adrenalin into the veins or vascular tissues of a patient lightly under the influence of chloroform. It may be safely injected just previous to induction with chloroform—that is, with the patient under no anaesthetic at the moment, or in a patient fully under chloroform, or into a patient anaesthetized to any degree with ether. Whatever the dose and whatever the dilution, and, in fact, whatever the other attendant conditions may be, in the case of light chloroform anaesthesia a risk is always taken.

Finally, I may add that the clinical cases herein quoted possess a pathological interest apart from their relation to anaesthetics; they afford the first substantial evidence of the association of sudden heart failure with ventricular fibrillation in the human subject.

REFERENCES.

1 *Levy, Proc. Physiol. Soc.*, January 21st, 1911, and October 21st, 1911; and May 18th, 1912; Levy and Lewis, *Heart*, vol. iii, No. 1. 2 *Proc. Hom. Soc. of Med.*, Therap. Sect., 1911, p. 59.

DISCUSSION.

The PRESIDENT said Dr. Levy's communication filled up a gap in existing knowledge of the effects of suprarenal extracts, and certainly should give pause to those who employed them as antidotes to chloroform poisoning. He wished similar experiments with pituitary extract could be made.

Dr. MCCARDIE (Birmingham) said he had seen collapse occur immediately after the injection of adrenalin in a septal operation when the patient was fairly deeply under a mixture of chloroform and ether. He had never seen any sign of it during ether anaesthesia. Mr. Seymour Jones, who had in his paper noted the occurrence of three cases of collapse, had performed some 800 operations under local and general anaesthesia, and always insisted on the lightest possible anaesthesia during injection and for three to five minutes afterwards, because of the danger of collapse from absorption of adrenalin during even moderate or deep anaesthesia. He did not use cocaine. Dr. McCardie now always induced anaesthesia by a mixture of chloroform and ether, and continued it with chloroform for these operations. Not uncommonly he found that the pulse became quick, irregular, and weak immediately after the injection, and the colour paler. On the other hand, he himself, when he had had injection of adrenalin for a septal operation, had had rather a feeling of stimulation. Mr. Seymour Jones's, and therefore his, experience was contrary to Dr. Levy's experimental results.

Dr. A. EHRENFRIED (Boston, U.S.A.), in response to an invitation from the PRESIDENT to give the experience of American surgeons, said that, as far as his knowledge went, adrenalin was seldom injected into the nasal mucosa during or previous to operations thereon by surgeons in the States.

Dr. LEVY, in reply, expressed surprise that Dr. McCardie's experience in practice was totally opposed to the results of physiological experiment, which definitely showed that it was only under light chloroform anaesthesia that the phenomena he had been speaking of developed. He considered Dr. McCardie had been extremely lucky.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

INTRAPERITONEAL INJECTIONS OF OXYGEN DURING CERTAIN ABDOMINAL OPERATIONS.

DURING the last four years I have injected oxygen into the peritoneal cavity directly the abdominal wound has been sutured, and I have found it distinctly beneficial in the following conditions:

1. Tuberculous peritonitis.
2. Septic peritonitis.
3. After the removal of large abdominal tumours.
4. In certain cases to prevent the formation of adhesions.

The method I adopt is as follows: Just before closing the peritoneum of the abdominal wound I insert a small trocar and cannula (specially made for me by Allen and Hanburys) through the abdominal wall a short distance from the original wound, and then withdraw the trocar and leave the cannula in the peritoneal cavity. The abdominal wound is then closed in layers. A sterilized rubber tube from a Wolfe's flask is then attached to the cannula. The Wolfe's flask, which contains hot saline, is connected to a cylinder of oxygen, and the oxygen, warmed, is then passed into the peritoneal cavity. The amount passed varies, but should be enough to obliterate the liver dullness. In cases in which I have filled the abdominal cavity quite tense with the gas, it has taken from ten to fourteen days to be absorbed.

I have never seen this method of giving oxygen used in any other hospital, nor have I seen any account of it in literature, and from the success I have had from it in these special cases I think it is worth a more extended trial.

H. J. GODWIN,
Honorary Surgeon, Royal Hampshire County Hospital, Winchester.

BREECH PRESENTATION IN SUCCESSIVE LABOURS.

DR. ILOTT, in his memorandum on breech presentation in three successive labours, states such a sequence was unknown and worthy of record. A case that I attended on May 20th, 1904, is still more worthy of record. On my arrival I found that the presenting part could not be felt, the os being very high, but the membranes were protruding well through the os. The head could be palpated in the epigastrium with the child's back to the left side of the mother, and a diagnosis of first breech presentation was made. The mother then told me that she had had seven children previously, all of whom, with one exception, had been born by the breech, and all were then living. No doctor had been in attendance in any of these until the third stage, the placenta being always retained. On this occasion labour was tedious, lasting twenty-three hours, but the child (a male weighing 8¼ pounds) was vigorous. The placenta was expressed in half an hour. It must surely be very exceptional for a woman to have seven out of eight children born by the breech, and all alive and healthy.

Latrobe, Tasmania. G. W. DAMMAN, M.B., B.S.Melb.

THE following case may be interesting in connexion with Dr. Herbert J. Ilott's note of June 1st, page 1240, *re* "Breech Presentation in Three Successive Labours."

I was sent for by the matron on May 17th, 1912, to attend Mrs. B., a healthy, robust, and well-built woman, in labour of her fifth child. The presentation was both feet, sex female. As I arrived a little late I found the left arm extended over the aftercoming head, and the child livid and asphyxiated. The extended arm was immediately pulled down, and the head delivered by jaw-traction. After slight efforts at artificial respiration and slapping the infant on the back, it began to cry and recover the normal hue of the skin.

I found that the patient had had feet presentation in all her previous labours: The first, ten years ago, feet presentation, sex male; second, eight years ago, feet presentation, sex male; third, seven years ago, feet presentation, sex female; and the fourth was breech presentation, left sacro-anterior, sex male.

Foot or knee presentations, compared with breech presentations, are supposed to be relatively more frequent with premature children and twins, but in this case all the infants were healthy and well developed. The third baby, according to the mother's version, "must have weighed ten pounds."

This interesting sequence, bearing out Dr. Ilott's of breech presentation, is my excuse for publication, as feet presentations are developed out of breech presentations.

Parsi Obstetric Hospital, Navsari, India. P. M. MEHTA.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

THE BOOTLE HOSPITAL.

A METAL PLATE UNDER THE SCALP—AND THE RESULT.

(By ROBERT TURNER, M.D., Ch.M.Aberd., F.R.C.S.Edin., Honorary Surgeon.)

A MAN, whilst working on board a ship, received a glancing blow from a flying piece of metal. This raised a large flap of the scalp, and cut out a piece of bone about the size of the palm of the hand from the parieto-occipital region in a very neat manner indeed. In hospital the wound healed by first intention, but a large surface of brain was now exposed to possible injuries.

Dr. Flood, late Senior House-Surgeon, took a cast of the region, and Messrs. Arnold made a metal plate to overlap the opening in the skull. A very large flap was dissected down, and the plate fixed in position by three screws. Rapid healing took place, and all went well for about eight months, when the screws became quite loose, and the plate dropped, causing pressure necrosis at the lower pole. Removal of the plate was then necessary.

Reviews.

THE SCIENCE OF SANITARY ADMINISTRATION.

DR. SEATON'S book on *Infectious Diseases and their Preventive Treatment*[1] contains the substance of the Chadwick Medical Lectures for 1910, delivered by invitation of the University of London. It deals with the science of sanitary administration. Few men have had such experience in this field as Dr. Seaton, who has been from early life onwards associated with the most prominent originators of the public health service, and who was officially connected with the institution of the notification and hospital isolation systems at the very outset.

The "stamping out" idea with which public authorities started some forty years ago seems generally, he says, to have been forgotten, and our apparent want of complete success in carrying out the main intention of the Notification Act has been due to failure in realizing the importance of purely preventive measures. It is the recognition of early cases and carriers of infection that must constitute the basis of a rational preventive system. The difficulty, of course, is the impossibility of this early recognition in the vast majority of cases, the result being that the epidemic may have got a solid footing in a district before its true nature is known. In the absence of certain means of early diagnosis the application of the machinery for the prevention of an epidemic is uncalled for. On the other hand, when recognized it is often too late. From this dilemma the only way of escape lies in the discovery of a means of detecting the first spark before it has become a conflagration. Dr. Seaton contrasts the dreams of sanitary perfection which used to be indulged in in the early mid-Victorian era with the practical work done at the present day. In respect of individual hygiene, including the care of infants and the physical condition of children, more has been done to advance the medical part of public health work during the last decade than in the twenty years before. There is, we venture to think, another side to the picture. The care for the physical wellbeing of children is not always carried out in a very enlightened spirit. Zeal sometimes outruns discretion, and the result will probably be that any neurotic tendencies already innate in the child must be largely increased by the minute attention to health that is forced upon them and their parents.

Dr. Seaton thinks that if measles is ever made notifiable and cases, especially those likely to be severe, are removed to hospital, the type may reasonably be expected to change for the better, with the result that the death-rate would be reduced much in the same way as has occurred with scarlet fever. One difficulty occurs to us here, and that is the notion ingrained in the public mind that measles is almost a negligible indisposition. People who should know better scoff at anxious mothers for calling in a doctor to a child suffering from measles, and it is well known that parents often take the opportunity of one child contracting the disease to expose all the others there may be to the infection in order "to get it over." Even in these days of the school teaching of hygiene, we fear that people in general still fail to recognize that in measles, however trivial it may seem in a particular case, lie the possibilities of serious mischief during its course and later on. Notification, with the consequent isolation, would undoubtedly tend to prevent subsequent developments, such as tuberculosis.

Dr. Seaton argues strongly for notification, but with the proviso that the authority applying for notification powers should show that it is prepared to make suitable use of the information obtained. He refers to cases within his own knowledge where nothing has resulted save the tabulation of certificates. This pedantry of officialism is writ large over the whole history of sanitary administration. Scarlet fever at present causes far less mortality than measles. The disease is of milder type than it used to be. But its very mildness tends to lessen the usefulness of notification which comes too late. It is to this failure of the

[1] *Infectious Diseases and their Preventive Treatment.* By E. C. Seaton, M.D.Lond., F.R.C.P., F.I.C., Consulting Medical Officer, Surrey County Council, etc. London: University of London Press; Hodder and Stoughton, and Henry Frowde. 1911. (Demy 8vo, pp. 250; 25 diagrams. 7s. 6d. net.)

notification system that the incomplete success of hospital isolation is largely due.

A chapter is devoted to the etiology of diphtheria and the history of preventive measures in England. Dr. Seaton, while admitting that it is beyond dispute that the great advance in knowledge has already led to some wonderful results, points out that there has been no "vanishing" of the diphtheria death-rate under the influence of the bacterial system, and that the twelve years after Budapest compared with the twelve years before do not exhibit any such marked change as had been predicted in 1894. What took place was a substantial fall of 17 per cent. in the diphtheria mortality of England and Wales. That diminution cannot, according to Dr. Seaton, be ascribed wholly to the bacterial system. Better sanitation and increased attention to diseases of the cow, with consequent improvement of the milk supply, have produced some effect. Increased attention to school hygiene must also be credited with a fair share in the reduction of the death-rate. Here, as in measles, the difficulty is to detect the beginning of an epidemic.

Typhoid fever is another disease which shows a marked mitigation in severity. The fact that it still exists is ascribed by some to mistaken views as to its etiology and epidemiology. In 1873 Gull said that the waterborne doctrine was a very good working hypothesis, but nothing more. To the rising school of epidemiologists, whose researches had done much to throw light on the causation of typhoid, Gull's statement appeared both inappreciative and misleading. Dr. Seaton says, however, that looking back from our present standpoint it may be well asked whether Gull's assertion was very far wrong. By 1893 it had become manifest that a polluted water supply is not by any means the sole or the general mode of conveyance of the disease, and attention was then directed to such agencies as dust and flies, and, above all, to polluted or unwholesome food. The fifteen years, 1893 to 1907, supply negative evidence even stronger in character. By this time notification had become universal, and medical officers had become very active. Dr. Seaton's own observations in the county of Surrey are summarized in the statement that when over 2,000 cases occurring in twelve years had been carefully investigated, it was apparent that only a very small percentage were attributable to the water supply. He is strongly of opinion that hospital isolation in cases of typhoid should be promoted where persons are attacked in crowded or insanitary houses. It is in such circumstances that direct infection frequently takes place.

Dealing with epidemic small-pox, Dr. Seaton says that ever since the adoption of the Notification Act the principle upon which many scientific authorities act in face of a rising epidemic has been to secure revaccination when and where it is most wanted—a very different matter from the aim to secure a total immune population as in Germany or Japan. "The most essential means of prevention is, of course, vaccination *properly applied*." In this country the long-continued freedom from epidemic small-pox is primarily due to vaccination. Without vaccination and revaccination we could not have enjoyed this immunity, for the simple reason that no small-pox isolation hospital could have been staffed. But auxiliary measures of protection are also necessary. An important step in limiting outbreaks is the establishment of a cordon of protected persons around the infected centre. If a case is taken to hospital the attendant and nurses must all be efficiently vaccinated or revaccinated. Without this precaution no small-pox hospital could be worked. Where the cases cannot be taken to hospital all persons likely to come in contact with them should also be vaccinated or revaccinated. Speaking of Leicester and its system of isolation by a cordon protected by vaccination, he says this is the opposite of the unlimited use of vaccination such as is aimed at in Germany. In the one case vaccinations have to be reckoned by the hundred thousand and in the other by the hundred. Here Dr. Seaton takes occasion to call attention to the mischief done among many people by the belief that the Leicester experiment is a proof that vaccination is unnecessary. The fallacy consists in the confusion of two totally distinct things, namely, the general and the particular use of vaccination in the preventive treatment of endemic small-pox. Although it is true that Leicester has been able to dispense with universal vaccination, it is equally true that through its officials it has been in large measure protected all the time by vaccination specially applied.

Phthisis is discussed in a chapter in which is recorded the growth of scientific opinion on the influence of the sanatorium. From a review of the question of prevention, regarded from the administrative point of view, he concludes that if county councils are to have an actual or implied responsibility in providing sanatorium treatment, many fresh arrangements will become necessary. Among the chief points for consideration will be the employment of existing hospitals for the reception of advanced as well as early cases of phthisis.

A chapter on public health organization brings this interesting book to a close. It is very suggestive reading, is very richly documented, and is illustrated with charts and other paraphernalia that delight the heart of Mr. Gradgrind, while at the same time it is written in a spirit of judicial fairness and scientific caution that must commend it to men of all shades of thought in regard to public health. It is a storehouse of facts, and represents the conclusions arrived at by a man of the ripest experience in public health administration. We hope it will be widely read, not only by members of the medical profession but by the public, and especially by all who have anything to do with the important function of guarding the health of the community.

CONSUMPTION IN GENERAL PRACTICE.

THE need for care and precision in the diagnosis of tuberculous affections and for well-balanced judgement in dealing with them has never been greater than at the present time. The literature on the subject is becoming voluminous, and the remarkable unanimity amongst writers in all countries is as welcome as it is unusual. Early diagnosis is universally recognized as all-important, and it is to the general practitioners of the world that we must look to take the initiative in discovering the presence of the disease before it has had time to do much mischief. Hence such a work as has lately achieved the distinction of a second edition, written by an experienced sanatorium superintendent and putting the case from the general practitioner's point of view, is an acceptable addition to the bibliography of the subject.

Dr. HYSLOP THOMSON, in the book to which he has given the title *Consumption in General Practice*,[2] sets forth the whole case in simple terms, admirably arranged, and although there is probably but little new to record, still the opinions of a writer of wide experience deserve consideration and must carry weight. Of the more modern methods of diagnosis by way of reaction to various forms of tuberculin, the plan of inunction, as advocated by Moro, is regarded as the best. The ophthalmic reaction is held to be by no means free from risk, while inoculation by injection is as unpleasant in practice as it is uncertain in result. Much of the book is devoted to consideration of the best means of dealing with early cases. Rest during activity of the poison is generally regarded as essential, and hence the sanatorium becomes a necessity for the successful handling of patients who are not in a position to obtain the necessary rest for themselves. Tuberculin dispensaries have been proved to be of great value in cases where rest is not essential, but the combination of tuberculin treatment and sanatorium life presents on the whole the most hopeful prospect of arrest or annihilation of the disease.

In common with other directors of sanatoriums, Dr. Thomson has studied the results of autoinoculation occurring after undue exercise, but he fully recognizes that other factors must often be at work. It is necessary to exercise extreme care in the selection of cases for induced autoinoculation, remembering that tolerance may be established without any real immunity being conferred. The cautious and graduated use of heteroinoculation may be called for, and the most minute instructions are given for the guidance of those who wish to use it in general practice.

Public measures for the protection of the community are now taking shape, and co-operation is greatly to be

[2] *Consumption in General Practice*. By H. Hyslop Thomson, M.D., D.P.H., Medical Superintendent, Liverpool Sanatorium. Oxford Medical Publications. London: Henry Frowde and Hodder and Stoughton. 1912. (Med. 8vo, pp. 350; charts 28. 12s. 6d. net.)

desired, but the ultimate stamping out of the disease will not be secured until the infective case is brought under control. The promiscuous output of bacillus-bearing excreta must be penalized, since the disregard of precaution by even a single person with a disintegrating tuberculous lung must always constitute a danger to his surroundings both at home and abroad. Dr. Thomson's work covers the whole field of morbid conditions which may be comprised under the broad title of consumption, and his general observations on the subject of treatment are sound and suggestive. His remarks as to unsuitable cases and on after-care should be specially noted. An appendix on sanatorium construction contains much interesting information as to cost of building and maintenance.

SURGICAL TUBERCULOSIS.

IT is rare in these days to find sixteen years elapse between the appearance of the first and the second edition of a medical book. Sir W. WATSON CHEYNE'S work on *Tuberculous Diseases of Bones and Joints*[3] was first published in 1895, and he says that in preparing the second edition he has been much struck by the alteration which has been taking place in connexion with the question of operative treatment. There is little that is new in the portion of the work dealing with pathology and symptoms. In discussing tubercle as an hereditary disease, the author thinks that we must not be too rigid in exclusion of the possibility of direct transmission from parent to child. He instances the transmission of the *Spirochaeta pallida* to the offspring as an example of the direct transmission of the virus itself. And, if direct transmission of one organism may occur, why may not that of another? If the bacillus gains access to the ovum, will it at once begin to grow and destroy the ovum, or will it soon be destroyed by the actively growing cells? Post-natal infection may be a much more easy explanation, but the author confesses that he cannot divest his mind of the suspicion that something of the same kind of process takes place in tuberculosis as occurs in syphilis, and that we are going too far in attributing all cases to infection after birth, and in looking on heredity as only an inheritance of a special susceptibility to the attack of the tubercle bacilli. There is, he thinks, quite a possibility that the bacilli are also inherited, but may remain dormant for a long time till circumstances arise which increase the susceptibility of the body.

In discussing the part played by injury in determining a tuberculous lesion, the author points out that in those cases in which an injury is blamed it is usually a slight injury, such as a sprain or a blow. It is a matter of common knowledge that severe injuries in tuberculous subjects do not lead to the formation of tuberculous foci at the injured part. The explanation of this may be that in violent injury, such as fracture, there is so much reparative material produced, and the process of repair is so vigorous, that the bacilli cannot obtain a foothold; whereas slight injuries simply disturb the nutrition of the part, or at most set up the early stage of inflammatory action, and thus produce conditions favourable to development of the organism. The author investigated these questions some years ago, and he gives statistics which show clearly that injury plays a part which is not merely accidental, but that it is an active, exciting cause of the disease. Not only so, but in those cases in which it was known that there had been a definite injury, it was observed that the disease assumed a more serious form, that suppuration was more prone to occur. A larger range of statistics than those at the author's command may give more definite information as to the relationship between injury and the occurrence of tuberculous disease. The matter is of great importance in view of the questions which the Workmen's Compensation Act opens up in relation to the remote effects of injury. A due proportion of space is given to the discussion of treatment. Sixteen years ago operations were performed frequently and early in the hope of eradicating the disease; now careful hygienic and local treatment give superior results. The author fears that there is a tendency for conservative measures to be sometimes unduly prolonged. The chapters on treatment are full of the most valuable critical matter. All the methods have been thoroughly tried by the author, and he has had the advantage of investigating the cases treated by Lister and himself by the older methods. The result is that all methods of treatment are approached with an open mind, and the good that appeared in the older methods is preserved, while a temperate enthusiasm is shown for the new. It will interest readers to know that the author advocates the use of the actual cautery and other forms of counter-irritation in some cases, with the object of improving the local condition and getting rid of chronic inflammatory products around the tuberculous lesion proper.

Tuberculin has not proved a success in the author's hands, and Bier's congestion method is commended with some reserve, indeed with hesitation. The use of iodoform, its action on the tissues, the injection of iodoform emulsion, and the injection of bismuth paste, all receive due attention. More might, perhaps, have been made of the diagnostic value of injection of bismuth paste in showing in a skiagram the extraordinary ramifications of sinuses in tuberculous bone disease. The chapter on operation as against expectant treatment is well thought out. How to decide between the two plans is not teachable in books, so much depends on the condition of the patient, his surroundings, his future chances in life, the experience of the surgeon. The author is struck with the greatly lessened need for operation in these days; he thinks that it may be due to better hygienic conditions in which the people live, and also, perhaps, to diminished virulence of the disease.

The work is one which we most heartily commend to the notice of the profession: the family practitioner will find it an immense help in dealing with cases which come under his charge in all stages and remain in his care throughout, and the surgeon will find well-considered, settled opinions, together with full descriptions of apparatus and operations.

JOINT DISEASES.

IN a volume on static joint diseases[4] Dr. GEORGE PREISER has amplified the theme dealt with in his small book on arthritis deformans coxae and variations in the position of the acetabulum, which was reviewed in 1908 (BRITISH MEDICAL JOURNAL, 1908, vol. i, p. 873, April 11th). Dr. Preiser, together with Drs. Stern and Lackmann, has charge of an orthopaedic institute in Hamburg, a kind of private hospital which has always been popular in Germany but which is practically unknown in Great Britain. There he has had the advantage of close study of a number of cases of chronic joint trouble, and the results of his extended experience are to be found in the present work, in which he deals with statical incongruities and consequent arthritis chiefly in the lower extremities, and devotes only a small space to diseases of the upper extremities. As in his view, rickets is the great cause of abnormalities of the joints, so it is indirectly a frequent cause of arthritis. In the rickety pelvis, as Dr. Preiser maintained in his previous book, the centre of the acetabulum is generally situated in front of Nélaton's line, and as a consequence the tip of the great trochanter is above the line. At the same time the acetabulum looks more forwards than normal, and in relation to its axis the femur is rotated outwards, so that in an extreme case only half of the articular cartilage of its head is in the cotyloid cavity. This is an insecure position, and to render it more secure the pelvis is tilted and secondary lordosis follows. The abnormal stresses thus set up often result in arthritis deformans coxae. That deformities of the femur and leg and foot bones and of the joint surfaces, whether the result of disease or of injury, also cause arthritis Dr. Preiser now endeavours to show by the evidence of a number of case-histories, of outlines taken from *x*-ray pictures, and from reproductions of radiographs. Some of the outlines are so remarkable that it would have been interesting to see the original radiographs from which they were taken. Whether we accept Dr. Preiser's theory or not, there is no doubt of the justice of his claim that by persevering and discriminating

[3] *Tuberculous Diseases of Bones and Joints: Their Pathology, Symptoms, and Treatment.* By Sir W. Watson Cheyne, Bart., C.B., F.R.S., F.R.C.S., D.Sc., LL.D., etc., Professor of Clinical Surgery at [illegible] etc. London: Henry Frowde and Hodder and Stoughton. 1911. Oxford Medical Publications. (Med. 8vo, pp. 415; figs. 176. 10s. net.)

[4] *Statische Gelenkerkrankungen.* Von Dr. Georg Preiser, Hamburg. Stuttgart: Ferdinand Enke. 1911. (Sup. roy. 8vo, pp. 286; Abbs. 272. M. 10.)

treatment, such as is carried out in his institute, a great deal can be done for cases of chronic arthritis, both to improve function and to lessen pain, and that the pessimistic attitude too often assumed by practitioners is not justifiable. The author says that Ernst Walkhoff has been studying the subject independently from a pathological point of view, and has arrived at results which bear out his theory. Whatever conclusion the reader may come to, he will find much interesting and instructive matter in this book.

The sole object of Dr. EDUARD WEISZ's book on the physical therapy of joint diseases[5] is to bring modern methods of treating joint diseases briefly and intelligently before students and also practitioners. His twenty years' experience at the well-known Hungarian baths of Pöstyén enables him to do this with some authority. Of the first twenty chapters, eighteen are devoted to concise descriptions of the various means of treatment, including the sick-room. The author's devices for extemporizing traction apparatus for the treatment of contractures in patients who cannot avail themselves of institutional treatment are good and simple, and such as any general practitioner should be able to rig up for his patients. Gymnastics, massage, and Swedish exercises are shortly dealt with, as are the various forms of electrical treatment, radium, local heat and cold, and air and sun baths. Diet is also considered. Serum and vaccine treatment in joint disease he does not strongly advocate, but thinks it is often an *ultimum refugium*. He recommends Bier's methods, especially for their power of relieving pain. With operative measures, such as excision and erasion, the book does not deal. The six chapters of the special part of the work are concerned with congenital joint disease, new growths, diseases of nervous origin, trauma, infection, and constitutional joint disease caused by altered metabolism, such as arthritis deformans, haemophilia, gout, and metallic poisoning. Altogether, this should prove a handy little book for readers of German.

NOTES ON BOOKS.

IN writing his elementary handbook of the anatomy and physiology of the nervous system, Dr. J. D. LICKLEY[6] has kept in mind the needs of students of psychology and neurology. These students form a growing body; they have not, as a rule, been grounded in the associated sciences—such as zoology and chemistry—as the ordinary medical student has. Hence their need for a special introduction to the study of the nervous system, written on broad and elementary lines, simpler, yet more extensive than the many textbooks that describe the nervous system as the medical student needs to know it. Dr. Lickley has succeeded in writing a compact and clear account of what the psychological student should know about the central and peripheral portion of the nervous system. His style is lucid, and sufficiently dogmatic for the purpose. Plenty of illustrations are given, mainly borrowed from the standard works of Gray or Quain or Testut. No idea of the magnification employed in drawing many of these figures is given, and this, we cannot but think, is an omission that should be corrected. The student who is led to expect a medullated nerve fibre to be as stout as a pencil—as it is in Fig. 14—is bound to feel that he has been deceived when he discovers how much smaller it is in real life. Dr. Lickley's book may be warmly recommended to the attention of those students for whom it is designed.

The large majority of books for the guidance of students in chemistry follow much the same lines, and any one which leaves the beaten track deserves to be welcomed. In his *Problems in Practical Chemistry*[7] Mr. G. F. Hood has brought together a series of exercises, suitable for somewhat advanced students, which are not a mere repetition of matter to be found in other books. Each problem is set forth with any information bearing upon it which it is necessary for the student to possess, but the method of solving it is left to his own devising; the time which ought to suffice for the investigation is stated, and in another part of the book directions are given for the assistance of those who find themselves unable to arrive at a suitable method without it. The problems appear to be well chosen and the information of a practical and useful character; the book will prove very useful to students working with but little guidance from a teacher.

With what race or nation is to be the future of the world? Is the white man to hold the balance of power, or are the yellow hordes of Asia, awaking, like Japan, from the sleep of centuries, to destroy his predominance? And if a white race is to rule, which is it to be? Such are the questions Mr. FRANK FOX attempts to answer in *Problems of the Pacific*.[8] The Pacific, he says, is the ocean of the future; the scene of the next great struggle for supremacy. Britain with India, South Africa, Australia, Canada, and her other possessions washed by its waters has paramount interests there; whilst America, having made a way for her merchant ships as well as her ironclads through the Panama Canal, and having provided a great naval base of immense strategic importance at Honolulu, has made sure her position in the great ocean. Mr. Fox comes to the conclusion that no yellow race—not even the teeming myriads of China—can compete on equal terms with the white man. In all the great colonies not only are there barriers to the entrance of Asiatics, but the military spirit, the sentiment of imperialism, is strong and active. The rise of Japan calls forth the comment that she has reached the zenith of her achievements. Mr. Fox's book is well worth perusal. It presents in readable form an exposition of a problem in which every one has an interest.

A small book on the management of skin diseases,[9] by Dr. OSKAR SCHEUER, consists of two parts. In the one he gives an explanation of the general action of the remedies commonly used in dermatology, and in the other supplies succinct descriptions by which each different skin disease may be recognized, endeavours to account for their existence, and suggests the lines of treatment that should be followed. The way in which different remedies should be employed is carefully described, and the book is so arranged that information on any point can easily be found, so that it should be found useful by medical men in whose practices cases of skin disease occur with comparative infrequency.

In a small book on the outlines of mechano-therapy, Staff Surgeon Dr. FRITZ SCHOLZ[10] gives a useful and practical account of the principles of massage in general, of its application to various parts of the body, and of its practice in various diseases. He points out, however, that the number of pathological conditions in which massage alone is capable of working a cure is very small. In most cases gymnastics and exercises must be combined with massage. Under gymnastics Dr. Scholz includes sports of many kinds. Speaking of cycling, he makes the interesting remark that it is a well known fact that since it became so common the number of cases of heart disease in those doing military service is disproportionately increased. Cycling is, however, useful under proper limitations. Riding, rowing, swimming, mountain climbing, ski-ing, dancing, and lawn tennis, all are useful in moderation, but Dr. Scholz bans football because it usually oversteps the limits of healthy sports and leads to many accidents. Of Swedish gymnastics and gymnastic machines, such as the Zander and Herz apparatus, a concise account is given. The sections on special applications to different diseases are good, notably those on nervous diseases (for example, ataxia) and on joint and muscle disorders. This book is well and fully illustrated, and should be very useful to those who can read German.

[5] *...krankheiten für Aerzte und Studierende.* Von Dr. Eduard Weisz. Budapest: Berlin and Wien: Urban und Schwarzenberg. 1912. (Crown 8vo, pp. 273; Abbs. 85. M. 5.)

[6] *The Nervous System.* By J. D. Lickley. London: Longmans, Gr...

[7] *Prob... Experiments.* By G. F. Hood, M.A.Oxon., B.Sc.Lond. London: Mills and Boon, Ltd. 1912. (Crown 8vo, pp. 270; 22 diagrams. 5s. net.)

[8] *Problems of the Pacific.* By Frank Fox. London: Williams and Norgate. 1912. (Demy 8vo, pp. 294; 1 map. 7s. 6d. net.)

[9] *Taschenbuch für die Behandlung der Hautkrankheiten für praktische Aerzte.* Von Dr. Oskar Scheuer. Berlin and Vienna: Urban und Schwarzenberg. 1911. (Post 8vo, pp. 157. M. 4.50.)

[10] *Grundriss der Mechanotherapie (Massage und Gymnastik) für Studierende und Aerzte.* Von Dr. Med. Fritz Scholz, Stabsarzt im ersten Garde-Regiment zu fuss, mit einem Vorwort von Geheimrat Professor Dr. Bruger. Jena: Gustav Fischer. 1910. (Sup. roy. 8vo, pp. 157; Abbs. 37. M. 4; geb., M. 4.80.)

THE Hoffmann La Roche Company (7 and 8, Idol Lane, London, E.C.) is now in a position to forward upon application a booklet containing abstracts of various papers dealing with omnopon from clinical and other standpoints. One of them is by Professor Sahli of Berne, the originator of the preparation, and another by Dr. H. M. W. Grey, of the Royal Infirmary, Aberdeen.

MEDICAL AND SURGICAL APPLIANCES.

Splint for the After-Treatment of [illegible] Femur.

Mr. R. Charles (House Surgeon, County Hospital, York) writes: This splint has been designed by me for the after-treatment of osteotomies in connexion with the femur, especially for Macewen's supra-condyloid operation or fractures of the middle and lower end of the femur which have been plated. It consists of a long outside splint with movable foot-piece and two small internal splints. Above



and below the knee are two parallel slits. The accompanying illustration shows the arrangement of the straps passing between the slits and buckling on the outside and not passing over the splint. They are thus in close contact with the leg, holding the broken ends firmly. I have used it in many osteotomies and fractures, giving excellent results. I find it a very useful splint if the wound requires a dressing or stitches to be removed. This can be carried out without interfering in any way with the complete immobilization of the limb. It is cheap and easy to apply, and can be made by any hospital carpenter.

A Hand Perimeter.

Dr. R. Beatson Hird (Ophthalmic Surgeon to the City of Birmingham Education Committee) writes: A perimeter should be of more than passing interest to those outside the ophthalmic speciality, but its cost hitherto has been prohibitive. The perimeter which Messrs. Dixey and Son, of Bond Street, London, have made for me is a modification of a pre-existing hand perimeter. It is simple in [illegible] with no mechanism to get out of order. The handle is detachable, and the whole can be carried in an ordinary handbag. It is light, so that any patient can easily hold it in position. There is a rotating half arc enabling the field to be mapped out rapidly, the dial registering the part of the field that is being tested. The face-rest is made of vulcanite for the purpose of being cleansed, and the fixation object is a white spot 10 mm. in diameter, so that it can be seen by presbiopes. The field is tested by white and coloured squares mounted on black handles which are carried along the arc. A book of 100 charts is provided. The fields can be mapped out accurately and quickly for white and colours, and with it the fields of a patient in bed can be taken if desired. The cost of the perimeter is 17s. 6d. and the book of charts 3s. 6d. The workmanship is excellent.



Improvised Valve for Empyema Tube.

Dr. Joseph H. Churchill (Wembley, Middlesex) writes: I have recently affixed a valve to an empyema tube in such a way as to impede the ingress of air on inspiration, yet not obstruct the egress of air or pus. The effect in the case of a boy of 16 has been that his respiration frequency, which for some days after the operation was 28, dropped on the first night after inserting my home-made tube to 18, and has remained about the same since. I think that the lung has expanded much more readily in consequence of the valve, whose action appears to make each inspiration of increased effect in that direction. The valve is made as follows: To an ordinary rubber empyema tube with flange a small square of thin rubber sheeting is affixed by one of its edges by [illegible] Michel's sutures to the surface of the flange so as to cover the opening. On each side a section of stout rubber drainage tubing is stitched to act as a pad to prevent the dressings from pressing on the valve. The flange should be at least 2 in. broad and 3 in. long, so as to cover the wound completely and lie close to the skin well outside its limits. At first the valve was affixed by means of tyre-patching solution, but hot lotions were found to render this method of attachment valueless.

EXPERIMENTS ON ANIMALS.

It would tax the assimilative powers even of those who, in Lord Rosebery's phrase, "can lunch on a biscuit and a bluebook" to digest the evidence, "voluminous and vast and rolling far," given before the Royal [illegible] section. As each of the four volumes or minutes appeared we summarized the evidence with the greatest care to omit no point, on one side or other, that seemed to be important. These summaries, if collected, would have made a goodly tome which none but persons keenly interested in the subject would care to attack. Yet unless the evidence is closely studied no conception can be formed of the contrast between the statements of the scientific men on the one hand, and the antivivisectionists on the other, and the spirit and temper and, we may add, regard for truth displayed by each side respectively. Mr. Stephen Paget has now put the gist of the evidence before the public within manageable compass.[1] He states in his preface that the book was written at the request of the Committee of the Research Defence Society. All of it, except the introduction and a final chapter in which the findings of the Commissioners are reviewed, was seen through the press long before the Royal Commission on Vivisection published its belated report.

In the introduction Lord Cromer sets forth his reasons for accepting the post of President of the Research Defence Society some four years ago. He abhors cruelty to animals, and, as is well known, that feeling made him take active steps in Egypt to prevent such cruelty. Before associating himself with the Society he fully satisfied himself both that the main accusations brought against the experimentalists were wholly devoid of foundation, and, further, that the men with whom he was to work were animated by a hatred of anything like wanton cruelty not less profound than his own. He felt strongly that the vivisectionists, and not their opponents, were the true humanitarians, and that they were, in circumstances which rendered them peculiarly liable to misrepresentation, fighting a cause in which not only the whole human race, but also the brute creation, were deeply interested. Since the issue of the Report of the Royal Commission the consciences of lovers of animals may be at rest: they have the deliberate pronouncement of a body of men of unquestionable ability and impartiality, who gave the most careful attention to the evidence for and against vivisection. Lord Cromer said in a letter addressed to the press immediately after the issue of the Report that, "broadly speaking, the supporters of vivisection have proved their case." A more careful study of the Report has confirmed him in this conclusion, and he proceeds to give a summary of his reasons. He first deals with those who hold that "nothing less than the total prohibition of all experiments on animals will satisfy them," and thinks that the conclusion of the Commission against this view will be approved by general opinion. Further, the Commissioners express the opinion that valuable knowledge has been acquired in regard to physiological processes and the causation of disease, and that useful methods for the prevention, cure, and treatment of certain diseases has resulted from experimental investigations upon living animals. Dr. George Wilson, a member of the Commission, who greatly dislikes vivisection, subscribed to these statements with certain reservations, holding that the useful results claimed have been enormously overestimated, and that "the fallacies and failures are far more conspicuous than the successful result." Lord Cromer points out that in this matter most people can only to a limited extent form their own opinions on the facts and statistics laid before them, and must in the main rely on authority. The doctors who share the views expressed by Dr. Wilson are a very small minority, and it may be added that there is not one among them whose opinion on a scientific point carries weight with the profession. That the results of experiments have sometimes proved fallacious or useless is no argument against the method. The progress of science is slow, and much of the work by which it is advanced is in the nature of groping in the dark, or following more or less plausible hypotheses

[1] [illegible] by [illegible] O.M., G.C.M.G., G.C.B. London: [illegible] W.C. 1912.

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which may turn out to be will-o'-the-wisps. In science as well as in practical things it is true that the man who never makes mistakes will never make anything else. How large a part happy accident has played in discovery would form a fascinating chapter in the history of science. Yet the fact that discoveries have been made by accident, and the other fact that apparently well-planned investigations have led to nothing, does not invalidate the general proposition that it is only by the experimental method rigidly applied that progress can be made. Of science it may be said as the ancients said of Nature, *non facit saltum*. Scientific truth is doubtless, as Huxley said, largely built on scientific error. The special value of the experimental method is that it enables us, if we may paraphrase a saying of St. Augustine, to make of the very errors that are crushed by further research a ladder to the attainment of truth.

In dealing with the question of pain, Lord Cromer takes occasion to define the attitude of the Research Defence Society on this point. Its view is not that pain is never inflicted, but that the vast majority of inoculations involve no pain or none that may not truly be called trivial. It maintains that all experiments involving operation are conducted under an anaesthetic, and that the anaesthetic is effective; that the law already provides safeguards against the unnecessary infliction of pain; that if any additional safeguards could be suggested which would not be unduly or vexatiously restrictive, they should be sympathetically considered; and, finally, that in those rare instances where some pain is inflicted, the results justify its infliction. One has only to read the evidence of the antivivisectionists to agree with Lord Cromer that on this vital point their case, when submitted to the test of cross-examination, completely broke down. Lord Cromer does not think that the adoption of the recommendations of the Commissioners[2] in the direction of further restrictions would seriously hamper scientific investigation. Much, of course, would depend on the manner in which they are carried into effect. Before any legislation, therefore, is undertaken, or new regulations framed, he says the advocates of vivisection should be taken into counsel and should have every opportunity of expressing their opinion. Dealing especially with experiments on dogs, he points out that with every allowance made for sentiment, he would be sorry to see dogs altogether excluded, as he cannot doubt that by such exclusion the cause of science would suffer. He gives instances of the good that has been done to dogs themselves by experiment, instancing Dr. Copeman's discovery of a vaccine against distemper, and the more successful treatment of malignant jaundice in dogs. He is of opinion, however, that the proposal made by the majority of the Commission to the effect that the legal position of dogs should be assimilated to that of horses and mules, might reasonably be adopted; that is to say, a special certificate should invariably be required whether anaesthetics are used or not.

Lord Cromer concludes with an appeal to the main body of his countrymen and countrywomen not to allow a misdirected sentiment to misguide them, but to study the facts for themselves by the light of the information now placed at their disposal. Should they do so they will, he thinks, come to the conclusion that, under proper safeguards, not only should vivisection be allowed to continue, but that its arrest would be disastrous to the further progress of humanitarian science in this country.

Mr. Paget gives the text of the Act of 1876, pointing out that no mention is made in it of inoculations because bacteriology was then in its infancy. Ninety-five per cent. of all experiments on animals in this country at the present time are inoculations or similar experiments, none of which involve any sort or kind of cutting operation on any animal, but owing to this fact every inoculation and every similar experiment has to be scheduled under Certificate A, as an experiment performed without anaesthetics. Of this the antivivisectionists avail themselves as a proof that "torture" is legalized. As Mr. P[illegible] however, Certificate A is never allowed [illegible]. A summary of the evidence [illegible] is then given with a running [illegible] of the Report of the Commission concludes the [illegible] defects in the Report are referred to. Of [illegible] the most important, in our opinion, are that it does not emphasize the difference of quality between the antivivisection evidence and the evidence of men like Lord Rayleigh and Sir R. Douglas Powell, and that the Report being four years behind the times necessarily says nothing of many discoveries which are of the highest importance. Notable examples of this are the remarkable success achieved at Panama, and the saving of life in tropical climates which has resulted from the adoption of the experimental method. Against these defects must be placed the important fact that the Report is unanimous. Whatever reservations or minimizings are set forth in memoranda by Sir William Collins, Colonel Lockwood, and Dr. George Wilson, they have appended their names to a report which admits that "valuable knowledge has been acquired in regard to physiological processes and the causation of disease, and that useful methods for the prevention, cure, and treatment of certain diseases have resulted from experimental investigations upon living animals." It is further stated that it is highly improbable that without experiments made on animals, mankind would at the present time have been in possession of such knowledge; that, in so far as disease has been successfully prevented, suffering has been diminished in man and in lower animals, and that there is ground for believing that similar methods of investigation, if pursued in the future, will be attended with similar results. How in the face of the fact that such a report is signed unanimously by the Commissioners, the antivivisectionists can profess to believe that the Report is in some way a triumph for their cause, is interesting as a revelation of their mental constitution.

Mr. Paget has done signal service by placing the results of this elaborate and prolonged inquiry before the profession and the public in a convenient form, with just the amount of commentary that is required to bring out the true bearings of the evidence and the value to be attached to the testimony of the witnesses on either side.

[2] British Medical Journal, March 16th, p. 625.

THE PROCEEDINGS OF THE INTERNATIONAL OPIUM CONFERENCE AT THE HAGUE.

II.*

Report of Redaction Committee.

The Conference resumed its sessions after the Christmas recess on January 9th, but the Redaction Committee had been at work previously, and had, under the Chairmanship of M. Brenier (another French delegate), who had taken the place of M. Guesde, produced an elaborate and lucid report. This report dealt (1) with questions of form—polishing the resolutions, as passed, into articles of Convention, and under the guidance of M. Asser eliminating inconsistencies and redundancies; (2) with certain questions which exceeded mere matters of form and on which the Report of the Committee discloses sharp divergence of opinion on the part of some of its members, and upon which (while reserving the liberty of their respective delegations) the members of the Committee found it necessary to seek the decision of the full Conference. The division of opinion appears to have centred around the question of the coming into force of the Convention. Only twelve nations were represented at the Conference. Others had been invited, but had not accepted the invitation, while yet others had not been invited to participate. Among the nations not represented were several which, either actually or prospectively, had an important stake in the decisions which might be arrived at. Moreover, the inclusion of morphine and cocaine, by widening the subject-matter of international agreement, had extended the geographical area involved in the operations of international engagements. What was a Far Eastern problem, or appeared to be so when the Shanghai Commission was initiated, had become an affair of world-wide importance before the Hague Conference had got half through its labours. Clearly, for a few nations to bind themselves by a self denying ordinance to restrict trade in opium, morphine, etc., while leaving others free to extend their commerce in the like commodities, or even to set up a trade which the more virtuous had either abandoned or severely limited, would be neither just nor politic; neither

* The first article appeared in the British Medical Journal of August 31st, p. 505.

good business nor good law. On the other hand, it appeared that there were in all some thirty or more sovereign Powers unrepresented at the Conference, to all of whom these invitations to sign the Convention would have to be addressed if the international engagement was to be universally applicable. Diplomacy could not tolerate any picking and choosing in the dispatch of any such invitations, though it was obvious that the non-represented Powers included States very diversely related to the subject of the Convention. Thus, amongst the unrepresented Governments were Turkey, Austro-Hungary, and Spain; also Bulgaria, Bolivia, and Peru, as well as Guatemala, Cuba, and Costa Rica. Then, again, there was the case of the colonies, dependencies, protectorates, and leased territories of some of the Powers concerned. Such world-wide expansion of the work might have appeared wellnigh overwhelming, or might even serve indefinitely to delay the coming into force of the results of the Conference, and thus play into the hands of those who desired that the trade in these noxious drugs should remain unmolested and unrestricted.

The Redaction Committee in their report set out in detail the foregoing considerations, thus briefly summarized. They pointed out that the normal course in the case of similar Conventions was for the Governments represented at the Conference to proceed to ratification as soon as possible after the plenipotentiaries had signed the original draft. The deposit of ratifications with the Netherlands Government would then be immediately followed by an invitation to the non-signatory Powers to adhere to the Convention. This course, indeed, was the one which seemed to commend itself to the Conference before Christmas, but with an amendment on the part of the British delegation proposed by Mr. Max Müller. This amendment provided that so much of the Convention which did not involve legislation should come into force upon ratification by the signatory Powers. Legislative enactments as distinguished from administration orders were to be introduced to the respective parliaments as soon as possible, but such laws should only become operative as from a date to be mutually agreed upon.

It appears, however, from the Redaction Committee's report that at its meetings an entirely new proposal had been put forward by M. Delbrück (Germany), whereby ratification was to be subordinated to adhesion, and that ratification, and *a fortiori* the coming into force of laws flowing from the Convention, were to be postponed until every non-signatory Power in Europe and America had "adhered" not only for themselves, but also for their colonies, protectorates, and leased territories. The report proceeds to say that, on the other hand:

Sir William Collins had contended (in the Committee) that the subordination of ratification to the adhesion of the other Powers, and especially if it be enacted until *all* other Powers have adhered, would indefinitely postpone the practical application of those measures to which the contracting Powers had, by their presence and the successive votes of their plenipotentiaries at the Conference, given their approval. The work of the Conference would thus assume a character which would be liable to be misunderstood. The British delegation was obliged, no less than the German, to have regard not so much to the ratifying power (rôle) of its Parliament as to its opinion.

On January 11th, at the seventeenth session of the full Conference, the sharp division of opinion thus disclosed in the Report of the Committee came under discussion.

M. DELBRÜCK said:

The proposal to subordinate ratification to adhesion made it necessary to make some general remarks on the question of ratification. The act of ratification had a very different value for the different States represented here. In England, Japan, and Russia ratification is effected without the intervention of the legislative power. In other countries the Government is obliged to submit the Convention to Parliament prior to ratification. That is the case in Germany; but it is not only that. In Germany a ratified treaty has the force of law; it is promulgated as such in the *Official Gazette*, and is binding on all State authorities and tribunals. In a certain sense a ratified treaty has greater force than a law, since it cannot be changed merely by further legislation. The law courts will not acknowledge a law which is in contradiction to an international treaty. That is not the case with all the Powers represented here. In the United States, for example, jurisprudence has formed a totally different conception of the binding force of an international treaty. The Supreme Court has repeatedly ruled that a ratified international treaty is subordinate to internal legislation. The treaty only becomes binding on the law courts as the result of internal legislation which may or may not follow, and such laws are liable to revision and amendment by fresh legislation not necessarily in accord with the treaty.

He therefore asked the American delegation what guarantee they could give to the other Powers that, after ratification, their Government would pass the legislation necessary to put the stipulations of the treaty in force.

Dr. HAMILTON WRIGHT replied that:

The United States could give a guarantee of one hundred and twenty-five years of national good faith. A convention or international treaty was ratified with the consent of the Senate. His own understanding was that when once a treaty was ratified it became the law of the land. If it were ratified by the Senate and approved by the President it would become law. If the United States undertook to pass or to propose legislation to enforce any article in the treaty, that legislation would be passed or proposed.

Mr. CREMER drew attention to the difficulty of distinguishing between legislation and administration as contemplated by the British amendment introduced by Mr. Max Müller and to which Sir William Meyer had directed attention. In their Far Eastern colonies several of the Powers promulgated by administrative orders what was equivalent to legislative enactments; such distinction therefore could not be sustained.

Sir WILLIAM COLLINS explained that the so-called British amendment had to do with the former proposal of M. Delbrück, in which the normal course of ratification first and adhesion afterwards was prescribed.

But the whole position was altered by M. Delbrück's new proposal which reversed the usual order. What they all desired was to see practical effects flowing from the Conference: matters of form were of less importance. He gathered that it was now intended by M. Delbrück that *every* other Power in Europe and America must adhere before ratification could take place. The proposal to make adhesion precede ratification was unusual, and, according to the Committee's report, unprecedented. They were accordingly confronted by a new situation. If it would make for celerity and progress, he would be inclined to agree with His Excellency M. Asser that there was no objection in principle, but the British delegation were in communication with their Government on the point.

M. BRENIER said he, too, had to ask instructions from his Government.

M. DELBRÜCK said the Conference itself was unprecedented, since only twelve Powers were represented.

Sir WILLIAM COLLINS pressed M. Delbrück for a reply to his question as to whether he wished ratification to be delayed till every Power had "adhered."

M. DELBRÜCK replied he could hardly answer that. He thought all the Powers should be invited. Perhaps if some of them stood out, those who were ready to act would say they would proceed without them.

Sir WILLIAM COLLINS said:

As you have drafted your proposition it appears that ratification must wait until *every* other Power has come in.

M. DELBRÜCK said:

If it is seen that all the Powers answer that they are ready to come in, we will have the ratification.

Sir WILLIAM COLLINS said:

If I am to understand that M. Delbrück does not intend us to wait for *all* the Powers to come in, I think some alteration in the wording of his proposal will be required.

At the next sitting a motion was made by M. BRENIER, on behalf of the French delegation, referring the matter back to the Redaction Committee with an instruction to submit at the next meeting a definite scheme for ratification, adhesion, and coming into force (*mise en vigueur*) of the Convention, and this motion, with an amendment (carried by 6 to 5) proposed by the American delegation which further instructed the Committee, in so doing, to have regard to all proposals made, but at the same time precluded them from expressing preference for any one of them.

Sir WILLIAM COLLINS said:

He felt sure his colleagues on the Committee would agree with him in saying that they were greatly honoured, and he might add embarrassed, by the additional labours and trust which the Conference seemed determined to place upon them. They will be required to present at the earliest possible moment a formula as to the principle of which the Conference had not vouchsafed any opinion. When the British amendment had been proposed they all assumed that the ordinary course of ratification, followed by adhesion, would be adopted. They separated for the holidays without a whisper of a suggestion that there would be any deviation from the usual precedent;

but when they returned they were confronted with a new situation which had taken them by surprise. It would have been an advantage to the British delegation if they had received earlier intimation of the proposal to render ratification dependent upon the adhesion of every other Power. But the British delegation had always set more store upon the earliest possible enforcement of the matters agreed upon than upon any pedantic concern for form or precedent.

It appears that at the next (nineteenth) session the Committee obligingly furnished a formula dealing with these contentious questions which M. Brenier explained was a compromise arrived at with the assistance of the jurist, M. Asser, and the Dutch Minister for Foreign Affairs, and which embodied some of the features of the German, British, and French proposals respectively.

M. SAVINSKI, on behalf of Russia, approved what he called the "conciliatory mean," which had been lighted upon.

M. DELBRÜCK said:

We will use our best endeavours to get it approved by our Government; I would not like to go further now.

Sir WILLIAM COLLINS said:

The proposal which was now presented was rather composite as regards the sources from which it had been gathered, and although naturally it had not yet been communicated to the British Government, their delegates would endeavour to secure its approval. The proposal met their chief objection, namely, to obviate a single Power by saying "No" to the invitation which was to be addressed to all the Powers, blocking the way for two whole years. Also it met the case of one or two Powers out of the forty or more who would be invited to express their approval, failing to reply by December 31st, 1912. In such case those Powers which had participated in the Conference, or which had subsequently signed, would then, through their representatives, meet and decide whether they could not, nevertheless, proceed to ratify without them. It also met the other point to which the British amendment was directed, and would in the case of new laws to be promulgated enable all the Powers, so to speak, to start fair. The new draft also cured the obvious defect in the second proposal made by the German delegation. The word "adhesion" disappeared altogether. The second proposal had what he might be permitted to call the inherent vice of using the word "adhesion" where it had no rightful place. By "adhesion" they understood, he supposed, the approval by certain Powers of a Convention already ratified by certain other Powers, and as he pointed out in the Redaction Committee, when he first saw the new proposal, "adhesion" to a signature was really meaningless. That difficulty was got over by the formula now propounded. He would like to bear his testimony to the good-will which animated every member of the Committee throughout their prolonged sittings.

The form prepared by the Committee was accordingly adopted by the Conference.

Trade in Morphine and Cocaine.

This obstacle having thus been successfully surmounted, the Conference at its next session found its progress again impeded by another scarcely less formidable one—one more directly concerned with questions of a medical and pharmaceutical nature—touching the problem of trade in morphine, cocaine, etc., to which the British Government, it will be remembered, attached the greatest importance.

Dr. GRUNENWALD, on behalf of Germany, stated that although their delegation had agreed to the articles regulating the trade in morphine and cocaine, they had since found, "in laying these resolutions before the Ministry of the Interior, that a careful examination had occasioned most serious doubts as to the practicability of carrying them out. It was found, he said, that their application would necessitate amendments of their laws, with regard to trade and commerce, of a kind that would most likely not be approved by their State Legislatures." The Imperial Government apparently was unwilling to commit itself on questions which by the German Constitution are largely within the competence of the federal legislative bodies. From Dr. Grunenwald's remarks it would appear that in giving their assent to this portion of the Convention before Christmas they had assumed that their existing pharmacy laws covered the proposed regulation of the morphine and cocaine trade, and that Germany was merely agreeing to assist other nationalities to level up their regulations to the "strict and severe" laws of the Fatherland. On their return to Berlin the delegates had, however, discovered that the unanimous resolve of the Conference rigidly to restrict the [illegible] trade in these alkaloids and their preparations had outrun the legislative powers at present in existence in some, at any rate, of the constituent States of Germany. A certain jealousy naturally existed between the powers of the Reichstag and the State Legislatures, and Germany being then in the throes of a general election the time might not have been very opportune for raising questions of this nicety, especially in regard to large home industries. This being the case, Dr. Grunenwald desired to secure amendments in what had been already passed, so as "to eliminate the categorical expressions used in the articles (10–16) and replace them by expressions more suitable to the particular conditions of the German Empire"; in other words, to indicate that the Imperial Government would use its best endeavours (*nach Möglichkeit darauf Bedacht nehmen*) to execute the stipulations in question, but not so as to bind it to legislate if difficulties arose with the Federal parliaments.

Mr. MAX MÜLLER said:

They must all be very grateful to the German delegation for the clear exposition they had given, through Dr. Grunenwald, of the constitutional difficulties which prevented them, to the very great regret of the British delegation, from accepting, as they originally understood the German delegation would accept, the articles mentioned, in the form in which they had been first agreed on in private conference between the German and the British delegations, next passed by the Redaction Committee, and finally read for the first time before Christmas by the whole Conference.

He added that:

His Britannic Majesty's Government very strongly deprecated the German amendments, though they ultimately gave them discretion to meet the new situation in what they considered the best way.

They could not certainly second these amendments, though they might not oppose them if the other delegations were prepared to approve them. He reiterated his regret that there should be any weakening of the sense of the original articles, and invited an expression of the views of the other delegations.

The Conference adjourned for consultation, and then the German amendments were voted upon in succession. In most cases the record as given in the *procès-verbaux* was—seven *for* the German amendments and *four* "reserved," the reserving Powers being the United States, China, Persia, and Siam. It would appear, therefore, that the vote of Great Britain was cast in favour of the German amendments, although it is evident there was by no means unanimity on the part of the other ten Powers in its favour.

The net result of these amendments was to substitute for an undertaking to secure legislation for registration of premises, licensing of persons, inspection, as well as the regulation of import and export trade in respect of morphine, cocaine, etc., an undertaking to endeavour to do so. It was undoubtedly a weakening of the original resolution; the native hue had been sicklied o'er by the pale cast of thought. Nevertheless, two Articles remained undiluted, namely, that (No. 9) which engaged the contracting Powers to enact pharmacy laws to confine morphine, cocaine, etc., to their medical and legitimate uses, and to co-operate *inter se* for that purpose; and another (No. 14) whereby the Powers undertook to apply all such laws to medicinal opium and to all its preparations containing more than 0.2 per cent. of morphine. These Articles, as Sir William Collins has since stated (see *Contemporary Review*, March, 1912), "when put into operation, will have far-reaching results."

Granulated Opium.

Certain minor questions were discussed at the remaining sessions of the Conference. Thus the meaning to be attached to the term "granulated opium" came under consideration. Was it "raw" opium or "medicinal" opium? The term is used officially in the United States *Pharmacopœia*, but medicinal opium had been defined by the Conference as "raw opium which had been heated to 60 C., and contained not less than 10 per cent. of morphine, whether or not it be powdered or granulated or mixed with indifferent material." M. DELBRÜCK said that Germany was prepared to prohibit those forms of opium that were liable to misuse, but not to prohibit the export of forms of opium which were pharmaceutical preparations. Dr. HAMILTON WRIGHT remarked that the United States were the largest importers of granulated opium from Germany. Sir WILLIAM COLLINS said he disagreed with M. Delbrück if he thought that medicinal opium could not be put to an illegitimate use. The Technical Committee, upon instruction, offered to add to the

definition of raw opium that it should be held to include all opium containing less than 10 per cent. of morphine. This the Conference was not prepared to adopt, and no definition of "granulated" opium was included; the British delegation, however, made a declaration defining their view as to what meaning they attached to the terms "powdered" and "granulated."

Proposed Division of Convention.

The regrettable weakening of the morphine and cocaine articles, at the request of Germany, led to a proposal at the twenty-second session by Dr. Hamilton Wright, on behalf of the United States, to split the Convention into two: the one to deal with raw and prepared opium and the other with the enumerated alkaloids. Dr. Wright feared that the effect of the new articles would be to "drag to a lower plane the treatment of the opium question," and that the inclusion of morphine and cocaine in the actual form of the Convention might delay progress till the Greek kalends.

Sir William Meyer, in reply, quoted Sir Edward Grey's dispatch, which said:

His Majesty's Government desire to be assured that if they participate in the Conference the other participating Powers are willing that the Conference should thoroughly and completely deal with the question of restricting the manufacture, sale, and distribution of morphine, and also with the allied question of cocaine.

He did not consider there was any inconsistency in having made a concession on these articles "in order to prevent the possibility of a Great Power which had taken a prominent part in the Conference declaring its inability to accept these articles."

Dr. Wright's proposal, however, met with little support: 9 voted against it, while Germany abstained. An attempt to rediscuss the same proposal to divide the Convention at the next session was frustrated by 7 to 3, Germany, the United States, and China constituting the minority.

Conclusion of Conference.

On January 23rd the final (twenty-sixth) plenary sitting was held. The President (Bishop Brent) pronounced an eloquent closing address, and a graceful message from Queen Wilhelmina, who had, unfortunately through illness, been prevented receiving the delegates personally, brought the Conference to a close, the various plenipotentiaries forthwith affixing their signatures to the Convention and protocol.

INTERNATIONAL DENTAL FEDERATION.

The twelfth annual meeting of the International Dental Federation was held in the Aula of the University of Stockholm on August 28th and 29th. Delegates from various national dental associations in Europe and America to the number of 100 attended. The opening meeting was attended by the Minister of Education and Professor Lecue representing the university. The President, Mr. W. B. Paterson, F.R.C.S., L.D.S., of London, delivered an address in which especial reference was made to the interest taken by King Gustav and his Ministers in the establishment of medical and dental clinics in connexion with the national schools of Sweden. Reference was also made to the Federation's previous visit to Stockholm in 1902 and to a valuable statistical report which was then presented by a committee on behalf of the various national dental associations of Europe, showing the incidence of dental caries among the different peoples and revealing a high percentage of defective dentures. A comparison between that report and more recent statistical tables in the same countries demonstrated an increasing ratio of dental caries as well as a larger number of septic mouths.

Short addresses and speeches from various representatives of national dental associations also testified to the universality of the spread and injury wrought by that disease. Dr. Elof Förberg of Stockholm, who welcomed the Federation on behalf of the Swedish dental societies, dwelt upon the question of inspection and treatment of school children in Sweden.

The following also spoke on behalf of their nationalities: Professor Walkhoff (Munich), Dr. Brophy (Chicago), Dr. Rosenthal (Brussels), M. Van der Hoeven (The Hague), Dr. Shimamine (Kioto, Japan), M. Maurice Roy (Paris), Dr. Wolff (Vienna), Dr. Guerini (Naples), Professor Christensen (Copenhagen), Dr. Valenzuela (Chile), M. Ottesen (Christiania), Dr. Aguilar (Madrid), and Dr. W. Guy (Edinburgh) for Great Britain. Professor Leche extended a cordial welcome on behalf of the university, and the Minister of Education expressed his thanks. Dr. Jessen (Strassburg) presided over the Hygiene Commission, and M. Huet (Brussels) presided over the Commission of Bibliography and Documentation.

Papers were read by Professor Lagerheim, of the University of Stockholm, on "Bread Stuffs," and by Dr. Röse, of Dresden, on "Swedish Breads and their food values," with a demonstration of the various kinds of bread in use in Sweden; Mr. Horace Fletcher (New York) on "An Appreciation of Modern Dentistry," in which the "cult of the clean mouth" was said to be known in some parts of the States as "Fletcherism."

A cinematographic demonstration of means to prevent the occurrence of dental caries was given by Mr. G. Cunningham, of Cambridge. The film, prepared by Messrs. Pathé Frères from actual scenes in the practice of the Cambridge School Dental Clinic, was exhibited for the first time.

It is proposed to use the cinematograph in connexion with popular lectures on the care of the teeth in various centres in this and other countries.

The Executive Council of the Federation, which consists of fifty members on a basis of proportional representation for the various countries, met to decide the award of the Miller Prize to the person who, in its opinion, had rendered the most eminent services to dentistry. The prize, which consists of a gold medal of the value of £50, a diploma of honour, and a sum of money resulting from the interest on £3,000, was awarded to Dr. Charles Godon, chief of the École Dentaire de Paris. The Miller Prize was instituted by the Federation in memory of the late Professor Miller of Berlin, the eminent odontologist, and its former President.

Considerable *éclat* was given to the meeting of the International Dental Federation by a special levée, held by His Majesty King Gustav at the Palace, of the members of the executive. Various social festivities were held in honour of the visit of the Federation to Stockholm, amongst the most important being the Hasselbacken banquet, Dr. Förberg's dinner in the Garden Court of the Royal Hotel, and the Swedish Dental Societies' dinner at Saltsjöbaden, which was attended by several distinguished personages. The weather throughout the meeting was dull and rainy, which caused the abandonment of certain boating excursions and outdoor picnics; otherwise the meeting of the Federation in Stockholm will be remembered as a great success. The Federation accepted a cordial invitation to meet in America next year.

THE EDUCATIVE FUNCTION OF THE DOCTOR.

It has often been urged in these pages that the true way to save the people from quacks and self-drugging is to educate them as to the aims and achievements of rational medicine. Its limitations should also be indicated, for, as Herophilus of Alexandria said in a pregnant maxim, the best physician is he who distinguishes between the possible and the impossible. This is a distinction which goes to the very root of the art of healing, and it is therefore most important that its significance should be appreciated by the public. Legislation cannot compel people to refrain from self-drugging or from giving ear to the blandishments of the advertising nostrum vendor. The medical knowledge of the people, so far as there is any, is a survival of theories framed by doctors in the dark ages, and the teaching of Avicenna to his pupils—that when there is any doubt as to the nature of a disease the liver should be made the scapegoat—is still deeply ingrained in the public mind. The medical profession has an educative as well as a healing mission, and it is to be regretted that this part of its duty has been to a large extent neglected. The public insists on calling every medical practitioner "Doctor." The word means teacher, and this is precisely what doctors in their relations with their patients should be. If medical treatment is to be successful, the co-operation of the patient is necessary, and for this some

degree of comprehension of the principles of rational medicine is required.

The people in general do not read medical books or journals, or if they do so it is to their own detriment more than to their edification, for they have not the training necessary to enable them to grasp the true purport of scientific communications or discussions. But any man of ordinary intelligence can with a little trouble learn something of the nature of the fundamental problems of medicine, and what has been done towards their solution. There are not wanting popular treatises on medical subjects, but too often they are written in a style more likely to mislead than to enlighten. There was great need, therefore, of a short treatise written in language understanded of the people, setting forth briefly and simply the progress made in medical science and the stage which knowledge has now reached. This need has now been supplied by Mr. Willmott Evans in a work[1] in which he endeavours to give a simple explanation of some of the main principles on which are based the medicine and surgery of the present time. This object, in our opinion, has been successfully fulfilled. After a brief review of the medicine of the past, he gives a lucid account of the causes of disease, of the part played by germs, of the development of scientific medicine, and the use of the microscope and of the principles of bacteriology. Two chapters are devoted to an explanation of the principles of immunity, and another to a short account of vaccination. The history of the discovery of anaesthesia is well told, and antiseptic surgery and the possibilities opened up thereby are briefly but adequately dealt with. In a chapter on the value of drugs attention is called to the ever-increasing tendency to trust to the self-healing powers of the body, hygiene, and diet; but the author has a judicial mind, and does not rush into extremes. He holds that there is a solid foundation for the employment of drugs in medicine, and he thinks it probable that at the present day they are unduly neglected. He points out, however, an error into which those treating diseases are likely to fall in the use of drugs. The symptoms are mistaken for the disease, and the physician may be too ready to content himself with treating the symptoms. The layman who reads this book will learn why it is often injudicious to stop a cough, even when it is a sore affliction to the patient, and why patent medicines for cough taken without medical advice so often prove highly injurious.

In discussing secret remedies, Mr. Willmott Evans does not deny that many proprietary medicines have proved useful. It would be strange, he says, if they had not, for they contain only the ordinary drugs used in prescriptions. They are credited with special powers, because to the vulgar *omne ignotum pro magnifico*. As to the remedy, he thinks the simplest and fairest method is not to forbid by law the sale of remedies of this class, but to make it compulsory that every bottle or box should bear a correct statement of its contents.

An interesting account is given of what has been done for the prevention of malaria, one of the greatest scientific triumphs of modern medicine. Of the part played by insects in the production of disease a fair summary is given, and a brief account of industrial disease and some notions of legal medicine form the subjects of other chapters. The *x* ray, radium, and Finsen light, and their applications are briefly described, and there is a useful chapter on malingering. The book ends with a forecast of the medicine of the future, which lies in the direction of the discovery of causes. The hope is held out that many of the evils that now afflict us will in course of time be avoidable. As a result, Mr. Willmott Evans looks forward to the stretching of the span of human life several "decades" beyond the three score and ten that once were allotted to man. Should this time ever come, it is earnestly to be hoped that means not only of preventing disease, but of preserving mental and bodily vigour, will have been discovered. For if the long lived men of the future are to be like the Struldbrugs of Swift's appalling imagination, the advance of medical science will not be a blessing, but a curse. Long life in itself is not a blessing, and it must be confessed that much as has been done for the prevention of disease, we are still far from the discovery of the secret of perpetual youth. Mr. Willmott Evans's book may safely be recommended to the readers for whom it is meant, and medical practitioners will find in it many useful hints that will help them to fulfil the educative mission which is a part of their duty.

We recognize fully the difficulties of this apostleship, but we feel strongly that it is necessary, if the people are not to be led astray by ignorance, half knowledge and mere pretension. The medical profession has been reproached with "priestcraft," and with a "pontifical attitude" in regard to what, in a scientific sense, is profane. In all this, it must be admitted, there is some measure of justice, though the charge is often absurdly misapplied. It is necessary to plead for breadth of mind on the part of the profession, and to protest against the disregard of everything outside the narrow circle of knowledge bearing the stamp of orthodoxy. We have done this in the case of cancer cures, manipulative treatment, psychotherapy, and so-called miracles. The eternal charge of conservatism has, as we have always been ready to admit, some foundation in fact, but there is a worse evil, illustrated by Mr. Gladstone's light-hearted utterance, that he kept an open mind on vaccination. To try methods on patients for the beneficial action of which there is no trustworthy evidence would be to make human beings the subjects of unjustifiable experiment.

There should be no mystery in the practice of medicine. The state of the case as the doctor sees it should be explained to the patient as far as this can be done without causing needless fears. The difficulty is that patients now do not think they are receiving anything solid in exchange for a fee unless they get a prescription. This, we fear, will be vastly encouraged by the operation of the Insurance Act. An attempt is already made to teach the elements of physiology and hygiene in schools, but from what we have seen and heard the results are not always satisfactory. Unless the elements of these subjects are taught by thoroughly competent teachers who know them at first hand, no good will be done, and possibly a great deal of harm will arise from wrong ideas implanted in young minds. The ideal would be a public knowing the real fundamentals of physiology. This would generate the intellectual atmosphere in which quackery could not live. We are still a long way, however, from this consummation

[1] *Medical Science of To-day.* A Popular Account of the More Recent Developments in Medicine and Surgery. By Willmott Evans, M.D., B.S., B.Sc.Lond., F.R.C.S.Eng., Surgeon to the Royal Free Hospital, and Surgeon to the Hospital for Diseases of the Skin, Blackfriars, London: Seeley, Service, and Co., Ltd. 1912. (Demy 8vo, pp. 321; Ill...

Messrs. Siemens Bros. and Company have reprinted from the *Archives of the Roentgen Ray* the paper on diathermic treatment of disorders of the circulation, read by Professor Nagelschmidt of Berlin at the annual meeting of the British Medical Association at Birmingham last year. Copies can be obtained on application.

An official report on the prevalence and distribution of rabies in the United States in the year 1911 is summarized in the *Medical Record* of August 24th. The most striking feature in the prevalence of the disease has been its spread to the Pacific Coast States, which apparently were entirely free from it at the time of a former investigation conducted by the Public Health and Marine Hospital Service in 1908. Thus, in California not a single case was reported in 1908, whereas 124 persons were treated for the disease in 1911. More cases were observed in New York than in any other single State. There 889 persons were treated and 13 deaths occurred. It is believed that there has been an increase in the prevalence of rabies throughout the States. In marked contrast with the increase among the lower animals is the diminution in human deaths, which amounted to only 12 per cent. of the total number of cases. This is attributed mainly to the opportunities of prompt treatment now available. In 1908 there were twenty-three institutions in the States where the Pasteur treatment could be carried out; now there are forty-two. In addition to these there are five firms and laboratories which supply material for inoculation to medical practitioners. In 1911 the Hygienic Laboratory in Washington distributed virus for 942 cases. In the year 1911 more than twice as many took the treatment as in 1908, when the whole number who are known to have availed themselves of this method of combating the affection was only about 1,500. In 1911, on the other hand, there were 4,625 persons who received the Pasteur treatment. The total number of deaths from rabies in the whole United States, so far as ascertained during 1911, was 98. Of these 44 occurred in children between the ages of 11 and 20.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THE eighty-second meeting of the British Association which has just been held at Dundee and was attended by 2,379 persons, of whom between 1,200 and 1,300 were visitors. The presidential address by Professor Schäfer, which is printed elsewhere in the present issue, attracted a large audience. In moving a vote of thanks to the President for his address Lord Provost URQUHART announced a gift of £10,000 to the funds from Mr. J. K. Caird, a jute manufacturer of Dundee, who is a vice-president of the association.

The work of the meeting was distributed among twelve sections. Summaries of the proceedings of those having some relation to medicine are here given, mainly from the abstracts supplied by the officials of the association.

SECTION OF PHYSIOLOGY.

Physiological Basis of Memory and Abstraction.

Professor MAX VERWORN presented a communication on the physiological basis of memory and abstraction. He said that upon the basis of the neurone theory the problem which arose for physiological psychology was the ascertainment of the physiological conditions of the sensory processes in the neurones. Here one of the first problems was the question concerning the fundamental principle involved in *memory*: what were the traces remaining after excitation produced by the sensory processes in the neurones concerned? It had been assumed that they consisted in molecular alterations resulting from the process of excitation. The maintenance of that view met, however, with some difficulties. The molecular alterations brought about in the neurones by the stimulus during excitation consisted in a disturbance of the metabolic equilibrium by an increase of the processes of oxydative disintegration. Immediately following each excitation, however, metabolic equilibrium was again restored, and every trace of the excitation process seemed to be obliterated. Still, even though the process produced no molecular alteration, a secondary result remained, which consisted in an increase of the mass of the living cell. This only became clearly manifest when the excitation was of frequent recurrence, and was then expressed by functional hypertrophy. The presence of the latter could be demonstrated in the neurones as well as in every other living substance. It formed the cellular basis of memory by increasing the intensity of the discharge of impulses, and with this the specific action of the neurone. This recurring use led to a facilitation of the tracts (*Ausschleifen der Bahnen*), and thus to a greater intensity of the specific action of neurone chains resulting from the repeated demands. They found this demonstrated in the association processes of the cerebral cortex by the predominance of the facilitated conceptions, in response to a stimulus over others not practised in this manner. In lapse of memory resulting from want of practice, the reverse process took place. Here the unused neurones fell into an atrophy by inactivity. These facts afforded an insight into the process of *abstraction*. All their conceptions were complex in their nature. The abstract conceptions were distinguished from the concrete by the fact that the former, in the specific manner of the adjustment of their components, had no correlation in the sensory world, whereas the latter were fully in accordance with those things which could be perceived through the senses. In spite of this, however, the material from which the abstract conceptions were built up was likewise individually derived from sensory perception, and even the most abstract conceptions were composed of sensory elements. In the genesis of abstract conceptions the principle was merely that in a number of association complexes gained by sensory perception, having in part common, in part different components, the common components which returned with greater frequency were developed by use, whereas the special components, which recurred seldom, or not at all, fell into atrophy and receded into the background. As the neurone stations, which corresponded to the common components, underwent, by more frequent functional demands, a hypertrophy, they consequently predominated later in response to a stimulus by the intensity of their discharge, that was to say, of their specific function. Thus, finally a framework of associated conceptions was formed, in which only the most frequently recurring components of a complex were left over, whilst the other, through atrophy by inactivity, had disappeared more and more. There was to be found the reason that abstract conception in regard to their specific structure finally possessed no precise correlation in the world of sensory perception.

Relation of Mind and Body.

This question was discussed from the standpoint of philosophy by R. LATTA, M.A., D.Phil., from that of psychiatry by Sir THOMAS CLOUSTON, from that of physiology by Dr. J. S. HALDANE, and from that of psychology by H. J. WATT, Ph.D.

Mr. LATTA said there were two main groups of theories—the parallelist and the animist—the latter including various forms of the interaction theory. Parallelism consisted essentially in the hypothesis of a similar mechanical system of mental phenomena, corresponding point for point with the physical system, but entirely independent of it. They had thus in parallelism an *a priori* extension of the mechanical hypothesis to mind, although the basis of the mechanical hypothesis was the necessity of excluding everything mental from the physical system. Parallelism, accordingly, transformed the mechanical method from a scientific hypothesis into an ultimate metaphysical principle. On the other hand, the vitalist and animist theories insisted on the recognition of a teleological factor in organism and in mind. They were thus in direct opposition to the mechanical hypothesis, as it was originally conceived, for this hypothesis had as its aim the rejection of final causes as principles of explanation in the physical world. The mechanical view was right in rejecting final causes if they were regarded not as immanent in nature, but as external and accidental. The vitalist and the animist were right in insisting on a teleological factor; but they exposed themselves to criticism from the mechanist point of view by placing the teleological factor entirely outside the mechanical system. The two realms, the mechanical and the teleological, thus remained, on the animist view, as much apart as they were on the mechanical theory. But teleology was not external, but immanent. Wherever they had system, they had final cause, and the ends were not outside of the system. If the physical world was a real system, it had an immanent teleology. If the mental was also teleological, they might set aside the hypothesis of a gulf between the two realms, and recognize that the distinction of the physical from the psychical was a distinction within one system. This brought them nearer to the actual facts of experience, and it did not mean the merging of one system in the other or of both in a vague unity, for increasing knowledge meant more exact and real distinction, and at the same time the recognition of more profound unity between the things distinguished.

Sir THOMAS CLOUSTON said psychiatry implied the general assumption that body and mind had a constant and necessary relationship. The progress of physiological science and of modern psychology had compelled the psychiatrist to the conclusion that the brain was the necessary vehicle of mind, and therefore the study of brain in its physiological and pathological relations was by far the most important, indeed the absolutely necessary preliminary to his work. It was definitely proved that when the brain was not developed in a normal way from birth onwards the mental functions were also non-developed. Careful observation had also shown that under these conditions the outward expressions of mind, in the shape of speech and the workings of the mind muscles of expression in the face and eye, were usually accompanied by what had been wrongly termed the "stigmata of degeneration," which were really the stigmata of non-development. It was now almost demonstrated that all the serious forms of mental disease could be associated directly with microscopic and bio-chemical alterations in the brain cells. It was found that in the brain there was a general solidarity of action, which in a way might be said to correspond to the metaphysical doctrine of the unity of mind, but that doctrine had to be extended so as also to include the unity of mind and body. If the term "unity" went too far, the term "parallelism" was certainly a correct description of the facts. A bad nervous or mental heredity tended especially to interfere with the development process of body and mind. If that heredity was very strong they were apt to find

complete arrestment, as in idiocy; where it was less strong there were attacks of mania and a tendency to that mental arrestment and death which he had called "adolescent insanity" and subsequently "dementia," or mindlessness. The normal power of the brain and mind to react to stimuli was impaired in some way in all cases of mental disease. This abnormality necessarily upset the social life of the community. The highest quality required for human society was the power of mental inhibition, or self control. They could not dissociate that from bodily inhibition. They concluded that there were centres of mental inhibition, probably situated in the fore part of the brain, which were non-developed in idiocy, poorly developed in the primitive races, and diseased in the insane. That was one of the most important relationships of body and mind, and one of the most essential parts of psychiatric study. He thought the facts which were often described by the terms "subconscious" and "subliminal consciousness" were much better understood and fell in with physiological facts by being looked on as merely molecular and bio-chemical changes within the brain cells.

Dr. J. S. HALDANE said that from the everyday point of view a man or higher animal was a personality consciously and purposively controlling, with greater or less success, his body, and through it the surrounding environment. From another point of view, however, the behaviour of the man was dependent on his physical environment and on the blind physical or physiological processes occurring around and within his body. His perceptions and actions and his continued existence depended absolutely on the material and energy coming to him from the environment, and on the bodily structure transmitted to him from his parents. From that point of view no independent mind or soul could be distinguished; all psychical activity was demonstrably dependent on the body and its physical environment, and was apparently a mere accompaniment of physiological changes. The facts on which that conclusion depended appeared at first sight to be unassailable, and to become more and more cogent with every year of advance in knowledge. Those two views clashed with each other. If they adopted the first view, they were faced by the hard facts on which the second view depended. If they adopted the second, they encountered the difficulty that, from their very nature, physical and mere physiological processes afforded no explanation of intelligent behaviour. The difficulties of the first view had been sufficiently emphasized in recent times in consequence of the great advances in physical and physiological knowledge. But the difficulties of the second view were equally great, if not greater. They had been admirably stated in Dr. McDougall's recent book on *Body and Mind*. These difficulties could not be solved by any theory of interaction between the body and the mind or soul. Between body and mind there was no interaction, simply because the body, more fully understood, was the mind. From the physical and chemical standpoint a man was about 70 kilog. of material with a certain configuration, properties, and internal movements — this material consisting of a great variety of chemical compounds, interacting upon one another in various ways. From the physiological standpoint the man was a living organism blindly fulfilling its biological destiny. From the psychological standpoint he was a person the subject of purposive knowledge and volition. The man as mere physical body or organism was an evident fiction or abstraction from reality, though a very necessary one for our imperfect knowledge. As a conscious individual personality he was at least far less of a fiction. But they could often get no further than a physical or a physiological account of reality, and for this reason the physical or physiological account of man could never be dispensed with. The physical sciences, biology and psychology, went on their several ways, accumulating knowledge which each science interpreted according to its own working hypothesis and subject to the limitations due to the abstractions from reality which were involved in these hypotheses. Each lower science also handed on what was working, raw material to the higher one. The attempt to resolve the higher into the lower, as by making mind dependent on body, was foredoomed to failure. The corresponding attempt to resolve the lower into the higher, as by making body dependent on mind, was also impossible, for the knowledge which would justify such an attempt was lacking, even were such knowledge conceivable. It seemed to him that it was only by this general conception of the relation of physical and physiological to psychological knowledge that each science could gain for itself a clear field of operation, and escape from the confusion which resulted from wrongly applying scientific hypothesis to what lay outside their scope. In practical life they drew no such distinctions; for they used every scrap of knowledge they possessed, however partial or mutually contradictory these scraps might be. They lived and moved in a world of apparent contradictions, within which science, religion, and philosophy afforded them only a general guidance. In this practical life the question of the relation of body to mind came up in a piecemeal form, and could only be answered in a similar fashion, as it was answered every day in practical medicine, where they sometimes regarded the body as dominating the mind, and sometimes the mind as dominating the body. Such answers were, however, not those of science or philosophy. They could not generalize from them, and the attempt to do so led only to confusion.

Dr. H. J. WATT, Ph.D., said the connexion between body and mind must rest upon some form of correlation between the realms of "material" and "psychical" things, in so far as it was agreed that some or all psychical processes were accompanied by, or are evoked by, physical processes or vice versa. The scope of this correlation could not well be explored from the physical side, as obviously not all physical processes and all aspects thereof had a discoverable psychical counterpart. The task for psychology was, then, to form an exhaustive list of psychical states, whether elements, compounds, or other derivatives, and to ask for each of these and each distinguishable aspect thereof whether some satisfactory correlative could not be found among known or possible psychical processes and their predicable aspects. Such a psychological analysis had been involved in every theory of the relation between body and mind. An attempt to reduce the scope of correlation by a proof that the unitary nature of psychical processes had no physical counterpart would be considered. Allowing for mind, not only the rule of the identity of indiscernibles, but also the integration of limited differences within partial identity, according to specific rules to be discovered, they need not invoke the soul or any other psychical agent in order to explain these rules, any more than in physical science they need assume the presence of "forces" to explain physical laws.

Professor STARLING thought the question had very little place in the physiological section. The distinction between mind and body had not been proved; how, then, was it possible to discuss any connexion between the two?

Professor LEONARD HILL said physiology got along best by leaving aside the question under discussion. Still, such questions had a lasting attraction for the human mind.

Sight Tests.

Dr. F. W. EDRIDGE-GREEN contributed a criticism of the report of the Departmental Committee on sight tests. This committee was appointed "to inquire what degree of colour-blindness or defective form-vision in persons holding responsible positions at sea causes them to be incompetent to discharge their duties; and to advise whether any, and if so what, alterations are desirable in the Board of Trade sight tests at present in force for persons serving or intending to serve in the merchant service or in fishing vessels, or in the way in which those tests are applied." He confined himself to the first part of the reference—namely, that dealing with colour-blindness. The committee recommended that the wool test should be retained, but further modifications made of it. They suggested that the skeins should be divided into groups and a dark brown skein added. The necessity of dealing with the whole of the skeins in doubtful cases was first pointed out by Dr. Edridge Green over twenty years ago. The committee had missed the most important points in the use of any test in which wools were employed. The first was that the test should contain the confusion-colours of the colour-blind. The second that the four chief colour names, red, green, yellow, and blue, should be used. If the test did not contain these essentials normal-sighted persons

would be rejected and colour-blind persons passed. This he had demonstrated repeatedly. It was evident that the committee had not recognized how very defective a man might be and yet pass the official test of the Board of Trade with the ease and rapidity of a normal-sighted person. In the *Lancet* of June 22nd he had given an example of a very dangerous case of colour-blindness which he examined for the first time in the presence of Professors F. T. Trouton and A. W. Porter. Examined with the official test of the Board of Trade the examinee picked out and matched all five test-colours—green, rose, red, purple, and orange-yellow—easily and correctly; he did not touch a confusion-colour. Examined with the largest aperture of his lantern, measuring ⅞ in. in diameter, at a distance of 20 ft. he called red A, nothing and green; yellow, red; red B, white; neutral, green; and green, white and red. The committee had recommended a lantern of their own construction. It was absolutely necessary to have means of regulating the luminosity of the light. In the lantern suggested by the committee this could not be done, and many colour-blind persons would learn the sequence and appearance of the colours, and with a little practice would tell all the colours on the method suggested by the committee. There were many other essential details which had not been considered, as, for instance, the exact spectroscopic composition of the colours. It would be seen from the report that the possibility of dispensing with it and going back to the wool test was mentioned. In fact, with the lantern suggested, it was quite possible that this might come about. The committee had recommended a classification of colour blindness based on the flicker method of photometry. The classification was based on two assumptions: First, that colour-blind persons could be classified by measuring the luminosity of their colour sensations; secondly, that it was possible to do this by the flicker method of photometry. There was the strongest evidence that neither assumption was justifiable. The classification was in direct opposition to the work of the ablest observers.

Pulmonary Gaseous Exchange in Apnoea.

Dr. T. H. MILROY read a paper on this subject. He said the apnoea produced in animals by forced pulmonary ventilation with air was evidently independent of the degree and rate of distension of the lungs so long as the total amount of air driven through the lungs remained the same. After freezing the vagi, apnoea could be produced in the same way as with the vagi intact. This period of apnoea could be markedly altered by replacing the air in the lungs at the close of the pumping by various gas mixtures. In all cases where gas mixtures rich in oxygen were employed in this way the duration of apnoea was markedly lengthened; in fact, the increase so produced was as great as if the ventilation throughout had been carried out with the mixture. On the other hand, gas mixtures which contained amounts of carbonic acid greater than that present in ordinary air produced shortening of the period of apnoea. As the carbonic acid in the gas mixture was raised, a point was at last reached when there was at first a loss in the carbonic acid present in the alveolar air, this point evidently indicating that percentage of carbonic acid which corresponded to a partial pressure of that gas above that present in the alveolar air at the beginning of apnoea. With gas mixtures which contained 10 per cent. or more carbonic acid breathing started very shortly after cessation of ventilation. When the air in the lungs after prolonged ventilation was replaced by nitrogen there passed out into the alveolar air both oxygen and carbonic acid. The oxygen which passed out under those conditions did not rise above 4 per cent., nor the carbonic acid above a slightly lower limit. In all cases where oxygen or air was left in the alveoli at the outset of apnoea the consumption of oxygen took place more rapidly than the excretion of carbonic acid, the respiratory quotient in the case where air was used being from 0.3 to 0.4. The passage out of carbonic acid from blood to alveolar gas mixture seemed to be mainly if not entirely dependent upon the difference of the pressure of that gas in blood and alveoli, and not upon the nature of the gas mixture in the alveoli. Thus carbonic acid passed out practically at the same rate from blood in lungs to alveolar gas mixtures, whether composed of nitrogen or oxygen or such other gas mixtures as were free from carbonic acid. Everything pointed to the gaseous exchange during the condition of apnoea being due to physical causes—namely, differences of pressure between the gases of the alveolar air and those in the pulmonary blood.

Nervous Induction in the Paths of the Pressure Sense.

In a communication on this subject Dr. MAX VON FREY said that if two sensitive points of the skin, so-called pressure spots, were irritated simultaneously, the subject might have the impression of a double stimulus or of a single one. In the former case three other effects could be observed, namely, a mutual influence of the irritations on their intensity, their clearness and location. These effects were bound to a certain proximity of the stimuli, and waned with their growing distance. There was, for instance, no effect from one hand upon the other, but a pronounced one from one finger upon the next or from a point on the forearm upon any one on the same segment. By comparing a stimulus H given on a finger, say, of the left hand, with another, V, following the first in two seconds on the right, it was possible by adjusting the intensity of the latter to make both equal. If now together with H a stimulus N were given on an adjoining finger of the left hand, the succeeding stimulus V appeared to the subject much too weak in comparison with H. To make V again equal with H, its intensity must be increased, according to the intensity of N, up to 80 per cent. of the original value. The subject moreover stated that the stimulus H, if accompanied by N, lost much of its clearness or distinctness, so that, in comparing it with V, it was difficult to arrive at a definite opinion as to its strength. According to the subject, the stimulus H acquired under these circumstances a dim, blunt, or blurred character. By repeating the irritation and directing the subject to concentrate his attention as far as possible upon H, the difficulty might be largely overcome. Finally, there was always a tendency of two simultaneous irritations to attract each other, that was to say, the subject was liable to underrate the distance between them, though he could judge it tolerably well if the two stimuli were given successively. The deception was so cogent that it was not overcome by the subject being acquainted with the real position of the irritated spots on the skin. If the stimuli were subjectively of equal strength, the dislocation of the corresponding sensations was the same for both, and they appeared therefore equally displaced towards the mid-point of the line which connected the spots on the skin. If the stimuli were of different intensity, the weaker was always drawn towards the stronger one. Dr. von Frey expressed the opinion that these mutual influences sufficiently explained the well-known difference between the successive and simultaneous space, threshold, or *Raumschwelle*.

Naturally and Artificially Aroused Impulses under the Influence of Nerve Blocks.

A communication on this subject was presented by CHARLES M. GRUBER (from the Physiological Laboratory of the University of Kansas). The research was begun by Dr. Hyde several years ago, at the suggestion of Dr. C. S. Sherrington, in his laboratory in the University of Liverpool, and was completed by one of Dr. Hyde's research students. It was conclusively proved by Gruber that impulses aroused by artificial stimuli in a frog's sciatic nerve could be suppressed by the tripolar electrical block, liquid air, and other blocking agencies, and that the tripolar block could be repeatedly introduced in the circuit without injury to the nerve's function; also that afferent impulses could be inhibited with weaker currents than could the efferent impulses. It was of interest, therefore, to ascertain whether natural impulses originated by higher centres in the brain were physically of the same nature as those electrically produced, and could be suppressed by the same kind and strength of block as could those artificially aroused by the electrical current. The experiments were conducted on the phrenic nerves in rabbits. By means of a modification of Head's method, records of the movements of the diaphragm and the thoracic wall were obtained. The artificial stimuli were the threshold strengths of the faradic currents applied to the phrenic nerve and its branches; the movements of the diaphragm in response to these stimuli and the contractions of the diaphragm

resulting from the stimuli emanating from higher centres in the brain were recorded and compared. If the phrenic nerve or any of its branches were stimulated with the weakest possible current, it was responded to, throughout the period, by a contraction of the diaphragm or an inspiratory phase of the side stimulated. The efficiency of the tripolar electrical block was compared with others, especially those produced by cocaine and freezing mixtures, and liquid air. It was found that the contractions of the diaphragm were suppressed the instant, and throughout the period, that the tripolar block circuit was closed. The strength of the block current was not more than $(2.8)^2$ volts, and this strength would suppress the cranial or naturally aroused impulses, as well as those originated by the very weakest faradic current. Only in one experiment did a block of $(1.4)^2$ volts inhibit the cranial, but not the artificially aroused, impulses. But cocaine, a freezing mixture of sodium chloride and ice, or liquid air, proved efficient in suppressing the impulses originated by the higher centres in the phrenic as well as those produced by electrical stimuli. But these blocks were inferior to the tripolar, because they could not be repeatedly employed without injury to the function of the nerve. The presence of afferent fibres in the phrenic was well demonstrated by a simple experiment. When the motor impulses on one side were blocked, and the phrenic stimulated centrally to the block, a change in rate and amplitude of the diaphragmatic movements of the opposite side followed, as was indicated by the contraction curves secured from the diaphragm slips on that side. The same result was obtained when the phrenic of one side was cut and the central cut end stimulated. Stimulating or irritating the peritoneum in different regions of the abdomen with intact phrenic was followed by a change in rate and force of the respiratory movements. This was, however, probably due to afferent stimuli from nerves other than the phrenic to the respiratory centre.

Pharmacological Action of Nitric Esters.

Dr. C. R. MARSHALL read a paper on the pharmacological action of nitric esters. He said that pharmacologically the nitric esters acted mainly on unstriped muscle fibre and especially on that of the arterioles. Their chief effect was to cause a fall of blood-pressure owing to dilatation of the blood vessels. That the action was peripheral might be shown by perfusion of the vessels of an isolated organ and in other ways. Doses producing distinct vaso-dilatation had no appreciable direct action on other organs of the body, but in men their administration was frequently followed by severe headache. The cause of this was unknown; but as it was not proportional to the degree of vaso-dilatation it could not, Dr. Marshall thought, be wholly ascribed to this action. Large doses caused methaemoglobinaemia, and if the dose were sufficiently large death, in mammals, resulted from this cause.

The nitric esters he had so far prepared and investigated were:

Methyl nitrate.	Dulcitol hexanitrate.
Ethyl nitrate.	Dulcitol pentanitrate.
n-Propyl nitrate.	Sorbitol hexanitrate.
iso-Propyl nitrate.	
n-Butyl nitrate.	
	Arabinose tetranitrate.
Glycol dinitrate.	Glucose pentanitrate.
	Fructose pentanitrate.
Glycerol trinitrate.	Rhamnose pentanitrate.
Glycerol dinitrate.	Quercite pentanitrate.
Methyl glycerol dinitrate.	Saccharose octonitrate.
β-Dichlorhydrin nitrate.	
Erythritol tetranitrate.	Tartaric acid dinitrate.
Pentaerythritol tetranitrate.	Ethyl-tartaric acid dinitrate.
	Citric acid nitrate.
[illegible]	Ethyl-citric acid nitrate.
[illegible] pentanitrate.	Nitric acid nitrate.
[illegible]-hexyl-mannitol tetranitrate.	Lactic acid nitrate.
	Ethyl-lactic acid nitrate.
Tetramethyl-mannitol dinitrate.	Cellulose nitrates.
	Starch nitrate.

For the present purpose these substances might be divided into four groups:

(i) [illegible]
(ii) The nitric esters of the polyhydric alcohols and sugars.
(iii) [illegible]
(iv) The nitric esters of the acids and their alkyl compounds.

The members of the last two groups did not produce the characteristic vaso-dilatation of most nitric esters—the nitric esters of starch and cellulose owing to their insolubility in aqueous media, the nitric esters of the acids owing apparently to what might be termed the inhibiting influence of the carboxyl group. In the case of some of the ethyl esters of the last-named compounds a fall of blood pressure commenced some minutes after an intravenous injection, the cause of which had not yet been ascertained. The first group—the nitric esters of monhydric alcohols — were relatively weak vaso-dilators. Methyl nitrate, for example, injected intravenously, was more than ten times weaker than glycerol trinitrate, and when administered by the stomach to man, was more than a hundred times weaker. They could be given in sufficiently large doses to rabbits to produce unconsciousness without causing death. The vaso-dilating action of the remaining group—the nitric esters of the polyhydric alcohols and sugars—considering their solubility, was powerful. The differences exhibited by the various substances were mainly quantitative, and were largely due to the differences in solubility of the substances in aqueous media. The presence of hydroxyl groups, however, diminished the action of a substance as compared with the fully nitrated compound very considerably. The action of the nitric esters seemed to be associated with their susceptibility to reduction and conversion into nitrites under the influence of caustic alkalis, and it was not improbable that a similar reduction occurred in the muscle cells themselves.

The Ductless Glands.

The report of a committee, consisting of Professor Schäfer (Chairman), Professor Swale Vincent (Secretary), Professor A. B. Macallum, Dr. L. E. Shore, and Mrs. W. H. Thompson, was drawn up by the Secretary, stated that Mrs. Thompson had been continuing her investigations into the neck organs (thyroid, parathyroid, post-branchial body, carotid body, ventral branchial body, thymus, procoracoid, and propericardial bodies). Her attention had been chiefly directed to these various structures in the frog. It seemed to be fully established that in the case of the American frogs which came into their hands at Winnipeg the thymus disappeared or became invisible during the winter months. The Secretary could state definitely that the same was not true of winter frogs in Edinburgh. Drs. Gardner and Mothersill have continued their experiments upon the adrenals of the dog. They found, as others had done, that extirpation of one gland caused marked wasting of the animal, though this was of a temporary character. They were also able to confirm the statement of some writers that, after removal of one gland, there was a marked compensatory hypertrophy of the other. But the chief object of their experiments was to discover whether, when the animal survived, for some time with a minimum of adrenal substance, there was a notable hypertrophy of the chromophil tissues left behind, and in particular the abdominal chromophil body.[1] The experiments showed that such atrophy actually occurred. Professor Vincent had found that the abdominal chromophil body of the dog could be stained deep brown by means of potassium bichromate even when the animal was alive. This was a convenient way of extirpation of the body without surgical proceedings. But in some cases the brown colour had disappeared when the animal had been allowed to survive. The nature of the absorbable or soluble compound formed with the bichromate was being investigated. In conjunction with Mr. A. T. Cameron, Professor Vincent had commenced an investigation into the chemistry of the thyroid apparatus and the rôle of iodine in the economy. The work had not advanced far enough to allow any definite report to be made.

SECTION OF ANTHROPOLOGY.

Human Ancestry.

Professor G. ELLIOT SMITH, President of the Section, in his address said it was the advance in brain structure in far greater measure than anything else that determined the evolution of mammals, and it had been wholly responsible for their dominant position, their world-wide distribution, and the plasticity which had manifested itself in the marvellous variety of adaptations to every mode of

[1] See Vincent, *Proc. Roy. Soc.*, 1910.

life which the mammals had undergone. If they searched for the new feature in the brain which had made possible all their achievements it would be found in a cortical area to which eleven years ago he gave the name "neopallium." In the lowlier vertebrates each of the avenues of the senses led to a special part of the brain, and, although there were free communications between the regions allotted to the olfactory, visual, auditory, tactile, and other senses, there was no instrument for the adequate blending of impressions reaching the brain through these different portals, or for the storing of impressions, so as to awaken in consciousness the different properties of an object which appealed to several different senses. The lowlier vertebrates did not see, hear, or feel an object in the sense that we associated with those terms. The neopallium of the mammal provided a receptive organ for impressions of all the senses—touch, vision, and hearing, as well as taste and smell, among the rest—which enabled the effects of all such perceptions to manifest themselves unified in consciousness, and to become recorded in some way so that they could be revived again, each discrete sensory impression or the one idea excited by all of them, in associative memory. Moreover, it was the instrument by means of which all these perceptions, past and present, could be freely blended in consciousness, so that the animal was able to appreciate all the properties of any object to whatever sense they might appeal, and could benefit by past experience and so be educated. He maintained that the neopallium was a feature distinctive of the mammalian brain. In the forerunners of the mammalia the cerebral hemisphere was predominantly olfactory in function; and even when the true mammal emerged, and all the other senses received due representation in the neopallium, the animal's behaviour was still influenced to a much greater extent by smell impressions than by those of the other senses. The adoption of an arboreal life by some small insectivore-like creature, shortly before the dawn of the Tertiary period, and its subsequent cultivation of the sense of vision until it became a highly specialized anaptomorphid, enabled man's remotest primate ancestor to escape from the domination of the sense of smell as the guiding influence of its life, and to cultivate its other senses, so as immensely to widen the sensory avenues by which the outside world could affect its conscious activities. The arboreal life, which demanded great activity and agility, led to the special cultivation of skilled movements of the limbs, and such an acquirement was clearly facilitated in this group by the perfection of visual control, without which finely adjusted actions of the hands and feet could not easily be learnt. The acquisition of such skill in movement necessitated the increased perfection of the tactile and other sensory areas of the brain, so as the more nicely to control the adjustments and correlations of muscles essential for any precise action. Thus, they had a chain of linked influences that followed on the specialization of the visual apparatus in the brain of our primitive arboreal ancestor—the perfecting of touch and the acquirement of skill in action. The heightened acuity of vision and the expansion of the cortical area for storing visual impressions, together with the growing importance of touch, and in a less measure, perhaps, of hearing, immensely widened the psychical content of the life of the Eocene Tarsioid in comparison with that of its contemporaries; but there was yet another factor which its mode of life called into play which was fraught with the most far-reaching possibilities in the creation of man. The co-ordination of large groups of muscles for the purpose of performing some precise action, which must be controlled during the stage of learning by tactile, kinæsthetic, and visual impressions and memories—the fruits of experience—necessitated the formation of some cortical apparatus which would control and harmonize the activities of the various centres, regulating the muscular actions, and bringing the total sum of consciousness at any one moment to bear upon the performance of a given act. Out of such a necessity as this there sprang in the early ancestor of man and—though in much less degree, in certain other phyla also—an outgrowth of the motor cortex, which became the mechanism for attention and the orderly regulation of the psychical processes. Thus, at the very dawn of the Tertiary period, there were developed the germs of all the psychical greatness which, in the million or so of years that had followed, culminated in the human mind. The primates found in the branches of trees the asylum and protection necessary for the cultivation of brain and limbs during the period of their obscurity as an insignificant tribe, but, when they became powerful enough to hold their own and wax great, both in size and power, they had maintained sufficient of their primitive character and the plasticity that went with them to be able gradually to give up the arboreal mode of living, and to re-establish themselves once more as dwellers on the solid earth, competent to hold their own against all comers. He should be inclined to look upon the orang, the chimpanzee, and the gorilla, not as ancestral forms of man, but as the more unenterprising members of man's family, who were not able to maintain the high level of cerebral development of the feeble-bodied human, but saved themselves from extinction by the acquisition of great strength, and a certain degree of specialization of structure. The feebler man was able to overcome his enemies and maintain himself in the struggle for existence by his nimbleness of wit and his superior adaptability to varying circumstances. Man was the ultimate product of that line of ancestry which was never compelled to turn aside and adopt protective specializations either of structure or mode of life, which would be fatal to its plasticity and power of further development. Such advances as the assumption of the erect attitude were brought about simply because the brain had made skilled movements of the hands possible; yet once such a stage had been attained, the very act of liberating the hands for the performance of more delicate movements opened the way for a further advance in brain development to make the most of the more favourable conditions and the greater potentialities of the hands. If the earliest gibbons were already able to walk upright, how was it that they did not begin to use their hands for skilled work, and at once, before men? The obvious reason was that the brain had not yet attained a sufficiently high stage of development to suggest appropriate occupation for these competent hands to do, to the exclusion of their function in climbing. In the simian brain the sensory areas predominated, and the behaviour of the animal was to be looked upon as the response to the immediate sensory impressions of the moment; in the human brain the great association areas had grown far beyond the dimensions of the sensory areas, and experience, the effects of education, and knowledge assumed the dominant rôle in influencing conduct. It was easy to conceive how it came to happen, once the evolution of the brain made it possible for the ape to appreciate its ability to perform and anticipate the results of skilled action, that he at once began to avail himself of the larger life that was opened before him. The erect attitude became stereotyped and fixed and the limbs specialized, and these upright simians emerged from their ancestral forests in groups with the rudiments of all the powers that eventually enabled them to conquer the world. To the memories of the sounds of other animals and of the noises that occurred in nature, which had already become stored up in the sensorium of apes, the primitive ape-man added a collection of records of the expressive sounds deliberately emitted by his fellows, and in course of time the consciousness of these sounds was recorded, along with the memories of his gestures and grimaces, associating each with some meaning, which became a new way of communicating with his fellows. The perfection of the cortical mechanism for appreciating sounds and detecting a very wide range of qualities was associated in the human brain with a remarkable growth and differentiation of the auditory area of the cortex. As intercommunication between members of a social group became a matter of vital importance to the individuals composing it, this acuity in recognizing sounds of different pitch, tone, and timbre, and in detecting their precise emotional significance, would grow *pari passu* with the acquisition of speech. If it was the precocious high development of the sense of sight that started the primates on their career, the high development of the cortical mechanism for discriminating sounds played a great part in making man from an ape. He thought that most anthropologists who approached the study of speech from the physical or biological side had concentrated too much attention upon the supposed motor centres, and not enough on the great temporo-parietal areas, upon the education of which the faculty of speech

so largely depended. In other words, our simian ancestor must have had something to say before he attempted to find means of expressing it. They were apt to forget the immensity of the heritage that had come down to them from former generations of men, until they began dimly to realize that for the vast majority of mankind almost the sum total of their mental activities consisted of imitation or acquiring and using the common stock of knowledge. For this accumulation of knowledge and its transmission to our generation they were almost wholly indebted to the use of speech. When they considered how slowly and laboriously primitive man acquired new ideas, and how such ideas were treasured as priceless possessions and handed on from tribe to tribe, what became of the current theories of independent evolution of customs and culture? The modern problems of anthropology that they had to solve, those which related to man and his inventions since the time of his world-wide distribution and differentiation into distinct races, were not so much questions of independent evolution, but rather those concerning the migrations, the intermixtures, and the blendings of different races and cultures. The hypothesis of the "fundamental similarity of the working of the human mind" was no more potent to explain the identity of customs in widely different parts of the world, the distribution of megalithic monuments, or the first appearance of metals in America, than it was to destroy their belief that one man, and one only, originally conceived the idea of the mechanical use to which steam could be applied, or that the electric battery was not independently evolved in each of the countries where it was now in use.

Ancient Egyptian Skulls.

Professor G. ELLIOT SMITH presented a communication on the physical characters of the human remains found by Mr. Quibell in mastabas of the Second and Third Dynasties at Sakkara. He said the problem that specially called for solution in the examination of this series of skulls was whether there was any evidence of foreign admixture in the population of the Second and Third Dynastic period in Lower Egypt, such as is known[2] to have occurred by the time of the Fifth Dynasty. The answer given by this material was quite definite. The people buried in these earliest Sakkara Mastabas showed numerous unmistakable alien traits; but at the same time they exhibited such a series of gradations, passing into the commoner type of Egyptian, as to raise for discussion the interesting problem whether real blending of characters occurs in human mixtures. The complete evidence and the discussion of its significance will be published in the report of the Committee of the Association on the Physical Characters of the Ancient Egyptians.

Early Mummification in Egypt.

Professor G. ELLIOT SMITH also read a paper on the earliest evidence of attempts at mummification in Egypt. He began by recalling that in previous notes[3] the earliest evidence of mummification in Egypt that he was prepared to admit as being unquestionable was that afforded by the mummy said to be that of Ra-nefer, found by Professor Flinders Petrie at Medûm in 1892, and now lodged in the Museum of the Royal College of Surgeons in London. The earliest date that could be assigned to this mummy was the age of Snefru, the beginning of the Fourth Dynasty, although he believed there were reasons for thinking it might belong to the period of the Fifth Dynasty. During a visit to Egypt last winter he was permitted by Mr. J. E. Quibell to examine the human remains found by him in a series of mastabas at Sakkara, belonging to the period of the end of the Second and the beginning of the Third Dynasties. In the burial chamber of one of these mastabas the skeleton of a woman about 35 years of age was found completely invested in a large series of bandages—more than sixteen layers still intact, and probably at least as many more destroyed—ten layers of fine bandage (warp seventeen and woof forty-eight threads to the centimetre), then six layers somewhat coarser cloth, and next to the body a series of badly corroded, very irregularly woven cloth, much coarser (warp six and woof fourteen per centimetre) than the intermediate and outer layers. Each leg was wrapped separately, and there was a large pad on the perineum. The bandages were broad sheets of linen rather than the usual narrow bandages. The body was flexed, as was usual at this period. In the wide interval between the bandages and the bones there was a large mass of extremely corroded linen, whereas the intermediate and superficial layers of cloth were quite well preserved and free from corrosion, except along a line where the cloth was corroded to represent the *rima pudendi*—a fact of great interest when it was recalled that in the Fifth and probably the Fourth Dynasties it was the custom to fashion (in the case of male mummies) an artificial phallus. The corrosion was presumptive evidence that some material (probably crude natron) was applied to the surface of the body with a view to its preservation. If so, this was the earliest body with unequivocal evidence of an attempt artificially to preserve or prevent decomposition in the soft tissues. The specimen is now in the Museum of the Royal College of Surgeons.

The Lesions Caused by Judicial Hanging.

Dr. FREDERIC WOOD-JONES presented a communication on this subject. He said that during the first season's field work of the Egyptian Government Survey of Nubia there was unearthed in the neighbourhood of Shellal a series of bodies, buried roughly in trenches, showing the effects of various forms of violent death. The physical type of these men—for all were adult males—indicated them to be intrusions on the typical Egyptian population. Their place of burial was within the walls of what had been a Roman frontier fort, and there was every indication that they had been executed in Roman times. One man actually had the hangman's rope *in situ* round his neck, and a very large number showed a curious lesion of the base of the skull. This lesion was diagnosed in the field as being caused by hanging, and its method of production seemed clear. However, when skulls of criminals were examined in museums it was found that this lesion did not exist in men known to have been "hanged." Quite recently (February, 1912) Dr. G. H. Edington had described the skull of Dr. Pritchard, unearthed during the demolition of old buildings in Jail Square, Glasgow. Pritchard was executed in 1865, and the actual circumstances of his hanging were known. The interest of the case lay in the fact that Pritchard's skull showed the same lesions as were displayed by the men executed by the Romans in Nubia. Methods of hanging had changed from time to time, and the lesions produced had been studied by many people; but there was still a great want of agreement in the ideas as to the actual injury inflicted. It was probable that in the cases of Pritchard and the Nubian men much the same methods were employed; but in the history of English judicial hanging the variation in method had easily accounted for the variety of lesions which had been found and claimed as the cause of death. The reason why no lesion was found in so many museum specimens was probably to be sought in this evolution of hanging. "Hanging" might imply (1) the hanging of a corpse; (2) the hanging (strangulation) of a living being; (3) or the dropping and hanging used to-day as the form of judicial death in England. Each had its historical aspect and its anthropological and pathological interest.

SECTION OF EDUCATIONAL SCIENCE.

School Books and Eyesight.

The report of the committee which inquired into the influence of school books upon eyesight, and was presided over by Dr. G. A. Auden, was presented.

The committee stated that the replies which it had received to its inquiries showed that it was not customy for teachers to give the children special instruction concerning the care of their eyes. It was stated in several instances that teaching of that kind was given incidentally in the course of the lessons on hygiene which formed part of the school curriculum; but nothing more was done, and what was done amounted to very little. While effective arrangements for the detection of existing defects in the eyesight of elementary school children were general, and arrangements for the supply of proper spectacles at cheap rates were not uncommon, practically no systematic attention was given to the influence of school books upon eyesight. In the opinion of the committee, the existence of a

[2] *Ancient Egyptians* (Harpers). London, 1911, p. 114.
[3] [illegible] *Cairo Scientific Journal*, February, 1908; [illegible] The History of Mummification. *Proc. Roy. Phil.* [illegible]

very serious amount of visual defect among children of school age was established as a result of official inspection. Some portion of that defect was preventable by greater care in the selection of books. It was desirable that a standard of book production should be established, and that the publication of books below standard should cease. It appeared possible that the adoption by local education authorities of a common standard would render unprofitable the publication of books which failed to reach such standard. It was hoped that the report might assist the responsible authorities in the work of determining the standard of book production requisite for the protection of the eyesight of children so far as it was influenced by the books which the children were compelled to read in school.

LITERARY NOTES.

MESSRS. D. APPLETON AND CO. will publish on September 18th a new edition (the eighth) of the *Principles and Practice of Medicine*, by Sir William Osler. This new edition has been entirely rearranged and rewritten. All the sections have been revised in the light of recent advances in medicine, and many new sections have been added. This well-known textbook is such a tried favourite with students and practitioners that many will be glad to learn of the appearance of this new edition.

Mr. H. K. Lewis (Gower Street) writes under date August 30th:

I notice in to-day's issue there is a review of the late Sir Henry Butlin's three lectures on the parasite of cancer. I should be greatly obliged if you could see your way to inserting a notice in your next issue mentioning that the book in question was printed (to Lady Butlin's order) *for private circulation only*, and that it is not therefore "*published*" nor obtainable from us (the imprint on the title page says "Printed by"). The whole edition was delivered to Lady Butlin as soon as it came from the binders. With regard to the appearance of the volume, your reviewer is of course entitled to his opinion, but I believe that both Lady Butlin and the Editor were satisfied with the appearance of the book.

Mr. L. L. Shadwell has edited *Enactments in Parliament Specially Concerning the Universities of Oxford and Cambridge*. The work, which is in four volumes, is published by Mr. Henry Frowde. The following interesting extracts relating to quacks is given in *The Periodical*:

Forasmoche as the science and connyng of Physyke and Surgerie to the perfecte knowlege wherof bee requisite bothe grete lernyng and ripe experience ys daily within this Royalme excercised by a grete multitude of ignoraunt persones of whom the grete partie have no maner of insight in the same nor in any other kynde of lernyng some also can no lettres on the boke soofarfurth that common Artificers as Smythes Wevers and Women boldely and custumably take upon theim grete curis and thyngys of great difficultie in the which they partely use socery and which crafte partely applie such medicyne unto the disease as be verey noyous and nothyng metely therfore to the high displeasoure of God great infamye to the faculties and the grevous hurte damage and distruccion of many of the Kynges liege people most specially of them that cannot descerne the uncunnyng from the cunnyng: Be it therfore to the suertie and comfort of all maner people by the auctoritie of thys present parliament enacted that noo person within the Citie of London nor within vij myles of the same take upon hym to excercise and occupie as a Phisicion or Surgion except he be first examined approved and admitted by the Bisshopp of London or by the Dean of Poules for the tyme beyng callyng to hym or them iiij Doctours of Phisyk and for Surgerie other expert persones in that facultie And for the first examynacion such as they shall thynk convenient; And afterward alway iiij of them that have been soo approved upon the payn of forfeytour for every moneth that they doo occupie as Phisicions or Surgeons not admitted nor examined after the tenour of thys Acte of v li to be employed the oon half therof to thuse of our Soveraign Lord the Kyng and the other half therof to any person that wyll sue for it by accion of dette in which no Wageour of Lawe nor proteccion shalbe allowed. . . .—3° Henry VIII, ch. xi (1511-12).

And where that in Diocesys of Englond onte of London it is not light to fynde alwey Men hable to sufficiauntly examyn after the Statute such as shalbe admytted to excersyse Physyk in them, that it may be enacted in this present parliament, that noo person fromhensforth be suffred to excercyse or practyse in Physyk through Englond untill such tyme that he be examined at London by the said President and three of the said Electys; And to have frome the said President or Electys lettres testimonialx of their approvyng and examinacion, except he be a Graduat of Oxforde or Cantebrygge which hath accomplisshed all thing for his fourme without any grace. . . .—14° and 15 Henry VIII, ch. v (1523).

With reference to this passage Mr. Shadwell notes that "although a graduate in medicine of Oxford or Cambridge who has complied with the requirements of this section is entitled under this Act and 3 Hen. 8, c. 11, to practise medicine or surgery with incurring penalties, there are now many privileges, including the right to recover at law his charges for services and medicines supplied, which he can only enjoy if registered under the Medical Acts."

In his *Physiology of the London Medical Student*, Albert Smith tells of an acquaintance who "when he was grinding for the Hall," being naturally of a melodious and harmonic disposition, conceived the idea of learning the whole of the practice of physic by setting a description of the diseases to music. He had a song of some hundred and twenty verses, which he called the poetry of *Steggall's Manual*, and this he put to the tune of "The good old days of Adam and Eve." Smith gives as examples the verses relating to the symptoms, treatment, and causes of haemoptysis and haematemesis:

A sensation of weight and oppression at the chest, sirs;
With tickling at the larynx, which scarcely gives you rest, sirs;
Full hard pulse, salt taste, and tongue very white, sirs;
And blood brought up in coughing of colour very bright, sirs;
It depends on causes three—the first's exhalation;
The next a ruptured artery—the third, ulceration.
In treatment we may bleed, keep the patient cool and quiet,
Acid drinks, digitalis, and attend to a mild diet.
Sing hey, sing ho, we do not grieve
When this formidable illness takes its leave.

Clotted blood is thrown up, in colour very black, sirs,
And generally sudden, as it comes up in a crack, sirs.
It's preceded at the stomach by a weighty sensation;
But nothing appears ruptured upon examination.
It differs from the last, by the particles thrown off, sirs,
Being denser, deeper-coloured, and without a bit of cough, sirs.
In plethoric habits bleed, and some acid draughts pour in, gents,
With Oleum terebinthinae (small doses) and astringents.
Sing hey, sing ho: if you think the lesion spacious,
The acetate of lead is found very efficacious.

Thus, says Smith, in a few lines a great deal of valuable professional information is conveyed, at the same time that the tedium of much study is relieved by the harmony. This medical poet appears to have been taken as a model by Mr. A. Ager, who describes himself as Medical Dispenser and "Author of *Magnus Stibium—The Alchemist*, *The Poetry of Bones*, and many other interesting Poems." Mr. Ager has been good enough to send us a few specimens of these poems. One of them, entitled the *Geography of Medicine*, begins:

Plants indigenous to Britain
Are well worthy to maintain
And better pay to cultivate
Than have them form (? from) a Foreign State,
The needs of Medicine should be made
Of more importance than sharp trade.
England supplies the useful Dill.
But Anise comes from Malta still.
India's a fertile region for Drugs
Exported in bags, boxes, or kegs;
Chiretta, Hemidesmus,
And Kamala come hence to us,
Galbanum, and Fruit Bael
Are sent over here as well:
Popular Caster (*sic*) Oil Plant;
Has leaves quite luxuriant;
Trimivelly provides Senna,
The Punjaub, Assafoetida.
Catechu, from the gulph of Kutch,
In Diarrhea is used much,
Bengal sends over Indigo,
Malabar, Cardamous (*sic*) and Kino;
Of Oil Cajeput a good store
Comes from the port of Singapore;
And the drastic purge Croton
Grows chiefly in the Isle Ceylon.

A curious piece of information is contained in the following verse:

Quassia is a bitter Plant,
Name derived from Negro servant:
Who gave it in doses of half a drachm,
For Fevers endemic at Surinam.

On the whole, we think it would be easier to learn materia medica in the ordinary way than from lines so halting as Mr. Ager's.

British Medical Journal.

SATURDAY, SEPTEMBER 14TH, 1912.

THE PRESENT STATE OF ANAESTHESIA.

THE Section of Anaesthetics has done notable work in presenting to the members of the Association some of the more recent developments in the department of anaesthesia. Although there is no novelty in the actual method of intravenous infusion of drugs, yet it is only since the experiments of Burghardt, Kummel, and others proved the comparative safety of inducing general anaesthesia by such a plan that serious attention has been directed to what promises to be a beneficial advance in this department of surgical technique.

Mr. Rood's paper, giving the results obtained by him and his colleagues at University College Hospital, affords solid evidence in favour of intravenous ether infusion. The apparatus, which is due to him, is an advance upon previous attempts, and the continuous as opposed to the intermittent flow of infusing liquid obviates one of the most serious dangers of the earlier workers—clotting in the cannula. We are warned, both by the President in his introductory speech and by those who took part in the discussion, not to expect that the intravenous method will remove all the dangers and difficulties of anaesthesia. Its use, we are told, requires a discriminating choice of cases, as well as a mastery of its somewhat exacting technique. But this is no detriment at the present time, when the administration of anaesthetics has earned an independent position in surgery, and when those who have established their claim to a mastery of both the medical and the surgical side of the speciality are prepared for, and indeed desire, full responsibility in regard to the patient as he passes through the state of narcosis. There are many conditions such, for example, as those which engender post-operative acidosis and its allied states, general septic invasion, the various pathological lesions which contraindicate the use of chloroform or ether by routine methods in which the intravenous method has proved of singular value. The after-effects, it is claimed, are few and transient; and provided the details of the methods are carried out in their entirety, its dangers are only those which a judicious and skilled anaesthetist can foresee and discount. From the surgeon's point of view, again, the plan offers material advantages, and since it is the surgeon's manipulations which are involved in the ultimate operation, a double adv[illegible] The larger question, [illegible] drugs are preferable to ether for intravenous infusion, cannot as yet be dealt with conclusively, since the [illegible] inflicting. The case of hedonal in [illegible] has been recently considered in our columns. It is true that Mr. Leedham Green, in opening the discussion upon the relative value of the methods of inducing anaesthesia and analgesia, deprecated intravenous ether infusion, but every novel method must pass through a period of careful trial before all workers accept it unreservedly. We have recently been reminded that that great scientist, Dr. Dionysius Lardner, scouted as an absurd impossibility the suggestion that ships could by steam power ever cross the Atlantic. *Quot homines, tot sententiae.* It is the thoughtful doubter who eventually increases the world's commonwealth of knowledge.

Yet a further development of the methods of inducing anaesthesia by ether was shown and discussed at the Section. The intratracheal method introduced by Meltzer and Auer was brought before the meeting by Dr. Ehrenfried, of Boston, and Mr. R. E. Kelly, of Liverpool, both of whom have modified in different ways the apparatus due to Elsberg. In spite of a somewhat complicated technique involved in intubating the larynx and the less simple character of the apparatus required, the intratracheal method has won for itself wide popularity and obviously possesses incontrovertible merits. Even if its adoption in routine practice is at present doubtful, its advantages are obvious for operations upon the lungs when a *plus* pressure in the pulmonary cavities is desirable. Both of these methods, however, owe in no small measure their freedom from serious pulmonary after-effects to the prior use of alkaloidal bodies, such as atropine, morphine, and scopolamine.

It was amply demonstrated at one of the sectional discussions that the preliminary injection of atropine abrogates hypersecretion of mucus and of saliva; while the true narcotics scopolamine and morphine subserve other useful purposes. As was pointed out by the President, who has made a special study of these drugs, there seems to be little doubt that the best results are obtained when these alkaloids are used in combination in appropriate proportions. The valuable work of the President of the British Association upon the protective value of atropine against vagal inhibition affords an additional reason for its use in all cases in which grave surgical shock is likely to arise. Professor Schäfer also, in his early work on the adrenal bodies, was led to anticipate great assistance from the adrenal extracts in cases of anaesthetic collapse. Upon this subject Dr. Goodman Levy's illuminating paper, read before the Section, issued a most important caveat against the indiscriminate employment of adrenalin in chloroformed subjects. Dr. Levy has found that during incomplete anaesthesia under chloroform the injection of even a small quantity of adrenalin causes the heart to pass into a condition characterized by a rapid succession of small beats; sometimes these are equal, but sometimes are irregular, being interspersed with intervals of arrhythmia. Electro-cardiographic tracings demonstrate that the normal procession of events in the systole is completely deranged, a multiple extrasystolic ventricular tachycardia supervening. Ultimately ventricular fibrillation arises, and, in the case of the lower animals, death ensues. That this is not a danger occurring in physiological research alone, seems evident from the cited cases of human beings who have collapsed, some fatally, when given adrenalin during incomplete anaesthesia. The research seems also to offer a probable explanation of many sudden deaths which have been attributed in the past to chloroform, cocaine, or fear, while the probable cause—adrenalin—has been overlooked.

The report of the work of the Section which appears in the present issue is well worth both reading and careful study, alike from the side of practical anaesthetics and from that of the *quaestio vexata* the professional status of the anaesthetist.

THE COLOUR OF FLOWERS AND HEREDITY.

DUNDEE can congratulate itself on the fact that this year's meeting of the British Association has marked —in the Chemical Section at any rate—a very definite stage of advance in the history of botany. The paper by Dr. E. F. Armstrong and Professor Keeble on the coloration of flowers vindicates the claim of the chemist to stand on an equal footing with the biologist as a student of heredity. Of the interest of the paper there can be no doubt, and, unfortunately, of its difficultiy one can speak with equal certainty, for on the complexities of Mendelism it superimposes a good deal of chemistry that is by no means clear even to the trained chemist. The main result achieved can be stated simply. The authors have given experimental proof of the brilliant hypothesis conceived by Bateson, that three factors are necessary for the production of colour in a flower —the hidden factor for colour, the factor that enables the colour to show itself, and, lastly, the absence of an inhibitory factor, which might almost be regarded as a double negative concept. The paper concerns itself with all three factors; but at last definite proof has been supplied of the existence of this inhibitory factor. So much for the fact established, but in their method the authors have gone a great deal further, for, instead of studying the mere outward manifestation of such phenomena as colour, square stems, wrinkled or smooth seeds, and so forth, they have pushed the research a stage further back, and have directed their gaze on the chemical substances through which these outward manifestations are produced.

Their paper can best be approached from the standpoint of a Mendelian problem. It is many years now since Professor Bateson "discovered" Mendel and began with the school of Cambridge biologists to extend the scope of his experiments. At first all was plain sailing, but one of the difficulties he had later to contend with was that on crossing white with coloured flowers he got in the second generation two results: the offspring appeared either in the ratio of three plants with coloured flowers and one with a white flower, or three plants with white flowers and one with a coloured flower. To explain this apparent anomaly he hit upon the hypothesis that many white flowers were really coloured, but that they contained, in addition to the factors that produced colour, a third factor that prevented its making its appearance. The idea was a working hypothesis, justified in so far as it helped to group and correlate a number of known facts but based on no sound foundation. To get a stage further it was clearly necessary to study the factors themselves. As the result of the work of Dr. Armstrong, Professor Keeble, and a number of other workers, the mechanism of flower coloration has been established.

Colour appears in a plant as the result of the union between a colourless substance known as chromogen and an oxidizing agent known as oxidase. One can fairly imagine the grains of chromogen lying in the cells of a flower petal starving for want of oxygen, just as the cells of the red-blooded animal are dependent for their oxygen on the circulating blood. The oxidase in its relation to the chromogen in the flower petal corresponds with the oxyhæmoglobin in the blood. When it has not its load of oxygen it is powerless to help the chromogen, and it is known as a peroxidase. The first stage in the inquiry was to try and mimic the process that goes on naturally in the flower. Most white flowers are without chromogen, and in the flowers with which they experimented the authors were able to make sure, thanks to the work of the Bateson school, that they were dealing with such flowers. They supplied their chromogen artificially, making use of some of the colourless coal-tar products, and soaking the petals in a weak solution of them made up with alcohol. Naturally, nothing occurred. The cells of the petal contained only peroxidase—that is, oxidase without the oxygen—necessary for it to perform its function. Oxygen was then added in the form of peroxide of hydrogen, and the whole cycle of petal coloration was set agoing. The peroxidase got the oxygen it required and turned to oxidase, the coal-tar substances that were masquerading as chromogen got their oxygen from the oxidase, and the white petals, in obedience to the same chemical laws that have governed the appearance of colours in flowers ever since the flowering plants appeared on the earth, blushed into colour whenever the oxidase was to be found in their cell substance. But the giving of oxygen to the peroxidase is not the first step of this house-that-Jack-built sequence. The chromogen grains are as a matter of fact tightly locked up with the sugar in the plant. Just as Professor Schäfer reminded us that the various glands of the body are continually sending out their hormones or chemical messengers instructing other cells to burst into active work, so the scent of the flowers is, so far as we know, the first stage in the long sequence of events. As the perfume of the plant spreads throughout the system, it unties the bonds that link the sugar and the chromogen, the peroxidase picks up its oxygen, and, according to the type of chromogen present, the blooms appear in all their several glories. The place of the scent can be taken by chloroform, alcohol, and carbonic and prussic acids.

Death has been defined by more than one physiologist as the completing of the act of life, and the changes just described are the changes that occur on the threshold of the death-chamber. Ordinarily the plant cell is in equilibrium, but the aroma of the flower is the signal that heralds the end. The water in the cells, concentrated in multiple molecules, breaks down into single molecules; the cell thus becomes swollen, and the down-grade changes set in until death comes at the end. There is a profound truth in the analogy between death and night. It is in the hours of darkness that the plant builds up the oxidase that is to call out the signal that the flower has run its full course, that is to announce that the fruit has ripened, and that the end of its activities has been reached. The blackening of the ripe banana, the browning of the cut apple, are actuated by the same mechanism — the union of the oxidase and the chromogen.

And now of the inhibitory factor that masks the latent colour in many of the white flowers. Its existence could be proved if a way were devised to remove it and the latent colours were then to reappear. This has not yet been achieved, but the proof of the contention advanced is cogent. The difficulty has been to show that such flowers possessed oxidase and that it was the inhibitory factor that prevented its operation. The authors have succeeded in removing the inhibitory factor by prussic acid, and they have then found that the colour from their coal-tar chromogen appeared just as theory demanded.

This experiment and the others by which the general theory has been worked out is a triumph for the bio-chemists, and justifies the many efforts which for

the last few years they have been making to carry chemistry into what is almost a new sphere of activity. The achievement is important in its actual results, and still more so in the future developments which it foreshadows. As Professor Keeble pointed out in his address to the botanists, there is much that is obscure in the regular cycle of activities that the plants alternate through by day and night. These, there can be no doubt, have their chemical counterpart, and, there can be little doubt, have their chemical cause. The paper that these investigators read is the public avowal of the chemists that the question is one that they intend to investigate, and the success already achieved is of good augury for the future. It is also a striking instance of the need for increased co-operation between the exponents of the different departments of science.

PATHOLOGY AND TREATMENT OF ECLAMPSIA.

DURING the past few years the treatment of eclampsia has undergone radical changes owing to investigations which have lately thrown much light on the pathology of the condition. Kermauner has recently published a critical review of the subject.[1] He points out that, owing to its frequent association with degenerative changes in the kidneys, eclampsia was formerly attributed to the retention in the blood of albuminous matter or of chlorides. But, as Zangemeister has shown, the symptoms may pass off before the functional activity of the kidneys is restored; and, moreover, diuretics are of little use in the treatment of the attacks.

More recently two theories have been advanced. One is that eclampsia is an anaphylactic phenomenon. This has been practically disproved by experiments on animals, which show that injection of fetal serum causes absolutely no symptoms. The other is that some substance of the nature of a ferment, accumulating in the maternal blood, leads to an outbreak of eclamptic symptoms. The placenta has hitherto been thought to be the source of this ferment, but Dienst has put forward a theory of its origin which goes far to explain the various pathological conditions now known to be associated with eclampsia. These conditions are: (1) The so-called "liver of pregnancy"—a pathological condition characterized by congestive changes in the lobules of the liver, which are not quite the same in primiparae as in multiparae. In the former the venules in the periphery of the lobule are congested; in the latter there is a block in the central vein itself. Dienst attributes this condition in primiparae to the increased abdominal pressure reacting on the portal vein, but in multiparae to cardiac insufficiency. (2) Multiple thromboses and necrotic areas in the liver, which have been observed in all cases examined after death. (3) Changes in the kidneys, the so-called nephrosis gravidarum, which are pathological. (4) Thrombosis, and perhaps necrosis, in

Dienst discerns a relationship between these several lesions, and traces all the symptoms to an excess of fibrinogen and fibrin ferment in the blood during pregnancy. Experiments on animals prove that both these substances, even in small quantities, are capable of causing convulsions and death. Fibrinogen is normally present in blood to the extent of 0.3 per cent.; it is increased during pregnancy, and in eclampsia reaches 0.6 per cent. or more. It is produced by the destruction of leucocytes, and is destroyed or eliminated in the lungs. Fibrin ferment, on the other hand, is not a normal constituent of the blood. From the red corpuscles, however, is formed "thrombogen," a substance which is neutralized at once by a product of the liver cells known as "antithrombin." If the formation of this is hindered by degenerative changes in the liver, the thrombogen is left free to unite with "thrombokinase" (also formed by the destruction of blood corpuscles) to form "prothrombin," and this latter substance is converted, in the presence of calcium salts, into fibrin ferment. During pregnancy, when large numbers of blood cells are being used up in the placenta for the nourishment of the embryo, a large proportion of the fibrin-forming elements is present in that region, and the coagulability of the placental blood is thereby raised. The venous blood of the uterus is comparatively poor in calcium, but this necessary factor of coagulation is supplied when it becomes mixed in the right heart with the blood from the portal vein. If this portal blood be deficient in antithrombin, fibrin ferment is formed and fibrin is precipitated. The liver, as stated above, may be congested during pregnancy, and Dienst points out that this would lead to a deficiency of antithrombin, and so favour thrombosis in various distant organs. At the same time the excess of fibrin ferment produced in the blood acts as a toxin and causes the eclamptic convulsions. The lesions in the kidneys only contribute to eclampsia by impairing excretion and thus hindering the elimination of the toxic fibrin ferment. Cases in which the outbreak of convulsions is sudden and in which no lesions can subsequently be discovered remain to be explained. Dienst suggests that, owing to the stasis produced in the veins of the lower half of the body by the pressure of the gravid uterus, an excess of prothrombin may be accumulated in them. When this pressure is removed by the emptying of the uterus at birth, the congested vessels are relieved and the general circulation suddenly becomes flooded with the fibrin ferment elements which they contained. Owing to the lack of a corresponding increase of antithrombin, fibrin is formed and toxic symptoms are produced.

To explain cases of eclampsia arising some days after delivery, Dienst points out that with the birth of the child the destruction of the corpuscles in the mother's blood ceases, and the products of degeneration are eliminated either in the lochia or by the kidneys, or even through the process of lactation. But when excretion is inhibited by serious lesions in the kidneys or by suppression of the lochia, then the renewed destruction of leucocytes which accompanies the formation of milk, by giving rise to the production of more fibrinogen, may determine an attack of eclampsia during the puerperium.

The theory of Dienst has a direct bearing on the treatment of eclampsia. If it be correct, then it would seem that the sooner the pregnancy was terminated the better. The increase in leucocytosis is thereby arrested, and the breaking up of the numerous leucocytes into toxic substances ceases. But the author does not favour rapid delivery, both on general grounds and on account of the special risk already mentioned of flooding the circulation with toxic elements by the sudden relief of pressure on the veins. Diuretics, he considers, have only a restricted value, they do not check the formation of toxins, and can only hasten their elimination if the kidneys are sound. He recommends venesection even after delivery, and thinks that curetting of the uterus, not only to remove clots, etc., but also to aid the elimination of poisons by the lochial flow, is useful in cases arising

[1] *Wien. med. Woch.*, No. 25, 1912.

during the puerperium. He considers that operations such as amputation of the breasts and decapsulation of the kidneys do good only through the loss of blood which they cause. As a preventive measure the administration of lemon juice is said to be beneficial. It stimulates the liver to increased formation of antithrombin (Nolf) and diminishes the coagulability of the blood. With a view to preventing congestion in the hepatic lobules, Dienst thinks it advisable in multiparae to give digitalis to strengthen the heart's action, while in primiparae anything which tends to lessen the intra-abdominal pressure—such as purgation, washing out the stomach, or even the spontaneous vomiting of pregnancy—must be regarded as beneficial. The good results which have followed the administration of chloroform and chloral hydrate may, he thinks, be in part due to their dilating the renal vessels and so favouring the excretion of toxins. But as all narcotics, especially those allied to morphine, tend ultimately to produce degeneration of glandular organs, he considers that further investigation as to their effects on the structure and functions of cells is necessary.

"DOCTORS' BOYCOTT" AND POLITICIANS' BLUFF.

UNDER the heading "Failure of the Doctors' Boycott Anticipated" some amazing statements are made by the London correspondent of the *Liverpool Post* and the *Liverpool Echo*. This oracle announces that the Insurance Commissioners have now abundant and clear evidence that they will be in a position to work the medical clauses of the Insurance Act without the co-operation of the British Medical Association. The confiding public is assured that the proposed boycott of the Act is now practically a failure. There has, it is said, been a striking addition to the ranks of the medical men anxious and willing to give the Act a fair trial, and among them, it is added, there are a number of distinguished consultants and "members of what is generally described as the Harley Street school." This phrase is of itself sufficient to show how intimately the inspired correspondent is acquainted with medical matters. He goes on to say that "Mr. Lloyd George is, of course, entirely acquainted with the position which has now arisen—a fact which no doubt explains the equanimity with which he has for some little time regarded the situation." No one has denied the Chancellor the attribute of courage, and doubtless even if his Act should tumble about his ears, *impavidum ferient ruinae*. But to the ordinary person who has not been admitted behind the shrine, it may appear that the correspondent who has been chosen as the medium of this weighty revelation doth protest too much. In the style of the message there rings the note of bluff with which we have become so familiar that it has lost any effect it might once have had. If the Commissioners cherish the belief attributed to them, the "abundant and clear evidence" which they profess to have is a possession peculiar to themselves. The British Medical Association has no evidence which lends a shadow of support to the statement, and the Medical Secretary has taken the earliest opportunity of stating publicly that the Association has no reason to believe that the vast majority of the profession has in any way changed its attitude towards the Act. In so numerous a body it is inconceivable that all its members should be unanimous as to a complicated and far-reaching question such as State Insurance. But we may state confidently that, notwithstanding a few backslidings and defections here and there, the mass of the profession stands firm in its determination to hold aloof from the working of the Act until its reasonable demands are conceded. The insidious attempts that have been made to sow dissension in our ranks have so far signally failed. This latest manœuvre will, we are sure, prove equally futile.

MR. LOCH ON NATIONAL HEALTH INSURANCE.

THE Charity Organization Society has issued the twenty-first edition of that valuable work the *Annual Charities Register and Digest*,[1] with an exceedingly useful introduction by Mr. Loch on "How to Help Cases of Distress." In the discussion of this pressing question he sets down the principles which should underlie true charity, laying special emphasis on the necessity of helping needy men and women to help themselves. "Charity," he says, "for those who are in distress has to open the way to sober living, health, and self-support"; and again, "Charity which seduces the individual from the wise and natural toilsomeness of life, and which does not push him forward to self-maintenance, is the poor man's greatest foe." After reading these statements one turns with interest to a new section in the introduction dealing with National Health Insurance, in the hope that Mr. Loch, out of his full knowledge, will lighten the gloom which still hangs over the National Insurance Act. This expectation is not fulfilled. The writer contents himself with giving us a synopsis of the Act, passing in lucid review the main sections grouped under the following headings: "Who are Compelled to Contribute?" "What are the Contributions?" "What is the Relation to Friendly Societies?" "What are Insurance Committees and their Duties?" "What is the Relation of the Scheme to Hospitals," etc.? Mr. Loch seems to err with many others in thinking that employees who have more than £160 per annum are excluded from the compulsory operation of the Act, forgetting that for the manual labourer there is no wage limit. He corrects this lapse, however, by saying that "the chief exclusion is that of employment with too high a remuneration and otherwise than by manual labour.' When considering the duties of the Insurance Committees he draws attention to Section 63, which deals with excessive sickness among insured persons as the result of insanitary conditions. The successful carrying out of this important and far-reaching section will not be easy, not only because of the inherent difficulties, but because it will lay a heavy hand on vested interests. To those doctors who think that the Act gives them adequate representation on the Insurance Committees and freedom from Friendly Society control, Mr. Loch's remark that "the Insurance Committee will thus be a committee consisting to a predominating extent of the insured persons themselves," must cause some misgivings. And when he adds, "It will be a matter of interest to follow the results of this measure and ascertain whether eventually, like the Workmen's Compensation Act, and possibly the Trades Board Act, it may have the effect of adding to the number of unemployed," we feel that Mr. Loch is in the ranks of the doubters.

ETIQUETTE AND LAW.

IT is important for the practitioner who is threatened with or who commences legal proceedings to draw a nice distinction between rules of etiquette and the rules of law. If he refuse to attend a patient "only that he may conform to tyrant custom" he may find that a court of justice takes a different view of the matter. In a case recently decided in the Clerkenwell County Court the limits of the professional rule that a practitioner shall not attend a patient who has already been prescribed for by another medical man were seriously considered. The facts were simple. The plaintiff, who was one of the medical officers of a friendly society, sought to recover 17s. 6d., his fee for attending a member of the society. He had attended on three days in succession, and then, declaring that the patient was better, had announced his intention of seeing him again a few days later. The patient was suffering from a sore throat. On the evening

[1] *The Annual Charities Register and Digest*. Twenty-first edition. London: Longmans, Green, and Co. and Charity Organization Society. 1912. (Demy 8vo, pp. 1058. 5s. net.)

of the third day the patient's mother became anxious about him, and again saw the plaintiff, who reassured her. Subsequently, however, she called in the other medical officer of the society, who pronounced that the youth had quinsy, and told the mother to get the plaintiff to relieve it. He also told her to tell him that the case was urgent. The plaintiff refused to have anything further to do with the case, as another practitioner had been consulted. He did not agree that the matter was urgent. The second officer relieved the patient, and was paid 17s. 6d. by the friendly society acting for the defendant. In answer to the claim the defendant counter-claimed for 17s. 6d., apparently on the ground that he had been compelled to incur this expense owing to the refusal of the plaintiff to continue his treatment of the case. In giving judgement for the defendant on claim and counter-claim, the judge seems to have taken the view that the plaintiff should have accepted the view of the second doctor that the case was urgent, and should have continued his attendance. He was apparently of opinion that, unless there is urgency, one doctor is not entitled to treat another's patient without his consent: and that, if the patient chooses to consult a second doctor, the first is entitled to discontinue his attendance. He acted on the testimony of the second doctor, who, in the course of his evidence, said: "When there is a serious case, and no time to write letters to the patient's doctor, I think it is quite sufficient to tell him the case is urgent. Then the least he can do is to come and see the case. If it is not urgent, he can blow me up for it." Having regard to the fact that the judge stated that "urgency" was the point in dispute, the case may almost be cited as an instance of judicial recognition of the general custom; but the moral of the case is that the practitioner must not put too strict an interpretation upon the custom if he is the official attendant of the patient. It is interesting to notice that a rule to prevent "poaching" has long been recognized in the legal profession. Thus, with certain limitations, no counsel will appear for a client who has already consulted another member of the bar with reference to the same matter, unless the first counsel consents to waive his rights.

THE POPES AND MEDICAL SCIENCE.

There is a widespread belief, still generally accepted even by educated people, that the Church of Rome has always been opposed to the study of medicine, and that the supposed neglect of scientific research during the centuries which preceded the Reformation was entirely due to the ignorance and bigotry of mediæval Churchmen. To refute this accusation that stout "defender of the faith," Dr. James J. Walsh, has published his striking series of essays on *The Popes and Science*:[1] and to those who still cling fondly to an exploded myth this most interesting and original book will probably be something in the nature of a bombshell. It was high time that some one took up the cudgels in defence of the principal, and in many cases the only, patrons of learning during the Middle Ages; and Dr. Walsh produces a vast and solid array of evidence to show the unhistorical character of the old legends of the suppression of science by the monks. The origin of these legends is easily explained by the hostile attitude adopted by many of the early Reformers, [illegible] unity of blackening the fair fame of the Church they had left; their reckless accusations have been [illegible] who came after them, [illegible] tion; and, as Dr. Walsh unfortunate[illegible]

[illegible] LL.D. [illegible] of [illegible]

and not real opposition on the part of the Popes to science," that we owe the persistent belief in "the supposed opposition between the Church and science." How groundless this belief is may be seen from the most cursory survey of Papal history. Far from suppressing knowledge, the Popes fostered it by every means within their power; and the enlightened interest displayed by them in everything appertaining to the art of healing is proved by the fact that for centuries Italy offered unrivalled opportunities for the study of science in all its branches, and medical students from every part of Europe flocked across the Alps to enjoy the freedom and educational advantages they could not hope to obtain at home. Dissection, generally supposed to be under the ban of the Church, was more practised in Italy than in any other country in Europe, and, says Dr. Walsh, "the nearer to Rome the medical schools were, the more dissection was done in them." It was most common of all in Rome itself, and the famous Bull of Pope Boniface VIII, far from forbidding dissection, as has so often been maintained, is here shown to have no bearing whatever upon the practice of cutting up the human body for anatomical purposes. As a matter of fact, it was directed solely against the popular but eminently unhygienic custom of boiling the bodies of dead crusaders in order that the bones might be carried back from the Holy Land and buried at home. Pope Boniface surely merits praise rather than blame for his prompt recognition of what might have proved a menace to the public health. This care for the temporal as well as the spiritual welfare of those under their care was displayed by many other pontiffs besides Boniface VIII; and it is a significant fact that the first city hospital in the whole of Christendom was founded in Rome by one of the Popes, whilst the modern hospital system owes its being largely to the practical charity of the same man, the famous Innocent III. But this interest in medicine, manifested by so many of the Roman Pontiffs, ceases to be surprising when we remember what Dr. Walsh calls "the most striking feature of the relation of the Popes to medicine."

> If they really were the bitter opponents of things medical . . . then we should expect that either there were no such officials as Papal physicians, or else that the men who occupied these posts were the veriest charlatans, who knew very little of medicine, and certainly did nothing to develop it. As a matter of fact, there is no list of physicians connected by any common bond in history who are so gloriously representative of scientific progress in medicine as the Papal physicians. The faculty of no medical school presents such a list of great names as those of the men who were chosen to be the official medical attendants of the Popes, and who were thus given a position of prominence whilst their discoveries in medicine had a vogue they otherwise could not have attained.

With great justice he continues:

> Could the Popes possibly have done anything more than this for medicine, or shown their interest in its progress, or made people realize better, that while prayer might be of service, every possible human means must be taken to secure, maintain and recover health?

The close connexion which existed for centuries between science and the Papacy was no doubt partly due to the fact that, the universities being ecclesiastical institutions, most of the teachers and nearly all the students were clerics, whose scientific attainments, it is worth noting, did not prevent many of them from reaching high preferment in the Church and enjoying the friendship of Popes and cardinals. Two of the mediæval Popes, Sylvester II and Victor III, had distinguished themselves, before their elevation to the Papal throne, by their knowledge of science, including medicine, whilst the author of a remarkable little book on diseases of the eye, Peter of Spain, one of the most distinguished physicians and scientists of the thirteenth century, ended his days as

Pope John XXI. These facts alone should be sufficient to prove the fallacy of the popular belief in the systematic persecution of science by the mediaeval church, and Dr. Walsh deserves the gratitude of all historians for his fearless exposition of an ancient and groundless calumny.

THE TREATMENT OF CANCER.

In spite of material advances in the knowledge of the pathology of malignant diseases, it has to be confessed their etiology is still an unsolved problem. In view of the lack of exact knowledge as to how cancer and the allied diseases are produced, it is not surprising than an efficacious remedy, other than mechanical removal, is also still the object of search. By "mechanical removal" is meant the removal of the diseased parts together with the surrounding healthy tissues by operative measures, and also the selective removal of the diseased tissues alone by some physical agent, such as Roentgen rays. It is, therefore, interesting to learn that Dr. Adolf Zeller, formerly of Stuttgart, and now of Weilheim, in Würtemberg, has spent some years in attempting to reproduce in an improved form the treatment by means of silicates, which is said to have been instituted by Batty, and of the arsenio-mercurial pastes of Astley Cooper, Hutchinson, and Dupuytren.[1] At first he limited himself to giving the silicates internally to patients who were suffering from cancer. Realizing that a general practitioner has little opportunity of studying a disease and its treatment thoroughly, he, after a period of ten years, left Stuttgart and went to Heidelberg, where he worked under Czerny. His work was interrupted by a serious illness, and he was obliged to leave Heidelberg in August, 1908, to recruit his health. When he had recovered, he took up his abode in Weilheim, a village of some 3,000 inhabitants, where he devoted himself entirely to the investigation of cancer. Before discussing the cases treated in these three periods and the results obtained, it is necessary to mention that Dr. Vincent Czerny writes[2] from Heidelberg to the effect that he, together with some others, investigated the results obtained. In seventeen of the cases microscopical preparations of the tumours were available, and the diagnosis was confirmed by these. In the majority of the patients smooth, healthy scars were the only indications of the disease. Dr. Czerny states that in Heidelberg they had too little experience to speak of the effect of the silicic acid part of the treatment, but he is disposed to believe that the combined treatment is better than the paste treatment alone. He regards the treatment "as extraordinarily remarkable," and invites general practitioners to apply it. The patients in the first period were treated exclusively with silicic acid or one of the silicates. There were 9 cases, but in none was the diagnosis confirmed by microscopical examination. Four of these were superficial growths of the skin of the neck or face, while 5 were mammary cancers. One patient died, the diagnosis was doubtful in 2 others, while in the last 2 Dr. Zeller states that the clinical diagnosis left no room for doubt. Eight of this group of 9 were cured. In the second period 25 patients were treated. Among these no complete cures were effected, although it is stated that the disease was arrested and the growths became smaller. In the third period 57 patients were treated by the combined method. This consisted in giving sodium and potassium silicate in powder form internally for several months, and in applying a paste the composition of which is not set out, but which consists of arsenic and cinnabar, and which is similar to the old Cosmo's paste. Of these 57 cases, 3 patients died, 10 are still under treatment, and the remaining 44 are said to be cured. In 20 cases the diagnosis was confirmed by histological examination. Ten of the tumours are said to have been deeply infiltrating, 22 of the 44 were skin growths of the head, face, or neck, 13 were growths of the nose and nostrils, 3 were breast cancers, 2 cancers of the cervix and three growths of the labia. A successful result by chemical removal applied externally is not altogether rare, and while the fact that temporary removal was effected in all the accessible cutaneous growths is highly satisfactory in itself, it must be pointed out that the time which has elapsed since the applications is too short to speak of cures, some of the periods being only one month. But the complete removal of the growths in the breast cases, and the production of smooth, healthy scars, even if this is only temporary, is certainly a noteworthy result. Professor Czerny will deliver an address on the effect of medicinal treatment of cancer at the meeting of German scientists and medical practitioners shortly to be held at Münster, and the description of Dr. Zeller's treatment will form a very interesting part of his speech. Until we learn more of this treatment, and especially until a very much larger number of cases have been treated in this manner, we must maintain the attitude of reserve which we have hitherto held in regard to the non-operative treatment of cancer and wait for fuller knowledge.

[1] Dr. Adolf Zeller, *Muench. med. Woch.*, August 20th and 27th, 1912.

[2] Introduction to Dr. Zeller's article by Dr. Vincent Czerny, *Muench. med. Woch.*, August 20th, 1912.

CAN THE UNDELIVERED FETUS CRY?

There has recently been some discussion in French and Belgian medical papers about the nature of the *vagitus uterinus*.[1] Is it the fetus or the uterus which causes the remarkable phenomenon occasionally heard before the fetus is delivered? Velpeau once said that even if he had heard them he would not believe in them, that is to say, he would not ascribe them to the fetus. Allard, on the other hand, has published an observation in the *Normandie Médicale* which leads him to believe that the *vagitus* is uttered by the fetus. Let it be remembered, however, that the forceps was used. It was a seventh labour in this instance, and on the three previous occasions the forceps had been applied, apparently on account of inertia. After a first attempt, which proved unsuccessful, he allowed the patient to rest before introducing the instrument once more. Suddenly he heard stifled cries, just like those of a new-born infant under the bedclothes, but the child was still undelivered. At the same time the nurse who was holding the patient's leg cried out, "*On voit bien qu'il s'ennuie, il pleure!*" and the mother drew herself up and exclaimed, "What's making that noise?" The husband, apparently a doctor himself, was present, and also heard the *vagitus*, which was repeated four or five times. The child's movements were vigorous. The forceps was again applied, but the child was born asphyxiated. It weighed over 11 lb. Unfortunately there does not appear to have been any *post-mortem* examination. Sippel, about eight years ago, reported a case of his own in which he undertook version. A pain occurred and he was obliged to stop his manœuvres without withdrawing his arm. Immediately two high-pitched notes were heard, clearly arising within the patient's abdomen. They precisely simulated the cries of an infant. But Sippel noted that at each cry air ran along his forearm engaged in turning, and he distinctly felt the vibrations of a fold of mucous membrane closely encircling his forearm. The current of air ran not from below, but from above downwards. The uterine contraction drove it out, and as it passed the slightly resistant fold the sound was produced. Possibly the *vagitus uterinus* may be explained in a similar way in most, if not all, other cases. There seems usually to be a flabby uterus on the one hand and an obstetrical operation admitting air into its cavity on the other.

[1] Editorial article in *Journ. d'accouchements et revue de mat. et de chir. prat.*, Liège, May 25th, 1912.

THE HOUR-GLASS STOMACH AND CORSETS.

In an article on hour-glass contraction of the stomach S. and J. Nordentoft[1] discuss the view, which has lately been revived in Denmark, that the condition is oftener than not primarily due to pressure by corsets. This theory explains the greater frequency of the hour-glass stomach in women who, according to some observers, constitute 80 to 85 per cent. of the total number of such cases. Harslöff finds a still greater inequality in the distribution of this condition between the sexes, for out of 58 cases which were operated on he found only 1 male, and out of 61 cases in which an hour-glass stomach was found at necropsies he found only 3 males. Gastric ulceration in its severer forms is, on the other hand, commoner in men than in women, and therefore the view that the hour-glass stomach is usually caused by gastric ulceration appears to be at fault. The process by which corsets may lead to the formation of an hour-glass stomach probably consists of a narrowing of the lower aperture of the chest, which favours gastroptosis or, if a strong abdominal wall prevents the downward displacement of the stomach, the kinking of the stomach backwards on its long axis. Such a process occurs either at the junction of the fundus with the body of the stomach, or in the region of the pylorus; and it leads to the adhesion of the two peritoneal surfaces, a crest being formed which projects into the stomach at its lesser curvature. Ulcers may, it is true, form on this crest, when their cicatrization will favour the development of the hour glass, but in such cases ulceration is clearly a secondary factor. The writers recognize two types of hour-glass stomach according as they are produced by corsets or primary ulceration of the stomach. In the first class, the distance between the pyloric and cardiac ends of the stomach is diminished, an acute angle being formed by the kink which involves the lesser as well as the greater curvature of the stomach, or even the lesser curvature alone. In the second class, the distance between the two ends of the stomach is unaltered, and the constriction is almost confined to the greater curvature. Rovsing, of Denmark, goes so far as to state that while the hour-glass stomach is occasionally congenital or primarily due to gastric ulcer, it is, as a rule, caused by corsets or belts, which contract the lower aperture of the chest. In most of the 10 cases which he has reported, the constricted portion of the stomach was lined by a normal mucous membrane, ulcers being seldom found covering this area. Rovsing's interpretation may be true enough for his own cases, but in the majority of cases reported by others the constricted area was seldom covered by normal tissues. Thus, out of 133 cases collected by the writers, there were only 14 in which no gastric ulcers were found. Whatever the cause may be, the hour-glass stomach which has given rise to symptoms can be effectively treated only by an operation. Numerous operations have been devised, and, owing to the various complications, such as pyloric stenosis and adhesions between the stomach and neighbouring viscera, which may be found at the operation, no one operation is suitable for every case. In the case of a woman, aged 53, whose stomach was shown by the *x* rays to be constricted in the middle by an extremely narrow isthmus, the writers performed gastro-enterostomia antecolica anterior, combined with an entero-anastomosis. This operation effected not only a communication between the two sections of the hour glass, but it also provided a new passage from the stomach into the intestine, a large part of the stomach in its most dependent area being supplemented by a portion of small intestine. The patient, whose condition had incapacitated her from all work, made an uneventful recovery, her weight rising from 38.5 to 46.5 kilos, and symptoms, such as indigestion, disappearing completely.

[1] *Hospitalstidende*, 1 and 2, 1912.

THE FIELDS OF VISION IN TABES.

On July 11th, 1911, Professor Fuchs delivered a lecture to the American Ophthalmological Society at New London, which is published in the *Archives of Ophthalmology* for September, 1911, upon "The Field of Vision in Tabetic Atrophy of the Optic Disc." The first class of cases noted were those, estimated by Uhthoff as about 2 per cent. of all cases of tabetic atrophy, in which there is a central scotoma. Fuchs believes that they are more common than Uhthoff's figure. He thinks that this central scotoma is not due to a simultaneous syphilitic retrobulbar neuritis, but is an essential part of the tabetic process. It is nearly always bilateral and is at first accurately central. It develops by joining the already enlarged blind spot of Mariotte. Eventually it assumes the shape of a horizontal ellipse. At first only the perception of red and green are abolished, but ultimately the scotoma becomes absolute. Even when it is relative we can, by Bjerrum's method, detect islets of absolute blindness. The scotoma not only becomes absolute, but increases in size. At the same time peripheral contraction of the field, especially for colour, sets in, and eventually colour perception may completely fail. The peripheral contraction becomes irregular, an indentation appears, and a large area becomes totally blind. These peripheral changes serve to distinguish a tabetic case from one of tobacco amblyopia in which peripheral vision for form and colour is unaffected. It is more difficult to separate these tabetic cases from one of syphilitic retrobulbar neuritis, especially as this condition may be associated with loss of reflexes and an Argyll-Robertson pupil. Fuchs knows of only two distinctive features which favour the diagnosis of syphilitic neuritis. First of all the influence of appropriate treatment which succeeds in arresting the loss of sight, and, secondly, the fact that it retrobulbar neuritis the pallor of the disc is likely to develop at a later stage. Another exceptional type of alteration of the field of vision in tabes is bitemporal hemianopsia. These cases are rare. The phenomenon indicates a lesion of the decussating fibres situated at the inferior side of the chiasma. It occurs in the case of a tumour pressing upon the inferior surface of the chiasma, as in tumours developing from the pituitary gland. It may also result from a local inflammation, mostly syphilitic, of the developing membranes of the brain at the same place. Such an inflammation has also been supposed to cause the bitemporal hemiopia in tabes. Fuchs admits that this may here and there be the case, but in general he believes that we have to do with the same kind of grey degeneration which is characteristic of tabetic atrophy in general.

MEDICAL WOMEN IN GERMANY.

It is stated that there are now 175 qualified medical women in Germany. Particulars as to 125 of them have been collected by Frau Dr. Stelzner. The results of her inquiry show that of that number 78 are unmarried, and 47 married (including five widows). Of the married women 34 have given up practice; two of them, however, who are wives of doctors, assist and act for their husbands. Considerably more than half the number are married to doctors. Two began their studies after marriage. The women who practise are distributed in the cities of Germany as follows: Berlin, 30; Munich, 7; Frankfort-on-the-Main, 5; Hamburg, 3; Düsseldorf, Breslau, Karlsruhe, Heidelberg, and Bad Elster, each 2; while a number of other places have one each. Most of the women doctors in Germany practise as specialists, especially in diseases of women and children. During the last few years the chances of medical women have steadily become more favourable in Germany. They often secure posts in hospitals, institutes, and asylums. Those entering the profession may, it is said, count with fair certainty that they will be able to earn a sufficient income within a year or two of qualification.

TWINSHIP AND FAME.

In a paragraph headed "From Triplets to Sextuplets," which appeared in the JOURNAL of April 6th, 1912, p. 802, reference was made to Dr. Kaiser, of Dresden, who stated that he knew of no famous man who had a twin brother. The question had been referred to our contemporary, *Notes and Queries*. It appears that the same query had already been raised in that useful serial in 1862, owing, as now, to an assertion, identical with Dr. Kaiser's, made by Dr. Simson in the *Edinburgh Medical Journal*. Simson was not aware of a single instance in which a twin had distinguished himself intellectually. The Rev. A. B. Grosart demurred to this assertion, pointing out that Henry and Thomas Vaughan, twins born on April 17th, 1622, both distinguished themselves. Since Grosart wrote his observations both have been immortalized by Sir Sidney Lee in his *Dictionary of National Biography*. Henry was the "Silurist," so called because a native of the district anciently inhabited by the Silures, which included Brecknockshire, where H. Vaughan was born. In 1645 he was practising as a physician in Brecknock, but his fame was won in the realm of poetry. Thomas, his twin brother, became an alchemist, but wrote some poetry of acknowledged merit. We doubt, however, if the brothers Vaughan reflect great glory on twinship. With the Scotts it is otherwise. Lord Stowell and Lord Eldon were "pigeon-twins," each entering the world with a sister. William Scott, "hostman" or coal fitter of Newcastle, father of the famous pair, had three children by his first wife and thirteen by his second. The latter bore him twins three times: William (afterwards Lord Stowell) and Barbara (1745), John (afterwards Lord Eldon) and Elizabeth (1751), and, about 1754, a son and daughter stillborn. Barbara lived to the age of 78, but Elizabeth died a fortnight after her birth. The most distinct feature about the Scotts is that they were both "pigeon-twins" and therefore not uni-oval. We know that in the case of the one-yelk twins they are always of the same sex. We also know that one at least is necessarily exposed to conditions which may more or less retard its development, and may greatly prejudice the other twin. Acardiac and all "Siamese" twins, two-headed fetuses and the like, are of the uni-oval and uni-sexual class. It is not certain, however, that the cerebro-spinal system is necessarily prejudiced when one uni-oval twin attains maturity, nor, indeed, is it certain when both do so. There is therefore no embryological nor psychological reason why even a "true twin," as an embryologist would call it, should not live to become famous. As for pigeon-twins, they are independent beings, and it is only in parturition that they are in jeopardy. When, however, we turn back to the original question, the reply is that, as far as records can teach us, twins of both kinds very rarely attain fame. The Vaughans, being both males, were possibly true one-yelk twins, but twins of the same sex may be developed from separate ova, and consequently are not troubled and endangered by a common placenta, hence the Vaughans more probably came under this class. The Scotts were clearly of the two-yelk type. Still, again, we know of no other famous "pigeon-twins." Out of the only two pairs clearly authentic, one doctor is to be found. Has any other celebrated member of the medical profession's twinship been overlooked? In conclusion, registration of births was faulty down to recent times, so a case or two of a twin who made his mark in the world may have escaped the vigilance of biographers.

It is stated in the American journals that President Taft has signed the Shirley Bill, which makes more drastic the pure food and drugs law as applied to patent and proprietary medicines. "The bill prohibits, under a heavy penalty, the publishing of claims for 'cure alls' that cannot be substantiated, or which have no foundation in fact. The legislation is of importance to medicine manufacturers, and gives the Government a much greater authority over the trade in nostrums."

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

THE third meeting of the State Sickness Insurance Committee appointed by the Annual Representative Meeting, 1912, was held on September 5th, and sat, with an interval of half an hour for lunch, from 10.45 a.m. to 9.20 p.m.

Mr. VERRALL, the Acting Chairman of the Committee, not being present, the PRESIDENT OF THE ASSOCIATION (Sir James Barr) was elected to the chair for the meeting. The members present were: *England and Wales:* Dr. R. M. Beaton (London), Dr. T. M. Carter (Westbury-on-Trym), Dr. Major Greenwood (London), Dr. S. Hodgson (Salford), Miss Frances Ivens (Liverpool), Dr. Constance Long (London), Dr. E. J. Maclean (Cardiff), Dr. James Pearse (Trowbridge), Dr. E. O. Price (Bangor), Mr. D. F. Todd (Sunderland), Mr. E. H. Willock (Croydon). *Scotland:* Dr. J. Adams (Glasgow). *Ireland:* Dr. J. S. Darling (Lurgan).

APPOINTMENT OF CHAIRMAN OF COMMITTEE.

Dr. J. A. MACDONALD, Chairman of Council, was elected Chairman of the Committee.

CO-OPTION TO THE COMMITTEE.

Dr. Lauriston E. Shaw (London), and Mr. Herbert Jones, Honorary Secretary to the Society of Medical Officers of Health (Hereford), were co-opted as members of the Committee.

QUESTIONS ARISING IN CONNEXION WITH SANATORIUM BENEFIT.

The greater part of the day was taken up with the consideration of correspondence in connexion with various questions concerning the administration of sanatorium benefit.

Relation of Medical Officer of Health to Post of Chief Tuberculosis Officer.

It was reported to the Committee that, acting on instructions of the Acting Chairman of the Committee, an advertisement had been inserted in the BRITISH MEDICAL JOURNAL for a tuberculosis medical officer for Deptford at a salary of £300 per annum rising to £350, the successful candidate being attached to the Public Health Department and being required to work under the administrative control of the M.O.H. In connexion with this advertisement and with the question of principle involved in it, the Committee considered several letters which had been received and which had influenced Mr. Verrall in sanctioning the insertion of the advertisement. These letters pointed out that there were some districts in which the amount of work in connexion with tuberculosis would not justify the payment of a salary of £500 per annum, and advised the Committee that an attempt to insist on such a salary would, if successful, be a great temptation to local authorities to insist on the tuberculosis officer undertaking treatment, so lessening the amount of work open to the local practitioners. After careful consideration of the whole question in the light of the following minutes of the Representative Meeting which the Committee had previously decided should be regarded as cardinal points—

> That the chief tuberculosis officer should be a whole-time officer and confine himself to diagnosis and consultative work. The rest of the staff of the dispens[illegible] possible, be formed of local medical practitioners serving on a rota or otherwise;
>
> That the commencing salaries for whole-time medical officers engaged in the Tuberculosis Service should be for junior or assistant whole-time medical officers not less than £300 per annum, and for senior whole-time officers not less than £500 per annum. These salaries in all cases must be exclusive of travelling and other official expenses—

the Committee, with two dissentients, passed the following resolution:

> That the Chief Tuberculosis Officer should be a whole-time officer, and should confine himself to diagnosis and consultative work, but, nevertheless, the State Sickness Insurance Committee recognizes that in certain cases it may be expedient for the medical officer of health to perform the *administrative* duties of such office [illegible] and better arrangements can be made; and, the

inopportune for the Association to insist at the present time on advertisements accepted for insertion in the JOURNAL in all cases implying the appointment of a chief tuberculosis officer at a salary of £500.

The action of the Acting Chairman in sanctioning the insertion of the Deptford advertisement was approved.

Mileage Fees in Connexion with Domiciliary Treatment.

Various correspondents having drawn attention to the fact that the scale of fees issued by the Committee in connexion with the domiciliary treatment of tuberculosis contained no reference to mileage, the Committee resolved that the fee should be 1s. per mile beyond the first two miles.

Capitation Fee for Domiciliary Attendance.

It was reported that suggestions had been made by various Provisional Insurance Committees that a capitation equivalent might be accepted for the fees authorized in connexion with domiciliary treatment. In view of the following Minute 205 of the Representative Meeting, the Committee resolved by 8 to 2 that it could not advise the acceptance of a capitation fee.

> That the payment to be made to medical practitioners for domiciliary attendance on patients certified to be suffering from tuberculosis shall be on a scale of fees and not by capitation.

Provision of Medicines in Connexion with Domiciliary Treatment.

Inquiries having been made as to whether the scale of fees laid down for domiciliary treatment included the provision of medicines, the Committee passed the following resolution:

> That the Committee is of opinion that the question of whether medicines should or should not be provided for the fees adopted in respect of domiciliary attendance is one for local decision, as the Representative Meeting arrived at no decision on the subject.

Practitioners and Tuberculin Treatment.

Strong remonstrances having been received as regards the assumption which it was alleged that the Association had made—namely, that tuberculin treatment was a matter which any practitioner could carry out without any special experience—the Committee directed that correspondents be informed that the Committee had always assumed that tuberculin and other forms of treatment would be carried out by general practitioners in association with the Chief Tuberculosis Officer.

Salaries of Chief Tuberculosis Officers in Ireland.

Correspondence was received as to the advertisement in certain Irish counties of appointments as Chief Tuberculosis Officers at salaries considerably below the minimum established by the Representative Meeting.

It was also reported that the Joint Committee of the British Medical Association and Irish Medical Association had agreed that salaries not below £400 per annum might be accepted in Ireland for the post of Chief Tuberculosis Officer. The Committee expressed its disapproval of this action of the Joint Committee, and its regret that the salaries reported as having been offered for these important posts had secured any applicants.

Schemes for Administration of Sanatorium Benefit.

A large number of schemes for administration of sanatorium benefit had been forwarded for the consideration of the Committee, but it was found to be impossible to deal with more than a few of them. The remainder will receive consideration on September 12th.

RESIGNATION OF CONSTRUCTIVE PROVISIONS.

The Committee had before it a report from a considerable number of Provisional Medical Committees who had considered either "weak" or "dangerous" provisions, in view of an early resignation [illegible] appointments concerning insured persons. The report showed that considerable progress had been made in the organization of these areas, though a few had not replied to the inquiries of the Committee. Various questions of detail were considered and a draft letter to the local committees dealing with the whole question was ordered to be prepared for the next meeting of the Committee on September 12th.

SUGGESTED RESIGNATION OF MEDICAL APPOINTMENTS IN THE TERRITORIAL FORCE.

The Committee had brought to its notice a report which had obtained considerable publicity, that a Provisional Medical Committee had recommended that medical officers in the Territorial Force should resign their commissions as a protest against the medical provisions of the Insurance Act. The Committee expressed its strong disapproval of such a suggestion as being calculated to alienate public sympathy from the profession.

PUBLIC MEDICAL SERVICE SCHEMES.

The Committee considered the minutes of four meetings of the Public Medical Service Subcommittee, which recommended three schemes for adoption by the Committee and transmission to the Divisions. The Committee spent a good deal of time in considering these schemes in detail, and approved two of them after making certain amendments. It was found impossible to deal with the third, but it was arranged that this should be done at the commencement of the meeting on September 12th, in order that those schemes which were approved might appear in the SUPPLEMENT of September 14th (see page 290).

RESIGNATIONS FROM ADVISORY COMMITTEES.

It was reported that since the last meeting of the Committee information had been received that the following had resigned their positions on the Advisory Committees, in accordance with the decision of the Representative Body: Dr. R. C. Buist (Dundee), Dr. T. B. Costello (Tuam), Mr. Herbert Jones (Hereford), Dr. J. E. Moorhouse (Stirling), Professor R. Stockman (Glasgow), Dr. Lauriston E. Shaw (London), Miss A. H. Boyle (Brighton), Dr. Constance Long (London), Dr. A. Mercer Watson (Aberdeen).

The following have intimated their intention not to resign at present: Dr. C. Addison, M.P., Dr. J. Robertson (Birmingham), Professor Sims Woodhead (Cambridge), Sir John Collie (London), Sir T. Clifford Allbutt (Cambridge), Dr. G. Reid (Stafford), Dr. A. Hamilton (Luton), Dr. G. Belcher (Birmingham), Dr. A. Latham (London).

No reply has been received from the following: Dr. Adam Fulton (Nottingham), Dr. W. E. Thomas (Ystrad Rhondda), Mr. A. Crook (Norwich), Dr. R. A. Lyster (Winchester), Miss M. C. Murdoch (Hull), Right Hon. M. F. Cox (Dublin), Dr. Hugh Jones (Dolgelly), Mr. D. N. Morgan (Bridgend), Dr. J. D. Jenkins (Rhondda).

CENTRAL INSURANCE DEFENCE FUND.

The Committee received a report on the Fund showing *inter alia* that since the Annual Representative Meeting the amount guaranteed had increased by £12,788. The Committee expressed the hope that a more rapid increase would occur after the termination of the holiday season.

AN epidemic of poliomyelitis is reported in Southern Sweden. The number of deaths from the disease since January 1st is 1,459.

IT is some testimony of the progress of the garden city movement that the publication of a periodical named *Garden Suburbs, Villages, and Homes*, which first put in a fleeting appearance some six years ago, has now been recommenced. The current issue contains some forty or fifty reproductions of pictures and photographs, which between them give a good idea of the garden suburbs and villages in being, while the letterpress is by various well-known writers. From one paper it appears that in 1906 there were only four societies engaged in promoting the movement, and only three of them possessed any property; whereas there are now fourteen, who between them possess 647 acres, providing room, it is estimated, for 6,595 habitations. It is published by the Co-Partnership Publishers, Ltd., 3 Southampton Row, London, price 6d. net.

Ireland.

(FROM OUR SPECIAL CORRESPONDENTS.)

SANATORIUM BENEFITS.

THE following statement from the Conjoint Committee of the British Medical and Irish Medical Associations has been sent to the daily press, explaining the attitude of the medical profession in Ireland towards the sanatorium benefits of the National Insurance Act.

The Sanatorium Subcommittee of the Conjoint Committee desire to assure the public that the medical profession in Ireland are anxious to give their most hearty co-operation in the administration of the sanatorium benefits, and to take their full share in the prevention of tuberculosis. The chief reason for the resignation of the medical members of the Irish Advisory Committee was due to the fact that the regulations for the conduct of the sanatorium benefit were far advanced before the medical members of the Advisory Committee were consulted. The Irish Insurance Commissioners gave the Conjoint Committee a promise that if each Local Medical Committee send forward four names the two medical members of the Insurance Committee would be selected in each case from these four names. In some instances this pledge was not fulfilled, and in these cases only were the medical members asked to resign. The subcommittee desire to point out that the regulations for the administration of sanatorium benefit have not yet been issued by the Irish Insurance Commissioners, and that pending the issue of these regulations and definite arrangements under them there is no barrier to the attendance on tuberculous patients or to the signing of certificates recommending patients for sanatorium benefits. The committee trust all necessary treatment and certificates will, until then, be readily granted.

DOMICILIARY TREATMENT OF CONSUMPTION IN CO. CORK.

The Secretary of the Cork County Insurance Committee was deputed to wait on the Secretary of the County Medical Association with a view to arranging the fees to be charged by the profession for attendance on consumptive patients in their homes. It was decided that the terms of the profession should be 10s. for an inspection and report, and 5s. per visit for persons recommended for domiciliary treatment. It appears this raises the question of the available finances of the Insurance Committee, as their funds would be about £4,200, and there are about 80,000 insured persons in the county. The Commissioners are to be communicated with on the subject.

PEAMOUNT SANATORIUM.

A visit of inspection was paid recently to the Peamount Sanatorium by the Countess of Aberdeen, the members of the Provisional Committee of Superintendence, and others. The sanatorium is nearly completed, and it is expected that it will be ready for the reception of patients very shortly. One of the chalets was almost ready, a second practically completed, and the third is in an advanced stage. There are twelve open-air chalets for those patients undergoing treatment which necessitates sleeping in the open-air. The members of the Provisional Committee expressed their great satisfaction with the location of the sanatorium and with the arrangements for the reception of tuberculous patients.

MEDICAL CONTRACT PRACTICE IN LIMERICK.

The Honorary Secretary, Limerick Federation of Friendly Societies, recently published a long letter in the daily papers with the object of laying before the Irish public a statement of the attitude of the societies in that city towards the new medical regulations which were issued by the Limerick doctors last May. After recapitulating the six rules drawn up by the medical profession in Limerick, the letter goes on:

As the press recently has shown the views of the Medical Association and its critics, a sober *resumé* of the facts from the societies' standpoint may have the dual advantage of impressing the profession in Ireland with a sense of the serious responsibilities incurred should a fight be forced on the societies, and the certain impossibility of such a fight ending in any other way than absolute defeat and confusion of the members of the profession; secondly, it may serve to encourage societies placed in remote parts of Ireland to resist, although no course may now seem possible except submission.

As the result of a round-table conference between the Federation and the Medical Committee, the date when the new regulations would come into force was postponed from July 15th to January 1st, 1913. It is stated in the letter that there is no instance in which any medical officer of a society in Limerick has ever complained of his remuneration or of the conditions under which he not alone accepted, but fought to secure the appointment. A member of a friendly society, before the Insurance Act date, paid in Limerick on an average 6s. per annum for medical attendance only, which included his dependents under 16 or parents, and about 2s. 6d. extra for medicine. The letter also states that the Federation has been informed that medical benefits were withheld from Ireland at the request of the medical profession, and that this has not been contradicted. The simple explanation is that such a monstrous falsehood has never been suggested before, and the Honorary Secretary of the Conjoint Committee of the British Medical Association and Irish Medical Association has immediately denied it in a letter to the press. The letter concludes by saying that "the societies are in no case anxious to provoke a quarrel and to make difficulties for an amicable understanding to be arrived at, but the societies have adopted that attitude not from any sense of weakness or lack of organization, but knowing the strength and justice of their case and the ease with which the Medical Association and its threats of boycott and intimidation can and will be set at defiance." Federations of friendly societies are in course of formation in Belfast, Dublin, Cork, and other places, and at an early date a convention of these federations is to be held in Dublin.

INSANITY IN IRELAND.

The annual report of the Inspector of Lunatics on the District, Criminal, and Private Lunatic Asylums in Ireland for 1911 shows that the insane in establishments on January 1st, 1912, numbered 12,868 males and 11,787 females, an increase of 261 in the twelve months. These numbers do not include the insane wandering at large or those residing in private dwellings, with the exception of Chancery patients and a few others who are specially returned. This increase was 61 less than the average increase for the preceding ten years. Since 1880 there has been a decrease of 956 in the pauper lunatics in the workhouses. The number of the insane under care has increased from 250 per 100,000 of the population in 1880 to 553 per 100,000 in 1911. The average rate of increase for the past five years has been over 5 per annum, whereas the average rate during the entire period was over 10 per annum. The distribution in the various counties is very unequal, varying from 2.6 per 1,000 in County Down to 9.2 in Waterford. Upon the whole it appears that insanity tends to prevail in the agricultural and rural counties. The order of the four provinces is: Munster 6.1 per 1,000, Leinster 6.0, Connaught 5.2, and Ulster 4.2. There is no appreciable connexion to be detected between the density of the population and insanity, nor can any distinct relationship be traced between the latter and the rateable valuation of the land. As regards pauperism, however, the case is different, as there would appear to be a close relation between the amount of pauperism and insanity in any district; thus Waterford, which gives the highest rate of insane in institutions, gives also the highest but one of pauperism, and all but two of the counties which stand over the average in pauperism were also over the average in insanity. It would appear that the influence of emigration in increasing insanity has been exaggerated, as when the emigration rate and the insanity rate are compared, county by county, it is found that there is no marked degree of relationship between them. Alcoholic addiction occurs in two forms, not necessarily distributed alike, namely, drunkenness and chronic alcoholism, of which the former, unfortunately very prevalent in Ireland, is undoubtedly much the less serious as a cause of insanity. From the statistics available regarding drunkenness, it would appear that there is practically no relationship between the distribution of insanity and drunkenness in this country; and the total amount of chronic alcoholism is so small that it can have no great influence on the insanity rate. There is some slight relation between the general distribution of insanity and the percentage of admissions ascribed to alcohol, so far as they can be compared, but the general conclusion which may be safely drawn from the facts is that alcohol possesses comparatively small importance as a cause of insanity in Ireland.

DUBLIN HOSPITALS REPORT.

The annual report for the year 1911–12 of the Board of Superintendence of the Dublin Hospitals has been issued recently. This report only refers to those hospitals—nine in number—which receive grants from Parliament. The report states that all these hospitals were visited and fully inspected, and it was found that the wards were clean and well ventilated; every provision was made for the treatment, comfort, and welfare of the patients, and the several buildings were kept in good repair and in a sanitary condition. Inquiries were made respecting the current expenses of each hospital and the system of purchasing, storing, cooking, and issuing supplies. The nursing arrangements were also examined, as also the means available in each hospital for the extinction of an outbreak of fire and for the escape of the inmates in the event of such an occurrence. In an appendix are tables showing the work done and dealing with the cost of working each hospital. A study of these tables, taken in conjunction with the evidence obtained on their visits to the several hospitals, enables the members of the board to report that the hospitals fulfil in an economical and thorough way the objects for which they were instituted. They conclude by saying, in regard to the Insurance Act, that its probable effect on charitable institutions is still speculative, but that it is plain that many questions of great importance will arise on which they will be in a better position to report next year.

CENSUS RETURNS.

According to the census returns recently issued for Belfast the population has increased during the last ten years by 10.82 per cent. The one-roomed tenements number 448. The number relieved by the Poor Law has risen since 1901 from 1 in every 96 of the population to 1 in every 94. The number of emigrants during the last ten years was 32,804. In County Antrim there has been a decrease in the population of 2,226. The number of persons relieved by the Poor Law has fallen from 1 in every 63 of the population in 1901 to 1 in every 79 last year. In County Down the population has decreased by 1,586. Though there was an increase in eleven county districts and a decrease in only six county districts, the number relieved by the Poor Law has fallen in the last ten years from 1 in every 75 of the population to 1 in every 116. In the past ten years there have been 15,709 emigrants from the county.

The population of Connaught has decreased by 5.56 per cent. The number in receipt of Poor Law relief has fallen from 1 in every 55 to 1 in every 77 during the last ten years. The number of persons returned in 1911 as being able to speak the Irish language was 217,087, or 55.5 of the total population; of these, 9,367 could speak "Irish only." In Munster the population has decreased by 3.78 per cent. Those relieved by the Poor Law have decreased from 1 in every 29 to 1 in every 41 of the population. The number able to speak Irish is 228,694, or 22.1 per cent. of the total population; of these 2,766 could speak "Irish only."

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

EARLY TRAVELLERS IN SCOTLAND.

A PAPER on this subject was read at a recent meeting of the vacation course series of lectures at the University of Edinburgh by Mr. R. Scott-Moncrieff, W.S. He began with Froissart's references to the complaints of the French knights on reaching that country, and to the primitive fare and general want of comfort. Aneas Sylvius Piccolomini, afterwards Pope Pius II, who visited Scotland in the reign of James I, was wrecked near Dunbar. He was washed ashore, and made a vow to walk to the nearest sanctuary barefoot. This turned out to be the Kirk of White Kirk, and Piccolomini had to [illegible] frost on the ground. As a result he [illegible], which never left him, and he had to be carried on the return journey in a litter. Mr. Scott-Moncrieff quoted Piccolomini's famous account of geese that grew on trees, of which three that fell into the water swam away, while those that fell on the ground never came to life. He also told how the poor received doles of stones, which contained some fatty matter that burned; the "stones" referred to were evidently coal. He misconstrued the law relating to crows. He stated that the crow was so rare, that any tree on which it built belonged to the king. The opposite was the fact, the crows being so numerous that the law confiscating any tree in which they built was devised with a view to the restriction of their number. Ayala, another early visitor, gave a characteristic sketch of James IV, who, he stated, was courageous even more than a king should be. "He is not a good captain, because he begins to fight before he has given orders." Peder Swave, a Dane, described a great many wonders he had seen in Scotland. Not far from Edinburgh, he wrote, "there is a mountain which constantly smokes like Etna. I saw it myself." He also described how, at a monastery, oil flowed out of a well, probably the Balm Well of St. Catherine, near Burdie House. Fynes Moryson, an Englishman, in his account of Edinburgh, commented on the poor fare even of the better classes, and their want of what, from the English point of view, were considered the necessaries of life. Sir Antony Weldon (1617) expressed wonder that "so brave a prince as King James should be born in so stinking a town as Edinburgh in lousy Scotland." Sir William Brereton complained of the noisome condition of the houses. He also states that he saw the floating islands of Loch Lomond, where the fish were without fins. Richard Francis, who came first with Cromwell and afterwards returned on an angling tour, was, perhaps, the first to eulogize the scenery of Scotland; his book therefore deserved the honour it received in 1821, when it was edited by Sir Walter Scott.

MEDICAL CONDITIONS IN THE HIGHLANDS.

After hearing evidence in Kirkwall on August 26th (see BRITISH MEDICAL JOURNAL, August 31st, page 518) the Medical Service Committee crossed over to Lerwick on August 27th. On the way they were able to effect a landing on Fair Isle to verify on the spot information which had previously been supplied as to the arrangements for medical attendance and nursing for this isolated community. Most interesting evidence was given by the Queen Victoria Jubilee Institute's nurse resident on the island, and by the teacher and missionary, as to the means adopted for the treatment of cases of severe illness or accident in the absence of the medical man. On August 28th a meeting of the committee was held at Lerwick, at which representative witnesses, including medical practitioners, from all parts of the extensive Shetland group of islands were present. Here, as in Orkney, the outstanding difficulties were the poverty of the bulk of the people and the inaccessibility of many of the islands, and more particularly of the distant island of Foula, except in fair weather, a condition comparatively rare, mainly on account of the abnormal strength of the tides. Several witnesses gave vivid accounts of the dangers encountered by the doctor in endeavouring to bring medical aid, and of the suffering frequently entailed by his being storm-stayed. The majority were of opinion that the betterment of the existing conditions must be effected, not so much by increasing the number of medical practitioners as by providing a seaworthy motor-boat for the doctor, small hospitals, better and more ready means of communication by telephone, and by increasing the number of fully qualified nurses, and also the doctor's income. Attention was also drawn to the strong contrast between the medical and the ecclesiastical provision in the islands, and especially in the island of Yell.

UNDER the will of the late Mr. Graham Vivian, of Clyne Castle, Swansea, a legacy of £10,000 is to be paid to the funds of Swansea Hospital.

THE King has granted Mr. Robert John Gordon, M.A., M.B., B.Ch., of the Irish Presbyterian Mission, licence and authority to accept and wear the insignia of the Third Class of the Order of the Double Dragon, conferred upon him by the Emperor of China in recognition of valuable services rendered as Plague Prevention Medical Officer at Hulan, Heilungchiang.

Correspondence.

THE HISTORY OF MEDICINE.

SIR,—In the second notice of Dr. Neuburger's *History of Medicine* the author is said to assert that: "In the Hippocratic Oath, the highest ethical standard of antiquity, the physician is enjoined to refuse to give his aid to the incurable. On the other hand, Christianity made it a moral duty for a doctor to give the benefit of his skill even in such cases."

There is no such injunction in the oath, and the statement seems rather a libel on the ancient physicians. For, though the rhetorical author of the *De Arte*, who was probably not a physician, repeatedly states that medicine does not take in hand incurable diseases, this seems merely his way of saying that a scientific physician recognizes the supremacy of natural causation and claims no supernatural power.

It may be a hit at the temple miracles, so strangely ignored by all the Hippocratic writers, and it is certainly parallel with the famous saying of Herophilus: "The most perfect physician is he who distinguishes between the possible and the impossible," and with Plato's remark that the wise physician, like the wise pilot, "knows intuitively his own powers, and attempts only what is within their limits" (*Republic*, p. 361). That the ancient physician was enjoined to do his best, even for incurable patients, is evident enough from the *De Articulis*, § 58, though he is warned of the loss of reputation he may incur among the vulgar; and that he did not avoid patients unlikely to recover, or even the publication of his failures, is clear from the cases recorded in the Hippocratic collection, the great majority of which end fatally. On the other hand, the danger and disgrace which may be incurred by undertaking desperate cases and the advisability of refusing to have anything to do with them are commonplaces of mediaeval medical writings, though, doubtless, doctors of all ages and religions have considered it a moral duty to relieve suffering so far as they were able.—I am, etc.,

Torquay, Aug. 31st. E. T. WITHINGTON.

⁂ Dr. Burgess of Hoylake, and Dr. R. J. Ryle have also written to us on this subject. We wrote in our haste, and the error is the less excusable since we published an article on the Hippocratic Oath, in which the full text was given, in the JOURNAL of May 4th, 1912 (p. 1032). The passage referred to is in *De Arte*, which is included among the Hippocratic writings. We quote what was said in the article: "Apparently the Hippocratic physician deduces from this realization of the limits of art—a conclusion foreign to our ideas—that help should be withheld from the incurable. Medicine is to him the art 'whereby sufferers may be entirely freed from their ailments and severe attacks of disease mitigated, but which should be refused to those persons who are already overwhelmed by illness, since it is clear that in such cases art can effect nothing.' [The quotation is from Neuburger.] This teaching held sway to the Middle Ages, and probably much later. Mondeville expressly enjoins his pupils not to undertake difficult or hopeless cases, on the ground that this would damage their reputation."

THE MENTAL DEFICIENCY BILL.

SIR,—Your temperate leading article of August 24th emboldens me to offer a few explanations.

1. Only an inadequate and therefore misleading report of my paper has appeared in the press reports of the Catholic Congress. If you were willing to print the paper it might provide a platform of discussion for those who wish to see all the data of a difficult subject. If this is impossible your readers might be glad to have a sober scientific statement of our position.

2. We admit a "problem" of feeble-mindedness, inasmuch as feeble-mindedness is often coupled with neglect, cruelty, or destitution. But we do not agree with those who propose that certain difficulties, which are largely economic or ethical, should receive a drastically eugenic solution.

3. The vexed question of "natural rights," to which so much of your leading article was devoted, is not essentially medical, but ethical. It requires a fuller and more expert treatment than I can command in this letter.

4. The leading article admitted that the definitions of the bill are defective, and that eugenists (whose theories are the theories of the bill) desire "fuller knowledge."

We merely add to this frank admission the wish that until such fuller knowledge is reached punitive legislation should be stayed.

The bill has already passed its second reading. No authoritative body has been so alert to the medical, economic, social, legal, and ethical principles at stake as to question it, until the National Catholic Congress at Norwich, admittedly a body with much expert knowledge, condemned the bill. And as the bill was like to be hurried through Parliament, the condemnation had to be loud enough to be heard.—I am, etc.,

Preston, Sept. 2nd. VINCENT M'NABB.

SIR,—I hope that the controversy into which you have entered with Dr. Mooney will be continued by other disputants, and that the medical profession will consider seriously the position which will be created by the Mental Deficiency Bill should it ever happen to become an Act.

In your leader you state that this bill "has for the most part met with the approval of those who are interested in the social welfare of the people." I am afraid that these distinguished persons do not bring their approval very forcibly before the public; for though while in Paris last May I happened by chance to read of the introduction of this bill, since my return to London I have met hardly any ordinary individual who has heard of it, much less learnt anything of its provisions.

It appears to me that your ready acceptance of this bill is akin to the error that has been perpetrated in so much of recent legislation—namely, a desire to take a short cut to the millennium. You say that "the eugenists are to-day mainly searching for fuller knowledge"; and everybody would be willing that they should do so in a reasonable manner. But if that search means an experiment by Act of Parliament before the eugenists have sufficiently completed their investigations or adequately formulated and expounded their views, I venture to think that the *corpus vile* of the public is justified in resenting their attentions.

I sincerely trust that I am right in thinking that even a latter-day House of Commons will decline to accept the absurd definition of feeble-minded persons given in the bill; and I hope that the subject will be investigated and discussed for a much longer time before the medical profession is called on to decide whether a person is capable of competing on equal terms with his fellows.—I am, etc.,

London, W., Sept. 3rd. CHAS. BUTTAR.

FORCIBLE FEEDING OF SUFFRAGE PRISONERS.

SIR,—I strongly protest, as I did upon a former occasion, against Sir Victor Horsley and others using the JOURNAL to exploit their political views. Whatever reasons may be adduced as to the expediency in publishing preliminary reports, the statement, "Full details of what steps were sometimes taken by the officials in different prisons cannot be ascertained," conclusively proves this preliminary report to be chiefly founded upon *ex parte* evidence and rushed into print with the intention of creating party political animus, certainly contrary to the better interests of the JOURNAL, its motto being, "*Audi alteram partem*."

Interesting as the results of the forcible feeding of suffrage prisoners may be, neither the statements of a Minister of the Crown nor the reasons which induced suffrage prisoners to refuse their food are topics for a purely non-political journal.—I am, etc.,

Bletchley, Sept. 1st. P. BROOME GILES.

Sir, I am sure that all who have read the "report" on pp. 505–8 in the BRITISH MEDICAL JOURNAL of August 31st must feel greatly surprised and exceedingly pained that such medical men as Mr. Moullin and Sir Victor Horsley could concoct and authorize a paper containing such grave charges against brother practitioners, and such a partisan summary of the statements of prisoners of that kind. As long as the law exists which declares suicidal attempts a crime, so long must we agree that forcible feeding is emphatically necessary for people who adopt starving, instead of a "bare bodkin," to threaten their existence, [illegible]

not to take their quietus; and it is certainly as necessary and ordinary a treatment to preserve their health as any other means with irresponsible people. Whatever discomfort it may cause, it is not dangerous, and Mr. Ellis Griffith was perfectly right in saying, "If pain was suffered, it was *entirely* due to the resistance offered to what was necessary treatment." The "physical and mental torture" was entirely due to the subjective feelings of these women, who were all abnormal excitable individuals, with mental instability. Their conduct and "statements" show this clearly and unmistakably to any one. All the "facts" and "written statements" of such people must be largely discounted, and I, for one, do not believe them, especially the absurd and vindictive "statement" that a wardress used a cup with a broken edge, put so as to imply, with a *suggestio falsi* that in one case such a cup was sawed along the gums. It happens opportunely that some apropos remarks from an expert, Dr. M. S. Wood, appear on p. 671 of the *Lancet* of August 31st, which every one will endorse:

> Refusal of food is generally an indication of severe mental disturbance. . . . When a patient, from whatever cause, refuses food it is unwise to delay forcible feeding, as ample diet in itself constitutes a valuable therapeutic measure . . . The passage of a soft tube causes no real pain nor injury.

As to the unseemly, unprofessional, unfounded, and entirely uncalled-for reflections, made with such an arrogant assumption of superiority, on the skill and judgement of the medical officers concerned, *whose mouths are sealed*, the nature of them may be shown by one charge, namely, "preventing for three or four hours access to the lavatory," when, as a matter of fact, utensils for this are in every cell; and it will strike all who have had to deal with such a class of patient, that the greatest praise must be given to the medical officers and all concerned, that, in the carrying out of most unpleasant duties towards such refractory, violent, and irrational prisoners, no more untoward results have followed; and Mr. McKenna deserves the best thanks of the community in resisting senseless, sentimental, class clamour; and in maintaining the discipline of places which are, after all, for equality of treatment for evildoers, not theatres for rehearsals by "normal-minded women" of insane acts, and "playing to the gallery" in so very lamentable and poor a way. The only good to be hoped for from such a (in every respect regrettable) report is, that suffragettes seeing it may cease to do evil and learn to do well.—I am, etc.,

Winchester, Sept. 1st. WILLIAM MORTON HARMAN.

SIR,—In the "Report on the Forcible Feeding of Suffrage Prisoners," published in the JOURNAL of August 31st, such a lurid picture is drawn of the horrible effects of this method of administering nourishment that many of us who have been in the habit of adopting it daily in our practice are appalled with the thought of the devastation which we must have caused! Yet when we consider the report maturely our spirits revive once more. We understand that it is the handiwork of devotees of the Zolaesque school, whose habit is to drag in every unpleasant detail in order to heighten effect, excluding everything that tends to diminish the sombre hue of tragedy which they are desirous of obtaining. Working on these lines, what a heart-rending description one might give of the passing of the catheter or of the opening of an abscess! It is indeed curious to reflect, too, how little observant medical men are of the dreadful results which their treatment appears to bring about. For many years the tube has been passed in order to introduce food into the stomach and to wash out the stomach in cases of dyspepsia or of poisoning; yet these dire effects have been overlooked. When, however, a certain number of members of society contravene the laws of the community, and for the protection of the community and its property are haled off to prison, results follow this process of introducing the tube out of all proportion to those which have been observed previously.

It may be frankly admitted that occasionally a patient will, after being fed by the nasal or by the œsophageal tube, complain of irritation of the passages; or, again, there may be sometimes a temporary spasm of the glottis, especially on the earlier occasions when feeding takes place which may necessitate withdrawal of the tube and discontinuance of the process for the time. The latter condition is, however, rare. Retching and even vomiting are of course to be looked for in certain cases, especially in those with sensitive fauces, but this seldom gives rise to any danger if the patient's head is turned to one side. If the tube is well oiled—and particular care should be exercised in this respect—it is difficult to realize why there should be such profound irritation of the passages as the writers of the report describe; and when one considers the strain put upon the fauces of the average person by hot, bulky, or imperfectly masticated boluses which they swallow, tube feeding may quite properly be looked upon as more likely to be restful to the throat than otherwise.

The whole "report"—though it is not so much a report as a carefully planned piece of special pleading—is unconvincing to any one who is practically acquainted with forcible feeding. To such practical acquaintance the compilers lay no claim. It is likewise as marked an example of the *post hoc* reasoning as one could wish not to see; and it seems that if women after forcible feeding suffer from any complaint, from "pruritus" to "nightmares," *ergo* it is the feeding that has done it.

You closed your columns, sir, to the discussion of this matter after a previous pontifical utterance by the same writers. I trust that now you will allow that discussion to take place, in order that an opportunity may be given of traversing further this amazing "report."—I am, etc.,

London, S.E., Sept. 2nd. HUBERT J. NORMAN.

SIR,—Having read in this week's BRITISH MEDICAL JOURNAL the account of the forcible feeding of the suffrage prisoners, I am surprised that medical men can be found to carry out such operations, which I consider to be degrading them to the level of common executioners. Not that I sympathize with the foolishness and misguided tactics of those who resort to such subterfuges as hunger strikes to escape justice. All this forcible feeding, however, and the violence necessary to enforce it, defeat their own ends, as the victim is thereby enabled to pose as a martyr. But why all this pother? Why not let the prisoners starve themselves if they wish to do so? A few days', or a week's, starvation would do them no harm, or at least less harm than forcible feeding; and directly it appeared, in the judgement of the medical officer, to be endangering life, they could be released on the understanding that immediately they appeared in public, before the expiration of their sentence, they would be re-arrested, when they could repeat the process of starvation if they felt disposed. In the meantime, on their discharge their friends would take them in hand and doubtless feed them up, but it would be probably some time before they would be able to renew any aggressive action, and they would be obliged to complete their term of imprisonment, if not in gaol, at all events in their own homes, where they would be a charge on their friends, and thus save the expense and trouble of having them in prison.—I am, etc.,

Bentham, September 2nd. ROBERT BRADLEY.

SIR,—While filling our JOURNAL with harassing details of the results of suffragists struggling with their warders, would it not be well to point out in general terms what should be done with a prisoner who refuses food?—I am, etc.,

Felsted, Essex, Sept. 3rd. DONALD SMALLPEICE.

SIR,—With regard to the article on forcible feeding written by three sympathizers with women suffrage, which is published in the JOURNAL of August 31st, I desire to point out that we require more impartial evidence than that which is contained in the "report" before we can credit the very grave charges made against the medical officers of His Majesty's prisons.

The JOURNAL is not a political organ, and therefore a discussion of the question is out of place in its columns. The treatment of the suffragists is a question between them and the Government, and it is one with which the medical profession has nothing whatever to do, and unproved charges of "malpractices and torture" should not be made in the JOURNAL of the Association against doctors who are doing their duty, which in the case of the suffragists must be a very unpleasant one.

If a case of malpraxis can be made out against the prison medical officers, the suffragists have their remedy,

but it is obvious that the BRITISH MEDICAL JOURNAL is not a suitable organ for the ventilation of suffragist grievances. —I am, etc.,

London, Sept. 3rd. A. G. WELSFORD.

SIR,—In the lengthy and interesting preliminary report on the forcible feeding of suffrage prisoners, by Dr. Savill, Mr. Mansell Moullin, and Sir Victor Horsley, published in your issue of August 31st, there are certain statements made and opinions advanced that invite examination and discussion.

Under the heading "Effects on the Nervous System" the authors depart from the clinical nature of the previous paragraphs, and make various statements of a more general nature, of which I select the following in the hope that there may be some interchange of views regarding the correctness of the opinions they indicate.

"These women are normal individuals who go to prison as political offenders." Are they normal individuals? Are the actions, for which they have been committed to prison, those of normal women? Is it the case that they go to prison as political offenders?

"We merely point out that on admission the prisoners are in a normal mental condition." Do the authors mean the normal mental condition of suffrage prisoners, or the normal mental condition of the average British woman?—I am, etc.,

Inverness, Sept. 3rd. T. C. MACKENZIE.

SIR,—I have read the preliminary report of Dr. Agnes Savill, Mr. Mansell Moullin, and Sir Victor Horsley in your issue of August 31st, and would be glad of your courtesy in allowing me to present an aspect of the case that seems to me of paramount importance, as affecting the honour of the medical profession.

Three consultants, after due investigation, have stated certain facts bearing on the medical treatment of prisoners in H.M. Prisons, which facts have not up to the present been denied. Further, it appears that this medical treatment has been administered by medical colleagues acting under orders with a two-fold purpose: (1) To prevent starvation; (2) to prevent these prisoners from terminating their sentences, and in most cases, after a medical examination, to ascertain, not whether the prisoner is too ill to take food naturally, but whether she is strong enough to stand the ordeal. From medical and other evidence, the physical condition of the prisoners so fed (either with or without resistance) is considerably worse than before feeding—for example, sepsis of nose, throat and mouth, lung conditions, dyspepsia from large, cold quantities of food introduced into contracted stomach, etc.

Obviously, then, forcible feeding in these cases has not prevented starvation, or at least cannot be said to have been administered with the result of improving the physical condition of the patient who is unwilling or unable to take food, for it has actually reduced her to a condition of collapse, rendering further forcible feeding, or, indeed, detention in prison, unsafe. Further, forcible feeding has the result (unintentional, of course), of terminating the sentence prematurely.

It seems, then, that the twofold purpose, (1) to prevent starvation, (2) to prevent termination of sentence, is not fulfilled, and I cannot see the *raison d'être* of prison doctors continuing to administer the treatment, unless, indeed, they are called upon by the special nature of their appointments to administer treatment that can only be regarded as punishment, in the shape of physical and mental torture.

If this is so, the time is surely ripe for the medical profession, through its organization, to protest against the imposition on its members of duties that are distinctly unprofessional, for it is probably difficult, if not impossible, for any individual medical officer to refuse to carry out the instructions of his authority. I fail, however, to recall in this connexion any other branch of the medical service where the necessity for the imposition of any form of medical treatment does not lie solely with the medical officer, whose decision is final. Apparently in the case under consideration, the prison doctors take their orders for this special form of medical treatment from their lay authority, which is surely an abrogation of their privilege to prescribe or withhold treatment unbiassed by any consideration, except the need of health.

Are prison doctors called upon to render purely medical services, and are they in order, as members of the medical profession, in administering a form of treatment to the patients under their care which rapidly reduces these to a serious condition of invalidity? Even in Russia, during the savage flogging of prisoners, the prison doctor stands by and raises his hand when in his opinion the prisoner has had enough. Here, apparently, the prison doctor administers the torture himself, and then decides from the prisoner's physical condition when she has had enough of his treatment.

I have before me a copy of the oath taken by Arabian doctors at the Kasr-el-Ainy Hospital at Cairo, which begins and ends:

> I swear in the name of God, the Most High, and of His Sublime Prophet Mohammed, whose Glory may God increase, to be faithful to the laws of honour, honesty, and benevolence in the practice of medicine.
>
> * * * *
>
> May I be respected if I remain faithful to my vow. If not, may I be covered with shame and be despised. God is my witness to what I have said. The oath is finished.

Surely the doctors of the West will not yield to their colleagues of the East in high aim and purity of motive!—I am, etc.,

Harrow-on-the-Hill, Sept. 10th. BARBARA TCHAYKOVSKY, M.D.

TUBERCULIN TREATMENT.

SIR,—In my letter of August 17th in answer to Dr. Prest I dealt with his statement of August 10th. Referring to tuberculin administration, Dr. Prest says:

> The chief desideratum at present would seem to be to reconcile the conflicting schools of thought on this subject.

He instanced Dr. Nathan Raw's work and views and my views: and I merely showed how these conflicting views could be explained. In his last letter Dr. Prest merely quotes the opinions of Dr. Arthur Latham and the work of Drs. G. B. Hawes and Cleveland Floyd.

These views are further evidence as to the value of tuberculin *in small doses*. It is too obvious that in the cases of Drs. Hawes and Floyd a similarity of results without or with tuberculin (used in small doses) is to be expected, because the small doses have little or no permanent effect. In America, at the Phipps Tuberculosis Dispensary (see BRITISH MEDICAL JOURNAL, September 16th, 1911, page 635) the maximum dose is stated to be 0.005 gram T.R. Dr. H. Floyd gave a maximum dose of 0.2 up to 8 mg. of T.R. Even 8 mg. of T.R. can only mean 0.008 gram of T.R., which is quite too small to have any effect. According to my views tuberculin fails in small doses, and therefore the evidence of Drs. Hawes and Floyd merely supports me. On the other hand, large doses succeed, and I cannot discuss the subject with Dr. Prest till he brings forward evidence proving that tuberculin used in large doses has failed.

Further, he says:

> I was desirous of trying to find out whether it was safer in difficult cases to begin with relatively large or relatively small doses.

I may tell Dr. Prest that not only in difficult but in easy cases it is always right to begin with relatively small doses. Neither I nor any one else, so far as I know, has ever thought otherwise.

Then Dr. Prest says:

> The difference in the ideas of sanatorium physicians and doctors at dispensaries is probably due to the different type of case dealt with.

He seems to forget that a large proportion of the cases we are treating at the dispensary are but failures of sanatorium physicians. Dr. Prest is taking for granted the very point that needs proof, and my work proves that so long as the disease is tuberculosis, tuberculin treatment is the best. The *difference of type* he speaks of is probably due to a *different disease*, especially an intercurrent mixed infection.

Dr. Prest refers to Professor Sahli's book. I have read this book of 120 pages, 80 of which are devoted to a fanciful disquisition upon the action of tuberculin, and the remainder to the details in regard to the use of Beraneck's tuberculin. In the 120 pages there is not one single line of evidence to show that Beraneck's tuberculin is useful, and I would refer Dr. Prest to the report upon Beraneck's

tuberculin issued by the Gesundheitsamt of Berlin. We have all to learn about tuberculin treatment and its action. Perhaps Dr Prest has to learn as much as any of us.

Facts are more valuable as evidence than fancies. I will give two facts:

1. A doctor long associated with sanatoriums lost his health. He was advised by several physicians to go to the seaside for change of air. He went, and returned worse rather than better. He was then examined by several physicians, and active trouble was discovered, with tubercle bacilli in the sputum. He was advised to have sanatorium treatment; he did so, and was worse after the treatment. He left the sanatorium and went home. In despair he came to me, and I found evidence of active disease in the third stage, in spite of sanatorium treatment when the disease was early. He has since had tuberculin treatment, and admits himself that tuberculin treatment has done him more good than any other. How does Dr. Prest classify this type?

2. A young girl with active disease was sent by a governor of Mount Vernon Hospital to this hospital for treatment. In spite of the governor's interest this girl was refused treatment, and again in despair the governor applied to me. I treated this active case (with tubercle bacilli in the sputum—rejected by the Mount Vernon Hospital) with tuberculin alone. The disease is arrested, tuberle bacilli have disappeared, and the governor took the trouble to send the sputum to the Mount Vernon Hospital for examination on three different occasions, and always received the answer, "No tubercle bacilli present." Will Dr. Prest also classify this type?

I merely mention these cases because a doctor was the victim in one instance, and the governor of Mount Vernon Hospital can vouch for the truth of my version in the second instance.

Lastly, will Dr. Prest kindly inform me what are the biggest doses of tuberculin he has used at one dose, and the form of the preparation? We may then know where we are in the discussion.—I am, etc.,

W. CAMAC WILKINSON, M.D., F.R.C.P.,
September 3rd. Director Tuberculin Dispensary.

THE CAMPAIGN AGAINST TUBERCULOSIS.

SIR,—It is of the utmost importance that the national campaign against tuberculosis should be launched on right lines. To use the machinery of the office of the local medical officer of health may be the easiest course, but it is not the best one.

Agreed, consumption is an infectious disease, but it cannot, therefore, be dealt with in exactly the same way as other notifiable diseases; and the medical officer of health, already overworked, is not of necessity an expert on diseases of the chest.

What is required is a whole-time tuberculosis officer, who is a recognized expert, to act as consultant in friendly co-operation with the local family practitioner in the combat with this scourge.

That, clearly, is the proper line of attack, and not the relegation of the whole matter to a department, which—important ally though it be in improving the public health—is, in the matter of tuberculosis, in many instances, out of touch with the actual treatment of patients.

Medical officers of health may be experts in diagnosing infectious diseases in the ordinary acceptance of that term; but the fact that tuberculosis has recently, and rightly, been included in the list by official decree does not endow this important service with a special training in diseases of the chest. They cannot become specialists in a moment.

Efficiency in this matter can only be attained by separating the duties of the tuberculosis officers from those of the medical officers of health.—I am, etc.,

J. WEBSTER WATTS,
Manchester, Aug. 30th. Secretary, National Medical Union.

OPERATIONS FOR GLAUCOMA.

SIR,—In reply to Major Elliot's letter I have to point out that we use the word "home" in different senses. When I indicated that Major Elliot went "home," I meant that he returned to the place where he ordinarily resides—namely, India. Major Elliot uses the word "home" in a restricted and conventional sense, and by "home" he means the United Kingdom. There is, of course, no objection to such a use of the word provided the convention is clearly understood or definitely stated. This point being made clear, I have now to call attention to the fact that my first operation by simple trephining was done on February 5th, 1909. That I was doing trephining operations was perfectly well known both in Edinburgh and in London by April of that year. Major Elliot returned to Madras in June, 1909, and did his first operation on August 2nd, 1909. So far as I am aware, Major Elliot's first communication to the *Ophthalmoscope* was in December, 1909, or nearly a year after I had done my first simple trephining operations.

I have obtained excellent and permanently good results by simple trephining. Some I have now had under observation from 1909, and they are still good, but on one or two occasions the success was not all that I could desire, and so for certain patients I have now altered the method of procedure by combining with the trephine operation a cyclodialysis.

Some day or other I may let such ophthalmic surgeons as are interested and as are possessed of open minds, and who do not shut themselves up rigidly to one form of operation, know why I sometimes make this addition. I feel sure that I am not in error in thinking that operative methods should be altered to suit special requirements.

Now, as regards publications in the *Ophthalmoscope*, I regret that Major Elliot has not seen his way to accept my statement that I do not see the *Ophthalmoscope*. I would not have made that statement were it not perfectly true. On one occasion one of my assistants said to me that a contributor to that journal had published an account of an operation for glaucoma which operation was the one that I had been doing as occasion required since February, 1909. I read the article to which he called my attention, but, so far as I remember, I have not had the advantage of seeing any other of Major Elliot's communications to the *Ophthalmoscope*.

Lastly, as to trephining in the neighbourhood of the ciliary body. Not many years ago all junior surgeons were warned by their seniors as to the extreme, almost fatal, danger of wounding the peritoneum in abdominal surgery. Such fears have been shown to be absolutely groundless. Similarly, a wound in the ciliary body of a reasonable amount is not followed by serious consequences if it be made absolutely aseptically.—I am, etc.,

Glasgow, Sept. 5th. FREELAND FERGUS.

MEDICAL MISSIONS, S. P. G.

SIR,—Can any of your readers kindly help us by suggesting a suitable man to be travelling secretary of the Medical Missions Department of the S. P. G.—*either* to undertake office work and devote a certain proportion of his time to speaking at meetings, etc., *or* to give practically his whole time to attending missionary exhibitions and doing deputational work? In either case the post would offer a splendid opportunity for useful service; and in either case the ideal man would be a doctor in holy orders, who has had some experience of medical mission work abroad and is not too old to adapt himself to new circumstances. It is not a *sine qua non* that our new secretary should be possessed of all these qualifications, but it is essential that he should be very keen about missions, and an earnest, spiritually-minded man. He must also be a good speaker and organizer, and in the former case, at any rate, have some business capacity. For further information please see advertisement, p. 49.

We are greatly in need of a competent helper in the medical ward at missionary exhibitions—some one who is capable of giving interesting demonstrations or practical addresses on medical missions. Until we succeed in getting a secretary who can undertake this work or a permanent deputation, we should be grateful for temporary assistance at exhibitions.

The Medical Missions Fund of the S. P. G. is quite distinct from the General Fund of the society, and is administered by a special committee largely composed of medical men and women. It is steadily growing, but at present it is utterly inadequate to meet the urgent appeals for medical help constantly received from abroad.—I am, etc.,

E. H. MOSSE,
Chairman, Medical Missions Committee, S. P. G.
St. Paul's Rectory, Covent Garden, W.C.,
Sept. 10th.

Obituary.

CLINTON THOMAS DENT, M.A., M.C.CANTAB., F.R.C.S.,

SENIOR SURGEON, ST. GEORGE'S HOSPITAL; VICE-PRESIDENT THE ROYAL COLLEGE OF SURGEONS; CHIEF SURGEON TO THE METROPOLITAN POLICE.

To a wide circle of friends the news of the death of Clinton Dent, on August 26th, must have come as a painful shock, for he was apparently in his usual health when he began his summer holiday, and his fatal illness—a virulent pure septicæmia, possibly due to oral sepsis—lasted little more than a fortnight. He was the eighth child and fifth son of Thomas Dent, and was born on December 7th, 1850, at Sandgate. He was educated at Eton and at Trinity College, Cambridge, where he took the ordinary B.A. degree in 1873. Subsequently he examined in surgery for many years, and was made Hon. M.C. in 1899. He entered the Medical School of St. George's Hospital, and after holding the usual appointments was elected Assistant Surgeon in 1880, and for a time was Joint Lecturer on Physiology in the Medical School. In 1895 he became full Surgeon, and at the time of his death was Senior Surgeon and Chairman of the Medical School Committee. He was also for many years Surgeon to the Belgrave Hospital for Children, which owed much to his constant guidance and generosity. In 1904 he undertook the congenial duties of Chief Surgeon to the Metropolitan Police, thus serving in the same capacity as his former teacher and colleague, the late Timothy Holmes.



Photograph by] CLINTON THOMAS DENT. [*Elliott & Fry, Ltd.*

Ample private means, which sometimes interfere with professional activity, had no such paralysing influence on Dent, and merely enabled him to concentrate his energies on worthy objects. He took an active part in the medical societies of London; he served as Secretary (1901–4) to the Royal Medical and Chirurgical Society, before which he read papers on "Four Hundred Cases of Amputation" (1890, with W. C. Bull), "The Behaviour of a Tendon Ligature" (1891, with S. Delépine), "Amputation of the Entire Upper Extremity for Recurrent Carcinoma" (1898), "Congenital Hypertrophic Stenosis of the Pylorus and its Treatment by Pyloroplasty" (1903, with E. Cautley), and at the time of his death was President of the Surgical Section of the Royal Society of Medicine. He was also Secretary and Vice-President of the Medical Society of London, and in 1908 delivered the annual oration on "The After-Results of Injuries," in which he embodied some of the experiences derived from work among the Metropolitan Police in connexion with the difficult subject of traumatic neurasthenia. As Hunterian Lecturer at the Royal College of Surgeons in 1905 he dealt with "Congenital Hypertrophic Stenosis of the Pylorus" and on "The Forms of Softening of Fracture of the Bones occurring in Childhood and Youth." It is to be regretted that these lectures were never published, for he had paid much attention to both of these subjects, and in the second lecture collected a number of original observations, and brought forward evidence to show that mollities ossium might be a sequel of infective disease. He was a most fastidious and critical writer, and has left behind a number of original and interesting notes and lectures in manuscript. For some years he was lecturer to the nurses of St. George's Hospital. These lectures, which were fully written out, he sometimes spoke of publishing, but this was never accomplished. He had long been interested in John Hunter, and in 1901 published a beautifully got up pamphlet as an explanatory notice of the picture of "John Hunter leaves St. George's Hospital, October 16th, 1793," by A. D. McCormick, R.B.A. It is sad that the material he collected will never see the light in any Hunterian Lecture of his; some of these data he generously gave to a previous orator, but this by no means exhausted his store.

At the Royal College of Surgeons, of which he became a Fellow in 1877, he was a member of the Court of Examiners (1902–1911), had been on the Council since 1903, and at the time of his death was senior Vice-President. His friends cannot but feel disappointed that his life has been cut short before it was crowned by the honour of the Presidency, for which he was so manifestly suited by his scholarly knowledge of surgery, his striking personality, and his exceptional powers of oratory. The latter was remarkably shown by his delivery without a note of the introductory address to St. George's Hospital twenty-five years ago on "The Nature and Significance of Pain," which was afterwards printed.

In December, 1899, he went out on his own initiative to the South African war, where he acted as correspondent to this JOURNAL. On his return he delivered an address on "The Wounded in the Transvaal War" before the Royal Medical and Chirurgical Society.

As a surgeon he was conscientious, careful, and at times, especially in the face of unexpected difficulties, extremely brilliant. He was not inclined to operate unless he was convinced of the need and that benefit would result; and he was always anxious to make a diagnosis before rather than at the operation. In spite of his critical attitude to his own work, his professional writings covered a wide field, for, in addition to those already mentioned, he translated and edited *Billroth's Clinical Surgery* for the New Sydenham Society (1881), contributed various articles to Heath's *Dictionary of Practical Surgery*, wrote on "Traumatism and Insanity" in Tuke's *Dictionary of Psychological Medicine* (1892, vol. ii), "The Development of London Hospitals during the Nineteenth Century" (*Lancet*, 1898, ii), "Insanity and Surgical Operations" in Allbutt's *System of Medicine*, "The Surgery of the Heart" in Musser and Kelly's *System of Treatment* (1911), and "Intestinal Obstruction" in Latham and English's *System of Treatment* (1912, vol. ii). His wide acquaintance with various forms of athletics prompted him to write an

interesting article on "Periostitis following Muscular Exertion" (*Practitioner*, 1897).

Between 1904 and 1911 death or premature retirement deprived the active staff of St. George's Hospital of four on the surgical and three on the medical side, and at the moment it is difficult to realize all that this further loss entails. Dent was a staunch and generous friend to the school, an ideal and absolutely impartial chairman of committees, a wise leader, and a charming colleague. Though the time limit would have necessitated his retirement from the staff in 1915, he was fully in sympathy with young men, and thus was a successful and graphic teacher.

As an Alpine climber Mr. Dent had so long been famous that the world at large thought of him in this, rather than in his professional, capacity. He made the first ascent of the Aiguille du Dru after eighteen unsuccessful attempts, the first ascent of the Rothhorn from Zermatt, and of other Alpine peaks, but his greatest achievements were in the Caucasus, where he not only climbed the peaks, but explored the range. He undertook in 1889 the sad duty of searching for the bodies of W. Donkin and H. Fox, who were killed on Koshtantau, in 1888; he had gone out with them and would have shared their fate had it not been that he was prostrated by illness. He wrote a charming book, *Above the Snow Line*, published by Longmans in 1885, edited and wrote a large part of the volume on *Mountaineering* in the Badminton Series (1892, third edition 1900), contributed largely to *The Alpine Journal*, and gave a Friday evening lecture at the Royal Institution "On the Influence of Science on Mountaineering" (1895). He also gave two juvenile lectures on "How Mountains are Made and Destroyed" before the Society of Arts in 1897. He joined the Alpine Club in 1872, was elected to the Committee in 1874, was Secretary (1878-1880), Vice-President (1884), and President (1887). It is curious that Sir Alfred Wills, who was the third President of the Club (1863–1865), also entered into the valley of shadows early in August. Dent was the first and only President of the recently formed Association of British Members of the Swiss Alpine Club. He was an expert photographer, and often exhibited the fine effects which he had obtained in the Alps and Caucasus, especially at the Graphic Society of St. George's Hospital, of which he was at one time President. He had an extensive collection of photographs of patients, and last year gave a cinematograph demonstration of gastric peristalsis in hypertrophic stenosis of the pylorus before the Section for Diseases of Children of the Royal Society of Medicine. He had wide interests, was a member of the executive committee of the Athenæum, belonged to many social clubs, and leaves numerous friends. Earlier in life he was fond of acting, wrote some farces, and under the title, *Fruit and Blossom*, adapted Pailleron's *Étincelle*.

H. D. R.

The following tribute was circulated throughout the Metropolitan Police District on August 27th by the Commissioner, Sir Edward Henry, G.C.V.O., C.S.I.:

It is with deep regret that the Commissioner acquaints the Force of the death of the chief surgeon last evening.

A singularly able man, he devoted to the Metropolitan Police, from the time of his appointment in 1904, his whole-hearted efforts. The Police Medical Service has been greatly improved under his care and guidance, and those who have been brought in touch with him by sickness will long remember the personal and kindly interest he took in every case. The Commissioner feels that he has lost an able and fearless counsellor in all medical questions affecting the wellbeing of the Force.

(Signed) E. R. Henry.

The memorial service, held on Friday, August 30th, at St. Peter's, Vere Street, was largely attended by friends and by representatives of the Royal College of Surgeons (Sir Rickman Godlee), the Royal Society of Medicine (Sir H. Morris), the Metropolitan Police, the Alpine Club, St. George's and the Belgrave Hospitals; and the burial at Kensal Green Cemetery was followed by hundreds of policemen who voluntarily came to show their respect.

By order of the Commissioner of Police, the body was carried into the church at Vere Street by men of the C Division, and at the cemetery it was carried to the grave by men of the X Division.

An Old Colleague writes:

In the death of Clinton Dent the profession deeply mourns the loss of a great personality—a personality which made itself felt in all that he said and in all that he did. Throughout the whole of his very active life Dent was always "up and doing." He was a man of great force of character, of wide and comprehensive views, absolutely unbiassed by petty jealousy or party spirit, both in his professional work and that—and it was great—which lay outside it. A voracious reader, he had acquired an extensive and accurate knowledge of many subjects connected and unconnected with his profession as a surgeon. All that he read he inwardly digested; in all that he did he was earnest, thorough, and scrupulously conscientious. To employ the expression "a right judgement in all things" may be strong language in the case of any human being, but it may be truthfully averred that in a delicate or difficult question the greatest respect was invariably paid to Dent's judgement. His opinion never failed to carry weight, because it was universally accepted that he never spoke at random or expressed an opinion without careful consideration of the point in debate.

Such attributes made him an ever helpful and valuable colleague in his various fields of action, whether it were as Surgeon and Governor of his hospital, in his office in Scotland Yard as Chief Surgeon of Metropolitan Police, on the committee of the Alpine Club, or in the less important associations with which he was connected.

He combined in a marked degree both theory and practice. He was an enthusiast in everything that he undertook, whether it was work or whether it was play. To his superabundance of energy and activity of thought it was due that in lecturing, and even in ordinary conversation, his words at times followed one another with so much rapidity that it was difficult for a listener to grasp his meaning and occasionally to distinguish his words. But in his prepared speeches or addresses it was a real pleasure to hear him. They were always good. None of those who heard his introductory address at the opening of the session at St. George's Hospital on "The Nature and Significance of Pain" (delivered without a note of any kind) are likely to forget the impression that it made.

It was not all mere brain work with Dent. He was a man of many accomplishments. As a photographer he was unsurpassed; as a mountaineer he had few equals. His pictures of the High Alps and the Caucasus show him to have been a true artist; they formed an interesting and pleasing group in many an exhibition. His professional attainments and his contributions to literature and science have already been set forth and may well be omitted from this memoir.

As an after-dinner speaker Dent was peculiarly attractive by reason of his manner and his matter. The speeches he made sparkled with wit and humour; otherwise they gratified the more serious members of his audience.

As a host he had few peers. One of his great delights was to entertain a few friends at his dinner-table; most pleasant dinners they were. It was on such occasions that he displayed his knowledge of a vast variety of subjects, and it was realized by his guests to what an extent he made himself master of them. His house was filled with art treasures—ample evidence of his good taste in silver plate, furniture, pictures, embroidery, and what not.

Dent was in all respects a well-read man, and the results of his reading in conjunction with his originality illumined his conversation. But it was during the later years of his life that what may be termed his chief work was done—from the time, that is to say, when he was appointed Chief Surgeon to the Metropolitan Police. From the date of that appointment in 1904 his heart and soul were in his work in Scotland Yard, and most excellent work he did there. This office is no sinecure, but to Dent, so far as one could judge, it was almost child's play, so inexhaustible was his energy, so great his ability to solve a difficulty. He rendered yeoman service to one of the most important departments of municipal London, and his name will be intimately associated with many recent improvements in the organization of the Force. He was popular with the divisional surgeons, and was liked by the men.

With his evenly balanced mind, he avoided mistakes arising from hasty conclusions. He was shrewd in matters of business, but scrupulously honourable in his dealings

with men. As a consequence, he secured to himself the utmost confidence in his integrity of all with whom he came into contact. He was a clever, able, upright man, and he was a staunch friend. Echo answers *Qualis erat!*

SIR WILLIAM SINCLAIR, M.D., M.R.C.P.,

PROFESSOR OF OBSTETRICS AND GYNAECOLOGY, VICTORIA UNIVERSITY, MANCHESTER.

We regret to announce the death of Sir William Sinclair, Professor of Obstetrics and Gynaecology in the Victoria University of Manchester, which took place at Manchester on August 21st.

William Japp Sinclair, the son of Alexander Sinclair, was born at Laurencekirk, Kincardineshire, on March 6th, 1846. He was educated at the public school, Laurencekirk, at the Aberdeen Grammar School, and at the Aberdeen University. He took the M.A. degree with honours in natural science in 1869, and graduated (M.B., C.M.) with honours in 1873. In the latter year he was appointed Resident Medical Officer at St. Mary's Hospital, Manchester. Subsequently he was House-Surgeon at the Manchester Clinical Hospital for Women and Children for two years. In 1875 he went to Vienna to study obstetrics and gynaecology; took his M.D. degree at Aberdeen, and was appointed Honorary Physician to the Manchester Southern Hospital for Women and Children.

For many years after the death of Professor John Thorburn (1886), Sinclair, the only consultant on its staff, was in charge of the women's work of the Southern Hospital. He was its professional mainstay, and contributed very largely towards its successful work, with its somewhat limited accommodation and resources. He was instrumental in arranging for the regular instruction of monthly nurses and midwives in the small maternity department, and the home patient district of the hospital. Whilst Professor he did a certain amount of clinical teaching there, but the hospital was not large enough for certification, and most of the students attended the larger, and much older rival institution, St. Mary's Hospital. When the Southern and St. Mary's Hospitals amalgamated, Sinclair retained his post as Honorary Physician to the St. Mary's Hospitals, as they became, until his death. It was mainly through his influence that the Board of Management of the Southern Hospital obtained from the Victoria University a gift of land, on which it was proposed to build their new hospital. This gift was made on the condition that beds should be reserved for the professor of midwifery and for the lecturer on diseases of children. Under the deed of amalgamation the university retained their rights to beds in the combined hospitals.

He was a very active worker and writer in the Eighties, and in 1884, as the result of meetings at his house, the *Medical Chronicle* was founded, with himself and Dr. James Niven as editors. In 1887 he contributed to it a series of papers on "Gonorrhœa in Women," afterwards published, with additions, in book form (1888). These papers brought him into prominence, abroad as well as at home. He was thoroughly conversant with what was going on in the Continental clinics, which he visited a good deal. When the late Dr. Cullingworth resigned the Chair of Obstetrics and Gynaecology in Owens College to take up work at St. Thomas's Hospital, London, Sinclair was appointed his successor. In his application for the post he had many testimonials from leading gynaecologists abroad. With the growth of the college into one member of the federal Victoria University, and finally into the independent body it now is, he became university professor and retained the chair until his death, although owing to rather prolonged ill health the performance of his duties during the last two years manifestly caused him considerable physical distress.

Sinclair, especially as Professor of Obstetrics and Gynaecology in the university, but also from his natural bent, played a very prominent part in the controversy over the proposed Midwives Bill in the Nineties. Like nearly all his consultant colleagues, he was in favour of the State legislating for the proper registration of midwives, believing that the result must ultimately be for the benefit of the nation. The question was argued in Lancashire and Cheshire with a good deal of warmth, and as the matter at issue was too acute to wait for weekly treatment in the medical journals, and because of its public interest, the correspondence columns of the daily press were freely used in its discussion.

Sinclair was naturally a fighter; he was an able letter writer and debater, with a talent for clear, precise, and logical thought, which he expressed in virile language. In the midwives controversy he bore the brunt of attack and defence for others of his side, though even his friends may not always have entirely approved of his controversial methods. The controversy is now a matter of history, and nothing more need be said about it. Whilst Sinclair was such a "bonny fighter" that he might have made even Alan Breck Stewart jealous had that doughty warrior taken to the pen, he was by heart one of the kindliest of men and a good companion, with ready wit and a sense of humour. He had a very deep sympathy for the poor, and most of his battles were in what he held to be their interests. With all this kindliness of nature and friendliness, he was somewhat injudicious in his criticism, either in the lecture-room or clinic, of the opinions and treatment of other medical men, and a little intolerant of the views of even his own consultant colleagues when they happened not to agree with his own. Nevertheless, especially in the Nineties, he had a large following of practitioners who had been taught their work by him. In his later years ill health prevented his keeping up and moving so fully with the progress of knowledge as, in his younger days, he had set such a worthy example in doing.

One memory of his teaching may be specially referred to, namely, the abuse of forceps in midwifery. On this matter he held strong views, which were expressed with characteristic vigour. This question formed the subject-matter of his address at the annual meeting of the Association at Montreal, 1897. The address was published in the JOURNAL of September 4th of that year (p. 589). When the British Medical Association met in Manchester (1902) Sinclair delivered the address on obstetrics and gynaecology. His subject was "Carcinoma in Women chiefly in its Clinical Aspect." The JOURNAL, in its leading article on the address, characterized it as being "a masterly review of a terrible subject." Sinclair, whilst fully recognizing the value of the work of pathologists and bacteriologists, felt that it had tended to throw careful clinical work into the shade without giving much that would make up for the loss of the information essential for treatment that clinicians could alone obtain. He pointed out the important part which the family doctor played in the early diagnosis of uterine cancer, and showed that his work was made more difficult because women believed that cancer was always painful from the beginning, and because they did not think much of unusual uterine haemorrhage about the time of the menopause. They therefore did not consult their family doctor as early as they should. The treatment of cancer of the uterus specially interested him, and he was a strong advocate of removal of the womb by the vaginal operation. The more radical operations then becoming popular with gynaecologists were, he considered, quite unjustifiable.

Early in the Nineties, Sinclair, with some others practising gynaecology in the North of England, felt that in the large towns there was sufficient material for a society devoted specially to their own subject. At his instigation a meeting of men from Manchester, Liverpool, Leeds, and Sheffield was held in Manchester, and a society formed which, as the North of England Obstetrical and Gynaecological Society, has had a most successful career, not only by doing good work, but by bringing specialists from the various towns into frequent contact. Sinclair, until the state of his health forbade it, was a regular attendant at its meetings and a frequent contributor to its debates.

As already stated, he was one of the founders of the *Medical Chronicle*, and edited it for some years, taking up co-editing duties again at a later date for a short period, with responsibility for the section on diseases of women. He maintained to the end a great interest in the journal, and had always a cheery word of encouragement for its present editor.

He was also the chief promoter of the *Journal of Obstetrics and Gynaecology of the British Empire*. The preliminary correspondence necessary to the formation of the committee of management was very extensive, and was

carried out almost entirely by Sinclair. A few years after successfully launching it he withdrew from a share in editorial responsibilities.

In his early days Sinclair wrote a good deal. The first of his two books on gonorrhoeal infection in women was to a large extent a reprint of papers which appeared in the *Medical Chronicle* in 1887. He did not profess to be in any sense a specialist in venereal diseases, but he wished to put before the reader the state of the question of gonorrhoeal infection from the purely gynaecological standpoint. He collected and annotated all the recent opinions of other clinicians of repute, and added his own experience. He laid special stress on the clinical work and the opinions of Noeggerath, much misunderstood in England, and, of course, on the importance of Neisser's researches on the gonococcus. He hoped to arouse the profession in England to active interest in a subject which he believed was too much neglected, though of vast social importance. In his opinion "gonorrhoeal infection in women give rise to a group of diseases which, by reason of their clinical interest and their social and moral consequences, surpass in importance every other class of affections which claim the attention of the gynaecologist." The book was a very forceful contribution to the gynaecological literature of the day. It treated its subject exhaustively and lucidly, and undoubtedly succeeded in its object of attracting attention, both at home and abroad, to the conditions he described.

His only other work, on *Semmelweis: his Life and Times* (1909), was a very able account of the life of the man who realized that puerperal fever was a contagious disease, and of his difficulties and struggles in getting his idea accepted by his contemporaries.

He contributed the article on malignant disease of the uterus in Allbutt and Playfair's *System of Gynaecology*, and wrote many papers for medical journals.

Sinclair was President for a year of the Manchester Medical Society and of the North of England Obstetrical and Gynaecological Society, and he was a corresponding member of the Deutsche Gesellschaft für Gynäkologie and of the Royal Medical Society of Budapest. He was a member of the Central Midwives Board, and he acted for some years as Examiner in Midwifery and Medical Jurisprudence for Aberdeen University. He became a member of the Royal College of Physicians in 1892. He was also a J.P. for the City of Manchester.

Sinclair played a prominent part in the political life of Manchester after the days of the split over Home Rule, when he left the Liberal Party. He also was a member of the City Council for five years, representing the Conservative organization for one of the city wards. He was knighted in 1904. In 1883 he married Margaret, daughter of Andrew Haddon, of Denholm, Roxburghshire. Lady Sinclair and two daughters survive him.

E. Margaret Phillips, M.B. (Peppard Common) writes: May I offer a few words of appreciation of the late Sir William Sinclair? I admired him chiefly for two well-marked characteristics—his sense of justice and his tender-heartedness. I know that he was peculiarly sensitive about hurting his patients, and he made the avoidance of pain and suffering the chief theme of his teaching. I remember how forcibly he denounced stupidity in our profession, and particularly in his subject, as criminal. He was himself a most skilful operator, and probably few men have had the good fortune to save more lives than he has done. He was always kindness itself to me, and I sincerely mourn his loss.



Photograph by] Leonard A. Bidwell. *[Elliott and Fry.*

LEONARD A. BIDWELL, F.R.C.S.,

SURGEON, WEST LONDON HOSPITAL.

The announcement of the death of Mr. Leonard A. Bidwell on September 2nd, following a serious operation, will have been received with the deepest regret by a very large circle of friends and colleagues—regret amounting to consternation in the minds of most, for few had any knowledge that his health was seriously impaired. Mr. Bidwell was the eldest son of the late Mr. Leonard Bidwell, Chief Clerk of the Post Office, and was born in 1865. He received his professional education at St. Thomas's Hospital, London, where he held the offices of Assistant House-Surgeon and House-Surgeon, and thereafter pursued a course of post-graduate study in Paris.

In 1891 Mr. Bidwell was elected Assistant Surgeon to the West London Hospital, becoming Surgeon in 1906, and Senior Surgeon in the present year.

From the commencement of his career as a surgeon his attention was drawn to the surgery of the abdomen, then in its infancy. During the marvellous development which has taken place in the past twenty years he was ever in the van of the progressive movement, and his sound judgement, courage, and exceptional technical skill and dexterity found wide recognition in an ever-widening circle of the medical profession and the public. Mr. Bidwell's class in intestinal and abdominal surgery in the Post Graduate College was always filled, and often many students were waiting eagerly for the practical teaching in which he excelled, and in which he took the greatest interest and pleasure.

In May, 1896, two years after the foundation of the Post-Graduate College at the West London Hospital, Mr. Bidwell became Dean of the College and Hospital for teaching purposes, a position which he held to the last. Bringing to this work his characteristic energy, and an excellent capacity for business, he had the satisfaction of seeing a rapid growth in prosperity and usefulness of an institution which very distinctly supplied a want in medical education in London. In the first three years of its existence 50 graduate students sought instruction at the new school; during the last three years 671 students passed through, whilst the number of new entries reached the considerable total of over 2,500 during the period of his guidance. It is no exaggeration to state that the present-day prosperity and success of the college are largely due to his energy, originality, and perseverance.

Mr. Bidwell for many years was Surgeon to the Florence

Nightingale Hospital for Invalid Gentlewomen, and Consulting Surgeon to the Blackheath and Charlton Hospital, to both institutions devoting so large and generous amount of time in a very busy life that he will be sorely missed. He was also Consulting Surgeon to the City Dispensary.

He was not a prolific writer, but what he wrote was always practical and the outcome of personal observation and experience. His *Minor Surgery* was found of great service by practitioners and students for whom he was writing, and he was busy correcting the proofs of a second edition at the time of his death. His *Handbook of Intestinal Surgery* proved most acceptable and passed through two editions, whilst his numerous contributions to contemporary surgical literature were always marked by sound common sense and sincerity.

Mr. Bidwell took a great interest in the Volunteer Medical Service (now the Territorial Forces), serving for four years with an artillery corps and later with the Royal Bucks Hussars, in which he held the rank of Surgeon-Major at the time of his death.

In 1891 he became a member of the West London Medico-Chirurgical Society. He edited its *Proceedings* until the publication of the *Journal*, when he became Editorial Secretary. In 1905 he was elected President of the society, a position which he filled with dignity and with pleasure to the members and satisfaction to himself.

His recreations were fishing and golf. To the former he was particularly attached, and derived the greatest pleasure from his visits to his fishing in Wales. But the greater part of his scanty leisure was bestowed upon his family; in 1896 he married the eldest daughter of Sir J. Roper Parkington, Bart., and is survived by her, by three sons, and two daughters. He was the most devoted husband and father, and it was in his happy family life that he undoubtedly found his true recreation and pleasure. To them we offer our sincerest sympathy in their sorrow, a sympathy which will be extended to them by many whom they have never known, to whom he has given freely and generously of his skill and knowledge.

Mr. Bidwell leaves a record of a life filled with interest, of good service to the profesion he adorned, and of much help given without hope of reward in the best spirit of charity.

Dr. SEYMOUR TAYLOR writes:

Leonard Bidwell has with dramatic suddenness gone to his long rest. It is only when a man has died that his true worth and merit are estimated at their proper value.

Bidwell presented many aspects for our admiration, and imitation if possible. As a surgeon he had few equals in manual dexterity and quickness, and certainly I have known no superiors in these qualities; and yet withal he was a man of great judgement, carefully weighing the risk of an operation, never operating rashly, and never suggesting operation unless such a step held out reasonable hope of a happy termination.

Then also as a teacher he was in the first rank. It did one good to witness the enthusiasm which he brought to his lectures and demonstrations—an enthusiasm which he imparted to his class, if one may judge by the attention which his pupils paid and the assiduity with which they imitated his methods of surgical technique.

As a colleague and friend his qualities were beyond praise. Always kind and considerate towards others, he made quarrels and bickerings impossible, and he was generous almost to a fault in affording his surgical help in any deserving case. There will always exist that difficult patient, who is above the rank of a hospital patient, and yet whose means do not allow of an able surgeon's full fee. Bidwell had only to be told this to secure his services at a lessened remuneration, and I have had many occasions to thank him for such generosity.

In every way he was a remarkable man, and now that he has gone we shall only discover how much the profession, and especially the hospital where he did so great a work, has lost.

Mr. ASLETT BALDWIN writes:

In face of the sudden and unexpected calling away of our friend and colleague, Mr. L. A. Bidwell, one feels scarcely able on the spur of the moment to find words suitable to adequately express all one feels. He was the soul of honesty and truth, a charming and loyal colleague; his example was always a stimulus to those around him to do their best. Always apparently happy and in the best of temper, his cheery presence and help smoothed over many difficulties and lightened many burdens. His loss causes a void in our hospital, our college, and in our hearts which it will be hard, very hard, to fill.

DEPUTY INSPECTOR-GENERAL USHER WILLIAMSON EVANS, A.M.D. (ret.), died at Clifton on August 27th, aged 89. He took the diploma of L.R.C.S.Irel. in 1844, and the degree of M.D.Glas. in the following year. In April, 1846, he joined the service as Assistant Surgeon, becoming Surgeon in 1854, Surgeon-Major in 1866, and retired with the honorary rank of Deputy Inspector-General in 1871. He served in the Crimea, and was present at the battles of Alma, Balaclava, and Inkermann, and the siege of Sebastopol, receiving the British medal with four clasps and the Turkish medal.

SURGEON-GENERAL DUNCAN A. CAMPBELL FRASER, M.D., A.M.S. (ret.), who died on August 28th at Cheltenham, at the age of 80, was the son of the late Rev. H. Fraser, of Ardchaltan, Argyllshire. He qualified as M.D.Edin. in 1853, in which year he joined the service as Assistant Surgeon, becoming Surgeon in 1863, Surgeon-Major in 1873, Brigade Surgeon in 1879, Deputy Surgeon-General in 1881. Surgeon-General in 1887, and retired from the post of P.M.O. at Malta, on reaching the age of 60, in December, 1891. He served in the Ashanti war, 1873–4, and received the medal, and also acted as a Commissioner of the Red Cross Society during the Russo-Turkish war of 1877, receiving the Star of Roumania for his services.

The Services.

INDIAN MEDICAL SERVICE.

THE Secretary of State for India has been pleased to request the Government of India to convey the thanks of His Majesty's Government to Captain W. T. McCowen, I.M.S., for the services he rendered on the occasion of the attack upon Acting Consul Smart near Kazerun in December, 1911.

It has been decided that officers whose commissions are dated September 30th, 1889, are eligible for the extra pensions of £100. Officers whose commissions are dated March 31st, 1890, and later are not eligible.

Universities and Colleges.

UNIVERSITY OF BIRMINGHAM.

IN consequence of the death of the Vice-Chancellor of the University of Birmingham (Alderman C. G. Beale, M.A.), it has been decided, as a mark of respect, to abandon the usual conversazione, which is held at the beginning of October to inaugurate the opening of the medical winter session.

Medico-Legal.

LOCUMTENENT AND FEE FOR LUNACY CERTIFICATION.

P. F. W. asks whether a locumtenent who has certified a lunatic and received a fee for the same while acting for his principal is entitled to retain the fee.

As has repeatedly been pointed out in these columns, all fees received by a locumtenent for professional work done on behalf of his principal belongs to the latter. Even if such fees are paid to him personally, it is his duty to hand them over. The only emolument he is entitled to is the stipend which the principal has agreed to pay.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

THE ETHICS OF ADVERTISING.

J. G.—Such an advertisement would be sure to provoke adverse comment, and the desired result would seem to be quite easily obtained by circulars addressed to the patients in each of the practices it is proposed to combine.

Medical News.

HIS MAJESTY THE KING has granted Dr. Egbert Sumner Verdon licence and authority to accept and wear the Insignia of the Commander of the Hafidian Order, conferred upon him by the Sultan Malai-Abd-el-Hafid of Morocco, in recognition of valuable services rendered.

AT the meeting of the Leicestershire Automobile Club at Beacon Hill on August 31st a competition was held among cars made and delivered at any date previous to the Olympia Show of 1907. The winner was a 6-h.p. De Dion delivered in 1902.

THE Garden Cities and Town Planning Association (3, Gray's Inn Place, London, W.C.) has recently put itself in a position to send to any part of the country lecturers competent to deal with all aspects of the question denoted by its name, and dates may now be booked by those interested therein.

THE KING has authorized the following medical officers, for the prevention of plague, Mukden Station, to accept and wear decorations which the Emperor of China has conferred on them in recognition of valuable services rendered: Dr. Dugald Christie, C.M.G., Order of the Double Dragon, Insignia of the First Class of the Third Grade; Dr. Alexander Russell Young and Dr. David Dickson Muir, the Order of the Double Dragon, Insignia of the Second Class of the Third Grade.

THE King has, on the recommendation of the Secretary for Scotland, approved the appointment of Dr. Robert Gordon McKerron to be Professor of Midwifery in the University of Aberdeen, vice Professor William Stephenson resigned. Dr. McKerron graduated as M.B., C.M., at Aberdeen with honours in 1888, and in 1898 he was awarded the degree of M.D. with honours, for a thesis on the complication of pregnancy, labour, and childbirth with ovarian tumour. For the past five years he has occupied the post of Physician to the Maternity Hospital, Aberdeen. For nearly twenty years he has held the position of University Assistant to the Professor of Midwifery.

THE third Annual Conference of the British Hospitals Association will be held in Birmingham on September 19th and 20th under the presidency of Mr. J. B. Clarke, Chairman of the Board of Management, Birmingham General Hospital. Among the papers to be read are the following: Sir William Collins, Hospitals and the State; Mr. E. S. Kemp, The Training and Work of a Hospital Almoner; Dr. Nathan Raw, The Probable Effect of the Insurance Act on Voluntary Hospitals and other Institutions; Dr. T. Basil Rhodes, The Voluntary Hospitals and the Insurance Act; Mr. J. Danvers Power, Hospital Management Considered with Reference to Responsibility.

THE London Inter-Collegiate Scholarships Board will hold an examination in anatomy and physiology on September 24th for entrance scholarships at the medical schools attached to the Westminster, St. George's, Charing Cross, and King's College Hospitals. The candidates must have passed the first M.B. examination of Oxford University, or the second M.B. of Cambridge or London, or some other examination accepted as an equivalent of these by the committees of the medical schools concerned. A successful candidate will be required to enter the medical school which has elected him in the following month. Applications for forms of entry may be made to the deans of any of the schools mentioned.

A POST-GRADUATE course in connexion with the University of Dublin will begin on September 23rd and last until October 12th. The arrangements, in addition to instruction in all general subjects and special departments, include instruction in anatomy, physiology, and pathology. The hospitals at which the clinical work will be done are within easy reach of the medical school, so little time will be lost in going to and fro. The social side of matters has not been overlooked, arrangements having been made by which those attending the course can reside in rooms in Trinity College and dine in the Hall. The course is open to all qualified practitioners, rooms in college being reserved in order of application. A syllabus can be obtained on application to the Honorary Secretary, 27, Lower Fitzwilliam Street, Dublin.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

DR. H. W. SMITH (Pleasley, near Mansfield) writes: Can any reader say which book on "Eugenics" is suitable for founding an essay on the subject for an elementary class of laymen?

ANSWERS.

PERPLEXED.—We are informed that Mrs. Priestly, The Mount, Whitby, Yorkshire, has a school such as is required. We understand that it can be highly recommended.

M.B.—We have made inquiries, but have not been able to learn of a suitable home at such low terms as those mentioned. Possibly the Secretary of the "After-Care Association," Mr. H. Thornhill Roxby, Church House, Deans Yard, Westminster, might, if applied to, be able to assist, being in touch with small homes for convalescents from insanity.

REFEREE.—Either of the following works would probably meet our correspondent's requirements: *The Medical Examination for Life Assurance*, by F. de Havilland Hall (Bristol, John Wright and Co., 4s.); *Life Insurance and General Practice* (London, Henry Frowde, 7s. 6d.).

H. D. J.—Tests for the Wassermann reaction are made at the Lister Institute, Chelsea Embankment, S.W., the Clinical Research Association, Limited, 15, York Buildings, Adelphi, and the Laboratories of Pathology and Public Health, 38, New Cavendish Street, W. Examinations of the blood for malaria parasites are also made at all these places. Application should be made to the Secretaries.

VENETIAN FEVER.

SOUTH AFRICAN PRACTITIONER, writing in reply to the inquiry of "M." in the JOURNAL of July 6th, makes the same suggestion as Major Kennedy (July 27th), namely, that the fever may be Malta or undulant fever, and suggests if the case has proved stubborn a trial of the *Micrococcus melitensis* vaccine.

LETTERS, NOTES, ETC.

ST. THOMAS'S HOSPITAL.

THE honorary secretaries of the old students' dinner at St. Thomas's Hospital this year are Dr. L. S. T. Burrell and Mr. C. M. Page, and not as previously stated.

THE MEDICO-PSYCHOLOGICAL ASSOCIATION.

THE Treasurer of the Medico-Psychological Association of Great Britain and Ireland informs us that the Gaskell Prize is now a gold medal (value 5 guineas) and £45 in cash. A silver medal and a sum of money are occasionally awarded to the *proxime accessit*. The Hack Tuke Memorial Prize is no longer awarded.

SIR CHARLES TUPPER, BART.

DR. W. G. PUTNAM (Yarmouth, Nova Scotia) writes: I have waited for some time to see if the name of Sir Charles Tupper, Bart., were not added to the list of medical baronets mentioned in the JOURNAL of May 25th. It is true his honours came as the result of political and not medical accomplishments. He was made a baronet in 1888. He is an M.D. of Edinburgh of more than sixty years' standing, and is also Hon. LL.D. of Edinburgh, Cambridge, and other universities; is now in his 92nd year, living in Vancouver, B.C., having left England early in the summer.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	15	0
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *postes restante* letters addressed either in initials or numbers.

A Discourse

ON

MODERN PROBLEMS RELATING TO THE ANTIQUITY OF MAN.

DELIVERED AT THE MEETING OF THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE, HELD AT DUNDEE, SEPTEMBER, 1912.

BY

ARTHUR KEITH, M.D., LL.D., F.R.C.S.,

HUNTERIAN PROFESSOR, ROYAL COLLEGE OF SURGEONS OF ENGLAND.

On my bookshelves there is placed a series of odd volumes containing past reports of this association, which Fortune sent my way many years ago on a Whitechapel bookstall. Among them there is one volume I prize—that which contains the history of the meeting at Aberdeen in 1859. In that volume you will find an early phase of the subject of my discourse for this evening—the Antiquity of Man. Sir Charles Lyell presided over the Section of Geology; in his opening address he announced that "a work will very shortly appear by Mr. Charles Darwin, the result of twenty years' observation and experiment," and that the evidence which had accumulated in recent years "made it probable that man was old enough to have co-existed at least with the Siberian mammoth." From other statements made in his address it is clear that Lyell was then convinced that man's appearance on earth was infinitely older than the limits fixed by Biblical record. I do not suppose I have a single listener who heard that address in Aberdeen fifty-three years ago, but even those who are not yet old will concede that the new doctrine, even as preached by Sir Charles Lyell, was not likely to be acceptable to the general membership of the Geological Section in the year 1859. You will find an exact record of what happened at the meeting—not in the official report of the year, but in the letters of Mr. William Pengelly, the explorer of Kent's Cavern. Orthodoxy was represented at the meeting by the Rev. Dr. Anderson, who, in Mr. Pengelly's words, "attempted to castigate Lyell for his opening address." There was a considerable amount of orthodoxy in the room, and Dr. Anderson got a very undue share of applause. The doctrine which Lyell and his companions championed in the face of public opprobrium in 1859 is the accepted and orthodox opinion of the vast majority of thoughtful people in the year 1912.

That splendid movement of the nineteenth century which knocked the shackles of tradition from the problem of man's origin was led by men of courage, conviction, and sound judgement. It was a progressive and victorious movement they initiated, but in every movement of that kind there comes a time when those who cleared the way turn circumspect, cautious, and more crititical than constructive. Opinion tends to become fixed and conventionalized, and then a new heterodoxy raises its head. That is the phase which we, who make a special study of the facts relating to man's origin, seem to have reached now. I cannot cite a more stalwart or distinguished representative of the orthodox opinion of to-day than Professor Boyd Dawkins of Manchester. In his Huxley Lecture of 1910 he gives very clearly his opinions on the antiquity of man—ripe convictions which are founded on a lifetime of active investigation and study. In his opinion, the history of man does not extend beyond the Pleistocene period—the phase of the earth's history which immediately precedes the one in which we live. He accepts the fossil man of Java—*Pithecanthropus*—a being with a brain a little more than half the size of a modern man's, as representative of mankind at the beginning of the Pleistocene; before the end of that period men of the modern type appeared. In Professor Boyd Dawkins's opinion, then, man was evolved during the Pleistocene period, and therefore, from a geologist's point of view, is a recent addition to the earth's fauna. If we ask how long ago it is since man appeared, Professor Boyd Dawkins replies:

> It cannot be measured in years—only by the sequence of geological events, and by the changes in animal life.

Yet we are certain that years came cycling round in the Pleistocene period just as they do now, and that every cycle wrought some degree of change on the face of the earth and on the form of living things—a degree of change which may be imperceptible in the period of a man's life, and yet cumulative and apparent in the course of time. Men who have studied the transformations effected during the Pleistocene period have formed varying estimates of its duration, but we may safely adopt as a moderate figure the 400,000 years given by Professor Sollas at a meeting of this association in 1900. We may accept, then, as the orthodox opinion of to-day, that the dawn of the very earliest form of humanity lies 400,000 years behind us; in that space of time man as we know him now was evolved from a crude, almost prehuman form.

For a representative of modern heterodoxy—as far as relates to the antiquity of man—we cannot do better than visit the Royal Natural History Museum in Brussels, and follow the guidance of M. Rutot, who has devoted himself to the study of the stone implements of ancient man and of recent geological formations. One civilization succeeded another in Pleistocene as in historical times. You will admit, when you examine the handiwork of the men of the Magdalenian age—at the close of the Pleistocene—that our ancestors were then artistic and skilled workmen. As we pass backwards in time from the Magdalenian to the Solutrean, and from the Solutrean to the Mousterian, Mousterian to Acheulean, and Acheulean to the Chellean—thus passing well beyond the mid-point of the Pleistocene—we find that although the handiwork of man changes in form and in design it does not lose in skill of execution; those flints of the remote Chellean period assure us that man had then a capable brain and a skilled hand. When, however, M. Rutot proceeds to show us the implements which were fashioned by men in the earlier parts of the Pleistocene, it is very probable that our orthodox companions will pull out their watches and find they have pressing engagements elsewhere. Human workmanship becomes cruder as we approach the commencement of the Pleistocene. The stones which have been wrought by man's hand (eoliths) become then more difficult to distinguish from those which have been shaped by natural forces. M. Rutot, however, is convinced that he has traced man, by means of his eolithic culture, not only to the commencement of the Pleistocene, but into and through the two long geological periods which preceded the Pleistocene—the Pliocene and Miocene—and even well into the formations of the still older period, the Oligocene. In M. Rutot's opinion the origin of mankind must be assigned to a time as early as the Oligocene period. Professor Sollas has made a provisional estimate of 900,000 years for the Pliocene, and 1,800,000 for the Miocene. On this crude estimate, the heterodox opinion as to the antiquity of man must be placed at over 3,000,000 years. It is only just to M. Rutot to state that he would by no means agree to the estimates given by Professor Sollas. In his opinion the duration of the Pleistocene period was not more than 139,000 years.

The modern heterodox movement, which I have sought to bring before you in the person of M. Rutot, had as its pioneer the late Professor Prestwich, a geologist whose long experience and great knowledge were tempered with a sound and conservative judgement. In 1859 he found flints on the uplands of Kent, between the Thames and the Weald, which he recognized as certainly the handiwork of man. Thousands of these eoliths have been collected by Mr. Benjamin Harrison. The deposits in which these eoliths are found were assigned by Professor Prestwich to a Pliocene date. Fifty years ago Sir Charles Lyell expressed the opinion that "signs of man's existence" would be found in the Cromer beds of East Anglia which mark the commencement of the Pleistocene period in England. Eoliths have been found not only in the Cromer beds, but also in the Pliocene formations of that district—in the Norwich crags by Mr. Clarke, and under the Red Crag by my friend Mr. Reid Moir. Thus in England heterodox opinion traces man to the commencement of the Pliocene period. I need only add that eoliths, as evidence of man's existence, are rejected by many whose opinion is entitled to our respect. The usually accepted opinion, then, is that man makes his appearance in a definitely human form about the commencement of the Pleistocene period; there are also those who refer his evolution to a much earlier period of geological history.

One thing is certain, whatever period is adopted, the time must be long enough to allow mankind to be distributed and differentiated as we now see it in the world of to-day. Modern human races, white and yellow, red, black or brown, although so different on the surface, are yet so similar in their structure and constitution that we must suppose all of them to have arisen from a common stock. Let us look at the problem in a concrete form. I will take as opposite and contrasted types of modern humanity the fair-haired, white-skinned, round-headed European and the woolly-haired, black-skinned negro of Central Africa, and set them side by side and study them from a purely zoological point of view. We must admit that both are highly specialized types; neither represents the ancestral form. Now, in seeking for the ancestral form of our breeds of dogs, of horses, or of cattle, we select one of a generalized and ancient type—such as we conceive might have been modified to produce modern breeds. We must apply the same system to human races. If we search the present world for the type of man who is most likely to serve as a common ancestor for both negro and European, we find the nearest approach to the object of our search in the aboriginal Australian. He is an ancient and generalized type of humanity; he is not the direct ancestor of either negro or European, but he has apparently retained to a greater degree than any other living race the characters of that common stock from which both European and negro arose. If, then, we accept the Australian native as the nearest approach to the common ancestor of modern mankind—and it must be admitted that it is not a low form of man we are postulating as a common ancestor—can we form any conception of the length of time which would be required to produce the African and the European from this common stock? What do we know of the rate at which mankind evolves? There is the classical instance of Egypt. During his residence in that country, Professor Elliot Smith and his colleagues—Dr. Wood-Jones and Dr. Derry—had opportunities of examining the remains of Egyptians belonging to every period—from pre-dynastic times to the present day. They had thus facilities for studying the evolution of a people over a period of at least 6,000 years—probably longer. They found evidence of an infiltration of foreign blood both from the North and from the South; they noted minor alterations in the configuration of the head and in the state of the teeth and jaws, but they could not say that the men at the end of that period were in any respect a higher or more specialized type than the inhabitants of the Nile Valley at the beginning of that period. There is no need to go beyond our own country to find evidence that the evolution of man proceeds at a slow rate. We have now material enough to form a fairly accurate conception of the physical condition of the people who lived in Britain these 4,000 years past. Were the prehistoric Britons to come amongst us now, dressed in our modern garb, they would pass unnoticed as fellow citizens. The neolithic men of France, Switzerland, and Germany were not in anywise a lower race than their successors of to-day. When we pass to examine human remains belonging to more remote periods we are confirmed in our belief that the evolution of human races is a slow process. In this country there have been found at Galley Hill, at Bury St. Edmunds, and at Ipswich human remains which belong at least to the middle part of the Pleistocene period. These remains indicate a kind of man somewhat different from ourselves, but yet of the same type. In size of brain and in complete adaptation to an upright posture they cannot be described as less highly evolved than we are. Such evidence as we have, then, leads us to believe that the evolution of a new and distinct variety of mankind requires an extremely long period of time.

If we again ask, How long will it take to evolve the Australian on the one hand and the European on the other from a common stock?—Australoid, we suppose, in form—it is very apparent, on our present knowledge, we must make a very considerable allowance of time. My own opinion is that the whole length of the Pleistocene—a period, we shall say, of 400,000 years—is not more than sufficient. I am thus postulating in order to explain the differentiation and distribution of modern races; that mankind, at the beginning of the Pleistocene period, had reached a physical condition which has its best modern representation in the aborigines of Australia.

Is it not possible, however, that the evolution of man's body may not be a story of slow, continuous, almost imperceptible change, but one of alternate spurt and quiescence? The human body is notoriously the subject of sport, of defects and malformations. Many of you will recall the book which Professor Bateson published eighteen years ago, entitled *Material for the Study of Variation*. The work contained many facts which seemed to indicate that the animal body was subject to violent structural changes, and that a new form of being might be produced almost at a bound. We often see men in whom there is an extra vertebra in the loins, an additional rib, or a supernumerary digit, but we now recognize that these marked structural changes are merely the extreme manifestations of a normal degree of variation of which every man's body is the subject. The bodies of men and anthropoids are notoriously liable to anatomical variation, and we are justified for that reason in regarding their bodies as particularly plastic material in the hands of evolution. When, however, we come to examine the anatomical differences which separate one race of men from another, we see that racial characters comprise, not those marked variations which so frequently are seen by the students of human anatomy, but a multitude of minor structural features such as might slowly accumulate in the course of the differentiation of one race from another. When one comes to realize the extremely complex structure and finely adjusted nature of the human brain, it becomes very apparent that any addition to the most essential structure of the human body must be the result of an extremely slow process of growth. Only one line of evidence shakes our belief in the slow rate of human evolution, and that is the study of certain diseases of growth to which man is liable. We have come to realize in recent years that we are—as regards face, figure, stature, and nature—largely what our internal glands and secretions have made us. Growth itself is definitely regulated by means of substances set free by certain glands of the body. We are absolutely certain that a marked disturbance of these glands will in the course of a few years definitely transfigure the individual to which they belong. Nature seems to have at her command a means for executing rapid advances; but when we survey what we know of man's past history, and mark the changes he is subject to in the present, we see no sign of her having resorted to such a means.

There is another route by which we may approach the problem of man's antiquity. Man does not stand alone; he has distant and rather despised relations—the great anthropoid apes. Although the structural hiatus between him and them is wide, yet when we compare the two types we see that there is a multitude of resemblances so intimate and so peculiar, that we cannot explain them except by supposing that man and the great anthropoids had a common ancestor at one stage of the earth's history. The great anthropoids have also a distant and primitive living relative—the gibbon. The gibbon in turn, while foreshadowing in his body the structural peculiarities of his more august relatives, finds his cousins by descent in more lowly forms still—the monkeys of the Old World and the monkeys of the new. Of these two groups the monkeys of the New World are the nearest to the original stock which gave rise to the higher primates. It was through such a lineage that man rose to reach his present estate. If, then, we are to ascertain the approximate date, or, to put it in other words, the possible date at which man appeared, we must first search for the earliest traces of the basal form of the higher primates which lead towards the human line. The earliest traces we have discovered as yet were described by Dr. Max Schlosser only two years ago. In the very oldest Oligocene formation of the Fayoum, Egypt, the teeth and jaws of three primates were discovered. Two of these are allied to the South American apes, the other is a forerunner of the gibbons. These Fayoum fossils are of the highest importance to the solution of our problem. Their discovery assures us that at such an early date in the evolution of mammals the South American apes and the pro-gibbons were already in existence. They are highly evolved forms, and it is not unlikely that they appeared at a much earlier date. In European strata of the period following the Oligocene—

the Miocene—many teeth and jaws of a form of gibbon which differ only in slight and trivial details from the teeth of living gibbons, have been discovered during the past fifty years. Here, then, we have the assurance that an animal which springs closely from the stock giving rise to man has come down to us with but little change through the leagues of time marked by the Miocene, Pliocene, and Pleistocene formations. By the middle of the Miocene we know the great anthropoids were in existence; it is most unlikely that the traces we have discovered mark their first appearance. With the evolution of the great anthropoids the appearance of a human ancestry as a separate stock is possible. From every point of view it is most probable that the human stock became differentiated at the same time as the great anthropoids. On the evidence afforded by our very imperfect knowledge of fossil forms of apes we are justified in assuming that a very primitive form of man may have come into existence during the Miocene period; at the very latest during the early part of the Pliocene. Thus, when we pursue the question of man's antiquity by studying the forms of primates contained in the Tertiary strata, we find reason to extend the possible date of his origin at least a geological epoch beyond what is allowed by the strictly orthodox. We are unable, however, to find evidence in support of the more extravagant claims of the ultra-heterodox represented by M. Rutot.

There is still another and a very important line of evidence bearing on the antiquity of man. We have, in the most cursory manner, followed the evolution of various ancestral forms of ape and anthropoid from the past towards the present; I propose now to follow the history of man's evolution, so far as we yet know it, from the present into the geological past. We are all evolutionists nowadays, and it is but natural that every one of us should expect man to become more anthropoid and more brutal the further we trace him into the past. What have we found? At the close of the Pleistocene period, which even orthodox and conservative geologists admit to have come to an end some 15,000 years ago, the men of Europe in stature and in size of brain were at least our equals. In tooth, limb, and bone they were more robust. When, however, we turn our eyes to France and pass backwards in the Pleistocene to the milder epoch marked by the last or fourth of the cold cycles which subdivided that period, modern man disappears; his place is taken by a human being of an altogether different kind—a human race or species to which the name of Neanderthal has been given by international consent. During the last six years, thanks to the enthusiasm, industry, and genius of French anthropologists, the remains of four individuals of this race have been unearthed. The strata in which these remains were found contain stone implements of the type known as Mousterian and of animals belonging to a cold climate. Neanderthal man appears suddenly in this later part of the Pleistocene, and as suddenly disappears, to be replaced by modern man. It is impossible to conceive that, just at the close of the Pleistocene period, Neanderthal man was suddenly converted into modern man. Think for a minute of the interpretation you would give of the Australian strata that are being laid down now. The older deposits contain the remains of aborigines; the newer, Europeans. You do not suppose that the aborigines are suddenly transformed to European. You must apply the same interpretation to the human remains found in the later Pleistocene. There was a supersession, not a transformation of races. We must infer, then, that at the end of the Pleistocene period there were two distinct races of mankind—Neanderthal and modern. That is a fact which our French colleagues seem to grasp with difficulty.

To follow the history of modern man into the past we shall return to England. It is a mystery why Neanderthal remains have not been discovered in England; they ought to be found, and a rumour is now current that they have been found. The oldest remains so far unearthed in England all belong to the modern type of man. They take us a long way further into the Pleistocene than the era of Neanderthal man. The skull fragment, known as the Bury St. Edmunds, was found in strata containing Acheulean flints and remains of the mammoth: the 90-ft. terrace of the Thames, in which the Galley Hill man was found, contains flints of the Chellean type. The Acheulean and Chellean flint civilizations are attributed by Professor Boule—a most reliable authority—to the long temperate interval which lies between the last two of the glacial cycles of the Pleistocene, or, if we accept the evidence of Professor Penck, between the second and third cycles. If Mr. Reid Moir and I are right in regarding the human remains lately found at Ipswich as resting under a bed of undisturbed chalky boulder-clay—it is right to say that our inferences are contested—then we have carried the history of modern man a step still further back in the Pleistocene period, for the chalky boulder-clay is the product of the great cold cycle which preceded the Chellean industry. So far as the evidence in England goes, it indicates the existence of a modern type of man at least as far back as the middle of the Pleistocene period.

All we know of man in Europe near the beginning of the Pleistocene is the famous lower jaw found near Heidelberg in 1907. A complete lower jaw with its full complement of teeth can tell with certainty a great deal about the individual to which it belonged. There is not a shadow of doubt that the Heidelberg man belonged to the Neanderthal type; perhaps he may best be described as pre-Neanderthaloid, for in strength and massiveness of jaw he foreshadows the Neanderthal men whose remains are found in Europe towards the end of the Pleistocene. Of the Neanderthal race in the middle phases of the Pleistocene we have, so far, discovered no trace. Although in many features Neanderthal man shows resemblances to the anthropoids, in others he is highly specialized. The teeth of an Australian native make a nearer approach to the anthropoid condition than those of Neanderthal man.

We have knowledge of another fossil man belonging to the beginning of the Pleistocene. In 1891 Dr. Eugene Dubois discovered in Java the fossil remains of a man who in stature, posture, and gait must have been very similar to us, but so unlike us in head form that his discoverer named this new form of man—*Pithecanthropus*. The size of his brain (855 c.cm.) was little more than half the size of the brain of a well-developed modern man. The Neanderthal man described by Professor Boule had a cranial capacity of 1,600 or 1,625 c.cm. It is usual to accept the fossil man of Java as representative of his time and race, but if we do we have to suppose that, in the early part of the Pleistocene, within a comparatively short space of time, the human brain developed at an astounding and almost incredible rate. I leave the matter there, simply asking my audience to keep in mind that there did exist in the Far East at the beginning of the Pleistocene, or perhaps close of the Pliocene, a very low form of primitive man.

Thus we have a knowledge—a very imperfect knowledge—of only two human individuals near the beginning of the Pleistocene period. The one was brutal in aspect, the other certainly low in intellect. It is hard, then, to believe that in strata belonging to the period preceding the Pleistocene there could be found fossil remains of a man of quite a high and modern type. Yet the details relating to the discovery of human remains by Professor Ragazzoni in early Pliocene strata of North Italy are so circumstantial and supported that one cannot put them lightly aside. In 1860 Professor Ragazzoni was searching in undisturbed Pliocene strata for fossil shells, he discovered remains of a human skull. His discovery was received with derision. Between 1860 and 1880 he found in the same strata remains of three further individuals. The only living anthropological authority, so far as I can learn, who accepts Ragazzoni's discovery as authentic is the celebrated Italian anthropologist, Professor Sergi, of Rome. If the remains found in these strata had been of a primitive type their authenticity would never have been called in question, but as they represented individuals as highly evolved as we are, the easiest solution of the problem was to suppose that by some means these remains had been interpolated in ancient strata at a later date.

Is it, then, possible that a human being, shaped and endowed as we are, may have existed so early as the Pliocene period? If we accept as authentic all the evidence brought forward by those who have traced man backwards by means of flints which have the appearance of man's work on them, then we must admit that Pliocene man is possible, for stones, apparently artificially fashioned, have been found in strata as old as the Eocene. If, on the other hand, we examine the evidence relating to that

group of animals to which man belongs—the higher primates—the facts, so far as we know them, render the existence of man in the Eocene and Oligocene periods impossible, improbable in the Miocene period, but quite possible in the Pliocene. If, finally, we take into consideration all the evidence relating to fossil forms of man, we must confess that the antiquity of the modern form of man is still an open problem. I, for one, am convinced that we have followed him almost unchanged to at least the middle of the Pleistocene, when we find him accompanied by another form of man almost as distinct from him as the gorilla is from the chimpanzee. Still further back, at the beginning of the Pleistocene, we find at least two forms of men—the pre-Neanderthaloid of Heidelberg and the small-brained man of Java—but the representatives of modern man at this early period we do not know. It does seem to me, taking all the scraps of evidence at our disposal, the slow rate of human evolution, and the great blanks in the geological record into account, that a man as high as the Australoid of to-day was then in existence, but I cannot bring myself to believe that human individuals as highly evolved as those discovered by Professor Ragazzoni were in existence at an early part of the Pliocene period.

The problem of man's antiquity is not yet solved. The picture I wish to leave in your minds is that in the distant past there was not one kind but a number of very different kinds of men in existence, all of which have become extinct except that branch which has given origin to modern man. On the imperfect knowledge at present at our disposal, it seems highly probable that man as we know him now took on his human characters near the beginning of the Pliocene period. How long ago that is must be measured, as Professor Boyd Dawkins insists, by the changes which the earth and living things have undergone, and yet it is only human to try to find a means of measuring that period in a term of years, and the estimates at hand give an antiquity of at least a million and a half of years.

THE CHIEF USE OF THE PERITONEUM:

*A SUGGESTION.**

BY

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Two years ago I had the pleasure of giving you the first rough outline of my theory of the use of the peritoneum. In addition to its well-known uses as a mechanical lubricator for the efficient movement of the intestines, as a lymph sac, as a secretory and absorptive gland, I ventured to propound what I considered to be its greatest use, "that of a perienteric trap for the reception and annihilation of micro-organisms which *constantly* and *normally*—that is, without producing symptoms—permeate the intestinal wall. It is part of the duty of certain organs intimately connected with the peritoneal cavity, of which the liver, stomach, and intestines are the chief, to excrete the toxic products formed therein, including, in times of stress, the bacteria themselves, with the minimum risk of contamination to the remainder and more important parts of the body."

Let me recall some of the more important facts in the anatomical environment and development of the peritoneum.

THE ANATOMY OF THE COELOM.

1. *The total extent of its surface* equals one and a half times the surface of the skin, consisting of living secretory cells, varying in shape and size in different parts, intimately connected with a most extensive subendothelial lymph capillary and blood capillary plexus, and irregular ramifying lymph spaces, yet varying in the intimacy of its attachment to the organs which it covers.

2. *The visceral layer of the peritoneum* forms the outer lining of the *absorptive* portion of the alimentary canal and its outgrowths. The internal epithelial lining of this part of the tube consists of a single layer of columnar cells with basement membrane lying directly on submucous retiform or lymphoid tissue in direct communication, in spite of muscularis mucosae and muscular layers, with the above subendothelial lymph spaces and plexus. The "duct" portion of the tube, mouth, pharynx, and oesophagus is lined with squamous epithelium on a much firmer and denser rete, and has no peritoneal covering.

3. *The blood and lymph circulation* is in both cases enormous. It is true that the absorption of air and of food requires a large blood supply; it is still more true that Nature makes the utmost use of her opportunities.

(*a*) The gastro-intestinal arteries come off the aorta; the veins return to the liver without exception.

(*b*) The right and left hepatic branches of the hepatic artery are no larger than the bronchial. The relative importance of their functions would be about the same—that is, nutritive to the framework of the organ.

(*c*) The *omental* veins also return their blood to the liver although they have no apparent share in the absorption of nutritive material. The size of the omental blood vessels is larger than the functions hitherto ascribed to the omentum would seem to warrant.

(*d*) The *lacteal* has a blind end in the subepithelial lymphatic space of the villus; if it were simply a question of the absorption of fat globules this could be more expeditiously performed by the direct opening of a lymphatic vessel into this space, which is the case in the rest of the body.† The lacteals are joined by the lymphatic sinuses around the bases of the solitary glands by vessels from the intermuscular plexuses and the subendothelial plexus, connected with scores of glands in the mesentery and pass to the receptaculum chyli where the lymph is conveyed to the left innominate vein.

The subendothelial lymphatic spaces of peritoneum and pleura are directly continuous through the diaphragm. In the frog the peritoneal coelom communicates through stomata directly with the large dorsal lymph sac (= our perirenal and retroperitoneal lymphatic space), and thence through the lymph hearts with the systemic circulation.

The lymph from the omentum passes by way of the gastric and splenic glands to the coeliac and thence into the receptaculum chyli.

4. *The movement of the lymph* in the coelom and lymph spaces is insured by:

(*a*) The diaphragm and the intercostal muscles, the rhythmic contraction of which ceases only with life itself.
(*b*) The muscles of the abdominal wall.
(*c*) The peristaltic and vermicular movements of the alimentary canal.
(*d*) The rhythmic contraction of the spleen.

5. *Liver.*—The significant histological structure:

1. Relation of portal capillaries to the liver cells.
2. Relation of liver cells to the bile capillaries.
3. The segregation of each lobule by connective tissue in direct continuation with the subendothelial connective tissue covering the organ (Glisson's capsule).

The peritoneum covers, and is intimately connected with, almost the whole of the stomach and small intestine, liver, and spleen, and half of the pancreas (the whole in the embryo). In the stoutest person no fat has ever been discovered between the peritoneum and these organs. Appendices epiploicae are only found on the large intestine.

6. *Nerve Supply.*—Spinal sensori-motor and sympathetic nerves connect the visceral and parietal walls of the coelom to the spinal cord. It has been found expedient to preserve a direct communication between the lungs and the stomach, liver, spleen, and the medulla; hence the vagus, the nerve of the tenth segment, has followed these organs in their downward displacement, and connects them with important centres in the lower cerebrum.

7. *The Omentum.*

1. Its position: It covers like an apron every viscus in the cavity except the liver, stomach, and spleen.
2. Its limbated edge.
3. Its power of "movement."
4. Its disproportionate blood and lymph supply.
5. Its normal coating of two or three layers of leucocytes. Associated with this is its exemption from suppuration when it has been replaced after being herniated through a wound.
6. Its history: Found in mammalia and lower vertebrata grows faster than other abdominal contents during life; before 45 above pubic spine, after that below it; left border lower than right.

The benefits which the human organism has been supposed hitherto to have derived from the existence of this organ are mechanical, and are, in my opinion

* Read before the Gloucestershire Branch of the British Medical Association.

† I am aware that Cunéo in his recent work thinks that all the lymphatic vessels are closed.

secondary to its great function as the great scavenger of the peritoneal cavity. Barnard (*Contributions to Abdominal Surgery*, page 170) says:

> The functions of the omentum, so far considerable, are normal ones which must be served each day; but there is a function which is *seldom needed*, but which is so beautifully served that the omentum must be specially adapted to fulfil it. This function is to localize infections of the peritoneum. For this reason the omentum has been called the "sticking-plaster" of the peritoneum.

The fact that this function is so beautifully served is almost proof that the organ which performs it is in constant practice; the simile of the sticking-plaster is thus a mistaken one. I would compare the omentum to a minister for foreign affairs. However capable he may be, there are times when his country is embroiled with another (sticking-plaster period), but no one supposes that this is the only occasion on which he is serving his country. How many wars has he nipped in the bud by his successful and experienced diplomacy carried on over a long period of years, and of which the public are left, by his very success, in entire ignorance?

8. *Histology.*—The endothelial cells vary in size and shape in different parts of the coelom; some are columnar, over the ovary; some large and transparent; some small, coarse, and granular; some kidney-shaped; in the lower vertebrata some may be ciliated. It is reasonable to assume that these cells are capable of different functions.

The Development of the Coelom.

In animal life its appearance is next in antiquity to that of the archenteron or primitive alimentary canal. The coelom, therefore, appears correspondingly early in the human embryo.

When the organism consisted only of an outer layer, *ectoderm*, protective, sensitive and reproductive, and an inner, *endoderm*, digestive and absorptive, the even distribution of nutritive material was a simple matter, even when the ectoderm was several cells thick. When, however, a third layer, *mesoderm*, was developed primarily for reproduction, secondarily for support and locomotion, any further progress in usefulness of this layer would be considerably hampered if its proper supply of nutriment continued to depend upon a correspondingly complex evagination of the alimentary canal amongst its cells. This difficulty would be solved by cleavage of the mesoderm into an inner thin layer, the splanchnopleure, and an outer layer, the somatopleure, with a cavity (the coelom) containing fluid kept in motion by the movements of the organism. Not only did this cavity serve as a *nutriment distributor*, but it also became a receptacle for the *products of metabolism* of the cells: the cavity was therefore placed in direct communication with the exterior. In addition, the *reproductive cells* were shed into its interior, and thus found an easy exit. These three uses alone would abundantly justify, by their unquestionable utility, this departure in the evolution of animal life.

In the trochosphere, the larva of the *Polygordius* (Archiannelida), we have evidence of the utility of a cavity between the ectoderm and the endoderm when none of the above three functions are required of it, for the ectoderm consists of a thin layer of cells, and could be adequately nourished by direct contact with the cells of the endoderm, for the mesoderm is only rudimentarily developed at the hinder end of the organism; the products of metabolism could be got rid of by the same method as in Coelenterates. It is certain also that the cavity is not a receptacle for reproductive cells. It is large in comparison with the size of the organism, and is in direct communication with the exterior by means of the pronephridia. It is by no means the homologue of the coelom, being, in fact, the blastula.

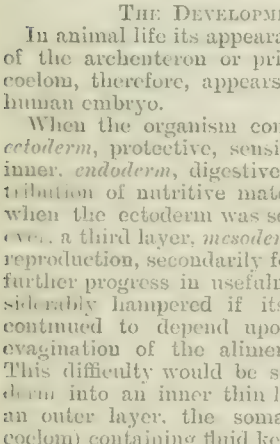


Diagram of trochosphere. A, Mouth; B, pronephridium; C, anus; D, mesodermic bands; E.C, perienteric cavity; F, stomach; G, cilia; H, eye.

I may assume that along with the food a large number of cocci, bacteria, moulds, protozoa, etc., would pass into the alimentary canal of this organism, some of them actively hostile and pathogenic (to it). With a large number of these the cells of the endoderm would be able to deal, but it can be imagined that from the number or virulence of the invading organisms the resistance of this first line of defence would be, not infrequently, overcome—too frequently for the successful propagation of the species. It is important that the contents of the canal should be freed from this contamination before it reaches the hinder end of the alimentary canal, for here, surrounding the endoderm, are the mesodermic bands which contain the elements essential not only for the development of the adult annelid, but for the development of countless numbers of annelids in the form of reproductive cells. Any bacteria, therefore, which succeed in defeating or eluding the endodermic cells only find themselves in a lethal chamber containing lethal fluid, and such again as are able to survive the effect of this fluid would be swept out through the pronephridia.

I have long thought it singular that, whilst incalculable time has been devoted to discovering the various mechanisms for digestion and assimilation, and in describing and exhibiting the admirable and beautiful methods of defence against what I call the "macroscopic" enemy, very little has been expended upon elucidating the methods of defence of the single strong, complex organism against the battalions of insidious microscopic low-organized enemies which it does, indeed it must, admit into its alimentary canal. This struggle is incessant, and the life of the host depends upon a long-sustained and continual victory; it has been going on from time immemorial, from the beginnings of animal life, and the progressive evolution of animal life only became possible by the establishment of a sound scheme of defence against them. In protozoa and diploblastic metazoa (Coelenterates) the defence is a simple matter. The development of a third layer and its progressive increase in bulk and complexity caused too much to depend upon the impregnability of the endodermic epithelium. The coelom was therefore developed between the enteron and the rest of the body, and it is on the other side of the coelom that animal life has developed its wonderful complexity and adaptability. The enteric side of the coelom is as simple almost in us as it is in the snail. The duty of the coelom was to protect the other side from the entrance of any foreign organism. It is, then, only the development of the coelom which has rendered possible the evolution of higher organized life.

In the adult *Polygordius* this cavity is retained as the cavity of the peristomium, and a coelom is developed from the mesoblastic bands: the cavities in the metameres of the adult worm separating the alimentary canal from the body wall are directly formed by the cleavage of the mesoblastic bands at the posterior end of the trochosphere. For the sake of clearness I will drop the ancestral *Polygordius* and take up its near descendant, the earthworm, which lie in the main channel of evolution from the protozoon to the craniate vertebrate.

I commenced with the assumption that the coelom was originally designed for three purposes:

1. The formation and collection of reproductive cells ready for shedding upon the exterior at the opportune moment.
2. The even distribution of nutritive material.
3. As a receptacle for the products of metabolism.

The plan of the trochosphere suggested the possibility of another function. I am confirmed in this belief on examination of the coelom of the earthworm, for we find:

1. The formation and collection of reproductive cells has been relegated to one or two segments, yet the cavity persists in all the segments except the first few.

2 and 3. An elaborate blood circulatory system has been formed which ensures: (*a*) That nutriment is conveyed from the chloragogen cells to the rest of the body; (*b*) that oxygen is conveyed from the skin vessels to the rest of the tissues and the carbon dioxide from the tissues to the skin; (*c*) that the products of metabolism are conveyed from the tissues to the nephridial tubes and thence to the exterior.

An explanation is required as to why:

(*a*) The coelomic cavity is relatively so large: a characteristic of the vermes from the platyhelminth to the choetopod.

(*b*) The use of the dorsal pores, for which I have found no suggestion; and further, why in the ancestral *Polygordius*

these are found in every segment, whilst in the earthworm they are not found until the eighth.

(c) Why, in spite of the existence of a circulatory system, the nephridia still open by bell-shaped ciliated mouths directly into the coelomic cavity.

To take the last first, it might be urged that the organism did not as yet depend upon the circulation entirely for the conveyance of metabolic products to the cells of the nephridial tubules, and that even if it did, as yet the funnels had not had time to degenerate; to which my reply is that tubules in direct communication with the exterior open by funnel-shaped mouths into the coeloms of the various orders right up to and including vertebrate fishes, even amphibia. It is significant that in the latter these are mesoblastic and not ectoblastic, so that when the disappearing ectoblastic nephridium is replaced by the mesoblastic tubule of the pronephros, and this in spite of improved elaboration of the circulation, I am entitled to gather therefrom that the coelomic fluid contains material which is better conveyed directly to the purifying cells of the tubules than through the systemic circulation. In the case of the earthworm it might still be true that a large part of the products of body metabolism were thrown directly into the coelom and then extracted by the tubules, but in the case of the lower vertebrates this could not possibly hold good, as only an infinitesimal quantity of these could be cast directly into the coelom. At the least it may be assumed that it is a similar necessity which has to be met by organs which resemble one another so closely in site and structure yet morphologically are so different. I believe that the coelomic fluid is poisoned by the toxins of bacteria, etc., which have entered through the walls of the alimentary canal; that the contaminated fluid is guided down the funnels by the cilia; that the water, or part of it, is reabsorbed by the cells of the tubules back into the general circulation, only sufficient being allowed to pass down the tubules to wash the toxins out to the exterior. In this way the coelomic fluid is kept clean of its poisons without risk to the body tissues.

The earthworm obtains its nutriment by passing immense quantities of decaying and organic matter and soil through its alimentary tract. Darwin has pointed out that earthworms are an important agent in the formation of vegetable mould. I venture to add, in its purification also. The food taken in by the mouth literally teems with bacteria of all sorts and kinds. Are we to believe that the only defence against the entrance of these into the body tissues is a single layer of columnar ciliated epithelium and a few layers of chloragogen cells? If that were so every earthworm would find death or disease the inevitable sequel of its partiality for what the gardener calls "fat stuff," and as organisms of use to the community they would cease to exist. I believe the bacteria, etc., normally pass in their myriads, some killed, some of them maimed, perhaps to some extent, after their struggle with the first line of defence, into the coelomic cavity, where they are effectually dealt with by the amoeboid cells and the bactericidal fluid of the coelom. The particulate relics of the encounter of both sides are swept out through the dorsal pore, not down the nephridial tube, the mouth of which is guarded by the cilia, which prevent the blocking up by such particles of the delicate, slender tubule, whilst the fluid itself is relieved of its contaminating toxins in the way just mentioned. This explains the large size of the coelomic cavity and the presence of the dorsal pore behind the pharyngeal segments, which, owing to the thickness of the pharyngeal wall, would not require one. It also explains how the soil is effectively purified of deleterious organisms, or, rather, how their excess is regulated.

I do not intend to give detailed descriptions of the internal organization of the echinoderms, arthropods, gastropods, brachiopods, molluscs, and tunicata. It will be sufficient for the present discussion if I point out that in all the absorptive part of the enteron runs through a cavity which either

(1) [illegible] directly with the exterior via generative opening, or the renopericardial opening and the ureter if the cavity is the whole or part of the coelom.

Or (2) if it is not the original coelom, is its derivative and part of the blood vascular system, the perienteric cavity communicates [illegible] with the gills or other respiratory organ or immediately underlies a large respiratory chamber, and thus the fluid in the cavity is in great part only separated from the exterior by a very thin layer of cells or delicate transparent membrane which would readily permit the excretion of toxins or the egress of amoeboid corpuscles containing organisms.

To my mind it is no objection to this general formula that in some of the above orders, perhaps most, the perienteric cavity is not the coelom but part of the blood vascular system. Rather is it an argument in my favour that, in spite of, let us suppose, the degeneration of the coelom, or perhaps because of it, a large perienteric chamber was developed round the enteron because it was an absolute necessity to the organism.

I will now examine a more direct descendant of the earthworm, the *Amphioxus*. In this acraniate vertebrate we find the same arrangement precisely with the added



Diagram of *Amphioxus*, to show relation of stomach and hepatic caecum to atrial cavity. A, Gills opening from pharynx into atrial cavity; B, hepatic caecum; C, stomach; D, atriopore; E, anus.

certainty that the perienteric cavity is really a coelom. This cavity is in direct communication with the exterior, not by one but by many tubes which open at the top of the branchial chamber on each side. I attach some importance to the fact that the perienteric cavity is in reality the coelom and not a secondary derivative, for the coelom is formed in this and probably in all vertebrate descendants by a process of budding from the wall of the enteron; the cavities of these buds run into one another to form the coelom, whilst the walls form the mesoderm and become the splanchnopleure and the parietopleure.

The cells of the enteron in Coelenterates are capable of seizing upon and digesting bacteria in the food, hence the coelomic epithelium would, as it were, have a hereditary instinct for slaying and devouring harmful organisms.

The short tubules of the *Amphioxus* give place to the pronephric ducts and tubules in the lower craniate vertebrates, these again to the Wolffian ducts and tubules and the Müllerian ducts. In addition some reptiles and fishes have "coelomic canals," short direct communications between the coelom and the external medium. For the latter no use has apparently been found. As for the former, they undoubtedly act as excretory ducts for the waste products and generative cells. But if this constitutes the whole of their function then certain difficulties must be satisfactorily explained:

1. The number of Wolffian tubules relegated to the duty of conveying the male generative products forms a very small proportion to the total, and in most orders these few are in direct communication with the testes. What is the function of the remaining large majority?

2. The waste products of metabolism are conveyed to the above ducts and tubules by renal, portal, and other vessels; there is, therefore, no apparent necessity for these tubules to open directly into the peritoneal cavity.

I contend that these openings are retained because the coelom contains poisons which are not absorbed into the general circulatory system, but conveyed to the tubules through the open funnels and so out to the exterior; that these poisons are produced by bacteria which have passed through the intestinal wall. In times of unusual stress, during an abnormally large permeation of organisms, the coelomic canals are made use of and the bacteria and toxins washed out by the serum secreted in defence by the peritoneum.

Now, as we proceed through the various orders of vertebrates, from the acraniate to the highest mammalian, direct communication between the coelom and the exterior gradually disappears, so that in the human being the only direct channel is the Müllerian duct of the female. Although I am not going to exclude the duct from any possible share in the cleansing of the peritoneal cavity, still to maintain my theory that the peritoneum is a constantly infected cavity it is necessary that I find some other excretory channels to replace the more direct ones. It would be in the highest degree improbable that the direct apparatus should be comparatively suddenly discarded and another indirect one equally suddenly brought into play. It is more likely that the new methods had

been for thousands of years in some similar sort of use, and that the convenience of the organism required or its environment enabled it to depend more and more upon the indirect channels, which, as the demand made upon them became greater, became more perfectly adapted to their work.

I believe I find both methods in use in the lowest vertebrate, the *Amphioxus*. When we compare this animal with the earthworm, where we found the direct channels at their best, we notice that:

1. Whilst the rest of the animal is markedly segmented, the coelomic segments have been run into one cavity and its two anterior prolongations, the dorsal coelomic canals. The excretory tubules, of Lankester and of Weiss and Boveri, are situated in these prolongations.

2. The absorptive part of the enteron is dilated and sends a prolongation forwards by the side of the pharynx (the hepatic caecum) covered by two layers of coelomic epithelium with space between and the somatopleure. Both the dilated enteron and its pouch are placed within the atrial cavity (the great gill chamber), where water is in constant circulation, where the somatopleure can afford to be very thin, as it is still protected by the walls of the atrial cavity, the metapleural folds. Behind the atrial pore the enteron is narrow and short, the somatopleure is comparatively thick, but the coelomic cavity is wider and better marked here than anywhere else.

Now, what benefits does the *Amphioxus* derive from this arrangement? From the point of view of digestion and absorption I answer: Digestion and absorption could be equally well carried on if the dilated enteron and its pouch, the hepatic caecum, were placed behind the atrial cavity or entirely excluded from it. The thickness of the somatopleure would be a matter of no concern. So that whatever functions this arrangement subserves, I think we can confidently say they are not connected with the assimilation and absorption of food. My view is that pouching and dilatation of the enteron, being designed for the stagnation of the foodstuffs, carries with it the disadvantage that, owing to the bulkiness of the mass of food, the bacteria which swarm in it have increased opportunity for multiplying and, owing to the stagnation of the food, these increased numbers have increased opportunities for overcoming the resistance of the single layer of epithelium and passing through into the coelom, which is here very narrow; in fact, the two layers of coelomic epithelium are almost in apposition. This enables the parietal epithelium to pick out the toxins into the lymph space of the somatopleure, which is here exceedingly thin, so that they are again immediately picked out by the atrial (dermal) epithelium, and so excreted into the gill cavity, whence they are washed out by the constantly circulating water. Any bacteria which forced their way through would meet with the same fate, though I think that the greater number of these would be washed out through the nephridial tubules, for the fluid in the coelomic cavity would be in constant motion. Now it is plain why the dilated part of the intestine and its diverticulum are placed in that part of the coelom within the atrial cavity, for behind the atrial pore, the somatopleure being of much greater thickness, and containing much muscular tissue, toxins and bacteria, once they gained admission into it, would be able to enter the general circulation.

But any excretion here is unnecessary, for the part of the alimentary canal posterior to the atriopore is narrow, and practically only a duct to the exterior, whilst the coelomic cavity is conspicuous. Have I made too large a demand in assuming that the coelomic epithelium can pick out toxins and bacteria? We see this power in its correlated descendant, the lymphatic and blood capillary endothelium, for it is only owing to the selective power of this cell that the different tissues are able to obtain the substances they require. This cell is also able to pick bacteria out of the blood and lymph, so that I am not ascribing any very great property to the coelomic cell, its ancestor. Once in the lymph of the somatopleure, here exceedingly thin, the atrial epithelial cell excretes it on to the exterior, and it is washed by the current of water out of the branchial chamber. I have no proof that the atrial, that is, epidermal, epithelium possesses this property, except to point to the great powers our own epidermal cells have in this respect, for under stress they will even excrete urea, etc., and other noxious products of the body metabolism.

I believe likewise that in the human organism bacteria escape in swarms from the canal, past the intestinal epithelium into the submucous tissue lymphatic spaces. There the leucocytes are waiting for them, and no doubt account for a good proportion of them. There are, however, many kinds of bacteria, and unfortunately they are the most virulent, which leucocytes are disinclined to interfere with. These pass into the thickness of the intestinal wall until they come to the muscularis mucosae; this acts as a close-meshed net, which, whilst it will not bar their further progress in twos or threes, as it were, bars the further progress of a clump which would have a great power for evil, and causes them to spread out into a thin layer. The thinned-out line passes still further into the interior until it meets the layers of longitudinal and circular muscle fibre, where a further spreading-out process takes place until, by the time they reach the lethal peritoneal epithelium and the omentum, the original clump is spread out over a considerable surface and makes the work of these cells considerably easier. Should they survive the coelomic epithelium of the splanchnopleure their further wanderings are ended by the layers of leucocytes and the quadruple layer of coelomic epithelium of the omentum, which lies like a huge parasite dining off a constant meal of organisms which it does not even require to go in search of, for the vermicular and peristaltic action of the intestines renders this unnecessary. The process which I have just described may be seen in the spread of small tubercles on the serous surface round a tuberculous ulcer of the intestine. The area would have been larger and their number would have been much greater but that the "outliers" were never in sufficient strength to resist the omental and peritoneal epithelium and the omental leucocytes.

It may be asked why they do not enter the blood and lymph capillaries, and thus get into the general circulation. Now, the region in which they are most likely to do this is the submucous tissue; their entrance into the lymph vessels is prevented by the fact that here, unlike any other region of the body, the lymph capillary (or lacteal) does not begin in an irregular open lymphatic space, but has a club-shaped end closed in by cells which allow the passage inwards of leucocytes containing fat, but have the power of excluding undesirable passengers—the endothelium of the blood capillary has a similar property of exclusion and selection, in addition to which, in this region, this defence is aided by the immense number of leucocytes present. I take it that the immense numbers of leucocytes which are present on the hypoblastic portion of the gills of fishes are there, not to nip up bacteria escaping from the blood capillary, but rather to prevent any undesirable micro-organism settling upon and then invading the delicate epithelium of the blood capillary, here part of the systemic circulation. Here virulence of the micro-organism does not matter, for the leucocytes are constantly shedding themselves and their foe into the gill stream. In the lymphoid tissue of the intestine virulence of the invader does count, but though the leucocytes apparently shrink from tackling him, as they do the less virulent—that is, by engorging—still they drive the invader into the far more fatal trap further in—that is, the coelom.

But in spite of all this, micro-organisms do manage to gain entrance into the blood and lymph capillaries.

The lymph capillary is more likely to be invaded than the blood. They are still liable to be picked out again by the endothelial cells, and any which may escape these, in the case of the lymph capillary, meet their fate in the mesenteric glands, and, in the case of the blood, in the liver, where they are arrested by the pseudopodia of the liver cells bordering the portal capillary (Werigo). Thus is the lymph purified before it reaches the receptaculum chyli and the blood before it reaches the hepatic veins.

Now we have to consider the methods by which the peritoneal "shambles" is cleared of the bacterial carcasses and their *ante-mortem* toxins. We have examined them in the case of the *Amphioxus*. Man is, however, at a disadvantage as compared with the lower vertebrates in having no direct outlet to the exterior.

At times of small or normal stress—that is, when no "symptoms are produced"—the bacteria (dead) are conveyed by

1. Leucocytes, where they may be digested entirely.
2. Leucocytes, back into the intestine, and thus to the exterior.
3. Leucocytes into (*a*) mesenteric glands by the lymph channels, (*b*) liver by the portal blood of omentum and intestine, where they are arrested by the liver cells and cast out into the bile.

The contaminated lymph of the cavity is—

1. Excreted by the visceral endothelium back into the intestinal lymph, whence it is (*a*) extracted by Lieberkühn's glands into intestine; (*b*) absorbed by veins and extracted, and perhaps changed by liver cells and thrown into the bile which passes down the intestine, and acts possibly as an antitoxin to that particular variety of bacteria.
2. Absorbed by omentum, and thence into liver, etc.

How often has it happened that a surgeon, when operating for a totally different abdominal condition, has found miliary tuberculosis of the peritoneum which has given rise to no "symptoms"! I had such an experience a short time ago. I was operating for a ventral hernia, and, to my astonishment and dismay, discovered that the peritoneum—parietal as well as visceral—was covered with little millet-seed tubercles. The case did perfectly well. Now, if I had not operated, this incident in the patient's history would never have been known, for, the normal machinery being equal to the demand, no physical signs or symptoms were produced.

I would also include here the thousands of abdominal cases which in the pre-antiseptic and even the pre-glove days emerged successfully from a surgical operation, with suppuration limited to the abdominal wall. The peritoneal cavity had done its work silently and effectively. Lane's constipation bands are the scars of silent battles in the peritoneum.

Now let us take a case in which the stress upon the peritoneum was so great that the normal machinery I have mentioned is not equal to the task imposed upon it. Nature is still far from the end of her resources; but, from the very fact that unusual methods of dealing with it are called upon, "symptoms" and physical signs are produced. These, so far from making us believe that physiology is "disordered" (Barnard), ought plainly to point out to us the extra reaction to an extra injury. Pathology is, in fact, not "disordered physiology," but "extraordinary" physiology.

The symptoms and physical signs of acute miliary tuberculosis which has been caused by the rupture of a mesenteric gland, Fallopian tube, or from a tuberculous ulcer of the intestine, are clues to the extra channels of excretion made use of in times of great stress upon the peritoneal cavity.

To begin with, the invasion is not by permeation, but by sudden flooding from a diseased focus, by bacilli and their toxins; hence there is pain; the overdose is thinned and spread out as rapidly as possible, a large quantity of bactericidal serum is secreted; hence there is ascites, which is not only fatal to the bacilli, but dilutes their toxins. Some of the toxin escapes into the systemic circulation; hence there is rise of temperature and rapid pulse. In order to limit the amount of toxins escaping into the general system, in spite of the arterial hyperaemia, which is necessary, the blood to the liver is stagnated as much as possible in order that the liver cells may have a fair chance to cope with it; hence the intestine has a congested appearance, and its movement is reduced to a minimum, and even inhibited entirely, and so we find constipation; in addition to which the intestine, *pro tem.*, acts as a respiratory chamber for the reception of the CO_2 and the waste products of the venous blood; hence there is tympanites. Were it not for this temporary relief the vitality of the bowel wall would be very seriously and rapidly interfered with. Under these circumstances, it can be imagined that the intestinal route for the excretion of the toxins from the peritoneal cavity would not be a very efficient one, so another has to be found. The peritoneum of the stomach now takes on the work; the peptic glands do the work normally done by Lieberkuhn's glands. The bowel being paralysed, a new duct to the exterior has to be found. The stomach is filled, not only with the toxins excreted by its own glands, but also with the excretions of the liver, and the vomiting centre in the medulla, being stimulated by toxins which have gained access to the systemic circulation, ensures (via the vagus?) a periodical expulsion of its noxious contents; hence the vomiting of large quantities of fluid. The colour of the vomit will depend upon the efforts which the liver cells have to make to meet the difficulties of the case. If the stress is small the hepatic centre in the medulla which regulates the metabolic activity of the liver cells (Bernard's glycogenic centre) is stimulated by poison in the systemic circulation to a corresponding effort only; hence the vomit, after the expulsion of food, will contain light yellow bile and the acid secretions of the stomach; under greater stress the latter will be mixed with light green bile, and so on, until, in virulent septic cases, such as peritonitis from a perforated gangrenous appendix, we see it gradually change to sage green (acid), dark spinach green (acid), to black and so-called "faecal" (alkaline towards the end).

Such, then, are the "local" symptoms of acute tuberculous peritonitis. If the dose is not too large, with the aid of this extra help the peritoneum recovers itself, shuts up the bacteria in tubercles and deals with them leisurely in the way in which I have before suggested. The omentum shows the most severe signs of the past struggle. As there is considerable leeway to make up, diarrhoea sets in; the ascitic fluid is gradually thus drained away, the temperature and pulse become lower, and the balance of health is restored. An abdominal incision expedites matters considerably.

If the original dose of bacilli is overwhelming, or, as in the case of tuberculous ulceration of the intestine, not only overwhelming but continuous, the bacilli cannot be sufficiently rapidly thinned and spread out, the result being the caseous or fibro-caseous peritonitis which even surgical assistance is so powerless to help.

The peritoneum may be invaded by all kinds of bacteria and cocci of all grades of virulence, either gradually, as through an inflamed appendix, infected Fallopian tube, the weakened intestinal wall behind a growth or other non-acute obstruction, etc., or overwhelmingly, as through a perforated gangrenous appendix, gastric or duodenal ulcer, from extensive ulcers in the intestine, strangulated bowel, or through bowel wall behind a chronic obstruction, whose vitality has at last been so diminished as to offer no resistance to the passage of bacteria from the intestine into the peritoneum (so-called "acute obstruction"), or from the extensive surface of a virulently infected puerperal uterus. The symptoms and physical signs of the peritoneal toxaemia will vary not only in intensity but according to the particular channels by which the peritoneum attempts to relieve itself—for example, diarrhoea is more characteristic of puerperal fever and pneumococcal infection than others, and vomiting, therefore, less conspicuous.

The greater the virulence of the toxins, the more the pain and the more Nature tries to limit the poison to the peritoneal cavity; hence there is more rigidity, constipation is more absolute, the vomiting more incessant (with exceptions where the ratio is inverted). There is more tympanites. The constitutional symptoms caused by the systemic poisoning are more marked, and all possible channels are used—for example, the lungs and pleurae, as shown by the frequent and shallow respiration, the peripheral arteries are constricted to minimize the poisoning of the tissues and increase the supply to the visceral vessels and kidneys; the extremities become cold; the sweat glands are called upon to join in the work of excretion in order to stave off as long as possible, and perhaps prevent, the final paralysis of the heart. The tissues are drained of fluid in order to supply the peritoneal cavity by the visceral arteries, with a wash-out which passes out through the liver and stomach.

The prevailing theory of the causation and mechanics of faecal vomiting (Huguenot's) is entirely wrong and is open to insuperable objections (see Hemmeriden, II, 157, for a statement of this theory).

1. It occurs when there has been *no* intestinal occlusion, such as very bad cases of appendicitis, and impacted gall stone in *cystic* duct, and acute pancreatitis, cirrhosis of liver (terminal stage).

2. The faecal vomit is not the same in colour as the contents of the higher reaches of the intestine, as was proved in a case of impacted gall stone in the jejunum which I operated upon a little time ago.

3. Even in cases of intestinal obstruction it appears com-

paratively late, the various vomits following a definite sequence of which faecal vomit is the last and comparatively late stage, except in impacted gall stone, whether in the cystic duct or intestine, when it appears very early.

4. The amount vomited is far greater than the amount taken in.

5. In cases of intestinal occlusion—say, of annular stricture of the small intestine—the more the faecal vomiting, the more relieved the patient should feel. On the contrary, the more toxic he appears.

6. In cases that recover there is an intense diarrhoea at first of small quantity of dirty brown material, then of large amount of light liquid, lemon-yellow faeces, showing that the liver cells have not regained their normal powers.

7. If the faecal vomiting occurs sometime subsequent to the insertion of a drainage tube in the peritoneal cases—that is, non-occlusion cases—then the patient will probably recover; whereas if operation is deferred until it has occurred the case is hopeless. An exception must be made in the case of impacted gall stone, as faecal vomiting is so often an early symptom, and followed by temporary relief.

8. A most fatal objection is that the higher up the obstruction the more profuse is the vomiting. The contrary should be the case. My explanation of this phenomenon is that the number of bacilli which should have been spread over the whole length of small intestine now flood the upper reaches of peritoneum, and stress is more rapid and urgent on stomach and liver: the need being great early, the liver early puts forth all its strength.

The reaction and colour of the vomit have, to me, become important indications, not only in the diagnosis, but still more in the prognosis of inflammatory conditions inside the abdomen.

For instance, if the case has been ill for more than three or four days and the vomit is still yellow and acid, I know there is no perforation or acute obstructive condition, but simply inflammatory, and if surgical interference is necessary, the prognosis is good. On the other hand, if by this time the vomit is black or coffee-coloured, the diagnosis is that of acute virulent, thin turbid fluid peritonitis—for example, pneumococcal (rare and fatal cases), or perforative gangrenous lesions of some part of the intestinal tract, and if surgical aid has not already been given the case is absolutely hopeless. A dark, spinach-green vomit before operation makes the prognosis exceedingly grave. A home-made beef-tea-like vomit generally indicates pus and a certain amount of lymph, and one sees it in some cases of gonorrhoeal peritonitis and general purulent peritonitis from appendicitis. Operation, to have any hope of success, should be undertaken instantly. The prognosis is bad. Early faecal vomiting is a certain sign of impacted gall stone, and prognosis, if operated upon, is good. Late alkaline faecal vomiting means acute strangulation, acute gangrenous appendicitis, etc., and operation, if it has not been previously undertaken, is now out of the question. If it comes on after operation, is acid or neutral, with clean tongue, even though there still be absolute constipation and great tympanites, if the pulse be under 100, the prognosis is quite good.

In operating on septic abdominal cases it should be remembered that the liver and stomach, if chloroform is given, have to excrete this drug from the circulation as well. The double duty handicaps them. Ether is better in such cases.

It is not necessary to enter upon a detailed explanation of the pathology, physical signs and symptoms of a midway type, such as pneumococcal peritonitis, chronic proliferative peritonitis, etc. The variation in the reaction of the peritoneum is due to the difference in the virulence of the organisms permeating the intestinal wall.

Localized peritonitis—for example, round an appendix—should present no difficulties in the way of explaining both its method of localization and why its symptoms are those of a general peritonitis. The vomiting in these cases is said to be reflex. I claim that my theory is the more reasonable. Does it not also throw light on the symptoms of "appendix dyspepsia"?

A boy's bilious attack is a peritoneal toxaemia; so also are the summer diarrhoea of children and Asiatic cholera—that is, the peritoneal cavity is the seat of the elaboration of the poison by the bacteria.

Some of the cases of "vicious circle" after gastro-jejunostomy are instances of septic peritonitis. Some of the failures of gastro-jejunostomy are due to the fact that the operation has been performed, not on account of pyloric obstruction or gastric or duodenal ulcer, but in cases of chronic infection of the peritoneal cavity, and the seat of this was not found; the poisoning, therefore, continuing, the liver and stomach continued their necessary work of excretion.

Take, again, some—I do not say all—cases of chronic atonic dilatation of the stomach (without obstruction). I believe the cause of the condition to be due to the following sequences of events:

Abnormal microbes in excessive numbers in the intestine (due to unsuitability of, and over-indulgence in, food and drink), permeation of these into peritoneal cavity; there being consequently the stomach assists the liver in the work of excretion, and therefore constantly contains toxic secretion; this duty and digestion cannot both be performed properly, the former, being of the most vital necessity, is proceeded with; food therefore ferments, the numbers of the bacteria are thus increased, and a vicious circle set up: the muscle coats are constantly soaked in toxic lymph and become atonic, etc.

I have a desire to believe that gastric ulcer has somewhat of the same causation, and that, in addition to toxins, bacteria themselves are thus excreted. Some of these bacteria, during the time that they find themselves in the submucous plexus, begin the mischief of ulceration, but I I merely whisper the suggestion at present.

The symptoms of acute intestinal obstruction, as given in the textbooks, are not symptoms of obstruction at all, but of the supervening acute virulent peritonitis due to the excessive permeation of virulent micro-organisms through the bowel wall. Such a permeation may take place without obstruction, and Hemmeter says that "many cases have died with the symptom of acute intestinal obstruction where none could be found at the *post-mortem* examination."

TUBERCULOSIS IN INFANCY AND CHILDHOOD.

FROM THE STANDPOINT OF PREVENTIVE MEDICINE.

BY

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In the JOURNAL during 1910 an article by Hamburger appeared, setting forth the results obtained by him in Vienna by the use of the cutaneous tuberculin reaction in a large number of apparently healthy children of all ages from infancy to puberty.[1] These results were remarkable, for they showed that tuberculous infection, entirely, of course, in a latent form, and beyond the reach of the most refined physical examination, began to occur in infancy, and so rapidly and steadily increased during childhood, that by puberty about 90 per cent. of poor children in Vienna reacted positively to the tuberculin test. Von Pirquet's classical investigation, published in 1907, had demonstrated for Vienna the same striking fact—namely, the existence in childhood of a widespread latent tuberculosis, in addition to the mass of active and clinically apparent tuberculosis.[2]

The following is a series of 371 cases in which cutaneous tuberculin tests were performed on in-patients of the Royal Edinburgh Hospital for Sick Children; they make it possible to institute a comparison between Edinburgh and Vienna. Both von Pirquet's results and my own included cases of active and recognized tuberculous disease, and are therefore strictly comparable; while Hamburger's figures, showing only latent or concealed tuberculosis, must be kept separate.

The Edinburgh cases were not selected in any way, but were taken systematically from all the medical wards of the hospital. The series was not consecutive, being interrupted from time to time. It includes a number of clinically tuberculous cases, but no attempt was made to secure a large number of these, or of any other clinical condition. The series, therefore, forms a representative group of the in-patients of this hospital, drawn from the poorer classes of the population of Edinburgh. The few cases from rural districts will not materially injure the deductions, and such cases are no doubt also included in the Vienna figures. The cases are arranged in six age periods, similar for both places. In the Edinburgh table there are no cases over 12 years.

Age Period.	Edinburgh.		Vienna.	
	Number of Cases.	Percentage of Positive Reactions.	Number of Cases.	Percentage of Positive Reactions.
Under 1 year	64	14.1	156	5.1
1–2 years ...	61	29.9	98	22.4
3–4 years ...	75	46.6	108	37.9
5–6 years ...	52	28.8	85	62.3
7–10 years ...	79	51.9	119	59.6
11–14 years ...	40	55.0	65	73.8
Total ...	371	37.7	631	38.5

These results can be conveniently shown and compared by means of graphic curves, as in the accompanying chart:

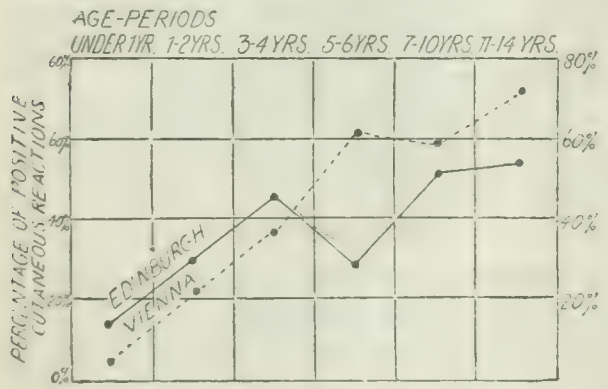


Fig. 1.—Cutaneous tuberculin reactions.

The two curves for Edinburgh and Vienna agree in some respects and differ in others. In both towns tuberculous infection begins in the first year of life, and increasing steadily in the successive stages, is found to prevail in a high degree about the age of puberty. But there are some differences. The curve for Edinburgh rises more steeply at first, and almost attains its maximum at the age period 3–4 years; after a drop in the next period (possibly to be accounted owing to the small number of cases), it rises again by smaller increments. The curve for Vienna is more uniform in its progress throughout, being distinctly lower than that of Edinburgh in the first three age periods, but overtaking it and decisively surmounting it in the latter half of the chart. In trying to interpret these curves from the standpoint of the sources of infection, it may be possible to show that this different behaviour of the two curves is significant.

It is generally agreed that, for practical purposes, there are only two sources of infection in human tuberculosis—the disease pulmonary phthisis in man conveyed by sputum and disease in cattle conveyed in tuberculous milk. It is seldom possible to indicate on a large scale the amount which each of these sources of infection, human and bovine, is contributing to the total of human tuberculous disease; but in the case of Edinburgh and Vienna the figures of tuberculous infection in childhood already given, along with certain other data, can be made to furnish a rough estimate of the respective parts played by the two factors in this widespread infection of the child population with tuberculosis.

The amount of human infectious material in a locality may be fairly gauged by the prevalence of phthisis within it, and so by the phthisis death-rate. The following figures give for Edinburgh (1909) and for Vienna (1906) the number of deaths from phthisis per 100,000 of the popula- The figures for Vienna were kindly obtained for me by Dr. J. C. Dunlop, Superintendent of Medical Statistics, Register House, Edinburgh:

Edinburgh, 117 Vienna, 293

In Edinburgh, therefore, the amount of human tuberculous material of an infectious kind is little more than a third of that in Vienna. Further, Edinburgh has possessed since 1887 in the Royal Victoria Dispensary for Tuberculosis an organization specially directed to control and nullify this mass of infectious material; while Vienna, as far as I know, is without such an organized control. Yet in Edinburgh, with its much smaller phthisis death-rate, and with its special defences against human infection, the poor child-population for the first four years shows a greater degree of tuberculous infection than the corresponding population in Vienna, where the amount of human infectious disease is not only much larger, but is also less strictly controlled. There being only one other source of infection—the bovine—we are driven to conclude that the bovine factor must play in Edinburgh a larger part in child infection than in Vienna—in short, that in Edinburgh the children of the poor are seriously exposed to infection by tuberculous milk.

That conclusion is strongly supported by evidence of another kind. Abdominal tuberculosis, which especially prevails in the early years of childhood, is exceedingly common in Edinburgh; it is very uncommon in Vienna. Thomson and Fordyce[3] have prepared figures (from clinical records) showing the incidence of abdominal tuberculosis in various European and American hospitals; they give the following results for Edinburgh and Vienna, which endorse the above statement:

	No. of Cases.	Percentage of Abdominal Tuberculosis.
Edinburgh	15,320	3.6 per cent.
Vienna...	11,184	0.46 per cent.

It is not denied that abdominal tuberculosis may be caused by human contagion; but this factor may be expected to operate at least equally, probably more severely, in Vienna. As before, therefore, we are forced to the conclusion that bovine infection is a considerable factor in the tuberculous infection of Edinburgh children, and explains the higher curve in the early years of childhood as compared with that of Vienna.

From the standpoint of preventive medicine, the importance of being able to estimate, however roughly, the varying parts played by human and by bovine infection in this process of tuberculous inoculation is obvious. The statistics collected by Thomson and Fordyce, already quoted, are of great value for this purpose. They show that, while Edinburgh and Glasgow are easily first (from hospital clinical records) in the prevalence of abdominal tuberculosis, all the other British children's hospitals investigated show a much greater frequencey of abdominal tuberculosis than do similar institutions in Italy, Austria, Germany, France, and America. The serious position which Great Britain occupies in this respect is graphically illustrated in the following chart, prepared from the figures of Thomson and Fordyce:

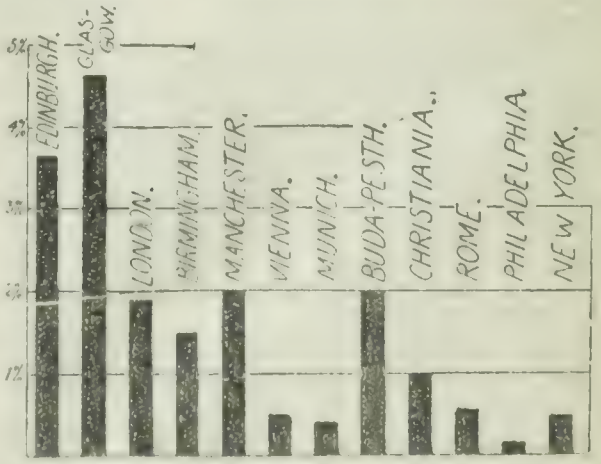


Fig. 2.—Showing the relative prevalence of abdominal tuberculosis in different children's hospitals.

I further endeavoured by the simultaneous use of human and bovine tuberculin for the cutaneous reaction to separate

cases of tuberculosis according to the source of infection, human or bovine.

Table showing Results in 330 Children, testing them with one another the Concentrated Tuberculin (Old) Human and Bovine, in each Case.

H = Human Tuberculin; B = Bovine.

H and B equal (both positive or both negative) ...	258
H and B both positive, but H greater than B ...	52
H and B both positive, but B greater than H ...	9
H positive, B negative	11
H negative, B positive	0

The results of this test defeated any hopes of discriminating in this way between a tuberculosis of human and one of bovine origin. They show that in the vast majority of cases, whatever the strain of bacillus present in the body, the reaction of the human tissues is the same, whether it is human or bovine tuberculin that is used to provoke it. It seems, in fact, another piece of evidence in favour of the view that human and bovine bacilli are closely kindred organisms. It is, of course, certain that some, and possibly many, of these 258 cases reacting equally to human and bovine tuberculin must have been bovine infections; but in the present state of knowledge this indifference of reaction cannot be used for or against the question of transmutation of the bovine into the human type of bacillus by residence in the human tissues. All that can be done is to state the results of this test and to leave them meantime unexplained.

So far, therefore, the conclusions are: (1) Tuberculosis, both as active tuberculous disease and as latent infection, is widespread among the poorer children of the Edinburgh population, and that by far the greater part of this is effected in the first few years of life.

(2) When one endeavours to fix the sources of this infection, whether derived from tuberculous disease in man or from tuberculous milk, by a comparison with conditions in Vienna, both as to tuberculosis in childhood and as to adult tuberculosis (phthisis), the conclusion is reached that bovine infection must have a considerable share in the tuberculous infection of Edinburgh children. This infection by tuberculous milk is chiefly operative in the first four years of life. It is specially marked in Edinburgh and Glasgow, but prevails in the large towns of Great Britain to a far greater extent than in most large centres in Europe and America.

(3) These facts of tuberculous infection in infancy and childhood, both as to its extent and its nature, must receive attention in any thorough scheme of administrative control of tuberculosis. They show clearly that the child is very susceptible to tuberculous infection, and that for Edinburgh at least this greater part of infection is effected *before school age*. This age incidence of the infection, if it can be shown to prevail generally, must make more difficult the problem of control. Some more effective measures for dealing with milk infection, which is a marked and special feature of tuberculosis in childhood in this country, are also called for.

It is very difficult to do more than guess at the relative parts played by human and bovine infection in Edinburgh. It is not meant to suggest that the factor of human infection is negligible. It is precisely during the first few years of life that the child is most dependent on the adult, and most closely in contact with [illegible] most susceptible to human infection, and most difficult to guard from such infection. But these conditions are common to all countries and places, and they do not explain the greater incidence of tuberculosis of young children in Edinburgh as compared with Vienna.

Animal experiments, notably those of Findel[4] and Cobbett,[5] and those carried out by the British Royal Commission on Tuberculosis, have shown for various animals that it is more difficult to infect by swallowing tubercle bacilli in food than by breathing them in air. The flaw of all such experiments, used as applicable to human conditions, is that while this may be true of the healthy intestine, the same mucous surface in unhealthy conditions of catarrh, etc., may be easily penetrable by tubercle bacilli. In the frequent digestive disturbances of young children the intestinal ports of entrance, normally closed, may be thrown freely open.

The investigation by the British Royal Commission[6] of the characters of different viruses obtained from tuberculous disease in man is relevant to this point. In 29 cases of primary abdominal disease, by certain cultural and inoculation tests, 14 bovine strains of bacilli were isolated, and 2 of mixed human and bovine strains: the remainder were human strains. But in 11 of these 29 cases where the mesenteric glands alone were subjected to the tests, the results were 7 bovine and 4 human strains. Here again the possibility of the metamorphosis of types, and especially of the bovine to the human type, comes to the front. The Commission, after rigorous animal experiments, failed to obtain evidence that this transmutation of types takes place, but nevertheless concluded that "they are not prepared to deny that the transmutation of types does not occur in nature." In face of that conclusion, the separation of strains of tubercle bacilli according to the above cultural and biological tests does not give a decisive verdict on this point.

In any case this means of separation is not available clinically, nor is it practicable on a large scale from *post-mortem* material. For practical purposes a rough method of calculating the amount of human and bovine factors in the tuberculosis of childhood is to take, on the one side, the phthisis death-rate for the district, and allowing for any organized control of phthisical patients that exists, to regard its amount as measuring the human factor of infection: and, on the other side, to take the figures for abdominal tuberculosis as roughly indicative of the extent of the bovine factor of infection.

The Relation of Latent Tuberculosis in Childhood to Adult Tuberculosis.

In the 371 cutaneous tests performed on Edinburgh children, 297 were in cases that clinically were non-tuberculous. Of these, 28 per cent. reacted positively to tuberculin, indicating this proportion of latent as against active tuberculous infection. It is the presence of this large amount of latent tuberculosis that destroys the value of the von Pirquet reaction as a test of clinical tuberculosis. It is necessary to point out that the undiluted old tuberculin must be used if latent infections are being sought for. Mills,[7] in a recent analysis of the cutaneous test in 253 children, where he used a 20 per cent. dilution of old tuberculin, found negative results in 48 healthy children, whose ages ranged from 9 months to 12 years, and concluded that "a negative reaction may be confidently expected in children apparently non-tuberculous." I myself,[8] in a previous series published in the JOURNAL, and using a 25 per cent. dilution, obtained negative results in about 50 children suffering from diseases clinically non-tuberculous. But if undiluted tuberculin is used for the test, this statement is no longer true. Many apparently healthy children and many with diseases apparently non-tuberculous will then give a positive skin reaction.

The curves (Fig. 3) prepared from Hamburger's tables[9] give a picture of the frequency of latent tuberculosis at the various age periods of childhood. They represent

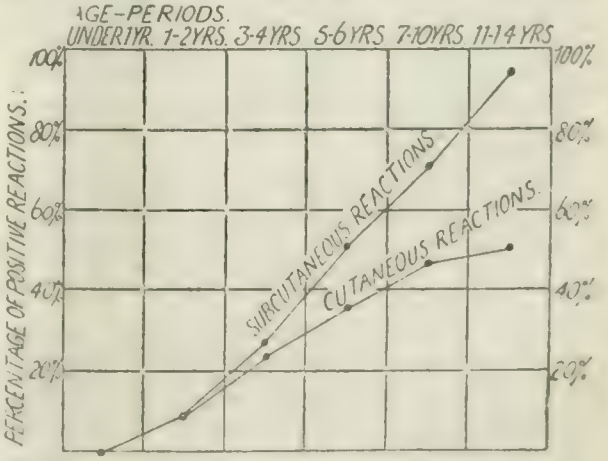


Fig. 3.—Latent tuberculosis (Hamburger), cutaneous reactions in 509 children clinically non-tuberculous.

tuberculin reactions given by 509 children, all of whom were by ordinary clinical tests free from tuberculous disease. The lower curve is of cutaneous reactions: the higher curve is of subcutaneous reactions (*Stichreaktion*), and represent positive results obtained by this more

delicate method in children who had failed to react to the cutaneous application of tuberculin.

This double curve of latent tuberculosis in childhood is interesting, for it serves to separate what may be called a latent infection of low potential from one of high potential. For the first four years of life the two curves are almost merged into one—that is to say, at this period all latent infections are of high potential; in other words, a quiescent focus may readily become an acute or general infection. But after this period the two curves widely diverge, the lower curve indicating the number of cases of latent infections of low potential at the later period of childhood, cases where the focus of tuberculosis is on the way to becoming obsolete and extinct. The upper curve, however, may represent cases where the focus of tuberculosis is quiescent but not obsolete. It is these cases of latent quiescent tuberculosis in the later years of childhood which may be the forerunners of adolescent and adult phthisis.

Von Behring[10] in 1903 endeavoured to link up tuberculosis in the child with adult tuberculosis, explaining the latter as a late fruit of seed that had been sown in infancy, and regarding the intestinal mucous membrane as the port of entrance, and tubercle bacilli in milk as the source of infection. In all the criticism that has been poured upon this theory, there has been neglect of one point which Behring emphasized—that phthisis is a disease occurring in a person already infected with latent tuberculosis, and that the peculiar character of phthisis is due to this previous infection, which without good grounds he dated back to the earliest period of childhood.

But Hamburger and von Pirquet have now established the fact of latent tuberculosis in childhood, and have traced its progress and increasing frequency through all the periods of childhood. Hamburger[11] therefore strongly supports Behring's conception of phthisis as a late sequel of a process begun in childhood. He compares tuberculosis with syphilis, and believes that primary, secondary, and tertiary stages can be marked in the one as in the other. In tuberculosis the primary stage is the first inoculation at some period of childhood—the penetration of a mucous membrane, the settlement in a gland. The secondary stage is represented by the terribly acute manifestations of tuberculous disease in childhood, abdominal tuberculosis, acute phthisis, tuberculous meningitis, general tuberculosis. But this secondary stage may never appear, and yet the tertiary phase may develop many years after in the chronic pulmonary tuberculosis of the grown man. That, so far, is an elaboration of von Behring's view. In childhood the seed is sown as latent tuberculosis; in manhood, the harvest is reaped as phthisis.

Hamburger brings *post-mortem* evidence in support of this view. In Vienna, of 175 children dying of tuberculosis, tuberculous disease of the bronchial glands was found in 97 per cent. The primary focus could in most cases be made out in the lung itself. This disease of the bronchial glands is, according to him, the starting-point of a tuberculous invasion of the lung, such invasion being delayed till adolescence or adult life.

But this pulmonary invasion may not be delayed. It may occur in childhood, producing an acute phthisis, which is rapidly fatal.

Sluka in Vienna[12] has published a series of cases of this kind, in which by the use of *x* rays he demonstrated in life enlargement of the bronchial glands, and later a spread of disease into the lungs. In adult life, however, it is a slow infiltration of the lung, in the first instance by way of the lymphatic tracts, and later gives the familiar picture of a chronic phthisis.

Shennan[13] has made a valuable analysis of *post-mortem* examinations in the Sick Children's Hospital, Edinburgh, and his table of glandular distribution is exactly comparable with a table given by Hamburger. In both tables the children died of tuberculous disease; the cases are thus not of latent tuberculosis.

This comparison brings Edinburgh into line with Vienna with regard to *post-mortem* material, showing for both places the great frequency of bronchial gland tuberculosis, but emphasizing also the peculiar position of Edinburgh with regard to abdominal tuberculosis.

The evidence in favour of a connexion between tuberculosis in the child and in the man thus rests on several sets of facts: On the great frequency of latent tuberculosis in childhood, especially in the later periods; on the localization of this latent disease in a great majority of cases in the bronchial glands that trap the lymphatic currents through the lungs, and on the special age incidence of phthisis at the periods of life nearest to childhood.

Table showing Glandular Distribution of Tuberculosis.

Glands Affected.	Edinburgh (Shennan). Total Cases, 243.	Vienna (v. Ghon). Total Cases, 175.
Mediastinal alone	93 (or 39 %)	113 (or 67 %)
Mediastinal and mesenteric together	101 (or 42 %)	169 (or 100 %)
Mediastinal total	194 (or 81 %)	169 (or 100 %)
Mesenteric alone	45 (or 19 %)	—
Mesenteric total	150 (or 63 %)	56 (or 33 %)

Whether this invasion of the lungs is entirely an auto-infection from the disease in the bronchial gland, or is partly also assisted by a fresh infection, there are no means of judging. The point, in any case, is not important. The fundamental fact, both for Vienna and for Edinburgh, is that among the poor children latent tuberculosis is extremely common, and in the majority of cases is located in the glands at the roots of the lungs.

A question here arises whether these bovine infections, that have been shown to be such a special and important feature of child tuberculosis in Edinburgh, can end in adult or adolescent phthisis. The British Royal Commission only isolated 2 bovine strains from 42 cases of phthisis. The answer to the question thus depends on whether metamorphosis of bovine into human types of bacilli occurs in human tissues; and metamorphosis, though the balance of experimental evidence is against it, has not received a final scientific negative. But even if bovine infections are practically confined to child tuberculosis, there is probably a sufficient number of human infections in childhood to support the hypothesis of adult phthisis as a sequel to a focus of pre-existing local tuberculosis.

If adult phthisis be in most cases a sequel of latent tuberculosis acquired during childhood—and certain facts, both clinical and pathological, seem to support it—any administrative measures that might reduce or prevent the infection of children would have decisive effect in the campaign against tuberculosis.

I wish to express my indebtedness to Dr. Melville Dunlop, Dr. John Thomson, and Dr. J. S. Fowler, who kindly allowed me perform the cutaneous tests on patients in their wards; and also to the Carnegie Trustees for a grant which has defrayed the expenses of the investigation.

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THE *Boston Medical and Surgical Journal* quotes a report from Albany as stating that on August 26th Governor Dix announced the appointment of Dr. Charles H. Andrews of Buffalo, Dr. Lemon Thompson of Glens Falls, and Dr. Charles C. Duryea of Schenectady, as members of the board, established last year by the Bush Bill, to examine the feeble-minded, criminals, and other defectives, with a view to determining upon the legitimacy of their surgical sterilization. "The examiners are empowered to examine into the mental and physical condition, the record and family history of the feeble-minded, epileptic, criminal and other defective inmates in the State hospitals for the insane, State prisons, reformatories, and penal institutions, and one of its members is authorized 'to perform such operation for the prevention of procreation as shall be decided by the board to be most effective.' Only criminals convicted of such offences against the criminal law as convince the board that they are subject to 'confirmed criminal tendencies' come within the operation of the law."

THE SUBJECTIVE METHOD FOR ESTIMATING BLOOD PRESSURE.

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In all observations for the clinical estimation of blood pressure it is generally agreed that the most accurate method is to employ a hollow pad to encircle the whole of some portion of a limb, to attach an air-pump to this, by means of which the pressure on the limb can be increased, and a manometer to measure the amount of pressure exercised. It is also generally agreed that the only forms of manometers which can be depended on for accuracy are those which are provided with a column of mercury. The others are not to be trusted unless frequently standardized by comparison with a mercurial instrument. For convenience the arm is the limb on which observations are generally made, and the best results are obtained when the compression armlet, measuring not less than 12 cm., is applied to the upper arm just above the elbow.

The pressure in the armlet having been raised sufficiently to obstruct completely the passage of blood through the brachial artery, this, by means of a control valve, can be gradually released, and the return of the blood into the arteries below the armlet can be determined in various ways. Those in common use are (1) the digital; (2) the auditory; (3) the visual.

1. *The Digital Method.*

By keeping the finger on the radial pulse the moment of the return of blood into the vessel can be observed with more or less accuracy. This indicates the moment when the power exercised by the heart is sufficient to overcome the pressure of the armlet, and is generally accepted as the systolic pressure. The digital method does not tell anything more, and is open to the objection that it is much influenced by the personal equation of the observer. This applies not only in comparing his observations with those of others, but also to his own, made on different occasions and under different conditions. I have little doubt, from experiments made on myself, that the acuity of the tactile sense is very much influenced by conditions of health and environment.

2. *The Auditory Method.*

This was first introduced by Korotkow of St. Petersburg in 1905, and made known in England by Dr. Oliver five years later. Instead of using the finger on the radial pulse, a stethoscope is applied to the brachial artery at the bend of the elbow: on the return of the blood beneath the armlet a distinct throb becomes audible, which gradually increases as the pressure lessens, and then gradually dies away and disappears on the complete relaxation of the constricting band. The auditory method gives not only the high point—the systolic pressure very definitely—but it also gives the low point; under normal conditions the point of maximum throb is midway between these points, and this is generally accepted to be the indication of diastolic pressure. It therefore gives three points. The finding of these is of the greatest importance, as I believe that alteration of the ratio between the systolic and diastolic points is the determining factor in the elucidation of those diseases which depend rather on disturbance of physiological conditions than on mechanical obstruction. Auscultation, then, has the advantage of giving more information, more accurately, and much less influenced by the personal equation. It has this disadvantage, that anatomical variations of the parts about the elbow may cause a throb to be heard even when there is no pressure at all. I have had one case, and Sir Lauder Brunton tells me he has had another, in which the low point was zero, which, of course, vitiates any calculation of the mean pressure.

3. *The Visual Method.*

Apart from the recording instruments, such as those designed by Erlanger and G. A. Gibson, which, though accurate, are unsuitable for clinical work, the determination of the blood's return by means of the sight depends on the agitation conveyed from the armlet to a metallic needle or a column of spirit or air. The maximal oscillation of the needle or column indicates diastolic pressure. The value of the observation depends very largely on the accuracy of the instrument and the amplitude of the oscillations. For demonstration purposes the visual method is most convenient, and Pachon's instrument, which I am using this afternoon, is perhaps the best. This instrument is supplied by the makers with too narrow an armlet designed for application to the forearm. The results from this are misleading; but if a Martin's 12 cm. armlet be used on the upper arm, substantially accurate results are obtained, coinciding with those by other methods, except that the needle is more sensitive than either the finger or the ear, and the record is 2 cm. too high for the high point and the same amount too low for the low point. In comparing methods a deduction must be made for this.

4. *The Subjective Method.*

Since my attention was called to the auscultatory method, I have always employed it, finding it more accurate and comprehensive than the digital. I found, however, in taking my own pressure that I was able, with equal accuracy, to estimate by my own sensations the moment when blood commences to return beneath the armlet, and that at which, the pressure being entirely relaxed, there is no obstruction to the circulation. The throb, which is audible through the stethoscope to the ear of the observer, is equally felt by the observed. With a little education the point of maximum throb can also be determined. This, which I call the *subjective method*, is, when attention is called to it, so obvious that I would not have ventured to bring it forward had I not been requested to make it public by Dr. George Oliver, to whom I communicated the observation at the beginning of last year. He introduced a note upon it into his paper in the *Quarterly Journal of Experimental Physiology* (March, 1911). He has since written to me saying that he has constantly made use of the method, and found it accurate and of much value. In estimating blood pressure I invariably make use of the auscultatory and subjective methods together, the one to correct the other. The subjective method has this advantage, that it is free from the small percentage of error due to anatomical variation, and this disadvantage, that with nervous and excitable people it is of no use at all.

[*] Paper read before the Oxford and Reading Branch of the British Medical Association, on July 13th, 1912.

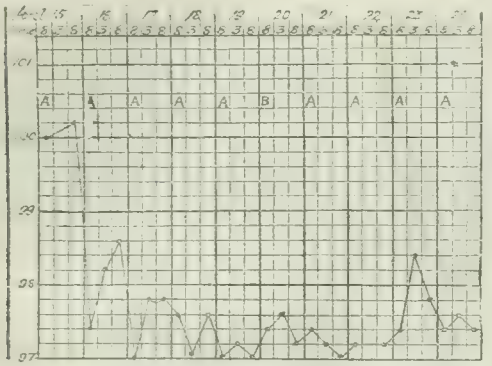
WHOOPING-COUGH TREATED BY INTRAVENOUS INJECTIONS OF IODOFORM.

BY
THOMAS W. DEWAR, M.D., C.M., F.R.C.P.E.,
DUNBLANE.

For many years I have been anxious to try the effect of intravenous injections of iodoform in whooping-cough, but as one generally meets with the disease in young children with very small veins who lack the fortitude to submit to the operation, I have not been able to attempt it. Apart from its utility in pulmonary tubercle, it has proved of service with me in pneumonia and many obstinate cases of pulmonary catarrh which have resisted applications of iodine, blistering, and a great variety of cough mixtures. I was glad, therefore, of the opportunity to apply it in a lad of 15, just returned from a public school where the disease was prevalent. He had the usual malaise, the suffused face and eyes on coughing; his temperature was 100°, pulse 100, and respirations 26. The whoop had developed. He could give me no idea of the number of coughs in the day, further than that they were frequent and his nights were very broken by coughing. There was very little expectoration, but on auscultating the chest catarrhal sounds were distinctly audible over both lungs from apex to base. There were no other physical signs of lung mischief. The temperature (taken orally three times a day) was normal on the third day. The whoop disappeared from the cough on the fourth day. He slept all night without a cough on the fifth day. Pulse and respirations became normal, and the number of coughs fell from twenty (urgent and prolonged) to four (simple and short) in the day, on the tenth day.

On the first two days the coughing immediately after the injection was pretty severe, but every day thereafter

it diminished still, on the tenth day, no cough followed the injection.



A, Injection of CHIs, gr. j. B, Injection of CHIs, gr. iss.

Pari passu with these changes there was a progressive sense of betterment and return to health. He felt less exhausted after the cough and his appetite improved. As I have said, the application of this treatment, even by the most dextrous, is quite impossible in children. Their veins, as a rule, are too small, even for the finest needles made, and are frequently buried in fat. Besides, very few young children could be coaxed into submitting to the daily prick of a needle, after having a handkerchief tourniquet applied to the arm, or hold the arm steady enough even if they would.

During the past nine years, since I first published this method for treating pulmonary tubercle, I have heard indirectly of alarming symptoms being attributed to the intravenous injection of iodoform. It is rather extraordinary that I should have practised it without intermission for nearly twelve years, and in that time given thousand of injections and never once met with anything worse than a local thrombosis in my earlier experience, which was due to my own want of skill. As iodoform is a power for good in such a complex disease as pulmonary tubercle,[1] and is apparently potent in pneumonia, persistent pulmonary catarrh, and whooping-cough, it is desirable that the minds of the profession should be disabused on this point. Even in advanced pulmonary tuberculosis patients can stand the continued exhibition of iodoform intravenously without any outward effect. I have shown what it can do in an adolescent with whooping-cough, and I have no hesitation in saying that an adult or elderly person who contracts the disease will suffer infinitely less from the daily dose of iodoform for ten days or a fortnight (should it be necessary so long) than their hearts and blood vessels will suffer from the strain of repeated prolonged coughing.

In this case the veins were large and well filled, and as I knew the course of treatment if successful would be short, I used 1 grain of iodoform dissolved in 10 minims of methylated ether, specific gravity 0.720, alone. In a paper in the BRITISH MEDICAL JOURNAL for 1905 I advised the addition of as much as 40 per cent. of liquid paraffin in the treatment of pulmonary tubercle, but I now think the less one can work with the better. There is no doubt that the large percentage obviates all risk of iodoform blocking in the needle or jamming the piston of the syringe, and it also greatly diminishes the irritating effect of the ether on the lining membrane of the veins. Where the veins are small, few in number, or badly filled with blood, it must be used in proportions varying from 2½ to 20 per cent., but it undoubtedly aggravates the coughing at the time, and is more apt to cause breathlessness afterwards than iodoform in ether alone, or with only a very small percentage of paraffin. In all the years I have used iodoform intravenously I have seldom met with any symptoms suggestive of idiosyncrasy, and certainly none pointing to anaphylaxis. Dr. Emery, in his paper on anaphylaxis at the Annual Meeting of the British Medical Association, 1911, alluded to this, not I think as a personal observation, but as having been recorded by Brucks and Klausner.[2] It is alleged that the shock which sometimes accompanies acute attacks of "serum disease" can be entirely controlled by the administration of ether as a general anæsthetic. Assuming Brucks and Klausner to be right, is it permissible to believe that the ether in the iodoform solution prevents this? I would also add that I have never met with symptoms of iodoform poisoning.

My object in publishing notes of this case of whooping-cough is not so much to present what looks like a specific treatment (for, as I have said, its application is circumscribed to adolescents and adults) as to direct attention to the general applicability of iodoform administered intravenously in a variety of pulmonary infections occasioned by different specific infections. Nor is its beneficial effect confined to the lungs alone. In a letter I received last month from Dr. W. Johnson Calder, of Rayton, Transvaal, he says: "I am convinced that not only is the injection of use in phthisis, but in pneumonia, asthma, and leprosy, as well as syphilis. This has been my observation, and you should note it."

In these days of vaccine and serum therapy, when a specific infection, we are led to believe by some, can only be controlled by a particular vaccine or serum, is it not possible to think that chemiotherapy may after all have been thrown over too soon? In the field of established and active disease no inconsiderable successes may yet await it.

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THE CONTAGIOUSNESS OF LEPROSY.

BY

J. W. LINDSAY, M.B.,

BELÉN, PARAGUAY, SOUTH AMERICA.

As the perennial discussion of the contagiousness of leprosy appears to have started again, as seen from the correspondence in your issues of March 23rd and 30th and April 20th, I have thought it might be interesting if I gave the history of various leper families resident in this Republic of Paraguay.

I daresay medical men resident in leper countries are as a rule so thoroughly convinced of the contagiousness of leprosy that they do not think it worth while to write to contradict statements made to the contrary. After an experience of twelve years in a leper country I am able, from personal observation, to support the view of your correspondent of April 20th, to the effect that "leprosy is not hereditary," and that "leprosy is contagious." Whether it is spread (as he says) wholly and solely by contagion, immediate or mediate, or whether cases may arise *de novo* from eating fish or other foods badly cured, is a difficult matter to decide. My own idea of the question will be gathered from what follows.

It is almost certain that for the rapid spread of leprosy in a country certain favourable conditions are necessary. It may be, as the advocates of the fish theory hold, that the conditions necessary are those of diet—that leprosy has been most prevalent when a certain kind of diet has been in general use.

At the present time in Paraguay leprosy is spreading like wildfire. During the last ten years the number of lepers has doubled—perhaps even trebled. In that time there has been no change in the mode of living of the people as regards their diet.

At the present time leprosy is far more contagious in Paraguay than tuberculous disease of the lungs. I could give various instances of phthisical patients who have lived in the midst of their families in their little windowless huts, have expectorated over floor and walls or wherever convenient, and yet their families, husbands or wives or children, have not contracted the disease as far as can be seen. A man in a house not a square from here is in the last stages of phthisis. His wife and two children have slept in the same room and eaten with the patient now for six years. Not one of the family shows a sign of phthisis. Signs may appear later; but what I wish to show is that tuberculosis has not found a suitable home in this country such as it has in Great Britain. Far otherwise is it with leprosy.

Ten years ago I first saw A. M. He had a black patch covering the place where his nose had been. He was in the last stage of leprosy. Two years later I was called to attend his son, who had been stabbed in the chest. The leper father was squatting in a corner of the hut. A year later he died.

Two years later his daughter consulted me. I diagnosed leprosy. She is now disfigured with the nodular form of the disease. Two years ago a son of the old leper, brother of the last, consulted me for indefinite symptoms. I suspected leprosy. Now the patient's face has the typical roughness and duskiness of the nodular disease. These two patients had always slept in the same room as their father, eaten from the same dish, and used the same bombilla, or metal tube for sucking maté.

R. R. I had known as a leper for many years. Three years ago I saved his face from being eaten away by maggots by destroying the latter with powdered calomel. Last year R. R. died of pneumonia. In the same room lived his wife and grown-up family. To-day his daughter, aged 25, came to consult me. Three months ago I had seen her and had noticed nothing in her appearance. To-day the expression of her face made me look twice. It was roughened with nodules and discoloured. She showed me her shoulders, and they presented a typical leprous eruption. She had come to consult me about another trouble, and asked me, by the way, if I could give her some medicine for her brother, who was worrying about a skin disease that had appeared on his shoulders, "the same as this on mine," she added, as she bared her own shoulder. The son and daughter had lived in close proximity to their father all their lives, and have contracted his disease.

A European, C. D., had been known as a leper for many years. Twelve years ago I became acquainted with him. He was then a typical leper with leonine face. He went on a visit to Europe. In H. he consulted a doctor about his eyes. The doctor diagnosed his leprosy and seemed scared. His remarks or behaviour scared C. D., for he left H. the same night and embarked again for South America on the first steamer. In Buenos Aires he consulted a doctor about his eyes. The doctor got a shock, which he unconsciously communicated to C. D., who took the first steamer up river to Paraguay. Here he had the pleasure of reading in a European paper of a mysterious case of leprosy that had been seen in H. in such an advanced stage that the medical man had reported it to the authorities. When the authorities came to look for C. D. he had disappeared. He was a very nice old man, and I had him brought out to our village and placed in a small isolated house. He lived there for about nine months and then died. The nearest native house was about fifteen yards from where C. D. lived and died. The native was M. Q., and he used to sit with C. D., and even share his meals. The day that C. D. died, and before we could get him buried, M., wishing to have some remembrancer of his old friend, went rummaging in the latter's trunk and appropriated his watch and various other things! Two years later M. consulted me about a scaliness of his ears. He is now a confirmed leper. For three years he lived in the same house as his young family; then he went to live in a hut in his plantation. Within the last three years three of his daughters, aged 20, 15, and 12 have become lepers. Within the last two years the children of a neighbour have become infected, and in one house twenty yards from M's. there are three leper children.

Six years ago I had occasion to visit an old man and his wife in connexion with a matter of business. Medical certificates of their state of health were required in a legal case. I found that they were both lepers. Two years previously a daughter of theirs had consulted me for heart trouble. She suffered from breathlessness and palpitation. Her pulse was generally between 120 and 140. I could find no cause for the rapid heart action. I tried various remedies, but after some months she left off taking medicines as they did her no good. When I saw her father and mother were lepers I immediately asked for her. Her parents laughed and said that she was hiding in the house as she had grown so ugly! I called her out; her face was horribly disfigured with tubercular leprosy. I came to the conclusion that the tachycardia that had puzzled me years before had been due to a very severe invasion of the lepra bacillus. The case developed very rapidly. The patient had lived with her parents, eaten with them and slept with them, and had become a leper.

M. C., a woman, has been a leper for some years. She lived in the house of her sister, R. C., who had a young family. When M. C. began to get disfigured in the face she went to live in another part. R. C's. oldest boy of 13 is now a typical leper, and his younger brothers are all attacked by the disease, a fact that can be considered certain, as the anaemia of the children will yield to no treatment.

From these cases and from the histories of many others that I might quote I am absolutely convinced that in this country at any rate leprosy is spread by contagion, either immediate through contact with a leper or his discharges, or mediate through conveyance of the infection by insects. In this country also there is no doubt that, owing to the conditions being so favourable to the rapid spread of leprosy, the disease is far more infectious than is tuberculous disease of the lungs, for which the conditions are not so favourable. It may be also that the present invasion of leprosy is due to a more than usually virulent strain of the bacillus. It has nothing at all to do with fish-eating, as the people do not eat fish, and although they are all Roman Catholics, the only Friday when they do not eat meat is Good Friday!

Your correspondent of April 20th says: "As I have lived and worked in a very large leper asylum for nearly seven years, and *am in consequence myself a leper*," as if to imply that such a fate was inevitable—and I quite agree with him. In this country, with the virulent type of leprosy at present so rapidly spreading, it would be almost impossible for a medical man to do his duty to his leprous patients in a leper asylum (if such existed) and escape infection.

Your correspondent mentions a curious point: "With regard to myself, I am not at present contagious."! How does he know? Perhaps the most contagious stage of leprosy is before any outward signs are visible, and when children and relatives and the patient himself have no idea of danger. When outward visible signs appear I fancy it may then be too late to think of separating from one's family with the idea of saving them from the disease.

Two days ago a typical tubercular leper came to my dispensary. His face and his hands were greatly disfigured. Four years ago he had gone to a general hospital in the capital, Asuncion, to consult about his nose. Years before he had had ulcers in his legs. The doctors in the hospital diagnosed his case as syphilis and treated him with injections of various kinds for four months. He then had a peculiar dryness in his nose, which on occasion would also get stuffed up. It probably had been the first lesion of his leprosy. For three years he lived with his family and worked with other men with the scarcely noticeable leprous lesion in his nose, and only six months ago did any other symptom appear, and then his hands and face began to swell, and to-day the diagnosis is unmistakable.

The diagnosis at the beginning, and perhaps for many years, is extremely difficult, in many cases, but in leper countries medical men very often can diagnose with certainty even incipient cases. The sanitary board in the capital has very strict regulations regarding lepers, their isolation, their non-admission to public buildings and public conveyances, etc., but the regulations are a dead letter, and nobody seems to mind where the lepers go or what they do. Up to the present it has been impossible to enforce the law for their isolation. When compulsory isolation becomes possible in this country, then we may hope that the disease will be checked and in time stamped out.

STRANGULATED INGUINAL HERNIA IN AN INFANT.

By G. E. E. NICHOLLS, M.B., CH.B.VICT.,
CROYDON.

THOUGH there is no point of an unusual nature to be related in connexion with this case, yet as strangulation at so early an age as eight weeks is by no means common the report may not be without interest to many.

A male child, born on March 16th, 1912, had been circumcised on April 4th owing to marked phimosis.

On the evening of May 12th, the child being then eight weeks old, I was called in as it had been crying almost continuously since mid day, he was also said to have vomited twice during the afternoon; this was not altogether remarkable as there had been considerable trouble in feeding for the past two or three weeks. On examination, however, the patient was found to be in a somewhat collapsed state, with very rapid and feeble pulse, and with a pinched and anxious expression. A small firm mass was found on the right side of the scrotum, obviously produced by a right inguinal hernia.

A careful attempt at reduction under an anaesthetic proving useless, I decided to operate at once. The hernia consisted of a knuckle of small intestine; it was oedematous and of a dark purple colour, but the serous coat was not without lustre, and it might evidently be replaced with safety. The sac contained about a drachm and a half of pale clear fluid. The constriction was at the internal ring, and there was some difficulty in returning the gut, the ring having to be incised in one or two places. The sac was of the complete funicular (so-called "congenital") type, the testis being found within it at the lower end. The sac was ligated high up, and two buried sutures inserted to diminish the size of the external ring. Recovery was complete and uneventful.

This was apparently the first occasion on which the hernia had come down, and the antecedent gastric disturbance, involving repeated vomiting and consequent raised intra-abdominal pressure, may no doubt have been a factor in the production of the hernia. There was no suppression or retention of urine, as has often been noted in these cases of strangulation in infancy.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF PHARMACOLOGY AND THERAPEUTICS.

Professor W. E. Dixon, F.R.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

Professor Dixon, after extending a hearty welcome to those who were attending the meeting of the Section, referred to the increasing interest which was being taken in the study of pharmacology. As a sign of this he mentioned that since the Section had last met a *Journal of Pharmacology and Therapeutics* had been established in this country. The journal was published simultaneously in the United States and in Great Britain, under the joint editorship of Professor A. R. Cushny and Professor Abel. He regarded the institution of a journal wholly devoted to pharmacology and therapeutics as an important step forward.

DISCUSSION ON THE TREATMENT OF NON-VALVULAR CARDIAC DISEASE.

OPENING PAPERS.

I.—G. A. Gibson, M.D., LL.D.,

Physician to and Lecturer on Medicine in the Royal Infirmary, Edinburgh.

The terms defining this discussion exclude every affection of the valves, and it appears to me that it will be more useful for us also to pass by all diseases of the pericardium. My remarks, therefore, will be simply confined to disorders of the myocardium.

The cardiac muscle is not only affected by microbic infections, but it is also subject to the influences of chemical poisons, which may be either of external or of internal origin. Increased and diminished glandular secretion may also bring about changes in the functions or the structure of the myocardium. The effects of strain, whether physical or mental, must not be left out of account. In elderly people many senile alterations take place which may be distant results of some of these other changes already referred to, or may simply take their origin in deficient metabolic processes. It is not necessary, in this connexion, to make any reference to the undoubted fact that the myocardium undergoes profound alterations as the result of pericardial and endocardial diseases such as we are precluded from referring to.

Such is a very short sketch of the pathogenetic factors leading to the alterations in the myocardium.

The effects brought about by myocardial diseases may be recognized by general symptoms—cyanosis, dyspnœa, angina, œdema, asthenia, insomnia, and many other evidences of disturbances of the circulation. Changes in the arteries are frequent accompaniments of myocardial affections; alterations in the walls and modifications of the pressure are often discovered. Disorders of the rhythm and the rate of the pulsation are never to be minimized in importance, as these are commonly present, and may be made out both by the ordinary clinical methods and by our modern modes of investigation. In this connexion you will allow me, once more, to affirm my belief in the results obtained by the sphygmomanometer as well as our modern instruments for recording changes in the movements of the heart and the arteries. The size of the heart must always be ascertained, not only by percussion, but, when possible, by orthodiagrams and skiagrams. The presence of murmurs may be most helpful, inasmuch as myocardial changes may be present without valvular diseases, murmurs of escape in such cases being produced by lack of tone in the muscular tissue surrounding the orifices. It seems to me that it will not be long before we are able to estimate the force which is generated in the heart by the methods summed up under the term "ergography," while a measurement of the electromotive force of the heart is now almost within the realm of practical medicine. We are able to measure the resistance of the body, and we are able, approximately, to estimate the differences in electromotive force, by means of the string galvanometer. Many years ago the subject began to occupy my attention; but as the only available instrument at that time was Lippmann's capillary electrometer, you can easily understand that the difficulties were insuperable. In all these methods it is our duty to ascertain, in so far as it lies within our power, the condition of the circulation from the examination of the heart and the arteries. One other point may be referred to—it is one which Oliver has, with his usual acumen, made practicable—an estimation of the return of the blood to the capillaries after it has been expelled by pressure.

Having thus briefly sketched the various conditions and their symptoms, along with the methods of investigation, let me turn to the management of myocardial changes. You will probably be tired of the trite statement that rest is the best of all cardiac tonics. At the risk of being tedious, let me once more reiterate the axiom. It must, however, be real rest, accompanied by abundance of fresh air and associated with a sufficiency of sleep. During the period of absolute rest, gentle massage and passive exercises are most helpful, by aiding metabolism without fatigue. The mention of massage leads me to refer to the employment of baths. In minor degrees of cardiac weakness, baths, especially the effervescing sodium and calcium baths, are undoubtedly useful.

As regards exercises, as has been stated by me on several previous occasions, the various modifications of Ling's Swedish movements are very much more satisfactory than the resisted movements which have been so much vaunted during recent years.

The diet must be carefully studied, the chief principle involved being the separation of solids and liquids, while thorough elimination must be attended to. In acute infective cases the treatment of the cause, if still present, must be carried on. As mentioned in the Address in Medicine yesterday, changes in the suprarenal bodies are apt to bring about fatal fall of arterial pressure, which must be combated by the use of suprarenal and pituitary extracts. In the chronic results of infective causes the use of iodides, combined with digitalis or strophanthus, cannot be overestimated. For those cases in which there is tachycardia or palpitation the bromides, along with digitalis, will be found most useful; the particular bromide which commends itself to me is calcium bromide. Will you allow me to mention that, as calcium is a bivalent element, the dose of calcium bromide requires to be proportionately less than of the bromides of the halogens?

In bradycardia, belladonna or atropine, with or without strychnine, has been of most use in my own experience, but in certain cases digitalis or strophanthus must be employed in order to keep up the tonicity and contractility of the ventricles.

For chemical poisons, such as tobacco and alcohol, total abstinence from these substances must be enjoined, and, along with general treatment, strychnine, in combination with hydrobromic acid, seems to me the best remedy.

When we are face to face with those conditions which we are fain to term "gouty," for want of a better term, the use of colchicum and the alkalis still give us the best results. In my own opinion, the reason why colchicum is so often despised is that we do not use it in sufficient doses.

Turning to the glandular conditions, when there is any myxœdematous tendency, such as is so common about the climacteric period, the use of thyroid extract gets rid of all the symptoms of cardiac dilatation and the patient enters upon a life of comfort.

In exophthalmic goitre no remedy approaches, even distantly, suprarenal extract in importance, and it may be regarded as almost a specific for the affection. The use of ovarian extract and of didymin in middle-aged people is

often extremely helpful when there are symptoms that suggest their employment.

In all cases of arterial changes with high pressure the nitrites and the iodides are of paramount importance. It need hardly be added that in such cases the use of abundant fluid to increase tissue changes will be found, along with free elimination, of the greatest value.

Perhaps you will permit me, finally, to refer to the most interesting work of our President on extracts obtained from the heart in varying conditions of activity. Some years ago, at a meeting of the Physiological Society in Edinburgh, the pleasure was afforded me of discussing with Professor Dixon the remarkable results which he had obtained from the use of such extracts, and it appeared to me that this line of inquiry will be of the greatest [illegible]. Our President informs me that he has recommenced his investigations along those lines, and we may look forward with confidence to much real help from those researches.

II.—Professor A. R. CUSHNY, F.R.S.,

Professor of Pharmacology, University College, London.

THE subject of discussion is so wide that it is impossible to treat of it as a whole in the opening remarks, and I must therefore ask you to allow me to devote my time to a small part of the treatment of heart muscle affections to which I have given my attention—that, namely, which involves the use of drugs of the digitalis group. These drugs have been so often the subject of experimental investigation that the broad characters of their action may be said to have been definitely determined, and a few years ago I pointed out that in their case, as in that of many other substances, the chief present need was more accurate and detailed clinical observation. An opportunity of following such observations was offered me by Dr. James Mackenzie, and I propose to lay before you to-day a short statement of the results obtained by Mackenzie, his pupils and myself from the use of these remedies.

First, as to the drugs used, we have tested a number of different preparations, and have found none superior to the tincture of digitalis for ordinary treatment. This is not always of uniform strength, it is true, but that supplied us by good firms has proved wonderfully constant, whether its toxicity was tested on frogs or its therapeutic effect was estimated by the results on patients. It may be questioned whether the so-called pure principles of digitalis, obtainable commercially, are more constant in their composition and action, and there seemed no object in undertaking the very laborious work of making a detailed comparison of their effects with those of the pharmaceutical preparation. Strophanthus and squills are still supposed to differ somewhat from digitalis in their effects, and one of our first series of observations was directed to determining whether any such difference could be made out. It may be stated at once that the three drugs showed no essential variation in their action on the heart. The tinctures of strophanthus and squills were weaker in their action on patients than that of digitalis, nearly twice as much being required to elicit changes in the heart, but these changes were the same in character. In some cases strophanthus and squills seemed to have less tendency to cause gastric disturbance than digitalis, but this was not constant, and, on the other hand, diarrhœa was rather oftener seen under them. On the whole, the impression was obtained that digitalis tincture is more certain in its effects on the heart than either strophanthus or squills, but some patients seem to tolerate the last two more easily than digitalis, so that these may be regarded as substitutes for the chief drug only. One point must be borne in mind in comparing these three—namely, that their active principles readily undergo decomposition when the tincture is diluted with water, and this is especially marked in the case of strophanthus. The tinctures should be dispensed as such or diluted only with alcoholic preparations, with directions to the patients to take them in water, if necessary.

Mackenzie has pointed out that the response to digitalis differs to an extraordinary extent, according to the condition of the heart and the character of the rhythm. Taking first those patients who offered definite evidence of cardiac insufficiency in breathlessness and pain on exertion, but whose heart rhythm originated in the normal pace-maker, digitalis had comparatively little effect on the pulse-rate, and while the improvement occurred during treatment, it was comparatively slow, and did not show the striking features of the second class. In fact, it was sometimes difficult to determine how far the improvement arose from the rest in bed and other treatment, and how far it could be ascribed to the drug. In general, the improvement in these cases was accompanied by no definite decrease in the pulse-rate, but in some the pulse showed irregularities in the form of auriculo-ventricular [illegible] very marked slowing of both auricle and ventricle. This irregularity and slowing disappeared in most cases under a grain of atropine, showing that they arose from inhibitory [illegible] this proved not to be the case, the [illegible] existing under quantities of atropine which [illegible] cient to eliminate all inhibitory action. In [illegible] may be said that in these cases of myocardial [illegible] se, in which the rhythm of the heart originates in the [illegible] al position, the beneficial action of digitalis may be very slight or entirely absent. When slowing occurs, it is generally inhibitory in character, though in exceptional instances it may arise from direct action on the muscle.

The most striking results of digitalis are seen in cases in which the pace-maker has lost its leadership and the rhythm of the heart is given by the normally auricle. But even in this form of cardiac disease the results are not by any means uniform. For when auricular fibrillation is not accompanied by a rapid pulse, there is again no very striking effect from digitalis, hardly more so than in the cases mentioned in which the rhythm is normal in origin. Improvement occurs, but it is slowly elicited, and there may be difficulty in determining how far it follows from the drug and how far from the rest and similar measures adopted. When, however, auricular fibrillation is accompanied by a very rapid irregular pulse, the picture presented by digitalis treatment is very different. Here its administration is followed by a rapid fall in the pulse-rate and a concomitant improvement in all the symptoms. These are the cases in which immediate relief is required to avert rapid failure of the circulation. The improvement in the general symptoms may be measured by the slowing of the pulse; as this sets in, the breathlessness, uneasiness, and pain lessen, the œdema disappears and the urine excretion rises, and the patient, if not restored to health, at any rate is able to go about and undertake such light work as is possible for one whose heart muscle is distinctly impaired. The slowing of the pulse in these cases may be used as a gauge of the action of digitalis, and also as an indication as to whether the treatment should be continued. The slowing is not, as has been supposed, inhibitory in origin, for it remains after large doses of atropine. It must therefore arise from some direct action on the muscle of the heart. The auricle continues to fibrillate as before, and the digitalis may therefore be presumed to act either in the bundle of His or in the ventricle itself. Arguments may be offered for each view, and the question must remain open until further observation determines the point.

On comparing the results of digitalis in these various forms of heart disease, one point emerges clearly, I think. The heart muscle impaired by disease is capable of responding to the drug by improvement, whether the impulse arises from the normal pace-maker or not. But when the impaired muscle is further exhausted by multitudinous demands on it from the fibrillating auricle the benefit is especially apparent. This exhaustion of the enfeebled ventricular muscle through its attempt to respond to the auricular impulses is most characteristically seen in auricular fibrillation, but is really the same in character as the exhaustion arising from great acceleration, even when the normal rhythm of the heart is maintained. In myocardial degeneration any physical exertion leads to breathlessness and heart pain owing to the exhaustion of the ventricle, and the patient soon learns to relinquish any effort which has this effect. In auricular fibrillation the same burden is laid on the ventricle by numerous impulses sent from the auricle, and the same exhaustion follows: but the patient can no longer control this exhaustion, for the demands made on the ventricle are now no longer under the control of the will, but arise from the uncontrollable auricle.

As in the one case digitalis treatment may enable the patient to undertake more active exertion than formerly

without exhaustion, so in auricular fibrillation the ventricle becomes more able to meet the demands made of it by the multitudinous impulses from the auricle. At the same time the rhythm is reduced, either because the strengthened ventricle becomes more refractory, or because fewer impulses reach it from lessened conductivity in the auriculo-ventricular bundle.

The inefficiency of the ventricle is the important underlying cause of the circulatory disturbance, though this may be exaggerated by the presence of auricular fibrillation. It is as yet impossible to define this inefficiency more closely, but it has long been known as dilatation, loss of tone, etc. It is very difficult to determine any change in the dilatation of the heart under digitalis. Careful percussion failed to show any change in the limits of cardiac dullness in many cases in which obvious improvement in the symptoms occurred under treatment. Only in one case was there an obvious change. Here no apex impulse could be made out before treatment, a diffuse movement in the epigastric region only being recorded, while after treatment a very well defined apex beat was present.

Digitalis was given in these cases in full doses to begin with, a drachm a day being prescribed. This very often led to headache, nausea, or vomiting after a few days, or the pulse showed distinct effects, and the drug was then abandoned for a few days and then resumed with rather smaller doses. The dreaded cumulative effects of digitalis proved not to be serious, though the pulse ought to be watched day by day. In many cases the best results were obtained at first only when the largest doses were taken which did not induce gastric symptoms. After a course of digitalis lasting for a fortnight or more, the patient often relapsed on giving up the drug, the same symptoms recurring as in the beginning. Renewed treatment restored the improvement, and after a more prolonged course a relapse was often much less in extent, and finally a satisfactory condition could be maintained with comparatively small quantities or with larger amounts taken at intervals of several days.

One great limitation in the use of digitalis is caused by the slowness with which its action is elicited. Rarely is any distinct change to be seen before the fourth day of treatment, and this precludes its use in the most acute cases. In order to elicit a more rapid effect we have injected strophanthin intravenously ($\frac{1}{200}$ to $\frac{1}{100}$ grain) in a number of cases with most satisfactory results. The action is in every way similar to that obtained by tincture of digitalis given by the mouth, except that the results are obtained in hours instead of days, the pulse four to eight hours after an intravenous injection of strophanthin being comparable to that after about a week of digitalis. The treatment in cases of emergency would thus seem to be to commence with an intravenous injection of strophanthin, and to continue with the daily administration of digitalis tincture by the mouth. The use of digitalis in such acute conditions as heart failure in pneumonia has long been a matter of dispute; and, indeed, the slowness of its action seems to contraindicate its use here, and at the same time to suggest the substitution of strophanthin intravenously.

The action of digitalis is of course to be aided by other remedies where possible. For example, in some cases of oedema, great benefit may follow the addition of caffeine and theobromin, but I cannot agree that these act through changes in the heart. In others, the weakness of the heart may be compensated by dilatation of the vessels by some of the nitrite series, and others still may improve under bromides and digitalis.

DISCUSSION.

Dr. JOHN HAY (Liverpool) said: The heart muscle affections apart from valvular disease, occurring in those over middle age, can be arranged with fair accuracy in four groups, and for the purposes of this discussion it is well to consider patients under the following classification: (1) Obese patients with cardiac disability; (2) patients with arterio-cardio-sclerosis with or without hypertension; (3) those patients who are afflicted by recurring extra-systoles, with no other distressing symptom; (4) patients suffering from auricular fibrillation, in the absence of valvular disease. In every case, before deciding on therapeutic measures, I think it wise to obtain certain data, such as the relation of the obesity to the general musculature of the body, the extent to which sclerotic processes are present, the blood pressure, and the intrinsic nature of any arrhythmia which is present. The general treatment in these cases is, with one or two exceptions, much the more important. Drugs take a secondary place. The value of treatment must be estimated by its effect in diminishing the distress of the symptoms in each particular instance. One almost feels it necessary to apologize for emphasizing the importance of rest, and the fact that the best place in which to rest is bed. For example, one finds that troublesome anginal pains sometimes disappear when the patient retires to bed in the early evening instead of remaining up and attempting to take his ease in a so-called easy chair. The value of chloral in soothing an irritable patient and obtaining a good night's rest, and, possibly taking the strain off the heart by slightly diminishing the arterial tension, is becoming better recognized daily. There seems to be no reasonable grounds for the dread with which many practitioners still view this valuable drug in cases of myocardial disease. The ameliorative action of the iodides and nitrites, when given to patients with arterio-sclerosis and raised blood pressure, is largely due to the fact that they also diminish the load under which the heart is staggering, and thus afford it relative rest. It is almost paradoxical that one should, in the same breath in which the value of rest is emphasized, plead for the value of exercise, and yet no more fatal mistake can be made than to neglect the importance of this factor in therapeutics, especially in the first and second groups. The determining limits as to the extent of exercise are generally obvious to the patient. Each patient must be a law unto himself; the slightest appearance of dyspnoea, palpitation, precordial pain or distress, should at once be recognized as an indication for diminution or cessation of physical effort. The paper by Dr. Cushny has dealt almost entirely with digitalis and its specific uses. He has pointed out that digitalis diminishes the excitability of the myocardium, and here one finds a possible explanation of its value in patients belonging to Group 3, in whom extra-systoles are the dominant feature. The digitalis is then usefully combined with the bromides. In all cases of auricular fibrillation with heart failure digitalis must be given a fair trial—one is most hopeful of obtaining a response when the heart's action is frequent. In every such patient the exhibition of digitalis is a therapeutic experiment. The preparation of the drug should be of known potency. The patient should be in bed and carefully supervised. The digitalis should be steadily pushed until the heart steadies down or until definite toxic results are obtained, showing that the limit of toleration is reached. The total quantity of digitalis required to produce the desired result should be noted in each case for reference later. If there is reason to believe that the vomiting is due to gastric irritation, use hypodermic medication. When the pulse is alternating in quality with other signs of cardiac failure, digitalis must be used tentatively in smaller doses. It sometimes improves the heart condition, although the outlook is extremely grave when this phenomenon has once appeared.

Dr. F. W. PRICE (London) said: I shall confine my remarks to a few points in respect of chronic myocardial disease following infection by rheumatism, and cases of degeneration of the myocardium (whether fibroid or fatty), and which are often associated with arterio-sclerosis of the coronary arteries or of the aorta. It seems to me that in regard to both groups of cases certain fundamental principles should always be remembered. Given a case of damage to the myocardium, either as a result of a former attack of rheumatism or of degenerative processes, it is of the utmost importance, first, that the fact of damage should be recognized, and, secondly, that its degree should be approximately estimated. Now, in regard to both these points there are other and more important criteria than the results of ordinary physical examination (such as the amount of enlargement and the presence of murmurs), which are not nearly sufficiently appreciated. Most important of all is the question of the efficiency of the working power of the heart. Is this impaired, and if so, in what degree? In trying to estimate these it should be remembered that each individual has his own normal standard—that is, the natural standard varies in each

individual, or, in other words, each individual possesses his own standard of the heart's strength, and each knows the amount of exertion he can indulge in without producing cardiac distress. Providing temporary and extrinsic causes (such as sleeplessness, temporary physical or mental overstrain, and anaemia) can be excluded, the fact of a departure from this standard and the degree of departure may be taken as fairly indicative of the presence and degree of myocardial damage. The commonest symptoms of cardiac distress are *undue* shortness of breath, palpitation, or fatigue, or precordial pain, on exertion. In almost all cases it is only after these have set in that objective signs, such as increased pulse-rate, dilatation, and dropsy appear. Later, these symptoms of cardiac distress are present even when the patient is at rest. It may here be mentioned by way of parenthesis that, apart from symptoms, auricular fibrillation may be the only indication of myocardial involvement. Now, given a damaged myocardium, in my view one of the most unfortunate of things is the fact that such a large proportion of patients endeavour to live beyond the limits of the heart's power—that is, as though their myocardia were normal. When this is the constant or fairly frequent habit of a patient, it necessarily throws a heavy strain upon the organ, and adds to the damage already done. It is of supreme importance that this should be avoided. The medical attendant will have done the greatest service to his patient if he succeeds in persuading him to acquire the habit of always living within the limits of the heart's power. I believe that in this respect it is better to be frank with the patient, at the same time letting him understand that he will be amply rewarded for curtailing his physical and mental activities in sufficient degree. It is impossible to give hard-and-fast rules, for the reason that the constitutions of different patients differ enormously. One patient can cycle but cannot play tennis without untoward results, while in the case of another patient the reverse holds good. But there is a cardinal principle which affords a good guide. It is this: Any exertion which the patient indulges in should not produce *undue* breathlessness, palpitation or fatigue, or precordial pain. On the other hand, any exertion short of producing these is usually not harmful. The importance of diminishing the amount of mental work is not sufficiently realized. When there are indications of progressive exhaustion of the heart's strength, the amount of effort should be proportionately reduced. Confinement to bed may be necessary. In my experience prolonged rest in the recumbent posture is of considerably greater value in cases without auricular fibrillation than in cases with it. Its place in the treatment of the former group of cases is of supreme importance. If there is an unduly excitable nervous system it should be treated. It is difficult to exaggerate the importance of sleep; every effort should be put forth to secure an ample amount. In regard to the employment of the digitalis series, as in valvular disease, there is a fairly sharp line of demarcation between two groups of cases—(1) those cases with auricular fibrillation, and (2) those cases without auricular fibrillation. In regard to the former, brilliant results often attend the administration of the drugs. My custom is to give a drachm of the tincture of digitalis per day until some definite reaction is obtained (such as nausea, vomiting, headache, diarrhoea, a slow pulse, or coupling of the beats), and then to stop the drug. In most cases there is a relapse to the former condition in about a week after the drug is stopped. The indication, then, is to find out what dose will best maintain the improvement without producing any unpleasant symptoms. In regard to cases unattended by auricular fibrillation, I confess to great disappointment with the results of the administration of digitalis or one of its allies. In my experience, the proportion of cases in which substantial results follow is small, and smaller than in cases of valvular disease without auricular fibrillation. In these cases much may be done by prolonged rest and other means. If these are not efficacious, in my view the outlook is very gloomy. In a paper which I am presently to read before the Section I hope to show that there appears to be no evidence that digitalis increases the blood pressure in man by constricting the peripheral vessels, and, if that be so, the important practical point will have been discovered that there is no risk in administering the drug in cases of degeneration of the walls of the blood vessels or of supernormal blood pressure. And, lastly, in regard to the treatment of supernormal blood pressure, which is so often present in cases of myocardial degeneration, in some investigations at the bedside on this subject, I have been very disappointed with the permanent results following the administration of the so-called appressors. I think far better results are obtained from rest, the avoidance of physical and mental overstrain and worry, free elimination, and exercising care in regard to the amount of food, especially diminishing the amount of butcher's meat and strong soups.

Dr. D. W. SAMWAYS (Mentone, France) said there was some danger that the discredit in which the physical treatment of cardiac cases by exercise, baths, etc., seemed to be held might be pushed too far. It was important to retain the good while rejecting the evil, and not go always to extremes. Reasonable exercise was necessary for the body generally, on whose well-being the heart itself depended. The whole man was not a heart. Warm salt and carbonic acid baths, the speaker, when he practised at Brides and Salins-les-Bains, in Savoy, had found would almost always slow the pulse of patients, sometimes considerably and enduringly. Rest was very important in all cases, but in bad cases bleeding was occasionally the best and quickest way to introduce rest. It diminished the load on the heart, and its effect in that respect was sometimes very encouraging. It should always be remembered that the heart, if dilated, laboured under very heavy mechanical disadvantages; for an enlarged chamber required a much stronger contraction of the heart muscle than did a smaller chamber to produce the same pressure, per unit area, on its contents. It was therefore very important that any deficiency in the contracting power of heart muscle should be met by decreasing as soon as possible the size of any enlarged chamber.

Dr. GIBSON, in reply on the discussion, said it was a real comfort to him to find himself in almost complete accord with Professor Cushny in his remarks. Fearing that the addition of other substances might effect changes in the active principles, both of digitalis and strophanthus, it had been the speaker's habit for many years to keep these substances by themselves, or with some other tinctures, simply adding them to the other remedies at the time they are to be taken. It was further satisfactory to have the assurance of Dr. Cushny that the tincture was far better than any other preparation. Many of the actions, both of digitalis and of strophanthus, appeared to be brought about by their effects on the tonicity of the heart, and the recent work of Cameron, carried out in Baltimore, distinctly proved this fact. Its employment in partial heart-block, and in auricular fibrillation, although not yet thoroughly understood, would probably be found in the future to be of the highest importance. Probably many present used digitalis in too small dosage; the speaker well remembered a distinguished patient who appeared to owe his recovery, when quite an old man, to the use of tincture of digitalis in teaspoonful doses, administered by the direction of the speaker's old "chief." Strychnine undoubtedly increased the tone of the heart; this had been proved by Cameron. He was previously unaware of the existence of pressor substances in the renal secretion of acromegaly. In regard to the employment of chloral, he agreed with Dr. Hay, and endorsed his views on the dangers of alternating action of the heart. High value was certainly to be set, as urged by Dr. Campbell, on the encouragement of the patient when there was no real danger. In many cases merely assuring the patient that there was no imminent risk sufficed to remove the symptoms.

THE STANDARDIZATION OF CARDIAC TONICS.

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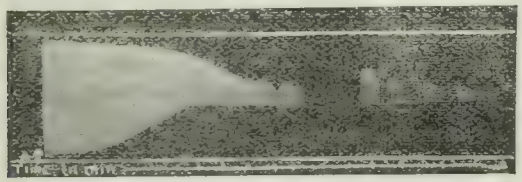
THE present methods for the physiological standardization of cardiac tonics are admittedly imperfect, and any suggestion for their improvement deserves careful consideration. In a communication to the Physiological Society in 1908, Dr. Waller[1] described the action of various

preparations of digitalis upon the isolated frog's sartorius, and concluded that

the method is very applicable to the physiological standardization of digitalis and allied substances.

From these results and from similar experiments with many other drugs Dr. Waller further concluded that

a general parallelism holds good between physiological activity, measured by the response of muscle, and toxic or narcotic power, measured by killing power per unit-weight of living animal.



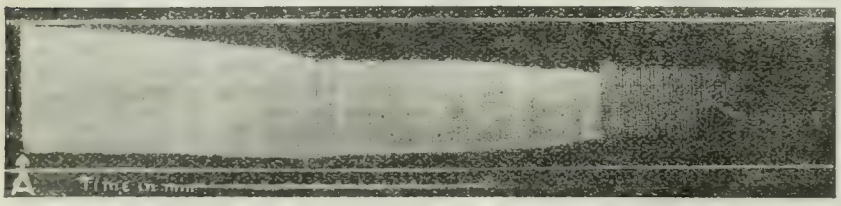


Fig. 1.—Tracings showing the action of strophanthin upon the isolated frog's heart. (i) Heart perfused with strophanthin 1 in 100,000: A = drug introduced. (ii) Heart perfused with strophanthin 1 in 1,000,000: A = drug introduced. (Upstroke systole. Tracings read from left to right. Time in minutes.)

The experiments described below were undertaken to test these statements in the case of two drugs of the digitalis series—namely, strophanthin and digitonin; the action of these two drugs was determined upon the intact frog, upon the isolated frog's heart, and upon the isolated frog's sartorius.

Method.

The drugs used were amorphous strophanthin Kombé (Wellcome brand, Burroughs and Wellcome) and digitonin (digitalinum cryst. or digitonin cryst., Merck).

In estimating the minimal lethal dose on the intact frog the drug was injected through the mouth into the breast lymph sac. In testing the action upon the isolated frog's heart the heart was perfused with a small quantity of Ringer's fluid containing the drug in solution, the method used being one described by Hartung[2] and slightly modified by myself.

In testing the action of the drug upon the isolated frog's sartorius, a method was used similar to that described by Dr. Waller; the isolated sartorius was suspended in Ringer's fluid and stimulated by strong induction shocks passed through the whole length of the muscle every ten seconds, the muscle was connected with a light lever, which was weighted with 2 grams, and the movements of the lever were recorded upon a slowly moving drum; the lever multiplied the movements of the muscle about ten times.

EXPERIMENTS.

1. *The Action of Strophanthin and Digitonin upon Intact Frogs.*

The lethal dose of strophanthin was found to be between 0.014 mg. and 0.008 mg. for a 20-gram frog.

TABLE I.

No.	Weight of Frog.	Dose of Strophanthin.	Dose per gram of Frog.	Effect.
			0.04	Died in 2 h
	14	0.014	0.02	Died in 2 hours
3	14	0.007	0.014	Died in 2 hours
4	14	0.004	0.008	Survived.

[illegible] Famulener and Lyons,[1] [illegible] and the minimal lethal dose of strophanthin for a 40-gram frog was 0.02 mg.

I did not attempt to ascertain the minimal lethal dose of digitonin, since Famulener and Lyons state that this drug has no apparent action upon a frog when injected subcutaneously.

2. *The Action of Strophanthin and Digitonin upon the Isolated Frog's Heart.*

The minimal concentration of strophanthin which would produce systolic arrest of an isolated frog's heart was estimated.

TABLE II.

No.	Concentration of Strophanthin in Mg. per C.cm.	Effect.
1	0.01	Systolic arrest in about 10 minutes.
2	0.001	Systolic arrest in about 30 minutes.
3	0.0005	Systolic arrest in about 60 minutes.
4	0.00025	No definite systolic action.

The action of strophanthin is shown in Fig. 1. It will be noted that the strongest doses produce no instantaneous effect, but that when systolic arrest occurs the arrest is incomplete, and no part of the heart continues to beat.

Digitonin also produces a systolic effect, as shown in Fig. 2, but much stronger concentrations are required to produce any effect. Digitonin in a concentration of 0.01 mg. per c.cm. of Ringer's fluid has no action upon the heart, but a concentration of 0.1 mg. per c.cm. produces a systolic effect; this effect, however, is entirely different to that produced by strophanthin, for the systolic effect in the case of digitonin is produced instantaneously, but is not complete, the auricles and part of the ventricles continuing to beat for some hours.

3. *The Action of Strophanthin and Digitonin upon the Isolated Frog's Sartorius.*

Strophanthin in concentrations of over 0.5 mg. per c.cm. of Ringer's fluid produced a gradual decrease in the force of the contraction—1 in 600 (Fig. 3), 1 in 2,000—but in a concentration of 0.01 mg. per c.cm. it produced no definite effect—1 in 100,000.

On the other hand, digitonin in a concentration of 0.1 mg. per c.cm. caused immediate rigor of the muscle, and in a concentration of 0.01 mg. per c.cm. it caused a slight increase of tonus, followed by a rapid decrease in the force of contraction of the muscle.

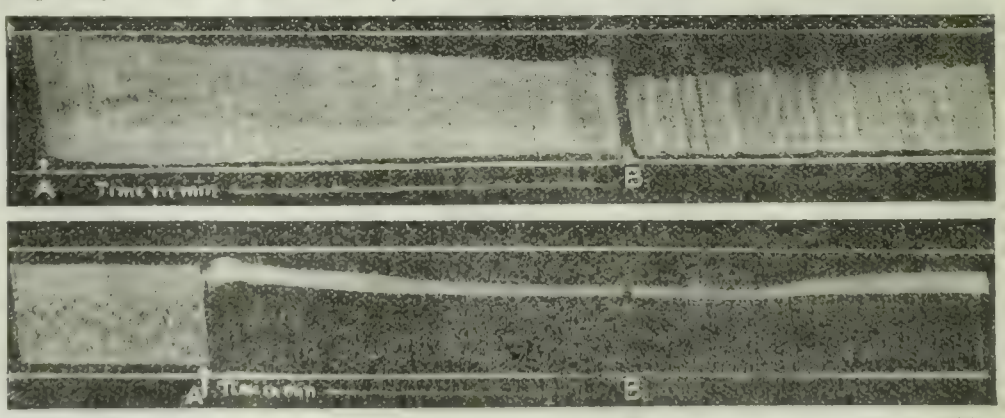
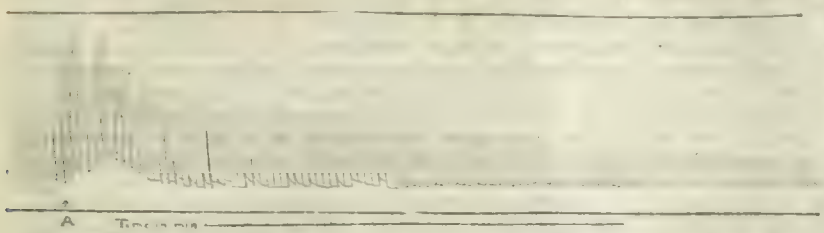


FIG. 2.—Tracings showing the action of digitonin upon the isolated frog's heart. (i) Heart perfused with digitonin 1 in 100,000: A = drug introduced, B = thirty minutes' interval. (ii) Heart perfused with digitonin 1 in 10,000: A = drug introduced, B = thirty minutes' interval. (Upstroke systole. Tracings read from left to right.)

The experiments described above show that, in the case of the two drugs tested, their action upon the frog's striped muscle bears no relation to their action either upon the intact frog or upon the frog's heart, for strophanthin has scarcely any action upon the isolated frog's sartorius, but is a very powerful poison, both to the intact frog and to isolated frog's heart; digitonin, however, has a marked action upon the isolated frog's sartorius, but has only a feeble action upon the isolated frog's heart, and, according to Famulener and Lyons, it has no demonstrable action upon the intact animal.

I therefore conclude that experiments upon the isolated striped muscle of the frog can be of no value for the physiological standardization of digitalis and allied substances, and that there is no necessary relation

between the physiological activity of a drug, measured by the response of striped muscle, and the toxic power,

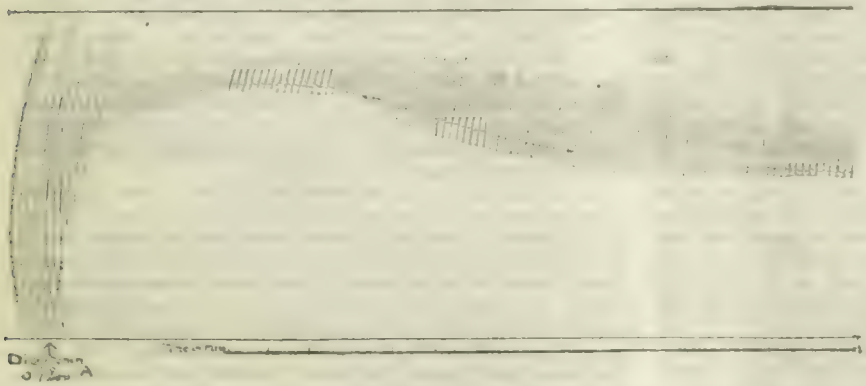


A

showing the action of strophanthin upon the isolated frog's sartorius. Sartorius suspended in Ringer's fluid, and stimulated every ten seconds with strong induction shocks. A = Strophanthus, 1 in 500, introduced. (Upstroke equals contraction. Tracing reads from left to right.)

measured by the killing per unit-weight of living animal.

The results obtained by Dr. Waller,[1] I think, may be



Digitonin

A

Fig. 4.—Tracing showing the action of digitonin upon the isolated frog's sartorius. Sartorius suspended in Ringer's fluid, and stimulated every ten seconds with strong induction shocks. Digitonin, 1 in 10,000, introduced. (Upstroke equals contraction. Tracing reads from left to right.)

easily explained by considering the nature of the drugs which he used; these drugs were as follows:

1. Digitoxin (Merck).
2. Digitalin (Nativelle).
3. Digitalin (Merck).
4. Digitalinum verum (Schmiedeberg).
5. Digitalinum pulv. pur. German (Merck).
6. Tincture of digitalis.
7. A saponin.

Of these drugs, the first two had no effect upon striped muscle, but the last five all produced rigor in a concentration of 1 per 1,000. The first three drugs were all nearly insoluble, the fourth was soluble with difficulty, and the last three were readily soluble. The last five drugs all produced considerable frothing when their solutions were shaken.

Now digitoxin (Merck) and digitalin (Nativelle) both consist of nearly pure digitoxin, and this drug is soluble in 1 in 2,000 of water (Euler and Lundberg[2]). Dr. Waller found that a saturated solution of either of these preparations produced no action upon the isolated frog's sartorius, but I found that a solution of 1 in 700,000 of digitoxin produces systolic arrest of an isolated frog's heart[3]; and it is generally agreed that digitoxin is the most powerful of the glucosides isolated from digitalis.

It appears, therefore, that the glucosides digitoxin and strophanthin both have no action on the frog's striped muscle, but both have an extremely powerful action upon the frog's heart.

Five drugs produced rigor of frog's muscle, and four of these (Nos. 3, 5, 6, and 7), according to Kobert,[4] all contain large quantities of saponin, and the other drug (No. 4) probably also contains some saponin; for digitalin (Merck) is really a pure preparation of the saponin digitonine, and is the preparation used by the writer in the experiments already described. Digitalinum pur. pulv. German contains 60 per cent. of digitonin; tincture of digitalis always contains a considerable quantity of digitonin, and the last preparation used was a purified saponin. Digitalinum verum is said to consist of the pure glucoside digitalin; but this substance is less soluble than digitoxin and does not cause frothing, whereas the preparation used by Dr. Waller was more soluble than digitoxin and caused frothing, and therefore probably contained [illegible] and Lundberg[2]). Probably, [illegible] the rigor of striped frog's m[illegible] produced by the digitalis preparations used by Dr. Waller was due in every case to the presence of a saponin; these bodies have little action on the frog's heart, and there is no evidence that they are of any therapeutic value as cardiac tonics.

Therefore the action of digitalis preparations upon the isolated frog's sartorius, unfortunately, cannot be relied upon to give any indication as to the therapeutic value of the preparation.

Conclusions.

1. Strophanthin never produces rigor in the isolated frog's sartorius; in strong concentration it produces a gradual loss of the power of contraction.
2. Digitonin produces rigor in the isolated frog's sartorius, but has only a feeble action on the frog's heart: the effect produced is unlike that produced by the digitalis glucosides.
3. The action of preparations of digitalis in producing rigor of the isolated frog's sartorius is probably due entirely to the digitonin or other saponins present, and is not due to the glucosides.
4. There is no necessary relation between the action of preparations of digitalis and allied substances upon the striped muscle of the frog and their action upon the frog's heart.

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SOME INVESTIGATIONS OF THE ACTION OF DIGITALIS ON THE BLOOD PRESSURE IN MAN.

By FREDERICK W. PRICE, M.D., M.R.C.P.,

Physician to the Great Northern Hospital and to the Mount Vernon Hospital.

AMONG the common beliefs which are held without questioning by the profession at large is the belief that the internal administration of digitalis increases the blood pressure in man by constricting the peripheral vessels. This view is found in the textbooks of pharmacology and therapeutics, and it is taught in the medical schools. The result of it is that therapeutists are afraid of administering the drug in cases of cardiac failure in which there is extensive degeneration of the arterial coats, for fear of rupture of their walls and apoplexy, or where cardiac dilatation is associated with increased arterial tension from disease of the arterial coats and of the kidneys.

Some try to get over the difficulty by prescribing along with digitalis some appressor, such as sodium nitrite or nitroglycerine, in order to dilate the vessels and lessen the arterial tension. It should not be forgotten, however, that the effects of appressors are but transient, while the rise in the peripheral resistance—if it is brought about by digitalis—is practically continuous. Others employ strophanthus instead in these cases, because of the prevailing view that it constricts the peripheral vessels less or not at all. Now, the belief that digitalis raises the blood pressure by causing arterial constriction rests, with the exception of Sir Lauder Brunton's observations by means of the sphygmograph upon himself, entirely upon experiments on animals, and animals which are in normal health. The experimentalist, in order

to get his results within a few hours, usually employs extremely large doses. Also, the reaction of a drug is influenced by the nature of the lesion. For these and other reasons, although it may be proved that a particular drug has a certain action on a healthy animal; it does not necessarily follow that it has the same action on a human being with a diseased condition. Also, in regard to blood pressure, it is of the utmost importance to remember that in man, in order that the upright posture may be maintained, the vaso constrictor mechanism is much more perfect than in the lower animal.

At the annual meeting in 1911 I read a short paper which embodied in a practical form some of the results of a series of investigations at the Mount Vernon Hospital, dealing in detail with the action of digitalis on the cardio-vascular system in man, conducted by Dr. James Mackenzie, Professor Cushny, myself, and others. In regard to the methods of investigation, with the exception of those cases where the symptoms required immediate treatment, all the patients were first of all given a course of rest before any drug was administered. This plan enabled us to study the effects of rest, and it also prevented any drug being credited with results which were in reality due to adventitious circumstances. Each case was daily observed, examined, analysed, and recorded with scrupulous care, attention being paid to the minutest detail. Blood pressure measurements were taken by means of Martin's modification of the Riva-Rocci apparatus, as a rule in each case over a prolonged period, and as far as possible the same individual took records of the same cases throughout their whole course. The accuracy of our sphygmomanometric observations was repeatedly tested by the employment of the polygraph, and of Korothloff's auscultatory method instead of the finger. Only the systolic pressure was taken, as, in our opinion, it is very doubtful if as yet we have a method of accurately determining the diastolic pressure. Excepting in the early stages of our investigations we confined our observations to cases with a regular heart action or with an occasional irregularity—that is, where there were periods of regularity of sufficient length during which to take measurements. In hearts with a completely irregular rhythm—in other words, in cases of auricular fibrillation—where there is a constant variation in the strength of the pulse beats, the pressure in the air-bag will obliterate some of the beats, and may not obliterate some of the other beats, and as the beats come through in an irregular fashion, in our opinion it is impossible to get a figure which represents the condition, and therefore we came to the conclusion that the records of cases of auricular fibrillation were not sufficiently reliable to be of much value.

In regard to digitalis, our practice was, as a rule, to give a drachm of the tincture a day, either 15 minims four times a day, or 20 minims three times a day; but in regard to the cases in which blood pressure measurements were carefully noted we sometimes gave only 15 minims three times a day. In practically all the cases these doses were continued until some definite reaction was obtained, such as vomiting and heart irregularities.

The cases in which blood pressure observations were carefully made were: Seven cases of mitral disease, one case of mitral disease with a systolic murmur over the sternum, one case of cardio-sclerosis and arterio-sclerosis, four cases of double aortic and mitral systolic bruit, and two cases of double mitral and double aortic disease. In all excepting five cases there was no observable change in the blood pressure during the administration of the drug. Of these five cases, in three there was a fall equal to about 20 mm. of mercury towards the end of the period of administration (in one of these the fall remained after the drug was stopped); in one there was probably a fall; and in one there was a rise equal to about 20 mm.—namely, in a case of double aortic disease and mitral systolic murmur, in which there was oedema, ascites, and impairment and râles over the bases of the lungs. A short abstract of all the cases is appended.

It seemed to me that the matter was of such great practical importance that I decided to extend these observations, and for nearly a year now I have been conducting investigations of blood pressure in man by the methods in use for observing it clinically. In regard to the general subject of blood pressure in man, one important point has been elicited which has a very important bearing upon the question of the possible action of digitalis. In this respect, I may say that the conclusion which I have arrived at is based upon a very large number of observations. It is this: that in a considerable, indeed in almost a large, percentage of cases I have found considerable fluctuations in the blood pressure from day to day. I am not now referring to the variations associated with meals, physical exertion, or mental states; but to diurnal variations which appear to be quite independent of these. Let me just mention one case which illustrates this.

I had under my care a middle-aged man, with a systolic blood pressure of about 150 mm., in whom there was a moderate degree of thickening of the vessel wall, and a slightly enlarged heart, but no evidences of kidney disease. He was under my observation in the hospital for five months. For many weeks I kept him in bed and took his blood pressure myself, with the same instrument, at the same time of the day, and under precisely the same conditions, nearly every day. There were not very infrequent diurnal variations, up to 26 mm. of mercury. Now, if in by no means a small proportion of cases there may be considerable normal fluctuations from day to day, we should be very careful in coming to conclusions in regard to the action of drugs on the blood pressure in man. It should never be forgotten that any changes observed after the administration of a drug in disease may be due to the natural course of the malady.

In regard to the cases in which I have given digitalis, the measurements were taken either by myself or on nearly every occasion by one particular individual with whose results I repeatedly compared my own and always found them to be the same. They were taken in each case over a prolonged period—up to five months—at practically the same time and under precisely the same conditions (that is, the patient was kept in bed, etc.) nearly every day, and the same instrument was used. I confined my observations to the systolic pressure for the reason already mentioned. Excepting where otherwise stated, I gave a drachm of the tincture per day. In practically all the cases these doses were continued until some definite reaction was obtained. Five cases have been recorded with the greatest detail. In none was there a rise in the blood pressure during the administration of the drug, and in one possibly there was a fall. I will read a short abstract of each case.

CASE I.

A labourer, 52 years of age. Complaint, pain in the precordia. Former history of excessive beer drinking. Accustomed to very severe physical exertion. No history of rheumatism, chorea, or scarlet fever. Slight tuberculous lesion left apex detected three years ago; soon became quiescent. Pain in precordia the last three years. Dyspnoea on exertion two years, present on lying down last few months.

State on Admission.—A short, thick-set, muscular man. Tenderness of left breast, sterno-mastoid, and trapezius. Pulse of normal rate and rhythm. Apex beat in the fifth interspace, 4½ in. to left of middle line. Faint mitral systolic bruit. Aortic second sound considerably accentuated. Evidences of healed lesion left apex, and of emphysema. Palpation reveals a considerable degree of thickening of wall of radial artery. From six weeks onwards after admission for ninety-nine days the average systolic blood pressure was 152 mm. It showed a considerable range of diurnal variation, from 134 to 160, apart from one occasion, when it was 170. During this period of ninety-nine days three courses of tincture of digitalis were administered—namely, (1) for nine and a third days, (2) for nine days, and (3) 30 min. t.i.d. for five days.

On comparing the blood pressure records of the periods when the patient was not taking the drug with those when the drug was being administered, it cannot be said that the blood pressure became raised during the latter.

CASE II.

A carpenter, 36 years of age. Complaint, "rheumatism." Acute rheumatism at 16, since when he has suffered from slight dyspnoea and palpitation on exertion. Has had subacute rheumatism the last seven weeks.

State on Admission.—No pyrexia. Pulse between 70 and 80, of normal rhythm. Apex beat in the fifth interspace, area and force considerably increased. Transverse diameter of heart 5¾ in. Loud, rather harsh, mitral systolic, with unusually large area of propagation. Wall of radial artery not unduly palpable. Systolic blood pressure ranges from 143 to 160, excepting that on one occasion it was 136, the average being 147. Two course of tincture of digitalis were administered—namely, (1) for nine days and (2) for six days. No change in blood pressure observed.

CASE III.

A bricklayer, 59 years of age. Complaint, attacks of faintness and pain in the region of the heart. No history of excess of

		History.	Pulse.	Heart, etc.	Blood Pressure.	Drug.	Change in Blood Pressure.	Change in General Condition.
21	F.	None of rheumatism or chorea	80-90, normal rhythm	Apex beat 5th interspace; transverse diameter 6½ in.; mitral presystolic, and sometimes diastolic	110-120 mm.	5j per day for 7 days	Fall of about 20 mm. by end of period of administration	Second course of drug followed by auricular fibrillation for 4 days: during 3rd course heart-block occurred.
23	M.	Scarlet fever; none of rheumatism	90-100, occasional extrasystole	Apex beat 5th interspace; transverse diameter 5 in.; mitral presystolic and diastolic	106-228 mm.	5j per day for 7 days	None	Drug caused heart-block.
[illegible]	[illegible]	[illegible]e rheumatism thrice; cerebral embolism	50-70, normal rhythm	Apex beat 6th interspace, ¾ in. outside nipple line, and forcible: mitral presystolic and occasionally diastolic	90-100 mm.	(1) m45 per day for 9 days, (2) 5j per day for 6 days	None	Slight decrease of pulse-rate
34	F.	None of rheumatism	60-70, normal rhythm	Apex beat 6th interspace, outside nipple line; mitral presystolic	112-128 mm.	5j per day for 5 days	Certainly no rise	No apparent effect on heart.
38	M.	Acute rheumatism four [illegible]	About 100, normal rhythm	Transverse diameter 3 in.; short mitral presystolic	116-134 mm.	5j per day for 5½ days	Fall of about 20 mm. by end of period of administration	Dr[illegible] heart-bl[illegible] [illegible] the [illegible].
32	F.	Acute rheumatism thrice	80-90, normal rhythm	Transverse diameter 6½ in.; mitral presystolic, systolic, and diastolic	About 100 mm.	m45 per day for 8 days	None	No effect upon the heart.
50	F.	Acute rheumatism thrice	95, frequent extrasystole and pulsus alternans after each	Left border 4½ in. from mid-sternal line; mitral presystolic and systolic	142-172 mm.	m45 per day for 5 days	Certainly no rise	No effect upon heart-rate or upon occurrence of extrasystoles.
24	F.	Scarlet fever, acute rheumatism, and chorea	70-80, normal rhythm	Transverse diameter 7½ in.; mitral presystolic and diastolic; systolic over sternum	112-130 mm.	5j per day for 11½ days	Certainly no rise; probably a fall	Decreased heart-rate and caused heart-block, sinus irregularity, extrasystoles, and pulsus alternans.
16	M.	None	120-140, normal rhythm, collapsing	Apex beat 5th and 6th interspace, outside nipple line, diffuse; aortic diastolic, and mitral systolic; bases impaired, and fine râles; liver large and pulsating; ascites; much oedema	116-134 mm.	(1) 5j per day for 15 days, (2) 5j per day for 9 days	None	Produced heart-block, extrasystoles, and pulsus alternans; it increased the flow of urine, but had no effect upon the auricular rate.
41	M.	Acute rheumatism thrice	About 90, normal rhythm, collapsing	Arterial wall thick and somewhat tortuous; apex beat 6th interspace, diffuse; transverse diameter 9½ in.; mitral systolic; double aortic; cyanosis; orthopnoea; slight jaundice; much oedema; slight albuminuria	170-180 mm	5j per day 7 days after admission for 7 days	Rise of about 20 mm.	Caused diuresis; pulse did not decrease in rate.
20	F.	Acute rheumatism several times	About 100, normal rhythm, collapsing	Apex beat 6th interspace, diffuse; transverse diameter 7½ in.; mitral systolic; double aortic	120-154, average 138, mm.	(1) 5j per day for 5 days, (2) m45 per day for 11 days	None None	No effect upon the heart-rate.
46	F.	Rheumatism each winter, but no acute attack	80-90, normal rhythm	Apex beat 6th interspace, 1½ in. outside nipple line; mitral systolic; double aortic; orthopnoea; oedema	130-140 mm.	5j per day for for 18½ days	Fall of 20 mm., which remained after drug stopped	Practically no effect upon the heart.
18	M.	Acute rheumatism several times, severe physical exertion	100-110, normal rhythm	Apex beat 6th interspace; transverse diameter 5 in.; mitral systolic; double aortic; liver large; orthopnoea	124-136 mm.	5j per day for 5 days	None	No effect upon the heart.
46	F.	—	80-90, anacrotic, occasional extrasystole	Apex beat 6th interspace; transverse diameter 6½ in.; mitral presystolic and diastolic; double aortic; emphysema	107-135, average 117, mm.	5j per day for 4½ days	None	No apparent effect upon the heart.
54	F.	None of rheumatism	80-90, occasional extrasystole	Left border 5 in. to left of mid-sternal line; mitral presystolic and diastolic; double aortic; emphysema; attacks of semi-unconsciousness	96-125, average 105, mm.	5j per day for 4½ days	None	Slight improvement in the general condition, but no appreciable effect upon the heart.
24	M.	Scarlet fever, acute rheumatism, and influenza many times	About 70, normal rhythm	Left border 5½ in. to left of mid sternal line; mitral systolic aortic systolic	100-118, average 111, mm.	5j per day for 7 days	None	No apparent effect upon the heart.

alcohol or of venereal disease. Increasing dyspnoea on exertion last three years. Dull, heavy pain in precordia on exertion last two years, worse since April, 1911; recently even on walking on level, and occasionally after getting into bed following exertion; when attack is severe, pain sometimes radiates to right shoulder and down right arm. When attacks severe sense of constriction round chest very definite, and on few occasions has had sensation of impending dissolution. Sometimes falls down during attacks, followed by retching.

State on Admission.—Pulse between 60 and 70, of normal rhythm. Tenderness of left breast, sterno-mastoid, and trapezius. Apex beat in fifth interspace. Left border of heart, 3½ in. from mid-sternal line. Faint localized mitral systolic. No aortic systolic, but second sound rather accentuated. Wall of radial artery considerably thickened and tortuous. Systolic blood pressure ranges from 104 to 120, being usually about 110, and the average being 111. Tincture of digitalis was given for about a fortnight. Certainly no increase in blood pressure, possibly a fall.

CASE IV.

A carman, 37 years of age. Complaint, pain in the epigastrium and left arm on exertion. Wassermann reaction positive. Accustomed to very severe physical exertion. History of quinsy; none of acute rheumatism, chorea, or scarlet fever. Has suffered from angina pectoris for three and a half months; attacks now occur on least exertion.

State on Admission.—Unusually well-developed, muscular man. Pulse of normal rate and rhythm. On examination of the heart absolutely nothing abnormal detected (no aortic systolic bruit or accentuation of second sound). Knee-jerks feeble. Urine normal. Wall of radial artery not unduly palpable. Systolic blood pressure ranges from 110 to 130 (except that one occasion 140), the average being 120. Digitalis administered for ten days. No change in blood pressure observed.

CASE V.

A male, 45 years of age, formerly a machinist (which involved rather severe physical exertion), last seven to eight months a paperer. Complaint, shortness of breath on exertion. No history of alcohol or venereal disease. Rheumatic fever at 34. Influenza, November, 1910. Dyspnoea and palpitation on exertion since Christmas, 1910.

State on Admission.—A spare man. Pulse 140, tracing reveals pulsus alternans. Apex beat in the fifth interspace, area and force moderately increased. Left border of heart 4⅘ in., and right border 2⅘ in., from middle line (right border of heart came in nearly 1 in. latter). Aortic systolic and diastolic. Mitral diastolic. Liver palpable. Moderate emphysema. Urine normal. Wall of radial artery not unduly palpable. Systolic blood pressure varied from 134 to 146. A course of digitalis was administered. No rise in blood pressure.

The conclusions I draw from these investigations are as follows: Taking the twenty-one cases, in regard to which I venture say that thoroughly accurate observations were made, in only one case was there a rise in blood pressure. When it is remembered that in several cases there was a *fall* of pressure, and especially when we remember the fact that, as I have pointed out, not infrequently a normal diurnal variation of considerable range occurs, I think we may say, that so far as these cases are concerned, judged by the methods in use for observing the blood pressure clinically, the internal administration of digitalis does not raise the blood pressure in man by constricting the peripheral vessels. If that be so, the very important practical point will have been discovered that there is no risk in administering the drug in cases of degeneration of the walls of the blood vessels or of supernormal blood pressure. It may be said that the number of the cases which I have investigated is not large. But when we consider the long-continued and detailed observations in each case, I am inclined to think I am justified in coming to the conclusion I have named.

CLINICAL EXPERIENCES WITH TETRAHYDRO-PAPAVEROLINE HYDROCHLORIDE.

By C. R. MARSHALL, M.D., M.A.,

Professor of Materia Medica and Therapeutics in the University of St. Andrews; Physician to the Dundee Royal Infirmary.

THIS alkaloid was prepared by Pyman[1] and was investigated physiologically by Laidlaw.[2] Laidlaw found that the substance inhibits the tone of unstriped muscle fibre, especially that of the blood vessels, the bronchioles, and the uterus, and stimulates the heart. Both by perfusion experiments and by cardiometric tracings with an intact circulation he showed that the rate of the heart-beats was enormously increased and their force considerably augmented. Notwithstanding this effect, the intravenous injection of 3–10 mg. to anaesthetized animals caused a rapid and marked fall of blood pressure; in one case an injection of 3 mg. induced a fall of 70 mm. Hg. On the bronchioles the effect was also powerful; 4 mg. counteracted the constricting effect of 1 mg. pilocarpine injected previously, and prevented the action of 10 mg. pilocarpine subsequently. The substance was also found to be relatively non-toxic; 25 mg. given hypodermically to a cat produced no obvious symptoms beyond a slight increase in the frequency of the pulse, and 50 mg. by the mouth half an hour later merely caused a further increase in the pulse-rate.

The relative non-toxicity of the substance and the combined effects of vaso-dilatation, relaxation of the bronchioles, and stimulation of the heart, produced by it, suggested that it might be of value as a therapeutic agent, and at the request of a representative of Messrs. Burroughs, Wellcome and Co. I agreed to give the new drug a trial. For this purpose a gross of tabloids, each containing ½ gr. (the suggested dose) of tetrahydro-papaveroline hydrochloride, was kindly sent to me by the firm.

The pharmacological experiments seemed to indicate that the substance might be useful, at least as a palliative, in the treatment of arterio sclerosis with commencing heart failure, and possibly also in dyspnoeic conditions and heart failure due to other causes. Its administration was consequently confined to this class of cases. Before commencing its administration I took two tabloids, and half an hour later four tabloids, with no other effect than slight fullness in the head and slight and transient increase in the frequency of the pulse from ten to twenty minutes afterwards.

The cases in which the drug was administered were four in number. Three had arterio-sclerosis associated with chronic Bright's disease, and had a blood pressure of over 200 mm. Hg; the fourth was a case of chronic myocarditis and pericarditis (adherent pericardium) with marked emphysema. The drug was given in doses of 1 grain (two tabloids) three times a day, and its effects compared with those of one or more members of the nitrite group. Thus administered, it produced no obvious effect on the form of the pulse tracing, and it had less effect on the blood pressure than 2-grain doses of sodium nitrite or half-grain doses of erythrol tetranitrate. It also failed to prevent the attacks of dyspnoea to which two of the arterio-sclerotic patients were subject, or to relieve the difficulty of breathing in the case of cardiac failure. But this was equally true of erythrol tetranitrate. The attacks, however, were relieved by inhalation of amyl nitrite, and usually, but less completely, by 1 drachm of sweet spirit of nitre in water by the stomach. The three arterio-sclerotic patients expressed themselves as feeling at first more comfortable under the influence of the drug, but a second administration in one case when symptoms of heart failure began to be more manifest failed to give any relief. No ill effects from the drug were observed or complained of except in the heart case, in whom it seemed to induce nausea, and its administration had to be discontinued in consequence. On the whole, considering the pharmacological action of the drug after intravenous injection, its therapeutic effects were disappointing. This may be due to the employment of insufficient doses, but is more probably due to the ease with which it oxidizes. Appended is a brief account of the cases in which the drug was tried.

CASE I.

Woman, aged 51. Engaged in household duties. No previous illnesses. The present illness commenced ten months before admission with breathlessness, palpitation, and cough. Later headache, nausea, and vomiting appeared. Under treatment she improved from time to time, but the symptoms always reappeared, and the coughing, which was often spasmodic in character, sometimes induced vomiting of dark masses of blood.

When admitted under the care of my colleague, Dr. Mackie Whyte, she was suffering from headache, especially in the morning, and breathlessness. The heart was much enlarged—the apex beating 5½ in. from the middle line—and a mitral systolic murmur and an accentuated second sound, especially in the aortic area, were present. The pulse was irregular both in force and rhythm, and the maximal blood pressure was 270 mm. Hg. There were slight dullness and some crepitations at the bases of both lungs, and a trace of albumen and a few hyaline and granular casts were present in the urine. With rest in bed and the administration of caffeine for the headache, the patient improved somewhat. Later 2 grains of sodium nitrite three times a day was ordered, but was discontinued four days later owing to a fainting attack with headache, giddiness, sickness and palpitation, occurring while in bed. A few days later the case came under my notice, and at my suggestion Dr. Whyte kindly consented to give the new drug a trial. The administration was commenced six days after the discontinuance of the sodium nitrite, two tabloids (1 grain) being given three times a day. The following table shows the effect of the first dose of 2 grains sodium nitrite and of 1 grain tetrahydro-papaveroline hydrochloride on the maximal blood pressure:

Time.				Effect on Pressure in mm. Hg.	
9	a.m.	...	...	250	230
9.30	a.m.	...	...	2 grains sodium nitrite	1 grain tetrahydro-papaveroline hydrochloride.
10	a.m.	...	...	200	210
11	a.m.	...	...	220	210
1	p.m.	...	...	230	220

The morning following the four days' treatment with sodium nitrite the maximal blood pressure was 190 mm. Hg; the morning after the tetrahydro papaveroline treatment was discontinued it was 208 mm. Hg. The day after the commencement of the new drug and the two following days the patient said she felt much better, but on the fourth day, notwithstanding the administration of the medicine, she complained of headache and discomfort. There was no decided influence on the pulse. The pulse tracings show no change until the end of the four days' treatment, when longer periods of regularity occurred.

Eight days later the tetrahydro-papaveroline treatment was recommenced. The maximal blood pressure was then 202 mm. Hg. The first 1-grain dose of the drug caused a fall to 180 mm. Hg. forty-five minutes after its administration. The following day she again expressed herself as feeling better, but the third night she had an attack of breathlessness. She was ultimately discharged much relieved.

CASE II.

A well-developed, intelligent man, aged 57, a bleachfield worker. Work formerly arduous, latterly not so. During the last few years had taken considerable quantities of alcohol. History otherwise unimportant. Three months before admission he ceased work owing to breathlessness occurring on exertion and palpitation occurring after retiring to bed at night. Shortly afterwards precordial pain appeared; it came on suddenly, lasted a few minutes, and disappeared suddenly. Some puffiness around the eyes was also noticed, and was followed by swelling of the legs and by headache. Under treatment slight improvement occurred, but he was eventually admitted to the Dundee Royal Infirmary.

On admission he complained of breathlessness and occasional precordial pain. There was slight difficulty in breathing and slight puffiness about the eyes, but no other oedema. The heart was much enlarged, the apex beating 6¾ in. from the middle line, and a rough blowing systolic murmur, slightly more marked over the sternum than elsewhere, was heard over the greater part of the chest in front and behind. The pulse was regular, 90 per minute, and of high tension. The blood pressure, measured by Martin's instrument, was 280 mm. Hg. A few rhonchi were heard in the chest, and some slight dullness and some crepitations were present at the bases of both lungs. There was a trace of albumen in the urine.

Four days after admission, during which time he had improved slightly, 1 grain tetrahydro-papaveroline hydrochloride three times a day was ordered. This treatment was continued five days. Two days after its commencement he said he felt better, and at the end of the treatment the breathing was less embarrassed, but the improvement did not seem to be greater than that which occurred during the four days prior to the treatment. The blood pressure was not greatly influenced. The four days' rest in bed had reduced it to 260 mm. Hg. After cessation of the papaveroline treatment it was 240 mm. Hg. The fall induced by any single dose did not amount to more than 10 mm. Hg. Two days after stopping the treatment he complained of breathlessness, and the following day he had an attack of dyspnoea. The three following days were spent in comfort. Then 1 grain pentaerythrite tetranitrate (a compound somewhat less active than erythrol tetranitrate) was ordered every eight hours. It caused headache at first, and on the fourth and fifth days of the administration some difficulty in breathing was complained of. Otherwise the patient was comfortable during the eight days this treatment was continued. The lowest blood pressure recorded during this time was 216 mm. Hg. At the end of the treatment the blood pressure was 240 mm. Hg. Later the breathing again became embarrassed and occasionally attacks of dyspnoea occurred during the night. For these attacks inhalation of amyl nitrite was ordered, and almost invariably gave relief. On a few occasions morphine was administered. Potassium iodide and subsequently pentaerythrite tetranitrate were given without benefit, but digitalin night and morning, with a drachm of sweet spirit of nitre three times a day, produced improvement. The patient was in hospital for eighteen weeks. For ten weeks the blood pressure, apart from variations induced by the vaso-dilators, remained about 230 mm. Hg. Thirteen weeks after admission the heart commenced to fail, the breathing became more embarrassed, and oedema appeared in the legs. Tetrahydro-papaveroline hydrochloride 2 grains (four tabloids) night and morning failed to produce any beneficial effect. There was no improvement in the breathing or diminution of the dyspnoeic attacks, and no stimulant action on the heart. The fall in blood pressure produced by this dose at this time was only 4 to 6 mm. Hg. Digitalis given subsequently produced temporary improvement, especially in the breathing, and ½ grain of erythrol tetranitrate night and morning given after the digitalis was stopped also produced some degree of comfort and a greater fall of blood pressure (8 mm. Hg) than the 2 grains of tetrahydro-papaveroline hydrochloride. From the present point of view the subsequent course of the case was disturbed by the presence of a duodenal ulcer which ultimately perforated.

CASE III.

Male patient, aged 60. Present illness commenced a year before admission, with breathlessness and palpitation on going up a hill. Later he had at times severe precordial pain passing to the left shoulder and down the left arm. When admitted the heart was found enlarged—the apex was 5 in. from the middle line—and beating irregularly. The sounds, especially the aortic second, were accentuated, but no murmurs were present. The maximal blood pressure was 210 mm. Hg. There was no albumen in the urine.

With rest in bed he improved considerably. Subsequently tetrahydro-papaveroline hydrochloride, 1 grain three times a day, was given without apparent benefit, and later, digitalis, pentaerythrite tetranitrate, and erythrol tetranitrate were administered in succession with better effect. The results were similar to those obtained in the earlier stages of the previous case. The patient was discharged much improved ten weeks after admission.

CASE IV.

Male, aged 46, suffering from cardiac failure. There was marked breathlessness, orthopnoea, some cyanosis and oedema, and troublesome cough with moderately profuse expectoration. The heart was much enlarged, and there was marked emphysema. (*Post mortem* the pericardium was found to be adherent.)

Under treatment he improved at first, but seven weeks after admission he commenced to get worse, and died seven and a half weeks later. Eight weeks after admission 1 grain tetrahydro-papaveroline hydrochloride three times a day was ordered in the hope that it would stimulate the heart. It had no such effect. The pulse and blood pressure, which was low (100 mm. Hg), were not materially influenced, and the embarrassed breathing was not relieved. On the first day of its administration he complained of sickness, and about midnight vomited. For the next two days he felt sickly at times, but did not actually vomit, and, as he was convinced that the nausea was due to the medicine, its administration was discontinued. The nausea then disappeared. This is the only occasion on which I have noticed ill effects coincident with the administration of this drug.

REFERENCES.

[1] *Trans. Chem. Soc.*, xcv, p. 1610, 1909. [2] *Journ. Physiol.*, xl, p. 481 1910.

WEST INDIAN CANE SUGAR IN THE TREATMENT OF CERTAIN FORMS OF HEART DISEASE.

By ARTHUR GOULSTON, M.A., M.D.Cantab.

IN this paper I wish to bring before you a suggestion bearing on the treatment of heart disease by means of cane sugar.

In the pages of the BRITISH MEDICAL JOURNAL there have been brought before the notice of the medical profession—by myself and others—a paper and two cases on the subject of the specific action of cane sugar (West Indian) on the myocardium in auricular fibrillation, which is present, according to Dr. Thomas Lewis and Dr. James Mackenzie, in from 60 to 70 per cent. of all failing irregular hearts. In the BRITISH MEDICAL JOURNAL for July 13th, 1912, Dr. Thomas Lewis says:

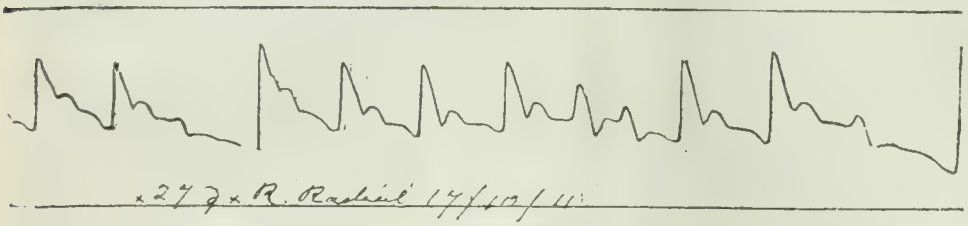
> In 60 to 70 per cent. of all failing hearts, irregularity is the result of a remarkable phenomenon which I described in this JOURNAL three years ago—namely, fibrillation of the auricles.

Now, I first brought this specific action of cane sugar (West Indian) on the failing myocardium before the notice of the medical profession generally in a short article I published in the BRITISH MEDICAL JOURNAL of March 18th, 1911. For certain reasons I had to write this article in a great hurry; otherwise I should have mentioned the fact that I had been using cane sugar for these irregular, failing hearts with considerable success for the previous eight or nine years. In consequence of the publication of this little article two striking cases have been published in the BRITISH MEDICAL JOURNAL—namely, one by A. H. Carter, M.D.Lond., on November 25th, 1911, and the other by Dr. Dingle on January 13th, 1912. In my thesis for the degree of M.D. at Cambridge, read May 9th, 1912, I established the fact that the ingestion of cane sugar has a beneficial effect on the myocardium in certain forms of heart disease. Now, in my hands and in the hands of my numerous correspondents this mode of treatment has been eminently successful; and in a large proportion of cases the improvement in the state of the heart and of the patient has been permanent. I have made these preliminary remarks in order to show that the treatment is being made use of by many medical men, and that, therefore, it is to that extent an acknowledged mode of treatment. The sugar treatment is no panacea for diseases of the heart, but it is a valuable addition to our therapeutic armament against failing, irregular hearts.

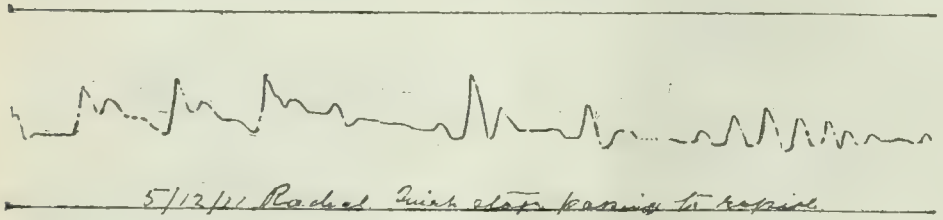
Given this premiss, I wish to make a suggestion about the mode of action of the temporary excess of dextrose, derived from the ingestion of cane sugar, in the blood; that is to say, does the nutritional value of the dextrose for the myocardium depend on the dextrose alone—as would seem to be the case from Dr. F. S. Locke's experience—or does it depend upon the introduction into the circulation of dextrose *plus* something else? The idea

that there might be another factor in the process was aroused in my mind by the following two cases:

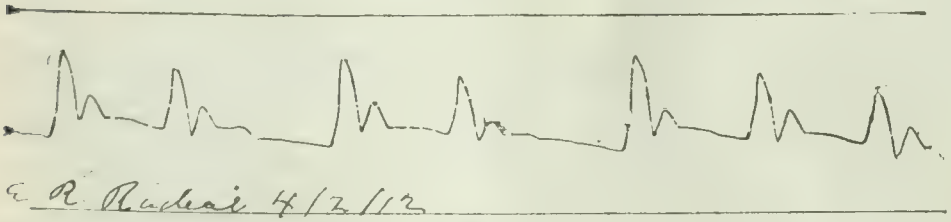
1. Lady, 79 years of age, one of my early successful cases. She had given up taking sugar except in her tea. From my point of view, this means giving up the treatment. In October, 1910, I was called in to see her, and I found her heart irregular again and feeble, and she was feeling ill. I advised her to return to her cane sugar treatment for a time. I saw her again in a week's time, but there was no improvement. At the end of the next week, as there was still no improvement. I thought I would make a few inquiries. I discovered that she was taking beet sugar, and not the sugar made from the sugar cane—that is, West Indian sugar. I then took means to ensure that she took the particular cane sugar which I know to be absolutely pure. At the end of another week the heart was much better, and in a fortnight it was quite regular and the patient had recovered her old feeling of well-being.



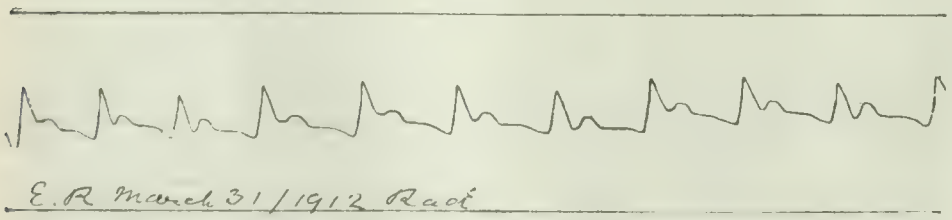
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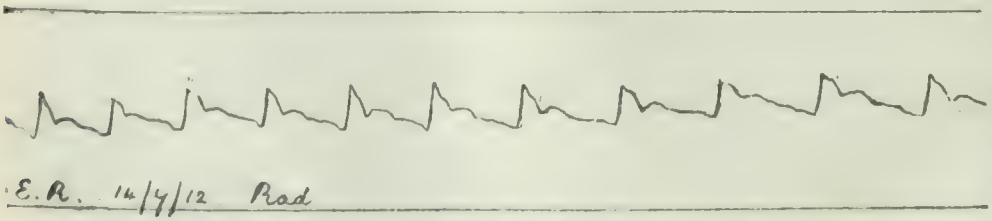
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Tracing 4.



Tracing 5.

2. A gentleman, 53 years of age, consulted me towards the end of May, 1912. I made up my mind that his was a suitable case for the treatment. I put him on it, and he improved rapidly, and after six weeks' treatment he was practically quite recovered and was in his former good health. This patient had to give up hunting on account of his severe heart symptoms, but now he can ride and and walk up the stiff hills in North Devon.

He dates the commencement of his heart trouble from about twelve months ago. He struggled on, thinking that his health would improve, until in December last he had to give up hunting, a sport to which he is devoted. Now comes the point I wish to emphasize. When the first bag of pure cane sugar (West Indian) arrived his wife immediately said, "This is the same kind of sugar we used up to twelve months ago," and, in proof of her statement, she sent for one of the old bags which had been given to the gardener to keep his seeds, etc., in. As I have said, this patient dated the commencement of his heart trouble to about twelve months ago—that is to say, he began to notice that he could not do quite so much as he had been in the habit of doing on account of his breathlessness and palpitation on exertion (even slight), till finally he was obliged to give up hunting altogether. Now, directly the ingestion of cane sugar (West Indian) was resumed—under my treatment—he began to mend, and in the course of six weeks became quite well and able to do anything reasonable in the way of walking uphill and riding. When the cane sugar (West Indian) was given up a year ago beet sugar was used in its place until I put my patient on the cane sugar (West Indian) treatment.

Now, in these two cases their hearts failed directly the beet sugar was taken instead of the cane sugar (West Indian), and rapidly improved when the process was reversed and the cane sugar (West Indian) was substituted for the beet sugar.

I naturally ask myself, Why is this? I venture to suggest that there is "something" in cane sugar (West Indian) which is not present in beet sugar. What is it? Is it of the nature of a co-enzyme or activator, or what?

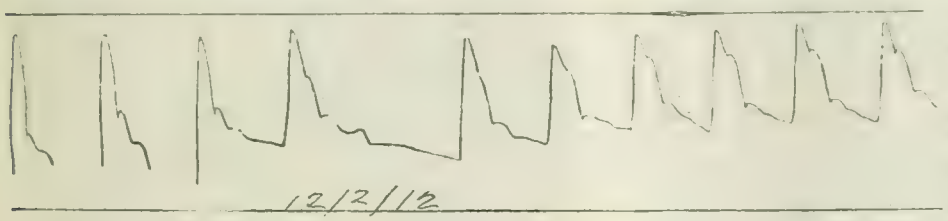
Now, I believe I am right in saying that up to the present time cane sugar, regarded from the purely chemical point of view, is cane sugar whatever its source may be, so I do not get much help from the chemists; but, in spite of this, I ventured to bring my idea to the notice of three of the leaders in the chemical and physiological world who have given me much help in the past, and they all agree that, although they do not know of anything of the kind, it is not inherently impossible that there may be a factor in cane sugar (West Indian) which is not present in beet sugar. As these physiological and chemical giants did not pooh-pooh my clinical inference, I was able to summon up enough courage to bring the point before your notice as I have now done.

Before closing this part of my paper I should like to mention a curious fact in connexion with the feeding of bees which is interesting in this connexion. Practical bee-keepers tell me that it is well known that the syrup used for feeding bees in winter must be made with West Indian sugar, for if it is made with beet sugar the bees deteriorate, and many contract disease and die. Here, again, it would seem that there is something in the West Indian cane

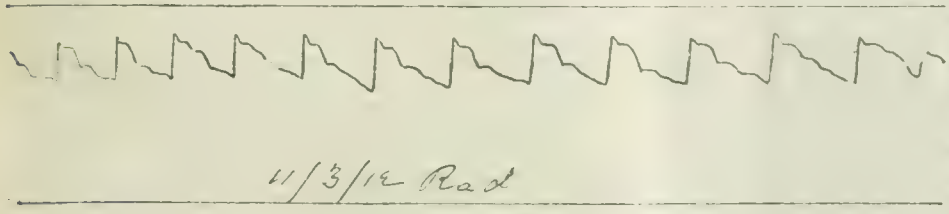
sugar which has a beneficial effect on the bees but which is not present in beet sugar.

The patient from whom tracings 1 to 5 were taken, a young man of 28 years of age, has been under my cane sugar treatment since November, 1911. He had been treated in the hospital at Exeter for his paroxysmal tachycardia for rather more than two years before he came to me in November, 1911, but without benefit. He had spent periods of many months in hospital, and when not an in-patient was treated as an out-patient.

As he could not get another "recommend" for the hospital, he came to me in the middle of November, 1911. I put him on my cane sugar treatment, and he has steadily improved up to the present time, as will be seen by following the dates of the series of tracings. From the middle of March, 1912, till now (July 24th, 1912) he has not had an attack of tachycardia. I saw him on July 21st,



Tracing A.



Tracing B.

and he said he was quite well and had not had an attack. Since March, 1912, he has been working at odd jobs, such as felling trees, hedging, and haymaking from 6 a.m. till 9.30 to 10 p.m. All these are hard work, and yet he has not had an attack. Since November, 1911, he has not taken any drugs, but he has taken the cane sugar treatment the whole time till now, and is still taking it.

In another case there was about a month's treatment between the taking of the two tracings (A and B), and I bring these two sets of tracings before your notice to show how rapidly the cane sugar treatment improves the heart in suitable cases.

DISCUSSION ON THE RÔLE OF CALCIUM SALTS AS THERAPEUTIC AGENTS.

OPENING PAPER.

By Sir James Barr, M.D., LL.D., F.R.S.E.

It is to me very gratifying to find so much interest taken in the present day in the use of the lime salts, because it is not very many years since I was looked upon as a bit of a crank on the subject, and the students had a pantomimic verse about myself and calcium chloride. Two years ago I took a fairly extensive survey of the subject in an address on the use and abuse of the lime salts in health and disease,[1] and I shall now only devote some attention to a few points in this large subject.

In an interesting paper on Facts and Fancies in Pharmacology,[2] Professor Dixon, F.R.S., has pointed out that calcium taken by the mouth is absorbed to a slight extent and very slowly, and is about as rapidly excreted. It is very fortunate that this is the case, otherwise many people would run the risk of being petrified. However, the amount and rapidity of absorption and excretion vary very much in different individuals in health and disease. I have shown that a much greater quantity is excreted by the kidneys than is generally supposed, and hence, when those organs are diseased, the calcium content of the blood is very apt to rise, especially so as those patients are frequently deluged with milk, a very popular but often not very appropriate diet for invalids.

This retention of lime salts in the system is a strongly contributory cause in the production of cardiac hypertrophy, owing to the contraction of the peripheral arterioles and increased viscosity of the blood. I pointed out the dangers likely to arise from the recent craze for sour milk, owing to the excessive supply of lime. This craze is now disappearing, but some of the expensive and injurious milk foods still have a strong hold, both on the medical and public minds. Properly home-cooked natural food is better than any artificial product on the market. The old Scriptural quotation that milk is good for babes and sucklings, but stronger food for those of riper years, is well worth remembering, especially by teetotalers.

Intestinal stasis and its deleterious effects have recently attracted a good deal of attention, but, strange to say, the medical profession is devoting its efforts to the cure of the mischief, while its prevention is almost entirely neglected. This is what might be expected in a disease where surgical intervention is a prominent feature, but it does not reflect much credit on those who see the affection in its early stages. Metchnikoff and Arbuthnot Lane seem to think that we would get on very well without our large bowel; but as this state of matters is not likely to be attained, in the ordinary process of evolution, during the next million years, those of us who do not hold Lamarckian ideas must try and get the large intestine to functionate regularly without any radical transformation in the animal economy. In the production of intestinal stasis the lime salts play a very important part. No doubt a minute quantity of active calcium ions is essential for the muscular contraction of the intestinal tract; but when you get an excessive amount of lime in the wall of the bowel the muscle contracts, often spasmodically, and the bowel remains contracted without any regular peristaltic action. Just as in the case of the heart, so in the bowel, you must not merely have calcium but also potassium ions for regular rhythmic action.

Dr. O. T. Williams has shown the injurious effects of insoluble calcium soaps on the intestinal mucosa. These soaps form the basis of intestinal sand, which becomes very irritating, and no doubt often leads to ulceration of the mucous membrane. The intestinal flora and their toxins have thus a fair opportunity of setting up inflammatory action in the whole colon and, to a less extent, in the small bowel. One of the worst cases of spasmodic entero-colitis with large quantities of intestinal sand which I have ever seen had been previously under the care of a physician who had kept the patient for six months largely on a milk diet with a liberal allowance of fat. The patient had been placed under this gentleman's care on account of a paper which he had published giving a vivid description of the symptoms of colitis. There was no statement as to how far the symptoms may have been manufactured by the treatment, but at any rate the patient got rapidly well under a more rational diet, and has remained well during the past nine years.

When ulcerative colitis is set up, a vicious circle is soon established so far as the lime salts are concerned. There is not only defective absorption, but also excessive excretion by the bowel, and thus the whole system is depleted of lime, the calcium content of the blood is lessened, and consequently the amount in the urine is small. The patient gets into a miserable condition, partly owing to intestinal toxaemia and partly to deficiency of calcium. The heart's action becomes impaired, the circulation feeble, and extremities cold. There may be

great emaciation from loss of fluid and defective nutrition. The bowel then, in place of being contracted, becomes partially paralysed, and you are apt to have constipation alternating with diarrhœa. In such cases it is absolutely essential to get some lime into the system, and for this purpose I usually prescribe some very active and soluble calcium salts, such as the iodide or glycerophosphate. Of course, the lime may be given subcutaneously, and when this course is adopted it should be largely diluted with normal saline to which about 5 per cent. of glucose has been added. These patients require a considerable quantity of fat, but this should be supplied in an unsaturated form, such as olive oil, cod-liver oil, and butter. Underdone red meat should be freely given.

In atony of the stomach and intestines there is a deficiency of lime—at least, in the walls of these organs—while in hypertrophic stenosis of the pylorus, whether in infants or adults, there is an excessive amount of lime. In advanced cancer of any part of the body there is a diminution in the amount of lime in the blood and tissues, and this diminution is associated with increased alkalinity of the blood.

As I have previously stated, a large quantity of the lime in the blood is excreted by the kidneys. So long as the urine is acid the calcium is usually in solution (except in the form of calcium oxalate) and so causes no local mischief, but when the urine is alkaline there is apt to be a cloudy deposit of mixed phosphates, though this is not likely to cause any mischief unless calcium be the principal base.

In gouty individuals, especially in those who are large meat-eaters, you get an excessive amount of phosphates, and if there also happen to be an excessive quantity of calcium you get numerous small calculi composed almost entirely of the insoluble phosphate of calcium. I recently came across a gentleman who had passed some thousands of such calculi. He was gouty, a free meat-eater, and he unwittingly supplied the lime by drinking large quantities of a Continental water which has acquired an undeserved popularity in the treatment of gout, although it is loaded with lime. I know of another instance in an old gentleman who passed such calculi which more than filled an 8-oz. bottle. In his case the lime was derived from milk. It is often said that the kidneys only excrete the excess of lime in the circulation, and the blood retains its normal quantity, but this is not so; in such cases as those to which I have just referred the excretion may be more rapid than the absorption, the calcium content of the blood falls, and the heart's action may become rapid, feeble, and very irregular from the deficiency in free calcium ions. In these cases I frequently prescribe a mixture of calcium iodide, potassium chloride, tincture of iodine, glycerine, and water.

I shall now show you the amount of lime in the water of Liverpool and of many of the popular Continental spas. After this demonstration I hope you will come to the same conclusion as myself, that people who pay often heavily for Continental waters when they can get much better at home for almost nothing are either fools or suffer from gross ignorance. An amusing *contretemps* often happens at these Continental spas when the physicians tell their patients that they will feel the benefit when they return home, that is, when they have ceased drinking the water, though these physicians do not see the humour of their remarks. I shall not trouble you on this occasion with any further remarks about the lime salts, but I hope I have given you some pabulum for thought, and set loose any plaster-of-Paris which may have hitherto fixed your ideas.

REFERENCES.

[1] British Medical Journal, September 24th, 1910. [2] Ibid., August 26th, 1909.

DISCUSSION.

Professor R. B. Wild (University of Manchester) called attention to the want of co-ordination between the known pharmacological actions of calcium, its pathological relations, and its therapeutic uses. Disorders of metabolism might result from a disturbance of the calcium balance in either direction, and the effect on heart and skeletal muscle in maintaining vitality and contractility was, like the action on the coagulability of the blood, only found within comparatively narrow limits. The question as to the absorption of calcium salts when given by the mouth was apparently still unsettled, and in some cases the excretion of calcium by the kidney appeared to take place in an irregular cyclical manner. In regard to the clinical use of calcium in the erythematous and urticarial group of skin diseases, good results were found from the administration of the chalk mixture as well as from the soluble salts, and might be due to local sedative action on the alimentary canal. Other cases might be cured by stopping milk and other calcium-rich foods.

Mr. G. R. Mines (Cambridge) said: There has been a tendency to regard experiments concerning the action of chemical substances on living tissues as being necessarily directed immediately towards therapeutic ends. It being shown that, under certain experimental conditions a particular substance can modify the behaviour of some organ, let us say the heart, the physician not unnaturally inquires whether such modification may not similarly be produced in the patient in whom it would be desirable. He is perhaps disappointed to learn that the effect is to be brought about only when the heart is cut out of the body and perfused, or that the active substance in sufficient dose to produce the desired effect on the heart would of necessity paralyse the respiratory centre. He is inclined to say that such experiments are "of no practical value."

The real object of these physiological experiments is not to determine whether or how the chemical substances may be employed as therapeutic agents, but to learn, by the study of their action, something about the mechanism of the tissues.

In order to discover by what sort of mechanism a tissue exerts those functions which constitute its life, a fruitful method is the investigation of the relations of its activity to its environment. Now this means of necessity, in most cases, a more or less extensive departure from its normal environment. Obviously it is of the first importance to know as precisely as possible what the environment is. What is called "the normal environment of tissues" is of immense complexity, and at present we are unable exactly to define it. From a physiological point of view the composition of blood or lymph is only very roughly and imperfectly known.

Normal conditions are at present unknown conditions. The position has often been maintained—and there are some who would defend it still—that in all physiological experiments it is desirable to keep the tissues under investigation "as nearly normal as possible." In many cases this position can be justified, and particularly in those experiments where the object is to determine directly the therapeutic action of chemical substances. But when the object is the investigation of function of some particular part of the body mechanism, the method of injection into the veins of an intact animal is far too crude to yield the kind of information that is sought. It is necessary to insist a little on this because the opposite view has been strongly advocated. Blake, for instance, asserted that the proper way to investigate the action of salts was to inject them into the veins of an animal. Thus, he said, one could find the action on respiration, on the muscles, on the kidneys, on the heart, and so forth. He poured contempt on the methods which Ringer adopted; it seemed to him fantastic and absurd to set about the investigation of the physiological action of salts by "pumping them through the heart of a dead frog." Yet it becomes more and more clear in the light of recent work that there are all sorts of difficulties in the elucidation of the chain of events connecting the injection of some chemical substance into the blood and the appearance of some characteristic effect in an organ.

For example, Elliott has lately shown that the administration of drugs may produce effects on plain muscle in the body by the following very indirect route: The drug stimulates a nervous centre in the medulla; nerve impulses are sent through the splanchnics to the suprarenal bodies; the suprarenals respond by discharging adrenalin into the blood, and the adrenalin acts in turn on the myoneural substance of the plain muscle.

Apart from complications of this type, it must be remembered that the injected substance may very possibly undergo some chemical change in the blood or in passing through some organ before it reaches that which is the

object of investigation. The chemical nature of the substance actually reaching the organ is therefore uncertain, while the concentration in which it is presented must be vague. For some purposes, as I have said, this type of experiment is valuable, but as a means of investigating local mechanisms it is hopeless. It would be almost as profitable to attempt to investigate the psychology of the Home Secretary by sending him letters through the post, couched in various terms, and scrutinizing the official replies.

As the immense complexity of the interaction of nervous and chemical co-ordinating mechanisms in the body is revealed, the necessity for the simplication of conditions when any special part is under study becomes more and more obvious. Not only do we cease to apologize for artificial conditions of experiment, we demand them. It is not expected that such experiments will provide short cuts to discoveries in therapeutics (though incidentally they may give useful suggestions), but there can be little doubt that on the attainment of their objects they will come to form part of the foundations of scientific medicine. It is significant that the physiologist to whose admirable researches the recognition of the importance of inorganic salts for the activity of living tissues is chiefly due—namely, Sidney Ringer—was himself a renowned clinician.

Of the various conditions under which it may be helpful to study the behaviour of tissues, naturally the most interesting will be those under which the tissues continue to manifest the functions which characterize their life.

Muscles and nerves give "signs of life" which we are able to study particularly readily, and Ringer showed how the conditions under which these tissues could continue to exhibit their "signs of life" could be reduced to their simplest terms. He worked chiefly on isolated organs, recognizing that a knowledge of the mechanism of its parts is essential to an understanding of the body as a whole. He pumped fluids through the heart of a dead frog! Ringer's triumph lay in the fact that though the frog was dead its heart was alive, and living under conditions more precisely defined than ever before. It is possible to adjust the conditions so that the tissues shall behave apparently as they do in the body. By modifying the conditions we may make them behave as they never could in the body, and these observations are as helpful as those, for it is by finding out *what a tissue can do* that we may hope to learn what it is.

Let us review very briefly some of the results of experiments on isolated tissues with respect to the importance of calcium salts. I will confine myself to skeletal muscle, neuro-muscular synapses, and heart muscle. We recognize that these tissues can continue to exhibit their characteristic functions when their chemical environment is simplified to a solution of sodium (potassium) and calcium chlorides in distilled water. For the tissues of the frog a concentration of sodium chloride 0.125 mg., or about 0.7 per cent., is suitable, while of calcium and potassium about 0.0025 mg., or, very roughly, 0.02 per cent. of each, is sufficient.

In this simple Ringer's solution the excitable condition of various tissues may be preserved for a considerable time. The heart will beat vigorously for many hours when perfused with such a solution, and, as Kuliabko has shown so strikingly, mammalian hearts may be resuscitated several days after the death of the animals. With the tissues permeated with Ringer's solution excitation can pass from nerve to muscle; and skeletal muscle, if putrefaction be avoided, will remain capable of responding to an electric shock with a contraction even as long as three weeks after removal from the body.

What are the effects of omitting calcium from the solution?

We will take the case of skeletal muscle first. Placed in a solution free from calcium, the sartorius muscle of the frog within a few minutes, often within a few seconds, exhibits lively spontaneous movements, which may continue at intervals for many hours.

It is very remarkable how quickly the effect of removal of the trace of calcium from the surrounding fluid appears in the muscle. The change in the condition of the muscle fibres which leads to these spontaneous contractions may be detected also by a change in the excitability of the tissue towards galvanic currents. Though there is little or no change in the excitability of the muscle towards induction shocks, there is a very marked increase in excitability towards electric currents of long duration. Moreover, any change in the surrounding fluid which tends to increase the spontaneous movements increases also the excitability towards stimuli of the type named; any change abolishing the spontaneous movements depresses the excitability towards galvanic currents.

The spontaneous movements are stopped, and the excitability reduced to normal by a small concentration of calcium. It is interesting to note that the spontaneous movements are due to rhythmic excitations originating in the muscle fibres themselves, and are independent of nerves or nerve endings. The abnormal condition of the muscle may be corrected not only by calcium, but also by strontium or magnesium salts.

It is necessary, of course, in experiments of the type we are discussing to make sure that the experimental solutions are really brought into intimate contact with the tissues. In the case of a thin muscle like the sartorious of a frog, the condition is realized very well by simple immersion; when a thicker muscle is taken, a much longer time is needed for the attainment of equilibrium between tissue and surrounding fluid. Thus if the frog's gastrocnemius is immersed in pure sodium chloride solution, the twitches do not start for about an hour. Much more prompt results are obtained by perfusing the experimental solutions through the blood vessels of the tissues. By this method it becomes possible to explore certain other relations of calcium. It is found that if the muscle is well washed out with a solution of sodium chloride, or of sodium chloride *plus* a little potassium chloride, after a time the muscle no longer contracts in response to the stimulation of its motor nerve, although it is readily made to contract when the stimulus is applied directly to the muscle. The block, like that produced by curare, lies not in the nerve, but in the myo-neural junction. A small concentration of calcium will restore the functional connexion between the nerve and the muscle: the calcium may be replaced by strontium or, less perfectly, by barium; but in this case magnesium is absolutely useless. Quite similarly in the heart, the connexion between the inhibitory nerves and the muscle requires the presence of calcium or of one of its close chemical allies, strontium or barium, for its completion. The heart perfused with a solution containing neither of these will continue to beat feebly for some time; but while in this condition it cannot be stopped by stimulation of the vagus nerve. The addition of a little calcium or strontium chloride to the perfusion fluid enables the vagus to exert its usual effect on the heart.

Perhaps the most striking instance of the importance of calcium is in relation to the activity of the heart muscle itself. It was shown by the classical experiments of Ringer that, if perfused with a solution free from calcium, the heart of the frog becomes feeble in its beats, tending to stop in diastole. Conversely, an excess of calcium makes the beats systolic in character and, if too great, stops the heart in systole. Here, again, the calcium may be replaced very satisfactorily by strontium, and to a certain extent by barium, while magnesium acts in a totally different fashion. It is interesting to note that the importance of calcium in relation to the activity of heart muscle is by no means confined to the hearts of amphibia. Similar relations are found to hold in mammalian hearts, in the hearts of fishes, and of molluscs.

It has been said that calcium is "the stimulus for the heart beat." Such a statement is, on reflection, meaningless. The statement is based solely on the fact that the heart will not beat in the absence of calcium. But the heart will not beat in the absence of water or if its temperature is too low. It would be equally reasonable to say that water or warmth is "the stimulus" for the heart beats. (Once the conception of irritability has been grasped, there is no objection felt to the use of the expression "spontaneous" rhythm.)

What we can say fairly is that the presence of the Ca ion, or of ions chemically akin to it, is one of the chemical conditions necessary for the manifestation of the normal activity of heart muscle.

I have recently made experiments in which the electrical variation, as recorded by the string-galvanometer, is studied simultaneously with the mechanical behaviour of the perfused frog's heart. The leading-off electrodes are placed—one on the sinus, and the other on

the apex of the heart. (The electrograms thus obtained, it is curious to note, often resemble the human electrocardiogram to an extraordinary degree.) When the perfusion fluid is changed to one containing no calcium, it often happens that the contractions of the heart are reduced in amplitude to a very great extent, while the electric variations are very little affected. We have many reasons for believing that the excitation process in muscle can be dissociated from the contractile process, and it seems clear that the electric variation is a direct index of the excitation process, while the contraction is a sequence, usual but not quite inevitable. Just as in nerve excitation occurs (but no contraction), so in muscle excitation occurs; if the contractile mechanism is in order, excitation is followed by contraction.

The experiments just described rather suggest that calcium is of peculiar importance for the contractile process in heart muscle. It is, however, also of importance for the excitation process; the frequency of the excitations is affected by removal of calcium, and later there may be interruption of the sequence of auriculo-ventricular excitations.

With regard to the question as to how Ca exerts its actions, one thing is quite certain—namely, that it is not always in the same way.

We know that any salt of calcium which is soluble and which, according to the physical chemists, yields Ca ions, is efficient. We say, therefore, that the calcium ion is responsible for the various effects we have to consider.

Now a particular class of effect of ions on colloidal systems, particularly colloidal systems involving membranous structures such as we have to deal with in the living tissues, is produced by ions simply by virtue of the electric charges and mobilities of the ions, irrespective of their chemical nature. Where Mg, like Sr, can produce the same physiological effect as Ca, there are strong reasons for believing that we have to deal with an "ionic" effect.

From the physico-chemical aspect, the Mg ion is as much like the Ca ion as is the Sr ion. They all carry the same electric charge and move with much the same velocity. With artificial systems of membranes it is easy to demonstrate electrical and imbibition effects in which these ions all act closely alike. As we have seen, in the case of skeletal muscle these ions have closely similar effects on excitability; they also behave very similarly in their antagonism to the action of potassium—an antagonism which can in fact be shown quite readily in an artificial membrane schema.

But, in addition to such "ionic" effects, and not infrequently masking them, there are more specific relations, due to the chemical combination of ions with the materials of which the tissues are composed. In the case of calcium the latter type of action is of predominant importance. In relation to the contraction of heart muscle and in the transmission of excitation from nerve to muscle, Mg is quite unable to take the place of Ca. This inability is not due to any injurious effect of Mg on the tissues, for Mg in the molecular concentrations with which we are concerned in no way prevents the restoration of function by Ca and its allies Sr and Ba.

Evidently in these cases we have not to do with a simple ionic effect. We know that chemically there are well-marked differences between certain of the compounds of magnesium and the corresponding compounds of the metals of the alkaline earths. Purely as an illustration, we may contrast the sulphates of these elements. As regards solubility and other physical features, the sulphate of Mg is strikingly different from the sulphates of Ca, Sr, and Ba. The same is true of the citrates of these elements, and may very well be true of the compounds which they form with the proteins of the tissues. It may be that an ion-protein compound with particular physical properties is a necessary part of the particular mechanisms we are now discussing. As Professor Moore has remarked, the reversibility of such a compound will be a matter of importance. These ideas are strongly supported by comparative observations of the effects of Ca, Sr, and Ba. Just as we trace progressive decrease of solubility in the series of sulphates ($BaSO_4$ is one of the most insoluble substances known, $SrSO_4$ is intermediate between $BaSO_4$ and $CaSO_4$), so we see a progressive change in the physiological action of the ions Ca, Sr, and Ba. This is shown in several instances, best in the heart. Adding equivalent concentrations of Ca, Sr, and Ba solutions in turn to the perfusion fluid, all produce increased tone and lengthening of the systole, but the effect of Sr is markedly greater than that of Ca, while Ba leads quickly to permanent arrest in extreme tone. It is as though Ba formed a compound similar in type to those of Sr and Ca, but almost irreversible. The study of electrolyte action provides much information which aids in the analysis of the functions of tissues. Above all, it is necessary to recognize that the field is very wide and that any attempt to attribute all the manifold effects of salts on living tissues to some single factor can only hinder progress.

Recognition of the interplay of various factors helps to clear up many points which otherwise are inexplicable. Let me conclude with one instance. Several speakers this morning have referred to the curious fact that though the presence of calcium is necessary for the clotting of blood, too much calcium hinders clotting, and there is thus an optimal concentration. The explanation seems simple enough. A certain small amount of calcium is needed for certain preliminary changes necessary for clotting. So far as these are concerned the amount of calcium is immaterial provided it reaches a certain minimum. But, as is well known, the clotting of blood is hindered by any large concentration of a neutral salt; it is, in fact, a common method of preventing coagulation in blood pressure experiments. And a large concentration of a calcium salt is as effective as a large concentration of a magnesium salt in hindering the conversion of fibrinogen into fibrin.

Dr. W. BLAIR BELL (Liverpool) said: I had no thought of being able to be present or to take part in this discussion. I have therefore prepared nothing, and must rely on the few notes I have just made concerning what has been said by the previous speakers. I have been extremely pleased at the pre-eminent position that has been assigned to Sidney Ringer (and with him I would associate the name of Dudley Buxton) as the real discoverer of the great physiological importance of the calcium salts. I am more proud of having been the first in recent years to recall attention to his work, than I am of anything I have myself done in regard to the calcium metabolism. For although it was not until I had been working at the subject for some time that I came across his papers, when I did so they inspired me to further efforts; and they still remain in my opinion the finest and most original contributions that have ever been made to the subject under discussion. Sidney Ringer was a clinical physician as well as a laboratory worker; and within earshot as we are of the surgical ward in which I work, I think it may not be out of place to say that I hope pure laboratory workers will give the greatest possible encouragement to clinicians to work with them. I feel convinced that in this way alone the best results can be obtained. As you are probably all aware, I was led to take an interest in the calcium metabolism by the discovery of the very important part it plays in the physiological and pathological processes of the female genital organs. But as these specialized processes are largely dependent on more general conditions, I was led far afield in an endeavour to complete the picture. As I have just published a paper dealing with calcium therapy in gynaecological and obstetrical disorders,[1] I must refer you to that for the special part in which I am particularly interested, and confine my attention to-day to the more general, and to you more interesting, aspect of the subject.

I think we must divide the consideration of the metabolism of the calcium salts into three periods in the life-history of the individual.

(1) The period of growth, when calcium is being collected for the building-up of the bones and tissues; (2) the period of maturity, when a balance is maintained between storage and excretion; and (3) the period of old age, when elimination becomes inefficient, or decreased oxidation of the tissues allows the deposition of lime salts.

It is in the middle period that we have the largest amount for excretion at our disposal; and women can supply their offspring with what it requires in the womb, and subsequently from her milk. Such claims which may be thrown upon a woman show us how active must be her metabolism, and how well adjusted it is. This brings us

[1] *Liverpool Medico-Chirurgical Journal*, July, 1912.

to the question of the regulating factors of the calcium metabolism. And when we offer to consider regulating factors in the living subject, it should be understood that behind these again are less understood primary factors controlling all that is obvious to us, and that the best we can do is to go back step by step. I believe, then, that immediately behind the activities of the calcium metabolism lie the secretions of the ductless glands, which, as I have just said, are subject themselves to other controls.

But this recognition of the position of the ductless glands is, I believe, of vast clinical importance. I can now only give one example: Osteomalacia, which has till recently been treated by the removal of ovaries, is now successfully treated by the injection of adrenalin or of infundibulin (post-pituitary extract)—a preparation I have had the satisfaction of helping to establish in clinical practice, although the credit for the discovery of its physiological importance rests with Schäfer and Oliver.

Calcium is taken into the system by absorption from the alimentary tract; and in regard to this I differ from what has been said by Professor Dixon and Professor Wild, if I have correctly understood them to say that calcium salts are with difficulty absorbed from the intestinal tract. What I believe represents the truth is this: The healthy individual can control, through his ductless glands, the quantity delivered to his tissues, and he can readily excrete any excess. My views concerning the influence of calcium salts on the clotting of blood coincide with those so admirably demonstrated by Addis—that is to say, there is, as I stated long ago, an "optimum amount." Less than this causes delay in coagulation, but moderate excess neither increases nor retards the rate of clotting. Great excess, which cannot be produced by oral administration, but only by intravenous, appears to retard the coagulability of the blood. It is interesting that this conclusion was arrived at by Sir Almroth Wright on apparently wrong scientific data. But it is not the first time that a correct hypothesis has been demonstrated incorrectly. I believe that the direct control of haemorrhage alluded to by Professor Wild is due largely to vasomotor constriction, although if the calcium index of the blood be low the establishment of the normal allows of normal coagulation.

I now come to a most interesting question which has entirely escaped notice in this discussion. Once more I am indebted to Ringer for the original suggestion to which I have given, and I believe correctly, clinical significance. Ringer, in a most interesting little communication, showed that the laminaria "tent," when immersed in distilled water, swelled at a certain rapid rate, and that the rapidity of swelling—that is, of the imbibition of fluid—could certainly be checked by the addition of calcium salts to the water. It is long since I read the paper, but, speaking from memory, I believe he showed that there was some direct relationship between the quantity of lime in the solution and the rate of imbibition. Without wishing to infer that the cells of the dried laminaria tent are absolutely comparable in this respect to those of the living animal, I would like to bring before you the suggestion, which I have several times referred to in other communications, that the beneficial effect often produced by the administration of calcium salts on urticaria, on chilblains, and on local oedemas is due to the fact that the tissue cells cannot readily imbibe fluid rich in calcium salts. The view of Sir Almroth Wright, who, I believe, first suggested the use of calcium salts in such conditions, was that the coagulability of the blood was increased, and leakage from the vessels, therefore, did not occur so readily. This interpretation of his clinical observation is, I think, incorrect, especially in view of our present knowledge regarding the slight or negative effect of oral administration on the coagulability of blood not deficient in the optimum amount of calcium. The view I have expressed regarding imbibition, which I owe to Ringer's experiment, I regard as more likely.

I have not the time to go in any detail into the many other interesting questions of pathology in which the calcium salts play an important part. Many references may be found in communications of other writers, as well as in my own. And many interesting suggestions are to be met with. You have had an opportunity of seeing the valuable demonstration of Sir James Barr of the injurious properties of many of the much vaunted waters for the treatment of stone in the urinary tract. And I think he is much to be congratulated on so forcibly calling attention to this matter.

With regard to the general principles underlying the pathological deposition of the lime salts in the tissues, we must all agree with the main chemical proposition suggested by Professor Benjamin Moore that deficient oxidation is present. But I would emphasize more especially in clinical terms the fact that the tissues are diseased (for example, arteritis) or degenerated (as in fibromyomata). Yet in regard to fibromyomata, it has often struck me as curious that "egg-shell" calcification should occur, in which calcification occurs at the periphery where the circulation is usually good, while the interior of the fibromyoma is not calcified. Many fibromyomata uteri, of course, calcify in the interior.

There is only one more heading under which I wish to make a few remarks—in particular on what has been said by Professor Wild. I do not believe, as he does, that one can get such good effects by the oral administration of insoluble compounds of calcium as with the soluble salts. For various reasons I think there is no comparison. I cannot realize how chalk can be absorbed so well in calcium lactate. So convinced have I become of the importance of administering soluble salts that I have the calcium lactate made in solution. I believe also in giving large doses—gr. xxx or 5j of calcium lactate every night for a week on an empty stomach, and then on alternate nights. I have found, too, that these large doses do not have a constipating effect, whereas, of course, chalk is extremely constipating. Anything that increases unnecessarily the too prevalent condition of constipation in woman is much to be deprecated.

Subsequently Dr. BLAIR BELL, in answer to the suggestion of Professor Dixon that the slightly aperient effect mentioned of large doses of calcium lactate would be due to the action of lactic acid, and was similar to the effect produced by sodium lactate, expressed dissent from this view. The action was, he thought, due to increased peristalsis, and it only occurred about twelve hours after taking the drug. The presumption of Professor Dixon that because sodium lactate was an aperient (owing to the effect of lactic acid) so also was calcium lactate, was not borne out by analogy. Sodium sulphate was an aperient, but calcium sulphate certainly was not. The suggestion of Professor Wild that the calcium carbonate and calcium lactate were both completely converted into calcium chloride in the stomach required careful consideration. But the strength of free HCl in the stomach was usually about 0.2 per cent., and this was insufficient for the purpose suggested by Professor Wild. However, such differences of opinion and interpretation of facts only showed how much work still remained to be done on the subject.

Dr. F. RANSOM (Cambridge) said: Amongst the many interesting facts which are associated with the metabolism of calcium, perhaps none is more striking than the enormous loss of this substance which occurs in numerous cases of diabetes mellitus. I have lately had an opportunity of examining the urine of two diabetics, especially in reference to the excretion of calcium, and I think that some observations on the results obtained will fit well into the present discussion.

So far as concerns the percentage of sugar contained in the urine of these two individuals, C. and W., there was no great difference. C.'s urine contained on an average from 5 per cent. to 6 per cent., W.'s from 6 per cent. to 7 per cent.; but, whereas C. usually passed about 1,500 c.cm. of urine in twenty-four hours, the quantity excreted by W. ranged from 2,500 c.cm. to 3,000 c.cm. Both were kept on a practically identical diet and both were in middle life. C. was stout and well nourished, W. extremely thin. From the difference in the total amount of sugar passed daily you will see at once that whilst W. had to a very large extent lost the capacity for utilizing carbohydrates, C. still retained considerable powers in this respect. Further—and this is the point to which I desire to draw your particular attention—W. was losing daily in his urine quite a large quantity of calcium, whereas C. did not excrete more than may be found with non-diabetics; 200 c.cm. of W.'s urine contained on a rough average about 0.080 gram

of CaO, which means that he was losing about 1.2 gram of CaO daily. On the other hand, C.'s urine contained on an average only about 0.0170 gram in 200 c.cm., which puts his loss of Ca for twenty-four hours at 0.12 gram, just one-tenth of what W. was losing. I may say that the observations were continued through a period of from seven to eight weeks, and that in each case some forty or more calcium estimations were made.

Opinion in general is agreed that this excess of calcium in diabetic urine is conditioned by the excretion of β-oxybutyric acid, and in accordance herewith I found this body in W.'s urine, but not in C.'s. The experiments of Minkowski and others have shown that β-oxybutyric acid may very well be a stage in the normal metabolism of fat, though it does not appear in the urine because it is completely oxidized—burnt off. Oxybutyric acid appears, however, in the urine of normal persons if carbohydrates are omitted from the diet, as also in prolonged hunger. For this and other reasons it has been concluded that if the quantity of carbohydrate burnt in the body sinks below a certain amount β-oxybutyric acid will be excreted, which is much the same as saying that for the satisfactory oxidation of fats the oxidation of a certain amount of carbohydrates is necessary. This view receives confirmation from the varying amounts of Ca excreted respectively by C. and W., for it is obvious that, as under an identical diet W. excreted more sugar than C., the latter had retained a very much greater power of burning off the carbohydrates than had W. As a result of this W. had to get rid in some way of the oxybutyric acid which he could not burn, and so his store of calcium was attacked.

Now, such a loss of calcium may be a very serious affair. The experiments of Ringer, Locke, Loew, Chiari, Januschke, Loeb, and many others have demonstrated the important part played by Ca. Calcium is necessary for the building up of the protein complexes in cell nuclei, and all calcium precipitating substances are cell poisons. The grey nervous substance is richer in cells and much richer in calcium than the white substance. Moreover, to come nearer to diabetes, Schrank has shown that within certain limits $CaCl_2$ is able to hinder the development of adrenalin glycosuria. In this direction I have lately made some experiments the results of which go to confirm Schrank's observations. The partial withdrawal of calcium has, as H. Meyer points out, the effect of causing an increased excitability of the autonom and sympathetic systems, so that, for instance, atropine acts longer and more powerfully upon the heart vagus than under normal conditions. The remarkable experiments of Chiari and Januschke have demonstrated the power which calcium possesses of limiting exudation into the pleura, such as follows the action of diphtheria toxin, and of diminishing or preventing the inflammation which oil of mustard sets up. Hamburger and Hekma have shown that calcium greatly favours phagocytosis.

In view of all these facts it seems highly probable that the intercurrent illnesses to which diabetics are notoriously liable may be, partly at any rate, due to the withdrawal of calcium. It is, indeed, conceivable that in some cases loss of calcium may be a factor in the etiology of diabetes. It should be a matter of consideration for the physician how he may best check the drain of calcium by putting other alkalis at the disposal of the oxybutyric acid, or possibly by giving calcium to replace the loss. The latter point is especially noteworthy, since it has been asserted that the administration of calcium materially improves the condition of diabetics. In this connexion it may be noted that Rey asserts that with a single subcutaneous injection of calcium one can cause a material rise in the calcium content of the blood lasting over several days.

COD-LIVER OIL AND ITS ACTION IN PHTHISIS.

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In the midst of the discussions of the modern methods of treating phthisis it is not without profit to review and reconsider some of the methods of treatment hitherto used. The object of this contribution is to show that cod-liver oil, which has been so much used, must still be considered a most valuable factor in the treatment of the disease. I have elsewhere shown[1] that the oil contains fatty bodies which have a markedly beneficial action on metabolism in phthisis, and that possibly it may have, even in the body, a direct action on the tubercle bacillus.

With Dr. Forsyth I demonstrated that the administration of cod-liver oil very definitely increased not only the total absorption of fat, as it naturally would do, it being so easily assimilable, but also that it increased the percentage absorbtion of all fat taken. Further, it very markedly influences the retention of nitrogen, a fact which is explainable by the findings of McLean and myself,[2] that the so-called tissue fats are really lipoids—that is, fat holding in chemical combination nitrogen and phosphorus. Cod-liver oil *in vitro* dissolves the fatty envelope which surrounds the tubercle bacillus. These effects I have attributed to the large amount of unsaturated fat in the oil, and in previous communications I have given reasons for believing that these unsaturated fats can reach the tissues as such, and so exert their beneficial action.

In relation to this, I should like to mention the work which, with Dr. Wilson,[3] I did on the blood in diabetes, in which it was shown that in this disease the unsaturated fats were used up, and that when lipaemia occurred, as it did in ten out of sixteen cases, the blood was loaded with an excess of the saturated fats. In view of the above findings, it appears to be at least a remarkable coincidence that in diabetes, where the unsaturated fats are so much diminished, phthisis is so common.

Dr. Mildred Powell has recently carried out some experiments which tend to show that unsaturated fatty acids inhibit the growth of the tubercle bacillus. We observed very definite inhibition of the growth of the organism on media containing amounts of unsaturated fatty acids, such as would occur in the blood. On media containing the same percentages of saturated fatty acids growth occurred. The inhibition was also present with the sodium soaps of the unsaturated acids, but not with their glycerides. From the fact that growth occurred normally in the presence of the soaps, it would appear that the inhibition is due to the nature of fatty acids, and not to acidity alone.

These observations tend to show that there is justification for the great faith held in cod-liver oil, which, with the introduction of more recent methods, seems to be declining.

Dr. C. J. B. Williams was, perhaps, the keenest advocate of cod-liver oil, but for many years following his time all authorities were agreed as to its supreme value. The reviews of fifty years ago all state that they are convinced of its value, and while deprecating some of the marvellous effects attributed to it, predict that it will always be considered of the greatest aid in treatment.

In the early part of the last century, when Laënnec showed the true nature of phthisis, the disease was looked upon as incurable, lasting only a short period; then comes a distinct note of hope as the result of the administration of oil.

The numerous cases recorded at that time show conclusively that the disease could be arrested for many years. Of the many writings of that period, I have chosen a series of twelve papers written by Dr. C. J. B. Williams in 1867 and 1868, to compare the results with those of to-day. I have chosen these because they contain an excellent series of closely analysed statistics, which may *roughly* be compared with our statistics of to-day.

Medical statistics containing no constants, and so many variables, can under the best conditions rarely lend themselves to biometrical consideration. In two series of statistics so far apart as 1868 and 1910 it is useless to consider any real correlation; nevertheless, I believe that the figures as we find them can teach us a great deal. In the *Medico-Chirurgical Transactions* of 1844 Williams considers the duration of life of 1,000 of his cases, of whom 802 were alive when last heard of, the average duration of life being already more than eight years. Faggo criticizes them thus: "Among these cases, however, none were included which had not been at least one year under observation; and this restriction, besides keeping out of the list all rapidly fatal cases, doubtless weeded out most who failed to improve for a time under

the treatment recommended, and therefore ceased to attend." These are not the only objections which might be raised. That they are phthisis and no other disease is easily seen on reading the papers, the only proof lacking being the demonstration of the tubercle bacilli.

For comparison I give the statistics from Dr. Bardswell's work on *The Expectation of Life of the Consumptives after Sanatorium Treatment*—the result of ten years' work at King Edward VII's and other sanatoriums. In this table Bardswell has adopted the German method of including all cases together, thus making one series comparable with the other. Comparing these statistics, we find in the older series: Cases less than a year under observation excluded, which no doubt makes the cases those of the more chronic type; on the other hand, in the recent series those dying in the sanatorium are not included. The great point of distinction is, in my opinion, to be found in the nature of the cases.

In the sanatorium statistics 25·6 per cent. of the cases are incipient (Trudeau's classification), showing: Slight or no constitutional symptoms; slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours; expectoration small in amount or absent; tubercle bacilli present or absent; slight infiltration limited to the apex of one or both lungs or a part of one lobe; no tuberculous complications.

Of the moderately advanced cases, 39·4 per cent., that is: No marked impairment of function, local or constitutional; localized consolidation moderate in extent with slight or no evidence of cavity formation; no serious complications. Therefore the remainder, only 35 per cent. of the cases, were advanced in a degree comparable to the cases published by Williams.

The final results are only quoted to compare in the only way possible the treatment fifty years ago and to-day. It is a comparison which of necessity must be very rough. In the series of cases treated by Williams most of the cases were diagnosed in the third stage, and were, therefore, most of them chronic cases. The statistics are vitiated as shown by Fagge.

With all the advances since made in the recognition of early cases, the immeasurable assistance rendered by the discovery of the tubercle bacillus, the knowledge of pathology and immunity, and the help of *x* rays, we should expect some striking results in the treatment of the disease, but these statistics do not show that advance. We have, on the one hand, a series of 500 cases, which, for the sake of argument, may be called chronic, and, on the other hand, a series of cases of which 65 per cent. are very early as compared with the former (25 per cent. incipient, some of them with no tubercle bacilli demonstrable).

I believe that a comparison of the results, rough though it may be, is sufficient to justify the statement that treatment has in no sense progressed with our knowledge of the disease. For comparison only the final results are given, as little can be expected from a closer comparison of two series of cases collected under such different conditions.

Bardswell's Cases (1910).

234 cases (19 who died in sanatorium not included).
Of 15 cases, four to five years after, 52 per cent. were well or alive.
Of 34 cases, five to six years after, 82 per cent. were well or alive.
Of 55 cases, six to seven years after, 58 per cent. were well or alive.
Of 53 cases, seven to eight years after, 49 per cent. were well or alive.
Of 38 cases, eight to nine years after, 34.5 per cent. were well or alive.

C. J. B. Williams's Cases (1868).

500 private cases (all dying in first year not included).
Five years and upwards living, 66.6 per cent.
Ten years and upwards living, 31.2 per cent.

The following statements quoted from C. J. B. Williams's Lumleian Lectures, delivered in 1862, show that even fifty years ago there were some who appreciated to the fullest extent the hygienic treatment of the disease:

> The more fully we recognize the relations of the disease to the general economy, and the less it is treated as a local affection, the more likely are we to progress. The proper treatment of phthisis seems to be that which is calculated to improve the nutrition, to elevate the condition of health. For the fulfilment of this object we must have an eye to the influence of food, clothing, and air, bodily and mental discipline.
>
> "Pure air, nutritive digestible food, regular exercise, and well-arranged habits of life—these and their correlative hygienic measures stand in the first place because they are equal or superior in power to any form of medicine, properly so called, in preventing the development of the disease."

Some six years later—that is, in 1868—Dr. C. J. B. Williams also said:

> On making a retrospect of forty years in the treatment of pulmonary consumption, I can trace a remarkable improvement in its success as judged by results . . . and I have no hesitation in stating my conviction that this agent 'cod-liver oil' has done more for the consumptives than all other means put together.

In the last half of last century almost every writer of note testifies to the value of the oil, and Fagge states:

> Now that it is taken by almost all consumptives one is apt to underrate its real importance.

Since the first chemical researches on cod-liver oil by Wurzer in 1822, many elaborate investigations have been made with a view to determining the active principle or principles contained in it. No fewer than fifty-one components have been found at different times occurring in the oil. Considering the fact that from 95 to 98 per cent. of the oil consists of fatty acid compounds, the other fifty or so are each present in the smallest quantities, and it may now be said that many of them are decomposition products, and some hypothetical. The efficiency of the oil has been attributed to the almost infinitesimal quantities of iodine or phosphorus, or to the peculiar bodies to which fanciful names have been given. An important difference between cod-liver oil and drugs which act in virtue of an active principle lies in the fact that cod-liver oil is in the nature of a food, and its activity is in a different sphere to that of drugs ordinarily so called.

The active principle of a drug enters into a combination with the cell in such a manner that it is loosely held, and can be recovered from the cell. Its activity results by an alteration of the chemical or physico-chemical reactions of the cell without yielding energy to it. Cod-liver oil, on the other hand, enters into direct and permanent combination with the cell, yielding energy to it, and thereby altering the whole of the cell's relations by becoming an integral part of the cell protoplasm. The activity of the oil is, I believe, to be found in those constituents which can perform this rôle, and these are the fats themselves. In recent years this has been perceived in a somewhat hazy manner, and the value of the oil attributed to the fact that the oil is more readily absorbed and assimilated than other fats, and this fact has been lost sight of in consideration of its therapeutic effect.

Recent work on lipoids has taught us that the various forms of fat play an important part in the animal economy and particularly in disease, and it has now to be realized that a recognition of two distinct classes of fatty acid, as regards their physiological action, is needed. The compounds of saturated and unsaturated fatty acids must be considered as playing two distinct parts in metabolic processes.

Leathes has suggested that one of the functions of the liver is the preparation of fatty acids of a high degree of unsaturation for the further processes of metabolism. Recognizing these points, it can be readily understood that cod-liver oil containing fatty acids whose degree of unsaturation is equal to those produced by the liver in its normal action, is a body which can be expected to have a marked action on metabolism. That it has that action is shown in the work mentioned above.

The phosphatides found by McLean and myself in the tissue fats were not found by Mr. G. E. Branch and myself in cod-liver oil, the inference being that they are split up (if they occur in the cod liver itself) and the fats only yielded to the oil in the process of extraction. The tissue fats extracted immediately after death by alcohol and ether before autolysis could occur yielded saponification values higher than those of ordinary neutral fats, this high value being due to the phosphoric acid contained in them.

Five samples of cod-liver oil made by different well-known firms gave saponification values less than those of neutral fats: Sample A, 186.7; Sample B, 181.9; Sample C, 187.9; Sample D, 186.9; Sample E, 187.5. These figures approximate those of the neutral fats, but are in each instance lower.

Direct estimation of phosphorus also leads to the same conclusion—the absence of any but the smallest amount of phosphatides, even if the phosphorus be present in that condition. Carles found no phosphorus in freshly-prepared neutral oil, but in oils containing free acid traces were found. He similarly found that iodine was only present in those oils where decomposition of the liver had occurred. These facts, which we have confirmed, further support the contention that the activity of the oil does not depend on the presence of iodine or phosphorus.

The oils in use, differing in their methods of preparation, contain different quantities of fatty acids, and also different amounts of phosphorus and iodine.

The five samples examined by us gave the following amounts of free fatty acids: A, 0.5 per cent.; B, 0.3 per cent.; C, 0.5 per cent.; D, 8.1 per cent.; E, 0.1 per cent.

The sample E was an oil obtained by extracting the liver in an atmosphere of carbon dioxide to prevent oxidation. Not only does it contain a very small amount of free fatty acid, showing the apparent freedom from decomposition, but it contains, as will be shown, the greatest amount of the fatty acids upon which the activity of the oil depends.

A consideration of the methods of preparation of the oils we examined leads us to believe (thus confirming Carles's work) that the presence of the small quantities of iodine, phosphorus, and various other bodies in cod-liver oil is due to decomposition. From our observations, both in the laboratory and clinically, where we have investigated the effect of the oil on metabolism, I believe that the therapeutic effect of the oil is due to the amount of unsaturated fatty acid it contains, and not to its impurities. We have therefore compared various oils from this point of view, and investigated the nature of these unsaturated bodies in the oil.

The five samples gave the following iodine *values*, representing the amount of unsaturated acids in them: A, 125.1; B, 120.7; C, 126.2; D, 118.4; E, 161.7.

It will thus be seen that sample E (obtained, as before mentioned, by immediate extraction in an atmosphere of CO_2 to prevent oxidation) contains by far the most unsaturated acid.

The unsaturated acids were separated from sample A. These gain an iodine value of 171.1. This would tend to show that in sample E (I value 161.7) the greater amount of the fatty acids present are unsaturated to an extent which only a part of those present in Norwegian oil are. Nearly all of the acids in sample E are unsaturated, as shown by the figures obtained from the unsaturated fatty acids themselves separated from the oil. These figures were on three different occasions 173.3, 170.5, 165.6. From the sample E Mr. Branch isolated fatty acid containing eighteen carbon atoms, with double bonds, thus resembling an acid separated from the liver by Hartley containing twenty carbon atoms and four double bonds.

Speaking of this acid, Leathes says: "There are, indeed, clearly yet things to be learnt with regard to the fatty acids of the liver. But a beginning has been made and indications exist as to the nature of the biological significance of some of the facts that have been already determined. To assign its place in the metabolism of the fats to this remarkable acid, however, is a task that we are not as yet equipped to undertake. It may be a product of that synthetic activity of which there is some evidence in the liver, but it is impossible to say.

It is thus seen that cod-liver oil is quite a different type of fat to any which occurs normally in food. It contains little, if any, phosphatide, is not a mixture (when prepared in an atmosphere of CO_2) of saturated and unsaturated fats, but is composed almost entirely of unsaturated fats.

The degree of unsaturation is far above anything occurring in the food fats, and is comparable only to the fats which the liver prepares for the immediate needs of the body. In the oil itself they occur as glycerides, and as such are fairly stable bodies, but the acids when liberated are highly reactive, as we have shown by the ease with which they undergo polymerization. It is thus clearly seen that cod-liver oil, when taken into the intestinal tract and split up in the process of digestion, liberates very highly reactive bodies, and, further, bodies which are easily assimilated. It is not difficult to understand that such bodies may have the marked effect on metabolism shown by us.

We have confirmed the observation that there is a relation between the taste of the oil and the number of hydroxyl groups it contains. Sample E contained only traces of hydroxyl, and had far less taste than any of the other oils examined.

There is a marked difference between the oil prepared under conditions which do not allow of its oxidation and those not so prepared. In the former the amount of unsaturated acid is much greater, there is less free fatty acid, and less impurities. It has also less taste.

Conclusions.

1. Clinical evidence shows that cod-liver oil has beneficial effects in phthisis.

2. It has marked action on fat absorption and nitrogen retention.

3. It is possible that the fatty acids of the oil, when they reach the tissues, have direct influence on the tubercle bacillus.

4. Of the oils on the market, the forms which are prepared under conditions which prevent oxidation have the greater amount of unsaturated fatty acid compounds to which the therapeutic effects can be attributed.

5. The oils prepared under these conditions have the least taste.

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DISCUSSION.

Dr. GORDON SHARP (Leeds) said Dr. Williams's paper was most timely, for it placed cod-liver oil on a sound scientific basis. Despite the vigorous fresh-air campaign now in progress, it was impossible to dispense with the use of cod-liver oil. This needed to be emphasized, for there was a disposition among many physicians to rely on fresh air and to leave off this old-fashioned but useful remedy. The speaker could confirm Dr. Williams's statement that patients always benefited under cod-liver oil. This took place even when the patients lived in their former unfavourable conditions. The oil appeared to stimulate metabolic processes quite apart from its pure fat value.

Professor J. HILL ABRAM (Liverpool) referred to the general belief in the value of cod-liver oil, even when not prepared in an atmosphere of carbon dioxide. He suggested a series of experiments, using tissue media as a basis for the comparison of the action of unsaturated and saturated acids in their effect upon the growth of the tubercle bacillus.

Dr. WILLIAMS shortly replied.

THE ACTION OF SYMPHYTUM OFFICINALE.

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SINCE the publication of my paper, entitled "A New Cell Proliferant," in which was related the discovery that the ancient fame of the *Symphytum officinale*, or common comfrey, as a vulnerary depends upon the richness of its rhizome in allantoin, a number of observations have been made with this substance which in a measure help to explain the nature of its action.

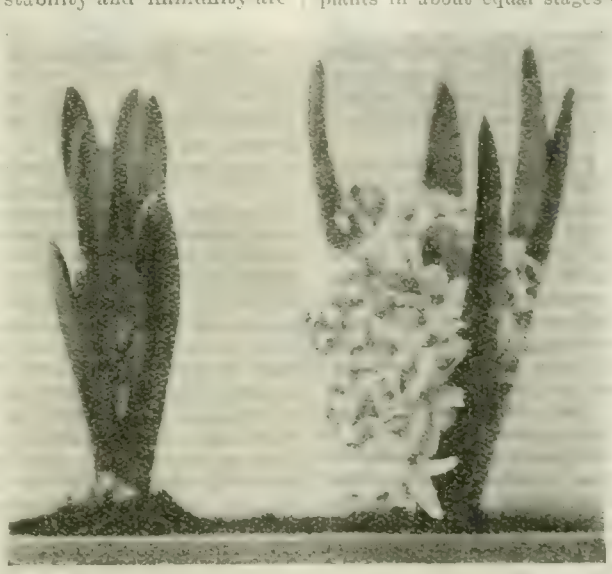
Its utility in the treatment of ulcerative conditions and of burns has been confirmed by the testimony of numerous observers, who in the descriptions of their cases have frequently referred to the marked way in which it has cleaned up the bases of the ulcers even when they have been septic and sloughy. This cleaning-up process is, of course, essential if healing is to occur, because healthy cell proliferation will not take place over septic surfaces, and is conducting an investigation concerning the action of allantoin the first thing to determine was whether it was primarily destructive to micro-organisms or promoted this effect by rendering the cells immune to them and their surroundings unsuited for their growth and development.

Some simple experiments quickly demonstrated that, far from being a poisonous antiseptic, it possesses no toxic qualities, and rather favours than inhibits the growth of organisms. In August, 1911, during a cruise to the Shetlands in Professor Herdman's yacht, *The Runa*, I was able to make a number of observations concerning the effects which followed the placing of samples of the plankton gatherings (which were constantly available during tow-netting operations) in sea-water containing varying amounts of allantoin. The object of this was to discover whether the allantoin was destructive to these small and simple forms of animal and vegetable life which

are found in the plankton. Owing to the active way in which they move about, the most easily observed creatures were the copepoda, but there were many other forms which could easily be watched with the naked eye. An excess of allantoin was placed in a quantity of sea-water and thoroughly shaken up, so as to make as saturated a solution as possible, and of this quantities were added to newly drawn sea-water in proportions varying from 1 in 8, 1 in 7, and so forth up to saturated strength, controls of pure sea-water being employed in every series of experiments. The net result of a considerable number of observations was that the animalculae observed lived for nearly as long a time (about two days) in the saturated and other solutions as they did in the controls, and from this it appeared that allantoin was not appreciably inimical to the forms of life which were experimented upon.

On my return to Liverpool Dr. Alfred Adams, working in the Bio-chemical Laboratories of the University, kindly made some experiments with various culture media, containing 0.2 per cent. of allantoin, and on November 1st, 1911, he reported that the *Bacillus coli*, staphylococci, streptococci, and tubercle bacilli were not retarded in their growth and multiplication by it.

Allantoin, then, is not an antiseptic in the usual acceptation of the term, and its action in this respect must depend upon some influence brought to bear upon the cells, whereby their resistance and stability and immunity are established and their proliferation promoted. As stated in the paper referred to, allantoin is found in parts which are related to active growth and development both in animals and plants. For instance, it is plentiful in the fetal allantois, in the rhizomes of plants at certain seasons of the year, and in the young buds and germinating parts of those which are growing and developing; in the comfrey rhizome it is abundant in the spring and autumn, the seasons during which it should be always gathered for therapeutic purposes, whereas in samples taken during June of this year, when the plant was well grown and in flower, the rhizomes contained a hardly appreciable quantity of it, but it was present in the leaves and young shoots. This important fact may be regarded as evidence that the plant withdraws allantoin from its storehouse in the rhizome, and utilizes it for purposes of cell proliferation.



The presence of allantoin in the storehouses and growing parts of plants, as well as its relation to the fetus in the allantois and in milk—the food of the rapidly growing infant—added to the clinical evidence that it promotes healing in ulcerative conditions, naturally led to the suggestion that experiments made upon plants might afford some information, confirmatory or otherwise, of its proliferative properties or functions. By my request Mr. Coppin planted a large number of hyacinth bulbs (the growth of which had been started in the dark) in solutions of allantoin varying from 0.1 to 0.5 per cent., and it was found that the growth of the roots was inhibited in a ratio proportionate to the amount of allantoin in the solution—that is, the stronger the solution the less was the amount of growth in the root.[1]

Notwithstanding this diminished root growth, which was confirmed by microscopic examination, the flower stems of the plants grew in a stunted way, but none had blossomed at the end of twelve weeks, and it therefore appeared that allantoin had a detrimental effect upon vegetable cell growth when added to the water in which the bulb was planted. This was disappointing, but an interesting development now ensued. It seemed evident that in plants the allantoin or other proliferative agent is stored for use in the rhizomes, buds, barks, and germinal parts, and it is probably elaborated there as the result of some metabolic process. There is no allantoin normally in water or in the earth in which bulbs are grown, but it or some kindred substance is formed and stored in the bulb, or, in the case of other plants, in the rhizomes or roots, to be drawn upon as required for the advance of the processes of growth and development. This being the case, the suggestion naturally arose that one might try the effect of injecting a solution of allantoin into the bulbs, and a number of experiments were conducted on these lines, the first of which was made in a more or less casual way as follows:

A child in the Royal Southern Hospital had two earth-grown hyacinths in a pot. They had grown quite unequally, one having developed well with the commencement of a flower, the other being feeble, short, and showing no signs of blossom.

About 15 minims of allantoin solution (0.4 per cent.) was injected on several occasions into the bulb of the latter, with the result that rapid growth ensued and it overgrew its more vigorous neighbour.

This experiment excited the interest of the Sister of the ward (Miss Archer) and of the Matron (Miss Jolly), and they gave similar injections into the bulbs of a considerable number of plants in about equal stages of growth. Controls were used, some being injected with quantities of water equal in amount to the quantities of allantoin solution given, others being grown without any injections, these experiments being conducted in earth grown bulbs. In addition, some hyacinth bulbs which had just started growth, the shoots being about ½ in. high, were planted in water, and some of them were injected every third or fourth day with allantoin solution, some with water only, the remainder being controls, and the same results were obtained in every case. The allantoin evidently acted as a cell proliferant, forcing the growth of the shoots, and especially of the flowers (for it was noticeable that the plant often blossomed with comparatively little leaf growth), commonly before their untreated neighbours had reached anything like the stage of flower production. The water-injected plants grew better than the uninjected ones, but nothing like so rapidly as those to which allantoin had been added.

These experiments were repeated many times with tulips, lilies of the valley, and other plants, care being taken that they were planted at the same time, in the same tubful of earth, and under the same conditions of temperature and surroundings.

I show some pictures illustrating the way in which injected plants flourished as compared with the controls. One is reproduced on this page.

Professor William Carter experimented with shallots and obtained similar results, only he watered earth-grown plants with allantoin solution against controls where water only was used. It must be remembered that in this case the water enters into the bulb from above, soaking in between the fleshy tissue layers as well as being absorbed by the roots. In the water-grown plants which were injected, it was noted that with the increased growth of the shoots there was sometimes a diminished growth of the roots, which were considerably longer and stronger in the controls.

This led to the impression that perhaps the roots were not so necessary to the plant if its water as well as the proliferant content were kept high, and in order to test this point a number of hyacinth bulbs were selected which had shoots ½ in. high but no visible roots. Some of these I injected with allantoin solution, some with water, others being uninjected, and they were simply placed upon a plate without earth or water. At the end of seven or eight days the little shoots of the treated plants were opening out into leaves. The water injected bulbs also

[1] Mr. Coppin, M.Sc., is publishing a paper describing his experiments fully in the coming number of the *Bio-Chemical Journal*. The type of experiment was suggested by a paper by Professor Benjamin Moore and Herbert Roaf and Robert E. Knowles, *Bio-Chemical Journal*, vol. iii. Nos. 6, 7, and 8.

lived, but did not grow so well, whereas the shoots of the controls browned at the tips and shrivelled up. Not a sign of roots made their appearance in any of these plants.

From these experiments one gathers the impression that allantoin is a substance which is capable of being utilized by vegetable cells in connexion with their proliferative processes, just as there seems to be proof that it has proliferative properties in connexion with certain animal cells, if one may judge by the way in which it promotes healing in the chronic and acute ulcerative conditions which have been recorded or communicated, and in both cases the reproduced cells are normal, and resemble those from which they took their origin.

The next point to determine was whether allantoin had any influence upon malignant cell growth. A good many cases have been recorded where cancerous or sarcomatous growths have benefited by treatment with comfrey. There is a very striking one mentioned by Professor William Thomson in a paper entitled "Some Surprises and Mistakes," published in the BRITISH MEDICAL JOURNAL of 1896, in which a man, who had a large recurrence after removal of the jaw for sarcoma, treated it himself with comfrey poultices, and it atrophied and disappeared. The author says, "I know nothing of the effects of comfrey root, but I do not believe that it could remove a sarcomatous tumour." The very first case in which I employed allantoin was a large rodent ulcer, which became entirely covered with epithelium in the course of some weeks after being treated with it. In this latter case there must have been some special circumstances which enabled the new epithelium to grow in, because other rodents have not been similarly benefited by it.

Concerning the former case I can offer no reasonable explanation, but they both led me to think that perhaps allantoin might have some effect in the way of lessening the malignant tendencies of the cells. Accordingly I proceeded to use it in a couple of advanced sarcomata, with the result that they seemed to grow, if anything, rather faster than before, and my conclusion is, from these and other observations, that allantoin is a dangerous substance to give or to apply in malignant cases. It seems to be a general proliferant which influences the reproduction of normal animal cells and of those of malignant or reproductive types, and it is also, as I have shown, a vegetable cell proliferant. It has no power apparently to produce a somatic cell from a malignant one, or a carcinomatous or sarcomatous cell from a somatic one, and the inference is that it is an agent which has to do in some general way with the activities of nucleic acid.

In this connexion a study of the structure of nucleic acid is important, and I am indebted to my co-worker, Dr. Titherley, for facts concerning the chemistry of this substance and the possible relationship of allantoin to it. Nucleic acid ($C_{35}H_{55}O_{29}N_{15}P_4$) consists of four meta-phosphoric molecules, having linked on to them one molecule of a pentose (discovered by Emil Fischer to be ribose, a substance difficult to obtain, and therefore difficult to experiment with), one molecule each of the purine bases, adenine and guanine, and one each of the pyrimidine derivatives, thymine and cytosin. It is to these two latter (purine and pyrimidine) groups that allantoin is related. Both of them yield uric acid in the course of their chemical metabolism, and uric acid in turn when oxydized yields allantoin, so that allantoin may be said to have certain relationships to nucleic acid, and I expect that bio-chemically it will prove to be a very important relationship, for reasons already referred to. It seems reasonable to suppose that cellular stability and resistance may depend upon the efficient building up of nucleic acid. There is no use in giving or applying nucleic acid (or nucleo-protein) itself in cases where it is desired to build up that substance in the cells; they cannot make use of the fully formed material, but require to assimilate its constituents to build it for themselves, and if cellular stability and resistance and immunity depend upon its proper construction and functions, we must try to supply the bricks for building the edifice.

During the past six or seven months I have been experimenting with meta-phosphoric acid alone and in combination (mixture) with allantoin, more especially in tuberculous sinuses and skin infections, in order to discover whether cell resistance and stability could be strengthened and healing promoted. It has been administered internally and given hypodermically into the tuberculous tissues, syringed into sinuses and into abscess cavities: and there is no doubt that it has done much good, the tissues have softened down and healing has been effected in long-standing cases, and it seems to me to be likely that a principle of this kind may lead to a change in our conception of the methods of treating tuberculous and perhaps some other infective conditions. There is great scope for work in the investigation of the therapeutic effects of these nucleic acid derivatives and constituents, some of which we have now under investigation, and I hope on a future occasion to be able to add something further to our knowledge concerning them. There is just one word to add with reference to the therapeutics of allantoin. I have already referred to its presence in milk, the food of the infant and rapidly growing child. Experiments conducted on the lines of marking the increase of weight, if any, of children suffering from wasting and rickets on a known milk mixture, and then noting it after the addition of allantoin to the milk, indicate that it promotes their growth and nutrition.

THE COMPARATIVE VALUE OF ARSENIOUS ACID AND SALVARSAN IN NON-SYPHILITIC DISEASES.

By Assistant Professor CHARTERIS,
Glasgow.

(*Abstract.*)

DR. CHARTERIS contrasted the therapeutic value of inorganic arsenic and salvarsan in Hodgkin's disease, leukaemia, chorea, and pernicious anaemia. In all these conditions it was found clinically that inorganic arsenic was of value by causing temporary improvement though rarely complete cure. Even in chorea relapses were common. The method of action was quite unknown. There was an effect on the blood-forming tissue in the marrow. On the theory that salvarsan might act upon the unknown cause of these obscure blood conditions, intravenous injection of salvarsan was tried, but without any results which indicated that it was of more value than inorganic acid. In pernicious anaemia the intravenous injection of salvarsan had produced such an anaemia that the patients in two out of three cases died within three weeks, and the third patient was not improved, though he apparently was not damaged by the treatment. Both in chorea and leukaemia not only did the injection of salvarsan not cure the disease, but it even did not prevent the appearance of complications. Thus, in chorea an endocarditis ran a normal course after salvarsan, and attacks of perisplenitis still occurred in a case of leukaemia after salvarsan treatment. It was found that in rabbits salvarsan injection produced a mild stimulatory effect upon the bone marrow analogous to that induced by inorganic acid.

COMBINED SECTIONS OF STATE MEDICINE AND BACTERIOLOGY.

DR. A. K. CHALMERS, President of the Section of State Medicine, in the Chair.

DISCUSSION ON THE VARIETIES AND SIGNIFICANCE OF B. COLI IN WATER SUPPLIES.

OPENING PAPERS.

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Introduction.

In illustration of the potentialities of the *Bacillus coli* test, two series of experiments were carried out, and the results are shown in Tables I and II.

TABLE I. *Delicacy of the B. Coli Test: One Part of Crude Sewage was Added to 100 Million Parts of Sterile Water.*

By using 10,000 c.cm. of the infected water for cultural purposes the following results were obtained:

Experiment 1.—*B. coli* (lactose +, indol +) isolated without any difficulty.

Experiment 2.—*B. coli* (lactose +, indol +) isolated without any difficulty.
Experiment 3.—*B. coli* (lactose +, indol +) isolated without any difficulty.
Experiment 4.—*B. coli* (lactose +, indol +) isolated without any difficulty.
Experiment 5.—Here the result was a failure, the reason being that the sewage used in this experiment happened to be very weak bacteriologically, containing only 1,000 *B. coli* per c.cm.
Experiment 6.—*B. coli* (lactose +, indol +) isolated without any difficulty.
Experiment 7.—*B. coli* (lactose +, indol +) isolated without any difficulty.
Experiment 8.—*B. coli* (lactose +, indol +) isolated without any difficulty.
Experiment 9.—*B. coli* (lactose +, indol +) isolated without any difficulty.
Experiment 10.—*B. coli* (lactose +, indol +) isolated without any difficulty.
The *B. coli* test is thus so delicate that one part of a normal sewage, or its bacteriological equivalent, can be detected in 100 million parts of sterile water.

Table I indicates the remarkable delicacy of the test. It will be noted that in nine out of ten experiments typical *B. coli* (lactose +, indol +)* were isolated from a known mixture containing 1 part of sewage in 100 million parts of water. The mixture was made by adding what represented 0.0001 c.cm. of sewage to 10,000 c.cm. of sterile tap water, contained in a large sterile bottle, thereafter adding a concentrated suitable sterile nutrient medium and incubating the mixture, and subsequently making subcultures in the ordinary way. With many sewages, even 0.00001 c.cm. would have sufficed (1 in 1,000 million) to yield a positive result, but the particular sewage used in these experiments is known to contain on certain occasions relatively few *B. coli*.

TABLE II.—*Absence of Typical B. Coli (Lactose +, Indol +) from 10,000 c.cm. of a Deep Well Water.*

Experiment 1.—10,000 c.cm. of the well water were poured into a large sterile bottle, a suitable enrichment of sterile bile-salt sugar medium was added, the bottle and its contents were placed in a warm water bath at 37° C. for several hours and then finally transferred to the incubator (at 37° C.). After three days' incubation subcultures were made. No typical *B. coli* (lactose +, indol +) or *coli*-like microbes of any kind were isolated.
Experiments 2 and 3.—Same procedure as in Experiment 1, with similar negative results.
Experiment 4.—Here microbes were isolated which yielded traces of gas in lactose cultures, but no indol in peptone-water cultures. No typical *B. coli* (lactose +, indol +) were found.
Experiment 5.—Same as Experiment 4.
Experiments 6 to 10.—Results quite negative, as in Experiments 1 to 3.

Table II illustrates a related picture. Here it will be observed that when dealing with a deep well water known to be very pure, in ten instances the attempt to recover typical *B. coli* failed, even when as much as 10,000 c.cm. were submitted to cultural tests. What do these results signify? They signify that the well water in question could not have been contaminated with sewage or its bacteriological equivalent even in the small proportion of 1 part of the former in 100 million parts of the latter. It is, of course, impracticable in general cases to use as much as 10,000 c.cm. for cultural purposes, but 100 c.cm. can always be employed, and so it may be said that in practice the test can readily detect 1 part of sewage or its bacteriological equivalent in 1 million parts of water. With a strong sewage the test may even detect 1 part in 10 million parts.

Requisites for Bacterial Tests of Pollution of Water.

Three main requisites for reliable tests of contamination are:

(1) To begin with the microbe indicator must be superabundant in excremental matters. (2) It must be normally absent or present only in comparatively small numbers in water free from undesirable pollution. (3) It should be a decadent microbe when divorced from the animal body.

1. As regards the first requisite, it is probably unnecessary here to embark on a description of the work I have done in estimating the numerical proportion of *B. coli* in excremental matter. Those familiar with my writings on this subject will accept the statement as being probably an underestimate that there are 100,000 *B. coli* per c.cm. of crude sewage and 1,000,000 *B. coli* per gram of human faeces.

2. With respect to the second desideratum, it is superfluous to go into the matter fully, but a few representative examples may be given:

Deep Well Water.—Taking 1,331 samples of Kent deep well waters, 94 per cent. showed no typical *B. coli* in 100 c.cm.; similarly with 458 samples of Lee Valley deep well waters 91.4 per cent. contained no typical *B. coli* in 100 c.cm.

Deep Sea Water.—34 samples collected off the West Coast of Scotland contained no typical *B. coli* in 100 c.cm.; 8 samples collected outside the Firth of Forth contained no typical *B. coli* in 100 c.cm.; 8 samples collected off the Norfolk coast contained no typical *B. coli* in 100 c.cm. Six of the Norfolk sea-water samples were also tested in the very large amounts of 1,000 c.c.m. cultures, and the results were likewise negative.

Deep Sea Shellfish.—A hundred and twenty cultures, amounting in the aggregate to 382 c.cm., were made from sixty-six deep sea oysters collected off the Norfolk coast. With a single exception none of the cultures yielded any typical *B. coli*. The microbe associated with the apparently positive result was not altogether typical when further tested in neutral red broth and litmus milk cultures.

I may also refer to the numerous experiments on sea-fowl and sea-fish described in my report to the Local Government Board, 1903–4. In these investigations I found that whereas the intestines of the ordinary gull harboured *B. coli* in enormous numbers, the guillemot, which is a clean feeder, did not apparently contain this microbe. Further, the intestines of crustaceans and fish—for example, shrimps, whelks, crabs, gurnets, cat-fish, whitings, soles, plaice, dabs, brill, skate, and dog-fish—dredged from the sea in localities remote from sewage pollution usually contained no typical *B. coli*. The foregoing are a few instances of the absence, practically speaking, of *B. coli* from unpolluted substances. It may, however, be at once acknowledged that between the two extremes of (1) and (2) lie many cases of materials which admittedly do contain *B. coli*, but which, nevertheless, appear to be perfectly harmless if ingested.

3. As regards the third desideratum, it is possible that under special circumstances, the *B. coli* may normally retain its vitality for considerable periods. This fact, however, does not invalidate the rule that *B. coli* outside the animal body is usually known to be a microbe with decadent attributes—for example, at 20° C. *Bacillus coli* dies rapidly (three to nine days) both in sea-water and tap-water.* The experiments, however, were carried out with cultivated organisms in 1903 and before I had adequately appreciated the fact that low temperatures have a marked effect in prolonging the vitality of *B. coli*. As regards uncultivated *B. coli*, a very large number of experiments at a later date with Thames and Lee raw river water (10 c.cm. amounts) showed that on the average *B. coli* disappeared within eleven days at laboratory temperatures.

Turning next to open-air conditions, in 1903 I had occasion to examine the Lee stored water feeding the sand filters at Lee Bridge, and was struck by the comparative absence of *B. coli* notwithstanding the fact that in the Lee river antecedent to storage this microbe is present in considerable abundance. At a later date, the matter has again been studied in great detail, but time only permits of my giving the following few particulars.

TABLE III.

Presence of Typical *B. coli* (Lactose +, Indol +) in :—	Raw Thames.	Raw Thames Water after Storage in the Lambeth, Chelsea, and Staines Reservoirs.		
		Lambeth, nominally 14 Days' Storage.	Chelsea, nominally 15 Days' Storage.	Staines, nominally 95 Days' Storage.
100 c.cm. and less ...	Per Cent. 99.9	Per Cent. 83.7	Per Cent. 57.2	Per Cent. 66.2
10 c.cm. and less ...	97.7	51.2	32.5	32.5
1 c.cm. and less ...	83.1	23.7	13.4	9.6
0.1 c.cm. and less ...	48.3	7.5	3.3	None
0.01 c.cm. and less ...	10.1	None	1.1	None

* To save repetition it may be here stated that throughout the paper typical *B. coli* signifies *B. coli* yielding gas in lactose cultures and indol in peptone-water cultures.

* See page 102, Fourth Report of the Royal Commission on Sewage Disposal, vol. iii.

The table shows very clearly the striking reduction in the number of *B. coli* when raw river water is stored in large storage reservoirs.

Enough, perhaps, has now been said under (1), (2), and (3) to establish their general accuracy, and it is convenient at this stage to consider the significance of the *B. coli* test in its negative and positive aspects.

Negative Aspects of the B. Coli Test.

In its purely negative aspect the value of the *B. coli* test is almost outside the pale of criticism. Reference may again be made to Table II, which indicates that the well water in question, at the time when the samples were collected, contained no typical *B. coli* in 10,000 c.cm. of water. In other words, it contained either none at all or less than 1 part of sewage or its bacteriological equivalent in 100 million parts of water. Now, when a water contains no typical *B. coli* in 100 c.cm., it may be said to be 10 million times less impure than sewage* or its bacteriological equivalent. Of course the *B. coli* test in its negative aspects is only of significance inferentially—that is, one cannot prophesy from negative results at any one time the absence necessarily of positive results in the future. Further, improperly protected water may be contaminated with the urine of a typhoid carrier containing no *B. coli* but myriads of typhoid bacilli.

Positive Aspects of the B. Coli Test.

Here obviously we are treading on debatable ground, and it is not always easy to avoid, on the one hand, condemning waters which are really safe or passably safe, and, on the other hand, passing waters which are actually or potentially unsafe for domestic use. Not being a believer in blindfold bacteriology, I consider that *B. coli* results should always be interpreted in relation to the topographical conditions. It is just as foolish for the topographist to ignore the findings of the bacteriologist as it is for the bacteriologist to pay no attention to local conditions.

Suppose, for the sake of argument, we condemn a water containing typical *B. coli* in 1 c.cm.,† this means that we are objecting to its quality because it contains $\frac{1}{100,000}$ part of sewage or its bacteriological equivalent.‡

This is a lenient standard. I think, indeed, there cannot be very many waters yielding *B. coli* in 1 c.cm. in a majority of representative samples which cannot be shown to be undesirably polluted. On the other hand, I think it must be admitted that there are some waters which may just fail to yield positive results with 1 c.cm. amounts, and yet which may not be altogether free from objection.

Suppose the above standard be made ten times more severe, and we object to a water containing typical *B. coli* in 10 c.cm. of water. It is obvious that there is more risk of condemning supplies which are reasonably safe, and less risk of passing others which are not above suspicion than is the case with a 1 c.cm. standard.

The standard may be made still more severe by condemning waters yielding positive results with 100 c.cm. amounts, but this, of course, involves the danger of passing an unfavourable opinion on not a few supplies, which, as judged by other tests and standards and by practical experience, are even free from suspicion. With this 100 c.cm. standard the risk of passing supplies which ought to be condemned is reduced to a minimum. The 100 c.cm. standard is the one which I adopted a good many years ago as a counsel of perfection, but I am far from saying indiscriminately that all waters which infringe the standard are of necessity unsuitable for domestic use. For example, surface waters from regions remote from the possibilities of sewage pollution, and from land which is not under cultivation, may yield *B. coli* in 100 c.cm. or 10, or possibly even 1 c.cm., and yet experience has shown that these same waters may be perfectly safe for drinking purposes. On the other hand, when dealing with well waters so situated as not to be wholly cut off from all sources of undesirable pollution, or with surface waters, which, by reason of their suspicious origin, have to be subjected to some form of purification treatment, no effort should be spared to bring such supplies into the position indicated as safe by the proven absence of *B. coli* from as much as 100 c.cm. of the water under investigation. That the standard is not at all unattainable is shown by the present position of the metropolitan water supply, which in 1911 yielded from somewhat unpromising antecedents the following results:

All London Waters, 1911.

Number of samples examined, 7,091.
Percentage number of samples containing no typical *B. coli* (lactose +, indol +), 77.6 per cent.

In 1907, in conjunction with Dr. M. H. Gordon, I examined 215 tap-water samples from 26 large towns; 57.2 per cent. of the samples contained no flaginac *B. coli* in 100 c.cm. of water and seven towns yielded no flaginac *B. coli* in 100 c.cm. out of 53 samples examined.

I think bacteriologists would always be justified in urging some objection on purely bacteriological grounds to all waters which do not yield, in a majority of representative samples, negative results as regards the typical *B. coli* when 100 c.cm. of water are submitted to cultural tests, but not necessarily in practice in condemning such waters without taking into account all the circumstances pertaining to the particular case under consideration. There is no inconsistency or weakness involved in admitting that the *B. coli* test, like all tests, has its limitations. On the other hand, the topographist who affects to ignore the findings of the bacteriologist is as open to censure as the clinician who, despite the findings of a clinical research laboratory or the revelations of the *post-mortem* room, refuses to enlist in his services the microscope or the test tube as most useful workaday adjuncts in his practical life.

The B. Coli in Relation to Purification.

The *B. coli* test, as an indicator of the efficiency of purification processes, stands without a peer, whether in judging the efficiency of a filtration process, or the adequacy of storage of impure water, or, before all, in determining whether a sterilization process is really effective. In the case of the metropolitan water supply over three-quarters of the samples of raw river water (Thames and Lee) contain typical *B. coli* in 1 c.cm. (or less), whereas over three-quarters of the samples from the same source, but after storage and filtration, do not contain this microbe, even in 100 c.cm. Whatever may be the demerits of London's sources of supply, the obvious and fair bacteriological inference is that the purification processes decrease the risks a thousandfold.

The B. Coli Test in Relation to other Tests.

In human faeces the results as judged by (*a*) the total number of bacteria (gelatine), (*b*) blood-heat bacteria (agar), (*c*) excremental bacteria (rebipelagar), and (*d*) typical *B. coli* (lactose +, indol +) are almost identical for obvious reasons. In sewage and sewage effluents, (*a*), (*b*), (*c*), and (*d*) diverge, the numbers being in the order named. As we pass from sewage to waters of increasing degrees of purity, we find usually the amount of divergence increasing—that is, relative to each other the harmless bacteria become more prominent than those associated more or less closely with undesirable pollution. These comparisons are of interest, but of far greater importance is the relative merits of the different bacteriological tests. Beyond all question, and without disparaging any other supplemental or corroborative test, the *B. coli* test, assuming that the test is properly applied and the results interpreted with discretion, is the "sheet anchor" of practical water bacteriologists.

Objections urged against its Value.

Most if not all the real limitations of the *B. coli* test were admitted, and, in fact, originally brought forward by the very men whose practical experience still leads them to persevere with the test. Perhaps the two most common objections are that *B. coli* is abundant everywhere, and that it multiplies in water. Neither statement is true in my experience. Again, it is said that as *B. coli* is non-pathogenic the test has no value. But a water is not condemned because it contains *B. coli* as *B. coli*, but because the presence of *B. coli* indicates the possible

* On the basis of 100,000 *B. coli* per c.cm. of sewage.

† That is, in a majority of samples, taken to be fairly representative of the average conditions of the supply in question. This note applies to the immediately succeeding paragraphs.

‡ On the basis of 100,000 typical *B. coli* per c.cm. of sewage.

presence of accompanying microbes of truly pathogenic sort. Further, it is correctly objected that the *B. coli* of man and that of the lower animals are practically indistinguishable. Undoubtedly the excreta of the lower animals are much less objectionable than those of man; but some of the diseases of animals are communicable to the human, and the ingestion of any kind of filth is surely to be avoided if reasonably practicable. Even in cases of gross indisputable sewage pollution the *B. coli* results have, on the above-stated grounds, been sometimes discredited, as if, forsooth! the lower animals had acquired the monopoly of our waterclosets to the exclusion of human beings. Further, it is argued that until bacteriologists are agreed on the definition of *B. coli* the test is of small value. But bacteriologists disagree only as regards the interpretation to be put upon the refinements of the test; and surely, as such disagreement only stimulates toward further research, it is to be hoped that it will continue.

Some bacteriologists think that they can get nearer the actual truth by a rigid classification, and others by a more elastic interpretation of their results, but it becomes at once apparent how relatively unimportant these differences really are if we look at the matter broadly and quantitatively. Practically every one is agreed that a microbe of "lactose +, indol +" attributes is probably of excremental origin, and the distribution of such microbes in Nature has already been dealt with. It has been shown that it may be absent from as much as 10,000 c.cm. of a very pure water and present in $\frac{1}{10,000}$ c.cm. of sewage.

Further proof has been afforded that if 10,000 c.cm. of sterile water be inoculated with $\frac{1}{10,000}$ c.cm. of sewage, "lactose +, indol +" microbes can be recovered without any difficulty. In other words, the test can readily detect 1 part of sewage in 100 million parts of water, or even 1 part in 1,000 million parts in the case of strong sewage.

Classification of Results.

I think a majority of bacteriologists have now adopted some such classification as was suggested by me in 1902.*

First Class.—No "lactose +, indol +" microbes even in 100 c.cm. of water; 10,000,000 times less impure than sewage or its bacteriological equivalent.

Second Class.†—No "lactose +, indol +" microbes in 10 c.cm. of water; 1,000,000 times purer than sewage or its bacteriological equivalent.

Third Class.—No "lactose +, indol +" microbes in 1 c.cm., but present in 10 c.cm. of water; 100,000 times purer than sewage or its bacteriological equivalent.

Fourth and succeeding classes on the same decimal basis.

In addition, each bacteriologist very properly likes to fortify his judgement by the application of additional tests, interpreted in whatever manner his experience leads him to think best. My point is that the quantitative estimation of the number of "lactose +, indol +" microbes is common ground for practically all bacteriologists, and the classified results based on this standard of measurement are found to be of the utmost value in connexion with water analysis.

Varieties of Typical B. Coli (Lactose +, Indol +).

It is quite easy by employing only six additional tests (adonite, cane sugar, dulcite, glycerine, raffinose, salicin) further to subdivide the "lactose +, indol +" *B. coli* of sewage into at least nineteen apparent varieties.

It will be noted that out of 100 specimens of typical *B. coli* (lactose +, indol +) isolated from sewage, there occurred 19 apparent varieties, though the proportion of some of these to the whole was very small (Table IV).

It may be convenient at this stage to refer to Tables V, VI, and VII, illustrating apparent varieties of lactose +, indol + *B. coli* isolated from water, sewage, sewage effluents and faeces. I am not prepared, however, to attach to these varieties any definite place in a scale representing degrees of undesirable pollution.

TABLE IV.—*100 Specimens of Typical B. Coli (Lactose +, Indol +) Isolated from Sewage.*

+ = Gas.

Group.	Adonite.	Cane Sugar.	Dulcite.	Glycerine.	Raffinose.	Salicin.	Per Cent.
1	+	+		+	+	+	4
2	+			+		+	10
3	+						1
4	+	+	+	+	+	+	2
5	+					+	1
6	+			+			1
7		+	+	+	+	+	22
8		+	+	+	+		13
9		+		+	+		8
10		+	+	+			1
11		+		+	+	+	2
12			+	+		+	13
13			+	+			9
14			+	+	+	+	2
15			+	+	+		2
16				+			4
17				+		+	3
18				+	+		1
19		+			+		1

		Per Cent.
Adonite Group ...	1, 2, 3, 4, 5, 6...	19
Cane Sugar Group	1, 4, 7, 8, 9, 10, 11, 19	53
Dulcite Group ...	4, 7, 8, 10, 12, 13, 14, 15	64
Glycerine Group...	1, 2, 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18...	97
Raffinose Group ...	1, 4, 7, 8, 9, 11, 14, 15, 18, 19	57
Salicin Group ...	1, 2, 4, 5, 7, 11, 12, 14, 17	59

No definite liquefaction of gelatine, 30 days at 20° C.

METHODS.

Primary Medium.—In the case of all but very impure waters it is necessary to use enrichment methods and liquid media for primary test purposes. Though as a result of comparative tests I obtained the best actual results with beef broth, next with McConkey's glucose bile salt medium, and then with his lactose bile salt medium, yet the use of bile salt media saves so much time and trouble that, generally speaking, they are entitled to preference. I am a little doubtful about the choice of a fermentative substance. A positive result with lactose is a much better presumptive sign of contamination than a positive result with glucose. On the other hand, both are indicators of potential danger, but a negative result with a lactose medium may lull suspicion, which would be aroused by the use of a glucose medium.

Bacteriologists are too frequently called upon, or expected, to form a judgement from the examination of a single sample from an unknown source of water supply. Suppose a negative result with 100 c.cm. and lesser amounts is obtained when using a lactose medium. On the basis of this result alone, there is no option to pronounce other than a favourable opinion. Had glucose been utilized, a positive presumptive result might have been obtained, although possibly no typical *B. coli* (or only non-typical *B. coli*) resulted from the subcultures, in which case a guarded statement would then be made, properly leading to the collection of further samples, which could be shown to contain possibly completely typical *B. coli*.

In the great majority of waters, although there is no evidence that a change in the hygienic quality of the water has actually occurred, yet striking variations occur from day to day, when dealing with the same volume of water, in the matter of isolation of glucose and lactose fermenting microbes. In the case of the metropolitan water supply, we are dealing with Thames, Lee, and New River filtered water and a considerable number of well waters. In the case of only one well has a positive result as regards fermentation not been followed, sooner or later, by a positive

* Report of the Medical Officer, Local Government Board, 1902-3, Opp. B. No. 5, p. 559. Also Fourth Report of the Royal Commission on Sewage Disposal, vol. iii, p. 107.

† As suggested in my report to the Local Government Board, each of these classes may be subdivided into ten subclasses. For example: +100-90, +90-80, +80-70, +70-60, +60-50, +50-40, +40-30, +30-20 +20-10.

result in respect also to lactose, and it is probably only a question of time when the bacteriological record of this well will follow that of the other wells and river-derived supplies. In my experience, the lactose primary media would seem to have the greatest usefulness in summer and hot and sunny weather, whereas in winter and cold weather the glucose primary media yield the largest number of typical *B. coli*.

I have found it a useful plan to work with a lactose primary medium, incubating the cultures for about twenty to twenty-four hours at 40° to 42° C., and then examining them for gas production. If there be any gas production, the cultures are put back in the same incubator for another day. If, on the other hand, the results are negative at twenty to twenty-four hours, a few drops of a concentrated sterile glucose solution are added and the cultures incubated at 37° C. for another day. Positive results in both sets of cases are then subcultured and classified.

It must, however, be stated that in the warmer months of the year the addition of the glucose may greatly increase the work without a correspondingly appreciable gain.

So far as the river water temperature is concerned, the year may be usefully divided into a period of five colder months (November, December, January, February, and March) and seven warmer months (April, May, June, July, August, September, and October), the water temperature during these two periods being on the average about 41° F. and 58° F. respectively. As a sort of compromise it might be desirable, as previously suggested, to use lactose

TABLE V.—*B. Coli* (*Lactose* +, *Indol* +).

Positive Results.	Raw Water.		Stored Water.		Filtered Water.		Alphabetical Classification.
	Actual.	Per Cent.	Actual.	Per Cent.	Actual.	Per Cent.	
1, 2, 4, 5, 10	23	13.53	22	20.56	21	27.27	A
1, 2, 4, 10	20	11.76	10	9.35	8	10.39	B
1, 2, 4, 6, 7, 10	1	0.59	—	—	—	—	C
1, 2, 3, 4, 6, 10	10	5.88	11	10.28	1	1.30	D
1, 2, 10	18	10.59	17	15.89	10	13.00	E
1, 2, 6, 10	3	1.76	7	6.54	—	—	F
1, 2, 3, 4, 5, 6, 10	10	5.88	13	12.15	10	13.00	G
1, 2, 5, 7, 10	12	7.06	8	7.48	3	3.90	H
1, 2, 3, 6, 10	9	5.29	2	1.87	2	2.60	I
1, 2, 3, 5, 6, 10	1	0.59	1	0.93	3	3.90	J
1, 2, 5, 10	28	16.47	9	8.41	11	14.29	K
1, 2, 7, 10	5	2.94	3	2.80	—	—	L
1, 2, 5, 6, 10	2	1.18	—	—	1	1.30	M
1, 2, 4, 6, 10	2	1.18	—	—	1	1.30	N
1, 2, 4, 5, 6, 10	2	1.18	2	1.87	2	2.60	O
1, 2, 3, 5, 6, 7, 8, 10	10	5.88	—	—	1	1.30	P
1, 2, 3, 4, 5, 6, 7, 8, 10, 11	2	1.18	—	—	1	1.30	Q
1, 2, 3, 4, 5, 6, 7, 8, 10	2	1.18	—	—	—	—	R
1, 2, 3, 6, 7, 10	1	0.59	—	—	—	—	S
1, 2, 3, 5, 6, 7, 10	4	2.35	—	—	—	—	T
1, 2, 4, 5, 7, 10	1	0.59	—	—	—	—	U
1, 2, 5, 6, 7, 10	1	0.59	—	—	1	1.30	V
1, 2, 3, 10	1	0.59	1	0.93	—	—	W
1, 2, 3, 4, 5, 6, 8, 10	1	0.59	—	—	—	—	X
1, 2, 3, 5, 10	1	0.59	—	—	—	—	Y
1, 2, 3, 4, 5, 10	—	—	1	0.93	1	1.30	Z
Totals	170		107		77		

1, 2, 3, 4, 5, 6, 7, 8, 9=gas in glucose, lactose, saccharose, dulcite, salicin, raffinose, adonite, inosite, and inulin respectively; 10=indol, 11=brown (V and P test). These microbes were not retested as regards their attributes. Had this been done, some of the smaller groups might have yielded different results and so have become absorbed into other groups. They are apparently not necessarily all real varieties of *B. coli*.

TABLE VI.—*100 Specimens of Coli-like Microbes Isolated from (a) Crude Sewage from various Sewage Works; (b) Various Effluents. B. coli (Lactose +, Indol +).*

+ = Gas

Group.	Cane Sugar.	Dulcite.	Raffinose.	Salicin.	A = Crude Sewage.		B = Effluents.	
					Actual.	Per Cent.	Actual.	Per Cent.
a	+	+	+	+	8	9.4	3	4.3
b	+	+	+	−	6	7.0	5	7.1
c	+	−	+	+	4	4.7	2	2.8
d	−	+	+	+	1	1.2	1	1.4
e	+	−	+	−	6	7.0		
f	−	+	−	+	12	14.1	11	15.7
g	+	+	−	−	1	1.2	4	5.7
h	−	+	−	−	5	5.9	12	17.1
i	−	−	−	+	26	30.6	15	21.4
j	−	−	−	−	16	18.8	8	11.4
k	−	−	+	+			3	4.3
l	−	−	+	−			3	4.3
m	+	+	−	+			2	2.8
n	−	+	+	−			1	1.4
Totals					85		70	

Fifteen specimens from A and 30 specimens from B were excluded from above table owing to their not being "lactose +, indol +" *B. coli*.

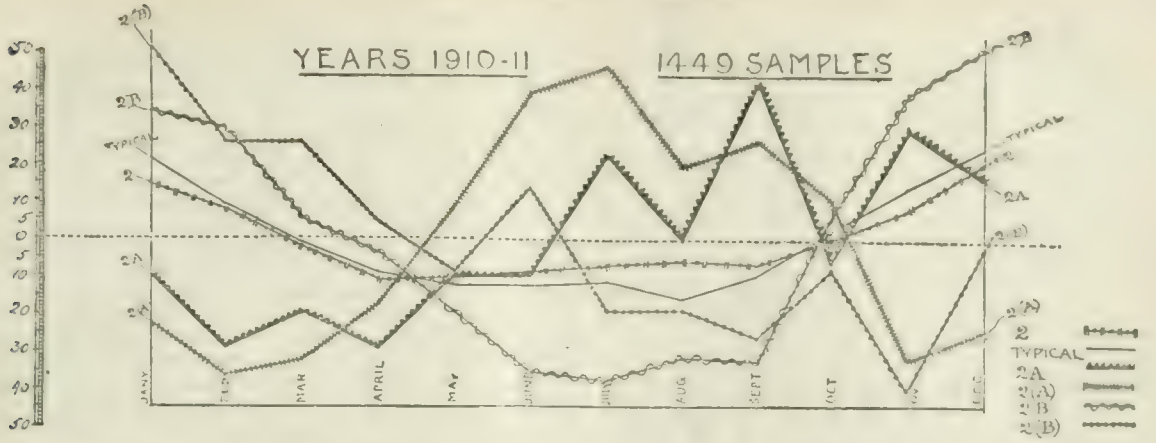
TABLE VII.

Out of 100 specimens of *B. coli*, isolated from 22 samples of human faeces, 88 per cent. were, as regards gas formation: Positive, that is, gas in lactose, glucose, mannite, maltose, galactose, laevulose, arabinose, sorbite, glycerin; and negative, that is, no gas in erythrite, amygdalin, glycol, inosite, inulin. These microbes all yielded indol and a negative result with Vosges and Proskauer's test. As regards adonite, cane sugar, dulcite, raffinose, and salicin, the following apparent varieties were obtained:

Group.	Adonite.	Cane Sugar.	Dulcite.	Raffinose.	Salicin.	Actual.	Per Cent.
α	+	+	+	+	+	2	2.3
β	+	+	−	+	+	3	3.4
γ	+	−	+	+	+	1	1.1
δ	+	−	−	+	+	22	25.0
ε	−	+	+	+	+	8	9.1
φ	−	−	+	+	+	10	11.4
ι	−	+	+	+	−	7	7.9
κ	−	+	+	−	+	1	1.1
λ	−	+	−	+	+	1	1.1
μ	+	+	−	−	+	1	1.1
ν	+	−	−	−	+	2	2.3
ο	−	−	+	+	−	9	10.2
π	−	−	−	+	+	10	11.4
ρ	−	+	−	+	−	1	1.1
σ	−	−	+	−	+	2	2.3
τ	−	−	−	+	−	1	1.1
υ	−	−	+	−	−	3	3.4
χ	−	−	−	+	−	2	2.3
ψ	+	−	−	−	−	1	1.1
ω	−	−	−	−	−	1	1.1
						88	

+ = Gas. − = No gas.

DIAGRAM I.—*B. Coli Test. Raw Waters.*



alone in primary medium during the warmer period, and during the colder period to add glucose at twenty-four hours should there be no gas formation within the first twenty to twenty-four hours.

Secondary Medium.—The value of neutral red bile salt peptone agar (rebipelagar) media in this connexion is indisputable. The Germans would seem to be very fond of Drigalski and Conradi's medium. Although, in my opinion, it is the best medium for streptococci, I do not think it is nearly as good for *coli* work as the bile salt media. At first sight it might seem almost ridiculous to raise any question as to the choice of a fermentative substance, as nearly all bacteriologists favour the use of lactose. Nevertheless, in my experience, as many "lactose +, indol +" *B. coli* are got by using saccharose (rebipesagar) as lactose (rebipelagar), and the chances are increased of isolating "cane-sugar negative" microbes. The best plan, in my experience, is to use both, and to subculture red colonies from the lactose bile salt medium and white colonies from the cane sugar bile salt medium.

Escherich's classical *B. coli communis* does not ferment cane sugar. Referring once more to my 1902-3 report on the normal stools of healthy persons, I find that the following results were obtained with cane sugar:

Only 8 of the 101 *B. coli* isolated yielded completely positive results; 35 gave quite negative results. Another 36 produced an acid change or a bleached appearance with which was associated either no gas formation or practically none; 20 gave rise to a bleached appearance with slight gas formation, and 2 showed a delayed and feeble power of fermenting the cane sugar.

As regard sewage and sewage effluents, the following results were obtained in respect to the fermentation of cane sugar:

	Sewages.	Sewage Effluents.
Positive results	29 per cent.	32 per cent.
Slight gas formation	3 ,,	5 ,,
Negative results	68 ,,	62 ,,
No record	—	1 ,,

In another research, among 100 specimens of *B. coli* isolated from 22 samples of human faeces, 31 per cent. showed gas formation as regards cane sugar and the rest none.

On the whole I am inclined to think still, as I did in the past, that "lactose +, indol +, saccharose 0" microbes are more suggestive of recent human intestinal pollution than "lactose +, indol +, saccharose +" microbes.

Subcultural Tests.—Having isolated presumably *B. coli* organisms, there are two subsequent tests which I think ought always to be used—namely, lactose fermentation (ag = acid and gas) and indol production (in). In the old days I also used litmus milk (ac = acid clot) and neutral red broth (fl = fluorescence), and I spoke of "flaginac" microbes and their variations. The cane-sugar test was also applied to the flaginac microbes, and the symbols CSN and CSP used to express negative and positive results respectively. The litmus and neutral red broth tests nearly always give positive results with "lactose +, indol +" microbes. Any one, however, who has worked with cultures recently isolated from human faeces and waters of various degrees of purity must have been struck by the rapid clotting of the milk and strong fluorescence of neutral red broth with cultures made from faeces. These attributes are not always possessed in full degree by even "lactose +, indol +" microbes isolated from water. Weakness of these characters not infrequently helped me in judging the probable quality of the water supplies under investigation. For some considerable time now I have used gelatine media for indications of gas production, the reason being that I find solid media more delicate than liquid media for this purpose.

The fermentable substances used in a gelatine base are lactose, dulcite, cane sugar, and glucose, and of course the indol test is also habitually applied. The results are then classified as follows:

TABLE VIII.

Typical *B. coli* (Lactose +, Indol +)	2A, 2(A)	Saccharose +	Dulcite 0, Dulcite +
	2B, 2(B)	Saccharose 0	Dulcite 0, Dulcite +

+ = Gas (or indol). 0, No gas (or no indol).
1 = Glucose +, lactose 0. 2 = Lactose +, indol 0.

As previously indicated, cultures are made of 100, 10, and 1 c.cm., and lesser amounts of water, and the microbes showing the attributes grouped as 1, 2, 2A, 2 (A), 2B, and 2 (B) are classified according to their derivation from 100, 10, and 1 c.cm., etc. Sometimes, however, it is convenient to group the above varieties irrespective of the volume or dilution of water from which they were obtained, and to show the relationship of each one to the total number of specimens. I desire, therefore, to show you some curves in which this has been done, except that the "1 microbes" have been excluded from consideration. (See Diagram I.)

You will note that the results, when dealing with the raw Thames, Lee, and New River waters have been arranged as group-percentages each above and below its own mean. The curves representing the "2" and the "typical" groups (that is, all the "A" and "B" groups) are almost parallel, being highest in the winter months and lowest during the summer months. If the waters are actually most impure during the cold flood months of the year, then the "2" and the "typical" groups would seem to be better indices of quality than the separated "2 (A)" and "2A" and "2 (B)" group curves. On the other hand, the "2B" curve agrees with the "2" and the "typical" curves, but is even higher in winter and lower in summer than they are.

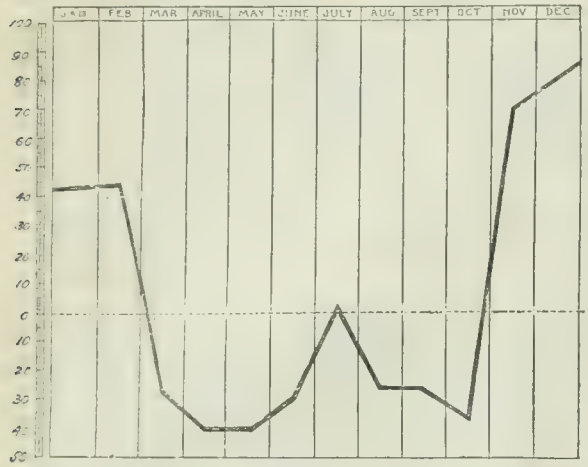
As illustrating the seasonal quality of the raw water, I show a diagram in which the results yielded by gelatine, agar, and bile-salt agar tests have been so arranged and combined as to give a single curve. (See Diagram II.)

The gelatine test tends to exaggerate the impurity of the water during winter, and perhaps to overestimate the improved quality of the water during summer. On the other hand, the bile-salt agar test sometimes yields high results during the summer months when the water, as judged by most other tests, appears to be better than the average. Possibly warm weather allows certain bacteria (probably not of excremental origin) to multiply in water,

and these same microbes are not sufficiently inhibited by the bile salt to prevent their growing and therefore being counted in the plate cultures. By correlating the results

DIAGRAM II.—*Raw Thames, Lee, and New River Water. Two-Year Period, 1910-11.*

Results yielded by the Gelatine, Agar and Bile-Salt Agar Tests combined to yield a Single Curve. (Percentage above and below Mean.)



yielded by the three tests, these differences are rounded off. It would, however, be begging the question to conclude that the curve thus obtained necessarily portrays the actual hygienic quality of the water. (See Diagram III.)

I take the opportunity of showing another diagram, illustrating the seasonal quality of the River Thames water over a five-year period. The results yielded by five chemical tests are shown both separately and in conjunction. (See Diagram IV.)

I now show another diagram dealing with the varieties of *B. coli* in water as supplied to consumers. Here the water, as supplied to the metropolis, has been dealt with in a similar fashion to that described under the raw sources of supply and the curves are more in agreement with each other, with the exception of the "2 (A)" curve, which is somewhat divergent. Excluding this one, it will be seen that the quality results are at their best about March, April, and May. Later there is a summer rise, which reaches its acme about August; then an autumn fall, finally followed by a marked rise in winter time. No doubt during the summer months the rate of filtration is increased, but it is a question whether the summer rise is not largely influenced by temperature. If this assumption be correct, the "2 B" curve, which tends to run highest in winter and lowest in summer, may really present the truest picture of the actual quality of the supply during the year. Another method of showing the *B. coli* results is to give the percentage number of samples yielding positive results in 100 c.cm. and less of water, as judged by the following three standards: "Lactose +"; "lactose +, indol +"; lactose +, indol +, saccharose 0." (See Diagram V.)

It will be seen that the three curves show a close relationship, but the "lactose +, indol +, saccharose 0" curve tends to run at a lower level during the summer months.

On the whole, I am inclined to think that the *B. coli* test is best regarded as a quantitative estimation of the number of "lactose +, indol +" microbes, and that the other tests should be regarded as supernumerary factors, enabling one to confirm or modify opinions principally based on the sheet-anchor lines referred to. What I am quite sure of is this, that with our London supplies the speculative chances of subculture result in the isolation almost indiscriminately and day by day of 2A, 2(A), 2B, and 2(B) microbes, without any real change having occurred in the meantime in the hygienic quality of the water. Before leaving the subject of methods I should like to call attention in the first place to the convenience of using iron instead of platinum wire and loops for subcultural purposes (as first described in my January, 1907, monthly report), and also to the practicability of using slope test tube cultures, instead of plate cultures, for subcultural purposes. In the third place, I wish to direct your attention to the advantage of what may almost be called automatic methods of inoculation—for example, picking off a colony with a sterile straight iron wire, placing the wire in a tiny test tube containing a drop or two of sterile salt solution, and subsequently introducing into that test tube as many more sterile wires as correspond to the number of tests proposed to be made. This saves a great deal of time and trouble, besides avoiding any uncertainty in repeatedly going back to a colony so as to inoculate a series of cultures.

SUMMARY OF CONCLUSIONS.

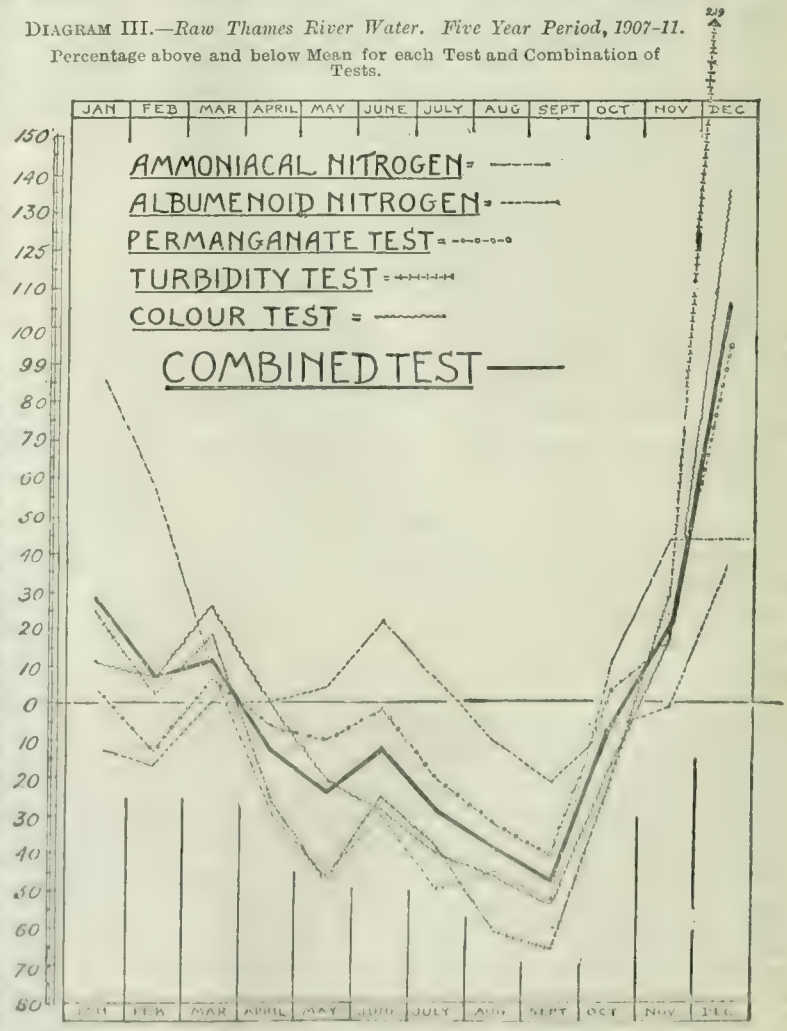
Typical *B. coli* (lactose +, indol +) is present in enormous numbers in excremental matters, and is absent from, or present only in small numbers in, substances free from undesirable pollution.

Typical *B. coli* is a decadent microbe when divorced from the animal body; hence its presence in a water in any number probably points to fairly recent pollution.

Pure waters, generally speaking, contain no typical *B. coli* in 100 c.cm. in a majority of representative samples; and incidentally it may be stated that impure waters can be so purified as to yield similar results at a not unreasonable cost.

DIAGRAM III.—*Raw Thames River Water. Five Year Period, 1907-11.*

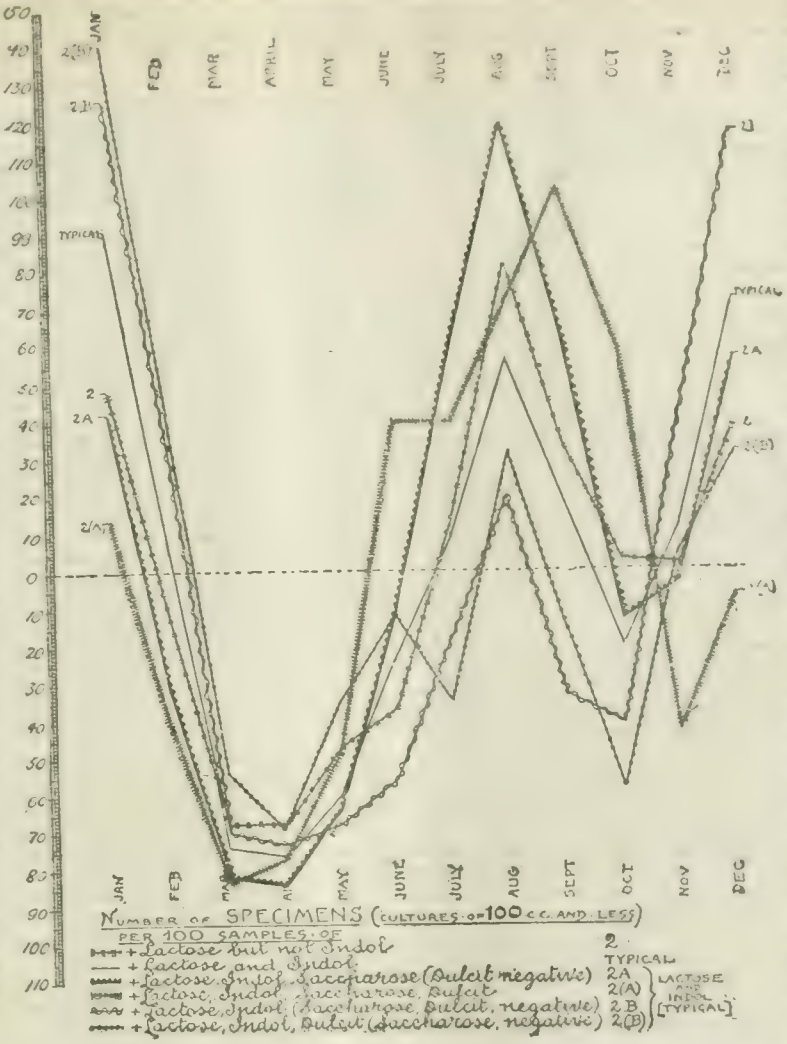
Percentage above and below Mean for each Test and Combination of Tests.



Even so lenient a standard as "no typical *B. coli* in 1 c.cm." of water in a majority of representative samples implies that the supply is not habitually contaminated with one gallon of sewage or its bacteriological equivalent, even in 100,000 gallons of water. The 10 c.cm. and 100 c.cm. standards (that is, no *B. coli* in these amounts) obviously connote the absence of $\frac{1}{10}$ and $\frac{1}{100}$ gallon of sewage respectively from a like volume of water. With too severe standards there is danger of condemning reasonably safe supplies, and with too lax standards there is the possibility of passing waters which ought properly to be condemned. Always to steer safely between the Scylla of the one and the Charybdis of the other may be difficult or impossible without the aid of a pilot familiar with all the local conditions.

The *B. coli* test ought primarily to be regarded as a quantitative decimal enumeration of "lactose +, indol +" microbes, but the subsequent grouping, according to certain attributes of the organisms thus obtained, into fairly stable or apparent varieties, may be of real practical or diagnostic importance.

DIAGRAM IV.—*B. Coli Test. Years 1910-11. 14,149 Samples.*



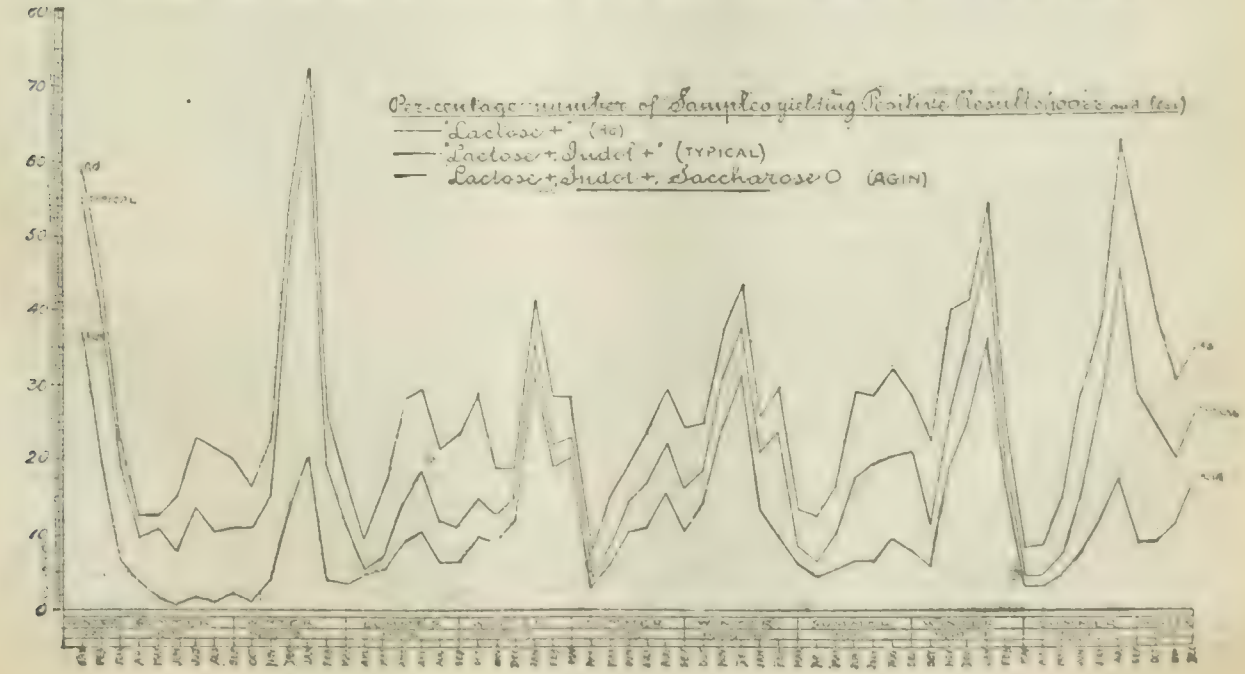
Standards are worse than useless if they are not interpreted with discretion and in relation to local and other conditions. Instances could be quoted where even similar *B. coli* results ought properly to lead to dissimilar conclusions as regards quality and safety.

The *B. coli* test even alone is of the greatest value, but a water supply should be finally judged on a summation of verdicts (geological, topographical, physical, bacteriological and chemical).

The *B. coli* test is by far the most reliable and speediest method of judging the degree of efficiency of the particular water purification process under investigation, and when a sterilization treatment is in operation, the certified destruction of *B. coli* should afford absolute proof, practically speaking, of the devitalization of all the microbes of epidemic water-borne disease.

The *B. coli* test having now survived the various vicissitudes of an earlier time, stands to-day as the most practical and delicate and rapid test for excremental filth, and may surely be taken as the most reliable indicator in its positive aspects of

DIAGRAM V.—*B. Coli Test. All London Waters. Sixty Months, ended December 31st, 1911. 85,325 Samples.*



possible danger, and in its negative aspects of the almost certain absence of microbes associated with epidemic water-borne disease, and, generally speaking, as the one test which, above all others, it is least excusable for a water analyst to omit.

All the counts in the indictment charged against the *B. coli* test when fully marshalled amount to no more than this: the test is only, or mostly, of relative, not absolute, value, and therefore the results should be interpreted with discretion.

II.—WILLIAM G. SAVAGE, M.D., B.Sc.Lond.,
County Medical Officer of Health, Somerset.

IT is now entirely accepted that the presence of *Bacillus coli* (and allied organisms) in water supplies is looked upon unfavourably, not because it is itself harmful or even possibly harmful, but because it acts as an indicator, and serves as a measure, of undesirable pollution.

I have set out in my book on the bacteriology of water, the four conditions of a perfect bacterial indicator, and these may be briefly mentioned. They are:

(*a*) It should be abundant in the substances for which its presence serves as an indicator.
(*b*) It should be absent, or at least relatively absent, from all other sources.
(*c*) It should be easily isolated and numerically estimated.
(*d*) Its characteristics should be definite and not liable to variation, whereby its distinctive characters might be impaired.

The question of the distribution of *B. coli* in Nature cannot be separated from the consideration of what is meant by *B. coli*, since we must admit that there is almost every gradation between the prevalent type met with in excreta and the coliform organisms common enough in harmless surroundings.

The object of the bacteriologist in examining water supplies is essentially—although for certain purposes he may have other objects—to detect whether excretal pollution (human or animal) is taking place and to measure the extent of such excretal pollution. Since for this purpose he uses *B. coli*, it is obvious that the characters of *B. coli* as found in excreta are of essential importance.

A study of *B. coli* strains isolated from healthy and diseased human beings and from animals, as carried out by Houston, McConkey, myself, and others, shows the following: That nearly all the strains are typical as regards the presence or absence of the ordinary characters; that no satisfactory differences can be made out between *B. coli* from healthy and from diseased persons; and that no differentiation can be established between *B. coli* from human and animal sources. These are all fundamental points.

The characters and varieties of *B. coli*, as met with in excreta, etc., require further consideration. Using the term *B. coli* broadly, two lines of variety differentiation may be adopted. On the one hand, varieties may be obtained, and do occur very frequently in water, which only differ from what, for convenience, I have called[1] "excretal" *B. coli*, in that one or other of the fundamental characters, such as milk coagulation or indol production, is absent.

The other basis of variety differentiation is by means of the sugars, alcohols, etc., and according as these substances are fermented by different strains.

Taking the first line of differentiation, we do find as a fact, as already mentioned, that in human and animal excreta the percentage of organisms which possess these characters is very high—over 90 per cent., for example, in a series examined by Houston. In water, soil, and other sources outside the animal body, on the other hand, the percentage of *B. coli* organisms which fail to clot milk or produce indol is, in my experience, very much higher. In polluted soil, for example, these atypical strains form a considerable percentage of the whole.

If we admit that the natural home of the *B. coli* group is the animal intestine, and that outside the animal organism these bacilli decrease and gradually die out, this fact suggests either that the excretal *B. coli* lose some of their characters and become atypical in a non-intestinal habitat, or that the small percentage of atypical forms present in excreta are under better environmental conditions outside the animal body, and tend, therefore, to persist in relatively large numbers.

In some experiments upon *B. coli* in soil[2] and their fate in this environment I was unable to satisfy myself as to how far the aberrant organisms met with in different soils and waters ever represent typical *B. coli* altered by unfavourable environment. Some further experiments in hand are not sufficiently advanced to quote in this connexion. If, as I think probable, the types only slightly aberrant are excretal *B. coli* altered by environment, their presence shows that time has elapsed since contamination, and thus they indicate a diminished danger.

Whatever their actual source, it is clear that their significance as pollution indicators is less than that of the typical *excretal B. coli*, and the following view, expressed in 1907, is still my opinion:

> The more nearly the organism isolated resembles an "excretal" *B. coli* the greater is its significance as an indicator of pollution, consequently the fewer the number required to condemn a sample of water in which they occur. Stated as a working proposition, the more the characters of the *coli*-like organisms deviate from that which for convenience may be spoken of as the typical form, the greater the proportionate number of them required to condemn the water.

It perhaps hardly requires mention, but the attitude that only concerns itself with *B. coli* which are completely typical as regards these ordinary characters is an impossible one for a water bacteriologist. These aberrant strains actually occur in waters, and may be the *only* varieties isolated in a given sample, and their significance cannot be ignored without great risk of making very bad mistakes in giving opinions upon water samples.

The other method of classification, based in the main upon the power to ferment certain sugars, alcohols, etc., is one which has been extensively employed, and for certain purposes is of the highest value. It is a precise and a definite method of classification leaving no room for individual variations of interpretation. On the other hand, each additional test means additional work. The value of their extensive employment for the differentiation of *B. coli* found in water must depend upon the light they shed upon the origin of the organisms to which they are applied. Unless their use differentiates organisms so as to show a different distribution in Nature and a different significance, it cannot be said that they are of any special value. For example, the question of the fermentation of saccharose may be investigated. To make this test of value it has to be shown that organisms which ferment this sugar have a greater or a lesser significance than those which do not ferment saccharose. If all *B. coli* in excreta or even a preponderance of them fermented saccharose, then the presence of a *B. coli* which was without this property would be of lessened significance, or might, for example, mean that it was not recently derived from excreta. Nothing of this sort has, however, been established. I have used these tests at one time and another extensively, and indeed, as long ago as 1904 and 1905, very carefully examined many specimens of human and animal excreta to try and differentiate the *B. coli* strains and so be able to detect whether they represented human or animal contamination. Also a careful study of the papers of McConkey and other workers on these lines has failed to show that they have established any distribution differences of value for water bacteriology.

For *research* purposes I am strongly in favour of their use, since it may be that differentiation of value showing differing distributions will be eventually established. For immediate practical purposes, however, they are of no particular value.

The question of the pathogenicity of strains of *B. coli* isolated from water deserves passing mention. Levy and Brun in 1899 strongly advocated testing the pathogenicity, and the presence of virulence, in their opinion, pointed to recent excretal contamination. More recent investigations have shown that this cannot be substantiated, and it cannot be advanced that the presence of pathogenicity in a *B. coli* strain is a proof of added danger from the water in which it is found, or that non-virulence in isolated strains in any way diminishes their significance.

In regard to the significance of *B. coli* generally, consideration must always be paid to numerical presence. This organism is a measure of excretal pollution, and is not used merely to show that excretal pollution, recent or remote, has taken place. It is much more valuable than that, since it measures the amount of such contamination. A further point is that its presence—like most bacterio-

logical tests—is of much greater significance than its absence. The one drawback of bacteriological examinations of water supplies is that they only indicate existing conditions; they do not indicate liability to contamination which is not actually taking place.

For example, a recent bacteriological analysis of a well water supplying five houses gave the following results: Organisms growing at 37° C. and 21° C = 2 and 15 per c.cm. respectively. No *B. coli* or streptococci in 50 c.cm.; larger amounts not examined. This well was a shallow one, sunk in porous ground, and surrounded up to a few yards by heavily manured gardens. It was on inspection obviously liable to pollution, while a chemical analysis disclosed a very high nitrate content (2.0 per 100,000), but low ammonia figures.

It is quite clear, as the very good bacteriological analysis showed, that the soil was acting as an efficient filter at the time the samples were collected. The bacteriological data did not, however, disclose that the good quality of the water depended upon an efficient soil filtration, and that this might break down at any time and without warning.

In conclusion, the particulars as to the following supply and its examination will serve as a good instance of the value of *B. coli* determinations:

The water is an important public supply, which supplies a large population. The water is derived from the mountain limestone. The limestone is extensively fissured, and careful topographical inquiry discloses that the supply is probably liable to contamination through these fissures from some of the villages and houses which are upon the gathering area. Apart from bacteriological examination, it is not possible to point to any definite specific pollution which is occurring. The following bacteriological analyses are of interest:

Date.	Number of Organisms per c.cm.		*B. Coli* (Excretal) per Litre.	Streptococci per Litre.
	37° C.	21° C.		
Oct. 4th, 1911 ...	200	1,000	30–100: 100–1,000 (atypical)	Absent in 50 c.cm.
Oct. 24th, 1911	100	500	1,000–10,000	1,000–10,000
Nov. 13th, 1911	120	950	1,000–10,000	1,000–10,000
Nov. 29th, 1911	60	—	30–100	Absent in 50 c.cm.
Jan. 16th, 1912	40	100	100–1,000	Absent in 50 c.cm.
April 29th, 1912	2	46	Absent in 100 c.cm.	—
June 4th, 1912	150	605	Over 10,000	Over 10,000
June 11th, 1912	37	145	1,000–10,000	100–1,000

This supply has been chemically examined upon a number of occasions, in every case without disclosing the slightest evidence of contamination. Incidentally they show the futility of chemical analysis to detect intermittent contamination of this kind.

The supply is derived from water running as an underground river which itself is evidently very pure, but which is liable to contamination from soakage from villages and towns on the gathering area, the contamination being shown after heavy rain following a previous drought.

The variation in the *B. coli* content is very striking.

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IT is specially in regard to the possible causation of enteric fever that the presence of *B. coli* and its varieties in a water supply bears significance. There are some who attach considerable importance to its presence even in small numbers, and also those who would be disposed to disregard their existence unless the number of them was relatively large.

It was my intention to contrast the enteric attack-rates of the two cities, Glasgow and Manchester (whose water supply is unfiltered) and Liverpool and Birmingham (which is filtered) with their coliform content, after deducting those cases where the source of infection was known, with a view to ascertaining whether they bore any relation to each other. But, as such data are not available, I am reluctantly compelled to proceed on other more general lines.

Taking the two cities, then, whose supply is unfiltered—that is, Glasgow and Manchester—the following table has been prepared to show the contrast in enteric fever for the four years 1907–1910:

	Manchester.		Glasgow.	
	Cases Notified.	Attack-Rate per 1,000.	Cases Notified.	Attack-Rate per 1,000.
1907	265	0.41	470	0.58
1908	393	0.60	594	0.74
1909	369	0.61	566	0.70
1910	358	0.53	340	0.42

From this it will be seen that Glasgow occupied a worse position than Manchester during the years 1907–1909, but had a smaller attack-rate during 1910—that is, 0.42 against 0.53 per 1,000. Those figures are interesting enough in their own way as showing the incidence of the disease in the respective communities, but they are of no interest as they stand to the bacteriologist. It would be necessary to exclude from them all known sources of infection, such as cases imported or having derived their infection without the city. Further, all secondary cases—that is, cases obtaining their infection from previous cases in the same household, and such cases where there is reason to believe that infection has arisen from the consumption of shellfish, watercress, ice cream, or through the medium of a "carrier" or missed cases—should be eliminated in order to present a reasonable comparison of the effect, if any, of the water supply of one city as against the other. I do not seek to go into this apparently large divergence between the number of cases occurring in Glasgow and Manchester during the years 1907–1910 further than to mention the following facts:

During 1907–8 Glasgow suffered from a serious outbreak of enteric fever through contaminated milk, accounting for no less than 92 cases.

During 1909, 94 cases may be deducted, 17 of these being due to 2 missed cases, 21 to a carrier, and 56 to infected milk. Deleting these cases, the remainder furnish an attack-rate fairly comparable for the two cities. I am unable, however, to contrast the similar figures for the two cities during the whole period. I have chosen, therefore, the year 1910 in the case of Manchester, the last year for which statistics are available, and 1911 in the case of Glasgow, and I find that in the former city, of the 350 cases recorded, 59 are stated to be due to infected ice cream, 71 furnish a history of having recently consumed shellfish, and 62 to direct infection—in all 192—leaving 166, or 46 per cent., still to be accounted for.

In 1911 384 cases occurred in Glasgow, of which 100 fall to be deducted, 8 being imported, 78 secondary, 9 milk infection, and 5 shellfish, leaving a balance of 284, or almost 74 per cent., for which no source has been discovered.

It would have been interesting if it had been possible to deduct those cases where the source of infection had been ascertained, and thus contrast for the whole period the monthly curve of cases with the coliform content of their respective water supplies. But as the cases cannot be separated out in regard to their dates of onset, and as the coliform content of Manchester water is not available, this is not possible. The foregoing information is interesting, however, in this respect—that, despite the energies displayed by an inspector devoting his whole time to tracing out all possible sources of the disease, the Medical Officer of Health of Manchester has to acknowledge defeat in 46 per cent., whereas Glasgow concedes 74 per cent. Dr. Niven, in concluding this part of his report, says:

Apart altogether from carrier cases, there is some undiscovered mode or modes of propagation of this disease.

This is an expression which, one has not the slightest hesitation in saying, is upheld by every medical officer of health in the country. The question then arises, To what are the remainder of those cases due? What is the source of infection? As you will observe, the very best case has been made out in favour of some of those so-called known sources. In point of fact one has been forced to grant a considerable amount of leniency in accepting some of the sources mentioned; but even conceding those, whence

does the remainder, for which there is no explanation, obtain their infection? And when one remembers that those are isolated and invariably single cases in households, between which it is impossible to establish any connexion, it becomes all the more difficult to explain their origin.

I have compared in a general way the number of cases of enteric fever occurring in Glasgow during the years 1909–10–11 with the coliform content of Loch Katrine water. The actual figures are:

566 cases in 1909
340 ,, ,, 1910
384 ,, ,, 1911

By deducting those of known origin, excluding secondary cases, the figures so corrected are as follows:

470 cases in 1909
315 ,, ,, 1910
362 ,, ,, 1911

It will be observed that there is a considerable fall in 1910 as compared with 1909 and 1911. The coliform content of Loch Katrine water for the same period, however, affords no explanation of this. In 1909 coliform organisms, although found in 10 c.cm. practically throughout the year, were only found in 5 c.cm. during February, March, May, September, and October. In 1910 they were present in 5 c.cm. during nine months, and in 1 c.cm. in July, August, September, November, and December. In 1911 they were present in 1 c.cm. throughout the whole year, excepting the month of March. Those figures suggest, therefore, a steadily increasing contamination of Loch Katrine water without, however, a corresponding rise in the incidence of enteric fever in the city.

Similarly in the case of Liverpool, although the number of cases have fallen from 447 in 1908 to 231 in 1910, the coliform content of its water supply has, like Glasgow's during the same period, shown a steadily increasing rise. It is stated in the Bacteriologist's Report that in 1903 the colon bacillus was only found in a few samples of Liverpool water during July in 100 c.cm., in small quantities (unstated) during June and July, 1909, and from numerous observations (times unstated) in 1910 in quantities varying from 50 down to 10 c.cm. Whether this increase in coliform organisms in Glasgow and Liverpool water is due or not to improved bacteriological technique—and one has reason to believe that it is—it is clear it bears no relation to the incidence of enteric fever in either of these cities.

Coliform organisms have been present since June, 1911, to June, 1912, in 1 c.cm. of Glasgow's water every month, except March and June, 1912, in samples taken at the laboratory tap. Loch Katrine—the source of Glasgow's water supply—is stocked biennially with trout, and gulls abound on its water throughout the year. This is reckoned to be the source of *B. coli* and its varieties in the Glasgow water supply, for we are assured that no possible contamination of human origin can take place along the site of the supply pipes with water supplied at a pressure of 30 lb. to the square inch. If, then, *B. coli* and coliform organisms usually found in more or less quantity in water supplies generally are only of animal and not human origin, whence lies the significance of their presence in water as consumed by the public?

Whilst one acknowledges that the source of infection of from 50 to 70 per cent. of the cases of enteric fever throughout this country generally is not ascertained, and that therefore other influences towards its cause than those at present known to us are in operation, water contaminated even with *B. typhosus* would not explain those cases. Infected water, like infected milk, usually causes outbreaks of considerable magnitude, and should not be difficult to detect from the phenomena resulting. Moreover, apart from infected milk, enteric fever is recognized almost entirely as a disease of the artisan or poorer classes. There is no doubt whatever that the removal of decomposable filth by the substitution of watercloseets for middens and pail closets has done much to reduce the incidence of this disease in those quarters.

Dr. Robertson, the Medical Officer of Health of Birmingham, states in his annual report for 1910 that 73 cases of enteric fever occurred in that city during that year. Five of those were imported, or derived their infection from places outside the city; 6 were institutional, 10 secondary, and 19 furnished a history of having recently consumed shellfish, leaving 33 cases still to be accounted for. He adds:

> In 50 per cent. of the cases some reasonable explanation could be given as to the source of infection, while in the other 50 per cent. the source of infection remains quite unknown.

The number of pan privies in Birmingham in 1907 totalled 12,100. In 1910 those were reduced to 5,509. Two hundred and forty-eight cases of enteric fever occurred in Birmingham in 1907, or an attack-rate of 0.45 per 1,000. In 1910 only 73 cases occurred, or an attack-rate of 0.13 per 1,000. If Birmingham, by this means, can reduce the incidence of enteric fever to such an extent, there should be good reason to prophesy that when the remaining 5,509 pan privies are removed enteric fever should fall to an almost negligible amount altogether.

Those figures would appear to present eloquent testimony of the importance of removing decomposable filth from the precincts of dwellings; but when we contrast them with those of Glasgow, which for several years has possessed very few pan privies, and only 80 in 1911, we are forced again to conclude that other agencies are in operation.

The number of cases of enteric fever in Glasgow during 1910 was 340, or an attack-rate of 0.42 per 1,000, exactly four times that of Birmingham, which has 5,509 privies, against only 80 in Glasgow. The explanation, with but little doubt, however, is to be found in the different housing conditions existing in the two cities. The density per acre, and consequently closer association of the people, afford more ready means of infection in the one city as compared with the other. Birmingham, being more built on the separate house plan, as compared with Glasgow's tenements, has a density of 39 persons, against Glasgow of 60 persons per acre.

An unmistakable attack of enteric fever confers a certain degree of immunity, although instances of two or even more attacks in the same individual are not unknown. It is recognized also that certain mild forms of intestinal disturbances, which are in reality light but unrecognized cases of enteric fever, afford a certain protection against the severer forms of the disease. The occurrence, for instance, of two or more members of one family sickening at the same time or within a few days of each other suggest an earlier or missed case. We in Glasgow have had from time to time, as doubtless similar examples have occurred elsewhere, small localized outbreaks due to this cause, the initial case yielding a history far from satisfactory, although the nature of the illness was confirmed by the blood yielding a positive reaction to the Widal test, with later the successful isolation of the *Bacillus typhosus* from the urine or faeces or both. On the other hand, however, although satisfied that a "missed" case has been the source of infection of such cases sickening in common, one is not always able to prove this either by the history of previous illnesses in the family, their relations or neighbours, or by bacteriological examination. In seeking explanation of this, would one be justified in assuming that a relative freedom from enteric fever is enjoyed in some instances by permanent residents in a city having what bacteriologists might term a slightly impure water supply, as compared with the susceptibility of the stranger within the gates?

For example, during the South African war our troops suffered very severely from enteric fever. I personally witnessed the suddenness of that outbreak shortly after the occupation of Bloemfontein, when several hundreds were laid low in the course of a few weeks. It was assigned, I believe, to the contamination of the water whilst our troops were holding General Cronje at bay before his surrender. Was that outbreak started by gross contamination of the water by *B. coli* only, or to *B. typhosus* from one or more unrecognized cases of enteric fever, or to "carriers"? The *Bacillus typhosus*, we are reminded, however, breeds true, and typhoid only arises from typhoid, recognized or unrecognized, in the form of a carrier. Whilst our troops suffered so severely at that time and later, how is one to explain the great immunity enjoyed by the Boers in this respect, not only then but throughout the whole history of the war? Is the explanation to be found in that they all suffered at one time in their life-history from severe, mild, or unrecognized enteric fever? Such an attitude is indefensible. Or was it that, throughout the course of years, maybe, the

general unsatisfactory condition of their water supplies (and this applies equally to a fair number of our country districts) was, by some means still unknown to us, producing this effect?

Some time ago I had occasion to visit a farm in one of the counties adjoining Glasgow on account of the occurrence of enteric fever on a particular milk supply, and in the course of my examination of that farm I learnt that the sewage from the byre found its way into a burn which was the sole source of water supply of a village 60 to 80 feet down the hill, where some twelve to fourteen families resided. This water was supposed to pass through a crude sand filter before being supplied to the village, but this filter had long been neglected, with the result that the water flowed freely over the top.

On making inquiry, I learnt that not a single case of enteric fever was known to have occurred in that village for many years past. Crude sewage of animal origin in bulk was thus finding access into that burn daily throughout all these years, and not a single case of enteric fever resulted. Had the bacteriologist examined that water, hundreds of *B. coli* would have been found, without doubt, in every cubic centimetre, yet the people not only thrived, but were the picture of health.

Those of you who have had experience of county work must agree that it is sometimes astonishing—looking at the subject from the bacteriologist's point of view—how the inhabitants of some districts have escaped. This instance is given only to emphasize the necessity of placing the significance of *B. coli* and coliform organisms in a water supply on a true basis, for until we can be authoritatively informed that a particular water supply is contaminated with organisms of human origin, indicating thereby the possibility of infection from a recognized or unrecognized case of enteric fever, or carrier, we may be excused in affirming that the presence of *B. coli* and its varieties in a water supply is not of great significance after all.

DISCUSSION.

Dr. M. J. OLIVER (M.O.H., Roxburgh) pointed out that the kinetics of water in motion were not the same as those of stationary water. Owing to partial obstructions in the main, due to bends or irregularities of joining, there might frequently be *minus* pressure at certain points, causing insuction of liquids through minute apertures. Again, many parts of such mains were above the hydraulic mean gradient, and the pressure might vary from *plus* to *minus*, according to the velocity of the flow. With regard to Dr. Wright's statement that it was remarkable that in a village supplied with polluted water no cases of typhoid fever had occurred, he directed attention to the fact that in such small populations it might require many years for results to show themselves in this manner. Taking a typhoid mortality of 0.1 per 1,000 persons per annum, or 0.01 per cent., this would work out at 1 case of enteric fever per 100 persons in one hundred years. In the speaker's experience, the local remembrance of cases of fever seldom exceeded twenty years or thereabouts.

Dr. W. G. WILLOUGHBY (M.O.H., Eastbourne) thought a handy guide to the safety of a water supply was greatly needed, and he asked Dr. Houston whether the total absence of *B. coli* in 100 c.cm. of water was evidence that such water was quite safe. Was it possible that storage, etc., could cause a disappearance of *B. coli* but not of pathogenic germs? The diagrams showed that there were apparently about nineteen varieties of lactose +, indol + *B. coli*; was it safe to condemn or classify water supplies on the presence of one of these nineteen varieties in 10 c.cm. of water until it could be shown that they were all equally good indicators of pollution? As far as the speaker was aware, no tables or figures existed which revealed the presence of diarrhoeal diseases in any district in relation to the presence of *B. coli* in high proportions in the water supplies of those districts. He was satisfied that at present the *B. coli* test acted as a safe indicator in conjunction with other forms of examination, such as topographical and chemical investigation.

Dr. C. O. STALLYBRASS (Assistant M.O.H., Liverpool Port Authority) said: A high relationship has been shown in the United States between sewage-polluted water supplies and the incidence of diarrhoea, which is parallel to that of enteric fever in cities with such supplies. In Liverpool the cases of enteric fever which could not be accounted for in the manner in which Dr. Wright referred to amounted to about 50 per cent. in 1911. But these cases were unequally distributed throughout the city. Distributing these cases into an outer sanitary area and an inner area characterized in the past by a large number of courts of an insanitary character, the incidence of these unaccounted-for cases was about five times as heavy in the inner area as in the outer, showing that a large proportion of them cannot be attributed to the water supply, but are rather to be accounted for by the housing conditions. This inference is borne out by the high correlation between the great reduction in cases of typhoid fever in Liverpool and the corresponding destruction of courts in the central area and their replacement by sanitary dwellings. The characteristic of the court houses was the presence of common trough closets. Infantile diarrhoea persists in those areas where typhoid used to occur in the past.

Dr. W. J. PENFOLD (Lister Institute) said that in faeces and urine non-lactose fermenting organisms were frequent, which fermented lactose after a short selection on a lactose medium. The non-lactose fermenters not infrequently appeared to be closely related to *B. coli* (Escherich), while at other times they were not so related. It seemed, therefore, desirable to examine the nature of those organisms which did not cause lactose fermentation immediately, in order to determine the closeness of their relationship to true *B. coli*. A consideration of McConkey's work would tend to suggest that *B. vesiculosus* was relatively characteristic of human faeces, and that consequently the use of an extended series of sugar tests should be of practical value.

Dr. RICHARD JONES (M.O.H., Merionethshire), speaking of the practical difficulties of country medical officers of health, said the population of his district was 12,000. In a report of the Local Government Board the number of deaths from typhoid fever in the district during the ten years 1868–78 was stated to be 12 per annum, 120 in all. The present water supply was obtained in 1879. During the following ten years the deaths from enteric fever fell to 1.0 per annum. The supply was from a natural mountain lake, 1,300 ft. above the sea level, with no possibility of contamination from human sources. There had been no enteric fever in the district during the past eighteen years. The authorities, wishing to improve the supply, and particularly to remove the peaty matter, asked his advice as to the best method. Prior to giving this the speaker had the water examined by bacteriological and other methods. Alien *B. coli* were found to be present in 1 c.cm., and in one sample in 0.1 c.cm. of the water. There had been no enteric fever in the district for eighteen years, nor any other disease which might reasonably have been attributed to the presence of *B. coli* in the water. A sum of about £3,000 would be expended. A Local Government Board inquiry had been held, and the inspector had taken a serious view of the presence of *B. coli* in the water. Dr. Houston had said that no means existed of distinguishing between *B. coli* of animals and of human beings. The lake was visited by swarms of geese during the summer months. He raised the question whether the *B. coli* of birds such as geese could be distinguished from those of the human being. After what had been said in the discussion, he would hesitate to advise a large expenditure on purification to remove *B. coli* in an otherwise pure supply when no enteric fever had existed in the district.

Professor JAMES RITCHIE (Edinburgh) considered that the most important point in Dr. Houston's paper was his insistence on the necessity of the results of the bacteriological examination of water being considered along with the results of a personal inspection of the locality. He hoped that the effect of the discussion would be that no bacteriologist would consent to give an opinion on the safety of a water without having the opportunity of considering its natural surroundings, and that no medical officer of health would accept a bacteriological report unless this condition had been complied with in framing

it. With regard to the more strictly bacteriological part of Dr. Houston's paper, he thought that bacteriologists were by no means clear as to the characters to be looked on as those of typical *B. coli*. This was especially the case when the development of indol was made a type character. In many waters organisms were found, of undoubted excremental origin, which failed to give a positive indol test. One of Dr. Houston's curves showed that over a long period in London waters the number of simple lactose fermenters varied directly with the number of bacteria which, besides fermenting lactose, produced indol. This bore out the view that atypical forms of *B. coli* in water did really come from excremental sources. Much investigation was still necessary regarding the effect of growth in artificial media on the permanence of fermentative reactions. Recent work on streptococci along parallel lines accentuated the necessity for adopting an attitude of caution before assuming that all the apparently different varities of the organism based on the fermentative reactions were in reality different. In certain waters too little attention had been paid to the serious pollution effected by gulls which had shortly before been feeding on street refuse.

Dr. A. K. Chalmers (M.O.H., Glasgow) said that, great as had been the reduction in the death-rate from enteric fever during the past generation, there were many apparent anomalies which required explanation. He had little belief in an irreducible minimum with regard to infection or disease. The minimum to be aimed at was its absolute prevention. Notwithstanding the reduction in the death-rate, the contrast between many places equally well administered required to be explained. For example, the death-rate in Scotland in 1900–2 was slightly below that of England (142 per million against 152), but the proportion of Scotland's population at ages between 25 and 35, when enteric fever was most fatal, was lower than in England. Or, again, it might be said that the West of Scotland suffered more heavily from enteric fever than the East. The country districts in Scotland, on an average, had a slightly greater incidence of the disease than the principal towns, whilst it was heaviest in the smaller burghs. Then, again, in what might be called the agricultural counties, the death-rate in landward districts was on the average below that of the burghs in these counties; whereas in the industrial counties, the coal and iron centres, the rate in the landward districts was higher than the average for the burghs. This was probably relative to the condition of the numerous groups of population scattered throughout these districts engaged in mining and other industries. In any case, the differences in the incidence which these several areas presented were of themselves sufficient to demand inquiry and the endeavour—which the discussion would, he felt sure, make clearer—to inquire whether these differences might be associated with differing degrees of bacterial content of water, was a new departure and one likely to yield help in the future researches on the disease.

Dr. Houston, in his reply, corroborated what Dr. Oliver had said in regard to insuction of liquids into an iron main. He instanced the finding of insects in the water supply in Edinburgh a few years ago. Dr. Williamson had been able to prove that they had been drawn into the mains. Replying to Dr. Willoughby, he stated that the absence of *B. coli* in 100 c.cm. of water might be accepted as evidence of the absence of pathogenic microbes, since the decadence in these was at least as great as that of *B. coli*. Typhoid bacilli disappeared in something like nine days from water as a rule. His experiments seemed to show that the death of *B. typhosus* could be concluded from the ascertained death of *B. coli*. Having expressed himself with caution in regard to the classification of the colon bacillus, according to the fermentation tests, he agreed with Dr. Penfold that further investigation of such microbes which changed their behaviour to lactose would be advantageous in each case, and explained the routine which he adopted at the Metropolitan Water Board. Dr. Richard Jones's case obviously could only be satisfactorily dealt with after local inspection had been carried out. He entered briefly into a discussion of the pollution of water by means of gulls after feeding on garbage, as compared with feeding on fish. In dealing with the question of the high incidence of pollution of London waters in winter time, and the remarks made by Dr. Chalmers relative to the Scottish conditions, he questioned whether a fully satisfactory explanation could be obtained on the basis of occupation and the like, and was inclined to think that the influx of storm water from over-filled burns played some part in raising the pollution.

Dr. Wright also replied to a few points.

It was then moved by Dr. Oliver, seconded by Professor Ritchie, and carried unanimously:

> That this Conjoint Meeting of the Sections of State Medicine and Bacteriology unanimously desires strongly to urge that no opinion as to the quality of a water for dietetic purposes should be arrived at on bacteriological evidence without a local and topographical inspection of the sources of the supply made by a competent observer.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE USE OF URANIUM AS A RADIO-ACTIVE THERAPEUTIC AGENT.

The results obtained by Czerny and Caan from the use of mesothorium in the treatment of skin diseases are of great interest, and my experiences during the last two years with the use of uranium in the same class of diseases may be of some interest in corroborating their claim on behalf of the former substance.

I have used a yellow oxide of uranium, prepared for me by Mr. J. C. Sharland, and the nitrate in solution.

After test treatment of several cases with varying strengths and different methods, I treated one of recurrent carcinoma of the breast, which was deemed inoperable. There was a tumour as large as the fist in the scar, with a sinus extending into the chest and extensive ulceration, also two separate nodules at the site of a stitch wound. There was frequent and profuse haemoptysis, and the patient was very exhausted.

I advised as a forlorn hope fortnightly injections of 15 grains of the oxide of uranium suspended in sterile oil into the substance of the growth. In a few months the tumour had practically disappeared, the haemoptysis had ceased, the nodules had gone, and the patient's general condition so improved that she was able to do her own housework. To accelerate the superficial healing I covered the ulcerated patches with silver foil, and gave weekly *x*-ray exposures of 2 H. with good results.

Of three similar cases, I obtained good results in two and no benefit in the third.

In a case of recurrent carcinoma of the parotid gland, I removed the growth as well as I could by the knife, and powdered the wound with the oxide of uranium. There has been no return up to now—a period of five months.

In two cases of rodent ulcer which were not affected by *x* rays I used ionization with 2 per cent. solution of the nitrate, with the result that healing commenced immediately.

In the treatment of lupus erythema I have obtained good results by the intramuscular injection of soamin (gr. v to viii) on alternate days, and the bi-weekly use of *x* rays from a tube having a penetration of 5 W. in doses of about 2 H. As an ointment in the same cases I am in the habit of using the following: ℞ Uranii oxidi ʒij, lanolinum ad ʒj. This sometimes causes quite a lively exacerbation of the erythema, but used about once in ten days is very useful. In psoriasis and senile atrophy of the skin I have found the ointment useful, and also a lotion of the nitrate containing 20 grains to the ounce of water.

Alfred Clark, F.R.C.S.Edin.,
Honorary Radiologist, Auckland Hospital, N.Z.

CASES OF EXOPHTHALMIC GOITRE MAINLY ASSOCIATED WITH THE PUERPERIUM.

There is reason to think that exophthalmic goitre is common in Leeds; I have met with very many cases. Several of these have recovered independently of treatment—in fact, long after treatment had been given up. There were also, as will readily be believed, a large number whose condition suggested hyperthyroidism, and in whom such symptoms as increased pulse-rate have been aggravated when thyroid extract has been given. This

positive reaction to the thyroid extract test appears to be of some importance. In two instances the exophthalmic symptoms drifted into mild myxoedema; mental instability was present in two more. Two other patients gave a history of fright, which apparently precipitated the attack.

The following cases are particularly interesting:

1. Mrs. A., aged 45; menstruation irregular; patient irritable, mildly excitable; tachycardia; slight tremors. She had lost a son with tragic suddenness from diphtheria. The exophthalmos became much worse soon after her daughter was attacked by pulmonary tuberculosis. The mother took this illness of her daughter greatly to heart; subsequently, indeed, she abruptly dismissed the medical man who had found tubercle bacilli in the daughter's sputum.

2. Mrs. B. showed the classical signs of exophthalmic goitre when she was in bed slowly recovering from childbirth. The confinement had been very tedious and difficult. She had been both exhausted and, as she said, terrified. Instruments had been used, without chloroform; the child had died, and the mother had been very ill. There had been no sign of Graves's disease before the confinement. She lived for several years. Attacks of diarrhoea were common, and she was subject to frequent febrile conditions. She ultimately died of pulmonary tuberculosis, aggravated by mitral insufficiency. This case was also seen by Dr. Barrs of Leeds.

3. Miss C. gave birth to an illegitimate child. During her convalescence it was noticed that her eyes were protuberant and the thyroid enlarged. There was some tremor, but not much. Five years afterwards the signs and symptoms had mostly disappeared.

4 and 5. About the same time I saw two other cases of exophthalmic goitre following close upon the puerperal state. In one of these cases the mother was unmarried.

6. Mrs. D. Sir Berkeley (then Mr.) Moynihan, who saw the case with me, found her suffering from a severe internal haemorrhage, due to tubal rupture. The case was proved by the pathologist to be one of tubal gestation. The patient had no signs of exophthalmos before the operation, as was shown by a photograph taken shortly before. The exophthalmic appearance and symptoms came on during the time the patient was in bed; they were very marked one month after operation. Five years after the appearance the patient was found to have glycosuria and polyuria. She has recently died from diabetic coma.

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Leeds.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

COSSHAM HOSPITAL, BRISTOL.

RENAL CALCULI (OXALATE) WITH SEVERE HAEMORRHAGE AFTER NEPHROLITHOTOMY.

(Under the care of Dr. HEY GROVES.)

Reported by W. A. REYNOLDS, M.B., Ch.B.Bristol, M.R.C.S., L.R.C.P., House-Surgeon.]

THE patient in the following case, a man aged 23, was admitted on December 27th, 1911. He stated that he had suffered for two years from continuous discomfort in the left side. There had also been occasional sharp pains in the side lasting about a minute, together with intermittent haematuria. There had been no increase in the frequency of micturition nor passing of gravel, so far as the patient was aware.

State on Admission.

His urine was straw-coloured and acid, the specific gravity 1025. There was a slight trace of albumen but no blood, no sugar. The total quantity passed in twenty-four hours was 28 oz. The lower pole of the left kidney was palpable, but not tender. A skiagram showed several renal calculi, one being the shape of a horse-shoe.

Operation.

On January 13th, 1912, the left kidney was exposed and delivered through the usual lumbar route. On palpating the organ several soft areas containing hard lumps could be felt. An incision was made into the largest of these, and the large horse-shoe-shaped stone shown in the skiagram was removed, one limb of the "horse-shoe" being fixed in the orifice of the ureter. Clear fluid and blood, but no pus, flowed out of the wound. The incision into the kidney was elongated so as to open it up from its convex border. About a hundred stones were now removed with a scoop.

A good deal of blood was lost while they were being got out. A catheter was passed down the ureter and withdrawn, and then water at 110° F. was poured into the opened-up kidney, and the two halves were sewn together with deep catgut sutures, except that a rubber drainage-tube of medium size was left in, so as to drain from the interior of the pelvis of the kidney out to the surface of the body. The kidney was then replaced in the abdomen, and the incision closed except for the drainage-tube, the muscles being sewn with catgut and the skin with silkworm gut.

Immediate Result.

After the operation the patient was rather collapsed at first, pulse 126, respirations 42. He was given a saline infusion per rectum, 1 pint every three hours.

Next day he was better, pulse 112, respirations 30, and temperature 100.2° F. The dressing soaked through several times, chiefly with urine. The tube was removed on the 15th, and a gauze drain inserted. He was much better on the 16th, pulse being 86. He seemed to be going on well, and was talking to the men in the ward, saying how "fit" he felt in the early morning of the 17th.

Occurrence of Haemorrhage.

About 9 a.m. that day he complained of sudden pain in the left side, with pallor and pulse-rate of 132. On examining the wound a steady stream of blood was seen to be flowing out; the two stitches nearest the drain were removed, and the wound opened up, and the sinus down into the kidney was syringed with hydrogen peroxide, and then gauze soaked in adrenalin 1 in 1,000 was inserted. This treatment stopped the haemorrhage.

About an hour and a half later a rubber tube was passed down into the kidney, and 10 oz. of an adrenalin solution (adrenalin chloride 1 in 1,000, ℥j, to water ℥j) was poured down the tube to thoroughly irrigate the wound. Cold fluids only were given.

After this there was no further haemorrhage from the wound, but blood clot accumulated in the bladder, causing retention of urine, with the occasional involuntary passage of blood and clots by the urethra. This caused severe pain, and on January 20th an attempt to clear the bladder through a Bigelow's evacuator was made.

This having failed, nitrous oxide was administered, and a suprapubic opening was made into the bladder and the clots turned out. A tube was left in, and a Hamilton-Irving apparatus fitted over the wound. The patient on the termination of the proceedings was extremely pale and collapsed, pulse-rate being 140. He was put on calcium lactate, grains xv four-hourly, with plenty of hot fluids, and brandy ℥ss three times a day.

Result.

He slowly improved without further haemorrhage from the wound, though blood was passed in the urine. Clots were washed out of the bladder through the suprapubic wound twice daily for several days. By the 25th no more clots were found in the bladder. During this time much urine but hardly any blood passed out through the lumbar incision, and 41 to 60 oz. were passed daily through the suprapubic wound, large quantities of fluid being taken by mouth. On January 28th the tube in the bladder was removed, together with the Hamilton-Irving apparatus, and the wound was packed with moss. He was given iron, and from this time made an uninterrupted recovery, urine passing through the urethra after two soft rubber catheters had been tied in for twenty-four hours each, at the end of a week from when the tube was left out; and he was discharged with both wounds practically healed on March 2nd, 1912.

The calculi were found to consist almost entirely of calcium oxalate, associated with a very small amount of amorphous organic matter. Uric acid was not detected. As already stated, they numbered about 100: the majority were of the size and shape of large shot, but several were shaped like Indian clubs, and one resembled the knob of a traditional giant's bludgeon.

Note by Dr. Hey Groves.

There are several points of interest in the above case. The number of the stones was very unusual: probably the large stone in the pelvis was the primary calculus which caused obstruction to the outflow of urine, and the consequent stagnation brought about the deposition of the numerous small stones. The bizarre shape of the medium-sized stones was very unusual.

From a practical point of view the question of chief interest is, At what point is a kidney to be regarded as so disorganized as to require removal? In a young patient with plenty of healthy kidney substance, nephrectomy is not justifiable, but nevertheless it would, of course, be a much easier operation than removal of the stones. The occurrence of such a severe haemorrhage from the kidney, with subsequent filling of the bladder with clot, is fortunately a very rare sequel to nephrolithotomy.

Reviews.

CEREBRAL DECOMPRESSION IN ORDINARY PRACTICE.

SOME years ago a distinguished authority is reported to have said that the treatment of intracranial tumours formed rather a melancholy chapter in therapeutics. How little this, so far as it is now true, is the fault of modern surgery is shown by Mr. BALLANCE's recent summary[1] of the advances that have been made of late in the local diagnosis and treatment of abnormally raised intracranial pressure.

At the present time there are three methods of effecting cerebral decompression. By the first method, that of lumbar puncture, a moderate amount of the cerebro-spinal fluid is withdrawn from the subarachnoid space. By the second, continuous drainage of the fluid from one of the ventricles of the brain, either into another cavity—the arachnoid space—or externally, is effected through a small metal or glass tube. By the third, a part of the skull is trephined and removed, so as to make an opening for drainage or for the establishment of a hernia; such decompression is most effectual when made over the actual site of the cerebral disease, and so the accurate localization of the intracranial lesion becomes a matter of the utmost importance.

The intracranial lesion—whether a tumour, an abscess, a haemorrhage—acts as would a foreign body within the skull, and raises the intracranial pressure by causing the quantity of cerebro-spinal fluid to increase. Death is apt to ensue as a result of the general raising of the intracranial tension, and decompression by craniectomy averts the dangers of this general pressure. And so, when the general intracranial pressure has been thus lowered, an end is put to the most distressing symptoms that render many of these cases so painful to deal with—the vomiting, the intense headaches that resist all other treatment, the optic neuritis that proceeds to optic atrophy and blindness. In ordinary practice, cerebral decompression may be undertaken either for injury to the head or for disease within the skull. It is indicated in cases of extradural haemorrhage from rupture of the middle meningeal artery, or in patients with intradural haemorrhage such as may occur when the skull is fractured either at birth or in later life. In these cases the indications for immediate operation are often obvious. But there is a danger lest the remote effects of such injuries should fail to receive proper treatment in the patients who survive, and Mr. Ballance instances intermittent headache, intermittent paralysis, and intermittent insanity occurring after head injury, as symptoms suggesting subdural haematocele, a condition certainly remediable by operation. He quotes a number of lesions in which decompression for disease in the brain should be essayed perhaps more often than it is. Immediate operation in cases of cerebral haemorrhage might, it is suggested, often be attempted, craniectomy being performed and the brain incised for the escape of blood and clot behind the fissure of Rolando and above the Sylvian fissure; a strip of gauze soaked in adrenalin and passed through the incision in the brain would, it is maintained, suffice to arrest the haemorrhage. Decompression for hydrocephalus by continuous drainage of the cerebral ventricles through a cannula into the subdural space or the subcutaneous tissues has been carried out with success in many cases. In suppurative meningitis wonderful cures have followed decompressive operations. Mygind had six recoveries out of twenty-six operations for meningitis occurring as a complication of ear disease; and Tedesko has reported a case cured by lumbar puncture, where pus was drawn off by the exploring needle. In serous meningitis, including certain cases of heat apoplexy, status epilepticus, and acute delirious mania, craniectomy and evacuation of the oedematous cerebral substance would appear to offer a hope of recovery, should lumbar puncture fail.

But it is in cases of cerebral and cerebellar abscess or tumour that cerebral decompression seems to have proved most successful. Such operations have long been in current practice, and the importance of their early performance is recognized. Early diagnosis and early operation before irreparable damage to the eyes has occurred are the great desiderata here. The presence of optic neuritis demands immediate operation. To make an osteoplastic flap is a mistake; a cranial defect is essential, a cerebral protrusion is desirable. It seems to be settled that when the tumour can be localized, the craniectomy should be performed over its site; but in all infiltrating tumours, simple decompression over some silent area of the brain is the method of choice, when the free escape of cerebro-spinal fluid will rapidly relieve the congestion of the optic discs. Mr. Ballance reports many illustrative cases, and gives convincing proof of the efficacy of cerebral decompression in a large number of different cases.

[1] [illegible] By A. Ballance. [illegible] 1912. (Demy 8vo, pp. [illegible] 2s. 6d.

TEXTBOOKS OF OPHTHALMOLOGY.

WE have received the first volume of a *Textbook of Ophthalmology*,[2] written on somewhat original lines by Dr. PAUL ROEMER, Professor of Ophthalmology at Greifswald, and translated into English by Dr. M. L. FOSTER of New York. Its originality consists in the fact that it is produced in the form of clinical lectures. In this volume nothing behind the lens is discussed, but a very thorough account is given of all external diseases of the eye, as well as that of the iris and lens. The anatomy is first described, then the methods of clinical examination, after that the diseases. An endeavour has been made to render the book attractive to students, and one very unusual feature about anything calling itself a textbook is this—that it is written in a colloquial style, and must admirably call to mind the cases and the surroundings of the clinic in which they were delivered. Considerable attention is bestowed upon diseases which owe their origin to bacteria, and several coloured plates are given which show different forms of organisms. A fairly thorough explanation will be found of serum-therapy and of the Wassermann reaction. The author strongly disapproves of boiling fine cutting instruments, which he states causes dullness of their edges. This is an opinion very commonly held by barbers with regard to razors. Professor Roemer recommends that knives should be placed for two hours before and two hours after the operation in absolute alcohol, and that all instruments should be used dry. Minute details are given as to the preparation of the surgeon and patient previous to operation. For the text we have nothing but praise, though doubtless most surgeons will find that some of the methods advocated differ somewhat from their own practice. The illustrations, on the whole, might be much improved; most of the reproduced photographs are very blurred, and even the coloured plates do not reach a high standard. We can highly recommend the book as being very readable and unusually practical. It carves out a line for itself, and instead of giving all sorts of methods of accomplishing the same end—a fault of many textbooks—it gives the views of one who has had great experience. It is, therefore, dogmatic about many things which are at present open to question, but this is an advantage to any one who really requires to be told what to do and how to do it.

The second edition of *Diseases of the Eye*,[3] by Mr. J. HERBERT PARSONS, much resembles its predecessor in appearance, but it has been revised and some new matter added. It is divided into six sections and three appendices. The illustrations, which are numerous, are both coloured and black and white; a great many of these are borrowed, but some are original. The pathological aspect of the various subjects dealt with is treated with rather more detail than is usual in books of similar size, and the same may be said of the optics. The author clings to the old theories and tests for colour blindness, which the majority of workers have found to be unsatisfactory and at variance with the facts arrived at from examining persons who are affected in this way. The nervous mechanism connected with the eye is fully treated and the whole book is well arranged and written.

[2] *Textbook of Ophthalmology in the Form of Clinical Lectures.* By Dr. Paul Roemer, Professor of Ophthalmology at Greifswald. Translated by Dr. M. L. Foster, of New York. Vol. I. London: Rebman, Ltd. 1912. (Sup. roy. 8vo, pp. 291; figs. 186, plates 13. 19s. 6d. net.)

[3] *Diseases of the Eye.* A Manual for Students and Practitioners. By J. Herbert Parsons, D.Sc., M.D., B.S., F.R.C.S. Second edition. London: J. and A. Churchill. 1912. (Demy 8vo, pp. 681; 309 figures, 12 plates. 12s. 6d. net.)

Among the books in the useful series of Oxford Medical Publications is one on *Diseases of the Eye*,[4] written by Mr. STEPHEN MAYOU. It has now reached a second edition (the first was published in 1908), and the new issue presents this exceptional feature—that it contains only 306 pages, or 82 less than the first. The tendency of most textbooks is to grow more bulky. For so small a book it is profusely illustrated, containing 124 pictures in the text and five plates, four of which are reproductions in colours of ophthalmoscopic drawings. The new edition is a decided improvement on its predecessor, and there are fewer accidental errors in it. But one curious mistake has crept in. When describing Snellen's test types the first edition told us that the letters subtend an angle of 5′ on the retina at the distance marked over each; this is, of course, absurd. In the second edition we are told that the angle the letters subtend is 5″, which is certainly going from one extreme to the other; the correct angle is 5′. In so small a book the description of the various conditions spoken of must be rather sketchy; but the work is well done, and we are glad to see that the necessity has arisen for the issue of a second edition. Such a book is bound to be popular with students.

INFANT FEEDING.

DR. Bosc, of Montpellier, published some months ago a careful essay[5] on breast feeding, artificial feeding, and mixed feeding, and on the diet of children from 1 to 3 years old. He has special chapters on the dieting of feeble infants and those with hereditary syphilis. He states that contamination of a healthy nurse by a syphilitic infant is frequent, and laments the fact that only too often the nurse subsequently infects her own children and husband. If the author speaks from a personal knowledge of the frequency of such lamentable cases, we can only say that his experience must be wholly exceptional. In a final chapter he deals with the excellent results achieved in the lowering of infantile mortality by the institution of "infantile consultations" at different places in France, and gives some details as to the working of his own at Montpellier. He speaks in glowing terms of the marvellous (*réellement merveilleuse*) effects of mountain air, at elevations of from 3,000 to 3,500 feet, in the prevention and treatment of summer diarrhœa in infants, and states that removals to such altitudes have reduced the mortality from 80 to 3.8 per cent. We can readily believe in the efficacy of such air as a preventive, but have a difficulty in understanding how infants could be taken to it in the acute stages of the disorder, fortunate as Montpellier may be in having mountains of such elevation close at hand and readily accessible.

DR. D. HASTINGS YOUNG, in his book, *Medical Education and Infant Feeding: An Impeachment and a Suggested Remedy*,[6] carries us over a wide field. From a consideration of the difficulties of digestion in infants, his argument leads us by gradual steps to an "impeachment" of the General Medical Council. The author is an ardent believer in the value in infantile dietetics of humanized milk prepared according to a formula devised by Dr. Truby King, of New Zealand. He has himself used it on five occasions, and he gives the results in the form of a table. In three cases the children did well, one did fairly well, and one developed diarrhœa upon the sixth day, and this food was changed. The author brings forward these results as evidence in support of his contention that "the acme of our present knowledge of infant dietetics is reached by the use of Dr Truby King's formula," and maintains that official recognition of the method is necessary in this country. He complains of the want of uniformity in the practice of medical men in infantile dietetics and of their lack of interest in the subject, and this he attributes to a want of special courses of instruction in medical schools. This lack of instruction is in turn the result of the apathy of the General Medical Council, and the apathy of the General Medical Council is due to faults in the composition of that body. "As specialists they have legislated in the interests of specialists and have formed themselves into a kind of House of Peers of self-[illegible] superior persons." Finally, the argument culminates in the impeachment. "It would almost appear as if the policy of the British (*sic*) Medical Council were to encourage entry into the students' ranks and to hinder the successful completion of the course with a view to personal gain." The author in this argument has, as will be seen, travelled a long way from his starting-point. With the author's plea that the study of infantile disorders should find a place in the curriculum, whether as a special subject taught apart from general medicine, as the author suggests, or, as at present, as a part of ordinary medical teaching, it is impossible to disagree. It is not easy, however, to follow the author in his further arguments that the difficulties of the subject would be diminished by the uniform adoption of any one form of modification or humanization of milk, and by stamping it with the seal of official approval, nor is it easy to agree that the present crowded state of the students' curriculum is due to the dishonesty or incapacity of the General Medical Council.

DISEASES OF THE MOUTH.

IN *Stomatology in General Practice*[7] DR. H. P. PICKERILL tries to tell the general practitioner of medicine what he should know of oral conditions. The book is comprehensive, and reference is made to almost every condition of disease which occurs in the mouth, but it is of unequal merit, and in places spoilt by neglect of facts which run counter to the author's theories. He believes that loss of function in mastication is mainly responsible for deformities of the jaws, and neglects those idiot children who, though fed from birth till death on "slops," yet have jaws above the average in size. On p. 158 arrest of development of an ankylosed mandible is ascribed to loss of function—but may it not be due to destruction of the growing centre? The author's conception of dental sepsis appears to be somewhat limited; stroking the gums to express pus (p. 218) is the extent of his examination for periodontal infection, and his only reference to the septic origin of hypertrophy of gums and alveolar bone is that "it has been suggested that the origin is always an infection" (p. 183). There is much else to criticize adversely, sometimes in grammar (p. 14, par. 2), sometimes in fact; how many times has the author found a tooth entirely surrounded by an epithelial lined cavity (p. 172)? Taken as a whole, however, the book is well worth reading. Throughout it there are original ideas and observations which must set the reader thinking, and some of the chapters—for example, treatment of dental disease, neuralgias—are excellent. Most of the micro-photographs are poor, spoiling an otherwise good set of illustrations.

PUBLIC HEALTH LAW.

THERE is already, both for the student and for those who are actively engaged in administrative duties, such a large choice of textbooks relating to public health law that there would hardly seem to be room for any addition. Mr. BERTRAM JACOBS has, however, managed to incorporate in his *Manual of Public Health Law*[8] some matter which is either not to be found at all in other textbooks or which has been dealt with only very indifferently. For example, the chapter on the public health authorities gives a clean and well-marshalled account of the public authorities which are concerned with the administration of the laws relating to public health, and he distinguishes in a fairly correct manner between the powers and duties of urban and rural authorities, though he might perhaps have entered into more detail when discussing the latter. For instance, he has omitted to point out that slaughterhouses in rural districts do not come under any of the provisions of the Public Health Acts unless the urban powers relating

[4] *Diseases of the Eye.* By M. Stephen Mayou, F.R.C.S. Second edition. Oxford Medical Publications. London: Henry Frowde, and Hodder and Stoughton. 1912. (Cr. 8vo, pp. 320; figs. 124; plates 5. 5s. net.)

[5] *Précis d'alimentation du nourrisson allaitement et sevrage.* By Frédéric J. Bosc, Professeur à la Faculté de Médecine de Montpellier. Paris: Masson et Cie. 1911. (Cr. 8vo, pp. 258.)

[6] *Medical Education and Infant Feeding: an Impeachment and a Suggested Remedy.* By D. Hastings Young, M.B., Ch.M.Edin. London: Routledge and Sons, Ltd. 1911. (Post 8vo, 120 pages. Price, 2s. 6d.)

[7] *Stomatology in General Practice: a Textbook of Diseases of the Teeth and Mouth for Students and Practitioners.* By H. P. Pickerill, M.D., Ch.B., M.D.S Birm., L.D.S.Eng., Professor of Dentistry at the Otago University, N.Z. London: Hodder and Stoughton. 1912. (Demy 8vo, pp. 280, illustrations 65. 15s. net.)

[8] *A Manual of Public Health Law.* By Bertram Jacobs, Barrister-at-Law. London: Sweet and Maxwell, Limited. (Demy 8vo, pp. 220. 7s. 6d. net.)

to them have been allowed by the Local Government Board, nor does he state that in a rural district a newly erected house cannot be occupied unless certified to be provided with a sufficient water supply. We do not find, moreover, any mention of the law relating to knackers' yards. These minor omissions do not, however, materially militate against the usefulness of the work, an important feature of which is the large number of references to cases which have been decided in the courts; those quoted, moreover, have been brought quite up to date. Should a second edition be brought out, we would suggest to the author that he should compile a much more extended index to the contents.

The study of the various laws relating to public health is not made any easier for the student by the fact that England and Wales, Ireland, Scotland, and London each have separate Acts of Parliament dealing with public health administration. With a view to lessening those difficulties Dr. ROBERTSON and Dr. MCKENDRICK have produced a work on *Public Health Law*[9] which they describe as an epitome of law applicable to England and Wales and Scotland. They deal with the subject in three parts under the headings of Acts specially applicable to Scotland; Acts applicable to England and Wales; and Acts applicable to the United Kingdom, though it would be more correct to have stated that the third part dealt with Acts applicable to Great Britain. The sections of the various Acts are set out in conspicuous type, and useful notes are appended in many instances. There is, however, evidence of some carelessness in compilation. This is particularly noticeable in the section dealing with the Housing of the Working Classes Acts, for the authors have apparently overlooked the fact that important sections and parts of sections of the Act of 1890 were repealed by the Housing, Town Planning, etc., Act, 1909. The work is, however, generally well up to date, for it contains the Rag Flock Act, 1911, and the regulations made under that Act which came into force as recently as July last.

NOTES ON BOOKS.

To Dr. J. T. RICHARDS, Chairman of the Health Committee of the Battersea Borough Council, belongs the distinction of having written the shortest account of the Insurance Act giving anything like an adequate analysis of that complex measure. Into an extraordinarily small space he has packed a consecutive account of its provisions which will be intelligible to the general public to whom it is addressed. It could only have been done by one who had studied the Act very thoroughly. There are points of interpretation as to which every one will not agree, and we shall probably not know exactly what the Act means in some parts until the law courts have had their innings. Meanwhile, Dr. Richards can give clause and subclause or very good reasons for everything he says, and his little pamphlet,[10] which he describes as a plain exposition of the Act for employers and employed, will be very useful.

It is no easy matter to form a just and correct estimate of Mr. C. E. STROMEYER'S book, *Unity in Nature*.[11] Almost every branch of human knowledge is dealt with; music and morals, physical and natural sciences, ethics and philosophy, eugenics and politics. Neither is it very clear what is the central idea the author has in his mind and wishes to convey to his readers. The title would seem to furnish the clue, but the book itself fails to afford much elucidation. In the introduction we are told that the first task which the author has undertaken is "to convey the idea that music is an independent world" and that the writing of the book has been "prompted by Schopenhauer's suggestion of a parallelism of music and life." In evolving this idea

the conviction grew that indestructible energy, a comparatively recent discovery, in all its numerous manifestations as Life, deserved far more attention than has yet been accorded to it by

[illegible] *Law Applicable to England* [illegible] Robertson, M.D., D.P.H., and [illegible] D.P.H. Edinburgh: E. and [illegible] [illegible] *m of the Act for* [illegible] [illegible] B.Sc., M.B. Third [illegible] [illegible]. H. Smith and Son.

[illegible] *An Analog* [illegible] *le and Life.* By C. E. [illegible] ber of the [illegible] Board of the National [illegible] Shurratt and Hughes. 1911.

metaphysicians, and that possibly a better use than has been customary might now be made of the great advantage possessed by human beings of being able to contemplate all things, and that this might lead to a clearer understanding of what perfect life is or what it should be.

The whole book is highly speculative, and it would not be difficult to join issue with the author in many of his ideas. Some of the chapters dealing with social problems are of interest and contain much common sense, but we think that the author will not find many who will agree with his ideas on sexual ethics. Whatever future generations may think, the world is not at present willing to accept the views here put forward. The book undoubtedly contains much to interest, and shows wide knowledge, but we confess to leaving it with feelings akin to those experienced after having partaken of a heavy meal of indigestible food, feelings of repletion and yet of unsatisfaction.

The importance of securing the systematic inspection of all foodstuffs is now so generally recognized that it has been necessary for sanitary officials to specialize in the subject, and in most sanitary districts of any considerable size one or more inspectors are employed whose sole duty is the inspection of foods. In small localities the inspector of nuisances is expected to include such inspections among his ordinary duties, and it is to be feared that as a rule he has no very special knowledge of the subject. To such Mr. HORACE WALKER'S *Food Inspectors' Encyclopaedia*[12] should prove of great assistance. It can hardly take the place of the larger textbooks, but the alphabetical arrangement lends itself to ready reference, and the information given is accurate and precise, while the practical advice which abounds in the volume is evidently the result of first-hand knowledge obtained from actual experience. Of particular importance is the long list of the most common ways of adulterating food, with an account of some substitutes and other tricks by which purchasers are frequently defrauded. As a handy book of reference the work should be of value to all public health officers.

The third edition of Savill's *System of Clinical Medicine*[13] is due to the energies of Dr. AGNES SAVILL, and may be regarded as thoroughly up to date, since apart from ordinary revision it includes a considerable amount of new matter in the way of notes on many conditions comparatively rarely seen in this country; the notes on Rocky Mountain fever and rat-bite fever are cases in point. It is less than ten years since the first edition appeared, and the present edition is faithful to the original idea—namely, that of putting observed effects in the foreground and endeavouring to trace them back to their causes. This is a sufficiently common plan in bedside teaching, but the late Dr. Thomas Savill, who was in many respects an original-minded man, was the first, we believe, to endeavour to apply it to a volume of the treatise order. Many of his dicta, perhaps, are open to discussion, and the book as a whole is not, perhaps, every one's book; it nevertheless contains an immense amount of information, and the plan on which it is arranged must clearly appeal to a considerable number of workers in medicine, since both the first and second editions were rapidly exhausted. Corresponding success for the present edition may be anticipated, since the level which it attains is fully equal to that of its predecessors, while the ground which it covers is even wider.

The fact that Miss MARGARET D. PALMER'S book, *Lessons on Massage*,[14] has reached a fourth edition is evidence that it is found useful by a number of nurses and students in massage schools. Of its sixteen chapters eight are devoted to elementary anatomy. The rest are given over to massage in its various forms, the Weir-Mitchell system and its diet, Nauheim treatment, and bandaging. The anatomical descriptions are somewhat loose. For instance, what is a nurse to make of the following: "The pelvis is divided into true and false. The false pelvis *is the* (*sic*) abdomen proper, the part that is enclosed in front only by muscle and fascia. The true pelvis, or pelvic cavity, is the part which is bounded in front by the pubes, the upper surface of which is the

[12] *The Food Inspectors' Encyclopaedia.* By A. Horace Walker. London: Baillière, Tindall, and Cox. 1912. (Demy 8vo, pp. 311. 7s. 6d. net.)

[13] *A System of Clinical Medicine.* By Thomas Dixon Savill, M.D.Lond. Third edition, thoroughly revised. London: Edward Arnold. 1912. (Med. 8vo, pp. 958. 25s. net.)

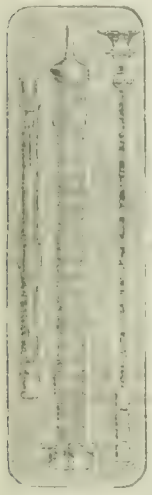
[14] *Lessons on Massage.* By Margaret D. Palmer, formerly Masseuse and Manager of the Massage Department of the London Hospital, etc. Fourth edition. London: Baillière, Tindall, and Cox. 1912. (Med. 8vo, pp. 308; figs. 118. 7s. 6d. net.)

brim. The ridge (what ridge and where?' is called the ilio-pectineal line. The abdomen proper is in a nearly straight line from the thorax," etc. The book is well printed, and the plates are clear, and the massage teaching is simple and sensible; it will no doubt continue to be useful to many students of massage.

MEDICAL AND SURGICAL APPLIANCES.

A Syringe for Tuberculin.

DR. H. EWAN WALLER (Birmingham) writes: Now that tuberculin is being so much more widely used in the treatment of consumption in this country, it becomes of increasing importance for the practitioner to be able to prepare his own dilutions. One of the chief difficulties has been the need of a suitable syringe for the purpose. The calibre of an ordinary hypodermic syringe is much too great. In order to measure $\frac{1}{10}$ of a cubic centimetre (0.1 c.cm.), one had to move the piston of the syringe approximately $\frac{3}{8}$ in. Obviously, an error of even $\frac{1}{16}$ of an inch in movement introduces an error of 1 in 6 in the resulting dilution. This error may be repeated several times before one has arrived at an ordinary initial dose of tuberculin, such as 0.0002 c.cm. P.T.O. I have had made for me by Messrs. Anderson and Dodds, of Broad Street, Birmingham, a syringe of much finer calibre, in which the piston has to be moved about $\frac{5}{16}$ of an inch to measure 0.1 c.cm. The possible error is, therefore, 1 in 20 instead of 1 in 6 for each sixty-fourth part of an inch traversed by the piston. This is obviously a great gain. The syringe itself is much the same in type as the "Metalline" and "Record" syringes. It is all metal and glass, without washers, and is put up in a metal case with the plunger separated from the barrel, which obviates the risk of finding the two inseparable at any time when the syringe has not been recently used. The piston rod of the syringe is also graduated and provided with a screw attachment, which is an additional safeguard against error in measuring. The capacity of the syringe is 1 c.cm.



Open-Air Shelter.

Dr. Hollick (Knowle, Warwickshire) sends us the accompanying photograph of an open-air shelter for early cases of tuberculosis made by Mr George Summer, carpenter, of Knowle. Dr. Hollick has three of them in use and finds them excellent. They can, he states, easily be taken down and removed through an ordinary doorway or entry.



The following is the carpenter's specification: "These shelters are made of best red deal. Framework 3 by 2, floor joist 3 by 3, floor 1 inch tongued and grooved boards; ends, front, and back boarded with ¾ matchboards, roof matchboarded and covered with 1 ply rubberoid, two coats of creosote outside, two coats of white paint inside. All shutters open with strong stays. Made in seven sections and can be taken through any ordinary doorway or entry, price £10."

ROYAL MEDICAL BENEVOLENT FUND.

AT the August meeting a number of cases were considered, and grants amounting to £191 made to nineteen of the applicants. Appended are particulars of the cases relieved:

Widow, aged 45, of L.R.C.P., L.R.C.S.Edinburgh, [illegible] ally unprovided for at husband's recent and sudden death, and hopes to support herself by taking boarders. Three children, aged 17 to 14. Voted £10 in one sum.

Widow, aged 57, of M.B.London, who was for many years an annuitant of this Fund and of Epsom Colle[illegible] No income; only son unable to help at present. Proposes to maintain herself by receiving paying guests. Voted £10 in one sum.

Widow, aged 33, of M.R.C.S., L.S.A., who practised in Cheshire. Since husband's death about four years ago has supported herself by nursing. Has recently been promised a post as matron at a good school, where her daughter, aged 9, can receive a thorough education for a nominal sum, but requires help for suitable clothing and maintenance meanwhile. Voted £10 in one sum.

Widow, aged 69, of late M.R.C.S., who practised in Berkshire. Has a small pension but is in bad [illegible] ly had heavy and unavoidable expenses. [illegible]

Widow, aged 57, of M.R.C.S., who pract[illegible] Is in very feeble health, and dependent entirely on a step-brother whose help is both small and uncertain. Voted £10 in two instalments.

M.B., B.C., aged 53. Has broken down through overwork and requires a long rest, for which his means are quite inadequate. Voted £20.

Daughter, aged 73, of late M.R.C.S., who was a surgeon in the Scots Guards. Was well provided for but lost everything through a defaulting trustee, and is now dependent on a small annuity purchased by friends and an old age pension of 5s. a week. Voted £10 in tw[illegible]nts.

L.R.C.P.Edinburgh, age[illegible] who practised in London. [illegible] to have a good practice, [illegible] incapacitated by the effects of an accident, and is depe[illegible] alid daughter, on his wife, whose income, m[illegible] ry help from a brother, is only about £1 a wee[illegible] Relieved three times, £54. [illegible] e instalments.

Daughter, aged 66, of late M.R.C.P.London, F.R.C.S., who practised in Derbyshire. Health very poor, and only income a small pension from a charitable society. Relieved five times, £37. Voted £5 in one sum.

Daughter, aged 63, of late M.R.C.S., who practised in Warwickshire. Maintained herself for many years by dispensing, but is now unable to obtain regular work and is practically dependent on a sister who has to earn her living. Relieved six times, £69. Voted £10 in ten instalments.

Widow, aged 55, of L.R.C.P.Edinburgh, who practised in [illegible]shire. Since husband's sudden death seven years ago has maintained herself by needlework and occasionally writing for the papers. Two daughters, the elder just self-supporting, the younger still at school. Relieved seven times, £72. Voted £10 in ten instalments.

Widow, aged 41, of M.B., Ch.B.Edinburgh, who practised in Surrey. Has an income of £15 a year, but is unable to undertake regular employment on account of her mother's ill health. No children. Relieved once, £5. Voted £5 in one sum.

Daughter, aged 56, of late M.R.C.S., who practised in Suffolk. No income, and practically incapacitated by bronchitis and chronic rheumatism. Relieved ten times, £97. Voted £12 in twelve instalments.

Widow, aged 42, of M.B., C.M.Aberdeen, who practised in Wales. Receives a small salary as housekeeper, but finds it insufficient for the maintenance of her two sons during the holidays, one of whom is at the Blue-coat School. Relieved five times, £45. Voted £12 in twelve instalments.

Widow, aged 41, of M.R.C.S., L.R.C.P., who practised in India. Since husband's death from plague fourteen years ago has been very generously helped by his brother, whose allowance is unavoidably withdrawn for anyhow a few months. Three children, the eldest 19, the two younger both delicate. Relieved three times, £20. Voted £10 in one sum.

Widow, aged 78, of L.F.P.S.Glasgow, who practised in Hampshire. Receives rooms and 10s. a week at an almshouse, but is paralysed, and consequently obliged to pay for an attendant. Children unable to help. Relieved twice, £17. Voted £5 in one sum.

Widow, aged 51, of M.B., C.M.Edinburgh, who practised in Perthshire. Supplements an income of £20 a year by taking boarders, and has brought up a family of seven children, of whom two are now self-supporting. Relieved thirteen times, £150. Voted £12 in twelve instalments.

Daughter, aged 45, of late M.R.C.S., who practised in India. Is a trained nurse, but is permanently incapacitated as the result of pyæmia. Only income a pension of £30 a year from a charitable society. Relieved once, £12. Voted £12 in twelve instalments.

Daughter, aged 61, of late M.R.C.S., who practised in Gloucestershire. Lent her capital to a friend whose security proved valueless, and is now dependent on a pension of £21 a year recently granted by the Royal United Kingdom Beneficent Association. Relieved eight times, £104. Voted £5 in one sum.

Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole Street, W.

BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

(Concluded from page 717.)

COMBINED MEETING OF SECTIONS OF ZOOLOGY AND BOTANY.

The Origin of Life.

DR. E. A. MINCHIN, in introducing a discussion on this subject, said the problem of the origin of life involved two inquiries, both at present of a speculative order: the first, as to the nature and characteristics of the earliest living beings; the second, as to the manner in which the primordial form of life took origin and maintained its existence upon the earth. I. The *cell*, which might be defined as an individualized mass of *protoplasm* containing at least one *nucleus*, had generally been regarded as the simplest type of organism, the vital unit in the composition of living beings, whether plants or animals. It was, however, impossible that the earliest forms of life came into existence as organisms composed of two distinct and separate structural elements, the *nucleus* and the body protoplasm or *cytoplasm*. Which, then, was to be regarded as representing or containing the most primitive elements of the living substance, the cytoplasm or the nucleus? By most biologists the cytoplasm had been considered to represent the true living substance. The earliest living beings had been supposed to be formless masses of protoplasm without nuclei, so-called Monera. There were, however, many reasons for believing that the chromatin substance, invariably present in the nucleus, or occurring as grains, chromidia, scattered in the cytoplasm, represented the primary and essential living matter. In support of this view might be urged:

1. The fact that chromatin is always present in the bodies of living organisms of all kinds.
2. The experimental proof that cells cannot continue to live if deprived of their nuclei.
3. The fact that in reproduction by fission the chromatin divides first, and is distributed among the daughter individuals; karyokinesis may be regarded as a mechanism gradually evolved and perfected to ensure an exact quantitative and qualitative partition of the chromatin between the daughter nuclei.
4. The relation of the chromatin substance to syngamy and probably to heredity.
5. The part played by the nucleus in the production of ferments in the cell.
6. The fact that in the minutest living organisms the body appears to consist mainly or entirely of chromatin, cytoplasmic elements being either reduced to a minimum or absent altogether.

For these reasons Dr. Minchin regarded the chromatin as the primitive living substance, and held that the earliest forms of life were very minute particles of chromatin, round which in the course of evolution achromatinic substance were formed. Within the cytoplasmic envelopes thus produced the chromatin grains increased in number. Organisms of the degree of structural complexity of a true cell arose finally by concentration of the chromatin grains (chromidiae) into a compact organized mass, the *nucleus* proper. II. As regards the origin of the earliest living beings, it was only possible to frame vague speculations in the present state of knowledge concerning the chemistry of the protein compounds on the one hand and the metabolism and modes of life of the simplest living things on the other. Whether life originated on the earth itself, as biologists had generally supposed, or was brought in some way to the earth from infinite space, as some physicists had suggested, its first origin involved a synthesis of proteid substances in Nature by some process as yet totally unknown. When the earliest form of living being had come into existence, it was very difficult to understand how it could have maintained its life and what it could have fed upon, especially if it were originally wafted from space to a sterile and barren earth. For light on these problems they must look to the future advance of knowledge, and especially of chemical science.

Professor H. WARD said they might have gathered from Professor Minchin's interesting statement that they were, as they would say in Yorkshire, "Not very much forrarder" as regards a solution of this extremely important problem. They must regard the fundamental life substance as cytoplasm, and not chromatin, and he [illegible] that it was not altogether [illegible] Professor Minchin should adduce as his main argument in favour of chromatin that it was the structure of an organism, the nature of which he definitely and distinctly said was not yet known.

Professor KEEBLE (Reading) said both chemical and mechanical theories had been abandoned in favour of a theory which regarded life as a factory containing all different kinds of machinery, and where they put in a pig at one end and obtained mincemeat at the other, or put in mincemeat at one end and got a pig at the other. It seemed to those who were perplexed with the complexity of life that, so far, the views expressed on it had not convinced them that they would see what was called synthetic life in the immediate future.

Professor MACALLUM (Toronto) thought matter was endowed with the potentiality of life, and to that extent he was in sympathy with the view that there was an association between them. He had enunciated the view that the organism which first came into existence was an ultra-microscopic one. At one time the earth was a vast laboratory, and in its atmosphere were an enormous pressure and electrical current and all the compounds which were simply necessary for the process. Synthesis must have occurred at that time which did not obtain to-day. Everybody who talked about the origin of life spoke of it as a great big cell. That was a mistake, as the cell they found to-day was as far removed from the ultra-microscopic organism as they were removed from the cell.

Professor MOORE (Liverpool) said the view had been put forward that if they were able to get over all the difficulties of the chemist and fabricate a substance identical with protoplasm they then would have life. That was purely a static view of life, and depended entirely on structure. It seemed useless for the biologists and physiologists to shut their eyes to the fact that they had a separate science, that they had a separate type of energy which was in a distinctive state of phenomenon, just as radio-activity was different from the ordinary electric waves. There was a peculiar transformation in the life cell. The first thing they had to evolve was an organic molecule from the simpler inorganic ones. It was not a metaphysical but an experimental problem, and would yield fruit as soon as it was attacked. The President had told them there might have been various times when life was produced on the planets. He believed at present, and all through the ages just as at various levels, that process was going on. Chemistry and physics must be the underlying elements in the whole process. They must remember that there was a plan running through the whole of evolution. They must call in the psychologist.

Professor MACDONALD said it seemed to him they had a limited problem such as even at the present time Professor Minchin was perfectly justified, and science was perfectly justified, in presenting to the mind of the world for its examination. What was the origin of the chemical material that was found in the nucleus of living cells? That was what Professor Minchin's paper boiled down to, and that was a matter which had to be left entirely to the hands of the chemists.

Professor HARROG (Cork) said he believed it was absolutely hopeless to try and find out how life was produced. To those who had ambition in the field he said: "Go on with the disinterested search for the unknown, and we or our successors will profit by the jewels you have picked up and dropped on the way."

Professor PATRICK GEDDES asked if they might not spend a moment in looking how, without any serious break in the scientific order, they might look at the life and mind together. He entirely dissented from the proposition of the President that they could really suspend and annihilate the psychic life by anaesthetics or any other process. The life process went on at one action on its psychic as well as on its organic side. They did themselves a permanent wrong by taking in physics and chemistry before coming to biology. They should proceed from life outwards towards the environment. To discover the origin of life was to trace the action of one's own life, in which one never lost sight of the unity of reaction, organism, and environment.

Dr. J. S. HALDANE (Oxford) looked for a future life to the more exact but more careful study of the things of what were called molecules and atoms. In studying the primitive forms of life they were extending the organic world into the apparently inorganic.

Dr. STEBBING (Tunbridge Wells) said the evolution of life might be going on continuously. They had not seen it, and had not been able to reproduce it by experiment, but that was no reason for thinking it could not happen.

Dr. CHALMERS MITCHELL (London) said they were getting closer and closer to the last difficulty in the whole business as to whether there was a distinction between the properties and qualities of living matter and of matter which was not alive. There had not been a single property of protoplasm produced to-day which had not its exact physical equivalent.

SECTION OF PHYSIOLOGY.

Prevention of Mental Degeneracy.

A paper by Dr. R. R. RENTOUL on the prevention of mental degeneracy suggested the following steps: (1) Compulsory notification of all mental and physical degenerates. (2) Compulsory and voluntary surgical sterilization of mental and physical degenerates. (3) Prenuptial medical certificate of good physical and mental health. (4) Making it illegal for any person to issue a permit to marry without obtaining beforehand a prenuptial certificate of good health from the applicants. (5) Making it illegal for any clergyman, registrar, or other person to join in marriage any physical or mental degenerate unless the woman is over 50 years of age, or unless sterilized. (6) Making it illegal for any sane person to marry a degenerate, and to make such marriage null and void. (7) Taxation of bachelors. (8) Taxation of sterile marriages. (9) Proceeds to go to couples with income under £450 per annum who bring up the largest number of physically and mentally healthy children. (10) Petitioning Her Majesty to institute a Royal Order of Maternity. (11) Physical degeneration.

A Plea for Regeneration.

Viewing the topic from another standpoint, the Rev. JAMES MARCHANT, Director of the National Council for the Promotion of Race Regeneration, said that degeneration, whether attacking the individual or the race, in a physiological or mystical sense, was not peculiar to this age. And the fact of regeneration was well known. But if the belief in regeneration was not novel, the application of it to the race at a time when belief in degeneration had seized upon the public imagination was a primary duty of physiologists and biologists, and of every one who had not lost faith in our ultimate recovery from the prevailing nervous attack. Quantitative human life, as shown by the falling birth-rate in some Western countries, whether the immediate causes were voluntary or not, might seem to be failing, but might it not be only a seeming? What new physiological fact of the reduction of essential fertility had come to light since 1875, when the birth-rate began to fall? Or had any inherent tendency towards a progressive decline in the standard of physique been disclosed? Was it not still true that nearly 90 per cent. were born healthy? And that many of the defects in adults and in school children were due to ignorance and avoidable social conditions? Was it not plain that qualitative life (which after all was in fact the only true way of measuring life) was advancing? That was a sociological fact, but was not its foundation, whether seen or unseen, physical? Might not the full explanation of evolution demand constant regeneration of life? The evolution of society was founded upon it. Physiology was concerned with the processes and functions of vital—that is, regenerating—organisms. Religion preached regeneration unceasingly; apart from it her faith and mission would be mockery. Dr. Marchant pleaded that the time had come to turn public attention and popular faith to the more assured belief in regeneration, and to throw the potent influences of science, sociology, and religion into this scale. "Put men into good physical surroundings, with opportunity to encourage healthy mental, moral, and spiritual development, make them less introspective and self-centred, and we shall soon have regeneration."

SECTION OF ZOOLOGY.

Speech in Animals.

In a communication on this subject Professor R. J. ANDERSON said there was an obvious relationship between the expression of wishes, emotions, etc., by means of word and the capacity to understand words. Many seem to believe that a dog, cat, or horse could be trained to understand the common meaning of many words. On the other hand, many believed that even the monkey, elephant, or parrot had a very limited capacity in this regard, and that the tone of voice, pose or gesture counted for much with many animals. Association and the reflex accompaniments seemed to count for much. A little dog would learn very soon to associate the presence of some friend with the licking of his lips. Salivation, which was commonly associated with the smell, sight, or thought of food in man, became in a dog associated with a nerve stimulus or sound, as the experiments of Pawlow and his pupils proved. The bell that calls the workman from labour to refreshment might lead a dog to "whine" or bark because of its association. A dog distinguished between a lively tone and menacing tone; this might be the result of education. And the sense of smell was evidently the most powerful associated sense. Sight and hearing were not so keen as scent in dogs. The power and disposition to seize upon some salient feature by the eye or ear was easily recognizable. This "quickness" was apt to lead to fatal errors, but answered the main purpose. The sounds that animals emitted were apparently, except in man, limited to a few often guttural or modified guttural expressions. The bark of a dog varied in loudness and in quality. The main cause of the sound was alarm, or a desire to alarm or attract the attention of another dog or the master. It was evidently the most useful sound a dog possessed. A dog was probably first domesticated because of its bark. The whine was a sound of appeal. Thus Franke's dog whined in order to get a box lifted; there was a bone beneath the box. Entreating sounds, cries for help, also threatening and warning cries were common amongst many animal tribes. Pain, fear, and anger might cause a dog to howl. Some animals did not express a sense of pain unless it were intense. Certain sounds made a dog howl. This might arise primarily from discomfort, but might afterwards arise from association. A cat whimpered and mewed mildly when she wanted a door opened. Her mew had a different tone when she was angry or hungry. Little guinea-fowl and pheasants soon learnt to run over to a "sod" to wait in expectation of a visitor turning the earth up to expose the worms. The bark, the tone of alarm was akin to the noise made by monkeys. It might, perhaps, develop into a battle cry, as a number of barking dogs would tend to intimidate adversaries, as happened in the case of men. The early training of dogs, horses, and other animals went far to obliterate any tendency to marked development of original lines of thought. It was to be doubted whether any great advance could be made in the development of a dog language. But that a series of combinations might be possibly made out of the sounds which adult dogs had at their disposal could not be doubted. The study of young dogs would be more fruitful in view of the fact that the vocal apparatus might be modified.

Parasitic Worms.

Dr. W. NICOLL gave an account of recent progress in our knowledge of parasitic worms. Dealing with the subject in all its various aspects, the address was of interest not only to zoologists, but also to medical men and veterinarians. Most attention was naturally devoted to matters of purely zoological importance, but economic and medical questions received as full treatment as time would permit. Dr. Nicoll dealt with the work of the last four or five years, and laid particular stress on the value of the advances in classification, morphology, and development made during that period. From the large mass of investigations which have been accomplished in this short period, the speaker selected the chief results of the most outstanding and best known authorities. Foremost amongst those he placed Looss, Fuhrmann, and Odhner, who have been mainly responsible for the great advances made in our knowledge of the flat-worms. Others whose work was specially mentioned were Railliet, von Linstow, Stiles, Ward, Lühe, Weinberg, and numerous other well-known helminthologists. Such a long list of distinguished names is evidence of the serious and extensive attention which the subject has been receiving. Of systematic work the bulk has been devoted to Trematodes, and many of the subdivisions of this class have been very thoroughly treated. The *Echinostomes*, for instance, the *Hemiuridae*, the *Paramphistomes*, and the *Monostomes*, have all been very amply dealt with. The great wealth and variety of

bird tapeworms, again, has been made a special study by Fuhrmann and by Ransom, while the tapeworms of mammals have also received some attention. The outstanding systematic work on nematodes has been that of Railliet and Henry, who in a series of short contributions have elaborated methods of classification which appear to be of permanent value. With regard to faunistic work Dr. Nicoll remarked on the constant addition of new and interesting forms, but at the same time he expressed the opinion that an enormous wealth of parasitic material remained entirely untouched and unknown. Outside Europe, only in the United States and in the valley of the Nile had any extensive attempt been made to investigate the parasitic fauna. A good beginning has been made in Australia, but Asia and South America are practically *terrae incognitae*. It is impossible to mention here the numerous morphological matters discussed in the address. Chief of these is the discovery made by Goldschmidt in 1909 that in the flat-worms the eggshell is not secreted by the so-called shell-gland, but by the yolk-glands, which have thus a double function, and possibly their nutritive function is the less important. Another interesting matter is the demonstration, based on a study of the nervous system, that what is usually regarded as the head of a tapeworm is in reality its posterior end. The most outstanding contribution to nematode anatomy is that of Looss on the human hookworm. This work is already familiar to most of our readers. Passing on to consider the bionomics and life-history of some of these forms Dr. Nicoll mentioned the discovery of the intermediate stage of the Japanese liver fluke (*Clonorchis endemicus*) and of the mode of infection of the Japanese blood fluke (*Schistosomum japonicum*). In the same connexion he also again referred to Looss's work on the hookworm (*Agchylostoma*), and to that of Leiper on the guinea-worm (*Dracunculus*). In regard to verminous toxins and their action in producing disease, reference was made to the recent work of Elmy and of Weinberg, a discussion on which took place at the annual meeting of the British Medical Association this year. The helminthic affections which have attracted most attention during the past few years have been schistosomiasis, ankylostomiasis, and hydatid disease. Considerable attention has been paid to the pathology of the first mentioned, but the most important new fact in regard to it is the discovery of the life-history of the parasite. With regard to the other two, full accounts have recently appeared in the JOURNAL of the most outstanding new work. Tallquist's work on *Dibothriocephalus* anaemia was also discussed, and mention made of the fact that he had been able to isolate toxic substances from the worms, which when injected into animals produced severe anaemia. The diseases of animals which Dr. Nicoll selected for particular mention were onchocerciasis and grouse disease. He, however, had nothing to add to the accounts published in the JOURNAL in the course of last year. The paper was a particularly comprehensive and lucid account of what is apparently becoming an increasingly wide and complex subject. The Association is to be congratulated on having had such an able exponent, and it might be well that a greater number of authoritative critical reviews of this nature should find a place at the annual meeting. We venture to think that they would be more readily received and serve a more useful purpose than some of the more isolated and inconclusive researches to which we have to listen.

SECTION OF EDUCATION.

Mentally Defective Children.

Dr. F. C. SHRUBSALL put forward the report of a sub-committee, which made suggestions for the examination of mentally defective children. In the more obvious cases of mental defect the current system of examination scarcely admitted of radical change at present. For the more doubtful cases, on the other hand, the existing resources seemed entirely insufficient. To send a child to a school for defectives had very serious consequences for it and for its parents, and there was a possibility of the matter becoming still more momentous in connexion with eugenical measures. "Nothing could be satisfactory short of a systematic examination at properly equipped central institutions. Such institutions were further and urgently needed for the purpose of research, since one of the main lessons to be drawn from the previous investigations was the desirableness of extending them." And as one of the chief difficulties in carrying out such a plan would be to find the necessary scientific experts, it seemed eminently desirable to take some steps towards encouraging the study of psychology among medical men. Several universities had recently instituted a systematic course of training and an examination qualifying for a diploma in psychological medicine. But this training would be of little avail for the present purpose, unless its pedagogical no less than its psychological aspect were duly regarded.

ECONOMICS AND STATISTICAL SCIENCE.

The Reformatory Treatment of Inebriates.

Dr. DAVID HERON, a Perth student, Assistant Professor of Eugenics, University College, London, contributed a paper on the results of the reformatory treatment of inebriates. He gave particulars of the records of over 1,900 inebriates who had undergone reformatory treatment, and, although a number of them had only been at liberty for less than a year, only 331 could be said to be doing well or to have reformed. Even this small number of successful cases would have been considerably reduced had all the inebriates been under observation for periods long enough to test adequately the permanence of reform. In Scotland, where nearly all the inebriates discharged had been followed up, the inspector under the Inebriates Act stated that only 12 out of 181 could be said to be doing well. Turning to the experience of the Girgenti Inebriate Reformatory, formerly used for inebriates committed from Glasgow courts, he said that out of 29 who had completed their sentences only 2 were doing well after two years of liberty, while the number of convictions against 23 inebriates whose records were carefully followed totalled at least 165 after discharge. In dealing with the influence of the reformatories in reducing the amount of public drunkenness, Dr. Heron doubted whether the committal of inebriates in such small numbers, and for such limited periods, could have any appreciable effect, and declared that in studying the condition of these inebriates the one fact which dominated all others was the appalling amount of mental defect among them. All the available evidence went to show that the mental defect preceded, instead of being the result of, the alcoholism, that inebriety was more an incident in the life of the inebriate than the cause of his mental defect. For the inebriates themselves there was little hope of improvement. Even if they were brought under reformatory treatment at the earliest possible age, they would, for just as long as they were kept segregated, reduce *pro tanto* their fertility. They would not, however, except in a few cases, be restored to a normal measure of self-control. The only remedy for at least two-thirds of the existing extreme alcoholism was the permanent segregation of the mentally defective child from school age onwards. They must deal with the mental defect of which inebriety was only a sign, not in the police-court, not in the inebriate reformatory, but *ab initio* in the school for mentally defective children. Cut off the supply of the mentally defective at the source and the problem of extreme alcoholism, to the extent of at least two-thirds, would be solved in a generation.

Sir HENRY CUNYNGHAME said that in his official experience he had an opportunity of observing the work of reformatories for inebriates, and they might fairly say that, so far as reformative effect was concerned, nine-tenths of their work was completely thrown away, the real reason being that the persons treated were in certain respects mentally defective, and were irreformable. He had a strong impression that the religious influence was the right mode, and, while using all the influence they could to get these women segregated, they should use their influence with the various churches to sink their differences completely, so that they might devote their united efforts to such service.

The Congress of the Italian Society of Internal Medicine will be held at Rome in the second half of October under the Presidency of Professor Baccelli. The questions to be discussed are: Hepatic insufficiency and its treatment; the cell-secretions in relation to clinical facts; fever from a clinical and pathological point of view; morphology in relation to

MEDICAL INSPECTION OF SCHOOL CHILDREN.

The Medico-Psychological Association of Great Britain and Ireland at its annual meeting adopted a report on this subject by a committee which was instructed to inquire into the propriety of the association framing and tendering to authorities advice on the search for and the definition of mental deficiency which is incompatible with the retention in elementary schools, with suggestions for the appropriate treatment of such deficiency, and to consider any other cognate matters.

The committee at once recognized the fact that, as regards general principles, it was to a great extent following in the footsteps of the Royal Commission on the Feeble-minded, and that it was dealing with subjects which were receiving current attention in other quarters. Nevertheless the committee has endeavoured to treat independently all questions on their merits, and on these lines it has come to conclusions which support the general findings of the Commission. It has, however, endeavoured to consider details from the personal and varied experience of its members, especially with regard to the scientific recording and following up the progress of mental defectives. It attaches considerable importance to the formation of a complete *dossier* of each defective; and it thinks that for the better study of a case of mental disorder, even though at the time of school mental insufficiency might not have been apparent, it should be possible to refer to its school experience.

It is of the opinion also that closer relations between the experiences of the school and the asylum, through the co-operation of the officers of each, will be advantageous. It is possible that a warning as to the occurrence in a parent of those forms of insanity which by their nature and time of happening may threaten to bring about early evidence of hereditary defectiveness of mind in the offspring, may be of some service in modifying normal education where such may produce stress on a possibly deficient brain.

The committee is strongly of opinion that, in spite of any statements to the contrary, the provision of suitable means of training for children with low intellectual power, and the elimination of means of education which are not suitable to such children, may be found to be economically helpful. Experience shows that it is almost impossible to say beforehand that any child cannot be of some service, however slight, to the community. Such an opinion can only be formed after the capacity of the child has been practically tested for some period of time, and obviously such tests cannot be applied unless there is appropriate machinery in existence. On the other hand, experience proves that under scientific regulation, such as exists at Darenth, considerable saving can be made out of the work of those who, without that work, would be troublesome drones. The committee feels certain that it is wrong, socially and economically, to allow considerable masses of mental deficiency to lie deteriorating in institutions without being afforded opportunity for practical trials. This opinion applies not only to the unfortunate children, but also to the adult stages which they may reach later on.

The following recommendations and resolutions were adopted:

Recommendations and Resolutions.

1. The committee, having seen the schedule of medical examination of children for mental defect, which appeared as an appendix to the annual report for 1909 of the Chief Medical Officer of the Board of Education, begs to endorse that schedule, suggesting certain amplifications (see Appendix I). The committee further considers that it is most desirable that authorities should arrange for facilities being provided for consultation in doubtful mental cases between school medical officers and recognized experts in mental disease, including the past and present medical superintendents of institutions for mental defectives.

2. That in all cases of mentally defective persons, provision should be made for a history of each case being kept as long as the case is under official supervision, and that records of the case should be preserved for reference. The committee further considers that the schedules of school medical inspection of every child should be preserved for future reference in case of mental failure at a later period of life.

3. When special provision has been made for the education of a mentally defective child under the Elementary Education (Defective and Epileptic Children) Act or otherwise, a report should be made to the local authority or other authority providing, by an expert, for the purpose of ascertaining the results, if any, of special treatment.

4. It is desirable that medical superintendents of county and borough asylums should be empowered to communicate with school medical officers about any cases under their care, whose children are attending elementary schools under the supervision of those officers.

5. The committee is of opinion that an essential feature in the solution of the mental defective problem should be that adequate arrangements be made for the permanent detention and control of mental defectives requiring such care.

6. The committee has no hesitation, after the inspection of Darenth, in expressing the opinion that the expense of the education and training of mentally defective persons, if properly conducted, is justified.

7. With regard to the suggestions for the appropriate treatment of juvenile deficiency, the committee has not been able to draw up any formal recommendation which would properly cover such an immense field of inquiry and at the same time be of practical use. The mere question of relative density of population renders it impossible to formulate any single proposition; so, too, does the difference in intelligence, natural habit of thought, environment, and anticipation of future calling and occupation which exists between urban and rural children: further, there has to be considered the obvious effect of variation in the extent of deficiency in any particular class.

The committee recognizes that, after all, the principal provisions for treatment must depend on the fitness, relative or absolute, of the defective for receiving modified education or training, independently of personal care and control, or the reverse. On such a footing appropriate provision will, with any necessary modifications, probably work out in the shape either of "special classes" or of institutional life, when by reason of their defect or of the unsatisfactory condition of home surroundings the special classes do not fulfil all requirements.

With regard to the special classes, in certain cases the only chance of justice being done to mentally defective children would appear to lie in co-operation between areas which cannot afford to make provision by themselves. In a large town of 160,000 inhabitants—Mannheim—a system is adopted which is set out in Appendix II.

With regard to the second line of treatment—the institutional—there is room for difference of opinion. But the committee puts forward (see Appendix III) a suggestion of a colony which it thinks has much to recommend it in convenience, economy, and benefit to the afflicted. It is quite recognized that all such propositions must be made subject to the details of the legislation which is so imperatively and universally demanded; but it is confidently thought that such legislation will not contain any provisions that will be inimical to the general idea.*

Though, of course, this suggestion is adaptable to the care of the feeble-minded in all classes of area, it gives chief consideration to the requirements of a rural county area. The principles must be the same everywhere; but there are differences between urban and rural areas which require different practical treatment. The comparative density of population is such a difference.

Since in certain cases continuity and permanence in supervision of mentally defectives is now admitted to be essential, the committee has rather gone beyond the childhood limit in its ideas, believing that economy and efficiency can be secured only by considerable concentration, and by avoidance of a break in that supervision.

The committee is of the opinion, also, that the existing institutions for idiots, such as Earlswood, the Royal Albert Asylum, etc., may be taken as models of institutions that will be required for such mental defectives as cannot be conveniently treated in colonies. Their present geographical distribution permits of the existing institutions becoming nuclei for certain districts, others being required

* Since this report was drafted it was found that the legislation proposed does not in any way interfere with the institution of colonies.

to fill up gaps, so that the whole of the kingdom should be supplied with such accommodation.

APPENDICES.

I.—*Schedule of Medical Examination of Children for Mental Defect.*

Note.—The object of the following schedule is to facilitate the investigation of suspected cases of mental defect. It is of a suggestive nature only, and is printed in the present form for the convenience of school medical officers making inquiries into the mental condition of feeble-minded children.

I. *Name of Child, Address, Name of School.*

II. *Particulars of Home Conditions, Environment, School Attendance, and other Factors.*

III. *Family History.*
Insanity, Feeble-mindedness, Alcoholism, Tuberculosis, Miscarriage, Syphilis, Epilepsy, other Characteristics.

IV. *Personal History.*
Constitutional Defects, Injury at Birth, Malnutrition, Rickets, Diseases of Childhood, Commencement of Teething.
Walking.
Speech, etc.
Physical State of Mother. Length of Gestation, Convulsions, Accident.

V. *Physical Conditions.*
(*a*) *General.*
Speech: Defective articulation.
Sight: Blindness, total or partial, errors of refraction.
Hearing: Deaf-mutism, partial deafness, partial mutism.
Nose and throat: Enlarged tonsils, adenoids, mouth breathing.
Control of spinal reflexes and of salivation.
(*b*) *Stigmata.*
General retardation—Cretinoid development.
Cranium—Microcephaly, hydrocephaly, asymmetry, rickets, imperfect closure of fontanelles, simple head measurement.
Hair—Double and triple vortices, wiry or supple.
Face—Irregularity of features.
Lower jaw—Protruding or receding.
Eyes—Mongoloid, presence of epicanthic fold.
Ears—Size, setting, conformation, lateral symmetry, size of lobes, attachment of lobe to the cheek, supernumerary lobules.
Tongue—Enlarged, furrowed, papillae enlarged.
Teeth—Irregular, absent, enlarged incisors.
Palate—Arched, narrow.
Fingers—Webbed, clubbed, defective in number or shape, supernumerary digits.
Limbs—Excessive length of upper limbs.

VI. *Mental Conditions.*
(*a*) *Reactions of Motor Mechanism.*
1. Formation of Motor Ideas. (Execution of simple and new movement from imitation.)
2. Storage of Motor Ideas. (Execution of simple familiar command by word of mouth.)
3. Power of control, initiative, purpose, and concentration. Success of motor output. (Execution of familiar complex movement.)
4. Motor Incompetence. Attitude in standing—Position of head, spine, and knees. Gait. Position of arms, hands, fingers, in horizontal extension. General balance.
5. Motor Instability. (Habits.) Rocking of body, Rubbing hands, Spitting, Biting nails, or Licking lips.
6. Motor Disturbance. Tremors (face, hand, tongue), Chorea, Epilepsy, Aphasia, Hemiplegia.

(*b*) *Reactions Resulting from Sensory Stimulation.*
1. Attention to colour, shape, size, smell.
2. Formation of Mental Images
(*a*) Recognition; objects, sounds.
(*b*) Description.
3. Association of Ideas.
4. Judgement (for example, length, size, distance).
5. Relationship (similarity, contrast, symbolism).
6. General concepts (possession, self-protection, purpose, concentration, initiative).

(*c*) *Emotional Conditions:* Interest, excitement, aggression, co-operation, affection, etc. (positive or negative).

(*d*) *Tests of Intelligence*—
1. Description of pictures, models, objects, familiar events.
2. Letters, words, reading (word blindness).
3. Counting, manipulation of simple numbers, simple money values.
4. Writing.
5. Manual Tests.

(*e*) *Tests of Will Power (under the above headings).*

VII. *Diagnosis.*—
(*a*) Physically defective—stating defect.
(*b*) Blind or partially blind.
(*c*) Deaf-mute or semi-mute or semi-deaf.
(*d*) Epileptic.
(*e*) Merely dull or backward.
(*f*) Mentally defective (Feeble-minded).
(*g*) Imbecile.
In this group, the symbols "a" to "g" are intended to be correlated when necessary.

VIII. *Treatment recommended.*
(i) An ordinary public elementary school.
(*a*) Normal.
(*b*) Normal, but backward.
(ii) A special class for dull and backward children.
(iii) Special school (day or residential).
(*a*) Feeble-minded
(*b*) Moral defective
(*c*) Epileptic
With notes as to after-care, custody, and the degree and character of manual training and ordinary school teaching likely to be advisable.
(iv) Unsuitable for special schools—
Imbecile, ineducable, invalid.

Note.—The above Schedule of Medical Examination was published by Sir George Newman, M.D., F.R.S.E., in his official report to the Board of Education for 1909, p. 208. The Committee have made several minor additions, with the full approval of Sir George Newman.

II. *The Mannheim System.*

The following is a short sketch of this system, communicated by one of the committee, Dr. Auden of Birmingham, who has studied it *in loco*.

The principal elementary schools correspond to what we should term normal schools. There are eight classes or grades, through one of which each child should pass each year between the ages of 6 and 14. Ninety per cent. of the children do so. For the brilliant scholars, various forms of secondary education are amply provided. If, however, at the end of a year, a child cannot satisfy the teachers that it is fit for promotion, it is relegated to another and parallel system of classes, the "coaching" or "repeaters" classes. Here during the next year it practically repeats the work of the class in which it failed to progress. It is important to note that, whereas in the chief classes the maximum teaching of children per class is 45, in the repeaters class the maximum is brought down to 35. If the child progresses sufficiently well he goes up a grade in this school each year. If he regains ground he is sent back to the chief classes, but will always be one year behind his class-age. The classes are divided, so as to allow of more individual attention. If, on the other hand, a child does not get on properly, it is sent to a third parallel series of classes, the "auxiliary" classes which are held in the same buildings as the "coaching" or "repeaters" classes. These, in Dr. Auden's opinion, are in strict conformity with the Special Classes established in England under the Defective Children's Act of 1899. Here the teaching is more concentrated still, the staff being as 1 to 20 as a maximum, but as a rule there are only fifteen children in a class, which is divided further into two divisions. At this point medical research comes into play, for each child's case and history are accurately taken, and it is very carefully examined by the School Medical Officer for any mental or bodily defects before it is sent to these classes; in doubtful cases the child is sent back to the coaching class. There are preparatory classes attached to this division, in which, as also in the lower classes, the teaching is on the kindergarten system. All through this series of classes the training is largely manual, the children attending the ordinary manual centre with the children from the normal classes. The children are retained in this series until 14 years of age, being carefully looked after as to food, clothing, etc., by a special committee. It is somewhat surprising, and certainly satisfactory, to read that the majority of those who pass through the auxiliary classes become self supporting. There is yet another receptacle for defectives, the idiot asylum, for those who fail to come up to the standard of the last school. This is maintained by the State, and not by the education authority. The proportions of children in the schools are about 90 per cent. in the chief classes, 10 in the coaching classes, and 0.6 in the auxiliary. It will be noted that this system allows plenty of time for the child itself to demonstrate its capacity for learning, and for the discovery and correcting, if possible, of any physical causes of retardation; it avoids the wasting of slow or damaged brain power by vain endeavours to teach it with those of higher mental capacity, or, on the other hand, by throwing it on the rubbish heap through neglect; it obviates the waste of teachers' time and energy which depend much on having only one standard of brain to develop at one time; it concentrates teaching where it is most needed; and it is very comprehensive and thorough. The main classes are, as

a rule, held in the smaller schools of the six districts into which the town is divided for administrative purposes: the repeaters and auxiliary classes are held for the most part in two large two-department district schools. There is thus no stigma attached to these children, such as is found to attach in England to those who have been transferred to the "silly" or "balmy" school—a stigma which often sticks and prevents the children from obtaining work afterwards. At the same time the removal of the lower-grade mental defectives (as is contemplated in the 1899 Act in England, but is not strictly carried out) removes the chief objection of parents to send their children to a "special school." The cost is high, but the authority can pride itself on doing its best not only for the sound brain, but for strengthening and preserving that which is weak or damaged. The number of children receiving education in the Public Elementary Schools in Mannheim is about 26,000. The system depends upon a careful decentralization into complete educational districts. It has been put into practice in many large Continental towns, either in part, or entirely, for example, Bale, Brussels, Copenhagen, Stockholm, Vienna, and in many large German towns.

III. *Plan of Colony System.*

When, for reasons before stated, it is found that institutional life is required, the committee thinks that the central idea should be that of a colony in one or more selected places in an area. It thinks that there should be rigid adhesion to the principle that prospect of improvement by education and training in handicraft should be the essential qualification for admission. It thinks that the machinery of a colony should not be used under any circumstances for the purpose of detention solely.

The children may be divided into the following classes:

1. Mentally defective who are not epileptic.
2. Mentally defective who are epileptic.
3. Epileptic children who are either not at all defective mentally as far as educational purposes are concerned, or who are merely dull or backward.

The form of education will be of three types:

(1) Physical Training.
(2) Purely Manual and Industrial Training.
(3) General Mental Education.

The general arrangements will have to be framed to afford the education or training best suited to each class. Obviously, those epileptic children who are only excluded from the normal elementary school on account of their physical disease should not lose their right to general education, which may advantageously be combined with such manual training as will facilitate their becoming useful to a certain extent in after-life; on the other hand, the lowest class can only receive strictly manual training.

The fact of epilepsy complicates the whole position, for while many epileptics are much the same as other children except for the convulsions, there is potentiality of their being or becoming defectives of an undesirable nature, while they are often morally defective, and always are a source of harm to other feeble-minded children, who frequently are mimetically impressionable.

A word may be said here about moral imbeciles, who assuredly will have to be provided for somewhere. Assuming that radical improvement in the moral direction is not to be looked for, these still have to be taught, especially in the manual form. For this reason it would appear to be right to include them as scholars in the colony, since it would possess suitable means of giving such training. At the same time as many of them are criminals or quasi-criminals, their inclusion will entail a certain amount of provision for forcible detention, which may be a drawback to the general comfort. In any case they would have to be housed by themselves. By day they could mix under rigid supervision with the other children undergoing manual training.

To provide the manual and industrial instruction there should be a comprehensive set of workshops for such trades, etc., in which the children may be reasonably expected to acquire proficiency. A laundry, and possibly a needle-room, should be attached for training the girls.

As far as possible, the training of the children should commence on the kindergarten idea, and we think that the school should be staffed as far as possible by females, since they are found to be more apt and patient than men in such work.

For the adults such provision as can be seen at Darenth would appear to be suitable and sufficient. Some of the aged defectives might have manual occupation with the children, for which Darenth also supplies a precedent. Thus they would be taken away from the more vigorous life of the adult shops. A competent craft master should direct the work in the shops.

The adults, after being trained in the schools, may well be housed in cottages on the estate containing from ten to twenty each as may be found desirable. The houses for the men would be conducted by the training staff and their wives, while the nurses and teaching staff would take charge of the women.

The colony should be provided with sufficient land to afford training and occupation for those defectives whose condition, physical and mental, is suited to garden and farm work. Probably a larger number of defectives are capable of being usefully employed in simple outdoor work than in more technical handicrafts.

THE NON-OPERATIVE TREATMENT OF CANCER.

THE address of Professor CZERNY of Heidelberg at the meeting of German scientists and physicians in Münster is a carefully weighed and cautiously expressed message of warning to the public. He states that while a number of methods are undoubtedly capable of influencing the course of the disease, it is hopeless to apply any of them in advanced cases, in which secondary growths have appeared in the internal organs and marked cachexia has supervened. Before it is permissible to speak of cure cases must be watched for many years, and even then the determination of the value of a method of treatment must be made with great care, since the variability of the course renders statistical evidence of doubtful accuracy. In Germany upwards of 50,000 persons die each year of cancer, and if the facts that approximately one-third of the cases operated on remain free from recurrence, and, further, that the average duration of life after the onset of cancer is somewhere about two years, are taken into consideration, it is probable that at least 100,000 persons are suffering from cancer in Germany at any given time. The old principle still holds good, that the earlier and the more radically a commencing cancer is removed, provided that it is local, the greater is the chance that the cure will be lasting. In cancer of the face up to 80 per cent. and in mammary cancers up to 40 per cent. of cures are obtained in this way. The public does not hear of these results, because the surgeon does not advertise his successes; but whenever a failure occurs the news travels apace. Most surgeons know only too well that some forms of cancer nearly always recur after operation, and do not operate in these cases. But this is no ground for giving up operation altogether, as this would mean throwing away all that surgery has accomplished in the struggle against cancer. There is scarcely an experienced surgeon who is not able, after a practice of many years' duration, to record hundreds of permanent cures of cancer, clinically and histologically proved to be such.

In tracing the methods which have been adopted to treat cancer without operation, Czerny instances Busch's and Volkmann's production of erysipelas, Coley's fluid treatment, the various forms of "toxin" treatment introduced by Adamkiewicz, O. Schmidt, Doyen, Wlaëff, as well as tuberculin and crotalin treatment, as having failed to lead to striking results. The processes of haemorrhagic softening, necrobiosis, caseation, fatty degeneration of the cells and replacement by scar-like connective tissue, have been described as retrogressive changes, but Nature alone fails to clear the whole field, and the remains of the growth after the destructive processes have taken place only develop a more rapid overgrowth. It is therefore necessary to attempt to imitate and supplement Nature's efforts to effect a cure. After briefly referring to the experimental work of Hanau, Morau, Jensen, Ehrlich, Bashford, and others, he admits that the explanations offered for the failure in a percentage of cases to implant a tumour with success are not entirely satisfactory. Next he turns to the attempts to utilize immune substances in the treatment of cancer, and states that the employment of these substances has not effected any apparent result in man. In speaking of chemiotherapy he mentions the interesting experiments of von Wassermann and Keysser, who injected selenium-eosin into the tail veins of mice, and succeeded in causing

the tumours to break down. In a very few cases actual cure was obtained. The therapeutic dose of this mixture is, however, so close to the toxic dose that no one has dared to apply it to man. Neuberg and Caspari have reported excellent results with copper and zinc, and Gaube de Gers with colloidal copper. In Czerny's own institute R. Werner has employed cholin in the form of a combination of boron and cholin, and has been successful in following out an energetic action which the radio-active substance exercises on the tumour cells. Professor Czerny says it is too early to speak of the effect of this form of treatment in man at present, but he claims that it is useful in what he describes as the combined treatment. Passing on to other methods, he speaks of arsenic cautery pastes. Hebra employed Cosme's paste with success in lupus and facial cancer. Zeller is using a modification of this paste, and has obtained remarkable results not only in superficial skin cancers but also in breast cancers and even in cancer of the cervix. Here, again, it is too early to speak of cure. Czerny is not prepared to determine what part in the beneficial effect should be ascribed to the silicic acid of the Zeller treatment. Various forms of arsenic have been tried with varying degrees of benefit. Ehrlich has suggested that neosalvarsan may prove more advantageous when locally applied in cancer than old salvarsan, as the former is soluble in neutral media and is easily diffusible. He passes over the so-called blood-purifying agents, such as guaiacum, salicin, formic acid, calcium, lecithin, and many others, with the remark that their beneficial effects are little apparent. He next discusses the light treatment, following up with x rays, radium, actinium, mesothorium, thorium x, and the like. The rays emitted from these preparations vary in their power of penetration, but attack young, rapidly growing cells in preference to other cells, destroy their nuclei, and by destroying the cells themselves cause the growths to disappear. But this form of treatment does not protect against recurrence. Czerny warns the operator against destroying in this manner too much tumour tissue at once, as the absorption of the products of disintegration may kill the patient. Fulguration and short-spark treatment are also dealt with, and it is pleaded for this method that in some cases the removal of nodules and remains after operation may be performed in this manner with advantage. At all events, he prefers the electric method to the destruction of tumour masses by carbonic acid snow.

Before concluding with a description of the combined treatment, which he regards as the best plan to work on, he makes some highly suggestive remarks on the duty of the State in regard to the cancer problem. Vast sums of money are spent on the combating of tuberculosis, leprosy, syphilis, and other diseases, but little is expended on the most terrible of all the diseases. It is necessary, in view of the large number of new suggestions which have been made for the treatment of cancer, to sift and study each medicament and method with care. This work can be adequately carried out only in a properly equipped institute. Dr. Czerny considers himself fortunate in having been placed at the head of such an institute in Heidelberg by the generosity of the German industrial firms, of rich individuals, and of the Government of Baden. If, he continues, the highly civilized nations—England and Germany—could be induced to build one Dreadnought less each and to invest the £2,000,000 in forty cancer institutes in each country, he is certain that the cancer problem would not only be solved within fifty years, but the number of those suffering from cancer would be reduced to one half.

The combined treatment, which has been applied to about 2,000 cases in hospital and about 1,000 out patients, is described somewhat as follows. When no contraindication exists against operative removal, the tumour is excised as radically as possible. In serious heart or vascular disease, in diabetes, nephritis, or in those tumours which recur almost constantly, the mass is cauterized by one or other method, or radiotherapeutic or chemiotherapeutic methods are substituted for the operation. In some cases dissemination is prevented by combining operation with fulguration, electric arc light, cauterization, diathermia, or x rays. The general condition is improved by giving Fowler's solution, sodium cacodylate, or some other arsenical preparation. Superficial cancers are healed by means of arsenical paste, electric cauterization or radiotherapeutic measures. In round or spindle-cell sarcoma with bad prognosis, an energetic radiotherapy is employed. In inoperable desperate cases a variety of the means previously enumerated must be cautiously applied, and one or other combination selected. X rays may be used locally, or radium or mesothorium may be tried. At the same time, thorium x or boron cholin may be injected either intravenously or subcutaneously or into the tumour. After two or three weeks' treatment a pause of one or two months is allowed to intervene, during which arsenic or silicic acid and general tonic treatment is given. Then the local or general treatment is again taken up. In each case it is necessary to individualize, and by careful selection of the remedies which may suit each patient considerable benefit may result.

REPORTS OF SANATORIUMS FOR TUBERCULOSIS.

King Edward VII Sanatorium.

THE fifth annual report of this sanatorium, recently published, states that the increasing number of applicants for admission and the fact that the sanatorium is always full prove that the objects for which it was founded have been largely achieved. Like all institutions of a similar nature, there is too great a proportion of advanced cases among those admitted, but lately a strict examination of candidates has improved matters, and a fair proportion of the patients now belongs to the earlier stages. During the twelve months under review all the beds in the sanatorium were occupied continuously. During this period 271 patients were discharged from the institution. Of this number, 91 patients, or 33.5 per cent., came within the definition of "early cases"; 115 patients, or 42 per cent., were cases of moderately advanced disease; and 41, or 16 per cent., were suffering from the disease in its more advanced stages. The remaining 21 patients gave no positive evidence of pulmonary tuberculosis. The routine treatment prescribed for the patients during the period covered by the report followed very closely the lines detailed in previous reports. Tuberculin has not been included in the routine treatment, but was given to a few selected cases. The report, which is drawn up by the consulting staff, states that, with the value of tuberculin still a matter of controversy, it is well to have available reliable statistics with regard to the results of treatment of a large number of patients to whom no tuberculin was given. Such statistics are of distinct value as a "control." The number of patients treated and discharged since the institution was opened in 1906 until the end of June, 1911, was 1,270. Of this number only very few had a systematic course of tuberculin treatment. Treatment by vaccines prepared from organisms other than tubercle bacilli separated from the sputum proved disappointing. The results would suggest either that mixed infection plays a less important part in pulmonary tuberculosis than is often stated, or that it is very difficult to separate the particular organism which is responsible for the mixed infection. The ultimate results of 935 cases are as follows: Well, 431; alive, 122; dead, 283; and unknown, 99. From the statistical tables it appears that 160 males and 111 females were admitted during the year; the majority of cases—132—were from 20 to 30 years of age. The cases were divided into three groups, following the nomenclature of the International Tuberculosis Committee. Group I included those in which the disease was of slight severity, limited to small areas of one lobe. Group II, disease of slight severity, more extensive than Group I, but affecting at most the volume of one lobe, or severe disease, extending, at most, to the volume of one half lobe. Group III, all cases extending beyond Group II, and all with considerable cavities. In 54.9 per cent. of the cases in Group I the disease was arrested, in 34.1 per cent. much improved, and in 4.4 per cent. improved; in 6.6 per cent. it was stationary. In Group II the disease was arrested in 12.2 per cent., in 51.3 per cent. much improved; 19.1 per cent. were stationary, and 5.2 per cent. were worse. In Group III in none was the disease arrested, 20.5 per cent. were much improved, 35.1 per cent. were improved,

22.7 per cent. were stationary, 15.9 per cent. were worse, and 4.5 per cent. died.

From the laboratory report it appears that only a small proportion of specimens of sputum were examined, owing to the absence of the pathologist. In 74 patients examined 27 were found to have tubercle bacilli in their sputum, equal to 36.48 per cent., while in 47 cases the tubercle bacillus was not found. The report closes with notes of a visit the pathologist, Dr. Radcliffe, paid to some of the most important centres of bacteriological research on the Continent, and deals with the value of the treatment by tuberculin, with von Pirquet's reaction in relation to diagnosis, with the complement fixation reaction in tuberculosis, and with experimental work on the effect of digestion on tuberculin.

Adirondack Cottage Sanitarium.

The twenty-seventh report of the Adirondack Cottage Sanitarium (thus spelt by our friends across the water) has just been issued. This institution is situated at Saranac Lake, New York, in the St. Regis Lake region. One feature in connexion with this charity, mentioned in the report, is that it has no auxiliaries pledged to its support, no regular subscription list, no committee whose duty it is to raise funds; but it has always depended—and so far its confidence has not been misplaced—solely on the voluntary contributions of its friends, mostly visitors to the Adirondacks.

Dealing with the medical part of the report, we find, as is the case in this country, that fewer incipient cases have presented themselves for admission, and this, no doubt, is owing to the fact that a greater number of incipient cases first try to get well under home treatment, and it is only if this fails that they apply for admission to a sanatorium. Dealing with the system of classification, the cases under the heading "apparently cured" have diminished appreciably during the last two years. This, the report states, is not, as it would appear at first sight, due to a real falling off in the percentage of good results, but is no doubt principally owing to the much more stringent and searching laboratory methods which are applied in making the classification, such as centrifugalization of the expectoration, improved staining, and even cultural methods, and an increase in the number of tests made during the three whole months when the patient's secretions are required to be free from bacilli. Further, many patients from whose expectoration the bacillus has disappeared leave the institution before the end of the three months of observation required to place them in the apparently cured class have elapsed. Some notice must be taken of one feature of treatment which is of the utmost value to the patients. Every Sunday morning a talk is given to all new patients on the causes and nature of the disease, methods of guarding against infection, the principles of modern and institutional treatment, and what results may be fairly expected from treatment. On Monday morning the staff meets for general discussion of various problems arising as to individual patients, and to hear a brief paper by one of the members. Once a fortnight there is a meeting of the patients, at which a talk is given by a member of the staff on the fundamental principles of treatment, and the influence of fresh air, rest, exercise, and food are discussed and explained. This educative form of treatment is highly to be commended. Of the 304 cases treated at the sanatorium during the year, 106 remained at the end of the year. Of the 198 patients discharged, 27 were apparently cured, in 101 the disease was arrested, 42 were improved, 23 were unimproved, 2 died, and 3 were doubtful. Of 174 cases admitted, the expectoration of 81 contained bacilli, and in 93 it was not found: 155 patients were treated with tuberculin in conjunction with the usual open air and climatic plan, and in 95 of those reported on 13 were apparently cured, equal to 14 per cent.; in 48, or 51 per cent., the disease was arrested, 24, or 25 per cent., were improved, 8, or 8 per cent., were unimproved or failed, and 1 died. The medical staff is large, and examining physicians look after cases in New York, Baltimore, Philadelphia, and Boston.

As the result of the new Prussian law on cremation two crematories have recently been opened, one at Hagen in Westphalia, the other at Frankfort-on-Main.

LITERARY NOTES.

THE Cambridge University Press announces that eight new volumes in the *Cambridge Manuals of Science and Literature* will be published on October 1st. The series will then comprise fifty titles. Among the new volumes are *House Flies and How they Spread Disease*, by C. G. Hewitt, and *The Psychology of Insanity*, by Bernard Hart, M.D.

It will doubtless interest the many lovers of old books among our readers to learn that Messrs. W. and G. Foyle, the well-known booksellers, have found it necessary to take larger premises at 121–123, Charing Cross Road. Throughout the six floors in these buildings there are over 1,000,000 volumes arranged in strictly classified order. It is stated that at the time of the Crippen trial the treatise on homœopathy that could not be found in any library or bookseller's, and on which practically depended the result of the trial, was obtained within a very short time from Foyle's, and the firm received a personal congratulatory letter from the Lord Chief Justice.

The Royal Academy of Medicine of Turin has published the terms of competition for the thirteenth award of the Riberi prize, which is of the value of £800 less Government tax. The period of competition extends to December 31st, 1916. All works offered must deal with medical science. They may either be in manuscript or printed; if printed they must have been published since 1911. They may be written in Italian, Latin, French, English, or German. Information as to the other conditions may be obtained from the General Secretary of the Academy, Dr. V. Oliva.

We are asked to state that copies of the *British Pharmaceutical Codex*, reviewed in the JOURNAL of January 13th, 1912, p. 95, can be obtained on approval for seven days by doctors in practice. Application should be made to the Pharmaceutical Press, 72, Great Russell Street, London, W.C.

We have received a copy of a *Class Catalogue of Current Serial Digests and Indexes of the Literature of Pure and Applied Science* exhibited at the meeting of the Library Association held at Liverpool on September 2nd and four following days. The *Catalogue* forms an appendix to a paper prepared for the meeting by Messrs. E. Wyndham Hulme and Charles Kinzbrunner. Its object is to indicate those periodicals which profess, by means of abstracts or index references, to record the output of the press in so far as it relates to their special provinces. We agree with the authors that such information, presented succinctly and revised periodically, should form a part of the bibliographical equipment of every librarian. We know of no existing publication which exactly covers this ground. The compilers say that "if a favourable reception is accorded to this experiment, it may be possible to arrange for the periodical publication of a handbook on similar lines, but comprising all branches of literature." We congratulate Messrs. Hulme and Kinzbrunner on their successful performance of a task which can only have been inspired by disinterested enthusiasm, and we hope that so useful an undertaking will receive the support which it deserves.

Among the contents of the third number of *Bedrock*, which will be published on October 1st, are Ancient Human Remains and their Bearing on the Antiquity of Man, by Professor Arthur Keith; and Modern Vitalism, by Hugh Elliot.

DR. G. HAYDEN (Eltham, Kent) writes: In the BRITISH MEDICAL JOURNAL of this week in the "Literary Notes," you give some extracts from the work of a student who endeavoured to use the art of poetry as an aid to the study of medicine. Some twenty years ago at the London Hospital a fellow student also hit upon this artful device, and I venture to think with more success. At the present moment I can only call to memory his terse and dramatic description of malignant endocarditis; all the salient features are presented, and could be elaborated in the examination room. It was as follows:

> Pallor of face, and petechiæ of skin,
> Terrible temperatures, rigors set in;
> Shifting heart murmurs, and optic neuritis,
> Typhoid's not in it, it's endocarditis.

British Medical Journal.

SATURDAY, SEPTEMBER 21ST, 1912.

ISOLATION HOSPITALS.

THE Local Government Board in England has issued an important report[1] by Dr. H. Franklin Parsons on isolation hospitals. It takes the form of a supplement to the report of the medical officer of the Board for 1910-11, and an introduction is contributed by him. The inquiry upon which the report is based was carried on by Dr. Parsons from time to time as opportunities occurred during his official connexion with the Board, and has been completed by him since his retirement. The primary objects of the inquiry were to investigate the complaints received by the Board concerning the large and increasing cost of construction of isolation hospitals, and to furnish instances of satisfactory hospitals which have been erected at a reasonable cost. Dr. Parsons has been assisted in his inquiry by Mr. B. T. Kitchin, F.R.I.B.A., architect to the Board. The report is described as a supplement to that *On the Use and Influence of Hospitals for Infectious Diseases*, written by the late Sir R. Thorne Thorne, first issued in 1882 and reprinted in 1900. The new report, however, seems really to replace rather than to supplement the earlier, and will, there can be no doubt, be of the greatest value and assistance to local health authorities.

The increased cost is shown to be in part due to increase in the cost of labour and building materials, and a greater desire for efficiency; but the fact that the cost of recent isolation hospitals has varied from £300 to £500, and even more when calculated in relation to the number of beds provided, shows that there must have been room for economy in many cases. It is, however, admitted that in some cases the excessive cost has been caused by the high price paid for the site, due in many instances to the objections of local residents, and in others to the heavy expense involved in preparing the site for building. Dr. Parsons lays it down that an isolation hospital should be provided in every populous district for the reception of infectious cases, at least for such as are without proper lodging and accommodation, or which occur under circumstances involving special danger to the public health, and in particular for the reception of the earliest cases in an outbreak. He points out, however, that, by combination of small districts to make the necessary provision in a single building, important economies may be effected, especially in the preparation of the site and in the water supply and drainage; the classification of patients according to the diseases from which they may be suffering is facilitated, and it becomes easier to maintain a competent administrative and nursing staff. Dr. Parsons gives special attention to the consideration of what is conveniently called "cross infection." The term embraces cases in which a patient may be admitted suffering from two specific diseases or from secondary infections, as in scarlet fever or measles, and also the conveyance of specific infection from one patient to another. On this account it is necessary to make adequate provision, whatever the size of the hospital, for separating patients, but what adequate provision means varies in different affections. In those of what Dr. Parsons calls "short-striking distance," a space between beds sufficient to prevent direct contact and the transference of droplets of mucus in coughing, together with careful aseptic nursing may suffice, but in infections of a more diffusible character complete aërial separation is necessary. It has been sought to obtain this end in more than one way. It may be assumed that every isolation hospital ought to consist of two or more ward blocks, and these blocks appear to be of two principal types, which are illustrated by block plans prepared by Mr. Kitchin. In the one the wards each contain four or more beds, and are connected together by enclosed communication. This is the most economical and convenient plan for the simultaneous treatment of a number of cases of the same disease. In the other form, each ward contains one or two beds only, and is separately entered from the open air. A hospital on this plan costs more per bed to erect, and involves more work in attendance, but owing to the facility it affords for classification of patients a given number of beds can be used for a greater variety of cases than where the wards are larger, and it is much easier to deal with cases in which the diagnosis is still doubtful. The plan of dividing the larger wards into cubicles by glass partitions, which was, we believe, first adopted in one of the children's hospitals in Paris, is mentioned, and it is pointed out that, while it presents considerable advantages in respect of isolation, it demands a high standard of nursing with scrupulous attention to detail.

The use of what are commonly called temporary materials, such as galvanized iron lined with matchboard, or wood or iron lined with asbestos, is discussed, but, apart from the risk of destruction by fire or storm, it is pointed out that the cheapness of such buildings as compared with permanent hospitals is not in reality so great as may at first sight appear. The cost can be properly compared only when the expenditure on site, water supply, drainage, furniture, and other requisites are included, and this may easily amount to more than the building itself. Further, though this no doubt is a remediable objection, in the temporary buildings supplied by makers of such constructions, the bed-space allowed is less than the Board's standard, and they are commonly very deficient in means for the classification of patients and in accommodation for the staff. In this connexion it may be noticed that it is recommended that the minimum cubic space in wards of the ordinary type should be reduced from 2,000 to 1,872 cub. ft. per bed, with a floor space of 144 sq. ft., and a wall space of 12 ft. for each patient, as at present. This would allow a pavilion containing two rows of beds to be 24 ft. instead of 26 ft. wide. It is added that in properly ventilated cubicles and single-bed wards, in which the patient is completely separated from any other, a further reduction in the number of cubic feet might be allowed.

Dr. Parsons devotes one chapter of his report to a discussion of the utility of isolation hospitals in preventing the spread of disease. In this connexion he discusses the suggestions first put forward some twenty or more years ago by the late Mr. Brendon Curgenven, and more recently advocated in papers published in the JOURNAL by Dr. Milne, as the result

[1] Report on [illegible] By H. Franklin Parsons, M.D. London: Wyman [illegible] Edinburgh: Oliver and Boyd; Dublin: E. Ponsonby. (Cd. [illegible] Price 1s. 7d.) To be obtained through any bookseller.

of his experience at Dr. Barnardo's Homes in connexion with scarlet fever. His treatment is described in the report as the rubbing in of pure eucalyptus oil over the whole body twice a day during the first four days, and afterwards once a day until the tenth day of the disease, and the swabbing of the tonsils and pharynx with carbolic oil (1 in 10) every two hours for the first twenty-four hours. Dr. Parsons points out that Dr. Milne lays it down that this treatment must be applied at the very commencement of the illness, a condition which it may be possible to fulfil in an institution such as a school or orphanage, but not commonly possible in the homes of the poor, where medical assistance may not be sought until the disease is established and others probably infected. The method was tested by Dr. Biernacki at the Plaistow Hospital for a year in every case of scarlet fever. It was found that cross-infection became commoner, that an unusual number of probationers contracted scarlet fever in the course of their duties, and that a larger proportion of doubtful cases of scarlet fever developed the disease after going to the convalescent home. In addition, though this may have been due to coincidence, the percentage of return cases rose above the average. It is noted, however, that a modified system of antiseptic nursing has been found by Drs. Rundle and Burton to give good results at the Liverpool City Hospital, Fazakerley.

Isolation hospitals will, however, in any case continue to be required for patients who do not enjoy proper accommodation at home, or in instances in which the case occurs under circumstances involving special danger or alarm to the public. There is, therefore, no near prospect that local authorities will find it unnecessary to be provided with hospital accommodation for the isolation of infectious diseases. Among other reasons mentioned for this conclusion is the occurrence of unrecognized or unnotified cases. Such cases are apt to be numerous at the present time when the type of scarlet fever is mild, and are a frequent source of infection at school and elsewhere. It also seems now to be established that scarlet fever is much more infectious at an early stage than used to be supposed. On the vexed question of "return cases" the conclusions are that they cannot be obviated by prolonged detention in hospital, and that the infection appears to persist in mucous discharges from the nostrils, throat, or other organs, rather than in the desquamating epidermis.

With regard to small-pox, Dr. Parsons is emphatic as to the value of isolation in a suitably situated hospital in preventing the spread of the disease. Owing to the active and far reaching nature of the infection and the persistence with which it clings to places and articles of clothing and bedding, a case of small-pox kept at home is a greater danger to susceptible persons in a house or neighbourhood than one of scarlet fever or diphtheria, and the increasing proportion of the population who are unprotected by vaccination makes it the more important to place a patient suffering from small-pox where he will be surrounded only by a cordon of efficiently vaccinated persons. Small-pox hospitals must be situated at a safe distance from populous areas if they are to be effectual in preventing the spread of the disease, and may therefore be very costly, though Dr. Parsons considers that they may be used at times when not likely to be required for their primary purpose as sanatoriums for consumptives or as convalescent homes for scarlet fever patients. If, however, a small-pox hospital be used for either of these purposes it is essential to make arrangements beforehand by which it can be immediately cleared of patients when it is necessary that it shall revert to its special purpose.

Coming back to the question of cost of isolation hospitals for other infectious diseases, Dr. Parsons points out that, as compared with ordinary general hospitals, the cost per bed of an isolation hospital must as a rule be high because the number of beds provided is small in relation to the cost of the site and the work necessary in preparing it, because of the need for the classification of patients according to sex and disease which involves a multiplication of wards, and because since the patients are acutely ill a comparatively large staff must be provided. The excessive cost of some isolation hospitals is attributed to the institution being too small, a defect to be remedied by combination of small districts, to the selection of an unsuitable site involving large expense in the preparation and making of roads, the supply of water and the disposal of sewage and the [illegible] of foundations, and last, though less frequently, the want of regard to economy in design or insufficient supervision and control over the cost of erection.

We have been able to give only a general outline of the report, which will be carefully studied by medical officers of health called upon to advise on the erection and administration of isolation hospitals; but we may say that, incidentally, it contains much information which will be of use to medical men who are consulted with regard to the erection of cottage hospitals; the conditions, especially with regard to isolation of individual patients, are different and less exacting, but on the general question of choice of site, its preparation and the economical erection of convenient buildings, this report affords many useful hints.

PSYCHOTHERAPY IN ORGANIC DISEASE.

As has often been pointed out in this JOURNAL mental or spiritual treatment often cures functional disease. At the present day we hear much about it under various names. The giving of new names to old things is one of the features of modern faddism. Everything from the fasting cure to faith healing of the most unorthodox kind goes back to the dimmest dates in human history. This is a point that should never be lost sight of, for the food faddists are always telling us that in their particular form of nutrition, whether it be nuts or grated cheese, lies the whole secret of health, and this in face of the fact that the vegetarians of the East are the prey of as many diseases as the lovers of the flesh-pots in the most luxurious capitals of Europe.

Professor James J. Walsh, who dealt with the subject in the *Albany Medical Annals* for January last, tells us of a special school of mental healers at Poughkeepsie, one of whose professors succeeded in getting a hearing from the United States Senate because of the wonderful new scientific powers he had discovered and controlled. Naturally it is always the "cured" cases that are appealed to, and there was any number of "cured" cases, so that Congressmen became persuaded that here was something worthy of investigation. Unfortunately, nothing is said about the result. Walsh considers that such men must have a wonderful personal magnetism, as shown in their power to persuade people to their views. "The only effect produced, of course, is through the mind and the influence it can exert upon the body. But it is startling to note how many patients that have made the rounds of the regular practitioners of medicine are cured in this way." Here it may be

asked, Cured of what? Cured, we say, of sensations of pain and other subjective symptoms of diseases which are certainly to a large extent imaginary. It would be a great mistake, however, to assume that because they are imaginary they were not a real affliction to the patient. This is the point on which many members of the medical profession go astray and lose hold of patients who would be quite amenable to cure by ordinary medicine with a large infusion of faith, the latter being the more active ingredient. Until the profession learns that faith healing has a real and definite place in therapeutics, it must be content to see a vast number of people in this neurotic age go to spiritualist quacks of one kind or other.

Dr. Walsh's thesis, however, is the part of psychotherapy in organic disease. We have never ourselves gone further than to contend that some of the symptoms of organic disease could be removed by faith healing. For example, although a truly malignant growth cannot be removed by faith, it may in rare cases disappear of itself. Most of us have had experience of this kind of thing in the case of innocent growths such as warts. Faith may move mountains, but, according to all trustworthy experience, it cannot remove a cancer. Still, the soothing of pain, the lessening of inflammation, and the inspiring of hope which generates a feeling of well-being in the patient, are effects of a very real kind not to be despised by the scientific practitioner. Dr. Walsh points out that there are so many people suffering from what was at the beginning a true physical ailment but which afterwards is only a group of symptoms made inveterate by the failure of the patients to take exercise, to eat and get air and sleep enough, that it is not hard to find improvement of symptoms as soon as they can persuade themselves that they ought to be better. In Professor Walsh's experience, organic disease can be distinctly modified by mental influences. This result is seen in affections that have no relation to the nervous system. He cites the case of a patient who suffered for some months from what was thought to be indigestion, and who was then found to have a tumour in the region of the stomach. Cancer was diagnosed, and an exploratory incision made, the patient being told that what was really intended was to attempt to remove the growth. It was found that the conditions would not allow radical operation, and the wound was stitched up. He was told that now an operation had been done he ought to be better. It was intended to tell him later the real state of the case. During convalescence appetite returned; he began to take more interest in life, lost the sense of discouragement, and feeling that whatever discomfort he felt could be referred to the operation scar, he began to put on flesh, and in six months he gained over 30 lb. Of course he ultimately died of his cancer, but he had been given many months of vigorous active life and a sense of well-being that made the operation eminently worth while. Walsh believes there are cases on record in which patients have gained 40, 50, and even 60 lb. in like circumstances. These are good examples of the influence of the mind over the body, and its power to overcome even the depressing effects of cancer.

In constitutional diseases dependent on obscure organic lesions striking examples of mental influence are sometimes seen. Walsh says that Graves's disease can probably be more influenced by strong mental suggestion than by any remedies that we have. He thinks that even pernicious anæmia is probably more benefited by getting the patient into a favourable frame of mind than by any other means. In tuberculosis the state of the patient's mind is important. One who faces the outlook bravely may live in spite of organic ravages. Dr. Walsh says: "Our three greatest specialists in tuberculosis in this country [America] were all given up as hopelessly affected by the disease in their earliest career. Yet all have done fine work." In heart affections of all kinds, not only cardiac neuroses but organic heart affections, the patient's state of mind is, he says, of more importance than any drug. The mind acts through the circulation, closing or relaxing vessels all over the body, and so relieving the burden thrown on the heart. In diabetes and gout the mental state is very important. Drugs are helpful in all these conditions, but behind them is the action of the mind gathering hope from their administration.

Walsh pleads for the deliberate use of psychotherapy, which has been unconsciously used with wonderfully good effect. Avicenna was right when he said that the presence of a physician often does more good than all his remedies. Mondeville, surgeon to Philip the Fair, thought cheerfulness so important a factor towards recovery that he suggested the employment of a jester to visit surgical patients when they were depressed. Dr. Walsh finds it an eminently wise practice of the Middle Ages that a patient should be asked to confess and receive the sacraments before the doctor saw him, for if this was suggested afterwards the patient might believe that there was no hope. This rather recalls Dame Quickly when she sought to comfort Falstaff on his deathbed by saying "a' should not think of God," adding the hope that "there was no need to trouble himself with any such thoughts yet." We may say, however, that we have more than once known a devout believer, whose state seemed almost desperate, begin to recover as soon as he had been comforted by the last rites of the Church. His mind was at peace and the mental state reacted on the body.

Psychotherapy has its place in medicine, and a very prominent place; but psychotherapy alone, except in certain well-defined cases of nerve disorder, can do little or nothing. If psychotherapy unaided could do all that Dr. Walsh claims it can do, there would be no need either for the physician or for the druggist, and the Christian Scientist and his congeners would have the field to themselves. It is not psychotherapy that could have brought about the revolution in surgery with which Lister's name is associated, nor could psychotherapy have effected what has been done in the prevention of contagious diseases. It is quite true that in some diseases there is a natural tendency to get well, and this is the foundation of much apparent success not only of quackery but of rational medicine. But it is not less true that there are many cases in which, as Gull said, Nature is trying to kill the man, and here the specifics come in. The action of these may be aided by mental healing, but such healing will not kill a malarial plasmodium in the blood or rid the system of the infection of a transmissible disease. When we are told that patients must not be allowed to cherish certain forebodings with regard to the course of their disease, nor to keep turning over in their minds the dread of developments that may come, we can only say that this is true enough; but it reminds us of the advice to a needy patient not to worry, but to eat a beefsteak and drink a glass or two of generous port every day. There is no class of patient more given to this kind of foreboding than doctors themselves. Hence they usually are the worst of all patients. They either know the complications that may occur, or eagerly read up the subject. We are the most unfortunate

of all people, for we know that a tiny sore or an almost imperceptible wart may be like the little cloud, no bigger than a man's hand, which overspread the heavens. To live under the shadow of a great fear deprives a man of energies that might otherwise be available for curative purposes. In dispelling this shadow psychotherapy may play a most useful part. In its employment, however, there are two factors, the doctor and the patient. The former must be a person who can influence, and the latter one apt to respond to such influence. Hence the self-centred neurotic is the subject best adapted for psychotherapy.

SANATORIUM BENEFIT IN MANCHESTER.

The sanatorium scheme for Manchester, an outline of which has already been given in the Journal, is evidently to meet with strong opposition from the Joint Committee of the Divisions of the British Medical Association, and from the four Provisional Local Medical Committees, which are all united in their opinions. It is a remarkable circumstance that so far only the general outlines of the scheme have been divulged, and that it has not been found possible to obtain any adequate and authentic information as to details. The Joint Committee of the Divisions has in consequence taken the precaution of sending copies of the decisions of the Annual Representative Meeting as to the administration of sanatorium benefit to both the Sanitary Committee and the Provisional Insurance Committee, with a statement that the local profession regards it as of fundamental importance that the scheme should conform to those decisions. A request has also been made that the Sanitary Committee should receive a deputation from the Joint Committee, and a promise has been given that this will be arranged at an early date.

There can be no doubt that the scheme as it stands at present fails in several important points to accord with the cardinal principles of the British Medical Association. With regard to the administration of sanatorium benefit, among other objections, it is especially urged that it will tend to deprive general practitioners of many of their private patients suffering from tuberculosis, and will thus be a serious menace to private practice; and, further, that it will make the tuberculosis dispensary into little more than an enlarged consumption out-patient department conducted by the hospital staff, with all the objections to out-patient departments aggravated by the fact that if patients refuse to attend the dispensary they may be denied sanatorium benefit altogether.

In the annual report of the medical officer of health a special chapter is devoted to the position of Manchester with regard to tuberculosis. Dr. Niven says it is evident, judging from the number of notifications, that the estimate of the number of cases in the city must be revised, as it cannot be less than 5,000 and may be more if, as is thought to be possible, a number of cases are not being notified. The available beds at the disposal of Manchester are put down at 543—that is, 424 under the guardians, 69 at Clayton Vale Hospital, and about 50 at the Crossley Sanatorium; in addition, there are 114 beds available for surgical tuberculosis. In both cases the demand is far greater. Dr. Niven considers that the Insurance Committee will be forced at no distant period to extend sanatorium benefit to the dependants of the insured, on the ground that it will be found difficult, if not impossible, to grant the benefit to an insured person while withholding it from his wife and children. It is expected that the City Council will have to provide a considerable sum [illegible]. In all probability the Insurance Comm[illegible] apply, under Section 17 of the Act, [illegible] Council and the Treasury to make up [illegible] ture in excess of the sum provided by the Act; but there is this difference, that the Treasury, in so far as it is liable at all, is liable only for half the excess expenditure on the treatment of insured persons and their dependants, while the City Council is liable for the whole of the remaining expenditure on both the insured and the non-insured, and as insured persons can exert a very great influence at elections, severe pressure will be applied to the council to provide all the necessary treatment. Moreover, of the total cases, the Poor Law authorities have always from 400 to 500 cases under treatment, and must treat at least 1,000 cases a year; as soon, however, as sickness benefit falls due, many persons who now receive treatment under the Poor Law will be able to dispense in large measure with assistance from the guardians, and will require sanatorium benefit from the insurance fund instead, and this it will not be easy to refuse. This will undoubtedly save the poor rates, but the necessary provision will have to be made by the public health authority, as the Act forbids arrangements with Poor Law authorities. Of the annual sum of 1s. 3d. per insured person taken from the insurance contributions for sanatorium benefit—amounting to about £880,000 for the whole country—it is estimated that about £14,000 will be available for insured persons belonging to Manchester, and the City Council may also receive a sum estimated at about £24,000 as a grant for capital expenditure out of the provision made by the Finance Act.

The death-rate from tuberculosis in Manchester is higher than in any other great English town. During 1911 there were 1,116 deaths from phthisis, giving a death-rate of 1.56. Bad as this is, it is an improvement on the average of the last ten years, which was 1.78. The death-rate from tuberculosis other than phthisis was 0.52; this is also an improvement on the average of the last ten years, which was 0.64. It has been stated that a high proportion of all children are tuberculous, and that while many recover, many others remain tuberculous, and the opinion has been adopted and acted upon in France that if children in the incipient stages are treated in suitable institutions, they can be freed from the disease and fortified against it. Following on these lines, the Manchester Education Authority has been presented with an estate, and is equipping a school for the treatment of incipient cases. Dr. Niven, however, expresses his conviction that the great majority of phthisical persons, especially among the poorest classes, contract the disease after childhood, and even when the disease has been present in childhood and been followed by recovery, the cause of an attack in adult life is not resuscitation but reinfection. He again urges, as in previous years, that a special fund should be established, out of which money should be advanced to families in suitable cases to enable them to occupy suitable houses and procure good food and clothing, subject to the sanitary authority being satisfied that hygienic precautions are carried out and the money wisely expended. He concludes the special chapter with some remarks which have caused much concern to general practitioners: "As regards Manchester, it is to be observed that the housing of the citizens will not lend itself generally to the use of shelters, and that henceforward, as hitherto, it will be found necessary to treat cases largely away from their own homes—at all events, for a time. Indeed, when sickness benefit

accrues, the demand will no doubt become imperative. It will be found difficult, if not impossible in most cases, to give sanatorium treatment at home in the sense of a carefully regulated life with a system of graduated labour and close observation of symptoms. Hence the majority of cases will require treatment in a sanatorium—for a time, at all events."

THE MEDICAL BENEFIT REGULATIONS.

The draft provisional regulations made by the Joint Committee jointly with the Insurance Commissioners and the Scottish and Welsh Insurance Commissioners as to the administration of medical benefit are to be considered at a meeting of the Advisory Committees at the offices of the Civil Service Commission, London, to-day, Friday, September 20th. The draft has already, we understand, been considered, and in its general outline approved by the Ministers most directly concerned. It was also considered at preliminary meetings of the medical members who have retained their seats on the Advisory Committees, which were held on Wednesday and Thursday, September 18th and 19th. While affording alternative methods of remuneration on a capitation basis, and on the system of payment for each attendance as well as a combination of these systems, recognizing the necessity for paying special fees for extras, and dealing with the question of mileage, the draft does not, we understand, specify the rates of payment. The Government proposals in this respect are, we believe, not likely to be made known before the meetings of the Cabinet which will be held early next month. It is no doubt to the meeting of the Advisory Committee of September 20th that the chairman of the West Riding Insurance Committee referred last week when he spoke of an important meeting to be held between the Insurance Commissioners and Advisory Committee of the Government and the medical men. The statement has been widely circulated in the press, as well as the anticipation that some arrangement would then be entered into. It will be seen that the chairman of the West Riding Insurance Committee had somewhat misinterpreted the information he had received with regard to the nature of the meeting, and his expectation that an arrangement would then be come to is obviously due to this misapprehension. No arrangements on behalf of the medical profession can be made by the medical men who still remain on the Advisory Committee. When the draft provisional regulations are promulgated—and we presume that this will be done shortly after the meeting on September 20th—they will be considered by the State Sickness Insurance Committee, and subsequently the Central Council of the Association will make a report to the Divisions with a view to instructions being given to their Representatives at the special Representative Meeting, which will no doubt be summoned at as early a date as the progress of business permits.

MEDICAL SERVICE ON EMIGRANT SHIPS.

At the present moment a large tide of emigration is flowing out of England. While Canada is obtaining her share of emigrants, Australia is clamouring for as many as she can get; the ships ordinarily engaged in the passenger trade between the home country and the antipodes are not capable of supplying the continuous demand for berths, and extra ships have been called for. Without attempting a detailed definition of the term "emigrant," it may be stated generally that all steerage passengers, or to give the more euphemistic title, "third class," sailing in a foreign-bound vessel from British ports come under the category of emigrants. As such, the ship carrying them becomes, *de facto*, an emigrant vessel subject, in addition to those applicable to ordinary foreign-going passenger ships, to the special regulations of Part III of the Merchant Shipping Acts. That these regulations should be all-sufficing is almost too much to expect of any legislative measure, more especially when it is remembered that the majority of the sections were drawn up to meet the requirements of emigrants in the old days of sailing clippers. The ordinary liner belonging to established firms, engaged in a regular run and carrying about 600 third-class passengers or emigrants in addition to a large complement of saloon and second class, is not much affected by the present boom in emigration, further than in having a full complement in the steerage on every outward voyage instead of numbers fluctuating according to season. The majority of emigrants are being carried in vessels purely of the cargo-boat type, temporarily fitted—according to legal specifications of course—for the carriage of emigrants on the outward passage. Homeward bound they revert to their original function. It is with this type of ship that seagoing members of the medical profession are especially concerned in view of the sudden increased demand for ship surgeons. A ship of this class will carry between 1,000 and 1,100 "statute adults." A "statute adult" may be either one individual or two children between the ages of one and twelve years, infants in arms are not reckoned. The size of the crew is regulated in the deck and victualling departments by the number of "statute adults" carried, while that of the engine room does not vary in regard to the number of passengers. Thus a ship of this class may have from 1,400 to 1,500 souls on board for a period of six weeks in continually changing climatic conditions. As the ships do not carry passengers on the homeward voyage, the law does not require a surgeon to be on board unless the crew numbers over one hundred souls. Thus the companies prefer engaging as surgeons medical men who will take their discharge in the colonies. In other words, surgeons are simply passage workers, with or without some remuneration for their services. While, as yet, there is no legal compulsion for these ships to carry more than one surgeon, the majority carry an assistant surgeon. A section of the Merchant Shipping Acts "recommends" that a second medical officer be carried in the event of there being more than 1,300 "statute adult" passengers. Thus, of these two medical men, both may be, and one as a rule is, a passage worker. The passage worker system applies also to the stewards, the majority of whom are first voyagers, with not the slightest knowledge of their duties or the ways of ships. Under this system permanent officials of the ship have great difficulty in maintaining proper discipline on board, as the men have one object—to get out to the colonies. According to law, the surgeon of an emigrant vessel is an important official, specifically mentioned in the sections of the Merchant Shipping Acts and vested with powers which are almost paramount, should he consider it necessary to enforce them. His responsibilities and work are far greater than in ordinary ships owing to the large numbers of this particular class of passenger he has to deal with. The average incidence of disease and demand for medical attendance are far greater among a thousand steerage passengers during a period of six weeks in varying climates than would be the case with, say, 6,000 for one week only. The strain, too, is much more prolonged in the event of any virulent epidemic disease breaking out. Also in these ships there is no private practice, well remunerated or otherwise. Finally, this class of vessel is nothing but a makeshift compared with an ordinary passenger vessel, and has none of the comforts, accommodation, and living conditions of a liner. In return for service under these circumstances a medical man may be offered either £10 a month, with possibly a bonus of one month's pay if everything has been satisfactory—from the owner's standpoint—or simply a passage in a cargo boat with all the drawbacks incidental

thereto. There is a good deal to be said for "passage working" on both sides, in so far as the discharge of the surgeon at the end of the outward passage is concerned. It is often a convenience to both parties, although it necessarily restricts the sphere of the professional ship surgeon, who finds so many ships closed to him thereby. But six weeks' service under conditions as outlined above, either as principal or assistant medical officer, are worth more than £10 a month or a passage to the steamship owner, who presumably is not engaging in a profitless enterprise. A bonus of ninepence a head is a little below the rate granted by the Government for National Insurance, and would not be too much remuneration for services rendered by the surgeons of an emigrant vessel during a period of six weeks among what is practically a class of unselected lives. There is also no reason why a man who only wants to go out to the colonies should not receive the average rate of monthly pay given to ship surgeons in addition to the bonus suggested as some compensation for services rendered, especially amid the discomforts and drawbacks of a cargo ship. It remains, as in other instances, entirely with members of the medical profession, either as permanent or as temporary ships surgeons, to demand adequate remuneration for the work they perform. They should bear in mind also that working a passage in a converted cargo boat is a very different matter in every way from doing so in a ship carrying saloon passengers. Shipowners are business men, and cannot be expected to drive any but business bargains. Medical men are in duty bound to their profession to do likewise.

THE COLON BACILLUS IN WATER SUPPLIES.

In another part of this issue will be found a report of the discussion which took place during the Liverpool meeting on the varieties and significance of *B. coli* in water supplies. It was introduced by Dr. A. C. Houston, of the Metropolitan Water Board, who, as will be seen, illustrated his remarks by a large number of tables and diagrams. They condense into small space an extensive knowledge of this and other aspects of water-protection work, and represent an amount of hard-won experience scarcely to be gauged by others than those who study the figures in the light of personal experience of laboratory investigations. The form which the discussion took, perhaps, makes it caviare to the general, but the vital importance of the question to the community will hardly be denied. Every one alike must feel an instinctive desire that the water he drinks shall be entirely pure. On the point of what constitutes entire purity there is perhaps room for difference of opinion, and there is certainly no consensus as to how far it is justifiable to condemn water as unpotable on the ground of the presence of *B. coli* therein. Taking the extremists on either side, the one party may be represented as claiming that if any *B. coli* whatever can be found in a sample, the supply from which it is derived should at once stand condemned. The other points to the fact that the *B. coli* is not a pathogenic organism in itself, and is not necessarily an indication of pollution from human sources, and further claims that even when such pollution is known to exist, the history of certain localities shows that water-borne disorders, such as typhoid fever, do not necessarily occur. The extremists, however, are not numerous, the vast majority of authorities accepting the view that the presence of *B. coli*, whencesoever derived, is evidence of pollution of the water at a comparatively recent date by matter of the sewerage class, and that this being the case, the chief practical questions concern what tests of its presence are most reliable, and what amount of any given water must be examined for *B. coli* in vain before it can be passed as sound. In regard to the latter point, Dr. Houston suggested many years ago some half-dozen *B. coli* ratios on which a water might be written down as of first, second, third, or other quality. Nevertheless, at Liverpool he urged, not for the first time, that though the higher of these standards of purity as regards *B. coli* contents should be the aim, the final verdict on a water should be based on a summation of geological, topographical, physical and chemical, as well as bacteriological considerations. As the meeting thought sufficiently well of this view to formulate it in a resolution, it may be anticipated that before long it will gain general acceptance. Meantime, it is satisfactory to know that Dr. Houston does not preach for the benefit of other communities what he does not himself practise for that of Londoners. Despite the not altogether desirable sources from which is derived the water issuing from the domestic tap of London—or possibly on account thereof—Dr. Houston maintains in his laboratory a very high standard, and manages to contrive that the purifying measures adopted under his general supervision at the reservoirs shall almost invariably bring up to it all water allowed to be distributed through the mains. On this fact the Metropolitan Water Board and its customers are alike to be congratulated.

THE ANTIQUITY OF MAN.

THE address on the antiquity of man (p. 669) which Dr. Keith delivered before the British Associatian at Dundee, affords such a review of the present state of knowledge as only one who is a thorough master of the subject could have attempted. In spite of the many recent additions, both of fact and theory, in which Professor Keith has taken no small share, the subject is still enshrouded in many mysteries. If we peer into the dim horizon of the geological past, when the world was young, we feel at once the need for some other measure of time than years, or even centuries. Even when we measure by geological epochs, there is room for much difference of opinion in attempting to estimate how long ago it was that man first walked the earth. It is now easy to follow modern man back through the age of metals to the neolithic period, a relatively short epoch by geological measure. Early in that epoch not only did man exist, but man of the modern type. It is on the question how much further we should go back in trying to fix the date of his more primitive ancestors that difference of opinion becomes acute, and sometimes, as occurred, we believe, in Dundee, leads to discussion characterized by more vehemence of expression than the calm which should characterize scientific men would appear to warrant. Even Professor Boyd Dawkins holds that for the early stage of the evolution of man we must go back to the Pleistocene period, which the best geological opinion appears to hold lasted some 400,000 years. Other geologists of eminence hold this to be a too conservative estimate, and the thousands of coliths which have been collected by Mr. Benjamin Harrison in Kent, seem now to be generally accepted as worked flints dating from the Pliocene, which preceded the Pleistocene period. Professor Keith's address is closely reasoned and should be read in the original text, but we may here point out that he stated three lines of argument of a biological rather than of a geological nature, which if accepted seem to make it necessary to put the beginning of man a very long way back in geological time. Dr. Keith considers that modern human races—white and yellow, red, black, or brown—are all so similar in structure and constitution that they must be supposed to have arisen from a common stock, and that the nearest approach to this common stock is the aboriginal Australian. Now investigations in Egypt have fairly well established that there is no definite evidence of the evolution of a higher or more specialized type during the six thousand years which have elapsed since the men lived whose bones occur in the

earliest burying place. Secondly, it is known that the great anthropoids made their appearance long after the gibbons, that both stocks survive at the present day, and Dr. Keith thinks it probable that the human stock became differentiated at or about the same time as the great anthropoids, so that it may be supposed that a very primitive form of man came into existence during the Miocene period, that which preceded the Pliocene period. We may thus have to go back from two to three million years for the beginning of the human stock. The third argument has reference to the appearance and disappearance of the Neanderthal man. Accepting, then, the view that a creature with human characters was evolved near the beginning of the Pliocene period, Professor Keith arrives at an estimate of an antiquity for man of at least a million and a half years.

THE EPIPHANIN REACTION IN SYPHILIS.

Weichardt's epiphanin reaction has chiefly been employed for tuberculosis and diphtheria. A few experiments have been carried out with syphilitic serums. Owing to the minute care which must be bestowed on the details of the test in order to obtain reliable results, it does not appear likely that it will attain wide popularity for clinical purposes, but it is of importance, especially in the study of the nature of the antigen-antibody reaction. The reaction—or, rather, test—is a manifestation of the difference of surface tension of a fluid containing both antigen and antibody reacting on one another, and that of a fluid containing both antigen and antibody, but not acting during the time when the indicator records the surface phenomenon. There is no doubt as to the ingenuity of the process. One tube is made up with a definite quantity of serum, a definite quantity of alcoholic syphilitic extract of liver, a definite quantity of baryta water, a definite quantity of normal sulphuric acid, and a definite quantity of phenolphthalein, to which some strontium chloride has been added. The same quantities are used in every tube. A second tube has water instead of serum, a third water instead of extract, and a fourth water instead of serum and extract. Thus tubes 1 and 4, when mixed, contain exactly the same constituents in the same quantities as 2 and 3 when mixed. But since the antigen (extract) and the antibody (serum) are allowed to interact before the indicator determines the degree of alkalinity in tube number 1, the mixing of 1 and 4 will yield a different result to the mixing of 2 and 3. Dr. Fritz M. Meyer, working under Professor Lesser,[1] has stated that when the serum is used in too high concentration the results may be erroneous, since the colloids may inhibit a positive reaction unless so much diluted that they do not affect the surface reaction, or the salts may give a positive reaction in high concentration, which does not depend on the presence of antibody. He has taken every possible precaution, and in testing 100 syphilitic and other serums has plotted out his results as curves according to the concentration of the serum. These results were compared with the results of Wassermann's test. In all save one, in which the Wassermann was positive, the epiphanin test was also positive. The exception gave a doubtful result. In those cases in which the Wassermann gave a negative, and the epiphanin test gave a positive reaction, the serum was derived from patients with latent syphilis and secondary stage syphilis. The doubtful cases in which the epiphanin test was positive, and the Wassermann test negative, were soft sore, alopecia, ozaena, disseminated choroiditis and abortions. There were 18 control serums, of which 1 case of acne and 5 others gave a positive result; these included carcinoma and infectious diseases. Meyer points out that the curve in these cases differs so essentially from the curve of the syphilitic case that confusion is impossible. An explanation has yet to be sought for these positive reactions with non-syphilitic serum. [illegible]

[1] *Berl. klin. Woch.*, [illegible]

not exist in connexion with these bio-chemical products. In any case, the chemico-physical phenomena on which the epiphanin test depends are so delicate that we may safely expect illumination from them in the still dark processes of antigen-antibody reaction.

SCHOOL HOURS

A discussion has been going on in the *Cape Argus* for some little time past with regard to the organization of work in Cape Town schools. The school day at present lasts, in the case of ordinary schools, five hours, and in the case of high schools six and a quarter hours, the day beginning at 9 o'clock in both cases and ending at 2 and 3.15 respectively. In both cases there is a five minutes break between 9 and 12, and a further break of thirty-five minutes at 12.15, during which the children are supposed to take their mid-day meal. If the practice of educational authorities elsewhere is to be taken as a criterion, it can hardly be contended that the Cape Town school day is too long. The children in the ordinary schools are only at work for four hours and twenty minutes, and even in the high schools for only five and a half hours; whereas in public elementary schools in London the lower forms are supposed to be at work for five hours, whilst those in the upper forms, whose ages average between 12 and 14 years, work for five hours and a half. Whether the time is properly divided at Cape Town is quite another question. A mid-day interval so brief as thirty-five minutes is certainly very unusual. In London the corresponding interval is a full two hours. Such an interval in the day's work allows plenty of time for a meal and perhaps a little exercise, and in all ordinary individuals, whether children or adults, must suffice to relieve any extra brain tension created by the morning's occupation. This seems a sensible arrangement, for though many business men who live more or less constantly on their nerves find they get through their work more comfortably if they cut their mid-day interval down to half an hour or so, it cannot be good for growing children to be forced or encouraged to adopt a like course. One would expect them in the long run to suffer physically, and their power of attention to ebb so rapidly that the afternoon's work would practically be wasted time. Indeed, thirty-five minutes at mid-day is so curious an interval as to suggest its origin in an attempt to compromise between the desire of the masters not to let the length of each day's tuition fall much below the European standard, and the wish of Cape Town parents to have their children at their own disposition during the greater part of the afternoon. But the true remedy would seem to lie, not in unduly abbreviating the mid-day interval, but in commencing work earlier. The hour of 8 o'clock in the morning could hardly be too early in so excellent a climate as that which Cape Town is so fortunate as to enjoy, and the children could then be sent home at 11 o'clock for their mid-day meal, getting back at 1 for their afternoon work.

TABES AND PAINLESS CHILDBIRTH.

The relation of tabes to pregnancy and childbirth is an interesting subject which has been discussed both by obstetricians and neurologists. The latter, Dufour and Cottenot more especially, have noted how easily incipient tabes may be overlooked in pregnant women. Nervous ladies may walk oddly, pains in the abdomen are very common in the course of sexual life, and incoercible vomiting is a symptom which the obstetrician cannot overlook. But there is a well-known complication of the disease in question—gastric crisis—and it is not surprising to find that it has been misinterpreted more than once in the case of gravid tabetic patients. One very important symptom usually marks the coexistence of tabes and parturition, namely, the absence of the normal "pains" associated

with the expulsive contractions of the uterus. Fruhinsholz and Rémy[1] have recently reported an instructive instance of the complication. A woman, aged 36, was admitted into the maternity at Nancy because a midwife whom she had consulted the day before on account of a bloody discharge told her that she was actually in labour. She had slept soundly all through the pains on the night before admission. The os was well dilated, the uterine contractions quite distinct and frequent, yet the patient felt nothing. It was difficult to get her to bear down, for this labour was her fourth and she knew what "pains" meant, as all the previous deliveries were painful. Not until the second stage was well advanced did she feel sure that she was giving birth to a child. At length she was delivered of a fine female child weighing 3,200 grams, or over 7 lb. The placenta came away painlessly, and weighed over 1 lb. The child was weaned when 2 months old. It was, when the report was published, 16 months old and remarkably well developed. The history and after-history of the mother were carefully reviewed. The first and second labours were normal. The third ended in the expulsion of a macerated fetus at the seventh month. The patient had fallen downstairs a fortnight previous to the premature labour, but she noted earlier in the pregnancy a widely diffused rash accompanied with headache. A few years later the patient suffered from incontinence of urine and then from gastric crises, both misinterpreted. The last pregnancy was associated with the most distressing vomiting, preceded by violent crampy pains radiating from the epigastrium to the loins and shoulders. Bloody mucus, but rarely food, was ejected during the crises. Lastly, delivery, as has been explained, was painless. The after-history left no doubt as to the nature of the complication. During the puerperium Romberg's and Westphal's symptoms were marked. The sight was failing and the crises continued. There was incontinence of urine. The patient's condition was unpromising when the report was published, whilst the child, 16 months old, showed no sign of hereditary syphilis. Abadie and other obstetricians have observed another symptom associated with tabes in pregnant women, quite the reverse of painless labour. Painful uterine crises occur simulating labour long before parturition takes place. Tabes is, indeed, remarkable for its mimicry of symptoms common in other disorders.

[1] *Annales de gynéc. et d'obstét.*, March, 1912, p. 144.

LIP READING AND ITS REVELATIONS.

A SERIES of detective stories of a novel kind is now appearing in the *Strand Magazine*. In them are recounted the remarkable experiences of Miss Judith Lee, a clever young lady who has acquired an extraordinary proficiency in lip reading, and who uses her talent for the unveiling of conspiracies and the prevention of crime. But it is evident that if the art of lip reading were common we should almost be living in the fabled Palace of Truth, and we should have to take refuge in what the historical French policeman, in the approved official style, called *un système de mutisme complet*. The cinematograph by itself is sufficiently indiscreet; but, if the audience had the power of Miss Judith Lee, the revelations of lip reading would often be extremely disconcerting. In a paper on the subject which recently appeared in the *Revue de Psychologie*, Mdlle. Attilia de Perreti tells the following story: At a cinematographic exhibition a surgical operation in all its details was realistically shown. As the film was rolled out the patient was seen stretched on the table. Then the surgeon came on the scene, knife in hand, ready to open the abdomen. His face was stony in its coolness. Not a muscle quivered. Only a slight movement of the lips was perceptible; this seemed to indicate some sternly controlled emotion. There happened, however, to be among the spectators a number of pupils from an institution for the deaf and dumb, and while the other people were thrilled with the fascinating horror of the sight, the children burst out into loud laughter. They had read the meaning of the movements of the surgeon's lips: the supposed twitches of nervous tension were interpreted by the deaf-mutes, who read that he was humming to himself the refrain:

On va lui percer le flanc.
Rantanplan, plan, plan!
Tireli, ranplan!

Lest this should be taken as a proof of callousness by any of those malicious persons who lose no opportunity of traducing the profession, we think it well to place beside it a story of a very great soldier, who has never been accused of inhumanity. It is related that on the morning after a battle in one of our Egyptian campaigns, Lord Wolseley was heard entering the compartment of his tent which he used as an office. He seemed, as was natural after a victory, to be in good spirits, and approaching his working table he took up a paper, singing while he read it, to the tune of "So early in the morning":

List of killed and wounded,
List of killed and wounded,
List of killed and wounded,
Ti tum, ti tum, ti tay!

To return to lip reading, Dr. Bérillon, wishing to inquire into the truth of the story of the cinematograph, invited M. Bagner, Director of the Seine Institution for Deaf-Mutes, to read a paper on lip reading before the Société de Psychothérapie. M. Baguer, by way of experiment, sent a number of adult deaf-mute women to a cinematographic exhibition. The result was conclusive; many of them could read words, phrases, and whole sentences on the lips of the actors. The moral which surgeons who lend themselves to such displays should take to heart is, if their lips move, to be careful of their language.

PROTECTION FOR QUACK REMEDIES.

IT is stated by the *Australasian Medical Gazette* of August 10th that in the Federal House of Representatives the attention of the Minister of Customs was drawn to a statement by Dr. Burnett Ham that an analysis of an advertised cure for cancer showed that it consisted of 24.43 per cent. of starch (bread), 75.57 per cent. of water, and 4½ grains of borax. The advertised price was 1s. 6d. for a 2-oz. bottle, and the label described it as "A remedy for the world. Cure for blood poisoning, pleurisy, pneumonia, erysipelas, all inflammations, typhoid and other fevers, and cancer in its various forms." Asked if he would take steps to prevent the sale of such a compound, Mr. Tudor replied that if the article was an imported one the department would take steps to prevent its introduction into the Commonwealth, but if it was manufactured in Australia no action could be taken until the people gave the Government the necessary power. The Federal Government could not prevent the manufacture and sale of such goods in any State, but the Department of Trade and Customs had prevented thousands of such quack medicines coming into Australia during the last two or three years. It is something to have quack remedies of foreign manufacture kept out of any country, but the Minister's statement seems to suggest that this may be done only for the protection of home produce.

SIR WILLIAM TURNER, K.C.B., Principal and Vice-Chancellor of the University of Edinburgh, has been nominated by the German Emperor a Knight of the Royal Prussian Order pour le Mérite in the section of science, as a recognition of his eminence as an anatomist and anthropologist. The number of members of the order is strictly limited, and the vacancy thus filled was created by the death of Lord Lister.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

SOUTH WALES AND MONMOUTHSHIRE.

King Edward VII Hospital, Cardiff.

A serious result of the Insurance Act was announced at the last board of management meeting of this hospital, when it was intimated that the employees of no less than forty-two firms had written to say that, in consequence of the demands under the Act, they would be unable to continue their subscriptions to the hospital. A circular stating this had been sent to the subscribers, and in it the fact was mentioned that practically the whole of the patients in hospital could be treated only in hospital, and that there was no treatment suitable provided under the Act. The chairman, Colonel Bruce Vaughan, said that, as it was, the hospital needed another £3,000 per annum before the whole of the beds could be opened, and, with a waiting list of 914, and the possibility of the subscriptions being materially reduced, it would presently be necessary to consider the propriety of closing some of the beds. He appealed to the workmen to support an institution which provided them with treatment which the Insurance Act could not give them. Some of the workmen members of committee said they had not heard of the proposed stopping of contributions, but the Taff Vale Railway representative said that to many railway servants the National Insurance Act was the last straw, and out of £1 a week a man had not even a penny to spare. Another member suggested that a scheme similar to that in vogue at Leicester should be adopted—namely, a contribution of 1d. a week from the workmen. Colonel Vaughan hoped that this would be done, for such a scheme would allow them to open all the beds, and to provide a convalescent home as well.

Swansea Hospital.

A special meeting of the board of management was held last week to consider the circular sent by the honorary medical staff to the effect that, with one exception, they would not, except in urgent cases, attend at the hospital any insured persons except on terms suitable to the profession.

Mr. Hughes, of the Dockers' Union, said he believed that the doctors were serious, and that this circular was an informal resignation. In any case it meant that 90 per cent. of the patients attending the hospital could not be treated. He admired the trades union spirit of the medical profession, but he looked upon their suggested action as syndicalism run riot. Mr. Aeron Thomas agreed with Mr. Hughes that this weapon of the doctors was two-edged and would cut in many ways that they did not think of. Passive resistance paled by the side of it. Mr. Brook, speaking for the medical staff, said that they were absolutely unanimous and perfectly serious. What all the speakers had overlooked was the scandal which the medical profession wished to stop, and which for years they had been unable to put an end to—namely, the continuance of underpaid contract work. It was no answer to say that there were any number of applicants for such posts when advertised. It was decided to defer further consideration of the circular until November 27th.

MANCHESTER AND DISTRICT.

The Early Notification of Births Act.

In spite of strong opposition from the medical profession, the Manchester City Council has adopted the Early Notification of Births Act, although little more than a year ago it refused to do so. Several weeks ago a deputation from the Joint Committee of the Divisions waited on the Infant Life Preservation Subcommittee of the Manchester Sanitary Committee, and laid before it in no doubtful terms the objections to the Act. The deputation urged: (1) That notification by a medical attendant would involve a breach of professional confidence, which, especially in matters relating to sex, ought to be held inviolable. (2) That the duty of notification, if required at all, ought to be imposed on the parents, not on the medical attendant. (3) That it was unjust to impose this or any other public duty on medical men without a fee, which, however, in the present case would not remove the first objection. (4) That cases of confinement attended by medical men were not cases in which any good could be derived from early notification, as the patients were under the personal care of the medical man attending, and visits by health visitors would not be required, and would, in fact, be resented. The deputation further said that there was ground for fear that if the Act were adopted the resentment of the profession might be carried to the extent of refusing at any cost to notify. The deputation was informed that the Sanitary Committee fully appreciated that medical men ought to be paid for notifying, and it had gone so far as to approach the Local Government Board with a request that the corporation might be allowed to pay a fee, but as the Act itself made no provision, the permission was not granted. On the whole, the subcommittee professed that, while wishing to show every possible consideration for medical practitioners, it was not convinced that the objections of the profession outweighed the advantages which were expected to be derived from the Act, and the committee reaffirmed its recommendation to the City Council, but put forward a number of suggestions for the working of the Act which it was hoped would lessen the objections of the profession. The subcommittee was, however, definitely informed that the suggestions would not satisfy the profession. Steps were next taken to memorialize the City Council, and a circular letter setting forth the objections stated above was sent to every member of the Council. At the meeting of the Council on September 4th there was only a comparatively small attendance of members owing to the holiday season, but in closing a long debate the chairman of the Infant Life Preservation Subcommittee said that the Act was in operation throughout London and in 295 sanitary areas containing half the population of England and Wales, that 59 of the 75 county boroughs had adopted it, and that Manchester was the only one of the leading towns where its provisions were not applied. The Council then decided by 44 votes to 41 to adopt the Act. A meeting of the Joint Committee of the Divisions has since been held, and the greatest indignation is expressed with the decision. It is stated that the Local Government Board is considering whether the time has not come when the Act should be made compulsory throughout the country.

Sanatorium Benefit in Salford.

The Salford scheme for sanatorium benefit, which has received the sanction of the Health Committee and the Provisional Insurance Committee, differs in some important respects from the Manchester scheme, referred to elsewhere, but none the less is being strongly opposed by the local Medical Committee. Out of a population of about 230,000 there were, during the year 1911, in Salford 380 deaths from phthisis, which is about the same as the average of the last ten years, and 196 from tuberculosis other than phthisis, which is higher than in any previous year except 1905, when the deaths numbered 206. Thus for both phthisis and other tuberculous diseases the death-rates, 1.6 and 0.8 respectively, are slightly higher than even in Manchester, where the rates are among the highest in the kingdom. The Salford scheme provides—

(*a*) That the medical officer of health shall be the chief tuberculosis officer, but for administrative purposes only.

(*b*) That a part-time specialist in tuberculosis shall be appointed to give two half-days a week, at a salary of £150 a year, with complete and independent control of the clinical work.

(*c*) That two assistant whole-time medical officers shall be appointed at £300 a year each, to act under the part-time specialist.

(*d*) That two nurses shall be appointed at £90 a year each.

(*e*) That a tuberculosis dispensary shall be established by the Health Committee in a shop belonging to the corporation in Regent Road. The dispensary is to be specially open on two evenings a week to suit the working classes, and the tuberculin treatment will be given where necessary, with medicines and appliances.

(*f*) That the clerical work shall be done for the present by the staff of the Health Committee.

(*g*) That the small-pox hospital at Drinkwater Park shall be fitted up as a temporary hospital for fifty patients.

(*h*) That the five beds at the Crumpsall Sanatorium, which are now retained by the Health Committee, shall be at the

disposal of the Joint Committee of the Health and Insurance Committees.

(*i*) That the cost of the hospital and sanatorium beds shall be divided between the Health and the Insurance Committees in proportion to the number of cases sent by each.

(*j*) That domiciliary treatment shall be carried out by the general practitioners of the borough on the following scale of fees: Report, 5s.; visits or consultations at surgery, 2s. 6d.; injection of vaccine, 2s. 6d.; vaccines to be at the cost of the administrative authority.

(*k*) That every insured person who applies for sanatorium benefit shall be referred to the dispensary for examination, and his case then submitted to the Insurance Committee, which will decide whether he is to receive home, dispensary, hospital, or sanatorium treatment.

Beyond these particulars, which have been published, the Provisional Medical Committee has been unable to obtain any further information. The resolutions of the Annual Representative Meeting were sent to the Health and Insurance Committees, but the local profession has not been consulted in any way, and as details were definitely refused when application for them was made, the Provisional Medical Committee has declined to meet the local authorities to discuss the question, and has decided to appeal directly to the Local Government Board to refuse to sanction the scheme. The objections put forward by the Provisional Medical Committee are: (1) That the medical officer of health cannot in addition to his ordinary duties have time for the purely administrative functions of a chief tuberculosis officer, and even if he had the time, the clinical work ought not to be subordinated to an administrative officer, as is the evident intention. Moreover, it is said that general practitioners will never tolerate control by an officer who from the nature of his office cannot have a personal and practical experience of the modern treatment of tuberculosis. (2) That the device of a part-time specialist for two half-days a week is quite inadequate even as a temporary expedient. (3) That the recommendation of the Departmental Committee on Tuberculosis, that the work of the dispensary should be as far as possible conducted by general practitioners, is ignored, as it is evidently intended that the whole routine work of the dispensary shall be done by the two assistant whole-time officers. This arrangement is not likely to enlist the sympathy of the public; it would deprive general practitioners of many of their present patients, and it is an insult to suggest that the medical men of Salford are incapable of carrying out the work of a tuberculin dispensary. (4) The financial provision for domiciliary treatment appears, as far as can be ascertained, to be inadequate, and suggests that it is intended to give as little domiciliary treatment as possible and to insist on dispensary treatment, making the dispensary practically into an ordinary consumption out-patient department. The Provisional Medical Committee finally states that it has various suggestions to offer which it would be glad to forward if the Local Government Board desires.

Macclesfield Infirmary's Appeal to the Government.

The Board of Governors of the Macclesfield Infirmary is evidently convinced that the conflict between the medical profession and the Government is not a mere local struggle, but one which will have to be settled on a national basis. At a recent meeting of the board a letter was read from Dr. J. B. Hughes on behalf of the medical staff, calling attention to the pledge of the British Medical Association which has been signed by most of the practitioners of Macclesfield, and which may interfere with the work of the hospital unless satisfactory arrangements are made. A member of the board pointed out that the dispute was not between the infirmary governors and the medical staff, but a general question between the profession of the whole country and the Government. That being so, it was hardly a matter for reference to the House Committee, as had been suggested, and it would be useless for the committee to discuss the subject with the medical staff. Accordingly a resolution was unanimously carried that the board should make an appeal to the Chancellor of the Exchequer declaring that it was to the interest of the infirmary and similar institutions and of the medical treatment of the sick poor that the Chancellor should come to terms with the medical profession.

WEST YORKSHIRE.

Sanatorium Benefit at Halifax.

An unsatisfactory situation has arisen at Halifax in connexion with the administration of sanatorium benefit under the Insurance Act. A few weeks ago, on the invitation of the Sanatorium Subcommittee of the local Insurance Committee, a deputation from the Executive Committee of the Division attended a meeting of the Sanatorium Subcommittee. It appears now that the temporary scheme had already been settled without conference with the local profession, and all that was required from the deputation had reference to the question of fees for domiciliary attendance and other services. The spokesman of the deputation went further than this and communicated to the subcommittee trenchant criticism of the scheme, such criticism having been carefully drafted by the Executive of the Division at a time when it was not thought the scheme had gone so far towards actual adoption. The medical officer of health, taking exception to certain statements made on behalf of the deputation, immediately sent in his resignation as a member of the British Medical Association to the central office. The subcommittee as a whole was so far favourably impressed by the deputation as to agree that it would be advantageous for the local profession to be represented on it, and the deputation undertook to secure the nomination of two local practitioners. A meeting of the Division was subsequently summoned, at which there was a large attendance; this meeting unanimously endorsed and approved the action of the deputation and the Executive, and elected two members to serve on the Sanatorium Subcommittee. Coincidentally a meeting of the local Insurance Committee was taking place.

The chairman of the Sanatorium Subcommittee, who is also chairman of the Borough Public Health Committee, and who, like the medical officer of health, seems to have been annoyed by the criticisms of the deputation, strongly urged the full committee not to elect the representatives of the profession to the subcommittee, because they would not serve on the full committee, and this course was adopted. There can be no valid reason why the local profession should thus have been excluded. Members are co-opted on Education Subcommittees who are not members of town councils, and there are also, among other precedents, committees of boards of guardians. The action of the chairman of the subcommittee in urging the exclusion of medical representatives may have been inspired by the free and frank criticism of the deputation, but it is certainly not in the best interests of the public and of sufferers from tuberculosis.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

Defective Children in Edinburgh.

The Council on Child Welfare has issued four reports from the Standing Committee for Edinburgh and Leith, with recommendations, on defective children, infant supervision, and juvenile delinquency. Regarding defective children in Edinburgh, the report states that from the facts put before the Committee they are of opinion that, although in Edinburgh a great deal is being done for defective children, both by statutory bodies and charitable agencies, a great deal more still requires to be done. There are at present 146 mentally, and 114 physically, defective children in the two special day schools of the School Board and in three special centres; and 58 in the School for Skin Diseases. Upwards of 50 blind, deaf, and dumb children have been placed in institutions by the Board under the Act of 1890. The Edinburgh Parish Council maintains about 50 imbecile children in Baldovan and Larbert institutions. No record is kept by the Council of defective children among children boarded out. As yet no exhaustive or systematic medical inspection has been made of defective children of school age in Edinburgh. With regard to defective children under school age and above a year old practically nothing is known.

The committee recommends the establishment of certified industrial schools for mentally and physically defective children, of a farm home for the feeble-minded over school age, and legislation for the feeble-minded.

The report on infant supervision contains a series of recommendations relating to the milk supply and other matters regarding child life.

PULMONARY PHTHISIS AND FORBES HOSPITAL.

At a special meeting of the managers of the Forbes Hospital held on September 10th the question of the admission of patients suffering from pulmonary phthisis was discussed. Dr. Adam moved that such patients should not be admitted, as there was no room for them. Their admission would make the present buildings useless for other purposes. If any epidemic occurred only eight beds would be available instead of sixteen, and that would not be ample provision. Dr. Rennie, in seconding the motion, said he supported the views of Dr. Adam; he saw no other way than the provision of a special place for such cases. The motion was unanimously adopted, the chairman remarking that after such a decided expression of opinion from the doctors it was the duty of the managers to write to the district Insurance Committee and say that they could not see their way to admit consumptive patients.

THE PURIFICATION OF THE AIR OF GLASGOW.

By means of numerous experiments, lectures, and demonstrations the Corporation of Glasgow has endeavoured to educate the citizen to the necessity of an unpolluted atmosphere in the interests of the physical well-being of the community. It has also given him an opportunity of assisting in the crusade against smoke by supplying domestic gas-cooking appliances to householders free of charge. Special arrangements have also been made for the supply of gas and electric-heating apparatus, and two years ago a smoke abatement exhibition was held, which was highly successful. In the three weeks during which it was open 80,000 visitors viewed the exhibits, and a surplus of £1,050 was realized. Another exhibition on similar educational lines is to be opened in the city, and the work will be maintained until October 12th. An influential committee is sparing no effort to make it instructive and interesting, and the school board has undertaken to co-operate. There will be sixty-six exhibitors, representing the leading firms in the country, and all the most modern electric and gas appliances for lighting, heating, and cooking will be on view. Lectures and demonstrations on the advantage of these appliances over coal fires with their smoke pollution of the air will be given regularly.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

SALARIES OF DISPENSARY MEDICAL OFFICERS.

At the last meeting of the Enniscorthy Board of Guardians, a committee appointed to examine the application of the medical officers of the union for a graded scale of salaries reported that any increase of salary would come out of the rates, and that under the National Insurance Act the duties of the medical officers would be considerably decreased. The committee, therefore, did not recommend any change from the present system. This report was unanimously adopted.

POST-GRADUATE CLASSES IN DUBLIN.

Post graduate courses will commence in Dublin, both in connexion with Trinity College and also with the College of Surgeons, on September 23rd. In the Trinity College course the clinical instruction is undertaken by a lecturer in medicine and another in surgery, whereas in the College of Surgeons course the clinical instruction is given by various medical men at practically all the clinical hospitals in Dublin. Through the kindness of the board of Trinity College arrangements have been made by which members of the course may reside in college and dine on commons in the college hall. Each course will last three weeks.

SHELTER FOR STREET WAIFS.

Last week a camp for homeless boys, erected under the auspices of the Women's National Health Association, was opened at the site of the old Ormond Market, Dublin. For some time past this area has been in a state of ruin, the houses having been condemned by the corporation as unfit for human habitation several years ago. Over 2,500 square yards have been cleared, and a circular camp in which there are twelve cubicles has been built out of the remains of the former houses. There is sleeping accommodation for over forty boys. A dining-room and bathroom have also been built, and the lads will be able to obtain bed and food at a nominal charge. At the rear is a large playground.

CENSUS OF IRELAND—LEINSTER AND ULSTER.

The census returns for Leinster show that there has been an increase of the population in the province of 9,215 during the past ten years. Dublin County showed an increase of 14,826, and county Kildare an increase of 3,061. In Ulster during the same period there was a decrease of 1,130. The only increases in this province were: Belfast, 37,767, and Londonderry, 888; Roman Catholics form 43.7 of the total population.

South Australia.

[*FROM OUR SPECIAL CORRESPONDENT.*]

AUTONOMY IN SIGHT.

I FINISHED my last letter (see BRITISH MEDICAL JOURNAL, October 14th, 1911) with an intimation that the Australian Branches intended to ask the British Medical Association for such alterations in the rules as might allow of closer federation amongst themselves and of a greater degree of autonomy: and to-day (July 31st) a cablegram has reached us to the effect that our requests have been conceded, and that we shall be granted "a constitution similar to that of the South African Branches." There is a general feeling of rejoicing at the "sweet reasonableness" of the parent Association, and of relief at knowing that our legitimate aspirations have not been opposed. The concession means not only a *federal* strengthening of the bonds of the Association throughout Australia, but also a renewed *imperial* strengthening of those ties which bind medical practitioners here to their fellows in the old country and in the other dominions beyond the seas. Had there been any serious opposition it would have necessarily meant, sooner or later, the dissolution of this imperial tie, for the British-born practitioner is being rapidly replaced by the Australian native, and there would soon arise leaders who "knew not Joseph."

THE FEDERAL COUNCIL.

And now there should be no delay, for already a provisional Federal Committee has been formed, and it has held its first meeting in Melbourne under the presidency of Dr. W. T. Hayward of Adelaide. It only needs the Association's parental benediction to blossom into a permanent council. But it will want a better name, and I would suggest the Australian Provincial Council of the British Medical Association. It is possible that in time New Zealand may throw in her lot, and then we should style ourselves Australasian, but the difficulty of distance must be considered, for New Zealand is nearly as far from Australia in point of time as New York from Queenstown. It is further suggested that the two weekly papers, the *Australian Medical Journal*, published in Melbourne, and the *Australasian Medical Gazette* of Sydney, should be amalgamated and reappear as the Federal organ and as the actual property of the British Medical Association in all the States.

THE FRIENDLY SOCIETIES' DISPENSARY.

In spite of the admirable cohesion of the medical profession in Adelaide and its suburbs, this dispensary was established with a flourish of trumpets; Labour Ministers attended the launching of the ship and spouted the usual platitudes. A staff of three medical men has been obtained from the neighbouring States, all of mature age and all with unrivalled experience; they seemed to be shunned by all but a few of the old "strike-breakers" imported during the hospital trouble of '96.

ANNUAL MEETING.

The annual meeting of the Branch took place at the University on June 27th, when Dr. Hone delivered an admirable valedictory address, dealing mainly with the

subject of infant mortality. He very justly remarked, amongst other things, that the bonus of £5 which the Prime Minister of the Commonwealth proposed to grant indiscriminately to the mother of every infant born during the next year would be a sheer waste, and that the £600,000 involved would be far better spent in attempting to save the lives of the 9,000 infants who annually die within their first year of life. It is some years since we have had an address the equal of this of Dr. Hone's in material affording food for thought. At the dinner in the evening, held at the Café Rubio, the chairman was Dr. Poulton, who is serving a second year of office, having been president of the Branch as long ago as 1893.

Western Australia.

Trade Unionists and the British Medical Association.

An indication of the spirit in which trade unionists in this portion of the globe regard the claims of the medical profession to adequate remuneration for the important services they render is afforded by a recent incident, which cannot be better described than in the following paragraph published in the *Western Australian*, one of the leading daily papers in the district:

"Recently the Yarloop Hospital committee received intimation from their medical officer that in consequence of regulations framed by the Western Australian Branch of the British Medical Association governing the conditions under which members of that Association might contract with benefit societies, hospital districts, etc., for professional services, it would be necessary for his allowances to be increased. The hospital committee found themselves in the position that on the present contribution of 3s. 6d. per month per member, it would be impossible for them to meet the demand and pay other necessary expenses. The committee's report on the subject was the chief business set down for discussion at the half-yearly meeting of subscribers held at Nanga Brook on the 11th inst. That the matter had aroused keen interest was shown by the large number of subscribers, who journeyed from all parts of the concession to be present at the meeting, a special train kindly provided by Millars Co. conveying large numbers from Yarloop and Hoffman. The majority of the subscribers are members of the Timbers Workers' Union, and it was quickly evident that they intended to support their 'union doctor,' as they termed him, one prominent unionist expressing delight at the fact that the medical men were through their 'union' endeavouring to establish a minimum wage. It was decided to bring the doctor's allowances up to the stipulated rate, and authority was given to the committee —should it become necessary—to make a further call of 6d. per month on subscribers. Mr. F. Barraclough, president of the Hospital Committee, occupied the chair."

New South Wales.

[*FROM OUR SPECIAL CORRESPONDENT.*]

Anthropometric Survey of Australian Children.

During the last thirty years several limited surveys of the physical proportions of Australian children have been made in the various States. The late Dr. F. Norton Manning, of Sydney, recorded the heights of a number of children of the public and private schools of New South Wales, and his results were given to the late Mr. Charles Roberts, and used in his work on *Anthropometry*. But the first important systematic survey was made in Sydney in 1901, the scheme being devised mainly by Dr. Mabel Graham and Professor Wilson, of the Sydney University. Dr. Mabel Graham, Dr. Mary Booth, and Dr. Brennand carried out most of the actual survey. The results were reported by Mr. Coghlan, Government Statistician of New South Wales, to the conference of the Australian Association for the Advancement of Science, in Hobart in 1902. This investigation, though based on relatively small figures, was a valuable contribution to anthropometric research in Australia, and was the beginning of a systematic attempt to ascertain the characteristics of bodily form exhibited in Australia.

Series of measurements have been made in Western Australia by Dr. Blackburne; in Tasmania by Dr. Elkington; in South Australia by Dr. R. S. Rogers; and in Victoria by the Education Department's medical officers—namely, Dr. Mary Booth, whose previous experience in the work was utilized to establish it, and also by Dr. Jane Greig and Dr. Harvey Sutton. Each year since 1907 the Department of Education of New South Wales has carried out regular anthropometric measurements of the height and weight of school children, and has already records of about 90,000 children, the results being detailed in the department's annual reports. The Commonwealth, in 1907, formulated a scheme and communicated with the States, asking their co-operation in obtaining measurements of school children, with a view to establishing the relations between age, weight, and height, chest measurement, etc. In a paper read at the Science Congress in Sydney, in 1911, Dr. Mary Booth, who has always taken special interest in the work, brought the subject under notice. This led to the appointment by the congress of a committee of experts to encourage anthropometric research and to consider the organization of a systematic survey of school children throughout Australia. The scheme was essentially identical with the former proposals of the Federal Government, but in the interim the report of the British Anthropometric Committee became available, thus making possible a method uniform with that of Great Britain, and so rendering the results immediately comparable with those of Europe.

The Australian Anthropometric Committee has drawn up a memorandum setting forth the object of the survey and suggestions as to the method for the use of teachers, physical trainers, and others interested. The plan of the survey is as follows: The children's heights, weights, and chest measurements are to be taken once a year. A card for each child enables its development to be watched. These cards are to be kept in the schools, and the results tabulated on sheets and sent to the Commonwealth Statistician for the general tabulation which the Federal Government has approved. In several States advantage has been taken by the Anthropometric Committee of the assembling of teachers in physical training camps to arrange for a demonstration on the object and method of the survey. Much interest has been aroused, particularly as regards the physical growth of school children and fatigue effects in connexion with the school programme or drill requirements. It is felt that the question of physique and growth must receive more intelligent attention than in the past if the progress of the British race in Australia is to be properly studied.

Illiteracy in Australia.

The Commonwealth statistician, Mr. G. H. Knibbs, has recently issued an education bulletin, in which he deduces from the number of marks used in the marriage registers instead of signatures the degree of illiteracy in the different States. The bulletin shows that above the age of 9 years there are 63,400 persons who cannot read the English or any other language. Of these 25,600 are in New South Wales and 11,700 in Victoria. Relatively Tasmania is the most illiterate State and Victoria and South Australia the least. In Victoria there are 1,103,428 persons who can read and write English and 3,897 who can read only. Of those who can read and write some other language only there are 4,237, and 598 who can read a foreign language only. There are 173,444 who cannot read at all, but 143,478 of these are under 5 years of age.

Maintenance of Hospitals.

The Hon. F. Flowers, in the course of an address at a meeting of the Sydney University Medical Students' Society, made some interesting statements bearing on the present state of public opinion on the question of what should constitute the basis of our hospital system. He considered it to be the duty of the State to provide for the health of those who were sane, equally with the health of the unfortunates who had lost their mental balance. The whole of the general hospitals of Great Britain were maintained by private generosity, and not by the State. Conditions in Australia, however, were quite different, for

there was no aristocracy, at any rate no hereditary aristocratic classes, and up to the present no very wealthy classes who could afford, or had shown the desire, to provide large endowments for charities. In New South Wales there had been no great bequests or donations for charities, with two or three notable exceptions—the bequest of Mrs. Mary Roberts of between £60,000 and £70,000 divided between the hospitals; the erection and maintenance of the Walker Convalescent Hospital by the late Mr. Thomas Walker and his daughter, Miss Walker; and the erection of the Carrington Convalescent Hospital, chiefly through the benevolence of the late Mr. Paling. Of the millionaires and semi-millionaires who had died during the past ten years not one had given any great sum for the benefit of a special charity or charities. In England there were frequent announcements of bequests of twenty, thirty, and fifty thousand pounds for some hospital, and occasionally even a quarter of a million or half a million for the same purpose. In Australia, a man with an income of £10,000 to £20,000 a year gave £10 to perhaps two or three hospitals, and that was regarded by him as his limit. Perhaps when he died he might leave £100, or even £1,000, to some institution. He expected, if all the endowments of all the hospitals in New South Wales were totalled up they would not amount to anything like a quarter of a million pounds, representing, say, £10,000 a year in the way of revenue.

Since this address the gift of £1,000,000 to the charities of Australia from Mrs. Walter R. Hall has been announced. The late Mr. Walter R. Hall, who died in Sydney in October, 1911, left his widow the residuary legatee of his estate (after deducting provision for those whom he desired to benefit at his death), and (1) to the charities of New South Wales the sum of £20,000, and (2) to the charities of Queensland the sum of £30,000. His widow has decided to establish a monument to her late husband's memory, and has handed over to trustees securities to the value of £1,000,000, the income from which is to be for ever devoted to the purpose of charity. Charity, by the deed which carries into effect her wishes, is defined to mean: (1) The relief of poverty; (2) the advancement of religion, according to the tenets of the Church of England; (3) the advancement of education; (4) the general benefit of the community not falling under any of the preceding heads. The benefits from the application of the annual income of the trust are to be allocated as follows—one-half in New South Wales, one-quarter to the State of Queensland, and one-quarter to the State of Victoria; one-third of the income to which each State is entitled is to be distributed primarily for the benefit of women and children. The trust is to come into operation in January, 1913.

Naval Surgeons.

A conference was recently held in Melbourne of representatives from the Universities of Sydney, Melbourne, and Adelaide, with the Naval Board, to consider the question of the supply of surgeons for the Royal Australian Navy. The following scheme was drawn up by this conference: Candidates must be of pure European descent and of Australian birth, or permanently domiciled in Australia. They must be nominated by the senate or council of an Australian university, on the recommendation of its faculty of medicine; they must have graduated in medicine and surgery at an Australian university, and have had at least one year's experience in a general adult hospital recognized by the university. Their age must not exceed 28 years, except in special circumstances, when the age limit may be extended to 30 years. Nominations will be allotted among the universities in order of seniority, the present requirements being as follows: Sydney, 2; Melbourne, 2; Adelaide, 1. Subsequent nominations, which will be numerous, will be allotted in rotation to Sydney, Melbourne, and Adelaide. The Defence Department is now inviting applications for the positions of staff surgeons, in accordance with the above regulations. Successful candidates will be required to engage for three years, and will have the option of engaging for a further period of three years. The successful applicant will be sent to England as soon after appointment as practicable to undergo a short course in a Royal Navy hospital, or in one of His Majesty's ships, prior to joining H.M.A.S. *Australia*. The rates of pay are, on entry, £547 10s.; over two years, £593 2s. 6d.; and over four years, £638 15s. These rates include active and deferred pay.

India.

[FROM OUR SPECIAL CORRESPONDENT.]

Kala-azar in Assam.

A supplement to the sanitary report of the Province of Eastern Bengal and Assam for the year 1910, recently published, contains some special reports submitted by medical officers to the Government during the two preceding years. The subject of the first of these is an inquiry regarding an outbreak of kala-azar in the Golaghat subdivision of the Sibsagar district by Major S. R. Christophers, I.M.S. The disease had died out after severe prevalence in the adjoining district of Newgong six years previously. Golaghat is on the way to the districts of Sibsagar and Lakimpur in Upper Assam, and the important questions referred to Major Christophers were: (1) Whether kala-azar really prevailed in Golaghat; (2) if so, whether it was on its spread northwards; and (3) how its march in that direction might be prevented. To the first question an affirmative answer is given, founded on clinical evidence, including splenic puncture. As regards the second, it is stated that advance seems to be very slow, and that the disease has died out in some villages. With respect to prevention, isolation of the sick and contacts, and precautions against migration appear to be the most promising measures.

Treatment of Leprosy.

Colonel Neil Campbell, I.M.S., contributes to the same supplement an interesting note on the treatment of 16 cases of leprosy by hypodermic injections of nastin B. Eleven of them were inmates of the Leper Asylum, Sylhet, one a prisoner in the Rampur-Boalia Gaol, and four out-patients of the Gauhati Civil Hospital; 1 c.cm. of the drug was injected with strict aseptic precautions into the subcutaneous fat every fifth or seventh day. The treatment is tedious and expensive, lasting over months and requiring patience and careful watching. Local reactions were observed in some of the cases. The results obtained in the Leper Asylum by Drs. McCoy and Ashe were satisfactory. "In no case have fresh lesions appeared. In every case there has been more or less improvement." Benefit resulted as regards both trophic and nervous lesions, and the general health of the patients underwent improvement. The other cases treated at Rampur-Boalia and Gauhati were failures, the patients getting tired of treatment and ceasing to attend.

Epidemic Dropsy.

As in the epidemic of 1877–8–9–80, so in the case of the outbreak of 1907–8–9, the prevalence of epidemic dropsy in Calcutta has been followed by the appearance of the disease in other parts of Bengal. Two reports in this supplement describe two well-marked invasions of townships of Eastern Bengal—one in the Habigmij subdivision of the district of Sylhet, and the other in the town of Faridpur and in neighbouring villages. The former outbreak was investigated by Assistant Surgeon H. Lungdoh and the latter by Captain T. C. McCombie Young, I.M.S. In Habigmij the disease broke out in December, 1909, and attacked 50 persons, of whom 2 died. The cases occurred in groups, and whole households suffered, but not simultaneously. The dropsy was in most cases preceded by diarrhœa, and "slight fever was present in all cases." No marked symptoms of peripheral neuritis were observed. The reporter considers that the malady was epidemic dropsy, and not beri-beri, failed to find any dietetic cause, and is inclined to consider the disease as a specific infectious one. In Faridpur the first cases occurred in December, 1909, and in February Captain Young found 48 cases scattered through the town and adjoining villages. The symptoms resembled those of the Habigmij outbreak, and both Captain Young and Dr. Ashe, the Civil surgeon, arrived at conclusions similar to those above noted, considering the disorder an infectious one, not caused but perhaps conveyed by food. Some evidence of importation from Calcutta was obtained.

Major E. D. W. Greig, I.M.S., has submitted a second and final report regarding the outbreak of epidemic dropsy in Calcutta which he was deputed to investigate. This report does not advance the subject beyond its predecessor, and is equally open to the strictures passed on the first (vide BRITISH MEDICAL JOURNAL, vol. ii, 1911, p. 391). It is quite inconclusive as regards identification, causation, and prevention. The deductions arrived at depend largely on oral and statistical evidence of very doubtful value, and there is a conspicuous absence of control observations. The identity of epidemic dropsy and beri-beri is taken for granted, and the whole contention is virtually a *petitio principii*. The experiments on fowls, both original and quoted, demonstrate that degeneration of nerves (so-called neuritis), resulting in paralysis, can be induced by special dieting involving phosphorus starvation, and cured by restoring the deficient elements; but, curiously, in not a single experiment was dropsy, the invariable and essential feature of this disease, observed. The observations on dieting possess some collateral importance. They are of interest as regards true beri-beri—endemic polyneuritis—and on general grounds, but their significance as respects epidemic dropsy is more than questionable.

THE PUNJAB LUNATIC ASYLUM.

The Legislative Council of the Punjab has passed a complimentary resolution on the report of the Punjab Lunatic Asylum at Lahore submitted by Lieutenant-Colonel Ewens, I.M.S. The Lieutenant-Governor states that the institution owes a deep debt of gratitude to the Franciscan sisters who are in charge of the nursing arrangements of female patients. During the past three years there has been a steady increase in the comforts and amenities of the asylum, and the new buildings, providing accommodation for 186 patients, have greatly improved the conditions of life. It is hoped that further improvements will be possible when definite schemes have been prepared. The poorer classes supply the bulk of the patients, and 70 per cent. of the admissions are persons between the ages of 20 and 40—doubtless the period of life at which lunatics can be least effectually looked after by their friends.

CHOLERA IN SIND.

Four of the six districts in Sind are now more or less affected by cholera, besides the native State of Khairpur. The epidemic seems to be worst in the Larkana district. It is the villages that are mainly affected, the towns being practically free. Precautionary measures are being adopted everywhere.

THE SIMLA MUNICIPALITY.

The annual report of the Simla Municipality states that no decision has as yet been reached in respect of the extension of the municipal boundaries. In the course of the year 240 building applications were received, each of which called for an inspection of the site and a detailed scrutiny of the plans by the several officers concerned before submission to the committee. To avoid accentuating the evils of overcrowding the committee were obliged to refuse a certain number of applications or return them for considerable modification. On the other hand, not only have they sanctioned buildings in open areas, but have provided and improved drains, roads, and lighting, as, for instance, at Dhar, a suburb with a rural charm of its own which appears to offer some compensation for its remoteness from the business centre of Simla. Buchail also is a locality in which there is some indication of a desire to build houses for the Indian community, and here also municipal amenities have been or are being provided. The committee recognize that if they are, under provisions of the new Act, to restrict buildings in congested areas, they must offer facilities in open spaces to furnish the increasing population with suitable residences. But the task of making roads and of providing water and sewage pipes for single houses, even with the promise of an increase in their number, is one that has to be approached with extreme caution. The summer population of Simla, after rising quickly in the thirty years between 1869 and 1898, has been practically steady during the last seven years. Thus the summer census of 1869 showed 1,434 Europeans and over 13,000 Indians, giving a total of 15,018. That of 1889 showed 3,400 Europeans and 20,779 Indians, or a total of 24,179. That of 1904 showed 4,096 Europeans and 31,608 Indians, a total of 35,704; and that of 1911 showed 4,153 Europeans and 31,849 Indians, giving a total of 36,002.

Special Correspondence.

PARIS.

Congress at Nimes.—Maternity Benefits for Paris.

AT the recent congress at Nimes, Dr. Bergonié, in discussing the treatment of stricture of the urethra by electrolysis, stated that the tightest stricture yielded without bleeding, and the patient was able to continue his ordinary routine of life during the treatment. Dr. Roques, of Bordeaux, spoke favourably of the results of radio-therapy in chronic tuberculous adenitis. There was appreciable diminution in the size of the swellings, lessening of the periadenitic thickening, and diminution of suppuration. Eventually the indolent keloid edges of the wound became more healthy, and a satisfactory cicatrix was obtained. In intrathoracic adenitis the *x* rays produced amelioration in the symptoms, and notably lessening of chronic cough and gain in weight. In abdominal glandular swellings likewise good results had been obtained. Dr. Cerira Salse (Barcelona) gave an interesting account of results obtained with high-frequency treatment in tuberculous disease of the bone. He cited three cases—the first that of a young man who had necrosis of the humerus following an injury: after two months' treatment not only was the bone solid and well calcified, but the function of the arm was normal. Like results were obtained in another similar case, and also in a case of tuberculous dactylitis. Dr. Miramond de Laroquette described the favourable effect of light-baths in various diseases of the skin and bones. He stated also that certain rays had powerful action in fractures where good union had not occurred owing to rarefaction of the osseous tissue. Good union and healing had been noticed in cases of fracture of the tibia in the middle and lower thirds. The treatment of cancer was discussed, and Dr. Julien reported favourably on the action of radium in cancerous growths of the cervical gland, and in cancer of the breast; in one case, in which the radium tube was placed in the centre of the tumour, the swelling disappeared with extraordinary rapidity. Dr. de Keating Hart spoke on the treatment of cancer by fulguration, and reported cases cured after periods varying from five to three and a half years.

The Paris Municipal Council has arranged a scheme for the assistance of expectant mothers who have lived two years in Paris. The women will be required to give notice before the seventh month of pregnancy. The husbands must not be earning more than 1,800 francs (£32) per annum. The scheme proposes that the municipality shall give 20 francs to the Mutualité Maternité towards the care of the mother and child. The scheme is to come into force on January 1st, 1913.

VIENNA.

Post-graduate Courses at the General Hospital.—Professorial Appointments.—Fresh Outbreak of Cholera and Small-pox.—Discontinuance of the late Professor von Neusser's Clinic.

A SERIES of post-graduate classes has been arranged at the Vienna General Hospital during the months of July, August, and September for the benefit of busy doctors who can only find time during the summer holidays to keep themselves abreast of the latest medical and scientific discoveries. These classes are even more popular with foreign graduates than with Austrians, so that of recent years it has been found necessary to divide the courses into German and English, applicants for the latter being extremely numerous. Moreover, the number of students in each class has been restricted to ten, and the fee is very low—from £1 15s. to £2 10s. a month. The classes are usually given either by the clinical assistants or by lecturers (*Privatdocenten*) who have formerly held posts as assistants at the various clinics and are still attached to one or other of them. The list of classes is published in the leading German medical

papers some weeks before the commencement of the session; and measures are taken to render this list easily accessible to English and French readers. On the other hand, doctors coming from Greece, Turkey, or the Balkan States have to find out for themselves particulars regarding such classes as are open to them.

A large number of new professors have been appointed at the University of Vienna during the last twelve months, the candidates being nominated by the Emperor, or rather by the Ministry, which controls both schools and university. The list includes the names of several eminent men, such as Hajek, Hammerschlag, Alt, Ewald, Hamburger, and Bartel, who are well known in the English medical colony in Vienna. The proportion of doctors with academic titles (professors and *Privatdocenten*) amounts to more than 10 per cent. of the total number of doctors of medicine practising in Vienna, and this has given rise to a certain amount of ill feeling on the part of the general practitioners, who complain that the holders of these titles, in the majority of cases, do not content themselves with being merely consultants. Most of them are specialists, and treat their patients as though they were regular practitioners: and the difference between the fees of an ordinary doctor and those of a titled specialist is so small that the public prefers to go directly to the specialist, who, by the way, considers himself well paid by a fee of 10 kronen (8s. 4d.). It is hardly surprising, therefore, that the bulk of the profession wish to see some restrictions made on the practice of appointing professors whose sole duty seems to consist in putting a title before their names.

The wet summer with which, in common with the rest of Europe, Austria-Hungary has recently been afflicted, has had one good result, inasmuch as the rain has kept the air free from the clouds of dust which are so often a prolific source of danger during the hot months. It has also, in consequence of the decrease of summer diarrhoea, prevented the usual heavy mortality amongst children: and flies were far less numerous than is usually the case at this season. On the other hand, cholera has recently appeared in the Austro-Hungarian border districts, though so far the Board of Health has succeeded in keeping it well under control; and sporadic cases of small-pox have been notified from all over the country, one case having occurred in Vienna itself. Every means have been taken, however, to stamp out infection, so that at present the empire is in no danger of being ravaged by these much-dreaded diseases.

The death of Professor von Neusser has been the cause of considerable anxiety to the medical students at the University of Vienna, since there is a rumour that his clinic is about to disappear. The wards will probably be divided amongst the three other medical clinics (von Noorden, Chvostek, Ortner), though the ever-increasing number of medical students would justify the introduction of even another (and fifth) clinic. The decision of the Government—which, as usual, depends entirely upon questions of finance—is therefore awaited with impatience in medical circles.

BUDAPEST.

The Defects of Medical Terminology.

THE name of Dr. V. Austerlitz, Assistant Professor of Anatomy at the Kolozsvár (Klausenburg) University, is to be added to the long list of critics of medical terminology. Its defects, he maintains, lead to many misunderstandings and difficulties. For instance, it is most objectionable that the name of some symptoms or disease should convey an idea remote from the condition it ought to designate. The reason of this is to be sought in the fact that such denominations are of ancient origin, dating back, in some cases, to mediæval times when clinicians swore by the humoral pathology, and anatomists had to restrict their activity to the dissection of animals only. The upper rectus muscle of the eyeball used to be called the *Musculus retinosus*, because it moved the eye toward the sky, and the lower rectus *Musculus humilis*. For a similar reason retention cysts of the cervical mucosa of the uterus are called "ova" (*Ovula nabothi*), and sadness "melancholy" (black gall), and muscle pains *rheuma* (flow).

Another source of unsatisfactory terms is the fact that the names of those who have first described certain symptoms have been used to denote the condition. Thus in the history of middle-ear catarrh such oddities may be read: "Weber positive, Rinne negative, Schwabach protracted." In some instances priority is claimed for three or four persons, and in this way such terms are created as "Charcot and Leyden crystals," "Cheyne-Stokes respiration," "Roser-Nélaton line," "Wassermann-Neisser-Bruck reaction." The absurdities arising from the use of authors' names is illustrated by the so-called "Patella disease," a term sometimes applied, not to any disease of the patella, but to the stenosis of the pylorus observed in certain tuberculous patients. The symptom derives its name from Vincenzo Patella, an Italian professor in Siena.

Another feature of medical terminology to which Austerlitz takes exception is that some affixes—for instance, the "itis" affix for inflammation—are not used in a consistent manner. As a rule, they are affixed to Greek terms, but in some cases to Latin. For instance, metritis is used instead of uteritis and colpitis instead of vaginitis, but in tendovaginitis the "itis" is affixed to a Latin root, and similarly in bursitis, gingivitis for tonsillitis. Sometimes the "*itis*" is affixed to an author's name, giving rise to absurd and ridiculous names—for example, Bartholinitis, which word, properly interpreted, would mean the inflammation of Bartholin, the anatomist. There are inflammations which are not expressed by "itis"—for example, pneumonia, phlegmone. At the same time, "*itis*" is affixed to diseases which are not inflammatory—for example, rachitis, diphtheritis, though the last word has now fortunately been generally replaced by diphtheria.

For the designation of tumours it is customary to affix "oma"—for example, sarcoma, chondroma, carcinoma—but glaucoma and trachoma have nothing in common with tumours. Habit has made such terms, and many more might be quoted, so familiar to medical men that their incongruities pass unnoticed, but they are bewildering to medical students and to educated members of the public who seek etymological explanations. Dr. Austerlitz suggests that the International Medical Congress to be held in London next year (1913) should take the subject of medical terminology seriously into consideration.

Correspondence.

PERIBRONCHIAL PHTHISIS.

SIR,—Dr. A. C. Jordan raises an interesting question in his paper upon peribronchial phthisis. He does not, however, seem clearly to realize the differences in the method of infection in children and in adults. In children morbid anatomists have long recognized that infection takes place in most instances through the root of the lung.

The only illustration given by Dr. Jordan in which a *post-mortem* examination was made occurred in a child, and conclusions of far-reaching character can scarcely be based upon such a case. That infection in adults occurs almost invariably at a certain spot at the apex cannot be doubted. This spot I believe to be the quiescent area indicated many years ago by my fellow-student, Dr. H. J. Campbell. The absence of infection in children at this spot is probably due to the movements and shape of the chest. Within the chest of the child there is probably more complete aëration of the whole lung than in the adult. In the fully developed chest the area of air stasis occurs at the apex of the lung, and there the bacilli lodge. While the method of infection in children is generally through the root of the lungs, it is not clear to me that the case recorded by Dr. Jordan is of this type. To me the description reads more like infection through the apex. However that may be, infection through the root of the lung in children virtually always occurs through the medium of caseous bronchial lymphatic glands, and in this case the glands were not caseous. In children, it may be mentioned, the lower lobe is almost as likely to suffer as the upper—that is to say, infection not very uncommonly invades mainly the lower lobe, leaving the upper lobe free.

These last remarks apply chiefly to acute and subacute infection. My experience leads me to believe that chronic tuberculous disease of the lungs in children is very uncommon. Caseous bronchial glands unfortunately are far

from rare but when infection arises through them the case almost invariably progresses rapidly to a fatal ending. Instances of chronic disease of the lung in children in the great majority of cases prove to be non-tuberculous. — I am, etc.,

September 2nd. THEODORE FISHER.

TUBERCULIN TREATMENT.

SIR,—I was somewhat troubled and not a little perplexed on reading Dr. Camac Wilkinson's letter in your issue of September 14th. I am afraid he has somewhat misunderstood my intentions. When I wrote my original letter I was desirous, owing to my ignorance, to find out, if possible, why there was so much discrepancy of opinion as to the advisability or otherwise of administering tuberculin, and so great divergence of opinion as to the results obtained and the method to be adopted if the treatment is to be successful.

The recent Hunterian Oration would seem to show that some physicians who should have had some experience of this disease are not convinced of its value. Dr. Thomas Glover Lyon concluded his oration by saying, among other things, that no reliance can be placed on specific remedies. When such conflicting views are held, it seems to me that it is a matter which should not be allowed to rest. Dr. Wilkinson must be as interested as any one else in having this matter settled authoritatively, and it is obviously of paramount importance to the patients concerned that as few mistakes should be made as possible. From my own somewhat limited experience, I am convinced that Dr. Wilkinson is far more in the right than Dr. Glover Lyon; yet I do not think it can be said that finality has been reached in this matter, and even Dr. Wilkinson may still be able to learn a little from others.

I was glad to learn that Dr. Wilkinson is in favour of commencing treatment with relatively small doses. My reason for asking this question was that I had gathered from medical men who had been in close contact with Dr. Wilkinson that he was not quite sure in his own mind whether it might not be more dangerous to use small doses than larger ones, a proposition which might be quite possible of defence when we consider the intricate and complicated workings of such a remedy as tuberculin. I did not wish it to be inferred that all my cases did badly on account of the methods which I adopted.

With regard to the two cases mentioned by Dr. Wilkinson, I have no doubt if all the data were forthcoming they might be classified. Curiously enough, two days ago I had a letter from an old patient of mine who, a little more than four years ago, was admitted into a sanatorium of which I was then in charge. He had previously been for eight or nine months resident in a sanatorium, and after that he had spent some months at a health resort, at the end of which time he was a great deal worse than when he had first gone to the sanatorium and had very extensive disease, tubercle bacilli in the sputum, and appeared quite hopeless about himself. At the end of four months' treatment, without tuberculin, he was completely restored to health, and has been well ever since, and is at present medical officer to a tuberculosis dispensary in one of our large cities. I am inclined to think that he might have benefited with tuberculin, but the fact remains that he did well without it. With regard to such cases, I may perhaps be permitted to point out that when a patient goes on for a long period gradually getting worse, so that extensive physical signs are present, and, it may be, abundant tubercle bacilli, it may be implied that the tissues of the patient are very resistant, or that the bacilli concerned are of less than average virulence, otherwise a fatal termination would be more speedily reached. Such cases, as a rule, are the result of neglect of efficient treatment: some of these cases are, I am inclined to think, incurable, unless tuberculin be administered, and may present excellent examples of the triumphs of tuberculin. I should be quite inclined to the belief that Dr. Wilkinson has saved the lives of both these patients.

I may mention that an astute sanatorium physician will often accept cases such as the above, knowing full well they will be easier to treat, and produce more permanent and brilliant results than many so-called early cases, which, because early, are often thought by the unwary to be more favourable.

There is one aspect of the question which I should like to emphasize. It is not so much necessary to know what happened to a number of individuals who reached big doses of tuberculin, or who were able to pass through all the grades in a system of graduated labour, as to know how far the system of treatment has been successful in bringing the cases to such a favourable condition.—I am, etc.,

Ayrshire Sanatorium, Sept. 16th. EDWARD E. PREST.

TUBERCULOSIS COLONIES.

SIR,—I was glad to see the letter by Dr. Benjamin Moore, in the JOURNAL of August 24th, insisting on the importance of preventive as contrasted with curative measures for dealing with tuberculosis. I fully endorse his view that sanatorium and dispensary treatment of curable cases is but a lopping of branches which will be to a large extent futile, from the preventive point of view, unless at the same time a vigorous attack is made on the root of the trouble—the sources of infection.

There appears to be ample evidence for the conclusion that at present "infection is so widespread that the artisan class—attending as children public schools, and as adults working in factories and travelling in public conveyances—can hardly hope to escape it, and, as is shown by *post-mortem* data, do not escape it,"[1] although the bulk of the population have sufficient resistive power to survive the attack, and die from other causes, only about 8 per cent. of the total death-rate being due to tuberculosis.

It seems to me that the two preventive measures of cardinal importance are:

1. Ensuring a pure milk supply, free from tuberculous infection. (The State ought also, of course, to institute a thorough-going campaign against tuberculosis in domestic animals.)
2. The segregation of patients who expectorate tubercle bacilli.

Both will be difficult to enforce, and compulsory segregation if attempted at the present time, would doubtless meet with bitter and determined opposition. But in these days public opinion is being transformed with startling rapidity by the leaven of scientific discovery, and the old views regarding the liberty of the subject are showing manifest signs of disintegration. If liberty, in the case of an individual, means the risk of passing on to others an insidious, lingering, and often incurable disease, we are justified in curtailing that liberty to the extent that is necessary for the safety of others. The principle has for thousands of years been admitted in the case of leprosy, which, although more disfiguring, is probably less infectious than tuberculosis, and in recent years public opinion has sanctioned its extension to one disease after another. We have only to produce and establish clear proof of the necessity for its extension to tuberculosis for public opinion to sanction that too.

Many, no doubt, imagine that if patients are careful about the disposal of their sputum, the risk to their neighbours is negligible—that, for instance, a patient who has been trained in a sanatorium and is conscientious in carrying out the precautions he has learnt, may safely return to his family, even although he continues to expectorate millions of virulent bacilli. Any one who is in the habit of closely observing tuberculous patients must see, however, that although danger may be greatly reduced in this way, it cannot, even with the best intentions, be entirely obviated, and that complete safety can only be obtained by segregation of the infectious. After all, the necessary curtailment of the patient's liberty is not such a dreadful thing as many probably imagine. Segregation need not entail prison walls and an end to all joy and usefulness in life for the unfortunate victims; and for curable cases it will only be temporary. For well-to-do patients, private sanatoriums as at present provided are quite suitable, but these institutions ought to be put under the supervision of the proposed State Board of Health, whose requirements they would then have to fulfil. The

[1] Karl Pearson, F.R.S., *The Fight against Tuberculosis and the Death-rate from Phthisis*. London: Dulau and Co., Limited, 1911.

difficult problem is to find suitable accommodation for the enormously greater number of patients belonging to the poorer classes. For the very advanced cases, which are also the most dangerous, hospital or sanatorium accommodation, where the patients can be nursed and made as comfortable as circumstances permit, is the only provision required; but for earlier cases, still fit for a certain amount of work and play, I suggest something different from the ordinary sanatorium. The idea is not a new one, and has already been carried out on a small scale with marked success.

My proposal is that a number of large colonies be established on suitable sites throughout the country, where consumptives could carry on a great variety of occupations—farming, gardening, building, carpentry, designing, clerical work, storekeeping, domestic service, factory work, and all the multifarious activities of a large community. It has been abundantly shown by Dr. Paterson (at Frimley) and others that while overwork is fatal to consumptives, an amount of work that is within their powers is beneficial, and far better for them than idleness. The work must, however, be suited to the patient. To put an elderly clerk of frail physique to manual labour on a farm might be disastrous. Hence the necessity, if the colony is to be successful, of providing a sufficient variety of occupations.

The whole life of the colony would, of course, be under the supervision of expert medical officers. Patients would work eight, six, or any smaller number of hours as prescribed. Many a man with early lung trouble, who is not quite able for a full day's work, has at present no escape from the cruel alternatives of putting in full time and struggling on with work that is killing him, or else giving up his job altogether. In the colony these men would be enabled to continue such work as they were fit for, with benefit both to themselves and the community. Patients would receive remuneration for their work, partly in the form of board, lodgings, and treatment, and partly, if funds permitted, in cash. They would live under sanatorium conditions and be given the best possible chance of recovery or improvement. Ample facilities for recreation and entertainment would be provided, and open-air (or fresh-air) religious services for those who wished to take part in them. All the work of the community, except that of the most responsible administrative posts, would be carried on by the patients themselves and the colony would be to a large extent self-supporting. The State or public authority ought, of course, to be responsible for the finance and administration, but a noble field would be left for private beneficence which could help in countless ways to improve the amenities of the place and make life pleasant for the patients. Experience as a sanatorium superintendent has convinced me that life in such a colony could be made quite cheerful and attractive, entailing little hardship except separation from friends which need not be absolute.

As many public bodies are at present contemplating extensive expenditure for the treatment of consumptives, I hope that some of them may be induced to start an experimental colony on these lines. Admission might be voluntary, and I believe that a great many patients would gladly avail themselves of such an opportunity of working under conditions which would give them the best chance of cure. Later on, if the experimental colony were successful, the system could be extended so as to provide for the whole of the (more or less) able-bodied consumptive population. By such a scheme the most fatal objection to sanatoriums, their expense, would be reduced to a minimum, while their advantages would be fully retained.

Given a pure milk supply and effective segregation of infectious patients, I believe that the incidence of tuberculosis among the general population could be abolished, almost at a stroke. Of course, the colonies would have to go on for many years, but once the system was in full working order, the number of admissions would very rapidly drop and the colonies could gradually be reclaimed for the use of the general public.

Without such drastic preventive measures, I fear we shall not get rid of the scourge of tuberculosis until in the course of generations Nature achieves the immunity of the race by the slow but steady elimination of the susceptible—that ghastly, heartrending process with which many of us are so terribly familiar.—I am, etc.,

J. E. ESSLEMONT, M.B.

West Southbourne, Hants, Sept. 15th.

DEVELOPMENT OF THE NOSE.

SIR,—While looking through some accumulated numbers of the JOURNAL I have just come across a notice—in the issue of August 17th—drawing attention to some recent papers of mine on the development of the nose, throat, etc.; in this you refer, among other things, to certain observations made by me on the earlier development of the pituitary body.

When, in 1910, I described the remains of Rathke's pouch as ultimately extending along the edge of the nasal septum as far as its angle of junction with the palate, I did not know of any similar previous observations. Professor Tourneux and his son, however, had already described the remains of the pouch in this situation in a communication to the Association of Anatomists at Lille in 1907, a fact of which I only became aware through the courtesy of Dr. Tourneux in sending me a copy of his paper. Under these circumstances it is fitting that I should direct the attention of those interested to this paper and to a couple of later associated papers.

The references are: "Developpement de la base du crâne et de la paroi postérieure du pharynx," Assoc. des Anatomistes, Congrès de Lille, 1907; "Base cartilagineuse du crâne et organes annexes," published at Toulouse, 1911; "Pédicule hypophysaire et hypophyse pharyngée chez l'homme et chez le chien, canal cranio-pharyngien et canaux basilaires," *Journ. de l'anatomie et de la phys.*, No. 3, 1912.

I think these writings may be of some interest and importance to any of your readers who may be working at the pathology of the pituitary, vault of the pharynx, or base of skull, and for this reason I venture to ask for space for the correction in your JOURNAL.—I am, etc.,

J. ERNEST FRAZER.

St. Mary's Hospital Medical School, Sept. 10th.

INTRAPERITONEAL INJECTIONS OF OXYGEN.

SIR,—Mr. H. J. Godwin's note on "Intraperitoneal Injections of Oxygen during Certain Abdominal Operations" (September 14th, p. 630) raises several interesting points. The intraperitoneal administration of oxygen has been in use for some time. Schulze (*Mitt. aus. d. Grenz. d. Med. u. Chir.*, Bd. 18, p. 150) in 1908 recorded seven cases of tuberculous peritonitis treated successfully by evacuation of the fluid through a cannula and the subsequent distension of the abdomen with oxygen.

As a post-operative measure in cases of septic peritonitis the method described by Weiss and Sencert (*Rev. de Chirurgie*, April and May, 1910), of passing a continuous current of oxygen through the tubes draining the peritoneal cavity, would appear to be preferable to that of distending the abdomen with the gas; for, if the peritoneal infection be not generalized at the time of operation, any separation of peritoneal surfaces is to be avoided, whilst, if it be generalized and the patient very ill, the question of respiratory embarrassment immediately comes in. For the past two years this method of passing a continuous current of warmed oxygen gas through the pelvic drain in cases of severe peritonitis has been practised in several of the surgical clinics in Edinburgh, and apparently with benefit.

As Seaman Bainbridge was the first to show, oxygen is rapidly absorbed from the peritoneal cavity; it is, however, an irritant, as evidenced by the active hyperæmia of the peritoneum and the free transudation of serum and leucocytes which it produces, hence probably its value in tuberculous peritonitis.

In an animal under an anæsthetic moderate distension of the abdomen with oxygen has, in my experience, little or no beneficial effect on the general circulation; in some cases, indeed, it caused an acceleration of the pulse and a fall in blood pressure. The propriety of filling the peritoneal cavity with oxygen after operations for the removal of large abdominal tumours or for adhesions is doubtful. In the light of Yandell Henderson's work on anæmia it would appear that the sluggishness of intestinal peristalsis which tends to follow abdominal operations is due to the

aëration of the viscera from exposure during the operation. As he has proved experimentally, this paresis may be avoided by exposing the viscera to an atmosphere of carbonic acid gas. I would suggest that after operations for adhesions, carbonic acid gas instead of oxygen should be injected into the abdomen by the excellent method described by Mr. Godwin.—I am, etc.,

Edinburgh, Sept. 16th. D. P. D. WILKIE.

PERFORATION OF THE TYMPANUM AFTER SYRINGING.

SIR,—Under the title of "Perforation of the Tympanum after Syringing," Dr. Drybrough-Smith called attention in the BRITISH MEDICAL JOURNAL of July 27th, p. 181, to the sequela of removing wax from the ear. The value of wax is somewhat noticeable in Natal and the Cape Provinces, where the pain and head-noises associated with a dry condition of the drums are aggravated by dry winds, particularly the hot ones, which are so frequent in this climate at certain periods of the year. The natives do not care to venture out on a windy, dusty day, the coolies wrap their ears up in flannel, and the Europeans often stuff their ears with cotton-wool. All this seems to indicate the need for protecting the drum from the wind, and a large piece of accumulated wax in the ear may act as a useful protection against the dry winds. Remove the wax and this protection is gone, with the result that the drum becomes dry, and a tendency to otorrhœa is increased. This is a much more likely cause than that of forcible syringing, if the nozzle of the syringe has not been directed on to the drum of the ear. However, considering the risks of exposing a drum which has been protected for years by a piece of wax, it is always desirable to use a small plug of cotton-wool to protect the drum for a few hours after the wax has been removed, and to advise the patient to use a drop or two of warm oil to keep the meatus moist, provided, of course, that there is no discharge from the ear.

Can you suggest a really satisfactory treatment for noises in the ear besides the obvious one of looking after the condition of the meatus, nasal passages, and Eustachian canal? General tonics are, of course, useful, and potassium iodide influences some cases, but adrenalin does not seem to produce much effect; and Mr. Heath's treatment of painting the drum, which is recommended by some otologists, seems rather a drastic measure when there is not much deafness associated with the condition.—I am, etc.,

F. G. CAWSTON, M.B., B.C.Cantab.

Greytown, Natal, Aug. 17th.

PROPOSED COMMISSION ON DIET AND DISEASE.

SIR,—In Professor Leonard Hill's address to the British Association occurs the striking observation that out of 2,000 children at Dr. Barnardo's Homes not one had had appendicitis. This statement requires examination, but if true it suggests that appendicitis is due to too liberal a diet, for probably it is in more stinted diet that the manner of life of these children chiefly differs from that of children in more affluent circumstances. The question of the connexion of diet with health and disease has received much attention of late years, but we still seem to be at sea on the subject. On one hand, we have Dr. Haig, the Hon. Rollo Russell, and many other authorities, both medical and lay, attributing numerous diseases to excess of certain articles of diet, and that general moderation promotes health and longevity is a truism. On the other hand, it is clear to those who have eyes to see that the diet of all but the very poorest classes greatly exceeds what is necessary for sustaining life, and we have medical journals advocating a more "liberal" diet in public schools, and the general practitioner putting down many diseases to "malnutrition" and seldom suggesting that the "mal" is due rather to excess of than to too little food.

Personally I am inclined to believe that for preventive and curative purposes general limitation of food is more important than deprivation of certain classes of nutriment. How, otherwise, explain the boasted success in rheumatism of the "Salusbury treatment" (minced meat only) on the one hand and the uric acid free diet on the other?

The Chittenden experiments and the fasting experience of various individuals surely demand further investigation. Might not the Royal College of Physicians be asked to appoint a commission to investigate and let us know whether we are moderate or whether we are most of us, gourmands who are being plagued for our gluttony by cancer, diabetes, and appendicitis, in addition to gout and the other diseases long recognized as the outcome of excess?—I am, etc.,

Woolwich, Sept. 16th. SIDNEY DAVIES.

MEDICAL SCIENCE AND WEIGHTS AND MEASURES.

SIR,—I do hope Dr. Johnston-Lavis's witty protest in the JOURNAL of August 31st about the British standard weights and measures will open the eyes of the profession in England.

Having often to examine candidates for an English life insurance company, I have to ask a Continental candidate how many pounds and stones his weight is and how many feet and inches his length!

Really I cannot believe that they do not know the existence of something like a Kgr. or a M. at the insurance office, but not to use the metric system in Continental insurance work goes above my understanding.

I feel sure that the imperial measures strongly impede the propagation of English medical literature in foreign countries.—I am, etc.,

Haarlem, Holland, Sept. 7th. H. BOSHOUWERS.

SIR,—A member of the Clinical Research Association has called our attention to the letter of August 31st by Dr. H. F. Johnston-Lavis, to the effect that, on his complaining about the results of a certain analysis being presented as grs. per gallon, the Secretary of the Association wrote him "a plaintive letter saying, of course all their researches were made by metric measures, but the ignorance of English medical men was such that they had to convert them to standard measures."

The member in question asks whether it is the fact that we wrote in such an "insulting" manner of English medical practitioners, and perhaps the best reply to this inquiry is to quote the actual terms of the Association's letter to Dr. Johnston-Lavis, in which we say that:

> When we cannot get a small number of educated Englishmen, as the members of the medical profession are, to change from antiquated apothecaries' tables to those which have for their basis, ease, simplicity, and generality, we cannot hope for such a radical change from the populus.

It appears to us that this is a plain statement of facts to which it is difficult to take exception, and your readers may judge for themselves whether the tenor of our remarks is accurately reproduced by your correspondent.—I am, etc.,

CHAS H. WELLS,

London, Sept. 10th. Secretary, Clinical Research Association.

THE INDIAN MEDICAL SERVICE.

SIR,—I am afraid that the tone of the article, Royal Commission and the Indian Medical Service, which appeared in a recent issue of the JOURNAL, is more optimistic than the circumstances should allow. I think the most probable outcome of the inquiry will be, as far as the Indian Medical Service is concerned, simply the holding of the competitive examination for entrance to the Service in India as well as in England, and so the gradual formation of a separate Civil Medical Department recruited in India. Would not this be the very best thing which could happen? We should then cease to see, as at present, men attracted to join the Indian Medical Service under absolutely false conceptions of the conditions of civil employment. We could then have confidence that reasonable terms would be offered in order to attract a sufficient number of candidates to fill the posts on the military side of the Indian Medical Service proper. There are at least two such conditions which must, sooner or later, be considered: (1) Living wage; (2) prospects of the more senior men.

The present pay is not a living wage for a married officer in view of the enormously enhanced prices of the necessaries of life, and this fact was recognized by the Indian Government when it increased the pay of all

regimental officers, other than the medical officer, some four years ago.

To turn to the subject of prospects. What are they? Absolutely *nil*. A man joins, becomes medical officer of a regiment, and as such he must remain; there is no possible chance for him. He will do the same work and have exactly the same responsibility after twenty years' service as he had when an untrained officer of, say, one year or less. As long as the present stupid and effete regimental hospital system continues, this must be so.—I am, etc.,

September 11th. MAJOR, I.M.S.

THE FIRST "INSPECTOR OF HEALTH."

SIR,—I think I may venture to say that the first person who ever bore the definite official title of "Inspector of Health" was Sir Jerome Fitzpatrick, who in 1795 was appointed under this title, to advise the War Office as to the health of the soldiers. This officer was himself a medical officer of the army, but he was not under the Medical Board that in those days administered army medical affairs. Indeed, he was quite independent of the board, and from time to time friction occurred between the board and the inspector in his efforts at preventing disease.

He seems to have effected several reforms for the benefit of the soldier, then so badly cared for. I knew nothing of his existence until I found an excellent mezzotint of him in a print shop in Soho. Very little seems to be known as to who he was or what training in medicine he received. Some brief reports of his work are preserved in the War Office section of the Public Record Office in London.

Perhaps some of your readers could give some particulars of him. He was alive certainly up to 1807. He is sometimes called Sir *Jeremiah* Fitzpatrick.—I am, etc.,

Junior United Service Club, London, Sept. 2nd. GEORGE J. H. EVATT, Surgeon-General (ret.).

ANAPHYLAXIS.

SIR,—I published a paper in the *New Zealand Medical Journal* some years ago on the administration of anti-streptococcus serum per rectum, quoting a number of cases. In one of these cases the treatment was continued for some weeks—I cannot now say how long, as I have not my notes by me. From our present knowledge, we should suppose that, had the serum been given subcutaneously, anaphylaxis would have occurred. This raises the important question, Does rectal administration prevent anaphylaxis? This can only be answered by experiment, and I trust that some one will undertake this important work.—I am, etc.

Bournemouth, Sept. 10th. ALBERT I. GARLAND.

SEA-WATER INJECTIONS IN SUMMER DIARRHOEA.

SIR,—All those who are interested in the use of isotonized sea-water injections in disease will be grateful to Dr. Parry for his letter in the JOURNAL for August 31st.

As one of those responsible for the issue of the statistical report of the Quinton Polyclinic, I particularly wish to thank him for the fair and open-minded manner in which he examines the details of the cases of gastro-enteritis which are therein mentioned. He should, however, remember that a great number of these cases there reported have no details as to the number of days that the patient had been suffering, and that most probably a fair proportion had lasted under seven days.

When you consider the great pressure under which we were working—frequently nearly 200 cases to be attended to in an afternoon—we may perhaps be pardoned that in the heavy stress of work we often omitted to note in our casebooks the number of days that the illness had been [illegible].

It should also be borne in mind that this special method [illegible] hardly sufficiently known in this country for many [illegible] to be brought promptly to the dispensary, but the reports of the *Dispensaires Marins* in Paris, where the treatment is well recognized, show a record of about 90 per cent. of cures in infantile cholera.

I would also remind Dr. Parry that isotonized sea-water is used successfully in many diseases besides summer diarrhoea, as any medical practitioner can easily ascertain should he care to attend the work carried on at Poland Street.—I am, etc.,

ARTHUR SANDBERG, M.D.,
Honorary Physician to the Quinton Polyclinic.

London, S.W., Aug. 31st.

NIGHT NOISES IN LONDON.

SIR,—I venture to appeal through your columns to the profession to assist me in moving the authorities to take some steps towards mitigating the intolerable night noises of London and suburbs. If it could be shown that, in addition to their nuisance, they were having, or were likely to have in time, especially if they go on increasing, as they must unless checked, a deleterious effect on the health of a considerable portion of the community, Government might be prevailed upon to appoint a committee to consider the matter. I shall be very happy to have a postcard from any member of the profession who approves my action, and I trust you may be pleased to lend the movement your support.—I am, etc.,

CHAS. MONK, Lieut.-Col. I.M.S. (Ret.).

Barnes, Sept. 11th.

FORCIBLE FEEDING OF SUFFRAGE PRISONERS.

SIR,—It seems to me that the only point in connexion with forcible feeding is to determine whether the proceeding is ethically defensible or not. As a means of saving life in the case of a lunatic who refuses food, no one will deny that it is a right and proper method of treatment. When a doctor is asked to carry out this treatment on a prisoner the question is not one of saving life, but of making it possible to carry out a sentence of imprisonment. In the eyes of the prisoner and the public he is putting himself in the same position as a prison warder. If forcible feeding is latent in every sentence of imprisonment, then the doctor who carries it out is in the same position as the man who carries out any other sentence the law orders—it is simply part of the punishment. The profession has a right to consider whether this is consistent with its dignity. To discuss alternative methods would involve a thorough examination of the whole prison administration, and opens up very serious questions which will have to be settled some day.—I am, etc.,

JAMES W. MCINTOSH, M.B., F.R.C.S.E.

Manchester, Sept. 16th.

DOCTORS AND DISPENSING.

SIR,—Will any member of the Association who has given up dispensing in country practice give me the benefit of his experience as to what he did with regard to fees, and whether his patients seemed satisfied or the reverse?

I have a small country town practice; there is a chemist in the town who would dispense if I were to prescribe. My *lowest* visiting fees are 2s. 6d. in the town, 5s. outside up to 4 miles, and 1s. a mile beyond; medicine always extra, 2s. 6d. a bottle of twelve doses. These are the charges initiated by the founder of the practice and carried down to me. It is a curious way of charging, and I am wondering how I should charge if I gave prescriptions instead of medicine. I feel sure that the only way to check "prescribing chemists" is to stop "dispensing doctors."

This and the more time given us for reading, in these days when so much is to be learnt, should certainly be for the good of our patients, and if we could still keep the wolf from the nursery door it would surely be desirable.

I am, etc.,

WESTCOUNTRYMAN.

PROFESSOR DR. KUTTNER of Berlin, general secretary of the German Central Committee for the Prevention of Consumption, will deliver the inaugural lecture at the Medical School for Diseases of the Chest, Royal Hospital for Diseases of the Chest, City Road, E.C., on Thursday, October 17th, at 5 p.m. The subject of the lecture will be The Modern Combat against Pulmonary Tuberculosis amongst Children. A donation of £50 has been received by the Dean from Dr. Horace Dobell towards the Research and Equipment Fund.

Obituary.

REGINALD EDWARD THOMPSON, M.D.
F.R.C.P.LOND.,

LATE CONSULTING PHYSICIAN TO THE BROMPTON HOSPITAL FOR CONSUMPTION.

DR. REGINALD E. THOMPSON, who suffered an attack of cerebral haemorrhage in November last, died at his residence at Chelsea on September 10th. He was the son of Mr. Serjeant Thompson, and was born in London in 1834. He received his early education at Brighton College, from which he passed to Trinity College, Cambridge, where he graduated B.A.; he took the degree of M.B. Cambridge in 1860 and graduated M.D. in 1863. In 1868 he became a Fellow of the Royal College of Physicians.

He pursued his medical studies at St. George's Hospital, and soon after obtaining his first degree accompanied the late Viscount Milton on a shooting expedition to the Canadian North-West, then almost completely unexplored. A few years later Viscount Milton made the memorable expedition across the Rocky Mountains, in which he was accompanied by the late Dr. W. B. Cheadle.

Dr. Thompson was appointed Medical Registrar to St. George's Hospital, and during his tenure of this office an outbreak of typhus fever occurred among the tenements which then existed in the neighbourhood of Sloane Street. During this outbreak 120 cases were admitted into St. George's Hospital, and as Medical Registrar Dr. Thompson had an opportunity of seeing them, and the results of his observations were embodied in a paper contributed to the first volume of the *St. George's Hospital Reports* in 1866, in which among other matters he discussed the differential diagnosis of typhus and typhoid fever. He himself contracted the disease towards the end of the outbreak, but made a perfect recovery. In 1869 he was appointed assistant physician to the Brompton Hospital for Consumption, with which institution he continued to be connected for nearly the whole of the remainder of his active life. In 1880 he became physician to the hospital, and for many years the *post-mortem* examinations were made under his supervision. On his retirement in 1894 he was appointed consulting physician, a post which he retained until 1901. In 1871 he was appointed physician to the Seamen's Hospital, but retired two years later. In 1880 he was secretary of the Royal Medical and Chirurgical Society, and in 1883 was appointed vice-president. His chief contributions to literature was a work on *Family Phthisis*, to which, as well as to his contributions on the subject of pulmonary haemorrhages, Dr. Theodore Williams refers below.

Both before and after his retirement he was much occupied in life insurance work, and for many years was a familiar figure at the London medical societies. He was a handsome man and always appeared to enjoy robust health, while his geniality endeared him to a large circle of friends. He was a good musician and a distinguished amateur artist. In recent years he had lived a very retired life, and to many of the younger generation he was personally unknown. He married in 1874 a daughter of Professor Augustus De Morgan, the mathematician, who died many years ago. Dr. Thompson is survived by two sons.

We are indebted to Dr. THEODORE WILLIAMS for the following appreciation of his late colleague:

It was with much regret that I noted the death at the age of 78 of Dr. Reginald E. Thompson, an old colleague of mine on the staff of the Brompton Hospital, and formerly physician to the Seamen's Hospital, Greenwich. It is seldom that I have known a physician of so many accomplishments and a man whose work and whose friendship I have so highly valued. Dr. Thompson was an excellent pathologist, a careful clinician, and a most able reporter. He contributed more than one paper on the results of pulmonary haemorrhage on the lung tissue, a subject which he investigated and illustrated with much success. Another good piece of work was his book on *Family Phthisis*, a statistical inquiry into the cases of the Brompton Hospital from the standpoint of family predisposition, and this has been helpful in the recent study of eugenics and allied sciences. Dr. Thompson was well known as an artist, and he was so good-natured that his talents as a draughtsman were always at the disposal of his colleagues and of the hospital which he served with such whole-hearted fidelity.

DAVID GEORGE DAVIDSON, M.B., C.M.,
EDINBURGH.

WE regret to announce the death of Dr. David G. Davidson, of 9, Granville Terrace, Edinburgh, which occurred quite suddenly at Kinloch Rannoch, in Perthshire, on September 9th, while he was on a short walking trip with an old friend.

Dr. Davidson was born at Lochans, near Stranraer, in Wigtownshire, on May 8th, 1865, the third son of a well-known educationist whose six sons all passed through the University of Edinburgh. After a course of considerable distinction he graduated M.B. and C.M. at Edinburgh in 1889. He gained his wonderfully exact knowledge of anatomy at Minto House under Professor Symington, and he worked under his chief as demonstrator for several years. Later he acted as class and clinical assistant to the late Dr. Alexander Bruce, and he was accustomed to say he had gained all his knowledge of medicine from that great neurologist. After a short period of service under Professor Griffith, of Leeds, he settled down to general practice in the south-west part of Edinburgh; here he laboured for more than twenty years, up to, indeed, the last week of his life. A man of unusual energy and vigour alike of mind and body, he built up a very large practice, but he paid for it by overtaxing his strength, so that he broke down at the early age of 47. He married in 1902, but lost his wife only in December last; he leaves behind him a son of 9.

Dr. Davidson was a very social and lovable man, and he had many devoted friends. He had a very sunny temperament, and carried about him an atmosphere of geniality and happiness that brought hope to the bedsides of his patients. No man, even of his profession, ever did more for nothing, and he had his reward in the love and gratitude of the poor and needy throughout the Fountainbridge district of Edinburgh. Never was a more impressive scene than his funeral. He was carried to his grave amidst the hushed silence and the tears of thousands of spectators who lined the street betwixt his house and the North Merchiston Cemetery. He was buried with military honours, as he had been for some years an active officer in the Edinburgh Territorials. Indeed, Nature had made him for a soldier, and he never looked liker himself than in the saddle, or in his characteristic short and sharp manner of lecturing on ambulance work to railway men or soldiers. He did the full work of two men all through his short lifetime; and perhaps it is better to fall on the field than to linger long as a supernumerary after the battle of life.

Dr. JOHN THOMSON writes:

In Dr. David G. Davidson the profession in Edinburgh has lost one of its most justly popular members. His vigorous and handsome presence and his kindly greeting will long be missed in the district where for more than twenty years he has been so well known and so highly esteemed. His practice was a large and very exacting one, and not a little of his best energy was given to people who never paid him except in gratitude. To his medical brethren he was a thoroughly good neighbour, and his ability, his enthusiasm in his work, his straightforwardness, and his unselfishness made him a man of weight in all gatherings of his own profession. Those who knew the terrible strain through which he recently passed during his wife's long and distressing illness could not but be anxious as to its effects on his health. But his sudden illness was not anticipated, and his death has come as a great shock to his many friends.

Dr. D. J. GRAHAM, R.A.M.C.(T.), writes:

Dr. Davidson was a keen and enthusiastic supporter of the Territorial Force. He was a Captain in the 3rd Lowland Field Ambulance, R.A.M.C., and took a great interest in the welfare of the corps, doing everything in his power to further its interests and maintain its honour. It was at camp that we saw Davidson at his best. He simply

loved being at camp, and at Lanark in July of this year little did we dream that it would be his last camp. There he was full of life and energy, and apparently in the best of health. No one was more active than he was, no one was cheerier. His high spirits and vivacity were infectious, and he was the very life of the officers' mess. By his cheerful, smiling countenance and his inexhaustible store of anecdotes he kept us all entertained and amused. There were no dull moments when Davidson was around. He was beloved by officers and men alike, and little wonder! A more kind, obliging, considerate, generous, and unselfish man never breathed. His large heart and lovable personality endeared him to us all.

We deeply mourn his loss and feel that a bright light has passed from our midst. Long will his memory be kept green in the 3rd Lowland Field Ambulance.

CHARLES EDWARD COVEY, M.R.C.S., L.S.A.,

ALRESFORD.

CHARLES EDWARD COVEY, who died at Alresford on August 31st, at the age of 71, came of a family which has for many years been well represented in the medical profession. His father, Edward Covey, had an extensive practice in Basingstoke, and was a large landowner in the neighbourhood and a J.P. for Hants.

C. E. Covey was educated in Winchester and at St. Bartholomew's Hospital, where he took the M.R.C.S. and L.S.A., and was house-surgeon to the late Sir James Paget.

After practising for a short time, first at Basingstoke and then at Walton, in Suffolk, he removed to Alresford, taking over the practice of his uncle. There for some twenty-five years, until his retirement in 1904, he carried on a large practice. When he retired he built himself a house in the neighbourhood, in which he lived until his death.

He was a sound and careful surgeon, and a man of most untiring industry. His distinguishing characteristics were an unusually benevolent and sympathetic nature, which caused him to be universally beloved, especially by his poorer patients, and a straightforward honesty which earned the respect and confidence of every one who had to do with him.

His leisure moments—few enough in the strenuous years of his middle life—were devoted to sport, for which he had a passion which survived undimmed until the day of his death. There is scarcely any branch of outdoor sport in which he had not taken part, but it is as a cricketer and a shot that he will be best remembered.

His cricketing days were over before he met the present writer, but the latter can speak from experience of his capabilities as a shooting man. Defective sight prevented his being a very brilliant shot, but in his knowledge of the habits of the game he hunted and of the best way to bring them to bag he was quite unsurpassed.

He belonged to a vanishing type of sportsmen who owed the size of their bags to their knowledge of the art of venery rather than to their power of drawing cheques; and the familiar figure of the old doctor trudging home with his gun on his shoulder and his dog at his heel will long be remembered by his neighbours with affectionate regret.

WE regret to have to record the death on August 16th of Dr. WILLIAM FLOOD, of York. An Irishman by birth, he was born in 1860, and received his medical education at the Ledwich School, Dublin, and at Queen's College, Galway, obtaining in 1882 the Licence in Medicine, Surgery, and Midwifery of the Royal Colleges of Edinburgh. He had been for some twenty years resident in York, where he had a large practice, especially among its poorer inhabitants, and was well known for his kindness towards them. Early in the present year laryngeal trouble arose subsequent to a severe cold, and though he went away for change of air on several occasions he never entirely recovered, and for some time previous to his death had ceased to carry on his practice personally. Dr. Flood was married and is survived by his wife and three daughters.

FLEET SURGEON ALFRED H. LISSANT COX, R.N. (retired), died on August 28th. He studied at King's College, and took the diplomas of L.S.A. in 1885 and M.R.C.S.Eng. and L.R.C.P.Lond. in 1887. He joined the service as Surgeon in August, 1889, and became Staff Surgeon in August, 1897, serving in that rank in the cruiser *Fox* during the trouble at Behrein and Hodeida in 1905; he was promoted to the rank of Fleet Surgeon in August, 1905. From October, 1909, to October, 1911, he served in the *Achilles* and then joined the *Blake*. He retired in February, 1912.

DEPUTY INSPECTOR-GENERAL GEORGE KELL, R.N. (ret.), who died at Southsea on September 9th, took the diplomas of L.R.C.P. and L.R.C.S.Irel. in 1863. He entered the service in March, 1867, being appointed Staff Surgeon in September, 1877, and Fleet Surgeon in June, 1886. He retired in November, 1895, with the honorary rank of Deputy Inspector-General.

SURGEON-MAJOR BERNARD KENDALL, Bengal Medical Service (retired), died suddenly at Upper Norwood on September 3rd. He was born on June 21st, 1831, took the M.R.C.S. in 1853, and entered the Indian Medical Service as Assistant Surgeon on August 4th, 1855. He became Surgeon on August 4th, 1867, Surgeon-Major on July 1st, 1873, and retired on February 22nd, 1879. He served in the Indian Mutiny in 1857-8. The Indian Army List shows no fewer than fifty-two officers of the Indian Medical Service as still surviving, on the retired list, who were in India in or before January, 1858, and so were in the country at the time of the Mutiny. Only twenty-five of them, however, appear to hold the Mutiny medal for actual war service in the campaign. Two of them—W. H. Harris and B. Williamson—also served in the Crimea. Only one—W. F. Mactier—served in the Sikh war of 1845 and the Punjab campaign of 1848–9, as well as in the Mutiny. The senior officer shown as still alive on the retired list—Surgeon-Major Henry Benjamin Hinton—entered the service on January 14th, 1839, so was actually in India at the time of the first Afghan war, though he did not himself take part in that campaign. He served in the Gwalior war of 1843–4: in the Sikh war of 1845–6, being present at Badiwal, Aliwal, and Sobraon: in the Punjab campaign of 1848–9; and in the China war of 1858–60; but does not appear to hold the Mutiny medal. He was born on March 7th, 1813, so, if he is still alive, must be within six months of the century. Curiously, another retired Bengal medical officer of the same name—Thomas Lambert Hinton—completed his century a few years ago; he was born on May 1st, 1808, and died at St. Leonards on June 14th, 1908.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Professor Ludwig Back, the well-known ophthalmologist of Marburg, aged 46; Dr. Josef Disse, Professor of Anatomy in the University of Marburg, and formerly Professor in the Imperial University of Tokyo, aged 59; Dr. Maurice Howe Richardson, Professor of Surgery in the Harvard Medical School, and Surgeon-in-Chief to the Massachusetts General Hospital, and author of many contributions to surgical literature, in his 61st year; Professor Oskar Eversbusch, Director of the Clinic for Diseases of the Eye in the University of Munich, aged 59; Dr. W. Bender, of Camburg, a well-known German bacteriologist, aged 85; Dr. J. E. Newcomb, Professor of Laryngology at the Cornell University, consulting laryngologist to the Roosevelt Hospital and author of various contributions to the literature of his speciality, aged 55; Professor Aurel von Török, of Budapest, the distinguished anthropologist, in his 70th year; Professor Cramer, Director of the Psychiatric Clinic of the University of Gottingen, aged 52; and Dr. C. E. F. Monoyer, Professor of Medical Physics in the Medical Faculty of Lyons, aged 76.

AN association of mental nurses working under the title of the New Mental Nurses' Co-operation has recently established itself at 85, Edgware Road, not far from the Marble Arch. All the members have been carefully chosen with a view to their suitability for work as private nurses, all have had prolonged experience in asylums, and all possess certificates testifying to their ability in their particular branch of nursing work. The superintendent is Miss M. E. Cook, who will doubtless be ready to afford any information desired by inquirers.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

CHANGE OF ADDRESS.

G. B. M.—We should advise our correspondent to send a circular headed "Change of Address," which may be printed on a postcard, to all bonâ fide patients of his practice and to all medical friends whom he wishes to notify.

PATIENTS AND PRACTITIONERS.

NESCIUS.—(1) It would have been better if B. had said nothing to X. as to A.'s conversation with him, as X. not unnaturally resented being made to feel that he had somehow parted with his inherent right to consult any medical men he chose, and that he was regarded as having become the property of A. (2) After what had passed B. was inconsistent in attending the third case, but the right of X. to consult him should not be disputed, as the public will never submit to the proposition that having once called in a certain practitioner to attend one member of a family they are for ever precluded from seeking the advice of any other member of the local medical profession.

FEES TO MEMBERS OF THE MEDICAL PROFESSION.

D. P. M.—We have always found medical men of all ranks willing to give their time and services gratis to brother practitioners if asked to do so, but we think any arrangement for reduced fees should be made before and not after these have been incurred, especially when, as in this case, the patient is in relatively good circumstances and is not dependent on practice. The only unsettled question seems to be the pathologist's fee for making the vaccine; we do not think three guineas excessive considering the trouble of getting a satisfactory result.

The Services.

ROYAL NAVY MEDICAL CORPS.

DEPUTY INSPECTOR-GENERAL S. SWEETNAM has been awarded the Greenwich Hospital pension of £50 a year, rendered vacant by the death of Deputy Inspector-General J. S. Dobbyn.

INDIAN MEDICAL SERVICE.

SUB-ASSISTANT SURGEONS.

WITH effect from May 13th, 1912, the Government of India have sanctioned the following enhanced rates of pay for military sub-assistant surgeons:

Senior Sub-Assistant Surgeons.	
First class, ranking as Subadar ...	...Rs.110
Second class, ranking as Jemadar	... 90
Indian Warrant Officers.	
Sub-Assistant Surgeons, first class	... Rs.70
Sub-Assistant Surgeons, second class	... 50
Sub-Assistant Surgeons, third class	... 35

The above rates are inclusive of the extra pay for an English qualification.

Public Health

PAIL CLOSETS AND TYPHOID FEVER IN NOTTINGHAM.

THE direct connexion between pail closets and the incidence of typhoid fever has been demonstrated by many observers. In successive annual reports Dr. P. Boobbyer, the medical officer of health of the city of Nottingham, has shown that both this disease and diarrhœa occur far more frequently in houses and districts where such closets are in use than in those furnished with waterclosets. In a special report recently issued he points out that the liability of pail closets to foster and disseminate infection is explained by the fact that the specific virus of typhoid fever, epidemic diarrhœa, and other diseases, is capable of surviving for considerable periods in faecal matter and in soil, and that these closets, even with the most careful management, necessarily entail the storage of faecal matter in the immediate vicinity of dwellings and the pollution of the latter and their surroundings by such matter, to a very large extent in many cases and to some extent in all. While admitting that there are innumerable other agencies by which typhoid fever is fostered and propagated in large centres of population, and notably by means of human carrier cases, he maintains that the pail closet is a powerful factor in this maintenance and propagation, and as such should be eliminated as speedily as possible. Incidentally he points out that a continuance of this conservancy system might involve a sanitary authority in heavy financial responsibility under certain provisions of the National Insurance Act. It appears that there are in Nottingham over 36,000 pail closets, and the cost to the authority of scavenging them amounts to about £24,000 per annum. Quite apart, therefore, from the sanitary improvement which would be effected by their abolition it would seem that in a very few years there would be a substantial financial saving. The Nottingham Corporation will be well advised to give speedy effect to the advice of their medical officer of health.

Medical News.

ON the occasion of the opening of the winter session at St. Mary's Hospital Medical School by the Lord Mayor of London, his lordship will visit the hospital to inspect the casualty department, where structural improvements have just been completed, and will declare the department open.

THE medical men who have attended the demonstrations at the Kennington Road Tuberculin Dispensary are invited to take part in offering a complimentary dinner to Dr. Camac Wilkinson on October 7th. Further information can be obtained from Dr. A. White Robertson, 26, Harley Street, W., who asks that notifications to attend may be received by September 30th.

BY way of commemorating the opening of its new buildings, the Royal Insurance Company has published a pamphlet containing an account of the history of Lombard Street, in which it established itself in the first half of last century. Lombard Street appears to have been recognized as a centre of financial operations even earlier than the thirteenth century, and has retained its repute to the present date despite all structural and other changes in the city. The pamphlet is illustrated by reproductions of maps, prints, and engravings preserved in the Guildhall and elsewhere.

AS has already been announced in the JOURNAL, the first International Congress of Comparative Pathology will be held at Paris in October (17th-23rd), under the presidency of Dr. Roger, professor of experimental and comparative pathology in the Paris Faculty of Medicine. This congress will deal with the whole series of diseases common to mankind and animals, with the relations existing between the diseases of the different species, with vegetable pathology and the possible relations of certain diseases of plants and those of animals. In addition to reports on the pathogeny of tuberculosis to be submitted by MM. Calmette, Chaussée, Vallée, and Lignières, other communications on the same subject will be presented by Professor Paul Courmont of Lyons (comparison of agglutination of Koch's bacillus in man and animals); A. De Jong, professor of medicine in the University of Leyden; Dr. Moore, director of the Veterinary College, New York (elimination of tubercle bacilli by infected animals); Professor Bruschettini of Genoa (vaccination against bovine tuberculosis, studied on laboratory animals—rabbit, guinea-pig, etc.); Dr. André Jousset (tuberculosis in the guinea-pig), and others.

THE issue of the *Gesundheitslehrer* for August contains the following story: A lady who had journeyed from her home in Switzerland to Riga had the misfortune to fall ill there of an affection which was diagnosed as chicken-pox. For this she was kept in a hospital in Riga. She went on to Frankfurt, where two persons who had previously been vaccinated fell ill with modified small-pox; a child of one of them had recently been vaccinated and escaped infection. The doctor who attended these two persons, a Dr. Spohr, was a well-known antivaccinator. He had never been vaccinated, and suffered a very severe attack of variola, for which he was nursed by his wife at home. Mrs. Spohr, however, had been vaccinated, as had the Spohr children. According to one account, the vaccination of the children had been carried out by their father, and in one case the success was doubtful. Be this as it may, the only other member of the Spohr family infected was the child whose vaccination was described as doubtful. In the meantime, Dr. Spohr considered it advisable for his health to convalesce in Switzerland. The child's attack was mild. Three further cases occurred in the neighbourhood, but by this time the authorities got wind of the state of affairs and promptly stepped in. The patients were removed to the isolation hospital, and as many persons as were suspected of having been in contact with the infected were forthwith vaccinated. But it was too late to prevent some further spread, and, in all, 15 cases have been traced; of these, one proved fatal, while another was reported to be dangerously ill. It will be interesting to learn whether Dr. Spohr returns to Frankfurt after his completed recovery, and, if he does, what the authorities will have to say to him.

Letters, Notes, and Answers.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

Telegraphic Address.—The telegraphic address of the EDITOR of the British Medical Journal is *Aitiology, Westrand, London.* The telegraphic address of the British Medical Journal is *Articulate, Westrand, London.*

Telephone (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2620, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

Dr. Reid (Aberdeen) desires to hear of an institution on the Continent for the treatment of a moral case in a lad 18 years old.

Cornishman desires to hear of an efficient, simple, and cheap appliance for a case of repeated dislocation of the shoulder in an epileptic, and of any charitable society which would supply the same in a deserving case, either gratis or at a reduced cost.

Northern finds that water from a certain well, even when boiled, is apt to cause gastric disturbance and diarrhœa. Long fibrous roots, probably of a lime tree growing near, pro[illegible] into the well, and he wishes to know whether they are likely to render the water injurious.

* * Whatever the answer to this question, the sides of the well should be cemented, or made watertight in some other way, down to the water level.

Income Tax.

G. F. C. W. has a salary of £218 per annum as assistant, £191 being paid in cash and the remainder deducted for furnished quarters. He wishes to know what sum to return for income tax.

** The law is that only money and what can be turned into money, is chargeable to income tax. If it is part of our corre[illegible] agreement with his principal that he shall receive £191 in cash and the remainder of his nominal salary in the form of the benefit of furnished quarters, then only the cash received is returnable for income-tax purposes. If, however, the agreement is for a salary of £218, and the arrangement as to furnished quarters is an optional arrangement quite out[illegible] the agreement, and terminable at will, the deduction from the salary is merely a convenient method of settling a debt, and the full salary should be returned.

ANSWERS.

H. B.—An excellent general discussion of the nature and treatment of pulmonary tuberculosis will be found in Dr. Hyslop Thomson's book on *Consumption in General Practice* reviewed September 14th. All that it is essential for nurses to know about it will be found in *Practical Nursing*, by Miss Isla Stewart and Dr. H. E. Cuff.

Alienist.—(1) Psycho-analysis is described in the following publications: *Selected Papers on Hysteria and other Psychoneuroses*, by Professor S. Freud. *Three Contributions to Sexual Theory*, by Professor S. Freud, with an introduction by Professor J. J. Putnam. All these have been translated by Dr. A. A. Brill, and are published by the Journal of Nervous and Mental Disease Publishing Co., New York. Mr. H. K. Lewis [illegible]. Dr. Brill has now in the press a trans[illegible] *Traumdeutung*. Dr. Bernard Hart has [illegible] of Freud and his School" (*Journal* [illegible] April, 1910), and two articles on the [illegible] Dr. E. Jones and the Rev. Dr. Pfister [illegible] published in *School Hygiene*, February, March, July and [illegible] 911. (2) Among the most practical books on hyp[illegible] *Hypnotism and Treatment by Suggestion* (Cassell and Company); and [illegible] *of Hypnotism*, by H. E. Wingfield [illegible].

Asylums and Paying Patients.

[illegible] Of the returns [illegible] London, [illegible] the follow[illegible] [illegible] Royal [illegible] [illegible] [illegible]

A Lecture
ON
CARCINOMA OF THE COLON.

Delivered at the Medical Graduates' College and Polyclinic.

By V. ZACHARY COPE, B.A., M.D., M.S.Lond., F.R.C.S.Eng.,

Surgeon to Out-patients, St. Mary's Hospital, Paddington.

The large bowel, in marked contrast to the small intestine, is very prone to malignant change; the irritation caused by the bowel contents, which progress slowly and may be hard in consistency, is probably accountable for this, though some other reason must be sought for the frequent incidence of cancer in the caecal region, where the contents are fluid. In the latter position, however, bacterial action is at its maximum, and this may be of significance as a predisposing factor to cancer.

I am not concerned here with carcinoma of the rectum, but with those cancers affecting the bowel from the caecum or caput coli to the recto-sigmoidal junction, situated opposite the third piece of the sacrum. The subject is important, both on account of the frequency of the condition and because recent advances in diagnostic methods and treatment have greatly improved our chances of dealing radically with the disease. That it is comparatively frequent may be judged from the fact that out of over four thousand general surgical cases admitted to the wards of St. Mary's Hospital during the past two years, twenty were cases of cancer of the colon—a proportion of about one in two hundred.

Some parts of the colon are more frequently attacked than others. Taking the distribution of 100 cases, at least 36 would be situated in the sigmoid (iliac and pelvic) colon, and about 25 in the caecum. The transverse colon and splenic flexure, the hepatic flexure, and the ascending and descending colon are accountable for the rest in about that order of frequency. Certainly the ascending and descending portions are the least often affected. Statistics vary considerably, and can only be obtained approximately. Of 20 cases which I have had cognizance of at St. Mary's during the last two years, 11 occurred in the iliac and pelvic colon, 3 in the splenic flexure, 2 at the hepatic flexure, 2 in the caecum, and 1 each in the descending and transverse portions of the colon.

The microscopic anatomy in practically all cases is that of a columnar-celled carcinoma, which arises from the glands of Lieberkühn. Wide variations exist in the reaction of the connective tissue to the invading cancer cells. In those instances where there is slight resistance to its advance a tumour forms by the extension of the growth both along and round the bowel. This form is prone to degenerative and ulcerative changes. In other cases the cancer is strenuously resisted by the formation of connective tissue, which contracts and strangles the advancing cancerous cells. This progress is comparable to the slow advance of an atrophic scirrhus of the breast, with the important difference that the breast complaint may not cause any marked inconvenience for years, whilst the bowel lesion tends to obstruct the lumen exactly in proportion to the natural attempts at cure. The lymphatics and blood vessels course round the bowel wall in a circular fashion, so that a ring of involved tissue is soon formed. We can, therefore, recognize two main clinical types—the first with tumour formation growing fairly rapidly; the second with no tumour to be felt, but causing a hard, malignant ring, which constricts the bowel. This ring growth is often very narrow, and has sometimes the appearance as if a piece of string had been tightly tied round the bowel. If one recalls the normal sacculations of the large bowel, it will easily be appreciated how it may need a very careful search to discover the puckered ring, even when the hand is inside the abdomen. There is a third and rarer variety of cancer of the colon which deserves a passing mention—that is, the malignant growth taking origin from a simple adenomatous polypus.

The progress of cancer of the colon is usually comparatively slow. It has been stated to be the least malignant of the carcinomata.[1] For a long time the disease is limited to the bowel, and the lymphatic glands are involved later than is the rule in most other parts of the body. One observer[2] found that in 40 per cent. of fatal cases the disease was limited to the gut. This would probably prove to be an under-estimation of the frequency of gland involvement if a larger series of cases were taken. The profession owes a debt to Jamieson and Dobson,[3] who thoroughly worked out the lymphatic drainage system of the colon, thus paving the way for the performance of scientific radical operations. These observers found that the lymph drained into four groups of glands—the epicolic, situated on the bowel wall; the paracolic, close to the gut on the vascular arches; the intermediate group lying on the arterial branches between the vascular arcades and the main trunk; and the main set grouped round the colic arteries close to their origin. Lymphatics run from the bowel wall direct to the epicolic and paracolic glands, sometimes to the intermediate, and occasionally to the main groups. From the transverse colon and splenic flexure most of the lymphatics are stopped at the paracolic group. Cancer may infect any or all of these gland stages, and even form metastases in the liver, although this is uncommon until late in the case.

The local changes which result vary according to the type of growth. The first type, which grows rather quickly and forms a palpable tumour, is not so apt to cause intestinal obstruction; it is more cellular and softer than the second type, and though it may project into the bowel lumen so as to impede the advance of the contents, yet ulceration commonly minimizes or removes such obstruction. It is also more likely to spread to neighbouring organs and cause infiltration of adjacent viscera, such as bladder, kidney, and pancreas; infection of the ulcerated surface occurs, and the symptoms of colitis result.

The second type, or annular scirrhus, produces a slow but sure narrowing of the lumen of the gut. This leads to hypertrophy immediately above the growth. This compensatory hypertrophy continues *pari passu* with the increasing obstruction until urgent symptoms arise from an attack of acute intestinal obstruction. It is a curious fact that in such an event the caecum is usually the most distended portion of the gut, even though the obstruction be so far on as the sigmoid flexure; this distension may proceed almost to bursting point. At least a partial explanation of this may be afforded by the researches of Cannon[4] and others, who have shown that antiperistalsis is one of the normal movements of the ascending and transverse portions of the colon. It is possible that an organic obstruction may produce storms of antiperistaltic waves ending at the caecum, which consequently becomes greatly distended.

Symptoms.

The signs and symptoms of cancer of the colon differ along with its pathological characteristics. There is no constant, ordered sequence of symptoms, for any one of a large number may be the first noticed. Constipation, diarrhoea, vomiting, pain, a tumour, increasing distension of the abdomen—one or several of these may herald the condition. A point to be laid stress upon is that the condition may be latent, and an attack of acute or subacute obstruction may be the first serious symptom to which attention is drawn. This is especially true of the scirrhous type. It is quite common to meet with cases which furnish a history of only a few weeks' constipation in which the growth as seen at operation certainly must have been growing for a much longer period. It is therefore all the more necessary to pay attention to slight symptoms of bowel trouble, so that, if possible, we may detect any morbid condition in the earliest stages.

The symptoms may be classified under six headings, but it must be remembered that the combinations of symptoms are varied and only one or two may be present in any particular case.

1. *Symptoms due to Bowel Obstruction.*

Under this heading come pain, constipation, distension, nausea, vomiting, and visible peristalsis. The pain is due to the contractions of the gut above the narrowed part, and, like all violent contractions of circular involuntary muscle, is cramp-like or colicky in character. Usually it has no direct time relation to the taking of food, but is often increased by taking aperients. In one patient whom

I saw the taking of sweet things increased the pain. Very frequently the site of the maximum pain indicates the position of the growth. Hertz has shown that intestinal pain is chiefly due to distension; if we consider a peristaltic wave passing along the bowel, the pressure inside the lumen would certainly be greatest just above the obstruction, and in the colon, unlike the small intestine, pain is localized fairly accurately. In view of the reversal of peristalsis which may occur in the right half of the colon, one would expect to find cases where obstruction of the distal part of the colon caused pain in the cæcal region; I have seen clinical evidence to support this. Sometimes the patient will describe the pain as travelling across the abdomen and increasing in intensity up to the site of maximum pain. The pain during the early stages is commonly mistaken for indigestion, and if accompanied by nausea or sickness is attributed to a "bilious attack." Vomiting is an infrequent occurrence until rather late, for the large bowel is much more tolerant of obstruction than the small intestine.

Gradually increasing constipation is often the first abnormality, and if this supervenes in a person over middle age who has previously been perfectly regular as to the bowels, suspicion should be aroused and a thorough investigation carried out. By constipation is meant the abnormally infrequent or insufficient passing of formed faeces. The consistency must be ascertained, since the so-called spurious diarrhœa due to irritation may cause frequent but ineffective movements of the bowel. Alternating constipation and diarrhœa may thus occur. Occasional attacks of distension and flatulence are common. The distension may be limited to the region of the abdomen where the colicky pains are greatest. It may happen that the gradual increase in size of the abdomen may first cause any alarm. Visible peristalsis may sometimes be watched through the abdominal wall, and local swelling may subside with a gurgling sound due to passage of flatus through the stricture.

All the above symptoms are frequently so slight as to be regarded as trivial, and completely neglected by the patient, so that it is a common event for an attack of acute intestinal obstruction first to compel attention.

2. *Symptoms due to Bowel Ulceration.*

Diarrhœa and the passage of blood and mucus may result from ulceration of the bowel. As a rule, the bleeding is a little-marked feature, but rarely quite profuse haemorrhage may ensue, doubtless due to erosion of a vessel of some size. If the cancer is high up, the blood may be dark and resemble melæna. No doubt occult blood would frequently be found in the faeces if it were more commonly sought after. Mucus is frequently passed, and is probably due to the irritation of the glands of the mucous membrane caused by the growth and its attendant bacteria, which readily thrive either amidst the obstructed bowel contents or on the ulcerated surface of the cancer. The fact deserves wider recognition that mucous colitis is often merely a symptom of some more serious disorder. The last two cases of mucous colitis which I have seen proved on further investigation to be due to tumour of the kidney and carcinoma of the sigmoid respectively.

It would appear that diarrhœa can result from two causes. We have already mentioned the spurious diarrhœa, or the diarrhœa of constipation; in other cases I believe extensive ulceration at the site of the growth is sufficient to cause it even when no obstruction is present. The fact that diarrhœa may occur should be remembered, for it may lead patients to assert that the bowels are regular. I know of one patient who suffered from diarrhœa for eighteen months before the disease was discovered.

3. *The Presence of a Tumour.*

A tumour is frequently felt. It may attain a considerable size before it is noticed. It is prone to break down into the bowel lumen, consequently obstruction and pain are not so marked. In the early stages the tumour is often mobile, especially when situated in a part which has a long mesentery, as the transverse or pelvic colon; mobility also occurs with tumours of the hepatic flexure, which moves with the right kidney on respiration. Fixation occurs when any pericolitis supervenes.

4. *Symptoms due to Extension to other Viscera.*

The symptoms due to extension to other viscera vary according to the organ or viscus involved. It may implicate the kidney or bladder, and give rise to symptoms suggestive of stone or other disease liable to attack those viscera. It may infiltrate the stomach wall and cause simulation of gastric disease. Ulceration may cause fistulous connexion between a part of the colon and small intestine, or another part of the colon. It is uncommon to meet with serious extension to other organs.

5. *Symptoms due to Pericolitis and Peritoneal Infection.*

Pericolitis, or inflammation of the tissues round the colon, may be consequent on ulceration and extension of a malignant growth. A local abscess may form and mask the primary condition. Sometimes perforation of the bowel suddenly takes place into the general peritoneal cavity, and diffuse and fatal peritonitis ensues.

6. *General Symptoms, Loss of Weight, etc.*

General symptoms are absent at first. The patient often looks robust. Later, as the growth advances, loss of weight occurs, and anæmia and cachexia develop, but a large number of patients come to a fatal ending from obstruction before they have wasted to any noticeable degree.

Diagnosis.

Any patient who complains of the recent onset of symptoms which might be attributed to cancer of the colon needs, and should obtain, a most complete examination. Bowel irregularity supervening after middle age should never be overlooked. After obtaining a careful history of the case, examination should be carried out on the following lines: The abdomen should be inspected to detect unusual fullness, distension, or visible peristalsis; palpated to find any tumour, and percussed in the flanks to see if there is any free fluid. It must be remembered that the transverse colon often sags down to the iliac fossa or pelvis, and that the sigmoid may be on the right side of the middle line. Little help is gained by auscultation, since borborygmi are usually audible without the help of the stethoscope.

A digital rectal examination is imperative. A cancer of the pelvic colon may occasionally be thus felt, for it sometimes prolapses into the lower portion of bowel, which may be ballooned. I recently felt a growth 8 in. from the anus by this means. This prolapse is apt to mislead as to the true distance of the growth from the anus. It is also important to make a bimanual recto-abdominal examination, for some small mobile growths of the pelvic colon can thus be detected.

Since a large number of colon cancers occur in that part which is suitable for endoscopy, there is no reason why the majority of them should not be revealed at an early stage by the use of the sigmoidoscope. Endoscopy of the sigmoid is free from risk if due precautions be taken, and furnishes most valuable information. Sigmoidoscopy can be carried out without an anæsthetic, though in some cases it is better to administer one. The patient (after as thorough a preparation of the bowels as is possible) is put into the Sims's or knee-elbow position, and the warmed lubricated end of the instrument inserted gently just within the anus. The obturator is then taken out, the light inserted, and by the aid of inflation the end of the sigmoidoscope can be safely passed up, *the observer watching continuously the opening channel which the instrument has to traverse.*

There is another valuable method of diagnosis which has only comparatively recently been adapted for the assistance of the surgeon. I refer to the taking of an *x*-ray photograph of the abdomen after the administration of a bismuth meal. Two ounces of an inert salt of bismuth (carbonate, subnitrate, or oxychloride) are mixed up with a pint of bread and milk and administered to the patient. At the time when the mixture should have reached the colon an *x*-ray photograph is taken showing the bowel filled with the material which is impervious to the rays. Any stricture is beautifully demonstrated, for the bismuth mush becomes massed on the proximal side of the obstruction, and a thin line may indicate its slow progress through the stricture. It has been found experimentally that food takes about four hours to reach the cæcum, and from this it takes

about two hours to traverse each of the ascending, transverse, and descending parts of the colon. If it is thought that the obstruction is in the lower sigmoid, then the bismuth emulsion can be administered as an enema given in the knee-elbow position, and possibly through the sigmoidoscope. This method of diagnosis is still in its infancy, but is destined to enable us to diagnose the obstructing form of colonic cancer at an early stage. Similar methods have proved extremely useful in tracing the outline and fixing the position of œsophageal strictures.

In spite of all these methods, there will remain some cases which present indefinite symptoms and in which diagnosis is doubtful. The question of an exploratory abdominal section then arises. If the general condition is good enough, this is a justifiable and necessary procedure, and should be strongly urged upon the patient; but in constitutionally feeble subjects it is not wise to open the abdomen unless the indications are very definite.

The conditions from which cancer of the colon has to be distinguished, and for which it is often mistaken, are numerous. The early symptoms of obstruction, colicky pains, flatulence, and occasional vomiting, are frequently ascribed to dyspepsia. When a more acute attack of obstruction supervenes, several conditions need to be excluded. Some help is afforded by the fact that, excluding strangulated herniæ, cancer of the colon is the commonest cause of acute obstruction in persons over middle age. Volvulus is likely to give rise to more acute symptoms, and the distension to come on more rapidly. Intussusception in the adult is rare, and when it does occur is sometimes caused by a malignant growth. Simple stricture of the colon cannot be diagnosed from cancer before operation; indeed, a microscopical investigation is sometimes needed to distinguish. It is well known that symptoms due to obstruction of the large intestine are much less acute than those resulting from a similar obstruction of the small gut. Vomiting is less marked, and comes on later, whilst pain is usually much less acute. This is what one would expect, for the fluid contents of the jejunum and ileum pass along quickly at the rate of 5 ft. an hour, whilst the colon usually retains its more solid contents for many hours, and may do so in some cases even for days or weeks without any serious consequences.

There is sometimes an intermittence in the acute obstructive symptoms caused by cancer. In February last a woman, aged 43, was admitted to St. Mary's as an urgent case with a history of a week's constipation, abdominal pain, and vomiting, which had become faculent. Prior to this attack she had had no abnormal symptoms. On admission vomiting had ceased, pulse and temperature were normal, there was no distension, and the only complaint was that of a little pain in the left hypochondrium. No tumour could be detected. In view of the short history and the absence of physical signs, I was at first inclined to attribute the condition to gastric derangement. She was given small doses of calomel, and, in order to test the question of obstruction, two consecutive turpentine enemata were administered with a few hours' interval. Only flatus came away, and for twenty-four hours the patient was comfortable; then suddenly she vomited a large quantity of faculent material and became rapidly distended. When I opened the abdomen I found a narrow annular growth in the splenic flexure. I performed cæcostomy, and a fortnight later successfully excised the segment affected. In the same month I operated on a case of sigmoid growth in a man of 68, in whom symptoms remitted, but increased rapidly after the giving of an enema. These cases serve to show how acute symptoms may suddenly become quiescent and deceive the observer. In both cases the giving of an enema appeared to cause an aggravation of the condition. It has been proved by Cannon[1] that in cats the giving of rectal injections stimulates antiperistalsis in the colon; a similar mechanism may partially explain these cases.

I have referred above to the real danger of mistaking a case of colon cancer for ulcerative or mucous colitis, especially in older people.

Those cases that come under observation with a tumour may be rather puzzling. In the cæcal region such a lump can be mistaken for chronic appendicitis or hypertrophic tuberculosis of the cæcum. A careful history should distinguish the former, but the latter may be indistinguishable from cancer unless tubercle bacilli are discovered in the fæces, or one of the tuberculin tests or the opsonic index give positive indication. Absolute diagnosis is not so important, since excision is probably the best treatment for hypertrophic tuberculosis. At the hepatic flexure tumours of the kidney, liver, and gall bladder have to be excluded. I personally know of one case, and have read of another, where cancer of this flexure was mistaken for a mobile kidney. The shape of the tumour is not reniform, however, and careful inquiry usually elicits a history of some bowel irregularity. In the transverse colon and splenic flexure the tumour may be mistaken for gastric carcinoma, but anæmia and loss of weight are more marked in the latter, and the pain has direct relation to the taking of food. Analysis of a test meal is important.

When the cancer invades or becomes adherent to neighbouring viscera it causes symptoms of a misleading nature. All or some of the many methods of diagnosis in vesical or renal diseases can be utilized if symptoms be referred to those organs; if the stomach is invaded it may be very difficult, apart from the history, to say in which part the disease began.

When general peritonitis ensues on the perforation of the gut, diagnosis of the cause may not be made till the abdomen is opened; when localized pericolitis causes abscess formation on the right side it may easily be mistaken for an appendix abscess.

Prognosis.

The prognosis of cancer of the colon is bad unless the condition is treated by operation. A fatal result follows from acute obstruction, involvement of other viscera, general peritonitis, or progressive anæmia and asthenia. The less malignant the growth, or the more the cancer is resisted locally, the sooner the obstructive symptoms arise, but, at the same time, the better the outlook for operative measures.

Treatment.

The treatment of cancer of the colon is surgical save for those cases which have gone too far for excision and which present no obstructive symptoms. We might possibly also except some low sigmoid growths to which it would be possible to apply radium by means of the sigmoidoscope. The manner of treatment varies with the stage of the disease and the state of the patient when brought under observation.

Cases without Acute Symptoms.

In judging which is the best operation to adopt in cases which are suitable for excision and present no acute symptoms, it must be borne in mind that the patients are often old and feeble, and that the cancer tends to destroy life as much by intestinal obstruction as by extension and metastases. In quite a considerable percentage of cases metastases are late in appearing, even in the adjacent glands. When the conditions warrant it, however, one should perform the ideal operation, which consists in the excision of the growth and as much adjacent bowel as may be necessary, together with the lymphatic drainage area of the affected part. Jamieson and Dobson have worked out the principles of such operations for each part of the colon. The main blood vessel supplying the diseased part has in most cases to be ligated, and all the bowel depending upon that artery for its chief blood supply must be removed. In cancer of the cæcum the ileo-colic artery is tied just below the duodenum, and the last 6 in. of ileum, the cæcum and colon to just beyond the hepatic flexure are removed, together with the peritoneum covering and the lymphatic glands lying along the ileo-colic artery and its branches. For a growth at the hepatic flexure the bowel must be removed from the end of the ileum to the left third of the transverse colon, since the middle colic artery has to be ligated. Cancer of the transverse colon commonly does not affect more than the paracolic glands until very late, for no lymphatics run direct to the intermediate or main groups, so that a resection of the growth with a few inches of gut on each side and the adjacent mesentery is sufficient. A limited excision is also advisable for the splenic flexure, for from this part some lymphatics go to the splenic glands which could not be removed thoroughly. When the descending colon is involved the left colic artery is ligated and the bowel removed from the left third of the transverse colon to the beginning of the iliac colon.

Growths of the pelvic colon are dealt with by ligating the inferior mesenteric artery below the origin of the left colic and excising most of the sigmoid loop with mesentery and contained glands.

Though the colon frequently has no proper mesentery in its ascending and descending parts, and at the hepatic and splenic flexures, yet it can be mobilized sufficiently to bring it out of the abdomen by cutting through the peritoneum as it is reflected from the outer side on to the posterior abdominal wall. Care has to be taken to avoid injury to such important structures as the duodenum, ureter, vena cava, and spermatic vessels.

Though in suitable cases—the number of which should increase considerably as we diagnose the condition earlier—these operations are to be carried out, yet practical experience has shown that good results can be obtained by a more limited operation. Many operators have reported cases in which they excised the local growth, but left enlarged lymphatic glands, and yet the patient kept well for many years. In some of these cases the glands were probably inflammatory; but doubtless there are some cases where the tissues of the individual can overcome the migrating cancer cells. Lockhart Mummery, in thirty cases where he looked for enlarged glands at operation, found the mesocolic glands enlarged in five, and the retroperitoneal in two instances, whilst two cases had metastases in the liver.

With a limited excision the cancerous segment is removed along with a sufficient margin of healthy bowel on each side. Regard must be paid to the blood supply of the bowel which is left, and if this is imperilled more bowel must be removed. The procedure may be performed in one or more stages.

Operation in One Stage.

This is never admissible unless the bowel can be well emptied beforehand. There is not a consensus of opinion as to the best way of dealing with the severed ends of the bowel after the diseased segment has been excised. In theory the ideal method would be to perform end-to-end suture, and this has been done with success. But such a method has several drawbacks when applied to the large intestine; the sacculation of the bowel, the presence of appendices epiploicae, and the absence of a complete peritoneal investment may render it difficult, added to which in some parts the suture line will have to stand the strain and irritation of solid faeces. If there has been marked obstruction, the difference in calibre between the proximal and distal ends may be considerable. End-to-end union is more suitable for those cases in which a colostomy has previously been done for obstruction; this obviates any strain on the suture line.

Another method is to excise the diseased part, close the cut ends, and perform lateral anastomosis between the proximal and distal segments. Mayo[7] says that such anastomosis should always be isoperistaltic in dealing with the colon. Leakage may occur from the closed ends and cause peritoneal infection; to avoid any risk of this, Bloodgood[6] has suggested bringing the closed ends out of the abdomen. End-to-end union by means of a Murphy button has been performed occasionally with success, but this would now hardly be considered sound surgery.

In excision of the caecum or right half of the colon the best plan is to cut across the ileum near its termination and implant it laterally into the transverse or pelvic colon.

Operation in more than One Stage.

By operating in two or three stages the mortality has been more than halved. One of the safest and best known methods is that devised by Paul of Liverpool, who practically made the operation an extraperitoneal one. The affected loop of gut is brought outside the abdomen, and the vessels in its mesentery ligated. The mesentery is then cut across, and the proximal and distal portions of the loop sutured together. The portion requiring excision is then cut away and a glass tube inserted into each end to drain away the intestinal contents. Later the spur between the two ends is crushed and the continuity of the gut re-established. The artificial anus left after crushing the spur can be closed by a later plastic operation. The primary operation can be modified by leaving the excision of the cancerous portion till a few days after bringing the loop of intestine outside the abdomen. The drawback to Paul's operation is that only a limited segment of mesentery with its contained glands can be removed.

A type of two-stage operation which is sometimes carried out is that in which the affected segment is first short-circuited and later excised. The short-circuiting can be done by lateral implantation, or lateral anastomosis. This method provides a cleaner field of operation at the time of excision.

Cases with Obstruction.

When there is acute or subacute obstruction present, that condition must first be treated. A similar method is advisable when the bowel cannot be properly emptied before operation. In a case of acute obstruction the part behind the stricture is filled with bacterial toxins, which not only poison the patient but render impossible any radical operation involving suture of intestine. In such cases the immediate indication is to perform caecostomy or colostomy above the obstruction, and later excise by one of the above-mentioned methods.

In some cases presenting marked obstructive symptoms Paul's operation may be carried out.

In those cases which have progressed too far for excision to be practicable or advisable, surgery does not need to step in unless symptoms of obstruction are threatening or some special complication exists. Obstruction is treated by short-circuiting the strictured part or opening the bowel above it. Occasionally bilateral exclusion may be deemed advisable; in this the bowel is cut across above and below the neoplasm, between it and the site of lateral anastomosis which has been previously performed. One end of the excluded portion is brought to the surface so as to drain away the foul contents, which if retained may lead to distension and leakage into the peritoneal cavity. The other end is either closed or also brought to the surface.

If local peritonitis, abscess formation, or general peritonitis result from carcinoma of the colon such conditions must be treated first, and the growth excised or short-circuited later if the patient recovers from the complication.

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APPENDICITIS:

THE RESULTS OF OPERATIONS UPON 619 CASES.

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I wish to record here the lessons to be derived from the results in 619 cases of appendicitis submitted to operation. I have divided the cases into several classes, each of which includes a well-marked group.

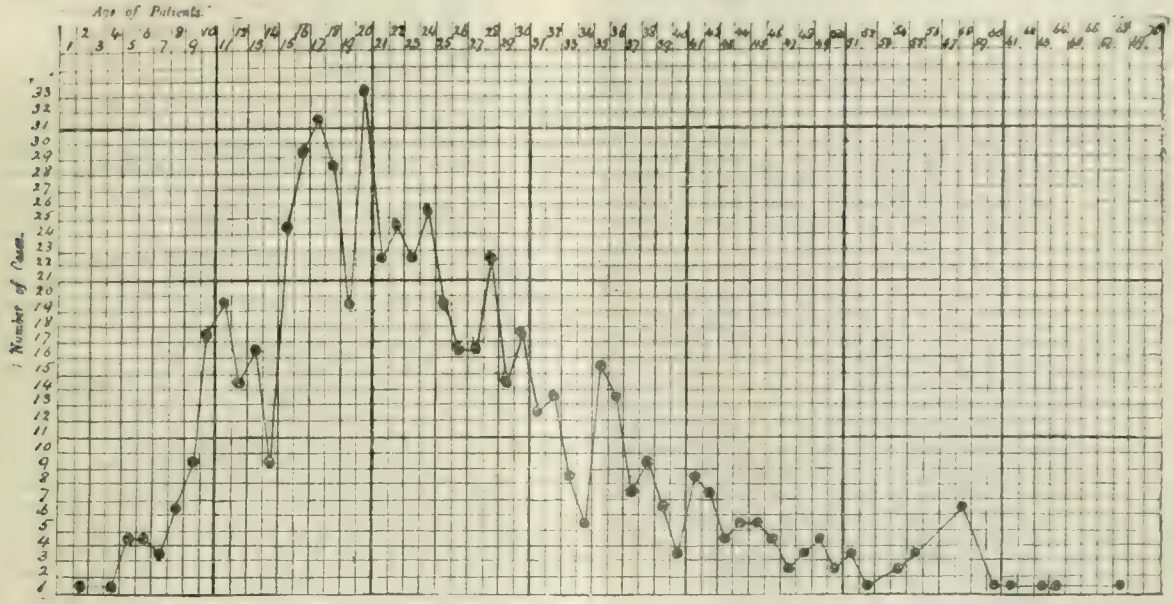
1. *"Interval" Cases.*

This includes those cases in which there had been one or more attacks of appendicitis and in which the operations were performed while there was no active inflammation. It does not include any cases in which the appendix was removed in the course of an abdominal section performed for some other condition, merely because it was an appendix. Such removal of the appendix does not appear to me to be either a wise or justifiable procedure. There were 113 cases and no deaths.

2. *Acute Cases.*

(*a*) *Early cases*, in which the inflammation was confined to the appendix itself. The appendix was removed in each case, but no drainage of the wound was necessary. There were 63 cases and no deaths.

(*b*) *Later cases*, in which there was localized peritonitis. In all of these cases the appendix was removed and drainage of the wound was necessary. There were 93 cases and 2 deaths.



3. *Abscess Cases.*

(*a*) Cases in which the abscess was localized. In all these the appendix was removed and the wound drained. There were 274 cases and 11 deaths.

(*b*) Cases in which the abscess was localized and was drained, the appendix *not* being removed. These include some cases in which the abscess was bulging into the rectum and was opened per rectum; others in which, on account of the size of the swelling, it was not thought advisable to search for the appendix; and others in which, on account of the density of the adhesions, the same treatment was adopted. There were 25 cases and 1 death.

4. *Acute Cases with General Peritonitis.*

(*a*) Cases in which the appendix was gangrenous and had given rise to general septic peritonitis, *without* the formation of a local abscess—that is, "fulminating" cases. In all these the appendix was removed and the wound drained. There were 29 cases and 20 deaths.

(*b*) Similar cases, with the complication of an abscess, and in which the appendix was removed and the wound drained. There were 20 cases and 14 deaths.

(*c*) Cases in which the patient was so ill that the peritoneal cavity alone was drained. There were 2 cases and 2 deaths.

By arranging the cases, as in the following table, according to this classification it will be seen that there is a rise in the relative mortality which followed operations as they were performed during later and later stages of the disease.

TABLE I.

	Cases.	Deaths.	Per Cent.
1. "INTERVAL" CASES	113	0	Nil
2. ACUTE CASES:			
(*a*) Early: Appendix removed, wound not drained	63	0	Nil
(*b*) Later: Appendix removed, wound drained	93	2	2.1
	156	2	1.28
3. ABSCESS CASES:			
(*a*) Appendix removed, wound drained	274	11	4
(*b*) Appendix *not* removed, wound drained	25	1	4
	299	12	4
4. GENERAL PERITONITIS:			
(*a*) "Fulminating" cases: Appendix removed, wound drained ...	29	20	69
(*b*) With localized abscess: Appendix removed, wound drained ...	20	14	70
(*c*) Very ill: Peritoneal cavity drained	2	2	100
	51	36	72.5
Total	619	50	8.1

The age incidence is most clearly seen in the chart, in which the horizontal lines represent the number of cases, and the vertical lines the age of the patients. From this it will be seen that the largest number occurred amongst those of 20 years of age, and that more than half of the total number of patients were between the ages of 15 and 28 years (330 out of 619).

Here, then, is a story of steadily advancing mortality in exact relation to the stage at which the inflammatory process had arrived before the appendix was operated upon. There is nothing new in such a tale. It has been told repeatedly, and yet there does not seem to be any diminution in the number of fatal cases. How are we to account for that? I believe that there are several reasons.

1. Many patients do not call in a doctor until complications have already arisen.

2. It is, perhaps, not fully realized that the highest mortality occurs amongst cases which have a very mild onset.

3. Most of the writing, both in textbooks and in periodicals, has reference to the treatment of the complications of appendicitis, rather than to appendicitis itself, so that, in the minds of many, these complications are regarded as though they were actual symptoms of the disease.

4. Many medical men have a habit of looking for certain well-known and true symptoms of appendicitis, and they expect that all those symptoms must necessarily be present in each case before a definite diagnosis can be made.

In the case of young children one is often told that the attack began very suddenly, perhaps the evening before the child is seen, and that the child vomited and complained of pain in the right iliac region. It is looked upon as in every way a typical attack, of an acute kind, and, the child being obviously ill, the appendix is removed without delay. At the operation in such a case one finds an acutely inflamed, perforated, or even gangrenous appendix. In almost all such cases in young children, if inquiry be made, it is found that the child has been "peevish" for a day or two before the onset of pain; it has not taken its food well, and has been generally "out of sorts." I have operated upon many such children, even within a few hours of the onset of acute symptoms, and the condition of the appendix has been such that it was impossible to believe that so much destruction could be effected in so short a time. Apparently, in children, acute appendicitis begins as an inflammation of the mucous membrane, exactly the same as acute tonsillitis, and the child is similarly ill. Doubtless if the appendix were palpated it would be found to be tender, but there is

no complaint made of any local abdominal pain or tenderness until the inflammation reaches the peritoneal coat of the appendix. When it has extended so far, then, and apparently not till then, the child complains of pain; it vomits and has the symptoms which we associate with septic infection of the peritoneum. It thus comes about that the mildness of the onset in many cases of acute appendicitis, especially in children, is a great danger, because the patient is first seen in an advanced stage of the disease, and that fact probably contributes largely to the high rate of mortality which follows operations upon children. There are two other causes of delay. One is due to the stress which, in textbooks, is laid upon what are undoubtedly the symptoms of acute appendicitis in a typical case. The description of symptoms is accurate in so far as it deals with that class of case, but, unfortunately, typical cases are not the most common, and when it is applied to mild cases it is a source of danger. It tends to make an inexperienced man think that his patient is not very ill if the symptoms are so much less marked than those which he has been taught to watch. To show that it is not an imaginary danger, I have recently had experience in a case in which I operated and removed a perforated appendix from a man seen the previous evening by a physician who had recommended that no operation should be done, on the grounds that the patient "was feeling better," the pulse was normal, and the temperature only raised one degree.

Another error arises from what one can only regard as an unfortunate necessity; I allude to the necessity for dealing very fully in textbooks with the symptoms of abscess, of general peritonitis, and the various complications which follow acute inflammation of the appendix. I would not have such description curtailed, but I think that stress should also be laid upon the fact that abscesses, peritonitis, etc., *are* complications, and may be prevented. It should be clearly and incessantly pointed out that they are not symptoms of appendicitis, but sure signs that other tissues than the appendix have become involved in consequence of the original mischief having extended beyond the appendix, and when that occurs all the symptoms of pure appendicitis become obscured by the graver symptoms of the complicating lesion.

Except in the case of those patients who call in the help of a medical man after complications, such as an abscess, have developed, all patients with diagnosed acute appendicitis should have the appendix removed before there is time for such complications to arise.

Unless one sees the extraordinarily advanced stage of inflammation, and even of sloughing, which the appendix may reach in cases in which the patient shows no outward evidence of any serious lesion, one cannot appreciate the danger that must inevitably attend expectant treatment. I have seen many cases in which the appendix was either perforated or gangrenous, and yet the patients have not looked ill, others in which the temperature and pulse were normal, and one in which the patient, in order to demonstrate to me that I had made a mistake in advising an immediate operation, "punched" himself in the abdomen directly over the region from which in an hour was removed a perforated appendix which had already given rise to an abscess.

I believe that it is possible to avoid disasters by the application of a few clinical rules which I have used for many years.

Diagnosis.

In a *typical* case of appendicitis the symptoms are as follows: The patient has a sudden attack of abdominal pain, before long he vomits, and in the course of a few hours the pain becomes localized in the right iliac region. He looks ill, and therefore a doctor is called in. When the doctor arrives, he hears that history, and he himself observes, first, that the patient has an anxious expression "sunken eyed" or "drawn." Secondly, there is some rigidity of the whole abdomen, but the rigidity is most marked in the right iliac region, in which, on pressure, tenderness is found. Thirdly, the temperature is elevated a little—rarely more than one or two degrees. Fourthly, the pulse-rate is accelerated to about 90 beats per minute.

He only *hears* about the manner of the onset, of the epigastric pain, the vomiting, and why he was sent for. What he *observes* is:

1. The general appearance and expression.
2. The rigidity and local tenderness.
3. The temperature.
4. The pulse-rate.

The value of the observations may be small in themselves, but when taken in conjunction with the history they are of the greatest importance. Similarly, the history, when taken by itself and without observation of other symptoms, may not be enough to justify a diagnosis. It is the combination and association of the two which is of importance.

1. *General Expression.*—The fact that a patient looks perfectly well is not a reason for thinking that there is not acute appendicitis. The "sunken-eyed" expression, when present, is indicative of a very acute attack, but its absence does not necessarily mean the contrary.

2. *Local Tenderness and Rigidity.*—Rigidity may be so extreme as to make it impossible to ascertain whether there is any tenderness of the appendix. The rigidity may also be as marked on the left side as on the right. On the other hand, it may be altogether absent, even in cases in which the appendix is gangrenous. Tenderness of the appendix itself is the most important symptom of all. Much of the difficulty in diagnosis is due to the fact that the appendix does not always lie in the same situation. It may be found up against the gall bladder, or even in the left iliac region. It may be wholly in the true pelvis or hidden behind the caecum. Frequently only part of the organ is acutely inflamed, and in such cases the tender point varies greatly, according to whether the proximal or the distal portion is the part affected. In the former case tenderness is usually in the right iliac fossa, whilst in the latter it may be scarcely ascertainable, because the tip of the appendix is almost out of reach, low down in the pelvis. Without tenderness of the appendix it is impossible to arrive at a sure diagnosis. The amount of tenderness varies greatly with the position in which the appendix lies. If it lies in the iliac fossa, with a resisting background, then tenderness is easily elicited, but if it lies over the pelvic brim, pressure upon the appendix is warded off by soft structures, and the tenderness may be so slight as to be overlooked. This is a common cause of mistake in diagnosis or of delay in arriving at a diagnosis, especially as little or no help is derived from a rectal examination in such cases. A localized abscess or a localized peritonitis can be discovered by examining the pelvis per rectum, but rarely an acutely inflamed appendix which has not given rise to such complications.

3. *The Temperature.*—This is a very variable symptom. It may be normal or it may range even to 105°. It is rare to find the temperature more than 102°. Between 99 and 101 is that usually met. It is of all symptoms the least to be relied on, inasmuch as it is commonly expected and frequently absent. If elevation of temperature is present it helps to confirm the diagnosis, but the fact that it is normal never warrants the opinion that therefore the appendix is not acutely inflamed.

4. *The Pulse-rate.*—This also is a symptom which, in the early stages of appendicitis, is not of importance. If the temperature is raised the pulse will rise in proportion. It is in the later stages that the pulse-rate is of the most value as an indication of how things are progressing, but in the early stages the pulse may be unaffected. A few years ago I operated upon a man for acute appendicitis, and six months later upon his son. The father had a pulse of 54 and the son's pulse was 58.

These, then, are the "cardinal symptoms" of acute appendicitis.

Unfortunately, the majority of cases are not as easy of diagnosis as are those which are known as "typical." Let us suppose that a doctor sees a case during the morning; he hears the history of the onset, and he notes the four cardinal symptoms. It is a mild case. What should he do? The wise course to follow, if he is sure of his diagnosis, is to advise the removal of the appendix forthwith; but, if he thinks differently, he should keep the patient in bed, apply hot fomentations to the painful area, and do nothing more. Sips of water may be given, but no food. On no account should morphine be given. If the pain is so severe as imperatively to demand morphine, the case is one for immediate operation, and the drug should only be given on the understanding that an operation is to

follow its administration. In the early stages of acute appendicitis morphine may give the appearance and feeling of perfect well-being to an urgent case, and it should never be given until a decision has been arrived at as to whether or not an operation is necessary. If an operation is not necessary, neither can morphine be. The patient must be seen again in the course of a few hours, and again the cardinal symptoms must be noted.

Indications for Operation.

If *all* the symptoms have not improved, or if *any one* of them has become more marked, the inflammation is not subsiding, and it is necessary to remove the appendix.

1. The patient may look well, the local tenderness may be slight, the temperature may be normal, but *if the pulse-rate continues to rise* (a fact to be ascertained by repeated countings) the appendix should be removed.
2. The patient may look well, the local tenderness may be slight, the pulse-rate may be slow, but *if the temperature has risen* the appendix should be removed.
3. The patient may look well and the temperature and pulse may both be normal, but *if the local tenderness has increased* the appendix should be removed.
4. The local tenderness may be slight, the temperature and pulse may both be normal, but *if the patient looks worse* the appendix should be removed.

If, using these rules as a guide, an operation is decided upon, it should be performed without delay. It cannot be right to allow such cases to wait until the following morning, any more than it would be right to allow a strangulated hernia or a ruptured gastric ulcer to wait. It will be noticed that I have only dealt with the symptoms of acute appendicitis itself, and that I have not regarded the symptoms which mark the complications developing in the later stages of the complaint. My object has been to draw attention to what are the symptoms of the initial lesion and to divert attention from symptoms which are produced by avoidable complications. The hope of preventing death from appendicitis can only be fulfilled by our removing the inflamed organ before it has time to infect the peritoneum.

Unfortunately, from one cause or another, either because the patient is first seen by a medical man after complications have arisen, or because an "expectant" line of treatment has been adopted, the majority of cases are operated upon more for the sake of combating complications than in order to prevent them. Of these 619 cases upon which I operated between January, 1900, and December, 1911, 113 were interval cases. Of the remaining 506 cases, 350 had already developed either an abscess or general peritonitis, 299 had abscesses, and 51 had general peritonitis.

The only complication to which I would make particular reference is that of a localized abscess. It is a common belief that it is necessary, before a confident diagnosis can be made, that we should be able to "feel" something in the appendix area. That is a most serious error. It should be generally known that *a "lump" means an abscess*. This, like all similar statements, is not invariably true; but it is so true that, unless some other cause can be assigned for the presence of the palpable swelling, it should in all cases be looked upon as an indication of the presence of pus.

Except in cases in which there is a palpable piece of oedematous omentum or in cases in which the appendix itself can be felt, I know of none to which the rule does not apply: that a palpable swelling which develops in the course of an attack of appendicitis indicates that there is pus—that is, an abscess.

It appears to me to be the duty of any surgeon who has had experience of the ill-effects of expectant treatment to do what he can to counteract it. The principles of expectant treatment are the principles upon which large numbers of the cases which are sent to hospital have been conducted. If it could be shown that expectant treatment had the effect of keeping the lesion localized, nothing more would be necessary to prove that expectant treatment was sound, but the frequency with which general peritonitis develops whilst such treatment is being carried out is enough to condemn it. If we divide all cases into the two classes—those with a localized lesion and those with general peritonitis—and compare the results of operations upon those two classes, we obtain overwhelming proof of the danger that attends general peritonitis. Of my own cases, 506 were acute. Of those, the lesion was localized in 455, and 51 had general septic peritonitis. The difference in the mortality in the two classes is truly appalling, for, whereas in those in which the lesion was localized the death-rate was 3.07 per cent., amongst those in which general peritonitis had developed it was 72.5 per cent.

Deaths from acute appendicitis cannot be abolished by treatment on the expectant principle—it has an acknowledged mortality of 3.3 per cent.—and there does not appear to be much hope of improvement in the results of such treatment. On the other hand, the results of operative treatment afford abundant hope that, granted the cases be seen in good time by a medical man, all may be saved. If we treat the acutely inflamed appendix by operation and do not wait for complications to develop, there is no mortality, but if we treat the complications, some of which are certain to occasionally develop during expectant treatment, by operation the percentage of cases which die steadily increases with the severity of the complications. In this list it will be noticed that there were no deaths amongst the cases in which it was not necessary to drain the wound, but as soon as the necessity for drainage arose there was an attendant mortality, which is another way of saying that some complicating infection of the peritoneum had arisen.

The true surgical treatment of acute appendicitis may be summed up in this: It is the prevention and not the treatment of complications which is our aim.

Though a patient may recover without an operation, he is left with the prospect of another attack. The severity or mildness of an attack gives no sure guide to the seriousness of the lesion. The advocates of the waiting policy advise that the appendix should be removed when the attack has subsided. That, I am sure, is a wise thing to do, provided that, in the case of those who recover from a severe attack, a sufficiently long convalescence be allowed before appendicectomy be undertaken. In the case of those who have recovered from acute appendicitis with an abscess or with general peritonitis, six months is never too long a time. Such advice, however, involves a reply to the question, which must be answered before the parents will consent—namely, What is the likelihood, the patient having recovered from one attack, that another attack will occur? It is not enough to tell the parents that another attack *may* occur. Every one knows that is possible, but every one also knows of many cases in which there has been one attack only without any recurrence for many years afterwards. They wish to know whether it is certain to take place before they will agree to an operation being performed for the prevention of a problematical illness. No man is able to say what that probability is, and until we are in a position to assure people that one attack necessarily involves another they will frequently wait until another attack supervenes. It is not altogether a matter for congratulation when a patient recovers from an attack of appendicitis and still retains the originator of the trouble. He may hope that the feared attack will be as the former one, but it may be fatal.

The method of operating which I employ is by an oblique incision parallel to the crest of the ilium, and of such length as the case requires. In "interval" cases the incision is usually 4 or 5 in. long, and I never employ the muscle-splitting method, because it requires one to operate in a hole without a sufficient view. In abscess cases I avoid, if possible, division of the epigastric vessels and opening of the sheath of the rectus muscle. The incision is extended into the flank, sometimes a long way, and this has the double advantage of giving an excellent view and of affording good drainage. I generally use both a gauze and a rubber drain, which are brought out through the posterior extremity of the wound. The stump of the appendix is clamped, ligatured with catgut, and tucked in with a catgut purse-string suture.

I would not have it thought that I regard the diagnosis of acute appendicitis as free from difficulty. I am fully

alive to the immense difficulty that there is in many cases—so great as to make a sure diagnosis in some cases impossible, especially in stout people and in pregnant women. In the majority of instances, however, it is not because a diagnosis has not been made, but rather because, having been made, it has not been acted upon, that so many cases come to the surgeon with complications.

SPONTANEOUS REDUCTION OF INTUSSUSCEPTION.

BY

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SPONTANEOUS reduction of an intussusception in infancy is admitted by the textbooks to be a possibility, though stated to be a very rare occurrence. There is an obvious difficulty in forming a definite opinion on this point in that the proof of such a happy ending is necessarily absent owing to the disappearance of the intussusception. Until quite recently I have never seen any real amelioration of symptoms in this disease unless relieved by operative interference, but the following case upon retrospective study would appear to be a genuine exception to the usual course of events.

J. B., male, aged 13 months, previously healthy, with no history of intestinal disturbance. He was present at a juvenile tea party on April 8th, and, in the absence of his mother, was given quantities of unsuitable food and whole strawberry jam. He passed a restless night, and next morning had some diarrhoea. On the same day I was urgently sent for at 2 p.m., and was told that the child had been seized with frequent and violent attacks of abdominal colic, several of which had been so severe that he had literally stood on his head, boring into the pillow and screaming out with pain. The diarrhoea continued, the stools being thin and offensive and accompanied by a quantity of mucus, but no blood. There had been no vomiting.

The child was white, restless, not intensely collapsed, but with a small, quick pulse, and a marked expression of abdominal distress; every few minutes he obviously had abdominal pain. The abdomen was hard and resistant, a little distended, and everywhere highly resonant. No tumour was felt and the rectum was empty. This examination being highly unsatisfactory owing to rigidity, and it being very desirable to make a diagnosis, if possible, I returned at 4 p.m. with my partner to give an anesthetic in the hope of settling the question. I found the child very much better, with lessening pain, returning colour, and an improved pulse. It was decided that an intussusception was improbable, and an anæsthetic was not given, it being determined to watch the child closely. The improvement was maintained, and in the course of a few days on a rigid diet with the cautious use of small doses of castor oil, the child recovered his usual health.

Some six weeks later, on May 21st, a similar attack took place, of corresponding severity, but on this occasion there was no diarrhoea, only a little blood and mucus being discharged from the bowel. There was no vomiting, and again no tumour could be felt in the rectum or abdomen. With the history of the former attack in one's mind and the recovery therefrom, and with the child close at hand under immediate observation, it seemed justifiable to again adopt expectant treatment. This was again attended by success. The bowels were opened with difficulty, the stools being constipated, but free from blood, and the abdominal pains disappeared, except at very rare intervals.

All went well for five days. On May 26th I received again an urgent message to see the child, whom the parents thought to be dying. This time the clinical picture of acute intussusception was to be read in the child's appearance. The collapse was of that degree of profundity which is associated with this lesion in infancy and which once seen is never forgotten. The child lay motionless, colourless, hollow eyed, and apparently moribund, the recurring abdominal pains momentarily restoring the appearance of life. All this was well within an hour from the first onset. Blood and mucus had again been passed, and vomiting had commenced. The child was at once taken to a nursing home. On opening the abdomen some hour and a half later a little clear serous fluid escaped. A quite recent intussusception, some seven or eight inches in length, was found in the left iliac fossa, which I had no difficulty in reducing. It was apparently of the ileo-caecal variety. The abdomen was rapidly closed with through and through sutures of one layer only, and the patient returned to bed certainly much better than before the operation. The after-history was uneventful and the recovery uninterrupted, small doses of opium (tinct. camphorae co., ♏ v) being freely used for the first three days.

The presence of a congenital umbilical hernia did not lessen the difficulties of diagnosis in the first two attacks. This was always reducible, but the possibility that a small piece of omentum might be nipped had to be borne in mind. The hernia was not interfered with at the operation, but curiously enough it has not reappeared, the empty flaccid sac lying on the abdominal wall.

My personal conviction is that the first two attacks were undoubtedly due to the commencement of an intussusception, which in each case was spontaneously reduced—completely so in the first attack, perhaps incompletely in the second, in spite of the fact that reduction at the operation was easily effected, and that the intussusception appeared to be a recent one.

The third attack alone showed the full degree of collapse which one is accustomed to expect, but there can be no doubt that this degree depends upon (*a*) the length of bowel involved, and (*b*) the amount of tension and compression of the mesentery.

A CASE OF FRACTURED PELVIS COMPLICATED BY LACERATION OF THE FEMORAL VEIN TREATED BY LATERAL VEIN SUTURE.

BY

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THE following case possessed characteristics which were deemed worthy of report:

J. C., a clerk, aged 35, was admitted to the Manchester Royal Infirmary with a history that he had been jammed between a lorry and a gate post at a railway station goods yard. The strain was apparently slightly oblique from right to left and oblique from before backwards.

The patient stated that on freeing himself he walked thirty yards or so; he was then seized with acute pain in the right groin and collapsed.

Condition on Admission.—The patient, who was admitted one hour after the accident, was a well-built man, but looked anaemic and ill. Respirations were quick and sighing, and he was very restless though fully conscious; the pulse was 120 and thin; the temperature was 97° F.

On inspecting the abdomen and groins a large swelling about the size of a melon was seen, filling up and mapping out Scarpa's triangle on the right side. The integument over this was of a mottled purple colour. The swelling was non-expansile, soft, and fluctuant. It had a feeling as if there was very little tension in the tumour, and was tender. The pulse could be felt perfectly well in the posterior tibial artery at the ankle, and was also quite palpable in the popliteal space. There was a slight impulse on coughing and straining. On jarring the crests of the ilia there was exquisite pain. Rectal examination revealed great tenderness and a bony prominence in the region of the pubic crest on the right side. The abdomen moved well on respiration, was soft, and not tender, and was resonant in the flanks. A soft Jaques catheter was passed, and 12 oz. of normal urine drawn off.

Diagnosis.

The history of the accident, the rapidity with which the swelling had appeared, and the fluctuant feel of the tumour led one to a diagnosis of haematoma. The absence of expansile impulse, the presence of the pulse at the ankle, the soft non-tense feel of the tumour made it most probable that it was of venous rather than arterial origin. The results of the rectal examination and the great pain on jarring the hips showed that the pelvis was fractured.

Operation.

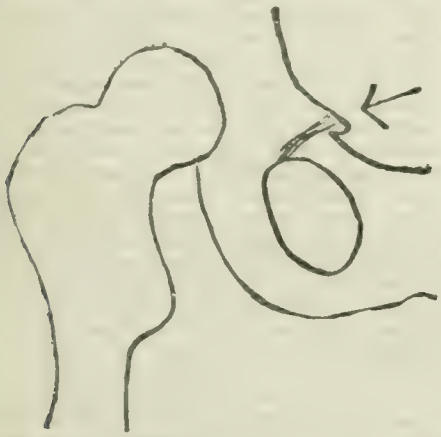
The man's condition was so urgent that the resident surgical officer, Mr. Howard Buck, F.R.C.S., decided on immediate operation.

A longitudinal incision about 4 in. long was made over the tumour. On cutting through the integument and deep fascia, dark clots and about a pint of dark fluid blood were turned out. On exposing the femoral vein, it was seen that a sharp spicule of bone broken away from the pubic crest had penetrated the vessel just as it came under Poupart's ligament. The tear in the vein was longitudinal and about ¾ in. in length. Further haemorrhage was controlled by digital pressure below the laceration. The vein was repaired by lateral phleborrhaphy, a Lembert suture of fine thread being inserted with a domestic needle. The spicule of bone was removed and a tube with gauze packed tightly round inserted into the cavity. Towards the end of the operation the patient's condition became critical, and about 4 pints of normal saline were infused into the median basilic vein.

After History.

The tube and gauze were removed on the third day after operation, and the patient lay between sandbags with a tight binder over the pelvis for a month. He was then discharged, and was able to walk from the ward. There was never throughout the convalescence any swelling or oedema of the limb, which remained quite painless. It is therefore most probable that at no time was there any venous thrombosis of any extent.

An *x*-ray photograph taken a week after operation showed a flake of bone torn away from the pubic crest to about ¾ in. from the pubic spine. The diagram shows the condition.



Arrow denotes point of fracture and spicule of bone. (Drawn from actual skiagram.)

Although laceration of the femoral vessels is a well recognized complication of fractured pelvis there are few, if any, cases on record; certainly none treated in this manner with success. The interesting physical signs in this case making it possible to differentiate the venous haemorrhage from arterial were very striking, as also the complete absence of venous complications after vein suture.

Lejars states that there have been several successful cases of suture of vein trunks reported. Out of six of the inferior vena cava there were four successes and two deaths. Jacobsthal has collected 53 cases of suture of large veins; in two only of these did lateral suture fail.

It is thus evident that a large vein such as the femoral should always be given a chance by suture rather than resorting at once to ligature, as the results of femoral vein thrombosis are so often unfortunate, to say the least. In cases in which lateral ligature (partial) can be carried out suturing can in nearly all cases replace it, and the chances of secondary haemorrhage are said to be less than in lateral ligature. In infected wounds or veins injured by sepsis suture is useless.

Lejars recommends round needles as used in the above case, and sutures of sterilized thread soaked in aseptic vaseline. He is against a Lembert suture being inserted, and always does a through-and-through suture. It is quite evident that if a Lembert suture is possible it is preferable.

My thanks are due to Mr. A. H. Burgess, F.R.C.S., and Mr. H. Buck, F.R.C.S., for permission to report these notes.

THE seventh Congress of Austrian Balneologists will be held at Meran in October (11th to 13th). Numerous papers have been promised not only from Austria, but from Hungary, Germany, and Switzerland. A special feature will be a formal tribute of acknowledgement of the work of Professor Winternitz, who has for many years been President of the Austrian Balneology Society. Communications relative to the Congress should be addressed to Dr. von Aufschneiter, Baden bei Wien.

REFLECTIONS AFTER TWENTY-ONE YEARS OF GENERAL PRACTICE.*

By F. W. JOLLYE, M.D., F.R.C.S.,
ALRESFORD, HANTS.

DANTE says that "all men are delighted to look back," and it is as well that it is so, for only by that means are we able to think over our experiences—successes and failures—and see how they can help us to steer a course in the future which shall not only increase the unity and concord among ourselves but also our power to lessen the sorrows and the average sum of human suffering. Never was the general practitioner better fitted by his training to undertake the treatment of disease, and never has he shown more than in the past few years, by his readiness to help on the work of preventive medicine, by his whole-hearted support of public health measures, that he is not here to get all he can out of life for himself, but to try and make the lives of others happier. And, although he is better qualified in every way to treat disease than he was, say, twenty years ago—owing chiefly to his greater knowledge of the cause of it—yet his responsibilities and anxieties have multiplied considerably without any corresponding acknowledgement by the public that his increased efficiency is worthy of better recognition. During the last twelve months the general practitioner has been passing through the most momentous times of this or any other age, and one has only to read the letters that have been published in the daily papers to see that our prospects are gloomy unless we fight shoulder to shoulder. We were all told at that very dull entertainment called the opening of the winter session that we were entering a noble profession, and ever since that blessed word "noble" has so rung in our ears that we seem as a body to have been quite mesmerized by it. Noble to suffering humanity we have been, and always shall be in the future, but have we shown by our loyal co-operation with each other the same nobleness of character? Have we not rather by our want of unity allowed ourselves to be at first cajoled and then threatened with ruin and disaster by self-seeking politicians, until at last we have realized that we must fight for principle and justice, cling to our ideal, and take hope in the remembrance that sometimes "from our desolation only does the better life begin." If we only reflect for a moment that medicine is the only world-wide profession following everywhere the same methods, actuated by the same ambition and pursuing the same end, it must seem to us all that it is only the want of unity, peace, and concord amongst ourselves that is responsible for the treatment meted out to us by certain sections of the community. During the last few months many men who for years stood aloof from the British Medical Association have come into the fold, having at last realized that the old maxim, "United we stand, divided we fall," is as true of the medical profession in its dealings with the public as it is of any other walk in life.

The protest made by some members of the profession, that we are forming ourselves into a trades union, seems, to say the least of it, illogical, for, while believing that each member taken individually is prompted by the highest ideal, they believe that when banded into a compact mass they are actuated by baser motives. Unless the majority of medical men are tradesmen, it is impossible to create a medical trades union. A union of professional men will be a professional union, and the more perfect the union the more possible it will be to maintain in each of its units the highest traditions of our calling. We object to being treated as tradesmen, as if our only duty is to supply all comers with a bottle of medicine or liniment, very much as goods are supplied across the counter at a co-operative store, all the finer and scientific work which has been built up during the last fifty years being totally ignored or sacrificed to the cry for the "cheap doctor." It is to be hoped that all who have lately joined the Association will attend the meetings of our Branches and Divisions as frequently as possible, for by so doing they will not only increase their educational value, but help to promote that unity and friendship amongst the

*Being the Presidential address delivered before the Southern Branch of the British Medical Association.

members which is so very essential to the dignity and usefulness of the profession. As Sir William Osler says, "Unity and friendship, how we all long for them, but how difficult to attain! Strife seems to be the very life of the practitioner, whose warfare is incessant against disease, ignorance, and prejudice, and, sad to have to admit it, he too often lets his angry passion rise against his professional brother." The medical meetings come in here as a professional cement, and in a friendly, social way lead to a free and open discussion of differences in a spirit that refuses to recognize diversities of opinion in the non-essentials of life as a cause of personal animosity and ill-feeling. But not only do these gatherings promote professional social intercourse, but they continue our post-graduate education and culture, for even in populous districts the practice of medicine is a lonely road which winds uphill all the way, making it difficult to escape the malign influences of a routine life and of work in a narrow field.

Many of us looking back must regret the want of a more liberal education, for a little more classical reading would have taught many of us that even in the ancient days there were two classes of practitioners who were supposed to treat their patients very differently according as to whether they were club or private patients, and who were consequently held in very different esteem by the public. Plato in one of his dialogues refers to the two sorts of doctors:

> The slave doctors run about and cure the slaves or wait for them in the dispensaries: practitioners of this sort never talk to their patients individually or let them talk about their own individual complaints. The slave doctor prescribes what mere experience suggests, as if he had exact knowledge, and when he has given his orders like a tyrant, he makes off with equal assurance to some other servant who is ill, and so he relieves the master of the house of the care of his invalid slaves. But the other doctor, who is a freeman, attends and practises upon freemen: he carries his inquiries far back, and goes into the nature of the disorder, he enters into discourse with the patient and with his friends, thus at the same time getting information from the sick man and also instructing him as far as he is able, and he will not prescribe for him until he has first convinced him; at last, when he has more and more brought the patient under his persuasive influence, and set him on the road to health, he attempts to effect a cure. Now which is the better way of proceeding in a physician and a trainer? Is he better who accomplishes his end in a double way, or he who works in one way, and that the rude and inferior?

It seems almost impossible that if we had read this and many similar passages from the classics in our youthful days we should have been for the last twelve months fighting the battle of the freeman doctor against enemies amongst whom we number some of our professional brothers, who seem to think that sufferance is the badge of all our tribe, and that the work we commenced fifty years ago in semi-charity should now be forced upon us, willy-nilly, at the point of the bayonet.

Looking back only the last twenty-one years one cannot help being impressed with the enormous improvement made in the lot of the working man, and how vastly enhanced is his wage-earning capacity, brought about by the agency of his powerful unions. Yet we, with our increased expenses both in our hospital training and in carrying on our practices, to say nothing of our increased efficiency in dealing with disease, are, I say without hesitation, taking lower fees than we were twenty years ago. And why? Because we have not the pluck to demand proper remuneration from those who can well afford it. I will give you an example from my own experience. I have had, as no doubt most of you here have had, letters from insurance companies running somewhat as follows: "Please examine Mr. So-and-so, and fill in the enclosed form under the Workmen's Insurance Act. On receipt of your reply we shall be pleased to forward you our usual fee of half a guinea." I have always answered that my usual fee is a guinea, and that I should be pleased to fill in the form on receipt of that amount. I have always received a satisfactory reply, with one exception, when I was informed that half a guinea was the fee considered satisfactory by many of the highest in the profession, and that it ought to satisfy me. To this I replied that I knew nothing about the highest in the profession, except that I had sometimes helped them to get their fees, but that they had never helped me to get mine, and I returned their form for some one else to fill up. Needless to say, I got it back with my guinea enclosed.

How much is lost in fees annually by the profession no one can calculate, but it must be very large, and I put it down mainly to two facts:

1. Because we let the public teach us what our fees ought to be, instead of our educating them; and
2. Which is even worse, so many of us, rightly or wrongly, are afraid that we shall not be supported by our own colleagues.

That there is a good deal of truth in the last statement can be gathered from the fact that you practically always hear of neighbouring practitioners being described by the public as opponents, never as colleagues or friends; we are only the latter when we are on a hospital staff and doing gratuitous work.

I know the business side of our professional life is very distasteful to most of us, but that is no excuse why we should neglect it under the veil of charity, which, although perhaps soothing to our conscience, will not take the place of our first duty—making provision for our old age and those dependent upon us.

Again, our education must be kept up to date, and often a man starts with a total misconception of the prolonged struggle necessary to keep the education that he has, to say nothing of bettering it. The times have changed, conditions of practice have altered and are altering rapidly, and we must show the public that the general practitioner, as of old, is still the man with whom, humanly speaking, are the issues of life and death, since upon him falls the grievous responsibility in those terrible emergencies which bring darkness and despair to so many households. It is often said that the days of the general practitioner are numbered, that one part of our work after another is being taken from us and carried out—some say even as effectually—by unqualified people such as the midwife, the optician, the prescribing chemist, and the wholesale drug houses. The specious and seductive pamphlets sent out by the latter indicate a thraldom and credulity of the profession which is hardly surpassed by the public itself. For years we have been exploited by these firms, so that a large section of the treatment of disease is to-day controlled by the big manufacturing pharmacists.

If we are to be regarded in the future as clear-headed, cautious, and independent practitioners we must throw off the fetters which have been forged around us, and not trust so much to the free-gratis Christmas visiting list so thoughtfully presented to us annually by some firms to save us the trouble of thinking out our own prescriptions, and to draw their net more closely around us. The specialists, who are ever increasing in number, we are often reminded, will eventually swamp us; but, putting aside for a minute the question of severe surgical cases requiring operation, the point whether they do or do not rests to a great extent in our own hands; for while we realize that it is the specialist and members of our hospital staffs who must lay down the indication—and what is, perhaps, even of more importance, the contraindication—of treatment, we as general practitioners should not play a too passive part; but after carefully following the practice of our hospitals, and having made ourselves familiar with the medical literature of the day, should be prepared to express our opinion whether any line of treatment should remain a common object of practice, or be confined exclusively to the consulting room of the specialist. During the last few years we have advanced firmly along a new road in the treatment of disease, due to specific micro-organisms, with the toxic products of which we are learning to cope successfully. The treatment with antitoxins and vaccines bears out the truth of the old maxim of Celsus: "He will treat the disease properly whom the first origin of the cause has not deceived." Upon the general practitioner in the future will fall the duty of treating cases by these specific remedies, and, if we are to hold our own, we must not shy at "specific treatment," which, because it is specific, allows of no routine prescription and application. To take the case of the diagnosis and treatment of pulmonary tuberculosis. After the sorrowful experience of the tuberculin incident of 1890 and 1891, with its unenlightened and mistaken method of administration, it certainly seemed advisable to leave this remedy in the hands of those specially concerned with tuberculosis, but now that the specific diagnosis and treatment of the disease has been accurately investigated and its value and freedom from risk are well recognized and its contraindications fairly evident, the treatment

ought to be recommended as a suitable one to be carried out by the family doctor. If we aim at mastering tuberculosis, no matter by what means, it must in the future become and remain, as will the chief work in stamping out infectious diseases of all kinds, the domain of the general practitioner. By the aid of tuberculin he will enable his patient to reach the sanatorium—if that is considered necessary—in good time, and in case he be obliged to leave too soon, would, thanks to the same after-treatment, stand a much better chance of being cured. We shall constantly miss early cases and diagnose others wrongly if the last and keenest diagnostic agent—tuberculin—in one way or another is not used and its results compared with our clinical observations. This must be so, for sanatorium physicians tell us that 50 per cent. of the patients admitted are in the second or third stage, and nearly 6 per cent. are not tuberculous at all. Want of clearness on the part of the practitioner is far more often responsible for the incurable cases than the patient's neglect to consult a doctor in time; this is greatly to be deplored, because it is the severe cases which, up to now, have formed an inexhaustible source of ever-fresh infection. I need only add that in many cases the test is unnecessary and in others superfluous and harmful, and that, like the *x* rays, these methods of specific diagnosis are not designed to replace but to supplement other approved methods of physical diagnosis and to enter the field when they fail. Unless we always bear this in mind, we are very apt to become what has been called "test-tube" diagnosticians; failing to use our hands and eyes, as our predecessors did, we shall be liable to lose our powers of observation, and be continually trusting to the clinical laboratory to put us right and to suggest the treatment. That the old methods of diagnosis are liable to be neglected, and too much reliance placed on the newer and more fashionable remedies without a sufficient examination of the case, is only too plainly seen by the recent epidemic of vaccine injections for chronic nasal catarrh, which have often been undertaken when the only cure was by surgical operation for the removal of polypi, straightening a deviating septum or other obstruction, which was causing a chronic naso-pharyngeal congestion.

Last year we had a most excellent address by our late President, Mr. Childe, "On Some Warrantable Intrusions of the Surgeon into the Abdomen." I think all who heard it or have since read it will heartily agree with his conclusions as to the necessity of the surgeon being called in in consultation very much earlier than he used to be, even though it be to similar cases that from time to time the general practitioner has pulled out of the jaws of death—more from good luck very often than anything else—without his aid. It has been said that the surgeon lives on the failures of the physician, and one object in the future will be, with the increased help of organotherapy and vaccines to reduce these failures to a minimum. Who knows but that oral and intestinal autointoxication, for instance, which seems to be answerable for many ills, will have been placed during our lifetime on a scientific basis, that each poison will be readily detected and its correct antidote immediately injected? Intestinal stasis and its sequelae, whether they be rheumatoid arthritis, tuberculous joint disease, or disease of the gall bladder, from simple cholecystitis to typhoid infection before the formation of gall stones, will be taken out of the hands of the surgeon, and we shall hear no more of ileo-colostomies and extirpation of the colon. Until that happy day arrives we shall have to go on perfecting our diagnosis, and by that means prevent many of those calamities, especially in abdominal cases, which we have all witnessed. That those calamities are often only the terminal episode of a chronic disease which may have been under medical treatment for a long time—perhaps only off and on—makes the tragedy, when it does come, so much the greater.

If I were asked in what particular it is the most necessary that the practitioner of the future should increase his skill, I should say, without hesitation, in diagnosis, especially the diagnosis of cases in their early stages. The cardinal symptoms of an intussusception, for instance, we were told, were the presence of a sausage-shaped tumour and the passage of blood per anum, and so they are in a fully developed case. But there is an earlier stage when the chief symptoms are a flatness and loss of resonance in the right iliac fossa due to the absence of the caecum. The tumour in its earliest stage is round, and only becomes sausage-shaped later, when it has advanced far enough to cause a drag upon the mesentery, and if we pass a finger into the rectum we shall withdraw it covered with blood and mucus some hours before it is passed externally. The child operated upon in this stage will have a much better chance of recovery than if we wait until the late symptoms are evident. Diagnosis, not drugging, will be our chief weapon of offence against the ignorance and quackery of the masses, which seems to increase *pari passu* with civilization. Long courses of treatment when treatment is useless, as Sir William Osler has pointed out, lead to the misapplication of remedies, and so directly to that lack of confidence in our methods which is apt to place us, in the eyes of the public, on a level with empirics and quacks. At the present time, thanks chiefly to the surgeon, who has thrown light into obscure places, we have opportunities during his manipulations, especially within the abdomen, to see not only the parts immediately concerned in the operation but other organs which are exposed to scrutiny, and a new pathology has arisen, well named by Sir Berkeley Moynihan "the pathology of the living"; and it is the facts based on this pathology, upsetting as they are to our preconceived ideas, which will have to be grasped by the general practitioner if he is to attain to that better diagnosis, followed up by prompt and rational treatment. A *post-mortem* examination, if we have a reliable history of the illness, may be most instructive, but we only see that he died from a far-advanced pathological change which is quite irremediable. How different will be the pathology of the future—that of the living—when we shall be able to know the pathological conditions in the early stages which are causing the patient's sufferings, and straightway proceed to remove them. This new pathology has already told us—only to mention a few fresh facts—that duodenal ulcer is quite as common as, if not commoner than, the gastric form; that a pathological lesion in the right iliac fossa is one of the frequent causes of symptoms of ulceration of the stomach, even although hematemesis is present; that a gall stone in the common bile duct has not jaundice as its cardinal symptom, and is much more frequent than used to be thought to be the case when we had only the pathology of the dead to guide us. At the present time there is just commencing another method of studying the pathology of the living—I refer to the administration of bismuth meals, and by means of the *x* rays watching its progress through the stomach and intestinal tract. The pathology of many obscure cases of so-called dyspepsia, we must hope, will be by this method of examination put upon a surer foundation, and as it can be applied in any position, we may in the future be able to explain why some patients lose their pain while in bed, only to have it return on their getting about again.

Very often there is difficulty, both in medical and surgical practice, in getting at the root of the evil—it is so very easy to mistake secondary effects for the primary cause—and if this new combination of bismuth meals and *x* rays can help us to decide whether to attack the digestive tract at its top near the stomach or at the junction of the small and large intestine below, a great advance will have been made both in the medical and surgical treatment of the digestive system. If the general practitioner wishes to study this new pathology he will have to follow his patient as often as possible to the operating theatre, and in my opinion it is only the cordial co-operation of the hospital staff and the medical men in the neighbourhood that will prevent much of the knowledge gained at first hand being wasted. It requires sometimes a certain amount of courage to send a patient, at perhaps our first visit, some miles into hospital, often at great trouble and expense, with the view of an urgent operation being performed, when we have only probability to support our diagnosis. Bishop Butler has said that "probability is the guide of life," and this is more true of medicine than other professions. We have to act on probabilities in diagnosis very often, and the older one gets the less dogmatic are we inclined to become. Dame Nature seems to be kind and considerate to the young practitioner, and does her best to cover up his mistakes—in more senses than one.

There are two remarks I should like to make concerning county hospitals and similar institutions from the general practitioner's point of view: First, that it ought to be an

understood thing that no member of the honorary staff accept contract work, such as club and Poor Law, but in return for his experience and advertisement—a perfectly legitimate one—he should, if in general practice, demand a rather higher fee than those without such an appointment; in fact, should be more or less a local consultant whom we could call in, in perfect confidence that he is not competing with us on the same basis of fees as our own. Having more time for hospital work, he would be able to increase greatly his powers as a diagnostician. It is in that capacity we chiefly want him to give us a helping hand: for experience is sometimes fallacious and judgement difficult, and we want a surgeon who does not always require to look inside before he can tell us whether it is a case for operation or not. Many a man becomes a good operator with practice, but the art of diagnosis is a much more difficult one to attain, unless one has the advantages of a hospital appointment and plenty of time to devote to it. My second remark is respecting the out-patient department — the ordinary medical and surgical part of it. For many years there has been great dissatisfaction about it, partly because it is overcrowded and sufficient time cannot be devoted to the individual cases, and partly to the abuse of it by people who could well afford the small fee of their own medical attendant. In these enlightened days, when drugging is considered in many cases to be quite a subsidiary part of the treatment and more importance is attached to the prescribing of a proper dietary, to the methods of living generally, and to the housing and sanitary surroundings of the patient, does it not seem evident that this treatment would be much better carried out by their own medical attendant, by whom all these details could be investigated, and whose personal supervision would ensure all orders being more thoroughly carried out? Looked at from this point of view, I think the out-patient department ought to be shut down, and, using Sampson Gamgee's phrase, "turned into the poor man's consulting-room."

There are other points which one could have touched upon concerning our outlook for the future, but I am afraid I must have already wearied you. Let me conclude with a paraphrase of the words of Sir Thomas Browne:

If a man does not sell his soul, if he does not part with his birthright of independence for a mess of pottage to the Ishmaelites, who harass our borders with their clubs and oppress us with their exactions, if he can only keep free, the conditions of practice are nowhere incompatible with St. Paul's noble Christian or Aristotle's true gentleman.

STERILIZATION OF THE SKIN BY SPIRITUOUS SOLUTION OF MERCURY PERCHLORIDE.

BY

COLIN CLARKE, F.R.C.S., M.B.,

CAPTAIN, R.A.M.C.

SIMPLICITY is the great advantage of the iodine method of sterilizing the skin, but iodine has certain disadvantages. A solution painted upon the scrotum, the anus, or the vulva causes considerable local inflammation, and the patient often suffers pain and discomfort for hours after the operation. Iodine stains all towels and clothing it comes in contact with, and the irritating vapour given off as the solution dries on the skin is most annoying to the operator.

Mercury perchloride in methylated spirit (strength 1 in 500) is a more powerful antiseptic than tincture of iodine, and has practically none of its disadvantages. It can be painted all over the penis, scrotum, anus, etc., and causes only a slight burning sensation when first applied. It can be freely used, and no local inflammation results as long as the spirit is allowed to evaporate. A small superficial burn, however, is caused by the spirit solution if a swab or towel soaked with it is left in contact with the patient's skin during the operation. This can easily be avoided. The perchloride solution does not stain clothing or towels, and no irritating vapour is given off as it dries on the skin. As an antiseptic the perchloride solution is very efficient, and no preparatory dressing of the skin is required before the operation.

The actual sterilization of the skin is very simple. The skin is painted or swabbed over twice with spirit and perchloride solution immediately before the commencement of the operation.

Method.

1. A hot bath and a shave, if necessary, the day before the operation.
2. When the patient is placed on the operating table the skin in the operation area is freely painted with the (1 in 500) spirit solution.
3. A sterile towel is then thrown over the skin and the patient anaesthetized.
4. Ten minutes after the first application of perchloride in spirit the sterile towel is removed, and the spirit solution is again swabbed all over the skin area for about one minute. The skin is now sterile and the operation can be commenced.

If the spirit solution has been applied to the scrotum a final swab over with watery lotion is advisable, for any excess of spirit solution left between the scrotum and thighs causes a superficial burn.

The accompanying list is a record of 102 operations performed without any preparatory dressing. The skin in each case was sterilized when the patient was placed on the operating table.

Seven of the appendicitis cases, marked (*a*) on the list, were of the suppurative or gangrenous variety. After removal of the appendix the peritoneal cavity was drained, and in these cases the wounds naturally healed by granulation. In all the other cases the wounds healed aseptically, and no case of suppuration occurred.

The cases in Group I were prepared as above described with mercury perchloride in methylated spirit (strength 1 in 500).

The cases recorded in Group II were prepared on the same principle—that is, two applications of antiseptic with an interval of ten minutes just before the commencement of the operation. The reagents, however, were different, the first antiseptic paint being a 5 per cent. solution of iodine in rectified spirit, which ten minutes later was thoroughly swabbed off with a 1 in 500 solution of mercury biniodide in rectified spirit. These reagents, however, are much more expensive. Rectified spirit (hospital price, Malta) costs 3s. 7½d. a pint, whereas methylated spirit, which gave equally good results with mercury perchloride, costs only 3½d. a pint.

The ten minutes interval mentioned above could not always be accurately observed owing to occasional delays—for example, in the administration of the anaesthetic. However, it was adhered to as closely as possible in each case.

Operations.	Group I.	Group II.	Total.
Varicose veins	4	9	13
Varicocele...	5	9	14
Inguinal hernia	5	5	10
Umbilical hernia	2	0	2
Acute intestinal obstruction	0	1	1
Exploratory laparotomy	1	1	2
(*a*) Appendicitis (abdomen drained) ...	6	1	7
(*b*) Appendicitis (abdomen closed) ...	3	11	14
Internal semilunar cartilage knee ...	0	6	6
Fractured patella (wired)	0	2	2
Fractured femur (wired)	0	1	1
Fractured tibia (wired)	0	1	1
Ganglia and bursae excised	4	3	7
Sebaceous cysts, foreign bodies, etc. ...	9	5	14
Amputation (toes)	3	1	4
Circumcision	2	2	4
	41	58	102

CULTURAL EXPERIMENTS.

The following cultural experiments were undertaken to test the antiseptic power of the perchloride and methylated spirit solution (1 in 500).

Strands of dry, unprepared catgut were soaked in broth cultures of pyogenic organisms for eighteen hours. The in-

fected pieces of catgut were then dipped into the spirit and perchloride solution for ½, 2, 3, or 5 minutes. They were then soaked in sterile water for twenty-four hours to remove the perchloride, and finally cultivated in broth tubes.

Minutes in Spirit Solution:	½	2	3	5
Staphylococcus albus (catgut)	+	−	−	−
Bacillus coli communis (catgut)	+	−	−	−
Staphylococcus aureus (catgut)	−	−	−	−

+ Growth in culture tube; − sterile.

IODINE AS A DRESSING FOR OPERATION WOUNDS.

BY

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PROFESSOR OF SURGERY, EGYPTIAN GOVERNMENT SCHOOL OF MEDICINE; SENIOR SURGEON, KASR-EL-AINY HOSPITAL, CAIRO.

My experience of iodine as a first dressing for recent cases of lacerated, and particularly dirty, wounds, having been decidedly happy, and the preparation of cases for operation by the same solution now being my routine practice, I was naturally much interested in the perusal of Mr. Reginald Alcock's address, published in the BRITISH MEDICAL JOURNAL of February 3rd, 1912, on iodine as the sole dressing for operation wounds.

I had already adopted the practice of painting wounds with iodine at the conclusion of the operation before applying the dressings, and had even tried—with much misgiving be it said—leaving them entirely without dressing, especially in children; but it is only during the last two months that I have taken my courage in both hands, with Mr. Alcock's experience to guide me, and in every possible case, both in hospital and private practice, used iodine as the sole dressing, with the most satisfactory results.

It appeared to me that working, as one does, on some of the dirtiest skins possible to imagine—those of the Egyptian fellah—the method would have an opportunity of justifying itself, and proving the claims so eloquently put forward on its behalf; and I must admit at once that it has completely established its position.

Before I began the preparation of operation cases with iodine—a practice which all my colleagues have now adopted—I was accustomed to dress my cases with a piece of sterilized gauze fixed with collodion; but I found that with iodine-prepared catgut the results were not always altogether satisfactory, as some superficial redness or even blistering occurred from time to time, due, I thought, to an antagonism between the collodion and the iodine. I therefore stopped the collodion and substituted ordinary sterilized dressings, but now no dressing, in the ordinary sense of the word, is used at all and the cases do better than ever they did.

The first case in which I employed this method was that of an old woman, on whom I operated for strangulated umbilical hernia. The abdomen having been prepared by painting freely with a 2 per cent. solution of iodine in rectified spirit, the operation was performed in the usual way, a free transverse incision being made in the skin, the sac opened, and a large mass of dark omentum removed. The radical operation was done, and the skin brought together by four deep mattress sutures of silkworm gut, and the edges fixed with Michel's clips. The wound and its surroundings were then thoroughly painted with iodine, and a piece of dressing thrown over it till the patient was taken back to bed. She was at once put in the Fowler's position on a special bed—the operation was done under stovaine anæsthesia—and a cradle placed over her to support the bedclothes, the wound itself being entirely uncovered. It was painted twice a day for the first four days and then once daily for a week, and in spite of the old lady's scratching of the wound and a rather disquieting interest in the mechanism of the clips from time to time, the wound healed absolutely perfectly, the deep sutures being removed in four days, the clips in six, and she was up and about on the tenth day.

Fifty other cases have been treated in much the same way with equally good results. Knowing my patients and their complete ignorance of the veriest elements of cleanliness, I have generally left a piece of dressing lying on the wound, but not fixed in any way, and in some other cases where there seemed to be a prospect of a good deal of oozing—notably in one case of plating an old spiral fracture of the tibia—I have continued the painting with iodine, but have put on some dressing and fixed it with a firm bandage for a few days.

Again, in cases in which it has been necessary to put in a drain, as in removal of the breast for cancer and in tuberculous glands of the neck, a piece of dressing has been placed over the drainage openings, the rest of the wound being entirely exposed and painted with the iodine. They all healed well and continued to go on satisfactorily after the drain was removed and the opening painted like the rest of the wound. Sometimes, also, serum that has accumulated in the wound has been let out by inserting a probe between two clips, but without in any way interfering with the aseptic healing of the entire wound. The iodine does not seem to exert any chemical action on the metal clips.

It would be tedious to record the cases individually, but they include 6 operations for ventral and umbilical hernia, many inguinal hernias (both single and double), several hydroceles, 2 complete removals of breast for cancer, 4 goitres, 2 epitheliomas of lip with removal of glands in the anterior triangle, 4 circumcisions, 1 hare-lip, trephining, amputations of legs, suprapubic lithotomy, plating of fractured tibia, plastic operations for cicatricial contractions after burns, and 2 partial amputations of the hand at the carpo metacarpal joints for enchondroma and sarcoma. The case we are proudest of is one of double hernia and double hydrocele, in which the patient developed delirium tremens the day following operation, and yet all his wounds healed perfectly without other dressing than the iodine paint.

Only one case in the whole series has gone wrong, and that may, I think, be entirely ascribed to our own stupidity and neglect, and cannot in fairness be considered a failure due to the method under discussion.

It was an extensive operation for softened and suppurating tuberculous glands of the neck, necessitating a very wide dissection. Unfortunately the drainage tube I had ordered to be put in for twenty-four hours was not inserted. The following day there was fever and the cavity had filled up with serum, but, hoping against hope that it might be absorbed, the house-surgeon did not introduce a probe to evacuate it, with the inevitable result that next day when I saw the case during my round the fever was still high, and I then evacuated broken-down blood and pus. Clips had to be removed in two places, and, though the final result was better than might have been expected, it spoilt our run of successes.

Personally I can only blame ourselves and hold the method guiltless, especially as a precisely similar case in the same ward, which had been done a few days before, but had been drained for twenty-four hours, did perfectly.

I would prefer not to dogmatize too strongly on the merits of this method on a comparatively small experience, but tender this contribution as confirmatory evidence of the efficacy, the simplicity, and the economy of a procedure which cannot fail to appeal to hospital surgeons and private, and especially country, practitioners alike.

IODINE AS THE SOLE PREPARATION AND DRESSING FOR OPERATION WOUNDS.

BY

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BEING much interested in the article by Mr. Alcock, F.R.C.S., of Stoke-on-Trent, which appeared in the BRITISH MEDICAL JOURNAL of February 3rd, 1912, on the subject of iodine as the sole dressing for operation wounds, I determined to give it a thorough trial, and have used it in every clean case admitted to my wards for operation, 77 in number, during the three months, February 6th to May 6th, 1912.

After this experience of it at the Royal Naval Hospital, Plymouth, I am so convinced of its efficiency and economy

that I think the following statistics may be of value in advocating its more general use:

Table of Cases Treated by the Open Iodine Method between February 6th and May 6th, 1912.

	No. of Cases.
Hernia, radical cure for	43
Hernia, strangulated	2
Hammer toe	1
Appendicectomy	4
Varicocele	4
Hydrocele	1
Excision of semilunar cartilage of knee-joint	5
Fractures, plated or wired	3
Excision of new growths (non-malignant) ...	3
Varicose veins	5
Bubo	1
Excision of tuberculous cervical glands ...	2
Cystotomy and repair of penile fistula ...	1
Exploratory laparotomy	1
Removal of needle from sole of foot ...	1
Total	77

In the earlier cases in this series, after painting with iodine on the evening before operation, a sterile gauze dressing was bandaged over the operation area and removed on the operation table before the second painting, but in the later cases this dressing was abandoned.

Routine Method.

(*a*) The evening before operation: (1) Shave the operation area; (2) hot bath and thorough drying afterwards; (3) paint the operation area with tincture of iodine.

(*b*) At the operation: (1) Paint operation area with tincture of iodine immediately before making the incision; (2) paint the wound again after insertion of stitches.

(*c*) After-treatment: (1) Paint wound with iodine on second day after operation; (2) paint again on ninth day, after removal of the stitches.

The wound and adjoining skin should be kept as dry as possible during the operation. All blood and discharges should be wiped off at once with dry gauze swabs, as fluid of any sort tends to macerate the outer layers of epithelium and to wash away the iodine from the mouths of sweat glands and hair follicles. It is generally allowed that the infection of an operation wound, the skin of which has been prepared in the usual way with spirit and antiseptic lotions of various kinds, is due to micro-organisms concealed in the mouths of sebaceous ducts, sweat glands, or in hair follicles, which had not been reached by the antiseptic lotions, and it is owing to the penetrative and hardening qualities of tincture of iodine that it is so much superior to any of the older methods for preparing the skin for operation and as the sole after-dressing.

Several of the patients in this series of 77 cases had been previously operated on for various conditions and had had to go through all the strenuous preparation of their skin before operation, and to wear many layers of aseptic dressings and bandages after operation, and have told me that this, to them, new method does away with the chief discomforts attendant on operation. It certainly does away with any anxiety for the operator, as to whether the skin has been properly prepared for operation or not, and it also seems more scientific to seal up any micro organisms present in the skin during the healing of the wound by means of tincture of iodine, than to encourage them to come out of their lair in sebaceous duct or hair follicle, by the genial warmth produced by a bulky aseptic dressing.

During the three months I have been using it, I only came across one skin that resented iodine—a case of loose bodies in the knee-joint, in which a pustular eruption was produced by a single application of iodine, necessitating postponement of the operation. This occurred in a sick-bay attendant working in the hospital, who was the subject of a marked acne, and on whom I operated about six months later (when he was cured of his acne) by the iodine method. His case is not included in the 77 cases, as I took over him after the three days' preparation had been completed.

The results in all my cases have been uniformly satisfactory, and I have yet to see a suture abscess. The advantages I have seen to the method up to the present are that where a space is left in the wound by the removal of a tumour, this space is apt to fill up with serum, which would not happen with a firmly-applied dressing and bandage. This happened in three cases of hernia and one of removal of a fibroid tumour from the great trochanter in this series of cases. It was a matter of no moment. A probe was passed through the wound, the serum let out, and the wound again painted with iodine. The three great advantages of this method of treating wounds are:

1. Its efficiency and simplicity, when compared with any other method of rendering wounds aseptic.
2. The minimum of discomfort to the patient.
3. Its economy, in doing away with at least three sets of sterile dressings, and the time and labour employed in preparing the same.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF ANATOMY.

WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

PROFESSOR WRIGHT, in opening the meeting, emphasized the interest of the first subject for consideration—namely, the growth of bone, normal and abnormal. The Section was to be congratulated on meeting under favourable auspices, and in having the great advantage of Sir William Macewen's presence, Sir William's contributions to the question being in many ways the most striking since the day of Hunter.

DISCUSSION ON DEVELOPMENT AND GROWTH OF BONE, NORMAL AND ABNORMAL.

OPENING PAPER.

By Sir WILLIAM MACEWEN, F.R.C.S., LL.D., etc.,
Regius Professor of Surgery in the University of Glasgow.

SIR WILLIAM MACEWEN, speaking from notes, gave a summary of the important work on which he had been engaged for some years past and which had recently been issued in book form. He felt that the problem was such a wide one that it was essential to limit the discussion to one more or less definite issue, and he had chosen the more strictly anatomical aspect of bone formation as the most suitable. One evidence of the vastness of the subject was the extraordinary wealth of its literature, a condition which made it impossible for any one doing real research work to even attempt a summary of the literature in the paper embodying his results. It was futile to level it as a criticism of original work that the author did not quote in his writings all the previous papers on the subject. From the anatomical point of view, the osteoblasts were the first subject for investigation. Concerning these cells and their origin very divergent views were held; some believed that they were cells which had nothing to do with the pre-existing cartilage cells, but his researches had led him to the very definite conclusion that the cartilage cells themselves became osteoblasts. He believed the osteoblast was derived from a cartilage cell, that cartilage was always present potentially in bone even when mature, and that when repair took place the development of cartilage preceded the formation of bone. In the change from cartilage cell to osteoblast the cell capsule disappeared, and he asked the pertinent question, If cartilage does not produce bone, what is the use of it? In rickets, too, the projections which occurred in long bones like the tibia were preformed in cartilage and subsequently became converted into bone. In some cases, however, cartilage did not appear, and the osteoblast seemed to develop from bone direct. It was certain, however, that old bone could produce cartilage, or to put it in other words, cartilage was a phase in the

reproduction of bone. By means of lantern slides, the speaker showed how he had carried out experiments to prove his statements. For example, after removal of a piece of a long bone in a young animal there was a rapid filling up of the space by fresh bone, from which it had been argued that the new bone was the result of the activity of the periosteum. This, however, the speaker regarded as a mistake, and to prove it he removed the whole of a long bone, leaving the periosteum intact, and even after the lapse of six weeks no reproduction of bone took place. In another experiment he took the periosteum from the radius and wrapped it round a neighbouring muscle, hoping, that if periosteum did produce bone, to find new bone formation, but the result showed there was no bone formed round the muscle, whereas from the bone from which the periosteum had been removed a node had formed. In speaking of the formation of callus, Sir William remarked that the large amount formed in animals was due to the movements of the limb after fracture, and the same thing occurred in man when the limb after fracture had been subjected to excessive movement. He next gave an account of some interesting experiments which he had made with reference to the growth of bone round rings inserted between the periosteum and the bone. Most textbooks stated that the bone which subsequently grew over the ring came from the periosteum, but the same result was obtained after the periosteum was removed. Experiments with regard to the transplantation of bone showed that if an inch of the circumference from one radius was taken and placed in the gap of another a proliferation occurred at either end, but especially where union took place. If, however, the transplanted bone was introduced in small pieces, then a greater reproduction of bone took place. The introduction of shavings of bone led to a great mass of bone formation, and cartilage was to be seen as a preliminary formation. If a flat piece of bone were introduced into the omentum it was either absorbed or bone was produced round it. Further, a piece of bone in a sponge imbedded in connective tissue led to the formation of cartilage cells. By means of glass tube experiments in which a small piece of bone was introduced into a glass tube full of blood, he showed that round the peripheral parts formation of bone took place. Sir William, who throughout the whole of his remarks confined himself to the anatomical side of his subject, next referred to the effect produced by introducing osteoblasts into the circulation and a spicule of bone into a false aneurysm. In the former case an embolus was formed, but in the latter a deposition of bone took place at the side of the aneurysm. Finally, an interesting case was detailed in which, after severe trauma, bone was developed in the thickness of muscle, a development so complete that, owing to the necessities of movement, a joint was actually formed between two portions of this abnormally formed bone. Cartilage as well as bone was present in this new formation.

DISCUSSION.

Professor A. C. GEDDES (Royal College of Surgeons, Dublin) said: Sir William Macewen has already placed us all under a debt to him for the light he has let into some of the darkest places of our knowledge in connexion with the development and growth of bone, normal and abnormal. I believe that I have read all his papers and his book upon this subject, and I know that I have learnt much from them, but I do not think that it is possible for any worker who approaches the problems from the point of view of the embryologist and morphologist to agree with all his conclusions. On one point, and it is a fundamental one, I find myself in complete disagreement with Sir William Macewen's conclusions. The two opening sentences of his book, *The Growth of Bone*, are: "In the study of the evolution of the osteoblast one sees in the fetal shaft that diaphysial ossification proceeds through cartilage. The nuclei of the cartilage cells divide and are set free as osteoblasts, and synchronously the cartilage envelope disappears." I have been unable to convince myself that this belief as to the origin of the osteoblasts is correct. The best evidence—and it is insufficient—that has yet been brought forward in its favour is Retterer's, published in 1908 in the *Journal de l'Anatomie et de la Physiologie*. Before him Ranvier and Müller held the same views. If this idea of the origin of the osteoblast ultimately be proved correct it will be necessary for us to revise almost our whole conception of the course of organic evolution, of cell histories and of cell lineages. First, it postulates that bone is a tissue of mesoblastic origin—in other words, that the endoskeleton of the higher animals is phylogenetically independent of the exoskeleton of the lower—a postulate which appears to me to be contrary to accepted "facts," which those who make it have done nothing to disprove. Second, it assumes that fully differentiated highly specialized cells can undergo a metamorphosis, can put back the clock of time and become as embryonic cells, an assumption contrary to everything we think we know about cells; third, it requires that the nature of a cell is determined by its general protoplasm and not by its nucleus. That to some extent this is true every one except extreme Weismannists will, I think, admit, but the form in which it is tacitly assumed by Sir William Macewen and Retterer is extreme and will not be readily accepted in default of much fuller evidence. In short, it may be quite true that osteoblasts are the nuclei of cartilage cells, but if it be the greater part of our knowledge of histogenesis, cytogenesis and morphology requires to be recast.

In my opinion the osteoblast is ectodermal in origin. For reasons advanced in full at a recent meeting of the Anatomical Society I believe that as a singleton or as one of a scattered group of three or four cells it migrates during early embryonic life from the deeper layers of the epiderm to the developing periosteum, through which it passes to reach the potential subperiosteal space, where it is joined by enormous numbers of its fellows and rapidly proliferates. Depending on the bone involved, its subsequent history varies, the ossification of the ribs being different from that of the metatarsal bones, for example, this in turn being different from the ossification of such a bone as the humerus or femur. These differences are associated with the two factors which may be expressed sufficiently intelligibly as the growth vigour of the cartilage cells and the pressure of the surrounding parts. In the case of a rib, for example, it is the existence of a positive pressure, resulting from the growth of the thoracic viscera, acting upon its concave aspect, and of a negative pressure, resulting from the growth of the superficial soft parts tending to adapt them to a larger curve and to draw them away from the rib, acting upon its convex aspect, which determines the site of formation of the subperiosteal space. This in turn compels the ossification of the ribs to be subperiosteal in type, for in the ossification of the ribs at least there can be no question of any cartilage cell giving rise to the osteoblasts. Between the metatarsals and the metacarpals on the one hand, and the principal long bones of the limbs on the other, there is a real difference in the growth vigour—the anabolic power—of the cartilage cells. With certain easily understood variations this power increases in amount steadily from the body axis towards the tips of the body processes and is the underlying cause of the differences between the body form of the short and of the tall man; of the tall man and of the eunuch and the eunuchoid; of the eunuch and the eunuchoid and of the giant. It is one of the most striking facts about the body, and it is almost ignored.[1]

The manner in which the cartilage cell gives place to the bone cell is the next important consideration. As a preliminary to endochondral ossification the cartilage cell undergoes a rapid hypertrophy which must, and in fact does, lead it into physiological difficulties, for like any sphere its mass increases as the cube, its surface as the square of its diameter. The proportionately diminishing surface is soon too small properly to support the contained mass. The nucleus becomes eccentric. Calcium droplets begin to form in the middle of the protoplasm, drift through it, and deposit in the matrix. Vacuoles appear. The cell becomes shrunken and the nucleus breaks up. And now we come to the point where the difference of opinion comes in. Every one, I think, admits that cells do break into cartilage from the subperiosteal space whenever the cartilage begins to be decrepit. If the cartilage cells are not very anabolic this irruption is delayed, and the osteoblasts in the subperiosteal space have time to deposit a rind of bone around the cartilage, but if the cartilage cells are very anabolic, as in the meta-

[1] *Proceedings of Royal Society of Edinburgh*, vol. xxxi, Part I, No. 6.

tarsals and metacarpals, there is no time for the formation of a bone rind before the cartilage cells are so hypertrophied and devitalized that they can no longer resist the advance of the invading cells. To some these invaders are osteoblasts, to others, apparently, they are not. Personally, I am convinced that they are the osteoblasts, and for this belief there are two definite reasons. First, if cartilage, in which ossification is just commencing, is sectioned and stained with Sabin's modification of Mallory's stain, the osteoblasts which lay down the peripheral rind of bone, the cells which irrupt, and the osteoblasts forming the endochondral bone, all stain to the same bright red tint, which differs markedly from the blue-red tint of the cartilage cells. This makes it extremely improbable that the endochondral osteoblasts are different things from the subperiosteal, and it also makes it extremely improbable that they have any direct genetic relation with the cartilage cells, for it is a rule, to which I know no exception, that cells of a common lineage have for a time similar stain reactions. And, secondly, if the tissue examined is serially sectioned and no sections are missed, it is always possible to trace a continuous chain of osteoblasts and definite cell paths from one or other of the numerous points of irruption to the most advanced osteoblast in the cartilage—at least I have found it so in many hundred specimens. Further reasons in support of this belief are provided by the phylogenetic facts and general considerations already referred to.

The rôle of cartilage in ossification is, I think, quite plain. Recent experiments on the cultivation of the tissues in extraneous media have made it clear that cells require support, a scaffolding upon which they can move, and there can be no doubt that the calcified cartilage provides a scaffolding for the early stages of bone formation. The relation of calcified matrix to bone is, I think, best brought out in Congo-red stained specimens. Recently the opinion has been advanced that the osteoclast is an artefact, and is in reality a piece of bone which has given up or redissolved its lime salts. Doubtful appearances resulting from some such cause may occur in some cases, but osteoclasts are present long before there is any piece of bone as large as themselves. The evidence available goes to show that they are hybrid syncytial masses composed of the fused bodies of two or more cartilage cells in which several osteoblasts have been engulfed. This is an example of a sort of table turning. Normally osteoblasts ingest the débris of the cartilage cells; exceptionally when the cartilage cell is not sufficiently devitalized it ingests the osteoblast that tries to ingest it.

In conclusion, I desire to express my appreciation of Sir William Macewen's work and of the beauty of his experimental proof that the periosteum takes no part in the work of bone formation, and that after it is once fully formed it acts as a limiter of bone formation. Before sitting down may I be permitted to say that in studying the histology of bone growth and bone development I have found it necessary to make use of a very large number of stain combinations in order to circumvent the misleading pictures given by the stains containing haematoxylin? I think Congo red, Sabin's modification of Mallory's stain, and the Bismarck brown stains the most generally useful, and haematoxylin the most confusing stain it is possible to employ in this particular field of work.

Professor PATERSON (University of Liverpool) said the subject was of fundamental importance to anatomists as well as surgeons. There were still many problems associated with it which await solution. The causes and varieties of ossification, the reasons for membranous or cartilaginous bone formation, the reasons for the differences in time of production of different bones, were still unanswered questions. The cause of ossification appeared to be essentially irritation; the agent was an embryonic connective tissue cell, the process was a chemical one which occurred *in situ*, and it was extravascular. Sir William Macewen's work had led them a very considerable way, and had been of the utmost importance not only in relation to practical anatomy and surgery, but also in relation to the larger questions associated with morphology and comparative anatomy. After adducing instances in support of Sir William Macewen's researches, the speaker pointed out that it was significant that the Section of Anatomy had chosen this subject with which to begin the work of the meeting. The necessity was emphasized of combining in a properly equipped anatomical school the subjects of embryology and histology. To the anatomist a subject like this was of prime importance, but it was only one of many. It was obviously impossible to divorce microscopic and macroscopic anatomy, either in teaching or research.

Mr. DOUGLAS-CRAWFORD (Liverpool) said he had, after frequent observations in hospital, accepted Sir William Macewen's views on formation and growth of bone. Autogenous transplantation of small pieces of bone had been most effective in repairing breaches of continuity of bone. Cartilage often appeared as a stage in the repair of bone in such cases where the fracture ends of bone had not been kept at rest. He thought that Professor Geddes's view of the origin of the osteoblast might explain the formation of new bone in cases of acute necrosis, in which the whole diaphysis had been removed.

The PRESIDENT (Mr. William Wright) pointed out that there must be other ways of forming bone than from cartilage, as evidenced in the formation of the membrane bones of the cranium, and doubted whether it was possible to remove the periosteum from a healthy bone without so fundamentally affecting the periosteum that its future behaviour could scarcely be regarded as the normal behaviour of intact periosteum. He further thought that the evidence of comparative anatomy was in support of Professor Geddes's contention that bone was ectodermal in origin.

Sir WILLIAM MACEWEN, in his reply, said that, as Professor Geddes's observations depended so largely on colour staining, he wondered if his deductions were absolutely reliable. He would, however, like to see more of his work, though he still adhered to the fact that bone produced cartilage and cartilage bone.

THE DIAPHRAGM IN A 7 MM. HUMAN EMBRYO.

By PETER THOMPSON, M.D.,
Professor of Anatomy, The University, Birmingham.

(*Abstract.*)

DESCRIPTIONS of the septum transversum, or primary diaphragm, in embryos of about twenty-eight days and about 7 mm. in length have been given by various writers—notably, His, Bromann, Mall, Uskow, and Piper—and the arrangement of the various parts of which it is composed is therefore well known. But most teachers of anatomy would admit that there are few subjects more difficult to describe or more misunderstood than the development of the diaphragm. The main reason is the want of adequate illustration, and not until we have a complete series of models of the cervical and thoracic regions of embryos of various sizes, with the heart and liver removable, leaving the diaphragm *in situ*, will it be possible to give a clear picture of the process.

The following is a brief account of a demonstration given of the diaphragm in a four-weeks human embryo in which such a dissection had been carried out. In this preparation a perfectly satisfactory view of the upper and lower surfaces of the diaphragm, enlarged fifty times, was obtained, as well as the connexions between the dorsal surfaces of the heart and liver on the one hand, and the posterior body wall on the other. At this stage, in which the diaphragm forms an inclined plane, placed in the upper thoracic region, and making an angle, directed backwards, of about 45 degrees with the primitive skeletal axis, four points stand out clearly. These are: (1) The thin partition, known as the septum transversum, forming nearly the whole of the inclined plane referred to above; (2) at its dorsal edge, on each side, the pulmonary ridge (Mall)—a highly arched fold of tissue, in immediate relation to the lung bud, attached ventrally to the septum and dorsally to the mesial side of the Wolffian body; (3) two apertures, one on each side, through which the lung buds pass into the embryonic peritoneal cavity and impress the dorsal surface of the liver; and (4) a single aperture placed on

the right side, immediately ventral to the right lung bud, for the passage of the ductus venosus (Botalli) from the liver to the right auricle.

Of these four points, the pulmonary ridge is particularly interesting, since, as F. P. Mall has pointed out, the relation of the ridge to the phrenic nerve, as well as its form in older embryos, makes of it the anlage of both the pleuro-pericardial and pleuro-peritoneal membranes.

In the model from which this demonstration was given it was clearly seen that the pulmonary ridge had definite cephalic and caudal edges, and that the cephalic edge was the pleuro-pericardial membrane, and the caudal edge the pleuro-peritoneal membrane. The former, which connects the right auricle of the heart with the posterior wall of the pericardium, extends forwards as far as the duct of Cuvier, and backwards as far as the septum transversum, and constitutes the lateral boundary of a narrow cleft, the pleuro-pericardial aperture. The pleuro-peritoneal membrane guards the lateral opening of communication between the pleural and peritoneal cavities. From this it will be seen that the pleural cavity is extremely small at this stage, and that it is the part of the coelom opposite the pulmonary ridge. At its cephalic edge it is continuous with the pericardial cavity, and at its caudal edge with the peritoneal cavity. As the lung enlarges and invades the thorax it carries with it the surrounding pleural space, which has in the meanwhile become completely closed off from the pericardial and peritoneal cavities.

In the embryo of three weeks (2.5 mm.) the septum transversum is a relatively thick crescentic mass with no definite pulmonary ridge. Into this mass the liver bud grows, and as it assumes the characteristic form of the fourth week, with definite right and left lobes, gall bladder, and a large "bare area" in front, the liver separates to a considerable extent from the septum. The "bare area" just mentioned is really an area of contact between the two, free from peritoneal investment, and when the separation is artificially made, and the liver removed, the septum is seen as the thin partition to which reference has already been made.

To complete the demonstration of the diaphragm at the end of the fourth week, it should be pointed out that, just as in the third week, the septum is continuous with the dorsal mesocardium. Also that the mesenteric septum leaves the liver to become attached to its under surface with its two layers relatively widely separated, and not as in the adult, with the two layers in contact to form the falciform ligament. Of course the separation between the two layers in the former case is the result of the incomplete separation of liver and septum already referred to. This mesenteric septum, after enclosing the liver, is reflected from its dorsal surface in two parts: One is the gastro-hepatic omentum; the other unites the liver and the right lung bud (*Nebengekröse*, Bromann), and is continued caudalwards between liver and posterior body wall as a double fold, in which the inferior vena cava grows, and called, therefore, the "plica venae cavae." Between these two parts or subdivisions of the mesenteric septum lies the pocket of the general peritoneal cavity known as the bursa omentalis.

ABNORMALITY OF THE URINARY SYSTEM.

(Demonstration.)

By A. CAMPBELL GEDDES, M.D.,

Professor of Anatomy, Royal College of Surgeons, Dublin.

THE abnormality was found in the body of a senile female. There is only one kidney. This is of the ordinary size, and lies in the normal position for the right kidney. It possesses two ureters. The upper of these emerges from the anterior aspect of the kidney at the junction of its upper and middle thirds, runs down across the front of the kidney, reaches the psoas muscle and thereafter has a course and point of entrance into the bladder exactly like that of the normal right ureter. The lower ureter emerges from a normal hilum anterior to the lower renal vessels, courses obliquely across the front of the vertebral column and the right and left common iliac arteries, which have a high origin, to reach the inner border of the left psoas muscle at the level of the crest of the ilium. From this point it follows the course normal for the left ureter, and opens into the bladder at the normal point for that ureter. In the bladder the internal trigone and torus interuretericus are quite normal.



Further abnormalities in the specimen are the extremely tortuous course of the aorta and the fact that the lower part of the inferior vena cava lies to its left. Just below the point of origin of the superior mesenteric artery the vein crosses obliquely in front of the aorta. A small vein (persistent right post-cardinal) occupies the position of the normal cava.

The positions occupied by the ureters at their points of emergence from the kidney suggests that the developmental origin of the abnormality was somewhat similar to the development of a horseshoe kidney which for some reason, unexplained, got pushed over to the right side, where the pressure to which it was subjected had the effect of moulding it to the general shape of a right kidney.

A SPECIMEN ILLUSTRATING PSEUDO-HERMAPHRODITISM.

(Demonstration.)

By A. CAMPBELL GEDDES, M.D.,

Professor of Anatomy, Royal College of Surgeons, Dublin.

THE specimen was obtained from the body of a lady who died at the age of 91 years. In life she had believed herself to be a male, and was distinctly male in stature and in facies. The external organs of generation supported, to some extent, her belief. Hanging down between the thighs was a penis-like structure nearly 3 in. long. The "glans" was distinctly red, and there appeared to be a small orifice at its tip. From this a small amount of white discharge could be expressed. There did not appear to be any vaginal orifice.

On dissection, perfectly normal female internal organs were discovered. The lower opening of the vagina, explored from above, was found just to admit of the passage of a porcupine quill. The "penis" was in reality an overgrown left labium minus: the "glans" its venously congested tip; the apical orifice a little sinus from which discharge came.

The lady had many years ago come to believe that she was a male, and the rightful heir to a title. So firm was this belief and so impossible were her actions, that her relatives had her confined in an asylum, in which she had remained for many years, long outliving her own generation and all who had known her; but apparently at the time of her certification there was no doubt as to her sex, and it is believed that the condition, which certainly simulated the male in some respects, developed after the fixed idea as to her sex had asserted itself.

DISCUSSION.

Dr. W. P. GOWLAND (Liverpool) referred to a case of pseudo-hermaphroditism in a man who was said to have had a right-sided inguinal hernia from birth, and had, in consequence, worn a truss continuously. At the age of 35 years he came under notice with symptoms resembling those of strangulated hernia. On examination there were no testicles to be found in the scrotum, and the left half of the latter was so small and the external ring so ill-developed that in all probability no testicle had ever been present in it. A tender lump being felt in the right groin a diagnosis of "torsion of the testis" was made, and an operation performed forthwith. Whilst anaesthesia was being induced the above-mentioned tender lump descended into the scrotum, and was followed by a second lump representing the other testicle. Immediately afterwards

a third much firmer and harder lump appeared between the other two. The whole mass was found to be enclosed in a sac containing fluid and to consist of two testicles in a broad ligament with a well-developed muscular uterus from which a narrow, thick-walled vagina ran to the region of the neck of the bladder. No communication with bladder or rectum could be made out, but a probe could easily be felt through the rectal wall. No prostate could be felt. Two tubes ran on either side from the uterus to the neighbourhood of the testicle. The appearance of each testicle was very like that of an enlarged cystic ovary, but on section the testicular substance seemed fairly typical and the cysts disappeared, being mainly subcortical. Microscopically there was absence of the thick hyaline sheaths so commonly found round the seminal tubes in cases of retained testis. Sir John Bland-Sutton expressed the opinion that the organs were probably functional but that it was difficult to see how the secretion could pass externally. A photograph was shown, from which it could be seen that the penis was well formed, with no sign of any external genitalia conforming to the female type. The breasts were not unduly developed and whilst in hospital the man grew a beard. As a boy the patient was backward at school and did not participate in the rough games of the other boys. He has always been quiet and retiring, with no disposition to associate with the opposite sex. He states that he has never had sexual connexion and that he has never had an erection, though on these subjects he is naturally reserved.

A CASE OF TRANSPOSITION OF VISCERA.

(Demonstration.)

By J. S. Manson, M.B.,
Warrington.

The subject of this developmental abnormality was a youth 17 years of age. He was a fifth child of a family of eight, three of whom died in infancy. The father, mother, and three other members of the family showed no peculiarities whatever. On the father's side there was a history of twin pregnancies. Two of his sisters have had twins, and so has a brother's daughter. There was no history of twins on the mother's side. The history of twin pregnancies may have some bearing on the origin of the condition, for, according to one theory, the abnormality is due to the development of a right-handed uniovular twin, with the complete disappearance of the left one. The famous conjoined twins, Maria-Rosalina, showed that Maria had the various organs normally placed, while Rosalina exhibited transposition.

On examining the case, together with the series of *x*-ray photographs, for which the exhibitor was indebted to Dr. Thurstan Holland, it was seen that the stomach was on the right, the liver dullness on the left, and the heart and spleen on the right side.

Discussion.

In the general discussion which followed the demonstration of this case it was agreed that no satisfactory explanation of this well-known condition could be given.

A CONTRIBUTION TO THE ANATOMY OF THE VESTIGIAL STRUCTURES IN THE NEIGHBOURHOOD OF THE EPIDIDYMIS AND CORD.

BY
William Wright, D.Sc., F.R.C.S.,
Professor of Anatomy, London Hospital,
AND
Mr. R. G. Brown.

(Abstract.)

This research was undertaken with the object of testing the correctness of the present-day view of the hydatids of Morgagni. (1) It is usually stated that there are two hydatids of Morgagni in the male. (2) In one case it is sessile, in the other it is stalked. (3) The sessile is a remnant of the Müllerian duct, the stalked a remnant of the Wolffian duct. Fifty-three testicles were examined to ascertain the number of hydatids, site of attachment, shape, size, and particularly the structure as disclosed by microscopic examination. The authors made serial sections of five adult and two fetal testicles. Of the adult hydatids, the structure was identical in both the sessile and the stalked varieties. In one adult, however, tubular structure was found. Of the fetal specimens examined by serial sections, one was at full term and the other at seven months, and in both tubular structure occurred. An examination by serial section was also made of the spermatic cord, 1.3 mm. above the caput epididymis down to the testis, and a distinct tubule was observed which divided into two, each of which terminated 0.85 mm. from the caput. Nearer the testis (0.74 mm. above the caput) another tubule was found, the two tubules representing the organ of Giraldès.

A COMPARISON BETWEEN TWO HEARTS.

By J. Stuart Dickey, M.D., B.Ch.,
Senior Demonstrator of Anatomy, Queen's University, Belfast.

During the past winter session I made a study of a series of cross sections through the cardiac region in two subjects.

One of these was a robustly built man, aged 50, who was said to have died of cerebral haemorrhage. The other was a slightly built young woman of 20 years, who died of pulmonary phthisis (haemorrhage).

The condition of the heart and mediastinum in these two subjects presented several well-marked contrasts, more especially in the degree of distension of the heart cavities and in the form of the posterior mediastinum. It was suggested to me by Professor Symington that I should ascertain, by means of reconstructed drawings, the form of the heart and its relations to the anterior thoracic wall in each case.

Before freezing each trunk it was divided by Professor Symington with a large knife and fine saw at the level of the nipples into an upper and lower portion. These portions were frozen and cut into transverse slabs 1 in. thick by Mr. P. T. Crymble and myself.

In the case of the female subject six of the planes of section passed through the heart and the aortic arch, forming the six slabs indicated in Fig. 5. The upper surfaces of two of these slabs have been reproduced (Figs. 1 and 2), and are respectively 4 and 6 in. below the top of the sternum.

In the case of the male subject seven of the planes of section passed through the heart and aortic arch, forming the seven slabs represented in Fig. 6. Figs. 3 and 4 have been drawn from the upper surface of two slabs which were also 4 and 6 in. respectively below the top of the sternum. Figs. 5 and 6 are drawings constructed from a study of the complete series of sections in each case.

I shall briefly refer to the series of six sections which passed through the heart and aortic arch of the female subject (see Fig. 5).

1. The first section was made through the lower part of the aortic arch, 1 in. below the top of the sternum, and passed through the lower border of the first costal cartilage in front, and through the upper part of the fifth dorsal vertebra behind. The highest part of the aortic arch was only ½ in. below the upper border of the sternum, but, owing to the obliquity of the ribs, it was not at all high in relation to the vertebral column.

2. The plane of section 2 (Fig. 5) was 2 in. below the top of the sternum, and passed anteriorly through the junction of the second costal cartilage with the sternum, and through the bodies of the seventh and eighth thoracic vertebrae behind. The left auricle, both auricular appendices, and the pulmonary valve were exposed by this cut, so that the base or upper border of the heart was rather high in relation to the anterior chest wall, these structures being usually found at the level of the upper border of the third costal cartilage; but, on the other hand, they were low in relation to the vertebral column, the base of the heart being in this case opposite the seventh and eighth vertebrae instead of the fifth thoracic vertebra (which is the level usually given).

3. The third section was 3 in. below the top of the sternum, and passed through the third costal cartilage at the sternum and through the eighth thoracic vertebra behind; it cut through the right and left auricles, and through the upper part of the mitral and tricuspid valves, and was just below the aortic valve, as may be seen in Fig. 5.

4. Fig. 1 represents the upper surface of slab 4, the plane of section being 4 in. below the top of the sternum. The fourth right costal cartilage is divided at the sternum and the ninth thoracic vertebra behind. This figure illustrates the small size of the heart and aorta and the voluminous lungs. The posterior mediastinum is laterally compressed between the lungs, so that it forms a thin, easily-displaced "dorsal mesentery" (Keith[1]) behind the heart. A small heart is described as occurring in three conditions, all of which were present in this subject—namely, in hypo-



Fig. 1.—The inferior vena cava is seen behind the cut auricle. Oes. = oesophagus, and Ao. = aorta, situated in the "dorsal or posterior mesentery of the thorax" (Keith).

plasia of the vascular system, in pulmonary phthisis (frequently), and in some cases of emphysema in young subjects. There had also been a copious haemorrhage in this subject, the stomach, trachea, and lung cavities being full of blood clot. The heart accordingly is nearly empty, and presents a striking contrast to that of the man of 50 years, in whom the auricles are distended with blood (Fig. 3). The remarkable condition of the posterior mediastinum seen in Figs. 1 and 2 appears to be partly due to the small size of the heart, especially in its depleted condition from haemorrhage. The auricular part of the heart could not dilate with blood as



Fig. 2.—Plane of this section was 6 in. below the top of the sternum. Oes. = oesophagus. Ao. = aorta.

lungs were not emphysematous; consequently in his case the posterior mediastinum appears to have been compressed from before backwards. The "middle lung field," or clear retrocardiac area, which is seen on lateral illumination of the thorax with the *x* rays, would probably have been increased in the female and diminished in the male subject, had such a method of examination been adopted during life. The cavity of the right auricle only extended ½ in. below the plane of this section (Fig. 1), and it can be seen that the inferior vena cava has not opened into the right auricle, the upper edge of the Eustachian valve, which guards its opening, being a little above the plane of this section (see Fig. 5).

5. The next section was at the level of the nipples, and was made 5 in. below the top of the sternum. It passed through the junction of the fifth costal cartilage with the sternum, and through the upper part of the tenth thoracic vertebra behind. The two ventricles of the heart were found at this level, and the intrathoracic portion of the inferior vena cava. The anterior surface of this vein, which was of abnormal length, was covered by the serous pericardium for a distance of 2.8 cm. or about 1⅛ in. In the male



Fig. 5.—P. = Pulmonary valve; A. = aortic valve; S.V.C. = superior vena cava; L.A. = left auricle.



R.A. = Right auricle; L.A. = left auricle; I.V.C. = inferior vena cava; Ao. = aorta.

normally occurs when the ventricles contract, so that the heart, becoming empty, was reduced to a very small volume, and the lungs came close together behind the heart to occupy the position usually required for the auricles. The fact that the lungs were emphysematous, and that the antero-posterior diameter of the thorax was large in relation to the transverse diameter (80 : 100) also appears to have assisted in producing the laterally compressed condition of the posterior mediastinum. In the case of the man of 50 years, the heart was both relatively and absolutely large: the auricles were dilated with blood; the antero-posterior chest diameter was small in proportion to the transverse diameter (66 : 100), and the subject (see Fig. 6) all four cavities of the heart were cut at the level of the nipples, and the inferior vena cava was covered by serous pericardium for only 0.5 cm. (¼ in.), and entered the right auricle almost directly above the diaphragm. The abnormal fissure seen in Fig. 1 extended down to the base of the lung and indicates the presence of an extra lobe on the lung base. In this connexion I was interested to learn that "where an azygos lobe separates the central tendon from the pericardium, as is the case in most mammals, the respiratory movement of the heart and pulmonary roots is less in extent. In such animals the inferior vena cava is extremely elastic (it can be stretched to two or three

times its length in relaxation) to permit the central tendon moving independently of the heart" (Keith).[2] It occurred to me that there might be some causal connexion between the presence of the extra lobe shown in Fig. 1 and the great length of the inferior vena cava above the diaphragm in this subject. But the low position of the diaphragm (which is due to the co-existing pulmonary emphysema) and the upward retraction of the empty right auricle may also have tended to stretch the inferior vena cava out of the central tendon of the diaphragm.

Fig. 2 represents the upper surface of Slab 6 (see Fig. 5), the plane of section being 6 in. below the top of the sternum. The sixth costal cartilage is cut at the sternum, while the body of the eleventh thoracic vertebra is divided behind. It is evident that the level of the apex of the heart is low with regard to the vertebral column, it being at the level of the eleventh vertebra instead of the eighth, which is usually given as the level of the apex. On the anterior chest wall the apex appears to be slightly higher than normal, being situated behind the fifth left costal cartilage (Fig. 5). The flattened condition of the right and left ventricles (Fig. 2) appears to be due to their having been compressed between the anterior chest wall and lung margins on the one hand and the sloping upper aspect of the liver on the other; the lower part of the pericardial sac was accordingly empty and collapsed. (See outline of pericardium in Fig. 5 below the heart.)

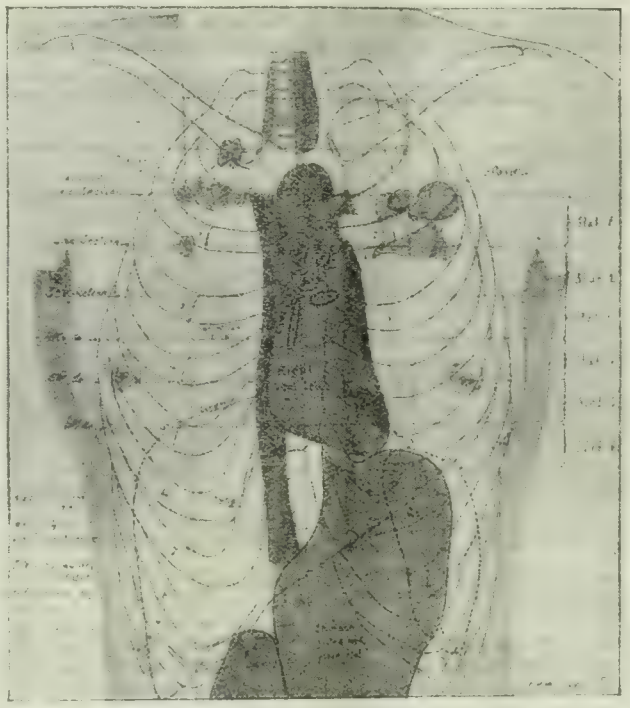


Fig. 5.—Reconstructed drawing from the sections through the heart, etc., of the female subject, aged 20. Viewed from in front. The ribs and sternum are shown.

Sections of Man aged 50 (Figs. 3, 4, and 6).

(i) The first section passed through the aortic arch, and was 2 in. below the top of the sternum; it cut the second costal cartilage at the sternum and the body of the fifth thoracic vertebra behind.

(ii) The plane of the second section was 3 in. below the top of the sternum, and cut the third costal cartilage at the sternum and the body of the sixth thoracic vertebra behind. The pulmonary artery was cut at its division into its right and left branches. No part of the heart was cut at this level, though the upper border of the heart usually corresponds in front with that of the third costal cartilage, and frequently with the level of the fifth thoracic vertebra behind.

(iii) Fig. 3 is drawn from the upper surface of Slab 3 (see section 3, Fig. 6), the plane of section being 4 in. below the top of the sternum. The fourth costal cartilage is divided at the sternum, and the seventh thoracic vertebra behind. The pulmonary valve, the left auricle, and both auricular appendices are cut at this level. The aortic valve is just visible below, and the superior vena cava has not yet fully opened into the right auricle. The level of these structures when projected on the front of the chest is much lower than in the female subject (cf. Figs. 5 and 6).

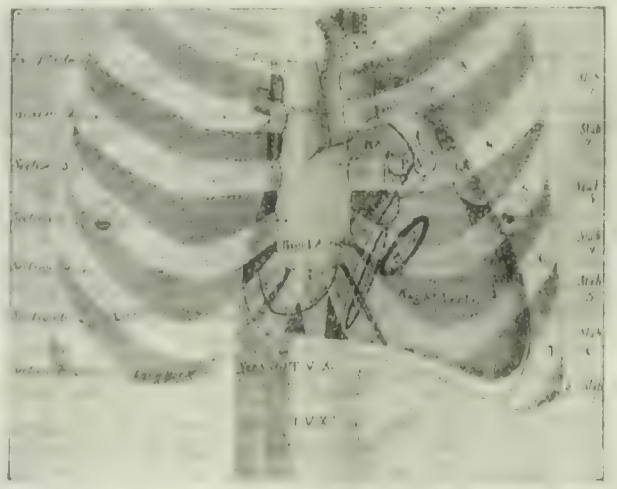


Fig. 6.—Reconstructed drawing of the heart in a man of 50, viewed in relation to the anterior chest wall. A lateral vertical line has been drawn 6 cm. (2⅜ in.) on each side of the median line of the body in both Fig. 5 and Fig. 6.

(iv) The next section (No. 4 in Fig. 6) was through the nipple level, or 5 in. below the top of the sternum, and cut the fifth cartilage at the sternum and the eighth thoracic vertebra behind. All four cavities of the heart were divided (not so in the case of the female subject), and the right and left auricles were distended with blood. *Ante-mortem* clot was found in the appendix of the right auricle.

(v) Fig. 4 represents the upper surface of slab 5 (in Fig. 6), the plane of section being 6 in. below the top of the sternum, or at the level of the base of the ensiform cartilage. The mitral and tricuspid valves are cut through, the cusps of the mitral valve being somewhat sclerosed and thickened. The upper portion of the Eustachian valve can be seen below the plane of this section, separating the inferior vena cava from the right auricle.

(vi) Section 6 was made 7 in. below the top of the sternum and cut through the ensiform cartilage in front and the tenth thoracic vertebra behind. The under surface of the dilated right auricle was in contact with the central tendon of the diaphragm for an area of 3¾ sq. in., and had displaced the right ventricle and the apex of the heart downwards and to the left. [In the female subject the right auricle was empty, and did not come into contact with the central tendon at all (cf. Figs. 5 and 6).]

(vii) Section 7 was made 8 in. below the top of the sternum, and merely grazed the apex of the heart (see Fig. 6). The apex in this man reached the level of the eleventh thoracic vertebra, as was also the case in the female subject; but on the anterior chest wall the apex of the man reached a lower level (sixth intercostal space). This difference is partly accounted for by the greater obliquity of the ribs in the female subject.

The drawing of the female heart from the front (Fig. 5) shows that the heart is elongated in a vertical direction. The heart and its valves are higher than normal in relation to the costal cartilages, and the heart does not extend as far outwards on each side of the median plane as it should; thus, on the left side it falls half an inch internal to a lateral vertical line drawn 6 cm., or 2⅜ in., from the median line; the right auricle only reaches a short distance (¼ in.) to the right of the sternum. The margo acutus or lower border of the right ventricle, which is usually nearly horizontal, is bent at a right angle and presents a vertical as well as a horizontal portion; the vertical portion formed the right border of the heart from

the level of the fourth to the sixth right interspaces (see Fig. 5). Apparently, this change of position of the right ventricle has been necessitated by the elevated and contracted (empty) condition of the right auricle as the result of pulmonary haemorrhage, the right auricle being 1½ in. *above* the junction of the ensiform cartilage with the body of the sternum. The inward displacement of the apex of the heart is partly due to the same cause.

In Fig. 6 the heart of the man is seen to be larger than normal both in its lateral and vertical dimensions. The right auricle is seen to reach about 1½ in. *below* the junction of the ensiform cartilage with the body of the sternum. All the valves are fully 1 in. lower than their normal position, and about 2 in. below their level in the female subject. The apex of the heart reaches ⅝ in. beyond the left mamillary line, being displaced outwards by the dilated right auricle.

I would like, in conclusion, to acknowledge the kind help and valuable suggestions of Professor Symington.

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SOME NOTES ON THE STOMACH.

By Richard J. Anderson, M.D.,

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The stomach in animals varies a good deal in form and structure. It is not improbable that the form in many species may vary in different individuals or in the same individual to some extent. The pose seems sometimes to affect the form and position of the stomach in man. The stomach of a Tursio presented some features of interest. The animal was 12 ft. long; the teeth were worn down as if the animal had been accustomed to masticate its food. The œsophagus was 6 in. in diameter, and led to a stomach paunch-like in form with a capacity of 20 litres. A large pyloric pouch, a second stomach, extended backwards, and had a small aperture in front. The bones of several fish were found in the first stomach, and some crustaceans which were part of the contents of the fish swallowed. The mucous membrane of the œsophagus was very like that of the paunch. The small stomach contained no undigested food. Some of the skeletons had not been in the small stomach. It is a question, then, whether the second stomach did not secrete juice and pour it out to aid in the digestion of the food in the first stomach. There was some vegetable débris in the stomach contents. The small stomach was 5 in. long by 4 in. broad as it lay flat.

A pyloric ventricle is sometimes found in man. Cricetus has an hour-glass stomach, so have some other rodents. The stomach of a rabbit when packed with grass is oval. It may be constricted when empty.

A tubular stomach is present in Testudo, Coluber, and Proteus. The stomach is transverse in the first in response to the body's breadth. Some of the contracted stomachs figured by His are modified tubular.

The common seal has a vertical stomach that turns upward near the pyloric end. This stomach is somewhat smoother above than below. Figures of shadow pictures given by Drs. Tuffier and Aubourg in *La Presse Médicale* resemble a little the outline of the seal's stomach; they, however, are much longer. One of them reaches down to the lower level of the fourth lumbar, and two much further, a good deal below the iliac crest, reaching into the true pelvis. Two of the stomachs figured by His seem to have had compartments and two show foldings. Delphis and Globeocephalus; and Bradypus, Manatus, and others have stomachs with compartments.

The beaver has a glandular stomach that precedes the larger stomach, which is succeeded by a pyloric bulla. A duodenal bulla is found in Tursio. The bursa entiana of some sharks may be referred to the same category. The tendency to subdivision or actual subdivision of the stomach in Halmaturus, and in another way in Dicotyles, becomes interesting when taken in connexion with the camera princeps, minor and tertia, of Professor His. A sacculated modified tubular form, which has been figured elsewhere, is a little like the stomach of a dolphin.

The receptacular nature of the stomach must have become emphasized after man had migrated to climates where his meals were likely to be interrupted; its toleration of the various substances and objects introduced excites surprise. The British Medical Journal published a letter some time ago which contained an account of a woman who ate large quantities of paper. Her health did not appear to suffer. From the stomach of a patient in a Paris hospital were obtained eight coffee spoons, the beak of a fork with three prongs, the handle of a fork, two long nails, one knife blade, a needle, and a tooth from a comb. She recovered from the effects of the operation. The articles were swallowed during six months. A Mulatto woman, who had been a long time in an asylum and seemed to enjoy good health, and had never shown signs of indigestion, died. A heap of nails, screws, and other things was found in her stomach. The number of nails alone amounted to more than 1,200.

In the old books on physiology the story was told of Canadian hunters who consumed 14 lb. of beef daily. Even without bread, this quantity seems large. Large herbivors, and many small ones, fill their stomachs, when the opportunity occurs, after a period of rest. The manyplies is sometimes packed with finely reduced food. Sea mammals consume sometimes a large quantity. Eschricht found thirteen porpoises and fourteen seals—very young ones, of course—in the stomach of an Orca. The stomach of a starling contained 160 insects—spiders, molluscs, etc.—and the débris of many more. The stomach of one marabou stork contained a joint of meat; another a large tortoise. A cat was found in a third. A secretary bird had in its stomach eleven large lizards, eleven small tortoises, a large number of insects nearly entire, and "three snakes as large as a man's arm." This bird kills many cobras; it is protected by the law. An ostrich, besides pebbles and sand, has been known to swallow "knives, old shoes, scraps of wood, feathers, and tenpenny nails." It is sometimes carnivorous. One is recorded to have swallowed a flock of ducklings.

Emus and rheas are also carnivorous. A cassowary has swallowed corks, nails, raw potatoes, ladies' blouses, hones, bones, etc. An ox has swallowed a washing of clothes. Rings and coins have been found in the stomachs of fish. The stomachs of some contain a huge heap of small animals. The stomach of one alligator (Ajax, in Cincinnati Gardens) contained a door knob, a pair of scissors, a small iron bootjack, nine rubber combs, 3 dollars and 18 cents. in silver and pennies, three pairs of spectacles without their glasses, a fish-hook 3 in. long, a *meteor* (2½ oz. in weight), seventeen toothbrushes, a portion of an iron garden rake containing three teeth. It seems not improbable that some of the above were thrown into the enclosure by mischievous people. Mr. Hagenbeck says that the largest living snake up to date is 26 ft. long. A Borneo python has been known to swallow a goat weighing 31 lb., and swallowed it as though "it had been a cherry," and later swallowed a buck 43 lb. in weight; a week later it swallowed a Siberian goat. This beats the man who ate as much food at one meal and slept enough afterwards to last for three days. A 9-ft. python swallowed a 7-ft. python that had already swallowed a rabbit. An Indian python swallowed four lambs within twenty-four hours, each lamb 12 to 19 lb. in weight. Eleven days afterwards the python took another lamb; the wool was thrown out in pellets. Elephants are known to swallow stones or pebbles. Portions of pine-tree shoots were found in the stomach of a mammoth kept fresh by the ice at the mouth of the Lena. In recognizing the full value of the stomach as a digestion organ, one may be allowed to appeal for its full recognition as a receiving and storing organ even in man of the present epoch, who by his hardening it (by acids) and softening it (with alkalis), alternately or by turns, treats the stomach like a candid friend that is easier to put up with than get rid of.

ASYMMETRY.

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Bilateral symmetry and radial symmetry, actinomorphy and zygomorphy, are the terms generally used to express the two common conditions of symmetry. There are some doubtful cases. The starfishes, in view of their development, are sometimes placed in the zygomorphic group. Bilateral symmetry interests one so much that one

becomes peevish when confronted with examples of change in one side of such a nature that symmetry is spoiled. The asymmetric conditions of some molluscs and fish are familiar. The asymmetry of the viscera in snakes is obviously due to the narrowing of the body cavity and its elongation. The great development of one ovary in birds is explained as due to the size of the eggs. The abdominal aorta rather than the chylopoietic is connected with this. The asymmetry of the skull in the dolphin tribe is noted—it is emphasized in the narwhal. In some skulls of Beluga it is much less marked than in the dolphin. It has been stated that the condition may be due to the disposition that animals have to present a larger surface to an opposing or oncoming foe, or a diminished surface to a powerful, relentless enemy. It is probable that the explanation has some connexion with the nature of the habitat, relation of the sea to land, and the nature of the illumination. Putting to one side the best known cases of asymmetry in man, also all the cases due to pathological causes, there still remains a large number of cases of asymmetry. The percentages of asymmetric cases given long ago by Viazzi and others, have been increased, and they are regarded as not so significant according to the further accumulation of facts. Viazzi held that anomalies were more common in man, especially savage man, than in woman, and more so amongst males than amongst the females of animals. Lombroso held that asymmetry was commoner amongst mammals than other classes. In some groups 50 per cent. was the average.

Anomalies seem to be, however, commoner in man than animals, and the power of imitation may influence muscle development racially and sexually. The skull presents asymmetry so often in the case of man that it has ceased to excite any surprise. The thickness of the cranial bones is commonly different on opposite sides, often conspicuously so, and some changes in the circumferential dimensions have been connected with special lateral development—for example, the enlargement of the upper part of the left occipital bone, and the corresponding diminution of the lower fossa. The posterior lobe of the left brain hemisphere Klatsch and Elliot Smith showed to be larger than the right. These changes are associated with right-handedness, and have been referred to the relation of the optic centres with the motor and the speech centres. Eternod has emphasized the importance of studying the actual condition of the skull. The monkeys of the Far East (gibbon and orang) have been stated to be generally right-handed, while the chimpanzee and gorilla are left-handed. A well-known writer has recently said that each cerebral hemisphere has in its "cross" action a "principal action" in man. Unilateral lesion is often only exhibited in this way. (1) The direct action is less immediately disclosed than the cross action. (2) Amongst the unilateral accomplishments language is a power supremely possessed by the left hemisphere. Lesions of the left seem to be more usually manifested by direct disturbances than are those of the right. (3) Bilateral (*a*) crossed fasciculi (fasciculi pyramidales) are the most important; (*b*) direct fasciculi (fasciculi homolaterales); (*c*) corpus callosum and crossed fasciculi. The corpus callosum does not seem to be of so much importance to the ape as it does to man: nor can it be of equal value to the dog. The speech centre and chief supremacy centre are in the left, and profit by the corpus callosum commissures. The acts associated with will and training are instinctive acts and not so much in proportion, according to Dr. Levi Vallensi, who has been working in Professor Raymond's laboratory.

The growth of the corpus callosum marks an advanced stage or phase in the mechanism of thought, and the evolution of the group or individual. It indicates a perfecting which is accompanied by the location of psychism in the left ventricle. (4) Semidecussation, which is realized by the sense organs, and is best exemplified by the optic commissure, is an important method of promoting conjoint action. The facility for promoting conjoint action favours unilateral action also, and the emphasizing of contrasts which play an important part in the life of the individual.

Bardeleben mentions that the seat of language, method, is in all cases the pars opercularis, Broca's convolution, but sometimes also the hinder half of the pars triangularis. Schwalbe's convolution corresponds to the pars orbitalis. The protuberantia frontalis corresponds to the pars orbitalis. The protuberantia frontalis corresponds essentially to the region of the planum temporale that belongs to the frontal bone. The speech centre is further back, and, when swollen with blood, impresses the skull at the anterior inferior angle of the parietal bone. The sulcus spheno-temporalis has an eminence in front and behind. The pars triangularis and the adjacent part corresponds to the anterior eminence, and the pars opercularis behind both. One would expect that difference on both sides of the skull would be distinguishable. This is possible in some heads of the living.

Variations in the extremities have been noted. In the *arteries*, 61 cases (Quain) of high division of brachial; 43 on one side only: 13 on both sides.

Stieda emphasized the importance of the interosseous artery, which had four high origins, all right, when dealing with abnormalities.

Veins.—Barkow's plates show some variations in superficial veins, but much material is required before one can make estimates. Veins in the axilla vary a good deal (Robinson). It is sometimes pointed out that the right arm is at a very early period larger than the left. And Godin says that the right arm and forearm at the age of 13 years are larger than the left. The right-handed in the old time used the left foot more than the right. It is possible that the measurements, as has been suggested, relate to the sternum, and that inquiries should be made with reference to the frequency of the use of the left hand in dextrous operations. The left hand is used in ways that require some training and skill. Where the two hands are used, as in some operations, it may be a question sometimes which hand is most skilled. Whatever may be said for the training of the hand carefully and the value of uniformity and specialization, it may be pointed out that many operations are begun and are conducted by the right hand under the eye as guide and register. In the course of time automatism is apt to become established in a greater or less degree, and then if the operation of the right come to lack precision, the training of the left hand may diminish the risk of overworking certain brain centres. The statistics presented to the Anatomische Gesellschaft showed that 4 per cent. of the German soldiers examined (about 250,000) were left-handed. Since this the extension of the inquiry to other groups showed, as indeed v. Bardeleben had anticipated, a much larger percentage.

DISCUSSION ON
THE ANATOMY OF THE NORMAL STOMACH.*

OPENING PAPER.

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THE earlier anatomists studied structure with but little reference to function; they were content to describe an organ as it appeared after death. In recent years anatomists have concerned themselves more and more with the relationship between structure and function; they have attempted to discover the anatomy of organs as they exist in life. It soon became recognized that the flaccid sac which is generally found *post mortem* (Fig. 1) differs greatly from the living stomach, but many years elapsed before a method was discovered which made it possible to investigate the anatomy of the stomach of living individuals. The methods employed by physicians in examining the stomach were of no assistance. Percussion, for example, only shows the extent and position of the gas present, but as there may be excess in a small stomach and very little in a large stomach, no information as to the size of the organ itself is obtained. Recent investigations with the *x* rays have shown, moreover, that auscultatory percussion yields entirely untrustworthy

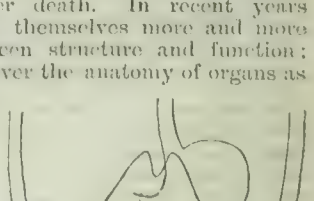


Fig. 1.—"Normal" stomach traced from a textbook on *Surface Anatomy*, 1911.

*This discussion took place at a combined meeting of the Section of Electro-Therapeutics with the Section of Anatomy, the President of the latter Section (Professor William Wright) occupying the chair.

results, although it was believed at one time that in this there had been discovered a means of estimating the exact size and position of the stomach. Modern surgery also has added nothing to our knowledge of the anatomy of the stomach, for the stomach seen in the operating theatre hardly differs from that seen in the dissecting room. The examination in both cases is made in the horizontal position, and an anaesthetic generally gives rise to the same relaxation of tone that occurs after death.

From time to time anatomists have described stomachs in which a certain degree of tone had been maintained after death. Recognizing that such stomachs must approximate more closely to the normal than those generally met with, an attempt was made to fix the stomach in its natural condition immediately after death by filling it with formalin and by freezing it. The former method has been criticized on the ground that formalin might give rise to contractions which did not exist in life, and both methods had the obvious drawback that they fixed the stomach in the form present immediately after death, which in the large majority of cases is very different from that present during active life, as in the last hours of a fatal illness the stomach probably becomes atonic and dilated. In those cases in which death is sudden this fallacy is no longer present, but it is replaced by another, as the depressions caused by peristaltic waves, which in life are constantly moving towards the pylorus, are fixed and are likely to be mistaken for permanent indentations. In spite of these fallacies, the investigations carried out on formalin and frozen specimens prepared the way for the acceptance of the results obtained with the *x* rays, and they yielded information concerning the structure of the pyloric end of the stomach which could have been obtained by no other means.

The discovery that bismuth salts could be safely mixed with food in sufficient quantity to render it opaque to the *x* rays opened a new era in the investigation of the anatomy of the stomach, as for the first time it became possible to see the stomach under natural conditions, both in the vertical and horizontal positions.

Before accepting the results obtained with the *x* rays, it is necessary to inquire into the possible fallacies of the method. In the first place it has been suggested that the salts of bismuth, by acting chemically upon the mucous membrane, reflexly influence the tone of the muscular coat. It has also been supposed that the weight of the bismuth salts added to the food might cause distortion of the stomach. Both of these possible fallacies have been shown to be non-existent by examining individuals who were so thin that a single gram of bismuth salt added to the food was sufficient to render the stomach visible with the *x* rays. It was invariably found that the outline of the stomach was the same whether the food contained 1 gram or 100 grams of the salt so long as its tone was normal. When atony was present, the greater curvature was somewhat lower with the larger quantity of the salt than with the smaller quantity, but this is of no importance in connexion with the normal stomach. Any possible fallacy resulting from the action of the salt on the gastric juice can be prevented by using the inert oxychloride instead of the alkaline carbonate of bismuth.

The distortion produced by the divergence of the rays is prevented by using the fluorescent screen instead of skiagraphy, as when a very small aperture is made in the diaphragm, only the central and almost parallel rays are employed. I have further diminished the error by placing a vertical and a horizontal wire across the diaphragm in such a way that the central rays pass through the point where they cross. If the tube is moved about so that the shadow of the crossed wires coincides with each point of the outline of the stomach, as it is traced upon the screen, no distortion can be present. By using the screen instead of skiagraphy, it is also possible to distinguish permanent from temporary depressions in the surface of the stomach. On several occasions when I have been asked for an opinion about a skiagram, which was supposed to show an hour-glass constriction of the stomach, a screen examination was subsequently made, and demonstrated that the stomach was normal and that the skiagram had caught a deep peristaltic wave in one point of its course towards the pylorus, thus repeating the error already described in connexion with the formalin and freezing methods of fixing the stomach.

Another very important point to remember in connexion with the *x*-ray investigation of the stomach is that the shadow thrown on the screen represents its outline projected on to a flat surface, although the stomach is neither a flat organ nor does its axis lie in a single plane. The image obtained with the *x* rays, therefore, requires correction with the aid of the information obtained by the ordinary anatomical methods.

In the writings of some of those who have interested themselves in the *x*-ray examination of the stomach, the assumption is made that a description is required of the stomach filled with the particular meal which the investigator is in the habit of giving the individuals he examines. In this he is repeating the error of the older anatomists, who did not distinguish between the anatomy of the empty stomach and that of the full stomach. What is really required is a knowledge of the shape, size and position of the empty stomach, of the stomach after the consumption of a special bismuth meal—which is required as a standard with which abnormal stomachs can be compared, and finally of the stomach after a large meal has been eaten. On comparing the stomach when filled to different degrees, it becomes evident that it adapts itself by variations in the tone of its muscular coat to the bulk of its contents, so that the intragastric pressure remains constant and the level of the upper limit of the gastric contents in the erect position does not alter with changes in their bulk.

What I shall therefore attempt to describe is the average shape, size and position of the stomach in healthy adults when empty, when half-filled with a standard bismuth meal, and when full, in the vertical and in the horizontal positions. As the depressions caused by peristaltic waves are only temporary, they must be ignored. Such a description of the stomach is certainly somewhat artificial, as peristalsis normally begins as soon as food enters the stomach and continues until the organ is empty. But so long as this fact is recognized, greater accuracy is obtained than is possible if depressions are described, which only represent what is seen at a given moment, the picture being completely altered a few seconds later.

My information is derived from my own *x*-ray investigations, amplified and confirmed by those of other workers, with the gaps left by this method filled in by the results obtained by anatomists with the formalin and freezing methods. The nomenclature I have adopted is that used by Cunningham and is mainly due to His and Jonnesco. It has the advantage of being perfectly definite, and its universal adoption by anatomists, physiologists, pathologists, physicians and surgeons would put an end to the state of confusion which exists at present in descriptions of the stomach in health and disease. I may mention at once that the term "pyloric antrum" has been discarded, as it has been employed with so many different meanings that its retention can only lead to confusion. I shall not refer by name to any authorities, but I desire now to express my indebtedness to the pioneer work of Cunningham, Symington, Birmingham, Jonnesco and Eric Müller amongst anatomists, and of Barclay, Thurstan Holland, Rieder, Groedel, Holzknecht, Béclère, Leven and Barret and Pfahler amongst a host of others, who have investigated the anatomy of the stomach with the aid of the *x* rays.

The Subdivisions of the Stomach.

The oesophagus enters the stomach very obliquely, the acute angle it forms being called the *incisura cardiaca*. The cardiac orifice, though not surrounded by a definite sphincter, has a much smaller diameter than the lower extremity of the oesophagus, as great a period being consequently required for the passage of a mouthful of food through the cardia as for its passage down the whole length of the oesophagus.

The stomach can be divided into a larger *cardiac part* and a smaller *pyloric part*. The cardiac part consists of the *fundus* and *body*, the fundus being the segment of the stomach which lies above a horizontal plane passing through the cardiac orifice. The body is situated entirely to the left of the middle line. In the erect position it is either vertical or, especially in men, slightly inclined towards the right: in the recumbent position it is always rather more oblique. Its axis is inclined forwards as it passes downwards.

The *incisura angularis*, a well-marked depression on the lesser curvature, most obvious in the erect position, separates the body from the pyloric part of the stomach, but there is no definite depression on the greater curvature marking the separation.

The pyloric part of the stomach consists of the *pyloric vestibule* and *pyloric canal*, the termination of which is the *pylorus*. The pyloric vestibule is directed upwards and slightly backwards as it turns towards the right; it generally reaches just beyond the middle line. The pyloric canal is about 3 cm. in length: it is directed more directly backwards than the pyloric vestibule, but is inclined slightly upwards and to the right. Its termination projects into the duodenum, producing a striking resemblance to the portio vaginalis of the cervix uteri. The position of the pylorus is only occasionally marked by a slight constriction on its outer aspect; it can be more readily recognized by a venous ring, the position of which

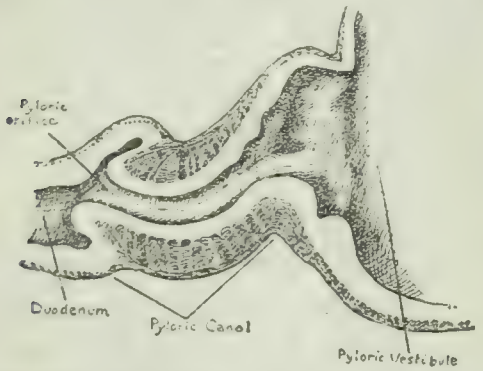


Fig. 2.—Section through the pyloric part of the stomach of a child aged 2 years. (After Cunningham.)

corresponds closely with it. Both the circular and longitudinal muscular coats are much thicker round the canal than in the rest of the stomach. The circular fibres are disposed in the form of a sphincter, which attains its greatest development at the duodeno-pyloric junction, where it is separated by a connective tissue septum from the circular coat of the duodenum. Only a few of the more superficial longitudinal fibres are continuous with those of the duodenum, the majority forming distinct fasciculi, which penetrate the substance of the sphincter, in which some end, whilst others reach the submucous tissue (Fig. 2).

1. *The Empty Stomach* (Figs. 3 and 4).—In the empty condition the upper third of the stomach is pear-shaped and contains gas. The rest of the organ passes to the pylorus in the form of a collapsed tube. The pylorus is situated in the transpyloric plane—midway between the upper margin of the manubrium sterni and the upper margin of the symphysis pubis in the middle line or very slightly to the right. The greater curvature in the erect position reaches the level of the umbilicus or slightly above it. In the horizontal position the stomach lies more

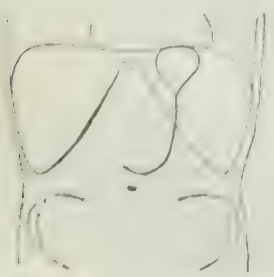


Fig. 3.—Lumen of empty stomach in vertical position, as defined with the *x* rays.

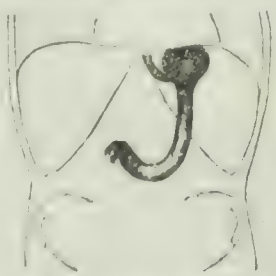


Fig. 4.—External view of empty stomach in vertical position.

obliquely, and the greater curvature scarcely reaches below the pylorus.

2. *The Half-filled Stomach* (Figs. 5, 6, 7, and 8).—When the stomach is partially filled by a standard bismuth meal, half a pint in volume, its body is almost uniform in diameter, and its axis corresponds in position with that of the empty organ. As the diameter of the fundus is rather greater than that of the body, a slight constriction marks the separation between the two parts of the stomach. The diameter of the pyloric vestibule becomes slightly smaller as it approaches the pyloric canal. The pyloric canal is always closed, except when chyme is passing

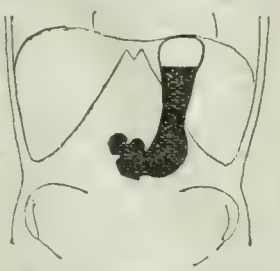


Fig. 5.—Stomach as seen after a bismuth meal, showing depression, produced by peristaltic waves.

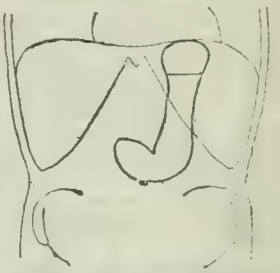


Fig. 6.—Half-filled stomach in vertical position, as seen with the *x* rays, the depressions produced by peristaltic waves not being shown.



Fig. 7.—External view of half-filled stomach in vertical position. I.C. = incisura cardiaca; I.A. = incisura angularis; P.C. = pyloric canal.

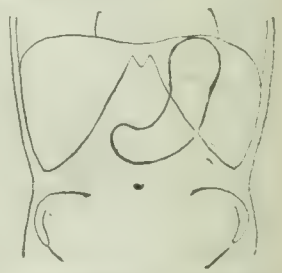


Fig. 8.—Half-filled stomach in horizontal position, as seen with the *x* rays.

through it into the duodenum, although its cavity is generally more or less expanded in *post-mortem* specimens. Even when the sphincter is relaxed for the passage of food, the canal is so narrow that nothing more than a very fine line can be seen with the *x* rays joining the gastric and duodenal shadows.

In the vertical position the greater curvature almost always reaches below the umbilicus, the average distance being 2½ cm. in men and 5 cm. in women. In the horizontal position the greater curvature is on an average 6 cm. higher, its lowest point being consequently above the umbilicus. The junction between the horizontal and descending portions of the duodenum is fixed, but the pylorus is mobile, and in the half-filled stomach it is situated distinctly lower in the erect than in the recumbent position. The fundus does not drop from the diaphragm when the erect position is assumed, but, as as the diaphragm itself falls slightly, the fundus is also a little lower in the vertical than in the horizontal position.

3. *The Full Stomach* (Figs. 9, 10, and 11).—Owing to the greater resistance of the structures in contact with

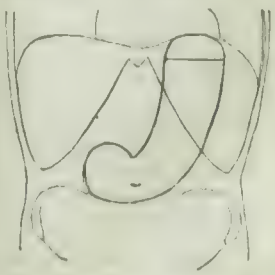


Fig. 9.—Filled stomach in vertical position, as seen with the *x* rays.



Fig. 10.—External view of filled stomach in vertical position.

the lesser curvature than those in contact with the greater curvature, when the stomach is filled with a large meal its walls expand more in the direction of the latter than the former, so that its axis comes to lie outside and below that of the empty and the half filled stomach. (Fig. 12.) The left dome of the diaphragm is pushed upwards until it reaches as high as, or higher than, the right dome. The diameter of the body of the stomach is so greatly

increased that the constriction between it and the fundus disappears. The collection of gas—the "Magenblase" of German radiographers—is wider and more shallow than that of the half empty stomach. The diameter of the

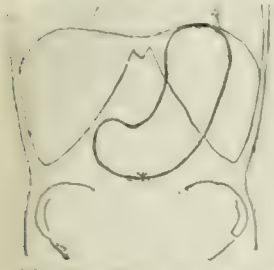


Fig. 11.—Filled stomach in horizontal position, as seen with the *x* rays.



Fig. 12.—Superimposed outlines of empty, half-filled, and full stomach, as seen with the *x* rays, in the vertical position.

body is uniform: that of the pyloric vestibule is almost as great as that of the body, but it diminishes as it approaches the pyloric canal, which invariably remains closed. The pyloric vestibule is so greatly widened that it reaches considerably beyond the middle line, and when viewed from the front completely hides the pyloric canal, which now points either directly backwards, or even slightly towards the left, in spite of the fact that the pylorus itself also moves slightly towards the right.

DISCUSSION.

Professor WILLIAM WRIGHT (President of the Section of Anatomy) thought that the bag-shaped stomach which was described by anatomists until a few years ago had now been entirely given up for a more modern view. The discussion that morning should be chiefly on two points, which, however, were not quite separate. The first was as to the shape of the stomach, the second as to its position. They were very much connected. As to shape, anatomists were to some extent out of court in this matter. The last word did not rest with them. Their observations were always made upon organs which had been subjected to formalin, and with formalin there was always the danger of a great fallacy. Formalin selected out certain fibres which it stimulated more than others. Nevertheless, so far as he could see, the chief difference between anatomists and the workers with *x*-ray methods had regard to the pyloric antrum. For his own part, he had always regarded this as rather a vague thing, quite possibly associated with a constriction of the pyloric orifice, and he felt no aversion to adopting the suggestion of Dr. Hertz that the pyloric antrum should be omitted in the description of the normal stomach. As to position, anatomists, perhaps in a roundabout way, could offer an opinion which was firmly based and must be accepted. For anatomists had not only the position of the stomach in the cadaver upon which to base their view, but they had the important inferences which could be drawn from the modelling of such organs as the liver and the spleen, and from the attachment and direction of the transverse meso-colon. These inferences were all in accordance with the view expressed by Dr. Hertz that the cardiac and pyloric portions of the stomach were in different planes, and that while the pyloric portion might be described in broad terms as being in the horizontal plane, the cardiac portion was in the vertical plane. That was a fair compromise between the two views—on the one hand, that the stomach was a horizontal organ, and on the other, that it was a vertical one. The gastric surface of the spleen was such as to suggest the vertical position of the cardiac portion of the stomach against it, while the modelling of the left lobe of the liver close to the pyloric portion of the stomach was in keeping with the idea that the stomach was a horizontal organ. The stomach might, therefore, be spoken of, neither as a horizontal nor as a vertical organ, but as being vertical in its cardiac portion and horizontal in its pyloric portion. Anatomists generally would be inclined to agree with Dr. Hertz's two contentions—first, that the pyloric antrum was not a very constant portion of the stomach, and secondly, that the former description of the stomach as a bag-like organ should be finally rejected for the more tubular form which Dr. Hertz and others had so clearly described.

Professor JOHNSON SYMINGTON, M.D. (Belfast) said it seemed to him that they should attempt to reconcile, if possible, the findings of the anatomist, the operating surgeon, and the *x*-ray worker, and if there were any differences in their results, that they should get at the reason for them. Anatomists desired to send their students to the hospital with a grounding in anatomy which, because of its truth and thoroughness, would enable them to profit to the utmost by the instruction received there. But the anatomical results were not really so different from the results by the *x*-ray method as was commonly imagined. More than thirty years ago the speaker had described the position of the pylorus in the empty contracted stomach, and had stated that the pyloric end of the stomach when it became dilated overlapped the pyloric orifice, which was directed distinctly backwards. With regard to the dilatation of this particular part of the stomach, not only had he specimens illustrating the directing of the pyloric orifice backwards and to the right side, but specimens also in which the pylorus actually pointed to the left. The stomach in that case had turned over towards the right side, reversing the direction of the pylorus and bringing about a complete half-circle rotation. With regard to the general question, he thought it too largely assumed that anatomists had to deal with conditions under which very considerable alterations had occurred in the condition of the abdominal organs. But *post-mortem* changes had to a considerable extent been exaggerated. As the speaker had shown in an anatomical exhibit in which he had hardened the whole of the abdominal and pelvic viscera and had displayed the organs contained within the abdomino-pelvic cavity, the alterations were not so great as was supposed. The posterior abdominal wall was fairly rigid, and the essential changes were those connected with the anterior abdominal wall, which of course was constantly moving during life. What occurred after death, as a rule, was an elevation of the diaphragm and a compensatory retraction of the anterior abdominal wall. Coming to the individual organ, he said that those of them who had been working of recent years more especially with the formol bodies, found that all the typical conditions described in connexion with the stomach were very frequent. The various conditions of the stomach which Professor Paterson had illustrated on the walls of the room that morning* were not permanent. They represented merely a temporary fixation and not a constant contraction. The stomach was continually varying and rings of contraction passed along it. The results obtained with regard to the hollow viscera after death were not nearly so different from the conditions that probably existed during life as was often believed. For a number of years he had been in the habit of preparing specimens by carefully hardening the entire body. He then reflected the anterior wall, and in the case of any hollow viscera containing gas that he met with he replaced the gas with gelatine, taking care not to alter the general form. He showed in this connexion a typical example of a condition he had met with many years previously—namely, the displacement of the liver as a result of the distension of the stomach. The liver was displaced towards the right side, the small intestine was fairly distended, and the stomach was occupied with gas. He desired to know whether that condition did occur during life. Dr. Hertz had rather implied that during life even the emptied stomach passed nearly vertically downwards and then turned sharply upwards and towards the right. The speaker had come across two or three stomachs lately in which the organ was found after death to be full of blood and presenting the typical position and shape of the ordinary bismuth stomach. During life many people undoubtedly suffered from gaseous distension of the small intestine and transverse colon. Could the *x*-ray worker give them any information as to whether such a condition as he had indicated should be regarded as a *post-mortem* result of the accumulation of gas or whether such a condition might exist during life? So far as he understood, *x*-ray workers always found that after a bismuth meal the stomach extended down below the umbilicus. It was possible that the contents of the stomach might displace and

* See later in this discussion.

push aside the intestines, but it was a point of some interest to know what was likely to occur. Of course, there was another aspect of the stomach which Dr. Hertz recognized, namely, the side view. The lateral view-point could not be ignored, because it was quite obvious from the anatomical relations that the fundus of the stomach—the upper portion of the main body of the stomach—tilted very distinctly backwards, and that there was a regular shelf sloping back upon the spleen and kidney and diaphragm, so that the stomach showed a distinct bend backwards at the upper part.

Dr. A. E. BARCLAY (Manchester) said that while they were greatly indebted to Dr. Hertz for the lucidity of his exposition, he noticed that he had not given them anything of the physiology of the stomach. The physiology and anatomy of the stomach were so wrapped up together that a proper conception of the one could not be obtained without the other. Perhaps on some future occasion Dr. Hertz would open a discussion on the gastric physiology. Moreover, a very large number of cases were required in order to arrive at a conception of the normal stomach, and Dr. Hertz had done well to superimpose the outlines of several examples on the screen. From the anatomical point of view, the graphic presentations were very difficult to understand, but the variations that arose between life and death were most interesting. He referred to a case related by a Liverpool physician in which an operation was performed upon a negro. The stomach in this instance was so thick-walled and hard that it was with the utmost difficulty that a gastro-enterostomy was done. The wall of the organ was said to be as thick as the little finger. The man died, and at the *post-mortem* examination a great "blotting-paper" stomach was discovered, thus showing the variation that might take place between life and death. A point worth making in this connexion had regard to the level of the diaphragm, which was at about the tenth or eleventh dorsal vertebra, and not the eighth or ninth, as it was found *post mortem*. The diaphragm after death thus rose considerably higher than the position it occupied during life. When a large quantity of food was taken—a patient of whom the speaker produced a radiograph had a kink in his mind about his digestive apparatus, and conceived it to be necessary to take a large amount of food—the administration of 4 pints of bismuth food with 8 oz. of bismuth brought out clearly in the radiograph the fact that the left side of the diaphragm was pushed up and reached to the level of the right side. In that case also the pylorus could actually be seen, and the distance between the pylorus and the cardiac orifice was still more or less fixed; whereas, in a case of gastroptosis, of which he showed a radiograph, the pylorus was considerably lowered, the lesser omentum was elongated, and the distance between the cardiac orifice and the pylorus was much increased. Dr. Barclay accompanied his remarks by an exhibition of radiographs, one showing a hypertonic stomach, exhibiting very active peristalsis and emptying exceedingly rapidly. The position of the pylorus was indicated by a separate bolus, which was persistently seen in the duodenum. The other radiograph represented the case described in which the stomach was filled with 4 pints of bismuth food. The stomach was really slightly atonic, and the large quantity had filled up the whole organ and had given it the normal shape, although the ordinary small quantities sank to the bottom in the usual manner.

Mr. H. J. STILES (Edinburgh) said that there was one point which had impressed him very forcibly in the course of the discussion, and that was, as the previous speaker had stated, the impossibility of properly studying the anatomy of the stomach without studying its physiology and vice versa. What physicians and surgeons had to do was to study the physiology of the stomach, and to correlate that with such anatomical appearances as were presented by the *x* rays. If the practitioner attempted to read the *x*-ray picture without a proper conception of the physiology and anatomy of the stomach he was extremely liable to be deceived. He remembered a case in which the *x* ray appearances of the normal full stomach were mistaken for those of an atonic and dilated stomach. The speaker thought it quite time that anatomists and clinicians should teach the student many respects more important than the appearances seen in the dissecting-room or on the operating table. As a surgeon, he scarcely ever found the stomach in the operating room to present the form commonly shown in the skiagram. The *x*-ray picture was made usually in the vertical position after a bismuth meal; the surgeon, on the other hand, viewed the stomach in the horizontal position in an empty condition, which made a very great difference. With the patient under chloroform the stomach was seldom physiologically active; therefore, under such a condition it represented much more closely the position and appearance of the *post-mortem* stomach than of the physiological stomach during life. The question of gas in the stomach had been raised in the course of the discussion. When the patient was in the vertical position the gas rose towards the fundus of the stomach. But some of them might have had the opportunity of examining the stomach in the case of a little child who had occupied the horizontal position for twelve months owing to spinal disease. Here would be observed a condition which looked, and which might be regarded clinically as, quite abnormal. The stretching of the abdominal wall which was noticed under such circumstances was due simply to the gas rising towards the anterior of the stomach and pushing the epigastrium before it. If the patient happened to die, the *post-mortem* appearances would probably be similar to those which Professor Symington had shown to exist in his specimen. The speaker desired some information as to the position of the pylorus. It was important, in his judgement, to determine whether the pylorus was as fixed as it was commonly supposed to be. In the majority of cases of the so-called normal-stomach it was said that the pylorus was fairly fixed, but he believed, on the other hand, that in the atonic stomach the pylorus came down, and that there were all transitions between the normal and the atonic stomach, the pylorus getting gradually lower and lower with the increasing atony. Dr. Hertz had spoken of the pyloric canal, but this as a rule was not seen by the surgeon in the normal stomach. The transition between the pyloric canal and the body of the stomach was usually less and less marked as the stomach became atonic, and even the pyloric ring was generally less marked in that condition. With regard to the pyloric antrum and the pyloric vestibule, the speaker said that he did not believe much in the pyloric vestibule. A projection of the pyloric antrum towards the right was specially seen when there was a stricture of the duodenum or pylorus. The degree to which the pyloric antrum passed to the right of the middle line was worthy of attention. He described the very great variations in the form of the casts which he made some years ago by filling the stomachs in the dissecting room with plaster of Paris. In chronic constipation the transverse colon, in his opinion, had a great deal to do with the dropping of the stomach owing to its dragging tendency upon that organ.

Professor A. CAMPBELL GEDDES (Dublin) said that a point of some importance in the discussion was that all the *x* ray photographs of the stomach were of necessity taken with the abdominal wall in a position of rest more or less complete. He thought it necessary to consider the abdominal wall in action. There was no doubt that the shape of the abdominal cavity in a man who was standing still was very different from its shape in a man who was actively moving. When a man was erect, in active, forceful movement, and breathing deeply, the abdominal wall occupied a position of contraction. He showed a graphic reconstruction of the abdominal cavity as it appeared when the muscles were contracted, and therefore as it was presumably during active life. In this it was almost of an hour glass shape in the sagittal plane. In the centre of the cavity, directly in front of the lumbar convexity and aorta, was an area which was absolutely devoid of viscera, the great omentum alone intervening between the anterior and posterior abdominal walls. This vacant area no longer existed when active movement ceased, for it then became occupied by a portion of the stomach, which sank downwards as soon as the individual came to rest in the erect attitude. In support of this view the speaker discussed the position of the transverse colon in relation to the activity of the abdominal muscu-

of the female abdomen. In all females, especially in those who had borne a number of children, the stomach tended to be brought down into the lower compartment of the abdominal cavity, whereas in the muscular male—the man who had died in his prime—it was found that the stomach was more highly placed. It seemed to him necessary to recognize that although they had, as a result of radiography, a great amount of new knowledge as to the shape and position of the stomach in the erect and horizontal attitudes, the anterior abdominal wall, when in active movement, influenced most profoundly the position and, to some extent, the shape of the abdominal viscera. Radiography could not demonstrate the effects of these influences, and the most hopeful line seemed to be carefully to study abdominal wounds made by high-velocity small-bore bullets. Such wounds often indicated that the position of the viscera at the moment of wounding was different from that disclosed by radiography.

Professor A. M. PATERSON (Liverpool University) sent a note on the subject under discussion, which was read by Dr. W. P. Gowland. It was accompanied by an exhibition of diagrams of twenty stomachs taken from the dissecting-room. The normal human stomach, Professor Paterson said, was doubtless subject to many extraneous anatomical and physiological influences whereby variations were produced, and there were doubtless also individual variations of a permanent character. One factor which was responsible for the very remarkable difference in the form of the organ as they saw it in the dissecting-room to-day from that presented thirty years ago, was the method of injection and preservation. Whether or not the unstriated muscular tissue of the organ retained its vitality for a period after death, and reacted under the influence of formol or carbolic acid, it was certain that the normal stomach in cases preserved by means of one of these reagents presented a differentiation of parts which was rarely seen in the days when corrosive sublimate was used as the preservative. One was now accustomed to find dilatations and constrictions in the walls of the organ associated with a greater thickness and accumulation of muscular tissue in the one case, and a thinning out of the muscular coat in the other. It might be that the heaping up of muscular tissue was merely a *post-mortem* fixation of a physiological state, but it was more than probable that it represented an actual anatomical thickening of the wall in which it occurred. Turning to the twenty diagrams exhibited, the writer pointed out that the typical form, presented by the majority of the examples, showed a four-chambered organ, comprising fundus and cardia, pyloric vestibule, pyloric antrum, and pyloric canal. The separation formed by the pyloric vestibule between cardia and pyloric antrum varied in different cases; it might be a definite canal, or it might be a deep V-shaped constriction of the greater curvature (hour-glass contraction). The commonest variation from this type occurred in several cases by the repression in part or wholly of the pyloric antrum, leading to a confluence of the thick-walled pyloric vestibule and pyloric canal. Less common was the form in which the pyloric vestibule was absent, so that the cardia and pyloric antrum were merged into one chamber. There were in the series two examples of extreme conditions—one in which the whole organ was contracted into a thick-walled tube between œsophagus and pylorus with a small thin-walled fundus in the left of the œsophageal opening, and the other in which the whole organ was distended and only a small constriction was found near the pylorus. Thirty years ago this last example would have been described as a normal stomach, and the typical stomach would have been accounted pathological. Jonnesco, Cunningham, and many others had suggested modifications by the introduction of the terms "incisura angularis" and "sulcus intermedius," by which the four parts named were differentiated; but these notches were by no means stable or reliable indications of the separation of the parts of the stomach. Physiologically there was little doubt that there were two essential parts of the stomach—the cardia and the fundus on the one hand and the pyloric portion on the other. It was interesting to speculate on the anatomical factors which were engaged in producing the varieties seen. Dismissing the examples of extreme conditions, to which he had just alluded, and in which physiological or pathological causes might have been at work, it was clear that the changes in the form of the stomach occurred in the pyloric portion and along the greater curvature. No doubt the proximity of other abdominal organs helped to support the stomach and to maintain it in position. There were two factors which appeared, however, to have the greatest influence in determining its form. In the first place, the stomach was slung between two fixed points—by the œsophagus on the one hand and by the connexions of the pylorus and first part of the duodenum on the other. Between these two points—and it was very remarkable how nearly constant, whatever the shape and size of the stomach, was the distance between the œsophageal and pyloric openings—the stomach sagged, and there were few alterations in the usually concave form of the lesser curvature. Alterations, dilatations, and constrictions occurred along the more mobile and plastic greater curvature. In the second place, in the resting state, sitting or recumbent, the stomach was bent across a projection formed by the vertebral column and the structures lying on it—diaphragm and aorta—so that a dumb-bell-like dilatation could take place in the lateral hollows, with the pyloric vestibule as an isthmus between them. An hour-glass stomach was obviously not of necessity pathological. It was the form most frequently seen in the dissecting-room. Its presence might readily lead to fallacies in *x*-ray work, in the event of bismuth-laden material gaining a lodgement, on one occasion in the cardiac, and on another in the pyloric portion of the organ.

REPLY.

Dr. HERTZ, in replying on the discussion, dealt first with Dr. Gowland's demonstration (for Professor Paterson). The graphic reproductions of the stomach which accompanied it, he said, brought out exactly the point he had made in his paper—namely, the mistake made by some anatomists in regarding temporary depressions—depressions which were simply peristaltic wave effects—as permanent features. Secondly, he thought that not sufficient distinction had been made between the full and empty stomach. The conclusions to be gathered from such a demonstration obviously depended to a very great extent upon the fullness or emptiness of the organ. The term "sulcus intermedius" had been used in the note read by Dr. Gowland, but the speaker had found such confusion existing among anatomists as to its precise meaning that he thought it would be advantageous to drop the term entirely. Professor Symington had certainly suggested an ideal way in which anatomists and radiographers could work together. It was most interesting to hear of his accurate description of the pylorus arrived at more than thirty years ago. The same gentleman had said that under many conditions he found *post-mortem* bodies presenting appearances not greatly different from those seen by means of the *x* rays. Such *post-mortem* appearances might be accepted so long as it was realized that the depressions might represent peristaltic waves, and so long as sufficient distinction was made between the empty and the full stomach. It was necessary also to remember that one was examining the *post-mortem* stomach in the horizontal position, whereas two-thirds of the life of the individual was spent in the vertical position. It was very necessary, he thought, to teach the anatomy of the vertical human being. The stomach of a child was different from that of the adult. He believed that the horizontal stomach was found very frequently on an *x*-ray examination of young infants. It was the assumption of the vertical position after infancy that gave rise to the vertical stomach. Professor Symington's remarks about the side view of the stomach were extremely useful, and this was one of the points that he referred to in speaking of the radiographer's interpretation of his picture. With Dr. Barclay he was in entire agreement, but there was one point in connexion with what that gentleman had said that he wished to mention. He thought it important to recognize that the stomach was not divided into two functionally different parts. He agreed with the view that had been expressed by Mr. Stiles, that the examination of the stomach and intestines by means of the *x* rays ought to form part of a practical course at the medical schools. He had made attempts at Guy's to give such demonstrations to the physiological and anatomical students. It was so easy and so admirable a thing that radiographers or physicians

and surgeons who took an interest in the subject should certainly initiate a course for the physiological student. Mr. Stiles had referred to the fixation of the pylorus. The speaker did not think that the pylorus was fixed. The pyloric canal seen in cases of hypertrophic pyloric stenosis in infants was simply an exaggeration of the normal. He did not agree, however, that the pyloric canal disappeared in atony. It might appear so at operations, but in atony the tone of the stomach was entirely independent of the peristalsis, and with the activity of the peristalsis went the activity of the pylorus. He expressed himself in considerable disagreement with Professor Geddes, because he thought that the anatomist far less than the radiographer was able to examine individuals during active life, and it was really impossible to say that reconstruction from *post-mortem* specimens in any way represented the condition during activity. He thought that Professor Geddes was incorrect in what he had said about the position of the stomach. The stomach certainly rose upon the contraction of the abdominal muscle, but it did not otherwise alter its size or position. From examinations he had carried out he had found very little difference in these respects even when the abdominal walls were contracted as strongly as possible. With regard to the colon, it was not correct to say that it was always above the umbilicus. He related particulars of an examination carried out upon twenty-five Guy's students in the vertical position and in the horizontal position, and not in one case was the transverse colon above the umbilicus in the vertical position, and hardly ever in the horizontal position.

SECTION OF PHYSIOLOGY.

Professor J. Smyth Macdonald, B.A., L.R.C.P., President.

PRESIDENT'S INTRODUCTORY REMARKS.

Professor J. S. Macdonald, after expressing a welcome to those present, initiated the proceedings of the Section by giving two short demonstrations, one dealing with the inter-relations of the serum and red cells of blood, and the other with the phenomenon of simultaneous contrast. He then called upon Dr. Mott to commence the discussion on the bio-physics and bio-chemistry of the neurone.

DISCUSSION ON THE BIO-PHYSICS AND BIO-CHEMISTRY OF THE NEURONE.

OPENING PAPERS.

I.—F. W. Mott, M.D., F.R.S.

Introduction.

The nervous system consists of complex branching cells, which in the embryonic state, like the cells of other organs, are confined within microscopic limits, but the inherent specific energy of each neuroblast is manifested by a tropism, a chemical or physical attraction by which extensions of the cell occur, one to form the axon, the other the dendrons. These tropisms have been slowly elaborated and fixed in the process of evolution and adaptation to environment, so that an inherent affinity between a sensory neurone and its peripheral receptor, a motor neurone and its effector, and between these and the appropriate association neurones, has been established permanently. The older phylogenetically and ontogenetically these tropisms, the more fixed and stable have they become. The neurones have thus developed increasingly complex and functionally correlated systems, groups, and communities as we rise in the animal series. Yet the bio-physics and bio-chemistry of a simple nervous system of a lowly organism is fundamentally similar to that of the higher forms.

Unlike other cells of the body, the neurone is a perpetual cell, and incapable of regeneration in the higher vertebrates; all the neurones are present at birth, arranged in systems, groups, and communities, each with a specific energy and durability determined by ancestral inheritance, awaiting the stimuli for their functional development. The truth of this is obvious, from everyday experience; but that inherent specific energy is the determining factor in the *durability* of the neurone is shown by the fact that in certain familial diseases of the nervous system a premature decay and loss of function of correlated systems of neurones occur at a particular age in a number of members of a stock in several, and sometimes successive, generations. We may seek an explanation of this in a failure of the germinal determinants of the nervous system. The metabolism of the neurone is presided over by the nucleus; it may therefore be assumed that the failure of nutritional equilibrium is due to a lack of some bio-chemical or bio-physical condition of the nucleus.

When we consider the extraordinary inherent potentiality of the nuclear matter of the male and female gametes, it is conceivable that the nuclear substance of the neurone possesses a potentiality whereby each functionally differentiated system of neurones inherits a specific bio-rhythmical character enabling it to react physically and chemically to particular modes of motion caused by biological stimuli essential for the preservation of the individual and the species. A bio-rhythm affecting widely separated groups of functionally correlated neurones, causing liberation of nervous energy in the reaction to the stimulus, would not then depend upon its strength so much as upon its biological usefulness.

The existence of two different types of neurone, as was first shown by Golgi, is characterized by the fact that the axon of one type never leaves the grey matter. According to von Monakow, these neurones (of the second type of Golgi), or *Schaltzellen*, are always interposed between the terminals of the axons of one neurone of the first type and the dendrites of another. In contradistinction to the neurones of the first type, the axons of which leave the grey matter and are destined to discharge functional energy, elaborated in the cells of the grey matter, or in a peripheral structure—these small neurones of the second type of Golgi are for the elaboration and local distribution and discharge of energy; indeed, Cajal maintains that the action is of a reinforcing nature; they might therefore be regarded as accumulators and condensers of energy; and not only would they serve to increase the discharge of stimuli, but also to lengthen the discharge. It is not surprising, therefore, that the neurones of the second type of Golgi are found in great abundance in the sensory receptor and perceptor centres of the cortex and the cerebellum. There is no essential difference in the structure of the neurones of the first type, but there are many different forms of neurones peculiar to the functionally different structures; indeed, a comparative histological examination of the cortex in the animal series exhibits differences and similarities in the extent of areas of various forms of neurones and arrangement in layers, in accordance with similarities and differences in modes of adaptation to environment. All the evidence, therefore, tends to the demonstration of the correlation of structure and function in the nervous system.

All neurones consist of a nucleus surrounded by a cytoplasm with branching processes. The neurone, when examined in a living state, produces a profound difference in our conception of its structure to that obtained by a microscopic examination of sections of nervous tissue after fixation and staining. Neither neuro-fibrils nor Nissl granules can be seen in the living cell; in fact, we must come to the conclusion that they are due to death changes, and therefore should be regarded as artifacts. No one, however, will be foolish enough to deny the great advances which have been made by the introduction and employment of methods for showing these structures, in the study of the normal anatomy of the nervous system, and the morphological changes occurring in degeneration and regeneration of the neurone, whether due to poisons, disease, or injury; but in my judgement the conception of the living neurone possessing fibrils and Nissl bodies may lead us astray regarding the bio-physical and bio-chemical conditions that really occur during life in the constituent colloidal substances of the neurone incidental to its functional activity and interaction with the circumambient medium occasioned by particular modes of motion acting as stimuli in vital action and reaction.

Having thus briefly introduced the subject, I will pass on to facts in support of this statement.

Microscopic Examination of the Living Nerve Cell.

We can examine the living nerve cell in an isotonic medium for example, the blood serum or cerebro-spinal

fluid of the animal. In the case of a warm-blooded animal I have used an apparatus which enables me to keep the preparation at the temperature of the body while under microscopic examination. The apparatus is a chamber with a glass front in which the microscope is placed. The microscope rests upon a metal plate covered with asbestos, which is heated by electric lamps. The constant temperature is maintained automatically by an electrical contact regulator, which can be set for any temperature required. By means of suitable resistance the temperature is kept constant within a degree or so of that required.

I have used both direct illumination and the paraboloid reflector with the dark ground illumination. The animals used were guinea-pigs, which have been killed for serum necessary for the Wassermann reaction, and in one case an ox that was slaughtered, and from which a piece of the spinal cord was removed immediately after death and put into a vessel filled with blood. In the case of the numerous guinea-pigs killed I have examined the posterior spinal ganglion cells, the sympathetic ganglion cells, and the cells of the grey matter of the spinal cord. In the case of the ox I only examined the anterior cornual cells.

The appearances presented by all the living nerve cells examined were fundamentally the same. If I knew nothing of the structural appearances of the neurones when examined in fixed tissues to demonstrate Nissl granules and fibrils, I should never suspect their presence in the living cell. I should say I see by direct illumination a viscous homogeneous white-of-egg-looking semi-fluid substance, permeated like a sponge with fine granules which look dark, and obviously have a different refractive index. This appearance was very evident in the multipolar cell of the spinal cord of the ox. These refractive granules were seen extending through all the processes, and were of uniform size. The nucleus appeared to have these granules in it, but I think this was an optical effect due to the nucleus being in the centre of the cell with the cytoplasm in front of it. Moreover, the appearance of a cell membrane of clear homogeneous material was exaggerated through optical effects, and the difficulty of drawing what is really an indefinite line of viscid substance, which alters its appearance by focussing. Posterior spinal and sympathetic ganglion cells show a similar appearance by direct illumination.

I have repeated the observations of Marinesco, Tello, and Ramón y Cajal of examination of the living ganglion cells with the ultra-microscope. Some cells appear more luminous than others on the dark ground, others more diaphanous, and still others intermediary. These luminous granules are the same as appeared dark with the direct illumination. The different degrees of luminosity depend upon the number and size of the luminous granules contained in the homogeneous spongioplasm. The nucleus with its nuclear membrane can sometimes be seen quite distinctly; sometimes it is indistinct owing to the granules lying in front of it. These granules remind one of Altmann's bioblasts, and possibly may be regarded as living elements of protoplasm; according to this theory, the bioblasts would constitute an essential factor in the production and emission of the nervous impulse. According to Marinesco, these luminous granules are in all probability identical with the neurosomes of Held.

The nucleolus may appear luminous; this is, no doubt, due to a difference in the index of refraction of the nucleolus and the nucleoplasm. This fact, as Marinesco points out, may be correlated with the fact that argento-fibril granules are seen in the nucleolus by the Cajal fibril method of almost constant number and dimensions. If the living nerve cells are subjected to the action of water or a weak 1 per cent. solution of ammonia an endosmosis takes place, the cells swell up, water passes through the cell membrane and collects in globules; it does not seem to dissolve the granules, but to be absorbed by the homogeneous spongioplasm; and, as the process continues, semi-opaque fluid droplets appear within the cell and the granules escape into the surrounding medium, where they exhibit active Brownian movements on the dark ground. I have seen the effect of their oscillation on the surrounding fluid as they are being forced out of the cell, in the form of a rhythmical vibration like a minute tuning-fork tracing. The granules are extremely minute—less than 1 μ; they sometimes appear spherical, sometimes oval, in shape. It appears to me that they consist of a colloidal fluid surrounded by a membrane possibly consisting of lipoids. They are seen, though less numerous, in the processes of the neurone, including the axon. Assuming that each granule consists of a colloidal fluid containing electrolytes surrounded by a (lipoid?) film which acts as an osmotic membrane with a surface tension, it is conceivable that they probably play some important part in the generation of nervous impulses.

I have stained the living cells with isamine blue and vital methylene blue; the whole cell was uniformly stained; the nucleus as well as the cytoplasm took up the dye. In one preparation—for they are not easy to make—I succeeded in slowly acting upon the cell with 5 per cent. formalin after it had been stained uniformly with isamine blue, and in one part of the preparation I obtained cells showing the whole of the cytoplasm filled with discrete blue granules; the nuclear membrane was stained blue, and in the nucleoplasm were a number of granules of varying size stained deep blue; these might have passed for chromosomes. The appearance of the cytoplasm of the spinal ganglion cell resembled that of a formol-hardened ganglion cell stained with methylene blue. I concluded, therefore, that these discrete refractile granules may form the basophil-staining substance constituting the Nissl granules. If the living cell be subjected to the action of neutral red $\frac{1}{2}$ per cent. solution in normal saline, it is true, as Marinesco says, that you may have appearances suggesting the existence of fibrils and granules in the living cell; but are we sure that the dye has not killed the cell and produced a coagulation of the colloidal spongioplasm?

Moreover, the work of Butschli and Hardy shows that the foam structure of protoplasm can be produced artificially, and it is more than probable, in my opinion, that the intracellular neuro-fibrillary network which is seen in all nerve cells which have been fixed and stained by the silver method is an artifact. If the luminous granules which we have seen in the cells are the antecedents of the Nissl bodies, how comes it that we can see luminous granules in the axon, for no Nissl granules are seen in the axon of fixed and stained tissues? My answer is, the colloidal fluid of the granule may vary in its chemical composition or its reaction, but the physical properties may be similar; the fluid of the luminous granules of the cell and its dendrons may have a basic reaction, but owing to chemical conditions in the discharge of impulses in the axon the fluid may become acid or neutral, and so is unstained by basic dyes in the hardened tissues.

Experimental and Pathological Changes in the Neurones.

What can be learnt concerning the bio-physics and bio-chemistry of the neurone by a study of (*a*) experimental and (*b*) pathological conditions of the neurone? First, let me briefly refer to the experiments of Ross Harrison, which have placed the neurone doctrine on a firm basis; they also indicate the probability of the occurrence of amœboidism of the terminals of the axon; consequently they serve to support the view of an alterable conductor due to bio-physical changes in the neurone incidental to functional activity. Harrison placed a small portion of the medullary groove of an embryo tadpole, before there was any trace of cell differentiation, in lymph removed from the lymph sac of a frog; the preparation was put on a cover-glass, and mounted on a hollow slide and sealed with paraffin. The lymph clots almost immediately and holds the transplanted tissue in place. He has kept preparations alive five weeks, and watched the development of the neuroblast, and he has seen the axon develop and grow. A somewhat similar structure to the cone of increase, described by Cajal, by his silver method of staining embryonic spinal cords, can be seen. It probably is similar to the terminal bulb of regenerating axons found in the peripheral stump of a divided nerve. Harrison has observed a growth of 20 μ in twenty-five minutes. Control experiments with other tissues of the embryo gave no such results. These remarkable observations of Ross Harrison show beyond question that the nerve fibre begins as an outflow of hyaline protoplasm from cells situated within the central nervous system. This protoplasm is actively amœboid, retaining its pseudopodia at its distal end; and the protoplasm

is drawn out into a thread which becomes the axis cylinder of a nerve fibre. Although Harrison has disproved the theory that the sheath cells form the essential portion of the nerve—namely, the axis cylinder—yet he fully admits, as all those who uphold the neurone doctrine do, that the cells of the sheath of Schwann play an important rôle in the nutrition and production of the nerve fibre. These experiments of Harrison place the outgrowth theory of His on the safest of all foundations—namely, that of direct observation. It is, moreover, interesting and important to note briefly that Marinesco, Goldstein, Minea, and Nageotte, have observed in transplanted spinal and sympathetic ganglia of warm-blooded and cold-blooded animals an outgrowth of fibrils from the ganglion cells. As Verworn truly says, the embryological basis of the neurone doctrine has been established beyond dispute. It is probable that the substance which forms the fibrils is the conductile substance; but inasmuch as the phenomena of fatigue show that the nerve when placed under physiological conditions is unfatiguable, whereas experiments show that the nerve cell is fatiguable, it tends to prove that there is another colloidal substance in the cell which is used up in functional activity. Fatigued ganglion cells show nuclear changes and a diminution of the Nissl substance.

The nerve cell, like all animal and vegetable cells, represents "an organized hydrosol" susceptible of being influenced by mechanical, chemical, and physical agencies. Again, all these factors affect the anatomical, chemical, and colloidal mechanism of the nerve cell. If the axon of a neurone be cut, bio-physical and bio-chemical phenomena occur in the nerve cell. If the dendrons of a nerve cell be cut—for example, the cells of Purkinje—bio-physical and bio-chemical changes occur in the cell and the portion separated from the cell. This is as we should expect from the neurone theory; injure a part and the whole suffers.

All the elements constituting the cell take part in this reaction of injury—the colloidal granules, spongioplasm, nucleus, and nucleolus. The nerve cell increases in volume; the nucleus, then nucleolus, and the cytoplasm are affected. Examined by the Nissl method, there is a dissolution of the chromatophil elements of the cell body and dendrons and a displacement of the nucleus. The intensity and gravity of these lesions are proportional to the intensity of the trauma, section, resection, or tearing out of the nerve and the amount of the neurone separated from the trophic centre—the nerve cell.

In the normal living state there is a kind of equilibrium between the circumambient medium and the osmotic tension of cells, but section of the axon causes an increase of the osmotic pressure of the circumambient medium, determining the passage of water into the cell. It may be that this is due to an escape of a colloidal fluid from the cut end of the axon. The same occurs when a condition of peripheral neuritis exists; also in transverse lesions of the spinal cord; and for the same reason—namely, trauma of the axon—there is a similar change in the Betz cells of the cortex, in the cells of Clarke's column, in the red nucleus, and in Deiter's nucleus.

In fixed and stained tissues a perinuclear chromatolysis is observed; the liquid which penetrates into the cell produces a tumefaction of the cytoplasm, and subsequently partial or complete dissolution of the Nissl granules. The variations in the swelling are dependent upon the severity of the injury. Thus, in a case of a fracture dislocation in the lower cervical region of mine, Sewell and Turnbull found the Betz cells of the cortex in the leg area showed a more pronounced change with subsequent atrophy than the cells of the arm area; this I explained by the fact that a larger length of axon was cut off, also many more collaterals of the neurones of the leg area, than in the case of the neurones of the arm area.

Experimental Anaemia.

The same disturbance of the normal osmotic pressure occurs in respect to the cells of the brain and the circumambient medium after experimental ligation of all four arteries. The cortex of the brain is for a time deprived of blood; cerebro-spinal fluid accumulates in the perivascular spaces and fills up the vacancy caused by the cessation of the arterial circulation in the cranial cavity. The cerebro-spinal fluid normally is isotonic to the nerve cells, yet there must be a marked disturbance of the normal osmotic pressure, for all the cells swell more or less, not only the body of the cell but the nucleus also. Here is a photomicrograph of the cortex of a dog with both vertebrals and both carotids tied; for a few days the animal was demented and did not see or hear or feel; but it soon recovered its senses, and when killed ten days later it would have been difficult to have detected anything wrong with the animal. The cells are seen to be swollen, the nucleus is larger and clearer than normal, but although all the cells show this change to some degree, in none is the nucleus extruded. Here is a photomicrograph of a cat's brain, showing the cells after ligation of all four arteries. One is struck by the enormous size of the nucleus caused by nuclear endosmosis. By the side of many cells with this marked condition of nuclear swelling is a cell which appears hardly at all swollen. This can only be explained by a difference of the specific energy in cells.

The swelling of the cell observed in these conditions of anaemia, as in trauma, leads often to dislocation of the nucleus; it no longer occupies the centre of the cell body but becomes eccentric, and so great may be the swelling that the nucleus is expelled. Many of these experimental anaemia cells exhibit appearances indicative of a distinct cell membrane. Monkeys usually died in convulsions after ligature of four arteries, restoration of collateral circulation not taking place in the rapid manner that it occurs in dogs. Here is a photomicrograph of a large pyramidal cell of a monkey so experimented upon. The outline of a membrane can be seen; the nucleus appears to have been extruded. Here, again, is a large Betz cell of a dog in which all four arteries were ligatured in which nuclear endosmosis is most pronounced; the swelling of the cell body is not so marked; in fact, in these cases of experimental anaemia the swelling is much more obvious in the nucleus than in the cytoplasm.

Lastly, I show the photomicrograph of a Betz cell of the cortex of a cat, in which all four arteries were tied by Dr. Hill. It was killed twenty-four hours after the operation; already it showed that a collateral circulation would soon have been established. This we discovered in the following way. The cat was lying apparently indifferent to everything around until a dog approached; the instinctive aversion of the cat to the dog aroused the biological stimulus of offence in its usual form of spitting and clawing. There is a little swelling of the cell on one side, but the most obvious change is the swollen nucleus, the nuclear membrane being distinctly seen; and all these preparations show that the nucleus possesses a highly resistive, elastic colloidal membrane. It will be noticed also that there are a number of argentophil granules in the nucleus. The wall of the nucleus is apparently indistinguishable from the fibril substance permeating the cell and its processes.

Why should an isotonic fluid pass into the cell and its nucleus in this complete but temporary anaemia? What has happened? An absence of oxygen is the main event: the vital energy of the whole cell, and especially that part of it which initiates nutrition and very probably function also, is depressed, resulting in a disequilibrium of the normal osmotic tensions of the cell structures and the circumambient medium.

Effect of Trauma on the Neurone.

In cases of trauma of the axon causing swelling of the cell and perinuclear chromatolysis we do not see such a disproportionate swelling of the nucleus, although fluid penetrates the cell membrane. It is conceivable, therefore, that the nuclear material possesses an essential chemical substance of the nature of a ferment for the utilization of oxygen, and possibly thereby storage of neural energy substance.

Having thus considered briefly what happens to the nerve cell as the result of injury, we may inquire, How does it recover, and what will determine its recovery? The more severe the injury—for example, tearing out a nerve—the greater will be the consecutive atrophy and disappearance of nerve cells; in fact, this constituted the von Gudden method, applied later by von Monakow and others for determining the nuclear origin of the cranial nerves by comparative observation of the cells of the nuclei of the two sides in the stem of the brain after evulsion of a nerve of one side.

When the swelling of a cell has arrived at its maximum,

it is followed by an inverse phenomenon involving the passage of water from the interior to the exterior, which explains the return of the cell to the normal; it may not, however, return to the normal but undergo atrophy. Endosmosis causes, according to my observation on the living cell, a swelling of the homogeneous viscous spongioplasm and disaggregation but not dissolution of the granules of the cells. Marinesco observed, after section of the sciatic nerve in newborn animals, the number of diaphanous cells increase, and he attributes this to a disaggregation of the colloidal granules, presumably due to endosmosis. When the cells are stained by the silver method, as seen in the large Betz cell of the cat with experimental anaemia, the fibrils look granular and disintegrated. Moreover, numerous experiments by Cajal, Tello, and Marinesco show that the appearance of the fibrillary texture of the cell can be modified by physical and chemical modifications of the circumambient medium. In proportion as the water penetrates the membrane of the cell and as the current of endosmosis increases, the perinuclear elements are dissolved or pushed away to the periphery, the mechanical pressure within the cell increases and pushes the nucleus, now unsupported by those forces which tend for equilibrium, in the line of least resistance. When these forces have arrived at a maximum it would drive the nucleus out of the cell if it were not for the resistance offered by the cell membrane. The nucleus, indeed, may be driven out, but owing to the greater resistance of its wall it remains intact.

We do not know what is the reason of the appearance of the fibrils; the fact that they change in thickness and under certain circumstances break up into granules may mean that colloidal granules are the living antecedents of these dead fibrils. In amaurotic idiocy we often have an appearance as if there were a destruction of the whole of the fibril substance, except the extreme periphery of the cell—that which would constitute the cell membrane; this pericellular fibril appears to be continuous with fibrils of the axon and the dendrons, the whole of the intracellular network of fibrils having disappeared; but the periphery of the cell constitutes the osmotic membrane. In some instances the axon and dendrons as well as the cell are enormously swollen, but the periphery of them is stained with the silver. I have thought it possible, therefore, that the same colloidal substance which forms the membrane of the cell is continued on to the processes.

Effect of Hyperthermia on the Neurone.

Hyperthermia produces a chemical change of the cell which may be regarded as a death process. I have subjected living posterior spinal ganglion cells in serums to a temperature of 116 for two to three hours; watching the changes under the microscope, the granules appeared to me to gradually disappear. I have not yet had time to observe the changes with the ultra-microscope, so I cannot say much about this at present. After submitting the cells to this temperature, I stained them with polychrome blue; the appearances they presented were very similar to the appearances cells present when hyperpyrexia occurs in the living body—namely, they stain a diffuse dull purple without any differentiation into chromatic and achromatic substance; a chemical change has occurred.

Halliburton and I found that this could be associated with precipitation of a globulin, and therefore a colloidal change in the cell results. Moreover, if each of the colloidal granules has a surface tension of its own, the heat would tend to expansion, increase of the surface tension, and rupture of the membrane. In a case of status epilepticus associated with high temperature which I examined, there was a marked swelling of the cell, an oedema with dislocation of the nucleus, diffuse dull staining, and absence of differentiation of chromatophil elements, and around the cell could be seen the distended perineuronal space. The condition of status not only changed the bio chemical and bio-physical condition of the cell by reason of the high temperature, but there were two other factors at work—namely, an insufficiency of oxygen and an excess of CO_2 in the circumambient medium. As a result there was enormous swelling, diffuse staining of the Betz cells, but although the nucleus was eccentric, it was not markedly swollen, as in the case of experimental anaemia.

All the facts seem, then, to show that in the normal living cell there are two colloidal substances—one, fluid granules with a delicate membrane, the other, a viscid homogeneous semi-fluid colloid forming a spongioplasm. Under certain conditions—for example, hyperthermia—the fluid granules are destroyed and blend with the spongioplasm.

Changes in Nerve Fibres.

Having thus considered the changes which occur in the cell, I will now pass on to the changes which occur in the cut nerve, and I will illustrate my remarks first by some photomicrographs of microscopic specimens, prepared by the Cajal silver method, kindly lent to me by Professor Marinesco. The first shows the appearances presented by the central stump of the sciatic nerve of a young dog fifteen days after resection of 20 cm. of the nerve. You will observe the neoformative reaction in the form of new regenerating fibrils; numbers of these are, however, coiled up in spirals. Another preparation illustrates the results of section of the sciatic nerve of a kitten, the animal being killed one month after the operation; the neoformative reaction of repair is well seen, for active regeneration has occurred by the outgrowth of the neuro-fibrils across the seat of the lesion; these fibrils in great numbers have penetrated the peripheral stump of the nerve, and active regeneration is occurring.

Now, it was first shown by Peroncito that a neoformative reaction occurs within six to forty-eight hours of section. It must therefore be assumed that active bio-chemical and bio-physical processes take place very soon if not immediately after the injury. But still more interesting and important are the observations of Peroncito, Cajal, and Marinesco, regarding the neoformative reaction in the peripheral stump of a cut nerve, and even in portions of nerve separated from both the peripheral and central ends, by two sections, so that it is isolated. Peroncito was the first to demonstrate that non-medullated fibres of a cut nerve are more resistant to degenerative processes than myelinated fibres. Cajal confirmed this, and found that non-medullated fibres are hardly altered at the third or fourth day after section. When a nerve is cut simultaneously at two points both ends show a neoformative reaction; but the reaction attains its maximum at the upper extremity of the peripheral end. In the intermediary fragment the reaction is limited almost exclusively to the non-medullated fibres, without, however, the power to attain the same degree of development as in the peripheral end of the isolated piece of nerve. The farther apart the two sections of nerve, the more numerous and extensive are the metamorphoses of the non-medullated fibres. The reaction is the more intense the farther the section is from the termination of the nerve. The nerve fibres which are separated from the trophic centre, and which in consequence undergo degeneration, can react as the result of a new section farther removed from the first, up to a certain interval of time; this secondary reaction Marinesco says can occur up to five days. But this new reaction is much less pronounced than the first section. The myelinated fibres which yield the most marked reaction, and in consequence possess the greatest resistance to destruction, appear to be the sensory fibres, which explains, at least partially, the difference of reaction that may be found between bundles of a mixed nerve. Marinesco says we ought to consider these metamorphoses as an attempt on the part of the protoplasm separated from its trophic centre to adapt its extremity to an equivalent function.

The injury leads to endosmosis; water enters the axon, swells up the colloidal substance, as it does in the cell, and it might be conceived that this, as in the case of the cell, squeezes out colloidal fluid.

Cajal has postulated the existence of ultramicroscopic particles, neurobions, or physiological living units, which are reciprocally attracted to form fibril systems of a variable morphological character and extension. This ingenious hypothesis may possibly serve to explain the various phenomena which I have described as occurring in cut nerves and in isolated portions of nerves.

All the facts which I have described show the probable great importance of such bio-physical processes as surface tension, osmotic pressure, and movement of ions in the explanation of the vital functions of the neurone. Under normal conditions the surface tension of the cell is greater

than that of the axon. MacCallum has shown this by proving that there is a great condensation of potash salts around the cells, whereas potash is relatively less around the axon and penetrates the nerve fibre; this, according to the Gibbs-Thomson law, shows that the surface tension of the cell is higher than that of the axon. The more viscid colloid may consist of the hypothetical ultramicroscopic neurobions; in the cell, and extending into the dendrons, is a colloidal fluid consisting of spherules, each with a delicate membrane, which converts this viscid, more solid, colloidal substance into a spongy network.

Stimuli arriving from the periphery, or by way of other neurones, are conveyed by the dendrites and dendrons to the cell, where physical and chemical changes may be set up which lead to an increase of the surface tension of the cell, causing dynamic changes in the colloidal constituents of the axon, resulting in an amœboidism of the terminals forming the synapse with another neurone. The experiments of Ross Harrison already referred to place this hypothesis within the range of possibility.

Again, as pointed out by MacCallum, surface tension of the neuroblast may explain the outgrowth of the processes to form axon and dendrons, but in this case, as in the case of regeneration, an attractive force operates—namely, chimio-tropism, or the mutual attraction of biologically related tissue structures. Now, in regeneration of nerves after section, undoubtedly the neurilemmal cells play a considerable part in regeneration by exercising a bio-chemical tropism on the colloidal substances in the cut end of the central stump of the nerve. Indeed, there are two forces at work—namely, this bio-chemical tropism and the dynamic force of surface tension of the ganglion cell, which has been increased by endosmosis, and both forces are operating continually upon the colloidal substances of the axon. If we accept the neurobion hypothesis of Cajal we may consider that the ultramicroscopic neurobions escape from the cut end of the nerve and are attracted to one another, so that stained by the silver method they look like fibrils. Those that cross the cicatrix are, as it were, pulled in a continuous stream by a chimio-tropism exercised by the sheath cells. Moreover, if we regard the neurobions as formed by a semi-fluid colloid, then we can understand how regeneration of a long stretch of nerve—for example, the sciatic—can take place within a comparatively short space of time.

Again, we have seen that the silver preparations show terminal balls and spirals; the former seem to indicate coagulation and death of the neurobions; the latter an absence of chimio-tropic influence. They were both especially numerous and extensive in the specimens where 2 cm. of nerve had been resected, whereas in the specimens where only section had been performed there were hardly any visible.

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II.—J. O. Wakelin Barratt, M.D., D.Sc.Lond.,
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THE THEORY OF NERVE EXCITATION.

In this communication it is proposed to consider only the physico-chemical conditions under which excitation of the neurone occurs, by excitation being meant that alteration induced in some portion of the neurone (for example, in the axis cylinder process) which is necessary to set up a propagated disturbance. We are not here dealing with the nature of the propagated disturbance, though the study of the physico-chemical conditions under which excitation occurs will no doubt ultimately lead to a theory of the nature of the propagated disturbance.

Towards the close of last century a number of empirical data, for the most part investigated quantitatively, had already been accumulated, especially in regard to the duration and liminal strength of current, which when applied to a motor nerve is capable of exciting a muscular contraction. These data must necessarily form the foundation of the physico-chemical theory of excitation.

The first step in the development of a theory of excitation was taken, not by a physiologist, but by a physical chemist. In 1899, Nernst[1] advanced a hypothesis of the nature of the change produced in an excitable living cell by the passage of an electric current. Regarding an organized tissue as a conductor of purely electrolytic nature, Nernst recognized that the only effect of a galvanic current would be to cause ionic movement. In a living cell in which some of the colloids present constitute a semi-permeable membrane, such ionic movement must result in changes of ionic concentration at the surface of such semi-permeable membrane, and this change would again in turn be opposed to a greater or lesser extent by diffusion. Nernst advanced the hypothesis that the necessary condition for the occurrence of excitation was that the concentration at the membrane should reach a definite value. He did not, however, remain content with putting forward a hypothesis which furnished a plausible quantitative explanation of excitation, but proceeded to take steps to attempt to verify this hypothesis, and thus to bring it within the domain of established fact, by showing that it was quantitatively in accord with the ascertained phenomena of nerve excitation. Nernst calculated the varying conditions of strength and duration of current at the membrane which are just sufficient to produce a given ionic concentration, and obtained integral formulæ which may be simplified, when dealing with the minimum conditions of current necessary to cause excitation, to

$$\frac{i}{\sqrt{m}} = \text{const.}$$

when alternating currents are employed, and

$$i\sqrt{t} = \text{const.}$$

when ordinary currents of short duration are employed: i representing the strength of current, m the number of alternations per second, and t the duration of the current.

Nernst's hypothesis of the nature of excitation was found to be in accord with the results of experiments made by v. Kries,[2] Zeynek,[3] Nernst and Barratt,[4] and Reiss,[5] using alternating current, and by Weiss[6] and Lapicque,[7] employing a constant current of short duration, the latter also working with condenser discharges.

It was, however, observed with agreement that the formulæ could in each case be obtained only when the conditions of experiment did not exceed certain limits. For stimuli the duration of which exceeded a relatively low limit a lack of complete agreement was observed.

The value of a hypothesis, however, depends upon its capacity to cover all the phenomena which it is intended to explain. Only when the agreement of theory with experience is complete can the explanation offered rank as an ascertained fact. It became necessary, therefore, to examine further the phenomena which did not appear to be in accord with Nernst's hypothesis.

During the period covered by the above investigations Lapicque[8] and Keith Lucas[9] had independently shown that the current required to excite any tissue becomes smaller as the duration of its passage becomes longer, but only up to a certain duration; for all longer durations the strength of current required for excitation is the same. Further, it was shown by these observers that gradually

increasing currents failed to excite if increasing with less than a certain minimum rapidity. These phenomena lay outside the formulae of Nernst. Keith Lucas[10] suggested that the original hypothesis of Nernst should be supplemented by the additional hypothesis that the required ionic concentration must be reached within a certain period of time; he was, however, unable to decide which of the two possible causes determined the need for this rapidity of concentration—whether, on the one hand, the requisite concentration would never be reached if not reached rapidly, or whether, on the other hand, it might in point of fact be reached slowly, but would then fail to initiate the propagated disturbance. Lapicque[11] adopted the former alternative.

A more extended mathematical investigation of Nernst's theory was next made by A. V. Hill,[12] who adopted Nernst's original hypothesis, but developed the reasoning afresh, introducing into his formulae a constant representing the distance by which the colloidal membranes, assumed to be present in the excitable material, are regarded as being separated. His equation in its simplest form is:

$$i = \frac{\lambda}{1 - \mu\theta^t}$$

in which i and t have the same significance as before, and λ μ and θ are constants dependent upon the conditions of experiment. Using this formula, Hill showed that the original hypothesis of Nernst gives a complete quantitative account of the phenomena of excitation by constant currents of variable duration. Turning now to consider the inefficacy of slowly increasing currents, Hill shows that assuming the requisite concentration to be actually reached, nevertheless it would fail, owing to its slow increase, to set a propagated disturbance in motion if the propagated disturbance were dependent upon a certain rate of breakdown of a compound contained within the excitable cell.

Keith Lucas,[13] applying Hill's formula to the results of experiments, showed that Nernst's original hypothesis would explain the paradoxical effect of temperature of nerve first observed by Gotch and Macdonald[14]—namely, that a nerve when cooled becomes more excitable to currents of long duration and less excitable to currents of short duration. Keith Lucas also studied the effect of changes in the conditions of experiment in modifying the values of the constants of Hill's formula.

In all the cases so far considered the value of Nernst's hypothesis has been tested by the aid of quantitative methods. The hypothesis, however, is capable of furnishing a qualitative explanation of many phenomena in respect of which no investigation of its sufficiency by quantitative methods has as yet been attempted. As an illustration may be taken the "apparent inhibition" first observed by Wedensky,[15] and subsequently the subject of much research, especially by Hofmann,[16] Fröhlich,[17] and Keith Lucas.[18] The Wedensky effect in its simplest form depends upon the circumstance that a stimulus applied to a nerve immediately after its refractory period has passed off may produce a subnormal disturbance, which, though successfully conducted along the nerve, fails in conduction between nerve and muscle, and may yet so modify a subsequent stimulus as applied to the nerve that it does not provoke a response in the muscle. The subnormal impulse in the nerve fails to excite the junction between nerve and muscle. In this case, again, Nernst's hypothesis suggests a possible explanation of the lack of conduction, but, as already mentioned, the applicability of the hypothesis has not yet been tested by quantitative methods.

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DISCUSSION.

Dr. H. M. VERNON (Oxford) said: The hypothesis of Dr. Mott that Nissl granules and neurofibrils cannot be considered to exist in living cells because they are not to be observed in such cells when microscopically examined in the living condition, can hardly be accepted without question, for it must be remembered that if the index of refraction of a substance be the same as that of the fluid in which it is bathed it would be microscopically invisible. Protoplasm frequently appears homogeneous when examined microscopically, yet we know that it is not so, but consists of an emulsion, a spongework, or foam-like structure of heterogeneous materials. Dr. Mott found that living nerve cells were unable to take up the isatin blue stain which Dr. Goldmann had shown to have such striking *intra vitam* staining properties. Dr. Goldmann however, found that this and other stains picked out and stained certain cells of the tissues, especially connective tissue cells, and left others untouched, and hence the positive evidence of Marinesco—according to whom the Nissl's granules of the cells are stained by neutral red—seems to me of more weight than the negative evidence adduced by Dr. Mott.

NOTE UPON SOME DYNAMIC PRINCIPLES INVOLVED IN PROGRESSION.

By T. GRAHAM BROWN,

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WHEN analysed the act of progression along the surface of the ground or in the air is seen to consist of three main parts. In the first place there is the "start" from a stationary posture; in the second place there is the maintenance of the initial velocity—the progression itself; and in the third place there is the "stop." Of these three parts of the act, the first and third are physical necessities, for a stationary body cannot become a moving one without the transformation of energy—nor can a moving body become stationary. But under infinitely perfect conditions the second part of the act might be a purely passive one. That it is an active and integral portion of the phenomenon is conditioned by the presence of friction between the moving parts of the individual itself, by the presence of various external resistances to the moving animal, and by the inequalities of the surfaces over which the animal passes.

Were the environmental conditions perfect and the surface of the ground level, the moving animal—having once started—would continue to move with the same velocity until stopped by the conversion of more energy. It is useful to look upon the act of progression as one based upon this foundation, and the conversion of energy during its process as a compensation for the retardation of the act by external resistance.

It seems to me that the act of progression itself—whether it be by flight through the air or by such movements as running over the surface of the ground—consists essentially in a movement in which the centre of gravity of the body is allowed to fall forwards and downwards under the action of gravity, and in which the momentum thus gained is used in driving the centre of gravity again upwards and forwards; so that, from one point in the cycle to the corresponding point in the next, no work is done (theoretically), but the mass of the individual is, in effect, moved horizontally through the environment. The whole may be likened to the swing of a pendulum, and resembles the movement of a railway train along some railway lines. There each station is placed at the top of a slight hill. A train approaching a station has its speed reduced in ascending the hill. One leaving a station more rapidly attains its maximum velocity in running down the other side of the hill. So that the energy of momentum which is usually wasted at a station in the application of

brakes is here—in part at least—stored in a potential form (that of height) in order to be again used in the passage from that station to the next one. The train really swings from station to station like the ball of a pendulum. In a similar manner the centre of gravity swings like a pendulum in many forms of progression in the vertebrate, and this may be termed the simple harmonic movement in progression. Of course the pendulum-like swing of the limbs in progression is not referred to here.

This principle is seen in progression by flight through the air. A bird which glides through the air without perceptible movement of its wings slides down a long incline towards the surface of the earth, and then slides up another long incline away from that surface. During this process the velocity of the bird gradually increases from a minimum at the commencement of the glide to a maximum at its lowest point; and then again decreases to a minimum as it again reaches the summit of its ascent. As the bird is rarely absolutely stationary at the summit between two consecutive glides, each glide commences with an "initial velocity," and the speed of the flight of the gliding bird is composed of this initial velocity and the changing velocity conditioned by the force of gravity during the glide. The direction of the glide is conditioned by the set of the wings, and the speed of the whole swing from summit to summit is composed of the initial velocity, an acceleration and a retardation conditioned by the component of gravity along the angles of the downward and upward glides, and the retardation caused by the air resistance against the surface of the wings and body.

Just as a pendulum which is not swinging *in vacuo* from a frictionless fulcrum does not swing back to the point from which it started, so the bird in flight by gliding does not attain to the same height at the end of each glide. A part of the potential energy of its height at the beginning of a glide is used up against the wing resistance and in the "leeward slip" of the bird from the true line of its glide. A series of glides will therefore bring it ever nearer to the surface of the earth. As a counteraction to this there is a factor in the phenomenon of flight—that of the raising of the bird against gravity by the beating of its wings. There are thus, in all sustained flight, an "initial velocity" with which each glide (and the flight itself) is commenced, a changing velocity in the "simple harmonic movement" of the glide, and an "incremental velocity" which is given by the beating of the wings and replaces the potential energy of height neutralized by air resistance and the downward slipping of the animal.

Where the angle which the direction of the glide makes with the plane of the horizon is small the velocity of the glide will be also small—for the component of gravity in the direction of flight will then be slight—and at the same time the wind resistance (which varies in proportion with the square of the rate of progression) is relatively small. But where the direction of flight makes a large angle with the horizontal the velocity of the flight will be greater, and at the same time the factor of air resistance will be still more great. The speed of flight by gliding may be regarded as conditioned by the bird swinging either slowly as a long pendulum or rapidly as a short one. In the former case the speed will be small, but the actual energy expended will be also small; in the latter case both will be greater.

If this view be taken, the fastest flight—in which the wings are kept continually beating—may be looked upon as a very steep glide during which the lost potential energy is being continually replaced by means of the movements of the wings. It seems to me that the question here arises whether the rapidity of the bird's flight is altogether due to the rapidity of the movements of its wings; for it is possible that the rapidity of the movements of the wings may be due to the rapidity of its flight—that is, to the rapidity of its fall through the air. In this connexion one or two observations may be made.

In the first place, it is interesting to note that birds which habitually glide—such as sea birds—often give a beat or two of their wings at the bottom of a glide, and that if they commence to progress by rapid flight (continuous movements of the wings) they do so often at the level of the bottom of a glide. Another observation may be made with a normal pigeon. If it be held in the hand from behind in such a manner that the wings are free, and if (being held in the hand all the time) it be dropped slowly towards the ground, there may be little or no movement of the wings. But if it be dropped more rapidly, the wings may perform a single beat; while if very rapidly dropped they may perform several beats. This phenomenon occurs also when the head of the pigeon is covered in such a manner that the bird cannot see.

It may be that the movements of the wings are, in part at least, reflex and from the labyrinth. As is well known, the semicircular canals are exceptionally well developed in all flying birds, and this exceptional development may be not only the basis of their necessary nicety of balance, but also that of the regulation of their flight. These organs are essentially for stimulation by acceleration and retardation of the velocity of the head, and it is by no means unlikely that in the downward glide of a bird the stimulus of acceleration so rises as to produce the reflex response of wing movements. This reflex will set a limit to the velocity attainable by the bird, besides at the same time automatically compensating for the lost potential energy absorbed by the wing resistance and the downward slipping.

The act of progression in the walking mammal—for simplicity we may consider the case of man—on analysis closely parallels the act of flight in the bird. At each step the centre of gravity may be regarded as performing a downward and an upward glide. In the gliding bird the angle of the glide is conditioned by the angle of tilt of the wings. In the walking man the angle of glide is conditioned by the length of the limbs, which act by their upward thrusts the part of the air resistance upon the under surface of the bird's wings.

The cycle of progression may be supposed to commence at a point at which one of the limbs is perpendicular to the ground. The "initial velocity" then carries the body past this point, and it then falls forwards along the circumference of a circle the radius of which is the limb in contact with the ground. At the same time the other limb is being swung forwards more rapidly than the centre of gravity, and it also comes into contact with the ground at that point at which the centre of gravity most nearly approaches it. For an instant the body rests upon a compound pendulum composed of the two limbs, and then it begins to ascend along the circumference of a circle the radius of which is the second limb. At the point at which this limb becomes perpendicular the centre of gravity again passes downwards and forwards; the first limb again comes into contact with the ground; the centre of gravity again passes upwards and forwards when the first limb is resting upon the ground; and when that limb is again perpendicular the cycle repeats.

Were the conditions of this act of progression perfect and the surface of the ground perfectly level, each of these "glides" would leave the centre of gravity of the body at the same distance from the ground. The "initial velocity" of the progression would then be handed on unimpaired from step to step. In each downward "glide" there would be an acceleration of this velocity, and in each upward glide there would be a retardation. But with a given length of limb there would be little elasticity in the average velocity of progression with a given "initial velocity"—for there is scope for little variation in the length of a given limb, and thus there is little possibility of changing the velocity by changing the swing of the pendulum.

But the conditions are not perfect. In the first place, the surface of the ground is rarely perfectly level. There is an air resistance which tends to retard the velocity of progression. There is friction at the moving joints of the limbs and at the skin over these joints. And there is a certain amount of backward slip between the foot and the ground with which it is in contact. All these factors tend to retard the velocity of progression, and, were it not replaced, the initial velocity would soon be used up in bringing the centre of gravity of the body past the perpendicular at the top of succeeding glides.

To compensate for this wastage, an "incremental velocity" must be added during the act of progression. This in part may be given by a direct upward thrust of the hind limbs during walking. Thus, by bending of the knees, the length of the lower limbs may be progressively shortened during progression, so that the centre of gravity

comes ever nearer to the ground. In such a case the initial velocity might be conserved at the expense of the potential energy of the height of the centre of gravity of the body from the ground. This potential energy may be replaced by a slight active extension of each lower limb during the ascending part of each "glide." In other cases there may be given an increment to the "initial velocity" by an active backward thrust of the lower limbs against the ground at the end of each downward "glide."

In very slow walking—where the air resistance, backward slip, etc., are slight—the incremental velocity is not great. But in running, the active forward and upward thrust is a great factor in the progression. This factor not only compensates the imperfection of this method of progression, but gives it an elasticity of velocity which it would otherwise lack. It may be remarked here that, just as in the case of the running man the incremental velocity is given by an active movement which thrusts the body forwards as well as upwards, so, too, in the case of the flying bird the beats of the wings may propel it forwards in part as well as upwards.

THE SUBSTANCE FROM YEAST AND CERTAIN FOODSTUFFS WHICH PREVENTS POLYNEURITIS (BERI-BERI).

By CASIMIR FUNK.

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IT has recently been shown[1] that a substance preventing polyneuritis may be isolated from rice-polishings, and the name *vitamine* suggested for it.[2] This substance has the provisional formula $C_{17}H_{19}N_5O_5$, and crystallizes in colourless needles which melt at 233°. The small yield obtained did not, however, allow of many curing experiments being performed, and as the substance was not recrystallized doubts about its purity might be entertained. A confirmation of these facts was therefore absolutely necessary, and in the first instance yeast which is known to be curative was chosen as the source of the material, since it promised to give a better yield than rice-polishings. It was of great interest to see whether yeast contained the same substance as rice-polishings or only an analogous compound. The yield obtained did not, however, come up to expectation. Although very few grams of pressed yeast are sufficient to cure a pigeon suffering from polyneuritis and, as Eykman recently showed,[3] the curative substance can be extracted by means of alcohol, the yield was even smaller than in the case of rice-polishings. Before Eykman's paper appeared, the author tried to extract yeast with alcohol, but only a small part of the active substance could thus be removed. The bulk of the substance remained in the yeast, even when the latter was boiled with alcohol for several hours. This suggests that the substance is to a great extent present in the yeast in a combined state. Schaumann,[4] in a recent publication, has confirmed the results previously published by the author, but thinks that besides the curative substance another substance is required. He founds this opinion upon the ground that the yield of the curative substance obtained from yeast or rice-polishings compared with the quantity of original yeast or polishings necessary for cure is so exceedingly small. As just stated, however, the extraction is far from being complete, and during the fractionation the yield of vitamine became smaller and smaller.

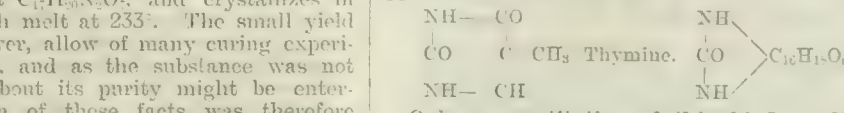
The yeast was worked up by the two following different methods. In the first case the alcoholic extract was simply evaporated, and the residue hydrolyzed with sulphuric acid, the solution being then treated as in the case of rice-polishings.[1] By precipitating first with phosphotungstic acid and then with silver nitrate and baryta half a gram of the curative substance was obtained.

In the second case the alcoholic extract of yeast after evaporation was extracted with water. On precipitation with silver nitrate and baryta, however, only an unappreciable quantity of the curative substance could be detected. The filtrate from the silver precipitate contained the bulk of it, and it was necessary to hydrolyze this with acid before the precipitation could be effected. The resulting fraction unfortunately contained the pyrimidine bases which are known to be constituents of yeast nucleic acid, and of these uracil and thymine could be isolated in a pure state. From this mixture it was found that the reagents ordinarily employed for the separation of the curative substance also precipitated more or less of the pyrimidine bases. After a long and troublesome fractionation, however, a small quantity of pure curative substance was obtained which showed the characteristic properties.

A large number of cures was effected on pigeons, and there can be no doubt that this substance is the sole curative agent, the dose used being 2 to 4 cg.

In the first place, it is necessary to correct the previous statement that the curative substance was isolated in form of a nitrate. This is not the case, the substance which was analysed having been found to be the free base. The curative substance must be regarded as a base, probably belonging to the pyrimidine group. The aqueous solution is of neutral reaction and does not react with acids. By boiling with copper oxide no copper salt is formed, and therefore it is not an amino-acid. Recrystallized from dilute alcohol, the substance melts at 233°, at the same temperature as the curative substance from rice. It gives the same reactions, and both substances must therefore be considered as identical. It is precipitated in a pure state by mercuric acetate as well as by silver nitrate, but not by mercuric sulphate or nitrate.

All these properties suggest that vitamine is a pyrimidine base, analogous to uracil and thymine, and that it probably is a constituent of nucleic acid. On this view the two nitrogens would be combined as in other pyrimidine bases to form an ureid.



Only a constitution of this kind would explain the neutral reaction of the substance and the great analogy to the other pyrimidine bases.

The curative substance was also isolated by analogous methods from milk (this fact being very important for our knowledge of infantile scurvy) and brain.[5] Everything suggests that in all these cases the substance is identically the same. Further, a substance curing avian polyneuritis was found in lime juice, and is at present being more closely investigated.

By extraction of rice-polishings with alcohol without the use of phosphotungstic acid, allantoin could be isolated. This substance, which shows a great similarity in properties, is, however, entirely different from the curative substance. Physiologically it possesses a very marked action when given to birds suffering from polyneuritis. It prolongs the life of the birds without, however, improving the neuritic symptoms.

These experiments throw an entirely new light on the physiological importance of the nucleic substances.

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DISCUSSION.

Professor H. M. VERNON (Oxford) said: Recent experiments on the physiology of nutrition point to the great importance of lipoids in diet. Stepp fed mice on milk bread, and found it adequate to maintain their vitality and health. If this bread was extracted with alcohol and ether, mice fed upon it rapidly lost ground and died in twenty-three days on an average; but mice fed on extracted bread to which the alcohol-ether extract had been added, remained in health. Bread extracted with alcohol, ether and chloroform killed off the mice like alcohol-ether extracted bread, but unexpectedly it was found that the addition of the alcohol-ether-chloroform extract to extracted bread did not confer any additional nutritive qualities on it. Hence it seemed probable that the chloroform extraction had destroyed some complex lipoid substance of the tissues which alcohol-ether extraction

had not affected. Addition of pure lecithin or cholesterin to pure synthetic diets does not give them a life-supporting value, so it is evident that some complex combined compound is required.

Dr. HEWETSON (Rhodesia) said: As a practitioner from the tropics having to deal with scurvy, I have followed closely recent progressive discoveries in regard to beri-beri, in the hope of light being thrown on scurvy. I have come to this purely scientific Section in order to pursue that line, and have been greatly enlightened on many points by what I have heard. I had not heard till to-day that the actual base, the deficiency of which causes beri-beri, had been isolated, and I congratulate Dr. Funk on his success. I shall be glad to hear from him when he has isolated from lime juice the corresponding base which is alleged by him to be the effective agent in preventing scurvy; and I also hope that he may find it in sufficient quantity to allow me to give it a practical trial. It may not be generally known that scurvy is, or at any rate has been, one of the most important diseases from which South African native labourers suffer. The place where I am located may be regarded as an endemic site. There was what merited the name of an epidemic existing about the time I began work in the place. Having realized in practice in England the value of fresh unboiled milk, etc., in scurvy-rickets, and the general situation on these matters, it was natural that I should take similar views in this case. After a time, however, I came to the conclusion that there was a confusion of a virulent gingivitis, which the natives are prone to, caused by the fermentation of carbohydrates on the teeth, and which was capable of going on to such effects as to cause death. The nature of the gum changes are those of an acute inflammation, and are not preceded by changes in the alveoli, etc. The diet scale at this place was improved also when this epidemic occurred, but I put down the fact that no death has occurred since to the rigid system of oral hygiene which I introduced on concluding that the mouth affection was an inflammation. What I have heard to-day has confirmed me in what I was suspecting—namely, that what we have in South Africa is a different type of thing. (1) One recent case of mine had a temperature of 103° F., and to all appearance beautifully clean gums and no discoverable septic focus (a distinct temperature is of very frequent occurrence indeed). Owing to the strict oral hygiene, and having all the natives' mouths in good order, I have been able to appreciate that a rise in temperature can take place apart from any septic focus, though this of course always greatly increases its degree. (2) It is not immediately curable by fresh food—that is to say, the remarkable and absolute changes seen in experimentally produced scurvy, in scurvy-rickets, etc., do not occur. I recently saw a case in a splendidly appointed hospital in Johannesburg which had been having first-class food, and had been there for six weeks. He was running a temperature, and was by no means convalescent—in fact, was confined to bed, and in quite a bad way. (3) Lime juice is discredited probably by 80 per cent. at least of mine medical men. The suggestion that there may be a poison, producing a neuritis of the sensory nerves, present in small amount in the food—maize is the staple—is one that I am inclined to give adherence to, although I would not like to say that our disease has not a bacterial factor which enters early during the induced debility. At my place, in spite of oral hygiene and a dietary which could not fairly be called in question, I have had, during the past hot season—hotter than the previous one, when I had practically no trouble—many cases of a slight degree. Four or five daily would frequently present themselves (out of 600) complaining of pain in the calf or lower third of the leg, with in some cases a slight amount of firm swelling there. That is the commonest type. A week or a fortnight off work with general medical attention was sufficient to enable these to return to work, but some cases were much more persistent and lasted right into the cool season. Though pellagra occurs amongst most maize-eating peoples, it is quite rare in South Africa, and I have not seen an undoubted case (in Rhodesia). We must remember that many of our most potent pharmaceutical products are derived from vegetable products and that in tropical countries the soya bean is an important commercial article and yields a certain quantity of prussic acid. In dry seasons it is alleged to produce more than usual, and farmers tell me that it is sometimes fatal to cattle and domestic animals under these circumstances. It may be that the substances which prevent and remove beri-beri, etc., act by neutralizing some other poison found in minute quantity, and such a circumstance would give almost identical experimental results. And there is the important fact to remember that experimental animals which are starved live longer than those fed on polished rice.

DISCUSSION ON TISSUE RESPIRATION.

OPENING PAPERS.

I.—H. E. ROAF, M.D.,

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RESPIRATION has to deal with the absorption of oxygen and excretion of carbon dioxide. As the links between these two processes involve the chemical changes by which oxygen combines with materials in the cells, giving rise to carbon dioxide and other substances, a consideration of many points in general metabolism is necessary.

Isolated cells can maintain their gaseous exchanges with their surroundings by means of diffusion, but multicellular organisms require some mechanism by means of which the gases can be transported to and from the cells. This mechanism is the subject studied under the heading of external respiration. Tissue respiration deals with the oxidative processes that occur in the cells. It is interesting to note, however, that the problems of tissue respiration also enter into the subject of external respiration—for instance, the regulation of respiration by the respiratory centre depends on the gases in the blood, and hence on the gaseous metabolism of the cells in the centre.

The aim of respiration is to furnish free or available energy for the purposes of cellular activity. It is usual to measure the heat produced as an indication of the total energy exchange, but the available energy does not necessarily correspond to the heat produced.

The amount of heat produced, corresponding to a definite absorption of oxygen or output of carbon dioxide, varies according to the nature of the substance oxidized.

TABLE I.—*Approximate Figures for Oxidation in Vivo.*

	Carbohydrate.	Fat.	Protein.
1 g. oxidized gives K (large calories)	4.1	9.1	4.1
1 g. oxidized requires O_2 in g.	1.06	1.77	1.52
K for 1 g. O_2	3.87	5.14	2.70
Respiratory quotient	1.0	0.7	0.8

From these figures it is evident that the gaseous exchange cannot give the heat production unless we know the nature of the substance oxidized. The nature of the substance oxidized remaining the same, the gaseous exchange shows the relative amount of heat produced. If the respiratory quotient alters, the average composition of the materials oxidized is changing.

For most tissues it has been shown that increase of activity is accompanied by an increased oxygen intake and carbon dioxide output.[1] Not only does the carbon dioxide output lag behind the oxygen intake, but in some cases the oxygen intake[2] and heat production[3] follow the active process. Several writers have suggested that the gaseous metabolism is necessary after activity to restore the tissue to its former condition[4]; the activity is due to the sudden release of potential energy stored as the result of previous oxidation.

Certain instances of activity are not accompanied by increased gaseous exchange. Kidney filtration[5] shows no increased oxygen intake, whilst secretion by the tubule does increase the consumption of oxygen. This difference is quite easy to understand as the filtration is the result of the activity of the heart.

The rigidity of the muscles of the decerebrate cat differs from tetanus in that the former is not accompanied by increased gaseous exchange.[6] This distinction has been

made by measuring the oxygen intake and carbon dioxide output with the muscles rigid, and then after the rigidity has been abolished by curare or by cutting the nerves to the limbs.

It is not necessary to assume that the shortening of muscle in these two cases is different, but the explanation may be that in one case relaxation follows, whilst in the other the contraction remains. As mentioned before, the gaseous exchange follows the activity, and may be the preparation for fresh activity. Whatever the mechanism of contraction, the two processes may be compared to a pump maintaining a constant head of pressure; if there is a leak the pump must continuously supply fresh energy, but if there is no (or very slight) leak no (or very little) fresh energy is required. This analogy indicates the possible explanation of the difference between maintained contraction and tetanus.

Turning to the relation between the amount of oxygen consumed and the oxygen tension, it is necessary to consider the law of mass action. The rate of oxidation will depend on the pressure of oxygen and the concentration of the substance to be oxidized.

$$d\text{-}c/dt = k C_{O_2}^{n} C_{\text{substance to be oxidized}}^{m} \quad (1)$$

The accumulation of the products of oxidation will tend to inhibit a reversible reaction, as shown by the equation for equilibrium. The water formed can be omitted, as it is always present in excess.

$$\frac{C_{O_2}^{n} \times C_{\text{substance to be oxidized}}^{m}}{C_{CO_2}^{x}} = K. \quad (2)$$

If the change proceeds by a series of steps the equation would be less simple, but the net result would be the same.

Under ordinary conditions the oxygen pressure remains constant as the blood is saturated with oxygen at one-fifth atmospheric pressure. Acid products of metabolism may slightly increase the pressure and thus render the oxygen more easily available, but the cause of activity cannot be due to this increase in pressure. As the tissues use oxygen the partial pressure is maintained by an increased flow of blood. Therefore, as the oxygen remains fairly constant increased rate of change may occur in three ways. First, the amount of substance to be oxidized can be increased; secondly, carbon dioxide can be removed; and thirdly, if the reaction is not in equilibrium, increase of k in equation (1) would accelerate the oxidation.

The third of these possibilities will be considered by Dr. Vernon in a paper on enzymes which he is reading to-day. The second is the basis of a hypothesis by Lillie,[7] in which muscular contraction is considered as the result of an increase in cell permeability whereby carbon dioxide escapes and chemical reaction results. As mentioned above, the oxidation appears to follow the activity, and hence any increased permeability must follow the activity and not cause it.

In favour of the first suggestion is the fact that activity produces certain substances (for example, lactic acid) which may be the substances oxidized.

In many experiments the gaseous exchange has been measured by blood gas analysis. These analyses do not entirely represent the oxidation in the tissues because of the time required for the gases to diffuse between the tissues and the blood. The time difference must be very slight, and hence the error may be negligible.

The oxygen intake presents an interesting problem. It is not likely that the oxygen tension in the blood can be altered by a nervous impulse, but there might be a secretion of oxygen by the endothelium of the blood vessels. Apart from such a secretion, the oxygen intake must depend on diffusion, and this is proportional to the difference of partial pressures in the blood and in the tissues. If the partial pressure in the blood remains constant the intake will depend on the pressures in the tissues. Most textbooks state that the tension in the tissues is zero, and hence we should be forced to the conclusion that the rate of absorption cannot be increased.

There is probably an oxygen tension in the tissues, as Ehrlich was able to show a difference in the reduction of alizarine blue by different tissues.[8] By the time a portion of tissue had been exhausted by the mercury pump, the oxygen may have been used up by the tissue.

The following suggests the outline of the process of oxygen absorption. Associated with activity the oxygen pressure in the tissue is diminished, with the result that the rate of oxygen intake is increased. This rate of increase will continue until the oxygen pressure is restored to the resting value. The oxygen tension in the blood will be maintained by an increased blood flow and by the action of the products of activity on the oxyhaemoglobin.

A special form of gaseous metabolism is that which occurs under anaërobic conditions. In this case there can be no oxygen absorption but only an output of carbon dioxide.

The energy for cellular processes must be obtained by some molecular rearrangement. Alcoholic fermentation is an example of this process. All the anaërobic decompositions yield much less total energy than the decomposition of the same substances in the presence of oxygen. Not only plants but animals (for example, intestinal worms) can live under anaërobic conditions,[9] but less than 25 per cent. of the total energy is produced.

The intermediate steps in the process of oxidation are not known. The oxidation of sugar has been considered analogous to alcoholic fermentation. Lactic acid, glyceric aldehyde, alcohol, etc., have been suggested as intermediate substances. Lactic acid has been shown to be formed during muscular contraction, but it is not necessarily an intermediate substance; it may not be formed from sugar and it is stated to be turned back into its precursor and not oxidized further.

The breakdown of fat is probably preceded by desaturation, and it seems probable that the seat of desaturation is the liver.

This brief outline of the processes involved in tissue respiration is intended to emphasize the importance of treating the subject from the dynamical point of view of modern chemistry.

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II.—H. M. VERNON, M.A., M.D.,

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ONE of the most difficult questions in the subject of tissue respiration is to determine the actual mechanism of breakdown of the proteins, fats and carbohydrates of the tissues, and their ultimate oxidation to carbon dioxide and water. In anaërobic organisms such processes occur in the complete absence of oxygen, and a good deal of evidence has been accumulated, more especially by Buchner, to show that these processes are dependent on enzymes. Thus zymase splits up sugar into CO_2 and alcohol. Lactacidase converts lactic acid into the same products. Acetic acid, formic acid, glycerine, and other substances are also formed from sugar by enzyme action. In aërobic organisms it is very probable that similar decomposition changes still occur, and they may form the first stage in the breakdown of some of the foodstuffs; but as sources of energy they are of comparatively small value compared with the oxidation processes. For instance, the conversion of sugar into CO_2 and alcohol causes the evolution of only 11 per cent. of the total energy liberated by its complete oxidation to $CO_2 + H_2O$. Hence the elucidation of the mechanism of such oxidation processes is a matter of special importance. Evidence is accumulating, though as yet it is far from complete, to show that they are dependent on oxidizing enzymes.

Arguing from the results of their observations on vegetable enzymes, Bach and Chodat have concluded that the tissues contain two classes of oxidizing enzymes—namely, oxygenases, or enzymes which take up molecular oxygen and transfer it to suitable organic substances with the formation of peroxides, and peroxidases, or activators which assist in the transference of this active peroxide oxygen to oxidizable substances, and so greatly

heighten its oxidizing powers. The existence of these two classes of oxidases in animal tissues is generally accepted, though some investigators suppose the oxygenase to be itself the organic peroxide, and others, such as Moore and Whitley, maintain that there is no adequate proof of its enzymic nature. They look upon it simply as a suitable organic substance which has taken up molecular oxygen and been converted into a peroxide; but the experiments which I have recently been making on indophenol oxidase point to its enzymic nature, for they show that it is rapidly destroyed even at 50° C., and that the amount of oxidation it effects varies, under suitable conditions, in direct proportion to the time of action.

The existence of oxygenase and peroxidase is strongly supported by the analogy of certain inorganic oxidizing processes. It was shown by Fenton in 1894 that hydrogen peroxide, in the presence of a trace of activator such as ferrous sulphate, could readily oxidize tartaric acid, and Dakin has shown that this process can be applied to many other organic substances. It can oxidize amino acids, such as $R.CH.NH_2.COOH$ to $NH_3 + CO_2 + R.CHO$. The aldehyde is then oxidized to the corresponding acid, this acid is in turn split up into CO_2 and a lower aldehyde, and ultimately is oxidized completely into $CO_2 + H_2O$. The ammonium salts of all saturated fatty acids from stearic down to formic can be gradually broken down in the same way, and are converted, at least in part, into CO_2 and H_2O. The remarkable point about these reactions is that they occur at body temperature, and if it can be shown that the oxygenase + peroxidase of the tissues are able to effect similar oxidations, we should be justified in assuming that the oxidation processes of protoplasm are the work of intracellular enzymes. Up to the present evidence of such oxidizing powers has not been forthcoming. Battelli and Stern have extracted a uricase enzyme from the tissues, which oxidizes uric acid to CO_2 and allantoin. Kostytschew prepared a peroxidase from germinating wheat which had considerable oxidizing powers in presence of H_2O_2, for if added to glucose which had been fermented for one to three hours with zymase and then boiled, it formed a good deal of CO_2. But for the most part the oxidizing power of the oxidases appears to be comparatively small. They will oxidize guaiaconic acid to guaiacum blue, pyrogallol to purpurogallin, a mixture of α-naphthol and paraphenylene-diamine to indophenol, and so on; but even their supposed power of oxidizing salicylaldehyde to salicylic acid has been shown by Battelli and Stern to be no oxidation at all, but a hydrolysis of the aldehyde to saligenin and salicylic acid.

Again, Battelli and Stern have shown that if tissues be minced up shortly after removal from a freshly-killed animal and be mixed with blood or saline and kept in an atmosphere of oxygen, they at first form CO_2 and absorb oxygen at a greater rate than the normal living tissue; but in a few minutes these respiratory powers rapidly dwindle, and in an hour or two may sink to zero. I have found that the oxidases of minced tissues remain in undiminished strength for twenty-four hours or more, so the failure of the respiration is not due to them. Also I have investigated the action of a number of different conditions on the respiratory powers and oxidase content of living tissues to see how far they correspond. Most of my experiments were made on freshly excised mammalian kidneys, as they are the most convenient organs to determine the [illegible] metabolism of. I found that on heating kidneys for half an hour to 50°, cooling them, and estimating their respiratory power, about half of it was lost, whilst after heating to 53° three fourths was lost. The oxidase of the tissues (indophenol oxidase) underwent a similar degree of destruction. Also on perfusing kidneys for half an hour with saline containing 0.1 to 0.4 per cent. of lactic acid, they showed parallel losses of respiratory power and of oxidase. Other poisons, such as chloroform and methylamine, acted rather less destructively on oxidase than on respiration; others, such as ammonia, still less so; and others, such as formaldehyde, less still. In fact, these and other experiments showed that there is some link in the chain of oxidation processes which a poison can destroy without its necessarily injuring the oxidases at all. As I hope to prove to you on a subsequent occasion, this link is probably a lipoid membrane.

The dependence of respiration on oxidases is supported by the fact that the richness of the tissues in these enzymes varies to some extent with the magnitude of their respiration. Thus I found that the tissues of birds are richer in oxidase than the tissues of mammals, whilst these again are very much richer than the tissues of cold-blooded animals. Also the smaller an animal the greater the oxidase content of its tissues. Canaries and sparrows, which have about seven times the respiratory exchange of the goose, have about twice as much oxidase in their tissues, whilst birds of intermediate size have intermediate amounts of oxidase. Of individual tissues, those possessing powers of sustained activity, such as the heart, diaphragm, and the pectoral muscles of flying birds, are richest in oxidase, whilst liver and lung are the poorest. The grey matter of the brain contains five times more oxidase than the white matter; the renal cortex ten times more than the papillary zone of the medulla. The amount of oxidase seems to run parallel with the amount of intramolecular oxygen which is supposed to be stored up in the tissues. Ehrlich found that when animals were injected *intra vitam* with various stains, and were examined immediately after death, certain tissues failed to reduce the indophenol blue injected, and so he regarded them as highly saturated with oxygen. Others reduced indophenol blue, but failed to reduce the more stable alizarin blue. Others reduced alizarin blue as well, and so he regarded them as of the highest degree of oxygen avidity. These latter tissues I find to be very poor in oxidase, whilst the tissues highly saturated with oxygen are all very rich in oxidase. It must be mentioned, however, that some investigators deny the existence of intramolecular oxygen in the tissues, but the evidence either for or against it is not conclusive.

DISCUSSION.

Professor Bainbridge (Medical School, Newcastle-on-Tyne) pointed out that Barcroft's observations as to the oxygen intake of the renal glomeruli were not conclusive as to their functions. The bulk of the glomeruli in relation to that of the tubules as a whole was so insignificant (probably less than 5 per cent.) that an increase of oxygen intake during activity of the glomeruli might well occur, which might be masked by the activity of the kidney as a whole, and fall within the limits of the experimental error of the method used.

Professor T. H. Milroy (Belfast) said: Oxidation processes may at one time be expressed mainly by the absorption of oxygen, and at another by the excretion of the carbonic acid. The amount of oxygen absorbed is very largely dependent upon the rate of the blood flow. For example, in apnœa produced by experimental pulmonary ventilation, there is evidently a marked slowing of the blood flow, and so, as Ewald has pointed out, the arterial blood shows an increased oxygen content, while the venous blood is poorer in oxygen. In the recovery from apnœa the oxygen is more rapidly absorbed than the carbonic acid is formed.

THE FUNCTION OF LIPOIDS IN VITAL PROCESSES.

By H. M. Vernon, M.A., M.D.,
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(From the Physiological Laboratory, Oxford.)

All living tissues contain lipoid substances, which are now thought to be no less an essential constituent of protoplasm than the proteins themselves. They are largely composed of lecithin and cholesterin, probably in ester-like combination. Protoplasm has been regarded as an emulsion of proteins and lipoids, whilst Overton compares it to a swollen sponge, the fibres of which correspond to the protoplasmic framework, and the spaces in between to the water of imbibition of the protoplasm, or vacuoles containing dextrose, salts, and unorganized protein in solution. Separating the framework and the vacuoles are lipoid membranes. The lipoids form a kind of cement holding together the various constituents of the protoplasm, and any substance which dissolves in them alters their physical condition and their cohesive power. According to Meyer and Overton the narcotic action of alcohols,

ether, chloroform, and similar substances depends on their solution in these lipoids, and the greater their solvent power the greater their narcotic action. Determinations of the partition coefficients of various narcotics as between oil and water give values roughly corresponding to their relative narcotizing action on tadpoles and other small organisms.

Further information as to the function of lipoids can be obtained by investigating the action of considerable concentrations of suitable narcotics on living tissues. In the experiments which I wish to describe I have practically confined myself to monohydric alcohols of the aliphatic series, more especially to ethyl, propyl and butyl alcohols. I have perfused freshly excised rabbit's kidneys for half an hour with saline containing suitable concentrations of these alcohols, and have determined their influence on the gaseous metabolism and the oxidase content of the tissues. After poisoning with the alcohol the kidney was perfused with oxygenated Ringer's solution, and by analysing the gases in samples of it before and after perfusion, the CO_2 output and oxygen intake of the kidney were ascertained. Finally the oxidase content was determined by allowing a weighed sample of the minced kidney to act on a mixture of α-naphthol and paraphenylene-diamine for an hour, and determining the amount of indophenol formed by extracting it with alcohol and estimating it colorimetrically.

The results obtained are best described in terms of the concentrations of the alcohols found by Overton to produce narcosis in tadpoles—namely, 0.29 gram molecule of ethyl alcohol, 0.11 M of propyl alcohol, and 0.038 M of butyl alcohol. Before any permanent reduction was produced in the gaseous metabolism it was necessary to perfuse the kidneys with about ten times the respective concentrations of these alcohols. Smaller concentrations than these excited the tissues to increased respiration, but probably the actual injury effect began approximately at the concentrations of 3.24 M ethyl alcohol, 1.08 M propyl alcohol, and 0.32 M butyl alcohol. Now these are the concentrations found by Fühner and Neubauer to lake red blood corpuscles, and which in their case almost certainly dissolve or destroy lipoid membranes. Hence it seems very probable that the destructive influence on the tissue respiration is likewise due to destruction of lipoid membranes.

In order to destroy the whole of the respiratory powers of the kidney tissues in half an hour, it was necessary to perfuse with 11.5 M ethyl alcohol, 4.1 M propyl alcohol, and 1.14 M butyl alcohol. These concentrations were also just sufficient to destroy the whole of the kidney oxidase, but the concentrations which first began to injure the respiration had little or no action on the oxidase. If fresh kidney were minced up, and were subjected to various concentrations of the alcohols for half an hour, its oxidase was found to be considerably more affected than was the oxidase of intact kidneys. Still it was not injured by the laking concentrations of the alcohols above mentioned, except in the case of the liver. The oxidase of this tissue was distinctly more sensitive to the destructive action of the alcohols than that of the kidney, and began to be affected almost exactly at the laking concentrations.

The reaction of the oxidase of minced tissues to the alcohols is a very sharp one. Thus all concentrations of methyl alcohol up to 10.5 M (a 42 per cent. solution by volume) had no action on it at all, whilst 14 M methyl alcohol destroyed it completely. Intermediate concentrations produced intermediate effects. In the case of ethyl alcohol, the limiting concentrations were 4.8 M and 8.0 M; for propyl alcohol they were 1.5 M and 2.75 M; for butyl alcohol, 0.32 M and 0.9 M. Other narcotics, such as chloroform, ether, ethyl acetate, ethyl urethane, and phenol, had a similar destructive action on the oxidase, and so presumably they act by destroying some lipoid membrane, perhaps a membrane which holds together the oxygenase and peroxidase enzymes of the tissues, and enables them to act in concert.

Narcotics, if in sufficient concentration, destroy the lipoid membranes which hold together the protein constituents of the cells. Thus, on perfusing kidneys with all concentrations of propyl alcohol up to 2.5 M, only 3 per cent. or less of the tissue protein was washed out by the perfusing liquid, but 3.0 M propyl alcohol caused so much breakdown of the cells that no less than 14 per cent. of the total protein contents of the kidney were washed out in half an hour. Butyl alcohol acted more powerfully still, for, whilst all concentrations up to 0.5 M removed 2 per cent. or less of the protein, 0.8 M removed 13 per cent., and 0.9 M no less than 29 per cent. of it. Ethyl alcohol acted less powerfully, for, whilst all concentrations up to 7 M removed 2 per cent. or less of the protein, 8 M removed 7 per cent., and 10 M 9.4 per cent. of it.

It might be thought that the physical changes produced in living tissues by these high concentrations of alcohols can have but little in common with those produced by the very much smaller narcotizing concentrations, but there is evidence which suggests that the difference may be only one of degree. Thus the maximum narcotizing concentrations of the alcohols for tadpoles (that is, those just insufficient to kill) are about five times greater than the minimum values given above, and are therefore about half as great as the concentrations which begin to destroy tissue respiration and oxidase. It is evident that these maximum narcotizing concentrations cannot produce any permanent physical change in the tissue lipoids. Only when they are double as great do they begin actually to dissolve and destroy the sensitive lipoid membranes which form a link in the chain of respiratory processes. At a slightly greater concentration they destroy the membranes which enable the oxidases to act, and at a greater one still they destroy the membranes which hold together the protein constituents of the tissues.

ESTIMATION OF THE UREA IN URINE.

By J. A. MILROY, M.D.,

Queen's University, Belfast.

THE following rapid method for determining the urea in urine consists of four stages: (1) Precipitation of the phosphates of the urine with baryta mixture, the mixture being made up so that the urine is finally diluted with an equal volume of fluid. (2) Determination of the preformed ammonia and amine derivatives in an aliquot portion of the filtrate by formol titration, using two indicators—methyl red for the determination of the neutral point, and phenolphthalein for the titration of the acid set free by the addition of the neutral formol. (3) Hydrolysis of the filtrate; 10 c.cm. portions of the filtrate are placed in test tubes covered with lead foil and heated in the autoclave with an equal volume of normal acid—either sulphuric or hydrochloric—at 155° C. for one and a half hours. (4) Determination of the ammonia and amine derivatives in the hydrolysed urine by means of formol titration, methyl red being used in determining the neutral point.

The result of step (4) *minus* the result obtained in step (2) gives the amount of urea expressed in c.cm. of decinormal alkali (1 c.cm. of decinormal alkali = 0.003 gram urea) present in 5 c.cm. of urine.

OBSERVATIONS ON THE PRODUCTION OF APNOEA.

By Professor T. H. MILROY, M.D.,

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THERE are at least two factors concerned in the regulation of breathing to which attention must be directed, namely:

(*a*) The intrinsic excitability of the respiratory centre.
(*b*) The reflex and other mechanisms that may alter the excitability.

As regards the former, it is extremely difficult to ascertain whether the respiratory centre discharges rhythmically in the absence of all afferent (reflex) stimuli, as it is difficult, if not impossible, to be sure that all afferent channels have been interrupted: and even if this were accomplished, as the traumatic lesions are so severe, it is difficult to exclude the possibility of the injured parts themselves exciting the centre.

Whatever view be held as regards the automaticity of the respiratory centre, it is evident that this centre is very much under the influence of two kinds of excitations—namely, the gaseous constituents of the blood and afferent nervous stimuli which reach it from the lungs, respiratory muscles, etc. The most evident and the most carefully studied departures from the normal rhythm of breathing

are due to changes in the amounts of carbonic acid and oxygen in the blood, and of these two gases the former is regarded at present as the important excitant of the centre. For example, an increase of 2 per cent. of an atmosphere in the carbonic acid of the alveolar air, when the total CO_2 pressure is between 5 per cent. and 6 per cent. of an atmosphere, doubles the pulmonary ventilation. Diminution of oxygen also leads to an increase in the excitability of the centre, but only when the oxygen percentage of the inspired air falls below 13 per cent. of an atmosphere. Just as an increase in the CO_2 alveolar pressure leads to an increase in pulmonary ventilation, so does a fall in the same gas lead at last to a stoppage of breathing when the CO_2 content of the blood supplied to the respiratory centre falls below a certain value. The activity of the centre then remains in abeyance until the gradually accumulating carbonic acid, and also the accumulated acid products of insufficient oxidation, lead to a renewed excitement of the centre.

In certain conditions the excitability of the centre may be markedly lowered, so that with any slight fall in the carbonic acid content of the blood the centre may cease discharging nervous impulses, and, as a result of the insufficient pulmonary ventilation, the carbonic acid rises to an amount that will again excite the centre to activity, at first slightly, then to a greater extent. With the increased respiratory activity the CO_2 is again washed out of the blood and the centre becomes inactive. Such successive hyperpnoeic and apnoeic periods are seen in the Cheyne-Stokes type of respiration. If an air mixture to which a small quantity of carbonic acid is added be given during the period of lessened respiration, the respirations at once become deeper.

Recently much evidence has been brought forward in support of the view that the CO_2 content of the blood is of maximal importance in respiratory regulation.

There is, however, no doubt that the normal rhythm is dependent upon another factor, namely, a nervous one, and especially is this true of the afferent path by the vagi from the lungs to the respiratory centre.

When the vagi are cut the breathing becomes markedly altered, the respirations being slow and deep. At one time this was supposed to be due to a stimulation arising at the central ends of the cut afferent fibres, but freezing the vagi produces exactly the same effect as section.

The vagi seem to be mainly concerned in the conveyance of inhibitory impulses which are set up by distension of the lung alveoli, these impulses checking the further course of inspiration so that the expiratory recoil occurs.

In my research I have been mainly concerned in the attempt to determine the extent to which each factor, the gaseous and the nervous, plays a part in the regulation.

In the investigation of the nervous factor it is advisable to study the changes produced in respiration after as slight traumatic interference as possible.

If the afferent nerve fibres from the alternately distending and collapsing lung alveoli influence the respiratory rhythm independently altogether of gaseous alterations, one ought to be able to produce different effects on the respiratory centre according as one artificially ventilates the lungs at a fast or at a slow rate, even when the total pulmonary ventilation over a given time remains the same in the two cases.

In the first experiments artificial respiration was carried out in the cat at different rates of pumping, keeping the total pulmonary ventilation the same. For example, 70 c.c.m. air or other gas mixture were pumped in sixty times per minute for five minutes, and a record taken of the nature of the breathing after the pumping, and, subsequently, 70 c.c.m. air or other gas mixture were passed through at a rate of 120 per minute for two and a half minutes, and again a record of the recovery of respiration taken.

Or again, volumes and rates were altered as follows: 50 c.c.m. air pumped in 100 times per minute for five minutes, and recovery recorded. Then 100 c.c.m. air were given at a rate of fifty times per minute for five minutes, and recovery recorded.

In the former case the lungs were distended to the same extent at each stroke of the pump, but in the one case at double the rate of the other, the total pulmonary ventilation being the same.

In the latter case degree of distension and rate were both altered, but in the two cases the total pulmonary ventilation remained the same.

In both series of experiments when air was employed apnoea or stoppage of breathing resulted, the duration of which depended upon the total pulmonary ventilation, not being affected by the rate of pumping nor by variations in the distension of the lungs so long as the total pulmonary ventilation remained the same. In cases, however, where the lungs have been distended with large volumes of air, the first few breaths after the apnoea may be very irregular in character. Thus we see that with variations in the rate or degree of distension and so with variations in the rate and degree of the afferent stimuli arising in the alveoli there is no distinct difference in the duration of the apnoea or in the type of recovery after the apnoea.

In the second series of experiments the vagi were frozen before artificial respiration was carried out, the breathing as a result becoming slow and deep. Then pumping was carried out in the same way as in the first series. Apnoea was produced in all cases just as when the vagi were intact and the duration of the apnoea was much the same as in the latter case.

The breathing after the apnoea is very apt to be irregular but the rate is slow, being similar to that occurring before the artificial respiration.

It is thus seen that so far as effects upon the respiratory centre are concerned, variations in the stimuli reaching it from the lungs along the vagi produce no characteristic disturbance in the apnoea or in the recovery after the apnoea, nor does complete removal of the vagal influence interfere with the production of apnoea.

In the third series of experiments various gas mixtures were given, and it was soon found that very slight variations in the CO_2 percentage of the gas mixture affected very markedly the duration of the apnoea. Thus, if a gas mixture containing the normal percentage of oxygen in air and 0.5 per cent. CO_2 were pumped into the lungs no apnoea is produced in most cases. With slightly larger quantities of carbonic acid the breathing after the artificial respiration is exaggerated and often very irregular and of the Cheyne-Stokes variety.

If the vagi are frozen before these gas mixtures are pumped, there is also no cessation of breathing; but when the breathing does start, it is regular at the outset, and thus differs from artificial respiration with air with the vagi cut. The breathing afterwards may become irregular, but its average rate is not above the slow rate existing before pumping.

Gas mixtures rich in oxygen prolong the apnoea, even if only a few breaths of oxygen are given after the main ventilation has been carried out with air.

The most important factor in the production of apnoea is undoubtedly the washing out of the carbonic acid from the blood. If this is prevented, apnoea does not occur. Oxygen prolongs the duration of apnoea, but moderate diminution in its amount will not prevent the production of the apnoea. The nervous factor is of minor importance.

At the outset of apnoea there is a rapid consumption of oxygen, and if a gas mixture rich in oxygen be introduced on stoppage of the pulmonary ventilation, the apnoeic pause is much prolonged. The carbonic acid which accumulates during the period of apnoea passes out into the alveoli, the rate of passage being approximately the same when the gas mixture is air or nitrogen, or mixtures of oxygen and nitrogen in various proportions. When the alveoli are filled with nitrogen, oxygen as well as carbonic acid passes out. When a mixture rich in CO_2 is pumped into the alveoli at the close of a prolonged pulmonary ventilation with air, the CO_2 leaves the mixture and rapidly passes into the blood, shortening the period of apnoea.

ANIMAL ACTIVITIES IN RELATION TO TRAINING.

By Professor R. J. Anderson, M.D.

The effects of fine training on animals have been, in part, attributed to the skill of the trainer, and in part to hereditary tendencies. Professor Zeigler points out that those practical actions not derived from experience are apt

to be hereditary. The ease with which an animal takes training depends on previous experiences, practice, and tendencies. The character and condition of the muscles and sense organs and their structure affect, or modify, the results of experience. The great Dane that died of starvation in a room where he was locked in with game, the dog that leaves its pups to follow its master, the collie that forgets about his food when a prevailing passion seizes him (whether it be the management of a flock of sheep, the retrieving of a stick, or the guarding of his master's property), are regarded as examples of training young and susceptible animals. Adjustments and readjustments are difficult to isolate.

Instinct, so-called, is likely to be racial or tribal. Indeed, the term is used by many in that sense alone. Professor Bohn believes that the term should be discarded. When an animal is easily trained one often attributes the facility to hereditary causes rather than to training because of the methods observed in selection. The dog that hunts rabbits and brings them to his master, acting on his own account, may be acting from racial tendencies, and so may the cat that brings a young rabbit, a rat, or a mouse to a friend. A cat may not be discriminating and may bring a dead kitten to her mistress, but this attention is a transference.

The effects of training may lead a dog, blind with passion, to savage his master, or kill his master's child. Here again there is a transference. A collie I knew joined in a fight between members of his own species readily, but became a peacemaker when he saw two oxen or two fowls fighting. The latter tendencies were the results of mixed impressions. Constraint as well as reward becomes an efficient means of training in horses.

In man, outside pathological domains, prevailing impressions have been known to carry him very far, although they are not so likely to become purely reflex as in other animals, and avenues to impressions through psychic centres increase the number and range, at least, of these. In training one is less concerned with the laws of reflex actions than with the influence of associated stimuli. Sound, odour, light, cooling of the skin surface locally, heat, local rubbing of a peculiar kind, have been made to produce salivation (Pawlow, and his pupils, Boldyrew, and others). Terror, fascination, hypnotism are among the effects of impressions received from without. Birds, fish, and crustacea have been hypnotized.

These find parallels in the psychic effects of certain medicines in man that have the therapeutic effects they are expected to produce. One has a better chance of seeing some reflex operations and of seeing their growing automatism in the lower animals. An Irish terrier showed a disposition to kill poultry. He was cured by inflicting a certain amount of pain in the region of his tail. Some time after the cure was complete this young dog quite ran away from a flock of chickens he happened to meet when following his master. There are other instances comparable in intention with some of the stories told to intimidate or horrify the youthful mind in man. In animals the cure is often worse than the disease. It is said that in man some of the peculiar troubles associated with neurasthenia and ending with the termination *phobia* may be traced to these psychic horrors of childhood. Amongst persistency of impressions I may mention the instance of a dog licking his lips when he sees a friend who gave him sugar on previous occasions. The influence of glands (internal) has attracted the attention of a good many observers. Dr. Laignst Lavastine has suggested that the psychic effects of diseases of the closed glands, adenoids, thyroids, etc., should claim the attention of physiologist, pathologist, anatomist, and therapeutist.

It is not too much to suggest that the study of change of activity associated with gland change comes within the domain of the working biologist. Human activities in some of their simplest phases may be studied in domestic animals and some others less familiar to us. If attention be paid to the details of training one cannot fail to gain clearer results with reference to the aspects of human movements.

THE eighty-fourth meeting of the German Association of Scientists and Medical Practitioners, recently held at Münster, was very successful. Next year the meeting will be held at Vienna, under the presidency of Professor H. H. Meyer.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE TUBERCULIN TREATMENT OF CONSUMPTION.

THE correspondence on this subject interests the majority of the profession profoundly. The mode of using this potent agent, tuberculin, is one that can hardly be settled by definite laboratory biological experiment—its action and reactions are admittedly so complicated. The data for its beneficial administration must therefore be worked out clinically. I have had the pleasure of hearing Dr. Camac Wilkinson lecture on the subject, but I regret to have to say I knew as much about his massive doses before as I did afterwards, and that was nil. My friend, Fleet Surgeon Acheson, R.N., and others, have borne testimony of the good results they have seen in his tuberculin dispensary, so no doubt the treatment he adopts is productive of great good.

I have been using tuberculin in the treatment of consumptives in the in-patient and out-patient departments of this hospital for six years. At first I used T.R. according to the directions issued with the preparation, but my results were worse than unsatisfactory as a rule. I now use mixed tuberculin, T.R. and *Perlsucht-tuberkulin*, which I dilute and mix myself, and my results are decidedly good, but preparatory treatment is invariably adopted. Cod-liver oil and minute doses of creosote are always given for a few weeks first. If the sputum is profuse and especially if there are symptoms of mixed infection (hectic, etc.), moist continuous inhalations of formalin, iodine, menthol, etc., are used until this is corrected. Haemorrhage is completely controlled. The patient, in other words, is prepared for the course, and of late my preparation does not end at this. Now for five days before giving a tuberculin injection $\frac{1}{10}$ to $\frac{1}{30}$ of a grain of strychnine hydrochloride is injected intramuscularly daily. Since I have used this latter preparatory treatment no bad results of any kind have followed the tuberculin injections, and I find I can give large doses more quickly. I might theorize much on how the strychnine acts, so can anybody else, and I will leave it at that. Strychnine by the mouth has not the same good effects: it will often cause griping and diarrhoea. The drug administered intramuscularly seems to exert a decided beneficial effect all round, improving the general condition and appetite, and helping to clear the sputa of tubercle bacillus.

JOSEPH H. WHELAN, M.D.,
Fleet Surgeon, R.N.(ret.)
Royal Hamadryad Seamen's Hospital, Cardiff.

TREATMENT OF CHRONIC DYSENTERY BY EMETINE SALTS.

IN confirmation of Dr. Leonard Rogers's instructive papers in the JOURNAL of June 22nd and August 24th last, it may be of interest to record the successful treatment of a case of chronic dysentery of ten years' duration by hypodermic injections of emetine hydrochloride.

The patient, a male aged 40 years, acquired dysentery in the Boer war in 1901 and again in 1902. Although discharged from hospital as cured his motions had remained very frequent, accompanied by a good deal of tenesmus. When he came to me in July last he had about ten or eleven evacuations daily, mostly of mucus and blood. If he contemplated a walk of any distance he had to plan out places of call beforehand.

After reading the successful results recorded by Dr. Leonard Rogers in his first paper, I thought it a pity not to give the man a chance of cure, although I rather hesitated when I found it noted that the South African dysentery was not of the amoebic form. I explained this to the patient as far as I could, and told him he must not rely on benefiting by the treatment, but his constant ill health and the annoyance was so great that he was willing to take his chance. The solution used was 1 grain of emetine hydrochloride in 30 minims of water. Starting with $\frac{1}{4}$ grain dose, this was increased to $\frac{1}{3}$ grain, then $\frac{1}{2}$ grain. In all nine injections of the solution were given, totalling $2\frac{3}{4}$ grains of the salt.

Immediate improvement resulted; some days before the termination of the treatment his bowels acted normally

once a day, the stools being of a natural consistency. This was in July, and he has remained well till now. No vomiting or other drawbacks occurred; there was slight local irritation at the sites of injection.

Possibly half the quantity of the drug might have sufficed, but considering the duration of the disease it was thought better to give more than might be absolutely necessary rather than risk giving too little.

London. J. WARD LAWSON, M.R.C.S.Eng.

EPIDEMIC JAUNDICE.

OCCASIONALLY during the past fifteen years I have had to deal with epidemics of jaundice occurring in the spring and summer months. This year an epidemic has again broken out, and as the disease is much more severe in its onset, intensity, and duration, I think it is worthy of record.

The age incidence is from 6 to 16 years, and a typical case runs as follows: The child is noticed to be sick, looks pale, and has little or no appetite. On the same evening pains in the back and legs are complained of, and the patient is put to bed. The pulse is quick. The skin is felt to be hot, and if the temperature is taken the thermometer will register 100°–102°. Next day there is great tenderness over the epigastrium; the liver is found to be enlarged, quite tender to the touch, and there is enlargement of the spleen. Slight icterus of the conjunctiva is present, and the bowels are constipated. The urine is very dark, from the presence of bile pigments. On the evening of the second day vomiting sets in, lasting twelve to eighteen hours. The jaundice now is very deep, and the pulse slows and great prostration is complained of. The discoloration remains for an uncertain period; usually lasting a few weeks, it went on in one of my cases to two months, so much so that I feared sarcoma. He, however, gradually improved, and is now quite restored to health.

Wet seasons seem to favour the outbreaks, and as this has been an exceptionally wet summer it would be interesting for me to know if others have met similar cases. The incubation period seems to be rather long, varying from five to twenty-one days.

I believe these cases to be a mild type of Weil's disease, though the age incidence and length of the fever do not tally with the meagre description in the textbooks. The points in favour of my view are (1) the great weakness, (2) the intensity and duration of the jaundice, (3) the feverish onset, (4) the season in which the outbreak occurs.

The treatment was simple. If the bowels had not been relieved an enema was administered. A mixture of sod. salicyl., tinct. rhei. co., and inf. gent. was prescribed, and later, tonics. The diet consisted at first of skim milk, and later on beef-tea, toast, etc. All the patients recovered.

Dunlavin, co. Wicklow. EDWARD LYONS, M.D., D.P.H. (Univ. Dubl.).

WIRING THE SAME FRACTURED PATELLA TWICE.

THE cases recorded in the JOURNAL of June 1st and 8th are paralleled by one that I had to deal with nearly ten years ago. In November, 1903, a woman aged 42 was admitted to the South Devon Hospital with a fractured patella of six weeks' standing, and I wired the fragments, the patient going out in a knee splint seven weeks later. In three months she was readmitted, having fallen downstairs while intoxicated, and re-fractured the same patella. I re-wired her, using two strands, and reinforcing the aponeuroses with kangaroo tendon, and she made a good recovery. I saw her afterwards with a very useful knee.

C. E. RUSSELL RENDLE,
Late Assistant Surgeon, South Devon and East Cornwall Hospital.

DEATH SOON AFTER THE USE OF DIPHTHERIA ANTITOXIN.

On July 25th, 1912, I was called to see a child, aged 2 years [illegible] months, because it was "choky in the chest." I found that it had a sore throat; there were yellow patches on both tonsils. The throat had more the appearance of a [illegible] than that of diphtheria, but I thought it [illegible] a dose of diphtheria antitoxin, and gave [illegible] child, whilst I was preparing my syringe, [illegible]y; the cry was not at all hoarse, [illegible] of laryngeal obstruction. This was at about 3 p.m. I left the house not feeling alarmed about the child, as it did not seem seriously ill. An hour afterwards convulsions set in, and, in spite of treatment, the child died at 6.45 p.m. The child had had no injection before. It was not subject to bronchitis. There was no bleeding from the needle puncture, and the serum formed a big swelling subcutaneously, so it is not likely that I punctured a vein. No *post-mortem* examination was made.

Durham. ARTHUR PAIN, M.R.C.S., L.R.C.P.

RAPID RECOVERY AFTER OPERATION FOR CHRONIC APPENDICITIS.

PRIVATE U., Sherwood Foresters, was operated on for chronic appendicitis on June 15th, 1912, under spinal analgesia. The appendix was much inflamed, twisted twice on its long axis, and also kinked. It was removed through an inch incision close to the anterior superior spine and by splitting the muscles. He left hospital to attend as an out-patient fourteen days later. He started on July 15th to train for a "Marathon race," and at first was able to do four miles. This distance he increased to six miles after a fortnight's training, and he can do eight miles now without discomfort. His time for six miles is 46 minutes. I may add that this has been done without my knowledge, but he seems none the worse for his exertions.

Secunderabad. F. J. W. PORTER, D.S.O., Major, R.A.M.C.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

GREAT YARMOUTH HOSPITAL.

A CASE OF DELAYED CHLOROFORM POISONING.

(Under the care of Mr. HENRY WYLLYS, F.R.C.S.Edin.)

[Reported by JOSEPH GEOGHEGAN, M.B., Ch.B.Edin., late House-Surgeon.]

ON July 14th, J. A., a girl aged 16, was admitted with the following history. On July 11th, in the late afternoon, she was seized with a sudden attack of severe pain in the abdomen. She had been constipated for four days, and had during the day or two immediately before suffered from some uneasiness. The pain continued intermittently, and on the evening of July 12th she called in the doctor, who found the temperature 100°, pulse 108, tongue dirty, abdomen not distended but tender on deep pressure, 1½ in. inside the right superior iliac spine. She had been sick several times. Her bowels had acted once that day, after a Seidlitz powder. Next morning her temperature was 100.6°, and pulse 110; the abdomen was more tender, but she had not been sick. Before sending her into hospital, which was done the following morning, an enema was given, with two good results.

When admitted under Mr. Wyllys the temperature was 101°, pulse 128, respirations 32; urine acid, specific gravity 1020, no sugar or albumen. Her tongue was furred and dirty, and the skin sallow and hot, but her general appearance was good. The abdomen was tender on the right side and flank, and particularly posteriorly above the crest of the ilium. Dullness could be made out in the right flank. Below the umbilicus the abdomen was rigid, the right rectus being the more resistant. There appeared to be a tumour in the right iliac fossa.

Enemas were given, one in the forenoon and another in the afternoon, with good results; hot fomentations were changed every four hours. In the afternoon the temperature rose to 102.4°, but the pulse subsided somewhat. The operation was performed at 9 p.m., the incision being carried higher and more towards the flank in the belief that a retrocæcal position of the appendix existed, and such was found to be the case. The appendix was kinked, gangrenous, and adherent to the cæcum; some fluid was present, but of no particularly offensive odour. A portion of the adjacent cæcum, about 2 × 1 in., was sloughy, and all the surrounding tissues were œdematous, soft, and inflamed. Fresh easily-broken down adhesions shut in the infected area. The appendix was removed

by the clamp method; two purse-string sutures were inserted in the caecum, and the wound was closed save for a drainage tube. The operation lasted a little over an hour, and only chloroform was used, 6 drachms being the quantity required.

On coming round the patient was excited and noisy, and hyoscine hydrobromide, $\frac{1}{100}$ grain, was given. She was also put on continuous rectal salines. Subsequently she was again noisy, and only quietened on receiving morphine hydrochloride, $\frac{1}{4}$ grain.

Next morning the temperature was 100.4°, pulse 108, respirations 24. The wound showed only a slight discharge, neither faecal nor over-offensive. The patient looked very much better and was bright and cheerful, and the prognosis was considered favourable. During the day she recommenced menstruating, having only ceased a week before. The temperature and pulse both subsided and calomel, $\frac{1}{2}$ grain every two hours, was commenced. About 4 p.m. she began to complain of pain which was attributed to flatulence; later on she vomited black material. About 11 p.m. she was found to have a very rapid pulse—140—and to look flushed and ill. The discharge from the wound was slight and suggested faecal contamination. The abdomen was soft all over save at the line of incision. During the night the temperature subsided, but the pulse-rate kept high. The abdomen showed no rigidity or tenderness next day (July 16th), and there was nothing to suggest further peritoneal infection. The vomiting continued and increased in frequency, becoming typically black (coffee-ground). During the day she began to become unconscious, with low muttering delirium. The temperature fell to 99°. Next morning the temperature was 98.6°, at which it remained till just before death. The pulse was now consistently 140, with intervals still more rapid. She was exceedingly irritable and quite delirious, throwing her arms up with a peculiar gesture, grinding her teeth and shrieking. Sordes appeared on the lips, and the pupils became widely dilated. There was still only slight discharge, the abdomen was soft, and afforded no signs to suggest the cause of her illness. The lungs and heart showed nothing abnormal; her breath was offensive, but not "fruity"; no acetone was present in the urine. Her delirium gradually increased to mania, and she showed signs of collapse; the temperature remained steady, but the pulse became rapid, weak, and thready. That evening she was obviously worse and, the mania being uncontrollable, she was transfused with Ojss of normal saline and digitalin $\frac{1}{100}$ grain was given four-hourly. It had previously been given with strychnine when she collapsed. Omnopon $\frac{1}{3}$ grain and hyoscine $\frac{1}{100}$ grain were given in 3ij of saline. She became prostrate, rapidly sank into coma, with an almost imperceptible pulse, shallow, harsh breathing, drooping chin, and half-shut eyes, and died quietly at about 7 next morning. In the few hours before death the temperature rose from 98.6 to almost 106°.

On *post-mortem* examination nothing definite could be found. The sloughing inflammation had spread somewhat up the colon, but was all shut off. No leak was apparent at the site of the appendix, and no sign could be found of any further spread of peritoneal infection. Cloudy degeneration was present in all the organs, and the spleen was enlarged and congested. The urine contained no acetone, and, except for a concentrated and uratic state, showed nothing to note.

Recently in this hospital there have been observed 4 cases of a similar nature, all showing the syndrome of peritoneal infection, the use of chloroform, delirium and mania, the peculiar thrown-back attitude of the arms, grating of the teeth, and coffee-ground vomiting, without evidence of peritoneal spread. These symptoms started twenty-four to thirty-six hours after operation and terminated in coma and death. Such a clinical entity has already, I believe, been suggested in these columns, but I am unable to lay my hands on the reference. Possibly amongst that group of cases conveniently lumped under the term "toxaemia," similar details may be noticed by those with more extensive material, and it suggests, at any rate, that delayed chloroform poisoning does exist in a modified form without the typical features of acetonaemia.

I desire to express my indebtedness to Mr. Henry Wyllys, F.R.C.S.E., under whose charge the patient was, for leave to use these notes.

Reviews.

"A SYSTEM OF TREATMENT."

It was said of Gladstone at the time of his death that it would require a syndicate to give a true picture of the many-sided statesman, and that no one man could do justice to the task of writing his life. But if this be true of a statesman, it is still more applicable to therapeutics at a time when the old order is changing so rapidly that no one intellect can fairly hold the scales between the thousand and one conflicting teachings of the present day. Hence the advent of *A System of Treatment*[1] by many writers, whose judicious selection by the editors offers a useful mirror in which the modern views on treatment are faithfully reflected. The title is, perhaps, not very happy, but a glance at the list of contributors and at the subjects dealt with shows a catholicism which at once favourably impresses the casual observer. Indeed, the juxtaposition of the man-of-the-world clinician of the old school with the man-of-the-laboratory bacteriologist of to-day ensures food for remunerative study to the student old or young.

Vols. I and II deal with general medicine and surgery. The principles of treatment are dealt with in an essay by Dr. Mitchell Bruce in the first twenty-five pages of Vol. I. The subject of appendicitis is ably treated by Mr. English, who discusses that vexed question: "Should the appendix be removed after recovery from the operation of incision and drainage of an appendicular abscess?" While guarding himself by the statement that "each case . . . must be considered on its own merits," he is of opinion that "in most cases the surgeon should advise subsequent removal of the appendix." He adds: "Amongst the cases of this nature operated upon at St. George's Hospital there has been no fatality." These are his personal views, but he also gives an impartial summary of other expert opinions which do not coincide with his own. The modern treatment of consumption in its many manifestations is concisely and clearly described by several writers whose authority on sanatoriums, tuberculin, and the artificial production of pneumothorax is generally recognized. A summary of these and other means of combating consumption is given by Dr. ARTHUR LATHAM, who emphasizes the importance of attacking the disease from as many aspects as possible. The treatment of pulmonary tuberculosis by graduated labour is described by Dr. Marcus Paterson, and we would recommend his admirably concise paper to all who are interested in this method, the indications for and against which are not always carefully observed. Sir William Bennett gives an account of varicocele and varicose veins, his interesting paper being admirably illustrated. The illustrations, we would remark in passing, are excellent, and this is particularly the case with drawings designed to show the different stages of various operations. Dr. Herbert French contributes a number of papers on the various forms of anaemia, on chorea, and on haemophilia. An interesting paper on affections of the tongue is contributed by Mr. Jonathan Hutchinson. Venereal diseases are dealt with by Mr. Ernest Lane, who gives short accounts of the treatment of gonorrhoea, soft chancre, syphilis, and impotence. Mr. Arbuthnot Lane also contributes a number of papers, of which that on the operative treatment of fractures is both long, well illustrated, and most useful at a time when the superiority of new methods to old is still uncertain. Gout and gouty conditions are described by Dr. Arthur Luff, and Mr. Lockhart-Mummery contributes many papers, most of which centre about the rectum. Disseminated sclerosis and tabes dorsalis are discussed by Dr. Risien Russell.

Vol. III, which is devoted to special subjects, contains much information on widely different subjects, such as hypnotism and suggestion, anaesthetics, vaccine-therapy, Bier's treatment, serum-therapy, bacterio-therapeutics, climatology, balneo-therapy, electro-therapy, ionic medication, *x*-ray-therapy, light-therapy, mechanical vibration, radiant heat, Zander methods, massage, physical exercises, stammering, voice production, and defects of speech. Bier's treatment finds an eloquent advocate in Mr. H. F.

[1] *A System of Treatment by Many Writers.* Edited by Arthur Latham and T. Crisp English. In four volumes. London: J. and A. Churchill. 1912. (Med 8vo. 21s. net each vol.)

Waterhouse, who deplores its relative lack of popularity in England. It should, however, be a source of comfort to him that while the popularity of the treatment has somewhat waned in the country of its birth, it is still highly valued in this country. Dr. G. Hamel's description of massage and the Zander methods is full of useful knowledge; and mechanical vibration is treated in a judicial tone by Dr A. P. Wells, who points out the important differences between it and massage, with which it is so frequently confused. This volume also contains such subjects as tropical diseases, diseases of the nose, nasopharynx, accessory sinuses and pharynx, oesophagus, trachea, larynx, ear, eye, skin, and the teeth.

Delimitation of the spheres of the general practitioner and of the specialist is always difficult, and the efficient general practitioner must be able to take a comprehensive view of the whole, though a detailed knowledge of the specialist's technique is necessary only for the invader. In obstetrics, owing to the relatively scanty provision of maternity hospitals, the specialist's reserve is small, but in gynaecology the reverse is the case; the emergency character of the obstetric case further emphasizes this difference. The writers of the 140 articles in Volume IV have faced the difficulties of their office with more or less success, but their task of presenting a comprehensive view has not been simplified by the alphabetic arrangement of the articles in the individual groups. Thus spondylotomy, by mere accident of the alphabet, finds itself divorced from craniotomy, decapitation, and evisceration, while cleidotomy occurs only in the article on contracted pelvis. The *ante-partum* haemorrhages also suffer from the same cause, and as the very detailed index supplies all that is needful in the way of an alphabetical guide, the editors might well take advantage of it in future editions. While the articles on haemorrhage recite most of the usual methods, they somewhat lack point in impressing the aim of each as against the haemorrhage. There is now a sufficient body of evidence regarding the elastic compression of the aorta (Momburg) to have warranted its mention, and the unfortunately misleading, though classical, term, "kneading the uterus," is still enshrined here. The articles by Dr. Ballantyne on the general management of pregnancy and of puberty and the menopause, and that of Dr. French on medical diseases in pregnant women, are notably sane and well balanced, and represent a very important revision of some views of the textbooks. The paragraphs on asphyxia of the newborn child do not suggest a full perception of the relative importance of asphyxia and of shock, or of the difference of the physiological action of the hot bath in the two. In the gynaecological part the difference of interpretation placed by the writers on their reference is illustrated by comparing the technically detailed articles by Mr. Bonney with the more general and chatty essays of Sir John Bland-Sutton. On the whole the latter will perhaps serve better the purpose of the general practitioner as an indication of what he should lay before his patient. In the gynaecological section the disadvantages of the alphabet are still apparent, though perhaps minimized by the topographical grouping. On the whole the volume does not produce a definite conviction that the alphabetic system as applied to obstetrics and gynaecology offers advantages as an intermediate stage between the short dictionary of treatment and the detailed special textbook.

Reviewers of a book written by many writers often indulge in the platitude that the value of the different articles varies considerably. We would modify this platitude by suggesting that, while some of the forms of treatment described in these volumes are based on accurate knowledge and long experience, others are but yesterday's products which have not been sufficiently tested. While we, therefore, would wish this particular edition a reasonably long life, we would also express the hope that later editions will appear at timely intervals. Of the *System of Treatment*, taken as a whole, it is clear that a work has been produced which, thanks to the liberal and cosmopolitan attitude of the editors, is representative of the world's medical knowledge as a whole. The index supplied with each volume gives references to the contents of all—a point of considerable importance to possessors of all four volumes. Another feature, on which both publishers and editors are to be congratulated, is the simultaneous appearance of all four volumes, which enables the medical profession to acquire at once the latest opinions on every branch of therapeutics.

CLINICAL MANUALS.

THE appearance of a fifth edition of the well-known handbook of *Clinical Methods* by Drs. HUTCHISON and RAINY,[2] shows at once its popularity amongst students of medicine, and the alertness and industry of its authors. Dr. Paton has given his assistance in remodelling the chapter on the blood, and similar help has been rendered in those devoted to the study of the respiratory, urinary, and nervous systems, by Drs. Lovell Gulland, Martin Flack, and Gordon Holmes respectively; Dr. James Ritchie has contributed the chapter dealing with bacteriology.

The volume can be strongly recommended to the student of medicine not only as a bedside guide, but during those periods of study when his attention is directed towards the more technical methods of investigation which are carried out in the clinical laboratory. The authors have preserved the original form of the work, and have in a thoroughly methodical manner described methods of investigation which are accepted at the present time. Quite rightly the niceties of diagnosis do not enter into discussion, the authors being satisfied in general with the methods of investigation rather than with the significance of the results, although opportunities are taken to impress well-established points. The investigation of the stomach contents is well put, and reference is made to the fact that pepsin and rennin enzymes run parallel in their secretion; capital is made of this by supplanting an inquiry for pepsin by one for rennin, which is easier. With regard to the statement that in some functional disorders of the stomach the total acidity of the contents is increased, rising above that of 0.2 per cent. HCl, it should be made clear that this does not mean that the mucous membrane is capable of secreting a juice containing more than 0.2 per cent. HCl, but that in these disturbed conditions the juice found in the stomach contains a larger percentage than in health, owing to the concentration of the fluid after secretion. The test applied to the stools recommended for occult haemorrhage is that of glacial acetic acid, benzidin, and hydrogen peroxide. We are not disposed to agree with the authors in saying that a diastolic pulmonary murmur is excessively rare; no doubt one due to endocarditis and the sequential distortion of the pulmonary cusps is excessively rare, but the murmur described by Dr. Graham Steell, dependent upon the effects of mitral stenosis and high tension in the pulmonary artery, is far from rare. It is satisfactory to see more space given to sphygmomanometric observation, which reveals more of importance than the use of the sphymograph (Dudgeon's). Recent work with the polygraph receives well-deserved attention and "auricular fibrillation" finds its niche. Strong's method for the enumeration of the red corpuscles is described and its advantages over the Thoma-Zeiss method are pointed out. The section dealing with the examination of the urine is one of the best we know, though in a book of this character it is questionable whether cryoscopy should receive so much attention. The section dealing with the examination of the nervous system is excellent and brings to the student's notice the more recent analyses of disturbances of sensations. In view of the great attention given at the present time to the subject of tuberculous infection, it is a little surprising that the only tuberculin reactions described are those of Calmette and v. Pirquet. A very full index closes a book which deserves as well in the future as it has in the past.

We have already favourably reviewed the second edition of Dr. EMERSON'S *Clinical Diagnosis*,[3] and welcome

[2] *Clinical Methods: A Guide to the Practical Study of Medicine.* By Robert Hutchison, M.D., F.R.C.P., Physician to the London Hospital, and Harry Rainy, M.D., F.R.C.P.Ed., F.R.S.E., Assistant Physician to the Royal Infirmary, Edinburgh. Fifth edition, revised throughout. London, New York, Toronto, Melbourne: Cassell and Co., Limited. 1912. (Fcap. 8vo, pp. 666; coloured plates 15, figs. 156. 10s. 6d. net.)

[3] *Clinical Diagnosis.* A Textbook of Clinical Microscopy and Clinical Chemistry, for Medical Students, Laboratory Workers, and Practitioners of Medicine. By Charles Phillips Emerson, A.B., M.D., late Resident Physician, the Johns Hopkins Hospital; Professor of Medicine, Indiana University School of Medicine. Third edition. Philadelphia and London: J. B. Lippincott Company. 1911. (Roy. 8vo, pp. 755; plates 5, figs. 126. 21s. net.)

the third. The author has earned the lasting gratitude of students of medicine, using this term in its broadest sense. Too often laboratory guides give the reader the impression that diagnosis depends upon two entirely different modes of inquiry—the one set aside for the pure clinician, rather old-fashioned if not out of date, the other presided over by the expert technician, to whom is conceded a much lower degree of fallibility. If for no other reason, we should be grateful to Dr. Emerson in that his book, both in its intention and in its accomplishment, succeeds in showing how the two branches of study achieve their greatest success in a reasonable, mutually supporting alliance. When a close inquiry is made into the details of the subject matter—say, for example, that devoted to a study of gastric analysis—it is seen how admirably Dr. Emerson combines the critical and technical excellencies of a pure laboratory worker with the common-sense bedside knowledge of the clinical investigator. Indeed in this section, and in others dealing with such subjects as the examination of the sputum, the urine, the intestinal contents and faeces, the blood and various body fluids, loaded as they are with the most technical details, there are many flashes of clinical generalizations which gain in brilliance by their juxtaposition with the advantages or failures of laboratory investigations. The biological reactions which have loomed so largely of recent years upon the clinical horizon, such as the Wassermann test, are treated in a masterly way, the reader gaining knowledge the while on some of the clinical difficulties which the widespread use of this test has brought to light. It is well for us to note how opsonic observation is apprized by a worker of Dr. Emerson's capacity. "At present the status of the opsonic theory seems unsettled." The illustrations, including some most beautifully executed coloured plates, deserve the highest praise; they contribute towards making this volume one of the best guides we know of written in English, and comparing most favourably with similar works in other languages.

We have much pleasure in noticing the encyclopaedic *Textbook of Medical Diagnosis*,[4] by Professor JAMES M. ANDERS and Adjunct-Professor L. NAPOLEON BOSTON, both of Philadelphia. The most obvious drawback to the book is its great size and weight. It contains 1195 pages of text, with 25 plates, of which 17 are coloured, and 418 other illustrations. Before we pass from this part of our notice we should like to say that although the plates and photographs of pathological conditions are excellent and most instructive, we venture to dissent, as a matter of taste, from the practice now common in American works of medicine of using photographs of naked healthy women for the purpose of demonstrating areas of dullness and the like, which can be quite as well shown upon outline figures. In the preface the authors say that their purpose has been "primarily to furnish an improved method of determining the clinical features of disease," and further on that they have "aimed to present consistently within a single modern textbook the full modern resources of the art and science of medicine as related to medical diagnostics." They think that the new features of their work are the brief pathological definitions of special diseases, the illustrative cases selected from the practice of the authors and the numerous diagnostic tables. The book is well printed and the subject matter set out in paragraphs with headings in thick type, and as a work of reference it will be valuable to practitioners. It is delightful to find the authors insisting so strongly upon the need for a long course of systematic case-taking as an indispensable element in the training of a physician. The habit thus acquired becomes in course of time so settled that the mental equipment persists throughout life, while the knowledge of cases gained is a permanent store of experience upon which to draw. This is so obviously true that many may think it a platitude, but unfortunately teachers know what a large proportion of students look upon case-taking as merely a piece of drudgery which they perform so far as they may be compelled, but without the slightest appreciation of its manifold advantages. In a book which is in most respects so thoroughly up to date it is somewhat surprising to find no reference to electro-cardiography as an aid to the diagnosis of heart disease. We note that Mackenzie is not given credit for the polygraphic method introduced by him, but both instrument and method are attributed to Jaquet: further, in describing the Doremus ureameter, it is said to have been modified by "Hinds," a misprint for Hintz. In the differential diagnosis of heart-pain of an anginal character, it is scarcely sufficient to speak of pseudo-angina as occurring only in hysterical women. The differential diagnosis of these pains is of some complexity, but of great importance, so that the question deserved more thorough treatment. We believe the differential diagnosis of purpura from scurvy and haemophilia is more difficult than the authors allow. The value of inflation of the stomach in the examination of this organ seems to be hardly sufficiently appreciated, but the *x*-ray shadow diagrams of bismuth meals in the diagnosis of stomach intestinal diseases are excellent. The name of the late Dr. Meinert of Dresden is spelt "Mienert." In view of the general acceptance of the classical work of Aschoff and Bacmeister, which appeared three years ago, it is scarcely right to teach that gall stones are always caused by infection of the gall bladder. We note that the authors quote an unfavourable report on the results of Cammidge's reaction, but it does not appear that they have any personal experience of it. We should have thought that an Esbach's tube stood well enough in an ordinary test-tube stand, and did not need the special receptacle which is here honoured by being figured in the text.

[4] *A Textbook of Medical Diagnosis.* By James M. Anders, M.D., Ph.D., LL.D., and L. Napoleon Boston, A.M., M.D. Philadelphia and London: W. B. Saunders and Co. 1911. (Sup. roy. 8vo, pp. 1195; figs. 418, plates 25. 25s. net.)

OCULAR MYOLOGY AND THE TREATMENT OF SQUINT.

Ophthalmic Myology,[5] by DR. G. C. SAVAGE, is a second edition of an elaborate work on the ocular muscles. The new edition consists of nearly 700 pages and has 84 illustrations. The author has made a lifelong study of the action of the extraocular muscles, and, as he states, he has for twenty years been at this disadvantage—namely, that in his teaching concerning the fundamental principles of ocular rotations he has been altogether opposed to that of Helmholtz. The points on which he differs are clearly set out. Dr. Savage is the great advocate of partial tenotomy for the cure of certain forms of heterophoria, and his method of operating is given, as well as a description of the various ingenious instruments he has suggested for its performance. He has invented numerous optical instruments also for the elucidation of the errors to which the muscular balance of the two eyes is subject. It is impossible in a short notice of so technical a book to discuss the various ideas which might call for criticism. All we need say is that it very fully sets forth the views of one who has given his best years to the study of the intricate problems the subject suggests.

In most of the textbooks mention is made of orthoptic treatment of squint, but in no case are careful and detailed explanations given as to how this treatment should be carried out. Even in books devoted especially to muscular derangements of the eye, organized methods of procedure are not invariably laid down. A book on the subject[6] by MM. TERRIEN and HUBERT therefore fills a real want in ophthalmic literature. It is a small work of 280 pages, printed on good paper in large type, written in clear and easy French. The following line of treatment is laid down: We are told that we must not think of correcting the refractive errors of a child under 3 years of age, but must rely upon instillations of atropine into the fixing eye if the squint be permanent in an eye; in alternating cases atropine may be used alternately in one eye or the other. By this means much may be done to prevent the onset of amblyopia. When the child is a little older an occlusive bandage may be necessary to force the amblyopic eye into use. Most ophthalmologists would consider the opinion of Worth and others to be the better—that it is absolutely essential to correct the refraction at once, and to order spectacles even to the nursing child. With patience an approximate retinoscopy is almost always possible in these very young infants, in fact in many cases

[5] *Ophthalmic Myology: a Systematic Treatise on the Ocular Muscles.* By G. C. Savage, M.D. Nashville, Tenn.: Mequiddy Printing Company. 1911. (Med. 8vo, pp. 696; figures 84, plates 5.)

[6] *Traitement adjuvant du strabisme.* Par F. Terrien et Hubert. Paris: G. Steinheil. 1912. (Med. 8vo, pp. 292; figs. 137. 4 francs.)

the infant is more easily managed than the spoilt child of 2 years old. Worth's special infant's spectacles are well tolerated, and if there is much refractive error the child actually demands them. When the refractive error is corrected the infant often ceases to squint. This is the sole criticism we have to offer on an excellent book, but it is a most important point, and it is surprising that the able authors, who quote freely from Worth's book, have not appreciated it. They go on to say that having provided the child of 3 with spectacles, the next procedure is to try to combat neutralization—in other words, to evoke diplopia. Neutralization is always present, because squinters do not possess binocular vision. This can be effected by using Rémy's diploscope or Terrien's synoscope, or often with Holmes's or Pigeons's stereoscope. Having got so far, we now try to get simultaneous vision and the fusion of the double images. Normal binocular vision follows in due course, and then exercises must be undertaken to improve and amplify binocular vision. The large diploscope is the instrument which the authors chiefly adopt, and a whole chapter of the book is devoted to describing it. Terrien freely admits that orthoptic treatment generally, in the case of convergent strabismus, ends in failure, and can only be regarded as a useful preparation for an operation, and a valuable means of treatment after such intervention. But divergent strabismus is far more amenable to orthoptic treatment, and the results are excellent. We can cordially recommend this useful book.

DISEASES OF CHILDREN.

THAT a second edition of Dr. STILL'S *Common Disorders and Diseases of Childhood*[7] has been called for within a comparatively short time may be taken as a testimonial to the many merits of the book. Its popularity is no doubt due to the practical character of the information it contains. It needs no very extensive experience of the ailments of children as met with either in private practice or in the out-patient departments of hospitals, to realize that the author is presenting to us in chapter after chapter pictures of disease drawn from life, and wonderfully true to life. His success in this difficult task is all the more remarkable because he has not confined his descriptions to those ailments which it is easy to depict because of their well-marked features and clear outlines. The titles of some of his most successful lectures, "Abdominal Pains in Children beyond the Age of Infancy," "Fever of Obscure Causation," "Bilious Attacks (so-called) in Children," show that he does not lack the courage to select subjects of considerable obscurity. In the matter of the artificial feeding of infants, Professor Still's views remain distinctly conservative. Although there are many passages which show that he is keenly alive to the danger of excess of sugar in the diet, he still holds to the belief that the commonest difficulty met with is in the digestion of protein, and that for mild cases of "curd dyspepsia" the sodium citrate addition is effectual. We are glad to see that he has nothing to say in favour of whole milk as the routine diet of very young infants. Although he regards the distinction between infective and non-infective diarrhoea as unreliable, he adopts a classification of the symptom diarrhoea under the three headings (1) Gastro-intestinal Catarrh, (2) Gastro-enteritis and Ileo-colitis, (3) Cholera Infantum, and states definitely that in the majority of cases infantile diarrhoea is due to some micro organism. We should have preferred to have found a more cautious statement, in view of the very slender evidence upon which the theory of the "epidemicity" and "infectivity" of infantile diarrhoea rests. The supposition which at present finds most favour on the Continent, that the increase of diarrhoea in the summer is due to a loss of tolerance for food, the direct result of heat, is dismissed in a sentence, because if such be the cause "the breast-fed should suffer equally with the hand-fed"—a statement which seems to ignore the common experience that diarrhoea in its most severe form most commonly affects the weakly and under-developed. The fact that resistance and the capacity for recovery are greater in breast-fed than in artificially fed children may explain the infrequency with which they are attacked and the trivial character of the disease when present.

Infant Feeding,[8] by CLIFFORD G. GRULEE, A.M., M.D., is a book which shows how close is the connexion between American and German medicine. In a surprisingly short space of time the work from the laboratories of Berlin, Munich, or Vienna, becomes the subject matter of works published in Chicago or New York. In Dr. Grulee's book the classification of disorders of nutrition proposed by Professor Finkelstein of Berlin is adopted, together with much of his teaching as to the important part played by the carbohydrate constituents of the food in the production of fermentative diarrhoea, and the acid green stools of infants. The reader will find a clear account of the dietetic treatment, as practised in Germany, of eczema, scurvy, and rickets, as well as a description of the symptoms and treatment of Czerny's exudative diathesis, and of the so-called spasmophilic diathesis. To those who have not time or opportunity to become familiar with even a small part of the enormous German literature which exists upon these and kindred subjects, the book should prove extremely useful. Well and clearly written, it is profusely illustrated both by coloured drawings of the stools of infants upon different diets, and by photographs showing the typical appearance of infants suffering from the disorders discussed.

THE MAKING OF NECROPSIES.

IN his book on *Post Mortems and Morbid Anatomy*[9] Dr. SHENNAN, Pathologist to the Royal Infirmary, Edinburgh, gives an account of the Edinburgh pathological teaching as modified by his own practice. The twenty chapters of which the book consists are well arranged, and take the reader through the examination of the body in more or less the same order, part by part, as the *post-mortem* examination is ordinarily made. The book is intended as a practical guide to the medical man or student who is called on to examine a cadaver, and Dr. Shennan devotes most of his pages to the naked-eye appearances and morbid anatomy of the various organs in disease. He gives brief accounts of the bacteriology and microscopy in a few of his chapters, where such additions are helpful. Twenty pages towards the end of the book explain the morbid changes produced by poisons; a few methods of preserving specimens, embedding tissues, and staining or preparing slides, are detailed; and tables for converting imperial into metrical measurements, or vice versa, are added. Dr. Shennan also gives an index of what may be called *post-mortem* literature for the last four years. The illustrations all represent naked-eye appearances; they are almost all reduced from photographs of specimens in the author's or other collections, and in most cases are excellent. In some, however, one cannot help thinking that the reduction in scale—to a third or a quarter of the natural size—has been carried too far, and that the pictures would have gained in clearness and value had it been possible to make them larger. We can cordially recommend Dr. Shennan's book to the attention of students, practitioners and pathologists. It is well and clearly written, the work of a practical man, thorough and complete without being unduly long. The volume is well got up, and has an excellent index.

NOTES ON BOOKS.

THE number of persons who are being led to take an interest in the manifold social problems included under the title of eugenics is steadily increasing. For all such as have had no biological or other technical training, Mr. and Mrs. WHETHAM have published a very useful and instructive little volume entitled *An Introduction to Eugenics*.[10] After giving a short historical sketch of the subject, in which a biographical notice of the late Sir Francis Galton rightly finds place, the authors deal in succeeding chapters

[7] *Common Disorders and Diseases of Childhood*. By G. F. Still, M.A., M.D., F.R.C.P., [illegible]. London: Henry Frowde and Hodder and Stoughton. Oblong 8vo, pp. 457, [illegible] 16s. net.)

[8] *Infant Feeding*. By Clifford G. Grulee, M.A., M.D., Assistant Professor of Pediatrics at Rush Medical College. Philadelphia and London: W. B. Saunders and Co. 1912. (Cr. pp. 295. 13s.)

[9] *Post Mortems and Morbid Anatomy*. By Theodore Shennan, M.D., F.R.C.S.Edin. London: Constable and Co. 1912. (Med. 8vo, pp. 511; plates 5, figs. 207. 18s. net.)

[10] *An Introduction to Eugenics*. By W. C. D. Whetham and C. D. Whetham. Cambridge: Bowes and Bowes; London: Macmillan and Co., Ltd.; Glasgow: James Maclehose and Sons. 1912. (Demy 8vo, pp. 74. 1s. net.)

with such subjects as racial qualities, methods of research, and the construction of society. The authors are well known by their writings on this subject, and their book forms an admirable introduction to the subject, and should be very helpful in educating the public in the vital importance to the community of a right understanding of the problems involved. It seems useless to expect Parliament to deal with these matters until there is a strong force of public opinion to urge it to take action, and it is only by pioneer work of this kind that the necessary stimulus can ever be attained. There appears to be a danger of eugenics becoming "fashionable." Medical men can do more than any other class of persons to keep it on the right lines, and to all those who have not already turned their attention to these matters, this volume may be commended.

Among the various possibilities of professional evolution in the near future inevitably suggested by the present crisis two stand out above the rest as clearly defined alternatives, and the free or constrained choice between them must largely govern the issue. On the one hand, Medicine may retain its economic independence and, with that, its autonomy in regard to the regulation of its activities—we may set its own house in order; on the other hand, the State may intervene, assuming the responsibility of providing for all citizens efficient medical attendance, and, as a natural corollary, that of paying the salaries of its official practitioners. We have received from Dr. ARTHUR TODD-WHITE a pamphlet entitled *S. M. S.: A State Medical Service*,[11] wherein he wholeheartedly advocates the second of these alternatives, pointing out that the thin edge of the wedge has already been inserted by the Insurance Act, and insisting that some such full-blown socialistic régime as he outlines is bound to follow. This argument hardly carries conviction at a moment when the Government seems to have renounced the attempt to provide medical benefits otherwise than in the form of a meagre pecuniary dole; nevertheless, the main features of Dr. Todd-White's forecast will doubtless be of interest to many. His higher officials of his State Medical Service are to be paid by the Treasury, the rank and file out of a rate specially levied by each county council. At the head of the service is to be a Minister of Public Health with a salary of £5,000 a year, and by him all appointments are to be made. Members of his council are to receive £1,500; consultants £2,500; the medical officers of districts and subdistricts, who will replace the private practitioner, £500 and £350 respectively; and assistant medical officers £250 per annum. Midwifery and operations are to be "extras," and there is to be "free choice of doctors" for the patients, subject to the condition that the number of patients assigned to each medical officer is to be limited. All members of the service are to have periodical opportunities of attending a three to six months' course of hospital study; definite "times off" and holidays are to be provided for by means of a special staff of "locums," and country members are to receive motor or horse allowance. Last, but by no means least, the medical civil servant is to share the privileges of his lay predecessors; after not less than thirty years of faithful service he is to be retired at 60 with a pension equal to one-third of his salary. We note with satisfaction that such a service would, in the author's opinion, provide work for all existing practitioners, "and many more," but the grounds for this conclusion are not stated.

Dr. V. E. HENDERSON'S *Textbook of Materia Medica and Pharmacy*[12] is intended for the use of medical students, and was originally written to meet the needs of the author's classes in the University of Toronto. It deals only with the subjects named in the title, and does not touch on therapeutics or pharmacology as some textbooks of materia medica do. The matter is presented in a condensed form. The relative importance of drugs is indicated by differences in the type used for their names, and small numbers are employed to show the greater or less importance of their preparations. Matter deemed superfluous has been rejected with judgement, and the book is very suitable for use as an adjunct to class instruction and for purposes of revision.

Readers of Mr. STEPHEN ANDREW'S much discussed novel, *Dr. Grey*, will doubtless remember the doctor hero's socialistic friend, the journalist Rufus O'Brien. In his new book, *Sable and Motley*,[13] which in some respects may be regarded as a sequel to the former, Mr. Andrew has given us the love story of that creedless Irishman with the daughter of a Church of England clergyman, whose wife is honestly convinced that no one can find salvation outside the pale of the Church. The inevitable conflict between the man of wide charity and no creed and the narrow Christianity of the hard-working, upright, and withal intensely unsympathetic woman is finely portrayed, as is the attitude of the peace-loving vicar, her husband, vainly endeavouring to mediate between progressive youth and stationary maturity. The unhappy mother, torn between her love for her daughter and her loyalty to her Church, is a tragic figure; but the gloom of the story is considerably relieved by a wonderfully vivid picture of a general election, with its accompanying intrigues, in an English manufacturing town. For that alone the book is well worth reading, whilst the occasional descriptions of slum life should provide food for thought for that large class of philanthropists which seems to regard the poorer classes as a convenient safety valve for their superfluous energy. Like the immortal Æsop, Mr. Andrew presents his moral in the form of a fable; but it is none the less plain for those who desire to see.

[11] Printed by Alex. Lamb, High Road and Hainault Road, Leyton.

[12] *A Textbook of Materia Medica and Pharmacy for Medical Students.* By V. E. Henderson, M.A., M.B. Toronto: University Press. 1912. (Med. 8vo, pp. 140.)

[13] *Sable and Motley.* By Stephen Andrew. Published by Greening and Co., Ltd., 91, St. Martin's Lane, London, W.C. 1912. (Pp. 316. Price 6s. net.)

MEDICAL AND SURGICAL APPLIANCES.

Test-Types for Young Children and Illiterates.

Dr. H. BEALE COLLINS, D.P.H. (Kingston-on-Thames), has arranged the "common object" test-types shown on a reduced scale in the diagram to correspond as nearly as possible with the letters of Snellen's types—$\frac{6}{6}$, $\frac{6}{9}$, $\frac{6}{12}$, etc. Dr. Collins writes: The limbs and minor characteristics of animals and parts of common objects cannot always be of the same relative size as the limbs of letters are in their scientific arrangements for Snellen's types. The trunk of the elephant, or the antennae of insects, must, in order to strike the eye by their similitude, be shown of a relatively larger size as compared with the bulk of the animal or insect. The body being compared to the thicker parts of the letter and the legs to the thinner parts, it is evident that in true proportions the trunk of the elephant, antennae, etc., or similar distinctive marks of an animal would be on too small a scale to be visible at the distance at which the grosser parts would be clearly seen. These grosser parts would be unrecognizable without the smaller characteristics, so each figure has been drawn of such a size that it may be recognized as a whole by a person with normal vision at the distance for which it is marked for use. A standard letter, or letters, is given on each line as a comparison, and it will be noticed that this is often very much smaller than the common object, but for ordinary sight it will be found to be just as clearly defined at the marked distance. It is not contended that these types can in any way supersede the use of Snellen's types, nor that when the figure is distinguished at the distance marked anything more than an approximate appreciation of the acuity of vision can be ascertained. It is of great importance in some cases to gauge the vision of young children before they know their letters. Other children decline to recognize letters who would be proud to show their acquaintance with animals and other objects of interest. The types may also be useful for persons of weak intellect, or for natives unacquainted with the Latin letters. The cards are to be obtained of Messrs. F. Davidson and Co., Great Portland Street, W.



MEDICAL EDUCATION IN EUROPE.

Two years ago the Carnegie Foundation for the Advancement of Teaching published in their Bulletin No. 4 a valuable report on medical education in the United States and Canada, by Professor Abraham Flexner, with an introduction by Professor Henry S. Pritchett, President of the Foundation, and this has now been supplemented by a report on medical education in Europe by the same authors.* This Bulletin No. 6, as it is called, is of the greatest value to all interested in medical education, and we commend its careful study not only to every member of the General Medical Council but to every teacher in our medical schools. The plan of the report is, after the introduction, a historical chapter, and one giving the number and distribution of medical practitioners in the countries considered, to describe the teaching as it is based, first, upon general education; secondly, on the preliminary sciences; the report then discusses the teaching of the special medical sciences, anatomy, physiology, and pathology, in the three countries; finally, clinical instruction, the curriculum, and the examinations. Later chapters deal with the financial aspects of medical education, with sects and quacks, post-graduate instruction, and the medical education of women. An appendix gives statistical tables of the cost of medical education in the universities of Prussia and Bavaria.

Those who have read Bulletin No. 4 will not be surprised in the introduction to the present volume to find the statement that if the lowest terms upon which a medical school can exist abroad were applied to the United States, three-fourths of its existing schools would be closed at once. The writer realizes that in America, and even to some extent in England, medical education is weakened by the unnecessary multiplication of medical schools, and he says:

> There is no opportunity to-day, either in England or America, for a wiser use of money if judiciously expended than in supporting on the right foundations the comparatively small number of medical schools needed in each country to train men to do the work of the profession. There is no field of human endeavour in which a wise Government can do more for civilization than in this cause. The man who has intelligently thought out the place of physician in our social world, or who [illegible] the enormous service which medicine is now rendering [illegible] in the future, not alone in the cure of disease, but in its prevention, will rise to his responsibility. It will be a source of hindrance to the work of civilization in the United States and England if there cannot be found those who will avail themselves of this great opportunity.

In the United States the production of doctors is largely in excess, there being 1 to 568 of the population, as compared with in England 1 to 1,107, in Germany 1 to 1,912, and in France 1 to 2,000. The report seems to assume that the German and French standard of 1 to 2,000 is sufficient, but we think this may be doubted, and that if it is tolerated in those countries it is because a large part of the population, especially in the country districts, regards the services of a doctor in ordinary illness as an unnecessary luxury and expense; but the difference between the two standards is so great that it may be readily admitted there is good ground for believing that the annual output of medical practitioners in the United States might be reduced by two-thirds with benefit to the medical profession and without any injury to the public interest.

Passing on to the educational questions, the writer of the report sees clearly the superiority of the German system, which requires in all cases evidence of sound general education before the student enters upon his professional studies. In this respect both France and Germany are in a more satisfactory condition than England, where the varying examinations accepted by the different licensing bodies and the low standard of the lowest of these, which [illegible] determines the general level, lead to the [illegible] into the medical schools of a number of ill-[illegible] youths who are unable to take advantage of the [illegible] provided for them, with results which are seen [illegible] of the medical curriculum, and the high percentage of failures at the qualifying examinations. These ill-trained students, moreover, being unable to teach themselves, demand an amount of tutorial instruction which is a burden upon the school, and the effect is at the best merely to enable them to scrape through their examinations without any adequate educational result. This and perhaps the excessive amount of time devoted to athletics are the chief defects pointed out in our British system of medical education. In Germany the writer notes the deficiency in the supply of anatomical subjects, and the corresponding excess of lecturing in anatomical teaching. Physiology also is said to be badly taught in Germany, as, owing to inadequate appliances, the student is not allowed to do things for himself. It is satisfactory to note that in both these particulars the methods of teaching in British schools meet with approval. Again, the authors rightly see that the teaching of medicine and surgery can be satisfactory only where the student is brought into actual contact with the cases, as he is by our system of clinical clerkships and dresserships, where the student is responsible for the case, and follows it to the end. No lecturing, however carefully performed, can take the place of this, even although the patient is there to be looked at and microscope slides and test tubes are handed round. The system in Germany by which the so-called "Praktikant" is called into the arena to examine the patient is considered to be a failure. Few answer to their names, still fewer seem capable of examining the cases, and after one or two timid attempts stand aside and allow the professor to proceed with his demonstration. "The professor does everything; it is a futile device." Nor is the "famulus" much better; it suggests the English clinical clerk, but is "inferior to the English analogue in authority of service, universality of custom and definiteness of responsibility," while not 50 per cent. of the students ever hold this post. The insertion of a hospital year between the university and professional practice has been introduced in Germany as a means of supplementing the deficiency in practical training, but, in the opinion of the author, has yielded disappointing results, partly owing to the students' want of training, the absence of any definite functions allotted to them, and also by the action of some hospital managers who have used them to do the work of assistants for which they are not fitted. Finally, two-thirds of this so-called hospital year may be spent in laboratory work. Practical midwifery seems also to suffer in Germany in the same way, the number of labours which the student must attend being only four. On the other hand, the reporter points out plainly the shortcomings of our British system. "The spoon-feeding of the student, the concentration of responsibility for a mechanically adequate equipment upon the tutors, are undoubtedly important factors in bringing about the general sterility of English medicine; for the ideal constantly held up is schoolboy mastery of the known."

Considerations of space forbid our dealing with many interesting subjects in this report, but we must say a word or two about the examinations. There are many who look on the State examination in Germany as maintaining a uniformly high standard of qualification, but this report is by no means entirely favourable to the system. We are told that "the details and specifications of the State are none too scrupulously obeyed" and are not, as a matter of fact, enforceable; that the examinations as conducted are hurried and crowded, and that haste leads to laxity; that the practical tests cannot be stringently or thoroughly applied; and that cramming flourishes. The State examinations are said to be less practical and more theoretical than the regulations design, that they bear no uniform or consistent character, and vary greatly with the individual. "A brilliant young Berliner admitted that he had shirked practical surgery, obstetrics, and gynaecology without consequences to his examination," while although students are undoubtedly often rejected in this subject or in that, occasionally a second time, "on the third trial they always pass." "At the critical moment, when an incompetent could be cut off, the barrier is lowered and he is invariably allowed to get over." On the other hand, the reporter believes that the General Medical Council in this country "has not been unsuccessful in maintaining the definite minimum, which is perhaps all that the one-portal system contemplates," and the latter would make "less educational difference than is expected, unless its establishment coincided with the modification of the national predi-

* [illegible] to the Carnegie Foundation [illegible]ng. By Abraham Flexner. Introduction [illegible] President of the Foundation. Bulletin [illegible]th. [illegible].

lection for examining and getting examined." In fact, the reporter's main objection to our British system is that we rely too much on examinations—our hospital appointments, for example, being reserved for men who have obtained what are called higher qualifications, which are given on an examination test of knowledge rather than for productive individual performances; that is to say, he would like to see the Membership of the College of Physicians and the Fellowship of the College of Surgeons given not for attainments in book knowledge, but for research work—a conclusion which seems to be quite in accordance with modern ideas, and might well be taken into consideration by the bodies concerned. The author recognizes the dilemma about examiners, for while the examination of students by their own teachers is not altogether satisfactory, an examination by outsiders alone is even more objectionable, and he thinks the British solution a decidedly happy one. "The profession governs itself, the examinations represent its pride in its own dignity and competence." They "demonstrate the feasibility of examining large numbers by the combined action of teachers and practitioners," while "arrangements are admirable," "partiality is eliminated," the "tests are increasingly practical," "evasion and vagueness get short shrift," and the "bearing of the examiners is informal, sympathetic, and easy." That the examinations have defects is not denied, but fortunately these "do not affect their fundamental merits."

The defects pointed out in British medical education are those of which the profession is fully aware. We suffer from defective preliminary education of the medical student, which interferes seriously with the teaching of the preliminary sciences, and in some places the equipment and arrangements for the teaching of these sciences are certainly not ideal; the system leans too much upon examinations, and tends to encourage cramming, to which the schools lend themselves by compelling their junior members to devote a large part of their time to tutorial instruction; there are too many systematic lectures in the practical classes, and there is no encouragement for research as the means of obtaining the professional prizes of hospital appointments. But while these defects are pointed out, the report shows that in no other country is the medical student made to do so much for himself, brought so closely into relation with the sick, or compelled to pass such a practical examination before receiving his qualification to practise.

REPORT OF THE METROPOLITAN ASYLUMS BOARD.*

THE Metropolitan Asylums Board, established in 1867, consists of fifty-five members elected by the metropolitan boards of guardians and eighteen members nominated by the Local Government Board. The area of administration of the Board includes all the unions and parishes in London, and it deals with those matters which it is considered can best be transacted by a central authority for the whole of the metropolis rather than by each separate board of guardians acting locally. The duties of the Board include the task of providing for the accommodation and treatment of infectious diseases arising in the metropolis and the incidental ambulance service necessary; provision for the care of the mentally defective who are not certified as lunatics; the care of various classes of Poor Law children, and, since November, 1911, the care of the casual poor in London.

The report of the Board for 1911 is of more than ordinary interest, for the reason that during that period measles and whooping-cough were for the first time treated in the infectious diseases hospitals; the casual poor also for the first time came under the care of the Board; and, lastly, a complete scheme was adopted for the systematic classification and treatment of the whole of the mentally defective persons of whatever grade for whose care the Board is responsible.

Infectious Diseases.

The number of patients admitted for treatment in the hospitals of the Board during the year was 21,138, an increase of 5,900 over that of 1910. This increase is mainly accounted for by an additional 1,500 diphtheria patients and by the measles and whooping-cough cases. Of the scarlet fever cases notified during 1911, as many as 89 per cent. were admitted to hospital, of diphtheria 85 per cent., of typhoid fever 51 per cent., and of small-pox 99 per cent. This is a considerable improvement over the early years of notification, for in 1890 the percentage of scarlet fever admissions was 43, of diphtheria 18, of typhoid fever 23, and of small-pox 37. The mortality per cent. in the case of scarlet fever was 1.9, diphtheria 8.9, bacteriological diphtheria 2, typhoid fever 14.3, measles 13.9, whooping-cough 13.2, and small-pox 15.7. Separate receiving-rooms for measles have now been provided at all the hospitals. The treatment of measles and whooping-cough has been sufficiently successful to justify the conclusion that these diseases have established a claim upon a portion of the hospital accommodation, and a scheme has been settled by which in the event of a well-marked seasonal rise in the numbers of scarlet fever and diphtheria patients a certain number of beds can be reserved for measles and whooping-cough if required for those diseases.

The substitution of motor for horse traction at the ambulance stations is now practically completed.

Mental Defectives.

Although the "insane" were included amongst the classes of poor for whose reception and relief the Board was formed in 1867, the persons to be admitted into the Board's imbecile asylums were defined in 1875 as such harmless persons of the chronic and imbecile class as could be lawfully detained in the workhouse. In 1897 feeble-minded children were included amongst the classes of poor persons to be received by the Board, and authority was subsequently given for their detention after 16 years of age. At the end of 1911 an Order of the Local Government Board defined the mentally defective persons to be received as

> persons not certified as lunatics, who, by reason of mental defect, are incapable of receiving proper benefit from ordinary instruction, or cannot be properly trained in association with other persons in ordinary schools or institutions, or are incapable of using ordinary means or precautions for protecting themselves from injury or improper usage or treatment, or are incapable of maintaining themselves by work; provided that any such poor person on admission into an asylum belonging to the Metropolitan Asylum Managers shall not exceed 21 years of age.

During 1911 a complete classification of all the mental defectives under the care of the Board was undertaken. The Darenth Asylum was turned into an industrial colony for the highest grades of mental defectives, who were properly classified, and the unimprovable imbeciles were sent temporarily to the Fountain Hospital, Tooting Grove.

Children.

In addition to children who are mentally defective, the Board is responsible for the care of Poor Law children who are sick, debilitated, or convalescent, who are suffering from contagious disease of the skin or scalp, from ophthalmia or other contagious disease of the eye, and those who are physically defective. These children are provided for in two hospitals for sick children, three sanatoriums or homes at the seaside, two ophthalmia schools, and one ringworm school.

The Casual Poor.

It has been clear for some years that there has been a lack of uniformity of administration in connexion with the treatment of the casual poor, and in 1911 definite steps were taken to secure greater uniformity so far as the metropolis was concerned. By an Order of the Local Government Board the metropolitan casual wards were transferred from the boards of guardians to the Metropolitan Asylums Board. It was anticipated that the Board would be able to make more adequate arrangements than had hitherto been practicable to inform the police of the wards in which there was a vacant accommodation, and thus ensure destitute wanderers and wayfarers the provision of the food and shelter of which they might be in need. It was hoped, moreover, to differentiate the occasional from the habitual vagrant, and to assist the former in securing employment.

* Metropolitan Asylums Board: Annual Report for the year 1911 (fourteenth year of issue). London: Ben Johnson and Co., Limited. 1912 (Pp. 258. 5s.)

Medical Supplement.

The medical supplement is edited, as in former years, by Dr. E. W. Goodall and Dr. F. M. Turner, who continue the information given in previous reports relating to the incidence of complications among the patients treated, post-scarlatinal diphtheria, antitoxin treatment, tracheotomy and intubation and laparotomy. Dr. Turner contributes a report on one year's experience of Dr. Milne's inunction treatment of scarlet fever, and Dr. A. F. Cameron reports on the treatment of scarlet fever on aseptic lines. In an instructive contribution to the medical supplement on the blood pressure in scarlet fever, Dr. J. D. Rolleston expresses the opinion that sphygmomanometry in scarlet fever, as in most of the other acute diseases, is of little practical importance in the acute stage, but in convalescence may give some indication of the severity of the renal lesion, which may be of value in the subsequent treatment of the patient.

BRITISH HOSPITALS ASSOCIATION.

The third annual conference of the British Hospitals Association was held at Birmingham on September 20th and 21st, under the presidency of Mr. J. B. Clarke, Chairman of the Board of Management of the Birmingham General Hospital.

The Lord Mayor, in welcoming the delegates, said Birmingham spent a great deal of money locally through the Health Committee, and a good part of it, £50,000 or £60,000 per annum, was spent in the maintenance of their different civic hospitals. Municipalities were more and more taking into their charge the public health of the city. To him this was all tending to the time when the communities would take entire charge of the public treatment of the sick. He thought the tendency was more and more to take hold of the hospitals. While it would ever be in the power of those who had the means to have private treatment of their illnesses, yet he thought as a rule it would be very soon brought about that the State would take—either by national means or, as he would prefer, by municipal agencies—the charge of all the hospitals. The national insurance against sickness was a step in the same direction. What action the hospitals would take he supposed they could not say until they knew what particular policy the doctors would adopt. He was not going into that matter except to say that he wished the Government would realize that they had a very strong public opinion in the direction of doctors being well paid. They did not want strict calculations made as to what was the lowest sum that would be a living wage for the well-educated doctor. He thought it would be to the advantage of every one that if the State took over nearly all the services of the medical profession, it should so remunerate that profession as to attract the most skilful men in the country. No money could be better spent than in improving the general health of the community.

Hospitals and the State.

A paper by Sir William Collins on this subject was read by Mr. Conrad Thies, in which he said that more than at any other time within living memory, the fundamental question of voluntaryism or communism in the matter of hospitals was engrossing the consideration of all thoughtful reformers. From two other sides had the Legislature led up to what almost amounted to an assault upon the voluntary hospitals as they had been known for the last two or three generations. A brief study of what was going on in regard to medical inspection and treatment of school children under the vague and casual powers of the Act of 1907 brought them up against the whole problem of the future of voluntary hospitals. The other direction from which recent legislative action would lead up to a review, if not a condemnation, of the voluntary hospital system, was the National Insurance Act. It was not easy to forecast the influence of this Act upon the hospitals. An attempt was made last year by the King's Hospital Fund, based on such materials as were available, to forecast the probable results. From this it appeared that the number of in-patients would not improbably be increased, by reason of the more systematic medical observation of the industrial population, even though the number of tuberculous cases admitted to hospital might eventually be reduced. Out-patients, on the other hand, might tend to be of a different class from those hitherto dealt with, and might not improbably be reduced in numbers. There appeared to be widespread apprehensions that contributions to hospitals, alike from employers and employed, would be reduced. He ventured to point out when the bill was introduced, and when on all sides there were expressions of approval of its amiable principles, that almost every detail raised a principle, and that a rather radical imperfection was embodied in the claim that the bill would provide all insured persons with full medical and surgical treatment, whereas the only means for supplying such benefits, in other than tuberculous cases, was to be by way of arrangement of Insurance Committees with individual general practitioners. The fact that the services of the hospitals were largely resorted to by general practitioners for persons of the insured or insurable class was either ignored, or it was tacitly assumed that they would be relied on in the future to discharge such benefits to the community, possibly even in a greater degree than before. The recent announcement that the antituberculosis crusade was to be a national one, and not confined to insured persons under the Act or their dependents, would doubtless raise, in a similar way to the treatment of school children and of insured persons, the rôle, if any, which the voluntary hospitals were to play. If the arrangements set up by public funds were outside the work of the hospitals, an artificial severance of tuberculous disease in its protean manifestations would result in much duplication of machinery both clinical and pathological. If a contribution per capita was to be made to hospitals in respect of insured persons treated therein, in view of the fact that a portion, at any rate, of such contribution came from the pocket of the insured, the compulsory contribution would reciprocally give rise to assertion of rights and the refusal to be used as "clinical material." Under a voluntary system such assertion was absent. As regarded the hospital staff, he supposed it was generally agreed that under a State or municipal service the visiting medical officers could not, or would not, any longer perform their duties in an honorary capacity. Whether the same class or type of visiting physicians and surgeons would be secured under a salaried system, controlled by a publicly appointed committee, was to say the least problematical. It had been estimated that if the hundred odd voluntary hospitals of London were put on the rates and staffed and managed after the fashion, say, of the Metropolitan Asylums Board institutions, it would mean a new charge of something like 8d. in the £ on the rates. Difficulty, however, would always be met with in dealing with (1) the urgent cases, which must be admitted irrespective of poverty, and (2) interesting clinical cases or cases of doubtful diagnosis, which would be franked or demand elaborate equipment which the general practitioner could not be expected to supply. This question of the abuse of out-patient departments, however, sank into relative insignificance beside that of voluntaryism or a State system for treatment of the sick and injured. Recent legislation had brought that question into the foreground. Was it to be answered by the application of principles or by mere eclecticism or empiricism? Was the presumption to be in favour of the State or of those charities remaining in private hands? The care and control of infectious disease and of lunacy requiring restraint, were clearly distinct from other cases of illness and cases of accident; State intervention in such cases might be justified on principles of which individualists would not disapprove. But, in other cases, a State system was beset with many difficulties. He would put in a plea to the effect that good voluntary work such as that which had been successfully organized in this country in the case of the general and special hospitals, which had supplied a felt want, had won the confidence of the public, inspired disinterested professional service among the most capable of the profession, and kept the healing of the sick from being impersonalized and stereotyped into routine and officialdom, should not be lightly thrown away through a mere careless acquiescence in a communistic trend.

Work and Training of a Hospital Almoner.

A paper on this subject was read by Mr. EDGAR S. KEMP (Secretary, Hospital Almoners' Council). He said the almoner was in the hospital as a reminder that doctors and social workers, hospitals and charitable societies, could only do their best work in combination. The first step would be to ascertain the suitability of the patient for treatment at the hospital. With regard to the grounds of the decision as to the suitability of a patient, whether any wage-limit could be fixed, and so on, he thought it was quite impossible to lay down any hard and fast rule. Particular rules might be laid down for particular classes when circumstances were normal, but the general principle must always be that each case must be judged on its merits. When it was decided that the patient might properly be treated at the hospital, it remained for the almoner to see that the treatment was effectively carried out and that the patient was benefiting by it to the full. The most important factor in this matter was the patient himself, who might not be disposed to follow the doctor's advice as to his mode of life—he might not be able to do so; his home conditions might be bad, his work might be unsuitable—all these were matters with which the almoner must deal. It might be thought that the mere provision of convalescent treatment or a surgical instrument would be a simple matter to an almoner accustomed to secure the co-operation of charities outside the hospital. That was true, but it did not necessarily follow that the matter was ended there; instruments must be worn regularly and must be properly looked after. Similarly, convalescent treatment might not be the only remedy required. In many cases no material help was required; advice only would bring about the desired effect. This advice must often be followed up by friendly visiting, which might have to be continued for a prolonged period. The quality which the almoner most needed was tact, not only that she might deal sympathetically and wisely with the patients, but that she might remain on good terms with the secretary, the governing body, and the medical staff of the hospital, as well as with all those others outside the hospital on whom the success of her work so much depended. The Hospital Almoners' Council, therefore, selected with the greatest care candidates to be trained for almoners' posts. The Council owed its initiation to Mr. C. S. Loch, of the Charity Organization Society. The Council started work experimentally as an independent body in November, 1907, and since that date had trained and given certificates to twenty-one almoners, who were now working in London and the provinces. The Council now numbered about fifty members, including representatives of the governing bodies and medical staffs of many of the London hospitals. Arrangements had recently been made to supply part of the training, in certain cases, in Leeds, where almoners trained by the Council were working. It was hoped later to extend this arrangement to other cities. The future of the movement was, he thought, assured; the recognition by the special committee of King Edward's Hospital Fund of the value of the system was a striking tribute to the devoted work of those almoners who had paved the way to a better order and a higher standard of treatment in hospitals. It remained for the hospitals to realize that just as they would not permit an unqualified medical man to deal with the ills of the body, so they could not allow an untrained person to tackle the no less important troubles and difficulties of the patients' lives.

The Insurance Act and Voluntary Hospitals.

DR. NATHAN RAW read a paper in which he said his experience in the administration of hospitals during the last twenty years had profoundly impressed him with the fact that a great change in their hospital system was inevitable. The work had become too onerous, and the number of persons who were now anxiously clamouring for hospital treatment was so enormous, that it was impossible to find the money requisite adequately to treat this army of sick people. The whole undertaking must be worked on sound business lines, and the treatment of disease must be conducted in the same way as any other municipal enterprise. Another point which had always impressed him was the inequality of treatment under the present system. Those fortunate enough to gain admission to a voluntary hospital received all necessary treatment without any question being asked as to payment, whilst those (in the same class of society) who were taken to Poor Law institutions were carefully scrutinized and made to pay, if possible, the full cost of their maintenance. Of the two systems the treatment under the Poor Law was undoubtedly the more equitable, and experience had shown that even the poor made no objection to pay for treatment. The Insurance Act would undoubtedly hasten on some such scheme with regard to voluntary hospitals. Under the Insurance Act two outstanding facts were before them: (1) No provision was made for the hospital treatment of insured persons; (2) no insured person might be treated by the Poor Law authorities. He estimated that when the Insurance Act was in full swing 30,000 beds would be required to deal with the illnesses of 15,000,00 insured persons. It was a grave defect of the Act that a carefully considered plan had not been prepared when it was framed; but perhaps this defect was only of a temporary character, and when the medical benefits were brought into force a proper arrangement would be made for hospital treatment. Undoubtedly more beds would be required in hospitals than were at present at the disposal of the working classes. In his opinion, in the course of a few years, when the funds had accumulated, the Insurance Committees would provide their own hospitals for the sole use of insured persons, with a properly paid professional staff, on the lines on which many of the German hospitals were conducted, and which worked so smoothly. He sincerely hoped the voluntary hospitals would all be prepared to offer treatment to insured persons on terms to be arranged, and so obviate the necessity of special hospitals.

DR. T. BASIL RHODES (Secretary and Hon. Governor, North Staffordshire Infirmary) in a paper on the same subject, said he did not propose to spend much time on the question how the National Insurance Act would affect the finances of the hospitals; but he was not convinced that great permanent loss of subscriptions would take place as a result of it. It was quite true that at this moment there was a very considerable tendency on the part of both private subscribers and working-class subscribers to withdraw their subscriptions, but he could not help feeling that the loss of income to the hospitals from voluntary subscriptions could be reduced to a small amount even now, and that, on the contrary, the income might actually be raised to a very large and satisfactory amount in the near future if, instead of anticipating loss of income, the hospital authorities throughout the country would make an urgent effort of a nature varying in different districts according to the particular conditions, to educate the public in the necessity for the existence of the hospitals and the advantages of the continuance of the voluntary system. The voluntary subscriptions might be considered as coming chiefly from two sources: A. From the private subscribers, who might be subdivided into (1) the private individual who gave from his own private funds, and (2) the employer of labour, as such, who subscribed as the head of a firm or establishment. B. From the working men and women. Referring first to Class A, Subsection 1, he felt sure there would always be a very large number of individuals throughout the country who would, from one reason or another, continue to give help to the hospitals as long as the voluntary system remained. The employer would also give, he believed, in a large number of cases from the same reasons that led the private individual to subscribe; but there was a further motive. It appeared to him that it could be shown to such employers that the hospitals were an absolute necessity, and were of considerable advantage to themselves for many reasons, not the least of which was that a case of accident might be treated at once in the most scientific manner possible, thus in many cases reducing the length of time during which payment under the Workmen's Compensation Act would have to be made. The employer would also very quickly realize that if the hospital which he had hitherto supported was placed on the rates or under the State, the contribution which he would be called upon to make would in all probability be much greater than the subscription which he now voluntarily paid. With regard to the working class subscribers, it was more difficult to judge, because so many forces were at work to influence them in bulk, and one could not be sure

that they would act as a body in the way in which he had little doubt they would act as individuals. There was another way in which the National Insurance Act might most grievously affect the voluntary system of hospitals, and that was in the relation of the hospitals to the medical profession. Taking first the "sanatorium benefit," the medical profession had decided that they would, under certain conditions, carry out this portion of the Act. It followed that cases of tuberculosis requiring such treatment as could only be suitably obtained in a general hospital would have to be sent into such a hospital. There seemed to be two courses open to the honorary medical staff of the hospital in regard to such cases: (*a*) They might decide to treat them as at present—without payment; or (*b*) demand a fee in respect of each patient treated. (*a*) If no payment was asked for by the medical staff in respect of these patients, then the situation as between the hospitals and the medical staff remained unchanged as far as that portion of the Act was concerned; but he thought it very unlikely that in those circumstances the medical staff would wish the hospital to receive payment from the State in respect of those cases. (*b*) If payment was asked for by the medical staff in respect of these "tuberculosis" patients, then it would follow that in each hospital a certain number of beds must be definitely allocated to cases of tuberculosis, and a definite charge made under the Insurance Act for each patient treated therein, and a definite payment (the amount of which would presumably be settled by the medical profession) would have to be made to the medical men in respect of each case. It seemed to him that from the moment any payment whatever was made in respect of patients treated in hospital to a member of the honorary medical staff, he ceased from that moment to be an honorary officer of that hospital. Further than this, it seemed to him that in a district where the members of the honorary medical staff were also general practitioners, the other general practitioners in the district who were not upon the staff of the hospital would be likely to insist that those beds allocated to cases of tuberculosis should be thrown open to all the medical practitioners in the district. With regard to the question of "medical benefits"—the second portion of the Act, which was to be in working after January 15th, 1913—it was impossible as yet to judge what the relation of the medical profession to the hospital would be, but he would presume for the purpose of discussion that some agreement would be come to between the medical profession and the Government, so that the "medical benefits" portion of the Act would be administered. Presuming, then, that the Act was to be in full working order in January next, with the full agreement of the medical profession, it would, he thought, be unfair to expect the honorary medical officers at any voluntary hospital to treat free of charge persons insured under the Act, whose medical attendance was already paid for by means of a capitation grant payable to the doctor chosen from the panel. It had, therefore, been said that the hospitals must at once announce that they would not treat persons insured under the Act either as in-patients or out-patients, except in cases of emergency. To take this step seemed to him both unnecessary and suicidal. Suicidal, because he felt convinced that the subscriptions from the working men would cease at once as a result; unnecessary, because he thought that the medical profession and the hospitals' committees working together in agreement could quite well make such arrangements as would allow of the treatment in hospitals of "insured" persons under certain agreed upon conditions. Two main factors must be considered by those who desired to preserve the voluntary system of hospitals: (*a*) The relationship of the medical profession to the hospitals; (*b*) the effect of the National Insurance Act upon the annual income of the hospitals. In regard to (*a*)—which seemed to him the factor which would have most immediate effect—he had endeavoured to suggest a scheme which, after consideration by the medical profession and the committees of hospitals, might be successful in preserving the present excellent arrangement, which was probably the best for the patients, for the hospitals, and for the medical profession. In regard to (*b*) he submitted a [illegible] which, if adopted by the hospitals and acted upon by the State, would, in his opinion, postpone for some considerable time the necessity on the part of the State to find the enormous sums that would be required for the maintenance of the general hospitals of the country, and would retain for the voluntary subscribers the general control and management of the hospitals which they support. The suggestion was that *at the end* of the financial year each hospital should be submitted to an examination by an inspector appointed by the State on the following points:

1. Has there been during the past year any expenditure which was markedly needless or avoidable?
2. Has sufficient effort been made by the management to retain or increase the voluntary subscriptions?
3. Having regard to the condition of the buildings when the National Insurance Act came into force, does the condition of those buildings show that suitable efforts have been made to set them in proper condition or maintain them in such condition?
4. Is the number of beds available in the hospital adequate for the general requirements of the district served?

It would perhaps be necessary to add further points upon which examination should be made, but it was not necessary to go into details at that moment.

Provided that the report of the inspector was satisfactory the hospital should be entitled to receive from the State *the exact sum of money by which the expenditure for the year had exceeded the income for that year.*. It could not, he thought, be argued that a payment from the State under circumstances such as the above was a payment for particular patients treated under the Insurance Act.

Mr. Thies, in opening the discussion, said the support given by the working classes to provincial hospitals had been on a large scale and was very admirable, but in London it was entirely different. There the contributions were so small as to be scarcely worth consideration. In nearly every other country in the world the community had taken upon itself to provide adequately for the sick. He thought that in this country eventually they would have a scheme in which each patient in hospital paid in accordance with his means, and those too poor were paid for by the district from which they came, as in Germany.

Hospital Management Considered with Reference to Responsibility.

Mr. J. Danvers Power, M.V.O., read a paper on this subject. He said it might be thought that any condition of affairs under which a public necessity was supplied by private generosity was likely to bring out some of human nature's better feelings. Unfortunately the reverse was the case. Every hospital manager knew that the coroner's jury, the Poor Law guardian, even newspaper editors of a kind, fell with great ease into a state of joyful readiness to fear the worst whenever a hospital was attacked. It was far too late in the day to tell them that subscribers could do as they pleased with their own. The responsibility of a hospital committee could no longer be limited to the roomful of empty chairs known as the annual meeting of governors and members. The chief importance of this fact at the present time lay in the danger of State interference with hospital work. It would, he thought, be admitted that destructive legislation was nearly always preceded by a cloud of prejudice; and in all attempts to deal with prejudice which he had had opportunities of observing, nothing had struck him more than the important part which responsibility played. Responsibility, placed on the right shoulders, would have killed half the so-called hospital scandals of recent years even after the fact; while, under a proper allocation of it from the outset, the other half would never have come to birth at all. In the case of hospitals, an example of divided responsibility which at once occurred to the mind was to be found in the work of the staff and the lay committee. About some of that work there could be no question. But there was a wide stretch of country between the physician's prescription and the kitchenmaid's evening out. Another example of responsibility divided between staff and committee was to be found in connexion with the admission of patients—a frequent subject of complaint by hospital critics, at any rate in London. It was said that wards were unduly filled with doctors' "request" cases, and that "uninteresting" illness was at a disadvantage. It was clear that none but a doctor could say whether a doubtful case was a proper one for admission; and personally he believed that in this matter the public would, on the

whole, be better off in the doctors' hands alone than under any system of interference by the subscribers. The rise of the central collecting fund also raised some important considerations connected with responsibility. The managers of these funds owed their first duty to those whose money they handled. They must consider destination, necessity, and economy. If a question arose as to money granted going directly or indirectly to medical schools they would properly take the best advice they could get, the more independent the better, and act upon it. If a hospital were already fully endowed they would not proceed to overendow it by grants. If a hospital wasted its subscribers' money they would not give it more than would have been necessary had it acted prudently. In all these matters the fund must take the responsibility of its own acts. But in order to be able to act, it must be in a position to judge. It could not judge without uniform accounts and statistics from the various institutions, and an excellent example of the wise allocation of responsibility within responsibility was to be found in the course taken on the establishment of the existing revised system, which was the work of representative hospital secretaries themselves, assisted by the highest professional advice. The collecting fund might also disseminate information which only such a fund could conveniently collect. It might arbitrate in cases of dispute, if invited to do so. But anything beyond this should be very carefully considered. There might be no harm in sending visitors to make an amateur inspection of a hospital. But he was very strongly opposed to a central fund giving any definite advice on internal management unless it was prepared to take the responsibility for the consequences. That was a test which, in common fairness, should never be lost sight of. The very life of the voluntary hospital system was local management. If that were once touched by central authority in the matter of details, the best argument for the retention of the voluntary system was taken away. With any such proceeding he would in no case be associated, but if others differed at least he ventured to advise that responsibility should never be divided.

Mr. GILBERT BARLING (Birmingham General Hospital) agreed there must be one responsible body for the administration of the hospitals, and the management committee or board must be the authority. The question was how could they satisfy a voluntary medical staff without splitting authority. With regard to the voluntary hospital system, there was so much to be said for it that he desired himself that it should continue to be their system; but he did not desire to see the voluntary system continued unless it were to be an efficient system. The question of efficiency greatly depended upon money. He acknowledged that many Poor Law infirmaries were efficient and well administered, but there was still an atmosphere of Poor Law about them, and people felt that they would rather avoid the Poor Law and prefer to go to the municipal or voluntary hospital. He felt that hospital treatment must become more and more expensive as it became more and more specialized, but whilst that was so one could not help being struck by the way in which expenditure was kept within bounds by the constant supervision of the accounts. In regard to Mr. Danvers Power's remarks on "request" cases, he asked how were cases to be admitted? He thought they would do away with the ticket system if they could, but this system was responsible for an annual income of about £3,000, and how were they to make that up? He thought the best way was to keep the system, but to work it in a reasonable spirit.

Mr. DANVERS POWER, in replying, said what he wanted to deal with was this: that the public was on the one side and the hospital on the other. The public would criticize the hospital if it had half a chance, and he contended that the public, when it began its criticism, should know whether it was criticizing the management, the medical staff, or the religious side of the hospital. He was afraid the question of efficiency that Mr. Barling hoped would be forwarded, or thought might be forwarded, by some State or municipal system would be a subject of party warfare. He was very much afraid he would find in other parts of the country that State or municipal hospitals would provide very inferior results to those now being shown by the voluntary system.

SCIENCE NOTES.

THOSE who desire to read Mr. J. Reid Moir's own account of the circumstances attending the finding of the human skeleton in a glacial deposit at Ipswich—a discovery to which many references have recently been made in these columns, the last by Professor Keith in his address to the British Association—will find the text in the *Proceedings of the Prehistoric Society of East Anglia for 1910–12* (vol. i, Part II, London, H. K. Lewis, price 3s. 6d.). The paper is illustrated by a diagram of the relation of the strata at the place where the discovery was made and a photograph showing how very near the surface the remains lay. Mr. Moir's paper is followed by a description of the skeleton by Dr. Keith, illustrated by a diagram showing the flexed position in which the remains lay, diagrams of the skull, and photographs of the remains in the Museum of the Royal College of Surgeons still embedded in the original matrix. In this instance the value of the discovery was greatly increased by the fact that Mr. Moir, finding the bones very friable, did not attempt to detach them, but removed the whole block of material in which they lay. The same issue of the *Proceedings* contains two papers by Dr. Allen Sturge, a vice-president and former president of the society. The one, of a highly technical character, deals with the patina of flint implements, and gives the result of an elaborate study of his own large collection of such implements. The second paper deals with implements of the later palæolithic cave period in East Anglia, and is illustrated by a large number of photographs. The *Proceedings* also contain a valuable discussion by Mr. F. N. Haward on the chipping of flints by natural agencies. The general conclusions with regard to the chipped stones called "eoliths" are that too much importance has been attached to the similarity of shape only, too little notice taken of the rubbish associated with them, and too little regard paid to the action of Nature in the past. With regard to the reference to eoliths contained in Professor Keith's address, we have received the following note from Mr. Benjamin Harrison:

> May I correct a mistake concerning the discovery of eoliths, and my share in it, which is contained in Professor Keith's admirable lecture on the antiquity of man, printed in your issue of September 21st?
>
> Professor Keith says that the Kentish plateau eoliths were first found by Professor Prestwich in 1859, and then goes on to say: "Thousands of these eoliths were collected by Mr. Benjamin Harrison."
>
> As a matter of fact, Professor Prestwich saw the first eoliths in 1888, when I brought them before him, whereas I first discovered them in 1865.

Dr. Hermann Dold, in a recent essay[1] on the highly important but still unsolved problems as to the essential nature of anaphylaxis, accepts the opinion of Friedberger that the doctrine of the specificity of antigens and antibodies is not violated by the assumption that non-specific toxic substance (anaphylatoxin) may be formed from specific albumoses by the agency of either specific or non-specific antibodies. In other words, whilst the intact albumose and perhaps also the most complex of its decomposition products remain specific, the further products of decomposition are no longer specific, but possess in common the properties of anaphylatoxin without reference to the original substance from which they were derived. The formation of these non-specific substances is, in his opinion, the explanation of the fact that symptoms alike in character are often found in infections due to widely different micro-organisms. Many infections, for example, which have nothing to do with the cholera bacillus may produce a clinical picture closely resembling cholera. He considers, furthermore, that the formation of anaphylatoxin must be regarded as distinct from those processes of bacteriolysis which lead to the liberation of endotoxins. In natural infections, apart from such specific toxin formation as occurs in diphtheria and tetanus, there are three distinct processes simultaneously at work—bacteriolysis, phagocytosis, and formation of anaphylatoxin; these three interfere with each other in greater or less degree, and so add to the variety and complexity of the clinical manifestations. It is impossible, in the present limitations of our

[1] *Das Bakterien-Anaphylatoxin und seine Bedeutung für die Infektion.* Von Dr. Hermann Dold. Jena: Gustav Fischer. 1912. (Demy 8vo, pp. 80; Taf. 14, 6 Figg., 4 Abb. M. 2.80.)

knowledge, to give preference to one or other of the numerous rival theories which have been put forward in explanation of anaphylaxis, but it may be said that Dr. Dold advocates his case skilfully and bases his arguments on an interesting series of carefully planned laboratory experiments.

Decastello and Krjukoff have published a monograph [1] on the structure of the blood cells which contains several new ideas. They take exception to the very general view that the blood cells, and more particularly their nuclei, are of the nature of vesicles enclosed in a membrane. They consider that a much more accurate conception is obtained by regarding them as agglomerations of highly convoluted strands or fibres. With regard to the polymorphs, their view is that the transformation from the originally compact nucleus into the multipartite form is not a result of external forces, but is due to an inherent modifying tendency of the nuclear strands themselves. The nucleus and the cytoplasm are not, anatomically and functionally, so essentially distinct as is generally supposed; they are, indeed, most intimately bound up with each other, and many strands from the nucleus pass into the cytoplasm and become constituent parts thereof. In regard to the cell granules, they hold the view that they are not products of secretion, but that they are variously modified segments of the karyogenetic strands. The blood platelets, again, undoubtedly arise from the cytoplasm of the leucocytes and show structural differences according to the type of cell from which they have derived their origin. As a logical conclusion, Decastello and Krjukoff do not confine their views to the cells of the blood, but extend them as of general applicability to all cells. It is not easy to criticize these views without actually repeating the observations along the lines adopted. The idea of the intimate connexion between the nucleus and cytoplasm is new, not so much in sense as in form. Recent researches have gone far to show that the two parts of the cell are not so sharply differentiated as was believed ten or twenty years ago, but it is difficult to admit at first sight that the morphological connexion is so closely connected as they would make out. We do not doubt the correctness of their observations, but the matter leaves room for much variety of interpretation. Their opinion on the evolution of the polymorph nucleus is a trifle obscure. The work, however, is worthy of serious consideration.

LITERARY NOTES.

An amusing account of Vichy in the seventeenth century is given by Madame de Sévigné. In a letter to her daughter, Madame de Grignan, dated May 20th, 1676, she says:

I took the waters this morning, my dearest. Oh how nasty they are! . . . We go at six o'clock to the spring, everybody is there. We drink and make very wry faces, for only fancy! they are boiling hot and have a very unpleasant taste of saltpetre. We go and come, take a walk, hear mass, pass the waters, speak confidently of the manner in which we do this; this is the only subject of conversation till noon. Then we dine. After dinner we spend the afternoon with some one of the party. To-day it is my turn to be hostess. . . . At five o'clock we take a walk in delightful country. At seven we have a light supper and at ten we go to bed.

In another letter, dated May 28th, she says:

I began the douche to-day. It is a fairly good rehearsal of purgatory. One is naked in a little underground place, where there is a pipe of the hot water, which a woman plays on you wherever you wish. This state, in which one scarcely retains a fig leaf by way of clothing, is somewhat humiliating. I should have liked to have had my two maids that I might see some one whom I knew. Behind a curtain is placed some one who keeps up your courage during half an hour. In my case it was a doctor from Gannat, whom Madame de Nemilles has taken with her to all her watering places. She likes him much. He is a [illegible] fellow—not a quack, and without prejudices. She sent him to me out of pure friendship. I will keep him, whatever it costs, for the doctors here are unbearable, and this man amuses me. He is not like an uncouth doctor. . . . He has wit and good manners. He knows the world, and I am satisfied with him. He spoke to me while I was in torture. Picture to yourself a jet of water as boiling hot as you can imagine thrown against any part of your poor body. At first the alarm is spread everywhere in order to stir the spirits into movement. Then an attack is made on the joints which are affected. But when they come to the nape of the neck it is a kind of fire and a surprise beyond understanding. That, however, is the essence of the matter. Everything has to be suffered and one does suffer everything, and one is not burnt, and afterwards we go to a warm bed where we sweat profusely and it is that which cures us. Here, again, is where my doctor is good. For instead of leaving me to two hours of the boredom, which is inseparable from the sweating, I make him read to me and that amuses me.

On June 1st she recurs to her doctor, whom she is trying to induce to study the philosophy of Descartes, and she says:

He knows how to live. He is not a quack. He practises medicine as a gentleman.

We hear more of her doctors over twenty years later in a letter written from Bourbon on September 22nd, 1687:

We have a doctor who pleases me. This is Amiot, a man with a reasonable dislike of bleeding. He has a good opinion of Vichy, but is convinced that the water of this place will do me at least as much good. As for the douche he will have it administered as delicately as if he did not wish me to have it at all. He says we should inform M. Alliot that the remedy is too violent and more apt to excite the nerves than to cure them; that purging the humours and the sweatings which the water and the hot baths will cause will be enough. He speaks sensibly and will guide me with the greatest care.

Elsewhere she says of Amiot:

Besides being a very good physician, he has here a little apothecary who is capacity, wisdom, and experience itself. Both say, No douche. They would think it a crime to attack a health such as mine. In a word, they excite confidence by being the first to condemn their remedies when they are not suitable.

The Boy Scout movement, so deservedly popular in England, has proved such a signal success in America that a demand has arisen in that country for a similar association for girls. In place, however, of an organization formed on the lines of the girl scouts, such as has been started on this side of the Atlantic, there has been founded a society of "Camp Fire Girls," an interesting account of which has been given by Dr. Luther H. Gulick in the September number of *The Child*. The ostensible purpose of this association, he says, is to encourage girls of all classes to lead "a healthy, out-of-door life under conditions similar to those planned for the boy scout." But the movement has, in reality, a far wider aim than the fostering of the virtues of courage and self-reliance in the future mothers of the American nation, and in course of time should have a far-reaching effect upon the future of the race itself. Its founders have realized that "protection of infant life is the basis of racial improvement, and is as essential to national progress as other economic necessities"; and the Camp Fire Girls are taught above all else the art of home making and the care of children. There is every reason to hope, therefore, that thus equipped for their life-work, the next generation of American women will be able to avoid the mistakes of the present, and so prevent in great part the frightful waste in child life which to-day forms one of America's most pressing problems. The high rate of infant mortality is the subject of an article by Dr. Joseph S. Neff which appears in the same number of *The Child*. The author demonstrates the usefulness of "Milk-shows" and similar exhibitions as a means of educating ignorant or indifferent parents in their duty towards their children. These exhibitions are largely used in the United States for the purpose of showing the dangers of improper feeding; and the success of this second "Children's Crusade" may be judged from the fact that in Philadelphia alone the returns for the year 1911 show a reduction of 12 per cent. in the mortality amongst babies under one year of age as compared with that of the previous year. The same number of *The Child* also contains an interesting discussion by Dr. Gordon Evans as to the choice of an anæsthetic for children, and an article by Dr. H. Maughan Brown on the effects of wage earning amongst working schoolboys; whilst Madame Emilia V. Kauffmann de Voss has contributed a short account of the Child Study and School Hygiene Section of the Royal Institute of Public Health Congress held last July in Berlin.

[1] [illegible] By Priv.-Doz. Dr. [illegible] and Dr. [illegible] Krjukoff. Berlin and Vienna: Urban and Schwarzenberg. 1912. Roy. 8vo, pp. 126, with 2 coloured lithographic plates. M 16., bound M.18.)

British Medical Journal.

SATURDAY, SEPTEMBER 28TH, 1912.

THE TREATMENT OF CANCER.

LAST week we published an abstract of the address on the non-operative treatment of cancer delivered by Professor Czerny of Heidelberg before the congress of German scientists and physicians at Münster. This utterance has been anxiously awaited, the more so as Dr. Zeller[1] recently published an account of his method of treating cases of the disease, for which he claims remarkable success. We must confess that the perusal of Professor Czerny's address has disappointed our hopes, even though the improbability of its containing an announcement of sensational character was recognized. Looked at broadly, Professor Czerny's opinion on the subject appears to be somewhat as follows: When a cancer can be radically removed, operative treatment is at present by far the best. On the other hand, when the disease has reached that stage where it is the mere despair of surgery—that is, when it has become complicated by metastasis to internal organs and by cachexia—the only thing to be done is to apply such means as may lessen the suffering of the patient and keep him as comfortable as possible in the last stage of his disease. But between these extremes there are many cases in which surgical treatment alone is unlikely to effect a cure and for which palliative measures are not appropriate. A host of remedies exist, which may be employed in these cases, although the practitioner is not justified in the present state of knowledge in building great hopes on any of them. These remedies may be regarded as agents which attack the cancer cells directly or which produce some indirect effect on the growth. Of the former class, the varieties of therapeutic rays—such as those emitted from the Roentgen apparatus, from radium, actinium, mesothorium, and the like—and fulguration and its modifications have apparently yielded the best results in Professor Czerny's hands. When the growth can be reached directly he removes as much as he can by a surgical operation and destroys the rest *in situ* by one or other of these means. But he warns us that the rays will not prevent recurrence. He therefore attempts to supplement this direct local treatment by indirect and more general methods, such as the intravenous or subcutaneous exhibition or cholin combined with boron, or silicic acid, while he aims at improving the condition of the patient by the exhibition of arsenic and other forms of tonic treatment. But he does not claim when all this has been carried out to be able to guarantee cure. His remarks on Dr. Zeller's arsenic paste are cautious, and he merely states that some very remarkable results have been achieved by its means, but that sufficient time has not yet elapsed for the observer to form an opinion as to the curative effect.

In all this Professor Czerny has scarcely told us anything new. True, his utterances will do good by urging the medical world to regard "cures" of cancer with caution, if not with suspicion. But the victim of cancer is in [illegible] position to-day as he was yesterday, and u[illegible]ly we can only re[illegible] the opinion we have [illegible] treatment of malignant disease, provided the operation is performed at an early stage, is still the one treatment which offers real hope of cure.

There is a very serious aspect of this matter, apart from the urgency of the case from the point of view of the patient. Professor Czerny touched on a very large number of methods of treating cancer which have been introduced within comparatively recent times, and said that each year brings forth fresh ones. In many instances the introducer of the method, directly or indirectly, proclaims that his remedy will effect a cure. In the interest of the public we would urge that each new remedy or method of treatment should be exhaustively investigated before any announcements as to its efficacy are published. We even regard it as inadvisable to deal with these matters in medical journals at an early stage and on short clinical experience alone, for what appears in the professional press soon finds its way to the public, and out of the modest statements of the scientific investigator may grow an altogether disproportionate assertion to the public that a cure has been discovered.

Who is to carry out the investigation of a new remedy? And where should this be done? Professor Czerny suggests that the State should equip and support institutions for this purpose, and expresses the opinion that if Germany and England were to have some forty such institutions apiece, the cancer question would be solved in fifty years, and the incidence of the disease would be reduced by one-half within that period. We agree that the cost of searching for a true explanation of malignant disease and for a cure should be borne by the community, since the community will gain by a solution of the problem. But in this country, at least, some difficulties would arise were a number of institutions founded by the State. The chief difficulty would be that for practical working these institutions would have to be attached to hospitals or clinics, and as long as hospitals remain free from State control such a plan would present many pitfalls. On the other hand, a State subsidy, if of sufficient magnitude to ensure success, might with advantage be granted. This sum could be distributed to the research departments of hospitals, or, in the case of hospitals which do not possess them, for the purpose of enabling them to create such departments, in order that the work might be carried out by expert workers under the supervision of clinicians and an experienced head of the department. We feel convinced that those practitioners whose ingenuity enables them to suggest fresh modes of grappling with the problem would find welcome and assistance in these departments and a fruitful field for their activities therein.

[1] *Muench. med. Woch.*, August 20th and 27th, 1912; and BRITISH MEDICAL JOURNAL, September 14th, 1912, p. 653.

FICTION ABOUT HOSPITALS.

AT the conference of the British Hospitals Association, held last week at Birmingham, Mr. Danvers Power, discussing the question of responsibility in relation to hospital management, said it might be thought that institutions which are necessary to the people and are supported by private generosity would be likely to bring out some of human nature's best feelings. But it is notorious that the reverse is the case. Men of all kinds take a pleasure in girding at hospitals. The coroner's jury, the Poor Law guardian, the newspaper editor, "fall with great

ease into a state of joyful readiness to fear the worst whenever a hospital is attacked." A particularly flagrant example of this readiness to believe evil has just come under our notice.

In a recent number of Cassell's *Magazine of Fiction* an article by Pearkes Withers, a writer whose name is unknown to us, entitled "The Scandal of our Hospitals," appropriately finds a place. The "scandal," we gather, is that hospitals are used as "training grounds for the medical men of to-morrow, experimenting grounds for the medical men of to-day." Then we have the old parrot cry about the number of students who "walk" the hospital, the number of cases upon which unfeeling demonstrations are made by doctors, the number of perfectly needless operations, and so forth. Complaint is made that patients are not always admitted. "'We are full,' the officials cry, with a ward of empty beds and the spiders busy upon the doorposts. 'You must pay or get a letter,' they declare, unmindful of the fact that they are pledged to tend the necessitous sick free of charge." Evidently Pearkes Withers has no first-hand knowledge of hospitals, or he would be aware that they are in a chronic state of congestion. He would know, too, that they do not take payment, and that the complaint against them is just the other way—that they sometimes take patients who could very well afford to pay. That is the real hospital scandal.

Pearkes Withers is good enough to admit that the hospital undoubtedly endeavours to cure; but he adds that it is before all things determined to teach, and in teaching it takes the meanest advantage of poverty. He pictures the feelings of a wealthy middle-class merchant if a doctor called in to attend his wife in illness brought a dozen students with him into the sick-room, and, ignoring the wife's agony and need of immediate attention, discoursed learnedly upon her sufferings to the staring youths. Yet, he says, such an incident is the veriest commonplace of a lying-in hospital. Now, if this writer knew anything at all about hospitals, he would know that a lying-in hospital is the place of all others where such a scene is almost inconceivable. The lying-in hospitals are very few, and admission to them is jealously guarded. And may we ask Pearkes Withers how he supposes medical students are to learn their business unless it is by seeing patients treated and helping to carry out the details? Would he care to be attended by a man who had never been inside a hospital ward, or to have his wife ministered to in her hour of travail by one who had never seen or assisted in a delivery? As for the suggestion that patients are made the "victims of surgical science in hospitals," this insinuation again betrays an ignorance that should have prevented this confident critic of hospitals from attacking these institutions. It has been truly said that in these days it is the poor that get the very best of surgical treatment. The real need is provision for the middle classes, who cannot afford to pay for the costly ritual of modern surgery. This raises a question which it would carry us too far to discuss here, and that is the erection of hospitals or of departments in general hospitals for the rich. Lord Salisbury not long ago called attention to the fact that the Duchess of Connaught when ill recently in Canada had herself taken to a hospital. As every one who knows hospitals from the inside can testify, patients are better looked after in a hospital than they could be in their own homes, and we may point out to Pearkes Withers that the very publicity of which he complains and the presence of students is the strongest possible guarantee against abuse. He insists that though doctors must be trained their education must not be obtained under false pretences. "It is for the patients to decide whether or not they shall be mauled about by incompetent youngsters." The animus of the writer is well displayed by this sentence. That students do examine patients is, of course, true, and it would be interesting to know how the hand, the eye, and the ear are to be educated to the delicate work unless by practice on living patients. Would Pearkes Withers place much confidence in an examination made by a practitioner who had never before examined a chest? He draws a picture which would be touching if it were not so ludicrously unlike the truth, of a sensitive young woman objecting to have her case lectured upon before a score of young men, and he says it should be made a legal offence to force any woman or girl to uncover her body so that it may be inspected by a swarm of mere students. In the first place, no one is forced. If a patient objects to such examination, her scruples will in practice be respected, and, of course, in any case she has the alternative of leaving the hospital. In the second place, we should like to know precisely at what time a practitioner becomes, in Pearkes Withers's opinion, capable of seeing an uncovered body. Obviously not when he is a mere student; then, presumably, when he is qualified. But a man who had never seen the naked body would stand a poor chance of ever being qualified, and we do not think that even if he managed to get qualified a woman would care to know that she was absolutely the first he had examined. The fact is that, as any one conversant with hospital life could have told him, objections of this kind are extremely rare, and the picture is the product of a prurient imagination.

Then we are told further that it should be made a criminal attempt for hospital doctors to neglect the common, but none the less serious, ailments of humanity in favour of out of the way maladies. Hospitals, it is sagely said, are supposed to exist for the alleviation of human suffering of every kind. If Pearkes Withers would look in at any out-patient department he would see for himself every variety of human ailment attended to with such care as the enormous crowds of patients allow the overworked staff to exercise. But a moment's thought should enable him to understand that Mrs. A. with the "windy spasms," Mrs. B. with a chronic ulcer of the leg, and such like, cannot be treated as in-patients, or there would be no room for cases in which there is imminent danger to life. He complains, too, of the long wait the patients must go through before they are attended to. But he suggests no means of remedying this. It is like the queue at a theatre—all cannot get in at once. All that can be done is to expedite the business as much as possible. And here we are confronted with another charge—namely, want of attention. Exactly the same thing occurs in the waiting-rooms of many busy physicians, and in the one case as in the other the only solution is that if the patient will not wait he is free to go elsewhere. The writer suggests that it would be infinitely cheaper and more satisfactory for many patients to consult cheap doctors round about. This is just what has been said over and over again by ourselves and others; but the fact is that patients prefer to go to the hospitals, and against this feeling no argument seems to prevail. Let us hope that the promised conversion of out-patient into consultative departments may do something to remove this grievance

We cannot go over in further detail the misrepresentations in the article. We have the eternal old story of the brutality of surgeons, of sour-faced nurses, and so on. Pearkes Withers has seen eminent surgeons listen to women's stories of intense agony with unmoved faces. Would he have them weep over every case of human suffering that comes before them, like Baines Carew, the sentimental attorney in the *Bab Ballads?* How does he suppose a doctor could ever get through his work unless he steeled himself to be "unmoved"? Yet we who know could tell him of surgeons who would probably have shocked his sensitive nerves by their jests in the presence of suffering, and who yet underwent agonies of self-reproach if they fancied they had not done just the right thing, and who, not satisfied with the hospital brandy for instance, paid for a better quality out of their own pockets. The article is simply an appeal to cheap sentimentalism, and for disproof of his charges Pearkes Withers need only go and see for himself how things really are.

A particularly absurd charge is one made as to the economy with which hospitals are run, an economy, we are told, which is to the detriment of the patient. The following interesting story gives us a measure of the author's insight: "I looked up Quain's *Medical Dictionary*, and it says I ought to have sulphate of zinc and cocaine," complained a daring out-patient who had been struggling hopelessly along for months with the hospital's boracic lotion for a certain form of inflammation. "Oh, indeed," snapped the doctor, "and do you know how much cocaine is an ounce? Do you suppose a hospital can afford to give expensive drugs like cocaine away by the gallon?" Gallons in the case of lotions would seem to be a stretch of fancy, but in any case does the author seriously think that the patient is to prescribe for the doctor whom he consults? Quain's *Dictionary* is not infallible, even where it is not yet out of date. The story reminds us of another patient of the same inquiring turn of mind, who was being treated for a skin affection. He also consulted the oracle, but he found that the disease with which he was afflicted was described in the Appendix. At the next interview he reproached the doctor with never having told him that the seat of his disease w s the appendix.

Messrs. Cassell publish a number of well-known medical books, necessarily founded on hospital experience, and we can only express surprise that the firm should have allowed a foolish and spiteful article of this kind to appear in one of their publications.

SALVARSAN AND NERVE COMPLICATIONS.

As a counterblast to the criticisms of Professor Finger of Vienna, which were dealt with fully in the BRITISH MEDICAL JOURNAL of January 27th, Dr. Benario has published a monograph on nerve complications which have been observed to follow the administration of salvarsan and of mercury,[1] to which Professor Ehrlich himself has contributed a preface. In the compilation of his book Dr. Benario has displayed great industry, but it is necessary to insist on the fact that it is merely a compilation, and is not founded on any special personal knowledge of syphilis. The author does not frankly face the fact that the use of salvarsan has been followed by nervous complications, which have not always given way to more salvarsan, to say nothing of the deaths, recorded and unrecorded, that have occurred after salvarsan competently administered, and usually after a second injection. His advocacy is therefore likely to do the cause for which he pleads more harm than good. Salvarsan does clear up certain severe symptoms with a celerity that is in a way wonderful when compared with previous experience; yet time, though short, has already shown that salvarsan alone cannot be relied on. If any proof of this were required, a reference to the leaflet on neo-salvarsan issued by the makers under the aegis of Professor Ehrlich's name would suffice, for there it is definitely stated that "a combined treatment with mercury, as experience with salvarsan has already shown, is to be recommended." As to the fatal cases, it is merely begging the question to say that in them the classical symptoms of arsenical poisoning were not present. The classical symptoms hitherto described were not the result of a synthetic compound injected intramuscularly and intravenously.

But to return more especially to Dr. Benario's points, the whole of the reasoning from the figures he puts forward is vitiated by the fact that they are erroneous. In the statistics of nervous complications set forth (page 139), the number of cases treated by salvarsan and the percentages as worked out show, for instance, that out of Wechselmann's 2,800 there were nervous complications in 10 (= 0.37 per cent.), of Weintraud's 1,500 there were 13 (= 0.9 per cent.), of Arning's 1,000 there were 2 (= 0.2 per cent)., whereas in Finger's statistics of 500 cases there were 44 (= 9 per cent.). This large discrepancy is explained by the fact that in the case of Wechselmann, Weintraud, and Arning, only a very small number of the individuals treated could be kept under observation, whereas 75 per cent. of Finger's cases were carefully followed up. Yet Dr. Benario does not allude to this important difference in the totals. Such a statistical method is in itself sufficient to knock the bottom out of the conclusions he arrives at. As already stated, this sort of manipulation of figures can only tend to bring discredit on a valuable method of treatment, which it is very important to judge fairly and squarely on its merits.

The careful and painstaking observations of a reasonable number of patients is more likely to guide us to a right appreciation of the value of a method of treatment than thousands of cases hurriedly dealt with. The prosecution of truly scientific inquiry demands patience. It is essential, if we are to get a little deeper into the numerous problems with which we are faced, that we should not imitate the methods of professional politicians.

[1] *Ueber Neurorezidive nach Salvarsan- und nach Quecksilberbehandlung.* Munich. 1911.

A PUBLIC MENACE.

SOME of the proposals at the present time being made in connexion with schemes for the treatment of tuberculosis accentuate a tendency which is becoming a serious menace to the efficiency of the medical service of this country. We refer to the proposals to set up tuberculosis dispensaries, staffed by whole-time officers, to which the public will have practically free access, and in connexion with which gradually all, or nearly all, of the treatment of tuberculosis will be carried out. At first blush the idea seems tempting. To the mere administrator it seems almost irresistible, for it suggests specialization, administrative compactness, and co-ordination with [illegible] hygienic measures. On the other hand it appeals by its apparent simplicity and directness to many

ardent sanitary and social reformers who are deeply interested in the new crusade against tuberculosis. But when closely examined the plan, except possibly from the administrative point of view, has few advantages, and these are far outweighed by the damage to the efficiency of the general medical service which is inherent in the scheme. It is universally recognized that if tuberculosis is to be dealt with successfully the cases must be caught early, and the best prospect of doing this lies in the utilization of the family practitioner who knows the family history and the home conditions and is relied upon by his patients as a friend as well as a professional adviser. Nobody knows so well as the general practitioner how difficult it often is to say, in the case of the delicate youth, where debility or anæmia ends and tuberculosis begins. Apart from general sanitary and housing reforms, the real hope of a successful tuberculosis crusade rests with the general practitioners of the country, in whose hands the bulk of the suspected cases first come, and by whose activities and influence if properly employed and directed the physical condition and home surroundings of the patient may most easily and most powerfully be influenced. We are well aware that at present many people cannot be said to have a family doctor, but the difficulty with most of these is largely financial, and that is a difficulty the local authorities now have the opportunity of surmounting. The necessity of their so doing is emphasized in the letter of Dr. Lauriston Shaw on p. 820, and his testimony is all the more valuable coming as it does from a consulting physician. It seems to us, therefore, the height of folly to inaugurate a campaign, which can so easily now be put on the right course, on lines which are demonstrably wrong. Already some local authorities have formulated schemes which can only mean that they hope in the near future to have every case of tuberculosis which is not confined to bed treated by whole-time officers at dispensaries or sanatoriums. Were this attempt to be successful what would be the result? The general practitioner would lose first his clinical experience of this disease, then his interest in it, and the inevitable sequence would be that many cases would escape detection in their earliest and most hopeful stage. Surely here is an opportunity, not for making a "corner" in the treatment of tuberculosis, but for so distributing the work as to interest and employ every general practitioner in the land, with a corresponding claim on the part of the community for increased efficiency and alertness on the part of the practitioner. These remarks have special reference to tuberculosis schemes because these are at present very much in the public eye, but the same tendency has been exhibited in other quarters, more particularly in relation to the treatment of school children. We feel it our duty to protest in the most emphatic manner against all attempts to take the treatment of disease out of the hands of the private practitioners of the country and put it into the hands of officials. Such a course, if successful, can only result in the lessening of the clinical experience and the lowering of the general efficiency of those who must always be the first line of defence of the public against disease. The supply of well-trained, efficient, and alert practitioners, available to the public at large in all places and at all times, is to the public, in the literal sense of a hackneyed phrase, "a matter of life and death."

MORE INSURANCE BLUFFS.

The bite as to the impending breakdown of the "doctors' boycott," to which we called attention in the JOURNAL of September 14th, has already, like so many others sent up from the same quarters, sailed "afay in de Ewigkeit." Another which seems also to have vanished into space is the report that the British Medical Association pledge is to be submitted to the law officers of the Crown as being in restraint of trade! Then we hear of a solid array of four thousand men who are said to be ready to take the dole offered by the Government. It is not long since we were told that ten thousand men would be needed to work the Act, and that they would easily be found. They have not, as we foretold at the time, been found; and there is every reason to think that the four thousand—or, to be exact, four thousand two hundred—are as imaginary as Falstaff's men in buckram. Now comes a mysterious advertisement under the heading, "The National Insurance Medical Association," inviting tenders for 1,000 motor cars. The tenders are to be sent to Dr. Charles Frederick Knight, the Organizing Secretary of the Association, which it may be well to recall is described as "being composed of members of the medical profession in Great Britain who are willing to accept posts under the Insurance Act of 1911." Dr. Knight, who was till lately, we believe, a successful "coach," may perhaps be seeking to provide his pupils with more rapid means of progression; but as he now, it is said, holds an office under the Scottish Insurance Commissioners, it would seem to be more likely that he is seeking to make arrangements to assist in working the Act. So far, we believe, not half a dozen men in Scotland have consented to work under the Act; it will be interesting, therefore, to see where Dr. Knight will get the passengers for his motors. But these "kites" are instructive as showing which way the wind blows. The number and variety of the attempts to put the situation in a false light before the public prove the ingenuity of their authors, but they also indicate a growing anxiety on the part of the begetters of the Act. If the profession will not let itself be frighted with false fire, but will stand firm in insisting on fair treatment, the issue of the battle which has been forced upon it cannot be doubtful. The country could, perhaps, do without Mr. Lloyd George, but it could not do without the doctors. That is the strength of our position—a fact which is thoroughly understood by those who are so sedulously trying to break up our serried ranks by manœuvres familiar to politicians.

THE REMUNERATION QUESTION AND THE PUBLIC.

During the Midlothian contest the Liberal candidate, Mr. Alexander Shaw, was heckled on the question of the remuneration of doctors under the Insurance Act. He was, according to a report which appeared in the *Aberdeen Daily Journal* of August 26th, asked "whether, since he and Mr. Lloyd George consider a doctor is well paid when he receives 4s. 6d. a year for each person, he would be in favour of giving every person legal advice at the same money—one penny per week?" To which Mr. Shaw replied: "I do not know! . . . There is a thing called a poor man's lawyer, who does things in that way. Of course, the value of the opinion you get may be just worth the amount paid for it." We welcome this testimony from an unexpected quarter to the soundness of the doctrine that sweated labour in any sphere of activity is worth little or nothing. Mr. Lloyd George as a lawyer will no doubt agree with Mr. Shaw, though he may not altogether approve of the frankness with which his youthful supporter gave away his case as to the payment of doctors. And cheap physicking is likely to be much more disastrous to the people than cheap law. We would also invite the Chancellor's attention to some wise words spoken by the Lord Mayor of Birmingham in welcoming the delegates at the recent conference of the British Hospitals Association. His lordship then took occasion to say that he wished the Government would realize "that they had a very strong public opinion in the direction of doctors being well paid." "They did not," he went on to say, "want strict calculations made as to what was the lowest sum that would be a living wage for the well-educated doctor. He thought it would be to the advantage of every one that, if the State

took over nearly all the services of the medical profession, it should so remunerate that profession as to attract the most skilful men in the country. No money could be better spent than in improving the general health of the community." We are sure that the Lord Mayor of Birmingham here represents the best public opinion. The friendly societies, as a rule, have hitherto made their bargains with their medical officers on a strict trade basis. For this we need not blame them; they could scarcely be expected to value the services of a doctor on any higher scale. But when the Government of the country engages the services of highly educated and specially trained men we may look for different treatment. The minimum wage for which men could be found willing to sell themselves into the boudage of a friendly society cannot be regarded as sufficient remuneration for the undertaking of larger responsibilities and the discharge of more exacting duties. If medical treatment under the Insurance Act is to be anything else than the old system of contract practice on a greatly magnified scale, the rate of payment must be such as will attract practitioners of the most efficient class. Insurance against sickness is nothing but an empty form of words unless the best medical attendance available is given. And this cannot be got on the terms offered by the Chancellor. In medicine, as in law, as Mr. Shaw so well said, "the value of the opinion you get may just be worth the amount paid for it."

PLANT CANCER.

IT would be a strange happening, indeed, if the secret of the cause of cancer were to be found in the daisy, and yet Mr. Erwin F. Smith and his lady assistants supply us[1] with facts derived from the study of the crown gall of that "modest, crimson-tippèd flower" which seem to have a bearing upon the problem of malignancy whose importance cannot be denied. Of course a plant cancer cannot be expected to resemble a malignant growth in an animal or in the human subject in all particulars, for a plant differs from an animal in having no rapid blood stream circulating in it, and there are other differences; but these American workers in plant pathology are of opinion that the crown gall of the Paris daisy is exactly what a malignant tumour of a plant might be expected to be. There is, for instance, an enormous proliferation of certain cells of the plant without reference to physiological needs and in opposition to the best interests of the organism. The tumour is non-capsulate, shows no abscess cavities and no visible parasites: its growth is peripheral, and it has a well-developed stroma consisting of vessels and fibres; from the primary growth proceed strands of tumour tissue from which secondary tumours develop, and the secondary growths have a strong tendency to take on the structure of the part in which the primary tumour has developed—thus a crown gall of the stem is followed by secondary growths in the leaves composed in great part of descendants of the originally infected stem cells; and, finally, the primary tumour often originates in wounds, bruises, or irritated places. Mr. Erwin Smith admits one marked difference between his plant cancer and the malignant growth of the human subject—namely, that the former has been shown by him to be due to an intracellular schizomycete (*Bacterium tumefaciens*) which can be isolated in pure culture and by means of which the disease can be reproduced at will, whilst no such organism has been found in the latter. He does not suggest that the *Bacterium tumefaciens* is the cause of malignant growths in warm-blooded animals; but he claims some success in inoculating a cold-blooded creature (such as a fish) with it, and so causing a growth which has the characters of a sarcoma. There are difficulties to explain away in connexion more especially with the demonstration of the causal micro-organism in the cells which we cannot regard as unimportant; and whilst it may quite well be true that, as Mr. Erwin Smith maintains, we may have "in these particular plant overgrowths a key to unlock the whole cancer situation," we do not think the key has yet moved the lock. The work, however, is a thoroughly good and painstaking bit of research, the plates are most instructive, and the conclusions will stimulate other workers to enter upon this field of investigation.

[1] *On Some Resemblances of Crown Gall to Human Cancer.* By Erwin F. Smith. Reprinted from *Science*, new series, vol. xxxv, No. 892, pages 161-172, February 2nd, 1912. *The Structure and Development of Crown Gall: A Plant Cancer.* By Erwin F. Smith, Pathologist in charge of Laboratory of Plant Pathology, and Nellie A. Brown and Lucia McCulloch, Scientific Assistants, U.S. Department of Agriculture, Bureau of Plant Industry, Bulletin No. 255, pp. 60; plates 109. Washington: Government Printing Office.

FIFTY YEARS OF OVARIOTOMY IN FRANCE.

M. RICARD, of the Hôpital Saint-Antoine, records in a contemporary[1] the fact that just fifty years ago, on June 2nd, Koeberlé performed the first ovariotomy ever systematically undertaken on French territory. It was performed in Strassburg in the presence of Schützenberger, Hergett, Aubenas, and Heeht. According to custom, the case was referred to the Académie de Médecine, and a committee consisting of Nélaton, Malgaigne, and Huguier—names that have survived—examined Koeberlé's report. Already one of the three—Nélaton—returning in the autumn of 1861 from London, declared in the course of a clinical lecture that surgeons who undertook ovariotomy when it seemed justifiable should be commended rather than blamed. He added a qualification very strange when we bear in mind that he was a scientific surgeon and a great clinical observer, like Paget. Ovariotomy was indicated, he declared, when a multilocular cyst began to cause emaciation or serious complications. How he, who knew well enough the nature of ovarian cysts in their earlier stages, failed to see that their removal was indicated before emaciation set in or complications developed, it is hard to say. He had recently witnessed five ovariotomies performed by Baker Brown, and in some of them at least the disease could hardly have been advanced to that stage which, in Nélaton's opinion, called for operation. After Koeberlé's triumph, five weeks later to be precise, Nélaton himself operated. Boinet followed in September, 1862, and very soon after that date the operation was frequently undertaken in Parisian hospitals. As in other countries, sporadic cases of the removal of abdominal tumours which proved to be ovarian had been reported in France. Laumonier seems to have been the first French surgeon who removed an ovarian tumour. The operation was performed in 1781. M. Ricard rightly adds that ovariotomy opened the gates of abdominal surgery. In warning his pupils of the unseen dangers which might be encountered, one of the earlier French ovariotomists observed that the operation was a step into the unknown. It proved, however, a step towards a more satisfactory "unknown" than intestinal adhesions and suppuration of cyst walls. Péan, Doyen, and other Frenchmen, like their British, Continental, and American colleagues, opened up unknown developments of abdominal surgery. Lastly, Koeberlé, says Ricard, last of the veteran specialists, yet lives, ending in a dignified and by no means idle retreat his noble career as a surgeon. He graduated in 1853.

[1] "Le cinquantenaire de l'ovariotomie en France." *Gazette des hôpitaux*, June 4th, 1912, p. 952.

THE ENEMA IN THE EIGHTEENTH CENTURY.

As we know, the enema syringe in the seventeenth and eighteenth centuries was the symbol of medicine in France. The august body of Louis XIV was washed out by means of it some thousands of times, and it is recorded of a royal duchess that she had the *remède*, as it was politely called, furtively administered to her even in the presence of the Court. It was used by everybody who

could afford it, and it was a considerable source of income to the apothecaries. Naturally it did not escape the keen eye of Molière, who introduces it several times. He represents M. de Pourceaugnac being pursued with the instrument by a number of apothecaries, assuring him that it is benign, and in the ballet which concludes the *Malade Imaginaire* the apothecaries carrying the emblem play a conspicuous part. There is a curious record of an action brought in 1746 against a canon of Troyes, Francois Bourjeois, by what may be called a nurse specialist in the administration of enemas. This lady, who had the very appropriate name of Etiennette Boyeau, brought an action for recovery of moneys due to her for the innumerable enemas she had given the patient. As he would not pay, she put her case into the hands of an advocate named Grosley. His pleading, which is given in French memoirs in all seriousness but which reads like an elaborate jest, set forth that the canon had for some time been "vexed by a heated state of the viscera of that enormous acrimony which causes the generative parts to be extravasated." (Doubtless the writer meant piles.) Having consulted his physician, the canon was ordered the frequent use of "a kind of lenitive commonly known under the name of clyster." Etiennette Boyeau, who was in high repute for her skill in the administration of that remedy, was called in, and she attended on the canon two whole years, officiating at least once, sometimes as often as six times, a day. But, though she served him well and her fee was small, she could get no money out of the canon. "Three hundred times, at the most interesting moments and in the most supplicating position, she begged him to relieve her needs, without his allowing himself to be softened." At length, in 1746, she brought an action against him. In the pleading it is stated that "the Sieur Bourjeois took at least one enema a day and often six, thus taking the whole together on an average three enemas a day gives a total of 2,190 enemas, which at 2 sols 6 deniers make up the big figure of 273 livres 15 sols. Etiennette consents to reduce the total number of enemas to 2,000, and to reduce her bill to 150 livres instead of 273 livres 15 sols." The canon resisted, but at last, fearing the publicity of a law court, he paid up.

DEVELOPMENT OF SPIROCHAETA PALLIDA.

SOME fifteen years ago Kurloff described certain bodies which he had observed within the large mononuclear leucocytes of guinea-pigs. These inclusions, which have been generally known as Kurloff's bodies, have since been studied by a number of observers, and Dr. Ledingham eight or nine years ago suggested that they were possibly of a parasitic nature analogous to the *Cytorrycles variolae* or *vaccinae*. Last year Schilling studied their development in the mononuclear leucocytes by means of vital staining with azur, and arrived at the conclusion that the granule stage was preceded by a rod stage. Using the jelly method suggested by Sir Ronald Ross, and described by Mr. H. C. Ross in 1909, Mr. E. H. Ross has arrived at the conclusion that the bodies are lymphocytozoa and parasites of the mononuclear leucocytes only when they are in the intracorpuscular stage, and ultimately give rise to free swimming spirochaete-like bodies, which Sir Ronald Ross has suggested might be microgametes. He described and illustrated the development of the spirochaete-like bodies. Sir Ronald Ross now informs us that Mr. E. H. Ross, working in the McFadden Research Laboratories at the Lister Institute, has shown that the *Spirochaeta pallida* of syphilis has a very similar development. The well-known spirochaetes of syphilis appear to be homologues of the motile filaments as developed from the Kurloff bodies. In syphilis they are developed from large rounded bodies, found not in the mononuclear leucocytes of the blood, but in large mononuclear cells squeezed from local lymphatics.

THE PHYSIOLOGY OF BATHING.

AN international conference, organized by the Dutch Union for Public Baths and Baths in Schools, was held last month at Scheveningen near The Hague, under the chairmanship of Dr. W. P. Ruijsch, of the Dutch Sanitary Service. Several Continental Governments, as well as municipal councils, commissions of health, and other bodies, were represented by delegates. The delegates from Great Britain included Dr. David Walker of Bradford, Mr. A. L. Kiens of Battersea, and Dr. Fortescue Fox. In an introductory paper on the physiology of bathing, Dr. Fox said that the new knowledge of the action of baths was of such importance that it behoved all school and public authorities interested in bathing to avail themselves of it under competent medical guidance. Both the routine and the haphazard modes of bathing were frequently injurious. The sensitive and unprotected skin was derived from the same embryonic tissue as the nerve centres and the organ of mind, and like them it had become more and more specialized and sensitive in the process of human evolution. The reaction of the body to cold was a most impressive physiological fact. Within clearly-defined limits both positive and negative heat (*plus* and *minus* baths as respects the temperature of the body) were powerful stimulants or sedatives. This reaction was habitually defective in a large proportion of people. If in the community at large it were educated by appropriate baths, the result would be an increased resistance to disease, and especially to "chill" and the consequent invasion of micro-organisms. The body was wonderfully tolerant even of extreme and sudden changes of temperature, and *minus* after *plus* baths were the most suitable for general use in cold and temperate climates.

SLEEPING HOURS IN HOSPITALS.

IN a letter of some eloquence a layman asks us to call attention to the difficulties put in the way of sick people obtaining as much sleep as possible, which every one will admit to be desirable, by the arrangements existing in hospital and infirmary wards. The fact that lights are lowered about 8 p.m. in no way ensures, he points out, that the patients will immediately go to sleep; on the contrary, it is highly probable that many of them will lie awake for some time and not get soundly off to sleep, if at all, until half the night is over. Nevertheless the "brutal business of waking them" begins about 6 a.m. While all this is a fairly true picture, our correspondent's view that it is an unreasonable as well as undesirable condition of things, which medical men could at once put right if they wished, is by no means accurate. Many besides himself have been struck by the drawbacks of the early hours kept at hospitals, but no one has yet been able to think of a remedy which in the long run would not prove worse than the disease. It is inevitable that the nursing staff of a hospital shall be divided into a night and day shift, and that these shall unite forces in the early morning to get through the heavy work necessitated by the dawning of another day, including the washing and tidying of patients, and the preparation of some of them for breakfast and of others for operations. If this work were not shared some patients would not receive for hours the multitudinous attentions that almost all of them require as soon as they awake; and if the hour of its commencement were delayed and the night staff kept on duty for that purpose, the whole of the day's work would be shifted on a corresponding number of hours. In that case, much of the day work would have to be hurried through in order to complete it before nightfall, and among other evils many patients who at present get a good deal of sleep during the quiet hours of the afternoon would get no sleep at all, while no arrangements could be made for either the night staff or the day staff taking that outdoor exercise which is essential to both if the nursing of a

hospital is to be efficient. A desire to get the wards tidy before the doctors pay their visits has very little, if any, influence on the matter. Some doctors visit their wards in the morning, some in the afternoon, all alike arranging their work chiefly from the point of view of what is the best system of correlating all the various forms of labour essential to success in hospital undertakings. Early hours at hospitals seem practically inevitable, but what is not inevitable is a custom to which our correspondent does not allude, though where it exists it is at least as important a factor in depriving patients of sleep as is the commencement of the day at 6 a.m., or thereabouts. This is the practice of putting in wards for adults one or more cots for babies or small children. Though children learn to "be good" in hospitals very quickly, there are times when practically all of them are fractious either by day or by night, and the disturbance they thus create is often bitterly resented by patients, especially those in women's wards.

NURSING IN GERMANY.

JUDGING from a paper on overstrain among nurses read by Professor Hecker of Strassburg at the recent International Congress of Nurses, the organization of nursing is not one of those things which are better done in Germany than in these islands. According to this authority, as reported in the *British Journal of Nursing*, a normal day's work for a nurse in a German hospital is from eleven to thirteen and a half hours, not including meal times, while the pay ranges from £14 15s. a year to £25 a year after ten years' service. When on night duty they have under their charge from 30 to 40 patients, and are not infrequently expected to do domestic work as well as nursing. The hours for probationers are just as lengthy, and they receive their instruction in "off duty" time—that is to say, at the end of a long day's work—and they are frequently put on night duty after three or four weeks' experience. They are usually bound to serve the hospital for a definite number of years, but there is no fixed period of training. The term "certificated" is protected by the law, however, and can only be used by nurses who have passed the State examination, which should usually be passed at the end of the first year's work. The net outcome, according to Professor Hecker, is a great deal of overstrain among German nurses and excessively high mortality and invaliding rates. Some statistics quoted by him on this point showed that among 35 nurses who died in 1910, the deaths of 6 were due to heart disease, of 7 to tuberculosis, and of 9 to suicide. The last official statistics of the Red Cross Society told the same tale, 30 per cent. of 1,562 certificated nurses being invalided, and 52 per cent. of 329 probationers. The high mortality from tuberculosis he ascribed largely to poor food, lack of outdoor exercise and recreation, and to the effect of the long hours of nursing being aggravated by domestic service being demanded in addition. Professor Hecker's statements, it should be noted, were subsequently upborne by a paper read by the Matron of the Municipal Hospital at Dortmund. The discussion ended in a resolution drawing attention to the evil effects of overstrain, and begging hospital authorities to give the same consideration to the problem of overwork among nurses that industrial leaders are giving to the same question among other workers. It was further decided that copies of this resolution should be sent to the Home departments of the Governments of all countries whose nursing organizations are affiliated to the International Congress.

EMETINE IN AMOEBIC DYSENTERY.

THE conclusions as to the value of emetine in the treatment of amoebic dysentery, stated in the paper by Professor Leonard Rogers in the JOURNAL of August 24th, are receiving ample confirmation by other observers, and the drug is being very freely tested with most satisfactory results in Indian hospitals. His statement that the extraordinary rapidity with which, in cases of amoebic dysentery, very marked improvement follows the subcutaneous injection of emetine in doses of half a grain is of the greatest diagnostic importance, since cases of bacillary dysentery and other amoebic cases in which blood and mucus are present in the stools are not materially affected by the drug, is also being generally confirmed. This would appear to solve a great practical difficulty in dealing with dysenteries in the tropics. On the other hand, proof is accumulating that every amoeba in the body is killed by the drug. Time is yet too short to allow any certain conclusions to be drawn as to the prevention of relapses.

THE HUXLEY LECTURE.

THE Huxley Lecture will be delivered at Charing Cross Hospital Medical College on Thursday, October 31st, by Professor Simon Flexner, of the New York Rockefeller Institute. The subject he has chosen is Recent Advances in Science in relation to Practical Medicine. On these advances Professor Flexner is from his own researches pre-eminently qualified to speak. We may recall that the previous lecturers have been Professor Virchow, Lord Lister, Professor Welch of Johns Hopkins University, Baltimore, Professor Pavlov of St. Petersburg, Sir Patrick Manson, Sir William Macewen, and Dr. F. W. Mott. It may also be mentioned that on the same day the extensive new laboratories of public health and bacteriology, recently formed by the school and taken over by the University of London as the public health and bacteriological departments of King's College, will be formally opened and handed over to the university. The laboratories will be thrown open on that day to visitors. Further details as to this important event in the history of all the institutions concerned will be found at p. 825.

MRS. RADCLIFFE CROCKER has made a gift of £1,500 to University College Hospital to endow a travelling scholarship in memory of her husband, the late Dr. H. Radcliffe Crocker, for thirty years physician to the hospital, and at one time President of the Dermatological Society, and Treasurer of the British Medical Association. The scholarship, which carries with it a gold medal, will be awarded every five years.

A MEMORIAL to Lord Lister is to be established at University College Hospital, where the great surgeon received his medical training. A special committee has been formed, of which the Duke of Bedford, President of the Hospital, is Chairman, Sir John Tweedy being Honorary Treasurer of the fund. The exact nature of the memorial will depend on the amount of the subscriptions received, but it has been suggested that either a bust or a tablet should be placed both in the hospital and in the college. Only those who have been in some way connected with University College or the hospital are invited to subscribe.

THE first Italian Congress on the history of medicine and natural science will be held in Rome in October (11th to 14th).

AN international collective inquiry into the nature of ozaena is being made. The results will be communicated to the International Congress of Laryngology, to be held at Copenhagen in 1915.

THE Gresham Professor of Physic, Dr. F. M. Sandwith, will give four lectures at the City of London School, Victoria Embankment, on the relief of the sick and wounded in time of war, on October 15th, 16th, 17th, and 18th. The lectures, which are free to men and women, will begin at 6 p.m. on each day.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

MANCHESTER AND DISTRICT.

SANATORIUM BENEFIT IN SALFORD.

IT was announced at a meeting of the Salford Insurance Committee, held last week, that the scheme for sanatorium benefit already described in the BRITISH MEDICAL JOURNAL had been submitted to the Insurance Commissioners, who had approved of the following items for a period of six months:

(1) The medical officer of health to act as temporary medical officer to the Insurance Committee. (2) A tuberculosis specialist to be employed at an agreed fee in cases where there was need for his services. (3) The arrangements for hospital treatment at the Drinkwater Park Hospital and for sanatorium treatment at the Crossley Sanatorium were approved, provided that these institutions receive the approval of the Local Government Board. (4) The arrangements proposed for domiciliary attendance were approved, provided that the treatment conforms with the orders of the Local Government Board. (5) The proposals about dispensary treatment were also approved, subject to the approval of the Local Government Board.

The medical officer of health estimated that the cost of the dispensary for the first twelve months, in addition to capital charges, would be about £1,300, and the Insurance Committee agreed to pay to the Corporation £350 for the use of the dispensary for the first six months. It was also agreed that the Committee should pay the Corporation 30s. a week per patient for treatment at the Drinkwater Park Hospital, but it was understood that the scale of payments would be revised in six months.

It was reported that the Honorary Secretary of the Salford Provisional Medical Committee had written, saying that if the Joint Committee of the Health and Insurance Committees would submit the scheme to the Provisional Medical Committee "for consideration and subsequent joint discussion with a view to amendment where necessary," members would be nominated for the purpose, but in the meantime until that were done no useful purpose would be served by any deputation. In reply to this the Insurance Committee directed a letter to be sent to the Provisional Medical Committee stating that the Insurance Committee "sees no reason why the draft scheme for sanatorium benefits should be submitted to the Salford Provisional Medical Committee for their consideration and amendment, having regard to the fact that the Committee has complied, as far as local conditions made it practicable, with the resolutions of the British Medical Association." It now remains to be seen whether the approval of the Local Government Board referred to above will be given in face of the letter sent to the Board by the Provisional Medical Committee, an extract of which was given in the JOURNAL last week. The letter of the Insurance Committee begs the whole question, for it is the one great contention of the Salford practitioners that the scheme does not accord with the resolutions of the British Medical Association as far as practicable.

LONDON.

THE INSURANCE ACT.

THE Clerk of the County Council announces that the machinery for providing sanatorium benefit (which includes institutional, home, and dispensary treatment) for insured persons in London is now in working order, and that already a number of applicants have been sent to sanatoriums or given dispensary and domiciliary treatment. In all, about sixty applications have been received, and of these about thirty-one have been dealt with in some way. It is added that, extensive as are the existing voluntary agencies for dealing with tuberculosis, several of the cases holding out the most hopeful promise of a complete recovery would probably not have been dealt with in ordinary circumstances until the disease had reached a stage which would have precluded any chance of a permanent restoration to health.

WITH a view to the better organization of the work, and reducing the cost of administration as far as possible, the London Committee has appointed a temporary sanatorium subcommittee for the cities of London and Westminster, and for each metropolitan borough. After applications had been duly inquired into, and the necessary examination and reports made, the committee, acting on the advice of its expert adviser, decided as to the treatment to be accorded to each case. If this is to be institutional, the necessary arrangements are made by the committee. If dispensary or domiciliary treatment is considered advisable, the case is remitted to the proper local subcommittee to be dealt with. In all instances the metropolitan borough councils have consented to their medical officers of health serving as members of the subcommittees. All the borough councils have also allowed their buildings to be used for the meetings of the subcommittees, and have given other facilities for furthering the objects of the Act in the direction of allowing their offices to be used in connexion with the giving of information to insured persons in the locality, the obtaining of forms of application for benefit and otherwise. These subcommittees establish a link with the central organization of the committee, which is likely to prove of great value in securing the efficient administration of the Act in London on the lines most calculated to be of benefit to insured persons. It is hoped that they will form the nucleus of the district committees which, under the Act, will have to be shortly appointed for each metropolitan borough and for the cities of London and Westminster.

The committee is now engaging the necessary staff for carrying on the work, for which they propose at an early date to secure suitable offices in a central part of London; meanwhile, applicants for sanatorium benefit, who, according to instructions issued by the Insurance Commissioners, must be insured persons who were in employment on or subsequent to July 15th, 1912, can obtain the necessary forms from the Acting Clerk of the London Insurance Committee, County Hall, Spring Gardens, S.W. These forms can also be obtained at the respective town halls of the metropolitan boroughs. The committee is giving close attention to the organization of the other duties devolving upon it under the Act, to ensure that there shall be no delay in providing the further benefits, so far as the committee is responsible therefor, immediately they come into force.

COMPULSORY NOTIFICATION OF WHOOPING-COUGH.

The Lambeth Borough Council proposes to apply to the Local Government Board, under Section 56 of the Public Health (London) Act, 1891, for an order to make whooping-cough a notifiable disease for a period of five years. The annual deaths from whooping-cough in Lambeth were for the two decennia 1891–1900 and 1901–10, 143 and 93 respectively, the annual morbidity from the disease being in the same proportion. Dr. Priestley, M.O.H., has expressed the opinion that to obtain the maximum benefit from the removal of patients suffering from whooping-cough to hospitals, under the new order of the Local Government Board, compulsory notification of the disease is essential.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

LOCAL GOVERNMENT BOARD REPORT.

THE annual report of the Local Government Board for Ireland for the year ended March 31st, 1912, which has just been published, contains particulars concerning the administration of the Poor Laws and the public health. On March 30th, 1912, there were in workhouses in Ireland 38,100 persons; 14,735 were in hospitals or infirmaries, 10,956 were aged or infirm, 2,313 were lunatics, idiots, or epileptics, and 5,097 were children under 15. On the other hand, there were 2,569 children at nurse or boarded out; 1,555 children under 15 died in workhouses during the year, of whom more than half were under one year of age. The total number of deaths in workhouses was 10,084, and of these over fourteen hundred were due to phthisis. There are still ten workhouses where there is no trained nurse. The new cases attended by dispensary medical officers under the Medical Charities Act numbered 652,778, and 77,379 vaccinations or revaccinations were performed. The salaries paid to dispensary officers amounted to £104,196. There are now eighty-three unions

in which scales of salaries for the medical officers have been adopted. Tuberculosis is notifiable in only forty-one sanitary districts. In 284 out of 309 sanitary districts steps have been taken to carry out the provisions of the Dairies, Cowsheds, and Milkshops Order.

PEAMOUNT SANATORIUM.

An open-air meeting was held last week at Newcastle, County Dublin, for the purpose of opposing, on behalf of residents of the districts, the establishment of a sanatorium at Peamount. The following resolution was adopted with one dissentient:

> Resolved: That this meeting, representative of the people of Rathcoole, Saggart, Newcastle, Celbridge, and Hazelhatch districts, protest in the strongest possible manner against the erection of a sanatorium at Peamount. Furthermore, that we strongly condemn the action of the Kildare County Council and Kerry County Council in taking beds in the said sanatorium, and we call upon the said county councils to rescind their resolutions binding themselves to do so, and we urge the other county councils to refuse any support to the proposed sanatorium.

CORK BOARD OF GUARDIANS.

At a recent meeting of the Cork Board of Guardians the following motion was proposed, but rejected by a majority of votes:

> That, inasmuch as the Chairman of the Board, on receiving notice of motion to increase the salaries of Drs. Morrissey and O'Connor, was not then aware, nor was he made aware, that they were appointed at a maximum salary of £100 a year, and as it was and is notorious that they are not now wanted at all, as never before were there more than two visiting doctors, now there are five visiting doctors, with 357 less inmates, therefore I move that the Local Government Board be made aware of the omission, and that they be requested to declare that the resolution passed granting them big advances be declared null and void.

Since then the Local Government Board has written to the Board of Guardians stating that it cannot allow any increase in the salaries of the doctors mentioned, as it was agreed when the appointments were made that £100 per annum was to be the maximum salary for these officers.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

ZOOLOGICAL GARDENS IN EDINBURGH.

AT the recent meeting of the British Association in Dundee, the President of the Zoological Section, Dr. F. Chalmers Mitchell, Secretary of the Zoological Society, Regent's Park, in the course of some remarks on zoological gardens and the preservation of fauna, said that he hoped that the efforts of the Zoological Society of Scotland would be successful, and that before many months are over there will be a zoological park in the capital of Scotland. There is, he said, no reason of situation or of climate to be urged against it. The smoke and fog of London are much more baneful to animals than the east winds of Edinburgh. The gardens of North Germany and the excellent institution of Copenhagen have to endure winters much more severe than those of Lowland Scotland. The Arctic winter and tropical summer of New York form a peculiarly unfortunate combination, yet the Bronx Park of New York is one of the most successful menageries. The Zoological Society of Scotland will have the great advantage of beginning where other institutions have left off; it will be able to profit by the experience and avoid the mistakes of others. The Zoological Society of London would welcome the establishment of a menagerie in Scotland for scientific and practical reasons. When a dealer in the tropics has rare animals to dispose of he must send them to the best market. In Great Britain there are very few possible buyers, but in Germany one or other of the twenty gardens is almost certain to absorb them, and, failing Germany, Belgium and Holland are near at hand. The second practical reason was that it was a great advantage to have easy opportunities of lending and exchanging animals; for it often happened that as a result of successful breeding or of gifts on the one hand, or of deaths on the other, a particular institution was overstocked with one species or deficient in another.

ADMINISTRATION OF SCOTTISH ASYLUMS.

Dr. A. R. Urquhart, the Physician Superintendent of James Murray's Royal Asylum, Perth, in the course of his report for the year ending March 31st, 1912, says:

> Scottish lunacy law was formulated in 1857 with such conspicuous wisdom that little has been required in the way of amendment ever since. Minor alterations have been noted as desirable of late years, and these have been embodied in a bill, introduced by Lord Pentland, which has met with general approval. Certain proposals, however, are apparently inimical to the interests of Royal asylums, and have been discussed at a congress of directors and physicians held to protect these interests. There are other bills which threaten disaster to the Royal asylums of Scotland. The district asylums were lately provided with pensions, thereby putting them on an equality with similar institutions in England and Ireland. No sooner had this become law than an amending Act is threatened, which reduces those hospitals for mental diseases to the level of factories in respect of hours of work. The Royal asylums require no such enactment; nor, indeed, do the district asylums. However suitable that may be for the vast asylums of London and Lancashire, it is unnecessary and adverse to the interests of patients and staff in every asylum in Scotland. Presumably the bill does not seek directly to affect the Royal asylums, but it is to be hoped that any such Act shall not apply to Scotland.

THE BISHOP'S WELL, GLASGOW ROYAL INFIRMARY.

In the course of the reconstruction work at the Royal Infirmary a well which may prove to be of considerable antiquarian interest has been discovered. The Master of Works, in a report, states:

> We have come across what we believe to be the Bishop's Well, which is immediately under the entrance steps and arched over with concrete, about 5 ft. square, lined on two sides with oak boards. This well has been filled in to within a few feet from the top, and a brick wall built at the south side, forming a "sump" to catch surface water and probably land drains, and a pipe sewer put in to drain the water away. The iron pump now standing at the east side was fixed originally, in my opinion, to remove the water out of the well—hence the brick wall to save this trouble.

The Bishop's Palace is known to have existed as a stronghold as early as the thirteenth century. The ruins were cleared in 1792 for the erection of the Royal Infirmary.

Another discovery was made in demolishing the front or oldest block of the infirmary, which it was originally argued should be left untouched, being an example of work which should be preserved. It has now been found that it was in an unstable and dangerous condition. The block was designed by the Brothers Adam, and was erected between 1792 and 1794. It had a massive and elegant appearance, and was greatly admired as an example of the work of its designers. In an official report to the managers of the infirmary, Mr. John Woodward, master of works, states that the building was found to be in a very bad state of decay. All the centre portion, which has the appearance of very heavy masonry, was really a skeleton, and had to be shored up to prevent a serious mishap in removing. The pediment face, which was nearly all cement, it was impossible to save, parts of it crumbling away in the men's hands. Bond timber, originally built in with iron and lead straps, was the only thing that held it up, and a sample of the timber, which was completely decayed, showed the state the building was in. Mr. Woodward concluded his report by saying that it was a good thing the building was now being demolished, as something serious would certainly have happened.

THE LAW RELATING TO THE ADULTERATION OF MILK.

The difficulty of proving a conviction in a court of law against the seller of milk alleged to be adulterated is so great that in many places defaulters are not summoned. The basis of the law relating to milk adulteration is to be found in the Sale of Foods and Drugs Act, one of the sections of which makes it an offence to sell, to the prejudice of the purchaser, any article of food which is not of the nature, substance, and quality of the article demanded by the purchaser. As the statute, however, did not indicate any standard for any particular kind of food, there was difficulty in applying the Act to the case of milk. This resulted in the passing of the amended statute in 1899, which conferred on the Board of Agriculture the power of making regulations for determining what deficiencies in or additions to genuine milk should raise a presumption that the milk was not genuine. In

1901, adulteration, in the case of milk, was defined to mean "the abstraction therefrom of milk fat, or the addition thereto of water." In 1901, shortly after the regulations were issued, a case came before the Court of Appeal in England—Smithies *v.* Bridges—which was not based on the regulations, but on the general statutory rule. The magistrates found that though the milk there in question had come direct from the cow it was not of the nature, substance, and quality of milk, and convicted the milkseller of adulteration. In the course of the argument in the Appeal Court, the regulations and the comments of the majority of the judges were on similar lines to those expressed by the Lord Chief Justice in the following words:

As to the recent Order of the Board of Agriculture, I do not think it purports to set up a standard of what is or what is not genuine milk, but only means to say that the want of a certain percentage of fat is to be prima facie evidence that the milk is not genuine. It will still be open to the defendant to prove that the milk is genuine. If, however, the article produced, though it is produced by the cow, is the result of an abnormal condition of things arising either from disease or, as here, from the unusual treatment of the cow, I think that that does amount to evidence on which the magistrates can find that the article is not of the nature, substance, and quality of the article demanded.

That opinion, given in 1902, influenced greatly the practice of the authorities who were charged with carrying out the regulations. It gave them ground for arguing that if milk was found to be below the standard set in the regulations, that was clear proof that it was not the milk of normally healthy cows fed in a normal manner. Convictions followed on proving a breach of these regulations. Since the hearing of a case in the Court of Session and the decision of a bench of seven judges in the recent case of Scott *v.* Jack, the state of matters in Scotland has been radically and definitely changed. There it was proved in evidence, and was prominently before the Court, that:

The cows were Ayrshires and crosses, and were selected by the respondent as likely to yield a large quantity of milk. Respondent fed the cows so as to produce the largest yield of milk, and paid no attention to the quality.

The cows were in a fair condition and appeared healthy. The milk in question was deficient in milk fat 14 per cent., and in milk solids 11 per cent., but it was proved that it had not been tampered with or adulterated, but was sold in the same condition as yielded by the cow. Had a breach of the regulations been committed? In finding that there had not, the Court unreservedly threw over the theory of Smithies *v.* Bridges and refused to convict. To show that the judgement was given on the broad question, the following observations by Lord Mackenzie may be quoted:

The case is intended to raise the general question whether milk may not be genuine though there has been no abstraction of milk fats or milk solids and no addition of water; that is to say, whether a man who sells sweet milk in an unaltered state can be convicted of selling what is not genuine milk, the deficiency being due to an improper method of feeding purposely adopted to produce quantity, irrespective of quality. In my opinion it cannot.

In this opinion the other judges concurred. The importance of this decision is very great. Milk prosecutions will probably now become rare, because unless proof of actual tampering with the milk can be brought, it will be useless to summon the milkseller, for the respondent has only to prove no alteration and he escapes; and in virtue of the judgement of the Court of Session last year (Lamont *v.* Rodger) he can prove this by testimony of himself and his family or servants.

THE HEALTH OF GLASGOW.

The annual report for 1911 by the Glasgow Medical Officer of Health is a voluminous but interesting document of 157 pages, with fifty-three pages of appendix and numerous charts and plans. It gives a comprehensive review of the health administration of the city, and while there are many points for congratulation, there are also notes of warning and regret. While the general death-rate is lower, there are districts with abnormally high rates. The problem of congested areas has not been relieved by the extension of the city, which has involved the absorption of new congested areas, and here a note of warning must be sounded. Infantile mortality is lower, but the birth-rate is the lowest on record.

Infant Mortality.

During the year 21,755 births were registered, of which 21,584 properly belong to the city. This represents a birth-rate of 27.513 per 1,000 persons living, as compared with 27.642 in 1910. The deaths from all causes were 13,899, or a rate of 16.44 per 1,000 as compared with 15.66 in 1910. But, except 1910, the lowest rate recorded was 17.58 in 1906. The deaths of infants under one year numbered 2,944, equal to a death-rate of 136 per 1,000 births. This is 17 per 1,000 above the rate for last year, which was the lowest on record. The increase is attributed to the high temperatures which prevailed in the summer and autumn of 1911, but there is evidence of improvement when viewed over a series of years. The diseases contained in the group "immaturity" constitute the largest individual portion of the infant death-rate, and represent a mean rate of 46 per 1,000 male births and 37 per 1,000 female births. Under existing circumstances this is to be regarded as an irreducible part of the infant death-rate—irreducible at least until the causes, which prejudicially affect gestation, are better known. There is some reason for thinking that among the poorest of the population the proportion of fat and carbohydrates in their dietary is insufficient. The death-rate among male infants is uniformly in excess of that among females, the total rate for the former being 145 per 1,000 births compared with 120 for the latter. This feature is reflected at every age period save from 25 to 35 years, when the rate among females exceeds that of males, and suggests that the higher death-rate obtaining among adult males are sex differences, and not wholly due to exposure and the exigencies of employment to which they are usually ascribed.

Next in frequency to immaturity are the diseases of respiration which show a mean rate of 31 and 25 per 1,000 male and female births respectively. During 1911 births numbering in all 171 were recorded in twelve private lying-in houses. Most of these children are illegitimate, and immediately after birth are handed over to the care of foster-parents. All such births are reported to the parish authorities, who keep careful supervision over the children, but the medical officer of health raises the question whether these houses should not be registered and put under supervision, either of the Public Health or the Poor Law Authorities.

Infectious Diseases.

During the year 28,157 cases of infectious disease were registered and dealt with by the department. This represents an attack-rate equal to almost 36 per 1,000 of the population, which is 2 per 1,000 less than the rate for 1910. Of the total cases registered, 9,181, or 32.6 per cent., were treated in hospital. The attack-rate for the notifiable diseases for the city as a whole was slightly over 10 per 1,000, as compared with almost 26 per 1,000 for the diseases which are not notifiable. Of the notifiable diseases 4 per 1,000 is due to scarlet fever, almost 3 per 1,000 to phthisis, and 2.4 to diphtheria. Upon this subject the Medical Officer of Health makes the following general observations:

Scarlet fever and diphtheria were again pretty generally distributed throughout the year, although there was evidence of a lessening in the prevalence of the former, as compared with the two preceding years. The attack-rates for diphtheria and enteric fever were practically the same as in the previous year. In phthisis there is a conspicuous reduction. This is not accounted for by diminution in the actual number of persons attacked by the disease, but by the fact that compulsory notification was introduced at the beginning of 1910, and in consequence a large number of cases which had been attacked in previous years came upon the books for the first time. The attack-rate of 3 per 1,000 shown for 1911 may be taken as representing more accurately the incidence of the disease.

SMALL-POX IN SCOTLAND.

During last week there was an outbreak of small-pox in Kirkcaldy (Fifeshire). In all ten patients were removed to the small-pox hospital, of whom three have died, while the remaining seven are going on well. All the cases which had been in contact were under observation, and so far have manifested no symptoms of the disease. The supposition is that the cases were due to Russian flax infection; but that will, doubtless, be more fully investigated by the local authorities and by the Local Government Board. On September 23rd the Kirkcaldy Town Council passed a resolution that the Infectious Diseases (Notification) Act, 1889, should apply to chicken-pox for the space of one month.

India.

[FROM OUR SPECIAL CORRESPONDENTS.]

THE REORGANIZATION OF THE SANITARY DEPARTMENT.

ANOTHER resolution of the Government has been issued defining the functions and duties of the Sanitary Commissioner with the Government of India under the new arrangements, whereby that officer is once more subordinated to the Director-General of the Indian Medical Service. The resolution states that the former complete separation of the two departments and the placing of the bacteriological officers under the Sanitary Commissioner led to an undesirable divorce between scientific and sanitary work, and rendered the bacteriological branch unpopular, while leaving the Sanitary Commissioner too little time for touring and inspections. After reference to the Secretary of State and local governments, the appointment of Sanitary Commissioner has been revived on the former pay, but subordinated to the Director-General, and relieved of the control of the bacteriological department, which will return to the charge of the head of the medical service. The Sanitary Commissioner will thus be in the position of a staff officer to the Director-General, but will have independent authority in technical sanitary matters, with power to correspond directly with local governments. In order to relieve him of as much routine work as possible, the two offices will be re-amalgamated, and the statistical officer will become a secretary of the sanitary section under the Director-General. The Sanitary Commissioner will in future be able to tour freely and regularly throughout India, inspecting and advising on sanitary works and schemes. He will find ample scope for his energies in regard to the important schemes of improved urban sanitation, for which grants are being given by the Government of India to the various provinces, and in the antimalarial measures which are being actively pushed on. Altogether the new arrangement appears to be an important advance on the previous conditions.

LADY HARDINGE'S SCHEME FOR A MEDICAL COLLEGE FOR WOMEN IN INDIA.

From a recently issued press note it appears that in June last His Highness the Maharajah of Kotah (Rajputana) offered a lakh of rupees to Lady Hardinge in commemoration of the Royal visit to India, to be spent for the benefit of the women of India. Her Excellency has decided to make this sum the nucleus of a fund for founding at Delhi a medical college and hospital for women, to be called the Queen Mary Medical College and Hospital. The urgent need for such an institution is due to the difficulty in getting enough of the better-class Indian women to take up the medical profession owing to the fact that they can at present only receive instruction in men's colleges and in mixed classes. The idea has been generously taken up by other Indian chiefs, and already half of the necessary fifteen lakhs has been promised.

DELHI HOSPITALS.

The hospital arrangements in temporary Delhi have now been finally settled. The General Hospital for Europeans will be established in Hindu Rao House and the Hospital for Indians in Balak Ram-ki-Kothi, while a small hospital for infectious cases will be built on the Durbar area somewhere near Kingsway. For the present these hospitals will be placed under the charge of Major Ogilvie, I.M.S., who has succeeded Captain Ward, I.M.S., as special medical officer at temporary Delhi.

MEDICO-LEGAL WORK IN THE CALCUTTA MORGUE.

Captain O. St. John Moses, I.M.S., Police Surgeon of Calcutta, and Professor of Medical Jurisprudence, Medical College, Calcutta, has issued in pamphlet form a review of a year's medico-legal work in the Calcutta Morgue for 1910 and 1911. These papers appeared in the *Indian Medical Gazette*, August, 1911, and June, 1912.

Dealing with the year 1910, 283 cases were sent up by the police for *post-mortem* examination, as cases in which death appeared to occur under more or less suspicious circumstances. Of the cases dealt with, 185 were males and 98 females. It is noted that Hindus numbered 196, Mohammedans coming next, 45; Europeans 13. The table giving the number of cases according to age-periods shows that between 20 and 35 years was the most frequent.

Of the viscera preserved at the time of the *post-mortem* examinations, 175 were sent to the Chemical Examiner to Government for examination and analysis. Captain Moses has introduced the plan of preserving the viscera in the usual manner, and with the usual precautions in all cases. In instances where there are evident signs of poisoning, or where, on the other hand, although no naked-eye appearances of poisoning are present, the police report points to a possibility of some poison having been used, or when a suspicion arises owing to the absence of manifest cause of death, the viscera are dispatched at once to the Chemical Examiner. If, however, death is found to be clearly due to natural causes, or if the unnatural cause (being other than poison) is quite obvious, and there is at the same time the suspicion of poisoning in the police report or in the *post-mortem* appearances, the jar containing the viscera is preserved. The viscera are retained pending advice from the Commissioner of Police either for destroying after disposal of the case judicially, or for forwarding to the Chemical Examiner.

In the cases examined by the Chemical Examiner, opium heads the list of poisons. Out of 83 cases, 47 were of opium poisoning, alcohol in 13, morphine in 5. It is stated that in 72 per cent. of all the opium cases the drug was used for the purpose of suicide. Violence in some shape or form accounted for 192 deaths, 74 being from accident, 67 being suicide. Natural causes accounted for 91 of the cases in which a *post-mortem* examination was made.

The figures for 1911 show that 356 cases were sent up for *post-mortem* examination—272 males and 84 females—Hindus again heading the list, 236 as against 62 Mohammedans, who come next. Poison was found in 72 out of 133 cases examined, and, as in 1910, opium maintains the first place, 40 cases; but of 211 deaths by violence, 90 were by accident, 78 suicidal, and 14 homicidal. Comparing the two years under review, it is that the total number of suicidal (violent) deaths in 1911 was somewhat in excess of that of 1910—78 as against 68—as also was the figure for suicidal deaths by means of poison alone—47 in 1911 against 43 in 1910. Poisons take the lead, opium being the favourite means of self-destruction, while hanging comes second, and accounts for 24.3 per cent. of all suicidal deaths.

HEALTH OF THE PUNJAB.

The general healthiness of the Punjab in 1911, which had its effects on the sanitary administration of the province, was naturally not without influence on the figures of attendance at the various dispensaries and charitable institutions. The number of persons treated showed a marked diminution, principally under the heading of malaria, where the reduction in patients amounted to 200,000. At the same time the proportion of females amongst in-patients increased, and the Lieutenant-Governor in his review of Colonel Bamber's annual report on the working of the dispensaries, etc., expresses satisfaction at this circumstance, and at the progress made in providing separate treatment for women patients. It may be noted that there are twenty-five dispensaries reserved for female patients, all but seven of these being "private aided" institutions. The returns show that they are all very popular. Sir Louis Dane suggests that more of these institutions might be maintained by municipalities and district boards, although the scarcity of female assistant surgeons to take charge of them is a difficulty at present. However, with the facilities for training now offered at the Northern India School of Medicine, as well as at the King Edward Memorial College at Lahore, the number of qualified women is certain to increase in the near future. The total number of dispensaries at work in the province underwent a net increase of one during the year, owing to two private institutions being closed, while three local fund ones were opened. The local funds in the twenty-nine districts of the Punjab support in all 266 dispensaries, and in addition there are the dispensaries at district and tahsil head quarters and at all towns of any size, while for several years past plague officers on tour have carried with them camp dispensary equipment. His Honour is in favour of opening Canal dispensaries to the general public, but nothing is said on this subject in Colonel Bamber's report. During the year under review the much discussed

experiment of charging fees to well-to-do patients was tried without materially reducing the attendance at the dispensaries. Except in the case of mission hospitals, it is noteworthy that private subscriptions play an almost negligible part in the maintenance of hospitals and dispensaries, the expenses of which are met entirely by municipalities, district boards, and Government. His Honour is of opinion that more money would be forthcoming from private persons if it were known that their subscriptions would be devoted to some special improvement which could not otherwise be afforded.

Health of Simla.

Considering the congestion that still exists in some of the wards the health of Simla is remarkably good. Excluding the deaths among children under 1 year of age—130 out 413 born—the rate of mortality last year was low. Epidemic disease was not prevalent, and the enteric cases dropped from 33 to 21, of which 11 were imported. Bad drainage and insanitary kitchens were detected in some instances, and it is remarked in the annual municipal report just published:

> The policy of condemning, whenever opportunity offers, insanitary buildings or parts of buildings, continued during the year, and when sanctioning construction or reconstruction the committee laid down the necessary conditions to secure light and air, not only for the new houses but also for adjacent ones. Improvement thus slowly spreads over the congested areas.

The water supply in the summer months works out to about 13 gallons per head daily, and this will be increased next year when the hydro-electric scheme comes into operation. More sewerage and drainage works are needed in the station, but at present all that can be done is to maintain in good order those that are already in existence.

Allahabad Water Works.

At a meeting of the United Provinces Sanitary Board it was decided to grant Rs. 30,000 to the Allahabad Municipality for the repair of the pumping engines, and Rs. 50,000 to the Mirzapur Municipality for the completion of the water works.

Light and Air in Bombay.

The Bombay Government has appointed a committee to examine the questions raised in a lecture given by the Hon. Mr. J. P. Orr on the subject of light and air in dwellings in Bombay. The Bombay Corporation has been asked to select two members to serve on the committee.

Sanitation in the United Provinces.

Sir John Hewett presided over the last meeting of the United Provinces Council before his near approaching retirement. After no less than ninety-seven questions had been answered, two bills were passed—namely, the Village Sanitation (Amendment) Bill of 1912, and the Prevention of Adulteration (of Food and Drugs) Bill, 1911.

Treatment of Snakebite.

In his report on dispensary returns for 1911, the Inspector-General of Civil Hospitals, Eastern Bengal and Assam, writes:

> In 1911 only 14 cases of snakebite were treated with Dr. Rogers's or Sir L. Brunton's lancets and permanganate of potash—namely, 4 in the Lushai Hills, 3 in Sylhet, 2 each in the Khasi and Jaintia Hills and the Naga Hills, and 1 each in Darrang, Goalpara, and Rangpur Districts. Of these 12 were males and 2 were females, and their ages varied from 14 to 50 years. In the 2 cases treated at Shillong in the Khasi and Jaintia Hills the snakes were identified by the civil surgeon as *Lachesis monticola*, but they were very small—6 in. and 8 in. in length—and the punctures were only skin deep. In the remaining 12 cases, in which the snakes were not identified, the constitutional symptoms and local effects showed that in 7 the snakes were probably non-poisonous, in 3 slightly poisonous, and in 2 poisonous (1 deadly). Of these 14 cases treated, 1 died. The treatment with incision by Rogers's lancet and potassium permanganate applied locally was apparently of use in some cases, but proved of no avail in a case supposed to be the bite of a cobra, though 2 ligatures were applied within three minutes and treatment with permanganate of potash began in ten minutes, according to the report. I am of opinion that much good results from this method of treatment for snakebite, but the reports furnished are not dependable in many cases, as various details as to time between the bite and the application of a ligature, as also between the bite and commencement of treatment, depend on guesswork; the snake, too, is frequently not killed, and, when killed, not recognized.

New South Wales.

[FROM OUR SPECIAL CORRESPONDENT.]

Low Death-rate in New South Wales.

The Acting Government Statistician, Mr. H. A. Smith, states that the mortality-rate of New South Wales during the last fifty years has decreased by 37 per cent. Between the period 1861–70 the death-rate per 1,000 in New South Wales was 16.42. Last year it was 10.34 per 1,000. Even fifty years ago our death-rate was little higher than the present rate of the most healthy European countries, and to-day Denmark, the healthiest of them, has a considerably higher mortality than any of the States of the Commonwealth. The New South Wales death-rate for 1911 is stated to be 10.34 per 1,000. At all ages the New South Wales death-rate largely decreased during the past fifty years, slowly for the first thirty years, and rapidly during the last twenty. Mr. Smith says that in this there can probably be seen the influence of the Dairies' Supervision Act of 1886, the Diseased Animals and Meat Act of 1892, the Public Health Act of 1896, and, moreover, in the early Nineties an improved sewerage system was carried on after the transfer in 1889 to the present board of the old sewerage works. Over the whole period the fall for all ages was as much as 37 per cent. Up to the age of 35 the decline was over 50 per cent., namely: 67 per cent. at ages 5–9. 53 per cent. at ages 0–4, 53 per cent. at ages 10–14, 48 per cent. at ages 15–24, and 50 per cent. at ages 25–34. At ages 35–75 the fall was 48 per cent. in the first group and 20 per cent. in the last.

Birth-rate in New South Wales.

Mr. H. A. Smith has also prepared an interesting return dealing with the birth-rate. In a table the birth-rates per 1,000 of women living at various groups of reproductive ages, from 15 to 45, are divided into total births, legitimate and illegitimate, for the three census periods 1891, 1901, and 1911. In the case of mothers aged 15 to 29 the decrease per cent. in rate from 1891 to 1911 was 4.4; 20 to 24, 17.2; 25 to 29, 24.3; 30 to 34, 32.5; 35 to 39, 37.7; 40 to 44, 43.6. The general rate thus shows a slight advance in 1911 as compared with 1901; the rate for mothers over 30 years of age shows a regular decrease from period to period, from which it appears that the rate has been maintained only by births the result of recent marriages. A second table shows the legitimate births per 1,000 married women at each age. From this it will be seen that the rate at the youngest ages (15 to 19) has advanced, and that in 1911, although lower than 1901, it was higher than in 1891. From thence onward, however, as the age advances the decline has been general, amounting to 21.6 per cent.

Medical Inspection of School Children.

At the present time three doctors are employed as medical inspectors of school children in the metropolitan area and one in the Newcastle district. Circulars of instruction are issued to teachers, which enable them to detect cases of children who appear to be suffering from defects. Teachers then select the children who should be presented for examination by the doctor on his visit to the school. The doctor also makes a general inspection of the various classes, and selects any others who may have escaped the observation of the teachers. On ascertaining the presence of an ailment, he gives the child a note to the parent informing him of the fact and advising medical attention. He further reports on the condition of the school premises from a medical point of view. It is also one of the duties of the doctor promptly to visit a school where an epidemic breaks out, and take such action as may be necessary to prevent the spread of contagion. The anthroponetric work for statistical purposes is confined to measurements of height and weight and to tests of vision. This is carried out by the teachers under instructions issued for the purpose. A new departure is now being made by the appointment of our nurses who are to work under the supervision of the doctors. The duties of these nurses are as follows: To attend school with medical inspectors; to take down at doctor's dictation medical directions as to ailments of children; fill in notes to parents with doctor's recommendation, and to dispatch them promptly by post; to keep a list

of all children whose parents have been advised as to ailment with a view to visiting their homes and urging compliance; to revisit the schools and ascertain from the list made out in the first instance if the doctor's recommendations have been adopted; to visit homes of those parents who have failed to carry out suggestions, and tactfully to urge compliance with the same; to take special cases to hospital or doctor whose parents are unable to do so; to carry out all other cognate duties such as the medical inspector may direct. In order that more time may be allowed to the doctors to carry out the medical inspection in the schools and the higher lecturing work, an additional nurse has been appointed to give courses of lessons to the senior girls in the schools on the care of infants, including the nursing, clothing and feeding of babies.

The Australian Death-rate.

Mr. G. H. Knibbs, the Commonwealth statistician, in the course of an address on Australian mortality during the last thirty years, stated that New Zealand was the only country in the world which had a lower death-rate than Australia. The Australian mortality had decreased from 13.0 per 1,000 in 1880 to 11.2 per 1,000 in 1896, and to 7.1 at the present time. It was noteworthy that whereas the mortality from tuberculosis had considerably decreased, that from cancer had correspondingly increased, until quite recently the number of deaths from cancer exceeded those from tuberculosis. Statistics showed, moreover, that whereas middle age was the time of life at which people most often died of tuberculosis, the mortality from cancer went on increasing with age. As regards suicide, Mr. Knibbs stated that, contrary to what might be supposed, it was possible to predict the phenomenon of self-destruction. In Australia the ratio of male to female suicides was very peculiar, for 495 men committed suicide to every 100 women. In Europe suicide occurred with greatest frequency in June, while in Australia they were most common in December; but in Australia the range of differences as between the seasons was less than in the Old World. The ratio between suicides and temperature was identical, so that it could be calculated from the temperature what the suicides would be. Usually there was an interval of nine to ten days between the period of greatest heat and its expression in the maximum of suicides. The tendency to suicide reached its maximum amongst males at 65, but among females it rose rapidly to 19, and then showed little further increase. The maximum of male suicides as at different ages was six times as great as the maximum of female suicides.

Juvenile Labour in Factories.

In the annual report of the Department of Labour and Industry, which has just been presented to Parliament, it is stated that since federation the number of factories in the metropolitan district had increased by over 100 per cent., and the hands employed therein from 34,225 to 77,505, and although the area of the district had been extended, this would not affect the increase to any considerable extent. The principal classes of industries which showed a substantial increase were clothing and textile fabrics, metal works, machinery, etc., processes in stone, clay, glass, etc., light, heat, and power, furniture, bedding, etc., and working in wood. The department has always been opposed to young girls in factories working overtime, and the provision in the Minimum Wage Bill (which was passed at the end of 1908) for tea money and overtime was intended to prevent the continuance of overtime by those employees. This appears to have been effective for a year or two, but since the latter part of 1910 there has been such an enormous increase in the work in various factories in which numbers of young girls are employed that a good deal of overtime has been worked by them. It is suggested that the only way to deal with this question is by legislation fixing the age at which females may be so employed. On the question of juvenile labour it is suggested that the age at which children should be allowed to commence work in factories should be raised to 15 years, but that provision should be made in regard to boys only, that where the Minister is satisfied that the boy is physically strong, is fairly well educated, and that his earnings would be of material assistance in the upkeep of the home, special permission to work in a factory at the age of 14 years should be granted. Overtime also should be forbidden in the case of any boy under 16 and any girl under 18 years of age.

Straits Settlements.

Annual Report of the Medical Department.

The report for 1910, which has just been received, is a lengthy document of over 150 pages, and deals with the different departments of the Public Health Service.

Population.

The population of the Straits Settlements for 1910 was 653,853, showing an increase of 8,931 on that of the previous year. The birth-rate for 1910 was 27.55 per 1,000, a slight increase on that of the previous year, which was 26.69. The death-rate for 1910 was 41.88 per 1,000, as compared with 37.58 for 1909; 5,077 of the deaths registered in 1910 were among infants under one year of age, which represents a percentage of 18.47 of the total. Of the 5,077 deaths registered of infants, 3,714 were returned as due to convulsions. With the hope of reducing the large infantile mortality a nurse was appointed in Singapore to instruct native mothers in the proper care of their infants.

Zymotic Diseases.

Only 5 cases of plague occurred within the municipal limits in Singapore, and all were in Chinese males. Two outbreaks of small-pox occurred during the year—in all 1,879 cases and 522 deaths, as compared with 41 cases and 8 deaths in the previous year. The number of cases of beri-beri remains much the same as in previous years. 2,044 cases being treated in hospital, with 290 deaths. In common with other countries where this disease prevails the results from the use of parboiled rice continue to be satisfactory. The native patients at the several hospitals are exclusively fed on it. The deaths from phthisis registered amounted to 2,571, as against 2,659 in 1909. The death-rate from malaria continues very high; there were in all 3,300 deaths in the whole of the colony. The chief cause of the great prevalence of this disease is the opening up and clearing of new estates in all parts of the peninsula. 280 cases of ankylostomiasis were admitted to the hospitals during the year, with 84 deaths.

Hospitals.

Full advantage is taken of the different hospitals throughout the colony, no less than 35,684 cases being treated in 1910, the percentage of deaths to total treated being 12.69. The principal diseases treated were malaria, beri-beri, phthisis, dysentery, and venereal diseases. There was a considerable increase in the number of vaccinations performed in the colony—20,990, compared with 12,854 in 1909.

Medical School.

Eighteen new students joined during the year for the full course of five years, of whom two were women, making in all 72 students in training for the L.M.S. diploma.

Lunatic Asylum.

The report refers with satisfaction to the fact that the percentage of insanity in the colony is considerably lower than in England and Wales. This percentage (based on the last census figures) is for the Straits Settlements 5.27 per 10,000, and 36.1 per 10,000 for England and Wales. The low percentage is attributed to there being an abnormal ratio of females to males, and so less puerperal insanity, abnormal number of very old and very young, little alcoholism, and the deportation of many of the partially insane, imbecile, and weak-minded to their own countries.

Leper Asylum.

Leprosy still continues to be prevalent in the colony, 191 fresh cases being admitted to the asylum during 1910, giving a total of 611 under treatment. There were 186 deaths.

Pathological Department.

During the year 879 specimens were examined. These specimens consisted of blood films from malaria cases and typhoid cases, sputum, urine, faeces, etc.

Meteorological Return.

The mean shade temperature in the different months varies very little during the year, 81.1° being the highest, and 79.5° the lowest, the mean daily range being about 14°. The total rainfall during the year amounted to 112.65 inches, the wettest month being February (which had a recorded rainfall of 22.31 inches), January, May, June, and July being the driest, with a rainfall of 6 inches.

Correspondence.

THE ORGANIZATION OF THE CAMPAIGN AGAINST TUBERCULOSIS.

SIR,—All over the country schemes are being considered and adopted for the control and treatment of tuberculosis in connexion with Sanatorium Benefit. In a few weeks we shall be in the thick of the fight again with regard to Medical Benefit, and the tuberculosis question will be likely to receive inadequate consideration, especially as all schemes now adopted are stated to be merely provisional. The main features of the provisional schemes are exceedingly likely to become stereotyped in the final arrangements, and it is, therefore, of urgent importance that two vital defects that tend to show themselves in many schemes under consideration should be carefully looked for and avoided. The one is a positive, the other a negative, defect.

The positive defect is the tendency to give an established place in the scheme to some particular form of treatment for the disease, either by making special provision for it, as being a form of treatment to be carried out by particular officers or at particular places, or by arranging special scales of payment for carrying it out. Such provisions are likely to find favour with the therapeutic specialist, whose chief work it is to carry out this particular sort of treatment, and who is naturally pleased to see prominence given to what he at the moment believes to be the most efficacious, and possibly the only true, method. They are also likely to find favour with those to whom the provisions assign the carrying out of this work, if it is not too arduous, or the payment for it, if it is sufficient. But to those who are interested in the general progress of scientific medicine any risk of stereotyping by official regulations any particular line of treatment which happens at the moment to be popular must be regarded with dismay. Most of us who are over middle age can remember large numbers of so-called specific methods of treating tuberculosis which at the height of their popularity were asserted to be the only infallible methods of cure, with as much confidence as are any of the specific methods at present in use, and which have nevertheless now rightly come to be regarded as having merely a limited use in particular cases. Whether they would so soon have found their proper place if they had been selected as authoritative methods for special regulations and special payments in a public scheme is more than doubtful. It is earnestly to be hoped that every doctor engaged in the fight against tubercle will be allowed "free choice of treatment" unhandicapped by any bias that may be imported by special regulations as to personnel, place, or payment.

The negative defect in many schemes is in my opinion of even greater importance. Insufficient attention is too often given to the supreme necessity of securing for every tuberculous person a "home doctor." In commenting on the Manchester scheme this week you, Sir, draw attention to this defect as a serious injustice to the general practitioner. But I would put it on the higher ground that it is a fatal bar to the efficiency of any scheme from the point of view of curing the patient or safeguarding the community.

The first step in any scheme should be to compel the tuberculous person himself to choose, and if he will not, to select for him a "home doctor." No form of treatment of any kind should be carried out until this is done, and [illegible] subsequently adopted should be [illegible] this practitioner. This home doctor should be continuously responsible for the supervision of the patient so long as he is residing in his home and should be kept informed of the progress of the case if removed for hospital or other institutional treatment. It is only by such constant supervision of home conditions that the arrest of tuberculosis in any individual case can be maintained, and that the large sums which it is now proposed to spend on the eradication of this disease shall be prevented from being frittered away.

No sanatorium scheme should be approved which establishes any form of specific treatment or fails to establish for each tuberculous person a home doctor.—I am, etc.,

London, Sept. 23rd. LAURISTON E. SHAW.

SIR,—Dr. McNeil shows again in his paper on "Tuberculosis in Infancy and Childhood" what has been shown time and time again, that a very large percentage of children, both under 5 and during school life, show a positive reaction to von Pirquet's test. This we find is the case, even though there may be no lesion at all, but each one of these children is a possible consumptive patient, and may become a focus of infection. Is not this fact a reason why more attention should be paid by the local education authorities to that part of the interim report which deals with children, and in which sanatorium and other schools are recommended?

The present so-called preventive measures being inaugurated by the various authorities are, to my mind, very incomplete, merely "shutting the stable door after the horse has been stolen." To destroy the tide of disease at its very start we must get at it in the children. The only effective method of rendering the next generation freer from the disease than the present one is to prevent the germs developing in childhood during school life, and at the same time to so develop their bodies that their resistive forces may overcome the ravages of modern life. The aim of the present crusade against tuberculosis should not be merely to obtain a reduced death-rate, but to stamp the disease out altogether, and to do this no half measures are of any avail.

The proper control of the milk supply is, of course, absolutely essential, but even when it is properly controlled there are still many other sources of infection; and if there are a great number of impaired constitutions and poorly developed bodies in the community, they will, of course, all be likely to be suitable media for the growth of the bacillus. If all children reacting to the von Pirquet test were deported out of the towns into country schools far away amongst the pines and heather, and if these schools were conducted on sensible, health-producing lines, not only would the nation be richer by having a growing generation stronger in physique, but also the slum children freed from disease, bad, unhealthy dwellings, and stupid, neglectful mothers, would be taught to appreciate their work in life, and how to do it well. Their brains and bodies would be developed at less cost and less energy on the part of the teachers than is the case now. Such schools properly controlled by resident medical officers, and conducted on very different lines to the modern council school, would not only, I feel sure, do more to stamp out tuberculosis than any other method, but also would help to solve many of the most pressing social problems of the day.

There are tremendous possibilities in these colonies. They would prove a means of regenerating the English race, of developing the national physique, of training the national brain into more normal grooves, of creating a healthy love of Nature and outdoor pursuits, and of creating a horror in the minds of all of dirt, foul air, filthy streets and dwellings, and all disease-infested neighbourhoods.—I am, etc.,

Salford, Sept. 25rd. PHILIP BENINGTON.

SIR,—Having noticed in past issues of the JOURNAL many instances of your keenness for correct nomenclature, might I venture to suggest that you once more have an opportunity of keeping the laity right, and of enlightening even the members of the medical profession?

Repeatedly in your recent issues, and also in the reports of the meetings of the State Sickness Insurance Committee, the term "sanatorium benefits" is used when the intention is to refer to a proposed tuberculosis medical service available for every member of the community in the United Kingdom. The words, "sanatorium benefits," have now become so closely associated with the National Insurance Act and certain peculiar benefits to be given

to insured persons only, with possibly an extension to their dependents, that to use them when referring to schemes for the whole community can only lead to confusion. This confusion was very marked at the recent Representative Meeting, when several of its members openly acknowledged their ignorance of facts by inquiring of the Chairman whether persons in the receipt of incomes of several hundred or thousand pounds a year, and not insured under the Act, could participate in the proposed tuberculosis schemes. It was the constant use of the words "sanatorium benefits" when a tuberculosis medical service was referred to which nearly placed the Representative Meeting in the untenable position of declining to assist schemes for combating tuberculosis throughout the United Kingdom for the whole community, even if all the cardinal principles demanded were granted, solely because a proportion of the required funds would come from the National Insurance Fund formed for only a third of the community and for whom it was proposed to give, in addition, a medical service for other diseases and complaints possibly on lines objected to by the medical profession.

Recent correspondence in the JOURNAL and SUPPLEMENT would lead one to suppose that the writers believed that the two medical services were interdependent and related. If it is appreciated that the proposed tuberculosis medical service is entirely separate in organization, conduct, and, so far as two-thirds are concerned, in *clientèle*, from the National Insurance Act and its medical service, and must therefore be judged entirely on its own merits apart from that Act, then the medical profession will be better able to give an unbiassed consideration to the schemes and more likely to succeed in obtaining their just and reasonable requirements.

Might I venture, therefore, to ask you, Sir, to draw attention to these facts and the confusion that seems to exist, in order to help to a successful issue the negotiations now being undertaken throughout the United Kingdom for the purpose of forming medical services for combating tuberculosis amongst all members of the community?—I am, etc.,

Brighton, Sept. 23rd. E. ROWLAND FOTHERGILL.

THE INDIAN MEDICAL SERVICE.

SIR,—I am at a loss to understand not only the motives but also the reasoning which actuated the writer of the letter signed "Major, I.M.S." published in your issue of September 21st. In regard to the former it may be admitted that circumstances *may* justify an officer attempting to disparage in an influential public journal the service to which he has the honour to belong; but by most of those who possess any feeling of *esprit de corps* it will be held that such action requires very strong justification.

In regard to the reasoning, your correspondent in the first paragraph of his letter suggests that "the best thing that could happen" to the Indian Medical Service would be for it to become a purely military service. Later on, however, in speaking of the prospects of the military side, he states: "What are they? Absolutely *nil*. A man joins, becomes medical officer of a regiment, and as such he must remain; there is no possible chance for him." It is true he ascribes this alleged state of affairs to the regimental system at present prevailing in the Indian army, but I take it he will admit that the station hospital system, which he evidently favours in common with others, though it may lead to increased military efficiency, will not develop the purely professional attainments of officers in a manner at all comparable to the vast and varied experience in the civil department now open to all officers of the Indian Medical Service.

I am wholly unable to understand what your correspondent means when he says that men are attracted to the Indian Medical Service under absolutely false conceptions of the conditions of civil employment. Until one has served in India in either a civil, military, or other capacity, it is impossible to realize fully local conditions, but I would ask him what other military medical service offers such scope for those with energy and initiative, or such opportunities for distinction as falls to the lot of officers of the Indian Medical Service in civil employment? The latter, it may be added, form the war reserve of the Indian Medical Service, and it is difficult to conceive any system whereby men not required for military service during peace can be employed with more advantage to themselves and to the State than that which exists in the Indian Medical Service. If I understand him rightly it is this system your correspondent would like to see abolished, and one in which "a man joins, becomes medical officer of a regiment, and as such . . . remains" substituted.

The facts appear to be that medical officers in civil employment, whether engaged in administrative duties carrying great responsibilities, in routine medical and surgical work, or in carrying out scientific research, perform important duties to the State which cannot be adequately undertaken for many years to come by any other service, either European or native.

It is for this reason that, in my opinion, the results of the labours of the recently appointed Royal Commission can be awaited in equanimity. The personnel of the Commission, it is true, does not inspire great confidence in the minds of members of the Indian Services generally: nevertheless, so far as the civil side of the Indian Medical Service is concerned, the Government of India (as the result of the representations of Lord Morley) are known to have studied the question in all its bearings, and they are believed to have arrived at certain conclusions. These conclusions, on account of their unanimity and authority, will carry great weight not only with the Commission but also—and this is more important—with the Secretary of State for India, who will be unable to ignore them without incurring a grave responsibility towards the people of India.

I do not propose to deal with the question of pay, referred to by your correspondent, and in this connexion I will only add that it is entirely contrary to general experience to say that the present pay is not a living wage for a married officer. When, as in my own case, it is possible to come home on furlough on £500 a year after eight and a half years' service, and at the end of thirty years' service to earn a pension of £700 per annum, it will be clear that your correspondent has failed to represent fully all the facts of the case.

My excuse for occupying so much space is that in the interest of the public service I do not think so misleading a letter as that of your correspondent should pass un challenged.—I am, etc.,

September 23rd. CAPTAIN, I.M.S.

FORCIBLE FEEDING OF SUFFRAGE PRISONERS.

SIR,—The letter of Dr. McIntosh in the JOURNAL of September 21st (p. 748), on the position of prison surgeons in respect of their duties, appears to have been written without a clear conception of the status of these officers. The duties of a prison surgeon are regulated by an Act of Parliament, 28 and 29 Vict., cap. 127. He is not a subordinate officer, but is bound to obey the directions of the governor in matters not regulated under the Prison Act, 1865. The governor has power to enforce on him the due execution of his duties. While acting as prison surgeon he is deemed, by virtue of his appointment, to be a constable (Sch. 1, s. 63). It is, therefore, an official duty to prevent a prisoner from doing any felonious act; and to attempt to commit suicide by starvation is a felony.

For neglect of duty or other misconduct he may be suspended or removed from his office by the justices in sessions assembled (Sect. 14). It is no part of his duty to decide whether the offences under which prisoners are sentenced have any political aspect, or otherwise; to him they are prisoners and patients. With respect to patients requiring forcible feeding, he deals with them as he would deal with private patients who decline to take food, thereby endangering their lives; and if he dealt otherwise with them he would be neglecting his duty absolutely.

It will be remembered in this respect that when an "eminent surgeon" was cross-examined in a suffragette action in the High Court he was obliged to admit that, should a private patient decline to take food, thereby endangering life, he would not hesitate to order such patient to be fed by forcible means.

To attack prison medical officers for performing a duty, however unpleasant it may be, which they would not hesitate to carry out in private practice where necessary, seems to be neither logical nor ethical.—I am, etc.,

London, Sept. 20th. A. G. BATEMAN.

SIR,—With regard to Sir Victor Horsley's report on forcible feeding, and the ensuing correspondence, I agree with one of your writers who deprecates the introduction of party political animus into the JOURNAL. But it is indeed surprising that he should accuse Sir Victor Horsley of this error, because, obviously, if this report is an indictment against any party, it is an indictment against the Liberal party, and we all know that Sir Victor Horsley recently stood as Liberal candidate for the University of London. Therefore it is at least proven that he has not been actuated by *party* political motives, as he has been writing against, rather than for, his own side.

This question of forcible feeding in prisons should be treated in a purely academic manner and apart from all political considerations. If the patients concerned are sane (and if insane, prison is no place for them) the question resolves itself simply into this: Do the medical profession wish to have it understood that they reserve to themselves the right—if they believe it to be for the good of the patient—to carry out on sane adult individuals, against their wishes and those of their friends, proceedings at once dangerous and painful? I turn aside for one moment to justify those two epithets. I say "painful" because we have evidence to that effect from a number of women, many of whom are only distinguishable in ordinary life from their fellows by rather an excess of philanthropic zeal. One of your correspondents brings forward—to belittle the evidence—the statement that the physical and mental torture was entirely due to the subjective feelings of these women. But all pain is subjective. Why do the medical profession believe childbirth to be painful? The vast majority of them have no first-hand experience of it. The women concerned are often mentally upset at the time, and their evidence, therefore, possibly unreliable, and on the face of it the process is a natural one and ought, therefore, not to be *a priori* painful at all! Yet we believe in its painfulness. I say also "dangerous":

(*a*) Because the patients had to be released on health grounds before the expiration of their sentences.

(*b*) Because of the evidence to that effect brought forward by medical practitioners who saw the patients on their release.

(*c*) Because, according to correspondence in the *Times* some months since, one man (non-suffragist) prisoner died under forcible feeding in 1910 and another in 1911.

Now, it seems to me that it is rather an honourable tradition of the medical profession that painful and dangerous treatment should not be carried out against the wishes of sane adult patients and their friends, even in order to save life. One remembers the cases that have been reluctantly permitted to leave hospital to die when, humanly speaking, only an operation could save them, and would have saved them easily, because the patients have refused their consent.

It is noteworthy that in these prison cases the results of forcible feeding appear to have been unusual. As one of your correspondents observes—here "results follow this process of introducing the tube out of all proportion to those which have been observed previously." One remembers cases of artificial feeding carried out over long periods with very little deleterious effect on the patients. But had they lost weight at the rate these suffrage prisoners appear to have done, they would have been non-existent long before the necessary term of such feeding expired.

In all but asylum cases (where endless notes and reports rightly safeguard the interests of the patients as much as possible) a person is able to terminate the ministrations of his physician at his pleasure; this is not the case in prison: he must be treated willy-nilly, it is in camera, with no friends present to witness what is done, and the doctor concerned has, in the nature of the case, no private practice to suffer if he persists in treating his patients in a manner—"dangerous" and "painful" to boot—that such patients deplore. This is a condition of things against which, now it is brought to their notice, it seems to me that it would be in keeping with high medical ideals for the profession to protest. It is a matter of indifference whether the patient is Tom Mann or Sir Edward Carson, a quaker or an anarchist, an angel suffering for humanity, or a player to the gallery. This is a matter for the profession to discuss apart from any political consideration.

Some of the laity, with that habit of loose thinking—so to speak where medical issues are at stake—have been heard to say, "Serve 'em right." That may be. But if treatment involving "pain" and "danger" is to be meted out as punishment, the dose should be prescribed by the magistrate, and most certainly not administered by the doctor, whose mission in prison is distinct from that of a disciplinarian. Let the Home Secretary and suffragists fight it out between them without medical interference. If the former prefers to let suffragists starve rather than account them as political prisoners, that is his affair, for which he will answer to the nation in due course; if, on the other hand, suffrage prisoners prefer to die rather than tacitly admit that they are actuated by the motives of common criminals, that, again, is their affair, for which they and their friends will be judged at the bar of public opinion.

In a political struggle of this kind "painful" and "dangerous" medical treatment which helps one of the parties in the struggle to get out of a dilemma, and which, applied against consent, increases the difficulties of the other party, seems an impertinence.

Finally, this question has to my mind arisen at a very opportune moment. Just now many medical men are interested in the compulsory treatment of school children. Whether Sir Victor Horsley's report will tend to give the public confidence in placing themselves unreservedly in our hands I have reason to doubt.—I am, etc.,

London, N.W., Sept. 23rd. H. B. HANSON.

SIR,—It is impossible to adopt the opinion of Dr. A. G. Welsford that the question of forcible feeding should be excluded from the JOURNAL on the pretext that it is a non-party organ.

Such reasoning would debar from comment in your columns references to the Mental Deficiency Bill, the State regulation of vice, and many other matters of general and professional interest. In common with Dr. Hubert Norman I trust that free discussion of this unutterably distressing report will be encouraged.

Apart from the question as to why such treatment should be persevered with when in so many instances the result has not justified the alleged reason of its administration, that is, the detention of prisoners till the termination of their sentences, the ethical side is one of considerable moment to those who are in general practice, and who are constantly being asked by patients who have read of cases as Miss Davison's such questions as the following: "Are prison doctors forced to do things to prisoners which they know are bad for them if they are ordered to do so by the Home Office?"

If this is not the case, how did "an eminent specialist" say that Miss Davison was in a fit condition to be forcibly fed, after attempting suicide to avoid what was to her a horrible ordeal, when she was in such a grave state of health that she had to be released unconditionally immediately after this treatment had been carried out? "Do specialists often make mistakes like this? What would you do in such a case?"

While *esprit de corps* constrains one to put as good a face on the matter as is possible where one's colleagues are concerned, one is in a singularly awkward position when all the evidence at one's disposal points to the fact that these men allowed themselves to be made executioner's tools. Treatment such as is quoted in the report requires much explanation, though obviously, if the evidence of the many victims themselves and that of the members of the medical profession who examined them on their release is to be ruled out of court, it is difficult to see how such charges can be anything but "unproved." How does Dr. Welsford suggest that proof can be obtained?

London, S.E., Sept. 14th. H. GORDON CLARK, M.D.

SIR, In your issue of September 21st there appears under the above heading a letter which—be it said without offending—is more a credit to the heart than the head of the writer.

The attempt to commit suicide is an offence at law, irrespective of whether it is attempted inside or outside a prison, and any person aiding actively or passively is *particeps criminis*.

Are we to understand from Dr. McIntosh's letter that he advocates that the forcible feeding is to be done by the warders? Heaven help the ladies! If he does not mean this, are we to understand that he thinks every criminal should be immediately liberated when he refuses his diet? Heaven help the public!

The question, to my mind, involves a grave national scandal—not as Dr. McIntosh takes it, but this way: the administration of justice would be reduced to a farce if penalties for crime were successfully evaded by refusing food. If the suffragette *must* be liberated when she declines to eat, how would you justify the refusal of the same privilege to the burglar?

Personally I would welcome a measure which would give a vote to women who pay rates and taxes; but that is very different from tolerating open defiance of the law. – I am, etc.,

London, E., Sept. 24th. GRAHAM GRANT.

THE NATURE, ORIGIN, AND MAINTENANCE OF LIFE.

SIR,—In his address before the British Association, Professor Schäfer has given us an excellent summary of our present knowledge of the physico-chemical mechanism of life and its origin, but I hardly think he is justified in including in his title the expression "nature of life." Life from its very nature is an unknown quantity, and must remain for ever so, as long as man's senses remain limited as at present.

To me it seems the point of the whole thing is, Where does consciousness figure in the problem? The mention of it in the address is scanty, much belated, and, to say the least, unconvincing. For most of us the salient feature of life is the phenomenon of consciousness, and by this I do not refer to self-consciousness, which is a highly-evolved product late to appear in the evolutionary scale. There must be in the simplest forms of life a rudimentary consciousness—something of the same order of existence out of which those higher degrees of consciousness as we know them are evolved—something which divides animate from inanimate matter.

Let us suppose for the sake of argument that those complex molecular vibrations which occur in undifferentiated living protoplasm, and give it its specific characters, are totally unaccompanied by any degree of consciousness. Then the question naturally arises, at what stage in the evolutionary scale of living things does it begin: for every evolutionist must admit that it has been evolved, and if so, "From what?" it may be asked.

This supposition, then, leads us to the conclusion that at a certain stage of evolution consciousness comes into existence apparently from nothing, which is absurd.

To say that certain cells of the external layers of an organism, in virtue of their position, become specially sensitive to the stimuli of the outer world would be probably true if by the term "sensitive" we mean reactive from the chemical point of view, but if otherwise we imply sensation, then we are merely begging the question at this stage.

I think the only logical view from the evolutionary standpoint is to admit that consciousness does not come into existence *de novo* at a certain stage in the evolutionary scale of living things but that it existed *ab initio*. There must be in the primitive protoplasm some rudimentary undifferentiated consciousness as the unit out of which the whole psychic life of the higher animals has been built up in the course of evolution, up to and including self-consciousness. It is a principle of biology that the vital functions that obtain in the higher organisms all occur in the simplest protoplasm but in a simpler form; we can hardly imagine, however, that the content of consciousness of such a simple form of protoplasm could be more than a pure, primitive, tactile sensation of the feeblest kind.

If we admit that the life process is always necessarily accompanied by consciousness, and that that is its chief and specific characteristic as differentiating it from non-living matter, then this fact alone justifies us in condemning life as merely a physico-chemical process, for no one will suggest that chemical actions alone are the subject of consciousness. Further, it argues well for life being a specific form of energy.

Now in these days we see everything through the spectacles of evolution. We have applied evolution not only to biology but to every branch of knowledge. In chemistry even our elements are looked upon as survivals—stability under the existing circumstances being the determining factor—evolved from one primordial element. Why should we not apply the evolution hypothesis to energy, and look upon the different forms of energy—radiant, thermal, electrical, chemical, etc., culminating in vital energy—as higher degrees evolved from some original form of energy, and which in process of operation on resistent matter are apt to dissociate into some of their simpler components, thus accounting for the transformations of energy known to physics? The principle of the conservation of energy and equivalent energy is not endangered. It is one of the specific characteristics of chemical combination that the product produced has entirely different properties from those of its constituents. No reason will explain it; we have to accept it as a fundamental fact. It is equally possible that combinations of different forms of energy might produce entirely different phenomena, including those of conscious life itself, as the highest and most finished product.

I look upon life, then, as a specific compound form of energy of its own kind, the highest product in the evolution of energies, and which in its operation dissociates *pari passu* into some of its components—chemical, electrical, thermal, etc.—which are then conspicuously free to act of their own accord, and have thus given rise to the idea of life as a purely physico-chemical process, as this is most in evidence.

In conclusion, although one may relegate life or consciousness to its proper place among phenomena, yet one does not explain it, and we can only banish the problem to final unknowable causes. – I am, etc.,

London, E., Sept. 19th. FRANK B. SKERRETT.

WHOOPING-COUGH AND IODOFORM INJECTIONS.

SIR,—After perusing the paper by Dr. Dewar in the JOURNAL of September 21st one remains with the impression that an equally good result might have been obtained by many other forms of treatment, or by none beyond good hygiene. Some data also, necessary to enable a conclusion to be drawn by any one, are omitted, though, no doubt, Dr. Dewar considered them. So he must pardon if others hesitate to make the jump he has so easily accomplished; must also pardon some amusement at this rushing into print with one case, and talk about "looks like a specific treatment." Should we envy or deplore such simple faith? It seems to come easily to those who picture all their therapeutic efforts as pregnant with large results, and all effects to be due to the one cause they initiated.

Dr. Dewar, however, naïvely admits that his object in writing was, not so much to present this treatment as to again direct attention to the intravenous treatment of pulmonary disorders, especially phthisis, by injections of iodoform; and a letter from a medical friend in the Transvaal satisfies him that this treatment is useful "in pneumonia, asthma, and leprosy, as well as syphilis." This is a sweeping statement to endorse in so bold a way, and hardly deserves the prominence Dr. Dewar accords it.

There may be much in Dr. Dewar's contentions, but this paper illumines the personal equation, which readers of the contributions to your paper must always estimate, and one is inclined to classify Dr. Dewar as of those people, combining enthusiasm with simplicity, who may be termed therapeutic optimists.

If Dr. Dewar will turn over his JOURNAL to page 690 he will find there an example for therapeutic investigation without the optimistic element.—I am, etc.,

Glasgow, Sept. 24th. R. O. ADAMSON.

MEDICAL SCIENCE AND WEIGHTS AND MEASURES.

SIR,—Medical men suit their own convenience when using the British tables of weights and measures in preference to the metric system. Custom, practice, thought—these three unite to make the British system popular. It adequately meets all practical requirements. The general practitioner never thinks of the metric system except when reading professional and scientific treatises. On these occasions he converts one system into the other if he has a medical diary at hand, if not he wearily skips the figures, and wishes to goodness that some enterprising firm would place on the market measures, thermometers, etc., marked with both British and metric scales. The want of means of practising and thinking in the metric system is the chief cause of our retaining the British system. The kindergarten method of having measures, etc., marked with both scales would in a brief

period familiarize the profession with the metric system and it would become exclusively used. Medical men would welcome anything that will enable them to read modern textbooks without the necessity of having to make a mathematical calculation every time they come across a figure in the text.—I am, etc.,

Dublin, Sept. 23rd. SEYMOUR STRITCH.

MENTAL DEFICIENTS AND THE COMMUNITY.

SIR,—Should we not believe that God helps those who help themselves as well in eugenics as in everything else? Nature has furnished us with a certain amount of plastic substance which within certain definite limits we can fashion more or less as we please. Is there not something of the immorality of gambling in allowing the human type to depend, as Samuel Butler would have said, upon a throw of the dice?

Gabriel Tarde, in his well-known book, *Les Lois de l'Imitation*, tells us: "We can already foresee the day when civilized man, after having created so many animal and vegetable varieties of inferior life suited to his wants or caprices, and kneaded to his wish as if to exercise himself for a higher design, will be bold to attempt the problem of being his own breeder, of knowingly and deliberately transforming his own physical nature in conformity with the needs or wishes of his final civilization." He also reminds us that in four centuries the ideal created by the cult of the Delphian Apollo culminated in the age of Pericles, that classical period which witnessed the production of the finest race, physically and intellectually, that the world has ever known. What a seeming reproach, then, to our time that after nineteen centuries of Christianity we in England should be faced with such a blot on the country and the empire as the slum population, for instance, and all that it implies, of London and other large cities.—I am, etc.,

September 19th. SOCIOLOGIST.

Special Correspondence.

BUDAPEST.

Notable Decrease in the Mortality amongst Consumptives in Hungary.—Prevalence of Insanity amongst Doctors and other Professional Men in Hungary.—Epidemic of Acute Poliomyelitis in Hungary.

THE untiring efforts of the numerous societies founded for the purpose of stamping out consumption in Hungary have already been rewarded by a steady fall in the annual number of deaths caused by that disease. The official returns for the year 1905 prove that out of 10,000 inhabitants 45 died of tuberculosis, whilst the mortality for the next six years was as follows: In 1906, 37.6 per 10,000; in 1907, 37.1; in 1908, 36; in 1909, 35.1; in 1910, 33.7; in 1911, 31.4. It is true that the average death-rate from tuberculosis in Germany is only 16.8 per 10,000 inhabitants; but, according to Fay, if the deaths from all the other diseases of the respiratory organs are included, the total German death-rate is in reality no lower than that of Hungary. Another proof of the excellent work accomplished by these societies may be seen in the fact that the Hungarian regiments suffer less from tuberculosis than any other corps in the Austrian army.

A startling statement has recently been made by Dr. Koloman Pandy, Senior Physician to the State Asylum at Lipotmezö. Dr. Pandy, who has made a careful study of the life-histories of the 12,000 patients admitted to the asylum during the last forty years, has come to the conclusion that 53 per cent. of the cases of insanity amongst professional men were avoidable. Every one of these cases, he tells us, died of paralysis, 29 per cent. being doctors under 36 years of age. As regards doctors over 36, the percentage of deaths from paralysis amounted to 77, whilst amongst lawyers who had passed the same age it rose to 89. Out of 55 members of the latter profession, ranging from 40 to 60 years of age, 51 succumbed to paralysis; and the 11 actors admitted to the asylum during the period in question all suffered from the same disease. As regards the prevalence of paralysis in other professions, the army was represented by a fairly large proportion—94 per cent. of military officers over 36 years of age—and the Church by 82 per cent. of Protestant and 42 per cent. of Catholic clergymen. The lowest proportion seems to be found amongst Jewish school teachers, there being only 6 per cent. under and 40 per cent. over 36 years of age in the total number of cases. On the other hand, the proportion of paralysis amongst the total number of mental diseases in Jewish merchants over 36 rises to 93 per cent.—thereby affording conclusive evidence that it is moral conduct, not circumcision, that protects the Jew from syphilis; whilst in agricultural labourers it is only 25 per cent., and in railway and navigation men 71 per cent. The connexion between paralysis and immorality is clearly proved by the data afforded by the histories of female paralytics, the proportion of paralysis amongst women between the ages of 16 and 30 being only 2 per cent., whilst in prostitutes of the same age it rises to 30 per cent., and amongst women between the ages of 31 and 36, 8 per cent., as compared with the 60 per cent. amongst their less fortunate sisters. It is surely a significant fact, moreover, that no one has yet seen a paralytic nun. These figures, in Dr. Pandy's opinion, prove that paralysis undoubtedly depends largely upon the previous presence of syphilis. There seems every reason to believe, therefore, that only a man suffering from the latter is likely to be smitten by the former, and that he who is free from the one is likely to escape the other. Alcoholism ranks next to syphilis as an etiological factor of paralysis, and, unfortunately, this cause is almost as frequent amongst the educated as amongst the uneducated classes. This is proved by the fact that though only 9 per cent. of non-paralytics amongst the doctors owe their mental disease to alcohol, 41 per cent. of the judges, 21 per cent. of the military officers and post-office officials, and 32 per cent. of the railway employees have been reduced to their present condition by a reckless indulgence in intoxicants. On the other hand, not one of the 33 Jewish school teachers suffered from alcoholic mental disease, a fact which also proves that epilepsy is relatively uncommon amongst Jews. These figures, compiled from the observations made during forty years' attendance at the Lipotmezö Asylum, convey an important moral. It is Dr. Pandy's deliberate opinion that all these unfortunate persons could, humanly speaking, have been saved from their disease if in early youth they had learnt to resist temptations to drunkenness and immorality. In this respect Hungary compares very badly with such a country as Sweden, for example. Whilst only 1 per cent. of the inmates of the Swedish State asylums are paralytics, the Hungarian establishments contain as many as 18 per cent. suffering from this disease, and, moreover, many of the patients are doctors, lawyers, and other professional men who, instead of being an object of expense to the State, ought to be capable of working for twenty or thirty years for their own and the public welfare.

An outbreak of poliomyelitis has been rife in Hungary for the last eight or nine months, and has already claimed many victims amongst the children of the country. In the majority of cases the disease is very acute and there is almost always more than one convulsion. It is believed to have been brought across the frontier from the Balkan States, where a similar epidemic was raging some time ago; but although every precaution has been taken to prevent its spread, up to the present they have been of no avail. The director of the Stephania Children's Hospital, Professor Bokáy, has therefore petitioned the Minister of Public Hygiene to order the notification of every case to the local district medical officer, and to empower doctors to remove patients to the hospital if they cannot be properly isolated in their own homes. This request has been granted, and the district medical officers, moreover, have been ordered to send in a monthly report on the progress of the epidemic in their respective districts.

AT a meeting of the eighth International Congress of Applied Chemistry held in New York on September 13th, a resolution was adopted expressing the opinion that the disinfectants used in different countries should be controlled by a simple bacterial test capable of being easily effected, and a committee of three was appointed to meet a similar committee which the International Congress of Hygiene and Demography has been invited to nominate for the purpose of defining that test.

Obituary.

JOHN E. RANKING, M.D., F.R.C.P.,

SENIOR PHYSICIAN, TUNBRIDGE WELLS GENERAL HOSPITAL.

Dr. J. E. Ranking, of Tunbridge Wells, died on September 11th, in his 63rd year, as the result of a motor accident. His car was going down a hill at Bexhill, when, in order to avoid a woman, the driver applied his brakes sharply, and the car skidded and overturned. Dr. Ranking sustained severe injuries, from which he succumbed two hours later, while Mrs. Ranking was also badly hurt. He was born at Hastings, where his father, Mr. Robert Ranking, was engaged in practice, and received his early education at Aldenham School and Hertford College, Oxford; he afterwards went to St. Bartholomew's Hospital, and took the diplomas of M.R.C.S.Eng. and L.S.A. in 1874; he graduated M.A. and M.B.Oxford in 1876, and proceeded to the M.D. in 1879. He was for a time prosector of anatomy at the Royal College of Surgeons of England, and in 1880 became physician to the General Hospital, Tunbridge Wells, a post which he retained until his death, being at that time senior physician. He was President of the South-Eastern Branch of the British Medical Association in 1898–99. He held a leading position as a physician in Tunbridge Wells, his opinion being highly esteemed as a consultant. He married the eldest daughter of the late Dr. Duncan, of Tunbridge Wells, and leaves two sons, both members of the medical profession, and three daughters.

Dr. Matthew Burke Savage, a well-known Dublin physician, died last week at his residence, 8, Rutland Square, Dublin, aged 46. He had been in ill health for some time. Dr. Savage was the eldest son of the late Dr. Savage of Newry. As a student he distinguished himself in the Catholic University Medical School, Cecilia Street, being a double Leonard prizeman. In 1889 he won the gold medal in clinical medicine, and the only medal awarded in surgery in the Mater Misericordiae Hospital. He was first appointed demonstrator of anatomy in the Cecilia Street School, and resident physician in the Mater Hospital. He next became physician in the extern department of St. Vincent's Hospital, and subsequently visiting physician to Jervis Street Hospital and to a number of private hospitals and nursing homes. About twenty years ago he started practice in Dublin. He was an expert in pulmonary diseases. In spite of his large practice he was keenly interested in sport, and for some time had racehorses in training at the Curragh.

A Reuter telegram from London, Ontario, announces the death of Dr. J. Stuart Dickie, until recently senior demonstrator of anatomy at Queen's University, Belfast. He had been appointed Professor of Anatomy at the Western Medical College, and had gone out to Canada to take up the duties of that office. He graduated M.B., B.Ch., B.A.O., R.U.I., in 1905, with first class honours, and won an exhibition. He took the degree of M.D.Belfast in 1910. He had been senior and junior house-surgeon at the Miller Hospital, Greenwich, and house-physician at the Canterbury Hospital.

Universities and Colleges.

UNIVERSITY OF LONDON.

King's College.

Departments of Bacteriology and Public Health.

More accommodation has for some time been urgently needed in the departments of bacteriology and public health. This has now been provided, with the sanction and approval of the university, by the removal of these departments with their staffs to 62, Chandos Street, Strand, W.C. (Charing Cross Medical School buildings), where an excellent suite of laboratories is at present vacant owing to the transference of the classes for preliminary and intermediate medical studies of the Charing Cross Medical School to King's College. The laboratories at Chandos Street are being altered and refitted, and the accommodation there provided will comprise a large class laboratory, research laboratory, professors' laboratory, and lecturers' laboratory for the departments of bacteriology and public health respectively, a photomicrographic laboratory, preparation and animal rooms, a large theatre, office and library for the joint use of the two departments. The regular courses of instruction in bacteriology, clinical pathology, and photomicrography, and for the diploma of Public Heath will be given there, and research and investigation work for public bodies and others will also be carried on as before. The new laboratories will be opened on or about October 1st; those vacated at King's College by this removal will be utilized for increasing the accommodation for the preliminary and intermediate medical studies.

Lister Institute of Preventive Medicine.

During the winter session a series of lectures dealing with problems in hygiene and preventive medicine will be given on Wednesdays and Fridays at 4 p.m., beginning on Wednesday, October 16th. The lectures will be addressed to advanced students; students of the university will be admitted free, while others can obtain a card of admission on application to the Secretary. On October 16th, 25th, 30th, November 6th and 13th, Dr. Dean will lecture on recent work on the serum reactions; on October 18th and 23rd Mr. Bacot will lecture on the binomics of fleas and on the method of rearing them for experimental purposes. On November 1st, 8th, and 15th Mr. Greenwood will discuss some methods of epidemiological research, and on November 22nd, 29th, and December 6th Dr. Ledingham will review some problems of immunity. Mr. Atkin will lecture on the electrical method of determining the reaction of fluids on November 20th and 27th, and Dr. Penfold will discuss studies in bacterial variations on December 11th and 13th.

The Services.

THE SANITARY COMMISSIONER WITH THE GOVERNMENT OF INDIA.

The Government of India has issued a resolution on the position of the Sanitary Commissioner with the Government of India and the question as to what changes are necessary in the functions and duties of the appointment so as to increase its utility and efficiency. The resolution takes a retrospect from 1880 to March, 1911, when, owing to the lamented death of Colonel Leslie, the Director-General of the Indian Medical Service, was appointed to hold charge of the duties of Sanitary Commissioner in addition to his own duties. The resolution proceeds:

In the meantime the entire question was carefully reconsidered by the Government of India, with special reference to certain disadvantages which had resulted from the entire separation of the appointment of Director-General, Indian Medical Service, and Sanitary Commissioner. They were advised in particular that the divorce between the sanitarian and clinician which resulted from that separation had led both to the loss of administrative efficiency and to the unpopularity of the specialized bacteriological and sanitary departments. Increasing difficulty was experienced in recruitment, and the closer co-ordination of research and practice appeared essential if more rapid progress was to be made in the improvement of public health and the prevention of disease. Moreover, the claims on the Sanitary Commissioner's time for office and bacteriological work cut short the period of touring and rendered it difficult for him to be in such close touch with the local authorities as was desired. After correspondence with the Secretary of State and local governments, it has now been decided that a remedy for the defects of the existing system can be best provided by a systematic modification of the functions of the Sanitary Commissioner; and the appointment has, therefore, been revised on the same terms as regards designation, pay, and term of tenure as before, with a view to secure the better co-ordination and co-operation of the sanitary and medical departments.

It has been decided that the Sanitary Commissioner shall in future be subordinate to the Director-General, Indian Medical Service, to the extent originally recommended by the Government of India in 1904, and that work connected with the bacteriological research shall also be placed under the latter officer. In regard to administrative questions and matters affecting the *personnel* of the sanitary services, the Sanitary Commissioner will be in the position of a staff officer to the Director-General, Indian Medical Service. He will be given independent authority in technical sanitary matters, with power as at present to correspond direct with the Government of India. He will occupy the position in regard to local governments and the officers under them laid down in paragraph 12 of the Resolution No. 1273-1290, dated September 8th, 1904. In order to relieve him of as much routine work as possible, the office establishment of the Sanitary Commissioner and the Director-General, Indian Medical Service, will be amalgamated. The statistical officer will in future assist the Director-General, Indian Medical Service, in the control of the sanitary section of the office as well as in the guidance of research work and the bacteriological department. His designation will be altered to that of Secretary to the Director-General, Indian Medical Service (Sanitary). The Sanitary Commissioner will, under these arrangements, be able to tour freely and regularly throughout India with a view to co-ordinate the lines of development, to inspect works of sanitation actually in progress, to advise on

projected schemes, and generally to disseminate the knowledge acquired in the different provinces.

The statement attached to the resolution contains details of grants which have been made in recent years from imperial revenues towards sanitation and research. In every province important schemes for the improvement of urban sanitation are now in course of execution. A preliminary survey has been in progress in several provinces, with a view to the preparation of schemes designed to effect the improvement of malarial conditions, and in particular to extirpate, if possible, the *Anopheles* mosquito in selected areas. Projects are now ready in more than one province, and grants are being made for their execution from imperial revenues. The data thus obtained will, it is hoped, be of very great value in planning future preventive measures.

The important questions of controlling and regulating the expansion of growing towns and of strengthening the existing powers of local authorities in dealing with congested urban areas are ripe for consideration and discussion, and the Government of India has recently addressed the local governments on the subject. The scheme, described in the BRITISH MEDICAL JOURNAL of June 22nd, p. 1464, for the general reorganization of the sanitary services throughout India has received the sanction of the Secretary of State, and, with the introduction of a trained staff, a general improvement in the condition of urban sanitation may reasonably be expected. A wide sphere of useful work, therefore, lies before the Sanitary Commissioner as an advisory authority, and the Government of India believe that the appointment under its new conditions will be of increased benefit to themselves and to local administrations.

ROYAL ARMY MEDICAL CORPS (T.F.).

EAST ANGLIAN DIVISION.

On Saturday evening, September 21st, the officers of the Royal Army Medical Corps entertained Colonel G. S. Elliston, C.B., at dinner at Cambridge on his vacating the appointment of Assistant Director of Medical Services in the East Anglian Division. About thirty sat down, Colonel S. S. Hoyland, his successor, being in the chair. Amongst those present were: Colonel J. Griffiths and Major Apthorpe Webb, representing the First Eastern General Hospital; Lieutenant-Colonel Brooks, Lieutenant-Colonel Stacy, and Majors Oldfield, Freeman, Milligan, and Crawford, representing the four field ambulances; as well as a number of captains and subalterns from other units. After dinner the Chairman, on behalf of the officers of the corps, presented Colonel Elliston with a silver tea-tray as a souvenir of his forty years' service in the Volunteer and Territorial Forces. Letters of regret for absence were read from Sir Clifford Allbutt, K.C.B., Honorary Colonel Howard Marsh (Master of Downing College), Professor Sims Woodhead, Major H. A. Ballance (Norwich), Major Fremantle (the sanitary officer), and others away on holiday. Lieutenant-Colonel Brooks and Major Apthorpe Webb acted as honorary secretaries.

Public Health

AND

POOR LAW MEDICAL SERVICES.

INTERCEPTING TRAPS IN HOUSE DRAINS.

THE disconnexion of house drains from sewers by means of a trap has been for many years the subject of controversy between sanitary engineers and medical officers of health. The former have maintained that it is all-important to exclude sewer air from buildings, and that this can best be accomplished by placing between the house and the sewer a simple siphon trap, and preventing that a portion of the drain between this trap and the house shall be open to the air. This view has been endorsed by the Local Government Board, which has frequently insisted upon a by-law to the effect that there shall be provided within the curtilage of every new building in every main drain or other drain of the building which may directly communicate with any sewer a [illegible] trap at a point as distant as may be practicable from the building, and as near as practicable to the connexion of the drain to the sewer. In actual practice it has been found by medical officers of health that where these intercepting traps have been placed, a large number of them [illegible] become blocked, with the resultant blocking of the house drain. As the result of a proposal by the Willesden Urban District Council to adopt a series of by-laws in which the requirement as to the provision of an intercepting trap was to be omitted, to which proposal the Local Government Board [illegible] a departmental committee was appointed by the Board "to inquire and report with regard to the use of [illegible] traps in house drains." The committee, consisting of [illegible] Malcolm Morris (chairman), Mr. Grenville Malet, [illegible] and Mr. H. J. Pearson, A.R.I.B.A., began its [illegible] and presented a report in December, [illegible] received, and is of considerable [illegible] with some qualifications, [illegible] and that the intercepting trap [illegible] tually harmful.

[illegible] appointed by the President [illegible] with regard to [illegible] Local Government Board on Public Health and Medical Subjects. (New Series, No. 47.) Price 5d. London: Wyman and Sons, Limited. (Cd. 6161.)

The committee came to the conclusion, as the result of investigations in a large number of districts, that the disadvantages involved by the use of the intercepting trap were substantial and of serious practical importance, and that as the most important of the effects of these disadvantages are concealed from view, they may remain in existence quite unknown to the householder. It is pointed out that although the liability of the trap to become blocked appears to be insuperable, its evil effects can be minimized by constructing the house drain, or at least the lower part of it, of iron pipes, and by closing with a movable cover the usual open channels in the inspection chamber which is provided as means of access to the trap. Apart from the great disadvantage of blocking, the committee considers that the trap does serve as an effectual barrier to the entry of sewer air into the house drain, this being the fundamental advantage claimed for it. The question therefore arises whether sewer air is harmful. The bacteriological evidence placed before the committee went to show that micro-organisms of sewage origin, while very rarely present in sewer air, were present in drain air in large numbers. This difference is attributed to the splashing of sewage which occurs in drains, and which does not usually occur in sewers. The necessity of the intercepting trap on bacteriological and epidemiological grounds has not, in the opinion of the committee, been established. Apart, however, from the presence of bacteria, specific or otherwise, the characteristic of sewer air is its smell, and it was found that this was less perceptible when there was no intercepting trap, owing to the greater opportunity afforded the air to escape entirely at a height above ground. It is conceded that exceptionally this smell may be so offensive that its escape even at a height might be a perceptible nuisance, so much so that it might be necessary to close as many sewer ventilators as possible, whether at the ground level or at a height. The committee advises, therefore, that the question whether, in order to prevent nuisance from smell in such exceptional cases, the intercepting trap is or is not required in any locality is one which will need to be considered and determined by the local authority and their advisers in the light of local conditions.

MILK AND CREAM REGULATIONS.

As long ago as 1901 a Departmental Committee on Preservatives and Colouring Matters in Food recommended that boric acid or mixtures of boric acid and borax should be the only preservatives permitted in cream, and that these preservatives should not be added in amounts exceeding 0.25 per cent. expressed as boric acid (H_3BO_3). It was also recommended that the amount of such preservative should be notified by a label on the vessel containing the cream. Following the publication of these recommendations, many traders adopted the practice of declaring the presence of boron preservatives in cream supplied by them, and successful action was taken by many local authorities where the proportion of 0.25 per cent. of boric acid was found to have been exceeded in samples taken by food inspectors. In 1909 there was issued a very full report[1] to the Local Government Board by Dr. J. M. Hamill on the use of preservatives in cream, in which he urged that effect should be given to the recommendations of the Departmental Committee, and early in the present year a further report[2] to the Board by Dr. G. W. Monier-Williams was issued on analyses and methods of detection of certain proprietary substances sold as preservatives for milk, cream, etc. The Local Government Board has now made regulations under the Public Health (Regulations as to Food) Act, 1907, which are designed to secure that no preservative shall be added to milk, or to cream containing less than 35 per cent. by weight of milk fat, at any stage from the place of production to that of delivery to the purchaser. Preservatives are defined in the regulations as any substance (other than cane or beet sugar), preparation, or solution which, when added to the milk or cream, is capable of retarding the onset of sourness or decomposition, or is capable of neutralizing acidity (sourness) in milk or cream. In the case of cream containing 35 per cent. or more by weight of milk fat, the only preservatives permissible by the regulations are boric acid, borax, a mixture of boric acid and borax, and hydrogen peroxide, and the amount of these substances when used must be clearly stated on the receptacle containing the cream, while in the case of refreshment rooms, restaurants, etc., where such preserved cream is used, a notice to that effect must be conspicuously displayed. The regulations also prohibit the use in cream of any thickening substance (which is defined as sour milk of lime, gelatine, starch, paste), or any other substance which, when added to cream, is capable of increasing its thickness. The regulations come into force on October 1st next, though the operation of one portion is postponed until January 1st, 1915. This provides that in every advertisement, price list, etc., dealing with preserved cream for human consumption, such article shall be clearly described as preserved.

BUILDING BY-LAWS IN RURAL DISTRICTS.

IT is the custom for those who are insufficiently informed on the subject to attribute the lack of cottages in rural districts to the stringency of local building by-laws. However true this may have been in former years when there was little or no

[1] Report to the Local Government Board on Public Health and Medical Subjects. (New Series, No. 47.) Price 5d.

[2] Reports to the Local Government Board on Public Health and Medical Subjects. (New Series, No. 60.) Price 2d. London: Wyman and Sons, Limited.

differentiation between the needs of urban and rural districts, it is far from being correct at the present time. As long ago as 1901 the Local Government Board compiled a model series of by-laws having special reference to rural districts, and there has of late years been evidence of a desire on the part of the Board to lessen, as far as possible, restrictive regulations. In a circular letter dated August 23th, addressed to both urban and rural district councils, the Board points out that new methods of construction and design almost inevitably demand periodical revision of by-laws, and offers to render assistance to those authorities who may desire to modify their existing by-laws by referring them to clauses which have been embodied in series already adopted, or by such other suggestions as may be practicable. The Board goes on to say that in many parts of the country (and especially in rural districts) there is great need for better cottage accommodation, so that rural district councils should be careful to see that the requirements of their by-laws, whilst prescribing conditions essential to health, are not such as to offer any impediment to the erection of suitable dwellings. It appears that the Board has tentatively framed, for working purposes, a series of by-laws, intermediate in character between the urban and rural model codes, suitable for rural areas which are beginning to assume urban characteristics. This series contains the same clauses with respect to the level, width, and construction of new streets as the urban model, but includes only those clauses concerning the structure of walls, foundations, roofs, and chimneys of new buildings which are the most important for securing stability and the prevention of fires and for purposes of health. It also contains a special clause partially exempting small dwellings, where sufficiently isolated, from the structural requirements relating to walls.

OPERATIONS BY DISTRICT MEDICAL OFFICERS.

IN reply to a correspondent, we may point out that no Poor Law medical officer can be ordered by his Board to perform any operation. If a lawful order be issued by the relieving officer, a medical officer is bound to attend any one residing in his district, but he is the sole judge of the kind of treatment necessary. In the case mentioned he might not think it desirable in the interests of the patient that the operation should be performed at the patient's house, and can recommend his removal for that purpose to the Poor Law infirmary. Again, he may consider it inadvisable to do any operation, and may prefer other treatment.

Medico-Legal.

PERPLEXED.—A registered practitioner possessing the diplomas of M.R.C.S. and L.R.C.P. has the legal right to practise dentistry, and, registered medical practitioners having been exempted from the prohibitory clauses of the Dentists Act, can use any title such as dentist or surgeon dentist. Most of the dental schools admit qualified medical men to a shortened and modified course of instruction, but it would take some time to acquire the requisite knowledge and manual dexterity.

WORKMEN'S COMPENSATION CASES.

Epilepsy or Accident.

IN a case at Salford (May 20th) it appeared that the late husband of the applicant was thrown from his lorry owing to his horse being startled by a motor vehicle. He was picked up unconscious with wounds in one of his legs, and became an in-patient at the Salford Royal Hospital until December 9th, and an out-patient until February 9th, when he was readmitted in a state of unconsciousness due to an epileptic fit. This was followed by a succession of fits, until death occurred ten days later.

Dr. E. W. Archer said that it was extremely rare for persons 34 years of age to have epileptic fits of this kind without any apparent cause. There was one form of epilepsy which might have resulted from the wounds in the leg, or in the fall from the lorry an injury to the head might have set up a cause.

For the defendants, Dr. Tylecote said that a man might have a form of epilepsy unrecognized for many years. The attacks might be very slight, and occur only during the night. Later they might become typical and be recognized for what they really were. He concluded that this was the case with the deceased, as there was nothing to account for his epilepsy. If it had come from the wound it must either have been accompanied by meningitis or been caused by some germ entering the blood through the wounds, and there was no evidence of either.

The judge said that for the non-medical mind it was difficult to resist the feeling that in this case there was some connexion between the accident and the convulsions which resulted in exhaustion and death. But whilst one sympathized with the widow and mother and children, that was not the test the court had to apply. He was bound to give his decision in accordance with the law as expounded in various cases, the result of which was that the applicant had to satisfy him that death was actually due to the accident. Nobody could say definitely that there was any tangible connexion between one and the other, and therefore there must be an award for the respondents.

Medical News.

SIR RICKMAN J. GODLEE, President of the Royal College of Surgeons, will distribute the prizes at the Royal Dental Hospital, Leicester Square, on Tuesday, October 22nd, at 5 p.m.

THE course of lectures and demonstrations at the Queen's Hospital for Children, Hackney Road, will commence on Friday next at 4 p.m., when Dr. Sydney A. Owen will give a lecture on heart disease in young subjects.

AT the meeting of the Society for the Study of Inebriety to be held on Tuesday, October 8th, at 4 p.m., at the house of the Medical Society of London, Chandos Street, W., Dr. Herbert Rhodes will open a discussion on alcoholism and tuberculosis.

The opening meeting of the thirty-first session of the West London Medico-Chirurgical Society will take place at the West London Hospital on Friday next at 8.30 p.m., when the President, Mr. G. P. Shuter, will deliver an address on the history of nitrous oxide anaesthesia.

THE King has granted permission for the Hammersmith memorial to the late King Edward VII, which takes the form of an endowed cot in the West London Hospital, to be called "King Edward VII Memorial Cot." The tablet to be placed over the cot will be surmounted with the Royal Arms.

THE annual meeting of the Continental Anglo-American Medical Society will be held on Saturday, October 12th, at 4.30 p.m., at the residence of the Honorary Secretary, Dr. Robert Turner, 42, rue de Villejust, Paris. The annual dinner of the society will be held the same evening at the Majestic Hotel, Avenue Kléber, at 7.30 p.m., when the chair will be taken by Sir Bertrand Dawson, K.C.V.O., Physician to the London Hospital. Members intending to be present are requested to communicate with the Honorary Secretary.

THE French Congress of Surgery will hold its twenty-fifth annual meeting in Paris in October (7th to 12th), under the presidency of Inspector-General E. Delorme. The following questions are on the programme of discussions: 1. Diagnosis and treatment of cicatricial strictures of the œsophagus (to be introduced by MM. Guisez, of Paris, and Moure, of Bordeaux). 2. The clinical indications supplied by radiology in surgical affections of the stomach and intestine (to be introduced by MM. Béclère, of Paris, and Mériel, of Toulouse). 3. Coxa vara, its relations with fractures and separations of the epiphyses of the upper end of the femur (to be introduced by MM. Kirmisson, of Paris, and Froelich, of Nancy). During the congress there will be an exhibition of surgical instruments, medical electrical appliances, dressings, etc., in the great hall of the Faculty of Medicine.

IN a pamphlet on *Legislation for the Protection of Women*, Lord Charnwood argues that remedial legislation may scatter injustice and lead to worse evils. Whilst agreeing that the law relating to affiliation orders needs improvement, he recalls that "the benevolently intended provisions of the old Poor Law produced terrible demoralization in many country villages by making illegitimate children desirable assets to a household." Lord Charnwood approves the provision of the "White Slave Traffic" Bill, which gives the police power to arrest offenders without a magistrate's warrant, but thinks that the greatest check to this traffic will be concerted action between different countries. Many countries have special officers to suppress the evil, but it is somewhat discouraging to learn that though some years have been spent in negotiations no concerted action has been adopted for punishing offenders.

A COURSE of lectures on common sense cooking in health and disease, intended primarily for health visitors, nurses, and voluntary health workers, will be delivered at the house of the Society of Medical Officers of Health, 1, Upper Montague Street, Russell Square, W.C., during October. The course will be conducted by Dr. F. S. Toogood, Medical Superintendent of the Lewisham Infirmary, with the assistance of Dr. Reginald Dudfield, M.O.H., Paddington, Dr. R. A. Lyster, County Medical Officer of Health for Hampshire, Dr. Joseph Priestley, M.O.H., Lambeth, and Mr. William Lawton, executive secretary of the society. At the first lecture, on Wednesday, October 16th, at 3 p.m., the chair will be taken by Sir William Collins. On October 23rd a visit will be paid to street markets, the Central Meat Market, and the Fish and Game Markets, under the guidance of Dr. Toogood and Mr. Lawton.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.: those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

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TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

S. J. F. would like to hear of a farm where a young man of 22, who suffers from epileptiform attacks, could board and work on payment of moderate premium.

NICOTINE asks for suggestions that will help a patient who wishes to discontinue the use of tobacco. Salivation is troublesome at times when smoking is stopped.

T. H. asks for suggestions in the treatment for gentleman, aged 55, who suffers from tender heels, but is in other respects quite well. Iodine, Scott's ointment, belladonna externally, and salicylate and iodide treatment internally have been tried with no effect.

ANSWERS.

DR. JOHN T. HARTILL (Willenhall) writes in reply to "Cornishman's" question: I attended a man some years ago who very frequently dislocated his shoulder during an attack of epilepsy, and I taught him to reduce it himself nine times out of ten as follows: By lying on the floor with his feet towards and his head away from the front of a stout squab or sofa, such as many working men possess, and attaching a rope to the squab in a line with the hand on the injured side, then by pulling hard at the rope with his hand, and the same time pushing at the front of the squab with his feet, he felt the humerus go into its place, and immediately let go his grip of the rope. When the shoulder has been frequently dislocated, the parts around have either been so much torn or stretched that it is always quite easy to get the bones into their proper position.

ISOLATION HOSPITAL.—Information concerning the staffing and equipment of an isolation hospital will be found in *The Prevention of Epidemics and the Construction and Management of Isolation Hospitals*, by Dr. Roger McNeill (London: J. and A. Churchill, 1894, 10s. 6d.), and in a paper on the furnishing and general administration of small isolation hospitals, by Dr. Meredith Young in vol. xix, p. 66, of the *Transactions of the Royal Sanitary Institute*, 90, Buckingham Palace Road, S.W.

J. H. The answer is in the affirmative, but it is usually advisable to leave the assessment of damages to the lawyers.

C. O.—We are not aware of any paper or book dealing with the employment of Dr. Silk's inhaler for the purpose of administering "open ether." The inhaler was primarily designed for the use of mixtures of chloroform and ether, but has more recently been adopted for ether. The method is merely to drop ether from a dropping bottle upon the sponge in the inhaler. It is important to have a fine honeycomb sponge and to regulate the rapidity of the drops according to the requirements of the case. By avoiding soaking the sponge with the anæsthetic freezing is obviated. [illegible] induction with a mixture, for example, the A.C.E., the C.E. of the C.A. [one part] nine of chloroform, giving one or other of these [illegible] on the sponge of the inhaler, and so soon as the [illegible] replacing the mixture by [illegible]

[illegible] for a pamphlet setting forth [illegible] advantages of vaccination, would find [illegible] and *A Plea for the Children* [illegible] popular distribution. The former is [illegible] Association of Public Vaccinators of [illegible] Wales, price 2s. 6d. The latter is published by the Imperial Vaccination Committee, [illegible] price 6d. for 25. Copies of both can be obtained on application to Dr. Drury, Landon House, Halifax.

LETTERS, NOTES, ETC.

DOCTORS AND DISPENSING.

DR. GRIFFITH C. WILKIN (Paignton) writes: May I point out to your correspondent "Westcountryman" that there is another very important question to be considered in dispensing. When I first began country practice between twenty and thirty years ago there was a chemist in the village, and running short of a drug—I think it was a decoction—I got a small quantity from the chemist. On using it I found it mixed a different colour to that which I had formerly been using. A little later I mentioned this to the traveller of the firm I dealt with. His reply was: "When I call for orders from doctors they say the drugs and quantities they want and nothing about the price; therefore, of course, we give them the best quality. When I go to a chemist he says, 'I have so much money to spend; for it I require these drugs,' mentioning names and quantities. Naturally we cannot afford to give him the first quality drug. Hence, probably, the difference you speak of." Surely the first duty of a doctor is to see that his patients have the best advice and treatment. No one can do the dispensing so well as he can himself.

TREATMENT OF AMOEBIC DISEASE.

A PAPER by Major Leonard Rogers, Professor of Pathology, Calcutta Medical College, entitled "Further Experience of the Specific Curative Action in Amoebic Disease of Hypodermic Injections of Soluble Salts of Emetine," was published in the JOURNAL of August 24th (p. 405). The following addendum reached us too late for insertion in that number: "Since the above was written I have tried the effect of giving emetine hydrochloride by the mouth on an empty stomach, and have found that doses of one or two of Burroughs and Wellcome's one-third of a grain tabloid thus administered rarely cause any sickness or nausea, and are very efficient in the treatment of amoebic dysentery. This further discovery will greatly extend the scope of the new line of treatment under conditions which do not readily allow of the repeated hypodermic use of the drug."

"TUBERCLE."

A TORONTO GRADUATE writes: By consulting *The Transactions of the Royal Colonial Institute*, your correspondent (BRITISH MEDICAL JOURNAL, August 17th) will find a very interesting paper by the Hon. Judge Russell on "Jamaica: a Home for the Invalid and Settler." At the request of the editor of the *Daily Gleaner*, Kingston, Jamaica, Dr. Logan Russell, J.P., gave a somewhat lengthened article on the advantage of the climate for consumptives. As Dr. Russell was once on the resident staff of the Consumption Hospital, it may be presumed he had some special knowledge on the subject. He wrote on the advantages of Santa Cruz mountains, describing the air as simply perfection, and, unless the case be too far advanced, amelioration and cure resulted. I came across quite a number of persons who gave a quite distinct history of phthisis, and attributed their cure to Malvern air. By writing to the *Gleaner* some information may be obtained. I may state the climate is ideal, simply lovely, mental and physical strain relieved, a buoyancy difficult to describe, nights cool, days warm, devoid of the excessive heat of the lowlands. I remember a gentleman attached to a large Liverpool firm, scarcely able to drag one foot after the other, cough and expectoration, emaciation, indigestion, no appetite—in fact, done up and looking as if he was walking around to save funeral expenses. In a few weeks the change for the better was so marked that his mother could scarcely recognize him. To my idea it is the ideal spot for a sanatorium. Living at Malvern (the town of Santa Cruz mountains) is good and moderate. I should say a man on £120 to £150 a year would do better there than on double that sum in Britain, and perhaps after he could get the run of things that sum could be materially reduced. Outdoor living in Canada is out of the question. A consumptive will have hard time bucking up against from 12° to 50° below zero, and it is a sin to send him there. I, so to speak, know every inch of the ground from Halifax to Collingwood. (I was an old Upper Canada College schoolboy, so can talk about frost.) This new sanatorium dodge under the National Health Act will prove a snare and a delusion and a white elephant on taxpayers' pockets. I have just received a few *Gleaners* from the island. They are at "Tubercle's" service if he desires.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

An Address
ON
THE DIFFERENTIAL DIAGNOSIS OF SURGICAL DYSPEPSIAS.

Delivered before the Finchley Ward of the British Medical Association.

BY

ALBERT J. WALTON, M.S., F.R.C.S., M.B.,

ASSISTANT SURGEON TO THE SEAMEN'S HOSPITAL, GREENWICH, AND THE EVELINA HOSPITAL.

The surgical lesions giving rise to dyspepsia are not only of relative frequency and of a serious nature, but are very prone to be mistaken for less important conditions; and since they are capable of being relieved only by adequate surgical treatment, I have considered that a discussion of the methods whereby an accurate diagnosis can be arrived at will be of practical interest.

The clinical history will in these cases be of the greatest value, and, as Moynihan[41 43] has so clearly pointed out, it alone may be sufficient to indicate the nature and site of the lesion. I shall therefore first draw attention to the variations in the symptoms as they occur in gastric ulcer, early gastric carcinoma, duodenal ulcer, gall stones, and some cases of appendicitis, and shall then consider the physical signs which may be present at the same time.

Discomfort and Pain.

Of all symptoms this is the most important, for in the majority of cases it is pain that causes the patient to seek advice, even if it is not the first symptom to appear. At the same time it is often so insidious in its onset that the discomfort or even actual pain which the patient describes as dyspepsia may be present for some months, or even years, before relief is sought. Although in the diseases which I am here considering he will nearly always complain simply of dyspepsia, careful investigation of the nature of the actual symptoms will often show that they vary considerably with the different lesions.

With a chronic gastric ulcer the onset is insidious, there is complaint at first of slight discomfort following soon after the ingestion of food, the discomfort is situated in the epigastrium, and is at first distinctly local. Later it becomes severe, and is, in fact, definite pain. This, again, may be localized to the epigastrium or may start here and then radiate to the right or left, being usually described as of a burning or boring character. As a general rule, the longer it has existed the more does it radiate; in the majority of long-standing cases it passes through to the back, and may be felt at the level of the sixth to eighth dorsal vertebrae or under the angle of the scapula. The most characteristic fact concerning this pain is that it is relieved as the stomach empties, so that it is definitely regarded as being due to the food, and with certain articles of food which are generally regarded as being indigestible the pain is more marked. Another characteristic is that it is present in attacks which may last for some days or weeks and then be followed by relief for two or three months, these attacks of pain in all probability being dependent upon exacerbations of the chronic ulcer, but in all cases the presence of pain is a prominent feature. Sir Bertrand Dawson[7] found that in 60 cases the pain was the most marked symptom in all but one. The time of onset of the pain after food is very variable. In some cases it may occur immediately, and be present before the meal is finished, whilst in others it may not be felt until two or three hours after the meal, and thus resembles the pain of duodenal ulcer. The time of the onset of the pain has been regarded as indicating the site of the ulcer, occurring earlier with ulcers nearer the cardiac end. The fact that the time of onset of the pain is generally constant in the individual patient would lend colour to this belief. The evidence of Sir Bertrand Dawson's cases, did not, however, support this view. Thus of the 60 cases 23 showed pain immediately after food, but in 19 of these the lesion was near the pylorus and associated with obstruction. It is probable, however, that with obstruction this indication would be valueless, and the pain immediate, for the stomach would tend to lose its normal shape and become converted into a single-chambered viscus.

With typical cases of gastric carcinoma a marked difference is seen in the character of the pain. It must be remembered, however, that carcinoma may occur either as a complication of gastric ulcer or arise in a stomach apparently free from previous disease, the symptoms in the two cases being different. The first group, those in whom there has been a previous chronic gastric ulcer, are the more common. Thus, Mayo Robson[35] found 57 per cent. of this variety, and Moynihan[39] 60 per cent. Mansell Moullin[30] found that in over 60 per cent. of his cases the patients had been told previously that they were subjects of chronic gastric ulcer. And in quite half the rest there were symptoms of such previous trouble. Wilson and MacCarty[58] place the figures as high as 71 per cent. Mayo,[31] in his earlier series found previous ulcer in 54 per cent., but in his later series of 216 gastrectomies, reported by MacCarty,[27] of 158 carcinomas, 125, that is 79 per cent., showed evidence of previous ulcer.

In this group there is the history of many previous attacks in which the pain was typically that of gastric ulcer. In the last attack, however, its character has altered; the intervals of freedom between the meals gradually shorten, and then disappear altogether, so that the pain becomes constant, although it may still be increased by food. At the same time, if the pain has been severe in the previous attacks, it tends to decrease in severity, so that there is complaint of slight but constant pain.

When the disease occurs in a patient previously free from any evidence of gastric trouble, the age at which the pain appears becomes an important factor. Most commonly the condition occurs after the age of 40. As Hale White[15] points out, there is an enormous number of people over that age with dyspepsia and no organic lesion, but such usually have symptoms of dyspepsia when they are young adults. "If symptoms of serious chronic gastric indigestion first appear after the age of 40, organic disease of the stomach should be strongly suspected." But at the same time it must be remembered that carcinoma may start at a much earlier age than this. Canny[5] has recorded a case in a boy aged 19. In many of these cases pain is an insignificant symptom—there may be a sudden or a gradual onset of other symptoms, and but little or no pain complained of throughout the course of the disease. When present it is usually of the nature of a constant discomfort, as in the last group, and not a severe pain, this discomfort becoming perhaps definite pain after food, and being more marked after solid than after fluid nourishment. It may be severe enough to keep the patient awake at night.

Although in typical cases the pain of carcinoma is distinct from that of gastric ulcer it must be remembered that unfortunately but few cases are typical in this respect. In many, especially in those following gastric ulcer, the symptoms may very closely simulate, or indeed be indistinguishable from, this latter condition.

The pain occurring in duodenal ulcer may again be quite distinct from that seen in other lesions. It is generally the first symptom noticed. The age at which it commences is, however, no criterion. Moynihan's youngest case[38] was 19 months old, his oldest 73 years. Kuttner[24] has recorded two cases, one in a child 10 days old, and one at 4 years, both being females, and Finny[11] a case of perforation in a male child 2 months old.

The nature of the pain, which has been so clearly defined by Mayo Robson[33] and Moynihan[38] under the term "hunger pain," is now well recognized. The man, for the patient is usually a male—in Mayo Robson's series 86 per cent. were males—complains of pain coming on some two to three hours after food. It commences as a sense of discomfort in the upper abdomen which passes into a gnawing sensation, later giving way to definite pain. With the onset of pain Moynihan[41] has described a free gush of saliva, the swallowing of which is often associated with relief. At first it may be relieved by eructation of wind, later it becomes more severe, and then passes through to the back, to the right of the middle line. At times it may be so severe as to be indistinguishable from that of hepatic or biliary colic. The most characteristic fact, however, is that it is definitely relieved

by food, so that the time immediately after meals is the most comfortable time of the patient's day. It may wake the patient up at night, so that many develop the habit of taking food to bed with them or carrying something in their pockets. It is relieved by alkalis as well as by taking food. As already mentioned, in cases of gastric ulcer where the ulcer is close to the pylorus, the pain may also not appear until some time after food, and thus the diagnosis be difficult. Kemp[23] goes so far as to state that one cannot distinguish between ulcers proximal and those distal to the pylorus. Recent statistics have shown also that duodenal ulcer is as common as, or even more common than, gastric ulcer. C. W. Mayo[32] found in his last 1,000 cases 401 (64.5 per cent.) duodenal, and 201 (32.5 per cent.) gastric, while in 19 (3 per cent.) both viscera were affected. Moynihan[38] in his first 114 cases found 40 per cent. associated with gastric ulcers.

Even more marked than in the case of gastric ulcer is the periodicity of the pain. At the onset of the disease it may last two, three, or four days, and be followed by complete relief for three, six, or even twelve months. In the later stages the attacks of pain become longer, and the intervals of freedom shorter, but it is only in the very late stages that it becomes constant. The attacks may be brought on by an indiscretion in diet, or even by exposure to wet or cold.

Gall stones, while they are still confined to the gall bladder and unassociated with complications, will, as Moynihan[37] and Mayo Robson[34] were the first to point out, give symptoms which are mainly referred to the stomach. Two distinct types of pain may be present which, as I have previously pointed out,[56] seem to depend upon the presence or absence of chronic cholecystitis. In the first group the pain is localized to the epigastrium and right hypochondrium. Soon or immediately after taking food there is a sense of fullness in the epigastrium and a feeling as of having eaten too much. It is often associated with flatulence, the feeling of distension being relieved when the clothes are loosened. The sense of distension may later be replaced by a dull aching or gnawing pain which in many cases varies with the nature of the food taken. This symptom was present as the first indication in 45 per cent. of the 400 cases of gall stones I have previously reviewed.[56]

In the second group of cases, where some chronic inflammatory condition is generally present, the pain is more severe. It is constant, but subject to severe exacerbations after meals. There are attacks of pain in the right hypochondrium and epigastrium, radiating from here to the back and shoulder. Although the pain is severe it is usually bearable, and thus differs from the agonizing pain of true colic. Like the pain of gastric and duodenal ulcer there is a well-marked periodicity, the attacks of pain lasting, perhaps, for a week or fortnight, during which there is but little relief. During such attacks the pain may be worse at night, and thus, from the point of view of this symptom alone, duodenal ulcer may be closely simulated. In severe cases, indeed, the two conditions may occur together. Moynihan[38] states that of the 114 cases of duodenal ulcer he had reported up to 1907, 7 cases had gall stones as well. In other cases the pain may be most marked in the right iliac fossa, so that appendicitis may be simulated; in fact, at times both conditions may be present (Ochsner,[45] MacCarty and McGrath.[29]

Of late years much evidence has been brought forward to show that there is a very close relationship between appendicitis and gastric lesions. Moynihan[42] first showed that in many cases of dyspepsia in which a lesion of the stomach, duodenum, or gall bladder might have been supposed to have been present none could be found, but on further investigation a lesion of the appendix was noted. He gave a full account of the symptoms, and showed how they closely resembled those of gastric ulcer, but how in many cases the condition could be distinguished. Fenwick[10] shortly afterwards described the presence of gastric hypersecretion in cases of appendicitis. Of 112 cases of such hypersecretion, the fault was in the appendix in 31. He goes on to state that an ulcer of the stomach may actually follow, the steps being as follows: A hypersecretion due to the appendix is the mildest form of the complaint (in acute conditions of the appendix the gastric juice is usually increased in quantity and acidity); the continuous flow of this hyperacid gastric juice is likely to incite an inflammatory change in the stomach, and be followed by an actual ulcer of the stomach or duodenum. At the same meeting Paterson[48] published the results of his investigations, which had been commenced before Moynihan's work was published. He operated in all upon 24 cases of appendicitis, 20 of which were females. In 15 of them a diagnosis of gastric or duodenal ulcer was made before operation. He gave the name of "appendix dyspepsia" to the symptoms which occurred. In a later publication[47] he showed that there was obvious appendicular disease in 66 per cent. of cases in which duodenal ulcer was present at operation, suggesting that appendicitis was one of the causes of duodenal ulcer as well as of gastric ulcer. Moynihan,[41] in his latest paper, shows the marked frequency with which the appendix is diseased in cases of duodenal ulcer, it being affected 12 times out of 14 consecutive cases. He states that in no case of duodenal or gastric ulcer should the appendix be left unexamined. I have myself shown[56] that there is very strong evidence that, in the majority of cases, gall stones are dependent upon a chronic *B. coli* infection which obtains admission by the intestinal canal. There is, therefore, every reason to believe that appendicitis may not only closely simulate one of the other lesions, but may actually be the cause of them. I shall describe later how the mimicry may even be carried further by the presence of haematemesis in appendicitis.

The pain may commence in the epigastrium shortly after food. In some cases it is rather a severe continuous discomfort than actual pain. In many it may radiate to the right iliac fossa and pressure here may increase the epigastric discomfort. Rarely does the pain radiate elsewhere in the abdomen. It is associated often with eructations, and although made worse by food, rarely shows complete relief between meals. In many cases the symptoms may date from childhood, and although in some they follow an acute illness suggestive of acute appendicitis, in others the onset is insidious. The symptoms often appear in definite attacks, lasting one to two weeks, but there is rarely complete recovery between, as with duodenal or gastric ulcers.

Appetite.

Variations in the appetite in these lesions are common, and seem to depend largely upon the changes in the secretion of hydrochloric acid. It must always be remembered, however, that they may be of two distinct varieties. In the first case the patient may take but little food owing to the fact that pain is thereby produced. In the second there is actual loss of appetite often amounting to repugnance for food.

In cases of gastric ulcer the appetite is very rarely reduced. The patient will, however, note that the ingestion of larger quantities of more indigestible food is followed by an increase of his pain. The general statement is, however, that he could eat anything, but is frightened to do so owing to this fear of the production of pain. With the presence of carcinoma, however, and possibly owing to the resulting decrease in the amount of hydrochloric acid present in the stomach, the appetite fails and the patient notices a gradually increasing distaste for food. This loss of appetite is, as would be expected, most marked towards meat foods, but is present for other solids in nearly as marked a degree. It is generally an early symptom, and thus, if it develop in a case which has shown a history of previous attacks, probably due to chronic gastric ulcer, suspicion should at once be aroused that the condition has now become carcinomatous. It is in such cases, however, that the appetite is most likely to remain good with the onset of carcinoma.

In cases of duodenal ulcer the appetite is good and is, in fact, better than normal. In addition to the actual condition of the appetite, there is the fact that the patient soon realizes that the ingestion of food relieves his pain, so that food may be taken in larger quantities on that account.

With gall stones and appendicular dyspepsia there may be little or no alteration in the appetite beyond the limitation of food brought about by the fact that pain is caused. At other times there may be distinct loss of appetite, whilst in others, again, it seems to be better than normal.

and associated with true hunger pain. These changes are probably dependent upon the fact that the amount of free HCl seems to be very variable. Thus Paterson[43] found in 17 cases, hyperchlorhydria in 2, and marked hypochlorhydria in 9.

Haematemesis and Melaena.

The nature of the loss of blood in any of these lesions is never sufficiently characteristic to make the diagnosis absolute. In cases of gastric ulcer the amount of blood lost may be very variable. On the one hand it may be so small in quantity as only to be found on minute examination of the stomach contents, whilst in others a severe or even fatal haemorrhage may be the first evidence of anything amiss with the stomach. More commonly there are attacks of free haemorrhage which last but a short time and are relatively quickly recovered from. Previously the presence of haematemesis associated with pain and vomiting was regarded as almost pathognomonic of gastric ulcer, but of late considerable evidence has been brought forward to show that all these symptoms may be present with no definite ulcer. Hale White[14] gave an account of 29 cases of haematemesis, of which 27 were females and 2 males, on whom a careful *post-mortem* examination had been made, but in no case was there any evidence of an ulcer. Similar cases were reported by Herringham[17] and Lejars.[25] Hale White has given the name "gastrostaxis" to this condition. In the majority of cases the difficulty arises in the diagnosis of acute gastric ulcers, which are rather of medical than of surgical importance; but in many the symptoms have lasted for so long a time that a diagnosis of a chronic ulcer is most likely to be arrived at. Sir Frederic Eve[8] reports 12 cases of such haemorrhage, where at operation with careful search of the interior of the stomach no trace of any ulcer could be found. In one of these cases the symptoms had lasted for twenty years, and in another for twelve years. In only three cases was the history of less than two years' duration. Bolton,[3] however, disputes the above findings, and states that in all cases an ulcer can be found if special precautions are taken on examining the stomach after death. Hale White,[16] in answer to this, quoted cases in which the evidence of the absence of an ulcer seemed to be very strong, and I think that it must undoubtedly be accepted that well-marked haemorrhage can occur from the stomach wall without any definite ulcer being present.

With cases of carcinoma the haematemesis is more likely to oe slight in quantity, but constant, so that each vomit will contain a small amount of altered blood, giving the well-known coffee-ground appearance. In many other cases there may be no trace of blood in the stomach contents even if vomiting be frequent, as occurs when the growth is situated near the pylorus. In a smaller number the amount of blood lost may be large in quantity, and not only may a severe haematemesis occur, but altered blood be present in the stools. In a few of such cases with no previous history of chronic ulcer the first symptom may be a severe haematemesis, perhaps one or one and a half pints of blood being brought up.

The haemorrhage with duodenal ulcer may again be very variable. Moynihan[38] states that in a few cases it is the only, or at least the chief, symptom. There are attacks of faintness followed by anaemia, an examination of the stools then showing the presence of blood. It must be understood, however, that such cases are very unusual. He found in his 114 cases, which he at that date reported, 42 of haemorrhage, in 15 of which it was the urgent cause of operation. If it does occur it is a more serious matter and is much more likely to be fatal than a similar symptom with gastric ulcer. Both he and Mayo Robson[36] have pointed out the serious results of such a condition, and have laid stress upon the fact that under no circumstances must it be waited for in order to arrive at a diagnosis. If cases of occult haemorrhage—that is, haemorrhage that is only discovered by chemical or microscopic examination—are included the percentage is much higher. Moynihan,[44] in his latest paper on the subject, states that it was present in 50 per cent. of his cases, and Kemp[23] found it in 7 of his 10 cases.

Owing to the position of the ulcer, blood is more likely to pass down the intestine than back into the stomach, and therefore to be found in the stools in an altered state. If it be relatively large in amount the stools would have the characteristic tarry appearance. It is a matter of very considerable interest that in many cases of gall stones and appendicitis, although the lesion is so remote from the stomach and duodenum haematemesis may be present. I have already shown how in many cases this may be due to the fact that these conditions may be associated with chronic gastric ulcer. In many others there is, however, but little evidence of any ulcer clinically, although at operation or *post-mortem* examination erosions and acute ulcers may be found. In some cases the condition has been noted before operation. Paterson,[43] in his 24 cases, found haematemesis in 5. In one the stomach at operation was found in the condition which has been described as weeping blood. McWilliams[29] has reported a case of severe and fatal haemorrhage after an operation for acute appendicitis, and quotes Schwalbach[52]—who collected 30 such cases, 17 of which were fatal—as stating that the condition was dependent upon haemorrhages, erosions, and ulcerations in the stomach and duodenum. J. Hutchinson[20] reported a fatal case following an operation for gall stones, and quoted the figures of the cases which I had previously collected from the London Hospital in the three years 1907 to 1909 inclusive. There were 24 cases of haematemesis dying after operation, 13 of which were of appendicitis. Of the others 6 showed some septic condition. In addition to these there were 16 medical cases in which acute ulcers were found *post mortem*, 13 of them having been admitted and treated for some septic lesion. That is to say, that of the 40 cases some septic lesion was present in 80 per cent., and appendicitis in about 32.5 per cent. MacCarty and McGrath[28] showed in a similar way that of the cases of gall stones in which the appendix was removed, 59 in all, 69 per cent. showed inflammatory lesions of the appendix. Spencer[51] also pointed out how haematemesis was dependent upon sepsis, especially intra-abdominal. With these figures and the evidence I have previously mentioned there can be no doubt that duodenal and gastric ulcers as well as gall stones are largely dependent upon some septic infection which in a large proportion of cases is situated in the appendix, and is probably due to the *Bacillus coli*.

Vomiting.

Vomiting with any of the above lesions is extremely variable, and apart from the presence of blood is of no aid in arriving at a differential diagnosis. In many cases its presence is dependent not so much upon the actual disease as upon the mechanical change brought about by the presence of that disease. Thus, in a large number of cases of chronic gastric ulcer there may be no actual vomiting, although eructation and regurgitation of acid material may be present. In other cases vomiting will occur with the attacks at the height of the pain, this latter being thereby immediately relieved. If there be any constriction of the stomach, either in the body in the form of an hour-glass deformity or at the pylorus, vomiting of large quantities of decomposing and fermenting material may take place, the amount which is returned and the frequency depending upon the amount of dilatation proximal to the obstruction. With carcinoma, again, the character of the vomiting will depend upon the presence or absence of obstruction of the gastric outlet. If there be no such obstruction there is early flatulence and regurgitation of bitter and foul material, while later actual vomiting occurs. In either case it may be associated with slight haematemesis. The amount of vomited material is generally small, and it is important to note that the act is not, as a rule, followed by relief, as in the case of a chronic gastric ulcer. If obstruction of the pylorus be present the characteristic type of vomiting found with a dilated stomach will occur early and not differ from that taking place when the obstruction is due to gastric ulcer.

With duodenal ulcer vomiting is rare; and although this is to be expected, it is a point which is insufficiently recognized. My own experience has been that vomiting occurring with a case showing otherwise typical symptoms of a duodenal ulcer, points to the presence of a gastric ulcer, gall stones, or chronic appendicitis as an addition to the duodenal ulcer. Moynihan[38] laid special stress upon the variety of vomiting in this lesion, and showed that it was only a constant symptom if stenosis of the duodenum had supervened from constriction of the ulcer.

When gall stones are present and are giving rise to the

more severe type of pain, vomiting is common. It then occurs at the height of the pain, and is followed by relief. This relief, although definite, is not generally so marked as in the case of chronic ulcer.

With chronic appendix gastralgia vomiting is frequent, and is often the most marked symptom. As is to be expected, it is most evident during the exacerbations of the symptoms, but may even be present between the attacks.

It will be seen that in many cases it is possible to arrive at a diagnosis from a careful consideration of the previous history, but there are so many exceptions to the common types that it is impossible to diagnose any one of the lesions with absolute certainty from this aspect alone. Certain further evidence can be gained from a careful examination of the patient.

In most cases anaemia is present. With chronic ulcer this may be due to the loss of blood or to the underlying toxaemia, for it is a noticeable fact that it is often marked in those cases where there has never been any visible loss of blood. Rutimeyer[50] found that the haemoglobin was reduced in 82 per cent. of his 200 cases. This is of interest, for the diagnosis between anaemia and gastric ulcer is thereby made less easy. In a similar manner, anaemia may be present with chronic duodenal ulcer, gall stones, appendicitis, or carcinoma of the stomach. And although it may be possible to recognize a distinction in the appearance of a patient suffering from haemorrhagic anaemia and that of one with an anaemia due to toxic absorption, too much stress cannot be laid upon it.

Emaciation and cachexia are likewise useless as a means of diagnosis. In carcinoma they appear late, and they may be present with chronic gastric ulcer. The ordinary methods of palpation, percussion, and auscultation give evidence of very limited value. In cases of gastric and duodenal ulcer there may be an area of deep tenderness of limited extent, and the position of such an area of tenderness may aid in making a differential diagnosis between the two. Again, with chronic cholecystitis there is generally deep tenderness over the gall bladder, which may be best shown by the presence of Murphy's sign. The enlarged gall bladder or a tumour of the stomach may be easily palpable. These last two symptoms are, however, often absent, and, in fact, the presence of a palpable tumour in the stomach points to the disease being far advanced although not necessarily inoperable.

If the stomach is distended and hypertrophied it may be felt or actually seen if the abdominal walls are thin, and active peristalsis may be visible as waves passing from left to right. In the majority of cases, however, there is absolutely nothing to be ascertained by palpation or inspection.

Hertz[18] has shown that the methods of percussion and auscultatory percussion are useless to determine either the size or the position of the stomach. This is, indeed, what one would expect when one considers that even if distended the stomach may contain solids and no gas, and my own experience is in complete accord with this statement of his. Radiography of the stomach and duodenum after administration of a bismuth meal may, however, be of considerable value, but here again it must be realized that there is considerable difficulty in interpreting the results aright. Cunningham[6] and Birmingham[2] showed by anatomical studies that the usual shape of the stomach was not that of a simple sac, as was previously believed, but that it was divided into a cardiac part, which was more or less saccular, and a tubular pyloric portion separated at the incisura angularis. These observations have been supported by Cannon and Blake[4] and by Pfahler[49] by means of *x*-ray photographs taken after a bismuth meal. They have also been very fully investigated and supported by Gray,[12 13] who has shown that food is retained in the saccular portion for an appreciable interval; and, although Barclay[1] has thrown doubt upon them, there is no doubt that such a division must be recognized in the normal stomach. With an atonic and distended stomach the division may be lost. Care, therefore, must be taken not to mistake a normal stomach for one with an hour-glass deformity. As regards the condition of the [illegible] duodenal outlet which may be followed [illegible] if it is not indeed always present with it. Moynihan[44] has, however, for the last two years examined all his cases of duodenal ulcer by this method, and finds that the food shoots rapidly through this portion of the intestine. There is, in fact, the very reverse of any delay or obstruction, but in a few cases the local arrest of the bismuth has led to a correct diagnosis of a pouch caused by the irregular contraction of an ulcer.

In every case of doubt a test meal should be given, as support may thereby be given to one or other of the possible diagnoses. As regards the value of the results, Willcox[67] states that the active hydrochloric acid is nearly always increased with gastric and duodenal ulcer, whilst it is markedly diminished with gastric carcinoma. Tidy and Panton,[46] from their exhaustive analysis of 331 cases, find a diminution of free HCl with carcinoma unless there is a previous history of ulcer, whilst with chronic ulcer alone there is on the average a slight increase, but with duodenal ulcer the increase is much more definite. There are, however, many exceptions to the above facts, and, as Sherren[51] has shown, too much stress must not be attached to the test meal. He has found in his series that, "in those cases in which most help is needed . . . namely, those with many years' history, which may be chronic ulcer or may have overstepped the line and become malignant, no information is given of any value." He has, moreover, reported several cases in which the condition verified at operation and by microscopic examination was directly contrary to what the test meal would have led one to expect. This method, therefore, must be regarded only as a valuable aid to diagnosis, and not as a certain means of deciding it.

Of the methods of direct vision I shall say but little. Of the ultimate value of the ingenious instrument invented and described by Souttar,[53] and the later one described by Hill,[19] which has the advantage of being passed in its whole length by direct vision, it is too early as yet to speak with any certainty. With both an admirable view of the gastric mucosa can be obtained; but, although with both the pylorus can be viewed, the stomach alone can be investigated, and those conditions which I have been describing, and which may so closely simulate stomach lesions, will pass entirely unnoticed. Moreover, the two stomach lesions which are so difficult to distinguish are chronic ulcer and gastric carcinoma, and not uncommonly it is impossible to recognize them with the naked eye, even when the diseased areas are fully exposed, the diagnosis resting upon the feel or even upon the microscopic examination. It must be remembered also that in most cases the passage of these instruments necessitates the administration of a general anaesthetic, and since, in careful hands, the sole danger to-day of an exploratory operation is the small one of the anaesthetic, the patient will thereby be exposed to the same risk in return for much less information.

The final and most certain method of diagnosis is that of exploratory laparotomy. It must be understood, however, that in all the above lesions the only satisfactory treatment is an operative one, and thus laparotomy is not performed for the purpose of making a diagnosis alone. It is the first step in the operative treatment. I have attempted to show how in the majority of cases a careful investigation will lead to the diagnosis of the presence of one of the above lesions. In a certain number the actual nature of the lesion is also clear, but there are a few cases in which one can say with certainty that one of the lesions is present, but it is impossible to say which. This is the type of case in which exploratory operation is desirable, or rather operative treatment is still demanded, but the exact nature of the operation can only be determined after the abdomen is opened. It is rarely that a true exploratory operation is done, and nothing is more to be deprecated than a tendency to slur over the clinical investigation on the plea that all will be made clear at operation. In the greater number of cases a certain diagnosis can be made. For the remainder it is all the more essential that a careful examination be made in order that further knowledge be gained, so that even they may be separated one from another.

What, then, are the indications for operation? It must always be borne in mind that the most important is the possibility, even if remote, of carcinoma being present. This in the early stages is quite capable of cure, but if left

is certain to become inoperable. It is in this stage that diagnosis is difficult. W. J. Mayo[33] states that "gastric cancer itself does not give rise to diagnostic symptoms during the curable stage." The other lesions are, however, not only so intractable to any other form of treatment and are so readily relieved by surgical measures, but if left are so likely to be associated later with severe or fatal complications that valuable time should not be lost. I would regard, then, the indications for operative treatment as follows:

1. Any case where the symptoms are such that one of the above lesions can be diagnosed with tolerable certainty.

2. Any case commencing after the age of 35, which is not markedly relieved by a few weeks' adequate medical treatment.

3. Any case where symptoms have recurred after previous attacks relieved by medical treatment, especially if the symptoms have changed from those typical of a chronic gastric ulcer.

4. Any case in which the stomach shows definite evidence of distension, whether the symptoms are those of ulcer or carcinoma.

5. Any case in which a tumour is present suggesting any of the above conditions.

6. Any case with repeated haemorrhage.

I would lay special stress upon the fact that if rapid progress is not made with adequate medical treatment operation should early be resorted to. With our present knowledge it affords the only certain method of diagnosis and cure, and if undertaken early many of the more hopeless complications can be entirely prevented. Also in cases of this nature no operation must be considered complete unless the stomach, duodenum, gall bladder, and appendix have all been examined.

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A CONGENITAL DEFORMITY OF THE FOREARM AND ITS OPERATIVE TREATMENT.

BY

H. G. W. DAWSON, M.B., CH.B.,

[illegible].

THE deformity which is the subject of this article has never, as far as I am aware, been described in any English textbook or journal; indeed it is doubtful whether the condition has ever received recognition at the hands of modern surgeons. I have, however, been told that it has been described in America, but I have not been able, so far, to obtain any more exact information concerning it. I think, therefore, that the case which has come under my care should be reported as fully as possible, together with a description of the operative treatment which has been followed out.

The patient is a lady, aged about 33, and the deformity a congenital one, consisting of fixation of the forearms in a position of complete pronation with some slight bowing of the radius in its lower third, the convexity of the bow being backwards and outwards (presuming the limb to be in the correct anatomical position, palms to the front and thumbs out). The condition affects both arms equally, causing very great limitation to the usefulness of the arms and hands. The carpal bones are unusually movable one upon the other, and the ligamentous attachments uniting them are very lax, this allowing of a certain amount of rotation of the hand on the forearm, much more than is normally the case, and is doubtless due to constant efforts at supination acting on the only part of the limb capable of any rotatory movement. The deformity is not very noticeable when anything is taken in the hands, and no effort at supination is attempted; but if an effort is made to hold anything with the palm turned uppermost, a most awkward exposure of the deformity results, the elbow being pressed firmly to the side, and the hand rotated into an almost spiral attitude. A younger brother is also the subject of the same deformity, both right and left arms being perfectly fixed in the position of pronation, with even more marked bowing of the radius and more laxity of the intercarpal ligaments, and their maternal grandmother also suffered from the same condition, although it was not supposed to be so extreme, thus showing the strong hereditary tendency such bony deformities have. Some radiographs here reproduced as engravings show the fixation to be due to bony union between the radius and ulna extending from the elbow downwards along the shafts for about 2½ in.; the two bones are quite free below at the inferior radio-ulnar articulation, the space between them being seen quite distinctly on the fluorescent screen, though the bones were very close together and the joint cavity very small. The head of the radius, instead of being the normal mushroom shape, was rounded off and laterally fused with the ulna. On considering operative treatment the question naturally arose that, supposing the bones were completely separated, could the movements of supination and pronation be effected by means of the usual supinating and pronating muscles? The biceps flexor cubiti was the only supinating muscle that had hitherto been functionally active, the others might have become completely atrophied owing to their never having been used. On careful examination the supinator longus and pronator radii teres muscles could be made out, though they appeared much smaller and thinner than normal, and during the operations which followed this was found to be the case, the former being very poorly developed, both the muscle and tendon thin and weak. The pronator radii teres was also very weak and its tendinous insertion into the radius was as thin as paper.

Treatment and Progress.

However, operation was decided upon, and the first step was to remove the bridge of bone uniting radius to ulna; this was done through a curved incision at the back of the arm just below the elbow, the attachments of the extensor muscles being separated as far as the posterior border of the ulna. No

trace of supinator brevis muscle was seen, in fact, the place normally occupied by this muscle was completely filled with bone, neither was anything seen of the posterior interosseous nerve, which normally pierces the supinator brevis between its humeral and ulnar heads of origin; it was probably pushed aside with the mass of extensor muscles arising from the external condyle of the humerus. The bridge of bone removed with hammer and chisel was about 2½ in. long, ⅜ in. thick, and ⅜ in. deep. The head of the radius was very irregular in shape and two or three bosses of bone were removed. Forcible rotatory movements were made, and some tendinous attachments or adhesions snapped in the region of the wrist, the hand moving round towards supination through some 70°–90°. A piece of muscle was stitched in between the raw bony surfaces, the capsular ligaments and deep fascia drawn together with a purse-string suture of catgut, and the wound closed.

Numbness of the hand was complained of, but it passed off in three or four days. Passive movements were made from the fourth day, slight at first but increasing daily, and at the end of a month considerable improvement had taken place from the original condition, and it was possible to rotate the radius on the ulna through about 25°. The



Fig. 1.



Fig. 2.

Figs. 1 and 2.—Right arm, showing bony union at upper ends of radius and ulna.

movement, however, came to a sudden stop, as if some tight ligamentous band was put on the stretch. This was thought to be at the inferior radio-ulnar joint. The anterior and posterior ligaments comprising the greater part of the capsular ligament are normally very lax and sufficiently long to allow of extended movement of the radius round the outer aspect of the head of the ulna; this movement never having taken place it was thought the ligaments had become contracted and tight.

The second operation (four weeks after the first) consisted of freeing the head of the ulna through a curved incision on the dorsum of the wrist, cutting all the ligamentous attachments and removing two or three small redundant bosses of bone. This operation, however, afforded little or no improvement, and following it a considerable amount of oedema of the hand developed, owing, no doubt, to the cutting of subcutaneous lymph channels when the skin incision was made. This took two or three weeks to clear up. The irksome stiffness of the fingers also followed, but massage, fango mud baths, radiant heat baths, elastic compression, passive movements and breaking of adhesions under chloroform has gradually restored them to an almost normal condition. The same treatment has also been applied to the forearm, and some stiffness in the elbow-joint soon got quite right again.

The third operation (eleven months after the second) consisted of division of the interosseous membrane and oblique ligament from top to bottom through a straight incision down the flexor surface of the forearm. The interosseous membrane was not very definite, and consisted of isolated bands of fibrous tissue strongest near the top and bottom. This was followed by some further improvement, the total amount of true rotation being about 30°. It was then decided to excise the head of the radius, and three months after the previous operation the arm was attacked through an incision just below the elbow as in the first operation. It was found then that some slight bony reunion had taken place between the cut surfaces of radius and ulna where the original bridge of bone had been removed (see Fig. 4). The head was separated from the ulna and surrounding soft tissues, drawn out of the wound and sawn off obliquely from above downwards and inwards, leaving behind the greater part of the tuberosity, so as to save the insertion of the biceps muscle. A good-sized piece of muscular tissue was interposed between the bones and



Fig. 3.



Fig. 4.

Figs. 3 and 4.—Left arm. Condition after the second operation.

fixed there with catgut sutures, the deep fascia united with catgut, and the wound closed.

This operation was very successful and increased the amount of rotation by quite 60 degrees so that after a further two or three months' exercises, massage, and passive movements the hand could be almost completely supinated with the help of some rotation at the shoulder-joint and adduction of the arm. The patient, however, was still not satisfied as the hand could not be made quite flat with palm uppermost owing to the bowing of the radius throwing the radial side of the wrist forwards, and urged me to consider still further treatment. The only thing that appeared feasible was to perform an osteotomy of the radius and rotate the lower fragment on the upper one. This was done in November last, an incision being made 7 in. long over the inner border of the supinator longus muscle; this was defined and separated out and the insertion of the pronator quadratus and all other muscular and ligamentous attachments separated from the lower two-thirds of the radius excepting the insertion of the pronator radii teres, the tendon of which was very thin and lax and did not in any way limit free movement. The bone was then sawn through transversely at the junction of the middle and lower thirds, the

lower fragment rotated through about 40 degrees and secured in position by means of a plate and screws. The arm was put up supinated and kept in splints for a month, and the result at the date of writing has quite justified the procedure adopted. Supination can now be easily accomplished, and though the movement is somewhat cramped, it should improve greatly as the muscles strengthen and adhesions still further disappear. Massage, passive and active movements, are being continued, together with such exercises as screw-driving, digging in the garden, and piano playing. It is probable that the right arm will be treated in due course, when, in view of the experience gained in operating on the left, the time of treatment will be considerably shortened, the first and fourth operations will be done together, the third and fifth together and the second only done at the last if the result demands it. One lesson to be learnt is to do too much, rather than too little, since the parts contract up, just as in ordinary joint excisions.

ON THE INFLUENCE OF METEOROLOGICAL CONDITIONS ON THE DEVELOPMENT OF TRYPANOSOMA RHODESIENSE IN GLOSSINA MORSITANS.

BY

ALLAN KINGHORN AND WARRINGTON YORKE,

NGOA, NORTHERN RHODESIA.

(Fifth Interim Report of the Luangwa Sleeping Sickness Commission of the British South Africa Company.)

In a former report[1] attention was drawn to certain points which seemed to indicate that meteorological conditions in the Luangwa Valley had a considerable influence on the development of *Trypanosoma rhodesiense* in *Glossina morsitans*. As, however, the experiments were few in number, and were carried out during only a single dry and wet season, no definite conclusions could be drawn. Since the Commission established its head quarters on the Congo-Zambesi watershed, evidence has accumulated which indicates decisively that such conditions, more particularly the temperature, exert a very pronounced influence on the development of the trypanosome in *Glossina morsitans*.

At Nawalia eight transmission experiments were made—four with laboratory-bred and four with "wild" *Glossina morsitans*. At Ngoa five experiments have been carried out to date—four with "wild" and one with bred flies. It is unfortunate that the bred flies are not more numerous, but owing to the low temperature the majority of the flies did not emerge from the puparia, and many of those which did were malformed and quickly died. In all the experiments in which "wild" flies were used, however, the possibility that they were already infected with the trypanosome was excluded by first feeding them on healthy monkeys.

TABLE I.—*Meteorological Observations at Nawalia, N. Rhodesia, 14° 25′ S., 32° 2′ E., Altitude 2,100 ft. (approximately).*

1911–12.	External Shade Temperature: Mean.	Absolute Maximum.	Absolute Minimum.	Laboratory Temperature: Mean.	Relative Humidity: Per Cent.	Rainfall in Inches.	Days on which Rain Fell.
	°F.	°F.	°F.	°F.			
June	67.2	89.0	44.3	—	48.6	0	
July	68.7	91.0	44.6	67.4	45.7	0	
August ...	73.3	96.8	51.2	71.2	35.8	0	
September ...	77.5	103.3	54.0	71.5	31.5	0	
October ...	85.1	107.6	62.3	84.5	31.8	0.26	2
November ...	87.1	107.8	67.9	84.6	41.1	1.61	8
December ...	82.3	101.7	67.8	79.6	69.1	8.54	20
January ...	80.6	101.1	67.0	78.4	77.7	14.97	16
February ...	79.2	96.0	65.1	77.1	73.3	5.55	16
March	79.0	97.6	61.0	72.0	62.5	5.10	6
April (to 9th) ...	79.5	97.9	59.8	77.2	58.0	0.01	1
						[illegible]	69

TABLE II.—*Meteorological Observations at Ngoa, N. Rhodesia, 11° 40′ S., 31° 30′ E., Altitude 4,400 ft. (approximately).*

1912.	External Shade Temperature: Mean.	Absolute Maximum.	Absolute Minimum.	Laboratory Temperature: Mean.	Relative Humidity: Per Cent.	Rainfall in Inches.	Days on which Rain Fell.
	°F.	°F.	°F.	°F.			
April (20–30) ...	72.0	89.7	54.1	68.0	53.7	[illegible]	
May	69.0	90.5	45.1	66.2	51.3	0	
June	61.5	85.5	34.3	60.5	53.0	0.01	1
July	62.4	83.0	42.3	60.9	53.0	0	
						0.01	1

The details of the Nawalia experiments have already been published,[2] while those of the Ngoa series will appear in a later report. For the purposes of the present paper synopses of the two series will suffice, and will be found in Tables III and IV.

TABLE III.—*Synopsis of Transmission Experiments with Trypanosoma rhodesiense and Glossina morsitans, carried out at Nawlia, Northern Rhodesia.*

No.	Date on which Started.	Season.	Number of Flies Used.	Variety of Flies Used.	Result.	Duration of Developmental Cycle: Days.	Mean Temperature during Developmental Cycle.*	Absolute Maximum during Developmental Cycle.	Absolute Minimum during Developmental Cycle.	Relative Humidity* per Cent.
							°F.	°F.	°F.	
1	Aug. 20, 1911	Dry	26	Bred	Infection	13	75.1	90.0	60.5	35.0
2	Nov. 14, 1911	Commencement of rains	16	,,	,,	15	83.5	93.5	74.5	44.8
3	Nov. 14, 1911	,,	57	Wild	,,	11	83.8	93.5	74.5	44.8
4	Dec. 29, 1911	Rainy	20	Bred	Negative	—	78.2	87.1	72.8	74.5
5	Jan. 12, 1912	,,	42	Wild	,,	—	78.0	85.7	72.8	74.2
6	Jan. 12, 1912	,,	42	,,	,,	—	78.0	85.7	72.8	74.2
7	Jan. 12, 1912	,,	23	Bred	Infection	19	77.9	85.7	72.8	75.4
8	Feb. 13, 1912	,,	104	Wild	[illegible]	26	77.5	86.0	71.0	65.5

*In the case of the unsuccessful exp[illegible] these [illegible] have been calculated for the first thirty days only.

TABLE IV.—*Synopsis of Transmission Experiments with Trypanosoma rhodesiense and Glossina morsitans carried out at Ngoa, Northern Rhodesia.*

No.	Date on which Started.	Season.	Number of Flies Used.	Variety of Flies Used.	Result.	Duration of Developmental Cycle: Days.	Mean Temperature during Developmental Cycle.	Absolute Maximum during Developmental Cycle.	Absolute Minimum during Developmental Cycle.	Relative Humidity, per Cent.
							° F.	° F.	° F.	
1	May 18, 1912	Dry	116	Wild	Negative	—	62·7	74.5	50.5	52.0
2	June 13, 1912	"	90	"	"	—	59.1	72.4	42.0	52.0
3	June 14, 1912	"	119	"	"	—	59.1	72.4	42.0	52.0
4	June 26, 1912	"	19	Bred	"	—	60.2	71.8	42.0	52.0
5	July 11, 1912	"	176	Wild	"	—	62.0	72.0	49.1	50.0

It will be seen from these tables that whereas, in the Luangwa Valley, *Trypanosoma rhodesiense* was successfully transmitted by *Glossina morsitans*, all efforts in this direction on the Congo-Zambesi watershed have so far been in vain. Of 330 flies used in the valley experiments, 6 and probably 10 became infective. The larger figure is based on the number of salivary gland infections found in the flies. Our experience indicates that the implication of these structures is intimately connected with the ability of *Glossina morsitans* to transmit *Trypanosoma rhodesiense*, and that until they are invaded by the organisms the flies are non-infective. Salivary gland infections have been found in all the flies which were capable of transmitting the parasite. In experiment No. 3 (Table III) six flies were found to harbour trypanosomes in the glands, but of these only two were actually proved to transmit *Trypanosoma rhodesiense*. As in all other instances it was shown conclusively that those flies in which trypanosomes were found in the salivary glands were infective, it may be concluded that the remaining four flies in this experiment were also capable of transmitting the parasite. Invasion of the salivary glands has not been observed, except in those flies which were known to transmit *Trypanosoma rhodesiense*. In the five plateau experiments, 520 *Glossina morsitans* were employed without a single fly becoming infective.

The explanation of these apparently contradictory results is at first sight not very obvious, more particularly in view of the fact that even on the plateau "wild" *Glossina morsitans* capable of infecting healthy monkeys with *Trypanosoma rhodesiense* were occasionally encountered. If the climatic conditions under which the valley experiments were carried out be compared with those obtaining during the plateau experiments, it will be seen at once that the most striking difference is one of temperature. As a rule, the temperature during the former series of experiments was roughly from 15 to 20 F. higher than during the latter series.

With a view to ascertaining the influence, if any, exerted by temperature on the developmental cycle of *Trypanosoma rhodesiense* in the tsetse fly, a further series of experiments were performed on the plateau, in which, by means of an incubator, the flies were kept at a temperature approximating to that of the valley at the most favourable season.

morsitans, and that the comparatively low temperatures obtaining during May, June, and July, on the Congo-Zambesi watershed are very unfavourable to the completion of the developmental cycle of *Trypanosoma rhodesiense* in this fly, and would account for the unsuccessful experiments at laboratory temperatures.

Other observations afford corroborative evidence in support of this contention. An analysis of the valley transmission experiments shows that the largest number of infective flies was obtained at the hottest season of the year.

TABLE VI.—*Showing Number of Infective Flies Obtained, and Meteorological Observations at Nawalia (Luangwa Valley).*

Number.	Date on which Started.	Season.	Duration of Developmental Cycle: Days.	Number of Infective Flies Found.	Mean Temperature during Developmental Cycle.	Absolute Maximum during Developmental Cycle.	Absolute Minimum during Developmental Cycle.	Relative Humidity, per Cent.
					° F.	° F.	° F.	
1	Aug. 20th, 1911	Dry	13	1	75.1	90.0	60.5	35.0
2	Nov. 14th, 1911	Commencement of rains	15	1	83.5	93.5	74.5	41·8
3	" "	"	11	6	83.8	93.5	74.5	44.8
4	Dec. 29th, 1911	Rainy	—	0	78·2	87·1	72.8	74.5
5	Jan. 12th, 1912	"	—	0	78.0	85.7	72.8	74.2
6	" "	"	—	0	78.0	85.7	72.8	74.2
7	" "	"	19	1	77.9	85.7	72·8	75.4
8	Feb. 13th, 1912	"	25	1	77.3	85·0	71.0	66.5

The fact that an occasional infective "wild" fly was encountered on the plateau during a period (May, June, and July) when attempts to transmit in the laboratory were invariably unsuccessful requires some explanation. A possible solution may be that the flies in question were infected during the warmer season of the year and had survived into the cold season.

If the results obtained by feeding freshly caught flies on

TABLE V.—*Synopsis of Experiments to Transmit Trypanosoma rhodesiense by Means of Glossina morsitans kept in Incubator.*

No.	Date on which Started.	Season.	[illegible]	[illegible]	Result.	Duration of Developmental Cycle: Days.	Mean Temperature during Developmental Cycle.	Absolute Maximum during Developmental Cycle.	Absolute Minimum during Developmental Cycle.	Relative Humidity, per Cent.
								° F.	° F.	
1	June 30, 1912	Dry	61	Wild	Infection	14	80·6	87.8	74.5	36.0*
2	July 1, 1912	"	72	"	"	15	80·6	87.8	71.5	36.0*

Approximate

[illegible] the warm, dry air [illegible] on the insects, [illegible] with which experi- [illegible] of the 72 in experiment [illegible] small number alive at the [illegible] at least one infective fly was obtained [illegible].

It [illegible] therefore, that a high temperature favours the development of the trypanosome in *Glossina*

healthy monkeys in the valley are compared with those from flies caught on the plateau, a marked difference in the number of infections resulting is apparent. In the Luangwa Valley 3,202 flies were fed in 29 batches, and *Trypanosoma rhodesiense* was isolated in six of the experiments, giving a ratio of 1 infective fly to 534, whereas on the Congo-Zambesi watershed 5,041 freshly caught *Glossina morsitans* were fed in groups on 39 monkeys, with

4 positive results—1 infective fly to 1,260. As tsetse flies and game are about equally numerous at Nawalia and Ngoa, and as the disease was presumably introduced into the two localities, which are less than 70 miles apart, about the same time, it appears to us that the only essential difference which can account for the fact that the percentage of infective "wild" flies at Nawalia is two and a half times as great as at Ngoa is the difference in the climatic conditions. It will be seen from Tables I and II that the temperatures experienced on the Congo-Zambesi watershed during May, June, and July are very much lower than those at Nawalia from September to March. It was during the months named that our experiments were carried out at the two places.

Finally, it might be mentioned that the percentage of infective "wild" flies caught in the valley was greater in the hot than in the cold season. This point is illustrated in Table VII.

TABLE VII.—*Percentage of Glossina morsitans found Infected with Trypanosoma rhodesiense at Nawalia at Different Seasons of the Year.*

1911-1912.	Mean External Shade Temperature.	Number of Flies Fed.	Number Infectious with *T. rhodesiense*.	Ratio Infective to Non-Infective Flies.
June	67.2°	18	0	0 : 790
July	68.7°	385	0	
August	73.3°	193	0	
September ...	77.5°	194	0	
October	86.1°	—	—	1 : 338
November ...	87.1°	270	1	
December ...	82.3°	205	0	
January	80.6°	538	2	
February ...	79.2°	104	0	1 : 466
March	79.0°	823	2	
April (to 9th)	79.5°	472	1	

In addition to temperature, there is one other factor in the climatic conditions which may possibly influence the developmental cycle of the trypanosome in *Glossina morsitans*. We refer to the relative humidity of the atmosphere. At the most favourable season of the year in the Luangwa Valley for transmission experiments, and also in the case of those carried out in the incubator, the relative humidity was extremely low. Whether this is a mere coincidence we are, at present, unable to form an opinion, but hope to be able to write more definitely on the subject in a later communication.

Summary.

The developmental cycle of *Trypanosoma rhodesiense* in *Glossina morsitans* is, to a marked degree, influenced by the temperature to which the flies are subjected. High temperatures (75–85° F.) favour the development of the parasite, whilst low temperatures (60–70 F.) are unfavourable.

References.

[1] Kinghorn and Yorke, *Annals Trop. Med. and Parasit.*, vol. vi, 1912. [2] Ibid., vol. vi, No. 1 A, 1912.

THE ninth International Physiological Congress will be held at Groningen in September (2nd to 6th), 1913.

UNDER the title, Vienna Roentgen Courses, an association of all the best known radiologists in Vienna, has been formed on the initiative of Herr Keinz Bauer (Engineer), Docent Dr. Holzknecht, and Docent Dr. Kienböck. It is proposed to organize every year a course extending over ten to twelve days, and covering the whole ground of radiology, theoretical and practical. Among the lecturers who have so far consented to take part in the courses are Messrs. Bauer (Berlin), Freund, Haudek, Holzknecht, Kienböck, Robinsohn, Schüller, and Schwartz (Vienna). The first course will be given in the spring of 1913.

THE ETIOLOGY AND TREATMENT OF MINER'S NYSTAGMUS.

WITH A REVIEW OF 100 CASES.

BY

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THE subject of miner's nystagmus as an industrial affection touches the interests of both employer and employee.

The conclusions formed by us as to the causes, predisposing or otherwise, and the treatment, prophylactic as well as curative, have been arrived at by an unbiassed and independent consideration of 100 consecutive cases as they presented themselves to us.

The factors contributing to the production of nystagmus in miners are not numerous, and, arranged in order of relative frequency and importance, are: (1) Inadequate light, (2) errors of refraction, (3) straining of ocular muscles, (4) neurotic temperament.

1. *Inadequate Light.*—That this is an important cause of miner's nystagmus is conclusively proved by the fact that 99 per cent. of our cases had been using the lock-lamp for a number of years. Only one case was found where the naked light was allowed, and here the nystagmus was accounted for by hypermetropia, much straining of the ocular muscles in narrow seams, and a markedly neurotic temperament with much physical debility.

The lock-lamp must be 9 ft. from the farthest point of the mandril, and so the workman is staring into comparative darkness, whereas the naked light is attached to the workman's cap or to a post close beside. Therefore, the naked light not only gives a much brighter and stronger light because it is exposed, but also because the workman has its full benefit. We have also had experience of miners in various parts of Scotland, where the naked light is used, and in these districts miner's nystagmus is practically unknown.

2. *Errors of Refraction.*—An examination of the summary of cases of miner's nystagmus seen by us will show that 90 per cent. had errors of refraction, excluding the three cases in which there was evidence of error, but owing to marked photophobia no exact estimate could be made; while 7 per cent. had normal refraction. Of the 90 per cent., 48 per cent. had either myopic, hypermetropic, or mixed astigmatism: 27 per cent. had simple hypermetropia; and 15 per cent. had simple myopia. It is interesting to note that a large number of the cases of hypermetropia were those of comparatively young men who had worked only a few years at coal-cutting.

3. *Straining of the Extrinsic Muscles of the Eyeball.*—This is the result of the two foregoing factors. In all our cases the workman had his eyes fixed in a staring, strained position for long periods, either downwards and laterally, as in narrow seams, or upwards, as in wide seams: 90 per cent. of our cases were engaged cutting coal, while 10 per cent. were hauliers and timbermen, and one a colliery examiner.

4. *Neurotic Temperament.*—The inability, on the part of a very large number of men with nystagmus, to concentrate their physical or mental powers in any particular line of action guides us to the conclusion that such instability is probably much more the cause than the effect of nystagmus. It most certainly appears to be a weak point in the miner's armour, and would repay careful examination long before the stage of inability to work.

The severe headaches and aching eyes of which these men complain are accounted for by errors of refraction and straining of the eyes; the vertigo, by inco-ordination of the ocular muscles; the conjunctivitis and photophobia by the sudden frequent change from darkness into dazzling light.

Prevention.

This resolves itself into medical examination of all men engaged to work underground, and the periodical examination of all underground workers, for (*a*) the presence of refraction errors, (*b*) any signs of incipient nystagmus, (*c*) physical or nervous debility.

To this must be added the importance of adequate light.

Age.	Occupation.	Years Underground.	Refraction.	Oscillation.	Remarks.
45	Miner	Over 30 years	Photophobia so marked that refraction examination was impossible	Marked	Vertigo very marked.
48	Miner	36 years	+0.75 D. sph. in both eyes	Marked	Nictitation and photophobia.
36	Miner	24 years	R.−1 D. cyl. horiz. L.−0.75 D. sph.	Slight	Photophobia.
27	Miner	14 years	R.+1 D. L.−2.5 D. sphs.	Marked	Vertigo and photophobia.
24	Miner	10 years	R.−2 D. L.−2.75 D. sphs.	Marked	—
56	Miner	40 years	R.=Normal. L.+0.50 D. sph.	Slight	—
29	Miner	16 years	R.−0.50 D. L.−1.50 D. sphs.	Marked	Vertigo frequently.
37	Miner	20 years	R.+0.75 D. L.+1.25 D. sphs.	Marked	Photophobia.
19	Miner	5 years	−2.50 D. horiz. cyl. in both eyes	Marked	—
22	Miner	8 years	R. 1.25 D. sph. −2.75 D. horiz. cyl. L.+1.25 D. sph. −2 D. cyl. axis 120°	Marked	Photophobia and conjunctivitis.
29	Miner	3 years	R.−0.50 horiz. cyl. L.=Normal	Marked	Vertigo.
30	Miner	27 years	R.+0.75 D. L.+1 D. sphs.	Marked	Photophobia and frequent headaches.
46	Miner	30 years	R.+2 D. L.+2.75 D. sphs.	Marked	—
21	Miner	9 years	Simple hypermetropia +6 D. in both eyes	Rotatory	Vertigo.
30	Miner	18 years	Hypermetropic astigmatism in both eyes	Very slight	Nictitation and vertigo.
46	Miner	30 years	Impossible, owing to photophobia	Very marked	—
23	Miner	11 years	R.+2.5 vert. cyl. L.+0.50 D. sph.	Rotatory	Severe headaches.
35	Miner	8 on coal, 4 timberman	Hypermetropic astigmatism in both eyes	Very slight	Vertigo and aching of eyes.
28	Miner	13 years	R.+1.5 D. sph. L.+1 D. vert. cyl.	Marked	—
41	Miner	10 years	R.+10 D. sph. L.+10 D. sph.; 2 D. cyl.	Marked	Nictitation and headache.
43	Miner	30 years	Oblique myopic astigmatism−1 D. in both eyes	Marked	—
39	Miner	20 years	R.=Normal. L.+4 D. sph.	Marked rotatory	Has been a haulier for last 10 years.
50	Haulier ...	40 years	R.−1 D. sph. −0.50 D. cyl. horiz. L.−1.50 D. sph. −0.50 D. cyl. horiz.	Marked	Headache and photophobia.
45	Miner	34 years	Mixed astigmatism in both eyes	Not marked	Nictitation and vertigo.
19	Miner	5 years	Simple hypermetropia in both eyes	Marked	—
21	Miner	9 years	Normal	Marked	Photophobia.
38	Miner	20 years	R. Normal. L.+2.5 D. sph.	Marked	—
55	Miner	40 years	Astigmatism (low degree)	Slight	—
21	Miner	8 years	R.+4 D. sph. L. oblique hypermetropic astigmatism, marked	Marked rotatory	Some photophobia.
32	Timberman ...	12 years	Oblique hypermetropic astigmatism	Marked	—
48	Miner . .	28 years	+2 D. sph. in each eye	Slight	Vertigo and photophobia.
35	Miner	22 years	+1.50 D. sphs. (both eyes)	Marked	Photophobia.
24	Miner .. .	12 years	R.−3 D. cyl. horiz. L.−1.50 D. sph.	Marked	—
37	Miner . .	20 years	+1 D. hypermetropic astigmatism (both eyes)	Marked rotatory	—
30	Miner . .	15 years	R.−0.75 D. L.−1 D. sphs.	Slight	Severe headaches.
30	Miner	12 years	R.−1.25 D. L.−1 D. sphs.	Marked	Vertigo and photophobia.
48	Miner	30 years	R.+2 D. L.+2.5 D. sphs.	Slight	Photophobia.
67	Miner all his life		Simple myopia, well marked	Marked	Complains of giddiness.
40	Miner	20 years	R.+0.75 D. sph. L.+0.50 D. sph.	Slight	—
44	Miner	25 years	R.+0.75 D. vert. cyl. L.+0.50 D. vert. cyl.	Rotatory	Marked headache and vertigo.
30	Miner	10 years	R.+1.25 D. L.+0.50 D. sphs.	Marked	Photophobia.
33	Miner	20 years	Simple myopia. −3 D. in both eyes	Rotatory	Photophobia.
25	Labourer	11 month	R.+4 D. vert. cyl. L.+4.50 D. vert. cyl.	Slight	Photophobia.
43	Miner	25 ye	h. L.+0.50 D. vert. cyl.	Slight	Headaches and vertigo.
25	Miner .	8 on coal 1 labourer	R.+0.50 D. sph. L.+0.50 D. sph. −3 D. horiz. cyl. −1 D. horiz. cyl.	Marked	No nystagmus when left coal cutting.
21	Mine	11 years	R. −0.75 D. cyl. axis 120°. L. −0.5 D. sph.	Marked	Marked quivering of eyelids.
38	Mine .	25 years	R.+0.75 D. vert. cyl. L.+1 D. vert. cyl.	Marked	Marked photophobia.
21	Miner ...	8 years	+0.75 cyl. axis vert.	Slight	Vertigo occasionally.
32	Colliery [illegible]		in in both eyes +0.50 D.	Marked	Pain in eyeballs and vertigo.
45	Timberman		R.+0.75 D. horiz. cyl. L.+1.25 D. sph. −2.25 D. horiz. cyl.	Not marked	Conjunctivitis and photophobia.

Age.	Occupation.	Years Underground.	Refraction.	Oscillation.	Remarks.
35	Miner	Coal 20 years	R.−1 D. horiz. cyl. L.−6 D. sph.	Slight	—
36	Miner	Over 20 years	Oblique myopic astigmatism	Marked	Quivering of eyelids and headache.
20	Miner	5 years	Hypermetropic astigmatism +1 D. in both eyes	Marked on stooping	Frequent headaches.
34	Miner	17 years	R.+2 D. horiz. cyl. L.+2.50 horiz. cyl.	Fine oscillation	Worked as timberman for past 10 months.
35	Miner	Over 20 years	Simple myopia. R.−3.5 D. L.−3 D.	Marked	Very marked when in stooping position.
31	Miner	20 years	Simple hypermetropia. R.+2 D. L.+4 D.	Marked	Frequent attacks of giddiness.
44	Miner	33 years	R.−1.50 D. sph. L−2.50 D. sph.	Slight	Vertigo.
18	Miner	2 years	R.−2.75 D. sph. −1.75 D. horiz. cyl. L.−5.50 D. sph. −3.50 D. horiz. cyl.	Slight	Vertigo. (Has worn glasses for some time.)
41	Miner	29 years	Refraction normal	Marked rotatory	—
31	Miner	25 years	R.−2.50 cyl. L.+0.50 sph. C.−3 D. cyl.	Very marked	—
27	Miner	13 years	R. Myopic astigmatism. L. Hypermetropic astigmatism (both of low degree)	Fine oscillation	Marked photophobia and vertigo.
22	Miner	10 years	R.+7 D. L.+6.50 D. sphs.	Rotatory	Photophobia and conjunctivitis.
29	Miner	17 years	No refraction error	Marked	Conjunctivitis.
45	Miner	38 years	R.+2.5 D. L.+2 D. sphs.	Marked	Worked last seven years with naked light.
51	Miner	40 years	R. and L.+0.50 sphs.	Marked	—
18	Miner	5 years	Mixed astigmatism in both eyes	Marked	Vertigo.
52	Miner	30 years	R. and L.+2 D. sphs.	Marked	Conjunctivitis and photophobia.
33	Miner	20 years	R. and L.+1.5 D. sphs.	Slight	Marked photophobia.
25	Miner	11 years	R.−6 D. sphs. L.−7 D. sphs.	Slight	Marked photophobia and quivering eyelids.
40	Haulier ...	25 years on coal, 5 years haulier	Unable to complete refraction examination owing to patient becoming sick	Rotatory	Headache and vertigo frequent.
38	Miner	15 years	R. hypermetropic astigmatism vertical. L. hypermetropic oblique	Slight	Vertigo marked.
33	Miner	22 years	Hypermetropic astigmatism in both eyes	Rotatory	—
47	Miner	30 years	Hypermetropia in both eyes	Marked on stooping	Nictitation.
23	Miner	8 years	Oblique hypermetropic astigmatism in both eyes	Oblique	Photophobia.
35	Miner	17 years	R.−0.50 D. L.−1.50 D. sphs.	Slight	Nictitation and photophobia.
21	Miner	10 years	R.+0.50 D. with slight myopic astigmatism. L. refraction normal	Rotatory	—
25	Miner	13 years	+0.75 D. sphs. in both eyes	Slight	Marked photophobia.
38	Miner	26 years	R.−1.5 D. L.−2 D. sphs.	Marked	—
41	Miner	27 years	−1.75 D. sphs. R. and L.	Marked	Nictitation, vertigo, and conjunctivitis.
25	Miner	12 years	Refraction normal	Slight	Severe headaches.
24	Miner	12 years	R.−2 D. cyl. horiz. L.−2 D. cyl. axis 120°	Slight	Marked nictitation.
53	Miner	40 years	R. and L.+0.50 vert. cyls.	Slight	Headache and vertigo.
39	Miner	27 years	Myopic astigmatism in both eyes	Marked	Retinoscopy almost impossible because of photophobia.
18	Miner	5 years	Normal	Slight	Nictitation and photophobia.
21	Miner	6 years	Simple hypermetropia in both eyes	Slight	Photophobia.
32	Miner	10 years	R.+1.5 D. sph. L +1 D. obliq. cyl.	Slight	Marked conjunctivitis.
27	Miner	7 years	Oblique hypermetropic astigmatism in both eyes	Marked	Severe headaches with photophobia.
34	Timberman ...	20 years	Simple myopia in both eyes	Marked	Severe headaches.
22	Miner	8 years	Normal	Slight	Vertigo.
38	Miner	20 years	R.+1.5 D. sph. L.+1 D. sph. +1.5 D. cyl.	Marked	Headache and photophobia.
41	Miner	25 years	Simple hypermetropia in both eyes	Marked	Conjunctivitis, marked.
31	Driver	8 years	R and L.+0.50, oblique astigmatism	Marked rotatory	—
35	Miner	23 years	Slight hypermetropic astigmatism	Rotatory	Headache and vertigo.
46	Miner	30 years	+1.4 D. sphs. in both eyes	Rotatory	Marked vertigo and photophobia.
49	Miner	40 years	R.−1 D. cyl., axis 120°. L.−0.75 D. cyl. axis 60°	Slight	—
21	Miner	6 years	No error	Fine oscillation	Photophobia and nictitation
40	Miner	24 years	R−0.75 D. L.−1.25 D. Oblique cylinders	Rotatory	—
50	Miner	40 years	R.+6 D. L+4 D., with slight oblique hypermetropic astigmatism in both eyes	Marked	Photophobia.
46	Miner	28 years	R.+1 D. horiz. cyl. L.+1 D. obliq. cyl.	Marked	Marked twitching of eyelids.
25	Miner	12 years	R.=Normal. L.−1 D.	Marked	Photophobia.

In this connexion it appears surprising that even in the most up-to-date collieries there is, as yet, no indication of electric light being used throughout the workings. We are satisfied that if such precautions were taken and electric light installed in all working places in collieries, or electric lamps capable of giving light for at least eight hours supplied to all underground workers, miner's nystagmus would soon be unknown, while serious accidents to workmen and consequent loss to employer would much more rarely occur.

Treatment.

The curative treatment may be summed up in a single sentence, "Rest, strychnine, and the correction of refraction errors."

Conclusions.

1. There are certain important contributory factors in the production of miner's nystagmus, such as inadequate light, refractive errors, and muscular strain.

2. Nystagmus is a menace to the miner working underground, as it may prevent the early detection of flaws in the roof and falls result. An illustration of the gravity of this danger is the fact that one of our cases was a colliery examiner.

3. We are convinced that the preventive and remedial measures suggested would, if carried out thoroughly, soon make miner's nystagmus a very rare complaint, and greatly facilitate the detection of the small blue cap which indicates the presence of fire-damp.

ANEURYSM OF THE ANTERIOR CUSP OF THE MITRAL VALVE IN A CASE OF STAPHYLOCOCCAL ENDOCARDITIS.

BY

WILLIAM CALWELL, M.D.,

PHYSICIAN TO THE ROYAL VICTORIA HOSPITAL, BELFAST.

T. L., aged 16 years, was admitted under me into the hospital on April 8th, 1912. He was an apprentice fitter, and stated that he had always been of good health till the onset of the present affection. There was no history of rheumatic fever. Six weeks before admission he complained of headache, palpitation, sickness, and pain in the infrasternal notch, and he was compelled to stop work.

On admission he looked pale and thin; his teeth were good, the tongue was furred, but otherwise the alimentary system was normal. There were fine and medium râles at the base of both lungs. The urine showed some phosphates, no albumen, and no sugar. The left ventricle was hypertrophied, and a systolic thrill was felt over the mitral area; there was some difference of opinion as to the presence of a presystolic thrill; a loud, blowing murmur was heard over the precordial area generally, perhaps loudest towards the base, but also conducted round into the left axilla; it masked or replaced the first sound in the mitral area. A diastolic murmur of feeble intensity, but of the ordinary character, was heard along the sternum and also in the mitral area, where its character was indefinite and rumbling; this murmur was diagnosed as a "Flint's." The pulse was regular, soft, and varied between 84 and 132; it was generally between 112 and 120. The temperature was 99° to 100° F. in the morning, 101° and 102° in the evening. The blood count a few days after admission gave 3,000,000 red and 14,000 white, haemoglobin 65 per cent., thus giving an index of 1.

[illegible] endocarditis, I drew off 8 oz. of blood from a vein and obtained a pure culture of staphylococcus in broth, and from this in agar. Dr. Wilson, Queen's University, kindly made me a vaccine, and on April 24th I gave the patient 20 million; this upset him and was evidently too large, but he seemed somewhat better on the third day after the vaccine; the improvement was not continued. A week later I gave him 10 million; this slightly upset him, and again there seemed a slight improvement. However, after the lapse of another week, when I was considering the advisability of a third dose, the embarrassment of the heart became more marked, the temperature fell, the pulse rose, his weakness increased, and he died on May 11th.

Post-mortem Examination.—The heart was found hypertrophied and weighed 17 oz. It was opened by a sterilized knife and a minute piece of the vegetation from the mitral valve removed and planted in broth; a staphylococcus was grown, but the growth became contaminated by the *Bacillus subtilis*. An abscess was found in the upper part of the spleen, which gave a pure staphylococcal growth. The right side of the heart was normal; in the left there was stenosis and thickening of the semilunar valves; there was a small growth of vegetations on the auricular surface of the left or posterior flap of the mitral orifice; the anterior or septal presented a large aneurysmal sac ballooned back into the auricle, no doubt from the greater pressure in the ventricle; the orifice of this aneurysm on the ventricular aspect was large enough to admit the tip of the little finger; the cavity was partially filled with blood clot.

Several interesting problems are suggested. Could such hypertrophy take place in ten weeks in a lad poisoned with a staphylococcal toxin? Had there not evidently been some old-standing heart trouble? Again, the question of the entrance of the poison into the system is one of great difficulty and interest. Not very infrequently we meet with cases in which presumably a local infection becomes from some trivial cause generalized. Thus Dr. Henry of Belfast had treated a case of acne in a lad of about 20. He improved and relapsed. About a fortnight after the last dose of vaccine he fell while jumping, and two days afterwards developed pain in the region of the left hip. This condition got worse, and in a few days during which I saw him septicaemia set in, probably with endocarditis, which became intensified, and death ensued so rapidly that a full bacteriological examination of blood or spinal fluid could not be made. A *post-mortem* examination was not allowed. A somewhat similar result followed a slight wrench of the



[illegible]: photograph of aneurysm of the anterior cusp of the mitral valve in a case of staphylococcal endocarditis. (Taken by Messrs. Lizars.)

elbow in a man subject for the previous year or so to boils.

The course in these cases might be compared to the breaking down of adhesions in a case of peritonitis, and the onset of a fulminant type of generalized peritonitis. But this lad gave no previous history throwing light on either onset or course. He may not have remembered or not have attached any importance to events which in the light of the subsequent catastrophe were of great moment. The case illustrates also the necessity for a much earlier diagnosis than is dreamt of at present. With such a valve, what vaccine could possibly have been of any service? In the future, the early examination of the blood by cultural methods may help in similar cases.

The use and the dosage of vaccines in these cases of septicaemia furnish another problem. One would think that the microbe circulating through all the tissues would stimulate them to respond more than a vaccine in one small spot. Again, the difference in dose between a few hundred million used in a case of acne or of boils and one million, the dose recommended to me by Dr. Houston of this city, after my second dose, is very remarkable.

Aneurysm of a valve is mentioned by most authorities, but the literature is not very full. I suppose there is not much to be said about it.

A CASE OF ULCERATIVE ENDOCARDITIS.

BY

A. HOULGRAVE, L.R.C.P.Lond., M.R.C.S.Eng.

I was sent for to see Miss ——, aged 55, towards the end of February.

She was in bed lying on her back, her head and shoulders supported by several pillows, her lower limbs drawn up, the soles of her feet resting on the bed. Her face was of an earthy, dusky hue, the alae of the nose were working, the lips apart, and the angles of the mouth drawn back. She complained of her throat, which she said pained her on the left side at the angle of the jaw, which was worse when she swallowed, and of a very acute pain at a spot on a line drawn from the tip of the tenth rib, which would meet the horizontal at a level of the umbilicus, and of acute pain in the metacarpal joint of the left thumb. The joint was swollen, red, hot and painful; pain much worse in movement. The temperature was 103°, the pulse 120, and the respirations 40. The tongue was moist, with a creamy brown fur; the fauces congested and swollen, left tonsil enlarged, white matter at the orifices of several of the crypts, no enlargement of lymphatic glands. The chest expanded well. The heart's apex by feeling and percussion was in the nipple line; systolic bruit at apex. No great enlargement of the right side, by percussion; no dullness above the third rib. A systolic murmur at second left intercostal space. First sound over aortic area not clear. No friction or thrill felt. Lungs and pleura nothing abnormal found front or back. Urine acid, no albumen, no sugar, specific gravity 1030, lithates. Over the spot indicated above in the abdomen she complained of great pain; the muscles, in that region especially, were tonically contracted, and prevented further examination.

Warmth was applied to the abdomen, the thumb was bathed in hot water and wrapped up in cotton-wool and bandaged. The throat was rinsed with warm salt and water, and swabbed with powdered boracic acid. This was done as often as the pain got worse. As to diet, she was ordered to have no milk curds, and nothing that would not go through a fine sieve, to be taken in small quantities, and not more than 2 oz. at a time; 1 grain of calomel was given followed by castor oil.

The symptoms gradually improved. Her blood was examined at the Pathological Laboratory of the University of Liverpool, with negative results.

In about a month she had a severe rigor, and it was followed by an attack of pleuropneumonia. She gradually got better of this and was sitting up. One day I found her sitting up in an armchair, leaning forward with her arms resting on the arms of the chair, gasping for breath. She had an ashy, earthy complexion, was bathed in a clammy perspiration, she could scarcely speak, and one could scarcely feel her pulse. The usual remedies were applied and she came round. This attack was followed by blocking of the right saphena vein. She was kept in bed with the limb bandaged and gradually got better, and then she had another rigor. This was followed by plugging of some vein in the lower third of the left calf of the leg. The same treatment was adopted, and she gradually came round.

Then one day she was out for a walk and sat on a seat. This was followed by chill and fever, but no local cause could be discovered.

By way of treatment, as soon as I felt pretty safe that there was not any acute intestinal inflammation, as appendicitis, etc., to deal with, she was given a mixture of 5 grains of quinine sulphate, 10 grains of salicine, and 5 minims of dilute sulphuric acid, three times a day, and occasionally 1 grain of calomel followed by castor oil, but the remedy was oxygen, given for ten to fifteen minutes every hour, about sixty to ninety bubbles coming through the water per minute. Her temperature varied from 103.5° the highest, to 96° the lowest. The chart was typical of pyaemia.

I am thankful to say she is now in her usual health.

The oxygen was made in a generator the same as is used in the French Army, and supplied by Messrs. Oppenhiemer and Son, London.

A CASE OF ABNORMAL PULSE RHYTHM.

BY

WILLIAM JOHNSTONE, M.B., Ch.B.Glas.

TRANENT.

The following case exemplifies rather an unusual condition and is of interest on account of the fact that the patient to all intents and purposes is a healthy man. He is aged 65 years, of robust build and regular habits, but inclined to be stout; he has always enjoyed good health, but was told when presenting himself for life insurance about thirty years ago that he had an "intermittent" pulse.

A tracing of his pulse taken with Dudgeon's sphygmograph showed a pulse partaking of the nature of a pulsus trigeminus but exhibiting a further abnormality. A long pause occurred after the three systoles and another full systole then occurred, followed by another fairly long pause, this in turn being succeeded by the trigeminal condition again.

The most unaccountable fact was that on our continuing our observations the pulse took on an apparently regular rhythm, as exemplified in the third tracing. The explanation of these phenomena is not very clear. The only answer which seems to me feasible is that the cause has to do with the nervous mechanism of the heart. I cannot find a similar condition recorded.

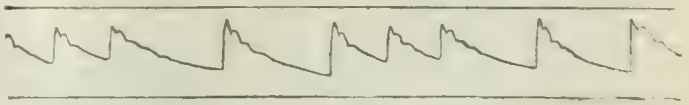


Fig. 1.

Mackenzie in his *Diseases of the Heart* (1908) has some tracings on page 143 which exhibit "extra" systoles after two, three, or four beats. But these extra-systoles are not of the same volume as the regular beats themselves, as the solitary beats are in this case with a long pause before and after.

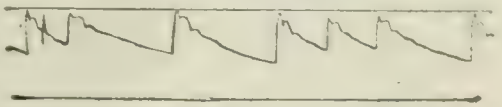


Fig. 2.

The cardiac condition of the patient was good for a man of his years, and there was no evidence of arterio-sclerosis in the vessels, as far, at least, as could be determined by examination of the accessible arteries.

On taking his blood pressure, however, we found it to register 195 mm. Hg systolic and 120 mm. Hg diastolic, with a pulse-rate of 68.

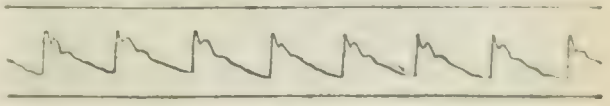


Fig. 3.

He has been put on a course of nitrites in order to determine whether the rather high blood pressure is of any etiological significance in eliciting the apparent vagary of the pulse rhythm.

The urine was examined and found normal. Dr. Thorne Thorne, in the British Medical Journal of June 12th,

p. 1363. draws attention to the fact that a sphygmographic pulse tracing is absolutely useless as a guide to arterial blood pressure. The tracings in this case with fairly high blood pressure would not, *per se*, suggest the figure which was determined to be the result by the use of the Riva-Rocci apparatus.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF SURGERY.

Professor RUSHTON PARKER, M.B., B.S., F.R.C.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

THE business of this Section is so varied and abundant that a formal introductory address would be a needless infliction. Moreover, as it would be against the expressed wish of the Association authorities, I gladly abstain from more than a few remarks.

I must begin by expressing a hearty welcome to all who honour us by their presence and share in the proceedings.

The only topic to which I shall allude is one that must strike all by its fitness at a gathering of representative surgeons, and that is the lamented death, during the past half-year, of our great master, Lord Lister, the teacher of all the surgical teachers of the world, whose memory has already received such tributes as the human race can pay, in every kind of journalistic notice, at the commemoration service in Westminster Abbey, and finally at the grave in London.

Those who came under his sway could never forget the influence produced upon themselves by his teaching and example; searching ideas and intelligent practice united to effect the brilliant simplification of our art. Of the numerous earlier witnesses as pupils and assistants in Glasgow, in the memorable years from 1865 onward, I content myself with mentioning two by name—Sir Hector Cameron and Sir William Macewen. The [illegible] writings of Sir Hector Cameron are an important part of antiseptic literature, and need no further allusion. It is gratifying to know that an address will be given by Sir William Macewen in the Anatomical Section on the development and growth of bone. Those who heard his address on the subject in the University of Liverpool in 1905 had the opportunity of learning at first hand the importance of his original work on this topic, first communicated to the Royal Society in 1881. The value of this work and the correction of previous ideas enabled me in 1907 to undertake and successfully accomplish the simplest, easiest, and least dangerous operation for ununited fracture, by planting in the interval small crumbs of bone clipped from adjacent callus, or, in the absence of callus, from the ends of the ununited bone.[1]

An early visitor to Glasgow in 1868 was Dr. J. Lucas-Championnière of Paris, one of the first and most devoted converts and supporters of Lister abroad. Grateful acknowledgement is here made of his article on the life and labours of Lord Lister in the *Journal de médecine et de chirurgie* of February 25th, 1912.

Not having myself been a witness of Lister's own practice until 1881 in London, I can still number myself with those at University College who read with avidity and discussed with profit his early papers on antiseptic surgery from 1867 onward and carried out his practice. His work on the early stages of inflammation was brought to the notice of myself and fellow students by Dr. Sharpey in 1866, but at that time I could not understand it. On preparing my own lectures on surgery in and after 1877, I found this work of essential value, with the reprints and personal advice freely sent to me by the author, who wrote in 1880 as follows:

> I have sometimes been tempted to think the work I did with regard to inflammation, etc., pretty much thrown away so far as any direct influence upon my professional brethren is concerned, although I am well aware that the knowledge which I gained in that way was of the utmost value to myself, not merely as enabling me to comprehend to some extent matters in surgical pathology which had before been mysterious, but also as affording the clue to the interpretation of the apparently conflicting facts with which I found myself confronted when I began to work at antiseptic surgery. Hence it was peculiarly welcome to me to receive testimony that those early papers have proved immediately useful to one engaged, like yourself, in the teaching of surgery.[2]

What better guides to successful practice can be found than the two remarkable cases of his in the *Edinburgh Medical Journal* for April and August, 1858—one on spontaneous gangrene from arteritis, and the other on a case of ligature of the brachial artery, both illustrating the persistent vitality of the tissues? The knowledge obtained from the latter, many years after publication, enabled me hopefully to deal with a case of compound dislocation of the elbow with severed main artery and vein, and to obtain complete restoration of structure and function without defect.[3]

Most wonderful are his latest papers in the BRITISH MEDICAL JOURNAL for 1908. The paper published January 18th, p. 125, "On the preparation of catgut for surgical purposes," is a complete description of the simplest, quickest, and most durable preparation of catgut for all purposes, with perfect tests of its efficiency added. There is a valuable editorial note on the same (p. 163). On April 11th, p. 849, were published "Remarks on the treatment of fractures of the patella of long standing" (illustrated), and on June 27th, p. 1557, "Remarks on some points in the history of antiseptic surgery." This is a splendid epitome of the aims and methods of his antiseptic practice, in a space of less than two pages. With regard to the first and third of these I have ventured to say in comment:[3]

> If these two brief papers . . . were mounted and hung up in every hospital and medical school for repeated study by all engaged in surgery, they would serve an invaluable purpose by spreading and simplifying antiseptic precautions among all concerned, and not least among those who are chiefly likely to encounter "minor cases," for when these "go wrong" much "major surgery" may result.

On which he wrote to me as follows:

> April 27th, 1909.
>
> Your letter in last Saturday's BRITISH MEDICAL JOURNAL gratified me much. It will, I hope, do a great deal of good. . . .

I received from him on the catgut question several more letters, which, up to August, 1909, were in his own handwriting throughout; after that others, dictated and merely signed by him, up to October, 1911, four months before the end.

A word now about the arrangements of this Section, in the appointment of three set discussions instead of two. The Council were very desirous that the report of the special Committee on Fractures should be presented and discussed in the Section of Surgery at this annual meeting. If the officers of the Section had only known, before choosing the subjects for set discussion, the report of the Fractures Committee would have been selected as one. But the request did not reach us until invitations had been issued and accepted for the discussions, on carcinoma

[1] January 11th, 1913, p. 81; *Proc. Roy.*

[2] *Lancet*, February 16th, 1884, p. 300.

[3] BRITISH MEDICAL JOURNAL, April 24th, 1909, p. 1036.

of the rectum and tuberculous disease of the urinary tract, between three and four months. We could not thrust aside either of these topics, so we have felt compelled to continue the work of the Section on Thursday afternoon. In compensation for this extra attendance, I should be inclined, were you a jury and I a judge, to grant you exemption from attendance at future meetings "for a season."

DISCUSSION ON THE SURGICAL TREATMENT OF RECTAL CANCER.

OPENING PAPER.

By Harrison Cripps, F.R.C.S.,
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As time is limited, it is unnecessary to enter at length into the history of the treatment of rectal cancer. The operation is comparatively modern and, for practical purposes, may be considered as first established by Lisfranc in his paper on the subject read before the Académie de Médecine in the middle of last century, while later the many successful operations of Dieffenbach, of Leipzig, and more recently the works of Marchant and Kraske on the Continent, and of Kelsey, Tuttle, and others in America, have all done much to improve the operation. British surgery, too, claims many names who have helped to establish the operation on its present basis. The first planned operation for excision of the rectum in this country was performed by Sir James Paget in 1878, and the specimen is now in St. Bartholomew's Hospital. Doubtless many of you will remember the paper read at Leeds at the meeting of this Association by one of the most eminent surgeons in the North, the late Mr. Jessop, who introduced the subject for a surgical discussion in 1889. Lately Mr. Swinford Edwards opened a discussion on rectal cancer in an interesting paper at the Royal Society of Medicine, to which Sir Frederic Eve and Mr. Miles and others added much valuable information, while the recent works of Mr. Lockhart Mummery and Mr. Handley have helped to elucidate this difficult subject. We must not forget the name of the late Mr. Herbert Allingham. Inguinal colotomy, now one of the most valuable operations, was never performed in this country until he helped to introduce it as an aid in the treatment of rectal cancer. The value of this operation can be estimated by the fact that it has entirely superseded the lumbar operation.

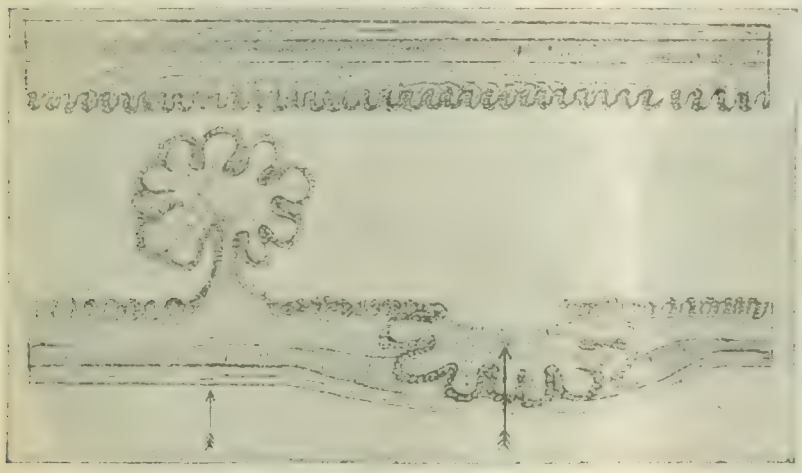


Fig. 1.—Section of bowel (diagrammatic).

Pathology.

I do not propose to encroach upon the time allowed by discussing at length the pathology of rectal cancer, except in so far as it bears directly on surgical treatment. From this point of view it is so important that it is impossible to neglect it. Out of many hundreds of cases under my observation, with the rarest exceptions, the growth has always been of one type—namely, adenoid cancer. This consists of an enormous hypertrophy of the columnar glands of the mucous membrane—that is, of Lieberkühn's follicles. In some instances the growth consists of perfectly developed gland tissue, both the individual epithelial cells, the retiform tissue, and the general arrangement being as clearly defined as in the normal mucous membrane (Figs. 2, 3, and 3A). The slower the growth the more perfect the development; the more rapid the growth, especially in a recurrence, the more vague and embryonic is the appearance (Figs. 4 and 10), yet its general plan, as a glandular structure, can always be recognized. Taking the physical appearances of these growths, although all adenoid in structure, they present at the two ends of the scale most marked differences, both in their appearance and clinical behaviour. The extreme on the one side is the papillomatous or villous growth, with its beautifully formed tree-like arrangement, growing free and unrestricted into the lumen of the bowel, increasing slowly in the course of years, not invading the submucous tissue, the lymphatics or glands, and never becoming disseminated about the body or threatening life, except, perhaps, from haemorrhage or obstruction. It is not malignant; this type of growth has a well-marked pedicle, sometimes short, sometimes many inches in length. It exhausts its activity in growing a mulberry-like head. This head is neither fragile nor hard, but has, as near as possible, the consistency of normal mucous membrane. It projects like a well-grown forest tree into the cavity of the bowel (Fig. 1). At the other end of the scale is the common form of flat growth, which, though starting in the surface mucous membrane, instead of growing upwards and free, extends horizontally and downwards, first into the submucous tissue, then into and between the muscular coats, through these into the peritoneal coat, and ultimately spreading into and destroying every tissue and structure in its line of progress (Fig. 1). In these cases the glands become infected, and it ultimately disseminates itself into the interior organs, and more especially the liver, and, to a certainty, destroys life with greater or less rapidity—a growth essentially malignant.

If a section be taken of one of these papillomatous growths through the centre of the stalk and head it shows a beautiful structure under a low magnifying power. There is a central stalk of fibrous tissue forming the trunk of the tree. This trunk soon commences to bifurcate, sending off main branches, which again, after many times subdividing, ultimately expand into a delicate retiform



Fig. 2.—Section through surface in a case of multiple polypi.

[illegible]. On the surface of this expanded retiform tissue [illegible] a layer of large cylindrical epithelial cells. No matter how intricate the branches and their [illegible], the ultimate surface is covered uniformly and continuously by this epithelial layer (Fig. 5). The constant folding of the leaves upon each other and the juxtaposition of neigh-

louring branches makes the structure difficult to follow, owing to the intricate pattern produced. The structure is, however, really most simple. The leaves, though in contact with each other, do not seem to coalesce, always showing the same principle, namely, fibrous stalks expanding into the retiform tissue, forming a supporting framework for the layer of columnar epithelial cells. A fair comparison for one of these growths under a low power would be that afforded by a section through the head of an ordinary artichoke. It is only when growing free, with a stalk into the lumen of the gut, uninterfered with by the structures of the body, and with a clear space in which to develop, that this tree-like structure is attained. It only increases to a limited size, leads its own life, and does not interfere with the structures or life of its host. Now what is the difference in structure between these innocent pedunculated growths and the worst forms of malignant cancer? Except in position in which they grow, there is none. The innocent tumour appears to start from the apex of Lieberkühn's follicles and to grow upwards by branches. The malignant disease appears to start at the base of the follicles and to grow downwards by roots. In all malignant tumours that are fairly slow growing at the edges can be seen exactly the same structure as in the

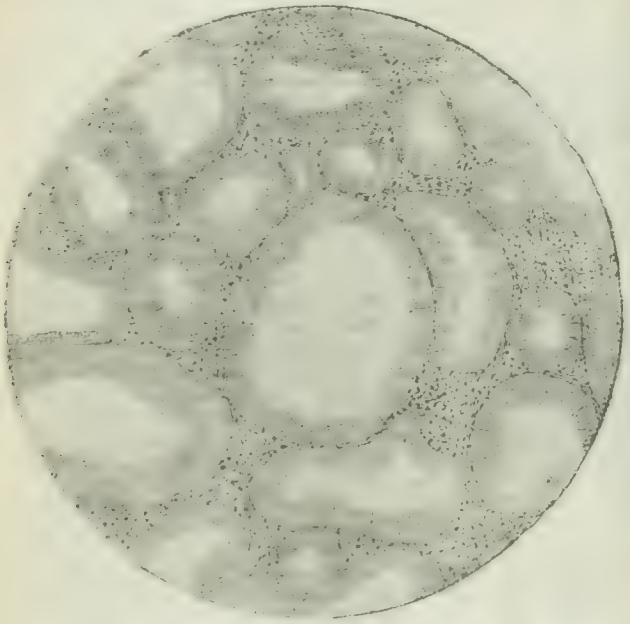


Fig. 3.—From a slow-growing adenoid tumour. The epithelial cells are very regular, and the intervening retiform tissue clearly marked. (Hartnack, obj. 4.)



Fig. 3A.—Section near margin of growth, showing the supposed identity of the nuclei of the epithelium with the leucocytes of the retiform tissue.

papillomata, but the microscopic appearance is more complex. This is due to its growth by roots, for here it has to insinuate itself into and between the pre-existing normal structures of the intestinal coats (Fig. 6). It does this very irregularly, spreading along the lines of least resistance, first into the submucous tissue, then here and there growing through the muscular layers, again to spread horizontally in the intermuscular spaces (Fig. 9). It ultimately perforates all the coats, incorporating and absorbing every tissue in its line of progress. Some resist more than others, but its progress is irresistible and only stayed by the death of the patient. Owing to this growth into the normal tissues, much of it, as yet undestroyed, may be seen lying in and between the spreading adenoid growth, giving a most haphazard and ragged appearance to the section, so that only here and there can portions of the growth be detected amidst the normal tissues hypertrophied by irritation or necrosed by pressure. The view I have always advocated is that there is no difference in structure between the innocent papilloma and malignant disease, though more embryonic in one case than in the other, and I have published the history of some clinical cases showing how the one form of growth may pass into the other.[1]

The world of plant life is full of similar phenomena, the power to grow in one direction, upward towards the light, as can be seen in a cutting from a plant. Cut off a growing shoot of a tree and stick it a few inches into a suitable soil, and in a short time it will take root, sending branches both upwards to light and downwards to moisture in the earth. These downward branches we call roots: histologically the root and the branch are the same structure, an epithelial surface spread upon a retiform or fibrous support. If such a section were taken of the roots of a plant and the ground in which they were growing, it would be most difficult to follow the continuity of the roots, for a great part of the section would not be plant at all, but the various structures appertaining to the ground into which it was extending. This is exactly what is seen in rectal cancer. The new growth can be clearly recognized here and there, but the section will be largely made up of layers of fibrous and muscular tissue which is no part of the growth, but merely the normal or damaged structures into which it was extending. At an early stage this can be clearly made out, though the normal tissues become necrosed and absorbed in process of time. I must not dwell here on the nature of the irritant that causes the epithelium of the intestine to construct this mass of adenoid tissue which we call cancer in the rectum. I would venture, however, to call to mind some specimens of gall tumour formation in oak and rose trees which I brought before the Pathological Society of London, and published in the thirty-fifth volume of their *Transactions*. These tumours were formed by the host—that is, the tree—and consisted of normal hypertrophied leaf structure, exactly as the cancerous tumour of the rectum is formed by the glandular epithelium of the follicles. In the oak and rose tree no amount of mechanical irritation will produce a gall. Similarly, there is no evidence that mechanical irritation will produce a cancer in the rectum. We know that in the oak the growth is due to a definite specific irritation—namely, the minute egg of the *Sinips quercus folii*, and the gall tumour forms a vegetable mass around it, to be eaten by the young Sinips when it is hatched. I have little doubt that science will in time discover a definite specific organism—that is, an infection from without the body—that produces these tumours in the rectum.

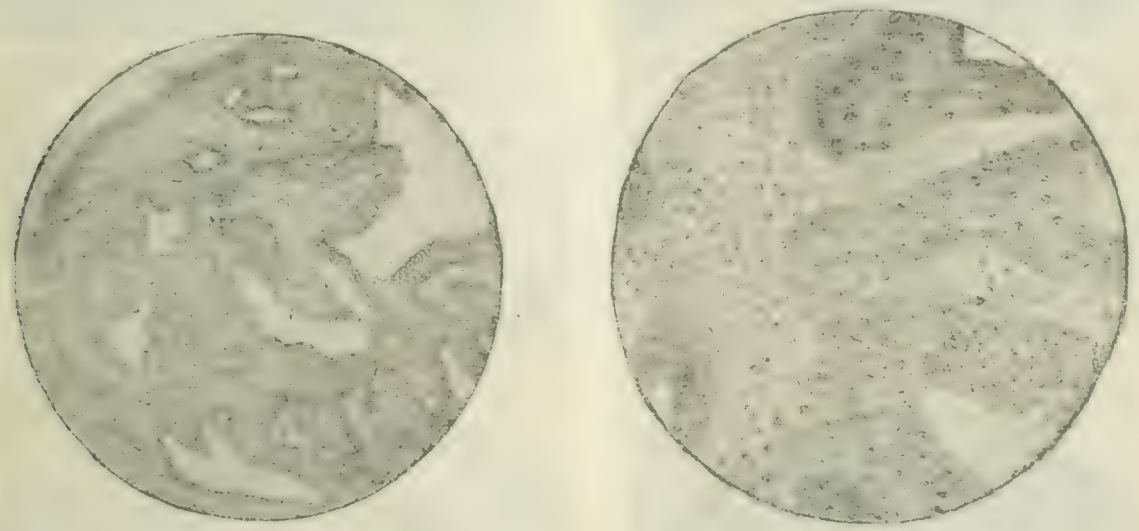
After this slight digression, whatever may be the exciting cause of the rectal tumour, let us get back to the way the growth in the rectum extends and spreads. It has already been stated that, should it develop from a pedicle free in the lumen of the bowel, it is not malignant, and need not now concern us. On the other hand, if it grows downwards between the muscular coats of the bowel, it is invariably malignant, gradually destroying and absorbing all the tissues in its path, ultimately infecting the glands and distant organs.

If a section is placed under the microscope and growth is seen between the muscular fibres in the rectal wall, such growth is, in my experience, invariably malignant (Figs. 6 and 7).

Rectal cancer is essentially local in its early stage, and the method of its extension has an important bearing on the question of operation. When once started, it spreads at first by continuity, more so horizontally than in depth. This appears due to there being less resistance between the layers of muscle than there is in the muscles themselves. In this way several square inches of the surface of the bowel are affected, while the whole thickness of the growth may for some time be less than half an inch. However, it eventually perforates into and through the muscular coats, and invades the tissues outside. Owing presumably to the interruption of the blood supply by the pressure of the increasing growth, the mucous membrane over it soon falls into a necrotic state and ulcerates, the greatest depth of the ulceration being in the older part of the growth. After ulceration is established, the disease advances along the bowel by a hard everted edge (Fig. 8), which generally ends very abruptly in sound mucous membrane. Lymphatic and glandular infection, in my experience, is quite a late stage of the disease, and thus affords the most hopeful prospect in operative treatment.

experience is entirely opposed to the deduction that such an early dissemination of rectal cancer along the submucous lymphatics is common or even usual. That recurrence unfortunately takes place in a large number of cases is true; but let us consider how this growth would manifest itself if Mr. Handley's view was correct. He endeavours to show that the lymphatics are infected for many inches beyond the apparent margin of disease. If this were so, it would be merely a question of time before the whole of the infected area became thickened and hardened with the usual manifestations of adenoid cancerous growth. Then by the time that this had developed, the disease would be still spreading ahead, and if the patient lived long enough, many feet, or even the whole intestinal tract would become involved. It would also show the uselessness of removing the growth locally with only an area of an inch or less of apparently sound margin: in fact, it would make any reasonable local removal quite hopeless: but both the conditions just mentioned are inconsistent with clinical facts in the great majority of cases.

It will be found that recurrence seldom takes place except at the extreme edge of the cut margin, and even this is exceptional, for in most cases recurrence is not in the remaining part of the bowel, but in the connective tissue and structures lying immediately external to the



A. B.

Fig. 4.—A, From rapidly-growing recurrent cancer. The adenoid structure can be clearly traced, and is formed on the same plan as the slower growth in Fig. 6. The cavities are very irregular. The epithelial covering and the intervening retiform tissue are embryonic and ill defined. (Hartnack, obj. 4.) B, Same under higher power.

I must dwell a little longer upon this method of spreading. I do this on account of the recent researches of so eminent a pathologist as Mr. Sampson Handley. It will be remembered that Mr. Handley published two years ago in the British Medical Journal a paper with drawings taken from sections stained with muci-carmine, the object being to show how rectal cancer spreads along the submucous lymphatics for several inches or even feet beyond the original site without producing any tumour or hardness by which it could be detected. He further pointed out that it was in this spreading along the lymphatics parallel to the bowel that the explanation of recurrence was to be found, and from this he drew the inference that, for successful surgery, not only should the disease be removed, but long lengths of the bowel, amounting to inches or feet, should be cut away. I believe this view to be erroneous as bearing on the surgical treatment of rectal cancer. I have carefully studied his drawings, and cannot accept the view that, because cells in the lymphatics, feet away from the primary growth, stain a certain colour with muci-carmine, this is, as he states, a conclusive proof of cancerous invasion. I have spent too many years in the histological study of rectal cancer to place the same reliance that Mr. Handley does on the significance of such stained cells, or that they invariably indicate cancerous infection. Before this dogma can be established, countless test experiments and methods of staining, both in normal and diseased tissues, must be undertaken and corroborated by clinical experience. Clinical

part removed. I have over and over again seen the recurrence in the neighbourhood of the ischio-rectal fossa and skin near the anus, while the bowel itself at the cut margin and along the whole of its course upwards remained entirely free from any visible infection up to the time of the patient's death. I have always regarded an inch or so as a fair margin, and, when I have been able to secure this, can scarcely recall a case of recurrence in the cut margin itself. Again, if these widespread disseminations were usual, how would the many successful cases of removal be accounted for? In my own practice I know of dozens of cases which remained perfectly well up to three to twenty-five years after removal where less than an inch of margin had been allowed. Lastly, amongst the most successful cases are those operations in which 2 or 3 in. of diseased bowel, with perhaps only a half-inch margin allowed, have been cleanly cut out, and an end-to-end anastomosis performed. Every surgeon may not be familiar with these cases in the rectum, but few can be without experience of the successful result that often follows an intra-abdominal section of a limited annular growth of the large intestine with an immediate end-to-end anastomosis. If the doctrine of the universal spread of cancer along long areas of the submucous tissue were generally accepted, I believe infinite harm would be done to operative surgery, for in every such case a grave increase of the danger of the operation would be entailed such as would be quite unnecessary and unjustifiable, and those brilliant cases of anastomosis made impossible, for you cannot join together in the rectum the ends if inches

of the gut have been removed, and I believe that an operation, now invaluable in properly selected cases, would soon fall into discredit if such wholesale removals became the fashion in deference to an unproved pathological theory.

DIAGNOSIS.

Diagnosis of rectal cancer can be made certain only by a digital examination, and a surgeon should never commit

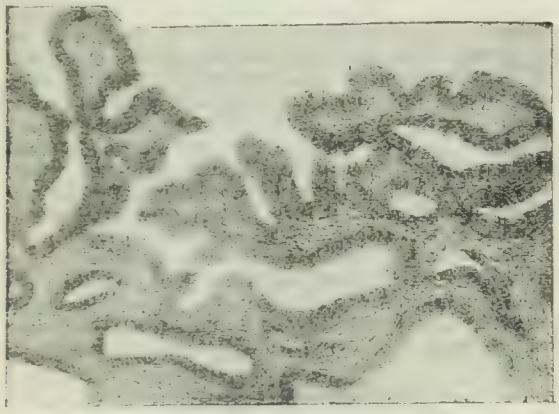


Fig. 5.—Section from surface in a case of multiple polypi, cut at right angles to the surface, and shows how the epithelium lining the cavities in the deeper part of the tumour is in reality but an invagination from the surface.

himself to an absolute opinion unless the hard surface can be actually touched with the finger. If within 6 in., this can be easily accomplished, and, under an anaesthetic, with gentleness and care in avoiding the rectal folds, the disease can often be touched considerably higher.

The utmost gentleness must be used in examining rectal cancer, and the temptation to thrust a finger through it resisted. The bowel at the seat of disease is very rotten, and will at times tear and split like wet paper. I have

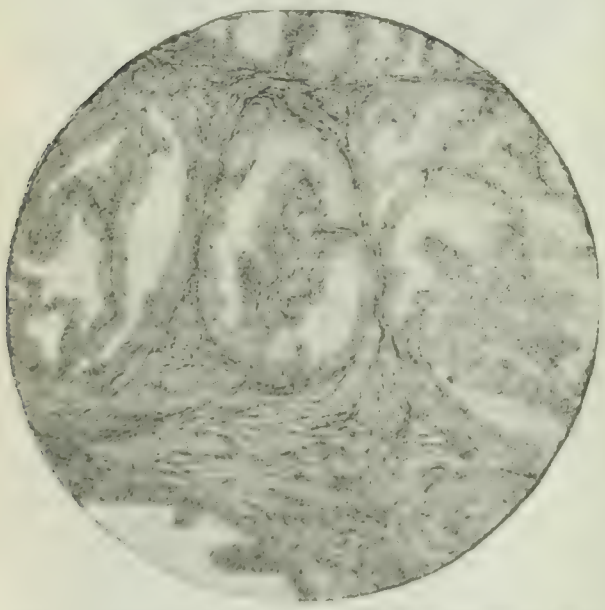


Fig. 6. Slow-growing malignant rectal tumour extending into muscular coat.

twice seen death follow from acute septic peritonitis after a simple digital examination of rectal cancer; in each case the bowel had split into the peritoneal cavity. I have known two similar mishaps after dilating malignant strictures with bougies. As regards the sigmoidoscope, it is worse than useless, being at times positively misleading. Cancer can never be diagnosed to a certainty by sight alone; touch only by indicating hardness and friability has to be relied upon.

OPERATIONS.

Selection of Cases.—The selection of cases suitable for operation is a matter of utmost importance. To regard all, or even a majority, as suitable for operation will certainly bring excision into disrepute. Unless there is a fair and reasonable prospect of removing the whole disease it is better to leave it alone. For, if it is found impossible to remove all the disease, that which remains seems stimulated to increased vigour and grows more rapidly than if it had been left alone. Naturally operators will differ

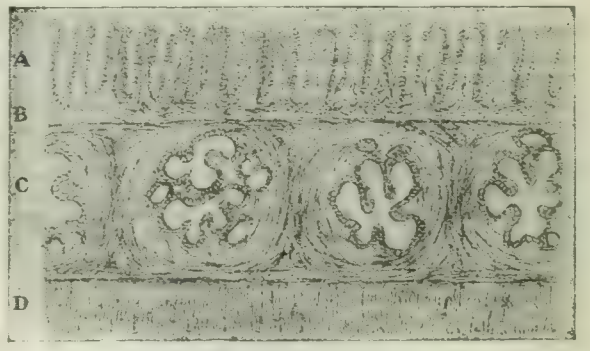


Fig. 7.—Diagrammatic. A, Mucous membrane; B, submucous tissue; C, growth in circular muscular fibres; D, longitudinal muscular coat.

much in what they consider suitable cases. For my own part, I have not felt justified in recommending excision in more than one-third of the cases coming under my observation. I do not regard age as of much importance, and have operated at all ages between 15 and 80, and have been much struck how quite old people will stand well a moderate operation on the rectum.

The following are a few of the chief points that have guided me in the selection of cases:

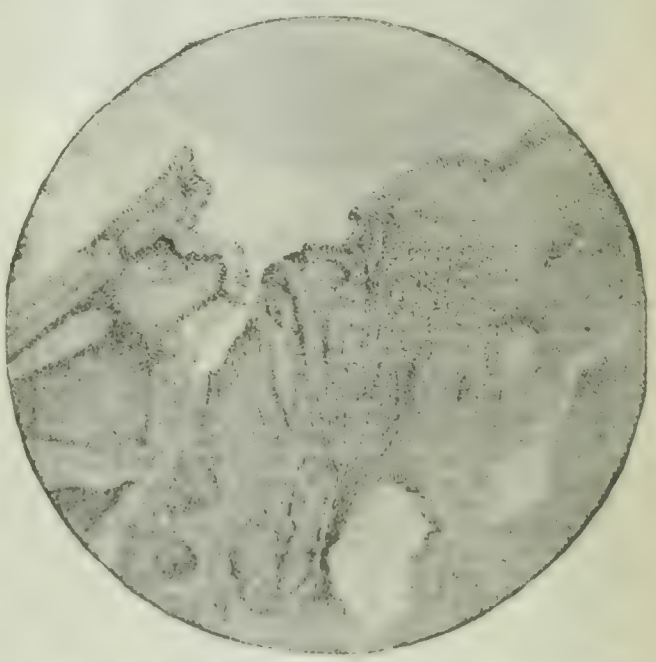


Fig. 8.—Section of surface at border of a malignant adenoid growth.

1. That there should be no obvious dissemination in the liver or other internal organs.

2. With the finger, under an anaesthetic, one should be able to define the upward edge of the growth if the operation is contemplated by the sacral route, or be able to push it upwards for an abdominal section.

3. That the growth should not be fixed or firmly incorporated with neighbouring parts, but that there should be some degree of mobility of that part of the

rectum in which it is situated upon the surrounding tissues.

If the rectum is once firmly fixed, its removal will not mean the removal of the disease. The rigidity of the bowel shows that the growth has extended beyond its walls, and that it has no definite limits. Where I have attempted a removal under these circumstances, there has invariably been a local recurrence within a few weeks, and the operation has been worse than useless. In cases where the rectum is firmly fixed, relief can only be afforded by timely colotomy. If there is any real question as to the possibility of removal, the surgeon will probably give the patient the benefit of the doubt.



Fig. 9.—Adenoid growth extending between the mucous membrane and muscular coat. Section is at right angles to the surface of the bowel. *b*, Hypertrophied Lieberkühn's follicles.

Colotomy.—If excision is impossible, colotomy is a most valuable palliative. It is in no sense a rival operation to excision, but invaluable in a certain class of cases where excision is out of the question. In the large number of the cases in which excision is impossible, any treatment that materially palliates the symptoms is worthy of consideration. In colotomy we have a means which not only robs the disease of its worst symptoms, but acts as a permanent safety valve against obstruction, while at the same time, by removing the constant irritation of the growth and putting the rectum at rest, it appears to diminish the activity of the disease, and indirectly prolongs life, as shown in Tables II and I. The suffering and misery of cancer are not so much caused by the disease itself, which is comparatively painless, as by the stricture which so frequently accompanies it. The constant desire to go to stool, the feeling of inefficient relief, and the dread of impending complete stoppage, are all due to the stricture rather than to the disease itself. What the patient passes is never a proper evacuation, but merely what dribbles through the stricture from a distended bowel above, analogous to what occurs with the urine from a distended bladder. The condition of the patient is generally markedly improved by colotomy, and the remainder of life rendered comparatively painless and tranquil. To suppose that, after the operation, the patient has motions constantly running from the side, is quite contrary to my experience. If the opening is made in the proper way and size, and care taken to keep the patient somewhat constipated, there is remarkably little trouble from this cause. By a mild aperient a good motion can be obtained on alternate days and a well-adjusted pad keeps the part clean and comfortable. Although in a few cases, generally through the opening being too small, colotomy fails to give all the benefit expected, in the majority of cases it affords most decided relief. In cases in which stricture has become marked, and which are hopeless for excision, the sooner a colotomy is performed the better. If done at this stage, there is very little danger in the operation, and the patient gets the full benefit. If delayed, half the advantage of the operation is lost, and when performed after complete obstruction it fails to prolong life in 50 per cent. of the cases. The effect of colotomy on the length of life will be seen in Tables II and I of the booklet handed round.

Excision.—There are practically only two ways of getting at rectal cancer, the first from below, including the sacral and perineal route; the second from above, known as the abdominal operation. Possibly in very exceptional circumstances there may be a combination of the two methods. There is no sort of rivalry between the two. Cancer in the middle and lower rectum can only be got at from below and not from above, while the disease in the upper rectum and sigmoid can only be reached from above.

As shown in Table A an overwhelming percentage of cases are situated within 6 in. of the anus, and therefore can be dealt with from below, probably not 10 per cent. originating above this height.

Sacral and Perineal Route.—In all operative surgery success depends on having a good view of what you are doing. Operations on rectal cancer have to be planned therefore to fulfil this condition.

For cases in which the upper border of the disease is not more than 4 in. from the anus, the lithotomy position is the best. A posterior division and dissection of the rectum up to or along the side of the coccyx, or removal of this bone if necessary, will be found to give all the room required, and it is better to remove each side of the rectum separately. If the patch of disease is limited, only involving a portion of the circumference, it is a great advantage to remove the growth with a moderate margin free of disease, and not the whole circumference of the bowel. Ever so narrow a strip of healthy mucous membrane greatly facilitates the after-treatment in the prevention of stricture, and some of my cases treated in this way remained permanently free from recurrence, and have had no trouble from stricture. Haemorrhage will give little trouble if, in making the transverse cut across the bowel above the limits of the growth, small consecutive portions of the bowel are seized with curved forceps (shown), and each bit transfixed with a right-angled needle and tied with strong silk above the grip. If the growth is more than 4 in. from the anus, it can be better removed by sawing across the lower part of the sacrum, 2 or 3 in. being removed. For this operation the position should be the prone one, with the thighs bent at a right angle, and hanging over the end of the table, the knees resting on a chair. If, in this operation, the lower part of the rectum is free from growth, it should be left, the diseased portion being cleanly excised. It may be possible in exceptional cases at once to unite the cut edges of the bowel end to end, but owing to the tension on the part, I have never yet succeeded in getting primary union in the lower rectum. On the other hand, I have had some very satisfactory cases of secondary joining. It seems advisable to defer this secondary anastomosis for a year or so, after which date a recurrence is unlikely. It will be found too, after this period, that the upper segment has become considerably prolapsed, protruding 2 or 3 in., and, the end of

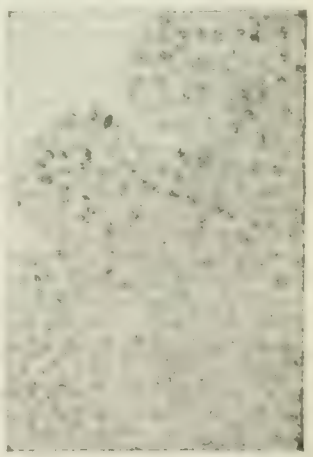


Fig. 10.—Growing margin of rectal cancer, high power.

the bowel being comparatively mobile, the two ends can then be carefully dissected out and united with little or no tension, and the superficial parts united over them.

One of the cases covered by Table A is an example of a thoroughly successful secondary anastomosis.

This patient was a lady under the care of Dr. Rushworth, of Hampstead. In 1898 the sacrum was sawn across high up, and 4 in. of the bowel excised, the section being about ½ in. clear of the growth on either side, the last 3 or 4 in. of the bowel, including the anus, being left intact. The peritoneum was opened; the ends of the cut bowel could not be drawn together, so the upper segment was fixed in the upper angle of the wound. Two years later there was no recurrence, but the upper bowel had prolapsed quite 3 in. The two ends were then freed from the surrounding tissue, and were easily joined together. The result was most satisfactory. The patient regained complete control, and has remained quite well for thirteen years.

Such a case seems a fair answer to Mr. Handley's teaching that as much as possible of the bowel should be removed. If this had been done the subsequent joining with complete control would have been impossible.

If the growth is situated high up, and takes the form of a limited patch on the anterior or lateral wall, I have found the following an excellent operation for removing it:

The patient being placed in the prone position, a 6-in. incision is made in the middle line, commencing at the lower third of the sacrum and carried down to the tip of the coccyx. The soft parts being reflected, the lower 2 in. or so of the sacrum is sawn across and removed with the coccyx, the tip of the latter bone being left. The posterior part of the rectum thus exposed is opened by a clean incision in the middle line. A strong thread is passed through either side of the divided bowel. The edges being thus held asunder, an excellent view is obtained of the growth, and enables it to be carefully and completely removed. The divided posterior wall of the rectum is again accurately united with sutures, and the soft parts brought together over it.

A ½-in. rubber tube is passed per anum well up to the resected portion and tied in. This prevents the rectum above the sphincters becoming distended with gas and discharge, and enables the interior of the bowel to be syringed out with boracic lotion two or three times a day. The tube can be retained to the ninth or tenth day, by which time the wound will have united.

Contraction at the site of excision must be looked for, and treated if necessary by bougies.

The advantage of this operation is that the mechanism of levatores ani and the sphincters is left intact.

In operating for rectal cancer a full-sized sound in the bladder is of the greatest assistance when dissecting the bowel off the prostate and base of the bladder. In these cases, if the disease is at all high up, the peritoneum will almost certainly be opened, but this does not seem much to increase the danger. When the peritoneum is thus opened, a fair-sized flat sponge, tied to a piece of strong silk, should at once be introduced into the opening, to keep up the intestines and prevent them being soiled during the rest of the operation. When all is complete the opened peritoneum can be closed with fine sutures, all the sutures being passed before removing the sponge.

I have on three occasions opened the base of the bladder and in all succeeded in closing the opening. In one of these the primary stitching held all right; in the others urine came into the wound in a few days. In both these cases nearly all the water was at first thus passed. It gradually, however, got less, and in one case permanently ceased in the fourth week and the other in about two months.

At one operation on a woman I think a ureter was wounded: anyhow, water came through the upper part of the wound on the sixth day, and continued to do so for nearly a month, when it gradually ceased. I do not think it was the bladder, for, on testing this by injection, it held the water all right, none of the injection coming out of the wound.

I am not able to see the advantage of doing a preliminary colotomy before excision. If it is on the ground of preventing the wound being soiled by faecal matter, this is a false hypothesis, for faeces appear quite innocuous in any wound if the part is kept clean. The operation, too, is premature if it is intended to correct a stricture that may never occur.

After-dressings require care, for there is a tendency for all retained secretions to rapidly decompose in this situation. Night and morning the patient is brought to the side of the bed, the part washed well with soap and water, and gently syringed out with some mild antiseptic, and lightly packed with gauze. It is generally desirable to keep the patient in bed from six to eight weeks. It is necessary to watch carefully during the healing for any sign of contraction. This begins to show itself in about three weeks to a month after the operation, or even later. If not treated immediately by a full-sized bougie passed daily and retained for a while, it will end in a most intractable stricture. The bougie may have to be used even for a year or two, but the time comes sooner or later when the tendency to contract disappears. Until it does so the bougie must be employed. In some cases the control in after-years is weak, but fortunately in most cases it is extremely good—in fact, nearly normal; and I think this control depends as much as anything on never allowing any degree of stricture to form.

Abdominal Section.—If the disease is beyond the reach of the finger it can only be excised by abdominal section, and the higher it is out of the pelvis the easier and more successful is the operation. As to whether it can be removed or not may not be clear till after the opening of the abdomen, and such an exploration is more than justifiable. If, after excising the portion of the intestine the cut ends can be brought together without tension, no doubt an end-to-end anastomosis is the right procedure. On the other hand, if the ends can only be approximated with tension, it would be highly dangerous to trust to their union. It would be better in these circumstances either to bring both ends out of the wound, or, if the lower end could not be brought up, to close it by inversion, bringing the upper end only out of the wound. It still might be possible to unite the ends by a secondary operation after the lapse of time had produced some prolapse of the upper segment, and thus union made possible without tension. The cases I have operated upon by abdominal section have been comparatively few and the mortality was far higher than in the cases operated on from below. But it must be remembered that these were mostly severe cases. The result in those that survived was excellent, and I have had no case of recurrence (see Table A). Seeing, therefore, that the disease, if left alone, is invariably fatal, and what good results may follow, it is well worth a patient's while to run a considerable risk on the chance of a permanent benefit.

Recurrence.

When this takes place it generally does so in the tissue lying external to the excised portion or in the glands and lymphatics lying in the sacral neighbourhood. Occasionally the recurrence takes place in the cut edges of the bowel itself. When it occurs in the glands or tissues external to the bowel, probably nothing further can be done; but if the recurrence is in the cut margin a second or even third removal may end in ultimate success. Cases in Table A are examples. In one of these cases a lady under the care of Dr. Stanley Smith had a growth removed. It reappeared in six weeks and was excised. It again recurred some months later, and was removed for the third time. The final removal was twenty-five years ago, and the patient is still alive and has never had any further recurrence.

To summarize the deductions to be drawn from the tables appended, the following appear to be some of the chief points:

1. That cancer of the rectum may occur at any period of life, but chiefly after middle age.
2. The disease is twice as frequent in men as in women.
3. The importance of an early diagnosis, for two-thirds of the cases were discovered too late to admit of excision.
4. That when removal was practicable nearly 40 per cent. of the cases were curable.
5. That if recurrence takes place, it almost invariably shows itself within twelve months, and is very rare after two years.
6. That colotomy prolongs life.

Table A.

This table gave full details concerning 445 cases arranged in chronological order, and included, with perhaps a few accidental omissions, all examples of rectal cancer seen by the author in private practice. It was originally intended to have included in the table hospital cases as well, but as they extended over a period of thirty years it was found impossible generally to trace their subsequent histories. This table was the foundation of

the other tables and was handed round at [illegible] too bulky for reproduction. The informa[illegible] included the date of the case, the medical his[illegible] of the patient, the duration of the symptoms, the disease in the rectum, its treatment, the result [illegible] ments made to be checked if necessary.

TABLE B.—*Showing Number of Cases at Each Period of Life.*

Under 20 years	3
Between 20 and 30 years	3
,, 30 ,, 40 ,, ...	25
,, 40 ,, 50 ,, ...	87
,, 50 ,, 60 ,, ...	109
,, 60 ,, 70 ,, ...	141
,, 70 ,, 80 ,, ...	61
Over 80 years	5
Not stated	11
Total	445

TABLE C.—*Showing Sex of Patients.*

Males	293
Females	152
Total	445

TABLE D.—*Showing Methods of Treatment Advised.*

Palliative	115	
Operations	330	
Advice refused or operation by other surgeons ...	73	Cases
Colotomy performed in	151	,,
Excision in	107	,,
Total operated upon	258	,,

TABLE E.—*Showing the Mortality from Excision of the Rectum and Subsequent History of those who Recovered.*

Died	8
Recovered	100
Total	108

Subsequent History of the 100 Cases of Recovery.

Died from various causes without local recurrence	6
Disease recurred	40
Remained well (cured) after 3 years	42
Remaining well under 3 years	5
Subsequent history not ascertained	7
Total	100

Five of these cases were operated upon by the abdominal route. Of these two died.

TABLE F.—*Showing the Length of Time after Excision at which Patients were Alive without Recurrence.*

Over 1 year, number alive	9
,, 3 years, ,, ...	7
,, 4 ,, ,, ...	3
,, 5 ,, ,, ...	7
,, 6 ,, ,, ...	3
,, 8 ,, ,, ...	1
,, 9 ,, ,, ...	2
,, 10 ,, ,, ...	1
,, 11 ,, ,, ...	2
,, 12 ,, ,, ...	5
,, 13 ,, ,, ...	3
,, 15 ,, ,, ...	1
,, 16 ,, ,, ...	3
,, 17 ,, ,, ...	2
,, 19 ,, ,, ...	1
,, 22 ,, ,, ...	2
,, 26 ,, ,, ...	1
Total	47

TABLE G.—*Showing in 38 Cases the Dates at which Recurrence was Noticed.*

Under 6 months, number of cases	9
Between 6 and 9 months, number of cases ...	14
,, 9 ,, 12 ,, ,, ...	7
,, 12 ,, 18 ,, ,, ...	4
,, 18 ,, 24 ,, ,, ...	3
After 24 months	1
Total	38

[illegible] between [illegible] months, number of cases 25
,, ,, 6 ,, 9 ,, ,, ... 23
,, ,, 9 ,, 12 ,, ,, ... 8
,, ,, 12 ,, 18 ,, ,, ... 3
,, ,, 18 ,, 36 ,, ,, ... 4
Total 71

Average length of life, 7.8 months.

TABLE I.—*Comparison with Table II. showing Duration of Life after Colotomy in 97 Ascertained Cases.*

Lived less than 6 months, number of cases ...	10
,, between 6 and 12 months, number of cases	11
,, ,, 12 ,, 18 ,, ,, ...	19
,, ,, 18 ,, 24 ,, ,, ...	18
,, ,, 24 ,, 30 ,, ,, ...	20
,, ,, 30 ,, 36 ,, ,, ...	5
,, over 3 years, number of cases	10
,, ,, 4 ,, ,, ...	3
,, ,, 8 ,, ,, ...	1
Total	97

Average of life after colotomy, 22 months.

TABLE J.—*Showing the Relative Rate of Mortality from Colotomy when Performed After and Before Complete Obstruction in 151 Cases.*

After complete obstruction, number of cases ...				21
Before ,, ,, ,, ...				130
	Recovered.		Died.	
After complete obstruction ...	10	...	11	
Before ,, ...	125	...	5	
Total	135	...	16	

REFERENCE.

[1] *St. Bartholomew's Hospital Reports*, vol. xxiii.

DISCUSSION.

Mr. CHARLES A. MORTON (Bristol) said: I had intended to say something about 21 cases of Kraske's operation which I have performed, but I found that if I did so my remarks would be too lengthy, and I will therefore confine them to the abdomino-perineal operation and excision of growth low down in the pelvic colon (or what until a few years ago we called the upper part of the rectum) wholly through the abdomen. After Kraske's operation I have found that there is a very great tendency to sloughing of the ends of the rectum at the junction. It is necessary to divide the strands of tissue holding up the rectum, which contain its vascular supply, in order to get it down far enough to make the junction. I thought if I divided this tissue, which in the higher parts consists of the mesocolon, from within the abdomen instead of through the sacral wound, I might be able by cutting very carefully at the root of the mesocolon rather than near its attachment to the bowel to save the vascular supply. I therefore experimented on the dead body. I presumed there was a growth situated at the level of the peritoneal reflection of the rectum, and I allowed an inch margin of healthy tissue above it. From this point I then divided the mesocolon upwards, keeping close to the sacrum, but I found that in order to bring the cut end of the pelvic colon down far enough to unite with the lower end it was necessary to cut the strand of mesocolon containing the superior haemorrhoidal vessels. I therefore never operated by this combined sacral and abdominal method for the purpose of saving the vascular supply to the bowel. But for other reasons I have now adopted the abdomino-perineal method in preference to Kraske's. I have found that most of my recurrences were in the bowel, and that therefore it was desirable to remove more of it, and that, though in a few cases the functional control after union of the rectal ends in Kraske's operation was good, yet the convalescence was so tedious, and in many cases the patient in the end would, I thought, have really been better off with an inguinal colotomy and an air pad, and so it seemed to me that it would be better to perform the abdomino-perineal operation. Its high mortality certainly made me hesitate a good deal, but as surgeons gain greater experience I believe this will be much reduced. I do not believe that

all that is necessary to get really encouraging results after excision of cancer of the rectum is to remove very great lengths of the colon. As Mr. Harrison Cripps has pointed out, recurrence often takes place, not in the bowel, but around it, or in the liver; but on looking through the records of my Kraske's cases I found most of the known recurrences had been in the bowel. I must say that within one year after an abdomino-perineal operation I have had extensive diffuse recurrence in the abdomen, though not in the bowel. In this case 16 in. of colon and rectum were removed. But the case was a particularly unfavourable one as regards the prognosis as to recurrence, as the patient was so young for cancer of the rectum—only 28. We have yet to learn the value of the abdomino-perineal operation in reducing the number of recurrences. With regard to the increased risk of this method, it seems to me, we have also much to learn. Some statistics have shown that it has been much greater in men than in women, and the explanation has been given that this is because the pelvis is deeper in men than in women, and therefore that operative manipulation is more difficult, and also that men stand all kinds of pelvic operations worse than women. Now, though a difference in the shape of the pelvis in males may account for some increased difficulty in manipulation, this would not be enough to make a decided difference in the mortality, and there is no foundation for the statement sometimes made that men stand pelvic operations worse than women. No doubt many more are done in women, for obvious reasons, but when one has to operate on suppurative appendicitis in the pelvis of a man, he does not specially suffer from shock. Really no satisfactory explanation of the remarkable difference in the mortality statistics of the abdomino-perineal operation for cancer of the rectum in men and women has been forthcoming, and it may be found to have been merely a curious coincidence of the early statistics of the operation. But with regard to the cause of the heavy mortality in both sexes, I wish Mr. Miles was able to be present at this discussion, and give us his own views on this subject from his experience in the twenty-six cases which he has published (BRITISH MEDICAL JOURNAL, October, 1910). My own idea, from a careful study of Mr. Miles's paper, is that the majority of the fatal cases were from some form of shock, either the typical form occurring at the time of the operation or a more gradual failure of vital power occurring during the few days following the operation. Six of the ten fatal cases were of this nature, the other four died from conditions which might be present in any intra-abdominal bowel operation, and such an operation is Kraske's. It would seem, then, from a study of these cases, that it is to some form of shock that the heavy mortality of the abdomino-perineal operation is due. I have operated myself by the abdomino-perineal method in six cases, with one death. They were not all rectal growths, according to the more recent description of the rectum. Some were in the pelvic colon, but as the whole rectum was removed, I may allude to them with growths of the rectum proper, and it seems to me impossible in discussing this subject to separate growths in the lower part of the pelvic colon (what we used to call the upper part of the rectum) and growths in the rectum proper. In three of my six cases shock was present at the time of the operation, but it was successfully dealt with by saline intravenous infusion with pituitary gland extract added to it, and all these three cases made recoveries without any serious complications. Four of the successful cases were women. The one fatal case was a man, aged 60, who had so extensive a growth that it felt quite fixed on rectal examination, and I only opened the abdomen for the purpose of doing a colotomy. I then found I could just move the growth to a slight extent, and I excised it by a combination of the abdominal and sacral methods. It was an extremely difficult operation; there was so little loose tissue left around the growth, as it was so nearly fixed to the pelvic wall. He did not, however, suffer from any marked degree of shock at the time of the operation, and on the following day he seemed to be progressing fairly well, with a pulse of fair strength and not more than 90; but his strength then rapidly failed, and his temperature ran up to 106°, and he died.

In two cases I have attempted to do the abdomino-perineal operation, but had to abandon it. In one I found the growth involving some coils of small intestine; in the other I found the growth invading the bladder. I am sorry to say that in this case, in trying to make a separation between the growth and the bladder, I broke into both the rectum and bladder, and caused a fatal peritoneal infection. We all know how difficult it often is to tell whether a malignant growth is simply adherent to, or actually infiltrating a neighbouring organ within the abdomen. In this case I realized too late that it was infiltrating and not merely adherent. If I had known this earlier I might have resected a part of the bladder wall with the growth.

I have also operated on three cases of lower pelvic colon growth wholly through the abdomen. In one case I found malignant glands around the inferior mesenteric artery, which had to be divided, and I therefore had to resect a large amount of colon, because of interference with the vascular supply. After this extensive resection I decided it was better to complete the operation from within the abdomen, though this obliged me to cut across the rectum only an inch below the growth. I also performed an abdominal resection of a growth in the pelvic colon a week ago. In this case I could get well 2 in. below the growth after dividing the peritoneum around the rectum and drawing it up, and I therefore decided not to add to the risk by dissecting out the whole rectum. Some years ago I also excised a growth in the pelvic colon from within the abdomen, and united the ends. It would have been better in that case if I had done what I did in the two later ones—make an inguinal anus—as leakage occurred, and, though it did not infect the general peritoneal cavity, the union having been packed off with gauze, yet there was a very septic cavity in the pelvis, and the patient died of pulmonary gangrene.

Four years ago I made up my mind to operate on cancer of the rectum by the abdomino-perineal method instead of by Kraske's operation, but my last Kraske's operation was done in October of last year. I wished to do the abdomino-perineal operation, but when I opened the abdomen I found such a mass of fat in the pelvic mesocolon and lining the walls of the pelvis that even in the Trendelenburg position I could get no room to work in the pelvis, and had to do a Kraske's operation.

There is an important matter which needs discussion, and that is, Can we operate by the abdomino-perineal operation, and yet bring down the cut end of the pelvic colon and fix it in the perineum, or below the sacrum, after removal of the coccyx, or even in cases of very high growths unite it to a portion of the lower end of the rectum, as we have been in the habit of doing in Kraske's operation? In one of my cases I divided the colon at the greatest convexity of a loop of sigmoid that extended for about 6 in. from the posterior abdominal wall, and brought the end down and fixed it just below the sacrum after removal of the coccyx. It certainly ought to have had a good blood supply to its very end, as it was nowhere severed from its mesocolon, and yet very extensive sloughing of the end occurred. I have not made the attempt again, and it seems to me that an inguinal anus controlled by an air pad is really best. I have been very interested to read that some surgeons can bring down the cut end of the high pelvic colon, and fix it at the anus, and secure sphincteric control by bringing it out through the external sphincter, and can do all this by operating from the perineum. It seems an ideal method, but I cannot myself conceive how they can do it without causing sloughing of the end of the colon.

Now there is one thing in connexion with operations for cancer of the rectum about which there seems to me to be no possible doubt, and the importance of which I wish in the strongest way to emphasize, and that is, that in no case, other than squamous carcinoma of the anus involving the rectum, should a growth of the rectum ever be excised, either by Kraske's or the perineal method, without first exploring the interior of the abdomen. Surely it is unwise to subject the patient to the risk of the operation if there are growths in the liver or irremovable malignant glands, and by the simple proceeding of inserting a hand into the abdomen we can ascertain this. And not only can we thus detect contraindications to excision, but possibly the presence of malignant glands which can be excised. This has happened to me in two cases. In one I removed

[illegible] glands around the inferior mesenteric artery, and in another a malignant gland in the mesocolon, at the bifurcation of the aorta. Moreover, by opening the abdomen, we may discover incorporation with the bladder, which might be dealt with by partial resection of that organ, or with the uterus, in which case the excision of rectum could be combined with a hysterectomy, whereas if we came across such complications operating only by the sacral route, we could not deal with them. Then I have in three cases found that a growth which appeared fixed on rectal examination, even when the patient stood up and strained down, was found to be movable on abdominal examination, and could be removed; and I have also found that a growth which seemed fixed on rectal examination alone, and on abdominal examination alone, was found to be movable, in an upward direction, when examined with one hand in the abdomen and the finger in the rectum at the same time, and it was removed.

Mr. G. Heaton (Birmingham) said: Owing to a variety of reasons the majority of sufferers from rectal carcinoma are not brought under the surgeon's notice until the disease has spread beyond the reach of the knife. In hospital practice in less than 25 per cent. is any radical operation possible when the patient first comes for advice. This is the more to be regretted in that the columnar-celled form of carcinoma, which is the common form of growth in the rectum, has but a low general malignancy if freely removed. The chief contraindications of any radical operation, now that surgeons do not hesitate to lay open the peritoneal pouch, are, in my opinion:

1. Implication of the urethra, prostate, or base of the bladder. When any of these are actually invaded, even though it may be possible to remove the growth, the knife is carried so close to the disease that recurrence, as a rule, soon follows.
2. Involvement of the vagina or cervix uteri in women. Here the surgeon has more latitude, as the vaginal wall or even the uterus may be freely removed with the mass.
3. Metastasis in the iliac glands or viscera.
4. Multiple metastatic deposits in the peritoneum.

Of the immense boon a well-executed inguinal colotomy confers on such inoperable cases we are all of us aware. Besides the relief of pain and suffering it affords, and the risks of intestinal obstruction it completely averts, I am myself strongly convinced that the patient's life is materially lengthened and that the cancer becomes less active in its growth. I have had patients who have lived in comparative comfort three, three and a half, and four years after a simple colotomy, and able until towards the close to take part in social and business life. With regard to the actual operation of excision or amputation of the rectum, we must be guided by the same principles here as guide us in our operations for carcinoma in other parts of the body. The amount to be removed, the restoration of the continuity of the bowel, and, in fact, every other consideration, must give way to a complete and thorough removal of that portion of the bowel in which the carcinoma exists, together with the lymphatic area into which it drains. For this reason the perineal route has given way almost entirely to the trans-sacral and coccygeal routes, or combinations of these with abdominal section. It is only by free access and exposure of the parts to be removed that we can hope to make the removal a thorough and effective one, and to secure for the patient an immunity from recurrence.

I have of late years urged the performance of a preliminary colotomy, done some eight or ten days before the major operation, and I do so for the following reasons:

First, through the small abdominal incision for the colotomy the upper limits and attachments of the rectal growth can be determined and the presence or absence of metastasis high up in the iliac or lumbar glands or viscera definitely recognized.

Secondly, by drainage of the bowel and diversion of its contents from the rectum the portion of bowel to be operated upon is rendered cleaner and healthier, and the risks of the subsequent operation are lessened.

Thirdly, during the actual operation the portion of bowel above that which is to be removed can be closed between two ligatures and the affected portion removed—if necessary with the anus itself—without opening it. The surgeon has not to [illegible] to bring down the cut end of the bowel above without risk of sloughing from tension.

Lastly, the after-condition of the patient is better. He is saved from the incontinence of a sacral anus or the discomforts inseparable from a strictured rectum which often follow attempts to bring the bowel down to the normal anus.

Professor Sinclair White (Sheffield) said: For the purposes of this discussion I hoped to have contributed a complete record of my operations for rectal cancer, but I find the data concerning my hospital cases are too fragmentary to be of statistical value, beyond showing an operation mortality-rate of about 30 per cent. in 78 operations, most of which were of the trans-sacral type. In my private clinic I am more fortunate. Excluding cases of epithelioma of the anus, I have operated on 32 patients, and have fairly complete notes of all of them. They comprise 25 males and 7 females, and extend over a period of seventeen years: 29 were operated on by Kraske's method and 3 by the combined abdomino-perineal procedure. In the former group the abdomen was opened in every case, and, with but two exceptions, an iliac colostomy was established ten to fourteen days previous to excision. In 23 cases the lower end of the rectum, with its sphincter mechanism, was preserved, while in 6 a sacral anus resulted. Aseptic healing took place in 5 instances only, while in the others more or less suppuration, and usually a temporary faecal fistula, followed.

A tendency to stricture at the line of union of the bowel was frequently observed, but this was easily overcome by simple dilatation, and the functional results were, as a rule, quite satisfactory. No case was rejected unless the growth was fixed to the bladder or prostate, or there were secondary growths elsewhere. Death followed the operation within one month in 6 cases, giving an operation mortality-rate of 18.7 per cent. The causes of death were: Shock and exhaustion, 3 cases; peritonitis, 2 cases; and pulmonary embolism, 1 case.

The after-histories of the 26 survivors are as follows:

5 are alive and free from recurrences, after intervals ranging from four to thirteen years.
2 died from other causes than cancer after intervals of five and eight years respectively.
3, who were operated on within the last three years, as yet show no signs of recurrence.
1 died at the end of nineteen months from a cause other than cancer, but there was no autopsy.
1 patient is alive after 5 years, but has had two subsequent operations for local recurrence—the last two years ago.
14 died from recurrence, and in 8 of these the recurrence first appeared locally.

Having regard to the large percentage of local recurrences after Kraske's operation, it seems probable that, in the desire to restore the rectal tube with its sphincters intact, we do not always resect widely enough. The method should be restricted to specially selected cases where the growth is small, freely movable, and does not extend lower than 3 in. from the anus, and in which the patient's general condition is good. For such cases it is, I believe, still the best operation, but it should, I think, be undertaken only after an intraperitoneal search has been made to eliminate secondary growths and a colostomy established to enable us to operate under relatively clean conditions, and to secure rest and freedom from tension during the subsequent healing process. Incidentally I may remark, as bearing on the value of a preliminary examination of the abdomen, that on four occasions I have found secondary nodules in the liver which had not been detected by external examination, while in several cases a growth which appeared to be immovable when examined per anum was really movable and therefore operable.

For cases less favourable free excision, without attempting to preserve the lower end of the rectum, must suffice, and this is best done by Hochenegg's method. He closes the anus securely with a purse-string suture, and through a long sacro-perineal incision, and after removal of the coccyx and lower end of the sacrum, dissects out the rectum until well above the growth. The rent in the peritoneum and the skin wound are sutured, except where the liberated rectum comes through above. Then, after the application of a dressing, which is securely fastened over the wound by strapping, the upper end of the rectum is stitched to the sacral skin and cut away just beyond

the sutures. The operation is conducted throughout with the greatest gentleness and regard for asepsis, and those who have been privileged to witness him operating, and to observe his after-results, will bear me out in saying that, apart from the destruction of the normal anus, his method leaves little to be desired.

The combined abdomino-perineal operation is ideal in its conception, but has scarcely justified the enthusiasm with which it was first received. The mortality hitherto attending it has been very great, especially in the male, whose narrow and deep pelvis renders its performance a most difficult undertaking. My experience of it is limited to three cases, two of which were females and did well, while the third, who was a male, died of peritonitis.

The seven years that have elapsed since this subject was discussed at the Leicester meeting, while not remarkable for many notable advances in our methods of treatment, have strengthened the view that cancer of the rectum is, in the majority of cases, a highly malignant disease, much more so than cancer of the colon or stomach, and that local recurrence is to be avoided only by very free removal. Moreover, there can hardly be a doubt that incomplete removal is worse than useless. Much harm has accrued from striving after ideal plastic results, particularly in regard to a normally placed anus, and it cannot be too fully emphasized that such considerations should not be allowed to interfere with the primary object in operating—the radical extirpation of the growth. Opinions will, of course, differ as to the amount of inconvenience which an artificial anus entails, and sentiment here, as elsewhere, will always demand consideration. Personally, I believe that with a proper appliance it need not be a very great handicap to a patient's usefulness, nor a serious bar to his social enjoyment. I could mention many examples in support of these views, but one will suffice. I know a tramcar conductor who was, and probably still is, efficiently discharging his duties in a large city in spite of an iliac colostomy.

Mr. W. SAMPSON HANDLEY (London) pointed out that he had not made the sweeping general statements attributed to him by Mr. Harrison Cripps. In two cases of rectal cancer he had demonstrated cancer cells in the mucous lymphatic plexus of the bowel at distances respectively 4 and 6 inches from the apparent edge of the growth. The cells observed were undoubtedly cancer cells. Nothing like them could be found in the normal rectum, they occurred only in the cancerous rectum and in the neighbourhood of the growth. He had never stated that permeation invariably occurred at an early stage in all cancers of the rectum, nor denied the possibility of cure resulting from such a limited perineal operation as that advocated by Mr. Harrison Cripps. But though he had only succeeded in demonstrating permeation in two out of about ten cases, he was sure it occurred more frequently than this, for muci-carmine, the stain employed, stains only those cancer cells which are secreting mucin. Thus it might fail to detect cancer cells which had entirely abandoned their natural functions. Mr. Percival Cole had drawn his attention to the fact that in certain cancers of the rectum muci-carmine may fail to stain any of the cells of the primary growth. This difficulty merely emphasized the importance of the successful demonstration of mucous permeation in a proportion of cases. The slides were shown at the Royal Society of Medicine, and Mr. Handley's observations emerged unshaken from this ordeal. Mr. Cripps stated that Mr. Handley's observations were not borne out by clinical experience, but, according to Mr. Swinford Edwards, in half the cases of recurrence after the perineal operation, in which the bowel was usually resected within an inch of the growth, the disease reappeared in the cut ends of the bowel. This was exactly what might be expected if mucous permeation had commenced at the time of operation. Sir F. Wallis recorded a case in which, after removal of the lower 9 in. of the rectum, the disease recurred in the mucosa of the lower end of the brought-down bowel, involving it for 2 in. A more striking clinical confirmation of the correctness of the speaker's observations on mucous permeation could hardly be desired. The perineal operation for rectal growths in the ordinary situation was on pathological grounds quite indefensible. It was necessary to remove a considerable length of bowel to get beyond the limit of possible permeation. For this and for other reasons he advocated the combined abdomino-perineal operation with removal of the anus and its muscles, and the establishment of a colostomy. The preservation of the anus involved risk of recurrence in this region, and attempts to bring down the colon to the anus greatly increased the risk of operation, and led to the preservation of meso-sigmoid which might contain infected glands. The latter point had been especially insisted on by Mr. Miles.

The only serious argument against the combined operation was that its mortality had been too high. In the speaker's opinion, no operation with a mortality of even 20 per cent. could hold a permanent place in surgery, but the mortality was rapidly falling, and should come down to 5 per cent. if old and feeble patients were refused operation. For such patients colostomy was the proper treatment.

At the present time the combined operation in women had a very small mortality if terminated by a colostomy. Schloffer lost only 1 case of 15; Goulliond none of 11. The speaker had had 3 cases without a death. In men the mortality could, he thought, be greatly reduced by the adoption of proper precautions. More especially he referred to a method of his own whereby a catheter is tied into the blinded end of the colon, where it emerges at the future colostomy opening. Through this catheter large quantities of saline, which cannot be rejected by the patient, can be introduced during the day or two following operation. The catheter serves occasionally as a flatus tube, and the bowel is not opened until the fifth day. He attributed his favourable experience of the operation largely to the use of this method.

Mr. Harrison Cripps claimed, as an advantage of the perineal method, the restoration of anal function, an advantage dearly bought at the risk of recurrence, and, moreover, rarely secured. Mr. Cripps had referred repeatedly in his writings, and again that morning, to one particular case, in which an ideal result had been attained—that of Dr. Rushworth. Why had the result in this case made such a deep impression on Mr. Cripps's memory? He submitted, because of its rarity. In most cases the perineal method involved a sacral anus.

In conclusion, he would remind them that in past years Mr. Cripps's advocacy had established the operative treatment of rectal cancer upon a firm footing, in the face of much hostile criticism. Mr. Cripps had remained indifferent to that criticism, because he knew that the progressive elements of the profession were with him. At the present time those who advocated in rectal cancer an operation in accordance with the teaching of pathology—namely, the combined operation—could, for the same reason, regard the controversy with equanimity, confident that time would decide it in their favour.

Mr. C. P. CHILDE (Portsmouth) said: Although I have operated on occasion by all the routes, except the vaginal, the sacral route is the one with which I am most familiar, and I shall confine the few remarks I have to make to this operation, and to what I consider its advantages.

The first point is that cancer of the rectum, it does not matter how high up the growth is situated, provided it is free and otherwise suitable for removal, is readily accessible by the sacral route. The three positions I have tried for the operation are Littlewood's kneeling position, the exaggerated lithotomy position, and the left lateral position. Littlewood's kneeling position is very inconvenient for the anaesthetist, and I have not found it to possess any compensatory advantages over the other two. The left lateral position is, to my thinking, the best. The skin incision should be free, and a sufficient piece of the lower end of the sacrum, below the third sacral foramen, should be removed. Formerly I contented myself with removal of the coccyx only, but though the operation can be done with removal of this limited portion of bone, ablation of the lower end of the sacrum with it greatly improves the access, renders the operation quicker and easier, and haemorrhage, if it occurs from the deeper parts of the wound, can be much more readily dealt with. To sum up, with the patient in the left lateral position, turned over somewhat on to his face, and with the pelvis slightly raised, with a free skin incision, and with removal of a sufficient piece of the lower end of the sacrum with

the coccyx, the technical difficulties of the operation are mostly overcome: it can be quickly performed, there is very little loss of blood, the bowel with the connective tissue and lymphatics behind it can be very freely removed, and it is very seldom that any shock whatever follows it. It can be undertaken, therefore, without anxiety in quite old people. My last four operations, for instance, were upon patients 71, 71, 72, and 70 years old: all of them were very free excisions, yet none of the cases exhibited immediate effects from the operation of any moment whatever.

When I first began operating by the sacral route, I used to make a sacral anus in those cases requiring an artificial anus. This practice I have abandoned. If an artificial anus has to be made—a disagreeable thing under any circumstances—one within easy access of the patient—that is, in the inguinal region—is, in my opinion, far preferable to one behind. If the growth, therefore, is so situated that the sphincteric muscles have to be sacrificed, or in cases where there is any doubt on this point, I think the best plan is to perform a preliminary inguinal colostomy and excise the bowel a fortnight later. I believe this, too, to be the best operation when the patient is advanced in years, or his ability to endure a severe operation is problematical. I think avoidable primary risks are frequently run, owing to the natural desire, and owing to elaborate attempts to provide an ideal anus in the normal position, and that the risks of recurrence are often increased by going too near the growth in striving after the same object. The chief consideration should be a free excision of the disease and its neighbouring structures without subjecting the patient to an excessive primary risk; the consideration of the position of the future anus should be secondary. If these principles are sound, there is, I think, a great deal to be said in favour of (in a large number of cases, I do not say all) a preliminary inguinal colostomy, followed a fortnight later by a wide excision from below, as the surgeon is then free from any anxiety as to the position of the future anus; he is not tempted to go too near the disease in an attempt to get an ideal result; there is no risk of contamination of the wound with faeces, and there is the certain knowledge that the operation can be performed quickly and without putting any severe strain on the patient's immediate recuperative powers. If preferred, the operation can be done at one sitting in those cases in which no obstruction is present and the bowel can be thoroughly emptied previously. If the position of the growth and other circumstances are favourable for attempting to preserve the natural anus various procedures may be adopted, such as end-to-end anastomosis, bringing the upper segment of the bowel through the natural anus, etc. I was very successful in one case by splitting the sphincter and the levatores ani in the mid-line, as recommended by Sir Charles Ball, dividing the bowel circularly above the attachment of the levator ani, and turning each levator ani and each half of the sphincter outwards as a flap. This procedure gave good room and did not interfere with the nerve supply of the extrinsic muscles. When the bowel was brought down the two levatores ani and the two halves of the sphincter were stitched together and to the bowel. After a little while the patient had good control of both flatus and faeces; in fact, the functional result was perfectly satisfactory. Of course, if the operation is started with the intention of retaining the natural anus, and the bowel cannot be brought down without tension, the operation is completed by closing the gut and performing inguinal colostomy. It must be conceded, I think, that the operation by one of the combined routes fulfils more perfectly the requirements of the modern operation for cancer, but it is impossible to ignore the present heavy primary mortality.

It may be said that inasmuch as the disease is necessarily fatal, any amount of primary risk is justifiable in the attempt to secure a greater freedom from recurrence. But I think there are limits to this attitude; at all events there is not much satisfaction to anyone concerned in the operation, least of all to the patient, in the fact that though the operation fulfilled the conditions of an ideal operation for cancer, the patient died the next day as the result of it. Though I am an entire convert to the abdominal route in extirpating cancer of the uterus, in which the risk (about 10 per cent.) is, I consider, a justifiable one if better results accrue, I am not yet convinced that an operation with a mortality of somewhere between 30 and 50 per cent. is equally justifiable. The operation is comparatively recent, and the primary mortality of the abdominal route for cancer of the uterus was at first very high, and that for cancer of the rectum will probably diminish with experience and improvement in technique. But women are particularly tolerant of operations on their genital organs, and I am doubtful whether it will prove as easy to reduce the primary mortality in extirpation of cancer of the rectum by the abdominal or one of the combined routes.

Mr. Herbert J. Paterson (London) said that no one had a greater regard for pathological work than himself, but at the same time he thought that some of the conclusions come to in recent years had tended to retard rather than to hasten progress. He ventured to dissent from the view that it was advisable to open the abdomen in every case, in order to exclude the presence of secondary growths in the liver. To explore the liver from an incision in the lower part of the abdomen was neither easy nor satisfactory. He asked those who advocated this procedure in what proportion of cases in which a secondary carcinoma of the liver was present would such growth be detected by abdominal exploration? He himself thought that in quite half of the cases in which secondary growths were present such growths would not be detected by exploration on the operating table. Mr. Paterson submitted that Mr. Cripps's statistics were a sufficient answer to those who advised preliminary abdominal section. In another respect pathological teaching was not in accordance with clinical experience. If it were true that cancer cells extended widely beyond the primary growth, then there would be few cases in which it would be worth while to operate. They had all often met with cases in which the margin beyond the growth removed was very small and yet the patient had remained free from recurrence for many years. He thought that another interpretation might be placed on Mr. Handley's researches. If it were true—and he had such a regard for Mr. Handley's work that he felt bound to accept his facts—that isolated cancer cells extended widely beyond the limits of the growth, then the inference was that after removal of the primary growth, Nature was able to deal with the isolated cancer cells. To this extent pathological teaching was misleading them. To adapt an American simile, "the pathological tail was wagging the surgical dog, instead of the surgical dog wagging the pathological tail." He regretted that the expression "ideal result" had been applied by one of the speakers to those cases in which the normal anus was preserved after a trans-sacral operation. While fully admitting the advantage of preserving the anus when possible, he thought that no cosmetic consideration should be allowed to influence the necessity for adequate excision. The ideal operation was not one in which a good cosmetic result was obtained, but the one in which the patient remained free from recurrence. The most striking surgical fact with reference to cancer of the rectum, and, indeed, internal cancer elsewhere, was the small proportion of cases in which a radical operation was possible at the time the patient came under the surgeon's care. He believed that it was Mr. Cripps who first urged the view that when a radical excision was impracticable colostomy should be performed, even in the absence of obstruction, on the ground that the diversion of the faeces diminished the rate of growth of the cancerous tumour. If they went over their cancer cases and noted the number of patients suffering from carcinoma of the rectum who had lived several years after colostomy, they must admit there was considerable justification for Mr. Cripps's hypothesis. He remembered several of Mr. Cripps's patients who had lived over five years, and he himself had three patients who had lived five, five and a half, and six and a quarter years respectively after inguinal colostomy for rectal carcinoma. He was not sure but that in this matter they were moving along wrong lines. Their efforts had been directed to more extensive operations, whereas they should have aimed at earlier diagnosis. To his mind it was an open question whether extensive abdomino-perineal operations, at any rate in the majority of cases, were worth while. In any case he thought they should clearly distinguish between two classes of cases: Early cases in which an extensive operation was done deliberately to eradicate the disease as completely as

possible; later cases in which an extensive operation had to be done in order to remove the growth. He questioned very much whether the operation in the second class of case was worth doing, and if early diagnosis were the rule they would never require to be done. If they were to obtain better results than at present, it was by early operation rather than by more extensive operations.

Mr. A. DOW (Dundee) said: I am a strong advocate of the combined operation, as I believe that we must follow the teaching of pathology, and if we cannot remove the disease we must be content with a colostomy. I therefore begin by making the left part of a Mackinrodt's incision, and examine the tumour and the whole of the abdomen for new growths. If I find none I now decide to remove the disease; I extend the incision and get a good view of the pelvis. To prevent haemorrhage one may tie the internal iliacs, though it is quite easy to check the haemorrhage as it occurs with such a free view of the pelvis. No doubt shock has much to do with the mortality, and I believe that spinal anaesthesia helps to prevent shock, and I use it, if necessary, with slight general anaesthesia, in all cases. I think we should be able to gauge our own ability to remove a growth, and the patient's ability to stand the operation we propose. It seems illogical to explore the axilla in all cases of cancer of the breast and to just remove the growth in rectal cases without paying any attention to the nearest glands, and the increased danger of the modern operation for cancer of the breast has been held to be no bar to its almost universal acceptance by surgeons. Why should we, if we are to do anything more than colostomy, not go equally far and attack the glands? I have elsewhere advocated, though never practised, transplantation of the ureters along the brim of the pelvis: and I feel that such an operation would be justifiable if explained to our patients, as an alternative to doing nothing but prolonging his life.

Mr. JORDAN LLOYD (Birmingham) thought that surgeons in the fifties were apt to look at surgical problems from a different standpoint from surgeons in the thirties and forties. Whether this were due to cerebral degeneration or to greater experience he would not like to say. He had arrived at firm conclusions on the question of the operative treatment of cancer of the rectum, and his present attitude was not that of the young advanced modern surgeon. The majority of cases that came to him were best left alone. The percentage of cases where good results were to be expected was very small. It was easy to say that early recognition of cancer was the secret of success, but he went further and held that it was of equal importance to recognize early the kind of cancer. If the cancer was big enough to form a mass, whether it spread by infiltration or by permeation it had to be approached with great care. He wished to revive the designation "tubular cancer" used formerly by Mr. Cripps; he had at present in his observation a case of that kind operated on by Mr. Cripps sixteen years ago. In any case mortality was high, and the results did not convince him that the extensive operation was justified, though he did agree that some of the modern operations might establish themselves in favour. In regard to examination of the liver, he doubted whether such an examination could be efficient through a small incision as had been recommended by some speakers.

Mr. ALBERT LUCAS (Birmingham) could not speak with authority on the abdomino-perineal route. Every case of carcinoma of the rectum was to be dealt with on its merits. Many small growths could be removed by taking away the coccyx, and perhaps in addition the lower part of the sacrum. He felt certain that these patients did as well as if an abdominal operation had been performed in addition. If the growth were extensive, it was preferable to adopt the combined route. Where the growth was adherent to the bladder or prostate in front or the sacrum behind, it should not be touched. It seemed as if the pathological theory of permeation was not borne out by practical experience when a margin of half an inch to an inch sufficed. Probably Nature herself dealt with cancer cells beyond the half inch area. The mortality of his own and his colleagues' cases was much higher by the combined route than by the perineal route, high though it was. He regarded it as an unjustifiable operation to remove practically most of the contents of a man's pelvis.

Dr. ARMSTRONG (Montreal) had come to employ the combined operation in many cases where the growth was large and particularly where there were obstructive symptoms with toxaemia. He operated in two stages: First, opening of the abdomen, and in the absence of metastases, separating the lower part of the colon and dividing the bowel low down: the end of the bowel was clamped, cauterized, and pushed into the hollow of the sacrum and the peritoneum closed with sutures; the lower end of the upper segment of bowel was employed as a permanent colostomy. The second stage was performed a few days later, when the lower end containing the tumour was removed by the perineal route. His mortality was low. The left inguinal colostomy was on the whole quite comfortable, and did not interfere with people taking their place in society to some extent.

Mr. HUEY GROVES (Bristol) said that the fact that metastasis was often found in the liver by a preliminary abdominal operation fully justified this procedure. He related two cases in which a sacral operation was followed by recurrence because too little bowel had been removed in order to do a union. In both these the combined method had given a lasting good result. He was convinced that complete removal of the whole rectum and a part of the colon by the combined method ought to be the method of choice in most cases. The two stage method was strongly advocated from personal experience.

Mr. ANDREW FULLERTON (Belfast) said he did not agree with Mr. Cripps that the sigmoidoscope was useless in the diagnosis of rectal cancer. He had recently seen a case in which the patient suffered from chronic diarrhoea, and in which the growth could not be felt by the finger. The sigmoidoscope showed a growth in the upper part of the rectum beyond the reach of the finger. This growth was subsequently removed by the combined method. He wished to mention two cases in which ideal results were obtained after removal of the rectum. One was a woman aged 60 years, in whom he performed a trans-sacral operation, removing the coccyx and a very small portion of the lower part of the sacrum. An attempt was made after removing the growth to bring the upper and lower portions of the bowel together. Primary union did not take place, but by tying a Paul's tube into the rectum through the anus the faeces were encouraged to come by the normal route, and in a few weeks the posterior wound healed. The patient was now—about nine years after operation—perfectly well, with full sphincteric control and without recurrence. The only sign of operation on the bowel was a thin wide ring in the bowel at the junction of the segment. In a second case, a man aged 50 years, he operated by removing the coccyx, separating the bowel from below, and, after dividing the superior haemorrhoidal artery well away from the bowel, bringing the pelvic colon down to the anal canal bared of mucous membrane. This patient—now more than four years after operation—had a functional anus, and almost complete control. He mentioned the operation of opening the abdomen, tying the superior haemorrhoidal or inferior mesenteric artery, and bringing down the pelvic colon to the anus, but he had seen sloughing of the bowel take place.

Mr. G. P. NEWBOLT (Liverpool) had followed the operative traditions of Mr. Harrison Cripps in doing the perineal operation. If Mr. Sampson Handley's pathology was right, it was impossible to operate successfully by the perineal route, but Mr. Cripps's statistics rather tended to disprove the theory. In the Kraske operation prevention of haemorrhage was of prime importance. If the sacrum was not interfered with it was better for the patient. He doubted whether the mortality of the combined operation could be reduced below 20 per cent. A preliminary colostomy was reasonable, but it was not always practicable. He narrated a case of recurrence six years after operation, a mass being found adherent to the sacrum. He thought it was important to exercise great care in selecting cases on which to operate.

Mr. Harrison Cripps, in reply, said he was struck by the appearance of rivalry in the discussion between the two operations: the perineo-sacral and the abdomino-perineal. There was really no rivalry between them. It would be as absurd to attack a low rectal cancer by the abdominal route as to attack a very high one by the perineal route alone. Each case must be selected and dealt with on its merits. In doubtful cases it was quite right to do a preliminary abdominal section to find out if complete removal were possible. Success in operating in rectal cancer depended more than anything else upon careful selection of the case, and in not binding oneself to do any one particular operation, but to operate on the lines dictated by common-sense principles.

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF URINARY TUBERCULOSIS.

OPENING PAPER.

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I feel it will be readily conceded that the subject of urinary tuberculosis, which has been chosen for our discussion this morning, covers a very large area and lends itself rather to discursiveness. In order to minimize this disadvantage, I suggest, as introducer, that it would be as well to remind ourselves of some of the chief conditions already accepted as facts by the majority of the workers in this field.

The international consensus of opinion formed during the last decade and reflected in the surgery of the world has for its bed-rock truth the fact that the kidney eliminates bacteria and the poisons they engender; and that the kidneys suffer more or less acutely according to the character and strength of the bacterial poison which reaches them and the health of the gland through which the poison passes. Should one kidney suffer locally from tuberculosis because it chances to offer a non-resistant field to the transient passage of the bacillus brought it for elimination from some focus in the body, the septic processes of this local destruction must be eliminated by both kidneys. Both kidneys must eventually suffer, though not necessarily by tubercle. I apologize for touching, even thus cursorily, on this nursery knowledge.

Built on this basis is the first article of faith, which is, that urinary tuberculosis nearly always starts in the kidneys, and generally in *one* kidney,* and not in the bladder: that the urine stream, laden with tubercle and toxins from the local renal destruction, descends the ureter, irritates the mucous membrane of that tube, and finally affects its orifice in the bladder and the bladder area around it. It is held, rightly or wrongly, that there is no such disease as *primary* tuberculous ureteritis or primary tuberculous cystitis; the changes visible in the bladder in an early stage are only those due to the action of a caustic urine.

The second article of faith, which you may prefer to consider as dogma, is that there is no chance of self-repair in the tuberculous kidney. It is stated that there is no known example open to criticism of spontaneous cure. Upon these grounds it is argued that, if the diseased kidney (which holds the primary focus) can be detected and removed *early*, the other kidney will be saved from septic and tuberculous changes, the bladder will heal spontaneously, and the patient will, as far as the urinary tract is concerned, be cured.

It may be pertinently remarked that surgery alone is responsible for these opinions, not pathology. To that I would answer, the surgeon records only early and living facts. Thus the results of removing the kidney for tuberculous disease embracing over a thousand cases were reported to the great congresses of Vienna and Rome[1] last year and this, by Israel, Wildbolz, Legueu and Chevassu, and others. It is asserted by Legueu that half of the cases were cured, one quarter were relieved by this means, and this with a 6 per cent. immediate mortality and an 18 per cent. subsequent death-rate. Such facts support the first article of modern surgical faith.

Our task to-day, starting from the plane of recorded and accepted facts, seems to resolve itself into two divisions, but I do not wish by suggesting this to limit in any way the speakers or to hamper discussion. I think we have to ask ourselves, Is it our experience that the kidney is always the source, the starting point, of tuberculous disease in the urinary tract? And, secondly, Is surgery the only means of cure? These are the vital questions, and we in Great Britain are still divided in opinion on them. I venture to think we cannot answer them either definitely or accurately without leaving the male cases out of consideration. We should confine our study at first solely to unassailable clinical facts observed in female cases. Women are easy to investigate; they are not endangered by the process, as are the males; they present undistorted symptoms, being uncomplicated by genital tuberculosis, so that from them we can obtain a vivid, easily controlled, precise picture of what urinary tuberculosis really is. Only from a sure basis like this can we determine the economic value of the signs and symptoms and results of treatment of the disease in both sexes. My own contribution to this discussion will be influenced by this opinion and will be mainly taken from the first 50 cases of nephrectomy I have performed for tuberculosis in the female, balanced by a series of unoperated cases. With this can be compared a series of male cases, and upon these findings I would venture to ground my own opinion.

The Diagnosis of Urinary Tuberculosis.

It will be conceded that in 90 per cent. of the cases the expert bacteriologist can give a definite opinion as to the presence of tubercle in the urine and the grade of the destructive process, whether it be acute or quiet, simple or septic. Upon this it follows that any practitioner encountering a case of cystitis or renal pain with pyuria in the well-to-do without obtaining an expert bacteriological opinion on the urine, lays himself open to the censure of grave neglect. I mention cystitis and renal pain with pyuria, because the onset of the disease in women—and I am now alluding merely to the female—is marked by one or the other in about equal proportions.

I pause to make an important digression. Is there a clinician of any worth who does not now insist upon obtaining the onset symptoms of urinary disease? I doubt it. Onset symptoms are clue lines to accurate diagnosis, and often prognosis, in many urinary diseases. But need the practitioner always wait for the report of the nature of the bacteria before he can give a probable diagnosis of the cause and source of the trouble? Perhaps not. In 84 per cent. of female cases he can by a vaginal or rectal examination detect the thickened ureter as it enters the bladder, and this is the distinguishing mark of early ureteritis in renal tubercle, and indicates the corresponding kidney as being involved. I qualify this by saying that I generally meet with the cases after three months' to seven years' duration, and the percentage I give is what I have myself detected. It may be that within only a week or a month of the onset the thickened ureter is not so often encountered. In 1900[2] I pointed out the "thickened ureter," having noticed it for nearly a decade, and it has since been insisted on by Keily, Caspar, and others. I thought at first it was only found when renal colic was experienced, but I know now that it is absent only in 16 per cent. in women when the disease is in the kidney, and I am certain when the thickened ureter is present that it forms the key to the correct diagnosis—the prognosis and operative treatment of the disease. Permit me to particularize.

The Swollen Ureter of Tuberculosis.—Interstitial Ureteritis.

It varies from the size of a slate pencil to that of a massive thumb (8 per cent. in my cases). It is apparently produced either rapidly or gradually by the caustic nature of the urine issuing from an eroded renal pelvis, affecting the mucous membrane of the ureter and penetrating the

* 36.7 per cent. of all tuberculous infection was confined to one of the two kidneys on *post-mortem* examination (Kryzwick). In 68 per cent. of all urinary tubercle the lesions were confined to one side at death (Halle and Motz). In 13 per cent. of all urinary tubercle the opposite kidney was the seat of pathological process other than tuberculous (Halle and Motz).

walls of the tube. In one case with a history only of seven weeks' bladder distress (40 urinations in twenty-four hours) the ureter was like an enormous thumb. In this case a small abscess in the renal cortex had burst into the pelvis (discovered on operation) and probably the acuteness of the condition was due to this. It may take longer—six to twelve months (?)—to evoke a well-marked thickened ureter.

Microscopical examination of the thickened ureter shows that the trouble is mainly inflammatory; giant cells are present, it is true, but tubercle bacilli are very rarely discovered. Upon this hangs an important surgical lesson, to which I will refer later.

There are two varieties of thickened ureter. Both can be positively identified by the cystoscope. The exact difference in their causation is a matter of speculation. The more common variety (65 per cent.) stops short, so to speak, at mere size. The channel certainly becomes warped and here and there obstructed to the free flow of urine, but this, I believe, is merely due to irregularity in the thickening, and not caused by actual contraction (stricture). It causes an irregularity and patency of the orifice of the ureter. The less common variety (27 per cent.) undergoes interstitial contraction—not only concentrically, but also longitudinally, and the ureter is actually shortened in length as well as strictured. As it shortens it drags on the corresponding side of the bladder. This shortening of the ureter causes a characteristic cystoscopic picture of great value, to which I shall refer directly.

It might be thought that the contracting, retracting type is merely the result of age—just as stricture of the urethra is the result of years of penetrating urethritis. Against this is the fact that the retracting type may appear within three months. In the retracting type there is always a small, unfeelable, "dry," irreparably diseased kidney with marked fibroid change in the glandular structure.

Should the kidney be removed or become quite useless from obsolescence, the ureter returns to a normal state of size and flexibility. In some cases this thickened ureter closes entirely, and the kidney is useless, but it does not cease to infect the body.

Its Economic Clinical Value.—I need hardly say that it is the thickened and obstructed ureter which causes the danger to the kidney and the pain to the patient. I would add, it is the ureter which shows which kidney is affected. It is the ureter alone which is the best guide to treatment and prognosis, both for the clinician and the surgeon. To support this latter I must ask your attention to one or two points in the ureteric meatoscopy of the tuberculous kidney.

Cystoscopy.

I pointed out in 1900[3] the various changes which took place in the visual aspect of the ureteric orifice as indicating tuberculosis of the kidney. I need not here refer to these, except to say that in women the changes are so characteristic that I have removed the kidney on cystoscopic grounds alone. In only 8 per cent. was the ureteric catheter really necessary. I have frequently removed the diseased kidney upon the appearance of the orifice alone, combined with a bacteriologist's report that tubercle was present, and that without opening the kidney to be assured there was tubercle within it. I am glad to say I have not yet been mistaken in my estimate.

The Pulled-out Ureteric Orifice.

The most characteristic appearance, and for the description of which I am especially responsible, is "the retracted or pulled out ureteric orifice." I described this in 1900.[3] It occurs in women in 27 per cent. of the cases, and has invariably indicated a small tough fibroid tuberculous kidney with an eroded pelvis and a very thick and narrowed ureter.[4] Such kidneys are quite irreparable and need clean nephrectomy. The condition denotes a capacity for firm and rapid healing (asepticity being assured), and such cases do well also remotely. I look upon them, rightly or wrongly, as evidence of what used to be called "fibroid phthisis." This condition raises this pregnant and difficult question, As hard carcinoma leads to similar fibroid change and similar rapid healing after operation, what is the connexion in the fibrino-plastic element of the blood in the two diseases?

The Irregular Ureteric Orifice.

In the larger number of cases the orifice of the diseased ureter is deformed—irregular; one cannot classify the changes, for they do not group themselves, but they are evidences of ureteritis, and, I submit, only one condition affects the surgeon. That is when small clear bubbles appear on the ureteric meatus and around it. These are evidences of acute recent ureteritis, and in these instances I wait, for those nephrectomies I have done in this acute stage have healed execrably. In nearly all early cases the red blush—due to scalding of the mucous membrane—is most marked in the neighbourhood of the orifice involved.

How should Ureteric Meatoscopy Guide the Surgeon?

If there are evidences of little bubbles at the meatus he had better, I think, wait a few weeks and effect subsidence of the acute stage by appropriate medicine and then nephrectomize. If the ureteric orifice is retracted, pulled out of position, there is, in my opinion, no second course—he must nephrectomize if he is to effect a cure. If the ureteric orifice is patent and there is no renal pain he may temporize, for there is a free outlet for the kidney. I do not myself temporize, for my nephrectomy usually follows on the cystoscopy at once. These are operative facts checked as far as can be done by the eye and the pathologist. Contrasting these with another series in female patients who refused operation, the cardinal signs and symptoms appear nearly in the same proportion. But there are a few in which I declined to operate because I could not obtain evidence of tubercle in the kidney. I may have bungled. There was obvious tuberculous ulceration of the bladder, but the ureters were sound and their orifices visually healthy. Till these few cases are cleared up I cannot assure myself that urinary tubercle always starts in the female in one kidney. This leads to an important and concluding point.

Abacillary Tubercle.

There remains a very small series of cases in which I could obtain no evidence of tubercle either from the bacteriologist, the cystoscope, the ureteric catheter, the radiograph, or the various other methods of investigation. Some of these I have accidentally flared up by means of tuberculin, the kidney inflaming and necessitating operation. On examination of such kidneys after removal, the tubercle was found in the renal pelvis, and microscopical sections revealed the bacillus. Nor is it only tuberculin which causes such an explosion. The influenza bacillus can; an attack of acute coli or a carbuncle can—even vaccine for small-pox. A girl was admitted into hospital with so-called left-sided pleurisy pain. Dr. Hadley, under whose care she came, negatived the diagnosis and sent the urine, which contained pus, to be examined. While this was being done, a scare of small-pox occurred, and every one was promptly vaccinated in the ward. At once the pain in the girl's side, which had been relieved, returned and became acute; the patient became dangerously ill, and I removed the left kidney at once. It proved to be tuberculous, but grafted on it was an acute haematogenous bacterial infection which resembled the *Bacillus coli communis*. The girl promptly recovered. This may afford a valuable hint of the searching diagnostic power of weak vaccines. Latterly a kind of Wassermann reaction has been introduced and reported as being of use (Heitz-Boyer), and some here may speak of its value in detecting such obscure cases. I, unfortunately, cannot as yet speak definitely about it. If, now, I examine a corresponding series of male cases, I find that pure urinary tuberculosis is but seldom met with. When the male patient has applied to me, he often has genital tubercle, and some have had genital tubercle years before urinary tubercle. I can with ease place before you 150 cases of prostatic and epididymal tubercle which were unaccompanied at first by urinary symptoms. This is common knowledge. If we put out of court all such genital cases exhibiting urinary tuberculosis, do we find the male different to the female? I think so. The disease is generally more severely marked in the male than in the female. The thickened ureter and ureteric visual changes, when they exist, are the same, but they are less easy and less often found, I think, than in the female. In other words, though the vesical trouble exists, the renal origin is more doubtful. Moreover, it is certain in hospital practice that the male is more prone to

septicity and to active suppuration of the disease in the kidney than the female, probably due to traumatism of active labour. The death-rate is higher in operative procedure (6 to 12 per cent.); the subsequent mortality is greater (18 per cent.).

When, however, the ureteric signs of renal tubercle exist, the sooner the kidney is removed the better.

This leads us to the important question of treatment. At present two schools oppose—those advocating tuberculin and hygienic measures in all cases, and those insisting on early operative procedure.

Perhaps I may seize this opportunity of stating my own relation to tuberculin. I first used it twenty years ago—I published my work in 1900. I have continued to employ it still, always in picked cases and in my own way. When I first advocated its medical employment (Medical Society of London, 1904) the profession had refused it. The disastrous results of Koch's early work had caused this revulsion, and it was tabooed until it was controlled by the opsonic index. I never talked of it as a "cure," only as the most useful remedy we possessed. This opinion I still hold: I cannot point to a single cure. Some patients, who can bear the treatment—for some cannot—increase in weight, feel greatly improved in general health, their micturition troubles subside to some extent, and for perhaps two years the men do well, and for five years the women are well; then mostly the disease gets the ascendancy and they go downhill. It acts best in women, and is often dangerous in widespread tubercle, such as genito-urinary tubercle. It can only, I judge, be used under five conditions: (1) When operative interference is refused and there are no extensive deposits of tubercle; (2) when the ureteric meatoscopy demonstrates the ureter to be recently and acutely inflamed, and therefore the patient temporarily an unfit subject for operation; (3) in those rare cases when the disease is apparently confined to the bladder, both ureteric orifices being healthy and the catheterized urine from each kidney being tubercle-free; (4) after nephrectomy in order to help to heal the bladder lesions; (5) when the clinician is dealing with latent renal tubercle and needs evidence of that affection in that organ. What, then, is left? If we do not believe in spontaneous cure arising during the expectant treatment—and I do not, though I admit I have seen cases heal as far as the bladder is concerned and remain well for years—what is left but operative treatment?

Operative Interference.

This must be considered under three heads—that directed against the kidney, the ureter, and the bladder—due consideration being given as to whether the disease in the bladder is early (within one year) or advanced.

(*a*) *The Surgery of the Kidney.*—I do not mention resection of tuberculous areas of the kidney or drainage of the pelvis; they are futile procedures, and merely lead to disaster. The kidney must be removed or left alone.

Nephrectomy.—Let us acutely mark what modern nephrectomy for tuberculosis means. It is essentially a dissection, not the savage "pulley-hawley" gallery practice of the nineteenth century. For a modern surgeon to burst a cyst and flood the wound with pus, or knick a pelvis or allow a cut ureter to leak, is to invite scathing criticism and court the disaster of a subsequent sluggish, gaping, tuberculous wound.

The careful aseptic dissection out of the entire kidney in its capsular fat undertaken in the female in an early stage within, say, two years, should result in about a 2 per cent. immediate mortality. My own is 4 per cent., but I lost an early case, to my lasting grief, from slipping of the pedicle. The end result in most of such cases will be found extremely good. They regain bladder power, marry, and bear healthy children. My longest record dates back to a case done in 1896. With men the mortality is greater, the wounds are slow to heal because they are often infected, the death-rate is 6 to 12 per cent., but this is not all. The operative interference undoubtedly stirs up mischief; most of the men who die within six months (12.9 per cent., Israel) die of chronic lung trouble or heart failure; men seem especially prone to subsequent heart failure; perhaps this is due to septic changes in the heart muscle.

Acute miliary tubercle supervenes twice as often in the first six months after operation as in any period of the subsequent life. This Israel considers is the direct result of the operation.

Half the ultimate death-rate, 10 to 15 per cent., happen at the end of the second year with lung or kidney trouble. It is stated that a half to three-fourths of those operated on are cured.

(*b*) *The Surgery of the Ureter.*—As regards the ureter, seeing that microscopic examination proves the bacillus to be absent and the condition merely inflammatory, it is needless to resect it to its lowest point at the bladder as is advised. Still, a ureteric sinus remained in 11.5 per cent., and it may remain open for four years (Israel). The little expedient of treating the interior of the ureter for several inches with pure carbolic, and then scooping out the mucous membrane and crushing the sausage skin left between pile crushers, will often ensure primary union.

(*c*) *The Surgery of the Bladder.*—In the early stages there is no doubt the less the bladder is meddled with, either with the cystoscope or the curette, the better. In women the lesions are not tuberculous at first—they are merely inflammatory. The lesions heal spontaneously: the scars can be seen years after. There is no doubt that tuberculin helps the process of repair. But when the bladder has become thoroughly implicated and the mucous membrane eroded and the muscle interstitially affected, the future health of the viscus is not doubtful. The organ is ruined.

Dr. Newman, of Glasgow, reports good results from curetting. I have nothing good to report. The good done in my cases was only temporary and the disturbance perpetuated the disease. In one case in which the bladder distress was unbearable I performed ureterostomy with great relief. As this case carried me through twenty years of all the advances in my knowledge of tubercle and all the newer methods of detecting and diagnosing it, I venture to give it in conclusion.

A girl, aged 18, came to me from Dr. Steele of Boxmoor, with cystitis in 1889. The cystoscope and microscope showed tuberculous cystitis and an ulcer near the right ureter. I did not note the orifice of the ureter—I had not learnt the value of the sign. I published the case.[2] Tuberculin was given and great relief of all symptoms was obtained.

Eighteen years later she returned to me with great pain in her *left* kidney. She had married and had children, but had never been well—always fretted with bladder irritation and pain. She was passing tubercle in the urine.

The *x* ray showed the right kidney to be a shell of putty—an obsolesced kidney, and yet this side was painless. The cystoscope demonstrated a closed right ureter, near which was the scar of the healed lesion I had detected in 1889. The left ureter was healthy, but around it were ulcerations—ureter catheterization of the left kidney showed tubercle.

I removed the right kidney shell[6] hoping to relieve the disease in the left. Unfortunately the patient continued to complain greatly about her bladder, and I scraped the areas involved in its left side. This made her worse until she micturated every few minutes. I had, I acknowledge, opened up fresh areas for the disease to attack. I now proposed to remove her bladder, and she accepted the suggestion gladly. After performing left ureterostomy her bladder gave her no trouble, and she had greatest comfort in that respect, so I left it. She was fitted with a loin urinal, and I learn died a year later—without doubt from disease of her left kidney.

References.

[1] Legueu, Traitement de la tuberculose urinaire, VII. International Congress of Tuberculosis, Rome, 1912. [2] *Ulceration of* [illegible] 1900, p. 75. [3] Ibid. *Handbook of Clinical Cystoscopy*, p. [illegible]. [4] British Medical Journal, January 27th, 1906. [5] *Handbook of Clinical Electric Light Cystoscopy*, p. 177. [6] British Medical Journal, July 3rd, 1909.

DISCUSSION.

Mr. Andrew Fullerton (Belfast) said: In this discussion I should like to say a few words on tubercle of the bladder. In the British Medical Journal of July 9th, 1910, I referred to a series of cases of tuberculous bladder and kidney, showing among other things that the disease is very frequent in Ireland. Out of a series of 400 cystoscopies, 24, or 6 per cent., were cases of tuberculous bladder and kidney. In a more recent series of 300 cystoscopies, tubercle of the bladder was diagnosed in 32, or over 10 per cent. In the combined series of 56 cases, the males and females were equally divided. The age at which the disease was most frequent was between 20 and 30, 21 out of the 56 being between these limits. Five cases occurred under 20, 16 between 30 and 40, 8 between 40 and 50, and 3 over 50. The youngest was 9, and the oldest 55. Tubercle bacilli were found in 11 out of 24

cases in the first series, and in no less than 26 out of 32, or 81 per cent., in the second series. In the latter more care and time were spent in the search.

In regard to the symptoms my cases have been very variable. In some the disease was quite unsuspected, as in the following case:

A young man, aged 29, who had had an attack of gonorrhœa two years before, was sent to me with what was thought to be posterior urethritis. He had to pass water every three hours during the day, but had not to rise at night. There was, according to his account, some scalding before making water, but no pain after. The duration of the symptoms was one year. His general health was good. The testis and epididymis on both sides were normal, and there were no renal signs or symptoms. Cystoscopic examination showed small, bright-red, slightly raised patches, resembling scattered spots of measles, varying from the size of a pin's head to that of a threepenny piece. These were scattered over the bladder walls, beginning just behind the trigone. The largest was on the anterior wall. The ureteral orifices were quite normal. Per rectum, there was nodular thickening in the left lobe of the prostate. The urine contained a few flecks consisting of epithelial cells from the bladder and an odd pus cell. Tubercle bacilli were found in the urine after a long search. This appears to have been a case of primary tuberculosis of the bladder. In a second case, a lady aged 43, there was no frequency and no pain referable to the lower urinary organs. She complained of some discomfort below the left ribs. Cystoscopic examination showed a slight degree of cystitis, and from the left ureteric orifice long ropes of pus were pushed out and deposited on the bladder wall. In this patient I removed a large tuberculous kidney on the left side.

In the majority of cases the symptoms were mainly those of an aggravated form of cystitis, frequency of micturition, pain, and the presence of pus and blood in the urine. The later symptoms were so severe as at once to suggest the probability of tubercle as the cause. In a fair proportion of cases renal pain, sometimes developing into renal colic, was present. In some the renal preceded the bladder symptoms, but in most the renal pain was a comparatively late occurrence. In a few cases the patient complained of pain in the opposite kidney. In some there was suprapubic and in some perineal pain. In about a third the affected kidney could be felt enlarged with or without tenderness. Thickening of the ureter, as felt per vaginam or per rectum, was present in a fair proportion. As I pointed out in my earlier paper, too much reliance must not be placed on enlargement of the kidney or thickening of the ureter. I have seen it when the enlarged kidney was the only kidney present, its fellow having atrophied after having been destroyed by tubercle.

One case, a boy, aged 14½ years, complained of pain at the lower part of the abdomen and of the passage of blood intimately mixed with the urine. The bleeding had ceased before I saw him. At no time had he frequency, urethral, penile or perineal pain. Tubercle bacilli were found in the urine and some few clumps of pus cells. Ureteral catheterization showed a lowered specific gravity on the left side 1010 as against 1015 on the right, but no pus cells were found in either specimen. I thought I could detect some thickening of the lower end of the left ureter per rectum. Here I presume that the left kidney is the seat of tubercle, which has not yet ruptured into the pelvis. In the light of the fact that neither albumen nor pus could be detected in the urine from either side, the subsequent history of this boy will be interesting.

Is tubercle of the bladder ever primary? In only 2 cases have I any evidence that the disease was not secondary, either to tubercle of the kidney or tubercle of the epididymis or testicle. One of these has already been referred to.

In the second case, a woman, aged 31, I found on cystoscopic examination evidence of tubercle of the bladder, and tubercle bacilli were found in the urine. The ureters were catheterized, and on both sides indigo carmine came through in about fifteen minutes. Pus was absent on both sides, and the specific gravity was 1025 in both specimens. In both, a trace of albumen and an odd hyaline cast were found. Neither ureter could be felt thickened per vaginam.

This appears to be a case of primary tubercle of the bladder. In 50 cases out of 56, so far as I can judge, the condition was secondary to tuberculosis of the kidney. In the two just referred to the condition may have been primary. In the remainder, the bladder was involved secondary to the deposit of tubercle in the epididymis and prostate. I must state, however, that in several cases of tubercle of the bladder which appeared to me to be secondary to disease of the epididymis and testicle I refrained from the use of the cystoscope, so that these are not included in my list. Even in the absence of signs of deposit in the epididymis or testicle, nodules were sometimes detected in the prostate gland. In these, the prostatic deposit would appear to be secondary to disease of the bladder and kidney.

Is the disease unilateral? Clinically, at any rate, the disease appears to be in the large majority of cases unilateral. The evidence afforded by the ureteral catheter in my cases has proved that pus on both sides is the exception. If urine of a good specific gravity, free from pus and albumen, is obtained from one ureter, I infer that that kidney is sound. I admit that this is not incontestable evidence, but I have acted upon it with success in my own practice. A trace of albumen in the specimen from the presumably healthy side has been present in a few of my nephrectomy cases which have completely recovered. Is this small amount of albumen (a mere trace) evidence of the presence of tubercle in the kidney? Without more *post-mortem* evidence I am unable to say.

My present position with regard to the use of the cystoscope in tubercle of the bladder is somewhat as follows: If the condition appears to be due to extension from the epididymis or testicle, castration with high division of the vas is carried out, and tuberculin is administered. If no improvement results, cystoscopy is used chiefly to ascertain the condition of the kidneys. I am a strong believer in the use of the cystoscope in cases of bladder tubercle, not so much for diagnosis of the bladder condition, but in order to ascertain which kidney is at fault, and if the second kidney is sufficiently sound to allow of extirpation of the diseased one. If, as in my own cases, tubercle of the bladder is in the overwhelming majority secondary to disease in the kidney, and if excision of the latter is the treatment most likely to cure the patient, it is necessary that there should be no doubt whatever as to which side to attack. The only certain method appears to me to be the ureteral catheter—an instrument I have used with great advantage in over 300 cases of all sorts of kidney trouble. In a bladder, ulcerated, bleeding, and secreting pus, the segregator is surely unreliable, and I should hesitate to depend on it to settle the fate of a doubtful kidney. Enlargement of the kidney and thickening of the ureter, if present, are valuable signs, but, as I have mentioned, the sound kidney may be the enlarged one, and a serious mistake may be made. In some, both kidneys may be enlarged, one being hypertrophied and the other extensively diseased. Pain may be entirely absent, or may be present on the sound side and absent on the affected side. This test, therefore, may fail. Cutting down on both kidneys is surely the last resort. Even by this method, unless both kidneys are laid open, a tuberculous focus may fail to be detected, as in a case referred to in my first paper. The use of the cystoscope without ureteral catherization is not, in my opinion, sufficient. The ureter on the sound side may appear healthy and yet its discharge, though free from pus or blood, may contain albumen and casts beyond what is safe. Again, I have seen cloudy urine issue from a ureter due to nothing more serious than the presence of a large amount of phosphates in suspension. A small amount of pus or blood in urine may be quite invisible by the cystoscope. Chromocystoscopy has failed me just when most required. Radiography cannot be relied upon to diagnose tubercle, at any rate in the early stage, before caseation and calcification have taken place. Under these circumstances I am driven to the use of the ureteral catheter. I admit the risk of instrumentation, especially if the disease is at all advanced, but if reliable information can be obtained which will benefit the patient, any slight risk that is incurred is justifiable. In all but one of my nephrectomies I have used the ureteral catheter. In all my unilateral cases the urine had a low specific gravity on the affected side, and in all undoubted cases of renal infection pus was present in the urine obtained from the affected organ. I except the case mentioned earlier in which the only signs were that the ureter was thickened and the specific gravity a little reduced on the suspected side.

In regard to treatment, I should like to speak of one complication after nephrectomy that has given me a good deal of trouble, and that is the persistence of a sinus in the track of the drainage tube. Why it occurs in one and not in another with exactly the same treatment is somewhat of a puzzle to me. I have divided the ureter with the cautery and have used easily absorbable catgut for all

ligatures. I have dissected away as much of the perirenal fat and fascia as I could with safety remove. I have removed the tube after twenty-four hours. Nevertheless, I still have a proportion of cases in which a sinus persists, perhaps for months.

Finally, in respect of mortality after nephrectomy, in my last series of 32 cases the affected kidney was removed in 8 with no deaths. One had a transient attack of albuminuria with oedema of the feet a year after operation, but has recovered. The second kidney was apparently quite sound in this patient at the time of operation. In my earlier series of 24 cases the affected kidney was removed in 14 cases with 3 deaths, making a total of 22 cases with 3 deaths, a mortality of 13 per cent. Of these nephrectomies I am responsible for 17 with 2 deaths, a mortality of 11.7 per cent.

Mr. E. Deanesly (Wolverhampton) said: The majority of cases when they first come under observation have symptoms referable to the bladder—namely, frequency of micturition with or without pain, and blood or pus in the urine, although these may be only found by the microscope in a centrifugalized specimen. Nearly all such cases are in the first instance treated as cases of cystitis, unless renal enlargement or renal pain is also present. Although a distinguished physician recently published an article on tuberculous kidney without mentioning the use of the cystoscope, I need hardly say that the latter is absolutely indispensable in all but the most obvious cases, such as those where a unilateral enlargement of the kidney is associated with unmistakable tubercle bacilli in the urine. The appearance of the ureteral orifice and adjacent part of the trigone in an advanced case of tuberculous kidney is usually characteristic and unmistakable. Moreover, in my experince, a tuberculous kidney which is in a sufficiently advanced stage to give rise to definite symptoms is almost invariably associated with definite and recognizable changes in the ureteral orifice. If to these are added the finding of pus by the ureteral catheter, the diagnosis is sufficiently established for all practical purposes. Like other cystoscopists, I have, however, met with difficulties and fallacies in certain cases. In the first case there may be definite changes in the mouth of the ureter of which it may be difficult to say whether they are due to tuberculous infiltration or to other causes. I have seen and sketched a ureteral meatus surrounded by most clear and definite ulceration of the mucous membrane. The only symptom was intensely frequent and somewhat painful micturition, with some discomfort in the loin on the side of the ureter affected. I found, instead of a tuberculous kidney as I confidently expected, a kidney packed with large and small calculi. The ureter itself was not enlarged, and was free from calculi throughout its course. Small calculi some little way within the orifice of the ureter may also produce changes in the appearance of the meatus which may be mistaken for tuberculous disease. On two occasions I have found typical ulcers surrounding a single ureteral orifice, and on exposing the kidney could find no trace of disease either in the kidney or in the ureter. It is possible that these were both cases of primary tuberculous ulcers of the bladder, but there was no focus in the testes or prostate, and I think it is more probable that both were really very early cases of tuberculous pyelitis. It cannot, therefore, be said that tuberculous kidney can be diagnosed with absolute certainty in all cases from the appearances seen within the bladder. If, however, the examination is carried a stage further by catheterizing one or both ureters, it is seldom that any practical difficulty remains. If the urine from the kidney supposed to be affected contains no pus, tubercle, except in the very earliest stage, can practically be excluded. If, on the other hand, it contains pus, that is, in my opinion, a sufficient indication for operation, provided that the pus is distinctly unilateral. As regards treatment, I think the majority of surgeons are now agreed that the best treatment for tuberculous kidney is to excise it, always provided that the opposite kidney is sound or sufficiently sound to maintain health by itself. This point is of such vital importance that for several years I have not been content with indirect evidence or even with such direct evidence as is afforded by catheterizing the kidney supposed to be sound. I do not undervalue the latter evidence, and in suitable cases where the bladder is not greatly implicated catheterizing the opposite ureter is usually easy, and in my experience attended with little risk. I prefer, however, in practically every case in which I propose to remove a tuberculous kidney to expose and examine the fellow organ through a lumbar incision. This is a very different and far more efficacious proceeding than a mere palpation of the kidney by passing the hand across the abdomen from the wound by which the affected kidney is to be excised. If the patient is placed in the prone position, in which I now perform all kidney operations, it is easy to expose first one kidney and then the other in a very short time, and with no disturbance of the operative field. I have carried this out in a large number of cases without any mortality and with the great additional sense of security from knowing the condition of the other kidney as positively as sight and touch can make it. I am aware, of course, that this does not positively exclude anything but gross anatomical disease, nor does it positively prove that the kidney so examined is perfectly functional; but it at least goes a long way in that direction, and the method is particularly valuable in those fairly numerous cases where involvement of the bladder makes catheterization of the ureters difficult. Moreover, many of these cases are very injuriously affected even by the manipulation and irrigations necessary for cystoscopy, and I have known deaths directly due to this procedure without any other operation. Mr. Fenwick has expressed his opinion that tuberculin, though sometimes highly beneficial in many cases of tuberculous kidney, never cures it. I think it is probable he is right; but I have certainly seen the most remarkable improvement from tuberculin, and it certainly often helps wonderfully in clearing up tubercle of the bladder after removal of the kidney. I had hoped to be able to report the present condition of a case of early tubercle of the kidney verified by microscopic section of a piece removed by operation. I treated her by tuberculin without removal of the kidney, and she was alive and well two years later, but I have been unable to trace her at the present time.

Professor Sinclair White (Sheffield) spoke of the difficulties in diagnosis. Tuberculous infection of one kidney alone was a condition seldom found. When tuberculosis of the kidney was diagnosed it was certain that tuberculosis was already present in other regions also. It seemed to him better to treat this form of tuberculosis on the expectant general lines as pulmonary tuberculosis was treated, by open air, good food, proper hygienic surroundings. He was not an advocate of operation unless the conditions were very obvious. If the kidney had been the seat of long-standing tuberculous disease it was a dangerous business to operate; he had seen the vena cava and the duodenum opened into.

Mr. Hey Groves (Bristol) asked if Mr. Deanesly could say in how many cases direct exposure of the opposite kidney had actually discovered disease which had not been demonstrated by other methods.

Mr. Temple Mursell (Johannesburg) said that in South Africa the open-air conditions were to all intents and purposes perfect, yet he had not seen recovery in a single case of renal tuberculosis by the expectant general treatment adopted for pulmonary tuberculosis. The cases improved greatly and the urinary symptoms subsided markedly, but actual complete recovery did not occur.

Dr. Darling (Lurgan) narrated the story of a case in which it appeared to him that complete cure followed the adoption of general and expectant treatment.

Mr. C. P. Childe (Portsmouth), in speaking of the technique of nephrectomy for tuberculous kidney, thought that it was better not to drain, because of the risk of persistent sinus. In his experience immediate closure of the wound resulted in healing by primary union.

Mr. Hurry Fenwick, in reply, said, in answer to Professor Sinclair White, that he began the discussion with the two questions, "Do we find tubercle in the kidney as the beginning of the trouble?" and "If so, is surgery the only means of combating it?" He had tried the expectant method of treatment. Some of these

patients lived as long as thirty years after the onset of the disease. But did the expectant treatment help? These people lived in spite of the doctor, who had no right to take credit to himself. Tuberculin should not be used in all cases, and was not administered if the ureter were blocked. He did not attach any value to the employment of the opsonic index. In regard to the plan adopted by Mr. Deanesly, who recommended examination by inspection and palpation of the other kidney through a lumbar incision, he had to point out that many of the tuberculous kidneys illustrated by him would have appeared and felt to be quite healthy, as the lesions were central, and there was a distinct layer of apparently sound cortex. Mr. Deanesly's method, therefore, was not efficient. The surgeon should be able to tell whether the other kidney was infected or not by other methods—cystoscopy, examination for thickened ureter per rectum or per vaginam. He agreed with the suggestions that it was best not to drain the wound after nephrectomy. It appeared as if the least infection resulted in the formation of a sinus, so that the kidney should be removed without opening into it, and the ureter—if thickened the distal end was scooped out for 2 or 3 in. and sterilized—ligatured and dropped back into the wound. In all cases operated on he regarded the thickening of the ureter as the diagnostic feature of first importance. He might operate even without cystoscopic examination. If cystoscopy were done, he would do it at the same sitting as the operation.

A TRANSARTICULAR METHOD OF OPERATION FOR CERTAIN DIFFICULT FRACTURES NEAR THE KNEE AND ELBOW.

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Up to a few years ago the joint cavities of the body were considered almost beyond the range of surgery on account of the risks of sepsis involved in opening them. Even at the present day no surgeon can open one of the larger joints without a feeling of grave responsibility, but it is nowadays very rare for any evil consequence to follow, provided only that all possible aseptic precautions are taken, and that the operation is carried out with reasonable celerity, without unnecessary handling of the structures of the joint. Accordingly, it seems to me that the time has come to reconsider surgical operations for certain fractures in which difficulties of access prevent accurate reposition of the fragments.

The fractures to which I refer are those of the lower end of the humerus and of the lower end of the femur, and more especially fractures in these situations involving the neighbouring joints. The type of such a fracture is the T-shaped fracture described in the textbooks. After such an accident, even when the injury is treated by an open operation, the shape of the articular surface of the broken bone is frequently so altered and deformed that the movements of the joint are greatly impaired. In the case of the elbow particularly you are all familiar with cases in which, despite early passive movements of the joint, a bond of fibrous tissue forms between the intra-articular portion of the line of fracture through the humerus and the contiguous surface of the ulna. Attempts to break down this adhesion may fail or may succeed only in refracturing the humerus, and the joint has to be excised. I believe that the present state of surgery justifies a bolder means of obtaining free access to the fracture and to the injured articular surface, so that its fragments can be accurately and precisely adjusted with the aid of vision. The only means available for securing such inspection is the free opening up of the joint into which the fractured bone enters. Such a method of exposing the fracture may be distinguished as *transarticular*, and in this paper I propose to consider the steps of the necessary operation in the case—first of the femur, and secondly of the humerus.

The following case illustrates the difficulties which in a fracture of the lower end of the femur may demand the employment of the transarticular method as the only means by which they can be overcome and the function of the joint restored.

The patient, a boy aged 9, was entangled in the wheel of a moving cab, and was admitted into the Middlesex Hospital with a transverse fracture of the right femur in its middle third and a separation of the lower epiphysis of the left femur. The end of the left diaphysis was prominent under the skin in the popliteal space. The fractured right femur was treated by extension and a long Liston splint, and good union resulted.

The left limb was at first treated by flexion of the knee, maintained by a figure-of-eight bandage around the thigh and leg. A skiagram showed that the position of the epiphysis remained deplorable. Under an anaesthetic an incision was made along the outer side of the thigh just above the knee, and an attempt was made, apparently with partial success, to lever the epiphysis into position. The limb was again put up in flexion with plaster-of-Paris. A skiagram taken eight days later showed, however, no improvement in the position of the fragments, and a senior colleague suggested excision of the joint as the best course to pursue. Ten days after the first operation, on October 26th, 1907, a U-shaped incision was made across the front of the lower end of the femur, its convexity crossing and dividing the ligamentum patellae just above the tubercle of the tibia, while the vertical limbs of the U extended up over the vasti muscles. The incision was deepened to the bone, cutting through the capsule of the knee-joint and the muscular fibres of the great extensors, and a U-shaped flap, including the patella, was turned up so as to expose the whole of the knee-joint from the front.

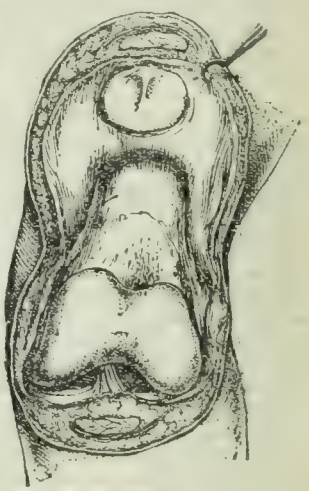


Fig. 1.

The line of fracture was found to follow the epiphysial plane on the outer side, but towards the inner side it ran obliquely through the lower end of the diaphysis. There was much difficulty in getting the epiphysis into position, and great force had to be used to effect this object. The posterior aspect of the lower end of the diaphysis was found stripped of periosteum for a considerable distance upwards. The epiphysis after replacement was fixed in position by a screw introduced above the external condyle, and passing obliquely downwards and inwards from the diaphysis into the epiphysis. The ligamentous structures which had been divided were then carefully sutured, and the limb was placed on a back splint in a position of slight flexion.

Convalescence was uninterrupted. The boy was discharged, with the limb in plaster, seven weeks after the operation, and, when seen three months afterwards, walked as well as before the accident. There was no apparent weakness of the left knee, and its movements, except for a slight limitation of flexion, were perfect.[1]

When the patient was last seen, in the following October, slight genu valgum had developed on the left side, and the limb was half an inch longer than the right one. The screw had remained in position. Evidently the inner side of the epiphysis was growing more rapidly than the outer side, a result to be ascribed rather to the accident than to the operation.

The recital of this case, and the illustration which I show, absolve me from the need of wearying you with any further description of the operative details. It is, however, to be noted particularly that the lateral ligaments of the knee joint are not in any way interfered with.

Turning now to the operative treatment of fracture of the lower end of the humerus, the methods which have been used are: (1) Longitudinal lateral incisions over each condyle, a method which gives imperfect access, but one which may suffice in the simpler cases. (2) A vertical median incision over the olecranon process, as in excision of the elbow. The triceps tendon is split vertically, and by means of the periosteal elevator is separated from the ulna, so as to reach the fracture. It is evident that this is an unsatisfactory means of reaching the fracture, for the operator is working through a sort of buttonhole in the rigid triceps tendon, and is embarrassed by the olecranon process, which hides the humerus.

In my opinion, the method by longitudinal lateral incisions should be always employed where an operation is necessary, for it can be converted in case of need into the

[1] This case appeared in the *Transactions of the Royal Society of Medicine*, Clinical Section, October 9th, 1908.

complete transarticular incision illustrated in Fig. 2. If difficulties arise, the operator should not hesitate to proceed to the complete transarticular operation. It might be objected to the method that it involves serious interference with the ligaments of an important joint.

Upon consideration, however, it will be seen that this is not the case to any appreciable extent. The strong ligaments upon which the functional integrity of the elbow depend are the anterior and the two lateral ones. These remain untouched, and the only one divided is the posterior, which is very thin and unimportant. The division of the triceps takes place in the direction of its fibres, and cannot interfere with its subsequent function. The only important structure divided is the olecranon process of the ulna, and the results of operation for fracture in this situation show that this solution of continuity is very unlikely to impair the action of the elbow-joint, especially when made by a clean raw cut and immediately wired. It is to be noted that the large nerves are not to be exposed in the floor of the incision, for such exposure may lead to irritation and subsequent cicatricial pressure upon them. In order to avoid exposing the ulnar nerve, the inner limb of the U-shaped incision must be kept well to the outer side of the line of the nerve.



Fig. 2.

The following case, for the notes of which I am indebted to my able house-surgeon, Mr. L. H. McBride, illustrates the employment of the transarticular method in a difficult fracture of the humerus.

G. H., a boy aged 12, on June 10th slipped on a piece of orange peel, injuring the right elbow. On examination a fracture of the lower end of the humerus was found, the lower end of the upper fragment protruding markedly forward. There was very little swelling, but much discoloration of the skin over the front of the elbow. Next morning, *x*-ray examination showed the lower epiphysis to be completely detached and displaced considerably backwards. Three unsuccessful attempts were made under anaesthesia to reduce the displacement and to get apposition of the fragments. The patient saw Mr. Handley on June 17th, and reduction by operation was advised. On June 21st, at the Bolingbroke Hospital, open ether was administered by Dr. C. J. Martin, and a horseshoe-shaped incision was made, commencing about 2 in. above each condyle, and crossing the back of the forearm just below the base of the olecranon process. The skin flap was dissected up for an inch, and the olecranon process and posterior capsule of the elbow-joint were cleared and defined, special care being taken to avoid injuring either the ulnar nerve and ulnar recurrent artery on the inner side or the musculo-spiral nerve on the outer side high up. The olecranon process was then divided with an Adams saw at its base. The vertical limbs of the incision were deepened to the bone through the muscular substance of the triceps. The detached olecranon, with the triceps attached to it, was turned up, and the posterior fibres of the capsule were carefully divided. This gave an excellent view of the posterior aspect of the humerus at its lower end, and the seat of fracture was rendered easily accessible. After some difficulty the fragments were levered and manipulated into position, and as there was no tendency for displacement to recur after reduction, no mechanical appliance in the way of wire or plates was thought necessary. The detached olecranon was replaced and kept in position with a stout silk ligature instead of wire. The capsule was stitched with fine catgut, and the skin margins united with interrupted Pagenstecher sutures. The incision was dressed with xeroform and sterile gauze, and the arm put up at the side in semiflexed position without splint. The wound healed by first intention, and the stitches were removed on the tenth day, and gentle passive movement commenced. On July 14th the silk suture in the olecranon ulcerated through the skin, and was removed. There was no suppuration, and the union of the olecranon was firm. The patient can now extend the arm to about an angle of 120°, and the movement continues to improve. It is, of course, still too early to speak of the final result of this case, but it appears certain that the necessity of excising the elbow has been averted.

In cases where a fracture of the lower end of the humerus involving the joint has been followed by firm and unyielding fibrous ankylosis of the elbow, my transarticular method of operation will, I am convinced, frequently succeed in restoring the integrity of the joint, a result not attainable by any other method with which I am acquainted.

In conclusion, I would emphasize the fact that I do not regard the transarticular operations here described as suited to the simpler cases of fracture of the lower end of the humerus and femur, nor is my experience of them sufficiently extensive to warrant the expression of a general estimate of their value. The transarticular method should be held in reserve for the more difficult cases. But in order that it may, if necessary, be employed, the incisions of access, in all cases of operation for fractures of the lower end of these bones, should correspond with one or both of the vertical limbs of the U-shaped transarticular incision.

DISCUSSION.

Mr. H. A. Ballance (Norwich) could not agree with some of Mr. Handley's conclusions. He did not believe that separation of the lower epiphysis of the humerus pure and simple did occur, but he did believe in the comparative frequency of fracture at the lower humeral end. In that fracture he was a strong advocate of operative treatment; the ordinary treatment by extension or by acute flexion was not satisfactory. He had operated by both the lateral incision and the median posterior incision over the joint. He passed a screw through the lower fragment up into the upper, the head of the screw being left in the outer condyle. By the median incision he thought a perfectly adequate view of the fractured surfaces could be obtained. In forty-eight hours after fracture it was possible to replace the fragments without mechanical appliances, as there was sufficient irregularity of the surfaces to keep them in position. In cases operated on later he required to insert one or more screws. He thought that in fractures in this situation the non-operative method should be given up; the amount of swelling made it absolutely impossible to make certain of anatomical reposition.

Professor Rushton Parker (Liverpool) thought that it was not sufficiently well known to what extent the method of treatment by acute flexion was beneficial in fractures in the region of the elbow-joint. In his own practice acute flexion was accomplished by slinging the arm by the wrist to the neck, keeping it in that position without looking at it and without moving it at all. If early passive movements were indulged in the result was a stiff elbow.

Mr. Sampson Handley, in reply, thought that stiff elbow would be a common result of Professor Rushton Parker's treatment. He did not wish it to be understood that his operation was to be regarded as a routine method: it was a method to be held in reserve for those very obstinate cases of which he had had experience.

EXCISION OF A PILE AREA BY A SIMPLE AND BLOODLESS METHOD:

THE END RESULTS OF FIFTY OPERATIONS.

By Alexander Don, C.M., M.A., F.R.C.S.Edin.,
Dundee.

In 1908 I published a simple method of removing the whole varicose area, and I have been able to collect the end results of fifty of these cases.

I do the operation, as I shall describe it, practically in every case, removing the whole lower 1½ in. of the mucosa with the varicose, or communicating, venous radicles underneath it. This practically assures the removal of all the dilated veins, and of those that might later become dilated, if the cause continued to operate.

Previous to my adopting this method, it was no uncommon experience to have a patient return, complaining that his piles had come back, and while it is easy to explain such an occurrence, it is not very satisfactory to either patient or surgeon. And many other patients do not give us an opportunity of explaining, but go to a different surgeon in the hope that he may do the operation better.

Whitehead's operation is the only one I know of that aimed at removing the whole pile area, but it is not easy

to perform properly, and, even if the haemorrhage is not alarming, asepsis is seldom attained, and bad after-results—such as incontinence, stricture, etc.—have made surgeons hesitate to perform it. But we do a circular suture of other parts of the gut, without producing stricture, and over-dilatation of the sphincter will produce incontinence for a considerable time and may require surgical treatment for its cure.

Every other operation, so far as I know them, removes the affected veins alone, or these *plus* an indefinite area of mucosa gripped in the clamp or other instrument used. Many arguments are used to uphold these operations, but they mainly resolve themselves into fear of stricture, if the whole mucosa is removed from the bowel in the form of a ring. If any operation can be devised that will spare the mucosa or parts of it, and still remove all the venules in the pile region, then it could, I admit, be performed with less risk of stricture, if asepsis were not attained; but we all operate aseptically nowadays, and it is difficult to soil the wound by the method I use.

The results of pile operations are perhaps less difficult to trace than are the results of other operations, partly because the effects of piles are more objective, persistent, and constant, and because the patient in hospital work always comes back to the original operator both by the rule of the institution, and by the desire of one's colleagues. Many of my cases came back to report, and others I have managed to trace to make up a series of 50 cases

1. I have never had to operate for piles a second time after doing this operation. I have only once had a complaint of insensibility, and a persistent mucous discharge. In that case—a private one—the patient was allowed to come out of chloroform too soon, and, contracting the sphincter tightly, tore out some sutures and prevented the accurate closure of the wound. It turned out later also, that he had a polypus 6 in. up the bowel, which accounted for the mucus and perhaps for the piles, and certainly for a good deal of pain and straining

2. There never has been any stricture, and personally I cannot see how there even can be, if the mucous membrane only has been removed, and if the wound has healed even with a little sepsis. Where deeper structures are mangled, or where the sphincter has been badly torn, some stricture is certain to follow.

3. I do not wish to open up the question of dilatation or not of the sphincter in pile operations further than to say that at first I dilated till I felt the sphincter give way, and I often had much subcutaneous haemorrhage, showing as a dark area for 4 to 6 in. round the anal opening with a good deal of pain and sometimes a period of a week or two of loss of complete control, but recently I have dilated only sufficiently to get a good view of the piles, and to get them easily down, and since then I have had no mishap of any kind.

4. In two cases only was there any haemorrhage. One where I removed a large ulcer which was suspected to be malignant, though I found it not to be so, and where there was much oedema. I tried to ligature a vessel and the ligature slipped off, but the vessel seemed to have stopped bleeding. I had to tie that vessel some hours later. The other case was in a woman five months pregnant, who was sent in to me for operation. I removed the piles, and she left the hospital on her own accord on the fourth day. She came back about a month later saying the wound had never healed and that she had lost a lot of blood. There was nothing to be seen wrong with pile region, and I discovered that she had been drunk almost continuously since she left the hospital and had always had diarrhoea. I do not attribute the haemorrhage to the operation.

The operation is done as follows:

If there is time the bowels are cleared by an aperient, and on the morning of operation by an enema. The operation may be done by local, spinal, or general anaesthesia, but, for obvious reasons, in this country I prefer the general.

The patient is put in the gynaecological position, the anus being brought level with the surgeon's chest. The area for 6 in. round the anus is shaved and sterilized with iodine, or, as I prefer, is cleaned with depilatory.

The sphincter is dilated moderately—always short of tearing. The cork, of conical shape and suitable size, with the screw handle is pushed inside the bowel. The pink mucosa above the pile area is easily distinguished from the deep blue congested piles or venules of the pile area, and this mucosa is caught at its lower border by Kocher's or other catch-forceps. About six pairs are needed.

The cork is now pulled down by means of the screw, and it comes against the points of the forceps. The forceps and the screw are taken in the left hand and six hare-lip pins are stuck into the cork, entering at the white line and passing through the front of the sphincter. A piece of rubber tubing or catapult elastic is now wound twice round between the pins and the body. It fits into the groove in the cork and is fixed by a pair of catch-forceps.

All the other forceps and the screw are now removed and the whole area wiped dry and again swabbed well all over with iodine spirit. There is no danger during the remainder of the operation of fresh infection, at least from the bowel. Beginning ¼ in. inside the white line, the mucosa, with the vessels, is dissected off, leaving in the depth of the wound the circular fibres of the sphincter, and on the inner aspect ¼ in. of healthy mucosa.

At this point the elastic ligature may be taken off and any bleeding vessel ligatured, but I oftener than not put in the suture before removing the tourniquet. The suture is a continuous buttonhole one of chromicized catgut, and picks up first skin, then sphincter at the centre, and then mucosa or vice versa.

If the tourniquet has not been previously removed, any bleeding area may be now secured by a mattress-suture. This suture also helps to steady the circular one, and two or three may be put in. The wound is again wiped with spirit solution, the screw inserted into the cork, the pins removed, and lastly the cork. I always push a ½ in. roll of gauze into the canal. It arrests bleeding and steadies the wound, and may be taken out by the nurse before the patient is quite conscious, for I give a hypodermic of morphine immediately on the patient's return to bed. The bowels are moved on the sixth day, and the patient leaves the hospital on the tenth. There is no difficulty in doing the operation, except in those cases where there has been a good deal of inflammation and cicatrixation, and where the varicose area is fixed to the sphincter; but here piles are not the only trouble to be dealt with.

THE SHAPE OF THE KIDNEY IN CERTAIN URETERAL OBSTRUCTIONS.

By R. A. BICKERSTETH, M.A., M.D.Camb., F.R.C.S.Eng.,
Surgeon, Liverpool Royal Infirmary.

SOME ten or twelve years ago, when I first became specially interested in the pathology of blocked or partially obstructed ureter, nothing impressed me so much as the poverty of our museums in specimens illustrative of this condition and the difficulty of obtaining useful information from such few specimens of the kind as could be found in our collections.

The reason for this is easy to understand. Large hydro- or pyonephrotic tumours which come to operation are almost invariably, and necessarily, very much damaged and torn in our efforts to remove them: further, to reduce their bulk during the course of our operation, we either purposely incise them or we make free use of the aspirator to withdraw their contents.

As a result, the specimen obtained at the close of an operation is generally a small ragged mass of collapsed cyst wall, and in this state it bears little or no resemblance to the sometimes enormous tumours which such kidneys form while still in the body. If thought to be worth preserving at all, these specimens are in the ordinary course sent over to the pathological department, and reaching it towards the close of the day, are there placed by an assistant in a jar of some preserving fluid, to be examined later on, and at his leisure, by the curator. The most painstaking and conscientious curator in the world can make little or nothing of a specimen which reaches him—hardened—in this condition.

If anything at all is to be learnt from these operation specimens, it is essential that they should be examined while still absolutely fresh, if possible they should be fully examined either by the surgeon himself, or by someone else fully conversant with the clinical history of the case and present at the operation.

For many years I have been in the habit of carefully examining all such specimens myself, whenever possible, during the evening of the day of the operation. My earlier attempts at preserving specimens were by a process somewhat akin to "bird-stuffing," packing the cavities with successive pieces of sponge, and sewing up the rents over these as best I could. But though I have saved many valuable specimens by this method, it is, of course, obviously open to the objection that the final shape of the preparation depends too much upon the imagination of the "stuffer." I soon realized that the only reliable method of reproducing the exact shape of these large hydro- or pyonephrotic tumours was to make them watertight in some way, and then to gently distend them with fluid.

The suturing of large rents and punctures in these soft thin-walled specimens, so as to make them watertight, at first proved to be a very difficult matter, but with patience, and by using the very finest silk and needles, I learnt before long that I could generally save specimens which at first sight appeared to be beyond hope. And it was worth the trouble.

Having once made the specimen watertight, the next step is to gradually distend it with water, noting (and drawing) the various shapes assumed by it in different degrees of distension.

The first step, in any specimen to be permanently kept, is to distend it with hardening fluid at a pressure given by 3 or 4 in. of fall, the specimen at the same time floating in a basin of the same fluid; in twelve hours it can be opened up or cut about to any extent, while still retaining its "distended" form and size.

I have placed in our annual museum some twenty specimens of pyonephrosis of various degrees preserved in this way; some twelve of these are calculus cases, and the remainder hydronephrosis from other causes, which had become definitely pyonephrosis at the time of their removal.

I propose in this paper as briefly as possible to put before you such impressions as I have gained from a careful examination of these specimens.

Formerly all patients suffering from the clinical symptoms which are now recognized as being caused by blocked or partially obstructed ureter were supposed to have "stone."

We rightly send all such cases to the radiographer, and in a minority, perhaps, but still in a considerable proportion of these cases, he informs us that no stone is present. As surgeons we may ask ourselves, What is the commonest pathological condition found to account for such symptoms in the absence of a calculus? My answer to this question is that, so far as my specimens removed by operation are concerned, on comparing them one with another, I find that they nearly all present certain characteristic and distinctive features in which they closely resemble one another; they tend, that is to say, to fall all into the same class, to assume a common type. The chief characteristics of this type are:

1. An enormously dilated, soft, thin-walled pelvis.

2. The body of the kidney enlarged somewhat and hollowed out, forming the "boat" or "canoe-shaped" kidney of Mr. Hurry Fenwick. The cortical tissue of the kidney seems rarely to be thinned out to the same extent as it often is in calculus cases; in the largest specimens of the class at present under consideration it seems to be generally the thin-walled, yielding pelvis—rather than the body of the kidney—which bears the brunt of the enormous distension which often occurs.

3. As regards the ureter in these specimens, it takes origin at the lowest part of the dilated pelvis, and runs at first upwards, apparently in the substance of the pelvic wall for a variable distance—may be 3 or 4 in. in a large specimen; from here on the ureter becomes free, and we generally find a short, freely movable stump of ureter before reaching the point where it was cut through at the operation.

Fig. 1 is a diagram representing the general outline of one of these kidneys. An examination of the shapes assumed by some of these specimens under varying degrees of distension is particularly instructive, provided that the specimens are still perfectly fresh. When barely filled with fluid, and still quite flaccid, one or two of them closely resembled in shape a normal kidney, in which the pelvis was, however, larger than natural.

I have endeavoured in Fig. 2 to show diagrammatically in a sort of composite picture, the changes in shape produced by increasing degrees of dilatation.

A part of the pelvic wall (Fig. 2, A—B) is evidently inelastic and undistensible, and when once this part is fully stretched the whole of the subsequent enlargement takes place at the expense of other parts of the pelvic wall. Watching the effect produced one cannot help being forcibly reminded of that unilateral bulging which occasionally takes place on the inner tube of a motor or bicycle tyre. An admirable paper by Mr. Hurry Fenwick and a lucky specimen which I was fortunate enough to obtain about the same time provided me with the explanation of what I had observed. The unyielding portion of the pelvic wall is supported by a band of connective tissue, in which run a large branch or branches of the renal artery.

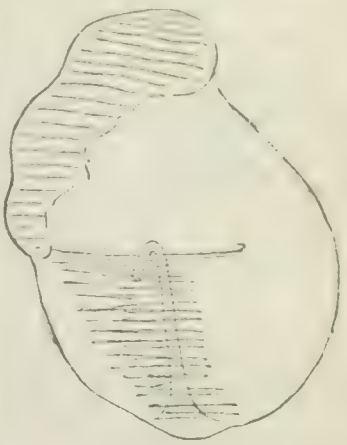


Fig. 1.—Diagram showing general appearance of hydronephrosis due to "kinked ureter."

Fig. 3 is an attempt to represent diagrammatically my explanation of the mode of production of hydro- or pyonephrosis in these specimens—by kinking of the ureter over a branch of the renal artery. And I believe that this is the explanation of the condition found in many of my specimens, and in a large majority of all cases of hydro- or pyonephrosis depending on causes other than stone.

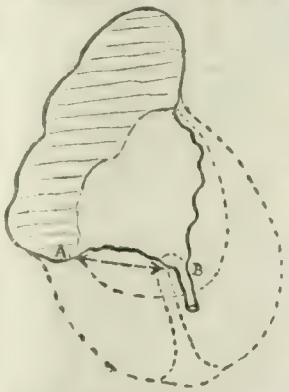


Fig. 2.—Diagram showing three successive shapes assumed by specimen of hydronephrosis under different degrees of dilatation.

My own impressions are based entirely upon specimens obtained by operation, and upon facts observed during operations in these cases. I am well aware that such evidence is in itself insufficient unless supported by fuller and more complete evidence, such as can only be obtained in the dead-house or dissecting room, and I am therefore delighted to observe in our annual museum an admirable and complete specimen lent from the collection of the Royal Free Hospital, which illustrates this condition.

I draw your attention specially to this specimen, which comprises portions of the aorta and vena cava, and shows very beautifully how hydronephrosis may be produced by "kinking" of the ureter over a renal vessel.

Time does not permit me to go at any length into the question as to whether this offending artery in these cases is always an abnormal one. Professor A. M. Paterson assures me that no artery in the body is so subject to variations and abnormalities as is the renal artery. It is by no means an uncommon thing to find a branch passing to the kidney behind the pelvis or ureter, and small

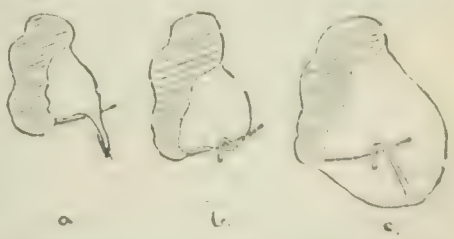


Fig. 3.—Showing three successive stages in the production of hydronephrosis by "kinking" of the ureter over a branch of the renal artery.

separate branches are occasionally found reaching the lower pole of the kidney direct from the aorta itself. These must of course always be regarded as abnormal vessels; I can only say that while in some of my specimens the offending artery is certainly *behind* the ureter, in others it is in front of it. I have no time to discuss the question of the relative importance of undue mobility of a kidney, and an abnormally placed artery, in the production of this condition; probably both factors are concerned in varying degrees.

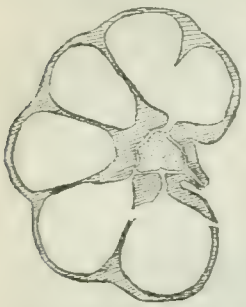


Fig. 4.—Calculus pyonephrosis. Showing tendency to formation of dense fibrous tissue surrounding the stone and contracting firmly upon it. ("Contracted cicatricial pelvis.")

The practical point for us as surgeons to remember is—that in a very considerable number of cases presenting the clinical symptoms of ureter obstruction (when stone has been excluded) the block will be found to be definitely due to "kinking" of the ureter over a branch of the renal artery. Granted this, it follows that we should not hesitate to explore such cases in their earliest stage, guided by symptoms alone, and not waiting until the appearance of a tumour makes it clear that irreparable damage has already been done to the kidney. Whenever we find a "kink" such as I have described, if the destruction of the kidney is not already too far advanced, the right treatment is to divide the offending artery between two ligatures.

While dealing with the subjects of hydro- and pyonephrosis, as illustrated by my collection of operation specimens examined and prepared in the way I have described, it may not be out of place if I very briefly draw attention to certain very marked points of difference between the calculus cases and those already described as being produced by kinking of the ureter. By calculus cases I do not mean simply kidneys which contain a calculus, but specimens of large pyonephrotic tumours in which the pyonephrosis is primarily due to the blocking of the orifice of the ureter by a stone lodged in the pelvis.

In nearly all specimens of advanced calculus pyonephrosis examined and prepared in the way I have described, I have noted that the pelvis as such had practically ceased to exist. The hilum of these kidneys is occupied by a dense mass of fibrous tissue in the middle of which lies the stone. I take it that what occurs in these cases is that the irritation caused by the stone sets up changes in the parts immediately surrounding it which lead to the formation in them of much new formed inflammatory fibrous tissue; this shrinks and contracts upon the stone in such a manner, as finally to constitute a serious and important factor in the causation of obstruction to the outflow of urine.

There is no doubt about the denseness and toughness of the mass of tissue which immediately surrounds the calculus. From the outside the hilum usually appears to be retracted, and I find myself constantly using in this connexion the term "contracted cicatricial pelvis." By the time any serious degree of obstruction is produced in these cases, the original wall of the renal pelvis is so thickened and altered, that any yielding or dilatation on their part is quite impossible.

In these cases, then, it is not the pelvis of the kidney which becomes dilated, but rather the soft yielding structure of the kidney itself; and as the calices become more and more dilated, so the cortex may eventually become reduced to almost paper thinness. Whatever may be considered to be the best incision for extracting a stone from what I may call an ordinary case of "stone in the kidney," in those cases of calculus pyonephrosis forming large tumours, it is well to remember that the stone cannot be removed by a simple incision in the pelvis, because the pelvis itself, in its original form, is no longer existent. Such kidneys, if not removed, require in any case to be opened freely and drained, and an incision along the free border of the kidney not only accomplishes this object, but affords the most suitable and convenient approach for the removal of the stone.

EXCISION OF GASTRIC ULCER.

By J. F. DOBSON, M.S.Lond., F.R.C.S.Eng.,
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It will be generally agreed that the operation of gastro-enterostomy is most satisfactory for the majority of those cases of ulcer of the stomach or duodenum which require surgical treatment. When, however, an ulcer is situated on the lesser curvature or in the body of the organ the results of the operation are apt to be disappointing. Attempts have been made by surgeons to obtain more satisfactory results by excising the ulcer, and the author's experience of the operation is such that it seems desirable to record the cases.

The cases referred to below consist of all those in which excision of an active (simple) ulcer of the lesser curvature or body of the stomach has been performed. They do not include any cases of ulcer at the pylorus treated by partial gastrectomy or cases of malignant disease. Further, cases of hour-glass contraction produced by the healing of an ulcer and treated by gastroplasty, gastrectomy, gastro-enterostomy, etc., are not dealt with. I have not included cases of free perforation of an ulcer, as these are in a different category. Naturally the number of cases form a very small proportion of all the operations done for simple disease of the stomach, particularly as many ulcers in the situations referred to have been treated by gastro-enterostomy.

I will say nothing of the symptomatology and diagnosis of these ulcers, except that the surgeon who prides himself on his ability to locate the position of an ulcer in the stomach is likely to meet with very frequent disappointments. As a rule it is impossible to say before opening the abdomen exactly which operation is most suitable to the case.

It is known that an ulcer at or near the pylorus will almost certainly heal after a gastro-enterostomy has been done. Of the results of the same operation in the case of an ulcer of the body of the stomach we are not so assured. Healing must occur in some cases, as there is perfect relief after the operation, but in a proportion the symptoms persist and evidences of continued active ulceration are manifest. Mr. Gilbert Barling has recorded four cases in which fatal haematemesis occurred from such an ulcer after gastro-enterostomy. If gastro enterostomy is to be done the aperture must be made well to the cardiac side of the ulcer. If not, stenosis may follow healing of the ulcer, and produce an hour-glass stomach with the opening into the pyloric pouch, as in the following case:

M. S., aged 37, female, had suffered from symptoms of gastric ulcer for many years. Seven years ago a gastro-enterostomy was performed by Mr. X. The patient was relieved from her symptoms for some time, and then had occasional attacks of vomiting and abdominal pain. During the last two months the pain and vomiting became more frequent and more severe, and the patient had lost weight considerably. X-ray examination after a bismuth meal showed a condition of hour-glass contraction of the stomach.

February 26th, 1912. Abdomen opened by incision in the middle line. The stomach was found to be divided into two pouches by the contraction of an old ulcer on the lesser curvature near the cardiac end. There was a good patent, no-loop, posterior gastro-enterostomy opening into the pyloric pouch, the opening between the two pouches being narrow. A wedge of the narrow isthmus was excised, and the edges sutured in such a way as to restore the continuity of the stomach. The patient made an excellent recovery; she has lost all her symptoms, and is gaining weight and strength.

Occasionally it is necessary to perform an anterior gastro-enterostomy. The lesser peritoneal sac may be obliterated, the ulcer extensive and adherent, and the condition of the patient such that the simplest possible operation must be performed. In some cases the results have been good, but the risk of jejunal ulceration is considerable, and the operation cannot be recommended.

Excision of the ulcer would seem to be the ideal operation. The diseased part is freely removed, and the possibility of secondary malignant disease is avoided. There is no likelihood of contraction producing stenosis of the stomach. There is no necessity for a gastro-enterostomy, and therefore no risk of jejunal ulcer. The actual operation may be one of the simplest if the ulcer is situated on the anterior wall of the stomach and has not contracted adhesions to other organs, or it may be one of great difficulty. A large ulcer which has perforated and is intimately adherent to the pancreas, the liver, and the abdominal wall

will tax all the resources of the surgeon. The excision of a wedge of the stomach, the base at the lesser curvature, including the ulcer, will be the operation usually practised (Fig. 1). The affected portion of the stomach is excluded

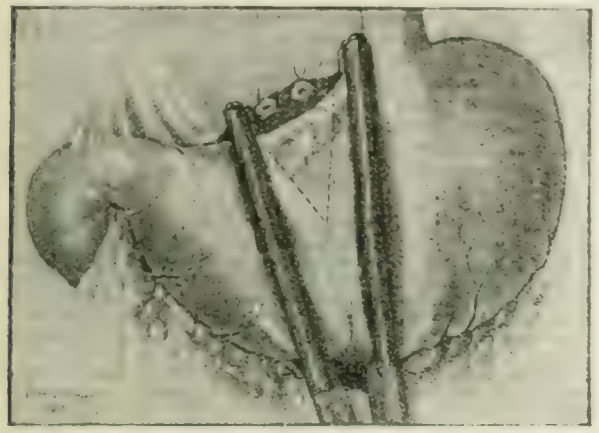


Fig. 1.—Excision of a wedge of the stomach, including an ulcer.

by clamps passed through openings in the gastro-hepatic and gastro-colic omenta, the wedge excised, and the form of the stomach restored by three layers of suture, one of fine catgut in the mucous membrane, one in the muscular coat, and a continuous Lembert sero-muscular suture of celluloid thread. The clamps are removed, the openings in the omenta sutured, and the abdomen closed. I have usually inserted a drain for forty-eight hours.

An ulcer on the posterior surface of the stomach may be removed through an incision in the anterior wall—transgastric excision—but I have not seen a case for which this method seemed suitable. The cases in which excision of an ulcer was performed may be divided into two classes.

I.—*Cases in which the Result was Satisfactory.*

L. F., female, aged 28, was admitted to the Leeds General Infirmary on December 10th, 1909. She had suffered from symptoms of gastric ulcer for twelve months, pain coming on about half an hour after food, associated with and relieved by vomiting. No haematemesis had ever occurred. A fortnight previous to her admission she had a very severe attack of epigastric pain, with collapse, from which she recovered quickly. She was seized with a similar attack on the day of her admission. The abdomen was opened the same day, and a small ulcer found on the anterior wall of the stomach, which was evidently on the point of perforating. The ulcer was excised, the stomach sutured, and the abdomen closed without drainage. The patient made a perfect recovery, and has had no further gastric symptoms (last seen July 21st, 1912).

A. W., female, aged 39, admitted to the Leeds General Infirmary on October 10th, 1910. She had suffered from symptoms of chronic gastric ulcer for many years; lately the pain had been very severe, and she had had one attack of profuse haematemesis.

October 12th. The abdomen was opened, and a large ulcer found on the posterior surface of the stomach, near the lesser curvature. The ulcer was very firmly adherent to the pancreas, and was separated with great difficulty and some troublesome haemorrhage. Wedge-shaped excision was performed, and the stomach wound closed by three tiers of suture.

The patient made a good recovery. She is now free from pain, and there has been no return of vomiting or haematemesis. She has not gained much weight, and complains of some flatulence. The result cannot be considered entirely satisfactory.

E. A. S., female, aged 37, admitted to the Leeds General Infirmary on October 15th, 1910. Many years' history of chronic ulcer of the stomach, with latterly severe pain after food and wasting. Laparotomy revealed a round ulcer on the lesser curvature and anterior surface. Wedge-shaped portion of stomach containing the ulcer excised and stomach sutured with three layers of stitches. Patient is perfectly well and free from symptoms at the present time (July, 1912).

M. S., female, aged 55, was admitted to the Leeds General Infirmary on October 24th, 1910. During the last ten years patient had suffered from pain in the left side and epigastrium coming on immediately after food and associated with vomiting. The attacks have become more frequent during the last two years; on several occasions she had slight haematemesis. In June, 1910, vomiting became worse; she was in bed for ten weeks. Since then she has had pain almost every day and frequent vomiting. No more haematemesis; no melaena. Twelve years ago she weighed 11 st.; two years ago she weighed 9 st.; her present weight is 6 st. 5½ lb. A year ago a diagnosis of carcinoma of the stomach was made. On abdominal examination the stomach is dilated; marked visible peristalsis; no tumour to be felt.

October 28th. Abdomen opened through the right rectus. A very large crateriform ulcer was found on the lesser curvature of the stomach close to the cardiac orifice, extending to both the anterior and posterior surfaces of the stomach. Wedge-shaped excision of the ulcer and the stomach closed with three layers of suture. Eleven days after the operation the patient was progressing well and taking fish, etc., without discomfort. At the present time she is in excellent health.

N. H., female, aged 47, was admitted to the Leeds General Infirmary on December 12th, 1911. She had suffered from indigestion for several years, and had been an in-patient in a hospital on two occasions. She had never had any haematemesis or melaena, and her principal complaint was pain in the epigastrium coming on very shortly after food. On abdominal examination an indefinite mass was felt in the epigastrium; marked muscular rigidity and tenderness; no splash.

December 21st, 1911. The abdomen was opened and an ulcer found on the lesser curvature, and both surfaces of the stomach adherent to the anterior abdominal wall, to the liver, and to the pancreas. Adhesions separated with difficulty, and the ulcer excised by the ordinary wedge method.

The patient made a good recovery from the operation and was discharged on January 6th, and is in good health at the present time and free from symptoms.

II.—*Case in which Adhesions after Excision necessitated a Gastro-Enterostomy.*

E. McC., male, aged 17, admitted to the Batley Hospital in June, 1911. He started work in the mine at the age of 13, and was quite well and strong, and working every day until the summer of 1908. He then had a severe attack of haematemesis, from which he recovered quickly. He continued at work until October, 1910, when he had another haemorrhage. This was followed by severe epigastric pain and repeated vomiting after food, symptoms which persisted up to his admission. He was extremely wasted and anaemic.

July 9th, 1911. The abdomen was opened, and a large ulcer found on the lesser curvature of the stomach, adherent to all the surrounding structures, and evidently having perforated for some time. The ulcer was separated with great difficulty, and considerable haemorrhage; margins of ulcer excised, and stomach closed with three layers of suture. The ulcer was simple. Patient made a very slow recovery, and return of pain and vomiting caused his readmission to hospital in December, 1911. He improved for a time, but eventually in March, 1912, the abdomen was reopened. The stomach was found dilated and embedded in adhesions. Posterior gastro-enterostomy performed.

The patient made a good recovery from the second operation, but symptoms have again returned. He is still very anaemic, and complains of pain when he attempts to work. Altogether the result is unsatisfactory.

III. *Cases in which Recurrence of Ulceration took place.*

G. G., male, aged 48, had suffered for two years from pain coming on two hours after food; relieved by taking a little more food or by a hot drink. No haematemesis or melaena and only occasional vomiting. He lost 21 lb. in weight during two years. On June 11th, 1910, he was operated on by another surgeon, an ulcer being found high up on the lesser curvature near the cardiac orifice. The ulcer was excised. Appendicectomy was performed. The patient made a good recovery. Microscopical examination of the ulcer showed no sign of malignancy. He remained well for some months and then his symptoms returned, and he was admitted to the Leeds General Infirmary on January 5th, 1911, suffering from general peritonitis following a severe attack of pain three days previously. I opened the abdomen and found a large perforation of an ulcer in the situation of the old excision. This was sutured and the abdomen drained. The patient, however, died six days later.

Mrs. T., aged 48, was seen on May 10th, 1911. For some years patient had suffered from indigestion, which has become worse during the last year. During the last six months has complained of severe pain in epigastrium immediately after taking food. Has rarely vomited, and has never had haematemesis. No melaena. Has lost 2 st. in weight during the last year.

Abdominal examination: Diffuse tenderness in epigastrium with rigidity. No tumour; no visible peristalsis; no splash.

Operation, May 18th. Ulcer on lesser curvature about size of sixpence. Considerable amount of thickening; wedge excised; three-layer suture; drain.

Microscopical examination: simple ulcer.

The patient made a good recovery from the operation, and was relieved of her symptoms, though the pain after food quickly returned, and was associated with occasional vomiting. Nine months later the abdomen was reopened, and a recurrent ulcer found in the scar of the excision. Posterior gastro-enterostomy to the left of the ulcer. Recovery.

The patient is now quite well, and has gained considerably in weight.

M. M., female, aged 27, was admitted to the Leeds General Infirmary on May 22nd, 1911. Has complained of pain after food for some years. When the pain is present she is unable to take solid food, because it increases the severity of the attack. She has vomited during attacks of pain, and this has relieved her. At the present time the pain is always present. Some twelve months ago she was able, by starving herself for a day or two, to relieve herself of the pain, but at the present starving has no effect. The bowels, she says, have sometimes been constipated, and at others she has been troubled with diarrhoea. There is a history of melaena, patient saying that she has passed blood many a time. There is also a history of bright red blood appearing in the vomit; this also has occurred more than once.

June 2nd. *X*-ray examination indicated the presence of an hour-glass stomach.

Operation: Ulcer upon lesser curvature near cardiac orifice. Ulcer excised; stitched; drained with rubber tube; removed on fifth day; replaced by gauze.

Microscopical examination: Simple ulcer.

The patient made a satisfactory recovery from the operation of excision, and was perfectly relieved of her symptoms for some months. She then had a return of pain and vomiting, but no haematemesis or malaena. She was readmitted to the Leeds General Infirmary on June 1st, 1912, and the abdomen was reopened on June 13th. In the situation of the old scar in the stomach there was a large ulcer, with a considerable mass of dense cicatricial tissue in the wall of the stomach. A posterior gastro-enterostomy was performed to the left of the ulcer, and was followed by appendicectomy.

Recovery was rapid and straightforward, and the patient is now making satisfactory progress.

In these last three cases the recurrent ulcer was found in the scar of the previous excision, where one would naturally expect ulceration to occur if anywhere. In the following case, however, ulceration recurred in the anterior wall of the stomach a little distance below the old scar:

E. L., female, aged 39, was admitted to the Leeds General Infirmary on July 26th, 1910. From the age of 14 to 23 patient had suffered from bilious attacks, vomiting, and sick headache. After 27, had every few months attacks of indigestion lasting for about a month. From November, 1908, began to have pain below right costal margin. During the last twelve months she has had attacks of another type—pain in left hypochondrium, severe pain in body below umbilicus; pain is worse after food, and greatly relieved by vomiting. These attacks have lasted from seven to fourteen days. She is always constipated; there is no haematemesis, melaena, or jaundice. Is thin; movable kidney on right side, no dilatation of stomach, general tenderness in epigastrium.

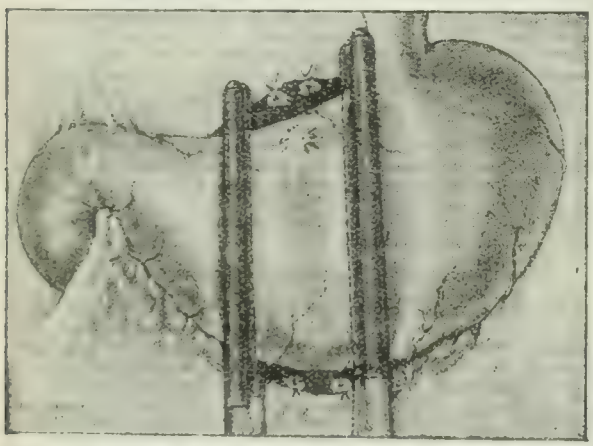


Fig. 2.—Modified partial gastrectomy for ulcer on the lesser curvature of the stomach.

Operation: Incision through right rectus. Ulcer found on posterior surface high up near cardiac end of lesser curvature. Excised. Three layers of suture. Appendicectomy. Microscopical examination: Simple ulcer.

The patient made a good recovery from the operation, but on June 9th, 1911, was readmitted for recurrence of symptoms of pain and vomiting. There was diffuse tenderness in the epigastric region with rigidity of the abdominal wall. On opening the abdomen an ulcer was found on the anterior surface of the stomach adherent to the abdominal wall. The ulcer was situated below the scar of the previous excision, and quite distinct from it. On separating the mass from the abdominal wall the ulcer was found to be perforated.

Modified gastrectomy with gastro-enterostomy was performed. Recovery. The patient is now perfectly well (July, 1912).

Microscopical examination of the second ulcer showed it to be simple.

It is difficult to account for the recurrence of ulceration in these four cases. In each the primary ulcer was simple and not malignant.

It may be noted that in two of the cases the appendix had been removed at the first operation. Whatever part it may have played in causing the original ulcer, it clearly could have nothing to do with the recurrence. The presence of an unabsorbed suture has been held responsible for the development of gastro-jejunal ulcers after gastro-enterostomy, and it is possible a recurrence of this kind might be caused in the same way. But in all these cases except one, of which there is some doubt, fine catgut was used for the innermost suture, and in one case the ulceration developed at some little distance from the scar. Three of the patients—Mrs. T., E. N., and E. L.—had certainly exercised great care in matters of diet, and in them recurrence cannot be attributed to carelessness in this respect.

From the results of these cases it must be concluded that excision of a gastric ulcer is an operation which is likely to be followed by a return of symptoms in an appreciable proportion of cases. In some this will be due to adhesions: in others, perhaps, to stenosis; but in many it will be due to recurrent ulceration. It is likely that these troubles could be avoided by performing a gastro-enterostomy at the same time as the excision, as has been done by Mr. Gilbert Barling. In the following case, when this was done, ulceration of the jejunum necessitated a second operation.

M. W., female, aged 40, was admitted to the Leeds General Infirmary on June 24th, 1910, under the care of Dr. Barrs. She had a history of gastric ulceration extending over twenty years, with recurrent attacks of pain and vomiting. During the last two years the attacks had become more severe. She had lost 5 st. in weight in that time. On abdominal palpation a well-defined mass could be felt in the epigastrium. *X*-ray examination was of no assistance.

July 18th, 1910. A median incision disclosed a large simple ulcer, as big as a crown piece, on the anterior surface of the stomach adherent to the abdominal wall. The whole stomach was very adherent, and there was much inflammatory thickening of the stomach wall. The ulcer was excised and the opening in the stomach closed by three layers of suture. An anterior gastro-enterostomy with entero-anastomosis was then performed. The patient made a good recovery, and on her discharge was taking solid food without discomfort.

Between August and November, 1910, the patient gained 2 st. in weight, but in November began to complain of severe pain in the left hypochondrium; no vomiting or haematemesis. On examination, a large mass was to be felt adherent to the abdominal wall; there was extreme tenderness on pressure.

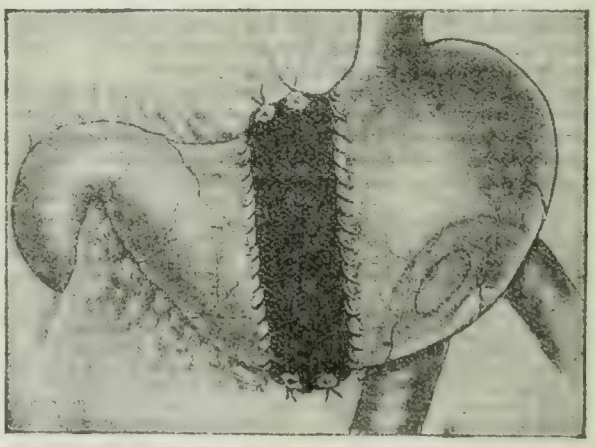


Fig. 3.—Modified partial gastrectomy completed by a gastro-enterostomy.

On December 5th, 1910, the abdomen was reopened and a large ulcer was found in the jejunum immediately below the gastro-enterostomy opening, perforated and adherent to the anterior abdominal wall, which formed the floor of the ulcer. The scar of the previous excision was quite healthy. The affected portion of the stomach, with the ascending and descending loops of jejunum, were removed, and the continuity of the stomach and bowel restored. The patient was thus left with a very small stomach, but without a gastro-enterostomy opening. She made a good recovery, and when last seen, some months later, was quite well and had gained in weight.

For an ulcer on the lesser curvature the combined operation of excision of a wedge and gastro-enterostomy is one of some magnitude, probably quite as difficult and time-consuming as a wide resection of the stomach. The type of operation done for cancer is not necessary for a simple ulcer. We wish to excise the ulcer with a margin of healthy tissue around, and to complete the operation by a gastro-enterostomy. This must be done as quickly as possible, as many of these patients are very feeble; it must be possible to avoid soiling the field and to have adequate control over the blood supply. But a wide resection of the stomach is not necessary, and we can fulfil all the requirements and at the same time avoid the greatest risk of a partial gastrectomy, that is, leakage from the sutured duodenum, by carrying the distal section through the pyloric portion of the stomach instead of through the duodenum.

In the operation suggested (Figs. 2 and 3) the stomach is

divided between clamps on the distal side of the ulcer; the pyloric pouch is closed by suture, and the proximal portion of the stomach turned over to the left. A posterior gastro-enterostomy is done well to the left of the ulcer. Clamps are applied on the proximal side of the ulcer, and the middle portion of the stomach containing the ulcer is excised. The stomach incision is then sutured.

This operation has been done in the following cases:

S. E., woman, aged 36, was admitted to the Leeds General Infirmary on February 3rd, 1911, under the care of Dr. Barr. She was an in-patient at the infirmary from August, 1909, to December, 1909, suffering from pain after food, vomiting, and wasting. A tumour was felt in the epigastrium, and the case was thought to be one of inoperable carcinoma of the stomach. Since December, 1909, the patient has been practically confined to bed; she has had pain and vomiting nearly every day; she has only been able to take milk. She has been taking morphine continuously for the last year. She is very wasted and anaemic, though she has not lost weight lately.

In the epigastric region there is to be felt a firm mass, which extends from the umbilicus to the left costal margin. The mass appears to be fixed to the abdominal wall; it does not move on respiration, but transmits the pulsation of the aorta. There is extreme tenderness on pressure over the tumour. There is no visible peristalsis; there is some gurgling to be made out on pressure to the left of the tumour.

X-ray examination after a bismuth meal suggested an hour-glass contraction of the stomach.

From the length of time that had elapsed since the diagnosis of carcinoma of the stomach first was made, and from the fact that the tumour had not greatly increased in size, it was clear that the condition was not one of malignant disease. It was determined to explore the abdomen.

February 16th, 1911. Ether. Incision in the middle line above the umbilicus. The abdomen was opened above and below the tumour, which was infiltrating the abdominal wall. The peritoneal cavity was packed with gauze and the stomach separated from the anterior abdominal wall. A large saddle-shaped ulcer involving almost the whole of the lesser curvature was found. It was perforated, the base being formed partly by the anterior abdominal wall in front, by the liver above, and the pancreas behind. There were dense adhesions to all these structures, which were separated with considerable difficulty. After freeing the stomach, clamps were applied and a modified partial gastrectomy performed. A very small amount of the cardiac end of the stomach was left available for the gastro-enterostomy. The pancreas was torn in stripping off the stomach, and for this reason a drain was inserted. The gall bladder was full of gall stones, but as the condition of the patient precluded any prolongation of the operation these were not interfered with.

The patient made a good recovery from the operation, though there was a discharge of pancreatic fluid for some little time. The wound, however, healed quickly. Microscopical examination: simple ulcer.

July 8th, 1912. Is quite well, and has gained 4 st. in weight.

K. W., female, aged 51, was admitted to the Leeds General Infirmary on November 15th, 1911. For as long as she can recollect patient has been troubled with indigestion, which at times has got considerably worse. She has pain continuously, and she does not think the ingestion of food has much effect on the character or intensity of the pain. The pain commences in the epigastric region, travels round to the back, and frequently up to the shoulder. For many years there has been persistent constipation. The teeth were removed two years ago, since when she has worn artificial teeth, both upper and lower. Vomiting has sometimes been present, but only slight, and then has never been noticed to contain blood, altered or otherwise.

Peristaltic waves can be seen in the epigastrium, and on palpation what is apparently the stomach can be felt hardening under the hand. When dilated the stomach could be well seen showing vigorous peristaltic movements.

November 22nd, 1911. Ether. Large ulcer on lesser curvature. Modified partial gastrectomy and posterior gastro-enterostomy.

The patient made a good recovery, and is in excellent health at the present time. She has gained weight, and has no gastric symptoms.

M. S., female, aged 32, was admitted to the Batley Hospital on November 10th, 1911. She commenced to suffer from attacks of indigestion eleven months ago, associated with vomiting, and on one occasion with a profuse haematemesis. As a result of hospital treatment she improved quickly, lost her pain, and was able to resume her work. She remained well for two months and then the symptoms returned, and on November 10th she had another severe haematemesis. With rest in bed she quickly improved, and on December 17th the abdomen was opened and a large saddle-shaped ulcer of the lesser curvature was found. The ulcer was very adherent to the pancreas, and was separated with difficulty. Modified gastrectomy and gastro-enterostomy performed. The patient made an uninterrupted recovery, and was discharged from the hospital on January 26th, 1912, free from pain and vomiting, and able to eat anything. On July 9th, 1912, she reported herself quite well and working.

The fourth case in which this operation of modified gastrectomy was performed was the woman E. L., who had a recurrent ulcer on the anterior wall of the stomach after an excision (vide supra).

In all these cases the results have been excellent: there has been no trouble with the pyloric pouch, and all the cases are free from symptoms. The operation is not more difficult than that of a wedge excision. It occupies little more time, and has many advantages. The ulcer is removed; it cannot bleed, perforate, or become malignant. Recurrent ulceration in the stomach is unlikely, as a gastro-enterostomy has been done. There is some risk of jejunal ulcer, as in every case in which a gastro-enterostomy has been performed, but this is very slight.

To sum up, it may be said that for ulcer of the body of the stomach and on the lesser curvature the operation of excision is unsatisfactory. When the patient is in a position to stand a somewhat severe operation, modified gastrectomy on the lines laid down is suitable and satisfactory. In others a posterior gastro-enterostomy well to the cardiac side of the ulcer is indicated. Anterior gastro-enterostomy should never be done.

DISCUSSION.

Mr. W. I. de Courcy Wheeler (Dublin) hesitated to take up the position that gastrectomy was a suitable treatment for gastric ulcer unless one were seriously driven to it. Its mortality was high. Gastro-enterostomy was a much more satisfactory operation.

Mr. Hey Groves (Bristol) stated that the mortality of the operation of primary excision of gastric ulcers was, according to Payr, between 15 and 20 per cent. It seemed to him that the solution of the difficulty lay in the performance of a two-stage operation. Mr. Dobson's cases proved most clearly that no radical operation was satisfactory without a gastro-enterostomy, and yet to perform an excision and an anastomosis at the same time was fraught with great risk. On the other hand, after a simple gastro-enterostomy three favourable things occurred. First, the patient's general condition rapidly improved; secondly, the local conditions in the stomach as regards sepsis were cured; and, thirdly, inflammatory adhesions often became much less dense. Then, at a later period of two to six weeks, the ulcer could be excised with little or no risk in those cases where this seemed desirable. The fact pointing to this desirability most strongly, in his opinion, was the great likelihood of chronic indurative ulcers having already become malignant, or giving rise to subsequent malignant growth. He was quite at a loss to know how any surgeon could decide in any given case, by seeing and handling an indurated mass in the stomach wall, whether it was innocent or malignant. There had been recently abundant evidence, especially the work of Wilson and Macarty, which proved that nothing short of a complete examination of serial sections could be taken as proof of the benignity of a gastric ulcer. And under these circumstances it was wise in every doubtful case to excise the mass, but this ought to be done after the patient had recovered from a preliminary gastro-enterostomy.

A CASE OF ANEURYSM OF THE SECOND AND THIRD PARTS OF THE LEFT SUBCLAVIAN ARTERY IN A WOMAN.

By G. P. Newbolt, F.R.C.S.Eng.,

Honorary Surgeon, Royal Southern Hospital, Liverpool, etc.

Cases of aneurysm in women are, comparatively speaking, rare, and it is very exceptional to meet with an aneurysm of the subclavian in a woman. It is only of late years that successful ligature of the innominate and left subclavian arteries has been possible, and on that account I think the following case worthy of record.

Miss E., aged 50, consulted me on February 3rd, 1912, concerning a pulsating swelling at the root of her neck on the left side which filled up the hollow above her collar-bone. This swelling had existed for three years in spite of treatment. It pulsated and the pulsation was distensile. The swelling involved the second and third parts of the left subclavian artery and the tumour extended into the axilla, where it could easily be felt. At one place above the collar-bone the swelling seemed to be just under the skin and threatened to come through. The inner margin extended well under the outer border of the sterno-mastoid

muscle. When 14 years old the patient had "fever" and her sight was badly affected, and at present she has "ground-glass" corneae. An iridectomy has been done on the right eye, but the sight of both is poor. Rest diminishes the swelling to some extent, but she is unable to take potassium iodide, arsenic, or mercury. When put on iodide a rash at once appears. Her doctor (W. H. Carse, of Rochdale) informed me that she had had marked endarteritis three years ago, when the vessels of her right arm were affected and her right radial pulse disappeared. The question of administering salvarsan was raised but not entertained.

There was no satisfactory history of syphilis, unless an infant she was nursing between three and four years ago was syphilitic, and this is hardly likely. The appearance of her eyes, however, was typical. The swelling did not cause her any pain. After examination I suggested ligature of the first part of the subclavian, and for this purpose she was admitted to the Royal Southern Hospital under my care on March 2nd, 1912. A radiogram was taken, which showed a shadow of the aneurysm above the clavicle, but the chest appeared to be clear. She was put on sodium iodide, but this produced an iodide rash in forty-eight hours. A careful examination failed to reveal any visceral disease in the abdomen or chest. On March 14th, 1912, I tied the first part of her left subclavian artery.

The patient was placed, with pillows under her shoulders, so that her head fell back and her face was turned to the right. The anaesthetic used was a mixture of oxygen and chloroform, given by Dr. Gardner-Medwin, whilst Mr. G. C. E. Simpson and Dr. Hargreaves assisted. An incision 6 or 7 in. long was made down the line of the sterno-mastoid on to the sternum, taking the sterno-clavicular joint as the centre of the incision. A second incision was made at right angles to the first extending along the collar-bone. Flaps were turned up and the collar-bone was exposed at its inner end. This structure was cleared by dividing the clavicular portion of the sterno-mastoid, and a rib elevator was passed under it, followed by a Gigli's saw, with which the bone was divided, the sternal end being turned inwards and dissected out. A small vein connecting the internal and external jugulars was tied, but there was practically no bleeding. The sterno-hyoid muscle was defined with dissecting forceps and partially divided. The internal jugular was very large and there was a high innominate junction, so that these veins practically filled the floor of the wound. By working down on the inner side of the internal jugular, the common carotid was exposed with the pneumogastric nerve lying on its outer side and behind. The big veins were now retracted downwards and outwards, and by drawing the carotid to the inner side the subclavian was felt pulsating deep down between the two. A vein crossing this space was tied, but the inferior thyroid vein was left untouched, and by scraping down with a blunt dissector the artery was exposed for a space of about ¾ in. The sheath was opened and the vessel found to be quite healthy. An aneurysm needle was passed from the inner side armed with a catgut ligature, and by means of the latter a loop of thick silk was drawn under the vessel. The latter was secured by tying the silk in two places with just enough force to occlude the vessel without damaging its coats. These ligatures were placed ½ in. apart, but one end of each was left uncut, and these were tied together. A reef knot was used. Pulsation at once stopped in the aneurysm. The wound was closed without drainage, but the cavity was obliterated as much as possible by bringing divided structures together. The arm, which was quite warm, was wrapped in cotton-wool.

The operation took forty minutes, but was not hurried over, and it was not as difficult as might have been expected. The patient was not stout, she took her anaesthetic perfectly, and there was no haemorrhage. The vessel lay very deep at a distance of from 2½ to 3 in. from the surface. The removal of a portion of the clavicle made the operation practicable, and the only important structures seen were the internal jugular, the left innominate and the left subclavian veins, the common carotid artery, the pneumogastric nerve, and the vessel itself. The pleura gave no trouble. It seemed to Mr. Simpson and myself that had we been pressed for room we could have got it by tying the internal jugular and pulling the lower end downwards. The subsequent history was uneventful as far as recovery went.

On the 15th she was very well, and her right carotid pulse [illegible] could be felt in the left radial, but her [illegible] and she moved them easily. There was no [illegible] she was a little sick after some beef tea. On the 16th she complained of a little pain down the left arm. On the 21st she was doing well, had suffered very little pain, and [illegible] March 23rd she [illegible] had healed, and the sac was hard and did not pulsate; she felt quite well and wanted to sit up. On April 5th she was propped up on a bed-rest; the aneurysmal swelling was smaller and decidedly softer, but there was no pulsation, and the swelling in the axilla was much smaller; there was no pulsation in the radial at the wrist. On April 15th there was a small ulcer over the lower part of the scar on the chest, and this was dressed. The swelling in the neck now felt like a soft cyst, and the axillary sac was smaller and harder. On April 16th she was allowed to get up, and on May 2nd she was shown at the Liverpool Medical Institution.

On May 10th she returned home, exactly eight weeks after ligature of the vessel, there being no sign of pulsation in the sac, which was rapidly disappearing. She was able to raise her arm fairly well, and could place her hand to the back of her head. The small ulcer on the scar had practically healed. On June 8th I saw her; she was very well, and her only trouble was the limitation in the power of abduction. The aneurysm had practically disappeared, but her left hand was decidedly colder than her right.

For the successful termination of this case I am indebted to the able assistance of my hospital colleagues, and also to the description of the case by Mr. Stonham in the *Lancet* of August 2nd, 1902. This successful case is, of course, well known as the first, if not the only one, in this country. The vessel has, I believe, been tied by Halsted, J. K. Rodgers, and by Schumpert, but I am not familiar with the results of these cases.

In ligaturing this vessel or the innominate, if silk be used (and personally I prefer this material), the strictest asepsis must be practised, otherwise there is a danger of the ligature being discharged from the wound, and a possibility, if not a probability, of secondary haemorrhage. The question of drainage depends upon whether there is likely to be much oozing. In my patient the wound was so dry that there was no necessity to drain. In placing the ligatures half an inch apart it was not possible to use the stay knot; hence two reef knots were used, the spare end of each being tied together. Ordinary silk twist, No. 7 in size, was used. Personally I have not absolute faith in the strength of catgut, however prepared, and the knot of kangaroo tendon is liable to loosen. My patient can be seen by those interested.

ONE THOUSAND CASES OF TOTAL ENUCLEATION OF THE PROSTATE FOR RADICAL CURE OF ENLARGEMENT OF THAT ORGAN.

By P. J. FREYER, M.A., M.D., M.Ch.,

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ELEVEN years have just elapsed since, in a lecture published in the BRITISH MEDICAL JOURNAL of July 20th, 1901, I first placed before the profession at large full details of my operation of total enucleation of the prostate for radical cure of enlargement of that organ. The anatomical and pathological considerations that render this operation practicable were then fully described, and I gave details of four instances in which I had performed the operation, in all with complete success. And here I have the pleasure to state that three of these patients are still alive, averaging about 80 years of age, two of them in perfect health, one suffering from heart disease, but all three absolutely free from urinary troubles, as they have remained since the operation.

It will be within the recollection of many of you that the previous decade and a half had been marked by unusual surgical activity in the attempt to find some radical cure for this dire disease. Partial prostatectomy, as expounded by Bottfield and his imitators in America, and by McGill in this country, castration, and vasectomy had been successively tried and found unsatisfactory or useless, so that at the period referred to—the dawn of the present century—palliative treatment by catheterism, with all its drawbacks and dangers, held the field amongst the profession as the least objectionable indeed, the only method of treatment available.

During the eleven years that have elapsed since then I have published numerous lectures and papers in the medical journals on this subject.[1] Several of those papers were read at the annual meetings of this Association. In my earlier papers full details of my first 170 cases of the

operation were given, with the name of the doctor with whom I had seen the case in consultation or hospital practice. Subsequently I have been with such large numbers that only cases illustrating some important features connected with the operation could be given in detail. In this way records of my first 800 operations have already been placed before the profession, and details of the remaining cases will be published later on.

Having now completed some 1,000 cases of the operation (the exact number is 995*), I have considered that it would be interesting to you to have a summary of the results presented to you, with some thoughts and reflections derived from this large experience of the operation.

The patients varied in age from 49 to 90 years, the average being 69. There were amongst them 62 octogenarians between 80 and 90 years, and 11 bordering on this age, 79 years.

The prostates removed weighed from ½ oz. to 17 oz., the average weight being 2¾ oz.

These 1,000 cases, though of course mainly drawn from the British Isles, embrace almost every race and nationality on the face of the earth. Nearly every country in Europe, all the republics of America, North and South, all our colonies and dependencies, are here represented. Two of them even hail from the small and remote island of St. Helena. The great majority of the patients had been entirely dependent on the catheter for periods varying up to twenty-four years. Nearly all of them came in broken health, and many were apparently moribund when the operation was undertaken. The vast majority of them were, indeed, reduced to such a miserable and painful condition that existence was simply unendurable; these latter were prepared to run any risk from operation provided I could assure them that in case of survival they could dispense with the catheter. Few of them were free from one or more grave complications, such as cystitis, vesical calculus, pyelitis, kidney disease, diabetes, heart disease, thoracic aneurysm, chronic bronchitis, paralysis, single, double, and even treble hernia, haemorrhoids, and in a few instances cancer of some other organ than the prostate. Such were the unpromising conditions under which in a large proportion of cases the operation was undertaken.

In connexion with these operations there were 55 deaths, or 5½ per cent., the remaining 945 operations, with the exception of one to which I will presently allude, being successful. With experience the mortality has been gradually diminishing from 10 per cent. in the first 100 cases to 4½ per cent. in the last 400; in my latest 100 cases there have been only 3 deaths. The causes of death were: Uraemia due to chronic kidney disease, 24; heart disease, 8; shock, 7; exhaustion, 3; septicaemia, 2; mania (hereditary in 1), 2; malignant disease of the liver, 2; bronchitis, 2; pneumonia, 1; heat-stroke, 1; pulmonary embolism, 1; cerebral haemorrhage with paralysis, 1; and acute pancreatitis, 1.

Though all these deaths are accepted in connexion with the operation, in not more than half the number can the fatal result be attributed thereto, the remaining deaths being due to disease incident to old age, and unconnected with the operation. This operation is comparable to none other in surgery owing to the advanced age to which it is mainly confined; and in judging of the mortality connected therewith, we must not lose sight of the fact that during the period of after-treatment and convalescence men of this age are liable to be carried off suddenly by disease entirely unconnected with the operation, the occurrence, however, if accepted in connexion with the operation, vitiating the results from a statistical point of view. Had the cases been selected, the mortality would have been infinitesimal; but, as will have been gathered from the successful cases described in detail in my numerous papers on the subject, selection would have condemned a large proportion of them to a painful death after prolonged suffering, instead of the complete restoration to health that ensued in each case after operation. It is, of course, impossible to avoid a certain small mortality when such cases are operated on. The wonder is that it is so small, considering the magnitude of the operation, the advanced age and conditions of the patients. But to refrain from operating in such cases, when there is any prospect of success, is to my mind utterly unjustifiable.

Nearly one-half the deaths connected with this operation were directly attributable to kidney disease resulting in uraemia, and in a large proportion of the deaths set down to other causes the kidneys were also affected. Kidney disease incident to prostatic enlargement is, of course, due mainly to two factors—backward pressure, caused by the obstruction to the natural flow of urine, and ascending affection of these organs from the cystitis, which invariably results sooner or later from the habitual use of the catheter. I cannot, therefore, too strongly urge the enucleation of the prostate, when there is decided enlargement of that organ accompanied by urgent symptoms necessitating the employment of the catheter, before grave complications set in. When undertaken whilst the patient's general health is sound and the kidneys unaffected there is practically no danger attaching to the operation in experienced hands; but when complications set in, and particularly when the kidneys become diseased, the operation must necessarily be attended by a considerable risk.

In 181 instances the prostatic disease was complicated by the presence of stone in the bladder, mostly of the phosphatic variety due to cystitis. The operation in these cases partook, of course, of a dual character—prostatectomy *plus* suprapubic lithotomy. Amongst these there were 16 deaths (all of which have been accepted as resulting from the prostatectomy part of the operation), or 8.84 per cent. Amongst the remaining 819 cases uncomplicated with stone there were 39 deaths, or 4.76 per cent., so that the mortality amongst the former was nearly double that from the latter, a fact which emphasizes still further the advisability of having recourse to prostatectomy at an early period before the formation of stone as a sequela to this disease sets in.

Another grave danger attached to postponement of operation is this—that recent experience has demonstrated beyond doubt that the adenomatously enlarged prostate, which is of course benign, has a tendency in a considerable proportion of cases to assume cancerous degeneration under the irritating influence of the catheter and the complications incidental to its habitual employment.

When I speak of "success" after this operation, what do I mean to convey to you by this term? I mean that in all cases of adenomatous enlargement of the prostate when my operation is properly performed, and the after-treatment carried out in the manner described in my published writings,[2] an absolute and permanent cure results, the patient regaining the power of retaining his urine at will and passing it naturally, without the aid of a catheter, as well as he ever did. There is no relapse of the symptoms; on the contrary, lapse of time only seems to consolidate the cure. There is no contraction at the seat of operation leading to organic stricture; there has been no instance of a permanent fistula resulting, and there is no loss of sexual power. I have in my possession many hundreds of letters from these patients and their doctors testifying to these facts. There are, indeed, no half measures about this operation. The patient can be assured beforehand that if he is prepared to accept the slight risk attached thereto he can with moral certainty look forward to a complete cure. In one case only have I known the patient fail to regain the power of voluntary micturition, and in this instance the bladder was quite flaccid, and seems to have been completely paralysed by the extreme over-distension before the catheter was employed.

I attribute the utmost importance to the rapidity with which the operation is accomplished. The essential portion of the operation, that during which profound anaesthesia is necessary, is covered by the time that elapses between commencing the suprapubic cystotomy and the delivery of the prostate from the bladder. With increased experience has come rapidity of execution. In the early days of the operation it was usual for this period to extend to twenty minutes or half an hour, or even more, whilst latterly in ordinary cases this period is covered by from two to four minutes, and in difficult cases by from eight to ten minutes. Rapidity in operating is of vital importance in an operation of this kind, confined as it is to persons of advanced age, thus shortening the period during which profound anaesthesia is necessary, minimizing the loss of blood and obviating shock.

* Shortly after this paper was read I completed 1,000 cases of the operation, and the statistics have been corrected accordingly.

With this large operative experience and my still larger acquaintance with prostatic disease in general, you might naturally expect that I should be able to tell you something definite, or at least to advance some theory, regarding the cause of the enlargement of the prostate in declining life. I have analysed innumerable cases and devoted much time and thought to this subject, but I have to confess that I have still no insight into the origin of this disease; and my researches would indicate that all theories hitherto advanced on this subject have no foundation in fact. My experience would seem to show that the previous mode of life led by the patient has nothing to do with the advent of this disease. It occurs with uniform frequency in persons who have suffered from urethritis and those who have not; in the married and unmarried; in the continent and those who have indulged in sexual excess; in persons of sedentary equally with those of active habits; in the gourmand, and in the man who has eaten sparingly all his life.

Even the purpose of the normal prostate in the human economy, always a subject of speculation, has been rendered more speculative still by the results of this operation. It is widely held that the prostate is some kind of accessory sexual organ. But there is no diminution of the sexual capacity after enucleation of the enlarged organ suprapubically by my method, the nerves controlling this function being left intact, though when removed perineally sexual desire would appear to be destroyed.

A very satisfactory feature in connexion with this operation is that the patients as a rule state, after the lapse of months or even years, that they feel from ten to twenty years younger than before the operation. I have been so much impressed by this remarkable rejuvenescence that, apart from the physical pain and mental depression caused by the obstructive symptoms, it has suggested itself to my mind that the enlarged gland may pour into the system some internal secretion of a toxic or deleterious character.

In my first paper[3] on the subject I wrote:

> These four operations have completely revolutionized my views with regard to the treatment of this painful and widespread malady, and I submit that the complete success with which they have been attended opens up a new and promising era in this field of surgery with far-reaching results . . . that we have at last arrived at a rational method of dealing with this painful and frequently fatal malady.

I submit that the forecast embodied in these words have been fully justified by the facts and statistics placed before you to-day, and by the almost universal practice of my operation by surgeons all over the world.

REFERENCES.

[1] British Medical Journal, February 1st, July 26th, November 8th, 1902; April 18th, July 4th, October 17th, 1903; May 21st, October 20th, 1904; May 20th, October 7th, 1905; March 9th, October 5th, 1907; October 2nd, 1909. *Lancet*, July 23rd, 1904; February 25th, 1905; May 1st, 1909; April 8th, 1911. [2] *Surgical Diseases of the Urinary Organs* (Baillière, Tindall and Cox). [3] British Medical Journal, July 20th, 1901.

DISCUSSION.

Professor Rushton Parker congratulated Mr. Freyer on the completion of the great series of 1,000 cases of prostatectomy.

Mr. C. A. Morton (Bristol) asked what were the late results of the early removal of cancerous prostates.

Mr. A. Fullerton (Belfast) said that success was to be expected in the early stages of the disease. He was desirous of knowing what was the earliest age that symptoms of enlarged prostate appeared. His opinion was that it appeared after the age of 40.

Mr. Ballance (Norwich) thought that the presence of pyelitis was a serious complication in enlarged prostate. He had lost a few of these cases from extensive suppuration in the bladder and in the raw surface left after removal of the prostate. He advocated perineal drainage, particularly in those complicated cases he had in view.

Mr. Hey Groves (Bristol) was convinced that the mortality of the operation was very much higher in general than had been indicated by Mr. Freyer's paper. At the Sheffield meeting in 1903 he had urged the desirability of a collective and impartial collection of operation statistics, and had illustrated his remarks by a reference to the operation of prostatectomy. Among all the cases available from all the large hospitals in the kingdom during the year 1907 the mortality was 40 per cent., and he ventured to think that even now this figure represented the average mortality of the operation much more nearly than that quoted by Mr. Freyer. The only way in which this high mortality could be reduced was by a careful selection of cases. It should only be done in those with a certain degree of functional renal efficiency. Mr. Freyer's statement and his writings led one to the impression that the more desperately ill and decrepit was the patient, the more suitable was he for prostatectomy. In his experience the operation was one of the easiest among the procedures of surgery, but the selection of cases likely to survive was a matter of great difficulty. In those doubtful cases where septic cystitis urgently demanded radical relief, but in which the vital functions were much impaired, it was much safer to operate in two stages. In the first a suprapubic drainage was performed, which relieved the back pressure upon the kidneys, and the septic state of the bladder. After a few weeks the prostate could be safely removed. In this procedure both stages could easily be performed under gas anaesthesia.

Mr. Newbolt (Liverpool) said that some of the hard fibrous prostates were very difficult to enucleate. His hospital mortality was heavy; in private it was not so bad. He agreed that it was sometimes advisable to operate in two stages.

Mr. Freyer, in reply, described his method of operating. The bladder was washed, then distended with boracic solution or sterile water. A vertical incision 2 to 3 in. long was made; the recti muscles were separated or cut. The bladder was still further distended by an assistant and made tense as a drum. With the finger (gloves were not worn) the prevesical tissues were scraped up out of the way for 2 in. above the pubis—the peritoneum was not seen—and then the knife was plunged into the bladder. The method of dealing with the prostate was sufficiently well known. He agreed that the fibrous prostates were difficult to deal with. Cases should be operated on before grave symptoms developed. In St. Peter's Hospital last year he had operated on 98 cases with 5 deaths only, and many of these patients were exceedingly ill; in some he did the operation in two stages. He could not understand how the mortality was put so high as 40 per cent. He never employed perineal drainage, and thought it was quite unnecessary. The object of the large drainage tube 1 in. in diameter was to drain perfectly. There was no time for pus to collect in the intravesical wound if the bladder were washed out twice a day. He did not remove the malignant prostate unless the disease were confined within the true capsule of the prostate—that was, if it had not spread into the sheath or second capsule. If the hard, apparently malignant prostate were movable in the surrounding tissues he removed it, but if it were fixed he made no attempt to remove it.

ACUTE APPENDICITIS: A PLEA FOR EARLY OPERATION.

By Herbert J. Paterson, M.C., M.A., M.B.Cantab., F.R.C.S.

There is still considerable difference of opinion as to the best treatment for acute appendicitis. Physicians and surgeons are divided into two opposite camps—those who advocate immediate operation in every case, and those who hold the view that each case should be judged on its merits. It is for the advocates of each view to justify their respective positions by the publication of statistics, and so determine the question, one which can and ought to be settled. "We ought to have no deaths from appendicitis, but we are having them," writes Dr. Murphy. In England and Wales appendicitis claims more than 1,500 victims annually. As one of the advocates of early operation, I have no hesitation in saying that the great majority of these deaths are preventable, and ought to be prevented.

No. of Case.	Sex and Age.	Duration of Symptoms Before Operation.	Condition Found.	Nature of Operation.	Previous Attacks.	Result.
1	F., 24	5 days	Perforated appendix; localized	Appendicectomy and drainage	2	Recovery.
2	M., 31	6 days	Leaking abscess	" "	1	Recovery.
3	M., 29	3 days	Perforated appendix; some adhesions	" "	0	Recovery.
4	F., 19	4 days	Acute appendicitis; mucosa gangrenous; not localized	" "	2	Recovery.
5	F., 23	3 days	Suppurative appendicitis; no adhesions	" "	Many	Recovery.
6	M., 33	3 days	Perforated appendix; local collection of pus; no adhesions	" "	0	Recovery.
7	M., 21	3 days	Localized abscess	Drainage	0	Recovery.
8	M., 19	36 hours	Gangrenous appendix, not shut off	Appendicectomy and drainage	0	Recovery.
9	M., 15	30 hours	Suppurative appendicitis, localized	" "	Several	Recovery.
10	F., 30	3 days	Acute appendicitis	Appendicectomy; no drainage	?	Recovery.
11	M., 40	24 hours	Acute appendicitis; old adhesions	" "	Several	Recovery.
12	M., 12	3 days	Perforative appendicitis; diffuse suppurative peritonitis	Appendicectomy and drainage	0	Recovery.
13	M., 7	4 days	Acute appendicitis; no adhesions	" "	0	Recovery.
14	M., 20	28 hours	Gangrenous appendix; diffuse suppurative peritonitis	" "	1	Death 15th day after operation.
15	F., 39	8 days	Acute suppurative appendicitis, localized	Drainage	Many	Recovery.
16	M., 23	36 hours	Gangrenous appendix; adhesions not noted	Appendicectomy; no drainage	?	Recovery.
17	M., 6	10 days	Localized suppuration	Drainage	?	Recovery.
18	M., 15	3 weeks	Acutely inflamed appendix; localized suppuration	Appendicectomy and drainage	?	Recovery.
19	F., 25	48 hours	Appendix and caput caeci gangrenous; free fluid	" "	0	Recovery.
20	M., 24	3 days	Gangrenous appendix; no adhesions	" "	1	Recovery.
21	M., 28	5 days	Free fluid; pus round acutely inflamed appendix	" "	Several	Recovery.*
22	M., 17	3 days	Perforated appendix; no adhesions	" "	?	Recovery.
23	F., 25	3 days	Acute appendicitis	" "	1	Recovery.
24	M., 30	6 days	Localized abscess behind caecum	Drainage	—	Recovery.
25	M., 40	4 days	Acute appendicitis; almost perforated	Appendicectomy and drainage	?	Recovery.
26	F., 51	7 days	Leaking localized abscess; diffuse suppurative peritonitis	Drainage	0	Death 8th day after operation
27	M., 22	4 days	Perforated appendix; diffuse suppurative peritonitis	"	0	Recovery.
28	M., 53	3 days	Perforated appendix; diffuse suppurative peritonitis	Appendicectomy and drainage	3	Recovery.
29	M., 49	30 hours	Perforated appendix; much free fluid in abdomen	Appendicectomy; no drainage	0	Recovery.
30	M., 14	6 days	Diffuse suppurative peritonitis	Drainage	0	Recovery.
31	M., 12	3 days	Acute appendicitis	Appendicectomy and drainage	1	Recovery.
32	M., 6	2 days	Acute ulcerative appendicitis	Appendicectomy; no drainage	—	Recovery.
33	F., 21	2 days	Gangrenous perforated appendix; no adhesions	Appendicectomy and drainage	0	Recovery.
34	F., 29	4 days	Acute appendicitis	" "	0	Recovery.
35	F., 14	2 days	Diffuse suppurative peritonitis	Appendicectomy and drainage; 7 days later enterostomy	—	Recovery.
36	M., 31	3 days	Acute appendicitis	Appendicectomy and drainage	1	Recovery.
37	M., 12	24 hours	Acute appendicitis	Appendicectomy; no drainage	0	Recovery.
38	M., 19	4 days	Acute appendicitis	Appendicectomy and drainage	2	Recovery.
39	F., 27	6 days	Appendix distended with pus	Appendicectomy; no drainage	1	Recovery.
40	M., 33	3 days	Appendix nearly perforated	Appendicectomy and drainage	1	Recovery.
41	M., 41	4 days	Partially gangrenous appendix	" "	4	Recovery.
42	F., 32	2 days	Appendix ulcerated, full of pus	" "	1	Recovery.
43	M., 11	30 hours	Gangrenous appendicitis; diffuse suppurative peritonitis	" "	1	Recovery.
44	M., 19	24 hours	Appendix almost perforated; large concretion	" "	1	Recovery.
45	F., 14	3 days	Perforated gangrenous appendix	" "	—	Recovery.
46	M., 25	18 hours	Gangrenous appendix	Appendicectomy; no drainage	0	Recovery.
47	F., 19	2 weeks?	Acute appendicitis	Appendicectomy and drainage	0	Recovery.
48	F., 16	36 hours	Appendix partially gangrenous	Appendicectomy; no drainage	0	Recovery.
49	F., 32	2 weeks	Acute gangrenous appendicitis; intestinal obstruction	Appendicectomy and caecostomy	0	Death.
50	M., 14	4 days	Perforated gangrenous appendix; free lying pus; no adhesions	Appendicectomy and drainage	0	Recovery.
51	M., 29	50 hours	Acute appendicitis	Appendicectomy; no drainage	—	Recovery.
52	F., 26	4 days	Acute appendicitis; no adhesions	" "	—	Recovery.
53	M., 35	36 hours	Free pus in peritoneal cavity; gangrenous appendicitis	Appendicectomy and drainage	—	Recovery.

* Died of intestinal obstruction four months after leaving hospital.

No. of Case.	Sex and Age.	Duration of Symptoms Before Operation.	Condition Found.	Nature of Operation.	Previous Attacks.	Result.
54	M., 23	3 days	Perforated appendix	Appendicectomy and drainage	3	Recovery.
55	M., 40	60 hours	Gangrenous appendix; diffuse suppurative peritonitis	" "	—	Recovery.
56	M., 9	2 days	Gangrenous appendix; diffuse suppurative peritonitis	" "	—	Recovery.
57	F., 18	2 days	Gangrenous perforated appendix; localized pus	" "	—	Recovery.
58	F., 27	3 days	Appendix almost perforated	" "	—	Recovery.
59	M., 62	2 weeks	Localized abscess	" "	—	Recovery.
60	M., 15	60 hours	Localized collection of pus	" "	1	Recovery.
61	F., 22	4 days	Acute appendicitis	Appendicectomy; no drainage	—	Recovery.
62	F., 10	60 hours	Localized collection of pus	" "	—	Recovery.
63	F., 10	36 hours	Perforated gangrenous appendix; some pus around it; no adhesions	" "	—	Recovery.
64	M., 14	2 days	Gangrenous appendix; almost perforated; no adhesions	" "	—	Recovery.
65	M., 31	3 days	Appendix gangrenous; much free pus; no adhesions; intestines greatly distended; free fluid in peritoneal cavity	Appendicectomy, drainage, and appendicostomy	—	Recovery.
66	M., 6	2 days	Gangrenous appendix; diffuse suppurative peritonitis	Appendicectomy and drainage	—	Recovery.
67	M., 27	7 days	Appendix ulcerated and lost in localized abscess	" "	—	Recovery.
68	M., 14	5 days	Gangrenous perforated appendix; much pus	" "	—	Recovery.
69	F., 30	4 days	Acute appendicitis; diffuse suppurative peritonitis	" "	—	Recovery.
70	F., 31	1 week	Acute appendicitis	Appendicectomy	1	Recovery.
71	M., 25	3 days	Acute appendicitis, suppurative	Appendicectomy and drainage	—	Recovery.
72	F., 78	1 week	Gangrenous appendix; much intestinal distension; free fluid in abdominal cavity	Appendicectomy and drainage; 10 days later enterostomy for obstruction	—	Death 14th day after operation
73	M., 12	4 days	Appendix full of pus; mucosa gangrenous	Appendicectomy; no drainage	—	Recovery.
74	F., 15	5 days	Appendix gangrenous; diffuse suppurative peritonitis	Appendicectomy and drainage	—	Death.
75	M., 20	40 hours	Perforation; diffuse suppurative peritonitis; intestines greatly distended	" "	—	Recovery.
76	M., 22	2 hours	Appendix full of pus; mucosa ulcerated; no adhesions	Appendicectomy; no drainage	1	Recovery.
77	F., 13	30 hours	Appendix full of pus; mucosa ulcerated	" "	—	Recovery.
78	F., 21	36 hours	Appendix perforated; pus escaping; no adhesions	Appendicectomy and drainage	—	Recovery.[1]
79	M., 22	36 hours	Appendix gangrenous and perforated; localized suppuration	" "	1	Recovery.
80	F., 38	113 days	Localized abscess	" "	—	Recovery.
81	M., 37	3½ days	Appendix and part of caecum gangrenous; diffuse suppurative peritonitis	" "	1	Recovery.
82	M., 11	24 hours	Gangrenous appendix	" "	—	Recovery.
83	M., 24	7 days	Acute appendicitis	" "	1	Recovery.
84	F., 10	7 days	Localized abscess	" "	2	Recovery.
85	M., 15	24 hours	Enormous appendix; pus around it; no adhesions	" "	0	Recovery.
86	F., 55	2 weeks	Localized collection of pus	Drainage	0	Recovery.
87	F., 44	3 weeks	Localized collection of pus	"	0	Recovery.
88	F., 24	10 days	Diffuse suppurative peritonitis	Appendicectomy and drainage	0	Recovery.
89	M., 38	4 days	Acute appendicitis	" "	2	Recovery.
90	M., 40	4 days	Suppurative appendicitis	" "	Many	Recovery.
91	F., 28	4 days	Appendix gangrenous distal half; no adhesions	" "	0	Recovery.
92	F., 47	5 hours	Collection of pus free in right iliac fossa	" "	0	Recovery.
93	F., 33	10 hours	Acutely inflamed appendix; no adhesions	" "	Several	Recovery.
94	F., 16	3 days	Leaking abscess	" "	Several	Recovery.
95	F., 42	3 days	Commencing diffuse peritonitis	" "	Several	Recovery.

[1] Five months pregnant. Aborted twenty-seven days after operation.
At first diagnosed as pyosalpinx, and so not operated on at once.

SUMMARY.

	Cases.
Cases with diffuse suppurative peritonitis ...	17
Local collection of pus, but no adhesions ...	9
Gangrenous appendix, but no adhesions ...	6
Perforated appendix, but no adhesions ...	3
Acutely inflamed appendix, but no adhesions ...	6
Localized collection of pus ...	18
Localized but leaking abscess ...	3
General peritonitis, not suppurative	6

Total cases 95; recovered 90, died 5; mortality-rate 5.2 per cent.

Fatal Cases.

1 (No. 14). Male, aged 20 years. Symptoms 28 hours. At operation, diffuse suppurative peritonitis. Died 16th day after operation. At necropsy, suppurative peritonitis still present.

2 (No. 26). Female, aged 51 years. Symptoms 7 days. At operation, localized abscess which had leaked, causing diffuse suppurative peritonitis. Patient died on 8th day after operation. At necropsy, diffuse suppurative peritonitis still present.

3 (No. 49). Female, aged 32 years. Symptoms two weeks. At operation, gangrenous appendicitis, intestinal obstruction, intestine punctured and evacuated. Died third day after operation, obstruction unrelieved.

4 (No. 72). Female, aged 78 years. Symptoms one week. At operation, non-suppurative peritonitis, gangrenous appendix, extreme intestinal obstruction. Relieved at first, obstruction recurred. Enterostomy on twelfth day after first operation. Death two days later.

5 (No. 74). Female, aged 15. Symptoms five days. At operation, gangrenous appendix, diffuse suppurative peritonitis. Death second day.

For three years I have operated, as soon as possible, on every case of acute appendicitis as soon as I have made up my mind as to the diagnosis, and my cases are tabulated in the table on pp. 871–2. The list of 95 cases includes every case of acute appendicitis which I have seen during this period. In no case has operation been declined.

My procedure in the past with regard to the treatment of acute appendicitis may be divided into three periods, and it is instructive to compare the respective mortality-rates. During the first period, if I could possibly avoid it, I never operated until the acute stage was over, and rarely unless there was evidence of an abscess; the mortality in this series of cases is 16 per cent. During the next period I attempted to judge each case on its merits; the mortality in this series is 13 per cent. In my present series the number of cases is 95, and there were 5 deaths, a mortality of 5.2 per cent.

In 17 cases diffuse suppurative peritonitis was present at the time of operation: by this I mean the presence of purulent fluid free in the peritoneal cavity, and not a localized collection in the right iliac fossa. In 9 of the cases there was a local but not localized collection of pus, not surrounded by adhesions, in the neighbourhood of the appendix, but which had not, at the time of operation, become disseminated.

In 6 cases the appendix was gangrenous and free in the peritoneal cavity: in 3 cases there was a perforation of the appendix without any adhesions, and in 6 cases the appendix was acutely inflamed and not surrounded by any protective barrier of lymph. So that in 24 of the cases (25.2 per cent.) there was either perforation or gangrene of the appendix or pus surrounding it, without any protecting adhesions to limit the spread of infection to the general peritoneal cavity. In 3 cases there was a localized abscess which had leaked, with commencing peritonitis; adding to these the cases in which diffuse suppurative peritonitis was present at the time of operation, we see that in 44 (46 per cent.) of the cases there was a septic focus without any protective adhesions. It is difficult to believe that many of these cases would have recovered without operation.

In a former paper[1] I have called attention to the frequency with which the local signs and general condition of the patient give no indication whatever of the gravity of the condition within the abdomen—cases in which there may be only a slight rise of temperature, a normal pulse, and only a slight tenderness over the appendix, and yet the appendix is perforated or gangrenous. In this series there were 12 cases which came under this category. It is futile to talk of judging such cases on their merits. It cannot be done, even by the most experienced clinician.

The number of deaths from appendicitis is, I think, far higher than would be the case if the safety and advisability of early operation were generally recognized. Four of the patients in my series who died had been ill for over five days before the operation. Four of them (Cases Nos. 14, 26, 72, and 74) at the time of operation had already diffuse suppurative peritonitis. The remaining patient had general peritonitis, not suppurative, and intestinal obstruction. One of the patients, a woman aged 78 years, although she had diffuse peritonitis, recovered from her operation, but died fourteen days later from cardiac failure, three days after a secondary operation for intestinal obstruction. I think four at least of these deaths might have been prevented had the patients come under surgical care sooner.

One of the fatal cases (No. 14) is of some interest. The patient had been ill only twenty-eight hours, and yet had a gangrenous appendix with diffuse suppurative peritonitis. After operation he appeared to be on the way to recovery, his bowels were well opened, and yet he died sixteen days later. At the *post-mortem* examination it was found that diffuse suppurative peritonitis was still present. I think this case exceptional, and I have discussed it with Dr. J. B. Murphy and many other surgeons, none of whom has met with a case in which the patient has lived so long after operation for diffuse suppurative peritonitis and yet has not recovered. My experience is that after operation, when once the bowels are thoroughly opened, the patient is, as regards the abdominal condition, out of danger. In this case one can only surmise that the patient's powers of resistance were so small that they were unequal to the fight. I do not see how this death could have been prevented, but none of the others would, I think, have occurred had an early operation been performed.

The mortality-rate of the acute cases in my series is 5.2 per cent.: if interval operations during the same period are included, my mortality-rate for all cases is 3.4 per cent. It is for the opponents of early operation to show that they can obtain *better* results by delay. It is not sufficient for them to show as good results, because granted, for the sake of argument, that the mortality-rate under the two methods of treatment is the same, the advantage rests with immediate operation, as the risk of further attacks is done away with and the convalescence is shortened; for I suppose no one nowadays will dispute that when a patient has had an undoubted attack of appendicitis, the wise course is to have the appendix removed, whether this be done during the attack or after it has subsided. I very much doubt whether any one can show in an unselected consecutive series of cases treated by the expectant method a mortality-rate as low as 5 per cent. This being so, I maintain that immediate operation is the proper treatment for appendicitis, and if this principle were recognized and acted upon, the mortality for appendicitis would speedily be reduced to under 2 per cent. Even this is, I think, too high a death-rate, but at least we should not be satisfied until our results approach this standard.

I wish to emphasize one point which has, I think, been overlooked in discussing the question of immediate operation: Before the introduction of continuous proctoclysis, the Fowler position, the use of ether instead of chloroform, I believe the expectant treatment was safer than immediate operation. Thanks, however, to these life-saving measures, the results of operation during the acute stage are immeasurably better than a few years back.

In acute appendicitis the operation must be limited both in time and extent. As Dr. Murphy well puts it, "the extent of the operation must be limited by the constitutional symptoms of sepsis, rather than by the extent and character of the pathological changes." No extensive manipulations, no flushing or sponging are permissible. If the operation is not to be performed gently and quickly, expectant treatment will give better results. With gentleness and rapidity, however, I am convinced that immediate operation is far safer than procrastination. As I have said elsewhere, in acute appendicitis the symptoms are often so deceptive, the signs of danger so slight, and the ultimate issue so uncertain, that clinical observation, the living pathology of the disease, and the results obtained by the surgery of to-day, all point to early operation as the treatment of choice.

REFERENCE.
[1] *Lancet*, May 13th, 1911.

DISCUSSION.

Sir GEORGE BEATSON (Glasgow) said: I intend to confine my remarks to the treatment of acute appendicitis. I would remind you that twenty-three years ago McBurney wrote that we ought to be able to save all our cases of appendicitis; that high standard of perfection has not been reached. Can surgery alone do it? We have to consider how appendicitis presents itself in ordinary practice and under ordinary conditions. Sometimes the cases are seen within a few hours of their beginning and sometimes a week or more has elapsed since the beginning of the attack. If you operate on all these cases that you see within a few hours, the results are all that can be desired. But as regards those cases which have been ill for three to six days, any one knows that this is the most dangerous class and often the most disastrous. I find what is wrong in these is that there has been extended to this intermediary class the plan which you are going to adopt, and in which we all agree for the immediate case. I say you cannot expect the same results from these intermediary cases that you do get from the ordinary cases. What is the immediate operation? Is it immediately after you see the patient irrespective of the period of the disease? If you follow that rule you will have bad results. It is impossible to see all your cases in the very earliest stages. The question now is, Is surgery the best treatment for these intermediary cases?

These divide themselves into two groups: (1) A group with general suppurative peritonitis, and for this the only help is immediate operation, but these are the small minority of cases. (2) The large majority of cases are those where the disease has localized itself; so much localization is there that if you treat it with proper dietetic and medicinal treatment, you will carry your patient through. If you attack it in the hope of eradicating the septic mischief you will fail. If you attack it you will find that you have caused that focus to extend itself beyond this localization; you run a serious risk of opening into the peritoneal cavity and so courting disaster. Is there risk in leaving that condition? I say "No," if you supplement it with proper medicinal treatment. I speak now of hospital cases. I have exactly the same kind of cases as my colleagues. During the past fourteen years I have adopted the measures I am speaking of, and of 273 cases 264 recovered; of these 256 were operated on subsequently—that is, after what I call the intermediary stage was passed—and 8 refused operation. Now, this cannot be a matter of luck. When one estimates one's cases over a number of years the question of luck does not come in at all. The medicinal measures I adopt are: Moderate starving, rest to the intestine by opium in the form of Dover's powder combined with bismuth, enemata every second day, local warmth in the form of poultices. In a short time the patient responds; you have assisted Nature, you have brought the case into the interval stage in which there is no mortality. I contend that the intermediary cases are in a class by themselves, that can best be met by local measures, and only in some instances require immediate surgical treatment.

Mr. W. J. Greer (Newport, Mon.) said that it was a matter of great importance that students should be taught the necessity for immediate operation in appendix cases. These cases should as soon as possible be brought into hospital or into the surgeon's hands.

Mr. Cuthbert (Gloucester) strongly advocated operation at the earliest possible time. This applied more especially to children, who should not be left a single day. In his experience it was not best to take statistics from hospital patients; it was amongst the well-to-do people that appendicitis was most fatal.

Mr. C. H. Fagge (London) was entirely opposed to the doctrine put forth by Sir George Beatson. He himself did not pretend that if he operated on the fourth or fifth day he would get a result as good as if he operated on the first or second day. He found that the majority of general practitioners and physicians were really anxious to get surgeons to see the patients at once. The keynote for treatment in the intermediary cases was to operate at once. He thought the doctrine of delay even in some selected cases was one of the most pernicious and mischievous put before the profession during the past few years.

Dr. Collinson (Preston) realized the necessity for teaching the general practitioner that he was not to use his own judgement: as a rule it was the surgeon who was the best judge as to whether a case should be left or should be operated on. Most were agreed that if the temperature were still high after four or five days it was known that pus was present. He would like the Section to lay down a strong rule on the matter.

Mr. G. P. Newbolt (Liverpool) said that he went on the principle that it could not be told what was the state of affairs inside the abdomen till it was seen. He therefore operated at the earliest possible moment.

Mr. C. A. Morton (Bristol) called attention to the fact that the five fatal cases were all cases of either diffuse peritonitis or were complicated by intestinal obstruction. He quite agreed with Sir George that the results of operation in cases in which the operation was performed some days after the onset of the disease were not as good as after operation performed within the first twenty-four hours, but that did not indicate that cases should not be operated on a few days after the onset of the disease, and it was the surgeon's misfortune that he did not get the opportunity to operate earlier. He also quite agreed with Sir George Beatson that statistics did not show as good a result in the treatment of appendicitis as surgeons wished, but that was because the surgeon often did not get the chance to operate early enough. Sir George Beatson had stated that he would certainly advise operation in diffuse peritonitis, but the difficulty was that the surgeon often found diffuse peritonitis already present when he had only diagnosed a quite localized lesion. It was quite impossible to be certain from the symptoms and physical signs that the disease was really localized. Sir George Beatson had referred to the well-known resisting power of the peritoneum, and used it as an argument that we might safely leave cases after the first few days without operation, but he thought that toleration of the peritoneum to infection might more reasonably be used as an argument for operating on localized collections of pus, for it might be very valuable if infection of the peritoneum did occur during the operation, though in his experience such infection was a very rare thing indeed. Then Sir George Beatson had described to them what medical treatment should be employed in cases not operated on, and he had told them that an enema should be given every other day. Now, surely it was advisable to keep the large bowel quiet, and not to stimulate it with enemata, for collections of pus around the appendix were generally shut up in the neighbourhood of the caecum, and if the case were not operated on, the next safest thing to do was to keep the colon as much at rest as possible, so that protective adhesions might not be disturbed.

Mr. H. J. Stiles (Edinburgh) said that he could not agree with the treatment advocated by Sir George Beatson. He held that the cases should be operated on at once, even though not seen till the fifth, sixth, or seventh day of illness. He admitted that more of these cases were lost than should be. The mortality ought to be reduced. He did not think that the dexterity or capacity of the surgeon entered very materially into the question. One of the great causes contributing to excessive mortality was the use of chloroform rather than ether. He was absolutely convinced of that. A patient ill for four or five days had suffered four or five days' severe toxaemia. That toxaemia was of bacterial origin, and these toxins had already poisoned the liver. By the administration of chloroform they were adding another poison of liver cells. Chloroform should never be given to a patient suffering from septic toxaemia. Since giving up the use of chloroform and adopting ether instead in these toxaemic cases, his statistics had improved enormously. His next point was that Sir George Beatson still had apparently the old fear of the peritoneal cavity. The peritoneal cavity should be opened thoroughly: the incision should be big enough to allow one to see what was there. Many appendices were left behind which should be removed. He quoted with approval the practice of a Los Angeles surgeon, who removed every appendix, no matter how ill the patient was. That surgeon's results surpassed any he knew. The appendix itself was the great source of toxaemia: by its immediate removal the toxaemia was cut short and the convalescence much diminished. One important medicinal treatment was washing out the stomach. He employed that means frequently, and knew that many cases had been lost through neglecting that measure. There was only one condition in which he would recommend delay in operating: that was where the patient had general peritonitis with acute intestinal obstruction. If that patient had been ill for seven to nine days he could wait twelve hours more, and that time could be devoted to washing out the stomach. The obstruction was in the small intestine, as a rule high up, and the stomach was full of putrid material, which ought to be washed out. The last cause of excessive mortality was washing out the peritoneal cavity; that resulted in diffusing the pus all over the cavity. He did advocate washing out the peritoneal cavity in perforation of stomach or duodenum where gross particles of food were present and had to be got rid of.

Professor Irving Cameron (Toronto) said that he wished to associate himself with the position taken up by Sir George Beatson. He made it a rule never to operate on cases which had gone on for five days if the treatment

advocated by Sir George Beatson, which was on the same lines as recommended by Ochsner, was adopted. He found that in many cases operated on prematurely there was nothing whatever wrong with the appendix, even though the symptoms of inflamed appendix had been present; perhaps these had been cases of typhlitis or perityphlitis. He approved of washing out the stomach in cases of acute appendicitis.

Mr. Herbert Paterson said that the ideas given expression to by Sir George Beatson and Professor Irving Cameron were antiquated. He thought that the intermediate cases did not present the difficulties and dangers to which Sir George Beatson alluded. He had had no answer to his question: "Can or can not Sir George Beatson say what is the condition of the appendix and which cases will recover and which cases will go on to a fatal termination?" The only reply he had heard was that if the appendix mischief was localized it did not matter what the patient's condition was.

Sir George Beatson explained that he was always guided by the pulse and temperature and their relation to one another, and by the local abdominal conditions. If there was a general rigidity of the abdomen and pulse and temperature not in harmony, then it was a case for immediate operation. If there was localized right-sided rigidity with pulse and temperature high, but keeping together, and if afterwards the blood count went down, then and then only did he operate. Some of these acute cases were operated on in ten days, when, with a high blood count and pulse and temperature normal, pus was indicated.

OBSERVATIONS ON THE LACERATION OF LARGE ARTERIES.

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The fact that a large artery may be completely torn across or divided by a blunt agent without fatal haemorrhage necessarily resulting is well known; it is mentioned in practically all textbooks of surgery.

The lesion is caused by such a force as is exerted on the vessel in avulsion of a limb; or in division by some blunt agent which contuses and lacerates the vessel wall (with

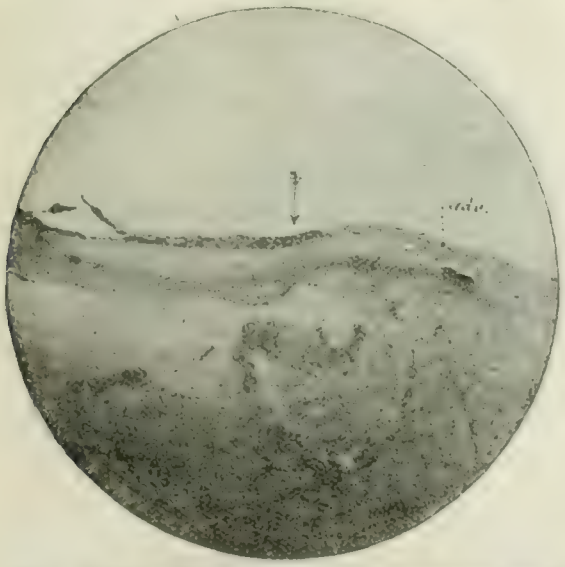


Fig. 1.—Wall of axillary artery (Case I). Arrow points to tapering of inner coats at seat of division. Lower half of field occupied by blood clot. × 12.

or without a wound of the superficial tissues of the part); or, in subcutaneous rupture, by a violent wrench. It is noticeable that authors do not state that occlusion and resulting haemostasis constantly occur. They seem to be content, as a rule, with stating the probability.

In their descriptions of the condition, also, writers are agreed as to how haemostasis is brought about. It depends on two factors—the curling up of the media and intima and the formation of a thrombus. This curling up of the inner coats may occlude the lumen of the injured vessel, or "at least favour the development of an obturating thrombus" (Lexer[1]). The adventitia also takes part in closing the open end of the vessel. It may simply be drawn out "to form a thin band of tissue" (Lexer[2]); or it may be folded over the retracted inner coats (Pepper[3]), or it may be drawn out and twisted (Erichsen[4]), the last seeming to form a very efficient aid to the prevention of haemorrhage.

I am not sure that this elongation of the adventitia is entirely due to the original violence. I think that, to any one who has had the opportunity of observing the occluded stump pulsating, the feeling must occur that the thudding of the thrombus against the inner surface of the adventitia must, to a certain extent, share in producing the elongation. It seems also from such observation that the occlusion is not very secure, and that the thrombus might easily be dislodged by movements.

A point to which attention may be drawn is the *condition of the vessel wall previous to the accident*. It might be thought that the inner coats of a healthy wall would more easily curl up after division, but that a healthy vessel would be more likely to escape injury from external violence. On the other hand, a calcified wall, being more brittle, would be more easily injured, while curling up would not take place so readily. But, as will be seen from the cases reported below, these ideas are not supported by facts. Of these cases, two were examples of external violence. In one the vessel wall was apparently healthy, and here the curling was by no means pronounced. In the other there were distinct calcareous changes in the media, and the intima was atheromatous. In this case curling up had occurred to a marked degree. This is in keeping with Dr. F. C. Wood's statement that while in the case of an artery thickened by disease retraction is not always possible, and that severe and occasionally uncontrollable haemorrhage is likely to result from a wound of the vessel, still, if "the injury to the vessel is due to crushing or tearing of the tissues, the edges of the inner layers of the vessel may curl up inside the lumen and partly close it."[5]

The question of precedent changes in the vessel wall is important in the case of a rupture by a violent wrench, as in Case III. Here atheroma was noted, and it is probable that it predisposed to the rupture which occurred.

With these preliminary remarks, I shall now proceed



Fig. 2.—Branch from axillary artery (Case I). Arrow points to seat of division of inner coats. To right is prolongation of adventitia. × 12.

to describe shortly three cases which were under my care some time ago.

Case I.—*Upper Limb Severed Close to the Shoulder, Axillary Artery Torn Across.*

R. K., aged 24, was admitted to the Western Infirmary on December 8th, 1906, shortly after having been run over by a locomotive. The left upper limb had been practically severed from the trunk, being attached by skin only, on the inner side;

and there was a fracture through the surgical neck of the humerus 5 cm. below the lowest part of the anatomical neck. There was no bleeding. An incision in the axilla, in the line of the artery, exposed the vessel, torn across. Just above the torn end a branch of the main vessel was found torn through about 0.5 cm. from its origin. The torn ends of main vessel and branch were closed by clot which extended along inside the main artery to above the origin of the branch. Although pulsation was vigorous, the clot was firmly held in the vessel. A ligature was applied about 2.5 cm. above the torn end, which was then cut away, and disarticulation at the joint was performed. The man made a satisfactory recovery.

The injured end of the vessel was examined microscopically by Dr. Leonard Findlay, who reported that the lumina of both trunk and branch contained a thrombus which projected a distance of 1.4 cm. beyond the vessel. To the naked eye the vessel wall appeared as a thin, pale strand of tissue embracing the thrombus, and towards its distal extremity ceasing abruptly. Sections examined under the microscope (Figs. 1 and 2), however, and especially those treated with Weigert's elastic stain (Fig. 3) showed the adventitia extending almost to the tip of the thrombus, the two inner coats stopping short of the adventitia by 1.4 cm. The adventitia thinned out towards its free end; the media tapered somewhat, and the most internal fibres were directed inwards from retraction of the coat. Small portions of the vessel wall were found detached and lying in the substance of the clot and towards its free surface immediately under cover of the stretched adventitia, so that there had apparently been considerable laceration.

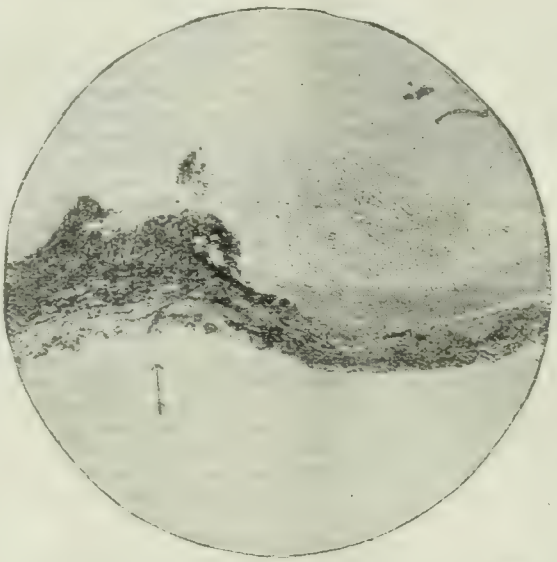


Fig. 3.—Same as Fig. 2. Weigert's elastic stain. Curling inwards of internal fibres. Photomicrograph by Dr. L. Findlay. × 24.

This, then, is an example of laceration of a large artery by external violence. The vessel was previously healthy, and the retraction of the inner tunics, formation of thrombus, and prevention of fatal haemorrhage corresponds with what we are familiar with in textbooks of surgery.

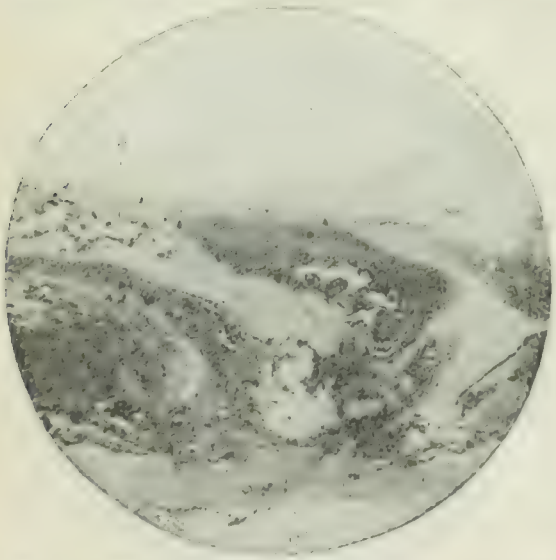


Fig. 4.—Laceration of ulnar artery (Case II). Curling in of inner coats. *c, c'*, Ragged cavities from which calcareous masses torn during cutting of section. × 12.

CASE II.—*Forearm Crushed, Artery Torn Across.*

[redacted] was admitted to the Western Infirmary on September 10th, 1909, shortly after having had his right [redacted] between two cogwheels. There was a large lacerated wound of the ulnar side of the limb, with free bleeding from the superficial veins. The soft tissues were pulped and the ulna extensively comminuted. The ulnar artery had been torn across below its middle, and the end of the upper portion, completely plugged by clot, was lying free in the wound and was not bleeding. The circulation in the hand was fairly good. A ligature was applied round the ulnar artery proximal to the torn end, which was then removed for examination. The wound in the limb was treated antiseptically, and, after a prolonged stay in hospital, the patient made a satisfactory recovery.

Dr. Shaw Dunn, who examined the portion of vessel removed, found that the coats were stretched and torn and turned inwards, the adventitia projecting beyond the media and intima. The lumen was blocked by recent thrombus in which there was no appearance of organization. Just about the level of the tear there was well-marked calcareous degeneration of the media (Fig. 4), and the intima appeared to have been somewhat thickened from atheroma.

Here we have an injury severely crushing the tissues of the limb, with comminution of bone, and involving one of the large arteries. In this case the artery was divided completely across. There were degenerative changes in its inner coats, but occlusion had taken place satisfactorily. The lesion of the vessel was easily discovered in the course of cleansing the wound.

CASE III.—*Rupture of Popliteal Artery.*

Alex. B., aged 20, was admitted to the Western Infirmary on June 21st, 1909, with gangrene of the right foot and lower half of the leg. Two days previously he was playing football, and, while making to kick the ball, he fell with some violence with the leg extended. He noticed immediately after the accident that there was a swelling in the popliteal space, and there was severe pain there and in the leg. By the following night signs of gangrene of the foot appeared; and next day, when he was sent into hospital, there was undoubted gangrene up to the middle of the leg, and severe pain continued. It was thought probable that he had ruptured the popliteal artery, and, in the absence of marked swelling, that the torn vessel had been occluded by clot. There was no history of syphilis, nor were there any signs of that disease; but it was noted that the arteries at the wrist seemed unduly prominent for a man of his age.

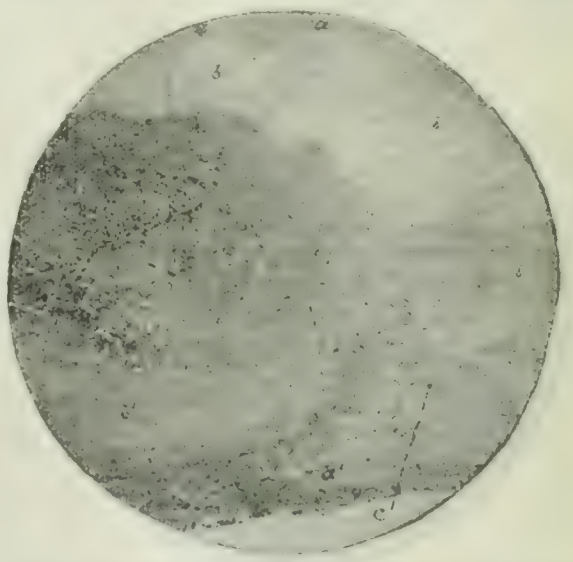


Fig. 5.—Laceration of popliteal artery (Case III). *a, a'*, Adventitia. *b b b, b' b'*, Curled-in inner coats. *c*, Thrombus undergoing organization. × 12.

An attempt was made to bring about desiccation, but without

success. He developed high temperatures, and showed signs of toxic absorption, and a Lister-Carden amputation was performed on July 1st. At the level of the division of the vessels by the knife the popliteal artery was found blocked by thrombus. Recovery was satisfactory, although delayed by considerable post-operative extravasation and retention of blood in the cavity of the wound.

Dissection of the amputated limb showed infiltration of the tissues with blood and a rupture in the lower part of the popliteal artery. The seat of rupture was closed by clot.

The vessel was submitted to Dr. Shaw Dunn for microscopical examination, and he found that the media and intima were sharply torn across (Fig. 5), and the lumen of the vessel filled by thrombus undergoing organization. Beyond the tear were portions of the wall in semi-necrotic condition. Above the seat of rupture was evidence of slight early atheroma.

In this case the wound was subcutaneous, and the trauma of the nature of a violent wrench, acting on the vessel wall, which was slightly atheromatous. When the parts were dissected it was seen that there had been considerable extravasation of blood, and the clot at first rather obscured the details of the injury. The complete shutting off of the circulation and the failure to develop a collateral supply resulted in gangrene. The failure of the collateral circulation may have been partly due to atheroma in the collateral vessels or to a high extension of the thrombus so as to obstruct their orifices of origin; but I believe that the pressure of the extravasated blood in the neighbourhood may also have had a share in its production.

It is interesting to find degenerative changes occurring in the vessel wall in a young subject, and this case recalls instances of popliteal aneurysm in children.[6]

Remarks.

Diagnosis.—In the cases which form the subject of the present communication the diagnosis was very quickly made in the first two, where the treatment involved a thorough inspection of the parts. While the diagnosis was not a matter of importance in Case I, it was otherwise in the second patient, where the attempt was to be made to save the limb. The nature of the injury and the careful inspection and cleansing of the wound led to the discovery of the arterial lesion, and consequently to the ligation of the wounded vessel.

In Case III the points I had to go on were the history of localized swelling following a strain, and pain extending from the seat of swelling down the limb, the onset of gangrene, and the suspiciously prominent vessels at the wrist. These, taken together, indicated the nature of the lesion; but even here the diagnosis was not a matter of vital importance, as there was only one course of treatment possible.

Treatment.—Apart from the question of treatment of the injured limb the course to be pursued with regard to the vascular lesion was obvious. I do not think that any surgeon would care, in the case of the large arteries, to trust to the security of natural haemostasis alone, and it therefore seems hardly necessary to insist on ligation above the torn end.

Conclusion.

We have in the above cases examples of laceration of large arteries by (1) crushing injuries and (2) violent strain. In Cases I and II I could not say whether there had been any great loss of blood, as whatever there had been had escaped through the external wound before I saw the patients. But when examined after admission into hospital complete haemostasis had been established.

In Case III, where there was no external wound, the extravasation and infiltration found on dissection represented the total haemorrhage, and while marked it was less than may be found accompanying a punctured wound of an artery.

In all three the disposition of the tunics of the vessel wall was similar; but in Case I only slight curling inwards of the inner coats was noticeable. It may be, however, that these coats were more markedly curled immediately after the artery was severed, and that they were straightened out by the thrusting action of the thrombus.

The retraction and curling up of the inner coats was well marked in vessels showing degenerative changes.

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[1] Lexer, *General Surgery*, translated by Lewis, London, 1908, p. 552. [2] Ibid, p. 553. [3] Pepper, in Heath's *Dictionary of Practical Surgery*, London, 1886, vol. i, p. 92. [4] Erichsen, *Science and Art of Surgery*, tenth edition, London, 1895, p. 408. [5] Wood, in Keen's *Surgery*, London, 1906, vol. i, p. 396. [6] Syme's *Contributions to Pathology and Practice of Surgery*, Edinburgh, 1848, p. 183.

SURGERY OF THE SACRO-ILIAC JOINT.

By W. I. de Courcy Wheeler, B.A., M.D.Dubl., F.R.C.S.I.,

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The difficulty I experienced in obtaining from current literature precise information in the study of three recent cases of sacro-iliac disease is my excuse for offering a short contribution to the surgery of the joint. To deal with this subject and to estimate at the proper value the present position regarding the diagnosis, prognosis, and treatment of sacro-iliac disease it is necessary to recognize certain gross anatomical and pathological facts.

The sacro-iliac is a diarthrodial or amphiarthrodial joint composed of two great masses of very vascular cancellous bone enclosing a negligible synovial cavity.

There is no *post-mortem* or operative evidence to show that disease ever originates in the synovial cavity, and the possibility may be dismissed from the field of practical surgery.

On the other hand, the cancellous bone of the ilium or sacrum is a suitable nidus for the development of a tuberculous or septic focus such as is so commonly found in the metaphysis of long bones (Fig. 1). To the surgeon contemplating operation the great posterior sacro-iliac ligaments and the excessive thickness of the iliac bone in the region of the posterior spine offer a powerful barrier (Fig. 2). The posterior ligaments are of primary importance, supporting as they do the weight of the superimposed trunk on the pelvis.

In contrast to the great thickness of bone in the posterior region of the joint there is but a shell of iliac bone occupied by the gluteus medius muscle covering the articulation on the outside.

The lumbo-sacral cord bears a direct anterior relation to the joint, hence the frequent presence of sciatica at the onset of sacro-iliac disease.

Diagnosis.—It is necessary to go back a number of years before finding in the literature anything but a passing mention of the symptoms. Erichsen gave us the classical description which detailed five cardinal symptoms—pain, lameness, changes in the attitude of the limb, swelling and abscess.

But do these symptoms bear investigation? The pain is far from being characteristic if it exists: lameness conveys nothing to a surgeon with an open mind; changes in the attitude of the limb occur in almost every pathological lesion of the lower extremity; swelling and abscess herald a vast destruction of the joint, which often cannot be checked by surgical means. If these symptoms are to be definitely established before the recognition and treatment of sacro-iliac disease it is courting disaster, and the reason why the prognosis is so exceptionally bad at once becomes obvious.

One is reminded of the words of Mayo when describing another disease—that a case with these symptoms already present is one for an undertaker and not for a surgeon.

Signs, such as pain on crowding together the iliac bones, tenderness in the front of the joint as examined per rectum, scoliosis with drooping of the pelvis, wasting of the muscles, and pain on heavy percussion behind, may be taken as occurring late, after advanced disintegration of the joint. Such symptoms cannot be elicited at the onset of a focus in the sacrum or ilium, or in primary synovial disease, if such ever occurs.

Too much emphasis cannot be laid on the fact that the textbook signs and symptoms are only present when there is extensive destruction, and although the picture is then unmistakable the time is past for successful surgical interference. In the great majority of cases the disease can be recognized at the onset with the same precision as in other joints. For example, all cases of persistent sciatica should be considered as suspect, no matter at what

age. The disease has been described in patients of 5 years and in patients over 60, but the most active years of life, from 15 to 35, should be watched with most suspicion. The sciatic pain in sacro-iliac disease often stops at the knee, and, in addition, radiates upwards into the sacro-lumbar region over a wide area. In more advanced cases the pain may be accompanied by tenderness over the course of the superior gluteal nerve.

The general movements of the patient, notwithstanding the free and unimpaired action of the hip-joint, are restricted, and there is obvious difficulty in turning or assuming a comfortable position in bed.

An acute onset with considerable rise of temperature was found in the first case I have to record in this paper.

If under ordinary treatment there is not a rapid subsidence of the pain and discomfort alluded to, no time should be lost in obtaining a good radiograph of the pelvis. The line of the sacro-iliac joint is admirably seen, and the absence or presence of disease recognized by comparison with the opposite side.



Fig. 1.—X ray showing a focus in the upper portion of the sacro-iliac joint in a patient with "sciatica."

The prognosis of sacro-iliac disease once suppuration has set in is admitted by all to be bad. Erichsen never saw a patient recover after full development of the disease and after suppuration had set in. Makins, on the other hand, describes several cases on which he operated with success after the formation of abscess, and urges the necessity of treatment of the joint along exactly the same lines as for diseases of joints in general. Stiles describes operation on late cases through the posterior route, but reminds us of the very unsatisfactory results. Tubby found in 38 cases of the suppurating form of the disease that without operation there were only three cases of death usually occurring from septicæmia or tertiary tuberculosis. Tubby, however, points out that the prognosis is favourably influenced by the thorough removal of diseased bone and the proper treatment of the abscess cavity. He adds that if the cases are seen early and placed under treatment the prognosis is on the whole favourable.

The treatment of sacro-iliac disease, if the diagnosis can be established at a reasonably early period, is in no way different in principle from the treatment of other joints. The indications for operation will be the same, and the cases which will recover by conservative management can be selected.

It is with the operative treatment of sacro-iliac disease that I propose to deal in this necessarily incomplete communication. If there is a tuberculous or septic focus present in the sacrum or ilium, as shown by a skiagraph, it should be exposed and removed here, as elsewhere, in as complete a manner as possible. The joint is not inaccessible, and its anatomical relations are such as to make bold the most timid of surgeons. The joint must be laid open by precise surgical methods, and on no account is the bone to be reached by following up existing sinuses. Mr. Golding-Bird and Mr. Makins have laid stress on this point.

It is apparent, notwithstanding earlier attempts to treat sacro-iliac disease in a rational manner, that *x*-ray photography and aseptic technique have not been utilized to develop the surgery of the joint.

Textbooks on surgical anatomy are as silent on the subject as are the surgical works; the points which might be of use to the operating surgeon are carefully omitted.

For obvious reasons, attempts to expose the articulation from behind are faulty (Fig. 3). By this route the powerful posterior sacro-iliac ligaments offer a barrier which, if broken down, interferes immeasurably with the suspension of the sacrum and superimposed trunk on the iliac bones. Injury to these structures can only be repaired by bony ankylosis after very prolonged rest. Similarly, an exposure of the joint immediately in front of the posterior iliac spine is rendered difficult by the great thickness of the strong attachment of the glutæus maximus, and by the bone in this region.



Fig. 2.—X marks the position on the bony pelvis for the application of the trephine or drill to expose the sacro-iliac joint.

On the other hand, in the centre of the fossa occupied by the glutæus medius muscle, about 2½ in. in front of the posterior spine, the bone is thin, and through this a drill

or trephine will enter the front of the joint at its highest point.

The exact position can be ascertained on the bony pelvis by joining a point marking the junction of the posterior and middle thirds of the crest of the ilium with the anterior extremity of the sciatic notch. The central point of this line marks the upper and front portion of the sacro-iliac joint.

The first impression on viewing this point on the bony pelvis, and still more so when the soft parts are *in situ*, is that it is considerably in front of the joint, and in this situation the drill or trephine would enter the pelvis. That such is not the case is easily verified.

Assuming that an *x*-ray photograph demonstrates an osseous focus in an early case of sacro-iliac disease, the operation is carried out as follows: The anterior and posterior iliac spines are marked while the patient is standing. (It is easier to accurately find the posterior spine lying at the bottom of a distinct dimple with the patient in the erect position.)

The patient is placed in the position familiar in kidney operations, and the point marking the junction of the posterior and middle thirds of the crest of the ilium ascertained. A curved incision 4 in. long is made 1 in. below the crest of the ilium, the centre of which corresponds to the point thus indicated (Fig. 3).

The superficial fatty tissue here is strong and well-marked, and lying deep to it is the strong aponeurosis covering the gluteus medius muscle.

These fasciae are divided in the length of the incision together with the underlying muscle fibres, and the bone is exposed (Fig. 4).

The bone is cleared with a periosteal elevator and the tissues retracted downwards. A finger now feels for the sciatic notch, and the drilling of the bone is commenced midway between this and the crest of the ilium. The best instrument is Doyen's burr with bit and brace (Fig. 5). It should be inclined slightly backwards until the joint is reached. If the bone is removed later with gouge or chisel in a slightly forward direction the pelvic fascia underlying the iliacus muscle can be felt in front of the joint, and an abscess in this position evacuated at the very earliest moment.

If further exposure of the joint becomes necessary, the bone is gouged away in a downward direction towards the front of the sciatic notch and backwards towards the posterior inferior spine if the disease is more located in the posterior portion.

Throughout the operation it is not necessary to ligature any important vessel or to injure the superficial nerves which lie to the front. The position of the incision is an admirable one, for this area lies developmentally between two sets of blood vessels, the segmental above and those for the limb below.

Before illustrating the remarks just made by a very brief mention of three cases, I would like to emphasize the following points:

1. The disease once well established is a very fatal one.



Fig. 3.—A shows the best line of incision, the mid-point of which corresponds to the junction of the posterior third with the anterior two-thirds of the iliac crest. B shows faulty approach to the joint.



Fig. 4.—The skin and superficial fascia divided, exposing the strong aponeurosis covering the gluteus medius muscle.

2. Radical treatment in the early stages is frequently indicated and offers a good chance of recovery.

3. The signs and symptoms usually described do not exist in the stages of the disease in which treatment promises most.

4. Vague and persistent pains in the sacro-gluteal and lumbar regions, especially referred down the sciatic nerve, when there is no history of previous similar attacks which got well, should arouse suspicion of sacro-iliac disease, no matter what the age of the patient.

5. An *x*-ray photograph gives valuable information.

6. Early operation to expose and remove the focus of disease is indicated in this joint as in others.

7. The joint is not inaccessible, and is easily reached through the iliac bone in the centre of the fossa occupied by the gluteus medius muscle.

A very brief description of three cases will suffice to illustrate the remarks just made.

Case I.

Mr. R., between 40 and 50 years of age. Symptoms came on acutely. He was apparently in perfect health, until coming in one evening after exercise he developed acute pain in the course of his sciatic nerve, which did not

extend below the knee. His temperature for several days reached 102°. For a week he was treated for sciatica and influenza. The temperature fell, and the pain became less, but the general discomfort about the sacro-gluteal region was increased. Thus he could not with any comfort turn in the bed or change his position. It gave him great pain and trouble to get out of bed. Yet on examination all the movements of the hip-joint were perfectly free: no pain was caused by forcibly crowding together the iliac bones. There was no tenderness on rectal examination. Sacro-iliac disease was carefully searched for. For a month nothing but palliative treatment was adopted, there being no evidence of bony disease. The patient in the meantime was improving, though his temperature was never settled, reaching 99° and 100° after intervals of no fever.

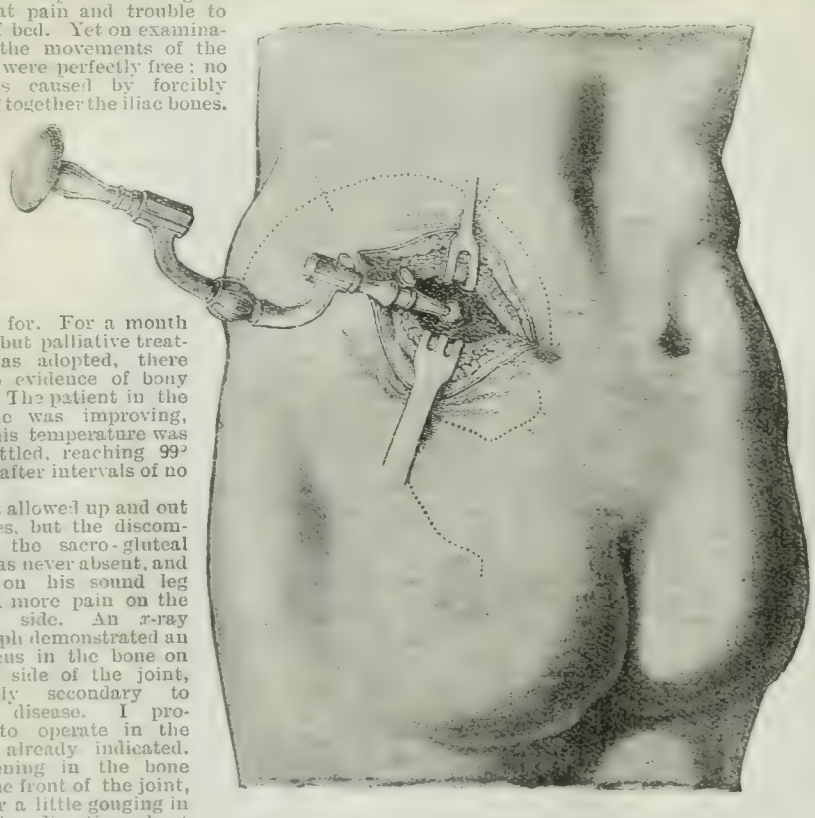


Fig 5.—Drill (directed slightly backwards) applied to the bone midway between the sciatic notch and the iliac crest.

He was allowed up and out for drives, but the discomfort in the sacro-gluteal region was never absent, and leaning on his sound leg produced more pain on the opposite side. An *x*-ray photograph demonstrated an early focus in the bone on the iliac side of the joint, apparently secondary to synovial disease. I proceeded to operate in the manner already indicated. The opening in the bone struck the front of the joint, and after a little gouging in an anterior direction about half a drachm of pus was evacuated. The finger could feel the pelvic fascia deep to the iliacus muscle, and was carried into the small abscess cavity leading underneath the bone towards the sciatic notch. The overhanging bone was gouged away, and the little cavity filled with sublimated iodoform and bismuth paste. After the operation the pain and discomfort disappeared, and the wound healed without drainage. A weak spot developed in the scar a fortnight afterwards, and on introducing a probe a little serum and bismuth were extruded. Each day there was a little bismuth on the pad covering this point. In eight weeks the patient was sent home. Six months after operation, Dr. Rensen, a distinguished Continental surgeon whom he consulted, wrote to me as follows: "Mr. R. is now quite well. The little fistula has closed after one injection of bismuth and vaseline. He has augmented his weight, and walks upright without any support." A year later this gentleman was in perfect health.

CASE II.

This was a girl who, in December, 1910, complained of "sciatic" pain from the hip to the ankle. She was treated with liniments, but finding no improvement, was admitted into a Dublin hospital about eighteen months ago and was detained for six weeks. After another interval, as her pain increased, she sought admission to another hospital, where, after treatment for sciatica, an abscess formed and opened on the outer aspect and below the left gluteal fold.

For four months the sinus discharged; she became more and more incapacitated, and appeared in a crippled condition at the extern department of Mercer's Hospital.

An *x*-ray photograph readily showed active disease of the sacro-iliac joint.

The patient was admitted to Mercer's Hospital in November, 1911. The articulation was laid open in the manner described and cleared of tuberculous granulation tissue and diseased bone.

Shortly after the operation she developed diphtheria, and the wound, already infected from the pre-existing sinus, suppurated freely. A sequestrum was extruded through the sinus some weeks later. Her convalescence was prolonged, but six months afterwards the operation wound was soundly healed and the sinus closed.

She was seen recently and is a strong, healthy girl, without any discomfort save some stiffness in her sacro-iliac region.

CASE III.

Male, aged 49, admitted to Mercer's Hospital, September, 1910, with symptoms of sciatica and lumbago; urine loaded with urates. No signs of sacro-iliac disease, for which he was carefully examined. *X*-ray photograph defective; the patient refused to remain in hospital until a second picture was obtained.

"Sciatica" and "lumbago" increased in severity, and the patient sought readmission. One month after his first examination an iliac abscess could be detected. An *x*-ray photograph now showed extensive destruction of the left sacro iliac joint, in addition to a focus in the lumbo-sacral articulation. The case was treated along conservative lines, the abscess was evacuated, and sublimated bismuth and iodoform paste introduced into the cavity. The patient made a good recovery.

THE LIGHTING OF OPERATION TABLES.

Demonstration.

DR. F. W. COLLINSON, of Preston, gave a demonstration of an electrical lighting system devised by him for use when operating at a private house. It consisted of a 12-volt accumulator battery and a telescopic upright, which could be clamped to the edge of the table used, and would support two 12-volt lamps of from 16 to 32 candle-power. The lamps could be easily and readily fixed upon the table in any position and turned in any direction for an operation with a patient in any recognized position. One of the lamps could be replaced by a head light, leaving the other in its position over the patient. The accumulator battery had a capacity of 40 ampère hours, and would keep the two lamps alight for six or seven hours. It could also be used for lighting a sigmoidoscope, urethroscope, cystoscope, and the like, and could be fitted so as to heat a cautery. The accumulator weighed about 44 lb., and the rest of the appliance about 20 lb.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

EXCESSIVE INGESTION OF SALT PRODUCING OEDEMA.

On September 8th I was asked to see a child 2 years old who was said to be very much swollen. The hands and feet were both markedly oedematous, and the face was stated by the mother to be very puffy every morning. Examination of the chest did not reveal any abnormality, and a urine analysis failed to show anything wrong with the kidneys.

A remark of the child's grandmother, however, seemed to me very significant. She said the patient was very fond of salt, and when he got the opportunity he promptly consumed the contents of the salt-cellar.

Thinking this might be the cause of the oedema, I ordered him to have no salt with his food and suggested that no salt should be left on the table within the child's reach. As his tongue was rather white a simple mixture containing magnesia and tinct. card. co. was prescribed, and a dose of castor oil to be given that night at bed-time.

On calling four days later I was gratified to find that the oedema had entirely disappeared, and that the child seemed in its usual state of health.

South Shields JOHN BAIN, M.B.

ALLYL SULPHIDE IN TUBERCULOSIS.

The communication of Dr. Minchin in your issue of August 24th, p. 460, on the subject of the treatment of phthisis by means of the active principle of garlic—allyl sulphide—and which was called forth as a result of your leading article upon tuberculosis treatment, is very interesting, especially at the present time when preparations are being made for the establishment of hundreds of State-promoted sanatoriums throughout the country, and an advance in the management of the disease demands more logical treatment than that dependent alone upon fresh air and a few vaunted but disappointing specifics. The well-known odorous properties of allium proclaim its penetrability, and this combined with its power as a germicide makes it an ideal inhalant in every stage of phthisis pulmonalis; its use, indeed, is indicated in every form of tuberculous mischief, and I can speak from the experience of several years past as to its undoubted curative properties, having put it to the test in general practice both in South Africa and this country. The preparations I have always employed have been those made under the direction of the pioneer of this treatment, Dr. Minchin, of Dublin, whose book upon the subject contains invaluable information.[1] Of the cases which I have treated within the past ten years by Minchin's method I will here mention the following:

Case I came under my care in March, 1910, having been sent from an inland county to the sea. She was in an advanced stage of consumption—hacking cough, large amount of thick sputum, loss of weight, vomiting, sleeplessness, aphonia, and fatigue, the usual physical signs, coarse râles, bubbling and fine crepitation, both lungs being involved, the left more extensively; temperature at mid-day 102°; pulse 120. The treatment consisted in bed, fresh air, suitable diet, and the inhalation twice a day of allyl sulphide. As the patient got more accustomed to it in a few days this was increased to three times daily, and then more frequently—indeed, whenever she felt inclined—the allyl sulphide being sprinkled on the respirator designed by Dr. Minchin for the purpose. Within a week an improvement seemed to result in the quality of the sputum, which, instead of being tenacious and difficult to get up, became thin and easy of expectoration; the quantity appeared at first to increase, but I have found that this is not uncommon and consider it a favourable sign; the cough, from being hacking and unnecessarily frequent, became useful and less wearying. The patient began to enjoy refreshing sleep, and after three weeks' continuance of the treatment was able to go out and take gentle exercise. The temperature gradually fell to normal, and in two months she returned to her home, being sufficiently well to undertake a long journey by road and rail.

Case II.—Another case of advanced tuberculosis was that of a patient who suffered from severe haemoptysis, with a large cavity in the left lung; the attacks of bleeding were frequent and alarming. I commenced attendance immediately following on one of these haemorrhages, and found the patient weak and very ill with all the symptoms and physical signs of advanced phthisis. He was placed on Minchin's inhalant, and his condition gradually became better—appetite improved, physical signs less marked, haemorrhage entirely ceased, and he was able to leave for home after two months' treatment.

Of many similar cases which I have treated—and I always adopt the routine practice of allyl sulphide in every case of tuberculosis—I have never seen one that did not materially benefit, lives having been prolonged and suffering relieved through its use.

It is, however, by its specific action upon tuberculous lesions that even more satisfactory results are to be obtained, for here the germicidal effect is unhandicapped by cavities containing shut-away fluid, as in the case of the lungs, which poison the system by their toxins, and are responsible for those cases of intractable phthisis one meets with. The credit of this theory is distinctly Dr. Minchin's, and there is no doubt that it will ultimately be adopted as affording the most rational grounds for surgical interference in tuberculous phthisis.

As an instance of the curative properties of allium when applied externally, or to an open tuberculous cavity, I will quote the following case:

Case III.—A lad of 18, whom I commenced attendance upon in the spring of this year. He had a history of phthisis, and his condition was further aggravated by a large tuberculous cold abscess in the scapular region. It had been aspirated half a dozen times before I saw the case, and by direction of his home physician I refrained from adopting any further treatment at the time, and aspirated once or twice, but the fluid rapidly accumulated. I meantime had the patient on the inhalant, and his health improved. The internal pressure of the abscess contents resulted in a sinus establishing itself through one of the old needle holes, and a chronic discharge followed. After six weeks of daily syringing and draining, the cavity showed no sign of healing. At this juncture, on the advice of Dr. Minchin, I decided to try an ointment of allium sulphide. The effect was magical. As in the case of lung disease, the discharge at first became more copious and watery, and then in a few days commenced to rapidly dry up. In a fortnight not a drop of pus exuded; even on pressure the walls of the cavity became adherent, the sinus closed, and, as far as this condition was concerned, the patient was cured.

With Dr. Minchin, I consider that the drug is an absolute specific in all tuberculous lesions in accessible situations, or in those which can be rendered accessible. It is in the happy combination of surgery and medicine that the successful treatment of phthisis will lie, and the discovery of the germicidal power of allyl sulphide has placed an ideal agent in the hands of the profession towards this end.

Rostrevor, co. Down. John F. Elliott, L.R.C.S.C.P.Irel.

[1] *Treatment of Tuberculosis and Lupus with Allyl Sulphide.* By Wm. C. Minchin, Dublin. Baillière, Tindall and Cox.

ACUTE NEPHRITIS DUE TO TURPENTINE ABSORBED BY THE SKIN.

I was consulted on August 26th by a woman about her daughter, aged 5 years. On August 21st the child had developed a mild bronchial catarrh, to which she is very liable, and the mother had kept her in bed and treated her in the way she usually did. On August 24th she noticed that the child's urine was of an extremely dark colour and as this persisted she brought a specimen to me. The urine looked like *café au lait*; examination showed the presence of blood in large quantity, and the sample went almost solid with albumen on boiling.

I found the patient in bed, apparently perfectly well except for a slight degree of bronchial catarrh; there was no sign of any oedema, the heart was normal, and there was no suggestion of scarlet fever. The urine was scanty; a sample was sent to a pathological laboratory, and the report received stated:

Serum albumen and globulin in abundance; a number of granular, epithelial, and hyaline casts, with some renal pelvic cells and leucocytes; red blood discs present. There is nothing suggestive of calculus or growth.

There was no pyrexia, nor was the pulse-rate increased. On making further inquiries I was told that the child's back and chest had been freely rubbed with a liniment containing ammonia, camphorated oil, and turpentine. It then occurred to me that the haematuria was possibly due to the absorption of turpentine by the skin. The application was stopped, milk diet ordered, and the bowels freely opened. The condition of the urine being exactly that found in the early stages of acute nephritis, whether caused by cold or by some toxaemia, the case naturally caused a good deal of anxiety; but in a week the amount of blood and albumen gradually diminished, and in ten days had completely disappeared. The child remained quite well all the time, the bronchial signs soon clearing up. A sample of urine examined after a further ten days' interval was normal.

The case may be of interest, since it seems fair to assume that the nephritis was caused by the action of turpentine absorbed from the skin. I can find no reference to this in the books at my disposal. Dixon Mann (*Forensic Medicine and Toxicology*) quotes a case of haematuria due to the absorption of the vapour of turpentine, and probably a far larger amount of the drug would get into the system after a considerable area of skin had been freely rubbed with it several times. The possibility of such ill-effects is worth bearing in mind, seeing to what extent turpentine is employed as a liniment in chest conditions among all classes of patients.

Kenneth Anderson, M.B., M.R.C.S., L.R.C.P.

Banwell, Somerset.

The number of diphtheria intimations in Edinburgh for the week ending mid-day, September 21st, was eighteen, the same as in the preceding week. The number is larger than the average, but is not regarded as alarming. Most of the cases have occurred in one district of the city. The medical officer of health says there is no cause for apprehension, as what is believed to have been the cause has been discovered and dealt with by his department. This is the season when a recrudescence of diphtheria may in ordinary circumstances be looked for.

Reviews.

HAEMATOLOGY IN DIAGNOSIS.

A REVIEW of Dr. ARTHUR PAPPENHEIM'S atlas of blood diseases was recently published in this JOURNAL; his new volume on haematological diagnosis[1] gives the reader an opportunity of coming to closer quarters with the views enunciated by the author in papers scattered in various publications. They are collected in this book and elaborated in such detail that the students and practitioners for whom it is said to be designed may well feel that some mistake has been made, for no one could properly appreciate the book unless he were not only a highly trained technician but an expert in the study of haematology. Dr. Pappenheim in his preface states his object has been to provide a guide for practical diagnosis, avoiding any critical or searching inquiry into the vexed questions of the morphology and genesis of the blood cells; yet we find the first 224 pages little more than a most elaborate exposition of the writer's views on the genesis, morphology, and pathology of the red and white corpuscles; only about 40 pages are devoted to the technique of the estimation of the haemoglobin, of the enumeration of the blood cells, and of the estimation of the various proportions of white cells, using more especially the combined May-Giemsa method of staining as modified by himself. The reader must not expect to find a clinical study of blood diseases or an analysis of the changes met with in the blood in various diseases; what he will find is the author's views on the reaction of the blood as revealed by the three forms of investigation above mentioned. While admitting that his views are not those usually accepted, he expresses the hope that his volume will enable the reader to grasp the various theoretical considerations which fill so many pages. Readers who have been impressed with Dr. Pappenheim's numerous excursions into the field of haematological investigation, especially in regard to the genesis and interrelation of the various white cells of the blood to one another, will heartily welcome the volume, for although Dr. Pappenheim's views have been frequently expressed in current literature there has always been very considerable difficulty in accepting the fine distinctions he draws between different cells. If for no other reason than that Dr. Pappenheim has published eight superbly produced plates in this work, and by outline drawings analysed the various individual cells, using his special nomenclature, we should welcome this work. The plates give the reader the opportunity to pin Dr. Pappenheim down to the duty of exhibiting to the eye the fine distinctions drawn in the letterpress. Despite Dr. Pappenheim's elaborate treatise, despite the many repetitions of his conceptions, we must admit that much of his work fails to carry conviction. For a proof of this criticism we would refer the reader to Plate 8, and ask him, after a perusal of the text, to attempt to make an analysis of the cells depicted. Evidently Dr. Pappenheim has had sufficient level-headedness left to induce him to acknowledge the bewilderment caused by his classifications; for he says with regard to this plate that many of the fine distinctions are lost owing to the difficulties of printing in three colours (!). To end this review on such a note would be unjust. So far from being so deeply immersed in his subject as to have lost proportion, as some of our remarks may have led the reader to suppose, Dr. Pappenheim in this volume keeps before the reader the truth that over-refining in the study of the blood pictures in disease has done harm in the past. We must unlearn much that has been taught, and it appears that the belief in the importance of distinction between leucocytosis and leucocythaemia which has led us to look upon one as a reaction to infection, and the other to a pathological result of some non-infectious nature, must be revised. The true conception of the meaning of Hodgkin's disease, of the leucocythaemias, of pernicious anaemia, of splenic anaemia, of inflammatory leucocytosis, will probably be one which recognizes in all a reaction to a stimulus or stimuli acting on the blood primarily, or on the blood forming organs primarily or on both at the same time. Very different stimuli may produce very similar results—for example, in bothriocephalus anaemia, and in pernicious anaemia. Progress in the study of the cellular content of the blood will come by accepting this doctrine, and though in perusing this volume we are constantly annoyed by what seems to be useless repetitions, by various addenda, by footnotes without number, not only to the remarks made in the general statement of views which are so painfully elaborated, but also to the numerous shortened summaries of these views, it must be constantly kept in mind that it is to Dr. Pappenheim's views, or mainly to them, that we must look in the future for the unravelling of countless problems. If the volume had been more carefully revised for publication it would have appealed to a larger circle of readers.

[1] *Grundriss der hämatologischen Diagnostik und praktischen Blutuntersuchung. Ein Leitfaden für Anfänger Studierende und Praktische Aerzte.* By A. Pappenheim. Leipzig: Werner Klinkhardt. 1911. (Roy. 8vo, pp. 272: Tfn. 8. M. 12.)

The volume[2] by Dr. DOMARUS differs very much from Dr. Pappenheim's work, and, if we are not mistaken, will be far more welcome to the student and practitioner. Its scope is not too ambitious. The first 63 pages deal with the technicalities of blood examination, and contain just as much information on the debatable points connected with the morphology and origin of the blood cells as will give the reader an incentive to look elsewhere if he wants to know more. It is interesting to see that in such a comparatively small work as this is, space should be found for reference to the work of Arneth, which was reviewed in this JOURNAL some years ago. His investigations led him to the conclusion that the slighter the polymorphous changes in the nuclei of the neutrophile leucocyte the younger such cells were, and vice versa. If many of the younger type of cells figured in the blood field then, it must mean that the older types have undergone destruction but that the supply from the blood-forming organs was prompt and adequate. The remaining 130 odd pages of the book are taken up with an account of the clinical aspects of true blood diseases and with the details of the blood examination in many of the diseases which have but remote connexion with primary disorders of this tissue. The reader will be very interested to read how Dr. Domarus distinguishes lymphatic leucocythaemia from pseudo-leukaemia and the latter from Hodgkin's disease (which he calls a malignant granulomatous disease) and from lymphosarcoma. The plate showing the staining character of the leucocytes with the May-Grünwald medium is a triumph of lithography, but it avoids difficulties too much. Dr. Pappenheim's atlas, in spite of its multiplication of types, would be a better guide for serious scientific work.

[2] *Taschenbuch der klinischen Hämatologie.* By Dr. von Domarus, assistant an der II Medizinischen Klinik in München. With a contribution by Professor Dr. H. Rieder on the Roentgen ray treatment of diseases of the blood and blood-forming organs. Leipzig: Georg Thieme. 1912. (Post 8vo, pp. 210, one coloured plate. M.3.)

It is interesting to turn from these two German works to the compact little volume written by Dr. LEFAS.[3] He devotes as many pages as Dr. Domarus to the technical examination of the blood, but contrives to pack into these limits references not only to those methods which he has found most serviceable, but to those which have been adopted by many workers in different countries. Two or three pages are devoted to the examination of the marrow, a subject which, though at present not developed clinically, might well be of use in the diagnosis of obscure causes of death. It has been found difficult to fix a definite formula for the various cells found in the human marrow, but Sacconaghi has been able to establish one in the rabbit, and details of it are here given. Those working at comparative hematology will find at p. 94 useful facts connected with the blood formula of various other animals. It is evident from the section on leucocythaemia (p. 161) that French workers, like the German authorities mentioned above, accept the idea that at the bedside it is possible to meet with conditions, not examples of lymphadenoma or Hodgkin's disease, which, as they reveal external characters so like those of leucocythaemia, and yet do not reveal the blood changes met with in such states, may well be called "pseudo-leucocythaemia." Lefas apparently agrees with the view enunciated by

[3] *Hématologie et cytologie cliniques.* By Dr. E. Lefas. With a preface by P.-E. Launois, professeur-agrégé à la Faculté de Médecine. Second edition, entirely revised. Paris: J. B. Baillière et Fils. 1912. (Post 8vo, p. 296: 5 coloured plates. Fr. 4.)

Pappenheim that the maladies known as the leucocythaemias really belong to the group of infectious diseases, as opposed to the conception advocated by Banti and others that the leucocythaemias are really of the nature of sarcomatous disease. The last forty odd pages are devoted to the study of the cells in various fluids; the section dealing with the study of the cerebro-spinal fluid are very fully developed. We close this useful little monograph with feelings of regret that the illustrations, both coloured and uncoloured, fall so far behind the excellencies of the subject matter.

A TEXTBOOK OF SURGERY.

The reputation of Thomson and Miles's *Manual of Surgery*, already thoroughly established, will be enhanced by the excellence of the new edition.[1] For authors of a textbook the task of keeping the work strictly up to date is becoming more formidable every year. We are told that a battleship becomes, if not quite obsolete, at any rate, in some respects out of date almost as soon as she is commissioned. In very much the same way we can understand that an author may find his work become in some more or less important degree behind the times in the interval between the laying down of the keel, so to speak, of the new issue and the appearance in the waters of the medical world of the fully commissioned book. The publication of a new edition of such a book as this is not, we fancy, undertaken by its authors with a light heart. And it is with special pleasure that we note that this, the fourth edition, maintains the freshness of treatment of the subject and graceful style of its predecessors.

The first volume deals with general surgery almost exclusively; some chapters, however, are devoted to injuries and diseases of the joints and bones in detail. A very large amount of new material has been added, and yet the work has been kept within limits of size not beyond the range of the student and the practitioner.

It is manifestly impossible for us to notice all the new features of the work. In the chapter on syphilis the remarks on the Wassermann reaction are short; but sufficient to rouse the interest of any one disposed to make further inquiry. Salvarsan is mentioned with more reserve than writers on "the revolution in the treatment of syphilis" may care for. Much has been learnt about it since the edition went to press. For example, in the text we read that the services of a "skilled chemist" are required to prepare the yellow powder for intravenous injection. The recent modifications in the methods of preparation suggested by Ehrlich do not demand any very great chemical skill. That very reserve keeps the authors right, for now that the limitations of salvarsan are known we find their opinion that it may be best for the drug to be combined with a course of mercury to be in accordance with the opinion of many observers, not excepting Ehrlich himself.

In looking into the author's descriptions of the treatment of aneurysm, we are disposed to take exception to the statement of the *rationale* of the acupuncture method of Macewen. We find that "granulations form on the rough surface produced, and on these the blood coagulates, the clot thus formed increasing in size till it fills the sac." Now Macewen holds that scarification induces reparative exudation in the parietes, infiltration of these with leucocytes follows, and then there is a further separation of leucocytes from the blood current and layers of white thrombus form along the wall of the aneurysm.

The chapter on methods of wound treatment deals very fully with the subject; more might have been made of the discussion on antiseptics, in this respect, that too many substances are mentioned and too little information is given of most of them. A statement as to their relative germicidal power is now practicable, and it is a matter which students should have firmly impressed upon them. The authors could well have omitted reference to many of the newer proprietary disinfectants especially those containing soap regarded by some observers as worse than useless.

In the treatment of fractures the authors hold temperate views and are opposed to wholesale operative measures applied in some schools in simple fractures, say, of the leg bones, though they strongly advocate open operation after eight to ten days when extension and manipulation will not bring the fragments into accurate apposition.

The second volume deals with regional surgery. It also has been most painstakingly revised and judiciously enlarged. The arrangement of the regions is anatomical, beginning with the head, face, neck, and so on, working downwards. The result is that it is easy to get at once to the part of the subject one desires to study. There is much subdivision, and the chapters are, on the whole, short. A feature of each is a brief dissertation on the anatomy, and sometimes the physiology, of the region whose diseases and injuries are described. These prefaces are of great value, as they are plainly and concisely written with a practical purpose in view. An illuminating diagram generally accompanies the letterpress. The text is written in crisp, lucid English, so that reading is pleasant, and yet the points are put in such a way that they stick. The aspect of this volume which appeals most to us is the great emphasis placed on the clinical features of disease; they are described uniformly and without overloading by description of conditions rarely encountered.

In the third volume, added to the new edition, the authors have presented to the profession a really readable work on operative surgery. It is compact, concise, and yet quite sufficiently full for the purposes of the student and practitioner. Its chief outstanding merit is that it embodies the experience and ideas of the authors, who write of operative procedures as they have tested them, and not simply as they have read about them. The pictures are uniformly excellent, and the descriptions are written in a quiet, self-possessed style. The authors leave much to the initiative and intelligence and powers of practical application of the operator. Examples of these points of merit are notable in the chapter dealing with operative surgery of bones: in that on hernia, where believers in the saccular theory of hernia will find the treatment of the sac elevated to its true place of importance; and in that on intestinal surgery, where the authors, rightly we think, recommend the simplest forms of intestinal suture, and but few of these. The printing and style of the three volumes are good, and we have found only two instances of the machinations of the "printer's devil": Vol. II, p. 671, third line from foot of page, and Vol. III, p. 456, in paragraph (*a*).

These three volumes constitute a textbook of surgery of the very highest rank; the teaching is absolutely sound throughout. They are a tribute to the thoroughness and excellence of the surgery of the present-day Edinburgh school, in which the authors are such distinguished teachers.

SYNTHESIS OF DRUGS.

A typical example of German book writing industry at its best lies before us in the shape of the third edition of Professor Sigmund Fränkel's volume on the synthesis of drugs.[2] It is written for medical practitioners, chemists, and pharmaceutists, and endeavours to trace the connexion between the chemical constitution of drugs and their physiological action. Such knowledge, as the author points out, is not merely of scientific interest, but also possesses considerable value expressed in pounds, shillings, and pence. For the advances made in synthetic organic chemistry, and in the study of the fate of drugs in the body have brought to light two highly important facts. First, that there is reasonable hope of preparing a new drug of almost any given constitution on the one hand, and, secondly, on the other, that in the case of many important drugs occurring naturally in plants or elsewhere, the pharmaceutical properties of the drug are bound up with certain of the side chains or atomic groupings in its molecule, and are not attached to the whole of its molecule as such. Hence the pharmacologist can often indicate to the synthetic chemist the

[1] *Manual of Surgery.* By Alexis Thomson, F.R.C.S.Edin., Professor of Surgery, University of Edinburgh, Surgeon Edinburgh Royal Infirmary, and Alexander Miles, F.R.C.S.Edin., Surgeon Edinburgh Royal Infirmary. Fourth edition, revised and enlarged, in three volumes. Edinburgh, Glasgow, and London: Henry Frowde and Hodder and Stoughton. 1912. (Cr. 8vo, pp. 939; figs. 274. 10s. 6d. net.)

[2] *Die Arzneimittel-Synthese, auf Grundlage der Beziehungen zwischen chemischem Aufbau [illegible] Aerzte, Chemiker, und Pharmazeuten.* Von Dr. [illegible] Third edition, enlarged, and revised. Berlin: [illegible] (Roy. 8vo, pp. 831. M.24 in paper, M.26.50 bound.)

approximate chemical constitution of a new drug that is to have certain medicinal properties, and can often save him fruitless labour by pointing out beforehand the lines along which the chemical constitution of some newly invented or discovered drug can be most promisingly developed or varied. Thus, it is often possible to get rid of certain undesirable qualities—insolubility, for example, or an unpleasant taste, or an unduly irritating action—in a synthetic product without impairing its most important activity as a drug; a vast amount of knowledge of this sort has been accumulated by organic chemists during the last few decades, and Professor Fränkel's volume, up to date down to October, 1911, gives a lucid and well-arranged summary of it all. The first 200 pages form the general part of the book, and deal with the theory of the action of drugs in the body, the influence of special atomic groupings in drugs, and the alterations, synthetical or analytical, that drugs undergo in their passage through the organism. The special part of the book covers 540 pages, and deals in successive chapters with such groups of drugs as the antipyretics, the alkaloids, hypnotics, antiseptics, and so on. In the ten pages given to the organic preparations of arsenic one naturally looks first for an account of the preparation of salvarsan. A scheme whereby it might be prepared from p-aminophenyl arsenious acid (the mono-sodium salt of which is atoxyl) by successive oxidation, nitration, and cautious reduction is given. One reads that Ehrlich ascribes its spirillocide action to the trivalent arsenic atom it contains, while its toxicity is reduced by the hydroxyl groups in the para position, and its pharmacological activity is increased by the presence of amino or hydroxyl groups in the ortho position to the arsenic atom. Countless references to the literature are given throughout the book, and it ends with full indices. It is fully up to date, and to the pharmacologist, to the organic chemist interested in drugs, and to the chemical physiologist it is indispensable.

TREATMENT OF NEURASTHENIA.

Dr. Paul Hartenberg is well known as the author of many interesting works on nervous diseases, and the last volume from his pen on the treatment of neurasthenics [6] is well up to the high standard of his previous publications. It is most readable, is written with all the author's usual clearness and precision, and is a record of the practical application of his extensive experience to the treatment of one of the most widespread and troublesome affections of the nervous system with which we are called upon to deal. Among the manifestations of neurasthenia, Dr. Hartenberg calls attention to the frequency with which atonic dyspepsia is encountered as a concomitant condition, and expresses the opinion, with which many observers will agree, that dyspepsia with a moderate dilatation of the stomach, far from being a consequence of the neurasthenic state, invariably occurs as a precursor, and is to be regarded as a principal cause. Many other causes, besides dyspepsia, contribute to the occurrence of neurasthenia, but none of them is self-sufficient, and the cause, whatever it be, can only produce the neurasthenic condition when it acts upon a nervous system with a special predisposition to this form of disturbance. Every nervous system, says Dr. Hartenberg, is possessed of a limit of "fatigability," and those in whom this limit is narrow are potential neurasthenics. "Fatigability" is a quality inherent in all men, but, like every other tissue proclivity, it varies in different individuals, and is influenced by inherited tendencies as much as, if not more than, by the wear and tear of every-day life. In the treatment of the condition the important point to ascertain is the margin of resisting power possessed by the patient. When kept within that margin his nervous system will respond comfortably to the calls he makes upon it: beyond it he will become, whatever the cause of excessive demand be, neurasthenic. Dr. Hartenberg has found that the results of treatment are not always alike, and that, as is to be expected, the patient with an inherited predisposition to "fatigability" is the one from whom least is to be expected in the way of complete and lasting cure. In the management of neurasthenia he lays special stress upon the necessity for complete confidence between patient and physician. The only form of treatment by suggestion which he has found of any use is the faith inspired by the daily visit of a wise and encouraging doctor. This personal and direct treatment, he writes, naturally demands frequent, almost daily, interviews between the patient and the physician. It is necessary, in fact, that the patient should be continuously under medical influence in every stage of the treatment. In the matter of drugs he has found, contrary to the experience of many physicians, that strychnine is without parallel as a curative agent, and is to neurasthenic depression what morphine is to pain. To be effective it must be used in large and progressive doses. He prefers the hypodermic route of administration, injects it once daily, and advocates its being pushed to the point of physiological toleration. When there is much restlessness and irritability he combines the strychnine with suitable doses of codeia. Alimentation, massage, rest, baths, and exercise are all discussed with admirable discrimination and with reiterated reminders that every case must be handled on its merits. Finally, on the question of prevention, he gives this wise advice: The patient will do wisely to make an exact estimate of his strength. He must be got to understand that he should limit the amount of work he does, always stopping short of fatigue, and economizing effort in every way. His hours of repose should be long, he should go to bed early and get up late. He must be content to take a siesta after meals, after lunch in particular, so that the day may be divided into two parts by an hour of immobility and quiet. In a word, he must resign himself to doing a moderate measured amount of work, recognizing that his constitution is only capable of a minimum of activity.

The book is an excellent exposition of a rational and wise system of treatment, and may be cordially recommended to the perusal of every one engaged in the practice of medicine.

[6] *heutiques.* By Dr. Paul Hartenberg. Paris: Felix Alcan. 1912. (Crown 8vo, pp. 350. Fr. 3.50.)

THE DICTIONARY OF NATIONAL BIOGRAPHY.

The second volume of the second supplement of the *Dictionary of National Biography* [7] was published on October 3rd. The supplement is to contain biographies of noteworthy persons who died between January 22nd, 1901, the date of Queen Victoria's death, to which the first supplement published in the autumn of 1901 brought the record of national biography, and December 31st, 1911. The new volume, like its predecessor, is printed on the thick paper of the original edition, and contains some 690 pages. The principal biographies, judged by length, are those of Sir William Harcourt, the first Viscount Goschen, George Meredith, Sir Theodore Martin, and Sir J. D. Hooker, the last by Sir W. T. Thiselton-Dyer. The volume contains about the usual proportion of names of distinguished members of the medical profession. Among those are Sir Michael Foster, by Professor J. N. Langley; Dr. Hughlings Jackson, by Dr. James Taylor; Dr. Gee, by Dr. Norman Moore; Sir W. T. Gairdner, by Dr. Gibson of Edinburgh; Sir A. V. Macan, by Dr. Rowlette of Dublin; Dr. Allan Macfadyen and Sir Stephen Mackenzie, by Dr. Rolleston; and Sir Arthur Mitchell, Scottish Commissioner in Lunacy, by Mr. A. H. Millar. For most of the biographies of surgeons, including Sir William MacCormac, Mr. Christopher Heath, and Mr. Timothy Holmes, Mr. D'Arcy Power is responsible. The biography of Sir Joseph Fayrer is contributed by Dr. H. P. Cholmeley, and that of Sir William Hingston by Dr. Andrew Macphail of Montreal. The biography of Sir Seymour Haden is by Mr. A. M. Hind, and is chiefly concerned with his influence in the recent revival of etching in this country. A very excellent account of the life and work of Sir Francis Galton is contributed by Sir George H. Darwin. The biography of Lecky, the historian, is by Dr. F. W. Prothero. The Supplement, under the editorship of Sir Sidney Lee, continues the admirable tradition established by him and Sir Leslie Stephen in the original work, and judging by the medical and scientific biographies seems to include the vast majority, at least, of those names which ought to find a place in such a compilation.

[7] *Dictionary of National Biography.* Second Supplement, Vol. II. Faed-Maybridge. London: Smith, Elder, and Co. 1912. (Roy. 8vo, pp. 686. 15s. net. Half mor., 20s. net.)

NOTES ON BOOKS.

The Rotunda Reports[8] of the year present several features of special interest. Three illustrations are given of the new lying-in wards, and 2,241 cases were dealt with in the extern department, 2,608 in the maternity, and 604 in the gynaecological wards. In obstetrical practice the most important change has been the adoption of the system of early rising, the patients being encouraged to sit up in bed twelve hours after delivery and to get up after forty-eight hours. The result seems to have been entirely favourable. Individual cases of torn perineum and others are, of course, excepted from the general rule. Experiment is also being made in departure from the routine eye-douching with silver nitrate. Thirty cases of vaccine treatment of puerperal infection are recorded with three deaths. The difficulty of political origin which lies before maternity schools from the conditions of the maternity benefit of the Insurance Act are referred to, and suggestions made regarding them. Of great pathological interest are two cases of intraperitoneal haemorrhage found on Caesarean section, and there is also a case of chorion-epithelioma, the first that has been recorded in Dublin for twelve years.

Dr. French's small volume in its third edition[9] maintains the purpose for which it was originally intended—namely, that of being a convenient guide to those examinations which are not carried out at the bedside, including the examination of the urine, blood, sputum, pus, gastric contents, faeces, various exudations and fluids the physiological characters of which have been altered by disease, and finally tests for the commoner poisons. It is not clear from statements made on pages 5 and 9 whether uric acid crystals are pigmented by urocrythrin or by urochrome. A word of warning, too, would be in place on page 39 et seq. in the description of the tests for acetone and diacetic acid that the urine should be recent. The volume contains a very large amount of useful information within very convenient compass.

In a little book with the title *The Care of Infants and Young Children*[10] Dr. A. Dingwall Fordyce has gathered together his lectures delivered to the medical class of the Christian Workers' Training Institute. The book is well written, in an easy and simple style, and shows clearly the author's power of explaining the elementary matters of which he writes. The articles on the characteristics of healthy childhood, on infantile mortality, and on hygiene, are full of sound common sense and omit nothing of importance. In the last chapter the author rightly lays emphasis upon the futility of hospital out-patient treatment unless supported and amplified by the work of the health visitor and the education of the parents of the child. It is, however, of equal importance to remember that a superficial acquaintance with matters of purely medical interest may be a dangerous possession both for mothers and for health visitors. For this reason the wisdom of the author in extending his lectures to include descriptions of many infantile disorders may be doubted, as also the insertion of some twenty photographs illustrating pronounced pathological conditions. In his preface the author states that the lectures may prove a useful guide for mothers, nurses, health visitors, and students of medicine. It would perhaps have been better to exclude consideration of the last class. It is difficult to imagine that lectures delivered under such circumstances should prove of great use to students of medicine.

Mr. Rogers, who has had a large experience in social work, is convinced that "the heart of the matter lies in character."[11] He emphasizes his belief in the effectiveness of voluntary service that is called "charity," as opposed to State-enforced relief, which, even where necessary, pauperizes the recipient and is extorted grudgingly and of necessity. The book is a collection of scattered papers, but its keynote is the need for the organization of charity. The book is, in fact, largely a defence of the methods of the Charity Organization Society and a plea for the education of character by religion. The cure of poverty, Mr. Rogers holds, lies in charity. He admits that charity has to a certain extent failed, but he maintains that in dealing with the mass of misery around us it is successful in comparison with the untried theories of its critics. The reason for the failure is that charity has been disorganized. Summing up his teaching, he believes that the solution of social problems lies in large part in education, as it is in schools that character is to a great extent formed. But Mr. Rogers will have nothing to do with secular or undenominational education. Whether one agrees with him or not, his book is well worth reading, for it is the outcome of knowledge gained at first hand, and is marked throughout by strong common sense as well as by a fine humanity not blinded by sentimental illusions.

[8] *Clinical and Pathological Reports of the Rotunda Hospital for One Year.* By Henry Jellett, M.D., etc., Master; Bethel A. H. Solomons and David H. Madill, Assistant Masters; and Robert J. Rowlette, Pathologist. Dublin. 1912. (Pp. 64.)

[9] *Medical Laboratory Methods and Tests.* By Herbert French, M.A., M.D.Oxon., F.R.C.P.Lond., Assistant Physician, Guy's Hospital. Third Edition. London: Baillière, Tindall, and Cox. 1912. (Crown 8vo, pp. 212; figs. 88, coloured plates 2. 5s.)

[10] *The Care of Infants and Young Children.* By A. Dingwall Fordyce, M.D., F.R.C.P.Ed. Edinburgh: E. and S. Livingstone. 1911. (Cr. 8vo, pp. 161; illustrations 36. 1s 6d. net; cloth covers, 2s. net.)

[11] *Circumstances or Character?* Studies in Social Work. By Clement F. Rogers, M.A., Lecturer in Pastoral Theology, King's College, University of London. London: Methuen and Co., Ltd. 1911. (Post 8vo, pp. 226. 3s. 6d. net.)

MEDICAL AND DIETETIC PREPARATIONS.

Muthol.

Mr. R. Demuth (68, Salusbury Road, London, N.W.) has submitted a sample of a preparation of pure petroleum oil called "muthol." It is a slightly gelatinous material, very similar to milk junket in appearance and consistence, very sweet and slightly lemon-flavoured, but practically free from other taste. It is stated to contain 99 per cent. of petroleum oil, but presumably this is intended to indicate the percentage in the dry substance. Our analysis of the sample submitted showed over 10 per cent. of moisture, and 88 per cent. of mineral oil corresponding to paraffinum liquidum, *B.P.* Muthol is put forward for use in chronic constipation, colitis, etc., its action being chiefly that of a lubricant in the lower bowel. Considerable doses of liquid paraffin can be taken in this form with ease, and it is not likely that any one would find this preparation other than agreeable.

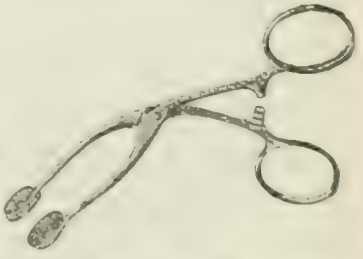
Ridge's Desiccated Milk.

We have received from Ridge's Food Co. (Boleyn Road, London, N.) samples of the milk powder which they have recently put on the market as a food for young infants in cases where hand feeding is necessary, as well as for general use in place of fresh milk. This preparation, which is named Ridge's Desiccated Milk, is in the form of a fine powder. Our analysis showed it to contain 23.0 per cent. of protein and 23.1 per cent. of fat. It can be readily mixed with cold or hot water, producing a fluid practically indistinguishable in taste from fresh milk. It is stated that the milk from which the powder is prepared is first thoroughly pasteurized. The samples submitted showed it to be a satisfactory preparation,

MEDICAL AND SURGICAL APPLIANCES.

Tongue Forceps.

Dr. T. C. Reeves (Alfriston) writes: The diagram illustrates a type of tongue forceps, made to my instructions by Messrs. Mayer and Meltzer. The chief advantage claimed is the insertion of rubber discs to hold the tongue, in place of the ordinary steel jaws. They grip firmly and cause no injury. The entire instrument can be sterilized by boiling or other means with the greatest ease. The rubber ends can be renewed whenever required in a few seconds. The handles are placed at an angle for the convenience of the anaesthetist, and can in no way interfere with the operator. Patients are apt to complain of a sore tongue after the ordinary type of forceps has been used. It will be found that the finger-grip tongue forceps obviates this.



The German Society of Scientists and Medical Practitioners has decided to have its proceedings regularly recorded in volumes of archives. In addition to the papers and discussions, the *Archives* will contain biographical and other articles. The editor is Geheimrat Dr. Sudhoff, to whom communications on the subject should be addressed at Thalstrasse, 33, II, Leipzig.

Introductory Address

ON

UNIVERSITIES AND MEDICAL EDUCATION.

Delivered at the Opening of the Medical Session of the Victoria University of Manchester on October 1st, 1912,

BY

H. D. ROLLESTON, M.D.Cantab., F.R.C.P.Lond.,

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(*Abstract.*)

In the past it has often been felt that universities should not give a technical training, or that they should at most be concerned with principles and not with their practical application. In other words, that a university should continue and expand the work of the schools into a liberal education rather than provide a strictly professional instruction, however good. This was partly due to the proper ambition to send out graduates with a broad outlook and humanization of character, and partly to a persistence of the vested interests of the classical tradition with which English universities in the past were almost exclusively concerned. But the view that universities should not give technical education, though they might examine for and confer medical degrees, may, in the light of the special courses and diplomas set forth in their calendars, be safely regarded as a thing of the past. The advantage of "the grand old fortifying classical education" is such a familiar *motif* in addresses given on occasions such as this that it may appear philistine to suggest that the Humanities are not absolutely essential to a medical man. The school and university routine of Latin and Greek is a hardy survival from the time when Latin at least was of distinct use as a means of communication between men who had no other common language, and was the medium of correspondence of statesmen and philosophers. This no longer holds good to the same extent as it did two centuries ago, and though French and English have to some degree taken its place, the want of a universal language is shown by the construction of artificial substitutes such as Volapuk, Esperanto, Ido, Neutral, and by the movement for the adoption of a simplified form of Latin as an international language under the name of "Latino." It may safely be concluded that to the ordinary medical man the direct or marketable advantage of a classical training is entirely out of proportion to the amount of time commonly devoted to it. But it is often urged that, apart from any intrinsic use, the classical languages, in virtue of their peculiar structure, give a mental training and discipline which cannot be obtained from the study of French and German. This statement is difficult to prove. Further, good classical training often entails neglect of modern languages. This is a most important consideration, for there can be no question that in medical science a knowledge of French and German is of incomparably more use than the highest classical attainments. The dead languages should be taught earlier and better, but they should not be abandoned, and the time spent on them should be rearranged and curtailed. The education best suited for a medical student before beginning his professional subjects should be on the following lines. The subjects ordinarily taught in schools, including Latin and Greek, should be pursued until the age of about 15½ years, when the student's proficiency should be tested by an examination the results of which should count at the university matriculation. After passing this examination, the student should spend the next two to two and a half years in obtaining a sound knowledge of French and German, literature, English composition, physics and chemistry, and the necessary mathematics. At the end of this time, when he is from 17½ to 18 years of age, he should be able to pass an examination in these subjects, and then begin the study of biology and of anatomy and physiology. This compromise would ensure general culture with a modicum of classical training, and a knowledge of French and German, at a time when it can be readily acquired, and yet would not encroach unduly on the time necessary for strictly professional instruction.

No doubt the ideal standard is that every student of medicine at his entrance to the profession should be a graduate in arts, with a sufficient knowledge of physics, chemistry, and biology, and of French and German; but these requirements demand more time than can or should be afforded by the average student, and it is for the average student that arrangements and regulations must be adapted. Those who advocate that the preliminary subjects should be taught in the schools usually include biology with chemistry and physics, and this plan is obviously advantageous from the point of view of saving time. But the specialized biology necessary for medicine requires the services of a medically-minded teacher in a greater degree than do chemistry and physics, and would therefore appear to be more conveniently carried out in university laboratories than in schools.

In view of the extensive demands on the medical student it has been suggested that the time spent on anatomy and physiology should be curtailed by altering the teaching so as to insist on those details only which are of obvious practical use in medicine and surgery. Thus medical and surgical or applied anatomy, and not the science of anatomy, would be taught, and the minute details of bone markings, the relations of muscles, and other points in descriptive anatomy which have no direct utilitarian bearing would be omitted. Physiology would be pruned to some extent—for example, by the elimination of exercises in muscle-nerve preparations. On the other hand, more attention would be paid to visceral topography and to the minute study of fresh organs.

Apart from their direct practical application, these sciences have a great educational value. Practical anatomy educates the powers of accurate observation and of classification, trains the memory, develops the inductive processes of reasoning, and confers manual dexterity and quickness of eye. In English universities the professorships of medicine and surgery differ from those of other faculties. Their incumbents, unless possessed of ample means, are mainly dependent for their living on sources outside the university, and therefore engage in private practice, which must often form the chief interest of their life; whereas the professors of other faculties receive a living wage on the tacit understanding that their activities shall be entirely devoted to their chairs.

The duties and responsibilities of a clinical professor include (1) the care of the sick in the hospital; (2) clinical instruction in the wards, clinical and, perhaps, systematic lectures; (3) official duties in the university and medical school; (4) the cares and anxieties of a consulting practice rendered necessary to earn a living and to provide for his family and old age; (5) reading and investigation of new methods so as to keep abreast of modern knowledge; and (6) original research in order to advance the science of medicine. The claims of the first four of these spheres of activity leave little time for anything else, and especially render research almost impossible. It therefore follows that one of the functions of a university—namely, original research for the advancement of scientific medicine—is practically prevented by the conditions under which the professors hold office.

From the university standpoint clinical medicine may be divided into (*a*) the teaching of the applied science, and (*b*) the pursuit of the pure science. As far as the object of the Medical Faculty is to turn out sound practitioners of medicine, the present arrangement has worked admirably. But to place medicine on an equal footing with other sciences as regards facilities for research, some change is necessary, and on the question how this is to be effected there is considerable difference of opinion. Possible alterations are the following: (1) That the professors of medicine, surgery, and obstetrics and gynæcology, whose conditions of tenure would be unchanged, should each have several assistants of proved ability. These assistants should be paid a living wage, and in return should for some (five to ten) years devote the whole of their time to their chief's clinic. They should take an active part in the teaching as the professors should direct, and at the same time should specialize in some department for example, to take medicine, in pathological chemistry and metabolism, hæmatology, neurology, or infectious diseases—in which they should pursue original

investigation. This would make clinical medicine more actively productive, and would provide a class of scientific clinicians from which professors of medicine could in the future be selected. Such assistants would be of the rank of, or actually be, registrars or junior assistant physicians and assistant surgeons, but would, while holding this post, be debarred from private practice. (2) A second possible change—namely, the establishment of the whole-time professors of clinical practice, though in principle only an expansion of the first—has not unnaturally aroused much criticism and some opposition, for it would radically change the status and prospects of the professors of clinical practice. Personally I am convinced that this reform will eventually be effected with advantage both to medicine as a whole and to medical education. The ideal of the whole-time professors of medicine and surgery who, like the professors of pathology, expend all their energies in teaching and working at their branches of medical science, and are continually in touch with the wards which form their laboratories, has often been carried into effect, especially in Germany, in spirit, though not in the rigid letter as to total restriction from private practice. The whole-time professor should be appointed when comparatively young (30 to 40) so that he has a prospect of at least twenty years' active work. He would be provided with a staff of competent assistants of the same calibre as those mentioned above, and must be paid an adequate salary and given a retiring pension graduated on the duration of service. The professor would be responsible for the organization of his department, would teach, pursue, and inspire original research, and set a high scientific standard. The advantages of the whole-time system—namely, undisturbed contact with the hospital patients and students, opportunities for uninterrupted research, for keeping up with the literature, for organizing a school of research workers, and the improvement in the teaching, both ordinary and advanced—which would thus result are sufficiently obvious. Much has been said on the other side; it has been stated, among others by Sir William Osler, that it would be impossible to keep the public away from a man so conspicuously and favourably placed; and that if this isolation could be preserved the professor would suffer from his narrowed outlook on medicine, or, as it has been expressed, that he would be a professor "of hospital practice" rather than of "clinical medicine," and that he would come to regard patients somewhat in the same light as guinea-pigs and from the laboratory rather than from the broad humanitarian point of view. (3) To debar the professors from private practice entirely is as yet without precedent in this country, and would necessitate very considerable financial endowment. A less radical change should be half or three-quarter time, and that one day and some afternoons in the week should be free for practice; or that paying wards attached to the hospital should be at the professor's disposal, so as to minimize the waste of time involved in ordinary consulting practice. This would to some extent meet the financial difficulties and the objection that a whole-time appointment would cramp the professor. The drawback to any kind of part-time appointment is the difficulty in restricting the amount of private work, for though it might work well at first, the demands on such an incumbent's services must almost necessarily increase with time, and eventually encroach seriously on the professorial duties. (4) It is more satisfactory to combine research and the teaching and training of university students by whole-time professors and their skilled assistants than to make special arrangements for original work alone, because the scientific spirit is thus more widely diffused. Instead of the establishment of whole-time professors in conditions favourable alike for research and scientific instruction, endowment has already been provided for scholarships, and in a few instances for research hospitals. It has been urged at intervals since 1869 that there should be a one portal qualifying examination, corresponding to the State examination of other countries, so as to protect the public by ensuring a uniform standard of professional efficiency. As a result of the establishment of a one-portal system university degrees would become honorary instead of qualifying, and, incidentally, examining bodies which now grant ordinary diplomas to practise would die of inanition. For the university degree some further requirements in the way of an examination (not a repetition of that carried out by the State board) would be necessary.

In order to make the medical degrees of universities mean more than superior qualifications, alterations in, or rather additions to, the curriculum, such as one of the following, might be made: (1) Six or twelve months' residence as a medical officer in a hospital might be demanded before the degree is conferred. In existing circumstances this would entail a qualification to practise from some licensing body, and would therefore add to the trials of the already over-burdened student. (2) Instead of the M.B. degree being the natural outcome of passing the necessary examinations, a thesis might be demanded so as to show how far the mind has been trained rather than crammed, and to bring out evidence of the ability to think and report logically and intelligently on what has been observed. (3) The students might pass for a period of twelve months or so into the hands of the whole-time professors of medicine, surgery, and obstetrics and gynaecology. There are, however, difficulties in the way of adopting a one-portal system of qualification. In the first place, the universities would have to give up their right to qualify their graduates to practise, an act of self-sacrifice which might not appear to them to be fully counterbalanced by the advantages secured. The examination, in order to be uniform, must be conducted by one board of examiners, which would be made up of representatives of the various teaching universities in England, just as now holds good to a certain extent in the constitution of the Conjoint Examining Board in England. It is doubtful if the provincial universities would consent to the examination being conducted exclusively in London, on account of the inconvenience both to their students and their representatives on the examining board. The written examination could be held in various centres, but if the clinical part were also decentralized it would be difficult to utilize the same examining board as in London, and if any extensive change in the *personnel* of the board occurred, the result might not be materially different from that at the present time.

Introductory Address

ON

THE PRESENT DUTY OF THE MEDICAL CITIZEN.

DELIVERED ON THE OCCASION OF THE OPENING OF THE WINTER SESSION AT ST. GEORGE'S HOSPITAL MEDICAL SCHOOL.

BY

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(*Abstract.*)

In the course of an address to students of St. George's Hospital on October 1st, Mr. Grimsdale made the following observations:

It is reported that the great Abernethy on some occasion similar to the present greeted the newcomers as follows: "Good God, gentlemen, what is to become of you all?" His exclamation showed that even one hundred years ago the medical profession, in the opinion of one of its leaders, was over-full and not over-paid.

But if Abernethy were here now he would probably repeat his warning in even stronger terms. For in the present conditions, though he must admire your courage, he would doubt the worldly wisdom—I had almost said the sanity of any man choosing the profession of medicine.

Abernethy was playing the part of a cynic: and it may seem to you that there is ample justification for cynicism now, when the horizon of our outlook is hidden by clouds, and when it seems that medicine—never a lavish paymistress—may be unable to pay her followers what the phrase of the day calls a living wage.

You, the newcomers, are entering the profession at a moment when it is engaged in a struggle for life. The course of study is more difficult and prolonged, the methods of examination necessary to successful diagnosis and treatment are more laborious and costly, and the competition keener than ever before. Modern methods have advanced so far that it is not possible for the general practitioner—however energetic, however capable—to carry out for himself all the investigations needful for diagnosis in certain cases; and medicine is, at last, we hope, becoming a science as well as an art.

At this moment of critical development a blow has been aimed against advancing medicine, which, if it strikes, may well throw back our profession into the dark ages of the early part of the last century; and the injury comes from the one authority which in a civilized State might be expected to understand the importance of modern medicine to the community—namely, the Government.

It has been a strange spectacle which has been presented to the world during the months that have passed since the passage of the Insurance Act—a spectacle without parallel in the history of medicine. The profession must have been sorely tried before it rose almost unanimously in protest against such an Act.

It is not our own interest mainly that is impelling us to this unprecedented course; if it were, I am proud to think that few medical men would have supported it; but we know that not only we, but through us the whole future of medicine and our present patients will suffer.

First let me say that there is not, and will not be, so far as any one can tell, a strike of medical men. We are told almost daily by one section of the press that we are employing the worst methods of trades unions; that we have adopted all the vices of syndicalism, and none of the virtues, if it has any; that we have forfeited the right to the name of a generous profession.

We are certainly not on strike: for what is a strike? When the coal-miners struck, coal went up to such prices that the poor were unable to buy it at all, and the rich were forced to economize; when the taxi-drivers came out, taxis could hardly be procured; but there is no evidence that any medical man has refused to treat any sick person.

What is it, then, that has united the profession as it has never been united before? Why are all medical men throughout the country breaking away from all their natural instincts, unwilling to take service under the Act?

[The speaker then gave a history of the origin of club practice, of its progress up to the present, and an account of the evils created by it. He then continued as follows:]

At the time when the Insurance Bill was first heard of, it was recognized by all that some system of State insurance against sickness was most desirable. Medical men were all in favour of the idea. A workable scheme, providing a service throughout the country had indeed been suggested by some of them and had been tried in certain localities; medical men, therefore, taking into consideration that they would have to be the chief workers under the Act, and that they had already some little experience in the treatment of the people who would come under it, remembering also that they had protested on every opportunity against the system of contract practice, not unreasonably expected that they would be asked through their organizations to advise on the best methods of working. However, as I shall tell you, they were not consulted; they might have thought, since they were going to bear all the risk, that the State would deal not only fairly but generously with them.

They were doomed to disappointment. The action of the Government is barely credible and not at all creditable.

The bill was brought in in May, 1911; in spite of repeated requests the Chancellor of the Exchequer saw the representatives of the British Medical Association for the first time in April. This was the only deputation from the Association received before the introduction of the bill, and at this meeting no special opportunity was afforded to the Association for ascertaining the provisions of the bill.

Nor, apparently, was the General Medical Council, nor the Royal Colleges of Physicians and Surgeons, treated with more courtesy. Presumably, the Chancellor had medical advisers; who they were has not, I think, been made known, but they certainly were not the associations of medical men who would have commanded the respect and been in some sense at least the representatives of medicine.

When the medical provisions were known, it was at once seen that they were most unfavourable to the best interests of medicine. In the first place, the payment was to be per caput; this alone must stamp any scheme as liable to failure. It is not in the interest of any man's work that he should be paid at a higher rate the less work he does. It cannot induce to keenness and initiative if the keen man is penalized because of his keenness.

The more care taken in diagnosis and investigation the less the reward. It must not be forgotten that investigation on modern lines costs money, and this had to come out of the funds for payment of medical men.

The Chancellor of the Exchequer has throughout shown himself ignorant of the first requirements of modern medicine. It is, if one may judge from his attitude, his opinion that doctors are engaged in a guessing competition, with numbered bottles which agree with the number of the disease from which the patient suffers.

The difficulties of diagnosis, the prolonged examinations which are required to disentangle the symptoms, the intricate reactions—all these are nothing to him. His attitude is like the fabled sea captain, at sea with a sick seaman: looking up his handbook, he found that for the relief of the symptoms a dose should be given from a certain bottle numbered 15 in the ship's medicine chest. He turned to the chest and found the bottle empty. "What did you do?" said a friend. "Well, first I gave him half a dose of 30, and as that did no good I tried three doses of 5, and he died." It is good as arithmetic, but it is not scientific medicine.

Then the medical men who form the panel are entirely under the power of the local Health Committee, which, though not the approved societies, will be made up chiefly of members of these societies; it has been repeatedly shown that lay control is not in the best interests of medicine.

Lastly, the suggested remuneration is inadequate; of course, it is perfectly true that nowhere is it laid down in the Act what the rate of remuneration is to be; but it is acknowledged that only a certain rate is justified by the actuaries. The Chancellor has been very generous at our expense—to the working man in an approved society. Under the present Act the labouring man pays about ½d. a week for his medical attention. He is often willing to pay 7s. 6d. a year for the fun of keeping a dog; it is not too much to expect that he should pay as much for keeping his health.

And, again, let me mention the case of firms who own large numbers of horses; they usually pay the veterinary surgeon a contract fee to look after them, and this is usually 21s. a head. Now, a horse cannot malinger and cannot demand unnecessary medical attention. Or we may look at this matter another way. The Government has been hitherto willing to pay 8s. 6d. a year for the medical attention of each employée in the Post Office, who are men of picked physique and in good health. It is not likely that the Government have been paying to the medical men who have had charge of these and other public servants twice the value of the services rendered. Why should we be asked now to undertake the treatment of all lives—healthy and unhealthy alike—who are compelled by the Act to insure themselves at about half the sum which the Government has previously thought equitable for healthy lives?

And with this threatened increase in the scope of contract work the value of the practice as a marketable asset has fallen, even more than Consols have done under the same master of finance.

Whatever the merits or demerits of the sale of practices, the fact that the goodwill has a market value and depends on the work of the holder of the practice must be taken into account in any scheme; now the present scheme has almost destroyed the value in many instances. To give a concrete example, an old St. George's man told me that about three years ago he contemplated selling the practice which he had built up entirely by himself; the best offer was £1,000, which for private reasons he did not accept. When the bill came in he again made inquiries, but his

practice was virtually unsaleable; he did not get any offer over £300; thus the Chancellor had caused to him a loss of capital equal to £700.

In the days when I was studying medicine at Cambridge, a small book appeared which was entitled *Fables, by George Washington Æsop*. From time to time I bought copies, but they were always borrowed by amused friends, and my last copy disappeared some time ago. The following quotation, therefore, is not literal, for, though I might have verified the words by dint of search in the library of the British Museum, I could not have improved on the sense which is contained in the following passage:

> A kind-hearted She-Elephant, who was absent-mindedly wandering through the Jungle where the Spicy Breezes blow o'er Java's Isle, Heedlessly set foot on a Partridge, which she crushed to death, within a few inches of her Nest, filled by her Callow Brood. "Poor little things," said the warm-hearted Pachyderm, "My Carelessness has robbed them of their Natural Protector, but for the future my Sollicitude shall replace the Tender Ministrations they have lost." So saying she sat down on the Orphan Birds.

Very similar has been the action of the Government: the lumbering elephant, dreaming, it may be, of the rare and refreshing fruit in the distance, by its clumsy act has destroyed the value of the doctor's practice and robbed him of his freedom: and when this was pointed out, declared that it would make up all his losses by allotting the sum of 6s. per head; out of which, first the drugs and surgical appliances were to be paid for, and the balance, if there were any, was to be given for the doctor's services.

There is, however, one important respect in which the analogue does not hold good; the fabulist tells us—and he is the only person who can speak—that the she-elephant was moved to her mistaken action by sincere and well-meaning pity. But does any medical man believe in the professions of the Government, of their interest in his welfare? There may be such an one, but I have yet to meet him. In the present negotiations the Government has been extraordinarily tender to the feelings of people of all kinds: in deference to the friendly societies they have given insurance only to those who join an approved society; the leaflets by the Commissioners state that the deposit contributor, that is, the man who is compelled to enter the State scheme and cannot or will not join an approved society—is not really insured. The Government gives him no benefit beyond the amount standing to his individual account.

They have been very generous—at the expense of the medical profession—to the working man, who is probably earning more than the young doctor; they are even generous to the unqualified practitioner, because they allow any insured person to employ any quack Christian Scientist or other charlatan, and his payment is as secure under the Act as that of any qualified man.

What, then, are the present duties of the medical man? It is, of course, the duty of every citizen to obey the law, so long as it is law; is it, then, our duty to accept the present Act and work under it? If by refusal to work we fail in our duty to our patients, we shall be breaking our Hippocratic tradition, and this we, as medical men, consider to be the primary and fundamental law governing our conduct. But no patient need suffer or is likely to suffer by our refusal. We shall not deny to the suffering poor those services which have been freely given in the past, but we shall demand from those who can afford it a reward not absolutely inadequate to the value of our service.

On the other hand, if we accept the present terms, we cannot carry out our duty towards our patient; we deliberately refuse him the advantage of progressive medicine, by binding ourselves to an old—I might almost say a fossil—knowledge.

Future generations will suffer for our want of independence to-day. Surely, then, we are fully justified in our rejection of the scheme designed by the Government, and in our determination to build up a better public medical service by our own efforts.

But we must have lofty thoughts, hold lofty ideals; then we need have no fear for the future, and may know that medicine will advance in spite of all discouragement, though in our eagerness we experience small reverses, small mistakes.

> That low man goes on adding one to one
> His hundred's soon hit;
> This high man, aiming at a million,
> Misses an unit
> Others mistrust and say, "But time escapes;
> Live now or never."
> He said: "What's time? Leave Now for dogs or apes,
> Man has Forever."

OPENING CEREMONIES AT THE MEDICAL SCHOOLS.

This week the doors of practically all medical schools and faculties in London, the provinces, and Ireland have been reopened for the winter session, but not all on the same day. At many the date chosen was insufficiently early in the week for a record to appear in the present issue of any opening ceremonies which has marked the beginning thereat of another *annus medicus*. The special feature of the year, if any, has been a further move towards final extinction of the custom of selecting some one to give a formal address to the assembled students and their friends. This year there have been only one or two deliverances of that order. On the other hand, the practice of utilizing the opening day of the winter session as an occasion for a distribution of prizes in place of some more or less convenient day towards the end of the summer session seems to be growing in favour. In respect of annual gatherings of old students around the dinner table, there is no change whatever. An account of some of these meetings and other allied events here follows.

ST. BARTHOLOMEW'S HOSPITAL.

At St. Bartholomew's, one of the earliest medical schools to abandon the practice of opening the winter session with a formal address, the customary gathering of old students at dinner took place on October 1st. The dinner was held, as usual, in the Great Hall, which, however, this year presented a somewhat different appearance owing to the fact that the tables were disposed down the length of the room instead of across it. The plan has the advantage of allowing the noble proportions of this ancient hall to be better observed, but seems to have been adopted mainly in view of the increasing calls upon the space arising from the popularity of this annual gathering. This year the chairman was Dr. Lewis Jones, who has recently resigned charge of the electrical department. It is one which, as was pointed out by Sir Anthony Bowlby in proposing a toast in his honour, he practically created some twenty years ago and has conducted in such fashion as greatly to contribute to the placing of electro-therapeutics on a thoroughly sound and progressive footing. The toast to "St. Bartholomew's and its School" was proposed by Dr. Lewis Jones from the chair in a speech delivered with characteristic restraint of language. In its course he alluded to Sir Henry Butlin, whose death was a loss to surgery and to most of those present a personal loss in addition. Among changes in the staff which he mentioned was the retirement of Dr. Norman Moore from the post of Senior Physician. There could be no one present who had not enjoyed his learning and his talent for combining entertainment with instruction. He had been appointed Emeritus Lecturer on Medicine. On the surgical side Mr. Lockwood had retired from the teaching staff: in him would be missed an original—a fearless independent, whose teachings must have bitten indelibly into the memories of all who had had the advantage of listening to him. The school had to congratulate Sir Francis Champneys on becoming President of the Royal Society of Medicine, and Dr. Herringham, on his election as Vice-Chancellor of the University of London. Three colleges at Cambridge were now headed by St. Bartholomew's men—Downing by Professor Howard Marsh, Christ's College by Dr. Shipley, Gonville and Caius by Dr. Anderson. Good progress was being made in the movement towards obtaining a charter of incorporation of the school. The latter provided the same instruction as the medical faculty of a university, but in present circumstances was solely dependent on the fees of students. As a corporate body with endowments to maintain lectureships it would be

able to carry on its work much better. An allusion to the National Insurance Act was also made. The dislike which it had created among medical practitioners was probably less due to purely financial considerations than to the fact that the Act introduced the contract principle: i by destroying a medical man's independent positi n was certain to spoil the proper relations between a doctor and his patient, and thus lead to an amount of difficulty and friction which could hardly be estimated in advance. The question of the relation of the hospital to the Act was under the consideration of a joint committee of the hospital and school, whose recommendations would shortly be made public. The toast was acknowledged by Mr. Acton Davis, who said he was present as acting treasurer of the hospital. Lord Sandhurst found he could not fulfil to his satisfaction the duties both of Lord Chamberlain to his Majesty and of treasurer to the hospital, so in order that the hospital might not lose his services entirely the governors had decided to ask the speaker to fill the office of treasurer until the time came for a change in Court officials to be made. The happy days when the hospital could rely solely upon its own resources had unfortunately passed away; it now stood greatly in need of philanthropic assistance. Like others, he had observed and admired the noble courage of the late Sir Henry Bathin going about his work and filling high office during the last two years of his life, despite the condition of his health and his knowledge thereof. The Insurance Act was involving the hospital in much labour and considerable expense; while it was of no benefit to its employees, who had always received much more consideration from the hospital when ill than was represented by the benefits provided by the Act. The toast to the guests was proposed by Mr. Bruce Clarke, and acknowledged by Professor William Osler. The latter laid a light but very skilful hand on many thorny subjects connected with the school and medicine in general. The greatest friend England had ever had, though he did not know it, was a man named Kruger: he had touched a button which had rallied the whole of the English-speaking nations, with one exception, around England, and had created a true spirit of imperialism. Similarly, the greatest friend the medical profession had ever had was a man named Lloyd George. Like a certain angel, he had touched the pool, and thereby created ripples which had united the medical profession as it had never been united before. Never again would any one think of endeavouring to sweat the medical profession without its consent. Yet there was one rock ahead, that rock being trades unionism. If its undesirable features were not avoided the medical profession might be expected to fall into two parts. He did not think it would be possible to preserve entirely unaltered the present system of voluntary hospital enterprise. Nor did he see any real objection to hospitals being paid for a part of the work that they performed. He had himself been connected with many hospitals which had paying wards, and it seemed to him that a corresponding system might be adopted in England with much advantage to the public and hospitals, and in the long run to the medical profession itself. The toast was also acknowledged by Professor Stricker of Amsterdam. He had once, he said, had occasion to deliver an address on his own subject—ophthalmology—in three languages at an international congress, and had endeavoured to write each paper not only in the language but in the spirit of those who habitually used them. He found that ten pages of English represented twenty of Dutch and as many as fifty of German. It was this conciseness of the English language and of English methods of dealing with scientific subjects which accounted for much of the admiration with which English medicine was regarded abroad. Another reason was that much of the progress of medicine was due to work done in the British Isles, though this fact was frequently obscured by work done in the same subjects abroad. Among other examples in point he quoted the history of ophthalmology, showing that the two Continental workers who commonly received the chief credit for the rise of scientific ophthalmology were men who in early life had attended at the Moorfields Eye Hospital under Bowman. In acknowledging the toast to his health, moved by Sir Anthony Bowlby and loudly acclaimed, Dr. Lewis Jones said that most of the credit which had been given him was really due to the fact that he had begun work at a time when the whole science of electricity was making rapid strides, and naturally electro-therapeutics benefited thereby. He had given in his resignation because it seemed to him that when a man had been twenty years in charge of one department it was time for him to make room for a younger man. He also voiced the general feeling that Mr. Waring, who had been the honorary secretary of the dinner for many years past, had on the present occasion almost excelled his previous efforts. On the conclusion of the toast list the party adjourned to the library, where proceedings were kept up until a late hour.

THE ROYAL FREE HOSPITAL.

The opening proceedings at the London (Royal Free Hospital) School of Medicine for Women on Tuesday took the form of a very well attended gathering of students and their friends, who, in the course of the afternoon were provided with an account of the recent history of the school, its future prospects, and an address. Mrs. Garrett Anderson, M.D., who presided, was able to give a very satisfactory account of the prospects of the school. The number of entrants for the full curriculum was thirty-two. Several valuable improvements had been made in the internal arrangements of the school, and it had been possible to establish a new scholarship, thanks to the receipt of a legacy of £2,000. The scholarship would be one of £20 a year for four years, and would be awarded as the result of a competitive examination in elementary chemistry, physiology, and biology. The formal address was delivered by Dr. Jane Walker, who dealt with common sense. It was a faculty, she said, to which every one believed they could lay claim, though, as a matter of fact, it was a very rare possession, and one excessively difficult to define. Many enthusiasts who had been called mad in their time later on had been so filled with common sense that their detractors could not see the wood for the trees. In medical connexions the late Drs. MacCormac of Dublin and Boddington of Sutton Coldfield were cases in point. Both practised open-air treatment, the latter making his patients take a walk very early in the morning. In his view, early morning exercise was productive of the greatest good to them. This view was supported by present knowledge regarding the opsonic index in tuberculous patients: it was at its highest in the early morning, so patients by taking exercise then were able to stand a bigger dose of their own tuberculin, and thus were direct agents in their own cure. Many of the great saints of past ages had been conspicuous for common sense, St. Francis of Assisi being an example in point. Apart from his fashion of dealing with the leper question, his "Song of all created things," though fantastical, was, from the point of view of doctors, full of common sense. An example of lack of common sense in public life was the conduct of a lecturer to whom she had listened many years ago in an Egyptian school deemed quite flawless by the Minister of Education. He was carefully teaching the reading of the thermometer by the Fahrenheit scale—a method only in use in England—and instructing his class most minutely in the diagnosis and treatment of scarlet fever, a disease perfectly unknown in Egypt. At the present moment some lack of common sense was being exhibited in regard to the mentally defective problem. Surely attention ought to be more earnestly directed to the so-called normal people: steps should be taken to see that they did not tempt their feebler brothers and sisters, who, left alone, would do little harm. The special business of the medical profession was the prevention and cure of disease. But how did it proceed to carry out the first part of its duty? Clearly not in a common sense way, since it allowed people to wait until they were really ill—indeed, in many cases past recovery—before it began to deal with them. It made the patient diagnose his own condition of illness and come to medical men, instead of medical men hauling out commencing cases of illness into the arena to be forewarned, or treated if necessary. In particular the nation, if it possessed foresight and common sense, would take care that mothers received the medical help they required. Efficient mothers were the most important sort of persons in a State. The world

waxed loud and eloquent over the diminution of the birth-rate and prated volubly about race suicide and the like, quite forgetting that a nation in a high state of civilization required quality, not quantity. The lower and poorer people were, the more rapidly did they breed, so common sense demanded that the low born should be helped efficiently to climb up. Most babies were born healthy, yet one in three died before it reached the age of 5 years. Nevertheless, the world made far more fuss over one case of anthrax than over 100 babies that had died of summer diarrhœa owing to bad food and milk. In regard to the work of medical students, one heard a great deal about all work and no play making Jack a dull boy; but it did not make either Jack or Jill dull at their studies. Possibly it might not verse them in topics which would add to the gaiety of a dinner party, but to do so was not their business. The author of *Confessio Medici* had recorded the speech of a patient to a friend of his: "I don't want my doctor to talk to me about the National Gallery." That was a shrewd saying. Patients wanted their doctor to have had some one else with just their complaint, only worse, but who had nevertheless got well; and cared far more about that than that their doctor should be an artist of no mean standing, or an enthusiastic student of Browning. The majority of their patients would be poor people, and common sense would be of assistance in dealing with them. It would lead them, for instance, to avoid saying to a dirty, frowsy, old woman from Whitechapel, "Do you take a daily sponge bath, Ma'am?" as the speaker had once heard a young house-surgeon say. It would prevent them, too, prescribing champagne and oysters for a private patient whose income was under 30s. per week. The patient might try to get them and succeed, but they would not do her much good, and one result would be a request that the medical attendant's account should be allowed to stand over indefinitely. Dr. Jane Walker concluded by quoting the following lines from Pope:

> Something there is more needful than expense,
> And something previous e'en to taste—'tis sense.
> Good sense, which only is the gift of Heaven,
> And, though no science, fairly worth the seven.

The proceedings ended in a very animated tea party.

THE MIDDLESEX HOSPITAL.

The arrangements in connexion with the opening of the winter session at the medical school of the Middlesex Hospital made Tuesday a very crowded day. In the afternoon the proceedings, which took place under the chairmanship of H.S.H. Prince Alexander of Teck, took the form of a prize-giving day. The awards were to have been distributed by Sir Charles Wyndham, but as illness unfortunately rendered him unable to attend, Prince Alexander himself stepped into the breach so far as the students were concerned, while the Fardon memorial medals and certificates for nurses were handed to their recipients by Mrs. Aston Binns. A report on the working of the school during the past year was read by the Dean, Dr. Campbell Thomson, and a short address on the genius of the infinitely little was given by Dr. Lazarus-Barlow. In its course he referred to some of the more striking properties of bacteria, enzymes, and radium radiations, as illustrative of his subject. In regard to bacteria and enzymes, the very magnitude of the results ensuing from their action frequently obscured recognition of the specific characteristics of the agents themselves. Nevertheless, it was owing to the precise performance of its functions by each separate ultimate particle that the final result was due. In regard to radiations from radium, he gave some account of recent discoveries of the action of radiation on various biological tissues and fluids, and more particularly of their destructive effects on bacteria. The fact that bacteria are destroyed by the alpha and beta radiations more rapidly than are the cells of the body seemed to him to foreshadow the utilization of radium in the treatment of bacterial diseases as well as in the treatment of cancer. The speaker concluded by an appeal to students to follow in the steps of those past practitioners of the healing art who had manifested the genius of the infinitely little by steadfast performance of their various duties. Thus would those who were now taking the first step towards entering the medical profession assist in maintaining that high reputation for honour and beneficence with which it was so liberally credited by the public. The afternoon's proceedings concluded with votes of thanks to Prince Alexander of Teck and Dr. Lazarus-Barlow, the guests then taking tea at the Nurses' Home and exploring several of the departments of the hospital. The evening was devoted to a dinner at the Trocadero Restaurant, where many past and present students gathered under the chairmanship of Dr. Campbell Thomson. The latter himself took charge of the toast to the hospital and the school, and in proposing it described various structural changes which had been effected during the past year; they all helped to secure efficiency in the work which was being carried on. He also recorded sundry changes in the staff of the school and hospital, and the honours which had fallen to the lot of several of its members. Academically the past year had been quite satisfactory from the point of view of the school authorities, while the record of work done on the athletic side was also good. In regard to the coming year, thirty students had entered their names for the general course, in addition to a corresponding number of students in dentistry, and others who had entered for various special courses. Dr. Campbell Thomson concluded by coupling the toast with the name of Mr. W. E. Gillett, who as chairman of the school council had done much to ensure the continued success of the school. In acknowledging the toast, which was received with enthusiasm, Mr. Gillett expressed his regret that Prince Alexander of Teck, who had done very much more for the hospital and school than himself, was prevented from being present. The governors greatly appreciated the exertions of the medical staff on behalf of the joint institutions, and felt that in Dr. Campbell Thomson they had an officer who filled a very important and difficult post most admirably. There was no school where a young prospective medical man had a better chance of learning his work, nor any at which in after-life he could be more proud to have passed his student days. The toast was also acknowledged by Fleet Surgeon Robert Hill, R.N., and Mr. T. L. Haldy. The only other toasts were those to the guests, which was proposed by Sir Pearce Gould and acknowledged by Lieutenant-Colonel H. E. R. James, and to the Chairman, which was proposed by Sir John Bland-Sutton. During the course of the evening several artists from the Palace Theatre gave short entertainments.

ST. THOMAS'S HOSPITAL.

The medical school of St. Thomas's Hospital was again one of those which commenced the winter session without other ceremony than the holding of an old students' dinner. This took place at the Hotel Cecil on Tuesday evening. But it was differentiated from an almost stereotyped succession of these annual functions by the presence in the chair, on his birthday, of the octogenarian Lord Mayor of London, himself a St. Thomas's man. To Sir Thomas Crosby it fell to propose the principal toast, that of "The Hospital and Medical School," and in doing so he chatted in a very interesting fashion about the St. Thomas's of his earlier memories. He thought that the present building, which was very different from the one he first remembered, was unequalled for its imposing character by any other hospital in the metropolis. Nor could any other hospital boast such an arterial stream of fresh air as that which the Thames tides brought to its doors and windows. He linked the toast with one of his own suggestion—"The continued prosperity of the medical profession." The time had arrived when the medical man should be up and active in municipal and corporate capacities. If the profession did not aspire to the public arena, and did not stand together to maintain its position, it was in some danger of being thought little of because it little demanded. A response to the toast was forthcoming from the Hospital Treasurer (Mr. J. G. Wainwright, J.P.), who said that the Governors were fully alive to the need for fostering research, and they were about to institute another advance in the shape of the clinical pathology department. New provision for the out-patients was also demanded, but it would be foolish for them to attempt to complete their plans until they knew exactly how they would be affected by the Insurance Act. A new out-patient department

such as they contemplated would cost £60,000 to £70,000, and towards that sum he was able to announce the handsome donation of £20,000 from a friend of his who desired to remain anonymous. It is to the Dean of the Medical School that one looks for the necessary humour at a students' dinner, and Dr. E. Stainer rose to the occasion. After reciting a formidable list of honours gained and appointments secured by St. Thomas's men, and of changes made in the hospital staff during the year, he concluded by telling in a whisper of a memorable event which has shaken the school to its foundations: "Dr. —— has got a new black bag." He also offered the congratulations of the company to one prominent member of the teaching staff on his attaining the joys of parenthood. The Dean said that he met him walking along the corridor at the head of his class, apparently immersed in clinical study. But when the happy father saw him, the remark he made, with an air of tremendous importance, was: "Weighing-day to-morrow." The health of the Chairman was proposed by Dr. H. P. Hawkins, who referred to the wonderful manner in which Sir Thomas had dovetailed into a professional career a whole second life of municipal activity. The Lord Mayor, in his response, said that on his election he received a letter asking for the secret of his healthy age, and saying that the writer would make it worth his while. A wholesome fear of any hints he might let fall being adapted for advertising purposes, and of seeing on the "ninth" a banner with the device, "Buy the Lord Mayor's live-long pills," deterred him from replying. His resolve to let his election go forward, he added, was due to the discovery by a literary personage that there was no record of a medical Lord Mayor, and he decided that he would show to the world the stuff and grit that were in his profession. Sir Thomas was accorded a great ovation on leaving the chair at 10.15 to address yet another gathering. Subsequently Mr. J. H. Fisher proposed "The Guests," and Mr. H. F. Heath, C.B., of the Board of Education, responded.

KING'S COLLEGE HOSPITAL.

At the medical school carried on in connexion with King's College Hospital the authorities have contrived to reduce the less necessary factors concerned in the beginning of a new school year to perhaps their simplest possible expression. In recent years there has been no address or other opening ceremony, nothing even in the way of a formal dinner, for though dinners have annually taken place, the underlying idea has been to give them as much the character of family assemblies as may be. The same plan was followed this year, past and present students, to the number of upwards of a hundred, gathering once more at the Waldorf Hotel around a number of separate tables. Professor Norman Dalton, physician to the hospital, was in the chair, while the only laymen to whom the privilege of being present was accorded were Captain Tunnard, the Secretary of the hospital, and Mr. Clifton Kelway, Secretary of the Removal Fund appeal. Likewise in accordance with established custom only two toasts were allowed—that to the King, and to the hospital and its school. In proposing the latter Professor Dalton recorded several changes on the staff that have taken place during the past year, and concluded with an expression of a hope that next year's dinner will celebrate the actual opening of the hospital at Denmark Hill. It was, he said, rapidly approaching completion, and there seemed reason to believe that it would be in full working order by the beginning of the winter session of 1913. The dinner was organized by several honorary secretaries, with Mr. F. F. Burghard, surgeon of the hospital and lecturer on operative surgery in the school, at their head, and the evening was voted a great success. Among its pleasant features were recitations by Dr. d'Este Emery, some of Dr. Harry Lavies's inimitable topical ditties, and songs by Mr. Milner.

A [illegible] has been appointed at the General Lying-in Hospital, York Road, S.E. This is said to be the first appointment of an almoner at a lying-in hospital. The lady, Miss Bletchley, was trained by the Hospital Almoners Council, 296, Vauxhall Bridge Road, S.W.

LITERARY NOTES.

It is announced that the Right Hon. Dr. Farquharson, of Finzean, has another book of reminiscences almost ready for publication. It is entitled *The House of Commons from Within, and other Reminiscences.* It will deal with the way in which things are done at Westminster, from the manner in which the public are made acquainted with what members are saying, to arrangements for feeding our law-makers.

The Child, the medico-educational monthly journal edited by Dr. T. N. Kelynack and published by Messrs. Bale, Sons and Danielsson, Limited, is, we are glad to learn, increasing in strength and favour. With the October issue it commences its third volume. The journal is devoted to all interests relating to child welfare, and it has the influential support of leading doctors and educationists.

The Librairie Générale des Sciences Occultes of Paris is publishing by subscription a French translation of the complete works of Paracelsus. The translator is M. Grillot de Givry, and the text has been collated with the German editions. The title of the work is *Oeuvres Complètes de Philippe Auréolus Théophraste Bombast de Hohenheim, dit Paracelse. Traduites pour la première fois en Français et collationnées sur les éditions allemandes par Grillot de Givry. Paris, 1912.*

The October issue of *The Arena* contains an article of special interest, entitled "What is a University?" by Dr. Alex Hill. Professor Herbert A. Strong contributes Reminiscences of the University of Melbourne. An article deals with Modern Education in India, the subject being viewed from the standpoint of an Indian; and another with "Universities and the Residential System." Among the remaining contents of a very interesting number are a finely illustrated article on Stonyhurst College; a beautiful series of Oxford drawings by Mr. John Key (Some Aspects of Magdalen Tower); a collection of candid writings by well-known authors, "In Abuse of Cambridge," and an article dealing at some length with many of the famous Harrow School songs. Sport is represented by an illustrated article on Cross-Country Running, by an old Oxford long-distance runner, and some instructive notes on the cost of pheasant rearing, by Mr. Frank Bonnett.

The art of soup making has never been thoroughly understood on this side of the Channel. If one excepts the delicious broths of Scotland, it would seem that it has been left to Frenchwomen to discover the secret of evolving a nourishing meal out of a few onions, some pieces of stale bread, and a pint of cold water; and it is therefore something of a shock to find a Frenchman casting doubts upon the value of soup as a foodstuff. Dr. V. Ch. Lefèvre, in an article which appeared in the July number of *L'Hygiène*, is very sceptical concerning its much-vaunted nourishing properties. He admits that, used in moderation, it may form an excellent stimulant for an invalid or a convalescent; but it is extremely indigestible, he declares, for all valid persons save those who labour all day in the open air, and are therefore in a condition to digest anything. Thick soups are particularly noxious, and should be carefully avoided, especially at night; and even clear ones should only be taken in small quantities, thoroughly masticated (a somewhat difficult proceeding, one imagines) and eaten very slowly. The true function of soup, we learn, is not to nourish, but to act as an *apéritif*; and for this purpose it should be consumed an hour before, instead of at the beginning of, a meal, a counsel of perfection which will probably prove a stumbling-block even to the most ardent food reformer. The question of food values also enters into M. Francis Marre's discussion on the danger of ptomaine poisoning from tinned sardines, which likewise appeared in the July number of *L'Hygiène*. The same number also contains some interesting advice to mountain climbers from Dr. J. Laumonier, and an article by Dr. Maurice de Fleury on the increase in infant mortality in France during the summer months; whilst Dr. Kermogant has contributed some striking details as to the important part played by medicine in the work of colonization.

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MODEL SCHEME FOR THE TREATMENT OF TUBERCULOSIS.

THE two months which have passed since the Annual Representative Meeting decided that the profession was justified in consenting to work the sanatorium benefit part of the National Insurance Act have been months fraught with much anxiety to all those interested in the unity of the profession and the well-being of the people. Although the decision to work this part of the Act was thought by many members to be a mistake in tactics, yet these members have sunk their own individual notions, and are now, along with the rest of their brethren, working or preparing schemes for the treatment of tuberculosis to include sanatorium benefit. This action has clearly demonstrated that the profession never intended—as some of our contemporaries basely said they did—to leave the poor consumptive to die. Its long and honourable record of devoted toil for the sick poor has become in the profession of to-day a mental attitude which its members could not change if they would.

Besides the difficulties inherent in the scheme itself, and those due to the unpreparedness of the Government when sanatorium benefit was brought into force, complicated as it was by a general scheme for the treatment of tuberculosis, the State Sickness Insurance Committee, in carrying out the instructions of the Representative Meeting, encountered further difficulties owing to the fact that each Division was authorized to make its own arrangements with the local authority, subject only to the approval of the scheme by the State Sickness Insurance Committee acting for the Council. This necessarily gave rise to local negotiations with all their attendant risks to the profession, and is accountable for most of the suggested departures from the findings of the Representative Meeting. Difficulties also arose in respect to administration in sparsely populated areas. It was soon apparent that, unless sparsely populated areas amalgamated for the purpose, they would not provide enough work to employ a whole-time tuberculosis officer, whereas densely populated and poor areas of large towns would easily afford ample material. Another point which called for careful consideration was the status of provisional and permanent schemes, for it was felt that unless the provisional scheme was on sound lines the permanent one would probably be unsound. Indeed, no sooner was a question from some northern Division settled than south, east, and west pressed forward with their difficulties. Should the medical officer of health be the chief tuberculosis officer? Should there be treatment at the dispensary? Where was the general practitioner to come in? What is the State Sickness Insurance Committee doing, and why does it not give a more distinct lead? These and a hundred other questions cried loudly for answers, and now, in answer to these, the State Sickness Insurance Committee has issued a model scheme, which is published in the SUPPLEMENT, p. 374. It would have been well if it could have come sooner, but even members of committees and hard-worked officers need [illegible] their work improves after a break. The model scheme is based on an interim report from the Sanatorium Subcommittee of the State Sickness Insurance Committee, which did not deal with arran[illegible] for hospitals and sanatoriums—a subject which will doubtless soon be considered by the Committee, when a further report will be made to the Divisions.

The model scheme may be commended to the careful study of every member of the Association and to the full consideration of Provisional Medical Committees and Divisions. Doubtless this consideration will lead to criticism and to suggestions for improvements, but when this is done there will, we believe, be general agreement that with no uncertain sound the decisions come to at the Liverpool meeting are here correctly applied. A careful perusal of the document shows that the fundamental principles are the welfare of the patient, the yoking together of the private doctor with the tuberculosis officer, and the linking up of the various units of the scheme. According to the scheme of the Local Government Board, the tuberculous patient may be any person in the community; such patients may be classed as the well-to-do, who will get treatment otherwise than through the Act; the very poor, who will come under the Poor Law administration; the insured for whom the Act specially provides, and the uninsured, a poor class not provided for by the Poor Law. For this last class the model scheme insists on like treatment as for the insured. But be it noted that it goes further and says that the flotsam and jetsam of humanity included in the uninsured class should have a home doctor who will help them to get proper treatment at the beginning of their illness and will take a continuous personal interest during its course. The Government has not yet given any indication of its intention as to the treatment of this class, but the sooner it does so the better.

When the general practitioner compares the position—the absolutely necessary position—assigned to him in the model scheme with that given him in the Astor report, he will recognize the great value of the work done by the State Sickness Insurance Committee in this regard. In dealing with the exceedingly difficult problem of the kind of work which should be done at the dispensary, the Committee gives a definition in paragraph 13, and the whole of the paragraphs under the heading "Dispensary Treatment" will well repay perusal. Whatever may be the ultimate result of the doctors' fight for liberty, they must needs be thankful to the Government for making them a great united profession irrespective of party politics. Nowhere can this be more clearly seen than in the suggestions made under domiciliary treatment for the consultations between the Chief Tuberculosis Officer and the "private" doctor. Clearly here they meet as doctors, members of the same profession, bent, each in his own sphere, on working in harmony to carry out sympathetically the scheme for the benefit of the consumptive patient.

In considering the scale of fees under the scheme, it should be noted that it is a scale of minimum fees, and therefore subject to improvement. Indeed, in some Divisions several of the items have been increased in amount, and, of course, circumstances may arise in which this is necessary. It must be remembered, however, that the money at the disposal of the Insurance Committees for payment of fees for sanatorium benefit proper is very limited, and the

tendency will be towards economy; should, therefore, the doctors' fees be unreasonably high, the committees might be glad to increase the work of the whole-time officer (without increasing his salary), and thereby take some of the work out of the hands of the general practitioner.

The other matters discussed under the scheme—staff, and procedure in providing treatment—carry out the decisions of the Representative Meeting, and of the Local Government Board Order adding the necessary details for effectively working them. Altogether the various parts of the scheme dovetail into each other, and form a well-balanced whole, which if cordially and sympathetically carried out may do as much as can be expected from any scheme designed for the cure, and not for the prevention, of tuberculosis.

UNIVERSITIES AND MEDICAL EDUCATION.

THE question of a university education as preparatory to professional training has been discussed by many men of the highest intellectual endowment. Roughly they may be divided into two classes, which may, "without prejudice," to use the saving formula of the lawyer, be called the liberal and the utilitarian. On the one hand, we have the great philosopher Locke writing as follows: "Can there be anything more ridiculous than that a father should waste his own money, and his son's time, in setting him to *learn the Roman language*, when at the same time he *designs him for a trade* wherein he, having no use for Latin, fails not to forget that little which he brought from school, and which 'tis ten to one he abhors for the ill-usage it procured him? Could it be believed, unless we have everywhere amongst us examples of it, that a child should be forced to learn the rudiments of a language which *he is never to use in the course that he is designed to*, and neglect all the while the writing a good hand and casting accounts, which are of great advantage in all conditions of life, and to most trades indispensably necessary?" It is clear from this that the author of the *Essay Concerning the Human Understanding* thought any teaching which tends to the general cultivation of the mind superfluous. This is an extreme expression of the view that all education should be deliberately shaped as a preparation for what the Germans call "bread studies." The opposite view is admirably set forth by John Henry Newman in his *Idea of a University*. We have not space to discuss the subject here, but we may be allowed to give some extracts from an essay by Davison, who is quoted with evident approval by Newman: "Of the intellectual powers the judgement is that which takes the foremost lead in life. How to form it to the two habits it ought to possess—of exactness and vigour—is the problem. . . . We may safely lay it down that they are not to be got 'by a gatherer of simples,' but are the combined essence and extracts of many different things, drawn from much varied reading and discipline first and observation afterwards. For if there be a single intelligible point on this head, it is that a man who has been trained to think upon one subject, or for one subject only, will never be a good judge even in that one. . . . Judgement does not stand here for a certain homely useful quality of intellect that guards a person from committing mistakes to the injury of his fortunes or common reputation; but for that master-principle of business, literature and talent which gives him strength in any subject he chooses to grapple with and enables him to seize the strong point in it." Probably no one could be found now to maintain with Edgeworth, the father of the novelist, that a boy intended for the medical profession, for instance, should be kept rigidly to pharmaceutical chemistry and a knowledge of medicinal plants. But there are still many who hold that his time should be spent in acquiring knowledge that may be useful to him rather than (in the words of Locke) in having his head stuffed with a great deal of trash, "a great deal whereof they usually never do ('tis certain they never need to) think on again as long as they live; and so much of it as does stick by them they are only the worse for."

Dr. Rolleston has dealt with the subject in a broad-minded way in his introductory address on universities and medical education, an abstract of which appears on p. 886. He fully recognizes that the medical graduates of a university should have a groundwork of general culture and scientific discipline on which their technical knowledge may be superimposed, otherwise their training would in no way differ from that given by a technical school. But while admitting that a really good classical training is valuable in some respects, he holds that the bulk of medical men pay somewhat dearly for whatever aroma of classical culture may still cling to them in late middle life. There seems reason, he says, to believe that a classical education does not give the average man any considerable advantage in science and medicine. As to this Dr. Rolleston differs from several scientific authorities who maintain that a classical training is an excellent preparation for a scientific career. Among these may be mentioned Dr. Alex Hill, formerly Master of Downing, and Vice-Chancellor of the University of Cambridge, and Professor Victor Vaughan, Dean of the Department of Medicine and Surgery of the University of Michigan. It should not be forgotten that nearly all the great medical discoverers down to comparatively recent times had received a classical education. John Hunter is an exception; but would not his writings have been less cryptic had he been trained to precision in the use of words, which after all implies precision of thought? How much do we suffer from lack of the same training at the present day! Beyond question, the want of power to express one's meaning clearly and unambiguously, the misuse of words and the misapprehension of their exact purport when employed by others, too often conspicuous in medical controversies, are the direct outcome of "modern side" education. It is owing to the want of the classical training which gives, as nothing else does, a sense of literary form, that medical books are proverbially ill written. It is nothing to the purpose to say that great scholars do not always write good English; they become so supersaturated with the ancient tongues that they are unable to handle their own. We do not want to manufacture pedants; it is the training in minute accuracy and the faculty of distinguishing fine shades of meaning that matters. This no living language can give in anything like the same measure, as the structure and phraseology—even the meaning of words—are subject to subtle but unceasing changes. A training in Greek and Latin, however little knowledge of the tongues themselves remains in after-years, leaves ineffaceable marks on the mind; it prevents to a great extent not only the slovenliness of expression, but the inaccuracy as to facts often displayed by scientific men when they come down into the arena of controversy. We are in hearty agreement with Dr. Rolleston in his suggestion that the dead languages should be taught earlier and better, and that the time spent on them

should be rearranged and curtailed. He suggests a compromise. Boys should be taught on the conventional lines till the age of 15½; then they should learn French and German, English composition, physics and chemistry. At the age of 18 or thereabouts they should begin the study of biology and of anatomy and physiology. Their proficiency should be tested at each of these stages of their education. This seems to us a sound scheme, combining the advantages of the old and the new.

We cannot follow Dr. Rolleston through his discussion of the still vexed question whether the preliminary scientific education required of candidates for the medical profession should be given in schools; nor can we deal with the extent and manner of the teaching of anatomy and physiology at the university. What he has to say on these points deserves consideration as representing the fruits of the experience of a thoughtful teacher, but when he comes to clinical teaching he enters on very debatable ground. He wishes to combine the teaching of the applied science of medicine with the pursuit of the pure science. To ensure this arrangement he proposes that professors of medicine, surgery, and gynaecology should be provided with several assistants of proved ability, who, besides taking an active part in teaching under the direction of the professor, should pursue special investigation in some department. As an alternative he makes the revolutionary proposal that the professorships should be held by men who should devote themselves entirely to the work of teaching and working at their respective branches of medical science. The whole-time professor should be appointed at an age that would give a reasonable prospect of twenty years of active work. He would be debarred from private practice, or would be limited to a stated extent from undertaking such work. This would necessarily mean a great increase of salaries if the chairs are to attract men of the right kind. But a far more serious objection, in our opinion, would be that if suitable men could be got they would inevitably become more or less fossilized as they became older. There would be a risk of their degenerating into academic pontiffs who would of their very nature tend to conservatism, and who from the habit of speaking *ex cathedrâ* would become intolerant of the free criticism which is as the breath of life to progressive science. They might even in time become like unto the doctors of Strassburg, who when told that, as a matter of fact, a thing happened otherwise than they said, replied that it ought not! The physician at whose feet the student is most eager to sit is a man who is "in the movement," if we may use a questionable phrase; who is in the forefront of the battle; who does not wear the panoply of an artificial dignity, and whose work is exposed to criticism from every side. We think that this question was decided many years ago. It is recorded in Trevelyan's *Life of Macaulay*, that Prince Albert was anxious that Oxford and Cambridge should become schools of medicine in the fullest sense. He asked Macaulay why these universities could not command the services of men of the first rank in practice as a university like Heidelberg succeeded in doing. Macaulay replied that a man earning £10,000 a year in London could hardly be got to retire into the unprofitable seclusion of a provincial town which happened to be the seat of a university. Hence there was, in his opinion, no chance that the academic chairs would be filled by the heads of the profession. There is, therefore, the economical difficulty, which to our mind is insuperable; and there is the further difficulty that physicians and surgeons of the highest order cannot be formed in cloistered shades. They can retire there when, after an arduous life, they long for dignified leisure, and they can do immense good by shedding the lustre of a great name on the university which is fortunate enough to secure them. But as a career for young men with the ambition to make a name in the practical part of their profession, a whole-time professorship does not commend itself to us.

THE REGULATIONS FOR MEDICAL BENEFIT.

The Provisional Regulations for Medical Benefit under the Insurance Act are being issued this week, and by the courtesy of the Commissioners we are able to print the full text in the Supplement.[1] We venture to urge every member of the medical profession not to accept any paraphrases, abstracts, or glosses of the Regulations which may be published in the daily press or elsewhere, but to read the Regulations as a whole in the full text. They are not very long, and for a document of the official legal kind the phraseology and arrangements of the paragraphs, with the exception perhaps of those dealing with the adjustment of financial business, is clear, so that whatever its merits or demerits the general scope and purport of the scheme embodied in the Regulations is not difficult to grasp by the expenditure of a reasonable amount of time and attention. The critical examination of details will, of course, be a much more laborious task, which the State Sickness Insurance Committee will undertake without delay, in order that it may report to the Council at the earliest possible moment. Meanwhile a few words may be said on the main trend of the Regulations and on the effect they might be expected to have on the efficiency of any medical service, should circumstances arise which might render the institution of such a service possible.

The general idea of the Commissioners would seem to have been to hand over the administration as far as possible to the local (County) Insurance Committees acting, in respect of various matters affecting the medical profession, after consultation with the local Medical Committees, the Commissioners being held in reserve as a court of appeal. In this, no doubt, effect has been given to the specific provisions as well as the general intention and purpose of the Act, but this devolution has been carried so far that local controversies, which must increase the difficulties of the situation, would be almost certain to arise, should the profession consent to work under the Act.

Each Insurance Committee is to make a scheme for medical benefit, and must consult the local Medical Committee with regard to it, and with regard to the amount and method of remuneration of medical practitioners. The agreement to be made with individual practitioners under any such scheme must be in accord with the terms and conditions which are specified in a schedule, and the method of remuneration may be any one of five different plans set out in another schedule, including payment by capitation, payment by attendance, and combinations of these systems. The Insurance Committee is to inform each approved society of the amount which it is to pay in respect of the cost of the medical benefit of its members resident within the county. Each Insurance

[1] The text of the Model Rules prepared by the Insurance Commis- [illegible] in the Supplement.

Committee is to submit its scheme to the Insurance Commissioners for their approval, and the Insurance Committee, if it has failed to come to terms with any approved society, is to notify the Commissioners of the terms so refused, and the Commissioners are to determine the amount to be paid by the society. Before approving any county scheme the Commissioners must consider any representations made to them by the local Medical Committee.

No attempt is made in the Regulations to ensure a uniform income limit throughout the country; each County Insurance Committee is to have power to fix such a limit, but is not required to do so. It appears therefore that the Commissioners contemplate negotiations which might well end in controversies in each county. The introduction into the Regulations, however, of paragraphs laying down the manner in which an income limit might be fixed and enforced ought to be taken by Insurance Committees as an indication of the Commissioners' opinion that the intention of the Act is that a committee shall prescribe an income limit, and in particular that the onus of proof that his income does not exceed the limit shall rest on the insured person as the British Medical Association desired. As the Regulations stand, the question will have be settled in each county or county borough after controversies in which the medical profession will be at a disadvantage, owing to the fact that the majority of an Insurance Committee will consist of representatives of insured persons. This disadvantage can only be neutralized by the maintenance undiminished of the union of the profession for combined action, of which so many satisfactory evidences have recently been afforded. The provision that the Insurance Committee before fixing, varying, or abolishing an income limit shall consult the local Medical Committee does not adequately meet the point, and will not avoid local controversies, for it will be open to the Insurance Committee to disregard the opinion of the local Medical Committee, which does not seem to have any right of appeal to the Commissioners on the point. Its importance is not diminished by the fact that the Regulations do not seem to touch the case of a person who, having been an insured person for five years, is, under Section 1 (3), apparently entitled to continue to be insured even though his income has come to exceed £160 a year.

The Harmsworth amendment permitting the continuance of any institution for medical treatment is reflected in the Regulations. The medical profession has from the first objected to this, mainly on the ground that it may perpetuate the evils of the system in its worst form, and must in practice operate to limit the free choice both of patient and of doctor. It appears to be contended that Paragraph 16 of the Regulations will diminish this objection, inasmuch as the treatment given by the institution must, in the judgement of the County Insurance Committee, be adequate, that every insured person shall be entitled to terminate his agreement on giving reasonable notice, and that no institution will be recognized until all its rules, terms, and conditions have been approved by the Commissioners. The definition of the term "institution" is "a system or institution existing on the 16th December, 1911, and providing medical attendance and treatment"; it is, we believe, interpreted by the Government to include works clubs, as well as medical aid institutions commonly so called, and, unless specifically safeguarded, there is a risk that it may be given an even wider scope. The term "adequate" is undefined; it is vague, and may easily lead to disputes between the Insurance Committees, upon which, it must be remembered, representatives of friendly societies will form, if not the majority, at least the most numerous and coherent group, on the one hand, and, on the other, not only the medical profession, but the Insurance Commissioners also. It is an important matter, and the Commissioners might have been expected to retain it in their own hands, or at least to have given a clear lead to local bodies.

The Regulations contain elaborate provisions as to the methods of remuneration and as to the methods of ascertaining the amount to be paid to each individual practitioner who may accept service under the Act, but nothing whatever as to the amount. It is generally understood that the Chancellor of the Exchequer is prepared to ask Parliament to provide an increased contribution from the State to the Insurance Fund. As will be seen, the Chancellor of the Exchequer informed the remaining medical members of the Joint Advisory Committee, who had an interview with him on October 2nd, that he would confer with the Cabinet at the earliest possible date, and hoped to be in a position to make known their decision in the course of the week beginning October 14th. It is much to be hoped that this intention may be carried out, for until this information is available an essential element in the formation of a judgement on the Regulations is wanting.

The Insurance Commissioners do not seem to have used the power conferred upon them in the Act (Section 78) to modify its provisions with the view of meeting any of the criticisms or objections advanced by the British Medical Association on behalf of the profession. The Regulations keep strictly within the four corners of the Act, but their general effect is to produce the impression that the intention is to throw as much responsibility as possible on to the profession for the efficient administration of medical benefit should the profession as a whole eventually consent to undertake the task. In so far as this intention exists and has found expression in the Regulations, it may be said to be in accordance with the desire of the profession to retain the control of its own work and affairs, and so far, therefore, the Regulations may be considered to show a spirit not unfavourable to the views expressed by and through the British Medical Association. They are, however, vague on points which the Association holds to be of cardinal importance. This, it may be said, was inevitable, but it is none the less to be regretted. The policy of handing over the adjustment of so many important matters to the County Insurance Committees, although in respect of certain matters it is in accord with the desire of the British Medical Association that such points as, for instance, the method of remuneration, should be left to local decision in consultation with the profession in the locality would, it is to be feared, lead to sectional controversies all over the country, a result to be deplored in the interests of the profession and of the insured. The British Medical Association must now consider whether the Regulations, taken in conjunction with the final monetary offer of the Government, afford a basis on which the profession can be advised to co-operate in working medical benefit. A decision can, of course, only be taken after a full consideration of the matter by every Division; and the report of the Council to the Divisions, preparatory to the holding of the Special Representative Meeting, will be awaited with keen interest, but it may be doubted whether it can usefully be issued until the Chancellor of the Exchequer has defined his proposals with regard to remuneration.

METHODS OF REMUNERATION.

The second part of the first schedule of the provisional Regulations for the administration of medical benefit sets out five different systems upon which the remuneration of practitioners undertaking treatment under the Insurance Act may be based. The first (A) is a capitation system pure and simple. The second (B) is a capitation system *plus* payment for what are classed as special services; a practitioner would receive a certain sum in respect of each insured person included on his list, and in addition would be paid at a rate (not yet fixed) for special services, the special services including a special visit, a night visit, consultations, surgical operations requiring local or general anaesthesia, the treatment of fractures or dislocations, the administration of a general anaesthetic, the treatment of tuberculosis in so far as the patient is not entitled to obtain such treatment as part of sanatorium benefit, and the treatment of abortion or miscarriage in so far as not included in maternity benefit. The third (C) is again a capitation system *plus* payment for ordinary as well as special services. Under this scheme presumably the capitation would be smaller, but in addition to the special services enumerated under (B) there would be payment for ordinary visits at the patient's residence, or ordinary attendance by the patient at the practitioner's residence, surgery, or dispensary. In (B) and (C) the capitation payment would have priority of payment as a charge on the fund. Under the next scheme (D) payment for special services would take priority, and the amount of capitation paid would apparently depend upon the amount remaining after the special services had been paid for. The capitation received under (D) might be, therefore, greater or less than the capitation received under (B). The fifth scheme (E) is a system of payment for attendance, pure and simple, without any capitation. The five systems would appear to render it possible to meet, at any rate the majority, of the many suggestions which have been made with regard to the method of remuneration, but the sections of the Regulations dealing with the amount applicable for the payment of practitioners (28), and the calculation of the remuneration under the several systems (29), clearly call for very careful scrutiny. The County Insurance Committee at the end of each year would determine the total amount to be applied in defraying the cost of the medical benefit of insured persons obtaining treatment from practitioners on the panel, and would then ascertain the cost of the provision of drugs and prescribed appliances and of mileage, and the amount equivalent to the cost of medical benefit on insured persons during periods of temporary residence outside the county. The third deduction would appear to be merely a matter of book-keeping. The amount thus arrived at is to be deducted from the total amount, and out of the remainder, termed the "net fund," individual practitioners on the panel would be remunerated. Where a capitation system pure and simple was in force, the County Insurance Committee would credit to each practitioner on the panel an amount, called a "capitation fee," in respect of each of the persons included on his list, calculated in accordance with the rate agreed with him. Where a system of payment by attendance pure and simple was in force, the committee would credit to each practitioner on the panel in respect of each service, the amount agreed for each such service. Having done this, the committee would ascertain the aggregate of the amount credited to each practitioner, and the grand total of the aggregate amount credited to all practitioners on the panel; it would then pay to each practitioner not necessarily the amount credited to him, but an amount bearing the same proportion to the sum credited to him as the net fund bore to the grand aggregate credited to all the practitioners. Where one or other of the combined systems was adopted, the committee would pay to each practitioner out of the net fund the capitation fees or attendance fees credited to him which are payable "in priority"—in systems (B) and (C) a capitation fee, and in system (D) the fees for special services—and out of the balance of the net fund an amount, in respect of other fees credited to him, bearing the same proportion to these fees as the balance of the net fund bore to the aggregate amount of such other fees credited to all practitioners on the panel. Every practitioner on the panel would be required to furnish a quarterly account to the Insurance Committee containing particulars necessary for calculating the amount of remuneration payable to him by the committee. The committee would then pay to the practitioner the amount agreed between it and the practitioners on the panel in advance of the amount due to him and the balance at the end of the year. But before paying the balance the Insurance Committee would be required to submit all accounts to a committee appointed by the practitioners on the panel, and this committee of practitioners would have power to reduce or disallow any item in any account. This elaborate machinery appears to have been devised not merely in the interests of economy, but as a part of a settled policy to discourage the abuse of drugs. That the belief in drugs and in big bottles of medicine has become something of a fetish with that section of the public to which insured persons chiefly belong—the wealthier classes have come to prefer systems of diet tempered by patent medicines and mineral waters—may be admitted. But there is a very real danger of going to the other extreme and putting obstacles in the way of the proper use of drugs from which sick and suffering humanity can derive much benefit and relief, as every one except the man "who has never known a day's illness"—and he usually has some private panacea—is well aware. The tendency disclosed in these provisions may be taken as a compliment, as an expression of confidence in the probity of the profession; but the original idea of separating altogether payments for drugs from payments for medical attendance possessed advantages which this ingenious scheme does not present.

LOCAL MEDICAL COMMITTEES.

The importance of the duties which the Insurance Commissioners propose to assign to local Medical Committees will not escape the attention of any reader of the provisional Regulations for medical benefit. All the proposals are, of course, dependent upon the profession consenting to work the medical benefits under the Act, and accordingly to set up such local Medical Committees—one corresponding to each local Insurance Committee, and, therefore, as a rule, one for each county. Where a local Medical Committee has been set up it must be consulted by the County Insurance Committee with regard to the conditions of service upon which it is proposed to invite practitioners to undertake treatment and the method and rate of remuneration, including the rate to be paid in respect of mileage. Under Section 14 of the Act the Insurance Committee must prepare rules with regard to the administration of medical benefit, and in the preparation of these rules, which must eventually be approved by the Insurance Commissioners, the Insurance Committee must consult with the local Medical Committee. Before approving any arrangements with practitioners submitted to them by a County Insurance Committee, the Commissioners must consider any representations made to them by the local Medical Committee. Before fixing, varying, or abolishing an income limit, the County Insurance Committee must consult the local Medical Committee, and that committee may at any time, by notice in writing to the County Insurance Committee, dispute the right of an insured person to receive medical benefit on the ground that the income of that person exceeded the income limit. Any complaint made by an insured person against a practitioner who attended him under the

arrangements made by the Insurance Committee in respect of the discharge by the practitioner of his professional duties towards the insured person, or by a practitioner against an insured person in respect of the conduct of the insured person towards the practitioner, or any other complaint against a person or practitioner on the panel, would be referred by the County Insurance Committee to a special subcommittee, consisting of six members and a chairman. Of the six members three would be appointed by the local Medical Committee and three by and from the members of the Insurance Committee who represent insured persons; the chairman would be selected by the six persons, and would be one of those members of the County Insurance Committee appointed by the county council or by the Commissioners, who are neither insured persons nor practitioners. This Committee of Complaints would hear the complainant and respondent, a representative of the society to which the insured person belonged, a representative of the local Medical Committee, and any witness or assistant of either party, but not a barrister or solicitor. It would make a report to the County Insurance Committee on the facts, and state the inference it drew from them, and its findings as to the facts would be final. With regard to complaints falling into another category, those involving the efficiency of the medical service made by a practitioner on a panel against any other practitioner on the panel, they would be considered by the local Medical Committee, which would be empowered to apply to the Commissioners to remove the name of the practitioner from the panel or to take such other action as they might deem proper. The Commissioners would not themselves investigate the charge, but would refer it to an Enquiry Committee. The Joint Committee of the several bodies of Commissioners for England, Scotland, and Wales are to constitute a body of sixteen practitioners, and when any complaint is to be investigated would appoint a special Enquiry Committee consisting of two of the sixteen practitioners above mentioned, and two other persons, one of whom would be a barrister-at-law or a solicitor. This Enquiry Committee would elect one of its members to be its chairman, and would draw up a report to the Commissioners stating such relevant facts as had been established by the evidence and the inferences, if any, which, in the opinion of the Enquiry Committee, might properly be drawn from the facts so found. A local Medical Committee would also be empowered to represent to the Commissioners that the inclusion or continuance on the list of persons supplying drugs and appliances (a chemist or other person) would be prejudicial to the service in the county, and the Commissioners must thereupon hold an inquiry. The County Insurance Committee is to prepare a list of the prices which it is willing to pay for the drugs ordinarily supplied and for appliances, and the County Insurance Committee, if it proposes to revise its list of drugs and appliances, must consult the local Medical Committee before submitting its proposals to the Commissioners.

DRUGS AND APPLIANCES.

From the third part of the provisional Regulations for local benefit, which deals with the provision of drugs and appliances, it appears that it is contemplated that every County Insurance Committee shall make arrangements for the supply by practitioners on the panel of drugs ordinarily administered by a practitioner in urgent cases and appliances required for immediate application, but that otherwise all drugs and appliances are to be supplied by chemists or other persons with whom agreements with the County Insurance Committee are to be entered into, except in districts where the insured person would experience difficulty in obtaining necessary drugs and appliances owing to the inadequacy of means of communication. In such districts the committee would be required to make arrangements for the supply of such drugs and appliances by the practitioner attending the insured person. In all other cases the practitioner would be asked to undertake to order drugs and appliances on a prescribed form, and the insured person would be entitled to obtain the drugs or appliances ordered for him by the practitioner attending him from any chemist or other person on the list of chemists who had arranged with the Insurance Committee to supply drugs and appliances. If a practitioner ordered a drug not included in the Insurance Committee's list for the time being, he must do so on a special form. The most practical and economical course in the long run would be to take the *British Pharmacopoeia*, prepared and published under the authority of Parliament, with the exception, perhaps, of one or two items such as cod-liver oil. It would be unreasonable and impolitic to forbid the use of any drug already recognized by the State; moreover, the prices of all official drugs are governed by the ordinary movements of the market and easily ascertained, and their quality and mode of preparation is laid down in the *British Pharmacopoeia*.

RESIGNATION OF CONTRACT PRACTICE APPOINTMENTS.

THE action of the State Sickness Insurance Committee in recommending that in every area the resignations of contributory contract practice appointments in so far as they apply to insured persons should be sent in on September 29th has met with a response which is a most gratifying exhibition of loyalty to the Association. In making the request it was realized that the loyalty of the profession was being put to a very severe test, as many practitioners derive a large portion of their income from contract practice work, and in addition, apart from the widespread and growing feeling against the general conditions of contract practice, the relations of the medical officers to their contract patients have been on the whole friendly. The result of the test was never for a moment in doubt after the issue of the circular of the State Sickness Insurance Committee. Even areas which had been considered weak by the Committee, and some of which, indeed, were very doubtful as to the wisdom of sending in the resignations, took prompt action. The final results are not yet in the hands of the Association, but up to noon on October 3rd, out of 230 areas, 144 have reported that they have sent in 22,729 resignations, affecting 6,042 doctors. In addition to this, it is reported that in the case of some hundreds of appointments a much shorter notice than three months is necessary, and arrangements have been made whereby they will terminate on or before January 15th. From the same areas it is reported that 243 practitioners have not resigned, but of these quite a large number, though reluctant to resign their own appointments, will not accept any appointments resigned by their local colleagues. The number of those who have definitely declared that not only will they not resign, but that they are willing to accept resigned appointments is so small as to be negligible, and it is evident that in most cases the calibre of the practitioners who have taken up this attitude is such as to allow their colleagues to view their action with indifference.

THE MYSTERY OF THE MOTORS.

IN the JOURNAL of September 28th reference was made to an advertisement asking for tenders for 1,000 motor cars, to be sent to Dr. Charles Frederick Knight, Organizing Secretary of the "National Insurance Medical Association." In speculating as to the possible uses to which these cars were to be put, we threw out a conjecture that, as it was said that Dr. Knight held an office under the Scottish Insurance Commissioners, they might be intended in some way to facilitate the working of the Act. Dr. Knight informs us that he holds no office under

the Scottish Commissioners, and we withdraw the statement, which was made in all good faith under a misapprehension. But the fact that Dr. Knight holds no such office as he was said to hold only deepens the mystery of the motors. There is no doubt about them, for we have copies of the advertisement before us as it appeared in the *Daily News* and in the *Musselburgh News*. It is headed "The National Insurance Medical Association," and, with a subhead, "Tender for Motor Cars," goes on to say: "Tenders are invited for 1,000 motors, chiefly 12-h.p., to be delivered in Great Britain early in January. Further particulars can be obtained by writing to the organizing secretary, Charles Frederick Knight, M.D., 7, Chambers Street, Edinburgh, to whom tenders must be sent by October 18th." Reports of what purport to be interviews with Dr. Knight have appeared in the *Daily Express* (September 23rd) and in the *Evening Dispatch* of Edinburgh of September 26th. In neither of these is any particular light thrown on the motor mystery. To the representative of the *Daily Express* Dr. Knight stated that plenty of doctors could be got to work the Act; he said he could get 300 from London alone. As to the motor cars, he denied that the Government was finding the money, and said that a number of wealthy people were interested in his association. He added that probably 1,500 cars would be required. To the representative of the *Evening Dispatch* of Edinburgh Dr. Knight was more reticent, and the representative had to leave the presence of the organizing secretary "just about as wise as he entered it." One of the most puzzling points in the mystery is that the *Musselburgh News* should have been chosen as the medium of such an advertisement. It is an excellent paper, no doubt; but, as the *Autocar* says, "one might as well advertise for tenders for battleships in the *Malvern Advertiser* or the *Leamington Spa Circular*." Perhaps it would be well for Dr. Knight to get the men before he makes so large an investment in motors.

FINSBURY MEDICAL SOCIETY.

The Finsbury Medical Society gave on September 26th the first of what is to be an annual event—namely, a supper party. Dr. Hobbs Crampton (President) was in the chair, and some forty-two members and guests were present. The toast to the society, proposed by Dr. Southcombe, Honorary Secretary of the City Division of the British Medical Association, met with acknowledgement from Dr. Francis Roe, the Honorary Secretary of the society, who gave an account of the strenuous work that it had done in the way of promoting professional and social union during recent troublous times. He added that it had been a source of strength to the British Medical Association, and had recruited for it several new members. The toast to the British Medical Association was proposed by Dr. Evan Jones, who said that on the whole the Association had led the profession very well indeed, and had succeeded in supporting its interests during the stirring times in which medical men had been involved by the passage of the National Insurance Act. The position in Finsbury was that notice had been given of the resignation of every club or allied appointment within the area. The toast was acknowledged by Dr. Alfred Cox, Medical Secretary of the Association, who said that the profession was within sight of the greatest crisis it had ever known. To arouse enthusiasm and lay down minimum terms was comparatively easy, but the real test of statesmanship would come when the profession considered whether it would accept the terms offered to it by the Government in the regulations which were shortly to be published. When the profession had seen those regulations it would have to decide whether they constituted a system under which any self-respecting profession could consent to act, or whether an indeterminate period of anxiety and friction would have to be faced. Together with the regulations would have to be considered the final offer of the Government in respect of remuneration, for the two factors were inseparable so far as the medical profession was concerned. Another task before the profession was to convince the public that its final decision, whatever it might be, was conceived not only in the interests of medical men, but of the public itself, and in this task there should be no difficulty. The evening ended when a toast to the chairman had been proposed by Dr. J. J. Udale and duly acknowledged.

ICEBERG DETECTION.

Several daily papers last week contained statements to the effect that on its arrival at Quebec the R.M.S. *Royal Edward* had reported success in regard to the experiments conducted during the voyage with the system of iceberg detection devised by Dr. Myer Coplans. The ship took the northerly route across the Atlantic, and the ship's officers became aware of the existence of nine icebergs in its course before sighting them. The breaking away of ice-floes from the shores of the arctic region and their appearance in the track of vessels when least expected represents a problem of much importance, and it is not from the medical profession that the public would probably have expected its solution. Those, however, who are acquainted with the many-sidedness of medicine and the capacity for seizing upon new lines of thought which is secured by medical education will hardly be surprised if the palm is carried off by a medical man. The experiments in question, which are being conducted by Dr. Coplans himself, with the co-operation of the Canadian and United States Governments, originated, we believe, in some observations made by him while conducting a research into the effect on certain serum reactions of the passage of an electrical current. They were carried on at Leeds, where Dr. Coplans is demonstrator of bacteriology and public health at the university, and showed incidentally that the conductivity of the liquids he was using varied with their temperature. Finding that this was true also of salt water, Dr. Coplans, when methods of detecting icebergs were brought under discussion by the *Titanic* disaster, worked out a system which he hopes will prove that the alteration of water temperature caused by the presence of an iceberg for many miles around it may be utilized for revealing its existence long before a vessel comes within the danger zone.

REVISION OF THE MEDICAL REGISTER.

The Registrar of the General Medical Council, in a letter published this week, makes the same appeal to members of the medical profession to assist in the annual revision of the *Medical Register* which has been made at this season of the year on many previous occasions. The onus of notifying a change of address is placed by the Medical Act upon the practitioner himself, and though the Registrar makes every effort to ensure that the address of every practitioner is correct, if once he loses touch he may find it difficult or impossible to get into communication again. Should his inquiries be persistently neglected, as may occur if notice of change of address has not been given to him in due course, it may become his duty to remove the name of the practitioner from the *Medical Register* under Section XIV of the Medical Act. The *Register* is the only official list, and as such is consulted by courts of law, and in consequence of representations made recently by the General Medical Council, it is used by the Registrar-General, the Board of Trade, and other Government departments more often than it used to be.

The Harveian Festival of the Royal College of Physicians of London will be celebrated on October 18th, when the Harveian Oration will be delivered by Sir James F. Goodhart, Bart., M.D., at 4 p.m.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

Cancer Hospital Electrical Institute.

About eighteen months ago we recorded the opening of a Research Institute in connexion with the Cancer Hospital (Free) at Brompton, S.W. This development has been quickly followed by another, relating to the *x*-ray and electro-therapeutic department of the same institution. Until recently this department was housed in a couple of rooms in the main building. Now it has entered into sole possession of a new building of two floors at the back of the hospital. The consequent reorganization of the department has been carried out with a single eye to efficiency. From the heating arrangements in the basement to the air-pump in the loft, there is scarcely a cubic foot of wasted space, yet there is no sense of crowding, and even in an electrical institute aesthetic considerations are not wholly sacrificed. The purpose of the building manifests itself in every detail, down to the system of dark-room blinds and the disposition of the electric plugs and fuse-boxes. It was a little difficult to overcome the reticence of the small staff, and to learn exactly who was responsible for all the ideas embodied in the general design, but the capable hand of the director, Dr. Robert Knox, has evidently been felt in every part of the undertaking.

One enters first a cheerful vestibule, where the waiting patients can sit in comfort. Beyond this is a small consulting room, with the radium safe, containing at present 250 mg., built into the wall. Adjoining is a double dressing room, and another door leads to the large apartment given over to radiography, with an annexe at its farther end to serve as a dark room. Among the apparatus installed by Messrs. Siemens Brothers and Company, Limited, we noticed a single-impulse *x*-ray outfit, capable of exposures of almost one-hundredth of a second; a screening stand, incorporating every protective device that ingenuity can suggest; and a specially built radiographic couch, with an automatically moved tube box below. Instead of the customary protection for the tube box, the whole length and breadth of the couch are covered with protective material, and thus, while the safeguards are even more complete than usual, the adjustment of the tube is rendered easier and more precise. Protection, in fact, is the keynote of the whole institute. One has everywhere a reassuring, if rather oppressive, sense of armour plate; and it must be a difficult matter for the most vagrant *x*-ray beam to reach the operator, either here or in the therapeutic room above.

This therapeutic room occupies the whole of the first floor, and contains eleven cubicles, each of which has its electric plug, its cabinet for appliances, and its inlet and outlet for ventilation. Nearly all these screened-off compartments are equipped for a distinct electrical treatment. In one a Schnée four-cell bath is installed; in another a diathermy apparatus; a third contains one of the "universal machines" for providing the galvanic and other currents; in a fourth is a mercury-vapour lamp; yet another is devoted to high frequency. Some of the cubicles are curtained recesses, the idea being to secure privacy for the individual patient, which is no unimportant matter if the best results are to be obtained in certain branches of electro-therapeutics. Those that are not curtained are permanently enclosed, and the three cubicles in which *x*-ray treatment is administered are not only enclosed but are completely isolated. The operator in these cases directs the treatment from the outer side of [illegible] doors. Each of the doors is a kind of sandwich [illegible] with a sheet of lead in the middle. The [illegible] which the operator is enabled to watch [illegible] of the tube, is also of lead glass. The [illegible] of the door automatically switches off the [illegible] The coil is deposited on an upper shelf out [illegible] the apparatus that has to be manipu- [illegible] of each little compartment. [illegible] for giving a "make and break" action to the current in the tube, so that the length of time [illegible] ovy currents are passed may be prolonged. Another happy arrangement is a system of air-cooling for the tubes. The current from an air pump is carried along an india-rubber piping, and, this piping being attached to the *x*-ray tube, the air is directed upon both anode and cathode. At the other end of the room one of the cubicles forms a little photographic studio, with stand, camera, arc lamp, and roll-up background.

Mr. C. E. S. Phillips, F.R.S.Edin., an ex-president of the Roentgen Society, who has carried out a great deal of original work upon the measurement of radium, has been appointed honorary physicist, and two laboratories are under his direction. One of these, a small room in the Electrical Institute itself, is given over to some investigations he is making upon radium emanation. In addition to other appliances for collecting and accumulating the substances given off by radium, it contains a double pump of special design, which, with the 25 mg. of radium bromide that it holds in solution, ensures a constant delivery of emanation for experimental as well as for medical purposes. The other laboratory, which is wisely housed in a different building so as to be outside the sphere of influence of this store of radium, contains electroscopes and other measuring instruments of great sensitivity, as well as an optical bench and, in another dark room adjoining, a good photomicrographic outfit. The whole of this work is still in its preliminary stages, and much may be hoped from the attempt on the side of physics to perfect the technique of the radium and *x*-ray treatment of cancer. Mr. T. A. Pole has been the architect of the new building.

London County Council.

Inauguration of the New Arrangements for Medical Inspection and Treatment.

The revised arrangements for the medical inspection and treatment of elementary school children in London—as to which details have appeared in the issues of the British Medical Journal of May 25th, 1912, p. 1212; June 22nd, p. 1452; July 22nd, p. 206, etc.—came into force on Tuesday last, October 1st. London is now divided for school medical purposes, and particularly for work connected with medical inspection, into four districts, each under the control of an assistant medical officer, who is responsible to the medical officer for the county, Dr. W. H. Hamer. In place of eighty quarter-time school doctors, there are now twenty-four whole-time officers, five having been appointed on a permanent basis and nineteen under yearly agreements. There is considerable divergence of opinion among members of the Council as to the relative merits of whole-time and part-time service in this work, some being of opinion that routine duties such as are required of the medical men undertaking the inspection of large numbers of children tend to become mechanically performed, and that it is desirable that the officer should devote the greater part of his time to work of a more general character. Others urge that the duties are of such a nature that medical men may usefully specialise in this branch, taking it up as their life's career, and looking for promotion in the Council's service and in the education service throughout the country. It is also claimed that a whole-time staff can be more efficiently organized than a part-time one.

The Board of Education having consented to recognize a system of medical inspection and treatment which makes use of hospitals and similar voluntary institutions, and of treatment centres established by local committees of medical practitioners, the Council has extended this method of dealing with the medical needs of the school children, incorporating various modifications demanded by the Board. In the case of hospitals, the system of "following up" in the homes of those treated—adopted with success at the London Hospital—is to be made the rule where hospital provision exists. The medical treatment centres have been subjected to criticism by the Board of Education on the grounds that they are not sufficiently under the control of the Council, and that they are not available for inspection and re-examination, nor for the treatment of minor ailments. In several new schemes for providing treatment at local centres which have been approved by the Council these points have been dealt with. While the centres will be provided and maintained by the local committees of practitioners, the Council will be responsible for the

administrative control, and the centre will be available for inspection and re-examination. Under the head of minor ailments will be included discharging ears, external eye diseases—for example, blepharitis and conjunctivitis—skin diseases such as impetigo and sores, and such other conditions as require the daily services of a nurse. The new treatment centres which came into being on October 1st are at Fulham, Hackney, Islington, Peckham, St. Pancras, Poplar, while agreements have also been entered into with the authorities of the Home for Sick Children, Lewisham, and of the St. George's Dispensary, Blackfriars. As in earlier agreements, payment will be provided for at the rate of £50 a year for each medical practitioner or anaesthetist working one half day a week and a capitation payment of 2s. for ear, eye, nose and throat cases,
with an additional capitation payment of 4d. a case for minor ailments. There are still only two or three centres in the county of London for the provision of dental treatment.

MANCHESTER AND DISTRICT.

The Chief Tuberculosis Officer for Manchester.

Early in September, by the instruction of the Town Hall Committee of the Manchester Town Council, the Town Clerk wrote to the Local Government Board drawing attention to the Board's order of July 26th on the subject of the domiciliary treatment of tuberculosis, and asking "under what provision, if any, of the National Insurance Act, 1911, or otherwise, the Board had acted in nominating the medical officer of health of this city, being a county borough, as consulting officer of a dispensary under the National Insurance Act, without first obtaining the consent of the Town Council, by whom he is appointed and paid." The Town Clerk observed that by Section 60 (2) of the Act the medical officer of health could only be required to give advice and assistance to the Insurance Committee with the consent of the Town Council by whom he is appointed, and as the administration of sanatorium benefit devolves upon insurance committees, "any services which the medical officer of health may be required to render with respect to tuberculosis would appear to have reference to the duties of the insurance committees." To this letter the Local Government Board replied that the letter of the Town Clerk was written under a misapprehension, that the expression "consulting officer" in the Board's order was defined to mean a consulting officer to a dispensary approved by the Board under the Insurance Act for the treatment of tuberculosis, or, "until such officer had been appointed, the medical officer of health, or such other medical practitioner as the Board may, on the application of the Insurance Committee, from time to time approve;" also that the Order did not nominate the medical officer of health as consulting officer, but that it was entirely within the discretion of the Town Council whether their medical officer of health should act, until consulting officers of approved dispensaries have been appointed, and finally, that if the Town Council withheld its consent to the medical officer of health acting for the time being as consulting officer, it was competent for the Insurance Committee to apply for the Board's approval of some other medical practitioner acting as consulting officer. On receipt of this letter from the Board the Town Hall Committee referred the matter to a special subcommittee to consider the whole question of Dr. Niven's duties, but resolved in the meantime to withhold its consent to the appointment of the medical officer of health as consulting officer of a dispensary of the Manchester Insurance Committee. On the other hand, the Sanitary Committee of the Town Council has resolved that, in its opinion, it is desirable that the Town Council should consent to the medical officer of health becoming temporary consulting officer within the meaning of the Order of the Local Government Board. The chairman of the Town Hall Committee disclaims any desire to place obstacles in the way of the Insurance Committee, but, having regard to the enormous amount of work which the medical officer of health has already to do, it is thought necessary to know whether he would be able to discharge the extra duties thrown on him by the appointment in question. At the monthly meeting of the Town Council on October 2nd a motion was made that the approval of the Council should be withheld pending the meeting of the Sanitary Committee on October 3rd, when it was arranged that a deputation should be received from the Joint Committee of the Divisions of the British Medical Association. This met with much opposition, and it was pointed out that if Dr. Niven were not appointed, the Insurance Committee would exercise its right to appoint some other medical officer, though no one could serve the ratepayers so well. Eventually it was agreed that Dr. Niven should be allowed to act as temporary consulting officer for the next three months.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Presentation to Dr. J. T. Creery, of Coleraine.

A short time ago Dr. Creery, of Coleraine, met with a motor accident, fortunately not attended with fatal consequences. Dr. Creery has given for thirty years zealous and efficient service in the interests of the community as dispensary medical officer and medical officer of health, and his many friends and patients showed their high appreciation of his services and gladness at his recovery and return to work by presenting an address to him on September 25th. The address, which was accompanied by a very handsome gold watch and a substantial cheque, showed forth the kindly relations and mutual devotion that existed between the doctor and his patients and friends. The profession in the North of Ireland join in their best wishes and congratulations to one of their best known and honoured colleagues.

South Dublin Union and Consumptives.

At the last meeting of the South Dublin Rural District Council one of the members called attention to the existence of very bad cases of tuberculosis in a number of cottages in the district. He mentioned one in which five or six people were living with a child that was actually dying of consumption. Some discussion arose as to whether the cases were too advanced for reception at Crooksling. A councillor said that at Crooksling all stages except the very advanced would be received, but there were 3,000 consumptives in the county, and he did not know how provision was to be made for all. At the present time it was in contemplation to erect additional buildings at Crooksling to accommodate 300 more patients. The following resolution was unanimously adopted:

> That in all cases of pulmonary tuberculosis the medical officers of health be instructed in the first instance to send such patients to a sanatorium by means of the machinery provided by the National Health Insurance Act and the Committees created thereby, any case to which the benefits of the National Health Insurance Act cannot be applied to be sent to the Crooksling Sanatorium under the provisions of the Dublin Joint Hospitals Order.

Tuberculosis Scheme.

The South Tipperary County Council, at its last meeting, made the following appointments under the county tuberculosis scheme: Dr. John Quirke, Ballyfoley, Cashel, was elected medical superintendent at a salary of £400 and £52 travelling allowance; Miss Violet Long, Balrothery Hospital, was elected matron at £100 a year, including rations; and Miss Kelly, County Infirmary, was elected travelling nurse at £100 a year, including travelling expenses.

India.

[FROM OUR SPECIAL CORRESPONDENTS.]

Report of Sanitary Commissioner.

The report for the year 1910, recently issued, has been compiled by Surgeon-General Sir C. P. Lukis, Director-General of the Indian Medical Service. It is unprecedentedly condensed—shorter by 47 pages than the report for the year 1909. The sections have been rearranged and a new section has been added, giving information regarding hospitals and dispensaries, lunatic asylums, and medical colleges and schools. This is an interesting and

welcome innovation. The subjects of report are, in other respects, the same as usual; but they are dealt with in a more summary fashion, and references to scientific work are less extended. This is probably due to the circumstance that researches regarding tropical diseases, their pathology, etiology, and prevention, are now issued and circulated in special publications, of which the periodical *Paludism* and the "Scientific Memoirs," issued under the authority of the Government of India, by the Sanitary Commissioner with the Government of India are the principal. The statistical statements and tables compiled by Major S. P. James, I.M.S., are as voluminous as hitherto, and have been prepared according to previous methods.

General Character of the Year.

Following a healthy year, the incidents and statistics of which were summarized in the BRITISH MEDICAL JOURNAL (vol. i, 1911, p. 1343), the conditions of the year 1910 were still more conducive to public health and the records of sickness and mortality still more satisfactory. The rainfall, which is the most important climatic factor in India, was abundant, being 2.8 inches, or 6 per cent. above the average. The early months were comparatively dry; but the monsoon rains were generous and well distributed. A cyclonic storm gave late and heavy rain in November in the Central Provinces, Central India, and the East of the United Provinces. Crops were everywhere abundant, food supplies ample and cheap, and the year on the whole is pronounced to be "one of good health and prosperity." Peace and order prevailed throughout the Empire.

Vital Statistics of the General Population.

The calculation of ratios has been made on the census of 1901; but the enumeration of 1911 has disclosed considerable changes, which affect the rates and will have to be taken into account in future reports. The birth-rate for the whole of India was 39.52 per 1,000 against 36.65 in 1908 and 37.61 in the previous five years. There was a rise in all provinces except Eastern Bengal and Assam and Coorg. The general death-rate was 33.20 against 30.91 and 35.40. There was a rise in all provinces except Eastern Bengal and Assam, Burma, and Ajmere-Merwara, the highest being 50.08 in the last and the lowest, 24.7, in Madras. Birth-rates exceeded death-rates in all provinces except Coorg and Ajmere-Merwara. The cause of increased mortality was mostly the greater prevalence of cholera and plague. Men died in higher proportion than females. The death rate of male infants, calculated on the births of the year, was 217.2 per mille, and female 201.17, against 260.72 and 226.57 in 1909. Infant mortality in large towns was very high, Calcutta returning 273, Bombay 414, and Madras 294.1.

Prevalent Diseases.

For the whole of British India the aggregate returns show, as compared with 1909, a rise in the mortality due to cholera, plague, bowel complaints, respiratory diseases, and "all other causes," and a decline in fevers and small-pox. Fevers, mostly malarial, account for 58 per cent. of the total mortality, cholera for 6, plague for 5, bowel complaints and respiratory diseases each for 3, small-pox for 1, and all other causes for 24; the corresponding rates for 1909 being 64, 3, 2, 3, 2, 1.5, and 24.5. The conditions prevailing in different provinces present considerable variation affecting public health for better or worse. In the present report the provincial prevalence of disease has been with advantage described in relation to the climatic and other characters of each province, and its vital statistics. The abatement of fever mortality, which fell from 19.82 per 1,000 to 19.17, was most marked in the United Provinces and Punjab; Bengal, Eastern Assam, the North-West Frontier Provinces, and Burma showing a slight fall. There was a marked rise in the Central Provinces and Coorg, and a slighter advance in Madras and Bombay. Malaria inquiry is being pushed vigorously through the agency of a central committee and provincial committees, and by means of special investigations by competent men. Classes for the instruction of officers and subordinates are held at Amritsar, and efforts are being made to instruct the public as regards the methods of prevention indicated by existing knowledge and warranted by experience. The sale and distribution of quinine is being actively promoted, and antimalarial measures have been carried out in many places. The report contains full information on this subject. The increased prevalence of cholera was most marked in the valleys of the Ganges and Brahmaputra, and the disease spread to Upper India as far as the North-West Frontier. In other parts of India there was a decreased mortality.

Plague, which began to increase towards the close of 1909, caused thrice as many deaths as in the preceding year, the rate rising from 0.64 to 1.83. There was an increase in every province except Upper Burma; it was greatest in the Punjab, the United Provinces, and Bengal. Segregation, evacuation of houses, disinfection, rat destruction, and inoculation are resorted to, but evidently with limited success; 625,690 doses of antiplague vaccine were issued, an increase of 32,526 doses. Special investigations are being carried out under the direction of the Advisory Committee. There was an increase of deaths from bowel complaints and chest diseases, the cause of which is not explained. The latter are more fatal in the Punjab, Central Provinces, and Bombay than in other provinces, but the figures are very doubtful. The decreased mortality from small-pox was general, the rate falling from 0.45 to 0.23. The Ferazi Mohammedans of the town of Nawabganj in Eastern Bengal resist vaccination, and the death-rate from small-pox in that place during the year was 21.17 per 1,000.

The Gaols.

Crime in India is largely governed by the material condition of the people. Peace and plenty make for a decrease, and the opposites for an increase, of crime. The prison population in 1910 accordingly fell from 99,104 to 93,032. There was, therefore, less overcrowding in the gaols, and this caused a reduced mortality from dysentery, tubercle, and pneumonia, which together account for 47 per cent. of total deaths. Sickness and mortality in gaols depend greatly on the physical condition of the prisoners admitted. In this year favourable outside conditions, in which the gaols participated, promoted the health of the inmates. The sickness-rates fell from 618 (admissions) and 28 (constant sick) to 549 and 25 per 1,000, and the death-rate from 22.85 to 19.28. The Central Provinces, and Eastern Bengal and Assam had the highest rates of 36.52 and 34.16, and Bombay and Burma the lowest of 15.25 and 11.98. The admission-rate for malaria fell from 172 to 134, and the death-rate from 1.19 to 0.90. The decrease is in some measure due to more accurate diagnosis and a healthier year, but is largely owing to quinine prophylaxis and other preventive measures. The admission-rate from dysentery fell from 70 to 57, and the death-rate from 4.20 to 3.46. This disease is the scourge of gaols, and is undergoing special inquiry. Tubercle admissions declined from 9.9 to 8.7, and deaths from 3.72 to 3.41 per 1,000. Many, probably most, of the cases arise from infection, and the avoidance of crowding and provision of tubercle wards and gaols are being attended to. There was a fall in admissions from pneumonia from 14.3 to 11.0, and of deaths from 3.60 to 2.57. Enteric fever caused 87 admissions and 23 deaths, cholera 42 and 23, small-pox 27 and 3, and plague 3 cases, all fatal. The health of the Andamans Penal Settlement continues to be very bad. The admission-rate was 1,566, and the death-rate 40.01. Malaria, dysentery, and tubercle were the main causes. Major Christophers, I.M.S., has been deputed to investigate the causes of excessive sickness and mortality.

European Troops.

The strength of the British army in India was 72,491, of which an average of 13,183 occupied hill stations, and 3,942 hill convalescent dépôts and sanatoriums, and 2,158 were marching. The rates of sickness and mortality were the lowest on record, the admission-rate being 576.5, the constantly-sick-rate 31.0, and the death-rate 4.66 per 1,000, against 716.9, 40.3, and 6.25 in 1909, and 840.6, 50.6, and 9.85 in the quinquennium 1904-8. The invaliding-rate was 7.77 against 9.07 and 25.23. The sickness and death rates were, as usual, higher in the northern than the southern army. There was a considerable reduction in the sickness and mortality due to malaria. This is attributable to a healthier year, more accurate diagnosis, and more stringent preventive measures which are resorted to with increased activity and care. Fewer cases were registered under the heading of "Pyrexia of uncertain origin." Sandfly fever, also denominated phlebotomus fever and

pappataci fever, appears for the first time in the returns, 512 cases being diagnosed as such in ten stations. Uncertainty evidently exists regarding the recognition of this form of pyrexia, and the full information given in this report regarding symptomatology, pathology, bacteriology, causation, and prevention will be of great service to medical officers in the future. The decrease of cases and deaths due to enteric fever continues, the admissions being 355 and deaths 46. Preventive measures, including inoculation, are responsible for this satisfactory result. Interesting details are given regarding recent observations concerning the pathology and epidemiology of both typhoid and paratyphoid fevers, in India and elsewhere. The case-mortality of enteric fever was also lower. Cholera caused 9 admissions and 7 deaths, small-pox 3 cases, plague 2 cases and 1 death. There was a slight rise in tubercle of the lungs, but a decrease in pneumonia and dysentery. The mortality caused by hepatic abscess was 35 against 34 in 1909. The decrease in recent years is coincident with a reduction in alcoholism. The decline of venereal disease continues. The statistics of officers, women, and children were more favourable than in the preceding year.

Native Troops.

The strength of the native army was 131,627—353 less than in 1909. Of this number 23,650 were stationed in the hills, 2,332 in China, 1,320 in Aden, Perim, and the Persian Gulf stations, 749 at Singapore, 738 at Colombo, 337 on service in Somaliland, and 11,331 marching. The admission and death rates were the lowest on record, the latter being 4.89, or, including absentees, 7.12, exceeding for the first time the death-rate of the European army. The statistics of troops employed outside of India were favourable. The 76th Punjabis at Tientsin in North China suffered from tuberculosis, attributed to overcrowded and badly ventilated barracks. There was a decided fall in admissions and deaths from malaria. In some stations Indian soldiers are beginning to buy and to use mosquito curtains. Pyrexia of uncertain origin accounts for 3,742 admissions and 24 deaths. The formula includes a variety of pyrexial complaints demanding investigation and discrimination; 508 cases of sandfly fever were returned, mostly from five stations on the North-Western Frontier. There were 9 admissions from kala-azar, 23 from Malta fever, 2 from relapsing fever, and 31 with 22 deaths from plague. Cholera caused 21 admissions and 12 deaths against 26 and 18 in 1909, and small-pox 22 and 1 against 43 and 8. There was a decreased incidence of scurvy and a lowering of deaths from tubercle, the rates being 2.4 and 0.15 against 2.3 and 0.26 in 1909. Goorkhas, as usual, contributed mainly to the mortality, but their rates show a decided reduction. The Corps of Guides at Fort Abazai suffered severely, the accommodation being bad, and the ventilation and lighting very insufficient. There were 329 admissions and 58 deaths from enteric fever against 284 and 57 in 1909. The discontinuance of the entry, "remittent fever," has caused an increase of cases and deaths under this head. There was a decrease in pneumonia and a reduction in dysentery; there was also a decrease in venereal disease. There were 18 admissions from beri-beri, 13 of them in the 83rd Infantry at St. Thomas's Mount, attributed to bad rice.

Hospitals and Dispensaries.

The number of institutions maintained in whole or in part by public funds was 2,670, an increase of 32. In these were treated over 28 million of patients, and over 1 million of operations were performed. In addition, statistics are given of 451 "State special," 360 railway, and 672 private non-aided hospitals and dispensaries, in which 6,751,231 patients were treated and 256,925 operations performed. Indian subscriptions contribute from 10 to 11 per cent. of income. The latter figure belongs to Bombay, in which presidency independent (non-aided) institutions are more numerous than in other parts of India. The sale and distribution of quinine is conducted in many dispensaries. The training of nurses and midwives is also a useful work, which might be extended. Many in-patients are dieted at their own expense, and in some provinces paying patients are admitted. The proportion of women and children treated is on the increase. The pay of subassistant surgeons and compounders has been raised in several provinces, and a better stamp of men thus obtained. In Eastern Bengal female subassistant surgeons and midwives are employed in female dispensaries. A new hospital is being built at Lucknow in connexion with the new medical college.

Lunatic Asylums.

The aggregate of lunatics in confinement in asylums, the number of which is not stated, was 7,405, an increase of 27 on 1909. This total represents a very small fraction of the population of British India. Males constitute 79 per cent., and criminal lunatics 27 per cent. of the asylum population. The recoveries were 9.1 and the deaths 7.9 per cent. of the mean residents. The causes of mortality are not stated, but dysentery and tubercle are probably conspicuous items. Overcrowding existed in some cases. A tubercle ward has been opened at Bareilly, and a similar provision—evidently much needed—is under consideration elsewhere. The prevalence of bowel complaints is under inquiry in the Punjab. Excessive mortality in the Nagpur Asylum is attributed to ankylostomiasis and other affections caused by worms. Difficulties are experienced in some provinces in obtaining the services of suitable attendants. Hospitals for females were completed at Calicut and Vizagapatam.

Medical Colleges and Schools.

There are four medical colleges and fourteen medical schools in British India. The report sets forth the number of students under instruction in each, the number who obtained qualifications, and some financial details. These institutions educate men and women for public and private employment in various capacities. Nurses and "dhais" (native midwives) are also trained in some schools. Hostels and laboratories are being added to the existing buildings in Madras and Bombay. The new medical college at Lucknow was opened for junior classes in October, 1911. The *x*-ray institute of India is doing good work in diagnosis and treatment, and two classes of instruction were held during the year, at which 37 officers and subordinates received practical training.

Vaccination.

The number of vaccinations, and more especially of re-vaccinations, performed in India in any year depend greatly on the prevalence of small-pox. It is therefore satisfactory to find that in 1910–11, while small-pox was comparatively in abeyance, primary vaccination underwent an increase of 190,367. Revaccination, as might be anticipated, showed a decrease of 199,759. There was thus a shortage of 9,392 on the whole. The proportion of the population successfully vaccinated was 35.06 per mille against 35.55 in 1909-10; and taking the birth-rate at 40 per 1,000, the percentage of infants protected is calculated at 46.44 against 44.20 in the preceding year. The proportions vary considerably in different provinces. Opposition from certain communities, reduced staff, and short supply of lymph are assigned as the chief causes of defect. The cost of vaccination also varies considerably—from 9 annas 3 pice per successful operation in Bombay to 1 anna and 5 pice in Bengal. Dispensary vaccination is declining, on account of the employment of a special staff, which is a more effective method. Arrangements for the supply of prepared lymph are being improved, and the system of cold storage has been introduced in Calcutta with advantage.

Sanitary Administration and Work.

The information given in this section of the report is condensed from the reports of provincial sanitary boards, several of which omit to supply details regarding the transaction of municipal and district bodies. The particulars cited indicate that a large proportion of their revenues are devoted to sanitary purposes. Increased effort is being applied to the execution of large undertakings for water supply and drainage, the provincial governments aiding these projects by grants and by sanctioning loans. The Sanitary Board of the United Provinces, three members of which are unofficial, is applying funds placed at its disposal by Government to the provision of model houses for the poor, constructed on sanitary principles, to rural sanitation, inquiries into the causes of malaria, and the free distribution of quinine. Incinerators for the destruction of refuse have been erected

in several towns. Altogether the record of sanitary work throughout India indicates commendable advance.

Miscellaneous.

Twenty-five ships carried 21,056 pilgrims to Mecca; 87 deaths occurred on the voyage and 121 at Cameran during seven days' pilgrimage. In the Hedjaz, city of Mecca, and Jeddah sickness was severe and mortality, caused by plague, fever, dysentery, diarrhoea, and respiratory diseases, very high. Twenty-one ships carried 16,900 return-pilgrims, among whom 363 deaths took place. Small-pox broke out on fourteen of the ships. Summaries of work done in the Central Research Institute, Kasauli, the Bombay Bacteriological Institute, the King Institute of Preventive Medicine, the Pasteur Institutes at Kasauli and Conoor are supplied, and *précis* of researches regarding plague, leprosy, and malaria indicate a large amount of useful scientific investigation. A list of scientific publications by the Sanitary Department brings this most admirable report to a close.

Ceylon.

REPORT OF THE PRINCIPAL MEDICAL OFFICER.

THE report of the Principal Medical Officer and Inspector-General of Hospitals for 1910–11 states that the population enumerated at the last census (March, 1911) was 4,105,535, of whom 7,625 were Europeans. Compared with the population at the census of 1901, there was an increase of 15.1 per cent.

The birth-rate was 39.6 per 1,000, and the death-rate 28.0 per 1,000. Compared with 1909, the birth-rate showed an increase of 2.9 per 1,000, and the death-rate a decrease of 2.3 per 1,000. The infant mortality in the thirty-one principal towns for 1910 was equal to a rate of 241.7 per 1,000 births, as against 257.7 in 1909.

The total number of persons treated for malaria in hospitals and dispensaries was 877,841, an increase of 72,371 on the number treated in 1909, which may be accounted for by the occurrence of an unusually severe outbreak in parts of the Western and Central Provinces after the break of the south-west monsoon of 1911 following a prolonged drought. The work in connexion with the prevention of mosquito-borne diseases in Ceylon during the year 1910 was on the lines followed in previous years—namely, general improvement in the sanitation of towns, the education of the public by lectures and pamphlets, and the free distribution of quinine.

The total number of cases of cholera treated during the year was 410, with 266 deaths. In nearly every instance the original source of infection could be traced to South India. Every province in Ceylon, excepting the North-Central, returned cases of small-pox, and in nearly every case the original source of infection was traced to Southern India; 209,160 primary and 42,340 revaccinations were performed. Among the 816 cases of enteric fever treated in the hospitals of the island the mortality was 20.9 per cent.

In the Government medical institutions 628 cases of leprosy were treated, with a mortality-rate of 63. The present accommodation for lepers is inadequate, but the question of a leper colony in the Eastern Province is still under consideration. There are many lepers at large.

The deaths from ankylostomiasis numbered 1,592, a slight increase as compared with 1909. A committee appointed to consider the prevention and treatment of this disease recommended that all superintendents of estates should treat new arrivals with beta-naphthol, followed by tonics. Where it is known that ankylo- already prevails on estates, superintendents should whole labour force in convenient batches in a manner. It also recommended superintendents to attention to latrines, drains, to the burning of and to the water supply. A draft enactment is under consideration, but many planters have improved the conditions under which their labour force live, and have carried out sanitary improvements and medical treatment with excellent results.

The cases of yaws treated in the various medical institutions numbered 4,777, with 18 deaths. The salvarsan treatment has been used by Dr. Castellani in a fair number of cases with satisfactory results, and a medical officer with special knowledge of the treatment has been stationed at Anuradhapura to treat all suitable cases in the hospital there.

Phthisis accounted for 3,917 deaths in 1910, according to the Registrar-General's returns. The education of the public has been attempted by means of illustrated hand-bills with letterpress in the vernaculars, and the principal civil medical officer has given popular lectures on the subject, illustrated by lantern views, at many towns.

Hospitals, Dispensaries, and Asylums.

There were 73 hospitals, and the lunatic and leper asylums, 408 Government dispensaries, and 250 estate dispensaries working during 1910. The nursing in these hospitals is undertaken by fully qualified European trained nurses, by religious sisters, and locally-trained Ceylonese young women. Two nursing schools for the training of local pupil nurses exist at the Lady Havelock Hospital and at the Kandy Hospital. The training course is two years, and at the end of that time certificates are given to those who pass the examination. The number of patients treated inside the hospitals was 118,024, with a death-rate per cent. of 10.88 of the hospital population. The out-patients at the dispensaries numbered 218,645, who paid 3,183,567 visits.

Medical College and Bacteriological Institute.

Full advantage is taken of this institute; over 3,000 specimens were sent for bacteriological examination. There were 243 students in attendance at the Medical College at the end of June, 1911, of whom 161 were registered medical students and 82 apothecary students. Thirteen students qualified in medicine and surgery; 19 apothecary students passed out.

Medical Department.

The principal civil medical officer, Sir Allen Perry, has a large staff to work his department—164 medical practitioners, 264 apothecaries, and 140 inspectors of vaccination and vaccinators. Under the guidance of the principal civil medical officer the work of the Government medical service is efficiently and thoroughly done, and great improvements have been effected, especially in connexion with the sanitation of the island.

The Opium Question.

Appended to the report is a memorandum on the opium question. This question was referred to a committee "to inquire into and report on the importation, sale, and consumption of opium in Ceylon, and to state what changes were desirable in the ordinances and regulations affecting the importation and sale of the drug." As the opium question is one which very materially affects the native community in the East, the recommendations of this committee are given:

(*a*) That the present system of renting and licensing be abandoned.

(*b*) That all opium shops be closed on the expiration of existing licenses.

(*c*) That the importation, distribution, and sale of the crude drug be made a Government monopoly.

(*d*) That for every opium shop closed the nearest Government dispensary be made available for the distribution of the drug to all habitual adult users of the same who may come forward to register their names for a certain quantity to be periodically given out and paid for in cash, and that suitable remuneration be given to the dispensers for the extra work and responsibility thus cast upon them.

(*e*) That the use of the drug, except for medical purposes, should be entirely prohibited after a definite period.

(*f*) That a system of careful inspection be introduced by the appointment of special officers under the direction of the principal civil medical officer.

This was followed by the appointment of a Commission

to inquire into and report on the question of introducing a system of registration of vedarales who deal in opium in this country; and, in the event of their being registered, whether the opium supplied should be pure or mixed with aloes or some other drug.

This Commission made certain recommendations, and these, along with those of the committee, resulted in an enactment being passed, cited as the Opium Ordinance, 1910, in which opium was made a Government monopoly, with Government dépôts in various parts of the island for the distribution of the drug to registered consumers

and registered vedaralas. Fifty-eight opium dépôts were established and equipped for the sale of opium by October 1st, 1910, since which date the work has gone along smoothly. The following figures may be interesting: During the year ending September 30th, 1911, 60,736,559 grains of eating opium and 12,206,574 grains of smoking opium were sold, bringing in a revenue to the Government of over Rs.579,376.

South Africa.

Report of the Medical Officer of Health of Johannesburg.

The report of the Public Health Department of Johannesburg for the two years ending June 30th, 1911, has recently been issued. Besides the report of the medical officer of health (Dr. Charles Porter) there is a report on the health of the natives employed by the Council by Dr. Stock, one on the municipal census of Johannesburg by Dr. Maynard, and one on mortality amongst natives employed on mines and works, also by Dr. Maynard.

According to the municipal census of October, 1910, there were in Johannesburg 220,304 persons: of this number 111,857 were Europeans. The birth-rate among Europeans was 35.7, with a death-rate of 14.4. Dealing with the chief factors of mortality amongst whites, the most notable feature is the marked and continued decline in the mortality from enteric fever, showing a decrease of 40 per cent.; there has also been a steady decline in the number of cases, 548 cases being reported in the two years under review, with 46 deaths, as against 814 cases with 68 deaths in the previous two years. Deaths from diarrhœal diseases were less by 11 per cent.; there was, however, a severe and widespread prevalence of measles, causing 80 deaths, as against 38 in the previous two years. The infantile mortality was 114 per 1,000 births, as against 128 in the previous two years. The mortality among coloured infants was 361 per 1,000.

Some interesting figures are given with regard to tuberculosis. The death-rate amongst whites in 1909–10 was 0.90 per 1,000 persons living, and in 1910–11 0.97, whilst in the natives it was 3.81 and 4.74 for the same periods. During the four years 1907–11 inquiry had been made in regard to each death from tuberculosis amongst whites, with a view to obtaining some notion as to (*a*) the proportion of fatal cases which may be regarded as "imported," that is to say, in which the infection was contracted before the deceased person came to South Africa; (*b*) the proportion in which the disease was acquired during residence in South Africa; and (*c*) the effect of occupation. The inquiry showed that 88 of the deaths occurred in persons who were infected before arrival in South Africa, and 150 after arrival. The percentage of fatal cases which may be regarded as imported is about 21, and that in which the disease was contracted in South Africa at 72; 158 deaths, or 37.7 per cent. of the total mortality from tuberculosis, occurred amongst miners employed underground, over one-half being machine drillers. There were 845 deaths from tuberculosis amongst South African coloured persons during 1909–11. The great majority of the males were mine boys (718) and labourers (92). The circumstances which led up to the voluntary notification of tuberculosis are stated, and the procedure adopted in regard to notified cases is recorded. The measures recommended for dealing with the disease are (1) the education of consumptive patients; (2) disinfection of infected premises; (3) enforcement of general sanitary conditions and better housing, especially as regards coloured persons; and (4) regulation of tuberculous immigration.

The mortality rate for cancer in Europeans in Johannesburg is 8.28 per 1,000.

Regarding miner's phthisis, reference is made to the reports of the Mining Regulations and the Miners' Phthisis Commissions. Practically all the commissions' recommendations, including those regarding dust prevention, mine ventilation and air standards, scavenging, water supply, native diet, housing, first aid, and ambulance, were promulgated as regulations in the *Union Gazette Extraordinary* of November 21st, 1911; it is believed if these regulations are enforced, they will place the hygiene of mining in South Africa on a very satisfactory footing.

The water of Johannesburg is obtained from two sources, (1) Rand Water Board, and (2) boreholes, shallow wells, and rain-water tanks. The water from the western series of wells at Zwaartkopjes has been satisfactory, but the bacterial content of the water from the southern section has varied considerably, and it was decided to try the effect of treating the water with a solution of chlorinated lime. This method appears, on the whole, to give satisfactory results.

Other special subjects are dealt with in the report, such as aërated water and ice factories, sewerage, sewage disposal and mine sanitation. Slum property is also dealt with, and the medical officer of health hopes for legislation on the lines of the English Town Planning Act.

The report is a very full and exhaustive one, and shows that much important work is being done in connexion with the public health of Johannesburg.

Adelaide.

Report of the Medical Officer of Health.

The report on the public health of the city of Adelaide for the year ending September 30th, 1911, has recently been issued. The population estimated by the Registrar-General on January 1st, 1911, was 40,605. The births during the year numbered 1,087, giving a birth-rate of 26.77, much the same as that of the previous year; it is satisfactory to note that since 1906 the birth-rate has progressively increased. The death-rate is 25.98; this death-rate includes all deaths registered within the city bounds, and if the deaths in public institutions (as specified by the Registrar-General) are excluded, of persons not usually resident in the city, the death-rate becomes 17.16. The infantile mortality-rate is 98 per 1,000 births. The infant mortality is the same as in the preceding two years. This figure is the lowest on record during the preceding ten years. Among the diseases tabulated the number of deaths from diphtheria, tuberculosis (other than phthisis), cancer, respiratory and circulatory diseases respectively, is above the average of the preceding ten years, while the number from typhoid fever, diarrhœal diseases, and pulmonary tuberculosis is below the average; 1,125 cases of infectious disease were reported during the year—this was exclusive of cases contracted outside of or brought into the city for treatment. Measles accounted for 737 cases, and diphtheria notifications numbered 194; 152 cases of pulmonary tuberculosis were reported during the year, of which 92 were imported for treatment or came to the city suffering from the disease; this leaves 60 of apparently local origin.

Some progress has been made during the year in the crusade against phthisis. The Metropolitan Boards of Health have contributed £350 per annum towards the funds of the James Bunn Trust, which in return provided at least seven beds at Kalyra for the treatment of poor patients in the early stages of the disease. In addition to this there are sanatoriums for patients able to pay, and the Government has provided for the isolation and treatment of poor patients in the advanced stages of the disease. As far as the city is concerned, the education and supervision of consumptive patients are being carried out by the city trained nurses, and every house is disinfected after removal or death of a patient.

It may be noted that the mean temperature (of maximum and minimum) during the year was 62.0° F., with a mean maximum of 100.5° F. and mean minimum of 34.9°, while there was a total rainfall of 17.97 in., with 137 wet days.

The Michaelmas term of lectures and demonstrations at the Brompton Hospital for Consumption will commence on Wednesday, October 16th, at 4.30 p.m., when Dr. Habershon will give a demonstration of cases. Further information can be obtained on application to the Dean of the Hospital.

The fourth annual meeting of the Indian Association of Negro Physicians, Dentists, and Pharmacists was (we learn from the *Journal of the American Medical Association*) held at Indianapolis on September 5th. Dr. A. H. Wilson was elected president.

Correspondence.

THE REVISION OF THE *MEDICAL REGISTER*.

SIR,—I shall be greatly obliged for your help in reminding the members of the medical profession of the importance of keeping an address in the *Medical Register* which will form a safe channel of communication. The onus of notifying changes lies upon the practitioners themselves, and, though every possible effort is made to remind them of this, and to trace them when touch has been lost, it is often impossible to get into communication with them. Representations have been made to the Registrar-General, to the Board of Trade and to other Government departments, with the result that the *Register* is officially consulted far more often than it used to be. This affords protection to the public and to the profession alike, but any practitioner who has allowed his name to lapse from the *Register* may find himself temporarily much inconvenienced. I shall be glad to hear from any one who has doubts as to the accuracy of his address, and all communications will be acknowledged.

I also wish to remind practitioners that the *Medical Register* is the only official publication, and that the entry of name therein alone confers any legal privileges; it should not be confused with any of the directories which issue circulars every year.—I am, etc.,

NORMAN C. KING,
Registrar.

General Medical Council Office,
299, Oxford Street, London, W.,
Sept. 25th.

THE ORGANIZATION OF THE CAMPAIGN AGAINST TUBERCULOSIS.

SIR,—Dr. Lauriston E. Shaw's letter under this heading will certainly be welcomed with a feeling of relief throughout the medical profession. A stereotyped method of treatment of phthisis is about to be inaugurated, and all members who administer the Act will naturally be expected to act as if they gave this particular kind of treatment their unqualified approval.

Recent letters which have appeared in the BRITISH MEDICAL JOURNAL show what a wide difference of opinion prevails with regard to tuberculin treatment, and it is to be hoped that all methods of treatment will be discussed and their effects noted.

General practitioners, of whom three-quarters of the profession consist, see tuberculosis in its earliest stages, and this class of case when successfully treated, as it must be in thousands of cases, is inevitably ignored and cannot be used in the compilation of statistics.

All do not use tuberculin, therefore the opinions of those who have found other methods of treatment successful would be of the utmost value now.

A specialist in any particular line of treatment is enthusiastic and perhaps unconsciously biassed; a general practitioner, who has to justify his treatment by success or soon lose his patient, is at the least equipped with an open mind.

With these differences of opinion as to tuberculin, supplemented by the danger of anaphylaxis, and further confirmed by patients who had unsuccessfully undergone sanatorium treatment, it was a relief to learn from the JOURNAL of the existence of soamin. My personal experience justifies everything said in its favour, and I have not found anything pointing to intolerance in any case in which I have used it. It has been successful in cases both with and without haemoptysis, but its most astonishing quality is the speediness with which the patient experiences a change for the better. Appetite generally returns within twenty-four hours, often in five or six; [illegible] are quickly checked, and in every [illegible] has expressed himself as quickly feeling

[illegible] absolute facts like these staring me in the face, I feel I shall be in an equivocal position under the Act. In every case of phthisis, until tuberculin is ordered by the chief tuberculosis officer of the district, I shall be conscientiously compelled to continue my present line of treatment, and shall regret the risks of anaphylaxis, the appearance of which no one can foretell, if tuberculin should be ordered by my official superior, unless of course he is justified by failure on my part. I hope this question will be widely discussed, especially by general practitioners, as it may be necessary to bring a matter of such importance before our next Representative Meeting.—I am, etc.,

London, Sept. 30th. J. FLETCHER.

TUBERCULIN TREATMENT.

SIR,—In the JOURNAL of September 21st, page 745, Dr. Prest asks a pertinent question regarding the knowledge required to enable one to say how far the system of graduated doses has been successful in bringing cases of pulmonary tuberculosis to a favourable condition.

I presume the only way in which that question can be answered is by citing examples, just as Dr. Camac Wilkinson has done. Obviously this alone can be the most satisfactory plan since there are those who believe that hyperaëration alone can do as much for phthisical subjects as tuberculin. Here is one of several examples that have been made under my personal observation:

Nellie A., aged 23, laundry worker. Illness of three years' duration. Complained of cough with expectoration, loss of weight, and hoarseness with gradual loss of voice. General condition fairly good; weight, 9 st. 6 lb.

Examination.—Chronic left apical phthisis. Deficient expansion, with flattening over left apex. Well marked dullness. Fine crepitation behind and below left clavicle in front. Breath sounds broncho-vesicular and distant. Sputum loaded with tubercle bacilli.

On two previous occasions this girl had been under treatment in the phthisical wards in 1909 and 1910. On the first occasion she had been a patient for nine months and did well. But in a few months she returned as bad as she had been before treatment had begun.

On January 15th, 1911, treatment was begun with small doses of P.T.O., and on April 1st she had reached a dose of 1 c.cm. She had then no tubercle bacilli in her sputum (verified by repeated examinations by the antiformin method). Her weight had increased to 9 st. 12 lb.

During 1909 and 1910 she had never been permitted to leave the sanatorium during her entire residence. After the disappearance of the tubercle bacilli in April, 1911, that is after four months' treatment with tuberculin, she was allowed to return to work every morning at 6 a.m., her nights being spent at the sanatorium. On April 19th she began treatment with P.T. On August 14th she had reached the full dose, 1 c.cm. From beginning to end her course of treatment had lasted eight months. She had no symptoms of any kind, there being neither cough nor sputum. Her voice was as strong as ever it had been, and she felt as fit as possible. At the end of 1911 she left for Australia and the information we receive from her is that she is in perfect health.

That I submit is a good instance of what tuberculin in graduated doses can do in suitable cases. Sanatorium methods did not assuredly do for her what tuberculin was able to do.

There are those who are still sceptical as to the value of tuberculin. I wish they would zealously and rigidly give it a fair and impartial trial before they, literally speaking, consign it to the waste-paper basket. No one will presume to say tuberculin is the Alpha and Omega of treatment. Meantime, however, I can declare that a comparison of results in Leith between the present and pre-tuberculin days leaves no doubt as the great value of tuberculin.

Cases fail to benefit by tuberculin, as cases fail in sanatoriums. Every case that comes under notice is not subjected to tuberculin treatment. The application of tuberculin must be accompanied by a close study of each patient, and the method advocated by Arneth of blood examination goes far towards assisting one in the direction of treatment. I can commend it to the serious study of those who are interested.

Let me say in conclusion that many of our patients are now allowed to continue at work, live in their own homes, and still show progressive improvement under systematic tuberculin treatment. That feature to my mind is one that is too often overlooked, or perhaps I should say not prominently adduced in favour of treatment with tuberculin. I am, etc.,

WM. ROBERTSON.

Public Health Department, Leith, Sept. 30th.

WHOOPING COUGH AND IODOFORM INJECTIONS.

SIR,—I read with much interest Dr. Dewar's paper on this subject in the issue of the JOURNAL for September 21st, and have read with equal interest the criticism of it by Dr. A. O. Adamson.

While quite admitting that Dr. Dewar has laid himself somewhat open to the charge of reasoning *post hoc, propter hoc*, in reporting one successful case of whooping-cough treated by the intravenous injection of iodoform, I think that instead of condemning his action as that of a simple enthusiast as Dr. Adamson has, we should regard it in quite another light. Whooping-cough is a disease that is notoriously difficult to treat, and any method of combating this complaint which promises rapid and complete cure is most certainly worthy of our serious attention, and I consider that Dr. Dewar has conferred a favour on his fellow general practitioners by reporting his first successful case of iodoform treatment of pertussis in the adult.

In the opening part of Dr. Adamson's letter he states that he is under the impression that equally good results might have been obtained "by many other forms of treatment, or by none beyond good hygiene." Now, if his statement is true, I am sure that hundreds of practitioners all over the country would be all too pleased to hear of those "other forms of treatment" which will cut short an attack of whooping-cough in ten days, the time required by Dr. Dewar to cure his patient by intravenous injection.

Even at the risk of being considered a "simple enthusiast," I beg to follow Dr. Dewar's example and record one case of whooping-cough in the adult which was cured in a week's time:

The patient was a married man, aged 30, who was said to have a very bad cough. On my first visit to the house I had the good fortune to see him in a paroxysm of coughing, and at once came to the conclusion it was pertussis, as his children had the disease at this time.

This man's attack was so severe that it was quite patent to me that unless something radical could be done at once to relieve him, he was going to have a very bad illness indeed.

Just then I was using an inhalation of formalin for irritable coughs, and decided to make this man give it a fair trial. The result was immediate relief, and in a short time complete cure of all symptoms of whooping-cough. In a week from the beginning of the inhalation treatment he was able to resume work, and has had no trouble with his chest since them.

If Dr. Adamson can point out any form of treatment for children which is as rapidly successful as Dr. Dewar and I have shown our respective treatments for pertussis in the adult to be, then he will confer a great boon on the profession and on the community at large.—I am, etc.,

South Shields, Sept. 28th. J. BAIN, M.B.

EPIDEMIC JAUNDICE.

SIR,—I was much interested in Dr. Lyons's note on epidemic jaundice (BRITISH MEDICAL JOURNAL, September 28th, p. 794). While serving in South Africa during the late Boer war I had experience of a severe epidemic of jaundice in the districts of Aliwal North and Stormberg in Cape Colony during the winter months of 1901. It was attributed to the high altitude of these districts and the intensely cold nights followed by very hot days. The cases rapidly recovered when they were sent down to the coast to East London. Probably the epidemic of which Dr. Lyons writes may be due to colder weather this summer than usual, and possibly the district is fairly high up.—I am, etc.,

C. RICHARDSON WHITE, M.B.Edin.

Merthyr Vale, Glam., Sept. 28th.

SIR,—In the issue of the BRITISH MEDICAL JOURNAL for September 28th, p. 794, I was interested in a note by Dr. Lyons on epidemic jaundice. Having recently had several cases I may perhaps give my experiences.

The age incidence was from 6 to 16 years, and the cases occurred here and there in a scattered country district; only in one family had I more than one child affected. The cases presented symptoms almost exactly similar to those described by Professor Holt in his *Diseases of Infancy and Childhood* under gastro-duodenitis, and differed from Dr. Lyons's cases in the comparative mildness of the attacks. Commencing with a feeling of languor and loss of appetite, the attack was ushered in with vomiting and icterus, which was very marked in the conjunctiva. The faeces were clay-white and urine almost black. The temperature in no case went above 99°. There was in all marked epigastric tenderness but no itching or alteration of pulse, and in all, too, the symptoms passed off in less than a week.

The treatment adopted was, at the onset, a dose of calomel followed by a mild saline, fat-free diet, mainly milk well diluted, and after meals a mixture containing bismuth carbonate, sodium bicarbonate, sodium salicylate, with mucilage and anise water.—I am, etc.,

Cheriton Fitzpaine, Devon, Oct. 1st. D. H. VICKERY.

INTRAPERITONEAL INJECTIONS OF OXYGEN DURING CERTAIN ABDOMINAL OPERATIONS.

SIR,—I have read with interest in the JOURNAL of September 14th (p. 630) my friend Mr. H. J. Godwin's account of his method of using oxygen intraperitoneally. I should like to endorse from my own experience what he says as to the value of oxygen intraperitoneally and to call attention to the value of oxygen injected into joints for suppurative arthritis and other conditions.

During the past two or three years I have used oxygen to flush out the knee-joint in a number of cases of tuberculous and gonococcal arthritis, as well as for more acute suppurative conditions.

By rendering the joint tense with oxygen the remote parts of the joint are reached which are probably untouched by ordinary fluid irrigation.—I am, etc.,

London, W., Sept. 26th. C. GORDON WATSON.

FORCIBLE FEEDING OF SUFFRAGE PRISONERS.

SIR,—On purely medical grounds, and quite apart from political or even medico-ethical considerations, I submit that this method of treatment of these particular patients is no longer justifiable, though I believe it was justifiable a year or two ago, when the hunger strikes began. No one will deny that forcible feeding is unpleasant (to put it mildly) to the patient, or that unpleasant treatment which cannot justify itself by success in a large proportion of cases is bad treatment if there is any other treatment available. However successful it may have proved in patients suffering from other diseases, the experience of the last year or two seems to prove pretty conclusively that it fails very frequently, if not always, in the case of the suffragist hunger strikers. It fails to improve their health or even to maintain it at the level at which the treatment was begun, and in the opinion of those who were responsible for the adoption of it and who carried it out, it would have failed to prevent death if continued much longer. Experience of a large number of experiments has quite failed to justify it in these cases, and either the methods must be improved or the theory on which the treatment is founded must be overhauled. We must leave the methods to the experts, but every medical man can and ought to seriously consider the discrepancy between the theoretical effects and the practical results.

The theory seems to be that if we can put food into a man's stomach we can prevent him from dying of starvation, and practice has shown that the theory is pretty correct in certain classes of cases, but not universally. Ingestion of food is one thing; digestion, absorption, and assimilation are others; and physiologists and physicians alike maintain (we all know it for a fact) that digestion may be seriously interfered with or inhibited by various emotional conditions. It seems quite possible that digestion, absorption, and assimilation may all be more or less inhibited by an effort of the will, and in that case forcible ingestion of food into an unwilling patient would be as futile as leading the unwilling horse to the water. The emotional condition of these forcibly fed suffragists is quite sufficient to account for the failure of the ingested food to improve or maintain their health, and experiment has over and over again demonstrated the failure; there is really no discrepancy between theory and practice. As medical men we must come to the conclusion that neither in theory nor in practice is the forcible feeding of these patients justifiable, and, having come to that conclusion, we should in common humanity express it clearly and with no uncertain voice to all whom it may concern. Every medical society in the land should state its opinion after proper discussion, and the political leanings of various individuals in our profession would then cease to complicate the question. What are the prison doctors to do? Most of us sympathized deeply with them when the bitter attack was made on their humanity and integrity

some time ago, and we still sympathize with them in their difficult position, but since then they have had considerable experience of the treatment, and are now in a position to judge whether or not it is warranted by success. If not, they are bound as medical men to refrain from advising it, and if they were ordered by some higher power to practise it against their judgement (which is almost incredible) they would be fully justified in refusing to do so. If they diagnose with due care the condition of their patients, prognose to the best of their ability, report faithfully, and advise such treatment as in their judgement is likely to meet the case, and carry out as much of it as lies in their power, they will do their duty as men and medical men, and no one has a right to demand more of them. Only those of us who do more than this for our private patients will be able to find any fault in them, and there are not many of us!—I am, etc.,

Swinton, Manchester, Sept. 27th. J. Price Williams.

Sir,—Dr. Bateman, in his reply to my letter published in your issue of September 21st, defines the position of a prison doctor with great clearness. Dr. Bateman says that a prison doctor is, by virtue of his office, a constable, and therefore in duty bound to prevent the commission of any felonious act. My letter was written to call further attention to the fact that doctors were acting practically as prison warders, and were putting their medical skill to an improper use by carrying out forcible feeding against the wishes of their patients. The fact that prison doctors are constables explains how this abuse has arisen, but does not justify it. The prison constable-doctor has the power to force his patients to submit to medical treatment, however much they may object. The doctor in private or hospital practice—excluding asylum work—merely advises, and if the patient refuses the advice retires from the case. I believe Dr. Bateman is quite wrong in thinking that any private practitioner could carry out forcible feeding or any other form of treatment against his patient's wish. I do not agree that when a prisoner refuses food he intends to commit suicide. He intends at the risk of his life to frighten the prison authorities and the Government into altering or cutting short his sentence. The constable-doctor comes to the aid of the Government with his skill as a doctor, his power as a constable, and, using the term "medical treatment" as a cloak, commits an act which would be an assault if done by any ordinary doctor. The public trusts the profession, and has great faith in "medical treatment." The shame of allowing forcible feeding to go on rests, therefore, in a very special way on the medical profession. In their article published in the Journal on August 31st, Sir Victor Horsley, Mr. Mansell Moullin, and Dr. Agnes Savill raised a corner of the cloak and allowed us all to see what lay beneath this "medical treatment."

There is one final argument which may appeal to those who think that, however unpleasant forcible feeding may be, justice cannot be administered without it. The thing is a failure; determined prisoners cannot be kept alive by forcible feeding, and many have had to be discharged. There will be no more forcible feeding in English prisons if the medical profession condemns it. I have purposely not referred to the suffragists; but the fact of this outrage having been committed on young and refined ladies has called public attention to medical treatment in our prisons, and will, I hope, lead to an end being made of what I can only describe as a scandal.—I am, etc.,

Manchester, Sept. 30th. James W. McIntosh.

Sir,—Having had personal experience of six cases on whom forcible feeding has been perpetrated, I should like to endorse the excellent statements of Dr. Savill, Dr. Moullin, and Sir Victor Horsley.

It is not within the province of the profession to express opinion as to whether the treatment of prisoners by the Government is commensurate with their crime. But it is within its province, in a civilized country, to utter a protest when the treatment of prisoners is calculated to lead to permanent shattering of the prisoners' health.

The amount of damage likely to result from tube feeding depends on the mental attitude of the patient. Given the hearty co-operation of an intelligent patient who swallows the tube the risks are practically nil; given an obliging but stupid patient the risks increase; given a lunatic who resists they increase still more: given a highly intelligent person who determines on resistance to the extent of sacrificing life, the risks reach their maximum.

Before expressing an opinion of the suffragette forcible feeding, it is necessary to be personally acquainted with a sufficient number of them to understand the spirit underlying militancy.

I asked my first case, "How could you manage to keep it up?" The frail little lady replied, "There is only one way any one does manage to bear it, and to keep it up. That is never to let yourself stop thinking for an instant of how much better you are making things for all the women who are ever coming after you." She was released when her life had been seriously endangered, but took part in the window breaking. She was one of three who smashed the windows of a large firm. For demanding the same treatment as the ringleaders of the "conspiracy" she was again forcibly fed until her life was endangered. I do not wish to enumerate suffragette grievances, but it is necessary to indicate the frame of mind which engenders such passionate and intense resistance that the process of tube feeding becomes extremely dangerous.

Crime is less prevalent among women than men (the last annual report gave 131,000 men and 35,000 women). Further, 85 to 90 per cent. of women prisoners are prostitutes. Therefore classification means rather more to a woman than it does to a man. Prison opens a woman's eyes to realities of life in a way which nothing else does. It is a well-known saying amongst suffragettes that no matter how "peaceable" a woman is who happens to get sent to gaol, she will come out a "burning fiery flame." The Government has manufactured a thousand of these "burning fiery flames."

Personally I have never understood the logic of militancy, but I have so many friends amongst them that I feel I do understand the spirit of it. I am convinced that they are right when they say that they have a thousand members each of whom is willing and ready to suffer death for their cause. The W.S.S.P. has 6,000 full subscribing members, and nearly 100,000 adherents. In no organization on earth is there a stronger *esprit de corps*, or keener appreciation, and approbation, and sympathy for suffering undergone in gaol. Not one has ever yet "submitted" nor given way on a point of "honour." Such a spirit will never be broken by violence from the Government. Therefore, as psychologists and physicians, it is incumbent on us to protest against such barbaric proceedings.—I am, etc.,

London, W., Oct. 1st. Ettie Sayer.

PERFORATION OF THE TYMPANUM AFTER SYRINGING.

Sir,—In a letter (of September 21st, p. 747) under the heading "Perforation of the Tympanum after Syringing," I see it is suggested that the retention of wax may be a useful protective to the natives about Natal. Also the question is asked as to whether there be any satisfactory treatment for tinnitus aurium other than that applied to the meatus, nasal passages, and Eustachian tube. With regard to the retention of cerumen, the advantages of removal certainly outweigh any protective properties it may afford. I would suggest the wearing of well fitting rubber plugs (with a sufficient perforation for the transmission of sonorous vibrations) on dusty windy days. With reference to the treatment of tinnitus, none would be satisfactory without, if possible, removing the cause. If driven to symptomatic treatment, bromides or hybrobromic acid with strychnine, and blistering, perhaps, will be of most avail. A very valuable lecture on tinnitus and its treatment, by Dr. Dundas Grant, appeared in the *Clinical Journal* of February 10th, 1897, dealing very practically with the question.—I am, etc.,

London, W., Sept. 27th. H. Clayton Fox, F.R.C.S.Irel.

PREVENTION OF DENTAL CARIES AND ORAL SEPSIS.

Sir,—I have to thank you for the favourable notice of my book on the *Prevention of Dental Caries and Oral Sepsis*. There are two points, however, on which the reviewer makes statements not quite in accordance with facts, and which I think might be rectified

1. My work nowhere shows that "sweets" decrease the salivary secretion. On the contrary, they always increase it, but not so much as acids or the combination of acid-sweet.

2. I am not aware that I have stated that salivary secretion takes place continuously night and day. What I have said is that it exerts a continuous action night and day, and this, of course, by reason of the antifermentative action of potassium sulphocyanate, which clearly increases in amount in stagnating saliva; and also to some extent the precipitated mucin by decomposition gives rise to alkaline substances which tend to neutralize any acids formed.

—I am, etc.,

H. P. Pickerill, M.D.,
Director, Dental School, University of Otago,
New Zealand.

August 20th, 1912.

Public Health
AND
POOR LAW MEDICAL SERVICES.

POOR LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

A council meeting of this association was held at 34, Copthall Avenue, E.C., on September 27th. Dr. Balding, J.P., was in the chair. Eight gentlemen were elected members of the Association.

Winkleigh District.

The Honorary Secretary reported that the following letter had been sent to the Local Government Board in reference to the recent election of a medical officer to the Winkleigh district by the Torrington guardians.

Sir,

I am instructed by my council to bring under your notice the recent election of a district medical officer by the Torrington guardians. My council specially desires to draw the attention of your Honourable Board to the following points: (1) On several occasions the election was unduly postponed by the guardians, although a properly qualified candidate was before them, against whom no valid objections were put forward. (2) That such treatment of Dr. Harvey was unwarrantable, and tends to prevent suitable candidates from applying for Poor Law appointments, to the detriment of the Poor Law Service. (3) That the subsequent election of Dr. Clements proves that the said postponement was made in the interest of a certain person, and that the guardians were influenced by other motives than a desire to promote the welfare of the sick poor.

I enclose a newspaper cutting, which gives a report of the proceeding of the Torrington Board, when Dr. Clements was elected. From this it will be seen that the postponement amounted to a public scandal, and resulted in a petition against the guardians' action from the ratepayers of the district. The letter of Dr. Harvey clearly shows the unfair position any professional candidate must be placed in by such treatment, and the unjustifiable reflections that might be made in consequence on his reputation. But, perhaps, the most serious aspect of the matter, which this report brings into prominence, is that it appears to be a case in which a public office is made use of to obtain a candidate to carry on underpaid medical work in the Winkleigh district outside the Poor Law, in opposition to the local profession. It is, doubtless, known to you that in this district there has been a dispute between the local profession and the medical clubs, and the latter have had the utmost difficulty in getting a medical officer. The remuneration they offer is insufficient to attract any respectable practitioner, unless outside emoluments are added thereto. There is reason to believe that the appointment was made solely for the purpose of increasing the meagre stipend of the Winkleigh clubs, and to render it possible to obtain for these institutions a medical officer.

I am, yours truly,
Major Greenwood, M.D., LL.B.,
Honorary Secretary, Poor Law Medical Officers' Association of England and Wales.

Right Hon. John Burns, M.P.,
President of the Local Government Board.

The Honorary Secretary stated that this letter was sent by the Local Government Board to the Torrington guardians for their comment. That board did not make any comments, but the letter was adversely criticized in the local press by some of the officials of the Winkleigh clubs in respect to the underpayment of their medical officer. The fact remained that since the death of their last medical officer, who had been paid from £50 to £60 per annum, they had been unable to obtain another, and had been paying a deputy medical officer to do the work at the rate of £3 10s. a week. The appointment of this deputy medical officer as Poor Law medical officer to the Winkleigh district might at any rate be an inducement to him to make some permanent arrangement with the local clubs. The following letter had been received from the Local Government Board:

Whitehall, S.W.,
September 18th, 1912.

Sir,

I am directed by the Local Government Board to advert to your letter of the 24th August last relative to the office of medical officer for the Winkleigh district of the Torrington Union, and to state that they have given the matter consideration, and have not seen sufficient reason for withholding sanction to the appointment of Mr. J. H. Clements as medical officer for the district in question.

I am, Sir,
Your obedient servant,
J. Davy, Assistant Secretary.

Major Greenwood, M.D.

The council were of opinion that there had been grave administrative abuse in this election, and trusted that their representations would induce the Local Government Board to look more keenly into these elections.

Inclusion of Fees for Vaccination.

The council next considered the recent action of the Dartford guardians, who were endeavouring to include fees for public vaccination in the salary of the district medical officer. The Honorary Secretary said he had sent the following letter to the Local Government Board, and that the matter was still *sub judice:*

Sir,

I am instructed by my council to draw your attention to the proposal of the Dartford guardians to pay one of their district medical officers a salary to include therein fees payable to the same officer as public vaccinator.

My council desires to protest strongly against this proposal, and to point out that it is in its opinion entirely opposed to the policy of your Honourable Board. It has been repeatedly laid down in Orders and circulars that the administration of the Vaccination Acts by the guardians is to be kept entirely distinct from Poor Law administration, and that boards of guardians are not to utilize the fees of the public vaccinator to compensate Poor Law medical officers for inadequate remuneration for their Poor Law offices.

If the Dartford guardians be permitted to carry out this arrangement, the abuse that those circulars were intended to restrain would be given free play. It is further considered that it is in direct contravention of the Vaccination Acts.

I am, yours truly,
Major Greenwood, M.D., LL.B.
Honorary Secretary,
Poor Law Medical Officers' Association,

Right Hon. John Burns, M.P.,
President Local Government Board.

Revision of Poor Law Orders.

The council next considered a letter from the Departmental Committee appointed by the President of the Local Government Board to report upon the revision of the Poor Law Orders.

The Honorary Secretary said that he had received six copies of a draft of an Order to regulate the management of Poor Law institutions; that the criticisms of the Poor Law Medical Officers' Association were invited upon this draft, and that they were to be submitted to the Departmental Committee not later than October 15th. As the draft referred entirely to Poor Law institutions, Dr. Thackray Parsons had given special attention to it, and had kindly drafted a reply to the Departmental Committee. Dr. Toogood had also given his services, and had carefully considered the draft, and Dr. Parsons's criticisms, with which he was in almost entire agreement. Dr. Parsons read the draft of the proposed reply, which was keenly discussed by the council. Dr. Holder added some valuable criticism from the superintendent of a large Poor Law institution at Hull.

It was finally left to Drs. Parsons and Toogood to prepare the answer to the Departmental Committee having regard to certain amendments that had been suggested during the discussion.

Extension of District.

A letter was considered from a correspondent, who objected to a portion of a parish not mentioned in his contract with the guardians being included in his district. He said the various parishes comprising his district were recorded *nominatim;* and he could not understand how a part of one not named in the contract could be properly assigned to him. The Honorary Secretary said that at law there was an aphorism, "*Expressum facit cessare tacitum,*" so that this member seemed to have a case. But it was finally decided that it was impossible to give an answer without considering the actual contract.

Certification of Lunatics.

A workhouse medical officer wrote asking if the guardians could legally include in his salary fees for certifying lunatics, and for giving medical attendance to officers resident in the workhouse.

This was discussed by the council. It was contended by some that the inclusion of lunacy fees was opposed to the provisions of the Lunacy Acts; and with regard to attendance on resident officers at the workhouse, it amounted to providing at the expense of the rates medical attendance for presumably well paid officials. Dr. Parsons said that to his knowledge both these practices had been sanctioned by the Local Government Board in the metropolis. With regard to the Lunacy Acts, it was not compulsory on the justice to make any order as to payment of the certifying practitioner, and a justice was procured by the guardians, who consented to this arrangement. The council was unanimously of opinion that both these practices should be condemned. The object of the Lunacy Acts was to insure that impartial and unbiassed justices should examine lunatics. If a justice could be selected for one purpose, he might be for another. The Honorary Secretary was requested to make inquiries into the matter, and bring it again before the council.

LOCAL GOVERNMENT BOARD REPORTS.

Shaftesbury Borough and Rural Districts.—Shaftesbury is an old-world town, situated on a plateau 700 ft. above sea level, and overlooking the Vale of Blackmoor. The country around which occupies the north-west corner of Dorset is included in the area of the Shaftesbury rural district. A very large dairying industry is carried on in the district, the average daily output of milk being about 10,000 gallons. The conditions under which the trade is carried on are related in a report (new series No. 67) of Dr. F. St. George Mivart to the Local Government Board. Regulations under the Dairies, Cowsheds, and Milkshops Orders have been adopted by the rural council, but they are apparently not enforced. There are 130 cowkeepers registered and 75, including members of the district council, who are not registered. A few cowsheds Dr. Mivart describes as being well kept, and many others had excellent features, but for the most part they were unsatisfactory, and the condition of many was bad. The walls and floors were in a foul condition, there was a want of ventilation and light, deficient cubic space, and defects or absence of drainage. In many instances pigs were kept in the same sheds as the cows. The general condition of the fold yards is described as bad. Manure was accumulated with liquid filth in vast quantities close to the openings of sheds. In two instances cows were seen plunging through this filth in order to enter the sheds to be milked, their udders trailing in the manure. At many farms there was found to be a lack of water. At some, the property of a Cambridge college, farmers are obliged all the year round to fetch water in churns from a long distance. Of the twenty-nine members of the rural district council twenty-two are tenant farmers, practically all engaged in milk businesses in one way or another. The ineptitude of the council may be gathered from the fact that the inspector of nuisances was definitely instructed by resolution that he should arrange for the tenant and the agent of a farm to be present whenever he went to inspect it. As the inspector is also inspector of nuisances to the town of Shaftesbury and surveyor to the urban and rural districts, it necessarily follows that this restriction hampers very considerably—as no doubt it was intended it should—his inspections of the dairy farms in the district. The housing regulations seem to be almost ignored both in the borough and rural district. Forty houses were inspected in the rural district, and the agent of seven was asked to remedy defects. A committee of the council was appointed to view the houses, but "no result seems to have followed the labours of the committee." The attitude of the borough council on sanitary matters may be gathered from the following extract from Dr. Mivart's report: "From the minutes of a meeting (date not recorded) between August, 1908, and January, 1909, it appears that a committee of five members was appointed to inspect and report upon the row of miserable dwellings called 'the Pool,' but I cannot trace any further reference to this committee or its doings. The condition of the place in question when I saw it seemed to indicate that the committee's labours had been unfruitful."

Ince-in-Makerfield Urban District.—The sanitary administration of the urban district of Ince-in-Makerfield, where there is now a population of over 22,000 persons, was reported upon unfavourably by Dr. Franklin Parsons to the Local Government Board in 1879 and again in 1886. In the report (new series, No. 65) of Dr. E. P. Manby, which has just been issued by the Board, there is not much evidence of great progress having been made in the direction of remedying unsatisfactory conditions. In 1879 the infant mortality-rate was equal to 181 per 1,000 births. In 1909 it was 212, and in 1911 it was 184 per 1,000. Dr. Manby considers that the probable causes of this high rate are the same as those stated by Dr. Parsons thirty-three years ago, namely, local insanitary conditions and social and domestic conditions and habits unfavourable to health. All that appears to have been done in the period which has elapsed between the visits of the two inspectors is the sewering and paving of a portion of the district, reducing the size of privy middens and improving the system of scavenging. Quite lately a female health visitor has been appointed who will act under the direction of the medical officer of health in connexion with administration made possible through the adoption by the council of the Notification of Births Act. There are about 4,500 houses in the town, of which no less than 4,000 are provided with privy-middens, although in many cases there is not a separate closet for each house. The cost of emptying these privies amounts to nearly £1,700 per annum, a sum nearly equal to a sixpenny rate. As the streets are already sewered this appears to be a very costly proceeding, and it would be more economical for this yearly expenditure to be used for the conversion of the privies to waterclosets under the provisions of the Public Health Acts Amendment Act, 1907.

Universities and Colleges.

UNIVERSITY OF LONDON.

Advanced Lectures in Physiology.

THE following advanced lectures in physiology are announced to be given during the first term:

Professor W. M. Bayliss, F.R.S.: Eight lectures on the action of enzymes at University College, on Fridays, at 5 p.m., beginning on October 25th.

Dr. F. S. Locke: Four lectures on the physiology of the mammalian heart at King's College, on Mondays, at 4.30 p.m., beginning November 11th.

Dr. E. L. Kennaway and Mr. J. H. Ryffel: Eight lectures on metabolism of carbohydrates and fats at Guy's Hospital, on Thursdays, at 4 p.m.

Lectures by Professor of Protozoology.

Professor E. A. Minchin, F.R.S., will give a general course of twenty lectures on protozoa at the Lister Institute of Preventive Medicine on Mondays, Wednesdays, and Fridays, at 5 p.m., during the second term. These lectures, which are free, will be addressed to honours B.Sc. students and to medical men, and will be followed by exhibits of preparations as occasion requires.

The Lister Institute of Preventive Medicine.

Owing to the appointment of Dr. Dean to the Chair of Pathology in the University of Sheffield, he will be unable to deliver the lectures of which notice has been given. The remaining lectures in the course will be given as arranged.

VICTORIA UNIVERSITY OF MANCHESTER.

THE following candidates have been approved at the examination indicated:

FIRST M.B.—*Part I, Inorganic Chemistry and Physics*: Alice M. A. Holt, Dorothy Potts, C. R. Sandiford, D. M. Sutherland, *R. L. Newell, *W. Stansfield, †A. M. Cotes. *Part II, Elementary Biology*: A. M. Cotes, E. R. Gilmore, C. R. Sandiford.

* Physiology only. † Chemistry only.

UNIVERSITY OF SHEFFIELD.

DR. HENRY ROY DEAN, Assistant Bacteriologist to the Lister Institute, has been appointed to the Joseph Hunter chair of pathology in the room of Professor J. M. Beattie, who has become Professor of Bacteriology in the University of Liverpool. Dr. Arthur Hall has succeeded Professor Beattie as Dean of the Faculty of Medicine.

The Services.

VOLUNTARY AID DETACHMENTS AND THE USE OF BRASSARDS.

AT the annual meeting of the Central Council of County Territorial Associations of Scotland, England, and Wales, held in Glasgow on September 25th, the question of the wearing of brassards by Voluntary Aid Detachments of the Red Cross Society during peace was under consideration. Recently the Army Council, in a communication to the County Territorial Force Associations, intimated that it had decided to prohibit altogether the wearing in time of peace of the Red Cross emblem in the form of a brassard. This decision was to prevent confusion, as the official brassard is only issued on mobilization, and the Council considers that in time of peace the use of the Red Cross should be restricted to official purposes, to be worn only on duty or in uniform, and in the form of a badge, or at least otherwise than as a brassard. The Standing Committee of County Presidents of the Red Cross Society has urged the Council to press the War Office to reconsider its decision, and allow Voluntary Aid Detachments to wear the brassard as many have been doing for two or three years. The chairman explained that the War Office sanctioned the wearing of the brassard when the Red Cross Society was raised, but a section of the Geneva Convention, dated 1911, was passed to the effect that brassards should be used only on mobilization. There was

a risk of the brassards (if they were continued to be worn as previously) getting into the wrong hands before mobilization. The Central Council decided that there was no alternative but to acquiesce in the decision of the War Office, which was itself bound by the Geneva Convention. The difficulty in the case of women might be got over by their wearing the Red Cross badge on their dresses, and in the case of men by putting a white cross inside the red one on the brassard now in use. But they recommended that brassards should be discontinued as soon as possible, and a white disc with red cross tied round the arm with black string. It would be desirable to print on these discs "to be exchanged for the official badge on mobilization."

DISTINGUISHED SERVICE REWARDS.

SURGEON-GENERAL A. D. GULLAND, R.A.M.C. (ret.), and Deputy Surgeon-General E. M. ERSKINE, C.B., R.A.M.C. (ret.), have been granted rewards for distinguished and meritorious services.

Obituary.

LIEUTENANT-COLONEL JOHN WILLIAM JEROME, retired pay, late Royal Army Medical Corps, who died at Norwood on September 9th, aged 55, received his education at King's College, and took the diplomas of M.R.C.S.Eng. and L.S.A. in 1880. He joined the Army Medical Service as surgeon in 1882, became Surgeon-Major in 1894, and was promoted to the rank of Lieutenant-Colonel in 1902. During the South African war he served with the Eighth Division, and was present during the operations in the Orange River Colony, including the actions at Biddulphsberg and Witteberger and in Cape Colony south of the Orange River, and received the medal. He retired in October, 1902.

Medico-Legal.

WORKMEN'S COMPENSATION.

The Function of a Medical Assessor.

IN a case stated for the opinion of the Court of Session (July 1st) certain important observations were made as to the duty of medical assessors.

The question was whether a man was fit to return to work. The medical assessor, besides assisting the sheriff with his views on the evidence, had reported on the applicant's condition as disclosed by an examination at the conclusion of the proof. In arriving at a decision to end the compensation, the sheriff was influenced by the medical assessor's report. The questions for the court were (1) whether it was competent for the medical assessor to examine the applicant and report to the sheriff his condition; and (2) whether the sheriff was entitled to take into consideration the medical assessor's report and end the compensation.

The court adhered to the decision of the sheriff-substitute and dismissed the appeal with the expenses to the respondents. It was made a point by the appellants that there was no evidence led by the employers as to the workman's condition between the date at which the court was asked to end the compensation and the date of the proof before the sheriff, and therefore the sheriff was not in a position to decide as to the workman's condition at the date of the judgement. The court held that if the workman had led evidence to show that he had had a recurrence of incapacity from the accident before the date of the proof, the sheriff might not have been justified in ending the compensation in the absence of rebutting evidence by the employers; but the fact that the employers had not alone led evidence for the period in question was not in itself sufficient to impugn the sheriff's decision. It was also said that it was incompetent for a medical assessor to examine the workman at the conclusion of the evidence without submitting himself to cross-examination on the result of his examination of the workman; but the court were of the opinion that while such an examination might not be competent in an ordinary case, in this case the point did not arise, because the examination of the workman was with the workman's own consent as well as that of the employers. On the question as to whether the arbitrator was entitled to allow the report of the medical referee as to the result of his examination of the workman to influence his mind in coming to a decision to end the compensation, the court were of opinion that the obvious meaning of the word "report" was "opinion"; and that, as the arbitrator had requisitioned the services of a medical assessor he was entitled, if not bound, to accept the opinion of the medical assessor, especially as the consent of parties had been obtained before the examination in question.

Injured when Cutting Corns.

In this case (Bradford, July 5th) it appeared that the plaintiff was in the employ of the respondents. On April 20th while cutting a corn she made it bleed. She was bathing her foot when she slipped and smashed the basin, severely cutting her toe. She was attended by a doctor for ten weeks, and had only just recovered sufficiently to be able to resume work.

It was submitted that the plaintiff was cutting her corn partly to make herself more efficient for her work, and it was therefore a risk connected with her duty.

Without calling on the defence His Honour gave judgement for the respondents.

Diabetes or Accident.

In Shelton Coal and Iron Co. *v.* Leese (Hanley, May 23rd) the employers applied to Judge Ruegg (who sat with Dr. King Alcock as medical referee) to terminate the compensation paid to a timberer on the ground that he was able to work. It appeared that on January 3rd, 1911, while helping another man to lift a loaded tub on some rails, Leese received an internal injury, which prevented him moving without great pain in the lower part of the body. For the applicants it was contended that he would benefit rather than otherwise by taking on some kind of employment. On the other hand, it was submitted, on behalf of the respondent, that he was suffering from diabetes set up by the accident, and that he was unfit for work, it being stated that his medical advisers were against his accepting the work offered to him by the applicants.

Dr. E. E. Young, in the course of his evidence for the applicants, said that he had examined the man on several occasions, and from the results of his examinations thought that he would not, while at work, feel the pain from which he complained in June last. What he was suffering from was general loss of tone. He advised that he should go back to light work in order to recover his tone. On a subsequent examination the respondent said that he had been told that he was a cripple for life, and that he did not think he should ever do any work again. He examined the man's heart and chest, which were quite normal. The man complained of some ailment in the lower part of the body, which witness attributed to the general low condition. He again thought the man could do some light work, and that it was the finest thing for him. He had not found diabetes, the amount of urine not being sufficient for both tests, and he had only examined for albumen. He also said he should doubt whether diabetes would be brought on by an accident. But even if it had, it would not do him any harm to do light work.

Dr. F. Shufflebotham, called for the respondent, deposed to examining Leese on June 14th, 1911, several times since, and again on May 15th of this year. The man gave him the history of the accident. While lifting he hurt himself inwardly and fainted. On recovering, he found he could not straighten himself. He said he suffered greatly from thirst and frequent passage of urine. In June last he said he was drinking six or seven quarts of water a day besides other things. The man also told him that he had lost three stone in weight since the accident. It would be unlikely that a man who had lost over three stone in weight, mostly by removal of fat from the abdomen, would feel the dragging down weight so much afterwards as before. The urine was loaded with diabetic sugar.

His Honour suggested that many men did go back to work who suffered from diabetes.

Dr. Shufflebotham: Not with diabetes of this nature. Witness did not think the disease had been going on for years. The man would not have been able to do the work he did down to the accident, and he would not have lost flesh so rapidly as he did after the accident. It was quite possible that diabetes might be due to the accident—there were many recorded cases. The man had not been treated for diabetes before the accident.

Supplementing Dr. Shufflebotham's evidence, Dr. R. A. Rowley Moody said that the most eminent authorities on diabetes gave traumatism as the principal immediate cause. He handed up a paragraph of Sir Clifford Allbutt's system to support this view. Another point, though he did not urge it as absolutely conclusive, supported the view that the diabetes had not existed for a very long time, and that was the absence of albumen in the urine, as to the absence of which he was in complete agreement with Dr. Young and Dr. Douglas. In cases of severe diabetes, such as Leese was suffering from, albumen invariably appeared in the urine if the disease had existed for a sufficiently long period. Another important point was, that in severe cases of diabetes fatty degeneration of the heart was a common result, and there was evidence that this existed in Leese's case. In answer to His Honour, Dr. Moody said diabetes was more frequent in stout than in thin people.

In the event His Honour said that he was satisfied that the man was unable to work, and that the disease was more likely to be due to the accident than to natural causes. He therefore dismissed the application.

LOCUMTENENTS AND INQUEST FEES.

A CORRESPONDENT asks if a locumtenent is entitled to keep for himself inquest fees paid to him while in charge of his principal's practice.

*** This question has been repeatedly answered in the negative. A locumtenent, in the absence of a special agreement to the contrary, is entitled to nothing beyond the payments made by the principal for his services, and certain railway expenses. All fees for professional work done, while in his principal's service are the property of the principal.

Medical News.

THE St. Mary's Nursing Home, Chiswick, will be opened by Sir Anthony Bowlby on Tuesday next, October 8th, at 4 p.m.

A SERIES of post-graduate clinics on the lines of those in recent years will be given at the Ancoats Hospital, Manchester, by the members of the hospital staff, commencing on Thursday next, October 10th, at 4.15 p.m.

THE winter session of the Post-Graduate College, West London Hospital, Hammersmith Road, W., commences on October 14th, when Dr. Seymour Taylor will give the opening address at 5 p.m., the subject selected being Medical Education, Then and Now.

THE dinner which the medical men attending the demonstrations at the Kennington Road Tuberculin Dispensary proposed to give to Dr. Camac Wilkinson on October 7th has been unavoidably postponed till after October 15th.

THE winter term of clinical lectures and demonstrations at the National Hospital for the Paralysed and Epileptic, Queen Square, London, will begin on October 8th, when Dr. James Collier will lecture on bulbar paralysis at 3.30 p.m. Further particulars can be obtained on application to the Dean of the Medical School at the Hospital.

THE opening meeting of the New London Dermatological Society for the session will be held on Thursday, October 10th, at the Western Skin Hospital, Hampstead Road (close to Tottenham Court Road), at 4.30 p.m., when Dr. G. Stopford-Taylor, of Liverpool, will deliver an address on some practical points in the treatment of eczema. All medical practitioners are invited.

A SPECIAL post-graduate course dealing with the diagnosis and treatment of pulmonary tuberculosis, including the use of tuberculin, is to be given at the Brompton Hospital for Consumption in November. The fee for the course, which begins on November 4th, is 5 guineas in the case of those who are not already connected with the institution. Further information may be obtained from the Dean, Dr. Cecil Wall.

THE Lewisham Memorial to the late King—a new bacteriological and *x*-ray department for St. John's Hospital, Lewisham—is to be opened on Thursday afternoon next by Major Sir Edward F. Coates, Bart., the member of Parliament for that borough, and Sir Almroth Wright.

THE opening meeting of the session 1912-13 of the Hunterian Society will take place on Wednesday, October 9th, when Dr. Frederick Taylor will deliver at the London Institution, Finsbury Circus, at 9 p.m., the first lecture of the society. The subject selected is sleepiness. Mr. A. H. Tubby will deliver his address as president on October 23rd. The second Hunterian lecture will be delivered on January 8th by Professor Arthur Keith, who has taken for his subject the history and nature of certain specimens alleged to have been obtained from the *post-mortem* examination of Napoleon the Great. A special feature of the session will be the clinical afternoons at the Westminster Hospital on November 13th, and at the London Hospital on February 26th.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society, was held at 429, Strand, London, W.C., on September 20th, 1912, Dr. F. J. Allan in the chair. The accounts presented showed that the claims in August were slightly below the expectation. There are 50 cases of permanent disablement on the society's books, and these alone account for nearly £5,000 per annum in sickness benefit, which will continue until age 65 or death previous to that age. These figures show conclusively the great advantages accruing to members of the medical and dental professions by joining such a society, which, for a comparatively small annual premium, is able to pay such benefits. It was reported to this meeting that a grant of money had been made to the widow of a deceased member by the Royal Medical Benevolent Fund, to which the society subscribes 100 guineas per annum; also that a son of a deceased member was elected to a foundation scholarship at Epsom College, to which also is subscribed 100 guineas a year. The new proposals are well up to the average for the eight months ending in August, but far below what they ought to be when all the advantages of membership offered are taken into consideration. Prospectus and all further information to Mr. Bertram Sutton, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, W.C.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

DR. A. CECIL HINCKS (Wells, Somerset) desires to hear of an institution that would receive a woman, aged about 47 years, paralysed, aphasic, and with incontinence. A payment of from 7s. to 10s. a week could be made, or possibly a little more with outside help.

SOUTHAMPTON desires to know of any institution from which he could buy a goat in milk which has had its thyroid gland removed.

ANSWERS.

DR. C. H. D. ROBBS (Grantham) writes in reply to "Cornishman's" query in the BRITISH MEDICAL JOURNAL of September 21st: A simple and effective apparatus for preventing dislocations of the shoulder was made for me by Messrs. Allen and Hanburys at a cost of 3s. 6d. It consists of a chest strap with buckle, to encircle the chest just below the axillae, an arm strap, and an adjustable link between the two. The patient for whom I employed it had repeated dislocations before wearing it, but remained free for over a year whilst using it. It is quite easy to adjust the buckle so that any desired limitation of range of movement of the arm can be obtained.

LETTERS, NOTES, ETC.

THE BLOOM UPON THE GRAPE.

DR. GEORGE PERNET (London, W.) writes: The latest atrocity in food-faking I have come across is an artificial bloom for black grapes. The stuff, I am told, is sprayed over the grapes, giving them, I admit, a beautiful bloom—painting the lily with a vengeance. But the bloom produced is almost too beautiful to be real. I discovered the fake by the rubbery taste of the grapes and the crinkling of the skin when pinched up between the finger and thumb. Perhaps some of your readers know more about it than I do. At any rate, "Caveat emptor."

"SECRET REMEDIES."

X. writes: I keep a copy of *Secret Remedies* hung up in my waiting room and find that it excites much interest. Another copy I lend out to any one who wishes to continue his studies. By this means valuable information is imparted to those who are in most need of it—the working classes. One man after keeping the book a longer time than usual explained that it had been the round of his workshop.

IODINE AS A SURGICAL DRESSING.

DR. P. B. COUSLAND (Edinburgh) writes: "The following testimonies to the efficiency of iodine as a first-aid dressing under the most unfavourable conditions are worth recording: Dr. H. G. Barrie, writing in the *China Medical Journal* on the Red Cross work at Hankow during the recent revolution, says: "When first aid had been skilfully applied with iodine dressings results were unmistakably good, and one regretted that this dressing was not more generally applied." A correspondent, writing of the same fighting, tells me: "The field workers were supplied with bandages, gauze, splints, morphine, and iodine. A 5 per cent. solution of iodine was applied to all wounds. In from one to twelve hours, and sometimes longer, most of the patients were carried off the battlefield into the base hospitals. No bad results were found from iodine even in cases where considerable absorption undoubtedly took place, as in shrapnel wounds. The splendid results from a free use of iodine, both in first-aid work and in the hospitals, made many of the Red Cross doctors staunch preachers of the gospel of iodine."

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

The Schorstein Lecture

ON

SOME CARDIAC PROBLEMS.

BY

T. WARDROP GRIFFITH, M.D., F.R.C.P.,

PROFESSOR OF MEDICINE IN THE UNIVERSITY OF LEEDS; HONORARY PHYSICIAN TO THE GENERAL INFIRMARY AT LEEDS.

AFTER some introductory remarks Professor Wardrop Griffith proceeded:]

To me there has always been something peculiarly fascinating about the anatomy, physiology, and diseases of the circulatory system. I have always been greatly impressed by the beauty of the central organ with its marvellous adaptation of structure to function; by its ontogenetic and phylogenetic development; by its malformations, and here the interest has been increased by an attempt to discriminate between those which are primary and those which are secondary or adaptive; and, finally, by its diseases, with their immediate symptoms and with the resulting disabilities which they impose upon the system—disabilities which are sometimes so wonderfully surmounted by varying combinations of dilatation and hypertrophy that they are made compatible with a long and useful life.

When I became familiar with the work of Dr. James Mackenzie, and when I began to appreciate the influence which it was destined to exercise upon our conceptions of diseases of the heart, I became his willing prisoner, and I have endeavoured to follow in his footsteps, and in my small way to contribute to the gathering of that harvest which his pioneer work has put within our grasp, and of which I believe we are very far from the last sheaf of even the first crop. The study of diseases of the heart by the graphic method in which he has enabled us all to share has illuminated some of the darkest corners of cardiac symptomatology, especially in regard to the rhythm of the heart. It has enabled us in some measure to discriminate between those forms of irregularity which may be discounted as of little or no importance and those which are serious and menacing, and already it has in many cases proved a valuable guide in treatment.

I am confident that no one can take up this work seriously without falling under its fascination or without encountering some phenomena which require a fuller and more convincing explanation than any which are at present available; and it is the knowledge of this that has emboldened me—one of the rank and file in the army of investigators in this field—to ask you to consider with me this afternoon some of the results which have been obtained by the use of this method.

In doing this I wish it to be clearly understood that most of what I have to say deals with the work of others, though here and there I may touch upon some isolated observation which is either new or has not been fully explained and which may prove of interest.

The fact that Dr. James Mackenzie is on the staff of the London Hospital, and has therefore made it the Mecca of cardiac investigation, might in the opinion of some have deterred a much more able man than myself from venturing to deal with the graphic investigation of cardiac disease within its walls; but those who marvel at my temerity must have failed to grasp the true generosity of the character of Dr. Mackenzie, who does all he can to encourage others to gather where he has sown, and who is the last man who might be expected to say, "I am Sir Oracle, and when I open my lips let no dog bark." It was not, indeed, until I had been peremptorily directed by Dr. Mackenzie to do so that I ventured to accede to your gratifying invitation, and his presence with us this afternoon is at once an honour and an embarrassment to me.

The conclusions which have been drawn from the characters of the venous pulse as to the action and rhythm of the heart have been in large part confirmed by the use of the electro-cardiograph, which has been brought to its present state of efficiency by Professor Einthoven. It is a source of pride to all who are interested in the history of British medicine to be able to point to the wonderful work which has been accomplished by Dr. Thomas Lewis in this connexion. One cannot but feel with him that the accuracy of this method must in time cause it to be the final court of appeal in regard to all problems dealing with the rhythm of the heart.

The work which I have to bring before you springs entirely from the investigation of the venous pulse, for as yet I have had no opportunity of doing any work with the electro-cardiograph. Some of the problems which I shall touch upon, and which in my opinion are not as yet settled, may indeed be capable of solution by the newer method, but I shall not allow this to deter me from mentioning my difficulties, for I know that for most of us electro-cardiographic work is in the future, and that even those who are as expert as Dr. Lewis is in this kind of work experience certain difficulties in the interpretation of some of the results obtained.

ESSENTIAL FEATURES OF THE JUGULAR PULSE.

At the risk of being considered guilty of dealing with facts which are too elementary, I must, for the sake of clearness, briefly refer to the essentials of the study of cardiac action by the examination of the venous pulse. It is now well known that the stimulus for the contraction of the heart begins normally at the junction of the superior vena cava with the auricle where the sino-auricular node of Keith and Flack is situated. Here it is believed that stimulus material is constantly being built up. When this reaches the explosive point it causes the contraction of the immediately adjacent portion of the cardiac muscle, and in doing so it expends itself completely, so that the region is left bankrupt and is called upon again to resume its task of building up stimulus material. Now, it is clear that what one may term the "flash-point" of this stimulus material will depend on two factors, both of which are liable to variation, and these are the rapidity with which the material is formed and the irritability of the cardiac muscle at the time. The contraction so initiated spreads with great rapidity all over the auricular musculature, as is seen in the systole of the upper chambers of the heart. The stimulus then passes along the auriculo-ventricular bundle of His, the course of which is now thoroughly well known, to the ventricles of the heart, over which the contraction spreads with considerable but with measurable rapidity. It is believed that this contraction begins at what Dr. Keith calls the auricular base, and terminates, after sweeping by the apex, at the conus or arterial base of each ventricle.



FIG. 1.

The lower part of this slide (Fig. 1) shows a simultaneous tracing of the radial pulse and of the pulse at the root of the neck taken from the jugular bulb—a part of the venous system which is not separated from the interior of the right auricle by any valves, and in which, therefore, the variations of pressure will correspond closely with those in the auricle.

Let us consider the causation of the various waves which are usually seen in the pulse thus taken from the jugular vein. When the auricle enters into its short, sharp contraction it either sends back a wave into the jugular vein or it arrests the onward flow of blood so abruptly that a pressure rise is registered. This is called the wave "A," and its beginning is taken to indicate the onset of the auricular contraction. The pressure now rapidly falls from the summit of this wave to the lowest point on the tracing. The cause of this fall is threefold: first, the cessation of the auricular contraction; secondly, the general diminution in size of the heart which results from the contraction of the ventricles; and thirdly, and most importantly as Dr. Keith has pointed out, the action of the ventricular musculature in pulling down the auriculo-ventricular junction and so expanding the cavity

of the auricles as one might expand a concertina by pulling on one of the ends. During this contraction of the ventricles, however, and at an early stage of this, though not until the pre-sphygmic phase has been passed, the semilunar valves are burst open and a wave of increased pressure passes along the arterial system. This wave reaches the carotid and subclavian arteries about one-tenth of a second before it reaches the radial, and most tracings from the jugular pulse present a rise, spoken of as the "c" wave, which in many cases measurement shows to correspond exactly with the time of the pulse in these two arteries of the neck. In many cases it doubtless owes its origin to the transmission of an impulse from the adjacent arteries, though in some instances in which it distinctly precedes this event—and there are many such—it must have another explanation.

The length of time between the commencement of the auricular wave and the appearance of the "c" wave (when this can be credited to arterial impulse) is known as the A–C interval, and may be used as an indication, though not an exact measure, of the time which separates the beginning of the auricular and ventricular systoles.

Now, the degree to which the ventricular part of the heart is capable of shortening in the line between the auricular base and the apex is limited, and, moreover, as the systole proceeds the wave of contraction passes from this line to that between the apex and the arterial base, so that the expanding effect of the ventricular contraction on the auricular part of the heart soon comes to an end, and the onflowing blood finds an increasing difficulty in entering the auricle; this leads to a fullness of the jugular, which is registered by the tambour, and the wave on the tracing due to this is called the ventricular wave. The

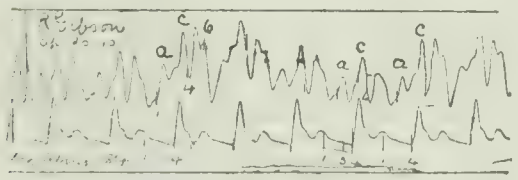


Fig. 2.

summit of this wave, or, if one likes to express it otherwise, the point where it begins to fall, indicates the opening of the tricuspid valve, and corresponds approximately to the bottom of the aortic notch in the radial pulse. It is, of course, well known that the semilunar valves close shortly before the ventricles have ceased to contract; they do so necessarily as soon as the pressure in the ventricles, which though still in systole are not now contracting so strongly as they were, falls below that in the aorta and pulmonary arteries. This closure of the aortic valves is associated with a second wave of augmented arterial pressure, which spreads to the periphery of the arterial system and reaches the radial in about one-tenth of a second. As the pressure in the auricles is much lower than that in the arteries, it is not until the ventricle has begun its true period of diastole that the tricuspid valve opens, and as a consequence there is a second and marked fall of the pressure in the jugular pulse. As the fall in the ventricular wave corresponds in time with the opening of the tricuspid valve, it is natural that it should correspond approximately, as we have seen it does, with the bottom of the aortic notch in the radial pulse, for at this distance from the heart the aortic notch does not appear till some time after the closure of the semilunars. From the point of time corresponding to the bottom of the "v" wave until the next contraction of the auricle the tracing from the jugular vein shows either a line which is horizontal or which slopes upwards to the beginning of the following "a" wave.

Very often this line shows small waves occasioned by stasis. Occupying this part of the phlebogram, Hirschfelder and A. G. Gibson, of Oxford, have described a wave well defined and following the ventricular wave at a fairly uniform distance (n in Fig. 1). Its probable explanation is that in certain conditions of relative auricular and ventricular pressure there is at the moment of opening of the auriculo-ventricular valves such a rush of blood from the upper chambers into the lower that the valves are temporarily brought together and momentarily retard the passage of blood from auricle to ventricle. It is certain that this wave is much commoner than it was supposed to be when attention was first called to it.

I have little doubt that the explanation which Gibson has given of the post-ventricular wave is the correct one. If it were not that the contraction of the ventricle normally follows that of the auricle at such a short interval, it would probably be found that the auricular wave would usually be followed by a wave due to the same cause—that is to say, to the momentary closure of the tricuspid valves at the end of the inrush of blood from the auricle: but the ventricular contraction begins before that of the auricle has ceased, and as its first effect is to expand the auricle this will prevent the appearance of a wave having this explanation. In cases where the conductivity is impaired, and where in consequence the ventricle does not contract for some time after the auricle, such a post-auricular wave is commonly seen (Fig. 2), and in cases where the ventricle fails to act at all in response

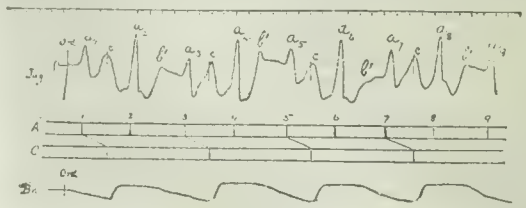


Fig. 3.

to one or more auricular stimuli the same thing is well seen (Fig. 3, b^1).

It is important to notice that the time between the fall of the ventricular wave and the following "a" wave is the most variable phase of the whole venous cycle. With a frequently acting heart the "a" wave will follow so closely on the ventricular of the preceding cycle that the fall of the latter is hardly to be seen, and in some cases the two waves may be fused. When, on the other hand, the heart is acting less frequently, the length of time between the ventricular wave and the auricular wave of the following cycle is increased out of all proportion to any slight lengthening which may occur in the rest of the cycle, and it is in those cases especially that the stasis waves are most likely to be seen, or in which the wave of Gibson can be recognized as such.

The tracing which I now show on the screen (Fig. 4) is taken from a healthy man of some 60 years of age. It shows the three waves to which I have referred—namely,

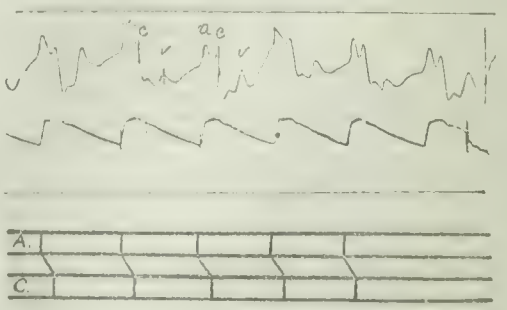


Fig. 4.

the auricular, the carotid, and the ventricular. The summit of the last is seen strictly to correspond with the bottom of the aortic notch in the radial tracing. The line of the tracing from the fall of the ventricular wave to the onset of the following auricular wave rises more abruptly in the case of every fourth cycle, which makes it probable that this depends on the slight rise of pressure in the right side of the heart which occurs during the act of expiration. The key which I have placed below as well as the tracing itself shows that the A-C interval is normal.

DELAY IN THE FALL OF THE VENTRICULAR WAVE.

We have seen that the post-sphygmic period is the measure of time between the closure of the semilunar valves and the opening of the auriculo-ventricular valves. The latter event is indicated by the summit of the ventricular wave, which usually corresponds with the bottom of the aortic notch in the radial pulse; for, although this

chronicles an earlier event, its appearance is delayed for about the tenth of a second, owing to the distance of the radial artery from the semilunar valves.

It is not the case that the summit of the ventricular wave always coincides *exactly* with the aortic notch of the radial; sometimes it precedes it or follows it by a minute fraction of a second. I can well conceive that this may be due to the varying amount of blood in the right auricle and the pressure under which it is at the moment of the beginning of the ventricular diastole. Clearly, also, it must depend upon the length of the post-sphygmic interval. I do not know of any observations which show that this period varies either in animals of different species, or under physiological conditions in the human subject, or whether it is lengthened, as one might expect, when the heart is hypertrophied or shortened when it is dilated or influenced by toxæmia. In the affection which is known as myotonia congenita, or more familiarly as Thomsen's disease, the essential symptom is that the voluntary muscles relax very slowly after they have been thrown into action. This is most marked after periods of rest, and it passes off after the same movement has been carried out several times. The special myotonic phenomenon is manifested in a greater number of the voluntary muscles than is usually supposed. Thus it is stated by some, and without any qualification, that the interossei of the hands escape, but in two cases which have been under my observation they were quite

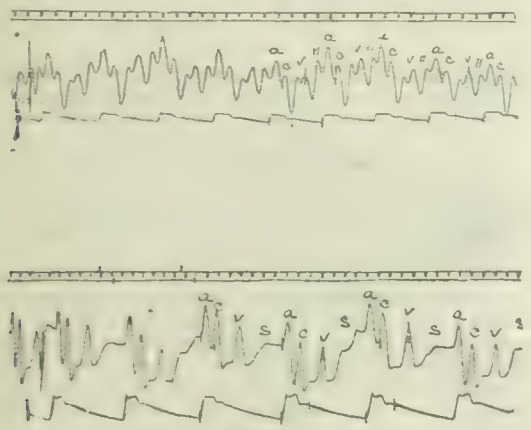


Fig. 5.

definitely affected, and the same is true of the levator palpebræ superioris. It is rather interesting to note that tracings taken in the two cases referred to show that the summit of the ventricular wave corresponds with a point on the radial tracing distinctly later than the bottom of the aortic notch (Fig. 5). If the ventricular muscle relaxes more slowly than usual, one would expect this to be the case, but I fully admit that the evidence afforded by the tracings is not strong enough to do more than raise the question.

Direction of the Wave of Contraction over the Ventricular Musculature.

The passage of the wave of contraction over the ventricular musculature in a definite direction has already been referred to. This has been proved experimentally by Gotch and by others, and the experimental and clinical work of Lewis has confirmed these observations. I well remember how, in a discussion on a communication presented by Dr. Hobhouse, of Brighton, at the Dublin meeting of the Society of Physicians in 1909, on the existence of a sphincter at the mitral orifice, Dr. Harry Campbell raised a similar question with reference to the aortic aperture. He said:

> Is it possible to believe that the aortic valves can sustain the [illegible] pressure of the blood amounting on an average to [illegible] mm. of mercury throughout a long life if not aided in some way?

And again, more strikingly, he asked this question:

> [illegible] possible to cut a window in the ascending [illegible] as it were, with material of the [illegible] aortic valve; can we conceive that it would make any effective resistance to the pressure of the blood?

which, however, in this case would be both the systolic and the diastolic pressure. The explanation he advanced was that probably a ring of ventricular [illegible] diately below the aortic valves remains contracted during the earlier part of the diastole, and does not begin to relax until the intraventricular pressure has become sufficiently high to afford the valves substantial support. Professor Thayer, who was present, quoted in confirmation of this view the researches of Stewart, which showed that the muscle of the aortic conus entered into contraction later, and remained contracted longer, than any other part of the ventricle.

In this connexion a case which was under my care for some two years may prove of interest. A lad of about 10 years of age, who had been operated upon for empyema some five years previously, with apparently a [illegible] satisfactory result, came under my care with symptoms of cardiac disease. There was great enlargement of the heart, and the signs, into which I need not enter, led us to diagnose adherent pericardium with mediastinitis. The maximum impulse of the heart, which was very forcible, proved on careful comparison with the radial pulse to be diastolic in time. The tracing which I throw on the screen* compares the radial pulse with the cardiac impulse, as made out in the fourth space and in the second space respectively. That the maximum impulse is diastolic is obvious, and careful measurement with the radial pulse in each case will show that the diastolic rebound occurs a little later in the tracing taken over the region of the conus than in that taken over the body of ventricle. Perhaps this is more strikingly shown in the

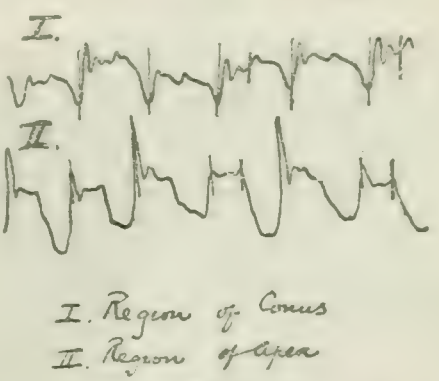


Fig. 6.

next slide (Fig. 6), in which it is seen that the diastolic recoil, indicated by the ascent of the lever, occurs a little later at the region of the conus than nearer the apex. In other words, the conus is the last part of the heart to relax. This appears to me to be in harmony with the findings of the experimental observers and with the conjectures of Dr. Harry Campbell.

Incidentally, I may say that as the patient was manifestly losing ground and as the heart seemed to be exhausting itself, not only in doing its legitimate work of driving the blood along, but in drawing in the chest wall at every systole, I got my colleague, Mr. Littlewood, to remove the portion of the chest wall shown in the diagram,* a proceeding which was attended with unquestionable benefit, which, however, was only temporary.

Additional Considerations on the Wave of Hirschfelder and A. G. Gibson.

I have referred to the post-ventricular wave which has been described by Hirschfelder and A. G. Gibson. A good specimen of it is seen on the screen where the rhythm of the heart is normal—auricular, carotid, and ventricular waves occurring in normal sequence (Fig. 7). It may also occur in cases where the auricle has passed into a condition of fibrillation, as the next slide shows (Fig. 8). Here the "H" wave bears a superficial resemblance to an auricular wave, but its [illegible]re is shown by the varying distance which separates it from the wave which is associated with the following systole, while its relation to the preceding systole is constant.

Dr. Davenport Windle has pointed out that this wave may be misleading in two ways. When the heart is acting

* Where an asterisk appears it indicates that the lantern slides referred to are not represented by figures in this paper.

infrequently it may fall exactly midway between two auricular waves and give rise to the impression that we have to deal with a case of partial heart-block in which every second impulse from the auricle is blocked; and when the heart is beating rather more frequently the wave may obscure the beginning of the following auricular wave and simulate a lengthening of the A–C interval.

A knowledge of this wave in connexion with certain auscultatory signs is of importance, and in some cases may guard against error. There are many conditions which may give rise to the presence of three sounds at the apex of the heart. Doubling of the first sound will cause this; so will doubling of the second, due to a lack of synchronous closure of the aortic and pulmonary valves, but in this case the sign will not be confined to the apex, but will be more distinct at the base, where alone it may be made

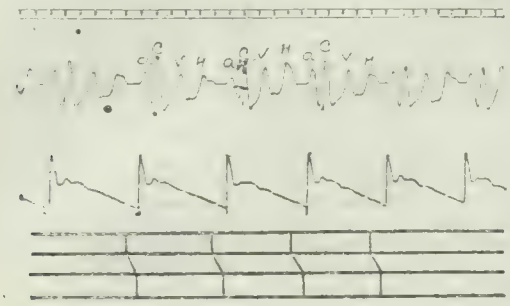


Fig. 7.

out. A very short presystolic bruit or a short mitral diastolic may impart a treble rhythm to the sounds as heard at the apex. Whenever we make out a treble rhythm at the apex which is due to the existence of a double diastolic sound, and when we can satisfy ourselves that this double diastolic sound is not due merely to the transmission of a true doubling of the second sound from the base, we must entertain the possibility of there being narrowing of the mitral valve. This has been emphasized by Graham Steell in his valuable contributions on the signs of mitral stenosis, though he mentions having met with the double diastolic sound at the apex in cases of cardiac failure without valvular changes. It is therefore important to know that sometimes when the heart is perfectly normal a third sound can be made out at the apex, which is believed by Gibson and others to be due to that second closure of the tricuspid valve which is regarded by him as the cause of the wave which bears his name. This sound may be contributed to by a similar closure of the mitral valve of which the tracing gives no indication. I am convinced that this view is correct.

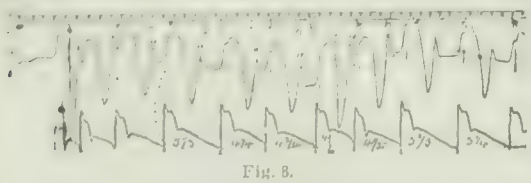


Fig. 8.

The existence of a well-marked third sound at the apex in the patient with the regular rhythm whose tracing I have shown you led me to anticipate the occurrence of the extra wave in his jugular. The next slide (Fig. 9) shows the same wave associated with a well-marked third sound, which was confirmed in the ears of several witnesses. The patient was a little girl with albuminuria, and she was kept in bed. One day, examining as a matter of routine, I failed to make out the sign, and my house-physician, Mr. A. Riley, had the same experience half an hour earlier. I at once took the tracing which I now show you (Fig. 10), and which presents no wave between the "v" wave and the following "a" wave. The next tracing shows the same wave from a patient with a normal heart but with a well-marked third sound. The influence of position is strikingly shown by the two tracings in this case, for the head was placed at a lower level when the second was taken.

Alterations in the Rhythm of the Heart.

Perhaps it is in connexion with the study of the rhythm of the heart that the graphic method has been attended with its most striking results. The irregularities of the pulse have from the earliest times attracted the attention of careful observers. Various classifications of these have been made, usually based on whether the irregularity has been one of force or of rhythm, and attempts have been made to attach definite prognostic significance to the different forms of irregularity, but until the study of the rhythm of the heart was conducted in the light of the information derived from the jugular pulse and that derived from electro-cardiographic work, it cannot be said that these attempts were attended with any great measure of success. Here I wish very carefully, and with all sincerity, to guard myself from appearing in any way to depreciate the work of the older observers. The facts which they observed are our valued inheritance; their nomenclature, which was the garment of their thoughts, is to a large extent the nomenclature we still employ, and if some of the terms have required alteration or are not used precisely as they were at first, we must always remember that the fabric is good, and we must not forget the advice of

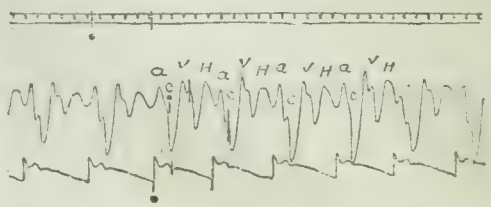


Fig. 9.

Diogenes Teufelsdröckh, "Friends! trust not the heart of that man for whom old clothes are not venerable."

Sinus Arrhythmia.

A form of cardiac irregularity to which I intend to make but a passing reference is that termed "sinus arrhythmia." A good example of this is seen on the screen.* The tracing was taken from a young lad the subject of renal disease; A, C, and V waves are seen—we may ignore the small H waves—and the irregularity is dependent on a varying length of the diastolic period of the cardiac cycle. The various events of each cycle occupy practically the same length of time and are normally grouped. The irregularity depends upon the various cycles not beginning at regular intervals. Probably the immediate cause of this is dependent upon the rapidity with which the stimulus material is built up or upon the irritability of the muscle of the sinus venosus. The pulse of a healthy individual

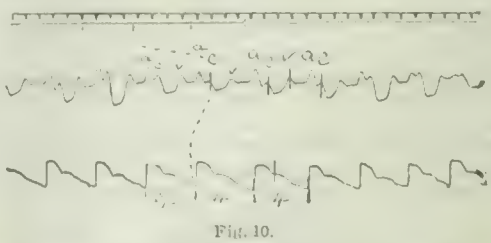


Fig. 10.

varies, of course, in frequency according to the demands of the system, and we only talk of any one having sinus arrhythmia who presents this form of irregularity when he is lying quietly and as free from emotional disturbance as may be. Very frequently it is dominated by the respiratory rhythm, and, as Dr. Mackenzie has pointed out, it is very common in children and in youth. At one time it was said that irregularity of the heart was to be made out frequently in those the subjects of chorea, even when there was no evidence of cardiac disease, and it was even suggested that this irregularity might be dependent on choreic incoordination of the muscle of the heart. I have no doubt the impression gained ground from this form of irregularity being, as chorea is, a common affection of children.

The "Extra systoles," more properly called Premature Systoles.

The irregularities of the heart which are dependent on the occurrence of the extra systole present many points of interest, and have been carefully analysed. I must briefly refer to the ordinary varieties of these, so that they

of the rarer kinds and how they may lead to the simulation of still rarer forms of cardiac irregularity of serious prognostic significance.

In the ventricular form of extra-systole (Fig. 11) the auricle goes on beating at the ordinary rate. There may, of course, be a certain amount of sinus arrhythmia, as there may be when there are no extra-systoles, and sometimes this makes it hard correctly to interpret the tracings.

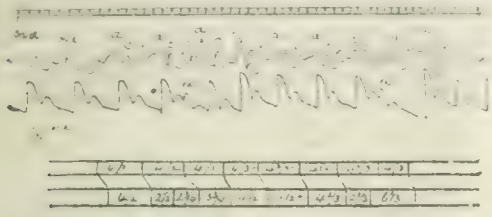


Fig. 11.

From time to time the ventricle contracts before the auricle or at a shorter interval of time after the contraction of the auricle than is compatible with the stimulus having reached it by the natural channel. It is thought that the stimulus which leads to the ventricular contraction arises in the bundle of His just below the node of Tawara. In most cases, as seen in the latter part of the tracing, the following auricular systole fails to provoke a ventricular contraction. It may be that

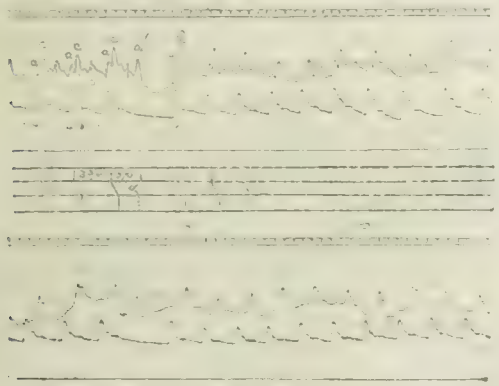


Fig. 12.

the stimulus does indeed pass the bridge and reach the ventricle, which, in consequence of its recent contraction, it finds refractory and irresponsive; or it may be that the bundle fails to transmit the impulse, and, as we shall see immediately, there is some evidence of this. In any case the ventricle is not provoked to systole till it receives the stimulus from the next contraction of the auricle, and thus it comes to pass that the pulse period of the normal beat and of the extra-systole which follows it are together equal to two normal pulse periods. Sometimes, however,

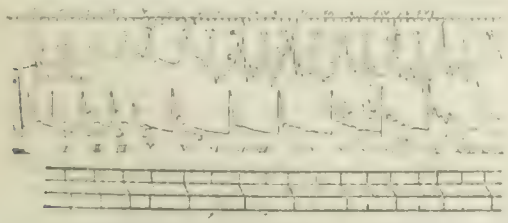


Fig. 13.

it happens that after an extra-systole of ventricular origin the ventricle does respond to the next auricular stimulus, and the extra-systole being then situated between two normal beats is said to be intercalated. This is shown in the earlier part of the tracing. As a rule which is not invariable the A–C interval corresponding to the stimulus which thus gets through is lengthened, and this disturbs the rhythm of the pulse in such a way that now not only do we find that *three* pulse spaces correspond to two interauricular, but that the third pulse space is shortened at the expense of the second. It is this lengthening of the A–C interval following the extra-systole which gives probability to the view that the usual failure of ventricular response is due to a blocking of the impulse rather than to the refractory condition of the ventricle.

I must point out that the extra-systole is always feeble because it is premature and the muscle has not had time to recover fully from its previous effort. Sometimes it may be so feeble as not to open the aortic valve, or, if it does so, the wave may be so feeble as not to be appreciable by the finger. This gives rise to one of the varieties of the intermittent pulse, and one might think the ventricle had actually failed to contract, and that a condition of partial heart-block prevailed. On auscultation, however, the premature systole may be heard, and tracings of the kind I now show will make the matter clear (Fig. 12). In the upper tracing the extra systole (which, by the way, I

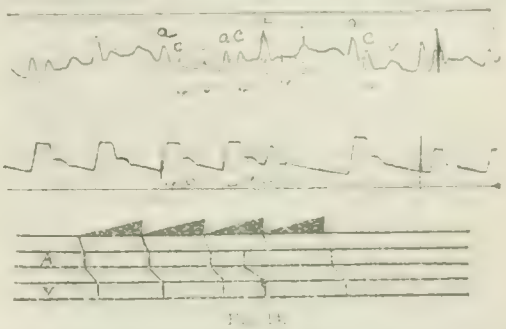


Fig. 14.

regard as one of auriculo-ventricular origin) is not visible at the radial. The wave marked "A" in the jugular might be due to the auricle alone, but the lower tracing, which is of the apex and radial, shows that there is a premature contraction of the ventricle. Sometimes it happens that two extra-systoles occur together, as is seen in the tracing I now show[ed]: and, again, they may occur rhythmically, as in the tracing now on the screen (Fig. 13), in which a regular rhythm breaks into a condition where every second systole is a premature one, which is sometimes without any effect on the radial pulse, or sometimes affects it slightly, but not always to the same degree. When the premature systole is made out at the wrist, we get one of the varieties of the *pulsus bigeminus*, to which I must return in another connexion.

In the variety of extra-systole known as auricular there is a premature contraction of the auricle. This may

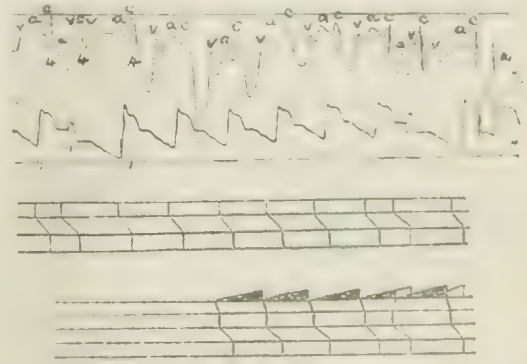


Fig. 15.

appear in the jugular pulse as a separate wave or it may blend with and modify the ventricular wave of the previous cycle. It is followed by a contraction of the ventricle, which it evokes by the sending of a stimulus along the usual channel. In most cases this stimulus passes slowly, so that the prematurity of the ventricular beat is not so marked as that of the auricle. In some cases, as in the one now on the screen (Fig. 14), the "irregular period" (as the combined pulse spaces of the extra-systole and the preceding beat are termed) is equal to two normal spaces, in which case it is assumed that the sinus is not disturbed in its rhythm, but goes on building up stimulus material, and after the usual time makes its customary call for auricular contraction. The auricle, however, being in the refractory stage, ignores this and waits for the next stimulus from the sinus, which

follows at the usual interval. In most cases, however, it is found that the irregular period caused by the occurrence of an auricular extra-systole is less than two normal pulse spaces. Of this I show you an example (Fig. 15), and the explanation which is provisionally accepted is that the premature contraction of the auricle has, by the passage of a retrograde stimulus, betrayed the sinus into premature explosion, and has left it with the duty of again building up stimulus material sooner than usual, which it does at the ordinary rate. If, therefore, the irregular period is less than two spaces the extra-systole is probably auricular in origin: but the converse statement—namely, that if the irregular period is not less than two spaces the extra-systole is ventricular in origin—cannot be made, for, as we have seen, such a condition prevails in certain examples of auricular extra-systoles.

Like the ventricular extra-systoles, these auricular extra-systoles often occur rhythmically. Here is a case* where

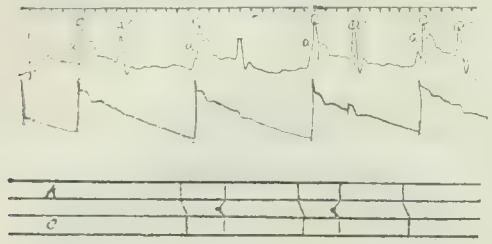


Fig. 16.

one day the prevailing tendency was for an auricular extra-systole to occur after every second normal beat. They were separated from one another by intervals of ten and a half fifths of a second. The next day many examples were found of extra-systoles occurring after every sixth normal beat and separated from one another by about five seconds. On the day following this again there is a loss of anything like a regular rhythm in their appearance, for they occur variously after three, four, six, and seven normal beats, and separated by very varying intervals of time. This peculiar rhythmicity which is sometimes observed in the incidence of extra-systoles has as yet received no adequate explanation.

In addition to those extra-systoles which arise in the ventricle and those which arise in the auricle, it is held that a third variety is constituted by those which are due to a stimulus arising in some part of the auriculo-ventricular junctional tissue, most probably in the immediate neighbourhood of the node, or in that structure itself.

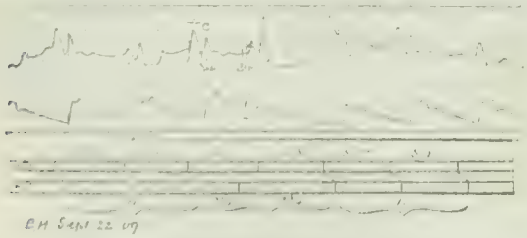


Fig. 17.

These are termed "auriculo-ventricular," and opinions vary greatly as to their frequency. They are, I believe, regarded as common by Dr. Mackenzie, by whom, I think, they were first described. Dr. Lewis, on the other hand, as the result of his electro-cardiographic work, considers that they are of great rarity. The essential features of such extra-systoles are that both the auricle and the ventricle enter into premature contraction, and that the two occur so close together that one cannot be dependent on the other.

[illegible] of about 50 years of age, whose usual cardiac [illegible] is shown by the tracing now on the screen,* had noticed for many years that there were times when his pulse suddenly [illegible] very infrequent. Tracings taken [illegible] I was fortunate to see him during [illegible] frequency of the [illegible] to the presence of extra-systoles alternating with [illegible] beats, most of which did not reach the radial [illegible] Fig. 16). The systole of the auricle was always markedly premature, and in those instances where it was possible from the presence of a slight radial rise to gauge the time of the ventricular systole, this was found to anticipate the systole of the auricle by a very brief period, for the auricular wave and the carotid impulse were strictly synchronous. It is difficult to attribute this to a stimulus arising from any other position than from the neighbourhood of the node of Tawara.

There are many cases, however, in which the interpretation is beset with difficulties. I have selected three tracings from a patient who has been under my observation for some years, and who had frequent extra-systoles on
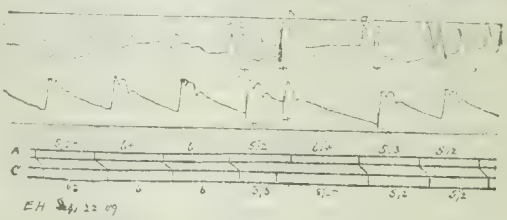


Fig. 18.

almost every occasion I examined him. The first of these (Fig. 17) shows a regularly acting auricle with a premature systole which has every appearance of being ventricular in origin. In the second tracing (Fig. 18) there is distinct prematurity of the auricle. Now I admit that there is here a certain amount of sinus arrhythmia, and that this prematurity of the auricular systole may be a coincidence. It is clear that the systoles of the auricle and ventricle are separated by too wide an interval of time (namely, by an interval which is longer than normal, for this is inadequately represented by the excess of the C–A

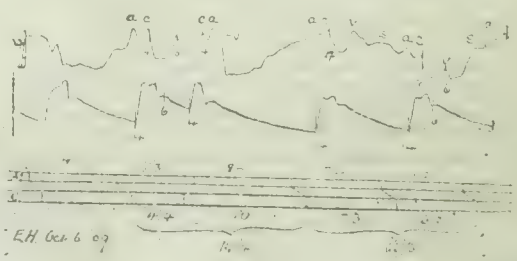


Fig. 19.

interval over the A–C interval, as a moment's reflection will show) to be due to a stimulus arising at the node. It is possible that the premature systole of the auricle may have been the result of a retrocedent stimulus passing from the prematurely contracting ventricle. Experimental observations do not, however, I understand, make it at all probable that isolated ventricular extra-systoles are often the cause of such retrocedent stimuli. In the next tracing (Fig. 19), in which the prematurity of the auricle is less open to doubt, a comparison of the C–A interval with the A–C interval would lead us to conclude that the ventricular systole preceded that of the auricle by the same interval as it usually follows it. In this case it is alike inadmissible to assume a retrocedent stimulus which should take a longer time to pass than a direct one, especially as it is also premature, or to assume a stimulus arising in the nodal region, for in that case the systole of the ventricle and that of the auricle should occur close together. In the case of this patient, therefore, I am driven to think that the extra-systole is ventricular in origin in spite of the prematurity of the auricular contraction.

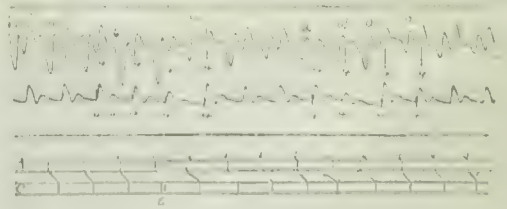


Fig. 20.

Before I pass from the possibility of retrocedent stimuli I should like to call your attention to a tracing (Fig. 20),

which is one of many presenting the same characters which I took from a patient who was under my care, a young woman of 25, the subject of mitral disease. For some reason the ventricle occasionally contracts very slightly before its expected time, the auricle being undisturbed; the next systole of the auricle, is, however, always premature, and is followed by a long A–C interval. It will be noticed that the next interauricular interval is unduly long, being, indeed, fully compensatory. This sequence happened again and again, and I am unable to offer an adequate explanation. If the premature auricular systole is due, as I suspect, to a retrocedent stimulus, then I incline to the premature contraction of the ventricle being of auriculo-ventricular origin, rather than of simple ventricular origin. In the latter case one would

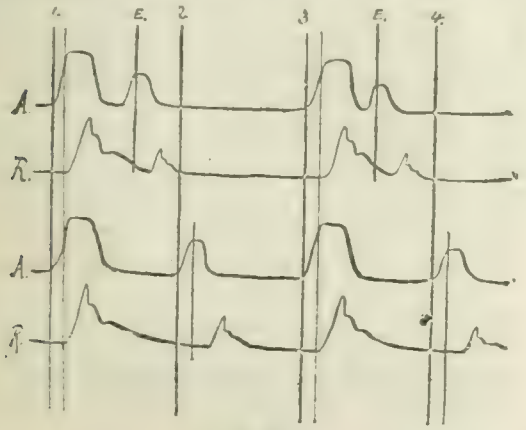


Fig. 21.

expect that the retrocedent stimulus assumed to be passing from ventricle to auricle would be blocked by the normal stimulus coming in the opposite direction. If, on the other hand, the extra-systole were of auriculo-ventricular origin, a retrocedent stimulus (which, I admit, would be highly problematical under these conditions) might not meet with any obstruction.

The Pulsus Alternans.

In many of the tracings which I have put before you, we have seen the occurrence of alternately big and small radial waves, and this I have referred to as the pulsus bigeminus. Now there is another condition in which there is an alternation of big and small beats, but which is due to widely different causes.

In the diagram now before you (Fig. 21) the vertical lines marked 1, 2, 3, and 4, equidistant from one another, are supposed to indicate the times of onset of the contractions

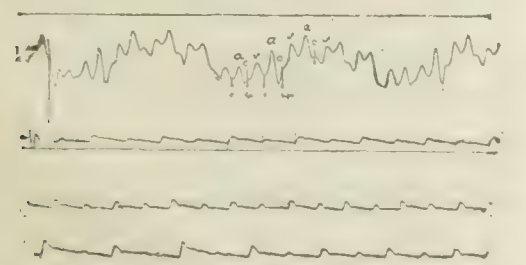


Fig. 22.

of a regularly acting ventricle. In the upper diagram it is seen that every second systole is premature; being premature it is feeble, which it has every excuse for being, as the ventricle has had but a short rest, and therefore the corresponding radial pulse is small, and though premature is, relatively to the systole of the ventricle, somewhat delayed. This is the *pulsus bigeminus*. It is recognized by the interval between the large beat and the small beat, being shorter than that between the small beat and the large one. In the lower diagram the spacing of the ventricular systoles is seen to be uniform. Each alternate contraction is feeble, and, as this usually results in some delay in the appearance of the radial pulse, we find that in this case the distance between the large beat and the small beat is usually greater than that which separates the small beat from the large one. This is the *pulsus alternans*. The explanation of this form of pulse which carries the most weight of probability is as follows. When a strong systole of the ventricle takes place it lasts relatively a long time, so that when a stimulus again reaches the ventricle it has not had a long rest, and is unable to respond by a strong contraction. The weak contraction, which is all it can attain to, is also a short one, so that when the next stimulus arrives for ventricular activity the muscle is found to have had a long rest, and responds with a strong contraction. Alternation of this kind may prevail for two or three beats after an extra-systole without casting any reflection on the cardiac musculature. If, on the other hand, it persists for a considerable time, either when brought on in this way or, as is supposed to be common, as a result of a weak contraction due to some other cause, it is regarded as of very grave prognostic significance, indicating, as it probably does, some serious weakness of the cardiac muscle.

A slight degree of persistent alternans is seen in the tracing now before you,* and in this case the gravity of the condition was borne out by the result. In the next tracing,* taken from a man suffering from aortic disease, there was a condition of well-marked alternation, without, so far as I was able to detect, any provocative extra-systoles. Half an hour afterwards, as the lower tracing shows, the alternation had passed off. In this case the man lived for nearly eighteen months. The next tracing* was taken in the case of a woman of about 55, who was the subject of myocardial degeneration, and who died with increasing signs of cardiac failure. Here there is well-marked alternation of the pulse; but it is interesting to note that the discrepancy in the length of the successive pulse spaces is in some degree due to a similar discrepancy in the interauricular periods, and therefore cannot be altogether attributed to a delay in transmission associated with a weak contraction of the ventricle.

I am glad to be able to say that sometimes a patient with well-marked alternation of the pulse does so well as to lessen the pessimism one usually feels in the face of

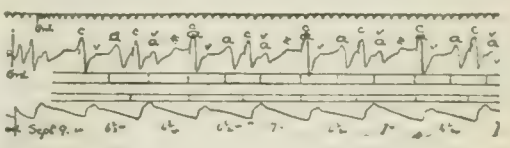


Fig. 23.

this symptom. The patient from whom this tracing (Fig. 22) was taken was a woman the subject of renal disease. The alternation was so marked that in some parts of the tracing each alternate beat fails to appear in the radial. The alternation is of the true variety; the small beat is separated from its predecessor by a longer interval than it is separated from the beat which follows it, and yet this patient did well. After leaving the hospital she had a hard time; her husband got locked up for some offence, and she with her family had to go to the workhouse, by no means a luxurious one, where she had to work hard. She had become pregnant, and gave birth to a healthy child, yet two years afterwards I saw her greatly improved and doing her housework.

Simulation of the Pulsus Alternans.

As this condition of pulsus alternans is rightly regarded as a sign of danger, it may be well for me to refer to a case of partial heart-block which I have put on record, and in which the phenomenon of alternation appeared under conditions which deprived it of its gravity. In the tracing now before you (Fig. 23) the alternation is well marked. It will be noted from the key between the jugular and radial tracings that every second ventricular contraction corresponds in time with a systole of the auricle; the question of whether the block is a partial or a complete one is not important in this connexion and may be waived. What it is important to notice is that the beat of the ventricle which coincides in time with the auricular systole expresses itself in the radial pulse by a wave which is at once small and somewhat delayed. This I have in part attributed to the handicap imposed upon the ventricle when it contracts at the same time as the auricle, which must drag on its base and lessen its

expulsive effect. I have said that I attribute the alternation in part to this, and only in part, because the patient had had a dose of $\frac{1}{30}$ grain of atropine; and the observations of Thayer and of Ritchie would appear to show that this drug may either cause alternation or reveal it if the muscle is in any way weakened. The tracings taken on the same day, but before the administration of the drug, did indeed show the phenomenon, but only to a very slight degree.

In view of the importance of recognizing with certainty the true pulsus alternans I now show a series of tracings

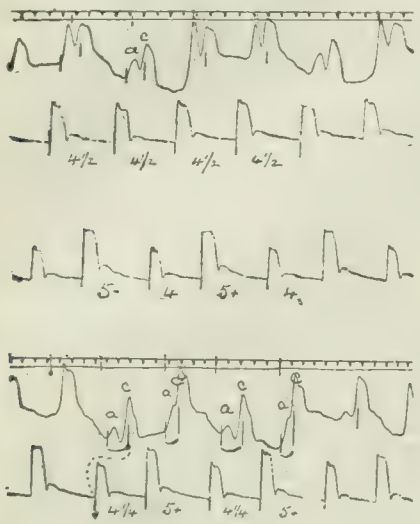


Fig. 24.

which demonstrate how closely this condition may be simulated by another which is not a herald of evil. The patient was an old man of some 70 years of age, a hawker by occupation, and somewhat of a character. He had some bronchial trouble, but was never seriously ill, and at no time did he cause me any anxiety. He steadily improved when in the infirmary under the good fare with which he was supplied, and he left us with many expressions of gratitude to resume his occupation. I show you three tracings which were taken on the same day (Fig. 24). In the uppermost of these the pulse is regular in force and in frequency and the A–C intervals are normal and uniform in length. In the second, which was taken within a few seconds, and from which I have with set purpose cut away the jugular tracing, we have, without any change in the pulse-rate, a condition which seems to comply with all the tests entitling it to be regarded as an example, and a very striking one, of the true pulsus alternans, the beats varying markedly in force and the time between the big beat and the small beat being much greater than that between the small beat and the large one. From the third tracing, in which the jugular record has been preserved, we begin to obtain some light on the real nature of the condition. Here we see that the A–C interval which precedes the small beat is always much longer than that which precedes the more forcible one. This raises the suspicion that during the longer pauses there may have occurred an extra-systole of the intercalated ventricular variety so feeble as not to show in the radial, and yet leading to a lengthening of the A–C interval and to a lessening of the strength of the following contraction. The next tracing (Fig. 25) shows that this is really the explanation. The early cycles are normal; then there comes an extra-systole of the intercalated variety, only just visible in the radial tracing; the next A–C interval is lengthened, being 1.6, as contrasted with 1.2, fifths of a second, and then comes a radial pulse, expressive of a ventricular systole, weaker than normal in respect of the brief rest which the muscle has enjoyed. An extra-systole of the ordinary ventricular non-intercalated variety follows, so that the explanation cannot be carried further in this tracing. The same sequence occurs in the latter part of the tracing—namely, an intercalated extra-systole, and then one of the more usual variety.

The strange irregularities which may result from the rhythmical and alternate occurrence of these two varieties of the ventricular extra-systole are well shown in the next tracing (Fig. 26). This begins with the apparent alternation I have described. Then an extra-systole of the ordinary variety occurs; that is to say, one which is not so premature, and which, therefore, does not allow the bundle of His time to recover its power of conduction. From this to the end of the tracing the rhythm is uniform, and the pulse waves fall into groups of singular similarity.

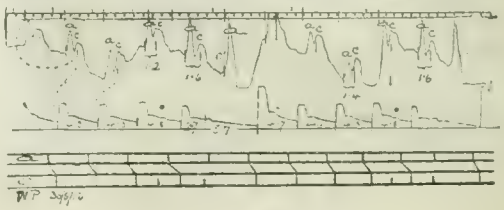


Fig. 25.

Each group begins with two physiological beats; then comes an intercalated extra-systole, not visible in the radial, sometimes, and sometimes only, influencing the jugular tracing, then another physiological beat, and then an extra-systole of the ordinary non-intercalated variety. On many days this was the prevailing form of allorrhythmia.

It will readily be understood that when the changes between this latter rhythm and the rhythm giving rise to the pseudo-alternans condition were frequent, and when, in addition, isolated extra-systoles occurred, the unaided senses might fail to recognize any rhythm at all, the pulse might be regarded as of the continuously irregular type, and the inference drawn that the auricle had passed into a condition of fibrillation. This, of course, was at no time the case, for the auricle always acted rhythmically and with perfect regularity.

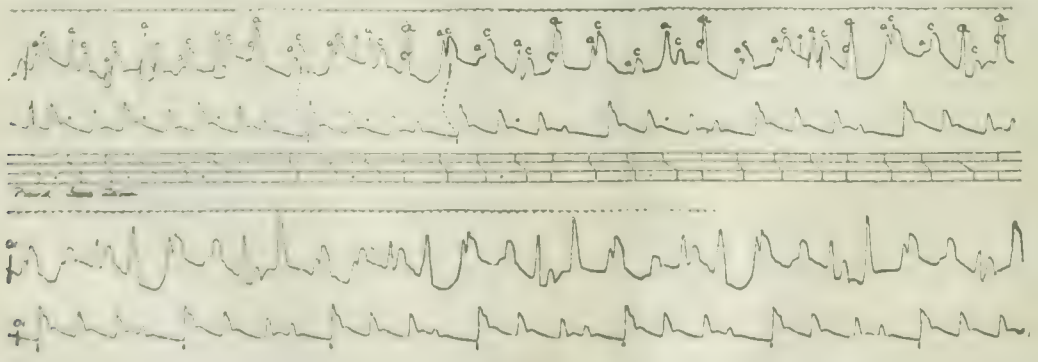


Fig. 26.

IMPAIRED AURICULO-VENTRICULAR CONDUCTIVITY AND HEART-BLOCK.

We have seen that the successive systoles of the ventricles of the heart are evoked by stimuli from the rhythmically contracting auricles, and that these stimuli reach the lower chambers of the heart by way of the auriculo-ventricular bundle. The facility with which impulses pass along this tract may be impaired to a greater or lesser degree, and in some cases no stimuli can pass at all. The conductivity of the bundle is influenced not only

by organic lesions, which may be acute or chronic, but by certain drugs, and therefore, probably, by some toxaemias, as well as by the nervous system. This tract is confidently believed to be the only path by which stimuli from the auricles can reach the ventricles, and complete destruction of it always causes complete dissociation of the rhythms of the upper and lower chambers of the heart. On the other hand, as the conducting functions of the bundle may be impaired or put in complete abeyance through the action of the nervous system, or, it may be, by organic lesions which our present means of investigation do not enable us to detect, it follows that there may be a complete dissociation of the rhythms of the auricles and ventricles without its being possible to demonstrate anything wrong with the conducting tissues of the heart.

Perhaps the simplest manifestation of impaired con-

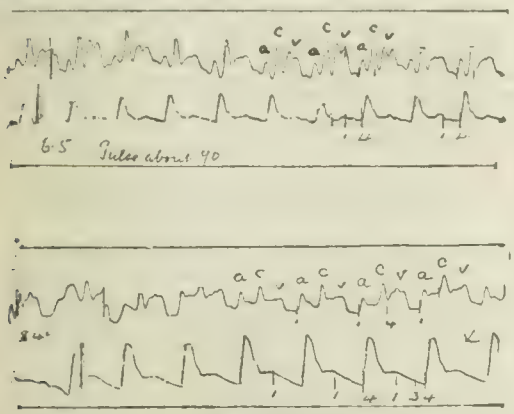


Fig. 27.

ductivity is that shown in the tracing now before you (see Fig. 2). It was taken from a young man who was admitted with slight rheumatism. There was evidence of slight regurgitation through the mitral valve, and the presence of a double diastolic sound at the apex made us suspect some organic disease of the segments which was probably recent as he had not suffered from rheumatism before. It will be seen that the wave c is here separated from the A wave by a considerably greater distance than is normal. As every stimulus from the auricle, though impeded in its passage, succeeds in reaching the ventricle, the rhythm of the pulse is not interfered with, and without the graphic method the condition could not have been detected. Immediately after the tracing I have shown you was taken, he had a hypodermic injection of $\frac{1}{100}$ gr. of atropine. This did not produce any effect of which he

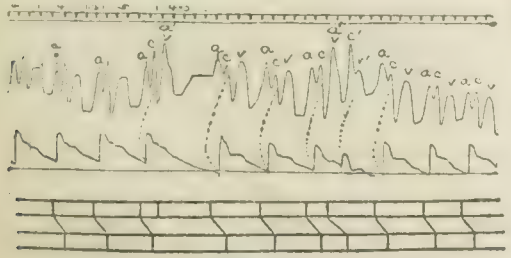


Fig. 28.

was conscious, but a tracing which was taken half an hour after the injection (Fig. 27, upper tracing) shows that the A–C interval has shortened and is now of normal duration. This shortening of the A–C interval is out of all proportion to the slight increase in frequency of the heart beats which was induced by the drug. The lower tracing was made three and a half hours after the injection, and here the A–C interval is again found to be lengthened, and the pulse-rate has fallen to what it was before the injection. These observations were made in April, 1910. The lad did well, and now leads an active life, going about all day on a bicycle soliciting orders on behalf of a firm of sewing-machine makers. There is still evidence of a slight amount of mitral regurgitation. A tracing taken on November 2nd, 1911, showed that his conductivity had by then become completely restored, for the A–C interval was of normal duration.

This effect of atropine in improving the conductivity of the junctional tissue when it is impaired was well seen in a case which I put on record some years ago. An aneurysmal dilatation of one of the aortic sinuses of Valsalva associated with syphilitic changes at the auriculo-ventricular junction was responsible for a considerable interference with the conducting functions of the bundle, which was manifested by a great lengthening of the A–C interval, and sometimes by the rhythmical blocking of stimuli from the auricle. The observation was made on a day when the auricular rate was 85; every fourth, or more usually every third, auricular stimulus failed to pass, and the A–C interval varied from a minimum of $1\frac{1}{5}$ to a maximum of $2\frac{3}{5}$ fifths of a second. One-fiftieth of a grain of atropine was given hypodermically, and a tracing was taken at the end of fifteen minutes. It was then found that every impulse passed, and, as might have been expected from

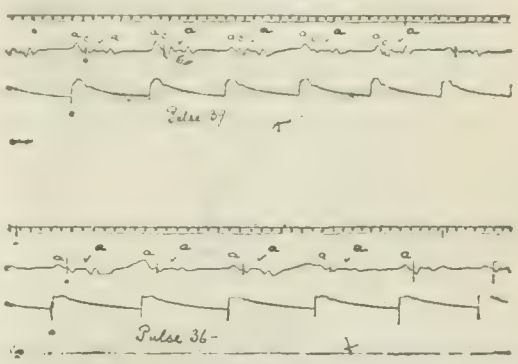


Fig. 29.

the absence of any blocking of stimuli, the A–C interval was uniform and had a duration of two-fifths of a second. The auricular rate had fallen to 70 per minute, and it might be suggested that the successful transmission of every stimulus was due to this. In about ten minutes, however, this totally unexpected diminution in frequency had passed off and the auricular rate had risen to 86—practically the same as it was before the injection—and still there was a complete absence of any blocking of auricular stimuli.

The next slide (Fig. 28) illustrates the occasional blocking of an auricular extra-systole in a case which did not present other evidence of impaired conductivity. Here, as is seen, most of the cycles are normal; the A, C, and V waves follow in normal succession, and there is no lengthening of the A–C interval. Towards the end of the tracing an extra-systole is seen; it is clearly of auricular origin, the premature A wave blending with the ventricular of the former cycle, which it profoundly modifies. In this case the stimulus gets through, though

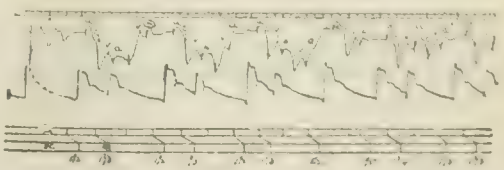


Fig. 30.

slowly, as is shown by the lengthened A–C interval, and the systole of the ventricle is expressed in the radial pulse as well as in the jugular. In an earlier part of the tracing an auricular extra-systole is shown which fails to reach the ventricle; here the jugular pulse is devoid of anything like the C or V wave and the radial pulse gives no indication of a systole of the ventricle. Long tracings were taken from this patient while an observer auscultated at the cardiac apex. The extra-systole was always heard when the evidence of transmission shown in the latter part of the tracing was present. When there was neither a radial wave at the wrist nor a C or V wave in the jugular pulse there was silence over the heart.

The next slide (Fig. 29) illustrates the condition described by Hewlett—namely, that of the blocking of rhythmically occurring auricular extra-systoles. The patient was an old man who had been observed by one of

my clinical scouts to have an infrequent pulse. The jugular tracing was difficult to obtain, but it will be seen that every second A wave is premature and fails to be followed by any manifestation of ventricular activity. It is of interest to note that when in this patient the occurrence of auricular extra-systoles was not observed, and when in consequence the strain on the conducting function was not so great, the blocking of stimuli was not so common, as is seen in Fig. 30.

From these instances of partial block let us now pass to a good example of the condition in which it is clear that no impulses are passing from the auricle to the ventricle. In the tracing now before you (Fig. 31) the auricle is seen to be acting at the rate of about 120 per minute, and the ventricles with perfect regularity at the rate of 26. A study of the mutual time relationships of the auricular

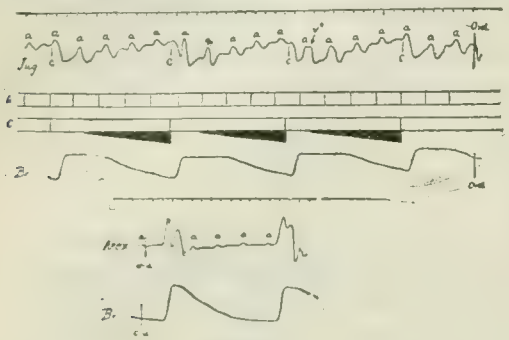


Fig. 31.

and ventricular systoles will show that these are pursuing rhythms which are entirely independent of one another. The ventricular musculature, as in the normal state, goes on building up contraction material, and, in the absence of any stimulus from the auricle, continues to do so until its own peculiar explosive point is reached. This is not attained so rapidly as in the case of the auricle, so that the ideo-ventricular rhythm is much slower than that of the auricle, being in this case, as we have seen, about 26. The tracing I have shown you is from the same patient who presented the unduly long A–C interval and the frequent blocking of auricular stimuli, and the onset of the phase of complete block was marked by the occurrence of the Adams-Stokes phenomenon. This syndrome is characterized by syncopic, epileptic or apoplectiform attacks associated with an undue infrequency of the pulse. Sometimes I hear the two terms, "Adams-Stokes disease" and "heart-block," used as if they were synonymous. The former is purely a clinical term; the latter means nothing more than that the auricular impulses are not passing to the ventricle. The sudden onset of heart-block is indeed likely to give rise to the phenomena described by Adams and Stokes; but patients are found with complete heart-block who have never had any [illegible] or allied attacks. On the other hand, the Adams-[illegible] syndrome is not confined to those who are the [illegible] of heart-block: it may occur in cases where the pulse is infrequent from other causes or where there is a temporary arrest of the action of the heart, and in this connexion a passing reference may be made to the slight convulsive movements sometimes seen at the onset of an ordinary fainting attack such as results from emotion.

It is clear that when a condition of complete heart-block prevails, the continuance of life must depend on the ventricle being able to take on its own rhythm, the latent possibility of which it is assumed has always existed. The more rapidly the condition comes on, the less likely is it that the ventricle will at once realize its powers; cases are on record in which the action of the ventricle has not been resumed for a surprisingly long period, and it may well be the case that some instances of sudden death are due to the onset of heart-block, the fatal result rendering it impossible for the true sequence of events to be demonstrated. On the other hand, when a condition of partial heart-block has prevailed over a long period, the ventricle may have been educated to use its latent powers; the blocking of one or more auricular impulses may have allowed the ventricle to go on accumulating contraction material to such an extent that it has entered into systole without awaiting the next stimulus from the auricle, so that when in the fullness of time the block has become complete the ventricle is found to have been successfully weaned from auricular supervision. It is therefore during the time that a condition of heart-block is developing that the most anxious symptoms are apt to show themselves. When

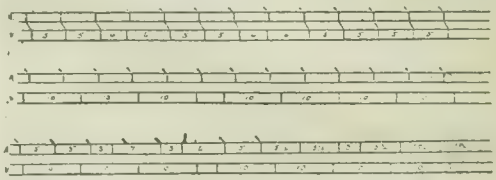


Fig. 32.

the block has been complete for some time and the ventricle has found itself, there may be a great increase in the comfort of the patient, and long life may follow.

It is not always easy to determine whether we have to deal with a complete or with a partial block. In making the attempt we must bear in mind the following considerations:

1. In complete heart-block the action of the ventricle is infrequent; it is usually below 40 per minute, and is often between 20 and 30.

2. The rhythm of the ventricle is regular. To this there is at least one exception, the peculiarity of which it is important to note. If a premature beat occurs, as may happen from time to time, the next ventricular systole appears after an interval which is the same as that separating the usual rhythmical beats from another; in other words, there is no compensatory pause. The reason for this will be clear from the diagram (Fig. 32). In the upper outline, where the ventricle is seen to be under the influence of the auricle, a premature beat is followed by a pause until the next stimulus comes down from the auricle. In the lower outlines the ventricle is left to its own resources; let us say it takes ten-fifths of a second, as a rule, to accumulate contractile material sufficient for what we may term a "spontaneous contraction." If for any reason the ventricle is caused to contract prematurely, it again builds up contractile material at the same rate, and so the next systole occurs at the end of two seconds. This guide is not always unequivocal, for the time following the extra-systole may not correspond strictly with that of the rhythmical beats; it may be a little longer or a little shorter.

3. There is seen to be no strict relationship between

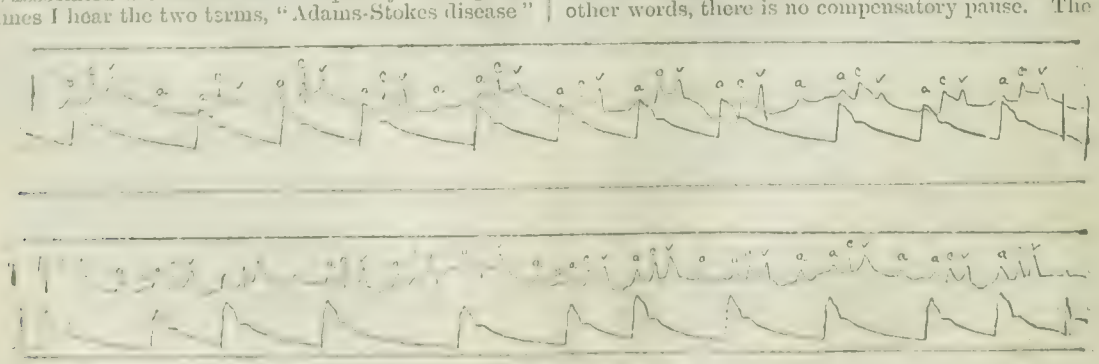


Fig. 33.

the systoles of the auricle and those of the ventricle, at least no relationship which would lead one to conclude that the one rhythm is dependent upon the other. Of course it is clear that if one compares two series of events each of which is pursuing a regular rhythm, it is always possible to assume a causative relationship between them, but if a long tracing is taken the true condition may be betrayed by the events of one series altering in frequency without those of the other series being affected. Instead of waiting for a spontaneous change in the frequency of the events of one or the other series, some drug, such as atropine or amyl nitrite, which increases the frequency of the auricular systoles may be given, and seeing whether this has any effect on the number of the ventricular contractions.

Fortified with these considerations, let us now, possibly with trepidation yet not without hope, examine the

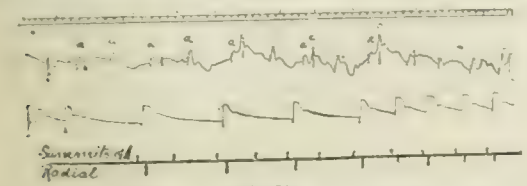


Fig. 34.

tracings of some of the cases which have come to my notice.

In the first tracing (Fig. 33) we have a pulse of about 25 to 30, which, considered apart from the rhythm, might make one think of a complete block. The rhythm is, however, irregular, and the irregularity in no way resembles the peculiar form found in cases of complete heart-block. Measurement shows that the pulse periods correspond in length approximately to two, to three, and in one case to four auricular periods. Examination of the jugular pulse in relation to the radial shows that this is due to the blocking of one, two, or three auricular stimuli respectively. The lack of precise correspondence between some of the pulse pauses and the corresponding groups of interauricular spaces is due to the greater shortening of the A–C interval after more than one auricular stimulus is blocked.

The history of this case is of interest. I saw the patient, in consultation with Dr. Crawford Watson of

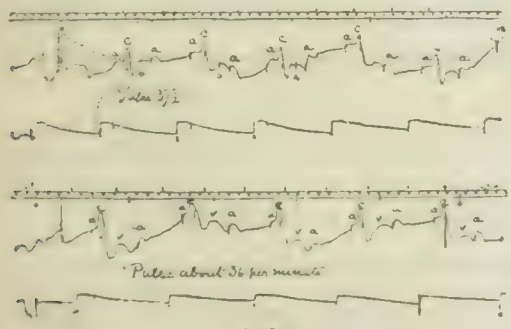


Fig. 35.

Harrogate, on July 10th, 1909. About the beginning of June he had complained of pain in the right shoulder, and he thought he might have strained the limb in starting his motor car, which he was in the habit of driving himself. This was followed by great pain, in the early hours of the morning, all round the chest and by some distinct gouty inflammation of the great toes. I sent the tracings to Dr. Mackenzie, thinking he might be interested to see them, especially as they were some of the first-fruits of my efforts to follow in his footsteps. Meanwhile the patient had improved and had left Harrogate. On July 23rd he was seen by Dr. Mackenzie himself, in consultation with his own medical man in the south, and at this time there was no manifestation of block. Within the last few months I have learnt the subsequent history of the patient. During the remainder of 1909 he continued ill; the pulse would be irregular for days together, at other times quite regular and not more than 34 per minute. During all this time he had pronounced gouty symptoms. These periods would be followed by phases lasting a week or two, during which the pulse was regular and about 70 per minute. In January, 1910, the gouty manifestations became much less marked, and since that time neither irregularity of the pulse nor any undue infrequency has been noted, though observations have been carried out over long periods to determine the existence of either. It does not seem unlikely, as his own medical man has suggested, that there may have been some gouty deposit in the junctional tissue interfering with the due passage of stimuli.

In September, 1910, I was consulted by a gentleman of 70 years of age for giddiness and swimming sensations in his head, which he had had for two years. There was dyspnoea on exertion. Some few days before seeing me he had lost consciousness for a short time. The pulse was not infrequent, the blood pressure was 140, the cardiac sounds were feeble, and there was a faint systolic bruit at the apex.

On December 27th, 1911, I saw him with his medical

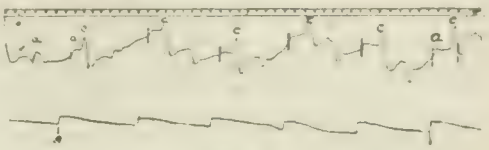


Fig. 36.

man. He had had several attacks of unconsciousness, preceded by peculiar sensations. The tracing I took on this occasion is shown on the screen (Fig. 34). The latter part of the tracing shows a pulse of about 66 per minute without any blocking of auricular stimuli. The earlier part of the tracing was not easy to interpret: either we had to deal with the rhythmical occurrence of extrasystoles so feeble as not to reach the pulse, or we had a condition of 2 to 1 heart-block, every second stimulus being arrested. In favour of the former view was the fact that some of the waves, referable to those contractions of the auricle the stimuli of which were supposed to be blocked, were followed by slight rises which might indicate that the ventricle also was in action. That there was silence during the long pulse pauses at the apex was in favour of the latter view, though I should note that the heart sounds were very feeble, and that the still feebler sound of an extra-systole might have been overlooked.

I saw him again on January 30th. He had been out from time to time, but lately the symptoms had become worse. He had had a great many "waves," as he termed them, when he felt as if he were about to lose consciousness. In addition to these there had been a great many attacks definitely associated with loss of consciousness

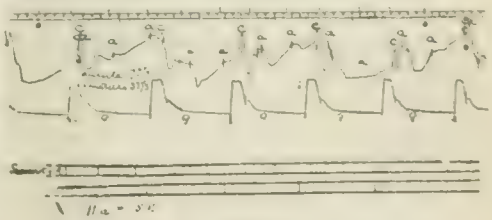


Fig. 37.

and with convulsions. There had been scores of these within the limits of one day. He was lying quietly in bed looking moderately comfortable but rather apprehensive, as if afraid of moving, as indeed he said was actually the case. The tracings I obtained at this time (Fig. 35) show a pulse of about 36 or 37, and a condition which at first sight would appear to be most readily explicable on the basis of a 2 to 1 heart-block. Every second auricular stimulus might be regarded as blocked and the uniformity of the A–C intervals in each tracing would lend confirmation to this view. But this is not the correct explanation; the case was at this time one of complete heart-block. Note in the first case that the A–C intervals, though uniform in each tracing, are rather shorter in the second tracing than in the first. This in itself requires explanation; but the chief evidence of the completeness of the block is furnished by the continuation of the lower of the two tracings which I now throw on the screen (Fig. 36). The pulse-rate has now risen to about 39, but the auricular rate has increased out of proportion to this, with the result that two interauricular spaces correspond to less than one

pulse period, so that as we pass along the tracing we find the A–C interval steadily lengthening and there ceases to be simple relationship between the auricular rhythm and that of the ventricles.

From this time he improved steadily. His general condition is now excellent, and subsequent tracings have invariably shown a condition of complete block. With singular uniformity the pulse beats at 30 to 33. Very occasionally a premature beat occurs which is not followed by a compensatory pause. A tracing taken at a later date (Fig. 37) shows 11 interauricular spaces to 5 pulse periods and the gradually falling back of one series of A waves from the C wave in front of them, and the gradual falling back of the other series, so as to approach, then to blend with, and finally to precede the V wave is well seen. On one occasion I found that 18 pulse periods corresponded to 37 interauricular spaces, so that his relative recession of the A wave was much more gradual.

The next tracing (Fig. 38) is from the case of a member of our own profession, and was taken when the patient was 81 years of age. The ventricles were beating at 40 and with great regularity, as all the pulse periods are seven and a half fifths of a second, except the few which are marked otherwise. The auricular beats are rather less than half the number of those of the ventricles; they have no constant relationship to the ventricular beats, and we have here the additional evidence of the block being complete, in the fact that the auricular rhythm is markedly irregular but that there is no reflection of this irregularity in the pulse.

There is another peculiarity in the tracing to which I desire to call attention. When a premature contraction of the auricle occurs it is followed by an interval which is seldom longer than those which separate the systoles of the auricle which occur about the same time. Now it is possible that this may represent nothing more than a sinus arrhythmia; but as it is clear that there is a profound interference with the conducting functions of the heart, I venture to suggest the possibility of another explanation, which I admit is highly problematical, and which I advance purely in the hope that others may meet with cases to confirm or to confute it. We have already seen that in complete auriculo-ventricular heart-block premature contractions of the ventricle are not followed by any compensatory pause. Let us apply the explanation of this to the possibility of a sino-auricular block, as suggested by the lower outline in the diagram I have already used (Fig. 32). When the sinus rhythm is dominant, we have seen that a premature contraction of the auricle is followed by a pause which is more or less complete according as the stimulus does not or does pass back to disturb the rhythm of the sinus. If, as the latter part of the diagram shows, the auricle may be supposed, in consequence of a block, to be emancipated from the influence of the sinus, a premature beat on its part would be followed by an interval of the usual interauricular length.

The patient was a man of active habits, and up to the time of his death, which occurred two years afterwards, was in the habit of walking some five miles a day. His daughter told me that as long ago as the early Seventies she remembers her father being subject to peculiar attacks. Sometimes when making up medicine in his surgery he would suddenly, after apologizing to those who were present, lie down on the floor for a few minutes as if overcome by a feeling of faintness, and then resume his work as if nothing had happened. Of these attacks the patient had no recollection during all the time, some two years or more, that he was under my immediate observation. I saw him about eighteen years ago, when he had influenza, and my notes show that during the moderate fever which prevailed his pulse varied from 104 to 112. What the pulse-rate was in the interval I cannot tell. He had often had attacks of giddiness, but of late years these had got much less frequent, and for some time they had ceased. There was some tendency to cyanosis; the arteries were very atheromatous; the systolic blood pressure was as high as 260, and about the end of May of this year, though he was still rather a wonderful man for his age and continued his active habits, he appeared to me to be failing. I was asked to see him early in June

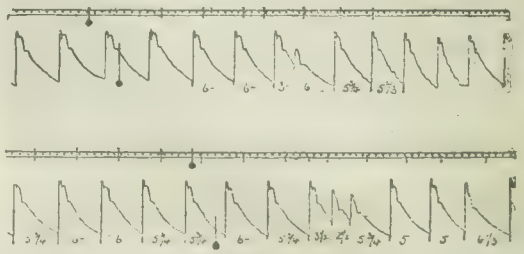


Fig. 39.

by his medical attendant. He was clearly suffering from pneumonia of a low type, and he died at the end of the sixth day. A tracing taking of the radial pulse on the third day of his illness (Fig. 39) shows that the pulse-rate had risen to about 50, and it never rose above 60. The upper tracing shows a premature systole, and the lower two in succession, without in either case a compensatory pause.

Mr. A. M. Kennedy, of the Pathological Institution of the Glasgow Royal Infirmary, kindly undertook the examination of the heart. He reports that there is very considerable pathological change in the vicinity of the A–V node and bundle, the latter being practically enclosed in a stiff sheath, which sends strands into its substance. There is fatty infiltration of the bundle, arterial thickening, and periarterial fibrosis. The continuity of the bundle is, however, not completely interrupted. He has reserved the examination of the sino-auricular node and region, so it remains to be seen if there is any pathological justification for my clinical speculations as to the possibility of a sino-auricular block.

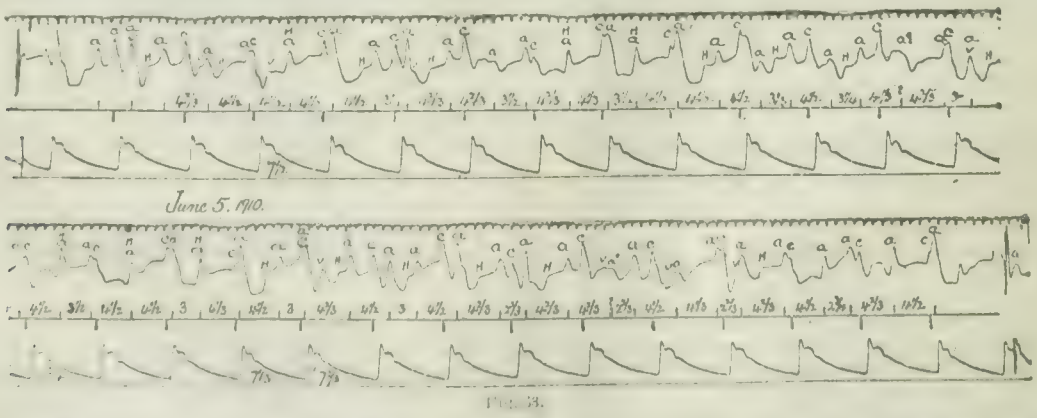


Fig. 38.

AURICULAR FIBRILLATION.

In the admirable series of lectures delivered by Dr. Mackenzie last year the subject of auricular fibrillation, with which his name and those of Dr. Lewis and Professor Cushny are honourably associated, was so fully gone into that I need not do more than say that all my work has tended to confirm the extraordinary frequency of this form of cardiac failure, and that I fully share the view that there is no class of case in which the use of digitalis is attended with a greater amount of benefit.

In view of the confirmatory evidence afforded by the brilliant electro-cardiographic work of Dr. Lewis, we are

now able definitely to condescend upon a diagnosis of auricular fibrillation from the presence of a pulse of the continuously irregular type, coupled with an absence of all evidence pointing to rhythmical contraction on the part of the auricles.

1. There will be an absence of any wave indicative of auricular action in tracings taken from the cardiac apex, but the value of this as a negative indication must be discounted in view of the fact that a rhythmically acting auricle does not always leave its mark in cardiographic records.

2. Should the patient be the subject of stenosis of the mitral valve, the absence of an auriculo-systolic bruit will be important. Perhaps it is unnecessary to point out that in the nomenclature of mitral bruits the two terms "presystolic" and "auriculo-systolic" are frequently used as if they were synonymous. This is misleading and without justification. If the former term is to be used with accuracy, or if it is to be of any use at all, it should be applied to a bruit only, because it immediately precedes the first sound; there must be no space of time between the end of the bruit and the occurrence of the first sound. Now it is true that a bruit of this rhythm is often due to the systole of the auricle driving blood through the narrow mitral orifice. We must remember, however, that even in the absence of auricular activity, blood will pass from the auricle to the ventricle from the moment at which the latter enters into diastole until the pressure is equal in the two chambers. If there is a narrowing of the mitral valve, then, depending on the vigour of the flow, and it may be

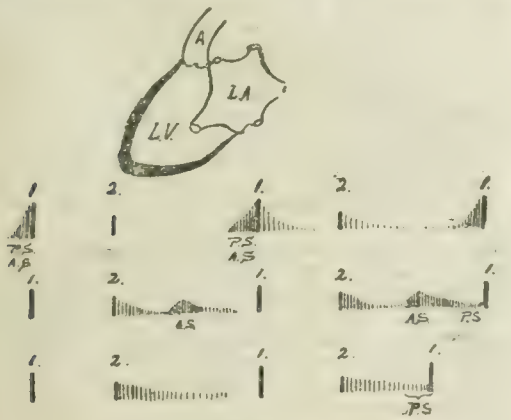


Fig. 40.

upon other considerations, there will be a bruit, the whole of which will be clearly ventriculo-diastolic. If the cardiac action is infrequent, the pressure will become equal in the two chambers of the heart before the next systole of the ventricle occurs, and the bruit will be separated from the following first sound by a period of silence. If, on the other hand, the heart is acting with greater frequency it may well happen that the next systole of the ventricle becomes due before the pressure in the two chambers has become equal, and before the sound produced by the flow of blood has come to an end. Such a bruit is entitled, at least so far as its terminal part is concerned, to the name of "presystolic," unless, indeed, we illogically read into this term more than it ought to convey. The term "auriculo-systolic" applied to a mitral bruit ought to be used merely to indicate that the sound is caused by the systole of the auricle. It is true that an auriculo-systolic bruit is usually presystolic in rhythm, but it is by no means necessarily so, for in cases in which, in consequence of impaired auriculo-ventricular conductivity, the systole of the ventricle does not follow that of the auricle for some time, the auriculo-systolic bruit may be separated from the following first sound and lose all title to the name of presystolic. These points are indicated in Fig. 40. In the first line the auricle acts at its usual time; in the second there is impaired conductivity, and in the third there is fibrillation of the auricle. From this it will be seen that while it is impossible for an auriculo-systolic bruit to exist when the auricle is in a state of fibrillation, that condition is quite compatible with the presence of a bruit, to which the term "presystolic" may be correctly applied. I refrain from any discussion, based on the character of the sound produced, on the distinction between an auriculo-systolic bruit and one which is merely due to the passive flow of blood from auricle to ventricle, though the distinction is important, for it is the absence of the former bruit that is of any value in this connexion.

3. There will also be an absence from the jugular pulse of any wave referable to the contraction of the auricle. Other waves of ventriculo-diastolic rhythm may indeed be present, but the examination of a tracing of some length will always enable one to distinguish between these waves and waves which are due to the rhythmical activity of the auricle.

A good example of the condition is seen in the two tracings I now show you. The first (Fig. 41) was taken when the rhythm of the heart was regular, except for the occurrence of an occasional extra-systole. The large wave marked "A" is clearly that due to the rhythmical con-

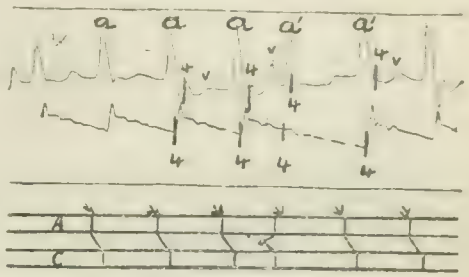


Fig. 41.

traction of the auricle. The next tracing (Fig. 42), taken some fifteen months afterwards from the same patient, is characterized by a rhythm of the continuously irregular character, and by there being now no evidence of auricular activity. Some small waves during the diastolic period probably indicate the fibrillation of the auricle.

A more striking case is recorded in the following slides.* In former years I had seen the patient when his cardiac action was regular, and I have tracings which show the regular rhythmical action of the auricle. He was admitted into the infirmary in infinite distress, and the first tracing shows a condition of delirium cordis. He was at once put upon digitalis, and at the end of sixteen days the second tracing was taken. This shows the continuously irregular pulse and the absence of any wave in the jugular pulse referable to the auricle. The continued use of digitalis for five days more was associated with a

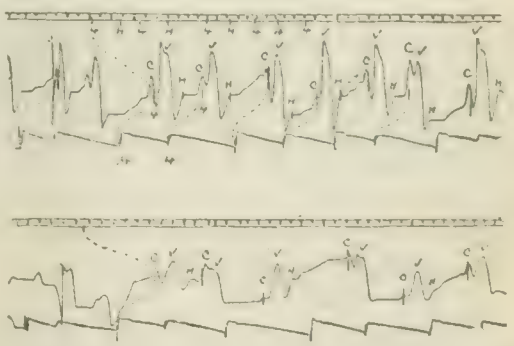


Fig. 42.

tendency to the appearance of coupling of the cardiac beats. There is still irregularity of the cardiac action, but there is this approach to a rhythm that, when the coupling is present, the second element of the pair of contractions follows the first with singular regularity.

This peculiar tendency to coupling of the beats is also well seen in the next two tracings taken from a patient who was comfortable under the full use of digitalis. In the first tracing (Fig. 43), with the exception of two single beats about the centre, the double rhythm prevails. The second beat does not show in the radial pulse; it is followed by a well-marked "v" wave in the jugular, and this is also seen after the solitary beats referred to already. The second beat of a couple follows the first at a constant interval; the intervals between the second beat of the couples and the following beat, as well as the intervals between the single contractions of the ventricle, vary in

length in a non-rhythmical manner. It is held that while this irregularity persists the ventricle is still responding to non-rhythmical stimuli from the auricle, but that the second contraction of the couples is in each case in some manner dependent on the first. When, on the other hand, the tracing is of the character of the one I now show

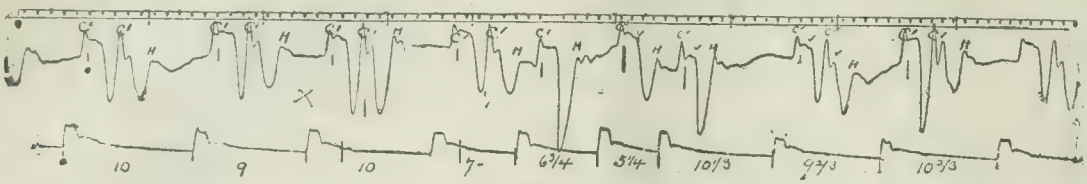


Fig. 43.

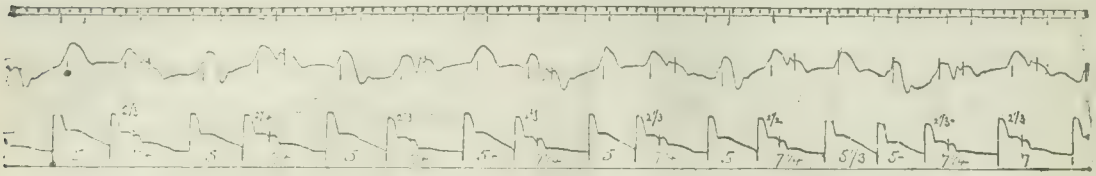


Fig. 44.

(Fig. 44), it is held that a condition of complete heart-block has been induced by the use of the digitalis. If we eliminate the premature systoles, each of which is held to be due as before to the systole immediately preceding it, we find that the heart is acting regularly. The premature

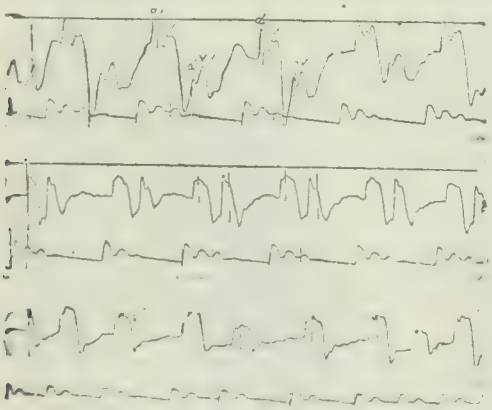


Fig. 45.

beats are followed by pulse spaces of about the same length as those between the ordinary contractions of the ventricle seen in the same tracing, an additional point in favour of the existence of a complete block. This is an explanation, however, which does not altogether satisfy my mind. I am unwilling to admit a condition of complete heart-block when, apart from the incidence of the premature systoles, the heart is beating at 60 per minute, especially when to account for the continuous irregularity shown in the former tracing, and at a time when the number of beats per minute was fewer, we have had to regard the block as only a partial one.

Although this peculiar coupling of the cardiac beats in cases where the auricle has entered into a condition of fibrillation is more usually due to the action of digitalis than to any other influence, it may occur in those who have never had a single dose of this drug. The tracings which I now show you (Fig. 45) prove this. In the first, which is from the jugular and the radial, there is seen to be no wave referable to the systole of the auricle. This fact, along with the existence of some irregularity of the pulse, makes it clear that the auricle is in a condition of fibrillation. The coupled rhythm prevails.

The second and third tracings are from the apex and radial, and show respectively the coupling of beats and the condition when this was not present. I never watched this patient for any length of time on any occasion without finding the rhythm change from one variety to the other several times, and he was under my observation for many months.

There are, indeed, many problems associated with the condition of auricular fibrillation which yet await solution, and among these must rank the exact nature of the handicap which its incidence imposes on the action of the heart in carrying on the circulation, but I am confident that these and many others will yield their secret to a continuance of the careful investigations to which they have already been subjected.

And now, gentlemen, it only remains for me to thank you for your patience and for your kindness and consideration. If, as I fear, I have kept you too long, that kindness and consideration have been ill requited. Perhaps to me the time has not appeared so long, for, as Isaac Walton says, "Good company in a journey maketh the way to seem the shorter."

ON THE LENGTH OF LIFE OF THE RAT-FLEA APART FROM ITS HOST.

BY

WILLIAM NICOLL, M.A., D.Sc., M.D., D.P.H.,

[illegible] HART MEMORIAL [illegible] OF THE BRITISH MEDICAL ASSOCIATION, [illegible] OF PREVENTIVE [illegible].

It is unnecessary to make any lengthy reference to the important part which fleas may play in spreading disease, not only amongst men, but also amongst animals. They have been shown to be intimately connected with bacterial, protozoal, and even with helminthic infections, and for this reason it appears desirable that we should have as complete knowledge as possible in regard to their life-history, and especially in regard to such points as may be of importance in their relation to the spread of disease.

Under ordinary circumstances, when in more or less close association with its host, the rat flea (*Ceratophyllus fasciatus*) passes though its developmental cycle in from two to three weeks. The rapidity of development is considerably affected by the environmental conditions, of which the chief appear to be the temperature and amount of moisture. In warm, damp weather the developmental period may be as short as ten days. Under unsuitable conditions it may be greatly prolonged.

With regard to the actual length of life of adult fleas, the Plague Commission in India found that the Indian rat flea (*Xenopsylla cheopis*) might remain alive for at least forty-one days when fed on rat's blood, but only twenty-seven and twenty days when fed on human and guinea-pig's blood respectively. Without food the fleas did not live longer than fourteen days when moisture was present, and only six days in the absence of moisture.

Gauthier and Raybaud record some experiments in which they kept a rat-flea (*Ceratophyllus*) alive on human blood alone for ninety days. They also found that at low temperatures fleas might live for a considerable length of time without feeding at all. In one experiment a flea remained alive in the ice-chamber for forty-one days without feeding.

The experiments to be described were directed chiefly towards determining how long adult fleas might remain alive without food under various conditions. Some experiments, however, were also made with larvae, in order to decide to what extent exactly their life might be prolonged under adverse conditions. The former set of experiments

was conducted as follows: Fleas were removed either directly from a rat or from the material in the rat-cage. They were then transferred to small, clean, dry flasks, in the bottom of which was placed a small quantity of sterilized sand. The mouth of the flask was loosely plugged with wool. In certain cases the wool plug was slightly moistened from day to day, and in others a trace of moisture was added to the sand at the beginning of the experiment. The conditions of light and temperature were also varied. The flasks were carefully examined at least once every day, and a count made of the fleas still alive.

As a rule, 7 fleas were used in each experiment, and altogether 89 experiments, involving a total of 638 fleas were performed. In the first experiment the number of fleas living from day to day was not noted, but in all the others an accurate record was kept. In the majority of cases the flasks were kept at ordinary room temperature, which, during the daytime in summer, varied from 15° to 23° C., and in winter from 10° to 17° C.

TABLE I.—*Showing Effects of Light and Darkness.*

	Date.	No. of Fleas.	Average Length of Life.	Longest.	
			Days.		
1	[illegible]	12	[illegible]	40	Light.
2	Jan. 17th, 1911	12	7.0	25	Light.
3	Jan. 24th, 1911	12	6.9	15	Dark.
4	Feb. 1st, 1911	6	11.0	22	Light.
5	Feb. 18th, 1911	6	4.8	13	Light.
6	.. ..	6	4.3	8	
7	[illegible]	6	3.3	5	Dark.
8	.. ..	6	3.8	4	Shade.
9	.. ..	6	6.1	8	Shade.
10	.. ..	6	6.3	11	
11	[illegible], 1911	9	2.4	4	Light. No sand.
12	.. ..	9	3.8	10	Dark. No sand.
13	.. ..	8	2.7	5	Shade. No sand.
14	June 15th, 1911	6	3.8	7	Shade. Dry sawdust and bread.
15	June 16th, 1911	6	7.1	19	Shade. Sawdust, bread, faeces.
16	June 17th, 1911	8	4.7	10	Shade. Sawdust.
17	Oct. 4th, 1911	6	7.8	12	Light.
18	.. ..	6	9.3	15	Light.
19	.. ..	6	6.3	9	Dark.
20	.. ..	7	9.1	17	Dark.
21	.. ..	7	5.1	10	Shade.
22	.. ..	7	6.4	7	Shade.
23	Oct. 18th, 1911	8	8.6	18	Light.
24	.. ..	8	8.1	21	Light.
25	.. ..	8	7.5	15	Dark.
26	.. ..	8	3.5	8	Dark.
27	.. ..	8	4.3	8	Shade.
28	Oct. 18th, 1911	8	4.8	8	Shade.
29	Nov. 16th, 1911	7	14.8	20	Light. Moisture added.
30	.. ..	7	15.5	25	Light. Moisture added.
31	.. ..	7	11.2	24	Dark. Moisture added.
32	.. ..	7	16.2	24	Dark. Moisture added.
33	.. ..	7	10.0	18	Shade. Moisture added.
34	.. ..	7	12.4	19	Shade. Moisture added.
35	Dec. 11th, 1911	7	6.1	9	Light.
36	.. ..	7	6.8	8	Dark.
37	.. ..	7	6.0	12	Shade.
38	.. ..	7	10.2	19	Light.
39	.. ..	7	8.4	14	Dark.
40	.. ..	7	7.5	11	Shade.
41	Jan. 8th, 1912	7	8.7	13	Light. Slightly [illegible]

TABLE I (*continued*).

	Date.	No. of Fleas.	Average Length of Life.	Longest.	
			Days.		
42	Jan. 8th, 1912	7	9.0	13	Dark. Slightly [illegible]
43	.. ..	7	5.0	14	Slightly [illegible]
44	.. ..	7	5.4	9	Light. Very damp.
45	.. ..	7	3.8	7	Dark. Very damp.
46	.. ..	7	4.2	7	Shade. Very damp.
47	Jan. 18th, 1912	7	5.4	12	Light.
48	.. ..	7	5.8	14	Dark.
49	.. ..	7	4.5	11	Shade.
50	.. ..	7	3.4	8	Light.
51	.. ..	7	5.4	8	Dark.
52	.. ..	7	2.4	5	Shade.
53	Jan. 31st, 1912	7	9.2	20	Light.
54	.. ..	7	3.0	11	Dark.
55	.. ..	7	5.5	11	Shade.
56	.. ..	7	3.2	12	Light.
57	.. ..	7	1.5	6	Dark.
58	.. ..	7	2.2	11	Shade.
59	[illegible]	7	4.0	5	Light.
60	.. ..	7	3.8	7	Dark.
61	.. ..	7	3.1	8	Shade.
62	.. ..	7	7.1	14	Light.
63	.. ..	7	6.5	11	Dark.
64	.. ..	7	6.4	11	Shade.
	Total ...	463	6.3	40	

In addition, the following experiments were undertaken to ascertain the effect of keeping fleas continuously at low temperatures. Control experiments were made at room temperature with the same batch of fleas. In one set moisture was supplied by introducing each day a pellet of fresh rat's faeces:

TABLE II.—*Showing Effect of Low Temperatures.*

	Date.	No. of Fleas.	Average Length of Life.	Longest.	
			Days.		
65	June 13th, 1912 ...	7	6.0	10	Temp. 18° C. Light. Without faeces.
66	.. ..	7	7.7	10	Temp. 18° C. Shade. Without faeces.
67	.. ..	7	38.4	59	Temp. −1° C. Without faeces.
68	.. ..	7	39.7	52	Temp. 8° C. Without faeces.
69	.. ..	7	8.2	21	Temp. 18° C. Light. With faeces.
70	.. ..	7	9.7	17	Temp. 18° C. Shade. With faeces.
71	.. ..	7	22.7	74	Temp. −1° C. With faeces.
72	.. ..	7	43.1	67	Temp. 8° C. With faeces.

In a third series the fleas were maintained continuously at a high temperature (37°), and at an intermediate temperature (24°). (See Table III. p. 928.)

From these figures several interesting conclusions may be drawn:

1. The average length of life of *Ceratophyllus fasciatus* apart from its host under general circumstances, is just under seven days, but about 9 per cent. live for a fortnight and at least 2 per cent. for three weeks or over (of 505 fleas 46 lived at least fourteen days and 10 at least twenty-one days).

TABLE III.—*Showing Effect of High Temperatures.*

	Date.	No. of Fleas.	Average Length of Life.	Longest.	
			Days.		
73	Aug. 26th, 1911 ...	7	5.0	9	Temp. 24°.
74	" "	7	4.7	9	Temp. 24°.
75	" "	7	4.0	7	Temp. 24°.
76	" "	7	4.1	6	Temp. 18°.
77	" "	7	9.1	16	Temp. 18°.
78	" "	7	Few hours	less than 24 hours	Temp. 37°.
79	" "	7	"	"	Temp. 37°.
80	" "	7	"	"	Temp. 37°.
81	Aug. 27th, 1911 ...	7	"	"	Temp. 37°.
82	" "	7	"	"	Temp. 37°.
83	" "	7	"	"	Temp. 37°.
84	Aug. 28th, 1911 ...	7	"	"	Temp. 37°.
85	" "	7	"	"	Temp. 37°.
86	" "	7	"	"	Temp. 37°.
87	Sept. 2nd, 1911 ...	7	"	"	Temp. 37°.
88	" "	7	"	"	Temp. 37°.
89	" "	7	"	"	Temp. 37°.

2. Other things being equal, they live longer in winter than in summer, that is, longer at low temperatures than at high. Under ordinary circumstances, when the temperature is over 15° C. for any considerable part of the time, it would be exceptional for them to live, without feeding, for more than forty days, but, from experiments 65 to 72, it is evident that in winter, when the temperature remains continuously under 10° C. (50° F.), they may remain alive for as long as two months, and if the temperature is maintained continuously at freezing point this period may be extended to over ten weeks.

3. Above 25° C. the length of life is greatly curtailed, and at 37° C. it is always less than twenty-four hours, though in some cases more than twelve hours.

4. Both excess of dryness and excess of moisture curtail the length of life.

5. Conditions of light do not appear to have any great influence, but in these experiments the fleas exposed to bright daylight lived on an average slightly longer than those kept in darkness or in the shade, the average figures being respectively 6.9, 6.6, and 5.8 days.

6. In the experiments which were done to determine whether the fleas could live longer when removed directly from the rat or from the material in the rat-cage, it was found that in the latter case the average length of life was two and a-half days longer, the average figures being 4.1 and 6.8 days respectively.

With regard to the length of life of larval fleas, some observations I was able to make may be of interest:

1. On September 14th, 1910, a rat in one of the flea cages died and the contents of the cage, consisting of gram, sawdust, [illegible] and containing a large number of fleas and larvae, were removed and put into a tall glass vessel, which was [illegible] and placed in a cupboard. On examining this vessel two months later it was found that the number of fleas did not appear to have materially decreased. On December 19th quite a number of active fleas were present, and on January 29th, 1911, a few still remained. Observations were continued throughout February, and on February 17th a few fleas were observed, but this was the last date on which any were seen, although periodical observations were made throughout March, April, and May.

2. [illegible] was started on December 5th, 1910. Observations were made once a week and it was found that [illegible] rapidly fell off towards the end of [illegible] during February. Thereafter [illegible] until May 24th, when [illegible] and in [illegible] up till the [illegible] red, although [illegible]

[illegible] was started on [illegible] of the [illegible] number [illegible] with two young rats free from fleas. The fleas settled on the rats, but not with such avidity as was expected. One rat died within twenty-four hours, the other the following day. Bacteriological examination of the blood and intestine of the rats did not afford any clue as to the cause of death. On November 28th only one flea was seen. It was removed and died shortly afterwards. In December, however, a number of fleas made their appearance, and on January 30th several fleas and larvae were observed. Next day five fleas were removed and placed in a large jar with a young rat free from fleas. The fleas attacked the rat almost immediately. Five days later the rat died. Bacteriological examination again was negative, though, it must be remarked, no anaërobic cultures were made. There were no marked *post-mortem* appearances. In this case a control rat from the same brood was used and placed under the same conditions as the first, but without fleas. It remained well. On February 5th, when the first rat died, the second was placed in the jar from which the first was removed. It remained alive and well for three months. During the first month no increase in the number of fleas could be detected, but thereafter the number gradually increased until, at the end of another six weeks, the jar contained a very large number of fleas.

The original material in the above experiment was kept until April 3rd, when, on repeated examination, no fleas or larvae could be observed.

In all the foregoing experiments the material used was comparatively dry, and in the course of time it became as dry as dust in the upper layers, although there was usually an appreciable degree of moisture in the bottom of the vessel. In two other experiments, however, the original material was obviously damp. In the first of these the fleas had disappeared entirely at the end of two months. In another month the material was covered with white mould and no fleas or larvae were seen then or at any later period. The second experiment had practically the same result.

In a third set of these experiments 30 fleas were removed from the rat cage and placed in a large vessel containing some comparatively dry, clean bran. In each case in the course of a month the fleas had entirely disappeared and no larvae or pupae could be detected in the bran. The same result was obtained when fleas from Experiments 2 and 3 of the first set were used. This appears to show that under these circumstances the fleas did not breed.

From these experiments the following conclusions may be deduced:

1. Material infected with fleas and larvae may remain infected for as long as a year.

2. This appears to be due to the fact that the larval and pupal stages in the development are greatly prolonged under the adverse conditions. Dampness, however, rapidly kills off both fleas and larvae.

3. No direct evidence was obtained that the fleas bred under these conditions; but the appearance of larvae towards the end of some of the experiments suggests that they did breed to some extent.

4. Fleas derived from the infected material readily attacked rats, and proceeded to multiply in the course of a short time.

REFERENCES.

[1] Reports on Plague Investigations in India, xxix. Observations on the Bionomics of Fleas, with special reference to *P. cheopis*, *Journal of Hygiene*, viii (2), 1908, pp. 236-259. [2] J. C. Gauthier and A. Rayband (1909), Influence des conditions de milieu sur la survie des puliciides, *Compt. rend. soc. biol.*, Paris, lxvii, pp. 861-4.

THE number of persons bitten by animals, either rabid or under strong suspicion of being so, in Prussia during the year 1911 was 231, as against 247 in 1910. Of that number 225 were inoculated—some in the Koch Institute, Berlin, and others at the Breslau University Institute of Hygiene. One patient died before the course of treatment could be completed, another from sepsis following an abscess which developed at the site of the bite. Of the total number of persons bitten by animals certainly suffering from rabies, who were treated from 1906 to 1911, 18 died, a mortality of 1.49 per cent.

THE Congress of the International League against Epilepsy was held at Zurich on September 6th and following days. Delegates from the United States and from Russia attended, and many of the leading neurologists of Switzerland, Germany, France, Austria-Hungary, Denmark, and Holland were present. Among the chief subjects of discussion were diet in the treatment of epilepsy, the relation between tuberculosis and alcohol, and operative treatment. A full account of the proceedings will appear in *Epilepsia*, the organ of the league. Dr. Weeks, of New Jersey, was elected president in succession to Professor Tamburini, of Rome.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF MEDICINE.

Professor T. R. GLYNN, President.

PRESIDENT'S INTRODUCTORY REMARKS.

PROFESSOR GLYNN confined his introductory remarks to the expression of a few words of welcome, and then called for the opening of the first discussion.

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF EARLY CARDIAC COMPLICATIONS OF RHEUMATISM.

OPENING PAPER.

By DAVID B. LEES, M.D.Cantab., F.R.C.P.Lond.,
Consulting Physician to St. Mary's Hospital, London.

I HAVE been honoured with a request to open a discussion this morning on the subject of the diagnosis and treatment of early cardiac complications of rheumatism, and it has been intimated to me that what is desired is not a short monograph on the subject, but the statement of a few definite propositions which may serve as a basis for discussion. This must be my excuse for what may perhaps appear to some of my auditors as too dogmatic statements. If they are too dogmatic, they will no doubt receive due correction in the course of the debate. But I may at all events claim that they are founded on careful observation carried on for nearly fifteen years in the wards of the Hospital for Sick Children, Great Ormond Street, and for twenty years at St. Mary's Hospital.

I.

My first proposition is that the disease which, for want of a better name, we still call "acute and subacute rheumatism," is a bacterial infection, most common and most virulent in childhood, less common and usually less virulent in adolescents and in young adults.

Probably you will all agree with the general statement that the disease is due to a bacterial infection. But there is at present a wide divergence of opinion as to the nature of this infection. One cannot but feel that it would be a most fortunate thing if some benevolent despot had the power of shutting up in the same laboratory the two prominent advocates of the diplococcal theory (both, I am proud to say, former pupils of my own) and its two most distinguished opponents, with the definite command to solve the question once for all. As this benevolent compulsion cannot be exercised, I venture humbly to suggest to these four careful and conscientious workers that they would confer a great benefit on the profession if they would form themselves into a voluntary association for the combined investigation of this difficult question, so that fallacies might be detected by friendly criticism of work carried on in common, and a certainty be attained that a precisely similar "technique" is adopted by all. It is not by public discussion of divergent results that truth is to be recognized, but by combined impartial investigation, using precisely the same methods, corrected by the friendly private criticism of all the workers, each contributing his store of knowledge and experience. If the investigation were continued patiently until a unanimous verdict could be given, such a verdict would be universally accepted by the profession.

The second half of my first proposition—that the disease is most common and most virulent in childhood—is beginning to be generally recognized. It was unfortunate that the early descriptions of acute rheumatism were taken from the wards of hospitals for adults; this caused a distortion of the true clinical picture in two respects:

First, arthritis became too prominent a feature in the description, so that rheumatism was actually described as essentially a disease of the joints: this fallacy seems still to linger in the minds of some pathologists.

Secondly, the much greater relative frequence, the greater wealth of symptoms, and the more intense virulence in children, were overlooked. When they were pointed out by Sir Thomas Barlow and Dr. Cheadle, it was grudgingly allowed that these were "peculiarities" of the disease in early life. It is only now beginning to be admitted that, if it is to be really understood, rheumatism (like measles) must be studied from the point of view of the child.

II.

My second proposition will probably cause more surprise. Fourteen years ago I ventured to draw the attention of the profession to the fact, till then unrecognized, that an acute dilatation of the left ventricle can always be detected by careful percussion in every acute or subacute rheumatic attack both in children and adults. The observations were made in St. Mary's Hospital by tracings of the cardiac outline as determined by percussion at intervals of several days in cases under my own care. The tracings were copied on glass by Dr. Poynton, and were exhibited by him to the Royal Medical and Chirurgical Society in 1898 as the basis of a paper by myself on acute dilatation of the heart in rheumatic fever. This was followed by a joint paper, which gave the results of a series of observations of the same phenomenon in children, carried out at Great Ormond Street. During the fourteen years which have elapsed since these papers were published I have never seen a first attack of acute or subacute rheumatism, either in a child or in an adult, in which this fact could not be demonstrated. Dilatation of the left ventricle (greater or less) appears to be an inevitable manifestation of the disease and one of its earliest symptoms.

Its constant occurrence is easily explained when we remember the classical observation of Gaskell, recorded in the third volume of the *Journal of Physiology*, that a dilute solution of lactic acid caused relaxation and "extreme dilatation" of the isolated frog's ventricle, and finally diastolic standstill. The rheumatic toxin (probably of acid nature, and, from Walker and Ryffel's observations,[1] mainly due to formic acid) produces relaxation of the ventricular muscle and therefore dilatation. But this is not the whole explanation. From the microscopical investigations of Poynton it has been made manifest that micro-organisms can sometimes be detected in the intermuscular connective tissue of the left ventricle, and that there is evidence of fatty degeneration in the muscular fibres themselves. The careful and prolonged histological work of Carey Coombs, of Bristol (formerly my house-physician at St. Mary's), has demonstrated the very frequent occurrence of minute rheumatic nodules in the interstitial tissue of the ventricles.

From all these observations taken together, it is clear that the cardiac implication in rheumatism is no mere "complication," but is an essential and the most important feature of the disease. Other rheumatic phenomena may be more distressing to the patient and may urgently need relief; but this is the phenomenon of essential importance to which the attention of the medical practitioner ought to be primarily directed.

III.

My third proposition is that the practitioner ought to have no difficulty in determining this essential fact. All that is required is a correct method of percussion and a little careful observation. By light percussion on the terminal phalanx of a finger of the left hand it is quite easy to ascertain the limit of the left ventricle in the third, fourth, and fifth intercostal spaces, and the limit of the right auricle in the third and fourth spaces to the right of the sternum. In a rheumatic attack the left ventricle will almost always be found to reach the nipple line; usually it extends beyond it, possibly as much as a finger-breadth, or in a severe case even two finger-breadths. The

cardiac impulse will be diffused and weak, the pulse-wave feeble, the first sound at the apex much enfeebled, the second sound at the base (and especially the pulmonary second) abnormally loud. In many cases, but by no means in all, there will be at the apex a systolic blowing murmur, and sometimes also a local reduplication of the second sound. The second element of this sometimes develops into a mid-diastolic murmur. A short blowing presystolic murmur, or what sounds like a presystolic reduplication, is sometimes audible to the right of the nipple line. In cases of great severity, where the dilatation is great, there may also be evidence of pericardial friction. Aortic murmurs are rare in a first attack.

IV.

My fourth proposition will, I think, secure universal assent in theory, though it is still far from universal adoption in practice. It is that the first essential for the successful treatment of the cardiac implication of rheumatism is prolonged rest.

Complete rest for the heart is impossible, for on its continued action life itself depends. Yet if the cardiac muscle is affected by disease, it must be of the greatest importance to diminish its work as much as possible. A reduction of ten beats per minute secured by the recumbent position is equivalent to a diminution of the number of beats by 600 per hour, 14,400 per day, and 100,800 per week.

Yet the simple and necessary precaution of sending to bed a child suffering from slight symptoms of subacute rheumatism is too often neglected, because the symptoms seem to the practitioner to be trivial, and because he does not remember the importance of a careful examination of the child's heart by accurate percussion. He is apt to be satisfied with a rapid auscultation, and to assume that the absence of audible murmur is proof of the absence of cardiac disease.

I repeat that the discovery of dilatation of the left ventricle, without any murmur or friction, makes a period of rest in the recumbent position desirable, whatever may be the cause of that dilatation.

V.

My fifth proposition is that whenever a patient who is found to have a dilated left ventricle has also symptoms which are certainly rheumatic or are even possibly caused by a rheumatic infection, it is the duty of the practitioner, not merely to keep the patient at rest in bed, but also to submit him to a careful but thorough antirheumatic medication. This is specially necessary when the patient is a child. Sore throat, pains in the joints, muscles, or tendons, erythema, arthritis, subcutaneous and subperiosteal nodules, pain in the chest, shortness of breath, marked pallor, and choreic movement (however slight) are all symptoms more or less strongly suggestive of rheumatism and demanding an antirheumatic medication.

About the precise method and extent of this antirheumatic medication there will no doubt be much difference of opinion among those who take part in this discussion. Let each speaker state fairly the results of his own experience, that those who have employed different methods may learn how others have succeeded.

My own experience has led me to the conclusion that sodium salicylate conjoined with sodium bicarbonate, in the proportion of one part of the former with two parts of the latter, is a most effective antirheumatic medication, if the dose is gradually increased to a sufficient extent.

There can be no doubt, I think, that sodium salicylate has a specific action against rheumatism as marked as is that of quinine against malaria, or as that of mercury or salvarsan against syphilis. Since its introduction into practice it is no longer true that acute rheumatism requires "six weeks" for its cure. We no longer see in hospital wards the profusely sweating, sour-smelling patients with intensely painful rheumatic arthritis whom some of us remember in our student days; and rheumatic hyperpyrexia has become a very rare phenomenon. The rapid subsidence of rheumatic arthritis under the influence of salicylate is universally recognized. This is clearly a specific action, for the drug has no such marked influence on a tuberculous, a gonococcal, or a pneumococcal arthritis. Now if the cure of the arthritis is due to a specific action of the drug, it seems clear that this action cannot be confined to the joints, but will be exerted to a greater or less extent in every tissue in which the rheumatic microbes are doing their deadly work. The addition of sodium bicarbonate probably counteracts the acid toxins (formic acid and probably also acetic, according to Walker and Ryffel), and it assists in producing an improved tone of the cardiac muscle, in accordance with the observations of Gaskell on the effect of perfusing the isolated frog's ventricle with sodium hydrate. The combination of these two drugs exactly meets the need of the rheumatic heart. In this respect sodium salicylate has a marked advantage over aspirin, which must not be combined with an alkali.

Comparatively small doses of salicylate will reduce the pyrexia and cure the arthritis of rheumatism, but if we attempt to ascertain whether larger doses of the drug have any beneficial action on the heart we are met by two difficulties. The first is that the rheumatic infection itself is very depressing to the heart, and that thus it is easy to make the mistake of attributing to the remedy symptoms which are really due to the disease. Hence has arisen a widespread impression that salicylate is a "cardiac depressant." This idea seems to be devoid of any real basis, as far as the "physiologically pure" salicylate now used is concerned, whatever may have been the case at the time when a less pure drug was employed. The second difficulty is the fact that certain unpleasant symptoms are undoubtedly caused by salicylate, such as vomiting and tinnitus, and that some individuals are much more prone to these side-effects than others.

Yet, in the great majority of cases, this difficulty may be overcome by a proper method of administration. If, when symptoms such as vomiting or tinnitus occur, the medicine is suspended for a few hours, and is then given again in smaller doses than before—half or two-thirds of the former dose—it will usually be found that the unpleasant symptoms pass away, and the dose can be raised to a considerably larger amount without causing their recurrence. If they do recur, another pause, followed by a reduction, will usually be successful. In this way it is possible to train almost all patients to tolerate much larger doses of the drug than those generally administered. Of course, it must be allowed that some patients are specially susceptible to salicylate, as others are to quinine, iodine, mercury, or opium. Yet it remains true with regard to the great majority of cases that by adopting the method above described the dose of salicylate can with safety be increased to a very considerable amount. In a rheumatic attack it is often desirable to increase the amount of salicylate to 150 or 200 grains per day, with double the amount of sodium bicarbonate, given in ten doses. It may be desirable to increase the amount still further, even to 350 or 400 grains. The largest dose I have ever given was 60 grains ten times daily, in the case of a boy of 16 who had an enormous crop of rheumatic nodules, about 250 in all, with pericarditis, endocarditis, dilated heart, and moderate arthritis. The maximum amount of 600 grains of salicylate and 1,200 grains of bicarbonate was given for two days. The dose had been gradually increased to this amount without any difficulty. After this he took 500 grains of salicylate and 1,000 of bicarbonate for six days a week for three weeks. The amount was then gradually reduced. Every one of his nodules disappeared under this treatment, his pericardial friction soon vanished, his heart became smaller, and he left the hospital with merely a short presystolic and a short systolic murmur at his apex. He has since then been in the hospital for a short time with a very much milder rheumatic attack.

Cases of chronic rheumatism in adults, with subacute exacerbations, which show no sign of improvement under 200 or 300 grains of salicylate daily, will sometimes be definitely cured when the amount is raised to 450 or 500 grains.

We may reasonably expect that when rheumatism affects organs like the heart or brain a larger amount of the remedy may be necessary than is required for the cure of more superficial structures. Who would expect to cure a visceral syphilis by 5 grains of iodide given three times a day? It is well known that much larger doses are required, and they are freely given, though with adequate caution. Yet even in this case one finds sometimes that one has not gone far enough for success; a yet larger dose cures the patient. A man under my care at

St. Mary's had pains apparently due to a pachymeningitis, possibly traumatic in origin, but also possibly syphilitic. Iodide to the amount of 30 grains three times a day was given without success. The case was transferred to a surgical ward for surgical consideration, and my colleague, Mr. Page, cured him by increasing the dose of iodide, I believe to 100 grains three times daily.

To give a small dose of iodide to a case of cerebral syphilis is to prove oneself an incompetent practitioner. Shall we not, then, expect that if we are to cure a case of cerebral rheumatism such as we describe by the absurd designation of "chorea," we must be prepared to use large doses of the specific remedy? We have not given the drug a fair chance unless we have increased the amount to 400 or 500 grains daily. The small doses ordinarily given are absurdly inadequate: and in chorea we must remember that time is a necessary factor of the cure because of the damage to the cortical cells, so well described by Dr. Carey Coombs.

In commencing the treatment of a rheumatic case by salicylate, it is desirable to give comparatively small doses for the first twenty-four or thirty-six hours. If too large a dose is used at first, there is a possibility that by the rapid death of many of the microbes so much of their internal toxin may be released into the blood as to cause an injurious effect, such as increased acidosis and a tendency to delirium; but after about thirty-six hours the amount of the drug should be rapidly increased. It is desirable also, since the rheumatic infection probably enters in most cases by the tonsils, to spray the throat three times daily for the first week with a solution of perchloride of mercury in glycerine and water, of the strength of 1 in 2,000.

VI.

Two precautions must be constantly kept in mind during the treatment of a rheumatic attack by salicylate, especially when the patient is a child. The first is that special care must be taken to prevent constipation. Dr. Langmead has rightly insisted on the importance of this, and Dr. Miller has suggested that it is wise not to increase the dose of salicylate for a child on any day unless the bowels have acted previously on that day. The second precaution is to remember the necessity of constantly keeping the patient's urine neutral or slightly alkaline in reaction. It is surprising how much sodium bicarbonate may be required to effect this in a rheumatic child.

By the careful observance of these two precautions the patient is secured against the possible occurrence of acidaemia and its sequence of air-hunger, drowsiness, and coma. In the only fatal case that I have seen the dose of salicylate was very small—only 5 grains four times daily—but it was given without any bicarbonate, and by an oversight the medicine was continued for ten weeks: also at that time the importance of preventing constipation was not recognized. Under the much larger doses which I have employed in conjunction with twice as much sodium bicarbonate, there has rarely been any indication of the approach of these symptoms of acidaemia. In the few cases in which anything of the kind has been observed it has always been quite easy to arrest them by giving up the salicylate for a short time and increasing the bicarbonate as much as might be necessary to render the urine alkaline.

Sodium salicylate is not the only drug liable to produce acidaemia. I have seen air-hunger and coma in a child produced by a dose of 15 grains of aspirin three times a day after only seven such doses had been taken. Fortunately the meaning of the symptoms was realized, and under alkaline treatment the child recovered completely.

VII.

My last proposition is that in cases in which the initial rheumatic attack on the heart is of great severity, where great dilatation is accompanied by evidence of pericarditis or of marked endocarditis, very great relief may be obtained by the local application of an icebag over the heart, provided that care be taken to keep the feet and lower limbs warm by means of hot-water bottles. Efficient nursing is of course essential, and the temperature should be taken every two or three hours. Before the ice is applied, if the dilatation of the right side of the heart is marked, it is often desirable to apply a few leeches over the false ribs on the right side. If these precautions be adopted the icebag may be used without fear. It rapidly relieves local tenderness, causes a congestion of the superficial vessels as marked as that resulting from a poultice, and appears to exert a markedly tonic effect on the cardiac muscle. Pericardial friction under its influence rapidly lessens, the dilated left ventricle diminishes, and pericardial fluid tends to be absorbed. One can often trace a beneficial effect even on an endocarditis, judging from the changes in the character of murmurs.

In later rheumatic attacks, where the heart is already much crippled by former myocarditis, endocarditis, and pericarditis, the same therapeutic measures are available, but they must be more cautiously employed. Leeches will almost certainly be necessary, and cardiac tonics such as strychnine, digitalis, and oxygen may be very useful.

The specific antirheumatic medication ought not to be suspended on account of the existence of pericarditis, as was formerly taught. This teaching was based on the belief that sodium salicylate was a cardiac depressant. But, in fact, it is the rheumatism which is the depressant, partly by its action on the cardiac muscle and partly by the reflex influence of pericarditis. In cases of pericarditis of rheumatic origin, the antirheumatic medication is specially necessary. Along with the local action of ice (and possibly of leeches) it will be found to produce the most remarkable therapeutic effect.

Possibly some of those who follow me in this debate will consider this method of treatment rash and dangerous. I can only reply that it has been tested by experience, and has been found most helpful. But let no one adopt it without the safeguards which I have described. Let me ask, is there no danger in too great timidity of therapeutic action? My firm belief is that at present sins of omission in the treatment of early cardiac rheumatism are responsible for an enormous amount of disastrous result which might easily be prevented by a wise and cautious boldness.

Summary.

1. "Acute and subacute rheumatism" is a microbic infection, most common and most virulent in childhood, less frequent and usually less virulent in adolescents and young adults.

2. There is but one symptom which is present in every case of the disease. Arthritis, nodules, endocarditis, pericarditis, pleurisy, tonsillitis, erythema, chorea, and all other rheumatic symptoms may be present or absent, but *dilatation of the left ventricle is invariably present.* This dilatation is caused by toxaemia or myocarditis, or both combined, and it is a very early symptom.

3. The dilatation can be easily detected by careful percussion, rightly performed. It is quite easy to determine accurately the sloping line of dullness of the edge of the left ventricle in the fourth and fifth left interspaces, and that of the right auricle in the fourth right interspace.

4. The first essential for the successful treatment of the cardiac implication of rheumatism is prolonged rest.

5. The second essential is an adequate antirheumatic medication, the most useful form of this being a combination of sodium salicylate and sodium bicarbonate, in the proportion of one part of the former to two of the latter, given in adequate and increasing doses.

6. During the treatment by salicylate it is necessary (1) To prevent constipation: (2) to keep the urine slightly alkaline; (3) to stop the medicine when vomiting or other symptom due to salicylate occurs, *but to resume it after a few hours in a dose of one-half the size of the dose last given,* and soon to increase the amount as far as possible.

7. When the dilatation (with or without endocarditis) is great, and especially when pericarditis is present, the medicine should be freely given, and an icebag should be kept permanently over the precordial region, with due precautions against general chill. Careful nursing is essential. The application of leeches is often beneficial.

Reference.

[1] British Medical Journal, 1903, ii, p. 659.

DISCUSSION.

Dr. Albert Abrams (San Francisco, U.S.A.) said: Dilatation of the heart in association with polyarthritis is an almost invariable phenomenon, but it is not pathognomonic of the disease inasmuch as it is a concomitant of other infectious diseases. Respecting its etiology,

my observations touch on new and heterodox facts. Clinicians have long sought the observations of the physiologist to explain clinical phenomena. I have introduced the neologism, "clinical physiology," to designate the study of the physiology of man and employing the latter as an object of study. After this manner clinical physiology is made the basis of clinical pathology. The size of the cardiac chambers is dependent on the tone of its musculature and the tone of the vagus. Therefore, cardiectasis is a neuro-muscular question. The vagus controls the rhythmicity, irritability, conductivity, contractility, and toxicity of the heart, and its functions may be depressed by the toxins of all infectious diseases. In polyarthritis it is wise to be on the look-out for the frontier symptoms of cardiac implication, notably arrhythmia, tachycardia, and dyspnoea, but it is wiser to regard heart involvement as the rule and not the exception in polyarthritis. By so doing we give the patient the benefit of every possible doubt and inaugurate our cardio-therapeutic measures accordingly. A murmur heard at the apex is no index of valvular implication. It may mean a relative insufficiency, and by eliciting the heart reflex the murmur is temporarily inhibited. In testing the usual cardio-tonics by physiological observations on the human I find that pilocarpin is the most efficient. Apart from its vagotropic action it renders the fluids of the body more alkaline. Its action as a diaphoretic is a desideratum if we view the diaphoresis in this disease as action of defence. The salicylates are specific in action, and subserve a diagnostic-therapeutic purpose. In polyarthritis toxic symptoms do not develop readily, the patient bearing as much as 250 grains a day. In pseudo-rheumatic infections toxic symptoms develop after 150 grains are ingested. We must remember, however, that the salicylates depress the vagus function, and so does antipyrin, the most efficient succedaneum of the salicylates. The employment of an icebag to the precordium must be deprecated. The influence of the cutaneous nerves on the tone of the viscera must not be disregarded. The observations of Head, Sherren, and others show that common sensation is a complex affair, and that we must take cognizance of deep, protopathic, and epicritic sensibility. Similarly I have found that certain cutaneous irritants to the pericardium will elicit the heart reflex of contraction, whereas a current of cold air or an icebag will evoke the counter-reflex of dilatation. My clinical observations show that the salicylates have a specific action only on the articular manifestations, and that in association with their employment we must have recourse to a cardio-tonic, the most efficient being pilocarpin.

Dr. F. J. POYNTON (London) said: I will confine my remarks to the clinical side of the question, merely pointing out that from the experimental side Dr. Paine and I have produced acute dilatation without either pericarditis or endocarditis, and have demonstrated similar pathological changes to those found in man in the myocardium. These facts were brought before the Pathological Society of London in 1900.

The remarks of my old friend and teacher, Dr. D. B. Lees, bring vividly back to my mind the days, now fourteen years ago, when I had the honour of working with him upon the subject of acute dilatation of the heart in rheumatism. This has been a privilege for which I have been and am deeply grateful. I feel that though rheumatism is an obscure problem, still, nevertheless considerable advance has been made in these fifteen years, and that we are much beloved to Dr. Lees's enthusiasm and investigations. Dr. Lees is too broad-minded and scientific to resent the fact that I have not followed him in some directions, and in others, though I have followed for some distance, I have not yet been able to complete the course. Thus, for example, although recognizing the importance and frequency of dilatation of the left ventricle, I am not convinced of its constancy, because I believe that even in childhood rheumatism may attack other organs yet spare the heart. At least, it appears to me that with every care I have failed in some cases to find any clinical evidence that the heart had been damaged. Nevertheless, if I were called upon to make an assertion I would rather make the one that Dr. Lees has, as one conducive to the greater care of the rheumatic, than one to the effect that the heart frequently escapes. Fortunately, I am not introducing this discussion, and so can rest content with expressing the belief that I have just given.

A point of difference is my attitude towards the salicylates in rheumatic heart disease. It is an attitude which I doubt not will be met with disfavour, for I consider the treatment of rheumatic heart disease most unsatisfactory and am not convinced that the salicylates exert any useful effect apart from relief of pain. I think the expression of such different opinions as Dr. Lees's and mine will have an advantage on this occasion, for it will give clear definition to one of the points under discussion and thus stimulate individual opinions. I do not dispute that some rheumatic lesions, notably arthritic and muscular pains, are greatly relieved and the temperature is lowered by these drugs, but further I am not prepared to go. How can such a position as mine be justifiable? I believe the bacterial poisons are so subtle that they vary with the tissues in which the lesions occur, and I think it probable that the salicylates may possibly be specific to some of these poisons and not to others. I am even tempted to feel that their specific action upon rheumatic arthritis is perhaps overrated, for I have seen other acute forms of arthritis relieved by them. It does not follow, I think, because acute rheumatic arthritis subsides rapidly that it is the salicylates that produce this subsidence, though they relieve the pain, for I have certainly seen rheumatic arthritis in children subside quite as quickly without them, and in some adult cases under their use I have seen quick subsidence in some joints, while one or two might remain intractable. For my part, my feeling about acute rheumatic heart disease is this, that although we can minimize the dangers by care and palliative measures, we have no control over its course. Take rest, for example. I have a child under my observation who, under the mistaken diagnosis of spinal caries, has been kept for two years in a Phelps's box; yet during that time I saw him in two attacks of rheumatic pericarditis with endocarditis and multiple arthritis. I have given a child, after an attack of rheumatism, sodium salicylate in 7-grain doses three times a day for nine months, when there occurred an attack of rheumatic carditis. I cannot, of course, be certain that, though the medicine had been ordered, it had been given. I have seen relapses occur rapidly after enormous doses had been given. Once I have ventured, in a paper upon rheumatoid arthritis, to express the opinion that we none of us really either understand the cause or the treatment of that disease, and have been accused of pessimism. To-day I feel I shall suffer the same fate; yet I am not a pessimist. I believe firmly that much will be done in the prophylaxis of rheumatic heart disease, and have great hopes of the medical supervision of school children. I have also faith that proper homes will be founded for the prolonged convalescence of the rheumatic, in which I believe many half-healed foci of the disease will be properly cured. The idea that meat is injurious to the rheumatic I have abandoned, believing it to be indicated in chronic cases in childhood, and at all times except when the disease is acute

The onset of rheumatic heart disease in childhood is of particular interest, and it is not to be supposed that I can add anything to Dr. Lees's account of acute dilatation. I, however, lay much stress upon the association of repeated attacks of chorea and mitral stenosis, for I believe from my experience it is the best warning we possess of this insidious valvular affection.

Primary cardiac rheumatism—using this term in the sense that the heart affection is the prominent and practically the only definite rheumatic manifestation—is a condition which I have found most likely to follow a sore throat. The importance of throat affections, as evidenced by recent literature, has fully borne out the experimental evidence put forward by Dr. Paine and myself in 1900. Among the poor there must be a few, but a diminishing number of cases of primary cardiac rheumatism which only come to notice after the damage has become advanced.

I wish to emphasize a group of cases in which tachycardia is an early symptom. Such are likely to develop mitral stenosis, but the tachycardia precedes the stenosis. If it is persistent tachycardia is a grave symptom. Another important group is that in which the myocardium is particularly affected, and such cases are much alike in showing an irritable, irregular heart, pallor, nervousness,

obstinate symptoms, and a tendency to asystole on over-exertion. Some of them, however, get quite well. Endocarditis smoulders on much longer than is often thought to be the case, and I maintain that many cases of malignant endocarditis in early adult life, particularly if the patient has been anaemic, are rheumatic. Slight mitral lesions frequently get practically quite well, and probably slight aortic lesions also, though more rarely, may do the same.

Dr. Carey Coombs (Bristol) said: The streptococcal theory of rheumatic infection, founded by Drs. Poynton and Paine, receives support from the following facts. Rabbits have been inoculated by Drs. Reginald Miller and E. H. Kettle with streptococci from cases of human rheumatic infection, and the resulting cardiac and other lesions have been submitted to me for histological examination, along with similar material kindly sent by other investigators. This examination showed (1) that the lesions were similar whatever the organ attacked, (2) that there was no difference between the phenomena produced by the five different strains of streptococci concerned, (3) that the type of inflammatory reaction found was essentially similar to that which is characteristic of human rheumatism. These facts will be published *in extenso*.

From the economic point of view, carditis is the disease and polyarthritis the complication; the latter cripples the patient for weeks or months, the former for a shortened lifetime. Further, there is some justification for thinking that of all the four chief forms of rheumatism—cardiac, cerebral, articular, and nodose—the most characteristic is carditis. And, again, the commonest manifestation of rheumatic infection is carditis, if its sequelae be included. For example, in my out-patient department at the Bristol General Hospital I saw, during the last twelve months, 233 cases of rheumatic infection, including every stage and form of the disease, together with its permanent injuries to the heart. In 72.5 per cent. of these there were signs of cardiac disease; the joints were attacked in 61.8 per cent. only, 47.2 per cent. had chorea, while subcutaneous nodes were detected in less than 4 per cent. It is therefore true to say that of all the manifestations of rheumatic infection carditis is seen at least as often as any other; and since it is also the most characteristic and serious effect of that infection it should be regarded as the central rheumatic lesion.

The first principle in the diagnosis of rheumatic carditis is, therefore, this—that since it is the most characteristic and individual of the rheumatic lesions it should be diagnosed on its own merits. The clinician, faced by certain symptoms and signs, says he can diagnose pulmonary tuberculosis or spinal parasyphilis, as the case may be; not even, in the latter instance, is he deterred from his diagnosis by the fact that there is no history of syphilis. His decision is, indeed, confirmed if he finds collateral evidences of syphilitic infection such as an aortic aneurysm, or by a confession of a past syphilitic infection; but these are only adjuvants, and not essentials. So it should be with cardiac rheumatism. Confronted by a certain type of cardiac disease, the doctor can say, "This is rheumatic," even when there is no history of rheumatism or chorea. In the earlier stages, when there is nothing to be found save dilatation of the left ventricle with or without a mitral systolic murmur, it is prudent to exclude the alternative causes—namely, recent diphtheria and influenza, and renal disease. But in the main, and until some biochemical test of rheumatic infection is available as it is for tuberculosis and syphilis, it is right to take the position that a case of cardiac disease can be recognized as rheumatic from its own clinical features. In many an early case diagnosis along this line is justified by the subsequent appearance of other rheumatic manifestations.

The second point is an obvious one—namely, that the diagnosis must be detailed. Nothing less than an inquiry into the state of every part of the heart can be regarded as satisfactory. As Dr. Lees has taught us, the primary, basic lesion of rheumatism of the heart is myocarditis, which finds its chief clinical expression in signs indicating dilatation of the left ventricle. There is also a definite subgroup of cases of rheumatic heart disease, characterized by the presence of hypertrophy of the left ventricle in addition to dilatation, without valvular or renal disease to account for it. In connexion with this group it should be remembered that ventricular hypertrophy is found *post mortem* in quite early cases of rheumatic carditis before valvular or pericardial lesions of an advanced type have developed. In some cases these signs are, no doubt, indicative of partial recovery: the mitral murmur, due to dilatation of the auriculo-ventricular ring, has disappeared, but the more general ventricular dilatation and its accompanying hypertrophy are persisting.

I must refer to one other point in relation to rheumatic myocarditis. Not only is there an acute form, but also a persistent one, in which ventricular dilatation is maintained for a period of months or even years by a series of recurrences of the infective process. That this dilatation is purely due to myocarditis is proved by the almost complete absence of valvular and pericardial lesions, which many present have, no doubt, noted at autopsies on children who have for years exhibited signs of cardiac disease. Apparently the recurrences are separated from each other by so short an interval that the muscle of the heart has no time to recover completely from one infection before the next is upon it.

To these signs of muscular alteration may be added evidences of pericardial or valvular disease sooner or later.

There is no real necessity for a polygraphic examination, except where the pulse is irregular. The only thing that can be discovered by the polygraph, in the absence of arrhythmia, is the length of the *a–c* interval. I have been taking tracings from cases of cardiac rheumatism, and have at present about 120 records. Lengthening of the *a–c* interval showing interference with the conduction of stimuli at some point in their path is practically never found in the earlier stages of the disease. Definite heart-block has only occurred three times in my experience of rheumatic carditis, and in each case it was of a mild degree.

A final observation as to diagnosis relates to the infrequency of directly cardiac symptoms in the earlier phases of the disease. Oedema, cardiac pain, syncope, are practically never met with until the disease is far advanced. Even shortness of breath is heard nothing of from most children with rheumatic heart disease until leading questions are asked; and then it has been so little in evidence that it has scarcely interfered with the normal activities. Of course, if the case is one of severe carditis with extreme and rapid ventricular dilatation, the patient is very ill and the cardiac symptoms are proportionately aggravated; but in most children entering upon their career of heart disease the onset is insidious. Setting aside for the moment other rheumatic manifestations such as polyarthritis, muscular pains, chorea, and subcutaneous nodes, children with early cardiac rheumatism are, as a rule, brought to the doctor because they are losing colour, flesh, and appetite. General examination discovers mild fever and a quick pulse; but beyond these vague generalities nothing is found till physical examination discloses the secret. It is clear, therefore, that if every case of cardiac rheumatism is to be detected early, it must be by routine examination of the heart in every child out of health, and also by periodical examinations of all children who have shown any evidence whatever of rheumatic infection. This early discovery of cardiac disease is one of the benefits that may be expected from the medical inspection of school children, as the figures published by Dr. Frederick Langmead show.

Something may be said, in conclusion, as to the treatment of the mild recurring attacks that pass almost unnoticed.

The two main principles laid down by Dr. Lees apply to these as to the severer attacks. I do not see how we can expect rapid cure by any method, for by the time treatment is begun serious injury has already been done to the myocardium, a delicate tissue which, owing to its high specialization of function, can only recover slowly. My own feeling is that salicylate treatment does some good, not so much by correcting this damage already done as by cutting short the prolongation of the injurious process. I have not found any form more effective than the sodium salt, though aspirin is sometimes taken better. As for rest in bed, it has seemed to me possible to prolong it unduly. The child should be kept in bed so long as there

is any rise of temperature, and for one to three weeks (according to the severity of the attack) after all fever has subsided. The convalescent child needs plenty of fresh air and food, and the return to activity must be very cautiously promoted by gradual stages, the temperature and pulse-rate being watched all the time so as to detect the smallest trace of recrudescence. As to prevention of recurrences, the three things to be avoided are underfeeding, fatigue, and exposure to damp. I have not yet tried vaccine treatment, but it seems a reasonable proposal, though a little difficult to carry out on a sufficiently protracted scale.

Tonsillectomy as a routine measure is inadvisable, for the tonsils are often small and difficult to remove, and the operation has been in a few cases followed by an acute outbreak.

I should like to associate myself with what Dr. Poynton has said as to the hope of prevention. When the mode of entrance of the micro-organism is more definitely known, and a fuller knowledge of those conditions which predispose to its activity has been gathered, there is reason to expect prevention of rheumatic infection, or at least of the severer cardiac lesions.

DR. FREDERICK LANGMEAD (London) said: There can be little doubt but that the subject of the early diagnosis and treatment of the cardiac manifestations of acute rheumatism is beset with many difficulties. The onset of the condition is usually indeterminate, and it is quite unusual to see a child during its first attack. All must agree how frequently evidence of previous rheumatism is found in the heart when an examination is made in what purports to be the first attack. That these observations are true is borne out by the results of an investigation which I have carried out among school children, with a view of finding out the prevalence of rheumatism among children considered physically fit. I have examined 2,555 unselected children with this intention, and have found that among the children from 3 to 6½ years old 5.20 per cent. were rheumatic, whilst among those from 6½ to 14 years old 5.83 per cent. were rheumatic. The great majority of these had never been diagnosed as suffering from rheumatism, nor had rheumatism been suspected by the parents or teachers. No cases were included about which there was any reasonable doubt, all were beyond cavil unquestionably rheumatic. There were 133 in all, and all but 18 had evidences of old rheumatism of the heart, namely, of a developed and persistent type of rheumatism. These figures show the difficulty underlying early diagnosis and treatment of the condition. Rheumatism may begin in a manner which attracts so little attention that it is soon forgotten by the parents. This may be said of growing pains and tonsillitis, whilst if anæmia should occur alone and as the first manifestation, no one could make the true diagnosis. With regard to the relation of tonsillitis to acute rheumatism, I have found that whereas in children other than the rheumatic the tonsils are sufficiently large to warrant removal in 7 per cent., in rheumatic children they are of these dimensions in 27.8 per cent.; in other words, tonsils large enough to warrant removal occur four times as frequently in rheumatic children as in others. This has a bearing on the importance of tonsillitis as an early sign, or possibly as a source of infection. With regard to treatment, I will not again consider the details, which have already been dealt with so fully in the discussion, but I should like to emphasize and dwell upon one point. There is no efficient means at present of dealing with the poor rheumatic child. The needful period of rest and supervision is not procurable in the hospitals. At the sea-side they generally do badly. Convalescent homes are not open to them. The time has come when a more extended knowledge of the disease is required. We are all glad of the good effect which has followed the fight against tuberculosis. The back of the fiend of tuberculosis may be said to have been broken and tubercle is on the wane, but acute rheumatism is still very inadequately understood and resisted. There is great need for an antirheumatic crusade if the cases of chronic heart disease which fill our hospitals are to be diminished—cases which return again and again, which can only be patched up, and cannot be regarded with any degree of hope.

DR. F. W. PRICE (London) said: In my view it is difficult to exaggerate the importance of the subject of this discussion. In order to get some idea of the degree of its importance it is necessary only to remember three facts: (1) By far the larger part of heart disease under 30 years of age, and a considerable proportion of heart disease of later life, is the result of rheumatic infection in childhood; (2) how easy it is to overlook a rheumatic infection of the heart in children, unless we are especially on the look-out for it, and even when we are on the look-out how difficult it often is to come to a definite conclusion whether the heart is affected or not; and (3), if the heart is definitely affected, in how large a measure the future welfare of the patient depends upon the medical attendant adopting sufficiently prolonged, careful, and adequate treatment during the stage of infection.

If these be facts, it is of supreme importance that the practitioner should be able to recognize, as far as it is possible, a rheumatic infection of the heart. Now, it is a matter of great regret that the clinical picture of acute and subacute rheumatism was originally exclusively drawn from the disease as it appears in adult life. The result is that a considerable percentage of practitioners do not realize that rheumatism as it appears in children presents many and most important points of difference from the disease as it appears in maturer life. The non-recognition or forgetfulness of this is the reason why damage to the heart by rheumatism is so frequently overlooked, much to the detriment of the patient's future welfare. It is of supreme importance that the following facts be recognized:

In adult life arthritis is the chief manifestation of the rheumatic infection; it is regarded as representative, and as constituting the typical attack, while cardiac involvement is looked upon as a complication. In childhood, on the other hand, arthritis is usually slight and unimportant, and may be entirely absent: it is not representative of the rheumatic state, while affections of other organs and parts are more frequent, and play a much more prominent part in the disease. Thus endocarditis, myocarditis, and pericarditis are much more frequent; they can scarcely be considered complications, since they are just as much part of the disease as is the affection of the joints. They should be looked upon as primary and essential phenomena. Similarly, subcutaneous nodules, certain exudative erythemata, and purpura rheumatica are also more frequent and conspicuous manifestations of the rheumatic infection; chorea is common in connexion with the rheumatism of childhood (being almost entirely confined to childhood); and tonsillitis is perhaps more common in connexion with the rheumatic state in children than in adults. There is a tendency for the various phases of rheumatism to arise independently and apart from each other, as, for instance, involvement of the heart at one time, arthritis at another, and chorea at another; although more than one, and indeed even all of the different manifestations may occur together. The whole series of phenomena may follow in succession, or only a single event may occur. The incidence in the rheumatic series may occur in any order. Involvement of the heart may be the first manifestation of rheumatism, or the only manifestation of rheumatism, or the first and only manifestation. It may occur alone, or in combination with one or more or all of the other manifestations of rheumatism. Usually it occurs early in the series of manifestations.

As arthritis in children is often slight, there is often merely a little pain, stiffness, and tenderness, with no perceptible swelling, and fewer joints are affected than in the case of the adult. Acid perspirations are usually only slight, and the pyrexia is in most instances moderate. Sometimes the affection is confined to the tendons or the fascia in the neighbourhood of the joint—as, for example, the tendons of the hamstring muscles under the knees, causing the child to walk on the tips of the toes with the knees bent (which may be mistaken for incipient talipes or paresis), but yet accompanied by an insidious endocarditis or pericarditis. On the other hand, we should be careful to exclude infantile scurvy, acute anterior poliomyelitis in its early stages, syphilitic disease of the ends of the long bones, and other affections of the joints in children.

Endocarditis, myocarditis, and pericarditis are more liable to occur together in children than in adults.

While endocarditis may occur acutely in children as it does in adults, it more often occurs in a subacute and insidious form, and therefore its existence is frequently not known or suspected until the heart is examined because of some other rheumatic manifestation.

Now, if these be facts, it is clear that when any child complains of pain in his joints, muscles, or tendinous structures, or of what are called "growing" pains; or has subcutaneous nodules on his tendons or round the joints, or subperiosteal nodules on the bones; or exhibits spots of erythema; or suffers from malaise and unexplained pyrexia; or complains of pain in the chest, shortness of breath, or marked pallor, he should be at once put to bed, and a systematic and most careful examination of the heart should be performed daily. Otherwise a large proportion of the cases in which cardiac mischief occurs will be missed altogether.

In cases of cardiac involvement there is frequently an absence of subjective symptoms, and even when present they are often very insidious or marked by those of the parent disease. Therefore the diagnosis rests largely on physical signs. Unfortunately, the physical signs are often vague and slight, and the diagnosis is then attended by extreme difficulty. There may be some quickening of the pulse. In my view, irregularity of the pulse is rarely of diagnostic value. If it is present, it is generally that variety which is called sinus irregularity, which comes within the normal and therefore is not indicative of any cardiac involvement. If the irregularity is due to the presence of extra-systoles, it should be remembered that these are merely indicative of an undue sensibility of the primitive cardiac tube, and are sometimes met with in febrile and other conditions. When the irregularity is due to partial heart-block, the only inference which can be made is that the bundle of His has suffered damage, and this is usually temporary. An extra-systole too feeble to reach the wrist and partial heart-block account for almost all the cases of intermittent pulse in acute rheumatism. Complete irregularity of the pulse, indicating auricular fibrillation, is exceedingly rare. Similarly, enlargement of the heart and a mitral systolic bruit are of no certain diagnostic value, since the former may be due to toxaemia or anaemia as well as to carditis; and the latter may be due to simple dilatation or to anaemia. A tumultuous character of the apex beat, a preliminary prolongation of the first sound before the appearance of the murmur, the appearance of the bruit in the very early stage of the rheumatic infection, a soft blowing quality of the murmur in contrast with a harsh quality, are all suggestive of involvement of the heart. A soft blowing aortic diastolic bruit is undoubtedly indicative of involvement of the endocardium, but is practically never heard during the early part of an acute illness. It is necessary to remember the possible existence of cardio-pulmonary murmurs.

It follows from the considerations mentioned that the points which conduce to successful treatment are prophylaxis and early diagnosis. A counsel of perfection would be that every child of a family known to be "rheumatic" should be examined at definite intervals, and also should be warned of "catching cold." When any symptoms of the rheumatic series are suspected, the child should at once be put to bed, and the heart should be daily examined during the active part of the illness and at intervals following it. If there is any doubt about the heart being involved or not, the patient should be kept in bed until all doubt is over. When there is no doubt that the heart is affected, absolute and *very prolonged* rest in bed is essential. We should endeavour to arrest the morbid process as early as possible, and to give the heart the best chance of the fullest possible repair. Antirheumatic treatment should be adopted. I faithfully carried out the method of administering sodium salicylate recommended by Dr. Lees in some cases, and, comparing the results with those when the drug was given by the ordinary method, am strongly inclined to believe that the former is the more efficacious. I have been disappointed with the results of Dr. Caton's plan of treatment. I have not the least doubt that, as in acute cases with fever from other causes, digitalis is ineffective in the early cardiac complications of rheumatism. This view conforms with our experience in a series of investigations dealing with the action of digitalis on the human heart at the Mount Vernon Hospital for Diseases of the Chest.

Dr. J. F. Halls Dally (London) said: This Section to-day has indeed been fortunate in having the benefit of the remarks made by Dr. Lees, as the result of his large clinical experience of so many years' standing, and in hearing also what Dr. Poynton has said from his special point of view. Starting with the conception that rheumatism is an acute infective process, in all probability of specific origin, it is not far to seek why dilatation of the left ventricle is often present. I cannot agree with Dr. Lees that dilatation of the left ventricle is invariably present, although I think that this is true in the main of cases which are serious enough to be admitted to hospital. I have examined a very large number of school children, in a certain small proportion of whom physical signs of organic heart disease following upon rheumatic fever were discovered, but by no means all of these have shown dilatation of the left ventricle. In the treatment of acute rheumatism I think one is often struck with the rapidity and earliness with which dilatation of the heart occurs, the rheumatic poison acting on the myocardium and so producing a partial paralysis, with the result that one gets relative insufficiency of the valvular apertures, the relativity being proved by the beneficial effect of the administration of the sulphates of sparteine and strychnine. I can hardly agree that dilatation of the right auricle is very easy to detect. In my clinic at the Heart Hospital I have been in the habit on many occasions of comparing the accuracy of percussion of many physicians, both British and foreign, with the evidence afforded by *x* rays, and after marking out the limits of dullness by blue pencil marks on the chest, to take the case to the *x*-ray room, where it was almost invariably found that the left border of the heart was accurately defined whilst the right border could not be delimited with anything like the same certainty. This I believe to be due to the fact that the right auricle is affected by both cardiac systole and respiratory movements, so that the right limit of dullness is not a fixed line except in very engorged auricles. Again, is it absolutely certain that, in the cases of which Dr. Lees speaks, the left border of the heart coincides with the edge of the left ventricle? Is the left ventricle in evidence at all, and may it not be pushed backwards when right-sided dilatation is present? As regards treatment, sodium salicylate, when used effectually, requires the following points to be observed: (*a*) Sodium bicarbonate is useful with it. (*b*) In many cases the cheapest form of sodium salicylate gives us the best results, many being over-purified. Real natural sodium salicylate can seldom be obtained. (*c*) Each person must be tested as to what dose they can take (young children, a grain for a year). It is best to give it until the patient exhibits some head symptoms, as buzzing. (*d*) To determine the necessity of repeating the doses, its excretion by the kidneys must be watched (average time twenty to forty minutes). It is best given every hour. (*e*) Vomiting seldom occurs from gastric irritation from any of the salts of this drug at present on the market. I have not found the blister treatment recommended by Dr. Caton of any avail. I should like to emphasize one point which Dr. Carey Coombs has just mentioned, namely, the occurrence of heart-block as a cardiac complication of rheumatism. In this connexion heart-block is usually temporary and not of high grade, manifesting itself as a prolongation of the As-Vs interval, and at times by dropped beats. Heart-block occurs in association with many acute specific infective processes, such as, for instance, pneumonia, influenza, and enteric fever, and there is sufficient evidence before us up to the present time, as the result of observations and of *post-mortem* records, that transient heart-block is not infrequent during the febrile stage, and if systematically looked for will be found in a larger proportion of cases than has been previously recognized.

Dr. T. R. Bradshaw (Liverpool) said: Since reading Dr. Lees's papers on the use of salicylates I have employed them in large doses, and have been impressed with their value. In chorea they seem at least as useful as any other drug, and I always advise their being given a trial. As regards the sodium bicarbonate, I doubted the necessity for the massive doses recommended, and desire information as to how they are to be administered, since the solu-

bility of the salt is very limited. As regards the evidence of dilatation in children, I should like to draw attention to the alleged fact that the normal position of the apex is outside the nipple line until the age of 12. I believe the benefit that appears to follow the treatment of endocarditis by blisters is due to the prolonged rest associated with it. The average stay in hospital of Dr. Caton's cases which were blistered was about a fortnight longer than those not so treated.

Dr. Lees, in reply, was glad to find that Dr. Abrams agreed that cardiac dilatation was very frequent in rheumatism. But he pointed out that physiological investigation of the action of drugs on the healthy body might easily lead to wrong conclusions as to their effects in conditions of disease. No one would rightly infer the remarkable therapeutic effects of mercury and digitalis from observations of their action in health. The same was true with regard to the application of ice. He strongly disapproved of the term "criminal," as applied to conscientious treatment of disease, however inadequate it might appear to be. The pathological and clinical observations of the subsequent speakers had been most instructive and valuable, and he entirely concurred with what they had said about the necessity for preventive measures, and the importance of educating public opinion on this subject. Those who had doubted the efficacy of salicylates had, unfortunately, not stated what doses they had employed. He entirely agreed with Dr. Hunter that antiseptic treatment of the throat and sometimes of the nose was very valuable.

DISCUSSION ON THE PATHOGENESIS, DIAGNOSIS, AND MEDICAL TREATMENT OF GASTRIC ULCER.

I.—Sir Bertrand Dawson, K.C.V.O., M.D., F.R.C.P.,
Physician to the London Hospital.

My problem—and it is a difficult one—is to open the discussion on this big subject adequately, and yet not lengthily. I will do my best.

One of the difficulties of the pathology of ulcer is nomenclature. It is first necessary to distinguish between lesions which are causal, and those which are incidental. "Erosions," for instance, are incidental lesions, resulting from multiple haemorrhages into or from the mucous membrane. They are small, irregular in shape, have no tendency to spread, and heal rapidly—unless associated with the last stages of life.

I would suggest as convenient the terms, "mucous ulcer," "chronic ulcer," and "acute perforated ulcer."

Mucous ulcer denotes a lesion limited to the mucous membrane and devoid of the features of inflammation. It has a rounded margin and gives the appearance of being punched out. It is usually a subacute condition, and in most instances has a tendency to heal completely. Sometimes, however, the destructive process travels deeper, and if it progresses acutely develops into a perforated ulcer. If, on the other hand, the destructive process invades the walls of the stomach more slowly and becomes associated with a secondary inflammatory process, a chronic ulcer eventuates. Some might regard "acute" ulcer as a better term than "mucous" ulcer. I think, however, that the term "acute" is from the clinical point of view misleading. Mucous ulcers are not associated with acute symptoms, if haematemesis is excepted. Indeed, the symptoms specifically due to them are often conspicuous by their absence. It is better to keep the term "acute" for those few cases which forge rapidly ahead to perforation. An ulcer is rightly called chronic directly the thickening of its edge commences. This means the involvement of the coats beneath the mucous membrane, and the tendency to heal gets less as the destructive process widens and deepens, and the inflammatory thickening increases. The starting of ulcer is now established. It is due to digestion of devitalized patches of mucous membrane. Two factors are necessary: damaged mucous membrane and gastric juice.

The sequence is shown in one of the plates in the booklet handed round. It is from a specimen in the Museum of the London Hospital. A blow on the abdominal wall damaged the mucous membrane of the stomach, and led to blood effusion, and an ulcer subsequently formed owing to the action of the acid gastric juice on the damaged area.

A few years ago I did a *post-mortem* examination on a patient who died from haemorrhage following gastro-enterostomy. There was an acute ulcer at the stoma which had clearly resulted from haemorrhage round one of the stitches. The clot had devitalized the mucous membrane, and the gastric juice had digested out the ulcer. In the 1910 volume of the Mayo Clinic there is an illustration of a similar occurrence.

But the foregoing examples, though they bring out clearly how damage to the mucous membrane can result in ulcer, cannot be the usual causes of such damage.

There is a body of evidence to show that such causes are toxic and bacterial agencies which act directly on the gastric cells, or by producing interstitial haemorrhages.

On the experimental side the work of Bolton stands out pre-eminent and convincing. By injecting gastrotoxic serum into guinea-pigs' stomachs he produced mucous ulcers. Other toxins—for example, hepatoxin, enterotoxin—produced similar ulcers. By neutralizing the gastric juice the formation of these ulcers was prevented.

Turok has produced mucous ulcers in dogs by feeding them on food infected with cultures of the colon bacillus.

On the clinical side mucous ulcers are found associated with toxic and infective conditions—that is, chronic nephritis, suppuration of the appendix, streptococcal and pneumococcal infections. The ulcers following burns probably belong to the same category. My colleague, Mr. Sherren, has shown me a picture of an acute duodenal ulcer following gangrene of the leg. The ulcers associated with these conditions almost certainly form quickly, and Bolton's experiments show that gastrotoxin injected into guinea-pigs' stomach walls can produce ulceration in from twenty-four to forty-eight hours. But the infections which are the usual causes of mucous ulcers in man are of lower grade and act more slowly. The relation between chronic appendicular infection and ulcer, if established, would be an example of this.

I will pause for a moment to consider certain histological facts. Mucous ulcer is often associated with changes characteristic of gastritis; sometimes the gastritis is general, and at other times it is restricted to the region of the ulcer. The degree of gastritis has even been observed to be more severe near the edge of the ulcer, which is most active. Miller has shown that in cases of gastric ulcer there is gastritis with swelling of the lymphoid follicles, some of which become necrotic and burst, and that in the mucous membrane outside the ulcerated area there is a great increase of lymphoid tissue. These observations bring out that mucous ulcer is associated with gastritis, and that the microscopic appearances are compatible with an infective or toxic process. The gastritis and the ulcer are offshoots of the same morbid cause.

I will now turn to the bacteriological aspect. Gastritis, presenting clinically the ulcer picture, may be associated with a low-grade infection. The same can be true in cases of mucous ulcer. I say "can" because I have not yet investigated enough cases to be able to draw general conclusions. The organisms most often met with are those of the streptococcal group. There is not time on this occasion to go into this matter in great detail, but for those who are interested, I would refer them to a paper I published in the *Lancet* in the year 1911. I may say, in passing, that care has been taken to avoid the fallacy of the organisms found in the stomach being merely swallowed.

Though it is true that the healthy stomach is free from bacterial infection, this is not true in disease. It is an interesting fact that though stomachs which are the site of a gastritis, and likely stomachs to be associated with mucous ulcer, may be found to be the seat of an infection, yet, on the other hand, I have found stomachs which are the seat of chronic ulcers sterile in the majority of the cases investigated. This observation, if it is confirmed, has, I venture to think, an interesting bearing on the problem before us. It might mean that though the search and cure of foci of infection may heal ulcer in the "mucous" or early stage, when once the chronic form is established such a line of treatment would be too late.

Further, a study of the bacteriology of the stomach brings out what is becoming increasingly evident from the clinical standpoint—namely, that we cannot look upon the gastro-intestinal tract as made up of watertight compartments. Just as, physiologically, one portion of the tract depends upon the other, so there is a close relationship between the morbid processes of the different regions. The relation between gastritis and septic conditions of the gums and pharynx on the one hand, and morbid conditions of the bowel on the other, is now a matter of knowledge, and many cases have been published where the symptoms associated with such conditions have clinically resembled those thought formerly to be characteristic of gastric ulcer. A further correlation is suggested when one recalls the occasional association of gall stones and haematemesis due to cholecystitis and gastritis, but without any ulcer being demonstrable at the operation.

The following example is an illustration of the correlation between the stomach and other regions of the alimentary tract:



Fig. 1.—Mucous ulcers in the region of the pylorus, containing remains of blood clots.

A man, aged 42, had had digestive disturbance on and off for some years. The manifestations comprised furred tongue on waking in the morning, fetid breath, a dull aching pain after food, with flatulence, constipation, and sometimes with mucus in the stools. During an attack the throat would often be the site of a chronic pharyngitis, and the tonsils, though only moderately enlarged, would be congested. The gums were swollen, but were not a marked feature. In the course of his ill health he twice had attacks suggestive of appendicular colic.

Cultures were taken from the throat and the fasting stomach during an attack, and a little later the appendix was removed and was found to be chronically inflamed, judged both from the naked-eye appearances and from careful microscopical examination. The appendix contained at the time of removal thick muco-pus under tension. Cultures of this muco-pus and cultures from the stomach and throat were submitted to my colleague, Dr. Bulloch. *Streptococcus pyogenes* was found to be the greatly predominating organism in all three, and all of them gave precisely the same fermentation results when submitted to Gordon's tests.

Removal of the appendix improved but did not cure this patient, and his condition was subsequently still further improved by a vaccine prepared from the streptococcus isolated from the stomach. I would submit, therefore, that there are strong grounds for supposing that certain forms of gastritis, mucous ulcer, or the two conditions in association, are ca[illegible]ive processes: that such processes have th[illegible]r in the stomach or away from it: that the [illegible] of infection may be in one case the tonsil, in another the colon, in another the appendix, and so on: that mucous ulcer and gastritis do not produce symptoms which render them clinically distinguishable one from the other.

Chronic Ulcer.

The evidence goes to show that this is a development from the mucous ulcer. It is the destructive process of the mucous ulcer extended into the deeper coats, with the added feature of inflammatory thickening. It is limited, like the mucous ulcer, to the hydrochloric acid area of the alimentary tract, and both mucous and chronic ulcers are found in the same stomach. As Bolton has shown, the transition from the acute to the chronic ulcer can be demonstrated microscopically. It is the inflammatory thickening which constitutes the chronicity, and as soon as that thickening has commenced in the submucous coat the ulcer is rightly styled chronic. From that moment its ability to heal will get less in proportion as the thickening progresses. The exact cause of the inflammatory thickening is not precisely determined, but it is suggestive of an effort at repair. The more chronic an ulcer becomes the less responsible is the microbic or toxic agent which has produced the originating mucous ulcer, and the more prominent become the effects of the gastric juice. This is supported by the bacteriological examination of fasting contents. Of fourteen chronic ulcers thus examined I found the cultures remained sterile in ten. It is the acid juice, the induration, and the contraction of the muscular coat which prevent the ulcer healing.



Fig. 2.—Ulcer showing further stage. Muscular layer exposed in the floor and commencing changes in the surrounding tissue.

The clinical picture of ulcer has undergone a great change. Whereas, formerly, the patient was most often a young woman, who had pain after food relieved by vomiting, with or without haematemesis, now the patient is more often a man, is over 30, and food more often relieves pain than produces it. The differences in age incidence in the two groups is strikingly shown in Fig. 5.

The change is due to surgery. We naturally give most weight to what we see, and the latter picture is frequently demonstrated, whereas the former is not. Whereas it is true that before the days of gastric surgery we had a very imperfect conception of the frequency and importance of chronic ulcer, which was often hidden under diagnosis of acid dyspepsia and hyperchlorhydria, now the tendency is the other way, and chronic ulcer is apt to be looked upon as comprising the whole problem.

In pre-operation days there is no doubt that ulcer was too readily diagnosed where it did not exist and not sufficiently diagnosed where it did exist. If haematemesis was associated with epigastric pain, relieved by vomiting, a diagnosis of ulcer was the rule.

Gradually it has been shown that this was an incorrect view, that there are other causes besides ulcer which produce haematemesis; that the bleeding may have a diffuse as well as a focal origin from the mucous membrane.

There are cases which clinically resemble ulcer; that is, manifest the pain, vomiting, haematemesis picture, and yet, when they are operated on and the stomach is opened, no ulcer is present. I have observed many of such cases, and will mention one of special interest. They occur far more often in women than in men.

A woman, aged 19, had suffered for several weeks from pain immediately after food, eased by vomiting, and shortly before admission to hospital brought up a pint of blood. Examination of the blood showed a secondary anaemia.

On examination there was deep tenderness to the right of the epigastrium, and the stomach was somewhat distended with gas. Her tonsils, though only moderately enlarged, were very septic. The gums, as a whole, were healthy, though round one tooth the red had been some pyorrhoea.

At the operation, by Mr. Turnivall, the stomach was first opened, and its inside thoroughly explored by means of the speculum. At the very commencement of this examination haemorrhage was seen to start in the cardiac region of the stomach from three separate spots, and was considerable in amount. These spots were carefully examined, but no abnormality of the mucous membrane was detected. The rest of the mucous membrane of the stomach and the pylorus looked healthy. The gall-bladder region and duodenum were healthy. A portion of the stomach wall was removed and examined microscopically by my colleague, Dr. Turnbull, who reported it to be normal. Previous examination of the fasting contents had shown on culture a diplostreptococcus. At the same operation the appendix appeared to be healthy, and was removed.

But although pre-operative clinical records of ulcer include cases which were not ulcer, I would suggest that many such, whether ulcers or not, have the same basal origin. At outset they are infections manifesting themselves—one as gastritis with mucous ulcer, another as gastritis alone.

I recall two patients of the factory girl type, presenting the same symptoms, the one with septic gums and an ulcer, the other with gastritis and colitis, but no ulcer.

The gastritis of the anaemic girl, which bulks largely in many ulcer records, would often seem to have its origin in the colon; no doubt mucous ulcers are sometimes present, the majority of them healing under treatment, but [illegible] is that such developments may occur [illegible] ear warning. There is clinical evidence which [illegible] but a chronic ulcer [illegible]

[illegible] ucous ulcer, has a definite clinical [illegible] han [illegible] are equal, while on the duodenal side the men are twice as numerous as the women. Taking all the cases, the duodenum is more often the seat than the stomach. Most of the patients are over 30.

Pain.—The dominant feature of the picture is pain. "Take away my pain, and I shall be well," the patient seems to say—so different this from the victim of malignant disease! In the majority of cases access of pain will occur from one and a half to three hours after a meal, the longer period being more often associated with duodenal location, and it will, except in bad cases, be eased by food and alkalis. If the pain occurs at night and prevents sleep, or still more if it awakes out of sleep, it is significant. In the minority of cases the pain is made worse by food, and occurs a few minutes to half an hour after a meal. The expression "hunger pain" is a good one, provided it is understood that a diagnosis cannot be based on it alone. Hunger pain, for instance, may be a feature of neurasthenia, and as such will be cured by bed or a holiday. When the ulcer is aggressive or the history lengthy the pain may become constant, food may make it worse, alkalis will give but very slight relief, and there may be exacerbations with some resemblance to a colic. Loss of weight will then ensue, and the patient may wear an aspect suggestive of malignant disease.



Fig. 3. Perforated duodenal ulcer (A). Several mucous ulcers of the stomach.

The actual cause of pain in ulcer is an interesting problem. The ulcer itself is not the direct cause, for it has been shown that the mucous membrane of the stomach is insensitive; and, further, although the pain disappears during the remission between the attacks, it is well established that the ulcer itself does not necessarily heal. The pain is probably produced by muscular tension and spasm, and in certain cases by involvement of the peritoneal surface. That spasm of the pylorus should play a prominent part in pain production is quite in keeping with our experience of pain associated with spasm of other sphincters of the body. Pyloric spasm explains the colic attacks that occur in connexion with ulcer, and the pain in the epigastrium which often ushers in an attack of acute appendicitis.

No certain relation is established between the position of the pain and the position of the ulcer, but pain to the right of the middle line suggests ulcer near the pylorus, and pain to the left of the middle line ulcer of the posterior wall. Heartburn and acid eructations are common, though bulky expulsions of gas are not.

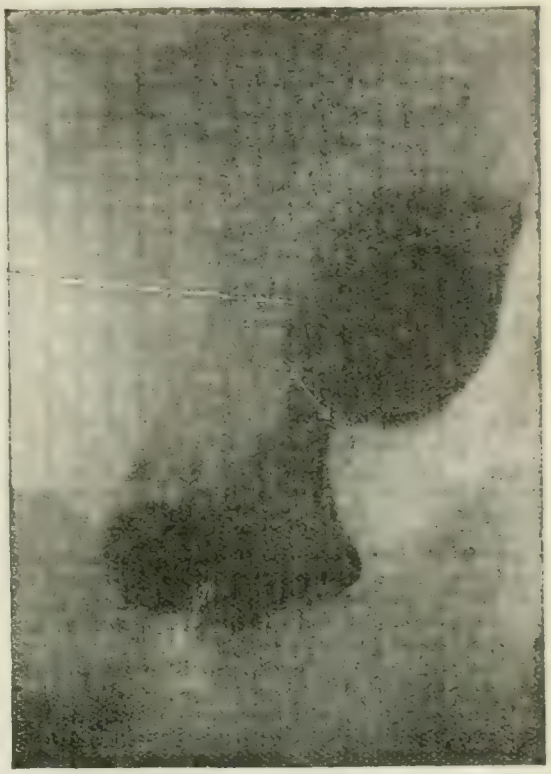
Vomiting is a familiar though not a constant feature, and it follows the pain. Where the pain is late the vomit is watery and acrid, and contains only a small amount of food. Where the pain follows food, the vomit consists of the food eaten.

[illegible] and Melaena.—As a part of the ulcer pr[illegible] are helpful features, though diagnosis should never await their appearance. If haem[illegible] occurs as an isolated event it should not be h[illegible] concluded that an ulcer [illegible] pecially if the [illegible] young and of the [illegible] or is diagn[illegible] for, in my [illegible] ld be a rule of practice not to operate [illegible] as an emergency.

Fig. 4.—Three Skiagrams from the Same Patient (Female, aged 40). (Radiograms by Dr. Gilbert Scott.)



(a) Immediately after bismuth meal; shows bismuth held up in upper portion of stomach. Note small portion (I) passing through first constriction.



(b) One hour after the meal; shows bismuth in both the upper and lower portions of the stomach. A second constriction (II) at the fundus of the stomach is now visible.



(c) Two hours after the meal; shows a further progress of the bismuth, the upper portion now half empty. Note bismuth passing pylorus, and portions (III) in small intestine, demonstrating absence of any pyloric stenoses. At operation two constrictions due to chronic simple ulceration were found in conformity with the plates.

Periodicity. — The second striking feature of chronic ulcer is the periodic appearance and disappearance of its symptoms. It comes and goes. When an attack appears it does so without apparent cause (unless sometimes it can be traced to a bout of strain and anxiety), and after enduring for two or three weeks disappears. During the attack there is a regularity in the sequence of the symptoms, and the latter have none of the erratic appearance and disappearance from day to day which characterizes gall bladder disease.

A consideration of the objective findings will now follow: Epigastric tenderness is present in many conditions, the more localized it is the more likely is an anatomic lesion to exist. Gall bladder trouble will often give identical signs. Cutaneous hyperaesthesia I have never found of assistance in diseases of the upper alimentary tract.

Test Meals. — Imperfect emptying of the stomach is evidence of value, and may be present long before the gross evidences of obstructed pylorus are apparent. It is brought out by giving a test supper, and including in the latter an article of food easy to identify, such as carrots or raisins. The next morning the ordinary test breakfast is given, and when that breakfast is withdrawn, it is noted whether there are any remnants of the supper of the night before. The finding of such remnants, in conjunction with a high acidity and with scanty show of bacteria and torulae, is very suggestive of early pyloric obstruction, due, it may be, to spasm, commencing stenosis, or both.

In malignant disease the remnants would be less clean-looking and often coffee-coloured, the acidity would be low, and bacteria and torulae would be more evident. On the other hand, in some cases of duodenal ulcer, the stomach empties itself with undue rapidity.

Acid Content. — In this connexion, let me say that hyperchlorhydria has come to be a confusing term, sometimes having a chemical and at other times a clinical significance. Acid content I base on free HCl and total acidity. Estimation of organic acids affords but little assistance, and the same applies to "combined hydrochloric acid." For clinical purposes it is important that chemical tests should be quick and easy of application, and they must justify their existence in proportion as they are cumbersome. Without doubt, both total acidity and free HCl are raised in a considerable proportion of ulcer cases. The actual figures of increase vary in different series of observations. The

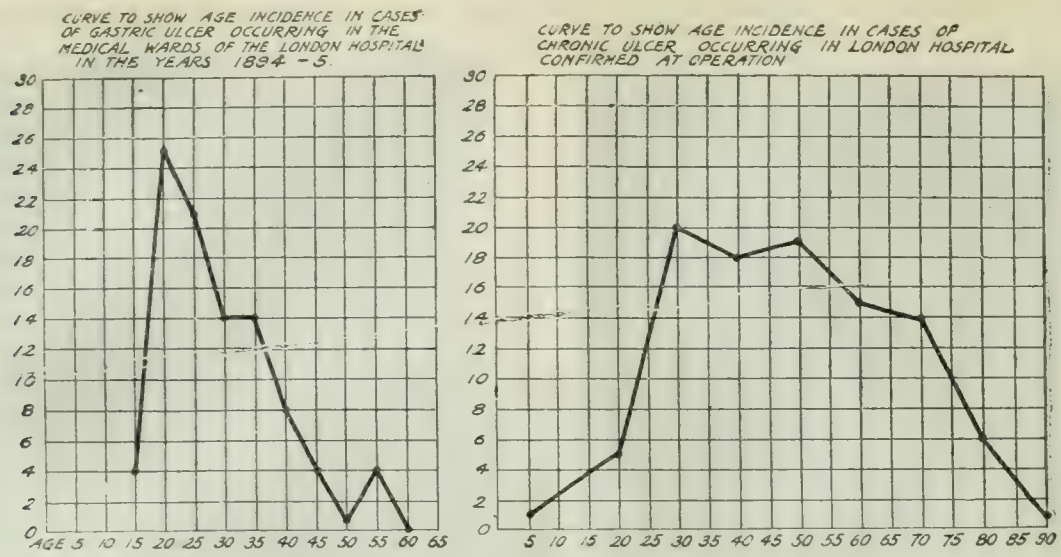


Fig. 5.

explanation of this variation may be due to differences of race, climate, and habits; but also, I suspect, to the proportion of duodenal ulcers, for the latter show, on average, a larger and more constant increase of acidity than the ulcers on the gastric side.

For England no better guide could be taken than the results contained in the excellent paper of Panton and Tidy. These authors put normal total acidity at 40 to 50, and normal free HCl at 0.1 per cent. In 44 gastric ulcers, confirmed at operation, total acidity varied from 34 to 86, and free acid from 0.06 to 0.21 per cent. In 20 duodenal ulcers total acidity varied from 43 to 105, and free acid from 0.08 to 0.3.

It follows that raised acidity, especially raised free acid, is a positive sign of value when taken in conjunction with other evidence, but it is not present in all cases.

Micro-organisms.—Bacteriological examination of the stomach in ulcer, provided there is no associated infection of the mouth, nose, and pharynx, shows scantiness or absence of microbes. This is a point worthy of attention, for in other gastric conditions the findings are different.

Radiography.—Bismuth meals help us to form an opinion as to the motility of the stomach, and as to whether there is an adequate exit at the pylorus. They further are valuable in disclosing deformities of the stomach of the hour-glass type.[1] Hertz has shown by bismuth meals that the motility of the stomach is enhanced in duodenal ulcer, a view which is confirmed by the rapidity with which a test meal will often leave the stomach in these cases.

Diagnosis.

Systemic disease may wear the guise of stomach trouble, but seldom presents difficulty to the experienced clinician. The conditions which do present difficulty are:

1. Malignant disease of the stomach.
2. Gastritis secondary to chronic infections elsewhere, and especially gastric disturbance caused by diseases of the gall bladder, appendix, and colon; and lastly
3. Hyperchlorhydria of unknown origin.

In the *diagnosis of chronic ulcer* the features which will be most helpful are:

1. The pain.
2. The constancy of the pain—food sequence.
3. The periodicity of the attacks.

In *gall bladder dyspepsia*, for example, the pain, tenderness, and even the acidity, may closely resemble ulcer, and there is often a certain amount of soda relief; but the great difference is that the gall bladder symptoms do not show constancy. They even vary from day to day. One day they will be marked, and the next day the patient may be in comparative comfort. There is usually more gas in the gall bladder than in the ulcer case. Needless to say the history is important, but even if this bulges out colic one has to bear in mind that colic pain is sometimes a feature of ulcer.

Appendicular and colonic dyspepsia may closely simulate ulcer. Often there has been no attack of appendicitis to help. Epigastric pain, due to an appendix, is a constant grumble, less related to food than in ulcer, and often aggravated by jolting or exercise. Moreover, the free and total acidity are more often down than up. Tenderness over the appendix should always be looked for in gastric cases, and the bowel washed out and the contents examined. Again, where there are manifestations suggestive of ulcer, the careful examination of mouth, nose, and pharynx should not be forgotten. But with all the care possible, in the present state of knowledge mistakes will sometimes be made.

The existence of *cases of recurring acid dyspepsia* with raised acid content, but independently of an anatomical lesion, has been a matter of some controversy. I think such cases do exist, though, no doubt, many of them thus classified in the past have had either ulcer or appendicular infection as a basis, as Moynihan has repeatedly emphasized. The presence of ulcer is easily established at operation, but with the appendix it is difficult to determine what amount of deviation from the normal justifies a verdict of guilty. Appendices and their contents need to be examined thoroughly and systematically to clear this matter up. We have to watch ourselves lest the appendix becomes the refuge of the destitute diagnostician.

Cancer is clinically unfolded in three ways:

1. There is the patient with an excellent health record, who loses appetite and strength; he, perhaps, has lost but a few pounds, but has wasted at the back of the neck and the backs of the hands; there is gastric discomfort rather than pain, and there is a feeling of depression and failing vitality. Abdominal examination discloses nothing, but a test breakfast will disclose lowered or absent free acidity.

2. The patient has been liable to dyspepsia for years, and these symptoms have recently become aggravated, and perhaps a tumour appears.

3. With this group the difficulty is great. The patient gives a history of recurring attacks, conforming in type to those of gastric ulcer. Failure of flesh and strength have supervened; yet the acid content may still be raised. Cancer has become grafted on ulcer.

These cases are very difficult to be sure about, and exploratory operation is needed.

Treatment.

Keep the alimentary tract clean and healthy, and ulcer will be less frequent; keep gums and teeth free from sepsis; treat tonsillar and naso-pharyngeal infections. It needs to be emphasized that there is all the difference between action and evacuation of the bowels. Faecal stasis is consistent with regularity in defaecation. An

[1] The diagrams on page 939 bear on this point. The paper was illustrated by many more pictures than it has been possible to reproduce.

infection may start high or low in the tract—a low grade gastritis, colitis, or appendicitis, or one may follow the other. Reasonable feeding is important, because it enables stomach and intestine to functionate well. The gastritis associated with mucous ulcer is of a toxic character, and there is no evidence that the irritative gastritis—say, of tea and alcohol—carries with it any special proneness to ulcer.

Mucous Ulcer.—Our inability to diagnose mucous ulcer from the gastritis which accompanies it is of no practical moment, for the treatment is the same. The danger lies in missing an ulcer which is becoming chronic or one that is threatening to perforate. The points to pay attention to are the persistence of pain and tenderness *after* the patient has been put to bed and the history of previous illnesses. In mucous ulcer and gastritis the symptoms disappear quite quickly, and light solids and even iron are tolerated in a few days; whereas, if there is an ulcer becoming chronic, the tenderness and pain and intolerance to solid food persist longer, and there will often be a history of previous attacks.

The response of the mucous ulcer to *treatment* is a contrast to that of the chronic ulcer. The great thing is rest. With this, with milk or light solid diet, with the treatment of the cause, and with bismuth and soda for a few days, followed by iron and arsenic, the cases respond promptly—so different to the difficulties with chronic ulcer.

Chronic Ulcer.—Whatever be the cause of ulcer, it is abundantly clear that acidity of gastric juice plays an important part both in its production and its continuance. An essential element in its treatment, therefore, is to remove the causes of excessive acidity, whether those causes in any given case reside in the stomach or outside it. It is further necessary to prevent the accumulation of acid, especially when there is no food in the stomach, or, failing this, to bind or neutralize it. There is no doubt that an ulcer on the road to healing will be set back by a bout of acidity. The pain that will sometimes awaken a patient at night is a symptomatic expression of this fact.

The motility of the stomach is seldom diminished, sometimes the reverse—for example, duodenal ulcer. The aim should be to limit its movements to what are required for the voiding of food and gas.

Rest of body in bed will rest the stomach, for thereby movement is diminished, and the food requirements are lessened.

Food must be such as to promote the least stomach effort. Milk (except in individuals who do not tolerate it) is the best to commence with, and it should be continued for three weeks. Eggs may be given with it. After three weeks the diet may be extended. Food must be finely divided and easily digestible, given in small quantities every two to three hours, with a dose of alkali at the intermediate hours. This will provide for the day, but the stomach must not be left to itself at night, or acid will form, pyloric spasm will be set up, and the healing work of the day will be undone. A dose of alkali (pulv. dyspepticus, consisting of bism. carb., sod. bicarb., and mag. carb.) before going to sleep, and even food or alkali in the middle of the night, may be desirable. Sometimes food alone is sufficient, but—keep down the stomach acidity at night.

Surgical Treatment.

Every physician should be acquainted with the *rationale* of operative treatment, and should be jointly responsible with his surgical colleague for its employment. It follows that the principles underlying an operation, as distinct from its technique, are within the sphere of a physician, and therefore of this discussion.

Where there is a structural narrowing at the pylorus the indications for gastro-enterostomy are as clear as the mode by which it gives relief. In no other gastric condition does the operation give such excellent results. Here I would urge that structural pyloric stenosis should not await diagnosis till such obvious signs as visible peristalsis and bulky vomitings have put in their appearance. Careful routine examination, including such means as test supper, inflation, and the bismuth meal, will usually disclose the condition

When there is no structural stenosis the way in which gastro-enterostomy helps is not so clear. Some say that for such conditions as ulcer of the duodenum and the lesser curve it is unsound treatment. Arbuthnot Lane holds this view.

I think the facts definitely show that chronic ulcers, wherever situated, are benefited by short-circuiting, though cure can be spoken of with more confidence where the ulcer is near the pylorus than elsewhere. Some results recently published in the *Lancet* by Sherren speak eloquently as to the efficacy of the operation.

The reason why gastro-enterostomy is more successful now than it was is not only because of improved technique, but because—unlike formerly—it is only done in suitable cases to achieve clearly defined objects, and not as a thoughtless remedy for any intractable gastric case.

The Modus Operandi of Gastro-enterostomy.

When the stomach contains food the stoma affords an alternative route. If the pyloric spasm is considerable, as it is likely to be with an ulcer near the pylorus, the stoma is the route of least resistance, and far less vigorous peristalsis is required to drive the contents through it than through an irritated pylorus. No doubt, as the ulcer heals, some of the food resumes the normal route: but the stoma, unguarded by a sphincter, remains as a safety-valve, ready for use if, on occasion, an over-vigorous peristalsis is called forth, whether from excessive or irritable contents or from hyperacidity causing pyloro-spasm.

When the stomach is empty of food the stoma prevents accumulation of acid juice; and, further, the alkaline fluid from the proximal loop passes through the stoma and helps to neutralize the stomach acid. This is an advantage which gastro-enterostomy has—namely, it better guards against relapse.

The hyperacidity stage which precedes ulcer may operate in silence, and no symptoms appear till the mischief is done, whereas a stoma is an exit for acid juice and food contents, and possibly an inlet for alkaline secretion. In other words, gastro-enterostomy is a better precaution against recurring irritation, and, if the liability of ulcer to pass into cancer is confirmed, the argument for its use is correspondingly stronger.

In some instances where a diseased appendix has been found concurrently with ulcer of the body of the stomach, the appendix has been removed and the ulcer excised, and no gastro-enterostomy done. This is a procedure well worthy of trial, and is being tried by surgeons here, and by the Mayo Clinic in America. It is thought that appendicular trouble can produce pyloric spasm and hyperacidity as well as chronic infection, and the sequence in the above type of case may have been—appendix mischief, pyloro-spasm, mucous ulcer and hyperacidity, and lastly, chronic ulcer. Removing the appendix would remove the cause, and excising the ulcer the effect.

As removing the appendix at the time of gastro-enterostomy can be usually effected without material addition to the risk, there is an advantage, considering the relation that can exist between it and the stomach, in so doing, always provided that the appendix is thoroughly examined and reported on.

As to the conditions which should favour medical or operative treatment, they may be stated as follows:

If there is no evidence of structural stenosis, medical treatment should be employed, and will often completely succeed. It must endure for three months. If, after such treatment, return to conditions of employment causes relapse, or if every few months there is a periodic return of symptoms, even though such be slight, emphatically operative interference should be advised. Hyperacidity and imperfect emptying of the stomach would likewise support operation. If at any time there is evidence of progressive structural stenosis operation should never be delayed.

Hæmatemesis.

In a proportion of cases severe bleeding occurs as an isolated phenomenon, and without any other manifestation of disease. Under such circumstances the rule should

be, Do not operate for the immediate condition, and for these reasons:

1. Medical treatment usually succeeds.
2. A blanched patient is a very unfavourable subject for operative interference.
3. The bleeding may have no focal origin, but arise from multiple points, and thus be incapable of arrest by mechanical means.

The above considerations have greater force if the patient is young and of the female sex.

Although operation is inadvisable for the haematemesis itself, it might be wise to operate for the conditions underlying it as soon as the patient has sufficiently recovered. There is no need to withhold food for more than thirty-six to forty-eight hours after an attack of haematemesis, which is about as long as the patient's disinclination lasts. Milk and egg (well beaten) in small quantities help the patient's healing powers and bind the acid juice. Light feeding after haemorrhage was Sutton's teaching twenty-five years ago.

But little reliance can be placed on rectal feeding. The amount of food absorbed is small, and however carefully the rectum is washed out, it is difficult to avoid putrefactive changes. The sweet smell of the breath, and even the smell of the patient, do not encourage the continuance. Where feeding by mouth is not permissible, I think a patient will often do better with saline injections and living on his own tissues than with rectal enemata.

Post-operative treatment should never be forgotten. Heavy physical or mental work ought to be avoided for a long while. There should be a period of "half-steam." Food should be first-cooked and easily digestible. Drink should be taken at the end of or between meals, not at meals. Alcohol should be avoided, except with the last meal of the day, when sometimes in small quantity it will do good. Long intervals without food must be studiously avoided. Hyperacidity is benefited by cream, olive oil, or cod-liver oil, taken twice daily between meals.

Heavy labour does upset some gastro-enterostomy cases. When such symptoms do arise, a day's rest in bed will do most good, followed by a period of careful dieting and resting before the last meal of the day and an alkaline mixture.

II.—ROBERT SAUNDBY, M.D.Edin., F.R.C.P., LL.D.,

Professor of Medicine, University of Birmingham.

Professor SAUNDBY said: I congratulate the Section on the admirable manner in which this subject has been introduced, and wish to emphasize a few points upon which there is little or no difference of opinion among teachers and writers on the subject, but which are not sufficiently appreciated by practitioners. These are (1) the difficulty of diagnosis, and hence the need for the uniform treatment of all cases that present a certain group of symptoms; (2) the absolute necessity for insisting upon rest in bed in all cases where the presence of a gastric ulcer is reasonably suspected; (3) the futility of the old starvation method of treatment, but the propriety of early feeding in proportion to the tolerance of the stomach. The chief indication for surgical interference is the evidence of pyloric obstruction, which should be sought for by the administration of a test meal containing currants, the stomach being washed out at the end of six hours and the washings examined for remains of food. Recurrent attacks after long intervals suggest the need for surgical help, but the decision must in such case rest upon its special circumstances. Interference for haemorrhage only is deprecated by surgeons; in my practice it had often been considered but never undertaken, and I have had no occasion to regret its omission.

III.—J. MICHELL CLARKE, M.A., M.D., F.R.C.P.,

Physician, Bristol General Hospital.

Dr. J. MICHELL CLARKE said: Confining my remarks to cases in which a gastric ulcer is the primary lesion, the first point I wish to deal with is the apparent discrepancy between the older medical statistics as to the age and sex incidence of gastric ulcer, and those more recent ones derived from the results of operations on the stomach and from *post-mortem* examinations. The former showed a great predominance of the female sex and of persons below 35 years of age; in the latter men are as often, or more often, affected as women, and the average age is 40 or over. Obviously the cases that come to operation or to *post-mortem* examination are more severe than the great majority of those that we are accustomed to treat in the medical wards, and to see go out relieved of their symptoms after a few weeks.

If for the moment we accept, for the sake of argument, the classical symptoms of gastric pain, aggravated by food, vomiting, often with relief of pain, and haematemesis, with or without melaena, as indicative of gastric ulcer, and reinvestigate such cases, they fall naturally into two great groups, the first corresponding to what has been called by Sir Bertrand Dawson the mucous, and is also called the acute, ulcer, and the second to the chronic ulcer. We shall further find that a dividing line of age separates these two groups, the great majority of the first occurring under 30 or 35 years of age, and of the second after that age. I do not, of course, mean to say that a chronic ulcer never occurs below the age of 30 to 35, nor an acute ulcer after that age; but generally speaking, the clinical course of the cases under consideration is distinct before and after that age—in the former females predominating, in the latter males being as numerous as, or more numerous than, females.

Proceeding in this way, I have taken the last 150 consecutive cases diagnosed as a gastric or duodenal ulcer either acute or chronic, under my care in the Bristol General Hospital. No especial distinction is made between a gastric and duodenal ulcer. Further, I should add that cases admitted during the same period for an actual perforation would not be included, as they would pass directly under the care of the surgeon, and a further small number would be also directly admitted to the surgical wards for operation for other complications of ulcer.

Of these 150 cases, 32 were between the ages of 15 and 20 years; of these, 3 were males and 29 females; 19 were admitted for the first attack, 13 for recurrence with a history of one or more former attacks. All recovered from the attack; none of them had any further haematemesis after admission; the average stay in the hospital was three weeks; one was operated upon for perigastric adhesions.

There were 55 cases between the ages of 20 and 30—2 males and 53 females; 19 again were admitted for first attacks, 36 for recurrent attacks; the average duration from the first attack was two and a half years. Again there were no deaths, and the patients left the hospital relieved of their symptoms—at any rate, for the time; the average stay in hospital was four weeks. Two cases had a fresh haematemesis shortly after admission. It is interesting to note that in 3 cases a gastro-enterostomy had been done at another hospital for a former attack, and that in each the symptoms returned as badly as ever at intervals of one to three years after the operation. There were 63 cases between the ages of 30 and 50, and I have included with these one patient of 56 and two of 62 years of age; 30 were males and 33 females; 11 were admitted for first attacks; there were no deaths amongst these 11, and the majority were women under 35. Fifty-two gave a history of former attacks—27 males and 25 females—and the average duration of symptoms was four and a half years. One case had a return of haematemesis soon after admission. There were 9 deaths in this group, or 18 per cent. nearly; 1 died from perforative peritonitis, 2 from haemorrhage, 4 died later from cancer occurring at or near the site of a chronic ulcer, and 2 after gastro-jejunostomy, of whom 1 died from pneumonia. In 7 cases there was marked dilatation of the stomach from chronic ulcer near the pylorus; in 5 of these a gastro-jejunostomy was done with relief of symptoms, 2 refused operation; 2 were successfully operated on for perforation, 1 for an hour glass stomach, and 2 for perigastric adhesions.

The above results are simply those that occurred whilst the patients were in the hospital; I have not attempted to trace the after-history of the patients. Without laying undue stress on a limited number of cases, I think they illustrate that the cases fall into two groups on an age basis, and that the cases of chronic ulcer occurring over the age of 30 to 35 fairly correspond to the results derived from operative and *post-mortem* work, especially when we remember that the cases admitted for a perforated ulcer

are not included in the long duration, frequency of complications, for example, dilatation of stomach, perigastric adhesions, severe haemorrhages, high mortality, and often persistent hyperacidity of gastric juice. About the actual lesion in these cases there is no dispute; the cause is a chronic ulcer. The cases below 30 form an equally distinctive group. The marked features being (1) the low mortality; (2) tendency to recurrence, with intervals of considerable length of freedom from symptoms, contrasting in this respect with the chronic ulcer in which the symptoms, once established, are more constant or recur at shorter intervals; (3) less severe pain; (4) sudden onset and cessation of haemorrhage; (5) hyperacidity not so marked; (6) absence of complications. Though perforation and fatal haemorrhage may occur they are very infrequent. This absence of complications may be connected with the superficial character of the lesion.

There is much less unanimity as to the nature of the lesions in these cases. They have been attributed to: (1) Haemorrhagic erosions; (2) the condition named by Hale White "gastrostaxis"; and (3) to acute gastric ulcer. Now, the conditions under which haemorrhagic erosions are found *post mortem*, for example, differ very greatly from those present in these patients, whilst those found in the acute gastric ulcer as experimentally produced in animals by Dr. C. Bolton correspond very closely, as he shows, in respect of (1) the short duration of symptoms; (2) the tendency to heal; (3) the rare occurrence of profuse haemorrhage unless an artery is accidently involved; and (4) the sudden onset and cessation of haemorrhage. I therefore conclude that in the large majority of cases under 30 to 35 there is a clinical condition corresponding with the experimentally produced acute ulcer, although some cases may own a different pathology; whilst in patients above that age the symptoms are due to a chronic ulcer, the pathological causes of which are at present uncertain.

In passing to the clinical causes of gastric ulcer I would first of all note its greater frequency in hospital patients than in those of a better social position. It seems to me that this greater frequency may be connected with the much greater prevalence of defective teeth and oral sepsis in the former, owing to the neglect of their teeth by the poorer classes, to the diseases of the tonsils, pharynx, nose, and accessory sinuses being also more common in them, and the considerable differences in the matter of dietary between the lower and the middle and upper classes. The working classes, especially young women, often live on a diet which consists largely of bread-and-butter, tinned foods, and tea. Such foods are slow of gastric digestion, and excite more copious flow of gastric juice than those more rapidly digested. Dr. C. Bolton found in his experiments that the action of gastrotoxin in producing acute ulcer of the stomach was favoured by the presence of HCl. It seems that an important cause of the acute ulcer may be the swallowing of toxins from the mouth, throat, or nasal passages, and of these septic teeth would be far the most important source, aided by an over-acidity or too long maintained acidity of the gastric contents. Of course I do not mean to say that all cases of ulcer can be thus accounted for—we all know that gastric ulcer may occur with perfectly good teeth and without sepsis in the mouth, throat, or nose—but I believe that these factors play a very important part in its causation. Sometimes, again, the source of infection may be in the food. There is considerable difficulty in understanding the recurrent attacks in acute or mucous ulcer. To meet this some authorities have postulated a diathesis to ulcer. However this may be, an important part in the production of ulcer is probably played by the lymphoid tissue, which is abundantly present in the gastric mucous membrane; is it possible that individual variation in its amount may partly account for varying susceptibility to ulceration of the gastric mucosa? Again, it is possible that the recurrent attacks in acute ulcer are simply due to recurrent infections by toxins derived from one of the sources above mentioned and constantly present there, and the intervals of freedom to periods of acquired immunity. One of the problems requiring solution is the relation of the acute to the chronic ulcer. The great difference in the sex and age relations between the two groups points to some differences in etiology. It is obvious, I think, that the great majority of cases of acute do not pass on into chronic ulcer. The history of the two groups is clinically different. At the same time in a certain number of patients we do get a continuous history which seems to point to the occasional passage of acute into the more serious form of chronic ulcer. Dr. C. Bolton has shown the great importance of delay of the stomach contents during digestion in preventing an acute ulcer from healing, and possibly spastic contraction of the pylorus due to an ulcer in its vicinity or motor insufficiency of the gastric wall from severe anaemia or other causes of debility may, by causing delay in emptying the stomach, bring about the transition of the acute into the chronic form. In the causation of chronic ulcer in men I believe abuse of alcohol to be an important factor.

In the diagnosis of ulcer little help is to be gained from physical examination except in those chronic cases in which dilatation, hour-glass stomach, or perigastric adhesions are present, but in all cases I attach importance to local tenderness when present. Decided tenderness is not found in merely dyspeptic conditions and is suggestive of a breach of mucous surface; at the same time, it is not always present. Without going fully into the differential diagnosis from cancer, I would merely draw attention to one point, and that is the occasional occurrence of a very large haemorrhage (of bright red blood) from the stomach as the initial symptom of cancer. Two cases of this kind have occurred in my wards during the past twelve months. In one woman it was the first symptom of ill health, and she vomited from 2 to 3 pints of blood. In the other case, a man, the amount was also large, and he was only 42 years old. Nowadays age seems to be of small account in the occurrence of cancer of the stomach, which cannot be excluded on this score. Initial profuse haematemesis, under such circumstances, may easily lead to a mistaken diagnosis of ulcer. More often a large haematemesis, if it occurs at all, and it is not very common in cancer, takes place towards the end of the illness, or is the immediate cause of death. I may also mention the importance of examining the faeces for small quantities of blood—"occult haemorrhage"—both in diagnosis and in watching the progress of a case.

Treatment.—In the first group, those under 30 to 35 years of age, a large number come under treatment for recent haematemesis in greater or less amounts, but rarely so great as to threaten life. In most hospital patients the haemorrhage has occurred one or two days before or on the day of admission, and experience shows that it rarely recurs in macroscopical amounts. As a rule, when the patient has once been put at rest under treatment haemorrhage ceases for that attack. Return of haemorrhage only took place in my cases in about 3 or 4 per cent. Very often there have been not one but several attacks of small or moderate haemorrhage during the previous two or three weeks before admission.

Very small quantities of blood—"occult haemorrhage"—will, however, often be found in the faeces for seven to ten days after admission, and for such patients absolute rest is necessary—nothing by the mouth for twelve hours except water to moisten the lips, then water for twenty-four to forty-eight hours with rectal injections of normal saline, or of normal saline containing dextrose and sanatogen or somatose. At the end of thirty-six to forty-eight hours to begin Lenhartz's diet. It is unnecessary to keep these patients on rectal feeding any longer, as the haemorrhage does not recur, and rectal feeding weakens the patients and means a protracted convalescence.

In my experience these patients do extremely well on Lenhartz's diet and soon lose their pain. There is a constant loss of weight for the first ten to fourteen days on this diet, afterwards a steady gain. The directions as to absolute rest must be rigidly carried out. The patients generally go out in good condition at the end of a month. I do not use the icebag over the stomach. Some caution is necessary in putting the patient on to pounded meat, as it is apt to give pain at first, and I often omit the rice included in the diet, as it does not suit all patients. As a rule no medicine is required, except iron in the anaemia cases, when I use ʒss–ʒj doses of the saccharated carbonate. The bowels are moved by enema, or if there is a foul tongue by mist. alba. Adrenalin has seemed useful in cases when haemorrhage continued, and in the occasional

cases where it is severe and repeated the question of operation has to be considered. This decision is often one of great difficulty; operation for haemorrhage in these cases gives unsatisfactory results and is to be avoided if possible.

In these cases gastro-jejunostomy is not to be advised, as the patients get well from the attacks, and as the operation does not prevent a recurrence at some future time, as is illustrated in the three instances I have given above. Further knowledge of the etiology is much to be desired, as the urgent need in these cases is to be able to prevent a recurrence of the attacks. In this connexion it is most important that in every case the teeth should be thoroughly attended to and oral sepsis got rid of; similarly any disease in the throat, nose, or accessory sinuses should receive careful treatment. It is possible that attention to these matters, care as to proper mastication of food, and a diet, when this is wrong, regulated accordingly to physiological rules, may do much to prevent recurrences.

In the small number of cases in which the disease seems to pass into the chronic form of ulcer the treatment will be adapted to that variety.

With regard to the treatment of the second group of chronic ulcer a certain number may get well and keep well on similar lines of treatment; even greater care with respect to diet is necessary for a very long time afterwards, or perhaps permanently if they are to remain well. More often a relapse soon occurs, or some complication is present which demands more active measures.

Apart from perforation and its sequelae the conditions for which a gastro-jejunostomy should be advised are (1) continual pain or discomfort, unrelieved after a fair trial of medical measures, and which is making the patient an invalid, (2) persistent dilatation, (3) "hour-glass" stomach, (4) perigastric adhesions, (5) severe and repeated haemorrhage. If possible operation for haemorrhage should be done in the interval between the attacks; the decision as to whether or not operation should be done at once in cases of severe haemorrhage from a chronic ulcer is often most difficult to decide. Another question which requires decision is whether in operations for perforation of a chronic ulcer a gastro-jejunostomy should be done as well, provided the patient's condition is good enough. From experience of a few cases who continued to be liable to severe symptoms, including large haemorrhages, for years after an operation for perforation had been done, I am inclined to answer this question in the affirmative.

IV.—WILLIAM HUNTER, M.D.Edin., F.R.C.P.,
Assistant Physician, Charing Cross Hospital.

DR. WILLIAM HUNTER said: With regard to the pathogenesis, I wish to add that I have made many thousands of microscopical examinations on the mucous membrane of the alimentary tract, and have almost invariably found an infection by staphylococcal and streptococcal micro-organisms. Gastric ulceration is more common than is generally supposed, and often accompanies gastritis, as Sir Bertrand Dawson has said. Later, the ulcer may become indurated, and the ulcer may be prevented from healing by the acid gastric juice. The importance of oral sepsis has not been exaggerated. It should be the first duty of the physician to remove every source of possible infection in the mouth. One other point is important, namely, the value of the temperature chart. A removal of the infective source causes an immediate drop in the temperature, and the patient ultimately is discharged free from gastric ulceration. Remedial measures are all-important and essential, but the most important procedure is to remove the underlying cause. Septic gastritis has been responsible for [illegible] three-quarters of the cases of stomach disorder under my care. The bactericidal power of the gastric juice is never complete in health, and for the greater part of the day is poor and insufficient to check infection. This factor has been, and is being, overlooked. The most important treatment is treatment by antiseptic measures. These should be directed to the mouth, for the infection comes from above and not from below. I have not experienced the need for surgical help of which others have spoken.

V.—C. H. MILLER, M.D.,
London.

DR. C. H. MILLER said: My observations on gastric ulcer are based chiefly on the histology of a number of stomachs examined *post mortem*, and from snippings of mucous membrane removed in life during operations on the stomach. Any form of ulcerated stomach found *post mortem* was examined, and those in which malignant disease of the stomach was found were discarded. Sections were cut in paraffin of the following parts of the stomach: Pylorus, fundus, lesser and greater curvatures, from edges of ulcers and the stomach wall near an ulcer. These were stained with haematoxylin and eosin, with orcein or Weigert's stain for elastic fibres, with Van Giesen's stain for white connective tissue fibres, and a few with Pappenheim's stain. Other stomachs were examined in which ulcers did not exist. Some difficulty occurred with regard to *post-mortem* ulceration, and various measures were tried to prevent it. But no method met with success, and as it was always worse in those who died slowly I came to the conclusion that the so-called *post-mortem* digestion sets in during the last hours of life.

The stomachs examined may be classified into two main groups: (1) Those with definite general disease of the vascular system; (2) those in which no general vascular disease could be found. With regard to the former, it is well known that ulcers of the stomach occur in certain forms of heart disease which are associated with multiple infarction of the usual organs, such as spleen and kidney. It has been contended that all ulcers of the stomach are due to vascular interference causing local ischaemia, and when no definite infarctive agent could be found it was suggested that arterial spasm would account for it.

But whatever may be the value of this view, it is quite certain that gastric ulcers may be caused by emboli and by other morbid conditions of blood vessels. Perhaps the commonest condition is endocarditis of the mitral valve, in which there are many systemic emboli. In many of these cases the stomach is found to be full of blood, and when this has been washed away numerous small ulcers are seen in the mucous membrane. They are most common at the fundus, and are seldom deep. Microscopic examination reveals the blocking of small arterioles in the submucous layer by particles of thrombus. Immediately over the blocked vessel the mucous membrane is necrotic and in places ulcerated. Frequently the ulceration has reached the submucous layer and caused destruction of the coats of the blood vessels, and this is the explanation of the free blood in the stomach. There are many other examples of ulceration following embolism. Of my series, heart disease was the commonest origin of embolic material, and general miliary tuberculosis accounted for a few.

An interesting case was one in which there was gangrene of a large piece of small intestine. The spleen was enlarged, and the diagnosis of "splenic anaemia" had been made during life. In the stomach were numerous shallow ulcers. Further examination revealed a morbid condition of all the veins in the tissues that were examined. In the submucous layer of the stomach the veins were extensively altered in all layers. The adventitia was thick and dense; the media was thick, granular, and irregular, and the usual appearance of unstriped muscle was lost. The intima was rough and irregular, the cells unrecognizable as endothelium; in some places there were heaped-up collections of cells in the intima. In this way the lumen was narrowed, and shreds of adherent clot were seen in many places. In this case the gangrene of the intestine and the ulceration of the stomach were probably due to the same condition—thrombosis of diseased veins. From such cases it is justifiable to argue that the integrity of the mucous membrane is directly dependent on the condition of the submucous blood vessels, both arteries and veins. But it is not permissible to argue from such cases that all gastric ulcers are due to such causes. In other words, embolism and thrombosis can and do cause ulceration, but as these conditions are not always present they cannot be the only causes.

Turning to the larger group in which gross vascular disturbance was not present, the most important and most constant change was found in the lymphoid follicles of the stomach. Attention has been drawn to

them by many observers; Dr. Beaumont described "boils" in the stomach of Alexis St. Martin. The late Dr. Samuel Fenwick used to teach the importance of these follicles in the causation of gastric ulcer. Dr. Soltau Fenwick has described them very fully, and to him should be given the chief credit for the first full account of their behaviour. My observations were made independently and with the object of seeing what histological changes could be associated with gastric ulcer. First non-ulcerated stomachs were examined from subjects who had died from accidental causes other than burns. In the infant lymphoid follicles were absent, in the child of 2 years they were scanty, in the adult they were well marked. The chief situations were in the lesser curvature and at the pyloric opening. In these regions the follicles were large and situated in groups. In the fundus the follicles were small and separate, being similar to the solitary follicles of the large intestine.

In old age the follicles of the lesser curve and pylorus were smaller and fewer.

An attempt was made to find changes in the stomachs of dyspeptics, but the difficulties were very great owing to the lack of material, for the majority of those who may have suffered from some form of dyspepsia came to the *post-mortem* room for other causes.

Briefly, the histological changes found in dyspeptics were the following:

(*a*) In the mucosa. In many there were no discernible changes in the cells. In some there was a shortening of the mucous membrane, giving it a stunted appearance. In a few there was a definite increase in the number of oxyntic cells.

(*b*) The muscularis mucosae was thickened in some stomachs. The connective tissue fibres underlying the epithelial cells were thickened, and showed up clearly with Van Gieson's stain.

(*c*) The lymphoid follicles were increased in size and number. In some they stood up above the level of the mucosa.

(*d*) The submucous layer was thicker and denser than in the normal stomach. Collections of round cells were common in this layer, and in some there was a diffuse local round-celled infiltration. Plasma cells were constantly found when Pappenheim's stain was used. In the pylorus there were sometimes lymphoid nodules in the submucous layer.

The chief features were increase of lymphoid tissue, fibrosis of connective tissue layers, and stunting of the mucous membrane. Several cases died from severe hæmatemesis, and *post mortem* there was no visible ulcer. Many sections were cut from various parts.

The chief changes were found in the lymphoid follicles. In many cases throughout the stomach they were swollen and necrotic. In a few sections they had partly or entirely sloughed away, leaving some lymphoid cells on the muscularis mucosae, and a great round-celled infiltration of this layer and the submucous layer. Many inflamed follicles could be found in these stomachs, and the condition was apparently one of acute general inflammation. In some of these stomachs there were areas where perforation had almost taken place. Those in which perforation had taken place presented the same changes, but owing to the possibility of the inflammation extending from the peritoneal coat inwards, their histological appearances may be of mixed causation.

In some cases the submucous vessels were surrounded by areas of hæmorrhage in the connective tissue layer. It is justifiable to infer that in these cases the lymphoid follicles burst and exposed the underlying tissues to the action of the gastric juice. The failure to see macroscopic ulcers may be due to the redundant mucous membrane covering over the gap, and the contraction of the muscular layers which would be stimulated by the gastric juice. It is worthy of note that in some of these sections there was an enormous number of oxyntic cells. They were found in cases of chronic gastric ulcer characterized by remarkable constancy.

The points of interest are not so much in the ulcer as in the non-ulcerated parts of the stomach. In a large number of cases chronic ulcers are multiple. But in nearly all in which a chronic ulcer is visible small shallow ulcers can be found by careful search. Apart from these ulcers the changes in other parts of the stomach are similar to those that are seen in the dyspeptic stomach, the differences being of degree only. They are an increase in size and number of lymphoid follicles, fibrosis of the submucous layer, round-celled infiltration of the submucous layer. In the fibrosed areas there were changes in the arterioles, a thickening of the adventitia, and endarteritis of the intima. Many sections showed excess of oxyntic cells. In the floors of chronic ulcers where arteries were exposed the arterial wall was necrotic and the coats separated. Between the coats blood corpuscles were seen. There was thus formed a dissecting aneurysm on a small scale.

A brief review of some of the historical views of gastric ulcer may be considered at this point and their bearing on the present subject illustrated. Hunter believed that the vitality of the cells protected the stomach from self-digestion, but Barnard and Pavy showed that living tissues, such as a rabbit's ear, could be digested. Barnard further pointed out that the superficial layer of mucous membrane was constantly being dissolved during life and as constantly replaced. Pavy showed that if a strip of mucous membrane was removed from a small area no digestion of the deeper layers took place, provided that the circulation was intact. This led him to think that the acidity of the gastric juice was normally neutralized by the alkalinity of the circulating blood. The importance of circulatory disturbances was demonstrated by Virchow and Colnheim. The work of Mathes threw more light on the subject. He pointed out that there is a larger area of mucous membrane than of the other coats and that the mucous membrane is arranged in folds. When a small piece of mucous membrane is removed from the stomach of a healthy living animal, the denuded area is immediately covered over by the redundant mucous membrane. If a larger piece is removed, the bare area is made smaller in the same way; and in addition the exposed muscular layer responds to the stimulation by the gastric juice and contracts. To prevent this action of the muscular layer Mathes sewed a glass ring to the peritoneal coat with sutures passing through and fixing the muscular coats. He then removed the mucous membrane corresponding to the area of the ring. But even then the denuded surface was covered over without permanent ulceration. Having failed to produce a lasting ulcer in this way he repeated the operation and left some 0.5 per cent. hydrochloric acid in the stomach. The animal was killed four weeks later and an open ulcer found. He concluded that hyperchlorhydria is the most important factor in gastric ulcer.

Turning to the points upon which histology has a bearing, interference with the circulation in the submucous layer leads to a condition in which the mucous coat loses its vitality over the affected area and is digested. In the other stomachs, in which there was no primary vascular disturbance, it may be assumed that lymphoid follicles become necrotic and burst. If the mucous membrane is pliant and redundant and the other coats are not fibrosed, it is quite possible for the deficiency to be covered over at once. If, however, the mucous membrane is short and the other coats are stiffened by fibrosis, the covering over will be more difficult, or even impossible. Further, if the vessels of the submucous layer are damaged, causing hæmorrhage or thrombosis, there is a chance of the necrotic area extending and a large ulcer being formed. The presence of large numbers of oxyntic cells in some of these stomachs is remarkable when the importance of hyperchlorhydria, as stated by Mathes and others, is considered. This is, of course, hypothesis; but the results of this histological examination show that when an area of stomach becomes necrotic, either from vascular changes or from inflammation of lymphoid tissue, ulceration can take place and become lasting. These two factors are the most important as far as my observations go. There are certainly other factors which can cause cell destruction in the gastric mucosa, but in many stomachs it is possible to demonstrate that the changes are inflammatory and that the process of inflammation leads to the self-digestion of stomach wall by the gastric juice, the ulceration being started from a lymphoid follicle and extended by the damage to the submucous vessels. Histological examination also explains how gastric hæmorrhage can occur without any macroscopic loss of tissue

VI.—Professor VAUGHAN HARLEY, M.D.,
London.

Professor VAUGHAN HARLEY said: In the majority of cases of gastric ulcer the diagnosis can be easily arrived at, although there appear to be cases where, unless haemorrhage occurs, it is impossible to say whether one is dealing with a simple case of hyperchlorhydria, or really gastric ulcer.

Pain.

The symptoms of gastric ulcer are, first, pain, which is supposed to be more or less typical of the condition, especially when coming on immediately after taking food. In practice it is found that the pain commences at various times after taking food. The pain that occurs some hours after food is more likely to be due to simple hyperchlorhydria. This pain, due to hyperchlorhydria, can be distinguished clinically by the fact of the taking of food causing a relief of the pain, which gradually recurs some hours afterwards. The typical pain of gastric ulcer is a more or less raw sensation or burning when the stomach is empty, which becomes shooting or penetrating immediately, or some hours after taking food. The painful area may be localized or diffuse. It is generally augmented by pressure, and the patient may describe the pain as going through to the back. This back pain, which tends to be situated in the dorsal region, on a level with the eleventh or twelfth vertebra, slightly to the left side, is very significant. The principal pain of gastric ulcer, which is more marked on pressure, is situated in the epigastrium, and tends to be to the left side of the median line. Not uncommonly there is a cutaneous painful area over the same region, which is only present on slight pressure, and relieved on deep pressure.

Appetite.

The appetite is, as a rule, good, and the patient is more inclined from the fear of the pain caused by the taking of a meal to diminish the diet, than from any bona fide loss of appetite. The dread of the consequent pain may lead to starvation, with consequent loss of weight.

Waterbrash and heartburn are not common symptoms of gastric ulcer. In some cases a burning sensation is complained of in the oesophagus or between the shoulders. This sympton, however, is principally due to the presence of the hyperchlorhydria, and is not really due to the gastric ulcer.

Vomiting.

Vomiting is certainly not a constant symptom, and, when there is no pyloro-spasm or organic constriction of the pylorus, causing retention of the gastric contents, vomiting is usually due to the hyperchlorhydria. It would appear as if the increased acid accumulations in the stomach cause peristaltic unrest, leading to the opening of the cardia and the ejection of the stomach contents, which is immediately followed by relief to the patient. The emesis of gastric ulcer occurs at the height of the pain, and usually causes cessation of the pain.

The excess of hydrochloric acid often leads to pyloric spasms, as the excessive acid contents, entering the duodenum, cause the tight closure of the pylorus, which in its turn allows the food thus retained to cause a greater secretion of hydrochloric acid and aggravates the hyperchlorhydria.

The great advantage of bismuth or olive oil in treating gastric ulcer is that it has a soothing effect in those cases where there is a tendency to pyloric spasms, even more so than the ordinary neutralizing action of an alkali.

The vomit in cases of gastric ulcer varies with the interval since food has been taken. The longer the interval since the taking of food the better digested the stomach contents appear to be, the food being, as a rule, well digested, indicating an active secretion and, as a rule, good gastric motility. The vomit has a very sour taste, and the patient may complain of its sourness.

Chemistry.

A chemical analysis of the stomach contents after a test meal is certainly of value in doubtful cases of gastric ulcer. The passage of the stomach tube in a case of gastric ulcer is by some contraindicated. In no case have I had any bad results, but, if the diagnosis is clear, it is unnecessary. In all doubtful cases of gastric ulcer one need not hesitate to use a soft stomach tube after Ewald's test breakfast. If there is no unnecessary straining, the use of the stomach tube is certainly less dangerous than the violent retching caused by vomiting, and washing out the stomach may give great relief to the patient. The stomach contents should be removed for analysis about one hour after the test meal.

The quantity of stomach contents is found not to be increased, as the motility of the stomach in simple gastric ulcer tends to be increased rather than diminished. If, however, there is any pyloric spasm causing retention, one may obtain an increased quantity of stomach contents, the same as one finds in organic obstruction of the pylorus.

The stomach contents on examination will be found to be well broken up, and the toast in fine division instead of large lumps, as one finds in cases of catarrh, which indicates an active motility of the stomach wall as well as a good secretion.

Lactic acid will generally be found present in small quantities after an ordinary Ewald's test breakfast has been given, as a small quantity is present in the diet taken, but, if Boas's oatmeal soup has been employed as a test meal, lactic acid will be found to be absent.

In simle cases of gastric ulcer, butyric acid will be found to be absent, and only in cases of severe pyloric spasm or organic stricture of the pylorus, leading to retention of the food in the stomach, will butyric acid be found to be present.

The various tests for free hydrochloric acid will give a very marked reaction. Riegel was first to demonstrate the fact that excess of hydrochloric acid is present in the majority of cases of gastric ulcer. In some cases, however, there may be no excess of hydrochloric acid, and there are a few observers who record gastric ulcer accompanied with hypochlorhydria. Personally, in the numerous analyses which have come under my own observation, I have never had a single case of gastric ulcer in which hypochlorhydria has been present, and I am inclined to believe that in most cases the hyperchlorhydria is the primary cause of the true gastric ulcer.

In the accompanying table I have put together the analytical results of three cases of simple gastric ulcer and compared them with three cases of gastric ulcer in which some obstruction in the region of the pylorus was demonstrated at the time of operation. It will be seen that in the first group butyric acid was absent; in the second group butyric acid was present.

The presence of some hindrance of the passage of food through the pylorus will be easily demonstrated after the administration of a bismuth meal by the examination of the stomach contents by means of *x* rays.

The stomach tube may, after Ewald's test breakfast, show that the gastric contents contain some of a previous day's meal, where one has distinct pyloric obstruction, and it is in such cases that operative interference is called for.

In the first group the total acidity is seen to vary from 88 to 94, as against the normal acidity of gastric contents after Ewald's test meal of 40 to 60.

The volatile acidity, as estimated by my method,[1] varies from 2.4 to 3.6, while I have found in normal cases the gastric contents yield a volatile acidity after Ewald's test breakfast varying from 2 to 5.

On comparing the results of the analysis in simple gastric ulcer with the second group, one sees the total acidity varied from 74 to 92 in the cases where there was some pyloric obstruction.

In these three cases of pyloric obstruction the volatile acidity varied from 6 to 10.4, so that there was distinct indication of increase of the volatile acids by quantitative analysis.

In the first group of cases the total hydrochloric acid, as estimated by Prout-Wynter's method, is seen to vary from 0.36 to 0.42 per cent.

The free hydrochloric acid in this group varied from 0.02 to 0.04 per cent.

In the second group, where there was some pyloric obstruction, the total hydrochloric acid was almost exactly similar, varying from 0.36 to 0.41 per cent.

The free hydrochloric acid was, however, somewhat higher, varying from 0.03 to 0.08 per cent.

The filtered gastric contents are seen rapidly to digest carmine-stained fibrin, so that there is evidence of pepsin being present in normal quantity in cases of gastric ulcer;

Analysis of Gastric Contents.

Group and Number of Case.	Qualitative.						Quantitative.						
	Quantity.	Reaction.	HCl.	Lactic Acid.	Butyric Acid.	Mucus.	Total Acid.*	Volatile Acid.*	HCl.—Prout-Wynter Method.				Digestion in Minutes.†
									Total.	Free.	Proteid.	Mineral.	
Group I.—*Simple Gastric Ulcer.*													
E. 142	75	Acid	++	0	0	Trace	88	3.6	0.36	0.04	0.23	0.09	2
M. 105	240	Marked acid	++	−	0	0	92	2.4	0.40	0.03	0.27	0.10	4
H. 23	—	Acid	+	0	0	0	94	3.0	0.42	0.02	0.29	0.11	4
Group II.—*Gastric Ulcer with Pyloric Obstruction.*													
E. 76	870	Acid	++	−	+	+	88	6	0.40	0.04	0.28	0.08	2
H. 102	150	Acid	+	−	+	0	74	6	0.36	0.03	0.25	0.08	3
L. 128	150	Marked acid	++	Trace	+	+	92	10.4	0.41	0.08	0.23	0.10	6

* Expressed in c.cm. of $\frac{1}{10}$ N. solution of NaOH.

† Filtered gastric contents and carmine fibrin.

this confirms what one finds in practice—that peptonized foods have no advantage in feeding patients suffering from gastric ulcer.

Haemorrhage.

There can be little doubt that in all cases in which one has a possible gastric ulcer, unless there is haemorrhage, it is difficult to come to a definite diagnosis, as all the symptoms of gastric ulcer may be due to simple hyperchlorhydria. In fact, the diagnosis of hyperchlorhydria as against gastric ulcer may be impossible without the confirmation of haemorrhage. This, however, is of academic interest, as the patient suffering from so-called gastric ulcer or severe hyperchlorhydria is principally interested in the cure of his condition and not in its exact pathological significance.

On the other hand, one can have little doubt that cases of gastric ulcer are unrecognized—in fact, cases of perforation may occur with no previous symptom of indigestion. The importance of haemorrhage, therefore, is all the more manifest, either as haematemesis or melaena. As a rule melaena occurs one or two days subsequent to the actual haemorrhage.

If vomiting occurs, the vomit usually contains coffee grounds, which can easily be recognized chemically. In some cases of profuse haematemesis the patient vomits blood containing clots, and in most cases patients and their friends are very much impressed by the large quantities of the vomit, out of all proportion to the size of the haemorrhage. A case of haematemesis is followed by tarry stools. In cases where one has haematemesis, before one makes a diagnosis of gastric ulcer one must exclude other possible causes of haemorrhage, such as hepatic or cardiac disturbances, etc.

A further symptom which accompanies gastric ulcer is chronic constipation, which is most important, since it has to be specially guarded against if one hopes to get a cure.

Perforation is undoubtedly the most frequent cause of death in gastric ulceration, and may occur at any time, so that one always has to be on the look-out for its earliest symptoms. There is no doubt that, as soon as the diagnosis of perforation is made, immediate surgical help should be called in.

Treatment of Gastric Ulcer.

All experimenters have practically found that in animals, if the mucosa is injured, it rapidly heals, and undoubtedly the same thing occurs in man.

The presence of an excess of hydrochloric acid tends to hinder the healing process, and it has been found that it is essential to keep the stomach at rest as far as possible, and not actively secreting, if one wishes rapid healing of the ulcerated surface.

It would appear, then, that the rational treatment of gastric ulcer is to try to inhibit the secretion and obtain as complete a rest as feasible for the stomach.

By keeping the patient in bed one helps to rest the stomach, and by starvation one tends to diminish the secretion of hydrochloric acid, if not to stop it altogether.

Undoubtedly, this is an ideal method of treatment, but the way in which each practising physician tries to obtain this result differs to some extent. A great mistake which one is apt to make is to be in too great a hurry to allow the patient food, or to discontinue the complete rest in bed prematurely. In my experience the rest in bed is as important as the abstinence from food, and I believe the rest of mind is also advisable and almost as important as the bodily rest. It is as well, therefore, that the physician should have the assistance, when feasible, of a thoroughly reliable well-trained nurse, who will act as a good watch-dog, and see that the patient is not upset by his too kind relatives and friends. The ideal sick-room should be an abode of peace, and the visits of sympathetic friends, as far as feasible, discouraged, as they invariably make suggestions of how certain friends of theirs have been treated or ought to have been treated, or, to cheer up the patient, they even tell of how somebody has just died of the same complaint. In severe cases I prefer to have a rest cure. The patient should also, at any rate at first, avoid all mental fatigue, and therefore reading should be, at the commencement, prohibited. Through the early stage of the treatment complete rest in a prone position should be insisted on, and, if it is a case of recent haemorrhage, an icebag or cold-water coil over the stomach seems to be useful. Whether or no the ice to the epigastrium has really any effect I have never been quite clear in my mind, but undoubtedly the patient is made to keep very much quieter, and probably the psychical effect may be of value.

In cases where pain is the most prominent symptom, there is nothing like a large linseed poultice, well covering the abdomen, which should be changed frequently. Also it is sometimes advisable, when the pain no longer requires the poultice, to apply some simple plaster over the region of the stomach. This plaster seems to have a two-fold effect. In keeping the abdomen warm it seems to hinder the peristaltic movements, which might be set up by the change in temperature over the epigastric region, and undoubtedly here again we have some psychological effect.

During some days absolute fasting should be the rule—certainly in all cases where there has been haemorrhage this is essential. One has to remember that it is most important that the general health of the patient should be retained at as high a level as feasible, if one hopes to get proper healing. The period of starvation should, in consequence, be limited to the shortest time possible, and, in some cases, where the general nutrition is at a low level, it may be necessary to feed by the mouth even at the beginning.

In order to promote the health nutritive enemata can be given during the fast; but one should try to avoid even the nutritive enemata for the first few days, as undoubtedly even they may tend to cause some peristaltic movement of the stomach. One has also to remember that the amount of nourishment one is able to give by nutritive enemata is extremely small, and I

believe the principal benefits are easing the mind of the patient and his friends, so that they do not think he is being starved.

The best enema is some modification of that recommended by Boas—the yolk of one or two eggs is beaten up with milk, to which is added one or two teaspoonfuls of Benger's liquor pancreaticus, and a small quantity of salt. Five to ten ounces of this mixture can be given to an adult three or four times a day. In cases where a stimulant is required, I prefer brandy to be added to the enemata, although, as a rule, I try to avoid any stimulant whatsoever. Some physicians are in favour of meat extracts as enemata. In my own experience I have found that they tend to irritate the bowel; the amount of nourishment which can be thus administered is extremely small, and they merely act as a mild stimulant, so that I think better results can be obtained by the administration of brandy.

When nutritive enemata are being employed, the bowels should be washed out at least once daily, and I prefer this to be done with a normal saline solution.

Subcutaneous Alimentation.

In the desire to try to rest the stomach, subcutaneous feeding has been thought of as an ideal method. Von Leube himself suggested the giving of subcutaneous injections of sterilized oil. I myself did a series of experiments on dogs who were on a low nitrogen equilibrium. I injected daily, subcutaneously, sterilized olive oil. The animals were observed as regards daily weight, and the small diet and all the excreta were analysed daily. The results of the analysis never showed any alterations in the nitrogen eliminated in the urine, nor was there any change in the chemical composition of the urine or faeces, which indicated any real sparing of tissue metabolism, and on killing the animals a considerable quantity of oil was found at the site of injection. The experiment certainly did not lead me to try this method of feeding on the human being, and therefore I have no suggestions to make except that I am not a believer in subcutaneous alimentation.

Diet.

How soon one can begin to feed by the mouth in a case of gastric ulcer varies as to whether the patient has had haemorrhage or not. There is no doubt that each individual case must be taken by itself. I am certainly in favour of starting feeding by the mouth as soon as feasible, as, if one hopes to get rapid healing, it is essential to have the patient's vitality at as high a level as possible, and rectal feeding, although it may enable us to starve our patients longer than we otherwise could, certainly could never be considered to yield sufficient nourishment to build up a reserve of energy. In most cases a few days' starvation is sufficient, and I think any longer period is to be deprecated, except in very obstinate cases.

The question of the method one is going to commence feeding varies considerably in each individual, and no doubt this accounts for the various opinions quoted by the advocates of the different methods.

Milk, in my experience, has undoubtedly yielded the best results, provided it is carefully persevered in, and one really finds few cases in which it cannot be borne.

The milk should be commenced in very small quantities, about 2 oz. at intervals of two hours during the day, allowing the patient to fast at night.

If plain milk can be tolerated it is best warm, although some people prefer it cool. A very high or low temperature should not be permitted. If simple milk is not well borne it can be diluted with one-tenth part of lime water. The advantage of the lime water in a case of gastric ulcer is that it helps to diminish the excess of hydrochloric acid, which, as we have already said, is one of the principal causes of the difficulty of the healing of the ulcer. It is rarely that milk with lime water cannot be tolerated when given in small doses and sipped, not gulped down, at regular intervals. In a few cases, however, it would appear as if citrate of potassium or soda were preferable to the lime water. In [illegible] milk, as milk, is not tolerated, junket can often be easily taken. The predigested milks I have always tried to avoid, and there is no sufficient reason for digesting it, considering that in cases of gastric ulcer the secretions of the stomach are more than ample, and pepsin is never absent.

It is important in a case of gastric ulcer not to be in too great a hurry to increase the quantity of milk. Two ounces of milk every two hours ought to be persevered with until all pain has ceased, when each meal may be increased by 1 oz. or even ½ oz. at intervals of about four or five days until one is giving the patient 10 oz. at a time. One is now giving 4 pints of milk daily if one commences at 8 a.m. and gives the last glass at 10 p.m. The patient will be taking a diet containing about 13.6 grams of nitrogen, 84.0 grams of fat, 106.4 grams of carbohydrates, which would yield no less than 1561.6 calories daily. This quantity of nourishment should be found ample for a person kept at complete mental and physical rest, and should be continued for at least a month or six weeks in all severe cases of ulceration if one hopes to get a complete cure of the ulcer.

I am strongly averse to the practice of giving broths or meat extracts alternating with, or instead of, milk. In those few cases in which I have been persuaded against my better judgement to give in to the wishes of the patient or the patient's friends, and have employed soups, etc., I have not obtained good results. That this is the case one cannot be surprised at when one remembers that in a case of gastric ulcer one has hyperchlorhydria to contend with, and one finds that the extracts of meat act as stimulants to the secretions of hydrochloric acid.

The case having satisfactorily progressed on the pure milk diet, the next addition should be a raw egg beaten up with the milk. The egg will contain about 1.25 grams of nitrogen and 5.95 grams of fat, yielding about 86 calories. One may gradually introduce one egg beaten up in the milk twice daily, and, if the patient continues to do well, the number can be increased up to three or even six eggs in the day. I prefer not to go beyond this amount.

One occasionally comes across cases, most frequently in men, who get very depressed on this milk diet. In such cases carefully scraped meat can be given with advantage two or three times in the day, raw by preference; or, if this is too repugnant, it may be given lightly cooked on the outside in rissole form. Personally the sensation of feebleness complained of by these people seems to me to be purely psychical.

The case having continued to improve, in all probability the hyperchlorhydria has diminished if the pain is absent, and one can now proceed to the addition of carbohydrates. This is best done at first by giving biscuits or *Zwieback*, twice baked, as the starch ferments are destroyed by the double baking, and do not undergo secondary changes in the stomach, and their dryness leads to the more thorough mastication, and in consequence there is a better insalivation, so that they are more easily digested.

The commencement of ordinary diet can now be gradually introduced, if there is no gastric discomfort, by giving the patient either a boiled or a poached egg for breakfast, instead of the whipped raw egg, and for lunch pounded fish or chicken. If this is well borne, gradually one can add vegetables in purée form so long as one avoids all roots. The patient should be advised to keep on a careful diet for at least a year, avoiding all condiments and highly seasoned foods. I prefer the meals during this year to be taken not in too large quantities and at fixed hours, so that the stomach can get into the habit of secreting at the proper time.

Alcohol is always a vexed question. In a case of gastric ulcer it seems to be harmful as a regular beverage. In some few cases it may be advisable as an occasional stimulant to a jaded body, but as a rule it tends to retard digestion and may be harmful to the mucous membrane of the stomach. For a considerable period it may be advisable that the person who has had gastric ulcer should not drink any fluid with the meals, and the drink (water) should be taken one hour before the meal, and on no account sooner than two hours after a meal.

Drugs.

Of all drugs I prefer bismuth subnitrate in the treatment of gastric ulcer. In some cases, at the commencement, it has been demonstrated by the *x* rays that in the presence of an ulcer some of the bismuth adheres to the raw surface. Anron says, in his book on diseases of the stomach:

The subnitrate disintegrates slightly and liberates some of its nascent nitric acid, which acts locally as a stimulant,

astringent, and antiseptic. The nascent nitric acid coagulates the albuminous surface of the ulcer, and thus acts as a protection to the healing.

Dr. Aaron wisely thinks that to get this result bismuth subnitrate must not be administered with an alkali, for the alkali would destroy the small quantity of nascent acid developed.

Riegel has also found bismuth subnitrate valuable in the cure of gastric ulcer. The administration of large quantities of bismuth by means of the stomach tube, after washing the stomach out, is suggested by Fleiner. The stomach tube is certainly unnecessary, as one can give large doses by the mouth first thing in the morning.

The bismuth subnitrate can be taken, as a rule, in powder or cachet form. While the patient is absolutely on milk, 5 grains may be sufficient before each tumbler of milk, and should be continued after all discomfort in the gastric region has disappeared. Later on, it may be advisable to give it suspended with a little tragacanth, to which some chloroform water has been added, in the hope that the chloroform will tend still further to diminish any fermentation.

If an alkali is required to diminish the acidity, magnesium oxide is preferable to sodium bicarbonate. Boas has shown what enormous doses of sodium bicarbonate are required. If more than 25 per cent. hydrochloric acid is present, no less than 2½ drachms of sodium bicarbonate is required to neutralize it. Another great disadvantage of the sodium bicarbonate is that it forms sodium chloride, and this in its turn tends to increase the formation of hydrochloric acid. Magnesium oxide will neutralize nearly four times as much hydrochloric acid. As a rule, however, it will be found that the lime water added to the milk is sufficient in the treatment of gastric ulcer.

Constipation has to be carefully guarded against. Hence the treatment by means of olive oil, as recommended by Karl Walko,[2] may be of service. He gives 100 to 200 grams of simple olive oil by means of a stomach tube for three to six days. Personally I have had no experience with these large doses, although 20 to 40 grams of olive oil with sodium bicarbonate, when well tolerated, can often be employed with great advantage. This is best done by means of the stomach tube first thing in the morning after washing out the stomach. Dr. Faber of Copenhagen in a personal conversation tells me he has obtained excellent results by this method.

The administration of a small dose of castor oil daily is often of great service, and the castor oil seems to have the double advantage of keeping the bowels acting regularly and, at the same time, helping the healing of the ulcer.

The daily use of a small dose of Carlsbad salts is valuable in the later treatment of gastric ulcer. When the patient has got so far well that he can be given ordinary light diet, it is often found that he will improve more rapidly when he takes one teaspoonful of Carlsbad Sprudel salt in half a pint of warm water the first thing in the morning. In some cases double doses may be required. This second dose should be taken in half a pint of hot water with an interval of at least twenty minutes between the drinking of the two glasses. The water should be sipped and not gulped down, and there should be at least an hour's interval before breakfast is taken.

In cases where the patient is anaemic, the administration of iron in the form of haemoglobin may improve the general nutrition. In cases of marked anaemia the subcutaneous injection of iron and arsenic is preferable.

In the case of pain, when the hot fomentations and bismuth have not been sufficient to relieve the patient, I prefer to give codeine to morphine.

In the treatment of haematemesis, the complete rest and the icebag to the stomach seem to be sufficient, and, in order to get the complete rest, it may be necessary to give codeine, and for the first two to five days rectal feeding should be avoided. Sterile normal saline solution may be injected direct into a vein in cases of urgent collapse, but good results may often be obtained by simple subcutaneous injection.

In cases of haemorrhage, Dr. Habershon recommends adrenalin chloride (1 to 1,000) in 1 drachm doses every two or four hours. I personally have used the hypodermic injection of ergot with apparently good results.

Operation.

In the majority of cases of gastric ulcer surgical treatment is perfectly unnecessary, and in all probability a great part of the benefit obtained in the case of operation is in reality due to the absolute rest which the patient is forced to take after the operation. I am glad to find that Dr. Jacobi,[3] in an excellent paper on gastric ulcer, concluded that at least 75 per cent. of cases of gastric ulcer recover under non-operative treatment, and quotes Kronlein's results—out of 85 operations, recovery 61 per cent., improvement 24 per cent., secondary carcinoma 3 per cent.

In simple cases of gastric ulcer, where there is free passage of food through the pylorus, nothing is really gained by a gastro-enterostomy, since it has been shown by observation with *x* rays that in such cases after a bismuth meal the food still passes through the pylorus, and not through the gastro-enterostomy opening. In cases of haemorrhage which persist, gastro-enterostomy may be of service, but even in such cases an operation should not be lightly recommended.

In those cases in which true retention of food occurs, owing to obstinate spasm or constriction of the pylorus, owing to the ulcer being situated in this region, gastro-enterostomy should be at once advised, and these are the cases which yield the brilliant results for the surgeon.

Of course, there can be no two opinions in the case of perforation, and as soon as the symptoms point to perforation the surgeon should be at once called in.

References.

[1] Harley and Goodbody, *The Chemical Investigation of Gastric and Intestinal Disease*, p. 22. [2] Karl Walko, *Albany Medical Annals*, June, 1907. [3] Dr. A. J. Jacobi, *Albany Medical Annals*, June, 1907.

VII.—Arthur Frederick Hertz, M.D., M.A., F.R.C.P.,
Assistant Physician, Guy's Hospital.

Dr. Hertz said: I should like to make a few observations on the value of the *x* rays in the diagnosis of gastric and duodenal ulcer. In uncomplicated cases of duodenal ulcer the stomach is always hypertonic, the greater curvature being situated well above the umbilicus, and the stomach empties itself with unusual rapidity. In gastric ulcer, on the other hand, the stomach is either normal in size or slightly dilated, and there is slight delay in its evacuation. This remarkable difference affords a very valuable means of diagnosis between the two conditions in doubtful cases. A gastric ulcer situated on the lesser curvature sometimes gives rise to a spasm which produces a functional hour-glass condition; although the latter occasionally results from other causes, its occurrence, when the other symptoms point to a gastric ulcer, is important evidence in favour of that diagnosis. I need hardly refer to the valuable assistance given by the *x* rays in the diagnosis of organic hour-glass contraction and pyloric stenosis, conditions which afford an absolute indication for operation. Whenever in cases of duodenal ulcer the stomach is hypertonic recovery is likely to take place by medical treatment, but the presence of the slightest degree of dilatation at once indicates that some obstruction is present and that a cure can only be obtained by means of gastro-enterostomy. The *x* rays further make it possible to recognize the presence of adhesions, which may so interfere with the motor activities of the stomach that an operation becomes desirable. Owing to the rapid evacuation of the stomach and the hypersecretion occurring in duodenal ulcer, gastric juice is likely to be present alone about three hours after meals. This tends to prevent the ulcer from healing and predisposes to recurrence. It is therefore desirable to give small quantities of milk between the ordinary meals and last thing before retiring to bed, and to have some at the bedside in case the patient wakes at night; this should be continued for many months after the ulcer is healed. On the other hand, the delayed evacuation in gastric ulcer makes it undesirable to give intermediate feeds of this sort.

I should like also to emphasize the great value of olive oil in the treatment of gastric and duodenal ulcers. Half an ounce given before meals greatly diminishes the flow of gastric juice, and thereby assists in the healing of the ulcer and prevents recurrence. Belladonna has a similar action, and in stout patients it should be used instead of the oil.

There is an unfortunate tendency to regard a case as cured as soon as all the symptoms have disappeared, but it should be remembered that anybody who has once suffered from gastric or duodenal ulceration is peculiarly liable to recurrence, and consequently it is essential to give patients exact instructions with regard to diet, and to continue the administration of oil and belladonna for months or even years after apparent recovery. Moreover, the patient should be warned that the slightest return of discomfort should be regarded as an urgent immediate indication for bed and strict dieting for a few days.

VIII.—W. T. TYSON, M.D.,
Folkestone.

Dr. W. T. TYSON said: I consider the division between acute and chronic ulcer is much more marked than Sir Bertrand Dawson has admitted. I have seen some 300 cases of gastric ulcer during the last thirty years and have watched their progress. With regard to cases of gastric ulcer under 25, if they do not die suddenly from haemorrhage or perforation they invariably get well, whereas the chronic cases occurring over 30 form another class, consisting as often, if not more often, of men as of women. Here, apart from the ordinary medical treatment, operative treatment may sooner or later be required. The patient should have a voice in this matter; that is to say, if the patient says that he cannot continue his work in his present condition, this statement should weigh strongly in finally settling upon the procedure. Lastly, the choice of operator is important, for after all the technical skill in operating will have much to do with the successful issue of the case.

IX.—WILLIAM MACLENNAN, M.B., C.M.Glasg.,
Assistant Physician, Western Infirmary, Glasgow.

Dr. WILLIAM MACLENNAN said: Duodenal ulcer has undoubtedly the same etiological factors at work as those in gastric ulcer. Such duodenal ulcers practically never occur below the middle of the duodenum because there the neutralizing alkaline bile comes into play. That the acidity plays an important rôle is certain, and it is not at all improbable that we have a proof of this in the pathogenesis of stercoral ulcer, which is formed by the action of acids from fermentation of the faecal contents. In such acid fermentation the condition for the formation of a peptic ulcer exists. The remnants of pepsin mixed with the faeces become active in the acid medium. The chief local defensive forces against gastric ulcer are found in the abundance of the rugae and mucus. Where there is a redundance of mucous membrane and an abundance of mucus, ulceration rarely takes place. Now these conditions are least fulfilled at the duodenal end of the stomach, and it is just here that the peptic ulcer forms in by far the larger proportion of cases. The other local defensive agent is probably an antiferment. This "antipepsin" may be defective in those who are the victims of ulcer. It is certain that certain parasites can live in the stomach without undergoing digestion. Weinland showed that trituration with sand of worms removed from the stomach yielded an antiferment which inhibited or retarded the digestive action of pepsin. Fuld showed that this antiferment differed from pepsin in retaining its activity after boiling. As regards the sex frequency of gastric ulcer, I am inclined to believe that ulcer is still more common in women than in men, but that the apparent increase in the male sex is rather due to the fact that the "mucous" ulcer in women rarely comes to the operating table but is healed by medical treatment. Ulcer is commoner than is supposed, and its diagnosis may be more certainly made nowadays by better modes of investigation. Clinical symptoms must be carefully correlated to chemical examination. For example, the search for occult blood in the gastric and faecal content is of the [illegible] importance. Combined to these methods, radiography gives much information in competent hands. I [illegible] a good photograph the actual site of the ulcer [illegible] the retention of the bismuth in the [illegible] area. The differential diagnosis of gastric ulcer and cancer may always present difficulty. In those cases where the malignant disease is primary there is usually no difficulty. But where we have a doubtful case with a history of chronic ulceration there will also be some difficulty in arriving at a diagnosis. And it is just in such cases that a correct diagnosis is imperative. It is here that the Yunghaus-Wolff and Gluzinski tests are of value. Gall stones and gastric disturbance are commonly associated. Chronic duodenal ulcer and chololithiasis are not infrequently difficult to differentiate. In chronic duodenal ulcer there is set up a chronic interstitial pancreatitis, and as the common bile duct passes through the head of the pancreas in about 70 per cent. of subjects it may get intermittently partially occluded and produce, with pyloric spasm, a transient jaundice and a clinical picture not unlike that of an attack of renal colic. An aid to diagnosis in the interval between the attacks may be found in Ehrlich's benzaldehyde test, a test which will usually be positive if gall stones be present. As regards gastro-enterostomy, it should not be undertaken unless when there is real stenosis, and it should only be undertaken (if improvement be predicted) when there is no serious damage to the pancreas. In respect to treatment, enemata, if nutrient, are harmful. They give rise to acetonaemia. The administration of oil is one of the best ways of reducing hyperchlorhydria. It does this in two ways—by inhibiting secretion and, if the dose be large enough, by causing a reflux of alkaline duodenal content. If chlorosis exists iron should be given hypodermically. The citrate is the best solution.

X.—S. H. HABERSHON, M.A.Camb., M.D., F.R.C.P.,
Physician to the Brompton Hospital for Consumption.

Dr. HABERSHON said: I fully agree that the pathogenesis of gastric ulcer must be the basis of all successful treatment. There is some danger, however, of taking a one-sided view, especially when research is conducted on one particular line of investigation. I disagree with Dr. William Hunter, whose careful observations lead him to remark that almost all cases of gastric ulcer are derived from oral sepsis, and that infection by a streptococcus or staphylococcus derived from mouth or nasal passages almost always proceeds from above downwards. A local bacterial infection, no doubt, is responsible for some cases of gastric ulcer, but it must not be forgotten that, as Sir Bertrand Dawson has stated, an initial necrosis of mucous membrane can occur from a variety of causes. Traumatic causes more often occur (as reported by Professor Robin and others) in those who are already the subjects of hyperchlorhydria, and this condition undoubtedly predisposes to acute and chronic gastritis, which (as Dr. Miller has described) often precedes the formation of follicular ulcers. I consider that these and superficial erosions often occur in these subjects of hyperchlorhydria, and are themselves the precursors of the acute or mucous ulcer. The local necrosis of tissue which possibly precedes the absorption of cytotoxins could conceivably occur from vascular conditions such as stasis or small emboli, thus producing the haemolysis and ulceration which Bolton has demonstrated as the result of his experimental observations. In appendicitis and in coli bacilluria a remote infection of the coli-toxins can in some cases produce the mucous or acute ulcer. It must be remembered also that free hydrochloric acid in excess is itself an antiseptic, and just as it is a potent cause in preventing the local infection of the tubercle bacillus and the production of tuberculous ulcer, so it may also be a protection against the local infection produced from oral septic conditions. The only other remarks I would make are upon the subject of the diagnostic value of symptoms in determining the position of the gastric ulcer, whether acute or chronic. I am accustomed to place the symptoms in two groups: (1) Those attached to the ulcer in the pyloric region, and (2) those of a gastric ulcer in any other situation. The former group were rarely recognized twenty-five or thirty years ago. The symptoms are usually those of pyloric spasm—namely, pain, with or without vomiting, occurring from two to four hours after a meal or culminating towards the close of the day; variable dilatation of stomach; and lastly hunger pain, or pain relieved by the imbibition of food or liquids. The second group—that is, the symptoms of ulcer in the lesser curvature, or, indeed, in any part of the gastric wall except the pyloric region—are the old and typical symptoms of pain and vomiting immediately following a meal, and the pain relieved by sickness. Some observations lead me

to think that an acute or mucous ulcer even in the pyloric region may also produce the latter typical symptoms, because they often occur in the past histories of patients who subsequently complain of all the symptoms of pyloric spasm. My deduction is that pyloric spasm is more often produced by the chronic ulcer in this region when either the deeper submucous structures are involved, or when cicatrization has taken place, whereas the more acute and often the more shallow mucous ulcer is liable to cause active and immediate symptoms of irritation after the ingestion of food.

XI.—HERBERT PATERSON, M.A., M.B., F.R.C.S.,
Assistant Surgeon, London Temperance Hospital.

Mr. HERBERT PATERSON said: I do not regard gastric ulcer as a common disease. The supposed symptoms of gastric ulcer are often present, but the lesion is elsewhere than in the stomach. I think it is perfectly easy to distinguish at operation between gastric and duodenal ulcer. As pointed out by Dr. W. J. Mayo, if the ulcer is on the duodenal side of the pyloric vein, it is duodenal; if on the gastric side, the ulcer is gastric. I fully agree with the dictum that operation for gastric haemorrhage should never be performed during the continuance of the haemorrhage. I regard operation under such circumstances as highly dangerous. Much of the confusion with regard to the results of test meals is due to the fact that many cases are erroneously labelled as gastric ulcer, but are not verified by operation. In ulcer situated near the pylorus there is almost invariable hyperchlorhydria, in ulcer away from the pylorus there is usually hypochlorhydria. Personally I have not met with a case of hyperchlorhydria in which there was not an ulcer near the pylorus or disease of the appendix. I do not think Professor Vaughan Harley can be serious in maintaining that few cases of gastric ulcer require operation. I am glad to see that the opener of the discussion regards gastro-jejunostomy as good treatment in cases of ulcer near the lesser curvature. I have for years been advancing the view that gastro-jejunostomy is *not* a mechanical but a physiological operation. This view is at last gaining ground, but is not yet generally accepted. In my own experience, the results of gastro-jejunostomy for ulcer at the cardiac end of the stomach have been most satisfactory. Gastro-jejunostomy acts in two ways: First, by allowing the entrance into the stomach of minute quantities of bile and pancreatic juice, which diminish the acidity of the gastric juice. Secondly, gastro-jejunostomy has a direct effect in lessening the amount of hydrochloric acid secreted by the stomach. These changes take place irrespective of whether there is mechanical obstruction at the pylorus or not, and whether the food after operation passes out through the pylorus or through the gastro-jejunostomy opening.

THE QUANTITATIVE REGULATION OF THE DIET IN DIABETES.

By P. J. CAMMIDGE, M.D.,
London.

THE regulation of the diet of a healthy individual may be safely left to custom and the dictates of appetite, but when the chemistry of the body is at fault these no longer furnish a safe guide, and a scientific adjustment, varying with the particular metabolic defect that exists, must be substituted. Of all disorders of metabolism, diabetes is the one in which such a procedure is most necessary, for at present it is the only reliable means we have of controlling the condition.

With a view to cutting out from the diet those foods which the defective powers of assimilation of the diabetic are unable to deal with, and so prevent the appearance of sugar in the urine, it is customary to give to patients suffering from glycosuria a list of foods of a carbohydrate nature that he must avoid, and another of protein and fatty foods that he may take. The object of this treatment is, no doubt, attained in many instances, but it is apparently very rarely realized what an upheaval such a change in the diet means in the usual habits and tastes of the patient and what an alteration in the chemistry of the body it involves. It must be borne in mind that on an ordinary mixed diet some 70 per cent. or so of the energy of the body is usually derived from foods of a carbohydrate nature, so that when these are excluded an equivalent amount must be provided from other sources if nutrition is not to suffer; but a patient on a carbohydrate-free diet, being deprived of his customary guides as to the amount of food required, is very likely to take an insufficient quantity to meet his energy requirements, or to consume an excessive amount of protein if, as is so often the case, fats are distasteful. Further, a strict protein-fat diet soon becomes monotonous to most people, and very frequently the craving for carbohydrate eventually becomes so strong that the patient, either openly or surreptitiously, indulges in forbidden fruits, vegetables, or, more often, bread, to an unknown extent. When persisted in for any length of time, it is also apt to cause depression, give rise to irritability, and set up digestive disturbances. If faulty carbohydrate metabolism were the only factor to be considered in diabetes, its treatment would be comparatively simple, but we have also to take into account the secondary disturbances of metabolism that occur in association with persistent glycosuria, and to remember that in severe cases part of the sugar excreted in the urine is derived from the carbohydrate moiety of the proteins of the food and tissues, so that mere restriction of the starchy and sugar foods is not sufficient to control the glycosuria—in fact, more benefit often results from cutting down the intake of meat, etc., and allowing a certain amount of carbohydrate.

For these and other reasons it is clear that the successful dietetic treatment of diabetes is not so easy to carry out as at first sight it might seem, and that the method of merely excluding carbohydrates from the diet is, after all, a very superficial and unsatisfactory procedure. What is really wanted is an adjustment of the food to the capacity and needs of the organism, quantitatively as well as qualitatively. This can only be done by a thorough investigation of the metabolism of each case, based upon a series of analyses of the urine and faeces when the patient is taking a diet of known composition. I have recently dealt with the methods employed, and the manner in which the results are visualized and compared in the form of charts,[1] so that it will not be necessary for me to consider that part of the subject again; what I am now concerned with is the way in which the results that are obtained can be employed to quantitatively regulate the subsequent diet.

Having discovered the carbohydrate tolerance of the case under consideration, and the particular forms of carbohydrate that are best suited to his idiosyncrasies, he is allowed to take each day a quantity of one of these starchy foods that is within his limit of tolerance. By this means one can often give considerable variety to the diet, allay the craving for starchy foods, and gain the co-operation of the patient in a way that would otherwise be difficult or impossible, while at the same time one can be sure that he is not receiving more carbohydrate than his defective powers of metabolism can easily deal with. It is quite unnecessary, and is indeed often harmful, to keep a patient on a strict carbohydrate-free diet for more than a brief period; I have seen so many difficulties result from it that I cannot too strongly urge the necessity for an early adjustment of the carbohydrates of the food to the tolerance of the case.

The experiments of most investigators have shown that the energy requirement in diabetes is little, if at all, altered from the normal, for the diabetic condition does not involve a decrease in the quantity of energy produced, but only an alteration in its source. We may therefore take it that a person with glycosuria requires 34 to 35 calories per kilogram of his body weight daily (that is, between 15 and 16 calories per pound), although in some instances it will be found that 25 or even 20 calories are sufficient to maintain the patient's condition. The carbohydrate that can be given will often only provide a small proportion of the required energy, and the balance has therefore to be made up with proteins and fats. It is by no means a matter of indifference which of these is used, since a large protein intake raises the metabolic level of the body, causes the formation and excretion of a large quantity of partly oxidized waste products, thus throwing extra work on the organs of metabolism and excretion, and is liable

to give rise to constipation, one of the worst enemies of the diabetic. It is one of my most common experiences to have sent to me a diabetic patient who has not done well on an ordinary carbohydrate-free diet, and on examining the urine to find that the total nitrogen excreted is considerably in excess of that contained in the food. On readjusting the diet so that nitrogenous equilibrium is established, a rapid improvement usually follows. A diet rich in fats is distasteful to most people in this country, is liable to set up digestive disturbances, and, if taken in very large amounts, fat, particularly in forms containing the lower fatty acids, may increase the tendency to acidosis. It is therefore obvious that both these varieties of foodstuff must, like the carbohydrates, be quantitatively adjusted to the requirements and capacity of the patient. The easiest way would be, of course, to work out a fixed diet and keep the patient on it; but this is not feasible in practice, partly because of the varying conditions under which the patient is certain to live, and partly because the monotony of such a diet would cause loss of appetite and upset the digestion. It should, therefore, be our object to give as much choice and variety as possible.

With these ideas in my mind I have worked out a system in which the diet is arranged in "rations" of approximately equivalent energy value, taking as the basis an average serving of roast beef, which weighs 3 oz. and is calculated to yield 300 calories. The same amount of energy is, for instance, provided by 3¼ oz. of mutton, 3¾ oz. of ham, 5½ oz. of chicken, 4¼ oz. of duck, 8¼ oz. of halibut, 10½ oz. of cod, 5½ oz. of salmon, 4 average eggs, etc., and by substituting any one of these for the beef we can be sure that the patient is receiving about the same amount of energy. It will be noticed, however, that there is very considerable difference in the weight of the "rations," and that some are in excess of what would be readily consumed by an average person, but by giving half or quarter "rations," and using two or more, the calorific value is maintained, while a greater variety can be introduced into the diet. The use of fractional rations for some foods also avoids the difficulty of too much protein being taken, for while 3 oz. of beef contain 18.7 grams of protein, 5½ oz. of chicken contain 53.3 grams, and 10½ oz. of cod about 66 grams; by giving half rations of chicken and quarter rations of cod the protein works out at about 26.6 grams and 16.6 grams respectively. The protein portion of the diet should be so arranged that the patient is in nitrogenous equilibrium, or there is a slight retention of nitrogen. As a rule not more than 1.5 to 1.6 calories per kilogram of the required energy can be derived from this source, and the total protein intake for an average individual cannot safely exceed 100 to 120 grams in the twenty-four hours. In some cases it may be reduced to 75 or 50 grams with advantage. The larger quantities will be contained in three or four protein rations, yielding 900 to 1,200 calories, and leaving therefore a balance of some 1,800 to 2,000 calories to be made up in other ways. If the carbohydrate tolerance of the patient is low, and only a small amount of starchy food can be permitted, the greater part, or even the whole, must be provided from fatty foods.

The administration of the requisite quantity of fat is facilitated by arranging the predominantly fatty foods in rations on the same plan as the proteins, keeping to the unit of 300 calories. This amount of energy is supplied, for instance, by 1½ oz. of fat bacon, 1¼ oz. of butter or margarine, 1 oz. of olive oil, 3¼ oz. of rich cream, 2¼ oz. of Cheddar cheese, etc., which can of course be given in fractional portions when the full ration is excessive. Bacon, cheese, and cream are usually well taken, and can be arranged to supply a considerable proportion of the energy required, but it must be remembered that, although Cheddar cheese contains about 37 per cent. of fat, it also contains about 28 per cent. of protein, which must be allowed for in arranging the nitrogenous part of the diet. A certain amount of butter or, better, good margarine, and a few Brazil nuts, which contain about 67 per cent. of fat, can be arranged to give another 400 or 500 calories. Salad oil is a most useful food for diabetics, and can conveniently be given with sardines. It is often necessary, however, to introduce more butter, salad oil, etc., into the diet than most patients will tolerate when they are having little or no bread, but this difficulty can be overcome by giving the former in the form of oiled butter with the coarser vegetables that contain less than 5 per cent. of carbohydrate, such as cauliflower, cabbage, turnip, spinach, asparagus, French beans, mushrooms, etc., and the latter with vinegar, yolk of egg, pepper, etc., as a salad dressing with raw vegetables such as lettuce, tomato, cucumber, radishes, celery, etc., which also contain under 5 per cent. of carbohydrate. By instructing the patient not to take more than a definite amount—which for my work I arrange as the quantity containing 1 gram or less of carbohydrate—we can be sure that not more than 1 or 2 grams of carbohydrate are being derived from this source. As a rule, probably less than this amount is actually absorbed from the raw vegetables, and the quantity derived from those that are cooked will depend upon the way in which they have been prepared. The energy value of the vegetables themselves is therefore negligible, but they not only afford a vehicle by which a considerable quantity of fatty food can be conveniently added to the diet, but they also furnish alkalis, and by their bulk make the diet more satisfying.

In cases where the tolerance for carbohydrates is fairly well maintained further variety can be given to the diet by allowing a fixed quantity of certain fruits that contain a comparatively small proportion of carbohydrate. Among the commoner fruits containing 10 per cent. or under are blackberries, bilberries, cranberries, lemons, pineapple, rhubarb, water melon, etc. By arranging these in rations which contain 5 per cent. or less of carbohydrate, and instructing the patient not to exceed a definite amount daily, we can keep control of his carbohydrate intake and make certain that his limit of tolerance is not being exceeded.

With regard to "diabetic" breads and bread substitutes, a small quantity of a thoroughly reliable brand is often useful as a vehicle for the administration of fatty foods, particularly butter and cheese; but as there are so many preparations now on the market that are very little different, excepting as regards their price, from ordinary white bread, it is essential that the exact composition should be known, and that the statements made by the manufacturer should be checked by frequent chemical examinations, otherwise it is safer to allow a definite quantity of ordinary bread, which is, moreover, much cheaper and more readily obtained. In any case, the quantity consumed must be regulated, and the protein, fat, and carbohydrate content be allowed for in calculating the values of the diet.

When a diet which suits the patient has been worked out, and the quantities of carbohydrate, protein, and fat necessary to supply the energy required have been determined, I give to my patients a specimen diet chart on the back of which are lists of the protein, fatty, and carbohydrate foods worked out in rations. They are instructed that they may substitute for any one article in the diet an equivalent amount of any other foodstuff, of the same class, from the list on the back, but that the daily total "food value" must always work out approximately the same. To avoid the difficulty of manipulating fractions when dealing with portions of a ration I give to the full ration the value of one hundred and to portions corresponding values.

In cases where it is found that nitrogenous equilibrium is easily disturbed it is advisable to prescribe a purely vegetable-fat diet for a few days at regular intervals. The semi-starvation which this entails has a beneficial effect as a rule on the patient's powers of utilizing both carbohydrates and proteins.

As the object of the treatment is to so arrange the diet that the patient is always working his powers of carbohydrate and protein metabolism at a little below their maximum capacity, and is yet receiving sufficient food of a kind that he can make use of to supply the energy he needs, constant supervision is required for some time. The urine should therefore be examined at intervals to determine the state of his metabolism, and the diet be readjusted according to the findings and the progress of the case.

Even in mild cases of persistent glycosuria a quantitative regulation of the diet is advisable, for there is no hard and fast line between these and cases of the more severe type, the fundamental metabolic error being the same in

both, and the one gradually merging into the other. The earlier suitable treatment can be commenced, therefore, the better is the prognosis.

It may be objected that this method of treatment is too complicated for the average patient, but I have not found it to be so in practice. When the reasons are explained to them they quickly grasp the essential points, and are usually eager to carry out a form of treatment in which they can intelligently co-operate. Since the preliminary investigations can only be carried out satisfactorily in a nursing home, or other institution where the ingesta and excreta can be weighed and measured, they receive practical instruction in the application of the method, and at the same time learn to judge weights and measures with considerable accuracy. It is surprising how quickly the eye can be trained in such matters, and it is usually found that in about a fortnight an appeal to the balance is only necessary as an occasional check, or when some unaccustomed food is being taken. The domestic measures, such as the tablespoon, teaspoon, or teacup, are sufficiently accurate for the estimation of liquids. The greatest objection is undoubtedly the expense, but when it is realized that diabetes is quite as serious from a chemical point of view, as cancer is from an anatomical standpoint, this objection loses much of its weight. I am firmly convinced that just as a radical surgical operation is the only reliable means of prolonging life in malignant disease, so in diabetes a thorough quantitative reorganization of the diet, based upon metabolic experiments, is the best method by which the patient can be offered a fair prospect of escaping the serious, and often dramatically fatal, complications to which his disorder renders him liable.

REFERENCE.
[1] *Lancet*, March 23rd, 1912.

DISCUSSION.

The PRESIDENT agreed that the accepted method of treatment of diabetes often did harm. He had been in the habit of allowing his patients a certain amount of potato with good results.

Dr. CAMMIDGE, in reply to the President, said there was no doubt that some patients improved if allowed potato and others if allowed bread.

THE TREATMENT OF SYPHILIS WITH SALVARSAN AND NEO-SALVARSAN.

BY

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AND

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IN a paper which we read a year ago to the combined Sections of Therapeutics and Dermatology we showed that the immediate effect of salvarsan on syphilis is more rapid than that of mercury, that it generally succeeds when mercury has failed to arrest the progress of this disease, and that its action is specific. We will not delay you now with further evidence to prove the immediate effect of salvarsan on syphilis, because the enormous amount of literature on this point must already be familiar to you. We propose, instead, to demonstrate with our results the great superiority of a routine salvarsan therapy of syphilis—that is to say, one in which salvarsan is used with or without mercury—over an exclusively mercurial one; to make some remarks on dosage and the general management of patients under salvarsan treatment, and to speak very briefly about neo-salvarsan.

To support a plea for the routine use of salvarsan in the treatment of syphilis it is necessary to show that while it is a reasonably safe remedy, its beneficial effects are more lasting than those which result from an exclusively mercurial therapy.

The system of supervision which is exercised over soldiers after they contract syphilis has enabled us to follow up those patients we have treated with salvarsan, and to compare their subsequent progress with that of a number of patients who were treated exclusively with mercury. In addition to clinical examination, frequent tests have been made of the blood serum for the Wassermann reaction, which we consider of equal, if not greater, importance than clinical examination. In order to make the comparison as fair as possible to the exclusively mercurial treatment, we have collected the facts regarding the clinical behaviour of our mercurial cases from a number of syphilis case-sheets relating to patients who were treated with nine injections of mercurial cream in the first course, rested for not longer than eight weeks, had six injections in the second course, and so on—in fact, were thoroughly treated with mercury.

The results we have ascertained are as follows:

In the salvarsan series, 65 patients were treated with one or more intravenous injections of salvarsan, either alone or in conjunction with nine intramuscular injections of mercurial cream, and were observed for periods ranging from twelve to twenty-one months; 9 of them relapsed clinically. Forty others were similarly treated, and observed for nine to twelve months, and 6 relapsed; while out of 57 others who were observed for six to nine months, none relapsed.

Altogether, therefore, out of 162 patients who were treated from the outset with intravenous injections of salvarsan, either alone or in conjunction with mercury, and observed for periods ranging from six to twenty-one months, 11 relapsed. In comparison with this, out of 102 well treated mercurial cases who were observed for six to twelve months, 85 relapsed. The average period during which the salvarsan relapses remained free from symptoms was seven months, while the mercurial relapses occurred in an average of 4.2 months.

When we consider those cases in which treatment was commenced before the onset of secondary symptoms, the superiority of salvarsan treatment over the exclusively mercurial one is still more striking, and incidentally emphasizes the importance of early diagnosis and treatment. Out of 23 primary cases treated with salvarsan and observed for twelve to twenty-one months, none subsequently showed secondary signs. Out of 10 others similarly treated and observed for nine to twelve months, 2 developed secondary signs; while out of 23 others observed for six to nine months, none developed secondaries.

Totally, therefore, out of 56 primary cases treated with salvarsan and observed for periods ranging for six to twenty-one months, 2 subsequently developed secondary symptoms. In each of these 56 cases *Spirochaeta pallida* was demonstrated previous to commencement of treatment. In comparison with this, out of 23 primary cases who were energetically treated with mercury and observed for twelve months, 21 subsequently showed secondaries. In the salvarsan series those patients who subsequently developed secondaries did so in an average of six months, while in the mercurial series secondary symptoms occurred in an average of only 1.8 months.

Within a period ranging from twelve to twenty-one months, therefore, the proportion of patients under thorough but exclusively mercurial treatment who showed further clinical signs of syphilis was twelve times as large as that of the salvarsan series; while in cases where treatment commenced in the primary stage the proportion of mercurial cases which developed secondary signs was twenty-four times as large as that of the salvarsan series.

Regarding the behaviour of our salvarsan cases to the Wassermann test, the results show that out of 157 cases who were tested four to seven months after suspending treatment, 25, or 15.9 per cent., were positive; out of 91 cases tested seven to eighteen months later, 18, or 19.8 per cent. were positive.

We have not had an opportunity of testing our mercurial cases at such long intervals after suspension of treatment as this. Out of 42 cases tested at the end of the fourth rest, or about five months from the end of the fourth course, 24, or 57.1 per cent. were found to be positive, while out of 289 tested three months after the completion of two years' regular treatment by mercurial injections, no less than 123, or 42.5 per cent., were found to be positive.

As you know, the percentage of positive reactions is greater the longer the treatment is suspended; while, other things being equal, one may expect a larger percentage of

positive reactions in the first year of the disease than in subsequent ones. Not only were our salvarsan cases tested after longer intervals from suspension of treatment, but in most of them less than one year had elapsed since infection. In spite of these facts the salvarsan series showed a considerably smaller percentage of positive reactions than the mercurial.

In illustration of the powerful specific effect of salvarsan, in rather less than two years we have had five cases of undoubted reinfection amongst the patients we have treated with this remedy. We cannot enter into the details of these cases here except to mention that in each the Wassermann reaction had been negative for many months, the new sore was on a fresh site, was clinically a chancre in which numerous spirochaetes were found, and occurred within the incubation period of syphilis from the date of exposure to infection.

After the results we have related, we do not think there can be any doubt that the routine use of salvarsan in syphilis will effect an enormous reduction in inefficiency from syphilis, especially when we consider that our salvarsan series includes a number of cases which were treated solely with one or two intravenous injections, a method of treatment which we do not think will give such good results as when salvarsan is used in conjunction with intramuscular injections of mercury. In illustration of this we may mention that out of 110 cases which were treated with an initial injection of salvarsan, then nine injections of mercurial cream, and finally an intravenous injection of salvarsan, 3 only have relapsed.

As to the safety of salvarsan, we have given 1,560 intravenous injections and 43 intramuscular or subcutaneous, and have experienced no untoward result. Nor have any of our patients suffered from affections of the cranial nerves, though one of our relapses suffered from hemiparesis, which cleared up rapidly under injections of calomel cream. For ourselves, we are convinced that affections of the nervous system which have been recorded after salvarsan treatment are evidence of syphilis relapse and not of any neurotropic action of salvarsan. From the statistics of 4,400 cases treated in the Austrian, German, English, and American armies with salvarsan, about 4 per 1,000 subsequently suffered from affections of the nervous system, and in many of these cases it is well recognized now that the initial treatment was not nearly energetic enough to ensure destruction of all the infecting spirochaetes (Ehrlich).

The question of deaths after salvarsan is naturally one of the greatest importance, and one which will well repay the closest investigation in order that we may not exaggerate the dangers of salvarsan on the one hand or run unnecessary risks on the other. As far as we can gather from the literature about 150 deaths have been recorded. It is not a large number when we consider the hundreds of thousands of injections which have been given, and it is astonishing that it is not higher considering the extraordinary technique adopted by some workers, and the cases to which they have administered salvarsan. We can safely say that the very great majority of deaths have been due either to faulty technique or gross disregard of well-known contraindications. A few deaths have been recorded, however, which cannot be explained in this way. Less than a dozen of them have been recorded, but they are important because they occurred in patients who, except for the fact that they were suffering from syphilis, were apparently in good health, and, as far as we can gather, the technique of the operators was beyond question. They are those cases in which rigor, epileptiform convulsions, coma, and death followed the injection in a few days. In all of them *post-mortem* examination showed punctiform haemorrhage in the brain, and it is evident that a common cause was at work in these cases. Professor Ehrlich believes they are due to liberation of endotoxins from spirochaetes in the meninges, since they have almost always occurred in early secondary syphilis, the stage when the infection is generalized, and when, as we know from the headache which is so common at this time, there may be multitudes of spirochaetes in the brain meninges. For many reasons we are bound to say we do not agree with this explanation. It is not surprising that the majority of these deaths should have occurred in patients who were suffering from early secondary syphilis, since by far the great majority of patients who are treated with salvarsan must be in this stage of the disease. But not all cases of death with these symptoms and *post-mortem* appearances have happened in the early secondary stage. Marschalko and Vesprémi record a case in which the infection was of twenty years' standing, where the same symptoms and death, with the same *post-mortem* appearances, followed a railway journey of 500 kilometres, undertaken four hours after the injection, and Lesser has recorded a case of fifteen years' standing when death occurred after the second of two injections which were given in a week. Again, if death is due to liberation of spirochaete endotoxins, it is difficult to understand why it does not always follow the first injection, when presumably the greatest liberation of toxins must occur. It seems to us much more reasonable to suppose that an extremely small proportion of patients are susceptible to salvarsan, and that this remedy, like other arsenical preparations, has a cumulative action. Marschalko and Vesprémi have produced identical symptoms and *post-mortem* appearances in rabbits by overdosing them with salvarsan, so that there can be no question of liberation of spirochaete endotoxins in these experiments.

If we accept the explanation that these deaths were due to overdosing of exceptionally susceptible patients with salvarsan, we can take steps to avoid its occurrence. It is quite possible, as Marschalko and Vesprémi claim, that we can do as much at one time with a smaller dose as we can accomplish with 0.6 gram; that in fact, when we give 0.6 gram as much as 0.3 gram may be wasted. We are compelled now to recognize the fact that we cannot hope to cure syphilis with one dose of salvarsan, even if this be as high as the patient could be expected to tolerate. To use a pathological term, we must employ intermittent sterilization, and our experience confirms that of others in finding that better results are to be expected from two or more doses of salvarsan in conjunction with a course of intramuscular injections of mercury.

Up to quite recently we have always commenced with 0.6 gram, but are now building up a series of cases to which we are giving an initial dose of 0.3 gram, following this with two injections of calomel cream, then another similar dose of salvarsan, two more calomel injections, and, lastly, a dose of 0.3 gram salvarsan. This series will be compared with a similar one we have just completed in which 0.6 gram salvarsan was given. It is too early at present to compare our results with salvarsan and calomel cream with those under salvarsan and mercurial cream, but the present indication is that we shall find eventually that better results have followed the course made up of an initial dose of salvarsan, then nine injections of mercurial cream, and lastly an injection of salvarsan. Subsequent to a course of injections on the lines we have mentioned, we examine the blood serum once every three months, and repeat the treatment if the Wassermann reaction becomes positive. Our patients are examined monthly for clinical signs.

There is little to say regarding neo-salvarsan, except to give a word of caution regarding the enormous doses of it which have been given. We have given doses of 1.2 gram every eight days for a month, and have seen no ill effect from its use; but in recent letters Ehrlich and Schreiber warn us against using doses even of this size, which are moderate in comparison with those which Schreiber administered at first with perfect safety. Neo-salvarsan seems to produce much the same effect on syphilis as salvarsan. It has not been followed by reaction so frequently in our hands, and may possibly be convenient from the fact that it is so very soluble in water and can be given at once. But it is very unstable, and we think that, as it demands greater care in its administration and more punctilious regard to detail than salvarsan, it will not replace the older remedy.

DISCUSSION.

Dr. R. STOPFORD-TAYLOR (Liverpool) said that it would be impertinent on his part to criticize Major Gibbard's and Major Harrison's paper, because his experience was infinitesimal as compared with the work done at Rochester Row by them. What had struck him was the extreme care with which the *pros* and *cons* of this method had been laid before them, and if one had any doubt as to the

excellent work done by these gentlemen, he (Dr. Stopford-Taylor) would advise the doubter to visit Rochester Row, where, he felt sure, he would be received with the greatest courtesy by the officers in charge.

Mr. Arthur Evans (Liverpool) said he had performed some 500 injections of salvarsan, and up to the present had had no fatality or the least cause for anxiety. He agreed with Major Gibbard entirely as to its efficiency, and he considered it a much more potent and rapid specific than mercury. He had never seen any affection of the cranial nerves follow it, immediate or remote. With regard to the safety of the procedure, it should only be performed by experienced administrators. He specially emphasized its great value in conditions affecting the palate and nose, a number of which he had treated; early perforations of the palate had completely healed over in a few days under this treatment. He predicted that when salvarsan was more generally used, many of the hideous syphilitic deformities of the face would disappear. He did not recommend its use in late nervous cases with obvious nerve degeneration, neither was it of any use in congenital nerve deafness the result of syphilis, as here too degeneration had taken place.

Dr. H. de Carle Woodcock (Leeds) said that to him the alternation of dosage by salvarsan and calomel cream seemed to require some further explanation. What was the scientific reason for this alternation of remedies? To what action and interaction did it owe its success? Whilst full of interest — benevolent interest — in the unfortunate soldier, he would like to know if Major Gibbard could answer one very serious question. Did the children whom the syphilized soldier (treated by salvarsan) claimed as his own escape congenital syphilis? He knew quite well that Major Gibbard was mostly interested in bachelor life, but in his keenness he would doubtless as a clinician have invaded the matrimonial area. In a great hospital of North Britain he (Dr. Woodcock) once saw a patient who, with ordinary dosage given under the supervision of the highest authority, had yet suffered gravely from salvarsan. The patient had, after two doses of the drug, been attacked by hemiplegia with aphasia. Doubtless Major Gibbard would know of this and many other similar cases. One would like to know the frequency of such accidents. He ought to add, however, that the case in question was one of parasyphilis.

Major Gibbard, in reply, said that possibly mercury assisted "606" by promoting absorption of the small cell exudation which occurred in syphilis. With regard to the result on the children of syphilitics who had been treated by salvarsan, he was able to say that certain syphilitic pregnant women so treated had given birth to healthy children. He agreed that only temporary improvement occurred in parasyphilis, but he had seen good results in early cases. It was important that those who used this form of treatment should be specially trained, but if this were done he considered it a perfectly safe procedure.

SOME POINTS IN THE TREATMENT OF PULMONARY TUBERCULOSIS, INCLUDING CONTINUOUS ANTISEPTIC INHALATION.

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The wide interest taken at present in the Government Insurance Scheme and the provision of national sanatoriums has brought the question of the treatment of consumption very prominently before the public, and has given me an opportunity to present to you a brief account of the means employed in our sanatorium in fighting this disease. The study of the treatment of consumption makes it essential that we should have some clear idea as to the incidence of the disease, and take a broad, philosophic survey of its ramifications and factors and trace this gigantic tree to its many roots that lie under the soil. Tuberculosis is a disease common to every civilization, and is peculiarly the outgrowth of the industrial and material development of modern civilization. Having lived both in the East and the West and studied the question of tuberculosis from social, economic, and national points of view, I make bold to say that where there is no civilization there is no tuberculosis, and as soon as the savage living in his primitive way comes into contact with the Western civilization and adopts Western ideas in his habits of dressing, eating, and living, consumption, cancer, and syphilis ravage his country and destroy his people; that civilized man, in his pursuit after wealth and comfort, spends half his energy in letting loose the demon of disease, and spends the other half in trying to catch him; that man creates conditions of disease within himself, and he alone must work out his salvation from within; that as long as man's vitality is not too low for Nature to work upon, she can respond to the treatment, and create in her secret laboratories vital energies that make for peace and healing; but if she fails to respond, all man's efforts and all the resources of modern science will be unable to take her place and effect a cure. Behind the ordinary predisposing causes of poverty, slums, and overcrowding; behind the wear and tear, the hurry and bustle of modern life; behind even tubercle bacilli, lie the root causes of worry, anxiety and mental strain, which lower the resisting power of cells and tissues. Years of unhealthy living and vicious habits and environment of modern civilization have brought about two evils: (1) They have sapped man's vital energy; (2) they have supplied the harmless saprophytes with food and virulence. So that any method of treatment to be effectual and permanent should have the twofold aim of raising the resisting capacity of the individual, and arresting, if not destroying, the growth and activity of pathogenic organisms. What, then, are the means to be taken to attain those two objects? How can we most successfully attack pulmonary tuberculosis?

The history of the treatment of consumption is long, and the voices that claim to have found a specific are many. In the course of a long career of many years of sanatorium work in England I have treated more than 1,000 cases, and have tried almost every remedy known, including antiseptic injection like the intravenous injection of formalin; tuberculin treatment, both in the forms of subcutaneous injection and given by the mouth; Wright's opsonic index; drugs like creosote, carbonate of guaiacol given internally, hypophosphates, cod-liver oil, etc. I have to confess they all have failed one by one to effect a permanent and satisfactory cure. But clinical experience, which made us discard many remedies, has enabled us to organize and develop three main lines of treatment which have proved of great success in saving about 50 per cent. of lives during the last thirteen years' work among consumptive patients.

What are they? They are:

(1) Open-air measures.
(2) Graduated physical exercises.
(3) Continuous antiseptic inhalation.

(1) Open-air measures include fresh air, food, and rest, which place the patient in a favourable condition to increase his vital energy and resisting power.

(2) Graduated physical exercises further increase tissue resistance, whereby Nature is able to respond and meet every tuberculous poison with an antibactericidal substance which makes for healing.

(3) Continuous inhalation takes the patient still further, and makes an effective attack on pathogenic organisms, inhibiting their growth and activity, and thus puts a finishing touch to the cure of the disease.

1. The open-air treatment—whether carried out in a sanatorium, in the garden of a private house, in the open-air châlet, in a farm colony—has come to stay in England. It is Nature's way of cure. It should be the basis of all treatment of consumption. True it is a long process, tedious and expensive. But Nature knows no short road. All short cuts to cure the disease have proved long in the long run. Fresh air, food, and rest help to recuperate the patient's failing energies, and strengthen the soil, so that Nature may begin her beneficent work.

2. Graduated physical exercises take the patient further on the road to recovery. They are worked under four groups:

(a) Graduated breathing and singing exercises, which are carried out both morning and evening under the supervision of the physician, expand the chest, increase physiological activity, open up the air cells, increase the intake

of oxygen and physiological activity, and improve the patient's physique and well-being.

(*b*) Graduated labour. Patients begin by chopping wood, then sawing, then go on to planing wood from five to twenty minutes. The next step is digging broken ground, and finally digging unbroken ground.

(*c*) Tramping. Patients commence walking from half to one mile; their walks are gradually extended to two, three, four, or five miles a day. As they get stronger, they are allowed to go further afield, covering new ground, visiting fresh places of interest, and to absent themselves in the afternoon or the whole day.

(*d*) Camping. Tramping naturally leads the patients to camp out in the open air, cook their own food, and sleep away from the sanatorium—all of which allow a great deal of latitude and freedom to the senior patients. When breathing exercises, or chopping, sawing or planing wood become dull and monotonous, tramping and camping under the supervision of the physician make a change, add variety, create a new interest, take the patient away from thinking of himself or his condition, and at the same time enable him to work out his own salvation and cure. For the last ten years we have been gradually working these exercises into a system, and we find that there is still room for improvement. There is, indeed, a great scope for development for this line of treatment in the future.

The *rationale* of graduated labour is that rest and exercise are so adjusted and regulated by the physician that for every toxin generated in the system Nature creates an immunity which increases the resistance capacity of the patient and makes for his health. This alternate rest and exercise, rest in every form—rest of body and mind, rest in bed, on the lounge chair, in the hammock, rest while tramping; exercises of all kinds, in every pleasant and agreeable form, balancing intoxication with immunization—all controlled and regulated by the physician—this, I assure you, is the secret of creating a natural, and therefore a permanent, immunity.

3. Side by side with the two previous agencies, antiseptic inhalation comes as a further aid in the cure of consumption.

Antiseptic inhalation has a classical history and dates back further than the Greeks, even to the ancient Indians. It is most interesting that more than 2,500 years ago Indian physicians used aromatic substances—in the form of sticks which were lighted and their fumes inhaled—in bronchial and lung affections. Coming back to our present time, many distinguished names, like Sir William Roberts, Dr. Coghill, Dr. Burney Yeo, Dr. Wilson Fox, stand pre-eminently among those who have used inhalation in the treatment of consumption. Lately, Dr. David Lees has come forward to champion the cause of this method of treatment, and has published seventy successful cases that came under his care during the last three years. It was Dr. Burney Yeo's lectures while a student at King's College, London, that drew my attention to the inhalation treatment. So in 1895 I first treated a consumptive patient with the inhalation of creosote, carbolic acid, and iodine. The patient was a married man, then working at Houndsditch, London, and presented all the classical symptoms—emaciation, fever, cough, and expectoration which contained tubercle bacilli. He made a good recovery, and is now living at Sheffield, with a family of five children grown around him. Ever since 1899, when I began sanatorium treatment, I had greater opportunities to use the inhalation in a more systematic way.

Some of the patients of the first batch treated in 1899 are still living. One is at Liverpool, married since he left the sanatorium, and has four children. Cases such as these give the lie to the insinuation of the pessimist that patients do not live ten years after they have had the sanatorium treatment. The inhaler which I employ is one which I have devised after the pattern of Dr. Yeo and Dr. Ruata. It is light, made of perforated zinc, to admit both air and antiseptic vapour freely, durable so as to bear the wear and tear of continuous use, and has a pad of wool to fit under the chin to absorb moisture and prevent the inhalant from irritating the skin. We use mainly two kinds of solutions—one a mixture of formalin (in 2½, 5, and 7½ per cent. strengths), with guaiacol, menthol, pumiline pine, chloroform, and rectified spirit; and the other is a stronger solution containing guaiacol, iodine, terebene, pumiline pine, chloroform, and rectified spirit. Both the inhaler and the solutions are manufactured by Messrs. Oppenheimer, Son, and Co., London. The advantage of using two or three mixtures is this: the monotony of using the same solution for days, weeks, and months has a wearying effect upon the mind, whereas the change and variety of solutions creates a fresh interest in the treatment and stimulates the patient's effort to continue the inhalation and persevere till success is achieved.

The mode of procedure is as follows: When the patient first comes to the sanatorium he is sent to bed and kept there if he shows any signs of a rise of temperature. He has the inhaler for two hours the first day, four hours the second, six hours the third, and eight hours the fourth and the following days. In this way he is gradually prepared to use the inhaler a great part of the day as well as the night. Patients keep on the inhaler while they are walking, resting, reading, or playing games, etc. In fact, they are encouraged to put on the inhaler at every opportunity from the time they wake up in the morning till late at night, and even during the night. And as they improve and show signs of arrest of the disease the hours are gradually reduced to six, four, and two hours a day.

It is rather difficult to dogmatize in what way antiseptic inhalation benefits the patient. I cannot help believing that volatile vapours continuously used enter the alveoli and have a direct action on the pathogenic organisms, inhibiting their growth and activity, and cutting short the morbid process in the lungs. This is clinically proved by the reduction of temperature, cough and sputum, gradual disappearance of tubercle bacilli, and final arrest of the disease. Some patients improved so rapidly by its continuous use that it was impossible to attribute their improvement to anything else. Many of the cases Dr. Lees has reported had no sanatorium treatment, so that the benefit and, in many cases, the entire recovery could only be due to the inhalation employed. It cannot be too often emphasized that the secret of success of antiseptic inhalation depends upon its being used continuously and perseveringly. The more strenuously it is employed the better the prospect of its success.

Although I have used the inhalation in many hundreds of cases I have had no ill effects from its use. Patients use weaker solutions to begin with, and as they get accustomed to them they go on to stronger mixtures. If formalin causes any irritation of throat and nose (which it does not in the majority of cases, as it actually hardens the mucous membrane of the air passages) the second mixture is substituted from the commencement. In a few cases there was a tendency to hyperaemia, as shown in the stained sputum, owing to the negative pressure caused by the inhaler. This is rather an advantage than otherwise, as the resistance the inhaler provides favours the flow of blood into the lungs like Kuhn's suction mask, and facilitates healing.

Other uses of the inhaler are: It affords protection from dust and strong winds; also prevents an attack of influenza, cold, or catarrh of the nose from spreading downwards and starting fresh mischief in the lung or laying open an old lesion.

Results.

As to the results, statistics are so full of fallacy that one hesitates to give the results in mere figures and tables. I have published in my book the results up to 1910. In 1911, leaving out those who only stayed a few weeks in the sanatorium, 42 patients went through the treatment from three to ten months. Placing them under six divisions:

20 made an excellent recovery; they had no physical signs and no bacilli in the sputum.
6 greatly improved; they had no temperature, very few physical signs; had they remained a little longer they would have made a complete recovery and been placed in the first division.
5 moderately improved; they had no temperature, areas of disease smaller, expectoration less, physical signs improved.
6 improved; temperature reduced, gained some weight, physical signs improved.
4 went back.
1 died of haemoptysis.

One of the 20 who got quite well came from Liverpool; was sent by Dr. Glynn and Dr. Craignile. The patient

was an insurance manager, aged 39, married. The whole of the right upper lobe was involved; there were signs of old disease in a large part of the left lung; for weeks his sputum was coloured. He carried out the inhalation very faithfully, and at the end of nine months left the sanatorium quite well. Lately he has been examined by Dr. Glynn, who has given an excellent certificate of health.

To go into the details of the other 19 cases will only be a wearisome reiteration. To give a few interesting items: Their ages ranged from 19 to 43; 5 were early cases, 11 were in the second stage, and 3 were advanced cases with cavities. Except 2 all had a temperature ranging from 99° F. to 102° F.; 3 gave a history of pleurisy and 4 of early haemoptysis. In 6 there were no bacilli in the sputum. They stayed from three and a half to ten months, and did well, and practically all of them have gone back to work.

To sum up: Tuberculosis is a widespread disease of civilized mankind, brought on by its social, industrial and economic conditions which have undermined the vital energy of cells and tissues. The main object of the treatment should be to strengthen the soil and its resistance capacity. The principles of the open-air treatment, which stand for clean food, clean air, clean surroundings and a clean life, are both sound and scientific, and should be the basis of all treatment of consumption. Open air measures improve the general condition and nutrition. Graduated labour creates natural immunity. Continuous inhalation tends to destroy the morbid activity of pathogenic organisms. All these agencies combined and carried on in a sanatorium under an experienced and enthusistic physician hold out the best prospect of recovery in the majority of early cases. If these measures fail, it may be because the vicious influence of heredity and environment is too strong for Nature to respond to treatment. Clinical experience also points out that we must not rely too much upon "our little systems," our pet theories, and the works of our hands. Nature can often do without any and all of our recognized methods of treatment and still bring about a cure. Life's forces and energies are too subtle, flow too deep and mysterious for man to understand them all.

SOME FURTHER EXPERIENCES OF ARTIFICIAL PNEUMOTHORAX IN THE TREATMENT OF PULMONARY TUBERCULOSIS.

By S. Vere Pearson, M.B., M.R.C.P.,
Physician to the Mundesley Sanatorium.

The remarks which I have to make to-day are supplementary to what I have already published in Latham and English's *System of Treatment* (vol. i) and last September's *Practitioner*. Further experience of artificial pneumothorax impresses me more than ever with the occasional usefulness of the procedure. Treatment by such a drastic method would very rarely be necessary if the early symptoms and indications of chronic pulmonary tuberculosis and the first principles of its treatment were better recognized by the public and the profession. No one should undertake this procedure without a full comprehension of the risks involved and of the methods for avoiding those risks; otherwise disaster to the patient is likely to result, and the treatment will quickly be brought to discredit. Sudden death from gas embolism can be avoided by taking fairly simple precautions; and the risk of death from the shock of pleural reflex is very slight and one well worth taking. It is necessary fully to inform the relatives of a patient chosen for the treatment the reasons for undertaking it. These reasons are generally summed up in the statement that the prognosis for the patient chosen is extremely bad, but that it is materially improved under this treatment. Doctors must judge the results of the method while remembering this point. There is another warning I wish again to emphasize—one connected with the choice of patient. It is brought out by my expressing the opinion that many cases with marked bilateral disease will simply have life shortened by the adoption of this procedure.

With respect to the kind of needle to use, I have tried various kinds. For a first puncture I use the simplest kind first, and then if that is not successful in finding free pleura I use different, more complicated kinds. Generally when I have not been able to give an injection of gas at one of the first two or three punctures, I have not succeeded, even after a dozen or fifteen attempts. I have not up to the present found it expedient to have recourse to Brauer's open method. For refills the simplest forms of needle are the best. That which has a solid point and a side opening is rather more painful to the patient. On the other hand, an ordinary hollow needle has to be cleared by the stilette about once in four times, and theoretically there is more liability of a tiny piece of skin being carried into the pleural cavity; this increases slightly the liability of infecting the pleura from without. Hence, perhaps it is better to use one of the solid pointed needles. A modification of that usually named after Betrup Hanson, for an ordinary refill, is quite a good one. In this needle the stilette can come up to, but not through, the opening close to the point. Care must be taken to see that the needle carefully fits the hilt and is screwed up tight to the washer on it. I generally use a needle only once or twice, and then I have it resharpened. If the needle is never boiled, but sterilized by being put, just before the operation, into alcohol, the drying of it is facilitated, and its point keeps sharp better. The sharper the needle, the less the pain to the patient. In withdrawing the needle, seize the skin and subcutaneous tissues the moment the needle has been withdrawn and pull them about to and fro. This helps to prevent surgical emphysema into the superficial tissues. After the completion of an injection I take the needle and holder off the tube and replace it by a sterilized solid glass rod. This, with the end of the tube, can then be dipped in antiseptic solution and dried with a sterilized towel just before the next operation.

In passing the nitrogen gas into the chest I much prefer siphonage to the use of hand-bellows. It is more difficult to teach an assistant the use of hand-bellows, and to supervise him or her closely, than is the case with siphonage. Towards the end of an injection, for example, especially in a case where some adhesions are present, when the pressures are somewhat high, there is danger of gas being sucked out again from the chest, or, short of this, of the pressures on the manometer being reduced below what they are actually within the chest, by relaxation on the part of the person operating the hand-bellows. After some of the gas has been injected into the chest this is particularly liable to happen if the level of the fluid in the nitrogen bottle or cylinder is higher than that in the other, as may happen easily if the bottles stand on the same level. Then, as soon as ever the assistant ceases to squeeze quietly and repeatedly the ball of the bellows, the positive pressure in the nitrogen bottle starts siphonage working, and this will be in the wrong direction. I have found it quite feasible to deal with pressures up to + 30 c.cm. of water by means of siphonage, provided the tube between the bottles is a good length. It is seldom that a pressure as high as this is required.

The exercise of careful judgement is required in deciding how to space the doses of nitrogen properly. In most cases, too, it is not always quite easy to decide the proper amounts of gas to give, so that the resulting intrapleural pressure will be what is adequate and desirable for the particular case at the particular time. In spacing the doses a preliminary knowledge of the average rate of absorption is important. I subjoin a table (p. 958) showing the injections actually given in one of my cases which behaved in a more or less average manner. The physical signs on the pneumothorax side must be frequently observed, especially during the first few days. After a good pneumothorax has been produced, if the breath sounds remain absent the lung has not appreciably re-expanded. Absence of breath sounds is better than weak amphoric breathing. If weak amphoric breath sounds occur over too wide an area previously silent, it is time for another injection, irrespective of what the preceding space between doses has been. My experience has been that a bell note is not at first present. Tinklings, too, are not unusually found, at all events at first.

In the case of a patient whose adhesions prevent completeness of the pneumothorax the physical signs will indicate where the shore, so to speak, of the adhesions is. If the adhesions confine the gas to one locality, it is important to note at the beginning of the treatment where the pleural surfaces are separate by observing where the

No. of Injection.	Date	Nitrogen Gas given in c.cm.	Starting Pressures.		Ending Pressures.	
	1912.					
1	January 1	260	−18	−12	−10	−6
2	,, 2	300	−18	−14	−8	−5
3	,, 3	450	−14	−9	−6	−2
4	,, 5	400	−12	−8	−4	0
5	,, 8	510	−6	−3	+2	+5
6	,, 11	370	−1	+2	+4	+7
7	,, 15	450	−1	+3	+7	+9
8	,, 20	670	−4	0	+8	+10
9	,, 27	450	−2	+2	+9	+11
10	February 5	700	−2	+2	+9	+11
11	,, 15	800	−1	+2	+11	+13
12	,, 29	600	−3	+2	+8	+10
13	March 14	500	0	−5	+10	+12
14	,, 28	600	+1	−8	+4	+6
15	April 8	580	−1	−10	+9	+13
16	,, 26	570	−1	−12	+9	+13
17	May 15	500	0	−2	+10	+12
18	June 12	400	−6	−10	+12	+14
19	July 5	475	−6	−14	+14	+16

breath sounds are silenced, lest any difficulty arise at a subsequent injection. If subsequently any trouble in finding free pleural cavity arise—and such trouble may occur in a difficult case—it is useful to know the exact area where a pocket of gas was formed. By perseverance in giving reinjections of nitrogen at more frequent intervals than under ordinary circumstances, and by cautiously and gradually raising the pressures, adhesions may be broken down. But the outlook for ultimate success is not generally good in such cases.

One physician who has recently adopted artificial pneumothorax in one or two cases tells me a natural pneumothorax has arisen in more than one case in the course of the injections. He supposes this has occurred from breaking down an adhesion and at the same time tearing a hole in the lung. Such an accident I have never experienced, and I cannot help wondering whether it is not due to raising the intrapleural pressures too high and too quickly, either at one injection or through a series of injections, or both.

I find that it is not at all uncommon for patients to lose weight a little, or at all events not to gain any weight, for the first few months. This must not produce discouragement; for perseverance and patience, with plenty of rest and great caution in the amount of exercise prescribed, whatever be the state of the temperature readings, gradually bring about increase in body weight, and eventually good recovery.

Fluid arises in over one-third of the cases, and generally has to be periodically withdrawn until it undergoes resolution. This may come about through the stages of pus formation, succeeded by cheesy thickening, and, finally, fibrosis. Secondary micro-organisms have no say in these processes, or rather they should have no say, and, as a rule, have not. In my small experience they have had none, I am glad to say. The spacing of the doses of nitrogen gas, and the decision as to how much gas to give and what pressures, are considerably more difficult in cases where fluid arises. In the operation of withdrawing fluid and replacing it by gas, I find that it is best to use two separate needles. I need hardly add every canon of treatment condemns the idea of draining such a case under ordinary circumstances by incision, or external opening with a tube in it. In cases with fluid the visceral layer of the pleura is apt to become much thickened. If this occurs and the lung re-expands partially, it will become all the more difficult to compress it again. Therefore, when such a condition is surmised, pressures should be rather higher than under ordinary circumstances. Occasionally, in cases from which fluid has been withdrawn, the lung re-expands rather suddenly and unexpectedly, according to one authority (Dr. C. Lillingston, *Lancet*, July 15th, 1911). When fluid has been present, especially for any length of time, and the lung allowed to re-expand, the two pleural surfaces nearly always become firmly adherent, and I believe generally this adherence sets in very quickly. Therefore, under such circumstances particular care must be taken not to allow re-expansion too soon. I append brief details of some cases.

The following notes refer to the after-history of those cases I published in the *Practitioner* last September:

No. 1. This, the first patient for whom the procedure was adopted in England (in August, 1910), is enjoying good health, except for the inconvenience of having a tube in his side. The presence of this is due to the fact that last autumn an effusion arose, with some fever. After it had been withdrawn thrice it became purulent, though no secondary micro-organisms were present in the fluid. The patient allowed his practitioner last September to treat it as I have indicated without any reference to a specialist. He wrote to me three weeks ago (June 30th): "I feel very well, and get about quite a lot." He leads a quiet life, but goes occasionally to race meetings, and helps to grow prize sweet peas in his garden.

No. 2, for whom the effort to produce an artificial pneumothorax was futile on account of adhesions, is considerably worse, although the disease is still much limited to one side.

No. 3, also a case in which there was failure to produce a pneumothorax, is worse, but, I believe, still alive, though in her case the disease is now much more bilateral.*

No. 4 has made a wonderful recovery. I gave him a refill last week. He comes to Mundesley once a month for this. His larynx is healed, his voice normal. I have never seen so bad a laryngeal tuberculosis make such a recovery. Dr. Burton-Fanning, who has seen the patient once or twice in consultation, wrote as follows to me (on July 19th): "I do think his case a marvellous result of treatment—as regards general condition, lung, and chiefly as regards larynx."†

In the following cases I decided not to adopt this method of treatment, and in no case have I seen fit to regret my decision:

No. 5 is rather worse, although not seriously so. This also applies to No. 6.

No. 7 is alive and well.

No. 8 died in September, 1911.

No. 9 died in November, 1911. Some months before his death the chest was explored with negative result by Sir Rickman Godlee to make more certain of eliminating an empyema.

No. 10 is alive and well.

No. 12 is alive and well.

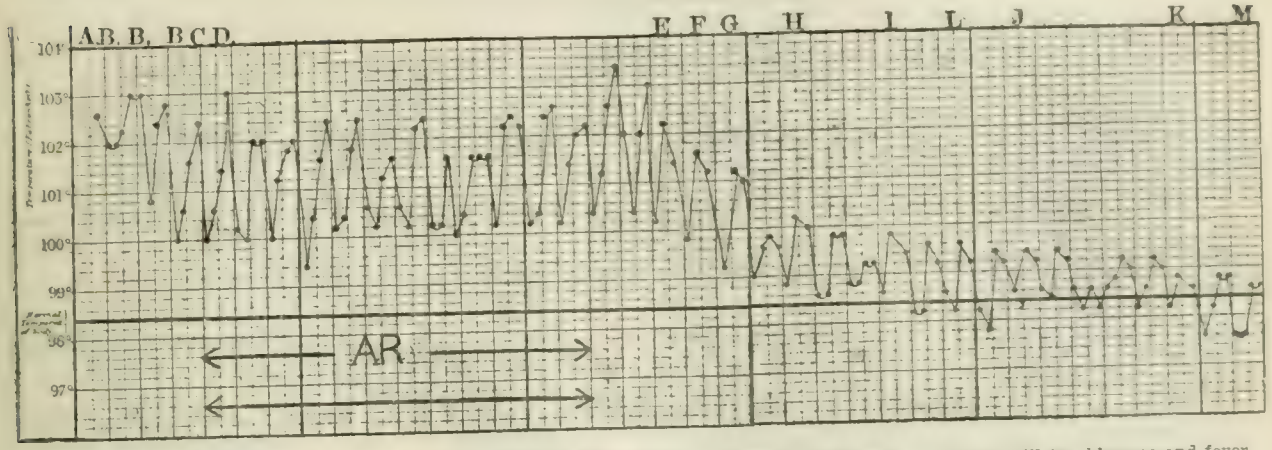
The following cases have not been published before. Tubercle bacilli were found in all five, usually in plentiful numbers.

CASE 1. Male, aged 26; admitted to sanatorium, June, 1911; ill for about a year; he came straight from another sanatorium, where he had been nine months in residence without marked benefit. Slight persistent fever; plentiful cough and frothy expectoration present. Physical signs pointing to extensive left-sided disease with large cavity towards base. Right side clear, or doubtful, with very slight abnormal signs. Some cervical lymph glands swollen. General condition: Flabby, anaemic, irritable in temper, poor appetite, and weak digestion. Fourteen attempts to induce artificial pneumothorax made, with no success. I could not find free pleura on account of adhesions. These efforts were made in August, 1911. I tried more than one type of needle and trocar. At the end of 1911 the patient went abroad. He has recently returned to England; I understand his condition now is rather worse.*

CASE 2. Female, aged 22; ill for ten months before admission on November 16th, 1911. Dr. Arthur Latham saw the patient in consultation. She had been four months just before admission at another sanatorium without making progress. The left side was extensively excavated. Dr. Latham looked upon the prognosis as bad, and recommended artificial pneumothorax to be tried (although there was some disease on the sounder, right side) because he thought, otherwise, the chances were practically hopeless. There was constant fever for at least five months previously to November 20th, when I induced an artificial pneumothorax at the first puncture. The range of fever was generally between 99.4° and 100.5°, occasionally rather higher; pulse 90; sputum copious. This patient is still in the sanatorium. She has received twenty-six injections of nitrogen. The pneumothorax is fairly complete. A little fluid has recently arisen. During the course of the last six months some tuberculous laryngitis has arisen and subsided again, and is now almost healed. The condition at the present moment is decidedly better, although not satisfactory. During the last week the fever has been nearly a degree (F.) lower. The patient is only just now beginning to get up, and the pulse keeps too

* *October.*—These two patients for whom I could not induce an artificial pneumothorax have recently died.

† See note on p. 959.



CASE 5.—A, Date of admission (February 10th). B, Profuse night sweats. C, Night sweats less. D, Cough still troublesome and fever persists. E, First N injection. F, Second N injection. G, Third N injection. H, Fourth N injection. I, Fifth N injection. J, Sixth N injection. K, Seventh N injection. L, No night sweats, no cough (March 8th). M, Up three-quarters of an hour in chair. A R, Absolute rest.

frequent. But she feels and looks a good deal better, and the cough has now at length become decidedly better and the sputum greatly diminished. The comparatively unsatisfactory result of this case so far is largely due to the activity of disease in the sounder (right) side. But undoubtedly the patient has improved, and the outlook has been bettered by the treatment.†

CASE 3. Male, aged 42; admitted August 21st, 1911. Five years previously phthisis suspected and diagnosed by general practitioner, but not confirmed by two consultants. Was leading a strenuous life during this period up to within a few weeks of admission. From the day of admission the temperature ranged very high. It was 107° on August 23rd, and throughout this month seldom fell below 101°, then only by a few points. There was acute pneumonic disease affecting most of the right side, with accompanying grave severity of symptoms. After three months' strict rest, etc., the symptoms had abated but slightly; fever still ran up to 102°. Dr. Hector Mackenzie saw the patient in consultation, and it was decided to attempt the induction of an artificial pneumothorax, because the outlook otherwise looked so black. On November 14th I was successful in accomplishing this at the first puncture. A fairly complete pneumothorax was induced. Since then the outlook has been materially altered, and gradually progress has been made. Up to the present twenty-one injections of nitrogen have been given. On June 1st the patient left the sanatorium, his temperature having been normal since the middle of January. Some fluid has complicated this case, and has kept the progress from being as good as it otherwise might have been. On four occasions fluid has been withdrawn—once 2,420 c.cm.—2,600 c.cm. of gas being introduced at the same time. The patient has gained 8 or 9 lb. in weight, and continues to go on in a satisfactory manner, although of course his restoration to health is far from complete. Besides Dr. Mackenzie, he has been seen by a number of London physicians. He now goes about seven weeks between refills.†

CASE 4. Female, aged 17; admitted September 28th, 1911. Disease extensive on right side; left side practically free. She had had a cough for some months, with sharp pain and some dyspnoea in July. Up to January 1st, when I induced an artificial pneumothorax at the second puncture, progress had been unsatisfactory. There was no fever except when the patient took exercise; then, even after slight exercise, the rest temperatures became raised for at least several days and the symptoms worse. To get sound progress at a reasonable rate by ordinary treatment did not seem very hopeful. After the induction of artificial pneumothorax progress was steady and good. This case has been a very straightforward one. She left the sanatorium on April 30th. Since then her practitioner at home, Dr. E. G. Colville, has been undertaking the refills about once every three and a half weeks. She has gained over 8 lb. since going home. Previously the gain in weight was only ½ lb. Her mother writes (July 7th): "She gains in energy and vigour steadily, and her appetite has much improved. We feel thankful to see her doing so nicely." And her doctor writes (July 24th): "She keeps well."†

CASE 5. Female, aged 17; admitted February 10th, 1912. Disease, extensive bronchopneumonic caseating of three months' standing, absolutely confined to the left side; some excavation already existing. Temperature rising from 100.5° to 103°. Three weeks of absolute rest accomplished nothing. Artificial pneumothorax at first puncture induced February 28th. On March 8th temperature was practically normal; all night sweats, previously severe, and cough had ceased. A week later the temperature was quite normal; henceforward all symptoms disappeared. She left on June 10th, and was then walking four, or even five, miles daily. She is now receiving injections occasionally under the supervision of Dr. Arthur Latham, who originally sent me the case, saying that if progress was not made within a week or two of admission nitrogen treatment should be tried. She writes to me (July 23rd): "I feel in the best of health." The result in this case has been astonishing, and quite of the nature of a miracle. I feel quite certain no other line of treatment could have come near to accomplishing what artificial pneumothorax has accomplished for this patient. Neither of these last two patients has minded much, after the first injection, the slight pain of the needle's insertion.†

In conclusion, very few, if any of these cases would in my estimation be alive to-day but for artificial pneumothorax; yet all are alive and several of them are now enjoying good health. I have now published notes of every case in which I have adopted this procedure.

† *October.*—These five patients with an artificial pneumothorax continue to go on well.

TUBERCULIN IN THE DIAGNOSIS AND TREATMENT OF TUBERCULOUS DISEASES,

ESPECIALLY PULMONARY TUBERCULOSIS.

By L. D. PARSONS, M.B., Ch.B.Edin.

I WISH briefly to put before you the results of a short experience of the value of tuberculin in the treatment of phthisis and other tuberculous diseases during 1911 after the method so strongly advocated by Dr. Camac Wilkinson, to whom I am indebted for the ability to use tuberculin in the manner to be shortly described.

I have a record of 29 fully treated cases, 26 being cases of phthisis, 2 cases of lupus of the nose, and 1 a case of mastoid disease. All the cases have been selected from patients attending the out-patient department of the Colonial Hospital, Gibraltar, of which I have charge. Cases of every type have been treated. Those with sputum have been given antiseptic inhalations, and most of the cases have had a mixture containing calcium chloride, dilute sulphuric acid, tr. belladonnae, and infusion of gentian. Patients exhibiting bacilli in the sputum have been treated without a preliminary test injection; others have been tested with Koch's old tuberculin, and have given positive reactions. All the patients treated have improved; some to an astonishing degree. Two days in the week have been set apart for their attendance—Tuesdays and Fridays. Each patient has to buy a thermometer and take the temperature every two hours, and according to the temperature the interval and dosage is regulated. General instructions as to ventilation are given, and an illustrated printed sheet with instructions is given to each patient. These sheets are supplied by the Sanitary Commissioners of Gibraltar, and are printed in Spanish as well as English. Most of the patients attending speak Spanish.

The preparations I have used are T.O.A., T.A., P.T.O., and P.T., prepared by Meister, Lucius and Bruning, and supplied in bottles containing 1 c.cm. These are diluted with ½ per cent. carbolic acid in distilled water to the required strength and injected with a Koch's syringe. Test doses I usually give in the forearm, treatment doses in the

Fully Treated Cases of Tuberculosis in 1911.

Names.	Sex.	Age.	Nationality.	Occupation.	Stage.	Sputum or Reaction to T.A.	Duration of Disease.	Duration of Treatment.	Weights.	Remarks.
1. R.M.A.	F.	42	Spanish	None	Lupus, nose	0.001 T.A. to 100° F.	4 years	Jan. 21 to Nov. 28, 0.7 P.T. followed by 1 c.cm. T.A. 312 days	Not taken	Completely healed.
2. A. A.	M.	43	Native of Gibraltar	Policeman	III	Tubercle bacilli found	? several years	Feb. 19 to June 6, 1 c.cm. P.T. and no reaction. 107 days	st. lb. 8 4 8 2	No sputum; improved generally.
3. M. A.	F.	39	Native	Housewife	I	0.001 T.A. to 100° F.	2 years	April 26 to Aug. 22, 0.7 T.A. gave 100.4° F. 119 days	10 3½ 9 11½	Improved generally.
4. J. D.	M.	37	Spanish	Labourer	I	0.01 T.A. to 102° F.		Jan. 17 to May 16, 1 c.cm. P.T., no reaction. 119 days	11 7 11 5	Lost all cough and looking well
5. F. D.	M.	41	Native	Transport driver	III	Tubercle bacilli found	1 year	May 31 to Sept. 7, 1 c.cm. P.T., no reaction. 100 days.	9 5 10 9	Had haemoptysis again in Nov. 1911, and was tested, 0.5 T.A. and no reaction; looks well. Tested in Feb., 1912, up to 0.05 T.A. and no reaction. Enormous improvement.
6. I. F.	F.	39	Native	Housewife	III	Tubercle bacilli found	4 years	Feb. 4 to Oct. 20, 0.8 P.T. gave 99° F. 258 days	8 4¾ 8 12½	Lost all cough and breathlessness. Has come again for further treatment, and in one and a half months has reached 0.5 P.T. and no reaction, and weighs 9st. 6½lb.
7. P. G.	M.	37	Spanish	Milkseller	II	Tubercle bacilli	14 months	Jan. 18 to June 27, 1 c.cm. P.T. gave 100° F. 160 days	9 8 9 9	Lost all cough and sputum; feels quite well.
8. A. G.	M.	40	Native	Labourer	Adv. III	Tubercle bacilli found	1 year	Jan. 25 to Dec. 27, 1 c.cm. P.T. to 99.5°, 0.7 T.A. to 103° F. 336 days	6 9 7 1	Enormous general improvement. Was a hopeless case to start with.
9. E. H.	F.	33	English	Housewife	I	? Tubercle found; 0.02 P.T.O.–100°; 0.04 P.T.O–101°; 0.08 T.O.A.–102°	3 weeks	Jan. 6 to July 11, 1 c.cm. P.T. gave no reaction. 186 days	7 10 7 9 and 8 6½ in Jan., 1912	Was being tested when tubercle bacilli found; 0.005 T.A. gave no reaction. Lost all shortness of breath.
10. D.R.H.	M.	27	Spanish	Clerk	I II	0.001 T.A. to 100° F.	7 or 8 years	May 26 to Sept. 5, 1911, 0.6 P.T. to 99.2°. 102 days	10 2½ 10 1	Had so much pain and constriction in chest after injection that I advised a pause. Occasionally bloody sputum.
11. E. I.	M.	10	Native	None	I	0.001 T.A. to 103° F.	2 years	May 19 to Oct. 3, 1 c.cm. P.T., no reaction. 137 days	3 13 to ?	Improved generally.
12. O. K.	M	43	English	Musician	III	Tubercle bacilli found	13 months	March 21 to Sept. 19, 0.7 P.T. gave a rise to 102° F. 183 days	9 1½ 8 8	Improved generally. Advised a pause, and he went to try Spanish Sierras. Hear he is doing well. Was under Dr. Batty Shaw at Brompton. Heard of him on Feb. 12, and was then well.
13. J. L.	M.	22	Spanish	Barber	I	0.002 T.A. to 102° F.	2 months	May 16 to Oct. 27, 1 c.cm. P.T. and no reaction. 164 days	?	No cough now; looks well and feels well.
14. J. L.	F.	20	Spanish	Teacher	I	0.001 T.A. to 100° F. and 0.01 T.A. to 103° F.	? 1 year	Dec. 28, 1910, to April 7, 1911, 1 c.cm. P.T. to 99° F. 100 days	9 6 9 10½	Looks well and feels well.
15. L. M.	M	40	Native	Coalheaver	II-III	0.02 T.A. to 100.2° F.	2 years	May 26 to Sept. 3, 1 c.cm. P.T. to 100° F. 100 days.	9 4 9 0	No cough and no sputum; looks well.
16. H. M.	M	25	English	Seaman	Lupus of nose	0.001 T.O.A. to 101.5° F.; 0.002 T.O.A. to 103.4° F.	4 years	May 25 to Oct. 3, 1 c.cm. T.O.A., no temp.; 0.6 T.A., no temp. 131 days.	10 7 11 8½	Locally condition wonderfully improved. Seen in March, 1912, and hardly noticeable bluish spot on either side of bridge of nose.
17. A. M.	M.	59	Native	Shoemaker	III; laryngitis	Tubercle bacilli found	1½ years	March 14 to July 11, 1 c.cm. P.T. gave no reaction. 119 days	—	Throat well; no cough. Feels strong.
18. E. M.	M	14	Native	None	II	0.002 T.A. to 103.4 F.	Several years	Feb. 16 to June 14, 1 c.cm. P.T. gave no reaction. 118 days	6 5½ 6 7	Feels quite well.
19. A. N.	M.	33	Spanish	?	III	Tubercle bacilli found	3 years	March 26 to Sept. 19, 0.6 P.T. gave a temp. of 104° F. 177 days	—	Improved considerably, but removed from locality, and treatment not finished.
20. J. N.	M.	15	Native	Baker's boy	I II	0.005 T.A. to 105° F.	1 year	Dec. 29 to March 14, 1910, and Aug. 25 to Oct. 17, 1911, 1 c.cm. P.T., no reaction. 129 days	5 7 6 8	Bad family history. Had asthmatic attacks. Tested in Jan., 0.05 T.A. to 100.4°. Had one month's treatment, reached 0.3 P.T., and then came no more. A very unsatisfactory patient, and never came regularly.
21. A. de la P.	M	42	Native	Clerk in Post Office	II	0.002 T.A. to 101° F.	6 years	May 2 to Aug. 29, 0.7 T.A. to 99° F. 120 days	7 7½ 7 12	Much improved.

Fully Treated Cases of Tuberculosis in 1911 (continued).

Names.	Sex.	Age.	Nationality.	Occupation.	Stage.	Sputum or Reaction to T.A.	Duration of Disease.	Duration of Treatment.	Weights.	Remarks.
									st. lb.	
22. E. P.	F.	20	Native	None	II–III	0.002 T.A. to 100.2° F.	1 year	Jan. 23 to Aug. 22, 0.5 T.A. to 101° F. 180 days	7 10 7 6½	Improved generally. Tested on Feb. 12, 0.01 T.A. Temperature 100° F. Had 3 injections, and then turned up no more. Quite well to look at, but still sensitive.
23. F. R.	M.	19	Spanish	Law student	Adv. III	Tubercle bacilli in sputum in large numbers	18 months	Dec. 31, 1910, to July 11, 1911, 1 c.cm. P.T. to 99.5°. 193 days	9 7 9 7	Very much improved. No cough, no sputum. Seen in February, and found to have a temperature. Ordered to bed. Looks well.
24. J. R.	M.	43	Native	Stoker in Port Department	I; pleurisy	0.005 T.A. to 101° F.	1 month	May 25 to Sept. 15, 0.6 T.A.; no reaction. 113 days	9 1 8 11	*Son* reacts, and has tuberculous glands neck. Patient quite well, and did his work the whole time.
25. M. R.	M.	55	Spanish	Labourer	III	0.0003 P.T. temp. 102° F. So many physical signs did not test with T.A. Laryngeal case	? 6 months	June 30, 1911, to Aug. 25, when he had 0.6 P.T. and temp. to 101° F., and next day, Aug. 26, 98° F. Aug. 27, 98° to 98.4° Aug. 28, 98° to 98.4° Aug. 29, 98° F. 57 days	9 9 8 11	I saw him last on Aug. 29, looking much improved, but gave no injection as interval not long enough. Cough almost gone; voice better. On Sept. 4 I heard that he had died on Aug. 30, suddenly, while sitting in a café playing cards.
26.* J. S.	M.	16	Native of Gibraltar.	None.	II	Tubercle bacilli found	9 months	Jan. 7 to June 16, 1911, 1 c.cm. P.T., no reaction. 160 days.	7 9 7 13	Did very well, and improved greatly; no cough. Tested Aug. 4, 1911, as he came back worse and with a little bronchitis. 0.005 T.A. 99° F.; 0.01 T.A. 99°; 0.5 T.A., 99°; 0.03 T.A., no reaction.
27. S. S.	M.	19	Native	Waiter	I	0.001 T.A. to 102.2° F.	2 months	June 30 to Oct. 13, 1 c.cm. P.T. with no reaction. 106 days	8 6½ 8 11½	Lost all cough, and feels quite well.
28. J. V.	M.	5	Spanish	None	Mastoid disease for one year	0.001 T.A. to 101.2° F.	1 year	July 17 to Sept. 29, 0.6 T.O.A. in Aug., no rise in temp. 74 days	—	Improved slowly; operated on Sept. 4, and wound quite healed on Sept. 29. No tuberculin after August. He had been previously operated on in 1910, and had an open discharging wound.
29. J. deL	M.	42	Spanish	Farm labourer	III	Tubercle bacilli found	? 8 months	Jan. 25 to July 25, 1911, 1 c.cm. P.T. 181 days	9 10½ 9 9½	Still had tubercle bacilli in sputum; pause for four months. General improvement very marked. Tested in Dec., 1911, and 0.01 T.A. gave 100° F. Is undergoing second course, and has reached 0.6 P.T. in month, but had a reaction to 103° F. Less sensitive than at first. Was a hopeless case to begin with.

* This patient has been through a second test in February, 1912; 0.05 T. to 103° F. Underwent second course and reached 1 c.cm. P.T. on March 5th. No reaction whatever during the whole course. Looks well.

upper arm intramuscularly in the deltoid region. The skin is merely painted with tincture of iodine. I have given several hundred injections in this manner, and have not once had any abscess at the seat of injection. The pipette used for picking up the dose either out of the original bottle, or one containing a dilution of tuberculin, was made for me by Messrs. Down Bros. It is of glass which will withstand sterilizing in the flame, and has three graduations—0.05 c.cm., 0.1 c.cm., and 0.5 c.cm. I have another made by the same firm, and graduated to 0.01 c.cm., but prefer the former.

I usually start with P.T.O., and go up to 1 c.cm. of this tuberculin, and then change to P.T. (which is clinically about fifty times as strong), and also work up to 1 c.cm. of this. When patients take 1 c.cm. P.T. without reaction I stop, and if they have been very advanced cases I tell them to come back in six months' or even four months' time to be tested; otherwise to return in a year's time.

Among the large number of injections I have given I have not once noticed any harmful effects that could be attributed to the tuberculin. Several cases have been so hopeless to start with that they have died within a couple of months of their first treatment dose. Their friends have understood that they were hopeless cases and took any risk; but even of such cases I have more than one where the unexpected happened and recovery took place—for how long, time alone can show.

It would be tedious and to no purpose to read you details of these cases, so I give the results in the accompanying table.

Till I began to use tuberculin in diagnosis I had no idea as to how prevalent tuberculous disease is, and I am so strong a believer in the diagnostic value of old tuberculin that I go so far as to suggest that every individual who gives a positive reaction should be treated till he cease to react to a dose of 0.05 T.A., and in this manner we would contribute largely to the stamping out of the disease. I suggest that this test should be applied to all recruits for His Majesty's services. I believe that all bovines for importation into Argentina are subjected to a tuberculin test, and those reacting positively are not allowed to enter the country. If human beings were similarly treated we would not meet with so many tuberculous joints developing after injuries nor with those sad cases of tuberculous meningitis in subjects that to all outward appearances were perfectly well about three weeks before they died.

In the fight against phthisis generally tuberculin is an invaluable remedy. My small experience seems to show that it is perfectly safe to treat patients by means of tuberculin at a dispensary, and the cost is well within the means available for treating every individual case. Treatment is carried out without any, or but very little, interference with the patient's work, and the more tuberculin is used in the diagnosis of cases the sooner will they be diagnosed and the easier treated.

I heartily recommend the use of tuberculin in gradually increasing doses until large doses are tolerated without reaction for treating all cases of tuberculous disease. No opsonic indices were taken.

THE ESTIMATION OF GENERAL IMPROVEMENT IN PULMONARY TUBERCULOSIS.

By F. RUFENACHT WALTERS, M.D., M.R.C.P.,
Physician to the Crooksbury Sanatorium.

THE object of this communication is to provide a convenient scale for the measurement of the general progress towards recovery in cases of pulmonary tuberculosis. The gravity and prospects of such cases are too often measured by purely anatomical considerations, without taking any account of physiological indications, it being assumed that the physical signs have a close relationship to the chances of recovery, which is very far from being the case. Many third-stage cases have a better prognosis than some first-stage cases; many cases of extensive disease are more manageable than some in which the physical signs are almost normal.

A rational system of classification and of recording results should take into account both the physical changes in the lungs and the evidences of constitutional intoxication; and if one alone of these criteria were to be chosen, the latter would be the more important. The disregard of this fact has reduced our British statistics of phthisical cases to a state of chaos, and has made them useless for determining the true value of different climates and methods of treatment. The current controversies as to the value of treatment in England or on the Continent, at high or at low altitudes, with massive or small doses of tuberculin, under sanatorium conditions or otherwise, and many other vexed questions, would be capable of solution if we had an adequate scale for the registration of the cases, whereas at present the published statements command no confidence.

Nineteen years ago Dr. C. T. Williams pointed out in his Lumleian Lectures on Aërotherapy the importance of separately estimating local and general improvement; yet at the present time the most widely used classifications—namely, the Turban or the Turban-Gerhardt, and those of the German Imperial Health Office and of the Hanseatic League—take no account of the constitutional conditions beyond a vague industrial test. This may be safe in dealing exclusively with afebrile cases, but is most fallacious if we are concerned with more mixed material. Early cases are not always afebrile; advanced cases are not always febrile. The length of time elapsed between infection and efficient treatment gives no reliable indication of the chances of recovery; but if we know the physical signs and also the degree of constitutional disturbance in relation to rest and exercise, especially as regards temperature, pulse-rate, and state of nutrition, we can make a fair guess at the chances of recovery. The degree of digestive disturbance, though most important in prognosis, is too vague to be used as a basis of classification. Slight digestive disturbance will usually be reflected in the state of nutrition, and can therefore be left out of account for this purpose; severe digestive disturbance, such as persistent vomiting or diarrhoea, is best regarded as a complication. Cases that are doing well often continue to have a fair amount of expectoration, whereas in some unpromising cases the expectoration and cough may cease or be greatly reduced.

Disappearance of tubercle bacilli from the sputum is of no value as a criterion unless the cases are under treatment for long periods. Moreover, recovery may appear to be complete while tubercle bacilli are still being expectorated, and in some cases with a bad prognosis tubercle bacilli are with difficulty discoverable in the sputum.

We often find the expressions "much improved," "improved," "slightly improved" in the statistics of chest hospitals and sanatoriums. These terms, however, are too vague and too much dependent on the personal equation to be of much value. On the Continent it is usual to classify cases on discharge according as the capacity for work is completely restored, partially restored, or absent. This is also very vague from a medical or physiological point of view, however interesting from a purely economic standpoint. A man may be fit for full work as a clerk or collector, and yet be quite unfit for full work as a gardener or mechanic.

What is wanted is a series of degrees or stages which can be determined by definite data; the degree of improvement can then be recorded according to the progress up the ladder of degrees.

For febrile cases the physiological criteria are the temperature, pulse-rate, and weight. For the afebrile the capacity for exercise.

In a communication to the International Tuberculosis Congress at Rome this year I proposed a physiological classification according to temperature, pulse-rate, and weight, which I believe meets our requirements for the febrile. Febrile cases would then be classified into three classes (I, II, and III), according to the Turban-Gerhardt standard of lung changes, and three other classes (A, B, and C), according to the constitutional condition. Complicated cases would be separately classed as AD, BD, or CD, on similar lines, according to the constitutional indications.

Class A consists of cases in which the temperature at rest is not over 38°, pulse-rate at rest not over 90, loss in weight not over 10 kg.

Class B: Temperature over 38°, not over 38.5°; a pulse-rate over 90, but not over 110; weight loss over 10, but not over 15 kg.

Class C: More serious constitutional disturbance.

I must refer those interested to the original paper for other details.[1]

For the afebrile, the criterion would be the amount of exercise that can be taken without constitutional disturbance, that is, without subsequent malaise and rise of temperature, or loss of appetite, the temperature being taken after an hour's rest and next day at the usual intervals.

I would suggest dividing patients into four classes for walking exercise, three classes for carrying earth, etc., in baskets, and four classes for light and heavy work. At the Crooksbury Sanatorium we subdivide these into thirty-six stages, and a certain amount of overlapping in the kind of employment is found advisable to prevent monotony. Also games are graded in the same way as different kinds of work; but in passing from one class to another the patient has to satisfy a test in which these complexities are omitted. I have provisionally accepted Marcus Paterson's rule that carrying exercises should succeed walking and precede manual work; but this will require further investigation.

The classes for walking exercise are recorded as WA, WB, WC, and WD. The first class includes all exercise from the time the patient is fit to get out of bed and dress to the time when he can without disturbance walk a distance of 2 kilometres (1¼ miles) in half an hour on level or slightly undulating ground. For WB, WC, and WD the exercise would be as under, the higher figure representing the test in each case:

	Time.	Distance.
WB ...	½ to 1½ hours	3 to 6 kilometres (3¾ miles).
WC ...	2 to 3 hours	8 to 12 kilometres (7½ miles).
WD ...	3½ to 4½ hours	14 to 18 kilometres (11¼ miles).

The next classes are employed in carrying earth or stones in baskets up an incline of 1 in 11 for a distance 50 metres (62 yards) returning with the empty basket.

The classes are recorded as XA, XB, and XC. In the XA test the load is 5 kg. (11 lb.), the journeys twelve to the hour, the time from half an hour to two hours, making up four hours with additional walking. In the XB test the load is 7½ kg. (16½ lb.), the journeys sixteen to the hour, the time from one and a half to three hours, with additional walking up to four hours. In the XC test the load is 10 kg. (22 lb.), the journeys twenty to the hour, the time from two and a half to four hours, with additional walking where necessary to make up four hours. Taking walks while carrying half the test weights may be substituted for part of the above if necessary.

XA. Carrying light load ½ hour to 2 hours, walking 3½ to 2 hours.
XB. Carrying medium load 1½ hours to 3 hours, walking 2½ hours to 1 hour.
XC. Carrying heavy load 2½ hours to 4 hours, walking 1½ to 0 hours.

In the last two classes the tests consist in the performance of work graded into several kinds. The lightest kind

is not used for test purposes. The next consists in chopping wood the thickness of the wrist, using rake, hoe, or small spade in already broken ground. The third grade consists in cutting small boughs with an axe, using an ordinary spade or fork in already broken ground, or pushing a loaded barrow along level ground a distance of 50 metres. The fourth grade consists in cutting trunks with an axe, planing wood, using the pickaxe, spade, or fork in new ground, deep digging, or loading a cart, or pushing a full wheelbarrow up an incline. I have had patients under my charge who were occupied in most of these ways, but the heaviest work was done before this system of grading was adopted, and only prescribed for two or three hours a day at most.

The tests are as follows:

YA. Two hours' work of the second grade and four hours' of the third grade.
YB. One hour's work of the second grade, two of the third, and three of the fourth.
ZA. Two hours' work of the third grade and four hours' of the fourth.
ZB. Six hours' work of the fourth.

With the three classes for febrile patients and the eleven tests for non-febrile patients, it is possible to classify every case on admission and departure by a physiological standard, and to state the improvement numerically. In doing so one would record the completed classes, and approximately the position in the class on admission. It ought then to be possible to agree upon a definition as to what should constitute slight, moderate, or great general improvement respectively, and to determine the value of different forms of treatment more accurately than at present.

REFERENCE.
[1] *Lancet*, July 15th, 1912.

DISCUSSION.

Dr. McAFEE (West Kirby) appealed for some guidance to be given to the general practitioner as to the methods of administration and the other details of tuberculin treatment. There were at the present time the work of Dr. Philip in Edinburgh, Sir A. Wright of St. Mary's, and, say, of Dr. Camac Wilkinson in London, at the extremes of methods. If workers could be brought together in council by the Association, through a committee or otherwise, they would have already material to determine more accurately how they should proceed with regard to dose and interval and relationship to tuberculin reactions. At the last Liverpool meeting of the Association Dr. Waters, the then President, hoped the meeting might determine the relationship of Koch's bacillus to pulmonary phthisis. They had travelled a long way since then, and it might be possible to give them some help in treatment where the practitioner could not avail himself of the sanatorium. Much misunderstanding existed regarding Dr. Wilkinson's treatment; it deserved more consideration than it had received from various quarters.

Dr. C. LILLINGSTON (Great Yarmouth) remarked that sufficient judgement was not exercised in the selection of patients suitable for treatment by induction of an artificial pneumothorax. Moribund patients with extensive disease on both sides were often advised to have the treatment, although they were unsuited for it. He asked for the careful selection of cases with extensive disease on one side, and but little on the other. With an experience of eighteen patients treated with an artificial pneumothorax, he had obtained arrest of the disease in nine, and marked improvement which would probably end in arrest of the disease in five. He referred to the fatal accidents which had followed the treatment, and pointed out that most, if not all, these cases were due to faulty technique and carelessness. He therefore advised none to adopt the treatment who had not mastered the technique.

Dr. H. WILLOUGHBY GARDNER (Shrewsbury) spoke of the treatment by artificial pneumothorax as seen by him at Schatz Alp, Davos, under Dr. Lucius Spengler, and of the excellent results obtained there, and asked Dr. Pearson if his work was done with the help of radiography, as at Davos. He also spoke of the value of the tuberculin tests in the diagnosis of tuberculous disease, and said he thought it would be a great pity if they were given up because they are not found to be infallible, considering the very great importance of early treatment.

Dr. H. DE CARLE WOODCOCK (Leeds) said he had carefully gone into the question of the benefit obtained by tuberculin treatment and by sanatorium treatment respectively. His figures showed that sanatorium *plus* tuberculin treatment gave the patients the best chance of recovery, and that after this combined treatment there was less likelihood of relapse. In coming to this conclusion he had arranged his patients in four classes:

1. Patients treated by dispensary treatment without tuberculin.
2. Patients treated by dispensary treatment with tuberculin.
3. Patients treated in hospital or sanatorium without tuberculin.
4. Patients treated in hospital or sanatorium with tuberculin.

These classes might be taken as indicating their value to the patient, the last class giving the greatest benefit. He would ask something as to technique. What was the average depth Dr. Pearson found that his needle had to sink? What dosage should be employed, especially in the case of adhesions? What cases with bilateral disease could be treated, remembering that all serious and advanced cases of pulmonary tuberculosis were bilateral? How were they to escape the production of what he might call a natural pneumothorax? and lastly, what were the favourable and what the unfavourable immediate signs in the case of the patient just operated upon? He had learnt much from watching cases operated upon at Dr. Jane Walker's sanatorium, cases operated upon in the presence of Dr. Vere Pearson, and it seemed to him that some cyanosis, some sweating, and some rise of temperature were favourable signs. In one case of his own there had been considerable shock with a dropping of the temperature one degree, a condition which quickly passed off.

Mr. CRACE-CALVERT (Vale of Llwyd Sanatorium) said that he had tried continuous antiseptic inhalation over varying periods of time, and had been very disappointed with the results, as he could not see that there was any improvement in cases beyond a reduction in the amount of sputum (which often increased again after stopping inhalation), and ordinary sanatorium methods gave equally good results. With regard to tuberculin, he thought that it was one of the most valuable remedies that they had, provided that it was used with care, but believed that it should in the majority of instances be used in conjunction with sanatorium treatment, for it was necessary to keep a close watch on the various reactions, as well as the temperature, because much might be learnt as to future dosage and treatment. He did not think that the bacillary emulsion had been used sufficiently. It was a strong preparation undoubtedly, but it corresponded more closely to an ordinary vaccine than any other preparation of tubercle bacilli, from which toxins in one form or other had been removed, whilst in practically all other vaccines they used both endotoxins and exotoxins. Doses should be small to start with and gradually increased every third or fourth day.

Dr. PARSONS, in reply, said that, in his opinion, there was nothing to touch tuberculin treatment in pure tuberculous infection, but it should be employed in the dosage formerly recommended by Koch.

Dr. VERE PEARSON, in reply, said that in artificial pneumothorax fluid did not matter. The diagnosis of adhesions was often impossible to make until several punctures had been performed. The depth of the needle was usually about an inch, but varied considerably. Bilateral disease was certainly a contraindication. The procedure took about a quarter of an hour or twenty minutes to give 400 or 500 c.cm. of gas.

Dr. WALTERS said that there was much point in the advice given by Dr. McVail in another Section, that those who believed in the usefulness of one method of treatment should content themselves with advocating it, and not run down every other as useless. When he (Dr. Walters)

began his sanatorium work twelve years ago he contented himself with hygienic measures; but he had come to use tuberculin more and more as time went on, and was convinced of its value. He believed that the method adopted by Dr. Camac Wilkinson was invaluable in certain cases, but in others he did not think it indicated or advisable. Many cases of mixed infection did well if treated with tuberculin, with or without a corresponding vaccine. It was common to speak as if sanatoriums only received slight or early cases; but in his experience most of the cases sent to a sanatorium were severe, or such as had not done well elsewhere. He had used continuous inhalation as advocated by Dr. Lees in a number of cases, but they had mostly been severe cases, which was, perhaps, not a fair test. He had found the method failed in just those cases where one would be glad of its help. In severe cases they needed all the help they could get; perhaps some other method, such as that of iodoform injections advocated by Dr. Dewar, might be of use. The diagnostic tuberculin test was very useful in doubtful cases; but it should not be trusted to alone. He was very doubtful whether people who reacted to tuberculin, but had no appreciable ill health and no suspicious physical signs, should be subjected to active treatment beyond taking rational hygienic precautions. He wished to emphasize the fact that because a particular method was successful in a certain group of cases it did not follow that it was universally applicable.

CAUSE AND TREATMENT OF CERTAIN CASES OF NEURASTHENIA.

(Preliminary Communication.)

By F. W. BROOK, M.R.C.S., L.R.C.P.,
London.

IT has long been suspected that certain cases of neurasthenia were due to autointoxication, but so far there has been no definite proof of this theory. In a recent paper Professor Bernheim stated his belief that the true neurasthenias are invariably of an autotoxic origin. In the discussion following, Professor Forel said: "It is pure hypothesis until the microbe or toxin has been discovered. Such assertions are wholly in the air." I hope in this preliminary communication to suggest to you that, at any rate in certain cases, the autointoxication theory is something more than a mere assumption.

Having adopted as a working hypothesis the theory that a large number of cases of neurasthenia were due to the absorption of toxic material from the intestinal canal, I decided upon a systematic examination of the faeces in every case subsequently encountered. The observations of the bacteriological department at Guy's Hospital show that when emulsions of faeces from normal individuals are sown upon plates of nutrose agar (Eyre), the resulting growth consists of *B. coli communis* and *B. coli communior* in almost equal numbers, often associated with a saprophytic *Streptococcus brevis* which occurs in the proportion of not more than 1 to every 10 colon bacilli.

Forty-five cases of neurasthenia in all were investigated, and the bacterioscopic examination gave the following results:

Bacillus coli, 10 cases.

Streptococcus pyogenes longus in practically pure culture, 21 cases. Here I have followed Eyre, who has never recognized the multitudinous varieties of streptococcus differentiated by some observers upon minor differences of biological characters, and which are undoubtedly due to variations of environmental conditions, but has adhered to the original classification of Lingelsheim into the pathogenic *Streptococcus pyogenes longus*, and the saprophytic *Streptococcus brevis*.

Bacillus coli associated with *Streptococcus pyogenes longus*, 2 cases.

Coliform bacilli in practically pure culture, 6 cases. This coliform bacillus (probably an atypical strain of *B. coli*), which produces blue colonies on neutrose-agar plates and only ferments the monosaccharides, has been recognized by Distaso and Eyre as causally associated with muco-membranous colitis; indeed, the former observer regards it as practically specific in [illegible]

[illegible] associated with *Streptococcus pyogenes longus*, 3 [illegible]

Bacillus lactis aërogenes in more or less pure culture, 3 cases.

Serological observations (agglutination reaction and opsonin estimation) were made in all the cases, except some of the streptococcal ones, and formed a most valuable guide, especially in those cases where the infection was a mixed one.

It is interesting to note that of 5 cases on the lunacy border line, not one showed any change at all from the normal.

A point of much interest is that in a large number of the streptococcal cases pyorrhoea was either present or, if not present, a definite history of it could be obtained.

I think it will be agreed that this analysis also throws much light on the well-recognized connexion of neurasthenia with colitis, a fact which has long been admitted, and also with various forms of chronic arthritis. A further point worth recording is that acting on Schrenk-Notzing's dictum that impotence may be the only symptom of neurasthenia, 2 cases whose faeces were examined showed very definite infection by streptococcus. One of these cases is quite cured, and is now married and leading a normal sexual life.

Upon the bacteriological results my cases may be classified as follows:

Class 1.—Those in which the bacteriological flora appeared normal, as far as could be judged by the cultivations obtained upon nutrient media, and where subsequent investigation by serological methods was needed in order to select such strains of *B. coli* as had undoubtedly acquired pathogenic properties towards their host.

Class 2.—Those in which the *Bacillus coli* normally present had partially or wholly disappeared from the intestinal flora and was replaced by (*a*) *Streptococcus pyogenes longus*; (*b*) *Coliform bacillus*; (*c*) *Bacillus lactis aërogenes*.

Treatment.

The treatment was by autogenous vaccines with, in addition, sour milk and intestinal antiseptic in some cases. The vaccines were given in small doses at intervals of from five to seven days, according to the reaction, if any. By only giving small doses, constitutional disturbance was usually avoided.

Of the intestinal antiseptics calomel, creosote, salol, sulphur and beta-naphthol were all tried, and, if anything, I think the beta-naphthol gave the best results.

In the streptococcal cases I tried a vegetarian diet, acting on the well-known fact that in the faeces of many carnivorous animals, streptococci alone are present, but I cannot say that I think any advantage accrued from this, and latterly I have abandoned this form of diet.

Results of Treatment.

Successful results were obtained in the majority of the cases, and in many where previous treatment not on the above lines had completely failed. Although the cases are not many numerically (45 in all), the results were very striking clinically.

In Class 1, where the plate cultivations appeared normal, evidence of infection by *Bacillus coli* was obtained in every case by means of serological tests—for example, agglutination reactions and opsonin estimations, and improvement followed upon the use of the appropriate autogenous vaccine.

In Class 2 (*a*) the *Streptococcus pyogenes longus* was present, and under treatment the improvement manifested clinically was coincident with the disappearance of the streptococci from the faeces and the reappearance of the typical *B. coli*.

In Class 2 (*b*) the same remark applies to the clinical improvement as the coliform bacilli disappeared.

In Class 2 (*c*), *Bacillus lactis aërogenes*, two of the cases were seen once only and were not treated; the one which was treated made a remarkable recovery.

One of the most striking results was the rapid improvement in the physical appearance; the muddy complexion so often present rapidly gave place to a healthy colour, the eyes became brighter and lost their dull, heavy look, and the face lost its appearance of premature age. The indigestion, aching pains, lassitude, and irritability disappeared, and the change in the mental condition was equally marked. The memory and power of concentration improved, the depression and insomnia passed away, and the whole outlook on life became quite changed, and in fact normal.

Neurasthenia has been classified according to whether the blood pressure is high, normal, or low. Whether this classification is of any very great importance I do

not venture an opinion, but I wish to call attention to the fact that in several cases where the blood pressure was high it fell steadily during the course of the treatment.

Traumatic Neurasthenia.

With regard to traumatic neurasthenia, in a recent address given at Milan by Professor Murri, published in the July number of the *Universal Medical Record*, he points out that "cause" only exists as a complex of determining conditions, and that most frequently the accident is but the occasion that reveals pre-existing disorder, or that gives effect to it when the conditions are already ripe. The effects, therefore, are not specific to the occasion, but to the precedent condition. Of the two cases of traumatic neurasthenia I have so far investigated one showed definite evidence of *B. coli* infection and the other gave a pure cultivation of *B. lactis aërogenes*.

Summary.

I would summarize my observations by advancing the opinion that the bacteria referred to bore a direct causal relationship to these cases of neurasthenia, for the following reasons:

1. An abnormal condition of the intestinal flora was present in more than half the cases.

2. Serological tests yielded evidence of infection by the abnormal bacteria, and by some of the strains of colon bacilli in each of those cases where the intestinal flora appeared at first to be normal.

3. Most important, the improvement in the patient's condition, both physical and mental, under treatment synchronized with the reappearance of the normal intestinal saprophytes in the faeces and the disappearance of the abnormal organisms.

4. Of course one realizes that the personal element and the factor of suggestion cannot be eliminated, yet many of the cases which were cured had previously tried other recognized forms of treatment—rest cures, high frequency, Weir Mitchell, hydropathy, etc.—where these same factors were at work, hence I do not think that they can fairly be said to have had much influence on the results.

5. The bacteriological investigations were made by Dr. Eyre, who was never informed previously of the nature of the case, and I should like here to tender him my very best thanks for the great trouble he has taken and the interest that he has shown in working out the results.

Illustrative Cases.

I will now give you some illustrative cases, dividing them into—

(*a*) Those which were successful.

(*b*) Those which were not. In these latter the intestinal flora remained practically unaltered in spite of the treatment.

I may here point out that neither the symptoms complained of nor the clinical appearance of the patient give any indication as to the variety of bacterial infection which will be found on examination of the faeces.

The following notes have been taken from my case-book just as they were entered:

Successful Cases.

Class 1.—Bacillus Coli.

Case I.

Mrs. A. C., aged 46, married, no children. Healthy till an attack of influenza three years ago; then anaemia, depression, chronic rheumatic pains, and some neuritis. In spite of treatment, rest cures, various kinds of baths both here and abroad, the condition, with the exception of the neuritis, remained unchanged. She complained of great depression, loss of memory, lack of concentration, irritability, and bad rheumatic pains (the joints appeared normal), and also of the ease with which she became fatigued. Complexion was muddy and the eyes dull and heavy.

The faeces, culturally and microscopically, appeared normal, but *B. coli* gave an opsonic index of 1.5. Treatment commenced July, 1911. After the eighth injection the depression had disappeared. She stated that she felt well and had plenty of energy and could walk without fatigue. After the twelfth injection the index was 1.09. The will and mind were clear and the memory good. In July, 1912, she reports herself perfectly well, and the opsonic index is 1.2.

Case II.

Mrs. F. C., aged 40, married, no children. History of an attack of what was apparently ptomaine poisoning one year ago, since when she has never been well. Has suffered from a feeling of heaviness in the appendix region for four years. Complains of inability to walk more than a few yards without intense fatigue. Pains in the limbs, especially in the legs. She is constipated and never has an action without drugs. Acidity, feeling of fullness after meals, palpitation; sleep and appetite good; anaemic, the complexion muddy, skin dry, dark circles under the eyes.

Faeces, apparently normal, gave an index to *B. coli* of 1.5. Treatment began November, 1911. She said she felt better after the first dose. Improvement was rapid, and after a month she could walk some distance without fatigue. Complexion became normal, and the face much fuller. After three months she was well, and in a recent letter states that she has remained so.

Class 2(a).—Streptococcal.

Case I.

A. S., male, aged 36, married, schoolmaster. Neurasthenia three years, which latterly became so bad that he had to resign his position as head master of a public school.

The first symptom noticed was a burning feeling of the face, hand, and back of the neck. Then followed lassitude, depression, and great irritability. He had no constipation, but was always worrying about the action of the bowels, the stools being always light-coloured. The blood pressure was 200 mm. The reflexes slightly exaggerated, marked insomnia, frequent micturition, great physical weakness.

Streptococcus longus was present in pure culture. Treatment commenced March, 1911. After the second injection he walked twenty miles, and was much more cheerful. At the beginning of May the *B. coli* equalled the streptococci in numbers. Head much better. Blood pressure 170. In July, much better generally, blood pressure 150, streptococci diminishing, insomnia only causes one bad night in five. In November, no insomnia for three months, no depression, blood pressure 160. Faeces have resumed normal type, culturally and microscopically. In March, 1912, writes that he is perfectly fit, and has taken up cross-country running.

Case II.

Mrs. T., aged 37, married, three children, youngest 7. Colitis in India seven years ago. Six years' history of neurasthenia. Complained of great lassitude, depression, insomnia, loss of power of concentration, pains in legs, and chronic abdominal dragging pain, previously supposed ovarian in origin, but probably coming from the colon. No constipation, complexion muddy, skin dry, dark circles under the eyes, very anaemic. Faeces showed almost pure cultivation of *Streptococcus longus*.

Treatment commenced April, 1911. The symptoms rapidly cleared up, especially the abdominal pain. Sleep and spirits became good, and the complexion normal. In September the faeces were microscopically and culturally normal. In a recent letter she reports that she is in excellent health.

Class 2(b).—Coliform Bacillus.

Case I.

G. W., aged 45, married, railway manager. Two years ago he suffered with a constant feeling of vertigo; he used to perspire very freely, at first only at night, then in the day also. Complains of a feeling of dread, and undefined haunting fear of doom. No cause at all. Sleeps very heavily, but always dreaming. Great lassitude. Occipital headache, and burning feeling on the top of the head. Bowels open daily with salines. Twitchings of arm and face. Horror of noise. Great depression, very easily tired. Has tried several forms of treatment. On cultivation of faeces, coliform colonies appeared, the opsonic index to which was 1.91, while to normal coli it was 1.0.

Treatment commenced in February, and there was rapid improvement from this date. In a fortnight the depression had disappeared, and dreams and fatigue were less. At the end of three months he was well, and now reports that his condition, both physical and mental, remains excellent, and that he enjoys his work, which had previously become a burden to him.

Case II.

W. P., aged 29, accountant. Was quite well till nine months ago, when the present symptoms became manifest. He complains of worrying greatly about things (the condition becoming rapidly worse), lack of concentration, heavy sleep with bad dreams. He goes over and over his additions, because he thinks there may be an error. Has a dragging feeling on the top of the head, and sensation of swimming in the head when reading or doing any head work. Occasionally, when walking, he feels as though he reels, but does not actually do so. He never feels ill. Faeces showed coliform bacilli, index 1.4.

Treatment was commenced in December. The symptoms gradually abated. He was able to add easily, without going over the work more than once. The swimming feeling passed away, and in April he reported that he was absolutely well, and just going to get married. The faeces had then resumed normal type.

Class 2(c).—Bacillus Lactis Aërogenes.

Mrs. N. G., aged 60, married, no children. Ten years' history of neurasthenia, in the course of which she had tried many forms of treatment without effect. She complained of a feeling of absolute exhaustion, as though dying, and that to do the slightest [illegible] depression. Very highly strung, keeps going till she drops. [illegible] acidity after every meal, pain and tenderness over colon on right side. Sleep broken by bad dreams; constant ringing in ears. Head always feels too heavy, and as if falling backwards. Mucus in stools, which are usually constipated. The patient was

very anaemic; complexion pasty and yellow, skin dry, sclerotics yellow; blood pressure, 240; pulse, 56. *Bacillus lactis aërogenes* in pure culture in the faeces.

Treatment was followed by rapid improvement; digestion became good, the depression disappeared, and also the abnormal feeling of fatigue. Complexion cleared, and after ten injections the patient was quite well. The blood pressure in the meantime had fallen to 170, and the pulse had risen to 68.

We now come to the unsuccessful cases. These were quite small numerically, and usually streptococcal. They were not absolute failures, but they were not cures.

CASE I.

E. E., aged 46, musician. Ill eight years. When he entered my consulting-room he announced that I was the twenty-eighth doctor by whom he had been treated. Operation on left kidney eight years ago for supposed renal colic. Nothing was found, and I have no doubt the pain had its origin in the colon. Twenty-eight weeks in bed last year. Complains of great lassitude, weakness, irritability, and depression. Every molehill appears a mountain. Periodical attacks of pain, very acute in left side of abdomen, running down to legs. Diarrhoea and unformed stools. Faeces showed streptococci in nearly pure culture.

Treatment commenced February, 1911. He improved steadily in spirits, energy, and colour, which had been very pasty.

In May the streptococci equalled the *B. coli* in number. Stools now formed.

In November, after a lapse of three months, the streptococcus to *coli* ratio was back to 10 to 1.

In February the numbers were equal, and there he remains for the present.

He is immensely better, and looks a different man, and he has only had one day away from work in eighteen months, but I cannot say he is cured. I have discussed removal of his colon with him, but this he has refused.

CASE II.

G. D. C., aged 49, male. Ill six months. Complained of vertigo and a feeling of reeling, although he never did so. Depression, lassitude, pains in legs, irritability. Sclerotics yellow, skin dry, eczema of old standing. Blood pressure 180. Faeces showed streptococci in almost pure culture. Treatment begun in July, 1911. Gradual improvement took place in his condition, and in October the streptococci and coli were in equal numbers; blood pressure 130. In January, although his condition remained about the same, the culture showed nearly all streptococci again. In February they were again equal; blood pressure 126. He was much better, but not well, and then went to Switzerland.

This case was one of those in which I tried a vegetarian diet for a time, but gave it up as it did not seem to be benefiting the patient.

With regard to the permanence of these cures several have been seen after an interval of over a year, during which period they have remained perfectly normal, and I see no reason to anticipate a relapse.

In conclusion, I may remark that as the above work is quite new, I have endeavoured to theorize as little as possible, and only to state the facts exactly as I found them.

DEMONSTRATION OF A MORE SYSTEMATIC DORSAL APICAL PERCUSSION; AND OF THE "OVAL INTERSPINOUS DULLNESS" AS AN AID TO EARLY DIAGNOSIS.

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THE purpose of this preliminary communication is to point out the need for a renewed clinical study of the upper dorsal region, which has not hitherto received, at any rate from myself, the close attention which it deserves. Its special object is to demonstrate a normal pulmonary sign not previously noted in dorsal apex percussion, its influence upon our mode of examination, and the help which it can afford to our practical conclusions. At this early stage the scope and the uses of the method based upon it cannot be stated with completeness. They will be indicated provisionally in connexion with some of our pulmonary affections; but the further elaboration of its future results must rest with clinical workers able to give to it the skilled attention which it requires.

Introductory Anatomical and Clinical Remarks upon the Upper and the Lower Apices.

The incentive to a fresh survey of this region was a recent paper by Cesare and Giacomo Minerbi of Ferrara,[1] based upon their own percussion of the interspinous region independently of any previous knowledge of earlier work. They describe two new signs—an "aortic arch sign" on the left and an "azygos arch sign" on the right—which would have been valuable clinical assets if they could have been confirmed. The difficulty in the way of any such fine differentiations is the blanket of resonant lung which covers everything from behind, and attenuates all the deeper visceral dullnesses. Dorsal dullnesses can never be absolute: they are subresonant only, except in the case of superficial lesions, either pulmonary or pleural, or else reaching the surface from the posterior mediastinum. Even the latter are modified by pulmonary resonant waves at their side and by those conducted along the ribs which mitigate the mediastinal dullness. Our most careful pleximetric percussion fails, therefore, to yield accurate linear outlines of the individual normal mediastinal structures. It can only determine their aggregate effect, and that resultant is the oval subresonant dullness shown in the diagrams, which had been too sketchily described in my former papers under the name of "the lozenge-

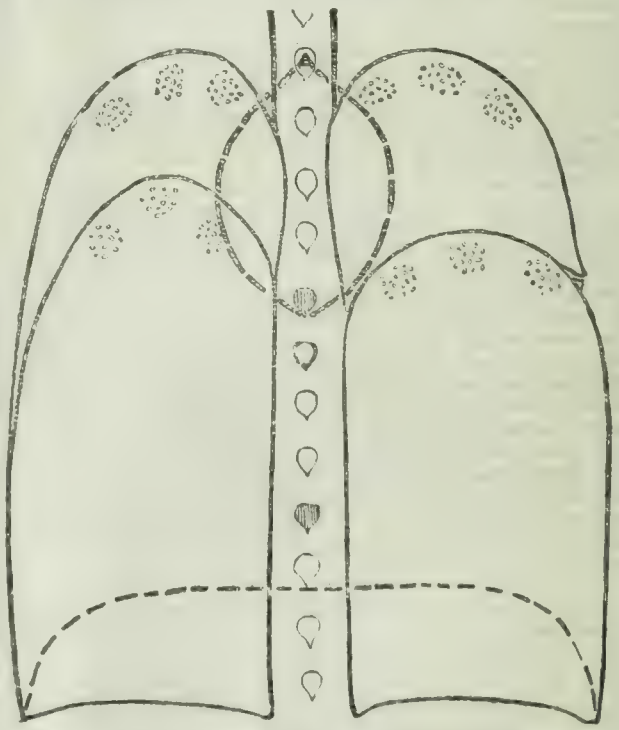


Fig. 1.—Dorsal diagram of the lungs, and spinous processes, showing the levels of the oval patch, of the diaphragm, and of the right and left lower lobes and of their early apical lesions. Right upper lobe tilted up at the side to show the axillary angle of the middle lobe.

shaped interscapular dullness"; it is the upward continuation of the "retrovascular" and of the "cardiac" dullness (cf. Fig. 2).

The Lobar Anatomy.

1. *The apex* itself at its extreme tip projects anteriorly under the dome of the pleura; but the greater bulk of it is posterior, and fits into the upper end of the spinal groove. This important point is well brought out in one of the illustrations in the late Dr. Stuart Dickey's valuable monograph on *The Applied Anatomy of the Lungs* showing a plaster cast of the right upper pleural cavity depicted *in situ*.

2. *The apices of the lower lobes* are exclusively dorsal. Thanks to the illuminating teaching of my former colleague at the Brompton Hospital, the late Dr. Reginald Thompson, some attention was given to their accurate description in 1882 in my Goulstonian Lectures on Pulmonary Cavities, and in 1889 in my work on *The Anatomy and Nomenclature of the Bronchi and Pulmonary Blood Vessels*. Further stress was laid upon their essential asymmetry in my papers of 1899 and of 1910 on dorsal percussion,[2] and in their dorsal maps. That asymmetry which is unalterably governed by the lobar, cardiac, and broncho-arterial features of disparity of the

left lung is accentuated diagrammatically in Fig. 1. The left lower apex is seen to rise higher—to the level of the third dorsal spine—and to be pyramidal in shape. The right rises only to the level of the fourth dorsal spine. It has a broader and flatter sweep because the posterior fissure has to give off in the anterior axillary line at the level of the fourth rib the almost horizontal anterior fissure between the upper and middle lobes, which closely follows the course of that rib.

Clinically, the "lower apices" have long been recommended for searching "dorsal" examination by Sir Kingston Fowler, and all "four apices," more recently in connexion with the diagnosis of early phthisis, by Dr. David Lees. In each of them the early foci, which may occupy any situation, usually occur at a moderate depth under the pleura, and in that sense are subapical. In Fig. 1 they are illustrated only at three conventional sites, a paravertebral, an axillary, and an intermediate site. As it is paramount in early diagnosis and prognosis to decide whether any audible râles are confined to the upper apex or extend also into the lower apex, this strict attention to

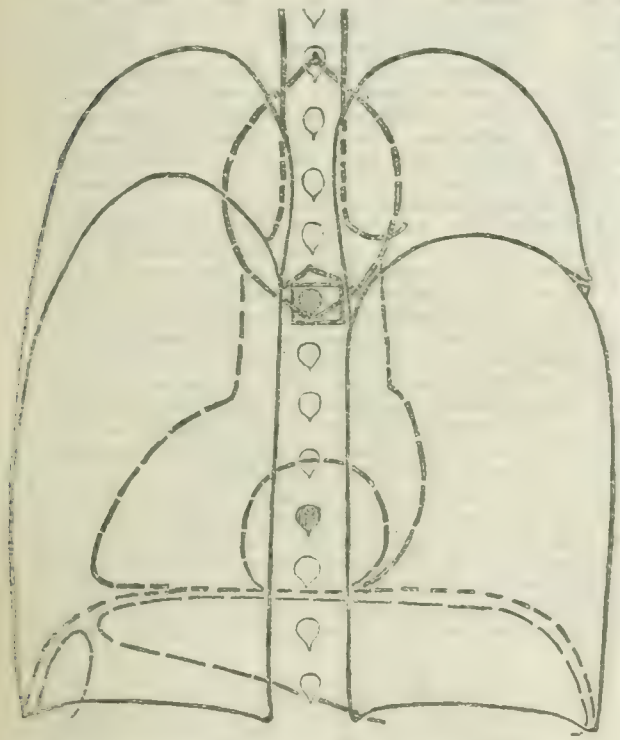


Fig. 2.—Same as Fig. 1, showing the trachea and bifurcation, the isolated dullness of the fifth and of the ninth spines, and the posterior thoracic dullnesses—namely, the oval, the infratracheal, the retrovascular, the cardiac and left auricular, the hepatic, and the splenic dullness.

lobar anatomy is essential. The dissimilarity in the level of the right and left lower lobes should be borne in mind, and their outlines accurately traced according to the only reliable guide, that of the spinous processes.

The clinical importance of the posterior apical examination, though always fully recognized, had been imperfectly utilized in my former method of examination when I was still unacquainted with the normal field of percussion which has now to be demonstrated. Incidentally, for earliest diagnosis percussion signs may be said to take precedence over the auscultatory, except in the catarrhal form of invasion. Some relative inexpansion is usually the initial change at the stricken spot. We may be able to identify it by its dullness; and we have then further to diagnose if possible whether it is merely "pretubercular," as it often is, or due to the actual presence of early tubercles. The new sign is of practical value in that direction. In the most recent contribution to this subject Dr. Sergent[3] alleges that the earliest seat for physical signs in tuberculosis is not the anterior surface, but usually a small area at the centre of the right supraspinous fossa.

The anterior examination needs no recommendation. In the supraclavicular fossa the finger and the stethoscope can almost touch the lung through the pleural dome. But they can only reach its extreme tip, where tubercle does not settle first: and they encounter an obstacle in the first rib and the scaleni muscles. The ear itself is kept by the clavicle at a distance from the more critical subapical zone and from the greater bulk of the apex, which lies back in the costo-spinal groove. It is true that râles, even when they originate in the depth, may "carry forwards"; but they should then *a fortiori* be audible from the back, where the ear can be directly applied to the supraspinous surface.

I. Demonstration of the Oval Interspinous Dull Patch.

The Landmarks.—This subresonant area is included vertically between the first and the fifth dorsal spines. Its curved symmetrical lateral boundaries diverge from the first spine and meet again at the fifth, the whole outline being ovoid, with the line of the resonant spinous process as its vertical axis. They vary slightly in different individuals, and our percussion has to define them. *The percussion resonance of the spinous processes* calls for a brief explanation, and a separate diagram. As a median line of resonance it extends continuously from the cervical spines as far as the fifth dorsal spine. This spinous process, which is always distinctly dull, serves as our lower landmark. It is surrounded at the site of the infratracheal glands by a small rectangular patch of dullness which extends to the right further than to the left, probably owing to the dullness of the right pulmonary artery in its backward course. Below that dull patch resonance prevails again for pulmonary reasons over the sixth, seventh, and eighth spines. The ninth, however (cf. Fig. 2), is likewise an isolated dull spine, and another useful landmark—namely, for the dullness of the left auricle. But, to return to the causation of the axial spinal resonance within the oval dullness: this is illustrated in Fig. 3. In the neck it is manifestly due to a resonant pharynx and trachea lying in front of the vertebrae. The tips of the spinous processes may be regarded as the accessible extremities of a series of vertebral pleximeters conveying backwards the highly resonant tracheal note. This note also belongs to the upper thoracic spine as far as the tracheal bifurcation, where it stops below the level of the fourth spinous process. Whereas, however, in the neck all the other tissues right and left of the bodies of the vertebrae are solid and dull, the upper dorsal vertebrae receive laterally from the lungs an element of resonance which modifies the dullness conveyed from the upper mediastinal structures in front of them. Instead of being absolute, the dullness of our oval patch is subresonant only; whilst the axial tracheal resonance conveyed by the "tracheal" spinous processes by direct plexímetry remains unimpaired.



Fig. 3.—Dorsal diagram of the trachea and upper dorsal spines, illustrating their pleximetric conduction of the tracheal note, also the asymmetry of the infratracheal patch which conveys the dullness of the infratracheal glands and of the right pulmonary artery.

Whilst the lower landmark may be readily identified by percussion, the identification of the upper landmark by palpation is not always so easy. The seventh cervical is known anatomically as the vertebra prominens; but under the integuments it is the projection of the first dorsal spine which is apt to be the more obvious. If there should be any doubt, we may succeed in identifying the first dorsal by counting upwards from the fifth. Having drawn a dermographic ring round it, we proceed to percuss.

The Technique.—The use of a Sansom's plexímeter is indispensable. In these days of advanced diagnosis, with complicated apparatus such as Roentgen's and Einthoven's, this is a very simple mechanical requirement. The plexímeter is in reality of greatest assistance to those who have most difficulty with their percussion: and they suffer most from the neglect of a systematic instruction in its use. To save time, there is an advantage in using first the long

flange to obtain the general outline, and afterwards the small flange to confirm or to correct that rough sketch. The latter is to be used exclusively for the percussion of any small surfaces, such, for instance, as the spinous processes.

The patient under examination is to be seated, with head inclined forwards, arms crossed, hands applied to the back of the opposite shoulder-joints. No reference should be made to his breathing. The easiest plan is to start the outlining (Fig. 4) above where the right and the left lines

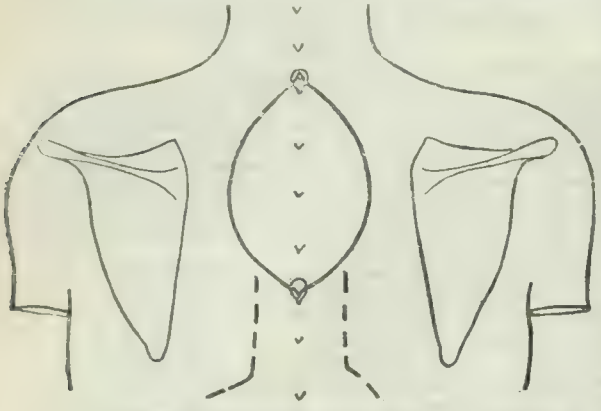
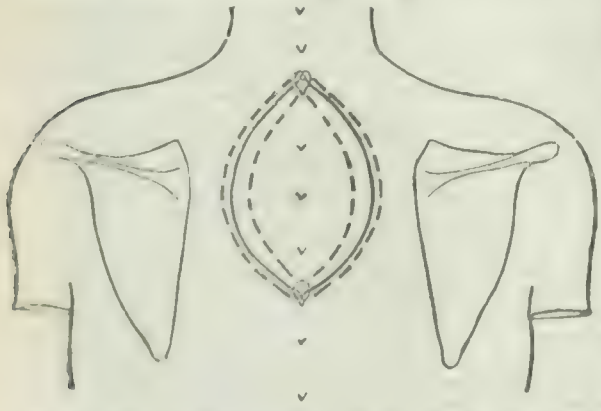


Fig. 4.—Clinical diagram of the oval interspinous dullness, as percussed during tranquil breathing, showing it to be the "upper mediastinal" continuation of the retrovascular dullness.

meet at an angle (A), and then to make out likewise the lower angle (V). This renders it comparatively simple to follow the boundary of dullness along its intervening curve.

The Size and the Respiratory Variations of the Normal Interspinous Oval Dullness.

Undisturbed breathing is wanted at this stage because deep inspiration and expiration modify the size of the patch. Deep inspiration markedly contracts it by increasing the aëration of the apex; conversely deep expiration tends to enlarge it slightly. This respiratory "to and fro," which was originally noticed by the Minerbis when percussing out their patches of dullness, is the special feature of this method. It supplies a fine differential test in apex diagnosis. It is, therefore, essential to obtain its correct tracing at rest, during average breathing, as a basis for our estimation of its full range of excursion.



[illegible] as Fig. 4, showing in broken lines the respiratory [illegible] of the oval outline during active breathing—namely, the slight outwards extension of the dullness during expiration, and the inwards extension of the resonance during inspiration.

It should be clearly understood that these respiratory oscillations of the outline do not correspond to any shifting of the pulmonary border analogous to the advance and retreat of the anterior pulmonary fringe. There is no free moving pulmonary margin. The lung completely fills the spinal groove during every phase, and its only variation is in the bulk of its gaseous contents and in the varying effect of [illegible] taken in intercepting more or less of the backward dullness of the steady mediastinal structures. In strict accuracy these structures are not absolutely immovable under the influence of breathing. Besides a slight descent of the heart when the diaphragm is lowered by forced inspiration we must remember the expiratory swelling and the inspiratory emptying of the great veins. Practically, however, this factor does not assert itself in our dorsal percussion results.

The relative disparity between the inspiratory and the expiratory excursions of the upper ribs has an important bearing upon the etiology and the treatment of phthisis. By inspiratory effort we can raise them above their average position, to which they return; but by expiratory effort, in the absence of systematic practice, they can hardly be lowered below their average position. Untrained individuals use them very little in either direction, and least of all in that of forced expiration. Whilst the smaller anterior segment of the true apex can receive no direct expiratory pressure from the fibrous dome of the pleura, its larger posterior segment in the upper recess of the spinal groove gets little of it, owing to the rigid anterior attachment of the first rib. This relative apical immobility during quiet breathing is the plausible and accepted explanation for the invariably apical localization of early tubercle. In connexion with the oval patch it explains why, although theoretically (cf. Fig. 5) three outlines are obtainable, the average, the inspiratory, and the expiratory, nevertheless, the "expiratory" outwards oscillation of the mediastinal dullness, being much less extensive, is negligible. Practically, then, our differential method is mainly based upon the study of the normal "inspiratory" inward excursion of the pulmonary resonance and of any abnormality in its extent.

The Normal Size of the Oval Patch at Rest.—The intensity, the precise shape, and the measurement of the dullness vary slightly with the individual, but normally the two latter are fairly constant. For the average adult stature the vertical measurement between the first and the fifth spines is about 110 mm.; the transverse equatorial diameter about 90 mm., being twice the distance between the middle line and the lateral outline, which is the same on both sides. The inspiratory oscillation is a much more variable quantity. In normal individuals it is greatest in the juvenile type, and among the abnormal in those who have developed the upper dorsal type of breathing.

The Normal Respiratory Variations.—Deep inspiration causes the dull area to shrink towards the spine. To show this the long flange of the pleximeter is placed inside the oval patch accurately along its boundary line, and kept there for alternate percussions, whilst the patient is directed to take a deep breath and hold it, and next to empty the chest and stop breathing for a moment. The

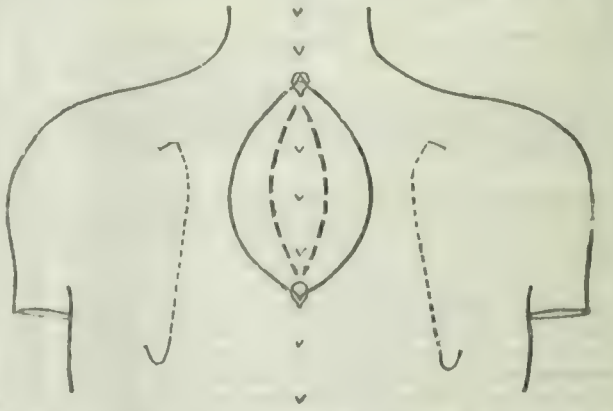


Fig. 6.—Simplified clinical tracing from a case with unusual degree of inspiratory shrinkage of the oval dullness in deep breathing, as apt to occur in the "juvenile type" and in inspiratory hyperpnœa.

note and the tactile vibration will vary with each respiratory phase in the manner stated. With a little practice the percussor will be able to determine the horizontal extent of the inspiratory encroachment of resonance towards the spine, which in thin active chests is sometimes considerable. It is obvious that Piorry's flat ivory pleximeter is too broad for that purpose; and likewise the finger, which, in addition, is quite unsuitable by reason of its curved surface. For greater accuracy in determining the excursion the pleximeter may be worked from the

spine outwards till it finds the inner boundary indicated by the dotted lines in the diagrams. The beginner should practise these normal percussions in a youthful subject with mobile and lean chest, although thickness of integument does not essentially interfere with the result.

II. The Method as Applied to Pulmonary Diagnosis.

Two distinct questions arise in every case: (1) At rest, is the oval interspinous patch normal in symmetry, in length and breadth, in the regularity of its outline, and in the absence of any encroaching adventitious dullness? (2) In active breathing, is the respiratory play normal in every way, symmetrical on both sides, and evenly regular at every level on either side? This demonstration will be confined to the more striking illustrations furnished by pulmonary over-expansion and inexpansion, by emphysema, by pleurisy, and particularly by early and late pulmonary tuberculosis, as samples of the many-sided practical applications of the method.

Pulmonary Over-expansion.

Hyper-inflation, as a temporary and functional condition, need not be coupled with any emphysema. Early emphysema, however, is always made up of some functional distension, and for diagnosis and prognosis any method will be of value which will show whether there is little or much of it, and therefore how much of the pulmonary elasticity may have been retained in spite of the emphysema. The following case is a good illustration in point:

A gentleman, past middle age, previously healthy and active, had suffered for several years from progressive

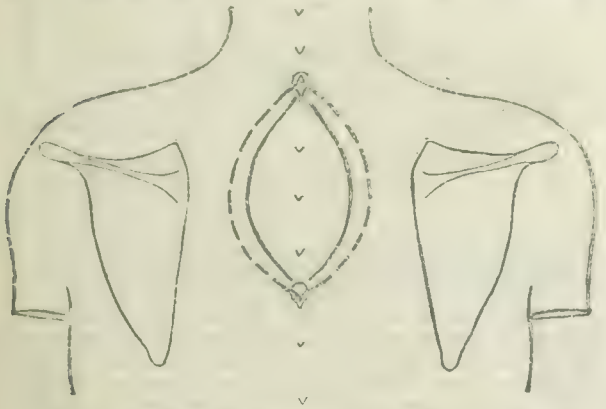


Fig. 7.—Tracing from a male patient with chronic dyspnœa and signs of emphysema. Shrinkage of the oval dullness from habitual pulmonary over-inflation: restored to the normal size by expiratory treatment.

breathlessness on exertion, associated with chronic bronchial catarrh; he now presents undoubted characteristic signs, both thoracic and general, of emphysema. Opinions had varied as to the nature of the case, "emphysema" having been found by some, negatived by others, but no pulmonary treatment had been suggested. My first dorsal examination as to the behaviour of the oval patch (Fig. 7) led to the hope that the existing emphysema might be still complicated with some degree of functional over-expansion. The patch, which measured at rest 65 mm. transversely and 110 mm. vertically, gave on both sides a fairly good inspiratory oscillation of 10 mm. That view was confirmed at the second examination a week later by the results of the respiratory treatment prescribed, the transverse measurement of the dull patch at rest having increased to 90 mm. This implied a reduction in the distension of the upper part of the lungs and a corresponding increase in the expiratory power. Some confidence having been restored by the perceptible improvement in the breathing and by a less hopeless prognosis, decided benefit was obtained in the country, where greater efficiency for walking exercise was regained, and the respiratory condition continued to improve. The chronic changes of emphysema remain, but the functional pulmonary over-expansion is being gradually reduced.

In other instances—as, for example, in asthma—the question may arise whether there is any genuine emphysema or only functional over-expansion. The oval patch may give a conclusive answer, as in the following case:

The tracing described in Fig. 6 as an illustration of the "juvenile type" was taken from a gentleman aged 55, suffering from an inveterate attack of catarrhal asthma of several months' duration, with considerable paroxysmal inspiratory dyspnœa much aggravated by any slight exertion or excitement. The striking amplitude of the respiratory excursion which was found on examination affords proof that the structural changes of emphysema are practically absent, that the lung has preserved considerable elasticity, and that the condition is one of unusually active inspiratory hyperpnœa, partly of obstructive, and largely of nervous, derivation.

Emphysema.

The attitude of the ribs is one of permanent inspiratory over-elevation, that of the lung one of permanent over-inflation. This implies (1) that the dull patch will assume at rest a smaller size than can be brought about by forced inspiration in the healthy chest; and (2) that the normal inspiratory excursion of the outline will be reduced to a minimum. The thoracic over-distension cannot be equalled in health by any isolated respiratory effort, because it is due to chronic structural changes in the costo-sternal and costo-vertebral articulations, and in the vertebræ and intervertebral discs, with a permanent increase in the sterno-vertebral diameter.

Another factor is the characteristic posterior convexity of the upper dorsal spine. This tends to increase the interspaces between the tips of the spinous processes, and

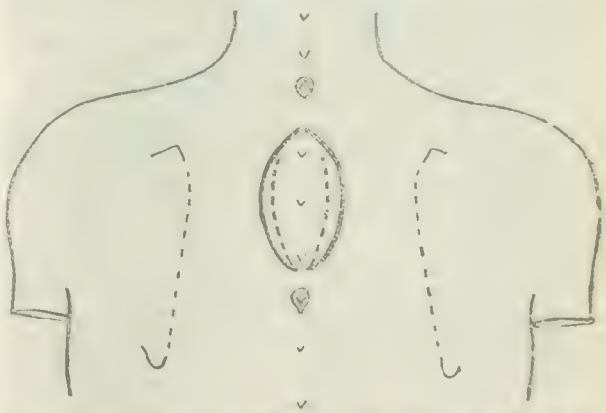


Fig. 8.—The oval dullness in emphysema. Great shrinkage of the dullness, with diminished inspiratory oscillation.

therefore, the distance between the first and the fifth as surface landmarks. The projection backwards of the mediastinal dullness, as measured upon the latter, will no longer correspond with, but fall short of them: there will be some apparent, in addition to the actual, shortening of the oval dull patch. It may no longer reach much above the level of the second, and its lower pole will rise perceptibly above the fifth spine.

In emphysema, the oval patch presents, as shown in Fig. 8, the following characteristic features: (1) Symmetrical shrinkage in all its diameters, chiefly in the transverse: (2) blunting of its angles: (3) marked lowering of the upper angle towards the second dorsal spine, with less marked rise of the lower angle above the level of the fifth: and (4) more or less restriction of the horizontal respiratory oscillation of the outline.

Pulmonary Inexpansion: General and Unilateral.

If inexpansion were always general and symmetrical the result would be the exact opposite to that in emphysema, namely, an increase of the dulling, mediastinal influence at the expense of the resonant pulmonary influence, leading to an increase in the transverse diameter of the dullness and to a maximum vertical diameter from the first to the fifth spines, beyond which there can be, of course, no extension. And again, instead of a growing inability to vary the range of oscillation by respiratory effort there would be room for progressive increase in that range. Symmetrical inexpansion occurs in any form of physical lethargy, and in the asthenic shallow breathing

of pretubercular. But our diagnosis will be specially concerned with the unilateral inexpansions induced by pleural and pulmonary affections.

Unilateral Inexpansion.

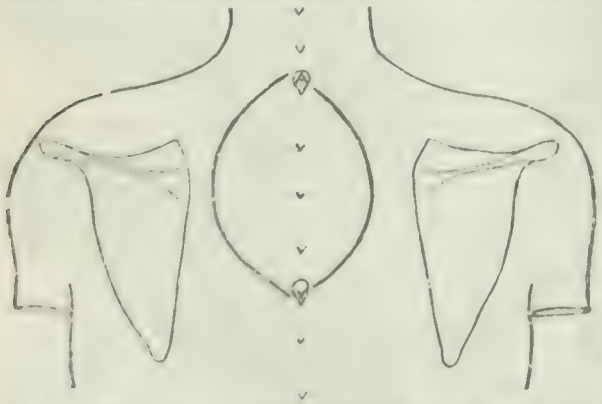
Any kind of interference with respiratory freedom on one side only will diminish both the air fullness and the air traffic or "ventilation" at the apex. That half of the dull patch will therefore be larger than the other, and its to-and-fro respiratory excursions smaller. At the other apex compensation will tend to increase both the permanent aëration and the ventilation, and its dull patch will be smaller with larger excursions. *The causes* of the unilateral impairment of breathing may be: (1) Thoracic, (2) pleural, (3) bronchial, or (4) pulmonary; my tracings afford illustrations of each. They may act upon the respiratory mechanisms at the apex, either locally or from a distance, as, for instance, in basic pleurisy. And, again, most of them may be either permanent, as in cicatricial bronchial stenosis, fibrous adhesions, or pulmonary cirrhosis, or merely temporary.

The thoracic group of causes is complex; they may be connected with nerves, muscles, joints, or bones. *Innervation* has a wide field of influence because of the respiratory triad of automatic, reflex, and volitional breathing. An almost purely nervous interference is witnessed in hemiplegia, where Hughlings Jackson observed and explained the presence of a greater respiratory activity on the paralysed side during quiet breathing, and its transfer to the sound side as soon as the effort of the will was thrown in. A purely *muscular* interference is witnessed in intercostal or phrenic rheumatism. The familiar disturbances connected with the various lesions or affections of the joints, ligaments, cartilages, and bones of the spine and of the ribs need only be mentioned.

Again, *thoracic space* may be unevenly encroached upon as in pleural or pericardial effusions. Pneumothorax, however, would have the opposite effect, that of obliterating, instead of enlarging the dull interspinous area. Cardiac hypertrophy and dilatation, glandular swellings, neoplasms, and below the diaphragm enlargement of the liver or of the spleen, and gastric or intestinal inflations or tumours would all tend to increase the area of dullness on the side of the interference with pulmonary expansion.

The influence of *pleurisy* will be presently referred to. The large group of the localized *bronchial* and *pulmonary* affections includes varied forms of asymmetrical obstruction to the passage or to the admission of air into the alveoli, by bronchial stenosis, or by pulmonary disablement ranging from Corrigan's cirrhosis down to simple localized pulmonary congestion. As an instance it is enough to refer to a tracing from a small child with pertussis showing considerable enlargement of the dull patch on the side where bronchopneumonia greatly interfered with the expansion of the lung (Fig. 9).

Lastly, in addition to the behaviour of the respiratory mechanism, apical expansion and the oval patch are subject



of the *mediastinal factor*. For example, a diverticulum, or of an [illegible] simplify the dull patch, not by increasing breathing space, but by increasing [illegible] of the intestinal structures.

Simple unilateral apical inexpansion, much more common in non-tuberculous young subjects than is generally suspected, is often overlooked in ordinary dorsal percussion because involving only a slight subresonance of the apex as a whole without any striking localized dullness. "*Lobular*" *atelectasis*—that is, localized pulmonary collapse—is much more noticeable. It has to be carefully diagnosed from early tubercle. *The test* for an atelectasis, say at the left apex, is easily applied. The left half of the oval dullness having been traced out as definitely larger than the right, it will be found that after a few deep breaths its size, when determined again after an interval of quiet breathing, will have diminished perceptibly, though it may not have become quite identical with that of the right half, whilst the suspicious patch of dullness at the apex may have completely disappeared.

Pleurisy.

Even double pleurisy, which is seldom symmetrical in its effusions or adhesions, will impair the symmetry of the oval; but the best demonstration is afforded by unilateral cases.

The Influence of Unilateral Basic Pleurisy.—The diminution in the inflation of the apex on the side affected

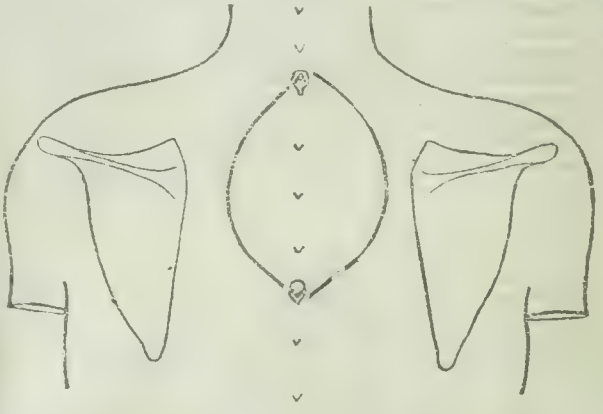


Fig. 10.—Tracing from a boy of 8 with right acute tuberculous pleurisy and effusion, causing diminished pulmonary expansion and increased size of the oval dullness on that side. Illustrating derivation of apical under-expansion from basic pleurisy.

was well shown in two boys of 8 suffering respectively from left empyema and from right tuberculous pleurisy with moderate serous effusion. The asymmetry of the oval patch was considerable in both cases, but on opposite sides. In the tracing (Fig. 10), reproduced from the latter, the width of the right half of the patch, corresponding to the side of the respiratory impairment, is much increased; that of the left half is reduced, owing to compensatory respiratory activity. The converse was seen in the other tracing, which resembled Fig. 9.

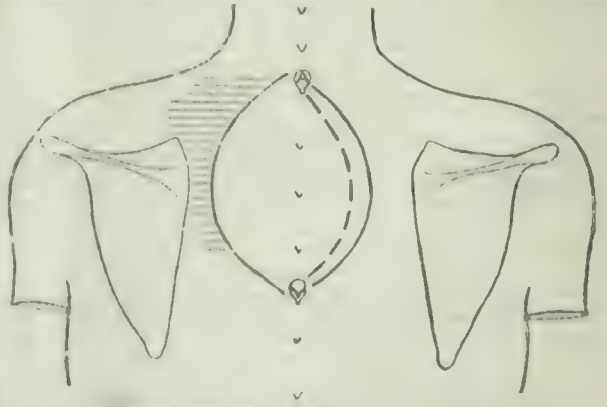


Fig. 11. [illegible] with tuberculous peritonitis. [illegible] The left oval dullness is widened, and [illegible] impression of the inspiratory oscillation, which persists on the right side. Illustrating apical inexpansion from local adhesions.

The Influence of Adhesive Apical Pleurisy.—This is well shown in the tracing (Fig. 11) from a lad of 14 free from active pulmonary symptoms, but in whom a laparotomy had revealed the presence of tuberculous peritonitis.

A well-marked dullness, without any râles, extended outwards from the margin of the oval patch towards the left supraspinous fossa. The right half of the patch was normal, and oscillated freely with respiration; the left was widened, and there was no oscillation of its outline, in confirmation of the diagnosis of a thickened and adherent pleura. This condition will be frequently found on examination in cases of chronic fibroid phthisis, where the old lesions have led to dense adhesions in the spinal groove.

Pulmonary Tuberculosis.

1. *The Early Diagnosis.*—The chief value of the method is the help it affords us at the earliest stage, prior to any possible identification by adventitious signs, or by the bacillary test, in estimating the significance of

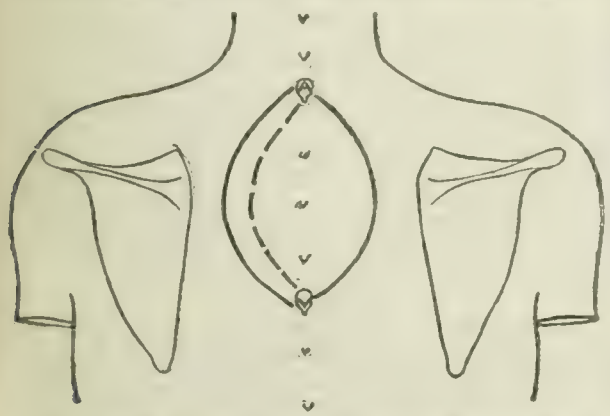


Fig. 12.—Tracing from a man of 52 examined for suspected phthisis. Deficient expansion on the left, with widened oval dullness, due to habitual gastric inflation. No other physical signs. Absence of phthisis diagnosed from the 15 mm. shrinkage (broken line) of the dullness to a 10 mm. smaller size than that of the right, as an immediate effect of corrective respiratory exercise.

doubtful indications, such as unevenness in apical expansion, and in the quality of the respiratory murmur, which often simulate incipient phthisis. Here are two cases in point:

The tracing (Fig. 12) is from a medical man who desired me to examine his chest for early signs of disease, because of rapid loss in weight and strength after influenza and persistent retronasal catarrh. There were no adventitious signs, but only slight relative loss of resonance at the left apex. The oval patch was markedly increased on that side. By suitably hindering the respiratory play of the sound side, whilst deep breaths were taken, the asymmetry was completely reversed, as shown in the interrupted outline, proving that the original inexpansion was not due to pulmonary or pleural causes, but was a mechanical result of the gastric inflation which I had suspected, and which I was able to identify as the cause of the general as well as of the local condition. He got quite well under appropriate treatment. The alteration immediately brought about in the oval patch, and shown in Fig. 12, is the converse of that described in Fig. 7.

In juvenile cases I commonly find that the cause of the unilateral inexpansion and diminished apex resonance is a latent functional spinal curvature, and that the suspicion of phthisis can be eliminated. An exceptional instance was that of a girl of 14, who was brought to me for an opinion, after two years which had been spent largely at sanatoriums for vague symptoms attributed to tuberculosis but no definite physical signs. The physique was good and the apices perfectly sound, as shown by their normal reaction to the dorsal test, with the exception of a left apical and general inexpansion, which I interpreted as due to the presence of an overlooked gastric dilatation with upward inflation. These I was able to treat successfully, with a complete disappearance of the respiratory asymmetry, which in this case was clearly of gastric, instead of the usual spinal derivation.

The "attitudinal" causation of an apical asymmetry can be identified in many cases by applying the respiratory test to the oval patch. To demonstrate that mode of origin I took in a healthy boy comparative tracings of the patch in the erect and in the laterally bent posture. In the latter the previous symmetry was lost and the dull patch on the bent side was immediately increased in its transverse diameter as a result of the diminished thoracic expansion.

The early clinical test by asymmetry of thoracic movement, which we owe to the *x*-ray demonstration of the fact that there is a general drooping of the ribs on the side affected, most obvious in the lower ones, is valuable owing to its simplicity. But it is not very reliable unless the bimanual basic expansion test be most carefully applied. The drooped ribs having a much greater range for inspiratory elevation than their fellows, and any strong pressure of the hand acting as an effective stimulus to expansion, I find that the drooped side may be often made to yield a greater amplitude of movement than the sound one. That fallacy does not arise in the performance of the oval patch test, which does not in any way interfere with the mechanism of breathing. This practical point might be worth remembering.

2. *The Study of the Active Lesions in Progress.*—Besides that early help, the method yields valuable information as to the position and extent of the local mischief. For instance, patchy atelectasis, which may simulate apex disease, frequently accompanies it, and should be diagnosed. It is not unimportant to discover whether the apex at the back is captive or free, over-inflated to compensate for anterior shrinkage, or under-inflated owing to posterior lesions or fibrosis. For those purposes more searching examinations will be required. In addition to the *general* changes which we have already described as affecting the whole patch on the right or the left side, as regards (1) its size, (2) its symmetry, (3) and its range, we must now call attention to its *local irregularities*, (4) in outline, and (5) in range of respiratory oscillation; and, lastly, (6) to any *local encroachments* upon its subresonant dullness by major dullnesses. These may be due perhaps merely (*a*) to atelectasis, but more commonly to permanent lesions, either (*b*) of the pleura, or (*c*) of the pulmonary tissue.

Focal atelectasis, simulating a structural lesion, might have its seat *within* the oval patch, and, as elsewhere, it would be identified by the evanescence of its dullness under deep breathing. We must beware, however, of a hasty conclusion that there is no disease; each tubercle has its atelectatic areola. But, at any rate, a complete return of resonance is sound proof that any corresponding lesion could only be minimal.

Local irregularities in the outline of the oval patch are mainly of two degrees: by local immobilization and by local encroachment. *Local immobilization* may occur at any part of the outline. It contrasts with the complete immobilization of the entire outline depicted in Fig. 11, but its causation is the same or similar—namely, either simply pleuritic from adhesion or pleuropneumonic from

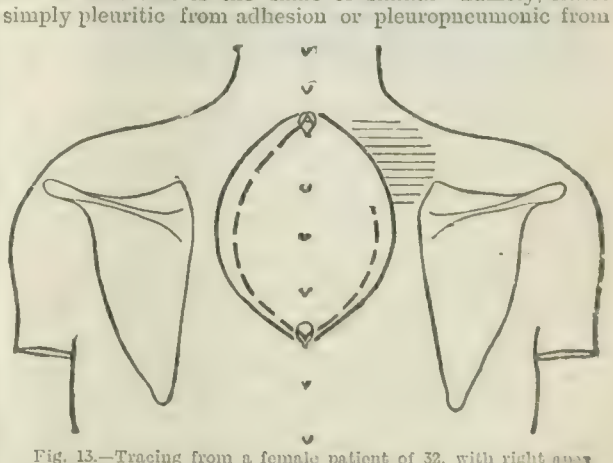


Fig. 13.—Tracing from a female patient of 32, with right apex lesion at inner supraspinous fossa, locally in mobilizing the oval patch with local suppression of the inspiratory oscillation, which still obtains below and on the left side.

tubercle. One of my tracings (Fig. 13) shows it at the upper part, another at the lower part of the right patch. It is seen that the inspiratory excursion which occurs elsewhere is suppressed locally where the dullness borders upon the outline of the patch. As the condition depicted was not altered by deep breathing, it was not due to atelectasis; moreover, a few râles were audible. In the other case, with precisely similar changes at the lower two-thirds of the oval, reported to have been the seat of excavation two years previously, there were no râles, and

the harsh blowing inspiration confirmed the diagnosis of local pleuro-pulmonary thickening with loss of expansibility.

Local encroachment, where an apical dullness, instead of stopping at the outline, obliterates it by extending into the oval area, is illustrated in Fig. 14 from an active stage

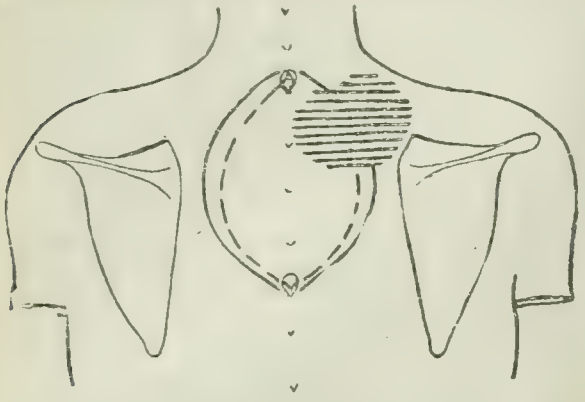


Fig. 14.—Tracing from an adult female patient with active phthisis. The major dullness of the lesion extends into the oval patch, locally obliterating its outline and suppressing its inspiratory oscillation, which are both present below and on the left side.

of phthisis. It is unnecessary to dwell upon the varying types of deformation which result in individual outlines from these encroachments by the heavier dullness of advanced destructive lesions. The finer analysis special to our method is not needed for their recognition, but will assist their accurate delimitation. Its chief purpose is that of early diagnosis.

III. The Method as Applied to Upper Mediastinal Diagnosis.

Pathologically this is a much wider field, including the lesions of a variety of organs which time will only permit us to enumerate. Hitherto we have studied the oval patch from its outer side, from its pulmonary and therefore resonant approach. We should now cross the border and study its behaviour as a dullness which may acquire abnormal intensity, and may encroach upon the normal outline of the pulmonary resonance. Full credit is due to the Minerbis for having attempted that investigation, but they were at a disadvantage in not being familiar with the normal field of percussion. Now that this is clearly defined, clinicians may turn that knowledge to full account for the diagnosis and localization of the varied affections of the mediastinum which cannot be discussed in this paper.

In major upwards dilatation of the left auricle, in major pericardial effusions, in aortic aneurysm or dilatation, in enlarged thymus, in upper mediastinal adenopathies and tumours, and particularly in tracheo-bronchial adenopathies, and in œsophageal disease, we identify the other element of variation, that of an abnormal "dulling" influence.

These would all tend to counteract the "resonant" influence of the lung, to increase both the size and the intensity of the oval dullness, to destroy its symmetry, and sometimes to modify its shape.

The share taken by the *aorta* in the production of the normal oval dullness is manifest; whilst its dilatations and its aneurysms cannot fail to intensify the latter. The distinction drawn by Sir William Broadbent between the aneurysms of physical signs and the aneurysm of symptoms which grows downwards from the concavity of the arch may not always in the future be strictly justifiable to a more searching percussion of the interspinous region. In addition to symptoms that variety might sometimes yield some percussion signs. Again, the detection by percussion of aneurysms of the descending limb of the arch is a question of the extent and of the direction assumed by the outgrowth. But, as regards the normal arch, an accurate percussion of its outline has not been attainable, in spite of the added dullness which it receives from the pulmonary artery beneath it. The *azygos arch*, which has been described by the Minerbis as yielding normally a small paravertebral area of slight dullness at the level of the third dorsal spine, has likewise eluded identification within the oval interspinous area. They have also given illustrations of its enlargement in cases of venous congestion from cardiac valvular disease, and of an extension of its dullness downwards by the side of the spine. Probably they may have been guided by a fractional recognition of the retrovascular dullness and of the oval dullness itself. Nevertheless, it is undeniable that the azygos, closely applied to the spine, must contribute its quota to the general retrovascular dullness, although its own dullness may not be capable of being separately identified.

The chief practical conclusions which may be drawn from this limited inquiry may be briefly stated: (1) The oval patch provides us with a normal standard for upper dorsal percussion. (2) The method also gives us some means of estimating the general respiratory activity of the lung and that of the apices. (3) It provides tests to differentiate between functional over-expansion and emphysema, between functional under-expansion and phthisis, and between local atelectasis at the apex and the lesions of tubercle. (4) In addition to its pulmonary and pleural data it opens up a wide range for the study of the upper spinal and the upper mediastinal structures and for mediastinal diagnosis. (5) Familiarity with the sign and with the method is likely to contribute to an earlier diagnosis of incipient pulmonary tuberculosis by physical signs.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

YEASTS IN THE ALIMENTARY CANAL AND STOMACH PAIN DUE TO ALCOHOL.

Recently it has been suggested that alcohol formed in the stomach "by the action of yeasts and sarcinae on carbohydrates" may account for some of the pain in indigestion (Hertz, Wetherell).

I have tried to get some definite information as to the species of yeasts commonly present in the mouth and intestines by examination of 12 cases, namely, 4 infants aged 3 to 8 months, 4 children aged 4 to 10 years, and 4 adults. They all had minor ailments, some of the children diarrhœa. Although present in all, yeasts did not appear to be numerous in any.

Many yeasts are very feeble fermenters. Long ago Pasteur applied the name "torula" to yeasts that fermented feebly or not at all. Hansen found that practically all these feeble fermenters were non-sporing yeasts. All the powerful alcoholic yeasts are saccharomycetes, and it is amongst the latter one must look for any likely to cause stomach discomfort.

Torulas.—These were found in every case, several varieties usually, both in the mouth and alimentary canal. In the infants torulas only were found. This was not surprising, for the distribution of saccharomycetes on fruit, cereals, etc., places them out of the way of infants. Torulas, on the other hand, are seldom absent from the mother's skin, about the scalp, armpits, breast, and they are often plentiful in the mouth. They are common in cow's milk and cream. No doubt there were many species, and three could be distinguished by the sugars fermented. Although several fermented very feebly, no specimen of a non-fermenter was obtained. There was not one among them able to form 2 per cent. of alcohol in a week.

Saccharomycetes.—These were easy to find in the adults, but only in one did they outnumber the torulas, which are generally much the more numerous. At least four species could be distinguished, of which two fermented cane sugar and two both cane sugar and maltose. By tubing traces of a dozen colonies, each in a few cubic centimetres of

wort, it was easy to pick out from a plate anything likely to be an energetic fermenter. Further trial could then be made of a selection of these. No yeast found was able to grow and ferment in 10 volumes per cent. of absolute alcohol in wort or other saccharine solution. Under optimum conditions not one of them formed 4 per cent. of alcohol in twenty-four hours, even when 1 to 2 grams of yeast was added to 100 c.cm. of wort, containing sugar enough for 8 per cent. of alcohol at least.

According to Dr. Hertz (Goulstonian Lectures, April, 1911), rather large percentages of alcohol—20 to 48—introduced into the stomach gave decided discomfort to his patients. In one case even a 5 per cent. alcoholic solution caused a burning for three minutes. It is obvious that yeasts such as were found in my patients are unlikely to cause stomach pain in any circumstances. It would be interesting to know if even 2 per cent. of alcohol was ever found in the stomach as the result of local fermentation.

The cases examined were few, but as yeasts come from the outside one may examine the most likely sources—sugar cane, molasses, raisins, figs, fresh fruits. Some figs carry much yeast. Of a number of yeasts from such sources, the most energetic formed about 7 per cent. by volume of alcohol in twenty-four hours and 9 per cent. in seventy-two hours, but no more in a week. This large percentage is only formed under optimum conditions which do not exist in the stomach. Even so, it takes six hours to yield 2 per cent. of alcohol. In practice few stock yeasts of the alcoholic industries are more rapid in action than this.

The researches of Dr. Hertz have added much to our knowledge which is of the greatest value in everyday practice. In regard to this pain attributed to alcoholic fermentation in the stomach, however, it seems to me the evidence is opposed to his explanation.

Ealing, W. ROBERT CRAIK, M.D.Glasg.

EXTREME DYSPNOEA DUE TO RAPID HYPERTROPHY OF THE THYROID: HEMI-THYROIDECTOMY: RECOVERY.

On the morning of February 6th, 1912, I met my partner (Dr. J. H. Crofton), who told me that he had seen a boy dying from tracheal obstruction, possibly due to the thyroid.

We immediately went to the house and found the boy (F. B., aged 13) apparently moribund. He was blue, unconscious, and breathing ten or twelve times a minute with a violent gasp, accompanied by much stridor and retraction. There was no obvious thyroid enlargement, but a firm fullness in the lower part of the neck. There was a history of increasing dyspnoea for a fortnight or more.

We rushed back for instruments, my hope being to relieve the obstruction, possibly by dividing the thyroid isthmus or by a low tracheotomy. No anaesthetic was necessary as the patient was quite unconscious. On cutting down over the trachea I found the right lobe of the thyroid very large and its lower pole passing round forwards between sternum and trachea and compressing the latter. I shelled this out, divided the isthmus to the left of the mid-line, and completed the removal of this and the whole right lobe. Immediately after bringing up the lower pole, respiration became comparatively easy, the colour improved, consciousness began to return, and an anaesthetic was necessary to complete the operation. I finally closed the wound but for the provision of free drainage.

From the first progress was satisfactory; for the first thirty-six hours the pulse was 120 to 126 and the temperature about 100° F.; both then fell gradually to normal.

The right lobe, which weighed 3¾ oz., I sent to the Clinical Research Association, and received the following report:

> This material consists of gland tissue in which many of the gland acini are dilated, and all are filled with the usual colloid substance. It has the appearance of a simple hypertrophy and shows no evidence of any growth.

When seen on August 28th the boy was absolutely well; there were no symptoms of hyperthyroidism or hypothyroidism, and no obvious asymmetry of the neck.

Oswestry. GATHORNE R. GIRDLESTONE, M.B.Oxon., F.R.C.S.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

DEVON COUNTY ASYLUM.

PORENCEPHALY.

(By RICHARD EAGER, M.D.Aberd., Senior Assistant Medical Officer.)

In the JOURNAL of June 1st, 1907, I recorded a case of extreme hydrocephalus in a male aged 7 and weighing 2 st. 1 lb.: the head measured 26⅞ in. in circumference. The brain at *post-mortem* examination was in this case found to be hollowed out into a large sac containing 90 ounces of fluid; the walls of the sac were formed by the attenuated cortical grey and white matter, measuring ¼ in. at the thickest part.

The case here illustrated is that of a male, also aged 7 years. His weight was 3 st. 6 lb. He presented the usual features of extreme hydrocephalus; he was quite helpless, and unable to support the weight of his head or do anything for himself, so that he was bedridden all the time he was under care.

His head was globular in form, with prominent forehead, and measured in circumference 24 in. The greatest transverse diameter was above the ears, and measured 7½ in.,



the occipito-bregmatic 8½ in. His small pale face formed a marked contrast to the size of the cranium. He had never walked or talked, and appeared to have no control over the sphincters. The body was thin and poorly developed for his age, and the muscles were atrophic. He was constantly moaning and whining. On July 31st, 1912, he died.

At *post-mortem* examination, as soon as the cranium was opened a quantity of clear watery fluid escaped. This reached the total of 5 pints in all. After removal of the vault of the skull it was found that the remnants of brain structure were lying on the base of the skull in a flattened-out condition as shown in the photograph. The inner surface of the dura mater lining the vault was very smooth and the skull bones were thin and diaphanous. What appeared to be the falx cerebri extended across a cavity inside the skull untouched by brain matter on either side. There seemed to be no corpus callosum, and in the posterior and median fossa the hemispheres seemed to be represented by two tongue-shaped pieces of brain substance, probably the median surfaces of the occipital and parietal lobes. In the anterior fossa there was a mass of brain substance on either side, but considerably larger on the right than on the left, as may be seen in the photograph. On the right it extended from the anterior fossa over the wing of the sphenoid into the middle fossa, and seemed to form the remnants of the floor and outer boundary of the lateral ventricle. On the left side the mass was about the size of a walnut, and completely isolated.

With these exceptions no signs remained of any brain structure above the basal ganglia and optic thalamus, and the total brain matter in the skull only weighed 13¼ oz. The right lung contained tuberculous foci, and the pleura was studded with tubercles. A smear from a section of the lung was found to contain tubercle bacilli. The spleen was also studded with tubercles on its serous surface, and the mesenteric glands were considerably enlarged.

The case appears to be one of extreme degree of porencephaly. In the case published previously the pressure, it would seem, was exerted from within the brain, stretching the hemispheres and finally compressing them against the inner table of the skull; in this case the cavity of fluid extended always to the surface, unbounded by anything representing brain cortex, and compressed the brain into the fossae of the base of the skull.

Reviews.

RECENT WORKS ON CONSUMPTION AND ITS TREATMENT.

THE modern literature of tuberculosis grows apace, and it is satisfactory to note the general agreement as to the main lines upon which the disease may be overcome. The clinical aspect of consumption has been very fully dealt with, and it is highly desirable that knowledge should advance from the point of view of the public health. A monograph has recently been issued[1] by Dr. ALFRED HARRIS of Southampton, in which the etiology, diagnosis, and prophylaxis are chiefly considered, and many points are put prominently forward which are deserving of particular note. The various factors which combine to influence the onset or spread of the disease are well known, but many fallacies have already been exposed, and it is probable that as time goes on other opinions will be found to be in need of emendation. Chief among these considerations is the subject of heredity. To what extent susceptibility may be inherited there is as yet no means of determining, but abundant evidence is now forthcoming to show that children removed from close association with tuberculous parents have escaped the disease, while others remaining in the home have become infected. In other words, the disease has been directly conveyed from parent to child. This important fact is not sufficiently recognized, but it has far-reaching effects which may in time be neutralized, if not by legislation, at any rate by common sense. The apparent immunity of the Jewish race is held to be due to their sanitary habits of life rather than to any racial peculiarity. The "consumptive appearance" which has been recognized from the earliest times is regarded as due to general delicacy of constitution, rendering the person liable not only to tuberculosis but to any other form of disease. Consumptive-looking people, it is truly said, often go through a long life without suffering from consumption. The evidence of the conveyance of tuberculosis by marriage is not so convincing as was formerly thought to be the case. Possibilities of separate infection are so numerous that only about one-third of the cases can be fairly attributed to personal contagion. The much-discussed question as to the paths of infection has not been finally answered, and the relative liability of the air passages and the alimentary canal as channels by which the bacillus may reach the lung, it is pointed out, calls for further investigation. The question of sanatorium treatment is discussed from the economic standpoint. Its powers and limitations are fully recognized, and comparison must now be made with the results of tuberculin dispensary treatment, which may or may not achieve as full a measure of success at a very much reduced cost to the community. Local authorities who have to deal with these matters may note the very sensible arrangements made by the Birmingham Corporation, whereby much trouble and possible expense may be saved to householders who have been "notified." Dr. Harris's work affords a great deal of useful practical information worthy the attention of every one who may have to deal with tuberculous disease, whether in a public or a private capacity.

A small pamphlet by an anonymous writer ("Medicus")[2] contains, in the form of question and answer, a summary of the essential facts relating to everyday hygiene couched in the simplest language. Fresh air and light, and the means by which they may be obtained even under the least favourable conditions; dust, and how to deal with it; food supply, and the danger of infection of the alimentary canal; personal cleanliness and its importance, especially in childhood, are each in turn discussed. The outcome is a counsel of perfection not likely to be attained in its entirety, but the little pamphlet, which is obtainable for threepence, may be the means of dispelling some of the prevalent ignorance on the elementary laws of health.

Another minor contribution, intended for the enlightenment of the public, deals with *The Tuberculin Treatment of Consumption*.[3] The writer, Dr. H. VAUGHAN BARBER, states in his preface that he desires to bring before "the people of England" the claims of tuberculin as at present employed. He sets forth in plain terms and bold type the history of the steps by which modern opinion on the subject has come to be formed, but the main object of the work would appear to be to call public attention to the Tuberculin Dispensary at Kennington. The non-medical victim of consumption will gather from this account that his disease, if in an early stage, will be cured in six months, and that even if it be well established he will have a 60 per cent. chance of recovery. The promise of such brilliant results has led to the formation of a Tuberculin Dispensary League and to the establishment of many such dispensaries in different parts of the country. It will not be forgotten that similar statistics and prospects were at first held out by the advocates of open-air and sanatorium treatment. Time alone will show whether inoculation can achieve a greater measure of success.

A Birmingham physician, who prefers to remain anonymous, has issued a penny pamphlet[4] in which the now familiar story of consumption is told again in simple terms suitable for public readers. Incidentally he points out the excessive cost of consumption to the community, both directly and indirectly, and shows that many millions a year are lost which ought to be saved when the disease has been brought under control. Notification, earlier treatment, and segregation of the dangerous cases, must in time effect a saving of expenditure and an increase of national efficiency. An appendix, descriptive of the best forms of cheap food for the poorer classes when affected by tuberculous disease, supplies some sound and useful information as to the relative feeding values of the simpler commodities and deals somewhat ruthlessly with many widely-advertised preparations.

PRACTICAL NEUROLOGY.

IN his book on the clinical examination of patients with nervous diseases,[5] Dr. OTTO VERAGUTH of Zürich has endeavoured to present to students and practitioners an introduction to the diagnosis of nervous diseases, adding a synoptic table to simplify their differentiation. Beginning with the systematic examination of the patient, Dr. Veraguth goes fully into the details of history-taking, investigation of the coverings of the central nervous system and of its blood supply, the use of electricity in diagnosis (this is given very fully), and the special points to be looked for in cases in which the lesion affects the cranial nerves, movement, sensation, the reflexes, speech and so forth. The second section of the book deals with

[1] *[illegible] Diagnosis, and Prophylaxis of Pulmonary Phthisis, [illegible] the Public Health Point of View. With an [illegible] Tuberculin Treatment of the Disease.* By Alfred Harris, M.B. [illegible], D.P.H. Camb., Deputy Medical Officer of Health, Southampton. Bristol: John Wright and Sons, Ltd. 1912. (Demy 8vo. pp. 126. Price 2s. 6d. net.)

[2] *[illegible] to Health, and How to Win Out Consumption.* By "Medicus," and published by him at 465, Seven Sisters Road, London N. (Cr. 8vo, [illegible] pp. 40. 2d. net.)

[3] *The Tuberculin Treatment of Consumption.* By H. Vaughan Barber, M.A., L.R.C.P. London: James Nisbet and Co., Ltd. 1912. (Crown 8vo, pp. 82. 6d.)

[4] *The Problem of Consumption.* By a Birmingham Physician. London: Headley Brothers. (Cr. 8vo, pp. 32. 1d.)

[5] *Die klinische Untersuchung Nervenkranker.* Ein Leitfaden der allgemeinen und der topischen und eine synoptische Zusammenstellung der speziellen Diagnostik der Nervenkrankheiten für Studierende und praktische Ärzte, nach Vorlesungen von Dr. Otto Veraguth. Wiesbaden: J. F. Bergmann. (Glasgow: F. Bauermeister. 1911. (Imp. 8vo, pp. 293; figs. 102; tables 44. 10s. 9d.)

topical diagnosis, and occupies thirty pages. The third and last section of fifty pages consists of synoptic tables in which the essentials of symptomatology and diagnosis for the various groups of nervous diseases are summarized. The work is a very thorough compendium of the subject, and owes much to the author's thorough acquaintance with the literature of neurology. It goes deeply into the physiology, pathological anatomy, and psychology of nervous disorders, and is well illustrated as well as clearly and dogmatically written. There is an index, and there are probably few, if any, points about nervous diseases on which the student or practitioner would consult Dr. Veraguth's book and draw blank. But it contains so much information that one may doubt whether the average practitioner or student would be able to take it all in, and whether he would not be confused by the wealth of knowledge placed at his disposal by Dr. Veraguth.

We welcome a fourth edition of Dr. J. Ryland Whitaker's little book[6] on the anatomy of the central nervous system. The last edition came out about thirteen years ago, and the book has been for some time out of print. It is designed as an introduction to temper the intricate complexities of the central nervous system to that shorn lamb, the medical student. Clearly written, with brief summaries where these prove helpful, with abundant typographical differentiations and with a full complement of illuminating diagrams, Dr. Whitaker's volume bears on every page the impress of a gifted teacher, the ripe experience of many years' practice as lecturer on anatomy. It may be warmly recommended to candidates for examinations who have to get up the anatomy of the brain and spinal cord; for it is well arranged, lucid, short yet complete, and familiar to many generations of Edinburgh students.

A practical handbook on neurology that should be useful and intelligible to the practitioner who is not a specialist sounds like an impossibility. Professor Lewandowsky of Berlin, however, has endeavoured to write such a book,[7] and we are bound to say that he has succeeded in the attempt. There is ample room for such a work. The science of neurology is so extensive and advances with such rapidity nowadays, that even the expert, as Professor Lewandowsky points out, can no longer cover all the ground, while the general practitioner is confused and intimidated by the complexity of the subject, the multiplication of terms and names, the difficulty of discriminating between lesions that are "organic" and those that are "functional." Professor Lewandowsky begins by describing fully, but in simple terms, the methods of physical examination in patients suspected of nervous disease, pointing out the special errors and fallacies that are to be avoided. Then he discusses the various symptoms—dizziness, pain, and so forth—of which the patients may complain. Then the various diseases of the spinal cord and brain are detailed, always in simple language and with indications of the therapy that should be employed. The book ends with fifty excellent pages on the psychoneuroses, including hysteria. The treatment of these neuroses is fully discussed; the author is no believer in Freud's psychical analysis for diagnosing the cause of hysteria and indicating the proper line of treatment. The book may be warmly commended to all readers of German who are in search of a sound elementary textbook on diseases of the nervous system: it has an excellent index. Professor Lewandowsky is a neurologist of great practical experience, and has a very extensive knowledge of the literature of his subject. A better author for a somewhat elementary book on this subject it would be hard to find.

A very complete account of the skiagraphy of the cranium is given by Dr. Arthur Schüller in his book on *x*-ray diagnosis of diseases of the head.[8] In the earlier days, as he points out, the difficulties of *x*-ray examination of the skull prevented its general adoption. At the present time, however, the subject has been very thoroughly studied, and both surgeons and physicians can receive much help from carefully prepared skiagrams of the head. Dr. Schüller divides his book into four sections. The first is short, and discusses the size, thickness, and shape of the normal skull. The second extends to ninety pages, and describes the *x*-ray appearances of diseases of the skull very thoroughly; the author points out how well adapted the *x* rays are to indicate where palliative trephining may best be done by showing at what point the skull is thinnest. He has met with no fewer than 67 cases of oxycephaly (*Turmschädel*), mainly in children, and describes the appearances met with in this and in other cranial deformities due to premature synostosis of the cranial sutures. The third section, of seventy-two pages, is given to the *x*-ray diagnosis of intracranial diseases, and in it much attention is devoted to elucidating the complicated skiagrams yielded by the region of the sella turcica and the middle fossa of the brain. It is this part of the book that will appeal most strongly to the puzzled skiagrapher. It represents a great deal of practical experience, for Dr. Schüller has examined 90 patients with tumours of the hypophysis (28 of which came to operation), as well as many others with abnormalities or defects in this region of the skull. He also gives a careful description of the local destruction of bone that may be encountered at the base of the skull in patients with tumours of the eighth nerve, founded on his observation of 15 cases, confirmed at operation in 8 patients and at obduction in 9. The fourth section of the book gives a brief account of the *x* rays in diseases of the nose, eyes, ears, and teeth. Dr. Schüller writes clearly, and provides good diagrams and photographs to illustrate his meaning; he adds thirty pages of references to the literature, but gives no index. His book is indispensable to the skiagrapher, and of great interest to the neurologist.

UROLOGY.

Urology,[9] by Ramon Guiteras, Professor of Genito-Urinary Surgery at the New York Post-Graduate School, is a work in two volumes of some 1,400 pages, with 950 illustrations. Figures such as these reveal the enormous mass of facts with which the urinary surgeon must be familiar if he is to carry out his craft in a "professional" manner, and will make it clear why it is that urology is tending to become a separate speciality.

The most interesting part of the work is a very full description of the author's urological clinic which serves to illustrate in striking fashion the advance of American educational ideals. For example, a man who wishes to take a course in urology has to sign on for one year, and he spends nine months in learning to pass urethral instruments before he is allowed to proceed to the final course of three months in cystoscopy. At the end of a year's course selection is made from the most promising students to serve as permanent clinical assistants, of whom there are nine working under the professor.

We approached the book with high hopes, as the excellence of the binding, printing, and illustrations produce a most favourable general impression. When we came to grips with the details of the text we must confess to disappointment. Some of the chapters may be selected for praise, but they are few and far between. We refer to the chapters on cystoscopy and on exercises, and the descriptions of certain operations, such as external urethrotomy and prostatectomy; but as for the rest of the book we find very little in it to recommend. A book on a speciality should deal only with that speciality. In this book we have diffuse wanderings into general medicine and surgery. Surely men who intend to specialize ought first to have mastered general medicine, but this book gives the impression that the author does not expect his readers to know anything. For instance, what is the point in a book on urology in devoting a whole chapter to the blood?—"Blood comprises a fluid, liquor sanguinis, or plasma, in which float specialized cellular bodies known as

[6] *Anatomy of the Brain and Spinal Cord.* By J. Ryland Whitaker. Fourth edition. Edinburgh: E. and S. Livingstone. 1911. (Post 8vo, pp. 281; 103 illustrations. 5s. 6d. net.)

[7] *Praktische Neurologie für Aerzte.* Von Professor Dr. M. Lewandowsky. Berlin: J. Springer. 1912. (Roy. 8vo, pp. 316; figs. 20. Price, M.6.80; Geb., M 7.60.)

[8] *Röntgen-Diagnostik der Erkrankungen des Kopfes.* Supplemente zu H. Nothnagel, spezielle Pathologie und Therapie, herausgegeben von Prof. Dr. L. von Frankl-Hochwart. IV. Die Röntgen-Diagnostik und Therapie in der inneren Medizin. I Teil. Vienna and Leipzig: A. Hölder. 1912. (Sup. roy. 8vo, pp. 226; figs. 50. M.7.80).

[9] *Urology. The Diseases of the Urinary Tract in Men and Women. A Book for Practitioners and Students.* By Professor R. Guiteras, M.D.Harv. London: Appleton and Co. 1912. Two volumes. (Royal 8vo, vol. i, pp. 689; vol. ii, pp. 776; figs. 945, plates 7. 50s. net.)

corpuscles . . . ." and so on. What has this to do with urology? This is elementary physiology, and we should have expected urological students to have learnt physiology in their first years of studentship.

It is not as if these excursions were either sufficiently illuminating or correct enough to be of practical use. For instance, a whole chapter is given over to a sketchy account of anaesthetics, twenty lines being devoted to spinal anaesthesia, not a word of which is up to date, the author, indeed, confessing that he has never performed it himself. These are but one or two instances of one class of fault constantly recurring throughout the book.

We could have afforded to overlook these faults had the urology itself been excellent, but it is not. We may mention as instances of this the author's method of diagnosis of stricture by means of bougies rather than by the urethroscope, his use of rubber sheath Kollmann dilators, of the rectal bag for operation on the bladder, his advocacy of cocaine as a local anaesthetic in the urethra and bladder, his preference for external urethrotomy in the treatment of stricture, his employment of scissors in starting enucleation of the prostate.

The chapter on urethroscopy is far from convincing, and contains mostly secondhand information. At the end of it the author frankly states he does not think much of urethroscopy, and that little is gained by it. This may account for the fact that the description of the lesions seen are wide of the mark. He states: "By this means—that is, urethroscopy—polypi, erosions and granular patches can be seen and noted in the history card." In this statement he mentions lesions which the expert urethroscopist seldom sees, and does not mention at all such things as soft stricture and folliculitis, which can be seen every day of the week. We cannot help feeling that he would do well to acquaint himself with the advances made in recent years by the English urethroscopists, and he would not then be so disappointed with this method of examination. We recommend especially to his notice the Wyndham-Powell aëro-operating urethroscope, of which he has clearly not heard, and which yields results far in advance of the Luys and Valentine urethroscope.

The illustrations are many of them excellent and helpful, but a large number of them are superfluous and useless. What useful purpose can be served by photographs of various operations in which none of the details can be seen, or outline drawings of naked men and women sitting in various positions, such as passing water, giving themselves rectal douches, and so on?

Again, if pages are devoted to the details of certain operations, such as external urethrotomy and the operation for epispadias, why are not all the operations worked out in the same detail? For instance, the important question of what to do with the ureters after cystectomy is not discussed at all, but a list a few lines in length is given just mentioning the different methods by name.

We are sorry to criticize this book adversely, as the author clearly knows his work well as far as he himself practises it, but we cannot recommend his book as a really sound textbook on the subject.

SURGERY IN THE FIELD.

VON OETTINGEN'S guide to practical military surgery[10] is based on his experiences in the Russo-Japanese war, during which he was employed as senior surgeon of the Livland Red Cross Hospital, and saw a great deal of surgical work, especially after the battle of Mukden. In his preface he says that the experience gained in recent campaigns has made it possible to systematize the surgical work to be undertaken at the different posts in the medical echelon in the field, and has also shown the necessity of adopting a definite scheme of work. The organization of medical work in the field may be compared to a huge and complicated machine; if it is to work smoothly and efficiently each individual who represents some small portion of the machine must conform to the general scheme of the work. In peace medical men, even those who [illegible] are never called on to treat numbers of urgent surgical cases, as happens after a battle, and certainly never under the conditions obtaining in the field. Although himself a surgeon, von Oettingen at first lost much valuable time through not knowing just how to go about the work. He has therefore written this little book to provide others, who may happen to find themselves similarly situated, with the guidance which he so sorely missed.

The book is divided into two main parts; the first deals with injuries in war in general and their treatment; the second discusses the management of special wounds. The first two chapters describe the various missiles employed in war and the effects produced by them. The following chapters discuss wounds of various tissues and organs, and the treatment of haemorrhage and shock; there is a short section on the special injuries likely to occur on board ship from bursting shells.

In the section on the aseptic healing of wounds, v. Oettingen tells us that bullet wounds can only rarely be really aseptic, but that the number of germs introduced is small, and that the natural protective powers of the body are quite capable of dealing effectively with these if only the surgeon will aid Nature by refraining from meddlesome interference with the wound, by affording rest to the injured part, and by relieving the pressure on the tissues caused by inflammatory oedema. Mild haemorrhage is stated to be distinctly beneficial, as it prevents the formation of a haematoma which seriously interferes with the healing process. Von Oettingen dislikes all antiseptics with the exception of collargol, which he uses for infected wounds. He is a firm believer in mastisol, a solution of mastiche in benzine; a similar solution was employed by him in his field hospital when dressing the wounded from the battle of Mukden; the results were astonishingly good; other favourable reports have since been published by a number of observers. The advantages of mastisol, which is painted on the skin round the wound, are that it kills many of the germs and fixes the remainder, rendering them incapable of growing or infecting the wound; no preliminary washing is required and the dressing is held in position without the aid of any bandage, thus affecting a great economy in dressings and time when a large number of wounded have to be attended as quickly as possible. If von Oettingen's claims for mastisol are confirmed by further experience, field surgery will be enormously simplified in the future. Mastisol can also be used for sterilizing the hands and skin before operating; it is now being tried in several of the German military hospitals. The improvised stretcher, illustrated on page 166, should be useful for expanding the accommodation of clearing hospitals. The remarks on evacuation, pp. 177 to 181, contain much sound advice for the surgeon who has to decide quickly how to dispose of a wounded man. In discussing the treatment of each of the special wounds, Von Oettingen describes what should or should not be undertaken at the advanced dressing station, at the main dressing station and the field or stationary hospital. A similar scheme of surgical work in the field has now been introduced into the Austrian army medical regulations.

The book does not claim to be an exhaustive treatise on military surgery, but merely a practical guide for the inexperienced. At the same time it is very thorough, and is the result of actual experience in the field, where the conditions are very different to those found in a civil hospital in peace, and where the surgeon must be content to do the best he can in the circumstances. The book can be confidently recommended to all medical men interested in or belonging to any military organization.

INHERITANCE AND RACE HYGIENE.

THE doctrines of propagation, inheritance, and race hygiene form a highly interesting and important basis for the study of those life phenomena which are usually dealt with in philosophy. A tabular exposition of these doctrines formed the special section of this subject in the International Hygiene Exhibition at Dresden, and the catalogue,[11] which has been most ably and carefully prepared by Professor MAX VON GRUBER and Dr. E

[10] *Leitfaden der praktischen Kr[illegible]* By Dr. W. von Oettingen. Dresden and Leipzig: Steinkopff. 1912. Post. 4to. pp. 393; illustrations 109. 9s. 6d., or M. 9.50.

[11] *Fortpflanzung, Vererbung, Rassenhygiene. Katalog der Gruppe Rassenhygiene der Internationalen Hygiene-Ausstellung, 1911, in Dresden.* Edited by Professor Dr. Max von Gruber and Privatdozent Dr. Ernst Rüdin. Descriptive text with illustrations by Professor M. von Gruber and bibliography by Dr. Rudolf Allers. 1911. München: J. F. Lehmann's Verlag. 8vo. pp. 178; illustrations 250.)

Rüdin, may be regarded as a permanent record of the position of knowledge in 1911. The book is well illustrated, so that it serves as a useful guide in the three subjects, while a full bibliography by Dr. Rudolf Allers greatly increases its value. The work is divided into chapters, and each chapter is written around some of the more typical tables, in order that the story which the authors have to tell may be clearly laid before the reader. First comes propagation, next variability, then in order selection and mutation, the regularity of inheritance and Mendel's laws, inheritance in the human subject, degeneration, race hygiene, and lastly neo-Malthusianism. Every student of eugenics and all interested in the subject of heredity will find in its pages a readable, suggestive, and welcome account of a very difficult problem. The book is much more than a catalogue, and will find a place in scientific literature quite apart from the exhibition for which it was written.

HYGIENE FOR NURSES.

The art of nursing has made great strides since the young man at the Bull in Holborn was left to the tender mercies of Betsy Prig and Mrs. Gamp; the nurse of the present day is expected to know much more than even her predecessors of twenty years ago. She must no longer be satisfied with being able to take a temperature, count the pulse or respirations, put on a dressing or change a sheet deftly and correctly. She must, it appears, know something of physics, of chemistry, and of sanitation. In Dr. F. J. Smith's *Domestic Hygiene*[12] the elements of these subjects are very clearly propounded in language which conveys in a lucid manner the meaning of the writer. The chapter on heat is most instructive; by practical illustrations the meaning of the terms "convection," "conduction," and "radiation" are related simply and thoroughly. Every nurse knows, or should know, that a bedroom requires to be well ventilated; but after reading the chapter on ventilation she will know better not only why fresh air should be admitted but how this should be done. There are few nurses who will not find their duties made more interesting and of greater service to their patients by a study of Dr. Smith's little book.

But the prevention of disease may be said to enter into the daily life of a nurse as much as it does into that of the medical practitioner, and for those who desire to become acquainted with what may be termed "household sanitation," Dr. Macleod has prepared his *Hygiene for Nurses*.[13] He deals in a readable manner with water supply, referring especially to the domestic supply, the best way to prevent its pollution, the forms of filters to be used and to be avoided, and he includes a well-written description of the hot-water system as it is to be found in modern houses. The sanitary appliances, of types both good and bad, are well illustrated by drawings, and their salient features accurately described, so that a careful study of this work should enable any one untrained in sanitary work to ascertain whether there is anything wrong with the sanitary fittings above ground. In an appendix useful information is given with regard to the law as to vaccination, infectious diseases, the notification of births, as to the Children Act, the Midwives Act, and the care of school children. When dealing with infectious diseases it would have been well to have drawn attention to Section 126 of the Public Health Act, 1875, which refers to the exposure in public places and elsewhere of infected persons.

NOTES ON BOOKS.

The gospel of Fresh Air has been preached far and wide, and, in theory, every one admits its value. In practice, however, the cult of the open window has not made very great strides, and the fear of "draughts" is as great as ever, except amongst those who have learnt by experience to ignore with impunity. To minimize draughts and yet to obtain a maximum amount of fresh air is a problem that has puzzled many ingenious minds. We have before us a work[14] from an expert American pen, in which every conceivable form of contrivance is described, and figured be means of photographs, by which fresh air may be used to advantage. Whether it be by means of tents fitted to open windows, by roof bungalows, by iron-frame porches, balconies or loggias, or by specially constructed buildings, ingenuity is never at fault to provide the needed accommodation in the most practical form. It would be difficult indeed to find any conditions which are not provided for in this comprehensive work, and we can cordially commend it to every one who wishes to utilize his opportunities of obtaining fresh air at all times, whether in town or country. Primarily recommended for the treatment of pulmonary disease, this habit of inhaling fresh air by night as well as by day is eminently prophylactic, and every one may find in Dr. Carrington's work a description of the best way in which he may cultivate it.

Marshall and Hurst's *Junior Course of Practical Zoology*[15] is so well known to all teachers and students of elementary zoology that any words of commendation seem to be superfluous. The book has now reached its seventh edition. It has been carefully revised by Professor F. W. Gamble, of the University of Birmingham. A new chapter on the embryology of the chick has been included, thus adding very materially to the usefulness of the work. There is one suggestion, however, we would like to offer, which might be considered in future editions; it is that the frog might be included in the types dealt with. We are aware that there is a separate small volume on the frog, written by the late Professor Marshall, but the anatomy of this animal is there dealt with at greater length than are the types in the volume under consideration. Students often rebel at having to purchase a separate book for one animal, and considering the fact that the frog is included in every elementary practical class, its inclusion here would make this *Junior Course* very complete, the smaller volume on the frog would still be used by students desirous of obtaining a fuller knowledge. As a practical guide this book is in every way good, reliable, and thoroughly useful.

To those in search of a house or about to build one *The Best Hundred Houses*,[16] or a visit to the exhibition of the completed houses it illustrates at the Romford Garden City, Gidea Park, may be recommended. Houses costing £500 and cottages costing £375 are shown. Block plans of the floors of each house are given, illustrating many varieties of internal planning, with a sketch of each house as it appears in its garden plot. There are many picturesque designs, and each is supplemented by the architect's summary of the advantages of the plan and the materials used in putting it into effect. The book, which is sold for the benefit of the King's College Hospital fund, is packed with illustrations of the Gidea Park of to-day, Old Romford, and the historic people who have moved in and around it, and is quite an entertaining and artistic shillingsworth. Over a score of well-known people indicate what they consider the worst feature and the greatest improvement in modern houses. As Sir Frederick Treves in his communication says, "Ugliness is not necessarily cheap, and some touch of beauty is not beyond the reach of the limited purse. . . . In the suburbs of every large town acre after acre of land is covered with houses whose only external feature is ugliness, houses as free from any trace of design as a row of packing cases. . . . The work the exhibition has in hand affects very directly the health and comfort of the people, as well as their artistic education, and, I may add, their self-respect."

[12] *Domestic Hygiene for Nurses, with as much of Physics and Chemistry as are necessary to the reasonable understanding thereof.* By Fred. J. Smith, M.D., F.R.C.P. London: J. and A. Churchill. 1911. (Post 8vo, pp. 161; 11 figures 1s. 2s. 6d. net).

[13] *Hygiene for Nurses. Theoretical and Practical.* By Herbert W. G. Macleod, B.Sc., M.D., M.S.Edin., M.R.C.P., D.P.H.Lond., D.P.H.Camb. London: Smith Elder, and Co. 1911. (Post 8vo, pp. 245; figures 49. 5s. 6d. net.)

[14] *Fresh Air and How to Use It.* By Thomas Spees Carrington, M.D., Assistant Secretary of the National Association for the Study and Prevention of Tuberculosis. New York: The National Association for the Study and Prevention of Tuberculosis. 1912. (Post 8vo, 1 p. 250; illustrations 150. 4s. 2d. or 1 dol.)

[15] *A Junior Course of Practical Zoology.* By the late Professor A. Milnes Marshall, M.D., D.Sc., F.R.S., etc., and the late C. Herbert Hurst, Ph.D. Seventh edition. Revised by F. W. Gamble, D.Sc., F.R.S. London: Smith, Elder, and Co. 1912. (Crown 8vo, pp. 551; figs. 94. 10s. 6d.)

[16] *The Best Hundred Houses.* Published for the Exhibition Committee. London: 33, Henrietta Street, W.C. (Small 8vo, pp. 149; 350 sketches, photographic illustrations, and plans. 1s. net).

It is announced that Dr. Giuseppe Pelacci, the chief physician to the Pope, died recently.

According to an American Consular report, the number of cremations carried out in Germany last November was 665 against 530, the total recorded at the corresponding period in the previous year. Of the persons whose bodies were cremated, 573 were Protestants.

MEDICAL AND SURGICAL APPLIANCES.

A Rapid Axis Finder for Testing Cylindrical Lenses.

MR. WILLIAM H. SODEAU, D.Sc. (Torpedofabrik, Fiume, Hungary), when recently in London, learnt from an ophthalmic surgeon that there did not appear to be any really convenient instrument for determining the position of the axis of a cylindrical spectacle lens. Optical interference, he writes, affords a very ready method of effecting this. If a flat piece of glass is brought in contact with the surface of a convex spherical lens, one sees the well-known interference phenomenon known as Newton's rings. With a convex cylindrical lens the appearance is that of a series of bands parallel to the axis of the cylinder on each side of the line of contact. In the case of a concave cylinder a similar series of bands is produced by bringing it into contact with a convex cylinder of somewhat higher degree of curvature, and turning the latter until the axis of the two cylinders coincide. An instrument based on these principles has been made by Mr. A. Hawes, of 79, Leadenhall Street, E.C., and 49, New Cavendish Street, London, W. The instrument consists of a metal plate in which are two holes ⅝ in. in diameter, with angular graduations corresponding to those adopted in optical prescriptions. On one edge of the plate there is a ledge against which the spectacles to be tested are pressed, and two springs are provided for holding the latter in position. For use with the instrument there are three plano-cylindrical test-lenses, + 2, + 4, and + 8 respectively, the diameters of which are a few thousandths of an inch less than those of the holes in the place. On the plane side of each lens there is a spot indicating the centre, two short lines marking the axis of the cylinder, and a number indicating its strength in dioptres. It is important that the marks on the lenses should not project above the surface, as otherwise optical contact will be prevented. For the same reason the lenses must be wiped before use. The glasses to be tested are carefully wiped, placed in the instrument with the cylindrical faces toward the observer, and the frame pressed against the ledge. The whole is then held so as to reflect a fairly uniformly illuminated field, such as the sky or a sheet of ground glass or tissue paper placed in front of a lamp. In the case of convex cylinders, place any one of the lenses in one of the holes in the plate, with its plane surface downwards. Gently press the lens with the tips of the thumbs or first fingers, and tilt until the line of contact passes through the centre mark. The angle of the axis is then read off. In the case of concave cylinders, select a + surface somewhat more highly curved than that of the − cylinder to be tested. Slowly rotate the test lens by means of the finger tips placed at right angles to its axis until the contact fringes appear, and then adjust carefully until the central line of contact coincides with the axis marked on the test lens. A little care is required in order to avoid passing over the point at which the fringes appear in the case of a concave cylinder. The instrument gives a direct reading of the axis without the trouble of balancing the spherical component, and will be found extremely rapid, even in the case of cylinders as low as 0.25. It is perhaps scarcely necessary to mention that if the position of the spectacles is reversed the reading of the angle will also be reversed.

MEDICAL AND DIETETIC PREPARATIONS.

Laibosc.

A NEW dietetic preparation which has recently been brought to our notice consists of a blend of dried milk with the carbohydrates and other constituents obtained by digestion of whole wheat. It is supplied by Messrs. Fairchild Brothers and Foster (64 and 65, Holborn Viaduct, London, E.C.) under the name Laibosc. Our analysis of a sample submitted showed it to contain 19.5 per cent. of protein, 20.3 per cent. of fat, and 4.4 per cent. of mineral constituents; the carbohydrates showed only a trace of starch. The relative proportions of protein, fat, and carbohydrate correspond very well with the requisite proportions in a complete diet for children. For cases [illegible] ary to give food requiring very little digestion, Laibosc presents a combination with little or no waste matter. It is intended to be used with no addition but that of water of suitable temperature; when so prepared it makes a very agreeable beverage.

OPENING CEREMONIES AT THE MEDICAL SCHOOLS.

IN our issue for last week (page 889) an account was given of a number of dinners and other events connected with the opening of the winter session. References to some other occurrences of the same order here follow. Most of the medical schools in Scotland have also opened their doors this week, so work for the winter session has now commenced in practically all the medical schools and faculties throughout the British Isles.

ST. MARY'S HOSPITAL.

THE events marking the opening of the winter session at the school connected with St. Mary's Hospital were a prize distribution, a presentation of a report on the events of the concluded year, and the opening of a new casualty department. The prizes were distributed by the Right Hon. the LORD MAYOR (Sir Thomas Crosby) who on the conclusion of his task delivered a short address. When the report of the commission of inquiry into the affairs of the University of London was issued it would, he hoped, be found to contain a recommendation on the subject of the two Royal Colleges. Though the degrees of London University were admirable, colleges which had been at work ages before that institution came into existence should have the power to confer a higher title on those who passed their examinations than they possessed at the present time. The report on the school work was read by the dean of the school, Sir JOHN BROADBENT. The present time, he said, was one of much anxiety for those concerned with medical education. The work of providing it was greater than ever, and the expenses attaching to it had enormously increased; but the fees paid by students remained practically the same as many years ago. It was a great mistake on the part of those responsible for the management of the different schools not to come to some agreement under which by raising the fees the schools could be made to pay. Nobody yet knew what the effect of the National Insurance Act on the schools might be, but the fear was entertained that the medical profession might be reduced to the level of a trade union. If ever such a condition came about it, it would seriously interfere with scientific teaching and would lead to a falling-off in the number of suitable candidates for admission to the medical profession. The meeting concluded with a vote of thanks to the Lord Mayor, moved by Dr. SIDNEY PHILLIPS, who was in the chair, seconded by Mr. E. LANE. The company then adjourned to the new casualty department, which Sir THOMAS CROSBY duly declared open. In the evening past and present students had a pleasant reunion in the gallery of the Royal Institution of Water-Colour Painters. The guests included the Lord Mayor and Sheriffs and the medical directors of the medical departments of the army and navy. The chair was occupied by Dr. W. J. Gow, Senior Obstetric Surgeon to the hospital, who, in proposing success to the hospital and school, maintained that they were really celebrating the diamond jubilee of both. At any rate, the first report of the hospital was issued in 1852, and one of its objects was then stated to be "the education of youth in medicine and surgery." With the coming of the medical student there was introduced into the hospital a very intelligent and often candid critic. The student of to-day was far from being a simple-minded youth to play the part of admiring audience. But it was a case of action and reaction, and if the student received from the hospital, he also gave to it something in the nature of a tonic, which was lacking in those institutions from which this candid critic was absent. Whether the practice of medicine as a means of earning a livelihood offered any unusual attractions he was not sure, but the years of the medical student were undoubtedly a happy time. Unfortunately at present there was some falling off in entries, but the numbers embarking upon the medical profession had always appeared to be curiously subject to cycles of increase and decrease. Responses were forthcoming from Mr. W. AUSTEN LEIGH, chairman of the Hospital Board, who said that although this year had been unfortunate financially, there was hope of material recuperation in the next; and from Sir JOHN BROADBENT, dean of the Medical

School, who confined himself to discussing the possibility of changes in the medical training available in London as a result of the Royal Commission on University Education. He owned himself jealous of maintaining the present system by which the student was wholly attached to the single medical school. Dr. SIDNEY PHILLIPS, the senior physician, proposed "The Visitors," to which the LORD MAYOR, who was received with musical honours, responded; a similar compliment was paid to the Chairman whose toast was in the hands of Mr. J. ERNEST LANE, and also to Mr. Warren Low, the dinner secretary. Dr. Gow, in a witty reply, remarked that medical men were good diners-out. To be a good diner-out it was necessary to be injudicious, almost reckless, and for that reason there was a romantic daring in the case of the medical diner-out which did not exist in the case of the uninstructed layman who knew nothing of dietetics. Some reference had been made to his own branch of surgery, and Dr. Gow remarked, amid laughter, that he was inspired to take up his speciality on seeing the statue of Henry VIII at the hospital. The position of accoucheur to such an establishment like his conveyed such dazzling possibilities.

THE LONDON HOSPITAL.

THE first day of the new winter session at the medical school of the London Hospital was very pleasantly spent. In the afternoon the Dean and the staff held in the college library an informal reception of old students and others, and this continued until the hour came for the delivery of the Schorstein lecture. The latter dealt with some cardiac problems and was lightened by a wealth of illustrations. It was delivered by Dr. T. Wardrop Griffith, Professor of Medicine at the University of Leeds, and a full report of it appears elsewhere in this issue. In the evening London men, past and present, to the number of about 120, reassembled at the Savoy Hotel, with Mr. JONATHAN HUTCHINSON in the chair, those present including Sir Frederic Eve, Mr. Harry Fenwick, Mr. Openshaw, Dr. Hadley, together with the honorary secretaries of the dinner, Dr. Lewis Smith and Mr. Frank Kidd. The arrangements made by them successfully aimed once more at that absence of formality in these gatherings which has been their note of late years and is much appreciated. In accordance with that idea the toast list was confined to three items—the King, the London Hospital and its medical college, and "Our Guests." The two former were proposed from the chair, the account which Mr. JONATHAN HUTCHINSON was able to give of the school and its prospects fully meeting the aspirations of those present. Its repute was amply evidenced by the number of students who had entered their names this year for the full curriculum, and the same circumstance augured well for its continued prosperity; while so far the past twelve months the school, both in academic and athletic competitions, had done excellently. Apart from distinctions won by students three of the teaching staff had become professors of London University, namely, Drs. Wright, Leonard Hill, and Bullock, while in interhospital competitions, the athletic shield, the rowing cup, and several other trophies had all been borne off by the London. In short, in all departments of the work of the school and hospital there was evidence of progress and active development. The remaining toast—that to the guests—was proposed by Mr. HARRY FENWICK, and coupled by him with the name of Professor Wardrop Griffith.

WESTMINSTER HOSPITAL.

THE only ceremony which served to mark the opening of the winter session at the Westminster Hospital medical school was the annual dinner of the students' club, this taking place at the Waldorf Hotel on October 3rd. The chairman was Mr. W. G. SPENCER, who, in proposing the toast to the hospital and its school, reviewed the events of the past year. In some respects it had not been a happy period, for it witnessed too many undesired changes in the membership alike of the house committee and of the staff of the hospital and its school. They were all the more to be regretted because two of them were due to death. For many years Sir William Allchin had been regarded as the doyen of the professional staff of the hospital, and all must miss his familiar face. In addition to his work at the hospital, he had been the representative of the Royal College of Physicians on the Senate of the University of London, and held the post of Physician Extraordinary to His Majesty. He admirably represented, in short, a physician of the nineteenth century at his highest point of development. During the last years of his life he had been engaged in endeavouring to disentangle for the benefit of the commission of inquiry into the affairs of the University of London a certain degree of confusion which had arisen in respect of the early history of that institution. Another death which the hospital had to mourn was that of Dr. William Murrell, only a short time after he had attained the position of its senior physician. Nevertheless the work of the joint institutions went steadily on, and judging from the applications received for vacant post there must, he thought, be something in them to attract men of professional distinction. The school for nurses carried on in connexion with the hospital continued to do excellent work, the assistance which its pupils afforded to the staff enabling the latter to carry out different modes of treatment most efficiently. In regard to the hospital itself its future was somewhat uncertain; it had occupied its present site only since 1850, but had developed from an earlier medical charity in the same neighbourhood some 200 years previously, and among institutions mainly dependent on annual receipts from subscriptions and legacies ranked, he believed, as the oldest of all. Unfortunately its regular subscription list was not large, while increase in the death duties seemed to be operating in the way of gradually cutting off legacies. Meanwhile its expenditure was growing, if not very greatly, from quite unavoidable causes, among which he would not place an increase in the rates levied upon the institution despite the nature of its work. This was the present position, while as for the future, they would be faced before long by the necessity of settling where the institution should continue to carry on its work. Rebuilding was essential, and the House Committee would have to elect between rebuilding on the present site or moving elsewhere at the risk of the institution losing its name and its associations. The toast was acknowledged by Mr. C. DEAKE, a member of the House Committee, who indicated that the House Committee lived in the hopes of something favourable to the institution turning up, and meantime did its best to maintain its income at the necessary level. He regretted that, after thirty-seven years' connexion with the institution, Dr. de Havilland Hall had had to retire from the active staff under the age rule. A reply was also forthcoming from Dr. Gossage, who dwelt on the necessity of higher education and research being endowed either by the State or by private individuals. The toast to past and present students was proposed by Dr. CARMALT JONES, who remarked that though Dr. de Havilland Hall had not himself been a Westminster student, more Westminster men had probably passed through his hands than through those of any one else present. It had been rare for Westminster students to rise to the position of members of the senior staff, and Dr. Gossage's recent promotion thereto constituted a record up to date. A proposal had been made that a post-graduate course for the benefit of Westminster men only should be held next year, and effect would be given to it if it were found that old students would be disposed to take advantage of the opportunity offered them of taking up work in the old school once more. The toast having been acknowledged by Mr. MACLEOD YEARSLEY on behalf of the old students, and by Mr. EDDEN for those still on the roll of the school, the formal proceedings ended with a toast to the Chairman, which was proposed by Mr. ARTHUR EVANS, and suitably acknowledged.

CHARING CROSS HOSPITAL.

THE October 1st proceedings at the medical school carried on in connexion with Charing Cross Hospital took the form of a prize distribution, preceded by a review of the events of the past year, provided by the dean of the school, Dr. WILLIAM HUNTER. The policy initiated last year of the students of the school doing their preliminary work at King's College had, he said, proved most successful. Charing Cross men had been stimulated by being brought into competition with students of other schools, and had managed to carry off the gold medal in

medicine of the University of London, as also the Murchison scholarship and that open to science students at King's College. A further outcome of that policy was that King's College had arranged to transfer its public health and bacteriological work to the buildings of the school at Charing Cross, where admirable laboratories were available. Apart from their specific advantages to individual students, such combinations of effort were practically essential at the present time when the task of providing efficient medical education was growing more and more difficult; even its cost had nearly trebled during the last decade. These facts were of general public interest, for, despite the growth of provincial universities, London was still responsible for the training of between 70 and 75 per cent. of all entrants to the medical profession in the British Isles. The prizes were presented by Lady Mary Glyn, the BISHOP OF PETERBOROUGH subsequently delivering a short address. Speaking of the Students' Club Union, he said he was glad to see that one of the affiliated bodies was a shooting club. The national prosperity, and possibly even the national existence, depended on the scheme of universal military service which Lord Roberts had brought forward. For some part of his early manhood, and subsequently for some days each year, every man should be submitted to military discipline and be taught to handle the weapons of a defensive warfare and to acquire a conception of national duty. A strong feeling of *esprit de corps* was needed in all branches of life. In the development of modern civilization and national existence members of the medical profession played an important part. Occasionally a black spot, such as the National Insurance Act, came into their lives, but it had been shown that something must be done to amend that Act, and promises, he understood, had been given for a certain amount of amendment. If such amendments were carefully thought out and covered the whole ground, the Act, perhaps, would prove of real and lasting benefit. The proceedings concluded with a vote of thanks to the Bishop of Peterborough and also to Lady Mary Glyn. It was proposed by Mr. ROBIN DUFF, the Chairman of the hospital, who, in the course of his remarks, said that so far as the present prosperity of the school was concerned, it was to Dr. Hunter that all thanks were due. Through his initiative, energy, and pluck, the school had arisen like a phœnix from its ashes, and undoubtedly now had a great future before it. Tea and coffee were served on the conclusion of the formal proceedings, and many visitors explored the laboratories, museum, library, and other parts of the school.

THE SCHOOL OF PHARMACY.

THE seventy-first session of the School of Pharmacy, conducted by the Pharmaceutical Society of Great Britain, was formally opened on October 2nd, the proceedings including the presentation of the Pereira medal—the blue ribbon among all pharmaceutical students—by the PRESIDENT, and the delivery of an address by Mr. J. RYMER YOUNG, J.P., a past president of the society and a brother, we believe, of the late Professor A. H. Young of the Victoria University. The winner of the medal was Mr. A. H. Stroud. In his address Mr. Rymer Young discussed the aims of education, saying that of late years there had been a tendency to argue that the curriculum imposed by the Pharmaceutical Society was too exacting. Really, however, the complaints amounted to nothing more than an unreflecting protest against the inexorable fact that there was no short cut to remunerative excellence in any calling. As a matter of fact, if the protestors only knew it, there was no better way of [illegible] in a man a capacity for commanding commercial success than that of providing him with a rational education. This in the society's view meant the development and cultivation of his mental and moral faculties, and the [illegible]nding of his existing powers to their highest form of expression. It did not mean the planting of dead facts upon the tree of life, and the substitution of conventional formulas for the natural exercise of the thinking faculties. Thinking was not an exact science, and ought not to be treated as such; its domain commenced where science as exact knowledge ended. A student should [illegible] of thought, and [illegible] in the time to express his personality in the calling he had chosen. If a student were so trained that his personality remained mute under a burden of partially digested data, he would, and could, be no more than a servant of his memory, however brilliant his examination record might be. Hence every student should endeavour to be master of his knowledge rather than allow the facts taught him to enslave his intellectual outlook. In that case he would find that education was not an expensive, useless vanity, but the best commercial asset a business man could possess. Men thus trained would employ wisely whatever faculties they originally possessed, and be less disposed than others to drift into a habit which now characterized many classes, and possibly even the nation as a whole—namely, that of expecting too much from others instead of trusting to one's own efforts. But there was one thing which education in itself could not supply—namely, those finer shades of courtesy and civil bearing known under the name of "breeding." Though the old saying, "Manners makeyth the man," certainly was not true, a courteous and sincere habit in one's relations with others was a very powerful adjunct to the weapons with which a man had to fight the difficulties of professional or commercial life. Breeding, however, was a contagious virtue, so it was very desirable to choose for colleagues in school or private life men who carried the bright, outward signs of inherent good breeding and good manners. Pharmacists need not look for gratitude in respect of the public services rendered by them, nor, indeed, for any recognition thereof, for they would not get it. Three score years of persistent endeavour to fit themselves for the position of trustees of the public safety had left pharmacists indistinguishable for all practical purposes from the swarm of unqualified adventurers within their domain. Even the brand new, up-to-date State system of insurance, admirable as it might be in principle, placed on a level a man like the President of the Pharmaceutical Society and one who had for three years juggled with a few stock mixtures in a rural surgery. Mr. Young had also something to say on the value of the habit of clear thinking, speaking, and writing. Nothing was more likely to return a heavy dividend on the small outlay involved in its cultivation. Half the troubles of the business world would not occur if every one spoke with knowledge and directness, and wrote his letters so that the recipient could decipher and understand them readily. The thinking powers of those before him should enable them to detect not only the subtle differences between COOH and CHO_2, but also corresponding differences in political and extra-pharmaceutical matters. If that were the case no future president would have to face the difficulties with which the speaker had to wrestle in 1908, when registered pharmacists appeared incapable of grasping the radical difference between equitable compromise and disgraceful betrayal.

OTHER SCHOOLS.

AT the medical school carried on in connexion with University College Hospital, work for the winter session began on October 1st without formal ceremony. There was, however, an assembly round the dining table of past and present students on October 2nd, the meeting place being the Café Royal and the attendance being large. Sir RICKMAN GODLEE, President of the Royal College of Surgeons, was in the chair, and in proposing the toast of the evening, touched on a variety of subjects, including the present condition of the University of London, a single-portal entry to the medical profession, and the effect of the National Insurance Act on the progress of medicine. The toast was acknowledged by the dean of the school, Dr. GEORGE BLACKER, in a speech full of wit and literary allusions. The health of the Chairman was proposed by Sir THOMAS BARLOW, President of the Royal College of Physicians, and consulting physician to the hospital. At Guy's, also, there was nothing in the way of a formal opening ceremony, but the dinner and conversazione customarily organized by the Pupils' Physical Society were duly held on October 5th. Last year they were omitted as a mark of respect to the late Dr. Pavy. The [illegible] received by Sir James Goodhart, the honorary president of the society, and the proceedings included an exhibition of medical books and instruments, and an exploration, so far as circumstances permitted, of the new

pathological laboratory which is to be opened within the next few weeks. The old students of St. George's Hospital also met at dinner on the day of the opening term, Dr. F. C. PENROSE being in the chair. In the afternoon there was a prize distribution and an address by Mr. HAROLD GRIMSDALE on the present duty of the medical citizen. Some account of it appeared in last week's issue.

THE COMPOSITION OF CERTAIN SECRET REMEDIES.*

THE "NORMYL" CURE FOR ALCOHOL AND DRUG ADDICTIONS.

SECOND REPORT.

IN the issue of the JOURNAL for April 27th, 1912 (also *More Secret Remedies*, p. 140) a report was given on the analysis of the contents of a package of the "Normyl" Cure, consisting the "Second Treatment," to be taken on the thirteenth to twenty-fourth days of the cure. We have since had submitted to us packages of both "First Treatment" and "Second Treatment," and they have been examined with the following results:

Each box bore a 3s. proprietary-medicine stamp, this being the amount of duty payable on an article priced (without the duty) at 30s. Each contained twelve bottles of liquid, and over the cork of each bottle tinfoil was fixed, bearing printed on it the words "1st day," "2nd day," etc., up to "24th day"; the tinfoil was unbroken in every case, showing that the bottles had not been opened before they reached us. The bottles were apparently all the same size, and were all filled to about the same height, a little below the shoulder; but owing to differences in the thickness of the glass the actual contents varied greatly, ranging from 77 to 135 minims. This was apparently mere chance variation due to filling all the bottles to the same height, as it showed no regularity at all; thus the first bottle contained 118 minims, the twenty-second 135 minims, the twenty-third 77 minims, and the last 85 minims, while intermediate variations were equally erratic.

The contents of all the bottles consisted of a clear, reddish liquid of somewhat aromatic odour; the only difference in appearance was between the liquid in the first four bottles and that in the others, the medicine for the first four days being slightly darker in colour. The whole was therefore divided into three parts, consisting of—

(*a*) First four days' medicine } "First treatment."
(*b*) 5th to 12th ,, ,, }
(*c*) 13th to 24th ,, ,, "Second treatment."

The results of analysis, however, showed no difference of importance between the three, and it is probable that the slight difference in depth of colour may have been due to some of the bottles having been filled with one batch or making of the mixture and the remainder from another.

The constituents found were:

	"*a*."	"*b*."	"*c*."	
Alcohol	78.6	78.2	78.4	% by volume
Alkaloid	0.076	0.068	0.062	% (weight in volume)
A soft resin	1.54	1.58	1.48	% ,, ,,
A non-alkaloidal bitter principle...	trace	trace	trace	
Ash	0.10	0.15	0.16	% ,, ,,
Extractive, including colouring matter	1.81	1.70	1.78	% ,, ,,

These figures being substantially the same as those previously reported for the "Second Treatment."

The alkaloid consisted of strychnine and brucine, and was evidently therefore derived from a preparation of nux vomica. The resin did not possess any characters by which the small quantity available could be identified. The ash had the usual composition for the ash of vegetable preparations. A good deal of trouble was taken in trying to prove whether the non-alkaloidal bitter principle was picrotoxin or not, as this substance was suspected from the results of the previous analysis; but in view of the facts that picrotoxin, unlike strychnine and many other principles, does not show any reactions sufficiently distinctive to identify a very small quantity of it when impure, and that the amount of the bitter principle under examination was minute, it was not found possible to characterize it with certainty. There are several bitter drugs from which it might have been derived.

The original mixture, when warmed with hydrochloric acid, gave a strong blackish-violet colour; numerous tests of various drugs and mixtures of drugs failed to yield a similar colour, and it was not found possible to prove what this behaviour is due to.

* Previous articles of this series were published in the following issues of the BRITISH MEDICAL JOURNAL: 1904, vol. ii, p. 1585; 1906, vol. ii, pp. 27, 1645; 1907, vol. i, p. 213; vol. ii, pp. 24, 160, 209, 393, 550, 1683; 1908, vol. i, pp. 833, 942, 1373; vol. ii, pp. 85, 505, 1022, 1110, 1193, 1285, 1566, 1697, 1875; 1909, vol. i, pp. 31, 909, 1128; vol. ii, p. 1419; 1910, vol. i, pp. 151, 213, 393, 1075, 1083, 1120; vol. ii, pp. 982, 1350, 1928; 1911, vol. i, pp. 26, 91, 823, 1324; vol. ii, pp. 32, 77, 456, 767, 854, 1543; 1912, vol. i, pp. 26, 141, 318, 438, 685, 791, 846.

EPSOM COLLEGE.

THE many friends of Epsom College who were disappointed in July last at the necessity for postponing Founder's Day must have felt gratified at the success which attended the festivities on Saturday, October 5th. The weather was as fine as could be desired, and as the visitors numbered close upon four hundred, the welcome given to the Lord Mayor, the Lady Mayoress, and the sheriffs was most enthusiastic. The proceedings commenced at half-past one with a luncheon in the gymnasium, which is one of numerous recent additions to the college premises, the total cost of these improvements being over £20,000. In proposing the toast of "The King, Patron of the College," the CHAIRMAN (Sir William Church) reminded the guests of the visit which His Majesty paid to the college when Prince of Wales, a few years ago, in order that he might become personally acquainted with the school. In proposing the toast, "The Lord Mayor and the Sheriffs," the HEAD MASTER referred to the pleasure which it gave to the council and staff to welcome their distinguished visitors, and expressed the regret of all present that Sir Henry Morris, who was to have presided, had been unavoidably prevented from attending. In responding to the toast the LORD MAYOR observed that he recollected quite well the foundation of the college by the late Mr. John Propert, and that he had watched with great pleasure the growth of the college, as well as of the foundation attached to it for distressed members of the medical profession, their widows and orphans.

The prize distribution took place in the big schoolroom, the chief prizes being given away by the Lord Mayor. On the platform were the Lord Mayor and the sheriffs, accompanied by the sword and mace bearers, the Rev. T. N. H. Smith-Pearse (head master), Sir William Church (chairman of the council) Sir Trevor Lawrence, Sir Alan Reeve Manby, Sir Malcolm Morris, Sir Shirley Murphy, Mr. Stanley Boyd, Dr. Charles Caldecott, Mr. Andrew Clark, Dr. William Collier, Dr. Clement Godson, Dr. F. de Havilland Hall, Dr. Frederick Needham, Mr. Bilton Pollard, Dr. Guthrie Rankin, Dr. Frederick Taylor, Dr. J. Roberts Thomson, Dr. Nestor Tirard, and other supporters of the college. After the HEAD MASTER had reviewed the work of the school, and given details as to the honours secured during the past year, he observed that it was customary to find fault with public schools. In regard to this, he reminded those present that well-educated Englishmen filled positions of trust in all parts of our colonies and dependencies, and so long as public schools could turn out such men there would not be very much to complain of. In reference to the charge made against public schools that they could not teach handwriting, he emphasized the fact that boys should be taught this carefully when they were young, then when they entered a public school nothing taught there would spoil their handwriting. After presenting the chief prizes, the LORD MAYOR addressed the boys on the value of school life, reminding them that much of their success in after-life would depend upon the way in which they spent their time at the college, and used the golden opportunities that would be offered to them there.

The visitors subsequently went to the two dining halls for tea, after which they took great interest in inspecting the numerous additions to the college buildings, including extensive alterations in Forest House, the enlargement of the box-room accommodation, and the masters' new common-rooms, which have been carried out during the summer vacation.

ROYAL MUMMIES.

DURING the time when Professor Elliot Smith occupied the Chair of Anatomy in the Medical School of Cairo, and did so much to increase our knowledge of the ancient Egyptians and of the art of embalming, he was asked by Sir Gaston Maspero, the Director of the Department of Antiquities, to prepare a catalogue of fifty specimens in that rich treasure-house of ancient Egypt—the Museum of Cairo. It may be said with certainty that never before was any anatomist called on to examine and describe such a series of specimens as fell to the lot of Professor Elliot Smith, for the series comprised all that is left of the great Pharaohs of ancient Egypt, their queens, and some members of their royal households.

The catalogue[1] thus prepared has just appeared; it is entitled *The Royal Mummies*. It is regal in every respect—its illustration, its ample page, and, above all, in its workmanship. Specimen No. 61051, with which the catalogue opens, is the mummy of King Saqnounri, the last king of the seventeenth dynasty (about 2000 B.C.), whose battered skull and wounded body, showing signs of having been hastily embalmed, bear witness to sudden death by murder. We encounter the mummy of Menephtah, the Pharaoh of the Exodus, beyond the middle of the series as No. 61079; his father, Rameses II, figures here as No. 61078; his grandfather, the great Seti I, as No. 61077; his son Siphtah, with congenital talipes of the left foot, is No. 61080; his grandson, Seti II, is numbered 61081. The series ends with Nos. 61099, 61100, two mummies from the tomb of Thoutmosis III. The manner in which embalming had been carried out showed that these two specimens belonged to a late dynastic or early Ptolemaic period.

In his preface Professor Elliot Smith anticipates the criticism which will naturally arise in the minds of some—that it is scarcely respectful to the memories of the potent rulers of ancient Egypt to catalogue all that now remains of them as museum exhibits. He asks those who are inclined to raise this criticism to remember that Sir Gaston Maspero has rescued the mummies from a worse fate: grave robbers, in search of plunder, brought them to light; nothing would have been left of them if the scientist had not stepped in. Each Pharaoh can still tell something of his history; each royal mummy is, if rightly regarded, a "historical document." It was during the examination of the royal series, extending from the seventeenth to the twenty-first dynasty, that Professor Elliot Smith first recognized the evolutionary changes which affect the methods of embalming practised in ancient Egypt. He perceived then that it is possible to recognize the dynasty to which a mummy belongs by the technique employed by the embalmer. In many cases he was able to set the historian right—the sex or age in some cases proved incompatible with the identification originally made. The question of age raised many points concerning the dates at which epiphyseal lines are finally closed. The degree to which the teeth were worn proved an uncertain indication of age; Rameses II was an old man, but his teeth were little worn. Dental caries and abscesses were common in the royal household. The jaws of Amenothes III were riddled with alveolar abscesses. There were feminine weaknesses, too, in the royal households; the old bald ladies had the biggest wigs.

It is wonderful, after the lapse of more than twenty-five centuries, that we should now obtain the material to form fairly accurate pictures of the appearances of the Pharaohs. In this catalogue we read that Menephtah, the Pharaoh of the Exodus, was

> a somewhat corpulent old man: the hands were placed in the position of [illegible] almost completely bald, [illegible] cut so [illegible] ing on the temple [illegible] and on the upper lip, [illegible] on the cheeks and chin. [illegible] minutely successful, the [illegible] much distortion. The [illegible] ration, [illegible] in the [illegible] packed with that [illegible] found in many mummies of [illegible] h, F.R.S. Catalogue Nos. 61051 [illegible] 1912. Price

[1] "And the Lord hardened Pharaoh's heart!

the priests of Amen of the twenty-first dynasty. A very curious feature is the complete absence of the scrotum . . . the distal portion of the penis is broken off and is missing. The mummy has suffered considerably at the hands of the plunderers . . . almost the whole of the anterior abdominal wall has been chipped away.

The general aspect of the face recalls that of Rameses II (his father), but the form of the cranium and the measurements of the face more nearly agree with those of his grandfather, Seti the Great. Seti I, and Rameses II exhibit in their cranial and facial features many alien traits, curiously blended with Egyptian characters; but in Menephtah the foreign element in his composition is more obtrusively shown than it is in either his father or his grandfather. He has the prominent high-bridged nose of his father, but a shorter and much broader cranium than either of his predecessors. In height Menephtah is intermediate between his father and grandfather. His stature is 1,714 mm. (5 ft. 7.4 in.); his father, Rameses II, 1,733 mm. (5 ft. 8.2 in.); grandfather, Seti I, 1,665 mm. (5 ft. 5.5 in.); his son, Siphtah, 1,638 mm. (5 ft. 4.5 in.); his grandson, Seti II, 1,640 mm. (5 ft. 4.6 in.).

This extract from the royal catalogue will show that Professor Elliot Smith has availed himself of a unique opportunity of studying the anthropological history of the royal dynasties. It was a matter of great good fortune that the cataloguing of the royal mummies fell into the hands of one who recognized the scientific value of his opportunities and availed himself of them to the fullest extent possible. It is most improbable that any anatomist will again have occasion to attempt a similar task.

ALCOHOLISM AND TUBERCULOSIS.

THE quarterly meeting of the Society for the Study of Inebriety was held at the rooms of the Medical Society of London on October 8th, the PRESIDENT (Mrs. Scharlieb M.D.) in the chair.

Dr. HERBERT RHODES, in opening a discussion on alcoholism and tuberculosis, said that it was to be regretted that, in spite of the many utterances on the subject, so little real scientific work had been done and that so few reliable statistics were available. Did alcoholism precede or follow tuberculosis? Was tuberculosis due to lowered resistance induced by alcohol or to the carelessness of the alcoholic subject in exposing himself to cold, damp, and other depressing influences? Did alcohol act only in a secondary way, or was alcohol the direct cause of the invasion of the tubercle bacillus? Whilst alcohol was a great cause of poverty and overcrowding, those dependent on the alcoholic were more liable to suffer from tuberculosis than the alcoholic himself. A drinker with an open tuberculous lesion was careless and unclean, and all in his miserable home were exposed to repeated doses of the bacillus. Poverty and overcrowding favoured tuberculosis. Dr. Henschen's Stockholm figures showed among the rich a mortality of 5.6 per 10,000, among the poor a rate nine times as high. In Paris, where the inmates per house averaged 35, the tuberculosis mortality was 43 per 10,000; in London, with an average of 8 in each house, the rate was 17 per 10,000. The decreased consumption of alcohol in London and New York between 1884 and 1901 had coincided with a reduction of the tuberculosis mortality in London from 3.12 to 2.34 per cent., and in New York from 4.45 to 2.49 per cent. In Paris an increase of the tuberculosis death-rate from 5.19 to 5.46 had corresponded with an increase of 11 per cent. in the consumption of alcohol. Peguriet, after an inquiry into the ancestry of 350 phthisical patients at the antituberculosis dispensary at Nice, concluded that alcoholism in the forefathers was a more potent factor in the causation of tuberculosis than drinking by the individual. Ancestral alcoholism transmitted a vulnerability to the tubercle bacillus. Alcoholized guinea-pigs and rabbits fell victims to tuberculosis in greater numbers than the non-alcoholized control animals, and Dr. Tatham's occupational mortality statistics proved the undue susceptibility of brewers, publicans, and their servants to tuberculosis. Dr. Kelynack had shown that tuberculosis accompanied 80 per cent. of the cases of alcoholic neuritis, and 23 per cent. of the cases of alcoholic cirrhosis. Dr. Howship Dickinson, in the *post-mortem* records of St. George's Hospital, found 66 cases of pulmonary tuberculosis among 149 potmen, barmen, and others engaged in handling alcohol, as compared with 44 cases in those not in the alcohol trade. When

the cases were classified according as the employment was indoor or outdoor, no preponderance of fresh air or the want of it was found to account for the excess of cases among the alcohol sellers. Lamerceaux reported that, of 2,192 hospital cases, 1,229 were the result of alcohol, and Liebe, who had a sanatorium in a gin-drinking district, reported 40 per cent. of his cases as alcoholics, 27 per cent. used alcohol daily, another 27 per cent. took very little, and 6 per cent. used none at all. The statistics of the German Bureau suggested that alcoholics suffered from tuberculosis less than abstainers. In female inebriates under sentence, Dr. Heron found that the phthisis death-rate was only half that of the female population and less than one-fourth that of the class from which they were drawn. This was due to selection of cases and to the fact that tuberculous cases found their way into Poor Law institutions. Dr. Crowley found that the majority of phthisical cases in workhouse infirmaries had been drinkers, and Dr. Henschen's experience in the workhouses of Denmark was similar; whilst Paul Reynier said that after 40 years of age alcohol was responsible for all cases of bone tuberculosis, and that in the young there was always a family history of alcohol. The conclusion, therefore, was that alcohol predisposed to tuberculosis of the lungs and bones, and was a factor in the spread of the bacillus. In the fourth annual report of the Henry Phipps Institute the patients who gave a history of alcoholism showed the highest percentage of disease arrested, and also of non-improvement and death. At the Henry Phipps Institute, over a series of years 72 per cent. of alcoholics did badly, as compared with 51 per cent. of non-alcoholics. Dr. Rhodes read replies he had had from a number of sanatorium physicians, who all agreed that in treatment much alcohol was harmful. As an appetizer at meals, or as a narcotic when there was fever and much autointoxication, small doses did good. During two years spent at the Clavadel Sanatorium, near Davos, Dr. Rhodes had many opportunities of ascertaining the views of doctors and patients. The doctors were unanimously against the necessity of alcohol during treatment, and were of opinion that patients who took much did not do so well as the very moderate drinker or the abstainer. Those who took alcohol freely did not keep to rules, always wanted to shirk some part of the treatment, and as a class were erratic and unstable. Dr. Rhodes agreed that a little spirit or fairly strong wine helped to soothe and lessen the discomfort arising from fever, bronchitis, autointoxication, and neurasthenia.

Dr. Jane Walker regarded alcohol as a purely secondary cause of tuberculosis, and in deciding upon the admission of patients to the sanatorium, she no longer, as she once did, refused admission to the subjects of alcoholism. She had several times observed that severe cases of tuberculosis in alcoholics did better than the generality of such cases, and accounted for this by the well-known tendency of alcohol to favour fibrosis. This experience was confirmed by the fourth annual report of the Phipps Institute. The environment of barmen was highly conducive to infection by the tubercle bacillus; whilst brewers' men, although, like gardeners, open-air workers, seemed to delight in stuffy atmospheres. Remembering the dictum of Naegele, that 98 per cent. of all adults over the age of 40 have tuberculous lesions, too much reliance should not be placed on statistics. Pneumonia did best when treated without alcohol, especially if it complicated or followed influenza.

Dr. Grace Calvert's experience was that alcoholics who were tuberculous did badly, more especially if the drinking extended over some time. But there were exceptions to this in the case of young, vigorous patients who had not been soaking for so long; the enforced abstinence on entering the sanatorium might turn the scale and the patient recover. In a large number of the cases the part alcohol played as a cause of tuberculosis was difficult to determine, as there were so many other factors, but he always preferred to have to treat a non-alcoholic subject.

Surgeon-General Evatt pointed out that the decrease of phthisis in the army had gone hand in hand with the rise of temperance and a diminished consumption of alcohol.

Mr. Theobald drew attention to the resolution passed by the Paris congress on tuberculosis in 1905, that the fight against alcoholism must be combined with that against tuberculosis, and said that whilst the public-house existed to supply an undoubted social need for many, the provision of efficient counter-attractions would help to draw many from the dangers of tuberculous infection, so common in inns and taverns.

Dr. Kelynack observed that this was a great national question; and, however closely the pathology of either alcoholism or tuberculosis and their relationship were studied, the economic and social side of the question could not be left out of sight. An alcoholic was in an inferior position to co-operate either with the State or his doctor in the fight with tuberculosis, either in its individual or national aspect, and jeopardized his chances by his careless disregard of hygienic and sanitary laws and thoughtless disobedience to specific medical instructions. The treatment of the individual alcoholic was the first requirement.

Dr. Claude Taylor questioned the soundness of Dr. Jane Walker's views on the benefits of alcoholic fibrosis. Dr. Jane Walker agreed that the cases did not improve until the alcohol was discontinued, and he was of opinion that many would never become tuberculous if they had not been first alcoholics.

Dr. Herbert Rhodes, in reply, doubted the production of fibrosis by alcohol. He believed that there were no facts in support of the view, which was at present simply a hypothesis.

LITERARY NOTES.

The publishers of *Whitaker's Almanack* are preparing a new book entitled *The International Whitaker*, which is intended to give a succinct account of every country in the world. The new book supplements but does not supersede *Whitaker's Almanack*, which, first published in 1868, has established itself as an indispensable book of reference. The book is to be published early in December.

Public Opinion, which has just entered its fifty-second year, celebrates the occasion by issuing a special number. Sir Harry Johnston writes on "Things Worth Striving For." Among such things, we gather, is a Parliament including among its members such men as Mr. H. G. Wells, Mr. Bernard Shaw, General Booth, and Mr. Sidney Webb. There is nothing to prevent such men finding seats now—if they can find electors to vote for them. Mr. A. C. Benson writes on "Real Life," which, it appears, is "true socialism, the constructive socialism not based on confiscation but on participation." The other contents of the number are as varied and interesting as usual.

Reference was made in a leading article on Universities and Medical Education which appeared in the Journal of October 5th to an opinion expressed by Macaulay as to the professorships of medicine at Oxford and Cambridge. It may be worth while to quote the record of the historian's conversation with Prince Albert as recorded in his diary (Trevelyan's *Life and Letters of Lord Macaulay*). The entry is dated January 14th, 1851:

> . . . I had a few words with the Prince about the Regius Professorship of Medicine at Cambridge, now vacant by Haviland's death. I remarked that it was impossible to make either Oxford or Cambridge a great medical school. He said, truly enough, that Oxford and Cambridge are larger towns than Heidelberg, and yet that Heidelberg is eminent as a place of medical education. He added, however, something which explained why this was. There was hardly, he said, a physician in Germany, even at Berlin, even at Vienna, who made £1,000 a year by his profession. In that case a professorship at Heidelberg may well be worth as much as the best practice in the great cities. Here, where Brodie and Bright make more than £10,000 a year, and where, if settled at Cambridge or Oxford, they probably could not make £1,500, there is no chance that the academic chairs will be filled by the heads of the profession.

Things have greatly changed since then. But although both universities have at present Regius professors of the very first rank, the medical Olympus in which they dwell is not for men who have to earn the "d[illegible]d guinea" for which John Hunter had to leave his researches.

In a paper which appears in the September number of the *Glasgow Medical Journal*, Dr. Hugh A. McLean gives us some interesting glimpses of certain aspects of medical life in old Glasgow. The first direct reference to a

practitioner in Glasgow which he has been able to find is contained in the account of the customers of the burgh of Linlithgow, 1393–95, where there is mention of a remission by order of the King to William, physician of Glasgow; there is also an order for payment of £2 13s. 4d. to the said William. There is no further reference to a physician or surgeon in Glasgow till 1505, when in the Protocol book of Cuthbert Simon mention is made, in connexion with the sale of an annual rent, of John Murref, "cirurgion." More than seventy years later we come on what Dr. McLean is inclined to regard as the first authentic information as to medical life in old Glasgow. Under date May 17th, 1577, there is a minute of Council to the following effect:

The provoste, baillies, and counsall understandand the supplicatioun gewin in be Alexander Hay, chirurgian, quhairby he is myndit to remane in this toune, being in redyness for serwing of the towne in his craft and art, thairfor for his support thai haif grantit . . . ane yierlie pensioun to him of ten merks money and attour the said Alexander for serwice bigane is maid burges and frieman of the burgh and citie of Glasgow and sall paye na manner of taxt in tyme cuming conforme to the preuilege haid be the umquhile Jas. Abernethie hes maister.

This minute shows that in the sixteenth century a retaining fee was paid to a surgeon who as a further inducement to remain in the town was given a burgess ticket. As Glasgow was by that time a city with some 5,000 inhabitants, it is not surprising to find a few years later mention of another practitioner. Under date March 7th, 1580, it is recorded that "Archibald Davidson, flescher, is maid burges and frieman quhais fines wes gewin to Thomas Mylne, chirurgian, for his cureing of Thomas Muir, hurt in the toune besynes." Mylne settled in Glasgow and apparently prospered, although he on one occasion at least suffered the *ineluctabile fatum* of medical practice by failing to recover fees. He seems to have been a man of strong opinions, which he expressed in language of corresponding strength, for in 1589 he appeared before the municipal authorities to answer a charge that he had called two baillies traitors and de[illegible], and spoken "sclanderouslie" of the "hungrie toun of Glasgow." Perhaps the loss of his fees still rankled. The "Provest, baillies, and counsalis," with the object of preventing a repetition of such *scandalum magnatum*, ordered that Mylne should "compeir at the croce and thair confess oppenlie in presens of the people his fault and grit sclander committit by him," and "thaireftir his pension to be dischargit during the space of ane yeir." In the closing years of the sixteenth century there is mention of other practitioners, and in 1599 we find the famous Maister Peter Lowe buying "a fore tenement under the above with a waste house adjoining . . . lying on the west side of the street leading from the Metropolitan Church to the Market Cross." The witness to this transaction is "Adam Flemyng, medico." Lowe also got a retaining fee, as appears from a minute of March 17th, 1599, which records that "it is aggreit of new and contractit betwext the toune and Doctr Low for xxiv merkis money be yeir." Lowe, who as his books show, was a man of education and wide experience, and who was the founder of the Faculty of Physicians and Surgeons, somehow came under the ban of the kirk session and had to "stand the pillar" three times. He had been much abroad and had been in the service of the King of France; therefore it may be conjectured that the breadth of outlook thus acquired made him impatient of the yoke of the kirk. At the time of Lowe's arrival in Glasgow, the town was a hunting ground for "quacksalvers, charlatans, witches, charmers, and divers other sort of abusers," most of whom, it is recorded, "lacke both soul and conscience and feare of God . . . promising marvails to cure all things in short space." Against this state of things the session prepared to take action, and a committee, composed partly of the councillors and partly of ministers, was appointed "to examinat and tak tryall of all sic personnes as usit or sal happin to [illegible] (of healing) within this toune in the time [illegible]." It may have been this decision that prompted [illegible] from a sense of injury, to take steps to [illegible] King the "Letter of Gift" by which the [illegible]. From the records of the Kirk [illegible] we learn that "Dr. Ross—trilapse in fornication—was passed, having paid 100 merks to the poor." Dr. McLean points out that the title "doctor" did not necessarily imply membership of the medical profession, masters of the grammar school being generally referred to by that designation. We may hope, therefore, that the "trilapse" Ross was not of the medical fold. From several minutes it is clear that the municipality sometimes helped deserving citizens to pay for medical attendance or paid the whole amount out of the public purse. Surgeons had at first been exempt from taxes and various duties of ordinary citizenship, but quite early in the seventeenth century there began a struggle between them and the town council on this point, which lasted about one hundred and eighty years. In 1784 the magistrates, after taking counsel with the Dean of Guild and the Deacon Convener, recommended "that the chirurgians and pharmacians should be liable to watching and wardings in respect that they are incorporate with the barbers in a deaconrie, and that by their burgess oath they are bound to all taxations, watchings and wardings." Perhaps it was this determination to tax that led the doctors not long afterwards to combine to secure the payment of their fees. The following advertisement was published in the *Courier* of October 29th, 1792:

The Physicians and Surgeons in Glasgow having experienced much inconvenience and loss from the long-delayed payment of their fees and accounts, and to remedy this as far as depends upon them the surgeons have come to the unanimous resolution to give in their acts once a year, and the physicians expect, when there is no agreement for attendance throughout the year, to be paid for their trouble and advice upon their visits becoming no longer necessary.

About the same time the surgeons of Paisley met and agreed to unite in insisting on uniformity in charges, the time at which visits were paid, and the means of recovering overdue accounts.

In "Brother Jacob," one of George Eliot's shorter stories, the great novelist gives a most amusing description of the gradual demoralization caused amongst the housewives of a small country town by the sudden opening of an attractive provision shop. These good ladies, accustomed to eat nothing but what came out of their own kitchens, rapidly succumb to the temptation of procuring ready-made the delicacies it had once been their pride and delight to prepare with their own hands, though each lives in terror lest her neighbours should discover her backsliding. Times have changed since then; and there are now few housewives, however notable, who do not save time and labour by stocking their larders with tinned and bottled foodstuffs. This easy method of housekeeping, however, is apt to prove extremely dangerous if there is no means by which the purchaser may be safeguarded from the exploitation of dishonest firms. The August number of *L'Hygiène* contains a lively account by M. Georges Benoit-Levy of the struggle of the American public to obtain pure and unadulterated food. In this struggle, it is perhaps needless to add, the medical profession played a leading part; and it was, thanks to the representations of Dr. Willey and his *confrères*, that the nation was aroused to a sense of the danger in which it stood. Public feeling ran so high that one morning the townspeople of Detroit were regaled by the unusual sight of gallons of tainted milk being poured down the drains, whilst the cans that had contained it were being battered to pieces elsewhere; and the school girls of Westfield (who had apparently profited by their course of chemistry under Professor Allyn) actually caused a boycott of all the grocers and provision merchants in the town, until the latter found themselves forced to supply their customers only with such preserves as would pass muster in the school laboratory. Without going to such lengths, the example set by the Americans might well be followed by other nations whose welfare depends just as largely on the purity of its food. The same number of our excellent contemporary also contains an interesting article by Dr. Marc Landolt on the origin of spectacles, and another by Dr. J. Laumonier on the advantages and disadvantages of sea bathing; whilst M. Henri Monrisse has contributed a few remarks on the various remedies for sea-sickness. An article of special value deals with the hygiene of schoolboys; it is an extract from an address delivered by the editor at a distribution of prizes. The illustrations, always a strong feature in *L'Hygiène*, are as artistic as ever in the August number.

British Medical Journal.

SATURDAY, OCTOBER 12TH, 1912.

THE DOCTOR AND HIS WORK.

THERE are no men whose work is so much misunderstood and so frequently misrepresented as doctors. There are people in every grade of society who dislike and distrust doctors as many good Protestants hate Jesuits. Of the latter feeling, Andrew Lang said that it seemed to him as though one should say he hated the Royal Engineers; he could understand hatred of a particular engineer, but why should any one hate the whole corps? So we may say of doctors. Were not proofs of the fact so abundant, it would appear inconceivable that people otherwise apparently sane should dislike a profession whose mission it is to apply all available knowledge to the healing of the sick. Such folk profess to believe that, as John Wilson said of unpaid contributors to magazines, a doctor is *ex vi termini* an ass. A legal diploma is to them a stamp of ignorance. The gift of healing, in their opinion, comes "by nature," as Dogberry said of reading and writing. The physician goes about ruining people's health with drugs; the practitioner poisons them with "animal filth"; the surgeons brandish knives and look about for victims; physiologists and medical students cut up living animals "only for wantonness." The General Medical Council is a tyrannical body which makes it its business not, as the law intended, to protect the public against unqualified practitioners, but to safeguard the sordid interests of the medical profession by hindering the beneficent work of heaven-born healers. The British Medical Association is a trade union established for the protection of privileges opposed to the general welfare. Both bodies are united in insisting on a rigid system of "etiquette" designed to rivet the chains of a medical priestcraft on the freeborn Briton. One might think doctors were a set of malefactors banded together in a conspiracy against the human race.

In view of all these fatuous misconceptions, fostered for their own purposes by quacks, and a certain class of politicians and journalists, it is well that people should have the opportunity of learning something of the real nature of the doctor's work, his aims, and the methods by which he seeks to compass them. Some years ago Mr. Brudenell Carter endeavoured to do this in a book[1] of which it may be said, as of the legendary curate's egg, that parts of it were excellent. It is instructive to compare that work with another bearing almost the same title by Dr. C. J. Whitby which has recently appeared.[2] Mr. Carter dealt with problems of education, the competition of quacks, and other practical subjects of what may be called everyday professional life, exposing misconceptions and suggesting reforms. Dr. Whitby, who is already favourably known as the author of books on human character, the makers of man, and others dealing with subjects of general interest, is an idealist who looks forward to a transfiguration of the profession that will make the doctor the saviour of society. To ensure fitness for this high vocation he would have candidates carefully selected by an anthropometric scrutiny and inquiry into their fitness for the profession. We quite agree that physical and moral fitness should be taken into account, and that the mere facility in passing examinations is not an index of the possession of the qualities needed for the fulfilment of the mission of the doctor. But at present, at any rate, no sure tests are available, and there is the further difficulty that the judges are not infallible.

Dr. Whitby proceeds to discuss the chances of survival of the general practitioner in the vast and rapid development of specialism. We do not think there is any fear of the disappearance of the general practitioner. The problem is rather, Is there room for the general physician? The immense improvement in medical education and the steadily rising level of efficiency among the younger generation of doctors, together with the ever-increasing encroachments of surgery, have made the territory which used to belong to the physician a gradually vanishing quantity. There will always probably be a few oracles whose counsel will be sought in difficult cases, but already many physicians live by what is simply glorified general practice; instead of fulfilling their old function of seeing cases only in consultation, they attend cases of typhoid fever, saving their dignity by charging higher fees than those who nominally belong to the rank and file. Others who would repudiate the title of specialists have the greatness that belongs thereto thrust upon them by the public, which insists that a man's province shall be limited to the heart, the lungs, the kidneys, or the stomach. Surgery itself is becoming more and more split up, till we are in danger of a profession subdivided, as was that of ancient Egypt, into practitioners dealing solely with particular organs. And the reign of the surgeon, too, is beginning to pass away, for the highly trained general practitioner is becoming more and more capable of doing operations for himself. There remain the specialists, and for some of these—ophthalmologists, laryngologists, otologists, gynaecologists, and to a less extent genito-urinary surgeons—there will continue to be room, for lines of practice which involve the use of instruments and delicate handling, that require a long apprenticeship, can be successfully followed only by those who devote themselves entirely to such work.

While fully recognizing the great work that has been done in the field of hygiene, Dr. Whitby takes occasion to warn the medical officer of health against a certain aggressiveness which has become more manifest of recent years. This warning is by no means superfluous, as the tendency is certainly for the medical officer of health to magnify his office more and more, and the ideal of certain social reformers seems to be that the independent practitioner should be forced out of existence and his place taken by official guardians of the public health.

Of the doctor in the sick room, Dr. Whitby well says that the successful physician is an artist, not a mere prescribing machine: he treats the individual, not a label. To do this he must know the personal peculiarities of the patient. Herein lies the justification of the general practitioner's existence. A man of sense who has brought human beings into the world, tended them through the disorders of infancy, seen them grow up, marry, and have offspring of their own whose early years, at any rate, he may well have the opportunity of observing, must

[1] *Doctors and Their Work: or, Medicine, Quackery and Disease.* By R. B. Carter. London: Smith, Elder, and Co. 1903. (Cr. 8vo, pp. 324. 6s.)

[2] *The Doctor and His Work.* By C. J. Whitby, M.D.Cantab. London: S. Swift and Co., Ltd. 1912. (Cr. 8vo, pp. 235. 3s. 6d. net.)

know them as a consultant, even of the keenest clinical insight, cannot. He knows how they react to diseases and to remedies. He knows how heredity shows itself in matters pertaining to health. In a word, he knows the natural history of disease in a way beyond the teachings of the laboratory or instruments of precision. A man of this kind has a store of knowledge, acquired during long years of observation, and developed by practice till it becomes intuition. This experience cannot be transmitted and for the most part dies with the possessor, but while he lives it is invaluable, and it will be an evil day if ever the charge of sick people is handed over to medical officials who have not the same opportunity of studying their peculiarities, and whose treatment, therefore, must be largely a matter of cut and dried formularies. There is, moreover, the psychological factor to be taken into account. The general practitioner necessarily learns much of the mental as well as the bodily structure of his patients, and the faith in him that makes them stick to him as their family doctor for many years is a professionel asset beyond price. If there is to be no choice of doctor this potent element of cure must tend to fade away, greatly to the detriment of the patient. Dr. Whitby thinks that this waste of knowledge might be prevented by organization of research into the natural history of the population, but after all a collection of statistics is like a *hortus siccus* compared with a living garden of experience.

Dr. Whitby is sanguine as to the future of medical science. It seems hardly, he says, too much to hope that within a few years we shall be able to control the functions, and perhaps even the growth and repair, of any given organ at will. He looks forward to a time, "not so far ahead, when much of the work now done by surgeons will be superseded by a regenerated medical art, when tumours innocent or malign will, instead of being excised, be caused to disappear as it were by magic, under the influence of minute doses of incredible potency and elective precision"—when cancer, consumption, alcoholism, and the whole host of acute or chronic infective diseases will be subject to our sway. It is a beautiful dream, and it is encouraging that such idealism should survive in the breast of a man who must have encountered the thousand natural shocks that the hopes of the practitioner meet in his struggle with disease. Huxley, in his address to the International Medical Congress held in London in 1881, comparing the state of the pharmacology as it was then with that which existed forty years before, said: "If we consider the knowledge positively acquired, in this short time, of the *modus operandi* of urari, of atropia, of physostigmin, of veratria, of cusca, of strychnia, of bromide of potassium, of phosphorus, there can surely be no ground for doubting that, sooner or later, the pharmacologist will supply the physician with the means of affecting, in any desired sense, the functions of any physiological element of the body. It will, in short, become possible to introduce into the economy a molecular mechanism which, like a very cunningly contrived torpedo, shall find its way to some particular group of living elements, and cause an explosion among them, leaving the rest untouched." Alas! We are not appreciably nearer the millennium of medicine here foreshadowed than we were then. Drugs, on which Huxley built his hope, are being more and more discarded. Is a better fate in store for mankind in the "magic" doses which Dr. Whitby believes are to work such wonders?

Dr. Whitby alludes to the silent revolution in the attitude of the scientific mind towards mental healing. We have for years past striven to help in bringing about this revolution, and now it seems to us that it tends to go too far. Dr. Whitby is doubtful whether the distinction between functional and organic diseases is philosophically justified. He would, we imagine, admit that there is some fundamental distinction between a temporary attack of indigestion and cancer of the stomach or intestine. And when he says that the records of well-authenticated cures at Lourdes and elsewhere seem to give the lie direct to any *a priori* limitation of miracles to "functional" disease, we ask for cases in proof of the statement. As regards Lourdes, as to which most authenticated information is forthcoming, we know of no case in which a partly destroyed organ has been made whole or a malignant disease cured. Even of those disorders which, whether we call them functional or not, are connected with some disorders of nerves, the percentage of cure, on the showing of the records themselves, is infinitesimal, and of the permanency of these there is as far as we know no satisfactory record at all. Dr. Whitby thinks we are on the threshold of a new medical era which he defines as psychological medicine: and he believes that psychology, understood in the widest sense, will have an influence upon medical practice and the medical point of view probably far greater than that of bacteriology or any of its predecessors.

Dealing with the unsatisfactory conditions of medical practice, Dr. Whitby maintains that they are in a great measure the inevitable outcome of our magnanimous response to the impossible or well-nigh impossible demands of our position. He denounces the National Insurance Act as a specimen of quack legislation which it would be hard to beat. He says the contract system has been a failure; but he holds that the principle is sound, and he would not object to its extension to all classes, provided that, beginning from an adequate minimum, it were so graduated in accordance with the means of the insured persons as to provide a generous living wage for all grades of practitioners, and that due provision were made for suitable extras. Dr. Whitby pleads for such an organization of the profession as shall ensure that every sufferer shall get in case of need adequate advice and treatment, "and by adequate (he says) I mean the very best." We commend this definition of the word "adequate" to Mr. Lloyd George and local Insurance Committees.

Dr. Whitby is opposed to the municipalization of hospitals, and in the interest of surgical science is anxious that the voluntary principle should be retained. But they must be placed on a sound financial basis. He looks forward to a great development of medical institutionalism, in the form of sanatoriums for nerve disease, the drug habit, and so on, each one devoting itself exclusively to a particular disease, and consequently attaining a perfection of equipment and efficiency not obtainable in any other way.

The true purpose of Dr. Whitby's book, we believe, is found expressed in his chapter on the doctor as sociologist. The doctor is to be an active instrument in racial progress. On the doctor as a eugenic expert he seems to us to hold very sound views. He rejects force as a panacea and seeks to restrain the ardour of eugenic enthusiasts, holding that to eliminate physical unfitness at the cost of genius would be a very doubtful gain to humanity. Like ourselves, he is sceptical as to the results to be expected by application of the cold-blooded methods of the scientific breeder. In the field of education he thinks the doctor is called upon to play a still greater part than

he already claims: but will not people rebel if this is pushed too far? Already mutterings of discontent are making themselves heard, and there is, we think, a real danger that too much talk of disease by indiscreet teachers may have an unwholesome effect on the children.

Dr. Whitby's book contains many excellent suggestions and places the difficulties of the doctor's life clearly before the reader. It ought to show persons who often in mere lightness of heart scoff at the medical profession, its true character and the many hindrances with which the doctor has to contend. We may think some of his views are Utopian, but he thinks nobly of his profession, and his book cannot fail to be stimulating to medical readers and to afford much food for thought for social reformers.

MALFORMATIONS AMONGST FISHES.

Any inquiry into the cause and nature of human monsters and human malformations is rendered difficult by the fact that all the earlier stages in their production take place beyond the reach of direct observation. In the study of malformations amongst fishes there is no hindrance of this kind, for every stage in the development of the embryo from the ovum lies open to the naked eye and to the lens. It is therefore to be expected that a study of abnormal development, which can be so frequently observed in fish hatcheries, will throw a new light on the problems of human teratology. For many years Dr. James Gemmill, lecturer on embryology in the University of Glasgow, has collected and examined the malformed ova and trout from the fish hatcheries at Lochwinnoch and Loch Lomond, and by his research has thrown much light on the nature of the malformations to which the young of vertebrate animals are liable. His recently published memoir[1] will prove invaluable to all who are investigating malformations of the body, not only on account of the numerous observations he records, his excellent and accurate illustrations, but also because of the complete manner in which he has indexed his results, and on account of the full bibliography of contemporary literature which he has compiled.

A most striking fact is that the malformations which occur amongst vertebrate animals are very similar in all of them from the lowest to the highest—from the lamprey to man. The tendency for development to proceed in certain abnormal directions appears to be a heritage common to all vertebrate forms. Fish ova are particularly liable to give rise to double monsters—the result of two embryos being produced on one yolk sac, with a greater or less degree of fusion of their adjacent parts. The double monster, in the vast majority of cases, according to Dr. Gemmill, is produced on a single blastoderm; very rarely does it arise from the fusion of two blastoderms. With one exception, nearly every form of double human monster is represented by the abnormal products of fish ova. Amongst birds and mammals—especially in man—monsters showing duplicity of the posterior part of the body and of the posterior extremities are common; amongst fishes such forms are rare. Dr. Gemmill seeks to explain the rarity of posterior duplicity of the fish body from the manner of its development; in the higher vertebrates the posterior part of the trunk frees itself from the yolk sac as it develops; in fishes it arises closely applied to the ovum, and hence the posterior parts of a double embryo tend to fuse. Dr. Gemmill also propounds a new and very practical system for the classification of double monsters.

Some of the slighter degrees of malformation described by Dr. Gemmill are likely to prove of great interest to medical men. The condition of cyclops—a greater or less degree of fusion of the right and left halves of the brain and face—is the same in the fish as in man; so is the condition of agnathia or micrognathia—where the lower jaw is absent or very small. Two other conditions are of special interest, for it is clear that the fish is also subject to "pug-head" (bulldogism, or simoprosopia), and to a condition of "hammer" or "round" head which very closely recalls the condition known in man as achondroplasia. Dr. Gemmill, while recognizing that malformations may be caused by the environment of the developing ovum, is inclined, on the evidence he brings forward, to regard an inherited tendency as the more potent factor in giving rise to monstrous births.

[1] *The Teratology of Fishes.* By J. F. Gemmill, M.A., M.D., D.Sc. Glasgow: J. Maclehose and Sons. 1912. (Dble. roy. 8vo, pp. 90; illustrations. 1 pl. etc.)

THE SCIENTIFIC STUDY OF ABORTION.

At the suggestion of the distinguished American obstetrician, Dr. Whitridge Williams, an analysis has been made by Dr. Paul Titus of a series of 274 abortions occurring in a total of 4,750 patients treated in the obstetrical ward at the Johns Hopkins Hospital, Baltimore, up to February 1st, 1911.[1] Only those pregnancies which were interrupted before or up to the end of the fourth lunar month have been registered in this series as abortions, and the determination of the period of development has been made from the history of the case, the operative findings, and the examination of the fetus, or a combination of these factors. Dr. Paul Titus admits that it is not possible to determine the actual incidence of abortions and the prevalence of criminal feticide, for his series represent conditions as they occur in the service of an obstetrical hospital. None the less such statistics are of some value, for though comparatively few cases of abortion, especially criminal cases, come into hospital, it is only those that seek hospital relief that can be thoroughly observed.

Dr. Titus classifies the 274 under several subseries. The incomplete, properly so-called, included 162, or 59.12 per cent. of all abortions. The complete, properly so-called, amounted to 35, or 12.7 per cent. The author puts criminal cases apart. Altogether 41, or 15 per cent., come within the series, including 8 complete and 33 incomplete. Five cases were "missed abortions" (1.8 per cent. of all). They were registered after Vernehren's definition, retention of the aborted ovum in the uterus for at least ten weeks. In Dr. Titus's subseries the longest certain term of retention was about six to seven months. A yet more important subseries included "therapeutic" abortions, or artificial termination of pregnancy by certain operations, before the fetus had attained viability, that is, prior to the twenty-eighth week. Twenty cases (7.3 per cent.) came within this group, the indications being hyperemesis gravidarum in 9, and pulmonary tuberculosis in 8 patients. In the 3 remaining cases the complication was mitral stenosis, pyelitis, and asthma with toxaemia respectively. Lastly, 11 cases (4 per cent.) were

[1] A Statistical Study of a Series of Abortions Occurring in the Obstetrical Department of the Johns Hopkins Hospital. *Amer. Journ. Obstet.*, June, 1912, p. 960.

"inevitable" abortions, where clinical symptoms demanded artificial emptying of the uterus. In the whole series of 274 abortions, 14 deaths (5.11 per cent.) occurred; the maternal mortality in labour at term in the Johns Hopkins Hospital is 1.1 per cent. No fewer than 5 out of a total of 41 cases of criminal abortions (12.19 per cent.) ended fatally.

Thus the mortality following abortion is considerably higher than that following labour at term, the higher average being almost wholly due to the frequency with which criminal procedures are employed for inducing abortion. The mortality in abortions is chiefly due to infection by the streptococcus. Retropositions of the uterus seem a more common complication of abortion than is usually believed. It was present in 20.25 per cent. of all the cases when discharged, and it is important to note that the occurrence was as frequent after non-infected as after infected abortions. If all cases having a temperature of 101° or more are registered as infected, as in Dr. Titus's series, the incidence of infections will be, in criminal cases 78 per cent., in "inevitable" cases about 60 per cent., in incomplete abortions about 45 per cent., and in complete abortions about 34 per cent. Involution proved slower in these cases than after labour at term. Inflamed placenta was detected in 25 per cent. of infected cases, but was practically absent in uninfected cases. On the other hand, decidual endometritis is seen in about 52 per cent. of infected and 68 per cent. of uninfected abortions, showing it to be a cause rather than a result of abortion, the occurrence of an infection being a mere incidental matter. This observation is of considerable pathological importance.

The question of aborting primiparae and habitual aborters is of much clinical and social interest. Dr. Titus states that the "habitual aborter" is, according to these statistics, not as common as is generally supposed, since it has been brought out that women who were, according to their stories, aborting for the first time, are those which predominate in numbers. But little credit can be attached to statements about no previous abortions made by women who have submitted to criminal operations, and as for the opposite type of patient, we suspect that a considerable number of married women who "habitually" abort do not seek hospital advice. More than one-third of all criminal abortions in this series, mainly taken from the poor of Baltimore and the adjacent parts of the State of Maryland, were among married women. Abortions proved twice as frequent among whites as among black women, and criminal abortions were five times more frequent among whites. Uterine retroflexions and retroversions accounted for 34 cases (12.41 per cent.), and decidual endometritis seemed to be the immediate cause of the death of the ovum and the result of the malposition. In 27, or 9.86 per cent., "decidual endometritis independent of malpositions" is registered as the cause of abortion. It is surprising to find that only 8 cases (2.92 per cent.) are registered under "probable causes" as due to syphilis.

Lastly, some careful observations of the catamenial history of these cases appear to show that the "menstrual waves" (neuroses in early pregnancy appearing at the usual time of the menstrual flow) mark the periods of greatest liability to abortion. A month after the appearance of Dr. Titus's paper, an important article[2] on spontaneous and criminal abortions, by Professor Herrgott of Nancy, was published in a French serial. As in the case of the Baltimore Hospital, it is the worst abortions, as a rule, that come into the maternity of the capital of old Loraine. Among 4,690 women admitted for delivery or puerperal trouble, there were 386 abortions; 22 of the former (0.51 per cent.) died, whilst 10 out of the 386 abortions ended fatally. Infection after admission was rare, occurring in only 6 of the 4,690 labours. Herrgott discusses at some length the ethical questions associated with abortion and hospital accommodation for parturient women.

[2] Avortements spontanés et avortements criminels. *Annales de gyn. et d'obstét.*, July, 1912, p. 385.

THE INTENTIONS OF THE GOVERNMENT AS TO REMUNERATION.

A STATEMENT circulated by the Press Association appeared in a number of daily papers on Tuesday to the effect that at the Cabinet council on the previous day it had been agreed to increase the amount available for medical benefit under the Insurance Act; it was added that the rumoured addition to the total annual sum was one million pounds, which it was stated would mean an increase to 7s. 6d. a head. We are in a position to state that the story is apocryphal. The matter was not considered by the Cabinet council on Monday, and it is not yet known when it will be considered; the delay may, without much hesitation, be attributed to anxieties relating to the disturbed conditions in the Balkans.

HOSPITAL RESIDENTS AND THE INSURANCE ACT.

THE Insurance Commissioners have fixed October 22nd, at 2.30 p.m., at the house of the Civil Service Commissioners, Burlington Gardens, for the inquiry to be held at the instigation of the Medical Defence Union in respect of the question whether, under Section 66 of the Insurance Act, resident medical officers are employed under a contract of service which would bring them within the provisions of the Act. The Medical Defence Union is raising a test case, but will also give evidence generally upon the point at issue. Its contention is that there is no such contract of service, and it will be urged that to compel resident medical officers who get a small salary *plus* board and residence to take out insurance cards and pay the tax when no benefits are derivable by them under the Act is inequitable. If the Commissioners are against the contention of the Medical Defence Union, it will appeal to the county court, and will, if necessary, carry the matter to the High Court.

LABORATORY WORK FOR INSURED PERSONS.

IN the October number of the *Journal of Clinical Research* a leading article discusses a question of considerable importance, of which more is likely to be heard in the near future. Assuming the ultimate success of the Act, and waiving the discussion of the precise form in which medical benefits are to be administered, the opinion is expressed that the great extension of contract practice which is regarded as inevitable will be attended by an improved standard, and it is said, "the great interest aroused in all matters connected with the efficient practice of medicine will give a marked impetus to laboratory methods of diagnosis and treatment." Constant access to laboratory aid will be one of the daily necessities of the members of every panel; the question, therefore, inevitably arises, how such facilities can most effectually and economically be provided. The rapidly growing demands of the technique of modern methods of clinical research make it chimerical to expect every general practitioner to undertake such responsibilities on his own account. The two most probable alternatives would seem to be either the provision of a local laboratory in each district, or the general adoption by county authorities of a plan already worked in

many centres, whereby an agreement is made by one of the central laboratories to investigate and report on all sorts of material which the practitioners within the county area desire to have examined. In the opinion of our contemporary, the latter is the preferable plan, the numerous departments and sub-departments into which a modern laboratory is now divided rendering the work impracticable upon a limited scale, while the existing facilities of transit make the advantages of personal contact in great measure illusory. This argument certainly seems valid so far as comparatively small and thinly-populated districts are concerned; but it is unlikely that either of the two plans will be exclusively adopted. In any case it is thought probable that a lower range of charges will be arranged for in respect of work done by existing laboratories for contract patients, or else that a fixed annual sum will eventually be arrived at in each centre to cover all the work that may be required. These are, of course, mere speculations, but it is clear that laboratory methods of diagnosis or treatment cannot be provided for out of the minimum capitation fee.

VISION TESTING IN THE MERCANTILE MARINE.

The Board of Trade report on the sight tests used for the mercantile marine for the year ending December 31st, 1911, differs in no important respect from its predecessors. Like them, it illustrates the unsatisfactory methods still used in the official tests. During the year 1911 the total number of candidates examined was 7,309, and of these 7,192 passed in the form test; none of the 117 who failed were re-examined: 7,000 were successful in the colour-vision test: of the 192 who failed 97 were re-examined on appeal, and of these 56 passed and 41 failed. It is stated that "no case of failure to pass the colour-ignorance test has been reported." As to the form test, it can only be said that the examination was conducted by men who have no technical knowledge, and that as no one appealed it is impossible to draw any conclusion. As to the colour-vision tests, we have on several occasions commented on the fact that about 50 per cent. of those rejected by the lay examiners for colour blindness are proved on appeal to be normal sighted; it is true that, owing to the defective methods in use, the results of the appeal cases are open to doubt, but we can only take the official figures and assume them to be correct. This year a higher level of rejections was reached. Of the 97 cases no fewer than 56 passed, or 57.73 per cent., and 41 failed (42.27 per cent.). As there were in addition 95 who were rejected but did not appeal, it is only fair to infer that this group also contained a percentage of normal-sighted people, most of whom would be unable to get another appointment on account of the defect alleged to be present. This is a very unsatisfactory state of things. The Board of Trade, representing the largest maritime nation in the world, employs examiners so untrained and tests so bad that, according to its own showing, over 57 per cent. of those who appeal are wrongfully rejected. Moreover, if certain tests in the hands of certain examiners lead to the rejection of normal-sighted people, it is certain that the opposite will occur, and that colour-blind people will be passed as normal. The Holmgren test, on which the Board of Trade relies, is not to be trusted. A good half or more of those dangerously colour blind can pass it with ease, and nearly all can pass it if they are coached in it for a few days previous to the examination; any matching test will certainly cause the rejection of many normal-sighted people, especially the Holmgren tests. It cannot reasonably be doubted that many accidents are caused by colour-blind look-outs at sea, but as the Board of Trade refuses to examine the sight of men concerned in collision cases at sea, it declares itself officially unaware that any such accidents have taken place. As was pointed out in commenting on the report of the Departmental Committee appointed to investigate the whole question of the sight tests, it whitewashed the Holmgren test, but it had to be admitted that some cases could only be caught with a lantern, and a new lantern of simplified construction, deemed suitable for the use of untrained examiners, was recommended. The report we are now considering states that "steps are being taken to carry into effect these alterations in the tests at the earliest practicable moment" (that is, the recommendations of the Departmental Committee). Although one or two of these suggestions are good, particularly that as to the employment of an expert examiner, yet the net result is not likely to lead to any great improvement in the present state of affairs. The colour-ignorance test is based on the assumption that a man whose intelligence is such that he aspires to be an officer in the mercantile marine may yet be so ignorant that he does not know that red is red or green green. As well might one invent a test to see if such a person knows the difference between water and land. If a man calls red green it is because the colours appear to him to be similar, and is certainly not due to ignorance of such a glaring type that he knows not that a field of grass is green or a fire engine red. The recent Departmental Committee has not settled the matter, and sooner or later it will have to be reinvestigated. One result of such reinvestigation will be that the official examiners will be men who know something about the physiology and pathology of the eye, and whose findings will not be found to be wrong in upwards of 57 per cent. of the cases which appeal after rejection.

MEDICAL TERMS IN THE NEW ENGLISH DICTIONARY.

The first term with distinctively medical relationships that meets the eye in the new portion of the *Oxford English Dictionary*[1] is *senna*, which comes to us through the Latin from the Arabic *sana*, a shrub of the genus Cassia. The name, however, is also given with defining words to shrubs of other genera with similar medicinal properties; such are bastard senna, bladder senna, Chili senna, and wild senna. The senna of the pharmacist is the Cassia one, and is distinguished as Alexandrian, Arabian, Indian, or Tinnevelly senna. It is employed as a cathartic and emetic, and the detestation with which it is regarded in the youthful mind is reflected in such a quotation as that from Godwin (in his *Caleb Williams* 1794): "I shall hate you as bad as senna and valerian": but Lord Chesterfield in one of his sagacious and worldly-wise *Letters to his Son*, advised "chewing a little rhubarb, when you go to bed at night, or some senna tea in the morning"; who, indeed, does not know the virtue of a "dose of calomel, followed by a senna draught in the morning" for the stirring up of the lazy liver? Turning over the pages we come to *sensation*, a word which, we are reminded in a quotation from Allbutt's *System of Medicine*, is a popularly employed synonym for the aura epileptica, and sometimes for the minor attacks themselves. The *Dictionary* is, thanks to Dr. Henry Bradley, who is responsible for the present part, well abreast of modern science, for under *sensitization* we find the explanatory quotation that "in the view of Bordet and the French school generally, the action of the immune body is a sensitization." The word *sensorium* has passed through some interesting phases. It meant at one time the brain as the organ of mind and the centre of nervous energy; then "that part of our brain in which our mind does principally reside," as Porterfield described it in 1737; and now its more restricted signification is "the percipient centre to which sense-impressions are transmitted by the nerves." It is also used "playfully in

[1] *A New English Dictionary on Historical Principles.* Senatory-Several (vol. viii) by Henry Bradley. Oxford, at the Clarendon Press: Henry Frowde. Double Section, 5s. October 1st, 1912

non-technical writing" for brain or mind; and an illustrative quotation comes from Sterne's *Tristram Shandy* (1759): "The ringing of the bell, and the rap upon the door, struck likewise strong upon the sensorium of my uncle Toby." But it also has a figurative use, as in Sir Isaac Newton's grand conception of infinite space as "the *Sensorium* of the Godhead," and in Macgregor's apt and delightful definition of the tiller as the "delicate and true sensorium of a boat." Dr. Bradley resembles the good surgeon in the small space he allows for *sepsis*, only five lines; but is he right in classifying it as a word not fully naturalized? It is news to us that *septic acid* is an obsolete term for nitric or nitrous acid, and that *septon* was once the name for nitrogen, "from its being regarded as the agent in putrefaction"; but if we knew all these things there would be less need for the *New English Dictionary*. Other medical terms, over which we must not linger but which are all interestingly dealt with, are *septuplet* (a doubtful occurrence), *septum* (in an anatomical sense), *sequela*, *seralbumen*, *sequestrum*, *serene* (as in Milton's well-known "drop-serene" or *gutta serena*), the big group of the *sero-* compound words, such as *serotherapy*, *sero-pus*, etc., *serpiginous*, *serre-fine*, *serre-noeud*, *sesamoid*, and *seven-days disease* (a kind of tetanus).

CITIZENS IN THE MAKING.

From Winnipeg comes a report on the reclamation of children, full of lessons for social workers in this country.[1] The work is in the hands of the judge of the Juvenile Court, Mr. F. J. Billiarde, B.A., who writes with abounding enthusiasm, sympathy, and clearness of vision. He shows that there is in the flotsam and jetsam of the juvenile population a potentiality for good, needing only suitable treatment for its development. All agree that for the individual to attain good, effort is needed; that reputable citizens do not grow up by chance, but must be trained. The converse proposition, that bad citizens only become so by an effort, is not so readily grasped. The implication in "Satan finds some mischief still for idle hands to do," is that the idle slide without effort into vice and crime. But Judge Billiarde contends that the criminal is made and manufactured, just as the good man is moulded and trained. Take away bad influences, or remove the child from them, and potential criminals become useful citizens. Of 500 cases which passed through the Juvenile Court, only 17 proved beyond control. Many of the cases investigated were merely school truants, but in many physical defect or incapacity was at the root of the truancy, and medical attention cured many cases which scholastic severity would have aggravated. The importance of methodical, regulated play is emphasized. Too often the street is the child's only playground. In Manitoba playgrounds in the charge of competent playmasters have been provided. Whilst Juvenile Courts are said to mark the century's greatest advance in judicial procedure, the employment of amateur probation officers is strongly condemned. The report is profusely illustrated, shows the many agencies which can be brought into action to make the most of the raw material of citizens, and deserves the attention of all interested in the welfare of the country and its children.

GUNSHOT WOUNDS OF THE SPLEEN.

In an instructive monograph on this grave form of injury, M. Maurice Guibé[2] gives notes of 108 cases, including several under his personal observation. It is remarkable to find how, thanks to surgical boldness and modern technique, patients with the most complex injuries have been saved. Thus out of 15 cases of wounds of the spleen, alone or associated with damage to the adjacent kidney, in which the track of the bullet passed through the thoracic cavity, and splenectomy was performed, 5 patients were saved. Out of 3 of the same class in which the wound in the spleen was sutured, 1 recovered, and 1 out of 4 in which the wound was packed with gauze was saved. Complex intra-abdominal lesions, with injury to the thorax as well, showed, as might be expected, a very high mortality, 23 out of 29 patients being lost. The most instructive series is the group of uncomplicated injuries collected. M. Guibé defines this group as purely abdominal wounds with lesions of the diaphragm but no damage to the adjacent pleura. With wound of the spleen alone, it is most encouraging to find that of the 23 cases in this subdivision 16 were saved. The spleen was removed in 15 cases with 12 recoveries; 3 out of 5 cases in which the splenic wound was closed by suture were saved, but 2 out of 3 in which the wound was packed ended fatally. The parietal incision was median, lateral, subcostal, or thoraco-abdominal. The immediate cause of death in the fatal cases was haemorrhage in 4, peritonitis in 2, and tetanus in 1. Under the main group of purely abdominal wounds, complex lesions of other viscera showed a lower mortality than the corresponding series in which the thorax was also involved. Splenectomy was practised altogether in 55 cases of gunshot wounds of the spleen, simple and complicated, with 23 recoveries and 27 deaths, and altogether it seems the safest treatment even in complicated cases. Guibé definitely states that in not a single fatal case in his series was the death of the patient due to the surgical operation. In the remaining fatal cases no other treatment, suture, packing of the wound, cauterization or non-surgical, could have prevented an unsuccessful issue. He finds that the finishing steps of the operation after the pedicle of the spleen is secured are to be duly considered. Experience shows that wounds of the diaphragm, however small, must be carefully sutured and the pleura similarly treated in every kind of case where it is involved in the gunshot wound. Blood effused into the peritoneal cavity must be thoroughly removed save when the patient's condition is very unsatisfactory. When a tract of peritoneum has been ripped up, leaving a wide oozing raw surface, the damaged area should be packed and drained. Drainage is, of course, necessary when the peritoneum has been soiled with the contents of the alimentary canal, and Guibé finds that it is best to make a suprapubic incision in the parietes so as to drain Douglas's pouch. The head of the bed must be well raised. In direct wounds of the spleen, where the bullet has not damaged the hollow viscera, drainage of the peritoneal cavity after removal of the injured organ may often be dispensed with.

DR. RODDICK AND THE DOMINION MEDICAL ACT.

At the forty-fifth annual meeting of the Canadian Medical Association, held in Edmonton, Alberta, Dr. T. G. Roddick was elected for life honorary president of the association in recognition of his distinguished services in promoting and carrying to a successful issue the Dominion Registration Act. In his inaugural address the president, Dr. Mackid of Calgary, sketched the history of Dr. Roddick's work for Dominion registration, and said that he was only expressing the sentiments of the whole profession in Canada when he said that it owed a deep debt of gratitude to Dr. Roddick, who had been the direct means, and in a sense the only means, by which this beneficent law had been placed on the statute book. "We realize," he continued, "what a vast amount of time and energy he has expended on this work; how, indeed, he has given many of the best years of his life to it. And in thanking him we desire to record, not alone our appreciation of the work he has done, but also of the sacrifice it has cost him. If it is, in his eyes, any reward that the profession throughout the country

[1] Annual Report of the Superintendent of Neglected Children for the Province of Manitoba, 1912. F. J. Billiarde, Attorney-General's Department, Legislative Buildings, Winnipeg. Pp. 178. Illustrations 44.)

[2] *Revue de gynéc. et de chirurg. abdom.*, May and June, 1912.

feels grateful to him for his work; if it is to him any gratification that the whole of Canada has learnt to call this bill the 'Roddick Bill'; if it is any pleasure to him to realize that every member of the profession, thinking of this task which he has accomplished, looks up to him with respect largely mixed with affection, let him be assured that all this is true. It is an achievement which perhaps no other medical man in Canada could have brought to pass. The task of reconciling so many diverse and even warring interests in the various provinces of the Dominion; of overcoming prejudice, and of bringing together those of dissimilar views, was only to be accomplished by a man whose professional reputation was high from East to West, and whose tact had become almost proverbial from East to West. People not only gave him affection; they gave him respect. It was the combination of qualities of head and heart in him which finally brought this great matter to a successful conclusion. One of the chief privileges of my office this year lies in the opportunity which it affords me of thus giving public expression, on behalf of the association, to the gratitude which we all feel towards Dr. Roddick." The first meeting of the Dominion Medical Council is to be held this month, and it is hoped that by next May the preparatory work will be complete, and the new arrangements in full working order. When this has been accomplished it will be possible for a medical practitioner who has passed the examination prescribed by the Dominion Medical Council to practise in any province in Canada, instead of, as at present, only in the province or provinces where he has satisfied the requirements of the respective provincial medical councils. The value of the work which Dr. Roddick has done in this matter is fully appreciated on this side of the Atlantic, and members of the medical profession in Great Britain will join their brethren in Canada in congratulating Dr. Roddick.

BART'S IN THE FIFTIES.

In the October number of the *St. Bartholomew's Hospital Journal* Mr. K. Macfarlane Walker gives an interesting account of a conversation which he had with Dr. J. S. Edye, who was a student at the great Smithfield hospital fifty-five years ago. He met Dr. Edye by chance in Buenos Aires, and lured him into talking of his old school as it was in his day. When Dr. Edye entered in 1857 Lawrence was surgeon and lecturer on clinical surgery. Paget was assistant surgeon and lecturer on physiology and pathology. Skey lectured on anatomy, and Holden, Savory, and Tom Smith were demonstrators. Of the lecturers the finest was Paget, who, though he spoke quietly and without any attempt at oratory, held his audience spellbound. Skey was popular with the students, and always prepared himself for his lecture with a glass of port. Lawrence was remarkable for his cold, unemotional temperament; nothing ever ruffled the calm of his bearing. It is related that on one occasion when he was making his round, Stanley, who happened to be in the same ward at the time, was suddenly taken ill. Lawrence was just on the point of leaving the ward when he was called to render assistance to his colleague. He accordingly went back and carefully examined the stricken man, the students crowding anxiously around. When he had completed his examination Lawrence said, "Gentlemen, Mr. Stanley is dead; we will now proceed with the next case." Lawrence lectured at the inconvenient hour of 8 in the evening, and he spoke in a low voice, which made it difficult to catch his words. Once the noise made by a convivial party which had established itself in the gallery of the lecture room drowned his speech altogether. After a time one of the studious front bench men interrupted the lecturer with a request that he would ask the gentlemen in the gallery to make less noise. "Gentlemen?" said the undisturbed Lawrence, looking round the gallery, "Gentlemen? Really, I don't seen any." The surgery of the period was limited, consisting mainly of amputations and cutting for stone. Washing the hands before an operation was entirely optional. Two forms of dressing were in common use—lint spread with lard, and lint spread with unguentum resinae. The operation wound was exposed at the end of twenty-four hours, and if there were no signs of irritation around the sutures, the dressings were reapplied. If, on the other hand, signs of inflammation were visible, the wound was opened up and the character of the pus carefully noted. The subsequent appearance of even a cupful of "laudable pus" did not disturb the operator's tranquillity of mind. A poultice was applied and a favourable prognosis was given. If, however, the pus had a greenish appearance, or was streaked with blood, the surgeon shook his head and proceeded with the next dressing.

PICTURES OF GUY'S HOSPITAL.

We have received from Messrs. W. H. Beynon and Co., of Cheltenham, a series of collotype reproductions of sketches of Guy's Hospital. The sketches are by Mr. Hanslip Fletcher and bear evidence of recent execution, inasmuch as they show details of the very latest alterations of and additions to the hospital buildings. Great changes have been made in the structure of the hospital during the last twenty years, and old Guy's men often declare that they cannot find their way about when they revisit their old school. These drawings, however, indicate that the main architectural features of the original buildings still dominate the place, and that the rebuilding schemes have been carried out with due regard to ancient traditions. The sketches will appeal equally to the student of to-day and the practitioner who learnt to love the old-world features of the hospital fifty years ago. The sketches were made in the spring and early summer, and give prominence to the well-grown trees in the "Park," which are such a pleasant surprise to the stranger entering the hospital for the first time from the densely-crowded thoroughfares which surround it. There are eight pictures in all, dealing for the most part with exterior views, of which the most popular will probably be the Front Quadrangle, as being the most characteristic part of the original building planned by Guy himself. The series as a whole is well designed to bring to the memory the everyday scenes familiar to all who have worked at Guy's. They have considerable artistic merit and are well reproduced. Guy's men all over the world will like to have and to keep these pleasant mementoes of their Alma Mater.[1]

THE RULE OF THE ROAD.

Since one advantage of travel is change of scenery and habit, the increasing sameness of life in all large towns is possibly a matter for just regret. Nevertheless, one of the few remaining marked differences between English and foreign towns might disappear, with advantage to everyone. This is in regard to traffic: in these islands, as everyone knows, traffic follows the left-hand side of the road, the drivers sitting on the right-hand side of their vehicles, and when travelling in opposite directions passing one another right hand to right hand; while abroad, precisely the opposite practice has hitherto obtained. How either rule arose it is difficult to say; possibly the foreign rule is a survival from the tilting-yard, wherein jousters approached one another guard (or shield) arm to guard arm, the same considerations also originating the practice of foot passengers keeping each to the right of his own line of progress. Provided that in either case the driver sits on the side of his vehicle furthest away from the footpath on his own side of the road, and is thus in a position to gauge with precision the distance between the wheels of

[1] Messrs. Beynon's address is St. Alban's Lodge, Howlett Street, Cheltenham, and the price of the set of eight drawings is 31s. 6d.

his own carriage and that of any other which he is meeting and passing. the arguments in favour of these converse rules may be regarded as having remained fairly well balanced so long as horse-driven vehicles were alone concerned in the question. But with the introduction of automobile vehicles the whole situation changed. It is essential that a chauffeur should have his best arm free for the work of controlling his brake and gear levers, and this fact was tacitly recognized even by the earliest of French builders of automobiles, with the result that they placed the gearing on the right-hand side of the chassis and the chauffeur's seat on the right hand also. This fact at once weighed down the balance in favour of the English rule of the road. since obviously a driver seated on the right-hand side of his carriage is not in the best position to gauge how much space there is to spare when passing a vehicle to his left. In consideration of this fact, a committee officially appointed in France to consider the traffic regulations has decided, it is understood, to recommend adoption of the English rule of the road. If France thus takes the lead in the matter, it seems quite probable that the International Tourist League may persuade all Continental countries to fall into line. As a matter of practical politics, no one is likely to regard the change as objectionable, but academically the ambidextral enthusiasts may possibly consider the French argument a slur upon their faith. They will be entitled to a certain measure of sympathy, since, so far as anatomy is concerned, there is little or nothing to show that their belief is ill-founded. Nevertheless, the fact remains that the great majority of mankind habitually uses one hand more than the other. According to Professor Smith, one of the greatest authorities on the history of man, superiority of one hand is as old as mankind and is one of the factors incidental to the evolution of the particular class of animal represented by it. Why precisely the right hand was chosen by the majority of mankind Professor Elliot Smith recently expressed himself unable to determine, though scores of anatomists and others have been ready with explanations. Possibly some slight mechanical advantage in the circumstances of a limb, or even some factor affecting the motor area of the left side of the brain, by which the right side of the body is controlled, may have inclined the balance in favour of the right arm; and the forces of heredity have continued to perpetuate a tendency early imprinted on man's structure. It is true, of course, that some people are born, so to speak, left-handed, but this circumstance Professor Elliot Smith suggests may be explained by the assumption that originally half mankind was left-handed, half right-handed, and that the former condition was either recessive in the Mendelian sense, or some infinitesimal advantage accrued to the right-handed members of the original community, and led in time of stress to these being spared in preference to the left-handed individuals. This in its turn led to the left frontal convolution of the brain becoming more educated than its fellow on the right, and thus eventually to its becoming chiefly concerned in the exercise of the faculty of speech.

"FICTION ABOUT HOSPITALS."

UNDER this heading an article appeared in the BRITISH MEDICAL JOURNAL of September 28th, in which attention was called to a particularly ignorant and mischievous attack on hospitals which had been published in a recent number of Cassell's *Magazine of Fiction*. We are assured that the article appeared through an unfortunate oversight, and we have received a copy of the current issue of the magazine referred to in which Mr. H. Norman Barnett, of Belfast, replies to the charges made by the writer of the article upon which we commented. This is satisfactory as far as it goes, though, as always happens in such cases, many have doubtless absorbed the bane who will not receive the antidote. It is unnecessary to go over the same ground again. There are one or two points, however, made by Mr. Barnett on which a few words may be said. He vindicates the character of the medical student, and tells the story of a girl in a hospital with which he is connected who for many years had required a surgical appliance for which her family could not pay. On learning this the student who was dresser to the case collected from his fellows and some of the staff a sufficient amount to pay for the appliance. To this we could from our own recollection add innumerable instances of the sympathy for suffering which the medical student hides under a careless, or it may be gruff, exterior. He has a horror of appearing sentimental, and would blush to find that the good he does by stealth has brought him fame. The medical student is not a plaster saint, his language is occasionally highly seasoned, and his behaviour may sometimes be a trifle noisy. All this is after all only the effervescence of the high spirits natural in healthy youth. Thirty years ago this was much more conspicuous than it is in these days, when the nightmare of an impending examination almost constantly haunts the student. Yet, even in the rough time of which we speak, we have known—not once or twice, but often—students buy out of a slender purse food for poor women to whom they had ministered in their hour of travail, and sweets for children, and subscribe to little funds for destitute patients. When blood has been wanted for transfusion, volunteers could always be found in plenty. The writer of the article spoke of patients being "mauled about by incompetent youngsters." This recalls an incident which happened within our own knowledge. A certain famous physician of former days, who himself concealed a heart of gold under a somewhat blusterous exterior, was a terror to his young assistants from his habit of personally verifying all the physical signs recorded in the notes; and if the notes were not accurate, the house-physician was made a fixed figure for the scorn of the time the visit lasted. Coming one day to the bed of a woman very ill with double pneumonia, the great man listened to the notes with his usual attention. At the end he said, "Mr. ——, did you examine this patient in the usual manner?" The answer being in the affirmative, the question was further pressed, "Did you make her sit up in bed and examine the back?" "Yes, sir." "Then," thundered the chief, "you should be ashamed of yourself!" The point about the story is that the house-physician, seeing how ill the patient was, had supplied the necessary imperfection of his examination by what John Tyndall would have called the scientific use of the imagination. The moral is plain, but we commend this true story to the attention of all writers of fiction about hospitals.

REPRINTS.

WE received last week, too late for insertion, a letter from Dr. W. Blair Bell pointing out the inconvenience experienced by those who wished to bind together reprints of papers bearing on the same subject owing to the fact that the various journals and societies do not use the same or even approximately the same size and shape of paper. He suggested that a common international standard of size should be adopted. The existing variation is well illustrated by a volume of collected papers from the Department of Pathology in the University of Oxford (1909–11), issued early this year. It contains fourteen reprints, the pages of which vary in dimensions from 8¾ in. by 5½ in. to something over 10¼ in. by 8 in. The last is a reprint from the *Philosophical Transactions* of the Royal Society of London, and has been a little cut down by the binder. Dr. Blair Bell believes that "it would be quite simple to make universal an international size such as that adopted by the

Royal Society and the Royal Society of Medicine—namely, 10 in. by 7 in."—although he thinks 10¼ in. by 7¼ in. would be better, allowing the ¼ in. for trimming by the binder. This is not the first time that the difficulty put in the way of classifying reprints for binding together by the variation in the size of the pages has been pointed out, and if we remember right, a determined effort was made in America to bring about uniformity, but not, we believe, with anything approaching complete success. The matter is, indeed, not quite so simple as it looks; the Royal Society has two sizes. The size of reprints from the *Transactions* has been mentioned. Reprints from the *Proceedings* measure 6¾ in. by 10 in. The abstracts for the meetings are on a page measuring about 5 in. by 8 in. Again, if we take the page of the British Medical Journal and of the *Lancet*, we find that the reprints of both could be made in double column on paper a little larger than Dr. Blair Bell suggests; in single column, which is generally preferred for reprints, we should have, if paper so large were used, a neat rivulet of type meandering through a meadow of margin with, as the necessary consequence, increase in cost and in bulk. Reprints are at present made from these two journals and from the majority of British and foreign journals in a single column on an octavo page. In the case of the home journals the page measures about 5½ by 8⅝ in., a little more or a little less, and the French journals as a rule are about the same size. The page used for reprints from the *Centralblatt für Bakteriologie*, and some other German periodicals, is about 9¼ by 6¼ in.; in the case of some others it is rather smaller than that used by the British and French journals. Meanwhile we may suggest that the difficulty may be turned by filing reprints in portfolios. This plan would probably be cheaper than binding, and has the advantage of rendering it possible to keep a collection of reprints on any subject up to date, and to classify and subdivide them as the subject grows.

THE CHIEF SURGEONSHIP TO THE METROPOLITAN POLICE.

The vacancy in the office of Chief Surgeon to the Metropolitan Police, caused by the lamented death of Mr. Clinton Dent on August 26th, has not yet been filled, and no decision is, we understand, likely to be reached until after October 21st. Mr. Clinton Dent, in 1904, succeeded the late Mr. A. O. Mackellar, surgeon to St. Thomas's Hospital, who was appointed in 1885 on the resignation of the late Mr. Timothy Holmes, surgeon to St. George's Hospital, who had held the appointment for twenty years.

On Tuesday, September 24th, Dr. James Pearse was presented by the members of the Trowbridge Division with a cheque which had been subscribed to by practically every member of the Division. Dr. Trevor Shorland, Chairman of the Division, in making the presentation, spoke of the time and work which Dr. Pearse had given for many years past to the secretarial duties of the Division, and especially to his work in the past year on the State Sickness Insurance Committee. Subscriptions were, in almost every case, accompanied by letters expressing appreciation of Dr. Pearse's services in the past and hope that he would for many years continue to act as Divisional Secretary.

The first meeting of the Child Study Society will be held at the Royal Sanitary Institute, Buckingham Palace Road, on October 17th. During the session two meetings will be held for the consideration of the Montessori system, one on November 15th, to be presided over by Mr. R. Blair, Education Officer, London County Council, and the other, on the following day, by the Right Hon. Sir John A. Cockburn, K.C.M.G., M.D.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

The Autumn Sittings of Parliament began on Monday, and the novel experiment of reassembling on the first day of the working week proved a success, in spite of the gloomy forebodings that the inconvenience of the day would oblige members from a distance to miss the sitting. The attendance in the Commons was indeed large, in spite of a relatively poor show on the part of the Labour Party and the Opposition. In the Lords, as the business was purely formal, the attendance was not large, and the Upper House sat for less than half an hour. In the Commons only a few questions were asked, chiefly relating to the Balkan crisis, foot-and-mouth disease, the loss of submarine B 2, and the Insurance Act. After questions and a statement on business by the Chancellor of the Exchequer, in the absence of the Prime Minister, the House proceeded to discuss the Report of the *Titanic* Commission. The debate was full of interest, and in face of two motions for the Closure, which the Speaker declined to put, the speeches went on till 11 o'clock, when the House adjourned.

The Course of Business.—Speaking for the Prime Minister, Mr. Lloyd George stated that Tuesday and Wednesday would be given up to the debate on the report and third reading of the Temperance (Scotland) Bill, and for this purpose the eleven-o'clock rule would be suspended. Thursday would be devoted to the closure resolution of the Home Rule Bill, and on Friday a motion would be submitted for the appointment of a Select Committee to consider the Marconi contract. After the Home Rule Bill closure is passed the Government will take the whole time of the House in order to have a reasonable chance of passing their proposals. With Home Rule, Welsh Disestablishment, and the Franchise Bill all to be passed before the session ends, the prospects are that March will be reached before Parliament can rise. Some odd scraps of time will be utilized to help on such measures as the Mental Deficiency Bill and one or two others that have passed through the Grand Committee. There will also be certain necessary bills which must be passed before the session can be closed. Everything points to a long and strenuous struggle up to Christmas, and an almost equally busy time for the opening months of next year.

The Insurance Act was the subject of many talks in the Lobby and members are strongly interested in the dispute between the doctors and the Chancellor. One of the first questions asked in the House was with reference to the Act and the order paper contains some dozen other questions to be asked on early days. So far the honours in the struggle are with the British Medical Association, but the power of the friendly societies for political purposes is so great that many members consider that in the end the societies will prove too powerful for the doctors. Whatever Mr. Lloyd George may decide to do he will have plenty of difficulties to surmount in the next few months.

National Insurance Act.

Health Insurance Contributors.

Mr. C. Bathurst asked the Secretary to the Treasury, how many persons had now joined approved societies for the purposes of health insurance under the National Insurance Act; what proportion did these represent of the total number of employed contributors in the Kingdom; and how many of them were women? Mr. Masterman said that he had no exact figures additional to those given before the recess, which estimated about ten and a half million members as having then joined approved societies. Further information would require a circular to about 20,000 approved societies and branches: but he hoped that when the first quarter's cards were returned by the societies to be able to give more exact numbers.

The Milk and Dairies Bill is to be introduced shortly by the President of the Local Government Board.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

Demonstrations at the Royal College of Surgeons.

The museum demonstrations at the Royal College of Surgeons of England will be resumed on Friday next at 5 p.m., when Professor Arthur Keith will discuss and exhibit specimens of defective growth, including a skeleton of a boy who suffered from the disease described by Mr. Hastings Gilford under the name of progeria, and of a child the subject of infantilism. On October 25th, at the same hour, Professor Keith will demonstrate a number of specimens recently added to the museum, and on November 1st specimens illustrating the comparative anatomy of the caecum and appendix, of the gall bladder, of the thyroid, and of the tonsil. On Mondays, October 21st and 28th, Mr. S. G. Shattock will demonstrate specimens illustrating diseases of the genito-urinary organs, and on Monday, November 4th, specimens illustrating diseases of some of the ductless glands; Mr. Shattock's demonstrations will be given at 5 p.m. on each day. On Wednesdays, October 23rd and 30th, Mr. J. F. Colyer will demonstrate John Hunter's specimens illustrating the formation and growth of teeth and the natural history of the human teeth, and on November 6th specimens illustrating periodontal disease in man, wild animals in captivity, and domesticated animals. Mr. Colyer's demonstrations will be given at 5.30 p.m. on each day.

The Medical Society of London.

The winter session of the Medical Society of London will be opened by a general meeting at 8 p.m. on Wednesday next. The President, Sir Watson Cheyne, will give an introductory address dealing with the early history of the late Lord Lister at 8.30 p.m., and this will be followed by a paper on a case of anaemia of the pernicious type with acholuric jaundice by Drs. Poynton and Pedler. A clinical meeting will be held on October 28th, when papers will be read on hedonal anaesthesia, and discussions have been arranged on respiratory neuroses, to be opened by Dr. Samuel West, on November 11th, and intestinal stasis to be introduced by Mr. Arbuthnot Lane on December 9th. The Lettsomian lectures will be given by Mr. James Berry, F.R.C.S., on February 5th and 19th and March 4th; the subject selected is the surgery of the thyroid gland, with special reference to the exophthalmic goitre. The anniversary dinner will take place at the Hotel Metropole, on March 5th.

The M.O.H. and the M.O. to the Port of London.

The Court of Common Council of the City of London, at a meeting on October 3rd, had under consideration the question of the salary to be allotted to the next occupant of the post of medical officer of health in the city, which is shortly to become vacant. The Officers and Clerks Committee submitted a recommendation that the pay should be £300, rising to £1,000, but an amendment to the effect that the initial salary should be £1,000 a year was moved on the ground that the occupant of the post had always been a man of professional eminence, and that the lower salary suggested would not now attract a man of like character. The amendment was adopted, and it was also resolved to raise the pay of the medical officer of the Port of London to £1,000.

Lambeth Tuberculosis Dispensary.

The Lambeth Borough Council has decided to establish a municipal tuberculosis dispensary. Two schemes were submitted to the council at the meeting on October 3rd—one estimated to cost £1,000 a year, and the second £671. The council chose the cheaper scheme, which provides for a medical tuberculosis officer at £300 a year; a trained nurse, £80; and medicine, £100. The remainder is [illegible] up in establishment charges. The initial cost was estimated at £200. It was anticipated by the Public Health Committee that substantial assistance would be forthcoming from the Insurance Fund. Mr. W. Gough Cook said, from his experience on the Metropolitan Asylums Board, he doubted whether it was possible to obtain the services of an expert tuberculosis medico for £300 a year. The duties were of a special nature, and the Insurance Commissioners fixed the commencing salary at £500. Mr. J. E. Wood, the Chairman of the Public Health Committee, said they were prepared to pay an initial salary of £500 if necessary. At the present time 3,000 patients living in the borough had been notified as suffering from tuberculosis.

The Provision and Management of Sanatoriums.

At the meeting of the Metropolitan Asylums Board, on October 5th, letters from the Lewisham, Bermondsey, and Poplar Borough Councils were read, stating that they concurred in the proposal that the provision and management of sanatoriums under the Insurance Act should be entrusted to the Asylums Board.

The Vice-Chairman (Professor W. R. Smith) thereupon, according to the report in the *Times*, made the following statement:

That the Board had already adopted a resolution stating that they were willing and able to provide sanatorium accommodation for London and to place at the disposal of the authorities from 800 to 1,000 beds for that purpose. That number of beds corresponded to the requirements of the Departmental Committee which dealt with the subject. A conference of representatives of the various London boroughs had unanimously resolved that the Board was the proper body for the purpose, not only because it consisted of men who had for years devoted their attention to hospital administration, but because it already dealt with hospital provision for infectious cases in London. Tuberculosis was now a notifiable disease, and it was felt by the representatives of the various public health authorities that in the interests of London that Board was the one of all others to make the provision necessary for that infectious disease. Both the proper treatment of tuberculous cases and the question of expenditure were involved. In the Act of Parliament under which the provision had to be made there was a clause which imposed a disability on the whole of the public health authorities in London. A subsection of Section 16 contained the words "other than Poor Law authorities." That was the difficulty with which London was faced owing to what he ventured to say was the improper inclusion of those words in the Act so far as London was concerned. Those who legislated, somehow or other, never realized what London government was. It was totally different from the government of any county or municipal borough in the provinces. The consequence was that they were faced with difficulties over and over again, and notably in this Act.

London had at its disposal, practically immediately, 1,000 beds for the proper treatment of tuberculous cases in admirable institutions, admirably officered, and under the administration of experts who had for years been devoting their time and attention to the proper administration of infectious disease. But London was debarred from receiving the advantage by this unfortunate clause in the Act, and the people of London were not only debarred from the privilege of utilizing the material and institutions they had, but were face to face with the possibility of an enormous waste of expenditure. In the *Times* of September 24th there appeared a sort of official report from the Sanatoria Committee—a statement made by the London County Council. The Act came into force on July 15th, and on September 24th, according to that official statement, sixty applications had been received for sanatorium treatment, and of those about thirty-one had been dealt with in some way. He suggested that this was a positive scandal as far as the metropolis was concerned. Large numbers of patients were waiting to be treated, and although they had one thousand beds the Board were precluded from using them owing to this unfortunate clause. The origin of the Board was of a Poor Law character, but its work had enormously developed and increased since it came into existence, and at the present moment it occupied the position of a joint hospital board, in the sense that it provided infectious hospital accommodation for the whole of the twenty-nine local authorities in London. Why it should be stigmatized in this way in the Insurance Act and why London should be put to the risk of incurring enormous expense by the inclusion of such a clause he failed to realize. He hoped the people of London would take the matter up and do their best to remove the disability under which they laboured.

The Chairman (Mr. Dennis) said that obviously a duplication of duties in this matter must lead to unnecessary expense. Work of this character would be discharged

much more economically by an authority with machinery than by the setting up of a new authority to deal with it.

The letters were referred to a committee.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Diphtheria Regulations in Edinburgh.

The Public Health Committee of the Edinburgh Town Council has had under consideration a report from Dr. Williamson, M.O.H., expressing the opinion that whenever a case of diphtheria occurred in a household a swab should be taken from the throats of all the inmates of the house. By this method it was contended the disease would be detected in the incipient stage, and would be prevented from spreading. The difficulty of payment, however, stood in the way of this being done, but the committee decided that a fee of 1s. 6d. for every swab taken from the throats of members of a family in which a case of diphtheria occurred should be allowed to doctors in the city.

Varieties of Trees in the Edinburgh Parks.

An interesting paper was read at the last meeting of the Scottish Horticultural Association on Edinburgh's park and other trees by Mr. Richardson, who pointed out that though Edinburgh compared unfavourably with some other cities in the United Kingdom in the way of street trees, there was a considerable variety of kinds which grew well in the parks and gardens, even in the most central parts of the city. Some of the pyruses, notably *Pyrus intermedia*, did well, and thorns and laburnums also bore the injurious effects of smoke fairly well, but none of these, although they were good park trees, were at all suitable for street planting, for which the so-called "London" plane (*Platanus acerifolia*) was the most suitable. Amongst the old trees there were still good specimens of the ash, beech, sycamore, and elm; but, curiously enough, a great many of the old elms were not the Scottish species (*Ulmus montana*) but the English elm (*Ulmus campestris*), or forms of it, and specimens of the latter species seemed to be doing well. The old beech trees were gradually disappearing, never to be replaced by others of the same kind, and the same was probably true of the birch. Amongst the soft-wooded, broad-leaved trees, the white or Huntingdon willow seemed most promising, and, as a park tree, the white poplar (*Populus alba*) seemed to deserve some consideration.

Small-pox at Kirkcaldy.

No fresh cases of small-pox have occurred in Kirkcaldy since September 30th. The health authorities are, however, engaged in fitting up the Philip Memorial Hall as an emergency hospital where suspected cases will be detained.

Edinburgh Friendly Societies' Nursing Scheme.

At a recent meeting of delegates of the Edinburgh, Leith, and District Friendly Societies' Council, details of a proposed working scheme for a Scottish branch of Queen Victoria's Jubilee Nursing Institution were submitted. The scheme provides that all those producing insurance books showing membership in societies assenting to the scheme would be attended, except in the midwifery cases, by nurses of the nursing associations who came into the scheme, under the directions—after the first visit—of registered medical practitioners. Such societies would pay 3d. a year in respect of each of their members resident in areas covered by the assenting nursing associations. The moneys so paid would be administered by a committee for each county or county burgh which would distribute the money so received among the nursing associations assenting to the scheme, in proportion to the net cost of the work done on behalf of insured persons, or to the total expenditure by the different associations. The assenting societies would be entitled to representation on the special committee for each county or county burgh area, provided a certain number of members, to be fixed by each area, were being paid for in the county or county burgh. The scheme, which will be reported to the various lodges by the delegates, will be dealt with at the next quarterly meeting.

Medical Conditions in the Highlands.

The Treasury Committee appointed to inquire into the adequacy of the medical service in the Highlands and Islands of Scotland will resume its inquiry into the adequacy of the medical, sick nursing, and hospital provisions this week. Meetings will be held at Bettyhill, Laing, and Rhiconich in Sutherlandshire, and the committee will then cross to Stornoway. Several days will be spent in the Lewes, where the difficulties under investigation are probably more acute than in any other district of the Highlands and Islands. Thereafter the Committee intends to go to Harris, Uish, and Skye, and to certain centres on the Western Mainland seaboard.

New Hospital for Orphan Homes of Scotland.

The feature of the bi-annual "thanksgiving day" at the Orphan Homes of Scotland, Bridge of Weir, was the opening of the new Elise Hospital, given by Sir Thomas Glen Coats, Bart., in memory of his late wife. The hospital, which was formally opened by his daughter, Miss Glen Coats, is a handsome building in the Elizabethan style, situated on a commanding site. It consists of two main wards, each for fifteen patients, with additional single-bed wards for serious cases, and patients' day-room. There is also a matron's room, nurses' dining-room, operating theatre, *x*-ray room, and ophthalmic room. The hospital and equipment cost over £10,000. The front entrance forms a memorial porch with a marble bust of the late Lady Glen Coats and a monogram in bronze. The population of the homes at present is 1,700. Since the last thanksgiving, two years ago, 697 orphans and fatherless children have been admitted, and also 64 patients to the epileptic colony and 719 patients to the consumptive sanatorium.

Practical Study of Tuberculosis.

Arrangements are being made in Edinburgh to afford increased facilities for the practical study of tuberculosis. Courses of instruction, clinical and pathological, to last some eight weeks will be held; the first will commence on or about October 21st. Further particulars can be obtained on application to the Dean of the School of Medicine of the Royal Colleges, Bristo Place, Edinburgh.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Milk Commission.

It will be remembered that early in the year the Irish Milk Supply Commission was appointed to inquire into the alleged scarcity in the supply of milk in some parts of Ireland, and to report upon the causes of the deficiency where it exists, its effect upon the public health, and the means whereby the deficiency can be remedied; also to inquire into and report upon the dangers of contamination and infection in the present milk supply, and the methods best adapted to guard against these dangers. As has been reported from time to time, the Commission has held numerous sittings for the purpose of taking evidence in various towns throughout Ireland. Last week it commenced a further series of sittings in Dublin, with Sir Stewart Woodhouse in the chair. The secretary of the Irish Agricultural Organization Society stated that since he gave his evidence on a previous occasion he had been making inquiries into the alleged scarcity of milk, and had found that it existed all over Ireland. It was stated that one important cause was the ignorance of the labourers as to the food value of milk for their children; consequently the demand was not sufficient to create a constant supply. Professor Craig, of the Royal Irish Veterinary College, Ballsbridge, described the great precautions which he had seen taken in Denmark to keep the milk clean; all the farms were inspected every month to see that the cattle were free from tuberculosis and other affections. These inspections were in the form of surprise visits at irregular intervals. He expressed the opinion that, speaking generally, the chief cause of the success of the Danish farmers was industry and co-operation, extreme

cleanliness in handling the milk, and care in heating it to prevent it from going wrong. Dr. Barrett of Melbourne said that in Australia the Talbot Milk Institute, which was started to forward the movement of a pure milk supply, pasteurized the milk for the first year, but after that decided to supply pure cold milk collected under ideal conditions. The direct results of the system, which had been followed the last three years, were most gratifying, as the reduction in mortality has been very great; though pasteurization was better than neglect, it was always the second best thing—not so good as pure milk treated under the refrigerating system and obtained from a healthy herd.

Death of late Registrar of Royal College of Surgeons in Ireland.

We regret to announce the death of Mr. George Francis Blake, who died suddenly at the Salthill Hotel, Monkstown, last week. About twelve months ago Mr. Blake retired from the position of Registrar of the Royal College of Surgeons, which he had held for many years. He was last seen alive in his usual good health and spirits on the night of September 29th, but did not appear on the following morning, and in the afternoon was found dead in bed; death was apparently due to sudden heart failure.

South Africa.

Cape of Good Hope.

Report of Provincial Medical Adviser.

Dr. Thornton, Medical Adviser to the Provincial Government of the Cape of Good Hope, in presenting his report to the Council, states that for several years past no attempt has been made to furnish any detailed report on the working of the Government and State-aided hospitals of the province. Very considerable sums of money have been voted annually towards the upkeep of these institutions, and large contributions have also been made by public bodies and by the public. Yet the annual reports hitherto published on the subject have consisted merely of a series of tables compiled from statistics furnished by the governing bodies. This defect being recognized, Dr. Thornton was instructed to prepare a report dealing comprehensively with the question of hospital administration in the province. The report, which goes into the matter in a very full and able manner, is divided into three parts. The first part is historical, then the question of administration is dealt with, and finally, matters which require consideration in connexion with any proposed legislation is discussed.

The first hospital in the Cape was erected early in 1656. One of the principal objects of the directors of the Amsterdam Chamber of the United Netherlands Chartered East India Company, in forming a settlement at the Cape, was to have a hospital in which sick soldiers and sailors could be left, thus doing away with the necessity of detaining ships until their recovery, as they could be drafted into the next vessel that called and needed men. In 1656 a large building for this purpose was completed near the seaside in front of the fort; this hospital answered the purpose for which it was intended for over forty years. In 1694 the hospital had become very dilapidated, and upon the representations of the new Governor, Simon van der Stel, the directors authorized him to build a larger hospital in a more suitable place. It was designed "to accommodate 500 patients without crowding, or 750 on an emergency." In October, 1699, it was completed and opened for use. The new institution appears to have served as a hospital for nearly a century, but was apparently, in course of time, not considered large enough for the purpose. Eventually a new hospital was designed to accommodate 1,450 patients, the foundation stone of which was laid in 1772; it was used for this purpose until 1795, when the building was converted into barracks and remained for that purpose until 1903, when it was pulled down and the site used for general building purposes.

Since then hospitals have arisen all over the province—general, fever, convalescent homes, cottage hospitals, and dispensaries. For many years there was only the one general hospital at Capetown. The bulk of the remaining hospitals were established as the demand arose. Some interesting facts in connexion with the establishment of the Grey Hospital at King William's Town are given. In 1856 the province of British Kaffraria was entirely destitute of hospital accommodation for either civilians or natives, and there was no civil medical practitioner within eighty miles of King William's Town. Native witch doctors flourished and exercised very extensive influence over the large native population; they taught the people that sickness was the result of witchcraft, and that they alone were able to cure the sick; the people implicitly believed in their power, and when anybody was afflicted with sickness a witch-doctor was sent for and smelt out the offender. This procedure generally ended in the torture by fire or by stinging ants and the death of the accused person, in addition to the confiscation of his cattle and property. The early days of the British occupation of Kaffraria were signalized by a succession of native wars. Every Kaffir war had its witch-doctor, who professed to be able to bewitch the enemy and to import strength to his own supporters so as to enable them to overcome the Europeans.

Sir George Grey established a hospital in King William's Town in 1859. He was also responsible for the inception of the Provincial Hospital, Port Elizabeth, the Albany General Hospital, Grahamstown, and for the decision which ultimately resulted in the new Somerset Hospital being established. From Sir George Grey's time onwards it has never been the policy of the Government, except in special cases, to undertake the erection and subsequent management of general hospitals. The Government seems rather to have aimed at stimulating local enterprise by making grants in aid of buildings and for maintenance. Every general hospital in the province existing to-day was started under local boards of management, with the exception of the new Somerset Hospital, the Vryburg, and the Grey Hospitals. For some years past the two former institutions have been taken over and controlled by the public, and the Grey Hospital also has been managed by a number of gentlemen on behalf of the Government. No definite system of allocating Government grants for hospitals has ever been observed; in the early days it was customary for the Government to provide most of the funds for the erection of hospitals, but subsequently it became the practice for money to be voted for this purpose on the £ for £ principle.

Regarding the constitution of hospital boards, the Government is represented on the boards of management by one or more *ex officio* members, but otherwise, except indirectly through the grants in aid, exercises no jurisdiction over the affairs of the board. They are subject to Government inspection. There are 29 State-aided institutions in the province and two Government chronic sick hospitals. In the State-aided institutions during 1911 10,853 patients were treated, and in the Government chronic sick hospitals 1,031. The largest general hospital is at Kimberley, with 318 beds; this is followed by the Somerset Hospital with 207 beds. The daily average number of patients treated in 1911 in the State-aided hospitals was 807.68, and the Government chronic sick hospitals 562. In the out-patient department in 1911 21,017 patients were treated. The daily average cost per patient in the State-aided institutions in 1911 was just under 6s. 1d., as against 5s. 11d. in 1910. In all, the ordinary expenditure of State-aided institutions in 1911 was £88,007, and the extraordinary expenditure £7,661.

The report, which is a lengthy one extending to over eighty foolscap pages, concludes with certain recommendations for improving the defects in internal administration. One defect is dealt with at some length—namely, the present system under which Government aid is furnished. Dr. Thornton makes certain recommendations, the principal being that in future the Government contribution to each State-aided hospital should be fixed by ordinance in accordance with the following scale—namely, not exceeding 25s. for every £1 subscribed to any State-aided hospital; £1 for every £1 received from patients; £1 for every £1 bequeathed for any approved purpose but not exceeding the sum of £500 in respect of any one bequest, and one-half of the deficit, if any, the remaining half being placed on the local authorities in the hospital

district. Other matters dealt with are the unification in the management of institutions, reconstitution of hospital boards, the powers and duties of boards, the question of nurses. Want of space forbids us dwelling on many of the more important subjects dealt with in the report; we can only add that the subject has received careful consideration at the hands of Dr. Thornton, who has devoted much time and trouble on its preparation.

Special Correspondence.

BERLIN.

Congress for Scientific Investigation of Sports and Gymnastics.—A New Department of the Kaiser-Wilhelm Gesellschaft.—Health Resorts for the German Army.—A Playground for Children Suffering from Whooping-cough.—Poisonous Mushrooms.

At the Congress for the Scientific Study of Sports and Gymnastics, held recently at Oberhof (Thuringia)—one of the few places in Germany where excellent golf links are to be found—papers were read on exaggeration of the culture of sports, by Professor Kraus, Berlin, and on sports and the heart, by Professor Grützner, Tübingen, and Professor Nicolai, Berlin. The last-named said that an enlarged heart was not necessarily pathological, for increased work produced and required enlargement. He summarized his views in the three following propositions: (1) Everybody ought to know his normal pulse-curve; fifteen minutes after the exertion the curve ought to be normal again. (2) The effort ought never to be so great that breath has to be taken by the open mouth. (3) The player ought never to exert himself so much that he becomes pale. The chief object of the congress was the constitution of an Imperial Committee for the Scientific Investigation of Sports, which is to work in connexion with the Charlottenburg Sport Laboratorium and the Sport Department of the Dresden Hygienic Exhibition. The new institution was named Reichsausschuss für die wissenschaftliche Erforschung des Sport und der Leibesübungen (Imperial Board for the Scientific Investigation of Sports and Gymnastics).

The "Kaiser Wilhelm Gesellschaft," which owes its existence to the initiative of the German Emperor and is under his patronage, has already in various directions done useful work in science and technology. It now proposes to establish, in connexion with the Berlin Physiological Institute, an "institute for the hygiene of work" (*Arbeitshygiene*), in which institute systematic experiments on the influence of physical and mental work on mankind shall be made under the direction of Professor Rübner. Similar experiments have been successfully made in America, and it is hoped in this way to establish certain hygienic laws and important social rules which will render it possible to adjust work better to the individual's mental and physical capacity.

Nearly all corps of the German army now possess health resorts. The Prussian army alone owns forty-one such places, and the Bavarian, Saxon, and Würtemberg armies have together twenty-one. Besides those on German territory the military authorities own sanatoriums and hydropathic establishments in Austria—in Marienbad, Karlsbad, and in Teplitz. Independently of these sixty-five places there are twenty-one resorts for the treatment of lung disease in its earliest stage.

A most valuable hygienic arrangement has lately been started by the town of Wilmersdorf (Greater Berlin)—a playground for children suffering from whooping-cough. A large piece of ground, shaded by old trees and enclosed in a wooden fence, has been reserved for children suffering from this disease who elsewhere would be a great danger to healthy children. Berlin is indebted to the town Deputy Geheimrat Edel for this excellent idea, which deserves to be imitated.

As a result of the extraordinary amount of rain this year there is an uncommon abundance in mushrooms, and in consequence a great number of cases of poisoning are reported. The official *Berlin Correspondeur* has recently issued a caution with regard to the advice given in various daily papers to the effect that to boil mushrooms in salt water and then to wash them several times in cold water is an effectual safeguard. It is pointed out that this process has been proved insufficient for mushrooms of the most poisonous kind. The *Kaiserliche Gesundheitsamt* has issued a *Pilzmerkblatt* which, at the low price of one penny, contains in word and picture much necessary information as to mushrooms.

Correspondence.

MEDICAL OFFICERS OF HEALTH AND CHIEF TUBERCULOSIS OFFICERS.

Sir,—The letter, on page 347 of the Supplement to the British Medical Journal of September 28th, of the State Sickness Insurance Committee to the President of the Local Government Board, shows a state of "nerves" in some quarters that is surely uncalled for.

The medical officer of health—so very necessary, apparently, to keep things going provisionally—is, in the view of the Committee, to be summarily ejected as an undesirable alien directly it is found possible to do without him.

The average medical officer of health, besides being a member of the profession, is, as a rule, also a member of the British Medical Association. Why we remain so is often a matter of wonder.

Who is to be substituted for the ejected medical officer of health when his brains, time, and energies have been used to set the machinery going? The alternative in the mind of the Committee apparently is the "chief tuberculous officer" of the Astor report.

This "desirable officer" is not to be under 25 years of age, and is to have had six months in a general hospital and at least six months at a tuberculosis institution.

This "desirable officer" of such vast experience, the Committee evidently thinks, should be "chief" to the medical officer of health, who has in many cases been working quietly, but effectively, at diminishing tuberculosis before these desirable officers were born.

The fact is, the title of chief tuberculosis officer is a very poor and misleading one, and if it could be abandoned so much the better.

The medical officer of health, from the very nature of his daily duties, must have such a knowledge, and he also has such powers that no other medical practitioner could possibly have powers and knowledge that would be so useful and even essential in the prevention of tuberculosis.

To the community prevention is infinitely of more importance than cure, and such items as housing, sites, dampness, etc., have and are going to have more effect on the public health by a long way than such terms as the injection of tuberculin. The Committee will, I suppose, still allow that the medical officer of health shall deal with housing, etc., but a tuberculosis officer, aged at least 25, with no powers and of at least twelve months' mixed experience, is to be set up as the "Chief."

Because a little treatment is involved, the medical officer of health may just as well have a "Chief Scarlet Fever Officer," or a "Chief Diarrhoea Officer," or a "Chief Scabies Officer" sent into his district blessed by a State Sickness Insurance Committee.

May I respectfully suggest to the Committee: (1) That there is no need for the title of "chief tuberculosis officer." (2) That the medical officer of health, who receives the notifications and has various powers under Acts and Orders, should confine himself personally to preventive, co-ordinating, and administrative measures. (3) That treatment apart from treatment in sanatoriums should be carried out by (*a*) practitioners, (*b*) tuberculosis officers who should be in the department of, or working with the medical officer of health, so that the co-ordination of measures can be complete.

If the subcommittee which has been appointed to deal with sanatorium benefit is to have any weight with local authorities and medical officers of health, one or more medical officers of health with practical experience should be co-opted. The gentlemen already appointed, though distinguished men, seem to have no special qualification to deal with this subject except from one point of view.—I am, etc.,

W. G. Willoughby, M.D.Lond.,
Medical Officer of Health.

Town Hall, Eastbourne, Oct. 2nd.

UNIVERSITIES AND MEDICAL EDUCATION.

SIR,—The illuminating article, "Universities and Medical Education," in the BRITISH MEDICAL JOURNAL of October 5th and Dr. Rolleston's address agree so far that, as the time devoted to preliminary and professional medical training is necessarily limited, the best use should be made of it as regards subjects, institutions, and teachers.

The article reopens the evergreen discussion of classics *v.* mathematics, and when it draws in Locke, to be knocked out a few lines lower by Newman and Davison, it should be remembered as an extenuating circumstance that Locke had his academical training at Oxford when physical experiment was in the air and the Royal Society was being founded. It betrays, I think, a bias in favour of the liberal camp, but paradoxically, because it out-utilitarianizes the utilitarian, of which John Hunter stands as the shining example, and all the others marshalled on the liberal or classic side.

As a fact both the liberal and utilitarian school aims at the same ideal—practical efficiency—but, whilst the results of the former are more permanent and remote, the outcrop of character, the latter are more immediate, and appeal to the philistine mind.

The human mind is, however, so plastic that there are few errors even in training that are entirely irremediable, so that evidence is difficult to adduce in favour of one or the other. The problem is better approached from a psychological standpoint and the meaning made plainer by a homely analogy. A boy is to become a carpenter or cabinet maker. The ordinary technical teacher sets him a task of box making, which excites interest because the labour is productive and directly profitable, and the use of the tools is learnt as a side issue. The university plan of "principles" would favour the handling of tools that the boy might get the widest range of use of them as instruments for his mental and manual activities, and the box would be the by-product. The examination results would be favourable to the technical rather than the university principle of education, because, whilst it is easy to judge material results, it is difficult to ascertain to what extent capacity has been developed. Theoretically, then, the big benefits are on the liberal side.

The article proceeds: "We do not want to manufacture pedants; it is the training in minute accuracy and the faculty of distinguishing fine shades of meaning that matter." And this applies as much to diagnosis as to literary form to which this pregnant sentence refers. Diagnosis is the essence of medicine, and depends on collecting and arranging data, and drawing correct inferences from them. Circumstantial evidence or the law of probabilities are our guiding stars. If this is admitted the problem of medical education has a more open face, and neither the Psalms nor the multiplication table, neither the dead languages nor geometry, are the only alternatives as a preparatory training for the practice of medicine, for there are other studies nearer home of an equally disciplinary virtue.

The article gives the suggestion in its mention of Locke, Why should not comparative philosophies and psychology be made more of in the curriculum? Both are bed-rock in the study of mental diseases. Again, an elementary knowledge of the principles and law of evidence could not fail to be serviceable directly and remotely, and would often prevent a stupid exhibition in the law courts which brings the profession into ridicule. These circumferential subjects would bring us in better touch with our brethren of other professions, would improve us as citizens, give our opinions a sounder tone and a higher status in public estimation.

Another point, not touched in Dr. Rolleston's address or the article, is the importance that professors should understand the art of teaching or pedagogics. It is one thing to know and another to impart. Few of us have escaped the dreary experience of dry, disconnected facts being [illegible] monotonously as flat as dish-water and served up [illegible].

Sir William Osler's arguments against whole time professors seem unanswerable, and in this light Dr. Rolleston's proposition of technical assistants is worth the most respectful thought.—I am, etc.,

Wonston, Micheldever, Hants, Oct. 7th. ARTHUR KING.

COMMON ORIGIN OF THE VARIOUS TYPES OF ANGINA PECTORIS.

SIR,—The presence of algesia in segmentary distributory areas is pathognomonic of the existence of foci of irritation in the cord.[1] During the acute stages of a case of angina pectoris recently under notice patches of tenderness appeared in the neck, epigastrium, and thoracic wall. From the frequency of occurrence of algesia in the distributory areas of the spinal, accessory, and intercostal nerves there is sufficient reason for the assumption that in this and other subjects of angina pectoris a wide range of medullary and spinal centres is the seat of foci of irritation, and there are grounds for the inference that this morbid condition constitutes the basis of the anginal habit and the true predisposing cause of the paroxysm.

In the case above mentioned, and in others of a similar character, the zonal regions affected by algesia indicate that, besides medullary centres, the second, ninth, and intermediate segments of the thoracic cord are involved. This interpretation of the algesic symptom signifies abandonment of the Jennerian doctrine and Benjamin Brodie's hypothesis of claudication, because afferent nerves of the myocardium are directed only to medullary centres and even efferent nerves of this muscle are connected with the second, third, and fourth segments of the thoracic cord alone. Consequently the algesic symptoms of angina abdominis and certain other types of angina pectoris cannot be explained upon any theory of the operations of a cardiac reflex.

Moreover, opposed to the theory of a cardiac reflex, many insuperable difficulties exist, a few of which are indicated by a consideration of the following questions: (*a*) What constitutes the cause of the seizure in the large ratio of cases presenting no signs of coronary or myocardial disease at death? (*b*) At age periods when coronary disease is increasing in frequency, why is the annual incidence of angina pectoris declining? (*c*) Why is angina pectoris rare or entirely absent at age periods when myocardial and coronary diseases are universal?[2] (*d*) Upon any conceivable hypothesis of myocardial inefficiency, what explanation can be given to the fact that many anginal subjects are able to walk ten or twelve miles immediately after the occurrence of seizures without showing signs of cardiac failure or sustaining thoracic discomfort?[3] (*e*) By what mechanism do cardiac processes determine certain attendant conditions recognized as common during the paroxysm—namely, local vaso-constriction and ephemeral elevations of blood pressure? (*f*) If coronary disease be a predisposing or exciting cause of angina pectoris, what explanation can be given to the fact that the ratio of incidence of coronary disease, as ascertained by *post-mortem* examinations, is not greater in angina pectoris than in certain other classes of circulatory disorders belonging to the same age-period?[4]

An alternative theory to that of a cardiac reflex is suggested by anatomical considerations. Afferent nerves of gastro-œsophageal muscle are in connexion with the entire range of medullary and spinal centres referred to as implicated in angina pectoris, and impressions generated as a result of hypertonus or tetany of this muscular sheet are calculated to cause neural, cardiac, circulatory, and gastric symptoms, such as are experienced during the paroxysm. Moreover, death in cases of angina pectoris has been recognized to result from vagal inhibition,[5] and consequently all symptoms and processes associated with every type of the disease find a common source of origin in morbid states of medullary and spinal centres when these centres are under the influence of appropriate stimuli. I am, etc.,

London, S.W., Oct. 8th. H. WALTER VERDON.

THE TREATMENT OF NEURASTHENIA.

SIR,—Having read the review of Dr. Paul Hartenberg's work on the treatment of neurasthenia by such drugs as strychnine and codein, which the writer of the review calls a "wise system of treatment," I hope you will allow me, on behalf of British medicine, to enter my protest. "No one

[1] James Mackenzie, Langley, Bertrand Dawson, Hertz, Goulstonian Lectures.
[2] Registrar-General's returns.
[3] James Mackenzie, Oliver Sharpey Lectures.
[4] Harlow Brooks, *Amer. Journ. Med. Sci.*, May, 1906, p. 78. Sir Clifford Allbutt.

who has not suffered from neurasthenia knows anything about it." Such was the verdict of one of our best Border practitioners who had himself been a victim, and from personal experience I can endorse his judgement. I have cured myself, and I can cure others, in three days, without any drug, by proper food and exercise. Having learnt by observation and experiment how I can not only cure but cause neurasthenia by food, I hope the suggestion of a recent correspondent in your columns may be adopted, and a commission appointed to inquire into the treatment of disease by diet. Quackery I abhor, but its exposure is of less moment than the advance of the rational treatment of disease, which our JOURNAL might do something to promote; and, in spite of the legion of committees we already have, another might be appointed with a scientific grant to inquire into and report on the dietetic treatment of disease. Such a report, embodying facts, would do infinite credit to our Association, and uphold British medicine in the eyes of the world.—I am, etc.,

Hawick, Oct. 8th. JOHN HADDON, M.D.

THE CHIEF USE OF THE PERITONEUM.

SIR,—Dr. John Howell, in his paper under the above title, which appeared in the BRITISH MEDICAL JOURNAL of September 21st, very ably attempts to elucidate the methods of bodily defence against the battalions of insidious microscopic low-organized enemies which the body admits into its alimentary canal. On the principle of setting a thief to catch a thief, one would imagine that the economy would evolve, among its complex structures, organs that would produce battalions of minute motile cells to best deal with these enemies, instead of leaving it to a supporting serous membrane, which is without any means of repelling the invaders, unless what has been termed a "pyogenic membrane"—the result of the inopportune destruction and death of battalions of immature leucocytes, which is a phase of their development when non-phagocytic—happens to be lining the entire serous surfaces. These have been termed endothelial cells, and their footprints are rendered visible in a silver-stained preparation, just as those of the adhesive limpet are to be seen on the rocks of our shores. I beg to suggest that the development of a third layer (mesoderm) and its progressive increase in bulk and complexity, causing, as the author rightly states, too much to depend upon the impregnability of the endodermic epithelium, the lymphoid and lymphatic systems of cytogenous glands were therefore developed, between the enteron and the rest of the body, and it is on the other functions of the mesoderm that the complexity of the rest of the body depends. Referring to this subject Cuneo states[1]: "According to the splendid conception of Metchnikoff, the actions of defence against microbic invasion, and the actions of an intimate nutrition, are united in the same gland. These functions of the closed gland, which can modify its contents, but about which we are still very ignorant, complete the analogy which it presents to other mesodermic and cytogenous glands, such as the testicle and ovary."

The lymphoid glands which immediately underlie the epithelium of the endoderm, and their analogues, the "large prickle cells" which underlie the epidermis of the ectoderm, are glands of a high cytogenous order, and *they* constitute the "first line of defence."

Where the solitary or lymphoid glands are aggregated, such as the tonsil, Peyer's patch, the vermiform appendix, or Lieberkühn's follicles, there the most active microbic conditions exist. It is in such situations that the struggle is incessant, and it is upon it being long sustained that the life of the host depends. Their rapid regeneration after destruction, often a rudimentary regeneration termed "adenoids," is a further extension of the processes of the first line of defence.

The admirable simile of the Foreign Secretary which Dr. Howell uses, is one that should be applied to the lymphoid glands, if not to the lymphatic glands themselves. "How many wars has he nipped in the bud by his successful and experienced diplomacy, carried on over a long period of years, and of which the public are left, by his very success, in entire ignorance?"

[1] *The Lymphatics.* By Cecil H. Leaf. P. 106.

The question of the antiquity of the coelom to that of the archenteron is of great interest biologically. I have always been under the impression that the coelom was of greater antiquity.—I am, etc.,

London, W., Sept. 24th. H. D. MCCULLOCH.

WHOOPING-COUGH AND IODOFORM INJECTIONS.

SIR,—As I have used a solution of iodoform intravenously in the treatment of pulmonary tuberculosis for a number of years with the most gratifying results, it was with deep interest I read Dr. Dewar's paper on the use of the drug in adult whooping-cough.

No doubt little can be argued from a single case; but, knowing the beneficial effect of iodoform in checking the distressing cough even of advanced phthisis, one might with reason hope for the same in the less serious disease.

Referring to the subsequent letters on the same subject, I fear Dr. Adamson has laid himself open to the same charge as that on which he condemns Dr. Dewar, as, so far as I can judge, he has not made any trial of the remedy. If he can check the paroxysms of whooping-cough in ten days by some other means, I implore him, in the interests of suffering humanity, to make his method known. In the meantime, I intend at the earliest opportunity to give Dr. Dewar's method a fair trial.—I am, etc.,

South Shields, Oct. 5th. JAS. MCHAFFIE, M.D.

POVERTY AND DEGENERATION.

SIR,—You report Dr. Jane Walker as having said, in her address at the Royal Free Hospital on common sense, that at the present moment some lack of it was being exhibited in regard to the mentally deficient problem, inasmuch as too little attention was being directed to the so-called normal people. I have been thinking that it is the men who impregnate the feeble-minded women who should have their liberty curtailed. The Mental Deficiency Bill, of course, makes no attempt to remove the cause of feeble-mindedness. Believing that this mostly originates in our conditions of chronic poverty, I further welcome Dr. Walker's approval of a lower birth-rate, and her warning that quality is more important than quantity. For example, over a million adult male workers in this country have less than 25s. a week of wages. Alongside of this fact has but to be placed Mr. Seebohm Rowntree's authoritative estimate that 23s. 8d. a week only supplies the bare necessaries of life (excluding any insurance or savings) for a family with three children, to make it apparent that we are shutting our eyes to a sufficient cause for serious social evils. When parents who can just afford to feed and clothe two children properly, have three or more, what can we expect but a high sickness, degeneracy, and mortality rate? Surely a wage-earner's falling birth-rate should be a welcome phenomenon so long as it is accompanied by a falling death-rate.—I am, etc.,

London, S.W., Oct. 7th. BINNIE DUNLOP, M.B., Ch.B.

TOTAL ENUCLEATION OF THE PROSTATE.

SIR,—Kindly allow me to correct a mistake in the report of the discussion on my paper on One Thousand Cases of Total Enucleation of the Prostate for Radical Cure of Enlargement of that Organ, read in the Surgical Section at the Annual Meeting of the British Medical Association, held at Liverpool in July last, and published in the JOURNAL of October 5th. In this report I am represented as having stated that I had performed 98 prostatectomies at St. Peter's Hospital last year, with 5 deaths. What I did say was that *we*—that is, my colleagues and myself—had performed this number of prostatectomies with the result mentioned.—I am, etc.,

London, W., Oct. 7th. P. J. FREYER.

EPIDEMIC JAUNDICE.

SIR,—With reference to the recent notes on epidemic jaundice, it may be of sufficient interest to report the fact that after the Suakin campaign in 1885 the Guards were ordered to Cyprus, and were encamped on the top of Mount Troodos (6,000 ft. above sea level). Numerous cases of acute jaundice occurred amongst them, myself and another medical officer not escaping; this we attributed,

correctly I believe, to the extremes of temperature between night and day at that high altitude.

Dr. White, in his letter of September 28th, had a similar experience.

As evidence of the lowness of the temperature I may add that each soldier was allowed five blankets.—I am, etc.,

A. B. R. MYERS.

London, S.W., Oct. 8th. Brigade Surgeon-Lieutenant-Colonel.

FORCIBLE FEEDING OF SUFFRAGE PRISONERS.

SIR,—As medical superintendent of an institution where there are more than two thousand instances of tube feeding every year I feel bound to support the contention of your correspondent that there is something wrong if it is true that forcible feeding of suffrage prisoners "fails to improve their health or even to maintain it at the level at which the treatment was begun and, in the opinion of those who were responsible for the adoption of it and who carried it out, it would have failed to prevent death if continued much longer."

The disturbance of digestion, absorption, and assimilation among the patients who come under my care and require forcible feeding is often appalling, but their health improves and their weight increases as the direct result of pouring suitable and sufficient nourishment through an indiarubber tube into the stomach. Similar success is recorded with patients who, in spite of a good appetite, refuse their food either by way of protest or as the result of some delusion; and Dr. Blair, in the April number of the *Journal of Mental Science*, reports the case of a patient with heart disease who was kept alive for nine years by forcible feeding in the face of enormous difficulties.

My conclusion, which admittedly may be erroneous, is that the prison dietary for "hunger strikers" requires revision.

May I take this opportunity of correcting two popular delusions respecting forcible feeding by saying (1) that tube feeding, although unpleasant, is not painful unless the patient succeeds in making it so; and (2) that, for a resisting patient, the feeding tube in skilled hands is a less dangerous implement than that fertile source of food poisoning, the feeding cup?—I am, etc.,

W. H. B. STODDART, M.D., F.R.C.P.

Bethlem Royal Hospital, London, S.E., Oct. 5th.

Public Health AND POOR LAW MEDICAL SERVICES.

AN ISOLATION HOSPITAL FOR SALISBURY AND DISTRICT.

A hospital costing about £18,000 was opened near Salisbury, on October 4th, for the Salisbury Rural, Wilton Urban and Wilton Rural, and Amesbury Rural districts. These districts have a population of about 40,000, and the hospital is intended for the reception of cases of infectious illness from the whole or any portion of the districts. The site, which is about [illegible] of the city of Salisbury, is [illegible] the air on every side. The [illegible] four acres and was purchased for £240.

[illegible] is the only one of the five to [illegible] after [illegible] out- [illegible] fever, and hopes are [illegible] that it may [illegible] a sanatorium under the National Insurance [illegible]

[illegible] the Countess of [illegible] the Earl of Radnor [illegible] the Marquis of [illegible], Dr. Tubb Thomas [illegible] E. Gordon (medical [illegible] (Chas. W. Pritchard), [illegible] ville, and the architect [illegible]

[illegible] ation for 44 patients and is [illegible] strative block is a building of two stories occupying a central position commanding a good view of the three ward blocks, with which it is arranged in an open quadrangle; it contains a dispensary, with external dispensing lobby, etc., two sitting-rooms for matron and nurses, nurses' cloak-room and eleven bedrooms, linen-room, bathroom, lavatories, stores, complete kitchen offices, etc. An external serving lobby is provided for serving out food for the pavilions. In addition to the principal entrances, separate entrances are provided for the nurses and for trade purposes. The ward pavilions are of one story. The scarlet fever pavilion has two large wards for 15 beds each, and two private wards for 1 bed each; it has an open entrance leading to a central hall communicating with the two large wards and with the nurses' duty room, which overlooks each of the four wards. The single-bed wards open off the large wards, as do the sanitary annexes containing bathrooms. A glazed movable partition is provided in each of the large wards for dividing them into two parts, if desired. The diphtheria block contains two wards for 3 beds each and two wards for 1 bed each. The isolation or observation block contains two wards for 2 beds each, and each ward can be divided by means of glass movable partitions into two one-bed wards. There is a separate open entrance into each of the two wards, which are entered from the duty-room by this route. The ward windows are carried close up to the ceilings, and have a pair of sashes with fanlights above. The large wards are heated and ventilated by central stoves having open fires; further ventilation is obtained by inlet ventilators at floor level, one under each bed, and by outlet ventilators close to the ceilings. Another block contains the discharge room, undressing room, bathroom, and dressing room, with separate entrance and exit; and the laundry, disinfecting chamber, and destructor form parts of this block.

Another block placed near the entrance contains the mortuary, ambulance house, and pump house. The power house contains an oil engine, dynamos, oil stores, etc.; the hospital is lit by electric light. The entrance lodge has a sitting-room, two bedrooms, bathroom, with external door and offices. The floors in the wards, discharge room, mortuary, and in the public parts of the administrative block are of terrazzo, elsewhere of granolith. Rain water is collected from the roofs in a large underground tank provided with a filter, and is pumped up for the use of the laundry. The various parts of the hospital are in communication by telephone. The elevation throughout is of simple lines in red brick slightly relieved with stone, and with red-tiled roofs. The grounds are being laid out as recreation ground and gardens.

The cost—over £400 a bed—is high, but the administrative block would appear to have been designed to meet the requirements for a larger number of beds.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

EXAMINATION FOR APPOINTMENTS AS ACTING SURGEONS.

AT the examination for the Naval Medical Service held on September 30th and October 1st, 2nd, and 3rd, ten candidates were successful and obtained the following marks:

Name.	Marks.	Medical School.
Mr. A. E. Malone	1,663	Dublin University.
Mr. H. M. Whelan	1,558	University College, Cardiff, and London Hospital.
Mr. R. E. P. Cory	1,543	St. Thomas's Hospital.
Mr. H. St. C. Colson	1,503	Westminster Hospital.
Mr. C. L. Gibson	1,485	King's College, Hospital.
Mr. G. A. Finegan	1,390	University College, Cork.
Mr. E. St. B. Wickham	1,285	St. Mary's Hospital.
Mr. L. T. D. S. Higgins	1,258	Trinity College, Dublin.
Mr. J. G. Beal	1,208	Edinburgh University.
Mr. S. Punch	1,200	University College, Cork.

The possible number of marks for the examination was 2,400.

The Royal Free Hospital has completed the purchase of the leasehold and adjoining premises in Gray's Inn Road, W.C. It is proposed to begin the building of the new out-patient department forthwith.

THE honorary secretaries of the Section of Odontology of the Royal Society of Medicine give notice that grants are made by the section for the furtherance of research in connexion with dentistry. Full particulars can be obtained on application to the Secretaries, 1, Wimpole Street, W.

The Great Western Railway commenced on October 1st a Bath Spa express, leaving Paddington at 11 a.m. every day, and completing the journey without stopping in an hour and three quarters. A saloon car is provided on the train for the comfort of ladies and invalids going to Bath for the cure.

Obituary.

EDWARD WOAKES, M.D.,

LATE SENIOR AURAL SURGEON, LONDON HOSPITAL.

We regret to announce the death, after a prolonged illness borne with great patience, of Dr. Edward Woakes, the distinguished otologist, which took place on September 30th at Fareham, where he had lived in retirement for several years.

Dr. Woakes was the son of a medical practitioner, and was born at Luton in Bedfordshire in 1837; he was, therefore, 75 years of age at the time of his death. He received his school education at Windsor, and after matriculating at the University of London, entered St. Thomas's Hospital in 1854. He had a brilliant career as a student, gaining the second prize for second-year men, the prize for clinical medicine, and being awarded a special prize for an essay on neurology in 1858. In the same year he won the coveted Cheselden medal, awarded for surgery and surgical anatomy. He was admitted a Member of the Royal College of Surgeons of England and a Licentiate of the Society of Apothecaries in 1858. He graduated M.B.Lond. in 1860, proceeding to the Doctor's degree in 1863. He served the office of house-surgeon at St. Thomas's, and might have looked forward to a position on the staff when he was recalled to join his father in general practice at Luton in 1859. He founded the Luton Cottage Hospital, now the Bute Hospital. During his years of practice at Luton he performed many major operations. He was a general practitioner in the best sense, having, as he used to say, "gone through the mill," but his bent was towards surgery. In 1876 he came to London, and took up otology and rhinology, then a comparatively new field of special practice. He was elected to the staff of Golden Square Hospital. Later he became senior aural surgeon to the London Hospital and lecturer on aural surgery in the medical school. He took a prominent part in the foundation of the London Throat Hospital, Great Portland Street, of which he was consulting surgeon at the time of his death. He was a Fellow of the Medical Society and a member of the Harveian Society and of the British Medical Association.



Photograph by] EDWARD WOAKES, M.D. [Barraud, London.

For many years Dr. Woakes had an extensive practice as a specialist in London. He had a very unusual capacity for work which enabled him, after a hard day in his consulting-room and at the hospital, which would have exhausted the energies of most men, to devote the evening and part of the night to writing. He was the author of several monographs: *On Deafness, Giddiness, and Noises in the Head*, which reached a fourth edition in 1896; *Post-nasal Catarrh and Diseases of the Nose Causing Deafness* (1884); *Nasal Polypus, with Neuralgia, Hay Fever, and Asthma in Relation to Ethmoiditis* (1887). He also contributed papers on necrosing ethmoiditis, the treatment of cystic goitre, ranula, and other cysts with chromic acid, a case of nasal vertigo simulating epilepsy, etc., to the medical journals. All his work was marked by such striking originality of thought and independence in observation that it is not surprising if he met the usual fate of the pioneer. But he cared nothing for ridicule, and was only stimulated by opposition. It would be out of place to recall the controversies to which some of Woakes's theories gave rise; but it is only fair to recognize that his work helped to elucidate some obscure points of pathology. He had a mind of singular subtlety, which delighted in tracing the complex relationships of the sympathetic and vasomotor systems and the manifestations of reflex action in parts apparently unconnected. We believe that the papers which he has left show that in not a few points he independently hit on discoveries which afterwards found general acceptance.

Dr. Woakes was a great reader, and his intellectual curiosity extended far beyond the boundaries of his professional work. Always a strong Liberal, when he retired to Fareham he became vice-president of the South Hants Liberal Association and of the Fareham Liberal Association. He also, till disabled by illness, played an active part in local affairs, and took a keen interest in social and philanthropic movements.

To appreciate Woakes at his true value one had to know him intimately. In London he held himself somewhat aloof from professional coteries. He was always loyal to those who had in any way helped or befriended him, or whom he thought unfairly attacked. He did not wear his heart upon his sleeve, and might sometimes appear brusque and even a little cynical. But to those with whom he was well acquainted his kindness was unfailing, and in his family circle he was at his best. In familiar conversations after dinner he would reveal himself as a man of strong convictions tempered by a large experience of life.

Dr. Woakes was left a widower in 1909. He leaves two sons, one of whom is a well-known member of the medical profession, and a daughter, married to Dr. Kirton of Dulwich.

A Former Colleague writes: By the death of Dr. Edward Woakes, laryngology, otology, and particularly rhinology, lose one who some years ago was a most active pioneer in the fields of research. A man of great ability and a keen observer, he was unfortunately somewhat intolerant of adverse criticism, particularly when, as was frequently the case, it was unsupported by sound argument, and so he was often misunderstood. Dr. Woakes was an original worker, and whether one exactly agrees with his views or not, it must be admitted that, particularly in rhinological work, he was a long way in front of his time. His views as regards "necrosing ethmoiditis" were received almost with derision in some quarters, yet later observers have had to admit the correctness in many respects of his observations. His writings show much originality and careful thought. Personally and socially the thing that struck one most, after many years' acquaintance with Dr. Woakes, was his kindness and liberality to some of those from whom he could never hope to get any real return, and doubtless his loss will be mourned in secret by many whom he unostentatiously befriended.

SIR HERBERT MACKAY ELLIS, K.C.B.,

LATE MEDICAL DIRECTOR-GENERAL, R.N.

Sir Herbert Mackay Ellis, K.C.B., Inspector-General of Hospitals and Fleets, Royal Navy, who died on September 30th, at Leavesden, Weybridge, was the second son of Mr. John Ellis, of The Elms, Chudleigh, Devon.

Born in 1851, Herbert Mackay Ellis entered the Royal Navy as a surgeon in 1875. He served with the battalion of Royal Marines throughout the campaign in Egypt in 1882, was present at the engagements of Kassassin on August 28th and September 9th, and at the battle of Tel-el-Kebir. He was mentioned in dispatches, received the Egyptian medal with clasp for Tel-el-Kebir and Khedive's bronze star, and was specially promoted to the rank of Staff Surgeon for these services. He was promoted Fleet Surgeon in June, 1891, and was Principal Medical Officer H.M.S. *Victoria*, the flagship of Sir George Tryon, when that vessel was sunk off Tripoli after collision with H.M.S. *Camperdown*, and the admiral, 21 other officers, and 350 men were drowned.

He became Deputy Inspector-General in August, 1899, and in this rank served in charge of Bermuda Hospital for three years. In February, 1904, he was promoted Inspector-General, and for a few months was in charge of Haslar Hospital, but in September, 1904, he was made Director-General of the Medical Department of the Navy, which position he held until his voluntary retirement in May, 1908.

Sir Herbert Ellis's services, as will be seen from the above record, although notable, did not differ in a great degree from the ordinary run of service until he was made Medical Director-General in 1904. He succeeded to this post under circumstances of considerable difficulty. Reform was in the air and was urgently required in the medical department as well as elsewhere. Unfortunately the initiative in medical matters had to a considerable extent drifted from the medical department, and it was to regain this initiation that Sir Herbert directed his efforts. By his force of character and absolute straightforwardness he attained his object, and in this way, although no notable reforms were carried out in his time, he paved the way to their possibility in the future, possibilities which have now happily been accomplished. Of commanding physique and presence he demanded attention, but his chief characteristics were his straightness, firmness, and fearlessness in dealing with any questions he thought were for the good of the service.

His last illness, a most painful one, he bore with the utmost fortitude and patience, and to the end amidst all his sufferings did not cease to take the greatest interest in the service to which he had devoted all his working life.

Sir Herbert Ellis was created K.C.B. in 1907, and for his services to the medical department of the Navy was elected an Honorary Fellow of the Royal College of Surgeons, Edinburgh, and LL.D. of Aberdeen University. He was honorary physician to King Edward VII from 1905 to 1910, and to King George since his accession. He was a J.P. for Carnarvonshire. He married in 1893 Mary Lily, eldest daughter of Mr. G. B. Ellicombe, of Rocklands, Chudleigh, Devon, and leaves no children.

DEPUTY SURGEON-GENERAL T. J. CROWLEY,

DEPUTY DIRECTOR-GENERAL, R.N.

By the death of Deputy Surgeon-General Timothy Joseph Crowley, M.D., R.N., the medical service of the Royal Navy, of which he had been Deputy Director-General for the past three years, has sustained a very heavy loss.

The deceased officer was the eldest son of the late Dr. Crowley, of Kilbrittain, co. Cork, where he was born on December 2nd, 1861. He was educated privately, and afterwards studied his profession at Queen's College, Cork, where he matriculated at an early age, and had an exceptionally brilliant career, gaining many prizes and also the gold medal as the best student of his year. He graduated M.D. of the Royal University with first class honours before he had completed his [illegible]. Entering the Royal Navy on February 26th, [illegible] was promoted Staff Surgeon twelve [illegible] and Fleet Surgeon, February 25th, 1899. He obtained promotion by selection to the rank of deputy [illegible] December 6th, 1909, and shortly [illegible] on account of conspicuous professional and administrative abilities, to the important office of Deputy Director-General of the Naval Medical Service, which he has filled greatly to its advantage ever [illegible].

During his career he served in many important positions, both at home and abroad, including the hospitals at Yokohama, Hong Kong, Haulbowline, Shotley, and the *Impregnable* Training Establishment.

He had a remarkably fine figure and presence. His manner was quiet, dignified, and refined. He was imbued with the very highest sense of duty, and with a ripe knowledge of his profession in all its departments.

Although shy and retiring, he was, when occasion demanded, fearless in stating the right, and, being absolutely straightforward in all the relations of life, was deservedly held in the very highest respect by all ranks in the service. Unselfish and unsparing of himself, he was always most considerate towards others. The service is distinctly the poorer by his loss. His vacant place will be difficult indeed to fill.

Early in August last he discovered he was in the hopeless grip of incurable disease, and although he fully realized that he was face to face with death, yet he bravely remained at his post of duty, working hard from morning to night, till a fortnight ago, when it became absolutely a physical impossibility to walk out of his residence. During this tragic time not a murmur escaped his lips, the kindly smile never left his countenance. Of the many who interviewed him and received his friendly assistance on Service business during these last weeks, none could have told that the sands of life of the man with whom they were speaking were then actually running out, and that the labourer's task was all but over.

Devotion to the service and its interests was the keynote of his whole career, and for him there was no slacking off till he had drawn his last breath. R.I.P.

On October 7th his remains were conveyed to Ireland, where they were laid to rest beside the ashes of his forebears. He was unmarried.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have been approved at the examination indicated:

SECOND M.B. (*Part II.*).—E. D. Adrian, G. F. V. Anson, K. B. Bellwood, E. J. Boyd, J. C. Bramwell, E. J. Y. Brash, W. E. H. Bull, H. R. Battery, E. L. Caldwell Smith, S. J. Cowell, H. A. Crouch, E. C. Cunnington, A. N. Drury, H. Dunkerley, J. Fairbrother, E. Forrester-Paton, H. L. Garson, E. H. H. Granger, C. Grantham-Hill, J. B. Hunter, L. M. Ingle, J. D. Jones, J. H. Jordan, E. C. Maldeu, R. A. Mansell, F. W. Maunsell, G. Y. Oliver, D. S. Page, R. N. Porritt, G. D. Read, J. R. Rees, W. H. C. Romanis, A. P. Saint, E. J. Selby, L. C. Somervell, T. H. Somervell, G. E. Spicer, H. N. Stafford, L. S. Taylor, G. S. Trower, D. C. L. Vey, T. Warrington, F. B. Winfield, K. J. Yeo.

ENTRANCE SCHOLARSHIPS.

Middlesex Hospital.

THE following entrance scholarships have been awarded at the medical school of the Middlesex Hospital: *University Scholarship*, value £50, to Mr. S. D. Kilner; three *Entrance Scholarships*, one of £100 to Mr. J. D. Dyson, one of £50 to Mr. F. C. Mason, and a third of £25 to Mr. E. H. Lake; the *New Zealand Scholarship* to W. P. Johnston, and the *Freer Lucas Scholarship*, awarded, on the nomination of the head master of Epsom College, to Mr. W. B. Gabriel.

St. George's Hospital.

The competition for the two *University Scholarships* have resulted as follows: The scholarship of 70 guineas was won by Mr. Rhys Trevor Jones, of University College, Cardiff, and the scholarship of £50 by Mr. T. S. Nelson, of University College, Oxford.

St. Mary's Hospital.

The following entrance scholarships have been awarded: Two *University Scholarships*, value 50 guineas each, to Mr. C. N. Williams, of University College, Cardiff, and Mr. C. H. Carlton, of St. John's College, Oxford, respectively; the *Open Scholarship*, value £100, to Mr. P. Hughes, of St. Columb's College, and the *Palmer Scholarship*, value 25 guineas, to Mr. T. [illegible] Davies, of Carmarthen Grammar School. The Epsom scholar for the year is Mr. C. L. Mason.

Guy's Hospital.

The competitions for entrance scholarships resulted in the following awards: The *Senior Science Scholarship for University Students*, value £50, was awarded to Mr. Charles Putnam Symonds, of New College, Oxford; the *Junior Science Scholarship* of £120 to Mr. J. E. E. de Robillard, a member of the preliminary science class at Guy's Hospital; while a third *Science Scholarship* of £60 was divided equally between H. J. Benstead,

of Birkbank College, and J. C. C. Howe, of the preliminary science class at Guy's Hospital. Two entrance scholarships in arts were also awarded; one, value £100, to Mr. W. H. Steavenson, of Cheltenham College, and another, value £50, to Mr. F. R. Leblanc, of the Royal College, Mauritius.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE following candidates have been admitted to the Membership:

B. A. H. Solomons, M.B., B.Ch., B.A.O.Dublin, R. H. F. Taaffe, L.R.C.P. and S.I.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved at the examination indicated:

FIRST COLLEGE (*Parts I and II, Chemistry and Physics*).—E. Ahmed, *N. A. H. Barlow, †E. Butler, †E. A. Clegg, G. P. Cobb, *F. G. L. Dawson, *J. H. C. Eglington, J. H. Ewen, *G. H. Fitz-Gerald, *E. S. Gouda, F. J. Harrington, J. M. Hughes, W. Kilroe, J. Macadam, *A. N. McMillan, †R. Moser, G. V. Richards, †A. H. Samy, J. A. A. P. Scott, †E. W. Terry, †H. G. Watters, †H. M. Wharry.

* Passed in Part I only. † Passed in Part II only.

Part III, Elementary Biology.—W. J. McB. Allan, L. E. Claremont, S. E. D. A. Daab, L. H. Dardier, J. A. Hill, H. Morris-Jones, R. M. Sidgwick, F. E. Smith, E. A. Tomes.

SECOND COLLEGE (*Anatomy and Physiology*).—A. Z. Abushady, D. R. Alexander, P. W. L. Andrew, M. Bayumi, P. H. Burton, S. F. Chellappah, F. E. Chenoy, T. L. Chiplonkar, G. F. Chissell, J. W. Clayton, W. L. Cockcroft, T. W. David, J. K. Davies, A. K. Day-Lewis, H. H. Fisk, E. D. Granger, E. A. T. Green, J. A. Gregory, H. J. Grimshaw, Dorothy M. Henty, H. F. T. Hogben, C. O. Hudson, W. B. Jepson, N. E. Kendall, L. G. Le Blanc, J. S. Leslie, E. D. Lindow, H. G. Ludolf, J. McDonnell, O. S. Martin, G. S. Mitchell, S. G. Moftah, A. D. Morris, N. R. Nalliah, L. D. Phillips, W. L. E. Reynolds, H. D. Pickles, J. D. Rutherford, N. A. Scott, J. H. Sewart, R. F. Sturridge, D. P. Thomas, F. M. Townsend, A. R. Upton, H. Vicker, R. H. Williams.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examination indicated:

D.P.H. (*Both Parts*).—E. L. Middleton, Alexandra B. MacCallum, J. D. Ingram, J. C. MacCallum, D. Jai Chand, W. G. Macdonald, Kate Fraser, Jane H. McIlroy, G. C. Strathairn, D. C. Adam, A. J. Ewing, G. V. T. McMichael, P. Allen.

Medico-Legal.

WORKMEN'S COMPENSATION.

Massage Refused.

IN Winger *v.* Baker (heard at Bristol, June 29th) the applicant alleged that on June 16th, 1911, while working for the respondent, a piece of copper wire ran into his right knee, totally incapacitating him from work, and that it was impossible to estimate the duration of the period of incapacity. His average weekly earnings were 35s. 9d., and compensation at the rate of 17s. 10½d. had been paid until March 30th, 1912. The insurance company declined to continue compensation on the ground that the applicant would not submit to a course of [illegible] treatment recommended by its doctors. The three [illegible] who had examined him for the insurance company all recommended massage treatment, but, as his own doctor was averse to that treatment, he declined to undergo it.

His Honour, in giving judgement, said that he could not say that the applicant had been unreasonable in refusing to have massage, and there must therefore be an award for the applicant with costs.

A Medical Assessor's Report.

In a case recently heard on appeal in the Court of Session, Edinburgh, the Division found that it was competent for the medical assessor sitting with the sheriff to examine the workman and report on his condition, and that the sheriff was entitled to take into consideration the medical assessor's report as to the workman's condition.

Lord Kinnear said the question in the case must be determined according to the specific statement before them. As the case was stated, he thought the sheriff was right in the way in which he disposed of it. His lordship did not think it was necessary to lay down any general rule as to the circumstances under which an expert assessor might examine a workman for himself, because the material point in this case was that the examination of the workman was made of consent. It was said that it was irregular for the assessor to report to the sheriff in the manner he did, and that it amounted to putting the assessor in the position of an expert witness without submitting himself to cross-examination and without taking an oath. It was argued that the sheriff had confused two entirely different things, and put the assessor in the position of a referee, to whom he had remitted for report. His lordship thought that was a confusion which did not affect the sheriff, but affected the appellant's argument. The assessor was not bound to submit his opinion to the cross-examination of the agents for either party. His opinion was to be formed and communicated to the court for the guidance of the court. His lordship thought that what was done in the whole matter was absolutely reasonable and proper, and that the sheriff could not have refused to allow his mind to be influenced by what the assessor told him without a denial of justice. Lords Johnston and Mackenzie concurred.

Three Cases of Blood Poisoning.

In Byecroft *v.* Oscar Asche, the claimant was a super in the Garrick Theatre, London. He claimed compensation for blood poisoning due to a scratch on the leg, which had got poisoned by make-up paint. On the evidence the judge was satisfied that the blood poisoning arose from an accident arising out of and in the course of the employment, and awarded compensation.

In Thompson *v.* Fairfield Company, recently decided in Scotland, the decision was that the claimant failed to establish that blood poisoning from which he was suffering was due to an accident of the employment. Blood poisoning could arise in many ways, and it was held that it lay on the claimant to establish affirmatively that in his case it was due to accident. The claimant had given two different accounts of his accident, and had assigned two or three different dates to it. Accordingly he failed to make out his case.

In Broadhurst *v.* Andrew Knowles and Company (Salford) the question was whether a miner who died from blood poisoning was the victim of an accident. He was working at the face when one of his feet was scratched by a piece of coal which had got into one of his clogs, with the result that blood poisoning supervened.

The defence raised was that there was no evidence that the blood poisoning was due to coal, and Dr. Westmacott, in support of this, declared that coal from the mine face was absolutely sterile. The claimant stated that it was a common thing for colliers to get coal into their faces and other exposed parts, and that blood poisoning frequently followed. A further contention of the employers was that the incapacity might have been set up by dust accumulating in the clog and causing subcutaneous irritation, in which event the colliery owners would not be liable, as it could not be regarded as an accident, and blood poisoning was not an industrial disease.

The judge said that in some mines he knew the coal was anything but sterile. The case was a very difficult one, especially as no coal had been found in the foot, but he considered that the benefit of what doubt existed in his mind should be given to the miner, and he assessed the compensation at 13s. 2½d. per week during the period of incapacity.

Medical News.

THE winter session of the Royal Microscopical Society will be opened by a conversazione which will be held at King's College, Strand, on Wednesday evening next.

THE winter session of the Otological Section of the Royal Society of Medicine will be opened next Friday by Dr. Dundas Grant in a presidential address entitled "Matter and Methods."

A PROVINCIAL sessional meeting of the Royal Sanitary Institute will be held at Alton on October 26th, when Dr. R. A. Lyster, County Medical Officer, Hampshire, will open a discussion on housing problems in county areas.

THE Society of Tropical Medicine and Hygiene is to hold its first meeting for the winter session at 8.30 p.m. next Friday, when its president, Sir William Leishman, F.R.S., will introduce a discussion on the etiology of blackwater fever.

THE series of post-graduate demonstrations will be resumed at the Manchester Royal Infirmary next week. These demonstrations are open free of charge to all qualified practitioners, and are held at 4.30 p.m. on Tuesday and Friday. The clinics on Tuesdays will be on medical subjects, and on Fridays on surgical subjects.

THE annual festival service of the Midland Counties Ward of the Guild of St. Luke is fixed for Tuesday, October 22nd, at 4.45 p.m., in Christ Church Cathedral, Oxford, when the sermon will be delivered by Canon Scott Holland. All medical practitioners are cordially invited. Further information can be obtained from the Honorary Secretary, Dr. W. T. Elliott, 65, Temple Row, Birmingham.

A MEMORIAL of the late Dr. T. D. Savill has been founded. It consists of a yearly prize of £5 and a silver medal. The first award of the prize will be made in July, 1913, to that student, of either sex, at the West End Hospital for Nervous Diseases, who passes the best viva voce examination in diseases of the nervous system, in addition to writing a thesis on a subject approved by the examiners. Further particulars may be obtained from the secretary of the hospital, 73, Welbeck Street, W. A triennial lecture, to be called by the name of Dr. Savill, will also be delivered at the hospital.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisements, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

MANUSCRIPTS forwarded to the Office of this JOURNAL cannot under any circumstances be returned.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2670, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

W. H. M. would be grateful to hear any one's experience of small doses of stout for an infant who is in danger of marasmus owing to indigestion.

A MEDICAL MAN in North London desires to hear of a small school or institution where a boy of 12 suffering from *petit mal* and with weak morals would have strict supervision and a good education for a moderate charge.

SIGMA would like to know the best form of treatment (medical or surgical) (1) of cyst of the thyroid gland about the size of a hen's egg accompanied by the symptoms of exophthalmic goitre. (2) Post-diphtherial paralysis of the throat in a child aged 1½ years.

J. H. desires information as to the significance of wasting of muscle between thumb and forefinger (abductor indicis). The patient, aged 56, is healthy and his muscles well developed. He resided in China for twenty years. He noticed a month ago that this part of the right hand was wasting. He thinks the fingers are slightly stiff but is able to use the hand in writing, etc.

ANSWERS.

DR. S. DONALDSON (Johannesburg) writes: In reply to "Tubercle" (BRITISH MEDICAL JOURNAL, August 17th) I think the climate in the immediate vicinity of Johannesburg (avoiding the town itself) would suit the case in question provided the disease has not progressed to a great extent and is now inactive. Johannesburg (5,760 ft.) stands on a ridge running due east for about sixty miles and west for about thirty miles. Any district on this ridge would, I think, prove suitable. Climate is [illegible] and not so subject to extremes of temperature prevailing forty miles north and south where there is a more or less sudden drop of altitude of 1,000 ft., such as Pretoria and Vereeniging. Dust is prevalent more or less all over the country, but does not seem to be a matter of such vast importance as hitherto considered to be so long as the busy centres of Johannesburg are avoided. Other suitable districts would be the North-East of the Orange River Colony, Bethlehem and Harrismith in particular, and also the North West corner of Natal, such as Nottingham Road. Healthy cardio-vascular and digestive systems are very desirable in cases sent to this country. I will be very glad to give "Tubercle" any further information or help desired.

TENDON HEELS.

DR. DOUGLAS MACDONAGH (London, W.) writes in reply to "T. H." (September 28th): I would suggest simply strapping with rather thin self-adhesive plasters (Johnson or Mould's). I have been successful in several similar cases in giving almost immediate relief by this simple device. Drug applications are tedious and disappointing in these [illegible].

LETTERS, NOTES, ETC.

[illegible] ACT.

DR. J. CHARLES, Honorary [illegible] of the Consett Division (Stanley, S.O., co. Durham), writes: An act of generous kindness towards the [illegible] deceased colleague is always worth recording in the [illegible] of a medical journal, and in addition to [illegible] done by an insurance [illegible] from mix philanthropy with [illegible] deserving of being remembered in their [illegible].

In the late summer of this year Dr. Pretsell, of Annfield [illegible] death [illegible] accident a few [illegible] were bereft at [illegible].

As is often the case when a medical man dies in harness, it was found after Dr. Pretsell's death that his widow and family (seven in number) had been left in very poor circumstances, the deceased having been unable to save or even to make provision for his dependants by life insurance. He possessed, it appears, a copy of Messrs. Scott and Bowne's *Doctor's Diary*, presented to the members of the medical profession each year by the proprietors of the well known "Scott's Emulsion," but had omitted to use it, and, what is more regrettable, to sign the £500 accident insurance coupon which it contained, so that it was of no value to the widow as a legal title, and she entertained no expectations from that source.

She was more than surprised, therefore, when I handed her the other day a cheque for £50, which had been forwarded to me by the insurance company whose name appeared on the coupon (the Ocean Accident and Guarantee Corporation, Ltd.) on behalf of the widow as an *ex gratia* payment, in view of the necessitous circumstances of herself and family. The gift was as generous as it was unexpected, and will be of great assistance to the widow in procuring some means of earning a livelihood.

It is to be hoped this act of kindness to the needy dependants of a deceased colleague will receive from the profession the appreciation it deserves.

DEATH SOON AFTER THE USE OF DIPHTHERIA ANTITOXIN.

DR. S. J. ROSS (Bedford) writes: The case recorded by Dr. Pain in the JOURNAL of September 28th is of very great interest. It appears to me to be a case of "serum disease," due to anaphylaxis and hypersensitiveness. Wolff-Eisner in 1904 thus described the severe form of the disease: "After a short incubation period, often lasting but a few minutes, a severe dyspnoea follows abruptly, similar to that following air embolus." Death sometimes occurs after a few moments with tonic-clonic convulsions. In other cases dyspnoea is transitory. Again, we are told that after the initial injection severe general symptoms are rare, yet there are cases where the patient died in from ten to fifteen minutes after the injection. The mucosa of the pharynx and larynx becomes swollen. Death ensues from paralysis of the respiratory organs. Evidence of fatal cases of serum disease has been adduced by American and German bacteriologists. Doubtless some fatalities have been ascribed to the disease for which the serum has been injected, which were in reality instances of serum disease. It behoves us to follow Weaver's suggestion that a small initial dose of serum should be injected to see whether general symptoms arise.

INTERMITTENT SWELLING OF THE PAROTID.

DR. THOS. BODLEY SCOTT (Bournemouth) writes: The JOURNAL of August 10th last contained an article on intermittent swelling of the parotid gland, no doubt a rare complaint and one that has hitherto not responded to treatment. A lady consulted me three months ago who had been suffering from this trouble for many years. She told me of all the treatments, internal and external, that had been tried without any success. Remembering the correlation that there is between the parotid and the testicle, I gave her Burroughs and Wellcome's didymin tablets, 5 grains, three times daily. She has taken them now steadily for three months, and she says she is cured. At any rate, all pain and swelling went in a week, and she has had no recurrence. Time alone can show whether the improvement will last. The treatment is quite safe, and produces no unpleasant symptoms. Didymin is distinctly a tonic to the nervous system, and, unlike other gland extracts, has no effect on arterial tension. I hope some of your readers will try this treatment when they get the opportunity.

JAMAICA AS A HEALTH RESORT.

DR. J. MACNAMARA (Kensington, W.) writes to corroborate "Toronto Graduate's" account of Jamaica as a health resort. I was (he says) there last autumn, and I have no hesitation in saying that Jamaica is one of the loveliest islands in the world. The lowlands are not good to live in, and Kingston has not recovered from the earthquake. But the mountains are glorious; their climate is perfect, and their beauty defies description. The leading public man in one of the mountain resorts is a doctor who went there in an advanced stage of tubercle of the lung. In the restoration of his friends he went three-fold. He is now in robust health, and one of the most valuable lives in the island.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, later than the first post on Wednesday morning; proofs, if desired, will be sent, and if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

THE MATERNITY WARD AT ST. THOMAS'S HOSPITAL, LONDON, AND ITS WORK DURING 1911.

BY

JOHN S. FAIRBAIRN, M.A., B.M.OXON.,

AND

JAMES M. WYATT, M.B.LOND.

A WARD, named "Mary" after Her Majesty the Queen, was opened in St. Thomas's Hospital for the reception of lying-in patients in October, 1910, and the report of the work done there during the year 1911 has just been completed. It seemed to us that this was a suitable occasion to give an account of the ward and its work.

As the conversion of a large 28-bed ward into a small lying-in hospital is a problem which presents many difficulties, we have thought it would be of interest to describe in detail the alterations and furnishing of this small hospital within a hospital, and we also purpose giving a sketch of the way in which the ward has been brought into the teaching work of the hospital in accordance with the recent recommendations of the General Medical Council as adopted by the Universities of Oxford and Cambridge.

Even before the committee of the General Medical Council had issued its report on the teaching of obstetrics the opening of a ward for lying-in patients had been before the minds of the staff and governors. The late Dr. Cullingworth had urged the advantages to the hospital and medical school which such a ward would bring, and largely through his representations the governors decided to convert one of the wards of St. Thomas's Home into a maternity ward after the removal of the Home from the charitable part of the hospital. This, however, did not take place till some time after Dr. Cullingworth had retired from the staff, and though he knew that the governors had decided to carry out the project he had so strongly advocated he did not live to see its realization.

If a ward of this kind is to take an important place in the training of students a number of beds sufficient to allow of a steady supply of cases is essential. One delivery a day was taken as the average to be aimed at, and it was calculated that 20 beds would give this. Reckoning the stay of each patient at an average of 14 days, it would mean 40 patients a month if the ward were worked continuously at its full capacity. This, however, is obviously impossible with maternity cases, and hence not more than 15 of the 20 beds could be looked on as in constant use, thus giving 30 deliveries a month, or about 1 a day. It will be seen that the actual number of confinements in 1911 was 364.

The ward selected was not one of the Home wards, but the ward at the top of No. 2 block (formerly Florence Ward), as it is further from the main corridors and more isolated than the old Home wards lower down. Having in mind the lying-in hospital system of small wards of 8 to 10 beds which are emptied and cleaned after each batch of patients, various plans of subdividing the ward into separate units were considered, but none were found practicable. It was impossible without interfering with the lighting and cross-ventilation to cut off wards which could be closed and worked separately with convenient access to the sanitary offices at the river end of the ward. Under modern conditions closing the wards for disinfection after each batch of patients seemed no longer as essential as in former days, and it was felt that there ought to be no difficulty in keeping a lying-in ward in continuous service—like an ordinary surgical ward—and accommodating as many as 20 patients at a time.

When once this point was decided the rearrangement became comparatively simple. The ward was 120 ft. long by 28 ft. wide, with a sanitary annexe at each angle of the river end, and on the stair landing at the entrance of the ward was the following accommodation: (1) Sister's sitting-room, (2) small clinical room for urine-testing, etc., (3) a linen room, (4) small ward, (5) kitchen.

The only alteration that was made in the rooms at the entrance was that the kitchen, being larger than the small ward, was converted into a receiving-room and the kitchen was transferred across the corridor to what was the small ward. The receiving-room, as modified, has a floor space of 224 sq. ft., including portions cut off for a cupboard for patients' clothing and a w.c., and is floored with terrazzo mosaic coved to the wall and channelled to take the waste of the bath and sink. The walls are lined to the height of 6 ft., with 6 in. cream tiles with green borders, and the upper portion finished in Parian cement and painted with Gay's enamel. It contains a white enamel bath on wheels, an earthenware sink fixed on cantilevers set clear of the walls, and a bedpan sink fitted with elbow-action taps, placed here for emergency use in case of the large labour room being used for lying-in patients when the ordinary sink room is unapproachable during the cleaning of the main ward. The only furniture in the room is an examination couch and a few screens. Patients on arrival at the hospital are not seen in the casualty like ordinary patients but are sent straight up in the lift to the receiving-room. There they are examined, and if in labour or to be admitted to the ward, are given a bath, put into hospital clothes, and sent to the labour room or to the ward as their condition requires. This room is also used occasionally for the examination of advice-patients who may come for measurement or determination of the time for induction and such like.

On passing through the swing doors that give entrance to the ward, the alterations shown in the accompanying plan are seen to be really no more than the cutting off from the main ward of a large and a small labour-room and a baby-room or nursery, leaving the remainder as the lying-in ward.

The new dividing walls which run from floor to roof were built of Shepwood hollow bricks, 12 by 6 by 2 in., with keyed face for the plaster. They were set and plastered in Portland cement, and lined on the room side with tiles like those in the receiving-room to a height of 6 ft. Above this and on the side towards the ward they were finished in Parian cement and painted with Gay's enamel. These partition walls cut off from the ward on the left a small labour-room with a floor space of 220 sq. ft. and a large labour-room of 476 sq. ft., and on the right a small nursery for babies of 143 sq. ft. Each of these rooms is fitted with a slow combustion grate with a fire-brick bottom, rounded metal kerbs, and raised tile hearth, and the large labour room has in addition a hot water coil. The floors of these rooms are laid with eubocolith patent flooring moulded to the walls to prevent damage from the beds. In each labour-room are two white enamel sinks, fixed on cantilevers standing clear of the walls and discharging into channels on the floor. Over the sinks are marmorite shelves 1 in. thick, with rounded corners, fixed on cantilevers and set clear of the walls. These carry jars, lotion bottles, etc. Aluminium shelves carry the sterilizers for instruments and boilers. There is one bed in the small and two in the large labour-room. These are of the Lawson Tait pattern, made of tube steel throughout, with a detachable headpiece and a patent castor attachment which can be thrown out of use when not required. They are 6 ft. 6 in. long and 3 ft. wide and 2 ft. 4 in. high, and are fitted with a zinc plate cover to form a lying space. The large labour-room also contains the instrument cupboard and an operating table. The nursery contains a double babies' bath, consisting of an enamelled iron top 3 ft. 8 in. by 3 ft. 3 in., with two oval-shaped basins 2 ft. 2 in. by 1 ft. 3 in. by 9 in. deep, with hot and cold taps between the basins to serve both. The whole is fixed on an enamelled iron stand 2 ft. 2 in. from the floor, the most convenient height for a nurse to sit at, with a knee-action waste to discharge to a channel on the floor. There is a hot coil by the side of the bath, and the only furnishing is a weighing machine and a small cupboard in the wall fitted with pigeon-holes, numbered for each cot, to contain the washing materials for each baby.

The ward, after these three rooms have been cut off, is somewhat L-shaped and accommodates 20 beds between the windows. The ward floor is polished oak boards, and the walls are plastered and painted with Gay's patent enamel. Originally there were three fireplaces down the centre of the ward supplied with fresh air from the outside by ducts below the floor, and with a ventilating air shaft at the ceiling. The wall cutting off the large labour-room includes one of these fireplaces and shafts, and the grate

has been altered so as to give one fireplace in the labour-room and one in the ward. Besides the two remaining fireplaces there are two large hot-water radiators down the middle of the ward, and also a large white enamelled sink (as shown in the plan). The ward bedsteads are like those in the labour-room, except that they are without the zinc cover and have a wire spring mattress and ordinary castors: at each end of the foot are detachable standards which can be arranged to carry the cots. The cots are of wire caging, with a flat bottom, so that they rest on the floor. In the ward are also a number of collapsible stands in which the cot can be swung when in the nursery. The bedsteads were specially designed, and, having an increased height, stays are provided from leg to leg, practically forming a double frame. As they have large rubber castors, each bedstead is a perfect ambulance.

At the river end of the ward is a door opening on to the balcony (which commands a magnificent view of Westminster and the north of the river) and on each side are doors leading on the left to the sanitary annexe and on the right to the isolation ward. Each annexe is cut off from the main ward by a short corridor with cross ventilation partition 7 ft. high. It is heated by a hot-water radiator above, which is an aluminium rack for bedpans, the hot-water pipes forming the bottom shelf for these pans. The one other item of interest in this annexe is the specimen cupboard, which is fitted into the wall above the sink, and is arranged like a larder with perforated zinc outside, and glass doors in iron frames inside; it is lined with marmorite and fitted with marmorite shelves. It is used for keeping placentae, dressings, and specimens of any kind that may be wanted for inspection or demonstration.

The sterilization of dressings, towels, gowns, etc., being carried out in the hospital basement, as for the rest of the hospital, no provision was necessary for this.

The majority of patients are selected for admission to the ward by the house-officer, preference being given to primigravidae and those in whom some difficulty and complication might be expected. Many are recommended to the house-officer by the lady almoner's department, either because their home conditions in the district are unsuitable or as deserving cases from outside the area covered by the charity. Great care is taken to avoid abuse, and personal visits are made to the homes in the



Fig. 1.—Lying-in Ward.

tion. The isolation room is 196 sq. ft., and is floored with terrazzo mosaic cored to the walls, which are rendered in Parian cement and finished with Gay's enamel. It has no fireplace, and is heated by two large hot-water radiators, and contains a sink with tiles to the wall at its back. This room is used chiefly for cases that require special nursing, such as cases of eclampsia after delivery, and other toxic cases. Suspected septic cases are also placed there, but usually for not more than twenty-four hours, as directly the diagnosis is confirmed they are sent to the special wards in the hospital kept for infective cases.

The sanitary annexe is also laid with terrazzo mosaic, and is channelled for the sink and bath waste. It contains three earthenware sinks fixed like the others on cantilevers clear of the walls. These sinks are 3 ft. 6 in. by 1 ft. 9 in. and 8 in. deep (in one the depth is 12 in.), and are used in the following way: The first one is the patient's washing sink, the next is used for washing basins and utensils, and the third is a mackintosh sink, and is also used for soiled linen, and is fitted with a wringer. Fitted to its side is a mackintosh table for scrubbing mackintoshes. There is a bedpan sink fitted with elbow action taps, and a white enamel bath on wheels, which discharges to the channel on the floor. The watercloset is cut off by a wood

great majority of cases. Included among these cases are patients with a previous history of difficult or complicated labour and patients referred from the medical and surgical side. Indeed, a striking difference between the patients in Mary Ward and in a lying-in hospital is the greater percentage with renal, cardiac, and pulmonary complications, as might be expected from the association with a large general hospital. For instance, there have been patients with such medical complications as pneumonia, acute rheumatism, pericarditis, and so on, and surgical complications ranging from sarcoma of the jaw to fractured limbs. Besides these there are the emergencies taken in from the district or sent in by doctors because of some serious complication.

Instruction of Students.

We now wish to explain how the ward has been brought into the clinical teaching of the hospital, and as the obstetrical and gynaecological work is carried on together it will be as well to mention that the combined departments are officered by three visiting physicians, a tutor and registrar, and two house-officers. Every student, after completing his medical and surgical ward work, serves a term of three months in this department,

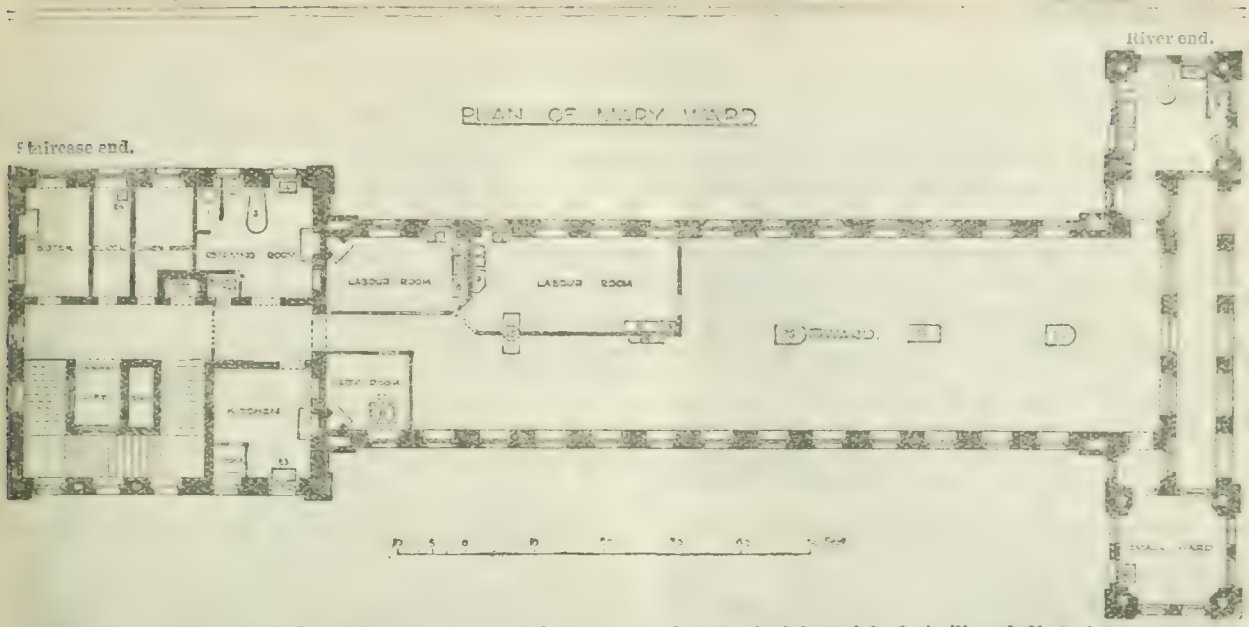


Fig. 2.—St. Thomas's Hospital, Block No. 2. 1, w.c.; 2, bed-pan sink; 3, bath; 4, sink; 5, sink; 6, sterilizer shelf; 7, sink; 8, sterilizer shelf; 9, marmorite shelf; 10, sink; 11, sink; 12, radiator, with sterilizer shelf; 13, sterilizer shelf; 14, sink; 15, sink; 16, draining board; 17, bath; 18, mackintosh sink; 19, w.c.; 20, bed-pan sink; 21, sink; 22, baby bath; 23, sink; 24, sink; 25, stove; 26, radiator.

his time being apportioned so that he spends seven weeks at gynaecology and six at obstetrics—that is, four as obstetric clerk in the ward and two on the district. This system of combining the work we look on as one of great importance, as in this way the difficulty of occupying the students' time while waiting for his indoor cases is largely obviated. As long a time as three days have elapsed without a birth in the maternity ward, and, again, as many as 7 births have occurred within three hours. To make up for this irregularity the student, when not required in the maternity ward, is expected to attend clinical instruction in the gynaecological ward or out-patient department. In this way he can fill in five afternoons and one morning, and, though not acting as clerk or examining cases, he receives clinical instruction. Besides his attendance in the labour-room he has to visit his patients in the lying-in ward and write his case records and, on two mornings a week, assist the house-officer in the examination of patients applying for admission to the maternity ward and be present at the two official visits of the physician to the ward, so that there need be no question of his wasting his time. As a rule four men working in pairs are on duty as clerks in the maternity ward, to whom the cases are allotted in turn, the routine being the same as on the medical and surgical side. The instruction in the labour-room was at first a matter which seemed to offer some difficulty, as the visiting staff, living at a distance from the hospital, cannot see any but the abnormal cases and so cannot supervise the teaching on the ordinary run of cases. But this soon solves itself. The clerks are already drilled in the methods of surgical cleanliness and of ordinary medical examination, and the special work of the labour-room soon falls into a routine, which the student readily adopts.

One or other of the house-officers takes the clerk over most of his cases, and as, except at the commencement of each three months, the clerk has already witnessed many deliveries and learnt the routine, he does not require close supervision. Two members of the visiting staff and the obstetric tutor pay frequent visits to the labour-room and see that the clerk is carrying out the usual examination and management of the case. But the most important check on the student's work is found to be the official round of the lying-in ward when the clerk reads his account of the labour and is questioned on it; this involves listening to many rather tedious records of normal cases, but it gives a very good index of the way the work is being

Eclampsia.

Case.	Age.	Parity.	Urine.	Maturity.	Convulsions.	Treatment.	Result. Mother.	Result. Child.
1	19	Primipara	—	Full	Post partum, 8 or 10 fits; not delivered in hospital; comatose on admission	Venesection and infusion pulv. jalap. co., chloral, āā 5ij introduced by stomach tube; severe headache before commencement	D.	G.
2	20	Primipara	Solid on boiling	32nd week	Ante partum, 13 fits before delivery; 3 fits after delivery; comatose on admission	Venesection 5x; infusion 5xv; os dilated by de Seigneux's dilator; head perforated and delivered; after delivery infusion three times with salino Ojss, but died 9 hours later	D.	S.
3	29	Multipara	Two-thirds albumen on boiling	Full	Post partum, 4 fits	Chloral gr. xxx, pot. brom. gr. xv, mag. sulph., sod. sulph. āā 5ij, intravenous saline Oij, inj. morph. hyp. mv; for a few days very irritable and had hallucinations, but these soon disappeared	G.	G.
4	23	Primipara	1 % Esbach	Full	Ante partum, 3 fits	Inj. morph. hyp. mxij in two doses; hot-air bath; labour induced with Champetier de Ribes's bag; normal delivery; 4 days later puerperal insanity; discharged to the infirmary	?	G.
5	37	Primipara	—	36th week	Ante partum, 8 fits	Light chloroform anaesthesia for 2½ hours, during which a toy bag was inserted and then a Champetier de Ribes's bag; then delivery with forceps; venesection 5viij, infusion Ojss; hot-air bath	D.	D.
6	33	Primipara	0.4 % Esbach	Full	Ante partum, 4 fits	CH: la, venesection 5xij, infusion Oijss, calomel gr. v, inj. morph. hyp. mv 4-hourly, 3 doses; hot-air baths; marked improvement; 4 days later induction with toy bag; low forceps	G.	D.
7	40	Multipara, 9th conf.	Solid on boiling	29th week	Ante partum, 20 fits.	Cervix dilated with Hegar's dilators; leg brought down and child delivered; venesection 5xij; infusion Oj, inj. morph. hyp. mv; this patient had eclampsia in her first two confinements	G.	D.

Placenta Praevia.

Case.	Age.	Maturity.	Parity.	Variety	Treatment.	Result. Mother.	Result. Child.	Remarks.
1	26	Full	Multipara	Marginal	External version; leg brought down	G.	D.	
2	25	Full	Multipara	Lateral	Champetier de Ribes's bag	G.	G.	
3	29	Full	Multipara	Marginal	Normal labour	G.	G.	
4	26	Full	Multipara	Marginal	Child lying transversely; internal podalic version	G.	G.	
5	33	34th week	Multipara	Marginal	Membranes ruptured; tight binder	G.	G.	
6	37	Full	Multipara	Lateral	Champetier de Ribes's bag; R.O.P. manual rotation forceps	G.	G.	
7	38	27th week	Multipara	Lateral	Champetier de Ribes's bag; internal version	D.	S.	Mother developed septicaemia; *B. coli* and a diplococcus grown from the uterus. Criminal abortion had been procured in this patient before her admission.
8	41	Full	Multipara	Marginal	A case of twins, the placenta of the second child being praevia; rupture of second sac. Inj. ergot hyp., mxj; liq. strych. hyd. miij, hypodermically	G.	G. S.	

done. The abnormal and complicated cases are used for more advanced instruction, directed not so much to the individual clerk as to the whole class. Not the least advantage to the student in the ward-teaching is the opportunity it affords of learning the management of the lying-in mother and her baby. The many little matters of much importance in family practice which were unavailable for instruction purposes are now brought to his notice, though it is not always easy to make him pay proper regard to them, probably because his perspective is based too much on examination requirements. Indeed, looking back on nearly two years' experience of ward teaching of obstetrics, we can only wonder that so important a part of the family practitioner's work was left so long to be picked up haphazard in the outdoor maternity. The advantage of the old system in personal responsibility is still retained, but it is based on a very different foundation of knowledge and experience, and the student now depends on his extern work rather to learn how to adapt his methods to the far from favourable conditions he finds in the patient's own home to learn, indeed, how to do without the many things he found to his hand in the hospital—than in acquiring clinical experience. The chances are that the 20 or 30 cases he sees outside are mostly straightforward. To the student, to the extern patient, and ultimately to the whole community, no reform in medical education has been of greater importance than this preliminary hospital instruction in midwifery.

Report for Year 1911.

In order to illustrate the opportunities for clinical experience afforded by a ward of this size we give an abstract of the work done during 1911.

383 patients were admitted, and of these 364 were delivered, 19 being discharged undelivered, either because they were not in labour or because they were taken in for a complication of pregnancy and did not require induction of labour. 139 were primiparae and 244 were multiparae. There were 286 cases of uncomplicated labour, of which 2 were face and 8 were breech and the rest vertex presentations. There were 5 normal cases of twin birth.

372 children were born during the year, of which 354 were mature; of these, 27 were stillborn and 4 died; 18 were premature; 3 of these were stillborn and 6 died. Of the abnormal cases there were: Eclampsia 7, placenta praevia 8, contracted pelvis 10 (for particulars of which see tables). Albuminuria 3; in 2 cases labour was induced and in the other came on naturally; all were discharged well. Pernicious vomiting 4; none severe, and all recovered without disturbance of the pregnancy; 1 had gastric lavage and 1 had saline per rectum. Accidental haemorrhage 5, none severe; in only 1 was there any interference—

Contracted Pelvis.

Case.	Age.	Maturity.	Parity.	Pelvic Measurements. Intersp.	Inter-crist.	Ext. Conj.	Diag. Conj.	Treatment.	Result. Mother.	Result. Child.	Weight of Child. lb. oz.	Length of Child.
1. E. W.	30	38th week	Mult.	9½	10½	—	4½	Induction with toy bag and Champetier de Ribes's bag	G.	G.	6 14	20 in.
2. E. A.	35	36th week	Mult.	9	11	—	—	Induction with toy bag and Champetier de Ribes's bag	G.	G.	[illegible] 14	20 in.
3. C. W.	32	Full	Mult.	9½	10½	—	3½	Caesarean section	G.	G.	6 5	21¼ in.
4. A. I.	32	Full	Mult.	—	—	—	4½	High forceps; advised to come up for induction at 37th week, but did not come till in labour	G.	S.	8 0	—
5. M. H.	24	Full	Prim.	9½	10	7½	4½	Old case of tuberculous hip induction with toy bag and Champetier de Ribes's bag; high forceps	G.	S.	—	—
6. H. H.	23	38th week	Mult.	9½	10½	—	Not felt	Induction with bougies; normal labour	G.	G.	7 6	18½ in.
7. M. B.	25	36th week	Mult.	8½	9½	—	4½	Induction with Champetier de Ribes's bag; normal labour	G.	G.	6 2	18 in.
8. E. G.	23	Full	Prim.	9½	10½	—	3½	Caesarean section	G.	G.	5 13	18½ in.
9. S. G.	27	Full	Prim.	10½	11½	6½	4; true conj. 3½	Kyphotic pelvis; Caesarean section	G.	G.	5 2	18½ in.
10. K. W.	23	Full	Prim.	10	10½	7½	4; true conj. 3½	High forceps	G.	G.	8 1	20 in.

Various complications, 14 cases:

(*a*) Cardiac and pulmonary disease, 7 cases. In one, a serious case of mitral stenosis, Caesarean section under spinal anaesthesia was performed; and although the patient improved for four days, a fatal attack of cardiac failure occurred on the fifth day (reported in the *Journal of Obstetrics and Gynaecology of the British Empire*, August, 1911, p. 60).

namely, dilatation by Champetier de Ribes's bag. *Post-partum* haemorrhage 6, treated by hot intrauterine douches and ergot or pituitary extract hypodermically.

Obstructed labour 32:

(*a*) Delayed second stage, 21 cases; forceps delivery.

(*b*) Obstructed breech, 5 cases; 3 extended legs; 1 hydrocephalus and 1 large head.

(*c*) Locked twins; 1 case.

(*d*) Transverse lie, 4 cases—one in a case of twins; internal podalic version in all.

(*e*) Impacted shoulders, 1 case; cleidotomy having failed, one arm was amputated and delivery effected.

(*b*) Various, including tuberculous cystitis (fatal) and acute rheumatism.

Maternal morbidity—that is, any case which shows a temperature of over 100° F.:

Septicaemia, 2.	Emotional, 6.
Sapraemia, 19.	Urinary, 3.
Gastro-intestinal, 19.	Pulmonary, 3.
Mammary, 22.	Various, 8.
Reactionary, 22.	

There were 7 maternal deaths during the year. Of these, 3 were in cases of eclampsia (see table); 1 in a case of placenta praevia from septicaemia (see table); 1 in a case of tuberculous cystitis and pyelitis; 1 in a case of mitral stenosis, already referred to; 1 in a case of acute pneumonia. Labour was induced, but the patient died shortly afterwards.

THE SIGNIFICANCE OF ALBUMINURIA IN PREGNANCY.*

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After reading the paper by Dr. Davies-Colley, published in the British Medical Journal of June 17th, 1911, on the association of toxaemia of pregnancy with haemorrhage, I thought that he and other readers of the Journal might be interested in the following statistics of a somewhat similar nature which I have collected from the records of the above hospital for five years. Unlike Dr. Davies-Colley, I find a marked increase in the cases of *post-partum* haemorrhage, not necessarily in eclampsia, but in cases of albuminuria.

When I was making up my first annual report on St. Helen's Hospital in 1906, my attention was directed to the fact that a large proportion of the various abnormalities and complications met with occurred in women who also showed albumen in the urine—for example, haemorrhages, adherent placenta, placenta praevia, and stillbirths, and in publishing the report in the *New Zealand Medical Journal* (October, 1906) I commented on this fact. Since then I have given particular attention to the subject, and now that I have statistics of five years I thought it might be of interest to bring before you the facts which I have collected.

The one possible danger which the obstetrician associates with albuminuria is eclampsia. Well, out of 289 cases of albuminuria which have passed through St. Helen's Hospital, we have had only 5 cases of eclampsia, and yet in many the albuminuria was accompanied by severe toxic symptoms and marked oedema.

Eclampsia is, therefore, not a frequent accompaniment of albuminuria, although I am inclined to attribute our escape from it in many cases to the prophylactic treatment extended to them beforehand. As soon as the patient comes to the hospital to book, which may be in the early months, or not till the seventh or eighth month, a specimen of urine is examined, and if it contains albumen, or if she suffers from toxic symptoms, she is given directions with regard to her diet and the care of the bowels and skin. She is told to report herself from time to time at the hospital, the urine being examined on each occasion, and toxic symptoms inquired for. If these supervene to any extent, she is admitted for perhaps a week's treatment, during which improvement usually occurs. I have mentioned eclampsia merely to show that it is not one of the frequent accompaniments of albuminuria.

I have purposely refrained from calling these albumen cases nephritis. Many of them were so, the kidneys being organically diseased, but in many the albumen was transient, passing away during the puerperium. We examine the urine in all the albumen cases on the day the patient leaves the hospital. We can thus note which are the transient cases, and in which cases the albumen is still present.

The proportion of pregnancies in which albumen is present is a very large one. Out of 1,127 cases which have been under our care, indoor and outdoor, there were 289 albumens—that is, 25.6 per cent.

I have worked out a comparison between the normal cases (that is, no albumen) and the albumen cases on the following points, and I find all the complications more numerous in the albumen cases:

1. History of previous labours.
2. Placenta praevia or low implantation.
3. *Ante-partum* haemorrhage.
4. *Post-partum* haemorrhage.
5. Mental symptoms.
6. Phlegmasia alba dolens.
7. Adherent membranes or placenta.
8. Morbidity.
9. Premature births.
10. Stillbirths and deaths of infants.
11. Inability to nurse, complete or partial.

History of Previous Labours.

I may say that I cannot guarantee perfect accuracy in numbers with regard to these previous histories, as some nurses, in writing up the charts, would get a much more accurate history of previous labours than others who were less thorough in questioning the patients.

Miscarriages.

	Normal (838).		Albumen (289).	
	No.	Per Cent.	No.	Per Cent.
1 Miscarriage	57	6.7	37	12.1
2 Miscarriages	12	1.4	13	4.8
3 „	3	0.35	3	1.04
4 „	1	0.12	1	0.34
5 „	0	0	4	1.36
6 „	1	0.12	1	0.34

Stillbirths.

In one of the albumen cases the whole five pregnancies resulted in premature stillbirths, and in one there were six miscarriages, one stillbirth at full term, and two which died in a few hours, representing a family of nine children lost.

	Normal.		Albumen.	
	No.	Per Cent.	No.	Per Cent.
Stillbirths	3	0.35	14	4.9
Died within a month ...	3	0.35	7	2.45
Phlegmasia	2	0.24	4	1.36
Eclampsia	0	0	11	3.8

It will thus be seen that, so far as previous histories go, the number of miscarriages in albumen cases is greatly in advance of those in normal cases, being nearly double for those with one miscarriage, treble for two, three, and four miscarriages, also increased for five and six miscarriages. In one of the normal cases there were six previous miscarriages and one stillbirth out of nine, but this case was distinctly syphilitic. There is a marked difference in the stillbirths at full time: the percentage was 0.35 for normal and 4.8 for albumen cases. Similarly, in those which died within a month there is a preponderance among the albumen cases.

Complications.

Among the complications of previous labours not many were inquired for, but phlegmasia was noted in two of the normal and four of the albumen cases; eclampsia in none of the normal and in eleven of the albumen cases.

Histories of Present Labours.

Coming now to present labours—in these the histories are quite accurate.

"Adherent Placenta or Membranes" including Total or Partial Adhesion of Placenta or Membranes.

	Normal (838).		Albumen (289).	
	No.	Per Cent.	No.	Per Cent.
Adherent placenta ...	28	3.3	44	15.2
"Placenta praevia or low implantation"	11	1.3	23	8

In many of the albumen cases the placenta was degenerate in parts.

Some of these cases had free *ante-partum* haemorrhage, some no haemorrhage, the condition being only diagnosed after the birth of the placenta, when the latter was found

*Read at a meeting of the Otago Branch of the British Medical Association.

attached to the margin of the opening in the membranes through which the child had passed, the membranes being complete.

Ante-partum Haemorrhage—either accidental or unavoidable:

	No.	Per Cent.
Normal	11	1.3
Albumen	20	6.9

Many of these were only slight, but the preponderance in the albumen cases is marked.

Threatened Post-partum Haemorrhage.—Threatening *post-partum* haemorrhage—that is, cases in which the discharge was so profuse that special measures were required to overcome it and a nurse told off to watch for some hours for a possible return of it; in these I have not included cases due to adherent placenta:

	No.	Per Cent.
Normal	25	2.9
Albumen	26	9

Mental Symptoms, including Violent Hysteria, Melancholia, and Mania:

	No.	Per Cent.
Normal	1	0.12
Albumen	9	3.1

Morbidity (taking a temperature of 100° and over lasting for at least two consecutive days):

	No.	Per Cent.
Normal	53	6.2
Albumen	55	19

The total number of cases in which there was inability to nurse was 225. Of these, 83, or 36.8 per cent., had albumen. Of the rare complications, such as phlegmasia, anencephalus, and vesicular mole, we had one of each, and in each case there was albuminuria. Of the complications which are usually associated with albumen—namely, toxaemia, oedema, and eclampsia—we had 29 with toxaemia, 56 oedema, and 5 eclampsia; all had albumen.

	Normal.		Albumen.	
	No.	Per Cent.	No.	Per Cent.
Premature births ...	4	0.47	30	10.5
Stillbirths	15	1.79	21	7.2
Died before leaving hospital	5	0.39	9	3.1

The history of the stillbirths, and the deaths shortly after birth, are particularly instructive. I found that in the normal cases there was a much larger proportion of what one might call unavoidable deaths—for example, due to impacted breech presentations in primiparae, a large child in a small pelvis, accidents to the mother shortly beforehand, and cases of prolapsed cord; whereas in the albumen cases these causes were less numerous, and the purely toxic causes more numerous.

Normal Cases (that is, those with no albumen).

1. Thirteenth pregnancy; previous 12 normal. Had worked sewing machine up to the last, and after one particularly heavy day she felt no more movements. The child was born dead, skin peeling.

2. Fifth pregnancy. Had a fright and heavy fall a week previously, after which no more movements were felt; child macerated.

3. Ninth pregnancy; induction at eighth month for contracted pelvis: had had eight previous craniotomies. This time the cord was prolapsed and the child was stillborn.

4. Induction at eighth month for contracted pelvis; breech presentation; difficulty with birth of head; child stillborn.

5. Primipara; contracted pelvis, head would not engage, high forceps required; child stillborn.

6, 7. Presentation of cord.

8. [illegible] pregnancy; premature at six and a half months, the [illegible] five months; syphilis.

9. [illegible] foramen ovale; died on the third [illegible]

10. [illegible] pregnancy; premature at seventh month, no [illegible] althy.

11. [illegible] child, born asphyxiated; required long [illegible] n, but died in convulsions in twenty-eight [illegible]

12. [illegible] had severe *ante partum* accidental [illegible] weakly, and died on the second day.

13. [illegible] admitted with haemorrhage from [illegible] month; the other two became [illegible] was rapidly performed, but the [illegible]

[illegible] others were weakly and anaemic, [illegible] weakly, and died on the second day.

[illegible] admitted with haemorrhage from [illegible] month; the other two became [illegible] was rapidly performed, but the [illegible]

[illegible] others were weakly and anaemic, [illegible] nourishment of the child; in two they were [illegible], in one the placenta was degenerate; and in the fourth it was her fifteenth pregnancy; the baby was pinched and ill-developed, and died in two days with haemorrhage from mouth and rectum.

The last four, therefore, are the only ones in which the death of the child could be attributed to the poor health of the mother, unless we include the three cases of placenta praevia, which may indirectly have been due to the mother's health.

Albumen Cases.

A total of 30 cases of stillbirths or early death, 24 of these being due to ill health in the mother, and only 6 due to such causes as placenta praevia, prolapsed cord, or difficult birth (in a small pelvis):

1 and 2. Prolapsed cord.

3. Primipara, breech presentation, with impacted head and arms.

4. Large child in small pelvis.

5. Large child; required two and a quarter hours artificial respiration, but died in fourteen hours.

6. Central placenta praevia, severe haemorrhage; internal version performed, but the child died.

The remaining twenty-four had bad histories from a health point of view; many showed symptoms of a severe toxaemia; several were cases of twins born prematurely, and one of them dead, sometimes macerated.

I may here say that in the healthy mothers, where twins were born, they both lived and were healthy, usually going to full term.

It is interesting to observe the different ways in which the toxaemia showed itself in the symptoms both of the mother and child.

Symptoms of Toxaemia.

1. Thirteenth pregnancy; heavy albumen and oedema; premature at eighth month. Her eleventh had died soon after birth, and her twelfth was stillborn at the seventh month; the previous ones healthy.

2. First pregnancy; heavy albumen. Sent in as urgent case from Middlemarch for excessive vomiting and jaundice; premature at eighth month; macerated.

3. First pregnancy, premature, eight and a half months, macerated; slight eclampsia on the following day with twitchings of face muscles, severe headaches, and swelling, with purple discoloration of face.

4. Tenth pregnancy; heavy albumen and oedema, stillborn; the second pregnancy was the only child living; there had been four premature births—two stillbirths at full term, one died after three hours and one after twelve hours.

5, 6. First pregnancies; heavy albumen, severe toxic symptoms, one full term, one premature.

7. Third pregnancy; premature; baby collapsed and died in two days from haemorrhage from the stomach.

8. Second pregnancy; severe vomiting and headaches; history of convulsive movements felt two days previously, then cessation; the first child had died, aged 7 months.

9. Fifth pregnancy; first and fourth stillborn; severe *ante-partum* accidental haemorrhage with collapse and inertia; child delivered rapidly by forceps, but dead.

10. Fifth pregnancy; under treatment in hospital for three weeks previously for toxaemia; child had spasmodic breathing from birth and poor circulation, frequently going blue and cold; died third day.

11. First pregnancy; baby had asphyxia at birth, heavy rapid breathing, spasms of larynx, and inability to swallow; died fifth day.

12. First pregnancy; heavy albumen; a twin premature at seven months; lived thirty-six hours.

13. First pregnancy; premature at seven months; born asphyxiated; died in a month.

14. Fifth pregnancy; brought to the hospital in a state of collapse, weak and cold from haemorrhage; child prematurely born rigid and dead. In her first pregnancy there had been haemorrhages, and the fetus died at the seventh month; her third and fourth were abortions.

15. Seventh pregnancy; vesicular mole.

16. First pregnancy; anencephalic fetus.

The remaining eight had the usual toxic symptoms; some of the children were premature, some macerated, some died in two or three days from convulsions or general weakness. Several of the mothers had a history of previous stillbirths or early deaths in the children.

Many of the mothers with heavy albumen collapsed to an alarming extent after labour, causing grave anxiety. The only death was one in which *post-mortem* examination revealed extensive changes in the kidneys.

In a few cases the baby had oedema; in some there was collapse of the child, requiring stimulants, and sometimes a saline per rectum, but afterwards recovering. Many of those who lived were below the average weight. In one case there were deformed feet. Two cases occurred of the child dying from haemorrhage of the stomach or bowels; one child had subsequent haemorrhage of the umbilicus, where the mother had heart disease, and was collapsed for some time after labour.

Return Cases.

The return cases to the hospital are also particularly instructive and interesting. I have details of fourteen return cases in which there was albuminuria for at least one of them. They distinctly show that in the pregnancy in which albuminuria was present, other complications were present; when the same woman had no albumen the labour was normal:

1. She first came to St. Helen's for her third pregnancy, which was normal in every way. Fourth pregnancy also normal. In both cases she nursed the baby entirely. Fifth pregnancy, albuminuria, complicated with uterine inertia, adherent marginal placenta, *post-partum* haemorrhage; milk had to be supplemented with artificial food.

2. Primipara; albuminuria; child born prematurely at eighth month. Second pregnancy, no albumen, and normal in other ways.

3. Her third pregnancy, heavy albumen, fetus macerated, premature at eighth month, excessive vomiting, and low condition of health. Fourth pregnancy, had treatment throughout whole period; the baby threve, no complications, except a poor milk supply and a tendency to run a temperature.

4. First pregnancy, trace of albumen, subinvolution with retention of lochia; ran a temperature. Second pregnancy, no albumen, normal in every way.

5. First pregnancy, albuminuria, twins, one dead, marginal placenta, *ante-partum* haemorrhage, oedema and toxic symptoms requiring treatment in hospital beforehand. Second pregnancy, no albumen, normal in every way.

6. Had one before she came to St. Helen's with albuminuria and eclampsia. The first at St. Helen's, albuminuria, toxic symptoms treated in the hospital beforehand; had *post-partum* haemorrhage and collapse. Second, in hospital, albumen only slight, no complications, except very free discharge. Third, trace of albumen with slight oedema, no complications, no haemorrhage. Fourth, trace of albumen with oedema, faintness beforehand, but no complications. This one continued to improve in each successive pregnancy, as she understood better how to manage her health.

7. First pregnancy, no albumen, normal. Second pregnancy, very slight albumen, no complications. Third pregnancy, heavier albumen; had *post-partum* haemorrhage.

8. Fourth pregnancy, trace of albumen, milk scanty; baby lost weight. Fifth pregnancy, normal, no albumen; baby threve. Sixth pregnancy, slight albumen; had frequent headaches and epistaxis; baby not very healthy, and losing weight.

9. First pregnancy, no albumen; normal in every way. Second pregnancy, trace of albumen, headaches; baby premature at eight and a quarter months.

10. First pregnancy, distinct albumen, threatening *post-partum* haemorrhage. Second pregnancy, no albumen; normal.

11. This one is particularly interesting. She came to book in the early months for her seventh pregnancy, and gave the history that at her second pregnancy she had had eclampsia, and in all since she had had oedema, headaches, and giddiness. She was given advice and treatment; no albumen appeared; baby 9¼ lb., and threve well; no complications. Eighth pregnancy; possibly she thought she was all right now, and took no precautions; there was albumen, oedema, and toxic symptoms; the babies, twins, were born prematurely at seven and a half months, both very weakly, requiring stimuants; fingers of both children pustular.

12. First pregnancy, slight albumen; child premature at seven months; born asphyxiated and weakly; milk scanty; child died in one month. Second pregnancy, trace of albumen, which di appeared in a few days; milk good; normal confinement. Third pregnancy, no albumen; normal. Fourth pregnancy, slight albumen; threatened miscarriage at sixth month, with haemorrhage; milk poor.

13. First pregnancy, albumen, symptoms of eclampsia, during first day *post partum*; face swollen and purple, could not see; pulse rapid, twitching of face muscles; child macerated; placenta degenerate. Second pregnancy, distinct albumen; patient under treatment for last two months for toxic symptoms; had *post-partum* haemorrhage and adherent placenta; baby threve.

14. First pregnancy, heavy albumen and oedema; under treatment for last month; baby two weeks premature; membranes ragged and part retained. Second pregnancy, had advice and treatment throughout; very slight albumen, no oedema; placenta and membranes intact; went to full term; baby threve.

When we come, then, to examine these cases carefully, we see a remarkable preponderance of complications in those showing albuminuria. It is evident that the albumen is only the visible sign of profound metabolic changes which are taking place in the body, and if the excretory organs fail to respond to the extra demand made upon them, the waste products of cell metabolism, probably from the disintegration of protein, circulate in the blood, act as an irritant, and lead to the development of inflammatory changes in the renal tissue, causing degenerative disease, and resulting in that type of nephritis of a transient nature which we usually separate from true inflammatory nephritis. If the condition is not recognized early, the waste products accumulate, and will lead to more serious disease, ultimately resulting in the death of the mother from eclampsia. It is fortunate that we have this one sign—the presence of albumen—as an indication of the slow toxaemia which is going on, as in many cases there is absolutely no other symptom of the mischief which is brewing. Indeed, I remember one case in my private practice where the woman was in excellent health—always had been—but as I made a rule of examining a specimen of urine at the seventh month I examined hers, and was surprised to find it heavy with albumen. I immediately explained her condition to her, and put her on treatment. She got safely through the confinement in a normal way, but I had just returned home again at three in the morning when a message came from the nurse to say that she had eclampsia. Fortunately it was mild; she had only three fits, and made a good recovery; but until that first fit appeared, although I had been on the look-out for symptoms, there was no indication of anything being wrong.

The fact that haemorrhages are more frequent in cases of albuminuria is only what we would expect, as we know that renal inefficiency is associated with serious disturbances of the vascular system, manifested by an increase in the general blood pressure, by cerebral and retinal haemorrhages and epistaxis, and finally leading to changes in every organ of the body, the uterus included. If the condition recurs through two or three pregnancies, no doubt actual arterio-sclerosis would arise, and from the histories of previous pregnancies which I have collected, it is evident that the same cause has been acting in several, producing permanent changes. This would account for such complications as placenta praevia, haemorrhages, and adherent placenta or membranes, possibly also for phlegmasia alba dolens. The increase of cases showing mental symptoms is quite easily accounted for, as a toxaemia from any cause will affect the brain and nervous system. The increased morbidity is, I think, due not so much to the direct effect of the poison in the body, as there is usually no temperature before labour, but rather to a want of resisting power in the body generally, to the attack of those organisms which would be present in the vagina, and which would quickly get the upper hand.

The stillbirths and early deaths which so markedly preponderate in the albumen cases would be accounted for: (1) By the direct effect of the toxaemic blood circulating through the placenta, degeneration of which frequently occurs, and thereby gaining access to the child; for there can be no doubt that this poison does find its way to the child, as is shown directly by the occasional occurrence of oedema in the children. Might not the various haemorrhages in the newborn—for example, in the skin, from the mouth, the navel, the nose, and the gastro-intestinal tract—be also produced by the circulation of this toxin in the fetal blood? (2) Once degeneration of the placenta sets in, a certain amount of nourishment to the child is cut off and the child dies.

Exactly what causes premature birth it would be difficult to say, but possibly the toxins circulating in the blood act as an oxytoxic, setting up uterine contractions. Every patient is not similarly affected, as many show a slight albuminuria with no other complications than that of anaemia, whilst a few, but a very few, have heavy albumen and no complications other than anaemia, bad varicose veins, poor milk supply, and occasionally degenerate placenta.

There is no doubt, however, that the presence of albumen during pregnancy is a serious indication, and is likely to be the forerunner of some complication in labour. It is a strong plea for the more frequent examination of the urine during pregnancy and the more careful supervision of the general health, in the latter months, by the obstetrician engaged to attend the woman.

In the subsequent discussion on the paper one of the chief points raised by several members was the difficulty of understanding why placenta praevia should occur more frequently in cases of albuminuria. The reply to this was that these were probably not cases of transient albuminuria produced by a toxin, but cases of true nephritis in which endometritis had been set up, thus allowing the ovum to fall lower in the uterine cavity before it found a resting place.

As a cause of the oedema, albuminuria, and haemor-

rhages, Professor Malcolm suggested that the circulation of the toxin in the blood damaged the endothelium of the vessels, thus producing greater permeability in the walls of the vessels, and a greater liability of the capillaries to rupture.

It is also possible that the contractile power of the elastic and muscular walls is diminished; this would account for the *post-partum* haemorrhages.

A PERSISTENT OCCIPITO-TRANSVERSE PRESENTATION: LABOUR OBSTRUCTED AT THE PELVIC OUTLET.

BY

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In the conduct of a case of difficult labour it is generally the practice to attach so much importance to the determination of the lengths of the diameters of the pelvic brim that the consideration extended to the pelvic outlet is apt to be rather meagre.

A moment's reflection on the normal mechanism of labour will show this to be irrational, as it is clear that any marked diminution in the size of the pelvic outlet will provide a most definite barrier to the passage of the child. For scientific delivery as accurate a knowledge of the pelvic brim as it is possible to obtain is, of course, essential. But our estimate of the size and shape of the pelvic outlet is of equal importance.

As a result of a number of observations that I have made on patients who had previously suffered from somewhat extensive perineal lacerations, I am convinced that a diminished pelvic outlet is a much commoner condition than is apparently generally supposed, and that the omission to recognize its presence has been responsible for a very large proportion of the difficulties experienced in delivery when once the fetal head has passed the pelvic brim.

In the estimation of the size of the pelvic outlet it is necessary to measure the distance between the ischial tuberosities, this being its narrowest diameter. This is of great value as far as it goes, but if we consider the process of extension by which the head is delivered it is obvious that it is not enough. The distance between the tuberosities is dependent on two factors—namely, the length of the pubic rami and the angle included by them—the subpubic angle. The ease with which the fetal head will escape from the vaginal outlet will depend very largely on that angle. Of two pelves with an equal distance between the tuberosities, the one with the wider subpubic angle and shorter pubic rami will clearly offer the less obstruction to the passage of the head during its delivery by extension. To work at the best advantage the suboccipital region of the fetal head should lie in contact with the under border of the symphysis pubis during this process and form, as it were, the fixed point of a lever, the length of which is determined at any instant by the particular diameter of the fetal head escaping at the moment, and which consequently varies continually during the extension. If the subpubic angle be so small that contact between these parts is rendered impossible, it follows that the length of the lever must be increased by the distance between the suboccipital region and the under border of the symphysis. This increase must of necessity put an additional strain on the perineal tissues, and so increase the difficulty of delivery and render a laceration more likely. This condition consequently calls for additional care in extending the head over the perineum.

As the shoulders escape the same thing is true. Their escape is a much more fruitful source of perineal laceration than one is often led to believe, and, in my opinion, they are in the majority of cases the determining factor. The process of their delivery is frequently apt to be more hurried than scientific.

The case on which this note is based forms an excellent instance of malpresentation at the pelvic outlet, which I have here described as an occipito-transverse. By this I mean that in these cases the sagittal suture lies deep on the pelvic floor and in the transverse diameter of the pelvis, the posterior fontanelle being in the right and the anterior fontanelle in the left lateral aspect of the pelvis, or vice versa.

I am unable to find any description of this condition in the standard English textbooks, though it is dealt with by the German authorities, the condition being known as a *Tiefer Querstand*. It is not very rare, and the case under consideration is one in point. It is not necessarily dependent on obstruction of any kind, but is probably a variation of the mechanism of an occipito-posterior presentation. Its recognition is very important from a point of view of treatment, as delivery is greatly facilitated by the knowledge of a suitable method of applying forceps should the occiput not rotate forward under the symphysis. The general rule that their application should be made in the transverse diameter of the pelvis obviously does not hold good in these cases, as the result would be to apply them with one blade over the face and the other over the occiput of the child, and an attempt at delivery would end in disaster. Under these circumstances the forceps therefore should be applied in one or other oblique diameter of the pelvic outlet with their pelvic curve towards the occiput of the child. Then during traction the forceps are rotated gradually into the opposite oblique, with the result that the occiput is swung round under the symphysis, and delivery is then effected in the usual way. To any one with a knowledge of the application of forceps this method of delivery is quite simple, and in the case under consideration was attended with an excellent result.

M. B., a primipara, aged 20, came into labour on August 14th; she had had slight pains throughout the day. The membranes were said to have ruptured earlier in the day, but strong labour pains did not commence until 6 p.m. She was examined at 7 p.m., and the os was stated to admit three fingers. It was fully dilated by 10 p.m., and before 11 p.m. the head was well down on the pelvic floor, and could be seen just inside the vulva. The pains now became more frequent, and although they were occurring every four minutes and were very strong, the head did not advance. At 12 midnight meconium began to issue from the vagina and the pains became still more severe, and the pulse-rate rose steadily. She was admitted into Guy's at 2.30 a.m., and when I saw her she was beginning to become very distressed, the pains were frequent and severe. The pulse-rate was now 110, and the interval between the pains was short. The back of the child was made out to be to the right. Meconium was issuing from the vagina, and the fetal head was visible on separating the labia. The fetal heart was counted at 152.

The patient was anaesthetized, and on examination there was a large caput extending over both parietal bones, and the sagittal suture was found to be lying in the transverse diameter, with the posterior fontanelle to the right and the anterior fontanelle to the left. The distance between the ischial tuberosities was 2½ in., and the subpubic angle was noticed to be small. Obviously the further progress of the head was completely obstructed by the narrowness of the outlet. By applying forceps in the left oblique diameter, and by rotating them into the right oblique during traction, I was able to swing the occiput under the symphysis. Realizing the smallness of the subpubic angle, great care was used in extending the head and the living child delivered with a small amount of laceration. This was immediately closed with sutures, and primary union has taken place.

The child was not large, and weighed 6 lb. 12 oz. Its head was 14 in. in circumference, its biparietal diameter was 3¾ in., bitemporal 3½ in., mento-vertical 5⅝ in., occipito-frontal 4¾ in., and suboccipito-bregmatic 3¾ in. The obstruction was, therefore, not due to any fetal abnormality. Under the anaesthetic the diagonal conjugate was measured and found to be 5 in., and an estimate of the pelvic brim showed that no source of obstruction was present. This agreed with the clinical history of the labour.

This case, then, serves to illustrate the following points:

1. The necessity of always determining in a case of labour the size and shape of the pelvic outlet.

2. In forming an estimate of the amount of obstruction likely to occur at the pelvic outlet we should be guided both by the distance between the ischial tuberosities and by the subpubic angle.

3. The existence at the pelvic outlet of a presentation, here described as an occipito-transverse.

4. The rational treatment of such a presentation, should it persist, consists in an application of forceps in an oblique diameter of the outlet, and while traction is being made they should be rotated into the opposite oblique, with the result that the occiput is swung under the symphysis and delivery effected in the usual way.

A PLEA FOR A UNIVERSAL STANDARD IN THE OBSERVATION OF THE MORBIDITY OF CHILDBED.*

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It is one of the notable signs of a real advance in obstetrics that nowadays, for purposes of statistics, and consequently for the improvement of treatment, attention is given, not merely to the rate of mortality incident upon childbirth—always a criterion of some value—but also, and more particularly, to those earlier and often slighter changes, indicated by a rising temperature and a quickening pulse, which have been grouped under the heading of morbidity. It must be admitted by all that it is the closer and more general attention to this morbidity of the childbed that has led to an earlier recognition and a more efficient treatment of those septic puerperal complications which so frequently cripple, and at times kill, the unfortunate patient. The question has therefore an important educational value.

No one who has studied the periodical reports of "maternity" hospitals in any country can rest satisfied with the present methods of observing and recording the morbidity of childbed, or with the varying standards created by individual observers, which greatly reduce the value of otherwise careful and reliable records.

For comparison of statistics, either of individuals or of hospitals, the present state of matters cannot be said to be satisfactory. One observer takes the temperature of his patients in the mouth, another in the axilla, a third in the rectum; one hospital records its temperatures at different hours or intervals of the day from another; one authority disregards the temperature of the first twenty-four hours, another includes it. The correctness of the thermometer also varies, and there is need for strict regulations as to all the precautions to be observed both by doctors and by nurses in the actual method of taking the temperature. The question of the pulse is disregarded by some and is considered very important by others, and by the latter the pulse-rate is always taken into account in estimating their morbidity. Again, abortions are included by some, excluded by others; while some hold that all deaths should be included, others that only deaths accompanied by some degree of fever should count.

All these varying conditions and methods lead us to the most difficult question of all—the unfortunate variation of the standards that have been adopted by different individuals, hospitals, or associations. To illustrate this important point I shall take four familiar standards of morbidity—the so-called Continental standard of 38° C. or 100.4° F., and the standards of the British Medical Association, the Rotunda Hospital, Dublin, and Queen Charlotte's Hospital, London.

Table of Cases taken by one Observer and Tested by these Standards.

	Primi-para.	Multi-para.	Total.
1. Queen Charlotte's Hospital*	37	7	44
2. Continental, 100.4° F. (38° C.)	26	6	32
3. Rotunda Hospital, Dublin, 99° F. (37.2° C.)† ...	14	2	16
4. British Medical Association, 100° F. (37.8° C.)‡	11	1	12

* Every temperature above 100° F. (37.8° C.) is morbid.
† When temperature after first 24 hours exceeds 99° F. and pulse 90 on three consecutive occasions, the case is morbid. Include abortions, but exclude death without fever.
‡ If the temperature reaches 100° F. on any two occasions between the second and eighth day the case is morbid. Include all deaths, but exclude abortions.

Conclusions.

Surely the foregoing considerations and these figures that so markedly demonstrate the disparity of the four standards warrant the following conclusions:

1. It is desirable to have a uniform standard for the scientific records of morbidity in the puerperium.
2. For this only thermometers of ascertained correctness should be used.
3. The observation should always be made in one place, preferably the mouth, and extend over a fixed time.
4. The temperature should be taken at stated intervals and at the same time of the day, and the first day should be included.
5. The record should include all abortions and also all deaths with a previous morbidity.
6. Both temperature and pulse should be taken, and the lower limit in each should be fixed by resolution of the International Congress for Obstetrics and Gynaecology, and thus become a recognized, universal, uniform standard of morbidity for use in all scientific communications.

* Extract from a paper read at the International Obstetrical and Gynaecological Congress, Berlin, September, 1912.

SOME REMARKS, WITH STATISTICS, ON THE TREATMENT OF 1,305 SCHOOL CHILDREN (LONDON COUNTY COUNCIL)

AT THE ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS).

By FRANK MOXON, M.B., B.S.Durh.,
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In presenting this report on 1,305 children who passed through my hands in the special department for the treatment of London County Council school children during the nineteen months from May 27th, 1910, to December 31st, 1911, at the Royal London Ophthalmic Hospital, "Moorfields," I am conscious that the number of cases dealt with is too small to enable one to make any dogmatic assertions, but I am hopeful that, at any rate, the details may be of some interest to those concerned with the welfare of the children. The bringing together of such large numbers of children for treatment gives one most valuable opportunities for studying the wider problems of refractive errors, which errors represent the major portion of the eye defects in children—for example, the factors at work in their causation and development: the effect of environment, nutrition, feeding, study, age, heredity, etc., particularly in regard to myopia, its beginning and progress.

I propose first to deal with a few aspects of medical inspection as they occur to one engaged in treatment. I may remind the reader that, when speaking of inspection, I am only referring to the inspection for defects of vision.

First, in regard to the periods of the child's school life in which inspection takes place, these periods, so far as the London County Council scheme is concerned, are the following:

(*a*) Entrants.
(*b*) Age 8 to 9 group.
(*c*) Leavers, aged 13 to 14.
(*d*) Those cases specially referred by the school teachers.

It is group (*b*) that I am more particularly concerned with, and I feel strongly that instead of inspecting the children of about 8 or 9 years old, it would be of more value if they were re-examined when 6 or 7 years old, or as soon as the child is able to read the alphabet, because, although, no doubt, a few at the time of entrance inspection—namely, at 5 years old—are able to read the test types, yet the larger number cannot, and are therefore classed as "illiterates," and unless they have some obvious defect, they are passed over until the next inspection period, which, as I have said, takes place at 8 or 9 years of age. To digress a little, I might, perhaps, mention that, as a matter of fact, many children who do not know their alphabet or numerals, can be got to read some form of "illiterate" type. Personally, I am in favour of, and use the E type, which consists of a series of the letter E placed in various positions—for example, E Ǝ Ǝ Ǝ, each line or row of letters being made to correspond in size to those of the standard Snellen type. The child is given a metal letter E, painted black and mounted on a handle; after a little explanation and encouragement the child is soon got to place the mounted E, which is held in the hand, in a position corresponding to that of any letter E pointed out by the examiner on the test card. However, there is no denying the fact that this test takes some

time and patience, and would not, therefore, be generally applicable for routine inspection work.

To return to my point on the inspection of group (*b*), I wish to emphasize the fact that if this second inspection were carried out at 6 or 7 years of age we should then be catching squints and myopia nearer the time of their inception, or at any rate at a more favourable time than is the case if we wait until they are 8 or 9 years old, or until a time when they show some such pronounced signs of defect as squinting, or, in the case of the myope, an inability to read the blackboard from the back benches, etc. It would be better still, no doubt — certainly as regards squints—if we could have the children inspected from birth onwards, when we should get all the squints in our net at the very beginning; but I fear this ideal is at present impracticable, and would no doubt call forth much hostile criticism. Nevertheless, can it be denied that if these children were reared from birth under the careful supervision of the school doctor, with the aid of his Health and Care Committees, we should then be able to get at and remove the seeds of future constitutional weaknesses and defects before they had taken root and developed into their many evil forms—bad feeding, stuffy atmospheres, giving rise to poor nutrition and stunted growth, and laying the foundations for the development of our myopes with their weak sclerotics, or our hypermetropes with their arrested eye development?

Another matter in regard to vision inspection is the wide diversity of opinion in regard to what vision should be called "normal" and what "defective." I have found in reading through some twenty or more school medical officers' reports that $\frac{6}{12}$ vision has frequently been adopted as the dividing line, as it were, between the "defective" and the "normal"; that is to say, that all with vision of $\frac{6}{12}$ or less are sent for treatment; those with $\frac{6}{9}$ are not; or, again, if a child can get $\frac{6}{12}$ each eye, and $\frac{6}{6}$ or $\frac{6}{9}$ partly with binocular vision, then it is not sent for treatment; or all with vision of $\frac{6}{12}$ or less, together with such of those with $\frac{6}{9}$ vision as show some obvious sign or symptom of distress, are sent for treatment. Quoting from the 1910 report of the Medical Officer (Education) of the London County Council, it is there stated—page 127—that "bad defects of vision or eye diseases were recorded in 18,923" children; and further on the following comment is made: "It will be seen that these are minimal numbers, and in the case of visual defects a comparatively *low standard* (the italics are my own) is taken; below Standard V, for instance, visual acuity of $\frac{6}{18}$ is taken as the beginning of what is called defect, and $\frac{6}{12}$ is only called defective vision in those children who are in Standard V or VI. I freely admit that a subjective vision test in the case of children is often unsatisfactory, a child one day, for instance, reading $\frac{6}{18}$ and the next $\frac{6}{6}$, which may be due to fear, stupidity, inexperience of the examiner, malingering, or spasm of accommodation; but this cannot be held to be a valid reason for permitting a child who, when in any Standard below V, reads $\frac{6}{12}$, to wait until promoted to Standard V before being sent for treatment. To me it seems entirely wrong. No doubt the visual acuity appears in some cases to increase as the child gets older, so that a child who reads $\frac{6}{12}$ when 7 years old might be found to read $\frac{6}{9}$ or $\frac{6}{6}$ when 9 or 10 years old; but I am convinced that more often this so called improvement in the vision is merely due to greater use and development of the accommodation, enabling the hypermetrope thereby to mask his real defect; whereas in the case of the myope it is due to narrowing of the palpebral fissure and screwing up of the eyes. Then, after all, why should a new standard for normal vision be set up? Our present $\frac{6}{6}$ or standard vision is not too severe or exacting, many children being able to read $\frac{6}{5}$, or even $\frac{6}{4}$. Personally, I feel strongly that if a child cannot read $\frac{6}{6}$ and Jaeger 1 with each eye, then that child should have a more detailed examination; if there is any doubt about the subjective test, give the child the benefit of the doubt and have it sent to the treatment centre for further examination. It is sometimes stated that a child may read, for instance, $\frac{6}{9}$ each eye, whereas binocularly $\frac{6}{6}$ may be obtained, and this case is frequently classed as $\frac{6}{6}$ vision, and so allowed to pass as normal; but frequently this apparent binocular increase of visual acuity is again simply due to a greater effort of accommodation in the case of the hypermetrope, or in the case of a myope a more ready adaptability in screwing the eyes up when both eyes are being used. Amongst the $\frac{6}{6}$ partly, the $\frac{6}{9}$, and the $\frac{6}{12}$ visions we shall find our early myopes, our hypermetropes and future squints. Must we wait until our myope can only read $\frac{6}{18}$ or our hypermetrope commences to squint, before we treat them? If myopia is going to be treated at all, then the sooner treatment is begun the better; treatment here does not only consist in prescribing appropriate lenses, but, what is of equal importance, also instructions about the prohibition of fine work, reading and writing at short range, etc., so that even if glasses are not at first ordered for the slighter defects, yet we can warn them and keep them under closer observation by re-examining them every six months, or until one is satisfied that no increase in the myopia is likely to take place. Then, again, many of these $\frac{6}{6}$ partly, $\frac{6}{9}$ and $\frac{6}{12}$ have considerable degrees of hypermetropia or hypermetropic astigmatism, who by accommodating are able to mask their defect, at any rate until they become older and use their eyes more for close work.

From the annual report of the London County Council Medical Officer, I find that a separate register is kept at each school, recording those cases which have had treatment, and that the school doctor re-examines these said cases at various periods, to record the result of treatment; this, of course, is a very necessary procedure, but, certainly in regard to those treatment officers who make a practice of having all their cases up again for re-examination, this means in many cases an unnecessary reduplication of work. But here I more particularly wish to refer to a certain number of cases which are re-examined and tested, not by the school doctor but by the teachers, and in some cases are referred again by them to the treatment centres either because, in their opinion, the glasses do not suit or that the child sees no better with the glasses than without them, etc. Obviously this is not a right procedure; it requires a more or less expert knowledge to pass such an opinion, for quite frequently lenses do not give better vision at first, especially if not worn constantly, and for many other reasons, the details of which I cannot enter into here. I have had several cases referred back to the treatment centre for a change of glasses in which it was stated that the teacher had tested the sight: in none of these cases was this necessary, and only had the effect of causing annoyance to the parent, who was put to the trouble and expense of taking a fruitless journey.

Finally, I am of the opinion that it is unfortunate that the card notes which are now made and kept for each child inspected are not sent, or a copy of them sent, with the child when brought up to the treatment centre, so that the treatment doctor may in all cases note for what defect the child is actually sent up. This would do away with many difficulties—for example, a child is sent because it has slight conjunctivitis; on arriving, perhaps several days later, at the treatment centre, this condition has cleared up; or, again, a child may be sent up with perfectly good vision, but it has been noted by the school inspector or teacher that the child frowns, has headache, or occasionally squints, etc.; on arriving at the treatment centre these complaints or signs are not always stated or seen, and if there is little or no refractive error, the vision is good, and the eyes otherwise appear normal, then it is only too often asked by the treatment doctor, "Why has this child been sent up?" or, on the other hand, the school doctor says, "Why is this child sent back without treatment?" If some notice were sent through the secretaries of the Care Committees, stating precisely what defect had been found and what symptoms complained of, a great deal of misunderstanding would be removed.

These will, perhaps, be considered trivial details in connexion with inspection and treatment, but I have thought well to mention them in the hope of reducing the difficulties in the stupendous undertaking of inspection and treatment of school children, and in the endeavour to correlate the work of the school doctor and the treatment doctor.

I will now briefly outline the method I adopt for re-examination of my cases. First, all myopes, in which class I include cases of mixed astigmatism, are given their full correcting lenses after careful retinoscopy, a note made of the exact refraction and the vision with correction under atropine; a note is made of the family

history, nutrition, etc., the presence or absence of any fundal or macular change, the presence or absence, and if present the size of a myopic crescent; if at the time of the first examination the case is obviously one of progressive myopia, or if there is any doubt about its being progressive, then the parent or guardian is asked to bring the child for re-examination in four months' time, also to prohibit the child in the meantime doing any reading, writing, or sewing, and warned that it would be advisable to educate the child with a view to some future occupation which does not necessitate the close application of the eyes. The higher degrees of myopia, and any that are considered to be of a progressive nature, are recommended for the Special Myope School, where a special schedule for their teaching has been drawn up by Mr. Bishop Harman. It seems that there is need for further schools or classes of this nature, as I find that there are cases recommended by me for special treatment that have not yet obtained it. In addition to this, the London County Council official, who is always present at the hospital, interviews the parent, and carefully explains the necessity and advantages of carrying out the treatment ordered, and at the same time repeats the details of treatment; a note is also made of all those cases instructed to return, and the time to return for re-examination. A notice is then sent to the secretary of the Care Committee for the district from which the child comes, repeating the above instructions, and finally a note is made in a register kept at each school by the teachers. This latter procedure to ensure the correct carrying out of treatment is, of course, adopted for all cases, whether myopes or not, if instructed to return for re-examination. All those myopes who are not considered to be of a progressive type are told to return for re-examination in six months. The parents are also warned to discourage excessive use of the eyes in close work, such as sewing or reading bad print in a poor light, and to prevent the child bending over its work with rounded shoulders, cramped chest, constricted neck, and eyes glued to the book, etc.

After the first re-examination I have all progressive myopes up again for re-examination every four or six months, and other myopes, with some exceptions, every nine or twelve months, during school life.

Hypermetropes I divide into two classes (in regard to re-examination)—namely, those of low or moderate degree with good vision, and those of the higher degrees with poor vision; the former I re-examine in one year, the latter in six or nine months.

My reasons for re-examining these hypermetropic cases in what to some may seem an unnecessarily short time are—not forgetting that we are dealing with children—because there are but few who do not very soon require the spectacle frames repaired, broken lenses replaced, or a general straightening up of the frames, together with re-centring of the lenses; this latter a most important factor when dealing with the astigmatic cases or the higher degrees of simple hypermetropia. If the time for re-examination is fixed at longer than one year, or left to the discretion of the child or parent, it then only too frequently happens that the child is not seen again; it is too long an interval to keep in touch with them; they either forget to return, break their glasses and do not trouble to get them repaired, go to some other district, or leave school. When first treatment was undertaken by the London County Council little was done about after-treatment; there was no efficient following up of the cases; so that, although I told nearly all my cases examined in the first six months to return for re-examination at varying periods up to one year, as a matter of fact only 95 out of 391 who had been ordered glasses did return by the end of the first year. Some of these absconders have since been hunted up, and it is to some extent on the experience gained in re-examining them that I was impressed with the necessity of re-examining all who had been prescribed lenses within the year, according to the plan I have previously given in detail, for the majority of these absconders either had lost their spectacles, broken them, or, in the case of some of the myopes, their defect had increased.

I am glad to say, however, that much of the difficulty in getting these children up for re-examination has now been overcome, thanks to the untiring zeal and patience of the London County Council Care Committees, so that during last year and the present year there has been a steady increase in the number of those treated who have returned for re-examination at the scheduled time.

Of the 1,305 children under review 726 were girls and 579 boys. Their ages ranged from 4 to 14 years.

Table showing Percentage of Girls and Boys for the Respective Ages.

Age.	No. of Girls.	Percentage.	No. of Boys.	Percentage.	Total.
4	16	1.22	7	0.53	23
5	32	2.45	21	1.60	53
6	41	3.14	29	2.22	70
7	62	4.75	33	2.52	95
8	96	7.35	95	7.27	191
9	84	6.43	51	3.90	135
10	62	4.75	50	3.83	112
11	95	7.27	83	6.36	178
12	156	11.95	126	9.65	282
13	73	5.59	71	5.44	144
14	9	0.68	13	0.99	22
Total..	726		579		1,305

Of these 1,305 children sent for treatment, 1,186 had their refraction estimated, 1,118 of whom were ordered correcting lenses.

Table of Refractive Errors and Percentage of the Total Number for Each Class.

	Number.	Per Cent.
Simple hypermetropia	234	19.73
Simple hypermetropic astigmatism	65	5.44
Compound hypermetropic astigmatism	530	44.68
Simple myopia	90	7.58
Simple myopic astigmatism	1	0.08
Compound myopic astigmatism	96	8.09
Mixed astigmatism	153	12.90
Anisometropia	13	1.09
Isometropia	4	0.33
Total	1,186	—

Table showing Other Defects, either as Accompanying the above Cases of Errors of Refraction or Accounted for among the Remaining 119 Cases of the 1,305 dealt with.

Defect.	No.	Defect.	No.
Strabismus—		Corneal phlyctenules	6
(*a*) Concomitant	185	Nebulae	59
(*b*) Paralytic	4	Leucoma adherens	3
Hyperphoria	3	Ectasia corneae	1
Ptosis—congenital	2	Irido-cyclitis	1
Nystagmus—		Cataract	6
(*a*) Lateral	6	Optic atrophy, secondary	2
(*b*) Rotatory	3	Detached retina	1
Chronic dacryocystitis	2	Retinitis pigmentosa	2
Conjunctivitis	68	Hereditary syphilitic choroiditis	3
Orbital cellulitis	1	Tuberculous choroiditis	3
Trachoma	1	Albinism	4
Chalazion	4	Phthisis bulbi	1
Blepharitis	37	Malingerers	1
Interstitial keratitis	3	Emmetropia	14
Phlyctenular keratitis	10		

Table of Cases of Concomitant Strabismus.

There were 185 cases in all, of which 100 were girls and 85 boys; in 63, or 34.05 per cent., of these cases the squinting eye was amblyopic.

Alternating convergent strabismus	51
Right convergent strabismus	49
Left convergent strabismus	75
Alternating divergent strabismus	4
Right divergent strabismus	3
Left divergent strabismus	3
Total	185

Table of Cases of Convergent Strabismus for each Age (Number and Sex).

Age:	4	5	6	7	8	9	10	11	12	13	14	Total.
Girls	5	15	10	11	13	7	9	5	13	4	2	94
Boys	—	6	14	8	21	7	6	5	8	3	3	81
Total ...	5	21	24	19	34	14	15	10	21	7	5	175

Table of Cases of Amblyopic Squints (Number and Sex).

Age:	4	5	6	7	8	9	10	11	12	13	14	Total.
Girls	—	2	4	4	3	3	5	1	4	2	1	29
Boys	—	1	3	4	9	4	3	1	5	3	1	34
Total ...	0	3	7	8	12	7	8	2	9	5	2	63

I have also more closely analysed the myopic cases, among which I include cases of mixed astigmatism. Under this classification there were 340 cases, of which 183 were girls and 157 boys.

Table of the Myopes for each Age (Number and Sex).

Age:	4	5	6	7	8	9	10	11	12	13	14	Total.
Girl	—	2	4	13	24	18	14	34	45	26	3	183
Boys	—	—	3	8	17	8	15	29	41	30	6	157
Total .	0	2	7	21	41	26	29	63	86	56	9	340

The number of cases recorded for age 14 is small, and is accounted for by the fact that 14 is the age at which the child may, and unfortunately generally does, leave school. The more or less progressive increase in the number of myopes for each age will be noted.

I had tabulated the schools from which these myopes were recruited, but the total number attending any one school was too small for any accurate conclusion to be drawn therefrom.

The two following tables deal respectively with the vision recorded before and after treatment in 397 cases, or all those of the 1,118 ordered glasses that returned for re-examination:

Vision before Treatment.

		Left Eye.							Total.
		$^6/_{60}$	$^6/_{36}$	$^6/_{24}$	$^6/_{18}$	$^6/_{12}$	$^6/_9$	$^6/_6$	
Right Eye.	$^6/_6$	1	4	3	3	1	1	2	15
	$^6/_9$	2	—	1	5	9	22	4	43
	$^6/_{12}$	2	9	4	16	41	13		81
	$^6/_{18}$	3	7	8	31	20	2	1	72
	$^6/_{24}$	5	9	12	21	13	2	3	85
	$^6/_{36}$	4	19	18	8	4	3	1	57
	$^6/_{60}$	—	6	3	2	4	—		44
Total		17	54	49	86	92	46	11	397

Vision after Treatment.

		Left Eye.							Total.
		$^6/_{60}$	$^6/_{36}$	$^6/_{24}$	$^6/_{18}$	$^6/_{12}$	$^6/_9$	$^6/_6$	
Right Eye.	$^6/_6$	2	3	1	2	10	16	93	127
	$^6/_9$	—	1	—	4	16	98	25	144
	$^6/_{12}$	1	—	1	10	53	15	9	89
	$^6/_{18}$	—	—	1	8	7	2	1	19
	$^6/_{24}$	—	—	2	1	1	2	2	8
	$^6/_{36}$	—	1	1	—	—	4	2	8
	$^6/_{60}$	—	—	—	—	1	1	—	2
Total		3	5	6	25	88	138	132	397

I am indebted to Messrs. Lang, Treacher Collins, and Hepburn for kindly permitting me to publish this report.

TRANSITORY BIGEMINAL PULSE.

BY

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In relation to the case of abnormal pulse rhythm described by Dr. Johnstone in the British Medical Journal of October 5th, it may be interesting to record the occurrence of a bigeminal pulse without any apparent cause other than the slight excitement of applying the sphygmograph.

The patient was a young man, aged 19, who had been suffering from albuminuria for more than two years; he also had enlarged glands behind his sterno-mastoids, in the axillae and left groin. The pulse was small, soft, and regular. The tension was only 97. The urine contained a few swollen renal cells, very few casts, and no crystals. With the exception of slackness he had no symptoms, and when excited showed considerable activity and would play four sets of tennis one after the other. He had no other complaint.

I saw him last on September 23rd and found his systolic tension 108 and the diastolic 60. The cardiac dullness and sounds were perfectly normal. There was still a large amount of albumen; he had several glands in the back of the neck, in the groins, and in the front of the abdomen. His pulse was quite regular, but while I was taking it it assumed a bigeminal character, as is shown by the accompanying tracings, which were taken without removing the sphygmograph from the arm.



Fig. 1.—Pulse tracing showing normal pulse and bigeminal pulse which came on while the sphygmograph was still on the arm.

It is difficult to explain the exact causation of this alteration in the pulse beat, but it gives me the impression of being due to the interference of two rhythms. We

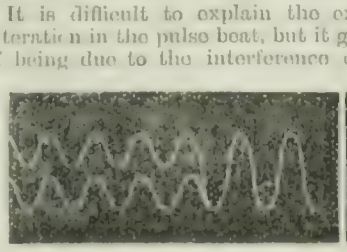


Fig. 2.—Diagram showing increase of sound or light by coincidence of waves.

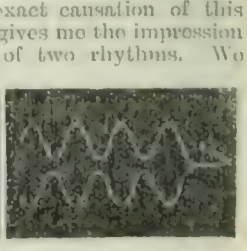


Fig. 3.—Diagram to show abolition of sound or light by interference of waves.

know that sounds or lights generally strengthen each other so as to cause a brighter light or a louder sound

because the waves of which light and sound are composed become superimposed one upon another, as in Fig. 2. But if, by chance, one sound or one light is thrown half a wave length behind the other, the two sounds make a silence, and once when I was a student in 1862 I actually saw the late Professor P. G. Tait of Edinburgh show the experiment of two lights making darkness (Fig. 3). When two rhythms do not quite coincide, beats of alternate strength and weakness are produced, as shown in Fig. 4,

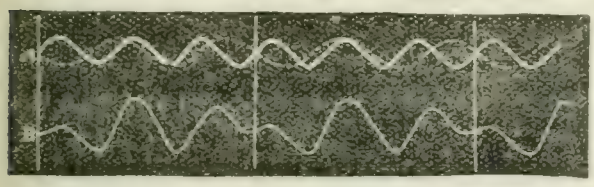


Fig. 4.—Diagram to show the effect of interference of waves of different wave lengths. The two systems having a relation of about 4 to 7 are shown above, and their resultant below. (From Ganot's *Physics.*)

and I think that in Dr. Johnstone's case and mine the peculiar rhythm of the pulse was due to the partial interference of two rhythms—muscular or nervous, or both—though the exact *modus operandi* may require a prolonged investigation and discussion.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF OPHTHALMOLOGY.

Edgar Athelstane Browne, M.Ch., President.

PRESIDENT'S INTRODUCTORY REMARKS.

Mr. Edgar Browne limited his introductory remarks to an expression of welcome to those present, and a few references to the work to be performed, and then called for the opening of the first discussion.

DISCUSSION ON CHRONIC IRIDO-CYCLITIS.

OPENING PAPERS.

I.—George Coats, F.R.C.S.,

Assistant Surgeon, Royal London Ophthalmic Hospital.

It is not my purpose to attempt a review of all the forms of chronic irido-cyclitis, but rather to select a few points here and there in order to elicit opinions on them. First, I should like to examine some recent views on autointoxication in relation to eye disease; I shall then speak of the exceedingly chronic form of cyclitis which is associated with heterochromia and cataract. Afterwards I shall mention briefly one or two points in connexion with sympathetic ophthalmitis.

A marked tendency of recent opinion is to seek the cause of chronic irido-cyclitis in poisoning either from a septic condition of the teeth, or from an abnormal state of the intestinal canal. The first of these I shall not discuss, as I believe Mr. Ormond intends to deal with it. The second, autointoxication from the intestinal tract, has been the subject of a good deal of discussion in recent years. Obviously the explanation must be received with a good deal of circumspection, for it is one which can be assumed in almost any case, and positively disproved in almost none. An evident fallacy lies in the great prevalence of constipation and intestinal putrefaction, which would render their association with irido-cyclitis in a certain number of cases not surprising, even although, in fact, no connexion existed between the two.

It may be asked, If intestinal putrefaction is the cause of irido-cyclitis why is the one so common and the other relatively so rare? This point, however, does not really tell against the explanation, for there are many instances in pathology to show that the condition of the tissues as regards resistance may be as important as the presence of the poison; even if irido-cyclitis were caused by intestinal putrefaction therefore we should not expect it to occur in every instance of that condition, any more than we should expect every one who swallows tubercle bacilli to become tuberculous. On the other hand, it would obviously tell against the autointoxication hypothesis, or at least against its universal application, if cases occurred in which there was no intestinal putrefaction. It would be interesting to hear the experience of members on this point. One meets sufficiently frequently with cases of chronic irido-cyclitis in which there is no constipation, but then an absence of constipation does not necessarily imply an absence of intestinal putrefaction. I can quote one case of typical chronic cyclitis, however, in which a careful examination of the faeces by Dr. S. H. Browning, both with regard to the completeness of digestion and the presence of an abnormal bacterial flora, was quite negative. The patient also had no pyorrhoea, the Wassermann reaction was negative, and his general health was quite good.

It would be a desirable link in the chain of evidence if the same microbe could be cultivated from the eye and from the faeces, or should this be too much to expect, if clear evidence could be brought forward of improvement in the eye condition under the use of a vaccine prepared from the faecal flora.

In recent years an attempt has been made to approach this question from a more scientific standpoint. One of the results of intestinal putrefaction is the excessive production of conjugate, or ethereal sulphates — combinations of sulphuric acid with organic radicles. To a member of this group—indoxylsulphuric acid—the name "indican" has been given, because indigo blue can be formed from it by means of agents which free and oxidize the indoxyl (Jaffé's test, Obermeyer's test). Minute traces of these substances are found in the normal urine, but it has been suggested that a persistently increased reaction may be a valuable indicator of the presence of intestinal putrefaction. It is not suggested that the sulphates themselves cause autointoxication; indeed, it does not seem to have been proved that any of the known products of intestinal putrefaction give rise, when injected experimentally, to symptoms analogous to those usually attributed to autointoxication.

Using this reaction, and also the therapeutic test of improvement with suitable treatment, Elschnig has sought to prove that enterogenous autointoxication plays a part not only in chronic irido-cyclitis and recurring iritis, but also in migraine, marginal ulcer, scleritis, episcleritis, occasional cases of glaucoma, and possibly some instances of post-operative infection, choroiditis, cataract, and recurring hordeolum. De Schweinitz supports some of these claims, and discusses the influence of intestinal catarrh on the etiology of tobacco amblyopia. On the other hand Uhthoff, writing earlier than these authors, takes a much more conservative view, and considers that the influence of autointoxication has been proved only for cases of paralysis of the ocular muscles, especially the ciliary muscle, as, for instance, in paralysis of accommodation from ptomaine poisoning.

In a recent work also v. Hippel attacks Elschnig's conclusions. He states that it is not universally agreed that indicanuria is evidence of autointoxication. Among 416 miscellaneous cases 16 gave a positive indican reaction, and most of these positive results occurred in patients suffering from a variety of conditions—wounds, ulcers, etc.—with which autointoxication can have no causal relationship; in two cases, one of scleritis and one of irido-cyclitis, in which the reaction was positive, a tuberculous etiology was almost certain. In considering these results it is to be remarked, in the first place, that 16 positive reactions out of 416 is not a very large number. If it could be shown that in chronic irido-cyclitis the

positive percentage is much higher, then v. Hippel's figures would only prove that the test is fallible, not that it is of no value. On this point, however, there is a discrepancy of evidence.

Again, even admitting the significance of indicanuria as a test of intestinal putrefaction to be disproved, it would not necessarily follow that intestinal putrefaction does not occur, or that it is not a cause of chronic cyclitis; one link of the proof fails, but the association may yet be real enough. There would still remain the therapeutic test of improvement with suitable treatment—dieting, calomel, and guaiacol carbonate according to Elschnig's prescription. The snares and pitfalls of this test, especially in the hands of the irresponsible optimist, are notorious, but without doubt some of our senior members of large experience could give us valuable information on the subject.

A form of cyclitis of extremely chronic type is that in which keratitis punctata is associated with heterochromia and cataract, the keratitis punctata and lens opacity being found always in the lighter-coloured eye. The condition has recently been the subject of a searching analysis by Fuchs, who points out that (*a*) either the iris may become bleached in consequence of the cyclitis, or (*b*) the blue colour of the iris may be the primary phenomenon and the cyclitis and cataract secondary. The first of these explanations he rejects on the ground that case histories and actual observation prove the blueness of the iris to be, in fact, antecedent to the cyclitis.

With regard to the second hypothesis (*b*) there are several possibilities: (1) The heterochromia may be a pure *lusus naturae*, or (2) it may be due to some unknown cause which prevents the normal acquisition of pigment by the originally blue infant's eye; such a congenitally abnormal eye might offer a diminished resistance to circulating noxae—or rather, one must say, considering the very characteristic type of the disease, to some specific noxa. It has yet to be proved, however, that blue eyes—or the blue eye in cases of true congenital heterochromia—show any special proclivity to be attacked by cyclitis or cataract. (3) Another possible hypothesis, and one which is favoured by Fuchs, is that some cause unknown first hinders the normal acquisition of pigment, and then in later life gives rise to cyclitis; the cause in question must be a noxa of slight intensity whose action commences in infancy and continues over many years; it must have a special predilection for the anterior part of the uveal tract, and in almost all cases it affects one eye only. The cataract seems to be a relatively late, and probably secondary, phenomenon.

If a word of criticism might be ventured on this analysis, it is that perhaps Fuchs dismisses too summarily the hypothesis of a primary cyclitis of which the bleaching is only a manifestation. It is admitted that the onset of the disease is extremely insidious, with no external congestion, and for a long time with but little visual defect; moreover, the keratitis punctata is easily overlooked except on the most careful examination, or may indeed be absent altogether, the only evidence of cyclitis being vitreous opacity; in these circumstances it is necessary to exercise much caution in fixing the date of commencement of the condition, and the statement by patients that the eye was blue before the vision became defective is not necessarily of much value. In the youngest case (13) observed by Fuchs keratitis punctata and cataract were already present. Again, although it may be true, as Fuchs states, that the heterochromia usually dates from early childhood, yet cases occur in which it is first noticed in later life—even after the vision has begun to fail; moreover, in some instances the heterochromia is said to have increased under observation. It must be confessed also that it is difficult to form a clear conception of a noxa which first, without any inflammation, causes a natural process of pigmentation to remain in abeyance, and then, it may be many years later, gives rise to an actual inflammation, slowly progressive and intractable to treatment. It would not be easy to point to any analogous phenomenon in [illegible]

On the other hand, bleaching of the iris is a well-known concomitant of various processes of inflammation and degeneration, as, for instance, after interstitial keratitis and in glaucoma of long standing. The cases of heterochromia which were examined by Fuchs, moreover, showed not a mere absence of iris pigment, but an abnormal condition of it—loss of the branched form of the chromatophores, and the presence of fine granules between the cells. In some instances, also, the lack of pigment is by no means complete, both eyes being brown, but one lighter than the other.

On these grounds, therefore, it is perhaps more probable that the process is primarily a cyclitis of a very insidious and chronic type which is associated with bleaching of the iris and with the formation of a secondary cataract. Histological researches have not so far elucidated the etiology of the condition. In addition to the changes in the chromatophores mentioned above, Fuchs found a transformation of the iris stroma into a more fibrillar type of tissue and an infiltration with mononuclear elements, probably derived from the stroma cells; lymphocytes were rare and polymorphonuclear cells absent; the vessel walls were thick and hyalin.

Turning to another type of chronic irido-cyclitis, I should like to raise for discussion one or two questions in connexion with the pathology of sympathetic ophthalmitis. I shall not enter into a discussion of theories, but shall take for granted two points which modern research seems likely to establish—that the disease is due to a living organism, be it bacterium or protozoon, and that this organism reaches the second eye, not by the nerves or orbital veins, but by the general circulation. This latter statement involves the doctrine of a specific affinity of noxae towards certain tissues; just as the poison of strychnine comes into contact with all the organs of the body, but finds its specific affinity only in the central nervous system, so, it may be supposed, the poison of sympathetic ophthalmitis also circulates everywhere, but finds its specific affinity only in a tissue which has the same constitution as that which was the seat of its original activity—namely, in the uvea of the other eye.

The exact nature of the causative organism, it need scarcely be said, is entirely a matter of speculation. Direct cultivation from the eye has failed totally, and the report by Nedden of the recovery of a diphtheroid organism from the blood does not seem to have been accepted as convincing or to have been verified. Recently Price-Jones and Browning, confirming an observation of Gradle, have described an increase in the large mononuclear cells of the blood, and have put forward the suggestion, on the analogy of the blood condition in syphilis, that this may indicate a protozoal infection as the cause of sympathetic. Some other considerations might have been added. The incubation period of sympathetic, for instance, is unlike that of most ordinary bacterial infections, but in the majority of cases is closely similar to that of syphilis; another point of resemblance is the occasional faculty which the noxa of sympathetic possesses of remaining latent over a prolonged period and then breaking out into activity—a faculty which suggests an analogy with the similar latency and recrudescence of the *Spirochaeta pallida* in the tertiary stage of lues. On the other hand, the histological structure characteristic of sympathetic is more nearly allied to that of the bacterial infection tubercle than to that of the protozoal infection syphilis; tubercle also is an example of a bacterial infection with a prolonged incubation period, so that with regard to these points the evidence for a bacterial *versus* a protozoal origin is inconclusive.

As a logical outcome of their speculations, Price-Jones and Browning recommend the treatment of sympathetic with salvarsan. The discussion of this subject will be more in place at a subsequent meeting, but perhaps I may be permitted to refer very briefly to three cases which have come under my notice.

The first was one of great severity, which only came under my care in a late stage; in this instance salvarsan had but little influence on the course of the disease. In the second, sympathetic followed an extraction with loss of vitreous. On the earliest appearance of a spot or two of keratitis punctata in the second eye, and before there was any trace of congestion, the eye which had been operated on was removed. In spite of this, however, sympathetic ophthalmitis of a severe and threatening type developed. Three weeks after its onset an injection of 0.5 gram of salvarsan was given. As no great improvement resulted, a second, larger, dose (0.6 gram) was given three weeks' later. An immediate and remarkable amelioration followed this injection; within a few days the pericorneal congestion had subsided, and the vascularity and thickening of the iris had practically disappeared; the vitreous could not be examined

owing to lens opacity. The eye has remained quite free from congestion ever since (six months), and the pupil is widely dilated, but for a long time the keratitis punctata remained as abundant as ever. Now it seems to be gradually disappearing.

In the third case the sympathetic followed an injury, and was of moderate severity. A first dose (0.5 gram) of salvarsan, administered seventeen days after the outbreak of the disease, produced comparatively little effect; a second (0.5 gram), given a fortnight later, was followed by bleaching of the pericorneal congestion, which, however, gradually returned; a third dose (0.45 gram), three weeks later, resulted in a still more decided subsidence of congestion; the media were still too hazy to permit of a clear view of the fundus. There is still a little pericorneal flush and some keratitis punctata.

It is evident that a great many more observations are required on this subject. In none of my three cases could it be said that the disease was cured by salvarsan, but in the second especially the improvement in an exceedingly threatening condition was very remarkable. Considering the gravity of sympathetic and the usual inefficiency of the ordinary methods of treatment, which were applied according to rule in the above cases, a more extended trial of salvarsan seems to be fully justified.

So far I have taken it for granted that sympathetic ophthalmia is due to a micro-organism. This assumption, however, has been called in question recently by Elschnig, who attributes the disease to anaphylaxis, and as some of his speculations are applied also to irido-cyclitis in general, it may be worth while to submit them to a brief examination. If a small quantity of a foreign substance, not necessarily a poison—egg albumen, for instance—be injected into the circulation of a guinea-pig, a hypersensitive condition towards that substance is induced, so that a subsequent injection of a much smaller dose of the same material may produce severe or even fatal symptoms. This hypersensitive condition is anaphylaxis.

Elschnig's application of these facts to the explanation of sympathetic may be stated briefly as follows: By the breaking down and resorption of uveal tissue, and especially of pigment, in the injured eye, a hypersensitiveness of the body generally, and more particularly of the homologous organ, the other eye, is produced. The second eye is therefore more vulnerable, and if there be any constitutional anomaly — for example, nephritis, diabetes, autointoxication, etc.—or if any minute lesion leading to the breaking up of even a single cell occur in this eye, then inflammation will be precipitated in the hypersensitized organ. Two things, therefore, are necessary to the occurrence of sympathetic—a hypersensitive condition of the tissues, and a constitutional anomaly.

Even in non-sympathetic cases the same factors may be at work; Elschnig finds that bilateral irido-cyclitis leads to total blindness of the affected eyes much more frequently than unilateral; he attributes this to the pigment absorption of the first affected eye causing a hypersensitive, anaphylactic condition of the second, so that in a sense all bilateral cases of irido-cyclitis are instances of sympathetic.

These views have undergone some damaging criticisms at the hands of v. Hippel. He points out that if a constitutional anomaly is required, then sympathetic could not occur in a perfectly healthy person. But in fact anaphylactic phenomena do not require any constitutional anomaly for their production, but can be induced in perfectly healthy animals. V. Hippel seems to be wrong in stating that anaphylaxis is a condition of the body generally not producing local inflammations; local inflammations of this type occur in the skin; and the recent work of Kümmell and others shows that they may occur in the eye. Whether or not these researches confirm the views of Elschnig it seems likely that many new and interesting facts will be obtained by such studies. Anaphylaxis is a protective reaction of the body to foreign substances; it is doubtful if it occurs from the absorption of autogenous products such as the uveal pigment of the same individual. (Recent researches, however, seem to prove that this type of auto-anaphylaxis is in fact possible.) If it could be induced by autogenous pigment in this way then it ought to occur in other conditions where there is free breaking down of the uveal tissues—for instance, in bullet wounds of the orbit close to the eye, choroido-retinitis, etc.—conditions in which sympathetic never does occur.

According to Elschnig the cause of the disease in the two eyes of a bilateral case of non-sympathetic irido-cyclitis is different—in the first a constitutional anomaly, in the second anaphylaxis; if, however, a constitutional anomaly is sufficient for the first eye there seems no reason why it should not also be sufficient for the second.

But even supposing it to be fully proved that injury of one eye produced an anaphylactic state of hypersensitiveness in the other, it would still be necessary, I think, to postulate a specific organism as the cause of sympathetic. It is true, no doubt, that the clinical and pathological features of sympathetic are not absolutely characteristic to the extent that no other disease ever imitates them—the same might be said of tubercle or syphilis; but they are quite sufficiently characteristic to make the assumption of a specific organism in the highest degree probable. It is incredible that so well-defined a clinical course, and such constant histological changes should be produced indifferently by nephritis, diabetes, autointoxication, or other constitutional anomalies. On these and similar grounds, therefore, pathologists will probably not be satisfied with a physico-chemical explanation, but will continue the search for the specific organism of sympathetic.

There is another point in connexion with sympathetic on which the experience of members would be welcome—namely, the occurrence of very mild cases. I do not refer to cases such as one occasionally sees, in which, after a period of grave anxiety, the eye finally does well, but to cases in which from first to last the symptoms are trifling—perhaps only a spot or two of keratitis punctata without congestion or other evidence of iritis. It will naturally be asked, Are these mild cases really instances of true sympathetic? and this will lead to the further question, Have we any pathological criterion whereby a certain diagnosis of that affection can be arrived at?

Taking the second question first, the best delineation and critical analysis of the histology of the sympathetic infiltration is that of Fuchs. The cells which take part in it are on the whole the same as in tuberculous granulomata—lymphocytes, epithelioid cells, and giant cells—but mixed up together in irregular strands and tracks rather than disposed with any regularity in tubercle systems. With these there is a more or less characteristic distribution—in the posterior layers of the iris, in the outer part of the inner zone of the ciliary body, and in the outer layers of the choroid. The infiltration may cause considerable thickening of these parts, but has comparatively little tendency to transgress their limits and form fibrino-plastic exudations in the vitreous, etc.

My own experience of the diagnostic value of these lesions, drawn from the examination of a very considerable number of eyes, both exciting and sympathizing, is as follows:

1. Perhaps the most characteristic feature of all is the widespreadedness of the infiltration. Usually the whole of the uvea is involved, and I should fully agree with Fuchs that cases in which the choroid is quite free scarcely occur. In this respect sympathetic stands in marked contrast with infective iritis, in which the most severe infiltration of the iris is often associated with total exemption of the choroid. The patchiness of the infiltration is also very characteristic of sympathetic, at least in its early stages.

2. Cases of true sympathetic undoubtedly occur which could not be diagnosed by the histological characters of the infiltration alone, in which the exudation in the uveal tract consists chiefly of plasma cells and lymphocytes. I have met with these cases chiefly in sympathizing eyes.

3. On the other hand, if the changes described by Fuchs are present in typical form and distribution, there is scarcely any possibility of error. Practically the only source of confusion is tubercle, in which, indeed, the histological resemblance to sympathetic may be very great. A few cases of idiopathic irido-cyclitis with the histological changes of sympathetic have been described by Continental writers. They must be very rare; I have not met with an instance which would mislead any one who had some experience in examining cases of genuine sympathetic. In both these instances, however, a reference to the clinical history will practically always exclude the possibility of a mistake.

Where there is a history of injury, therefore, and where the changes described by Fuchs are typically present, the diagnosis of sympathetic can be made with the utmost confidence. This was exceedingly well illustrated in a

case which came under my observation. On examining an eye lost after extraction, which was sent to me in the ordinary way, the typical changes above described were found; when the patient left hospital, the second eye was normal, but further inquiry showed that three weeks later he was readmitted with a well-marked attack of sympathetic.

In the case just mentioned the sympathetic was severe. In the following case, although the histological changes were typical, the inflammation in the second eye was very slight:

Six weeks after an injury causing a rupture of the globe, the other eye became slightly flushed, and there was some recent keratitis punctata in it; pupil active. Vision $\frac{6}{9}$. The injured eye having been excised, the flushing of the other subsided within a week, and three weeks later the keratitis punctata had entirely disappeared; tension normal; media clear; fundus normal. In a second case of the same kind the histological changes in the excised eye were not quite so typical. Two months after an injury with an air-gun pellet, fine keratitis punctata appeared in the other eye; no injection, iris bright, pupil active. The injured eye was excised, and thirteen days later only two spots of keratitis punctata were present in the other eye, which had remained quite quiet in the meantime; a month later these also had disappeared.

In the first of these cases especially, therefore, there was good pathological evidence that the affection, although so mild, was genuine sympathetic. Have other members experience of similar cases?

I am conscious that in these remarks I have rambled rather freely, picking out a point here and there, and leaving unmentioned large divisions of the subject, which are quite as worthy of discussion. But, in the first place, it is seemly that I should leave something for my friend Mr. Ormond, and, in addition, I hope there is no rule of the Association which confines discussion to the subjects broached in the opening papers.

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II. A. W. ORMOND, F.R.C.S.,

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THAT syphilis is a direct and primary cause of a large number of cases of iritis will not, I think, be disputed by any; the frequent occurrence of iritis in the secondary stage of syphilis, its well-known clinical features, its reaction to antisyphilitic remedies, and the finding of the *Spirochaeta pallida* in the aqueous and iris tissue, leave no room at all for doubt. The evidence that gonorrhoea is a cause of iritis and that the gonococcus will grow in the uveal tissue is also conclusive, and the same certainty exists about tubercle. Syphilis, gonorrhoea, and tubercle, then, are undoubted causative factors of iritis and irido-cyclitis.

Among other certain causes of iritis, although rarer and less well known, are leprosy and malaria. In addition to these the meningococcus, staphylococcus, and *Bacillus typhosus* have been isolated from the iris or anterior chamber in cases of iritis. In order to limit the discussion of the etiological factors of iritis to a somewhat reasonable extent, I have omitted all reference to diabetes and Bright's disease, as I wish to give most of the time allotted to me to the discussion of rheumatism and gout as etiological factors in iritis. We are at present ignorant of the primary cause of both gout and rheumatism. Messrs. Poynton and Payne have isolated a micrococcus from cases of acute rheumatism, and it is possible that a streptococcus frequently present in the body may under certain conditions be the cause of rheumatic fever; but the definite isolation of the specific organism is not yet conclusively accomplished. It is consequently difficult to arrive at a definite conclusion as to the etiology of cases of iritis supposed to be due to rheumatism, because there is as yet no available scientific proof. If the clinical associations are definite, we say the iritis is due to rheumatism, but it becomes necessary to examine this clinical evidence very carefully in order to answer the question, Is rheumatism a cause of iritis?

I asked my colleague, Dr. Rippmann, the Medical Registrar of Guy's Hospital, to let me know the number of cases of acute rheumatism treated in the hospital during the last ten years. They number 1,163, an average of 116.3 a year. There are in London twelve large hospitals and thirty Poor Law infirmaries. If one institution with about 600 beds averages 116 cases of acute rheumatism a year, and there are in London alone over forty other institutions which would also receive their share of such cases, besides those patients treated privately, it must be allowed that the number of cases of rheumatic fever treated annually in England alone must number many thousands.

As far as I know, only two observers have published cases of iritis directly associated with acute rheumatism. It is possible that others have seen cases but have not published them; still the coincidence of iritis with acute rheumatism is so rare that it does not shake my belief that acute rheumatic fever must not be looked upon as an etiological factor in iritis; and I am the more confident of this in remembering that the advocates of rheumatism as a cause of iritis and irido-cyclitis have been challenged to produce their proofs for a sufficiently long time to enable them to do so, if indeed they possessed any. In Mr. Forster's case it is acknowledged that tonsillitis existed, and I would suggest that the case is not only rare on account of its supposed etiology, but also in the fact that it occurred in a child of 12 years. The case cleared up entirely, but Messrs. Poynton and Payne, in their communication to the Ophthalmological Society in 1903, speak of it as being of unusual severity, and add significantly, "such examples as we have seen have been very transient," clearly indicating that the clinical aspect of these cases differs very markedly from the intractable case of irido-cyclitis usually designated "rheumatic."

When we consider the tens of thousands of cases of acute rheumatic fever treated all over the civilized world during the last ten years, the amount of evidence to prove an association between rheumatism and iritis is practically *nil*.

With regard to chronic and subacute rheumatism, the proof that rheumatism in this form is not a causative factor in the production of iritis is more difficult, but I think it is nevertheless conclusive. The case may be stated thus: A patient having had an undoubted attack of acute or subacute rheumatism, is found some time afterwards to have an arthritis of one or more joints, and later on iritis develops in one or both eyes. Is the etiological factor producing the iritis really rheumatism? Rolleston, in his Hunterian lectures on "Acute Arthritis of Doubtful Origin," quotes cases in which a primary rheumatic synovitis became complicated by a secondary infection, such as tubercle, syphilis, etc., and also cases in which the joint trouble of patients suffering from acute arthritis was shown to be due to *Bacillus coli*, syphilis, tubercle, typhoid bacillus, or acute periostitis, and concludes that acute arthritis may be a manifestation of various diseases.

I have notes of a case of a patient who was sent to Guy's Hospital with a history of rheumatic fever; during convalescence a suppurative irido-cyclitis developed. On careful examination it proved to be a case of acute periostitis of the humerus with a metatastic deposit in the uveal tract leading to phthisis bulbi.

Acute rheumatism, then, is frequently simulated by various diseases which are not rheumatic in origin at all. The chronic arthritis which sometimes follows attacks of acute rheumatism have in some instances been proved to be due to a secondary infection. As Rolleston points out, a patient who has oral sepsis may recover from the rheumatic attack and subsequently suffer from arthritis due to infection derived from the mouth. It is also a fact that irido-cyclitis which is said to be of rheumatic origin seldom shows any permanent reaction to the use of salicylates such as we are accustomed to see in treating true rheumatism, or as we see when treating syphilitic cases with mercury, and the slight improvement which is sometimes found may be fairly attributed to the diaphoretic action of the drug.

It is generally agreed that rheumatic fever never induces

fibrous ankylosis; such a condition when found in association with iritis should cast a doubt as to the likelihood of the cause being rheumatism. Chronic rheumatism is a clinical entity described with unvarying regularity in the textbooks, but with most unconvincing evidence of its etiology. Take, for instance, Professor Osler's account. He says: "In my experience it is extremely rare as a sequence of acute rheumatism"; and again, "the salicylates are useless"; and again, "the majority of cases resist all treatment; it is a disease, however, which persists indefinitely." That Professor Osler is describing a definite clinical entity is certain, but that that entity has the *Streptococcus rheumaticus* as its etiological factor is by no means proved. I do not assert that the *Streptococcus rheumaticus* is incapable of producing a chronic arthritis, although many writers have suggested that where an attack of rheumatic fever is followed by a chronic arthritis in one or two joints the arthritis is really due to secondary infection and not to the *Streptococcus rheumaticus*, but what I can assert is that in my experience the evidence of true rheumatism in a case of irido-cyclitis is so rarely obtained as to justify scepticism as to whether rheumatism ever does produce iritis in clinical medicine. I am aware of Messrs. Poynton and Payne's experiments on animals and also of Messrs. Ainley Walker and Beaton's failure to verify their results, but even allowing that iritis can be produced by injection of large quantities of streptococci, it does not prove that this occurs in ordinary everyday medicine.

If we remember the hundreds of cases of rheumatism treated annually in the British Isles and the complete absence of iritis in association with the disease in its acute and most virulent stage, I am myself of the opinion that where iritis seems to have occurred in connexion with the *Streptococcus rheumaticus* it really results from a secondary infection from possibly the mouth, tonsils, nose, intestinal tract, or elsewhere.

Gout as a causative factor of iritis has, in my opinion, still less to recommend it. Dr. Luff defines gout as the manifestation of a number of morbid tendencies, some of which may be inherited and some acquired. If the joints are affected, articular or regular gout results; if other organs or tissues are affected, then irregular gout is produced. He continues:

> It is a disease which is due to faulty metabolism, probably both intestinal and hepatic, as the result of which some toxin or toxins are produced and lead to an autointoxication, which is a factor in the development of the gouty conditions. This autointoxication coincides with or is followed by, in the majority of cases, a deposition of sodium biurate in certain of the joints or tissues which constitute the cause of the gouty attack. I cannot but think that, with our increasing knowledge and experience of the disease, uric acid and its salts will in all probability have to be relegated to a position of subsidiary importance in the pathogenesis of gout.

Later on, in the same book (*Gout*, 1907), Dr. Luff says:

> In my opinion the view that a bacterial toxin is the primary cause of gout is the most probable one.

As far as I know, there is no authority for suggesting that gout manifestations are due to the presence of micro-organisms in the joints and tissues themselves, only that toxins elaborated by bacteria in the alimentary canal may be the cause.

If, then, gout is to be accepted as a causative factor in iritis, we must allow that a toxin circulating in the blood is able to cause an inflammation of the iris tissue. But there is no evidence in support of such a contention. If toxins derived from a remote source could produce iritis, surely cases of iritis should be markedly on the increase, since the injections of serum, antitoxins, etc., are so widely prevalent; I do not know of a single case of this nature having been recorded.

Axenfeld is quite clear on this question. He says, "We cannot infer in an endogenous purulent inflammation that the toxins which are circulating in the blood have settled down at one spot; the hypothesis that a microbe-free metastatic ophthalmia exists is quite without proof." And again, "There is no proof (however) that the circulating toxins of the organisms can produce any localized inflammation in the eye."

The fact that in this or that case no organism could be found in the aqueous removed from the anterior chamber does not allow us to conclude that the cause is toxic, because the germs may be in the iris tissue, or may die out in the exudates, or may not have been sufficiently carefully transferred to the culture media. It is an undoubted fact that organisms directly transferred to the interior of the globe produce much more violent reaction than when injected into the veins, probably owing to the presence of protecting substances in the blood. Virulent pathogenic organisms often produce very mild non-purulent inflammations when metastatically deposited in the uveal tract.

If gout is to be considered a causal factor in iritis, the possibility of a toxin producing a definite local inflammation of the eye must be proved.

I believe iritis and irido-cyclitis to be due invariably to the presence of micro-organisms in the uveal tissue. Some organisms have a preference for certain tissues, and rarely, if ever, affect others—as, for instance, the mucous membrane of the lacrymal sac is immune to the gonococcus and Koch-Weeks bacillus. I should say that the uveal tract is very susceptible to invasion by the *Spirochaeta pallida*, tubercle bacillus, and gonococcus. Various cocci, also streptococci, staphylococci, pneumococci and meningococci, *Bacillus coli*, and the influenza bacillus have been found in the uveal tissue. They generally, however, produce purulent inflammation, but under favourable circumstances a non-purulent inflammation may occur, where organisms are metastatically deposited in the uveal tract, and reach the globe by the blood vessels.

The chronic arthritic troubles which are so frequently associated with iritis are generally *rheumatoid*. Cases of iritis in association with acute rheumatoid arthritis have been published.[1] I have notes of 9 cases where a chronic irido-cyclitis is associated with definite rheumatoid arthritis, most of the patients having Heberden's nodes and the distinctive changes in the compact tissue of the bones due to the rarefying action of the disease, which renders the *x*-ray photographs so clear and distinct. Rheumatoid arthritis is now recognized as being an affection of the periarticular and articular structures of certain joints, due to a chronic poisoning of bacterial origin, which gains access to the blood through some chronic catarrh of the alimentary tract, mouth, nose, pharynx, or air tubes.

Beaumont,[2] writing on this same subject, says:

> I find two men and one woman showed signs of old iritis, that is, in 3.61 per cent. This is a sufficiently high percentage to hint at a connexion between the iritis and rheumatoid arthritis.

In conclusion I would urge that cases of iritis and irido-cyclitis of the prolonged and intractable kind are due to the presence of specific organisms in the uveal tissue; that there is no evidence that toxins alone are capable of producing a localized inflammation of the uvea; that for this reason gout as an etiological factor in producing iritis must be abandoned; that in face of the widespread occurrence of rheumatic fever and the absence of any evidence to show that iritis is generally associated with it, rheumatism as an etiological factor must be given up; the arthritic lesions which are frequently associated with iritis and cyclitis being due to microbic infections, derived from septic absorption; and the causative factor of both the iritis and arthritis is probably the same.

In my opinion all intractable cases of iritis and irido-cyclitis are due to the presence of micro-organisms in the uveal tissue, and the pathological changes produced are the result of their presence there.

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DISCUSSION.

Dr. SNELLEN (Utrecht) said that the nature of irido-cyclitis was difficult to understand so long as they were unable to know whether the disease was primary or secondary. In most cases punctate deposits were seen on the posterior surface of the cornea. Fuchs looked upon such deposits as evidence of an affection of the ciliary body. He considered that they were flung there by centrifugal force by the motion of the eyeball, and most modern books gave the same explanation. He (Dr. Snellen) thought that this could not be correct. In a few cases he found that they did not consist only of cells and pigment (proving that they came from the uveal tract), but also of micro-organisms attached to the leucocytes accompanied by uveal pigment. In most cases he could not discover organisms, though they might at one time have been

present. Dr. Rochat of Utrecht had shown experimentally that these punctate deposits could be found without microbes in the anterior chamber if agglutinating toxins were present; if not, the cells fell to the bottom of the anterior chamber and formed a hypopyon. If loosely attached only, they frequently fell or became attached in the familiar triangular form at the lower part of the cornea. To explain the presence of leucocytes, it was necessary to accept the presence of toxins which entered the anterior chamber through the cornea and attracted the leucocytes that were already there as the result of some affection of the uveal tract. He was unable to say if they arose from conjunctival affections or blepharitis, but he could not see how their presence could be otherwise explained.

Mr. George Mackay (Edinburgh) said that, owing to the fact that organisms were so seldom to be found in the anterior chamber, he thought it strongly indicated that toxins were capable of setting up irido-cyclitis with the setting free of leucocytes and pigment cells which deposited themselves on the surfaces bounding the anterior chamber, and he regarded the brown colour of the deposit as indicating a subsidence in the inflammatory process. He mentioned two cases, and showed illustrations of one in which there was found a lowered phagocytic index to the *Bacillus coli*. One treated with atropine and helmitol was making good progress, but the other and worse case was doing better with atropine and *Bacillus coli* vaccine. He showed another illustration of a case of prolonged and intractable irido-cyclitis, showing well-marked heterochromia, which had twice given negative reactions to von Pirquet's test, and it was probably due to the *coli* bacillus, though when seen the means of proof were not available.

Mr. T. Harrison Butler (Coventry) firmly believed in oral sepsis as a cause of irido-cyclitis. Yet in Palestine oral sepsis was extremely common and violent, and iritis and cyclitis were almost unknown. Rheumatic iritis, he thought, was probably a myth, and many of such cases as were called rheumatic were due to septic and tuberculous toxaemias. Syphilis accounted for 25 per cent. of all cases. Toxins must be the cause of some, for interstitial keratitis had developed after Calmette's tuberculin had been placed in the eye. A corneal ulcer also could cause a toxic effect upon the ciliary body and a hypopyon would be produced. He doubted, from his experience in Palestine, whether malaria ever produced irido-cyclitis. In a case he had treated of heterochromia it was the dark eye and not the light-coloured one which was affected, and yet the cataract and subsequent glaucoma were typical. There was no proof that constipation was a cause of the disease, though he had seen one associated with mucous colitis.

Mr. Claud Worth (London) said he was convinced that by far the most important cause of irido-cyclitis was septic intoxication, chiefly from the alimentary canal but also from other parts of the body as well. Irido-cyclitis and "quiet cyclitis" were frequently seen in factory girls who suffered from constipation, indigestion, and decayed teeth, and also in middle-aged men who drank much and took but little exercise. He alluded to certain cases of quiet cyclitis which almost exactly simulated cases of chronic glaucoma, and in which there was tension, dilated pupil, slight keratitis punctata, but neither cupping nor enlargement of the blind spot.

Mr. S. H. Browning (London) said that iritis and irido-cyclitis might be caused by intestinal toxaemias was to a certain extent proved by the fact that the disease might be cured by bacterial vaccines prepared from the faeces. He had seen a case, with Mr. Lawson, a few months ago of a missionary invalided home on account of irido-cyclitis in the right eye and commencing iritis in the left. Amongst other things, he had examined his faeces and found a non motile fermenting organism of the Flexner type. Treatment with a vaccine prepared from this organism cured the eye condition in about six weeks, and the patient had been well ever since. As regards the relationship between cystitis and iritis, he had had several cases of bacterial infection of the bladder in which the eye condition had been cured by a vaccine prepared from the causative organism of the cystitis. As regards the presence of the organism in the anterior chamber, he had only been able to cultivate an organism in one case out of a considerable number of tappings at Moorfields during the last three years, and he was of opinion that most of these cases were due to toxins rather than to the bacteria themselves. He had repeatedly examined the urine of patients suffering from irido-cyclitis for indican, and had been unable to find more than the usual slight trace in practically all cases.

Dr. J. Gray Clegg (Manchester) stated that he recently had some 3 cases of extremely chronic irido-cyclitis associated with cataract in young adults; in fact, the only sign or symptom of the irido-cyclitis was the presence of the keratitis punctata. He was of the opinion that in heterochromia iridis the blueness of the iris was secondary to the irido-cyclitis. He had just had a case in which there was distinct subacute irido-cyclitis of oral septic origin which had entirely cleared up, but a portion of the iris was becoming blue.

Mr. W. H. Brailey (Brighton) did not agree with Mr. Ormond that a toxin could not cause irido-cyclitis, but thought that this was a very common factor in the complaint, and was possibly the cause of chronic cyclitis and cataract with heterochromia, which in his experience might follow the other symptoms.

Mr. Coats briefly replied.

THE BOARD OF TRADE STANDARD OF EYESIGHT FOR SAILORS.

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The proposed alteration of the standard of eyesight required by the Board of Trade for candidates for certificates of competency has, like every other change, been severely attacked of late. Shipowners, sailors, and even ophthalmic surgeons have rushed into print in the columns of the daily press, and have declared the tests to be far too exacting.

A Departmental Committee on Sight Tests appointed by the Board of Trade in June, 1910, have just issued their report thereon, dated May 12th, 1912, approving of almost all the proposed alterations. Holding no brief for any side, the Board of Trade included, I wish to emphasize some points in reference to this matter.

Before our minds is in grim eloquence the *Titanic* disaster.

The tests, as before, are to comprise (*a*) form vision, (*b*) colour vision, and to be compulsory for candidates for officers' positions only.

A. Form Vision.

The standard required hitherto has been half normal vision of each eye; from 1914 it will be normal vision of one and half normal vision of the other eye. With much indignation this has been stigmatized as being far too exacting a standard. In a letter by one of my ophthalmic friends to a daily paper of one of the largest British seaports we read:

> Now the Board of Trade are going to the other extreme, and demanding perfection where perfection is not necessary. To see a ship in the distance does not require the acuteness of vision necessary to see certain small letters of the alphabet at 16 ft.

However kind to the sailor the intention of the writer of the above may possibly have been, the passage as it stands is inadmissible, and potentially fraught with great mischief. It puts those whom it apparently wants to help in a wrong position, and is a retrograde step of the most harmful kind, by encouraging inaccuracy as against exactness.

We see its harmful influence clearly in the last paragraph of a letter from the Secretary of the Imperial Merchant Service Guild in the Liverpool dailies of June 30th, 1912, which reads:

> It appears to be a sorry farce to hold that a man is incompetent on a ship's bridge because, forsooth, he cannot distinguish

letters of a certain size at a distance of 16 ft. It is of no use blinking the fact that many shipmasters and officers at the present time, possessed of the keenest vision as regards their duties at sea in picking up objects and lights, could not pass the test.

It is now nearly half a century ago since Herman Snellen in Utrecht introduced accuracy into the determination of the acuity of vision existing in an eye, and his "optotypi ad visum determinandum," thought not absolutely perfect, are sufficiently accurate for practical purposes, and will, above everything else he has done, form the monument by which his memory will live. He brought down the quantitative measurement of vision into arithmetical units, easily determined, easily understood, and easily compared with others.

Whether this is done by means of letters, signs, dots, or any other symbols, is indifferent. Snellen employed the handiest signs, namely, letters, and for general purposes they are still and will remain the best test. What a man is required to recognize is a letter of a certain size at a certain distance, in a certain light, because it is the easiest way for him to give a definite answer to a question which will at one stroke show his amount of form vision, and express it quantitatively in units. If he can differentiate certain objects—in this case letters—under certain conditions, we know from his answer his vision is sufficient for the requirements of the case, and he will also be able to "see a ship in the distance," whatever that may mean.

We come now to probably the most important question—namely, Is "normal" vision for one eye and half normal for the other eye, really much, or even enough, for a man in such a responsible position as that of ship's officer?

It ought scarcely to be necessary to emphasize the fact that Snellen's standard of the unit is a very indulgent one. What we call "normal vision"—$\frac{1}{1}$ (or $\frac{6}{6}$)—is, after all, only fair average vision. Really good vision, frequently met with in the young, and often kept into old age, is $\frac{2}{1}$, and even more.

But let us be content with the accepted normal vision of $\frac{6}{6}$, and ask, What comprises good vision? During the last thirty years this country has been awakened from one of its many delusions by having to face the fact that almost half of its children require glasses for reading. The wiseacres and those who pander to popular vanity (though it is difficult to see why this should be a matter for vanity) tell you the race is deteriorating. This is the purest nonsense; but the fact that the eyes of the present generation have not deteriorated, but are just as good or bad as those of their elders thirty years ago, would never be admitted.

From my own experience in this country I have learnt that thirty years ago just as large a percentage of children required glasses as now, but—they did not get them. At that time many parents would not hear of their children wearing glasses. It is this attitude on the part of parents that has changed, and not the eyes of the young generation. And inasmuch as the keener struggle for life has ordained that cricket is no longer the chief subject taught in boys' schools, and that more arduous application is required for such eye work as reading, writing, etc., the defect in vision is now revealed for this portion of the curriculum, while it was not discovered before. The result is that we see the schools of this country as full of spectacle wearers as those in any other part of the world.

A very characteristic experience has recently come under my notice in this connexion. When prescribing glasses for school children, the objection was raised: "I cannot wear glasses; grandmother won't allow me to wear glasses"—in every case these children were living with their grandparents, the parents being dead. In grandmother's time glasses were not worn. Parents have by this time been trained to acknowledge the necessity of glasses, and consequently they no longer object.

I therefore ask, What comprises good vision? And the reply is, All those cases in which, whether unaided or with the help of spectacles, vision is at least $\frac{6}{6}$. And these cases mean a large proportion of all the eyes of the country. They not only comprise the slight degrees of myopia and astigmatism, but also the legions of hypermetropics. Who are those who, according to the prevailing popular notions, have good vision? They are mostly hyperopic. Examine them, not in your well-lighted study, but out at sea on a dark night, and note what their vision is then. Unless they are very young, many of them will not be able to pick out a distant dim light, nor "see a ship in the distance" in the dark hours half as well as those wearing properly selected correcting glasses.

What I miss in the new Board of Trade tests is the saving clause that vision, if it can be corrected to normal vision by means of glasses, is to be accepted. At present glasses are not allowed. I hear the chorus of opposing voices: "You would admit a sailor with glasses? Preposterous!" etc. I certainly should. He would be more reliable with corrected vision of $\frac{6}{6}$, let alone of $\frac{6}{9}$ in both eyes, than a man with uncorrected vision of $\frac{6}{9}$ in one and $\frac{1}{9}$ in the other eye.

"Seafaring men could not wear glasses," you say. Why not? For the same absurd reason that engine drivers do not wear them, although many of them require glasses at the present moment; they are afraid of being dismissed as cripples. Yet you make cripples of them by forbidding them to wear glasses. Glasses are as much part of the necessary personal outfit to many as clothes, and quite on a par with them. Would you expect your sailor or officer to work, whatever the weather, without clothes?

And how inconsistent you are. You allow him binoculars, you provide for him when on the bridge those opera glasses called for his special benefit "marine glasses," with the small, restricted field which does not admit of a proper survey, but you forbid ordinary glasses with which he can so readily take in a large portion of the horizon. When will it be recognized that the proper thing is to put the right man in the right place? The man on the look-out must be a man with particularly good sight, and he is not tested at all, neither under the old nor the new regulations for 1914. Why not? The good old slovenly rule of thumb way—"A sailor could not wear glasses," under the tacit understanding that a "sailor" is fit and able to do *everything* well. This sounds very well, but does not work in practice. Does not your "normal sight" sailor, hypermetropic and without glasses, become your most valuable employee when, at the age of 40 to 45 years, his training and judgement have ripened and all his other faculties are in their prime? But his sight, most noticeable in the dark, when his pupils dilate and cease to screen off the circumpolar zone of the lens with its irregular refraction, becomes somewhat troublesome. Not thinking of such a possibility he may not notice it for a time. If and when he becomes aware of this decrease of keenness of vision at night, he dare not take to glasses and thereby put himself right at once! And why superannuate your excellent captain, when at 50 years his eyes, both for short range and at night, refuse to reach full normal vision without glasses! He is, or ought to be, with his training and experience, infinitely more valuable to you than he was twenty-five years before. Does he become a cripple when bespectacled? I should think even with glasses he can give points to the youngst rs of 30 years of age. There is, you say, danger for a man so occupied as he, in wearing glasses; an engine driver cannot see sufficiently well with glasses on because they would get cloudy and dirty. Nonsense! Does not the latest kind of engine-driver, the chauffeur, whether amateur or professional, wear glasses, and, moreover, glasses that exclude the peripheral part of the field altogether?

I do not agree with the Departmental Committee's report when they reject the admissibility of glasses. They say (No. 49):

> If it were practicable for navigating officers to use spectacles to improve their distant vision. . . .

I ask, Why is it not practicable?

They answer:

> The evidence which we have heard given by nautical witnesses forces us to the conclusion that with every allowance for exceptional cases the circumstances which attend navigational duties render it quite impracticable to allow officers to depend upon the aid of spectacles for distant vision.

This statement appears to me quite unconvincing. I have already pointed out the superiority of spectacles over binoculars for scanning a large field of vision and for non-luminous objects in poor light. I must confess that my belief in the infallibility of nautical witnesses has been rudely shaken by the experience of the *Titanic* disaster. Such opinions as those that dark icebergs practically do

not occur, mean in reality that they are as good as unknown to the givers of such opinion. It has become a dogma that they do not exist, hence they are not looked for or observed. This may be quite convincing subjectively. Objectively, alas! the *Titanic* catastrophe has proved their existence even to the most dogmatic witness, nautical or otherwise, and doubtless they will be observed, and let us hope avoided, in the future.

Why should glasses be impracticable? Could those nautical witnesses not requiring them themselves ever have tried them properly, or did they ever allow others to wear them? I have personally been able to wear glasses in good working order not only at sea, but also riding in rain and snowstorm for days together, and fording wide rivers on horseback in various expeditions in Iceland, and I found glasses perfectly practicable. And sitting in the crow's nest leaves the hands freer than when managing a horse through deep glacier rivers or over lava fields in a snowstorm.

It is high time that we threw this old and foolish notion on the rubbish heap, and allowed a man to use his faculties freely under the most favourable circumstances.

The Departmental Committee's report further completely omits to mention the possibility of, and desirability of examinations for, diminished vision in the dark. We know that night blindness occurs in varying degrees with apparently normal vision in daylight. To a certain small degree we all have it for the keenest portion of our vision field corresponding to the fovea centralis, as a search for a star of small magnitude will show on any starlight night. Above a certain amount of stimulation we perceive a light or an object; below that limit no perception occurs. That limit may be disproportionately high in the dark for eyes with normal average limit in daylight. What do we know of the light perception in the dark of those on look-out duty on that fateful night of the *Titanic* disaster, both of those who perished and those who survived? There are fearful gaps in our knowledge which cry out for investigation.

In my opinion every sailor should have his sight tested compulsorily and the exact amount of vision should be stated on his papers, not only in the case of officers and those applying for certificates of competency but also in the case of sailors. This would be of great value to the safety of the ship by allotting to each such work only as he is fitted for, with regard to his eyesight, or providing him with suitable assistance in that part of the work where he is deficient, and also in the interest of the sailor himself be much easier for him, in case of an accident to his eyes, to prove any damage resulting to his vision, and would be of great value to him in case of claim for compensation.

Everything would be known and above board, and no concealment of deficiencies would become necessary, with possibilities of serious and disastrous consequences.

Further, every sailor should be examined for vision not only for daylight but also for dark, and his vision noted on his papers.

The *Titanic* collision occurred at night, there was no fog, the stars shone brightly, but the night was very dark, there being no moon (one and a half days before the famous sun eclipse). I do not say that in this case any look-out could have been able to prevent the collision; a speed of 21½ knots in a sea of floating ice on a dark night might defy any vision, even if binoculars had been handy.

I know it is considered almost a sort of disgrace by many a master or officer not to detect a light *before* even the look-out reports it. But there is no need for any such feeling; put your look-out into the crow's nest, and as he is there on a point much higher than the bridge, his horizon is wider and he *ought* to see a distant light *before* those on the bridge. If he does not, he has no business to be in the crow's nest; either his vision or the brain behind it being defective.

Here the *Titanic* inquiry should bear fruit. The President, Lord Mersey, said: "It seems very desirable there should be some test for the look-out men." We [illegible] the full length and ask for the examination of [illegible].

What needs to be done in future is to put the right man in the right place, in the place for which he is best suited, and [illegible] suitable men only for those places. It is non sense to say good crews cannot be obtained. They can be had if properly paid. And those lines that pay for good men will live and prosper while the others will have to fall out. Cost is of no consideration here. How much has the *Titanic* disaster cost?

Good vision is desirable for every one, but necessary for at least some individuals on board. *Whether with or without the help of spectacles does not matter*, as long as their vision is sufficient for the purpose. They act as the eyes of the ship. Have I not seen portraits of Admiral Togo wearing glasses? And we have to believe in him; he has given proof of his efficiency.

Not so with the ordinary rules and "laws" of navigation, as reported in some of the evidence of the *Titanic's* second officer with regard to "ordinary navigation which embodies carefulness." I quite agree with him that the binoculars are bad finders of objects, and are mainly of use for examining objects already noticed. But such rule, as going at full speed on a moonless night through a sea reported full of floating ice, happily does not appear to apply to every commander of every ship that crosses the Atlantic. There are masters who stop in an ordinary fog. I remember once coming from Iceland in a small Danish boat of about 1,000 tons. After a good journey we neared Leith, when suddenly the foghorn sounded and the engine stopped; a dense fog had suddenly enveloped the ship, and the boat did not move for twenty-seven hours, until the fog lifted. I was very much annoyed at the time for being delayed so unexpectedly, but with more haste there might ultimately have been less speed. To my mind, at a speed of 21½ knots on a dark night, a collision might just as easily occur or be avoided if no look-out at all had been employed: it would be purely a matter of chance.

I have often heard it said by people who ought to have known better that it is safest to go through a fog at full speed. I have never been able to believe these assertions. It may have become an axiom with some men; but nothing less than this over-awing calamity of the *Titanic* would have sufficed to prove to them and to the world at large that it was not even a "working hypothesis."

The *Times* of August 2nd states that Lord Mersey's report has been received with dissatisfaction in the highest shipping circles in Germany. The commanders of the German transatlantic liners are all agreed that in similar circumstances to those obtaining when the *Titanic* met her fate they would not have reduced speed. In clear weather it is possible to see a great distance ahead, and they maintain that with a proper look-out there would have been ample time to have avoided the collision. The German view, in fact, is that Captain Smith's look-outs failed him. All I can say is, it seems incredible that this should be a correct rendering of the views of the commanders of the German transatlantic liners. Should it turn out to be correct, the travelling public is not likely to share this view, and will quickly transfer its patronage to lines which have taken the *Titanic* lesson more seriously to heart.

Taking into consideration the responsibility of those in command of a ship, actual or potential, I consider that the proposed new Board of Trade standard is not only not too high, but, on the contrary, too low. I disagree in this respect with the Departmental Committee's report, and consider that the standard for any first examination should be ⅚ for each eye separately.

If at any re-examination at a later period the acuity of vision should become smaller I should consider the case on its individual merits, and should not necessarily disqualify the officer, and the less so the greater his nautical experience and other efficiency. I need not now go into fuller details on this point.

If the Departmental Committee had not been satisfied with the information received from Sir Walter Howell, that the Board were not aware of any casualty which could be traced to defective vision (No. 13), they might have come to the same conclusion as myself and asked for a minimum standard of V. = ⅚* for each eye separately. Some shipowners—for example, in Liverpool—have adopted and have been using for some time a standard higher than the one now proposed by the Board of Trade.

B. Colour Vision.

With regard to colour vision, the Holmgren test, whether in the original form or in any later modification, including

* I prefer examination at at least 20 ft. to examination at 16 or even at 12 ft. distance.

that recommended by the Departmental Committee's report, is not reliable. It has the one advantage of being cheap, and an examination with it is an interesting experiment; but as the results obtained by it are conclusive neither in the positive nor in the negative direction, it is altogether superfluous. It is neither reliable in congenital nor in acquired colour blindness. It fails completely in central colour scotoma. I pointed out the unreliability of the Holmgren test more than twenty-five years ago, crying as one in the wilderness then; in the meantime the faith in the infallibility of the Holmgren test has been shaken by observations on all sides.

A lantern test showing coloured lights under similar conditions to those seen at sea should be chosen. The lights should vary in brightness, size, and colour. The colours *should not be named*, but matched to a sample. This sample might remain till the matching has been accomplished, or might be allowed to appear for a short lapse of time only, and could then be matched from memory after having been withdrawn. This test to be carried out in the dark. The size of the light should admit of being made so small that even a very small central colour scotoma could be detected. It is twenty-two years ago that I first demonstrated my lantern for quantitative colour tests for this purpose.

The Departmental Committee's report proposes a modification of a lantern for testing colour vision which in my opinion is absolutely insufficient. There is "green," "red," and "white" only represented. Oil or electric carbon filament lamps being used for light, the "white" is a reddish-yellow. This gives practically two colours only—namely, green and red, and leaves too much scope for guessing. No attempt is made to introduce either confusion colours or graduation of the intensity of light. These and other defects make the lamp useless.

With regard to the reservations of the Minority Report of the Departmental Committee, I can, after what I have said above, dismiss them without going into any details.

In conclusion, the safety of the ship, with its officers, men, passengers, and cargo, is of paramount importance, and every precaution ought to be taken to ensure it. Speed and working expenses are of second consideration. I am afraid legislation will not be as effective in this direction as would be a stricter code of conditions by underwriters. With regard to the standard of vision for those in charge of the vessel, the following appears to me the minimum demands:

Minimum Demands.

A. *Form Vision.*

1. The proposed new Board of Trade standard is not only not too high, but, on the contrary, too low.
2. It should be $\frac{6}{6}$ for each eye separately.
3. Vision which can be brought up by the help of spectacles to $\frac{6}{6}$ or above, should be admitted.
4. Vision should be tested, not only in the case of ships' officers, but of every sailor, and should be noted on the papers of each man.
5. Vision should be tested not only for daylight, but also for night, and the result noted on the papers of each man, so that the skipper may know whom to place on the look-out and whether in daytime only or also at night.
6. Retesting should take place at certain regular intervals, so as to make known any subsequent changes (defects) to the men themselves and to the owners, such changes not necessarily disqualifying from further service, and especially not if correction be possible by glasses.

B. *Colour Vision.*

7. The Holmgren test is unreliable.
8. A lantern test is required with a suitable lantern.
9. The lantern test suggested in the Departmental Committee's report is quite inadequate.
10. Each eye should be examined separately.
11. Every sailor—officers and men—should be examined and the result noted on his papers, for the reason stated under No. 5.
12. Colour vision should be retested at certain intervals, as there is such a thing as acquired colour deficiency without much deterioration of form vision; the result should be noted on the man's papers (see No. 6).
13. A colour ignorance test is superfluous.
14. All tests for vision should be made by properly qualified men.

It would be as unfair to present certified officers whose vision is found to be defective to have any new regulation made retrospective as it would be a menace to safety at sea not to have new stringent regulations carried out without delay. Arrangements will therefore be indispensable by which all defective officers that have passed the present tests must be either compensated or given such help as to neutralize any deficiency of their visual standard.

DISCUSSION.

Dr. J. W. Barrett (Melbourne) stated that he knew of four cases in which defective form and colour vision at sea had caused difficulty and accident. The first two accidents were connected with the loss of the P.O. steamer *Australia* outside Port Phillip Head in 1904. The cause of the disaster was the defective form vision of the pilot, whose vision was only $\frac{6}{36}$ in each eye. This pilot had made a mistake a few months before, and had his vision been examined after the first accident, the disaster to the *Australia* would in all probability have been averted. Full details were published in the *Lancet*, October 29th, 1904. The two other cases, involving three officers, had not been published, for obvious reasons. In one case the injury done to the steamer was slight, in the other the accident was averted because another officer recognized what was taking place. The speaker was astonished to find in the appendix to the report of the Special Committee of the Board of Trade the statement made by the one dissentient that accidents due to form vision had not occurred. In consequence of the accident to the *Australia* the Marine Board of Victoria had issued a new set of regulations providing for the complete periodical examination of all the pilots in the service. The standard fixed was much higher than that now proposed to be fixed by the Board of Trade, but the pilot service was, of course, a picked service. The Lighthouse Department had followed, and arranged for a periodical examination, but at a lower standard. The Union Steamship Company of New Zealand insisted on an entrance examination for officers, quite as severe as, or perhaps more severe than, that required for the pilots. It must be obvious to all ophthalmologists that the real desideratum for service at sea was a complete ophthalmic examination when the boy proposed to go to sea, so that the parents would have proper knowledge respecting his future prospects. For ordinary service he did not think the standard should be severe, but the initial examination would prevent much subsequent hardship and injustice. The Union Steamship Company of New Zealand, which now trained its own officers, insisted on this entrance examination. He quite realized the difficulties of the Board of Trade in regard to the supply of seamen and officers, but nevertheless thought that in the interests of public safety the proper course was to arrange (1) a complete examination at the outset, (2) a moderate standard, and (3) periodical examinations throughout the career. In the pilot service of Victoria, if a pilot was absent through illness or accident, or if a ship suffered in any way, he was not allowed to resume work until his vision had been re-examined. He thought that the ophthalmic profession in Great Britain might well approach the Board of Trade and endeavour to arrive at a reasonable understanding which might be found acceptable throughout the empire.

Mr. Devereux Marshall (London) said that he totally disagreed with Dr. Grossmann as to the advisability of admitting to the sea services men whose vision could only be depended upon if they were to wear glasses. It would be utterly useless for such men to be employed as look-outs in exposed positions. Even if it were possible to prevent glasses from getting broken and mislaid, fog, mist, and spray would render them useless, though he saw no objection to officers wearing them in the chart-room if necessary, but their distant vision should be normal without their aid, and high cases of hypermetropia should be rejected. He commented upon the recent report of the Departmental Committee of the Board of Trade, and said that it was a most disappointing document. He criticized the action of the committee in recommending a lantern of their own construction, which, on their own showing, had been so simplified that it contained only white, red, and green lights without any modifying glasses at all, and the only modification which could be made was to increase or

diminish the size of the aperture. This very simple lantern they found necessary in order to bring it within the understanding of the clerks and seamen who were the appointed examiners for eyesight of the Board. He considered that if such a lantern were used it was bound to prove that "lanterns" were useless. They still stuck to the Holmgren test against the considered rejection of it by almost every other authority. He was astonished at the official ignorance expressed about accidents which had occurred at sea and elsewhere through men having defective form and colour vision. He felt sure that report would satisfy and convince no one, and it left the matter almost where it was before they started their investigations.

Mr. T. H. BICKERTON (Liverpool) said that he was in entire agreement with Mr. Marshall in his criticism of the Board of Trade report. That document showed an entire ignorance of the condition of the sea service, and he was astonished that it could ever have been presented.

Mr. BISHOP HARMAN (London) severely criticized Dr. Grossmann's recommendation as to the wearing of spectacles by sailors. It was evident, he thought, that Dr. Grossmann had either not worn glasses at sea himself or was unfamiliar with the sea. His own experience of spectacles at sea over many years, under conditions ranging from fishing smacks to the bridges of large liners, was that spectacles were worse than useless; they speedily became covered with spindrift and fine drops of rain, so that the vision of anyone wearing them would indeed be bad if he could see better with them than without them. Spectacles were a boon in their proper place, but at sea they were an impossibility.

Mr. HARRISON BUTLER (Coventry) also agreed that spectacles at sea were useless, and that he considered vision of $\frac{6}{6}$ to be absolutely necessary for men employed as look-outs.

Dr. GROSSMANN replied.

DISCUSSION ON THE USE OF TUBERCULIN IN DISEASES OF THE EYE.

OPENING PAPERS.

I.—GEORGE MACKAY, M.D., F.R.C.S.E.

(With Coloured Plates.)

MR. PRESIDENT AND GENTLEMEN,—I have, in the first place, to acknowledge the compliment of being asked to open a discussion in the Section of Ophthalmology, and to thank the Committee for accepting the suggestion that an interchange of opinion upon the use of tuberculin in relation to diseases of the eye might be instructive and helpful to members of this Section.

Robert Koch's epoch-making discovery in 1882 that the tubercle bacillus is the cause of tuberculosis in its multiform aspects, and his announcement in 1890 of tuberculin as a curative remedy, has led to experimental, clinical, bacteriological, and pathological researches so vast and abundant that I must refrain from attempting to survey the recorded literature of the subject even in the realm of ophthalmology, and assume that this audience will only expect me in the brief time at my disposal to indicate the lines upon which our discussion may conveniently and expeditiously proceed, so as to afford each of us an opportunity of stating his personal experience.

Dr. Peel Ritchie and I suggest that the discussion upon the use of tuberculin in diseases of the eye should be conducted in accordance with the scheme which has been placed in your hands:

I.—The use of tuberculin in the diagnosis of ocular tuberculosis.
  1. Which preparation and which method of application is the most reliable?
  2. The importance of differential diagnosis between the human, bovine, and avian varieties, and the means of discrimination.

II.—The use of tuberculin in ocular therapy.
  1. General principles.
  2. The choice of preparation.
  3. The scheme of dosage.
  4. The duration of its influence.

III.—Illustrative cases and statements of experience in the use of tuberculin in diagnosis and treatment.

I.—THE USE OF TUBERCULIN IN THE DIAGNOSIS OF OCULAR TUBERCULOSIS.

For the diagnosis of tuberculosis Koch's old tuberculin may be employed in at least four different ways.

1. *The Subcutaneous Method.*—An initial dose (usually 0.0001 c.cm. of the original fluid) is given by hypodermic injection. The diagnosis is founded on the evidence of resulting reactions, general and febrile, local and specific. The general reaction requires careful observation of the patient's temperature before and after the injection, and is better suited for sanatorium and hospital rather than for ambulant treatment. The local reaction in the eye is not free from danger, since increased exudation may impair the ultimate efficiency of the organ. A cicatrix which in the lung is proclaimed a cure may become a lifelong disaster in the eye. The production of a lowered or "negative phase" in the phagocytic index taken about twenty-four hours after the injection, and followed by a "positive phase" with raised index for a variable period thereafter, has been largely used as a guide or confirmation of the diagnosis. This may follow an inoculation with any of the tuberculins. In ophthalmic practice the test may be employed more freely as an aid to diagnosis of suspected tubercle in parts adjacent to the eye, but not involving the eyeball itself. In any case large initial doses and excessive local reaction must be avoided.

2. *Calmette's Ophthalmic Reaction.*—For this, one or two drops of a glycerine-free preparation of Koch's old tuberculin are applied to the conjunctival sac. The diagnosis rests on the appearance of a conjunctivitis in tuberculous persons in from twelve to twenty-four hours. It indicates that tubercle is present *somewhere*, but not necessarily in the eye. It is not free from danger. The occurrence of disastrous local reactions has led to its condemnation where there is any pathological condition present in the eye (especially superficial lesions), and this, of course, greatly restricts its employment in ophthalmic practice. The danger is lessened by using a diluted drop.

3. *Von Pirquet's cuti-reaction* aims at the production of a local reaction in some thin-skinned part (for example, the forearm) by simple vaccination with a drop or two of Koch's old tuberculin smeared into a small area which has been carefully cleansed and slightly scarified. The previous scarification of another small area, well isolated but adjacent to the first, and to which only a little saline solution is applied, acts as a control for comparative observation. In this test the tuberculin is usually applied in 25 per cent. dilution; but if this prove negative it may be used in full strength before accepting the verdict. A positive reaction by this method may be taken as evidence of tuberculosis present (or perhaps past) *somewhere in the system*, but it is not a certain indication that the malady in the eye is altogether or even partly tuberculous; it may be only coexistent. The test has the great merit of safety and simplicity, and though it does not reveal the whole truth, it tells enough to justify a trial of tuberculin in the treatment of many doubtful cases.

4. *Moro's tuberculin ointment test* is only a modification of von Pirquet's of some possible service in timid persons who dread scarification, but is not so reliable. And there are various other modifications to which it is not necessary to refer.

Koch's old tuberculin may be prepared from tubercle bacilli of human or bovine origin, and contains not only the products of the bacilli, but also the nutrient medium. It is a concentrated boiled culture freed from bacteria by filtration. For diagnostic purposes either the human or the bovine strain appears to be capable of exciting the cuti-reaction, and it is doubtful whether any special advantage is gained by employing one rather than the other, so far as a specific diagnosis can be secured thereby, since apparently a patient affected with tubercle from either source will respond to both varieties. But definite



Fig. 1.



Fig. 2.

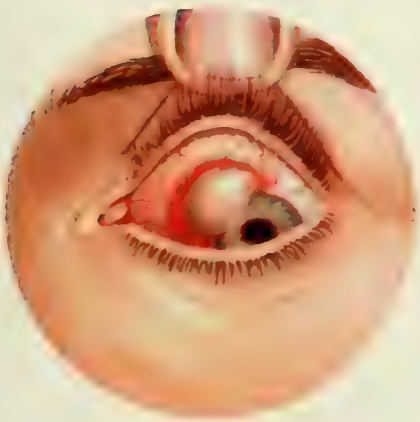


Fig. 3.

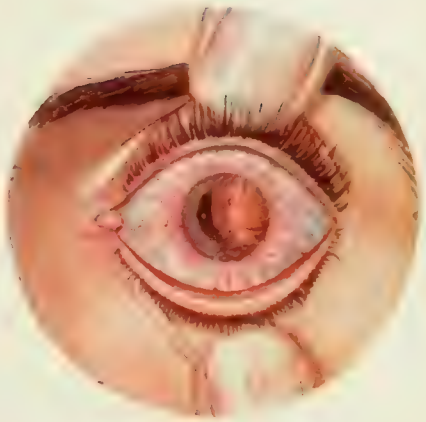


Fig. 4.

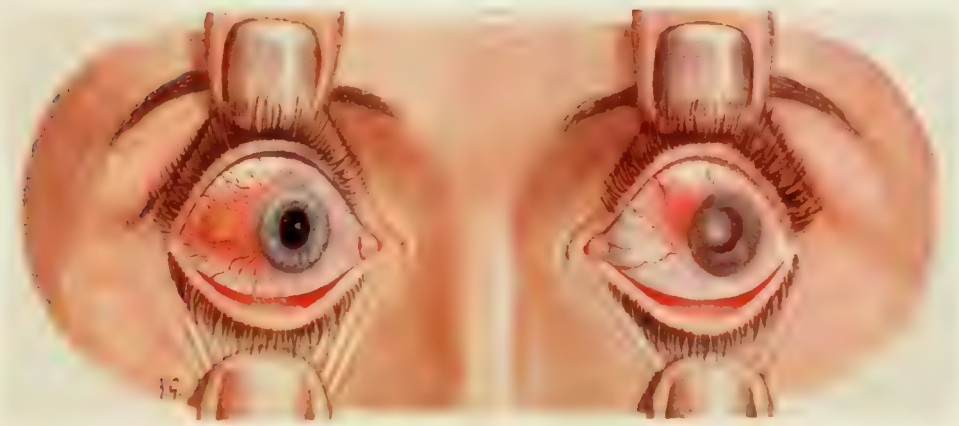


Fig. 5.

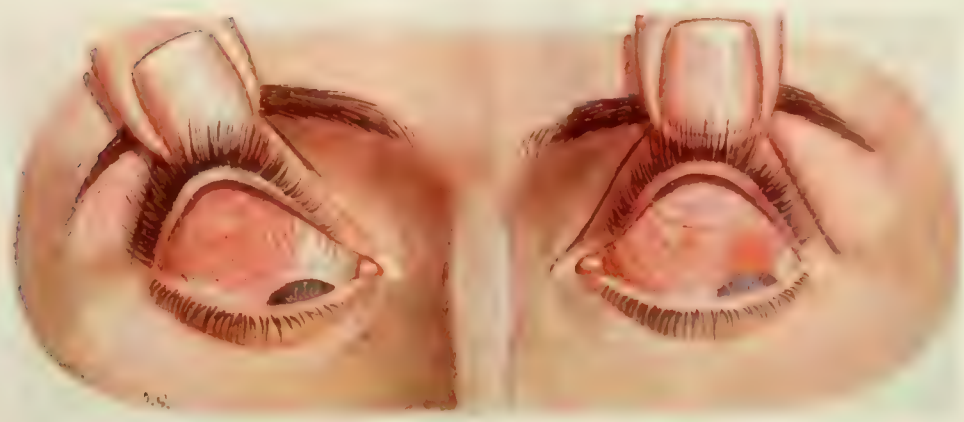


Fig. 6.

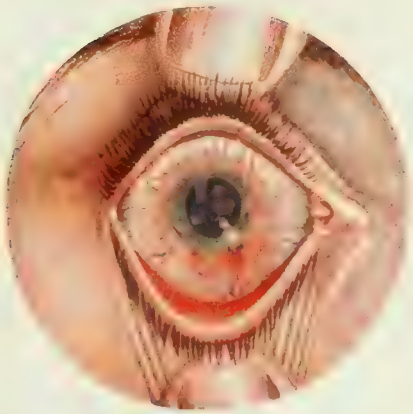


FIG. 7.



FIG. 8.

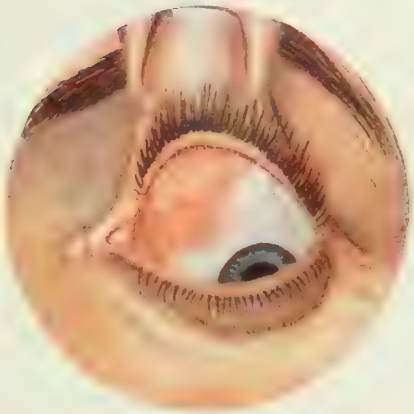


FIG. 9.



FIG. 10.



FIG. 11A.



FIG. 11B.



FIG. 11C.

observations on that point will be welcome to-day. There is good reason to believe that the discrimination is of importance in treatment. As regards infection by bacilli of avian type, the records are so scanty that little can be said, and the occasions for recognition of that variety in ophthalmic practice must indeed be avian rarities.

When I first began to study vaccine treatment the methods of Calmette and von Pirquet had not yet been introduced. Sir Almroth Wright's investigations into phagocytic indices appeared to offer the best available method of determining the presence of organismal infections and elucidating their nature. I gladly availed myself of the skilled assistance of Drs. Ian Stewart and Peel Ritchie of Edinburgh, who had already gained a large experience of Wright's methods. I am greatly indebted to both these gentlemen for their labours and interest. Dr. Ritchie, in the midst of many other claims upon his time as a general surgeon, has attended frequently at the eye wards of the Royal Infirmary and undertaken a long series of phagocytic observations upon which our clinical notes are largely founded, and I gratefully acknowledge his assistance. He is present to-day, and will tell us the plan which he has followed in this investigation.

I am well aware that considerable scepticism has been expressed as to the reliability of the phagocytic indices. The risk of mathematical inaccuracies, the personal equation of the observer, and the laborious character of the inquiry have tended to discredit it. But in the earlier stages of investigation it has been helpful, and in the hands of an expert I cannot but regard it still as an aid to diagnosis of very considerable value. It has undoubtedly helped us to gain experience as to the class of cases in which tuberculin treatment might be justifiably recommended; it has indicated the presence of mixed infections, and we believe that it has enabled us to exclude tuberculosis as a causative factor in some doubtful cases. For routine purposes, where the presence of tuberculosis alone is to be certified, we now employ von Pirquet's cuti-reaction. Where the diagnosis presents special difficulty the phagocytic indices are investigated prior to the application of von Pirquet's test, or some little time afterwards, if the cuti-reaction has been negative.

II.—Tuberculin in Treatment.

Turning now to the use of tuberculin in treatment, one can employ (1) Koch's old tuberculin, (2) Koch's new tuberculin (T.R.), and (3) Koch's emulsion of tubercle bacilli (B.E.). Each variety can be obtained prepared from either human or bovine tubercle bacilli. There are other modifications to which I do not now refer because I have no personal experience of their use or advantages. Old tuberculin is now but little employed for purposes of treatment, and is least well suited for ophthalmic cases. The new tuberculins (T.R. and B.E.) consist of the bodies of the bacilli ground down and dissolved or suspended in a watery solution, and when injected in appropriate doses promote an antibacterial immunity. The view has been advanced that the human and bovine forms of tuberculin are antagonistic to one another; that in the case of human infection the bovine vaccine should be used, and vice versa: but this does not accord with our experience. It is claimed that a proper interval between the doses is best secured by a careful study of the opsonic index, so as to avoid repeating the dose until the "negative phase" is past and the "positive phase" well established. But sufficient experience appears now to have been obtained to justify the view that if the initial doses of vaccine are small, the increase gradually made, and the inoculations not too frequent, the clinical condition of the patient and the absence of local reaction may be taken as a guide without continued repetition of the tedious observation of the opsonic index. The safest preparation appears to be Koch's new tuberculin (T.R.)—human or bovine—which produces the least violent reaction. Where a more powerful effect is desired the bacillary emulsion may be employed.

The two chief methods of administration employed in ophthalmology have been: (1) Wright's, in which, commencing with a small fraction, $\frac{1}{50000}$ mg. to $\frac{1}{10000}$ mg., the dose is gradually increased over a prolonged period of treatment at about ten days' interval between each inoculation, and the dosage is regulated by the phagocytic index. (2) Von Hippel's method of treatment, commencing with an initial dose of $\frac{1}{5000}$ mg. of tuberculin T.R., the inoculation is repeated on alternate days, and increased each time by $\frac{1}{5000}$ mg. until a dose of $\frac{1}{500}$ mg. up to $\frac{1}{2}$ mg., then by $\frac{1}{250}$ mg. until 1 mg. is reached. If during the treatment the temperature rises above 100° F., the previous dose or a smaller one is repeated, until there is no rise of temperature after the inoculation.

No hard and fast rule can be laid down for the scheme of dosage. The personal reaction of each patient must be studied, and the observer must be prepared to lessen or may feel justified in increasing the dose by simply watching its effect. It must be borne in mind that the treatment does not consist in flooding the patient with a massive dose of bactericidal material ready prepared, but in stimulating his own tissues to produce the opsonic material necessary for his protection, and many factors in his condition may modify his capacity in that respect.

III.—Illustrative Cases and Experience.

Phlyctenular Conjunctivitis.

No part of the eye is free from the ravages or indirect effects of the tubercle bacillus. In several of its manifestations the clinical picture is so definite that a diagnosis of its presence may confidently be made by the clinician either from the actual appearance of the eye or the associated evidence of tuberculous disease in other parts of the body. But there are not a few cases in which some aid to diagnosis is required either because the appearances do not follow the well-recognized clinical types, or are not easily differentiated from those produced by other toxic processes, or where a mixed infection makes it difficult to determine the various factors in the disturbance.

As regards one of the commonest ocular diseases, phlyctenular conjunctivitis, while we recognize its frequent association with definite tuberculous infection of glands, or bones, or skin, or viscera, we still have, or at least I think the majority of us have, some diffidence in pronouncing a phlyctenule as a manifestation of pure tuberculosis, or of yet saying exactly to what its origin is due. We feel no hesitation in pronouncing a patient a tuberculous subject who, along with a phlyctenule of the conjunctiva, exhibits also lupus of the nose or glandular cicatrices in the neck. But we have more hesitation in relegating to the same category Kate A. (Fig. 1), who showed no other manifestation of known tuberculous disease, and whose phlyctenule disappeared under a few days' treatment with calomel dusting, or weak yellow oxide of mercury ointment; or Jean M. (Fig. 2), who only took a little longer to recover with the addition of atropine because her corneae were involved. There was little difficulty in recognizing that the large, granulomatous, pulpy mass which occupied the ciliary region in the upper nasal quadrant of Mrs. T.'s (Fig. 3) eye was of tuberculous origin, when one learnt that she had been suffering for years from extensive tuberculous disease involving the right shoulder and clavicle, that she had a sinus in her axilla and foci in the forearm. But had a cuti-reaction with tuberculin been available, it might have fortified the diagnosis of tuberculous deposit in the deep punctate keratitis and massive exudation in Ethel C.'s (Fig. 4) anterior chamber. This little girl, 13 years old, seen in January, 1906, was examined by Dr. G. A. Gibson, and reported free from signs of tubercle elsewhere, and an absolute diagnosis was not made until after enucleation, yet this child died of acute tuberculous meningitis within a few weeks of the enucleation.

Early in 1907 a young lady, Miss W., who had been under my care occasionally for some years, suffering from phlyctenular conjunctivitis and keratitis, developed a more than usually obstinate attack with corneal infiltration and large pustules breaking down into deep ulcers on the sclera. I invoked the aid of Dr. Ian Struthers Stewart, in the hope of determining from her phagocytic indices the cause of her malady. As that case was communicated to the Ophthalmological Society of the United Kingdom, and published in its *Transactions* (see vol. xxviii, 1908), I need not enter into any detail beyond saying that the method of opsonic inquiry served our purpose well enough to reveal that one had to do with a staphylococcic rather than a tuberculous infection, and under staphylococcic vaccine treatment this patient made a good recovery, and has continued well since.

In an interesting research reported in the *Lancet* (December 1st, 1906) Nias and Paton found so close a correspondence between the rise and fall of the opsonic index for tubercle, *pari passu* with the development and

retrogression respectively of phlyctenules or phlyctenular ulcers in children, that they concluded that these efflorescences are of tuberculous origin. They considered that their research supported the "hypothesis of Lebe and others that these (phlyctenular) ulcers are due to attenuated or dead bacilli escaped from some unidentified focus of tuberculous disease, either free or taken up by leucocytes and not having sufficient vitality to generate a typical tuberculous lesion at their new site."[1] The occurrence of staphylococci in such cases as a secondary infection is generally admitted. But it seems difficult to exclude the possible occurrence of such widely distributed organisms as staphylococci as a primary factor also in these cases, and it does not appear that Nias and Paton excluded them by their method of inquiry. The prompt disappearance of phlyctenules in many cases under simple local treatment makes it hard to believe on clinical grounds that they are always primarily tuberculous. I cannot myself go further than the belief that they are manifestations of local staphylococcic infection in a soil well suited for tuberculous cultivation, often, indeed, already planted and flourishing elsewhere in the system. I do not regard them as a hall-mark of tuberculosis. I would rather say that in the human mansion they constitute a sign of "Apartments to let for tubercle." I frankly admit that other tuberculous tenants are frequently already in occupation of neighbouring quarters, but I do not think they are necessarily the first arrivals in that upper story which we call the conjunctival floor.

I should like next to refer to a closely allied group of cases occurring more frequently in adults, cases more of the nature of episcleritis, sometimes with and sometimes without a definite efflorescence rather deeper seated than the ordinary phlyctenule, rarely ulcerating unless upon the cornea, sometimes occurring without keratitis, often recurring with keratitis. As a junior surgeon I occasionally saw such cases of patchy episcleritis diagnosed and treated as rheumatic, and observing that in some at least one could elicit no history of rheumatism, and that in a certain proportion there were obvious glandular scars in the neck, I became impressed with the idea that many of them were not rheumatic, but were more related to the strumous diathesis. That opinion became more confirmed when, with increasing experience, one recognized that the same individual seen at different times might on one occasion exhibit an episcleritis, at another a phlyctenule, or a corneal infiltration, or an actual ulcer, or some combination of these, as in the case of Mrs. J. (Fig. 5).

When Dr. Peel Ritchie first came to work in my department, and at my request investigated this class of case particularly, he cast his net widely and sought for phagocytic evidence of the presence of staphylococci, pneumococci, streptococci, *Micrococci rheumatici*, as well as tubercle bacilli. It soon became evident that the staphylococcic index was the most frequently perturbed, and the wide diffusion of that type of organism, and the facility with which its products may find their way into the blood stream apart from an ocular source of infection, made it as difficult to be confident that it was the causal factor as to exclude it as one of the possible factors in a mixed infection. Anyhow, in several cases of episcleritis and phlyctenular conjunctivitis and keratitis we were guided by the phagocytic indices to attach importance to [illegible] infection, and staphylococcic vaccine treatment gave apparently good results.

As bearing on that point I would present the case of Mr. R. [illegible] of a poor [illegible] affecting the [illegible] In the [illegible] a broad [illegible] and [illegible] nodule of [illegible] In the left [illegible] a similar broad patch [illegible] junctival [illegible] and iritis were not involved. The [illegible] taken for *Staphylococcus aureus*, *Micrococcus pyogenes*, but bovine tubercle [illegible] could not, at that time be specially in [illegible] the comparative indices, it was taken as [illegible] all the more probable since Mr. R. had [illegible] He was given six staphylococcic inoculations during the next three months (April 7th to June 25th, [illegible] The right eye, which had no efflorescence, lost its [illegible] first, and by June 25th both eyes were apparently free from inflammation. On October 6th of the same year, just after a holiday, he returned with a fresh attack affecting the left eye on the inner upper quadrant. There was an ill-defined nodule, with bright red injection of the conjunctiva over and around it. No yellow focus. Pain considerable. Tongue furred. He received staphylococcic injections as well as Gregory's powder, and in a week returned much improved—pain gone, nodule flatter, injection less—and after three further injections he was practically well. On February 27th, 1909, he returned with episcleral nodule on left eye below limbus corneae of ten days' duration, showing a yellow centre and injection around. No pain. Staphylococcic injections were resumed, and after four more he recovered and has remained well up to date of last inquiry—May 11th, 1912.

Similarly Mrs. J. (Fig. 5), aged 43, who came under my care about the same time, had had three attacks of inflammation in the eyes—the first in 1901, the second in 1907, and the third which brought her to me in 1908. The last had commenced ten weeks previously, and occurred at the same time as a pimply eruption on the face. She had considerable pain and headache. There were some peripheral opacities on the right cornea, left apparently by the previous inflammation. During the present attack the right cornea was fairly free from injection, but there was a well-marked episcleral patch with an efflorescence over the posterior ciliary zone at the outer side of the right eye. There was less extensive injection of the left eye, but a corneal infiltration with a denser central focus occupied the upper nasal quadrant, and extended to the centre of the pupil. In both eyes there was some evidence of dusky thinning of the sclera from previous attacks. Her index for *human tubercle*, taken by Dr. Peel Ritchie, was practically *normal (1.06)*, but a lower index for staphylococcus (0.78 on one occasion and 0.79 taken at a week's interval), and a "*negative phase*" *following the first therapeutic injection* of staphylococcic vaccine appeared to give the indication for treatment, and she received thereafter eight inoculations of staphylococcic vaccine. The conclusion in this case was not very emphatic, for her attendance was irregular and her improvement slow. She made eventually a fair recovery, but with considerable corneal opacities, and has remained well to the present date.

In these two cases the index to bovine tubercle was not investigated, for want of suitable facilities at that time.

In 1909 the following cases, showing more involvement of the corneae, in which an early recognition of a *mixed infection* based on phagocytic indices was followed by treatment with the double vaccine, gave gratifying results:

Thomas D. (Fig. 7), aged 35, a pithead fireman from Lanarkshire, over 6 ft. in height and strongly built, came under observation on June 12th, 1909. Both eyes had been inflamed in boyhood. He had then kept free from inflammation until a month before his visit, when it recurred after influenza. The tuberculous tendency in this man was easily recognized, because he had had enlarged glands in his neck since boyhood, some of which had spontaneously suppurated and burst, but had never been operated on. The scars remained. The glands were not prominent, but one could be felt. Three sisters had all had trouble with cervical glands. He considered his general health good. His right eye showed diffuse injection of the sclera, especially about the ciliary region, with a phlyctenule-like efflorescence at the lower corneal margin about 5 o'clock, and scattered nebulae in the cornea. His left eye also showed corneal and scleral scarring. His phagocytic indices were as follows:

T. acium = 0.88	*T. hominum* = 0.86
T. bovum = 0.69	*Staph. aureus* = 1.11

Atropine drops were prescribed, and he was given combined injections of bovine tuberculin and *Staphylococcus aureus* ranging from 0.0005 mg. of each to 0.004 mg. of each. The treatment extended from June 18th to February 26th, 1910. He made comparatively rapid progress, and at each returning visit declared his health better. By February the injection had all but passed away, and in April he was admitted to my ward for iridectomy, which was performed first upon the left eye and a week later upon the right. Soon after going home he developed a phlyctenule of the left eye and injections were repeated and continued until October 8th, 1910, when he reported himself as keeping well in every way. On July 13th, 1912, he came with obvious pleasure to report himself very fit and always at work during the past two years.

R.V. $\frac{6}{9}$ 1 D. sph. $\frac{6}{6}$; L.V. $\frac{6}{9}$—1 D. sph. $\frac{6}{6}$.

In the fundus of each eye, but chiefly the left, there can now be seen disseminate choroidal pigmented spots.

The next case, that of William McG. (Fig. 8), aged 11, seen first on June 5th, 1909, is of some interest because along with multiple episcleral nodules and corneal infiltrations very similar in character to the last patient, there was *no history of tuberculous disease* nor family history pointing to tuberculosis, unless it were that a brother had died a year before of tuberculous meningitis of the terminal short duration. The patient had had inflammation of the left eye four years previously. The present attack had ensued four weeks before his visit. He had some carious teeth, but no suppuration. His left eye (as shown in the illustration) exhibited multiple episcleral nodules with corneal opacities chiefly of the lower inner quadrant. Atropine and boric lotion were ordered, and he returned home until a

report could be obtained on his phagocytic indices, which were found to be as follows:

T. avium = 1.0	*T. hominum* = 1.0
T. bovum = 0.61	*Staph. aureus* = 0.89

He was not seen again until July 24th, when it was found that the inflammation was extending and he was admitted to the ward. The indices taken again showed a raised index for staphylococcus, but a still subnormal index for bovine tubercle. On July 28th treatment was commenced with the combined vaccines *T. bovum* and *S. aureus*. There was no local reaction from the doses employed. These were repeated at intervals of two to four weeks. By October 16th injection was almost gone, by November 13th entirely gone, and by December 11th the eye was practically well and the nodules resolved. He had altogether seven injections, spread over six months. So far as known he has continued well.

Further illustrations could easily be given, but with these happy experiences of the benefit of the mixed vaccine treatment I have had no hesitation since in employing and recommending it in apparently similar cases, with most gratifying results.

I should like to conclude this section by exhibiting one of my most completely investigated recent cases, which appears to show a pure tuberculous infection of the human type.

Mrs. W. (Fig. 9[1]), aged 41, who only came under observation on July 15th of this year, had never been troubled with her eyes until seven weeks ago, when her left eye became tender and reddened at the nasal side. There was no secretion, nor did the lids gum, nor was sight affected. Externally there was little to be seen at fault until the left upper lid was raised, and then a broad patch of episcleral thickening was revealed in the upper inner quadrant, a diffuse elevation with *no appearance of yellowness, nor suppuration*, nor any definite phlyctenular-like efflorescence. Slightly tender to touch. Her general aspect a little anaemic. She had lost all her teeth save two, right premolars, one above, the other below. These were decaying, and might have been a source of infection. She exhibited no scars in the neck, nor could glandular enlargements be felt, and had no idea as to the causation of the eye trouble. Before any further history was elicited Dr. Ian Stewart was good enough to examine the blood, and gave me the following note of the indices:

Staphylococcus	1.01
Bovine tuberculosis	1.10
Human tuberculosis	0.72

On the following day von Pirquet's test was applied with Koch's old tuberculin of human strain, which gave a moderate positive cuti-reaction on the right upper arm. On July 20th some blood was taken for the examination of the phagocytic indices, and immediately thereafter she was given an injection of $\frac{1}{1000}$ mg. of tuberculin bacillary emulsion of human strain. After twenty-four hours the index, taken again, showed *a marked negative phase to human tubercle*. Confirmation of a tuberculous causation thus appeared ample. The question arose, Where was the tubercle seated? It now appeared, on closer scrutiny of her history, that she had had one sister phthisical; seven children alive and well, three said to have died of pneumonia; that as a girl she had some enlarged glands in her neck, which disappeared after painting with iodine, but she was unconscious of anything being now at fault. An examination of the lungs revealed slight dullness, with increased vocal fremitus and resonance and prolongation of expiration at left apex behind. No accompaniments. It was further discovered that a year previously she had been in hospital and had an operation in Professor Alexis Thomson's ward by Mr. George Chiene for the removal of a gland in the right axilla. This was found to be tuberculous, and her tuberculous tendency was further proved by von Pirquet's test applied at that time.

This case appears to be proved up to the hilt, and it will be interesting to see how she responds to a course of treatment by human tuberculin. It also illustrates the difficulty in getting at the history of some of our eye patients.

But tuberculous infection assumes many forms.

When I first saw Mr. E. (Fig. 10), aged 41, a bookseller and publisher, on August 13th, 1909, with a rather persistent inflammation of his right eye, his physician, Dr. R. Thin, had not been able to discover any reasonable explanation for it, and the appearance of the eye gave little indication of any definite etiology. As shown in the illustration, the eye presented a moderate ciliary injection, with only slight photophobia. He had never had any previous trouble, and considered that he enjoyed good health. There was just a trace of greyness in the limbus corneae below, no further corneal opacity nor ulceration, no punctate keratitis. The pupil reacted, though a little less actively than in the sound eye; it dilated fairly, but not widely, under atropine, remained circular, and showed no synechiae, and the ciliary injection remained thereafter little altered. Dr. Thin assured me that he had never exhibited any signs of tubercle, and beyond the fact that his mother had died of consumption when he was a year old, the family were not supposed to be tuberculous. I had some difficulty in persuading his doctor and his brother (a London physician) that anything could be gained by investigating Mr. E.'s indices for tubercle. But eventually, consent having been given, Dr. Ritchie made the necessary examination, with the following result:

T. avium = 0.85	*T. hominum* = 1.43
T. bovum = 0.85	*Staph. aureus* = 0.85

The divergent and supernormal index for human tubercle strongly indicated infection therefrom, and with this as a justification for treatment Mr. E. received six injections of human tuberculin T.R. From August 23rd to December 15th the redness slowly faded away, and by the end of four months he was practically well, doing a full day's business, and able to withstand the strain of Christmas trade. He has kept perfectly well since.

I have had gratifying experiences in the use of tuberculin in cases of irido-cyclitis with punctate keratitis. I believe that I have in some instances been enabled to prevent employers being imposed upon in cases where compensation was claimed for inflammation of the eye supposed to be due to minor injuries, through being able to prove (at least, to my own satisfaction) that the case was not so much due to traumatism as to constitutional poisoning with tubercle.

I should like to draw special attention to the value of tuberculin as a means of diagnosis in some cases of interstitial keratitis of doubtful etiology. As is well known, a large proportion (according to Hutchinson, fully 75 per cent.) of cases of interstitial keratitis are due to inherited specific disease. But in a certain number little confirmation can be got from either the facies of the patient, the dentition, or other characteristic signs of that inheritance. On clinical grounds it has been generally admitted that some proportion of cases are related to tubercle, but the proof has not been hitherto well established. Greater certitude may be attained, or at least sought for, by the employment of the Wassermann reaction for the one and the tuberculin reaction for the other.

Maggie W. (Fig. 11), aged 12, was sent to my ward by Dr. Rae, of Wick. She had been suffering for several weeks from severe interstitial keratitis, with great photophobia and considerable steaminess and infiltration of the corneae, without any ulceration. There was nothing abnormal in the formation of her skull or bridge of the nose, but her teeth were as illustrated, with rather poor and pitted enamel, and slight notching of the upper incisors, and each canine peg-shaped and decaying. She was treated for a time as an out-patient in the usual way, with atropine and small doses of mercury and iron. But as she was making but little progress I admitted her to my ward and applied a von Pirquet's cuti-reaction, with very marked positive result. She had not been complaining in any way of glandular swellings, but on careful search one enlarged gland could be felt below and behind the angle of the jaw on the right side, and there was a history of her having had at one time swellings on the left side of the neck, but no cicatrices to attract attention. Wassermann's reaction, applied for me by Dr. Carnegie Dickson, has revealed a "definite syphilitic reaction," so that here is an undoubted instance of the possibility of a mixed infection. She is now under *Perlsucht* tuberculin as additional treatment, and making good progress.

(Illustrations were given of other two cases of interstitial keratitis—one in a girl aged 12, the other in a domestic servant aged 21—in which Wassermann's reaction was *negative* and von Pirquet's *positive*.)

I recommend the use of tuberculin in the treatment of cases of interstitial keratitis which respond to von Pirquet's test.

Passing over cases of disseminate choroiditis with a tuberculous origin, I should like to mention that I have at present under my care a small boy, Andrew C., aged 6, with a large buffy mass in his left vitreous, raising a doubt as to the diagnosis of glioma or pseudo-glioma. The anterior chamber is shallow. There is no retraction of the periphery of the iris, and when recently exhibited to some of my ophthalmic colleagues at a meeting of the Scottish Ophthalmological Club, considerable doubt was expressed as to whether I was justified in describing the case as pseudo-gliomatous. In the meantime, however, von Pirquet's reaction has proved positive. Dr. Leslie Lyall, assistant physician to the Victoria Dispensary for Consumption, tells me that there is some evidence of phthisis at the apices of the boy's lungs, and though one cannot hope to restore vision, I feel that tuberculin has enabled me to refrain from enucleating what is at present a quiet and not unsightly eye, and offers a means of remedy at least worth trying.

[1] It may interest the reader to compare this case with one published by Mr. J. B. Lawford, F.R.C.S. (See the *Transactions of the Ophthalmological Society*, vol. xxx, p. 134 and Plate 6.)

Let me add an observation upon the value of tuberculin in *muscular palsies.*

Lizzie T., aged 19, of rather small physique, but with no obvious signs of tubercle or complaint of ill health, suddenly developed a paralysis of the left external rectus. In the absence of any obvious cause, the usual surmise of a rheumatic origin led to treatment by blistering the temple and the internal administration of sodium salicylate. As after a month's perseverance in this course no improvement appeared to have been secured, a cuti-reaction was applied. The response was markedly positive. *Perlsucht* tuberculin injections were commenced; after the second or third dose improvement rapidly followed, and in a few weeks recovery was complete. It was the remark of her friends, and her appearance also bore it out, that her general health had extraordinarily improved at the same time. As she resided in the country I was unable to arrange for her indices being taken prior to treatment.

A few weeks ago Mr. R., aged 35, a clerk, came to consult me, complaining of diplopia. The photograph (Fig. 12) shows that he was suffering from a paralysis of his right external rectus. He had sought advice at a public institution, and his right temple shows the mark of the blisters which had been applied. Antirheumatic remedies had also been given. He denied any specific infection, and considered his general health good. But on inquiry I learnt that the paralysis had ensued after sitting in a rather draughty tent watching some entertainment at the seaside, and that two or three days previously a gland in his neck had been incised by his own physician. The photograph exhibits the still scarcely healed wound a little above the clavicle at the root of the neck on the right side, and a chain of three or four enlarged glands could be felt leading up to another cicatrix half way up to the ear at the posterior border of the sterno-mastoid. In this case a cuti-reaction seemed superfluous, and treatment by *Perlsucht* tuberculin was at once initiated. He has had two injections and feels better. His primary deviation has lessened and his range of external movement has increased.



Fig. 12.

A case almost identical with this was that of a young woman lately sent to me by Dr. Hamilton, of Hawick, with paralysis of the right external rectus of recent origin. She had suffered for a long time from a tuberculous ankle, and had her foot amputated a year ago. I had no hesitation in advising the use of tuberculin, and have only this morning heard that she has now had four injections of $\frac{1}{10\,000}$ mg. of new tuberculin T.R. bovine from Dr. Oliver Hamilton, who reports, "Her diplopia is gradually improving, especially since the third dose. Her giddiness has disappeared, and she seems happier in herself now."

In these three cases the acuteness of vision was undisturbed and the fundi normal.

Negative Cases.

Thus far I have only endeavoured to illustrate cases in which tuberculin has been of value as positive evidence of the presence of tuberculosis. I could easily adduce others in which it has been proved of value as a negative means of diagnosis, more especially cases of irido-cyclitis whose etiology is often obscure.

Conclusion.

I would submit that in tuberculin we have a valuable remedy, if judiciously employed, to assist us both in diagnosis and treatment. I am not unmindful that in the study of disease we are constantly confronted with the danger of forgetting that *post hoc* is not necessarily *propter hoc*. If we may trust to a cuti-reaction as a sure indication of tubercle somewhere in the system, we still have need to determine to what extent it is the exciting factor in any particular case of ophthalmic disease. In treatment also we have much to learn as to whether we cannot accelerate the process of cure. We must never forget that the *vis medicatrix naturae* is, after all, the great healer. We need not lay the flattering unction to our souls that the recovery of our patients depends solely upon the treatment which we have employed. The most experienced practitioners will be the first to admit that their patients frequently cure themselves by processes beyond our ken, sometimes despite our well-intentioned but misdirected efforts. We may admit that humbly and thankfully *sans peur et sans reproche*, if at least we have striven to do our best. In the diagnostic and therapeutic considerations to which our thoughts are turned to-day we may advance with some assurance that we are acting on the principle of assisting the human frame to utilize its inherent powers to combat a most insidious and destructive malady.

REFERENCE.

[1] *Lancet*, 1906, vol. ii, p. 1500.

II.—L. C. PEEL RITCHIE, Ch.M., M.D., F.R.C.S.Edin.,

Research Student, University of Edinburgh.

THE object of my investigation was to apply to certain forms of eye disease of uncertain etiology those methods of blood examination by means of the phagocytic index which had proved themselves reliable as diagnostic methods in diseases due to known organisms. The results obtained in this way led to treatment by bacterial inoculations with the particular organisms which the blood examinations had indicated as the causes of infection. In a method of investigation such as this, it had always to be kept in mind that, while the blood might give evidence of the presence of some particular organism infecting the system, that in itself did not necessarily furnish the cause of the eye affection. The possibility of more than one variety of infecting agent being present had always to be considered, and many cases presented obvious infective conditions elsewhere than in the eyes. Cases in which the eye was the only apparent site of disease provided of course more conclusive evidence, and subsequent inoculation treatment also went far toward furnishing final proofs, and was accordingly largely directed towards this end. At first, when the nature of the causal organisms producing the eye affections was almost wholly a matter of surmise or speculation, it was necessary to make the number of the organisms tested for in the blood examination extensive, so as to cover as far as possible all likely causes. At the earlier stage of the investigation, therefore, practically all the common infective bacteria were taken into account and tested for; at a later stage, by a process of exclusion, the tests became narrowed down in accordance with the evidence obtained, and in the final stage inoculation treatment was carried out on a number of patients without any preliminary examination of the blood, making use of the information so obtained in similar cases previously.

The methods of blood examination which were employed were three in number, and consisted of the inoculation test, the absorption index test, and the comparative index test, which have been described fully elsewhere.[1 2 3] The inoculation test consists in observing a negative phase in the phagocytic index following inoculation of a particular organism in persons infected with that particular organism, or the absence of such negative phase in non-infected persons.

The absorption index test is a method of absorbing from the serum those non-specific substances which influence phagocytosis, leaving evidence of the presence of specific substances influencing phagocytosis of some particular organism, but only in the case of serum from an individual infected with that particular organism.

The comparative index test consists in estimating the phagocytic index of a serum at any one time to a number of organisms. It is found that the index is the same, within the limits of technical error, to all organisms other than one with which the individual is infected. The index of such an infecting organism almost always stands at a distinctly different level, either higher or lower. This method was found to be the most suitable in this investigation, where a large number of bacteria had to be tested for in each case, and was the method therefore employed for the most part.

In regard to the tests in relation to possible tuberculosis, it should be stated that, on the basis of previous research,

it was considered necessary to test for infection with either the human, bovine, or avian types of bacillus, it having been found that the blood serum reactions as shown by the phagocytic index differ in respect of each of these, and further, that successful inoculation treatment depends on the employment of a tuberculin corresponding to the specific type of infecting tubercle bacillus.

The cases dealt with here are those in which one or other type of tubercle bacillus was demonstrated as an infecting agent, and also other cases of a similar nature in which tuberculin treatment was carried out without the preliminary serum examination described.

This differentiation between the various types of tubercle bacillus we consider of high practical importance. In certain types of case the bovine type of infection was found to be specially common, and evidence has been obtained that treatment of such cases with the human type of tuberculin is ineffective. The avian type of infection was not found in any case examined by the methods referred to.

The system of dosage followed has been that which has been found to be the most suitable where a prolonged course of treatment is necessary, as is the case with tuberculosis. It is one which has been found to obviate the occurrence of any objectionable "reactions," and which has the advantage of being suited for the ambulant treatment of patients coming, it may be, from a distance for each inoculation, as it does not need to be controlled by frequent observations of the temperature of the patient. It follows a fairly simple and definite plan, and is therefore well adapted for routine use in hospital out-patient practice, requiring but seldom any variation from the set scheme, while it necessitates as little as possible the attendance of the patient at hospital for the inoculations. It also admits satisfactorily of a renewal of the treatment at a later date if found desirable, and has the advantage from a hospital point of view of costing but a trivial amount for the tuberculin used for each patient.

The general principles are to keep the patient constantly under the influence of a comparatively small dose of tuberculin, fairly uniform in amount, but tending, as time goes on, to increase slightly; never to diminish the dose; to make no attempt to "accustom" the patient to the largest doses of tuberculin, but to aim at a gradual immunization; to avoid hypersusceptibility by giving the earlier doses at short intervals, while later, as the condition tends to come under control, to increase the intervals, as also the doses. It has not been found that anything is to be gained in the end by attempting a rapid immunization in tuberculosis, and in eye conditions the probability of deposits of tubercle elsewhere in the system in all cases has to be kept always in view. The best dosage is that which causes no obvious reaction and has the most prolonged effect. In the more acute forms the initial doses should be smaller, and the intervals between them may be shorter.

The tuberculin used has been commonly Koch's Tuberculin R, of either the human or the bovine (*Perlsucht*) type, as indicated in the particular case.

In a chronic case a typical scheme of dosage would be as follows:

Dose No.	Amount of Tuberculin.	Interval Allowed before Next Dose.
1	0.00025 mg.	1 week.
2	0.0005 mg.	2 weeks.
3	0.0006 mg.	2 ,,
4	0.001 mg.	3 ,,
5	0.001 mg.	3 ,,
6	0.00125 mg.	3 ,,
7	0.00125 mg.	3 ,,
8	0.0015 mg.	3 ,,
9	0.0015 mg.	3 ,,
10	0.002 mg.	4 ,,
11	0.002 mg.	4 ,,
12	0.0025 mg.	4 ,,

In a course such as the above there is a total amount of 0.01535 mg. tuberculin injected, spread over a period of thirty-five weeks, which gives an average of 0.00044 mg. per week, but it will be seen that the dosage per week is at first less than that, and is progressively increased.

In an acute type of infection the scheme of dosage would approximate more to the following:

Dose No.	Amount of Tuberculin.	Interval Allowed before Next Dose.
1	0.0002 mg.	1 week.
2	0.0004 mg.	2 weeks.
3	0.0005 mg.	2 ,,
4	0.00075 mg.	3 ,,
5	0.001 mg.	3 ,,
6	0.001 mg.	3 ,,
7	0.00125 mg.	3 ,,
8	0.00125 mg.	3 ,,
9	0.0015 mg.	3 ,,
10	0.0015 mg.	3 ,,
11	0.002 mg.	4 ,,
12	0.002 mg.	4 ,,

In this course the total amount of tuberculin injected is 0.01335 mg., spread over a period of thirty-four weeks, which gives an average dose of 0.00039 mg. per week, but it will be noticed that the scheme of dosage gradually falls into line with that adopted for the chronic type of case, and this plan would be followed in cases in which the acuteness of the symptoms diminishes satisfactorily at an early stage. Otherwise it is advisable to continue for a longer time with the smaller doses at shorter intervals as shown in the earlier part of the course. As a general principle, if a dose given is thought to have been too large, the next one should not be diminished, but the same may be repeated, allowing a longer interval. In any case the injections should be continued steadily and the treatment should not be started without ensuring arrangements for its continuity. In tuberculosis the results of inoculation cannot be judged from but one or two injections.

The schemes of dosage above outlined are for adult individuals, and should, of course, be proportioned according to the age of the patient.

In those cases in which inoculations were given of other organisms the doses were measured by weight in the same way as with tuberculin, and the course of treatment followed similar lines—that is to say, when two or more organisms were to be administered, one would give simultaneously an injection of the same amount of each corresponding to the dosage in the scheme of treatment which was being followed.

The injections are always made into the substance of a muscle, and the dilutions of the tuberculin, etc., made up with 0.9 per cent saline solution.

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III.—Dr. Louis Dor,

Lyons, France.

If any of you were present at Berlin at the session of the International Medical Congress of 1890 you must certainly remember the enthusiasm of the whole assembly when Koch announced that he had found a remedy against tuberculosis, which he called "tuberculin." During the years 1891 to 1893 nearly all the physicians of the world tried to cure tuberculosis with the Koch tuberculin, but, unhappily, the deception became general when it was proved that the remedy was very dangerous, and that, certainly in many cases, the disease of the patients had been aggravated. This is the reason why it is now very difficult to generalize the use of new tuberculins. I had myself great hesitation in the beginning when these new tuberculins appeared, and I had on my table a tube of tuberculin T.R. for a year before I dared to inject it into a patient. It was the confidence I had in Professor v. Hippel which decided me to try the method, and I must also say that the patient—a young lady, who asked me formally to treat her with tuberculin—took away my last hesitations. I was very timid in the beginning, but when I saw the first case going well I became more and more bold.

As I have treated a large number of cases, I must tell now how it was possible that I could find out so many—nearly 80—in a period of four years. This happened because all the pupils of Poncet—amongst which I count myself—consider as being really tuberculous a large number of chronic inflammations generally attributed to rheumatic or to other infectious diseases.

I believe that a great number of cases of interstitial keratitis where the Wassermann reaction is negative, cases

of phlyctenular conjunctivitis, of chronic scleritis, quiet iritis, hyalitis, detachment of retina without myopia, iridocyclitis, optic neuritis, and so forth, may be produced by tubercle bacilli; and the best thing is to try the action of tuberculin as agent of diagnosis. In some cases there is no reaction at all. I leave these cases aside, but in the great majority of cases I found either a local or a general reaction, and I treated those cases. Of course, I treated also some cases of very typical tuberculosis of the iris, three cases of doubtless tuberculosis of the retina, but the great majority were cases of atypical tuberculosis, and this is the explanation why I could find so many as nearly 80 patients. The method I have adopted is the following —I try never to have the least reaction. I begin with very small doses (generally the one hundred-thousandth part of a milligram), and every third day I inject a higher dose. As long as I have no reaction at all I go on further. As soon as I see a local or a general reaction I inject always the same dose as long as it causes a reaction. All my patients themselves take every morning and every evening their rectal temperature, they write it down in a pocket-book, and I write beside the number of drops of the solution which I inject. The injection is made generally on the back between the shoulders.

I have never neglected to give my patients the best local and general treatment that I could imagine—atropine for iritis, dionine for keratitis, cod-liver oil, sodium cacodylate—for I tried to cure them, and not use them for experimental purposes.

I can say that I have never seen the least inconvenience of the injections. The tuberculin acts evidently on the lesion; for instance, in the tuberculous detachment of the retina the patients will see after each injection, the second day, or sometimes the same day, a great number of flashes of light; in the tuberculous iritis they feel pain; in the tuberculous keratitis the eye becomes more red. The question is to know if the action is a good one or a bad one.

If the action were rapid, nobody would have a doubt, but the action of the tuberculin is not so quick as the action of real remedies like salvarsan or potassium iodide. The action of tuberculin is always slow, and the patient, as well as the physician, needs patience. Some physicians after having tried once or twice to cure patients with tuberculin gave up the remedy. It is absolutely necessary to treat a great number of patients to have an idea of the antituberculous action of the injections. The treatment must never be shorter than two months. Even after treatments of three months, when the patients seemed quite cured, I have seen some cases where relapses appeared. A second cure is then necessary, and it can last as long as the first.

You see that the action of tuberculin on tuberculous diseases is not at all to be compared with the action of the sun on the snow, but I believe, however, that the action is really a good one, that the patients are cured better and sooner than they would have been without tuberculin, and that the injection causes no harm, either to the local disease or to the general health.

I have tried a great number of tuberculins. I began with the tuberculin of Béraneck, and tried one after the other the tuberculin T.R., the French tuberculin C.L. of Calmette, the Russian endotine, the German bacillary emulsion called B.E., and last the Rosenbach's tuberculin and also Spengler's *Immun Koerper* I.K.

I can say that in some cases I found reasons to prefer one of these tuberculins to the others, but for the great majority of my cases my preferences go to the B.E., which is not a selected poison of cultures of tubercle bacilli, but the culture itself or bacilli killed and crushed. I have never regretted to have used the B.E., and I know cases where I regretted I had used other tuberculins because the treatment seemed to me to be longer than it ought to have been.

Of course the endotine and the Rosenbach's tuberculins are too new to be judged. They are very different from the other tuberculins; C.L. is the more active and also the more difficult to handle of all the tuberculins. My opinion is that the B.E. is in the middle, that it is very easy to be used. It is also the cheapest of all the tuberculins, which may be a consideration for some people.

My conclusion is that the tuberculin treatment of all the various forms of tuberculosis of the eye never does harm when it is used with some rules, that it helps the cure of the tuberculous diseases, but it acts less quickly than one would hope, and the patients as well as the physicians need perseverance. A cure of one month is very seldom sufficient. Two or three months are generally necessary, and after a period of rest it is frequently a good thing to begin again a second cure. In very severe cases I kept my patients under the action of tuberculin more than one year, and they were finally cured.

During this meeting I have heard Mr. Butler say that he had cured phlyctenular keratitis with two or three injections of T.R. I dare say that I have seen also cases where after two or three injections the disease was influenced, but it generally appeared again very soon, one or two weeks after, and the real cures must last, in my opinion, at least one month for the simplest cases.

DISCUSSION.

Dr. W. B. MARPLE (New York) was much interested in the cases related and depicted by Dr. Mackay of so-called interstitial keratitis of tuberculous origin. The majority of his own cases gave a positive Wassermann reaction, and the remainder did not give a positive tuberculin test. He had had several cases of choroiditis with a focus of recrudescence with positive tuberculin reactions. Some cases of recent tuberculous choroiditis, with mutton-fat exudates in Descemet's membrane, quickly disappeared, but the media and choroid took a long time to clear. In tuberculous iritis in which tuberculin had been given as a diagnostic aid three times at intervals of four days no positive reaction resulted except the rise of temperature of half a degree, but the condition gradually got well, and the nodules disappeared. Relapses took place, but with subsequent treatment a cure resulted after six months. He thought that the best way was to give small and increasing doses gradually, and to continue the treatment for several months or a year.

Mr. T. HARRISON BUTLER (Coventry) said that Calmette's reaction was dangerous and inaccurate. He had seen a violent reaction, with interstitial keratitis and corneal ulcers developing after its use in eyes which were previously perfectly normal. Von Pirquet's reaction was given by 90 per cent. of all adults, and so became valueless, but it was more useful in children. He considered that the injection of old tuberculin was the only method of value in ophthalmic work. A local reaction was almost certain proof of ocular tuberculosis. He used 0.001 c.cm. followed after an interval of a few days by 0.002 c.cm. and 0.004 c.cm. He had one case which failed to react to human, but reacted to bovine tuberculin. A dose of $\frac{1}{2000}$ mg. of T.R. was the best. It should be used for several months or a year, and he questioned whether any good resulted from increasing the dose. He had seen excellent results in tuberculous disease of the uvea. Scleritis and sclerosing keratitis were frequently tuberculous and greatly benefited by the treatment. He looked upon phlyctenular conjunctivitis as a sign of tubercle somewhere in the body.

Mr. BISHOP HARMAN (London) thought that they were now justified in using a tuberculin without a preliminary and exhaustive examination of the blood and the repetition of these tests during each stage of treatment. The cutaneous tests were doubtful, and the personal equation entered so much into the blood tests. He had found the use of tuberculin after the manner detailed by Dr. Peel Ritchie safe and satisfactory. He relied upon the three following signs: The appearance of the local lesion, the temperature of the patient taken regularly, and the feeling of fitness on the part of the patient if the patient felt out of sorts no injection was given. He raised the most emphatic protest against the assumption that phlyctenulae were always of tuberculous or paratuberculous origin. All the evidence went to show that they were usually due to some local cause. Of the cases treated at the Belgrave Hospital for ten years, 50 per cent. were cured in a week, a further 25 per cent. in a fortnight, and only 5 per cent. dragged on for months, and these were all in strumous children. Next the cure was obtained with the simplest of remedies for example, yellow ointment, or even with castor oil drops. The cases had an "age peak" of 6 years,

which corresponded to the decay of the milk teeth and the eruption of the permanent ones, and lastly, the seat of election had a specific relation to the distribution of the fifth nerve to the supply of the teeth. These things led him to believe that the common phlyctenular conjunctivitis in children was not tuberculous in any real sense but a herpetiform eruption due to irritation of collateral branches of the fifth nerve. In the residuum of cases there were genuine tuberculous lesions, particularly in those lesions which occurred later on of the pustular sort and the combined episcleral and corneal lesions which were often, but probably erroneously, called "phlyctenular." He felt that to assign a simple lesion to a grave condition and then to claim a cure for it by vaccine treatment, when it was more easily cured by the simplest means, was to discredit vaccine treatment.

Dr. MACKAY briefly replied.

THE TREATMENT OF WORD-BLINDNESS, ACQUIRED AND CONGENITAL.

By JAMES HINSHELWOOD, M.A., M.D.,
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THE subject of word-blindness is now receiving increased attention from ophthalmic surgeons. My communication in 1900[1] on the subject of congenital word-blindness first drew the attention of ophthalmic surgeons to the importance of the subject, and in 1904 I made two communications[2] at the Oxford meeting of the British Medical Association—one on acquired, and another on congenital word-blindness. Since then many communications on the subject have appeared in the ophthalmic journals, so that it is evident that ophthalmic surgeons are now realizing that this is a subject which is worthy of careful study, as the oculist is frequently the first person to be consulted in such cases, from the very natural belief on the part of the patient that the inability to read is due to some ocular defect. Hence it is most important that he should not only be able to recognize them, but he should also know what is the best method of treatment.

The old idea was that nothing could be done for such cases, but it is now quite clear, both in acquired and congenital word-blindness, much can be done if the treatment is conducted on proper lines. The object of this communication is to attempt to convey more precise and definite information as to the line of treatment which affords the best chances of success.

It was Kussmaul[3] who first clearly pointed out that blindness for words is capable of being met with clinically as an isolated condition, and that it represents the pathological condition of a special faculty. Before the publication of Kussmaul's article, however, Sir William Broadbent[4] had already called attention to cases where the patients were unable to read printed and written words, but in these cases the inability to read was accompanied by speech disturbances, such as verbal aphasia or amnesia, in a greater or less degree. Kussmaul's exact words are, "a complete text blindness may exist, although the power of the sight, the intellect, and the powers of speech are intact." He invented the term "word-blindness" for this condition in which the patient, though not blind, is unable to read visible words.

Such pure cases of acquired word-blindness almost always first consult the ophthalmic surgeon, as they naturally suppose the inability is due to their eyesight. The case which I reported to the Oxford meeting of the British Medical Association in 1904 was first seen by me at the Glasgow Eye Infirmary. The study of the cases of acquired word-blindness is necessary to the proper understanding of congenital word-blindness, and I therefore begin with acquired word-blindness.

The inability to read in acquired word-blindness is due to a lesion either in the angular gyrus itself (cortical lesion) or to a lesion (subcortical) interrupting the communicating fibres, and thus isolating the angular gyrus from the other cerebral centres. In the auditory and visual centres of one hemisphere only are the sensory impressions of language, visual and auditory, retained and stored up. The hemisphere selected is always that in which are situated the motor centres for speech and writing. It is thus as a rule the left hemisphere in right-handed people, so that a lesion destroying the left angular gyrus or isolating it from the other centres will render a person completely word- and letter-blind.

The case of acquired word-blindness with pathological examination recorded by me at the Oxford meeting of the British Medical Association was that of a man, aged 58 years, a teacher of French and German. He went to bed quite well, and next morning on waking he found that he had lost the power of reading both printed and written words and letters. On examination I found there was also present right lateral homonymous hemianopsia, but no other cerebral symptom was observable.

Acting on my advice this patient started the process of re-education. He got a child's primer and began again to learn the letters of the alphabet. After six months' da[illegible] learnt again to recognize the letters of the alphabet, but he never learnt to read words by sight. He was never able to recognize the visual memories of words, or at the most only of a very few of the short familiar ones. He could only read by spelling out each word letter by letter, and thus appealing to his auditory memory. He thus made little progress beyond reacquiring the visual memory of letters. After labouring at this for a year, he came to me one day and said that he had given the task up. It took so much out of him, as he expressed it, and required such intense mental effort, and he was making such little progress that he felt constrained to abandon any further attempts towards learning to read.

This case, however, was so far encouraging, as the patient reacquired the visual memories of the letters of the alphabet, and of a few familiar and short words. This showed the possibility of re-education to some extent at least, and encouraged me to try the same method in the next case which came under my notice. The patient was a woman, aged 34 years, who had been completely word- and letter-blind for a period of fourteen months before I saw her. So complete was the letter-blindness that she could not recognize a single letter of the alphabet. On examination I found there was also right homonymous hemianopsia. I recommended that she should learn to read again, beginning with the letters of the alphabet, and then the short words and sentences in a child's primer. This case was a much more favourable one, as the patient was twenty-four years younger. Fortunately, also, she lived with her brother, who, being a schoolmaster, was greatly interested in this process of re-education, and undertook the supervision of her re-education.

I asked her brother to give me some account of his experience in teaching her to read, and I quote the following from the notes which he kindly sent me:

> On July 19th, 1900, my sister became paralysed on the right side, and also became word- and letter-blind, both for printing and writing, but could to a considerable extent recognize figures. By September, 1900, she had recovered the power of her right arm and leg and improved in her general health, but her inability to read remained just as before. Her medical attendant, Dr. Miller Semple, advised that Dr. Hinshelwood should be consulted, and in September, 1901, Dr. Hinshelwood, after seeing her, advised that an attempt should be made to re-learn to read. Ordinary day-school primers were recommended, the print being big and the lessons graduated. Generally speaking, the task of re-learning was found to be twice as difficult as the learning of letters and words for the first time, but as the auditory memory was unimpaired the task was to some extent easier, for she could spell words when she could neither recognize them, nor even the letters of which they were composed. She could not study at first for more than ten minutes at a time, as exhaustion soon came on and she had to stop. Slowly and with the greatest perseverance she succeeded in learning the alphabet and little words. The first primer (words of four letters) was mastered in about ten weeks, greatly by the help of the auditory memory; and by July, 1902, she was reading simple Bible texts, but spelling most of the words letter by letter.
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> Since July, 1902, her progress has been steady but slow. In common narrative a large proportion of the words are now not spelt at all, and of those which she requires to spell few have now to be spelt aloud. She often stumbles yet at small words, and gets easily over big words, the appearance of the latter being often more characteristic.

I have recently had an opportunity of seeing this patient and hearing her read after an interval of more than ten years; her homonymous hemianopsia remained unchanged. She read an article from a newspaper very fluently, but occasionally stopped and spelt out a word before she was able to read it, but this occurred only very rarely. Her brother's account of her re-education gives us a very clear idea of the process. She first acquired the visual memory of the letters of the alphabet. This is a comparatively easy task, as there are only twenty-six letters, and, taking

capital and small letters, only fifty-two visual images to be registered in the visual memory. Her auditory memory was unimpaired, and hence when she could recognize the individual letters she could read by spelling aloud the words and appealing to her auditory memory. It was in this way that she gradually acquired the second stage in the art of reading, which is a much more formidable task and requiring for its accomplishment a much longer period of time. In fact she has not yet thoroughly mastered this stage, although she is fairly proficient, finding it necessary even yet occasionally to spell a word. This second stage consists in the gradual acquirement and storage of the visual memories of words. When this is accomplished the individual reads not by analysing each word into its individual letters, but by recognizing each word as a separate picture. The words then cease to be for such an individual simply a congeries of letters; each word is regarded rather as an ideogram, picture or symbol, which suggests a particular idea. The individual now recognizes a word, just as he recognizes a landscape or a familiar face, by its general outline and form without resolving it into its constituent details. He has now learnt to read by sight, and can skim over the pages of a book with great rapidity. When he looks at a printed or written word he can instantly interpret it by comparison with the word-image in his visual memory without having recourse to his auditory or glosso-kinaesthetic memory. To acquire this art of reading by sight alone requires the storing up in the visual memory of an enormous number of visual images of words, and many people never perfectly acquire it, but, like our patient, occasionally require to pause and analyse the word, spelling it out letter by letter.

In April, 1905, a girl 14 years of age was brought to me with the history that eighteen months ago she became paralysed on her right side, with loss of speech. She gradually recovered from her hemiplegia and aphasia, but it was then found that she was unable to read, and had remained in that condition ever since. Before her illness she was in the fourth standard at school, and could read very well. When I examined her I found that she had right homonymous hemianopsia, and was completely word- and letter-blind, not being able to recognize a single letter of the alphabet. Her auditory memory was unaffected, and she still retained the power of spelling.

I therefore advised that she should be re-educated, beginning with the alphabet and then with a child's primer. After learning the alphabet she was to be allowed to spell out aloud the words letter by letter, and thus appeal to her auditory memory which was unaffected.

I saw her again four months afterwards, and found that she had made considerable progress in that time. She could recognize by sight all the letters of the alphabet, and could pick out by sight a large number of small words, such as "to," "up," "go," "in," "the," "of," and so forth. Larger words she could read by spelling them out letter by letter, and so appealing to her auditory memory. Her hemianopsia remained the same.

I learnt later from her medical attendant that her progress in relearning to read had been continuous. Her education was undertaken by her father, who spent a great deal of time in training her, and in two years after I saw her, she was able to read just as well as ever, although her hemianopsia persisted.

The case and rapidity with which this child relearnt to read was very striking as compared with the other two cases. It is evident, then, that age is a very important factor in the prognosis of such cases, and that the younger the patient the less will be the difficulty in teaching them to read again.

In the three cases recorded, and in many such cases, the cause of the word-blindness was cerebral haemorrhage, which either destroys the angular gyrus itself (a cortical lesion), or, leaving it intact, may destroy the fibres leading to it—a subcortical lesion. In the three cases recorded the word-blindness was accompanied by lateral homonymous hemianopsia, which points to a lesion in the white matter of the left occipital lobe, so situated as to cut across the fibres passing from both occipital lobes to the left angular gyrus, and also involving the optic radiations passing to the left occipital cortex. It is important in such cases that the process of re-education should not be started too soon.

Complete cerebral rest is essential after such an attack for a considerable time, and no attempt at re-education should be made until all signs of acute brain disease have disappeared. The right homonymous hemianopsia remaining permanently in all three cases showed that the left angular gyrus was permanently cut off from the visual centres in both occipital lobes.

Re-education in these cases could therefore only be accomplished by the education of the corresponding centre on the opposite side of the brain, and hence the greater difficulty in teaching such patients to read by sight, as they require for that purpose to use a part of the brain which does not usually discharge that function. It will be noted also that in these cases the auditory centre in the first convolution of the temporo-sphenoidal lobe was unaffected, and hence these patients retained the power of spelling words even when they could no longer recognize them by sight. Word- and letter-blindness has not always the complete character of the three cases just recorded. There are often peculiar varieties and partial forms which I have discussed in detail in my book on word-, letter- and mind-blindness.[5]

The study of these cases of acquired word-blindness with auditory memory centres intact and their method of relearning to read gives us a clue to the proper method of education in children suffering from congenital word-blindness but who have good auditory memories, and who therefore belong to a very similar category.

It was the study of acquired word-blindness which led to the recognition of the cause of the inability or difficulty in learning to read, which is seen in many children, as being due to a congenital defect in the visual memory for words and letters, and which hence could be conveniently described as congenital word-blindness. That these cases are comparatively numerous is now evident from the large number of recorded cases which have appeared in the ophthalmic journals during the last few years. The important point is that these children can be taught to read, if it is set about in the proper way. But the question arises, what is the proper way? Now this is the point to which I wish to draw special attention, as I am not in agreement with many recent writers on this subject. Mr. Herbert Fisher[6] in a recent and interesting communication to the Ophthalmological Society on congenital word-blindness, quotes a case of his own, where the patient was successfully taught to read on the "look and say principle," "a system," he says, "in which the word or at most the syllable, is made the unit for visual memory, instead of the individual letter." He advocated this method of teaching such children as being *a priori* that which might be expected to be the most ready way of practically meeting the difficulty.

A case which has recently come under my observation affords conclusive proof that whilst the method of training recommended by Mr. Fisher may be most successful in some cases, as he has found it, yet there are others where this method will not succeed, and where the child must be trained in a different way.

In March, 1911, a boy, 13½ years of age, was brought to me with the history that he could not be taught to read. He had been seven years at school. He had made good progress in writing, copied very well with a beautiful hand. He was good at drawing and fair at arithmetic. He had been taught to read entirely on the "look and say" principle, and had not been taught to spell. When I examined him I found that he knew most, but not all, of the letters of the alphabet, and could recognize by sight many small words of one syllable, but this was all he could accomplish after seven years' training on the "look and say" system.

I found that the boy had a good auditory memory, and, profiting by what I knew of the process of re-education in acquired word-blindness, I advised that the boy should be taught to read on the old method, beginning with the letters of the alphabet; and as he already knew most of these, he would probably not be long in learning them all. I then advised that he should be taught to spell, and then to read the simple words in a child's first primer, spelling them out letter by letter, and so appealing to his auditory memory, which was good. In this way the auditory and visual centres would be trained simultaneously.

I saw the boy in April last, and found that his progress had been continuous and rapid, much to the surprise of his parents. He was now reading fairly well words of two and three syllables, and had made more progress in the last thirteen months than he had made in the preceding seven years when taught on the "look and say" principle.

It is evident, then, that the "look and say" principle of learning to read was not the proper method in this particular case. In the "look and say" method the child is taught to recognize printed words as a whole, not to recognize the words by spelling them out letter by letter, and hence it is claimed that the child learns to read more rapidly, as this process of reading by visual recognition alone dispenses with the necessity of the child learning to

spell before learning to read, as in the old method. Now while this may be true of a child with a normal visual memory, it is to be remembered that the conditions are entirely different in cases of congenital word-blindness, where the difficulty is dependent upon a defect of his visual memory.

I do not say that all cases of congenital word-blindness ought to be taught on the old system, and that none should be taught on the "look and say" system, but I do say that, whilst some cases may be taught on the "look and say" system, other cases cannot be taught to read in this way. The method of teaching will depend upon the degree of defect in the visual memory and upon the condition of the auditory memory. When the visual memory is very defective and the auditory memory is good, then the old system is the method by which the best results will be most rapidly attained, as is exemplified by the case which I have just narrated.

When the auditory memory is good the child can rapidly learn to spell, and will be able to spell the words fluently long before it has learnt to recognize them by sight. The letters of the alphabet are soon mastered, as there are only 52 in all, taking both capitals and small letters. If the auditory memory is now furnished with the spelling of the words, the task of learning to read is greatly simplified, as the child has simply to recognize by sight the individual letters, and is now able to read the word by spelling it and appealing to the auditory memory. In this way the child with defective visual and good auditory memory acquires both more easily and more rapidly the visual images of the words, which when permanently registered in the visual memory centre will enable it ultimately to read without spelling.

In cases, however, where the auditory memory is not good, I think the best results might be obtained by the "look and say" system. In such cases attempting to teach the child to spell is only increasing the difficulties of the task. We are then attempting to educate two defective memory centres instead of concentrating our attention upon one. In cases of congenital word-blindness, then, with defective auditory memory, I would approve of the child being taught on the "look and say" method.

I have in other papers,[7 8 9] insisted upon the fact that these defective children cannot be taught in class along with normal children. The great difficulty they experience excites the ridicule of other children and is a great source of discouragement to the affected child. In many large centres there are now schools for training defective children, but I do not think that the children suffering from congenital word-blindness should be taught even there in class. The degree of the defect varies very considerably, and as I have attempted to show, the method of instruction is not uniform but must be adapted to the needs and peculiarities of the particular case. Each child should be taught alone.

I always advocate a number of short reading lessons every day rather than one long one. In re-educating the patients with acquired word-blindness, it was always noticed that the brain became exhausted in a comparatively short time, and in these cases of congenital word-blindness, the effort involved in trying to store up the visual images requires a much greater degree of concentration than in children with normal visual centres. The visual impressions, too, must be very frequently repeated, before they remain permanently in the brains of these patients. Hence the proper treatment is by short and frequent lessons during the day without anything leading to exhaustion. I have often found great assistance from the use of block letters in teaching these patients to read, thus deepening the visual impressions by associating them with tactile ones. Above all, patience and perseverance are most important factors in the successful treatment of every case of congenital word-blindness.

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DISCUSSION.

Dr. F. W. EDRIDGE-GREEN (London) quite agreed with the method suggested by Dr. Hinshelwood of training the memory. He had found it was of the greatest importance to put as little strain as possible on a weak faculty. It was important to remember that the retina was represented in the cerebrum; we might almost speak of there being a cerebral retina.

INTRAOCULAR HAEMORRHAGE.

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HAEMORRHAGE within the eyeball may occur in a number of conditions. Small haemorrhages are frequently present in the retina in various diseases of the blood, and in certain retinal affections. Even when they are fairly numerous, if the macular region is not involved, vision may not be much impeded. But if a haemorrhage, however small, is situated in the fovea centralis, it then becomes of importance, apart from disease of this portion of the retina, which is so prone to be affected in many different conditions, of which syphilis, myopia, and senile degeneration are perhaps the most frequent. In this paper it is proposed to discuss the etiology and prognosis of intraocular haemorrhages which may produce transitory or permanent blindness, apart from those due to traumatism.

Haemorrhage at the macula may be absorbed, but if the retina is destroyed by it central vision will be lost, although, should the remainder of the retina be healthy, good peripheral vision will be preserved.

Such cases are common in thrombosis of the retinal vein and in albuminuric retinitis.

Post-operative haemorrhage deserves special mention. It may occur during the operation, during the first night, at any dressing, or on any subsequent day until the closure of the wound. It is generally of choroidal origin, and produces at once a complete separation of the retina. The entire contents of the eyeball may be expelled, and the bleeding may saturate the dressings. As sympathetic inflammation may follow this most lamentable accident, enucleation of the unfortunate eyeball becomes often imperative.

During the three years of my position as pathologist to our Eye Infirmary in Glasgow I had the opportunity of examining several eyes removed upon account of this danger. The haemorrhage in all cases was of choroidal origin, and filled the eyeball. The retina was completely separated except at the optic nerve, where it is anchored by the nerve fibres. It is difficult to say how to prevent such an occurrence, but all eye operations should be dressed with the greatest gentleness. The wool should be applied so as to form a "nest," and the bandage put on firmly, but without undue pressure.

The common form of intraocular haemorrhage is that known as the "subhyaloid." It is most frequent in men. The comparative rarity among women is believed to be due to the function of menstruation. Cases in women have been reported. One coincided with the sudden suppression of menstruation, one with the climacteric, and one with violent vomiting in the sixth month of pregnancy.

Constipation and gout are important predisposing factors. Any severe strain may be the exciting cause. The following is a typical case:

J. C., aged 53, golf starter, came to me on August 30th, 1910, with the statement that two days earlier, while straining at stool and coughing, the vision of the right eye suddenly became obscured. He states that he saw red streamers going out in front of him. On looking at a light he saw a half red moon. Upon examination, a large central scotoma was found, but he could count fingers at 1 ft. towards the periphery of the field of vision. Vision of the left eye $\frac{6}{9}$ (letters). With the ophthalmoscope a large haemorrhage was seen occluding the macula. It projected into the vitreous like a mushroom with diverging processes. He was ordered to lie in bed in a darkened room with smoked glasses; mag. sulph. with pot. cit. prescribed, and placed under the care of his own physician, Dr. Roxburgh of Troon. On September 30th, 1910, the vision of the right eye was $\frac{6}{36}$. On July 17th, 1912, vision right eye $\frac{6}{9}$ and Jaeger No. 2 without glasses. Vision left eye $\frac{6}{6}$ letters and Jaeger 2 without glasses. The fundus of each eye was perfectly normal, and not a trace of the haemorrhage could be found in the right eye.

These haemorrhages are nearly always situated at the macula, and are generally of a hemispherical shape, often with the superior margin delimited by a horizontal line. It is rare to find a second haemorrhage at another part of the fundus. A fresh haemorrhage may be superimposed on the first. The red colour is often maintained for a long period, and it has been thought that during this time the blood remains fluid. Pigment is occasionally observed in the retina after the haemorrhage is absorbed, and is probably due to blood pigment deposited in the retina.

One case has been examined *post mortem*.[1] In it the blood was found spread out on the inner surface of the retina, with the internal limiting membrane detached over it, and covered also by the hyaloid membrane of the vitreous. These two sheets were perforated at one spot, and the blood had entered the vitreous to a slight extent, but this appears to be uncommon. The fact that the vitreous often shrinks from the fovea centralis of the retina during hardening of the eyeball has suggested that the great frequency of these haemorrhages at the macula is due to the apparently slender attachment of the hyaloid membrane in this area.

Notwithstanding much early writing and argument in favour of an arterial source, it is now generally believed that in almost all cases the blood comes from a ruptured vein. Bleeding ceases spontaneously, not by coagulation, but by a rise of the intraocular pressure, which compresses the ruptured vessel. It is easily understood, further, why the retina and the vitreous body are rarely penetrated by blood escaping from a venous leakage. Recovery of good central and peripheral vision is therefore the rule, as Mr. Hill Griffith[2] reported, and as in the case described above.

REFERENCE.

[1] Fisher, *Roy. London Ophth. Hosp. Rep.*, vol. xiv, 2, 1896. [2] Hill Griffith, BRITISH MEDICAL JOURNAL, November, 1904.

DISCUSSION.

Mr. WORTH said that it was usually said that spontaneous intra-ocular haemorrhage was very much more common in males than in females, and a speaker at a recent meeting of the Ophthalmological Society of the United Kingdom said he had never seen a case in a female. Mr. Worth said he had seen several cases in females; two cases he wished to mention: 1. A young lady, a patient of Dr. J. D. Rice, who for several months had suffered from haemorrhage into the vitreous of one or both eyes just before each menstrual period. As all treatment proved of no avail and the patient was obviously becoming blind, after consultation with physicians, removal of both ovaries was performed. It did no good, and the patient became blind. 2. A girl, aged 18 years, a patient of Dr. Mayo, of Cowes, had one haemorrhage in one eye and one in the other. The patient was anaemic, and her blood coagulated slowly. Iron and potassium iodide produced a cure.

Mr. EALES mentioned a singular case of a patient who was affected with recurrent retinal haemorrhages, and who, up to 17 years of age, was supposed to be a female, but then developed decided evidences of his male character about the time of onset of the haemorrhages. Tuberculous choroidal disease in his experience had in a few cases been accompanied by recurrent intraocular haemorrhage, but he still believed that there was a peculiar vasomotor condition underlying the special class of recurrent intraocular haemorrhages which appeared to affect young men from 19 to 25 years of age, as described by him many years ago.

Dr. J. GRAY CLEGG said he had had several cases of repeated haemorrhages into the vitreous in young persons. The coagulability of the blood had been investigated where there was no evidence of tubercle, and in one case where it was below normal calcium lactate seemed to be of great service.

Dr. IGERSHEIMER (Halle) said he had just published a paper [illegible] tuberculosis as an etiological factor in intraocular haemorrhage in young persons. In one case he had seen very encouraging results with tuberculin treatment and had seen local reaction take place. In two other cases evidence seemed to point to their being tuberculous, but not so clearly as in the case mentioned above.

DISCUSSION ON SALVARSAN IN DISEASES OF THE EYE.

OPENING PAPER.

By SYDNEY STEPHENSON, M.B., C.M.Edin., F.R.C.S.Eng.,
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(Abstract.)

IN opening the discussion, Mr. SYDNEY STEPHENSON limited his remarks to the action of salvarsan in syphilitic diseases of the eye. The remedy, he thought, was best given in series by the intravenous route, and he was of opinion that it should be supplemented by mercurial inunctions. He did not believe that it had any harmful effect upon the optic nerve, healthy or diseased. Its administration did not of necessity prevent the subsequent appearance of syphilitic disease of the eye. In the treatment of interstitial keratitis due to inherited syphilis, good results might be obtained by a series of injections, but a single injection, in Mr. Stephenson's experience, seldom produced any marked effect. Salvarsan acted better and more speedily than mercury in the irido-cyclitis of secondary syphilis. Mr. Stephenson considered that the serum reaction should throughout remain the touchstone as to the efficacy of treatment and the permanence of cure. The continued absence of clinical manifestations had less value.

DISCUSSION.

Dr. W. B. MARPLE (New York) deprecated premature conclusions as to the value of salvarsan in eye work. At the same time, he had used salvarsan in interstitial keratitis, and in specific iritis accompanied with a gumma or papule of the inflamed iris. In the former disease it had little effect, while in the latter it acted admirably.

Dr. IGERSHEIMER (Halle) discussed at some length the nature of salvarsan and other organic arsenic compounds. From salvarsan he had obtained excellent results in cases of iritis papulosa. As regards interstitial keratitis, his results had become much better since he had employed not one but several injections of salvarsan. For example, improvement resulted in 5 per cent. of his 39 cases from a single injection, in 25 per cent. of 24 cases from two injections, and in 36 per cent. of 11 cases from three injections. The Wassermann reaction became negative in a large number of the patients treated with salvarsan, whereas under treatment by mercury alone it seldom became negative, or at most did so after lapse of several years. This point was important in the decision as to the particular treatment of interstitial keratitis, since their aim was not only to cure the local manifestation, but the underlying disease itself. On this account salvarsan was to be preferred to mercury. He had seen good results follow the administration of salvarsan in recent disease of the retina and optic nerve, whether due to acquired or inherited syphilis. It often acted excellently in inflammatory affections of the uveal tract. In 3 cases of ocular paralysis good results were obtained. As to neo-salvarsan, he had found that when injected in massive doses into rabbits the animals died very quickly. Injected into the corneae of the same animals, weak solutions produced temporary opacity, and stronger ones cloudiness that lasted for a much longer time and was more intense. Local necrosis sometimes followed injections of neo-salvarsan beneath the conjunctiva. In two female patients neo-salvarsan, in doses corresponding to 0.3 gram of salvarsan, gave rise to disquieting symptoms soon after the injection, such as vertigo, delirium, and hallucinations, but these were regarded by him as an exaggeration of already existing syphilitic manifestations. In several cases of interstitial keratitis a single injection of neo-salvarsan yielded results that he had never seen from a single injection of salvarsan. In conclusion, he considered that both salvarsan and neo-salvarsan, if not exactly ideal, were good remedies in diseases of the eye. The former was indicated in diseases of the retina and optic nerve, and the latter in affections of the anterior parts of the eye.

Mr. S. H. Browning (London) confined his remarks to the treatment of sympathetic ophthalmitis by means of salvarsan. About two and a half years ago Ormond and Price-Jones found that the differential blood count of patients with sympathetic ophthalmitis showed a large increase in the large mononuclear leucocytes at the expense of the polymorphonuclear variety. Mr. Browning had independently been conducting blood counts on cases of sympathetic ophthalmitis, and had obtained similar results. Since this type of count was peculiar to the blood of patients suffering from protozoal diseases, it seemed natural to conclude that sympathetic ophthalmitis might also be a protozoal disease, and since salvarsan was used so successfully in those diseases, that it might also be of use in the eye affection. Some 27 cases of sympathetic ophthalmitis had so far been treated on those lines with more or less success. In every case there was temporary benefit, and in three cure resulted. An interesting point was that the blood count approached the normal within forty-eight hours after the injection of salvarsan, but it unfortunately returned to the protozoal type of count again in about thirty days. Further doses of salvarsan again brought the blood count to normal.

Dr. A. Maitland Ramsay (Glasgow) had employed salvarsan or neo-salvarsan in 22 cases of syphilis of the eye (20 chronic and 2 acute). The intravenous injection of those remedies was followed, preceded, or both, by the systematic administration of mercury. The clinical diagnosis of syphilis was confirmed in every instance by the Wassermann test. In Ramsay's experience, there was no difference in the therapeutic results obtained by salvarsan and neo-salvarsan respectively. The rapidity with which salvarsan acted was its outstanding feature. It quickly controlled an acute case, and, if given in time, prevented permanent damage to the delicate structures of the eye. But there was good reason for doubting whether by itself it was truly curative, and his experience with the remedy supported the view that the most trustworthy results were obtained when salvarsan was combined with a course of mercurial treatment. He had noted recrudescences of the disease after salvarsan had been injected, but these he regarded not as due to any noxious action of the drug, but rather to a further manifestation of syphilis. He doubted whether salvarsan exerted any poisonous effect upon the tissues of the eye. The more recent the infection the better did salvarsan act. In chronic infections its effect was neither so rapid nor so manifest. In the cure of syphilis mercury was as necessary now as ever it was. The value of salvarsan lay in its power of destroying the spirochaetes before they had time to damage the delicate structures of the eyeball. It prepared the way for the mercury, and consequently the one drug was the complement of the other. Neither should local treatment be neglected. The judicious application of leeches, counter-irritants, and subconjunctival injections, as well as the use of pilocarpin hypodermically, were valuable adjuvants to the constitutional treatment, and their use at the opportune moment might make all the difference between success and failure.

Mr. Bishop Harman (London) said he was in the fortunate position of being able to overlook the work of his colleagues in a general hospital where salvarsan was extensively used. It was their custom to prepare a patient as for a major operation, and to give two or three injections at intervals of a week. So far he had not seen any deleterious effects upon the optic nerve, and in some cases of cerebral syphilis with optic neuritis they had benefited considerably, but in one there had been a sharp relapse. Among eye diseases he had not been able to find any advantage in its use in interstitial keratitis, even when used with three injections in a recent and acutely vascular case. Again, it had failed in a case of rapidly advancing choroido-retinitis: but so also had mercury. He acknowledged its successful influence in acute iritis, but he did not advise it in such single ocular lesions which were readily ameliorable to other and completely harmless measures. The case was different when general symptoms of the disease existed. In acute cyclitis, with rapidly increasing vitreous opacities, and in syphilitic optic neuritis its use was warranted, for rapidity of treatment was essential. In cases of lesser severity it should only be given when the risks had been fully explained to the patient, for there were risks. He had seen serious ocular paralyses follow immediately on the injection, and there were known cases of inexplicable and sudden fatal results even when administered by perfectly competent hands.

Mr. Nimmo Walker (Liverpool) said that he had not yet used salvarsan, and mentioned four cases which had come under his notice and caused him to hesitate—two, one of interstitial keratitis, the other of gummatous iritis, occurring after the use of salvarsan, showed that it had been unsuccessful; the other two, one of papillitis, the other of acute retrobulbar neuritis with myelomalacia, might be due to the syphilis or the salvarsan. He felt that general principles must not be forgotten, and that there must be risk in the injection of so large a dose of arsenic; of course, it was said that arsenic in this form was non-poisonous, but the same had been said of atoxyl, arsacetin, and soamin, and proved to be untrue.

Mr. Inglis Pollock (Glasgow) said he would like to add a word of caution. Atoxyl was given in large and increasing doses, but it was two years before the first case of blindness was reported, and within a short time about two hundred were placed on record. He had seen a child of 7 with slight optic neuritis and paralysis of the pupil; six months later, during which time she was under mercurial treatment, the vision was normal, and the mother stopped treatment. Three years later she had complete optic atrophy. The next two children became affected with paralysis of the pupil on reaching 7 years of age, and now after three years their vision was normal. Had he given salvarsan no better results could have been obtained and it might have been worse.

Mr. A. L. Whitehead (Leeds) gave statistics of cases treated by him. He had had 37 cases of interstitial keratitis, 22 of syphilitic iritis, and 1 of syphilitic retinitis. All these cases gave positive Wassermann reactions before treatment; 17 had had intramuscular injections, 8 combined intramuscular and intravenous, and all the later cases (34) had intravenous injections only. He prepared his patients as for a general anaesthetic, and gave 0.3 to 0.6 gram, according to age. He had seen slight vomiting, some headache, a moderate rise of temperature up to 100.4°, and, after intramuscular injections, some local pain for a few days. They remained in hospital from seven to nine days. In acute iritis the results were striking and satisfactory, and 1 case of retinitis recovered rapidly. In interstitial keratitis only 2 showed any improvement. In 3 one eye only was affected and in 1 of them the other eye subsequently became involved. He concluded that salvarsan was excellent in acute iritis, but useless in intestitial keratitis.

Mr. Jameson Evans (Birmingham) said he had used salvarsan on a few cases with satisfactory results, including one case of interstitial keratitis with marked photophobia and trigeminal neuralgia which had resisted ordinary forms of treatment. He had given neo-salvarsan in one patient who had been prepared as for a major operation, and freshly distilled sterilized water was used for making the solutions, but in spite of this the patient had sickness, headache and dizziness, and a temperature of over 100° for twenty-four hours after the injection. He did not think that this result could be ascribed to extraneous matter in the saline and salvarsan solutions.

Dr. Antill Pockley (Sydney, N.S.W.) briefly referred to the experience of salvarsan in ocular disease on the other side of the world. The most marvellous results followed on its use in the first case in which he had seen it employed, and he had then thought that they had got a most powerful new remedy, but he had seen no such effects in subsequent cases. The patient, a medical man, aged 50, got inoculated on the finger at a confinement, and, as frequently happened in cases where syphilis was contracted in an "illegitimate" way, the secondary manifestations were very severe. The patient got meningitis, and he (Dr. Pockley) was asked to examine the eye and see if there were any retinitis. One eye had been lost in early life; the other was quite normal, as was vision. Some months later the patient, looking a complete wreck,

appeared at his consulting room, nearly deaf, scarcely able to walk, and so blind that he could only just see the chair, and aided his vision by groping for it. There was intense acute serous iritis with much exudation into the anterior chamber and posterior surface of cornea; much injection, no reflex from the pupil, and temperature was very high. Next morning (Sunday) he was given an injection of 0.5 gram salvarsan intravenously. On Monday afternooon all injection and exudation had disappeared, the eye was quite clear, tension was normal, and he read the newspaper to me. The deafness was also gone. However, he died a few months later from other syphilitic sequelae. As regards interstitial keratitis, he had tried salvarsan in many cases, all intravenously and all administered by an expert, and sometimes repeated twice. He had never got any better results than with ordinary treatment by mercury and atropine. In iritis he had had better results. He had had no untoward results, but in a neighbouring hospital a patient had died suddenly after an injection given for some non-ocular syphilitic condition.

OCULAR IMBALANCE AND AUDITORY AFFECTIONS:

AN INVESTIGATION INTO THE RELATIONSHIP.

By A. ALISON BRADBURNE, F.R.C.S.Edin.,
Manchester.

THE subject of the relationship between the balance of the eyes and auditory affections has not yet received a great amount of attention, and what has been accomplished relates mainly to the phenomena associated with nystagmus; that other imbalances are probably present is what we would expect from the role the two organs play in the maintenance of the equilibrium of the body.

One of the earliest workers at this subject was Hunter, who discovered that rotation of the eyeballs takes place simultaneously with the movements of the head. It was Flourens who first noticed that injury of the semicircular canal was accompanied by twitchings of the eyes. Purkinje noticed similar convulsive movements of the eyes when studying vertigo in the human subject. Other observers followed, but none appreciated the real connexion between the eye and the ear until, in 1870, Goltz established the fact that the semicircular canals played the part of the organ of equilibrium for the eye movements.

Soon afterwards, in 1873, Breuer and Crum Brown were able to state that the nystagmus which accompanies vertigo is produced in the semicircular canals. Ewald showed by experiments in 1892 that definite movements of the lymph in one of the canals always produced a corresponding movement of the eyeball. Javal, Nagel, and others showed that active or passive movements of the eyeball produce a compensatory rotation of the eyeballs, and Breuer says that when the head is turned to one side, the eyeballs, after a few moments, follow the motion of the head.

Kreidal pointed out the interesting fact that in the majority of deaf-mutes, in whom defects exist in the semicircular canals, these eyeball movements are wanting.

The relationship between the labyrinths and the eyes is proved by the well-known fact of the appearance of nystagmus, which accompanies irritation of the semicircular canals, and that the balancing function of the canals can be taken up by the optical organs is evidenced by the effects of their removal in middle life.

In such individuals on whom this operation has been performed a condition of "utter bewilderment" exists when the eyes are shut, and if attempts at moving are made the patient collapses in a heap on the floor. When, however, the eyes are opened the gait becomes normal. The steadiness which the vision restores to such is derived from the [illegible] of space and distance which the [illegible] "vision affords.

Now in normal individuals estimation of the relationship of the visible objects around us to the poise of the body is the outcome of a combined impression derived from the visual and vestibular organs. The "vestibular factor" comes from the semicircular canals, and the visual from the binocular faculty. The faculty of binocular vision consists in bringing the optical axes of the two eyes to so bear on an object that a picture of it is simultaneously formed on corresponding portions of each retina. The two images thus recorded are blended in the brain so that we become conscious of but one single picture. This physical blending into one picture of an object seen from two sides gives depth and perspective to our outlook, and to attain this entails accurate adjustment of the optical motions around three axes. If we consider what takes place when we look at a horizontal line we shall better understand these movements. If the ocular movements from side to side be defective the line will appear lengthened, if one eye be on a different level two lines would be seen one above the other, and if the rotation of the eyes about a fore and aft axis be unequal a crossed or scissor-like appearance of the line will result. The adjustment of the ocular motions around these axes is governed by centres known as the "conjugate centres." If, then, we alter the position of our line so that the gaze is directed down and out, it is obvious that the blending of the two images must entail a complicated adjustment of the optical axes and a delicate control on the part of the conjugate centres. Substituting, then, for our horizontal line the horizon itself, which forms the chief factor in the maintenance of the equilibrium of the body, it is plain that the conjugate centres adjusting the optical axes must take into consideration the tilt of the head or body. The semicircular canals, we know, teach us the degree of such tiltings, and it seems but natural they should similarly instruct the conjugate centres. If, then, this assumption be correct, we should naturally expect to find disturbances in the conjugate movements when the canals are affected by disease or irritation.

Further, seeing the relationship which exists between the poise of the body in the maintenance of the erect position, we might also expect to find in labyrinthine affections disturbances in the conjugate movements of the eyes which have to do with the recognition of the vertical, or, in other words, defects in the ocular motions around the fore and aft axes. That this is really so I believe is true, as out of seven cases of labyrinthine affections which I have examined all but two showed that the vertical meridians of one or both eyes tended to lean outwards at the upper end. In the two exceptions the implication of the labyrinths was not absolutely certain, and in these the conjugate disturbance consisted in a difference in the horizontal level, one eye being higher than the other. This horizontal disturbance, on the other hand, was a feature in 3 out of 4 cases of temporo-sphenoidal abscess, in 1 case of serous meningitis, and in 2 cases of lateral thrombosis. The eye on the affected side was the lower in 3 cases and the higher in 2. The only exceptions are a cerebellar abscess in which no imbalance was present, and an extradural abscess in which the vertical meridians were leaning out in both eyes.

In the course of my investigations I examined a large number of cases in which the radical mastoid operation had been performed, and at first was puzzled by the results obtained. The vertical meridians were at fault in 6 and the elevation in 5. I think, however, this variation in the findings can be accounted for by the close relationship which exists between this region and the deeper and more internal structures. I examined also cases

Cases in which a Radical Mastoid Operation was Performed.

Case No.	Ear.		
66	Left	Radical mastoid operation	Left eye down; right eye normal.
69	Right	"	Right eye down; left eye up.
68	Right	"	Right eye down; left eye normal.
3	Left	"	Vertical meridian of left eye leaning out.
7	Right	"	Vertical meridian of left eye leaning out.
14	Right	"	Vertical meridian of left eye leaning out.
15	Left	"	Vertical meridian of right eye leaning out.
18	Right	"	Vertical meridian of both eyes leaning out.
17	Left	"	Vertical meridian of both eyes leaning out.
43	Left	"	Both eyes raised.
41	Left	"	Both eyes raised.

Intratympanic Affections.

Case No.	Ear.	Condition.	Ocular Balance.
60	Right	Otitis media	Left eye vertical meridian leaning towards right side.
31	Right	Acute mastoiditis and otitis media	Verticle meridians of both eyes leaning out.
53	Right	" "	Vertical meridian of right eye leaning towards right side.
72	Right	Acute otitis media	Vertical meridian of right eye leaning towards right side.
71	Left	Otitis media	Vertical meridians of both eyes leaning towards right side.
69	Left	Otitis media and mastoiditis	Left eye lower.
67	Left	Otitis media	Left eye down; right eye up.
65	Left	Otitis media	Left eye down; right eye up.
54	Left	Otitis media and mastoiditis	Left eye up; right eye normal.
28	Left	Ossiculotomy	Vertical meridian of left eye leaning out.

Expetrosal Complications.

Case No.	Side Affected.		
77	L.	Radical mastoid operation had been performed a few days before; condition of pulse very suspicious of abscess in temporo-sphenoid	Left eye lower than right; right eye normal.
51	L.	Temporo-sphenoidal abscess and mastoid operation 4 years previously; return of discharge, pain, and dizziness, pulse rapid, no nystagmus	Left eye higher than right; right eye normal.
62	L.	Temporo-sphenoidal abscess and mastoid operation 4 days previously; pupils equal	Left eye down; right eye raised.
55	L.	Lateral thrombosis, operation 6 years before examination	Left eye down; right eye up.
61	L.	Lateral thrombosis, operation 4 days before examination	Left eye down; right eye up.
76	R.	Cerebellar abscess, radical mastoid operation 4 days before examination	Right eye down; left eye normal.
52	R.	Temporo-sphenoidal abscess, radical mastoid operation 15 years before examination	Right eye up; left eye normal.
26	R.	Cerebellar abscess, radical mastoid operation 2 years before examination	No imbalance.
30	R.	Serous meningitis, suppurative otitis media, operation 6 weeks before examination	Both eyes raised.
2	L.	Extradural abscess over temporo-sphenoidal lobe, operation recent	Both vertical meridians leaning out.

Affections of the Labyrinths.

Case No.	Side Affected.		
1	R.	Discharge for years. Labyrinthotomy operation, recent	Vertical meridians of both eyes leaning out; more marked in right eye.
6	R.	Labyrinthotomy operation, recent	Ditto.
70	R.	Extirpation of vestibule, old case	Ditto.
8	R.	Labyrinthotomy, recent	Ditto.
13	L.	Superficial erosion of external semicircular canal, exposed and scraped; fistula nystagmus	Vertical meridian of left eye leaning out. Right normal.
9	L.	Labyrinthotomy performed for Ménière's disease	Vertical meridian of left eye leaning out. Normal 6 months later.
48	L.	Labyrinthitis? Nystagmus on extreme abduction to right	Left eye down.
50	R.	Labyrinthitis? Great tenderness over mastoid; old otitis media; nystagmus most marked to right	Left eye down; right eye up; very strongly marked.

involving only the tympanic cavity, and in every case ocular imbalance was present when of any severity.

In 13 of such cases a vertical imbalance was present in 8, in 4 the elevation was at fault. The explanation for this is that in those cases in which the level of the two eyes differed the mischief extended probably well into the mastoid region, and where the vertical meridians leaned out the conjugate cerebral centre was affected through the medium of the sympathetic plexus on the tympanum and its connexion with the interior of the skull through the carotid and cavernous plexus. Investigation of the effects of disease of the auditory organs on the ocular balance such as I have attempted is naturally beset with many difficulties, and presents many opportunities for falling into error. Not the least is the likelihood of an ocular imbalance existing entirely separate from any auditory affection, as we all know how common such is from our experience gained in ophthalmological work.

However, allowing for the more than probable existence of such inherent errors, I fancy we are justified in drawing the following conclusions:

The occurrence of nystagmus in labyrinthine affections proves that a relationship exists between the labyrinths and the ocular balance, that this relationship can be further logically assumed from the manner in which the conjugate centres can be expected to be influenced by the semicircular canals.

That examination of affected cases of disease of the labyrinth shows a majority of them causing an ocular disturbance in the maintenance of parallelism of the vertical meridians. That when disease tends to invade the deeper parts in the neighbourhood of the auditory organ, an ocular imbalance follows, which is manifest in a difference in the elevation of the eyes.

Time and examination of a larger number of cases may confirm or refute these conclusions, but whatever be the result, I think I have been able to show that it is a subject which is worth further investigation. If such investigation should some day enable us to obtain evidences from the eye balance of the exact nature of some of the early stages of serious ear complications, the work and time spent on it will be more than repaid.

I cannot conclude without expressing my personal thanks to the staff of the Manchester Ear Hospital, and particularly to Mr. Milligan, for their courtesy and kind permission which has been extended to me during the past twelve months, in which every facility has been afforded me in carrying out my investigation into this subject.

DISCUSSION.

Mr. Claud Worth (London) and Dr. Hill Griffith (Manchester) discussed conditions allied to those noted by the author, and Dr. C. G. Lee (Liverpool) suggested that the visual influences in the production of sea-sickness had connexion with the phenomenon noted by Mr. Bradburne.

Mr. Bradburne, in reply, pointed out the paucity of work in the past on these lines, and that what had been done referred mainly to that associated with nystagmus. He trusted that his paper showed that a field existed for further investigation, and that it was on the theory which he had enunciated regarding the relationship between the labyrinths and the conjugate centres that the phenomena of sea- and train-sickness might be explained, as had been pointed out by Dr. Hill Griffith and Dr. Charles Lee. Mr. Bradburne mentioned a case of Ménière's disease which had come under his notice in the course of his investigations into the subject. The patient was a female of over 70, who for several years had been free from any attacks, but after a severe testing of the strength of the range of movements of the obliques with a torsiometer of his own design a recrudescence of the old symptoms supervened next day. This seemed to prove the connexion which existed between the labyrinths and the conjugate centres, and probably explained the cause of several of the symptoms met with in this type of disease.

DEMONSTRATION.

Mr. Jameson Evans (Birmingham) gave a demonstration of the "optophone," an instrument devised by Mr. D'Albe, of Birmingham, which had the property of rendering light radiations audible to the ear. The instrument was a selenium photometer. The sensitive plates were set in the circuit of an electric battery, so that variations in the condition of the plate by light varied the current and caused it to work a rachet. The rate and strength of the sound indicated variations in the light, which could be appreciated by blind people. At present, he said, it was a toy, but it had possibilities.

SECTION OF LARYNGOLOGY AND RHINOLOGY.

John Middlemass Hunt, M.B., President.

PRESIDENT'S INTRODUCTORY REMARKS.

After some initial observations, Dr. Hunt said: In Liverpool we have now throat departments in connexion with three of our general hospitals, a lectureship in laryngology in our university, and there are seven men engaged exclusively in the practice of oto-laryngology. But much remains to be done before our speciality obtains that recognition which it has long enjoyed elsewhere. To illustrate what I mean I need only say that in this great centre of population, numbering considerably over a million, there are no beds specially set apart for the treatment of diseases of the throat and nose, except four in the Stanley Hospital, which are also used for ear cases. Personally I look forward to great changes in this respect as a result of the new Insurance Act. It is becoming evident that soon the charitable basis on which our hospitals exist will largely disappear, and that some charge will be made for the treatment of all insured persons. When this takes place I anticipate that the "insured person" will insist that while in the hospital he shall have the same skilled treatment as the wealthier classes can command in private. As a result, I expect that before many years have passed there will be no specialist connected with any of our general hospitals who will not have beds under his exclusive care for the treatment of in-patients.

But this suggests another question which is to form a subject of discussion at this meeting—namely, the training of the specialist in laryngology and otology. Several of my predecessors in this chair have devoted their introductory remarks to the education of the medical student in laryngology and otology, and great advances have been made in this direction in recent years. We can now say that there are abundant opportunities in all our medical schools for the student to learn special work—more, in fact, than he has time to take advantage of. But in the training of the specialist I do not think there has been any advance. As yet we have no system. He may, if he can afford it, spend years in acquiring a thorough scientific knowledge of his work, but more often he starts with little or no training, and has to gain his knowledge at the expense of those entrusted to his care. Of course, it must be open to any qualified medical man to practise in any department of medicine he chooses, and there must be, I suppose, the heaven-born specialist who requires no training, but I am convinced we shall never get that supply of highly-trained men which the country requires—men not only able to do all the routine work of laryngology and otology, but also to take an active part in the scientific advancement of those subjects—unless we can establish some recognized method of systematic training. How is this to be brought about? Not, I think, by our present haphazard system. Let us look abroad and see if we cannot learn anything from our neighbours. What has given to Austria, to Germany, and to other Continental nations their rich supply of highly-trained specialists? So far as I can determine it has arisen from one cause, the existence of the "Professor." He is the acme, the ideal, the man who, having mastered the whole field of ascertained knowledge in his own department, is striving to advance its borders towards the unknown. But he is only the ultimate result of a long process of competitive struggle and selection. He began somewhere as an "aspirant." He became, and remained for some years, an "assistant," progressing from a junior to a senior post. From this he may have passed at one step to a full professorship, or have gone through the stages of *privat docent* and "extraordinary professor." But through all these years he has been striving to make his scientific work of such value as to ensure his ultimately reaching the goal. Now, I do not for a moment propose that we should adopt this system. I do not think it possible even if it were desirable. We should require to begin by thoroughly disinfecting the name of professor, and removing the title from its ignoble use by the barber and the dancing master. But I think it is possible by a combination among the clinical teachers of oto-laryngology in this country to do something to improve matters, and the suggestion I would offer is the establishment of paid senior and junior assistantships in every special clinic in the country, and, if possible, the promotion of the best men from one clinic to another, for I hold that a free circulation of talent from one teaching centre to another would be of great value, both to conductors of our clinics and to the assistants under them. I would have a man begin with, let us say, Logan Turner in Edinburgh, pass on to Milligan of Manchester, and then to one of the London schools. But during these *Wanderjahre* what is he to live on? Where is his salary to come from? I think I see a way to get over this difficulty. Our education authorities will, before long, be forced to provide and pay for the treatment of the special diseases of the throat, eye, and ear so frequent in children. Why should they not make use of the existing clinics? Here, then, is one source for the payment of these assistants. Again, as I have already hinted, the Insurance Act will also bring revenue to our hospitals, part of which might also go to the same purpose. Whether after this special training we should mark off the efficient men by degrees in laryngology and otology is, to my mind, a secondary question. We shall at least ensure a satisfactory training for our specialists, which is more important than the passing of any examination, however severe.

It is impossible to work out this scheme in the short time which is permitted me in opening this Section, and there are many details which I have not thought out, but I make the suggestion in the hope that it may be considered by the teachers of laryngology and otology throughout the country, and may perhaps lead to some practical scheme for ensuring better training for the specialists in these departments, and also to a larger output of original scientific work.

DISCUSSION ON THE DIFFERENTIAL DIAGNOSIS OF OESOPHAGEAL STENOSIS.

OPENING PAPERS.

I.—Professor Otto Kahler,
Freiburg.

A few years ago the subject of differential diagnosis of oesophageal stenoses could have been disposed of in half a dozen sentences; we knew little enough of the diseases which occasion constrictions of the gullet, and troubled our heads even less about them. But since then, thanks to the introduction of two new means of investigation—the Roentgen rays and oesophagoscopy—we have got into a position to differentiate between the various diseases of the oesophageal tracts; and if there are still cases in which an exact diagnosis is unattainable, this is chiefly due to the fact that the new methods are not yet in sufficiently general use, and that far too few cases in which accurate examination by the above methods have been made, have been reported and described. It is therefore extremely gratifying that this subject should have been brought up for discussion to-day, since valuable contributions to the extension of our knowledge of this interesting field may confidently be awaited. Before entering upon the actual subject of my paper, I should like to say a few words about the various methods of examination which may be utilized for the differential diagnosis of oesophageal constrictions, and to elucidate them a little.

From the history of the case we can obtain indications as to whether a stenosis exists or not, but in most cases no information as to its nature. Slight constrictions often cause at first no noticeable inconvenience in swallowing, and yet it must ever be our aim to detect them in the initial stage, since they can then, if need arise, be treated with much greater prospects of success. In such cases we are frequently first led to suspect oesophageal trouble by the occurrence of pains which are referred by the patients to the neighbourhood of the stomach or to the back.

Direct palpation of the oesophagus being impossible (Gangolphe's[1] proposal to make all parts of the

oesophagus accessible to the finger by an incision in the stomach wide enough to admit the whole hand, and by deep oesophagotomy, is hardly likely to be adopted), the probe in its various modifications was the stock means of examining the gullet. But the diagnosis of oesophageal constriction is just one of the very cases in which the probe should not be employed. Not to mention the fact that its use is accompanied by danger—for example, in the presence of aneurysms (various cases of perforation have been recorded), it affords us no certainty of the absence of slight stenoses, they being easily passed over; neither does it give us any information as to the nature of the stenosis. A number of probe-like instruments (for example, Kelling's[2] sponge sound and Brüning's[3] fenestrated sound) have been constructed for the purpose of bringing up particles of the tumour for investigation. But these instruments are open to the same objection as the ordinary probe: there is danger of perforating a possible aneurysm. The sounding of stenoses, to ascertain the position of the constriction, is often recommended even when subsequent oesophagoscopy has been decided on. I always abstain from this preliminary investigation, as it often causes haemorrhage, and thus makes a minute inspection impossible.

The assistance of auscultation was also sought in the diagnosis of oesophageal stenoses. According to Meltzer[4] two typical sounds can be distinguished, most audible on the left side in the angle between the inferior sterno-costal margin and the xiphoid process—the so-called *stenotic murmur*, audible about six to seven seconds after the beginning of deglutition, and the so-called *pressure murmur* which conveys the impression that the whole of the liquid is passing at once and unobstructed into the stomach. Hamburger[5] auscultated the whole of the oesophagus, the cervical portion on the left side of the neck and the thoracic tract along the spine, and maintains that he can determine the absence or presence of a stenosis according as he hears the boluses glide smoothly along, or rustle and rub against one another. Quincke[6] and Ewald[7] would prefer the designations "primary" and "secondary" for the auscultation sounds. According to them, only the secondary sounds is always to be heard. Schumm,[8] who recently examined a large number of cases of oesophageal stenosis from this point of view, found in all cases, with a negligible number of exceptions, marked alterations of the deglutition sounds, mostly of the secondary sound, consisting of delay or total suppression. And finally we may mention the "residual sound," characteristic of oesophageal stenosis, described by Rewidzoff,[9] to be heard after the secondary sound if the patient is made to go through the motions of swallowing.

Percussion is rarely of any value in determining the presence of oesophageal stenosis, as it only gives a positive result in the case of large tumours.

Examination by means of Roentgen rays renders yeoman service in investigating pathological conditions of the oesophagus. We have the choice of two methods—Roentgen illumination and radiography, the illumination of the oesophagus carried out from behind and on the left, the rays being directed forwards and towards the right. The patient stands in the attitude of a fencer (Holzknecht).[10] Between the shadow of the spine and that of the heart and its appendages a bright interval appears, in which the course of the oesophagus can be made visible by introducing into the latter some substance opaque to Roentgen rays. For this purpose lead or quicksilver sounds were first used (Doyen[11]), or elastic tubes filled with shot. Still better is a method first advocated by Rumpel[12]—namely, the administration of ingesta of sufficiently high specific density to prevent the passage of the rays. A sedimentary deposit of bismuth nitrite (administered in suspension) was at first employed; but as cases of poisoning, taken to be nitrite poisoning, occurred after the use of this preparation, bismuth carbonate (Groedel[13]) is now preferred. The very latest favourite is barium sulphate, yet in the use even of this preparation two fatal cases of poisoning occurred quite recently in Prague owing to the extremely poisonous barium sulpho-carbonate being mistaken for barium sulphate by a deplorable oversight. Zirconium oxide, which is sold under the trade name of "contrastin," and is absolutely non-poisonous, is exceedingly well adapted to this purpose; but it must be admitted that it is very expensive. I should like to refer to another possible danger of this procedure in addition to the risk of poisoning. As is well known, fistulae, both congenital and acquired, occur between the oesophagus and the trachea. In such cases there is danger of the bismuthic ingesta being aspirated into the air passages. I found two reported cases (Schwarz[14] and Zimmer[15]) in which, during the examinations, the whole bronchial system in its remotest ramification was shown on the screen. In one of the cases no ill effects followed, the other terminated fatally.

The most suitable means of indicating stenoses is the administration of bismuth in capsules; for instance, to ascertain the degree of constriction at the stenoses, the patient may, according to Tornqi,[16] be made to swallow glutoid capsules of various sizes—for example, 6, 8, or 10 mm. in diameter.

But the method which has led to the greatest advances in our knowledge of the differential diagnosis of oesophageal stenoses is undoubtedly oesophagoscopy. It has, to be sure, the drawback of being the most trying one for the patient, and we should only have recourse to it when the other methods fail to give us the necessary information. All the same, with sufficient manual dexterity, especially since the improvement of the available instruments, an oesophagoscopic examination can always easily be carried out, except in the case of unusually sensitive patients.

I cannot now discuss all the various sets of instruments in general use with their advantages and defects; but beyond question the Killian-Brüning's telescopic tubes are at present those most extensively employed. Oesophagoscopy with a mandrin, formerly so frequently practised, I should like to see entirely relinquished. It is precisely in the case of stenoses of the oesophagus that the introduction of the tube without a mandrin is of incalculable importance, being the only way by which the danger of perforation can be avoided. How easily may it happen that the introduction of the oesophagoscope with a mandrin may lead to bleeding from the tumour, thus making it extremely difficult to gain a clear idea of the pathological changes that may be present. I always use a Brüning's tube without a mandrin. The best length for the guide tube is 25 cm., as this enables it to reach past the mouth of the oesophagus into the open portion before the inner tube is introduced. Opinions differ as to the best attitude for the patient during examination. For stenoses of the superior part of the oesophagus I prefer the patient to sit; for those in the inferior regions, especially if there is constriction of the cardia, make him lie on the back or on the left side, as the large quantities of mucus, evolved in consequence of the dilatation of the oesophagus which usually accompanies such stenoses, can more easily be removed when the patient is in a recumbent position.

There remains the question whether local anaesthesia or narcosis should be induced for the examination. In most cases local anaesthesia suffices; but, nevertheless, in the case of many spastic stenoses general anaesthesia is to be recommended for differential diagnosis, and in the case of children it may be said to be indispensable.

The excision of test articles made possible by oesophagoscopy is of great value for the differential diagnosis of stenoses. I have often practised this and have never observed any ill effects. Infection of the wound can easily be avoided by the application of hydrogen peroxide or tincture of iodine immediately after the operation, and the subsequent administration of formamint. If constrictions in the superior portion of the gullet are suspected, hypopharyngoscopy (Blumenfeld, v. Eicken) should always be carried out before oesophagoscopy, as we can often obtain valuable diagnostic information from the former alone.

For those who wish to diagnose a pathological stenosis of the oesophagus, familiarity with its physiological constrictions is an absolute necessity. It therefore seems to me advisable to treat these, and especially the appearances presented in the oesophagoscope, in somewhat more detail; all the more so as writers on the subject still differ on many points—for example, as to the state of things at the cardia. Mehnert,[17] to whom we owe a very accurate paper on the anatomy of the oesophagus, distinguishes thirteen physiological constrictions, corresponding to its segmental structure. Only four need be considered as of really practical importance—namely, the cricoidal, the aortal,

the bronchial, and the diaphragmatic constriction with the cardia.

The cricoidal constriction, or, as it has been termed since the appearance of Killian's[18] well-known paper, the mouth of the oesophagus, is level with the lower border of the cricoid cartilage. As seen in the oesophagoscope, it usually presents a transverse slit. When passing the constriction with the tube, the ridge termed by Killian the posterior lip of the oesophagus is usually clearly visible. In adults the mouth of the oesophagus is always closed; it is only seen to open occasionally when a deep inspiration is taken. Guisez[19] states that in children the closing is less complete: the slit gapes open during inspiration and does not wholly close during expiration. I can confirm this observation. This feeble closing of the oesophagus is no doubt a contributory cause of the relative ease with which oesophagoscopy can be carried out in the case of children. The cervical tract of the oesophagus appears in the oesophagoscope as a closed tube. A slit, usually transverse, is seen, which opens and closes with the respiratory movements. After entering the thorax the gullet is open; it is sometimes possible to see right down to the hiatus diaphragmaticus.

The next visible physiological stenosis is the aortic constriction. It can in many cases be clearly seen, and may be the narrowest point in the gullet (internal diameter 11 mm., according to Mehnert[20]). The forward projection of the aorta may be very considerable, especially in children, on account of its prevertebral position. In young people the oesophagus and aorta are in contact over a fairly extensive area. If the two organs meet at an angle, as they do in quite a number of cases, owing to slight anatomical abnormality, the constriction is still more considerable. In cachectic persons the aortic constriction is also frequently to be observed, since the physiological stenoses, as examples of arrested development, are more marked in such persons. Unmistakable pulsations can nearly always be observed by means of the oesophagoscope at this spot, especially on pressing the tube against the oesophageal wall in the left anterior quadrant. A few centimetres below the aortic constriction we see the impression made on the oesophagus by the left bronchus, but it is not always clearly marked. A further obstruction to the advance of the oesophagoscope tube is met with at the hiatus oesophageus. At this point there is often, to all appearance, a complete blockage of the passage, as in most cases the gullet alters its direction, curving forwards and to the left. There are great discrepancies between the opinions of different authorities regarding the appearance presented by the cardia. Mikulicz[21] maintains that he has never seen a sphincter-like closed termination of the oesophageal tube at the point where it enters the stomach. Hacker,[22] on the other hand, could never see directly into the stomach. Rosenheim[23] attributes these differences of opinion to differences in the way in which the examinations were conducted (the patient lying or sitting). If one neglects to take into account the alteration in the direction of the gullet, it is easy to mistake the hiatus oesophageus for the cardia, the more so as at this point a complete spastic closure of the gullet appears sometimes to exist. The cardia itself is usually closed in a rosette-like manner; but when the oesophagoscope has passed the hiatus oesophageus, the cardia can very often be seen to open and close in time with the respiration. Faulty manipulation of the oesophagoscope, causing it to be pressed against the wall of the oesophagus, may easily delude the observer into believing that he has before him a spastic closure of the gullet. The actual existence, moreover, of a means of closing the oesophagus between the cardia and the stomach follows not merely from the appearances seen in the oesophagoscope, but also from experiments on animals, such as those carried out by Magendie and Kronecker.[24] In the more detailed portion of the report my colleagues and I have so divided the subject that Dr. Brown Kelly will go into the subject of spastic stenoses and congenital constrictions, Mr. Waggett into that of diverticula and tumours, whilst I confine myself to the remaining affections of the oesophagus which may induce stenosis.

The most frequent, perhaps, of all causes leading to stenosis of the gullet is the swallowing of foreign bodies. As has already been mentioned, the anamneses do not always enable us to arrive at a diagnosis; in the case of children, for example, or of adults who swallow their false teeth in their sleep, we are left quite in the dark. Roentgen-ray examination does not always give certain information. Burger[25] has collected 220 recorded cases in which this method was employed for the detection of foreign bodies. Out of 38 cases of swallowing sets of false teeth, a positive result was attained 28 times; of 14 bones, radiography indicated 6. Only metallic foreign bodies are invariably indicated. Roentgen photographs may easily lead us astray; for example, calcificatory centres in the thyroid gland may on the plate look exactly like a foreign body in the oesophagus. I[26] have seen two such cases and Ach[27] one. To diagnose with certainty, oesophagoscopy must be employed. I once, for instance, saw a man who had been sent to the hospital as a case of carcinoma of the oesophagus. He had suffered for four weeks from increasing difficulty in swallowing, and the use of bougies had proved inefficacious. The oesophagoscope revealed a complete blockage 22 cm. from the teeth and an annular sellig of the mucous membrane. The lumen could at first not be seen. It was only after plentiful application of cocaine and adrenalin that a foreign body at length came into view and could be recognized as a false teeth plate. The extraction proved comparatively easy. I have often found that foreign bodies which have been for some time in the gullet become so concealed by granulation and swellings of the mucous membrane that their diagnosis is very difficult. In such cases anaesthetizing of the swollen parts and their reduction to an anaemic condition is of great assistance, a proceeding advocated also by Blanel.[28] A correct diagnosis can also sometimes be attained by examination with a small hook or with a probe bent up at a right angle at the end, the instrument being watched through the oesophagoscope. We are thus enabled to feel under the swollen folds of the mucous membrane and so find any foreign body that may be present. Except on one occasion I have always been able to recognize a foreign body as the cause of the stenosis at the first examination. In that case a coin had been jammed in the gullet for a week, and was completely covered by mucous membrane. No Roentgen apparatus was available, and neither the use of cocaine and adrenalin nor even the general anaesthetising of the patient brought it into view. I then ordered the sucking of ice, and the next day the coin could be seen quite easily. In differentiating between a tumour and a foreign body the violent pain felt when the spot under which the foreign body lies is touched may be turned to account. Poli[29] has drawn attention to a diagnostic sign which he maintains to be characteristic of foreign bodies in the oesophagus; he found in a number of cases a rounded inward bulging of the posterior wall of the trachea. It may, however, be assumed that this symptom is only perceptible when the foreign body is lodged sagittally. The swallowing of foreign bodies, even if they do not remain lodged in the gullet, leads by no means infrequently to pathological changes which result in the formation of stenoses. We often find that subjective stenoses have had their origin in injuries caused by foreign bodies—small scratches—most frequently at the mouth of the oesophagus, which not seldom lead to a secondary spasm. Such stenoses can only be diagnosed by means of oesophagoscopy. If such a spasm is observed, it is often possible, after applying cocaine, to see the still slightly bleeding abrasion, or, in the case of rather large bodies that have wedged themselves transversely or sagittally across the gullet, injuries on both sides. Quite frequently lesions caused by foreign bodies occasion periœsophageal purulent processes—abscesses, which may result in almost complete blocking of the gullet. I have had opportunity of observing four cases of this kind. Such cases have also been reported by Guisez,[30] Halsted,[31] and others. The appearance presented in the oesophagoscope is very typical; the abscesses appear only to occur in the cervical portion of the oesophagus, for the simple reason that it is only here that the greater number of foreign bodies cause injuries. We see a highly reddened smooth swelling often displaying at some point of its surface an ulcerated, greasy-looking spot—the lesion caused by the foreign body—from which pressure with the tube causes pus to exude. On feeling it with the tube, or with a probe, fluctuation is easily perceived, and

this should be employed as a differential diagnostic indication of the absence of malignant tumour. On incision a quantity of pus is evacuated. In three cases of the kind incision led to a complete cure; a fourth case ended fatally, in spite of external oesophagotomy, in consequence of progressive mediastinitis. It would be interesting, if time allowed, to discuss the question when external oesophagotomy is indicated in such cases, and when internal lancing is insufficient. My own opinion is that, if there is an increase of fever, however slight, and severe pain, it is absolutely necessary to perform the external operation, in order to avoid the danger of the inflammation extending in the direction of the mediastinum.

Cicatricial formations in the gullet, which may arise from the most varied causes, lead very frequently to stenoses. The commonest of these causes are lesions caused by drinking caustic liquids either by mistake or with suicidal intent. Generally speaking, of course, the patient's own statements make diagnosis easy and certain; yet in cases of attempted suicide they are often mendacious; and, in addition, it frequently happens that pronounced constriction does not set in till many years after the injury, when the patients have very likely completely forgotten the occurrence. We must therefore base our diagnoses solely upon the observed facts—a procedure that may not seldom be of great importance from a forensic point of view (Guisez). Roentgen skiagraphy enables us, no doubt, to determine the position and length of a cicatricial stenosis, but we cannot by this method distinguish it from other—for example, malignant—stenoses. The oesophagoscope clears up the question. The appearances differ according as the injury is recent or occurred some time back. In the case of recent lesions we find great swelling and reddening of the mucous membrane, generally accompanied by spasmodic contractions of the oesophageal walls. The appearance presented resembles that of the closed os uteri. In the immediate neighbourhood ulcerations are to be seen covered with small reddish granulations, as also whitey furred patches.

Granulations are also sometimes still to been in the case of stenoses of fairly long standing if the bougie has been previously employed. If the granulation is extensive carcinoma can often only be diagnostically excluded by the excision of fragments for examination. Scars caused by injuries are of extremely varied configuration. We rarely have to go further than the mouth of the oesophagus to find them, most frequently on the posterior wall, in the form of sharply projecting, whitish, lustrous ridges. In the case of strictures due to caustic liquids, scars are generally to be found at the other physiological constrictions also—a fact which should be utilized to differentiate them from scars due to other causes. Hacker,[32] in a passage which has become classic, describes the oesophagoscopic appearance of strictures due to physical or chemical lesions as follows: We see streak-like, longitudinal scars, flecked with white, which stand out conspicuously against the pink mucous membrane. If the scars are completely clothed with epithelium, they are smooth and lustrous, usually thin and, if anything, rather depressed below than rising above the surface of the mucous membrane and only in places projecting like cords. The more nearly we approach the seat of the stricture the more extensively is the mucous membrane converted into cicatricial tissue. An annular, or the mouth of a cylindical, stricture looks rather like a more or less scarred funnel, down at the small end of which a roundish or oval lumen can be seen, or, to use another simile, like the portio vaginalis. This is due to the fact that the part of the oesophagus above it is dilated and is pushed down, *pari passu* with the tube, over the stricture, which it invaginates itself into like a faucet. Respiratory movements and radial creasings are usually absent. The deeper the lesion was the more marked and the more rigid is the stenosis. All works on the subject contain passages similar to this classical description of Hacker's, with which also my own observations are in complete agreement. In the case of injuries caused by caustic alkalis, the residual lumen of the oesophagus may assume the most various positions; it is, perhaps, most frequently eccentric. Stark[33] attributes this to the fact that cases in which it is central are easily probed, and that consequently the oesophagoscope is probably more rarely resorted to. Scarred stenoses may, however, be also due to other causes.

Injuries occasioned by foreign bodies seldom lead to such morbid changes. Guisez[34] reports 2 cases of this kind in which the symptoms of stricture did not appear until six and ten years respectively after the swallowing of the foreign body. Such scars are, according to Guisez, easy to diagnose. The characteristics are their isolated occurrence, the shortness of the scars, which are frequently linear, and the complete mobility and freedom from all ill effects of the rest of the mucous membrane.

The same author describes 5 cases of scar stenosis at the cardia, which he designates as spontaneous scar stenoses. The appearances were in every case the same—a central lumen, annular sclerosis of the mucous membrane, which was white and scarred. Since the history of the case excluded every other etiology, he attributed the changes to chronic oesophagitis. He supposes the primary cause to be spasms of the cardia. The irritation caused by the accumulation of the food thus obstructed led, he thinks, to sclerosis of the mucous membrane and to the other observed results. That catarrhal ulcers of the kind described by Gottstein,[35] Rosenheim,[36] and others can result in the formation of cicatrices, I am able myself to confirm. I once saw a case of this kind in which the existence of an ulcer 1 cm. long in the hiatus diaphragmaticus was ascertained. Some month later I observed in the same patient on the site of the ulcer a white scar which somewhat reduced the area of the lumen. The occurrence of scars of this kind is probably in most cases to be attributed to burns caused by too hot food. At any rate, he statements of my patient led to this conclusion. Gtottstein[37] also reports a case of this kind.

Scar stenoses can also be produced by a peptic ulcer, the so-called ulcus simplex. These scars will always be found, in correspondence with the position of the ulcers, at the cardia, or, at all events, in the inferior portion of the oesophagus. In the patient's account of his symptoms, phenomena which point to ulcus ventriculi—for example, severe pain, especially in the back, and the vomiting of blood—should be given weight. The disease is in any case rare. Wilder Fileston[38] has succeeded in collecting 41 reported cases. Oesophagoscopic observations have only been made by Guisez,[39] Mikulicz,[40] Gottstein,[41] and v. Hacker.[42] A differential diagnosis excluding catarrhal ulcers must be principally based upon the answers of the patient; peptic ulcers differ also in being larger and penetrating deeper. In the case of carcinomatous ulcerations the respiratory movement of the wall, which in the other diseases usually persists, is no longer found. It is not so very rare to find scar stenoses after acute chronic infectious diseases in which the oesophagus has been affected. Such cases after scarlet fever have been most recently reported by Oppikofer.[43] In 128 *post-mortem* examinations of scarlet fever subjects, he found that in 15 cases the oesophagus had been attacked. This is usually accompanied by typical changes in the larynx—a circumstance which facilitates diagnosis. Amongst Oppikofer's cases, there were only 3 in which the oesophagus alone was affected. Scars have also been already observed after oesophageal diphtheria (Jungnickel,[44] Killian,[45] Field[46]). Oesophageal strictures following typhoid have not yet been observed through the oesophagoscope; we have only reports based on *post-mortem* examinations. Tamerl's[47] observation of pemphigus of the oesophagus stands alone. In such cases the diagnosis is checked by the appearances on the other mucous membranes.

In the case of the chronic infectious diseases, lues and tuberculosis, constrictions of the gullet have been many times observed. They also can, as a rule, only be diagnosed by means of the oesophagoscope. In lues, gummatous infiltrations, and the secondary cicatricial contraction following on their disintegration, are the causes of the constrictions. Oesophagoscopic observations of tertiary lues of the oesophagus have been reported by von Hacker,[48] Gottstein,[49] Fackelday,[50] Mersbach,[51] Guisez,[52] and Jackson.[53] I have myself seen a case in which it was possible to diagnose lues from the appearances observed with the oesophagoscope. In the cervical portion of the oesophagus, covering the

right oesophageal wall, was a dull red infiltration, in which was a quite sharply defined ulcer, with a yellowish-white coating. The appearance of these pathological features, the small amount of pain, and the statements of the patient as to lues, led me to diagnose gumma. That this was correct was shown by the success of the specific treatment. The case reported by Gottstein presented equally typical pathological features, but such typical appearances will not be found in all cases. In the differential diagnosis of non-ulcerated gummata it is no doubt difficult to distinguish between compression by a gland or a tumour; in case of need we must have recourse to the Wassermann reaction. It is also not always easy to distinguish between lues and tuberculosis. This was shown by the very first case of tuberculosis of the gullet that was ever observed oesophagoscopically (von Schrötter[54]), it being taken for syphilis; 32 cm. from the upper alveolar process the mucous membrane was swollen and tumour-like, the lumen was about 3 mm. in diameter. On account of the simultaneous existence of scarring, lues was diagnosed. In a second case Schrötter saw on the anterior wall, 20 cm. from the dental line, a coarsely tuberculated tumour which, on advancing the tube, showed mobility. The colour of the infiltration was strikingly pale. The examination of excised test fragments showed the correctness of the diagnosis of tuberculosis that he had already been led to by the appearance of the tumour. The pale colour of the infiltration and the appearance presented by the ulcers should be made use of for differential diagnosis. Guisez,[55] who has been able to examine 6 cases oesophagoscopically, has had more experience than any one else of oesophageal tuberculosis. He distinguishes three forms: (1) The secondary oesophageal tuberculosis, arising from perforation by tuberculous glands. In this form the symptoms of compression of the air passages are present; there is a tumour-like rounded projection, mostly lateral, and the lumen is crescent-shaped. The seat of this contraction is in the neighbourhood of the bronchial bifurcation; Guisez advises recourse to tracheoscopy in case of need. It is possible, if no better way is open, to infer disease of the bronchial glands from the enlargement of the spire of the bifurcation.

The second form, the ulcerous, is probably the most frequent. Since these ulcerations of the oesophagus arise at a comparatively late stage, and the patient is then already so weak that oesophagoscopy appears to be contra-indicated, they will probably rarely be observed. The appearance of the ulcers hitherto observed was thoroughly characteristic. There were granulations in the neighbourhood, and the ulcerations were very painful. In many cases these characteristic nodules would probably have also been visible in the neighbourhood of the ulcers on careful inspection.

The third form, tumorous types of oesophagal tuberculosis (Schrötter's type), is, in any case, very rare. It can probably only be diagnosed with certainty by examination of excised test fragments.

Strictures of the oesophagus due to actinomycosis have been reported on by Gottstein,[6] Weylowski,[7] and Netter.[58] A diagnosis of these rare strictures can only be attained by bacteriological examination of specimens obtained by aid of the oesophagoscope.

In conclusion, we have to mention compression stenoses. The rounded protuberance, usually lateral, the smooth and normally coloured mucous membrane with which the protuberance is usually covered, and the crescent-shaped lumen are characteristic. If the narrowing of the passage due to the compression is considerable and has been in existence for some time, the oesophagus is dilated above the seat of the stricture, as it is, in fact, in all well-marked cases of chronic stenosis. This can easily be demonstrated, either by means of Roentgen rays or with [illegible].

In the cervical section of the gullet compressions may be caused by goitres. Their diagnosis is easy, as the goitre can be perceived by external palpation. Such cases have been observed by Goyanes,[59] Bennett May,[60] v. Hacker,[61] and Gottstein.[62] In the cervical section, compressions due to lordosis of the cervical vertebrae are not infrequent. Von Hacker[61] observed the first recorded case of this kind with the oesophagoscope. The lumen was slit-shaped, being pressed forward by prominence of the hardness of bone, which projected from the posterior wall. Oesophageal stenosis may also be produced by ecchondroses of the upper dorsal vertebrae (Zahn[63]). There should be little difficulty in diagnosing such cases by means of Roentgen photography. According to the investigations of Hacker and Köllicher, no compression or distortion of the oesophagus is caused by scoliosis of the vertebral column. A compression of the gullet by a tuberculous abscess at the back of the pharynx is also always easy to diagnose, as fluctuation can be perceived, and destruction of the bodies of the vertebrae can be seen if Roentgen rays be employed. I have already mentioned that compressions of the gullet may be brought about by tuberculous glands. The first case of the kind was described by Zencker.[65] Since then many have written on the subject; for instance, Grabower,[66] Buss,[67] Pèhu,[68] and others. It is usually possible to diagnose with certainty on the ground of the Roentgen plate, taking into account the characteristic position of the stricture in the neighbourhood of the tracheal bifurcation. Sendziak[69] was able to diagnose a case as compression of the oesophagus due to carcinomatous glands by the help of Roentgen photographs, confirmed by the discovery of a double paralysis of the posticus muscle of the larynx. Malignant tumours of the mediastinal glands often cause at first only a smooth lateral or anterior protuberance in the gullet on which the mucous membrane is completely normal. It is only later, when the mucous membrane has become adherent, that the appearance of the swelling becomes more nodular. In the attainment of a correct diagnosis the help of the tracheoscope can be resorted to. In three cases inspection of the interior of the respiratory passages enabled me to see the tumour, which had already eaten its way through the rear wall of the trachea, but in the oesophagus had as yet only produced a simple protuberance. The observations made by Störk and Kovacs[70] of stenoses of the oesophagus due to enlargement of the heart are deserving of great attention. The pressure of the enlarged heart, and especially of the dilated left auricle, upon the oesophagus, produces displacement and compression, especially in the section between the bifurcation of the trachea and the point where the aorta crosses the oesophagus. I have observed such a case through the oesophagoscope. The patient had little difficulty in swallowing. The anterior wall of the gullet was seen to bulge inwards 25 cm. from the dental line, and very pronounced pulsation was visible. It is not possible to diagnose such cases by oesophagoscopy alone, as the appearances do not differ from those seen in the frequently occurring cases of compression of the gullet by aneurysms. The latter very common stenosis presents a characteristic appearance. A hemispherical protuberance, usually of the left and anterior walls, is visible in the thoracic section of the gullet, and the lumen is displaced by it backwards and to the right and compressed to a crescent. Pulsation is always clearly visible. I have examined seven cases of this kind, in which the correctness of my diagnosis was demonstrated by skiagraphy and the subsequent necropsy. Guisez[71] also observed six oesophageal stenoses due to dilatation of the aorta and four due to aneurysm, and very rightly emphasizes the fact that in oesophagoscopy we have at our disposal a means of recognizing such pathological changes in their initial stages. It is not always entirely easy to distinguish between mediastinal tumours and aneurysms, since the latter, shortly before bursting, cause also a somewhat tuberculated protuberance. The pulsation is, however, never so marked in the mediastinal tumours.

In the lower section of the oesophagus, compression stenoses are very rare. Gottstein's[72] case, in which stricture was due to a calcareous plate in the pleura, and Collier's[73] case of stenosis caused by cancer of the liver, must well be unique.

The new methods of examination, by the use of Roentgen rays and of the oesophagoscope have very greatly increased, our diagnostic power. But for the recognition of the oesophageal stenoses the maxim is especially of force, that we must not cling exclusively to one method of examination, and that our goal is often only to be reached by calling in the assistance of all known methods. Most important of all, we must always remember that, as Semon[74] has so well said, "the human body does not consist of a number of strictly separated parts." We must always consider the patient as a whole, and then we shall be responsible for no false diagnoses.

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MALIGNANT DISEASE AND POUCHES IN THE OESOPHAGUS.

I think that if this meeting of experts disperses to-day without formulating a definite guide to the diagnosis of malignant stricture, it will not have done its duty—for after all, much as we all dislike the subject, we have to remember that at least three out of four gullet cases are malignant.

A case of dysphagia with regurgitation of alkaline food, emaciation, pain, recurrent and sympathetic nerve paralysis, will probably turn out to be one of malignant disease, but we cannot for a moment make a definite diagnosis on these symptoms. I do not think that we should spend our time this morning profitably in the discussion of symptoms which are quite indecisive and merely indicate oesophageal stenosis, which may be due to inflammatory trouble or to mediastinal tumour of one kind or another. Even the enlargement of supraclavicular lymphatic glands, coupled with oesophageal obstruction, does not decide the diagnosis. The one certain diagnostic sign, namely, the spontaneous ejection of a piece of growth, the nature of which can be proved by microscopic examination, is an occurrence of which I have knowledge neither at first nor second hand, though I have seen it quoted in general terms in some of the books. I need not say here that the admixture of blood with regurgitated food is by no means diagnostic of cancer, for the blood may come from dilated veins or from fissures and ulcers which are non-malignant.

I am surprised to find that the general textbooks still affirm that the sovereign means of diagnosis lies in the passage of the bougie, and some of them rather naïvely suggest that the bougie on withdrawal should be examined for blood, the presence of which will afford evidence of malignancy. There is some wisdom in this suggestion, for a blood-stained bougie certainly affords evidence that the course of the case is not likely to be happy if the bougieing is frequently repeated. It is true that in the hands of certain surgeons the blind passage of bougies, coupled with great manipulative skill, long experience and the clinical instinct, has given reliable results with but few errors and accidents; but this blind method of diagnostic palpation has now to compete with methods of recent development, and in order to compare the old methods with the new, we might with propriety bring forward to-day statistics of serious accidents resulting from the blind passage of the bougie. Any reliable statistics of the kind, however, would be impossible to come by, and I say this because I have personally heard of a good many fatal cases, none of which, so far as I know, have ever been recorded. I am anxious that we should at this meeting to-day once and for all throw cold water upon blind bougieing of the gullet, for the reason that it is both unsafe and quite inconclusive.

We now have two diagnostic methods, both of which can be used with safety, and one of them with certainty; I refer, of course, to the *x* rays and the direct method.

With the *x* rays we cannot diagnose malignant disease of the oesophagus, but, on the other hand, we can with perfect safety diagnose stenosis of the gullet and locate the position of the stenosis, determining at the same time whether the cause is intrinsic or extrinsic—that is to say, due to stricture in the true sense or to compression by neighbouring structures.

A good deal of information as to the mediastinal contents is forthcoming from a simple *x*-ray photograph, but with the addition of bismuth porridge and the right anterolateral posture, very precise information is to be obtained. With a powerful source of *x* rays and a small diaphragm in use, we can observe the process of deglutition in the fluorescent screen with no difficulty. I should like to say here that the ability of the observer to watch the descent of the bismuth meal depends very largely upon the length of time he has rested his retinae. Certainly in my own case a rest of ten minutes in complete darkness enables me to see a very great deal more than does a rest of three or four minutes, and I have read somewhere that a rest of thirty minutes increases the visual acuity fifty times—a point worth considering when we have to make the best of apparatus which is not of the latest pattern.

Under favourable circumstances it is then possible to make out the position of an obstruction, the degree and length of the stricture, and the character of the dilatation above it; we cannot, however, for a moment claim that the nature of the stricture can be detected by *x* rays. It might, for example, be supposed that a narrow tortuous stricture, as shown by the bismuth porridge, either on the screen or in the photograph, was highly suggestive of malignancy, but Dr. Hill tells me that he has a case of long tortuous stenosis which is definitely cicatricial.

Direct oesophagoscopy enables us to make absolutely sure of our case and to make a genuine diagnosis. We should, I think, all admit that the direct method of examination with the oesophagoscope was perfect and ideal if it could be made without danger and without discomfort. Let us, then, try to make a just estimate of the shortcomings of the direct method.

First, with regard to danger: I make bold to say that the inspection of a stricture, malignant or otherwise, can always be made without danger, or at least with no more danger than that entailed by the local or general anaesthetic employed. I know well that in skilful hands a certain number of fatal accidents have occurred, but it is our special business to point out that these are avoidable accidents, and, indeed, should always be avoided. I

believe I am right in saying that in all cases they have been due to one of two causes—namely, the laceration and even penetration of the diseased tissues by a guide or mandrin projecting in front of the oesophagoscopic tube, or else the attempt to pass the tube into and past the stricture.

Taking the second point first, I would like to suggest that for purposes of diagnosis it is never necessary to do more than bring the end of the tube into proximity with the stricture, and I think that in the majority of cases it is quite unnecessary to go nearer to the stricture than half an inch; from this distance one can with precision and safety wipe the diseased part with cotton-swabs and remove a fragment with the forceps. Where this has been done I have never seen even temporary ill effects. In a word, I consider that for diagnostic purposes we should be content to see the upper edge of the diseased area in a field clear of saliva and food, and if the appearance is not decisive as to the nature of the disease, to remove a small fragment with delicacy and precision.

Secondly, with regard to the mandrin. We all know that the passage of the cricoid constriction is facilitated by its use, and it is conceivable that when the *x* ray has made it abundantly clear that the upper region of the oesophagus is in a particular case quite sound, the use of the mandrin may be permissible. Certainly the mandrin should be withdrawn as soon as the cricoid region is passed, for I am certain we should make it a definite rule that no suspicious area ought to be approached except under the direct guidance of vision. For my own part, I never make use of a mandrin until I have learnt by previous direct examination under visual control that the upper end of the gullet is perfectly sound, and I do not see any reason why this should not be adopted as a general rule. No one can say that the mandrin is a necessity, and I cannot recall a single case of healthy cricoid constriction which could not be traversed without its assistance, that is to say, since we have had bevel-ended spatulae, such as those of Brüning; and we have had them now for a good many years. All, I think, will agree that it should be taken as an axiom that where the upper end of the gullet is diseased the use of the mandrin entails a risk to which we have no right to subject our patients. I would also repeat here that we need for diagnostic purposes to see only the upper limit of the disease, and that we have no right to do more than look at and deal with the upper edge of the lesion. If this be a sound view to take, there can be no further excuse for the use of the mandrin, and I hope to hear this meeting affirm its belief that the mandrin should never be used except in those regions of the gullet which are definitely known to be healthy. The use of bougies passed under visual control is, of course, a totally different matter.

It is a good plan to imagine yourself as the patient, as I have had occasion to do, and ask yourself if you will allow even the most expert of your friends to approach a dangerous lesion in your own gullet with any instrument except under direct visual control, assisted by careful swabbing or pumping. I venture to say that we should all prefer for use on our own persons the old-fashioned flexible blind bougie to the modern rigid blind mandrin.

I think we shall do a valuable piece of work if this meeting formulates a rule for the guidance of the inexpert, to the effect that no rigid instrument ought to be passed down the oesophagus except under direct visual control.

Next as to the comfort of the patient. No one can pretend that oesophagoscopy is pleasant to the patient, though all of us who have any experience have come across certain patients, sometimes hysterics, who seem rather to enjoy the process. I have very rarely seen the patient complain of genuine pain once the cricoid constriction is passed, and though a good many complain of the sense of pressure against the cricoid cartilage when a large tube is used, this is not a serious matter, and is less distressing than the pain caused by pressure on the teeth, and far less important than the psychological element. I have the impression that the sense of fear and of insecurity is much diminished by employing the recumbent position, either dorsal or right lateral. This, of course, is not the place to go into small details of technique, and I wish merely to say that the discomfort of the passage of the tubes is really very slight if the right lateral position is adopted, if the examination is preceded by a dose of morphine and atropine, and if the mental distress is eliminated by the knowledge that the surgeon will keep his compact honourably to withdraw the instrument when a preconcerted sign is made by the patient. I said the passage of the tube was not distressing; it is another matter with regard to the retention of it, for in a very short time the pain from pressure on the teeth, and also the general sense of distress, become literally intolerable. It is for this reason, and not on account of the difficulty of passage, that a general anaesthetic becomes necessary when a preliminary examination under cocaine has shown the patient to be intolerant.

Let us frankly admit that oesophagoscopy is not a pleasant process, and also that a hurried examination made under cocaine is often quite useless—indeed, should be regarded as worthless where merely a negative and no positive result is forthcoming. If in any such case the diagnosis is worth making, it is worth while to give a general anaesthetic. With a light chloroform anaesthesia there is no danger and no after-discomfort. I would add that it is wise to keep the patient under observation for twenty-four hours.

With regard to difficulty, I have unconsciously divided my own cases into two classes: the easy class, where the disease is definitely in the middle and lower portions of the gullet, and the difficult class, where it is suspected at or about the cricoid constriction. An essential point in the second class is to make out quite clearly the condition of the cricoid constriction as the instrument traverses it. This is not always easy to do, but it can be done if two hands are taken to the work—the left hand to supply the forcible traction upon the cricoid, and the right hand to advance the spatula slowly and delicately; during its gradual progress the spatula should be rotated on its longitudinal axis by means of the left hand, so that all parts are brought into view.

I strongly deprecate the manœuvre recommended by some surgeons whereby the tip of the instrument is felt suddenly to pop through the cricoid constriction. It is, of course, easy enough to perform this *tour de maître*, but it leaves the surgeon in almost complete ignorance of the condition of the part he has traversed, and I confess myself to have passed by a dangerous foreign body impacted in the cricoid region, and to have discovered it only on withdrawal of the tube. This is bad surgery, and cannot but lead to occasional accidents. The expert may consider that he can afford to be responsible for a few accidents, but the time has now come when oesophagoscopy should be placed in the hands of at least one man in every cottage hospital; and I hope that you will support me in urging the necessity of this gradual sliding of the instrument through the cricoid constriction under constant and real visual control. It is not difficult if two hands are used. It is not difficult—that is to say, for the surgeon, but it may be extremely difficult for the patient to tolerate, and I think we may say that the question of employing local or general anaesthesia is one which depends almost entirely upon the psychology of the patient. Records of Killian's clinic show that nearly all adult cases are examined under local anaesthesia; Mosher in America, on the other hand, considers that general anaesthesia is necessary in almost every case. In Germany the surgeon deals with a populace trained to confide in the word of authority; in America that mental training is absent. In this country we certainly find that women are more amenable than men to manipulation under local anaesthesia; they are more ready to repose confidence in the surgeon.

Oesophagoscopy, the certain method of diagnosis, may be said to be free from danger if the surgeon will learn and practise the technique, and not attempt to do more than is necessary. It is often extremely irksome to the patient, but this difficulty can always be overcome by general anaesthesia. One question remains: Is it always possible? The cases in which it is impossible, granted a general anaesthesia, must, I believe, be very limited in number. Personally I have seen but two cases, one of ankylosis of the cervical and dorsal vertebrae in an old man, another of partial ankylosis of the jaw coupled with a good set of teeth. Both occurred some years ago, at the time when we were content to arrive at a diagnosis by the weighing of probabilities; and I do not remember testing them by von Eiken's method of hypopharyngoscopy, which in the case of the old man would very likely have

revealed the post-cricoid carcinoma which subsequently made itself evident. This method is very ingenious and should give excellent results if properly carried out; but, if I may judge from my own experience, it is much more difficult to perform with success than is the direct method. The vigorous traction of the probe with one hand renders the manipulation of the mirror with the other somewhat difficult. Killian's suspension laryngoscope promises a more satisfactory method of obtaining a general view of the post-cricoid region. I have been in possession of the instrument but a few days, and am therefore unwilling to say much about it.

Year by year the technique advances; we have excellent new tubes devised by Hill in this country and other experts abroad—we have, this year, Killian's suspension apparatus, and we have general anaesthesia by intravenous infusion of ether—an element in the technique which I suspect we have all used with great satisfaction. Any diagnostic formula, therefore, which we can devise to-day will doubtless be superseded by something better in the course of a year or so, but I hope you will all agree that the time has come when every laryngologist should be capable of oesophagoscopic diagnosis, and that some definite guide should be forthcoming. It is certain that many a competent surgeon has not yet made the plunge, owing to the supposed dangers, difficulties, and uncertainties of the method; can we not supply him with a guide to be followed with confidence and success?

For your criticism I would put it in this way: In a case of dysphagia, at the first visit a surgeon should take the history and symptoms, palpate the neck, percuss and auscultate the chest, examine for aneurysm, examine the larynx, the trachea, and the pupils, and in a tolerant patient perform hypopharyngoscopy. He should strictly avoid the blind passage of the bougie.

At a second sitting he should examine by *x* rays with screen and photographic plate, both with and without a bismuth meal. As a rule, this will determine the condition of the aorta and of the mediastinum, and will indicate the position of the upper end of the diseased area, and also exclude hypopharyngeal pouch.

At a third sitting the oesophagoscope should be passed under cocaine anaesthesia, either in the sitting or recumbent posture, as preferred by the patient. The tube, and preferably Brüning's telescopic tube, should be passed under direct visual control, that is to say, without any mandrin. The tube should merely approach the diseased area and not be passed through it. A fragment should be taken for the microscope if necessary. If the patient prove unable, in spite of scopolamine, morphine and cocaine, to tolerate a slow, deliberate examination, a negative result must be taken as worthless, and a general anaesthetic, chloroform or intravenous ether, should be given, and the tube passed without mandrin and without passing the extreme upper limit of the diseased area.

Practically it comes to this: Get general indications with the *x* ray, then pass the oesophagoscope under visual control. To the expert this may seem unnecessary talk, but I am certain it is necessary if the direct method is to take its proper place in this country.

The diagnosis of pouches falls to my lot, but I do not intend to say much upon this topic, for the reason that the subject is very adequately dealt with in the textbooks, but chiefly because I am anxious that we should not allow ourselves this morning to shirk the discussion of the less interesting subject I have just dealt with.

True oesophageal pouches are practically always traction-pouches, the result of cicatrization of diseased bronchial glands. Consequently they are generally found just below the level of the bifurcation of the trachea and on the anterior aspect of the gullet. As a rule, they have a wide opening and a pointed fundus, and as the latter is nearly always on a higher level than the former, food does not tend to collect in and to distend the cavity. Consequently these pouches do not give rise to symptoms, and are usually discovered accidentally. One may say that the diagnosis is made by the oesophagoscope. I have found one or two references to true pulsion-pouches situated at the lower end of the oesophagus, but I have never seen a true oesophageal pouch *intra vitam*.

We must, however, consider the pharyngeal pulsion-pouch, for though it is in fact a herniation of the lower pharynx and not of the oesophagus, it comes into notice by obstructing the latter viscus. I think we are all familiar, through the writings of Butlin in particular, with the anatomy and surgery of these pharyngeal diverticula. The diagnosis is fairly easy, and it is usually made by the patient, who, as his meal progresses, experiences increasing difficulty in deglutition associated with the development of a swelling in the neck immediately below the level of the cricoid, and usual upon the left side. I have one case where the pouch projects to the right, and I should be interested to learn if any one present has a similar experience.

The patient learns that by manipulation he can partially empty the pouch and continue his meal; I have one patient who cannot manage this manœuvre, and, as she refuses operation, has to content herself by washing out the pouch with a syringe two or three times during dinner.

These patients often complain of the rejection of unaltered food some hours after its ingestion; it comes up in small quantities at a time, unlike the gush of regurgitation or oesophageal vomiting observed in cases of true dilatation, such as occurs above an organic stricture. Unless the pouch is kept clean by syringing after meals, fermentation takes place, with the production of foam which may cause great discomfort, and incessant cough at night. I do not remember observing this particular symptom in any but pouch cases. In conjunction with the symptoms mentioned, the *x* ray with bismuth porridge gives invaluable evidence, but I believe that we cannot always, by the mere inspection of the photograph, assert that the case is one of pouch.

An ingenious diagnostic method has been devised by Plummer. About six yards of silk are swallowed during the twelve hours preceding the examination. A bougie, with its perforated acorn-head threaded over this silk, is passed down to the obstruction in the gullet. The silk, its lower end more or less anchored in the intestines, is now pulled taut. If the bougie remains unmoved, you may diagnose stricture, but if it is raised, say a couple of inches, you may conclude that you are dealing with a pouch, and that the distance between its fundus and the lower lip of its orifice is two inches. I think it should always be possible to diagnose a pouch by the direct method if the tube is passed under visual control and quite slowly. The difficulty is, of course, to see the horizontal slit-like orifice of the oesophagus, which lies immediately below the level of the cricoid and sometimes under cover of the lower edge of that cartilage. The spatula passes only too readily into the pouch, and it is easy to miss the oesophageal opening unless either the introduction or the withdrawal is made with great deliberation and with the additional aid of a probe. Mosher describes the detection of the oesophageal opening in an elusive case of this sort by the use of a pneumatic oesophagoscope, whereby he obtained a view of the inflated viscus and saw the two orifices as he withdrew his instrument.

However, it must be but very seldom that the diagnosis of pouch cannot be made by the exercise of patience and a little ingenuity, and I will say no more about it: and I will conclude by respectfully urging upon you, Mr. President, the desirability of arriving this morning at some consensus of opinion as to what is safe and what is clinically sound in the diagnostic methods for oesophageal cases. If we can agree upon a routine method of examination for general use in the daily run of cases, and put it forward as a recommendation to those who do not profess to be expert in the matter, we shall, I believe, have done a day's work of some value.

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STENOSES AT THE LOWER END OF THE OESOPHAGUS, WITH SPECIAL REFERENCE TO THOSE OF SPASTIC ORIGIN.

When a meeting of laryngologists proceeds to discuss affections of a region so distant from their own domain as the cardia, some explanation may seem called for. A little consideration, however, should show that they are not seeking to annex territory already administered by others, but are merely fulfilling their destiny as endoscopists. An apology for apparent trespass is certainly not due to the physicians. With a few brilliant exceptions, they have

neglected to avail themselves of the most valuable aid in the diagnosis and treatment of affections of the cardia—namely, direct inspection. The study of these conditions, therefore, need not be denied the laryngologists, whose training qualifies them to make the examinations and the majority of whom at the present day are furnished with the necessary armamentarium.

Disease at the cardia first received attention in the *post-mortem* room. Then came a period in which the bougie, auscultation of deglutition sounds, chemical and various physical tests were employed. Ingenious as these were, little clinical progress was made until oesophagoscopy began to be practised by a few surgeons and physicians. Radiology, at a much later date, helped greatly towards the explanation of the processes of deglutition, and continues to afford valuable assistance in many doubtful cases.

Cardia and Epicardia.

As some confusion exists as to what precisely is meant by the term "cardia," a few words on the subject may be opportune.

Anatomically the cardia is the junction of the oesophagus and stomach, and is indicated by an irregular line demarcating the pinkish lining membrane of the former from the dark red velvety mucosa of the latter. The regions above and below this line are known respectively as the cardiac portion of the oesophagus and the cardiac portion of the stomach. From the hiatus oesophageus to the cardia is a distance of about 5 cm.; this has been termed the epicardia, and is made up of the diaphragmatic and abdominal portions of the oesophagus. It is more than doubtful whether certain functions and disorders attributed to the cardia have not their seat in the epicardia; it might therefore be best to refer to this region as the epicardia-cardia. For the same reason we should remember that the term "cardiospasm" does not fully represent the extent of this affection; on other grounds it is objectionable, but our knowledge of the physiology and pathology of this affection does not yet justify a change in nomenclature.

Symptoms.

The symptoms of obstruction at the cardiac end of the gullet are: (1) Hindrance to the passage of solids and liquids into the stomach; all degrees may exist, from the slight or momentary difficulty with meat to complete obstruction to the passage of liquids. The patient may be able to force the contents of the gullet into the stomach by swallowing movements or by drinking large quantities of fluid. (2) Discomfort or pain in the epigastric region, which the patient attributes to food and drink lying in the gullet above the stomach. The pain may radiate to the back, shoulders, or arms. (3) Vomiting, or rather regurgitation, which takes place readily, often without effort, immediately after a meal or while fasting. There is no nausea, and the food returned has its proper agreeable taste. Occasionally blood may be present. (4) Profuse secretion of saliva. Gottstein states that 150 c.cm. may be secreted in ten to fifteen minutes. (5) Loss of flesh, weakness, cachexia.

The pathological conditions at the lower end of the oesophagus which may give rise to stenosis are: Cancer of the oesophagus or cardiac portion of the stomach; mediastinal tumours and other extra-oesophageal diseases leading to compression of the oesophagus; cicatrices; idiopathic hypertrophy of the oesophageal musculature; and spastic affections.

Cancer.

Next to the cervical end, the cardiac region is the most frequent site of cancer in the oesophagus. In the latter situation the age incidence is not strikingly early, nor are the majority of subjects females, as in the former. The chief and often sole symptom is dysphagia, which usually sets in slowly. Spasm plays an important rôle in most oesophageal diseases, and particularly when these are situated in the region of the cardia; consequently long before the neoplasm has attained a size capable of causing obstruction complete dysphagia may be produced by spasm.

Malignant disease in the middle portions of the oesophagus in some cases appears to progress very slowly and to have periods of improvement. Such alternations are not characteristic of cancer at the lower end, owing to the constriction of the oesophagus and the comparatively unyielding nature of the surrounding tissues. The presence of blood in vomited or regurgitated fluid, in the oesophagus on inspection, and a marked tendency for the tumour to bleed, all point to malignant disease. The appearances produced by cancer in the lowest part of the gullet, as seen by direct examination, vary greatly. They depend upon the type, mode of extension, stage, etc., of the disease. The presence of ulceration, granulations, papillomatoid or polypoid proliferations, proclaims almost indubitably the malignant nature of the disease. In rare instances a peptic ulcer has to be differentiated.

On the other hand, the submucous type of cancer may closely resemble certain spastic affections of the cardia, and therefore requires more detailed consideration. It is just in those cases in which we are most doubtful of the diagnosis, owing to the mucous membrane being smooth and intact, that we are precluded, as a rule, from excising a piece of the tumour for histological examination. Careful observation of the endoscopic appearances is, therefore, the more necessary. V. Hacker has described a condition of leucoplakia in the oesophagus as an almost constant accompaniment of cancer even in its early stages. Authorities are not inclined to attach value to this sign.

The neoplasm may be at an early stage and limited to a small area immediately above the cardia. The infiltrated part of the wall may then project into the lumen, giving it a crescentic shape; it moves during respiration less freely than the surrounding parts, and its surface is smooth, stretched, intact, and very red, although occasionally pale. Very soon the surface ulcerates or becomes nodular, and the true nature of the bulging is evident, or may be determined by removal and examination of a fragment. The malignant process may be more advanced, and may involve the entire circumference, producing an annular constriction. If it develop uniformly, a funnel-shaped stenosis will result. This has to be distinguished from the funnel-like constriction due to corrosive action. In the latter case the funnel is deeper, its surface is more uniformly smooth, and scarring may be seen above. When caused by cancer the surface is often nodular and ulcerated, and the mobility of the parts during respiration is diminished or absent. In both cases the oesophagus may be somewhat dilated above the constriction.

The oesophagus may be normal as far as the hiatus oesophageus, and the disease causing the dysphagia may be located beneath the diaphragm. In our efforts to traverse the epicardia-cardia it is most important to carry out all manipulations with caution, and to employ no undue force in attempting to pass the oesophagoscope deeper. The danger is not so much of perforating with the point of the instrument as of tearing the neighbouring diseased tissue in consequence of the parts being put on the stretch.

When the cancer is in the diaphragmatic canal the difficulties of inspecting the parts are great. In the normal subject the passage of a tube into the stomach is not always easy, so that when an apparent obstruction is encountered it is necessary to allow for the natural tonus of the cardia as well as to keep in view the possible presence of a neoplasm. Owing to the limited field of view in this situation one must content oneself, as Starck advises, with the detection of very slight changes, and, if need be, examine repeatedly with the patient in different positions in order to get a characteristic aspect. If the neoplasm is in the stomach it may cause obstruction by submucous infiltration and narrowing the cardiac orifice. One looks for a tumour-like prominence or fold and particularly for an ulcerated or readily bleeding surface. Tapia has pointed out in connexion with one of his cases that the respiratory movement of the fluid lying at the cardia instead of being up and down as usual is from side to side. He considers that this appearance allows of an exact diagnosis being made of the site and extent of the tumour. In the case in question the neoplasm was seen in the lowest part of the oesophagus on the right wall. This, however, was merely part of a large growth which sprang from the small curvature of the stomach and extended across beneath the cardiac opening. Its upper surface served as a resting place for fluids, hence the horizontal oscillations.

Compression Stenoses.

Stenosis in the region of the cardia in consequence of extra-oesophageal pressure is nearly always due to a mediastinal tumour. Starck reports a rare case due to a calcareous plate in the pleura, which at first excited

spasm of the oesophagus and cardia, and later led to fatal perforation. Guisez has seen stenosis and displacement of the cardia produced by aneurysm of the aorta in one patient, and by cancer of the liver in another. A tumour of the great curvature may act similarly. The oesophagoscopic appearances may be indistinguishable from those produced by submucous cancer. There is the same encroachment on the lumen by a smooth bulging of the wall. The covering mucous membrane is usually intact and normal in appearance, but may be nodular or ulcerated. The affected part does not move during respiration. The symptoms of oesophageal stenosis develop insidiously, and before they are marked the mediastinal growth has attained considerable dimensions and is evident on *x*-ray examination. Percussion may also assist the diagnosis.

Guisez emphasizes his observation that in stenoses by compression dysphagia is quite out of proportion to the degree of obstruction. This he attributes to spasm.

Cicatrices.

The history of having swallowed a corrosive is often considered sufficient to establish the diagnosis. This is not always to be relied upon. The stenosis may develop very slowly and years may elapse between the date of the accident and the onset of the signs of obstruction. On the other hand, it is not uncommon for patients to attribute their dysphagia to an injury from hot liquid or food, or a foreign body, and on examination to be found suffering from malignant disease. Investigations into the mechanism of deglutition have shown that solid food is carried comparatively slowly down the gullet by peristalsis, while liquids are projected rapidly or squirted to near the cardiac end by the muscles of the mouth. The facts noted in the cases that I have examined—namely, that cicatrices due to corrosive liquids are found in the lower part of the oesophagus, while those due to solids are in the upper part—are in accordance with the physiological observations mentioned. Guisez has found cicatricial stenosis in the neighbourhood of the cardia, in five patients probably due to a round ulcer, and in other five as a consequence of chronic oesophagitis. In the latter group of cases the primary condition was spasm of the cardia, which, by causing retention of food, set up inflammation, infiltration, and concentric cicatricial contraction. A sound localizes the site of the stricture, *x* rays give additional information as to its permeability, but only the oesophagoscope allows of a positive diagnosis being made as to the situation, nature, form, and degree of the obstruction. In old cases one usually sees a funnel shaped constriction or diaphragm-like partition, with a more or less small aperture in the middle or to one side, and a surrounding smooth, pale, cicatricial surface. Several strictures may be superposed. If the lumen is much reduced the oesophagus may be dilated above, and may contain food débris and saliva.

Idiopathic Muscular Hypertrophy.

Only very few cases of primary muscular hypertrophy of the oesophagus are on record. Elliesen has carefully studied the condition, and his case may be taken as typical. The patient was a man, aged 39, who died of tuberculous meningitis. The oesophagus, excepting above, was converted into a rigid, thick, uniform tube. The dense leather-like wall was cut with difficulty. The lumen in the lower 18 cm. was found to be 9 mm.; the narrowest physiological diameter, according to Kraus, is 10 mm. The most important change was an enormous thickening, especially of the inner circular muscular layer, which in the lower third amounted to 7 mm., so that the whole wall measured 9 mm. instead of 2 mm., which is stated to be the normal thickness. The external longitudinal muscular layer participated but little in the thickening. No other change could be detected. Ehlers more recently has met with a similar hypertrophy of the oesophageal musculature, which he regards as probably congenital, associated with congenital hypertrophic stenosis of the pylorus. In this case there was an immense thickening of the muscular wall, which a short distance above the cardia amounted to 12 mm. No other pathological condition was found in the oesophagus: its lumen was normal. In neither of the above cases was there dysphagia, although Elliesen's patient had to masticate carefully and eat slowly from his fifteenth year. It is possible that the dysphagia might have increased had he lived longer, and that death might have taken place from inanition, as occurred in the earlier recorded cases. Both writers discuss the etiology of the hypertrophy, but neither can assign a probable cause: Elliesen, therefore, considers himself justified in regarding it as idiopathic; while Ehlers, viewing it in conjunction with the hypertrophy of the pylorus, believes it to be congenital. I think that cardiospasm would explain both cases. An increase in the lumen of the oesophagus does not invariably accompany spastic closure of the cardia, and it was just because of the absence of dilatation that both authors excluded cardiospasm as a possible cause. I am therefore not prepared to regard this condition as a distinct entity.

Paralysis.

Paralysis of the gullet is extremely rare, but the symptoms to which it gives rise may cause it to be confused with stenosis at the cardia. The patient may be unable to swallow solids, while liquids pass easily: he may have pain behind the sternum during eating, and he may vomit frequently quantities of mucus. Our fears as to the grave nature of the ailment are set aside by the result of the examination. On auscultation the first deglutition sound may be heard if there is insufficiency of the cardia. A bougie passes readily into the stomach. The oesophagoscope is introduced with unusual ease, the parts appearing to be almost insensitive: there is no sign of disease in the gullet, and the epicardia-cardia is not unduly contracted. In order to test the musculature Starck advises that a large capsule or pill be passed 27 cm. down the oesophagus; if the musculature is normal it will be carried into the stomach by peristalsis, if there is paresis it will not change its position.

Spastic Affections.

The last group of stenoses in the region of the cardia to be considered is that of the spastic affections. We here enter upon a subject that is highly controversial from the standpoint of the anatomist, physiologist, pathologist, and clinician.

Spasm plays a very important part in affections of the oesophagus—for the moment I am speaking of the oesophagus as a whole and not of the cardiac end only. It may be either primary or secondary. We are all acquainted with secondary spasm, to which many strange and sometimes misleading clinical phenomena in the oesophagus owe their origin.

I may mention several examples. In oesophageal cancer not uncommonly the first symptom is sudden and complete inability to swallow, which, after a variable duration, passes off entirely. A patient with cancer at the lower end of the oesophagus may locate the dysphagia at the upper end owing to spasm. In another patient symptoms may point to obstruction at the cardia, and this may be confirmed by a bougie, whereas the neoplasm is beneath the mucous membrane in the middle portion of the oesophagus, and is still too small to interfere with sounding. The power of deglutition in patients with cicatricial stenosis may vary much from day to day, as may also the ease with which a bougie is passed, owing to spasm.

The most convincing demonstration that I have had of the rôle played by spasm was in a man brought to me on account of a piece of meat having stuck in his throat. Oesophagoscopy showed, at the level of the arch, a funnel-shaped stricture in the lowest part of which lay some dark material. This was extracted and found to be a fetid pultaceous mass about the bulk of a pea. Its removal was immediately followed by relaxation of the spasm and the patient drank off a tumblerful of water after having been unable for three days, all but four hours, to get a single drop down.

I now pass to the consideration of an affection which, in most instances, owes its origin to primary spasm—I refer to cardiospasm.

Oesophageal Aspect of Cardiospasm.

The normal aspect of the hiatus oesophageus varies in different persons, and even from time to time in the same person. It often appears as a cleft running obliquely forward and to the left, with a rounded fold in front and to the right, and another behind and to the left; it may also have a stellate appearance. Occasionally it opens

a little, especially if a deep inspiration be taken, and scanty mucous secretion wells up. In cardiospasm the appearance of the hiatus oesophageus may be the same as in the normal state. On the other hand, certain characteristic features may be produced by the contraction. The folds bounding the obliquely running cleft, or those radiating from the point like lumen, may bulge unduly and produce an appearance like the os. The mucous membrane over the most prominent parts may be pale and traversed by blood vessels, or, if irritated by retained food, may be inflamed. During the spasm there is no variation in the lumen with respiration, and no bubbling up through it of fluid or gas. Starck states that he has seen the hiatus free while spasm at the cardia produced a funnel-shaped constriction.

Having noted the points mentioned, the tube is now gently pressed onward. The parts may be found excessively sensitive, and an unusual amount of resistance may be experienced; but on waiting a little relaxation takes place, and the instrument glides along the abdominal section of the gullet and enters the stomach. Lerche states that in no case of cardiospasm is the epicardia-cardia impermeable. Starck distinguishes spasm in the diaphragmatic portion of the oesophagus from spasm at the cardia, and states that in the former he has found the closure so tight as to be insurmountable, while at the latter he has never met with muscular resistance. Spasm at the cardia may produce a stellate arrangement of folds, some of which may consist of gastric mucosa.

In carrying out these manipulations the oesophagoscope should be passed from the right angle of the mouth and the patient's head bent to this side. The tube should be carefully kept in the axis of the gullet. Resistance at the cardia should, if possible, be overcome by cocaine, gentle pressure, and patience. It may be necessary to repeatedly alter the position of the patient before entrance to the stomach is effected. Lying on the side relaxes the crura of the diaphragm (Gottstein), and probably the right recumbent position, as recommended by Starck, is best of all. In order to diminish the profuse secretion which usually collects above the stenosis atropine may be given beforehand.

Diagnosis of Cardiospasm without Dilatation.

It will be gathered from what has already been said regarding compression stenoses and stenoses due to cancer at the cardia or in the diaphragmatic part of the gullet that the differential diagnosis of these conditions from cardiospasm is sometimes extremely difficult; at present I am referring to cardiospasm without dilatation.

Compression stenosis above the diaphragm can usually be recognized by the asymmetry produced; pressure below the diaphragm may alter the direction of this part of the gullet. When the abdominal oesophagus is involved, either by infiltration of its wall or by external pressure, inspection may fail to differentiate the condition from cardiospasm. If difficulty is experienced in entering the stomach in spite of the adoption of the manipulative measures recommended it is best to suspect the presence of malignant disease. Repeated examinations should then be made at intervals, with the object of detecting the development of irregularities or ulceration in the neighbourhood of the cardia. Any attempt to pass the oesophagoscope into the stomach should be made with great gentleness. It is necessary not only to keep the instrument completely under control of the eye and hand but to bear in mind that extremely vulnerable diseased tissue may be in the immediate vicinity. If the state of the patient do not allow of delay, let gastrostomy be performed, and settle the diagnosis later.

Dilatations of the Oesophagus.

Stenoses at the cardia are liable to be followed by dilatation of the part of the oesophagus immediately above. When the stenosis is due to cicatricial contraction, extra-oesophageal compression, or malignant infiltration of the wall, the dilatation, if present at all, is, as a rule, insignificant. In cardiospasm it may also be *nil*, but on the other hand it may be immense. A marked dilatation, with symptoms of obstruction at the lower end of the oesophagus, is therefore strongly suggestive of cardiospasm. The cases in which a differential diagnosis is so difficult and to which reference has just been made are those of cardiospasm without dilatation.

Angulation and Kinking of the Oesophagus.

The oesophagus not infrequently undergoes marked deviation, sometimes with elongation; the elongation may be associated with, or independent of, dilatation. The normal length of the oesophagus is about 25 cm.; in a case of Luschka's it measured 46 cm. When the elongation is such as to cause the gullet to approach the hiatus diaphragmaticus obliquely, kinking may be produced and symptoms of dysphagia may arise. It is probably only under such conditions that the crura of the diaphragm play a part in causing obstruction. In the later stages of cardiospasm with dilatation the dysphagia therefore is chiefly mechanical. The recumbent position is then specially unfavourable for deglutition, as the food gravitates to the deepest part of the sac and cannot get into the stomach.

Kovács and Stoerk have recently studied the condition of the oesophagus in enlargement of the heart. They show that as a result of enlargement, especially of the left auricle, the oesophagus may be markedly compressed and deviated. The bend, which may approach a right angle, passes to the right and backwards, and the lowest part of the gullet in order to reach the opening in the diaphragm must cross the aorta almost horizontally. They also prove by *x* rays that ingesta may be delayed above the bend. Starck has found the mucous membrane in this situation very inflamed, a condition which he assumed to be due to the temporary retention of food.

Bending of the oesophagus is recognized during direct examination by the difficulty or impossibility of keeping the lumen of the gullet opposite the end of the oesophagoscope even when the tube and patient's head are bent unduly to the right or forward.

Symptoms.

Occasionally a dilatation of the oesophagus is found at a necropsy without there having been any symptoms to suggest its presence during life. As a rule, however, symptoms are manifested. These may set in suddenly and be very marked, some form of dysphagia being the most prominent; or they may develop insidiously, so that years may elapse before the affection causes trouble. A characteristic and frequent symptom of dilatation is regurgitation. This is unaccompanied by nausea or retching, and may be brought about merely by increase of intrathoracic pressure without active contraction of the gullet. The regurgitated fluid consists of undigested food and mucus, is usually alkaline, but if long retained may be slightly acid; it contains lactic acid, but no hydrochloric acid or pepsin.

It is not surprising that patients complaining of vomiting and epigastric pain, amongst other symptoms, are regarded as suffering from disease of the stomach. A fair number of cases are recorded in which gastro-enterostomy was performed for persistent vomiting, and at the *post-mortem* examination the disease was found in the oesophagus and not in the stomach. In cases of violent, cramp-like pains in the epigastrium, Gottstein emphasizes the importance of keeping in view not only affections of the stomach and gall stones, but also spasm of the cardia. In all of his cases of cardiospasm the disease had been treated for years, or even decades, as ulceration of the stomach or gall stones.

Rumination.

In connexion with regurgitation reference should be made to merycism or rumination. Some of the published reports of cases of rumination strongly suggest that the patients had stenosis at the cardia with regurgitation. The correctness of the diagnosis in these cases becomes more doubtful when no mention of the latter condition is found, and when at the *post-mortem* examination of some ruminators dilatation of the lower part of the oesophagus is stated to have been present.

Well-marked cases of regurgitation and rumination are easily distinguished, but in some individuals the symptoms may not be characteristic, and the distinction may be difficult. In rumination heredity often plays a part. The process may set in at any age, even in childhood. It begins from a few minutes to half an hour after meals; mouthful after mouthful of the food is returned, chewed, and swallowed; and this may go on for an hour or until next meal. The food is pleasant, but may become sour if

the rumination continue longer than two hours; it contains hydrochloric acid and pepsin.

Diagnosis.

Various tests have been devised to prove that the oesophagus is dilated, and that it can retain a large quantity of fluid without allowing any to escape into the stomach. Thus a stomch tube is passed and 200 c.cm. of methylene blue solution poured into the stomach. The tube is then removed, and the patient drinks 200 c.cm. of milk. Again the tube is introduced a distance of 30 cm., and unchanged milk is obtained, and on being passed to 50 cm. blue-coloured fluid returns. The capacity of the dilated oesophagus can be conveniently measured by Lerche's oesophagometer. X rays give valuable information as to the size and shape of the dilatation.

Endoscopy surpasses all other methods in the extent and accuracy of the information it affords regarding oesophageal dilatations. When the oesophagoscope is in the lower third of the gullet, instead of being able to overlook the entire or greater part of the circumference, we find, if the patient is seated, that more or less of the wall passes out of sight and that we are looking into a large cavity. During expiration the dilatation will be at its smallest and the walls best seen. If the patient is recumbent during the examination, a fold of the overlying wall may dip down and cover the end of the tube and present no respiratory movements. It will also be found that in order to bring into view opposite points in the circumference of the gullet the tube must make a considerable excursus. The lining membrane of the dilatation is crossed by transverse folds and is inflamed or superficially ulcerated; usually it contains fluid, food, debris, and mucus. The inspection must, lastly, discover any malignant tumour that may be present. The association of diffuse dilatation and cancer has been noted by several observers.

Etiology of Oesophageal Dilatations.

The first important contribution towards the elucidation of dilatation of the oesophagus was made by Zenker in 1878. This writer published reports of a series of cases in which the patients died with symptoms of severe dysphagia, and at the necropsies oesophageal dilatation was found, but no stenosis; he thought the condition was due to diminished power of muscular contraction. In 1881 Strümpell, in discussing a similar case, raised for the first time the question of spasmodic closure at the cardia as a cause; he dismissed this, however, in favour of the view that there was kinking at the hiatus oesophageus and secondary dilatation in consequence. V. Mikulicz in 1882 made the first oesophagoscopic examination of the affection; he attributed it to spasm at the cardia, and therefore termed it cardiospasm. In almost all cases of so-called idiopathic dilatation of the oesophagus there is spastic closure at the cardia, as indicated by the symptoms, appearance, abnormal resistance, and the fact that cure is effected in a large proportion of cases by stretching the cardia. The study of the etiology of dilatation of the oesophagus is thus inseparably bound up with that of cardiospasm. Before proceeding to consider the theories that have been advanced to explain these associated conditions it is necessary to discuss certain objections that have been raised to the existence of primary spasm of the oesophagus.

Does Primary Spasm of the Cardia Exist?

Dr. William Hill, whose exceptionally large experience in oesophagoscopy entitles his utterances on the subject to our respect, has recently published a paper denying the possible existence of primary spasm at the cardiac end of the oesophagus. In support of his contention he asserts that the circular fibre musculature at the extreme lower region of the oesophagus is weak, and, if anything, weaker than elsewhere, and quotes passages from Professor Macalister's *Textbook of Human Anatomy* to show that there is no special muscular sphincter in this region.

In order to obtain first-hand evidence as to the condition of the musculature at the junction of oesophagus and stomach, Dr. Williamina Abel, Carnegie Research Fellow in the Physiological Department of the University of Glasgow, has made a number of dissections. These confirm the correctness of Professor Macalister's description as quoted by Dr. Hill. Two of the preparations are shown—one from a child a few days old, and the other from an adult. They include the lower part of the oesophagus and upper part of the stomach. Each has been slit up and the muscular layers separated. It was found that the longitudinal coat was uniform throughout, while the circular coat was peculiar only in that it was very closely connected with the submucosa for 1 to 2 cm. above the cardia. It is quite apparent to the naked eye that both muscular coats are of uniform thickness, and that no special aggregation of fibres exists at or near the cardia. On the other hand, nothing was found in any of the dissections or in the anatomical works consulted to justify Dr. Hill's statement that the circular fibre musculature was specially weak in this region. I would point out, however, that "the modern supporters of the spasmodic theory" do not seek to explain spasm at the lower end of the oesophagus by the presence of a sphincter. The few writers who have employed the term "cardiac sphincter" have probably done so rather as a matter of convenience than from any desire to account for the pathogenesis; had they used the expression "sphincter-like appearance" in reference to the hiatus oesophageus, no objection could have been raised. The true explanation of cardiospasm will probably be found to lie in a disturbance of innervation; to this important aspect of the question Dr. Hill has barely referred. Mention will be made immediately of the various theories that have been advanced in this connexion, but I may conveniently preface them by recounting a few physiological facts which will also serve to prove that spasm at the cardia is possible.

From experimental work it has been found that stimulation of the peripheral ends of the cut vagi causes contraction of the whole oesophagus but dilatation of the cardia; this is essentially the normal process of deglutition. On the other hand, section of the vagi without stimulation is followed by dilatation of the lower part of the oesophagus and contraction of the cardia; this corresponds to the supposed condition in cardiospasm. The vagi thus control the muscular action—the peristalsis—of the oesophagus and supply a special dilator branch to the cardia. Tonic contraction at the cardia is maintained by the autonomous nervous system, which consists of a fine plexus situated between the two muscular coats under control of ganglia which are independent of the central nervous system. Normally, this tonic contraction is inhibited during deglutition by impulses conveyed along the vagi, and the cardia opens to allow the food to enter the stomach. Secondary closure of the cardia is due to reflex action excited by the acidity of the gastric juice. [The author then showed a series of slides illustrative of various points raised.]

Returning to the clinical aspect, the question that next suggests itself is: Have we a correct conception of spasm as it exists at the cardia? We are accustomed to associate in our minds with the term "spasm" a condition of violent muscular contraction, but if we read the reports of a number of cases of cardiospasm we find that almost invariably the obstruction at the cardia is stated to have yielded on waiting a little. Some writers assert that the cardia-epicardia is always permeable in cardiospasm. In this connexion I might mention that even in animals with both vagi cut, when the spasm is undoubted, it can be overcome comparatively easily by increasing the intra-oesophageal pressure. At one time I myself held a different opinion, and in consequence experienced a mishap that I shall always regret. In a patient with great dysphagia, but with no sign of disease in the oesophagus excepting firm closure at the hiatus, my efforts to overcome what seemed to me to be strong spasm caused a tearing of neighbouring diseased tissue with fatal result. Secondary spasm may certainly have been present in this case, but the main resistance encountered was due to subdiaphragmatic carcinoma. Dr. Hill states that from his endoscopic observations spasm of a really unyielding nature is not found. Has he not been looking, as I did, for what is non-existent? It might be advisable for all of us to remember that in cardiospasm the spasm is of a yielding character and little more than a state of non-relaxation.

Theories as to the Causation of Diffuse Dilatation of the Oesophagus.

1. *Primary Cardiospasm.*—The first explanation of oesophageal dilatation, as already stated, was offered by v. Mikulicz, who attributed it to the retention of food, etc., above the spastically contracted cardia. In support of this view, it is pointed out that a stenosis of comparatively short duration, as in cancer, is occasionally found associated with a certain amount of dilatation. In cardiospasm, which may go on for years or even decades, great dilatation need, therefore, excite no surprise. The muscular hypertrophy of the walls of the distended organ suggests the presence of obstruction to be overcome, as in valvular disease of the heart. Meltzer goes a step further. He believes in the pre-ence of cardiospasm, and attributes it to inhibition of the cardia dilator. In consequence, the cardia instead of relaxing during deglutition, as it normally should, remains firmly closed. Rosenheim opposes the theory of primary cardiospasm because marked and extensive dilatation of the oesophagus above anatomical strictures, both benign and malignant, is comparatively rare, and further, because obstruction at any part of the oesophagus to the passage of ingesta produces, if the muscular st·ength of the organ be well maintained, regurgitation, but no dilatation.

2. *Primary Atony.*—Another group of observers maintains that the dilatation is primary. Rosenheim, the chief exponent of this theory, attributes dilatation to atony of the oesophageal musculature, followed by overstretching and distension of the walls, and regards the spasmodic closure of the cardia as secondary and produced by the irritating action of stagnating collections of food on the altered mucous membrane. Quite recently the atonic theory has received support from Holzknecht. His extensive *x*-ray researches have led him to recognize in a large proportion of those suffering from nervous dysphagia a characteristic condition which he regards as due to an atonic state of the oesophageal musculature. When very thick semisolid food is swallowed normally it passes through the gullet as a closed column, the length of a finger, in about seven seconds. In the affection in question, on the other hand, each portion of semisolid is pushed onward by that next swallowed until a continuous stream courses through the gullet. A variable interval, often a quarter of an hour, may elapse before all reaches the stomach. The dysphagia may be overshadowed by various neurotic symptoms—for example, cramp-like feelings in the throat and chest, retching, attacks of choking, and occasionally inanition may result.

Starck admits the possibility of atony leading to dilatation, but states that no case has been proved, for almost without exception muscular hypertrophy is found at *post mortem* examinations. This has not been my experience, for in a comparatively small material I have met with thinning twice, in one case to a very marked degree. A case of Lerche's reported this year promises to throw light on the nature of the disease, and to open up new possibilities in its treatment. A piece of banana had stuck in the patient's throat; afterwards she experienced delay in the passage of food through the upper part of the chest, and subsequently was unable to get anything into the stomach. *X* rays showed a sausage-shaped dilatation. There was not much obstruction to food at the lower end of the oesophagus, but it passed slowly through the upper part. The galvanic current was applied to the interior of the oesophagus in this region, which was undoubtedly in a state of atony. The electrode consisted of four thin steel felt-covered springs. After twenty applications there was surprising improvement, and after ten more the epicardia-cardia was stretched. Two months later the oesophagus was found, on examination, almost normal. More than a year after treatment the patient was feeling perfectly well. In this case, according to the author, the primary disturbance was atony of the upper thoracic part of the oesophagus, which delayed the passage of food and thereby irritated the epicardia-cardia to spasm.

3. *General Neurosis.*—The view that simultaneous dilatation of the oesophagus and spasm of the cardia is due to a general neurosis was advanced by Kraus as a result of his observation of a case in which after death atrophy of both vagi was found. He considers that it reconciles the two apparently antagonistic theories already described. To explain his standpoint I may again remind you that if vagal transmission is interfered with the oesophageal walls will relax, while the cardia will remain closed and obstruct the entrance to the stomach.

These facts justify one in speaking of a paralytic dilatation of the oesophagus; they also explain why after death dilatation is found, but no anatomical stenosis. On the other hand, they fail to explain the hypertrophy that exists in a large proportion of cases. If the musculature of the oesophageal walls is paralysed in accordance with Kraus's theory, it will not undergo hypertrophy.

Kraus does not assert that atrophy of the vagi is always present in oesophageal dilatation—in fact, he refers to cases in which these nerves and their oesophageal branches were demonstrated to be normal; he desires rather to lay weight on the importance of taking the vagi and their connexions into consideration.

4. *Neurosis of the Autonomous Nervous System.*—The action of the autonomous nervous system in maintaining tonic contraction of the cardia has just been referred to, and it is easily conceivable that the tonus of this system may be increased so that normal impulses conveyed by the vagi are too weak to inhibit, and cardiospasm results.

In Kaufmann's case, which was the first of the kind reported, of the four nerves which receive sympathetic supply and which react similarly pharmacologically—namely, the vagus, oculomotor, chorda tympani, and pelvic (erigens)—three were affected.

Last year Heyrovsky reported a case of this nature. The patient was an exceedingly nervous woman who had increased tendon reflexes, absence of corneal and pharyngeal reflexes, and symptoms of heightened tonus of the autonomous nervous system, as indicated by cardiospasm, dermography, abnormally profuse sweating, eosinophilia, hyperacidity, and marked sensitiveness to pilocarpin. There was no slowing of the pulse. A beneficial effect from atropin could not positively be shown, as other therapeutic measures were employed.

Further evidence pointing to the nervous origin of cardiospasm is afforded by the nature of the exciting causes and the temperament of some of the patients. A number of cases date from an injury received—for example, a blow on the abdomen or chest, a fall on the back, lifting heavy weights; others are traceable to the violent vomiting of pregnancy or sea-sickness. Such causes are capable of producing local lesions involving centres independent of the central of the nervous system.

You will recall the fact that after the entrance of food into the stomach the cardia is reclosed by the acidity of the gastric juice. It is easily conceivable that hyperacidity may give rise to undue contraction of the cardia or interfere with its normal dilatation. Hyperchlorhydria is probably, therefore, a potent exciting cause of cardiospasm. The onset of the disease has been occasionally traced to psychical disturbances, and its course has been found to be influenced by emotions, moods, exertion, etc. In such cases the patient was frequently neurasthenic or hysterical. The bolting of imperfectly masticated or large pieces of food is supposed to be capable of producing oesophagitis and consequent spasm and atony.

5. *Anatomical Abnormalities.*—Having disposed of the innervation theories of cardiospasm, I shall now very briefly refer to certain other explanations that have been advanced to account for dilatation at the lower end of the oesophagus.

Luschka has described dilatations limited to a small part of the oesophagus above and below the diaphragm, which he has termed respectively the fore-stomach and cardiac antrum. The fore-stomach has been proved by Zenker to be congenital, and Fleiner has seen it in the living and dead subject as a dilatation resembling a sac or diverticulum. The condition may long remain latent until for some reason its function is disturbed. In these cases, however, the dilatation or fore-stomach is circumscribed and is quite distinct from the diffuse dilatation we have been considering. The former may therefore be regarded as a rare variety. The congenital origin of this small class throws no light on the etiology of the typical diffuse dilatations ordinarily met with. Congenital narrowing of the cardia has been offered as another explanation of diffuse dilatations. The circumference of the normal cardia is stated to be 6.9, 5, and 5.5 cm. by v. Hacker, Leichtenstern, and Stierlin respectively. Stierlin reports

a case of great dilatation in which the cardia was only 2.8 cm. and refers to other similar cases.

In connexion with congenital abnormalities the investigations of Mehnert may be mentioned. This observer found thirteen physiological narrowings of the oesophagus: the spindle-shaped segment between each two he termed an enteromere. The fore-stomach corresponds to Mehnert's eleventh oesophageal enteromere: while the narrowing of the cardia just referred to might be attributed to the persistence of the thirteenth physiological constriction. The fact that other developmental defects were present in some of the cases supports the view of a congenital origin.

Conclusions.

In conclusion, I venture to express the following opinions: Under the term "cardiospasm" several distinct pathological conditions have been included. Those due to developmental or anatomical abnormalities should allow of differentiation and correct classification. The existence of primary cardiospasm is undeniable. Cardiospasm alone accounts for the *ante-mortem* and *post-mortem* conditions found in some cases. In others it affords an insufficient explanation, and further investigation is demanded. The disease is sometimes located in the extrinsic nervous system, as manifested by degenerative changes in the vagus or its oesophageal branches. The most frequent seat of the lesion is probably the intrinsic nervous system, and the disturbing cause an injury, hyperacidity, or other influence exercising a harmful action on the ganglia. A fuller knowledge of the physiology of the autonomous nervous system is likely to assist in elucidating the pathology of cardiospasm.

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DISCUSSION.

Dr. WILLIAM HILL (London) gave a lantern demonstration of some seventy slides illustrative of oesophageal stenosis. In the course of it he said that pulsion diverticula, or pressure pouches, were purely peri-oesophageal, and caused dysphagia by extrinsic pressure on the cervical oesophagus. The dissections of Keith, Killian, and others showed that they were localized ectasia of the post-cricoidal pharynx, the mucous, submucous, and fibrous coats forming the wall of the hernia. The diverticulum passed out between the oblique and fundiform fibres of the crico-pharyngeus (inferior constrictor) muscle. The mouth of the diverticulum could always be demonstrated both by endoscopy and radioscopy (with bismuth paste) on the posterior wall of the post-cricoidal pharynx. Killian was wrong in describing these diverticula as arising immediately above the mouth of the gullet as the fundiform fibres of the crico-pharyngeus intervene, and he was equally wrong in describing this fundiform bundle of fibres as the sphincter of the mouth of the oesophagus, as it was of course a part of the pharyngeal musculature and sphincters the deep pharynx. These diverticula were purely pharyngeal in origin and could not be correctly described as oesophageal or as pharyngo-oesophageal as is often done. The mouth of the gullet was situated at the lower border of the crico-pharyngeus (inferior constrictor) muscle and had no specialized sphincter development of its own either at its mouth or at its termination. The term "cardiospasm" commonly applied to phreno-cardiac stenosis was usually, if not invariably, inaccurate. In most of these cases the lesion was a true anatomic stricture, of the nature either of cicatricial contraction or else of hypertrophic stenosis or of soft inflammatory tumefaction; exceptionally the passage of food might possibly be interfered with merely by kinking or else by a want of co-ordinate active opening up of the phreno-cardiac gullet during swallowing, which might be accounted for by atony of the longitudinal musculature of the gullet and the radiating fibres of the stomach near the cardia. The speaker had failed to find evidence of primary spasm, whether paroxysmal or continuous, in the region of the cardia; and the assumption that long-continued primary spasm could give rise secondarily to a permanent anatomic spastic contracture at the cardia was entirely unproved. Deglutitory cramp of a short paroxysmal character and always more or less painful was often observed as a secondary symptom in acute and chronic gullet stricture and also when large foreign bodies were impacted. But was there any convincing evidence that deglutitory cramp was ever primary anywhere in the gullet, or that it produced secondary functional stricture of the cardia? The term "cardiospasm" had been in the past loosely applied to undoubted anatomic—that is, organic—narrowings of the lumen in the region of the cardia, as well as to almost every case of phreno-cardiac dysphagia of uninvestigated or unknown etiology and pathology. The time had come for the adoption of a more accurate nomenclature.

Dr. WALKER DOWNIE (Glasgow) held that primary spasm of the cardiac orifice did as a matter of fact occur. This opinion was based on a case which he had seen some years ago in consultation with a physician in the Western Infirmary of Glasgow. The patient was a man over 60 years, who had much difficulty in swallowing, and most of the food swallowed returned after an interval, and he was losing flesh steadily. A large bougie could be passed readily down to the cardiac orifice of the stomach, beyond which it or any smaller one could not be passed. Some time later the patient died. At the *post-mortem* examination, performed by the pathologist of the hospital, the oesophagus was found to be thoroughly healthy, with no malignant disease of its walls nor in any of the neighbouring structures, and the conclusion then formed was that the difficulty was due solely to spasm.

The PRESIDENT agreed with Mr. Waggett that the blind passage of a bougie should not be practised, but did not consider there were a sufficient number of men able to pass the Killian tube, and that under these circumstances the passage of a bougie was the lesser evil.

Dr. HARRIS P. MOSHER (Boston, U.S.A.) said the *x*-ray plate was often misleading in the diagnosis of oesophageal pouch. He had had two cases where the oesophagoscope proved an apparently typical plate to be wrong. The use of a widely open tubular speculum made it possible to learn the condition of the oesophagus in the cricoid region, and to dispense with the mandrin for the introduction of the tube. He preferred making examinations

under a general anaesthetic, because he was trying to get a view of anything, and wanted that view to be as large as possible. In his examinations a tube 20 mm. in transverse diameter was used, and he felt that at times even larger tubes might be employed. The larger the tube the larger the field, and the greater the field the more accurate the diagnosis which it afforded. A negative examination under cocaine meant that everything had to be done over again. Not only was a more exact diagnosis possible under a general anaesthetic, but the treatment which could be carried out was far more efficient. In the dilatation of fibrous strictures, for example, one dilatation under ether or chloroform would accomplish what it took months to secure under local anaesthesia.

Mr. Jobson Horne (London) could not accept, as of general application, the proposition that the use of the oesophageal bougie should now be condemned. The time had not arrived for regarding the oesophagoscope as fully developed or the bougie as an obsolete instrument; in fact, two of the readers of papers introducing the discussion had respectively drawn attention to the limitations of the former and the utility of the latter instrument. The oesophagoscope at present was in only a few experienced hands, and a good deal of useful work could be done still with the bougie in conjunction with the *x* rays. The physiological, functional, and malignant forms of stenosis of the gullet, he considered, might be co-ordinated, as the sites of occurrence were commonly the same in all three. In his experience foreign bodies lodged in the mouth of the oesophagus could be detected and removed as readily and with less discomfort to the patient by the indirect method under the guidance of the mirror as by the oesophagoscope. The latter undoubtedly in other cases saved a good deal of groping in the dark. Of the diseases causing stenosis of the oesophagus, syphilis, he considered, ranked second to malignant disease, but relatively it was by no means so frequently met with. Tuberculosis of the oesophagus, comparatively speaking, was rarely met with, excepting in the last stages of pulmonary phthisis. Owing to the enforced recumbent position, the ulceration occurred on the posterior wall, and the cicatrization seldom reached the stage of stenosis.

Dr. Bronner (Bradford) thought it was not always necessary or advisable to give a general anaesthetic for the use of the oesophagoscope. In many cases due to projecting teeth, a thick neck, etc., it was impossible or very painful to use the oesophagoscope. If the bougie were olive-shaped and passed with care, there was not much danger to the patient: in fact, much less danger than the use of the oesophagoscope in unskilled hands. Strictures of the upper part of the oesophagus were frequently of non-malignant nature and due to fissures of the mouth of the oesophagus.

Mr. C. W. M. Hope (Newcastle-on-Tyne) said general anaesthesia was in almost all cases not necessary when examining the oesophagus. He employed a hypodermic of morphine hydrochlorate gr. $\frac{1}{4}$, and atropine sulphate gr. $\frac{1}{150}$ half an hour before examination, and careful anaesthetization with cocaine 5 per cent. and adrenalin solution 1 in 1,000, of the mouth, pharynx, and arytenoids. Except in a few cases of post-cricoidal growth, he found this method exceptionally satisfactory.

Sir StClair Thomson (London) could not support Mr. Waggett's plea for the abolition of the bougie, for in many years' practice he had never had any anxiety from the careful use of the solid bougie, and yet in his early days of oesophagoscopy he had had many moments of anxiety. Fortunately he had never had nor been associated with a fatal accident from direct examination, but one of his cases had alarming emphysema of the neck with damage to the cricoid cartilage. Therefore he thought that teachers should insist on the fact that oesophagoscopy was a much more delicate and dangerous proceeding than direct tracheoscopy. The seniors knew this better than others, for they had not had any one to teach them the manipulations in which they were now able to instruct others. Of course, once acquired, oesophagoscopy was a safe and sound procedure, and he should abolish the use of blind bougieing. But he would much rather have a bougie passed down his own gullet by a general practitioner of experience than allow a budding laryngologist to pass a Killian tube on him. Hence he agreed with the President in not being able to support Mr. Waggett's plea for the abolition of the gum-elastic bougie.

Mr. Herbert Tilley (London) thought that, while the mandrin was quite unnecessary in the hands of the practical oesophagoscopist, it would not be wise to deprive the beginner of its aid in enabling him easily to enter the upper regions of the gullet. To pass the metal tube into this region required considerable practice, and only by this could the beginner learn the amount of pressure necessary to overcome the resistance in the cricoid region: in his days of inexperience the mandrin would probably be safer than the metal tube. The speaker also thought that the olive-headed bougie was not entirely useless or to be discarded, for nothing so effectually cured cases of functional dysphagia as the passage of such an instrument. He was still inclined to regard the condition as a functional spasm of the musculature in the upper gullet; if not, how would Dr. Hill explain the sense of resistance and its sudden giving way to the bougie with complete cure of the dysphagia? He had had many opportunities of using radium in large doses and properly screened for malignant stricture of the gullet, but at the Radium Institute they had never seen a cure of any form of squamous epithelioma affecting the mucous membrane of any part of the alimentary tract, although very great relief to dysphagia followed the dilatation of, and insertion of the radium capsules into, the malignant stricture. Some of this relief was probably due to mechanical dilatation of the stricture. He sympathized with Dr. Mosher's view as to the value of general anaesthesia in the first examination of many cases of gullet stricture.

Mr. Waggett, in his reply, said he wished to emphasize the following points: (1) The blind passage of the bougie left the surgeon in ignorance as to the nature of the obstruction. (2) It was therefore desirable that at least one surgeon in every hospital should be able to make a genuine diagnosis, and be able to pass the oesophagoscope with safety through the healthy portions of the gullet. (3) It was unnecessary for diagnostic purposes to pass the instrument into and past the diseased area, and it should not be difficult to train students in this country, as was done in other countries, to pass the instrument with perfect safety, under direct visual control, to within a quarter of an inch of the lesion.

Dr. Brown Kelly, in his reply, maintained that the obstruction at the cardia in so-called cardiospasm was due to spasm and not to paresis. This he had showed was caused either by abolition and inhibition of the cardia tonus or by the action of the autonomous nervous system in overpowering the dilator fibres of the vagus. In many cases of cardiospasm there was epigastric pain, but this was not essential. In his opinion cardiospasm did not imply violent contraction, but rather a condition approaching one of non-relaxation.

Dr. Hill, in reply, said that, according to observations with his deep pharyngoscope, Professor Kahler and others were wrong in describing the upper view of the closed mouth of the oesophagus as appearing as a slit. The partially closed post-cricoidal pharynx presented a transverse slit-like lumen during the passage of the endoscope, but the true closed mouth of the gullet appeared as a dimpled pucker or rosette. Professor Kahler's unfavourable impression gained by observing the results of Exner's applications of radium to malignant strictures he could well understand, as Exner's technique was different to that of Dominici, which had been carried out by himself (Dr. Hill) in conjunction with Dr. Finzi. Exner used radium salts enclosed in glass tubes, whereas their radium salts were enclosed in platinum screens of 2 mm. thickness, with an outer rubber covering 1 mm. thick. Moreover, there were other refinements of technique, so that the radium tube remained accurately in the cancerous area, so that no cauterization took place, as was probable, at all events, in Exner's earlier applications. Dr. Brown Kelly's very interesting experiments and observations on section of the vagi seemed to him to

support very strongly his (the speaker's) views that functional phreno-cardiac dysphagia was of the nature of atony, for Dr. Kelly showed that after section of the vagi the whole thoracic gullet was actually dilated—that is, atonic and paralysed—and it could scarcely be argued that the phreno-cardiac region was presumably in a state of spasm whilst the rest of the gullet was admittedly atonic. Those who loosely used the term "spasm" in a primary sense in reference to the gullet seemed to have no idea of what they were really postulating. They made no distinction between paroxysmal deglutitory spasmodic cramp and long-continued tetanus, and they did not appear to realize that primary spasm without subjective sensations presented great difficulties. Moreover, they made no distinction between hypothetical functional spasm and an alleged post-spasmodic anatomic contracture. Dr. Downie's 24 cases, recorded as "spasmodic," out of a total of no less than 100 cases of alleged gullet stricture, could not be accepted as unequivocal evidence, as the diagnosis had been made by the old blind and uncertain methods of investigation in most instances, and he doubted if any one of them would stand the test of expert endoscopic and radioscopic investigation, which was not extensively practised during the period when most of Dr. Downie's cases came under observation. Dr. Hill was firmly convinced that true primary functional dysphagia located in the gullet, whether paretic or spasmodic, was extremely rare and based on errors of observations and misconceptions on the anatomy and physiology of the gullet, more especially as regards the presence of sphincters. In answer to Mr. Tilley's remarks, Dr. Hill pointed out that the relief afforded by bougieing was no presumptive evidence of spasm, as that procedure would merely accentuate spasm, whereas bougieing admittedly relieved paresis by mechanical stimulation, and was the accepted treatment for the relief of soft inflammatory tumefaction, as well as for tighter anatomic strictures.

NOTES ON SOME CASES OF PAINFUL FISSURE OF THE MOUTH OF THE OESOPHAGUS.

By ADOLPH BRONNER, M.D.,

Bradford.

No part of the body has, up to a few years ago, been more neglected than the oesophagus. It was no man's land; the laryngologists did not trouble much about it; the surgeons neglected it. It is only since the introduction of the oesophagoscope that we have been able to get a more or less distinct view of the oesophagus; but even now our knowledge of its diseases is very deficient. It was Killian who in 1908 first carefully studied the upper part from an anatomical point of view. He proved that the lower fibres (fundiform plexus) of the cricoid-pharyngeal (lower constrictor) muscle, form a ring round the posterior and upper part of the oesophagus, which he calls "the lip of the mouth." He proved and demonstrated that this mouth is, in a way, similar to the cardiac orifice, that it can be opened or closed, and is generally in a state of tonic contraction. This is the spot where, on passing a bougie, we often find a resistance, more or less marked, where foreign bodies frequently lodge, where we find the opening of the oesophageal pouch; it is often the seat of cancer, and is naturally the spot where we should expect a traumatic lesion, from the passing of hard or irritating food. There is no doubt that we can get spasm (reflex or direct) of the mouth of the oesophagus, just as we get spasm of the cardiac orifice, generally of a more or less painful nature. We have all of us frequently seen cases of painful spasm of this region, which was probably due to a local ulcer or fissure, and which have lasted for months, even years, and have been permanently cured by the use of olive-shaped bougies. Often there was blood on the bougie, and we then suspected cancer or a syphilitic or tuberculous lesion. Of course, it was impossible to make an exact diagnosis before the introduction of the oesophagoscope.

I had noticed that the majority of these cases which came under my notice were women of 30 to 50 years of age, and that they often also had dry catarrh of the pharynx. I have only been able to follow up two cases, which had been carefully and frequently examined with the oesophagoscope. Some patients refused to be so examined, or at least more than once. Some are most difficult to examine.

CASE I.—Mrs. P., aged 30, saw me in August, 1911. She has had difficulty in swallowing for three or four years, which varies very much. There is not always much pain, but it is sometimes very severe, and generally a feeling of choking. Liquids can be taken more easily than solids. She has a dry feeling in the throat and nose, and has been hoarse for two or three months at a time. She looks ill and feeble, due, as she says, to being unable to take enough food. There was slight dry catarrh of the nose, pharynx, and larynx, with a few crusts. On examination with the oesophagoscope, I could distinctly see a small ulcer (fissure) partly covered with granulations. Ten per cent. argent. nit. was applied. I could not pass the tube, but succeeded in passing a fairly large olive-shaped bougie. There was a little blood on the bougie. I passed a larger bougie two or three times, and gave her a prescription for a menthol spray and iodine paint. In November I saw the patient again. She had been able to swallow very much better, but sometimes solids would not pass. I again examined her and found that the ulcer was distinctly smaller, and the bougie could be passed with greater ease. On December 24th the ulcer was only just visible. She can now swallow fairly well. She complains of the accumulation of wind "below the windpipe"—a common symptom, which is evidently due to spasm of the mouth of the oesophagus. I saw her again on July 22nd, 1912. She is perfectly well and can swallow anything. She refused to be examined as she says she is cured, and has been for some months. There is still some dry catarrh of the pharynx.

CASE II.—Mrs. H., aged 55, saw me at the hospital in December, 1908. She had not been able to swallow well for three years; often had much pain, which varied. A small ulcer was seen at the mouth of the oesophagus. Bougies were passed six times, and the dysphagia disappeared. On April 1st, 1909, the oesophagoscope was passed, there was no fissure visible. The patient can now swallow perfectly well. She called again, February, 1912. Has had dysphagia for two or three months. A small ulcer was again visible. Bougies were passed three times. There was slight atrophic catarrh of the pharynx. March 1st, no fissure whatever. July 22nd, she writes: "I think I shall have to come to see you as I cannot swallow so well again. I have not much pain, but my throat dries up and makes me feel queer."

In my opinion these have been cases of fissure of the mouth of the oesophagus similar to those recorded cases of fissure of the cardiac orifice. Possibly the dry catarrh of the hypopharynx may have been a predisposing cause, or possibly there may have been a small foreign body embedded in the mouth of the oesophagus. The following cases are evidently of a similar nature.

CASE III.—Mary W., aged 55, had lupus of the nose in 1909, which was scraped and cured. In January, 1911, she complained of dysphagia. A small ulcer and growth were seen on the lip; too small to remove. Bougie was passed. June: Can swallow much better. July, 1911: Perfectly well; no growth. She writes July 22nd, 1912: "We are pleased to report favourably. Mrs. W. is quite well and can swallow without pain both liquids and solids.

CASE IV.—Mrs. A. was seen in June, 1907. Not able to swallow well for two or three years. Refused to have the oesophagoscope passed, as the throat was very painful. Large bougie was passed with difficulty. Blood on the bougie. June 13th: Much better. June 27th: Perfectly well. Has not answered my letter of inquiry of July 10th.

CASE V.—Alice T., aged 50, was seen in September, 1911. Dysphagia three or four months, slight atrophic pharyngitis. The interarytenoid fold was slightly thickened. Lungs normal. The mucous membrane round the mouth of the oesophagus thickened and bleeds. No ulcer visible, but the patient was very difficult to examine. Bougies passed. October 5th: Large bougies passed and examined with the oesophagoscope. Normal.

CASE VI.—Florence W., aged 28. Seen May, 1911. Dysphagia for several years, and dry throat. General thickening of the mucous membrane round the mouth of the oesophagus, and small ulcer. Large bougie passed. May 18th: Much better.

CASE VII.—Walter S., aged 43. Had dysphagia for six months and dry throat. Well-marked atrophic pharyngitis. Could not pass oesophagoscope as teeth were too prominent. Difficulty in passing bougie. Blood on bougie. November 12th: Still dysphagia. Bougies were passed a few times. November 29th: Very much better.

I have brought these cases before you in the hope of eliciting the opinion of the members on this very important subject. Of course I know perfectly well that incipient cancer or a syphilitic or tuberculous lesion may give rise to similar symptoms. I know that many feel very strongly, that non-malignant lesions of the mouth are very rare.

Personally I think that non-malignant ulcers and

fissures of the mouth of the oesophagus are not uncommon, and that they are possibly in some way connected with dry catarrh of the pharynx.

SYPHILIS AS A CAUSE OF OESOPHAGEAL STENOSIS.

By Walker Downie, M.B., F.R.F.P.S.Glas.

In this very short communication I wish to draw the attention of the members of this Section to the subject of syphilis as a cause of stricture of the gullet. Speaking offhand, one would say there is no reason why syphilis should not attack the gullet in common with other organs, nor is there any apparent reason why a stenosis of the oesophagus should not follow a specific inflammatory or ulcerative lesion of its walls. As a cause of stenosis of the gullet syphilis appears, however, to be systematically ignored. In my experience syphilis is rarely considered as a probable cause during the investigation of cases of oesophageal trouble, and many practitioners, I find, believe that the gullet is never the seat of a syphilitic lesion.

Dr. John M'Crae, in Osler's *System of Medicine*, says that "many authors deny that syphilis of the oesophagus occurs: this can scarcely be true, but the condition is certainly very rare. The cases described," he says, "rest mainly upon therapeutic evidence, namely, that after antisyphilitic treatment the apparent stenosis of the oesophagus had disappeared."

In my opinion there is no doubt about syphilis being the cause of stenosis of the gullet in a fair proportion of cases; and further, I think that that structure is affected by syphilis much more frequently than is generally supposed. I have long held this opinion, and have had the opportunity of demonstrating cases of this nature on several occasions. While the diagnosis may be verified by therapeutic means, it rests largely, in my opinion, on other grounds.

Recently I published a paper under the title of "Remarks based on the Analysis of 100 Consecutive Cases of Stricture of the Gullet." In that series 11 cases were due, in my opinion, to a lesion caused by syphilis. Syphilis of the gullet, in my experience, is chiefly met with in women. Of the 11 cases which occurred amongst the 100 cases just referred to 9 were in women, and as there were 63 women in the 100 cases, we have syphilis as the determining cause of the stenosis in a fraction over 14 per cent. A married woman who has had the misfortune to be syphilized by her husband, has neither knowledge nor suspicion of the nature of the illness, and too often she considers it to be a concomitant part of the married state. For these reasons she does not seek treatment until her system is deeply saturated with the disease, and her health has become seriously impaired.

The absence of appropriate treatment in the early stages I believe to be one of the chief reasons explanatory of the fact that cases of syphilitic stenosis of the gullet occur so much more frequently in women than in men.

The patient with syphilitic oesophageal stricture is anaemic, thin, and feeble, and the pale skin has usually a tinge of yellow. Frequently there are fissures at the angles of the mouth, which she will probably tell you have been there for months or years, and these fissures are usually accompanied by a chronic superficial glossitis, with recurring attacks of sore mouth, indicative of increased activity at intervals in the inflammatory process as it affects the tongue. Of course, neither fissures at the angles of the mouth, nor a chronic superficial glossitis, are necessarily syphilitic lesions, but when these are present the possibility of syphilis being the cause should be carefully investigated.

In these cases there is the further story of difficulty in swallowing, sometimes painful, though usually devoid of pain, and this difficulty is accompanied by a slow, but steadily progressive, emaciation, and later by considerable [illegible]. On further inquiry you may get a history of the presence in the early period of her illness of the signs indicative of the secondary stage of syphilis, with, in many cases, a subsequent history of [illegible], etc. There may be scars in the upper respiratory tract which mark the site of some healed tertiary lesion. But in my experience scars in the fauces and pharynx, and other structural losses in the palate, fauces, pharynx, or in the nose, caused by syphilis, are but rarely met with in cases where stenosis of the gullet is present. The diagnosis may be further confirmed in some instances by employing Wassermann's method of testing the blood for syphilis. This should be done before any form of antisyphilitic treatment is employed, for after treatment has been pursued for some time the result of such an examination may be negative, and the conclusions based upon this finding may be misleading.

Direct examination by means of the oesophagoscope, while it enables one to make a careful inspection of the affected area and to obtain information regarding the condition of the mucous membrane in the neighbourhood of the stricture, is not of any great service in the differentiation between the stricture resulting from syphilis and a fibrous or cicatricial stricture from any other cause.

In the early stage we may have, as Dr. Kahler has said, a deep lividity of a limited area, and there may be a yellowish coloration of the mouth surrounding the dull red area.

As illustrative of my contention that syphilis is a cause of serious stricture of the gullet, and that much can be done to remove the stenosis which threatens starvation, I shall quote particulars of one case which is fairly typical of most of the other cases I have had under my care.

The lady, 33 years of age, complained of difficulty in swallowing. This she had suffered from for between four and five years, during which time she had never been free from pain during the act of swallowing, and she had difficulty in the taking of fluids as well as of solids. Her food had consisted of soups and milk preparations, and she could not remember when she had last swallowed any flesh meat, it was so long ago. She had been married for nine years, and her first pregnancy had terminated in a miscarriage, due, she had thought, to the state of her health, although until after her marriage she had not known what ill health was.

She was anaemic in appearance, with a tinge of yellow in the skin, and she weighed 7 st. 2 lb. only when fully dressed. She had fissures at the angles of her mouth, with a glazed and tender tongue, indicating a superficial glossitis.

On examining the gullet with a bougie, a stricture was discovered at a distance of 7¾ in. from the upper gum, through which, with gentle pressure, a No. 7 bougie was passed. Treatment was prescribed, under which she improved satisfactorily. Her home was at a considerable distance from Glasgow, and I did not hear of her until three years had passed, when she again called on me. She was then in an enfeebled, emaciated condition. She had been unable to continue treatment in the interval as advised, and the difficulty in swallowing had returned, and was slowly increasing.

On examining the gullet a No. 3 oesophageal bougie was the largest size which could be passed through the strictured area.

She was placed in a nursing home, where the treatment consisted of vigorous inunction with mercurial ointment, the administration of potassium iodide, combined with pepsin, regular and progressive dilatation of the stricture by the passage of bougies, and feeding by stomach-tube and otherwise.

At the end of three months she gained 1 st. 12 lb. in weight, and in general appearance she was marvellously improved. And now after a lapse of close on three years she is exceedingly comfortable and in good health.

The importance of recognizing syphilis as a cause of oesophageal stricture cannot be exaggerated, for the majority of the cases due to this cause are amenable to treatment, and most of them can be cured; and this fact is my excuse, if excuse be necessary, for bringing the subject of this paper before you.

DISCUSSION.

Dr. William Hill (London) was not convinced that Dr. Downie's claim of having observed 11 cases of syphilitic contractions of the gullet out of a total of 102 patients diagnosed as oesophageal stricture could be accepted as a conclusive record. Most of the cases came under observation many years ago, when Dr. Downie, in common with others in this country, had not realized the practicability of Mikulicz's method of oesophagoscopy. In over 180 cases of gullet disease, excluding foreign bodies, examined by endoscopy and radioscopy, he (Dr. Hill) had only observed one undoubted case of syphilis—a gumma on the deep pharynx involving the mouth of the gullet. Guisez had only seen one syphilitic stricture in over 800 gullet cases, and unequivocal records of such instances, verified either *post mortem* or by modern methods, were extremely scanty. He hoped Dr. Downie

would see his way to demonstrate the condition with the œsophagoscope in one or two patients before one of the laryngological societies at an early date. It would be interesting to know in how many of these alleged syphilitic strictures the lesion was behind the cricoid plate and therefore not, strictly speaking, œsophageal.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ON THE PRESENCE OF POSTERIOR NUCLEATED PARASITES IN A STRAIN OF *T. BRUCEI*.

(From the Runcorn Research Laboratories.)

WHILE carrying out some experiments on the degenerative changes undergone by trypanosomes in the cadaver of the animal host, it was observed that in the blood of a rat which had been inoculated for the purposes of the experiments with the strain of *T. brucei* (Uganda), some of the short, stumpy forms of parasite presented a position of the nucleus posterior to the centre. The strain employed was obtained from Sir David Bruce in September, 1910. In consequence of this observation the films taken from the laboratory animals employed for carrying on this strain and for experimental purposes during the period that the



Figs. 1 and 2.—Long forms.
Figs. 4 and 5.—Short, stumpy forms.
Fig. 3.—Form with nucleus slightly posterior to centre.
Figs. 6, 7, 8, and 9.—Forms with nucleus posterior.

strain has been kept going in the laboratory were examined carefully and searched for parasites presenting this peculiarity in the position of the nucleus. As a result of this examination it was found that not only in rats, but also in rabbits and guinea-pigs, such forms appeared, usually in small numbers. The figure shows to what extent the nucleus is displaced posteriorly in various instances in films from the blood of different animals. In no case so far has the nucleus been observed in these preparations to lie actually posterior to the blepharoplast, but in many instances it approaches very closely to the blepharoplast.

Liverpool. B. BLACKLOCK, M.D.

LARGE DOSES OF CALOMEL IN DIARRHŒA.

FOR over twenty-five years I have observed the results of the treatment of diarrhœa by means of the administration of calomel, and have found that in every case in which the remedy was promptly and efficiently employed the result has been recovery. In this complaint large doses of calomel are tolerated without ill effect, and I have found that the drug is sufficient for the purpose without opium. It is best exhibited as a powder, because in the form of pills or tablets it is less satisfactory. Infants have borne the drug in much larger doses in proportion than adults. For a long time I had considerable difficulty in the administration and retention of the powder in cases in which vomiting was a complication. I discovered that cerium oxalate, combined in equal quantities with the calomel, at once overcame the vomiting and secured the retention of the drug. Mercury perchloride suggested itself owing to its greater convenience of administration than the powders, but it did not produce the same satisfactory result.

In mild cases of diarrhœa I have found small doses of calomel to be sufficient, but in serious and obstinate attacks I have been compelled to the conclusion that larger doses are indicated—so much so that I regard it as an aphorism that if calomel fails to cure diarrhœa it is because the dose is insufficient. I have tested the use of calomel in heroic doses, and in this complaint have never observed any untoward effects. For adults I prescribe 5 grains, together with 5 grains of cerium oxalate, to be taken every two hours, and find that six of the powders, and sometimes less, are sufficient to control the attack. To children, of no matter how tender an age, I prescribe 2 grains of calomel with 2 grains of cerium oxalate every two hours until the symptoms subside.*

I have also tried calomel in the diarrhœa of typhoid fever; 2 grains night and morning give good results. Though I cannot say that calomel will cure typhoid, if given in the early stages it greatly mitigates it. One precaution is very necessary—never to give it if the bowels be confined, as they often are. Magnesium sulphate combined with potassium bicarbonate should then first be given, or salivation is almost certain to occur. There is usually great diffidence in giving purgatives in typhoid fever, but I have never seen any harm result from this combination in moderate doses, and continued until the bowels are relaxed; it should on no account be given in one large dose. I have never known a case to end fatally that had been submitted to this treatment in the early stage of the disease.

Calomel is also of great value in the wasting condition of children from gastro-enteritis due to bad feeding, but only where tubercle is absent. One grain of calomel given night and morning, together with proper feeding, has been the means of restoring many infants where other modes of treatment have failed, including hydrarg. c. creta, which I have found absolutely useless.

It is well known that calomel disinfects the alimentary tract, but, in addition to this, it is supposed to increase the flow of bile from the liver. I believe, after a long and careful investigation, that the flow of bile following the use of mercury does not depend upon increased action of the hepatic cells, but that the drug has the power of removing the mucus which has obstructed the biliary passages, and thus permits the flow of bile which has accumulated in the liver itself. It has often been told me, both of adults and children, that 1 grain of calomel taken at bedtime has produced sleep—a report which has led me to speculate as to whether the liver plays any physiological part in the production of sleep.

Bradford, Yorks. W. E. FELLOWES, L.R.C.P. and S.Edin.

EXCESSIVE INGESTION OF SALT PRODUCING OEDEMA.

DR. BAIN'S memorandum in the BRITISH MEDICAL JOURNAL of October 5th, 1912, page 880, interested me very much. I am indebted to my friend Dr. Ackerley of Llandrindod for having first forcibly called my attention to the subject of excessive salt eating. I have had a case of exophthalmic goitre under my care for over a year, and on the whole she has done well under treatment by means of continuous counter-irritation (Lebensweecker method). She, however, suffered from extensive oedema. I showed her at a meeting of a medical society, and the members were inclined to attribute it to cardiac weakness; nevertheless it was acknowledged that oedema was often seen in exophthalmic goitre quite apart from heart or kidney disease. No one suggested salt-eating as a cause. A short time ago the patient's sister told me she ate large quantities of salt. I asked her to stop this, and

* Messrs. Hough, Hoseason and Co., of Manchester, prepared the powders in the form of tablets, which are readily dispensed and easily crushed into powder.

since then the oedema has greatly lessened. Patients who are very fond of highly salted food often refuse to give it up. I know of several such who have puffy eyelids and slight oedema of the feet, especially at the end of the day.

Bournemouth. W. J. Middleton.

Reports of Societies.

MANCHESTER MEDICAL SOCIETY.

Wednesday, October 2nd, 1912.

Dr. E. S. Reynolds, President, in the Chair.

Classification of Dysmenorrhoea.

Dr. W. E. Fothergill (Manchester) submitted a way of explaining and arranging the varieties of dysmenorrhoea, which, he said, occurred (*a*) as a complaint of healthy women, and (*b*) as a symptom of various abnormal conditions. Women whose reproductive life was perfectly normal could have (1) the sharp pain known as spasmodic dysmenorrhoea, (2) the dull, aching pain known as congestive dysmenorrhoea, or (3), as was often the case, a mixture of the two. Uterine contractions went on throughout reproductive life, but were most active during pregnancy, during parturition, just after parturition, and during menstruation. Painful contractions during menstruation might well be called "menstrual pains," and regarded as not less compatible with perfect health than "labour pains" and "after-pains." Pelvic congestion was a normal feature of menstruation. If sufficiently pronounced, it was always associated with pain; and in many women produced it without any departure from health. In spasmodic dysmenorrhoea there were two factors—the violence of the uterine contractions and the sensitiveness to pain of the nervous system. In congestive dysmenorrhoea there were also two factors—the degree of pelvic congestion and the sensitiveness of the nervous system. Thus one factor was common to the two conditions, and this explained the fact that many healthy women suffered from a mixture of spasmodic and congestive dysmenorrhoea. For the woman whose brain received into consciousness menstrual contractions in the form of "menstrual pains" would also recognize menstrual congestion as pain. Persons specially sensitive to pain were by no means to be confused with neurotics. The latter complained every day of their lives, while the former only complained when in pain—as, for instance, during menstruation. As to the treatment of spasmodic dysmenorrhoea by dilatation of the cervix, the child's head was the best dilator, and there was no use in dilating the cervix for dysmenorrhoea in parous women. This treatment was also quite useless in cases of pure congestive dysmenorrhoea. As a symptom of abnormal pelvic conditions, both spasmodic and congestive dysmenorrhoea were common. This symptom was not much use from the point of view of the diagnostician; its presence had little bearing upon the treatment of the causal condition. It must be relieved by the usual analgesics, as must dysmenorrhoea in healthy subjects.

Lacrymation.

Mr. Bradburne, in a paper on lacrymation, asked if the source of stimulation in eyestrain could not be found in the nature of the aqueous fluid, and referred to the work of Pfeffer and Albricht on the toxicity of urine in cases of *petit mal* and chorea. He closed with a warning against the use of probes in epiphora, and quoted Hirschberg as saying, "These methods never do what they are intended; they only demonstrate what sick people will stand and what the sick body will stand in the way of ill-treatment."

Slow Pulse.

Dr. Charles Melland recorded three cases of slow pulse, illustrated by polygraph tracings, the analysis of which showed that in each case the nature and cause of the slow pulse were different. Only one of the cases (a young man aged 22 with a perfectly healthy heart) was a true bradycardia, in which all the chambers were beating slowly. His pulse was 40 per minute, and he had a well-marked "a" wave, as in other cases of sinus bradycardia. A second case, with a rate of 36, was one of incomplete heart-block, with the ventricles beating only half the rate of the auricles. This was in an elderly man with aortic disease and a history of syphilis, but with none of the syncopal attacks of the complete Stokes-Adams syndrome. The third was a patient with ulcerativa endocarditis, with a pulse of 45, whose tracings showed a heart-rate of 90, every alternate beat being a regularly recurring extrasystole, whose impulse could not be felt at the wrist.

ROYAL SOCIETY OF MEDICINE.

Surgical Section.

Tuesday, October 8th, 1912.

Mr. G. H. Makins, President, in the Chair.

Injury of the Semilunar Cartilages.

Mr. A. J. Walton, in a paper on injury of the semilunar cartilages, said this injury occurred when the knee was in a position of full extension, not in the position of semiflexion and eversion as usually described. The two semilunar cartilages represented the remains of an interarticular cartilage, the central perforation of which had increased in size until only a circumferential band was left. The under surface of the femur was flat, so the internal and external lateral ligaments were tense in full extension of the knee. The posterior crucial ligament was attached further forwards on the femur than usually described, so the posterior as well as the anterior crucial ligament became tense in full extension. The crucial ligaments formed a couple which kept the joint surfaces tightly together, especially on the inner side, during the movement from flexion to extension. At the end of extension the femur rotated on the tibia and the anterior end of the internal semilunar cartilage passed over the edge of the tibia. During sudden extension the anterior part was liable to be caught. The anterior end of the external passed forwards on to the non-articular area of the tibia, and so escaped injury. The speaker demonstrated his theory by a series of diagrams and dissected joints. Mr. Albert M. Martin said that from a personal experience of 449 cases he was sure that the joint was in a position of semiflexion. The anterior and posterior crucial ligaments were relaxed and the joint surfaces separated; this allowed lateral mobility of the knee. The internal rather than the external semilunar cartilage was caught, as the accident was an inward twist. The percentages in his cases was 92 to 8: 282 of his cases occurred in miners. The narrow places in which they worked precluded full extension of the knee. A large number of his cases occurred in football players, who were liable to twist their knees whilst dodging, the knees being semiflexed, and the feet fixed in the ground by the leather studs whilst the body weight went on. Some 95.5 of his cases were definite splits or tears; it was rare for the whole cartilage to be detached. Subsequent attacks were due to very slight causes. After thirty-six hours in bed, through a transverse incision, the cartilage was removed. He used no splints, and allowed the knee to be moved as soon as the patients could bear it. They were discharged on the tenth day. Mr. McAdam Eccles agreed with Mr. Martin as to the position of the joint at the time of the accident. The weight of the body came on the internal condyle accompanied by an inward twist. The cartilage was nipped by the weight of the body falling on the internal condyle with the knee twisted inwards. For the first dislocation he advised the application of a plaster for one month, followed by massage to the joint and muscles. For subsequent attacks he removed the cartilage through a curved incision. Mr. Berry thought that to obtain a good result the operation should be done rapidly. It should be completed in six minutes.

Clinical Section.

At a meeting on October 11th, Sir William Osler, Bart., President, in the chair, the following were among the exhibits: Mr. H. Morriston Davies: A case in which *Arterio-venous anastomosis* had been performed after gangrene due to syphilitic endarteritis in a man aged 47. In June, 1911, the middle toe of his left foot had been amputated for gangrene, but the wound failed to heal. Fresh gangrenous patches developed, the foot was cold and

painful, and there was some purple discoloration. For this an arterio-venous anastomosis was done in Hunter's canal in August, 1911, the proximal end of the superficial femoral artery being joined to the peripheral end of the femoral vein and the proximal end of the vein and distal end of the artery ligatured. When shown, fourteen months after, there was no pain, discoloration, or oedema. Dr. A. E. Gow (for Dr. W. P. Herringham): An *Unusual rash* in two brothers aged 5 and 2 respectively. The rash first appeared when the children were only a few months old. First a papule appeared, then a black crust formed in the centre, next a circular crateriform ulcer developed, and finally, in about two or three weeks, the lesion healed, leaving a scar like a vaccination mark. There was a fusiform swelling of many of the interphalangeal joints of the fingers. The lesion was possibly a tuberculide. The President: A girl, aged 20, showing *Circulatory disturbance with cervical rib*. After using the muscle of the right hand for a few minutes the skin of the arm reddened, the arm swelled, the right radial pulse became smaller, the blood pressure fell from 115 mm. of mercury to 90, and the veins in the neck enlarged. Later the arm became numb and useless. The President had described a group of cases to which this belonged. Dr. F. Parkes Weber: *Calcinosis* of the subcutaneous tissue in a girl aged 7. Many subcutaneous nodules, most of them smaller than a pea, were present. Some, much larger, had been formed by coalescence of smaller ones. A few had softened. Microscopical and chemical examination had shown that they consisted of phosphate and calcium carbonate. Dr. H. Batty Shaw and Mr. Percy Hopkins: A boy, aged 7, showing (*a*) double-jointedness, (*b*) dermatolysis ("elastic skin") with great friability of the skin and tendency to bruising, and (*c*) multiple subcutaneous tumours of the limbs (? fibromata or neuromata). Mr. Lawrie H. McGavin: Two cases of successful *Excision of the rectum for carcinoma* by the abdomino-perineal method. In each case a transverse colostomy had been done, and in one, a woman aged 67, most of the operation had been performed under spinal analgesia. Also, among other exhibits, an apparatus devised for exerting extension on the fragments in cases of fractures in the length of the tibia. Mr. Paul Roth: *Traumatic myositis ossificans* on the front of the thigh of a carman, aged 54, following kick by a van-horse. Dr. F. E. Batten: A man, aged 43, showing *Tremor* of all four limbs. It was present during rest, but increased by movement and under observation, when it became very violent. He regarded it as functional

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

At a meeting on October 4th, Dr. Freeland Fergus, President, in the chair, the following were among the exhibits: Professor Robert Kennedy: (*a*) A child aged 4 years, who, when 2 months old, was operated on for a *Birth paralysis* affecting the whole of the left arm. The lesion found was a band of cicatricial tissue encircling the juncture of the fourth and fifth trunks of the brachial plexus. Function was now very largely restored. (*b*) A man aged 30, in whom a *Dislocation* of the left shoulder in December, 1911, was followed by paralysis of the arm. At the operation in April, 1912, the trunks of the brachial plexus were freed from cicatricial adhesions. Function was now practically restored, and the arm, which had been much wasted, measured only slightly less than the other. (*c*) A man aged 32, who in November, 1911, sustained a *Fracture of the vault* of the skull on the left side, followed by paralysis of the right arm. In June, 1912, a cicatrix and some spicules of bone were removed from the cerebral cortex, and within twenty-four hours power of voluntary movement was restored. (*d*) A child aged 7, who, from the age of 1 year, had had paralysis of the right leg and foot resulting from an acute *Anterior poliomyelitis*. The operation of tendon grafting performed in May, 1912, had given the child a perfectly satisfactory limb. Professor W. K. Hunter: (*a*) A woman aged 39, suffering from *Sclerodermia* with calcareous deposits in the subcutaneous tissues of the fingers. The illness began at the age of 14, with phenomena of Raynaud's disease. When 18 she had pains in the joints, and began to suffer from tightness of the skin of the fingers. Three years later nodules appeared about the finger-joints, some of which broke down, exposing calcareous material. The hands and feet, face, arms, and gluteal regions were the parts affected by the sclerodermia. Treatment by injections of fibrolysin for the past two months appeared to be doing good. (*b*) Blood films from a case of *Infantile leukaemia*. The patient, a girl aged 2½ years, died in Glasgow Royal Infirmary after an illness of about two months' duration, characterized by gastro-intestinal disturbances, anaemia, epistaxis, and marked enlargement of liver and spleen. Blood examination a few days before death showed haemoglobin 30 per cent., red blood corpuscles 1,460,000, white blood corpuscles 4,400 per c.cm. Differential leucocyte count showed 13 per cent. polynuclears, 5.5 per cent. large lymphocytes and transitionals, 81.5 per cent. small lymphocytes. Mr. G. H. Edington described 2 cases of spina bifida presenting unusual features: (1) A female infant, aged 4 months, with large cervical *Meningeal lipoma*, in the deeper part of which was felt a movable piece of bone. A skiagram confirmed this and showed defective closure of the neural arches of the second and third cervical vertebrae. There was at operation no bulging of the meninges, which were plainly seen through the gap in the bones. (2) A female, aged 4 months, with very large *Meningo-myelocele*, forming a cystic swelling over the right innominate bone. The lower limb was everted and held extended. On tapping, 18½ oz. of cerebro-spinal fluid were withdrawn, and a finger detected a gap in the right laminae of the lumbo-sacral region. Removal was followed by death within twenty-four hours. *Post-mortem* examination showed scoliosis of the lumbar spine with concavity to the right. The sacrum was displaced forwards and upwards in front of the fifth lumbar vertebra, which projected into the spinal canal. The left laminae were well developed, but the right were rudimentary. The protrusion had occurred beneath the gluteus maximus, stretching the muscle and accounting for the position of the lower limb.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

The annual meeting was held on Tuesday, October 1st, at 8 p.m. The minutes of the previous meeting having been read and confirmed, the officers and committee for the ensuing year were elected. Dr. Constance Long was re-elected President. Dr. Mary Murdoch Provincial Vice-president, Miss Aldrich-Blake Treasurer. The Secretary's report dealt with the Insurance Act and with the question of a State service for medical women in India. The deaths of Drs. Jex-Blake, Appel, Colley, and Pailthorpe, four members of the association, were recorded with regret. The Treasurer's report stated that the Benevolent Fund, the object of which was to assist necessitous medical women who were former or present members of the association, now amounted to £40. Miss Thorne and Miss Chadburn were elected administrators of this fund. A further amount was voted from the surplus money of the association to be added to the Benevolent Fund. At 8.30 p.m. a reception was held, after which the meeting was addressed by the President, Dr. Long, who gave an account of the present position of the British Medical Association with regard to the Insurance Act. Dr. Sheppard then moved the following resolution:

> That this meeting protests against the unjust imprisonment of Mr. Mark Wilks for the non-payment of taxes on his wife's income, over which he has no legal control, and which taxes he is unable to pay, and calls upon the Government to release him immediately, and further to amend the law in the interests of married people so as to make the income of husband and wife separate for the purpose of taxation.

Dr. Sheppard said that Mrs. Wilks was an honoured and respected member of the medical profession, and was sacrificing herself in the interests of all women; she therefore urged the meeting to carry the resolution as a mark of sympathy and encouragement to Mrs. Wilks. The motion was seconded by Dr. Murray, and, after a prolonged discussion, was carried with only two dissentients.

Reviews.

THE I.K. TREATMENT OF TUBERCULOSIS.

THE work of Dr. Carl Spengler of Davos, although doubtless familiar to all students of tuberculosis, is probably less well known to the general profession in this country, and hence the recently published account of it by one of his English disciples will be welcomed.[1] Dr. FEARIS occupied himself for several months in Dr. Spengler's laboratory in obtaining a thorough insight into the practice and results of the so-called I.K. treatment and the theories upon which it is founded. I.K., it may be premised, stands for *Immun Körper* (Immune Substances) contained in the blood of animals which have been injected with living tubercle bacilli and other micro-organisms into their muscular tissues. These tissues being endowed with a high degree of natural immunity, it follows that the blood of the inoculated animals possesses marked properties of lytic antitoxic action. The blood is collected, acidified, sterilized, and diluted according to instructions, and a further dilution must be made in varying degree according to the circumstances of the case for which it is to be used. Dr. Spengler's contention has always been that the immunizing substances are contained in the red blood cells, and that the serum derives them from that source. The more healthy the corpuscle, the more resisting power it possesses against tubercle and other forms of micro-organic poison. The capacity of these red cells to respond to the stimulus of tuberculin determines the success of that form of treatment, and the same may be said for open-air treatment also.

Dr. Spengler's main object has been to produce a method which should be less dependent upon the capacity of the patient's own cells, but should have independent powers of lysis upon micro-organisms and antitoxic effects upon their results. He claims to have succeeded in these objects, but success depends entirely upon the method in which his system is employed. Dr. Fearis's account of Spengler's views is very full. In many respects they are original. He lays a good deal of stress on the essential variety of the two forms, the long and the short, of the human tubercle bacillus, and discusses their relation respectively to the bovine form. The question of mixed infections is also dealt with in rather dogmatic fashion.

Turning to the more practical sections of the work, it will be found that a large measure of success is claimed for the I.K. treatment, not only in Dr. Spengler's hands, but in those of many other observers, and it may be assumed that Dr. Fearis has been duly impressed thereby if one may judge from the enthusiasm of his advocacy. It would appear, however, that several highly-qualified pathologists have come to a different conclusion and have expressed the opinion that the I.K. fluid is entirely inert. Such a conclusion can only be explained, according to the writer, by assuming that improper methods of administration have been employed. Much space is occupied in the book in controverting this criticism, and many illustrative cases are quoted to prove its futility. A tone of confident assertion prevails throughout the whole work, and the behaviour of the blood is assumed to be fully known. The only positive facts, however, that would appear to be really known are summed up as follows: The tubercle bacilli often disappear from the sputum, sometimes rapidly and sometimes only at intervals, while many of them appear to be undergoing disintegration by the breaking down of their capsules. While these microscopic changes are observed the patient's general health and well-being tends to improve, and the statistics quoted go to show that the rate of improvement is higher than under any other form of treatment. Similar claims have been made [illegible] times past, but Dr. Spengler's system rests upon a foundation of careful observation and scientific reasoning, and as such deserves the attention of those to [illegible]

[illegible] John Murray. 1912. (Demy 8vo, pp. 225. Price [illegible])

INTERNAL SECRETIONS.

PROFESSOR SWALE VINCENT, in his volume entitled, *Internal Secretion and the Ductless Gland*,[2] has given us a valuable summary of the present position of knowledge.

As Professor Schäfer says in the preface, almost all we know regarding the internal secretions is the product of the last twenty or twenty-five years. Now the subject requires more than 400 pages even for a concise digest of the accumulated facts and some 3,000 references to deal with the literature.

In regard to the pancreas, Professor Swale Vincent takes the view that "the islets of Langerhans are not organs *sui generis*, but are an integral part of the pancreatic tissue." It is an extraordinary thing that this question should be so debatable. We find men of the highest acumen ranging themselves on either side. Professor Swale Vincent records, but gives no explanation of the fact, that islet tissues may be found as a separate lobe in certain fish. The difference in the circulatory supply is not a convincing proof of difference in nature, for the appearance of the capillary network would naturally alter in the shrunken exhausted alveoli which are supposed to form the islets. "As to whether the temporary structural modification of alveolus into islet tissue corresponds to a specialization of function, the evidence," he says, "is at present inconclusive."

In the chapter dealing with the kidney the author mentions the experiments of Rautenberg, who tied up the ureter of one kidney for three weeks and then opened it and excised the other kidney; the animal suffered from albuminuria, high blood pressure, and other signs of nephritis. At the autopsy extensive arterio-sclerosis was found. This brings to mind certain experiments of Carrell and Guthrie on the transplantation of both kidneys in cats, wholly successful in so far that the normal secretion of urine continued in the preliminary stage, but finally resulting in death with, in one or two cases, generalized arterio-sclerosis. There is some evidence that the serum of guinea-pigs injected with rabbit kidney emulsions are nephrotoxic to rabbits, giving rise to albuminuria and anaemia.

The chapter on the reproductive organs contains the results of recent researches by Marshall and others which are of very great interest. Castration before puberty entails the non-development of the secondary sexual characters, but "the penis does not share in the atrophy, so that in Eastern countries it is frequently considered necessary to remove this as well as the testes: the condition produced by castration is infantile, not female." Division or ligature of the vas produces none of the effects of castration, although the spermatogenic tissue degenerates. It is concluded, therefore, that the interstitial cells produce the internal secretion. Castration prevents the development of antlers in stags, but not of horns in animals where both sexes possess them. The thickened pad on the first digit of the spring male frog does not develop after castration, but does if pieces of testis are introduced into the dorsal lymph sac. In females removal of atrophy of the ovary leads not only to disappearance of secondary sexual characters, but in some to appearance of male characters. The cells of the ovary produce an internal secretion which causes menstruation and heat. The corpus luteum is essential for the attachment and development of the embryo in the first stages of pregnancy, and for the development of the mammary glands. Lane-Claypon and Starling's pronouncement that the fœtus furnishes the hormone for these glands has not received confirmation: it is the corpus luteum. Ovarian grafts give good results, inducing heat, etc., but the efficiency of ovarian medication is regarded as unproven. The activity of the corpus luteum as a drug demands investigation.

In dealing with the adrenal glands the author gives an excellent account of their comparative anatomy and the developmental history of the cortex and medulla, which are separate organs in elasmobranch fishes, and of the inter-renal body and the chromophil bodies or paired suprarenals. He also portrays the abdominal chromophil body and the chromophil tissue, which stands in close

[2] *Internal Secretion and the Ductless Gland*. By Professor Swale Vincent. With a preface by Professor E. A. Schäfer. London: Edward Arnold. 1912. (Demy 8vo, pp. 464; illustrations 66. 12s. 6d. net.)

relation to the sympathetic ganglia of mammals: together these make up the additional adrenal medullary substance, the existence of which may explain the persistence of life in some animals after total removal of the adrenals. In the discussion on adrenin we note that the arterial degeneration which can be produced experimentally by successive doses cannot be attributed to the effect of mechanical strain from high blood pressure. It is a nutritive effect. In this respect we may mention the recently published experiments of Carrell by which he proved that a piece of artery or vein grafted into the abdominal aorta of a bitch served all the functions of an artery for four and a half years—the bitch pupped several times—and yet the artery was composed of nothing but connective tissue; no muscle and no elastic tissue was left within it. Wiggers brings evidence to show that in using adrenin as an injection to stop haemorrhage, it should be injected in small doses (0.01 to 0.075 mg.) and the blood pressure carefully watched. Large doses increase the haemorrhage as an initial effect. Evidence has been afforded by Cannon that emotional disturbances causes adrenin to be secreted into the blood. Exhaustion of adrenin may be one of the chief causes of fatigue after emotional excitement. The relation of cortex to medulla and the relative importance to life of each part has not been elucidated, and Professor Swale Vincent is inclined to regard the cortex as of equal, even if not of higher, importance than the medulla. Certain cases of tumour of the adrenal cortex, and likewise of the pineal gland or parts of the brain involving the pineal gland, are associated with extraordinary precocious development of the sexual organs and gigantism. Professor Vincent takes the view that the thyroid and parathyroid form parts of one whole apparatus, and probably the pars intermedia of the pituitary body may be added as a third constituent. The structure of one merges into that of the other. "Removal of the thyroids only may sometimes give rise to nervous symptoms (tetany), while removal of the parathyroids only may occasionally cause chronic symptoms (cachexia)." It may be supposed that the function of the internal secretion is to prevent poisoning by the products of body metabolism, or by infections from without. Hence the varying effect of removal on animals. Major McGarrison's important researches on endemic goitre and tetany, which support this view, are very well summarized. Asher and Flack's experiments, which afford evidence that the internal secretion of the thyroid is under the influences of the laryngeal nerves, are noted. In the case of the pituitary gland Cushing's claim that a fatal cachexia hypophyseapriva is produced by extirpation is negatived by the recent experiments of Horsley. One of Horsley's monkeys lived in good health for nearly four months, and was then killed and found to have been totally deprived of pituitary. The whole question remains open. The active blood-pressure raising and diuretic substance is definitely allocated to the posterior lobe of the gland, which consists only of neuroglia cells.

Enough has been said to indicate the interest and importance of this work, which affords the physiologist, the pathologist, the pharmaceutist, and clinician a most useful account of the chief researches on this subject, which equally interests them all. We have noticed a few errors which might have been avoided by more careful proof-reading, and, admirable as is the matter, we cannot express the same opinion as to the style in which the author writes.

DIGESTION.

In Professor Abderhalden's *Synthese der Zellbausteine in Pflanze und Tiere*[3] is contained an account of recent progress in our knowledge of the process of digestion, and more particularly of the work carried out by the author himself and his co-workers. He strongly advocates the view that digestion consists essentially of a gradual breaking down of the complex foodstuffs into simple constituents, or "Bausteine," comparatively few in number, which are absorbed as such, and thereafter synthesized by the animal cell into the characteristic cell constituents. Whatever be the nature of the carbohydrate introduced, most evidence points to the fact that the "Bausteine"—the form in which it is ultimately absorbed—is dextrose. At the same time, Weinland has shown that if saccharose be injected into the blood stream, although the greater part of it is excreted, yet the plasma becomes capable of inverting it. This may be taken to show that some ferment has been elaborated capable of dealing with, and destroying, the foreign substance. In the case of fats, the "Bausteine" are glycerol and fatty acids—amino-acids in the case of proteins. It is further shown that the older view that iron can be absorbed only when combined in an organic complex is untenable. Introduced in this form, iron is set free in the intestine in the ionic condition, and probably all inorganic substances are absorbed in such a state. Feeding experiments have shown that a mixture of amino-acids derived from completely hydrolyzed proteins may be successfully substituted for the proteins themselves, and that the animals fed on such material are maintained in a state of nitrogenous equilibrium, and, indeed, even gain in weight. The same experiments have shown that phosphatides are not essential constituents of food, for they are actually synthesized within the body. Abderhalden maintains that the solution of the problem of obtaining synthetic food is complete, since, although it is not possible to synthesize artificially the complex foodstuffs, yet the synthesis of the fundamental "Bausteine" has been effected. Such a view is of distinct importance to clinical medicine, for it evidently shows that the process of digestion can be carried out entirely outside the animal organism, and that the exhibition of certain fundamental and comparatively simple elements is sufficient to maintain life. The learned professor regards as of the greatest importance the part played by the intestinal wall in the building up of these fundamental elements, and he suggests that the intestinal epithelium is instrumental in effecting the synthesis of the products found in the blood, which are carried to the tissue cells, and there further elaborated. Professor Abderhalden's work in this department of bio-chemistry has become classical in scientific circles. Together with the numerous workers in his laboratory he has covered the greater part of the ground himself, yet one cannot fail to note the fact that he shows a tendency, not uncommon in Germany, to ignore the work of other authorities who have investigated some of the problems which he has tackled. On the whole, however, the book gives an essentially accurate idea of the subject with which it deals.

HYGIENE OF THE JEWS.

The hygienic value of Mosaic law has been recognized for centuries and by persons of all creeds. Virchow, indeed, considered Moses the greatest of hygienists. Much interest, therefore, attaches to a volume ably edited by Dr. Max Grunwald,[4] in which the development of the Mosaic hygiene, and the doctrines taught in the Old Testament, in the Talmud, and in the Schulchan Arukh, as well as the modern modifications of old customs, are clearly dealt with by numerous writers. Some of the authors write from the religious point of view; others discuss the sociological importance of the Jewish maxims and practice, while others analyse the precautionary regulations in the light of modern knowledge.

The work is founded partly on the material contained in the Historical Section of the Dresden International Hygiene Exhibition, and has an interesting introduction by Dr. Neustätter, the chief organizer of this section. There is a full bibliography, filling some 11 pages—a fact which gives some idea of the attention which has been paid to the various branches of Jewish hygiene. In the successive chapters all these branches are dealt with in considerable detail. The more important headings include personal cleanliness, dietary, method of slaughtering animals, meat inspection, sexual hygiene, prevention of infection, a weekly day of rest, and school hygiene. The object of the descriptions is to lay before the reader the significance of the laws relating to these various branches of hygiene, and the manner in which the details of the laws have been interpreted at different stages of Jewish

[3] *Synthese der Zellbausteine in Pflanze und Tiere.* By Professor Dr. Emil Abderhalden. Berlin: Julius Springer. 1912. (Med. 8vo, pp. 138. M. 5.60; geb. M. 6.40.)

[4] *Der Hygiene der Juden.* Edited by Dr. Max Grunwald. Published by the Publishing Department, Historical Section of the International Hygiene Exhibition, Dresden. 1911. 1912. (8vo, pp. 325; with appendices, indices, etc., pp. 64.)

history. At times the writers have allowed their enthusiasm to run away with their pens, and to discuss the habits of the early biblical times, as if the Mosaic laws were in reality based on modern doctrines of health and disease. But, in spite of this, the authors have succeeded in arguing the case for the acceptance of the ancient ideas of hygiene in a capable manner. To the unbiassed critic, for example, the citation of Maimonides as a hygienist of great repute may seem somewhat strained, the more so since practically all his excursions are concerned much more with the religious than the public health point of view. In the same way, though to a less striking extent, the discussions on the actual value of the ritual washing of the hands before meals and other functions may be discounted to some extent. It is quite clear, from the practical point of view, that the mere pouring of water over the hands and the rubbing of them together cannot serve to remove a really dangerous soiling of the skin, and beyond its religious significance, the proceeding is rather an indication of the desire to inculcate cleanliness than a practical means of preventing the chance of polluting food through contact. A highly interesting subject, which receives varied and repeated treatment, is the method of slaughtering. The reason given for the Jewish procedure by cutting the vessels instead of first stunning the animal by the poleaxe or by shooting, is that the muscles are more fully depleted of blood, and therefore less prone to rapid putrefaction. But, as Dr. Kallner points out in a special chapter, this method of killing does not achieve this object. It does not lead to a greater effusion of blood than cutting the throat after the poleaxing of an animal. The difference lies in the reduction of the haemoglobin, and the consequent darkening of the flesh after the latter procedure. These and many other questions are admirably dealt with, and the reader has an opportunity of forming an independent opinion on the data adduced. A large amount of statistical evidence is adduced to show that the mortality among the Jews is lower and longevity greater than among non-Jewish people, but no satisfactory explanation of the differences is given. Dr. F. A. Theilhaber shows with incisive clearness that a race immunity does not exist, and that other suggestions made from time to time are not tenable. He comes to the conclusion that a peculiar disposition of the race, the Jewish environment, and the sociological factors of Jewish life are contributory causes.

The Mosaic law recognizes that there is danger to human life in the ingestion of the flesh of animals whose lungs are affected if the pleurae are involved. There seems to be little doubt that the fact of the infectivity of tuberculosis was recognized by the Patriarch, although not proved for thousands of years. The power of conveying plague to human subjects was in the early days attributed to mice. The book teems with matter of importance and interest, and underlying all these critical surveys is the suggestion that further research into the records would reveal other facts which might be of illuminating value to modern science. Who knows? The aqueduct of Solomon was built with an insight into hydrostatics which would do credit to water engineers of to-day. We have been able to do no more than refer to a few points which may give some idea of the value of this excellent book; it is well worthy of minute study and careful perusal by students of hygiene. Dr. Grunwald and his collaborators are to be congratulated on its production.

MILITARY HYGIENE.

COLONEL MELVILLE'S *Military Hygiene and Sanitation*[1] is an expansion of the lectures which he delivered at the Royal Army Medical College, when professor of military hygiene, to the lieutenants on probation, and to the officers attending the captain's course. In his book he has wisely confined himself to the essentially military problems, and has omitted those questions of hygiene which primarily concern the civilian and are fully dealt with in the ordinary textbooks.

In a short review it is only possible to indicate the general nature of the work and to note a few of its more interesting features. The introductory chapter gives a summary of the special aspects of military hygiene, and should be carefully read by those who are making their first acquaintance with the problems of military hygiene and sanitation. On page 7 Colonel Melville draws attention to the "communal life" of the soldier, and shows how this peculiarity of military life must be borne in mind by all sanitary officers when making any recommendations intended to improve the welfare of the soldier. Marching—a most important subject for every one connected with the army—is scientifically, but practically, discussed and illustrated by examples from past campaigns. The chapters on food and rations are interesting, especially in view of the author's experience on the experimental marches undertaken to determine the necessary field service ration for the soldier.

When dealing with the purification of water in the field, Colonel Melville shows by means of four concise rules that with the power available a high standard of purification together with a rapid output cannot be obtained, and that therefore, notwithstanding any claims made by manufacturers of filtering apparatus, either a lower standard of purification must be accepted or the rate of delivery must be reduced, which means that the thirsty soldier on arrival in camp would have to wait some time in order to obtain pure water.

In the chapters on the removal and disposal of waste matters Colonel Melville insists on the importance of speedy and safe removal of physiological and economic waste matters, and points out that if this condition is fulfilled the actual mode of disposal is of secondary importance. In discussing the danger of spreading disease by the agency of flies, the author lays stress on the value of strong-smelling chemicals in Indian latrines.

A short account of the unhygienic barracks existing in 1857 is given; in these many of the men had less than 250 cub. ft. of space. It is refreshing to turn to the description of the luxurious barracks recently erected at Windsor, and gratifying to learn that the cost of these is less than that of many of the older and less perfect buildings. Some excellent general rules are given for the designing and construction of Indian barracks. One of the very best parts of the book is that on p. 278, on the inspection of barracks. The young medical officer when first appointed to the charge of a unit rarely grasps the importance of his duties, or how to go about them in a systematic manner. This section tells him exactly what to do and how to do it, and the author may confidently expect to earn the gratitude of hundreds of future medical officers.

Some practical advice is given on the subject of clothing, especially in regard to the texture of the material used for underclothing.

The history of enteric and other fevers in India, with a chart showing the admissions and deaths due to this cause, is most instructive. The influence of dust in spreading enteric fever is well illustrated by the account given of the experience of the Quetta garrison.

In our opinion this is quite the best work which has appeared on military hygiene and sanitation. All through the book Colonel Melville gives sound practical advice and is not afraid to state his opinions, which are his own, and are based on many years of practical experience in army sanitary work. We can most strongly recommend this work to all medical officers of the Regular or Territorial Forces, but more especially to those who are commencing a military medical career.

WORKMEN'S COMPENSATION.

IT has been stated, and there is no reason to doubt the accuracy of the assertion, that no series of modern Acts of Parliament have been subjected to so much judicial scrutiny as the Workmen's Compensation Acts. Mr. DOUGLAS KNOCKER'S volume, *The Workmen's Compensation Digest*,[2] does not contain a note of every decision; many

[1] Royal Army Medical College. London: Edwin Arnold. 1912. (Demy 8vo, pp. 424; charts 11. 12s. 6d. net.)

[2] *The Workmen's Compensation Digest*: Containing every reported decision of present authority in the House of Lords and the Supreme Court of Judicature in England decided up to May 15th, 1912, and in the Court of Session, Scotland, and the Supreme Court of Judicature in Ireland reported up to May 15th, 1912, under the Workmen's Compensation Acts, 1897, 1900, and 1906. By Douglas Knocker, Esq., of the Middle Temple and South-Eastern Circuit, Barrister-at-Law, M.R.Lond., M.R.C.S.Eng., L.R.C.P.Lond. London: Butterworth and Co. 1912. (Sup. roy. 8vo, pp. 511. 21s. net.)

cases are uncontested, many unreported. It does not even contain every reported case, for the learned author of *Accidents in their Medico-Legal Aspect*, who is responsible for the new compilation, has only selected decisions "of present utility or authority." A digest of this kind will be of the utmost value to the legal practitioner, for it will enable him to ascertain, without any difficulty, the leading decisions on any particular section in the Act of 1906 and the rules and orders appertaining thereto.

The book follows the arrangement of the Act of 1906. The text of the Act is set out, and under every word or phrase that has been the subject of judicial decisions are given all the cases bearing thereon. When, as often happens, a case bears upon more than one phase in the Act, it is given in every place where it is relevant. In many instances the cases grouped under any phase are preceded by short extracts from important judgements, selected as illustrative of the principles applied by the courts in their decisions.

As the medical profession is largely concerned with compensation to workmen, we naturally desire to examine this book from the standpoint of him who has to act as certifying surgeon, medical witness, or medical referee. All the relevant cases appear under the proper heading. For instance, it is pointed out, on the authority of M'Ginn *v.* Udstone Coal Co., Ltd., that the effect of a certificate of a medical referee that a disease is not due to the employment is the same as a similar certificate of a certifying surgeon, and that the effect of the certificate is simply to rebut the presumption given in favour of the workman by Section 8 (2) of the Act, leaving it open to the workman to prove that the disease is in fact due to the employment. In another case (Winters *v.* Addie) the duty of the referee to whom an appeal is brought is made plain. He must certify definitely "yea" or "nay." The responsibility rests with him. The important case of Carolan *v.* Harrington and Sons, Ltd., is also noted. It was there decided that a county court judge has jurisdiction to submit the question as to the cause of death to a medical referee, although the terms of the Act and rules appear to limit the jurisdiction of a referee to cases of injury or disablement. An excellent index completes a work which will be useful to every lawyer and to many members of the medical profession.

NOTES ON BOOKS.

It was with no little interest that we took up a volume entitled *Microbiology*,[7] and found it to be rather a gem in its way. It is typically transatlantic in the manner in which it sets out to cover the entire field, and it is rare to find a book of such small size with so many independent contributors: no fewer than twenty have been concerned in the production of this work, and, with such a division of labour, the resulting production might have been expected to have been overwhelmingly up to date. Disappointment, however, is in store for those who would consult it on the latest pronouncement: the volume, in fact, is at least a year, if not more, out of date. The subject is undoubtedly too big both for its compass and for its collaborators. The term "microbiology" is now as synonymous with mycology, although it is true protozoa find a place. As might be expected from the academic positions of the contributors, the general chapters on microbiology and on agricultural microbiology are easily the best. The chapters on the infectious diseases of animals and man are distinctly poor and inadequate. On the whole, however, the book is decidedly interesting, and can hardly fail to be of great service to those for whom it is intended.

As a textbook, Professor Buchanan's *Veterinary Bacteriology*[8] is worthy of every commendation. It deals with the subject in a manner which is at once lucid and convincing, and although a very large number of diverse forms have of necessity had to be described and discussed, the information afforded about each is by no means scrappy. In addition to the bacteria, the yeasts, moulds, and protozoa pathogenic for the domesticated animals also meet with a fair share of treatment. The book is concerned chiefly with the morphology and cultural characters of these organisms and with their pathogenic properties, and it does not enter into any very detailed discussion of technique. In this respect, as in several others, the author gives evidence of profitable teaching experience. Most of the information is thoroughly up to date and reliable, and the only serious fault that can be found with the book is a certain ultra-American looseness of style which leads to not a few solecisms.

Partly, no doubt, as a natural reaction after the great boom of a year ago, partly also as a consequence of the recent uncongenial summer, interest in our little enemy, the house-fly, has declined to a very appreciable extent. The public memory is short, and it is easily occupied by fresh novelties; but it would be a pity that attention should be wholly withdrawn from an object which is of undoubted hygienic importance. Dr. L. O. Howard's book on *The House Fly—Disease Carrier*,[9] will serve a very useful purpose in reviving interest in the matter both scientifically and popularly. It is a particularly good book of its class, attempting as it does to give a general summary of all the facts known in regard to the house-fly in a manner which is easily comprehensible to those without special knowledge. It certainly reviews the subject very thoroughly, and the various sections are surprisingly full. There is an excellent account of the life-history and habits of the fly. Its diagnostic features are summed up briefly and concisely, and a short account is given of about a dozen other flies which occasionally inhabit houses. The natural enemies of the fly provide an interesting chapter, and Dr. Howard's lapse in almost omitting to mention spiders in this category will amuse the reader. As might be expected from the title, the carriage of disease by flies is given a prominent place, and although Dr. Howard may not be qualified to deal with this as an expert authority, his review is quite a satisfactory piece of work. The most interesting section of the volume from a practical point of view is that on "Remedies and Preventive Measures." The author is an optimist, and never ceases to stimulate the hope that we shall eventually be able to deal effectively with the fly problem. The majority of remedial measures emanate from America, where the fly nuisance is greater than it is even in this country, and where the authorities have been particularly active in endeavouring to combat it.

It seems unnecessary to further appraise the value of Mitchell Bruce's *Materia Medica and Therapeutics*,[10] which has now reached a ninth edition. In preparing the new and revised edition Dr. Bruce has had the assistance of Mr. W. J. Dilling, Lecturer in Pharmacology at Aberdeen University. It is five years since the last edition appeared, and in the interval not a few alterations of considerable importance have been necessitated. These have affected more particularly the section on general therapeutics, which has been influenced by recent physiological researches, especially in connexion with the digestive and circulatory systems. In the appendix notice is taken of a number of non-official remedies, including ionic medication, radium, organo-therapeutic substances, and vaccines. It is still somewhat of a novelty to find vaccines incorporated in a textbook of materia medica, although their therapeutic value is almost universally recognized both theoretically and practically. Naturally the treatment of the subject is very brief, but so far as it goes is quite accurate. Exception might be taken to the perhaps somewhat undue stress laid on the danger of the "negative phase," although it is quite in accord with modern teaching. The value, too, of Haffkine's plague vaccine is somewhat underrated by the statement that immunity "lasts for a few weeks only." The inclusion of Doyen's neoformans vaccine seems rather useless when it is stated that it is "practically valueless," and in view of the fact that the space occupied by it might have been devoted to some other vaccine of more promising worth. On the whole, however, the facts with regard to vaccine therapy have been carefully chosen and efficiently presented.

[7] *Microbiology for Agricultural and Domestic Service Students.* Edited by Charles E. Marshall. London: J. and A. Churchill. 1912. (Demy 8vo, pp. 745; 128 illus. 10s. 6d.)

[8] *Veterinary Bacteriology.* By R. E. Buchanan, Ph.D. Philadelphia: W. B. Saunders Company. 1911. (Med. 8vo, pp. 516; figures 214. 13s. net.)

[9] *The House Fly—Disease Carrier.* By L. O. Howard, Ph.D. London: John Murray. 1912. (Demy 8vo, pp. 332; figs. 40. 6s. net.)

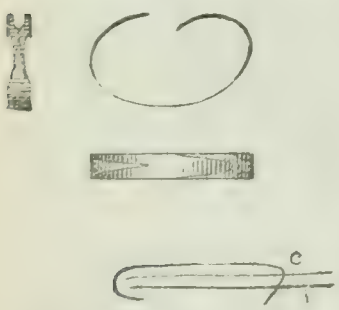
[10] *Materia Medica and Therapeutics.* By J. Mitchell Bruce, M.A., LL.D., M.D., F.R.C.P., and Walter J. Dilling, M.B. Ninth Edition. London: Cassell and Co., Limited. 1912. (Cr. 8vo, pp. 956. 6s. 6d. net.)

Messrs. W. R. Grossmith, 110, Strand, have recently brought out a new catalogue containing a multiplicity of illustrations of the artificial limbs made by them; copies can be obtained on application.

MEDICAL AND SURGICAL APPLIANCES.

A Satisfactory Towel Clip.

MR. G. S. THOMPSON, F.R.C.S.Eng. (Kimberley) writes: At my suggestion the clip illustrated was made for me by Messrs. Mayer, Meltzer, and Co., of Capetown. The defects of most, if not all, towel clips or forceps are: (1) Undue and obstructive bulkiness, rendering them unsuitable for certain situations, or liable to get in the way or fall in an annoying manner into the wound during manipulations—as, for instance, in the abdomen. (2) Failure to retain the towel tucked round and under the skin margin, thereby allowing the latter to present during the progress of the operation, and not effecting the desideratum of a skin-free exposure. This clip overcomes all these disadvantages. It consists of a strong, curved piece of flattened steel spring. At one end it is prolonged into two sharp teeth, these being united below so as to retain the border of the towel under the skin edge and prevent it slipping round to the upper surface; at the other end into one tooth, which serves to fix the clip in position by penetrating the towel and skin to one side of the wound. These clips are made in three sizes, 1, 2, and 3 in. in length. After fixture they are quite out of the way, lying flat upon the surface. They are also quite cheap. The advantages claimed are: (1) Self-retaining action owing to curved spring shape; and however much the skin be pulled to one side the clips retain their hold unless deliberately released by the operator. (2) Smallness of size and therefore unobtrusiveness, leaving an unobstructed field. (3) Impossibility of towel being worked round skin margin to upper surface. (4) Adaptability to any part, not only flat but curved surfaces, as the limbs and scalp and even the fingers. (5) Extreme simplicity of design. Three or four of these clips on either side of the wound are usually sufficient. There is only one towel clip with which I am acquainted that will remain where placed, owing to the presence of two additional teeth on the shanks near the handles; but its bulkiness and inability to retain the towel under the skin are its defects, although this forceps is an improvement on most, if not all, of the others. So far as the latter point is concerned, I think it is very desirable in all or nearly all operations that the skin, which is likely to be, or which might be, touched during the operation, should be completely hidden from view, so as to obviate one possible, and very probably a chief, cause of wound infection, no matter how carefully the subject's skin has been prepared. Of course it is assumed that gloves are worn by all to obviate hand infection. Both these possibilities or probabilities can or ought to be prevented. We can boil coverings and gloves and be certain of sterilization, but we cannot boil our hands and skin, heat being the only certain and desirable method of sterilization. Now, although the use of gloves is usually observed, it is quite common, if not the usual fault, to see the patient's skin presenting to view in the region of the wound. This, I hold, is bad technique. The clips described, amongst other things, do away with this cardinal defect. In this connexion also I would like to suggest a modification by way of improvement in Jordan Lloyd's very useful hook retractor. The hook end of this instrument, being round, will not readily penetrate the skin, its disadvantage being that it slips, failing to retain a hold. This can be overcome by converting this hook into a blade flattened sideways, like that on a Hagedorn needle. This I have had done, and find the change most useful, penetration of the skin being now quite easy, instead of with difficulty or not at all as in the usual pattern.



Clip inserted: A, skin; B, towel; C, clip.

THE fourth annual report of the National Food Reform Association, in addition to giving an account of its proceedings during the past year, including the Guildhall conference and the publication of *Our Children's Health at Home and at School*, contains a good many expressions of opinion from medical men and others as to the need of a wiser choice of food materials and of more skill in their preparation for the table. Copies, price 3d., with a list of publications, including books of recipes, may be obtained from the office of the association, 178, St. Stephen's House, Victoria Embankment.

RECENT NEUROLOGICAL INVESTIGATIONS IN SPAIN.

IN the histological laboratory of the Madrid University, of which Ramón y Cajal is the Director, a little band of workers carry out important researches. Some of their results were published in the transactions of the laboratory (1910–11).[1]

Ramón y Cajal[2] criticizes the statements of Abundo and Dustin that the sensory portion of the posterior bundle has the power of re-establishing itself after separation of the posterior roots, and relates a series of experiments which lead him to the conclusion that the intramedullary portion of the posterior roots has very little power of regeneration, owing to the absence of neurotrophic materials within the spinal cord and the presence of mechanical hindrances. In very young animals, however, and notably in the newborn, under exceptionally favourable circumstances, if the neurilemma has not been destroyed, or if a portion of the root has escaped section and has been merely inflamed, some regenerating fibres may be seen penetrating the cord and proceeding to the posterior bundle in an ascending or descending direction. He is uncertain whether these efforts at regeneration are permanent or transitory.

Some further experiments[3] were made to examine the persistence of life in the sensory nerve cells of the central nervous system after they have been separated from their trophic centres, and also to test the resistance of nerve fibres to autolysis. Small pieces of the cords of young animals were placed in various nutritive fluids (blood serum, cerebro-spinal fluid, etc.) at a temperature of 38° to 39° C., and examined after periods varying from eight to forty-eight hours. The histological examination showed signs of active growth proceeding from the ganglion cells. It was also observed that non-medullated axons had great powers of resistance, while the medullated degenerated very quickly. The neurofibrils of the muscles preserved their power of taking the silver stain up to fifty or fifty-four hours after being cut off.

Ramón y Cajal records also another series of experiments[4] made on young animals to examine certain regenerative processes in the central nervous system in order to ascertain whether they were permanent. Lesions were made in the brain and spinal cord, and after one to twenty days the animals were killed and the areas in question cut out and treated by the silver nitrate method. An interesting difference was observed in the behaviour of the white and grey substance. In the early days, after the lesion, the nerve fibres of the white substance showed definite signs of sprouting. These signs of regeneration, however, disappeared progressively in the second, third, and fourth weeks. In the grey substance the conditions were reversed. During the first two weeks after the lesion very few regenerative signs were noticed, but at a period of twenty days the number of newly formed fibres had markedly increased. The observations led him to the conclusion that, excepting the regenerative signs in the grey substance, all other sprouting phenomena of the axons of the nerve tracts represent temporary reactions, which are destined to disappear.

In two other articles[5] he gives the results of a study of the very early stages of degeneration in the cerebellum and cerebrum not previously described. The changes were already well marked twelve hours after the lesion. They concern the axons of the cells interrupted by the lesion, as well as many which had not been mutilated, but had apparently only been stimulated by the exudations and other inflammatory processes. They consisted in general hypertrophy of many of the fibres, varicosities in the axons, and terminal balls, from which fibrils were sprouting. These new formations were mostly in the medullated axons. They continued for five or six days, and then gradually disappeared. In the specimens examined after ten days from the time of the lesion, they had lessened considerably in number, having apparently been reabsorbed. The conclusion drawn coincides with that of Rossi and Marinesco and Minea that no true regeneration takes place in the cerebrum or cerebellum, that the new

[1] T. VIII, 1910.
[2] *Trabajos del laboratorio de investigaciónes biolog. de la Universidad de Madrid.*
[3] T. VIII, 1910.
[4] T. VIII, 1910.
[5] T. X, 1911.

formations are purely intraprotoplasmic or neurobional, and that they are unable to traverse the pre-established limits of the axon and its branches, or form new appendices.

Lafora[6] describes some cases in which he examined the cerebral cortex for karyorrhexis, that is, those cell changes which involve the extrusion of the chromatin of the nucleus. The chromatin shows itself in the form of round or oval bodies, which mostly remain connected with the nucleus by means of very fine threads. These changes were found in syphilitic gumma, dementia senilis, and in a case of experimental haemorrhage in the cortex cerebri of an ape. They were most abundant in the cornu ammonis. He believes that they are the beginning of cell disintegration, perhaps caused by loss of power in the cell to imbibe sufficient nourishment. Illustrations of cells stained with toinidin blue and by Heidenhain's method show this form of degeneration very well.

Achúcarro[7] examined histologically a case of progressive general paralysis in order to study the nature of the so-called "Stäbchen" cells. He found these cells in numbers in the cortex cerebri, but most abundantly in the cornu ammonis. They were mostly attached to the pyramidal cells or their processes, and were sometimes in the forks of the processes. Treated by Herxheimer's method they showed inclusions which took a deep red stain (Scharlachrot), and by Cajal's method deep black granules in the centre. These are probably products of disintegration. He thinks that these "Stäbchen" cells are probably a special form of phagocyte for the products of disintegration, and that they shape themselves according to the particular cell in process of degeneration—in this case the protoplasmic prolongations of the pyramidal cells of the cortex. Another article[8] by the same writer shows the changes found in the cerebral pyramidal cells of rabbits inoculated with the virus of rabies and *Sporotrichon beurmanni*.

In the report of a case of this disease by Ritchie and Walker,[9] changes in the brain cells were not mentioned, as granulomata were not present in the brain. Achúcarro's prefatory remarks allude to the methods of Nissl, Bielschowsky, and Cajal for staining nerve tissues, and to Cajal's researches on the structure of the nuclei of pyramidal cells, as forming a basis by means of which new elements in pathological cases may be detected. In the cerebral pyramidal cells the nucleus has a somewhat complex structure. It has a fundamental substance in which argentophile granules are embedded, observed distinctly for the first time by Simarro adjacent to the nucleolus; there are also the granules of Levi, and the corpus accessorium of Cajal, which is situated somewhat apart from the nucleolus. Further, there are the neutrophile and hyaline granules of the karyoplasma and the reticulum revealed by silver nitrate, resembling Holmgren's protoplasm reticulum. Achúcarro mentions only the changes noticed in the argentophile granules, the granules of Levi, and in the karyoplasma in general, more especially in the cornu ammonis. Siciliano was the first to call attention to a special nuclear lesion in the cells of the cornu ammonis of rabbits affected by rabies, but did not give a detailed description of the complex process of degeneration fully entered into by Achúcarro in 1908 in an article on the formation of "Stäbchen" cells. In the present cases the nuclear changes were characterized in the beginning by an increase of the basophile and acidophile substances, accompanied by the disappearance of the reticulum. The more advanced stages showed conglomerates of basophile and acidophile substances. Finally, destruction of the membrane and changes in the body of the cell made it impossible to differentiate the nucleus and protoplasm. The nuclear changes in the cortex cerebri of rabbits affected by rabies and sporotrichosis showed some resemblance as to the form they took, but in essence were distinct. In rabies the degeneration is apparently primary, whereas in sporotrichosis it follows the lesion of the nerve protoplasm. In rabies it begins by a proliferative stage of progressive character affecting the argentophile granules, whereas in sporotrichosis the initial stage consists in the separation of the membrane and the retraction of the karyoplasma. In both cases the nuclear changes have a common localization in the cornu ammonis.

Tello[10] discusses the causes of regeneration in the nervous system, and describes a series of experiments undertaken by him analogous to those of Lugaro, who grafted nerve tissue into the cerebral cortex of dogs three months old, examining the affected parts after varying periods. Tello repeated these experiments in adult rabbits, modifying somewhat the conditions. The piece of nerve tissue chosen was from the sciatic nerve, and the situation of the graft was in the cerebrum, cerebellum, and optic nerve respectively. Histological examination showed a surprising difference in the regenerative capacity produced by the stimulus of a foreign tissue as compared with the ordinary regenerative capacity existing in the nervous centres. The cortex of the cerebrum, cerebellum, and optic nerve showed definite signs of newly formed fibres in the axons separated by the lesion. The fibres had unquestionably crossed the border, entered the connective tissue, and penetrated the grafted nerve, in which they appeared to be growing rapidly. These signs were more vigorous in the optic nerve and cerebrum than in the cerebellum. Tello is convinced that new fibres are formed under the described conditions which traverse large areas in the interior of foreign tissues. He thinks that the action is a chemical one, exciting the regenerative capacity of the axons.

[6] T. VIII, 1910.
[7] T. VIII, 1910.
[8] T. IX, 1911
[9] British Medical Journal, July, 1911.

[10] *Trabajos*. T. IX, 1911

THE INTERNATIONAL MEDICAL CONGRESS, LONDON, 1913.

Since the programme of the seventeenth International Congress of Medicine to be held in London from August 6th to 12th, 1913, was published in the Supplement to the Journal of March 9th, considerable progress has been made in the general arrangements and in the organization of the Sections.

The congress will be opened by H.R.H. Prince Arthur of Connaught at the Albert Hall, at 11 a.m. on Wednesday, August 6th, and on the afternoon of the same day the first of the general addresses will be given by Professor Chauffard (Paris) in medicine; the address in pathology will be given by Geheimrat Professor Paul Ehrlich (Frankfort) on Friday, August 8th, and on August 12th the President of the Local Government Board will give the address on public health; Professor Harvey Cushing (Harvard) that on surgery; and Mr. W. Bateson that on heredity. The general secretary of the congress is Dr. W. P. Herringham, and from him at the office of the congress, 13, Hinde Street, London, W., the full programme can, we believe, be obtained.

We may, however, indicate some of the chief discussions which have been arranged. The Section of Anatomy and Embryology (President, Professor Arthur Thomson) will hold a joint discussion with the Section of General Pathology and Pathological Anatomy (President, Mr. S. G. Shattock) on the excitatory and connecting muscular system of the heart, to be introduced by Professor Dr. Wilhelm His (Berlin). The Section of Bacteriology and Immunity (President, Professor G. Sims Woodhead) will hold a joint discussion on cancer with the Subsection of Chemical Pathology (President, Dr. F. Gowland Hopkins). In the Section of Therapeutics, over which Sir Lauder Brunton will preside, Professor Dr. R. Gottlieb (Heidelberg) and Professor T. C. Janeway (New York) will open a discussion on the comparative value of cardiac remedies. In the Section of Medicine, under the presidency of Sir William Osler, the first subject for discussion will be the pathology of heart failure. It will be introduced by Professors H. Vaquez (Paris) and v. Wenckebach (Strassburg). On the following day the section will hold a joint discussion with the Section of Physiology (President, Professor E. Schäfer) on the correlation of organs of internal secretions and their disturbances. The Section of Physiology will also hold a joint discussion an endogenous metabolism of proteins with the Subsection of Chemical Pathology, to be introduced by Professor Abderhalden (Halle).

The Section of Surgery (President, Sir W. Watson Cheyne) will hold two joint discussions, the one on the

diagnosis and treatment of early renal and vesical tuberculosis with the Section of Urology (President, Mr. Hurry Fenwick), and the other on the treatment of tumours of the brain and the indications for operation with the Section of Neuro-Pathology (President, Sir David Ferrier). The last-named discussion will be opened by Professors Bruns (Hanover), Harvey Cushing (Havard), v. Eiselsberg (Vienna), and Dr. H. H. Tooth (London). The Section of Surgery will also have a discussion on the surgery of the arterial system, introduced by Professors Rudolph Matas (New Orleans) and V. A. Oppel (St. Petersburg). The Subsection of Orthopaedics (Mr. Robert Jones of Liverpool, President) will discuss jointly with the Section of Radiology (President, Sir James Mackenzie Davidson) the value of radiographs of bones and joints in orthopaedic surgery. In the Subsection of Anaesthesia, which will meet under the presidency of Dr. Dudley W. Buxton, the subjects for discussion include recent methods of producing analgesia and general anaesthesia.

The Section of Obstetrics and Gynaecology (President, Sir F. H. Champneys) will hold two joint discussions, the one with the Sections of Diseases of Children and of Hygiene and Preventive Medicine on infant mortality in the first four weeks of life, and the other with the Section of Radiology on Roentgen and radium therapy in gynaecology.

Among the subjects for discussion in the Section of Ophthalmology (President, Sir Henry Swanzy) will be operations for glaucoma and affections of the eye produced by undue exposure to light.

The effects of the ductless glands on development, the treatment of tuberculosis in childhood from the surgical point of view, and the nature and pathology of polioencephalitis and poliomyelitis, will be subjects discussed in the Section of Diseases of Children, which meets under the presidency of Dr. Eustace Smith.

In addition to the joint discussion with the Section of Surgery, the Section of Neuro-Pathology will have debates on cerebellar disease, introduced by Dr. Babinski of Paris; on motor aphasia, anarthria, and apraxia, introduced by Professor Dejérine of Paris; on the relation of the myopathies, introduced by Professor Oppenheim of Berlin; and on the nature of the condition called parasyphilis, introduced by Dr. F. W. Mott. The President of the Section of Psychiatry is Sir James Crichton-Browne, and the first subject put down for discussion is the aims—educational and therapeutic—of the psychiatric clinic; another subject is psycho-analysis, and the Section will hold a joint meeting with the Section of Forensic Medicine for the discussion of the psychology of crime.

The Section of Dermatology and Syphilography (President, Sir Malcolm Morris) will have two discussions on syphilis—one on its dangers to the community, jointly with the Section of Forensic Medicine, and the other, jointly with the Section of Naval and Military Medicine, on its treatment by salvarsan and allied substances, introduced by Professor Ehrlich. In addition to the joint discussions already mentioned, the Section of Urology will hold discussions on the treatment of early malignant disease of the prostate, and on haemic infections of the urinary tract.

The Section of Rhinology and Laryngology (President, Sir StClair Thomson) will hold two joint meetings with the Section of Otology—the one on the treatment of diseases of the throat, nose, and ear by salvarsan and other arsenical compounds, and the other on the treatment of diseases of those regions during the active stages of infectious fevers. Among the subjects to be discussed by the Section of Otology meeting alone, under the presidency of Mr. Arthur Cheatle, will be the pathology of deaf-mutism, and climatic and occupational influences in diseases of the ear. The President of the Section of Stomatology will be Mr. Morton A. Smale, and among the subjects for discussion are the relation of nasal obstruction to dental disease; at a joint meeting with the Section of Hygiene the subject for debate will be the supervision of the health of children between infancy and school age.

Dr. Arthur Newsholme will preside over the Section of Hygiene and Preventive Medicine, and among the subjects for discussion not already mentioned will be the effects of dust in producing diseases of the lungs and visual defects in school children. The Section of Forensic Medicine, over which Professor Harvey Littlejohn (Edinburgh) will preside, will hold discussions on the cause and prevention of suicide, and on the teaching of forensic medicine, including the construction and equipment of a medico-legal institute.

The Section of Naval and Military Medicine will have as President Sir James Porter, K.C.B., Director-General, R.N., and among the subjects for discussion will be hospital ships, antityphoid inoculation, and the physiology of physical training and marching. This section will have a discussion jointly with that of Tropical Medicine, over which Colonel Sir David Bruce will preside, on sanitary organization in the tropics. Plague, beri-beri, Leishmaniasis and relapsing fevers are the other subjects put down for discussion by the Section of Tropical Medicine.

The subjects selected for discussion in the Section of Radiology, under the Presidency of Sir James Mackenzie Davidson, are the radiotherapy of malignant disease and the radiography of the stomach and intestines and of the chest.

The XXIII Section, that of the History of Medicine, is newly formed, and will meet under the presidency of Dr. Norman Moore, who will give an address on the history of medicine in England. A large number of independent papers will be read in this section.

The general rule will be that in each section the morning session will be reserved for the discussions, the independent papers will be taken in the afternoons. The council of each section will arrange the order in which the selected papers shall be read, and any paper offered after April 30th, 1913, will be placed upon the agenda after the discussion of those announced before that date. All documents must be typewritten: the official languages are English, French, German, and Italian.

SCIENCE NOTES.

DURING the last ten years highly artistic and accurate paintings and drawings (chiefly of animals) have been discovered on the walls of the ancient caves which abound in the North of Spain and in the neighbouring parts of France. When first brought to the notice of archaeologists, the cave pictures, owing to their merits as works of art, were regarded with suspicion, but evidence was soon forthcoming to show that they were genuinely ancient and belonged to the later paleolithic periods of man's evolution—the Aurignacian, Solutréan, and Magdelenian—the three ages which, it is believed, followed immediately the last of the glacial cycles. No one has taken a more active part in exploring these cave pictures than the well-known French archaeologist, Abbé Breuil. While in England lately, investigating the authenticity of certain collections of eoliths—as to whether or not they were of human workmanship—he accompanied Professor Sollas, of Oxford, on an excursion to the caves along the coast of the Gower peninsula, west of Swansea. At Bacon's Hole, a few miles from the Mumbles, one of the caves which has already yielded the handiwork of paleolithic man, they found, not pictures, but coloured bands coated by stalagmite—the first sign, so far, discovered in England of cave decoration. Abbé Breuil, from the type of art thus discovered at Bacon's Hole, had no difficulty in recognizing it as belonging to the same species of work as is found in the ancient caves in the South of France. It is improbable that the cave painting of Bacon's Hole is an isolated example. We may hope to hear of further discoveries soon, but it seems improbable that so fine examples as those found in the Santander caves of Spain could have escaped the sharp eyes of our cave hunters.

The October number of *Bedrock* contains an important paper by Professor Arthur Keith on recent discoveries of ancient man. He sums up with the statement that recent discoveries in the Dordogne have shown that Neanderthal man is confined to a restricted and comparatively late date of the Pleistocene epoch.

He appears for a period, and is then replaced by modern man. His transformation into modern man is refuted by both anatomical and archaeological evidence. We have, therefore, still to seek for the primitive and ancestral forms of modern man. The discoveries in England show that we must go a long way further back in the geological record than is usually believed to find our ancestral form. At least, in the middle of the Pleistocene period, long before the period of Neanderthal

man of the Mousterian age in France, modern man had appeared in England. It is therefore in the Pliocene formations we are most likely to meet with the early forms of modern man. There are no deposits in Europe so likely to give us a clue to the ancestral forms of modern man and the date of his evolution as the Pliocene and Pleistocene strata of East Anglia.

Professor Keith adds that progress can never be made until geologists and anthropologists realize that human remains must not be rejected purely on the ground that they are similar to those of modern man. Above all, he urges that we must educate the workmen and managers engaged in every work which necessitates the exploration or disturbance of recent geological deposits. Mr. Hugh S. Elliott writes on modern vitalism, and Dr. A. M. Gossage on human evidence of evolution, whose controversial methods are criticized by Dr. Archdall Reid. Two articles deal with psychical research.

The research which Dr. Myer Coplans has been conducting in the Atlantic covered, we are informed, a wider field than that of iceberg detection; the work done during his recent voyage by the R.M.S. *Edward* to Quebec and back related mainly to a determination of the salinity of the Atlantic. The general objects of the investigation are to work out the course of ocean currents and the influence of estuarial waters and coast lands on sea salinity generally, and more particularly to determine the salinity of the currents around Newfoundland and the course pursued by large floes of ice in those waters and the differences which their presence creates before they can be detected by sight. A complete record of the ocean from Avonmouth to Rimouski in the St. Lawrence river, and from thence up past Montreal as far as Niagara, was obtained during both the outward and homeward journeys. It is considered that the results when published in detail will throw considerable light on the behaviour of bergs and the course of their drift around Newfoundland, which was practically encircled during the investigations. A further result may be a revision of present views as to the course of estuarial waters in the Bristol Channel and in the Gulf of St. Lawrence. The research was conducted by means of an apparatus devised by Dr. Myer Coplans as the outcome of work commenced by him in the pathological laboratory of the University of Leeds early last year. This showed that the electrical conductivity of water is affected by two factors—its salinity and its temperature. The greater the salinity the higher the conductivity, and the lower the temperature, at all events in respect of figures under 20° C., the greater the fall in capacity for electrical conduction. Sea-water, therefore, when diluted by streams of inland water, and especially by highly pure water, such as that derived from glacier ice, must exhibit lessened conductivity; the lowered temperature resulting from the presence of floating bergs will operate in the same direction. It was on these general data that the appliance used during the recent investigation was devised. It cut out automatically all variations due to temperature, presumably because the primary object of the research related to the course of currents due to the inflowing of estuarial streams of water. In an appliance specially intended to assist in the detection of icebergs, both factors would no doubt be taken into consideration, temperature variations and salinity variations being recorded side by side, each record being used as a check upon the other. The results obtained during the recent investigations are being reduced to cartographical form by Mr. C. de V. le Sueur, Lieutenant R.N.R., second officer of the ship in which the investigation was pursued.

LITERARY NOTES.

Among the contents of the second number of the *Edinburgh Review*, issued under the editorship of Mr. Harold Cox, published on October 17th, is a paper on Secret Remedies, by Mr. Hugh Elliot.

The *Journal of the Royal Sanitary Institute* has issued this month a special supplement wholly devoted to matters of colonial interest. It is now thirteen years since colonial centres for the examinations of the Institute were first established. Following on this courses of lectures and training were arranged: meetings were held for reading and discussing papers; and in Hobart a conference for the instruction of local sanitary inspectors, and a school of instruction for dairymen in sanitary matters, were attended by inspectors and dairymen from all parts of the State. In Western Australia and South Africa the members have been formed into definite branches of the Institute for the holding of meetings and for engaging in other efforts for the general advancement of sanitary knowledge. South Africa, the largest branch, numbering over one hundred members, has been the first to organize a general congress on the lines of the meetings annually held by the Institute in Great Britain and Ireland. All these efforts were initiated and organized by the members of the Institute in the several centres, and they were actively supported by the public health authorities. The Colonial Supplement contains the address delivered by Sir Frederic de Waal, the Administrator of the Province of the Cape of Good Hope, and a report of the proceedings of the congress. There are also papers referring to sanitary questions in British Guiana, Western Australia, and Canada.

It was stated in the British Medical Journal, on the authority of Dr. Nevins Hyde, that the first authentic description of pellagra was by a Spanish physician, Gaspar Casal, who under the name of *Mal de la Rosa* gave an account of it as observed by himself among the peasants of the Asturias in 1735. His work, which was written in Latin, was published after his death by Joseph Garcia in 1762. We are indebted to Dr. Aurelio Perez Ortiz, of Torrelavega, Santander, for an earlier account taken from a Spanish work by Pedro Casal, which was published in 1707. The following is a translation of the Spanish text:

This is a disease the most horrible that can be conceived, and it presents before all a symptom which consists in a certain crust, which although at first red soon degenerates into a dry blackish crust split by cracks reaching down to the flesh which cause great pain. It must be noted that for this affection to have the name of pellagra and rose disease, there must be adherent crusts to the metacarpus and metatarsus since, although they appear on other parts of the body, they do not receive this name. These crusts disappear in the summer on account of the sweat, and in the place which they occupied there remain certain red surfaces like scars of burns. From the reddish colour of the scar is derived the name rosa which is given them here. Every year at the approach of spring the crusts come out anew, and in those in whom the disease is not so developed there appear other smaller crusts. There is another situation where this disease shows itself, and that is at the lower part of the neck over the point of junction of the clavicles with the sternum. I have asked some of the persons afflicted with this disease to see if one could discover something about the etiology, and here is what they have told me. In August last I saw a man who made the following statement: That he was accustomed to see himself attacked; that he had some appetite, but when he ate he fell into a state of lethargy. In the month of March he remained in a state of stupor. He felt a great fatigue in all his limbs, and particularly in his legs. In walking his head was affected and he fell down, but he never lost consciousness. He was always languid; his feet were cold, his mouth dry, and his tongue foul. His wife suffered in the same way, and said that she could not bear the heat of the sun or fire, and that she never felt cold. Some days before the spring there appeared some very large crusts on the metacarpus and metatarsus, which in the spring fell off, leaving a scar. Other patients said that vesicles came out in their mouths, that their legs were limp, but that when they began to walk they got stronger. All the skin of the hands was covered with a black crust; wherefore the "disease of the rose" was in reality black. We may sum up the symptoms as follows: First, nodding of the head. Secondly, vesicles in the mouth. Thirdly, great fatigue. Fourthly, crusts on the hands and feet, and those which appear on the neck in the manner of a collar. Fifthly, the burning heat which they feel in bed. Sixthly, the want of resistance to heat and cold. And, finally, a tendency to weeping to appear without manifest cause. Many of the cases end in suicide. Their food is maize, milk, chestnuts, herbs, and nuts, and the patients have obtained great relief when their food has been replaced by other substances of a more sustaining kind.

We do not know whether Pedro was another Christian name of Gaspar Casal or whether there is some confusion of personality. But the work is the same, as may be seen on comparing the Latin text of the description of the pellagrous skin with the Spanish quoted above:

Degenerat tandem in crustam siccissimam, scabrosam, niaricantem, profundis, saepissime intercissam fissuris, etc.

British Medical Journal.

SATURDAY, OCTOBER 19TH, 1912.

TUBERCULOSIS AND THE TEACHING HOSPITALS.

Before the Government scheme for national insurance was promulgated in the Insurance Bill, before the appointment of the Astor Committee, and before the issue of the circular of the Local Government Board to county councils on the organization of the treatment of tuberculosis occurring not only among the insured but throughout the whole population, the practical value of the tuberculosis dispensary had been widely recognized, and such institutions had sprung up in many large towns. As a rule they had no organic relation with other institutions in the same town, and in a weighty letter addressed to the *Times* last August Sir William Osler, writing from his experience in America, insisted emphatically on the need for concerted action. Appearing as it did during the first weeks of the holiday season, the importance of his letter, both from the medical and from the lay points of view, may have been overlooked, and it therefore seems well to call renewed attention to one of the points he then made.

After mentioning certain other advantages of linking the general hospitals with the tuberculosis scheme—the proposal he was then advocating—he said that for the sake of the public he would be sorry to see the members of the staffs of general hospitals deprived of the opportunity of seeing so important a disease as tuberculosis. The public loss he had in mind was no doubt in a large measure the defect which might thus arise in the completeness of medical education, for he went on to instance the Henry Phipps Tuberculosis Institute at Baltimore, which through its connexion with the Johns Hopkins Hospital "now forms an important part of a great medical school through which every student as a matter of routine passes as a clinical clerk. If for no other purpose than this, every general hospital with a medical school should have its tuberculosis department." Attention to this point seems to be a natural corollary to the policy of the Association in insisting that the domiciliary treatment of tuberculosis should be retained in the hands of general practitioners. Tuberculosis of the lungs is, as a rule, excluded from the wards of teaching hospitals, and during the course of instruction in out-patient departments there has been too little opportunity of spending much time in studying the indications of the early forms of the disease. With the withdrawal of tuberculosis patients from ordinary hospitals this tendency must increase, and it might easily come about that the average student of medicine would become qualified with only a very scanty experience of pronounced consumption, and with hardly any acquaintance with its earliest indications. The very opposite is the result which should be sought, for it will become more and more important that all future practitioners should acquire a good knowledge of the incipient forms of tuberculosis, and of the various methods by which they may be diagnosed.

The organization proposed by Sir William Osler involves a full supply of trained medical officers, and he points the way to the provision of such a supply by advocating a system whereby a tuberculosis dispensary shall be linked up with each large hospital having a medical school. Not only should there be the dispensary or out-patient department devoted exclusively to tuberculous cases, but there must be a sufficient number of beds allotted for the proper treatment and study of such cases in different stages of illness or convalescence. Just as there are in most large hospitals some special wards for the study and treatment of syphilis, so ought facilities to be afforded for tuberculosis in all its forms.

That such a scheme with suitable modifications is by no means Utopian, but has been in actual use for many years, may be gathered from the reports which have been published annually by the authorities of the Johns Hopkins Hospital at Baltimore. It is probably not generally known that the initial steps toward the establishment of dispensaries for the early diagnosis of consumption were taken by Sir William Osler himself in the year 1898. He foresaw the advantages that must accrue from such a system, and started a fund for the purpose and a society to bring willing workers together. His efforts were backed up by lady members of the profession in Baltimore, who undertook the visitation of the patients in their own homes after the presence of disease in them had been discovered at the dispensary. With each succeeding year the work increased, and new buildings with laboratories were provided by the generosity of Mr. Phipps. The association with the hospital kept up the supply of physicians, who undertook the work of daily attendance at the dispensary for diagnosis and prescription of appropriate treatment for each case, and the visiting nurses at short intervals reported on the progress of their respective patients. From the last report, dealing with the work during 1911, it appears that the home visiting had become so extended that it called for the services of a staff of municipal nurses, all of whom have had special training. But the number of cases to be dealt with daily by the physicians would appear also to have become quite unwieldy, surpassing the powers of the medical school to supply sufficient honorary officers, and the necessity for well-paid appointments is hinted at. A further difficulty is likewise felt in obtaining sufficient in-patient accommodation for patients under special treatment by tuberculin or otherwise.

The lessons to be learnt from these valuable reports point unmistakably to the need for linking a tuberculosis dispensary with each large school hospital, and the provision of an adequate number of beds in the hospital for the study and treatment of tubercle in its earliest manifestations. The addition of special wards to our existing hospitals, most of them already hampered by accumulating debt, can hardly be expected, but the affiliation of the chest hospitals for teaching purposes with the existing medical schools is not by any means impossible. The cases seen and diagnosed at the dispensaries attached to the general hospitals could then be followed up in the wards of the chest hospitals, and by such means every student would have the opportunity of seeing the disease in all its stages.

Medical men throughout the world are agreed as to the means by which consumption should be attacked, but concerted action is required if the victory is to be won. It is for the medical schools to train the rank and file of the antituberculosis army.

PREHISTORIC CRANIO-CEREBRAL SURGERY.

In 1868 M. Prunières, while exploring a barrow in France belonging to the Neolithic period (2000-3000 B.C.), discovered a human skull showing a large opening which apparently had been deliberately and successfully made during the life of the individual. At the time when this first evidence of prehistoric trepanning came to light European surgeons regarded the operation as highly dangerous, and were suspicious of M. Prunière's discovery. Since 1868 many prehistoric crania have been discovered in Europe, belonging to periods ranging from the Neolithic to that of the Roman occupation of France, which leave no doubt that trepanning was frequently and successfully practised amongst the ancient inhabitants of Europe for several thousand years before the birth of Christ. In 1876 Dr. Lucas-Championnière's attention was drawn to the subject; he showed that during the Neolithic period the *roudelle* of bone was usually removed from the cranial wall by encircling it with a series of perforations made by means of flint "borers." The eminent French surgeon has never lost his early interest in this subject, and during the present year he has issued a monograph[1] which gives a very clear account of the facts he has gathered and of the conclusions he has reached during the last thirty-six years on the operation of trephining as practised anciently and empirically. The operation in prehistoric times was not performed for fractures of the skull, but apparently for the relief of deep-seated pain in the head. In Dr. Lucas-Championnière's opinion, trepanning in prehistoric times represents the decompression operation, which is usually regarded as a triumph of modern surgery. "We too often forget," he writes, "in our vanity of modern science, that during thousands of years before our day men have observed and meditated." He regards these ancient inhabitants of Europe as the unknown and successful pioneers of modern cranio-cerebral surgery.

In ancient Peru the operation was often practised. At the congress of Americanists held in London last summer Dr. Julio Tello of Lima showed lantern slides of the great collection of trephined crania collected from the ancient cemeteries of Peru, and now preserved in the Warren Museum of Harvard University. The operation was often so extensive as to remove one-third or more of a parietal bone. The condition of the margin of the openings affords evidence of the surgeon's success; in some cases death must have followed before repair had commenced; in others the condition of the bone shows that the patient had recovered. No trace of trepanning has been found in the ancient crania of Egypt, India, or China. At the present day it is still practised by the natives of Polynesia, by the Kabyles of North Africa, and by the mountaineers of Montenegro. It seems to Dr. Lucas-Championnière very surprising that an operation which had so great a vogue in ancient Europe should have so completely disappeared as to leave no trace behind, and for many years he has sought for evidence of its survival in the more remote parts of European countries. The only instance which he regards as possibly a survival is to be found in Cornwall. In the BRITISH MEDICAL JOURNAL of July 21st, 1877, appeared an article by Dr. Robert Hudson of Redruth, describing how the miners of that district resort to the neighbouring surgeons to be trephined on their own initiative for injuries to the head incurred in the course of their work. Trepanning was then one of the commonest operations undertaken by the surgeons in Cornwall. Dr. Hudson attributed its popularity to the teaching of Mr. Pott of St. Bartholomew's Hospital, and to the practice of Dr. William Pyrce, a graduate of Edinburgh, who had a wide influence in Cornwall between 1760-1790. Dr. Lucas-Championnière, taking into consideration the antiquity of the mining industry in Cornwall and the remoteness of the county, thinks it just possible that the predisposition shown by the tin miners to undergo trephining may have resulted from the survival of a tradition which has come down from Neolithic times. A fragment of a human frontal bone recently discovered in the floor of a cave in the valley of the Wye, probably of Neolithic date, shows distinct evidence of an operation having been performed. Dr. Lucas-Championnière's contribution to the history of trephining will be welcomed in England, where it has always been a subject of interest and inquiry. A standard work on it was written by Dr. John Fletcher Horne[2] in 1894, and recently Sir Victor Horsley has made several contributions to our knowledge of this subject.

[1] *Trépanation néolithique, trépanation pre-colombienne, trépanation des Kabyles, trépanation traditionelle.* Paris: Steinheil. 1912. (Pp. 132; figs. 32.)

[2] *Trephining in its Ancient and Modern Aspects.*

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THE INTENTIONS OF THE GOVERNMENT AS TO REMUNERATION.

THE consideration of the new proposals with regard to the remuneration of medical men in respect of medical benefit under the insurance scheme has not yet been completed by the Government, but we understand that the Chancellor of the Exchequer will make his statement early next week. The State Sickness Insurance Committee will be unable to complete its report until after the statement has been made, and the date of the quarterly meeting of Council has in consequence been postponed from October 30th to October 31st, at 10 a.m., when the report of the Committee will be considered.

A CRITICISM OF THE PUBLIC MEDICAL SERVICE SCHEMES.

As we go to press we have received a critical review of the public medical service schemes (A) and (B) proposed by the British Medical Association, printed for private circulation by Mr. M. St. L. Harford, L.R.C.P.I., and Dr. H. H. Mills (two of the medical members of the Advisory Committee selected by the Commissioners who have retained their seats on that body). Mr. Harford resides in the east and Dr. Mills in the west end of London. Both claim to speak as general practitioners, and it is to general practitioners that their pamphlet is addressed. It is something more than a critical review, for it concludes by stating that "it is difficult to imagine" that the influence of the proposed public medical service "on the public health would be beneficial," while they believe that "the cost would be prohibitive to those millions who, according to the report of the Poor Law Commission, are in urgent need of improved medical care. The Poor Law medical service has utterly broken down, and is condemned on every side. The British Medical Association, in the opinion of the writers, has signally failed to offer any practicable alternative. Its members must shortly decide whether they will accept service under the national scheme, which, with all its faults, offers the profession greater advantages and security than it has hitherto enjoyed." We are unable to follow the authors through their detailed review, but their first, and, as we understand, their chief criticism is contained in what they say with regard to Rules 1 to 10 of Scheme (A). They point out that though the scheme is intended to include many millions of people, the control of the organization is entirely in the hands of the profession, and express the opinion that a similar proposal for any other purpose would not be considered for a moment, since people who

supply the money generally expect to have some voice in determining how it should be spent. They argue that the amount of clerical labour, the number of offices necessary, and the co-ordination of the work of some twenty thousand doctors dealing with millions of people constitute a problem of the greatest magnitude, and they believe that only "a Napoleon of finance, with unlimited power and capital," could carry through such a scheme, and, even so, only if he had the law on his side. They contrast with the scheme the Insurance Act, under which the complicated machinery is provided and has already proved so costly that it has been the subject of a good deal of hostile criticism in the House of Commons. The question is, they say, Would the people agree to have no voice in the management of an enormous service provided from their contribution? The pamphlet criticizes the rules seriatim; with regard to 16 and 17, it is argued that the requirement that intending subscribers must apply would break down, and it is contended that only the fact that it is compulsory for employers to insure their workpeople has made the scheme of the National Insurance Act possible. The authors believe that under the Public Medical Service scheme there will be few subscribers until illness actually occurs. As regards the income limit, they accept the estimate by Mr. A. L. Bowley, Professor of Mathematics and Statistics in the London School of Economics and Political Science, founded upon inquiries with regard to some eight million adult male workers. The rate of wages earned by such workers was found to exceed 40s. a week in 13 per cent. only; the rate did not represent the actual earnings, which were less than the rate, since deductions had to be made for occasional lack of work, and loss of time from sickness, accidents, strikes, and holidays. Professor Bowley estimated that not more than 6 or 7 per cent. actually received on the average 40s. a week or more. The critics also dwell upon the cost of collection of the weekly premiums. The general result of the whole criticism is shown by the quotations at the beginning of this note. It has seemed well to give this brief abstract of the arguments of the pamphlet, but we must not be understood as in any way endorsing its conclusions.

CENTRES FOR THE TREATMENT OF SCHOOL CHILDREN.

On May 16th the President of the Board of Education received a deputation from the British Medical Association with reference to the establishment of centres for the treatment of elementary school children. At that interview, as may be seen by the report of the deputation published in the Supplement to the British Medical Journal of May 25th, Mr. Pease not only listened to the arguments advanced in favour of the establishment of these institutions, but promised to give the matter his favourable consideration. In the Journal of October 5th (p. 900) the establishment of six treatment centres in the north, south, east, and west of London was noted. With those already in existence the number of such centres in the metropolis is raised altogether to a dozen. Some of these have been in existence for the last few years, and although the agreements are only for a year the fact that they are renewed year after year by the London County Council shows that the treatment of the children is being carried out to the satisfaction of the Government and the Council. The medical men in general practice who are to do the work at the new centres have been nominated by their fellow practitioners, and from those nominated the necessary number has been selected by the London County Council. We feel sure that they also will carry on their work to the satisfaction of the Council, to whom is given through appointed representatives right of entry to the centres. Doubtless as time goes on the Council, finding that the medical men working at these centres are successfully meeting the demands made upon them, will have little hesitation in arranging for other centres in the metropolis. As yet little has been done at these institutions for the dental treatment of the children, the delay in utilizing this important factor of child health being no doubt caused by the heavy expenses of such treatment. Now, however, the Council is beginning to see how needful it is for the ultimate health of the community that the children's teeth should be cared for, and it has, here and there, consented to a dental department being connected with these treatment centres. This is a step in the right direction, and in all probability at these newly established centres dental treatment will be arranged in the near future. The negotiations and arrangements for the establishment of these new centres have been very long drawn out, but at last they are in being. The Minister of Education and the London County Council are to be congratulated on this forward movement, and we sincerely hope that, having put their hands to the plough, they will not look back.

SLEEPINESS.

Dr. Frederick Taylor, in his lecture before the Hunterian Society last week, discussed a subject—sleepiness so prolonged or quickly recurrent as to be pathological—which has received remarkably little attention. Dr. Taylor, after quoting some accounts of prolonged sleep in myth and fiction, and several instances of extreme sleepiness recorded in the public press and in medical literature, related two cases under his own care. In one these, a lady aged 48 suffered for years from constant drowsiness, associated with no other morbid condition than high arterial tension; no relief could be obtained from any kind of treatment, which included vaso-dilators and depletory measures, and she ultimately died of apoplexy. In the other case, a man aged 41, very fat, with a turgid, almost cyanosed face and high blood pressure, for some years experienced constant drowsiness, which subsided at length under some simple treatment. In discussing the causes of the somnolence in these cases, Dr. Taylor said that purely cerebral and nervous conditions, such as cerebral tumour, catalepsy, trance, and hysteria, could be excluded. The difficulty in finding an explanation was due, he said, to the very imperfect knowledge of the immediate cause of natural sleep, and he discussed some of the hypotheses which had been put forward. The two cases he had related could not be referred to overwork or fatigue or anæmia. Both had high blood pressure, but, though this was recognized and vaso-dilators were employed in treatment, no good results followed therefrom. Moreover, high blood pressure had been widely regarded as a frequent cause of the opposite condition—insomnia. On the other hand, temporary insomnia was certainly caused by mental excitement, which involved vasomotor paralysis and dilated vessels. The hypothesis that sleepiness is due to fatigue products or muscle poisons acting upon the cerebral tissues was next considered, and the toxic factor in the production of sleep by drugs like opium and alcohol was illustrated, and the less familiar instances of extreme sleepiness in various infectious diseases, such as septicæmia from local foci of disease, typhoid fever, trypanosomiasis, malaria, ankylostomiasis, and the drowsiness of autointoxication in gastric and intestinal disorders. The sleepiness observed in myxœdema and acromegaly was of great interest, because it gave the opportunity for an ingenious theory, which was advanced by Dr. Albert Salmon, of Florence, to explain not only these exceptional cases of drowsiness, but also the origin of sleep itself. The theory was briefly to the effect that fatigue poisons commenced to operate as poisons from the very moment of waking, but that they were neutralized wholly or in part by the internal secretions of the pituitary body, of the thyroid gland, and perhaps of other glands, the testes and ovaries. Excessive sleep might on this theory be the

result either of excess of fatigue products or of a defective secretion from the glands; the latter condition was illustrated by acromegaly, by myxoedema, during the menopause in some women, and by some rare cases of obesity and sleepiness combined. Dr. Taylor recorded a case of extreme somnolence in acromegaly complicated towards the end with albuminuria, but pointed out that drowsiness was not constant in acromegaly, and that in fact insomnia was sometimes present. From the therapeutical point of view, it was, he said, remarkable how few drugs there were for preventing sleep, or directly curing drowsiness. Of the drugs used in opium poisoning, such as potassium permanganate, atropine, and coffee, only the last was antihypnotic. The treatment of drowsiness was thus confined to the attempted removal of the cause, if this could be recognized. Vaso-dilators had not proved very successful; working upon Dr. Salmon's hypothesis, pituitary or thyroid extracts might be tried, but the cases were rare, and it was not possible to speak with confidence of the results until more experience had been acquired.

ANAPHYLAXIS AND REPEATED INJECTIONS OF SERUM.

A CORRESPONDENT has raised the practical question whether a repeated injection of serum in the form of diphtheria antitoxin undertaken after a shorter or longer period is attended with any real dangers and how such dangers can best be prevented or dealt with. This practical aspect of the anaphylaxis problem is unfortunately not yet cleared up. It will be remembered that von Pirquet and Schick analysed the symptoms which frequently follow the injection of serums, and came to the conclusion that the complex of rash, fever, and severe illness which is met with some seven to nine days after an injection is an anaphylactic phenomenon. Under ordinary circumstances the production of hypersensibility to a protein is induced by the repetition of the absorption of the same protein material, and is now ascribed to the rapid dissociation of the protein molecule. In actual practice very large numbers of human beings are subjected to injections of serum with a more or less considerable interval between the injections, and only a few have shown serious symptoms. A few deaths have been reported, notably the case closely investigated by Rosenau and Anderson. While recognizing that the future may reveal factors which are at present unknown, it seems at present justifiable to state that the chances of a dangerous fall in blood pressure resulting from a second injection of serum in the human subject are not great But it cannot be denied that some risk does exist. Another matter, on which the practitioner who employs diphtheria and other antitoxins, but who can scarcely find time to follow the bewildering literature on the subject, naturally needs information, is what measures can be taken to prevent the occurrence of the shock, or, if it occurs, to treat it. In the laboratory, anti-anaphylaxis can be induced, but how far this could be employed in human subjects has not been determined. A number of chemical substances, such as calcium choride, have been suggested for the purpose of avoiding the shock, but it appears extremely doubtful whether reliance can be placed on these preventive measures. Anaesthesia with ether holds out a much better promise, especially if the symptoms are recognized at the earliest onset and the anaesthetic can be applied at once. On the other hand, the physician may to a certain extent gather from the reaction to the first injection whether any special susceptibility is to be anticipated. If there is reason to fear that such is the case the renewed application of the protein should be small, but it may be repeated in larger amounts within a short time if a marked degree of anaphylaxis is not evidenced. It must further be pointed out that this applies with equal force to bacterial vaccines, tuberculins, etc. A hypersensibility to tuberculin may be produced by the disease itself, and this accounts for the damage which tuberculin has done when applied without precautions or control.

DR. LETTSOM AND THE MEDICAL SOCIETY.

MR. GEORGE BETHELL, Registrar of the Medical Society of London, has called our attention to the following passage in Mr. Walter G. Bell's *Fleet Street in Seven Centuries*: "Nothing of note is left of Bolt Court save No. 3. This picturesque eighteenth century building is quite unspoilt. It was the residence of Dr. John Coakley Lettsom, who in 1787 settled the Medical Society of London there. In 1790 he gave the house, which was his freehold, to the council; his other benefactions to the Society, of which he was a founder in 1773, and three times president, included funds and a library of books. The Society remained there until 1850, and one of the treasured possessions at their present premises in Chandos Street, Cavendish Square, is a painting by Medley of a meeting of the council in Bolt Court, at which Dr. Lettsom, a tall, spare figure, is presenting the title deeds. The canvas contains twenty-two portraits of medical men." Medley was the maternal grandfather of Sir Henry Thompson. Mr. Bell adds: "The Medical Society of London enrolled in its ranks all the distinguished physicians in the capital for upwards of a century, and honours the memory of its most illustrious founder by the Lettsomian Lectures delivered in its theatre. It still owns the old house in Bolt Court. Over the entrance is the Society's emblematic tablet, placed there by Lettsom himself. A ribbon bears the name. The central figure, standing in front of a pyramid, is the Isis of Sais, the revealer of the secrets of Nature, who presided over medicine; having discovered the virtues of healing plants, she is said to have invented it. The sphinx and the coiled serpent on either side of her represent eternity. Within the circle beneath is an inscription in worn Greek capitals, which, translated, reads: 'I am whatever is, or has been, or will be, and no mortal has hitherto drawn aside my veil.'" This is interesting to lovers of old London, but we are somewhat doubtful of the accuracy of the statement that the famous Quaker physician lived in Bolt Court. In Pettigrew's *Memoirs of the Life and Writings of the late John Coakley Lettsom* (London, 1817), it is stated (p. 50) that the Society "held its meetings in Crane Court, Fleet Street, until the year 1788, when Dr. Lettsom presented the Society with a freehold house situate in Bolt Court, Fleet Street, excellently adapted for all the purposes of the Society," etc. It will be noted that it is not said that Lettsom lived in the house, and as a matter of fact we find him (p. 102) two years earlier addressing a letter to "Mr. Urban," of the *Gentleman's Magazine*, from Basinghall Street. Some eighteen years later he writes to the Rev. J. Plumptre as follows: "About 20 years ago, a letter from the Indies, which came via Liverpool, having neither the city nor the nation of my residence, came safe to me. I do not mention it as a matter of analogy; but it is said that Boerhaave's Letters were sometimes directed to him in Europe; however, a Letter directed to me in London is sufficient; *my residence, really, is Sambrook Court, Basinghall Street.* The Camberwell postman lives in my lodge, that opens to Grove Hill; he has the residence for the trouble of opening the gate. I am rarely there, as my professional duties oblige me to remain a denizen of the metropolis." On November 1st, 1815, he died in the house in Basinghall Street, and Pettigrew relates that "hundreds of persons walked up Sambrook Court to view the mansion of its late owner in order to ascertain the truth of the report of his death." In an account of his own life, Pettigrew, who lived for several years in the house in Bolt Court as Registrar of the Society, says that Lettsom had given to the Society the freehold house in which its meetings were held. It is unlikely that if Lettsom had lived and practised there, Pettigrew, who was devoted to him, should not have mentioned the fact. The point is trivial, and we merely

submit it to Mr. Bell and Mr. Bethell for consideration. It may be mentioned that the emblematical figures, together with the Greek inscription over the door of the house in Bolt Court, also adorned Lettsom's country house at Camberwell, of which Boswell, who was a friend of Lettsom, sings:

> From terrace high he feasts his eye
> When practice grants a furlough;
> And while it roves o'er Dulwich groves
> Looks down—ev'n upon Thurlow.

Lord Chancellor Thurlow then lived at Dulwich.

CRAMP RINGS.

In old times one of the customs on Good Friday was the hallowing by the King or Queen of England of rings which were held to be thereby rendered efficacious against cramp, the falling sickness, and similar complaints. The hallowing was attended with a special religious office, the complete Latin text of which is given by Burnet.[1] After some introductory prayers, the rings were placed in one or more basins, and blessed with many signs of the Cross. God was invoked to send the Holy Spirit into the rings and expel therefrom "all the evil of the livid and venomous snake." The last prayer contained a petition "that the rings might restore contracted nerves." Then, according to the formulary, "the queen's highness rubbeth the rings between her hands," saying, "Sanctifice, Domine, annulos istos," etc. The words of the prayer imply "that as her hands rub the rings, the virtue of the holy oil wherewith she was anointed might be infused into their metal, and by grace of God be efficacious." The ceremony was concluded by pouring holy water into the basins, and further prayers. The rings apparently were made of silver, sometimes of lead from the metal ornaments of old coffins; sometimes they were of black enamel with gold and silver ornaments. The belief in cramp rings still lingers in this country, and they may be bought in London at the present day. Not long ago on the way to Victoria Station we saw a number offered for sale for the reasonable price of 4s. 6d. It is easy to distinguish three elements in the treatment—the miraculous, the metallo-therapeutic, and the suggestive. They probably act as efficiently and in the same way as the potato—supposed to act more surely if stolen—which a good many people carry in the pocket as a prophylactic against rheumatism. That the blessing of the ring was, like touching for king's evil, looked upon as a prerogative of royalty, and therefore a test of true sovereignty, seems to be shown by the fact that Anne Boleyn, when Gardiner went to Rome in 1529, on a mission concerning the proposed divorce of Henry VIII, sent him on April 4th a number of cramp rings with the following letter: "Mr. Stephen. . . . I send you here the cramp rings for you and Mr. Gregory Cassal and Mr. Peters; pray you to distribute them both as *she* that (you may assure them) will be glad to do them any pleasure which shall be in my power. Written at Greenwich the 4th day of April By your assured friend Ann Bollein."[2] In connexion with this letter the question naturally arises how Anne in the year 1529 came by a sufficient number of cramp rings for Gardiner to distribute among the English Embassy to the Pope, if she had not at that time already taken upon herself the queenly office of consecrating them. The actual date of her marriage to Henry is uncertain, but is supposed to be about the beginning of 1533, though for reasons of public decency antedated to 1532. Benvenuto Cellini says cramp rings were imported into Italy from England in the sixteenth century. The use of rings as amulets against disease, however, was not confined to this country. Joan of Arc was said to have the names "Jesu Maria" inscribed on her ring which was a gift from a member of her family. Such rings were then common, and were believed to be prophylactics against epilepsy.

[1] *History of the Reformation*. Book II of the Records appended at [illegible] *England*, vol. II. p 608 9.

RULE OF THE ROAD.

ELSEWHERE in this issue appears a letter from Dr. Mercier, in which the origin of the rule of the road is ascribed to a regulation made in 1722 in regard to vehicles traversing London Bridge. The suggestion is interesting, but possibly open to the objection that the making of this regulation does not necessarily imply that the rule thus established was entirely novel. Many generations often pass before authorities take it into their heads to convert a useful and well-recognized custom into a formal law or by-law. Even the rule of the road at sea, in some respects a much more important matter, did not possess any legal sanction until some fifty or sixty years ago. Dr. Mercier's suggestion that the choice of the left side of the road was not brought about by any consideration of convenience in driving, since the regulation spoke of east and west, not left and right, is open to the objection that the upholders of the English rule have always maintained that it is the physiological or natural rule, and was especially convenient at a time when four-horse teams and tandems were in vogue. The object of drivers when meeting is to keep well away from one another, and, since all drivers hold their reins in the left hand, it is easier to keep away if the right hand remains free to bring the whip to bear, if need be. This advantage is so marked that it seems quite probable that it must have been recognized quite early in the history of vehicular traffic. In any case, the rule of "keep to the left" is by no means limited to these islands, America, Canada, and Australia. In fact, the only purely "keep to the right" countries are, we believe, France, Germany, Belgium, and Holland. In many parts of Italy the rule is "keep to the left," and this is the case throughout the greater part of Austria and the whole of Switzerland. From the point of view of foot passengers, an equally important rule is that relating to the side to which vehicles must keep when overtaking and passing those travelling in the same direction. In Great Britain the rule is to keep to the off, or right-hand side—that is, the one furthest from the pavement; while in some foreign countries where the left-hand rule prevails in respect of meeting vehicles, the same rule applies to overtaking vehicles—that is to say, the faster moving vehicle passes the slower one on the side next to the footpath. In some respects this is the better rule for foot passengers, since it is very awkward and dangerous when one has crossed in front of a dray or other slowly moving vehicle to find one's progress endangered by a previously hidden and rapidly moving taxi.

COMMITTEE ON INDUSTRIAL DISEASES.

THE Departmental Committee appointed last April to consider whether cow-pox, Dupuytren's contraction, and clonic spasm of the eyelids apart from nystagmus should be added to the third schedule of the Workmen's Compensation Act, met at the Home Office on October 12th; Mr. Ellis Griffith, M.P. (the chairman) presided. The other members of the committee are: Sir T. Clifford Allbutt, F.R.S., Mr. A. H. Ruegg (County Court Judge, Staffordshire, and Joint Judge for Birmingham), and Dr. T. M. Legge (Medical Inspector of Factories). Evidence was given by Dr. E. L. Collis (Medical Inspector of Factories) as to the occurrence of Dupuytren's disease among minders of lace machines, a matter with regard to which he and Mr. Eatock (H.M. Inspector of Factories) have recently conducted inquiries and made a report to the Home Secretary. This report, which has just been issued,[1] contains a brief examination of the literature, from which it is concluded that Dupuytren's contraction may be congenital or may be caused by definite injury or chronic and localized pressure. The several branches of the lace trade and the machines used are then considered

[1] Home Office. Dupuytren's Contraction. London: Wyman and Sons. (6d.)

and described, and the results of the examination of 139 cases of the disease among operatives in the trade are analysed. The contraction definitely followed upon accidents in 14 cases only. The statistics are compared with those obtained from an examination of a somewhat large number of persons engaged in making tinplates and dressing granite, and the result appears amply to support the conclusion that Dupuytren's contraction is more than usually prevalent among lace machine minders. The other conclusion of the report is that this prevalence has a direct relation to the frequency with which the levers and wheels of the machine are manipulated, and the power required to actuate these levers and wheels and their size, shape, and position. Certain suggestions are made for improvements in the construction of the machines, which, it is believed, would tend to prevent the prevalence of the disorder. The committee will also take evidence as to the occurrence of the disease in trades other than the lace trade, and any communication with regard to the matter should be addressed to the Secretary of the Committee (Mr. Arthur Locke), at the Home Office. Additions to the schedule of diseases under the Workmen's Compensation Act, 1906, were made in 1907 and 1908, and the question for the committee is whether the three conditions mentioned, or any of them, should be added to the schedule, so as to enable workmen so disabled to claim compensation if the disease be due to the nature of the employment.

MEDICAL MEN IN THE DICTIONARY OF NATIONAL BIOGRAPHY.

The second volume of the second Supplement to the *Dictionary of National Biography*, a brief review of which was published in our issue of October 5th, p. 884, shows, as was then said, a fair proportion of medical men; the actual number seems to be 39 out of the 384 lives dealt with. The number of medical lives approximates very closely with that found in the first volume (38); and it may be taken that, speaking roughly, one in every ten names in this national Valhalla is that of a physician, of a surgeon, or of one possessing a medical or surgical education. In this volume there appears one man whom medicine might well claim, for he practically founded the department of laryngology; we refer to Manuel Garcia, who invented the laryngoscope in 1854, and made known the invention in 1855. Exactly fifty years later, on his 100th birthday (1905), Garcia, who had for more than half a century been premier singing teacher in the world, received many honours, and was entertained at a banquet in London which was attended by many distinguished persons. But if Garcia, who was not a doctor, did much for medicine, Sir Francis Seymour Haden, who was a surgeon, and who also had a long life (dying at the age of 92), did much for art by his work in etching. If we analyse the departments of medicine to which the thirty-nine men in this volume devoted themselves, we find that ten were surgeons, including such names as Sir Thomas Fitzgerald, Mr. Christopher Heath, Mr. Luther Holden, Mr. Timothy Holmes, Sir William MacCormac, and Mr. Edward Mapother; there were also four surgeons-general, including Sir James Hanbury and Sir William Guyer Hunter; and one Inspector-General of Hospitals and Fleets (Sir John Macdonald); eight were physicians, including Sir William Gairdner, Sir Alfred Garrod, Dr. Samuel Gee, Dr. Hughlings Jackson, Dr. W. W. Ireland, and Sir Stephen Mackenzie; three were botanists, including Sir Joseph Hooker and Sir George King; two were gynaecologists (Sir Arthur Macan and Dr. More Madden), and two were physiologists (Sir Michael Foster and Dr. Gamgee); while the following specialities claimed one each, namely, ophthalmic surgery, veterinary surgery, tropical diseases (Sir Joseph Fayrer), bacteriology, pathology (Professor Hamilton of Aberdeen), and lunacy (Sir Arthur Mitchell). Many of the lives make interesting reading, although no one is treated at great length. Surely none had a more adventurous life than Dr. W. W. Ireland, the son of a publisher in Edinburgh and a descendant of John Knox through his daughter, Mrs. Welsh. He was born in 1832, and in 1856 was appointed an assistant surgeon in the East India Company's service; he was present at the siege of Delhi, where he treated the wounds of Lieutenant (now Lord) Roberts. Ireland was wounded by a bullet which destroyed one of his eyes and passed round the base of the skull to the opposite ear. In the Army List of casualties for 1858 his named appeared as "killed before Delhi, August 26th, 1857," but he was alive more than fifty years later. Dr. Ireland is perhaps best known by his fascinating works on psychology in relation to historical personages (such as Mohammed, Joan of Arc, and Swedenborg); *The Blot on the Brain* and *Through the Ivory Gate* may be specially named. Two misprints occurring in the life of Dr. Allan Macfadyen, the bacteriologist, who died from an accidental infection with Malta fever and typhoid, may be noted; it is stated that he married the daughter of Professor Cartling of Dettingen, but it ought to be Professor Bartling of Göttingen. With respect to birthplace, the thirty-nine medical lives are thus distributed: England, 18; Scotland, 9; Ireland, 8; Canada, 1; Europe, India, and West Indies, 1 each. It is more difficult to allocate to each the medical school or university at which he was educated, for in several instances the student's training was begun in one school and ended at another. Speaking generally, the London Schools and Edinburgh University lead the way with 20 and 9 respectively, whilst the remaining names are divided between the Irish schools and the Universities of Aberdeen and Glasgow.

PLAIN TALK ON READING.

The public is accustomed to be lectured on reading by more or less eminent persons. The advice is generally to the effect that only the "best" should be read, and to help us to choose the "best," lists are from time to time compiled. The eminent persons of course think it due to themselves to recommend only those books which no gentleman's library should be without, and which, as a general rule, no possessor of such a library reads. There is far too much cant on the subject of reading. Did not Macaulay, one of the greatest of readers, say that very few and very weary are those who toil through the *Faërie Queene*, and are in at the death of the Blatant Beast—an unlucky remark, which seems to show that he himself had never read Edmund Spenser's great poem to the end. Except Shakespeare, who but professors and critics, whose business it is to know something about them, reads the Elizabethan playwrights? How many could lay their hands on their hearts and say they had read *Paradise Regained*? Most, we fear, if they dared to speak out, would say with Thackeray, "Oh, yes: Milton, a great poet of course, but such a d——d bore that no one can read him." How many people have read Plato even in Jowett's translation? After the customary displays of artificial enthusiasm about classical writers it is refreshing to find Lord Rosebery giving his views as to the choice of books with characteristic frankness. At the opening of the Carnegie Institution at Peebles on October 9th, he said he supposed some people would say that the standard books were the "hundred best books" which competent gentlemen were so ready to furnish; as to these he hinted a doubt whether they had always read them themselves. He believed that if a man in honesty and conscience proceeded to read the hundred best books in any list right through, he would never wish to read anything again. The best literature for everybody was that which he could assimilate and digest. It was, he said, an enormous mistake for

people to toil through masterpieces of literature without caring for them or understanding them, and feel they had done a virtuous act when they had completed them. Every one must find out for himself the books that suit his mental digestion. Many great people said they took pleasure in the novels of Richardson. He hoped they told the truth. For his part he found the best of them the most unspeakably dreary thing he ever had to wade through. On Lord Rosebery's remarks about Richardson we will say nothing, because we confess we have never been able to read the little printer's novels which made the ladies of the eighteenth century cry so much. As Dr. Johnson said, if a man were to read Richardson for the plot he would hang himself. Yet we know how popular they were with the author's contemporaries, and how men like Diderot and other good judges in France spoke of him. For the rest we entirely agree with Lord Rosebery. The great writers are all very well in their way, and the appeal of Shakespeare is universal and eternal. Yet we know that Charles Darwin, who had been a great admirer, lost the taste for him in his later days and subsided on common novels. This, we take it, was a case of exhaustion of the aesthetic sense by intense devotion to observation. Novels have been the mental recreation of other great men. A very distinguished physician not long dead used to read the yellow-backed volumes, so common a few years ago, in his carriage on his rounds, tearing out and throwing out of the window the pages as he finished them—a waste of material that might have gone to soothe the weary hours of convalescence in hospitals. Napoleon always carried with him a travelling library of some 3,000 volumes, including a large proportion of fiction. He was an impatient reader, and if after a glance or two a book did not please him, he threw it out of his carriage window, his devastating progress through Europe being thus marked by bad novels. For recreation, the literature best adapted to the intellectual digestion of most people is wholesome fiction; but, as Lord Rosebery said, one has to wade through a great quantity of fiction before finding what one wants. The modern novel in which medicine of a kind plays a large part is an abomination. Zola got details of diseases for his realistic descriptions from medical books which he often misunderstood. Flaubert, who was the son of a distinguished surgeon, was careful to have his medical descriptions corrected by professional friends. It is a curious fact that medical men are often inaccurate in their scientific details. We hold with Mr. Balfour that literature should be cheerful, and on that account most healthy minds find the whole class of so-called realistic novels distasteful. For doctors, the novels most likely to take the mind furthest away from the harassing cares of the daily task are unquestionably the best. Of course, the nearer they approach the highest standard of literature the better, but many, perhaps most, readers prefer books in which the meaning is not obscured by painful elaboration of style.

THE LINNÉ LETTERS.

The University of Upsala, subsidized by the Swedish Government, has now issued the fourth part, vol. i, of the correspondence between the Swedish naturalist and his friends. Reviews of the earlier parts of this correspondence have appeared in the Journal (December 24th, 1910, p. 1978, and December 23rd, 1911, p. 1661). The present volume[1] contains much that is interesting and humorous. The letters written by Linné are full of requests for botanical specimens and information. In this respect his letters closely resemble those of John Hunter, and both appear to have accumulated a mass of zoological observations from their correspondents, the substance of which was more suited for the novelist than the scientist. A clergyman writes to Linné of the wonderful medicinal properties of the plant *linnea*. He collected the stalks and leaves and dried them during the winter. Hearing of a man who had been confined to his bed for many months by rheumatism in all his joints, in his head and stomach, the pastor sent the patient a large quantity of linnea with directions how to brew a decoction from it. They were misunderstood, and the whole quantity of linnea was taken in one dose. The patient felt very drunk and went fast asleep. On waking, he found his pain had vanished and that he could get out of bed. The cure was complete and permanent! Many other cases of rheumatism were cured by the worthy pastor in one to four days. The same writer also relates how he and four other clergymen were present at a wedding where a fifteen-year-old girl suffered from such severe oedema of the legs that each limb was thicker than the body. None of the other clergymen could suggest a remedy, so the writer gathered a quantity of linnea, dried it by the fire, and made a decoction which the patient drank of, while in another portion of it her feet were plunged. Intoxication ensued, the girl beginning to dance by herself; but she was completely cured on the same day. Linné appears to have scoured the whole world for matters of interest, judging by the number of countries from which his correspondents sent him news. A friend in Constantinople writes him a long dissertation on phosphorescence in sea-water and its source, which he traces to slimy bodies, such as *Medusa verrucosa*, and not to the salts in sea-water; for the latter pass through filters, and the filtrate is no longer phosphorescent. Another correspondent writes from Edinburgh about the professors in medicine. Dr. Home, Professor of Materia Medica, is reported to have but a small following, for his lectures contain so many marvellous theories, and his accounts of different cases are too wonderful to be believed! Another sufferer from marvellous theories is Lord Monboddo, who, "though really learned, believes that primitive man had a tail, walked on all fours, and could not speak." This letter is dated February 28th, 1773.

[1] *Brief och Skrifvelser af och till Carl von Linné*. Vol. I, Part 4. Edited by T. M. Fries. Stockholm Aktiebolaget Ljus. 1912. (Roy. 8vo, pp. 545. Price Kr. 10.)

It is stated that the Nobel Prize in Medicine for 1912 will be awarded to Dr. Alexis Carrel, of the Rockefeller Institute, in recognition of his researches on the transplantation of organs.

The first ordinary meeting of the recently constituted Section of Psychiatry of the Royal Society of Medicine will take place at the house of the Society, 1, Wimpole Street, W., on Tuesday next, October 22nd, at 8.30 p.m., when the President, Sir George H. Savage, will deliver his address.

Considerable progress has recently been made in the organization of the Australian Institute of Tropical Medicine at Townsville, Queensland. Dr. W. Nicoll, of the Lister Institute, and until recently Ernest Hart Scholar of the British Medical Association, has been appointed chief assistant; Dr. Priestley, Beit Memorial Scholar, an Australian graduate who for the last year has been working at the Lister Institute, has been appointed second assistant; and Dr. Young, assistant chemist at the Lister Institute, bio-chemist.

At the invitation of the Lord Mayor of London a meeting will be held at the Mansion House on Wednesday next, at 2.30 p.m., to take steps for raising a fund to establish a memorial to Lord Lister. The meeting will

be addressed by the Prime Minister, Lord Avebury, the President of the Royal Society, the President of the Royal College of Surgeons, and the Hon. W. F. D. Smith. The offices of the committee to promote the memorial are at the rooms of the Royal Society, Burlington, London, W.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

National Insurance Act.

Compensation and Medical Benefits.

Mr. Sutton asked whether, in the event of an employed contributor suffering an accident whilst following his employment, for which he received compensation to an amount which precluded him from sickness benefit, he would be entitled to medical benefit. Mr. Masterman replied that the answer was in the affirmative.

A Select Committee on Medical Remuneration.

Sir Norval Helme asked the Chancellor of the Exchequer whether, in view of the general desire throughout the country to secure a settlement of the scale of remuneration for medical services under the National Insurance Act, he would consider, on request being made, the appointment of a Select Committee to take evidence and report to the House as to what would be adequate remuneration for the doctors. Mr. Lloyd George said that he was obliged for the suggestion, but he feared that it would hardly be possible for a Select Committee to complete its investigations and issue its report in time to enable him to make effective use of the report before January 15th.

Isolation Hospitals used for Tuberculous Patients.

Mr. Hume-Williams asked how many isolation hospitals in the country were, or were going to be, used in pursuance of the National Insurance Act for the reception of tuberculous patients; and what, if any, arrangements were being made in such cases to provide accommodation, in case of an outbreak of infectious disease, for those who had to be at once isolated, and for whom the hospitals were constructed. Mr. Burns said at present thirty-eight isolation hospitals in England and Wales had been approved for the purpose of providing treatment for insured persons suffering from tuberculosis. It was not possible to say what number might be hereafter approved, but in all cases the necessity of having suitable arrangements for dealing with outbreaks of other infectious diseases would be kept in view.

Choice of Doctor.

Mr. C. Bathurst asked whether it had been decided by the Insurance Commissioners that insured persons who were members of approved societies would be deemed to have exercised their free choice of a doctor if they had agreed, as a condition of membership, to abide by the decision of the majority of their society or club; and, if so, whether, in view of the prevailing ignorance on the matter among members of approved societies, the Commissioners would make known this decision through the public press. Mr. Masterman replied that the Insurance Commissioners had not come to any such decision as was suggested in the question. Every insured person had a right individually to select any doctor on the panel or to obtain medical treatment in some other manner, and this right was fully preserved by the Regulations, which provided that the appropriate forms of application should be filled up by the insured person.

Sanatorium Benefit.

Mr. Royds asked whether, under the provisions of the National Insurance Act, no sanatorium or other benefit was available for consumptives suffering from that disease at the date the Act came into operation; and whether such benefits were confined to persons actually employed at that date and attacked with the disease afterwards. Mr. Masterman answered that any insured person was entitled to sanatorium benefit if the Insurance Committee recommended the case for such benefit, whether he was suffering from tuberculosis before or after the Act came into operation; but no person was entitled to become insured under the Act unless he was either employed within the meaning of Part I of the Act or engaged in some regular occupation and wholly or mainly dependent for his livelihood on the earnings derived by him from that occupation.

State and Society Contributions.

Mr. Robert Harcourt asked whether in certain lodges of friendly societies a large proportion of existing members were paying the State Insurance contribution in addition to their existing contributions to the society, thus voluntarily paying at least 10d. a week in order to secure, *inter alia*, sickness benefit of 22s. a week; whether this practice was general; and whether any figures could be given? Mr. Masterman said that he understood that very many members were choosing to continue their previous voluntary contributions in addition to their contributions under the Act. He was unable, however, at present to give any exact statistics showing the extent of such voluntary insurance outside the Act.

County of London Insurance Committee.

Mr. Davison Dalziel asked the Secretary to the Treasury if he was aware that the acting clerk of the County of London Insurance Committee received on or about August 30th last an application for sanatorium treatment from Mr. G. Akers, a member of the Lorne Lodge of the Manchester Unity of Oddfellows Approved Society, No. 123, and on or about September 15th a similar application from Mr. H. Weatherstone, also a member of the Lorne Lodge of the same approved society; and would he say whether either of the above-mentioned applicants had received sanatorium treatment, and, if not, what was the cause of the delay. Mr. Masterman said that he was informed that in neither of these cases was treatment in a sanatorium recommended as suitable by the medical adviser to the committee, and that both were now receiving the treatment recommended by him.

Medical Benefit.

Mr. Lansbury asked the Secretary to the Treasury, with reference to the provisional regulations as to the administration of medical benefit made under the National Insurance Act, and dated October 1st, 1912, whether it was intended that each local insurance committee should fix each year a total sum to be paid for medical benefit, which was not to be exceeded, and out of which the payments for ordinary medical treatment, the payments for special services by the doctors, and the payments for drugs and medicines were alike to come; whether it was intended that, when a capitation fee or a rate of payment per visit had been agreed on, the medical practitioner would not necessarily get that fee or that rate, but only such a proportion thereof as the total sum arbitrarily fixed by the local insurance committee for the various items of expenditure would allow; whether he was aware that, under such circumstances, the medical practitioners would find themselves getting a smaller annual remuneration whenever the sickness of the year had necessitated a larger outlay on drugs and medicines, so that, for instance, when an influenza epidemic involved more quinine than usual, the medical practitioners would find their incomes reduced; whether he was aware that such an arrangement was in contravention of the spirit of Section 15 (5), proviso (ii), which was intended to prevent the medical practitioner from having any pecuniary interest in stinting the supply of expensive drugs; whether he was aware that the arrangement was calculated to restrict the calling in of consultants in serious cases, as the cost of their fees would, in effect, have to be borne by the ordinary medical practitioners themselves; whether he would explain on what basis the local insurance committee could, or would be instructed or advised to, fix the total sum to be paid in respect of medical benefit if, as explained, this was expected to be less than the aggregate of the sums payable to the medical practitioners for fees and extras at agreed rates and for drugs and medicines at agreed prices; and whether he would arrange that the House should have an opportunity of discussing the terms to be made for medical benefit before these were approved by the Commissioners.

Mr. Masterman said that the draft regulations now before Parliament could not be interpreted except in connexion with the general question of remuneration for medical benefit under the Insurance Act. This question was still under the consideration of the Government, and the Chancellor of the Exchequer hoped to make an announcement on the subject in the immediate future.

Mr. Oliver Locker-Lampson asked the Chancellor of the Exchequer if he would state how much additional money would be required to pay the doctors under the National Insurance Act 8s. 6d. per head instead of the sum originally decided upon. Mr. Masterman answered that if by the sum originally decided the hon. member meant the sum of 6s. per insured person in the original actuarial estimates as the cost of medical benefit, the additional sum required to raise the 6s. to 8s. 6d. would be approximately 1½ million a year.

Provisional Insurance Committees.

Mr. O'Grady asked the Secretary to the Treasury whether, in view of the fact that the time for meeting of many of the provisional health committees would necessitate a financial loss to the working-men members of those committees, steps would be taken to recompense them for the loss sustained, as was done in connexion with the Labour Exchange advisory committees. Mr. Masterman replied that, as he stated on July 24th, the Insurance Committees could pay railway fares in counties for any members of committees, and were doing so in a number of cases. He was afraid, however, that in this case, as in that of other similar administrative public bodies with executive power, it would be impossible to arrange for payment for loss of time.

Sleeping Sickness Commission.—Sir J. D. Rees asked the Secretary for the Colonies whether the whole expenses of the Sleeping Sickness Commission had been or would be debited to Nyasaland; and, if the answer was in the affirmative, whether he would consider the advisability of spreading the cost over other administrations which would share the benefits resulting from these researches. Mr. Harcourt said that the answer to the first part of the question was in the affirmative. He saw no sufficient ground for spreading the cost over other administrations which had incurred and been incurring expenditure in connexion with their own sleeping sickness problems. He hoped that all the researches carried out in different parts of Africa would be for the benefit of the whole.

Vivisection.—On October 11th, when the debate on the Marconi contract was finished, a few minutes before 5 p.m., Sir F. Banbury seized the opportunity of moving the Dogs Protection (No. 2) Bill. Mr. Booth at once pointed out that the bill dealt with a very important matter, and ought not to be passed without due deliberation by the House. At this point a Member called attention to the few members in the Chamber and the House was counted, and forty members not being present the adjournment took place and the bill made no progress.

Hospital Accommodation at Rosyth. In answer to a question put by Mr. Booth, Dr. Macnamara said that as regards hospital accommodation, there was ample provision for rendering first aid. Two doctors were retained, one of whom was always at his surgery, about two and a half miles from the works, or within call; the other could reach the works in a few minutes by motor car. Hand stretchers and two fully equipped railway hospital wagons capable of holding twenty-six injured men on stretchers were kept on the works. For serious accident cases the Dunfermline and Western Fife Hospital, distant three and a half miles from the works, was available. Fifty-eight cases of injury had been admitted since the commencement of the contract. The hospital contained over sixty beds, and had never had to refuse a case from Rosyth Works. Contractors made a contribution to the funds of this institution. There was also the local Poor Law infirmary, an admirably equipped hospital, and also suitable infectious accommodation provided by the local authorities.

House of Commons (Ventilation).—Sir J. D. Rees asked whether the Commissioner of Works had read the address of Mr. Leonard Hill, as president of the Physiological Section of the British Association, in which he explained how deadly was uniformly heated air, how necessary perceptible movement and changes of temperature, how injurious were the effects of a still, close, equable atmosphere; and whether he would take steps to alter the present system of ventilation of the House so as to bring it more in accord with these sanitary principles. Mr. Wedgwood Benn said that the ventilation of the Chamber had been the subject of several inquiries by Committees between 1902 and 1906. Over £5,000 had been spent in carrying out the recommendations of those Committees and the reports of Dr. Mervyn Gordon. The air in the Chamber was constantly in movement and was changed about six times an hour. A uniform temperature was maintained. The First Commissioner was not of opinion that any alteration in the ventilation system would be desirable.

Tooting Creche (Deaths).—Dr. Chapple asked whether any of the infants which had recently died in a crèche at Tooting were children to whom the proviso to Subsection (1) of Section 1 of the Children Act, 1908, applied; whether there were now in that crèche any children to whom that proviso applied; and what visits of inspection had been paid since the crèche was started. Mr. McKenna said the answer to the first part of the question was in the negative. He was informed by the London County Council that in each case the reception of the infants in the home was duly notified. The home was started in June, 1912, and the superintendent was informed by officers of the Council as to the precautions to be taken and as to the grave risk she ran in establishing and carrying on the home, and she was warned not to receive many young infants. The Council's inspector visited the home on a number of occasions, on none of which was any condition found which would have enabled her to take action for the removal of the infants under Section 5 of the Act. The inspector was assured that the home was under medical supervision, and that in the event of illness a doctor would be instantly available. All the surviving infants had been removed from the home. Dr. Chapple pressed the matter further by asking the Prime Minister whether his attention had been drawn to the reports of the deaths of four infants within a week in a babies' home in Tooting, where none of the nurses in attendance were qualified; and what steps, if any, he was prepared to take to ensure that protection to the sick which in many other countries was provided by the State registration of trained nurses. Mr. McKenna said that the Prime Minister had asked him to answer this question. His attention had been called to the reports, and he had been in communication with the London County Council with regard to the case. The home was a crèche, not an institution for sick children, and the persons described as "nurses" were not sick nurses, but the ordinary attendants on the children. The case was a serious one, but he did not think it had any direct bearing on the question of the State registration of nurses.

ACCORDING to the *Medical Record*, during the year 1911 small-pox was again prevalent all over the United States, but for the most part in a very mild form. Severe outbreaks of the disease during the year were limited to Texas, California, and Kansas, and were few in number. Reports from twenty-nine States and the District of Columbia give a total of 21,768 cases during the year and 134 deaths reported. In 1910 there were in these same States 25,598 cases, with 403 deaths. The greatest number of cases were reported from North Carolina, 2,484; Florida, 2,195; Kansas, 2,043; Utah, 1,660; and Colorado, 1,381. In Connecticut only 2 cases were reported during the year. The case fatality was, on the whole, very low, the average rate being only 0.61 per 100 cases. In Massachusetts, however, there were 11 cases with 2 deaths, giving a fatality-rate per 100 of 18.18, the highest reported. In Texas, where many more cases of the disease occurred, the rate was 7.42, and in California 5.4 per 100.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

WEST YORKSHIRE.

Halifax and District Medical Society.

The opening meeting of this society was held at the Royal Halifax Infirmary on October 8th. The president, Dr. T. H. Hunt, gave an interesting address in which he dealt with various facts, cases, and theories which had been the most striking landmarks in his own professional experience. The profession was growing, he said, in a scientific direction. Medical men aimed at earning their living more by the sale of professional knowledge, and less by humouring and amusing their patients. They were less and less unwilling to confess their ignorance of cases or their inability to effect a cure. Dr. Hunt then treated in quick succession many changes and improvements in the domain of medicine. Referring to phthisis and the open-air treatment, which had gained so much in popularity, he thought signs were not wanting that a reaction was setting in. There was some factor not fully recognized yet in the causation of phthisis besides the tubercle bacillus and lack of fresh air. In therapeutics and materia medica the standardization of drugs had effected a great change, but nothing was more remarkable than the way in which synthetic preparations had multiplied. The *x* rays had led to a great advance both in diagnosis and treatment, but care was required, as in recent times a broken leg had been sent away as unfractured because the fracture line in the skiagram was so faint and regular that it was missed. The transference of the normal widwifery case to the care of the midwife was a change he did not regret. Sitting by the bedside of a parturient woman was not, he thought, a very dignified proceeding befitting a scientific man, and in few cases did the fee repay the time and disturbance to other work. As a medical officer to the education authority he was able to speak of that work with considerable confidence. More than half the cases of defective vision and hearing, otorrhoea, ringworm, and impetigo were neglected by parents, notwithstanding warning notices from the education authority. There were hospitals ready to treat the poor cases gratuitously, and yet the parents would not trouble to take them. In connexion with this work, and within the last few years, open-air schools had been provided (of which there was an excellent example in Halifax) in suitable surroundings. They would all agree, he thought, that school sanatoriums, with diminished book work, marked a great forward movement in educational hygiene. In the domain of surgery there was a striking advance, as shown in the increasing number of surgical operations, and in the improved diagnosis, especially in abdominal work, and the great diminution of suppurating cases. Taking the reports of the Royal Halifax Infirmary, a comparison between 1897 and 1911 showed that the number of major operations had increased from 230 in the former to 630 in the latter year. In 1897 the appendix was not mentioned, except as one case of typhlitis. In 1911 there were 120 of these cases, 30 of which were complicated by general peritonitis. Of these 30 cases 50 per cent. were cured, a result which would have caused amazement twelve years ago. The statistics for radical cure of hernia were also very instructive. In 1900 there were 24 cases, in 1911 75 cases, showing how much more popular operation had become in these cases. It was interesting to trace the course of fashion. He could not remember the days of the carbolic spray, but he did remember when everything had to be soaked in carbolic. Then came the stage of sterilization by boiling and the use of sterile water for lotions. Now much of the ritual of skin cleansing by soaps, brushes, and compresses was simplified by merely painting with iodine. A hearty vote of thanks was accorded to Dr. Hunt at the conclusion of his interesting retrospective address.

Annual Dinner.

The Halifax and District Annual Medical Dinner was held at the White Swan Hotel, Halifax, on October 10th. There were sixty-four present. Dr. Drury was Chairman. Among the guests were Dr. Wilkinson (Manchester), Drs. Wardrop Griffith, Whitehead, and Watson (Leeds), Dr. Hillman (Castleford), and Dr. Little (Bradford). A significant notice appeared on the inner leaf of the menu card. It was in the following terms: "On this occasion the Red Cross Flag will be hoisted over the Right Hon. Lloyd George and the Insurance Act." Considerable amusement was caused by the dexterous manner in which the speakers skirted round these topics without much infringement of the temporary regulation. Dr. N. Perrin Brown proposed "Our Guests," coupled with the names of Dr. Wilkinson and Dr. Hillman, who replied. Dr. J. Oakley, J.P., in felicitous terms proposed "The Chairman," and alluded to his keen work in many directions. The tributes were endorsed in a "bumping" toast with musical honours. Dr. Drury appropriately replied. With controversial topics in the background, the speeches were bright and humorous. A great share in the evening's enjoyment was provided by the musical programme. The vocalists were highly appreciated, and the humorist evoked roars of laughter. Mrs. Drury acted as accompanist, and was also one of the vocalists. A special vote of thanks to her was proposed by Dr. West Symes, and heartily supported.

MANCHESTER AND DISTRICT.

The Tuberculosis Scheme in Salford.

On October 10th a deputation representative of the Provisional Medical Committee for Salford met the Joint Committee of the Health and Provisional Insurance Committees at the Salford Town Hall to discuss the scheme put forward by the Corporation for giving sanatorium benefit. The deputation consisted of Drs. Bradley, Fletcher, Hodgson, J. H. Taylor, and Waltenberg. The scheme had been laid before the last meeting of the Town Council, but at the request of the medical members of the council had been postponed in order to give medical practitioners an opportunity of considering and commenting on it before it received the sanction of the council. The object of the deputation was to elicit information on details of the scheme, and, if possible, to obtain assurances as to its practical working in several important particulars. Anxiety had been expressed that the proposed tuberculosis dispensary might be used as a general out-patient department at which patients suffering from tuberculosis would be under some compulsion to attend as a condition of being recommended for sanatorium benefit. It is understood that assurances were given that treatment at the dispensary would only be given after consultation between the tuberculosis officer and the private medical attendant, and that when it had been agreed in consultation that domiciliary attendance should be given patients would be at liberty to choose their own private medical attendant. The deputation obtained further information on other points, and will now report to the Provisional Medical Committee, which will decide as to the future action of the local profession. In the meantime the Joint Committee is offering the scale of fees sanctioned by the British Medical Association for visits, consultations, injections of vaccine, and reports; but until a working agreement has been arrived at between the Joint Committee and the profession, practitioners have been advised not to make individual arrangements with the committee, but to deal with the patients themselves directly.

BIRMINGHAM.

The Birmingham Dispensary and Tuberculosis.

For some time the authorities of the Birmingham General Dispensary have had under consideration the question of providing special treatment for phthisical patients. Upwards of 1,200 tuberculous cases have annually come under the notice of the dispensary medical officers, and the problem of their treatment has proved perplexing, for the majority, being breadwinners, were not in a position to undergo treatment at a sanatorium.

Arrangements have been made to establish a tuberculosis dispensary in Great Charles Street, which will be in charge of a medical officer, who will devote the whole of his time to this work. Dr. Alfred E. Carver has been appointed to this office. The arrangements are that the resident medical officer of the Birmingham General Dispensary in each district will refer all cases which appear

suitable for tuberculin treatment to Great Charles Street. Where necessary the medical officer, accompanied by a nurse, will visit patients at their own homes to see that his instructions are carried out. The medical officer will be assisted by two nurses, and it is estimated that the annual cost of the new department will be slightly under £1,000.

Hospital Treatment of Puerperal Sepsis.

At the last meeting of the Management Committee it was reported that £3,933 had been received or promised towards the appeal for £6,000 to extend the septic ward at the Birmingham and Midland Women's Hospital. Ten beds have been for some time reserved exclusively for septic cases, and in April, 1911, an arrangement was entered into with the City Health Committee to deal with cases of puerperal fever notified to the medical officer, and two beds were set aside for these cases. The work increased rapidly, and though the number of reserved beds has been raised from two to seven, cases have been refused for lack of room. After further consultation with the Health Committee it has been arranged to keep fourteen beds for puerperal fever, three-fifths of the annual cost of which will be borne by the City Council. The additional beds proposed will bring the accommodation of the septic ward up to twenty-five. The operating room has already been erected, but the extension to the hospital necessitates an increase of ten beds in the nurses' home. The cost of carrying out the work and the necessary furnishing and equipment will be at least £6,000.

LONDON.

London County Council.

Charges for Treatment of Minor Ailments.

The London County Council decided last year[1] that a uniform charge of 1s. should be made to parents in respect of (1) the medical treatment of children suffering from ailments of the eye, ear, nose, and throat, and from ringworm; and (2) dental treatment, but that a charge of 1d. should be made in respect of children who had been ascertained by the Children's Care (School) Committees to be necessitous, and in approved cases where it had been ascertained by careful inquiry that the parents had been accustomed to subscribe to the Hospital Saturday Fund, or had any other legitimate claim to free hospital treatment. The Education Committee reported on October 15th as to the charges to be made for the treatment of minor ailments. In cases in which nursing treatment for minor ailments was supplemental or incidental to medical treatment, the committee thought that the present charge of 1s. or 1d. would suffice. In other cases, however, it would be necessary to make a charge for the services rendered; and, as a large proportion of the cases would be of quite a minor character, and the treatment required would be simple, and would take up a comparatively small amount of time, a uniform charge of 3d. would be suitable, subject to a reduction of 1d. in necessitous cases, and in cases where parents had been accustomed to subscribe to the Hospital Saturday Fund, or had any other legitimate claim to free hospital treatment.

The Council approved the suggested charge.

Annual Address of the Chairman.

In the course of the annual Chairman's address, Lord Cheylesmore referred at some length to the reorganization of the school medical work under the direction of the medical officer of health of the county, to the appointment of Dr. W. H. Hamer as medical officer, to the retention of Sir Shirley Murphy's services in consultative capacity, and to the agreements that have been entered into with hospitals and committees of local practitioners for the medical treatment of school children. He mentioned the important drainage works now in progress in the metropolis, and added that the Council had maintained its policy of securing, whenever possible, open spaces for the public. There were now 116 parks and open spaces, with a total area of 5,100 acres, in the administrative county. The provision of sanatoriums for the treatment of tuberculosis was under consideration, and much information as to existing means of treatment had been collected. The number of lunatics during 1911-12 had shown a larger increase than in the previous year, and the accommodation of the London asylums having been found insufficient, plans for an eleventh asylum had been prepared, and were awaiting the sanction of the Home Secretary. Progress had been made with the designing of a mental hospital, towards the cost of which Dr. Henry Maudsley had so generously contributed £30,000. The new legislation in regard to the mentally defective, if carried by Parliament, would throw additional responsibility upon the Council.

Street Ambulance Service.

Mr. H. L. Jephson asked the Chairman of the General Purposes Committee whether a return could be prepared showing the number of street accidents in London during the last three years. On receiving a promise that the matter would be brought before the committee, Mr. Jephson further asked whether it was a fact that the question of the provision of an ambulance service for London had been before the General Purposes Committee for five and a half years without any decision having been arrived at; that three and a half years had elapsed since a departmental committee reported, and that no action had been taken thereon by the Council. What explanation could be given of the delay on the part of the committee in deciding whether to take action or not, and could an assurance be given that a full report would be brought to the Council at once?

Mr. H. J. Greenwood, Chairman of the Committee, replied that the matter had been before the Council since 1901. In 1906 the Council unsuccessfully promoted legislation on the subject. The departmental committee issued its report in March, 1909, and in the same year the Council was empowered by Parliament to establish an ambulance service for London if it thought fit. The General Purposes Committee was making exhaustive inquiries (ironical applause), and when its negotiations were concluded it would report to the Council.

The Board of Education and Hospital Treatment.

In reply to a request by the London County Council that it would define more explicitly the basis of the allocation of the Government grant of £60,000 towards the medical inspection of children, the Board of Education, in a letter communicated to the Education Committee of the Council on October 16th, stated that nothing could be added at present to the reply given in the House of Commons by the Parliamentary Secretary to the Board on May 6th, 1912; that the amount of money at the Board's disposal was strictly limited, and that it would not be possible to state, even approximately, how the grant would be apportioned until statements of expenditure actually incurred during the year ended July 31st, 1912, had been considered.

It was reported to the Committee that the Vice-Chairman, acting under recess authority, had approved agreements with nursing institutions at Fulham, Islington, Peckham, St. Pancras, Norwood, and Wandsworth, for the employment of the equivalent of a full-time nurse in connexion with the treatment of school children suffering from minor ailments at the medical treatment centres already established in these districts. It was reported at the same meeting that these centres had received the approval of the Board of Education.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Medical Conditions in the Highlands.

The committee appointed by the Treasury to investigate the medical, nursing, and hospital provision in the Highlands and islands, held a series of meetings in Sutherland last week. On October 7th a visit was paid to Bettyhill, in the extreme north of the county, to take evidence from witnesses as to the adequacy of medical and nursing attendance in the parishes of Tongue and Farr. In the latter parish, the second largest in Scotland, the problem of medical provision is extremely difficult, and in recent years has often been considered both by the parish council and the Board of Supervision. One witness drew attention

[1] British Medical Journal, July 29th, 1911, p. 244.

to the contrast between the medical and ecclesiastical provision, with the remark that whereas there was only one doctor in the parish there were usually eight clergymen. It was said that a large amount of suffering went unrelieved by medical treatment, and a large number of deaths not medically certified. The straitened circumstances of the bulk of the people frequently prevented them from calling a doctor even when available.

On October 8th the committee had a long sitting at Laing, when representative witnesses from several remote parts of the county gave evidence. The medical witnesses included Dr. Simpson (Golspie), Dr. Macrae (Bonar), Dr. Mowat (Laing), Dr. Johnstone (Brora), Dr. MacLennan (Lochinver), and Dr. Bremner (county medical officer of health). Mr. Mennie (Golspie) and Mr. Fraser (Helmsdale), chemists, gave evidence as to the supply of medicine, and more particularly of patent medicines of American manufacture, the sale of which was much larger than that of medicine supplied by the doctor's prescription.

On October 9th the committee travelled to Rhiconich, where evidence was taken from witnesses representing the parishes of Durness and Eddrachilis, and on October 10th the committee crossed by the fishery cruiser from Lochinchard to Stornoway.

On October 11th a meeting was held in the Town Hall, Stornoway, to take evidence as to the medical, sick nursing, and hospital provision in the Island of Lewis. The conditions as to public health and the health of school children were set forth by Dr. Murray, medical officer of health and school medical officer, and Dr. Mackenzie and Dr. Murchison gave evidence in regard to medical practice in the populous parish of Stornoway. The advisability of readjusting the present medical areas, the general inability of the people to pay adequate fees, the inadequacy of the nursing and hospital provision, and more especially the heavy burden of rates, were fully investigated.

Medical Treatment of School Children.

At the meeting of the Glasgow School Board on October 10th it was reported that the subject of medical treatment of school children had been considered by a committee, and that a grant of £1,500 had been allocated to the board for this purpose by the Education Department. The committee had outlined a scheme under which £850 would be devoted to dental clinics, £310 to skin clinics, £160 to eye clinics, and £100 to ear clinics. Dr. Grant Andrew, in moving the adoption of the recommendation, said the dental clinics would be established in Calton and at Elmbank Crescent. Cases of defective vision would be treated at the schools. The scheme was unanimously adopted.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

The Treatment of Tuberculosis.

A deputation representing the Dublin Insurance Committee waited last week on the Local Government Board to draw attention to the allocation of funds for persons suffering from tuberculosis. It was urged that they should receive a weekly grant to cover the cost of treatment at their own homes, union hospitals not being fit places for the treatment of such patients, and the "pauper taint" being decidedly objectionable. After an exchange of views, an undertaking was arrived at that the Committee should formulate a definite scheme and submit it to the Board, which in turn undertook to consult with the Insurance Commissioners so as to establish the basis of a final settlement. Meantime, the Local Government Board will make no objection to the Sanatorium Committee continuing to administer the provisions of the Act on the lines which have been followed up to the present.

A deputation from the local Division attended a special meeting of the County Carlow Insurance Committee last week, and stated the terms under which the members were prepared to act. They accepted the offer of the Committee of 10s. 6d. for filling up Forms 2 and 4 pending the appointment of a tuberculosis medical officer. Other propositions as to fees for domiciliary attendance and travelling expenses were held over for information as to the available income from assurers. It was decided to recommend a salary to the medical officer of health to be appointed of £400 per annum, with £50 travelling expenses.

Last week a further statement appeared in the Irish daily press as the result of the interview with the Chairman of the Irish Insurance Commissioners. The chairman said:

> The first thing I wish to state with reference to the account of the interview published in the Irish press is that it was accurate in every particular. The interview was given after full consideration of my position as a civil servant and as chairman of the Commission, and I have had the sanction of my chiefs to the course I have taken. The object of the interview was not to endeavour to place the doctors in the wrong, but to let the country know exactly the position with reference to the sanatorium benefit. The point that seems to be lost sight of by the medical profession is that domiciliary treatment was not really part of the original plan connected with the above, and was inserted to meet the wishes of the profession, which complained that there was a danger of local medical practitioners having their private patients taken from them. We are most anxious that the doctors and the county committees should come to a sensible working arrangement, but it is our duty to see that the sanatorium benefit is not hung up indefinitely, and that the county councils are not discouraged from proceeding with their schemes by the cost which would be entailed should the demands of the doctors be acceded to.

Epidemic of Measles in New Ross.

The epidemic of measles in New Ross has now reached such proportions that at the last meeting of the Urban Council the Medical Superintendent recommended that the schools of the town should be closed for a fortnight. It was decided to communicate this recommendation to the school managers. A week ago it was reported that there were over 20 cases of measles and scarlatina in the local hospital, and since then the numbers have increased.

Royal Academy of Medicine in Ireland.

The annual general meeting of the Royal Academy of Medicine in Ireland was held last week in the Royal College of Physicians, and the following officers were elected for the coming year:

President: Walter G. Smith. General Secretary: J. Alfred Scott. Secretary for Foreign Correspondence: Sir John Moore.

Medical Section.—President: J. F. O'Carroll. Council: James Craig, H. O. Drury, J. A. Matson, Sir J. Moore, T. G. Moorhead, G. Peacocke, F. O. Purser, E. J. Watson, W. A. Winter.

Surgical Section.—President: R. D. Purefoy, F.R.C.S.

Obstetrical Section.—President: A. J. Horne.

Pathological Section.—President: A. H. White.

Section of Anatomy and Physiology.—President: B. J. Collingwood.

Section of State Medicine.—President: M. J. Nolan. Council: A. E. Boyd, W. M. Crofton, W. R. Dawson, T. P. C. Kirkpatrick, J. A. Matson, W. A. Winter.

Treatment of Tuberculosis in Belfast.

Some weeks ago the local Insurance Committee approached the Public Health Committee with regard to the treatment of tuberculous patients under the Act. The Committee also entered into communication with the Forster Green Hospital for Consumption and with the Royal Victoria Hospital and the Mater Infirmorum for the treatment of such cases of tuberculosis as were not suitable for sanatorium treatment. The Public Health Committee postponed consideration till April next; the civic provision for consumptives is pretty well met by the Whiteabbey Sanatorium under the Poor Law Board and the Forster Green Hospital, which the Corporation has enlarged and subsidized. The hospital boards have referred the matter to committees, so that complications may be avoided. Considerable regret is expressed that the local Insurance Committee has no general scheme or plan, and that no attempt has been made to consult the local Medical Committee. A multitude of problems have already been raised. It is asked who would have the power of admission or discharge of patients paid for under the Act. How would it affect the present subscribers? How would it affect the relations between doctors paid for domiciliary attendance and the medical staffs, who would either receive a small fee for such patients or, as at present, give their services free? All practitioners holding friendly society appointments have sent in their resignations, and a proposal has been made by the local Medical Committee that the question should be discussed at a general meeting of the visiting staffs of all the hospitals. The problems raised are endless: the solutions so far suggested are few and unsatisfactory.

Special Correspondence.

PARIS.

Angina Pectoris.—Notification of Tuberculosis.—Congress of Pediatrics.

AT a recent meeting of the Academy of Medicine Dr. Fliessinger discussed the various causes giving rise to symptoms of angina pectoris, and enumerated as the most important arteritis of the coronary arteries, aortic regurgitation, certain forms of myocarditis, high blood pressure in interstitial nephritis, and obesity and aërophagy. As to the prognosis in anginal symptoms due to the two latter causes, he was inclined to be optimistic, for with attention to diet and general hygiene the symptoms disappeared. In coronary arteritis mercurial treatment was the most satisfactory. In cases of aortic diseases small doses of the iodides gave relief, whereas in cases of chronic nephritis he advised theobromine combined with a laxative. In myocarditis small doses of digitalin appeared to give the most favourable results. The complication of aërophagy, or swallowing of air, was frequently troublesome in all forms of angina, and in one case cited by Dr. Robin death resulted from the gaseous distension of the stomach acting upon the already embarrassed heart. For the aërophagy which so frequently occurs in hyperchlorhydria, nervous and flatulent dyspepsia, Dr. Fliessinger had no suggestion beyond the exhibition of alkalis, especially sodium bicarbonate.

A discussion on the compulsory notification of phthisis has been opened at the Academy of Medicine by Dr. Letulle, who presented the following conclusions:

1. Tuberculosis is a contagious disease disseminated by the tubercle bacilli in the sputa of phthisical patients.
2. Alcoholism must be stamped out, and the general hygienic life of the working classes ameliorated.
3. Tuberculosis should be a notifiable disease.
4. Notification must be made by the parents of phthisical children when the disease is known to exist, or, in default of such person, it must be notified by the doctor in attendance.
5. The notification must be accompanied by a medical [illegible] State should take in hand the disinfection of the tuberculous patient's house, and give necessary care and treatment to phthisical patients.

During a discussion on infantile anaemia at the International Congress of Pediatrics, Dr. Tixier spoke of the difficulty in classification of the bone-marrow reaction and also of the changes produced in the spleen. Professor Jumna read an interesting paper on anaemia Leishmania in infancy. The parasite, which is distributed by the house-flea, might be found in the bone marrow and liver. The disease might be either acute, subacute, or chronic. The treatment so far adopted had produced little effect on the disease, and the prognosis was not good. Dr. Czerny of Strassburg, in discussing anaemia due to alimentary toxaemia, observed that it was often complicated by rickets, and that enlargement of the liver, spleen, and lymphatic glands was frequently present. In some, if not all, cases the milk was at fault, and in many the condition was due to the fact that the child had been fed on milk and milk alone for too prolonged a period.

THE Lord Chancellor, on the recommendation of Colonel Mount Batten, C.B., Lord Lieutenant for Dorset, has placed Mr. W. Burrough Cosens, honorary surgeon to the Dorset County Hospital, on the Commission of the Peace for the county.

THE St. Joseph's Hospital for Incurables, Chiswick, has been under the care of the East Grinstead Sisters since May, 1910. It was originated by the Sisters of St. John's House some forty years ago, but was moved to Chiswick in 1899. Since the institution [illegible] hands of the East Grinstead Sisters [illegible] patients, under the charge of a trained [illegible] added to the adjoining convent. [illegible] incurable cases among women [illegible] from paralysis and rheumatoid [illegible] opened on Tuesday, October 8th, [illegible] was accompanied by Lady Bowlby and Lady Duckworth, and by a number of [illegible] of the medical profession.

Correspondence.

THE ORGANIZATION OF THE CAMPAIGN AGAINST TUBERCULOSIS.

SIR,—I regret that I was in Scotland when Dr. Lauriston Shaw's letter on the organization of the campaign against tuberculosis appeared in your issue of September 28th.

Both in his letter, and in the "model scheme" for the treatment of tuberculosis drawn up by the State Sickness Insurance Committee, an attack is made upon the system of tuberculin dispensaries. I do not think Dr. Shaw is in a position to analyse, much less condemn, the functions of a tuberculin dispensary from any first-hand knowledge, and the Committee in deciding that "all attempts to make tuberculosis dispensaries into institutions merely for the administration of tuberculin should be rigidly discouraged," might have investigated the work of these dispensaries before it attempted to smother them. I know of no institution existing "merely for the administration of tuberculin," though, with some practical knowledge of tuberculin dispensaries, I do not hesitate to say that the proper administration of tuberculin at these institutions, which I have called into existence, provides simpler, cheaper, and more effective treatment for dealing with tuberculosis among the poor than any system hitherto proposed, and I think I can prove by evidence, which neither Dr. Shaw nor the Committee could rebut, before a properly constituted tribunal, that the more stereotyped an institution becomes in the proper use of tuberculin in the diagnosis and treatment of tuberculosis, the better both for the patients and the medical profession, especially the general practitioners. One of my reasons for urging, in season and out of season, the appointment of such a tribunal to sift and weigh evidence for and against tuberculin treatment, has been to silence medical men like Dr. Shaw, who are ready to form an opinion upon the value of tuberculin treatment without having had any experience to justify a judgement.

Dr. Shaw makes the following remarkable statement, which would need much qualification and attenuation before a judicial tribunal:

> Most of us who are over middle age can remember large numbers of so-called specific methods of treating tuberculosis which at the height of their popularity were asserted to be the only infallible methods of cure.

As one with this necessary age qualification, I cannot remember anywhere in medical literature—and I trust Dr. Shaw is not referring to quack advertisements—any specific methods of treating tuberculosis which were ever asserted to be "the only infallible methods of cure." The only specific method of treating tuberculosis is associated with Professor Koch's epoch making discovery of tuberculin, but, as one fairly familiar with most of the literature upon tuberculin, I venture to assert that neither Professor Koch nor any of his pupils have ever spoken or written in a way to justify this extravagant and inaccurate language. I have asserted, and am ready to support my claim before any competent judge, that tuberculin dispensaries are the best institutions for dealing with the treatment of tuberculosis among the poorer classes.

With a strange disregard of the practical side of this problem, Dr. Shaw and those whom he follows always studiously avoid any reference to finance. If there is any amount of money waiting to be spent upon this huge national problem, there are a multitude of ways of enlarging the scope of our activities at tuberculin dispensaries; but if there is a limited amount of money at our disposal, it is best to deal with the problem so as to secure the greatest good to the greatest number. I doubt not that Dr. Shaw has still an unshaken belief in the value of sanatorium treatment, yet I think I can prove before any board of inquiry that for a given amount of money tuberculin dispensaries can deal with 70 per cent. of the cases of tuberculosis and secure 70 per cent of successes, while for the same amount sanatorium methods can hardly deal satisfactorily with 10 per cent. of the cases, and can at most secure 50 per cent. of successes. After all, the Insurance Act, the funds for which are exacted from employers and employees, is framed and designed to

treat insured persons afflicted with tuberculosis, so as to restore the sick to health. It is not the purpose of the Insurance Act to encroach upon the province of preventive medicine, which should be left in the hands of the medical officer of health. When the money provided is more than sufficient to supply treatment to the sufferers, it will be time enough to consider how the balance shall be spent upon measures of prevention.

Too little attention has been paid to the urgent needs of the unfortunate victims of tuberculosis in the "model scheme," and the Regulations of the Insurance Commissioners are being twisted so as seriously to interfere with the free choice both of the sufferer and of his medical adviser. I will give two instances: An insured person came to the tuberculin dispensary for treatment. He applied to the Insurance Committee of the London County Council for assistance. The Insurance Committee told the applicant that they would provide sanatorium treatment for him. He replied that he had already had five months' sanatorium treatment at Benenden, and at the end of it was rather worse than better. Thereupon he was allowed to return to the tuberculin dispensary. In another instance an insured person, wishing to have tuberculin treatment through his own doctor, applied to the Insurance Committee. This person was sent on by the Insurance Committee to another medical man, Dr. Squire, I presume at a fee of not less than one guinea. Here the Insurance Committee interfered both with the patient's choice of doctor and the doctor's choice of treatment. Before the insured person could get any benefit a preliminary outlay of at least 25s. was necessary. General practitioners, accordingly, can hardly expect fair treatment from the Insurance Committee of the London County Council. Dr. Shaw says: "It is earnestly to be hoped that every doctor engaged in the fight against tuberculosis will be allowed free choice of treatment." In these instances not much free choice was allowed either to the insured person or to his doctor. This Insurance Committee apparently exhibits the same bias as Dr. Lauriston Shaw.

Through my work in London at least forty tuberculin dispensaries have been established in different parts of the country, and the work of these dispensaries should be judged on its own merits, and not prejudged by medical men who have had no opportunity of studying the nature and scope of these institutions. It is little short of cruel that insured persons should be debarred from seeking a form of treatment at properly organized institutions, such as tuberculin dispensaries, when they have very definite knowledge of the benefit to be obtained by the proper use of tuberculin.

There is no coercion at tuberculin dispensaries, and treatment is often tedious and troublesome, yet we are overwhelmed with applications. In the presence of this evidence in favour of the value of tuberculin treatment, is it fair, either to the patients or to the doctors who believe thoroughly in the system, that an embargo should be placed upon these institutions without any investigation of the merits of the system? I believe that a proper investigation of the work at tuberculin dispensaries would show that they should be placed in the forefront of any scheme for the treatment of tuberculosis among insured persons.

The general practitioner is the one who should advise his patient to the best of his ability, and there are hundreds of general practitioners at the present time who would select the tuberculin dispensaries for the treatment of their own cases, and as the general practitioner slowly and laboriously learns for himself the proper use of tuberculin, he should have the privilege of treating his patients. At the present time, through my work, the medical men of Finsbury and also of Islington have themselves established tuberculin dispensaries with this definite object in view. It would be preposterous that any decision or regulation of the State Sickness Insurance Committee should interfere with this progressive and independent line of action with regard to the dispensing of sanatorium benefit under the Insurance Act.

This matter has no personal interest for me, because I do not intend to make a single penny through tuberculin dispensaries, but I intend, so far as lies in my power, to teach the general practitioner how he may best serve insured people who suffer from tuberculosis through the administration of tuberculin. We do much else at tuberculin dispensaries besides using tuberculin, but at the same time we make it the essential remedy for tuberculosis in all its forms.—I am, etc.,

W. Camac Wilkinson, M.D.Lond., F.R.C.P.,
Late Lecturer in Medicine, Sydney University.

London, N.W., Oct. 12th.

TUBERCULIN TREATMENT.

Sir,—We should like to offer a few general observations on the undesirable results which may follow the production of a high degree of tolerance to tuberculin in the case of patients receiving tuberculin treatment.

In vaccine therapy it is accepted as a cardinal principle that the more acute and extensive the infection the smaller should be the initial dose, and that the increase in dosage should be carried out with great care and with due regard to the focal, as well as the systemic, effect. In any external disease which is visible to the eye the degree of focal reaction can be readily observed, but in the case of pulmonary tuberculosis the focal effect is liable to be overlooked unless careful search be made. For practical purposes tuberculin may be considered to be a vaccine, although the nearest approach to a true vaccine is probably B.E. We venture to suggest that the same principles which apply to other departments of vaccine therapy should govern the administration of tuberculin.

The aim of tuberculin treatment is to secure a direct immunizing response at the seat of disease with a parallel degree of tolerance both to the auto-tuberculin produced and to the tuberculin injected. We believe that this can only be secured by an initial dose, sufficiently small to evoke a focal response without any constitutional disturbance, and by gradually increasing the dosage at intervals of not less than one week. If tuberculin be administered at shorter intervals the immunizing respons is interfered with, owing to the setting up of two negative phases, and we have observed that in cases in which the dose has been too frequently administered and too rapidly increased a condition of tolerance to tuberculin is produced without any commensurate immunizing response at the seat of disease. Indeed, this condition of tolerance to tuberculin may have the effect of masking the progression of a smouldering lesion in the lung, the physician being thrown off his guard by the apparent feeling of well-being enjoyed by the patient. Thus, while evidence of constitutional disturbance may be entirely absent, examination of the patient will reveal the presence of coarse crepitations and the evidence of invasion of fresh areas of pulmonary tissue. Several such cases have come under the writers' observation, and they serve to emphasize the necessity of a frequent examination of the chest during the whole course of tuberculin treatment. In treatment by induced auto-inoculation, on the other hand, the examination of the chest is less frequently called for, as the constitutional condition provides a more trustworthy guide to the extent of the focal reaction. Here the patient benefits first of all by the immunizing response evoked and, secondly, by the degree of tolerance which he gradually acquires to his own tuberculin. It would seem to be unnecessary and undesirable to produce a tolerance to an amount of tuberculin far in excess of that which can possibly be produced by the lesion.

If the chief aim of tuberculin treatment be to secure a high degree of tolerance to tuberculin, then the result will be to increase the number of bacilli carriers by masking the constitutional evidence of the disease without healing the infective focus.—I am, etc.,

H. Hyslop Thomson.
E. H. R. Harries.

Newport, Mon., Oct. 9th.

Sir,—In your issue of October 12th, p. 959, is a paper read before the British Medical Association by Dr L. D. Parsons, of Gibraltar. The whole of the paper is much what we have learnt to expect from disciples of Dr. Camac Wilkinson.

Dr. Parsons does not seem to be aware that the work of von Pirquet and of other observers on the tuberculin tests and on *post-mortem* material shows that from 50 per cent. to 80 per cent. (the percentage varying according to the locality) of clinically healthy adults have at some time or other had a tuberculous infection, and consequently give a tuberculin reaction. Dr. Parsons apparently has been using the subcutaneous method, the most delicate of all,

and from the context one gathers that the criterion of a positive result has been taken to be a rise of temperature only.

But to say, as he does, that any one who gives this reaction needs treatment quite apart from any symptoms of disease, is going very much farther than the facts warrant—indeed, is entirely opposed to the facts.

The classical experiments of Franz may be quoted, who tested by the subcutaneous method the soldiers of two regiments, and found that 50 per cent. of them reacted. Does Dr. Parsons seriously maintain that all these men needed treatment? And if, as he suggests, the method were applied to all recruits, I fancy that conscription would be necessary to maintain our army at even half its present strength.

If Dr. Parsons will devote some short time to the study of current medical literature I think he will soon arrive at a more reasonable state of mind. Finally, may I ask his object in giving test doses of tuberculin to cases he has already diagnosed by the physical signs, if he merely observes the ensuing rise of temperature? I can understand, without defending, a physician who searches the chest during such a reaction for increased physical signs in order to ascertain the real extent of the disease, but to use the test merely to provoke a rise of temperature which will follow as a matter of course in a tuberculous patient, unless he has a high degree of immunity, seems, to say the least, unnecessary.—I am, etc.,

Sanatorium, Birmingham, Oct 13th. H. Coppock, M.D.

MODEL SCHEME FOR THE TREATMENT OF TUBERCULOSIS.

Sir,—There must be many members of the Association who will share with me a feeling of disappointment, if not of dismay, on reading the model scheme and the editorial on this subject in the Journal of October 5th.

A careful perusal of the document shows that the fundamental principles are the welfare of the private doctor and the restriction of the duties of the tuberculosis officer and dispensary doctor so that they may not encroach on the preserves of the general practitioner. In my opinion we should have taken a wiser and more dignified course as a profession in refusing to work sanatorium benefits till the Government were prepared to make it a comprehensive plan aiming at stamping out tuberculosis altogether, rather than attempt to make capital out of a scheme which, to use your own words, is designed for the cure and not the prevention of tuberculosis.

We in Oxford have now two years' experience in organizing a crusade against the disease, attempting not only to cure those afflicted, but to prevent the spread of infection. Our work is confined to the necessitous poor, and our armament for the fight consists briefly of the following:

The Scheme of the Association for the Prevention of Tuberculosis in Vogue in Oxford.

1. A tuberculosis officer, whose efforts at treatment are confined to the dispensaries, and whose main function is to act as health officer for tuberculosis. He visits the homes, places of work, and schools of those affected, examines contacts and other suspects, placing them under continuous observation. He arranges for the provision of shelters and, perhaps, of food when necessary; and he administers tuberculin to selected cases at the dispensary.

2. Nurses, who assist at the dispensary and visit dispensary cases at their own homes.

3. Dispensaries, of which the main one is at the Radcliffe Infirmary and three smaller ones in the outlying districts. Locally the staff of the hospital and tuberculosis officer treat the cases, whilst in the country dispensaries the local practitioners assist the tuberculosis officer.

4. Finally, when patients are too ill to attend the dispensaries, arrangements are made with private doctors to attend them at their own homes.

Advantages over the Model Scheme.

1. We get hold of a large number of strumous delicate children and contact cases, who undoubtedly are infected, though the disease is not yet in an active stage.

2. We have [illegible] rooms, dark room, weighing machines, etc., we can and do give a much more thorough examination than the private doctor is usually able to.

3. We have [illegible] in the administration of tuberculin, both as to the class of patient and kind of tuberculin advisable, than is possible for the average private doctor to have.

4. With our surprise visits by the officer and nurses and our shelters, etc., we believe that we do much to prevent the spread of the disease.

5. As only the tuberculosis officer and nurses are paid, this work is done at a very moderate cost to the community, and is largely met by private charity.

The Shortcomings of the Model Scheme.

1. Consumptives only too often postpone consulting a doctor, and those who may only attend a dispensary with a doctor's order will often come too late to hope for recovery. We want to seek our cases amongst those exposed to infection.

2. No provision is made for supplying nurses' thermometers, expectoration flasks, or weighing machines, etc.

3. Domiciliary treatment in the absence of any of the machinery mentioned in paragraph 2 will prove unsatisfactory. And yet can the authors of the model scheme really intend patients to attend regularly at the surgeries of their private doctors? Such a procedure is certainly more consistent with the cure than the provention of tuberculosis.

4. The administration of tuberculin would be in more competent and experienced hands as a rule at the dispensary.

5. There is no suggestion for preventing the disease, and no provision is made for examining contacts.

6. As it is in no way compulsory for the local authority to take care of the uninsured consumptive, is it likely that a body whose main object is to keep down the rates will find the enormous sum required to finance the model scheme?

As a general practitioner I, like my colleagues, naturally welcome any proposals which will assist me to meet the ever-growing demands on my purse. But it is to be feared that, even if the necessary funds are forthcoming, the adoption of the model scheme here instead of the work of the Association for the Prevention of Tuberculosis will be disastrous to the interests of the public, and therefore foredoomed to failure.—I am, etc.,

Oxford, Oct. 9th. Ernest Mallam.

THE TREATMENT OF NEURASTHENIA.

Sir,—In a letter under this heading (October 12th) Dr. John Haddon states that he can produce neurasthenia by dieting, and he can cure it in three days by dieting and exercise. Although in the past the cure of neurasthenia has been reached by many different routes, none of them has been capable of pointing us at all surely to its cause. But he who can summon its manifestations at will may claim to have touched the root of the matter and to have resolved one of the most perplexing problems of medicine. Dr. Haddon pleads for a commission to inquire into the dietetic treatment of disease. But one may hope that he will not wait for such a consummation before he consents to share with the rest of us an item of knowledge so vital to the numerous victims of the distressing malady in question. I should be sorry to ask a laborious exposition from him, but beg your leave to appeal to him for:

1. An example of the dietary which may be relied upon to produce neurasthenia.

2. An example of the dietary which will cure it so quickly.

3. The special features, if any, of the exercises to be employed in the cure.—I am, etc.,

London, W., Oct. 12th. William P. S. Branson.

Sir,—Since my letter in defence of British *versus* German medicine which appeared on Saturday, I have received so many letters from my medical brethren asking my advice, that I hope you will find room for this letter in your next issue because I cannot undertake to answer them.

Much as I sympathize with medical men who suffer from that dreadful malady, it is, I find, absolutely necessary to have the patients under my own personal supervision, for the will power of the patient is gone, and a stronger must be substituted so as to ensure obedience. It is an asylum we require for such cases, for, as in insanity, it is the mental centres that are at fault: and if medical superintendents of asylums (many of whom I have for some years endeavoured to convert to the proper treatment of their patients) had followed the right line, they might have emptied their asylums. If, however, the publicity of my success in curing myself and others should lead to the abandonment of the mere symptomatic treatment of disease by drugs and a return to the study of ancient medicine by the modern physician, I shall feel that the misery I have suffered from reliance on such treatment has not been in vain.—I am, etc.,

Hawick, Oct. 14th. John Haddon, M.D.

A STATE MEDICAL SERVICE.

Sir,—In your issue of September 28th (p. 799) you refer to my State Medical Service scheme as a "full-blown socialistic régime," and I admit that at first sight it seems quite unnecessary for our profession to interest itself in what I cannot deny is a socialistic scheme. But—and this is a big but—is not the work of our profession drifting gradually into a scheme of this sort? and inspectors of schools, tuberculosis inspectors, medical officers of health, etc., are cutting into the life-work of medical men. We are not to in future call in the Harley Street specialist in a case of tuberculosis and pay him two guineas, but we must call in the county inspector, who is paid out of the rates, and so we drift on. What I want the profession to do is to take the bull by the horns and say to the Government, "You are taking our work away in pieces; we are as a whole absolutely unconsidered; what we demand is that we shall have a Minister of Public Health and a Board of Public Health, and we will come under that board and no other; we will not be the slaves of insurance companies and county councils; we wish to have our goings and comings and our doings absolutely controlled by members of our own profession, and not by a class of men who know nothing of our work, services, disappointments, etc. As things go, it will be absurd of any of us to put our sons into the medical profession—it is getting into such a tangle and muddle with one kind of appointment and another, and no uniformity of salary; but if such a scheme as mine came in, with the Board of Health in control of the salaries and appointments, underselling and underpaying by councils would be done away with. I should not dream of putting my sons in anything else.

Another point you mention is the doubt as to whether all the present members would get employment. As work would be more evenly divided, and as a very large staff of locumtenents would be required under my scheme (for every member would have one month off per annum), I doubt whether we should have enough men. Many now take no holidays, except, perhaps, week-ends, but a medical man ought to have a complete rest in the interests of his patients; and, again, under my scheme every five years the member of the State Medical Service has three or six months' leave to attend hospitals. We who live near London or other large towns can attend lectures, but, buried in the country, many men are years behind the times. I know one man who, ten years after sodium salicylate had been in use for rheumatism, had never heard of it, and the other day I met a man, in town, who had no experience of aspirin. These are the highly intelligent people who tell the public that drugs are no use. We cannot expect a man to be up in all the details of antitoxin treatment and electrical treatment, but we do expect him to know a little about drugs. The only absolute objection so far made to my scheme is that it is "too much in favour of the doctors." This, of course, was said by a member of another profession.—I am, etc.,

Leytonstone, Oct. 7th. Arthur Todd-White.

FORCIBLE FEEDING.

Sir,—In reading the letters that have appeared on this subject I have been puzzled by the almost complete absence of any comment on the methods that have been adopted for carrying it out. From letters in *Votes for Women*, and from personal inquiry, I am led to believe that the routine methods were the nasal tube and cup-feeding, and that in many cases there was violent struggling, prolonged over a period of half or three-quarters of an hour, which resulted in the women being left in a state of extreme exhaustion. The statements about the prolonged struggling may be exaggerated, but it is certain that large numbers of prisoners were liberated long before the expiration of their sentences, and were sent home in a very dangerous state, which could hardly have been produced by starvation alone in the time. I am anxious to know why the nasal tube was adopted, because it has always seemed to me to be much more painful and dangerous than the larger and stiffer tube of the ordinary stomach pump, which is introduced through the mouth. There are statements of the nasal tube curling forward and coming out of the mouth and being pushed back by the doctor's fingers. It may also enter the larynx, and is said to have done so.

Many years ago I did a good deal of tube feeding in the Durham County Asylum, and later, in private practice and in the Gateshead Workhouse Infirmary, I have adopted the same method. It is my opinion that with not less than five assistants, a screw apparatus for opening the mouth, and a fairly large and rather stiff tube, any patient can be fed with very little difficulty and hardly any danger. The patient lies face upwards on a bed—on a mattress, not an air or water bed—and is held so that struggling is impossible; therefore there is no exhaustion and no encouragement to struggle on subsequent occasions. This absolute control is impossible with a patient in a chair.

I shall also be glad to know more about the two men who are said to have died under forcible feeding.

In writing thus I am stating my opinion, but it seems that other people have thought differently, and I ask for an explanation. The suffragettes have inflicted a disastrous injury on the administration of justice in the British Empire.—I am, etc.,

Ipswich, Oct. 14th. A. Woolsey Blacklock, M.D.

THE RULE OF THE ROAD.

Sir,—It may interest your readers to know that this rule originated, in this country, in the narrowness of old London Bridge, and the abundance of traffic thereon.

In 1722, the Lord Mayor, Aldermen, and Common Council, being sensible of the great inconveniences and mischiefs which happened by the disorderly driving of coaches, carts, and other carriages on the bridge, promulgated an order that all carriages coming out of Southwark into the city should keep along the west side of the bridge, and those going out of the city on the east side, appointing three persons at each end to see this order executed; and this method, says a writer forty years later, is still observed. It is clear, therefore, that at the time the order was made, and most likely that forty years later, there was no rule of the road, except on the bridge itself. It was natural that as traffic became more frequent in the streets of London, the rule should be extended to them, and so to the rest of the country, being spread by the drivers of vehicles from London. No reason is given for the selection of the left for the near side, and it seems clear, from the directions as to east and west, that the rule did not take its rise from any greater convenience to drivers to keep to the left. From London Bridge this rule has spread over the whole of the United Kingdom, and all the oversea colonies and dependencies thereof, and to the United States of America.—I am, etc.,

Parkstone, Dorset, Oct. 12th. Charles Mercier.

The Services.

HEALTH OF THE EUROPEAN TROOPS IN INDIA, 1911.

The annual report issued by the Director-General of Medical Services in India shows that the remarkable improvement in sickness and mortality recorded in 1910 was maintained and in some respects increased in 1911. The chief features are shown in the following table:

All Causes.	Ratio per 1,000 of Strength.		
	1905-09.	1910.	1911.
Admissions	802.5	576.5	524.7
Constantly sick	47.26	31.93	28.81
Deaths in the command	8.79	4.66	4.89
Invalids sent home	19.92	7.75	7.07
Invalids finally discharged	8.93	6.51	—
Average sick time to each soldier	17.25	11.66	10.52
Average duration of each case of sickness	21.50	20.22	20.05

The slight increase in the ratio of deaths from all causes is attributed to a large number of casualties from heat-

stroke, and an increased number of deaths from both cholera and plague.

Heat-Stroke.

The hot weather was unusually severe owing to the irregularity and amount of distribution of the monsoon; the conditions rendered the life of the soldier in the plains of India exceptionally trying.

Plague.

Nine cases of plague with 6 deaths occurred: all the cases were single with the exception of 3 among the band of the Royal Scots at Allahabad: they went to Benares to play, and travelled in compartments out of which large numbers of the Indians had issued at Allahabad. Cases of plague developed among the bandsmen a few days later, and the inference drawn was that they had contracted the disease in the railway carriage.

Cholera.

There were 38 admissions and 21 deaths; both were in excess of recent experience. The disease was prevalent among the native population, and one series of 4 cases with 4 deaths was directly traced to the consuming of bazaar supplies: another series of 7 cases with 4 deaths in a regiment on the march appears to have been contracted in villages traversed en route; a third series of 26 cases with 12 deaths was traced to infected butter sold from the regimental dairy; the dairy had run short, and had purchased butter in a bazaar from a maker in whose house cholera cases and deaths had occurred.

Typhoid and Paratyphoid Fever.

Enterica.—For the purpose of comparison with previous years, cases of typhoid and paratyphoid fever are in one part of the report brought together. It appears that ten years ago the admission-rate per 1,000 was 12.8, and the death-rate 3.32; in 1911 the rates were respectively 3.8 and 0.33.

Typhoid Fever.—Under the headings "enteric fever" and "paratyphoid fever," the particulars of the cases lumped together under "enterica" are given. The number of cases of typhoid fever in 1911 was the lowest on record. There were only 170 cases altogether, with 22 deaths, equivalent to an admission-rate of 2.3 per 1,000 of strength, and death-rate of 0.3. There was no epidemic outbreak. The cases were more or less isolated, and scattered over a large number of units and places. Nursing orderlies and others engaged in attendance upon the sick were remarkably free, and there was no evidence that milk, water, or articles of food had caused the disease.

Paratyphoid Fever.—Paratyphoid fever was first carefully distinguished in the returns from typhoid fever in 1910. The diagnosis was in all cases made by the isolation of the specific bacillus, which in 103 of the 104 cases was of the (A) variety. In the one remaining case it was of the (B) variety. The case mortality of typhoid fever was 12.9, of paratyphoid fever 2.0 per cent., and the latter disease showed a tendency to occur in explosive outbreaks. The four chief of these were carefully investigated by Major Grattan, Major Faichnie, Major Walton, and Captain Safford, of the Royal Army Medical Corps, and in all instances the determining factor was found not to be water, milk, or any other article of food, but the presence of an undetected and unsuspected infected person.

Enteric Fever Dépôts.—The enteric fever dépôts at Naini Tal and Wellington proved very useful. To them are sent convalescents not only from typhoid and paratyphoid fever, but also from types of pyrexia of uncertain origin, which, though not diagnosed as either disease, yet afford evidence that they may have been one or the other. Of 158 cases of this kind seen at Naini Tal, 5 were found to be excreting the paratyphoid (A) bacillus in the faeces. Among the 95 cases convalescing from typhoid fever sent to Naini Tal, no carrier was discovered, while in 85 cases convalescent from paratyphoid fever, twelve carriers were [illegible]

[illegible] Of the European troops serving in India 85 per cent. have been inoculated. Upon this [illegible] graphs:

[illegible] of inoculation against paratyphoid infection appears to be negative. Of the 104 cases of paratyphoid fever, no less than 97 were inoculated men with 2 deaths, while the other seven cases were not inoculated men. The admission-rate per 1,000 among the inoculated is 1.57, and 0.73 among the not inoculated. The coefficient of correlation between inoculation and freedom from attack by paratyphoid fever is 0.1994 ± [illegible]

[illegible] fever and paratyphoid fever together, we find that the admission-rate among the inoculated is 2.75 per 1,000, while among the not inoculated it is 10.88. The corresponding death-rates per 1,000 are 0.17 and 1.15; further, the coefficient of correlation between inoculation and freedom from attack is 0.2527, 0.0071, while the coefficient between inoculation and recovery after attack is 0.6579, 0.0684. The above figures indicate that against true enteric fever the value of inoculation is most marked, and the case in favour of the procedure much strengthened by our experiences during 1911. The disturbing factor is the prevalence of paratyphoid fever, against which disease antienteric inoculation appears to have little influence. This view was hinted at in last year's report, and emphasizes the plea for a polyvalent, or rather a bivalent, emulsion with which inoculation could be carried out against both diseases. The reinoculation of men after a lapse of thirty months since their primary inoculation is being steadily pressed, and meets with an encouraging support from all ranks.

Malaria.

There were 3,045 fever admissions in 1911. It was not thought that this diminution could be attributed to any special action on the part of either the State or the medical services, but that it was probably associated with the comparatively small and irregular rainfall of the year. Further information, it is stated, is required with regard to the degree of infectiveness of the human population and of the extent to which the mosquitos are infected, and also as to the seasonal variation of infectivity among mosquitos. Attention is called to the fact that an apyrexial malarial carrier may be a danger to a unit or other community if the *Anopheles* mosquito be present. The remedy recommended is the routine use of netting at night. The active antimalarial measures carried out in all garrisons by mosquito brigades have not diminished, and the work is slowly bearing fruit: the systematic administration of quinine has been extended and a more complete record of all cases of malaria instituted. On the other hand, the number of cases of sand-fly fever showed a remarkable increase—from 512 in 1910 to 1,393 in 1911. This is believed to be due to increased accuracy of diagnosis, such cases having previously been confused with malaria.

Chloroform.

It is stated that 3 deaths followed chloroform inhalation: in no case was blame or want of care to be attributed to the anaesthetist, but the number seems rather large, having regard to what has been said as to the relative safety of the administration of chloroform in India.

Venereal Diseases.

These diseases caused 3,842 admissions during the year, a definite decrease as compared with former years. In respect of the component groups decrease, as compared with 1910, was 2.6 per cent. of admissions for syphilis per 1,000 of strength, 1.4 per cent. for soft chancre, and 1.8 per cent. for gonorrhoea. This is equivalent to a total decrease of 5.8 per 1,000 of strength in admissions to hospital for all forms of venereal disease. There was a decrease of 51.31 per 1,000 in the average number of constantly sick from all forms of venereal disease.

The gradual fall in the admission rate for all forms of venereal disease during recent years is summarized in the following table, the ratios being in all cases per 1,000 of strength:

Years.	Syphilis.	Gonorrhoea.	Soft Chancre.	All forms of Venereal Disease.
1907 . .	22.2	48.0	19.7	89.9
1908 . .	15.8	37.9	16.1	69.8
1909 . .	16.3	37.7	13.9	67.8
1910 . .	13.5	33.5	10.9	58.9
1911 . .	11.9	31.7	9.5	53.1

The invaliding rate has also fallen, and this favourable result is attributed to improved methods of treatment, more especially by salvarsan with after-treatment by mercury and iodides. Salvarsan was used altogether in 432 cases: in 225 in which it was administered intramuscularly there were 37 failures: in 207 cases treated intravenously there were only 5 failures. Its action on ulcerative and early lesions is reported to be most definite and good. The employment of the Wassermann reaction is a routine procedure in all the military hospitals in India.

Officers.

The number of admissions declined from 532 in 1910 to 450 in 1911, but the ratios of admissions of invaliding and of deaths in the command are now higher among officers than among the men. The deaths in the command gives

a ratio per 1.000 strength of 8.10 for officers, as compared with 4.89 for non-commissioned officers and men. This discrepancy is attributable, in part, to the heavier incidence of enterica among the officers, the outcome of exposure to risks in jungles and out-of-the-way places when on leave or shooting expeditions, but in part to the comparatively small percentage of officers inoculated against typhoid fever. The percentage of inoculated persons among the men is 85, while among the officers it is only 51.

Women and Children.

The general health of women was good as compared with former years, though the death-rate was slightly higher, but the health of the children in barracks was not good. The admission-rate from all causes rose from 343.5 to 370.6, and the death-rate was also somewhat higher.

INDIAN MEDICAL SERVICE.

It has been decided that officers without a permanent regimental appointment who are officiating in the Bacteriological Department shall draw staff pay at the rate of 225 rupees per mensem if under, and 250 rupees per mensem if over, five years' service.

Officers of this department are eligible for the benefits of Presidency house allowance in Madras and of the Calcutta and Bombay house allowance schemes.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

The following candidates have been approved at the examinations indicated:

First M.B.—*Part I. Chemistry*: F. Allen, D. J. Batterham, P. J. Briggs, E. B. Brown, G. W. Brown, T. A. Butcher, T. A. Collot, R. S. Corbett, G. P. Crampton, T. L. Crawhall, L. P. L. Edwards, G. G. Havers, J. M. Higgington, J. B. S. Lewis, G. T. Lipshytz, R. H. Marten, R. T. Raine, D. W. R. Richardson, G. D. C. Tracy, C. R. H. Weekes, T. A. V. Wood. *Part II. Physics*: F. Allen, D. J. Batterham, D. C. Beaumont, P. J. Briggs, E. B. Brown, G. W. Brown, T. A. Butcher, B. M. Coates, G. P. Crampton, T. L. Crawhall, L. P. L. Edwards, R. T. S. Gwynne, E. W. Hall, G. G. Havers, J. M. Higgington, M. H. Jupe, G. T. Lipshytz, H. H. Marten, G. S. Need, R. T. Raine, D. W. R. Richardson, G. D. C. Tracy, C. R. H. Weekes, T. A. V. Wood. *Part III. Elementary Biology*: F. Allen, D. C. Beaumont, G. H. Bickley, T. A. Butcher, B. M. Coates, G. P. Crampton, W. L. Dandridge, L. P. L. Edwards, E. W. Hall, M. H. Jupe, R. T. Raine, D. W. R. Richardson, C. R. H. Weekes, T. A. V. Wood.

UNIVERSITY OF LONDON.

The London Hospital.

The competition for entrance scholarships at the Medical School of the London Hospital resulted as follows: The *Price Scholarship in Science*, value £100, was awarded to Mr. R. G. Simpson; the *Price Scholarship in Anatomy*, value 50 guineas, was divided between Messrs. W. D. Newcomb, of Trinity College, Cambridge, and A. C. Ainsley, of Caius College, Cambridge. Similarly treated was the *Buxton Scholarship in Arts*, the dividers being Mr. H. L. Douglas and Mr. S. E. Harvey; while the *Entrance Scholarship in Arts*, value £50, went to Mr. V. J. F. Lack. To the *Epsom Scholarship*, value £120, Mr. S. H. de G. Pritchard was appointed on the nomination of the Head Master of Epsom College.

SCOTTISH UNIVERSITIES.

Inclusive Fees.

At a conference of representatives of the General Councils of the Universities of Glasgow, Aberdeen, and Edinburgh to discuss the question of an inclusive fee in the departments of medicine and applied science held recently in Perth, the following resolution was adopted:

That, having considered the memorandum of resolutions adopted at the conference of representatives of the University Courts of St. Andrews, Glasgow, and Aberdeen on June 20th, 1912, and the report of the subcommittee of the General Council of the University of Glasgow, the conference finds that, while not opposed to the principle of an inclusive fee for university courses in medicine, further inquiry is necessary into the amount of the fee and into the form the regulations must take to protect the interests of the universities and the extramural schools.

UNIVERSITY OF WALES.

An examination for a registrable Diploma in Public Health is to be held for the first time next December. The names of candidates must be submitted to the University Registrar, Cathays Park, Cardiff, not later than November 15th, and the examination will begin on December 16th. The regulations concerning it closely correspond with those of other like bodies. The examination is in two parts, the fee for each of them being 6 guineas. The Act empowering the university to grant registrable diplomas in public health was obtained in December, 1911, and recognition of the diploma was accorded by the General Medical Council last June, and made retrospective.

UNIVERSITY OF EDINBURGH.

The following candidates have been approved in the subjects indicated:

First M.B. *Chemistry.*—G. B. Brewster, S. L. Dmitrieff, J. A. C. Guy, J. B. Hanna, Jeannie J. Harper, F. J. Hauptfleisch, P. W. Lam, Marjorie I. S. M'Gregor, J. P. D. Maclagan, Bessie M. Mactaggart, H. G. H. Maxwell, J. S. Rao Pandit, M. Talaat, E. T. N. Taylor. *Physics:* H. Anderson, W. E. Canekeratne, Eva M. Clark, H. B. Dykes, J. Gunn, K. C. Jaidka, S. N. Kaul, P. W. Lam, Marjorie I. S. M'Gregor, A. W. Mackie, A. Maja, S. A. D. Naoroji, D. A. Sprott, G. W. G. Sutherland, P. Vertannes, D. F. Thompson. *Botany;* J. G. L. Brown, W. E. Canekeratne, D. Colombos, P. W. Edwards, N. M. Gokool, K. C. Jaika, N. Jennings, D. W. M'Lean, A. J. Muirhead.

Second M.B. *Anatomy.*—R. C. Aitchison, R. Andrew, T. C. Bowie, J. E. Chow, I. A. Clarke, D. S. Falconer, A. J. Ferguson, F. J. Ng-a-Fook, A. W. Forrest, J. Hej burn, O. D. Jarvis, E. B. Kelley, D. Lennox, A. J. E. G. Lim, H. H. Lim, J. G. Louden, C. F. Maclachlan, P. C. MacRae, R. W. H. Miller, S. N. Mitra, J. J. Molyneaux, R. Power, P. V. Ramanamurty, V. A. Rankin, A. A. Watson, C. J. Young. *Physiology:* M. H. Alikhan, Dorothea I. Baird, T. Y. Barkley, H. J. Bruwer, W. M. Christie, F. A. Correa, J. Dale, M.A., J. C. Dobson, R. B. Eadie, A. J. Ferguson, W. H. Ferguson, E. L. Galgut, Helen M. Gall, W. Goldie, H. Jackson, Muriel H. Kerr, N. B. Laughton, A. R. Laurie, E. Law, J. Lawson, T. J. Lloyd, Margaret M. M'Garrity, I. C. Mackay, R. M'Kinlay, J. M'Leman, J. W. Malcolm, C. E. Meryon, S. N. Mitra, W. T. Patterson, J. S. Rankin, C. B. B. Reid, W. Shanks, H. S. Smith, L. J. Spence, M. Stewart, T. M. J. Stewart, C. H. Wan, J. S. Webster, L. H. Werden, J. D. Whitfield, W. Williams.

Third M.B. *Materia Medica.*—R. G. Bannerman, M.A., E. G. von B. Bergh, W. Bird, J. V. Buchanan, J. S. Crichton, Georgina E. Davidson, S. J. A. Laubscher, E. Llewellyn, W. H. M'Granahan, Jessie A. MacLaren, R. H. H. Newton, B.A., G. S. Pirie, E. G. C. Price, E. A. Seagar, H. J. Simson, J. Z. Truter, J. B. Young.

UNIVERSITY OF GLASGOW.

The following candidates have been approved at the examinations indicated:

First M.B., Ch.B. (B., Botany; Z., Zoology; P., Physics; C., Chemistry).—G. W. Allan (B., P.), A. B. Austin (B., P.), *J. W. W. Baillie (B., P.), W. Baird (C.), *J. E. Bannen (B., P.), W. Barras (C.), J. Beveridge (Z., C.), M. N. Bhatia-harjee (Z., C.), T. Blackwood (Z., C.), R. M. S. Boyd (B., P.), J. P. Broom (B., P.), A. C. Brown (B.), H. D. Brown (B., P.), J. A. Buchanan (B., P.), S. E. A. Buckley (B., P.), D. Campbell, M.A., B.Sc. (B., Z.), T. W. Carstairs (C.), T. C. Christie (B., P.), D. Clyde (B., P.), D. H. Coats (C.), W. K. Connell (C.), A. S. Cook (C.), *A. J. Copeland (B., P.), J. Crerar (B., P.), J. N. Cruickshank (B., P.), R. Cunningham (B., Z., P., C.), A. Dick (B., P.), J. H. Dobbin (B., P.), J. F. Duthie (B., P., C.), K. H. Dyke (B., P.), S. N. Dykes (B., P.), J. Ewing (B., P.), B. W. H. Fergus (B., P.), F. E. Ferguson (P.), J. B. Fisher, (B., Z., P.), L. L. Fotheringham (B., P.), *A. D. Gibson (B., P.), K. J. A. Gillanders (B., P.), P. F. A. Grant (C.), T. Gray (B., P.), W. Guy (B.), A. Harper (B., Z.), W. E. Haydon (B., Z.), F. W. Hebblethwaite (B., P.), S. J. Henderson (B., P.), J. C. Hendrie (B., P.), H. F. Hollis (B., P.), J. N. Jamieson (P.), O. Johnston (C.), S. Johnstone (B., P.), A. Kennedy, M.A. (B., P.), J. Liddell (B.), F. C. Logan (B., P.), W. W. Lundie (B., P.), K. M'Alpine (B., P.), H. E. M'Coll (B., Z.), W. R. M'Crae (B.), J. R. M'Crindle (B., P.), E. Macfarlane (B., P.), A. M'Gowan (Z.), A. M'C. Macintosh (B., P.), D. B. M'Intosh (C.), J. E. MacIntyre (B., P.), N. Mackillop (B., P.), J. M. Mackintosh (Z., C.), D. M'Laren (Z.), *G. Maclean (B., Z.), J. W. Maclean (B., P.), P. D. MacLean, M.A. (B.), J. Macleod (B.), P. M'Luskie (B., P.), A. F. M'Millan (B., P.), F. K. Macmillan (B., P.), W. M'William (B., P.), F. R. Martin (C.), A. M. Millar (P.), G. M. Millar (B., C.), D. S. Mitchell (B., P.), W. W. Morrison (Z.), J. Orr (C.), W. M. B. Orr (B.), J. A. Paterson (P.), J. W. Patterson (B., P.), G. Pearson (B., P.), A. C. Philps (B., Z., P.), J. Prentice (B., P.), *T. J. Quigley (B., P.), J. G. Rennie (Z.), S. M. Riddick (B., P.), A. W. Ritchie (B., C.), I. M. Robertson (B., P.), K. M. Rodger (B., Z., P., C.), R. Rodger (B., P.), F. J. G. Rolland (B., P.), F. W. Sandeman (B., P.), A. M. Scott (B., P.), W. Scott (B., P.), *H. B. Sergeant (B., P.), A. W. Sinclair (B.), A. W. Smith (B., P.), *C. L. Somerville (B., P.), H. H. Spencer (B.), J. Steel (B., P.), J. Steele (B., P.), A. R. Steinberg (B., P.), J. S. Stewart (B., P.), P. A. Stewart (Z.), T. S. Stirling (B., P.), *A. S. Strachan (P.), H. Stuart (B.), G. C. Swanson (B., P.), J. B. Sweet (C.), D. Taylor (B., P.), C. B. Templeton, (C.), *H. W. Torrance (B., P.), J. J. Trennor (B., C.), R. N. Walker (B., P.), R. S. Weir (C.), *K. J. T. Wilson (B., P.), J. T. Wylie (C.), R. Young (C.). *Women:* J. M. Alexander (B., C.), M. M. Anderson (B., P.), M. N. Blake (B., P.), W. J. Crawford (B., P., C.), *M. B. Gillespie (B., P.), M. H. Glen (B., P.), L. F. Goetz (P.), J. L. Hamilton (B., P., C.), M. C. B. Leigh (Z., C.), M. J. T. Leitch (P.), M. E. MacIver (B., P.), *L. Maclay (B., P.), M. A. M. MacLean (B., P.), E. S. Martin (C.), M. K. Mitchell (B., P.), M. M. Morton (B., Z.), M. I. T. Reid (B., P.), M. N. Robertson (P.), *J. Stalker (Z., C.), M. Watson (B.), M. M. Weir (B., Z.), *A. E. Wilson (B., P.).

Second M.B., Ch.B. (A., Anatomy; P., Physiology; M., Materia Medica and Therapeutics).—I. Abdurahman (P., M.), G. K. Allan (A., P., M.), J. M. Anderson (A., P., M.), J. Anderson (M.), R. Armstrong (A.), A. D. Blakely (M.), W. E. Boyd, M.A. (A., P.), M. S. Bryce (P.), J. Buchanan (M.), W. E. A. Buchanan (A., P.), J. Cameron (P.), J. Campbell (A., P., M.), J. M. Campbell (A., P.), *A. M. Clark (A., P.), A. L. B. Clark (M.), R. Clark, M.A. (M.), A. Climie (A., P.), W. Combe (A., P.), J. P. Crawford (M.), W. Cullen (A.), F. V. Daeblitz (M.), W. Donald (M.), T. I. Dun (A., P., M.), D. Ferguson (P.), T. Ferguson (A., M.), H. T. Findlay (A., P.), J. J. Finlay (A., M.), G. Fleming (M.), I. M. Frazer (A., P., M.), W. W. Galbraith (A., P.), L. W. Gemmell (M.), A. J. Gibson, M.A. (P., M.), J. Gilchrist (P., M.), P. Gordon (P.), *R. T. Grant (A., P.), R. M. Greig (M.), D. C. Hanson (M.), D. Hardie, M.A. (M.), J. W. P. Harkness, M.A. (A., P., M.), R. Isbister (A., P.), *A. C. Jebb (M.), D. B. King (P.), J. C. Knox (A., P.), R. M. Lang (A., P.), *G. M'Callum (P.), H. D. M'Crossan (A.), A. M. M'Cutcheon (A., P.), R. W. MacDonald (M.), D. M'Intyre (M.), D. M. M'Intyre (M.), J. M. Mackay (A., P.), D. Mackie (A., P.), R. H. M'Killop (M.), J. A. MacLean (A.), E. J. MacPhail (P.), J. K. Manson (M.), A. P. Martin (M.), W. J. May (M.), W. Meikle (M.), P. Nath (A., P.), J. R. Pate (M.), J. Paterson (P., M.), J. M.

Pinkerton, B.Sc. (M.), J. S. Prentice (M.), W. B. Primrose (A., P.), H. Quigley (A., P.), F. P. Rankin (M.), T. F. B. Reid (M.), R. C. Robertson (A.), A. F. Ross (A.), A. Scott (A., P., M.), *S. C. Shanks (A., P.), *W. F. Shanks (A., P.), J. Smith, M.A. (A., M.), N. M. Smith (M.), J. B. Steven (A., M.), J. F. Steven, M.A. (A.), J. S. Stewart (M.), *R. S. Strachan (A., P.), R. Tennent (M.), C. R. T. Thompson (A., M.), J. Vallance (M.), J. Walker (A., P.), W. S. Wallace (M.), W. J. C. Watt (M.), J. B. Williamson (M.), J. G. Wilson (P., M.), T. M. Wilson (M.), A. Young (A.), G. Young (M.), J. M. Young (P.). *Women:* G. G. T. Anderson (M.), E. W. Gompertz (A., P.), J. F. Henderson (P.), G. Montgomery (M.), M. Walker (A.), G. B. Whish (A., P.), I. H. Younger (A., P.).

THIRD M.B., CH.B. (P., Pathology; M., Medical Jurisprudence and Public Health).—A. M. Blackwood (M.), J. S. K. Boyd (P., M.), J. J. Burke (M.), J. Cameron (P.), W. L. Cassells, B.Sc. (P.), T. M. Crawford (M.), W. T. Currie (P., M.), J. Dunbar (P., M.), J. B. Fotheringham (M.), A. R. H. Geyer (M.), I. D. Grant (P., M.), J. W. W. Hewitt (P., M.), T. C. Houston (M.), J. R. C. Mackintosh (P.), R. M. M'Minn (M.), E. S. Macphee (M.), W. S. Martin, M.A. (M.), O. H. Mayor (M.), T. A. O'Brien (P.), R. Parker (P.), A. M. Ramsay (P.), D. R. E. Roberts (P., M.), S. D. Robertson (P., M.), H. Stewart, M.A. (P.), R. Stewart (P., M.), W. B. Stewart (P., M.), I. D. Suttie (M.), E. N. Thomson (P.), J. C. Walker (P.), H. C. Watson (M.), W. H. N. White (P.) *Women:* C. S. T. Anderson (P.), J. R. Anderson (M.), M. J. Brown (M.), E. Crawford (M.), M. P. Hislop (M.), A. R. M'Kail (M.), S. A. J. Rankine (M.)

FINAL.—J. J. Lowell, S. Blumenfeld, C. Brash, A. Brown, W. Brown, J. S. Buchanan, J. W. Burton, J. H. J. V. Coats, *Jane M Davidson, *J. H. Dible, J. Dickie, *W. B. Drummond, J. M. Forsyth, J. E. Fyfe, A. M. Gibson, Maggie L. Kirkwood, R. A. Lennie, J. R. M'Curdie, C. A. M'Guire, G. D. M'Lean, *J. M. Macpherson, *T. Martin, K. D. Murchison, A. Peden, J. F. Quigley, *D. W. Reid, J. R. R. Ritchie, A. L. Robertson, E. Robertson, *J. H. Robertson, J. I. Robertson, F. Shearar, J. F. M'G. Sloan, *A. R. B. Soga, G. Stevenson, R. Stewart, W. P. A. Stewart, *W. Taylor, J. C. T. Teggart, Janet M. Walker, G. M. Whish, F. J. Whitelaw, T. Whitelaw, W. F. Wood

* Passed with distinction in one or more subjects.

UNIVERSITY OF BIRMINGHAM.

Professors Malins and Priestley Smith.

AT the last meeting of the Council, the resignation of Dr. Edward Malins as Professor of Midwifery and Diseases of Women was reported, and the following resolution was unanimously passed thereon:

That the Council accepts with great regret the resignation of Dr. Edward Malins as Professor of Midwifery and Diseases of Women, and begs to tender to him its best thanks for the valued services which he has rendered to the medical school during the eighteen years in which he has occupied the chair. The Council also desires to express to Dr. Malins its warmest thanks for the generous donation of £1,000 to the university funds with which he has signalized the termination of his official connexion with the the university.

Subsequently the resignation of Mr. Priestley Smith as Professor of Ophthalmology was received and acknowledged in the following terms:

That the Council accepts with great regret the resignation of Mr. Joseph Priestley Smith as Professor of Ophthalmology, and begs to tender to him its thanks for the distinguished services which he has rendered to the medical school during the fifteen years in which he has occupied the chair.

UNIVERSITY OF BRISTOL.

THE following degrees have been conferred:

M.D.—G. W. J. Brashor; V. B. Green-Armytage.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY council was held on October 10th, 1912, the President (Sir Rickman Godlee) in the chair.

The late Mr. Clinton Thomas Dent.

The following resolution was passed by the Council:

That the Council hereby expresses their deep regret at the death of their colleague, Mr. Clinton Thomas Dent, whom they highly esteemed for the energy and ability which he displayed in all [illegible] and keen [illegible].

For these reasons, as well as for his attractive personality, the Council believe that his loss will be long felt and deeply regretted in the large circle of friends which his many interests and versatility gathered round him.

That a copy of this resolution be forwarded to Mr. Dent's relatives, [illegible] by of the Council be expressed to [illegible].

The President reported that the vacancy in the Council occasioned by the death of Mr. Dent would be filled up at the annual meeting of Fellows in July, 1913. It was arranged to hold a special Council meeting on October 17th, 1912, to elect a vice-president in place of Mr. Dent.

Mr. John Marle.

The President reported that Mr. John Marle had recently died of pneumonia. Mr. Marle had been "articulator" at the college since 1885, and had, during his long period of service, carried out a large amount of valuable work in connexion with the osteological portion of the museum.

Annual Meeting of Fellows and Members.

A [illegible] of the annual report, to be presented to the above meeting on Thursday, November 21st, 1912, was submitted to the Council.

Jenks Scholarship.

Mr. Graham S. Wilson, till lately a student at Epsom College, was appointed to the above scholarship.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examination indicated:

FIRST COLLEGE.—J. H. Barrett, S. H. Berwitz, J. J. Campbell, B. J. Daunt, R. D'Alton, Miss E. M. Lloyd Dodd, C. K. T. Hewson, E. T. McElligott, T. Moore, P. O'Connell, I. Sharpe.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

FIRST HALL.—(*Chemistry*) H. C. C. Hackney. (*Anatomy*) A. U. L. Bennet, C. H. Fischel, H. C. C. Hackney, N. Hoffmeister, J. Lyon, R. H. Pettersson, J. E. Pickering, W. F. W. Sim, R. A. Wilson. (*Physiology*) C. H. Fischel, N. Hoffmeister, S. B. King, J. Lyon, R. H. Pettersson, J. E. Pickering, W. F. W. Sim, R. A. Wilson.

Public Health AND POOR LAW MEDICAL SERVICES.

DISTRICT MEDICAL OFFICERS AND SUPERANNUATION.

VORTEX, who is a district medical officer, 60 years of age, with twelve years' service, asks if he can now resign on pension, or whether he must hold office till he is 65 to enable him to claim it.

*** Our correspondent must remain in office till 65 years of age, unless previous to that time he becomes incapable of discharging his duties efficiently in consequence of permanent infirmity of body or mind or old age.

Obituary.

DR. E. MELLOR LIGHT of Ebury Street, London, S.W., died of septic infection at Cromer on October 1st after a comparatively short illness. Dr. Light won an exhibition in natural science at St. Thomas's Hospital in 1879, but shortly afterwards went up to Cambridge, where he graduated B.A. in 1883 and M.B., B.C., in 1888. He proceeded M.A. in 1887 and M.D. in 1904. He received his medical education not only at Cambridge and St. Thomas's Hospital, but also at Leeds. He at various times held the appointments of house-physician to the Brompton Hospital for Consumption, clinical assistant to the throat department of St. Thomas's Hospital, and resident medical officer and pathologist to the General Infirmary, Leeds. Dr. Light gave particular attention to the study of life assurance, and was a member of the Life Assurance Medical Officers' Association and of the corresponding international association. He had been since 1897 the chief medical officer of the Prudential Assurance Company. Dr. Light, who was only 52 years of age, married in 1901 the daughter of John James of Hurcott, Worcestershire, by whom and by two young sons he is survived. The body was cremated at Golder's Green on October 4th.

DR. JOHN KNIGHT, Medical Officer of Health for Scarborough, whose death occurred after an operation undertaken to relieve a condition of ill health from which he had suffered for several months, was born at Glasgow in 1874. He was educated at the High School and afterwards entered the University of Glasgow, where he had a brilliant career, graduating M.B., C.M., with first-class honours in 1896 and taking the Brunton prize as the first medical graduate of his year. He took the D.P.H.Camb. in 1898 and the degree of M.D.Glasg. in 1902. He became a pupil associate of the Glasgow Public Health Department and afterwards acted for a year as assistant to the Professor of Forensic Medicine and Public Health in Glasgow. Later he again became connected with the health department and was for a time on the staff of the Belvidere Fever Hospital. In 1900 he was appointed assistant to Dr. Chalmers, Medical Officer of Health for Glasgow, and five years later received the appointment of medical officer of health for Scarborough. He was also appointed school medical officer for the borough and in 1906 published an analysis of the infantile mortality of Scarborough for twenty-nine years ending 1905. He was medical superintendent of the fever and small-pox hospital, Scarborough.

Medico-Legal.

WORKMEN'S COMPENSATION.

Appendicitis or Accident.

In Lawson *v.* Weardale Steel and Coke Company (Durham, July 15th) the question was whether the applicant's husband, who had died of appendicitis, was the victim of an accident. It was alleged that while working in an abnormal place he had strained himself, and that in consequence of the strain he had developed appendicitis.

His Honour, in giving judgement, said that the necropsy showed that the deceased, a young man apparently in good health when he went to work, had died of appendicitis, a well-known disease, which unfortunately too frequently attacked people in all stages of life, and under various circumstances. The case for the plaintiff was that although it was true the man died from appendicitis, yet it was brought on or accelerated by the accident. The first step that the applicant had to take was to prove that there was an accident. Was there proof that there was any accident at all, or was it merely conjecture? The accident suggested was a strain of some muscles of the abdomen which would have caused the appendix to burst, which undoubtedly it did. The only evidence of that was that the man thought, or complained, or said that he had strained or injured his inside. That was perfectly consistent with the pain in the ordinary case of appendicitis coming on suddenly, which it generally did. Therefore, when they had the facts perfectly consistent with the disease running its ordinary course without the intervention of any accident at all and the only evidence of the accident to put it at the highest was that the man thought that he had strained himself it would be wrong for him to say that the applicant had proved the first step in the case, namely, that there was an accident. He had no doubt that the poor young man thought he had strained himself because he did not know that there was anything the matter in the nature of appendicitis. His (the judge's) view on the facts was that the young man was unfortunately attacked with appendicitis which assumed acute form, and that he died from that disease. In his opinion the deceased did not meet with any accident within the meaning of the Act.

Capacity of a One-eyed Man.

The case of Hargreaves *v.* Haughhead Colliery Company (House of Lords) raised a question of general importance—namely, if a miner loses one eye by accident and is subsequently able to resume work at full wages, is he entitled to have a declaration of liability made under which the employers will be held liable if cataract supervenes in the other eye?

It appeared that upon February 18th, 1910, the appellant sustained injury by accident arising out of and in the course of his employment with the respondents, and as a result one of his eyes had to be removed. The sheriff substitute found that on November 12th, 1910, the appellant's incapacity ceased, that he was fit to resume work as a miner, and that his wage-earning capacity was not diminished by the loss of his right eye. This decision was upheld by the Court of Session.

On appeal to the House of Lords, Lord Macnaughton said: In this case I think the injury plainly results from the loss of the man's right eye. At the time of the accident there was no sign of incipient cataract. It is not very clearly stated, but I think that is the fair result. It seems to me impossible to say that the arbitration ought to have been kept open. If a man gifted by nature with two organs of vision loses one, then to say that the arbitration ought always to be kept open on the chance of his losing the other is, I think, absurd. For these reasons I think the appeal ought to be dismissed. The other learned lords concurred.

Power Finally to End an Award.

It is important to notice that the House of Lords has now settled a point on which the English and Scottish Courts have been at variance—namely, can the county court judge keep an award open where the incapacity has ceased, but may at some future time recur?

A man was injured in the London and North Western Railway's employment on February 12th, 1909, and received compensation for a month, when he returned to work at his former wages. For nearly a year he worked without complaint, but in January, 1910, he ceased, on account of pain and nervousness. He attributed this to neurasthenia due to the accident, but the employers maintained that it had nothing to do with the accident, but was the result of influenza. After hearing, the arbitrator found as a fact that the illness was not attributable to the accident, that the man's incapacity was due to illness, and that he had completely recovered. Accordingly, he ended the compensation.

The appellant maintained, on appeal, that an award of one penny a week ought to have been made to keep the matter open. The House of Lords dismissed the appeal. The Lord Chancellor said that when the arbitrator was satisfied that the incapacity resulting from the accident had finally disappeared he could so adjudge, and thereby finally end the weekly payment beyond renewal. On the other hand he might, if he thought proper, adjudge that the weekly payment be ended until further order, or award a nominal payment to keep the matter alive. But in the present case he had found, in fact, that the man had recovered from the effects of the accident, and, accordingly, he was entitled to end the compensation.

Medical News.

Professor Metchnikoff will deliver the Lady Priestley Memorial Lecture for 1912 on "The Warfare against Tubercle," on Friday, November 29th, in the great lecture theatre of the Royal Society of Medicine, 1, Wimpole Street, Cavendish Square, at 4.30 p.m. The lecture will be given in French, and illustrated by lantern pictures. Professor Metchnikoff is delivering the lecture under the auspices of the National Health Society, of which Princess Christian is President. Members of the Society will be admitted on presentation of members' tickets. Applications for tickets for non-members, price 10s. 6d., must be made before November 29th, to the Secretary, National Health Society, 53, Berners Street, Oxford Street, W.

The Liverpool Medical Institution commenced its meetings for the session 1912-13 on October 10th, when Mr Robert Jones delivered his presidential address on the present position of the treatment of fractures. Subsequently he entertained the members at supper.

The annual meeting of the State Children's Association will be held on Wednesday next at 4 p.m. at 24, Park Lane, W., by the invitation of the Earl and Countess Brassey. The chair will be taken by the Right Hon. Sir Albert Spicer, M.P., vice-chairman.

The inaugural lecture of the winter session at the Central London Throat and Ear Hospital will be delivered by Dr. Dundas Grant on Friday, October 25th, at 3 p.m., the title of the lecture being "Some Views in Oto-Rhino-Laryngology Reviewed: Some Criticisms Criticized."

The opening meeting of the thirty-first session of the West London Medico-Chirurgical Society took place on October 4th, when the new President, Dr. G. P. Shuter, delivered an address dealing with the history of nitrous-oxide anaesthesia. Earlier in the evening the Keetley Memorial Medal was presented to the out-going President, Mr. McAdam Eccles.

The Hungarian National Committee for the seventeenth International Congress of Medicine in London next year was definitely constituted at a meeting in Budapest on October 5th. In accordance with the rules of the Congress it consists of representatives of the Ministries, of the Faculties, of the Academy of Science, and of the larger medical societies of Hungary. Professor Emil de Grósz has been elected President, and Privatdocents R. Bálint and J. de Elischer and Dr. Ch. Jassniger, Secretaries of the Committee.

The latest date for sending in essays for the Hunterian Society's medal this year is December 31st. It is awarded for the best essay by a general practitioner embodying the results of his own operations. The competition is open to all registered practitioners resident within Great Britain, Ireland, and the Channel Islands, whether Fellows of the society or not. Further particulars can be obtained on application to the Honorary Secretaries, Dr. A. C. Jordan, 11, Bentinck Street, W., and Dr. O. K. Williamson, 55, Upper Berkeley Street, W.

A course of lectures and demonstrations will be given at the National Hospital for the Paralysed and Epileptic, Queen Square, W.C., during October, November, and December. Dr. C. M. Hinds Howell will give a course on the anatomy and physiology, and Dr. S. A. Kinnier Wilson on the pathology of the nervous system. Dr. James Collier will give a course on the clinical examination of cases of disease of the nervous system. The fee for the course will be five guineas, and full particulars can be obtained from Dr. Frederick E. Batten, dean of the medical school. The first lecture of the course will be given on Tuesday, October 29th, and the subsequent lectures will be given on Tuesdays, Wednesdays, and Thursdays in each week.

At Bradfield College, Berks, on October 10th, Sir William Osler opened the new science school, and afterwards addressed a large audience. It was mentioned that the sons of medical men largely predominate at Bradfield, and Sir William suggested that boys going in for the profession might spend two years working in the laboratories between the ages of 14 and 16; this would modify the science work, which is now necessary after the boy leaves school. He much opposed the name used in connexion with chemical laboratories, and trusted that "stink" would not be applied to those he had just opened, as it had prejudiced boys against taking science classes. The Head Master pointed out the healthy situation of the school; also the

new sanitary and ventilating systems that had just been completed, thus making the college one of the most up-to-date public schools in England.

THE opening meeting of the Bournemouth Medical Society was held on October 9th. The retiring president, Dr. A. C. Coles, was in the chair. Before proceeding to the business of the evening, the president referred to the great loss sustained by the death of Dr. Fred Gardner, a past president of the society, and a vote of condolence with Mrs. Gardner was passed by the members present. The president, in introducing the president-elect, thanked the members for their support during his term of office. Dr. Frank Fowler, the new president, then took the chair and read his address. A Review of Electrotherapy and Radiology. A vote of thanks was passed with acclamation. Mr. Belben showed a specimen of a fibroid uterus containing a hydatidiform mole.

THE annual dinner of the Continental Anglo-American Medical Society was held at the Hôtel Majestic in Paris on October 12th, when the chair was occupied by Sir Bertrand Dawson, K.C.V.O., Physician to the London Hospital. The following members were present: Sir Dyce Duckworth, Bart. (Honorary President), Dr. G. Sandison Brock and Dr. Welsford (Rome), Dr. Gubb (Algiers and Aix-les-Bains), Dr. Pryce Mitchell (Monte Carlo), Dr. Tribe (Cairo) Dr. C. Winchester du Bouchet, Dr. Chaussegros, Dr. Hogg, Dr. Jarvis, Dr. Koenig, Dr. Magnin, Dr. Leonard Robinson, and Dr. Turner, Honorary Secretary (Paris). The guests included Dr. Chauffard, Dr. Widal, Dr. Vaquez, Dr. Florand, Dr. Lepage, Dr. Tuffier, Dr. Barton Jacobs (New York), Dr. Castaigne, Dr. Field Robinson, Dr. Castex, Dr. Galezowski, Dr. Farcy, Dr. Lecene, Dr. Desfosses, Dr. Loredde, Dr. Léon du Bouchat, Dr. Nagle, Dr. Mignot, Dr. Wickermann, Dr. Rehfuss, and Dr. Sibbald. After proposing the toast of "The King and the Presidents of the French Republic and of the United States of America," the Chairman, in proposing "Success to the Society," laid stress on the importance of organization in modern watering-places, and, in discussing the great progress made by modern methods of diagnosis, insisted on the importance of the modern hospital, not only as an educational centre, but as perhaps the only place where a thorough and complete examination of a patient could be carried out. Dr. Jarvis replied on behalf of the society, and proposed the health of the guests, to which Professor Chauffard replied. Dr. Robinson then proposed the health of the Chairman, who had been elected an Honorary President of the society at the annual meeting. Sir Bertrand Dawson briefly replied.

MEMBERS of the medical and administrative staffs of many of the London hospitals attended a demonstration at the house of Mr. E. B. Waggett on October 15th of the "Econocooker," an apparatus manufactured in France, for which advantages are claimed as compared with ordinary methods from the point of view of economy and the retention of the nutritive value of food. Undaunted by the presence of M. Escoffier, the chef of the Ritz Hotel, Mr. Waggett, in introducing Mr. Kiechlé, who demonstrated the invention, declared the proper method of cooking to be that of the primitive savages, who made a fire in a hole in the ground, withdrew the fire, and cooked their food in the heated cavity. The principle is still applied in cooking bread in the old-fashioned brick oven, and the French apparatus applies the principle to the cooking of meat. Two pieces of iron are heated for ten minutes and then placed above and below the food to be cooked, the whole being enclosed in a close-fitting cover. Mr. H. S. Corder, the British representative of the makers, claimed that the apparatus roasted meat in what is undoubtedly the correct way, thus described in the *Encyclopaedia Britannica*—namely: "The meat at first should be placed close to a brisk fire for five minutes so as to coagulate the albumen. It should then be drawn back a short distance and roasted slowly." Owing to the rapid fall in temperature of the hot discs during the first few minutes, while the enclosed air, the cover, etc., is being heated, the meat was treated in the way described above. Emphasis was laid on the [illegible] in attending to the cooking range by [illegible] apparatus, and on the fact that the only [illegible] given for ten minutes to the [illegible] prepared in the presence [illegible] tested by them and [illegible] of the apparatus [illegible] designed for hospital and military use were exhibited, and [illegible] the "Econocooker" is now on sale at [illegible]

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

ANSWERS.

DR. GEO. GORDON CUMMING (Estcourt, Natal) writes: In reply to "Tubercle" (BRITISH MEDICAL JOURNAL of August 17th), the province of Natal is admirably suited for cases of tuberculous disease of lungs such as suggested. The chief point in selection of a place of residence would depend on the condition of the heart, owing to the great variations in altitude. Estcourt itself and district is well suited for cases without any marked heart condition, and living in the district can be had from about £6 per month in boarding house. I can speak from personal knowledge of several cases which have been under my care here, and will be pleased to furnish any further information desired.

TENDER HEELS.

DR. R. NIMMO WATSON (Harrogate) writes, in reply to "T. H." (September 28th): In a number of these cases which had resisted various forms of treatment I have found instant relief afforded by deep acupunctures of the heels under nitrous oxide.

SIGNIFICANCE OF WASTING.

K. S. L. writes: If "J. H." resided in South China he would know that this wasting is a common early symptom of leprosy. He does not mention whether there is anaesthesia of the skin over the affected part. The nerve trunks should be examined to ascertain if there is any thickening.

LETTERS, NOTES, ETC.

TREATMENT OF WHOOPING-COUGH.

M.R.C.S. writes: Dr. Bain asks in the JOURNAL of October 5th for a treatment of whooping-cough which will cure in ten days. Years ago, when in practice in a large town, I went through an epidemic of whooping-cough which was most distressing from the great mortality not only in my practice but in those of my neighbours. I read everything I could find, and adopted Niemeyer's treatment, as he was the only man who had a decided faith in himself. The patient was to be kept at one temperature, and nothing allowed which was likely to produce a paroxysm, such as draughts or wild play, and before each paroxysm a full dose of potassium bicarbonate was to be given. My first case coughed twenty or thirty times an hour and refused to take the medicine. I urged the mother to persevere, and in three or four days the child ran to take the medicine when she felt a paroxysm coming on; in ten days she was coughing once only in the twenty-four hours. I have never since had a case lasting beyond a fortnight when the treatment was seriously carried out.

A CORRECTION.

DR. H. D. MCCULLOCH writes calling attention to a defective sentence which appeared in his letter in the JOURNAL of October 12th, p. 999, on the chief use of the peritoneum, and which crept in through Dr. McCulloch not having had the opportunity of correcting a proof of his letter before publication. The sentence (commencing in the sixth line of the letter) should read as follows:

> On the principle of setting a thief to catch a thief, one would imagine that the economy would evolve, among its complex structures, organs that would produce battalions of minute motile cells to best deal with these enemies, instead of leaving it to a supporting serous membrane which is without any means of repelling the invaders, unless it be by becoming what has been termed a "pyogenic membrane"—the result of the inopportune destruction and death of battalions of immature leucocytes, which, in a phase of their development when non-phagocytic, happen to be lining the entire serous surfaces.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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The Harveian Oration

ON

THE PASSING OF MORBID ANATOMY.

DELIVERED AT THE ROYAL COLLEGE OF PHYSICIANS OF LONDON ON ST. LUKE'S DAY, OCTOBER 18TH, 1912,

BY

SIR JAMES GOODHART, BART., M.D., LL.D.,
FELLOW OF THE COLLEGE.

TWENTY-SEVEN years ago, in delivering the Bradshaw Lecture before our College, I stood in the place of a much regretted Fellow dead in his early prime, when, in a retrospect of his work on arterial tension, I had the more easy task of recalling still recent memories. To-day, when in pursuance of the honourable duty that you, Sir, in your kindness, have imposed upon me, I try to look back into the mists of centuries to the full life and ever-to-be-revered memory of Harvey, no longer can one appeal to those personal recollections in which we all could share and sympathize; in place thereof is an influence, a resurrection, and my outlook becomes essentially *pro*spective.

Harvey's influence as it is permeating the avenues of time! What a subject, what an opportunity! Yet, when some 256 years have come and gone since this annual commemoration of our benefactors was instituted by Harvey himself, what an impossibility, in any but the most spectral form!

May I try to present it to you thus, on the wings of a thought—the passing of morbid anatomy—as it flits across the horizon of pathology, and in so doing touches us and humanity at large? No doubt it has often been said or thought before that, apart altogether from the coming into being of any particular man, the circulation of the blood, even to the full extent of Harvey's demonstrations, must have become common knowledge sooner or later. Even so, in his time, with anaesthetics still in the womb of the far-distant future, with instruments of precision hardly in their infancy, what a magnificent triumph of patient and determined observation was his! and it does but enhance the reverence we owe to him to add that the truest estimate of his fame rests even less perhaps on what he did than on how he did it, less on how he *did* it than on how he *said* it, or showed that he had worked it out in thought. It is the completeness of his work that is so surprising, and it is the plan of campaign that Harvey carried out by searching out the secrets of Nature with such deliberate self-content, that will as a motive power stretch further along the ages even than the actual conditions that he demonstrated, great as these truly were, and are.

Harvey taught us how to work and what to work at, and showed that the knowledge of the structure of our tissues goes far to suggest their functions. By actual investigation, by experiment, by what now goes by the name of "original research," and the reasoning and suggestion that emanate therefrom, the anatomy and even the larger details of the physiology of the circulation were worked out, and in the absence of any adequate powers of magnification, discovery in that direction must then have seemed to have reached its furthest limit. Yet who knows but what Harvey himself—physiologist, physician, and pathologist as he was—foresaw, or at any rate had some ideas about what the histology of the future was to tell? The book itself had its leaves uncut, but could such a mind as that altogether still the passion of the seer? He saw and taught that the knowledge of the skeletal tissues must come first; that this would open up some of the more pronounced changes of morbid anatomy, and their association with certain signs and symptoms of disease. Next, as opportunity developed, would come an inquiry into the minute structure of the normal tissues, and not till then would it be possible to interpret those finer alterations present in disease, or gain any appreciable knowledge of the subtleties of function. Such is, indeed, a sequence of events that has actually come about, and with which we are all familiar. Within the short span of our own lives this is true for our own time, so let me dwell to-day on *our* earlier pathology, trace it as now, and prospect its future.

And no more pertinent introduction could I take than the history of the growth of our knowledge of malignant tumours.

Years ago, when the scientific world was pulsating under the influence of the master mind of Virchow and of his cellular pathology, many of you, my learned colleagues, kindly here to-day, were hard at work studying and describing the features of morbid growths and trying to obtain an insight from the histological appearances of how and perhaps why they came.

What did morbid anatomy and histology—the cellular pathology of that day—tell to the mid-Victorian pathologist? Well! it was known in those now seemingly far-off days that the *auto*genous propagation of tumours was not uncommon; one could see it almost any day in the *post-mortem* room—in the peritoneum, for example, where a tumour originating in one part of that membrane was transplanted to another part, and was well rooted there. It was well known, as the result of experiment, that *exo*genous plants in similar regard were seldom attended with success. Yet one noted that when sowing—skin seed, shall I call it?—upon large sores, some stimulus was forthcoming; something happened that clearly set epithelium growing, and it often grew with considerable energy. This would apply to autogenous as well as exogenous grafts within the common species. I have always doubted if the import of that suggestion of skin grafting has received quite its just meed of recognition in its physiological aspect. The observation is full of instruction when we try to trace the life-history of the living cell, and still more attempt to influence the progress of its nutrition, its growth—even its very nature, perhaps—by stimulant or inhibitant, as is the aim. I take it, of the various grafting or tincturing processes by serum now in vogue. Again we knew, or thought we knew, that seats of worry were prone to take on malignant growth; that the well-known nag of a clay pipe, of irritating smoke, of soot, was associated with epithelioma; we knew, or thought we knew, that simple and malignant tumours were liable to be found side by side in the same body—a point that I have repeatedly demonstrated in the deadhouse, and that seems to me to cast a doubt upon the claim still maintained (I do not say wrongly so) that malignancy is something altogether apart from ordinary growth. But it was surmised by some, from what we saw, that a spermatic or, perhaps, graft-like influence was at work in the one group that was not to be seen in the other, and that, so it seemed to me, this influence gradually communicated itself to the cell structures in the neighbourhood until they ultimately shared in the process, and fraternized with the ill-tutored agitator. In this one respect, I may say in passing, the opinion then hazarded is not in accord with more recent work, which, on the contrary, goes to show that malignancy, even to its latest stages, is self-ordered and self-centred, and does not give a pattern to the surrounding elements. And yet, on the other hand, there is a suggestion of some more intimate relationship between the invaders and invaded, even in our *latest* information, for it would seem that the more matured tissues in which a new growth finds itself—the old hands, so to speak—may possibly exercise a very effective restraint upon the young bloods, and thus preserve the ordered going of the locality, by the drastic method of starving the newcomers out.

As one thought on these things, who could do otherwise than peer into the future, and in doing so I wrote thirty-five years ago, "What a subject for Darwin would be the cells of a cancer, if only they were tangible, if only we could observe the variations of tumours under judicious cultivation!"

I have often said during these many years of search for an exogenous germ of cancer, that I shall be disappointed if we find one, for malignancy, it may be only upon adequate environic invitation, already finds and fills its place as a *sine quâ non* of evolution.

One likened the position then to that of the chemist,

* This address was written in all essential [illegible] several months ago. To those who have read Professor [illegible] utterance at the British [illegible] and a similar line of [illegible] case that I had to ask myself the question, "Is it worth while to revise it?" But there was no time to do otherwise; and, after all, it is based upon the ponderings of a lifetime, so I have altered nothing material.

who, putting together his scheme of elements, finds bits of his puzzle wanting; but, knowing what their form should be, he proceeds to look for them, finds them and fits them in, the whole one purpose and one picture.

And thus regarding Nature, is there anything improbable in such a pathology of morbid growths? Is there not in the natural order of things, if so I may speak of what in the empire of the corpus becomes disorder, a place ready for it—a chance that such a thing may come? Are we wrong to expect that if a complex body is possessed of energy, or many centres of energy for orderly growth and development, that this disposition or force will now and then slip its leash, and run off on its own account? An analogy of this kind seems to me to convey a workable conception of a scheme of malignancy, where ordered growth diverges by successive steps of variation, of indulgence of function, until cancer appears, until malignancy becomes the insanity, shall I say, of function. And does not an idea of this kind foreshadow, and father too, the modern doctrine of the individuality of protoplasm which I take to be taught by cell eating (phagocytosis) and other forms of irritative response of which we now hear and think so much?

The last effort of the friend of many here, the late Sir Henry Butlin, who was at work with us in the days that I recall—embodying as it did the results of thirty-five years of research and thought in this very region—surely all pointed to some such conclusion in his mind, for, although his introduction of the term "parasite" is liable to misinterpretation, the parasitic cell was no other than some derivative of a proto-plasmic human cell, and thus was parasitic, if at all, only in behaviour, to which the highest organisms must plead guilty—for are we not all of us, at one time or another, sponges on the world we live in? And, regarding the living animal from the point of view of individualistic protoplasm, are some of the sports of our gardens so utterly divergent genetically from tumours of natural tissue, from the infective granulomata, or from the growth of a cancer? I should call the difference one of degree of vigour of growth rather than of kind. Exuberant energy will out. Think of the fact that x rays so stimulate the surfaces as to lead in the first instance to an excitement and proliferation of the superficial cells of the skin, and then too often to cancer. A most vital acquisition this to our knowledge—an obvious signpost, not too distinct, upon the road we are travelling.

Here life from two worlds is perhaps forming into line, and as in the one, so in the other, say by some direct inducement to the cell or adaptive alteration of the nutrient juices—photo- or chemo-synthetic in kind, may be—an intensive cultivation is brought about; one may even suggest that the equivalent of a top mulch is applied.

Thus, I see in cancer a home-grown weed or a prodigal son, may be—alas! by no means yet worthy of the fatted calf—and in my study I seem to light upon the fundamentals of eugenics, and, indeed, to hark back to their earliest dawn.

But, however this may be, the trend of all recent work carried out by that splendid Imperial Cancer Research Fund realizes the dream of the bygone pathologists, for a large part of the monumental labours of Dr. Bashford and his fellow workers, during the last ten years, although showing that exogenesis is possible, and defining its limitations, has gone to point the fundamental necessity of the study of the life-history of the individual cancer cell, and, as you know, this has now been done and followed up in short lived animals (the mouse), where alone it is possible, the results seeming to show, not that the environment, but that the individual cell, is the master of the situation, and that the dominant issue that comes up is, What is there in that cell, or influencing it, that gives to it such an inexhaustible power of propagation whence comes that boisterous energy of which I have spoken?

So in this quarter of study, as in others I must mention, we seem to have come to what is still but a mirage, to an inaccessible land, where histology perhaps may no further help, and where organic chemistry and physics must take up the running, and show what part they play in the origin of life; or, if not that, we must search for and find the homologue of cancer in some still more embryonic stage of existence and inquire of its habits there.

Thus what we call pathology is growing up. But are we sufficiently alive to the fact that it is no series of stationary phenomena, but constantly on the move, like all else in Nature, and in being so it shifts its ground? That it changes absolutely you will, I think, readily admit. As I think of disease in the *post-mortem* room forty years ago, what alterations have we not seen! Pyaemia may be said to be wiped out; typhus is well-nigh forgotten; typhoid fever has altered; diphtheria seldom attains the initial severity that so often characterized it of yore, and is much more amenable to our attacks; scarlatina is of a much milder type; erysipelas is more of a rarity; malaria and Malta fever have been run to earth; the late results of syphilis seem to me to be far less often in evidence; lardaceous disease, so very common in our early days, is now seen but seldom; and we have come at grips with acute rheumatism, and, let us hope, with tuberculosis. Probably as much might be said of other diseases, and all will, I suppose, admit that good old age is both more prevalent and enjoyable.

It is true that these ills belong to the great group of epiphytic diseases that has been abolished in direct response to the researches of Pasteur and Lister, and that there is no such evidence of any general move all along the line, but make away with even one large group of maladies, and how large a part of the morbid anatomy of the organs must alter too, and even then how little account would be taken of numberless arrested purposes that make for the beginnings of other diseases.

Pathology not only changes but it shifts its ground when we really pursue it. There is no more striking confirmation of this than a comparison of the practice of the Pathological Society of London forty years ago and now. Our meetings then were crowded with specimens of all kinds; a set discussion came only now and then, as a sort of relish in the general menu. *Now*, I am told, morbid anatomy is much less in evidence; we have left all that behind, and discussions of the intricate problems that are behind it occupy the attention of our members. Whereas we used to display disease in the gross—the results of disease, that is—we are now able to recognize finer changes, and more minute evidences of bioplasmic unrest that are behind those results, and these are the goal that we make for now. I say that these results must long ago have been suspected. I remember in the early days of ovariotomy making the observation that those who succumbed therefrom were mostly those who had suffered from haemorrhage into the parts concerned, especially, of course, into the peritoneal cavity. And examining the blood extravasated under these circumstances one could see it peopled with countless hosts of minute bodies that the bacteriologist is now in some measure able to name and to classify. It was evident in the rude experiments of those days that blood was a favourable soil for their production, and one even had a suspicion that intensive cultivation lay there, but failed to detect its presence.

And pathology still is shifting! We have not yet reached finality. Even bacteria are probably results and not causes; they strive, or cancel with one another, to ulterior ends, and we are gliding on in advance of the most painstaking morbid anatomy. As I have just now suggested for cancer: look how near the chemist and biologist have come. I struck a hybrid the other day—a bio-chemist! In devoting himself more and more to the minutest germs, and particles of protoplasm, the biologist is not far off the investigation of gases, and the chemist in concentrating his attention on gases, is apparently overlapping pure physics, which seems to have established, that many media supposed to be gaseous are really clouds of solid particles of inconceivable minuteness, borne along by a velocity of which no words can convey any adequate conception. It seems, therefore, not altogether within the realm of fancy to suggest that we may all be working now in some intermediate zone, on the confines between the three kingdoms of living energy—for the colloidal states of inorganic life, the crystalloids of biology, may perhaps allow of this expression of the facts—whose language at present we do not understand, and whose purposes or meanings we are therefore unable to interpret. I wonder!

Animate or inanimate we are never outside life. Montaigne puts it very quaintly when he says, "Even as Nature makes us to see that many dead things have yet certain secret relations to life." How like is radium, in all but death, to what I would call the aureole of life. Here seems to be one substance that is always spending yet is never spent; that has power within it to regather of its loss, and by its action on the cell may even be said to originate the function of vitality. But does the spirit of life die? It may correlate with other forces of Nature; it may perhaps transform itself to other forms of being; may it be that we begin to see how it might transcend the firmament of space? The physician thinks not of death, but of the tenacity of life, and of how long, save by catastrophe, it takes to bring the machine to a standstill.

Even in the presence of the pathologist death may be disputed. Many years ago there was what may be called a pathological axiom, that the pus cell was a dead cell. Yet it was at the same time evident that unemployable or even obnoxious as regards its influence in the home, it had colonizing proclivities that were charged with great possibilities in some new world. Dead indeed it might be from one point of view, yet from another one might say of it, as Lord Curzon said once of the British Empire: "It is not a moribund organism; it is yet in its youth, and has in it the vitality of an unexhausted purpose." Where, indeed, is the demarcation in a degenerate cell—we call it so from a narrow, self-centred aspect—between life and death? We know of none, for even desiccated it does but pass into some more minute state of atomic subdivision, that is almost certainly capable of renewed energy, although it may not as yet be within our ken to give an answer to the question, "With what body does it come?"

One may change, but one does not die.

All *living* things are rhythmic. Is it altogether otherwise with matter devoid of life? Within the cadences of that rhythm are the moan of disease and the pause and silence of death, but the *Resurgam* of life is ever the dominant of the song. And this is well illustrated by our growing appreciation of the activity of the pus cell—*Laudable* pus, as it used to be called, by a seeming contradiction in terms. I suppose on the altruistic plea that somewhere deep down in the worst of criminals there lies a warrant of nobility.

I know not whether now it has still further lost, or regained a character, when, reappearing as the leucocyte of to-day, as hungry chickens rush for food, it revels in cannibalistic orgies; or else, as some may prefer, it fulfils the more useful if more subservient function of scavenger, or destructor to the community. Then, as my dreams suggest, reinforced by such omnivorous gatherings, by ionization, shall I say, amalgam, symbiotic fusion or combine, these lusty atoms, disintegrating and ambushing into still more minute particles, rearrange themselves within the confines of the body politic in which they find themselves, and thus perhaps reincarnate some of the bacilli, cocci, and such other early and unstable existences as Nature seems to have in store for us for good and ill within the cycle of living things. It seems, indeed, quite within the possibilities of the revelations of the future that germ and sperm of a sort are here at work, and that a primer lesson is thus conveyed not alone on the origin of communities but also on the very beginnings of existence.

Now all these changes and shiftings of ground suggest to me the existence of a struggle on the part of the pathologist to find out some morbid change for every disease, and it is indeed admitted that we have been ever more and more reducing function to terms of structural change. But now the time has come when it seems worth while to insist that all this work upon the foundations — whether it be anatomical, histological, chemical, physical—has, unconsciously, perhaps, but none the less inevitably, been ushering in another point of view than that from which we started, and the latest phase of pathology is this more intricate one that concerns itself with the investigation of function. It is now no longer so much the morbid change as the prejudicial function that is to be our quarry, or rather the passage of the one into the other. It is to this point that the researches on cancer have come. As pathologists we are now trying to identify as it comes and passes that coign of clinical medicine—

> When that which drew from out the boundless deep
> Turns again home. . . .

Where a detrimental method of function commences devolution and sets towards decay.

And what numberless instances are there where, with no accessible morbid changes, this is the problem. Perhaps it may even be said that there is no disease, however much we think we know about it, in which this is not the problem still.

Take this latter case first, as exemplified by arterial tension (*De motu sanguinis*). It came first into more precise recognition in clinical medicine as a symptom of what we have known as a form of Bright's disease—a disease that is of structural change. But before very long it was noticed that it was present under conditions when the examination after death showed no alterations in the kidney of any moment. So Bright's disease has been rechristened, and now we hardly hear of it. That postal address is now "not known," and you must inquire for arterial sclerosis. This disease is constantly being brought under our notice. Why so? Because particular signs are supposed to betoken it. But do they? Would it not be more true to say that they are its occasional cause? The point is that the search for a structural change has shifted its ground on to a functional disturbance—quite properly, as I think—and then, incorrectly, the arterial state has come to be regarded as due to the condition (sclerosis) of which it is in all probability the cause.

Then *de motu cordis*. Much work has been done of late upon the irregularities of the cardiac muscle. This work is well known to you, and is of the very best, and not by a breath would I belittle it, for it is no doubt gradually emancipating a difficult subject of research from the mists of ignorance that envelop it, and by true Harveian method. But I may perhaps be permitted to say as a caution that *it is possible* to attribute to *disease* of the muscle more importance than by right belongs to it, and I believe it will be accepted in the future, as the result of further clinical observation, that many a case of arrhythmia where we now seem to be inclining to muscular disease, is in truth an aberration of the higher cardiac centres, and as such no true example of pathological anatomy.*

Diabetes shall be my between-maid—in part functional, in part perhaps otherwise. What morbid anatomy have we not sought in this disease, and have not found it? Long, indeed, have many of us hovered over the alterations we had *hoped* to find, and have not found them—changes in the nervous system, in the pancreas, in the liver, in the blood, and so on.

To my mind there is no more splendid, and yet pathetic, figure in the whole range of medical history than that of Pavy. In early life he set himself to unravel the pathology of diabetes, and in so doing he planted himself with correctly forecasting eye at the spot that made victory certain, and, to my mind, he won it, by taking the first parallel. But it may be doubted if he himself quite realized that he had done so, and there are those to-day who certainly think that he was defeated. I am not of that opinion. It has always seemed obvious, when one considers how greatly the output of sugar varies even under the most rigid system of dieting, that the excreted sugar could not be a mere output of what has been taken in: that the human kiln has, in fact, the power of in some way coining sugar out of its own constituent elements; and I believe that Pavy's ultimate credit for a real step onward in this still most intricate disease will rest upon his observation that the protein molecule is in some way split up and that a carbohydrate molecule emerges therefrom. Still other parallels need assault. The question has now to be answered, What causes this seemingly inveterate sugar craze on the part of the proteins? This curious reversion—may we call it?—to a plant-like metabolism in thus compounding with carbon to the rejection of its natural affinities. Is it nervous incoordination, or toxic disorganization, or what? Again we seem to be driven back, cancer-like, upon a loquacity of function, upon some misapplied vital energy behind the scenes, with which as yet we cannot grapple.

* Catarrhal jaundice is for me another remarkable instance in point. We have always been so hard up for a morbid change in this malady that we have come to accept as sufficient the existence of a plug of mucin more or less natural to the part. But can it be that the proper performance of a function, so important as the passage of bile, is in danger of being arrested by an everyday circumstance such as this? Some temporary check to the driving power seems much more probable. The old ideas of splanchnic melancholia and abdominal megrims were not without warrant, and indeed they are worthy of rehabilitation.

Who, till within quite recent times, would have thought that a protein molecule could give birth to sugar! I trust there is no chemist here to-day. To one of a prim age it seems quite a surprising outcome, yet I understand that bio-chemistry is already quite familiar with it, and regards it as an everyday occurrence, whether in the physiology of plants or animals. And how this must enlarge one's horizon of the subtilty of energy that lies within the human kiln! The mills of God, the engines of Life, are indeed wonderful examples of an indomitably complete performance. They seem able to enforce within the organic confines of the body that extreme atomic disintegration we are now learning to recognize in the inorganic world, and which seems to suggest that even the stability of the primary elements, as they were wont to be called, is not immutable—that our gold, for instance, at some future geological day may lose its caste, and rank as some inferior substance.

Brought about under such conditions of continuous perfection no wonder that our reactions are thus delicate and complete—not that we manufacture something out of nothing, as might seem to be the outcome of my argument, but that by such means a much greater and more absolute resolution of ourselves is possible, and our primary elements being unfettered renew their potential energy, to synthesize again by some of Nature's seductively elastic methods as now still unknown or but guessed at. There is nothing strange in this. Our environment in diverse ways known and unknown is essential to the working of the machine, of course, but I am contending for the possibility of *still more direct* methods of combination that have become conceivable in these days of progressive physical knowledge. And from this point of view it becomes legitimate perhaps to try and catch a glimpse behind the veil of present attainment of the working of the obviously potent influence of climate upon temperament, constitution, and disease. For it is at any rate conceivable that light or electricity split up, energy in one garb or another liberated in this way or that, might make to waver between negative and positive some weak-kneed member of our society of constituents; might loosen the force of attraction that had hitherto kept its atoms bound; might thus katabolize our tissues, and evolve new varieties of function, in some hitherto unsuspected way. How, for instance, should plant life have photo-synthetic metabolism all to itself?

It is to points like these—unsubstantial, even visionary, though they seem—that pathology is now compelled to turn its attention. And in so doing, although there is still much to be done in the *post-mortem* room, it is leaving its terra firma of morbid anatomy (I say it with lingering regret) mapped out so well by the great masters of the past—by Baillie, Bright, Addison, Peacock, Bristowe, Jenner, Wilks, Payne, and many another still happily with us—and seems to be betaking itself to aviation—a deadly dangerous, albeit, as it must be, an earnest pursuit. Let us remember, lest we forget. And to the many pathological phenomena that I think emphasize this still more, and which I would fain call unequivocally functional—in their origin, at any rate—I must yet mention one or two.

It used to be said that acute disease is mostly an outburst from a chronic one. This is but very imperfectly true. It is true that many an acute attack of disease is [illegible] when, as a fact, further investigation proves that it has followed upon pre-existing changes. But then these in their turn have come about in so insidious a manner that they have never been capable of [illegible] at all, and I am here to-day to contend that [illegible] of pathology will be a physiological [illegible] function that has confirmed itself into an habitually baneful one. And I see no reason for limiting the pathology thus engendered to function only. It is surely permissible to hold that morbid function may bring about structural change. There is not an organ of [illegible] not true, but how largely and [illegible] to the brain! A large part of the structural disease of the brain is led up to by slow [illegible] of thought and action that [illegible] the seed or the seeds of the thought, as [illegible]

Another [illegible] pio, for *it* nowadays is a disease. What more common than to meet a woman or man who is "So tired, always tired"?

We all know the machine that will not spark aright. Every movement an effort; even rest a pain. You know too well that there is nothing to be called structural change; and that even rest furnishes you with no remedy. It is clear that what is required is a fresh stock of some form of energy for charging up the machine that we are as yet not able to supply. So far away, and yet perhaps so nigh. These are they who are born out of due time; the day of their like has yet to come. And with fatigue might well be coupled pain, for there are those who almost seem to be born in pain, and of a sort that no remedy seems able to assuage. Says the poet:

> The sweetest thing in all the world is pain
> Consoled by love.

But that is *extra medicinam*. Even more than death, pain is our hereditary foe; no quarter given. In olden days hysteria stalked abroad, but to-day a broader view of physiology would teach that pain is no certain indication of any existing morbid anatomy; that its intensity is always subjective, individual, aloof from standardization; and it is evident that in such chronic pain one needs to recreate the nervous elements, or to instil them with some electroid that shall reset the spring of the machinery in motion, and guide it smoothly on its livelong bent. Nor, though it has been the quest of aeons, does this seem to be inexorably beyond the knowledge of the future.

Of other groups of disease that might be mentioned few are of more abiding interest than that which concerns itself again with Harvey's realm, and the finer processes of the circulation. How little we as yet know about these conditions: but, surely, distraught function is busy with them. Think what suggestions are contained in such an hypothesis as that of vascular spasm, or, to put it more generally, of peripheral stasis. Long years ago our trusty and well-beloved Fellow, now Regius Professor of Medicine at Cambridge, wrote a short paper on mental anxiety as a cause of granular kidney. It was to me one of those illuminating suggestions that have added interest to my life. I believe it to be abundantly true, as I do that similar malign influences, by dislocation in some way, as I suppose, of our correlated impulses, make for cancer. You must have often seen the nervous, anxious, worried man with the phenomena of high tension, and have felt able to predict *in posse* the future disease of this organ or of that. Such conditions, real diseases though they be, are but functional; but what a wealth of pathology is wrapped up in them!

Thus, as it is with life, so in a measure is it with its diseases. Life itself is a developing function; it comes to each one of us from the past, with innumerable atomic differences gathered by the way, and it passes on to each of our successors similarly changing. So that Professor Arthur Keith, from another place, can say to us that a thousand years is as one day, so like is this to that; yet also one day is as a thousand years, and in that day so multitudinous and infinite have been the changes, that life *now*, is another life—the same, yet not the same.

This all too brief survey must suffice to show how much pathology there is yet in front of us if the future is to be disentangled of its heritage of disease, and how difficult it must be to acquire the information necessary to enable us to bring the aid we would to sick humanity.

The outcome seems clearly to be: Experiment, and ever more experiment. We come, indeed, back to Harvey's teaching: to search out the secrets of Nature by such means. But to that word "experiment" attaches no narrow meaning, and it is to humanity at large that I would now say that it is quite as much your duty as far as in you lies, as it is that of special scientific inquiry, to search out thus by way of experiment those secrets of Nature that are seemingly so elusive.

Look a little closer into this matter O man of the world. To give an illustration that may appeal to you. To touch [illegible] that liver of which we are all so tenderly conscious, and regard with such blind solicitude, we have to deal with an organ that is occupied in *coining the energy of its life* out of elements organic and inorganic, that are, for it, as yet, outside life. The continuity of life, therefore, itself becomes an experiment. Will this grouping of substances, this bio-chemical combination come off, or will the individual atoms fail to synthesize, and fall back again

into the sea of odds and ends still waiting for their purpose to appear?

Will the action, whatever it be that may be done by you, help it, hinder it, or be quite inoperative, and unsuited to the end? Who can tell? The vitality and activity of the organ are pioneering on the outskirts of the origin of Life, where their very existence is always at stake, and where the requisites are quite unfamiliar to you and me.

Clearly every single dose of medicine, every act done to influence such occult conditions, is an experiment. The social instinct is very hypersensitive to the use of this word in relation to disease; but why? We all when ill become the prey of experiment. Even the man who does nothing is not exempt. I suppose that there has never been a dose of medicine administered that has not been in some measure an experiment. "It subdues pain," you say. Yes. "It strengthens the heart." May be. "It arrests disease." No doubt. But how and why? They are the questions. And if it does these things for one of us, why does it fail for others? Further, what else is it doing in the economy at large—is its mission ended when your behests are accomplished? What about thyroid extract, Coley's fluid, atoxyl, and all the vaccines, serums, and so on, that are now coming into use? All powerful, even heroic, attempts to cure disease, what are they all in their use but experiments? And although the wind be tempered, as far as possible, to the shorn lamb—it is here that knowledge and experience come in—they are, and must be, experiments attended with risk. There are some who think and speak of experiments as if they were performed only upon the lower animals and the poor who cannot help themselves. The fact is that by experiments the worlds have grown; that experimentation is the one fundamental necessity of all progress, and the whole of animal life—life of every kind—to reap the benefit must share the risks and chance the pain. So each and all of us *must think* on these things, and try to give such individual thought and observation as is possible to the how and why of ordinary physiological reactions. We depend upon leechdom too much, and spend our time in thinking our leeches fools on the one hand or an all-knowing Providence on the other, and seem to be prone to handle the wrong end of the stick when it comes to a pinch. But it is not wise to leave these matters entirely to the republic of letters. Let us learn to steer our own craft amid the smoother eddies and currents of life's stream, so that when the call to the pilot comes we may be able, as we shall, to help him to apply his principles, derived from wider sources and more tutored insight, to the special needs of our immediate stress. As pilots we may also take heed of this.

And then what of the prospect?

With problems such as these before an expanding science, it cannot be one of royal pageant, or of easy achievement, and it is certain that the future triumphs over disease will only unfold themselves to an ever widening horizon that embraces all the latest advances of physical science as they bear upon the function of living. Yet would the possibilities seem to be limitless. With all the added information of recent years, the suggestions that have come to us from all directions by way of electricity and light and the ether that surrounds us, with all the forces that make towards us and for us, merging all Nature into one ordered whole, who can do other than put to himself this question:

"Can it indeed be that we are come to look unto the rock whence we were hewn?" Yet, with spectroscopic insight, with darkness dawning into light, with mental flashes borne across the storm, with all these new aspects of Nature surging on us, who shall say that we are now familiar with all forms of living energy—that there are no other sources still to be made known to us? In the sigh of the wind, the spirit of a voice, the magnetism of a presence or a touch, or that ineffable something in face or form that the painter tries to catch, is there nothing travelling that other way?

I trust the larger hope.

But to inquire into final causes, it has been said, inasmuch as they are beyond the grasp of the human intellect, is not the pursuit of a scientific mind. Such an opinion, since it would seem to ignore the stimulus, the insight, the instigations of the imagination, must be belated, if ever it could have been true. Still, reverencing as I do that attitude of mind thus expressed not long ago by Mr. Arthur Balfour, that to make the best of the future one must never ignore the past, you may, perhaps, think that, could Harvey have returned to us for this afternoon, he *might* have looked askance at the future, to which I have committed the influence of his immortality and the trend of the set purpose of his life. But methinks *he* would have absolved me, for where is that knowledgeful man—let him step forward that we may look at him—who has deliberately foresworn that pleasure—I will venture even to say profit—of a mind set free to roam awhile, who does not dream even while he works, whose mood is not rather:

> And I who with expectant eyes
> Have fared across the star-lit foam,
> See through my dreams a new sun rise,
> To conquer unachieved skies.
> And bring the dreamer home.

It is only thus that Past, Present, and Future hold in one; why the Harveian Orator at this annual festival is bidden by our Master's expressed will to commemorate the Past. And the Fellows will count it indeed happy and appropriate that on such a day, by the filial and devoted generosity of its President, the College should receive its latest and priceless benefaction of the eleven recently discovered autograph letters, the very *ipsissima scripta* of William Harvey. Alive as these are with human interest, how the shade of Harvey seems to become re-embodied, and the passage of time to have been for the moment stayed!

The Past! I sometimes think, Sir, that the mundane casket of our Harveian librarian must be as full of ghosts as a queen bee is of embryonic honey. These walls are alive with memories of benefactors of the college. The dead herein still speak to us, and here is harboured the tomb of many a brilliant but buried thought awaiting its emancipation that still tarries. And with Pavy, Hughlings-Jackson, Wilks, Allchin, and others dear to us all gathered to the fathers of medicine almost since St. Luke's day last, what an addition to the supporters of the arms of this our ancient college within the bygone year. And of the *less* recent past, who is there entering this library and making his obeisance to your presidential chair that does not experience the calm and the charm of a great contentment when he remembers that the afterglow of Harvey and his followers still guides *him* on to that yet more perfect day of ever-increasing knowledge and less disputable truth?

> And though long sunk from sight, I know,
> The glory of your afterglow
> Will never wholly fade.

PELLAGRA IN THE BRITISH ISLANDS.

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Of all known diseases pellagra is certainly the one which escapes recognition most easily, not that it lacks individuality, because few diseases are better characterized in their full manifestation; not that it is of little importance, because few diseases are more harmful and deadly, but because it varies greatly in the nature, sequence and intensity of its symptoms; because it may remain clinically latent for years in the patient and epidemically dormant for long periods in a given region; because it avoids crowded cities and, as a rule, strikes the uncared-for peasant in remote country districts; because it principally affects the young with manifestations usually so mild that it is either overlooked or unheeded; because it breaks out in the mature and elderly under the stress of lowered resistance following in the wake of poverty and famine and engrafting itself on to other diseases; and because, in most countries, it is concealed with shame as the brand of destitution and madness.

Ignorance and superstition in the patient, lack of knowledge and indifference in the physician, have not only added to the burden of the unfortunate pellagrin, but also greatly retarded the recognition, elucidation, and eradication of this grave and insidious disease, a prolific, though frequently unrecognized, cause of insanity.

It is no easy matter to trace far back the history of indubitable pellagra, because, in the past, it was confounded with many other diseases, such as scurvy, eczema, leprosy, syphilis, erysipelas, ankylostomiasis, etc.

Don Gaspar Casal, the learned and able physician of Philip V of Spain, as early as 1735, when practising in Oviedo, was the first to grasp the individuality and significance of this triform, protean disease, which he portrayed most skilfully in his *Memorias de Historia Natural y Medica de Asturias*.

In Italy the disease was first recognized in Feltre, about 1740, by Professor Giuseppe Antonio Pujati, and soon after, in Friul, by Drs. Nascimbeni and Anton-Gaetano Pujati, but nothing was published until 1771, when Francesco Frapolli observed it in the country round Milan and described it under the popular name of "pelagra," by which it had long been known to the peasantry in Lombardy. The recognition of pellagra in Italy towards the middle of the eighteenth century does not imply, as the majority of Italian physicians have hitherto held, that the disease had been imported or had arisen *de novo* at that time, because not only did Frapolli himself say it was "as old as the sun," but we have ample evidence to show that, at the time of its discovery, it was already widely distributed throughout North and Central Italy, and occupied, amongst the foot-hills of the Alps and Apennines, those very same localities in which it is now stationed. This, of course, means that it must have existed for centuries previously, because, like malaria, pellagra has never shown any tendency to rapid spread from place to place, but only fluctuations of prevalence and virulence within its endemic areas, which areas are everywhere associated with swift-flowing streams, just like malarious localities are associated with stagnant waters.

In France the disease was first recognized by Jean Hameau, a precursor of Pasteur, and famous for his work on *Les Virus*. Hameau began to observe pellagra in 1818, at La Teste de Buch, but the disease had long been known to the shepherds of the Landes, who had popular names for the disease and went to implore the saints at special shrines for deliverance—as at Bascons, for instance, where they got some ointment from off the transfixed hands of a local crucifix and besmeared with it their own discoloured and burning extremities.

In the Landes of Gascony pellagra used to be very prevalent about the banks of the Leyre and Ciron rivers and along the streams running from the central plateau to the sea coast. Since about 1890, owing to great engineering, agricultural, and piscicultural changes, both pellagra and malaria have greatly diminished, but pellagra has not entirely disappeared, as Régis and Marie had led us to believe. Cases still continue to crop up in the Landes and in the river valleys of the Pyrenean region, as we were able to ascertain during our recent investigations in the south-west of France.

The history of the discovery of pellagra in other countries—such as Hungary, Roumania, Egypt, etc.—shows everywhere, again and again, the same late and fortuitous recognition, notwithstanding the antiquity and [illegible]ibution of the disease. Indeed, in many cases, [illegible] example, in Transylvania, Egypt, and Algeria, even after its presence had been unmistakably pointed out by competent men, it was long before it became generally [illegible]ged. Indeed, Hirsch, in his *Handbook of [illegible]ical and Historical Pathology*, goes so far as to say that "The statements as to the occurrence of pellagra in Hungary and the Banat, in Egypt, and in Algiers, are based upon quite untrustworthy information."

Another curious feature in the history of pellagra is the fact that in countries where it has been known to prevail endemically for over a century, as in Spain, Italy, and France, we observe from time to time a peculiar tendency to consider pellagra a thing of the past.

No instance of oversight could be more instructive than that of the recent recognition of pellagra in the United States of America. Until five or six years ago the disease was looked upon as non-existent in North America, and for this reason was not even mentioned in medical textbooks. Yet it existed, and Grey and Tyler had both in 1864 recorded one case each. Later, a perusal of the old case-books of lunatic asylums brought to light other earlier cases, such as those of Trezevant in 1834. But it was not until 1907, when Drs. J. W. Babcock and J. J. Watson raised the alarm, that pellagra became a subject of inquiry in the United States. Now we know that the disease prevails in no less than thirty-three States, and that there are over 10,000 indubitable cases on record. Recent importation and spontaneous origin are quite out of the question. Only centuries of the prevalence of the disease can explain the wide range of pellagra in North America, extending from the Atlantic to the Pacific Ocean and from the Gulf Coast to the Great Lakes, especially when we consider the peculiar topographic distribution of the disease, which, in America as in every other affected country, is limited to the foreland or "Piedmont Section" of mountain ranges, and more particularly to the valley tracts of swift-flowing streams.

Although so far the British Islands have not been looked upon as a likely field for pellagra, we have no hesitation in stating that the disease is endemic, and has long been endemic in various parts of the United Kingdom. Two certain and quite typical cases have already been described, one by Dr. James C. Howden, in 1866, the other by Drs. R. Dods Brown and R. Cranston Low in 1909. Then we have earlier though vague information which acquires strength in the light of these cases, and, lastly, the result of our own recent investigations in the eastern districts of Scotland between the Firth of Forth and Pentland Firth, including the knowledge of two other grave and typical cases as yet unrecorded, one studied by Dr. R. Cranston Low, the other under the care of Dr. Box, subdean of St. Thomas's Hospital, London.

So long as pellagra was looked upon as a kind of poisoning due to the eating of damaged maize, or to some form of cachexia peculiar to the insane, the occurrence of one or two isolated cases of the disease could have relatively small importance, but since we have shown that pellagra is an infectious insect-borne disease the recognition of a few cases in separate places and at various times acquires a very different significance. It indicates the overlooking of a widespread and long-standing endemic disease of very grave nature.

So far as we are aware, the first notice regarding the presence of pellagra in the British Islands is the one given by Dr. E. Billod.[1]

Billod states that on December 14th, 1860, he received a letter from Dr. Brown, Inspector-General of the Scottish Lunatic Asylums, informing him that during an inspection in the most remote eastern parts of the island, in two idiots of the same family, he had observed an alteration of the skin which he qualifies as a kind of pellagra, adding that he had never seen any other cases of Italian pellagra, and regretting that he was unable to furnish more precise details. "I have considered it right," says Billod, "to place these cases on record, with the reserve, however, that they probably pertain to the pellagra which accompanies insanity." Believing pellagra to be a kind of cachexia due to poverty, and giving rise to an erythema under the action of the solar rays, he surmised that this pellagrous cachexia must perforce occur in Great Britain and Ireland, "where poverty is great beyond conception" (*sic*), without, however, being accompanied by any erythema, the sun in these parts not being powerful enough to occasion it. Thus one would have a *pellagra sine pellagra* such as is observed at times within the endemic centres of the disease, and analogous to *variola sine variolis*.

Very soon after the publication of Dr. Billod's work, Dr. James C. Howden, Medical Superintendent of the Montrose Royal Asylum, published[2] a case of typical pellagra which occurred in a woman aged 33 years, a factory spinner from Arbroath, Forfar, who was admitted into the asylum August 19th, 1863.

The next supposed case on record is one from Cheshire, England, published by Dr. Andrew Cassels Brown.[3] We prefer to dismiss it, however, as doubtful. The last case published is the one described by Drs. R. Dods Brown and R. Cranston Low.[4] It occurred in an unmarried woman aged 21 years, who was admitted to the Royal Edinburgh Asylum on July 13th, 1908, under the care of Dr. George M. Robertson. She was born in Shetland, and had lived there

all her life. The dermatitis in this case affected the face and the back of the hands, extending over the wrists and lower parts of forearms. The patient was delusional, complained of severe pain in the lower part of the back, presented spasticity of both legs, severe stomatitis, and diarrhoea.

In a paper read at the National Conference on Pellagra, in Columbia, South Carolina, U.S.A., in 1909, Dr. Sandwith stated that two cases had recently been recorded in patients who had never been out of the British Isles, but that the published accounts did not tally with the disease as he knew it. While agreeing with Dr. Sandwith with regard to Dr. Cassels Brown's case, we cannot agree with him with regard to Drs. Dods Brown and Low's case, which we consider to be a typical case of pellagra.

At the time of the International Dermatological Congress in Rome in April, 1912, we had the opportunity of taking Sir Malcolm Morris, Dr. Ian MacLeod, and Dr. R. Cranston Low to Zagarolo, a small village at the foot of the Prenestini Mountains, and showing them a number of pellagrin peasants encamped close to a typical *Simulium* stream. Dr. Low remarked that these cases and others from Northern Italy shown at the congress meetings exhibited symptoms identical with those presented by his Shetland case, and by another as yet unrecorded case from Fifeshire, which he had had the opportunity of examining in Edinburgh in 1911.

On our return to England this autumn we resolved to visit the eastern districts of Scotland, and possibly the Shetland Islands, and endeavour to ascertain all we could concerning the distribution and prevalence of pellagra in these parts. Owing to lateness of season, unfavourable meteorological conditions, and limited available time, we were unable to make as thorough and extensive a survey as we should have liked, but we were able to establish that pellagra is certainly endemic in Fifeshire, Forfarshire, Aberdeenshire, and the Shetland Islands.

Dr. Low having given us the name of the village in which his recent unpublished case had occurred, we visited it twice, and during one of these visits Dr. Low very kindly joined us. The village is Colingsburgh, halfway between Largo and Anstruther, on the eastern coast of Fifeshire. Here Mrs. R., the patient, was born and lived all her life. From time to time since the age of 8 she went for short visits to her relatives at Rothesay in Bute. She was born at a farm called Kilconquhar Mill, which is on the road between Colinsburgh and Kilconquhar, and which is situate on a slight elevation above a little stream or burn, in which we found many larvae and some pupae of Simuliidae. In the fields adjoining this stream we obtained very clear statements from the field labourers of the attacks of small biting flies coming in clouds in the early morning, and especially in the evening. Mrs. R. was about 40 years of age when she died of pellagra in 1911. The full clinical history of her case will be published in detail shortly by Dr. Low, and therefore we will restrict ourselves to the points which more directly concern us. Our knowledge is derived from Dr. Low, Dr. Bryson, the local physician under whose care the patient was, and the relatives of Mrs. R.

Mrs. R. suffered from an eruption on her face, which recurred in spring and autumn. The actual date of the commencement of this eruption was forgotten, but it was remembered that it was thought to be due to vaccination, and, if this association is correct, it probably started at a very early period of her life, a fact fully in accordance with our experience of Continental pellagra.

The eruption is stated to have been on the exposed parts of the face and arms. She is also said to have suffered from sore lips and increased amount of salivation and from diarrhoea on and off from girlhood. No history of having eaten maize could be obtained, but we were told that the patient had a peculiar habit of eating raw oatmeal, but when she acquired this habit no one remembers; apparently it was in early life. We could find no evidence of maize being used as human food in Colingsburgh, though apparently it is given to pigs. We were told that maize is often used along with other materials in the preparation of Scotch whisky, but this need not be seriously considered in this case. As regards social position, Mrs. R. appears to have been very comfortably provided for all her life. She had three children, the youngest being born in 1909. None of these children showed any signs of pellagra when inspected by us.

Dr. Bryson kindly informed us that Mrs. R. was vaguely ill after the birth of the baby in 1909, and became acutely ill in April, 1911, with a bright red erythema on the dorsum of both hands. At the time he saw her the eruption only extended to the wrist. There was no evident eruption on the face at that time, but there was an eruption on the nates, about the size of half the palm of the hand, on either side. A peculiarity which struck him was that the eruption on the left hand showed a clear band of skin corresponding to the area covered by the wedding ring and therefore not exposed to light. There was no vaginal discharge and there was diarrhoea, especially in the morning. She was inclined to turn faint and giddy and to fall down and she became very weak. In May, 1911, the mental symptoms became pronounced and she became apathetic and lost interest in everything, while she began to look foolish, and later she was sent to Edinburgh.

Her symptoms in Edinburgh were kindly described to us by Dr. Low, who also showed us a photograph and three admirable casts he had taken of her face and arms, but, as he will eventually publish in detail this portion of her history, we refrain from further remark beyond stating that we are entirely in accord with Dr. Low that Mrs. R. was a typical pellagrin.

In Colingsburgh we had the opportunity of examining Mrs. R.'s sister, and we are inclined to believe that she is also a pellagrin. She appears to be subject to a recurring eruption, not unlike a sunburn, which affects her face and the back of her hands in spring time, and this occurs with a more permanent eczematoid condition affecting the palms of the hands, as in the case of her deceased sister. However, she has been out of the United Kingdom.

On visiting the farm where Mrs. R. was born we endeavoured to ascertain whether we could trace any pellagra in the present occupiers; and, indeed, we did see a woman and a child presenting suspicious skin lesions on hands, arms, and face, but these people were unwilling to give us any information. In the fields close by we met a woman with erythematous eruption on the face, and a history of eruption on the dorsal surface of both hands and forearms, and this case we also regard with suspicion, even after considering the fact that she suffers from seborrhoea.

In the Royal Montrose Asylum we were shown a Shetland Islander from Uist, who was admitted to the Edinburgh Asylum on June 2nd, 1880, and thence transferred to the Montrose Asylum on June 30th, 1881, where he has been ever since.

He is suffering from chronic dementia, is not epileptic, and is said to have been suicidal before admission. The history is not very good; we are told that on admission he was unable to answer questions coherently, that he was restless, excited, and dirty in his habits. He was often wild, and has assaulted people. His left pupil was larger than the right one for some time. There is no doubt that from time to time he has suffered from diarrhoea, and that he constantly spits about owing to excess of salivation. The ward attendant told us that his hands have presented an eruption from time to time, especially about spring time, but this is not recorded in the history. The epidermis on dorsum of hands is in parts thickened, in parts atrophic. The feet and face are normal.

At the Aberdeen Royal Asylum the superintendent told us of a possible case from New Aberdour, Aberdeenshire, which had recently died in the asylum. The patient had an erythematous condition of the face and hands, and his mental state was that of chronic dementia. His skin lesions were recognized by the superintendent and the senior assistant medical officer as similar to those shown in our photographs of Italian pellagrins.

On the Ugie, a typical *Simulium* stream, near Peterhead, Aberdeenshire, we met several children presenting the peculiar skin lesions characteristic of pellagrin children after the subsidence of the eruptive stage.

Finally, on our return to London, Dr. Sandwith kindly informed us of the presence of a suspicious case at St. Thomas's Hospital, under the care of Dr. Box, and, thanks to the courtesy of the latter we were able to see a most severe and typical case in a boy who had never been out of England. The following is a note by Dr. Box:

"Recently there has been in St. Thomas's Hospital under my care an English boy suffering from the nervous and cutaneous manifestations of pellagra.

"The patient, who was 8 years old, was born at Leyton in Essex, moved thence at the age of 5 to Catford, and later to Slough. His illness first attracted attention in June of this year owing to an epileptiform attack. He died in hospital on October 18th.

"An extremely interesting fact is that this boy's brother was also under my care in 1910 with symptoms pointing to combined sclerosis of the spinal cord. His malady was not then recognized as pellagra. It was of longer duration than was the case with the younger brother, commencing soon after the age of 4 with difficulty in walking; the boy, however, did not come under observation until he was 11. The mother

states that his skin eruption was in every respect similar to that of the younger brother, and showed, as did the other, marked seasonal variations. The elder boy died early in 1911, and no *post-mortem* examination was obtained. It is hoped that a complete report of the first-mentioned case, together with the pathological findings, may be published in due course."

We believe that the information so far collected is sufficient to prove that for an undetermined but long time pellagra has endemically prevailed in parts of the United Kingdom, and that, notwithstanding the recognition and publication of two grave typical cases, the disease has been generally overlooked in its milder and more obscure forms.

The presence of pellagra in the British Islands is of geographic interest, because hitherto the disease was believed to be limited northwards by the forty-fifth parallel. Etiologically, its presence in the United Kingdom is of importance, because here its causation cannot be reasonably explained by the consumption of either sound or bad maize, and its topographic distribution shows that here, as elsewhere, it is linked to the swift-flowing, Simulium-infected streams. Sociologically, the disease calls for the most urgent attention. Pellagra is an insidious disease, either rapidly fatal or of long intermittent course, leading to insanity. The pellagrous psychical disturbances are as many-sided and as obscure as the somatic manifestations of the disease, but the salient feature is an intermittent and progressive amentia, often assuming a semblance of melancholia and exhibiting from time to time regular outbursts of maniacal excitement. In some cases there may be all the appearances of progressive paralysis. Dementia is the invariable termination, unless the patient be cured, or carried off sooner by some intercurrent disease or mere exhaustion of the vital powers.

A careful reading of the old case-records of our lunatic asylums will no doubt bring to light many cases of overlooked pellagra; but—and this is far more important—we trust that henceforth physicians will be on the look-out for this disease, and that they will make a thorough search for the milder forms which, as our experience shows, very easily escape detection.

However dormant it may be at the present time, a fatal, insanity-causing disease, such as pellagra is, cannot be allowed to continue unchecked in its progress, and it behoves us to take the matter very seriously in hand.

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MITRAL STENOSIS: PERIPHERAL EMBOLI CAUSING PARTIAL MONOPLEGIA WITH SYMPTOMS SIMULATING CEREBRAL EMBOLISM.

By G. G. ALDERSON, M.B.CANTAB., F.R.C.S.,

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THIS case is of interest because on both occasions on which embolism occurred in a limb artery the attendant symptoms accurately simulated those associated with cerebral embolism. Thus on each occasion the patient was the subject of partial monoplegia, with attendant nausea and giddiness.

Additional interest is afforded by the fact that death was absolutely sudden, and was found to be due to the presence of a ball thrombus in the right auricle.

The patient, a married woman aged 42, had had mitral disease, following an attack of rheumatic fever six years previously.

The first embolus affected the left upper limb. It occurred eighteen days before admission to hospital. The patient while stooping suddenly felt sick and giddy, and the left forearm and hand fell powerless to the side. She retched but did not vomit, and she saw dark spots in front of the eyes. The second embolus, affecting the left lower limb, occurred three days later. "Without warning" she again felt sick and giddy, again saw dark spots before the eyes, and simultaneously "lost power" in the left leg and foot.

She was recommended as a case of cerebral embolism to University College Hospital, where she was admitted under the care of Sir John Rose Bradford, to whom I am indebted for permission to publish this case.

Considerable trophic changes in the affected limbs caused some doubt of this diagnosis, and the real state of affairs was revealed on noticing that the left radial pulse was absent.

Condition on Admission.

The facial muscles showed no paralysis or weakness. The skin of the left forearm and hand was cold, dry, and shining, and blebs containing serous fluid were present on the tip of each finger. Movements at the left shoulder and elbow were weaker than on the right. Pronation was only possible through an angle of 45°; supination was weak, but complete. Flexion and extension at the wrist and of the fingers were both markedly limited. No pulsation could be felt below the first part of the axillary artery. In the left lower limb also marked trophic changes were present, and pulsation was absent from some of the main arteries. The skin below the knee was white, shining, and oedematous. It was colder than on the right side. Over the front of the leg was an oval erythematous area, 8 in. long, in the centre of which was a smaller oval area, 3 in. in length, where the skin was blue. Over all this area the skin was hyperaesthetic. There was a small patch of anaesthesia on the dorsum of the left foot.

There was no paralysis on the left lower limb. Movements were weaker than on the right side, but the impairment was due rather to pain evoked than to any actual loss of power. Both knee-jerks were present; there was no ankle clonus, and the plantar responses were flexor. Sphincter control was normal. Examination of the heart showed well-marked mitral disease.

Death.

The patient died suddenly four days after admission. She was leaning over the bed, when she quickly raised her head and shoulders, became intensely cyanosed, made a few stertorous efforts at respiration and then stopped breathing. She had spoken to a nurse a few minutes before and had then appeared perfectly well.

Necropsy.

The *post-mortem* examination confirmed the opinions formed as to the nature and origin of the lesions in the upper and lower limbs and also supplied the explanation of the sudden death.

There were no cerebral lesions to account for the loss of power in the limbs.

As the right auricle was being cut open, there fell out an oval *ante-mortem* clot 2½ in. in its longer diameter. The endocardium of the walls and valves was smooth and free from adherent clot, so that the thrombus lay quite free within the auricle. The mitral orifice was buttonhole in shape and only admitted the tip of one finger. There were no vegetations to suggest malignant endocarditis.

The upper part of the left brachial artery was blocked by a reddish grey clot evidently of recent formation. Another thrombus filled the lower half of the left femoral and the whole of the popliteal arteries below. This thrombus was white and organized. Hence, seeing that the leg lesion was the more recent, there must have been an earlier embolus in the femoral artery which had caused no symptoms, and either an extension of this or a second embolus must have been responsible for the symptoms and signs affecting the leg as described above. Whatever may be the correct explanation of the second series of symptoms, the additional interference with the blood supply brought about the subsequent commencing gangrene of the skin covering the tibia.

Thus the symptoms of nausea and giddiness accompanying a partial monoplegia were on both occasions misleading. No lesion to account for these could afterwards be found in the central nervous system. The loss of power in both instances was due to the local anaemia. The nausea and giddiness are more difficult to explain. They may only have been expressions of a general circulatory disturbance consequent upon the occurrence of a sudden peripheral embolism, or possibly they were due to reflexes originated from the walls of the plugged vessel. In this case the patient would be expected to have noticed some pain in the limb at the time of the embolism. Pain, however, was absent on both occasions. Hence the exact cause of the nausea and giddiness must be left open to conjecture.

ON THE PRESENCE OF SUGAR IN THE CEREBRO-SPINAL FLUID FROM CASES OF MENINGITIS.

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Whether the reducing substance be dextrose, saccharose, pyrocatechin, or a mucinoid matters not for the purpose of this short paper. There is in normal cerebro-spinal fluid a chemical substance which reduces Fehling's solution, and this is absent in some cases of meningitis and present in others. There appears in the literature of the subject considerable confusion as to the cases in which it is present or absent, and considerable uncertainty as to its value.

My own experience, based, it is true, on only a small number of cases, has led me to a definite conclusion on this subject, and I consider such examination to be of definite value.

The method adopted is to boil together equal portions of cerebro-spinal fluid and Fehling's solution in a narrow test tube and allow it to rest in a sloping position. In the course of an hour there will be a marked yellow deposit forming a band on the lower side of the tube, and with a little practice one can form a fairly accurate opinion as to whether such band is normal in amount or diminished; where sugar is absent no deposit will occur.

My results are as follows:

1. In 9 cases of tuberculous meningitis sugar was present in apparently normal amount in 1 case; was present in diminished amount in 7 cases; was present in markedly diminished amount in 1 case—this was taken only two hours before death.

2. In 7 cases of pneumococcus meningitis sugar was absent in every case.

3. In 3 cases of streptococcus meningitis sugar was absent in every case.

4. In 9 cases of cerebro-spinal meningitis sugar was absent in 2 cases and present in diminished amount in 7 cases.

5. In 7 cases of poliomyelitis sugar was normal in amount in 1 case and slightly diminished in 6 cases.

6. In 3 cases of mixed septic meningitis, secondary to middle-ear disease, sugar was absent in all 3 cases.

Andrew Connall, in a fine paper in the *Quarterly Journal of Medicine*, January, 1910, gives the results of the examination of the cerebro-spinal fluid for sugar in 133 cases of cerebro-spinal meningitis, testing them in every stage of the disease. He comes to these conclusions:

> The results prove that sugar is absent from the fluid during the acute stages of cerebro-spinal fever. This finding was invariable, and it depended, as previously shown, on the presence of active acid-forming meningococci. . . . Sugar, however, is not absent at all stages of cerebro-spinal fever, and during the chronic periods of the disease Fehling's solution may be reduced in the presence of living organisms. It may be said, however, with certain reservations, that the reappearance of the sugar is an indication that the disease is in process of cure.

He also examined 122 specimens from 69 cases of tuberculous meningitis. He states his results thus:

> In tuberculous meningitis sugar was found to be present in the great majority of the cases, and at all stages of the disease; 122 specimens were examined. An active reduction on boiling of the Fehling's solution occurred in 15, a partial but decided reduction in 102, and no reduction at all in only 4 instances. Complete absence of sugar was observed in only 2 cases. It was noted in the last week of illness, three times in one case and once in the other, and in each case at other times there was a slight reduction of Fehling's solution.

I would state the conclusions thus:

1.—In pyogenic meningitis, pneumococcus, streptococcus, and mixed infection sugar is invariably absent.

2.—In cerebro-spinal meningitis sugar is absent in the acute stage, but may return in some degree as the infection recedes.

3. In tuberculous meningitis sugar is present, except in very rare cases shortly before death, in which stage difficulty of diagnosis rarely exists.

4. In poliomyelitis sugar is present.

These findings seem sufficiently definite to be of real value.

The Science Committee of the British Medical Association,

THE ANAEMIA OF ANKYLOSTOMIASIS.

BY

WILLIAM NICOLL, M.D., D.Sc.,

ERNEST HART SCHOLAR.

The Blood Volume in Hookworm Disease (Ankylostomiasis).

In regard to the first subject of research the conclusions I venture to draw from my experiments are:—

1. Hookworm disease in dogs is not analogous to hookworm disease in man. In the latter the disease is essentially chronic and progressive, gradually leading to a fatal termination. No great degree of resistance appears to be acquired, although some individuals are apparently less susceptible to infection than others. Again, individuals of all ages are equally liable to acquire infection. In the dog, however, the disease is very acute and rapidly fatal. While all dogs appear to be liable to a greater or less degree of infection, only young dogs (under six months) succumb to the disease. In older dogs infection cannot be pushed beyond a certain point, even with long continued administration of infective material. In those a certain degree of anæmia is slowly produced, but it is also gradually recovered from, and the animal may regain its normal state, even although it remains infected with the worm, which infection, it may be added, may last over two years.

2. The anæmia in young dogs was characterised by great loss of weight, emaciation, prostration, intestinal hæmorrhage, greatly reduced temperature, and accelerated and irregular cardiac beat. These symptoms were present to a less extent in older dogs suffering from a minor degree of anæmia. In the latter the erythrocytes were rarely reduced in number to any great extent, but the hæmoglobin fell in some cases as low as 50 per cent. of normal. In the acute disease of young dogs, however, the erythrocytes were observed under one million per c.mm., and the hæmoglobin 10 per cent. In both cases the blood picture was characterised by the large number of erythroblasts, not infrequently of large size, and polychromatophilia. Eosinophilia was not a constant sign either of infection or of disease; and, in fact, was observed only on few occasions.

3. Infection is generally accompanied by fairly profuse intestinal hæmorrhage, which is most marked in the early stages, and tends to disappear later.

4. The blood volume of dogs suffering from the minor degree of hookworm anæmia is not materially altered, but, if anything, is somewhat diminished. The oxygen capacity of the blood per unit of body weight is also, on the average, somewhat decreased. In the acute stage of the disease the blood volume appears to be decidedly reduced.

5. In the early stages of infection the worms attach themselves to the lower reaches of the ileum, but in the course of time they are found further forward.

6. Cats are much less easily infected than dogs, while monkeys and man were found to be insusceptible to infection with the dog hookworm.

FLIES AND OTHER INSECTS AS CARRIERS OF INFECTION.

By WILLIAM NICOLL, M.D., D.Sc.,

ERNEST HART SCHOLAR.

The Length of Life of the Rat Flea.

Rat fleas (*Ceratophyllus fasciatus*) were removed from their host and kept under various conditions of light, temperature, moisture, etc., in order to determine their length of life without feeding. Altogether sixty-four experiments were performed, involving a total of 463 fleas. The average length of life at ordinary temperatures was found to be 6·8 days, but the maximum in one experiment was over forty days. Two per cent. of the fleas lived for over three weeks, and 10 per cent. for over a fortnight. They live longer in winter than in summer, the difference being about two and a-half days on an average. At

very low temperatures (0°—8° C.) their life may be prolonged to over two months. Both excessive moisture and excessive dryness are inimical, but a certain amount of moisture is beneficial. Darkness does not prolong their life, for those which were kept in bright daylight lived, on an average, longer than those kept in the shade or in darkness.

It was further found that fleas may remain in the larval and pupal stages for much longer periods than normal under certain circumstances. Several experiments were made to determine this point. In the first, material containing fleas was removed from a rat cage and isolated. It was observed to remain infected with fleas for a period of over five months. A second experiment continued to produce fleas for a period of eleven months. In a third experiment this period was extended to fourteen months. Some fleas in this experiment at the end of a year were placed along with a young rat, and in three months they had multiplied very considerably.

From these experiments it is evident that the larval and pupal stages of the rat flea, which normally last from two to six weeks, may be prolonged to over a year. As seen in the first set of experiments, the length of life of an adult flea under these conditions is generally under a month, and no evidence was obtained that the fleas multiplied during the period, although this may be possible: so that it may be concluded that the appearance of adult fleas after such a long period as a year was due to the larval and pupal stages being prolonged.

The importance of these observations to preventive medicine lies in the fact that as fleas are carriers of disease, it may be—and is—of considerable moment to determine exactly how long they can exist under various conditions. A full account of these observations is being prepared for publication.

THE OPSONIC INDEX IN PLAGUE VACCINATION.

By RALPH St. JOHN BROOKS, M.B., D.P.H.,

RESEARCH SCHOLAR.

[ABSTRACT.]

THE production of immunity in rats vaccinated against plague, is correlated with the production of immune opsonin in the serum of such animals.

Various anti-bodies appear in the serum of animals inoculated with plague vaccines, but the development of agglutinins and bactericidal substances, for example, do not lend themselves to satisfactory quantitative study, in the case of pest. The opsonic response has been studied in man by Douglas,* who found a good response after inoculation with Haffkine's Prophylatic. It, therefore, seemed advisable to correlate the development of opsonin with the absolute immunity of some susceptible animal in order to see whether the amount of opsonin produced could be used as evidence of the development of immunity in man.

In most of the following experiments the results obtained with a single dose of vaccine are recorded in relation to the opsonic index; in others the results of repeated dosage are

Preliminary communication.

The scope of the enquiry resolved itself into the following points:—

1. Is there any correlation between immunity and opsonic production in plague infection?

2. What is the influence of previous vaccination in the experimental animal?

3. What is the source of opsonin in immune plague serum?

METHODS OF EXPERIMENT.

In all cases the dilution method of Klien (1) was employed.

A strain of avirulent plague bacillus killed in 50 % formalin solution was employed in the opsonic technique.

The nucleo-protein used as a vaccine was prepared in the manner described by Rowland in the *Journal of Hygiene* (2).

The bacterial emulsions were prepared from 24 hour agar slopes.

The pooled serum of ten rats were used in each experiment.

EXPERIMENTS ON RATS.

The following is a summary of the results obtained on estimating the opsonic indices of the various pooled sera from day to day (see table at foot of page).

By plotting out curves based on these figures, it will be seen that those obtained with 1/10 mg. whole bacillus vaccine, and 1/100 mg. nucleo-protein are very similar, though in the former case the maximum is displaced somewhat to the right. The doses correspond, as it has been shown that the nucleo-protein contained in the bacillus is about 1/10 the weight of the whole organism. The smallest response is elicited with the smallest dose (1/12000 mg. nucleo-protein) and the largest response with the greatest dose (1 mg.) No response is elicited with the bodies of the bacilli washed free from nucleo-protein, and used as a vaccine, or with nucleo-protein solution which had been hydrolysing for several months, though the hydrolysing process has no effect on the immunising property of the nucleo-protein.† The general conclusions from these experiments would seem to show, as found by S. Rowland, by directly determining the protection aroused in rats to a subsequent fatal dose of living pest, that the soluble nucleo-protein contained in the plague bacillus is the responsible agent in the production of opsonin. The production of opsonin as first rises with the immunity. In the first two series on the table the maximum response is reached by the first day, by which time full immunity is established with this dose of vaccine.

HUMAN EXPERIMENTS.

The dose used in each case was 1/10 mg. of hydrolysed nucleo-protein, which is about the quantity of nucleo-protein contained in 1cc. of Haffkine's Prophylatic. The first experiment was conducted on myself (R. St. J. B.), the second on five persons who had been inoculated, like myself, some time previously with Haffkine's Prophylatic (P. I.), and the third on

† In the latter experiment the absence of opsonin is somewhat remarkable and may possibly be due to hydrolysis having gone too far, or to the carbolic added as a preservative interfering in some way with the opsonic response. It was subsequently shown that rats, inoculated with this particular vaccine, did not acquire immunity.

DOSE AND NATURE OF VACCINE.	HIGHEST DILUTION OF SERUM WHICH SHOWS A GREATER PHAGOCYTIC INDEX THAN SALINE CONTROL.										
	Before inoculation.	10 hours.	22 hours.	2 days.	3 days.	4 days.	5 days.	6 days.	7 days.	8 days.	9 days.	10 days.
1/100 mg. nucleo-protein	1/16	1/2048	1/4096	1/2048	—	1/1024	1/1024	—	1/256	on 18th day.		
1/10 mg. whole bacillus	1/16	1/1024	1/4096	1/4096	1/2048	1/1024	—	1/1024	1/64	on 21st day.		
1/12,000 mg. nucleo-protein	—	—	1/512	1/1024	1/2048	1/2048	1/1024	1/828	—	1/512	—	—
1 mg. nucleo-protein	—	1/4096	1/6044	1/4096	1/6044	1/2048	1/2048	—	—	1/1536	—	—
1/10 mg. [illegible] protein	—	1/4096	1/16384	1/24576	1/24576	1/16384	—	—	1/4096	—	—	—
1/10 mg. [illegible] protein (hydrolysing for 8 months)			No response.									
9/10 mg. of washed bodies [illegible]			No response									

five normal persons (P. II.) The following Table shows the highest serum dilutions which gave an index higher than normal saline.

Highest dilution of Serum which shows a greater phagocytic index than normal saline.

	Before Inoculation.	3 days.	4 days.	5 days.	6 days.	7 days.	8 days.	9 days.	10 days.
R. St. J. B.	—	1/1024	1/768	1/1024	1/1536	1/512	—	1/512	—
P. I.	—	1/512	1/512	1/1024	1/1024	1/512	1/512	1/256	—
P. II.	less than 1/32	1/128	1/128	1/256	1/384	1/256	—	—	1/192

Except in two cases in the third series, the effects, on inoculation, were very slight and in no case was any increase in pulse rate or temperature observed. In the third series the opsonic response is not as great as in series I. or II. In the case of the two groups of pooled sera the number of persons in each group is so small that one would hesitate to draw any definite conclusions from these results, but as far as they go, they tend to show that pre-existing sensibility has an influence on the opsonic index in human plague vaccination.

Conclusions.

1. The substance which produces a rise in the opsonic index in immune pest serum is the nucleo-protein contained in the bodies of the bacilli.

2. The washed bodies of the bacilli when used as a vaccine do not cause any increase in the opsonic index.

3. Within limits, the larger the dose the greater the opsonic response.

4. A repeated dose of vaccine raises the index above the maximum of the first inoculation, even after the curve has fallen to its normal level.

5. In the early stages, in rats, the opsonic response and the degree of protection aroused rise together.

6. In human beings the maximum response is observed to be much later than in the case of laboratory rats, and the response in a series of previously sensitised persons is somewhat greater than in a series of persons not previously vaccinated.

7. The local and constitutional effects of nucleo-protein vaccination compare very favourably with those observed in other methods of protective inoculation.

I desire to express my thanks to Dr. C. J. Martin, F.R.S., Director of the Lister Institute, and to Dr. J. C. G. Ledingham, Chief Bacteriologist, Lister Institute, for valuable advice and suggestions throughout the enquiry, and particularly to Dr. Sydney Rowland, of the Yersin Laboratory, Elstree, Herts, without whose constant advice and help the experiments could not have been carried out.

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THE DESTRUCTION OF ALKALOIDS BY EMULSIONS OF THE BODY TISSUES.

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During recent years many workers have investigated both the natural tolerance to drugs, that occurs in certain animals, and also the tolerance that is acquired when certain drugs are administered repeatedly. We now know that the protective mechanism, which causes tolerance, differs in the case of different drugs, and that, with the same drug, tolerance may be produced by different mechanisms in different animals. This evidence has been recently reviewed by Dixon (1); it appears that tolerance may be established by the following mechanisms: (1) Diminished absorption. (2) Increased rapidity of excretion. (3) Increased resistance of the tissues upon which the drug acts. (4) Linkage of the drug with other bodies to form an inert substance. (5) Absorption of the drug by organs upon which it has no action. (6) Destruction of the drug by the body tissues. All of these six mechanisms, except the third, have been shown to exist in mammals, the third has been demonstrated chiefly in protozoa and may depend upon physical causes. The sixth mechanism, the destruction of the drug by the body tissues, has been studied in various ways, both in the intact animal, in isolated surviving organs, and in emulsions made of excised organs; the present paper is concerned only with results obtained by the last method.

1. History.

Numerous investigators have examined the power of emulsions of the tissues to destroy alkaloids, and the method employed has usually been the following: An organ is excised from a freshly killed animal, and made into a fine emulsion with normal saline, a small quantity of alkaloid is added, and the mixture incubated for some time at body temperature, in the presence of oxygen; after incubation the alkaloid is extracted and estimated. Using this method Buys (2) showed that the livers of the frog and the rabbit could destroy hyoscyamine, but that the frog's blood, and the dog's liver did not do so. Cloetta (3 and 4) showed that the rabbit's liver could destroy atropine, he also considered that the rabbit's brain, and the cat's liver and brain could destroy atropine. Fleischmann (5 and 6), and Metzner (7) both showed that the rabbit's serum could destroy atropine, but that this power varied greatly according to the locality from which the rabbit came; they noted particularly that the serum of rabbits suffering from goitre did not destroy atropine. Fleischmann moreover showed that normal human serum did not destroy atropine, but that the serum of patients suffering from exophthalmic goitre could do so. Cloetta and Fischer (8) showed that neither the dog's liver, brain, nor heart could destroy digitoxin.

Several investigators have compared the action, which emulsions of the organs of normal animals have upon a drug, with the action of emulsions of the organs of animals made tolerant to the drug. Albanese (9) showed that liver emulsions from normal dogs did not destroy morphine, but that liver emulsions from dogs made tolerant to morphine could destroy considerable quantities of the drug. Dixon (1) showed that the liver of normal rabbits possessed a slight power of destroying nicotine, and that this power was increased in rabbits in which tolerance to the drug had been induced. Cloetta (4) compared the destruction of atropine, produced by the livers of normal cats and rabbits, with that produced by the livers of cats and rabbits made tolerant to atropine; he showed that the tolerant rabbits possessed increased powers of destruction, but that there was no such increase in the tolerant cats.

2. Method.

The method adopted by the writer was similar to that already outlined. A freshly exised organ was made into a fine emulsion by pounding in a mortar with sand and normal saline, and then filtering through muslin: a few drops of toluol were added to prevent sepsis, a minute quantity of the alkaloid to be tested was next added, and the mixture well shaken, and then incubated for a few hours at body temperature; after incubation the alkaloid was extracted by the Staas method, and the amount recovered estimated. It was found by experiment that heating to 60 C. completely removed the power of emulsions to destroy alkaloids; control experiments were therefore made by always taking two equal portions of emulsion, and heating one portion to 60 C. for 30 minutes before adding the alkaloid; the two portions were then treated in an exactly similar manner, and the amount of alkaloid recovered from each at the end was compared. In all cases small quantities of alkaloid (usually less than 1 mgm.) were added, and destruction of the alkaloid was only considered to have been proved, when, firstly the unheated portion was found to contain either no alkaloid, or at most a trace, and secondly there was a large difference between the amount recovered from the heated and the unheated portions: in this manner errors due to the extraction and estimation of such minute amounts of alkaloid were eliminated as far as possible.

3. Mode of Destruction of Atropine by the Tissues.

The livers of frogs and rabbits were used, since emulsions of these organs were known to possess the power of destroying atropine (Buys (2)). The atropine was estimated by Vitali's test; the extracted alkaloid being diluted until Vitali's test was only just positive. When 1 c.c. of fluid was taken I found that 0.003 mgm. of sulphate gave a distinct violet colour, and that 0.002 mgm. gave a very feeble violet colour; smaller quantities showed a red colour, but no violet colour. The sensitiveness of the test depends upon the fuming nitric acid used, and upon the freshness of the alcoholic solution of caustic potash. Cloetta (4) found the end point with this method to lie between 0.005 and 0.01 mgm. of atropine, but the end point is so indistinct that no two observers are likely to obtain exactly similar results.

TABLE I.

POWER OF FROG'S TISSUES TO DESTROY ATROPINE.

1 or 2 c.c. of Emulsion of the organ mixed with Atropine Sulphate and incubated for some hours at 22° C.

Nos.	Date.	Organ.	Quantity of Emulsion in c.c.	Quantity of Atropine Sulphate added in mgm.	Length of Incubation in hours.	Quantity of Atropine Sulphate (in mgrm.) recovered.	
						i. From unheated Emulsion.	ii From Control. (Emulsion previously heated to 60° C.)
1	4.12.11	Liver	2	0·2	3	Nil	Atropine present
2	10.11.11	,,	2	0·4	2	,,	,,
3	14.11.11	,,	2	2·5	15	,,	,,
4	4.12.11	Heart	1	0·2	3	0·01	over 0·02
5	4.12.11	,,	1	0·1	3	nil	,,
6	8.1.12	,,	1	0·04	2	less than 0·002	0·04
7	21.11.11	Kidney	1	0·05	4	nil	Atropine present
8	18.1.12	,,	1	0·04	2	,,	,,
9	8.1.12	Skeletal muscle	2	0·02	2	0·01	,,
10	14.11.11	,,	2	0·025	19	over 0·01	,,
11	21.11.11	Pancreas	1	0·03	4	Atropine pres.	,,
12	4.12.11	,,	1	0·02	4	,,	,,
13	18.1.12	Blood	1	0·04	2	0·02	0·01
14	8.1.12	,,		0·02	3	Atropine pres.	Atropine present
15	18.1.12	Intestinal mucous membrane	1	0·04	2	,,	,,
16	4.12.11	Testicles	0	0·2	2	,,	,,

Cloetta [4] used this method and apparently considered it accurate within 10 per cent., as he draws conclusions upon differences of 10 or 20 per cent. I consider that the method cannot be relied upon to show a difference of less than 50 per cent. I found it possible to recover about 0.002 mgm. of atropine from 1 c.c. of tissue emulsion mixed with 0.01 mgm. of atropine. No atropine could be isolated when 0.005 mgm. of atropine was added to 1 c.c. of tissue emulsion. The unavoidable loss of atropine, therefore, is about 0.005 mgm. per c.c of emulsion used.

In some experiments the organ emulsion itself was tested, without extraction, by putting a drop of it into the eye of a kitten or rat. This test, when positive, was considered to prove the presence of atropine, but when negative the result was confirmed by extracting and testing by Vitali's test.

With a rat one drop of a solution of 0.01 mgm. atropine sulphate per c.c. always caused dilatation within forty-five minutes; a solution of 0.005 mgm. per c.c. did not always produce dilatation. With a kitten three instillations of one drop with intervals of ten minutes produced dilatation in sixty minutes with a dilution of 0.002 mgm. per c.c.; this corresponds to about 0.0004 mgm. actually introduced into the eye. Metzner [7] found that about 0.0001 mgm. of atropine sulphate put into a kitten's eye produced a well-marked dilatation. I made a few experiments with excised frogs eyes but found that they were much less susceptible; a concentration of 0.2 mgm. atropine sulphate per c.c. was required to produce dilatation.

(a) *The Rate at which Atropine is Destroyed.*

Expt. i.: Frog's liver emulsion 0.05 c.c. + 3.5 c.c. 0·65 NaCl. 1 c.c. of mixture put in four test tubes + 1 drop of toluol in each tube. 0·04 mgm. of atropine sulphate added to each tube. Incubated at 22°C. for varying times, killed by heating to 100°C., atropine extracted and estimated by Vitali's test.

Test Tube.	Length of Incubation.	Atropine originally present.	Atropine recovered.
1	Killed at once	0·01 mgm.	0·01 mgm.
2	Killed after 5 min. incubation	0·01 mgm.	0·01 mgm.
3	,, 30 ,, ,,	0·01 mgm.	0·0095 mgm.
4	,, 60 ,, ,,	0·01 mgm.	0·0099 mgm.

This experiment shows that the destruction of atropine proceeds slowly, and that the action resembles that of a ferment rather than that of an ordinary chemical combination.

(b) *The Nature of the Atropine Destroying Substance.*

As already mentioned, the power of emulsions to destroy atropine was found to be completely abolished by heating to 60°C. The action was not however dependent upon the presence of living cells, for if an emulsion of liver was smeared upon glass plates and dried, the dried material when made into an emulsion with saline could destroy atropine and retained this power for several weeks; after keeping for a few months this power to destroy atropine disappeared. On filtering a liver emulsion through a Berkefeld filter the filtrate was found to possess the power of destroying atropine, but after filtering through a Pasteur-Chamberland filter the filtrate was inactive. The destruction of atropine is therefore due to a body which resembles a ferment in its general charateristics, it acts slowly, it is destroyed by heating, but it does not depend upon the presence of intact cells.

4. THE DISTRIBUTION OF THE ATROPINE DESTROYING FERMENT IN THE BODIES OF THE FROG AND THE RABBIT.

A series of experiments was made according to the method already described, using emulsions prepared from the different organs of the body. If, on prolonged incubation, an organ emulsion did not destroy nearly all of the minute quantity of atropine introduced, it was considered that the organ had no power to destroy atropine, and in these cases it was not considered necessary to make an exact determination of the atropine recovered.

From these results it appears that the frog's liver can destroy considerable quantities of atropine, the heart and kidney can destroy minute quantities, but the other organs possess no such power; it is especially noteworthy that the frog's blood possesses no power of atropine destruction, a conclusion also obtained by Buys [2]

The destruction of atropine by the frog's heart was further tested upon the surviving excised heart. The heart was perfused with a small quantity of fluid by means of a cannula introduced into the ventricle through the sinus venosus.

Expt. ii.: 7/2/12. 2 c.c. of saline in frog's heart, 0·04 mgm. atropine. Heart maintained a good beat for twenty-four hours. One drop of fluid tested on rat's eyes at intervals. Atropine disappeared after five hours.

After twenty-four hours fluid and heart extracted, and the extracts tested for atropine. No atropine found in either.

A control was made by leaving 0·04 mgm. atropine in contact with a dead heart under similar conditions. No destruction of atropine occurred.

From these experiments it appears that the rabbit's liver and serum can destroy atropine. This result confirms the experiments of Buys [2], Cloetta [3], Fleischmann [5 and 6], and Metzner [7].

The other organs of the rabbit appear to have no power to destroy minute doses of atropine, even on prolonged incubation. Cloetta [4 and 8] used a similar method, but obtained a different result. He took 10 gms. of the organ emulsion and added 5 mgm. of atropine sulphate, and incubated for thirty minutes. He found that the rabbit's brain, as well as the liver, possessed the power of destroying atropine. I have been unable to confirm this result. Cloetta also found that the muscles destroyed about 20 per cent. of the atropine introduced, but I consider that this difference lies within the limits of the experimental error of the method used

TABLE II.

POWER OF RABBIT'S TISSUES TO DESTROY ATROPINE.

Emulsions incubated at 37° C.

Nos.	Date.	Organ.	Quantity of Emulsion in c.c.	Quantity of Atropine Sulphate added in mgrm.	Length of Incubation in Hours.	Atropine Sulphate (in mgm.) recovered from i. Unheated Emulsion.	Atropine Sulphate (in mgm.) recovered from ii. Control (Emulsion previously heated to 100° C.)
1	24.11.11	Liver	1	0·1	4	Nil	Atropine present
2	9.12.11	,,	1	0·5	5	,,	,, ,,
3	2.1.12	,,	2	0·1	15	,,	0·1
4	5.1.12	Serum	1	0·01	5	,,	0·01
5	27.11.11	Heart	2	0·4	15	Atropine present	Atropine present
6	16.11.11	,,	2	0·2	5	,,	,,
7	9.1.12	,,	2	0·01	5	,, 0·02 ,,	,, 0·02 ,,
8	16.11.11	Brain	1	0·1	15	Atropine present	Atropine present
9	9.1.12	,,	2	0·04	5	0·02	0·02
10	27.11.11	Intestinal mucous membrane	2	0·4	15	Atropine present	Atropine present
11	4.12.11	,,	1	0·2	5	,,	,,
12	27.11.11	Stomach mucous membrane	2	0·4	15	,, ,,	,, ,,
13	8.12.11	,,	1	0·2	4	,,	,,
14	9.1.12	,,	2	0·04	5	,, 0·02 ,,	,, 0·02 ,,
15	27.11.11	Pancreas	1	0·2	15	Atropine present	Atropine present
16	27.11.11	Kidney	2	0·4	15	,,	,,
17	27.11.11	Bone marrow	1	0·2	15	,,	,,

5. THE POWER OF THE TISSUES OF OTHER ANIMALS TO DESTROY ATROPINE.

In the rat, the liver, serum, heart, pancreas, kidney and intestinal mucous membrane were all tested, quantities of atropine varying from 0·2 mgrm. to 0·02 mgrm. were found not to be destroyed after incubation for four hours, there is therefore no evidence that any of the rat's organs can destroy atropine.

In the cat similar experiments were performed with the liver, heart, brain, pancreas, kidney and intestinal mucous membrane, in no case was there any evidence that atropine was destroyed, even after incubation for sixteen hours.

Cloetta ([3] and [4]) using a similar method, but using larger quantities of atropine (4 to 5 mgrm.) concluded that the cat's liver destroyed 50 per cent. and the brain 25 per cent. of the atropine introduced, as already mentioned, I consider that the method he used was unsuitable for estimating accurately the total quantity of atropine recovered. If the cat's tissues possess any power to destroy atropine, minute quantities of atropine should be almost completely destroyed after prolonged incubation; as I have shown, such a destruction occurs regularly with the rabbit's liver, but is never observed with any of the cat's tissues. A few experiments were made with the dog's liver, this was found to have no power to destroy atropine, a result previously obtained by Buys ([2]).

6. THE DESTRUCTION OF PHYSOSTIGMINE BY THE TISSUES.

The drug was extracted in the same manner as atropine, and the extracted drug estimated by dropping into the eye of a kitten. When three drops of a solution of physostigmine were put into the kitten's eye at intervals of ten minutes, it was found that a concentration of 0·02 mgm. per c.c. produced contraction within one hour, but that a concentration of 001 mgm. per c.c. produced no contraction. Experiments were made with the frog's liver and the rabbit's liver, in neither case was there any evidence that physostigmine was destroyed.

7. DISCUSSION.

It is interesting to consider what relation there is between the power of the tissues of an animal to destroy atropine, and the degree of tolerance shown by the animal to this drug. I have shown that the frog's liver, the rabbit's liver, and the rabbit's blood can destroy atropine, but that there is no evidence that any of the tissues of the cat, dog or rat possess this power.

Unfortunately it is difficult to determine the relation between the power of an animal to destroy atropine, and its tolerance to the drug, as measured by the minimal lethal dose per kilo of body weight, because there is no general agreement as to the latter. Different observers give widely different numbers for the minimal lethal dose of atropine both for the rabbit and dog. This diversity of opinion may be explained by the fact noted by Fleischmann, that rabbits from different localities show different powers of resistance to atropine. I determined the minimal lethal dose of atropine administered subcutaneously for rats, but found that it varied greatly, being much lower in young rats: 0·5 grms. atropine per kilo body weight killed young white rats weighing about 50 grms., but over 2 grms. atropine per kilo were required to kill older rats weighing 200 grms. Cloetta ([4]) compared the minimal lethal subcutaneous dose of atropine in cats and rabbits and found it to be 0·03 grms. per kilo and 0·5 grms. per kilo respectively: thus showing that the rabbit whose liver can destroy atropine is much more tolerant than the cat whose liver possesses little or no such power.

Heffter ([10]) compared the minimal lethal dose of atropine in rabbits and dogs, and obtained the following figures:—

TABLE III.

Animal.	Mode of Administration.	Dose of atropine Sulphate in grm. per kilo.
1. Rabbit ..	By mouth	1·4-1·5
2. ,, ..	Subcutaneous	0·65-0·7
3. ,, ..	Intravenous	0·068-0·074
4. Dog	Subcutaneous	0·401
5. ,, ...	Intravenous	0.07.

The rabbit therefore shows greater power of resistance to the drug administered subcutaneously, but both animals are equally susceptible to the drug when it is given intravenously; as already mentioned the rabbit's liver can destroy atropine but the dog's liver cannot do so. Cloetta also compared the action of atropine upon normal rabbits, and upon rabbits in which tolerance to the drug had been induced. The tolerant animals were more resistant to atropine given subcutaneously, but when atropine was given intravenously, and the minimal dose ascertained which would paralyse the vagi, it was found that this dose was the same both in the normal and in the tolerant animals.

In the cases recorded therefore it appears that there is some relation between the power of an animal to destroy atropine and its tolerance of the drug, when measured by the subcutaneous minimal lethal dose; this is shown by the following table:—

TABLE IV.

No.	Animal.	Subcutaneous Minimal Lethal Dose of Atropine in grms. per kilo body weight.	Authority.	Power of Liver to Destroy Atropine.
1	Frog	3·0	Determined by the writer	Well marked
2	Rabbit	0·7	Heffter ([10])	Well marked
3	Rat	2·0	Determined by the writer	Nil
4	Cat	0·03	Cloetta ([3])	Nil
5	Dog	0·4	Heffter ([10])	Nil

This comparison is not satisfactory because of the uncertainty as to the true minimal lethal dose in any species. It will b seen that some of the more tolerant animals possess the power of destroying atropine, but that the rat is exceptional since it is very tolerant to atropine, but none of its tissues have any power to destroy the drug.

Both Cloetta and Heffter show that an animal may be tolerant to subcutaneous doses but show no tolerance to intravenous doses, this is only natural because, when given intravenously, the drug exerts its specific action before sufficient time has elapsed for any appreciable destruction to occur. This rule probably holds good for most other drugs in which tolerance is observed, and with the development of intravenous therapy it may become of considerable practical importance.

CONCLUSIONS.

1. The livers of the frog and rabbit possess the power of destroying atropine; this power persists when all living cells are destroyed, and is due to a soluble body, resembling a ferment in its action.

2. In the frog the liver has a marked power, and the heart and kidneys have a slight power, to destroy atropine; no other tissues have any such power.

3. In the rabbit the liver has a marked power, and the blood a less marked power, to destroy atropine; no other tissues have any such power.

4. None of the tissues investigated in the cat, the rat, and the dog have any power to destroy atropine.

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STUDY OF EXPERIMENTAL PURPURA.

BY

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Although it is now easier to interpret the phenomena of purpura on theoretical grounds, yet it is still difficult to explain many cases clinically, and more difficult to produce the condition experimentally. The experiments generally quoted in the large text-books are those of Grenet, carried out in 1904. This author claimed to have produced purpura in a rabbit by introducing three pathological factors:—(1) Hepatic derangement; (2) nervous disturbance; (3) presence of toxin. These are old observations, but, as far as I know, have neither been confirmed nor disproved. My first experiments were therefore repetitions of Grenet's, using, as far as possible, the same technique.

Grenet took rabbits, ligatured the "hepatic pedicle" for twenty minutes, and then in five to seven days injected an aleo- extract of serum from a haemophilic patient into the [illegible]. Paraplegia of varying degrees followed, but [illegible] moses on the hind legs invariably appeared. [illegible] preliminary ligature of the pedicle, [illegible] pic fluids with ligature, always gave negative results.

In the four rabbits in which these proceedings were repeated, apart from some paresis of the hind limbs, no change was produced. No sign of purpura ever appeared. In six other [illegible] were made to investigate the [illegible] which occur when the cord is [illegible]. Using any fluid, it was found that 1 c.c., the amount employed by Grenet, caused death in a few minutes; with 0·5 c.c. recovery with paresis followed.

Sections of the liver, cut at different dates after ligature of the pedicle, showed no histological changes.

Charrin in 1892 described the easy production of purpura by injecting either organisms and their toxins into animals. *B. pyocaneus* was said to give purpura readily. I found, however, that repeated doses of sterilised twenty-four hours' growth of this organism produced negative results. Animals dying with a *pyocaneus* septicæmia even developed no purpura. Other bacterial toxins, as diphtheria and coli, also injected into guinea-pigs, failed to give a positive result. The mere presence of potent bacterial toxins is not sufficient to produce purpura; some other factor must be present before lysis of the capillary endothelium can occur.

The number of blood platelets is said to be greatly reduced in the hæmorrhagic conditions. Duke has studied the subject, and finds the platelet count is 30,000-80,000 instead of the normal 500,000-600,000 per c.mm. Selling, by injecting benzol subcutaneously into dogs, claims to have been able to reduce the number of platelets. It seemed, therefore, that by diminishing the platelets and then giving the animal toxins, that purpura should follow. Unfortunately I have not been able to confirm Selling's work, using rabbits and guinea-pigs. In counting the platelets Pratt's method was used. Careful microscopic examination of the liver and spleen of these animals failed to show free iron. It is difficult to imagine a drug affecting platelets without at the same time destroying the red corpuscles.

Appended are the tables of blood counts, showing the effect of benzol:—

Date.	Hb%	Reds	Whites	Platelets	Inj. Benzol.
Jan. 22	85	5500000	14000	690000	nil.
,, 23	90	6000000	15000	600000	·5cc.
,, 24	—	—	—	—	1cc.
,, 25	85	5160000	11900	480000	1·5cc.
Feb. 1	60	4200000	11250	450000	1cc.
,, 6	90	5060000	12000	500000	1·5cc.
,, 9	80	5000000	12000	550000	1·5cc.
,, 20	90	6500000	12500	480000	1·5cc.
,, 21	95	6800000	19.00	540000	nil.
,, Animal killed.					
Jan. 23	99	6500000	12500	470000	·3cc.
24	—	—	—	—	·2cc.
Feb. 1	95	6000000	13000	600000	·2cc.
6	95	6500000	14000	620000	·5cc.
9	98	6000000	15000	580000	·5cc.
10	animal killed.				

CONCLUSIONS.

Unfortunately, as regards the production of experimental purpura, my results have been negative. It appears that the oft-quoted positive experiments must, at any rate, not be accepted at present.

It is doubtful whether benzol has any effect on the blood platelets.

Although the lytic body at work in purpura is undoubtedly allied to a hæmolysin, yet its action seems to be different, since in two fatal cases of purpura neonatorum I have been able to microscope the organs without finding traces of free iron.

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SOME CLINICAL AND EXPERIMENTAL OBSERVATIONS ON THE OPERATIVE TREATMENT OF FRACTURES,

WITH ESPECIAL REFERENCE TO THE USE OF INTRA-MEDULLARY PEGS.

BY

ERNEST W. HEY GROVES, M.S., F.R.C.S.

The use of intra-medullary pegs for the fractures of the long bones is, of course, no new invention. Various modifications of these, in shape and material, have often been suggested. But for two chief reasons they have not been used very widely, first because of the fear of sepsis being introduced into the marrow cavity, and secondly because of the mechanical difficulty of introducing the peg into the interior of the closely-apposed fractured ends.

Nevertheless I feel quite sure that in certain cases the method of using an intra-medullary peg has great advantages over all others, and I have endeavoured to ascertain, by clinical and experimental observation, the comparative merits of this and other methods of the operative treatment of fractures.

There are two different methods by which the pegs may be introduced into the bone.

1. *Pegs with Fixed Crosspiece.*

Fig. 1 illustrates the first kind of peg. It is comparatively short—*i. e.*, about 2·4 c.m. in length. It has a fixed crosspiece, transfixing its centre, which keeps the peg from slipping too far into one end or other of the hollow bone. One end of the peg is fitted into one fragment of the broken bone. Then the

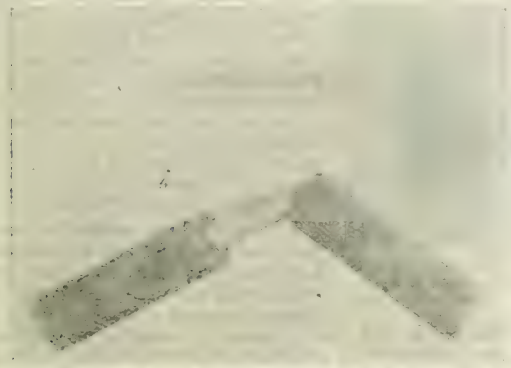


Fig. 1.—Short peg with fixed crosspiece. *a*, The peg. *b*, Bone. The peg is in position of the peg. One end has been placed and the other bone fragment is about to be placed in apposition.

other fragment is made to engage the projecting end of the peg, and by bringing the bone fragments into line with one another the muscular tension pulls the ends of the bone together over the enclosed peg, which serves thus to keep the fragments in exact apposition. This type of peg can only be used in those cases where the broken bone fragments are easily separated from one another. When it is in position, owing to its shortness, it does not exercise much influence in maintaining the straight axis of the bone.

2. *Pegs introduced by Wire Traction.*

But in the important class of fractures in which operation is demanded most imperatively; a peg like the one described cannot be employed, simply because in these neglected or malunited cases it is impossible to separate the broken ends of the bone sufficiently to insert the peg. For these cases I have used pegs (Fig. 2) which are drawn into their place by means of wire traction. Each of these pegs is about 4·7 c.m. long, and is perforated in its centre by a hole transverse to its long axis. Along opposite sides of the peg run grooves in its whole length, and into these grooves the ends of the transverse hole open.

The size of the hole and groove is one which easily takes a fine flexible steel wire, which, when threaded through the transverse hole, lies snugly in the grooves, so that the whole peg can be slipped into one fragment of the bone, the other fragment brought into apposition, and then, by traction on the wire, the peg is pulled up into position, so that one half lies in one fragment and the other in the other.

As regards the thickness of these pegs, I have a set of thirteen sizes, varying from one-eighth to one-half inch, each size differing from the other by one-thirty-second of an inch, and also a set of drills for preparing the bone ends. Each drill makes a hole, into which the corresponding peg will slip easily. The object of drilling the bone should simply be to clear away any rough, outstanding spicules of bone, and not to actually enlarge the natural marrow cavity. It is unnecessary to make the pegs fit very tightly, and the less drilling that is done the better. As regards the method of traction on the wire, in most cases it is quite sufficient to pull on the wire ends, which are rolled round pairs of forceps. But if one has to work at the bottom of a deep wound, which makes it difficult to carry this out, the traction may be made by an instrument (Fig. 3), which winds the wire ends on to two revolving shafts, at considerable mechanical advantage

Experimental Results.

I have carried out a series of experiments on cats and rabbits in order to test the rapidity and efficiency of organic union of the bones when fixed after fracture by various



Fig. 2.—Long peg, introduced by wire traction. *a* is the peg showing the groove and perforation for the wire. *b*, Bone, with fragments in line; the peg is wholly in the left-hand fragment, and the wire, the ends of which are indicated by arrows, when pulled on will draw the peg up into the other fragment.

appliances. Up to the present these have been 50 in number, and although my full inquiry is not yet complete, I have attained certain results which are of interest. I will merely give a few examples and illustrations of this [illegible] work.



Fig. 3.—Instrument for introduction of the long pegs in difficult cases. *a*, Shows the peg from the side being pulled up by the turning of the two rollers which pull on the wire. *b*, The instrument, which consists essentially in two steel rollers which roll the wire ends, and so pull upon the peg which lies between them.

Plates and Screws.

I endeavoured to carry out the method chiefly advocated by Arbuthnot Lane. That is to say, a small steel plate was used, which was screwed into the dense bone on either side of the fracture without perforating the entire thickness of the bone. But owing to the small size of the screws used, and the fact that it is practically impossible to immobilise the limbs of animals by external splints in



[illegible]—Femur of a cat four weeks after a plating operation, showing the way in which the screws from one end have been drawn completely out of place.

the way that it is done in human surgery, none of these experiments gave good results. Invariably within one week

of the operation the screws from one or both ends had been pulled out and complete disunion of the fracture occurred. (Fig. 4.) I think that it is fully proved that no screw which merely penetrates the outer shell can hold a bone in position for long if there still exists a constant considerable force tending to its displacement. In such cases the bone round the screw is rapidly absorbed, and the screw comes out. (See Fig. 10.) The success of any plating operation is therefore dependent upon the absolute fixation and immobilisation of the bones by external splints after the operation.

Fixation by Encircling Plates.

The majority of these experiments were successful. I have used steel, aluminium, and silver plates wrapped round the seat of the fracture like a collar and fixed by wire. But in none of these, at the periods during which the animals have been kept alive (four to five weeks), was there any efficient attempt at natural repair. Fig. 5 shows the tibia of a cat in good position four weeks after operation. The position is good and the animal could run about freely, but there is not a trace of reparative callus between the bone ends, and the periosteum is slowly forming a very slender collar of new bone outside the steel plate. Therefore, it is evident that, however efficient that method may be in the fixation of a bone, it greatly retards the natural process of repair.

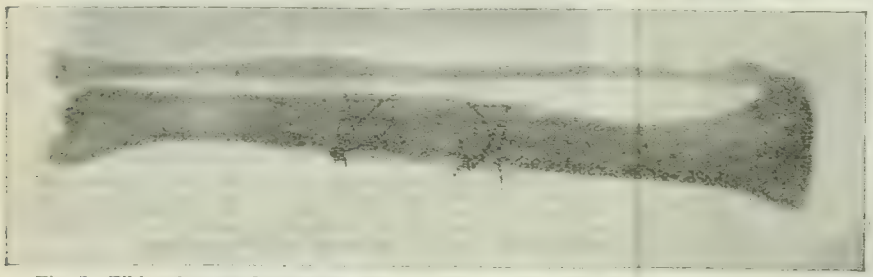


Fig. 5.—Tibia of a cat five weeks after operation. The fragments are surrounded by an aluminium plate which is almost transparent to the *x* rays. With the exception of a little periosteal callus at each end of the plate, there is no trace of repair.

Intramedullary Pegs.

Although I have used internal pegs made of various materials, I will here only speak of those which are unabsorbable. In comparing the merits of various materials—*e.g.*, bone, steel, and aluminium—the metal pegs are much the best for animal experiments, because those made of bone or ivory are very brittle, and are liable to be broken. It is an interesting fact, as illustrating the very powerful force which tends to displace a fractured bone, that in every case (about ten in number) in which I used a bone or ivory peg for the tibia or femur of an animal, this was snapped in two, and the fragments thus became displaced. Steel is preferable to aluminium, because it throws such a good shadow by the X-Rays. A steel peg is very easy to insert by the method I have described. When it is inserted the bone is kept in a straight line, but a little movement is still possible, and this no doubt greatly hastens callus formation. The animals, from the second or third day after the operation, are able to run about, and within three or four weeks they do so without any apparent disability or limping. Fig. 6 is from the tibia of a cat killed six weeks after the operation. The specimens demonstrate that the method of peg of steel gives perfect position, firm and speedy union, and perfect functional result.

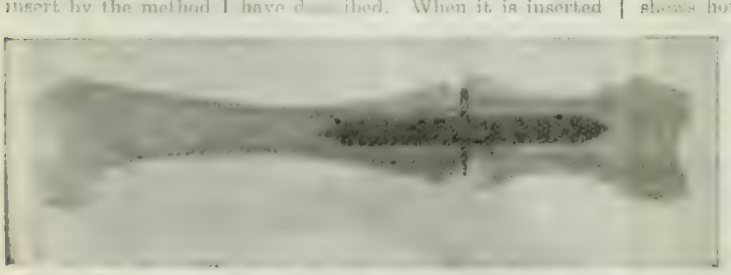


Fig. 6.—Tibia of a cat six weeks after operation, showing steel peg in position. The bone is quite united.

Aluminium has a very definite and distinct characteristic when used for the pegging of bones. It is absorbed within a few weeks, and in the process of its absorption it greatly stimulates the callus production and the ossification of the same. Fig. 7 shows the tibia of a cat eight weeks after the operation, and it will be seen that there is a well-marked spindle-shaped thickening of the bone at the seat of the fracture.

Although this property of magnesium renders it unsuitable for use in ordinary cases, it may be of great value in treatment of old cases of ununited fracture, in which a powerful stimulus to callus formation is the object most desired.

Of the other forms of absorbable bone pegs I have not yet found any which give good results with animal experiments. I have used decalcified bone, horn, catgut, gelatine hardened with formol, and fibrine round an axis of catgut. Of these horn is the best, but in all cases the softening takes place too early—that is to say, before any organic fixation has occurred—and then complete displacement takes place. But it is possible that these pegs might be useful in human surgery in conjunction with external splints.

Some Clinical Results.

I have used the method of intramedullary pegs for the treatment of bad fractures for the last two years, and I feel sure that it has certain advantages over other methods of operation. I will here, however, content myself with giving two examples of conditions for which it is specially suitable. Fig. 8 shows the femur of a boy of 13, broken

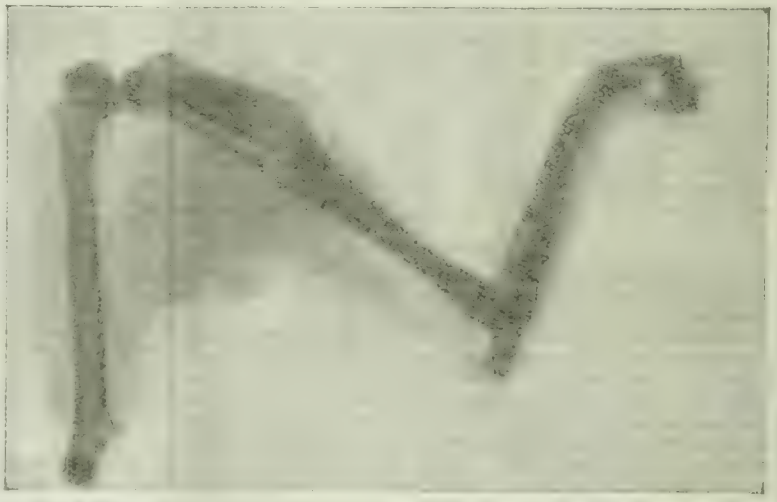


Fig. 7.—Shows the tibia of a cat, eight weeks after operation, with a peg of solid magnesium. There is marked over-production of callus.

in its upper third, with a displacement which neither weight extension nor a double-inclined plane could reduce. Fig. 9 shows how perfect the apposition was after the introduction of an intra-medullary peg. This is the kind of fracture for which the method is especially suitable. The displacement is very difficult to correct by external means; it is still more so to maintain in good position. The bones lie so deeply bedded in muscles that any kind of screwing operation is difficult to carry out efficiently, and, moreover, the muscular tension is so great that a single plate becomes displaced within a short time after the operation. Fig. 10 is from a case of this kind, and it shows the plate and screws, which have become loose within two weeks of the operation.

Fig. 11 illustrates a malunited fracture of the tibia and fibula 18 months after the accident, with much overlapping of the fragments. In such a case there is very great muscular tension when the bone is divided and replaced. This would make fixation by screws very difficult, and such fixation would be liable to give way after the operation.

Fig. 12 shows the same case four weeks after the operation, the ends of the tibia being replaced over an intramedullary peg.

Conclusions.

The advantages of the intra-medullary peg method, in operative treatment of fractures may be summarised as

follows:—(1) It can be easily and quickly performed, provided the details I have suggested are observed. (2) It requires a very much smaller incision and less exposure of the soft parts. (3) It involves a minimum of injury to the periosteum. (4) It adjusts the broken bone in the correct position. (5) It allows slight movements between the fragments, which is beneficial for rapid union. (6) It makes the use of external splints unnecessary after the operation, and massage and movements are thus rendered possible as soon as the wound has healed.



Fig. 8.—Fractured femur of a boy of 13, broken in its upper third, with displacement of its upper fragment in front of the lower.

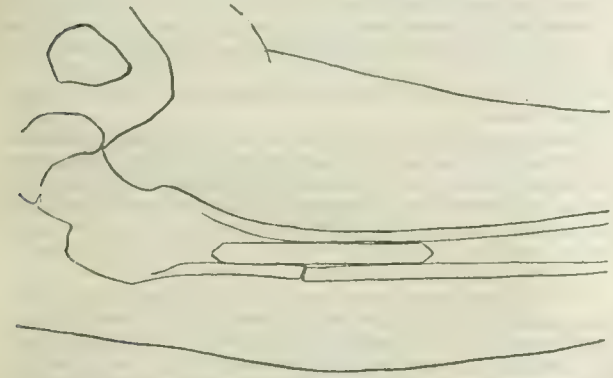


Fig. 9.—The same case shown in Fig. 8, a fortnight after the introduction of a bone peg.



Fig. 10.—Femur of a man, broken in its upper third, showing how a plate and screws failed to maintain the correct position of the bones.

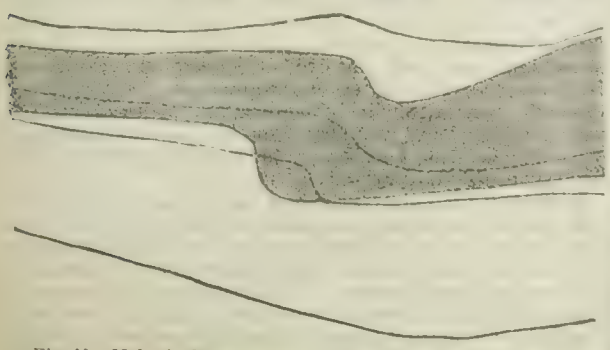


Fig. 11.—Malunited fracture of the leg bones eighteen months after the accident. The tibia is shaded and the fibula only shown in outline.

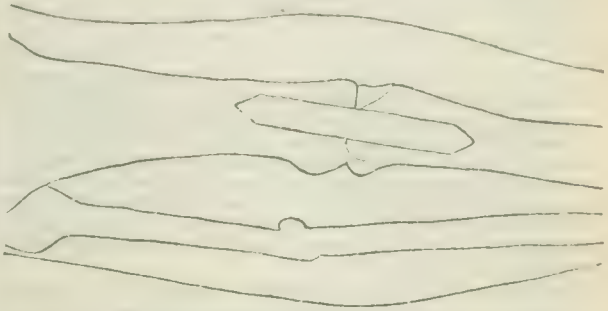


Fig. 12.—The same case as shown in Fig. 11, after the operation, showing the peg in position. A piece of the wire used to draw the peg into position has been left to prevent the peg slipping up or down.

[Figures 8, 9, 10, 11 and 12 are accurate outline drawings from the actual skiagrams, reproduced in this form for the sake of clearness.—ED.]

THE ACUTE AND SUBACUTE LESIONS INDUCED IN THE SPINAL CORD BY INFECTION OF ITS LYMPH SYSTEM.

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The research carried out during the past year has been a continuation of the investigations on the inflammatory phenomena induced in the central nervous system by infection of its lymphatic system. In our last paper we gave in detail the histological evidence which demonstrated that the path of the toxic lymph could be traced, by the presence of inflammatory reaction, along the infected sciatic nerve as far as the posterior root ganglion, and for a considerable distance along the spinal roots. The nerve had been infected by placing a celloidin capsule containing a broth culture of micro-organisms in contact with it.

In our most recent experiments the spinal cord was infected in two ways—either by removing the laminæ of the vertebræ and suturing the capsule against the dura mater at the level of the lumbar enlargement, or by separating the muscles from the vertebræ in the dorsal region and placing a capsule against an intervertebral foramen.

All the experiments yielded positive results, but there were marked differences in the degree of the reaction, because in some cases the capsule had burst and a growth of organisms had occurred in the tissues and spread along the dura mater.

In the experiments in which the capsule had burst the changes in the spinal cord were of an acute nature. When there was no growth of organisms outside the capsule the reaction was sub-acute.

Synopsis of the Phenomena in the Acute Series.

1. In the epidural tissue there were micro-organisms, polymorphonuclear leucocytes, and large lymphocytes.
2. Inflammatory reaction of the cells of the dura mater and pia mater, with the formation of polyblasts.
3. Within the spinal cord were found:—Proliferation of the adventitial and endothelial cells, with the formation of polyblasts, and here and there of compound granular corpuscles; dilatation of the blood vessels, and the formation of thrombi within them; neuroglia proliferation; nerve cell degeneration and neuronophagy.

Synopsis of the Phenomena in the Sub-acute Series.

1. In the epidural tissue there were polymorphonuclear leucocytes, plasma cells, and polyblasts.
2. Plasma cells were present also in the dura mater and in the capsule of the posterior root ganglia; in the substance of the posterior root ganglia, and collected into a prominent group at the proximal pole; in the perineurium of the spinal roots and in the adventitial sheath of the vessels in it; in the

pia mater and in the adventitial sheath of the vessels passing into the spinal cord.

5. Proliferation of the neuroglial cells.

A comparison of the phenomena of reaction in the two series of experiments shows that although they differ markedly in degree they have the same anatomical distribution.

In our last communication we drew a comparison between the sub-acute vascular lesions found in the infected sciatic nerves and those seen in the brains of general paralytics, and we assigned to both a similar mechanism of production—infection of the lymph paths. The induction, in our last experiments, of acute lesions in the spinal cord which follow the anatomical distribution of the sub-acute series has widened the application of the research very considerably, and supports the most recent view that acute poliomyelitis is a lymphogenous infection.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF GYNAECOLOGY AND OBSTETRICS.

Professor HENRY BRIGGS, M.B., F.R.C.S., President.

PRESIDENT'S INTRODUCTORY REMARKS.

PROFESSOR BRIGGS, after extending a cordial welcome to members and visitors, continued: The prospect of three days' full employment on subjects of immense scientific and practical importance is consistent with the traditions of these annual gatherings of the Section and with the steady progress shown throughout the history of obstetrics and gynaecology. Discouragements from any source or of any kind looming, or threatening to loom, in obstetrics must disappear under the combined influences of healthy mothers and children and an efficient obstetrical service. The latter requires the extension in populous centres of adequately equipped training schools in obstetrics for the medical student, the midwife, and the monthly nurse. A short statement of our local obstetrical history—in 1796 a ladies' charity, in 1841 a lying-in hospital, in 1869 an amalgamation of the two, at a date soon after the discoveries of anaesthetics and antiseptics—reveals an ancient institution which has outgrown its present, too small and always overcrowded, accommodation for 24 in-patients amidst an average of 2,000 out-patients yearly attended at their homes. On a central site, already acquired by the committee, a modern Maternity Hospital of 85 beds, by the great generosity of Sir William Hartley, is, at an early date, to be built. The endowment fund provided by other friends of the hospital has now reached the sum of £15,000; another £5,000 at least is desired. The gratifying assurance of this vigorous accession to the growth of our own local obstetrical training school will encourage the ever-increasing efforts of the hundreds of medical men and midwives in the district of Liverpool for the advancement of this branch of practice.

In addition to our membership of the British Medical Association and of our own purely local medical societies, we in this district, as obstetricians, are all members of the North of England Obstetrical and Gynaecological Society; its monthly meetings in one or other of the four university centres of Manchester, Liverpool, Leeds, and Sheffield, are well attended. To recall the society's origin in 1889 is to recall one of a long roll of varied and valuable public services capably and courageously rendered by our neighbours. Sir William Sinclair, of Manchester, who has this year resigned his seat on the Central Midwives Board after ten years' faithful service. We know his enormous energy; we recognize the gigantic debt obstetrics now owes to him.

The activity and the ability of the Royal Society of Medicine have amply compensated for the fusion of the London societies; the Obstetrical and Gynaecological Section has maintained its high level. With such organizations behind us we may be optimistic, and thus open the business of this meeting.

DISCUSSION ON THE RESULTS OF TREATMENT OF INFLAMMATORY DISEASE OF THE UTERINE APPENDAGES.

OPENING PAPERS.

I.—W. S. A. GRIFFITH, M.D.Camb., F.R.C.S.Eng.,
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THE treatment of inflammation of the ovaries and tubes has passed, since the time when many of us were students, from a simple treatment of symptoms, based on a very imperfect knowledge of the pathology of the disease, through a period of operative surgery which has since dominated treatment, and with the progress of antiseptic principles and operation technique has gradually achieved a high degree of success, to the great benefit and relief of many chronic and formerly incurable, as well as many of the acute cases.

During recent years advance in bacteriological research has enabled us to discover the causes of these inflammations, and with a more accurate knowledge of their pathological anatomy, their progress and termination, the medical treatment promises to prove of greater value than ever before, and to deprive the surgeon of some of the cases which would otherwise have come under his hands.

Medical treatment may now be said to begin with the means to prevent infection, not only by the use of disinfectants, but by educating the public as to the sources and means of infection, the instruction of men suffering from gonorrhoea and gleet as to the suffering and misery produced by the communication of the infection after marriage, and the more thorough protection of women in labour.

Next in importance is the immediate arrest of infection of the vulva and vagina wherever this is possible, so as to prevent its extension to deeper tissues and organs, and at the same time placing the patient under the most favourable conditions for her recovery, by absolute rest, and attention to the common rules of medical practice, so that the various structures of the body may be enabled to fight their battle with the invading organisms with the best prospects of success, aiding them with such agents as serums and vaccines and such other methods as radiology and pharmacology provide for us from time to time.

It is of great interest to look back at the writings of those who were leaders in gynaecology in our student time, when the first investigations into the use of antiseptics were being made, and when the fear of opening the abdomen was only equalled by our ignorance of the condition inside it, and of the proper methods of treatment. If we look at the writings of such men as Matthews Duncan and Charles West in this country; Courty, Professor of Clinical Surgery at Montpellier; Scanzoni, Professor of Medicine at Würzburg, as representative of the best practice of their time in England, France, and Germany, we see that the treatment advocated by them was almost identical, and almost entirely medical; and that even in cases of pelvic abscess there was great hesitation in recommending any surgical treatment, with the result that large numbers of women were unrelieved and wandered from one doctor to another, or from one cure to another, unable to get the relief which modern surgery now affords.

It is interesting also to see how the advance of surgical treatment of the living led to, and was followed by a more exact knowledge of the anatomy and pathology of these diseases than was obtained from clinical observations and *post-mortem* examinations. The principles of treatment advocated at that time were common to all countries, and it may be of interest to see how far they are maintained at the present time. First in importance, then as now, were the common-sense measures—lying in bed, attention to the

bowels, and properly regulated diet. Without these any other treatment can have a poor chance. Next in importance came "local depletion" advocated by all the older writers, and now almost, if not entirely, given up. This was carried out by the application of leeches, a dozen to that part of the abdomen where pain was most acute. A better and more effectual method was the application of a smaller number, from four to six, to the cervix by means of the speculum, the external os being closed by a small plug of cotton-wool to prevent them entering the uterine cavity. The objects of the depletion were the relief of pain and the diminution of the congestion of the part affected. They undoubtedly gave relief, and when necessary the application of leeches was repeated in smaller numbers. These were followed by poultices, hot compresses, with opiates for the relief of pain. Aperients and mild febrifuges were also given. Later, especially in more chronic cases, "resolvents" such as mercurial and belladonna ointments, and blisters were applied, and a more stimulating diet was given with wine and tonics, of which liquor cinchonae was a favourite with many.

These general lines of treatment, which varied in detail in the hands of different physicians, indicate the practice of medicine at that time. They were good common-sense principles, handed down from our forefathers, untainted by a knowledge of microbes, serums, and vaccines, or of the risk of septic instruments, fingers, and clothes. They are in the main the principles of treatment which are carried out by the great body of practitioners at the present time.

I have details of 48 cases in the gynaecological wards of St. Bartholomew's Hospital, treated in the four years 1907–1910 without operation, and without serum or vaccine treatment. They show the usual results of the ordinary routine treatment—no deaths, and the local condition much improved.

Thermal Treatment of Pelvic Inflammations.

The beneficial results of hot poultices and fomentations to the abdomen in pelvic inflammation has led to attempts to apply heat more directly through the vagina. Daily douches at a temperature rising from 115° F. to 122° F., and continued for from ten to fifteen minutes, has been strongly recommended by Richelot.[1]

S. Flatou, of Nuremberg,[2] describes a vaginal heating instrument (but gives no detail of cases) by which he says he can raise the temperature of the pelvis up to 40° C.

Clavigo[3] reports cures of cases of various pelvic inflammations.

The continuous hot douche is the only form of which I have had experience, but I am unable to say how much benefit is obtained from it. If the vulva is well protected, it certainly gives more relief than the ordinary douche which is so commonly ordered by medical men for every form of gynaecological ailment. The value of the ordinary douche is extremely limited, and the benefit obtained from it small in proportion to the time and trouble which its frequent use entails.

Radium Treatment.

Treatment of pelvic inflammations by radium is still in a stage of trial, and we are indebted chiefly to France for such information as we have. My personal experience is limited to one case treated at the Radium Institute in June of this year, and it is too early to form any opinion as to the result.

Cheron[4] records 26 cases, described as chronic, with grave lesions, which did not yield to former treatment. Two of these, however, were cases of so-called ovarian pain, without evidence of inflammation, and as might be expected were not benefited by the treatment. The remainder, he says, recovered, and remained well during many months. Seventeen of these were bilateral, of which eight were severe on one side and slight on the other. These, he says, are perfectly well and menstruation remains normal. There were nine cases in which the bilateral lesions were well marked which also did well, some with a diminution of menstrual flow, others with entire cessation for two or three months, but menstruation then returned normally; and in such cases he remarks that we must not too hurriedly conclude that menstruation has ceased permanently. Seven cases were unilateral; two of these were cured and preserved their ovarian functions. He draws the conclusion that we should always try the effects of radium treatment before having recourse to the removal of the uterus or the appendages.

Madame Fabre, M.D.,[5] says of this treatment:

> In certain cases of chronic inflammation of the uterine annexes, with great infiltration and perimetritis, we notice a softening of the adhesions and a diminution of the mass of the annexial tumours. The most noticeable phenomenon, however, is always the diminution and subsequent complete suppression of pain. The complete cure is slow. We may affirm that the ultra-penetrating radiations of radium have a curative action in all inflammatory diseases of the pelvis with the exception of genital tuberculosis, of which there is not yet sufficient evidence.

Jacobs, of Brussels,[6] relates two cases of chronic salpingitis, in which the application of radium appeared to have some beneficial effect. The disease was left-sided in both, and he used 3 cg. of radium applied through the left fornix of the vagina—in one, for six hours on alternate days for a period of two months, in the other, every third day for four weeks. At the end of the treatment the tubes were no longer tender, and in one case the inflamed tube was diminished in volume. He does not speak highly of the results.

The latest contribution is by Barcat, Assistant at the St. Louis Hospital, Paris,[7] in which he gives a short summary of recent work on the use of radium, and in the case of salpingo-oöphoritis speaks highly of the results. There are no details, however.

There appears to be no evidence that radium is of value in acute cases, nor in those in which there is any considerable formation of pus. The application of radium should be made, as far as possible, in the vagina, in some cases in the cervix, and Cheron especially points out the uselessness, and even the danger, of introducing radium into the body of the uterus in cases of inflammation.

In a recent paper by Professor Bordier of Lyons, at the Royal Society of Medicine,[8] "On the Treatment of Uterine Fibroids by the X Rays," he laid stress on his successful results being due to the direct effect of the rays destroying the follicles and the ova.

On these grounds I felt bound to criticize the treatment of fibroids by radiology as compared with the removal by operation, in which the ovaries, if healthy, are left untouched and the risk of a sudden climacteric disturbance is avoided. One of the points, therefore, in which radiologists will have to exercise caution, especially in the minor inflammatory affections, is the risk of sterilizing the patient as a result of this treatment. Owing to the great expense and the difficulty of obtaining radium, it is improbable that it will be frequently used for this class of cases.

Serums and Vaccines in Pelvic Inflammations.

One of the great advances in the treatment of all inflammations has followed the systematic bacteriological examination of the infection. This is a comparatively simple matter where the affected part is external or communicates directly and closely with the exterior. Both the Fallopian tubes and ovaries are unfortunately too far away, and often it is impossible, until the organ is exposed by operation, to ascertain with certainty the nature of the infecting agent. In cases of inflammation of these organs, examination of the bacteria of the vulva would give no reliable results. Those of the vagina and cervix, especially if gonococci or streptococci are present, would be of more value, but their presence is not conclusive evidence as to the nature of the infecting agent in the more distant parts.

It is held by some authorities that an acute vaginitis is necessarily the result of gonococcus infection, and until the systematic bacteriological examination of these cases was undertaken, most of us, I suppose, held the same opinion. This, however, is clearly not true, and, indeed, some of the most chronic and troublesome cases, apparently not amenable to any chemical antiseptic, have been those in which the pus contained no definite pathogenic organisms—only a variety of forms from which no useful vaccine could be obtained.

One can expect a practical clinical cure of gonorrhoeal vaginitis in from one to two weeks by chemical disinfection

lone. I would not undertake to cure the other cases in three months. Now these latter cases fortunately appear to have no tendency to spread beyond the cervix, whereas the gonococcal and streptococcal infections are those which most certainly are the cause of the great majority of inflammations by extension from the uterus, and this extension is most prone to take place in connexion with menstruation, abortion, or labour, and it is imperative if either of these is impending that the vagina be adequately disinfected. The general recognition by the profession of the importance and simplicity of vaginal disinfection in these cases, and of the necessity of warning young men who have suffered from gonorrhoea of the risk of marriage and of infecting their wives (not necessarily by an acute infection readily ascertained, but by a slow gradual process, the result of an uncured gleet, which rarely produces any obvious symptoms until it has reached the tubes, ovaries, and peritoneum)—the recognition, I say, of these two great factors would do a very great deal to diminish the number of such cases and prevent much ill health and sterility.

When the uterus itself is infected, or, what is more common, when its mucous membrane is in a state of chronic inflammation as a result of infection, it can be disinfected by the careful use of the flushing curette and the swabbing afterwards by an efficient antiseptic, and in cases where the Fallopian tubes are also the seat of chronic inflammation, this treatment of the endometrium appears to act most beneficially on the mucous membrane of the tubes, in a way similar to that obtained by the removal of tonsils and adenoids on the Eustachian tubes and the ear.

Treatment by serums and vaccines is being carried out by numerous investigators, but much information is still needed before definite rules can be formulated. It is obviously essential that in the cases of pelvic inflammation a competent gynaecologist be associated with a competent bacteriologist in order that reliable information may be obtained. A long list of investigators might be quoted, but it seems in the short time available better to point out certain matters which are peculiar to pelvic inflammations and add to the difficulty of the investigation and to the uncertainty of the results.

It is in the first place impracticable to entirely separate inflammation of the tubes and ovaries from inflammation of the pelvic peritoneum and cellular tissue; they must be considered together, their treatment is identical.

With the exception of the tuberculous group, most pelvic inflammations arise from infection which extends through the vagina and uterus to the tubes and peritoneum or to the cellular tissue, lymph and blood vessels of the pelvic diaphragm, or in both of these ways.

Mr. Girling Ball, in his Hunterian lecture,[9] pointed out that in all streptococcic infections it is probable that some bacteria invade the blood stream, but in many cases they are destroyed by the serum and the leucocytes, so that they are not found in the circulating blood, natural immunity being sufficient to prevent general infection.

We may regard infection as the entry of bacteria to a part, and, unless they are destroyed there and then, they multiply with enormous rapidity and either remain localized or they spread along the surface of the part infected, or through a wound they enter lymphatic or blood channels, spreading in all directions, unless arrested by natural immunity, which varies in every individual, and in the same individual it varies in its power of resistance to different organisms.

The use of serum is to provide an immediate antidote to the bacterial toxins, and unless used early it appears to be [illegible] we may regard not as direct antitoxins to the poison, but as stimulants to the tissues to provide an extra quantity of their natural antidote, and unless these tissues are already overcome by the virulence of the bacterial invasion, and have exhausted their power of production of antibodies, the injection of [illegible] the invading organisms appears to be able, under favourable circumstances, to turn the scale and arrest the further bacterial growth and the production of toxins (this is termed "active [illegible]

If this correctly [illegible] the present views of this difficult and very [illegible] subject, it appears probable that the use of vaccines in gynaecology will prove to be of most value as a prophylactic against extension of infection, and in a manner somewhat similar to our usual methods of chemical disinfection. Chemical disinfection is of the greatest value when carried out thoroughly, and applied, as it easily can be, to the infected vagina, and less easily, but with fair efficiency, to the infected uterus.

The value of thorough disinfection of the vulva and vagina, which are usually the first seats of infection, cannot be overestimated, and many a woman might be saved from extension of inflammation to the uterine appendages if this were more generally recognized and carried out without delay.

It is as futile to attempt to disinfect the vagina by the use of the ordinary douche as it would be to prepare one's hands for an operation by squirting an antiseptic on them.

In some forms of inflammation in little children and girls in whom the infection has extended beyond the hymen, and in whom efficient chemical disinfection is to be avoided if possible, even under an anaesthetic, a vaccine appears to be capable of arresting the disease.

The recent paper by Chapple[10] on two cases of pneumococcal vulvo-vaginitis in young girls is important evidence of this.

Butler and Long[11] record several cases of gonorrhoeal vulvo-vaginitis in children, treated by vaccine with good results.

We contribute from St. Bartholomew's Hospital 3 cases of gonorrhoeal vaginitis, 1 in a child of 5, 2 in adults, in which gonococci were identified by film and culture. The two adults were treated by chemical disinfection under anaesthesia, the child was merely irrigated with Condy's fluid. All three received an autogenous vaccine in two doses of 10 million at intervals of three to four days. In each case, after fourteen to eighteen days, no gonococci could be found.

A pregnant woman (nine months) with acute streptococcus vaginitis was disinfected with 2 per cent. silver nitrate, and received two doses of 10 million autogenous vaccine. She was confined twenty days later. The puerperium was normal, and the infant's eyes were not affected.

There are 13 cases of chronic pelvic inflammation at present under treatment with autogenous vaccine, prepared from organisms obtained from the uterine cavity:

Streptococcus pyogenes	10 cases
Gonococcus	1 case
Diphtheroid bacillus	2 cases

on which we hope to report later.

Records of tuberculin treatment in cases of pelvic inflammations are very scanty. A case was recorded by Miss Ivens[12] after the removal of the tubes.

The paper by Heinsius[13] is a contribution to the vaccine treatment of gonorrhoeal inflammation of the uterus and appendages. His 10 cases are interesting, but they are not sufficiently in detail to enable us to accept his conclusions unreservedly. The difficulty of distinguishing *post hoc* from *propter hoc* results is always present, and, as several of his cases show (though they are described as gonorrhoeal), gonococci were not always found or are not reported as found; one of the great difficulties in the investigation and adoption of vaccine treatment is the doubt whether the organism obtained from the vagina and cervix, from which the vaccine is usually prepared, is really the organism of the more distant pelvic inflammation.

Again, in chronic cases much of the induration felt in the neighbourhood of the uterus is scar tissue, and the bulk of the mass is often increased by the loaded condition of the bowels. We must all be aware that it is not rare for the diminution of these masses to be attributed to the cure of inflammation, or to the rapid disappearance of a tumour, rather than to the emptying of the bowel, which is often the true explanation.

We may, however, agree with Heinsius that treatment of gonorrhoeal inflammations of the uterine annexes by vaccine is a therapeutical measure of value, and is worth a more extensive trial.

There is a general consensus of opinion that the use of vaccine must be subservient to the use of the best surgical methods; the septic vagina or uterus must be cleaned

out, and the opening of abscesses and their drainage are just as essential as ever they were.

I have had under my care chronic cases of infective endometritis, with thickened tubes, in which the disinfection of the uterine cavity by the flushing curette, and the free application of iodine has been followed, not only by the cure of the endometritis, but by a recovery of the tubes so perfect that in one case a patient previously sterile gave birth to a child at the end of twelve months after the curetting.

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II.—Christopher Martin, M.B., C.M.Edin., F.R.C.S.Eng.,
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I have had the honour of being asked to discuss the results of the surgical treatment of inflammation of the uterine appendages. The subject is a complex one, and in the limited time at my disposal I can only touch on some of the salient points.

At the outset, let me say I am not an advocate of surgical treatment for all or even the majority of cases. The various medical lines of treatment must be given a full and patient trial, and an operation recommended only when they fail, or it is obvious they are futile.

In judging of the value of an operation we must bear in mind:

1. The natural course of the disease untreated.
2. The results of medical treatment.
3. The mortality of the operation.
4. The effect on the local disease.
5. The effect on the general health.

In each case we must count the cost and estimate what the patient stands to gain or lose by the proceeding. Will she be really the better for it? Are the probable benefits worth the risk? If we cannot make her any better, let us take care we do not make her any worse. In past years many needless mutilating operations have been performed, but nowadays saner and more conservative methods prevail.

It will be convenient to consider ovarian and tubal inflammation separately.

A. *Ovarian Inflammation.*

Acute Ovaritis.—The condition of acute ovaritis, except as part of a tubo-ovarian infection, seldom calls for surgical treatment. It rarely goes on to abscess, and I do not consider it justifiable to remove an ovary for acute inflammation unless there be suppuration. It would be just as reasonable to remove the testis for acute orchitis.

Occasionally, however, suppuration does occurs in the substance of the ovary; and then the surgeon has to interfere. If the ovary can be felt in the pouch of Douglas, distended into a bag of matter, it is best opened and drained per vaginam by an incision in the posterior fornix. This allows the pus to be evacuated at the most dependent point, with the least disturbance of the tissues, and the minimum risk to the patient. With the opening of the abscess the febrile symptoms subside, and the patient is able to overcome the general toxaemia. In many cases a permanent cure results. But if it does not, and the ovary continues so painful, swollen, and adherent that its removal is called for, this second operation is done under much more favourable circumstances and with much less risk to the patient.

Chronic Ovaritis.—There are many varieties and degrees of chronic inflammation of the ovary. In some it is small, hard, anaemic, and sclerosed. In some it is enlarged, congested, and tender. In others it becomes cystic—the contents of the cysts being serous, colloid, or altered blood. From time to time the cyst contents leak into the peritoneum and set up an adhesive inflammation, which glues the ovaries to the uterus, the tubes, the bowel, and broad ligament. These patients suffer from recurrent pelvic peritonitis, dysmenorrhoea, and general pelvic distress. It is usually necessary to remove such diseased ovaries. The operation is sometimes a difficult and dangerous one from the density of the adhesions. The more grossly diseased and adherent an ovary is, the greater is the justification for its removal; but the greater also is the risk.

Less severe cases of cystic ovaritis can often be cured by an operation short of removal—namely, separation of adhesions, ignipuncture of the cysts, or resection of the diseased part of the ovary. In the case of young women such conservative operations should be given a fair trial, and both ovaries removed only where the patient's sufferings are severe and milder measures fail. If but one ovary be diseased, this should be removed and the healthy one left. Even if only a small part can be saved, this is enough to produce the internal secretion (so essential to the patient's well-being), menstruation continues, and the possibility of pregnancy remains.

The removal of the ovaries for "cirrhosis" is seldom satisfactory, and often does more harm than good. Cirrhosis is usually the result of premature senile changes in the organ. It may, however, be caused by repeated attacks of inflammation. The ovary becomes hard, nodular, and fissured. The scar tissue may compress the nerve fibres in its substance, and cause severe neuralgic pain. Its removal is then sometimes necessary. But if the other ovary be healthy, it should be preserved, and not sacrificed on the plea that "it may go the same way."

In general, the more severe the local lesion in the ovary, the more satisfactory is the after-result of removal, and vice versa. To remove healthy ovaries for simple dysmenorrhoea, or purely nervous disorders (such as epilepsy, insanity, and nymphomania), is quite unjustifiable.

It is futile to perform double oöphorectomy in the hope of curing the "chronic neurotic." We all know her—the thin, fretful, hysterical creature, who wears out the patience of her doctor and nurses, and makes her husband's life miserable. She goes from consultant to consultant and falls an easy victim to the quack. In turn, she tries all the fashionable remedies. At one time she has a Weir Mitchell "rest cure"; at another a course of "high frequency." One physician washes out her stomach, which he finds dilated; another has her colon irrigated for a supposed colitis. She then tries the surgeons, who perhaps short-circuit her stomach, remove her appendix, or stitch up her kidneys. Sooner or later she falls in the hands of a gynaecologist who treats her with pessaries, curetting and ventrifixation. Finally, he removes her ovaries, and the last stage of the patient is worse than the first.

Remote Results of Removal of both Ovaries.—The remote results of removal of the ovaries vary with the age of the patient. If she be a young woman the changes are more marked than if she be middle-aged. Menstruation (with few exceptions) ceases, and the whole genital canal undergoes atrophy. The uterus may return to the infantile condition. The vagina shrinks and loses its elasticity. There is often a curious tendency to develop urethral caruncle and painful vascular patches around the vaginal orifice. There is, of course, complete sterility. In many cases the sexual instincts dwindle and disappear. Coitus may become distasteful from psychical causes, or distressing from physical changes. She suffers severely from all the sympathetic disturbances of the menopause, such as heats and flushes, palpitation and giddiness. Usually she becomes fat. But I have not seen any tendency to the development of male characteristics, such as hair on the face, deepening of the voice, or mannish habits and modes of thought. These masculine features depend on the presence of the internal secretion of the testes, and not on the absence of that of the ovaries. Now, none of these climacteric changes occur if only one ovary be removed, or even a small fragment—not larger than a cherry stone—be left behind. They can to a certain extent be prevented or diminished by administering to the patient the ovarian substance of the sheep. But this never quite takes the place of the natural secretion. It is probable that the ovarian secretion of the woman differs somewhat both in chemical

composition and physiological effects from that of other animals.

B. *Tubal Inflammation.*

The results of surgical treatment of tubal inflammation depend on the cause of the disease, on the severity of the inflammation, and on the extent of the operation. The three chief causes are gonorrhoea, tubercle, and sepsis. Salpingitis nearly always spreads from the uterus by continuity of mucous membrane; and therefore it indicates a past and usually a present endometritis. Developmentally the uterus and tubes are one; and in many pathological processes they must also be considered as one organ. If the tubes be infected the uterus is also infected.

Salpingitis may be acute or chronic, mild or severe, single or double, and the line of treatment varies accordingly. Mild cases do not call for operation, and can be cured by medical treatment.

Adherent Appendages.—In most cases of salpingitis there is more or less pelvic peritonitis causing adhesions between the tubes, ovaries, uterus, bowel, and omentum. In recent acute cases these adhesions are soft and easily parted. In old cases (for example, in bad chronic pyosalpinx) they may be extremely dense and difficult to separate. In many cases of adherent appendages it will be found possible to remedy matters by a conservative operation. The abdomen is opened, the adhesions are broken down, and the tubes and ovaries freed. If the abdominal end be closed, by gluing together of the fimbriae, it can be opened. If the tube be distended with serous fluid (as in hydrosalpinx), it may be slit up, the contents evacuated, and the ostium reformed. If this proceeding be combined with curetting and ventrifixation, a cure usually results. A patient previously sterile may be made fertile. I know of many cases where pregnancies have followed these conservative operations.

Pelvic Adhesions Secondary to Appendicitis.—It must be noted that in many cases of adherent appendages the pelvic peritonitis is secondary, not to salpingitis or ovaritis, but to a previous appendicitis. The latter sets up a local peritonitis. The inflammatory effusion sinks into the pelvis—the most dependent part—and covers the appendages with plastic lymph, which sets into firm adhesions. In such cases there is no justification for removing the ovaries and tubes. The appendix should be taken away, the appendages freed from their toils, the fimbriated ends reopened, and the uterus stitched forwards. The results are excellent: the pelvic pain and dysmenorrhoea disappear, and patients previously sterile may now conceive. When operating for adherent appendages or adherent retroversion, it should be a rule always to examine the appendix and remove it if there be any signs of old inflammation.

Unilateral Salpingitis.—In unilateral salpingitis it is not necessary to remove both tubes; the diseased one alone should be taken away. If the corresponding ovary be healthy it should be saved, but if infected with pus it must be removed with the tube. At the same time the uterus should be curetted to remedy the endometritis and prevent the other tube from becoming infected.

Double Salpingitis.—If a patient suffer from double salpingitis calling for operation especially if there be a double pyosalpinx—I would strongly urge the removal, not only of the tubes, but also of the uterus. This does not add to the risk of the operation, and it makes the cure more certain. In these cases the uterus is deeply infected, and if left behind is not only a useless but a diseased organ. The patient often continues to suffer severe pain, to menstruate profusely, and to have irregular floodings. When not losing, she has a nasty purulent discharge. In several cases where I had removed the tubes alone for pyosalpinx I have had afterwards to do hysterectomy. If at the primary operation the entire uterus be removed, it is easy to drain the pelvis through the open vagina with iodoform gauze. One ovary should if possible be saved in order to continue the ovarian secretion. There is, as far as I know, no internal secretion of the uterus; at any rate, the removal of the uterus causes no marked disturbance of the woman's nervous system if some ovarian tissue be left behind.

Acute Pyosalpinx.—In acute pyosalpinx it is best to open and drain the distended tube by an incision through the posterior fornix. This allows the virulent pus to escape through a dependent opening, and there is little risk of infecting the general peritoneum. At a later date, if she be not cured, the abdomen may be opened from above, and the diseased organs removed with comparative safety. In years past I lost a number of cases of acute pyosalpinx by doing a primary abdominal section. The rotten tubes burst during the operation, the peritoneum became fouled with septic pus, and the women died of acute peritonitis. I am confident I should have saved nearly all these cases if I had first drained the tubes vaginally, and at a later date removed them from above.

Mortality of the Various Operations.—After all, the most important result of an operation is the result to the patient's life. The death-rate after different operations varies considerably. Let me illustrate this by a few figures taken from the annual reports of my own hospital, the Birmingham Hospital for Women. During the past ten years there have been performed altogether 3,365 abdominal sections, with 80 deaths (2.3 per cent.).

The mortality of operations for inflammatory diseases of the appendages was as follows:

	Cases.	Deaths.	Per Cent.
Removal of one ovary for chronic ovaritis	22	0	0
Removal of both ovaries for chronic ovaritis	2	0	0
Removal of one tube for salpingitis (including hydrosalpinx, haematosalpinx)	91	1	1.1
Removal of both tubes for salpingitis	129	2	1.5
Removal of one tube for pyosalpinx	31	1	3.2
Removal of both tubes for pyosalpinx	134	6	4.4
Vaginal drainage of pyosalpinx and ovarian abscess	36	0	0
Removal of uterus and both tubes for salpingitis or pyosalpinx	147	2	1.3
Conservative operations on the appendages (including separation of adhesions, ignipuncture of ovaries, resection of ovaries)	392	2	0.5
	984	14	1.4

These figures represent the result of the work of all the members of the surgical staff of a modern gynaecological hospital during the past ten years. It will be observed that we operated on very few (24) cases of chronic ovaritis, whilst in a large number (392) conservative operations were performed on the appendages. As might be expected, the mortality of removing one tube was less than when both were taken away. In the case of pyosalpinx, the mortality of vaginal drainage was nil (36 cases, no death); that of removal of one tube was 3 per cent., and that of removal of both tubes was 4.4 per cent.

Other Sequelae of Operations on the Appendages.

But if the patient does not die from the operation she is unfortunately not always cured. In certain cases there are after-complications which cause pain or discomfort to the patient and vexation to the surgeon. In addition to some already mentioned, let me briefly refer to the following:

1. *Hernia of the Scar.*—This is much less common since the abdominal drainage tube has been discarded and vaginal drainage employed when necessary. With few exceptions, a hernia of the abdominal scar is evidence of faulty technique on the part of the operator.

2. *Sinuses.*—These may be due to suppurating foci having been left behind in the abdomen or pelvis. They are rare if a clean sweep be made of the diseased organs. In some cases they are caused by the presence of septic foreign bodies especially infected silk ligatures—in the abdominal cavity. Since I have given up the use of silk for ligatures and buried sutures, and have used iodine catgut exclusively, I have not been troubled with sinuses.

3. *Faecal Fistula.*—This is most common after operations for tuberculous pyosalpinx. It is apt to occur in those cases where the tube has to be stripped off adherent bowel, or where previous to the operation the pus sac has been discharging into the bowel. I know of nothing more distressing to a refined sensitive woman than this condition. The surgeon is often unjustly blamed for causing it, as it

is difficult to get the patient and her friends to understand that the fistula is due, not to the operation, but to the original disease.

4. *Uterine Discharges.*—I have already referred to the occurrence of menorrhagia after removal of the appendages for salpingitis. It may be so severe as to call for hysterectomy. It cannot, of course, occur if the uterus be removed with the tubes at the primary operation. Sometimes a very annoying purulent discharge from the uterus persists for months or years after removal of the appendages. It is due to an untreated endometritis, and may necessitate curetting or removal of the uterus to effect a cure.

Importance of Combining Medical and Surgical Treatment.—Some cases are easily remedied by medical treatment alone, and some are promptly cured by operation. But in many others both medical and surgical treatment must be combined to get a good result. For example, in cases of tuberculous pyosalpinx, we must not only remove the diseased organs by operations, we must also combat the general tuberculous condition by fresh air, dieting, tonics, and injections of tuberculin. In cases of gonorrhoeal salpingitis we may have to supplement our operations by the administration of iodide of mercury, urinary antiseptics, and gonococcic vaccines. In short, the modern gynaecologist must be both a physician and a surgeon.

DISCUSSION.

Dr. F. W. N. Haultain (Edinburgh) said he had not heard the entire papers, but must join issue with Mr. Martin in his sweeping statement that removal of the ovaries for epilepsy was unjustifiable. He had removed the ovaries in 5 cases of this condition, in 3 with complete success, in 1 with marked improvement, and in 1 failure. All of these cases showed marked association of the fits with the menstrual function, usually commencing with the onset at puberty, and at first being mainly confined to these times, but gradually increasing in severity and frequency. Under the same category other reflex conditions such as vomiting and asthma with enlarged and tender ovaries might be benefited by removal. In one typical case he removed one diseased ovary in a woman with asthma with completely good results for five years, when the other ovary became similarly diseased, with recurrence of the asthma. Since the removal of the second ovary she was completely and permanently cured.

Mrs. Scharlieb, M.D. (London), said: Cases of inflammatory disease of the uterine appendages should be first treated on medical principles, such as rest, diet, care of the bowels, and, if necessary, with serum and vaccine-therapy. These measures might be followed, if necessary, by curetting and painting the endometrium with iodized phenol. The next step in cases of pyosalpinx was incision through the posterior vaginal roof. In cases where abdominal section was performed for the removal of pyosalpinges or tubo-ovarian abscesses it was very desirable to secure free drainage by incision through Douglas's fossa. In many cases the adhesions behind the uterus were so dense as to make this incision difficult or impossible. If this were the case, the uterus should be removed. The uterus was the sac designed for the accommodation of the fetus until it was mature and fit for independent existence; it was not essential to the woman's health and well-being. The sacrifice of the uterus was of little moment as compared with the sacrifice of the ovaries. The ovaries should be spared whenever possible: if not both, then one; if not a whole ovary, at least a portion, for they were of great importance to the psychical and physical health of the woman. Abdominal section for suppurative disease of the uterine appendages was one of the most difficult and dangerous of gynaecological operations—really more so than Wertheim's operation for cancer of the uterus; but it was made less difficult, less dangerous, and more useful by the removal of the uterus.

Dr. Amand Routh (London) agreed almost entirely with the medical and surgical treatment of acute and chronic salpingitis as stated by Dr. Griffith and Mr. Martin. He referred especially to three methods of medical treatment: (1) The importance of sterilizing the vulva, vagina, and endometrium by appropriate methods as a preliminary to every type of surgical treatment of inflamed tubes, whether removed by the abdomen or drained by the vagina. (2) The vaccine treatment of gonorrhoeal salpingitis had, in his hands, proved very useful, and even in acute cases had led to the immediate cessation of the acute symptoms. If gonococci were found to be present a stock vaccine should be at once used, and if this failed, an autogenous vaccine should be injected. (3) Electric heat applied by electric lights swung on the limbs of a bed cradle for twenty minutes once or twice a day in subacute cases encouraged absorption and greatly hastened the cure of a perimetritis. In regard to operative treatment, he looked upon vaginal drainage of a pyosalpinx which could be reached by the vagina as the safest and best treatment. He regarded this treatment not merely as a preliminary to a subsequent abdominal operation, but, as in many cases, absolutely curative. He had known many cases where a complete cure had been thus obtained, and he had even seen pregnancy occur eighteen months after both tubes with purulent contents had been drained per vaginam. In all cases physiological rest should be insisted upon and the husband should be examined by an expert lest a chronic gleet were present. He considered the removal of a pyosalpinx during the acute stage to be one of the most dangerous of all abdominal operations, owing to the fact that almost all such pus tubes were the result of a mixed injection—usually gonococcal and streptococcal. Bumm had stated that the rupture during laparotomy of an acute pyosalpinx infected only by gonococci would not cause peritonitis: but, as most cases were due to mixed infection, it was far better to wait till the acute symptoms had subsided and the pus had become sterilized. He believed this discussion would prove how advisable it was to avoid abdominal operations during the acute stages of salpingitis. These cases rarely, if ever, died of their disease, and should be treated by palliative treatment or by vaginal drainage; abdominal operations should be left to those rare cases where they were subsequently indicated. In general, he cordially agreed with the modern as distinguished from the old-time Birmingham view.

Sir John Byers (Belfast) spoke of the value of the excellent introductory papers as indicating that, in the treatment of inflammatory diseases of the uterine appendages, they had now reached a state of stable equilibrium showing the value of both medical and surgical treatment. He emphasized the value of vaginal incision and drainage in acute collections of pus in the tubes, and also of vaccine-therapy. He specially drew attention to the prevention of inflammatory disease of the tubes and ovaries, which he thought was the great lesson of the discussion.

Professor J. B. Hellier (Leeds) said he was struck with the general consensus of opinion amongst gynaecologists to-day on the question of operative treatment of diseased appendages. He thought gynaecologists as a class were now cured of the "oöphorectomania" which was epidemic thirty years ago. Time and patience would often make the knife unnecessary, but many hospital patients who had to earn their own living could not or would not afford the time, and hence one had to operate. His experience of yeast suppositories for acute gonococcal vaginitis had been very satisfactory, and he used them also for preparing patients for vaginal operations. Posterior colpotomy for pelvic abscess was very good, but sometimes abdominal drainage would succeed when vaginal drainage had failed. He quite agreed that when both tubes were removed for infection it was often excellent practice to remove the uterus also.

Dr. H. Beckwith-Whitehouse (Birmingham) observed that from pathological reasons, in the majority of cases of chronic pyosalpinx it appeared justifiable to conserve the uterus. He had submitted to bacteriological examination a considerable number of uteri removed with double pyosalpinx, and the large majority he had found to be sterile. This observation coincided with the fact generally accepted, that the pus in chronic pyosalpinx was usually sterile. On the other hand, the endometrium of such uteri was usually oedematous and hypertrophic, and appeared to be a suitable soil for further infection. He

had found that a very satisfactory method of ascertaining whether organisms were still actively present in the uterus was to collect the menstrual blood and submit it to a careful bacteriological examination. If organisms were still present hysterectomy appeared to be associated with some risk, and removal of the appendages only should be attempted. He was glad to hear that conservative measures were advocated, and he was thoroughly in accord with the views so expressed. It was astonishing how pelvic adhesions disappeared. He recalled several cases in which a second laparotomy, performed some months after the first, had shown almost complete disappearance of adhesions. For this reason it was frequently advisable to divide operations for pelvic inflammation into two stages. The first should be simple incision and drainage of pus-containing cavities; the second, if required, was a radical operation performed some weeks later. With regard to conservative measures, the question of autoplastic ovarian grafts certainly had a place. In cases of double pyosalpinx with very adherent ovaries it was frequently possible to save the uterus and to graft minute fragments of ovarian tissue into a rectus muscle. He had performed this operation upon two occasions with distinctly good results. Menstruation had continued, and the patients were now in excellent health.

Dr. C. E. PURSLOW (Birmingham) entirely agreed with Mr. Martin's advice that acute pus collections in the pelvis were in many cases most safely treated by vaginal incision, followed later, if necessary, by abdominal section; these cases were characterized by acute pyrexial symptoms and a mass, usually in Douglas's pouch; some of them were completely cured by the vaginal incision. He thought that when an acute salpingitis was due to gonorrhœa there was much greater probability of its spontaneous cure than when it was due to sepsis, and some of these cases, when acute peritonitis was present and the symptoms were severe, recovered in a surprisingly short time.

Dr. F. EDGE (Wolverhampton) recalled that the late Professor Taylor drew attention to the common occurrence of gummata in the interstitial portion of the tube causing pyosalpinx. The free use of red mercury iodide usually cured these cases. With regard to pyosalpinx he (the speaker) had had many cases in former years where he had removed first one tube and later the other, still later the uterus subtotally, and later again the cervix. There was, therefore, a logical indication for total hysterectomy with removal of both appendages. A piece of ovary, if uninfected, might be left behind, but the patient must be told that the possibilities were ovarian pain from cystic formation and inclusion in dense adhesions. With working women who had to keep themselves, he advocated total removal after full explanation. It was only in this way, also, that one could avoid the tragedy of those specially virulent cases where conservative surgery with insufficient drainage led to death. The gonococcus cases were the most favourable for interference, while infections from the bowel or vermiform appendix were very dangerous. Even when a radical operation had been done there still remained sources of infection. He asked whether vaginal opening of pus sacs as a preliminary operation might not sometimes lead to mixed infection endangering the subsequent operation for removal of the diseased parts. With the general trend of the papers and discussion he was in complete accord. Vaccines and other new means might yet render surgical aid exceptional, but by that time prevention might eliminate even the need for vaccines.

Miss F. IVENS, M.S.Lond. (Liverpool), thought that future treatment would be an association of medical and surgical measures, and that the tendency would be to use vaccines in combination with conservative surgical treatment. After separation of adhesions and the opening of tubes vaccine treatment was of great prophylactic value in preventing the formation of fresh adhesions. She operated always [illegible] normally by the abdominal route, with carefully packed-off intestines; it gave good access and most satisfactory results, even in acute purulent cases. She used no drainage in gonococcal cases, but if a *B. coli* infection were present in addition, abdominal drainage was used in preference to vaginal. With regard to tuberculous tubes, in an experience of 20 cases she had only found it necessary to use tuberculin in 2 cases where tuberculous peritonitis had occurred later. These cases had been treated conservatively with removal only of affected areas, an effort being made to leave the whole or part of an ovary. The uterus was not removed, except in one case where a necrobiotic fibroid was present. No drainage was used unless a secondary bowel infection were present.

Dr. J. E. GEMMELL (Liverpool) dwelt upon the degree of infectivity of gonococcal and mixed infections. He referred to a series of cases under observation and treatment some twenty years ago where clinical evidence established what had now been proved bacteriologically. Conservative treatment of chronic inflammatory appendage disease—opening of closed tubes, separation of adhesions—had not been very satisfactory; in no case had pregnancy supervened, and several cases had required a later operation. Early recognition of the infective nature of these diseases, active medical treatment, and a wider promulgation of the view that there was a risk to women of latent gonococcal infections, would do much to diminish chronic inflammatory appendage trouble.

Dr. E. NAPIER BURNETT (Newcastle-on-Tyne) referred to the great difficulty which the gynaecologist experienced in deciding for or against operation in cases of infection of uterine appendages. Every one had experience of cases of pelvic cellulitis readily yielding to palliative treatment, while other apparently similar cases of pathological lesion defied all such medical treatment. The difference in such results was probably due to the varying degrees of personal resistance on the one hand, and, on the other hand, to the difference in the virulence of the infecting agent. He would like the openers of the discussion to state their experience of tubal pregnancies following the treatment of tubal inflammation on conservative lines; he believed this to be an important point for consideration. Regarding tuberculous salpingitis, he strongly condemned vaginal drainage in such cases, as it almost invariably led to mixed infection, with disaster to the patient.

Dr. GRIFFITH, in reply, took the opportunity of discussing the more surgical aspects of the subject. He agreed with most that had been said as to the advisability of a rational conservatism. He noted that in the discussion surgery had dominated medicine. It appeared an obvious duty to save everything that could be saved. Tubercle was different from all other infections, and, if local, was extremely curable. He considered mercury a most useful drug, quite apart from its specific action on syphilis. Drainage, in his opinion, was always carried much too far. Acute cases undoubtedly needed it, but in most others it was quite unnecessary. Gonococcal peritonitis, if pure, was practically never fatal, although the patient might for a time look extremely ill. He regarded mere statements of the advantage of removing the ovaries in epilepsy and dysmenorrhœa as harmful; all such cases should be very fully reported.

Mr. CHRISTOPHER MARTIN, in reply, stated that with reference to the question of the removal of the ovaries for epilepsy, his experience was quite different from that of Dr. Haultain; he thought that they should be very chary in recommending the operation in such cases. He was glad that so many speakers agreed as to the value of the vaginal drainage of acute pyosalpinx, the importance of saving one ovary when possible, and the wisdom of removing the uterus with the tubes in cases of double salpingitis. He was surprised to hear that Dr. Beckwith-Whitehouse found the uterus sterile in his cases of salpingitis; but even so, it was still a chronically inflamed organ and should be removed with the tubes. He agreed with Dr. Purslow that cases of acute gonorrhœal salpingitis were more likely to recover spontaneously than those due to sepsis or mixed infection. He was quite at one with Dr. Edge as to the great value of a course of mercury iodide in cases of salpingitis, as was first pointed out by his colleague, the late Mr. J. W. Taylor, but he could not agree with him as to the frequency of gummata in the uterus in these cases; what he called gummata were probably caseous abscesses in the uterine wall, and not of syphilitic origin. It was not usually difficult to diagnose pus in cases of inflammatory trouble; in addition to the

constitutional evidences of suppuration, a fixed mass was to be felt in the pelvis, behind or to one side of the uterus, with signs of thick fluid in it; if fluctuation could not be made out per vaginam it could often be detected on rectal examination; in some cases there was a dense, hard mass of effusion with a soft centre—the focus of suppuration. He could not agree with Miss Ivens that vaginal drainage for pyosalpinx was more dangerous than abdominal drainage; in his experience it was quite the reverse. He did not condemn the removal of cirrhotic ovaries absolutely, but thought that the operation should be done only in intractable cases after milder measures had failed. He was glad that Miss Ivens agreed with him as to the importance of combining medical with surgical treatment. In reply to Dr. Gemmell, it was true that patients might object to undergoing two operations where one would suffice, but if it were explained to them that it meant much less risk, they readily gave way. Several references had been made to the feud in years gone by between London and Birmingham. He was glad that this was now a thing of the past, that the hatchets had been buried, and that good feeling prevailed. In these battles his old master, Mr. Lawson Tait, was the chief fighter, and much of the animosity was due to the vehemence of his onslaughts on those who opposed him. In spite of the mistakes he made he was a great genius, and modern gynaecology owed much to his pioneer work. Let us forgive and forget his errors, and with gratitude remember his marvellous achievements.

CHORIO-ANGIOMA OF THE PLACENTA.

By R. W. JOHNSTONE, M.A., M.D., F.R.C.S., M.R.C.P.E.,

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TUMOURS of the placenta are of interest on account not only of their extreme rarity, but also of their structure and origin. I therefore felt that the members of the Association would be interested to see the specimen which I am able to show to-day. So far as I have been able to discover, this is the seventy-first case of a genuine tumour of the placenta (excluding cysts) that has been recorded. The actual incidence of the tumours is, however, probably not so rare, for one or two observers have recorded more than one, and all the cases have been discovered in hospital or institutional practice. In the *Transactions of the Edinburgh Obstetrical Society* I have found no record of any such tumour having been shown; and in the *Transactions of the London Obstetrical Society* only two—one by Galabin in 1885, and one in the beginning of this year by Drummond Maxwell.[9] Strangely enough, I had the opportunity of seeing still another specimen this summer, which has, I believe, been shown to the Pathological Society at their recent meeting at Newcastle by Dr. Stuart McDonald. It is interesting, too, to recall the fact that the first observation on the subject was made by an English physician, John Clarke, in the *Philosophical Transactions*, London, in 1795.

The patient from whom this specimen was obtained entered the Royal Maternity Hospital, Edinburgh, in December, 1911, during Professor Sir Halliday Croom's service, and I gladly take this opportunity to acknowledge his kindness in giving me freedom to examine and describe the specimen.

The patient was a woman of 25, who had had two normal labours previously and no miscarriages. The last menstruation had been in April, 1911. She complained of never having felt quite well during this last pregnancy, and in the last two months the abdomen increased rapidly in size. Latterly it caused some difficulty in breathing, and for a fortnight she had had considerable dyspnoea, which prevented her from sleeping. For some weeks she had felt a vague pain all over the abdomen.

On examination the abdomen was found distended beyond the size of a full-term pregnancy, and a network of distended veins was noticed coursing over the surface. The patient was suffering from marked dyspnoea. The pulse-rate was 96, regular but weak. The os uteri admitted one finger.

The patient was put to bed, the intention being to induce labour the following morning. At 10.30 p.m., however, pains began spontaneously and continued. The dilatation was slow, and the patient's distress considerable, so the membranes were ruptured above the fetal head, and 6 pints of fluid allowed to escape. After this the labour proceeded normally, and at 3.10 a.m. the child was born. It was obviously premature, and only survived twenty hours. The placenta required to be expressed. The patient's recovery was uneventful.

The Placenta measures 6 in. by 7 in., and the greater part of it is quite normal in appearance.

Maternal Surface.—At one side of the placenta there is a mass of smooth greasy-looking lobules of various sizes packed together into a fairly compact tumour measuring 3 in. by 4½ in. Repeated examination of the tumour has loosened the arrangement of the component lobules, which may be seen to vary in size from that of a large pea to that of a plum. Some of the lobules on the extreme edge of the tumour were detached by a mere touch. Most of them are attached to fine pedicles composed of one or two delicate vessels bound together in a sheath. The arrangement of several groups of lobules was very like that of a bunch of grapes on a stalk (Fig. 1). The uterine surface of each lobule has a greasy gelatinous appearance, most marked at the edges, where the lobules are moulded upon each other, and faceted like a collection of gall stones. Several lobules bear the impression of the vascular pedicle as a distinct gutter mark running over one or more surfaces.



Fig. 1.

Fetal Surface (Fig. 2).—The cord is inserted eccentrically towards the opposite end of the placenta. It is thick and apparently normal. The tumour is seen to lie in a crescentic bay in the edge of the normal placental tissue, its surface being raised above the level of the normal part, and separated from it by a definite furrow. The tumour has the same greasy appearance as on the uterine surface. One or two large vessels run direct from the base of the cord to the tumour, over which they ramify, sending branches at right angles down towards the uterine surface—to which branches the lobules are attached as described. At the base of the cord these vessels are exceptionally thick, one being as thick as the little finger. This vessel shows a very decided constriction just at the base of the cord. The amnion passes normally over the entire surface of the placenta and strips readily from the chorion.

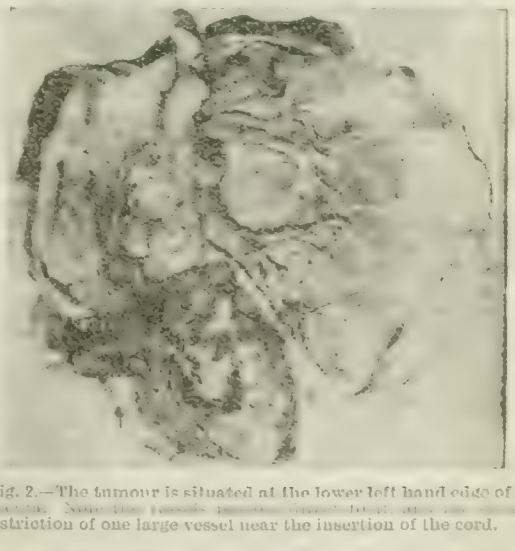


Fig. 2.—The tumour is situated at the lower left hand edge of the [illegible] constriction of one large vessel near the insertion of the cord.

The tumour appears to be separated from the normal portion of the placenta by a connective tissue capsule, but microscopic examination reveals that this is not so. On section the individual lobules show a gelatinous appearance at the edges and superficially. The deeper parts look quite homogeneous in structure and are dark crimson in colour.

The entire placenta was hardened in 5 per cent. formalin solution and sections cut from various parts of the tumour, placenta, and cord. Examination showed that the various lobules were all identical in the essentials of their structure.

Microscopic Examination.

The *covering* of each lobule consists of chorionic epithelium (Fig. 3). Both layers can be detected at many points. The most persistent appearance is that of large, more or less regular, rounded cells with large oval or polygonal nuclei. These are the representatives of Langhans's layer. Outside these a plasmodial layer is every here and there visible with smaller and more deeply staining nuclei grouped together. This is the syncytium. The thickness of the covering varies considerably, but it is never lost. At some points it is quite exuberant, at others only a thin film of syncytium is to be seen.

Where the vessels forming the pedicles enter the lobules, the covering is reflected over them, enclosing them in a sheath. The lobules lying in direct contact with the chorionic membrane have no pedicle, their structure being directly continuous with the connective tissue layer of that membrane. Their other surfaces are, however, covered with the two layers of epithelium like the rest.

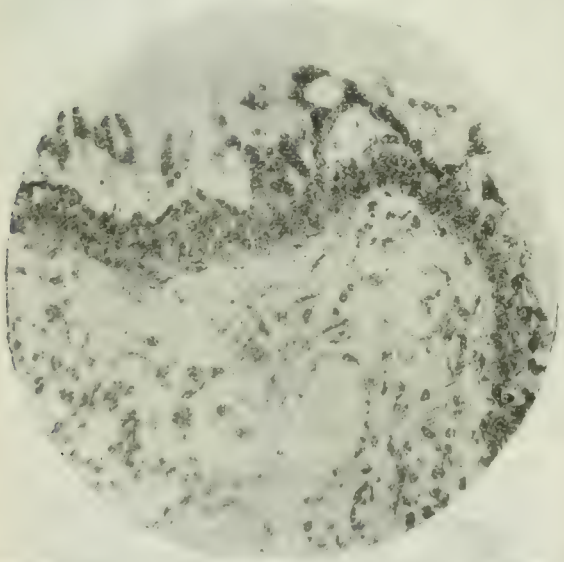


Fig. [illegible] At this point the chorionic epithelial covering is particularly exuberant.

Substance of the Lobules.—Immediately under the epithelial covering we find a layer, varying greatly in thickness at different parts, most marked at the edges and corners, and sometimes altogether absent, of very elementary and delicate connective tissue. The fibrils form a loose network, rather resembling a myxomatous tissue. It is this tissue that gives rise to the gelatinous appearance of the edges of the lobules and has led to many of the specimens being identified with myxomata.

Below this delicate layer lies the characteristic structure of the tumour. Briefly it consists of an enormous number of capillaries filled with fetal blood, and supported by a fine connective tissue stroma. Here and there the vessels are large and have the ordinary structure of arteries and veins, but for the most part they are capillaries with walls consisting of a single layer of endothelium (Fig. 4). In many parts the capillaries are so fine, and so numerous, and so full of blood, that the appearance is very like that of a haemorrhage into the stroma. I believe, however, that there is no actual haemorrhage, for such areas pass gradually into others in which the capillary structure may be clearly seen, and even in the middle of these haemorrhage-like areas one can detect, amidst the jostling crowd of blood corpuscles, the dark elongated nuclei of the endothelial cells of the capillary walls.

Sections through the part where the tumour and the normal placenta are contiguous show that the villi next the tumour are compressed, and in many cases they show fibrinous degeneration. Here, as elsewhere, the tumour is covered with chorionic epithelium. There is, therefore, no proper capsule, but only a layer of flattened and degenerate villi and fibrin.

An interesting point is that at no point on the uterine surface of the tumour was there any decidua visible, either to the naked eye or under the microscope. In other words, there is no true "maternal" surface to the tumour, which had no intimate connexion with the uterine wall, and therefore took no part in the ordinary functional exchanges of the placenta.

With regard to the 70 cases of placental tumour that have been recorded, it may be observed in a word that the great majority of them correspond very closely to this specimen in their essential structure. It is true that they have been described under some dozen different titles, such as, "myxoma fibrosum chorii," "angioma placentae," "fibrosis chorii," "fibromyoma placentae," "chorioma placentae," and the like, but, according to Pitha,[1] who has gone very fully into this point, the essential structure in most cases is very much what has been described. The

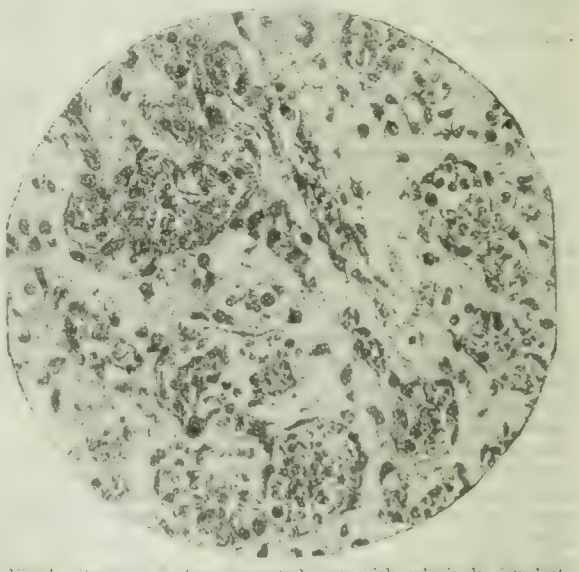


Fig. 4. [illegible] area, with relatively few but large capillaries.

main feature is the presence of an enormous number of capillary vessels filled with blood. Further, careful study of the sections shows that one is dealing, not with an organizing haemorrhage, nor with a haemorrhage into a myxomatous tumour, but with an angioma, whose vessels are supported by a stroma, which in parts is myxomatous in type.

The question remains, From what structure does this angioma develop? I believe that the chorionic origin of these tumours may be taken as proved. Each lobule in the specimen before us is made up of exactly the same tissues as a chorionic villus—a covering of two layers of chorionic epithelium, delicate embryonic connective tissue and capillary vessels. Further, as was pointed out by Virchow, the stalked arrangement of the lobules at once suggests that the tumour arose in a bunch of early villi; while the fact that the pedicles are so thin indicates that the angiomatous lobules have developed in the terminal branches of the villi.

The cause of this angiomatous development has given rise to some discussion. It has been suggested that it was the result of some inflammatory condition of the deciduae. But the definitely localized nature of the tumour argues against that, or any other theory based upon *maternal* conditions.

There is some indication that interference with the fetal circulation is associated with the condition in the fact that almost invariably the tumour has a special blood

supply direct from the base of the cord. The typically congested condition of the tumour points to some obstruction in this special circulatory arrangement, but in all probability such obstruction is purely local, due perhaps to some kink, or constriction, or excessive tortuosity in the vessels. In the present specimen there was very decided constriction in a large vein passing direct from the tumour to the cord, with a considerable varicosity on the tumour side of it. This would certainly cause a distinct degree of venous stasis in the capillaries of the villi supplied by it, and it is quite possible that, if such an obstruction came into play at a very early stage of development, it might stimulate the capillary loops in the branches of the villi to this angiomatous overgrowth. We know, for example, that ligature of the hepatic vein may cause the development of an angioma in the liver.[9]

In some recorded cases the tumour has taken the form of a distinctly succenturiate mass, pointing to the probability that the circulatory disturbance has affected an entire primitive cotyledon of the placenta. The most probable theory would therefore appear to be that we are dealing with what is primarily an abnormal vascularization of a primitive cotyledon (or cotyledons), and that the occurrence of some obstruction in this abnormal vascular supply results in the enormous angiomatous overgrowth. This view places the origin of the tumour as far back as the third week of intrauterine life.

The literature of the subject shows that in many cases the presence of the tumour in no way affected the course of the pregnancy or labour. In others, as in the present case, there has been a degree of hydramnios leading to premature labour, with the subsequent death of the child. This association is interesting but not surprising, for we know that hydramnios is often due to interference with the fetal circulation. In several cases the placenta was adherent, but the abnormal adhesions appear to have been in the functionating part of the placenta. In itself the tumour appears to exert no influence directly on the pregnancy or labour, or upon the subsequent life and health of the child.

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DISCUSSION.

Professor CHIPMAN (Montreal) considered the case a very rare one; he had never seen such a condition. From the absence of decidual elements on the uterine aspect of this tumour, from its marginal position, and its extension beyond the attached margin of the placenta, it seemed to him probable that this tumour formation had occurred later in the embryonic cycle—at some time subsequent to the definite limitation of the placental area. In the excellent photomicrographs it was clearly demonstrated that the main mass of the tumour was made up of angiomatous capillaries; there were, nevertheless, areas of oedematous connective tissue reticulum, with few vessels sufficiently large and numerous to account for such tumours being classed as myxomatous; a thorough examination such as Dr. Johnstone had made would prevent such an error. He inquired whether in any of the 70 reported cases there were any observations made of vascular disturbances in the children. It was to be remembered that the fetal placenta was as much a part of the child as its arm or its leg, and that there was a tendency for vascular tumours to be multiple.

Dr. JOHNSTONE, in reply to Dr. Chipman's remarks, said that in most cases the tumour developed at the edge of the placenta, where the villi of the chorion frondosum were presumably less attached to the decidua. In cases where the tumour was in the centre of the organ it was difficult to offer any explanation of the absence of decidua, unless it was that the unfixed villi—not the anchoring villi—were those most affected. In most recorded cases the children were born healthy, but in a few cases they were born prematurely as a result of hydramnios.

NOTES ON RUPTURE OF THE UTERUS IN CONNEXION WITH A CASE OF CONCEALED ACCIDENTAL HAEMORRHAGE.

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IN reading this paper I am actuated by the desire to learn the views of those better qualified to give an opinion on a subject about which comparatively little has been written—namely, severe accidental haemorrhage of the concealed variety, and more especially those cases in which tearing of the uterine wall takes place. Concerning these particular cases very little has been recorded. In nearly all our modern textbooks on obstetrics no mention is made of them, and in investigating the literature on the subject an article by Knauer seems to be one of the very few articles available for reference.

The case about which I wish to speak came under my care in the Glasgow Maternity Hospital.

She was a woman aged 40 years, a multipara, and was first seen by the house-surgeon on duty in the extern practice of the hospital. From her and from her friends he learnt that three weeks before she had been ill, but such illness could not have been of a serious nature as no medical man was asked to see her. Her friends told him that she was well, going about as usual performing her household duties, when suddenly she complained of great abdominal pain; she became faint and fell to the ground. The house-surgeon diagnosed concealed accidental haemorrhage and hurried her into hospital. I saw her on her arrival. She was very much collapsed and presented a typical picture of the disease from which she suffered. She complained of severe pain all over the abdomen. Her pulse was very rapid and her temperature subnormal; she was bathed in a cold, clammy sweat and was very pale. The clinical picture appeared to me to be one of shock rather than of haemorrhage. Palpation of the uterus was accompanied by great pain; no fetal parts could be felt as the uterine wall was extremely hard. The organ was rounder than normal and larger; it filled the whole abdomen. According to her own statement she was a little more than nine months pregnant. On auscultation no fetal heart could be heard. No blood was found in the vagina but a little serum escaped when the examination was made. The cervix was hard and would not permit of the entrance of a finger. The urine contained no albumen. The patient was anaesthetized and I performed Caesarean section and at the same time removed the uterus, but unfortunately she died one hour after the operation was completed.

When the abdomen was opened and the uterus laid bare I made out the following interesting facts, namely, the uterus was ruptured—small multiple incomplete tears. The peritoneal coat was the one mostly involved. There was a large tear at the junction of the bladder with the uterus measuring roughly between 2 and 3 in., and scattered here and there over the uterine surface were many smaller breaks in the continuity of the outer coat. Likewise, as I discovered after the operation, here and there in the muscular layer were small tears; into these tears blood was extravasated. As far as I could make out the mucous coat was not ruptured. A haematoma about the size of a small apple was found under the peritoneum on the left side of the uterus near the bladder. The wall of the uterus was very thin. Free blood was present in the abdominal cavity. Unfortunately the specimen was lost and the microscopic investigation was therefore rendered impossible.

In concealed accidental haemorrhage two factors have to be considered:

(1) The condition of the uterine wall; and
(2) The effects of the sudden increase of pressure caused by the blood that is rapidly poured into the uterus.

It is an accepted fact, I think, that all such uteri are in an abnormal state. Weiss mentions two cases in which suppurative metritis had been present, and probably in all these cases metritis exists. The fibrous tissue in the walls becomes increased more proportionately than the muscle, and in some cases so much so that the muscular elements become greatly diminished. In women who have had large families—the class in which concealed accidental haemorrhage is so common—it has been noted that the

increase of the fibrous elements in the walls of their uteri is very marked.

The placenta in these cases is also probably the seat of inflammatory changes, but I am inclined to think that in severe accidental haemorrhage the principal lesion is in the uterine wall.

Consider, then, for a moment such a uterus, and note the effects of greatly increased sudden pressure on its walls. A normal uterine wall will and does distend sufficiently to accommodate a full-term fetus, but is it not rational to think that a wall made up of fibrous tissue will not bear the strain and there must come a time when it will give way. When this accident happens the walls of blood sinuses will be lacerated and blood will be rapidly effused, causing a partial or complete separation of the placenta. Blood is poured rapidly and in great quantity into the space between the membrane and wall of uterus; its escape is rendered impossible owing to the membranes being adherent, or, what is more likely, to a sudden paralysis of the uterine wall from sudden over-distension. The blood collects in this space and increases the intrauterine pressure so much and so suddenly that the power of contraction of the muscular fibres is overcome for the time being and the uterus passes into a state of acute dilatation, and rupture follows.

Dr. A. W. Russell, in one of his cases in which no rupture was present, found the uterus in this dilated state, and recently Dr. Miles Philips in describing a similar case remarked on the marked thinness of the uterine wall.

From the point of view of sudden increase of fluid causing marked distension and giving rise to similar symptoms, though not nearly so severe, we have an excellent analogue in an ovarian cyst whose pedicle has become suddenly twisted. In such a cyst the vessels in the pedicle are twisted, the arteries less so than the veins, with the result that blood is poured into the tumour and none returns. Haemorrhage into the cyst takes place from the engorged vessels in its walls and raises the intracystic pressure so much that acute dilatation takes place and rupture may ensue.

Volvulus furnishes us with another analogous condition. In this diseased state the bowel becomes so much distended with gas that the peritoneal coat becomes fissured.

It is, I feel certain, this very marked and very sudden increase of intrauterine pressure that wrecks the uterus.

In external accidental haemorrhage no blood is retained in the uterus, therefore no distension take place and no urgent symptoms of shock make their appearance.

In the mixed variety blood is retained in the uterus, distension takes place varying with the amount of blood that is pent up, and symptoms midway between those of external and concealed are seen.

The peritoneal coat was the layer that was mostly involved. Here and there over its surface were small fissures, such as only could be caused by a general over-distension. They were most abundant in the regions of the fundus and posterior wall.

The tear at the junction of the bladder with the uterus measured between 2 in. and 3 in., and is of special interest in showing that this distension is the cause of the tearing. The bladder lies over the lower uterine segment, and its peritoneum stretches from its anterior surface on to the anterior surface of the uterus, to which it is firmly attached.

In cases of concealed accidental haemorrhage the lower uterine segment becomes, like the other parts of the uterus, markedly distended with blood and blood clot, but its walls being thinner, and on that account offering less resistance, the distension will be greater, and the peritoneum at this part will be so stretched that it will tear. This tearing would be more liable to occur if the bladder was full at the time the accident happened.

The hæmatoma found at the side of the uterus was formed probably by the rupture of some of the small vessels. It was about the size of a small apple and lay near the large peritoneal tear. At first I thought that the sudden formation of this hæmatoma might have been the causative agent in forming this large peritoneal rupture, but I feel certain now that it had nothing to do with its formation, as the peritoneum in the immediate vicinity of the hæmatoma was not ruptured. The muscular layer was thin. It did not contract, as a normal uterine wall would after the relief of pressure, but remained in a thin and flabby state, and on this account I am of the opinion that the whole uterus goes into a state of acute dilatation before rupture occurs.

The tears in this layer were small fissures, and were scattered over its surface. Blood was found in each of them, and its presence can be explained by the rupture of the small capillary vessels due to the excessive stretching. No large tears were present in the muscle. The mucous coat, as far as I could make out, was intact. It remains intact because it stretches so easily under pressure, and because the muscular layer behind it acts as a great support.

The amount of blood lost in this case was not sufficient to cause death. From the amount collected and from what was lost I am certain there was not more than two to two and a half pints. This has also been my experience in other cases of concealed accidental haemorrhage that I have seen. It has been said that a woman may lose five pints of blood and yet live, and I think it would be an impossibility for this amount to be suddenly effused into the space between the wall of the uterus and membranes when that organ was in its tenth month of pregnancy.

Excessive haemorrhage does not give rise to the symptoms one sees in a typical case of concealed accidental haemorrhage. I have never observed the same amount of shock in cases of severe external haemorrhage, in severe cases of placenta praevia, or in haemorrhage *post partum*, so therefore I infer there must be another factor present giving rise to this symptom. The shock, which is really the main symptom in these cases, is in all probability caused by the excessive pressure on and the stretching of the nerves in the wall of the uterus.

In other cases where the nerves of the uterine wall become disturbed by pressure, as, for example, in acute inversion of the puerperal uterus, symptoms of shock become prominent. Similar symptoms are also present in cases in which a hollow viscus ruptures or becomes acutely dilated.

It is in this later category I would be inclined to place cases of severe accidental haemorrhage of the concealed variety. Shock is probably the chief cause of death, and not the haemorrhage, although the more blood that is shed the greater will be the intrauterine pressure and the greater will the shock become.

Treatment.

The treatment of such cases is difficult, because, no matter what procedure is adopted, the majority of patients will die.

The first thing to be combated is the shock. If one believes that it is caused by this great and sudden increase of intrauterine pressure, then one must adopt measures to get rid of this pressure at once. My patient, when first seen, had 3 pints of saline injected into her veins, and I must say I think it did her more harm than good. It seems to me that such a procedure will tend to increase the amount of fluid in the uterus; by doing so the intrauterine pressure will become greater, and shock, instead of being diminished, will only be made worse.

With the idea in view of relieving this pressure the membranes should be ruptured as soon as possible and preparations made for instant operation in case profuse haemorrhage should supervene. After the membranes have been ruptured salines should be injected and strychnine or caffeine used liberally.

If the haemorrhage does not become profuse, the patient, now that the cause of the shock has been removed, should be allowed to lie still, in the hope that she may rally before any operation is performed. A major operation, with the patient in the midst of a severe shock, is in itself a very dangerous undertaking, but in some of those cases of severe accidental haemorrhage when a patient does not rally, or where, after rupture of the membranes, profuse haemorrhage makes its appearance, then we must operate at once so as to give the patient every chance.

The trend of thought amongst modern obstetricians is that in these severe cases Cæsarean section followed by subtotal hysterectomy is the treatment that holds out most hope of cure. There are quite a number of cases now on record where lives have been saved by these procedures.

If it be a fact that in these severe cases of concealed accidental haemorrhage the uterus becomes acutely dilated or ruptured, then its removal is indicated, for if

it remains *post partum* haemorrhage will become so profuse that the patient will die. I have seen this happen in a case in which *accouchement forcé* had been performed and where the uterus had been plugged after the operation.

In one of my own cases—a case of mixed accidental haemorrhage—although the uterus was plugged after *accouchement forcé* had been performed, I had the greatest difficulty in checking a *post-partum* haemorrhage that nearly carried off the patient.

To accurately plug the uterus in these cases, where it remains a large flabby and non-contractile organ, is a difficult if not an impossible task. It was the fear of *post-partum* haemorrhage that made me adopt Caesarean section in this case.

DISCUSSION.

Dr. Grimsdale (Liverpool) discussed the question of salines intravenously in these cases, and observed that he considered that they were more likely to do good and less likely to do harm if administered after the bleeding vessels had been ligatured—that is, after hysterectomy.

Sir John Byers emphasized the difficulty of treating such cases. As a general principle he was not in favour of rupturing the membranes. He preferred Ringer's solution to simple saline as an intravenous injection, and was strongly of opinion that morphine was of great service.

Dr. Shannon, in reply, stated that he ruptured the membranes in the case under discussion with the knowledge that the facilities for doing Caesarean section were at hand.

THE EXCRETION OF CREATIN IN PREGNANCY AND THE TOXAEMIAS OF PREGNANCY.

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The study of the excretion of creatin in pregnancy and the toxaemias of pregnancy has come into prominence during recent times and seems likely to lead to interesting results.

Whereas normally women do not excrete creatin, in pregnancy there is a considerable quantity of this substance to be found in the urine. How early in pregnancy this excretion starts is not known, but it is certain that by the third month considerable quantities of creatin may be found. In some animals pregnancy has the same effects; this was first shown in the case of the dog, and my friend, Dr. Edward Mellanby, has found this excretion a most useful test for pregnancy in rabbits prior to metabolism experiments. There can be little doubt also that this phenomenon may be useful in the diagnosis of pregnancy in the case of women.

Van Hoogenhuyze and Ten Doeschate have published the results of their investigations of the urine of pregnant women. They examined 8 cases of eclampsia, 2 of albuminuria of pregnancy, 3 of chronic nephritis with pregnancy, and 6 of normal pregnancy, and their results clearly show that in the abnormal cases the quantity of creatin excreted is very much greater than in the normal.

In the cases of eclampsia they found in almost every daily instance that 10 c.cm. of the urine contained more than 1 mg. of creatin, and in many as much as 4 mg. They obtained the same results in the cases of albuminuria and chronic nephritis. On the average they found about 2 mg. in all these abnormal cases. In normal pregnancy they found the excretion much less, and in almost all their estimations the reading was below 1 mg. In the course of a chemical investigation of eclamptic and toxaemic cases I had occasion to estimate the quantities of creatin excreted by such women, and although the cases examined were too few for conclusive decisions, my results were strikingly different from those of Van Hoogenhuyze and Ten Doeschate.

The cases investigated included both the normal and the abnormal. The normal cases were taken as a control, and in two of these the urine was examined daily for about a fortnight before and for the same length of time after delivery. In another it was examined a week before delivery and daily during the puerperium. In five other normal cases the urine was examined at intervals during the third, fourth, and fifth months of pregnancy. The estimations were done by Folin's colorimetric method, and as 10 c.cm. of urine were used in each case, the figures I give represent milligrams of creatin in 10 c.cm. of urine. In the cases at or near full term the daily figure varied between 1 and 3.5 during the fortnight before delivery. In one case the daily amounts in 10 c.cm. for the week before delivery were 2.5, 3.3, 1.6, 1.3, 1.0, 3.0, and 2.4. In another the average was about 1.5, and in the third the urine a week before the birth of the child contained 2.4 mg. in 10 c.cm. Soon after delivery, usually on the second or third day, there is a rapid increase in the creatin, and in these cases the averages for the week after delivery were 2.8, 3.7, and 2.6 respectively.

In the cases of early pregnancy examined I found creatin present in all, and the following figures represent the average amounts for these cases at the various periods of pregnancy:

At 3	months	= 1.1
At 3½	,,	= 2.2
At 4	,,	= 1.2
At 4½	,,	= 1.8
At 5	,,	= 2.5

Amongst the abnormal cases there were three in which there were numerous eclamptic fits; two in which the patients suffered from very severe toxaemia with large quantities of albumen in the urine, oedema of the hands, face, vulva, and legs, headache, vomiting, etc.; three patients whose urine became almost solid on boiling, but whose general condition gave rise to little anxiety (one of these had had eclampsia eighteen months previously, and her mother had suffered from this disease in each of her five pregnancies); one in which the albuminuria was due to chronic nephritis; and two in which the patients, both pregnant for the second time, were examined at about the seventh month because they had had eclampsia in their previous pregnancies.

In the eclamptic cases only one observation was possible before delivery in each case, and in two which were fatal only one afterwards. The third patient, whom my colleague Dr. Fairbairn delivered by Caesarean section, was observed daily until she left the hospital on the twenty-first day. In this case the amount of creatin excreted after delivery was larger than usual, but this increased excretion was due, certainly in part, to the abdominal operation.

In these cases the amounts of creatin excreted before and immediately after delivery were markedly less than in the normal cases. In one there was so little that the quantity could not be estimated, and in the other two the readings were 0.58 and 0.69 before and 0.46 and 0.92 respectively after delivery.

In the two severe toxaemia cases the results differed from one another.

In the first the urine was examined daily for forty-five days, twenty-four before and twenty-one after delivery. Before delivery the figure only rose on one occasion as high as 0.69, and remained low until the fifth day after delivery, when it rose, as in normal cases, to between 2.0 and 3.0.

In the second case the examination of the urine extended over three weeks, starting five days before delivery. During these five days the excretion of creatin was greater than in any other case observed, the daily readings being 8.3, 8.1, 7.3, 5.3, and 4.6. After delivery, however, the amount excreted rapidly fell to the level usual in normal cases.

The figures in this case before delivery were therefore in agreement with those obtained by Van Hoogenhuyze and Ten Doeschate. The remaining four patients—three albuminurias of pregnancy and one chronic nephritis—showed no variation from the normal creatin excretion, and the urines of the two patients who were examined on account of previous eclampsia were found to contain 2.0 mg. and 1.0 mg. of creatin in 10 c.cm.

Considered together, these results indicate not that there is an increased excretion of creatin in such pathological conditions, but that there is either a diminution from the normal, or sometimes even—in the worst eclamptic cases—complete suppression, at least at the time of the fits. These are the results, and it would be well to consider their meaning quite briefly.

Since Mellanby first emphasized the importance of the liver in creatin metabolism it has been clearly shown that the conditions in which creatin is most abundantly excreted are those in which the liver is under some harmful influence—for example, carcinoma of the liver (Mellanby), phosphorus poisoning (Leffmann), deficiency of or inability to use carbohydrates (Cathcart, Krause, and Cramer, Mendel and Rose, etc.), also toxaemias directly affecting the liver, such as general peritonitis and portal pyaemia (Mellanby), and operative interference affecting the portal area (Mellanby).

Consequently Van Hoogenhuyze and Ten Doeschate thought that they had good *a priori* reasons for expecting an increased excretion of creatin in eclampsia, for, as is well known, the liver in such cases when examined *post mortem* usually shows characteristic lesions. Yet in the cases which have come under my observation, when the *post-mortem* examination has revealed typical eclamptic livers, creatin was only present in the smallest detectable quantities.

My interpretation of these results is that the toxaemia of eclampsia is essentially different from the ordinary bacterial toxaemias with which we are familiar. Attention has recently been drawn to the similarity between the livers of eclamptic patients and the haemorrhagic livers of animals killed by anaphylactic shock.

Whether or no the study of anaphylaxis will ultimately teach us to understand the mode of action of the substances causing eclampsia and the toxaemias of pregnancy, it is clear that if the ordinary bacterial toxins acting directly on the liver cause an increased excretion of creatin, whereas the toxins of eclampsia acting on the liver suppress or diminish the excretion of creatin, then we have here a fundamental difference in their bio-chemical effects which seems worthy of further consideration.

RASHES OCCURRING DURING THE PUERPERIUM.

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RASHES occurring during the puerperium are of great interest to the medical attendant as regards both their causation and diagnosis, while, when they assume a scarlatiniform appearance, they arouse the deepest dread and anxiety among the patients' friends. Let me give some examples of rashes I have observed during the puerperal period.

Iodoform Rash.

CASE I.—I was asked to see, in consultation with her medical attendant, a primipara on the fifth day after her confinement. Her temperature was 101° F., and her pulse 110. On the lower part of the abdomen, from the umbilicus to the vulva, there was a bright erythematous rash, which also involved the corresponding part of the back and the hips. The hands and face were swollen, but they were free from any rash. The perineum, which had been torn, was stitched, and had been dusted every night and morning with iodoform. No medicine of any kind—beyond a castor-oil aperient—had been taken. On ceasing the use of iodoform the rash disappeared, and the patient's fever and pulse fell, and she made a good recovery.

CASE II.—A multipara was admitted into the Belfast Maternity in the eighth month of her third pregnancy, owing to severe haemorrhage depending upon a central placenta praevia. The os admitting two fingers, the child was turned by Braxton Hicks's method, the foot was brought down and secured by a small piece of iodoform gauze. Labour set in after six hours, when the child was easily delivered. On the next day a rash similar to that seen in Case I appeared, but there was no fever and no rise of pulse. The eruption remained for twenty-four hours.

I have seen three other cases of iodoform rash during the puerperium (that is five in all), but now that much simpler methods are used than formerly, when powdered iodoform was often applied in the case of a sutured perineum, such rashes are not so common. The diagnosis in these cases depends upon a red, often itching, rash occurring after the use of iodoform, in the form of powder, either to a wounded perineum, or used as a fillet, or packing, (an erythema toxicum)—and disappearing when the drug is no longer brought in contact with the patient. After ceasing the use of iodoform in these cases, the rash, as a rule, disappears within twenty-four hours. In some patients, with great susceptibility to the drug, the hands, arms, and face will swell, and occasionally constitutional symptoms (fever, headache, sickness, and gastric irritability) will be present at the time of the appearance of the eruption. In two of the cases I saw in consultation, the friends of the patients were in great terror from the belief that scarlatina had developed.

Lysol Rash.

I have seen several cases in which the use of a lysol lotion (a teaspoonful to the pint) employed to bathe the vulva in the puerperal period has caused a local irritation with a red, itching rash, which has spread from the perineum upwards to the abdomen and backwards over the sacrum, followed by a slight desquamation. Usually the rash and irritation cease on using some simple lotion, such as boracic, instead of the lysol, but in one case the irritation of the vulva and perineum continued long after the employment of lysol had been given up. I may say that, personally, I cannot use lysol, as it causes on my own hands and arms an itching whealing of the skin, due probably to idiosyncrasy.

Urticaria Rash.

In some patients, not at other times subject to urticaria, this rash appears during the puerperium, irrespective of any external (bites of insects, lotions) or internal (articles of food) causes. It occurs often in women who are not of a neurotic temperament, and may in such cases be associated with the functional activity of the uterus. I have attended a patient who in each of her three confinements has developed this rash. It appears on the third or fourth day after delivery on the abdomen, chest, and limbs in the form of wheals which came out in crops for a couple of days, and are attended with intense itching and burning of the skin. There is slight fever (100° F.) and quickness of pulse (90 to 100), which continue while the rash is out. The least scratching of the skin develops new wheals, which, when the skin is stretched temporarily, disappear. Curiously this patient to whom I have referred never has an attack of urticaria except during the period immediately after childbirth.

Sudamina or Miliaria Rash.

In some patients, after delivery, vesicles appear over the front of the chest and abdomen, like, as Jamieson puts it, drops of dew upon the skin, due obviously to obstruction of the sweat glands, but occasionally—especially under the binder—a red inflammatory condition develops both in and around the ducts, and the fluid in the vesicles becomes of a serous nature. As a rule, although locally there is itching, no constitutional symptoms arise. On the other hand, when sudamina are observed with an accompanying bright red rash (usually of a septic nature), there are marked signs of constitutional disturbance, and the prognosis is, in my experience, bad in such cases. I have seen several cases of both of these types of sudamina.

Rash of Erysipelas.

Since the rigid application of the aseptic and antiseptic methods to obstetric practice, cases of erysipelas are now much rarer than formerly, but during the past two years I have seen four cases. In two both primiparae the perineum was torn (one before she entered the Belfast Maternity Hospital, in an attempt at delivery in a slightly contracted pelvis), and in both the rash began at the seat of the tear and spread up the abdomen and down the thighs with great constitutional disturbance. The eruption was red, not elevated; there was some accompanying oedema, and vesicles appeared in one of the cases, and in both a slight desquamation followed. A house-surgeon and a student looking after these cases had each a septic finger. These were clearly cases of puerperal septic infection with an external erysipelatous rash. Fortunately they both, after a serious illness, recovered. In another case, four days after delivery an erysipelatous rash developed on the face, beginning at the edge of the right nostril; while in the fourth patient, a week following childbirth, a well-marked attack of erysipelas showed itself at the left nipple and gradually spread over the chest. In both of these latter cases, the constitutional symptoms were slight, and there was no interference with the gradual involution of the pelvic organs. While modern bacteriology has taught us that the streptococcus of erysipelas and the streptococcus most commonly associated with puerperal infection are practically identical, it is an interesting

fact, needing scientific explanation, that when erysipelas begins in the face, scalp, or breast of a puerperal woman, the progress is much more favourable and the constitutional symptoms are much less severe than when the rash appears first at the genitals, probably owing to the lowered resistance of torn or bruised tissues. In his monograph on this question Winckel[1] gives an account of 42 cases of erysipelas occurring during pregnancy and the puerperium, of which 36 developed after delivery, while only 6 were seen during pregnancy. Of the 36 puerperal cases, 28 started from the vulva, and of these 12 died; of the remaining 14 cases, 6 during pregnancy (none of which originated in the genitals), and 8 during the puerperium, (2 commencing in the breast and 6 in the face and scalp) only 2 died.

Scarlatiniform Rashes.

Of the rashes resembling the eruption of scarlatina occurring in puerperal women, I have met with two types—one mild, the other severe.

(a) Mild Type.

Case I.—I saw in consultation a primipara on the fifth day after her confinement. The labour, I was told, was a rather difficult forceps one, due to the head (a male child) remaining persistently occipito-posterior. The perineum was torn, and required four silkworm sutures. At the time of my visit the temperature was 103°, the pulse was 120, and the front of the abdomen was covered with a red petechial rash. There was slight tenderness over the uterus, and the lochia were somewhat foul-smelling. There was no sore throat, no enlargement of the submaxillary glands, and an absence of any history of exposure to the contagion of scarlatina. The friends of the patient were most uneasy, as they said a sister had died of scarlatina immediately after her confinement. I douched out the vagina with a weak creolin lotion, and introducing the gloved forefinger into the uterus, found it quite empty. I then took a swab from the cavity of the uterus, and gave an intrauterine douche. The head of the bed was raised, and a 5-grain dose of quinine administered. A stock vaccine (20 million streptococci) was injected. A subsequent bacteriological examination of the swab showed an infection of streptococci, and an autogenous vaccine was being prepared, when I heard from her attendant that the patient was better, her temperature having in twenty-four hours fallen to normal. There was no subsequent albuminuria and no case of scarlatina developed in her household.

I have seen five other cases with a similar rash, in two of which there was slight desquamation. They were all clearly cases of sepsis with a red rash, and, fortunately, of a mild type.

(b) Severe Type.

Case II.—On October 14th, 1911, a patient was delivered in the Belfast Maternity of her first child. The labour was natural (first vertex). The patient was in good health, but it was noticed that the tongue had been cut by the stumps of some carious teeth. Two days after childbirth she complained in the evening of feeling chilly, and her temperature rose to 99.6° F., but fell next day to normal. On the evening of the third day her temperature rose to 103° F. and the pulse to 100, but she did not feel ill. The lochia were normal in quality and quantity, there was no abdominal tenderness, and, indeed, there were no physical signs to account for the pyrexia. On the morning of the fourth day of the puerperium, a bright petechial scarlet rash appeared on the upper part of the chest and the abdomen. It subsequently spread all over the body and limbs except the face. There was no angina of any kind, the submaxillary glands remained normal, and there was neither initial headache nor vomiting, and no subsequent albuminuria. For a couple of days she was delirious. The skin peeled (as it often does in such severe erythemata), but the desquamation on the hands was an early not a late feature. The patient was treated with two injections of a polyvalent antistreptococcic serum and cold sponging, and made an excellent recovery. When the rash was at its height it looked uncommonly like scarlatina, but there was a total absence of all the other symptoms of that fever. At this time there was a severe epidemic of scarlatina in Belfast, and I asked Dr. Gardner Robb (Medical Superintendent of the City Fever Hospital, Belfast, and Visiting Physician to the Union Fever Hospital, Belfast) to see her. He agreed with me that it was a severe septic case with a scarlatiniform rash, but not scarlatina. She remained in hospital until December 9th, 1911, and no other patient or person in the maternity during her residence developed either scarlatina or puerperal infection. She nursed her baby, which kept quite well.

I have seen three other cases with a similar widespread "scarlatiniform" rash, all fatal; and in none of the houses in which they were confined were there previously any cases of scarlatina, nor did any arise subsequently.

Relation of Scarlatina to the Puerperium.

These cases with a scarlatiniform rash raise the important question of the relation of scarlatina to the puerperium, about which there has been considerable discussion, and in relation to which a very extensive literature has arisen.

Has the puerperal woman a special liability or not to scarlatina?

Is scarlatina specially modified when the disease attacks a puerperal woman?

Is scarlatina—when it arises immediately before or after labour—a very serious disease with a high mortality? Or are the great majority of cases of so-called "puerperal scarlet fever" sepsis (puerperal infection) with a red rash resembling the eruption which is seen in true scarlatina?

The public have an intense dread of scarlatina occurring in a woman at the time of her confinement, and before the era of antiseptic and aseptic midwifery the same view was formerly held by many obstetricians. Olshausen[2] collected 134 cases with a 48 per cent. mortality; Dr. McClintock,[3] in 34 cases observed at the Rotunda Hospital during his Mastership, reported a 29.7 per cent. mortality; while Dr. Halahan, who practised in Dublin,[4] observed 25 private cases with a death-rate of 76 per cent. Dr. Braxton Hicks, in *A Contribution to our Knowledge of Puerperal Diseases*, reported that out of 89 puerperal cases with fever seen by him in consultation, 37 were due to scarlatina (of whom 27 died), although 17 had no rash, and almost none of these patients showed any throat lesion. Even at the present time some of the current textbooks of midwifery and medical treatises teach that puerperal women are specially prone to scarlatina, and that when such a complication occurs the death-rate is high. Others say that when scarlatina appears in the puerperium it is specially modified. Personally I believe that scarlatina is rarely met with during the puerperium, because women at that time seem, to a large extent, to be immune from the disease, either owing to the circumstance that they have had it before, or because of the immunity given by age, and that the so-called "puerperal scarlatina" (like most cases of "surgical scarlatina") is not really true scarlatina, but rather a form of puerperal infection with a red rash. In support of these views let me submit the following evidence.

1. *Personal Experience.*

I have never seen in private or consultation practice a case in which a woman after childbirth developed scarlatina. I can recall two cases after delivery which were thought to be scarlatina, but it was at a time before asepsis and antisepsis were regularly used in obstetric practice, and before bacteriology had become a science. On the other hand, I have observed a number of puerperal women with a rash which clinically could not be distinguished from that which accompanies true scarlatina, and which in the past would have been diagnosed, unquestionably, as true scarlatina. In all cases of women who after delivery develop a scarlatiniform eruption, puerperal infection should be suspected, and a bacteriological examination of the contents of the uterine cavity should be made, and treatment, especially by vaccines, should be begun, unless some of the other signs which make up the typical picture of scarlatina are present, such as the well-known appearance of the throat, enlargement of the submaxillary glands, the strawberry tongue, or the nephritis, as well as a history of exposure to contagion, and the spreading of the zymotic to those in direct contact with the patient. It is unfortunate that the *materies morbi*—which causes scarlatina—has not yet been isolated.

2. *Evidence from Maternity Hospitals.*

I have never seen scarlatina arise in a puerperal patient in the Belfast Maternity Hospital, and I find by inquiry that the experience in the maternity of the Union Infirmary in Belfast is the same. Among 16,000 puerperal patients in the Berlin Obstetric Clinic, A. Martin reports that there were only three cases of scarlatina. In his *Textbook of Obstetrics*, sixth edition, 1909, page 675, Dr. B. C. Hirst, Professor of Obstetrics in the University of Pennsylvania, states that in twenty years' hospital service in the Philadelphia Maternity and University Hospitals he has met but two cases of true scarlet fever in the puerperium. It is a remarkable fact that in the epidemics of scarlatina in the General Lying-in Hospital, London, recorded by Dr. R. Boxall,[5] in the Copenhagen

Maternity Hospital by Dr. Meyer,[6] and in the Queen Charlotte's Lying-in Hospital by Dr. Brown,[7] there was no mortality. Only about 1 per cent. of the lying-in patients during the epidemic in the Copenhagen Maternity acquired the disease, and Meyer points out that in the years 1871 to 1885 there were only 2 cases of scarlet fever in the lying-in period among the women confined in the Copenhagen Maternity, while in six years only 3 cases of the kind were noticed in the Infectious Diseases Hospital in Copenhagen.

3. *Evidence from Hospitals for Infectious Diseases.*

Dr. Gardner Robb tells me that during his lengthened experience of fifteen years in all at the Belfast City Fever Hospital and at the Union Fever Hospital, Belfast, he has only seen one case of scarlatina in a puerperal woman.

4. *The Effect of the Prevalence of an Epidemic of Scarlatina on the Puerperium.*

Scarlatina in an epidemic form commenced in Belfast in the middle of October, 1909, and continued throughout 1910 and 1911. In 1910 there were 734 cases notified, giving an attack-rate of 1.8 per 1,000 of the population; in 1911 the number notified was 766 (being 181 in excess of the average of the ten years, 1901–10). In other words, in the two years, 1910 and 1911, there were 1,500 cases of scarlatina notified, of which 1,259 were removed to the two fever hospitals. During the same years (1910–11) there were 2,188 deliveries at the Maternity Hospital, in the intern and extern departments, and 776 at the Belfast Union Hospital Maternity—that is, 2,964 deliveries in all; and yet at neither of these institutions was there a case of scarlatina, nor during these two years (1910–11), when there was such a widespread epidemic of scarlatina in Belfast, was a single case of that disease attacking a puerperal woman admitted into any of these maternities or into the fever hospitals of the city.

Conclusions.

From the above facts I think we may draw the following conclusions:

1. Scarlatina is rarely encountered during the puerperium.

2. When it does occur during the puerperal period it is, as a rule, a mild disease—that is, with the use of modern aseptic and antiseptic precautions.

3. What has been called "puerperal scarlatina" is almost always a form of septic infection with a rash resembling the eruption seen in true scarlatina.

4. From a person ill of scarlatina there may be conveyed to a lying-in woman either:

(*a*) A true scarlatina; or

(*b*) Septicaemia, arising from the secondary septic changes which are apt to take place in the throat, etc., in scarlatina.

The former (*a*) occurrence seems to be rare, while the latter (*b*) should be avoided by modern aseptic and antiseptic precautions.

[illegible]

1 "[illegible] Scharlach aus dem Abdruck aus dem" Aerztlichen [illegible]. Mem. [illegible] "Untersuchungen ueber die Complication des [illegible] Scharlach und die sogenannte [illegible] puerperalis," *Archiv der Gynäkologie*, 1876. Bd. ix. S. 169. [illegible] *Journ. Med.*, 1866. [illegible] Ibid., 1865. [illegible] *Obstetrical Transactions*, vol. xxx. 1888. [illegible] "Ueber Scharlach bei Wöchnerinnen," *Zeitschr. f. Geb. u. Gyn.*, xiv, 1888, p. 289. [illegible] BRITISH MEDICAL JOURNAL, February 8th, 1862.

DISCUSSION.

The PRESIDENT said the question raised was very important, and Sir John Byers seemed to him to have brought forward ample evidence of the need of being, if possible, doubly sure before making a diagnosis of scarlet fever in a lying-in woman.

Dr. BECKWITH WHITEHOUSE (Birmingham) remarked that he was much interested in Sir John Byers's paper, particularly with regard to urticarial rashes. He had not [illegible] follow labour, but he had a case at [illegible] where the typical "wheals" [illegible] after each menstrual period. He had [illegible] it to the excretion of calcium in the [illegible], but no good had accrued from the [illegible] to drug rashes, he thought none mention should be made of iodine. Now that iodine was so largely used in the cleansing of the skin before operation, it might be of interest to note that hyperaemia and vesicular rashes had not infrequently followed the application of iodine, especially to the vulva, but also to the abdomen. This had followed even when no dressings had been applied. With regard to the scarlatiniform eruptions, he was quite in accord with Sir John Byers. Quite recently at the General Hospital, Birmingham, such a case had been admitted to Dr. Thomas Wilson's ward. Desquamation had occurred, and it was thought that the woman had undoubtedly suffered from scarlet fever before admission, yet no subsequent fever developed in the ward.

Dr. STOOKES (Liverpool) agreed with Sir John Byers on the rarity of scarlet fever during the puerperium. The records of the Liverpool Maternity Hospital showed it to be non-existent as a complication. At the same time, he had seen cases both of scarlet fever and erysipelas during the early part of the puerperium. One case especially, which, on the day after delivery, had a marked attack, ran a normal scarlet fever course. In the Liverpool City Hospital, Fazakerly, Dr. Rundle mixed cases of infectious disease and, with precautions, there was found to occur no spread of the diseases.

Mr. S. ENGLISH (Manchester) suggested that as most children had had scarlet fever before puberty that might account for its rarity during pregnancy and the puerperium. There was no reason to believe that there was any other cause than this for their immunity. It would be wise to inquire in a doubtful case if the patient had had scarlet fever.

Dr. J. P. HEDLEY (London) remarked that scarlet fever was a rare disease in adults; therefore one would expect it to be rare in the puerperium, especially as a woman late in pregnancy would avoid contact with scarlet fever patients. Sir John Byers's numbers from the Belfast fever and maternity hospitals were not strictly comparable, as those from the fever hospital presumably contained a large number of children. There was no reason why a puerperal woman should not develop scarlet fever.

Dr. PURSLOW (Birmingham) said he had had charge of an extern clinic in which some 400 to 500 cases were attended annually, and during twenty years had seen no case of scarlet fever among these patients. He thought that an argument in favour of Sir John Byers's view was that cases of scarlet fever during the puerperium were now generally considered to be rare, whereas years ago the association was considered to be quite common. In the meantime the general incidence of scarlet fever, so far as he knew, had very little diminished. The inference clearly was that many of the older cases described as scarlatina were undoubtedly instances of septic rash, and were rarer now owing to the adoption of antiseptic measures.

Sir WILLIAM SMYLY (Dublin) and Dr. FOTHERGILL (Manchester) generally endorsed Sir John Byers's conclusions.

Sir JOHN BYERS said his object had been to show that the teaching of the past, and even of some modern textbooks, that puerperal scarlatina was common, and that it was a serious obstetric complication with a high mortality, was wrong; and that, like "surgical scarlatina," it was the result of faulty observation, which more modern clinical scientific methods had corrected.

A NOTE ON SOME DEVELOPMENTAL ERRORS OF PUBERTY.

By W. E. FOTHERGILL, M.A., B.Sc., M.D.,

Manchester.

THE object of this note is not to bring out fresh observations or new theories, but to make a suggestion towards the improvement of our method of teaching errors in the development of the female reproductive organs. Most books give a little information on this subject under the heading "vulva," a little more under "vagina," more under "uterus," and so on. Thus the matter is dealt with

in snippets which are scattered throughout the volume. In a few books a much more satisfactory plan is used, and all the malformations are grouped together in one section or chapter. The suggestion now made is that this section or chapter ought to be divided into two portions. One of these should deal with errors of development which occur during embryonic and fetal life, such as doubling and atresia. The other should discuss errors which occur in the second developmental phase of the organs—namely, at puberty.

No one will deny that the female reproductive organs pass through these two phases of rapid evolution with a period of relative rest between them. It is clear that the organs may be formed normally *in utero*, but that the changes which occur at puberty may be abnormal.

There must, therefore, be developmental errors of puberty. The suggestion now made is that this should be recognized and taught. Some errors of this kind are doubtless truly congenital—due to some inherent defect in the ovum, while others may be produced by some elusive, extraneous cause acting during infancy or early childhood. The abnormality is generally on the side of under-development rather than on that of overgrowth; but there are cases of hypertrophy at puberty affecting, for example, the labia minora, the clitoris, and the breasts. Undergrowth is exemplified by various degrees of infantilism. Thus a girl may be a normal child until the time when the changes of puberty are expected. But she may then remain like a child for the rest of her life. In less marked cases the girl grows in size and her external appearance becomes more or less womanly, but the reproductive organs remain childish and do not function. In other cases, again, there are no physical signs of infantilism, but menstruation and ovulation are indefinitely delayed. There is no need to treat the many varieties of infantilism in detail, but two examples of maldevelopment at puberty may be briefly discussed.

Hypertrophy of the Cervix.

It is well known that the uterus of the child has a relatively large cervix and a small body. Indeed, the cervix often forms two-thirds of the whole organ. If the changes leading up to puberty are normal the fundus grows much faster than the cervix, so that when the development of the organ is complete the body of the uterus forms two-thirds of the organ and is twice as long as the cervix. But occasionally the cervix grows too fast at puberty and the body of the uterus fails to outgrow it. The result is an organ 4 in. or 5 in. long instead of 3 in. long. In the most striking instances the overgrowth affects mainly that part of the cervix which projects into the vagina, but in other cases that portion of the cervix which is above the vagina is also involved. Hitherto a somewhat artificial and over-accentuated distinction has been drawn between hypertrophy of the vaginal portion and hypertrophy of the supravaginal cervix.

Clinically this abnormality in development at puberty presents varied pictures. In the most pronounced cases the cervix grows down to the vaginal orifice, dilates it, and peeps out by the time the patient is 17 or 18 years of age. Ulceration and infection of excoriated surfaces may then occur, and the patient is brought to hospital complaining of "falling of the womb." The condition, however, is easily distinguished from true prolapse, because there is no cystocele. Both the anterior and the posterior vaginal fornices are present, though they may be shortened by inversion from above downwards of the upper part of the vagina. In such cases a portion of the cervix is amputated, the perineum, if very much stretched, is repaired, and the case is heard of no more.

In less marked cases the patient complains only after marriage: dyspareunia is the trouble, and the treatment is amputation of the cervix as before. Sometimes the patient notices nothing until she has become pregnant. Then the hyperaemia of pregnancy causes her to complain of "something coming down," and the hypertrophied cervix is found nearing the vaginal orifice. It has often been amputated during pregnancy without causing abortion. But, if this is not done, the elongated cervical canal softens, and opens out during labour, and seldom offers serious resistance to the passage of the child. It generally splits on one side or both, leaving lacerations which, if they do not become infected, do little harm. The puerperium over, the patient, who had a long cervix before pregnancy, has a long split cervix afterwards, and that is all. But, if involution is interfered with in any way, the cervix remains subinvoluted as well as the corpus uteri. The patient's cervix will then be larger than ever.

It is usual to describe a form of hypertrophy of the cervix in parous women, but this is unnecessary. Indeed, the distinction between hypertrophy in virgins and hypertrophy in parous women is a mistake. True or primary hypertrophy of the cervix is an error of development at puberty, and it may be exaggerated by incidents of parity. A woman who has a normal cervix as a virgin may of course have her cervix enlarged subsequently to parturition by oedema, congestion, and subinvolution. But such enlargement is not true hypertrophy of the cervix. It is merely enlargement secondary to other pathological conditions. The advantage of this way of regarding hypertrophy of the cervix is that it simplifies teaching. It does away with the distinction between hypertrophies of different parts of the cervix, and also with that between hypertrophy in virgins and the same in parous women. Thus one condition replaces four, and a mass of useless and artificial distinctions which the student used to be asked to memorize are done away with.

The Menorrhagia of Puberty.

The menorrhagia of puberty is another good example of an error in the developmental changes of puberty. The clinical picture is fairly familiar. A girl of 13, 14, or 15 begins to menstrate without pain, but the discharge is too profuse, and it continues for two or three weeks at a time. Anaemia is produced, and fainting is frequent. Sometimes with treatment, and sometimes without any, the lapse of months is followed by gradual improvement, and the periods finally become normal. On physical examination the uterus in these cases is found to be narrow, soft, and flabby; it is generally normal in length and may be longer than usual. The cervix is found to be open, and offers no resistance to dilatation. If the condition has lasted for some months, the endometrium is hypertrophied, and comes away in thick, fleshy flakes under the stroke of the curette. On microscopic examination the endometrium shows no variation from the normal structure: it is simply overgrown. The muscular wall of the uterus has not been submitted to microscopic examination by the writer.

But it is well known that, during the years before and after the appearance of the menstrual flow, there is a great increase in the uterine muscle relative to the uterine connective tissue, and this corresponds, in the normal individual, to the increase of blood supply which is observed as the reproductive organs begin their functional life.

Uterine haemorrhage is normally under the control of the muscular walls of the organ, and when this muscular control is absent bleeding is excessive. The most striking illustration of this is *post-partum* haemorrhage. Another is the menorrhagia of the menopause, which occurs when the uterine wall becomes demuscularized by age changes before its blood supply is proportionately reduced by physiological obliteration of the vessels.

Again, menorrhagia is observed when the tone of the involuntary muscle of the body is reduced by the toxins of various diseases, such as influenza, and when the muscle is weakened by malnutrition, as in certain cases of anaemia. The uterus at puberty, if its muscle does not develop properly, is in a state of chronic hyperaemia: and this causes the overgrowth of its endometrial lining which is clinically observed on curetting.

The view that this particular kind of menorrhagia is due to developmental muscular inadequacy is favoured by other clinical features. Thus the treatment of the anaemia does not lessen the bleeding in these cases, while in muscular weakness secondary to anaemia the administration of iron cures both the anaemia and the excessive menstruation. In the menorrhagia of puberty iron makes the bleeding worse. Again, the use of ergot, hydrastis, strychnine, and quinine generally checks uterine bleeding by acting on uterine muscle, but these drugs are of no use in the menorrhagia of puberty. This is understood if it is recognized that in this condition there is not enough muscle for drugs to act upon.

Two therapeutic measures only appear to be available in

these cases, namely, rest in bed and curetting. Girls in this condition progress most favourably if they are kept at rest with the foot of the bed raised throughout each period. No doubt this alone would suffice, but the endometrium must be restored to its ordinary thickness. The atrophic and degenerative changes in the endometrium which form a part of each menstrual cycle would no doubt bring about a normal condition in time, after the uterine muscle had developed sufficiently to prevent undue hyperaemia. But time is saved by scraping away the hypertrophied endometrium with a sharp curette. In several cases which have ultimately done well curetting has been repeated twice and three times.

DISCUSSION.

Dr. PURSLOW (Birmingham) said he had seen many cases of cervix protruding and ulcerated in young unmarried women, and could not agree that this was usually the result of congenital elongation of the cervix; on the contrary, he thought that these cases were nearly always due to prolapse brought on by too hard work, and he could not accept the view that cystocele was an inevitable antecedent of prolapse. He had on occasion been reluctantly compelled to curette cases of severe haemorrhage of puberty, and was very glad to find that Dr. Fothergill supported this method of treatment when all other means had failed.

Professor CHIPMAN (Montreal) remarked that Dr. Fothergill was always original, and had lately done a great deal to improve their classification of pelvic disease. He asked whether it was not advisable to draw a distinction between development and growth, the former referring solely to the proper assembling of the several parts of the genital tract before the twenty-third week of intrauterine life, and the latter indicating an increase in the size of these parts. It seemed to him scarcely wise to group together a bicornuate uterus, which was certainly an error of development, and a cervical hypertrophy, which was rather an error of growth. He was greatly interested in the cause of the menorrhagia of puberty. Such cases in Canada were not treated by the curette, except as a last resource. A change in altitude of 800 to 1,000 ft. to a high and dry locality was advised, and had in several instances in his own practice afforded a very satisfactory result.

Dr. HEDLEY (London) asked whether Dr. Fothergill thought that supravaginal elongation of the cervix was commonly congenital. He considered it nearly always due to prolapse.

Dr. FOTHERGILL, in reply, agreed with Dr. Chipman as to the distinction between development and growth. He would be quite willing to call Group I "developmental abnormalities," and Group II "irregularities of growth." His patients with menorrhagia were, as a rule, workers, and in order to treat them by elevation he would only be able to send them to the top floor of the mill. He had never seen any evidence offered of the statement that elongation of the supravaginal portion could be caused by dragging from below. He frequently saw it entirely apart from prolapse.

SECTIONS OF PATHOLOGY AND GYNAECOLOGY AND OBSTETRICS.

(COMBINED MEETING.)

Professor HENRY BRIGGS, M.B., F.R.C.S., President of the Section of Gynaecology and Obstetrics, in the Chair.

DISCUSSION ON THE ETIOLOGY OF ECLAMPSIA.

OPENING PAPERS.

I.—J. W. BALLANTYNE, M.D., F.R.C.P.E.,
Physician, Edinburgh Royal Maternity Hospital; Lecturer on Mid[illegible] Hall, Edinburgh, etc.

THE etiology of eclampsia deals with the investigation of the cause or causes of this dangerous complication of the pregnant state and with the mode of action of the cause or causes. There are thus two closely related paths of inquiry. Proceeding along one of these, we search out the circumstances which generally precede the appearance of convulsions, and which may possibly be causally connected with them; going by the other track, we try to discover how, by what mechanism, and in what manner, the cause, or the alleged cause, acts upon the patient's body and leads to the convulsive phenomena. The former method is, as I take it, *etiology* in the ordinary sense of the word, whilst the latter is best named *pathogenesis*. The former the profession shares with the general public, which speculates, often with amazing assurance, on such matters; the latter is the possession of the scientific physician, who leaves the surface of things and strives to go deep down among the roots of origin of the causes themselves.

The layman is sure that convulsions in childbed are due to something going wrong with the kidneys; the obstetrician is not certain as to the part played by the kidneys, and laboriously riddles his ton of earth looking for the diamond of fact lying hid somewhere in it.

Etiology.

It is unnecessary to spend much time over etiology in the ordinary and popular sense of the word. The eclamptic patient is either pregnant or is passing through the early days of the puerperium; one is justified, therefore, in regarding pregnancy as the great cause of eclampsia. But it is not a normal pregnancy which so relates itself to convulsions. It is one in which the intricate relationship which has been rightly called the harmonious symbiosis of pregnancy—that marvellous mechanism by which mother and fetus act, react, and interact upon each other with mutual benefit—is in some way and in some degree thrown into disorder and dissonance, and mutual harm results in place of advantage. It is generally a first pregnancy which thus breaks down into disaster; the presence of two fetuses in the uterus apparently makes the supervention of convulsions more probable; that the pregnancy is an illegitimate one seems to have the same effect; certain parts of the world and certain cities have more cases than others; and particular atmospheric conditions, especially such as throw a strain upon the kidneys, favour its development. To this picture of the typical eclamptic patient as an unmarried primipara or twin-bearing multipara, nearing her full term in cold foggy or warm muggy weather, it is permissible to add a few touches, and to say that she is habitually constipated and generally neglectful of the laws of hygiene in the matter of diet, exercise, bathing, and sleep. There may be a history of kidney trouble before marriage, but I lay no great stress upon that; uraemia may result from pre-existing chronic nephritis, but this, in my opinion, is a different thing from eclampsia. Other causes have been alleged, including such unexpected things as round worms, emotional strain, and malaria; but they have not come within my experience, and of the so-called neurotic type of eclampsia I have met only one or two doubtful cases, for it seems to be very rare in Edinburgh, at least.

Pathogenesis.

When we pass from etiology to pathogenesis we go from matters about which there is some degree of agreement to theories most of which rest upon slender substrata of facts, and many of which have led to very divergent views. Here we plunge into a veritable labyrinth of speculations. We are searching for what R. L. Stevenson called "the reason o' the cause and the wherefore o' the why," and we find very little else than the spaewife's answer, "it's gey an' easy speirin'," and the natural desire to go on asking. It is easy to express an opinion on causation (etiology), but it is often of small importance; it is extraordinarily difficult to state with assurance any single fact of pathogenesis, but the single fact may be of the value of the four or five grains of radium in the ton of uranium residues.

A Toxaemia, with Causes Outside the Uterus.

We may start from the standpoint that eclampsia is essentially a toxaemia, although there may possibly be some who place a query even here; and for the purpose of treatment there is, I feel sure, much benefit in so regarding eclampsia. This conclusion, however, is only a starting point, not a terminus, in pathogenesis. What is the cause of the toxaemia? To this deeper question many answers have been given. Some investigators have looked outside of the mother's body for the cause; they have

imagined a microbe coming from without, with a special tendency to infect pregnant women, causing the epidemicity or semi-epidemicity occasionally noticed in connexion with eclampsia; and, when hindered by a lack of evidence, they have suggested that a comparatively harmless bacillus may, when pent up in the uterus between the decidual membranes and the wall, become more virulent or virulent in a new way. But if there is one thing which may be described as fairly certain, it is that eclampsia is not of microbic origin; we may keep the question open for a little longer, for we have not forgotten about the long-delayed discovery of the syphilis organism, but we hardly look for the announcement of the arrival of the *Bacillus eclampsiæ*.

We look next for a cause of the toxaemia in the woman's body, but outside the uterus; and we are offered a large number of morbid agents to choose from. We turn hopefully to the kidney, for we note the diminution in the amount of urine excreted, the presence of albumen and occasionally of blood and tube casts, the fall in the urea, and perhaps the decrease in urinary toxicity with increase in the blood toxicity; and we say to ourselves the kidneys are proving inadequate to their task of excreting noxious products, they have been incapacitated by nephritis, and some poisonous thing, such as urea or carbamic acid or xanthin or creatin, is being retained in the body and is causing toxaemia.

Now, whatever may be the pathogenetic value of renal conditions in eclampsia, there cannot be the slightest difference of opinion in respect of the importance of albuminuria as a warning of impending convulsions; it may well be called the C.Q.D. among the danger signals of the symptomatology of morbid pregnancy, and the medical man who does not respond when he discovers this message for help is risking the lives of mother and infant. Next, we may look at the liver, having our attention specially drawn to it by reason of the pathological changes found in it in fatal cases, and see in it signs of inadequacy; or we may put the blame upon the intestines, being impressed by the extraordinary constipation which prevails in pre-eclamptic patients, and saying to ourselves that there must be great absorption of toxins taking place from the vast area of the intestinal mucosa; or, again, we are led to look at the thyroid gland, not unwillingly, for we share with the physician a great hopefulness that there is a sort of therapeutic El Dorado in the ductless glands, in those formerly unconsidered trifles of parenchyma which are now seen lording it over the metabolism of the body and saying, "We are both the cause and the cure of many maladies; blame us if you so please, but use us also." Now, latest of all, we have the suggestion that not thyroid but parathyroid inadequacy is the root cause of eclampsia, and since this theory has had the effect of slightly modifying my plan of treatment, I may refer to it a little more in detail.

It is known that parathyroidectomy in animals is followed by twitching of all the muscles of the body, then by tonic contractions and dyspnoea, and then by death: there is also a rapid excretion of lime salts constituting a sort of calcium diabetes; along with these marked changes there are also the signs of acidosis. The appearance or the evolution of these phenomena can be checked by the injection of lime salts into the peritoneum.

It has been found, further, that partial parathyroidectomy may be followed by no evil results unless pregnancy supervene, and that tetany of the nursing woman would seem to depend in some way upon the strain of lactation. It does not, of course, follow that tetany due to experimentally produced parathyroid inadequacy is the same thing as eclampsia in the pregnant woman, but some evidence has been collected in support of such a conclusion by Vassale and others. It has been stated that the parathyroid glands are more active during gestation; that the removal of them during gestation is followed by more severe symptoms than in the non-pregnant condition; that in some cases of eclampsia *post-mortem* examination has shown a diminution in the number of the parathyroids or signs of defective functioning in them; that some women suffering from maladies of the thyroid gland (whose effects could scarcely be separated from those due to parathyroid disease) have developed eclampsia or tetany in pregnancy, and that some of the good results which have occurred after the giving of thyroid extract in eclampsia have been due to the presence in it of parathyroid gland. It is an ingenious theory, although hardly securely enough grounded to enable us to accept it as more than a possible explanation of eclampsia, or as a probable solution of some of the morbid states associated with eclampsia; for the results of parathyroid anomalies or lesions are not the same thing as eclamptic seizures. It has been, however, the cause of my trying the effect of chloride of calcium, given intravenously, during eclampsia.

Another gland with an internal secretion which has been by some regarded as a cause of eclampsia is the suprarenal capsule; and the high blood pressure along with the cardiac hypertrophy of pregnancy give some support to this view. Others incline to incriminate the pituitary gland. Yet others look for a cause in a sort of mêlée or irregular conflict between all the glands with internal secretions. Here also we may refer to Sellheim's mammary theory of the origin of eclampsia, based upon the remarkable resemblance which exists both in symptomatology and in morbid anatomy between calving fever or parturient apoplexy in cows and convulsions in the parturient woman; this theory has brought along with it the amazing suggestion that amputation of the breasts should be practised to control eclamptic seizures; and the suggestion has actually been carried out.

Now, all these theories look to an organ outside the genital sphere as the seat of the cause of eclampsia, but into every one of them *pregnancy* enters. The foreground of each etiological picture, so to speak, is occupied by different characters, but the background is always the same. The kidney may be the failing organ, but it is the kidney as influenced by gestation which is understood; or blame may be attached to the liver, or the thyroid, or the parathyroid, or the adrenal, but it is always the liver, thyroid, parathyroid, or adrenal of pregnancy which is incriminated. This consideration or generalization leads us, therefore, naturally enough to the next group of theories—those which look inside the uterus, or, at least, inside the genital sphere, for the primary cause of the toxaemia which produces eclampsia, and which are content to regard the failure of the other organs (kidneys, liver, parathyroids, etc.) as the cause of a secondary toxaemia—important enough, and only too fatal sometimes, but yet secondary. We may, perhaps, think of the two groups of pathogenetic views as linked together by the theory of mammary causation, for the breasts are in more intimate sympathy with the utero-ovarian system than any other organs in the body.

Within the genital sphere a cause has been found in the ovary, or, rather, in the corpus luteum in the ovary; and some have begun to think of this mysterious, and possibly potent, structure as a sort of controlling centre under which the activities of the ductless glands, and possibly also of the placenta, are increased or diminished; it may be the place of origin of a hormone, and this hormone may stimulate the mammary glands; and there are other "may be's," but the corpus luteum still remains a force of unmeasured significance for good or ill.

A Toxaemia, with Causes Inside the Uterus.

When we turn to the contents of the uterus as possible factors in the production of eclampsia, we are at once embarrassed by the number and the intricacy of the suggestions. We wander somewhat hopelessly among the fetal, the placental, and the amniotic theories; among the notions of poisons generated in the fetus, in the placenta, or even in the liquor amnii; among the highly hypothetical ideas of exaggerated formation or penetration of plasmodium, of haemolysius, and of antibodies or syncytiolysins; among the views which seem to regard the fetus *in utero* as a prejudicial parasite against which the mother has to be elaborately protected by a complex system of blood and glandular reactions, and those which on the whole look upon the unborn infant as a healthy stimulus of the maternal tissues becoming dangerous only when the infant or the mother is already weak or unhealthy. In other words, the hypotheses as to the intrauterine or ovular causes of eclampsia raise anew and in acute form the whole problem of the intimate nature of pregnancy; there is a real lack at the present time of a correlation of our knowledge or partial knowledge of the biology of reproduction with the pathology of eclampsia. What, for instance, is the significance of the fact that eclampsia may

be associated with hydatidiform degeneration of the chorion and absence of the embryo? It must have a meaning; it seems at first sight to go against the fetal theory of origin, but on closer inspection it rather tends to concentrate our attention upon an intrauterine cause. What, again, is the reason why 20 per cent. of eclampsias are *post partum* in time? Surely the cause of these cases must be extrauterine, for the uterus has been emptied before they develop; but there is the possibility of delayed action of pathogenetic factors to be considered before we can decide with any certainty.

A New Question: What is the Mechanism of the Normal?

It seems to me, therefore, that investigation must be given a new direction. We have been working for years at the question why it is that one pregnant woman in five hundred suffers from eclampsia; let us now ask ourselves persistently why the four hundred and ninety-nine pregnant women remain healthy, so far at least as convulsive attacks are concerned. Let us first make an exhaustive inquiry into the physiology of pregnancy and into the natural inter-relationship which exists between the fetus and the maternal organism. A good beginning has been made, and every month witnesses additions to our knowledge of the chemical interchanges of gestation. We know now with certainty that the pregnant state has an immediate, a profound, and a far-reaching effect upon every organ and tissue of the mother's body. The presence of the impregnated ovum *in utero* affects at once the growth of the most distant parts of the woman's body, for example, the nails, so that literally she may be said to tingle to her very finger-tips with the new life that is in her. Such epoch-making books as Professor Bar's work, *Leçons de pathologie obstétricale*, which deals, let it not be forgotten, with the physiology as well as with the pathology of pregnancy, have done much to throw light into a neglected corner of the science of life. I, for one, fully accept Professor Bar's great conclusion that when there is a healthy fetus in a healthy mother (*fetus sanus in matre sana*) there is developed an instance of harmonious symbiosis of the most wonderful kind, and that at the end of such a pregnancy the mother emerges no worse, but rather the better, for the strain which has been placed upon her organs and tissues. No one who has studied Bar's numerous analyses of the nitrogen, calcium, iron, phosphorus, sulphur, sugar, fat, and chloride interchanges between mother and unborn infant can any longer continue to regard the latter as a necessary danger to the former, or to look upon pregnancy as a state of prejudicial parasitism. At the same time, just because the relationship is so vital and so intricate, it is very delicately balanced; a little deviation from the normal in either the mother or her fetus may dangerously disturb the equilibrium and convert the natural harmonious symbiosis into the unhappy association of morbid antenatal and antepartum tendencies. In eclampsia there is, I think every one will admit, a break in the harmonious symbiosis of pregnancy; when we have discovered all the mechanism by which the normal state is ordinarily maintained we shall be infinitely better fitted to pick out in any given case the defective or disordered part which has caused the breakdown which has eventuated in convulsions.

Let us, therefore, welcome all pieces of work which tend to throw light upon any part of the physiology of pregnancy, and let us try to piece them into the great scheme of antenatal health and maternal safety in gestation. There is, for instance, Abderhalden's recent research upon the protective enzymes of the maternal blood in pregnancy; if foreign proteins, fats, and carbohydrates be introduced directly into the blood, enzymes appear adapted to digest these unusual components of the circulating fluid. Further, in pregnancy Abderhalden found indications of the presence of enzymes in the blood capable of digesting the protein derivatives of the placenta; these were not found in the blood of non-pregnant women. Obviously this is a very important matter, and must have a bearing upon the theories of eclampsia which look upon the invasion of the maternal blood by chorionic or placental tissue as a possible primary cause of the toxaemia which leads on to the convulsions. Every such piece of information is of possible etiological importance. The investigation of the antibodies of the blood in pregnancies may do much to clear up the pathogenesis of eclampsia, and may give us, if it has not already done so, a physiological blood test of pregnancy; the determination of the histological appearances of the parathyroids in the pregnant state, and their comparison with the changes found in eclamptic cases, may assist to establish or to disprove the parathyroid theory of the disease; and the calculation of the normal demands of the fetus for calcium, iron, sodium chloride, etc., when placed alongside of analyses of the maternal urine and blood at various dates in gestation, may at once give a hint as to the pathogenesis of eclampsia and a suggestion as to its treatment. Until we know as much about fetal physiology and the associated maternal reactions as we do about, say, digestion in the stomach and duodenum, we shall hardly be able to decide finally regarding the disturbance in the feto-maternal symbiosis which lies at the root of the origin of eclampsia.

The Argument from Treatment.

In the meantime our comparative ignorance of pathogenesis is no excuse for a suspension of attempts to reach a satisfactory line of treatment. Indeed, we can to a certain extent argue backwards from successful treatment to a probable pathogenesis. During the seven years in which I have been in charge of the Edinburgh Royal Maternity Hospital in the autumn quarter—a period altogether of twenty-one months—I have dealt with 43 cases of eclampsia; during the first three years I employed medical means of treatment, but not to the exclusion of forced delivery in some instances, and had a maternal mortality of 3 in 12 (25 per cent.); during the last four years I have left the uterus alone and have concentrated my energies on the medical treatment of the fits, and have had a maternal mortality of 3 in 31 (9.6 per cent.). The medical treatment was purely antitoxaemic, consisting of venesection, intravenous transfusion, stomach washing with sodium bicarbonate solution (1 drachm to the pint), the running into the stomach of 6 oz. of magnesium sulphate, the giving of a copious enema, and the use of the hot pack. Chloroform was only used to enable us to carry out the other measures and to control the fits before the medical means began to take effect. Morphine and thyroid were occasionally employed. I feel confident, therefore, that the great cause is a toxaemia, although I am not yet certain whether it is a primary or a secondary toxaemia which is immediately responsible for producing the fits. I am inclined, further, to believe that the causal toxaemia is somewhat slowly produced, for the reason that I have found that when the above-named measures have been taken the fits do not return even when the pregnancy persists for a few days. I am therefore inclined to think that the shock accompanying rapid emptying of the uterus is a greater cause of danger than the possible continued influx of toxic substances due to the persistence of the gestation.

The only change I have recently made in the details of treatment has been the partial substitution of a solution of calcium chloride for the saline in the intravenous transfusion. I have been led to make this change because of a very satisfactory result following the use of this means in a serious case of chorea gravidarum. The patient was at the sixth month of pregnancy, and was suffering from chorea in an aggravated form. The washing out of the stomach, accompanied by the transfusion of a pint of solution of calcium chloride (30 grains to the pint) into a vein of the arm, was followed in a few hours by marked improvement, and the patient has since had no further treatment but calcium chloride by the mouth in 20-grain doses four times a day. It is now (three weeks later) difficult to detect any choreic movements at all. The pregnancy is continuing and the fetus is alive.* Possibly the calcium chloride has acted as a sedative to the nerve cells; at any rate, it seems justifiable to give the drug a trial in eclampsia.

Conclusions.

The chief factors in the etiology of eclampsia are pregnancy — especially, but not exclusively, a first pregnancy — renal and hepatic inadequacy, and possibly certain external influences and internal disturbances

* Now, three months later, there has been no return of the chorea, and the patient is near her delivery.

which throw a strain upon the kidneys and the nervous system.

The pathogenesis is most satisfactorily to be regarded as a toxaemia; probably there is a primary toxaemia due to some defect in the normal harmonious symbiosis of fetus and mother, and possibly the convulsions themselves may be caused by a secondary toxaemia, which is the result of, or has been caused by, the morbid changes which are often found in the kidneys, liver, parathyroids, adrenals, etc.

For the further elucidation and explanation of eclampsia reliance must be placed upon the investigation of the intricate feto-maternal relations which exist normally in pregnancy; when the physiology of gestation is known as thoroughly as that of digestion, it may be possible to reach some unassailable conclusions regarding the pathology of the pregnancy which is accompanied by convulsions.

In the meantime, the theory of a toxaemia is supported by the good result obtained the use of purely antitoxaemic measures; when these are successful the continuance of the pregnancy does not apparently bring any immediate dangers with it, possibly because the primary toxaemia takes some time to reproduce itself: the ideal treatment aims at the stopping of the fits and the continuing of the pregnancy, with a living mother and a living fetus.

II.—John H. Teacher, M.D.

It is generally agreed that while the pathological picture varies greatly in different cases of puerperal eclampsia, it is sufficiently precise and definite in its principal features. These are, speaking generally, degenerative changes of the nature of cloudy swelling and patchy necrosis, frequently with capillary thrombosis and haemorrhage, occurring in many organs, but most striking and characteristic in the liver.

During the past three years the *post-mortem* examinations at the Glasgow Maternity Hospital have been made by me or my assistant, Dr. A. M. Kennedy. We have not made them the subject of a systematic research, nor have we examined sections in all cases, because we soon came to the conclusion that we could in the main accept the conclusions set forth in Schmorl's monograph. We have seen a certain number of cases in which convulsions were associated with the puerperal state, but which could not be called cases of puerperal eclampsia, being clearly uraemic or due to some lesion of the nervous system. Excluding these, a larger group remains which we regard as puerperal eclampsia, in number 21 cases.

In all of these there were pathological changes visible to the naked eye. In six they were cloudy swelling in the kidneys and cloudy swelling and fatty change in the liver, and in one or two they were not at all striking. Twelve showed, in addition, the characteristic haemorrhages into the liver, and in six of these there was also cerebral haemorrhage. The remaining three showed symmetrical necrosis of the cortex of the kidneys, and were cases of eclampsia with suppression of urine, but without the usual uraemic phenomena.

In what we regard as the most characteristic cases the liver is covered with scattered red, irregular patches, due to haemorrhage immediately underneath the capsule. These are largest and most numerous on the right lobe. The substance of the liver is mottled with haemorrhagic areas, singly of small size but often confluent and very striking, sometimes bright red and at other times dull red in colour, showing that they were at least a day or two old. Anaemic infarction of the liver in addition to the haemorrhagic foci has been described but is rather rare. I have not seen it.

Microscopically the changes are found at the periphery of the lobules, that is, close to the portal tracts, and this distribution is characteristic of the disease. The earliest changes are degenerations of the liver cells, either shrinkage with defective nuclear staining, even to the extent of complete necrosis, or swelling and vacuolation, which resembles fatty infiltration, but is not of that nature. In the latter condition the cells become very greatly enlarged and foam-like, lose their nuclear staining, and are invaded by leucocytes. The capillaries between the cells may be dilated.

The next stage is the development of the areas of haemorrhagic necrosis. The capillaries are overdistended with red blood corpuscles closely packed together, small haemorrhages occur, and thrombosis takes place with formation of fibrin within the vessels, and it is also deposited outside them among the degenerated cells. The red corpuscles degenerate and become shadowy, their haemoglobin dissolving out and forming granules of brown pigment, the fibrin contracts into solid masses, and a structureless necrotic focus is the result.

Round these foci great dilatation of capillaries may develop with atrophy of the liver cells between them. This is probably a secondary result of the thrombosis of the first affected capillaries. When the thrombosis is extensive and affects the larger vessels in the portal tracts anaemic infarction of large masses of liver tissue may take place. The rest of the liver commonly shows cloudy swelling.

Similar changes have been observed in the suprarenals.

The changes in the kidneys are said to be even more constant than those in the liver. They consist of cloudy swelling and patchy necrosis of the epithelium of the convoluted tubules and ascending loops of Henle. The necrosis is regarded as the characteristic lesion. Haemorrhage in and around the necrotic areas and capillary thrombosis and small infarctions also occur. The glomeruli are swollen in some cases, but show neither proliferative changes nor cellular infiltration.

The symmetrical necrosis found in some cases associated with suppression of urine may be related to the last-mentioned phenomena. It is an anaemic necrosis or infarction affecting about two-thirds of the whole renal cortex in both kidneys, and it is caused by thrombosis in the interlobular arteries, the peculiar distribution of which is best explained on the theory of spasmodic contraction affecting these arteries and so favouring the formation of the localized thrombi. The condition may be compared with the white infarction of the liver above mentioned. Up to 1910 only six cases of this kind had been recorded, two of them by Dr. Robert Jardine and myself; but since then we have seen three more in Glasgow. The condition is probably less rare than has been supposed. An important point is that the fits generally ceased as the suppression of urine developed.

Schmorl also described capillary thrombosis and focal necrosis in the lungs, intestines, heart, and brain, frequently accompanied by haemorrhage. Larger cerebral haemorrhages are not uncommon; and their principal characteristic appears to be that they occur in other than the usual situations of cerebral haemorrhage. Similar lesions in the organs of the fetus have been described.

As to the placenta little can be said. Schmorl has long ago shown that the pulmonary embolism by masses of syncytium, which he was the first to describe, and which he suggested might be the cause of puerperal eclampsia, is a common feature of pregnancy. Degenerative changes are found in the organ itself, but they are not recognized as peculiar or really different from those which appear so commonly without definite disturbance of pregnancy.

As to the significance of the pathological changes. Every one agrees that there is no relation between their extent and the severity of the fits. There may be little change in cases with enormous numbers of fits, and, on the other hand, profound changes in the liver have been found in patients dying in the puerperium without fits—eclampsia without convulsions.

The general opinion appears to be that the morbid changes are, like the convulsions and other features of the disease, an expression of a general intoxication presenting resemblances on the one hand to uraemia and on the other to the intoxication of septic disease. Doubtless they produce grave disturbance and are unfavourable to recovery, but they are not the cause of eclampsia.

The peculiar character of the distinctive lesions may be referred to the high clotting power of the blood which is present in pregnancy, coupled with the injury to the walls of the small blood vessels by the unknown toxin.

III.—Sir William Smyly, M.D.,

Gynaecologist to the Adelaide Hospital, Dublin.

THE APPLICATIONS OF RECENT RESEARCH IN THE TREATMENT OF ECLAMPSIA.

The term "recent research" suggests the laboratory work of chemists and biologists, and without doubt their work has done much to assist practitioners in forming some idea as

to the nature of the conditions which are present in eclampsia. But they have not up to the present time discovered the cause of these conditions, and therefore, as regards treatment, there is no clear light or leading to be got from them. Instead, they have supplied us with an abundance of theories, more or less probable, which have very materially affected our practice. Practice is the test of theory, and is, in the absence of certain knowledge, purely experimental: it should, therefore, be included amongst the methods of research.

The treatment of eclampsia at the present time appears to me to be influenced by three considerations: (1) The particular theory adopted by the practitioner; (2) the urgency of the symptoms; and (3) the results of previous experience.

I propose, therefore, to consider the subject in this order.

Taking, then, the influence of theory upon practice, I begin with the idea that this disease is due to a poisoning of the maternal system. The evidence in favour of this theory is so strong as almost to amount to certainty, and it is generally assumed by therapeutists to be a fact, and therefore their efforts are generally directed towards:

1. Preventing the formation of toxins.
2. Neutralizing or destroying those already formed:
3. Eliminating them from the system.

1. In order to prevent the formation of toxins we should have some idea as to where they originate. They must do so either in the mother or the ovum, but in which or in what part of either we do not know. Those who believe that the ovum is the source of the poison consider that the only reasonable course of treatment is to get rid of it as quickly as possible, and with this object the cervix is dilated with the fingers, rubber bags, or metal dilators; and the child delivered by version and extraction, the forceps, or the cranioclast. The brilliant results which were obtained by Dührssen in cases in which he extracted the fetus after deep cervical incisions or vaginal Caesarean section strengthened and appeared to confirm the ovular theory; and he went so far as to recommend that in every case of eclampsia at the end of pregnancy, or *sub partu*, delivery should be effected as rapidly as possible, and, if possible, after the first fit. Out of 80 cases treated in this way he lost only 15 per cent.

His results had such influence upon practice that by many it was held that to fail to deliver an eclamptic patient as rapidly as possible was little short of malpraxis. Albeck thus analyses the results in 136 cases treated actively to show the importance of early delivery:

Where the Mother was Delivered.	Maternal Mortality.	Fœtal Mortality.
	Per cent.	Per cent.
After 1 fit	14.5	16.0
,, 2 fits	10.0	37.0
,, 3 to 10 fits	16.0	44.0
[illegible]	44.8	69.9

Total, 136 cases. 19.8 per cent.

Dr. J. A. Mitchell and Dr. Jennie Drennan attributed the eclamptic condition to the abstraction of calcium salts from the mother by the fetus, and recommended calcium lactate as a remedy. The fact, however, that eclampsia occurs *post partum* and in cases of molar pregnancy was against any theory which involved the fetus as the only source of the poison, and concentrated the attention of those who held the ovular theory upon the placenta. It was quite natural for those who regarded this structure as the source of the disease to assume that when convulsions [illegible] or continued after the expulsion of the placenta, part of it must have been left behind; and consequently the uterus was curetted in several cases with gratifying results. It is important, however, to note that the microscopic examination of the particles removed failed to show [illegible]

[illegible] the poison originates in the maternal organism are not as much at variance in practice as in theory. If, for example, the poison is due to some ferment derived from the ovum, the only rational treatment is to get rid of the latter as quickly as possible, whereas if it be due to some hitherto undiscovered micro-organism, the condition will tend to cure itself if the patient can only be kept alive until this is accomplished.

Those who, like Kaiser and Strobach, would locate the mischief in the ductless glands, have given thyroid and parathyroid extracts. The mammary theory was started by Bolle from the similarity between the symptoms in eclampsia and in a disease which occurred in cows, and in which the mortality had been greatly reduced by injecting a solution of potassium iodide into the udder. He tried the same treatment in seventeen cases of eclampsia in women, and his example was followed by Sellheim, who, as we know, went further and excised the breasts. Dr. Emilio Santo recommended injection of sterilized air, and others massage and Bier's suction treatment.

Dr. Hastings Tweedy, at the Birmingham meeting last summer, stated that the intestinal tract was the source of the poison, and very strongly insisted upon the necessity of thoroughly washing out the stomach and rectum, and of withholding every form of food, even milk in the smallest quantities. We have long been familiar with the advantages attending a restricted diet in cases of threatened eclampsia, but milk has hitherto been regarded as almost a specific in its prevention. Tarnier, who introduced this treatment in 1875, stated positively that eclampsia would not occur where a patient had been restricted to milk for a week. And Pinard has lately said that during thirty-five years' experience he had never seen a patient get eclampsia who had been on a milk diet for eight days. The fact, however, which I think is generally admitted, that these patients do better on milk than on any other diet, does not prove that they might not do better still on nothing but water. But it does prove that the intestinal contents are an important factor in causing the disease. Dienst also appears to attach importance to the intestines, for he regards vegetable acids as important prophylactics. He says that in Leipzig vegetable salts are administered with the object of neutralizing organic acids, and especially lactic acid, in the maternal system. But he believes that the good results obtained by this treatment are attributable not to that alone, but, as Noff has proved by experiments upon animals, that by filling their intestines with vegetable acids, the hepatic lymph became uncoagulable, so in the human subject these acids, by increasing the secretion of the intestinal glands, stimulate the liver to increased production of antithrombins. He therefore advocates giving such drinks as lemonade not only in eclampsia but in all cases of thrombosis.

2. As regards the neutralization or destruction of the poison in the maternal system. Assuming that in health this process is being constantly carried out by certain antibodies, and that toxaemia is the result of insufficiency of such antibodies, Mayer has infused serum obtained from healthy pregnant women; and, with the same object, Freund and others have employed horse serum, which has the advantage of being more easily obtained, whilst Leith Murray has suggested antivenin.

3. The elimination of the poison is assisted by increasing the action of the skin, the bowels, the kidneys, and by abstraction of blood. Opinions are divided as to the value of diaphoresis; in my own opinion, it is more likely to do harm than good by abstracting water from the blood, which, as Zweifel has lately proved, is thicker than normal in eclamptics. It is better to introduce plenty of fluid into the system, through the stomach or rectum, hypodermically or directly into a vein. Normal saline solution is usually employed, but though many of the best authorities declare that they have never seen anything but good result from it, yet the danger of chloraemia in eclampsia is a fact which must be weighed against the use of chlorides, and it is probably better to replace the sodium chloride with either the bicarbonate or sugar. The fluid acts beneficially in many ways, not the least of which is by promoting the action of the kidneys. In the same direction decapsulation of these organs, first introduced by Edebohls, appears to have been of value, but should only be resorted to after delivery in cases of anuria where every other means have failed.

Phlebotomy.

Fifty years ago bleeding was regarded as the sheet anchor in the treatment of puerperal convulsions, but, though never completely abandoned, was until quite

recently but seldom employed. Now, however, a reaction seems to have set in in its favour, and from France, Germany, and America a loud chorus is raised in its praise. Commandeur declares that it is the most important remedy at our disposal, and Lichtenstein endeavours to prove from statistics that all the benefits derived from operations are attributable to the attendant haemorrhage. The important thing, he says, is not emptying the uterus, but loss of blood. In his statistical tables he shows that after operative delivery convulsions ceased in one-third of the cases, and that those were the cases which had lost most blood. Bleeding benefits the patient by removing a certain amount of poison, by lowering blood pressure, and by assisting the secretion of urine.

The minute thromboses found in all cases of eclampsia are by some regarded as the cause of the disease. Dienst is of this opinion, and to prevent their formation recommended a diet free from sodium chloride and intravenous infusion of hirudin. The latter substance has also been employed by Engelman, Stade, and others, with success. It does not, however, dissolve thrombi which have already formed, and in one case at least it caused dyspnoea and serious symptoms of collapse. It should, therefore, only be employed early, before thrombosis is extensive or heart failure has begun. Other disadvantages are that it requires to be freshly prepared, and is therefore difficult to obtain in an emergency; and that it is very expensive.

Zangemeister believes that the convulsions are caused by pressure on the brain due to oedema, and to relieve that pressure he trephined the skull and laid open the dura mater. In three cases thus treated the convulsions ceased, but one died on the sixth day without any further fits: and he believed that the fatal result was due to his having closed the dura mater after the operation in that case.

Lumbar puncture has also been performed and successes recorded, but it has not met with much support.

The last theory to which I shall allude in connexion with treatment is that the disease is essentially a spasm of the minute blood vessels, and that, the other anatomical changes being secondary to this, the chief aim should be to prevent or relieve spasm by narcotics. The two narcotics most generally used are morphine and chloral, the latter, according to Commandeur, being regarded in France as almost a specific. Chloroform is for many reasons objectionable, and has been generally abandoned excepting for operations, or in very small quantities where for any reason the patient has to be disturbed.

Symptomatic Treatment.

Symptomatic treatment is of the greatest importance, for many of these cases die from accidents which could easily be prevented by a watchful attendant. The patient should be guarded from injury—especially from biting her tongue or inhaling the saliva and mucus which accumulates in her pharynx. A suitable gag should be held in her mouth, and her throat mopped out with gauze or cotton-wool; or, what is far better, keeping her on her side, and occasionally depressing her head over the side of the bed with the face towards the floor, as recommended by Tweedy: the mucus will then pour out of her mouth. It is further advisable to give oxygen after each fit.

High arterial tension is a common and very dangerous condition. It can be reduced by phlebotomy or veratrum viride. The latter drug, which was introduced in the United States by Baker half a century ago, has latterly been extensively employed in that country, and with considerable success. Gustave Zincke, of Cincinnati, recommends Norwood's tincture in 20-min. doses, given hypodermically every hour until the pulse is reduced to sixty beats per minute. When the pulse begins to rise he gives 10–15 min. every hour until it again falls to sixty.

Having considered separately most of the methods in vogue for the treatment of eclampsia, let us now try to treat the subject synthetically. It is quite evident that it would be impossible to employ them all, and it is equally evident that each practitioner must select those which appear to him to be the best, and combine them in a system which he shall be immediately prepared to carry out when the emergency arises.

In determining the value of any system of treatment where, as in eclampsia, we have no exact scientific knowledge to guide us, we are forced to fall back upon clinical experience. But eclampsia is a disease of such varying severity that we are liable to meet with long runs, sometimes of twenty or thirty cases, without a death; and then a series of great severity with many fatalities. So that to form anything like a definite opinion upon any particular line of treatment some hundreds of cases are required; and as so many cases are not likely to be met with by any one individual we are forced to fall back upon statistics. In making use of statistics two things are necessary: they must include a large number of cases, and the cases must be similar, so as to be comparable.

In a paper read recently in New York by Dr. Ralph Waldo Lobenstein he quoted the following, amongst others, to prove that the results of operative treatment are better than those obtained by medical.

Conservative Methods.

C. Zinke, 15.38 per cent. mortality: Stroganoff, less than 7 per cent.; Ahlfeld, 12 per cent.; Pfannenstiel, 35 cases without a death; Tweedy, 8.22 per cent.

Radical Methods.

United States generally, 10.25 per cent.: Dührssen, 112 cases and 15 deaths; Fromme, 34 cases without a death; Winter, 22 without a death; Veit, 33 with 1 death; Liepman, 2.8 per cent. by early, 25 per cent. by late, delivery.

A little investigation is sufficient to show that these figures are not comparable. For example, C. Zinke is tabulated as having a mortality of 15.8 per cent. amongst cases treated conservatively. But on referring to his paper I find that out of nine deaths one was due to haemorrhage after violent efforts at delivery; another occurred after *accouchement forcé*, and a third from septic infection. Of the cases allowed to deliver themselves the mortality was 8.3 per cent. Liepman's 2.8 per cent. cannot be compared with Stroganoff's 7 per cent., which was the total mortality out of 900 cases; whereas Liepman's 2.8 per cent. was obtained by a process of classification, and the total mortality was about 19 per cent.

In systematizing our methods of treatment, the first point of importance is to determine whether we shall or shall not include immediate delivery. The radical school have of late materially improved their results by the introduction of vaginal Caesarean section, but such a method is only possible in hospitals, and even there it has failed to give any better results than more conservative measures. And I believe that Commandeur is right when he says that the statistics which should have proved the value of active treatment have failed to do so.

The general practitioner who feels it incumbent upon him to deliver his patient as rapidly as possible generally resorts to *accouchement forcé*—that is, by dilating the cervix, turning, and extracting the child. That, in my opinion, is the worst method of all. The cervix does not stretch like a piece of elastic: on the contrary, it is apt to tear like wet blotting paper, and the proportion of cases in which serious lacerations occur is estimated by Bar as 30 per cent.

Accouchement forcé has increased the mortality in every condition in which it has been adopted. Forty years ago it was the recognized practice in placenta praevia, and the mortality was enormous, much greater than in accidental haemorrhage, in which the practice was to rupture the membranes. Twenty years later the practice was reversed: in placenta praevia the child was turned but not extracted, whilst in accidental haemorrhage it was; and at that time the latter was looked upon as a far more serious condition than the former. I believe that in eclampsia also *accouchement forcé* kills more than it cures.

The best results hitherto obtained have been by the methods adopted and systematized by Dr. Tweedy and Professor Stroganoff—the former with a total mortality of 8 per cent., and the latter with a little over 7 per cent. When the large numbers of cases and the uniformity of the results are considered it cannot be doubted that no other statistics hitherto published can show results comparable to those attained by Stroganoff's method. In a paper published last month in the *Centralblatt für Gynaekologie*, he reports 661 cases—600 treated in Russia with a maternal mortality of 8 per cent. and a fetal mortality of 21 per cent.; and 61 cases treated in Germany with a maternal mortality of 6.5 per cent. and a fetal mortality of 18 per cent.; and he reiterates his conviction that in uncomplicated cases in which his treatment is commenced

early the mortality should not exceed 2 per cent. When in Dublin the other day he informed me that he has now reports of over 900 cases, with less that 8 per cent. mortality.

In conclusion I may add the main features of this method as summarized by Stroganoff himself:

1. Avoidance as far as possible of all external irritation. Therefore a quiet darkened room to which no one is admitted but the doctor and nurse, who must be as silent and noiseless as possible. External and internal examinations restricted to what is absolutely necessary. These and all other manipulations, such as catheterization and hypodermic injections, are carried out under slight chloroform anaesthesia; generally 20 to 30 drops suffice.

2. The control of fits by morphine and chloral hydrate; given as follows in an average case:

1st hour,	0015	gram	(¼ grain),	morph. mur.	hypodermically.
2nd ,,	2	,,	30 ,,	chloral hydrate	per os or rectum.
3rd ,,	0015	,,	¼ ,,	morph. hypodermically.	
7th ,,	2	,,	30 ,,	chloral hydrate.	
13th ,,	1.5	,,	25 ,,	,,	,,
21st ,,	1.5	,,	25 ,,	,,	,,

3. Labour is assisted but not forced.

4. Watching and stimulating the vital processes.

(1) *Respiration.*—Posture, careful cleansing of throat and nose. Pure warm air. Oxygen after fits.

(2) *Heart.*—Milk and saline infusion per os and rectum. If pulse is weak, digitalis and stimulants.

(3) *Kidneys and skin*, warmth and saline infusions.

DISCUSSION.

Professor Walker Hall (Bristol) congratulated the openers of the discussion upon the broadness of their views, and joined with Dr. Ballantyne in urging that more attention should be directed to the physiology of pregnancy. In fact, he went further and suggested that it was the earlier months of pregnancy which called for closer investigation. The multiplicity of views and treatments pointed to the probability that if it were possible to forget what had been published and commence once more with a study of the bio-chemistry of the condition, there would be good hope for more direct work. He referred in detail to Emil Fischer's work upon proteins and Abderhalden's investigations upon protective ferments, and related some work carried out in his own laboratories upon the action of blood and tissue fluids upon polypeptides. The action of blood of pregnant and non-pregnant and post-abortional blood upon polypeptides prepared from placental proteins showed essential differences, while the milk during lactation corresponded with the blood of pregnant women. It was necessary to realize that, after all, the condition associated with eclampsia was cellular in character; it was important to recognize that cellular action was carried on in a fatty as well as a watery medium. The current measures of treatment seemed heroic with regard to single cells, and appeared to cause chiefly such intracellular disturbances as would result in altered metabolism of nucleins and cytoplasm and probably reduce the cell to insensibility. While the means at present offered the most promising results, it appeared probable that the advances in chemistry and chemical pathology during the next decades would furnish the possibility of a more specific line of treating the cellular deficiencies.

Dr. Leith Murray (Liverpool) was surprised that no mention had been made of anaphylaxis in pregnancy. Very much work had been done in recent years on this aspect of the subject and on the immunology of normal pregnancy in general. Mosbacher and several others had produced undoubted evidence that there was homologous [illegible] by placental elements. He [illegible] did not consider that toxic symptoms following were anaphylactic. Cases of phthisis were [illegible] tuberculin, yet anaphylaxis was not the [illegible] The clinical evidence, too, was all [illegible] a fall of temperature, a lowered blood pressure, and acute asthma were not found in eclampsia, while the *post-mortem* lesions in the liver and lungs were entirely different. Discussing a direct intoxication, he considered that much water had flowed under the bridge since Schmorl wrote, and that it was now possible to define the eclamptic toxin as one consisting of five elements — thrombotic, haemolytic, haemagglutinative, endothcliolytic, and neurotoxic. The polymorphism of lesion was produced by interaction of these—for example, a high haemagglutinating value leading to much focal necrosis in the periphery of the lobules. It was important to appreciate (1) that death might result with an *apparently* slight lesion in the liver—that is, necrosis prevented by a low agglutinative and a high lytic value, precisely as occurred in the case of many immune serums; (2) that death might result with an *undoubtedly* slight lesion in the liver—that is, an early lesion accompanied by fatal cerebral haemorrhage. He did not agree with Dr. Teacher that the lesion of eclampsia was absolutely unique, as in reptilian venom poisoning as a whole the same lesions were produced by the same five elements. He considered, then, that a bio-chemical search for a body of this nature was advisable, especially as haemolytic tests gave ample confirmation of this similarity.

Dr. J. S. C. Douglas (Birmingham) said: The condition of eclampsia may be due to the failure of the pregnant woman to produce antibodies to toxins which are always formed during pregnancy, normal or otherwise, rather than to the formation of some abnormal toxin. On this supposition the advantage of blood-letting in eclampsia may be explained not so much by the removal of toxins from the blood stream, but rather by the increased volume of antibodies brought into the circulation by this process, since it has been shown by v. Schroeder that haemorrhage in actively immunized animals was followed by an actual increase in the quantity of antibody present in the circulating blood.

Professor Haultain (Edinburgh) said eclampsia was a much debated subject. Upon two points only were they all agreed—namely, that it was due to pregnancy and to a poison. Its actual cause might be due either to defective excretory function of the placenta or to deficiency of general metabolism. Probably the latter, as proved by the excellent effect of milk diet, which could have no action on placental function. The action of the poison was probably, in the first instance, to increase arterial pressure; secondly, to irritate the kidney, causing albuminuria and acetonuria, passing on to defective secretion and suppression; and, thirdly, direct irritative action on the cerebral cells. The treatment he adopted was based on physiological principles, there being no direct specific antidote to the poison—first, to try and remove poison; secondly, to reduce blood pressure; and thirdly, to counteract nervous symptoms. If these failed, to remove the cause or terminate the pregnancy. Removal of the poison by purgation, washing out of the stomach, diaphoresis, and bleeding. The latter also acts by reducing blood pressure, and for that reason he did not transfuse saline solutions to raise it again. He had given up the use of chloroform, as it might increase the poison, acetonuria being met with in chronic chloroform poisoning. Morphine he had also ceased to use. As regards emptying the uterus, he certainly recommended it in cases where in spite of all means of treatment the fits continued, as it was removing the primary cause of the disease. Where labour had commenced this was simple, but before labour had commenced it was dangerous, but appeared to him the lesser of two evils. He had done three cases of Caesarean section for this condition with two favourable results. Eclampsia cases varied enormously in severity. In Scotland it was more frequent and virulent than in Ireland, and one could not compare their methods or results. In Scotland it was becoming a distinct scourge, and he thought it would be most desirable if some means could be devised whereby the pregnant poor might learn the necessity of putting themselves under care in all instances, so that their urine might be treated, and thus by the prophylactic treatment of milk diet ninety-nine out of every hundred cases of eclampsia would be prevented.

Sir John Byers said that the discussion, so ably introduced, showed that eclampsia was still a disease of theories, and that treatment, based upon the working hypothesis of the condition being a toxaemia, was ahead of their exact scientific knowledge of the complication. He hoped for further knowledge from

the clinical physiological chemist. He had found that neither weather, nor fog, etc., had anything to do with its incidence. As to treatment, the great thing was attention to details—to treat the convulsions with morphine, to purge thoroughly, to starve the patient, and not to bring on labour, but to facilitate its progress when it began and when the conditions were suitable. He emphasized the great importance of the prevention of the complication.

Dr. Griffith (London) asked Professor Walker Hall if his opinion was that the so-called toxins were merely waste products of disordered metabolism, and not causative of the diseases attributed to them. No speaker had attempted to limit or define the disease under discussion; the convulsions which characterized eclampsia and were clinically its most alarming feature were but a single phenomenon present in a small proportion only of the group of cases in which the essential pathological changes were present in various forms or degrees. Those cases in which these changes were comparatively slight recovered, if allowed to, under the simple treatment of rest and warmth, thorough evacuation of the bowels, and milk diet. The very severe cases, with extensive destruction of liver, kidney, and cerebral tissue, with haemorrhages, could not recover under any treatment, and they could not expect even to save the life of the infant. The intermediate cases were those in which they were bound to use such measures which accurate observation and experience proved to be beneficial. He entirely agreed with Sir William Smyly that these measures should be as gentle and, as far as possible, in themselves free from risk, and he would suggest a rule applicable equally to cases of placenta praevia and accidental haemorrhage, Do not kill your patient by the means you adopt in your endeavours to save her life. While opposed to the risky practice of forced delivery, he would accelerate delivery in suitable cases, feeling confident that the majority of women were safer after delivery than before. In the cases where the symptoms developed in women known to be sufferers from chronic nephritis, he held strongly that no time should be lost, but the uterus should be emptied at once, without any regard for the life of the fetus. The further progress of knowledge of this disease must, as in so many others, depend on the investigations of the biological chemist, for it appeared to be certain that it was not the result of microbial infection.

Professor Chipman (Montreal) said he was interested in the proceedings, especially so as eclampsia was the subject of discussion at the last meeting of the American Gynaecological Society, held in Baltimore in May. In this way an opportunity was being afforded them to compare the findings of the British and American schools upon this interesting subject. He said that the main fact that emerged from those two meetings was a realization of the little that they actually knew. He quite agreed with Dr. Ballantyne and Professor Walker Hall in the plea that they made, that they must approach the subject from the beginning. The lines of approach were along those of physiology and physiological chemistry. Many workers in America were attempting such research—among these was Williams of Baltimore—and their results were promised next year. In Canada, in the matter of the incidence of eclampsia, they must occupy a midway position between Belfast and Edinburgh. Eclampsia was common in Canada, occurring most frequently in the autumn and winter months, and the number varied greatly in different years. It was of advantage, he thought, to group together in one's mind the various toxaemias of pregnancy—for example, vomiting, chorea, and eclampsia. These were probably all toxaemic, the result of one or more toxins accumulating in greater or less degree within the economy. Accordingly the patient should be watched, not for three months of her pregnancy, but for nine months. In Montreal they were accustomed to roughly divide the cases of eclampsia into two great groups: (1) Those cases in which the kidney was most affected, and (2) those in which the liver suffered most. These two groups could frequently be distinguished clinically. The latter group was, fortunately, less common, the prodromota were less pronounced, and the prognosis much more grave. The etiology of the two groups was probably the same, the difference between them being in all likelihood due to a larger dose of the toxin, or to a lower resistance or idiosyncrasy of the individual. As regards treatment, they adopted a middle course. In group (1), the milder type of cases, wise medicinal treatment usually sufficed. In group (2) the case was often desperate from the first; destructive changes were rapidly occurring in the liver and kidney, and it was here often wise to deliver the mother as rapidly as possible. In all cases the blood pressure was carefully measured at frequent intervals, and the readings made an index of the progress of the case. He thanked the profession of Great Britain for the honour conferred upon Canada and on himself in being made a vice-president of the Obstetric Section.

Dr. Amand Routh (London) hoped this discussion would stimulate chemical pathologists to work harder at the toxaemias of pregnancy. It must be remembered that there were other toxaemias of pregnancy besides that of eclampsia; hyperemesis gravidarum, chorea, albuminuria, diminished urea excretion, and insanity, were all due to autotoxaemia. Probably before the exact constituents of the toxins could be ascertained—and clearly they were different in each of these diseases—pathological chemists must first work out the normal difference in the blood in a pregnant as compared with the blood of a non-pregnant woman. They knew nothing of the chemical constituents the accumulation of which in the blood led to the onset of labour, and of lactation; they did not even know much of the cause of the cyclical onset of menstruation, though Blair Bell had shown that it was to some extent due to an accumulation of calcium salts in the blood. If, therefore, the physiology of pregnancy were more clearly understood, especially as regards the bio-chemical changes in the blood, they would then be on the way to discover the causes of the toxins. As regards treatment, he would only deal with one point, that of obstetrical interference, and he strongly deprecated any variety of *accouchement forcé*, but if the woman were in labour and the cervix dilating, he usually punctured the membranes, thus reducing intra-abdominal and, indirectly, arterial pressure, and when the head was on the perineum the forceps should empty the uterus under ether anaesthesia. He hoped for great results from the continued co-operation of clinicians, pathologists, and chemists, and this discussion was sure to further such a combination.

Professor J. M. Munro Kerr (Glasgow) said: As regards the etiology of the disease, the probability is that the start of the toxaemia is the destructive effect of the trophoblast on the uterine mucosa. Generally the maternal organism resists and overcomes, naturally or by medical means, the poison; sometimes it does not. If the latter occurs, then the pathological changes and clinical features with which we are familiar develop. As regards the treatment of eclampsia, I am a supporter of the British and French school, which relies upon medical rather than active surgical treatment. I therefore rely upon washing out of stomach and bowel, venesection, moderate saline infusion, and morphine. But I make this reservation: Every one is familiar with this fact, that every now and again the type of this disease is very virulent. Now, when one gets among such cases, I believe that active surgical treatment should be adopted, and adopted early. If the cervix is taken up, then incising the cervix and forcible extraction with forceps may be employed, but if the cervix is not taken up then I advocate abdominal Caesarean section. Vaginal Caesarean section is not an easy operation, and cannot be performed in a private house. Abdominal Caesarean section, on the other hand, is a simple operation. I feel convinced that the poor results obtained by Caesarean section could be improved by earlier operation.

Mrs. Scharlieb (London), narrating her experiences, said forty years ago (1873) in Madras they had a very heavy percentage of cases of eclampsia among their patients in the Government Lying-in Hospital. In contrast with Edinburgh, they had a hot, moist climate. In contrast with the inhabitants of Great Britain and Ireland, they had a rice-eating, total-abstaining population who ate no flesh food and who took no alcohol. In one particular only did the incidence of eclampsia in Madras agree with that at home. The patients were nearly always young primiparae, and often young primiparae pregnant with

twins or who had hydramnios. The puerperal convulsions in Madras were always associated with albuminuria and with pyrexia, frequently with jaundice and haemorrhages. *Post mortem* they found lesions of the kidneys and the liver. They had no sphygmographs or other instruments of precision, and they knew little about toxins. They acted on the belief that there was some poison in the woman's system, and that she resembled the strychnized frog in which convulsions were likely to be evoked by very slight causes. Consequently the treatment was eliminative and sedative. Seeing that any disturbance seemed to provoke attacks, they put the woman under chloroform, drew off the urine, and placed calomel gr. x and croton oil miij on her tongue. After this they gave chloral and potassium bromide, gr. xx each, by the nasal tube, and sometimes doses of veratrum viridis. As a rule they observed the maxim, "Take care of the fits and the labour will take care of itself." To this rule there was one exception. They ruptured the membranes, and of course, when necessary, gave help to the labour; but as a rule the uterine contractions were brisk and the labour progressed naturally. It was evident that this experience and treatment were clinical, not pathological, but it seemed as if they had progressed little during the last forty years. They must hope that collaboration of clinicians and pathologists and bio-chemists would be more fruitful before the end of another period of forty years.

Major R. HEARD, I.M.S., referring to remarks by Mrs. Scharleib, mentioned the prevalence of eclampsia in the hot, dry climate of Northern India, not only in the plains but also at higher altitudes. A point worth mentioning, in view of the remarks by some of the speakers regarding the value of milk in eclampsia, was the very large amount of milk in the dietary of the vegetarian races amongst which Mrs. Scharleib found the condition so frequent.

Dr. BALLANTYNE, in reply, was glad to have Dr. Walker Hall's support in what was really intended to be the central conclusion of his article, to wit, that the study of the physiology of pregnancy must be undertaken as the basis of further advances in their knowledge of eclampsia. Some of the plans of treatment might be of the nature of shock, but big diseases needed strong cures. Dr. Ballantyne thought that with regard to statistics no man had the right to speak of percentages unless he had had at least a hundred; etymologically that seemed to be a fair statement; but a man had every right to test the results of a change in his treatment, and to compare one set with another. They ought to elaborate the details of any kind of treatment, to feel free to alter small details from time to time, and to keep really an open mind on these matters.

Dr. TEACHER (Glasgow), in reply, was very interested to hear from Dr. Leith Murray that the liver in rattlesnake poisoning was so like that of eclampsia. The similarity of this intense toxic condition was interesting. Nevertheless, he was inclined to regard the comparison of the two conditions as a false trail. The morbid anatomy of snake venom poisoning was as variable as that of eclampsia. Dr. Teacher also referred to the placental theory of eclampsia, which he had omitted in giving his demonstration.

SECTION OF LARYNGOLOGY AND RHINOLOGY.

JOHN MIDDLEMASS HUNT, M.B., President.

DISCUSSION ON THE TREATMENT OF CHRONIC SUPPURATIVE ETHMOIDITIS.

OPENING PAPERS.

I.—Professor L. HAJEK, Vienna.

THE methods of treatment of chronic suppurative ethmoiditis are, or ought to be, different, according to the pathological and anatomical conditions prevailing in the individual case. For the purpose of classification, we may put down the following groups of chronic suppurative ethmoiditis:

I. Chronic suppurative inflammation, with marked hyperplasia of the tissue.

II. Chronic suppurative inflammation of the ethmoid, with hyperplasia only in restricted areas, but with extensive atrophy (ozaena—Uffenorde,[1] Hajek [2]).

III. Secondary suppurative processes of the ethmoid consequent upon constitutional disease (syphilis, tuberculosis, and malign neoplasms).

I.

The cases belonging to Group I show either (*a*) that the hyperplasia predominates in the clinical picture, whilst the suppuration is circumscribed, often even latent and restricted to a few cells; or (*b*) that the suppuration predominates in the clinical picture (*a*). These cases are represented by the numerous well-known instances of chronic polypus formation of the ethmoid; the treatment is therefore coincident with the problem of treatment of chronic polyposis.

As regards this problem of treatment of polypi, which is, in fact, the most important part of the treatment of chronic disease of the ethmoid, I cannot undertake the task of enumerating all the various methods recommended for this purpose. I can only mention the leading ideas, which, in their turn, are intimately connected with the views pertaining to the formation of nasal polypi in general. There are undoubtedly cases of beginning and circumscribed polypus-formation, which do not return after removal even without resection of the osseous basis; this is the best proof that polypi originate from the superficial inflamed mucous membrane. We see very often after endonasal operations, that the mucous membrane produces "acute" polypi. These disappear after the irritation has subsided. Polypi forming around a foreign body do not return, as a rule, if they are removed together with the foreign body. All these facts are instances of superficial inflammation of the mucous membrane of the ethmoid region.

In the majority of cases with nasal polypi we see recurrences after a while, and the therapeutic methods depend upon the causes in the reappearance of polypi.

According to my experience, as recorded (Hajek [3]) in a paper read in 1902, recurrence of polypi may have one of the following possible causes:

(*a*) In the course of operation not all polypi are removed, and the individual polypi are not removed together with their base (Zuckerkandl[4]).

(*b*) In many cases the empyema, which gives the inflammatory basis for the formation of polypi, is overlooked. (Grünwald[5]).

(*c*) The bone, or the medulla, which with the polypi are intimately connected, is also diseased (Woakes[6]), and new polypi come out of the cellular infiltrate of the medullary spaces.

To these three causes I should like to add another one, which is the result of later observations:

(*d*) Continual polyposis of the nasal cavity can be produced by recurrences arising from the maxillary sinus (Hajek [7]).

Let us consider now the various possibilities and the therapeutic measures necessitated by them. It is clear that we cannot remove *in toto* with our usual methods all the polypi which originate from the depths of the middle nasal canal, from the hiatus, the infundibulum, or the depths of the upper nasal canal (Zuckerkandl). We only amputate them at various distances from their base. Very often a considerable portion of diseased mucosa remains, producing new polypi. But we see daily that recurrences stop if we resect the middle turbinate, and thus can approach the base of the polypi and remove them *in toto*.

Since Grünwald [5] has pointed out that an empyema of an accessory sinus is often the primary cause of polypi, we can observe every day that in many cases recurrences of polypi can be prevented by proper drainage or cure of empyema. Although I cannot accept Grünwald's opinion that the majority of polypi are caused by suppuration of accessory sinuses, nevertheless it cannot be disputed that in a large number of cases the existing suppuration of such accessory sinuses is a constant source of polypus formation. The third reason for continual recurrence is the diseased condition of the bone itself, which is present in inveterate cases of polyposis.

As regards the nature of this disease of the bones, various opinions are held by the authors. But it is

absolutely necessary to have one opinion, and the correct one too, if possible, for this controls our indications for operation; therefore I trust I shall be excused if I digress a little from my original task—treatment. There are two opinions opposed to each other as regards this problem. The one was formulated some time ago by Woakes,[6] who expressed his belief in the primary disease of the ethmoid bones. Zuckerkandl[8] and myself (Hajek[9]) do not agree with it, whilst the English surgeons—at least, as far as I can judge from the *Transactions* of the London Laryngological Society—still adhere to this opinion (Lambert Lack[10]), whilst other authors (Spencer,[11] H. Tilley,[12] StClair Thomson[13]) doubt the primary disease of the bones. Woakes makes a "necrosing ethmoiditis" responsible for the polyps, and his thesis has been proved, according to many authors, by Martin.[14] I wish to state emphatically that this is a mistake. Martin has only shown the existence of a rarefying ostitis, which has not been doubted by any of his successors, also not by Zuckerkandl[8] or myself.[9] But Martin already has strictly refused to accept the conclusions arrived at by Woakes—namely, that the necrosing "ethmoiditis" is the primary cause of polyp formation. Investigations by Zuckerkandl and myself, afterwards corroborated in the main points by Cordes[15] and Uffenorde,[1] have shown that the inflammation starts in the most superficial strata of the mucosa, that it goes deeper and deeper in older cases. Later on it affects periosteum, and causes partly the formation of new bone (osteophytes) in the periosteum, partly rarefying ostitis. My investigations, furthermore, have shown that the inflammation, spreading into the depths, also extends into the medullary spaces of the ethmoid bone, which is markedly spongy and fills them with cellular infiltration. The changes in the bone and the medullary spaces are therefore secondary, not primary, as Woakes and his pupils believe. The main consequence of these changes, recognized by all nasal surgeons, is the undoubtable fact that in inveterate polypus formation concomitant disease of the bone is the rule. There are present either periostitic irritations or inflammatory infiltration of the medullary spaces, which favour the return of polypi. It is therefore only logical to remove in such cases the soft tissues together with their bony basis.

The anatomical conditions of the ethmoid bone bring it about that the mucous covering of the nasal ethmoid bone extends without interruption into the interior of this bone, and that in *well-marked* polyp formation the interior covering participates just like the nasal mucosa in the production of polypi (myxomatosis interna—Bosworth). Even if the osseous base is not yet diseased, we must remove in such a case the osseous fundament of the ethmoid labyrinth, for it is not possible otherwise to remove thoroughly the polypi from the interior of the ethmoid cells.

I have observed[7] and published a unique case in which continually relapsing polypi originated in the maxillary sinus, whence they came into the nasal cavity through the ost. maxillare. The case was cured by opening widely the maxillary sinus and removing the mucosa of this sinus radically.

After this short explanation of the most important points of view, we will turn our attention to the methods of operation.

In the majority of cases the endonasal method with cocaine anaesthesia is the rule. Exceptions will be mentioned hereafter.

The bulk of the polyps is removed by means of a snare or forceps with a good grip. Polypi should be "evulsed" by the snare, for evulsion is much more effective than cutting with the snare, and should be always employed. Polypi with a broad base are best removed by evulsion with Luc's forceps.

I should like to mention that according to my experience a latent empyema of the ethmoid often becomes manifest through evulsion; for if the polypus, which blocks the openings of the ethmoid cells, is removed together with its attachment, the cells can now drain, and the empyema, formerly closed, is now open. Such observations prove that the methods adopted against an uncomplicated simple polyposis cannot be separated from those used in cases complicated by chronic suppuration.

Some surgeons recommend galvanic cauterization of the roots of the polypus after removal of the polypi in order to prevent a recurrence. This method cannot be endorsed—first, because it does not prevent a recurrence, and, secondly, the reaction set up by the cauterization can become excessive and produce dangerous complications. It is best to wait a few days after a polypus operation, until the reaction subsides, before another surgical interference takes place.

The operations are repeated until all visible polypi have been removed. We must remember that all procedures for the removal of polypi are only an introduction to the treatment proper, nothing more. Then we are enabled to examine repeatedly and thoroughly, and to answer those questions which are absolutely important for the correct judgement of the case—namely, whether the polypi represent the primary inflammation, or whether they are but secondary products caused by a previously hidden neoplasm, foreign body, or by a suppurating accessory sinus. The existence of this cause directs hereafter our therapeutic actions.

Repeated examinations by means of a very thorough cocainization of the nasal canals will show whether any nests of polypi are present in the middle or upper meatus. In the case of recurring polypi one can be sure that the polypoid degeneration is not restricted to the superficial mucosa, and that an extensive removal of the site of attachment of the polypi, often together with the osseous base, is indicated.

Mostly it is necessary to remove the middle turbinal in order to gain free access to the whole ethmoidal mucous lining. One is often surprised at the extensive degeneration of the mucous lining, which extends into the ethmoidal ostia and the depths of the cells of the infundibulum, and which one would not have expected before removal of the middle turbinated bone.

As regards the extent of the removal of ethmoid bone, with the exception of the lamina papyracea and the lamina cribrosa, each individual case must be considered separately. Also that part of the medial ethmoidal wall which is situated above the line of attachment of the middle turbinal should escape removal as far as possible, and should not be taken away high up. But one need not be too modest in removal of the uncinate process or of the septa of ethmoid cells and the degenerated mucous lining of the interior of the ethmoid bone.

As regards the method advisable for this operation, the following may be said: It is most important to cocainize well, care being taken to have adrenalin added. As much as possible should be removed in one sitting, absolute orientation during operation being a *conditio sine qua non*. This last sentence I believe to be one of the most important leading ideas of any intranasal ethmoid operation. Further important conditions are: Quiet position of the patient owing to good cocainization; then absence of haemorrhage, which, starting early, seriously interferes with the view of the field of operation. Frequent use of the probe gives information as to the nature of the mucous lining of the ethmoid cells. I cannot consent to the demand that all should be removed at one sitting. Such a method, excluding all individualizing treatment, is fraught with danger to the patient. As long as one sees his way well, and the haemorrhage is small, and the patient feels well, one can continue to operate. If one of these conditions is absent we must stop and wait until the next sitting (Hajek[3]).

The obstacles which prevent our surgical interference based on the principles sketched just now may be of a twofold kind: (1) General; (2) local or individual. To the first group belong diseases which *per se* prohibit or restrict all surgical interference: haemoptysis, diabetes, chronic nephritis, etc., or diseases associated with general cachexia. A local obstacle may be given by insufficient accessibility due to a deviated septum or a spine. In that case the deviation must be corrected previously, for there is nothing more unsatisfactory than to grope in the dark or to manipulate in the region of the ethmoid with instruments and curettes without free access. An individual obstacle is, for instance, the liability to fits and collapse. Here the operation should be done under general anaesthesia, in spite of the increased difficulty. In cases of inveterate polypi repeated sittings are often required, as is well known, if one wants to remove thoroughly all diseased tissue. It is often necessary for a longer interval between the sittings, so that the reaction caused by one

operation may subside before the next is done. Such a treatment lasts, therefore, for weeks and months; yes, even after years slight recurrences may take place, but these are generally removed in a short time. But it is important to state that, although the treatment necessitates often many operations, and requires a good deal of patience and time both on the side of the surgeon and the patient, all cases can be cured finally, unless the above mentioned general reasons prevent continuation of treatment.

This tedious treatment of inveterate polypi explains why a more radical method, effected in one sitting, is sought after. As far as I know, the famous laryngologist, Lambert Lack,[10] a member of this honoured society, already ten years ago favoured such a method. But I do not believe that he has found many followers, for the following reasons: The operation is much more difficult under general than under local anaesthesia; the patient cannot aid us in clearing the nose; the most important point—the possibility of exact orientation mentioned before—is not guaranteed, for even a profuse haemorrhage cannot stop the operation, since all must be removed in one sitting. For the judgement of the merits of operation under general anaesthesia I would point out the following experience in several cases, where I had to operate for special personal reasons under chloroform: In spite of good anaesthesia, good anaemization of the ethmoid, the operation was not thorough, although I had removed all visible diseased parts. I several times removed afterwards oedematous remains of the diseased mucous lining of the ethmoid, which had escaped notice during the operation. But as one should strictly adhere to the principle of removing rather too little than too much, if orientation is not perfect, one has always to face the necessity of a later operation. In general anaesthesia one has the tendency to violate this principle and remove all disease at once if possible. This I believe to be a procedure that might make the operation a very dangerous one.

II.

We come now to the problem of chronic ethmoiditis, where the suppuration predominates in the clinical picture. Here we must at once differentiate between the (1) open and the (2) closed empyema, because the treatment is different in both kinds.

1. *Open Suppuration of the Ethmoid.*—Here we must, first of all, be guided by the diagnosis. I should like to say that the procedures required for an exact diagnosis form at the same time an important part of treatment. Diagnosis of open empyema of the ethmoid is based on the exclusion of empyema of other accessory sinuses, further on the free drainage of the ducts of the ethmoid cells, and on the finding by means of the probe. In order to fulfil all these requirements, one has mostly to remove all visible polypi and hypertrophied parts of the interior of the nose. Also the middle turbinate must be sacrificed mostly, because it is partly degenerated, and partly occludes the free view of the ethmoid labyrinth by its unusual curvature. But it must be conceded that at times the middle turbinate can be saved, and therefore we should aim at saving this organ, for it possesses a functionating cavernous body. Only after making free the middle meatus we are able to state whether an ethmoid suppuration is present alone or in combination with affections of other sinuses. Also the extent of the suppuration of the labyrinth can be recognized only after obtaining completely free access to the middle meatus and repeated use of the probe. These details as regards intensity and extent of the suppuration, found out by repeated examinations, must give us a clue to the kind and order of therapeutic interference. I am strictly opposed to a method which would put down a hard and fast line of treatment for all cases.

Let us suppose, for instance, we have to deal with an open suppuration of the anterior ethmoid cells—that is, those opening into the middle meatus—and that we have succeeded by means of the probe in finding out that the pus comes out on the roof of the middle meatus, between the bulla and the insertion of the middle turbinate—that is, one of the typical openings of the ethmoid cells. The curved probe goes about 1 cm. laterally towards the lamina papyracea. Nothing is easier and more rational than to open the ethmoid from the roof of the middle meatus through this ostium ethmoidale and thus to drain the cavities containing the pus. It is most convenient to use for this purpose my ethmoid hook to break down the bony walls around the ostium and then to enlarge the cavity by means of the ethmoid curettes mentioned before, biting away the surrounding bone. Then only can one see and consider the condition of the mucosa lining the interior of the cells—can see eventually a communication with other cells. If the disease has advanced further into the ethmoid, one can open the way into the diseased cells, remove their walls, and in a few minutes one can see nearly every point, control it with the probe, and get an excellent orientation regarding all details. The latter point is most important of all. As long as this is possible and the patient can stand it, the haemorrhage not hindering, one should remove as much as possible, and open up all pus cavities. It is not necessary to remove the walls of healthy cells.

In other cases the main suppuration is localized in the infundibular cells. The entire mucous lining of the hiatus semilunaris of the infundibulum and of the cells opening into the latter is diseased. In such cases it is the best plan to resect first of all the processus uncinatus, beginning at its anterior end at the attachment to the agger nasi. A free access to numerous infundibular cells is obtained by a resection of a part of the bulla. Not all authors are so careful as regards detailed diagnosis, but remove all accessible ethmoid cells. Thus, for instance, Stenger[16] regularly starts from the bulla and removes the labyrinth from here. It must be emphasized that the endonasal removal of the infundibular cells requires great caution in using the instruments, and one must carefully consider how far to go. The variable anatomic conditions of this region postulate restriction, for the orbit is endangered if one goes too far laterally, and if the infundibular cells reach high up the roof of the ethmoid, the lamina cribrosa may be injured. Here endonasal technique has its limit. Therefore, if infundibular cells reach high up, the extranasal route is indicated; this is the resection of the frontal process of the maxillary bone. But it must be stated that with the exception of the rare cases of infundibular cells reaching high up, all other parts of ethmoid labyrinth can be removed by the endonasal route perfectly well.

In suppuration of the posterior ethmoid labyrinth we can act in a twofold way: Either we begin with the operative removal of the anterior labyrinth, and then by gradual progression we enter the posterior part if the anterior and posterior labyrinth are diseased; or we open only the posterior labyrinth if the anterior is healthy. The preferable place for opening the posterior labyrinth is situated just above the line of attachment of the middle turbinate in the upper meatus (Hajek[2]). Here my ethmoid hook can easily be applied, and will open by pulling it in a forward, inward, and downward direction the posterior ethmoid labyrinth safely. If a part of the anterior labyrinth is also opened by this procedure, it does not matter much, for sometimes it must be done in any case for better orientation. But it is superfluous to do it *a priori* in all cases, as Stenger[16] does, starting from the bulla and working one's way through the whole labyrinth. The removal of the walls of the posterior labyrinth up to the anterior wall of the sphenoid sinus offers but little technical difficulty. Owing to the depth of the ethmoid labyrinth at this point an injury of the orbit is not at all likely, but one must be on the look-out for it when working on the infundibular cells in the hiatus. Such injuries of the orbit have been observed already repeatedly, and I have seen them, too, several times, but luckily without any further harm. The large amount of orbital fat is an excellent protection against the surgical interference of less experienced rhinologists.

Local obstacles to the accessibility to the ethmoid labyrinth are given by a deviated septum. In such cases one must not hesitate to correct the deviation before any extensive operation on the labyrinth is done, for an operative procedure in the region of the infundibular cells, in presence of septum deviation, is, according to my experience, a very bold undertaking.

The number of operative interferences depends not only upon the extent of the disease, but also upon the numerous variabilities as regards the resistance of the patient, the haemorrhage during operation, etc. Here one cannot lay down a hard and fast rule; each case must be judged according to its merits.

A very important question is that dealing with the intervals between the operative sittings. One should adhere to the rule never to operate until all the reaction caused by the previous operation has subsided. To adhere to this rule is, I believe, one of the most important points of after-treatment. If we operate before the reaction has subsided, then the next reaction is more intensive, and unpleasant complications are to be expected; furthermore, one must not forget that after an operation on the ethmoid also the healthy parts of this region are swollen and can appear like polyps, which, however, return to the normal state after a few days. This makes the differentiation between healthy and diseased parts much more difficult, sometimes even impossible.

As regards the instruments to be used, we can say that the instruments mentioned previously for the treatment of inveterate polypi are here also satisfactory (for example, the instruments of Schäffer,[17] Grünwald, Hartmann, Hajek,[2] etc.). The kind of instrument is indeed of secondary importance, as every author prefers his special favourite ones to which he is accustomed. Not the instruments are important, but the brain and the hand which apply them. One can be very liberal as regards the use of special instruments, but it is not right to describe a special method of operation of the ethmoid bone only on the ground that one prefers the blunt instruments to the sharp ones used by others (Stenger).

I have mentioned already that the extent of the operation to be done at one sitting is very variable. This depends upon the individual conditions mentioned several times. But the minimum which has to be effected must also be stated; for in breaking down suppurating ethmoid cells it is important that the opening be a large one. If this is insufficient, the reactive swelling may cause retention of the secretion, with a rise of temperature and threatening symptoms. I have published a case (Hajek[19]) in which the condition was extraordinarily obstinate, so that the operation done by one of my assistants was insufficient. We lost this patient through meningitis, caused by violent reaction and retention of secretion. The case has been published. If, in the case of an ethmoid operation, we are in doubt whether we shall be able, either owing to local endonasal difficulties or special individual conditions, to obtain sufficient drainage for the pus, then it is better not to operate endonasally, but to use the external route under general anaesthesia. The aim of after-treatment is, indeed, to prevent all retention. Therefore, if possible, packing should not be used. If this is not possible the packing should be removed as early as possible, or at least it should be applied as loosely as can be. Also intensive cauterization should preferably be not used during after-treatment. Only at the conclusion of the treatment may one apply solutions of silver nitrate (Hajek[2]). The definite healing or scarring of the mucous membranes of this region takes weeks, if not months. It is effected by shallow scar tissue, and never by filling of the ethmoid cells by granulations, as Stenger[16] says. In extensive ethmoid suppuration the final result is given by a cavity transformed after removal of the septa into a deep niche, which Bosworth[20] has for the first time postulated as desirable. It is also a good plan to soften the crusts, as long as after-treatment lasts, by means of oil and ointments. Sometimes it becomes necessary to promote healing a little with silver nitrate where the granulations on the edges of the injured bone threaten to become too exuberant.

2. *Extranasal Method.*—The extranasal method is indicated:

(1) In cases of suppurative ethmoid disease, when the endonasal method was not sufficient owing to the inaccessibility of the infundibular cells, also orbital cells, reaching up very high.

(2) In cases where the accessibility to the ethmoid is restricted owing to a narrow nose, and where threatening symptoms do not permit waiting until sufficient space is obtained by an operation for the anomaly of the septum.

(3) In such cases of ethmoid suppuration which are complicated with marked disease of the frontal sinus, thus being only part of the actual disease, and its operation taking place together with that of the frontal sinus.

(4) In such cases of ethmoid suppuration, where the endonasal method could not ward off a threatening bursting of the suppuration into the orbit, or where already bursting has taken place with formation of a circumscribed or diffuse abscess. In all these cases, only the external method can bring help.

In order to make the ethmoid labyrinth accessible from the outside, Kuhnt,[21] Grünwald,[5] and Jansen,[22] have worked out practical methods. Whilst Kuhnt and Grünwald lay open the ethmoid labyrinth by an incision through the skin, Jansen has forced his way into the ethmoid labyrinth through the maxillary sinus.

Of all the methods recommended, the incision devised by Killian,[23] with resection of the frontal process, is the best foremost cases. Of course, in cases of formation of a fistula or abscess one does not always adhere to the typical operation, but has to regard the individual requirements of the case. Especially in cases of abscess formation all cosmetic considerations must be put aside: one must abstain from primary suture, and even the orbital bridge cannot be saved. For such cases the method devised originally by Riedel,[24] from which Killian's method differs only in so far as it saves the orbital bridge, can be stated to be the safest and most convenient. In cases with an extensive abscess in the orbit, especially in retrobulbary abscess, the access to the region one wants to operate cannot be large enough: one cannot pay attention to save the attachment of the trochlea; even parts of the lamina papyracea must be removed if they are necrotic.

Ethmoidectomy, recommended by Guisez,[25] will be hardly ever the typical operation in indicated cases of abscess alone, but *de facto* will approach it the more the lamina papyracea has to be sacrificed.

It is remarkable that even the radical methods do not guarantee a healing without recurrence. Also after the radical operation it will be necessary, just as after the endonasal method, to control the case for weeks, months, or years for the sake of removing now and then remaining or newly formed polypi. I have several times been called upon to remove endonasally most exuberant polypi after operations done half a year or a year before by fully competent nasal surgeons.

It must be finally stated that after operations of the ethmoid labyrinth fatal brain complications have occurred. Dreyfuss[26] and Gerber[27] have compiled these cases. Let us hope that strict adherence to the principles of operation and after-treatment mentioned above will make these sad cases less and less frequent.

3. *Closed Empyemata.*—The method of treatment of a closed ethmoid empyema has to adjust itself to the prevailing conditions of the case. This is readily understood if one considers that in such instances a certain diagnosis can be made only after operative interference. A cursory enumeration of the possibilities arising here will soon make it clear. I have mentioned already that at times after evulsion of a polypus situated high up pus wells up. The evulsion was succeeded by the diagnosis of the empyema, hitherto latent. Similar conditions prevail as regards the majority of circumscribed or diffuse dilatation of the ethmoid labyrinth. For instance, in the region of the middle turbinate or the middle meatus one sees a more or less marked bony enlargement, or tumour, the exact origin of which cannot be stated *a priori*. It can be either an enlarged middle turbinate or an ethmoid cell dilated by mucus or pus, or a bulla ethmoidalis, dilated by pathological contents, or the process uncinatus, enlarged by the same cause. The probe tells us that all these formations are cystic cavities with bony walls. Exact palpation shows a more or less distinct fluctuation here and there, which demands the opening of the cyst in that place.

If the cavity is opened, we can diagnose a suppuration in a bony cell, lined by a mucous membrane. This cannot belong to anything else but to the ethmoid labyrinth. The further consequence of our diagnosis is naturally a further removal of the osseous wall. The more we remove the bony wall, the clearer the topographic conditions will become, which, in their turn, will direct our further therapeutic interference. The endonasal opening of the closed ethmoid empyema is nearly always sufficient to effect a complete drainage. External opening is mostly not necessary, except that an extension into the orbit and abscess formation call for it urgently. The symptoms of dislocation of the bulbus which occurs in consequence of a closed empyema of the ethmoid disappear generally in a short time, so that the operation of a closed empyema is,

comparatively, one of the easiest and at the same time most gratifying of rhinological operations.

III.

The chronic suppurative inflammations of the ethmoid which appear under the symptoms of ozaena require a separate discussion, because they have a special position both from the points of view of pathological anatomy, of the clinic, and of treatment. It is not the task of this paper to consider the pathological, anatomical, and clinical positions of ozaena; therefore we shall not discuss the relation between affections of the accessory sinuses, especially the ethmoid empyema, and the concomitant ozaena so frequently met with. But in this paper it must be pointed out that the suppurative inflammation of the ethmoid bone must be treated on the same lines as the hyperplastic inflammation of the ethmoid bone, but that the indications for their operative treatment must be very much restricted in ozaena, as the therapeutic gain is mostly quite insignificant. According to my experience, only those cases of ozaena with chronic ethmoiditis should be operated on where the ethmoid labyrinth or part of it is the main source of the suppuration, and where we can therefore hope to improve or stop the bulk of suppuration by a change in the condition of the ethmoid. Only in cases of threatening complications of a closed empyema we may abstain from conservative methods.

IV.

The treatment of the inflammatory processes of the ethmoid accompanying tuberculous and syphilitic disease, as well as malign tumours, depends absolutely on the primary disease, therefore we need not discuss it here.

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THE treatment of suppuration in the ethmoidal cells may be operative or non-operative, and the former may be conducted entirely through the nose, or involve an external wound. In my opinion, operative measures are invariably indicated, and other measures—even the fashionable vaccine therapy—are useful only as adjuncts. Suppuration in the ethmoidal cells is almost always accompanied by polypus, and frequently by suppuration in other accessory sinuses; also orbital or other external complications may be present. It is probably more often productive of serious symptoms than suppuration in any of the other sinuses. These symptoms are such as to necessitate treatment for their relief, even though it is not necessary, nor in all cases advisable, to insist on absolute cure of the disease.

Piecemeal Operations.—The methods of piecemeal operations through the nose under local anaesthesia I need hardly discuss, as I consider them both inadequate and dangerous. They belong to the older days of rhinology, before surgical experience had been brought to bear upon the subject, when the rhinologist was still too timid to employ general anaesthesia in operations involving bleeding in the nose, and was afraid of touching the ethmoidal region unless he had the patient sitting upright and could "see" exactly what he was doing. These "operations" required constant repetition; weekly or almost daily treatment, extending over two or three years, was necessary to produce even a "half cure." Patients would rarely submit to this, and the few who did were usually reduced to a condition of profound neurasthenia. Fewer still would admit that their nasal symptoms were improved, whatever might be the view of their enthusiastic physician. I am speaking only of extensive disease; when only one cell, such as the cell in the anterior end of the middle turbinate, is involved, a trivial operation with local anaesthesia is sufficient, but then only a single sitting is required.

Ethmoidal Curettement.—This operation still appears the best for most cases of ethmoidal suppuration. Take a typical case presenting more or less the following symptoms: There is nasal obstruction, purulent discharge, headache, neuralgia, or various aching pains, often associated with mental depression and other neurasthenic symptoms. One, often both, sides of the nose are stuffed with polypus, or the upper part of the nose is filled with small oedematous granulations; between the polypi and granulations pus exudes. Sometimes the pus may not be apparent at first, and the operator may commence by snaring the polypi, and only then discover the extensive disease in the ethmoidal region. In such a case, when it is quite certain that there is extensive ethmoidal disease, with suppuration in many cells and polypoid degeneration of their lining membrane, possibly also suppuration in other accessory sinuses, the operation which I have described as "ethmoidal curetting" should be carried out. It is well to pack the nose half to three-quarters of an hour before the operation with a weak solution of cocaine and adrenalin, as it permits a better view of the parts, and the danger of reactionary haemorrhage appears to be remote. This also facilitates exploration of the antrum. A general anaesthetic should be given, and the patient should lie on his right side with the head slightly raised and turned to face the operator, who sits on a stool by the side of the operating table and uses a reflected light, as in ordinary rhinoscopy.

If there is any suspicion of antrum suppuration, the first step should be to explore that cavity, and if pus is obtained, it is best to deal with it at once. In these cases I consider a radical operation on the antrum is necessary, and therefore proceed to remove the anterior end of the inferior turbinate and the whole inner wall of the antrum. The attention is then turned to the ethmoidal region. Any large polypi should be removed with forceps, Luc's forceps being probably the best, and the middle turbinate, if present, clipped away with Grünwald's forceps. Directly this has been done and the ethmoidal cell region exposed, the ring knife should be introduced. As I have said previously and would like again to emphasize, the curette should be introduced gently with the blunt edge of the ring towards the septum, and passed as far upwards and backwards as possible without using force. The blade is then sharply dragged horizontally forwards along the ethmoidal region with the sharp edge directed *outwards* towards the orbit. On no account should the cutting edge of the blade be turned upwards towards the cribriform plate. The scraping is continued rapidly and with a fair amount of force until all friable tissue is removed. A great deal of polypoid mucous membrane and bony débris is usually scraped away, and almost the whole of the lateral body of the ethmoid can be thus removed. Often it will be found that a large communication has been made into the upper part of the antrum, and frequently the inner wall of the orbit has been broken down and the orbital periosteum exposed.

Other details of this operation I have frequently described, and will pass on to consider the results. I

have taken some trouble, and have given others considerable trouble, to ascertain the results of this operation, not by the common but fallacious way of consulting published reports, but by circularizing some of my busiest and best friends. I am greatly indebted to them for their kindness in replying. Many of them have carefully looked up the notes of their cases, and have supplied me with valuable statistics and suggestions. In particular, I am indebted to Dr. J. W. Bond, Mr. Charles A. Parker, Mr. Ernest Waggett, Mr. Fitzgerald Powell, Mr. Gay French, Mr. Charles Heath, Mr. Herbert Tilley, Mr. G. Constable Hayes, Dr. Bronner, Mr. E. W. Bain, and Mr. Frank Rose. From grouping their reports and from the notes of my own cases, I think some definite conclusions can be formed.

As regards the ultimate condition of the nose, the results of the operation are excellent. The removal of such an extensive portion of the bones and mucous membrane rarely gives rise to any ultimate inconvenience to the patient. The upper portion of the nose becomes lined with a healthy white scar membrane, and only occasionally is there any undue dryness or crusting in the nose or post-nasal space. So far from destroying the olfactory sense, the patient often regains the power of taste and smell which he may have lost for years. In all cases the result is not so successful as this. There may be a continuance of suppuration or some remains of polypoid degeneration. Many reports state that subsequent trimming away of tags under cocaine anaesthesia has been necessary. It must be borne in mind that a continuance of the suppuration may mean disease in other sinuses. The clearing away of the ethmoidal cells facilitates the diagnosis of this, for when the antrum has been explored and the ethmoidal region thoroughly curetted, pus coming down from high up in the front of the nose can only come from the frontal sinus, whilst pus at the back of the nose must come from the sphenoidal sinus, the ostium of which has been freely exposed to view by the removal of the middle turbinate and the posterior ethmoidal cells. In this connexion one must also remember that the antrum, even if healthy before the operation, may become infected at or soon afterwards. In other cases where the disease has been very extensive and the operation for one reason or another not carried out so thoroughly as it might have been, a *partial success* may be obtained, and the patient's symptoms, such as pain, headache, and the sense of nasal obstruction, may be relieved, although the appearance of the nose may be anything but satisfactory. Lastly, there may be *adhesions*. These are due to injury of the septum during the performance of the operation, and they may usually be avoided by care at the operation and in the after-treatment. The use of cocaine and adrenalin as above described diminishes this risk. *The dangers of the operation* I wish to consider fully.

1. *Mortality.*—In my own practice, in over 300 cases, I have, unfortunately, had one death. This was due to neglect of the precautions which I have above emphasized. The case was one of chronic ethmoidal suppuration associated with asthma; the patient took the anaesthetic badly, was somewhat congested, and bled freely, so that it was impossible to see what was done. The middle turbinate and ethmoid seemed unusually dense, and the curette produced very little effect. Too much force was used, and the blade of the instrument was turned upwards. The patient developed meningitis, and died a week later. In the reports which I have had from eleven different operators, eight state that they have had no deaths; the other three report six deaths. Parenthetically, I may remark that these figures illustrate the advantage of the method of investigation, for there are no deaths recorded in the published accounts of the operation. From a study of the details I should say most of the deaths were avoidable. Two cases, both young girls, did well until the fifth day. They were in wards which were unusually septic at the time, and one was dressed by a house-surgeon suffering from a septic throat. Two of the others were old people over 60, their noses were widely distended with polypi, and they had had growths removed for over thirty years. One of these cases apparently died from traumatism, a cribriform plate which was very brittle being fractured; the other died of sepsis. All the deaths were due to meningitis; I have heard of no death from any other cause. In considering these results it must be borne in mind that the operation is a serious one, but it should only be carried out to cure an undoubtedly serious and incapacitating disease, and therefore some risk is justifiable. Also remember that these statistics date from the earliest days of the operation before any experience had been gained, and whilst some surgeons considered it an absolutely safe procedure, and therefore neglected the precautions which we now know to be necessary. I quite agree with the opinion expressed by Dr. Bond, one of our most cautious and level-minded colleagues, who has had large experience in this operation. He considers that there is little danger (1) if the patient is not aged, (2) if the operation is done skilfully, and (3) if the operation and after-treatment are carried out with full aseptic precautions and the patient's surroundings are free from sepsis. With regard to age, I used to confine the operation to patients under 40 years, and would still hesitate to operate on people over 50. Between 40 and 50 each case may be judged on its merits: there can be no hard and fast age limit. As age increases the ethmoid becomes more brittle, and there is more danger of fracture of the cribriform plate, and the patient is less able to stand the loss of blood, the shock of the operation, and the complications arising from blood entering the air passages.

With these precautions I think the risk could be reduced to less than 5 per 1,000; it would certainly not be a tenth of the mortality of operations on the frontal sinus. There is no alternative method giving anything like such good results with so small risk.

2. *Septic Troubles.*—In some of my early cases there was considerable fever two or three days after the operation. This rise of temperature almost certainly arose from packing the nose. For many years I have given up this practice, and the after-treatment has consisted in gently irrigating the nose daily with a mild, unirritating lotion, such as warm boric acid solution. Since then I have had no trouble with fever. Other operators have been led to abandon packing for the same reasons. Some advocate the use of vaccines preparatory to the operation, and think the absence of fever subsequently may be traced to this. These views are open to discussion: I am not convinced of their correctness, and would not, with our present knowledge, advocate vaccine treatment.

3. *Haemorrhage.*—Bleeding is often profuse at the time, but rapidly ceases. Only once or twice has it been necessary to pack the nose for this reason. Should the bleeding really be severe and not yield to simple remedies, such as the application of cold to the face, then the nose must be packed, and I would recommend the introduction of strips of gauze into the ethmoidal region. These should be removed twelve to twenty-four hours later, and not replaced unless again required.

4. *Orbital Complications.*—When the orbital plate has been removed or fractured and the periosteum exposed there may follow some effusion into the orbit or a severe "black eye" may be produced, occasionally with some pain or impaired mobility of the globe. In two cases where ethmoidal disease was associated with antrum suppuration an abscess formed in the lower eyelid. All the other cases of "black eye" have passed off in a few days without subsequent trouble.

5. In one case privately reported to me and published in my book, and in another published by Robinson, of Brisbane, optic neuritis and blindness have followed the operation. It seemed doubtful if the operation itself was the direct cause of the trouble; in one case the operator ascribed it to the rapid loss of blood.

No other ill results have occurred, so far as I know, in my own practice or in that of others. A consideration of these results shows the necessity for care and skill in performing the operation and in avoiding unsuitable cases. The operation remains, in my opinion, the best method of dealing with uncomplicated cases of chronic ethmoidal suppuration.

Finally, the *various external operations* and their indications. The latter depend upon the complications that are present. When there is definite evidence that the case is complicated by frontal sinus suppuration with such symptoms as render an operation on the frontal sinus advisable, then I would recommend that the ethmoid be treated at the same time and through the same incision. The skin wound is extended a little lower down and the bone freely cut away to expose the infundibular region, when the anterior ethmoidal cells come into view and

may be freely cut away or curetted. The ring knife again seems to me the safest and most effective instrument to use, and it may be inserted through the wound and guided by the finger in the nose, or vice versa. It is hardly correct to state that it is possible even by this method to see what is being done. The bleeding and the small external opening render the view obtained of little use.

Watson-Williams's operation on the frontal sinus gives an excellent approach to the anterior ethmoidal region. Although I have little experience of this method in cases of suppuration I have often performed it in malignant disease, and can testify to the excellent way in which the ethmoidal region is exposed. By this operation, more than by any other with which I am acquainted, can the ethmoidal region be brought into view and a thorough dissection made right through from front to back; even the sphenoidal sinus could be opened if necessary.

An external operation should also be performed when any orbital complications are present. I think in every case in which there is a fistula, or an abscess, or any swelling in the orbit, possibly or probably of ethmoidal origin, it is far safer to operate through the orbit than to attempt an operation through the nose. The incision is made around the inner angle of the orbit, similar to the incision for the frontal sinus but a little lower, and carried down to the bone. The periosteum over the inner wall of the orbit is separated from the lacrymal plate, and the sinus or abscess is thus exposed and traced to its origin. The ethmoidal cells are thus freely opened up as far back as necessary. The operation must be completed by making a free communication between the orbit and the nose, so that the subsequent drainage can be carried out from the nose. Orbital drainage alone must never be relied on.

The results of these external operations are exceedingly good. So far I have had no deaths nor any serious complication, but they are more serious than ethmoidal curettement. They involve more disturbance to the contents of the orbit, more shock, and a more prolonged convalescence. I certainly would not recommend them as the routine method of operation in chronic ethmoidal suppuration, but would reserve them for cases in which orbital or other complications are present. I hope other speakers, and especially those who have had more experience of Watson-Williams's excellent method, will give us their views on this subject.

With reference to *non-operative methods*, a very few words will suffice. Vaccine therapy is the only treatment which has been recently brought forward as an alternative to operation. Although I have had little experience of it, that experience has been so unfavourable that I regard the treatment as useless. My experience has been limited to cases in which an operation has failed to give a wholly successful result. When, after the cavities have been opened up—and in this connexion I may speak of antrum and sphenoidal as well as ethmoidal suppuration—a purulent or muco-purulent discharge has persisted, I have referred the patients to various pathologists in order that cultures may be made of the organisms present and vaccines prepared. As in all these cases reasonably free drainage had been established, they might be looked on as very favourable for vaccine treatment, yet I cannot honestly say that in any single case have I seen definite improvement, although the treatment has been continued for [illegible].

Lastly, it has also been recommended that the patient be prepared for operation by a course of vaccine treatment, but if the vaccine cannot cure a case in which there is but a little remaining discharge, it is not likely to do much good where no drainage has been established. I doubt if it would diminish the risk of operation, but upon this point other views may be held.

Personally, I should prefer to rely on carrying out these operations under the most favourable hygienic circumstances [illegible] with full antiseptic precautions; and after [illegible], wherever possible, the patient should be [illegible] I suppuration heal much more rapidly if they can be sent into fresh, especially seaside, air, than they do in the dirty wet atmosphere of a town.

To sum up, there are three methods of dealing with chronic ethmoidal suppuration, each of which has its advantages and indications, and also its disadvantages.

1. When there is frontal sinus suppuration, or orbital, or other complications, an *external* operation seems to me always advisable.
2. In all other cases where the patient is otherwise in good health and is not too old, ethmoidal curetting should be carried out. In some of these cases one should be content with removing the patient's serious symptoms, although signs of suppuration may continue.
3. In the aged and weakly one must be content to keep the patient as comfortable as possible by an occasional operation under local anaesthesia.

DISCUSSION.

Dr. William Ballenger (Chicago) said he would not defend his technique other than to say that in his hands it had proved eminently satisfactory. There must be a reason why some cases were acute and some chronic. The former rarely had any obstruction in the region of the middle turbinate, but this condition existed in practically all the chronic cases. The middle turbinate might be enlarged in a variety of ways, the septum deviated, etc. In acute disease there was a transitory lowering of the vitality of the mucous membranes of the body. This he considered a predisposing cause. He quoted Ziegler as saying that any cavity lined by mucous membrane, and that had its drainage partly closed, was prone to infection and inflammation. The speaker recognized that there were cases requiring only partial operation, but he would deal with the more complete methods. He was led to his method by noting that there were three attachments of the ethmoid—sphenoidal, cranial, and orbital—and that after making cranial and orbital incisions, the ethmoid could be removed *en masse*. Good drainage gave the best results, and avoided bad sequelae, and he had noticed that when he operated upon the old lines of partial removal there was considerable swelling and obstruction to drainage afterwards, but since he had adopted the more radical method this had never occurred. He could not explain his technique, but he would do his best to illustrate his procedure by diagrams, which he drew upon the board as required. He had had only one death since he adopted his radical method, and that was due to meningitis, which had evidently been present before operation, and then became acute. Emphysema of the orbit had twice occurred, and disappeared in twenty-four hours. He had never had orbital abscess or cellulitis, or any other complication of any moment. It was important not to pack. Anterior or posterior ethmoidal arteries did not give any trouble, but a branch of the middle meningeal might do so. He operated under local anaesthesia, allowed the patients to wait a little for possible haemorrhage, and then sent them home, and had done over 200 cases without being called to check haemorrhage. The after-treatment was done at his office. It consisted of a pledget soaked in a 10 per cent. aqueous solution of ichthyol and placed for twenty minutes in the region operated upon. It was then removed, and the patient went home. He was doubtful as to the value of vaccine treatment.

Dr. Mosher (New York) said: Of all intranasal operating, manipulations carried out in the ethmoidal labyrinth have been to me the most unsatisfactory and disquieting. This condition of affairs has persisted in spite of abundant opportunities, of which I have freely availed myself, to make use of a liberal supply of anatomical material. Being in this unfortunate frame of mind, I have preferred to do all extensive ethmoidal operating by the external route. During the last twelve months, however, it has been my good fortune to have the applied anatomy of the anterior part of the ethmoidal labyrinth emerge, in a measure, from the mist which had so obstinately shrouded it. As a result, I have returned to intranasal ethmoidal operating with an increase of confidence which I had despaired of attaining. The following is a short summary of a paper on Intranasal Surgery of the Ethmoidal Labyrinth, which I presented at the last meeting of the American Laryngological Association. The

article has not been published, so I hope that my reading this extract here will not be looked upon by you as a discourtesy, especially when I add that I feel the responsibility of speaking before this distinguished body of men keenly, and hesitate to trust myself to speaking without notes. The summary is as follows:

The anterior boundary of the ethmoidal labyrinth is made by the internal angular process of the frontal bone and the posterior surface of the ascending process of the superior maxilla. The labyrinth cannot be entered effectively unless the curette is carried outward behind the ascending process of the superior maxilla, toward the lacrymal bone. Removing the anterior end of the middle turbinate and curetting upward and not outward does not open the labyrinth to any extent. The internal angular process of the frontal bone makes two-thirds, or the whole of the bony ring, which is the first part of the naso-frontal duct. The best guide to the duct is the posterior surface of ascending process of the superior maxilla. In a large number of cases the naso-frontal duct is not a tubular canal, but consists rather of a bony ring at the beginning and then becomes a triangular antro-posterior slit. This is more like an ethmoidal cell or an irregular meatus than a duct. The nasal frontal duct tends to run from without inward and to come into relationship with the anterior end of the extreme upper parts of the middle turbinate. When the drainage canal has the cell form, the anterior end of the middle turbinate makes its inner boundary. The duct, therefore, is reached most easily through the nose and through the anterior end of middle turbinate in line with the superior turbinate. A curette introduced at this point and carried outward toward the lacrymal bone and then withdrawn a little and carried straight downward and backward enters the anterior part of the labyrinth behind the ascending process of the superior maxilla and breaks down the cells through which the naso-frontal duct runs, destroying both the cells and the duct. Very little curetting is required to convert the anterior part of the labyrinth into a single cavity. In the roof of the chamber, secured by these manipulations, and usually in the anterior outer angle, the opening of the naso-frontal duct is placed.

If it is the wish of the operator to clean out all the ethmoidal cells, the posterior half of the labyrinth is entered by piercing the attachment of the middle turbinate and by curetting still further backward, using all the while the outer side of the middle turbinate as a guide. If the head of the patient is held level, the middle turbinate guides the curette into the posterior ethmoidal cell. Often the posterior half of the labyrinth is a large cavity made up of only one or two cells. This portion of the labyrinth has been, as it were, exenterated by nature. When the curette brings up against the back wall of the labyrinth, the remaining part of the middle turbinate and the lower half of the superior turbinate are removed. Then the posterior part of the superior turbinate is taken away flush with the front face of the sphenoidal sinus. The operator now recognizes the inner part of the front face of the sphenoidal sinus, which is free in the nasal cavity, and the outer part, which has a common wall with the posterior ethmoidal cell. The posterior upper outer angle of the posterior ethmoidal cell is dangerous to curette or to probe. In this locality it is of the utmost importance that the operator should be sure of his landmarks. He orientates himself by finding the superior rim of the choana and by differentiating the free face of the sphenoidal sinus by proceeding upward from the rim of the choana close to the septum. Having made out the extent of the free face of the sinus, the width of the common wall between the sphenoidal sinus and the posterior ethmoidal cell is determined. The dividing line between the two parts into which the anterior face of the sphenoidal sinus is directed is made by the obliquely vertical attachment of the superior turbinate.

The commonest mistake made by the operator is to get lost in the posterior ethmoidal cell. This comes about by curetting too high and too far outward, and by considering the posterior wall of the posterior ethmoidal cell as the whole of the front face of the sphenoidal sinus instead of the outer half of it. This mistake, if persisted in, will carry his instrument into the brain. Insufficient removal of the posterior part of the superior turbinate, and allowing the head of the patient to become tipped upward, are the chief causes of this confusion. After the landmarks of the front face of the sphenoidal sinus have been cleared and recognized the sinus is entered near the septum, if possible through the ostium, and the whole of the anterior wall removed.

The mishaps of the operation are entering the orbit through the lacrymal bone and entering the posterior part of the anterior fossa of the cranial cavity at the apex of the orbit. The first accident is trivial, the second is fatal.

Puncture of the anterior end of the middle turbinate on a level with the superior turbinate for catheterizing the frontal sinus or exenteration of the anterior ethmoidal cells is readily accomplished under cocaine anaesthesia. For the complete removal of the anterior and posterior cells, especially if this is to be accomplished at one sitting, it is more satisfactory to use a general anaesthetic.

Dr. Watson-Williams (Bristol) was convinced that ethmoiditis and resulting polypus formation was an infective process; this view he urged years ago, both in this Section of the Association and more recently at the Royal Society of Medicine, when he endeavoured to prove that the infection first involved the mucosa, and, when it extended to the periosteum, rarefying and formative osteitis occurred. The process was not primary affection of the bone, but of the mucosa, and the polypi were probably the result of a localized obstruction of lymphatic vessels, leading to an ever-increasing localized oedematous infiltration. The process of polypus formation extended over a long period, and in the earlier stages there might be no macroscopic appearances indicative of what was occurring, the symptoms being restricted to sneezing and rhinorrhoea. Hence the desirability of caution in prognosis: one never could tell the extent of processes which were only in the developmental period. In the same way polypi formed in the antrum or frontal sinus, and in the Zuckerkandl collection at Vienna examples of a frontal sinus and of a sphenoidal sinus polypus extending down into the nose were shown, and a few days earlier he had had a case of an enormous firm post-nasal polypus which grew out through an accessory maxillary ostium. Once an ethmoiditis became established as a chronic pathological process, operative procedures to ensure free drainage were essential to a cure. Personally he preferred cutting forceps to the curette, moderately large for the lower ethmoidal cells, but small and very light for opening up the higher cells, whether posterior or anterior, and particularly for the infundibular. Those that he showed he had found most suitable and safe. He went very cautiously here. Moreover, he avoided too free a removal of the vertical plate of the middle turbinated body. Only under exceptional circumstances were external operations necessary, except when the ethmoidal disease was complicated by frontal sinus involvement, and with the small forceps he had shown it was often possible to free the fronto-nasal duct sufficiently to allow of lavage and drainage. He was very glad to hear from Dr. Lambert Lack that he had found his osteoplastic method so useful, and that it afforded a better exposure than any other available procedure. He did it relatively seldom, and only when the necessity of a radical operation was imperative, but he thought it was safer to see what one was doing when one had to deal surgically with the higher fronto-nasal ethmoidal cells. Finally, as regards the use of vaccines, his experience had not encouraged the belief that they would avoid the necessity for operation, however desirable they might be after operation. But in sinusitis due to, or associated with, streptococcic infection he thought the previous injection of full doses of anti-streptococcic serum tended to prevent septic infective processes due to the operation itself.

Mr. Herbert Tilley (London) thought that all would agree that the principle underlying the treatment of chronic ethmoid inflammation was removal of the main disease and the establishment of free and permanent drainage. Opinions only differed as to the best method of carrying out the latter. Professor Hajek, as characteristic of the Austrian and German speaking race, preferred as a general rule to proceed slowly, with great thoroughness and minute attention to detail, and since the majority of his patients were also of this type of mind and nurtured in discipline, he attained his goal, and no one would dispute how excellent were the results. In England, however, both the patient and the surgeon preferred to get rid of the trouble as quickly as possible, and few of the ordinary English patients, hospital or private, would tolerate numerous sittings for the gradual removal of ethmoidal disease, and the time involved in the treatment. Hence the speaker preferred Dr. Lack's method—namely, a preliminary application of cocaine and adrenalin to the affected region, followed by a general anaesthetic. The diseased ethmoidal cells could be quickly removed; haemorrhage could be checked by strips of gauze moistened in hydrogen peroxide solution or adrenalin. He preferred ethmoidal forceps to the curette, but that was merely a personal predilection, and did not affect the principle of the operation. Much information could be gained as to the progress one was making during the operation by insertion of the little finger, and one assumed that the surgeon would be wearing rubber gloves. Soft or diseased structures felt very different from the hard, resistant, normal ethmoidal cells. When very free access was desired, the speaker would prefer to enter the nasal

cavity under the upper lip, and remove the ascending process of the malar bone (Denker's method) rather than to make an external opening. The first method gave admirable access to the ethmoidal mass, and left no visible scar. When chronic ethmoidal suppuration was combined with frontal sinus suppuration, he thought that it was daily becoming more feasible to relieve and cure these cases by intranasal operation, that is, removal of the diseased ethmoidal cells, enlargement of the fronto-nasal canal, followed by irrigation and ultimate destruction of the degenerate portion of the lining mucous membrane of the frontal sinus by the use of strong solutions of silver nitrate.

Mr. JOBSON HORNE (London) said that whilst congratulating the Section upon the happy solution to the ever-increasing difficulty in finding fresh subjects for discussion, he thought the title might lead to a misconception. For their own purposes the title was useful, inasmuch as it defined the scope of the discussion, but in the minds of others it might create the impression that chronic suppurative ethmoiditis was an entity. It was quite evident from the opening papers that the sphenoidal or the frontal sinus, or both, were not uncommonly involved. It was as well, therefore, not only on anatomical and developmental but also on clinical grounds, to regard the frontal and sphenoidal sinuses as more highly developed parts of the ethmoidal labyrinth. He urged the use of *x* rays in the investigation of the extent of the disease and of the presence or absence as well as of the size and situation of the larger cells. With such anatomical vagaries it was impossible to define any routine treatment; one had to treat the individual case. He had not been convinced by the arguments put forward in favour of extreme measures being immediately adopted. Personally he was opposed to operations in the nasal regions which were not carried out under ocular inspection. He ventured to ask whether any one of those present would personally submit to curettement or to the exenteration of the ethmoidal labyrinth prior to the adoption of milder measures.

Mr. WESTMACOTT (Manchester) always used the method of operation by the intranasal route described by Dr. Hajek, and never in any chronic disease had it been necessary to do the external operation. He used general anaesthesia, and removed the whole middle turbinal, and then broke down the septa of the labyrinth with the hook and punch forceps. The nose was packed with gauze steeped in liquor hamamelidis (*B.P.*) for one to four or five hours, and then removed without renewal. Daily lavage and application of protargol-argyrol, or iodine tincture, and occasionally pure carbolic acid. He would like to know how Dr. Hajek dealt with obstruction by the septum; further, could he explain the occurrence of a neuralgia in the nasal process of the superior maxilla which was occasionally met with? It was very persistent. He agreed with Mr. Tilley that the usual British patient would not have patience for slow methods. He had also found the sense of smell return after operation and not in others. Why was this? Was it ascending degeneration of the nerve or mechanical pressure causing death of the nerve? In other cases, even with complete filling of the nasal cavity with hypertrophies, there was no anosmia.

Dr. BRONNER (Bradford) was in favour of using large flat forceps, removing as many of the diseased cells as possible under direct examination, and to try and get permanent free drainage. Lack's operation was useful in some cases, especially when the patient could not afford the time to be examined and treated frequently. It was not fair to describe it as the operation of the future. He hoped that at the International Medical Congress next year Dr. Ballenger would demonstrate the operation he had described.

Dr. WILLIAM HILL remarked that there were probably few present who had performed a considerable number of ethmoidal operations of magnitude who could claim a clean record as regards mortality. Dr. Lack had not shirked this question of fright and perhaps unavoidable risk. He was, however, not quite able to follow Dr. Lack's line of reasoning when he advised that patients over 50 with ethmoidal disease should be left severely alone as far as any extensive exenteration was concerned, holding that surgical measures in such cases were literally "surgical interference," and more dangerous than the neglected disease. Seeing that fatal complications were usually due to stirring up an infected area with resulting septic meningitis, and not to shock and excessive bleeding, which two latter might be urged as a contraindication to operation in those past middle age, he doubted if the slight mortality from intracranial septic infection would be found any greater in the old than in the young; if the former might be well advised to put up with the disease in spite of its depressing effect on the patient's general well-being, on what grounds could young adults be more appropriately urged to run the slight operative risk? As far as he could gather, the danger of subsequent fatal septic meningitis bore no relation to the magnitude of the operation or to the microbic findings. One of his hospital patients had died from diffuse meningitis after so slight an operation as removal of the anterior extremity of the middle turbinal. It was true that there were two other unexpected deaths from sepsis in the same ward during the same week. His (the speaker's) remarks concerning the apparent want of proportion between the magnitude of the operation and the risk of fatal intracranial sepsis were not intended to apply to operative mishaps where the cranial cavity was accidentally opened up. He had heard much of the danger of injuring the cribriform plate; as a matter of fact, that structure was protected by its high position above the extremely narrow highest meatus and was extremely difficult to get at if fairly large-sized forceps and curettes were used, and this was an argument against the small cutting forceps advocated by Dr. Watson-Williams. Although he (the speaker) usually relied on the method of operating favoured by Dr. Lack, yet he was bound to admit that since he had made a pilgrimage to Bristol to watch Dr. Watson-Williams perform his osteoplastic operation he realized that that ingenious procedure was the ideal one to employ in those severe cases of pansinusitis in which there was not only extensive ethmoidal disease, but there was also involvement of the frontal and sphenoidal sinuses. By no other method that he knew of could such an extensive exenteration of the diseased sinuses be accomplished. One was not only comparatively close to one's work but actually in touch with it, for even the more posterior ethmoidal cells and the sphenoidal sinus could be opened up under the combined guidance of the eye and finger; and it appeared to him much easier by Watson-Williams's operation to avoid getting out of bounds—for example, entering the orbit or cranial cavity. It had been a great treat to him to listen to Dr. Ballenger's lucid exposition of his particular method aided by the excellent blackboard illustrations. The essential drawback to an operation performed from behind forwards was that it was a blind method, and its successful performance depended on the sense of touch and accurate direction; moreover, in using a single instrument, cutting not only vertically but also transversely, it had to be borne in mind that, whilst the posterior cells were wide transversely, the anterior ones were often extremely narrow, and there was risk of opening the orbital cavity. It was true this was not often followed by serious results if the periosteum were intact. Dr. Mosher's modification of the intranasal method of first perforating the infundibulum and upper anterior ethmoidal cells high up above the region of the *agger nasi* instead of the usual method of first entering the bulla (Killian) certainly seemed to possess the theoretical advantages he claimed for it on anatomical grounds, and he (Dr. Hill) was glad to hear that Dr. Mosher had found no great difficulties in successfully putting it into practice. Their object, no doubt, should be to open up as many as possible infected cells which were accessible, but when Dr. Ballenger and others used the expression, "complete ethmoidal exenteration," they were certainly claiming a little too much for operations performed through the nose; for the upper ethmoid cells in some instances formed a quite inaccessible labyrinth in the base of the skull, exceptionally permeating the wings of the sphenoid. He had seen a specimen where the most outlying cell was quite 2 in. distant from the nasal cavity. This was the reason why even a very extensive exenteration often resulted in relief rather than cure, and it was rather surprising that their necessarily

incomplete operations afforded so much relief as they usually did.

Professor Hajek, in his reply, briefly stated that, of course, opinions varied, but he adhered firmly to the principle of seeing everything. He advocated no definite method of operation, for most ethmoids differed; but he believed in removing middle turbinate, and then diagnosed as to extent of trouble, and then the extent of his operative procedure depended upon the extent of the disease. Dr. Ballenger did not desire to defend his technique, but his experience had taught him that the better the drainage the less the danger of secondary trouble.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

INGUINAL HERNIA IN A CHILD, WITH A SUPRARENAL REST IN THE SPERMATIC CORD.

J. R. H., aged 19 months, was admitted under Mr. Hawthorn on August 14th, 1912, with a large left scrotal hernia, which had been present since one month after birth. A truss had been worn for six months, but without benefit. The patient's general health was good, and both testes were fully descended. The usual oblique inguinal incision was made and the external ring exposed. The external oblique aponeurosis was not divided. The hernial sac, which proved to be of the funicular type, was defined, opened, separated and removed after ligature of its neck. The peritoneum appeared to be quite normal, and no fluid was present. A small oval body, of the size of a split pea and of a yellowish colour, was seen lying on the structures of the spermatic cord. It was remarked that it resembled the adrenal body of the rabbit, and its possible suprarenal nature was suggested. A further suggestion was made that it might be a tuberculous deposit, but against this was the fact that it was unconnected with the peritoneal sac, and also that the peritoneum was apparently healthy, no evidence of tuberculosis being present. It was sent for micro-section. The subcutaneous tissue with Scarpa's fascia was sutured with catgut and the skin united by subcuticular silkworm gut.

The microscopic section of the specimen showed it to be a suprarenal rest (Professor McDonald).

I am indebted to Mr. Hawthorn for permission to publish the case.

Charles F. M. Saint, M.D., M.S.,
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DERMATITIS VENENATA.

I have occasionally seen, in summer, dermatitis venenata attacking the hands and arms of gardeners who had handled the cut stems of *Heracleum giganteum*, a plant largely used in the arrangement of perennial borders. In the worst case this year the patient had cut down about two hundred plants, and the hands and arms had become smeared with the sap. Wherever it touched it produced a glow, which was soon followed by intense itching and burning; then an erythemato-vesicular eruption appeared with well-marked infiltration of the skin. Unlike the irritation caused by *Rhus toxicodendron*, it never spread to other parts of the body, but was limited to the areas actually touched by the sap. The toxic agent is probably angelic acid. In its acrid character and sweet aromatic fragrance the sap of Heracleum resembles that of Angelica, the two plants having close botanical relations. Angelic acid, like crotonic acid, is a monatomic acid of the acrylic series. I do not know that Angelica possesses any real antiseptic virtue, but it has always enjoyed a great reputation as a prophylactic against infection—indeed, it is supposed to have derived its name "ab immensa contra venena facultate." Angelica water was in great repute in the Middle Ages as a remedy against the plague, and Fuchs calls it "das aller-edelst wasser das man haben mag für die Pestilenz," and so also du Bartas:

> Contagious aire ingendring Pestilence
> Infects not those that in their mouths have ta'en
> Angelica, that happy counterbane.

As an antiseptic dressing to wounds it was one of the principal ingredients in the balsam of the Chevalier de Saint-Victor which claimed to heal in eight days rapier wounds received in affairs of honour, "à moins que la plaie ne fût mortelle"!

The acridity of the sap of Heracleum, Angelica, and similar plants varies with the season of the year, and all skins are not equally susceptible to its action. A lotion or thick pigment of calamine and creta preparata applied with a soft brush and covered with absorbent gauze gives great relief in this form of dermatitis.

Ficus Carica.—It is not so well known that a dermatitis may be produced in many people by the sap of the common fig. If the acrid milky sap of the cut shoot or leaf-stalk be allowed to drop on the hand it gives rise to a burning sensation with tumefaction at the spot; this soon dies away, but is followed by permanent pigmentation of the skin. I saw recently a patient with ten or twelve round bronze-coloured spots on the back of each hand which were caused by drops of fig-sap thirty years ago. The maculae are not raised, and there is no hyperkeratosis such as chestnut-sap produces. If the hands are washed at once no pigmentation occurs.

In an old manuscript in the Communal Library at Cambrai a number of *recettes* are given which were in use in the thirteenth century. Curiously enough, black stains on the teeth were removed by using a powder of charred fig boughs, so that by removing stains from the teeth the fig may claim to make up in some measure for occasional pigmentation of the skin. In the south of Europe the sap of the fig is in use as a common counter-irritant or vesicant, but it occasionally gives rise to ulceration—"adeo ut liquor ejus. et foliorum succus, non solum mordeat aut extergat vehementer, sed etiam exulcerat et ora venarum aponet et formicarias verrucas exigat."

The fruit of the fig speedily loses its acrid character, becoming sweet and demulcent, and from the days of Hezekiah it has been a popular poultice for boils and sores.

Wilton, Salisbury. Charles R. Straton.

STRANGULATED INGUINAL HERNIA IN AN INFANT.

The report of Dr. G. E. E. Nichols's case of strangulated inguinal hernia in an infant induces me to record the following very similar case.

On July 11th, 1912, at 3 p.m., I was called to see an infant born on May 19th, and therefore seven weeks and four days old. The mother told me that the child, who was breast-fed and previously perfectly healthy, started to scream in the morning, and continued to do so until I saw him. I found a lump filling the right side of the scrotum, evidently an inguinal hernia. The child had vomited two or three times, and looked pale and pinched. Under an anaesthetic it was impossible to reduce the lump, so I removed the child to a nursing home and cut down on the hernia, which was of the congenital variety; on opening the sac I found a coil of small intestine, which could not be reduced until the constriction was divided. The cord was separated from the sac and the latter ligatured high up. The sac contained no fluid. The child made an excellent recovery. I had circumcised the child when a month old.

Howard Dent, M.B., F.R.C.S.,
Wolverhampton. L.R.C.P.

The case recorded by Dr. G. E. E. Nicholls in the Journal of September 21st, 1912, belongs to a class that few have experienced, and is quite worthy of record. This is a good opportunity for stating what has been found out as to the degree of rarity, in early infancy, of strangulated inguinal hernia; and I do this the more readily as I have not long been acquainted with what others have done in this respect.

Those who are not familiar with the very comprehensive and thorough *Treatise on Ruptures*, by Mr. Jonathan Macready (1893), will find it a mine of interest and information on almost everything else relating to hernia, but not on this special topic, which from many other works on hernia is also omitted.

On turning to the *Traité de chirurgie* of Duplay et Reclus, however, the matter is referred to quite clearly

(second edition, vol. vi, page 80) in the article on hernia by Paul Berger (1898):

Strangulation is not found with the same frequency at all ages; it is very rare in early infancy. Gosselin never found it. Holmes, at the Children's Hospital, London, never had to operate in such cases; and the same applies to de Saint Germain at the hospital in the Rue de Sèvres; in ten years Guéniot only operated once at the Hospice des Enfants Assistés. But this accident may nevertheless occur. Heyfelder operated for hernia on a child 8 days old; Dieffenbach, 14 days; Fergusson, 17 days; Dupuytren, 20 days.

Some of this information Berger got from the admirable article by Mr. Howard Marsh in *St. Bartholomew's Hospital Reports* of 1874, vol. x, pp. 205–17, in which 47 cases are tabulated at ages 8 days to 13 years. Of these 16 were under 3 months; 25, 6 months; 31, a year; and so forth. Berger refers to 56 cases collected by Féré, and to several other papers and theses on the same subject, which by 1894 had acquired quite a bibliography of its own.

In Mr. Marsh's memoir, and many of the writings of the time, temporizing measures in strangulated hernia were discussed, but surgeons have long come to see that early operation is not only safer than delay, even in children, but often even safer than previous attempts at taxis, which have their own well-known dangers.

The sole instance I have met with myself occurred twenty-eight years ago in association with Dr. Richard Humphreys and the late Drs. Cayzer and Packer, in private practice in Liverpool. The boy was 28 days old, and the hernia, right inguinal and congenital, had been strangulated two days. I performed herniotomy with the assistance of those gentlemen on June 20th, 1884. The bowel, imprisoned around the testicle in the open tunica vaginalis, was purple, and was reduced without difficulty on nicking the neck of the sac; but the delicate membrane of the latter was not easy to strip up to its offset from the peritoneum in order to tie it with catgut in the inguinal canal, owing to the diminutive size of the parts, which were very little larger than those of a tomcat.

To avoid contamination with urine, the wound was closely sewn without drainage, and a dressing of folded sublimate gauze with a hole for the penis was applied to the front of the pelvis and perineum, and bandaged on with a double spica, in the manner seen by me in Lister's wards in 1881, and described in Watson Cheyne's *Antiseptic Surgery* (1882). Two or three days later the scrotum was punctured with an exploring trocar and cannula, and retained bloody fluid withdrawn, without further need of similar interference. On one of those early days the infant was found collapsed and apparently dying, but revived and made a good recovery, with a sound radical cure and the testicle in proper place in the scrotum. He eventually grew up and entered Sandhurst College and the army.

RUSHTON PARKER, M.B., B.S., F.R.C.S.,
Professor of Surgery in the University of Liverpool.

CAN THE UNDELIVERED FETUS CRY?

THE following cases may be of interest in connexion with the note entitled "Can the Undelivered Fetus Cry?" (p. 653):

1. *Vagitus Uterinus.*—Mrs. C., secundipara, was found on arrival to be in labour; the os was fully dilated, bag of membranes protruded almost to the vulva; the head had not engaged. A hand was thrust through the membranes and, seizing a leg, internal version was performed. During this manipulation the child cried *in utero*, much to the alarm of the mother and nurse in attendance.

2. *Vagitus Vaginitus.*—Mrs. K., also secundipara, was in labour all day, and uterine inertia having set in the midwife sent for help. On examination the head was found to lie in the vagina in an occipito-posterior position. During the application of the forceps the child audibly cried in the vagina.

These are the only two examples met with in an experience of upwards of 3,000 midwifery cases.

London, W. J. REDY, M.B.

In the JOURNAL of September 14th you raise the question "Can the undelivered fetus cry?" and express doubts as to the possibility. Some years ago, while in Australia, it was agreed at a consultation on a patient of mine, then in her eighth month of pregnancy, that I should at once induce labour. I selected a female catheter as my rubber bougies were, from the effects of the heat, too pliable. I inserted it well up between the wall of the uterus and membranes, when, by mishap, the point penetrated the membranes and the liquor amnii began to flow down the catheter. I was washing my hands in the room, when the fetus gave two or three cries nearly as loud as if it were born. The mother and nurse remarked upon this incident. I was considerably taken aback by it, and began to consider the matter, somewhat timid of the consequences. It occurred to me that after the liquor had drained away air had rushed up the catheter into the uterus, enabling the fetus to breathe. I withdrew the catheter, and in a few hours labour set in, and the child was born without any further interference. Both mother and child did well.

Worthing. A. TEEVAN, L.R.C.P.Edin., M.R.C.S.Eng.

In the Epitome of Current Medical Literature in the BRITISH MEDICAL JOURNAL for July 20th, 1912, you mention a case of this rare condition which had been published by Allard.

I had never believed in the possibility of such an occurrence until some three years ago. At that time I was in practice in Luton, Bedfordshire. One day my partner, Dr. Robert D. Bell, informed me that during the previous night, whilst attending a woman in labour, he had distinctly heard intrauterine crying of the baby, much to his astonishment and to that of two or three women who were present. Had my informant been other than Dr. Bell I should still, to put it mildly, have been sceptical.

A few days later I was attending a lady in confinement. So far as I remember the presentation was occipito-posterior, and I applied forceps. Almost immediately afterwards the child cried distinctly, and the cry was repeated a few minutes afterwards. It was heard by both mother and nurse. Like Allard, I am convinced that Velpeau himself would have changed his opinion had he been present at my case.

Mount Morgan, Queensland. OLIVER SMITHSON.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

THE COUNTY HOSPITAL, YORK.

STRANGULATED FEMORAL HERNIA (GANGRENOUS) WITH FEW SYMPTOMS: OPERATION: RESECTION.

(By R. CHARLES, F.R.C.S., Senior House-Surgeon.)

TIME and again cases of strangulated omental or Richter's hernia have been recorded in this and other journals demonstrating the comparatively few symptoms compatible with strangulation. In the *Lancet* of October, 1911, my brother (Dr. S. F. A. Charles) reported a similar case. In the following case not only was there an absence of vomiting, but the patient had no pain.

C. B., a farm labourer aged 57, was seen by me in the casualty department of this hospital complaining of a swelling in the upper and inner side of the thigh, which he had noticed two days previously. His temperature was normal, pulse 80, and respirations 20; in the region of the saphenous opening was a hard rounded tumour; it was somewhat tender, and the skin over it was dusky and oedematous; there was no impulse on coughing.

My first thought was an abscess, but on reflection and after careful examination came to the conclusion that it was a femoral hernia. Owing to the presence of oedema over the swelling I suspected strangulation with gangrene and advised immediate operation.

On cutting down one hour later a quantity of blood-stained fluid escaped on opening the sac, and a gangrenous entero-epiplocele presented. I opened into the abdomen, packed off the peritoneal cavity, relieved the strangulation

by nicking Gimbernat's ligament in several places, and from within reduced the hernia. I had to be extremely careful, as the gangrenous portion was very soft and lacerable. Resection was performed with end-to-end union and from 8 to 10 in. of the gut removed; subsequently I performed radical cure for the hernia.

The characteristic feature of the case was the complete absence of vomiting and pain, in spite of the fact that there was complete involvement of the gut with absolute constipation; indeed, the patient felt so well previous to the operation that he asked to be allowed to smoke. He stood the operation (which lasted an hour less a few minutes) and made an uneventful recovery, leaving the hospital at the end of three weeks feeling quite well.

It may be of interest, owing to the articles that have been published in this JOURNAL on iodine as the sole preparation and dressing for operation wounds, to state that since writing this article I have carried out this procedure in three cases of acute intestinal obstruction, due to strangulated inguinal hernia with gangrenous intestine. In each case I performed extensive resection—all recovered; also in several other minor cases with most pleasing results. Certainly Mr. Alcock's method deserves a fair trial.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, October 14th, 1912.

Sir W. WATSON CHEYNE, Bart., C.B., F.R.S., President, in the Chair.

THE PRESIDENT, in an opening address, referred to the serious loss the society had sustained during the last year by the deaths of several of its most distinguished members. In speaking of the late Lord Lister, he emphasized the truth that not only was Lord Lister the great introducer of antiseptic and aseptic surgery, but also decades ahead of the surgeons of his time in operative surgery—a part of his work which has never been published, and has not been properly recognized.

Anaemia of the Pernicious Type with Acholuric Jaundice.

Dr. F. J. POYNTON and Mr. H. C. G. PEDLER read a paper on a case of this description. The acholuric jaundice was accompanied by some enlargement of the liver and spleen, great weakness, protracted fever, dilated heart, occasional delirium, and vomiting. The blood count showed at first an increase in the leucocytes, their number reaching 35,200, diminution in the red cells to 980,000, with an increase in their average size and much change in their shape. The fragility of the red cells was less than normal. Temporary considerable improvement had been followed by a relapse which threatened to be fatal. This was accompanied by leucopenia, with the appearance of numerous erythroblasts. Neither arsenic nor neo-salvarsan had influenced the condition. They pointed out such features of resemblance to acholuric jaundice as acholuria, enlargement of the liver and spleen, high colour index, and occasional severe anaemia with outbursts of fever. They contrasted the increased fragility of the red cells *in vitro* in some cases of acholuric jaundice with the increased resistance in the case narrated, and also the widely different outlook in the two groups.

Dr. C. R. BOX referred to two similar cases under his care. The first, one of megaloblastic anaemia with leucopenia and cholaemia, had been treated with salvarsan on two occasions. Each injection had accentuated the jaundice, but the blood picture had afterwards improved. In the second the cholaemia was accompanied by severe abdominal crises. Mr. Corner had excised the spleen, and the girl appeared to be on the way to convalescence. Dr. PARKES WEBER was strongly inclined to think that the case recorded was due to chronic septic infection allied to "endocarditis maligna tarda." Dr. FREDERICK TAYLOR mentioned a case under his care of pernicious anaemia and acholuric jaundice in which the red blood count had fallen so low as between 600,000 and 700,000 per c.mm. There were leucopenia and splenic enlargement. Salvarsan had been administered three times, he thought, on the whole, with benefit. Dr. G. R. WARD spoke of two Australian cases, for which excision of the spleen had been done.

Professor Theodore Kocher.

The following letter has been received by the Medical Society from Professor Kocher, in reply to an address of congratulation from the society on the occasion of the celebration of his forty years' professorship at the University of Berne:

To Dr. Mitchell Bruce, President of the London Medical Society, and Members.

Dear Mr. President and Gentlemen,

It was a plea a it surprise to receive the address handed me by your distinguished representative on the occasion of the jubilee of my forty years' professorship, and it will always be to me a most valued possession.

Your Society was one of the first to recognize the importance of my publication on the thyroid gland, and one of the first to confer upon me the Honorary Fellowship at a time when I had little reason to be well known; and it is for this I owe you my warmest thanks.

May your Society, whose efforts are directed in such an eminent and influential manner, continue to flourish to the advancement of medical knowledge, and to raising the standard of the medical profession.

Please accept, Mr. President, officers, and council of the London Medical Society my most cordial thanks, and assuring you of my respect and esteem.

Yours truly,
(Signed) TH. KOCHER.

P.S.—To Professor Sir Victor Horsley, who came so far to bring me the address and to greet me on my anniversary, I owe my personal thanks.

ROYAL SOCIETY OF MEDICINE.

PATHOLOGICAL SECTION.

Tuesday, October 15th, 1912.

Professor R. T. HEWLETT, President, in the Chair.

The Structure of Urate Calculi.

MR. S. G. SHATTOCK remarked that the microscopic structure of urate calculi presented much less variety than those of uric acid. The study was carried out by means of thin sections made after the petrological method. The nucleus, he found, invariably consisted of conglomerated spherules, doubtless held together by vesical mucus. Upon such an aggregate the "body" was formed by a regular *growth* of further spherules, as distinguished from the deposition of such as are independently formed in the urine. That these *grew* upon the surface was shown by the fact that they were hemispheres or lesser sectors only—that is, the centre of the sphere was located on what was at the time the exterior of the calculus, its subsequent growth taking place only on the distal side; the varying proximity of those centres determined the size of the sector produced in connexion with them. From the coalescence of such laterally apposed sectors a continuous lamina resulted. The spheres were resolvable into radiating collections of minute rod like crystals, which the author had called bacilliform. In addition to this method, a laminar formation might arise directly from the radial deposition of bacilliform crystals, radial, that is, to the centre of the calculus as a whole, as distinguished from the centres of individual spheres. The general uniformity of structure was invariably interrupted by the zonular deposition of irregular aggregates of spheres like those composing the nucleus, or of bacilliform crystals without order, or of both intermingled. The various elements might be matched in urinary sediments, but bacilliform crystals in a discrete form were very rare as sedimentary urates. The spherules of calcium urate encountered in calculi corresponded with those sometimes met with in urinary sediments, and were of comparatively large size and constructed of coarse crystals with sharp projecting ends. All urinary calculi contained a delicate organic matrix which was revealed when the salts were dissolved away. The author had shown the presence of this even in an Egyptian calculus of uric acid at least 7000 years old, as well as in intestinal calculi. In 1904 he had independently demonstrated the same matrix in uric acid sediment, an observation previously made by Moritz. That the material in question was mucin was shown by its presence in the urate spheres deposited in normal urine after this has undergone ammoniacal fermentation, and where no protein other than mucin was present. In the

case of calculi, or of sediment, if albumen was reaching the urine from an inflamed mucosa, or through the kidney, albumen might be admixed with the mucin.

Thyroid Action and Reaction.

Mr. RUPERT FARRANT read a paper on this subject, which will be published in full.

CLINICAL SOCIETY OF MANCHESTER.

AT a meeting held on October 15th, Dr. J. W. GRANGE, President, in the chair, Dr. T. K. DALZIEL, of Glasgow, described a disease of the intestine which he termed *Chronic interstitial enteritis*. In this condition the walls of the intestine showed chronic inflammatory changes, the bowel lost its normal elasticity and became more or less brittle. No definite organisms had been discovered on bacteriological examination. A portion or the whole of the intestinal tract might be affected, in the latter case with fatal termination. The main characteristic of the clinical picture consisted in attacks of very violent abdominal pain during the intervals of which the patient might appear quite comfortable and happy. Although the disease might simulate intestinal obstruction, the bowels could always be made to act, even though with difficulty. The treatment consisted of laparotomy and excision of the portion of bowel affected. Should this portion be not very extensive recovery would ensue. A disease identical with this condition had been described as occurring in the lower animals, and on bacteriological examination a bacillus resembling the tubercle bacillus, but shorter, had been discovered.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

PROFESSOR E. W. HOPE, in his presidential address on October 11th, said that the phenomenal growth and results of sanitary administration in this country during the last twenty years deserved a very much closer public attention than they had received. The present time was undoubtedly one of great expansion in every field of sanitary investigation. The growing enlightenment of public opinion had enabled sanitary authorities to increase the facilities for investigation as well as to strengthen and perfect the actual administrative procedure with very material advantage to the public. For example, the channels of infection and the conditions which favoured the development of typhoid fever were well known, but the close verification of the actual source of each infection now adopted could not fail to emphasize the value of preventive medicine, and encourage perseverance in them. Another illustration was afforded in the prolonged immunity of the country from small-pox, notwithstanding the growing neglect of vaccination, and this immunity was largely due to improved administrative methods which embraced not only the prompt notification and isolation of the patient and vaccination of contacts, but the greater vigilance and the extended measures adopted at the port of entry. The last dozen years had seen the addition to the statute book of a long list of exceedingly important enactments in matters so diverse as the Midwives Act, the Notification of Births Act, various Acts to protect and further improve the condition of children, Factory and Workshops Acts, amendments of the Public Health Acts, other Acts relating to the improvement of food and milk supplies, the importation of foreign meats, to housing, and, lastly, the National Insurance Act. Numerous orders of great importance had been issued, and, in addition to all these, there had been a considerable amount of special legislation affecting particular districts. One of the means by which the work of sanitary administration might be made more easy and [illegible] recent years been more fully [illegible] in consenting to the enlargement [illegible] administration. If taken in time the [illegible] could easily and cheaply be dealt [illegible] in the most liberal town planning schemes, provided there was unity of administration between the city and its growing suburbs, without which the old bad conditions repeated themselves. The Board of Education and the Local Government Board realized that the improvement in health and physique of children was closely associated with general public health administration, and wisely advised that the work of medical inspection of school children should be carried out in close association with medical officers of health. The obligation of entry into schools which had been placed upon medical officers of health had made it possible to keep closer supervision upon infectious disease as it affected school children and to devise more stringent and uniform methods of control. Whilst open-air teaching might be considered the need of all children, it was absolutely essential for the debilitated and tuberculous, and open-air schools had more than justified the hopes of their founders.

UNITED SERVICES MEDICAL SOCIETY.

AT the opening meeting on October 9th, Fleet Surgeon P. W. BASSETT-SMITH, C.B., in a presidential address, gave some account of the evolution of the Naval Medical Service. From the time of Henry VIII it had progressed in efficiency and in importance. In the reign of Charles I the naval surgeon apparently laboured under the disadvantage of not being supplied with either stores or drugs; but under the Commonwealth a great improvement was manifest, even hospital ships being used by the navy at this time, since when steady preparation for all emergencies likely to occur in either peace or war had been going on, the advance having been especially rapid in recent years. Captain SYLVESTER-BRADLEY, R.A.M.C., in a paper on the *Evacuation of the sick and wounded in the Territorial Force*, pointed out that while the field ambulances of the Territorial Force were very efficient, there was little or no organization for medical services on the lines of communication. The general hospital was the only line of communication unit existing in the Territorial Force, and peace establishment of the unit, so far as concerned rank and file, was 66 short of its establishment for war. The clearing hospital being the pivot on which the evacuation of sick and wounded would turn on active service, it appeared urgently necessary that this unit should be organized, and, as far as possible, trained in times of peace. The commanding officer should preferably be a retired R.A.M.C. officer, and should be given ample facilities for seeing and training his unit before mobilization. Rank would seem to be necessary for the personnel, as it would be no easy task to maintain discipline in clearing hospitals full of sick and hungry soldiers. For this reason it would be well to embody the rank and file as reservists of the Royal Army Medical Corps Territorial Force. Transport, such as motor cars and motor buses, should also be registered in peace time, and use should be made of canals and rivers for the carrying of sick and wounded.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

THE first meeting of the society for the current session was held on October 18th, the proceedings being commenced by an address from the PRESIDENT (Dr. Joseph Dobson), entitled *Gleanings from general practice*. In its course Dr. Dobson expressed a belief that there was too much readiness nowadays to ignore the wealth of therapeutic knowledge stored up by previous generations of men of great clinical experience. Few medical men who had been in practice for many years could be altogether devoid of great faith in the value of drugs when judiciously administered as a means of relieving the symptoms and discomforts of illness. There was also on the whole a tendency to resort to operative measures too readily. It was doubtful whether it was really wise to include so many scientific subjects in the preliminary examinations of medical students; the time spent in acquiring a knowledge of them would be more profitably devoted to gaining experience of actual medical practice in hospital or private. Subsequently there was a demonstration of cases and specimens, and Dr. CHURTON raised the question of whether a variable patellar clonus should be taken as evidence of neurasthenia or organic disease in a case of suspected malingering.

Reviews.

GONOCOCCAL INFECTIONS.

We thoroughly agree with Majors Pollock and Harrison[1] that gonorrhoea and its consequences have not received the scientific attention they deserve from the profession in this country. For years the disease has been closely studied by Continental writers, who perhaps have better facilities in special clinics. In our country a gonococcal infection has not been regarded as a serious disease which might lead to permanent deformity, cause loss of life, or diminish the birth-rate. Rather the attitude of the profession has been tainted with a moral bias against the sinner who has been supposed to be suffering no more than he deserves. But the medical profession has nothing to do with the patient except as a suffering individual, and there is no relationship between the sin and the treatment of its results. In *Gonococcal Infections* the authors urge that gonorrhoea and its sequels should be dealt with on strictly scientific lines, and their little book will do much to further this aim. They admit that treatment is still far from satisfactory. The newer organic silver compounds—protargol, argyrol, and others—are useful in making a direct attack on the mucous membrane so long as it is only superficially infected. The vaccine treatment provides what the authors in military phraseology call a flank attack with the object of turning the organisms out of hitherto unassailable parts of the body. But it is acknowledged that when the organisms have fixed themselves deeply in the epithelium of a mucous membrane they may defy any attack; that is to say, "we do not yet know how to cure a chronic gonorrhoea."

The two first chapters deal with pathology and describe fully the biology of the gonococcus, its virulence, the susceptibility of different human tissues, the pathological changes produced by the organism, and the laboratory diagnosis of gonococcal infections. There is a tendency towards prolixity in describing the pathological changes produced by the gonococcus, but the fullness and elaboration are not altogether unwarranted. The treatment of gonococcal infections is fully described. We must commend to the profession the details of treatment of gonorrhoea and its complications given in this book. They follow modern scientific lines. The authors' experience of vaccine treatment is that it has no effect in cutting short the acute stages of urethritis, but that excellent results follow its use in gonorrhoeal arthritis. As to the respective therapeutic merits of vaccines prepared from recently isolated and from older cultures, sufficient work has not been done to justify a definite opinion, but the authors agree that, so far, a stock vaccine prepared from a number of different strains is practically as good as one made from the patients' own organisms. The autogenous vaccine may be used for cases which make no progress under treatment with the stock vaccine.

We have sincere pleasure in bringing this little book to the notice of the profession, as it claims to be a concise account of the present state of knowledge of this important subject. As it is one of the Oxford Medical Publications, it leaves from the bibliographical point of view nothing to be desired.

PRIMARY CANCER OF THE LUNG.

Carcinoma of the lung has always been regarded as a rarity, and many of the leading textbooks pass it over with scant notice. A monograph on the subject written by Sir Risdon Bennett many years ago appears to be the only book specially devoted to it, although many isolated reports are scattered through transactions of societies and hospital records. A larger and more comprehensive work[2] written by Dr. Adler of New York deals with the whole question very fully, and presents a long series of tables in which the details of all the cases are summarized under headings. Many hundreds of such cases are quoted, and although the reports are of necessity somewhat meagre, being culled from many sources, still the whole record has its value from the statistical point of view, and affords material for further study and thought. Dr. Adler glances at the history of the disease, and gives the credit of the first classification of primary growths to Stokes, Graves, Walshe, Hughes, and other physicians of their time, but as to the mode of formation of such tumours there has been endless inquiry and discussion ever since. Etiological considerations show that the civilized races are more prone to cancer of the lung than others, but heredity, contrary to the popular idea, probably has very little influence. Age, on the other hand, has a marked influence, by far the larger number of cases falling in the decade between 50 and 60. The precancerous stages of cancerous affections appear to be as elusive as ever, and although concomitant conditions are well known, the definite relation which they may bear to the disease have yet to be discovered. Contrary to the views of many English pathologists, Dr. Adler does not accept the dislocation of germinal cells and their distribution by way of the lymphatics with any confidence. He regards the epithelial cell as liable to metaplasia under certain conditions, and presupposes some local cause for such change of type. Pathological considerations are thus open to discussion, and anything like certainty has never been attained. The clinical aspect of the disease presents more positive evidence, and diagnosis ought not to be regarded as impossible. Although no one symptom can be regarded as pathognomonic, Dr. Adler maintains that the frequent appearance in the sputa of large granulated, spherical cells, associated with deformed epithelial cells, may be taken as a certain indication of the presence of cancer. His long series of cases includes many that are not primary, and several sarcomatous and ill-defined forms of morbid change. He is optimistic as to the future, and holds out hopes of more certain diagnosis and more successful treatment by surgical interference in early stages.

DIGESTION AND METABOLISM.

In the preface to his book on *Digestion and Metabolism*,[3] Professor Alonzo E. Taylor, of the University of Pennsylvania, states that he is "convinced of the need among American physicians for a work presenting the subject in a popular manner without technical details, and from the standpoint of dynamics rather than from that of analytical statics usually occupied by textbooks of physiological chemistry." He goes on to say that the aim of the book is to "describe the chemical changes in normal and abnormal digestion, and explain the known metabolic modifications that food materials undergo within the body; in a word, his aim is to give the student and practitioner a working knowledge of just what is known to occur in the chemistry of the normal body, and also of the changes concerned in many widespread and important diseases." Although this may have been the author's aim, we doubt whether he can be regarded as having accomplished it, for we have found the book exceedingly difficult to read; it is written in a style which to our comprehension is neither easy nor clear, and it starts from a standpoint which is not at all that of the medical practitioner, but of the advanced student of physiological chemistry with laboratory experience. No doubt it is a compendium of information, and has been brought up to date, but it compares unfavourably with such other recent books on the same subject as the translation of von Noorden's *Metabolism and Practical Medicine*, Starling's *Recent Advances in the Physiology of Digestion*, and Pawlow's work on the *Digestive Glands*, all books that may be read and understood by the practitioner. Dr. Taylor gives few, if any, illustrations drawn from clinical medicine, but overloads his pages with details of laboratory work that lead to no definite conclusion, and will almost certainly be superseded by further discoveries. Is it reasonable to expect the practitioner to attempt to assimilate inconclusive material, and is it not wasting his time to read it unless he is in a position to carry out further researches—a position occupied by few, if any, of those to whom the book is addressed?

[1] *Gonococcal Infections.* By Major C. E. Pollock, R.A.M.C., and Major L. W. Harrison, R.A.M.C. London: Henry Frowde, Hodder and Stoughton. 1912. (Cr. 8vo, pp. 245. Price 5s. net.)

[2] *Primary Malignant Growths of the Lungs and Bronchi: A Pathological and Clinical Study.* By I. Adler, A.M., M.D., Professor Emeritus at the New York Polyclinic, etc. New York and London: Longmans, Green, and Co. 1912. (Med. 8vo, pp. 337; plates 27. Price 16s. net.)

[3] *Digestion and Metabolism, the Physiological and Pathological Chemistry of Nutrition: for Students and Physicians.* By Alonzo E. Taylor, M.D. London: J. and A. Churchill. 1912. (Med. 8vo, pp. 563. 18s. net.)

The subject of metabolism is of great and growing importance, and one of the most interesting problems is the metabolism of carbohydrates, which, we are glad to see, is dealt with very thoroughly. Among its obscure problems is the retention of sugar by the kidneys under physiological circumstances. The late Dr. Pavy suggested that the sugar is carried to the tissues in combination with the leucocytes, but Professor Taylor rejects this as unproved, although he has nothing better to put in its place than his belief that the retention is "an expression of semi-permeability resting upon a physico-chemical basis." He lays stress upon the fact that the diabetic organism has lost in part the power of forming fat from sugar, but as we know little about the process by which fat is formed from sugar under normal conditions, he is unable to throw any light upon what happens in disease. Another important question is the formation of oxalic acid, which is also left in darkness.

The chapter on glycosuria is a good summary of our present knowledge, as is also the connected section on carbohydrate metabolism in diabetes, but is the author quite justified in regarding as proved the relation of the islands of Langerhans to the function of glycolysis? He suggests that the non-combustion of glucose in diabetes is due to the inability of the diabetic to split glucose into lactic acid, this power being impaired or lost, while the relative toleration of lactose and lævulose is explained by supposing that the liver has retained its power to convert them into glycogen and to store them. As in acidosis the tissues are deprived not only of soda but of potash and lime, he remarks that our treatment should include all three, and not only sodium bicarbonate; he would give a dose every hour and a larger one at bedtime. Acidosis is discussed further under fat metabolism, and he thinks that most cases may be explained either by the absence of the normal ferment for the combustion of butyric acid or because when the entire maintenance of the heat of the body is thrown upon fat metabolism "there is a quantitative incompleteness in the reaction," as there is more aceto-acetic acid than the body can deal with. Under the metabolism of protein he asks why it is that a dead cell is digested while a living cell resists this action—a consideration worth bearing in mind in connexion with the question so much discussed at the Dundee meeting of the British Association. To say that it is due to the presence of an antiferment is merely a verbal evasion of the difficulty, and until some one can show the chemical difference between a dead cell and a living one it is futile to claim that the problem of life can be solved in the chemical laboratory.

Another interesting section is that on the metabolism of fasting as observed in fasting men and illustrated by the experimental starvation of animals. With respect to the use of large amounts of protein he denies that these are eaten chiefly by the classes that do the most muscular work, even where they can afford to buy them; he thinks the excessive consumption of protein is chiefly among the leisured classes; such excess he regards as wasteful both chemically and calorically, as protein is undesirable as a fuel. He does not even allow that large quantities are desirable for the growing body. With regard to the kind of protein, he thinks it best given mixed; the amount should be about 1 gram per kilo daily for a subject weighing 70 kilos, and for smaller individuals rather more. He thinks plant protein as good as animal protein, but that its value depends upon its bulk, fermentability, digestibility, and variety. Although excess of protein is tolerated in health, this is not true of all persons, and it is never wise to carry an overload; excess in protein is as unwise as excess in tobacco or alcohol, and in no case can be of benefit. The metabolism of old age he believes to differ from that of adult life only in quantity, and this mainly depends upon inactivity and lower input. There is little power of retention of protein corresponding to the reduced intensity of protoplasmic activity, while the sparing power of sugar for protein is very pronounced.

The most effective way to fatten is to give excess of fat if this can be tolerated. The author does not think that the obese are fat because they burn less or have retarded metabolism, but "because they have very effective economy." In many instances of obesity the heat production is not low, but high, and where this is the case there is a very high input. He prints useful tables from Benedict and Joslin on the relation of heat production to metabolism.

The section on fever is short but clear; the author thinks that our defective knowledge is due to the difficulty of studying the question under clinical conditions, but he states that the recent improvements of apparatus and the more accurate definition of caloric efficiency "have placed it in the power of every well-equipped hospital to conduct investigations into the metabolism of patients inflicted with infectious and other febrile diseases." He thinks fever is due, first, to a disintegration of tissue, and, secondly and chiefly, to the action of micro-organisms. There is always an increase of heat production, and where this is not the case the fever must be due to some derangement of heat regulation, as is probably the case, although he does not refer to the matter, in hysterical hyperpyrexia. In addition to the increased production of heat, there is a failure of adequate and regulated heat dissipation.

We have said enough to show that this book deals with many important questions and may be regarded as a valuable work of reference.

MALINGERING.

MR. ARCHIBALD MCKENDRICK'S book on *Malingering and its Detection*[4] is a valuable contribution to a difficult subject, and it may be recommended to those to whom it specially appeals—namely, judges and magistrates, members of the legal profession, and insurance companies. Medical men will also find it helpful in dealing with a class of cases which frequently presents many difficulties. The author points out that the real malingerer is comparatively rare, but that the partial malingerer is more often met with. There is also the unconscious malingerer, or the person who is not malingering with intent to defraud but is acting thus so far as compensation is concerned, attributing his ailment to an injury when it is really due to disease, or he is more frightened than hurt. The last type, being in quest of sympathy, goes from one medical man to another, but, in the author's opinion, eventually finds his way to the electrical department of a hospital. In the chapter on pain, it is wisely pointed out that before a definite diagnosis of malingering is decided, it must be proved conclusively either that there is no existing cause for the symptoms or that the symptoms are at marked variance with the physical signs. In discussing the important matter of stiff joints the value of the *x*-ray examination is indicated: the use of the electrical current for flexing or extending a joint and the use of chloroform are all essential to the settlement of the genuineness of the case. The troublesome question of back injuries is well dealt with, and the section will repay careful study.

In Mr. McKendrick's opinion, radiography is not as fully appreciated as it ought to be. In the chapter on medical examination he points out that since the Workmen's Compensation Act came into force the medical practitioner is called upon to exercise the skill of a lawyer in addition to having a capacity for readily applying his professional knowledge, and that care should be taken to make an exhaustive examination and to consider this with the history of the alleged injury. He gives drafts of a medical report to be used in a case of genuine injury, and also of one to be used in a case of malingering. If medical practitioners would follow these we should probably hear less of disagreement between medical witnesses. We can cordially recommend this book.

THE HOUSING AND TOWN PLANNING ACT.

WHEN the President of the Local Government Board introduced into the House of Commons what is now known as the Housing, Town Planning, etc., Act, 1909, it was found to be a flagrant instance of an attempt at legislation by reference, and so great an outcry was raised that when the bill had been redrafted and reintroduced in the following session it was observed that many clauses had been materially simplified. But even when it passed into law

[4] *Malingering and its Detection, under the Workmen's Compensation and other Acts.* By Archibald McKendrick, F.R.C.S.E., etc., Physician [illegible] Medical, Electrical, and Balneological Department, Royal Infirmary, Edinburgh. 1912. Edinburgh: [illegible]. Cr. 8vo, pp. 94. 1s. 6d. net.)

and became an Act of Parliament there were far too many references to previous Statutes, which considerably increased the difficulties of those who had to administer the Act. In his work on the Act,[5] Mr. W. A. Casson has endeavoured to lessen those difficulties, by suitable notes on the whole Act, and by introducing in the appropriate place the text of referred sections. One of the most useful provisions of the Act is that embodied in Section 15, which requires that a house under a specified rental shall be let after December 3rd, 1909, the date of the passing of the Act, on the understanding that during the tenancy it is in all respects reasonably fit for human habitation. If such a house can be shown to be not so fit, the tenant can throw up the tenancy and bring an action against the landlord for breach of contract. In this connexion Mr. Casson expresses the opinion that to bring any case within the operation of the section it is essential that there should be a tenancy with a rental—that is to say, that there are excluded from the section cottages let to colliers, or those occupied by agricultural labourers or others, as part of their remuneration, or even cottages occupied by their owners. If this view be correct, it should be noted as one of the matters needing amendment, for there appears to be a very general opinion among housing reformers that the rental of a cottage, especially in rural districts, should be paid direct to the landlord, and should not be included as part payment of wages. The section (18) of the Act which has reference to the demolition of dwellings which have been closed as uninhabitable has been differently interpreted by the Local Government Boards in Scotland and England, and Mr. Casson apparently agrees with the latter authority, for he says that if a closing order has been made and has been in force for three months, the local authority *must* make a demolition order. The English Board has stated that demolition must be carried out even though the owner desired to make use of the premises for a barn, stable, warehouse, etc. In such case the local authority has been advised to refrain from making the formal closing order. The second part of the Act deals with dwellings in the mass as the first part deals with them in detail, and, if properly used, the planning of streets will be greatly facilitated, and the crowding of houses which in the past has been a marked characteristic of many modern towns will no longer be possible. Town planning has no doubt been expedited by the provisions of the Act, but in Mr. Casson's opinion it will probably in course of time be repealed and adopted as the basis of some entirely new legislation dealing with the subject in a more drastic and stringent manner than is the case at present. Since the passing of the Act in 1909 the Local Government Board has issued in connexion with it many Orders, circular letters, etc., and all those published up to September, 1911, are given in an appendix, which numbers seventy-one pages. The value of the work, especially to medical officers of health, is thus very materially increased, for the Local Government Board has not yet seen the necessity for sending these documents to those officials, who have to depend in many instances either upon our columns or the clerks to the district councils for any intimation that they have even been issued.

NOTES ON BOOKS.

As indicated by its title, Dr. SOPP's book[6] is intended for the public rather than for the profession, although it may be read by any practitioner with advantage, for it gives a perfectly clear and generally accurate account of diabetes, avoiding doubtful questions. There can be no doubt that the co-operation of the patient is essential, but we doubt whether the average English patient would be capable of deriving much benefit even from such a simple and clear account as the author has provided. After all, it seems to require some education and training before people are able to understand medical propositions that are to us perfectly clear; at least, that is the experience of the writer, who has always endeavoured to explain the grounds for his treatment, but has not been very well satisfied with the results. It may be doubted whether improved diagnosis is a sufficient explanation of the enormous increase in diabetes as shown by the mortality statistics of the last thirty or forty years, for although it is probably true that sugar is more often looked for in the urine than it was fifty years ago, those cases of diabetes which terminate fatally have well-marked symptoms which must have attracted attention at any time. With regard to treatment, Dr. Sopp adopts von Noorden's diet and recommends a trial of his oatmeal cure, but he does not appear to appreciate the use of potato where it is desirable to give a limited amount of carbohydrate. For this purpose he gives small quantities of white bread, yet these are so small (50 grams) that they cannot satisfy the patient. Where potatoes are so generally eaten as in England, patients appreciate greatly the amount of this vegetable which can be given as equivalent in carbohydrate contents to white bread, for it is three times as much. The author gives some tables at the end of the book which add greatly to its utility, and we wish such a little manual were available for English practitioners.

Although the general arrangement of the fourth edition of Professor KENWOOD's treatise on *Public Health Laboratory Work*[7] follows very much that of previous editions, there is evidence in nearly every chapter of very careful revision. For example, in the third edition he suggested that the fact whether a cesspool or drain contaminated a well might be ascertained by introducing aniline red or Prussian blue into the cesspool and endeavouring to detect the colour in the well-water. In the fourth edition he has substituted fluorescine as the colouring matter. On the relative efficiency of a chemical analysis and a bacterioscopic examination of water, the generally accepted view is expressed that the two processes are complementary to each other, and that it is essential in a great many cases that they should both be performed. Neither analysis is infallible, the value of one is often greatly enhanced by the other, and the value of both depends upon the correct interpretation of results. Separate sections of the work deal with the analysis of sewage and of sewage effluents; soil examination; air analysis; food examination; and the examination of disinfectants. In the section dealing with the bacteriological examination of water, Dr. SAVAGE has introduced a chapter on streptococci, staphylococci, and the meningococcus. The four plates showing objects, variously magnified, found in impure water should be very helpful in microscopic examinations, and the large number of illustrations of apparatus, etc., adds materially to the usefulness of a work which may now be considered as a standard textbook.

In reviewing the diet tables published in Germany by Schall and Heisler the wish was expressed that something similar was available for the use of English-speaking practitioners, so that we welcome this little book on *Food Values*,[8] which has been published by Dr. EDWIN A. LOCKE of the Harvard Medical School. After an introduction which briefly explains the bases of modern dietetics and the method of calculating food values, the book is made up of four tables. Table 1 gives equivalents of weights and measures in the metric system and avoirdupois. Table 2 gives the composition and calorific value of various prepared foods, including meats, fish, soups, vegetables, fruit, cheese, bread, biscuits and cakes, pastry and puddings, condiments, and non-alcoholic beverages. An attempt has been made to make this easier for the practitioner by calculating the value of ordinary servings or slices, the approximate weight of which is given. Other articles of food are measured by tablespoonsful or dessertspoonsful. Table 3 deals with alcoholic beverages, and Table 4 gives the average chemical composition of foods abstracted from the tables of Atwater and Bryant. With the assistance of these tables it is quite easy for any practitioner to compile dietaries containing such definite quantities of protein, fat, and carbohydrate as he may wish to give, and of any calorific value. We heartily commend the book to the notice of our readers.

[5] *The Housing, Town Planning, etc., Act, 1909, with Incorporated Provisions of the Housing Acts, and all Orders issued by the Local Government Board, together with full Explanatory Notes and Index.* By William A. Casson, Barrister-at-Law. Third edition. London: Chas. Knight and Co., Ltd. 1912. (Demy 8vo, pp. 348. 10s. 6d. net.)

[6] *Die Zuckerkrankheit, ihre Ursachen, Wesen und Bekaempfung, Gemeinverstaendlich Dargestellt.* Von Dr. med. A. Sopp. Wurzburg: Curl Kabitzsch. 1912. (Post 8vo, pp. 71. M. 1.50.)

[7] *Public Health Laboratory Work.* By Henry R. Kenwood, M.B., D.P.H., F.C.S., and W. G. Savage, M.D., B.Sc., D.P.H. Fourth edition. *Lewis's Practical Series.* London: H. K. Lewis. 1908. (Demy 8vo, pp. 482; 4 plates and 119 woodcuts. 10s.)

[8] *Food Values. Practical Tables for Use in Private Practice and Public Institutions.* By Edwin A. Locke, A.M., M.D., Instructor in Medicine, Harvard Medical School. New York and London: D. Appleton and Co. 1912. (Post 8vo, pp. 110. 5s. net.)

THE late Mr. Arthur Trehern Norton, C.B., left estate of the gross value of £1,859, with net personalty *nil*.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

The Select Committee appointed in the early summer to inquire into the sale and advertisement of proprietary medicines resumed its sittings at the House of Commons on October 17th, Sir Henry Norman presiding.

Dr. Norman Walker, Direct Representative for Scotland on the General Medical Council, Physician for Diseases of the Skin at the Royal Infirmary, Edinburgh, and Lecturer on Skin Diseases at the University of Edinburgh, was the first witness. Dr. Walker explained that he attended in place of Sir Thomas Fraser of Edinburgh and Professor Ralph Stockman of Glasgow, who were originally nominated. Professor Fraser was ill, and Professor Stockman had just begun his university session. Dr. Walker said he proposed to confine himself almost entirely to his own special experience in the evidence he would give. The effect upon the skin of unsuitable remedies could be more easily demonstrated to the Committee than their effect upon other organs, for, while internal results could only be surmised, the effects upon the skin could be seen. As it was not convenient to bring patients before the Committee he had brought with him wax casts taken from a number of cases, and they were very close imitations in every respect of the actual appearance of the eruptions, etc. As his evidence proceeded, Dr. Walker produced a number of these models. There were many drugs, Dr. Walker said, which produced eruptions—some important, some unimportant, and some serious. He was not making any accusations in this connexion against proprietary medicines as such; there were many preparations in the *Pharmacopœia* which might produce harmful effects. His point was that when drugs were administered by a medical man their effects were known and guarded against. Dr. Walker quoted from the card records of his cases, a number of which he had brought with him. One related to a man who was suffering from a rupture, and used an advertised rupture cure which consisted largely of turpentine. He was in the hospital ward three weeks before he recovered from the eruption that resulted from the application of turpentine, and, of course, the rupture remained as before. Some of the drugs administered internally were capable of producing eruptions that resembled certain fevers. An eruption produced by antipyrin was very like that of measles. Opium or morphine externally applied produced a rash so exceedingly like scarlet fever that sometimes it was almost impossible to distinguish between the two. An important branch of the subject was the serious effects produced by the bromides and iodides. Dr. Walker showed a photograph of an eruption produced in a child by the administration of potassium bromide, largely in the form of teething powders. These cases occurred most frequently in districts where married women worked, and where it was important to keep the child at home quiet. Potassium bromide also formed a stand-by remedy for epilepsy, and was an ingredient of many cures for fits. Dr. Walker produced a cast of the leg of a patient who had been taking considerable quantities of bromide. It was originally prescribed by a doctor, but the patient thought he could get it cheaper by purchasing it by the pound, and he took it for years, suffering from this eruption in utter ignorance that the medicine was causing it. To show that his evidence was unprejudiced, Dr. Walker mentioned that after a prolonged search a colleague and he had found a proprietary preparation of bromide which controlled the epilepsy in a particular case without producing an eruption on the skin. Arsenic was exceedingly useful when properly employed, but it was capable of producing effects of a very serious nature. It sometimes produced a thickening of the skin of the palms of the hand and the sole of the foot, which might, and occasionally did, go on to the production of cancer. One of his cases was that of a child of 1½ years who was suffering from an eruption due to receiving ½ grain of calomel three times a day in a soothing powder. It was a very pitiable and common thing to find poor persons starving themselves to provide quite useless remedies for patients suffering from phthisis and cancer. Dr. Walker put forward certain suggestions for which he was glad to find public opinion in Scotland was ripe, the county councils having independently asked for them. These suggestions were that the name and quantity of the active ingredient of a proprietary medicine should be stated on the label; that the label should be a warranty, and that the provisions of the Food and Drugs Act should be applied. Dr. Walker gave it as his own opinion that any proprietary medicine containing a drug that might do harm should have the name of the drug on the label. There would be a difficulty in defining the use of the word "active," and he suggested the appointment of a board that should decide this point. Personally, he did not think the quantity of the ingredients, as suggested by the Scottish county councils, need be stated; it did not convey very much to the lay mind.

In reply to Mr. Lawson, Dr. Walker said that the suggestions of the Scottish county councils were identical with the first three recommendations of the British Medical Association.

Mr. Glyn Jones: Does not your evidence come to this: That no layman ought to take medicines except under the supervision of a doctor?—That is, of course, the ideal.

In reply to Mr. Newton, Dr. Walker said he could, in consultation with medical colleagues, make up a list of drugs which, he was perfectly certain, should not be used in proprietary medicines, and another list of drugs whose suitability was open to argument. He agreed that it would be an advantage if there were a list of diseases which it should be illegal to promise to cure.

Mr. Lawson: Is an additional risk likely to arise under the National Insurance Act, when drugs will be obtained freely by the great masses of the people for supposed diseases?

Dr. Walker: I hope there will be no encouragement to persons to get a prescription and go on using it indefinitely when they have a right to medical advice.

In reply to Dr. Lynch, Dr. Walker expressed the opinion that a declaration on the label of the active ingredients of proprietary preparations would be a step in advance, and would mitigate present evils. The diagnosis of maladies due to wrong use of drugs would be facilitated.

Sir Philip Magnus said that he was inclined to believe that the ignorant public would be more ready to buy a preparation if it was stated on the label to contain ingredients unfamiliar to them than if they recognized the names, and asked the witness if he would approve of a censorship of proprietary medicine advertisements.

Dr. Walker thought that, though theoretically desirable, the result would be an assumption by the public that the remedies advertised were beyond reproach, having passed the censorship.

The Chairman suggested that vendors of proprietary medicines were quite capable of turning a restrictive law with reference to declaration of ingredients to their own advantage. Sir Henry Norman also remarked that according to the witness's suggestion a patient would not have the benefit of the new law until he had come to the hospital and told the doctor what he had been taking. The doctor would then read the label on the preparation and be guided as to what drug was affecting the patient.

Dr. Walker replied that Parliament could scarcely legislate for the very ignorant; if the active ingredients were stated, people of average intelligence would be able to find out something of their effects.

Mr. George S. Paternoster, assistant editor of *Truth*, placed before the Committee some of the information that had come into the possession of that journal during its campaign against quackery. Mr. Paternoster's evidence consisted principally of brief sketches of the careers of various notorious vendors of secret remedies. The list included men with "degrees" conferred by foundations established by themselves, men with veterinary qualifications, and so-called "analysts" who wrote testimonials at a guinea each, the notorious murderer, Crippen, also coming in for mention in connexion with naval institutes. In his evidence generally, Mr. Paternoster dealt mainly with the distribution of nostrums by means of postal advertising. He remarked that the present condition of affairs put a premium upon fraudulent misrepresentation, because an advertiser who was absolutely unscrupulous gained an advantage over one who had some qualms of conscience. The follow up system, in which a series of letters of gradually increasing intensity were sent to an inquirer,

was the most successful method of proprietary medicine advertising in use to-day. Another method was the wide distribution of free samples followed by a huge advertising campaign. After three months' advertising, the vendor of the preparation expected to get his money back with considerable profits. A plan that had been in continuous operation in this country for the last ten years was to engage lady "health lecturers," who were instructed in a book of "patter" relating to the nostrum offered for sale and in a few elementary hygienic matters. These women held meetings, usually for ladies only, in which the nostrum was recommended. It was remarkable how sufferers from a particular disease became known to the quacks. Lists of sufferers were sold at 5s. or 6s. per 1,000, the charge for lists of consumptives being somewhat higher because this was one of the most profitable classes of patient. Perhaps a man who had sold for years a "consumption cure" would decide to turn his attention to rupture; he sold his list of consumptive patients to an agency and bought a number of "rupture names" to start with.

The witness had not concluded his evidence when the Committee adjourned.

OPENING CEREMONIES AT THE MEDICAL SCHOOLS.

Belfast Medical School.

The opening address was delivered by Dr. Thomas Houston in the Royal Victoria Hospital on October 17th. Dr. Houston welcomed the students: he drew their attention to the enormous changes that had taken place in the last forty years: this change amounted to a revolution and was by no means at an end. But, as ever before, the habits and training students received in their undergraduate career were of priceless importance. The new element or factor lay in the laboratory and in the necessity of highly-skilled and specialized technique. It was by laboratory work that Pasteur forty years ago made his great discoveries and Lister adapted them to surgery. This movement would be embodied in Belfast not merely in the greatly increased laboratory work in the university but also in the King Edward Memorial shortly to be erected in connexion with the Royal Victoria Hospital, in which laboratories for larger pathological, chemical, vaccine, bacteriological, and electrical work would all find place. He then recalled some of his personal experiences as a student, and illustrated the changes that surgery had undergone. It was difficult to see clearly in all such momentous changes, and students should early begin not to accept dogmatic assertion, and to distrust inferences founded on inefficient proof. But although the surgeon had lately been the most useful man in the profession, yet in many cases surgery was a confession of failure. In the future bacteriology must become a study for all medical men and the microscope a most useful, indeed a necessary, instrument.

There were signs of progress; although surgical operations were and would continue to be a necessity in many cases, their sphere was narrowing. In bacteriological infections, often much harm was done by surgical interference. What defence could be brought forward to extenuate a diffuse tuberculosis or tuberculous meningitis following the scraping of a tuberculous gland? Dr. Houston then passed in review the treatments of these infections: following the analogy of the surgical procedure, great hopes were built on the chemical or antiseptic or aseptic treatment; but this failed altogether in internal infections, and was but rarely a success even in skin affections. Syphilis and malaria seemed to furnish exceptions but they were not strictly bacteriological; however, chemotherapy was a splendid field for future investigators. Bier's method, the Roentgen rays, and others had all their use, but not seldom failed. The expectant method answered in pneumonia and typhoid, but failed utterly in cerebro-spinal fever. Serum therapy was a magnificent success in diphtheria, and lately in cerebro-spinal fever, where Flexner's serum reduced the deaths in the Belfast epidemic from 80 to 30 per cent.; a potent serum postulated a potentiality in the animal of manufacturing limitless antitoxin to the various poisons which did not exist. Lastly, vaccine-therapy was put on a scientific basis by Wright, who adopted a procedure of Leishman; he began by an endeavour to find a prophylaxis to typhoid. His method and beautiful technique furnished a rational explanation of many phenomena—why massage and exercise agreed in some cases and rest was demanded in others.

Dr. Houston concluded by saying that clinical methods furnished only a presumptive diagnosis; bacteriology, a real diagnosis. Care, infinite care, was necessary; but the profession was rising to a higher level: and it was for each one to see that he or she did the utmost to assist in the elevation.

ROYAL MEDICAL BENEVOLENT FUND.

At the October meeting 19 cases were considered, and grants amounting to £181 made to the applicants. Appended is an abstract of the cases relieved:

1. Widow, aged 53, of M.D.Glasg. Practically unprovided for at husband's death, and children only able to give slight occasional help. Takes boarders but finds great difficulty in making ends meet. Relieved once, £10. Voted £5.

2. M.D.Edin., aged 69. Has practised for several years in a large provincial town, but has been in bad health and at present is incapacited. Voted £12.

3. Daughters, aged 51 and 42, of late M.R.C.S. After father's death helped to support an invalid mother by taking boarders, and have since acted as companions. Income £15 a year each, and one is only just convalescent from a critical illness. Voted £10.

4. Daughter, aged 52, of late M.D. Lost her home a year ago through the death of a brother, and so far has been unable to obtain employment. Voted £10.

5. Daughter, aged 73, of late M.R.C.S. Has supported herself as a housekeeper for many years, but is now past work and has exhausted her small savings. Voted £6 and advised to apply for an old age pension.

6. Widow, aged 45, of M.B., C.M.Glasg. Husband's means were exhausted by a long expensive illness which preceded his death a year ago. Has taken a house in a large town, and hopes to obtain boarders. One daughter, aged 15. Voted £10.

7. Widow, aged 45, of M.R.C.S. Practically unprovided for at husband's death a few years ago, and endeavours to support herself by letting lodgings. Three children, the eldest earning 10s. a week as a clerk, and others dependent. Relieved three times, £35. Voted £12.

8. Widow, aged 72, of M.D. St. Andrews. No income, and family only able to give slight assistance. Relieved five times, £66. Voted £6, subject to application being made for an old age pension.

9. Widow, aged 69, of L.R.C.P.Edin. Income £12 a year, and receives a little help from her children. Relieved once, £10. Voted £10.

10. Widow, aged 46, of M.D. Receives a home at a boarding house in return for her services, but has never been able to obtain a paid post. Only child, a boy aged 14, is at Epsom College. Relieved thirteen times, £146. Voted £5.

11. Widow, aged 33, of M.D.Lond. No income, and occupation practically impossible, owing to feeble health and deafness. Three children, of whom two have been adopted by relations, the third being at school. Relieved once, £5. Voted £5.

12. Daughter, aged 40, of late F.R.C.S. No income, and regular occupation impossible, on account of ill health. Receives 10s. a month from another society. Relieved six times, £72. Voted £12.

13. Daughter, aged 50, of late M.R.C.S. Supports herself by letting lodgings in the summer and keeping a small sweet-shop in the winter, but has had a very bad season, and consequently has no means to buy any stock. Relieved once, £10. Voted £10.

14. Daughter, aged 58, of late M.R.C.S. Had a small income, but lost it through the speculations of a friend to whom it was entrusted for investment, and is now dependent on a relation who can ill afford to help. Relieved three times, £15. Voted £12.

15. Daughter, aged 63, of late M.R.C.S. No income; is in very bad health and consequently dependent on this fund and a small weekly allowance from a friend. Relieved eight times, £90. Voted £12.

16. Widow, aged 72, of M.R.C.S. Is a chronic invalid and dependent on an old age pension and slight irregular help from her children. Relieved seven times, £86. Voted £12.

17. Widow, aged 75, of L.R.C.P.Edin. Supplements an income of a few shillings a week by letting lodgings, but often has her rooms empty and is in failing health. Relieved twice, £24. Voted £12.

18. Daughter, aged 53, of late M.R.C.S. Used to be a nurse, but is now unable to support herself owing to chronic glaucoma. Income £4 a year, and receives slight help from friends. Voted £10.

19. Widow, aged 80, of F.R.C.S. No children and small income insufficient for expenses which are quite unavoidable on account of ill health. Relieved three times, £30. Voted £10.

Contributions may be sent to the Honorary Treasurer, Dr. Samuel West, 15, Wimpole Street, W.

THE "EDINBURGH REVIEW" ON SECRET REMEDIES.

THE current number of the *Edinburgh Review*, issued last week, contains an article by Mr. Hugh Elliot on secret remedies, founded in the main on the two volumes, *Secret Remedies* and *More Secret Remedies*, published by the British Medical Association, and upon a pamphlet issued by the "Owners of Proprietary Articles' Section" of the London Chamber of Commerce. Mr. Elliot makes rather a parade of the impartiality with which he has sought to state the arguments on both sides of the controversy, but his general conclusion is that the evils of the trade in secret remedies can only be checked by the application of the general principle *caveat emptor*, by the spread of education, and by administrative action, apparently by the police, in cases in which charges of obtaining money under false pretences could be sustained. We will not grumble with Mr. Elliot's attempt to be impartial, but must observe that early in his article he introduces, no doubt by inadvertence, a statement which imports some prejudice. "The attack," he writes, "was opened by the BRITISH MEDICAL JOURNAL in 1904." The historical matter of fact is that the series of articles afterwards collected in the volume *Secret Remedies* were in the first place undertaken in order to supply information with regard to the constitution of much advertised remedies to members of the medical profession, who were often questioned by patients with regard to the nature and efficacy of the remedies, and were asked, if not to prescribe them, at any rate to sanction their use. The main object of the publication in a popular form of the materials published, in the first place, for the use of members of the medical profession, was to promote that education which the writer in the *Edinburgh Review* considers so essential.

There is another passage which shows that the judge has not fully understood the case upon which he has set himself to adjudicate. We may make the following quotation the more readily because it is used partly as an argument against the validity of the objection of the trade to the proposal to require the publication on every bottle or package of the name and quantity of each constituent, or at least of every active or dangerous constituent. He says:

"Yet we must remember that proprietary medicines have continued to be very valuable paying properties after their secrecy was divulged. Such, for instance, are antipyrin, urotropin, aspirin, adrenine, and 'tabloid' preparations: for the merits of these substances are recognized so widely that they represent a valuable addition to a doctor's pharmacopœia."

The inclusion in this list of "tabloids"—practically a trade mark for a method of dispensing drugs of any kind—is evidence that the facts have not been fully understood. Antipyrin, urotropin, and aspirin are registered trade names for bodies of definite chemical composition, which it is open to any chemist to make if he chooses to take the trouble, though he may not apply the trade name to the product. To imply, as we think Mr. Elliot does, that they may be placed in the same class as Beecham's pills, or tuberculozyne, or antineurasthin—to instance three preparations named in the article—is misleading. They are trade names for a particular firm's brand of a synthetic chemical substance of definite known composition.

Mr. Elliot, in opening the case for the proprietors, makes the point that the "attack" on proprietary medicines originated not with the victims of the fraud, nor with philanthropists or social reformers, but with the British Medical Association as representing the medical profession; and he states that it has been suggested that the Association is animated chiefly by the desire to suppress unlicensed competition. The assumption underlying this would seem to be that a man cannot be animated by high ideals and definite aims in any calling in which he makes his living from services rendered to clients. Consideration of the relation between doctor and patient in [illegible] observer who makes an impartial study of the facts, and has any adequate acquaintance with the history of medicine, that its practitioners, though they demand, like those who follow other professions, adequate reward for their labours, are imbued with certain ideals inculcated by their training, and kept alive by their knowledge of and respect for the traditions of the calling, with the result that when fees are not forthcoming the necessary care and attention will not be withheld from those who need it.

Mr. Elliot fastens upon the statement in the memorandum of evidence put in by the British Medical Association, "that financially the profession gained by the unrestricted use of proprietary medicines and preparations." And we are then presented with the following rhetorical questions: "And if it is really philanthropy which impels the profession along a path contrary to their interests, why, asks the proprietor of secret remedies, does not the Association gather itself together for the greatest achievement open to mankind—the prevention of disease? Why do they not strain every nerve for the extinction of tuberculosis and the other preventable diseases? Why is the interest in prevention among the profession at large chiefly confined to small-pox, where the preventive measures are such as to require every healthy baby born into the world to be delivered into the doctor's hands? Why does the dentist who gaily stops a hole in our teeth not inform us of the measures requisite for preventing the arrival of future holes?" Mr. Elliot admits that the exaggeration, and, indeed, the baselessness, of this criticism will be obvious to every well-informed person, but he might have pointed out that the enormous progress which has taken place in the theory and practice of preventive medicine within less than a century is almost entirely due to the investigations and advocacy of members of the medical profession, who have by their persistent efforts partly converted public opinion. The results of its efforts are reflected in the public health legislation of the last half-century, and in the elaborate system of public health administration which has been called into existence. Such a charge as is implied in the question is refuted also by the modern development of the treatment, preventive and curative, of many diseases by appropriate serums and vaccines, to the notification of tuberculous disease, to the early treatment of ophthalmia neonatorum, and, lastly, to the enormous amount of time and money that is devoted to the study of cancerous disease. To the discovery and application of means for the prevention of disease the medical profession is devoting time, energy, and money. In this good work the British Medical Association has not been backward; indeed, it may justly claim to have taken the lead.

There are several reasons why charges are not more readily preferred by the victims of the nostrum-monger. One is that no man is ever ready publicly to admit that he has committed a foolish act: another is that, the greater number of proprietary remedies being composed of harmless ingredients, it is only in very flagrant cases that the damage becomes apparent to the victim, either owing to delay in obtaining suitable treatment in serious disease, such as cancer or tuberculosis, or by the exhibition of a drug that may be harmful from its inherent qualities or from its prescription without due regard to the nature of the individual case. Self-medication without due regard to the requirements of the individual must always be unsatisfactory and often dangerous. It is not difficult to conceive a case in which the prescription Mr. Elliot gives as an illustration of the safety of self-drugging—"℞ Pil. hydrarg. gr. iiij"—might imperil life.

This brings us to another point upon which the writer in the *Edinburgh Review* shows himself an uncertain guide. He quotes from the pamphlet issued by the London Chamber of Commerce the claim that proprietary medicines constitute a system of medication that is unsurpassed for simplicity, uniformity, and cheapness. The claims as to simplicity and cheapness we may pass by as too absurd to need refutation. But about uniformity there is something to be said. It is abundantly proved that secret remedies are not uniform. In the first place, their composition may be changed, and in certain instances has been changed, without any alteration in the name; and in the second place, many are so imperfectly dispensed that the dose varies within very wide limits. Certain headache powders, for example, have been shown to be very far from uniform in their compounding, the amount varying in different powders or tablets within quite wide limits. As a contrast to this let it be noted that one of the chief purposes of the *British Pharmacopœia*, the official publication issued under the authority of Parliament,

is to ensure the uniformity of drugs. Any one who will take the trouble to consult that volume will find that minute directions are given to ensure uniform strength and the absence of impurities. The prescriptions of the medical profession are made up according to the direction of the *British Pharmacopœia*, and uniformity is thus ensured. The technical terms, such as "Pil. Hydrarg.," which excite the easy ridicule of some critics, are safeguards to the public because the use of the technical term implies that this preparation must be that directed by the *British Pharmacopœia*.

It is true that doctors are not infallible, but it is true also that not all diseases are curable; doubtless cases occur in which medical science is unable to cure, arrest, or sometimes, though the number is yearly decreasing, even to identify the disease, but such a statement is no argument for the safety or the efficacy of proprietary medicines, any more than it is a sound proposition to advance the fact that bed is the most dangerous place in the world, because most people die there. Patent medicines are like ready-made clothes, for although in certain cases they may serve a useful purpose, they are administered without regard of the needs of the individual, and it remains purely a matter of chance whether the fit is good or bad.

A NATIONAL MEMORIAL TO LORD LISTER.

A large and influential meeting was held at the Mansion House, London, on October 23rd, for the purpose of establishing a fund for a memorial to the late Lord Lister. This, it is proposed, should take the form of a medallion to be placed in Westminster Abbey, a monument to be erected in the metropolis, and the establishment of an international Lister memorial fund for the advancement of surgery. The Lord Mayor presided, and the assembly included the Lord Chancellor (Lord Haldane), who attended in the absence, through indisposition, of the Prime Minister; Lord Avebury, Lord Cromer, Sir Archibald Geikie (Royal Society), Sir Rickman Godlee (Royal College of Surgeons), Sir Thomas Barlow (Royal College of Physicians), Sir Francis Champneys (Royal Society of Medicine), Professor Saundby (British Medical Association), Sir Donald MacAlister (General Medical Council), Sir William Osler (University of Oxford), Professor Howard Marsh (University of Cambridge), Sir Alfred Pearce Gould (University of London), Sir John Rose Bradford, F.R.S. (Honorary Secretary to the fund), and many others.

Establishment of a Memorial.

The Lord Mayor said that the purpose of the meeting was to inaugurate a lasting memorial to one of the most eminent men who had adorned the profession to which he (the Lord Mayor) had the honour to belong. The nation gave great prizes and distinctions to those who could invent engines of destruction of life and limb, but it thought too little of the skill, intelligence, and ingenuity of those who had saved life and limb, and had mitigated suffering in thousands of cases. Such an one was Lord Lister, who devoted a life of study to the great discovery with which his name was associated.

The Honorary Secretary (Sir John Rose Bradford) said that letters regretting inability to attend had been received (amongst others) from Prince Alexander of Teck, Mr. A. J. Balfour, the Archbishop of Canterbury, Sir James Whitehead, the Ambassadors of France, Russia, the United States, the Ottoman Empire, the Belgian Minister, and many members of the House of Lords and House of Commons. The Archbishop of Canterbury wrote that it would be difficult to exaggerate the value of Lord Lister's services to humanity and the animal creation generally; and Mr. Balfour felt confident that from the nature of the cause the appeal would meet with ready and substantial support.

The Lord Chancellor (Lord Haldane) moved the first resolution:

> That this meeting is of opinion that the priceless services of the late Lord Lister to the cause of science and the alleviation of human suffering should be commemorated by a suitable memorial.

Lord Haldane remarked that he had just come from the house of the Prime Minister, whom only the stern injunction of his physicians that he must husband his strength for unavoidable duties prevented from being present. Mr. Asquith would have wished, as head of the Government, to move the resolution, and to testify on behalf of the Government to the importance which it attached to this memorial. Lord Haldane mentioned that he had the honour of knowing Lord Lister, and was privileged to be one of the spectators at that extraordinary tribute paid after his death to his memory, not merely by the people of this nation but by the potentates and peoples of other great nations. A distinguished foreign critic once observed that the British were a remarkable people—they were not great at organization, probably the average number of highly educated men was not as great among them as it was in some other countries—but the British race had this remarkable quality—it poured out a succession of extraordinary leaders of men in science and in literature. Every now and then somebody appeared who was outstanding, not merely amongst his fellow countrymen, but in the world. Lord Haldane grouped the names of Darwin, Kelvin, and Lister as three men who stood for much more than pre-eminence among their fellow Britons. Lister in some ways was different from the other two. He did not inaugurate a great world-wide, far-reaching conception such as that which underlay the doctrine of the *Origin of Species*, nor was he associated with matters resembling those far-reaching applications of the theory of mathematics and the principles of physical science which were the outcome of the inventive genius and imagination of Kelvin. Lister did something in its way more extraordinary. He gave to the world a discovery which revolutionized the whole conditions of the practice of surgery. Not only did the terrible diseases of the surgical hospital almost disappear, but the work which Lister did opened up a whole new field, which had since been explored in a fashion that had had the most fruitful results. The basis of his discovery was his treatment of micro-organisms, and his principles set men thinking so that they were speedily transferred to the science of medicine as a whole. It was hardly too much to say that Lister's discoveries had been almost as fruitful in turning men's minds to the study of micro-organisms in medicine as they were in his own department of surgery. In surgery it was not only that a whole series of surgical operations, previously attended with the utmost danger, and resulting in death in a large percentage of cases became capable of being performed with comparative ease and certainty, but a whole field of new surgical operations were rendered possible, which no one but a madman would have attempted before Lister made his discoveries. That was a tremendous revolution, and in time it came to be accepted as such all over the world, so that now a surgeon would as soon think of neglecting Listerian precepts as of going without his food. In medicine the attention which had been directed to the effect of life in these minute forms upon the human organism was no less marked; the discoveries that had been made in pathology, in tropical diseases, plague and all other maladies attendant upon the introduction of micro-organisms, were due to the new zeal stimulated by Listerian methods being devoted to the cognate study of medicine and the life of the organism as a living whole. The man who did that effected a revolution perhaps more definite, more precise, more far-reaching than anything done by even Darwin and Kelvin, important as the changes were that they introduced, and this country might be proud of the privilege of seeing arise from its ranks such a man as Lister. Another legitimate source of pride was that Lister's work shared that splendid privilege of scientific accomplishment that it was done not for one nation but for humanity at large; it was as accessible and valuable to every other nation as it was to theirs; in science was to be seen that noble spectacle of the co-operation of nations for great and peaceful purposes for the good of mankind. Lister was one of the great pioneers in that kind of altruism, and it was not unnatural that he should come to be regarded, even in his own lifetime, as a man who belonged not to Great Britain but to the world, and of whom the world was consequently proud. It was fitting that the Government should be represented at such a gathering as this, for there was no part of the community that had not profited by Lister's discoveries; all were his debtors, the humblest and the greatest. The poor had benefited, perhaps, even more than the rich, and therefore it was fitting that the meeting should assume a national aspect, and that in the

name of the whole nation honour should be done to the memory of one of the greatest men of recent years.

Sir Archibald Geikie (President of the Royal Society) seconded the resolution. He described the late Lord Lister as at once one of the greatest men of science the world had ever seen and one of the most signal benefactors of humanity as a result of the work to which he gave his life. Sir Archibald briefly reviewed Lord Lister's career and the discoveries by which he was able practically to banish from operations the malign demons of inflammation and suppuration, and to enable the most difficult of operations, and new operations, to be performed with ease and success. He threw a flood of fresh light on the relations of bacteria to disease, and, in conjunction with Pasteur and Koch, Lister might be regarded as one of the founders of the new science of bacteriology. His name would be handed down to future generations as one of the chief alleviators of human suffering. Into every hospital in the world he had brought hope and confidence, with diminution of pain and death, where before his time despair, prolonged suffering, and mortality were rampant.

The resolution was put to the meeting and carried unanimously.

The Form of the Memorial.

Lord Avebury moved the second resolution:

That this meeting cordially supports the scheme which has been adopted by the General Committee appointed for the purpose of deciding what should be the form of the memorial, namely:

A memorial in Westminster Abbey, to take the form of a tablet with medallion and inscription.

The erection of a monument in a public place in London.

The establishment of an International Lister Memorial Fund for the advancement of surgery, from which either grants in aid of researches bearing on surgery, or awards in recognition of distinguished contributions to surgical science should be made, irrespective of nationality.

Lord Avebury referred to the many directions—politics, music, art, literature—in which this country had deserved well of the world. In medicine the great names of Harvey, Jenner, Simpson, and Lister would never be forgotten. Of Lister it could be said that, with the possible exception of Pasteur, no one had done so much to mitigate the sufferings of poor human nature. Lord Roberts once remarked to him (Lord Avebury) that no one except those familiar with the condition of military hospitals before Lord Lister's time could possibly realize the value of his contribution to medical science.

Sir Rickman Godlee (President of the Royal College of Surgeons), in seconding the resolution, alluded to the heavy responsibility of speaking for the medical profession, and especially the surgical part of it, on this occasion. However, he could claim that very few of those present had had a greater opportunity than himself of seeing the enormous change that had come over the domain of surgery in the last forty years, chiefly through the discoveries and the enlightened perseverance in putting them into practice of the great man to whom it was proposed to raise a memorial. It might almost be said to be fortunate that Lister had charge of what were at the time perhaps the most unhealthy wards in the kingdom, because the reduction in mortality that took place consequent on his reforms was extremely striking. In a short time those wards became more healthy than any others in the world at the same date. If it were possible to draw a picture, what a contrast there would be between the wards of the early Seventies and those of to-day! The nature of the cases susceptible of surgical treatment was now vastly different; surgery had advanced in every direction, and now cured or relieved a great number of diseases which formerly were considered incurable. Hardly any region of the body was now beyond its reach, and conditions which in the old days were only helped by amputation were now relieved by milder means. Lister's labours continued to yield fruit of incalculable value. Let it be remembered that he was not merely the promulgator of one new [illegible] practical surgeon of the highest eminence. [illegible] mentioned the various proposals for a memorial to Lord Lister that had been considered by the Executive Committee, and laid emphasis on the international character of the awards to be granted from the memorial fund.

The resolution was carried unanimously.

The Hon. W. F. D. Smith moved a vote of thanks to the Lord Mayor, and referred to the institute with which Lord Lister's name was latterly associated, and also to the personal characteristics of the scientist whom the whole world held in reverence. Lord Lister was honoured by his Sovereign and by his fellow-scientists, but his greatest reward was the consciousness that his discoveries had saved a great sum of human life, and alleviated a vast mass of human suffering.

In acknowledging the vote of thanks, which was carried with acclamation, the Lord Mayor alluded to the reforms in hospital practice which in his experience had followed the establishment of Listerian principles.

The meeting then terminated.

Donations to the fund may be sent to the Treasurers of the Lister Memorial Fund, at the Royal Society, Burlington House, W.

LITERARY NOTES.

The papers, speaking of Mr. Roosevelt, who was so fortunately saved from death by the bulk of the manuscript he carried in his pocket, say his "stamina is remarkable." We read the statement with great pleasure, but we wish it had been expressed in better grammar. As "stamina" is so often treated as a singular form, we hope it will not be thought pedantic if we point out that it is plural. The singular is "stamen." The word recalls the story of Thomas Willis, who, when called in to see one of the sons of the Duke of York, afterwards James II, gave his opinion in the words, *Mala stamina vitae*, which gave such offence that his advice was never asked again by the royal father. "Stamina" as a singular noun is as grotesque a barbarism as "phenomena," which we remembered seeing followed by a singular verb in a letter addressed to a contemporary by one of the most distinguished physicians of the day. The solecism was all the more remarkable, since the writer was somewhat noted for his literary style.

Some three years ago we were gravely taken to task by a correspondent for allowing a contributor to speak "of women who are but fighting for a just cause" as "Suffragettes." We pointed out that the word was frequently used in the editorial as well as the advertising columns of *Votes for Women*. Now we note that the word has received what may be called official consecration, as it is the title of the journal "edited by Christabel Pankhurst, LL.B.," the first number of which appeared on Friday, October 18th. The foreword to that instructive periodical says:

The name "Suffragette," first applied to members of the W.S.P.U. by the newspapers, has, by use and association, been purified of any opprobrium or distasteful significance it may have borne in the past. It is now a name of highest honour, and women in ever-increasing thousands bear it with pride; and until a better is invented it stands as no other word does for the independence, courage, public spirit, and, we may add, humour, which are the attributes of the really womanly woman.

Further, we are told that "the suffragette has come to stay." Whatever high qualities the suffragists may have shown, it certainly had not struck us that humour was one of them. But there is something deliciously humorous in the assurance given, since the lady who may be presumed to have written this finds it, we understand, inconvenient at present to stay in the country in which *The Suffragette* is published.

Referring to an article on cramp rings which appeared in the Journal of October 19th (p. 1072), Dr. Y. M. Jones-Humphreys (Cemmaes, Montgomeryshire) writes:

It may interest some of your readers, and perhaps some of them can give a better account of the superstition than I can, that rings to "cure fits"—that is, probably epileptic—were worn by people in Wales in the eighteenth century, but the following process had to be observed:

1. To collect twelve pence singly from strangers.
2. To exchange the pence with a stranger for a shilling.

The shilling was then made into a ring. I remember one being made on the thin end of a blacksmith's anvil by being beaten with a hammer.

I can also remember a woman collecting pence from strangers while travelling by train; her husband was with her at the time, and had a ring on one of his fingers, from wearing which she said he had derived great benefit. How many rings were necessary to effect a complete cure she did not say.

British Medical Journal.

SATURDAY, OCTOBER 26TH, 1912.

A SCIENTIFIC STUDY OF MEDICAL BENEFIT.

Mr. I. G. Gibbon, D.Sc., who some time ago published a work on unemployment insurance the result of research in the Department of Sociology in the University of London, has now issued another volume on *Medical Benefit*.[1] It is founded on a study of the experience of Germany and Denmark, and, as in his earlier work, Mr. Gibbon approaches the subject in the impartial spirit of the disinterested scientific observer; he has not set out to prove any thesis, but has collated and analysed the facts of observation and set out the conclusions to which in his judgement they lead. Mr. Gibbon's treatment of the subject is absolutely unemotional, and it is interesting to observe that in the main, and with the exception of certain points of detail, his conclusions fully justify and support the contentions advanced by the British Medical Association in the name of the profession in its criticisms of the medical benefit proposals of the National Insurance scheme as originally put forward. Some of these objections have been met by Parliament in consequence of the representations of the profession, and on some others it is clear that the views commonly held by members of Parliament and by the representatives of the working classes fall far short of the ideal which Mr. Gibbon would put before them.

In Germany, where the law has recently been amended so that it more nearly accords with the principle of the British scheme, sickness insurance including medical benefit is compulsory, but in Denmark it is voluntary, although the State exercises a certain amount of control since it makes a contribution to schemes which fulfil certain conditions it lays down. In Germany sickness insurance comprises medical treatment, drugs and appliances, and money benefit, or as an alternative to these three, institutional benefit with, if the member has dependants, reduced money benefit. Maternity benefit and death benefit are also provided. Invalidity insurance comprises a pension for permanent disablement or for temporary disablement after twenty-six weeks, an old age pension after 70, and, at the discretion of the insurance authorities, treatment for an ailment which threatens premature invalidity. A large amount of sanatorium treatment for tuberculosis is given under this head.

We must not set out here all the conclusions to which Mr. Gibbon has been led by his facts, but may indicate some of the most important. The facts, he says, show that medical service should be provided mainly in kind, and not by giving the insured person a sum of money and leaving him to make his own arrangements. Free choice of doctor should be ensured in the interests both of the doctor and of the patient, but he considers it essential that strict control should be exercised over medical practitioners in their treatment of insured persons to prevent such abuses as laxity with regard to malingering, unnecessary visits, and unnecessary ordering of expensive drugs and appliances. On the other hand, the facts, he holds, prove that detailed control in expert matters should be exercised mainly through the organization of the doctors themselves—the difficulties which have arisen in Germany pointing to the conclusion that expert should control expert. With regard to remuneration, he says that the facts indicate that medical practitioners will demand, and will probably obtain, a higher rate of remuneration from the working classes than has been general in the past. Further, while the payment by the insurance authorities for medical services should be in the form of capitation fees, he holds it reasonable that individual doctors should be remunerated according to services rendered, and that for this purpose insurance authorities should make contracts with corporations of doctors, paying the corporation the capitation fees, and leaving the corporation to divide the proceeds among the several doctors according to their respective services.

The evidence he has obtained from Germany leads him to the conclusion that valetudinarianism is a greater menace to the successful working of sickness insurance than deliberate malingering. It is a danger, he says, which hangs on the skirts of all insurance against sickness, or invalidity, or accident, a habit of mind ready to fall victim to disease, and quick to exaggerate small symptoms to gross proportions, and to make a person ill by mere weight of thought. He does not think that the evil in Germany is due solely, perhaps not even primarily, to insurance, which is but one of a number of causes. "In recent years," he says, "men have become more and more alive to the part which mind bears in the causation of disease. Yet, unavoidably, the very efforts to cope with disease may seriously weaken the mental barriers to its inflow. On every hand institutions for dealing with disease are multiplied, insurance schemes among them, and the very fact of doing this emphasizes the existence of disease. Each institution serves as a point of suggestion for ailment. The youth who read the medical treatise thought that he had every ill described except housemaid's knee. The ordinary citizen is becoming surrounded by institution after institution for coping with disease. There is danger that they will do for him what the medical treatise did for the youth; and they are always open before him. The influence of the clever advertising of patent medicines is also very great. The danger is a very serious one, much more serious than deliberate malingering. The poison works more subtly and insidiously. It saps the mental resistance to disease." He concludes that experience proves that for this reason alone there are considerable advantages in making the insured person pay for part of the cost of medical service out of his private resources. It would favour the better development of the system of educating the insured public as to medical treatment and in matters of health, which is a necessary part of any sound health insurance scheme, and the education might perhaps check valetudinarianism.

Experience, he says, proves that institutional benefit is essential for adequate medical treatment, but that such benefit should be restricted within reasonable limits. To achieve this medical practitioners should be remunerated in such a manner that they have not any pecuniary inducement to send cases unnecessarily to hospitals. It does not pay an insurance society, much less the community, that cases which under a judicious system of medical remuneration could

[1] *Medical Benefit: A Study of the Experience of Germany and Denmark.* By I. G. Gibbon, B.A., D.Sc. London: P. S. King and Son. 1912. (Demy 8vo, pp. 511. 6s.)

be equally well treated at home should be sent to hospital, and it is partly on this account that remuneration paid according to the services rendered by the individual doctor, and not by a capitation system, is advantageous to the community. Full advantage of domiciliary treatment cannot, however, be obtained without the provision of an adequate system of home nursing. With regard to the wage limit, the conclusion is that the claims of the doctors that a distinction should be drawn between the terms on which medical service is rendered to persons with comparatively large earnings and persons with small earnings merit sympathetic consideration.

Mr. Gibbon, as we have said, looks upon the problems which so nearly concern the medical profession with the indifferent eye of the impartial scientific observer. It is, therefore, all the more interesting to find him coming to the conclusion that the medical profession should corporately arrange with the insurance authorities for medical service, with indeed a liberal dash of individual stimulus. This conclusion may be commended to the attention of Drs. Harford and Mills, who in their pamphlet have sought to convince the profession that the scheme of a public medical service conducted by the medical profession is impracticable and contrary to public policy. Mr. Gibbon goes further, and asks why, if doctors should corporately undertake medical service, a principle which he regards as the inevitable consequence of the facts he has accumulated, their corporate responsibility should not be extended to hospital as well as domiciliary treatment. The different kinds of treatment, he observes, cannot be divided by watertight compartments; there must be organic relationship between them. He thinks that there is a risk that this will not be secured satisfactorily and permanently unless all are under one jurisdiction, and he believes that if doctors were corporately responsible for hospital treatment with a pecuniary interest in it, the difficulty of checking the abuse of hospitals by doctors—that is to say, of checking the sending of patients there without sufficient reason—would be largely solved. He sees three possible methods by which hospital treatment may be provided for insured persons—namely, by public hospitals, either State or municipal, by hospitals run by insurance societies or authorities, and by hospitals under the direction of the organized medical profession. The experience of State or municipal hospitals gained on the Continent is not such, he says, as to make the impartial observer very enthusiastic of the re- Against the provision of institutional treatment directly by the insurance societies and authorities is the objection that the organic relationship between forms of medical service is lost. He acknowledges that the tendency at present is towards municipal provision of institutional treatment, but believes that the permanent development may lie in quite another direction. He believes that, while the capital expenditure on buildings and equipments may be provided by public authorities or by [illegible] essential [illegible] the [illegible] of the [illegible]. If, he [illegible] is to be [illegible] and [illegible] Germany in [illegible] and corporate [illegible] liability for service [illegible], Mr. Gibbon thinks, [illegible] unnecessary needless [illegible] the work of the doctor, whether individually or through his society, or if he imposes in either of these ways a control which could be equally well exercised by the doctors themselves, he is "violating the demands of democracy no less essentially than does a tyrant who exacts forced labour at the point of the bayonet." Mr. Gibbon says that in the scheme of medical administration suggested by his observations, the conclusion is that the doctors should organize their own system of control subject to the general supervision of those to whom they render service. He contends further that this conclusion deduced from practical needs affords the best form of control, and is seen to be in accord with the broad claims of democratic development. He recognizes that a system under which there is free choice of doctor clearly implies that ordinarily every doctor should be free to join the medical organization, and that each should have an equal voice in the management and control: this is the ideal of the British Medical Association.

THE SECRET OF LONG LIFE.

Whenever any more or less distinguished person reaches the age of 80 he is at once subjected to a close interrogatory as to his habits of life, in the hope that the secret of his long life may be discovered. The other day Mr. Frederic Harrison celebrated his 81st birthday, and confided to a representative of the *Daily Mail* "five golden rules of health." They are as follows: "(1) Abstain from tobacco, spirits, made dishes, and all such dreadful things. I am satisfied with a little bit of mutton and rice pudding. (2) Rise from a meal with an appetite. I believe people eat too much. (3) Walk every day for two hours. This I am going to do as soon as I get through a pile of letters and telegrams from Florence and Rome. I am too old to play at tennis, and golf is too slow. (4) Sleep eight hours. People cannot sleep who smoke themselves black in the face, eat too much, and have not walked enough. (5) More important than all—be content with what you have got. Take things quietly." Lord Strathcona, who is 92, expressed approval of these rules, adding details of his own personal habits. He has not smoked for the past seventy years, and does not believe in smoking. He thinks that most people eat too much: for many years he has only taken two meals a day, breakfast and dinner. He eats little or no meat, and the diet agrees with him. Exercise is decidedly, in his opinion, a most important factor of good health and longevity, but, like Mr. Harrison, he has a great deal of correspondence to go through; hence he cannot always find the time for walks. He makes a point of not sleeping longer than six hours a day. Tolstoi, the grand old man of Russia, taught that the secret of long life is to be found in the following hygienic code, which is now, we believe, being circulated among his countrymen: Fresh air, day and night; daily exercise; moderation in eating and drinking; one hot bath weekly, and a cold one daily; comfortable and not over-heavy clothes; a dry, spacious, and sunny dwelling; scrupulous cleanliness; regular work, which acts as a preventive of ills of body and mind. Rest after labour, he teaches, must not be sought in distraction. Night was intended for sleep; the chief condition of good health is [illegible] fruitful in labour and ennobled by good actions. Moltke in his 90th year said he had maintained his health by great moderation in all things, by regular outdoor exercise in all weather, good and bad, never a whole day at home. In an article by Mr. H. Ottewill Bruce, which appears in

the current number of *Chambers's Journal*, the results of an investigation of twenty-four recent American centenarians are given. Eighteen of them were women, and previous investigations have shown that women have a greater predisposition to longevity than men. This may be due to the fact that as a rule they lead a more protected and less strenuous life. Otherwise the experience of the individuals adds little to what has already been said. It is to be noted, however, that some attributed their length of days to simple living—and no medicine. Simple living—which, by the way, is a very different thing from the highly artificial and often unwholesome existence sometimes known as the simple life—is excellent; but the implication that the avoidance of medicine tends to lengthen life is a confusion between cause and effect. The triple brass of a sound constitution will bear unhurt shocks which make occasional tinkering necessary for a weaker vessel. It is significant, however, that the advice comes from America, where the consumption of quack medicines is very great and widespread. Self-drugging is undoubtedly an evil to be avoided by any one who wishes his days to be long in the land. Then the methods of the vendors of quack remedies, with their circulars full of pseudo-scientific descriptions of disease and its effects, create an unhealthy state of mind. The microbe is too much with us. One lady thought the secret of longevity was to be found in the *dive bouteille*, for her prescription was burgundy four times a day! The most comprehensive replies were given by a negress, who attributed her long life to a good constitution, and a tramp, who said he had never followed any rule of life. All the centenarians in this list, it was noted, were married, and the writer of the article says he has no recollection of ever coming across a record of an unmarried centenarian, man or woman. This is a fallacy which has been exposed several times. It is obvious that more persons of sound health will marry than people of bad constitution. It may be, too, that there is something in the fact that the responsibilities of married life tend to make a man put forth his best endeavour, and saves him from the perils of idleness. It may further be allowed that a married man is, as a rule, better looked after than a bachelor. This, however, scarcely accounts for the large proportion of women among centenarians, unless it be that, contrary to the doctrines of modern feminism, marriage is, after all, woman's natural profession.

The precept not to worry, which we find so often repeated, is sound in itself; it is in the application that it is difficult. If a person has nothing to worry about, there is no fear of the fretting of the mind wearing out the body. It has been cynically said that a bad heart and a good digestion form the best equipment for long life. It has often been noticed in men or women who have led a life of great nervous strain, that when they get into the sere and yellow leaf their mind becomes less active, and the body at once, as if relieved from the constant mental goad, becomes healthy. The absence of wear and tear of mind is probably one reason why most centenarians are found in the country, usually among the poor and ignorant classes. Not a few of them are mere wrecks who have drifted into workhouses. They have not worried because they have taken things as they come with the fatalistic resignation of the poor in spirit. The intellectual and other problems which press so hard on this generation leave them untouched. With them sufficient for the day are the needs thereof. But such vegetative centenarians do not count, for it is most true that *non est vivere sed valere vita*. Old Parr, who, if he did not live to be 152 years 9 months, was probably at least a centenarian, retained his faculties to the end; all his organs were found healthy by William Harvey, who made the *post-mortem* examination. He might well have lived longer but for the transference from his healthy surroundings in Shropshire to London, and the different habits of life forced upon him when he became an object of curiosity to the Court. We believe Chevreul's death was hastened by the drums and trumpetings, as Sir Thomas Browne would say, with which enthusiasts came to celebrate his centenary, and we know that some admirers of Manuel Garcia were afraid that the festivities intended to mark his 100th birthday might have been changed into funeral obsequies.

It must be admitted that all the eager research that has been brought to bear on the question has scarcely touched the secret of longevity. The most exhaustive investigation of aged persons ever made is probably that made by Sir George Humphry for the British Medical Association. His conclusion, besides the importance of "temperance in all things," may be given in his own words as follows: "The prime requisite is the faculty of age in the blood by inheritance; in other words, that the body has been wound up, as it were, and sent into the world with the initial force necessary to carry on the living processes through a long period; that this is the case with every organ, and that the several organs are so adjusted to one another as to form a well-balanced whole."[1] In a word, if we may parody the famous explanation of the action of opium given by Molière's candidate for the doctor's degree, a man lives long *quia est in eo virtus longaevitiva*. A habit of long life is engendered somehow and is often transmitted to descendants. Therefore the most essential thing is to come of a long-lived ancestry.

Temperance in all things is a golden maxim, but men have lived to patriarchal ages who have persistently set this precept at defiance. Victor Hugo, who lived to the age of 83, did not smoke and he was moderate in his use of wine. On the other hand, he was a great eater. Theophile Gautier speaks of seeing his plate piled at the same time with "fabulous mixtures of cutlets, haricots cooked with oil, beef with tomato sauce, ham omelet, café au lait, with a little vinegar, a little mustard, and Brie cheese, which he devoured indiscriminately, very fast and very long." The gorge rises at it. The poet was intemperate in other ways, and we gather from his admiring biographer that he boasted of sacrificing three times to Venus at different altars in the same night. And this when he was 72. Hugo retained his Gargantuan appetite till his death at the age of 83. His intellect was vigorous to the end. The Homeric feats of Bismarck in eating and drinking made him noted even in a land of mighty trenchermen; he mixed beer and champagne, and ate all sorts of indigestible messes in quantities that would have killed an ordinary man. Yet he lived to be 84, retaining all the lucidity and strength of his understanding. These, of course, are heroic examples which do not invalidate the maxim that most men dig their graves with their teeth.

It must be owned, however, that the most perfect life from a hygienic point of view will not ensure longevity. A melancholy illustration of this is Sir Benjamin Ward Richardson, who gave it as his "fixed opinion" that every man should attain the age of 100. This was to be done by observing certain rules, which may be summarized as never to smoke

[1] British Medical Journal, March 10th, 1888.

or drink, to eat very little meat, to keep early hours, and so forth. Yet, within a few months of expressing the opinion we have quoted, Richardson, the sanitarily perfect man, himself died at an age a full generation short of that fixed by him as the limit of life attainable by all who followed his rules.

All the rules which have so far been formulated are summarized in the dedication of the famous *Regimen Sanitatis* of Salerno:

> Si vis incolumem, si vis te vivere sanum,
> Curas tolle graves, irasci crede profanum,
> Parce mero, coenato parum; non sit tibi vanum
> Surgere post epulas; somnum fuge meridianum;
> Ne mictum retine, ne comprime fortiter anum.
> Haec bene si serves, tu longo tempore vives.
> Si tibi deficiant Medici, medici tibi fiant
> Haec tria: mens laeta, requies, moderata diaeta.

All the "rules" are there, and till the elixir of life is discovered man will have to be satisfied with these general precepts.

REMUNERATION AND CONDITIONS OF SERVICE.

THE CHANCELLOR'S STATEMENT.

THE statement made by the Chancellor of the Exchequer to the Advisory Committee on October 23rd with regard to the remuneration the Government proposes to ask the House of Commons to authorize to be paid for medical services under the Insurance Act out of State funds will, we do not doubt, be read with great interest by all members of the profession. The text published in the SUPPLEMENT has been furnished to us by the Insurance Commissioners, and is full and official. It should be read in preference to the condensed statement made later in the day by Mr. Lloyd George in the House of Commons, because it sets out very clearly the course of reasoning by which he has been guided. It should be studied along with the Provisional Regulations for Medical Benefit published in the SUPPLEMENT a fortnight ago, for the two are interdependent, and it will be observed that the statement implies certain alterations in the Regulations.

The alteration of the terms of remuneration now proposed has brought about a new situation, differing materially from that which existed when the Representative Meeting resolved to break off negotiations with the Government. Upon this new situation the members of the profession must pass judgement. The meetings of the Divisions of the British Medical Association which will shortly be held will afford them an opportunity of discussing the matter and expressing their opinions. In coming to a decision they will have the help of the Report which is being drafted by the State Sickness Insurance Committee for presentation to the Council next Thursday. Immediately after that meeting the Council will issue its considered report, and meetings of Divisions will be held between November 4th and 16th. The meeting of the Representative Body has been provisionally fixed for November 19th and 20th.

Mr. Lloyd George's statement put the matter from his point of view, and he declared that throughout the course of the discussion of the scheme he has desired to treat the medical profession fairly. We can only wish that this intention had been made more evident to the profession at an earlier date; but we must now look at matters as they stand, and it will be recognized that on some grounds at least Mr. Lloyd George has modified his attitude so as to approach more nearly to the position desired by the profession. He admitted that the Plender Report was not by itself a sufficient basis for computing the amount which it would be fair to pay the profession under the conditions of the Insurance Scheme, for he had been convinced by the argument that at the present time a large number of people have no medical attendance at all, and that a still larger number receive inadequate attendance, but will in future receive regular medical attendance under the provisions of the Act. He also admitted that the claim for extras was just, but contended that they must be met, not by a special payment from the National Exchequer, but out of the proposed increase in the fund set aside for medical attendance. He also admitted that the criticisms of Regulation No. 28 with regard to remuneration were well founded, inasmuch as that Regulation proposed that the cost of drugs to an unlimited amount should be a first charge on the sum allotted for medical benefit. This, he said specifically, was obviously a very unfair arrangement. The proposal he now makes is to raise the amount originally proposed in the actuarial estimates for medical benefit from 6s. to 8s. 6d., to include the cost of drugs, appliances, and extras. Out of this amount 6s. 6d. a head would be allotted to the profession as a minimum payment for medical attendance, and 1s. 6d. would be allotted for drugs: this leaves 6d. a head, the distribution of which would be determined by the amount expended on drugs. The amount available for medical attendance in respect of medical benefit would therefore be anything from 6s. 6d. to 7s., subject, as we gather, to a deduction for mileage. He has also made an effort to meet the contention that during epidemics the doctor's work would be increased and his remuneration diminished, inasmuch as the expenditure on drugs would be increased. He proposes to form a central drug fund for such abnormal circumstances, but the amount and mode of distribution of this fund are left undefined. In addition he proposes that the treatment of tuberculosis, so far as it will be carried out by the general practitioner—including, it is to be presumed, domiciliary attendance and the filling up of forms—should be paid for on the basis of an inclusive fee; this fee would be 6d. a head of insured persons, deducted from the 1s. 3d. which the Act provides for sanatorium benefit, and would be in addition to the payment for medical attendance in respect of medical benefit.

It will be noted that the question of the mode of remuneration—whether by a capitation payment pure and simple, by a system of payment for attendance, or by a combination of these plans—is not here and now at issue. The Chancellor declined absolutely to contemplate a national income limit, but said that if the working population and the doctors in any given area liked to make arrangements of this kind they had a perfect right to do so within the terms of the Act. This, then, is a point which has been left to be settled by way of negotiations with the Insurance Committees in each area.

It would seem also that a similar result will follow from the failure to make specific provision for extras except major operations and specialist services. The Act contains no provision for institutional treatment, and for major operations and specialist treatment it would appear that the insured person will still be dependent on the voluntary hospitals, and nothing is said as to the payment of the staffs of such hospitals for services rendered to insured persons. A difficulty, perhaps, more immediately pressing arises with regard to the treatment of accidents—fractures, and so on; the treatment of such cases is anxious and exacting, involving serious responsibilities; but an equitable adjustment of this difficulty seems to be left to local effort.

A great deal of the Chancellor's address was devoted to the consideration of the means which should be taken to provide a guarantee of a sufficient supply of drugs while preventing extravagant drugging. On the other hand, he sets out certain additional conditions which have been devised in order to improve the service. The first is that the medical profession shall undertake to give the medical certificates an insured person will require to enable him to get sickness or disablement benefit—a certificate that he is unfit for work, a certificate, when necessary, that he continues to be unfit for work, and a certificate that he has been restored to health. The second condition he makes is that the practitioners who act on the panels shall keep clinical records of the patients whom they treat. He admitted that this demand is new in respect of the industrial practice of this country, but undertook that the records required should be of the simplest character that would give the necessary information. He then went on to make the condition that the Commissioners should have power to see that a proper standard was reached and maintained, not merely in respect of the number of visits paid or the number of times a patient is seen at the doctor's surgery, but also that where necessary the practitioner "should resort to those modern means of exact diagnosis," the importance of which is increasingly recognized in the profession. "The modern means of exact diagnosis" is a very wide expression, and if all that it implies is to be carried out, it will be necessary for the nation in some way to provide clinical laboratories with an adequate skilled staff for carrying out the very tedious and complicated modern methods, such as, for instance, the Wassermann reaction. It will mean obviously an extension of the principle of municipal laboratories, linked, where possible, with universities or large hospitals which are already at work in some places for the diagnosis of diphtheria and typhoid fever.

It is to be regretted that the Government has not dealt more boldly with the question of mileage. It is left in an unsatisfactory state. The contention that because medical men in rural districts would probably receive the whole of the sum allotted for drugs should be taken as a set-off in respect of mileage will not bear examination. The cost of drugs and their dispensing has nothing to do with the cost of travelling. You cannot compare 4 lb. of tea with 4 o'clock. It would probably be better to establish a central fund for mileage. The total cost would not be great, and the risk of serious injustice to individuals would be avoided.

It will be seen that Mr. Lloyd George put in a strong light the advantages which some believe would result from the establishment of a National Medical Service, by which, we presume, is to be understood a whole-time service. We believe it to be impracticable, but the point need not be argued, for Mr. George has put the proposal aside.

We cannot pretend here to do more than mention some of the salient points which present themselves on a first perusal of the statement. It will require and receive the most careful and minute consideration from the State Sickness Insurance Committee and from the Council. But in a democratic body such as the British Medical Association the duty devolves upon every member to form his own opinion and to record it after discussion with his fellow members in Divisional meetings; it is most important that every member of the profession should do his utmost so to arrange his work that he shall be able to attend the meeting which will be held in his locality.

The new proposal falls short of what the profession has demanded in many important respects. But the justice of many of the claims put forward by the Association on behalf of the profession is recognized in principle. That this has been brought about is due to the firm stand made by a united profession against a scheme which it asserted, and which it is now admitted, would have inflicted a serious injustice upon it and would have rendered it impossible to provide the adequate and efficient medical service that is universally desired. The need for the maintenance of that unity is as great as ever.

PELLAGRA IN THE BRITISH ISLES.

The facts related in the article by Drs. Sambon and Chalmers on pellagra in the British Isles which is published in this issue will come as a surprise to many, and will open a new field to the alienist, the dermatologist, and the epidemiologist in Britain. That so serious a disease as pellagra has existed in these islands unrecognized for so many years is more than a surprise, although in this particular we are only repeating the experience of the United States of America, where it is now known that many thousands of sufferers from pellagra are to be found scattered about the country and domiciled principally in lunatic asylums, and where also the presence of such an enormous number of cases of this very grave disease has only been recognized within the last few years.

The paper will doubtless call the attention of the medical officers of lunatic asylums, poorhouses, and infirmaries to the clinical features of the disease, and it is not improbable that, as in the case of the United States of America, many cases will be recognized in Great Britain within a comparatively short time. History repeats itself, and it may well be with pellagra as it has been with myxoedema and many other "new" diseases which, when attention was called to their clinical features, were found to be common enough in the community. Of more importance than this, however, is the fact that another cause of insanity in this country has now been indicated, and, inasmuch as knowledge of the cause is a most important step towards the prevention of a disease, it is to be anticipated that some reduction in the incidence of insanity may be brought about.

Those who have followed the recent investigations by Dr. Sambon into the nature and cause of pellagra must know that in consequence of his study of the literature of the subject the inadequacy of the grounds on which rested the theory that the disease was due to the consumption of maize were made plain. The field studies of Drs. Sambon and Chalmers in many pellagra districts on the epidemiology of the disease have shown that its absence from towns and its occurrence only in the country in very circumscribed areas are circumstances incompatible with the maize theory.

The man who destroys an untenable hypothesis has done good work, but if in addition he gives us a new view of a very grave disease, and especially if he gives us a working hypothesis which may lead to a definite solution of the etiological problems involved, has conferred a great boon on medical science and on the public. This Dr. Sambon has done. The hypothesis he advances, founded partly on direct observation, topographical and epidemiological, and partly on analogy, is to the effect that pellagra is a germ disease, that the germ is a protozoal organism, and that this organism is conveyed by a special kind of insect, a *Simulium*. The very marked associa-

tion of the disease with streams haunted by the insect, the fact that the disease is believed to originate nowhere else than in the neighbourhood of such streams, that people coming from outside the endemic areas can acquire the disease during a very short visit to these areas, seem to support the view that *Simulium* may be the transmitting agent. The fact that the active clinical manifestations of the disease recur at fairly regular intervals, that the disease is not directly communicable from man to man, and a variety of clinical features similar to those associated with other protozoal diseases, are certainly compatible with this hypothesis. One remarkable circumstance Dr. Sambon has brought out is that, in a general way, in countries in which malaria and pellagra occur, the topographical distributions of these two diseases do not correspond. With occasional overlappings, where malaria is there pellagra is absent: and, conversely, where pellagra is present malaria is absent. Malaria, the mosquito-caused disease, is a disease of countries of stagnant waters, the haunts of the mosquito; pellagra is a disease of swift-flowing streams haunted by *Simulium*.

Though as yet unproved by direct observation or experiment, the hypothesis that pellagra is a protozoal disease communicated by *Simulium* seems so probable that it should be followed out. Now that attention has been called to the subject, we trust that a solution of a very important etiological problem will speedily be forthcoming.

RED CROSS AND RED CRESCENT.

The honorary and other officers of the British Red Cross Society, including its active secretary, Mr. Frank Hastings, have been having an overwhelmingly busy time during the past fortnight, and do not seem likely to reach a period of comparative quiet until next Tuesday. By that date it is hoped that the last of the units whose dispatch is at present definitely in view will have started on its way out to the much scattered seat of war. Though the society is in theory only concerned with wars in which British forces are taking part, it has for some little time past foreseen that a demand for its activities might arise in the near East, and has been taking steps accordingly. Still there is a great difference between quietly arranging possible plans and actually sending out expeditions on short notice. However, it is getting through its work with remarkable speed and completeness; one unit has already been dispatched, and it is hoped that five others will be ready to leave within three days or so of the publication of this issue. An interesting feature has been the rush of volunteers. The number of applicants has been so large that the task of giving each of them an opportunity of stating his claims to consideration has been no small one. Many factors besides professional knowledge and ability go towards the making of an ideal Red Cross worker, and those finally selected as the most likely among the candidates are all men in the prime of life and of excellent physique. This is an essential point, since before the various units return their members are pretty certain to have to undergo very considerable hardships. The general work of selection has been carried out by a committee, the final choice between two candidates of equal merit having usually been made by Sir Frederick Treves and Sir Anthony Bowlby, both of whom have, as is well known, ample personal experience of the needs of the situation. Three of the units are to make their way to Turkey, two to Greece, and one—that which has already left—to Montenegro. Each consists of 3 medical officers, 3 dressers, 5 nursing orderlies, 5 general duty orderlies, a cook and a sergeant. Though nearly all the medical officers are young men, some are sufficiently old to have already specialized in surgery, and all have had recent and ample experience of hospital work as residents or otherwise; some, too, have had experience of a not essentially different kind from that now in anticipation. One of them is Dr. Martin Leake, who gained the Victoria Cross as a civil surgeon in South Africa, and who until recently was resident in India as chief surgeon of the Nagpur Railway. Another is Mr. C. M. Page, resident assistant surgeon at St. Thomas's Hospital: a third is Dr. A. B. Bradford, who until a little time ago was resident medical officer at St. Thomas's Home, and before that had filled all resident appointments in the hospital itself; a fourth is Dr. Goldsmith, until recently a medical officer in New Guinea. Others are Messrs. H. L. Mann, Bourdillon, Anderson, Thornton, Ward, Appleyard, Steele, and Gardner. Each unit is being provided with the equipment of an ordinary field ambulance, but not with beds and tents. The primary need in the Balkans is the presence of more surgeons and nurses, and it is intended that each unit shall get as near to the front as possible. At present there is no true front, and to render the greatest service possible the units may very well have to make frequent moves. Later on, when the war has become in some degree localized, beds and tents or huts may be sent out if this seems desirable and if funds are forthcoming. Meantime the units will be able to do most valuable work, utilizing cottages and other buildings placed at their disposition. The cost of equipping and dispatching each unit is estimated at £1,500, while its maintenance will entail an outlay probably of some £850 a month. The cost of provisions is sure to be very high, and when this factor, and the employment of interpreters, who are certain to be required, are taken into consideration, these estimates may well be considerably exceeded. In any case, a large amount of money is certain to be absorbed, and will have to be found by the general public, since the ordinary funds of the society are not available for the purpose. It is to be hoped that it will be found, because the medical arrangements of none of the forces concerned are in the least commensurate with the vast numbers of men who have been summoned to join the colours. Moreover, there is certain to be an immense number of wounded persons having no direct call on the services of the medical officers of any of the combatant forces, since on this occasion all the worst features of war between regular forces and of a civil war are combined. All the units operating in each of the main areas are in charge of a Director appointed by the society to attend to the business side of the work, such as the payment of expenses, securing provisions and negotiations with the authorities. One of them is Surgeon-General Bourke, C.B., who has had wide experience of war in various parts of the world; another is Major Doughty Wylie, C.M.G., who, when in the consular service, did notable work for the victims of a massacre a few years ago in Caramania, and a third is Colonel Delmé Radcliffe, C.V.O., C.B., the officer who, as Military Attaché at Rome, organized the relief operations undertaken subsequent to the Messina earthquake.

THE WASTE OF MEDICAL EXPERIENCE.

When an old practitioner who has for many years been wrestling with disease in all its forms passes away, one cannot help a feeling of regret at the irreparable loss of the experience which dies with him. Books we have in abundance and superabundance, and the reports of cases which fill our columns and those of other journals generally contribute something to the sum of knowledge or help in the extinction of error. Without such records progress would be impossible, and even discounting the natural enthusiasm of the pioneer, every case honestly reported adds a stone to the slowly rising temple of truth. But what would we not give for the fruits of the ripe experience of a man like Jenner or Gull, who ar

represented in catalogues by a few papers and addresses! Something of this, of course, they gave those who had the privilege of being their pupils, who in turn may hand it on to their pupils, until it becomes a floating tradition which influences generations to whom the original source of inspiration is only a *magni nominis umbra*. What would we not give, too, for the experience of a man who had been in general practice for half a century, who had seen many whom he had brought into the world grow up and in their turn become parents and then pass away, all the time under his observation! Such men seldom have time to write down what they see and what their practice has taught them. Often, too, they have not the faculty of exposition. They are like the inarticulate poets who die "with all their music in them." Generally, however, such experience is so personal to the man, consisting as it does of the accumulated impressions of all the senses gathered by long observation, that by its very nature it is not transmissible to another. As Baglivi said, *Multa sunt in praxi quae nec dici nec scribi possunt.* It was in this that the old system of pupilage had an advantage which modern scientific training, with all the apparatus of the clinical laboratory, fails adequately to supply. There is the physiognomy of disease, the interpretation of which has, owing to the large use of instruments of precision, become almost a lost art. There is the knowledge of that subtle something, called for convenience "constitution," which so often makes all the difference between success and failure in treatment, and other still more intangible things, which together make up the knowledge a man acquires in practice. It is true that the records might sometimes be disappointing, as in the case of the celebrated Dr. Jephson of Leamington, who was reputed to have made £12,000 a year by a practice which included patients from the most distant places. The legend is that when his case-books came to be examined after his death, the entry against most of the names was the simple formula—"wind and fat." The young man writes because he thinks he has something new to tell; as he gets older he probably writes less, as Syme's *Surgery* became smaller in each successive edition. The old man does not write because he finds age has made him indolent and he is perhaps unwilling to put his experience on paper. Indeed, he would not, for the fear of scandal, care to record all his experience. Yet if old practitioners could and would set down faithfully what they had seen and done in their professional career, what a mine of lore not to be found in textbooks or scientific monographs we should have! We certainly do not wish to suggest that every doctor should write his experiences, but there are a few in every generation from whom such a record would be a boon of permanent value.

THE HEALTH OF FEMALE CIRCUS PERFORMERS.

THERE has been for a good many years past much discussion about the evil effects of excessive brain-work on girls, and now a disposition is becoming evident to maintain that the gymnasium and the playground are being abused. Dr. Angenette Parry[1] has recently read before an American medical society a paper on the relation of athletics to the reproductive life of woman. Educational institutions have been freely canvassed by Dr. Parry, and though she has received, as might have been expected, very contradictory reports, the opinion seems general that competitive athletics—that is, training for foot races, "tournaments," etc.—are, on the whole, bad. "I personally know two or three stunning girls who have wrecked their health by over-exercise," says "a very intelligent layman." On the other hand, it is certain that neither young women who "run to muscle" nor psychically masculine women are always barren. How far gymnastics and games are favourable or otherwise to the development of the uterine, pelvic, and perineal musculature we cannot say; at least Dr. Parry's evidence is conflicting. One point seems clear, and that is that the evils of athletics in the case of school girls in high-class institutions are largely due to over-luxurious surroundings in early child life and the resultant debility and neuroses. Amongst girls used to physical exertion from infancy, and free from the ill effects of improper mental training, professional athletic exercises seem to have, on the whole, a favourable effect, not only on their health, but also on their sexual system. As a rule, they are not subject to menstrual disorders. They are by no means infertile. Among professional women athletes abortion is not rare, but it appears to be almost always due to a fall. Lastly, as a rule, the breasts of these subjects secrete "plenty of milk." A bare-back rider, 35 years old, accustomed to making fifty jumps in six minutes through hoops, menstruated first at the age of 16. She married at 17, and early marriages are common amongst women of her class. She is subject to slight dysmenorrhœa, which antedated marriage, but she goes on with her work. She feels headachy and dizzy, but her head clears directly she enters the ring. This latter piece of evidence is interesting in respect to the physiology and psychology of menstruation. Four times pregnant, she miscarried after a fall on two occasions, but she rode until the eighth month in her second pregnancy, and bore a child to term, which weighed 8 lb. at birth. The first pregnancy ended in a miscarriage, and the third in abortion, after an accident; during the fourth pregnancy she rode to the eighth month, and the child was born at term. Several other circus performers furnished Dr. Parry with equally satisfactory reports. These women wore no heavy skirts or corsets, and their career began in childhood. The trapeze performers and "hand balancers" seemed equally sound as females. They seemed free from neuroses, and professional selection must here be taken into account. Nobody would train a nervous little girl for the trapeze.

[1] *Amer. Journ. Obstet.*, September, 1912, p. 341.

ALCOHOL AND MODERN LIFE.

IN an address at a conference of the National Unitarian Temperance Association, Mr. J. Lionel Tayler, M.R.C.S., maintained that stimulants do not, like narcotics, among which he included alcohol, create a craving. Tea, coffee, and kola, he admitted, might form a habit, and on breaking the habit a feeling of flatness and malaise might follow, but with narcotics it was otherwise; they alone were associated with moral deterioration, and were, in fact, devolutional. They held mankind back from the upward evolutionary path. He considered, therefore, that they must all be abandoned. Mr. Tayler stated his views with a candour and moderation all too rare with writers on the alcohol question. He led logically to his main conclusion by a review of the action of narcotics and the changing social conditions of modern life, and did not evade the obvious answer to his Utopian conclusion—the fascination narcotics have for millions of civilized and uncivilized people. In spite of the penalties of indulgence, no race has yet been discovered that does not consume them either to banish care, to plunge into forgetfulness, however temporary, to create a flash of intellectual excitement, or in the more refined civilizations because they are agreeable to the palate. The use of narcotic substances is ingrained in mankind; and, until human nature is altered, it seems unlikely that the present or any near generation will see their use altogether die out. Mr. Tayler gives a very useful bibliography, and deplores, as every one must, that death certificates omit mention of alcohol, save in the flagrant instances where it is impossible to ignore it. In answer to his plea for research over the whole narcotic field, it may be pointed out that the Society for the Study of Inebriety exists for this very purpose.

CAN THE UNDELIVERED FETUS CRY?

The paragraph on this subject which appeared in the Journal of September 14th, page 653, has been read with interest by many, and three interesting communications, by Dr. J. Reidy, Mr. A. Teevan, and Dr. Oliver Smithson, appear in our present number. Over fourteen years ago Dr. Charles Kevin of Belfast related a case of intrauterine pulmonary respiration in the Journal (May 16th, 1898, page 1253). He vouched for the fact that the child, in a labour which he attended, cried and sobbed for two hours before birth. The membranes had ruptured, and Dr. Kevin states, "I could feel the apex of the child's left ear by sweeping my finger round the os." Some hours later he heard "a distinct sobbing, smothered cry." In Dr. Reidy's first case the child, it is stated, cried while internal version was being performed. In Mr. Teevan's case the cries were heard after a female catheter had been passed up between the uterine wall and membranes, to induce labour at the eighth month. In Dr. Reidy's second case cries were uttered when the child's head was in the vagina. Dr. Smithson heard cries, audible to the mother and nurse, after he had applied the forceps. Thus there can be no doubt that in all these instances sounds were heard before the child was born. In four, and probably in all, air had entered the genital canal. The sound was produced with the aid of the air, that is clear, but though many obstetricians believe that the fetal lungs make the sound, while others, like Sippel (whose experience was recorded in our recent paragraph), insist that the "cries" are due to expulsion by uterine contractions of the air admitted to the genital canal.

THE KING AND THE LONDON SCHOOL OF TROPICAL MEDICINE.

Mr. Austen Chamberlain has announced that the King has been graciously pleased to mark his interest in the London School of Tropical Medicine and his care for the welfare of his tropical dominions by sending a contribution of £100 to the fund opened by the Lord Mayor for the [illegible] of the school. Mr. Chamberlain says that His [illegible] interest and approval encourage the committee formed in the City with the aid of the London Chamber of Commerce to make a renewed effort to secure the £100,000 for which they originally asked. The Lord Provost of Glasgow and the Lord Mayor of Bristol have promised their assistance. Already nearly half the sum has been secured. Mr. Chamberlain points out that more is urgently needed to place the school on a sound financial basis and to enable it to prosecute effectively the great work of training and research by which the deadliest terrors of tropical life are being steadily eliminated, the death-roll of whites and natives alike is being diminished, and the development of these fertile lands is rendered possible without the terrible suffering and loss of life which it has previously entailed. He commends "this truly Imperial work to the favourable consideration of all who are interested in Imperial development or tropical trade." Since the first small beginnings of the school we have not ceased to call attention to the vast importance, from a national as well as a scientific point of view, of the work which it was established to do. It has done much both in the way of teaching and dis[illegible] but it could accomplish far more if it received the [illegible]rt for which it is asking. The hindrance [illegible] to trade caused by ignorance of the [illegible] tropical disease is slowly but surely [illegible] by business men and even by politi[illegible] that the appeal, which is [illegible] will receive a prompt and [illegible]ng, in the letter enclosing [illegible]t that the School owes its inception to Mr. Chamberlain's father, an expression of interest which must be highly gratifying to him. Donations to the fund may be sent to the Secretary of the School of Tropical Medicine, Seamen's Hospital, Greenwich, or to the Right Hon. Austen Chamberlain, 2, Egerton Place, S.W.

At a special meeting of the Council of the Royal College of Surgeons of England, held on October 17th, Mr. Edmund Owen was elected vice-president in the vacancy caused by the death of Mr. Clinton Dent.

Medical Notes in Parliament.

[From our Lobby Correspondent.]

NATIONAL INSURANCE SCHEME.

MEDICAL REMUNERATION.

Statement by the Chancellor of the Exchequer.

Sir Philip Magnus asked the Chancellor of the Exchequer whether he could now state what additional sum he was prepared to recommend Parliament to set aside for the provision of medical benefit under the National Insurance Act; and, if so, whether he could state what would be the normal amount offered for each insured person, with or without drugs, and what arrangements had been suggested for securing, where necessary, exceptional medical or surgical treatment.

Mr. Lloyd George: After careful consideration and consultation with the members of the Advisory Committee, the Government have decided to increase the sum available for medical benefit to an amount which they are satisfied will secure an improved medical service for the industrial population, and at the same time afford an adequate remuneration to the medical practitioners for the work which they will be required to do under the Insurance Act. The House will remember that, on the second reading of the bill, I stated that there was a margin which would have enabled an increased amount to be paid to the doctors where a case was made out. But during the passage of the bill provisions were inserted, particularly as to the free choice of doctor and the system of providing drugs, which tended to increase the cost of medical benefit, while other charges had at the same time absorbed the margin originally available for these purposes over and above the 6s. assumed in the actuarial estimates. The Government have always recognized that, as they could not throw the burden on the societies, these charges would necessitate an additional contribution from the Exchequer. At the same time, the Government recognize the reasonableness of the demand that the medical profession should receive a guaranteed minimum rate of remuneration without trenching upon the sum necessary for an adequate supply of drugs. It was always contemplated also that provision must be made for extras, including mileage. This cannot, however, be unlimited, and provision for it is included in the addition which it is now proposed to make. The financial proposals which the Government intend to submit to the House may be briefly summarized. It is proposed to add to the amount already available for medical benefit a further sum equivalent to 2s. 6d. per insured person per annum. This will enable the provision for medical benefit to be raised to 8s. 6d. a head for insured persons, with a small additional sum to be reserved for extra drugs required at times of excessive

sickness. Of this amount it is proposed that a minimum of 6s. 6d. should be definitely assigned for medical remuneration and 1s. 6d. for drugs. A further 6d. would be available for drugs where required, and will otherwise be available for medical remuneration. Counting a further 6d., which will be applicable from the sanatorium benefit fund for the treatment of tuberculosis by general practitioners, the total remuneration which the doctors will receive (exclusive of drugs) will amount to 7s., or possibly 7s. 6d., per head of the insured. This additional grant, the total annual cost of which is estimated at £1,650,000, will be made under such conditions as to secure enhanced efficiency of medical service, and that the doctors will give such certificates as are necessary for sickness and disablement benefits, and will keep such simple records of disease as are requisite. I am publishing at once a full statement of the effect of these proposals.

Lord Helmsley: Does the 8s. 6d. include mileage, or is there a further sum?

Mr. Lloyd George: Yes, it is an inclusive fee.

Mr. Ginnell: Will the right hon. gentleman say how this alteration will apply to Ireland?

Mr. Lloyd George: Irish members of all sections deliberately pressed me to leave medical service out.

Mr. Barnes: Do we understand that the certificates are to be given free by the doctors?

Mr. Lloyd George: Yes.

Mr. Ginnell: Cannot the right hon. gentleman apply some proportion of this further contribution to Ireland? (Cries of "No.")

Mr. Ward: Does this mean that a proportion of the sum, amounting, I think, to nearly 3s., which it was expected at the time the bill was passed through the House might be available for extra benefits, is now taken entirely by the doctors?

Mr. Lloyd George: No; that is exactly what I explained—that that margin will not be trenched upon at all.

Mr. Lane Fox: Will this require a special supplementary estimate?

Mr. Lloyd George: Oh, yes.

Mr. Clynes: In the event of this announcement not having the desired result, does the right hon. gentleman contemplate any organization of a State medical service?

Mr. Lloyd George: I think my hon. friend had better wait until he sees the full statement, because I deal with that point.

Mr. Lardner: Will Ireland not be entitled to a share in the increased grant in regard to sanatorium benefit? (Unionist cries of "Home Rule.")

Mr. Lloyd George gave no reply.

[The full statement made by the Chancellor of the Exchequer to the Advisory Committee earlier in the day is printed in the SUPPLEMENT.]

QUESTIONS.

Sanatorium Benefit.

In reply to Captain Faber, who asked what steps had been taken towards finding a consumptive sanatorium for two applicants, Annetts and Merriott, who had applied under the terms of the National Insurance Act, Mr. Masterman said he was informed by the Hampshire Insurance Committee that Mr. Annetts applied for sanatorium benefit on October 4th. The county medical officer of health wrote to the applicant the same day to inquire whether he wished to go to a sanatorium, and received a reply on October 7th, from which it was understood that the applicant was going to Salisbury Infirmary. A further letter was, however, received from the applicant, from which it appeared that he had not gone to the infirmary, and his case was under consideration. The Royal National Sanatorium at Bournemouth had agreed to accept Mr Merriott, and hoped to be able to admit him in about a fortnight's time.

Captain Faber then asked was it the policy of the Government to shunt on to convalescent homes and hospitals what was really the duty of the Act. Mr. Masterman replied that the Royal National Sanatorium was a fully recognized sanatorium by the Local Government Board, and the Insurance Committee would pay for the man going there. In reply to a further question he said that the Salisbury Infirmary was not recognized under the Act. Now that the Insurance Committee knew that the man was not going to the infirmary, it was considering what sanatorium to send him to.

Medical Benefits (Fishermen).

In reply to Mr. Fell, Mr. Masterman said that the whole question of the administration of medical benefit in the Highlands and Islands was now being investigated by a Departmental Committee. He was unable to make any announcement as to the details of the arrangements in these districts in anticipation of the report which would, he hoped, be issued at an early date.

Medical Fees.

Sir Arthur Markham asked the Secretary to the Treasury whether he had sanctioned Clause 28 of the Regulations, lately issued by the Insurance Commissioners, which provided for the purpose of determining the amount of remuneration payable to medical men, that the committees should determine the total amount to defray the cost of medical benefits, and should deduct therefrom certain specific charges, and that the sums remaining should be paid to medical men; and whether, in view of the declared policy of the Government that insured persons should have the benefit of having the best drugs irrespective of cost, he would say whether, if under this Regulation, a medical man prescribed expensive drugs, his salary would be reduced accordingly. Mr. Masterman said that the draft Regulations now before Parliament could not be interpreted except in connexion with the general question of remuneration for medical benefit under the Insurance Act. This question was still under the consideration of the Government, and the Chancellor of the Exchequer hoped to make an announcement on the subject within a few days.

Maternity Benefit.

Mr. Charles Bathurst asked whether the Health Insurance Commissioners had issued or proposed to issue provisional regulations for the uniform administration of maternity benefit under the National Insurance Act, or whether it was open to each Insurance Committee to make its own arrangements and regulations in reference thereto. Mr. Masterman said that the Commissioners were not authorized to issue such regulations, but they proposed to issue model rules for the administration of benefit by Insurance Committees to deposit contributors. The maternity benefit of members of approved societies was administered by the societies.

Tuberculous Patients in Ireland.

In reply to Mr. Guiney, Mr. Masterman said that provisional arrangements for the treatment of tuberculous insured persons had been made by the Insurance Committee of each county and county borough in Munster. Seventeen persons had been recommended for sanatorium benefit by the several committees. All these seventeen persons had been actually sent to institutions for treatment, the numbers from each Insurance Committee being as follows: Clare County, two; Cork County, one; Cork County Borough, one; Kerry County, five; Limerick County, two; Limerick County Borough, two; Tipperary South Riding, two; Tipperary North Riding, one; Waterford County, one.

Sanatorium Grants (Ireland).

Mr. T. M. Healy asked the Chief Secretary for Ireland whether the share of the county and borough of Cork of the one and a half million granted for sanatoriums on a population basis was £13,182; whether only £9,000 was proposed to be allotted; how much of the £145,000 given to Ireland was the Women's Health Association getting for the erection of the sanatorium at Peamount, county Dublin; on what principle was this allocation made; and were counties like Cork, which could derive no benefit from Peamount, to be deprived of their due proportion of the sum provided by Parliament. Mr. Birrell said if the whole £145,000 were distributed between counties and county boroughs in proportion to population, the share of Cork county and borough would be approximately £13,000. The share of the county and borough in the sum of £130,000 at present available for distribution on this basis was £10,750, and it was proposed to allot this amount immediately. A further sum would

be allotted at a later date when the amounts to be charged against the shares of counties which have entered into contracts with the Women's National Health Association, instead of making provision for themselves, had been ascertained. By this means such part of the £25,000 originally allotted to the Women's National Health Association as was expended on behalf of particular counties would be recovered from the shares of these counties, calculated on the population basis, and would be available for distribution on the same basis as the £120,000 now being allotted, leaving only the remaining portion of the £25,000 (which would represent expenditure incurred in the interest of the country generally in respect of temporary provision for the counties which were contemplating building sanatoriums for themselves and in respect of accommodation whether for adults or for children which would be available in the future for any county insurance committee which might apply for it), as a final charge against the £145,000 grant as a whole.

Peamount Sanatorium.

Sir John Lonsdale asked the Chief Secretary for Ireland if he was aware that, although thousands of pounds of public money were being spent by the Women's National Health Association upon the Peamount Sanatorium, the water supply of the place had been found to be insufficient in quantity and unfit for dietetic purposes; would he state who was the medical inspector of the Local Government Board who inspected the site and reported it to be suitable for a sanatorium, and why the inspector did not satisfy himself that there was a sufficient supply of pure water for a large institution before recommending the site; would he state approximately how much money had been spent in endeavouring to find water at Peamount; and whether he now considered that this sanatorium was fit for the reception of patients, seeing that all drinking water had to be carted a distance of two miles. Mr. Birrell replied that the Peamount site was selected by the Women's National Health Association after it had been examined and most favourably reported upon by a well-known Dublin firm of architects and sanitary engineers and subsequently inspected by three eminent Dublin physicians who endorsed and confirmed the report. The Local Government Board was not asked to send a medical inspector prior to the decision to select the site; but ever since the actual commencement of works of construction these had been frequently inspected by officers of the Local Government Board, and no payments from public funds had been made except after being duly submitted to the Board and authorized thereby. The water supply, on investigation, was found unsuitable for dietetic purposes, but the sinking of a well which would yield, it was believed, an adequate supply of water for all purposes was now progressing. The sanction of the Local Government Board to the opening of the institution as a whole would be given when a thoroughly satisfactory water supply for a large establishment of the kind had been obtained, and not before; but owing to the urgency which was the primary consideration for the establishment of the sanatorium, the Board's Inspectors had felt justified in recommending that during the sinking of the well a limited number of patients should be admitted for whom a supply of drinking water of the excellent quality could be provided from a spring outside the property, the necessary arrangements having been made for this purpose. He was informed that the expenditure incurred in connexion with the water supply at present was well under £200. He believed the spring two miles distant, but it would not be the sole supply. The sanatorium would not be certified and proper place until there was an ample and water supply which could be used for all proper and at once. The Local Government Board did not report as the site had already been properly examined to the satisfaction of the Board by in Dublin. This supply of water from the well no doubt insufficient for the sanatorium as a whole, there was no difficulty whatever in obtaining it, by all accounts about the best water that could be obtained in the district. The Peamount Sanatorium would not be certified to its full amount until the difficulty of the water supply had been got over, if that had not already been done.

Hospital Nurses (Ireland).

In reply to Captain Craig, the Financial Secretary to the Treasury said that the nuns employed by the New Ross Union were not at present excepted, and their insurance cards for the last quarter had been duly stamped. The union was now in communication with the Commissioners with a view to the exception of their officials (including these nuns) under Schedule I. Part II (*b*). Such exception, if granted, would depend on the terms of their employment under this union, and would afford no ground for a general exception of all hospital nurses in Ireland, which the Commissioners had no power to grant under the Act.

The Mental Deficiency Bill, which is one of the bills that the Government must pass if possible, still pursues a somewhat eventful career. On Thursday, October 17th, when it was before Standing Committee B, there were some twenty-eight pages of amendments on the paper. The Home Secretary's new clause setting up a board of control as the central authority to deal with lunatics, the feeble-minded, and other mentally deficient persons, was the subject of discussion. An amendment to increase the legal members from four to six was defeated, but one opening the position to solicitors was accepted. The words requiring one at least of the Commissioners to be a woman were objected to, but eventially they were accepted. It was then moved that two of the paid Commissioners should be women. Mr. McKenna said he was willing to accept words which would secure that one of the paid Commissioners should be a woman and one of the unpaid members also. He informed the Committee that, notwithstanding what happened at the last meeting, he did not propose in the first instance to appoint more than eleven paid Commissioners—that was, three in addition to the existing eight Lunacy Commissioners, who would form the original board. This amendment as suggested by the Home Secretary was finally adopted as follows:

> There shall be constituted a Board of Control consisting of not more than fifteen Commissioners, of whom not more than twelve shall be paid Commissioners; and of the paid Commissioners four shall be legal Commissioners—that is to say, practising barristers or solicitors of at least five years' standing; and four at least shall be medical Commissioners—that is to say, duly qualified medical practitioners of at least five years' standing; and at least one of the paid and one of the unpaid Commissioners shall be a woman.

A proposal to limit the appointments to five years was rejected, and then the Committee adjourned.

At the meeting of the Standing Committee on October 22nd, the constitution of the Board of Control was further discussed, and an amendment was moved by Captain Jessel providing that the three unpaid Commissioners should be appointed by the Home Secretary, and not by the Lord Chancellor after consultation with the Home Secretary as proposed in the bill. Mr. McKenna resisted the amendment, and said that he was anxious not to encroach on the powers of the Lord Chancellor. Under the arrangement proposed in the bill the Home Secretary accepted the responsibility to Parliament by appointing eight of the fifteen members of the Board. A good deal of discussion ensued, but eventually the amendment was carried by 25 votes to 6. After this Government defeat, the new clause of the Home Secretary was added to the bill as amended. The Chairman, it was decided, should be appointed by the Home Secretary after consultation with the Lord Chancellor, and it was decided to call the new body simply the Board of Control. Mr. McKenna then accepted an amendment setting up an administrative council consisting of the Chairman and four members of the Board. This would be a temporary arrangement to secure parliamentary control while the Lunacy Commissioners still held office. As regards the prospects of the bill, the Home Secretary announced that it was the firm, resolute intention of the Government to pass the bill this session, but as it contains sixty-eight clauses its prospects become less favourable at each meeting of the Committee.

Medical Practitioners (Income Tax). On Monday last, in answer to Mr. Cawley, the Chancellor of the Exchequer stated that it was not possible to give any estimate of the amount of income tax paid by members of the medical profession in respect of professional earnings. The information was not available.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LIVERPOOL.

Town Planning and Housing Exhibition.

At a meeting held at the Town Hall on October 18th, a scheme was proposed for holding a town-planning and housing exhibition at the beginning of next year. The estimated cost is about £750, and it is proposed to raise £500 by subscription and to form a guarantee fund of the same amount. The Chairman (Sir W. Lever) said that the exhibition would show what was being done in other parts of the world in town planning. There was no more fitting centre for such an undertaking in the whole of the United Kingdom than Liverpool, which in housing reform, sanitation, and the development of civic life on the highest plane had always taken the leading part. Much of the credit of this was due to Dr. Hope. Liverpool had been extremely fortunate in its medical officer of health, who had carried on the work under considerable difficulties. Liverpool ought eventually to become the model of the provinces in this respect. On town planning depended the future of Liverpool and its health and prosperity. Professor Adshead said that it was fitting that this educational effort should be made in Liverpool for various reasons, one of which was that a chair of town planning, the only one in the country, had been founded in the university by Sir W. Lever. The exhibition would show the historical growth of Liverpool in its present-day aspect, and the plans for its future development. Apart from this there would be exhibited a large and valuable collection of town-planning material from the Royal Academy.

Association of Medical Officers of Health.

It is a pleasure to record that Dr. Hope, the medical officer of health for Liverpool, has been installed president of this association. His qualifications for the post are many. He has worked sedulously for the removal of slum areas in his city. Not only has he sought to change the abodes, but has also aimed at changing the lives of the people, and each year he has been able to point to something accomplished.

Annual Medical Service at St. Luke's.

The annual medical service was held at St. Luke's Church, Liverpool, on Sunday, October 20th. Archdeacon Maddon conducted the service, the Rev. J. S. Cooper, M.A., read the special prayer, and the Lord Bishop of Liverpool the lesson. The sermon was preached by the Right Rev. A. Robertson, D.D., Bishop of Exeter, who founded his discourse on St. Mark ii, 17: "When Jesus heard it, He saith unto them, They that are whole have no need of the physician, but they that are sick: I came not to call the righteous, but sinners to repentance." The offertory was taken in aid of the British Medical Benevolent Fund. The service was well attended by members of the medical profession as well as laity.

National Vigilance Association.

International Bureau for the Suppression of the White Slave Traffic.

The annual meeting of the Liverpool branch of the National Vigilance Association was held in the Town Hall on October 18th. The was a large attendance. The Rector of Liverpool, who was in the chair, said that not only in Liverpool, but all over the country, as evidenced by the meetings held in London and elsewhere, interest had been shown in this matter, and both Parliament and people were keenly alive to the great danger of the white slave traffic.

Miss Edith Rose, the honorary secretary, reported that 835 girls were met at the Liverpool landing-stage by the organization, which had discovered that girls were being brought into Liverpool. That had been stopped, at all events, as far as the landing-stage was concerned. It was found also that girls were being taken out of the country. The association had made searching inquiries, and had received valuable information relating to the traffickers, which they forwarded to the police. One of the persons engaged in this traffic had remarked that it was getting so difficult to bring the girls through Liverpool that another way must be found.

At the conference this week at Brussels a proposal of considerable importance from the English committee is that which recommends that all the foreign women of the unfortunate class shall be repatriated when a charge is brought home to them. It is argued that in getting rid of the foreign women of this class the foreign criminals who live upon them would also disappear. Germany is proposing an application of the repatriation laws for very similar reasons.

MANCHESTER AND DISTRICT.

The Midwives Act in Manchester.

It is uncertain as yet how far the working of the Midwives Act in Manchester may be modified by the administration of maternity benefit under the Insurance Act, as it is probable that a very large proportion of the women dealt with under the Midwives Act will be either insured themselves or the wives of insured persons, and so will be eligible for maternity benefit. At present the town council pays the fees of medical practitioners summoned to the assistance of midwives in the case of women whose family income is below a fixed limit, but when maternity benefit comes into force such fees will be payable out of the insurance funds under Clause 18 (1) of the Act, and in this way there will be a saving to the city rates of several hundred pounds a year. Thus the figures given in the report of the Midwives Supervising Committee are of interest in connexion with maternity benefit.

During 1911 there were 18,583 births registered in a population of 716,734. This is a birth-rate of 25.93, which is the lowest on record. Of these, 10,937 were attended by midwives, and, of the remainder, most were attended by general practitioners, though probably some only received attention from neighbours and relatives, and a considerable number of births occurred in institutions, such as the workhouse infirmaries. The number of cases in which medical practitioners were summoned to the assistance of midwives in accordance with the rules of the Central Midwives Board was 2,729, of which 1,514 were in the private practice of midwives and 1,215 were in connexion with the various lying-in charities. It is noted that medical aid has been advised more frequently in cases of retained placenta, perineal tear, feeble or premature children, and inflammation of the eyes. In each case where a record was received of rise of temperature, rigor, offensive lochia, abdominal pain, mastitis, or other suspicious symptoms, immediate investigation was made. Out of the 2,729 cases where medical aid was summoned the practitioners made a claim on the corporation for the agreed fee in 595 cases. These were considered by the Medical Subcommittee, which recommended that payment should be made in 506 cases, the total sum paid amounting to £471 1s., compared with £425 7s. in the year 1910. Of the 89 cases which were rejected as not fulfilling the conditions, in 50 the family income was above the scale, while 36 did not fulfil in various respects the conditions under which a fee is paid, and 3 were referred to boards of guardians. The income limit below which the corporation pays the fees of practitioners summoned by midwives varies with the size of the family from 21s. to 33s. a week, and as in all probability most of the 50 cases that came above this limit were of the working classes who will be insured, it seems likely that if maternity benefit had been in force the approved societies which administer the benefit would have been liable to pay for these cases which the corporation rejected.

During the year 135 cases of puerperal fever were notified, of which no fewer than 24 occurred after abortion or premature labour. The date of onset of the fever was in 88 cases within the first four days after delivery, while in 39 cases the attack began from the fourth to the tenth day, and in 8 on or after the tenth day. In 44 cases midwives alone were present at the confinement, in 63 doctors alone, and in 28 both doctors and midwives were present. During the year two special nurses were appointed to assist medical practitioners and midwives and to attend to the mothers and infants, and also two other special nurses to visit cases of ophthalmia neonatorum.

BIRMINGHAM.

WORK OF THE HOSPITALS IN 1911.

THE following list shows how large was the number of patients treated in the Birmingham hospitals in 1911. The total cannot be taken as the actual number of patients attending the hospitals, as there are a certain number of patients suffering from chronic or incurable diseases who wander from one institution to another, and also some of the in-patients are probably included also among the out-patients. Even taking this into consideration, there can scarcely have been less than a quarter of a million patients treated in the Birmingham hospitals during 1911. It will be noticed that in every hospital there was a deficit on the year's working.

	In-Patients.	Out-Patients.	Total.	Income.	Expenditure.	Deficit.
				£	£	£
General Hospital	5,252	73,309	78,561	22,006	27,177	5,171
Queen's Hospital	3,172	39,743	42,915	11,234	16,251	5,017
General Dispensary ...	—	63,414	63,414	11,485	11,762	277
Children's Hospital ...	1,023	14,589	15,612	5,579	5,867	288
Eye Hospital...	1,311	32,526	33,837	7,836	8,659	823
Women's Hospital ...	1,032	4,037	5,069	5,607	8,486	2,879
Maternity Hospital ...	437	1,435	1,872	3,311	3,915	604
Orthopaedic Hospital ...	314	2,242	2,556	2,392	3,387	995
Skin and Urinary Hospital	185	6,768	6,953	2,697	3,073	376
Ear and Throat Hospital...	1,430	6,871	8,301	3,047	3,276	229
Homoeopathic Hospital ...	450	4,527	4,977	2,276	2,436	160
Dental Hospital	—	6,530	6,530	1,538	1,731	193
	14,606	255,991	270,597	79,008	96,020	17,012

Among other Birmingham institutions the patients treated were as follows:

	Patients.	Income.	Expenditure.	Deficit.
		£	£	£
Royal Institution for Deaf and Dumb Children	173	8,085	8,869	784
Royal Institution for the Blind	986	9,260	10,612	1,352
Birmingham and Midland Counties Sanatorium	1,757	3,003	2,982	+ 21
Birmingham District Nursing Society	4,918	1,767	2,558	791
Moseley Hall Convalescent Hospital	899	2,219	2,429	210
Jaffray Branch Hospital ...	344	2,240	3,047	807

SOUTH WALES AND MONMOUTHSHIRE.

MEDICAL ATTENDANCE ON MINERS.

THE Executive Council of the South Wales Miners' Federation, which embraces the whole of the South Wales coalfield, had under consideration last week a scheme for the payment of medical men under the National Insurance Act. At the present time in this coalfield a certain poundage is deducted for the medical man by the colliery officials, the amount varying, but being usually 3d. in the £. For this the doctor attends the miner, and his wife and family if he is married. The Act, of course, provides only for the treatment of the insured person, and to meet [illegible] new circumstances the following scheme has [illegible] the approval of the doctors and miners. [illegible] sumption that the medical profession [illegible] agreement with the Chancellor as to [illegible].

1. That where [illegible] on providing medical at[illegible] ment can be brought [illegible] n 16, should [illegible] committee for the approval of such system or institution, subject to any modification in its rules necessary to meet the provisions of the Act.

2. That in all other cases the workmen shall make the necessary arrangements, through the medium of the Medical Committee, for the continuance of a weekly payment, either poundage or a fixed payment, for medical attendance on the wives and children, the medical practitioners receiving through such committee the remuneration payable by the Insurance Committee under the Act in respect of the medical attendance on the workmen, and the poundage or fixed payment to be paid, and allowing from the poundage or payment at present paid a sum equivalent in amount to the weekly value of the remuneration so payable by the Insurance Committee.

3. That, as the provisions of the Act in relation to medical benefits of insured persons come into operation on January 15th next, each district of the Miners' Federation shall at once take steps for dealing with the matter referred to in the second recommendation by meeting the medical practitioners concerned with a view to discussing the amount of allowance to be made and of agreeing thereon, and on any other alterations in the present arrangements which may be necessary under the Act, but that, before coming to any final arrangement, the districts shall confer with each other, so as to secure uniformity of policy throughout the coalfield.

The scheme has not been discussed by the profession in South Wales; it will call for very careful consideration. There are some points about it which are not clear. Until the amount of the poundage or fixed payment is settled it will not be possible to form any estimate of the effect these suggested schemes would have on the income of the doctors concerned. In each colliery a large number, sometimes placed as high as 40 per cent., of the men are bachelors; but, under existing arrangements, families, we understand, include sisters who keep house or are dependent upon bachelor brothers, and widows and parents who depend upon the earnings of their single sons or daughters. So that in industrial places single people cannot be regarded as freed from responsibility when they have provided for their own medical care. They may properly be required to pay something towards the family medical fund. The only reasonable means of doing so would be on the lines of insurance, married and single paying alike; so that a single man, by paying a little more than his share when unmarried, would be relieved of the burden that would otherwise fall upon him when he has a family.

BRISTOL.

HONORARY DEGREES.

THE distribution of honorary degrees and installation of the Chancellor, which took place on October 17th, was a well-organized and dignified ceremony. The Colston Hall, where the function took place, was ablaze with scarlet gowns, both of those of the new university degrees and of other universities. The recipients of the widely-distributed honours ranged from the Prime Minister and Mr. Balfour to several whose connexion with the city of Bristol and the university was not very close. Over seventy persons were presented *in corpore* or *in absentia*, so that it is probable that few universities in the world can boast of such a wholesale shower of honours conferred in two hours. It must, however, be admitted that, except for the overpowering noise of the organ, every one was well pleased, and whoever was responsible for the planning and conduct of the pageant is to be heartily congratulated on the manner in which the ceremony was performed. Lord Haldane was resplendent in the black and gold gown of the Chancellor of the University, but beyond a few words of thanks and appreciation of the honour conferred on him, kept his remarks for the address which he delivered in the evening. The medical men honoured by degrees were Mr. Nelson Dobson and Mr. J. Paul Bush, C.M.G., who were made Masters of Surgery. Both of them had been for many years connected with the Bristol Medical School. Dr. R. Shingleton Smith and Mr. Munro Smith were created M.D. for a similar reason. Mr. W. R. Ackland was made a Master in Dental Surgery, having been lecturer on that subject at the Medical School. Dr. J. Michell Clarke and Mr. F. B. Cross were made LL.B., and Dr. Fletcher, of the Index Medicus, an old Bristol student, was made an M.D. Not the least interesting part of the ceremony was to watch the variety of bows the recipients gave on being presented to the Chancellor, but the palm for grace must be accorded perhaps not unnaturally—to Sir George Alexander.

LONDON.

Treatment of Tuberculosis.

It was reported at the meeting of the London County Council, on October 23rd, that the following letter had been received from the Local Government Board with reference to the provision of accommodation for patients entitled to sanatorium benefit under the National Insurance Act:

Sir,—I am directed by the Local Government Board to inform you that the Government have under consideration the arrangements which should be made in London for the provision of sanatoria and other residential institutions for the treatment of persons suffering from tuberculosis.

The Departmental Committee on Tuberculosis suggested that it should be considered whether some of these institutions should not be provided by the Metropolitan Asylums Board; and the Board have been informed that the Asylums Board would be prepared to undertake the work, and that if authorized to do so they could at once arrange for the reception of a considerable number of cases.

Having regard, however, to the fact that the London Insurance Committee are precluded by the terms of the National Insurance Act from entering into arrangements with the Metropolitan Asylums Board for the reception of insured persons suffering from tuberculosis, legislation would be required before the suggestion of the Departmental Committee could be carried out.

After careful consideration the Government have arrived at the conclusion that it would be impracticable to obtain such legislation in the near future, and the Board, therefore, suggest that the London County Council should act in this matter.

It is desirable that the accommodation which is required should be made available at the earliest possible date, and the County Council will no doubt put themselves in communication with the Metropolitan Asylums Board and other bodies who may have suitable vacant accommodation which could be temporarily utilized without unnecessary expense. As the County Council are no doubt aware, the Metropolitan Borough Councils are taking steps to provide dispensaries.—I am, Sir, your obedient servant,

F. J. Willis, Assistant Secretary.

The letter was referred to the Public Health Committee, which has the whole matter under consideration.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Medical Conditions in the Highlands.

The Medical Service Committee paid a visit to the west side of the Island of Lewis on October 12th, to take evidence from witnesses representing the parish of Uig. This extensive parish, which is cut up by long arms of the sea, and in parts is very high and mountainous, has only one doctor for 4,500 inhabitants, 700 of whom are resident in the remote island of Bernera. The difficulty of providing medical attendance in such circumstances was very clearly set before the Committee. Interesting evidence was given by Dr. Victor Ross and by Mr. MacDonald, chairman of the parish council. On October 14th another meeting was held in Stornoway to hear witnesses from the parishes of Lochs and Barvas. Geographically, the former presents difficulties as formidable as the parish of Uig, and has a much larger population dependent on one doctor. The parish of Barvas has a population of close on 7,000 living in hamlets scattered along a seaboard of 27 miles, and there is but one doctor. Complicating circumstances, particularly marked in this parish, appeared to be the frequent occurrence of typhoid and typhus fever: in recent years a heavy burden has been thus inflicted on the doctor. All the witnesses testified to the unsatisfactory conditions as to housing and sanitation under which medical treatment had to be carried on, and to the necessity of improvement in these conditions as a preliminary to making any effective medical provision. In some townships infectious diseases had become endemic. It was also pointed out that the doctor rarely gets a holiday, and that this was detrimental not only to him, but to the people he served. An annual holiday would not only make him more fit to stand the strain of Hebridean practice, but it would afford him an opportunity of taking a post-graduate course at a university centre. An interesting fact of vital importance to the inquiry emerged in the course of the evidence. It was that between the Royal Naval Reserve, the militia, the Territorial Force, and the regular army over 4,000 Lewis men were being trained for the defence of the country. The medical witnesses bore testimony to the extraordinary improvement in the health of the people with the coming of spring and summer, and in the case of the children, more particularly with the change to the open-air life of the sheiling. In their case, however, there was evidence of physical deterioration during recent years—due partly to underfeeding, to the use of artificial foods, and to indulgence by the seniors in over-brewed tea. It was also apparent that there is urgent need of educating the mass of the population to realize the value of medical attendance in the early stages of sickness and disease and of systematic care in personal and household hygiene.

The Committee left Stornoway on October 16th, and made a call at Harris, where it heard evidence from the two local practitioners as to the medical wants of that district, and also examined members of local public bodies. At Lochmaddy, later in the day, the evidence of the North Uist and one of the South Uist doctors and the South Uist inspector of poor was taken. Some of the witnesses were in favour of the compulsory levy of a medical rate locally. Mr. Chisholm, Procurator Fiscal for the Long Island, also gave evidence, and expressed the opinion that the present medical service was inadequate, but that the locality was too poor to stand heavier rating than at present. For the Outer Hebrides he favoured a State medical service controlled from some central authority, which would have a voice in the appointments of the medical men, and rigidly supervise their conduct. After a few years' service in the islands they might be promoted according to merit to more desirable posts elsewhere. He thought the central authority should be in London. Mr. Wilson, sub-land commissioner, said the people generally would be able to pay 5s. a family towards medical aid. He had worked such schemes in two parishes, but they could not pay much more. He would approve a State service and a central board directing it, but he would differ from Mr. Chisholm to the extent that he would wish it to be kept in Scotland.

On October 18th the Committee crossed from Lochmaddy to Dunvegan, where the following witnesses from the extensive parish of Durinish were examined: MacLeod of MacLeod, Dunvegan Castle; Dr. Stewart, Dunvegan; Mr. John MacPherson, Glendale; Mr. Kirkpatrick, schoolmaster, Waternish; and the Rev. Mr. MacLean, parish minister of Durinish.

On the way from Dunvegan to Portree a visit was paid to the Geslo Hospital, a free institution for the reception of patients of Skye, provided through a legacy of £30,000 left by the late Mr. Kenneth MacLeod of Greshornish.

Witnesses from the parishes of Portree, Snyort, and Kilmuir were examined at Portree. Evidence was given by Dr. Fletcher, Medical Officer of Health and School Medical Officer; Dr. Stewart, Portree; Dr. MacDonald, Uig, and by several lay witnesses. The club system of payment for medical attendance in the parishes of Durinish and Stoath was discussed. As the doctor could not make a living by fees alone, the parish council had to pay a salary ostensibly for attendance on paupers, but really to provide medical attendance, not only for them, but for poor non-pauper patients. The need of a fuller and better qualified nursing service, of cottage hospitals in the more remote compact townships, and of the development of the telephone system, not only with a view of making the doctors' services more readily available, but especially for communication between doctor and nurse, with a view to her guidance pending, and after, medical treatment, was urged by all the witnesses, as was also the inability of the local rate to meet the necessary cost of making adequate provision for these and other important aspects of the problem. The expenses incidental to public health had in recent years become so heavy a burden on local resources that unless substantial subventions were forthcoming from imperial sources a grave financial situation must be brought about.

Medical Charity in Glasgow.

At Glasgow University, on October 18th, Professor Glaister delivered the opening lecture of a course arranged by the School of Social Study and Training. His subject was A General Survey of the Medical Service of Glasgow, and he gave some remarkable statistics regarding medical charity. The three infirmaries—Royal, Western, and

Victoria—alone expended annually in the charitable medical treatment of the sick poor £108,826, treated 143,657 patients, involving 470,760 individual consultations with the medical staff, and required a staff to handle that vast number of patients of no fewer than 876 doctors, nurses, etc., the medical staff alone numbering 228 doctors, of whom 52 were employed full time and the rest part time. Of the 24 chief institutions in the city, the total annual expenditure amounted to £157,964, the number of patients dealt with to 285,203, involving 637,327 consultations with the medical staffs. The number of nurses was over 1,000, and the number of doctors 450.

In the medical inspection of school children by the School Boards of Glasgow and Govan close upon 39,000 children were inspected during 1911 by a medical staff of 32, of whom 9 were full time and the rest part time officers, and by the aid of a nursing staff of 16.

In the municipal medical service 10,213 patients were medically treated within the wards of Belvidere and Ruchill Fever and Small-pox Hospitals and were nursed and cared for by staffs numbering in all 698 persons. The cost to the ratepayers of these establishments during the year 1911 was £76,392. Of tuberculosis patients within the city 1,348 suffering from lung tubercle were looked after.

Inquiry showed that the membership of the various friendly societies in the city amounted to over 72,000 persons, and had received the services of no fewer than 289 medical men.

Summing up the whole matter, it would not, Professor Glaister said, be overestimating the effect of public medical service of a philanthropic character to say that close on 300,000 persons above the rank of those requiring the services of the Poor Law received medical assistance at Glasgow's medical institutions every year, that over 30,000 received medical assistance from the medical officers of the Poor Law, and that over 76,000 persons had formed themselves into societies to secure medical assistance and monetary aliment during sickness.

The Housing Question.

The housing question is in certain parts of Scotland hardly less pressing than in England and Ireland, and a Royal Commission has now been appointed to inquire into the housing of the industrial population of Scotland, rural and urban (with special reference in the rural districts to the housing of miners and agricultural labourers), and to report what legislative or administrative action is desirable to remedy existing defects. The Commission consists of Sir Henry Ballantyne (chairman), the Right Hon. Lord Lovat, K.C.V.O., C.B., Sir William Younger, Bart., Mr. W. F. Anderson, Mr. G. F. Barbour, Mr. Charles Carlow, Mr. J. F. Duncan, Mr. David Gilmour, Mr. J. Milne Henderson, Dr. W. Leslie MacKenzie, Mr. J. Middleton, and Mrs. George Kerr.

Royal Medical Society and Medical Education.

The one hundred and seventy-sixth session of the Royal Medical Society of Edinburgh was opened on October 18th, when Dr. Robert Hutchison, of the London Hospital, delivered an inaugural address on the function of the Royal Medical Society in medical education. He took as his text Bacon's aphorism, "Reading maketh a full man, conference a ready man, and writing an expert man." The society, by means of its library, its debates, and the writing of dissertations, enabled its members to cultivate all three aptitudes. The library was peculiarly rich in old authors, and he expressed the hope that the members would not despise these, because a study of the medical [illegible] a proper perspective to the medical outlook, [illegible] often lacking in medical writings, a sense of style. Medical current and periodical literature was not so suitable for the student, although, wisely used, it had its use in completing the sense of perspective. He [illegible] that the society had no department of general literature. General culture was as important as purely professional study. No man was a worse doctor for being a well-read man.

At the close of the address, Mr. R. Simpson, W.S., on behalf of Miss MacFarlan, the last surviving member of the family of Mr. J. F. MacFarlan, founder of the well-known firm of J. F. MacFarlan and Company, chemists, Edinburgh, handed to Dr. Ritchie, one of the presidents, for custody by the society, a very handsome gold medal, which had been presented to Mr. MacFarlan by the society in recognition of his long and valued services as its honorary treasurer.

Reconstruction of Kilmarnock Infirmary.

It has been agreed by the directors of the Kilmarnock Infirmary to carry out a scheme for the reconstruction of the building at an estimated cost of £12,000. Dr. Mackintosh, superintendent of the Western Infirmary, and Dr. Burnett, architect, Glasgow, are advising the directorate as to the remodelling of the hospital, and arrangements are being made to obtain the necessary funds by public subscription and otherwise.

The Anthropological Museum, Aberdeen.

The *Illustrated Catalogue*,[1] by Professor R. W. Reid, of the Anthropological Museum at Aberdeen, with the extra *Catalogue* of specimens deposited by Sir William Macgregor,[2] is of high importance to all who study mankind and analyse prehistoric and ancient art. The catalogues are well got up, cheap, and adorned with good photogravures of flint heads, stone-hammer heads and axes, anvils, and querns, pottery, Egyptian works of art and utility, Asiatic objects of worship, and so forth. It will be of use to the student, with the aid of a manual of anthropology, but it will certainly be yet more prized by experts. The local relics, which include nearly 600 specimens, come first, the museum being rich in Scottish antiquities, from palæolithic flints to the kayak, paddle, and weapons of a Finn captured in Scottish waters in 1700. Next in order will be found the Wilson Collection of Classical and Eastern Antiquities, put together by Dr. Robert Wilson, H.E.I.C.S., and bequeathed to the College in 1871; the Grant Bey Collection, important to Egyptologists; the Henderson series of early classical vases; and many specimens from other donors, including objects from Africa and the New World. Professor Reid informs us in his preface that the Museum of Marischal College likewise includes a large series of Greek, Roman, Oriental, modern Continental, and British coins contributed by many donors. This series comprises the Davis collection of highly valuable Greek coins acquired by purchase over thirty years ago. The special catalogue of these coins is in course of preparation by the Rev. Professor James Gilroy. Sir William Macgregor has deposited a number of anthropological specimens, mostly derived from the New World. No less than 200 come from British New Guinea, and include remarkable personal adornments, card almanacs, and fishing apparatus.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Medical Officers' Salaries.

The Belfast Board of Guardians on October 15th considered an important letter from the Belfast Medical Guild, drawing attention to the two following resolutions:

> That in the opinion of the Guild Council no qualified medical practitioner should accept less than £5 5s. per week while acting as locumtenent to any dispensary appointment.
>
> That in the opinion of the Council the minimum salary for a qualified resident medical practitioner should be £130 per annum, with board and rooms giving suitable accommodation for the position he holds.

In support of these resolutions it was pointed out that a private practitioner when engaging a locumtenent would have to pay £4 4s. a week, travelling expenses, and board and lodging; and that a practitioner lately, while acting as locumtenent, paid 410 visits, vaccinated 16 children, attended 3 confinements, for which he received £5 11s., which worked out at 2.92d. per visit alone. A committee appointed to consider the question

[1] *Illustrated Catalogue of the Anthropological Museum, Marischal College, University of Aberdeen.* By R. W. Reid, M.D., F.R.C.S., Professor of Anatomy, Curator of the Museum. Aberdeen: The University Press, 1912. (Demy 8vo, pp. 365, with numerous illustrations. 1s. net.)

[2] *Catalogue of Specimens deposited by Sir William Macgregor, G.C.M.G., M.D. Lond., etc. in the Anthropological Museum, Marischal College, University of Aberdeen, 1909-1910.* Aberdeen: The University Press, 1912. (Uniform with Illustrated Catalogue, pp. 35.)

of resident medical officers recommended a rotation in the holders of the various posts, instead of the present system of an officer remaining in the one post; and that in future all officers should be appointed on their merits, and that canvassing of the members of the board either directly or indirectly should be a disqualification. The question of salary was deferred.

Dr. Andrew Trimble and the Belfast City Council.

Dr. Trimble has lately intimated his intention of leaving the City Council; he has been a member for about five years, and has proved an energetic and useful member. He was elected Chairman of the Children's Act Committee when it was formed recently; he also had much to do in originating the municipal milk supply, and was influential in bringing about the co-ordinating scheme between the Technical School and the Queen's University. Much regret was expressed at the committees by his fellow members, and he retires with the best wishes and high esteem of all.

The Carlow County Council.

A special meeting of the Carlow County Council was held last week to consider the appointment of a medical officer for the county under the Insurance Act, and to fix a salary. Some time ago the council advertised a post at a salary of £350, and two candidates applied, one of whom, however, was not within the age limit; the other, Dr. Edward McDonald, was appointed, subject to the approval of the Medical Associations. Subsequently Dr. McDonald wrote resigning his appointment, as the Medical Associations would not sanction the salary of £350 a year, and it would not be possible for him to discharge his duties without the co-operation of the other medical men in the county. A letter was read from the Conjoint Committee of the Medical Associations, pointing out that the salary should be at least £400 a year, and further that a sum of less than £100 a year would be inadequate for travelling expenses. A resolution was submitted that the annual salary should be £400 a year, with £50 travelling expenses. The chairman stated that the council was absolutely in the hands of the doctors, and that they could only bow to the superior strength of the medical profession; he would therefore vote for the increase, but his vote was only given under the strongest possible protest.

The county council has decided to send tuberculous patients to the Peamount Sanatorium, paying £70 each for a certain number of beds and £1 a week for each patient while in the hospital. Some opposition was offered to this scheme on the ground that, as it was to be temporary, pending a grouping of counties for sanatorium treatment, the expenditure of £70 each for the purchase of beds should not be authorized.

North Dublin Guardians and Doctors.

At the meeting of the Board of Guardians of the North Dublin Union held last week the following resolution was proposed:

That, in consequence of the action of the Dublin Medical Committee in refusing medical attendance to members of friendly societies or other such bodies, and excessive demands made by that Committee, and the undue hardships which will operate on the thrifty workers of the city, it is hereby directed that a notice be inserted in the newspapers, and hung up in the various dispensaries, intimating the hours of attendance of the doctors, morning and evening, also the name and address of each guardian and warden from whom tickets may be obtained and the conditions of same.

That the master of the union be directed not to permit any bodies from this union to be sent to the colleges or schools of anatomy, but that in future he sees that all unclaimed bodies are buried.

That all doctors in the employment of the guardians or medical officers who are in receipt of a superannuation be communicated with to ascertain if they are assisting the Dublin Medical Committee in their cruel medical boycott; and that the clerk be directed to have legal opinion as to whether such scheme or superannuations may be cancelled, seeing that the action of the Dublin Medical Committee will necessitate a large number of patients being rejected by the various hospitals, being sent to the workhouse, and the consequent increase in the rates of the city.

That we request the Irish members of Parliament to at once have defined the Medical Act of 1858, and, if necessary, its amendment. Copies of this resolution to be sent to each of the medical officers under this union, and to the members of Parliament representing the county and city.

The chairman of the friendly societies stated that close examination showed that the capitation hitherto paid was 4s. a head, and now the doctors were asking 12s. It should be noted that the 12s. mentioned is the fee for medical attendance on an insured person and family, 8s. being the fee demanded by the doctors for attendance on an insured person. An amendment was proposed to leave out the paragraph referring to the bodies, but this was defeated by 16 votes to 7, and the resolution as originally proposed was carried.

This whole question of disposal of unclaimed bodies by the union was discussed some years ago, when an attempt was made to show that they were sold to the schools of anatomy in Dublin. It was then conclusively proved that the sum paid—about £2—was only sufficient to cover the necessary expenses. Some reference to this "traffic in corpses" was raised at the meeting the other day, but no one pretended that it was the real cause of the refusal to supply the bodies; it was only introduced in order to buttress up their case and enlist sympathy.

Meals for School Children.

For the last two years the Ladies' School Dinner Committee in Dublin has been doing in a small way what in other countries is done by municipalities. It is distributing 450 meals daily in two of the poorest schools in the city. These cost 1d. each for the big children and a little over ½d. each for the smaller ones, and consist of Irish stew on four days in the week, and rice and jam on Fridays. In these schools 15 per cent. of the children come in the morning without having broken their fast. Most of the others have only had quite inadequate breakfasts of bread and tea, often without milk in it. Half the children bring no lunch, and if it were not for the dinners given would remain fasting from 9.30 to 3. Whatever may be the theoretical objection to pauperizing the poor by providing dinners for their children, there is no doubt that it is a waste of time and money trying to teach starving children, and it is probable that this schoolday starvation is largely responsible for a great deal of the tuberculosis in Ireland. It may fairly be argued, therefore, that the feeding of these school children is the lesser of two evils, and that it should be provided for from the rates, as in England, Scotland, and Wales.

Vaccination in Co. Wexford.

Dr. Connolly reported at the last meeting of the Enniscorthy Board of Guardians that there were 266 vaccination defaults in the Oulart dispensary district. This report was marked "read" without discussion, the chairman remarking that they were not going to poison the rising generation.

South Africa.

Regulation of State-aided Hospitals.

An ordinance bearing on this subject has just been passed into law and comes into operation on March 1st, 1913. The medical principles embodied in the ordinance are virtually those laid down by the South African Congress in 1910. The ordinance provides for the constitution of hospital districts, the area of the district being that in which there is a State-aided hospital or dispensary, for each of these districts there shall be a hospital board established, which shall consist of numbers varying from six to thirty-six members according to the size of the district. One-third of the members shall be elected by the contributors at the annual general meeting, one-sixth of the members appointed by the visiting medical officers, and one-sixth of the members appointed by the administrator. This elected board shall have the control and management of every State-aided hospital, dispensary, or convalescent home in the Province at the time of the promulgation of the ordinance. The meetings of the board shall be held once a month and are to be open to the public. Regarding the amount of the Government subsidy which will be paid to every board, it will be on the following scale:

(*a*) Thirty shillings for every pound of the value of all voluntary contributions or gifts of money other than

devises or bequests; (*b*) one pound for every pound of the value of all devises or bequests; and (*c*) one pound for every pound received as fees from patients. The subsidy shall not exceed £500 in respect of the estate of a single testator. If in any year there is a deficit, the administrator shall, if he is satisfied that the board has reasonably endeavoured to collect voluntary contributions, authorize the payment of such deficit in whole or part, as he may deem advisable, in equal proportions, out of moneys appropriated by the Provincial Council for this purpose and out of the funds of the rural or divisional council of the district. The Board has full power to invest any surplus funds, or if need be may borrow money or sell lands held in trust.

Power is given to establish new institutions in a district; they may also, with the previous consent of the administrator, close any institution under its control. Committees of management are to be established, the members being elected by the contributors and the medical officers of the institutions. Rules for the management of the different institutions will be drawn up, but these do not come into force until approved by the administrator.

The administrator shall appoint a medical inspector of hospitals and charitable institutions for the purpose of assisting in the administration of the ordinance. This inspector shall at all times, for the purpose of inspection or the carrying out of his duties under this ordinance, have access to any part of any institution and any books or other records kept by a board or committee thereof.

Correspondence.

TUBERCULOSIS AND THE TEACHING HOSPITALS.

SIR,—Will you allow me a few words relative to the subject of tuberculosis and the teaching hospitals, discussed in a leading article in to-day's JOURNAL?

If, as I trust, the campaign against tuberculosis is to be waged more and more by each medical practitioner in his own sphere, it is essential that he be alive to the great frequency of tuberculous infection, and that he be familiar with refined methods of diagnosis and treatment. Only thus can he be in a position to deal quickly and effectively with the earliest manifestations of tuberculosis—with what has been termed the tuberculous "seedling."

That necessity must be kept in view in the framing of antituberculosis organizations. It was an inspiring element in the creation of what is sometimes known as the Edinburgh system. Indeed, when the tuberculosis dispensary was first projected by me as a practical instrument in handling the great and varied mass of tuberculous disease, I turned towards the teaching bodies and tried to establish the dispensary as a special department of an existing teaching institution.

When the Victoria Dispensary came into being in 1887 as a separate institution, it did so because the opinion of the authorities had not yet grasped the need for special measures in relation to tuberculosis. The proposal to create a scheme of attack on tuberculosis was not received with favour. It was thought unnecessary to put tuberculosis on a different footing from other diseases treated at general hospitals.

It was largely that attitude—natural enough as it was at the time—that actually led to the erection of the tuberculosis dispensary as a separate institution. The incident was not unfortunate, because it permitted the freer development of the ideal of the tuberculosis dispensary as an information bureau in matters pertaining to tuberculosis, a receiving house, a centre of diagnosis, a centre of observation and treatment, a "clearing-house," a centre for the examination of "contacts," and a centre for "after care."

From the experience of the past there is a good deal to be said in favour of an entirely separate institution which thus centralizes effort in relation to the most frequent and protean of infective diseases. Yet I am far from saying that such separate existence is necessary, provided that, whatever the organic relationships of the institution, the essential purposes and methods of the tuberculosis dispensary are maintained.

Considerations of mere convenience must not be allowed to interfere with the fundamental aim of the tuberculosis dispensary, that not a single case of tuberculosis shall remain undetected and uncared for, and that not a single dwelling in which tuberculosis has occurred shall escape attention.

In teaching centres it should not be difficult to link the tuberculosis dispensary and other institutions devoted to the prevention and treatment of tuberculosis with the teaching school. In the case of Edinburgh, the tuberculosis dispensary has been used ever since its foundation as a training ground for students and graduates. Since 1889 regular courses of instruction in the diagnosis and treatment of tuberculosis have been carried on in connexion with the school of medicine by members of the dispensary staff. The attendance of medical practitioners at the ordinary visiting hours has been welcomed both at the dispensary and at the hospital.

Co-ordination of effort, which has throughout been the *motif* of the Edinburgh system, includes not only the harmonious co-operation of the several elements in the antituberculous scheme, but also the linking of these elements with other agencies connected with the problem, including the medical school.

Numerous facts point to the conclusion that success in the eradication of tuberculosis will depend especially on anticipation and prevention of its occurrence in childhood. In any case it is clear that the secret of success lies in the earliest possible determination of the presence of disease, and this in turn is dependent on the training of men who shall be alive to the possibilities, quick to perceive, and ready to act.—I am, etc.,

Edinburgh, Oct 19th. R. W. PHILIP.

TUBERCULIN TREATMENT.

SIR,—In discussing the advantages of tuberculin dispensary treatment, as compared with sanatorium treatment, I do not think it is always clearly explained that everything that is done at a dispensary can be done better at a sanatorium. When discussing the cost of the two treatments, it is left out of account that many cases going to dispensaries do not require treatment in that particular way, but might well be treated by their own doctors. If the figures available from districts such as Greater New York (where compulsory notification has been enforced for a number of years) are examined, it will be found that the number of notifications for any year exceed by three or four times the number of deaths notified from pulmonary tuberculosis. We may infer that 60 or 70 per cent. of those notified recover; if, therefore, the net be drawn wide enough, we cannot help securing good results from any treatment that is not in itself harmful. The number of deaths occurring from pulmonary tuberculosis in any given year, in so far as it is accurate, will indicate the number of cases where treatment has failed.

Because a chronic case—the chronicity often being due to neglect of proper treatment in the early stage—can be treated with some measure of success by a given method, it does not follow that an early case should be treated in the same way, nor does it follow that because people desire to follow their employment whilst being treated that they should be encouraged to do so. Such a course results either in the production of a chronic or of acute disease, both of which conditions may be very difficult to cure; such cases provide the majority of bacilli carriers. The use of diagnostic injections of tuberculin is open to grave suspicion. If the diagnosis be so difficult it would seem to follow that the patients are not so very ill, but if such a dose of old tuberculin be administered to produce a focal reaction in the lung a typical case of early phthisis with physical signs is produced, and, although the immediate ill results may soon pass off, a lesion may have been produced which it may or may not be possible to check, and at the same time a certain amount of toxin tolerance which may mask any symptoms of activity produced by the injection; larger doses of tuberculin will probably have to be used than would have been necessary had a very small dose, incapable of producing a focal reaction, been used at first. If diagnosis be made from symptoms and from correct records of temperature, the patient being put to bed, there

would seem to be very few cases where a diagnostic injection could be regarded as justifiable. It would seem that resting a patient in bed increases the sensitiveness to the benefits of tuberculin, whereas injecting tuberculin decreases this sensibility.

It would appear that of 324 patients who received diagnostic injections of tuberculin at Tübingen Medical Hospital between October, 1904, and October, 1909, 197, or 60.8 per cent., gave a focal reaction, together with a general reaction, 24, or 7.4 per cent., focal reaction only; 76, or 23.5 per cent., of a general reaction only; 27, or 8.3 per cent., neither focal nor general reaction. Of the 18 showing no reaction and receiving no treatment 17 remained healthy, whilst one had developed fistula in ano, and laryngeal tuberculosis. Out of 47 examined later, who had given only a general reaction, 44 were healthy, 3 showed deterioration in lungs and general condition. Subsequently, of 135 who had given focal reaction, 2 had died, 82 were worse, and in 51 only was permanent arrest obtained and restoration to working capacity.[1] The above is well open to the criticism that those patients who exhibited a focal reaction did worse than had they been left alone, for presumably, unless the injections were given from mere wantonness, these patients could not have been showing marked symptoms. It seems probable that a large number of these patients might have been a long while, perhaps years, before such a disturbance of their economy, as that produced by the tuberculin, would have occurred.

I agree with Dr. Hyslop Thomson that physical signs should improve, when patients are receiving tuberculin. If they do not, then some other form of treatment should be adopted at once.—I am, etc.,

Ayrshire, Oct. 21st. EDWARD E. PREST.

SIR,—The letter by Dr. Wilkinson (p. 1080) is a straightforward statement of facts proved by himself in practical everyday work. Any one who has taken the trouble to attend his dispensary in Kennington Road, London, must be convinced of the scientific truthfulness and accuracy of his statement. My stay at his dispensary, though short, was quite sufficient to convince me, and my subsequent work with his methods has given me and my patients every satisfaction. All my work is done in private practice, having no hospital appointment. This fact goes a long way to prove one of his assertions—that is, that his method of giving tuberculin is the most suitable one for general practitioners.

The two letters by Drs. Thomson, Harris, and Coppock are a mixture of theory and destructive criticism, and so call for no further comment than to say that Dr. Coppock might have hit on a happier way of expressing himself re "disciples of Dr. Camac Wilkinson." I am one of those "disciples," and my being so depends on personal observation and practical experience; therefore I resent very much Dr. Coppock's words.

I hold no brief for Dr. Wilkinson, nor does he need support from me, but it gives me great pleasure to acknowledge his courtesy to me in allowing me to examine his patients and learn something of his methods. I have found his work good, and I believe it will endure.—I am, etc.,

Lisburn, Oct. 19th. J. L. RENTOUL, M.B.Edin.

THE ORGANIZATION OF THE CAMPAIGN AGAINST TUBERCULOSIS.

SIR,—You publish this week a long letter from a correspondent purporting to be an answer to an attack supposed to have been made by me in a communication which appeared in your issue of September 28th. Any one who read the communication will see that no such attack was made. I was merely concerned to point out the danger to medical science of stereotyping by official regulations any methods of treating tuberculosis regardless altogether of their special nature or supposed merits. Your correspondent and any particular methods he may claim to employ were not referred to. They were not in my mind. If I should ever think fit to criticize them, your correspondent will be in order in trying to disprove my competence as a critic or in taking any steps he likes to endeavour to silence me. Until then your correspondent's assumptions as to my "bias against" or "unshaken belief" in any form of treatment are without evidence and, in the parliamentary sense of the word, impertinent.—I am, etc.,

London, W., Oct. 22nd. LAURISTON E. SHAW.

TREATMENT OF NEURASTHENIA.

SIR,—I have read with much interest the article by Dr. Brook in the JOURNAL of October 12th, p. 954. For the last six months I have been treating patients with similar symptoms by a vaccine of a diploid streptococcus and a staphyloid coccus urinae, having previously in each case had the diagnosis confirmed by detection of these organisms in the urine. I have been doing this on the suggestion and under the direction of Dr. Warren Crowe of Yelverton, who for some time has been doing valuable pioneer work on the subject.

Within the first month the anaemia, lassitude, "rheumatism," frequency of micturition, irritability, and insomnia have been ameliorated with a decisiveness and rapidity that have astonished me. I have never known a haematinic so rapid in effect. The second and third months of treatment have confirmed the result. The question is, Would not a microscopic and cultural examination of the urine, without serological observations, have revealed as much in these cases of Dr. Brook's, and given the same clue to treatment? As a country practitioner I aver that these symptoms are to be met with as frequently among country folks as among the dwellers in cities.

We have been recently told by an advocate of suggestive medicine that 50 per cent. of the cases a practitioner treats are functional. It would appear that some of these functional disturbances have for efficient cause a coccal or coliform invasion from a mucous tract, of saprophyte turned pathogenic under conditions of lowered vitality the result of faulty hygiene or infection from without. They are at least not all neuropaths by inheritance and perhaps we need hardly yet become followers of Mesmer.—I am, etc.,

Liskeard, Oct. 15th. JOHN DONALD, M.D.

THE INDIAN MEDICAL SERVICE.

SIR,—Your correspondent, "Capt. I.M.S.," whose letter appeared in the JOURNAL of September 28th, suggests that my letter published in the issue of September 21st is wanting in *esprit de corps*, and states that he is unable to follow my motives.

I would ask him, Is it not truer *esprit de corps* to look facts in the face, and strive for better things for one's service than to shut one's eyes to deficiencies and to declare them, therefore, non-existent?

The I.M.S. was a fine, a very fine, service, but can that be honestly said of it now? The truth is "Capt. I.M.S." and I look at the question from a different standpoint; he views them as a young, probably unmarried, officer in civil duty, and I as a more senior married man in military employ. In the past the military side of the I.M.S. has undoubtedly suffered and been neglected, the bait held out of possible civil employment being sufficient to attract candidates to fill vacancies in the service. Remembering that the I.M.S. is primarily a military service, such a state of affairs is obviously very unsatisfactory.

No doubt there are even yet some attractions on the civil side of the service. For instance, furlough pay, as mentioned by "Capt. I.M.S.," he now draws £500 as against the £300 per annum he would get if in military. I think he might have added that £500 per annum is civil furlough pay irrespective of the amount of an officer's service—that is, "Capt. I.M.S." would draw the same furlough pay in, say, ten years' hence as he does now.) Then, again, the young officer in civil evades the discipline of mess and military duty generally. I fancy your correspondent's motive for writing was probably that he was restive under the idea he might have to return to military duty if my supposition of the future of the I.M.S. is correct.

If "Capt. I.M.S." will observe the signs of the times, he will see that there is a very grave and justly founded feeling of discontent in the service—a feeling of being "done." During the past few weeks no less than four majors have resigned the service (see JOURNAL). If the service is attractive, why should comparative junior men be so

[1] *British Journal of Tuberculosis*, October, 1912, pp. 207 and 208. (Abstract.)

anxious to leave it directly they are qualified for early pension, instead of waiting for higher pension?—I am, etc.,

MAJOR I.M.S.

October 7th.

DIPLOMAS AND DEGREES.

SIR,—I had the pleasure of being present at the very interesting address given by Dr. Seymour Taylor at the West London Post-graduate College at the opening of this session on October 14th. Medical authorities of the day seem to consider it an undisputed fact that a man with any university qualification must be superior to one possessing that of the Royal Colleges, and it is on this point that I wish to call the attention of your numerous readers. Again, it is taken for granted that one with only such letters as L.S.A. London or Dublin to his name cannot but possess a very superficial knowledge of his profession, and here again I come forward to protest against such views.

It must be remembered that many a student who seems to possess no higher ambition than the L.S.A., and studies for such, does so not on account of any lack of intelligence on his part, or even to want of confidence in his ability, but may be due to mere force of circumstances.

Dr. Beddard, now Senior Physician, West London Hospital, after proposing a vote of thanks to Dr. Taylor, very correctly remarked, in expressing his views of medical education of to-day, that students studying for the L.S.A., Royal Colleges or any university, pass through much the same courses of study. Why, then, should the lower qualifications be despised when often it is only a matter of one man having a more severe test than another to obtain for him an entrance into the noblest profession existing?

As long as England has these various grades of qualifications it must be expected that students will choose for themselves, according to their means or other circumstances. It is by no means uncommon to find that a man once he holds the coveted letters of M.B., B.S., considers he has all he wants, and thus leaves studies aside for a shorter or longer period, and perhaps sometimes for good. On the other hand, men with only the Royal College or Hall diplomas, realizing their disadvantages, strive hard by constant study to be considered equal to their brother M.B., or to do justice to the post that they are holding, with often more than the desired result.

The proof of the pudding is in the eating. Take the results of the examinations into any of the services—for example, the Indian Medical Service, one of the best all-round tests. Men who are licentiates of the Royal Colleges do every bit as well as those holding university degrees, and not infrequently one with only his modest L.S.A. passes in, leaving behind him many a Royal College or university man. The greatest drawback in the Colonial Service is the fact that no competitive examination is held for entrance, and so with only qualifications to be guided by, many a good hard-working applicant is rejected, unless backed by influential superiors.

I suggest that the posts of house-physician and house-surgeon should be made by examination. It is only fair to give men equal chances of soaring to a lofty niche in the Temple of Fame. Some hospitals do carry out this plan—a perfectly fair and just procedure—but there are still many institutions that would do well to adopt the same method.—I am, etc.,

HALL AND ROYAL COLLEGES.

October 15th.

WHOOPING-COUGH AND IODOFORM INJECTIONS.

SIR,—May I indicate to Dr. Bain that he has quite missed the point of my letter of September 28th; also that he has begged the question at issue no less than four times in his short letter? It is just from that assumption of cure by the specific means employed, so easily reached by Dr. Dewar, so readily accepted by Dr. Bain, that I dissent.

I will only add that, in his selection of a case to support Dr. Dewar's example, Dr. Bain is extremely unhappy, and that it also illustrates his peculiar conception as embracing therapeutic optimism of a marked degree.—I am, etc.,

R. O. ADAMSON.

[illegible], Oct. [illegible].

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following degrees have been conferred:

M.S.—H. S. Souttar.

B.M., B.S.—N. S. Lucas.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have been approved at the examination indicated:

D.P.H. (BOTH PARTS).—A. B. Arora, *A. T. M. Blair, W. Brown, J. C. G. Carmichael, Capt. R.A.M.C., A. J. Clark, T. G. D. Cooper, J. T. Dick, G. Fletcher, S. N. Galbraith, C. M. Ganapathy, T. S. Gibson, L. C. Hayes, Lieut. R.A.M.C., C. B. Heald, T. J. Hughes, J. McGilchrist, G. Macleod, R. K. Mhatré, H. W. Moir, J. McI. Morgan, J. Selfe, C. H. S. Taylor, G. Walker, A. White.

* Passed with distinction.

Degrees.

The following degrees have been conferred:

M.D.—G. Graham, A. B. Howitt.

M.C.—T. J. Cleminson.

M.B.—H. Bowring, A. C. Gemmell, C. B. Wainwright, L. N. Weeks.

B.C.—H. Bowring, J. Ellison, A. C. Gemmell, C. E. Redman.

UNIVERSITY OF LONDON.

KING'S COLLEGE.

Special Lectures in Physiology.

THE course of four lectures on the mammalian heart to be given by Dr. F. S. Locke in the Physiological Laboratory, King's College, on Mondays, November 11th, 18th, 25th, and December 2nd, at 4.30 p.m., are free to all medical students in London medical schools, to internal students of the university, and to medical men on presentation of their cards. The following is the syllabus of the lectures: "Recent Methods of Investigation of the Mammalian Heart. The Isolated Heart. Graphic Methods. Electrical Methods. Automaticity, Rhythm, and Excitability of the Heart. The Nutrition of the Heart. The Innervation of the Heart and of the Coronary Circulation. Heart Failure. Some Points in the Mechanics of the Heart and of the Coronary Circulation."

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL.

The following entrance scholarships have been awarded at the medical school of King's College Hospital: *Anatomy and Physiology*, value £50, Mr. H. Rivers Pollock (Trinity College, Cambridge); *General and Clinical Pathology and Pharmacology*, value £50, Mr. E. Watson Williams (Caius College, Cambridge). The Epsom Scholar is Mr. R. H. Leigh.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At the annual stated meeting of the President and Fellows of the Royal College of Physicians of Ireland, held on October 18th (St. Luke's Day), the following officers were elected for the coming year:

President.—Dr. C. E. FitzGerald.

Vice-President.—Dr. James Craig.

Censors.—Dr. James Craig, Dr. T. G. Moorhead, Dr. A. Nixon Montgomery, and Dr. T. Henry Wilson.

Examiners for the Licence to Practise Midwifery. Dr. G. FitzGibbon and Dr. Holmes.

Additional Examiners to take the Place of an Absent Censor or Examiner.—Medicine: Dr. Parsons. Medical Jurisprudence and Hygiene: Dr. Bewley. Midwifery: Dr. Hastings Tweedy.

Supplemental Examiners under the Conjoint Scheme. Biology: Dr. E. MacDowel Cosgrave. Chemistry: Dr. E. Lapper and Dr. N. Falkiner. Physics: Dr. E. J. Watson and Dr. W. G. Harvey. Pharmacy, Materia Medica, and Therapeutics: Dr. Travers Smith and Dr. D. J. O'Connor. Physiology: Dr. H. C. Earl. Pathology: Dr. F. C. Purser. Medicine: Dr. J. F. O'Carroll and Dr. H. C. Drury. Hygiene and Forensic Medicine: Dr. W. A. Winter.

Examiners for the Conjoint Diploma in Public Health. Chemistry: Dr. E. Lapper. Hygiene: Dr. H. T. Bewley. Bacteriology: Dr. H. C. Earl. Meteorology: Dr. W. G. Harvey.

Examiners for the Membership of the College. Practice of Medicine: Dr. Martin Dempsey and Dr. T. G. Moorhead. Clinical Medicine: Dr. J. Craig and Dr. George Peacocke. Pathology: Dr. H. C. Earl and Dr. O'Sullivan. Obstetrics and Gynæcology: Sir William J. Smyly and Dr. A. J. Horne.

Representatives of the College on the Committee of Management. Dr. Walter G. Smith, Sir John W. Moore and Dr. T. P. C. Kirkpatrick.

Representatives of the College on the General Medical Council. Sir John W. Moore.

Treasurer. Dr. H. T. Bewley.

Registrar. Dr. T. Percy C. Kirkpatrick.

Librarian. Mr. R. G. J. Phelps.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following candidates have been admitted to the Fellowship:

G. W. Bury, R. G. M. Clements, J. G. Cormack, A. Eells, H. W. Gahn, [illegible] J. Gemmell, A. C. Hendrick, C. Hudson, D.S.O., Major, I.M.S., J. W. [illegible], Captain, I.M.S., I. Kehlenbeck, V. Lloyd Evans, R. B. Marks, A. McMurray, I. Myer, C. F. H. Newton, G. F. Pearce, W. R. [illegible], W. L. [illegible] Moncrieff, Major, I.M.S., A. A. Straton, L. W. D. Taylor, W. S. Thacker.

Obituary.

WILLIAM TUSTING COCKING, M.D.

HONORARY PHYSICIAN TO THE SHEFFIELD ROYAL INFIRMARY; EMERITUS PROFESSOR OF PHARMACOLOGY AND THERAPEUTICS, SHEFFIELD UNIVERSITY.

It is with profound regret we record the death of Dr. William Tusting Cocking, on October 17th, after a long and distressing illness which he endured with rare fortitude. The cause of his death was pulmonary tuberculosis, and there can hardly be a doubt that he contracted the disease in the out-patient department of the Sheffield Royal Infirmary, where for many years he made a special study of phthisis.



WILLIAM TUSTING COCKING.

Photograph by] [*R. S. Henderson, Sheffield.*

He was the son of the late Mr. Tusting Johnson Cocking, of Sheffield, and was born in 1862. He was educated at Wesley College, Sheffield, and at University College, London, where he greatly distinguished himself; he became M.R.C.S. in 1884, and in 1885 took the degree of M.B.Lond. with honours in medicine and obstetric medicine. Two years later he proceeded to the M.D. Lond., qualifying for the gold medal. After holding the usual resident appointments at University College Hospital he returned to his native city, and was appointed assistant physician to the Sheffield Royal Infirmary, and thus began a connexion with that institution which ended only with his death. In due course he was promoted to be full physician to the Royal Infirmary, and for upwards of twenty years he worked incessantly for the sick poor of the field, earning the gratitude of a multitude of patients.

He took a very large share in the management of and the teaching in the medical faculty of the Sheffield University. He was the first Dean of the Faculty, and for many years held the Chair of Pharmacology and Therapeutics. On resigning the latter, owing to his illness, he was appointed Emeritus Professor. His clinical teaching in the wards of the Royal Infirmary attracted at all times a large class of students, with whom he was always on excellent terms.

He was the first representative of the university on the General Medical Council, and held this office as long as the state of his health permitted.

For several years he acted as Secretary to the Sheffield Medico-Chirurgical Society, resigning this post on his election to be President in 1906. He was a member of the British Medical Association, and was Secretary of the Section of Pharmacology and Therapeutics at the Annual Meeting at Portsmouth, 1899. When the Association met in Sheffield in 1908 his health was already too precarious to justify him in accepting any office.

He took an active part in the editing of the *Quarterly Medical Journal*, and contributed many articles to it.

A good observer, a man of keen insight and sound judgement, thoroughly interested in his work, and doing with all his might whatever he undertook, he made an ideal hospital physician. Singularly modest, perhaps even to a fault, and self-sacrificing to an unusual degree, he delighted to advance the interests of others rather than his own. His reward was the universal esteem of all with whom he came in contact. While tolerant of the weaknesses of the weak, he could, when the necessity arose, be a severe critic of those in high places, but his keen wit was reserved for the few who were privileged to belong to his inner circle of friends. The views he held of mankind are well summarized in R. L. Stevenson's aphorism: "There is so much bad in the best of us, and so much good in the worst of us, that it ill behoves any of us to find fault with the rest of us." Dr. Cocking married Miss Alice Mary Birks, the daughter of the late Mr. Edward Birks, of Sheffield, who with one son and daughter survive him. He was buried in Fulwood Churchyard on October 21st.

THOMAS MCCLURE, M.D.Edin., F.R.C.S.I., who died at Luton on October 1st, aged 65 years, entered the medical profession in 1868, and joined the Bath and Bristol Branch of the British Medical Association early in the Seventies. He spent forty-four years in hard general practice, mostly in the country, and wherever he practised he soon attracted by his kind, sympathetic, and genial manner a large number of patients. He was at times misunderstood by his professional brethren, but those who were best acquainted with him knew how, with a real heroism for the sake of those around him, he bore silently and with extraordinary cheerfulness strokes of misfortune, and, during his last months, the agony and distress of a disease that he must from the first have known to be fatal. He leaves a widow and eight children. Two of his sons joined the profession; the oldest, Charles, died of enteric fever at Koffyfontein, South Africa, only five weeks before his father. The other, Walter, is now assistant medical officer of health for Manchester.

WE had with regret to announce last week the death of Mr. JOHN MARLE, who had been attached since 1865 to the Museum of the Royal College of Surgeons of England, working as assistant articulator under Mr. James Flower, he succeeded to the senior appointment in 1876. He was well known to anatomists as an expert in identifying fossil bones, and his merits were recognized and appreciated by the three conservators under whom he worked—Sir William Flower, Professor G. Stewart, and Professor Keith. He was yet more widely known to a whole generation of students as an assistant at the College examinations, his voice as he ushered in the candidates being very familiar to the Court. He died in University College Hospital of pneumonia and empyema, at the age of 67.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Professor Otto Soltmann, director of the Clinic of Children's Diseases of the University of Leipzig, aged 67; Dr. Danlos, physician to the Hôpital Saint Louis, Paris, and a recognized authority on diseases of the skin and syphilis, aged 68; Dr. Joseph Schmitt, professor of clinical medicine in the University of Nancy, and author of works on microbes and disease, the diagnosis and treatment of infectious diseases, and other contributions to medical literature, aged 57; and Professor Hermann Munk, the famous physiologist of Berlin, aged 73.

Medico-Legal.

STEVENS v. BRITISH MEDICAL ASSOCIATION.

THIS case, the hearing of which was commenced on October 22nd before Mr. Justice Pickford and a special jury, was an action in which Mr. Stevens, managing director of Stevens & Co., Ltd., formed for the sale of a specific for the cure of consumption, sued the British Medical Association for damages sustained through statements published by the Association in *Secret Remedies, What they Cost and What they Contain*. The defendants denied that the words published were capable of the meaning alleged, and said that so far as the allegations consisted of fact, they were true, and so far as they were expressions of opinion, they were fair comment on a matter of public interest.

Mr. Tindal Atkinson, K.C., and Mr. H. W. Rowsell appeared for the plaintiff; and Mr. Holman Gregory, K.C., and Mr. Colam, K.C., for the defendants.

Mr. Tindal Atkinson, in opening the plaintiff's case, said that the statements in the book were founded on analyses, and on the face of these the defendants had charged Mr. Stevens with being a swindler and a quack, and a quack who foisted upon the public a remedy which he knew to be absolutely worthless. The defendants relied on their analysis and on the names of the plants the plaintiff said he had used not being found in the British or South African *Pharmacopœia*. He quoted the analysis as follows: "The medicine was a clear red liquid, and analysis showed it to contain in 100 fluid parts 21.3 fluid parts of alcohol, 1.8 parts of glycerine, and 4 parts of solid substance; this solid substance contained about 1 part of a tannin and 0.2 part of ash; the remainder being extractive. No alkaloid was present, and no other active substance could be detected. The solid substance agreed in all respects with the solids of decoction of krameria, or a mixture of this decoction with a little tincture of kino. The formula thus appears to be approximately: Rectified spirit of wine, 23.7 parts by measure; glycerine 1.8 parts; decoction of krameria (1 in 3) to 100 parts by measure, or it may be made with tincture of krameria."

Mr. Tindal Atkinson said that if that analysis were true there was a fraud on the part of the plaintiff. He would be making his remedy from krameria and kino, costing a few pence, and selling drugs which were useless for the purposes for which the remedy was sold—and useless to his knowledge—at a greatly increased price. If that were so, there was an end of Mr. Stevens's case and of his reputation. But if the defendants failed to establish their analysis, then the way was open to Mr. Stevens, who, he submitted, would be entitled to their verdict.

Continuing, Mr. Tindal Atkinson said that the plaintiff was born in Birmingham in 1880, and in 1897, as he was out of health and losing flesh, consulted his doctor, who told him that he was suffering from tuberculosis of the lungs. This opinion was confirmed by a specialist and the plaintiff was advised to go to South Africa. Accordingly in 1897 he went to Bloemfontein, and there learnt of an Englishman suffering from consumption who had been treated by a native and after three months had been able to return to England perfectly cured. The plaintiff submitted himself to the treatment of this native, and was supplied with a substance which he was told to boil, and to drink the decoction. At the end of two months he lost practically all symptoms of consumption and returned to England, when his doctor reported that he was cured. Subsequently he served with the Scottish Yeomanry in the Boer war, and afterwards in the Cape Mounted Police. He started in business as a motor and cycle agent in Cape Town, but owing to the destruction of uninsured property by fire the business came to an end. The plaintiff commenced to advertise the remedy under the name of Seccom, and endeavoured to form a company for its sale under the name of Secco, Limited. In this he did not succeed. He had added to the substance a plant called chijitse, a name which was an attempt to express a well-known clicking sound used by the Zulus. The object of this substance was to stop bleeding. Mr. Stevens had cured himself and had treated hundreds of people with the remedy with almost invariable success. Amongst the cures were those of people who had been discharged from sanatoriums and hospitals as incurable, but had yet been cured. Counsel intended to call a number of them as witnesses, and also a number of doctors who had watched the cases, and the jury would be asked to award Mr. Stevens substantial damages.

Mr. Edwards Morrell Holmes, examined by Mr. H. W. Rowsell, said that he had been curator of the Pharmaceutical [illegible] lecturer on materia medica from 1887 to 1890 for the Society, and had been president of the British Pharmaceutical Society in 1900. The plaintiff submitted to him in December last two substances, [illegible] herb. He recognized that the substance called chijitse belonged to the natural order of *Ornamaceæ* and grew in South Africa; it was not recorded as growing in any other country. It was impossible to say where the root called umckaloabo grew. From a microscopical examination he [illegible] to the *Polygalaceæ* family, which [illegible] Krameria and umckaloabo were [illegible] characteristics, and on microscopical [illegible] a root but an extract from the bark of an Indian tree. Neither krameria nor kino came from South Africa.

Cross-examined by Mr. Holman Gregory, witness said that when the plaintiff brought him the roots he told him they came from South Africa. He knew the botanical name of chijitse, but did not know whether he ought to mention it.

Mr. Justice Pickford: You mean it is the plaintiff's secret; then write it down.

The witness wrote on a piece of paper and handed it to counsel.

Mr. Holman Gregory: That is the botanical name; has it got a popular name among the natives at South Africa?—Yes, it is spelt in various ways—nwta, geita, and keita. Hottentots and other natives use it for colds and inflammation; also for anthrax, dysentery, and chronic diarrhœa; also for convulsions and cough and chest affections—as a demulsive. It appears to have been known locally for 100 years. As to the substance known as umckaloabo, he was not in position to say whether it ever grew in South Africa. He could only say it was a root of a plant of a group which grew all over the world. He had not made any decoction from it.

The court adjourned at this point.

The cross-examination of Mr. E. M. Holmes was continued when the court resumed on October 23rd.

In reply to Mr. Holman Gregory, witness said that there were three kinds of krameria, but no species of krameria was known in South Africa at all. Rhubarb, dock, and sorrel were roots of the same family as umckaloabo. They possessed astringent and other properties, one of their properties being to stop bleeding. Monsonia, another name for chijitse, had been mentioned in the *Lancet* as being good for dysentery, and it might possibly be a germicide.

Re-examined: He had never come across anything exactly like the root submitted to him.

Mr. Otto Hehner, Public Analyst for Nottingham, West Sussex, Derby, and Ryde, examined by Mr. Rowsell, said that he had analysed a sample supplied by the plaintiff. It contained neither krameria nor kino. He had prepared a decoction of umckaloabo and chijitse. The reactions of both agreed. He had tested Stevens's mixture in many different ways, and in his view it could not contain krameria in any tangible quantity. He was also of opinion that there was no kino in the mixture, but he had not made so many tests with the object of finding that substance.

Cross-examined: He obtained the sample of Stevens's mixture in March, 1912. If the analysis on p. 32 of *Secret Remedies* was correct the two mixtures were entirely different. If the mixtures were the same the analysis of the defendants was inaccurate.

Mr. Holman Gregory: The defendants' analysis was made on June 17th, 1908. Continuing, witness said that in a decoction of krameria the solids would vary. There would, however, be no variation in the reactions.

Re-examined: Quantitative and qualitative analysis were entirely distinct, but even by qualitative analysis he was satisfied that the two mixtures were different.

Mr. John Percival Lord said he was an analyst and bacteriologist living at Wimbledon. He had had twenty-two years' experience. In his view the plaintiff's medicine was not made of krameria, nor did it contain any; krameria and Stevens's mixture differed in specific gravity, total solids, etc. He had analysed Stevens's mixture on many occasions since 1908, and was quite satisfied that it contained no krameria. Although the quantitative results varied slightly, the qualitative results were always the same.

Cross-examined by Mr. Holman Gregory: He knew the plaintiff, but had never lived with him at Wimbledon, although he had worked in his office. He had worked in a special laboratory which the plaintiff had fitted up for him. The plaintiff's mixture was advertised considerably, and eight or ten young ladies were employed taking down letters for dispatch. He had been employed by the plaintiff from January to March, 1911, and again from December 21st, 1911, to June, 1912, being paid a guinea and a-half a week. In 1906, 1907, and 1908, he had been bacteriologist for the Councils of New Malden and Leatherhead. In that at New Malden he had a small annual retaining fee, but otherwise he was paid by fees. He only saw a part of the correspondence which was sent out from Mr. Stevens's place, as his work was on the top of the building. There was one room in which packing and dispatching was done, and another for the correspondence.

In re-examination, he said that prior to 1911 he was not employed by the plaintiff, except with regard to work on a sample a doctor had sent him.

Mr. Thomas Dalkin, of the South London Laboratories, said that he was a qualified pharmacist. Although not now a member of the Pharmaceutical Society, he was still on the roll. He had no connexion of any kind with the plaintiff. He had found no krameria or kino in the plaintiff's samples, and did not know of the existence of Stevens's Consumptive Cure until he received the samples.

In cross-examination, he said that he earned a salary of £2 10s. a week and commission at the South London Laboratories conducted by Mr. Muter. He had been allowed to do this work, as the firm was busy at the time. He had received typewritten instructions with the samples, but could not now produce them. His object was to find out whether the samples contained krameria or kino. His experiments occupied his evenings for a month.

Mr. Edward Ferdinand Griffin, L.R.C.P., M.R.C.S., a medical officer of the Steyning Union, in giving evidence, said that he was in practice near Brighton. He had had experience of tuberculosis, and had written a book on Dr. Koch's treatment of that disease. He was then at the Hospital for Incurables, Putney. He was also the author of a number of letters to the *Lancet*

In 1908 he received a circular relating to Stevens's Consumption Cure. He then wrote to Stevens, who sent him further papers, pointing out the very striking results obtained. During the thirty years of practice he had lost many dear friends from tuberculosis, and in 1908 one had just died, and he accordingly felt it his duty to try every remedy. With the consent of some patients he gave them Stevens's mixture, and was very much satisfied with the beneficial results. One patient, a woman named Hudson, who asked for relief was in a very bad condition, having a temperature of 103°. She could not eat. Upon making use of the mixture her condition improved, and at the end of fourteen days before the next meeting of the guardians her husband was able to send her away. Another patient, a lad at Shoreditch Grammar School, had a cavity at the apex of the lung, and became so bad that he could not go to school. After three months' treatment with Mr. Stevens's mixture there was no mischief in the lung and no tubercle. There was no relapse. Another patient whom he had treated successfully had come to court to-day. He had been certified by four doctors to be suffering from tuberculosis. In 1908 he had had a bad attack of the disease, but under the plaintiff's treatment he had put on weight. He had been sailing a yacht round the coast all this wet summer. A gardener in the witness's employment, named Pusey, a man of good physique, weighing 11 or 12 st., had suddenly been taken ill with galloping phthisis. In a month he weighed only 7 st. When witness returned from abroad he found this man very bad, but on treating him with the mixture he improved. He was subsequently attacked by influenza and died of pneumonia. On the whole he thought the treatment very beneficial, and he would recommend it in future. Honestly, he did not think there was any better remedy than this, and the matter should be thoroughly ventilated.

In cross-examination by Mr. Holman Gregory, witness agreed that it was in the public interest to suppress quackery. Phthisis was not prevalent in his district. In some years he had three or four patients, in others ten or twelve. He could only remember two deaths among these patients, so it was difficult to say when a consumptive patient was quite cured. He believed this was a form of germicide. He would not recommend it for bronchitis. Not long ago a domestic servant in his employment had been taken ill. She was apparently cured, and was told she could get married. She died three weeks after her marriage.

Mr. Gregory: Is it your view that if this drug were used there would be no more consumption in the world?—I think it would go a long way towards stopping existing tuberculosis, and I think if this drug is given a proper trial by unbiassed medical men they will think the same as I do.

Frederick Cross (master mariner), the patient referred to by the last witness, and Mr. Meynor, L.R.C.P., having been called,

Mr. Campbell, L.R.C.S.Edin., L.S.A.Lond., said he had retired from practice this year, and had been the medical officer to the Post Office at Hastings and St. Leonards. He became qualified in 1864. He began to use Mr. Stevens's remedy in 1907, and had a distinct recollection of three cases. The first was a postman at Hastings, who began to spit blood in 1906, and he eventually suffered from consumption. He was sent to hospital, and was discharged apparently well. In 1907, however, he developed consumption of the windpipe. He (the witness) received a sample of the medicine from the plaintiff. He considered he was justified in using it on the first favourable opportunity. As a result of it, the patient began to put on flesh and to get rid of his cough. In 1911 he had pleurisy and pneumonia, but he recovered, and in July, 1912, he was at duty and looking well. As to the second case, that was a woman known to witness for many years, who was in the last stages of consumption. Had the disease not been arrested she would have died. He gave her Stevens's remedy, as a result of which she was able to leave her bed, and in June last she was still attending to her duties. The third case was that of a girl who had chronic phthisis in the left lung and tubercle of the throat. He had also successfully treated her with the plaintiff's remedy. He had a favourable opinion of the medicine, and would use it again. [The Court adjourned at this point.]

AGREEMENTS NOT TO PRACTISE.

W. H. L. inquires whether an agreement not to practise within so many miles and for so many years is binding on an assistant who has signed it. He has been told that if the latter chooses later to disregard the agreement there is no legal redress.

If the agreement has been properly drawn up and is a legal instrument, it is quite as valid as any other legal agreement, whether made with an assistant or locumtenent. There may be difficulties in the way of enforcing an agreement, according to circumstances, but they equally affect all agreements. All legal agreements can be enforced at law, and are binding.

According to the return just issued showing the rates of duties, taxes, or imposts collected by Imperial officers during the year ending March 31st, 1912, the net receipts for patent medicine stamps was £527,856 14s. 4½d., being an increase of £2,210 over the preceding year.

Medical News.

A MEETING will be held in the Common Room of the British Medical Association, 429, Strand, W.C., on Thursday, October 31st, at 3 p.m., to discuss, in view of the forthcoming Representative Meeting, the principle underlying the Public Medical Service Schemes C and D (SUPPLEMENT, October 12th)—namely, co-operation between the profession and approved societies. Any member of the Association interested is invited to attend. Dr. H. D. Ledward, Letchworth, Herts, is acting as convener.

THE regular classes at the North-East London Post-Graduate College will be resumed next Wednesday, October 30th, when an address on lymph lavage as a therapeutic measure will be given by Sir Almroth Wright, F.R.S.

THE annual meeting of Fellows and Members of the Royal College of Surgeons of England will be held at the College, Lincoln's Inn Fields, W.C., on Thursday, November 21st, at 5 p.m., when the annual report of the council will be laid before the meeting.

THE departments of bacteriology and public health of King's College, London, have been transferred from the College in the Strand to the University laboratories, 62, Chandos Street, London, W.C., in the buildings constituting the medical school of the Charing Cross Hospital.

A RECENT addition to the list of *Black's Modern Guides* is one dealing with *Harrogate*, edited by Mr. Gordon Home. It contains many maps, and the charms of the spa and its neighbourhood are shown in twelve illustrations in colour. Reference is facilitated by placing the data under certain alphabetical headings, such as motoring, geology, cycling, baths, history, places of interest, and the like. It is published at the same price as the earlier volumes—namely, 1s. net.

CHIRNSIDE, in Berwickshire, was *en fete* on October 11th, the occasion being a presentation to Dr. Samuel Maevie, J.P., of a silver loving cup and a purse of sovereigns. Before the presentation was made there was a kind of masque, during which were successively described in verse Dr. Maevie's claims upon public affection, first as a physician, then as a musician and artist, and finally as the genius of Chirnside. Dr. Maevie went to reside in Chirnside some thirty-six years ago, and last year became a justice of the peace. When alluding to this gathering, the *Berwickshire Advertiser* described Dr. Maevie as an excellent prototype of Ian MacLaren's Drumtochty doctor.

DR. HUGH WALSHAM, who has been associated with the electrical department of St. Bartholomew's Hospital for some sixteen or seventeen years, assumed formal charge of it last week in succession to Dr. Lewis Jones. The radiotherapy work of the institution has grown so greatly in the last few years that the number of rooms devoted to it in the new out-patient department is to be increased, and the muscle testing, electric bath treatment, and other measures which at this particular institution are classed under the heading of electro-therapeutics, are to be moved elsewhere. In the radiological department Dr. Walsham will have two chief assistants, two clinical assistants—both qualified men—and a number of clerks.

A QUARTERLY court of the directors of the Society for Relief of Widows and Orphans of Medical Men was held on October 9th, the Right Hon. Sir Thomas Boor Crosby, Lord Mayor, president of the society, in the chair. Seventeen directors were present. Three gentlemen were elected members of the society. The sum of £514 was voted to be distributed at Christmas amongst the annuitants of the charity, each widow to receive £10, each orphan £3, and each orphan on the Copeland Fund £10. This is in addition to the half-yearly grants made in January and July. The society only grants relief to the widows and orphans of its deceased members, and the secretary is constantly receiving letters from widows of medical men asking for relief, but this has to be refused, as their husbands had not joined the society. Membership is open to any registered medical practitioner who at the time of his election is residing within a twenty-mile radius of Charing Cross. The annual subscription is two guineas, and there are special terms for life membership. The invested funds of the society now amount to £101,600. Further particulars or application forms for membership may be obtained from the secretary at the offices of the society, 11, Chandos Street, Cavendish Square, W.

Letters, Notes, and Answers.

QUERIES.

R. L. asks for experience of soamin in the treatment of phthisis and other forms of tuberculosis, and what is a good initial dose to use.

Income Tax.

S. W. commenced practice in February, 1911, and is assessed on £200. His takings in cash were £175 in 1911, and £100 to date in 1912.

*** The basis of assessment for the year 1912-13 in such a case is the amount of the net profits of the first year of the practice. On the figures given our correspondent should have no difficulty in proving that he made little, if any, profit in the first year. He should send to the surveyor of taxes an account showing the gross fees earned in that year and the professional expenses occurred, including a reasonable estimate of doubtful debts.

I. G. F. sold his car last year for £97 (the original cost having been £120) and bought a new one for £385. The surveyor refuses to allow as an expense a greater sum than £23, the difference between £120 and £97.

*** Our correspondent, on the strength of an article in the Journal of October 7th, 1911, claimed as a deduction £288 (the difference between the £385 and £97), as representing the full cost of the old car. This was clearly wrong, since the original cost of the old car was £120. In our opinion, the surveyor's contention is equally wrong. "H. G. F." is entitled to charge so much of his expenditure as represents the cost of renewal of his car. His expenditure is £288 (£385, less £97), and of this sum £120 is a repetition of the expenditure incurred when the first car was purchased, and £120 is, in our opinion, the amount proper to be allowed on account of the renewal. The point is one that is not dealt with specifically in the Income Tax Acts, and one that is not covered by any case decided in the courts. Since the expense is allowed as an expense for the year in which it is incurred, the effect will, on account of the operation of the three years' average, be to reduce the current year's assessment by only one-third of the sum allowed.

LETTERS, NOTES, ETC.

Hunterian Society's Medal.

In the paragraph published last week, p. 1087, regarding the Hunterian Society's medal, it should have been stated that it is awarded for the best essay by a general practitioner embodying the results of his own observations.

The Rule of the Road.

Dr. Chas. Mercier (Parkstone) writes: Sad experience has bred in me a wholesome reluctance to question your more than encyclopaedic knowledge, but on this occasion I must stick to my guns. If, before the ordonnance of 1722, there had been a custom of the road to keep to the left, the City Corporation would surely have ordered this custom to be observed, and would not have promulgated the order in terms of east and west; nor would my authority, whose name I have unfortunately forgotten, have had any occasion to assert, forty years afterwards, that the rule was still observed on London Bridge.

The City of London undoubtedly had then, as it has now, more traffic than any other place in the kingdom; and any custom with respect to traffic would be more likely to originate there than anywhere else. Now, we have it on unimpeachable authority that in the City of London the streets were so broad and the lanes so narrow, that on an important occasion the only practicable vehicle was a wheelbarrow. Westcheap and Eastcheap, the two considerable thoroughfares, were wide enough for a dozen carriages abreast, even after allowing for the booths that occupied their margins; there was no need for a rule of the road in them. Scarcely any of the remaining streets were wide enough for more than one cart, as any one familiar with the by-streets of the City knows; there was no possibility of a rule of the road in them. Old London Bridge, a long thoroughfare without side streets, was just wide enough for two vehicles to pass, and it was on the bridge that the need for a rule would first be felt. We might infer, therefore, even without the positive record that [illegible]

The rule of the road at sea is statutory; the rule of the road on shore is not statutory; it is [illegible] first decision? I do not know, and I doubt if even you do, but I hazard the assertion that it was subsequent to 1760—[illegible] the left hand merely shows how fleeting and unreliable is the human memory. I am [illegible] remember the time, before the luggage tricycle was invented, when butcher boys drove ponies, and drove them uncommonly fast, and on the whole very well. I suppose that one motor bus will sacrifice more lives, on a single journey, than all the butcher boys in London took in a twelvemonth. These experts invariably drove standing up in their carts, with a rein in each hand, the hands a yard apart. I do not commend the practice for imitation, but it disposes of your assertion.

While I am upon this subject, I may advert to the fact that Dr. Lettsom, whether or not he was witty in himself, was certainly the cause of wit that was in other men. He was the provocation to the epigram, better known than the one you quote—

> When folks is sick they comes to I,
> I physicks, bleeds, and sweats 'em:
> And if in spite of that they die,
> What's that to I? I. Lettsom.

Dr. Major Greenwood (London) writes: Dr. Mercier's remarks in your last issue are very interesting, but I cannot think that the rule to which he refers took origin at the date he mentions, 1722. There was in all probability such a rule in existence long before then. That the rule originated in London, as far as this country is concerned, is very probable, and may have been originally derived from Roman sources, when London was a Roman municipium. Sir Lawrence Gomme has shown that there has been a continuity from Roman times with regard to many old customs that are directly traceable therefrom, and this may be one of them. It is true that the contrary rule holds good on the Continent, but some of the old London customs may reflect ancient Roman usages more correctly than Continental rules. It is not quite correct to say that our rule of the road applies to the United States universally, as I believe in some States the Continental rule applies. I am not sufficiently familiar with the civil law to be able to show what the old Roman rule was, although I have made searches therein, but I should think an answer might be found there. If our rule of the road is identical with the old Roman rule, it seems to me it would be a highly interesting fact, and would furnish further evidence of the truth of the continuity of Roman institutions in the history of ancient London.

Dr. S. D. Clippingdale (London) writes: With regard to the interesting letter from my friend, Dr. Mercier, upon the rule of the road, and your valuable comment upon that letter, may I give the reason held by some as to the varying rules of the road here and upon the Continent? If a sculpture or a fresco of a Roman chariot race be observed, it will be noticed that the chariot drivers keep to the left as we do in England. It is therefore supposed that the Romans introduced this rule of the road into this country. When the Huns overran Europe, it is supposed they brought with them the rule now in vogue on the Continent—namely, that of keeping to the right. The Huns never crossed the Channel, hence the English have retained the rule introduced when England was a Roman colony.

"Honour a Physician."

A Grateful Patient writes: I happened to be in the City on Friday, and, as the great bell of St. Paul's warned me that service was about to commence, I entered the Cathedral. It was the Festival of St. Luke, "the Beloved Physician," and the first lesson was so strikingly applicable to the present relations between the medical profession and the State that I ask you to print it, in the hope that it will meet the eye of Mr. Lloyd George, who is very fond of quoting Scripture. It is taken from the 38th chapter of Ecclesiasticus, and is as follows:

> Honour a physician with the honour due unto him for the uses which ye may have of him: for the Lord hath created him. For of the most High cometh healing, and he shall receive honour of the king. The skill of the physician shall lift up his head: and in the sight of great men he shall be in admiration. The Lord hath created medicines out of the earth; and he that is wise will not abhor them. Was not the water made sweet with wood, that the virtue thereof might be known? And He hath given men skill, that He might be honoured in His marvellous works. With such doth He heal men, and taketh away their pains. Of such doth the apothecary make a confection; and of his works there is no end, and from him is peace over all the earth. My son, in thy sickness be not negligent; but pray unto the Lord, and He will make thee whole. Leave off from sin, and order thine hands aright, and cleanse thy heart from all wickedness. Give a sweet savour, and a memorial of fine flour; and make a fat offering, as not being. Then give place to the physician, for the Lord hath created him; let him not go from thee, for thou hast need of him.

I was the more impressed by these words, as I have recently recovered from a very serious illness.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so addressed.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

Note.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

An Address

ON

HIGH BLOOD PRESSURE:

ITS ASSOCIATIONS, ADVANTAGES, AND DISADVANTAGES.

DELIVERED AT THE GLASGOW SOUTHERN MEDICAL SOCIETY.

BY

SIR WILLIAM OSLER, BART., M.D., F.R.S.,

REGIUS PROFESSOR OF MEDICINE, OXFORD; HONORARY PRESIDENT OF THE SOCIETY.

LIFE is correlated in every way with tension of a certain quality—with a force, a pressure that keeps the atoms whirling in organic circles. Lower, beyond a certain point, the pressure with which the blood flows in the medulla, changes the surface tension of the fluid in which a leucocyte swims, or an amœba crawls, and the atoms of the man, of the leucocyte, and of the amœba soon cease to swing in organic rhythm, and change to that to which all inorganic matter has been attuned since, in the words of Lucretius, "the atoms fell into such a disposition as those whereby our world of things created holds together."

Blood pressure—the force with which the blood circulates—maintains in organic activity every part of the body. With the five factors concerned in its maintenance I need not detain you. The heart pump supplies a force which the elastic coats of the large arteries store to convert an intermittent into a continuous stream. The small arteries act as sluices or taps regulating the supply to different parts. Over the capillary bed the nutritive fluid is distributed. And there is a drainage system of veins and lymph channels. Life depends on the maintenance of a due pressure in the irrigation fields, to the canals of which Galen first likened the blood vessels: "So it is with the animal body. Many canals dispersed through all its parts convey to them blood, as those of a garden convey moisture, and the intervals separating those canals are wonderfully disposed by Nature in such a way that they should neither lack a sufficient quantity of blood for absorption, nor be overloaded at any time with an excessive supply." On a huge scale, one sees this in a land like Egypt, the very life of which depends on the height of the pressure of water, whether in the annual rise of the Nile, or as it is dammed and stored artificially.

A man's life may be said to be a gift of his blood pressure, just as Egypt is a gift of the Nile (Herodotus). It is interesting to see at first hand how this pressure is kept up in Egypt by the big dams at the Delta, at Assiut, at Esna, and the monster one at Assouan. When raised 15 ft., the last named will give life to another one and a half million acres of dead sand. Along the Nile big steam pumping stations keep certain canals and reservoirs full. For thousands of years, long before dams were built, the patient fellaheen have baled the water from level to level with a bucket at one end of a crossbeam, counterpoised with a weight at the other. Of the three forces which now keep Egypt watered, gravity, steam, and human muscle, the first is the most important. In the human irrigation scheme there is nothing to correspond with this—indeed, gravity in the circulation of all living things is a great obstacle, to overcome which the pump had, in animals at least, to be introduced. The man with the shadoof working on the banks of the Nile, the immediate agent in the old fashioned plan of irrigation, represents rather the living capillary cell. And the Nile mud itself is alive, not alone in the magic potency which gave man his earliest civilization, but in plastic qualities which enable the fellaheen to build the dykes and dams with canals and rivulets, making every acre a miniature of Egypt itself. In the fields, as in the body, are schemes for distributing the vital fluid, for varying the pressure in different parts, and two all-important things are arranged—the final channels of distribution between the cotton rows or the corn are kept free from weeds and obstructions, and provision is made for drainage, for carrying off the surplus water, to prevent dropsy of the soil.

The whole question of blood pressure is too vast for me to do more than touch upon two points essential to my purpose this evening. The smaller arteries are [illegible]—taps which regulate the flow to the vascular [illegible] ing to requirements. Under the control of various stimuli—vasomotor, hormonic, physical, and postural—they are sluice-gates to be open or shut. The mean pressure in them depends less on the forces of the pump than on the distribution of the blood bulk, the state of the arterial walls, and the state of the capillary bed. So important is distribution that a person may bleed to death into his own vessels, splanchnic or systemic. Hold a hutch rabbit up by the ears, and so much blood accumulates in its splanchnic reservoir that the pressure falls in the smaller arteries of other regions, and the animal dies. The average pressure in the various territories to be irrigated is regulated from the vasomotor centres, just as a man in charge of a big irrigation plant controls the sluices, often nowadays raising or lowering them by simply touching an electric button. In man a mean arterial pressure is maintained—about 125 to 130 mm. of Hg. and 140 to 160 mm. in persons over 50. A permanent pressure above 160 mm. may be called high, but we must not forget the great regional variations pointed out by Leonard Findlay and others.

In the capillary lake into which the arterial stream widens the current slows and the pressure lessens, though on the latter point authorities are not agreed. There are probably great variations. The Nile, when in low water, takes ninety days to flow from Lake Victoria Nyanza to the sea. Between Gondokoro and Khartoum it passes through the great capillary lake known as the Sud, and more than one-half of the time—forty-six days—is taken to pass this short region. But when in flood it takes only fifty days from Lake Victoria Nyanza to the sea, twenty-eight of which are occupied in passing through the Sud. But it is not merely a matter of rate-flow and pressure in the capillary bed; there are two other factors of prime importance. In the brief fraction of a second, and in a short quarter to three-quarters of a millimetre of space, the business of life is transacted, for here is the mart or exchange in which the raw and the manufactured articles from the intestinal and hepatic shops are spread out for sale. The endothelial capillary cell is not a simple dead membrane under the laws of diffusion, but has an active selective power. Playing the part of a middleman, it is everywhere a free trader in the bread stuff of life, oxygen, but a strong protectionist in certain commodities. Thus the renal capillary cell trades in water, salts, urea, and uric acid, but has a high tariff wall against proteins and sugars. In the secretory glands the selective capacity of the capillary wall must be of the first importance, as here the middleman and the retailer are cheek by jowl, and their shops abut, back to back, opening to different streets. These retail shops, represented by the gland and body cells of the capillary areas, do a roaring trade, partly in common commodities—water, oxygen, salts—and partly in special goods made up on the spot for the use of the body. Each cell, factory as well as shop, collects a great deal of dust and rubbish, and special provision is made for getting rid of this, part being dumped back into the common river, and part into a special lymphatic drainage system, which keeps the irrigation fields free from weeds and dirt. The transactions which take place between the middleman (the capillary cell), the factory and shop-people (in the gland or body cell), and the sanitary department (represented by the lymph circulation), are regulated in part by the laws of diffusion and osmosis, and partly by the cell specialists (enzymes of various sorts), some of which, for example, enable the liver cells to make bile, others to make glycogen. All this activity is associated with movement. The force taking the protein molecule through a capillary cell, through the furnace of a muscle cell to make it appear in the lymph space as sarcolactic acid and other organic compounds, is not simple osmosis; but in its working currents caused by the machinery of the cell must set from blood to lymph stream. Though we know very little about it in the animal body, this *vis a fronte*, which Galen compared very aptly to a magnet, is not a negligible quantity. We know of its immense power in plants, and I believe botanists agree that the force which may lift water to a height of 300 feet or more in a tree is a *vis a fronte*, and not a *vis a tergo*. All this is preliminary

to the main topic of my address, the associations' advantages, and disadvantages of a high blood pressure.

Some years ago I wrote a short paper with a somewhat paradoxical title: "The advantages of a trace of albumen and a few tube casts in the urine of men over 50 years of age." It was written with the specific object of allaying the unnecessary fears of physicians obsessed with the old idea that the presence of these bodies in the urine always indicated serious and progressive disease of the kidneys. This bogey has been to a large extent replaced by that of high blood pressure, a knowledge of which has filtered to the laity with the usual disastrous results. A good many people are unnecessarily alarmed, and much needless worry and anxiety has been caused. For example, a robust, full-blooded country girl was taken to a physician for some menstrual disturbance, and was told that her blood pressure was 140, and that the outlook for her was serious. The poor girl, very much depressed, regarded her condition as hopeless, particularly in so far as a married life was concerned. She was a strongly built, plethoric, muscular girl, who only needed the reassurance that with her physique such a pressure was as natural as one of 90 would be in a thin, pale delicate girl.

What are the conditions in which we see permanent high pressure, and what are its advantages and disadvantages? For practical purposes we may consider three groups of cases: Simple high tension, hyperpiesis, without signs of arterial or renal disease; arterio-sclerosis, with the associated high tension, renal, and heart changes; and chronic nephritis, with secondary high pressure, arterio-sclerosis, and heart changes.

I. Hyperpiesis.

Hyperpiesis signifies simple high pressure without signs of cardio-vascular disease. We have learnt to recognize an average pressure, as taken with ordinary instruments, and the figures given are usually accepted. There are, of course, great variations, usually temporary, but now and again we meet with individuals whose pressure is permanently high—above 180—without, so far as can be ascertained, arterial, cardiac, or renal disease. Of course the difficulty is to exclude internal, not discernible, alterations in the splanchnic and other vessels, since, as is well known, vascular disease may be very localized, but, clinically, the group, well defined and very important, has been carefully studied by Allbutt and others. We see the condition most often in men who work hard, drink hard, and smoke hard, particularly in keen business men with heavy responsibilities, and we see it now and then in neurasthenic and gouty persons. Let me give a few illustrative cases:

A man just over 40 years of age, 13 st. 7 lb. in weight, of excellent family history and no syphilis, had lived a business life of the greatest possible intensity. Early successful, he began to speculate, and made and lost several fortunes, lived "high," as the saying is, smoked eight to ten cigars and several cigarettes in the day, took a dozen drinks of Scotch whisky, always champagne at dinner, and with it all found time for a moderate amount of exercise, chiefly riding. In short, he lived the "hustling" life of Wall Street. He regarded himself as "hard as nails," nothing could hurt him. The ill effects of the night disappeared with the morning cold bath. He was [illegible]ly for his breakfast, and sharp as a hawk for busi[illegible] lock in the morning. Suddenly one day, without [illegible] heavy dinner, he lost the power of speech, and for nearly three days was confused in his head and could not [illegible]ntelligently. There was no paralysis of face [illegible] at the end of a week he was quite himself again. [illegible] albumen and a few tube casts were found in the [illegible] a blood pressure of 212. Of course this was [illegible] He gave up business, went to Carlsbad and [illegible]orts. I saw him just a year after the attack. He was still very apprehensive and worried, and had had a few [illegible] after exertion. He was a big, [illegible]-looking man, of good colour and good physique. Careful examination showed no alteration in any of his viscera. The pulse was 80. Both the radials and temporals could be [illegible], and the pulse could be felt just as well [illegible] pressure. Compressing a section of the radial at a distance of 2 in. apart, the intervening portion of [illegible] firm, and could be readily rolled [illegible], with gentle pressure, the blood [illegible] about 2 in. of the radial, its wall [illegible] in any way from the tissues [illegible] for the temporal. With a [illegible] to feel the wall of a brachial artery. The retinal arteries looked large and full, but they did not compress the veins specially. The apex beat was not outside the nipple line. The cardiac dulness was not increased, but there was a snapping, valvular aortic second sound. The systolic blood pressure was 235. No difference in the recumbent position and after exertion. The specific gravity of the urine was 1020, and at times there had been a slight trace of albumen. There was none when I first saw him. There were no tube casts.

Here was a man whose arteries, as far as one could make out, had not thickened palpably, certainly not beyond his age. His heart was not hypertrophied, but he had a very high blood pressure, and he had had one of those peculiar but not very uncommon attacks of aphasia in connexion with it.

It is interesting, sometimes distressing, to see a man of great vigour, in the prime of life, full of work and energy, in the first shock of the realization that he is a machine, with the works of which there is something radically wrong.

A fine strapping fellow of 48, a lawyer of distinction, and among his friends a boon companion, full of work, public and private, suddenly noticed a slight obscurity of vision. As he was going off for his holiday in Europe he consulted an ophthalmic friend, who told him he had retinal haemorrhages and disease of his arteries. To a man who had never realized that his body was a mechanism it was a great shock to find himself "out of gear," and as he said pathetically, "it did not seem the same world when I had to give up cigars, champagne and Scotch whisky, and pleasant evenings at the club." I saw him in July, 1909, the picture of health, and with the frame of a prize-fighter, but self-centred, nervous, apprehensive, worrying all the time lest another blood vessel might break. He had had a permanent blood pressure above 220, records taken by a dozen different doctors, and he had copies of the analysis of his urine, and had provided himself with Theodore Janeway's book.

It is not always possible to suggest the factors causing the high blood pressure. It may be met with unexpectedly and determined only by the apparatus; indeed one may feel a keen sense of disappointment that the educated finger should be so far astray. It may sometimes be the initial event in an inherited bias towards cardio-vascular mischief, without the occurrence of any of the usual factors.

I saw this year, with Dr. Lichfield of Pittsburg, a healthy looking woman, aged 46, whose father, mother, several brothers, and a sister had died comparatively young of heart or arterial disease, and in whose family there was marked gout. She had herself been very healthy, except for occasional "nervous attacks." She is stated to have had congenital syphilis. She had had some pains in the muscles, rheumatic or gouty, and Dr. Lichfield was astonished to find that her blood pressure was above 200. She was a well nourished, healthy looking woman, without luetic stigmata. The peripheral arteries were nowhere sclerotic. The empty radial artery could not be felt. The temporals were not palpable. The heart impulse was not forcible, and the aortic second sound was not specially accentuated. To the touch I could not determine that the pressure was high in the peripheral arteries, but it was above 200 mm. The urine was of low specific gravity; no casts.

Where is the change in these cases? Not, so far as one can say, in the heart, not in the mains, not in the supply pipes, but to keep up a normal irrigation in the capillary beds there has to be a widespread increase of pressure in the smaller arteries. Where is the first link in the chain? In an altered condition of the vessels in the splanchnic area? In a toxaemia from the bowels? In an over-secretion of pressor substances by renals and adrenals? More likely the block is in the irrigation fields. If the director of a large irrigation plant found the pressure rising in the supply pipes of the third and fourth dimensions, and there was nothing wrong in the pump or the sluices, he would go directly to the fields to see if the channels were free, and to see that the drainage was proportionate to the supply. I believe that in these cases the primary mischief lies between the capillary cell and the lymph spaces, in the working area of the body—a row between the middle man, the manufacturers, and the sanitary authorities—a sort of general strike, to overcome which the Government has to intervene. Remember, as I mentioned, vegetable physiology teaches plainly that the *vis a fronte* is a powerful factor in the metabolism of the cell, and it may be disturbances in this sphere that necessitate, as a conservative action, an increase in the pressure with which the blood flows in the supply pipes. Or there is a difficulty in clearing of ashes and cinder the furnaces which keep up the fires of life in every unit of the bodily frame. The engines are stoked for the Glasgow express on the London and North-Western Railway, but put to work shunting empty trucks in the station yard!

Cannon and others have shown that in emotional states there is an increase in the adrenal flow, and this is a factor which has to be considered in the high pressure of modern life. Understand one thing clearly—this high pressure is not itself the disease, but a compensatory, salutary state, if not for the man, at any rate for his circulation. That this is so, try to reduce it below a certain point. You may, for a time, but up it goes again, and the man only feels comfortable when you allow him to live at a certain high level. By diet, a change in the mode of life, etc., the pressure may be kept at a reasonable rate, but in my experience, never again does it fall to the normal. The first patient illustrates how difficult or impossible it may be to permanently keep down the blood pressure. He had been at spas for special treatment: he had taken nitrites and potassium iodide: he had had "high frequency" treatment and a special course of sterilization of his colon but all of no avail, as the pressure kept up. As he had become morbidly apprehensive and self-centred, I urged him to resume his business, lead a rational life, and stop taking "cures."

The disadvantages are: (1) Just such transient cerebral attacks as the first patient had, or headache, vertigo, flushings, or an anginal attack, or transient bouts of dyspnœa with palpitations. But more serious still is (2) the certainty that sooner or later sclerosis of the arteries will follow. And this brings me to the consideration of group II.

II. Arterio-sclerosis with High Tension and Associated Cardiac and Renal Changes.

There are two essential factors in arterio-sclerosis—the quality of the tubing and the way in which it is treated. The marvel is that any set of pipes could be constructed to stand the continuous strain to which for years the human blood vessels are subjected. To use a well-worn simile—very different qualities of rubber are used in the make up of our tubing, and longevity is very much a matter of its quality, whether good Para or not. There is, too, that curious and inexplicable element which brings such uncertainty into our calculations. Take two 1910 motor cars turned out from the same shops and by the same workmen and with the same parts. The one may give no trouble, the other may be half the time in the repair shops. Of a dozen blades of a Gillette safety razor, all identical in appearance and in fineness of edge, some may be used for weeks, even months: others may have to be cast aside in a few days. So it is with man and his blood vessels. The contract calls for from sixty to eighty years of usage. Some hold out well, and even after ninety years are still fairly good, but the personal equation has always to be considered. The ordinary wear and tear of life may bring about arterial degeneration in a temperate man of 40 years; on the other hand, who has not seen lusty octogenarians with untouched hearts and arteries?

The commoner causes of arterio-sclerosis need not detain us, toxic agents, chiefly, exogenous or endogenous, some of them acting directly on the vessels, others by disturbing the circulation in the cell factories, calling for higher pressure in the supply pipes, and so leading indirectly to sclerosis.

I should like to refer to two other causes, one of which has a note of personal appeal. There is an old motto, "It is the pace that kills," and nothing is more certain than that the pace of modern life kills many prematurely through the complications of arterio-sclerosis. The keen, sharp business or professional man, year in, year out giving his engines no rest, leading a life of high pressure, though a teetotaler and temperate in his diet, and a non-smoker, may have so driven his machine that at 50 it is only fit to be scrapped. These tragedies of life are only too common among us. It is not only a great leader like William Pepper, who died an arterial death at 55, but we see it in the men who live the hard, unselfish lives of general practice. I have notes of at least a score of physicians wrecks before 50—men, too, who had enjoyed their work, untiring, unsparing of themselves and of their time—sensible fellows in everything but in the care of their machine. Some were victims of angina pectoris, some of myocarditis, others of progressive cardiac failure, many more of the complications of arterio-sclerosis—all of the high-pressure life too often nowadays the necessary accompaniment—the penalty—of success. And I think we must recognize another factor—prolonged overuse of the muscles. That athletes die early is well recognized, but it is not easy to determine always how far the cardio-vascular changes are due to muscular effort alone. Take a not uncommon picture:

An exceedingly vigorous man, aged 50, spare, weighing only 10 st., with a good family and a good personal history. He had never had syphilis, but at 28 he had had a bad attack of typhoid fever. He had lived an out-of-door life, and had used his muscles incessantly in sports as a young man, at cricket and hunting, and when at college as a long-distance runner; no gout in his family. He had been a moderate user of alcohol and had smoked cigars and cigarettes, but not in excess. Four or five years ago he began to have headaches, which have bothered him at intervals ever since; but he has kept at work, has played tennis and golf, and it was only a few months ago that he consulted his doctor for the headaches. A very healthy looking fellow, strong and muscular; his pulse was 80—the vessel rolled easily under the fingers. The pulse was recurrent, and there was practically no difference as one felt the vessel with the blood current in or when it was pressed out. The arteries were like whipcord. The temporals could be easily felt. The walls of the retinal arteries looked thick and they compressed the veins. The apex beat bulged the fifth interspace an inch and a half outside the nipple line—a strong, forcible, and visible beat, localized in the one interspace. The shock of both sounds was palpable, and the shock of the aortic second sound so intense that it could be heard six or seven inches away from the chest wall. The first sound at the apex was booming, a little murmurish. The urine had a specific gravity of 1020, and he did not pass an excessive amount; it showed a few hyaline casts. The blood pressure was 212.

It is true the man had had typhoid fever, and a bad attack, but the arterial changes of the acute infections rarely take the form of a widespread sclerosis. I have notes of cases of angina pectoris in comparatively young men, not syphilitic, in whom the sole factor leading to coronary artery degeneration was persistent over-exertion.

As a rule men under 60 years of age with primary arterio-sclerosis have high blood pressure, indeed the highest known records are in this condition.

In this group of cases it is well to recognize that the extra pressure is a necessity—as purely a mechanical affair as in any great irrigation system with old encrusted mains and weedy channels. Yet the victims are often robust, energetic men of great vitality. Get it out of your heads, if possible, that the high pressure is the primary feature, and particularly the feature to treat. We tied up one evening near a big pumping station on the Nile, and in conversation the Scottish engineer in charge told me that the two essential factors in maintaining uniformity in irrigation were keeping the terminal channels free between the rows of cane, and maintaining the drainage. Obstruction in the fields could be overcome by increasing the pressure, to a certain point, but it was cheaper and safer to clear out the weeds. The difficulty, I believe, is to keep the human irrigation plant free from weeds, the sud that chokes the capillary bed, through which it takes a greater force to drive the fluids. We too often tinker at the pump and the mains, instead of looking for the real seat of trouble in the fields.

It is alarming to find that a patient may only be comfortable with a pressure about 200 mm., but, as a rule, do not take too gloomy a view of the condition, which is often not so bad as it looks. For years a man may enjoy good health and do hard work with high-pressure, whipcord arteries and a hypertrophied heart. Take warning, pessimists, from this story:

I saw on June 21st, 1901, a judge, aged 46, a man of good habits, except that he had been a very heavy eater. He had been very moderate in alcohol and tobacco, and had not had syphilis. He had taken a great deal of exercise, and had always regarded himself as in the pink of condition. A year before I saw him he began to have a little shortness of breath, particularly if he played too much golf or went uphill rapidly. He consulted Dr. Delafield, who told him he had sclerosis of the arteries and enlargement of the heart, and who urged him to change his habits of life. He presented the usual picture—markedly sclerotic arteries, very high blood pressure, a strong, forcible apex beat *3 in. by measurement* outside the nipple line. The aortic second sound at the base was much accentuated. The specific gravity of the urine was high; no albumen, no tube casts. Now that did not look a very satisfactory condition in a comparatively young man who had never had syphilis nor any serious infections. He was a sensible fellow—cut down the intake of fuel, lived an easy life, attended to his duties, and has got on very comfortably. He called on me last summer; unfortunately I was away, but a message on his card read: "Am feeling very fit":

"Judgement is difficult," says Hippocrates; but I never knew a man with so marked hypertrophy of the left ventricle to have an extension of life even beyond that granted to Hezekiah. I do not think even the most optimistic would have given him five years; Nature gave him twenty!*

High tension is not always associated with arterio-sclerosis, though present in a large majority of all patients under 60. Normal or low pressures may occur in three conditions: (1) In elderly persons with extensive sclerosis of the aorta and its chief branches; (2) with a general failure of health and strength; and (3) in the late stages with the failing, dilated heart.

What is the condition of the kidneys in these cases? This important question is not always easy to decide. In many instances the urine presents no abnormalities. There may be a trace of albumen, particularly in the morning, and a few tube casts, but the output is up to the mark, and certainly patients may for years have extreme arterio-sclerosis without serious kidney disease. And *post-mortem* studies show this to be the case. With permanent high tension alone, or with high tension *plus* arterio-sclerosis, the kidneys have been found in a few cases practically normal. We must remember that no one at 50 has kidneys completely normal histologically. In the cases of chronic arterio-sclerosis which came to necropsy from my wards in the Johns Hopkins Hospital three types of kidneys were found.

1. The full-sized, hard, beefy organ, often with a smooth surface, sometimes with slight adhesion of the capsule, but an organ obviously not contracted. When I lived in Philadelphia a remarkable man was demonstrator of morbid anatomy at the university, and coroner's physician, the late Dr. Formad. He had had a rich experience in medico-legal cases. I remember he brought before us the results of the study of the kidneys in some 250 cases of sudden death in alcoholics—176 men and 74 women—the great majority of them above the middle period of life. Accurate figures were not given of the causes of death, but the interesting feature is that nearly all of these patients had somewhat enlarged, hard kidneys, frequently, too, of the rounded, sausage-like or pig-backed form. Emerson's analysis of our cases of patients dying with features of general arterio-sclerosis showed that in 60 per cent. the combined weight of the kidneys was above 300 grams. The general experience is that in a very considerable proportion of all middle-aged persons with arterio-sclerosis the kidneys are not contracted.

2. The patchy arterio-sclerotic kidney, which presents atrophy of surface areas, or sometimes an extensive section of the end of one kidney, and everywhere showing the effects of irregular vascular sclerosis.

3. The small, red, granular kidney, the final outcome in a limited number of cases of renal arterio-sclerosis.

I need not dwell upon this side of the question further than to ask you to bear in mind that conditions of chronic hypertension and of advanced arterio-sclerosis may exist without serious interference with the renal function.

Many of these patients have been condemned as cases of incurable Bright's disease without full knowledge. Fully fifteen years ago I saw an old friend with slight swelling of the feet, cardiac weakness, retinal haemorrhages, traces of albumen in the urine, and tube casts. In a man of 60 who had worked very hard such a state certainly looked serious. He had stiff arteries and an accentuated aortic second sound. Though urged to retire, like a wise man he decided to slow the engines but to continue the voyage. I saw him a few weeks ago, now a man of 75, who meanwhile has travelled much, organized new departments of his work, and has been an active, though not a vigorous man. On and off his ankles have swollen and he has been short of breath on stairs and hills; but, like the ship in Kipling's *Devil and the Deep Sea*, with patched machinery he has been able to keep up an 8 to 10 knot rate. I was interested to examine him carefully, and found his blood pressure above 180; cardiac impulse outside the nipple line and diffuse; the pulse regular, moderately stiff vessels, a small amount of albumen with tube casts in the urine, and in one eye a fading retinal haemorrhage.

* Since giving this lecture, Dr. McCrae tells me of his death—the usual way, gradual heart failure, with the distressing mental symptoms so often seen.

III. Chronic Nephritis with Arterio-sclerosis and High Pressure.

Only a man of brazen boldness will speak dogmatically on this last, long and much-discussed group. That hyperpiesis may lead to arterio-sclerosis, that arterio-sclerosis in turn may lead to sclerosis of the kidneys, that there are primary lesions of the kidney associated with fibrosis, which lead secondarily to high blood pressure, sclerosis of the arteries, and hypertrophy of the heart—these are points upon which most of us are agreed. Here, of the two important divisions—the chronic nephritis of the infections, and the nephritis of the intoxications, gout, lead, alcohol—the end-product in both may be the small, hard, contracted kidneys. In a large proportion of all cases there are associated gradually hypertension, arterio-sclerosis, and hypertrophy of the heart. To distinguish between the two sets of cases, the primary arterio-sclerotic and the primary nephritic, is not often difficult. In the infectious group the history is generally very distinct, the patients are younger, and they rarely have the general vigour of the arterio-sclerotic form. In the lead and gout toxaemias one is rarely in doubt, though in the latter the etiology is often overlooked. On the other hand, the urinary changes in both differ from the arterio-sclerotic form in the persistent low specific gravity, the lower nitrogen output, the more constant presence of albumen (though in slight amount) and the persistence of granular casts. The symptoms, too, are renal and cerebral in the nephritic group, cardiac in the arterio-sclerotic. Uraemic features, progressive pallor, headaches, and marked ocular changes are very much more common in the primary nephritic form, and the retinal changes are degenerative, not simply haemorrhagic. There are transitional stages, and the end of the arterio-sclerotic kidney may be small, red and granular. Intercurrent acute or subacute attacks of nephritis may at any time blur the picture. I have not infrequently been mistaken, led astray usually by the robustness of the patient, and forgetting that chronic interstitial nephritis leading to extreme contraction of the organ may be consistent with good health up to the very onset of fatal uraemic convulsions. In this nephritic class we see remarkable variations in the arterial tension, persistently high in some cases, in others quite moderate, though with extreme arterio-sclerosis and hypertrophy of the left ventricle. The hypertension, doubtless compensatory, and so far as it goes salutary, is caused possibly by increased discharge of pressor substance, and in any case is imperative in the irrigation fields of kidneys choked with débris and overgrown with the weeds of connective tissue growth. The disadvantages are obvious when the chronic hypertension leads to arterial degeneration and renders the patient liable to rupture of the cerebral vessels—a common mode of death in these cases. Careful study of the blood pressure is demanded in the form in which we see hypertensive crises associated with severe headache, often the precursor of uraemia or of transient aphasia with or without paralysis, attacks which a timely bleeding, or purge, or a sweat may ward off.

Lastly, a few words on the care of these cases. Differing as they do so much in etiology and symptoms, a thorough study of each patient is required. At the same time do not lay too much stress upon the hypertension, particularly in nervous patients. When the first intimation comes in the form of an angina, or of a cerebral attack, a man naturally becomes very apprehensive. Patients easily become kipped on the subject of blood pressure; one man had his records carefully charted for eighteen months, and talked like a lay Marey on the various methods. I am not sure whether he was consoled or disappointed to be assured that it was a very good thing for him that his engines had kept up a pressure of about 180 mm.

I.

The first thing is to determine the nature of the case, whether simple hypertension, arterio-sclerosis, or chronic nephritis, or all combined. In the case of the active, driving, business man, who has unconsciously damaged the machine, let him reduce the speed from the twenty-four knots of a *Lusitania* to the ten knots of the ocean tramp. It is interesting to note that the worry and apprehension associated with the first shock of the discovery that something is wrong may cause loss of weight and with it reduction in the blood pressure. A man of 62,

whose first indication of trouble was an attack of transient aphasia, lost 2 st. in weight in a year, and his blood pressure sank from 200 to 150. He has been better since he has taken a philosophical view of the situation, and his blood pressure has risen to 180.

II.

The second thing is to lessen the intake. We all eat too much, and in no age was the saying more true that "the platter kills more than the sword." Time and again I have been impressed with this as a possible factor in obscure forms of hypertension and arterio-sclerosis in persons otherwise temperate. Largely a matter of habit, the amount of food taken should be just enough to keep the engines going at a steady speed. A diet of low protein content is best, and fairly large quantities of liquid should be taken.

III.

Thirdly, elimination should be promoted in every way, by making the action of the kidneys, bowels, and skin thoroughly efficient.

IV.

Fourthly, of drugs none are entirely satisfactory in chronic hypertension. Nitrites in various forms may be used, and are often of temporary benefit, but I think the general opinion now is that neither the nitrites nor potassium iodide are of permanent benefit; though now and again one meets with an instance in which the prolonged used of potassium iodide is followed by marked lowering of the pressure. A preparation of mistletoe has also been much lauded, but it, too, is very variable in its effects. Be careful in this point—if the patient does not feel so well, and begins to get thin and look badly, stop all drugs, trust to general measures, and let the pressure rise. In the robust man of full habit in the hypertensive crises with headaches, dyspnoea, or angina, a free venesection is indicated, to be followed by mercurial and saline purges.

The clinical picture which I have thus briefly sketched of chronic hypertension with its associations, advantages, and disadvantages, may not have all the outlines or full details which an artist with more pains and greater skill would put on his canvas, but it is a fair presentation of the subject as I have seen it, and you cannot expect more. The colours, necessarily a bit sombre, have been brightened when possible. And I believe Candide to be wrong—life at the best is not a bad bargain. Even the victim of high tension may find it useful and enjoyable if, following the rest of the moral, he will *cultivate his garden*—weeding the irrigation channels, and keeping free the drainage.

THE CALCULATION OF DRUG DOSAGE FOR CHILDREN.

WITH DESCRIPTION OF A NEW AND SIMPLE METHOD.

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The calculation of the correct dosage of drugs which are to be administered to children is of considerable importance. The systems at present in use are those of Young, Gabius, and Cowling, all of which are based on the duodecimal system, and are thus not readily applicable to the metric system; Sir Lauder Brunton's method of calculating from the metric system involves perhaps rather more mental calculation than can be expected of the practitioner when prescribing at the bedside, and further, it does not lend itself to the calculation of doses from the imperial system.

These four systems may be stated briefly: Young's formula is the age of the child divided by the age *plus* 12: according to Gabius, the correct dosage—taking 1 grain as the adult dose—is for a child 1 year old, $\frac{1}{12}$ grain; 2 years old, $\frac{1}{8}$ grain; 3 years old, $\frac{1}{6}$ grain; 4 years old, $\frac{1}{4}$ grain; 7 years old, $\frac{1}{3}$ grain; 14 years old, $\frac{1}{2}$ grain; 20 years old, $\frac{2}{3}$ grain; and above 21 years, the full dosage. Cowling's rule is the division by 24 of the child's age at his next birthday; and Sir Lauder Brunton's plan consists in using the age next birthday as the numerator and 25 as the denominator of the fraction.

Apart from idosyncrasy, abnormal development, and the excessive susceptibility to certain drugs, such as opium, a rational system for calculating dosage in children should follow the curve of increase in body weight; that is to say, we must supply the child with the same relative dose of the drug in proportion to his bulk as we supply to the adult, or, in other words, the dilution of the drug in the body tissues should be the same in both cases. It is, however, impracticable to weigh each infant before writing its prescription, and we therefore adopt the age as an indication of the development and weight of the average child and its abilities to tolerate drugs. Gabius assumes the adult age to be 21, while Cowling and Sir Lauder Brunton postpone it till 24 and 25 respectively. It may, I think, be assumed that the ages 24 and 25 were selected, not on account of any particular anatomical or physiological reason, but because of the fact that they were numbers easily divisible on the duodecimal and metric systems respectively. If statistical tables of the average weights of males and females be examined it will be noticed that the body weight becomes stationary on an average at from 20 to 22 in males and from 19 to 20 in females. Thus, we find that the average adult age according to the weight is from 20 to 21 years. These figures I have arrived at by averaging the results of statistics by Quételet, Landois, Bencke, and Roberts, the last-named having obtained his data from English-speaking children, who are relatively much heavier than Continental children. Whichever series of weight statistics is adopted, it makes little difference to the final results, since we are concerned with the relation of the child's weight at a certain age to his probable adult weight. The following table—taken, since we are dealing with English children, from Roberts's tables—will illustrate the points to which references have been made:

Average Kilogram Weights of Children at Different Ages and their Proportion to the Average Adult Weight.
(Compiled from Roberts's Tables.)

Age.	Average Kilogram Weights.		Proportions to the Average Adult Weight.		
			Male.		Female.
	Male.	Female.	Adult Age as 21 $\frac{3.22\times100}{65.7}$	Adult Age as 24 $\frac{3.22\times100}{67}$	Adult Age—21 or 24 $\frac{3.13\times100}{55}$
Birth	3.22	3.13	4.90	4.80	5.69
1	10.89	9.12	16.59	16.25	16.58
2	14.75	11.48	22.45	22.01	20.87
3	15.42	14.35	23.47	23.01	26.09
4	16.92	16.39	25.90	25.25	29.80
5	18.14	17.78	27.59	27.07	32.32
6	20.15	19.05	30.66	30.07	34.64
7	22.68	21.55	34.52	33.85	39.18
8	24.95	23.54	37.95	37.24	42.80
9	27.40	25.17	41.70	40.89	45.76
10	30.62	28.12	46.60	45.70	51.13
11	32.66	30.90	49.70	48.74	56.18
12	34.93	34.66	53.16	52.13	63.02
13	37.66	39.55	58.84	56.21	71.99
14	41.73	44.00	63.51	62.28	80.00
15	46.68	48.18	70.83	69.67	87.60
16	53.94	51.31	82.09	80.50	93.29
17	59.38	52.35	90.38	88.62	95.18
18	62.28	54.89	94.79	92.95	99.80
19	63.46	56.21	96.59	94.71	102.20
20	64.96	55.93	98.87	96.95	101.69
21	65.73	55.20	100.00	98.10	100.36
22	67.09	55.93		100.00	101.69
23	67.09	56.25		100.00	102.27
24	67.09	54.85		100.00	99.73

The first two columns of the table show the average kilogram weights of males and females from birth to the age of 24. The third column indicates the percentage of the adult weight which the male child possesses at different ages, taking 21 as the adult age. Column 4 shows the percentage weight of male children taking 24 as the adult age, and it will be observed that the variation of the figures is within narrow limits. The last column gives the female child's percentage weight for both 21 and 24 as adult age, since the weight at both ages is practically identical. The third, fourth, and fifth columns give, therefore, the absolute average percentages of the adult dose which we should employ at different ages. These may be plotted in a curve as in Chart 1.

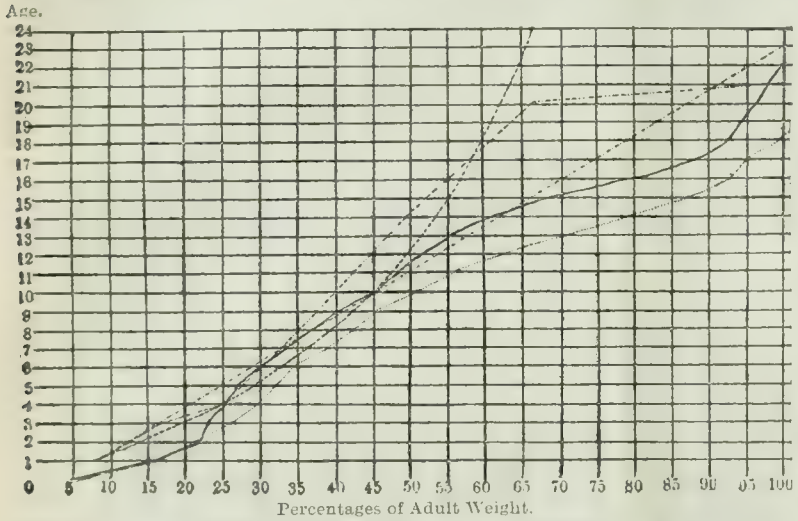


Chart 1.——— Percentage male weights. ..... Percentage female weights. ------ Young's formula. --.---. Gabius's formula. -.-.-. Cowling's formula.

In Chart 1, columns 5 and 6 are plotted to show the average percentage increase in the weight of individuals, using 24 as the adult age, and it is evident from the curve that females reach their maximal weight earlier than is the case in males; this is a fortunate circumstance, since it is recognized that females as a general rule require rather smaller doses than males, and, as will be seen, a medium course may be attained. These curves, then, not only exhibit the percentage increase in body weight, but also supply the absolute average dosage at ages below 24 for males and females; thus, for example, for males of 12 years the exact dose, reckoned according to body weight, should be 53 per cent. of the adult dose; at 15 years, 71 per cent., and so on.

For comparison, I have also plotted in this figure the formulas of Young, Gabius, and Cowling, calculated as percentages to show their relationship to the curve of weights. Young's formula, which is probably that most frequently employed at the present time, is decidedly the least satisfactory; the fraction $\frac{\text{Age}}{\text{Age} + 12}$ is sufficiently accurate up to the 11th year, after which it diverges from the weights curve since the fraction can never become a unity. Gabius's formula diverges in much the same manner, but Cowling's rule follows the curve fairly closely till the 15th year, after which its dosage is also on the small side.

Chart 2 gives the curves of average percentage weights, using the weight at 21 years as 100. The general type of the curves is that of Chart 1. On Chart 2 is plotted Lauder Brunton's method of calculating dosage with the metric system; this falls from start to finish below the actual dosage calculated from the weight, and the same statement holds good if age 24 be taken as the standard, as may be noted if Brunton's curve be plotted on Chart 1.

What is desirable is a simple rule for the calculation of dosage which shall follow as nearly as possible the curves of percentage body weights. This, I believe, may be most easily attained by using 100 as the denominator and 20 as the adult age—thus, the formula $\frac{\text{Age} \times 5}{100}$ gives a curve which, as shown in Chart 2, lies for the greater part of its course between the percentage weights of males and females. Such a fraction is extremely easy to calculate when metric weights are in use. Thus, to take Sir Lauder Brunton's example—if 0.33 gram be the adult dose, the dose for a child of 7 is 0.1155 gram, obtained by multiplying 0.33 by 35, and shifting the decimal points two places to the left. On Lauder Brunton's system the dose is $\frac{0.33 \times 8}{25}$ or $\frac{0.33 \times 32}{100} = 0.1056$ gram; and the absolute dose is 0.1138 gram and 0.1293 gram for males and females respectively. This instance is of more than ordinary difficulty for the new system, for, if the child's age were an even number, calculation would of course be simplicity itself. For instance, to use the same dose for a child of 8 years, we obtain 40 as multiplier and the figure 0.133 gram at once; the absolute being for this age in males 0.125 gram and in females 0.141 gram. While 100 as a divisor is especially suitable for the calculation of metric doses, it is not essential for doses stated in terms of the imperial units. Here multiplication of the age by 5 is cumbersome, and the formula $\frac{\text{Age}}{20}$ gives the same ratio, and affords simplified fractions, easier for calculation than those of any of the other systems employed for the imperial units.

Criticism of the Method.

In order to test the accuracy of the above method for calculating dosage, I have plotted curves showing the average percentage weights from both Continental and English statistical tables, and also curves showing the values after deducting the weight of the clothes. In all cases, however, I have found that the formula $\frac{\text{Age}}{20}$ or $\frac{\text{Age} \times 5}{100}$ gives the nearest approximation to the actual dosage. Below the age of 6 the formula gives too small a dosage for both males and females, but this is the case with all systems and is, perhaps, no disadvantage since it is in those early years that especial care must be exercised in the administration of drugs, and particularly of those which influence the nervous system, which is then

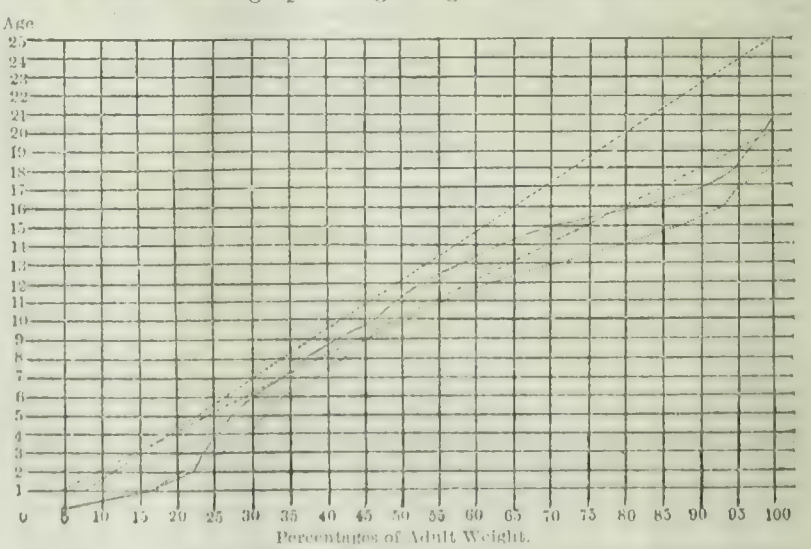


Chart 2.——— Percentage male weights. ..... Percentage female weights. Sir Lauder Brunton's formula. -.-.-.- New formula.

in a stage of rapid development. After the age of 6 the author's method lies almost regularly between the curves of male and female weights. For males, therefore, it gives a slightly higher dose than is necessary: for females a lower dose than is required. This latter feature is of importance, since, as already stated, females are, as a rule, more sensitive to drugs than males, especially at the age of puberty, at which time this formula gives a dosage decidedly lower than that demanded by the weight of the average female.

Conclusions.

1. Of existing formulae for the calculation of doses in children from imperial measures, those of Young and Gabius are of little value after the 10th year. Cowling's formula is the best of the older methods.

2. Sir Lauder Brunton's formula, for calculating dosage with metric weights, gives figures which are somewhat low at all ages and for both sexes; the calculation is also a little elaborate, and is not readily applicable to the imperial system.

3. The method suggested by the writer for the metric system $\frac{\text{Age} \times 5}{100}$, or for the imperial system $\frac{\text{Age}}{20}$, results in doses which correspond closely with those demanded by the average weights of non-adult individuals of both sexes at different ages; the calculation is simple, and the method can be employed for the metric and also for the imperial weight systems.

SUCCESSFUL REMOVAL OF A TUMOUR IN THE ADRENAL GLAND.

BY

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In the British Medical Journal, October 12th, 1907, I recorded a case of retroperitoneal haematocele causing acute intestinal obstruction. The sequel to that case is recorded now.

History.

In July, 1907, I was asked by Dr. F. Pershouse, of Johannesburg, to see in consultation with him a lady, aged 39, who the previous day had shown typical symptoms of acute intestinal obstruction. The history was that three years previously, shortly after confinement, she discovered a lump in the left lumbar region, which caused a certain amount of dull, aching pain in the back. She suffered always from constipation, but could obtain relief by means of cascara. A year ago, while in London, she had symptoms of obstruction, but apparently not of acute character. Under the advice of a surgeon whom she consulted, massage was carried out, with complete relief to the symptoms. From time to time, however, she had left lumbar pain, and always more or less constipation.

Condition before Operation.

The patient had been confined twelve days before I saw her, having a perfectly normal labour. The facial aspect was anxious, vomiting was frequent, the vomited material being greenish-brown and inoffensive. The pulse was 100 and rising steadily. The abdomen was distended, though not greatly so, and in the left lumbar region a hard movable lump could be felt. On bimanual examination it was found to extend into the loin, and was movable antero-posteriorly but not laterally. It was dull on percussion. The impression conveyed was that of a para-renal growth of some kind. There had never at any time been any renal symptoms. The lump extended from the left renal region down to the umbilicus and over to the middle line. The nature of the swelling was quite uncertain, and beyond a vague suggestion that it was a para-renal "something," no diagnosis was made.

First Operation.

The condition of the patient was critical, since no relief had been obtainable by enemata, and the acuteness of the symptoms was hourly increasing. She was therefore removed to a nursing home, with a view to operation. Four hours later, Dr Pershouse anaesthetizing and Dr. Stanley Heberden assisting, I opened the abdomen in the left linea semilunaris, over the swelling. There was no sign of peritonitis. The descending colon was completely flattened over a large tense swelling, which bulged forward the posterior peritoneum, the colon lying to its outer side. Some large vessels, apparently supplying the colon, ran over its surface. Above, the swelling was apparently continuous with the left kidney, and it extended well over to the middle line. An incision was made parallel with the vessels through the posterior peritoneum, and an attempt made to shell out the swelling. It was, however, completely fixed posteriorly and above, and a fresh layer was attempted in what looked and felt like a tumour capsule. Suddenly the finger slipped into a large cavity, from which rushed some fluid blood and large masses of blood clot, some recent and some old. The peritoneal cavity had been well packed off, and there was no soiling of the peritoneum. The cyst cavity having been thoroughly emptied and sponged out, the cyst wall was stitched all round to the peritoneum of the anterior abdominal wall and the cavity stuffed with gauze. There had been free oozing from the wall of the cyst, but this ceased on pressure with the gauze packing. None of the cyst wall was removed, since there was none to spare when the cut edges were brought forward.

The subsequent progress of the case was uneventful, the patient leaving the home in a month.

Contents of Cyst.

The material removed from the cyst was submitted to Dr. Pakes, pathologist to Johannesburg Hospital, and his report was that it was old and recent blood clot, with fluid blood.

It seems clear that the origin of the trouble was a retro-peritoneal haemorrhage during confinement three years ago—that at the recent labour a fresh haemorrhage occurred, rendering the cyst tense and flattening the colon over it. It is difficult to determine precisely the source of the haemorrhage—whether from a mesenteric vessel, a renal branch, or a pancreatic vessel, it is impossible to decide.

Could the nature of the swelling in this case have been diagnosed, there is no doubt that drainage through the loin by an extraperitoneal operation would have been the ideal one. Fortunately, however, all went well by the method adopted.

If this earlier history of the case in 1907 can be considered of real interest, the subsequent events in regard to the same patient are still more worthy of record.

In March, 1912, I was again asked by Dr. Pershouse to see this patient, as she was once more threatened with intestinal obstruction. Since the operation in 1907 she had been remarkably well, only suffering from time to time from constipation and occasional left lumbar pain of quite moderate character. When seen the patient's general condition was good. For about twelve hours there had been some vomiting; she was decidedly thin, but presented no other abnormality in general appearance. There was no discoloration of the skin anywhere.

In the left loin was a densely hard tumour, movable antero-posteriorly, but not vertically, having the colon in front of it. It filled the loin space and extended to the middle line. There were no renal symptoms. A paper by Mr. Alban Doran[1] on cystic tumour of the suprarenal body successfully removed by operation was materially helpful to me in making a diagnosis of suprarenal tumour.

Second Operation.

The patient was removed to Johannesburg Hospital for operation. Dr. F. B. Mudd anaesthetizing and Dr. George Murray assisting, I made the usual oblique incision in the left loin employed for nephrectomy. On opening the loin space I came upon a large dense tumour, having a tough fibrous capsule which extended from the diaphragm downwards to below the iliac crest and over to the middle line. Below it was the left kidney pushed into the iliac fossa, with its upper pole flattened from pressure. The tumour was adherent to the kidney below, the descending colon and peritoneum in front, and the diaphragm above. Its separation from the kidney was clean and easy, from the diaphragm and colon more difficult, and the peritoneum was torn twice and sutured in the usual way. There was no definite pedicle, but vessels were ligatured with catgut as they were encountered. There was no difficulty in controlling haemorrhage, although some of the vessels were of considerable size. The kidney was pulled up into the loin and retained in place by sutures through its perirenal fascia, and a drainage tube inserted down to it. The patient left hospital well on the twenty-eighth day.

The tumour, which was about twice the size of a fetal head, was globular, with one small nodular outgrowth. It had a dense, laminated fibrous capsule, presenting on the inner surface thickenings here and there, which on section showed adrenal tissue. The interior of this fibrous capsule was filled with dense altered blood clot of old standing.

I am indebted to Dr. Watkins-Pitchford, Government Bacteriologist and Pathologist, Johannesburg, for microscopic sections and preservation of the tumour. Dr. Watkins-Pitchford was of opinion that the growth was a hypernephroma. The tumour and sections are now in the Royal College of Surgeons, England.

There can be no doubt that the lumbar route is the method of choice for the removal of growths of this character: it is easier, quicker, and therefore safer than by anterior abdominal section. This is, so far as I can discover, the first case of the kind removed through the

loin, and if I am not mistaken the first one diagnosed as suprarenal growth prior to operation. I refer, of course, to growths in the adrenal itself, not to growths of adrenal origin embedded in the kidney.

REFERENCE.
[1] BRITISH MEDICAL JOURNAL, June 27th, 1903.

SOME EXPERIMENTS WITH IONIC MEDICATION.

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(Performed under a grant from the Royal Society at the Laboratories of Pathological Chemistry, University College, London.)

THE subject of ionic medication is so technical as to involve in considerable difficulties those not continually applying it. One source of error that the beginner is very apt to fall into is that of not recollecting which pole should be used to drive in each particular ion: for instance. I recently came across a case in which a surgeon ordered the ionization of cocaine and employed a nurse to do this for him: both he and the nurse agreed that the cocaine should be placed on the negative pole. Now, as basic radicles, including alkaloids, are driven in at the positive pole and acid radicles at the negative pole, the result of this, of course, was that, cocaine hydrochloride being the salt used, no cocaine was driven in at all, but only chlorine ions. Another error is exemplified by a simple experiment which the author has performed upon himself, which can easily be repeated and which will also serve to emphasize some of the essential points of the treatment. A pad of cotton-wool soaked in cocaine hydrochloride was placed on the forearm over a square window cut in a piece of oil silk; this was connected with the positive pole: a similar pad was placed on the other forearm with an oil-silk window of exactly the same size and connected with the negative pole: the size of the window in the oil silk was 3 × 3 cm., and the current used was from 10 to 15 milliampères for ten minutes, the time being reckoned after the needle had first reached 10 milliampères. It was found at the end of this time that the skin in the square area covered by the *positive* pad was completely anaesthetized, while no anaesthesia whatever was obtained beneath the *negative* pad, showing that the cocaine had been introduced from the anode (or positive pole), not from the kathode (or negative pole). Now, anybody who repeats this experiment will find that the anaesthetic effect of cocaine ions so administered is extremely transient, passes off in a few minutes, and is followed by hyperaesthesia and hyperaemia, which persist for some days and which are succeeded by brown pigmentation. Obviously, therefore, this method is a bad one for local anaesthesia.

A further experiment was performed with cocaine; this drug was first driven in (from the anode, of course) over an area of 2 × 1 cm. An attempt was then made to extract the cocaine from half this area by covering half the patch and reversing the current, but this was not successful, the reason being either that cocaine is deposited in the tissues in an insoluble form, or else that the ions of sodium, potassium, etc., which abound in the tissues, are extracted in preference to the heavier cocaine ions.

In order to determine as far as possible the path which various ions took when they were introduced into the tissues, a series of experiments was performed on animals.

The method used was as follows: The part to be treated (generally the animal's back) was first of all shaved. After a few days had elapsed to allow any abrasions due to the action of parasites or to minute lesions incidental to shaving to heal thoroughly, the animal was anaesthetized by chloroform or ether. A thick pad of pure cotton-wool was thoroughly wetted with a solution of the salt containing the ion to be tested and a piece of metal gauze connected to the source of current placed over it. The whole was then completely enveloped in a piece of oil-silk in which a window 2 × 1 cm. had been cut on the side opposite to the gauze, and this window placed against the skin: a similar pad was prepared and connected with the other pole. By this method there was no possibility of short-circuiting even if the pads touched. In order to obtain uniformity one-twentieth normal solutions were used in all cases, so that they all had the same number of molecules per unit volume, that number being sufficient to provide an adequate supply of ions. For convenience the pad on the right side of the back was always connected with the anode.

The current was obtained from a shunt rheostat across a constant current main. The resistance handle was moved rapidly until the ammeter registered 6 milliampères*; the resistance had to be varied to keep the current constant during the experiment. The current was allowed to flow for a definite time, and in the case of some of the ions the effect of passing the current for different lengths of time was observed. The skin containing the ionized patches was then removed and in most cases the subcutaneous tissue and muscle beneath it also, the animal being killed by an overdose of the anaesthetic. An attempt, where possible, was then made to stain the ions *in situ* by immersing the tissue in a solution which caused the formation of a coloured compound with the ions in the skin. When this method could not be used the tissue was merely fixed and hardened in alcohol and stained in various ways. In all cases the tissue was properly hardened and embedded in paraffin and microscopical sections were made. In one experiment in which it was desired to observe the late effect of the action of zinc ions the animal was allowed to recover and was killed at a later date.

The experiments were performed on cats, rabbits, a monkey, and a dog.

The ions experimented with were:

Acid Radicles (from Kathode).	*Basic Radicles (from Anode).*
Hydrogen	Hydroxyl
Sulphide	Calcium
Ferrocyanide	Zinc
Ferricyanide	Copper
	Ferrous
	Ferric
	Mercuric

It would be as well in the first place to describe a very important experiment bearing on the whole question of the ionic treatment of joint diseases. A monkey was anaesthetized by chloroform, and a pad soaked in potassium ferricyanide was placed over the front of its knee, the area which the solution touched being limited by a window cut in a piece of oil-silk. This pad was connected with the negative pole, that attached to the positive pole being placed on the back. A current of 10 milliampères was passed for thirty minutes, and then the animal was killed. Before its death, however, the knee was removed by cutting through the thigh and the leg, and was placed in a solution of ferrous sulphate. A control experiment was performed in which a pad of potassium ferricyanide was fixed on a monkey's knee for the same length of time, no current being passed, and the knee was subsequently treated in exactly the same way. The next day the knee was opened, and it was found in the case in which the current was used that the skin, subcutaneous tissues, and patellar tendon over which the window had been placed were stained an intense blue from the interaction of the ferricyanide ions and the ferrous sulphate, and further that this blue extended right into the joint, there being a stained patch on the cartilage which penetrated right down to the bone. In the control the blue did not even penetrate the skin. This definitely proves that it is possible to introduce the ions of some substances directly into a joint, even into the cartilages; at any rate of a comparatively superficial joint like the knee.

Very few ions driven in at the kathode, that is to say, acid radicles, can be traced in this way, but it is possible in various ways to trace certain of the basic radicles driven in at the anode.

The penetration of different ions varies enormously, and it is possible to tell from the movements of the needle of the milliammeter whether a drug is entering the tissues freely or not. In using two ions which penetrated the tissues freely, it was found that if the handle of the shunt resistance was moved to a certain point and left there the milliampèrage gradually increased, which means that the resistance of the skin had diminished so that the ions were entering in greater number. With ions which

* In most of the experiments this was found the most convenient current to use.

precipitated in the epidermis, as described subsequently, the milliampèrage actually decreased after the first few moments, showing increased skin resistance and a lessened number of ions entering; to maintain the milliampèrage at all, the handle of the shunt resistance had to be continually moved in order to raise the voltage. In the case of ions subsequently proved to be deposited in the deeper layers of the skin, an intermediate effect was obtained, the current rising first and falling afterwards.

Hydrogen and hydroxyl ions cannot themselves be stained, but it was found that hydrogen ions caused the tissues to have an increased affinity for basic stains, the whole of the tissues under the ionized patch being deeply coloured by them, and the nuclei not picked out in the usual way. On the other hand, hydroxyl ions (introduced at the positive pole) produce the reverse effect, the tissue under the ionized patch failing to take basic stains. The staining in the hydrogen ion patches was even, and no granules could be detected. The effects persisted some time, as in one case the animal was allowed to recover, and the patches excised two days afterwards, when they still exhibited the same phenomena.

Attempts to stain sulphide ions by immersing the tissue in metallic salts, such as mercuric chloride, failed. Similarly, metallic ions could not be stained by immersing the tissue in solutions of sulphuretted hydrogen or potassium sulphide.

Ferrocyanide ions can be traced through the skin and subcutaneous tissue into the muscles; they are seen in large quantity in the capillaries of the subcutaneous tissue. All the tissues are stained blue, but the stain is not quite diffuse, as some parts seem to be picked out and stained more than the rest; the hair follicles and sebaceous glands are to a large extent avoided, and apparently the absence of staining of these is because the fat which they contain is a non-conductor of electricity. The taking up of the ions by the subcutaneous capillaries gives the deep layers of the subcutaneous tissue a more intense colour than the superficial layers. Ferricyanide ions give a very similar appearance to that obtained with ferrocyanide ions.

Copper ions were easily demonstrated by fixing the tissue with potassium ferrocyanide. They were deposited entirely in the epidermis, not even reaching the corium, and the deposit extended a short way down the hair follicles

With ferric ions, the tissues being fixed in a solution of potassium ferrocyanide, precisely similar results were obtained. With ferrous ions, on the other hand, the appearances were almost identical with those given by ferrocyanide ions, with the exception that there was a rather more abundant deposit in the epidermis.

Calcium ions were found to be deposited in and beneath the corium, only a small quantity going through the corium, even when a large current was passed for a long time. The deposit takes the form of minute granules which stain very intensely with a basic dye.

Unfortunately the attempts to demonstrate zinc ions failed; one would expect from the macroscopic results to obtain very similar preparations to those of calcium ions, as in each case the skin presents an opaque white appearance after the ionization.

Attempts to stain mercuric ions also failed, but from the behaviour of the current they apparently penetrated the tissue readily.

These experiments are admittedly very incomplete, although they serve to demonstrate some important facts with regard to the science and practice of ionization.

I cannot conclude without tendering my best thanks to Dr. Goodbody for kind advice and assistance during these experiments, and to Dr. Bellamy for cutting the numerous sections in the last experiment.

A COMMISSION, appointed to advise the authorities in regard to the new German Criminal Code, has recommended that duelling with rapiers, provided that certain conditions are fulfilled for the protection of life, should not be made a punishable offence. The *Muench. med. Woch.*, in noticing this recommendation, remarks that duelling among students will in future lack the stimulation of being forbidden. Our contemporary therefore anticipates that this antiquated method of exercising muscles, pluck, and skill will become still less fashionable than it has been within recent years.

A CASE OF URAEMIA TREATED BY MORPHINE.

BY

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SUGGESTIONS in the textbooks in regard to the use of morphine in acute uraemia are usually so unconvincing that I thought my experience in a recent case might prove useful.

On July 23rd of this year I was called to see W. L., a warehouseman, aged 56. He was sitting by the fire, wrapped in blankets; his face was puffy and dusky in colour, and his legs very oedematous; his whole body was also oedematous, though not extremely so. There did not appear to be any effusions into the serous cavities.

He had been feeling vaguely out of sorts for some weeks and, latterly, particularly short of breath and easily tired. A week before I saw him he had consulted his club doctor, who had prescribed for him. He had seen him again three days before my visit. He gave a history of a severe attack of scarlet fever seventeen years previously; eleven years ago he was told he had Bright's disease, but the doctor whom he then consulted told him he was cured of it.

The patient was too ill to examine very thoroughly at my first visit: the pulse was about 90, and very full; the cardiac impulse was about 1 in. outside the nipple line, with a blowing systolic murmur; the second aortic sound was accentuated. I had not my sphygmomanometer with me, so I do not know what his tension was, nor did I, unfortunately, take it with me before his acute symptoms started. He was complaining of constant eructation of wind and occasional vomiting; he had headache, but no ocular symptoms. The urine was almost solid with albumen on boiling.

The patient was put to bed, and diaphoretics, aperients and warm packs ordered. Next morning he expressed himself much better. The sickness and eructation of wind and vomiting had stopped, and the oedema had already to some extent receded. In the evening his son came to tell me that the vomiting had recommenced, and that he was not so well. Shortly after midnight I was sent for, and on going to see him I found that he had got out of bed and fallen on the floor; he was somewhat incoherent and could not raise himself; being a big, heavy, man, it was not an easy matter to lift him back into bed. I was inclined to think that he had probably had a fit and fallen out of bed. His pulse was still very full, though not rapid, and as I thought that convulsions seemed imminent, I tried venesection and inhalation of amyl nitrite. The venesection was not a success, only about 5 oz. of blood being abstracted. He became quiet and seemed inclined to sleep, so I left him, but ordered him another hot pack.

At 8.30 the same morning I was again sent for; I was told that he had had five fits since 7 p.m., and could not be kept in bed. I found him unconscious and extremely restless, cyanosed, and incessantly throwing himself about from side to side of the bed. Having had so unsatisfactory an experience of venesection, I did not attempt it again, but gave him a hypodermic of morphine sulphate ½ grain with atropine sulphate $\frac{1}{150}$ grain, and told his friends to get a cylinder of oxygen and administer it continuously. I called to see him again about an hour after the injection, and he was sleeping fairly quietly and had not had another fit.

At 2 p.m. I called again; he had just had another very severe fit—the first since the hypodermic injection. He was unconscious, deeply cyanosed, with a slow, full pulse, and heaving himself up and down and from side to side of the bed as if in a struggle for breath. He did not keep in one position for more than two or three seconds, and the oxygen could not be administered because of his extreme restlessness. The dyspnoea was extreme and the veins extremely engorged. I now immediately venesected him, and with the utmost ease withdrew at least 25 oz. of blood. This improved his colour considerably and to a certain extent his restlessness. He was still restless, however, and I was so anxious about the condition of his heart that I thought quiet must be obtained at almost any cost, so I gave him another hypodermic of morphine sulphate gr. ½,

atropine sulphate gr. $\frac{1}{150}$. He became quiet in about a quarter of an hour and slept peacefully and continuously until 7 p.m. He then awoke conscious and comparatively himself. He had a good night and awoke next morning feeling "very comfortable."

He has since then had no more bad symptoms, and although he has still a fair quantity of albumen in his urine he is in other respects very well. Oedema, flatulence, and vomiting all quickly disappeared, the cardiac impulse came in to well inside his nipple line, and he now expresses himself as feeling better than for many months. He remembered faintly my finding him on the floor of his bedroom at 1 a.m., and then remembered nothing else until he awoke at 7 p.m. on the same day, and wondered why his elbows were bandaged. His case was, I imagine, an acute attack on the top of a chronic parenchymatous nephritis.

Although the venesection undoubtedly did him good, and possibly, too, the inhalation of oxygen, which was given continuously for about ten hours except when his restlessness was too great to admit of it, I have no doubt in my mind that it was the morphine which saved his life.

TWO CASES OF PEPTIC ULCER OF THE OESOPHAGUS.

By C. GORDON WATSON, F.R.C.S.,

ASSISTANT SURGEON TO ST. BARTHOLOMEW'S HOSPITAL; SURGEON TO THE METROPOLITAN HOSPITAL.

My attention has been called recently to the account of an interesting case of perforative peptic ulcer of the oesophagus, published by Dr. James Miller in the BRITISH MEDICAL JOURNAL of January 20th, 1912. The two following cases came under my notice at St. Bartholomew's Hospital, and should be recorded on account of the rarity of the condition. The ulcer in the first case perforated into the left pleura; in the second case no perforation occurred. In the first case a diagnosis of perforated gastric ulcer was made, and in the second a diagnosis of gastric ulcer. In both cases acute abdominal symptoms occurred; laparotomy was performed, and nothing abnormal discovered. Both cases ended fatally, and occurred in males over 40.

CASE I.—*Acute Perforation of an Oesophageal Ulcer into the Left Pleural Cavity.*

A. S., male, aged 47, was admitted to St. Bartholomew's Hospital under my care at 11.45 p.m., May 22nd, 1910.

History.—Sudden epigastric pain at 7.30 p.m. (whilst lying down). Last meal 3.30 p.m. (mutton and potatoes). No history of jaundice, indigestion, or urinary troubles.

Condition on Admission.—Face pale and pinched. Temperature 95°; pulse 100, regular, weak; respirations 36; abdomen distended, not moving on respiration. No localized swelling. On palpation, abdomen very hard and very tender in the right hypochondrium. Liver dullness two inches below costal margin. Nothing abnormal discovered in heart and lungs.

Exploratory Laparotomy, May 23rd, 12.15 a.m.—No free gas or fluid. Intestines red and injected. Several small omental haemorrhages. Stomach, duodenum, liver, gall bladder, bile ducts, pancreas, spleen, appendix and kidneys examined and found natural. Wound closed. The stomach was washed out on the table, but only a small portion of the fluid was returned on siphonage. No vomiting occurred after this. The patient became very restless, respirations increased in rapidity, and he died at 8.10 a.m.

Autopsy.—The right pleura contained about a pint of blood-stained fluid. The right lung was collapsed, but was not otherwise abnormal. The left pleura contained four pints of thick turbid brown fluid with an odour of gastric contents. The fluid contained recognisable pieces of meat and vegetable. The left lung was collapsed. In the lower lobe near the middle line there was a small gangrenous cavity which communicated by an aperture about ¼ in. in diameter with the left pleural cavity, and by a similar sized opening with the oesophagus immediately above the cardiac orifice of the stomach. The opening in the oesophagus had a discoloured shelving edge, and was not clean cut. It showed no evidence of any pre-existing chronic ulcer or of new growth. No foreign body could be found in the neighbourhood of the perforation. The rest of the oesophagus was natural. The stomach was natural, and contained a considerable quantity of solid food. Liver fatty. Remaining organs natural. No peritonitis.

CASE II.—*Oesophageal Ulcer without Perforation.*

A man, aged 52, was admitted to St. Bartholomew's Hospital under the care of Dr. Herringham on May 8th, 1909.

History.—Quite well until five months ago, when he began to suffer from sickness after food without pain. Vomiting continued almost daily until admission, and the vomit was occasionally "coffee ground." For the last two months epigastric pain had been constant.

Condition on Admission.—Large, well built, stout, anaemic man. Temperature 99°; pulse 98; respirations 20. Brassy cough. Arteries not thick. Tongue furred. Chest: *Nil* abnormal. Abdomen: Tenderness to the left of the ensiform cartilage. Urine: Natural. Blood: Red corpuscles, 3,104,000; haemoglobin, 24 per cent.; colour index, 0.4; white corpuscles, 10,000. A skiagram of the chest showed a normal area of cardiac dullness and a normal aortic shadow.

May 8-27. Vomit contained altered blood and no free HCl. Temperature was irregular.
May 15. Pain constant. Vomiting frequent.
May 22. No food given by mouth. Rectal salines.
May 26. Eggs and milk by the mouth.
June 2. No pain or tenderness.
June 4. Vomited altered blood.
June 6. Pain returned. Frequent vomiting.
June 15. Transferred to surgical ward (under the care of Mr. Lockwood).
June 20. Operation. Incision in middle line above the umbilicus. Nothing abnormal found. Wound closed. Temperature and pulse rose after operation and patient died on June 22nd.

Autopsy.—No peritonitis. All organs very pale. Stomach natural. Duodenum contained a pouch the size of half a chestnut. Oesophagus: There was a chronic punched out ulcer the size of half a crown involving the lower end of the oesophagus close up to the cardiac orifice. There was no perforation into the pleural cavity, but the base of the ulcer was extremely thin. Microscopically the ulcer showed chronic inflammation and no evidence of malignant disease.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF TROPICAL MEDICINE.

Professor J. L. TODD, McGill University, Montreal, President.

PRESIDENT'S INTRODUCTORY REMARKS.

THE PRESIDENT limited his introductory remarks to expressing a few words of welcome to those present, and then called upon Drs. J. W. W. Stephens and H. B. Fantham to read the first paper.

PAPERS DEALING WITH TRYPANOSOMIASIS.

I.—J. W. W. STEPHENS, M.D.Cantab., and H. B. FANTHAM, D.Sc.Lond., B.A.Cantab.

TRYPANOSOMA RHODESIENSE (STEPHENS AND FANTHAM).

A SECOND SPECIES OF AFRICAN TRYPANOSOME PRODUCING SLEEPING SICKNESS IN MAN.

Prefatory Note.

EARLY in 1910 a case of sleeping sickness in a European from Northern Rhodesia was being treated in the Royal Southern Hospital, Liverpool. The case was studied from various points of view by Sir Ronald Ross and Dr. D. Thomson.

In March of the same year I was demonstrating the trypanosomes in the blood of a rat sent as *T. gambiense* to a class of students, when I noticed certain peculiarities in the structure of the trypanosomes. These peculiarities were so striking that I remember well telling my students to label their slides *T. gambiense* (?) as I felt certain that some mistake had been made. On inquiry I found that the rat had been inoculated with the blood of the patient in hospital, though at the time I was ignorant of this. I now proceeded to see if the forms I had observed were to be found in the ordinary laboratory strain of *T. gambiense*, but after examining the latter over and over again I was unable to find them. In a letter dated

May 9th, 1910, to the Advisory Committee for the Tropical Diseases Research Fund I noted these points. In the meantime I was continuing my observations on this trypanosome, and eventually I mentioned my suspicions that I was dealing with a trypanosome that was not *T. gambiense* to my colleague Dr. Fantham, who kindly consented to help me in describing it, and before doing so to make quite certain again that *T. gambiense* did not show these forms. (J. W. W. S.)

We finally felt that our position was secure, and we read a paper on the subject before the Royal Society on November 3rd, 1910, the concluding paragraph of which is as follows:

> Our own view is that we are dealing with a new species of human trypanosome for which we propose the name *Trypanosoma rhodesiense*.

We mention these points somewhat in detail because they appear not to be generally known, but all the dates can be verified by reference to the literature.

Before summarizing the evidence in favour of the specificity of *T. rhodesiense*, we would emphasize the fact that the identification of a trypanosome is a very difficult matter, and that with our increase in knowledge the difficulty has hardly decreased; in fact, it may be stated to have increased. We must, indeed, make use of every possible means at our disposal, even though these may not be perfect. What, then, is the evidence on which we base our belief that *T. rhodesiense* is a second species of African trypanosome producing sleeping sickness in man?

1. *The Morphology.*

The peculiarity of this trypanosome is that in the blood of *all* subinoculated animals the nucleus instead of being in the middle or near the middle of the trypanosome, as is usually the case, is, in some of the short or stumpy forms of the trypanosome near the posterior end, more or less close to the blepharoplast (kinetic nucleus), or even on its posterior side. We believed, and still believe, that this morphological feature alone definitely enables us to distinguish the trypanosome from *T. gambiense*.

2. *Animal Reactions.*

Laveran sums up the question of the animal reactions as follows:

> The total results correspond with those of other authors—namely, Bevan, Yorke, Fantham, Laveran, Mesnil and Ringenbach, and others, and show that *T. rhodesiense* is clearly distinguished from *T. gambiense* by its great virulence for the majority of animal species; whereas in rats and mice *T. gambiense* has very variable virulence, some animals being refractory, others contracting light infections, *T. rhodesiense* invariably kills them. In the guinea-pig, dog, and Macacus monkeys the duration of *T. rhodesiense* infections is shorter than that of *T. gambiense* infections. In sheep and goats the difference in the evolution, symptomatology, and gravity of the two infections is quite remarkable; whereas *T. gambiense* infections in these animals often give rise to no symptoms except fever (often missed if one does not take the temperature), and usually end in recovery, *T. rhodesiense* infections lead to an acute disease, with high fever, oedema and keratitis, and death is invariably the end after a relatively short duration.

3. *Serum Reactions.*

(*a*) *Action of Immune Serum* (Mesnil and Ringenbach). — (1) A goat was infected with *T. rhodesiense*. Twenty-two days later its serum + *T. rhodesiense* was injected into a mouse. Result: Protection. (2) The serum + *T. gambiense* was injected into a mouse. Result: Infection.

(*b*) *Action of Baboon Serum.* —Contrary to *T. gambiense*, *T. rhodesiense* is very susceptible to human and baboon serum. Thus Mesnil and Ringenbach performed the following experiment: A dose of 1 c.cm. of baboon (*Papio anabis*) serum cured mice with *T. rhodesiense*. In the same dose it acted very feebly on *T. gambiense*.

Action of Human Serum.—One c.cm. of human serum cured *T. rhodesiense* mice in 3 out of 4 cases; on *T. gambiense* mice there was no appreciable effect.

Laveran and Nattan-Larrier have shown the same—namely, that human serums act on *T. rhodesiense*, but are quite without action on *T. gambiense*.

(*c*) *Trypanolytic Reactions.*—The results got by Mesnil and Ringenbach are most demonstrative in the case of trypanolytic reactions. The serums of animals (man, monkey, and guinea-pig) infected with *T. gambiense* are trypanolytic for the homologous trypanosome—that is, *T. gambiense*—but have no action on the heterologous trypanosome—that is, *T. rhodesiense*.

4. *Cross Immunity Experiments.*

(*a*) Mesnil and Ringenbach immunized a monkey (*Macacus rhesus*) against *T. gambiense*. It was inoculated with *T. rhodesiense* on June 7th, 1911; on June 27th trypanosomes appeared (the infection was slight); on July 4th it died. A control died in ten and a half days.

(*b*) Laveran immunized a goat and mouse against *T. gambiense*; when they had acquired a solid immunity they were inoculated with *T. rhodesiense*. They became infected like the controls.

(*c*) Laveran and Nattan-Larrier immunized a goat against *T. brucei*; it subsequently became infected with *T. rhodesiense*.

(*d*) Laveran immunized a ram and a sheep against different strains of *T. brucei*. Inoculated with *T. rhodesiense* they both acquired acute infections and died. Conclusion: *T. rhodesiense* is not *T. brucei*.

When the converse set of experiments is tried, namely, immunizing an animal against *T. rhodesiense*, and then inoculating with *T. gambiense*, the difficulty immediately arises that it is impossible to immunize an animal against *T. rhodesiense*, owing to its virulence. But a partial and transitory immunity to *T. rhodesiense* can be got by treating the infected animal with drugs, such as arsenophenylglycin. The results, so far as they go, seem to show that an animal immunized against *T. rhodesiense* is immune not only to *T. rhodesiense*, but also to *T. gambiense*, a fact which, according to Mesnil and Leger, does not invalidate the specificity, but tends to show that the two trypanosomes are closely related.

5. *Mode of Transmission.*

Although not regarding it as an absolute specific characteristic, it is interesting to note that according to Kinghorn and Yorke (1912):

(1) *T. rhodesiense* is transmitted by *Glossina morsitans*, both in laboratory experiments and in nature.

(2) That about 16 per cent. of the wild game examined in Northern Rhodesia is infected by *T. rhodesiense*.

6. *Curve of Measurements.*

We have measured 2,000 *T. rhodesiense* and the curve differs from that obtained by Surgeon-General Bruce for 1,000 *T. gambiense*.

Conclusion.

When we first announced this trypanosome it seemed to be very generally assumed that it was a variety of *T. gambiense*, and that its peculiarities were due to the fact that it was probably transmitted by *Glossina morsitans*. We have never held this view, as we considered that there were no facts to warrant such an assumption. We believe that sleeping sickness in Rhodesia, Nyasaland, and adjoining territories is due to a specific trypanosome, *T. rhodesiense*; that the disease is not due to *T. gambiense* recently introduced, on the contrary—though this may be difficult to prove—that it has existed in these territories from time immemorial.

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II.—F. K. KLEINE,

German East Africa.

THE IDENTITY AND MODE OF TRANSMISSION OF TRYPANOSOMES.

R. KOCH emphasized the fact that the pathogenic trypanosomes—for example, the pathogenic agent of sleeping sickness, nagana, surra, etc.—are not confined to one species of animal, and that they vary considerably in reference to their morphology and virulence. He considered that one must conclude therefrom that these parasites as contrasted with others only live a comparatively short time in the blood of their hosts, that they have not completely adapted themselves to them, and that they have not yet acquired the position of fixed species. He postulated a period of mutability. It appeared to him that similar conditions existed in the case

of trypanosomes to those which de Vries had found in his classical investigations on the mutation of *Oenothera*. In fact, the variations in size and morphology in individuals of the same trypanosome strain, especially if inoculated into another genus of animal, are not inconsiderable. Striking differences in virulence also exist, which can be increased or decreased at will. Data, however, are completely wanting as to trypanosome strains of the same origin which *completely* differed from one another in their virulence in the same species of animal, and which date back to that time when one actually only knew *T. brucei* intimately, and in that trypanosome, as a matter of course, one looked for the characters of this species, and naturally they frequently were not found. If the properties were not found, one considered that the fact proved quite special variations in virulence and peculiar immunity relationships.

In my opinion, in the case of most trypanosomes the period of mutability is passed. We have now before us sharply defined groups, differing in their pathogenicity and other biological properties, and I know of no case in which one has been able *fundamentally* to alter the whole character of a strain. To take an example. Through passages in the mouse I had raised, during the course of two years, the virulence of *T. gambiense* to such an extent that by intraperitoneal injection it killed mice almost always in two to three days. The characteristic susceptibility of man towards the strain, however, remained, as a laboratory assistant who was unfortunately bitten by a mouse fell ill soon after of sleeping sickness. Also all attempts to alter the specificity of trypanosomes in the body of *Glossinae* have proved fruitless. A number of clean *G. palpalis* were twice fed on sleeping sickness monkeys, and then always on healthy sheep or goats, until eventually some of the animals showed trypanosomes in their blood. On these infected animals freshly hatched flies were now fed four times, and then daily on sound sheep or goats. When the time arrived that the trypanosomes taken up by the *Glossinae* were about to become infective, I tested their infectivity by feeding the flies for comparison on healthy monkeys and goats. The result was that *T. gambiense*, in spite of its stay of many months in goat's and sheep's blood, both in the animal's body and in the fed flies, remained far more infective for the monkeys than for the other animal corresponding to its original specific characteristic. The fuller data of these experiments will shortly be published by Dr. Fischer and myself. As the specificity of the trypanosomes is a marked one, so in many cases inoculation into various animals suffices to establish their specificity. If we proceed always in a uniform way we get correspondingly satisfactory results. I will mention the chief points on which I lay stress.

The quantity of injected blood must not be too small (if possible, 5 to 20 c.cm.), so that it may be quite certain that numerous trypanosomes are injected. As many animals as possible must be injected. The injection must always be *subcutaneous*. If large intraperitoneal injections are used, certain trypanosomes can be transiently carried over into animals which are not actually susceptible to the particular species. To determine whether an injection is positive or not, *thick drops* must always be made for the blood examination. This method, first described by R. Ross and subsequently tested by R. Koch on his expedition to the Sese islands in hundreds of cases, is unfortunately still insufficiently well known and appreciated. An exact description will be found in *Sleeping Sickness Bureau Bulletin*, vol. iii, No. 31, p. 402. The fact that other authors have not got as good results as we ourselves depends mainly on changes of technique, whereby the fundamental principle of the method has been considerably injured. In cases where the method of identifying trypanosomes by injecting into different species of animals is employed this trustworthy method is indispensable, as it saves one from false conclusions. I conclude that when, using a technique free from all objections, one fails to infect by subcutaneous injection a particular species of animal with trypanosome-holding blood, that species is insusceptible. Many observers appear not to have this view. Thus in the *Sleeping Sickness Bureau Bulletin*, vol. i, No. 7, p. 274, there is an abstract of a paper, entitled "Cattle Trypanosomiasis in the Congo Free State," by Dutton, Todd, and Kinghorn, in which they state:

> The results of the animal inoculations show that animals we employed frequently remained uninfected after the inoculation of large quantities of blood containing many parasites. As a diagnostic test the subinoculation of laboratory animals was often, therefore, less sensitive than the examination of coverslip preparations of blood. . . . Of twelve rats, four guinea-pigs, two rabbits, two monkeys, and four dogs inoculated at various stations, only one rat ever became infected . . . the virulence of various strains of trypanosomes (in the laboratory) may vary greatly. *The effect of a parasite on experimental animals can, therefore, only be taken as a general indication and cannot be accorded specific value.*

In our experience just the opposite is the case. When out of 4 guinea pigs, 2 rabbits, 4 dogs, and 12 rats, only 1 rat was infected, it at once passes through one's mind that the trypanosomes used were not infective for these animals. The infection of one rat was perhaps only a transient one, determined, perhaps, by intraperitoneal injection. It is self-evident that in identifying trypanosomes we regard not only their infectivity-pathogenicity, but also their properties. For instance, we do not omit investigation of fresh preparations. With regard to this we may state that the motility of individuals of the same strain is not always the same. Trypanosomes which one day move actively out of the field, in a few more travel either sluggishly or only move about the same spot. They remain together attached to the red cells, and endeavour in vain to get free. This phenomenon is very likely produced by the formation of antibodies, which for a time check the motion. It is questionable, therefore, whether one can ascribe any great significance to motion through the field. It is certain, at any rate, that some trypanosomes—for example, *T. cazalboui*, are naturally characterized by quite remarkable rapidity of motion. If a trypanosome "shoots" through the field like a spirochaete, *T. brucei*, *T. gambiense*, and others do not come into consideration in the diagnosis. On the other hand, slight motility does not, as a matter of course, exclude a trypanosome from the *cazalboui* group, as in chronic infections also we have found the motility considerably diminished. In estimating morphological characters we must not forget that most of the different trypanosomes show a certain dimorphism which naturally is more striking in the larger than in the smaller species.

All the data regarding the size of a trypanosome vary not inconsiderably as the individuals of one and the same strain vary in themselves in size, and, again, there is no correspondence in methods of fixation and measuring. We may hope that Bruce's methods will effect a considerable advance in this respect. For instance, the difference between his two curves of *T. evansi* and *T. brucei* is extraordinarily instructive, but how far it will allow us to identify *T. gambiense* the future must show. Bruce himself expresses himself very carefully and sceptically. While, then, from these points of view, it should not be as a rule difficult to identify animal trypanosomes, our skill fails us when we come to human trypanosomes. For obvious reasons, in the case of human trypanosomes, we cannot avail ourselves fully of our chief method of diagnosis—namely, the testing of the infectivity—if we find, for example, in a *G. morsitans* country a trypanosome in a goat which on certain grounds we take to be *T. gambiense*, yet the proof is not easily furnished. In such cases we turn to other methods.

Laveran tests the identity of trypanosomes by cross inoculations of immunized animals. A disadvantage of the method is the long time it takes. Further, in many animals an immunity cannot be produced against the trypanosomes highly pathogenic for that particular animal. Also, after the lapse of time animals apparently immune succumb to the infection or to intercurrent disease, especially if any unfavourable external conditions diminish their existence. If one uses, however, for purposes of immunization, animals which further first possess a great resistance to the trypanosome in question, the certainty of the conclusion suffices. For African conditions serum reactions are in many cases more applicable.

In 1905 I was able to distinguish with certainty *T. brucei* from *T. gambiense* by means of the serum of two donkeys whose relative immunity against tsetse (Nagana) was pronounced, though both animals died eventually of the disease. Their serum in a dose of 0.5 c.cm., given subcutaneously, protected mice from an intraperitoneal injection twenty-four hours later of 0.2 c.cm. of a Nagana blood emulsion. The controls died

in four to five days. On the contrary, the serum specific for *T. brucei* did not protect against *T. gambiense* even in repeated doses.

Laveran and Mesnil have systematically used and recommended the serum of immunized animals for the identification of trypanosomes. The French savants mix in increasing doses 0.25 to 1.00 c.cm. of immune serum with some blood containing the trypanosome to be tested. The mixture is allowed to stand for five minutes, and is then injected into the peritoneum of white mice. As a control a mixture of 0.5 c.cm. of normal serum with the trypanosome blood is used. The advantage of serum diagnosis is that one can use the serum of relatively immune chronic cases—animals, as in my case—the disadvantage is that the specific property of the serum and the virulence of the trypanosome to be tested vary much, so that the certainty of the diagnosis suffers. Yet in the identification of human pathogenic trypanosomes one can scarcely dispense with the method of serum diagnosis.

Identification of the pathogenic mammalian trypanosomes is not possible in the tsetse fly. Yet, with some practice, forms derived from cold-blooded animals can be distinguished from those of warm-blooded ones. In *Glossina*, trypanosomes pass through a development, as is well known, and personally we are convinced it is a sexual one. The analogies from other protozoa favour this view; besides one finds in the fly two quite different types of trypanosome appearing beside one another—they are male and female. The first are characterized by their size and breadth. The abundant plasma stains blue with Romanowsky, and is generally filled with numerous granules of chromatin or volutin. The nuclear chromatin is not compact, but loose, and not uncommonly it is arranged in eight chromosomes, rosette-wise. Many of these parasites which we must call females have two or more nuclei. Males, on the contrary, we designate the quite thin and slender forms, the protoplasm of which stains in a reddish shade with Romanowsky. The rod-shaped, elongated nucleus lies, as a rule, fairly near the hind end, and it is compact and intensely stained. In these cases where the blepharoplast is clearly separated from the main nucleus, one sees that it generally lies anterior to the main nucleus.

The two past described types R. Koch was the first in main essentials to designate as male and female. Beside the microscopical appearances, another observation appealed to him as of force for the assumption of sexual development.

He twice found trypanosomes in the salivary glands of caught *G. palpalis*. On the contrary, I frequently failed in my experiments with reared flies to find parasites in the salivary glands of infective ones. Sir David Bruce, on the other hand, published some time ago experiments from which it appeared that the infection of the salivary glands was a preliminary necessity for the infectivity of the flies. The matter is not yet cleared up. I consider it for my part an error, especially as it is quite possible that the salivary glands can be infected secondarily from the proboscis. In my earlier method of dissection, unfortunately, the thoracic portion of the salivary glands remained unexamined. All trypanosomes do not develop in the gut of the fly; according to Bouffard's interesting observation, they are in the case of *T. cazalboui* confined to the proboscis.

Of special scientific interest appears to be Minchin and Thomson's discovery of intercellular stages of *T. lewisi* in the rat-flea. May it be the beginning of still further elucidation of what are as yet quite obscure developmental processes.

In general, at the present time, our theoretical knowledge shows grievous gaps. This is explained by the difficulty of the subject and by the natural desire of most active workers in the struggle against sleeping sickness to elucidate above all important practical points—namely, the mode of transmission, the heredity of the trypanosomes, etc.

The results of my experiments, which permitted a mechanical transmission of sleeping sickness and nagana as only exceptional occurrences, and excluded the hereditary transmission of the pathogenic trypanosomes in the fly, have been recognized since as correct, are beyond discussion. It is practically established that a fly which has once become infective remains so for the rest of its life. At the present time the solution of the question whether any species of trypanosome can be transmitted by any species of *Glossina* is important. The experiments of Bruce, Hamerton, Bateman, and Mackie, of Bouet and Roubaud, of Fischer, and others favour this view. Dr. Taute, at my suggestion, attempted to convey sleeping sickness on Tanganyika by means of *G. morsitans*, with the result that he succeeded in infecting the flies in a not inconsiderable percentage. Lately he has completed his investigations, in which he made use of eight different strains of human trypanosomiasis from the Tanganyika district. The transmission was always successful, also in the case of two strains which he had procured from monkeys from Lake Victoria. In opposition to these laboratory experiments stand the natural epidemiological conditions, in virtue of which sleeping sickness is bound up with the appearance of *G. palpalis*. The connexion appears to be, however, no longer quite insoluble, as in addition to those cases of sleeping sickness without *G. palpalis* in Nyasaland, now also a dozen cases are known in German territory in a district (on the Rovuma river) where only *G. morsitans* exists. It is not impossible, however, that sleeping sickness does not depend on the existence of *G. palpalis* to the extent that is believed, but that one only accidentally recognized the epidemic just at the moment when it was on the point of emigrating from West Africa with its fauna to East Africa.

III.—F. Mesnil,

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TRYPANOSOMA RHODESIENSE AND TRYPANOSOMA GAMBIENSE.

It is to a former worker at the Liverpool School of Tropical Medicine, the regretted Dutton, that we owe the discovery of the first human trypanosome, *T. gambiense*, rediscovered a year and a half later by Castellani and Bruce as the pathogenic agent of sleeping sickness. It was again from the Liverpool School of Tropical Medicine that the announcement was made that there exist in the English protectorates of Rhodesia and Nyasaland another human trypanosome, the *Trypanosoma rhodesiense* (Stephens and Fantham). Very generously the workers of Liverpool, through the intermediary of Dr. W. Yorke, have sent me in the spring of 1911 their new strain. It is an agreeable duty for me to thank them by sending for the congress which takes place in their city a brief summary of the facts that my collaborators, Drs. Ringenbach, M. Leger and M. Blanchard, of the Colonial Service, and I have been able to collect regarding the trypanosome of Rhodesia.

First, we confirmed the morphological facts on which Stephens and Fantham had based their species, and the pathological characteristics recorded by Yorke concerning the great virulence of *T. rhodesiense* in various mammals—namely, rats, mice, Macacus, goats, and sheep. Studies pursued in my laboratory on two races of *T. gambiense* during the last seven and four years respectively in the three first named species of mammals have further strongly confirmed the results obtained at Liverpool. One of the strains of *T. gambiense* is relatively virulent for these species of mammals. It was the one used by Yorke as the basis of comparison.

Granted the marked virulence of *T. rhodesiense* for a number of mammals, it seemed well to determine whether vertebrates regarded as refractory or little susceptible to *gambiense* would not be more easily infected by *T. rhodesiense*. From this point of view no difference could be found between the two human strains.

Cynocephalus is refractory to *T. rhodesiense*, also to *T. gambiense:* with either virus one obtains abortive infections in *Cercocebus fuliginosus* (Mesnil and Ringenbach). Pigs acquire with each virus a slow infection which terminates in recovery (Mesnil and Blanchard). Fowls, regarded up to the present as refractory to *gambiense*, acquire, after inoculation in the wattles, a scanty infection as regards the presence of trypanosomes—which can only be seen by inoculation into the blood of rats or by centrifuging the blood—but which leads generally to death in one to three months. On two occasions out of four there appeared conjunctivitis and keratitis. Our results with *T. rhodesiense* have been

quite comparable to the preceding results (Mesnil and Blanchard).

Since the researches of Laveran, *T. gambiense* has been regarded as refractory to human serum employed either as a preventive or a curative. The very marked action of the serum of *Cynocephalus* on *T. rhodesiense* has led Ringenbach and myself to suspect an action with human serum also, and we have discovered that this serum in doses of 1 c.cm. generally prevents infection in mice, or leads to quick recovery if infection occurs. This new property affords, in addition to the difference in virulence, a means of separating the two strains, and shows that the trypanosome of Rhodesia dehumanizes itself ("*se déshumanize*") quickly. Further researches have proved that *T. gambiense* can also "dehumanize" itself, becoming sensitive to human serum; such is the case at the present time with our strain (of *T. gambiense*) kept in the laboratory for the last seven years. Between the sensitiveness of this virus to human serum and that of *T. rhodesiense* there is an appreciable difference.

The experiments on active or passive cross immunity are among the best for the identification of trypanosomes. Regarding this question Ringenbach and I obtained the first results. We have used a *Macacus rhesus* having a solid immunity for *T. gambiense*. It became infected after inoculation with *T. rhodesiense*, but its infection was considerably slower than that of the control. This experiment has been followed by others which we owe to Professor Laveran, in which he this worker showed, *inter alia*, that a male goat immunized for *T. gambiense* could be infected with *T. rhodesiense*, just as could a female goat used for control; in fact, the former died several days before the latter.

It is clear that these results support the individuality of these two human species of trypanosome. It would be most interesting to complete the cross immunity experiments by inoculating an animal which had already acquired active immunity for *T. rhodesiense* with with *T. gambiense*. M. Leger and I have attempted this, as far as it is possible, by inoculating *T. gambiense* into mice which have recovered from an infection of *T. rhodesiense* after treatment with arsenophenylglycin. The delay in the controls attaining even complete recovery can only be interpreted, we think, as a proof of the relationship of the two strains.

Lastly, Ringenbach and I have been able to try cross experiments as regards protection, trypanolysis and attachment with the serums of Congolese sleeping sickness patients and animals showing a chronic infection with *T. gambiense* or *T. rhodesiense*. The majority of our results favour a differentiation of the two trypanosomes. Thus, the trypanolytic reaction, in general positive to the homologous trypanosome, is usually negative to the heterologous trypanosome. The reaction of attachment, when it is positive, is so usually only with the homologous trypanosome. The reaction of protection has given us conflicting results. Regarding sleeping-sickness serums, the reaction is difficult to carry out, especially with *T. rhodesiense*. One can attain it by using a strain which is refractory to normal human serum. We have seen thus in two cases that specific serum no longer acted. The serum of the *rhodesiense* goat, active to the homologous strain, was no longer so to the heterologous strain. On the other hand, Blanchard and I have found that the serums of the two pigs, mentioned before, protected equally well to the homologous or heterologous trypanosome.

Taking all these facts together it follows:

1. That there is a marked differentiation between the two human trypanosomes of Africa, and that the creation of a new species for the trypanosome of Rhodesia is rendered legitimate.

2. But that these two species are more closely allied to each other than any other two known species of trypanosome.

IV.—ALLAN KINGHORN and WARRINGTON YORKE, Luangwa Sleeping Sickness Commission, British South Africa Company.

TRYPANOSOMES INFECTING GAME AND DOMESTIC STOCK IN THE LUANGWA VALLEY, NORTH EASTERN RHODESIA.

WITHIN the confines of the Luangwa Valley a numerous and varied selection of game is found, but, doubtless due to the fact that *Glossina morsitans* is everywhere abundant, domestic stock is extremely scarce, and in many districts non-existent. Whilst cattle were found in one village only, a few dogs and goats were met with on several occasions.

Examination of Game.—In practice it was found that trypanosomes were more readily detected in a buck's blood by the examination of thin, stained smears, than by that of fresh preparations. Apart from isolated instances, several hours elapsed after an animal had been shot before its heart reached the laboratory, and this, together with the great heat, had a very deleterious effect on the parasites, destroying their motility, and permitting degenerative changes to occur. On the several occasions on which fresh preparations made under these conditions were examined in conjunction with thin blood films made in the field, and afterwards stained, no trypanosomes were found in the former, whilst they were recognized in the permanent stained preparations.

Owing to the impossibility of obtaining clean sheep and goats, all inoculations from game were made into monkeys and rats, the amount of blood used varying from 1 to 10 c.cm. That sheep and goats were not available was unfortunate, since these animals are susceptible to several trypanosomes—for example, *T. vivax* and *T. nanum*, which do not readily infect the smaller laboratory animals.

A total of 127 head of game, comprising 19 genera, were examined at Nawalia, and trypanosomes were found by direct examination, by inoculation, or by both methods, in 33, and by direct examination only in 26. The latter is a high figure for single observations, and it is probable that had several preparations from each buck been searched, the percentage of successes would have been much greater. Occasionally only a single parasite was found in a film covering the greater portion of a slide, and this after a very careful examination extending over two hours.

A more accurate estimate of the true percentage of game harbouring trypanosomes is afforded by considering only those from which inoculations were made. An analysis of these gives the following figures:

Number of inoculations made...	56
Number of positive inoculations in which parasites were found in buck's blood	8
Number of positive inoculations in which parasites were found in buck's blood... ...	7
Number of negative inoculations in which parasites were found in buck's blood	6
Total number found infected	21

These figures show that at least 37.5 per cent. of the local fauna were infected with trypanosomes. Both *T. vivax* and *T. nanum* were found by direct examination in buck's blood, and to both of these species monkeys, drawn rats are refractory, so that no conclusions can be drawn regarding the presence or absence of these parasites in animals in which trypanosomes were not detected in blood smears. Had sheep or goats been available for inoculation, it is probable that many more buck would have been found to be infected with the parasites in question. Even a really conservative estimate, the percentage of game actually infected with trypanosomes in the vicinity of Nawalia might be placed at 50.

In Table I is given the species of trypanosomes occurring in each animal in which parasites were found. In compiling the table, information obtained from the results of inoculations, where these were made, has been utilized. This enables a differentiation to be made between such species as *T. pecorum* and *T. nanum* which are morphologically indistinguishable. *T. vivax* has a characteristic morphology and can thus be identified in blood smears without difficulty.

As would be expected, double infections in game are not uncommon and several instances are recorded in the table. No data exist as to the ultimate effect of infection on game. All the animals which were shot appeared to be in perfect condition and presented no signs of disease. Whether or not buck succumb to trypanosomiasis it is impossible to state, but as they have steadily increased in numbers since rinderpest swept through the country, it may be assumed that their tolerance to trypanosomes is very great.

TABLE I.—*Trypanosomes Found in Game.*

Animal.		Trypanosomes Found in Peripheral Blood.	Trypanosomes Isolated by Inoculation into Monkeys and Rats.	Diagnosis.
Bushbuck	1	Negative	T. pecorum	T. pecorum.
,,	2	T. pecorum or T. nanum	Negative	T. nanum.
,,	3	T. sp.	T. sp.	T. sp.
,,	4	T. pecorum or T. nanum	No inoculation	T. pecorum or T. nanum.
,,	5	Negative	T. rhodesiense	T. rhodesiense.
,,	6	T. pecorum or T. nanum	No inoculation	T. pecorum or T. nanum.
Waterbuck	1	T. pecorum or T. nanum	T. pecorum	T. pecorum.
,,	2	T. pecorum or T. nanum	T. pecorum and T. rhodesiense	T. pecorum and T. rhodesiense.
,,	3	T. pecorum or T. nanum and T. vivax	Negative	T. nanum and T. vivax.
,,	4	T. pecorum or T. nanum	Negative	T. nanum.
,,	5	Negative	T. pecorum	T. pecorum.
,,	6	T. vivax	Negative	T. vivax.
,,	7	T. vivax	Negative	T. vivax.
,,	8	T. rhodesiense	T. rhodesiense	T. rhodesiense.
,,	9	T. pecorum or T. nanum and T. vivax	Negative	T. nanum and T. vivax.
,,	10	T. pecorum or T. nanum	No inoculation	T. pecorum or T. nanum.
,,	11	(?) T. rhodesiense	Animal died the day after inoculation	(?)T.rhodesiense.
,,	12	T. rhodesiense	T. rhodesiense and T. pecorum	T. rhodesiense and T. pecorum
,,	13	T. vivax	No inoculation	T. vivax.
,,	14	T. rhodesiense and T. vivax	T. rhodesiense	T. rhodesiense and T. vivax.
,,	15	T. vivax	No inoculation	T. vivax.
,,	16	(?) T. rhodesiense and T. vivax	No inoculation	(?) T.rhodesiense and T. vivax.
,,	17	(?) T rhodesiense	No inoculation	(?)T.rhodesiense.
Kudu	1	Negative	T. pecorum	T. pecorum.
,,	2	T. pecorum or T. nanum	No inoculation	T. pecorum or T. nanum.
,,	3	T. pecorum or T. nanum	T. pecorum	T. pecorum.
,,	4	T. pecorum or T. nanum	No inoculation	T. pecorum or T. nanum.
Roan	1	T. pecorum or T. nanum	No inoculation	T. pecorum or T. nanum.
Warthog	1	Negative	T. rhodesiense	T. rhodesiense.
Puku	1	T. vivax	No inoculation	T. vivax
Mpala	1	Negative	T. rhodesiense	T. rhodesiense.
,,	2	T. pecorum or T. nanum	T. pecorum and T. rhodesiense	T. pecorum and T. rhodesiense.
Hartebeeste	1	Negative	T. rhodesiense	T. rhodesiense.

Examination of Domestic Stock.—The domestic animals examined and the species of trypanosomes found in them are given in Table II.

TABLE II.—*Examination of Domestic Stock for Trypanosomes.*

Animal.	Trypanosomes Found in Peripheral Blood.	Trypanosomes Isolated by Inoculation into Monkeys and Rats.	Diagnosis.
Cow	T. pecorum or T. nanum	No inoculation	T. pecorum or T. nanum.
Cow	T. pecorum or T. nanum	Result not yet known	T. pecorum or T. nanum.
Goat No. 39 ...	T. vivax	Negative	T. vivax.
Goat No. 94 ...	T. vivax and T. nanum or T. pecorum	Negative	T. vivax and T. nanum.
Goat No. 202...	T. pecorum or T. nanum	Negative	T. nanum.
Goat No. 258...	T. vivax	Negative	T. vivax.
Dog	T. rhodesiense	T. rhodesiense	T. rhodesiense.
Dog	T. pecorum	T. pecorum	T. pecorum.
Dog	T. pecorum	No inoculation	T. pecorum.
Dog	T. pecorum	No inoculation	T. pecorum.
Dog	T. sp. (? montgomeryi)	Negative	T. sp (? montgomeryi).

The only native village in which cattle were found was Kambwiri's, some forty miles south-east of Nawalia. At present there are only three head, all that are left of a big herd which existed there some four or five years ago. Two of the three appeared to be in good condition when last seen, but the headman of the village fully expected to lose them within a few months. The third beast was obviously ill. The cow in which trypanosomes were found at Fort Jameson was bred on the Government farm and had never been beyond the limits of the township. Tsetse flies have not been seen within some miles of the place, but *Stomoxys* is abundant in the kraals, and at certain seasons of the year various species of *Tabanidae* are common.

In several of the villages on the main road from Nawalia to Fort Jameson a number of goats were found at the end of August, 1911, and again at the beginning of April, 1912, but at the end of that month not a single animal was alive. *Glossina morsitans* was found around all these villages. The four goats mentioned in Table II were under observation at Nawalia for a considerable length of time. During this period parasites were found in the peripheral blood only at rare intervals. Two were rather thin, but, apart from this, there were no signs of disease. Goat 258 was examined at frequent intervals for two months before parasites were first found, while in the others trypanosomes were found on the first occasion. Nos. 39 and 258, after having been under observation for nine and four months respectively, died on the road when the Commission left Nawalia, most probably from being overdriven. The other two are still alive, seven and four months after the diagnosis was made. The dog in which *T. rhodesiense* was found came from a village on the Nyasaland border. The natives said that it had not been out of the village for over a year previously. As the disease runs an extremely acute course in these animals, there can be no doubt that the dog was infected locally.

The following is a brief description of the various trypanosomes found in game and domestic stock:

1. *Trypanosoma rhodesiense.*—This organism was found in 4 waterbuck, 2 mpala, 1 hartebeeste, 1 bushbuck, and 1 warthog—16 per cent. of the game from which inoculations were made—and from 1 native dog. As the trypanosome has been dealt with fully in previous reports,[1] no further description is required.

2. *Trypanosoma vivax.*—This organism was found in 8 waterbuck, 1 puku, and 3 goats. It is a more or less club-shaped parasite with a long free flagellum. The greatest width is posterior to the nucleus, which is situated about the middle of the body. The blepharoplast is large and rounded, and lies close to the posterior extremity. The undulating membrane is feebly developed or absent. Mean length of 125 trypanosomes 23.3 μ, maximum 28.25 μ, minimum 19.75 μ. The greatest width varied from 2 to 4.25 μ, average 3.2 μ. The trypanosome was innocuous to monkeys, rabbits, and rats.

3. *Trypanosoma nanum.*—Found in the following animals: 1 bushbuck, 3 waterbuck, and 2 goats. Possibly it was also present in 2 other bushbuck, a fourth waterbuck, 2 kudu, a roan, and 2 cattle, but, as no subinoculations were made from these animals, it was impossible to differentiate the parasite from *T. pecorum*. It is a short aflagellar parasite, with a more or less rounded posterior extremity, from which the body tapers forward to the acute anterior end. Blepharoplast small, and terminal or latero-terminal. The mean length of 175 individuals was 14.4 μ, maximum 19 μ, minimum 10 μ. The breadth, at the level of the nucleus, varied from 1 to 2.25 μ, average 1.5 μ. Monkeys, rabbits, and rats were insusceptible.

4. *Trypanosoma pecorum.*—Found in the following animals: 1 bushbuck, 1 mpala, 4 waterbuck, 2 kudu, 3 dogs, and 1 wild rat. Possibly it was present in 2 other bushbuck, a fifth waterbuck, 2 other kudu, a roan, and two cattle, but, as mentioned previously, it could not be distinguished from *T. nanum* in the absence of subinoculations from these animals. The parasite is identical morphologically with *T. nanum*. Monkeys, rabbits, guinea-pigs, rats, and mice were readily infected with the trypanosome.

5. *Trypanosoma sp.*—This parasite, which has not yet been fully worked out, was isolated from one bushbuck. It is markedly polymorphic, exhibiting every gradation between extremely short, aflagellar forms indistinguishable from *T. pecorum*, and long, slender, free flagellated parasites closely resembling the corresponding forms of *T. brucei* or *T. gambiense*. The mean length of 525 individuals was 20 μ, maximum 35.25 μ, minimum 10.75 μ. The curve giving the percentages of the various lengths of the parasites encountered in an examination of 525 individuals differs unmistakably from that of *T. gambiense*. The apex of the curve occurs at 17 μ.

Monkeys, rabbits, and rats were infected, but the disease ran an exceedingly chronic course in all. One guinea-pig was inoculated with the trypanosome, but was refractory.

6. *Trypanosoma sp. (? montgomeryi).*—Found in one dog which came from a village on the Nyasaland border. At first sight

the parasite resembles *T. pecorum*, but on closer examination it is readily distinguished from this organism by its great breadth. The ratio of breadth to length is 1 to 4.8. The posterior extremity is rounded, the anterior attenuated. The greatest width lies at the level of the nucleus, or posterior to it. The blepharoplast is very large, and is situated near the posterior extremity. Frequently it lies at one edge of the trypanosome and projects laterally as a small excrescence. The undulating membrane is, as a rule, absent, and when present is simple and feebly developed. Occasionally a short free flagellum, 1 to 2 μ in length, is to be seen, but this is generally absent. The cytoplasm often contains coarse granules and vacuoles. The average length of 200 individuals was 15.88 μ, maximum 20 μ, minimum 10 μ. The breadth, at the level of the nucleus, varied from 1.25 to 6.5 μ, average 3.29 μ. One rat, subinoculated from the dog, had not become infected up to the thirteenth day, when it was accidentally killed. Unfortunately the dog died some days previously, so that the strain was lost.

It will be seen that, morphologically, this parasite differs widely from *T. pecorum*. The average length is greater, 15.88 μ as compared with 13.6 μ. The most characteristic difference, however, is the great breadth of the organism, which is, on an average, 2.2 times that of *T. pecorum*—average breadth 3.29 μ, as compared with 1.5 μ. It appears to resemble most closely the parasite described by Montgomery and Kinghorn[2] as the Ninamwenda, strain, and for which the name *Trypanosoma montgomeryi* was proposed by Laveran. But in view of the fact that we were able to examine material from one dog only, we cannot regard its identity with this parasite as established.

SUMMARY.

1. Trypanosomes are of frequent occurrence in game and domestic stock in the Luangwa Valley. At least 37.5 per cent. of the buck harbour parasites.

2. Six species of trypanosomes were found—namely, *T. rhodesiense*, *T. vivax*, *T. nanum*, *T. pecorum*, and two others, of which one was possibly *T. montgomeryi*.

3. *Glossina morsitans*, in nature, transmits two of these trypanosomes—namely, *T. rhodesiense* and *T. pecorum*, and probably also transmits at least two others—namely, *T. vivax* and *T. nanum*.

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A CONTRIBUTION TO THE PATHOLOGICAL HISTOLOGY OF TRYPANOSOMIASIS.

Introduction.

In this work we have endeavoured to ascertain the distribution of trypanosomes in tissues, and the factors concerned in the production of the lesions in trypanosomiasis. The generally negative results of work directed towards the artificial production of immune phenomena led us to believe that the relationship of the trypanosomes to the lesion must be a very direct one. The work was stimulated by the acquisition of a reliable technique for the demonstration of trypanosomes in tissues. The staining technique is modified from that published by Giemsa in 1910.[1] The important modification is a substitution of a 15 per cent. solution of colophonium in acetone for the xylol-acetone mixtures recommended by Giemsa for differentiation of the stained sections. With this change, and special care in securing perfect fixation, and sections of two microns in thickness, trypanosomes may be stained with the same regularity that the tissue elements are stained. The trypanosomes in skilful preparations show all structures including flagellum well stained.

The strains of trypanosomes used came from the Rockefeller Laboratory. They are *Trypanosoma gambiense* from the French Congo, and *Trypanosoma brucei* from Uganda. The results are based upon a study of twenty animals, including rats, guinea-pigs, and three *rhesus* monkeys. The lesions were studied in every instance in parallel sets of tissues fixed in Zenker's fluid and stained by the eosin-methylene blue method. Special stains, such as Mallory's connective tissue stain and phosphotungstic acid hematein stain, were employed on occasions. The last stain is especially useful in the recognition of young fibroblasts, as it stains the characteristic fibrils, which are not produced by endothelial cells.

Pathology.

We have been able to add practically nothing to the pathological history. The striking reaction in all organs is the endothelial cell proliferation, which has been described by many workers. A slight contribution is the demonstration of an intravascular proliferation of endothelial cells in lungs, liver, and kidneys, and subsequent fibrosis. The former process, we believe, demonstrates the source of the increase of large mononuclear cells in the blood in trypanosomiasis. The amount of endothelial cell proliferation in the lungs and kidneys may produce obliteration of the capillaries. In the case of the lungs there may be marked thickening of the alveolar walls and collapse of the alveoli in small foci throughout the lung. Giant cell production occurs, and occasionally alveoli are filled with giant cells. Ingrowth of connective tissue into the alveolar walls follows. In the kidney the condition might well be termed an intra-capillary glomerular nephritis. Here, also, fibrosis is an end result.

The production of external gross lesions in the guinea-pig with *Trypanosoma gambiense* has been observed in six instances and studied in three. These lesions are similar to those produced by other trypanosomes in guinea-pigs (*T. brucei*, *T. hippicum*) and by *Trypanosoma gambiense* and other trypanosomes in other animals. The lesions began as oedema of the eyelids, perineal region, and skin of the back. The oedematous tissues became brawny in consistence, there was loss of hair, and in some instances ulceration. The condition of the eyelids was accompanied by conjunctivitis.

The pathology of the skin lesions is interesting in that there are collections of endothelial cells and giant cells, rather like the lesions of kala-azar. The endothelial cells and giant cells contain remains of trypanosomes. The process affects the skin, subcutaneous tissues, including fat, and muscle panniculus. In each tissue the process is the same—oedema with a slight deposit of fibrin, infiltration with lymphoid cells, plasma cells, and endothelial cells, giant cell formation, and fibrosis. The proliferation of connective tissue cells is fairly rapid in the corium and in the subcutaneous fat.

Distribution of Trypanosomes in Tissues.

We feel warranted in making the following statements:

1. That trypanosomes leave the vessels and are found in the tissues of all organs, showing, however, a decided preference for connective tissue structures.

2. That the lesions of trypanosomiasis, including focal infiltrations in the parenchymatous organs, the infiltration of the meninges, perivascular infiltration in the brain and other organs, and the oedema and subsequent changes in the skin and underlying tissues, are due to the presence of the trypanosome in the affected tissue.

The preference of trypanosomes for connective tissue structures heightens the numerous analogies between trypanosomiasis and syphilis, in that the *S. pallida*, as far as is known, is found most abundantly in connective tissues (primary lesions, gummata, and lesions of blood vessel walls). In two monkeys infiltration of the meninges and perivascular infiltration in the brain were obtained. Trypanosomes were found in both locations in both monkeys. In the monkey that survived the longest, trypanosomes were numerous in both locations, and were found in numbers migrating through the substance of the brain.

Morphology of Trypanosomes in Tissues.

Wherever found, the majority of the trypanosomes have the typical flagellate form. Dividing forms can be recognized almost as easily as in blood films. Rounded forms are found in fair numbers, mostly within endothelial leucocytes. We have no evidence that these rounded forms are other than the remains of partially destroyed trypanosomes. We are certain, at least, that most of such forms go on to complete destruction, as is evidenced by the finding in endothelial leucocytes and giant cells of many inclusions of a chromatoid nature. Rarely forms have been encountered within phagocytes which were round or oval in shape, and consisted of a well-stained cytoplasm, nucleus, and blepharoblast. It is probable that such forms are viable.

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PAPERS DEALING WITH LEPROSY.

I.—Charles Duval, M.D.

THE ORGANISMS ISOLATED FROM THE LESION OF HUMAN LEPROSY.

Since the discovery by Hansen in 1872 of an acid-fast bacillus in the leprous lesion to which he ascribed an etiological rôle numerous investigators have reported success with its artificial cultivation. It may be stated, however, that prior to 1901 the cultures isolated and described by various investigators differed tinctorially and morphologically from the Hansen bacillus of the tissues, and, although many of these cultures were said to have induced experimental lesions similar to human leprosy and to have fulfilled other postulates, no one of them has been universally accepted as the specific organism of leprosy.

A review of the literature, together with a careful study of the cultures which have been isolated from the leprous lesion by different workers throughout the world, has convinced me that two, and possibly three, apparently different germs have been described as the causal agent of leprosy, namely: (1) A non acid-fast diphtheroid (Kedrowsky), (2) an acid-fast chromogenic bacillus (Clegg), (3) non-acid-fast and acid-fast interlacing and filamentous streptothrix (Rost and Williams), and (4) a permanently acid-fast bacillus, which *in vitro* maintains the morphology of the Hansen bacillus of the tissues, and grows under artificial conditions only in the presence of special nutrients (Duval).

Whether the various cultures reported as the Hansen bacillus represent the same or distinct species, some one of which is the real exciter of leprosy and the others simply extraneous or accidental commensals, is a problem which I have attempted to solve by a comparative study of the lesions induced experimentally, the behaviour of the cultures with respect to immune serums, and by other well known methods. Furthermore, I have gone back over some of the leprosy cases formerly studied by me to determine, if possible, which yield the types above mentioned. I have also attempted to establish an etiological rôle for some one of these cultures, to the exclusion of others, by means of serum reactions and histological differences in the experimentally induced lesion.

Kedrowsky in 1901 described an organism which he cultivated from the leprous lesion, and believed to be the specific bacillus of leprosy. This author described his culture as a non-acid-fast diphtheroid bacillus, which when injected into laboratory animals became acid-fast after a sojourn of weeks in the tissues. He advanced the theory that the acid-fast rods seen in human leprous lesions represent but a stage in the developmental cycle of a single pleomorphic species.

Deycke and Rost and Williams have since reported (1905) upon the successful cultivation from the leprous nodule of an organism similar to that of Kedrowsky, together with which they also found streptothrical forms and acid-fast rods.

More recently Bayon (1912) describes a non-acid-fast diphtheroid obtained from a leper which behaves in a like manner to Kedrowsky's culture—that is, the initial growth from the tissues is non-acid-fast and a diphtheroid until passed through rats, after which it permanently changes into a typical acid-fast bacillus. Like Rost and Williams, he also mentions streptothrical forms in his culture. He concludes that not only is his culture identical with Kedrowsky's, but also that it is the cause of human leprosy, basing his argument upon specific reactions obtained with human leper serum, and also upon the production of characteristic lesions in laboratory animals.

Clegg in 1909 announced his success in the cultivation of an acid-fast bacillus which he isolated from lesions in a large series of lepers in the Philippines. He reported that multiplication in each instance occurred in the transferred leprous tissue bits when planted with amœbæ and their symbionts. He subsequently obtained pure cultures of acid-fast organisms on the ordinary laboratory media as a moist profuse pigmented growth after heating at 60° C. for thirty minutes to kill out the symbionts.

Duval (1910) described a method by which the acid-fast bacilli in the leprous lesion could be cultivated *in vitro* without the use of symbionts. His culture differed from Clegg's in that it did not produce pigment, and refused to grow except upon special nutrients; however, subsequently many of his cultures became rapid growers and chromogenic.

Acid-fast cultures similar to Clegg's have been reported by Brinkerhoff and Currie in Honolulu, Rivas in Philadelphia, Thompson in Australia, Wellman in California, and other workers in Hawaii.

The work of Rost, Williams, Kedrowsky, Bayon, and others who have cultivated organisms other than acid-fast rods from leprous lesions, tends to show that the organism of leprosy is "an extremely pleomorphic streptothrix" which under certain circumstances may be: (1) A non-acid-fast streptothrix with interlacing filaments; (2) a non-acid-fast diphtheroid bacillus, which is in reality a streptothrix, and capable of becoming acid-fast under certain defined conditions; (3) a definite acid-fast filamentous streptothrix; and (4) an acid-fast bacillus which is the broken-down stage of a streptothrix.

Acid-fast and non-acid-fast filamentous forms I have also encountered in certain of the cultures which become chromogenic and rapid growers. These curious forms I regarded at the time as "involutions" or degenerations of the species. However, by plating and transplanting colonies from the Clegg type of culture, non-acid-fast streptothrices and acid-fast diphtheroids were recovered, and these are convertible into acid-fast rods by alterations in the reaction of the medium, etc. It is not necessary to pass the culture through an animal to bring about this change.

Branching non-acid-fast streptothrices I have never noted in any of the cultures, which so far are non-chromogenic and refuse to multiply except upon special media.

Since we may encounter in the leprous lesion an associated pleomorphic acid-fast organism which is capable of changing *in vitro* under defined conditions, it is easy to explain the bewildering number of "stages" for the supposedly cultivated Hansen bacillus of the writers above-mentioned.

I have attempted the cultivation of the Hansen bacillus from 29 cases of leprosy, and have succeeded in isolating an acid-fast bacillus from 22 of these cases. The chromogenic variety (Clegg) was recovered from 14 of these cases, while 8 yielded a non-chromogenic acid-fast bacillus, which thus far has refused to produce pigment or multiply on the ordinary laboratory media.

For many generations the subplants, both of the chromogenic and of the non-pigment producing forms, have each remained well within the variations of a species and have in general maintained pretty closely the morphology of the Hansen bacillus, as we know it, in the tissues.

In the 14 cases above-mentioned the acid-fast culture recovered eventually underwent a marked change in morphological and cultural features, after which it could be propagated upon the ordinary laboratory media. These cultures, which become chromogenic, correspond to Clegg's description of his original 7 isolations.

In the 8 cases referred to, the non-chromogenic culture, although behaving much as did the Clegg chromogenic bacillus for the first two or three months under artificial growth conditions, has refused to alter in a similar manner.

Since the chromogenic culture behaved much in the same manner during the first three or four months under artificial cultivation, I have looked for a similar change to occur eventually for this "slow-growing" strain. It would seem, however, that it will not do so, as the period of parasitism experienced by the cultures which subsequently became chromogenic and vegetative has long passed. The oldest culture of this slow-growing, non-chromogenic bacillus has now been under cultivation for more than a year, but has only attracted special attention the past nine months, because it is now more than fifty generations removed from the parent stem and still refuses to alter.

The initial multiplication of both the acid-fast strains referred to is accomplished with comparative ease, provided that the bits of leprous tissue transferred are treated in such a way that the protein moiety is split into its dissociate products.

This action upon the protein of the removed leprous

lesions may be accomplished in the following ways: (1) By seeding the tissue transplants with some one of the putrefactive bacteria or with any species capable of hydrolyzing the tissues; (2) by saturating the removed tissue bits with a 1 per cent. trypsinized albumen solution; (3) by transferring the leprous material directly to a medium containing the products of protein digestion.

With any of these methods the acid-fast bacilli in the removed lesions will multiply and continue to do so as long as these products are present, which, of course, is permanently in the case of the medium last mentioned.

To determine if possible whether gross or microscopic differences exist for the experimental lesion induced by the varieties of acid-fast bacilli which have been isolated and cultivated from the human leprous lesion, or whether the experimental lesions induced with any strain is similar to the human lesion or to those produced by the well-known saprophytic acid-fast species, rabbits, guinea-pigs, and rats were injected with graduated doses of the following cultures—namely, five chromogenic leprosy cultures (Clegg, Duval, Brinkerhoff, Currie, Bayon respectively), the non-chromogenic slow-growing lepra culture (Duval), and two representative saprophytic species (Moeller's grass bacillus and the bacillus of timothy hay).

In general it may be stated that macroscopically the lesions produced in these animals do not differ greatly for any of the species employed, unless it be that the chromogenic culture produces lesions which appear earlier and are more localized. The lung usually shows the most extensive changes in the form of greyish-white discrete foci, which are indistinguishable from miliary tubercles, except possibly by the absence of necrosis. Microscopically the cell picture, or relation of the bacilli with respect to the cells, is not sufficiently distinctive of any culture to warrant more than a tentative differentiation.

In other words, the experimental lesion in these animals affords no absolute differentiation for any strain or species of acid-fast organism, excluding, of course, the tubercle family. Lesions are as readily induced experimentally with some of the well known saprophytic species as they are induced with either the infested leprous tissue or with the lepra culture.

To determine, if possible, a relationship between the acid-fast chromogen, the non-chromogenic acid-fast and the saprophytic chromogenic species, a series of rabbits were immunized with the respective cultures and a comparative study carried out upon the immune serums for the detection of specific antibodies. Realizing the difficulty of immunizing against the acid-fast group, the animals were subjected to a long period of treatment, administering large doses intravenously at weekly intervals over a period of three months.

In addition the blood from a series of twenty cases of leprosy was also tested for specific antibodies, to determine if possible a specificity for any given culture isolated from the same case or from other cases of leprosy. In performing these serum tests the agglutination reaction and complement binding tests, using a culture of antigen, were employed.

The serological tests with the blood of lepers has not established an etiological rôle for any type of acid-fast organism recovered from the leprous lesion. The agglutination reaction with the lepers' blood rarely gives a positive reaction in dilution of 1 in 50 with the separated Hansen bacilli obtained from the human nodule, while in the majority of cases a reaction is not obtained above a dilution of 1 in 10. On the other hand, many of the tubercle family and the acid-fast saprophytes react equally as well and not infrequently in higher dilutions. The Wassermann reaction with culture antigen utterly fails to show anything specific for the various cultures in so far as the human serum is concerned.

However, the serum reaction of animals immunized against the various acid-fast species has served to separate into three distinct groups the Clegg chromogenic culture of leprosy (Group I), the Duval non-chromogenic culture of leprosy (Group II), and the chromogenic saprophytic acid-fast species (Group III). The reactions with specific immune serums establish the fact that there is a difference between the non-chromogenic and the chromogenic leprosy cultures. Furthermore, the serum reaction indicates no relation between these two strains and no relation of either to any known saprophytic species. It is hard to explain the occurrence in leprous lesions of this chromogenic acid-fast (Clegg), which, in my experience with cases in Louisiana, is encountered more frequently than the non-chromogenic variety. This may possibly be explained by our present imperfect methods of cultivation. Curiously enough, the chromogenic type, if we are to regard it as an extraneous organism, is always the same variety—that is, a moist, rapidly growing pleomorphic bacillus when once it becomes accustomed to an artificial environment. I have compared the original cultures of Clegg with those isolated independently in other parts of the world, and find them, except for inconstant differences, identical. That this chromogenic strain can be recovered from the lesions of certain types of leprosy there can be no doubt, and that, too, in the lesions where the overlying skin is apparently intact as well as from the internal organs at autopsy.

It is interesting to note that the Clegg leprosy strain undergoes at times the most marked change in tinctorial and morphological features. It is relatively easy to obtain from this culture a non-acid-fast diphtheroid, non-acid-fast streptothrix and a diplococcoid acid-fast type. This wide variation in morphology and difference in staining reaction might possibly account for the non-acid-fast diphtheroid and streptothrical "stages" described by European authors.

In the entire series of cases from which I have attempted the cultivation of the Hansen bacillus I have failed to note the non-acid-fast diphtheroid stage for the Hansen bacillus which has been described by Babes, Bordoni-Uffreduzzi, Kedrowsky, and others, except in so far as the transitory changes in the Clegg culture above mentioned may be thus interpreted.

So far as the non-chromogenic, slow-growing bacillus is concerned, I believe it deserves careful attention. In cultures it is always acid-fast, and usually occurs as long beaded rods.

The presence of the chromogenic Clegg bacillus in the tissues of human lepers, together with the fact that disseminated lesions may be induced that are histologically like human leprosy, led me in a former publication to conclude that the chromogenic strain played an etiological rôle in the disease. In going back over some of the preparations from the animals employed I find them to contain the long beaded acid-fast rods in dense masses, and also many more scattered bacilli which are shorter and less beaded (Clegg bacillus). These findings were described previously by me as indicating a transformation of the long, slender beaded rods to diplococcoid forms, but by replating on a special medium I find that the culture is in reality mixed, containing both strains, so that it is impossible to say without further work just what part the two types played in the production of lesions in the monkey. This view has been greatly strengthened by recent results obtained by replating upon special medium the culture from the original triptophane fish agar formerly described by me. I find that in this culture the two varieties exist; therefore it is not improbable that the subplants of the earlier isolations upon amino-acid medium would also yield both types.

Summary and Conclusions.

There may be cultivated from the leprous lesion two types of acid-fast bacilli which have distinct characteristics: one an organism which after it has become accustomed to a saprophytic existence produces pigment and becomes extremely pleomorphic; the other a bacillus growing slowly and only upon special media, retaining its tinctorial and morphological character throughout the period in which it has been under observation (two years).

The strain which subsequently becomes a rapid grower and chromogenic shows a wide variation in morphology and in its ability to retain the stain when subjected to decolorizing agents. At times and under certain conditions the individual bacilli are diphtheroid, streptothrical, and non-acid-fast. The slow-growing non-chromogenic culture is always acid-fast, and can be sharply differentiated from the chromogenic culture by its growth features.

The animal experiments undertaken for the purpose of differentiating the acid-fast organisms recovered from the human leprous lesion, and to fix their etiological status are not regarded as conclusive. The serological tests, especially those performed with highly immune serums, are

of some value, and suggest that the leprosy bacillus of Clegg is not closely related to the saprophytic acid-fast chromogens, and that the non-chromogenic slow-growing culture from leprosy is different both from Clegg's isolation and from all known species of acid-fast bacilli.

The role played by the chromogenic bacillus of Clegg in the production of leprosy is as yet an unsettled question.

The non-chromogenic strain, while behaving according to most of our notions regarding a pathogenic organism, has likewise not up to the present been proven to be the cause of leprosy, although I am impressed with the probability of such a rôle being eventually attributed to it, and consider that it deserves more serious attention than any strain so far cultivated from the human leprous lesion.

The wide variation in morphology and staining reaction for certain cultures recovered from the human leprous lesion which subsequently become rapid growers and chromogenic, might account for the views of Kedrowsky, Rost, Williams, Bayon, and others, that *B. leprae* is a bacterium of such pleomorphism that it can be recognized as a non-acid fast diphtheroid, or streptothrix, and as an acid-fast bacillus.

II.—Dr. M. E. Marchoux,

Paris.

THE PROBLEM OF LEPROSY.

Are we in Europe threatened by an active recrudescence of leprosy? He would be a daring person who would venture to assert this. The relations between home countries and their colonies where leprosy exists are always growing more and more intimate. Increasing numbers of different nationalities carry it back into their own countries. Large numbers of foreigners—rich, or also sometimes very poor—some of whom are infective, visit our capitals and take up their residence in them. These are all causes of diffusion of an infectious malady which, in the Middle Ages, was only caused to disappear with very great trouble. We are less well equipped now than they were in those days to fight against it. Compulsory segregation of the diseased would no longer at the present day be accepted, nor acceptable. Science has not hitherto given us any new and humane prophylactic. The obscurity which surrounds the etiology of leprosy has not yet been dissipated. The reason of that is that laboratory animals are not susceptible to infection by the bacillus of Hansen, of which man possesses the sad privilege of being the only host.

In the hope of elucidating certain of the problems which this question raises, I have for several years, alone and with my collaborator, M. Sorel, given great attention to the study of a disease of the rat which presents a remarkable resemblance to leprosy. This disease, discovered at Odessa by Stefansky, has been met with throughout the world. Like leprosy, it is caused by a bacillus, acid and alcohol resistant, which is, up to now, apparently not cultivable *in vitro*. Like the bacillus of Hansen, this germ multiplies in the rat with great abundance, remains intracellular, and does not appear to be toxic for the migratory cells which harbour it. It causes formation of nodules, intracutaneous and subcutaneous, glandular and intramuscular. The compression exercised by these tumours brings on atrophy of the hair follicles with production of patches of alopecia, of the epidermal cells with the formation of ulcers where the bacilli swarm, of the muscular cells with the appearance of resultant functional weakness. Although the bacillus of Stefansky, like that of Hansen, lives chiefly under the skin and in the connective tissue, it is also met with in the lungs and the other viscera, in the nervous system, and in the bones. As in the case of the bacillus of leprosy, its rapid multiplication does not cause death, and animals succumb to a secondary infection.

These two bacilli, which have so many points in common, and which cause two diseases so similar, are different, but they appear to form two varieties of the same species as closely related the one to the other as may be human and avian tubercle. It does not seem, then, illusory to try by the study of one of them to attain a more profound knowledge of the other. The bacillus of Stefansky (*Mycobacterium leprae murium*) is not resistant to desiccation, and is killed by heating to 60° for more than five minutes. It is inoculable into the grey rats and white rats of the laboratory, which prove themselves at least equally susceptible—a fact which George Dean has recognised for a long time. But what one did not know was the facility with which this inoculation can be made; it suffices in order that they may penetrate into the organism to place the bacilli of scarification on the epidermis, or even simply on the skin newly shaved.

One can reproduce experimentally the two forms of the spontaneous disease. The first, limited to the superficial glands, which is the most common variety in the case of the sewer rat (*Mus norvegicus*), is that which one produces in the greater number of cases. The second (musculocutaneous), which is clinically similar to human leprosy, is rare in nature. One can produce it by impure inoculations. It seems due to the simultaneous action of the bacillus of Stefansky, and of certain infective organisms of a secondary nature which favour its diffusion. The fact is that in leprous rats this secondary infection is constantly met with. Insects, and other arthropod parasites, never appear to play any rôle in the transmission of the disease. In fact, bites are the usual ports of entry for germs, as the appearance of little nodules upon recent wounds show. The infection of the bites is easily accounted for by the intimate contact in which rats ordinarily live.

Perhaps, in the case of man, infection by contact is as easy as in the case of the rat, but one does not recognize it because nothing betrays it. Perhaps there are many carriers of the bacillus of Hansen without obvious signs of leprosy. The germs might remain localized in one part of the organism, probably in one or several glands, and might not leave them to become generalized in certain individuals, except in the presence of a secondary infection or bodily decay. In other words, there might be more lepers than one thinks, but in the majority the disease might not be revealed except at the autopsy. Thus might be explained the curious statistical observation of Sand, who is astonished to see that only 10 per cent. of children born of mothers who are lepers become themselves leprous. This might be explained by the long incubation periods and the persistence of the infection in a single family. These are only hypotheses suggested by the study of the disease of the rat, but they appear to me to merit the attention of leprologists who live in countries where leprosy exists.

III.—H. Bayon, M.D.,

Beit Memorial Research Student, the Lister Institute.

A COMPARATIVE EXPERIMENTAL STUDY OF THE LEPROSY CULTURES OF CLEGG, DUVAL, KEDROWSKY, ROST, AND WILLIAMS.

Before proceeding to explain the specimens being demonstrated I am glad to be able to state that the work carried out during the past twelve months only enables me to confirm and amplify the conclusions of my preliminary communication to this section last year.

The only point I have to modify is that which regards the sporadic cases of leprosy in persons who had never left this country. On careful investigation it was found that in one case where the patient denied having been abroad the statement was untruthful. In another case the father and mother and also the grandmother on the maternal side had been lepers, and the boy who contracted leprosy had lived with them when their disease was already in an advanced stage. It was, therefore, not possible to prove an infection through rats in these cases, though I still consider the transmission of infection from rat to man as theoretically possible.

I should like to make a special point of the fact, if I may, that this is above all a demonstration, and that the paper I am reading is mainly explanatory.

I have endeavoured to substantiate all the statements made in this communication by microscopical sections, the number of which has only been limited by the microscopes at my disposal.

The conclusions I have now arrived at, over and above those set forth in my previous paper, are the following:

1. Histological, serological, and clinical evidence lead us to believe that the organism of leprosy is a slowly

multiplying, very slightly toxic bacterium, closely allied to the so-called "tubercle" group, but in so far distinguishable from it by not being artificially cultivable as an acid-fast rod on the ordinary media which are made use of to isolate the tubercle "bacillus," and, moreover, in not being pathogenic for guinea-pigs to the extent that human, bovine or avian tubercle are.

2. Rapidly growing, more or less acid-proof saprophytes are ubiquitous, so that even the repeated cultivation of such from cases of leprosy by no means proves their relationship to the disease in man. Much further identification is required in order to ascertain their true significance.

3. With the exception of Kedrowsky's, no leprosy culture has been, so far, sufficiently identified to enable the statement to be made that its properties and appearance are identical with those of the morphological entity called Hansen's "bacillus," because only Kedrowsky's and the author's cultures have produced lesions in animals absolutely identical with those found in leprosy of the human being and rats.

4. The author's cultural and animal experiments lead him to believe that Kedrowsky's culture is true leprosy, and that Kedrowsky's views of the varying morphology and staining properties of this organism in artificial cultures are correct.

5. Other cultures appear to belong to the group of acid-proof, chromogenic, rapidly growing saprophytes, such as have been found in butter, milk, grass, smegma, urine, lung, earth, etc. Their relationship to leprosy is not clear.

6. Generalized leprous lesions—that is, metastasis in the internal organs—have been produced in rats by the intratesticular injection of the abdominal glands of a rat which has been injected, also intratesticularly, with the ground-up nodules of a leper.

7. A culture from a case of rat lepra has been so far identified as to enable the assertion to be made that it is a pure culture of the organism causing the disease in rats. This culture appears to the naked eye, in its microscopical morphology and staining reactions, very similar to the strain isolated from a leper.

The histological evidence that leprosy does not only attack the skin, but in advanced cases also causes visceral lesions not at all dissimilar in parts to what is seen in tuberculosis, is a fact well known to those who have had occasion to carry out a sufficient number of autopsies of lepers. A review of the subject has been given by Schaffer and also Kedrowsky, who have shown that under certain circumstances giant cells very similar to those of the Langhans type may occur in lepromata, and that sometimes the resemblance between a leprous affection and tuberculous disease can be so complete that only experiments with guinea-pigs enable the distinction to be made.

Lepers are known to react with tuberculin in a similar fashion to tuberculous patients. For further information on the subject I can but refer to the work of Brinckerhoff and the paper of Babes in *Lepra*, 1910, p. 322. Clinically the disease is similar in many points to tuberculosis because of its long incubation, its slow progress, its intractability by any of the drugs known so far.

The similarity of the morphology and staining properties of Koch's and Hansen's "bacillus" is too well known to require repetition. All these observations lead us to believe that the culture of leprosy, or, more exactly, of Hansen's "bacillus," must belong to the so-called "tubercle" group.

If we consider how "leprous" lesions can be imitated under certain circumstances by avian tubercle when injected into fowls and guinea pigs, we may expect the culture to be similar to avian tubercle. Such microscopical specimens have been published in the last report of the Tuberculosis Commission.

In any case, as said before, it clearly belongs to the "tubercle" group, which consists of human, bovine, and avian tuberculosis.

Quite a different group of organisms altogether, especially as far as their cultural characteristics and pathology for animals are concerned, is formed by the extremely ubiquitous more or less acid-proof saprophytic bacteria, which are exemplified by the *B. smegmae*, *B. phlei*, the numerous acid-fast rods isolated from butter, milk, grass, nasal discharge, urine, dung, earth, etc., by Rabinowitsch, Lombardo Pellegrino, Binot, Nabarro, Korn, Grassberger, Marpmann, Moeller, Karlinski, Kersten, and others. To the same group belong no doubt the acid-fast bacteria to be found in tap water, and which I have found to possess definite acid-resisting filamentary branching forms, which break up into acid-fast rods. This organism appears to be the one observed by Brem, Beitzke, Schern, and Dold.

The outstanding feature of this latter group is the capacity for growing easily at room temperature on any of the usual laboratory media such as common agar-agar or gelatine. They are non-pathogenic for guinea-pigs in small doses or if injected alone. If injected intraperitoneally in sufficient quantity into guinea-pigs together with butter or fat they are capable of producing nodules on the peritoneal surface not at all dissimilar to what can be seen after injection of human tubercle, and at times the distinction may present difficulties. If injected intravenously in great quantity they may produce caseating nodules in various internal organs, which under certain circumstances may contain an enormous quantity of acid-fast rods, which possibly are only deposits of the organisms injected.

These organisms are generally easily regained in pure culture from the animals into which they have been injected, but though the growth can be very slow for the first generations, gradually it gets more and more rapid till practically all can be made to show a definite growth after three days, on common agar at 37°. Even a fortnight may elapse before the first colonies appear.

The bacteria of this group frequently produce a brilliant yellow or red pigment of varying intensity according to the media they are grown on. Some are almost constantly milky white, such as *B. smegmae*, Karlinski's "nose-bacillus," Moeller's "grass bacillus." A dry, white growth such as Marpmann's acid-fast organism from urine may turn moist yellow and at other times take on a reddish hue, so that it is difficult to make use of pigmentation or similar features as a means of distinguishing one growth from another.

The whole group, therefore, can be roughly differentiated from the family of "tubercle bacilli" of warm blooded animals, from which we must except Hansen's bacillus, by its not being pathogenic for guinea-pigs in small quantities and in growing easily at room temperature on gelatine.

Having approached the problem of leprosy as an investigator with the definite purpose of comparing the claims of different cultures which had lately been published by various authors, I soon found it necessary to compare the behaviour of this large group of acid-fast organisms with that of human, bovine, and avian tubercle cultures from various sources, any leprosy cultures I succeeded in getting being only considered from the standpoint of confirmatory evidence. Once it had been settled which of the many cultures was really Hansen's "bacillus," I could then proceed to identify my strain. This work has been extremely slow in progressing, and I must acknowledge with gratitude the help that has unstintingly been given me by the Lister Institute and staff, and also by my co-worker, Dr. J. M. Martinez of Santamaria Bogota.

The long incubation of directly inoculated leprosy enables me to demonstrate only the second generation of directly transmitted leprosy in rats. The third generation is still under observation, and I do not wish to kill the rat till several months have elapsed.

The following lepra cultures have been extensively tested on animals experimentally: Kedrowsky's strain from Moscow, Duval's culture from New Orleans, Rost's Indian strain, the author's culture from rat leprosy. I have also Clegg's culture, but unluckily was unable to procure Williams's strain, which, however, is considered to be identical to Rost's culture, and appears to belong to the same group of rapid-growing organisms. From personal communication of the author and from Captain Williams's papers on the subject, I see, however, that it is practically non pathogenic for animals, and admittedly has so far produced no "leprous" lesions in the animals injected with it.

These cultures have now been injected into monkeys, rabbits, guinea-pigs, rats, mice, fowls, and pigeons. The animals were killed at times varying from twenty-four hours to seven months. In no animal, with the exception of a certain proportion of those that had been injected with Kedrowsky's culture and with the culture from human and rat leprosy, were lesions produced which could

fairly be considered similar to those occurring in human or rat lepra. The lesions produced by Duval's and Rost's strain would successfully be imitated by intravenous injection into rabbits, or intraperitoneal injection into rats, of large quantities of saprophytic organisms such as Moeller's dung "bacillus" or Grassberger's acid-fast from milk.

This is certainly an apparently sweeping statement; the proofs of my assertion are, however, under the microscopes. You will see that, whether you inject Kedrowsky's culture, the culture I have isolated from a leper in London, the ground-up leprous nodules from human beings or rats, or the organism isolated from rat lepra, you find the same outstanding features in the resulting lesions—an overwhelming quantity of acid-fast rods, to the extent that the whole field of vision may appear to be one mass of acid-fast ruby-red "bacilli," together with a minimal reactive tissue proliferation, hardly any giant cells similar to the true Langhans type as seen in tuberculous lesions, no caseation necrosis, or sclerosis of the vessels.

These are the typical features of the "leprous lesion," and as such they are described by MacLeod in his "Survey on the Present State of our Knowledge of the Bacteriology and Pathological Anatomy of Leprosy," *Lepra*, 1910, iii, 309.

What are the changes brought about by the injection of Duval's strain into animals? Extensive necrosis, production of giant cells of the Langhans type with a necrotic centre, scarcely any acid-fast rods to be detected—in a few words, all the histological features that can be produced by acid-fast saprophytic germs of the timothy grass group. At no time is Duval's organism identical in morphology with Hansen's "bacillus," though at times it resembles it to a certain extent.

Rost's germ is practically non-pathogenic for animals. To produce lesions you must repeatedly inject big quantities or several culture slopes at a time. The resulting lesions show very few acid-fast rods, not at all morphologically similar to Hansen's "bacillus," some caseation, and a copious round-cell infiltration.

Serologically—that is, by means of complement absorption or by agglutination—both these germs react with leprous serums in the same dilutions as the majority of the saprophytic acid-fast and acid-resisting bacteria.

Rost's germ has not been often cultivated, but it still remains to be explained how Duval succeeded in getting, time after time, from the internal organs of his cases an organism that is clearly only distantly related to leprosy and certainly unable to produce any leprous lesions in animals; at least, in the sections kindly sent me by Duval leprous lesions could not be recognized by authorities on the subject such as Dr. MacLeod in London, Professor Jadassohn of Bern, Professor Marchoux in Paris.

Regarding the differentiation of acid-fast organisms by means of various serological methods, such as agglutination, precipitation, and complement absorption, it is known that Duval considers it impossible to carry out these experiments satisfactorily with the serum of lepers. It is quite true that the serum of many lepers reacts very feebly indeed with any acid-fast organism, including the cultures I believe to be genuine leprosy. It so happened that the serum I tested first was the most efficient from this standpoint; none of the others that I examined later showed such marked reactions. But even here, though the titre in relation to Kedrowsky's strain may have been low it was absolutely negative in relation to Duval and Rost's strains. I have published the results of some of my complement absorption experiments, and can but repeat that my results confirm on the whole those of Much and his co-workers, and do not in any way agree with Duval's agglutination tests, so that in this case, whilst awaiting confirmation from an independent source, I have resolved to repeat my experiments on a bigger scale with a great number of leper serums. This I have not been able to do so far.

I can only state once more that by gradually diluting in constant proportions the serum and antigen, moreover by suitably preparing and titrating the antigens, one can, as is to be expected, differentiate with appropriate serums leprosy from tubercle, but not Duval's or Rost's strain from Moeller's dung "bacillus" or Grassberger's organism from milk.

It may also be noted that Dr. Ledingham, of the Lister Institute, has carried out several tropin content determinations with leper serums linked against Duval's and Kedrowsky's strain of leprosy. Duval's strain was not taken up specifically by the leucocytes employed in the presence of inactivated leper serum, whilst on several occasions a very high tropin content could be shown to exist in the serum of certain cases of leprosy when tested against Kedrowsky's culture.

I have no difficulty in admitting that these experiments require repetition on a larger scale; but in the meanwhile it remains an undeniable fact that leprous lesions have been produced in rats and mice by injection of cultures regained from men and rats affected with lepra, as the specimens shown clearly demonstrate. Moreover, that so far no lesions similar to those occurring in human beings have been produced either by Rost's or Duval's culture, so that definite and conclusive serological or experimental proof must be awaited before considering them as cultures of Hansen's "bacillus."

Turning now to the question of the communicability of leprosy to animals, I have been able to persuade myself that it is possible to transmit the disease directly to rats from the human being by injecting ground-up lepromata into the testes. The incubation is exceedingly long and in many cases the lesions are only localized. Since publishing my last paper on the subject in the BRITISH MEDICAL JOURNAL of February 24th, 1912, I have been able to produce in the second generation definite leprous lesions in the spleen, liver, and lymphatic glands of the rat injected, as you will see in the specimens placed under the microscope for your inspection.

In the first instance the localized lesions took four months to develop; the second rat, injected with a lymphatic gland from the first animal, was killed six months after inoculation, and showed great numbers of acid-fast rods in the viscera, which I am now demonstrating. I have no doubt that a multiplication of the "bacilli," though doubtful in the first instance, did take place in the second generation. Culture attempts were unsuccessful.

In a demonstration held before the Society of Tropical Medicine and Hygiene on February 15th, 1912, I announced with Dr. Martinez the culture of an acid-fast rod from a case of rat leprosy. At the time I was not able to give a description of the fish-juice-agar used in the isolation of the organism, owing to the short time at my disposal. I do so now, remarking, however, that though I consider the medium to be quite good for the isolation and culture of most acid-fast organisms, still I do not believe that it can enable us to guarantee a culture in all cases of rat leprosy. The culture on artificial media is a result depending on some factor connected with a special stage or condition in the developmental cycle of the filamentary, branching organism, which I consider to be the parent form of the "bacillus" of rat leprosy, as I also consider a filamentary, branching, non-acid-fast organism to be the parent form of Hansen's "bacillus."

The fish-juice-agar is prepared in the following fashion: Mackerel, cod, or bream are carefully cut up in a meat-chopper and mixed with an equal quantity of sterile distilled water. This mash is placed to freeze hard in the refrigerating room, and next day rapidly thawed. The liquid is separated from the solid matter by first straining it through a thick cloth, after which it is further cleared by passing through a paper filter, vacuum being used to hasten the process. A Berkefeld and a Doulton filter are linked up tandem fashion, and the resulting liquid is caught in a sterile flask, kept twenty-fours at 37° to detect any contamination, and filled into test tubes with an equal quantity of 4 per cent. glycerine agar, which has been liquefied and then allowed to cool down to 42–45° C. Contamination must be carefully avoided, as the slopes may not be sterilized or heated after mixing. It is necessary to go quickly through all stages of filtration after thawing, as decomposition is very rapid.

The rat leprosy nodules are thickly smeared over a good number of tubes; I have often used as many as fifty at a time.

Though our rat leprosy culture has now been artificially cultivated for months, it still has not adapted itself to artificial conditions of life so as to grow in a shorter space

than two or three weeks at the very least, showing, therefore, that it does not belong to the "saprophytic" group. It only thrives so far on the media that grow tubercle, and shows no growth at room temperature or on gelatine. As you see, it is also a milky-white, absolutely non-pigmented moist growth, very similar to avian tubercle, but non-pathogenic for fowls even in big doses, half a slope or more.

To produce lesions in a guinea-pig one has to inject a slope or more; in small quantities, up to ten loopfuls, it appears to be non-pathogenic. Injected into rats it has caused so far the identical glandular and visceral lesions which are caused by the intraperitoneal injection of ground-up nodules of spontaneous rat leprosy. These slides show that the organism has been identified, and I am now proceeding in my attempts to regain this bacterium from the animals infected—an experiment which has not succeeded so far.

Also in this point the similarity with human leprosy is striking,* so that I still hold that the rat disease and the human disease, if not identical, are as closely allied as human and bovine tuberculosis are.

A point in connexion with human and rat leprosy which I have not investigated during the past year is the question of an eventual transmission of the disease through arthropods. So little is known about the bionomics of Hansen's "bacillus" and the "bacillus" of lepra murium, that it is premature, to say the very least, to decide whether the presence of a few acid-fast rods in any arthropod, be it a bug, mosquito, fly, flea, or louse, has any connexion in the spread of leprosy, especially as we do not know, nor have means of proving, whether the acid-fast organism seen under the microscope is really Hansen's "bacilius" or a simple ubiquitous saprophyte, moreover whether it is dead or alive, and capable of multiplying and infecting. It is quite possible that the non-acid-fast stages of the germ of leprosy are the only ones capable of infecting in small numbers.

Regarding treatment I am awaiting the results of the injections with bacterial extract, made on the same lines as Koch's old tuberculin from one of Kedrowsky's cultures. This substance gives a definite, typical rise of temperature within twenty-four hours in the three nodular cases I have injected with 1 c.cm. of the extract. I do not know if it has any therapeutic value; in any case I do not expect it to produce any conclusive results till many years have passed, during which the patients have been under close observation. I believe that we cannot hope for any cure under the time that the disease has taken to develop, which in the majority of cases is a period extending over many years.

To show that I am quite aware of the pitfalls attending therapeutic efforts in connexion with leprosy, I am projecting a series of photographs which I owe to the kindness of Dr. George Turner, showing the remarkable improvement which took place in a young girl leper who had not undergone any treatment whatever during this time. Later on the disease again took a progressive course.

The acid-fast rods found in leprous lesions are so quiescent in the tissues, moreover resist disintegration through the protective substances of the animal body and tissue reactions, that I am unable to expect much from what is called "vaccine" (killed cultures) treatment.

My conclusions are, in a few words, the following:

1. Only Kedrowsky's culture and similar or identical strains, such as Bayon's, have produced on injection leprous lesions in animals.

2. Duval's and Rost's strains do not cause any leprous lesions in animals. Their cultural behaviour is that of saprophytic organisms. The same applies to Clegg's culture.

3. The direct transmission of leprosy from man to rats has succeeded in the second generation.

4. A culture from a case of rat leprosy has produced on injection into rats identical glandular and visceral lesions to those found in the spontaneous disease.

5. A bacterial extract prepared from the culture isolated from lepers gives a specific rise of temperature, but cases have not been observed long enough to enable any conclusions to be drawn as to its therapeutic value.

DISCUSSION.

Professor GEORGE DEAN (Aberdeen) remarked that the present state of affairs in regard to cultures derived from cases of leprosy was unsatisfactory, there being a large number of workers, each of whom appeared to think that his, and his organism only, was the true cause of leprosy. The investigation of the subject from the side of rat leprosy might prove of value. The lesions of the spleen and other viscera which Bayon had shown, produced by the injection of his pure culture from rat leprosy, were identical with those which he (Dr. Dean) obtained by injection of material from spontaneous leprosy of the rat, and had all the histological characters of human leprosy. After seeing Bayon's serological tests, it was difficult to accept Duval's chromogenic organism as the cause of leprosy. The free growth on ordinary media at low temperature, and its morphology, did not suggest to him that it was the leprosy bacillus. No dogmatic position, however, should be adopted till much more work was done on the subject. A free interchange of cultures by different workers was highly desirable at the present stage of the subject. Though the subject had been to many a very disappointing one, the present time seemed very hopeful, from the large number of workers in the field and the widespread interest in the subject.

Dr. E. P. MINETT (British Guiana) said that in British Guiana laboratories their cultures always contained acid-fast bacilli and cocci and never streptothrix. The results of injection into rats, guinea-pigs, rabbits, and monkeys with Williams's and their own cultures were invariably negative. So far also they had found that treatment with vaccine and with nastin and benzoyl chloride was without result. He confirmed Dr. Bayon's observation as to the self cure of leprosy—the anaesthetic variety—and could show proof of this in 13 cases. He found that bacteriolysis was common in both treated and untreated cases, and no value could be placed on it as an indication of results.

Dr. BAYON, in replying, said: The simple cultivation of an acid-fast organism from cases of leprosy does not prove its relationship to the disease till the culture can produce by injection into animals the leprous lesions found in visceral lepra of man. The slides demonstrated show you that whether you inject Kedrowsky's culture or rat leprosy culture into rats, or make use of ground-up leprous nodules from men or rats, you get in a certain number of cases identical lesions in the spleen, liver, glands, and sometimes lungs of the rats experimented upon. The work is very slow. In ten to eleven months I have only succeeded in getting a second generation of directly transmitted human lepra in rats. You will see the specimens from the spleen and liver of these animals. You will see that the quantity and position of the acid-fast rods, the minimal resulting tissue reaction, are identical to the lesions produced by culture. It has taken two years to get these results, and I do not believe that less than a further five or six years will enable us to get an absolutely clear result in the matter.

PAPERS DEALING WITH LEISHMANIASIS.

I. W. S. PATTON, Captain, I.M.S.,
Madras.

THE KALA-AZAR PROBLEM.

I HAVE been asked by the secretary of this Section to give you a short paper on my work on the etiology of Indian kala-azar. I do not think I could do better than place before you this problem as it stands to day, and to tell you exactly what I have accomplished. It is now seven years since I began this work, and five years since my last paper was published. I have no doubt that many of you have wondered why further work in connexion with the latter was abandoned, and why, apparently, nothing has been done for five years. Several observers have asked me whether I still seriously believed, in view of the recent Italian work with the flea, that the bed-bug is the transmitter of the parasite. At the outset I need hardly say

that I still firmly believe that the bed-bug, *Cimex rotundatus*, is the transmitter of the parasite of Indian kala-azar.

In 1905 I realized three main points in connexion with the successful investigation of this problem:

1. Thorough mastery of insect technique.
2. That the cultivation of the parasite in the test tube would never lead me to discover in which insect it underwent its development.
3. That the clue to the solution of the kala-azar problem lay in the study of the flagellates of the genus *Herpetomonas*.

1. *Insect Technique.*—By this I mean all the little things which go to make insect feeding experiments under artificial conditions successful. Those of you who have attempted to study the development of any protozoon in its true invertebrate host will agree with me when I say that although in nature the life-processes of such a parasite are carried out with precision, yet when we control the insect and feed it under artificial conditions we fail to study the life-history of the protozoon, and are met with obstacle after obstacle till some little flaw in our technique has been discovered. The mastery of insect technique in this particular work is of fundamental importance.

2. *The Cultivation of the Parasite in vitro.*—In 1905 I studied the development of the parasite in the culture tube in order to observe for myself its flagellate stage; since then I have never cultivated it, and as a result my work has been criticized for this apparently serious omission. Permit me, then, to state why I omitted this ready means of studying the parasite. In 1905 I set out to try and find in which blood-sucking insect the parasite underwent its development, and how that insect then transmitted the parasite; since then this, and this alone, has been my goal. I am well aware that the parasite of kala-azar will develop into a flagellate in several kinds of media in test tubes, and that it can be maintained in this condition for long periods. I now ask you how the knowledge, gained by studying the parasite in these culture media, can ever help us to find the natural invertebrate host of the parasite. I would be deeply indebted to those who adopt this method of studying the parasite if they would tell me, as a result of this work, exactly how it gains access to man's body. Yet some observers, even to-day, compare my insect-feeding experiments with their cultures *in vitro*. Dr. Row states that he has discovered the complete development of the parasites of kala-azar and Oriental sore in the test tubes—that is to say, using Dr. Row's nomenclature, the development of the ⊙ body to the flagellate, and from the flagellate back to the ⊙ body; he wonders whether it is possible to transmit the parasite by the aid of the ⊙ body stage, whatever that may be. Granting that Dr. Row is able to accomplish this, are we to-day any nearer the solution of the methods of transmission of these parasites in nature? His discovery, if it is confirmed, only goes to support the view which I brought forward in 1907 (see Annual Report of the King Institute for that year), that these parasites, in order to again pass back to man, must be inoculated in their post-flagellate stages.

3. *The Study of the Flagellates of the Genus Herpetomonas.*—I have all along maintained the view, first advanced by Major Rogers, I.M.S., that the parasite of kala-azar is a true insect herpetomonas, and have believed that the study of these flagellates in other insects would give us the clue to the origin of the human parasite. I therefore abandoned all further work on kala-azar, and made an exhaustive study of several herpetomonads. For details of this work I would refer you to my papers, especially to one on *Herpetomonas muscae domesticae* in *Musca nebulo*. You will now see that this work has been of the utmost value in the elucidation of this problem.

In the first place, I wish you to clearly understand that, as far as I have been able to discover, the parasite of Indian kala-azar will only develop into a flagellate in the bed-bug. I have repeatedly failed to find its development in lice, mosquitos, *Conorrhinus rubrofasciatus*, and, so far, in the dog-flea, *Ctenocephalus felis*. Yet in spite of these facts it is still believed, and stated, that my work harmonizes with the recent observations of Dr. Wenyon on the parasite of Bagdad boil in *Stegomyia fasciata*, and those of Professor Franchini on the parasite of Italian kala-azar in *Anopheles maculipennis*. Further, if the development in the bed-bug is due to the fact that this insect contains a rich haemoglobin-containing medium, why, may I ask, does it fail to develop in other insects, and particularly in *Conorrhinus rubrofasciatus*, which contains, when fed on human blood, an enormous amount of rich pabulum? I would most emphatically state that the alimentary tracts of these blood-sucking insects are not test tubes containing pabulum rich in blood, but they are organs in which complicated processes of digestion take place. Any one who has experimented with lice will know that the process of digestion in them is totally different from that taking place in the bug or the mosquito. As a result of my work on insect herpetomonads I believe that, with one or two exceptions, each species will only live and develop in its particular insect. I am unable here to enter into details of cross infection experiments with bred insects infected in the laboratory. I can only ask you to accept this conclusion: "*Cimex rotundatus*, then, is the specific invertebrate host of the parasite of Indian kala-azar."

The next point I wish to bring forward is that the food of an insect has a direct bearing on the life-history of its herpetomonas (Cf. my paper on *Herpetomonas muscae domesticae*.) It was found that the natural herpetomonas of *Culex fatigans*, though present in almost every male mosquito, was only rarely found in the female. On investigating this point further, it was discovered that when an infected female took its first feed of blood, and if the parasites were present as flagellates in its stomach, they were almost invariably destroyed. I took advantage of this fact in my recent feeding experiments with bred *Cimex rotundatus* and *Cimex lectularius* on a case of kala-azar in whose peripheral blood there were hundreds of parasites, and as a result the following important discovery was made: When the parasites had flagellated in these bugs, and the latter again fed either on a case of kala-azar or on a monkey (*Macacus sinicus*), the flagellates degenerated and disappeared within twelve hours, whereas in those bugs which had only fed once on the case the flagellates went on multiplying, and every bug contained large numbers which actively multiplied from the fifth to the eighth day. By the twelfth day they had all practically reached the post-flagellate stage, and were only found in the stomach of the bug. These observations are fully described in a paper which is now in the press. This discovery of the destruction of the flagellates by fresh blood, either of man or the monkey, is of fundamental importance; for if we are to attempt the transmission of the parasite by the bug, repeated feeding will defeat the end we have in view, as it has already done in my previous work. At present it is useless to attempt the transmission of this parasite through the bug to an animal, for the simple reason that we do not know of a susceptible one.* Dogs and monkeys have so far proved refractory, but these experiments are now being vigorously repeated. Over 400 dogs destroyed in Madras during March and April from the endemic areas have been examined, with negative results; these observations will be continued for a year. The inoculation of dogs and other animals, under the most rigorous conditions, will, I hope, soon settle the question as to whether the parasite can be transmitted to any known animal. As soon as this is settled transmission experiments through the bug will be carried out. Till then I need only say that no one realizes more than I do the great gap at present existing between my observations on the development of the parasite in the bug and the conclusive proof that it is the natural carrier. I would therefore ask those who are anxiously awaiting this proof to exercise still further patience. The elucidation of this problem, I regret to say, has advanced very slowly, but you will bear with me when I say that I am just as anxious as you are to settle this question once and for all. All my plans are laid for the next good case which comes along, and I confidently expect to be able to convince every one that the parasite will only complete its development in *Cimex rotundatus* under the conditions mentioned above.

A few words regarding the recent work on the human and canine kala-azar of the Mediterranean littoral. I have read with the utmost interest Dr. Wenyon's able

* I have succeeded in infecting a white rat by inoculating it intraperitoneally with splenic emulsion.

summary of the work in the first number of the *Kala-azar Bulletin*. On laying it down I regret to say that I am no wiser as to how children contract the infantile form of the parasite, and as to whether the flea or the mosquito is the natural carrier. The feeding experiments which have been carried out are, in my opinion, misleading, for these insects had been fed on cultures of the parasite and not on the peripheral blood. They are, therefore, in no way comparable to my experiments, for if you will refer to my papers, you will find that I have invariably traced the parasite from its unchanged condition in a leucocyte in the stomach of the bug through all its stages up to the formation of the mature flagellate. This has yet to be done in the case of the canine and infantile form of the parasite.

II.—R. Row, M.D.Lond., D.Sc.Lond.,
(From F. D. Petit Laboratory, Byculla, Bombay.)

SOME EXPERIMENTAL FACTS *RE* KALA-AZAR (INDIAN).

In a former communication[1] I pointed out that *Leishmania donovani* of Indian kala-azar could be grown in successive cultures both in N.N.N. medium and in a haemoglobinized saline medium[2] described by myself; and that at a certain stage of the culture typical bodies resembling the original parasites could be demonstrated. The experimental results, both with the original virus and the culture, were awaited with interest, and as some of the observations are just completed, I crave permission to submit these at once to the Association. I restrict myself here to the results obtained by infecting the monkey (*Macacus sinicus*) cutaneously and subcutaneously with (1) original virus, (2) an old culture derived from the original virus.

1. The virus was derived from a human source, and was obtained by splenic puncture. It was fairly rich in parasites. It was rubbed into the skin (after scarifying) of the forehead of a monkey in two spots, one on either side, on March 16th. The scarified surface healed completely in four or five days, and nothing was marked until May 22nd (about nine weeks), when a small pinhead nodule was observed on the left side. This felt hard. A small quantity of the fluid squeezed out of this after puncture, when smeared and stained, showed a few parasites typical of the original virus. The culture made from the same unfortunately got contaminated. This nodule has grown during these six weeks, and is now of the size of half a pea. It contains bodies recognizable as the parasites, but not so typical as those observed on May 22nd. The scarified spot on the right side developed two pinhead papules about June 6th. These have also grown slightly but not markedly, and they also contain bodies like those on the left side lesion, though in scanty numbers. This animal is quite well and thriving. His further progress is being watched with interest to see if he will ever develop a general infection.

2. A fifth subculture in N.N.N. medium (from the original parasite derived from the spleen of the same case as (1) on December 20th, 1911) which was found to be rich in flagellates on January 20th, 1912, but full of rounded forms on February 2nd, was injected subcutaneously into the right and left side of the forehead of Macacus 3, the portion injected on the right side being 0.3 c.cm. and that on the left side 0.15 c.cm. There was no local reaction at the seat of injection, which was recognizable even three days after the injection. The animal remained quite well and thriving. There was nothing noticed at the seat of inoculation week after week when observations were made until July 2nd—that is, five months after the inoculation—when two nodules were found to have developed, one on each side of the forehead, at the seat of inoculation; the right one being distinctly larger than the left one. The nodules are freely movable under the skin; they feel like half-beans under the skin, which is perfectly healthy. They are firm and almost hard. One of these nodules was punctured on July 4th, and the scanty serous juice which was squeezed out, when smeared, fixed and stained showed a fair number of parasites like those found in the spleen, etc., of a kala-azar case. These parasites have reached up till now in culture (after 72 hours) only the preflagellate stage of development. There is little doubt by another twenty-four hours they will develop flagellates.

Results of the intraperitoneal infection with the virus, as also with the cultures, both in the monkey and in the guinea-pigs, are not yet ready as the observations are yet incomplete.

From the foregoing experimental results the following points and facts come to light:

1. By the cutaneous injection of the virus of kala-azar from a human source it is possible to induce a cutaneous lesion in a susceptible animal, for example, *Macacus sinicus*, the incubation period in this case being about nine weeks.

2. By the subcutaneous injection of a three weeks old culture of *Leishmania donovani* in N.N.N. medium it is possible to induce a subcutaneous lesion in a susceptible animal—for example, *Macacus sinicus*, the incubation period in this case being about five months.

3. Parasites resembling those found in the human tissues are found in fair abundance in these lesions artificially induced cutaneously and subcutaneously—these parasites being also culturable into flagellates in suitable media.

4. It is not possible at present to say how far these lesions will affect the animal—that is, whether these will ultimately get absorbed without causing a general infection or whether they will ultimately lead to a general invasion by the parasite—although, from the localized nature of the nodules, their free mobility, and the general good condition of the animals, it looks as though they are going to be only local.

5. The bearing of these lesions on the possible results of a cutaneous infection by biting insects, who might act as transmitters, is interesting.

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III.—H. B. FANTHAM, D.Sc., B.A.,
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SOME INSECT FLAGELLATES AND THE PROBLEM OF THE TRANSMISSION OF LEISHMANIA.

HAVING paid considerable attention to the study of insect flagellates, I venture to bring to notice certain of the protozoal organisms which may occur in the alimentary tracts of blood-sucking insects, such as fleas, lice, and mosquitos, all of which have been suspected of transmitting various species of *Leishmania*. The occurrence of such insect flagellates complicates the *Leishmania* problem.

Several Italian investigators have laid stress on the transmission of *Leishmania infantum* by fleas, both dog fleas and human fleas. However, it should be remembered that the human flea, *Pulex irritans* (adult and larva), has been shown in England to harbour a flagellate in its digestive tract. This flagellate, *Crithidia pulicis* (Porter, 1911), is a natural parasite of the flea, and passes through a *Leishmania*-like preflagellate stage. *C. pulicis* is not a developmental stage of a trypanosome or of *Leishmania*, for it was found in fleas bred to the third generation on a normal healthy person in England, who did not suffer and has not since suffered from either trypanosomiasis or leishmaniasis.

Again, in the case of dog-fleas in Turin, Marzocchi (1911) has recorded the occurrence of a flagellate in the alimentary tract of *Ctenocephalus canis*, possibly belonging to the genus *Herpetomonas*, though Marzocchi does not figure or name the parasite. Noller (1912) recently recorded a flagellate, which he calls a *Leptomonas*, from the digestive tract of the same flea in Germany. He gives a very few sketches of the parasite.

Personally, last autumn I found 3 cases of *Herpetomonas* infection in dog-fleas (*Ctenocephalus canis*) out of 68 dog-fleas examined. The fleas were taken from a healthy dog in England. The dog was quite free from trypanosomes and *Leishmania*. The flagellates were not numerous, the stages seen being rounded (*Leishmania*-like) and elongate oval, uniflagellate parasites. I believe that the parasite is a *Herpetomonas*, but have not yet quite obtained its complete life cycle. I had previously seen rounded forms of the parasites in dog-fleas in Cambridge in 1908. The parasite may be named provisionally *Herpetomonas ctenocephali*. Patton has recorded the occurrence of a *Herpetomonas* in the flea, *Ctenocephalus felis*.

Basile, in his transmission experiments of *Leishmania* from dog to dog by means of fleas, has not entirely precluded the possibility of his having mistaken forms of *Herpetomonas ctenocephali* for *Leishmania*.

Human lice, both body and head varieties, have been suspected of transmitting *Leishmania*. Recently I published a paper on a flagellate, *Herpetomonas pediculi*,

This animal was exhibited at the meeting of the Bombay Branch of the British Medical Association on June 29th, when the lesions were

occurring in the digestive tract of human body lice (*Pediculus vestimenti*) in England. Many of the lice were bred on my own person, and fed on my blood, and some of these bred lice were found to be infected. The organism passes through pre-flagellate, flagellate, and post-flagellate stages. The pre-flagellate stage is like *Leishmania*. The flagellate is a natural parasite of the louse, and has no connexion with either *Leishmania* or *Trypanosoma*. I have still more recently found similar herpetomonads in *Pediculus capitis*. The method of infection is contaminative, that is, by the mouth. Captain Mackie, I.M.S., informs me that he has seen a similar parasite in human lice in India. The occurrence of such a flagellate in lice must be recognized if these insects are used in transmission experiments with *Leishmania*.

Also, herpetomonads are known to occur in the digestive tracts of certain mosquitos. *Herpetomonas culicis* has been described by Novy, Patton, and others from the gut of *Culex pipiens* and *Culex fatigans*, both in the larvae and adults. The flagellates had been seen by Ross in 1898. Allied flagellates, such as *Crithidia fasciculata* (Léger), occur in various species of *Anopheles*. Wenyon (1911) has recorded a *Herpetomonas* in the larvae of *Stegomyia fasciata*. The occurrence of these natural flagellates of mosquitos complicates matters, and they must be considered in experiments on the transmission of various *Leishmania* by mosquitos. Wenyon states that *L. tropica* can develop into the flagellate stage in the gut of *Stegomyia fasciata*, and Franchini states that *L. infantum* can develop into the flagellate stage in *Anopheles maculipennis*.

Wenyon has observed in Aleppo a herpetomonad in the gut of *Phlebotomus*, which has been suspected of transmitting *L. tropica*.

House-flies have also been suspected of spreading *L. tropica*. In their digestive tracts *Herpetomonas muscae domesticae* (Burnett) may occur.

Apparently no natural herpetomonad flagellate has yet been recorded, or at any rate investigated in detail, from the gut of the bed-bug, although a large number of bed-bugs have been examined in various parts of the world.

Other flagellates known to occur in allied insects might be mentioned. Time, however, does not allow of further discussion of them or of the evolutionary significance of these interesting organisms. All the flagellates named pass through *Leishmania*-like stages, which must not be mistaken for *Leishmania* itself, while a flagellate herpetomonad closely resembles the flagellate forms of *Leishmania*. The possible occurrence and intrusion of such natural flagellates of insects in transmission experiments with *Leishmania* and blood-sucking insects must not be overlooked.

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DISCUSSION.

Dr. H. SEIDELIN (Liverpool) stated that he had recently observed in Yucatan (Mexico) several cases of dermal leishmaniasis. From the new world several cases had been reported (Brazil, the Guianas, and Panama), but in the case of Yucatan there were several peculiarities which deserved to be mentioned. They had here to do not with isolated cases, but a condition which was widespread in the interior of that State; in fact, almost all chicleros—that is, collectors of chicle (the raw material for chewing-gum)—were said to suffer from this disease. Furthermore, the affection showed a very peculiar predilection for the ear, being localized in practically all cases on the pinna, and was commonly called the "ear ulcer of the chicleros." The speaker had seen ulcers of the same nature on the forearm and on the legs, but only in individuals who had also ear ulcer. Further, in all cases he had found a mixed infection of *Leishmania tropica* and diplococci, in closed nodules, as well as in the ulcerated ones. (The speaker concluded by demonstrating a number of illustrations in point.)

Professor F. C. MADDEN, F.R.C.S. (Cairo), said: I would like to draw attention to a peculiar condition with which I have been familiar for many years in Egypt, and which, after repeated failures to find any causal parasite, I was accustomed to call papilliferous degeneration of the skin. Fortunately, however, my colleagues Professor Ferguson and Mr. Richards discovered the actual *Leishmania tropica* in certain sores of this nature, and have published their results in detail in the *Annals of Tropical Medicine and Parasitology* of the Liverpool School of Tropical Medicine, vol. iv, No. 2, July, 1910, under the title "Parasitic Granuloma." I will therefore content myself with presenting a few photographs of this condition and showing you a slide prepared by Professor Ferguson with his notes on the parasite. The slide shown was taken from smears of pieces of the outer edge of the sores, stained by Giemsa's method. The following are notes by Professor A. R. FERGUSON on the specimen prepared by him from cases of parasitic granuloma occurring in Egypt: The Leishman bodies are more elongated than those which are found in internal manifestations of this disease—kala-azar—and are found especially at the periphery of the lesions. They are found very scantily in the blood obtained by the scarification of apparently healthy skin in the vicinity of the sores, but have not been found in the peripheral blood of parts remote from the lesions or in spleen punctures in patients suffering from these sores. Morphologically the bodies vary considerably; the free forms are cigar-shaped, the intracellular more spheroidal; and these latter are found only in large mononuclear phagocytes at the growing edge of the sores. The central parts of the sores consist mainly of granulation tissue, rapidly becoming fibrous, and here no parasites are present. When pyogenic infection occurs the parasites are soon destroyed. The parasites tend to early degeneration and vacuole formation, and in very chronic and particularly septic lesions are entirely absent.

Dr. ANDREW BALFOUR (Khartoum), commenting on Captain Patton's paper, stated that he had examined a considerable number of bed-bugs (*Cimex lectularius*) in Khartoum without finding any evidence of flagellate infection, but pointed out that any such research must be conducted on a large scale. There was a danger of confounding mere cultural changes in the insect intestine with a true developmental cycle. This was one of the fallacies which had to be specially guarded against, for though, as Captain Patton had said, the intestinal contents of insects were not comparable to culture media, there was nothing to prevent them acting as such in certain cases. The speaker also cited a recent observation by Captain Archibald, who had observed definite granule-shedding in flagellates from cultures of *L. tropica*, using the dark field method. In view of similar observations by Fry in the case of trypanosomes this might be of great interest, although the precise significance of this phenomenon had not yet been determined in the case of flagellates. Possibly sufficient attention had not been paid to such minute and possibly infective forms, and work along these lines might help to solve the problem of transmission in leishmaniasis as in other protozoal infections.

DEMONSTRATION OF SPECIMENS RELATING TO THE TRANSMISSION OF ARTIFICIAL CULTURES OF LEISHMANIA INFANTUM TO MICE AND RATS.

By H. BAYON,

Deit Memorial Research Fellow, Lister Institute of Preventive Medicine.

Novy, in 1903, was the first to publish the successful transmission of artificially cultivated *Leishmania infantum* to animals. By repeatedly injecting a dog during

the course of five months with the contents of 270 culture tubes of Nicolle's strain of *Leishmania infantum*, he succeeded in finding, eighteen days after the last injection, a large number of protozoa in the spleen, liver, and bone marrow. The parasites were regained in pure culture.

A year later, in conjunction with McJunkin and Schule, the same author announced having infected five dogs, to one of which he had injected at one time the contents of twenty tubes.

Franchini injected 1 c.cm. of a culture of *Leishmania infantum* intraperitoneally into a guinea-pig, and got an infection of the animal apparently without further trouble.

Delanoe, and later Visentini, have, however, found that *Leishmania infantum* cultures injected intraperitoneally into mice and guinea-pigs are very soon destroyed, and Visentini was able to show that in the peritoneum of the guinea-pig, after an hour and a quarter, it was not possible to regain the protozoa by culture on blood-agar.

That dogs and monkeys are receptive for the "virus" (in contrast to the culture) of infantile kala-azar is a well-known fact. This experiment has been so often repeated by different workers after Nicolle's, Comte's, and Manceaux's first experiments in 1908 that it may be considered an established fact.

On the other hand, cats, guinea-pigs, and rats have been shown by Nicolle and others to resist even the injection of virus direct from the patient, so that Franchini's extremely prompt result appears to await independent confirmation.

With the intention of getting a strain of *L. infantum* virulent for animals I carried out some experiments, the corresponding slides of which I am now demonstrating.

The strains of *L. infantum* I made use of were kindly given me by Dr. Visentini, who at that time was working at the Lister Institute. One strain originally came from Tunis, having been isolated there by Nicolle; the other culture had been made in the first place by Professor Jemma of Palermo.

Both cultures grew abundantly and easily on rabbit-blood agar within five days from subculture. After fifteen to twenty days numerous rounded, non-flagellate forms are present, also numerous disintegrating, that is vacuolated and badly-staining flagellate shapes are to be seen. I have succeeded in getting subcultures also from such old tubes.

An initial series of experiments with other protozoa was carried out with the intention of showing, by microscopical examination combined with animal injection and artificial culture, to what extent the natural immunity of an animal affected the virus injected; also with the further purpose of demonstrating similar or analogous results with the cultures of *L. infantum*, should the animals injected show themselves highly immune or resistant, as was to be expected from Delanoe's and Visentini's experiments.

I was therefore comparing an immunity I knew to be definite with one whose degree I still was doubtful about.

For this purpose blood from rats infected with *T. rhodesiense*, a protozoon which we have every reason to believe is extremely difficult to transmit to birds, was injected intramuscularly into five sparrows. Their heart's blood and ground-up organs were reinjected into rats after intervals varying from twenty-four hours to five days.

In no case did the rats show any infection, so that I could conclude from these experiments that naturally immune animals were capable of completely destroying certain protozoa in their circulation within twenty-four hours.

The possibilities of the direct cultural method were now tried. It was not possible to use *T. rhodesiense* in this case, as its culture is still a matter of great uncertainty, so an easily cultivable protozoon, namely, *T. lewisi*, was experimented with. To avoid confusion with bird trypanosomes, mice were used as experimental animals, also in consideration of the fact that their immunity against *T. lewisi* is not very marked, and therefore the behaviour of protozoa towards natural immunity of an inconstant type could be observed.

Three mice were injected intraperitoneally with 1 c.cm. of rat's blood, showing very numerous *T. lewisi*. The rat had been infected with the blood taken from a wild rat. Cultures were taken from the heart's blood, peritoneum, and organs of the mice. Microscopical preparations were also made. The mice were killed after eight hours: one showed a few trypanosomes of the *lewisi* types in the blood of the heart. Partially disintegrated trypanosomes were found in the peritoneal fluid of all three, together with many motile and apparently faultlessly staining parasites. All culture tubes remained sterile.

The limitations of the cultural method appeared evident in this case, where a temporary infection was apparently in course. As a matter of fact, Rondsky has shown that mice can be infected with *T. lewisi* under certain circumstances.

I now proceeded to attempt to infect mice and rats with *L. infantum*, bearing in mind that, according to the analogy of my previous experiments, should the animals be absolutely immune against this organism, I could not expect with probability a culture even after such a short time as eight hours, and certainly not after twenty hours, as the extremely delicate method of rat inoculation had failed with *T. rhodesiense*, a protozoon which infects rats in minimal quantities, and even after forty-eight hours after the death of the host (Blacklock).

Three mice were injected intraperitoneally with 1 c.cm. each of six to ten days old cultures. The animals were killed four hours after injection; smears were taken from the peritoneal fluid and organs, and cultures from the blood, organs, and peritoneal fluid. A culture tube taken from the peritoneal fluid was successful, showing numerous *Leishmaniae* a fortnight after the others remained sterile.

In the smears taken from the peritoneal fluid the following appearances were evident:

The flagellate parasites were taken up by big mononuclear cells and disintegrated in the fashion described by Delanoe and Visentini. A certain number were phagocyted by neutrophile, polymorphonuclear leucocytes and presented the identical appearance of the rounded or oval non-flagellate stage, with or without the short rhizoplast rod which is met with in the organs of persons affected with kala-azar. I have placed a specimen showing this condition under the microscope.

Various stages of disintegration are to be seen in these specimens, and I can confirm Visentini's observation of the resistance of the flagellum to disintegration and the rounding-up of the protozoa in the protoplasma of the mononuclear cells. The observation I intend emphasizing to-day is that the rounded or oval stage of *L. infantum* which is seen in cultures resists disintegration much longer and more effectually than the flagellate stage.

This rounded shape is not in all cases a result of the transformation of the leptomonad phase, because the leptomonas condition, once enclosed in the plasma of the leucocyte, gets soon digested and loses its staining properties, whilst these rounded bodies stain sharply and clearly.

Does this observation agree with any of the facts hitherto known? Certainly it does, for we know that the "virus" from a patient affected with *L. infantum* infects animals, or in any case is capable of transmitting the disease without exceptional difficulty to dogs and monkeys, whilst the cultures are only able to infect animals after repeated injections extended over a relatively long period of time. The "virus" consists, however, of rounded, oval, non-flagellate phases of the parasite, whilst in cultures the leptomonad or flagellate stage is by far the most predominant one.

If we turn, then, to the question of insect vectors, we find that the only experiments that have any satisfactory results to show are those of Basile, with the transmission by means of *Pulex serraticeps* and *Pulex irritans*. On examining Basile's specimens, which this author kindly showed me in Rome, and one of which he has sent me for demonstration purposes, we find, again, that in the naturally infected *Pulex serraticeps* from the dog the rounded, non-flagellate stage predominates.

Similar observations are recorded by Alvarez and Da Silva, who found in *Pulex serraticeps* taken off a dog naturally infected with leishmaniasis, round and flagellated stages of the protozoon. The faeces of these fleas showed the round phase only, an observation not without interest in view of the recent work of Brumpt, who has found that the faeces of *Conorhinus megistus* are capable of infecting guinea-pigs with *Schizotrypanum cruzi*.

Alvarez and De Silva did not find any protozoa in the fleas taken from healthy dogs.

It is, of course, quite easy to see that none of these observations have a decisive value, but still they seem to point to the fact that the rounded or oval stage of *L. infantum* is the infective phase of the protozoon, and that in any case the immunity of mice against the cultural stages that imitate this rounded stage is not very great, otherwise culture would not have succeeded four hours after injection into the peritoneum of the animal.

Regarding the experiments of Franchini with *Anopheles maculipennis*, we find that also here a non-flagellate stage appears to be considered infective. However, in these experiments no positive results in animals were performed; not only that, but the drawing and specimens I have seen show the parasites clearly disintegrating in the gut of the mosquito. In the last paper published in the *Annals of Tropical Medicine and Parasitology*, 1912, vi, pp. 41–52, we find that in no case is mention made of the time after infection or feeding when the mosquitos were examined. This is an important point—the principal one, in fact.

Referring to the plates accompanying the paper, we find that *de facto*, incorrect or incomplete in detail as the pictures may be, still they show clearly that the parasites are disintegrating—an opinion that is shared by Martin Meyer on page 441 of his chapter on "Leishmanien" in the seventh volume of Kolle and Wassermann's *Handbuch der pathogenen Mikroorganismen*.

This may appear severe criticism, but I can but refer to drawings appearing on Plates III and IV, on which in no case, except one, the flagellum is represented penetrating the protozoon, or rising from a basal granule near the kinetonucleus, as it does in reality, but instead, where present at all, it is seen to fade away feebly in the periplast of the flagellates—an appearance that can only be due to bad staining, incomplete observation, or both combined.

Of the many "dividing forms" figured in the plates, No. 14 on Plate III, and Nos. 7, 14, 17, 21 on Plate IV can scarcely with fairness be called "dividing forms." On this matter I can safely await the judgement of any one versed in microscopy.

I have been obliged to pay so much attention to Franchini's paper because its results, and the results of his school in general, are confusing the issues by a series of observations which do not agree with those made by other workers in the field.

The experiments with the intention of getting a strain of *Leishmania infantum* pathogenic for mice from cultures are being continued, for so far I must admit not having succeeded in finding any *Leishmaniae* in rats and mice which were examined twenty days after repeated injections of cultures.

For the moment I should like to venture the suggestion that the rounded or oval, non-flagellate stage of the *Leishmania* protozoon is the infective phase, and that the significance of the leptomonad forms in cultures is, that they correspond to the developmental, non-infective, multiplicative phases in the invertebrate host.

Somewhat analogous conditions seem to hold good with Chaga's *Schizotrypanum cruzi*, where, however, a flagellate, trypaniform phase in the "virus" is infective, but cultural forms non-infective.

PAPERS DEALING WITH SANITATION OF AGRICULTURAL ESTATES IN THE TROPICS.

I.—Malcolm Watson, M.D., D.P.H.,

Chief Medical Officer, Estate Hospitals Association, Klang, Federated Malay States.

In the tropics, especially in a new country like Malaya, and, above all, in what is practically a new industry, like plantation rubber, the problem of sanitation is not simply that of reducing a somewhat unsatisfactory death-rate. In Malaya very often the existence of almost the whole population is at stake and death sometimes lays claim to a third of the population in a year.

In such places, where everything has to be done—healthy sites found, houses built, water supplies provided, hospitals built and administered—in the face of a devastating sickness, it is essential to estimate as accurately as possible the relative importance of the factors causing the sickness and producing the death-rate. Only when this has been done will it be possible to frame anything like an intelligent medical policy and to spend money on sanitary measures which will give the maximum result. While, if this be neglected, there may be, and often has been in my experience, the *maximum expenditure* with the *minimum results*.

Nor must the medical officer forget the necessity for economy. Neither Governments nor private individuals have unlimited money for expenditure on sanitation. Governments must find money for their roads and other public works. Sanitation makes its claim only among many equally insistent claims, and so if the medical officer "fills in" a swamp at a cost of ten times what would have been sufficient to drain it, nine other swamps must remain undrained. And so, too, with the person who lives by growing rice in a malarious swamp. He, by reason of his poverty, must suffer malaria because the removal of the malaria would at the same time remove his livelihood. At every turn sanitation and finance are inextricably associated, and the health officer—especially the health officer in the tropics—who ignores this is less than useless, he is an obstruction. Moreover, even in the tropics, nay especially when high death-rates and severe sickness are urgently calling for action, and from all quarters the medical officer is being called upon to recommend "something"—as "something must be done"—the medical officer will be wise if he recommends only measures based on experience, and is not led away into a large expenditure which may give no result, without clearly stating that his recommendation is of the nature of an experiment. For if he confidently recommends something which ultimately turns out useless, he must suffer in reputation; in other words, he loses his influence for good. While, on the other hand, if he frankly admits there is no assured remedy for the trouble, but that what he recommends might do some good, being based on a careful study of the situation, then failure, while disappointing, will do no greater harm, and the officer may learn something from it.

Finally, the wise medical officer will discuss fully with laymen of practical experience his thoughts on sanitary measures; and especially will he do so before making recommendations. Only by doing so will he thoroughly understand the problem, and avoid the many pitfalls that await those who strive to progress. And free discussion will have the further advantage of educating the layman to the aims and methods and advantages of sanitation.

Personally I firmly believe that sanitation adapted to the needs of a tropical agricultural population pays handsomely, and it should be our special aim to demonstrate this where possible to the estate manager; and to this end it is necessary for the medical officer to obtain all figures bearing on the health of his charge and their output of work. Only by this means will he obtain a clear idea of what is required and what progress he is making. The career of the sanitarian is by no means likely to be a triumphal procession. Rather will it be an arduous campaign, with surprises and ambushes, hard fights barely won, and sometimes temporary reverses; and the wise commander will by means of an efficient intelligence department seek to minimize the number of the reverses and to direct his course along the line of least resistance.

I am led to these remarks because progress has been seriously delayed by medical officers forgetting these things. Indeed I am not sure that the medical officer himself is not often the greatest obstacle to sanitation.

Malaria.

Turning now from these more general considerations to the specific problems here, in the front rank in Malaya stands that of malaria. This illustrates very well the need for the local study of the disease and the adaptation of measures to the carrier. The district immediately under my care can be divided into low-lying alluvial flat land and hilly land intersected by ravines. For the flat land the only antimalaria measure necessary is the removal of jungle and undergrowth and a thorough system of open agricultural drainage. As this is done the land becomes non-malarious; and large populations now exist

on this land, where the spleen-rate of the children is *nil* and Europeans have lived for years without contracting the disease.

But while this low-lying clay land with its high ground-water has become free from malaria by a simple system of open drains, the hill land remains persistently malarious, and the difference is due to a difference in the species of the mosquito inhabitant.

While in the flat land the carrier is *Palagiamyia umbrosus* (*Myzorhynchus umbrosus*, Theobald), a mosquito which breeds in clear pools and is destroyed by water currents, in the hill land the mosquito is *Myz. willmori*, Leicester (*Myzorhynchus maculatus*, James and Liston). The larva of this mosquito lives in clear running streams.

The method which has been adopted to deal with this has been to put the water of the ravines underground. The whole surface is now quite dry.

The engineering details I need not dwell on here, but they are essential to the success of the scheme, and each ravine must receive individual treatment. The cost works out at about 50 cents (1s. 2d. sterling) per foot of the ravine. While this is high, it will probably be reduced ultimately, and is a small item compared with the loss from malaria. The buildings are concentrated within an inner circle, and for 24 chains all round the land has been underdrained. We are still at the experimental stage as regards the total area to be underdrained. It may be found necessary to underdrain anything up to 40 chains (that is, half a mile). A radius of 25 chains gives an area of only about one quarter of that of 40 chains, and may possibly be sufficient. An area of 40 chains radius would, I have no doubt, have resulted in a striking success, but I do not think this would have been justified when one-quarter of the expenditure may be sufficient. It will at least prove of value in showing if we are on right lines, and the area may be extended if necessary.

This attempt differs from what is being done in Panama in the following respects: In Panama the antimalaria operations consist of (1) draining all land within 100 to 200 yards of houses, (2) oiling or treating with a larvicide any water which cannot be drained off, (3) making all houses mosquito proof, (4) catching any mosquitos which gain access to the houses, and (5) inviting people to take quinine.

The scheme I have adopted has been inspired by seeing how malaria has disappeared from the flat land in Malaya simply by the eliminating of the mosquito, and without the use of mosquito-proof rooms, etc. I am therefore attempting the freeing an area from dangerous mosquitos, so that men may live as in non-malarious regions, doing nothing or taking nothing which they would not do or take elsewhere. It will demand no elaborate organization such as exists in Panama. Much as we must admire it as the finest sanitary organization ever seen, it demands a discipline of the people which sanitarians will avoid if possible.

Quinine in daily doses is, of course, used, but I have long since come to the conclusion that, while death and sickness will be reduced by its use, it will never eradicate the disease.

Cholera.

Next in practical importance is, perhaps, cholera and its prevention. In Malaya it is not endemic, and is usually introduced from China or India. On the estates I isolate new coolies for a week after their arrival. When an outbreak occurs the houses (or lines—barracks containing 50 to 100 coolies) are instantly evacuated and the population housed in little huts, each containing not more than three people. The huts are arranged in rows like a camp. This is the contact camp. If a case occurs in one of these huts, the case is taken to a similar hut away from the others (the cholera camp). The infected hut in the contact camp is burned down, the remaining two inhabitants washed in a disinfectant and given clean clothing, their old clothing and all possessions in the infected hut being burned. This method of treatment is extraordinarily efficacious. Two years ago, in thirteen outbreaks, there was an average of only 3.3 cases per outbreak. So much for the actual treatment of an outbreak. We recognize, however, that safety is only to be got in pure water supplies. On the hill land, with its numerous streams and springs, there is little difficulty in this. On the flat alluvial land, however, the problem has been a much more difficult one. So far the water has been taken from shallow surface wells. It is impossible, as a rule, to dig deeper than 6 ft., for at that depth a layer of salt is found. In addition, layers of decomposing vegetable matter are often found, which give off foul gases and black stinking slime. To open into this is to render the water quite impossible, even for the least particular palate.

The last difficulty was, that being so superficial, the least drought dried the wells completely, and even in ordinary weather very large numbers of these wells or holes in the ground have been necessary to obtain a reasonable supply of the liquid, which resembles pea-soup rather than water. It has been obvious, therefore, that as a permanent supply for a large population these surface wells were useless, and when recently an attempt was made to force the estates to expend on each of these holes a sum amounting to fully £100 sterling, I strongly opposed it. The absurdity of the proposal will be gathered when it is stated that one estate with 1,200 coolies had 169 of such wells. For this estate we would then have had a total expenditure of practically £17,000. The capital of the company is £60,000.

The real solution of the problem was made some years ago when, at the instigation of the estates, the Government started on a scheme for bringing water from the hills. The cost of the scheme is estimated to be 560,000 dollars, or roughly £66,000, and is nearing completion. It will supply water to estates covering, roughly, eighty square miles. The estates are to pay 4½ per cent. on the total cost of construction and upkeep. To the estate just mentioned the annual charge will be under £300 sterling. For this there will be an abundant supply for both the population and manufacture. The £17,000 spent on brick wells and sand filters would have given it a supply probably no better than the old wells, and one which would have failed regularly with every drought. Yet not only was this seriously proposed, but the estates were threatened with prosecution if the work were not carried out.

In other parts where the estates are too far from the hills to make a gravitation supply of hill water financially practical, the proposal is to take water from a large river and pass it through either a Jewell or Candy filter. The matter is still under consideration.

Diarrhœa and Dysentery.

These are important diseases, but I do not think they are mainly or even often associated with impure water. It is rare to find the characteristics of a water-borne disease, although I have seen five or six such outbreaks. I rather incline to the view that, as with the European so with the native, these bowel diseases are due to impure food rather than impure water. The subject, however, is too large to discuss here.

Housing of Coolies.

The coolies themselves prefer what they have been used to in India namely, little huts with cowdung floors. But most estates house their coolies in lines or barracks consisting of ten or twenty rooms back to back. The coolies can cook underneath these lines; while if the lines are only 2 ft. from the ground they cook in the verandahs, which they shut up with planks and sacks in order to exclude rain. This is undesirable, as the rooms then become dark and very dirty.

In housing coolies it is necessary, before building expensive permanent lines, to make certain the site is either healthy or can be made healthy. Thousands of pounds sterling have been wasted in building lines on unhealthy sites near to undrainable swamps. The style of building has not a great influence on the death rate at present, but with increasing immigration will become of more importance. Above all, the estates are now practically free from tuberculosis in marked contrast to the town populations which live in brick houses. I would rather see the coolies all back in huts like those in India than induce such a scourge as tubercle with our Western ideas of housing. I trust, however, the modern "lines" are sufficiently airy and open to prevent so grave

a disaster. The old lines with palm leaf (attap) walls were certainly free from reproach in this respect.

Ankylostomiasis.

A number of observers have worked in this field, and it is certain that between 80 and 90 per cent. of the Tamil coolies on estates harbour worms. Dr. T. S. Macaulay of Seremban has shown that *Necator* predominates and that probably only 15 per cent. of the coolies harbour more than fifty worms. This probably explains the comparative variety of symptoms due to the worm, and the fact that large labour forces may exist with very small death-rates from all causes—and that such deaths as occur are in no way connected with the worm.

In my opinion the importance of the worm as a cause of disease among Tamils has been much exaggerated, and I have heard of places with spleen-rates of 100 where the oedema and anaemia of chronic malaria has been attributed to the worm. A mistake of this kind is of importance, for while strict use of latrines and anthelmintics might cure ankylostomiasis, they would have little influence on malaria. With regard to the prevention of the spread of the worm, one difficulty in Malaya is that with the high wages he makes the average stay of the coolie is only one and a half years. He then returns to India for a more or less prolonged holiday, and very often is set up in life with his little fortune. To replace him his string of relatives come over, and so there is a constant flow of new coolies. The general use of thymol among Tamils, as is done in Java with Mohammedan Javanese, would probably lead to disaster, since the Tamil is so much addicted to alcohol. Thymol, beta naphthol, and eucalyptus are very frequently ineffective unless repeated time and again. So that while, perhaps, more might be done, among Tamils it will have to be done cautiously and tentatively before any general recommendation is made.

The general use of latrines is also not without difficulty. First, there is a caste trouble: next, there is the general (probably universal in all races) dislike to a public latrine when an open field is available. The difficulty of making a horse drink is at least minimized by the possibility of leading him to the well. But the compulsory use of latrines on estates has nothing in its favour.

The problem is a difficult one, nor is it quite apparent to me what advantage there is in a shallow trench if the worm is an inhabitant of the surface layers of the soil. To destroy the worm it would apparently be necessary to burn the motions, which has not yet been suggested for estates. Nevertheless, I am in favour of the use of shallow trenches carefully covered with earth at least twice a day. I think whatever effect it may have on the ankylostome worm, it at least will help to diminish germ infection from indiscriminate defaecation, and tend towards greater purity of earth and air and water. I am conscious this has been only a hurried review of a large subject, but I trust it will lead to a discussion of value.

II.—W. Carnegie Brown, M.D., M.R.C.P.,
London.

In agricultural undertakings, practically all of which are commercial ventures which rest entirely on their financial success, and which would be abandoned were they unremunerative, sanitation is of course no less important, but it must never be forgotten that it is based on entirely different conditions to those which obtain in urban communities, where there is a settled population with a substantial background of valuable and assessable property. And there can be no doubt Dr. Watson is right in the emphasis with which he insists on this point of view being strictly borne in mind; for it must be confessed that Governments and local authorities, as well as estate and plantation managers, have in many instances been led into deplorable difficulties by the mistakes, and especially by the financial mistakes, of their sanitary advisers. It may be that in our public health training insufficient attention is given to finance, that sanitary officers are accustomed to regard financial considerations as being to a large extent beyond their province, and that questions of cost and the results to be obtained from expenditure consequently receive insufficient attention from them. In dealing with the sanitation of estates, then, it must always be borne in mind that there is no money to play with, and that unless sanitary improvements in common with other operations show a reasonable return on expenditure, they are impracticable and impossible.

My own experience of estate sanitation indicates that the following are the essential conditions of success, and I give them in the order of their importance:

(1) The provision of a plentiful supply of pure drinking water.
(2) Permanent antimalarial precautions.
(3) A suitable dietary.
(4) The effective sterilization or destruction of sewage.
(5) General cleanliness, and the removal of all filth and rubbish.

The Provision of a Pure Water Supply.

In selecting and laying out an estate no consideration is of greater moment than that of securing a reliable and readily available supply of good water. Infections of epidemic cholera, dysentery, and typhoid fever, in my experience, are almost invariably waterborne, and the first line of defence against epidemic outbreaks of these and a host of other intestinal disorders is to provide an abundance of wholesome drinking water. The facility with which this may be accomplished naturally varies with the position of the sites which are chosen for bungalows and coolie lines; and it is, of course, always advisable to take the supply from the source which is least liable to taint. Whenever possible, the drinking water of an estate should be collected, as suggested by Dr. Watson, from a jungle catchment area well above the level of a habitation, and it should then be brought by a pipe-line from a small protected reservoir direct to the houses. In most cases, however, this is impracticable, and it is generally necessary to have recourse to wells or to river water as a source of supply.

Surface wells—that is to say, shallow wells which are filled by the gravitation of surface and subsoil water—are always dangerous; but away from the coast, if the impervious layers of the upper strata are pierced, a fairly reliable supply may often be obtained from a deep well. Protection from pollution must, in the case of all wells, be secured by a waterproof parapet and by a concrete pavement, sloped outward and extending for 12 ft. or 15 ft. round the opening. A river furnishes a much more questionable source of supply, for although water may be effectively purified by a comparatively short flow in a stream, river valleys in the tropics are generally so densely populated that freedom from pollution is rarely attainable. On rubber estates it is seldom necessary to store rain water, but in a country where there is an annual rainfall of from 100 in. to 120 in. this is always available. If it has to be collected the pipes should be fitted with a simple apparatus which is in general use in many parts of Australia. This appliance prevents the first water which falls on the roof from entering the storage tank, but after a certain amount of rain has fallen, a shoot turns automatically and water from a clean surface is secured. But in the tropics, with the possible exception of the first, all these natural sources of supply are unreliable; and in thickly populated districts, and on estates where a large force of native labour is employed, rivers and wells are specially open to objection. Practically, from whatever source water is derived contamination may take place; and as heat is the only effective method of sterilization, it should be made an invariable rule to *boil all drinking water*, and after boiling, to keep it as far as possible sterile.

The sterilization of water on a large scale has recently received careful attention, and it is now possible for a very moderate outlay to instal an appliance by which all the drinking water required on an estate may be effectively and economically sterilized. In one pattern of water sterilizer—the Lawrence—with which I am familiar, and which is in use on several estates in the eastern tropics, the water to be purified first enters a heat interchanger, provided with an inner cylinder or tube, where it is raised to a temperature of about 180° F. by the boiling water returning from the sterilizing chamber. It then passes to the sterilizing chamber, where it is brought to boiling point by additional heat, which may be derived either from ordinary fuel, or from gas, oil, or the injection of live steam. The prohibitive cost of raising cold water to a

temperature of 212° is thus ingeniously avoided, and—a point of importance in the tropics—the effluent water is at the same time cooled and aërated. Whatever form of apparatus is selected, the following points should be borne in mind: It should be simple and easily worked; all the parts should be readily accessible for examination and special cleansing; and it should be able to deal with the water directly—that is to say, no preliminary preparation by chemicals or otherwise should be necessary. When there is much sediment—a frequent result of tropical rain—a filter may be employed as a preliminary measure; but filtration is useless for sterilization, and filters, dripstones, etc., may themselves prove a fresh source of contamination. On no account should water be filtered after it has been boiled, and it should be taken for consumption direct from the storage tank. As a rule, sterilized water is perfectly free from taste; and when an aërating sterilizer is used, it is particularly clear, bright, and sparkling.

Antimalarial Measures.

It is unnecessary to do more than to emphasize the whole of Dr. Watson's advice as to antimalarial measures, but in practice, in order to secure satisfactory results in the general sanitation of an estate, a few specially selected and specially paid coolies—say 3 per cent. of the labour force—ought to be permanently detailed to carry out these and other necessary measures under competent supervision. Their duties, apart from drainage and petrolage of swamps, canals, gutters, etc., should include the removal of broken bottles, tins, and other rubbish where mosquitos may breed, the emptying of unused baths, etc., the screening of necessary water barrels and cisterns, and the fumigation of dwellings, coolie lines, and stables. For the latter purpose green bamboo twigs, burned on charcoal braziers, are generally sufficient, but sulphur candles may be necessary to kill the adult *Anophelines*, which often congregate in enormous numbers under the tiles and thatch of estate dwellings.

In a malarial district infection is mainly derived from native children, who generally harbour large numbers of parasites, although they show no obvious signs of illness. The question of how to deal with carriers—both child and adult—is a very difficult one—for their discovery and segregation are practically impossible. In many French colonies, where, as in some of our own dependencies, education is compulsory, excellent results have been obtained by the administration of quinine in the schools; and the action of the Indian Government in making quinine everywhere readily accessible has materially diminished the enormous toll of human life and human suffering which malaria formerly levied on the peasantry of that country. Used merely as a preventive of malaria on an estate, quinine is often of great value, but I agree that less reliance should be placed on its administration than on mosquito destruction. Both in prevention and in active treatment quinine must be given regularly, and continued for six months after attack. If a patient under treatment stops taking quinine before that time because he has no more fever he generally gets a relapse, and as he is infective to mosquitos he is a source of danger to others. A native protects himself at night by enveloping the whole of his body in a sleeping cloth, but for Europeans everywhere in the tropics the systematic use of mosquito curtains is imperative. Part of the verandahs of every bungalow should also be made mosquito proof, and all hospitals, etc., where malarial patients are under treatment should be carefully screened.

The Disposal of Sewage.

On most estates insufficient attention has been paid to the destruction of night soil, and I do not find myself in agreement with what Dr. Watson says on this very important subject. To arrest the spread of ankylostome infection it is necessary to prevent pollution of the soil, and, when it has become tainted, to protect the feet of the workers. For the latter purpose boots, unless they are watertight and reach well up the leg, are useless, and an inexpensive substitute which is preferred by native labourers, and is quite effective, is to smear the skin with a thin coating of tar and sand; at the same time it is imperative to destroy all estate sewage. This is usually effected by a system of pail latrines and a small furnace, and several varieties of moderately priced incinerators are now in use in asylums, gaols, hospitals, and on many estates in the tropics. Here, again, the simplest types of apparatus are the best, and a locally constructed but thoroughly efficient sewage destructor sufficient for a labour force of four hundred men can generally be installed for a very moderate outlay. When in working order, such an incinerator should be able to consume 500 lb. of matter nightly at a cost of 2 cwt. of firewood and 40 lb. of coir dust for admixture. Suitable estate rubbish, old gunny bags, etc., are generally available as additional aids to combustion, and two coolies at a daily wage of 65 rupee cents are sufficient for the whole of the work. Such an apparatus is actually in use on several estates in the East; and although more than one may be necessary, after their introduction no special difficulty has been found in making their use compulsory. Incinerators are, of course, largely employed in gaols, asylums, and elsewhere in India.

Estate Dietaries.

As a rule, managers are fully aware of the necessity of strict supervision of the food supplied to their labourers, and on most estates the diet is good, abundant, and nutritious. But it must be remembered that unexpected danger may lurk in food which is apparently perfectly wholesome. It is more than probable, for instance, that the terribly fatal disease beri-beri is caused by a deterioration in the quality of rice—invisible and unknown—but which in all likelihood is set up by the outer layers of the grain being removed during milling. At all events the disease chiefly affects Chinese, and does not occur in Tamils and other natives who use "cured" and freshly husked rice; and it is known that, in the early stages at least, beri-beri can be arrested by substituting "cured" for white rice. The value of this discovery will be appreciated by every one who is familiar with the labour problems of the eastern tropics, and, although the probability of a serious outbreak of beri-beri on a rubber estate is more remote than in the case of some other industries, its economic importance is enormous. Even as I write I have received a letter from an employer of Chinese labour, who states that whereas a short time ago he lost three hundred out of every thousand coolies from beri-beri alone during the first year after they were imported, since he introduced freshly husked and "cured" rice his total death-rate from all causes is only 35 per mille.

A claim that beri-beri or any of the other protean maladies of the tropics can be entirely eradicated is, however, premature. Incessant vigilance will always be necessary for their repression, and retribution will be the certain reward of apathy and negligence. But it is not too much to assert that the difficulties of estate sanitation have been immeasurably lightened by a knowledge of the causes of tropical diseases, and that proved methods of prevention, intelligently directed, are abundantly sufficient for their control.

III.—W. F. LAW, M.D., F.R.C.S.I.,

British Guiana.

Our object should be to attain the highest sanitary level at the lowest possible cost to employers, a point which is sometimes lost sight of by our profession.

Houses.

One of the first points of importance is to see that every apartment has plenty of permanent ventilation, that is, ventilation which is independent of door and window, and which cannot easily be stopped up; and that the range or house is well raised above the surrounding level so as to facilitate drainage and keep the structure dry. Perhaps the best way to convey my meaning is to give a short description of what in British Guiana we consider a good yard, it being borne in mind that the country is absolutely flat. In choosing a site for a yard we select a spot as high and as open as can be got.

The dwellings are built of wood in ranges of 100 ft. each, divided into ten rooms, each room being 10 ft. by 14 to 15 ft., and provided with a gallery along its leeward side.

All along the roof on leeside, in about its upper third, is a fixed ventilating space locally known as a "cow mouth," whilst where the roof meets the plate there is an eave space back and front.

There is a window opposite the door, and each end room has two windows and a large gable end jalousie above the end window. Ample ventilation is thus provided which is difficult to block up.

The range is well raised above the surrounding level, and each room is considered capable of accommodating three adults. The ranges are built in lines, with suitable distance between each range, and between each line of ranges, this latter not being too great, so as to enable the ground between to be drained by a small, shallow, open trench running midway between the two lines of ranges.

Each of these small drains is graded, so as to allow a steady fall into the main drainage trench, which runs at right angles to it along the outer side of the yard, and is just deep enough to carry off the surface water, but not so deep as to hold water permanently. If the ranges are sufficiently raised there will be a good steady slope from each range to the small trench, and the yard will remain dry; but it is important that this ground be kept smooth and even, that grass, if any, should be kept very short, trees and gardens being prohibited, whilst cattle are most rigidly excluded.

If this plan is followed, it gives a compact, but airy and dry yard with well ventilated houses and fair accommodation.

Water Supply.

In the matter of water supply, I shall not ask any one to follow the example of British Guiana estates. I look on it as one of our weakest points, and have fought long and unsuccessfully against the system. It consists of fairly good, rather dark, but reasonably wholesome water, brought in open trenches from the conservances aback and stored in open trenches close to or in the yards.

It is liable to contamination at any stage of its journey, and I cannot imagine any system more dangerous. The plan I have always advocated, and which has been in use on one estate for many years, is the storage of rain water in large concrete tanks, and conveyed from these tanks to the yards by pipes, and delivered from standpipes. The tank I refer to holds some 210,000 gallons, and is filled from the factory roof. The method is a good one, but I would prefer several smaller tanks rather than one large one, as they could then be regularly cleaned out without inconvenience. On one or two estates in British Guiana we had some success with small tanks, iron or concrete, put up in the yards and fed from the roofs of ranges—one tank to every two or three ranges: this gave a good and convenient water supply, and helped to keep the yard in better order. The cleaning out of these tanks is a matter of great importance.

A few years ago (in 1907) I investigated, along with Dr. Wise, our bacteriologist, an epidemic of dysentery which had broken out at the Almshouse in Georgetown. Rain water stored in large tanks was the water supply, and we traced the disease to contamination of the water by the excretion of carrion crows. Numerous pathogenic bacilli were isolated from the water, and the same bacilli were afterwards found in the intestines of the carrion crows.

Recently Drs. Wise and Minett have devised a method of rendering impure water safe and wholesome by treating it with alum and chloride of lime, but Dr. Minett will be able to give an account of this himself.

Latrines and Sewage Disposal.

This is a point of immense importance, but one that, at any rate in British Guiana and the West Indies, has been entirely neglected until quite lately. It would seem absurd to waste time advancing arguments in favour of latrine accommodation for labourers, and I shall not do so; but it is only seven or eight years since I was laughed at by managers of sugar estates for suggesting such a thing, the chief argument being that the East Indian coolie would not use them. We have proved in British Guiana that the East Indian can, and will, use them, and is only too glad to get them: and now every estate in the colony has ample latrine accommodation, and the managers who formerly laughed at me are now firm believers in the system and its usefulness in preventing disease.

The question, therefore, no longer is: Shall we have latrines? but, What class of latrine is the best? and, What is the best method of sewage disposal? This question must be answered by each country for itself, in accordance with local conditions. In theory the correct method would be one by which the effete matter could be collected, rendered innocuous, and returned to the land: but there are difficulties, and in British Guiana we have not attempted anything so elaborate. My plan was to devise a cheap and satisfactory method which would be acceptable to the East Indian, and would not prove too great a burden on the estates. With this in view we placed our latrines either over the large drainage trenches, or over smaller trenches leading directly into them, and so the faecal matter was carried away direct to the sea. There were a few instances in which suitable trenches were not available, and in these cases we adopted the bucket system with burial of contents. The provision of these simple structures has already effected a considerable improvement in the health of the labourers.

The points I have thus briefly mentioned give us for our labourers good, well ventilated houses in a well-laid-out and properly drained yard, a good water supply, and good latrine accommodation. It must not be forgotten, however, that these three primary desiderata cannot be maintained in a state of efficiency without constant work and intelligent supervision. The keeping of a yard in proper order entails the constant employment of a small gang, whose business it would be to keep down grass, attend to the small drains, fill up holes and irregularities in the ground, and collect and remove all rubbish: whilst the latrines require the constant attention of a good scavenger to wash them down every day, or even twice daily. It would repay an estate to have such a gang, under the leadership of a well trained inspector, who would provide the brains and direct the work along intelligent lines.

Special Methods directed against Malaria and other Diseases.

Several of the points I have already dealt with, such as thorough drainage of yards, removal of rubbish, especially old tins, bottles, and other receptacles, the keeping down of grass and "bush" and the filling up of holes, are useful in the prevention of malaria, since they do away with a good many of the breeding places of mosquitos. Tanks and vats must be efficiently screened, and swamps and marshy places, if in the region of dwellings, should be drained if possible. Large collections of water and deep trenches are not a source of danger provided they are well stocked with fish, and are kept free from weeds and have clean cut banks. In British Guiana we have had considerable difficulty in dealing with water barrels, which the labourer is so fond of keeping close to his door. These are a great source of danger, and though we insisted on their being screened, we found that the screening was constantly being broken. The only safe proceeding is to have a good convenient water supply such as I have recommended above, and absolutely prohibit all water barrels.

It is impossible in a short paper to deal fully with all measures necessary for a complete antimosquito campaign, but I may here say that in our colony our efforts to lessen malarial fever by antimosquito measures have to a great extent been counteracted by the rapid increase of rice cultivation. In spite of warnings it is being grown far too near the dwellings of labourers and others, to the great detriment of the health of the colony. Of late years the medical department has endeavoured to induce estates authorities to persuade and insist as far as possible on all their employees taking a daily dose of quinine. It was only in 1909 and 1910 that this measure came at all fully into action, and though it is too soon to draw any hard-and-fast conclusions, we can say that so far the outlook is most hopeful.

As in 1910, the number of cases admitted into estates hospitals showed a reduction of 5,800 on the next lowest year, whilst last year there was a further reduction of over 6,000 cases.

In advocating this method of prevention I met with, at the outset, just as much opposition as I had encountered over the latrines, but before I left the colony I had the satisfaction of knowing that the most influential of the employers of labour were on the side of the medical department in this matter, and that the work would be continued on an even wider scale.

As regards the prevention of ankylostomiasis and other intestinal parasitic diseases, I have already dealt with the latrine question, and this measure, along with recognition and treatment of infected cases in the early stage, constitute all the preventive measures necessary. The evidence in favour of the ankylostome becoming sexually mature outside the human body appears to have

no foundation in fact, and if this is so, I cannot think that infected ground could long remain infected if left unpolluted by man.

Ankylostomiasis and malarial fever I look on as the two greatest destroyers of labour in the tropics, and unfortunately they work together far too well. Therefore the strongest efforts should be made to combat both; and in doing so I think the employer of labour will get a good return for his money.

IV.—K. S. Wise, M.B., B.S.Lond., and E. P. Minett, M.D.Brux.,

British Guiana.

1. *The Disposal of Faeces.*

The problem of faeces disposal is by no means an easy one in British Guiana, because the usual methods are not practicable. The whole country is absolutely flat, below high tide level, and the soil consists of a stiff clay almost impervious to water. Therefore gradient drainage is out of the question, as a fall is impossible; close or wide irrigation useless, as the water cannot penetrate the heavy clay, and is liable to drain off into drinking water canals. Trenching, either deep or shallow, is also impossible, as trenches filled with night-soil simply remain a filthy putrefying mass, no moisture escapes except by evaporation, and the trench becomes practically an open septic tank (by virtue of the thick scum on the surface); heavy rains cause these to overflow on to the surrounding land, and they become a serious nuisance and danger. Further, these spots invariably breed enormous numbers of flies, chiefly *Muscidae*, which quickly become an intolerable nuisance. Within recent years more than one epidemic of typhoid fever has been directly traced to flies under the above conditions.

Any pipe system is out of the question, owing to the cost of connecting up a large number of widely scattered coolie ranges, and, further, a fall of even 1 in 40 is in most cases impossible. The clay soil being unstable, the pipes readily break across and become displaced.

Properly constructed latrines have been built in some instances, the soil being removed by means of buckets and buried; the objection to this method is that the coolies will not go to any distance to make use of them, and the land is unsuitable for burying this night-soil.

Under these circumstances an open water carriage system has been adopted on most of the estates in British Guiana.

Latrines are constructed on narrow bridges over an open trench in the centre of coolie yards and between the ranges. These latrines have walls of corrugated iron and wooden floors, in which holes are left through which the faeces drop directly into the water beneath. The trench itself is usually about 6 to 5 ft. wide, about 5 ft. deep; it is kept filled with water and flushed periodically by means of a sluice.

This system, although open to many obvious objections, has been found satisfactory on estates bordering on the rivers, since here a shorter outlet channel (500 yards) is customary, and a greater fall is obtained. On estates bordering on the sea-coast the conditions are less favourable. The outlet channel is two to three miles long, the fall is very slight, and the stream is stationary when the sluice is closed at high tide and sluggishly moving when the sluice is open at low tide. In times of drought an insufficiency of water is maintained in the trenches.

We are at present experimenting with various schemes for the biological disposal of sewage on these estates, based on the principle of a grit chamber, leading to an enclosed septic tank of reasonable capacity, so arranged that the overflow from this is conducted down an open gutter filled with coke or clinker, to act as a nitrifying bed. It is hoped to provide a satisfactory effluent which can be run into the main draining trench and not be offensive. Our experiments are at present not sufficiently advanced to enable us to quote analysis of the contents of the septic tank and of the finished effluent, but we have reason to think that this system is likely to be satisfactory, and to require little, if any, attention once installed and started.

So far, our experiments go to show that biological changes only go as far as ammonia (NH_3) compounds, owing to reducing substances in peaty water, or absence of nitrifying organisms. We never get nitrites or nitrates present in effluent to any amount.

2. *Drinking Water Supplies.*

This would not seem a difficult question in a flat country where the ground water level is rarely more than two or three feet beneath the surface and where the average annual rainfall is approximately 100 inches. It is not so much a difficulty to supply water—there is usually more than a sufficiency of that; but the real difficulty is to provide a drinking water supply of reasonable purity. The usual sources of supply are:

1. Rain water collected from the roofs of the coolie ranges and various other buildings.
2. Impounded peaty savannahs, and river water conducted on to the estates by means of open canals.
3. Well waters from various depths.

To deal with the third variety first: It has been found in most cases that the water derived from artesian wells at depths varying from 10 ft. to 160 ft. was too brackish and too hard for general use. These waters, somewhat milky in appearance, have a distinctly earthy odour, and are usually alkaline in reaction. The following analysis shows their average composition, expressed as parts per 100,000:

Free ammonia, from 0.04 to 0.18 part; albuminoid ammonia, from 0.4 to 0.27 part; chlorides (expressed as Cl_2), 27 to 250 parts; nitrites, absent usually; nitrates, traces occasionally; total hardness ($CaCO_3$), 5 to 44 parts; total solids, 73 to 112 parts; organic, 2.5 to 8 parts; inorganic, 70 to 104 parts; phosphates (estimated as P_2O_5) are present in varying quantities, ranging from 1.0 to 5.5 parts.*

From a bacteriological standpoint, these waters are fairly pure when protected from surface contamination.

Rain water is conserved largely by collecting the rain falling from the roofs by the coolies. The principal objection to this system is that, apart from the possibility of roof contamination by dust, carrion crow faeces, etc., the coolies persist in using vessels such as barrels, tubs, and jars to contain the water, and as the majority of these are unscreened or screened very inefficiently they quickly form most suitable breeding places for mosquitos. On some estates rain water is collected from a number of roofs and collected into large concrete tanks situated partly or wholly beneath ground level; these tanks are usually well roofed over and screened more are less efficiently. Water conserved in this manner undergoes a considerable amount of self-purification, but is of course always liable to fresh pollution from the roof collecting areas after each shower of rain.

Two analyses of water taken from rain water tanks of this description during the dry season are given in Table I.

As will be seen, these waters are of fair quality, and passably free from dangerous pollution. We have recommended that these stored waters be rendered safe by the addition of 1 oz. of fresh chlorinated lime per 1,000 gallons (two parts Cl. per 1,000,000) occasionally—say monthly—in the wet season and every three months in the dry season. Occasionally, in a few instances, the roof water is simply conducted by pipes into an open pond or trench; this system is, of course, open to many grave objections, and is discouraged as much as possible unless the trench can be properly protected from surface pollution.

The other water supply is not as satisfactory nor easily controlled. It consists in digging long trenches about 12 ft. wide, 4 to 6 ft. deep, alongside the coolie ranges. The peaty, brown-coloured savannah water is then simply allowed to run into these trenches, and dipped for use as required.

This mode of water supply has many very grave objections. The trenches are often by the side of the road, and receive road surface washings, etc. Besides, as they are often unfenced, animals can be frequently seen wandering about them. But the worst objection is that they nearly always get polluted by refuse, etc., from the yards and drainage trenches in close proximity, especially in wet weather, when the yards are flooded.

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* In quoting analysis as above, the samples 1 and 2 are identical in each set of analyses. Also, for the sake of brevity, only two examples are quoted, representing a large number.

TABLE I.

Chemical Analyses.

Sample.	Reaction.	Ammonia.		Chlorides.	Nitrites.	Nitrates.	Total Hardness.	Phosphates as P_2O_5.	Solids.		
		Free.	Albuminoid.						Total.	Organic.	Inorganic.
1	Neutral	0.015	0.035	1.3	Nil	Traces	1.7	0.23	6.0	4.5	1.5
2	Neutral	0.016	0.045	0.7	Nil	Traces	4.0	0.23	12.0	3.0	9.0

Bacteriological Analyses.

Sample.	Total Organisms per c.cm.	Faecal Organisms per c.cm.	Faecal Organisms Isolated.	True B. coli communis.
1	135	Absent 6 c.cm.	Nil 6 c.cm.	[illegible]
2	2,060	Present 1 c.cm.	B. la[illegible]; B. cloacae; B. acidi lactici	Nil

Examples of analyses of water supplies of this description are given in Table II.

As will be seen, these peaty waters very soon become heavily polluted with excremental organisms, and cannot be considered as in any way satisfactory.

3. *Housing.*

With regard to this subject we do not think that we can do better than quote parts of the existing building regulations. The coolie ranges in this colony are built of wood, but they are extremely well constructed and kept in first class order, especially on the estates where indentured coolies are employed:

1. On any plantation where new dwellings for indentured immigrants are required the manager shall give in writing one month's notice to the medical inspector of his intention to build such dwellings, at the same time describing the site on which they are to be erected.
2. No such dwelling shall be erected without the approval of the medical inspector.
3. Each range shall be a single story building, constructed on the following plan:
   - (*a*) Length, either 50 ft. or 100 ft., and divided accordingly into five or ten rooms, each room to be numbered consecutively.
   - (*b*) Breadth 14 ft.
   - (*c*) Height from upper side of sill to lower edge of wall plate 7 ft. 6in.
   - (*d*) Height to apex of rafters from top of wall plate 8 ft.
   - (*e*) Height of upper side of sills from ground level not to be less than 2 ft., and in special cases to be higher, if required by the medical inspector and approved by the surgeon general.
   - (*f*) The roof may be either shingled or covered with corrugated galvanized iron sheets, and need not be close boarded.
   - (*g*) The floors may be either made of boards laid on floor beams or made of earth raised to the level of top sills and well rammed.
   - (*h*) The walls shall be of close boards.
   - (*i*) Each room shall have a window on the windward side and a door on the leeward side, or there may be a door on each side; if the latter, then the door on the windward side shall be in halves, so that the upper portion can form a window. Each room shall contain a platform or other suitable arrangement for sleeping, to be approved by the medical inspector.
   - (*j*) The partitions between the rooms shall be close [illegible] boarded with grooved and tongued joints to a height of 2 ft. above the plate, the space above that to be close lathed.
4. Each range shall have a gallery not less than 6 ft. wide by a height of not less than 5 ft. in the clear, and running the whole length of the leeward side.
5. Permanent ventilation shall be provided as follows:
   - (*a*) A leeward "cow mouth," 4 in. high, running to within 2 ft. of each end of the roof.
   - (*b*) The rafters shall be placed on interties, which on the leeward side are to project 3 ft., and on the windward side 1 ft. The ventilating spaces thus formed shall be lathed, not boarded.
   - (*c*) There shall be a series of louvres at both gables, extending from the apex of the rafter downwards to a distance of 4 ft.
6. Each range shall be provided with a distinguishing letter, and each room numbered.
7. Each range shall be placed on a dam not less than 36 ft., or more than 60 ft., wide, with a small drain running both in front and behind the range, and leading on to the main drainage; the ground shall be sloped off towards these drains.
8. The distance between the gable of one range and the nearest of the next range shall not be less than 40 ft., or more than 50 ft.
9. The distance between the front of one range and the back of the one next in front shall be not less than 50 ft., or more than 75 ft., except with permission of the medical inspector.

The only improvement that we are of opinion would be of value in the above is this, that if the ranges are raised from the ground at all they should be raised at least 6 ft. As a general rule all houses in British Guiana are best if raised a good height from the ground.

DISCUSSION.

Lieutenant-Colonel JOHN K. RITCHIE, R.A.M.C., said: I have listened with great interest to Dr. Malcolm Watson's paper. Like everything he has done, it shows that genius for clear thinking and hard working which has made him one of the pioneers in the great efforts for the restriction of tropical disease which has been perhaps the most important achievement of the last years of the nineteenth and the first decade of the twentieth century. Its scope

TABLE II.

Chemical Analyses.

Sample.	Reaction.	Ammonia.		Chlorides.	Nitrites.	Nitrates.	Total Hardness.	Phosphates as P_2O_5.	Solids.		
		Free.	Albuminoid.						Total.	Organic.	Inorganic.
1	Neutral	0.038	0.061	0.80	Nil	Nil	1.80	0.12	20	16	4
2	Faintly acid	0.100	0.150	1.5	Traces	Traces	2.0	0.50	45.6	30.6	15.0

Bacteriological Analyses.

Sample.	Total Organisms per c.cm.	Faecal Organisms per c.cm.	Organisms Detected.	True B. coli communis.
1	2,000	10	B. cloacae; B. oxytocus; B. neapolitanis; B. violaceous	Absent 3 c.cm.
2	38,000	1,000	B. lactis aerogenes; B. ent. sporogenes; S. faecalis	Present 3 c.cm.

has been coextensive with his subject. In criticizing it, or rather in expressing my views on it and the other papers we have listened to, I shall confine myself to antimalarial measures and sewage disposal. On the other points we are all agreed. As regards the former, it may not be without interest to the meeting if I state that I have formed the opinion that, good as all the other methods for the reduction of malaria are, the best is the prophylactic administration of quinine. It is almost a counsel of perfection to expect in a flat soil that stagnant water can be prevented, and the smallest surface is a breeding place for *Anopheles*. In Multan in 1909 all the usual methods were used; in 1910 I concentrated myself on quinine. I was surprised that my friend Dr. Watson advised the daily administration of quinine. Considerations founded on the life-history of the organism made me believe that a weekly administration of quinine was all that was necessary. By giving 15 grains every Thursday, cases of malaria were reduced 70 per cent.; that is to say, there were three cases for every ten the year before. Idiosyncrasy must be considered, and where the slightest cinchonism is produced the dose should be reduced, but I found few men who could not take 15 grains without discomfort. The shallow trench system appears to me better than the incinerators. In the flat this can be carried out easily. It certainly is more economic, as it returns nitrogenous matter to the soil. The desideratum is plenty of ground and very careful supervision. It is best to divide a large piece of ground into five parts, four of which are under cultivation, while the other is used for trenching.

Major S. R. CHRISTOPHERS, I.M.S., said: There is one aspect of malaria prevention in the case of labour in the tropics that has not been emphasized in any of the papers read to-day, and this aspect is to my mind most important—namely, the economic. I mean economic from the point of view of the coolie. About a year ago, along with Dr. Bentley, I read a paper on what we called "Tropical Aggregation of Labour," and we showed that malaria when it decimates, as it often does, native labour communities, derives its intensity from the occurrence of economic stress among the coolies. This stress is, curiously enough often hidden, but it exists none the less, and the very first antimalarial measure in the case of a labour force suffering severely from malaria is the close investigation of the economic conditions as they affect the individual coolie in this community. The rectification of economic errors (and these may not be always on the surface) is the first step in malaria reduction under these conditions.

Dr. W. F. LAW (British Guiana) said: In British Guiana we have advocated the habitual administration of quinine. The amount given practically works out at 5 grains three times a week, and I consider this better than one large dose each week. Charts which I had instituted showed that ordinary measures were producing little or no effect in the reduction of malarial fever. We therefore instituted the daily administration of quinine. This, as the figures given with my paper show, has reduced the amount of malarial fever by more than one half. In a very flat country such as British Guiana, it is most difficult to eradicate the mosquito; therefore, quinine prophylaxis is necessary as a supplemental measure. We gave our quinine in the form of tablets made specially for us by Howard and Son, and by their use we find the quinine is taken much more readily.

Dr. E. P. MINETT (British Guiana) was of opinion that mosquito campaigns should be the first line of defence against malaria, because of the serious results apart from the febrile reaction—for instance, anaemia and general weakness. But quinine was a good second line, and should be used in conjunction with mosquito destruction. In British Guiana they gave 5 grains three times a week, instead of 15 grains in one dose, as suggested by Lieutenant-Colonel Ritchie. Because, although quinine diminished the results of infection in the way of fever, etc., it did not prevent the actual reinfection.

Captain C. RYLEY, R.A.M.C., said that in Hong Kong two companies of a European regiment recently arrived from home, and therefore malaria free, were ordered to proceed to a camping ground which was known to be malarial. In order to test the efficacy of quinine as a prophylactic, a daily dose of 5 grains of the sulphate of quinine were given daily to one company, the other company getting no quinine, the idea in the first place being to keep a small amount of quinine in circulation to destroy the sporozoites as they entered the body. The result of the experiment was that 47 per cent. of one company and 49 per cent. of the other were found to have benign tertian parasite.

Dr. W. T. PROUT, C.M.G. (Liverpool) agreed with Dr. Watson as to the necessity for common-sense schemes, but considered that while there was a danger of extravagant schemes being put forward, there was an equal danger of being too economical. It was not his experience that any executive, whether government, commercial, or agricultural, was ever in danger of giving too much, the usual tendency was to give much too little. Within the last ten years a vast change had taken place in the point of view as regards sanitation in the tropics. They had known for many years the lines on which water supply, sewage removal, etc., should be organized and carried out, but now with the discovery of Ross they had a new element introduced, and now tropical sanitation resolved itself largely into a war against insect-borne disease. The problems involved were very complex, and an intimate knowledge of parasitology, of the life-history of insects, of native habits and surrounding was required. He considered that the whole question of tropical sanitation required co-ordinating, and he advocated the formation of a central advisory board for all the colonies, on which men with practical experience in the tropics would sit, and which would collect information and advise on any matters connected with the pressing needs of the various colonies.

HELMINTHIC TOXINS.

By M. WEINBERG,

Paris.

WORMS play a very important rôle in tropical pathology. Their action on the organism is not, however, completely elucidated. In the course of the last ten years I have been much occupied with the part taken by worms in the etiology of certain infectious diseases. It is actually definitely admitted that intestinal parasites and worms in general are capable either of inoculating microbes directly, or of favouring their penetration into the organism. But though this is true, it is not a characteristic of the action of all worms. It has been supposed for a long time that worms secrete toxins, but the authors who have been engaged in this question have not brought forward sufficient proofs in favour of this theory. However, researches undertaken for some time by a certain number of authors have placed in evidence a large number of facts which permit us to affirm that the parasites secrete toxic substances, and that these substances are absorbed by the host, in the organism of which they often provoke considerable trouble. We can divide all the facts which prove the existence of verminous toxins into two principal groups:

1. Into those of which we have direct proof.
2. Into others, which furnish us with the proofs just as conclusive, but indirect.

The indirect proof of the intoxication of the organism in helminthiasis is brought forward by the presence of eosinophilia. The researches of Achard, Protcher, and those which have been made by us in collaboration with Moore, Alexander, and Hugo Mello, have shown that this eosinophilia is due exclusively to the action of parasitic substance on the haematopoietic organs. They have explained why this eosinophilia diminishes, and even disappears completely, under the influence of a very intense infection, or even in the course of an infectious complication. We have searched for a long time for direct proofs of the toxicity of worms. Guided by the anaemia observed in the course of ankylostomiasis, some observers (Calmette and Breton, Luigi, Preti, etc.) have discovered that extracts of ankylostomes are capable of destroying the red blood corpuscles. It has been shown that all parasites, worms, or insects which live on red corpuscles elaborate haemotoxic substances which prevent the coagulation of blood and dissolve the red cells. This happens with sclerostomes, larvae of gastrophilia, etc.

I believe, too, that the ankylostoma and sclerostoma secrete also an epitheliotoxin—that is to say, a substance capable of dissolving epithelial cells. Indeed, Looss has found in the intestinal canal of ankylostoma the débris of epithelial cells. I have here under the microscope a preparation which shows a sclerostoma fixed on the wall of the large intestine of a horse. You can see that the œsophagus of the parasite is filled with blood. These are completely disintegrated in the lower part of the intestine, and that is not an exceptional case. Thus, there can be no doubt that the sclerostoma secretes a cytolytic toxin for epithelial cells.

The experiments made with parasites are very interesting: but the objection can always be made that the results obtained are due, not to the action of toxins secreted by the parasite, but especially to those of the products of disintegration of the cells, since they were made with extracts of the parasites. In order to show that the worms secrete a true toxic substance it is indispensable to work, not with an extract but with a parasitic liquid, pure and sterile, and to show that it is harmful for animals belonging to the same species as those infected by the worm. We have been able to carry out this experiment, M. Julien and myself, in carrying out our researches on the *Ascaridae* of the horse. By a special technique of which you may find the details elsewhere,[1] we have recovered the pericæteric liquid of *Ascaris megalocephala* in a state of purity and sterility. This liquid has been tried on a carrier of *Ascarida*—that is to say, on a horse. We have been able to show in this way that the instillation of some drops of this liquid into the eye of a horse produces, often at the end of a few minutes, sometimes at the end of half an hour, an intense congestion of the eye, and considerable tumefaction of the eyelids. Although the sensibility of the horse is quite individual, one obtains easily 90 per cent. of positive reactions by injecting 1 c.cm. of ascaridian liquid into the eye of the horse. Sometimes reaction is more general; the horse suffers from dyspnœa, which is very intense, profuse sweat, and even sometimes the symptoms are complicated by severe diarrhœa. These phenomena, although sometimes of a very severe intensity, only last a few hours, the horse being completely recovered the next morning. This toxin of *Ascarida* is very active; some strains are active even when diluted 5,000 times. It is thermostable: the liquid remains active after a sterilization of twenty minutes in the autoclave at 120°. It is very complex, and must in reality represent a union of a series of toxic substances, since we have obtained inflammatory phenomena as well with the alcoholic and other extracts, etc., as with products obtained by coagulation by heat and by precipitates after treatment with alcoholic ether, etc. The ascaridian liquid is also very toxic for other animals. Thus, it kills a guinea-pig of 200 to 300 grams in a dose of 1 to 3 c.cm. The rabbit is more resistant; one can inject up to 40 to 60 c.cm. without it killing it immediately, but very often it dies of intoxication the next morning or after some time.

Certain authors have affirmed that the ascaridian toxin is very haemolytic. This is not the case. It is sometimes slightly haemolytic, but generally the red cells put in contact with the ascaridian liquid remain intact, even at the end of twenty-four hours in the incubator at 37°. But this liquid certainly acts on the red cells to render them more easily phagocytable. This fact results from some unpublished work done recently in my laboratory by M. de Lintwarer. M. de Lintwarer has discovered in guinea-pigs injected daily with small doses of the pericæteric liquid an erythrophagia of high degree. In these animals the spleen and glands hypertrophy and show a considerable quantity of macrophages filled with red cells. This erythrophagia has necessitated the formation of a great number of new macrophages, and one can see in sections of the spleen a multiplication of these elements, in the centre of the lymphatic follicles, easily recognizable by the presence of numerous karyokinetic figures. Thus the ascaridian toxin acts directly, like all other parasitic toxins, on the bone marrow, provoking eosinophilia, but it acts also indirectly on the other centres—namely, the haematopoietic centres, like the spleen and the lymphatic glands, in giving place to the formation of lesions which I have just described.

The horses intoxicated by this ascaridian toxin immunize themselves against this toxin: thus, we have been able to state that the majority of horses infected by a great number of these parasites remain insensible to the local action of the perienteric liquid. This, we believe, is the first example observed of immunity against a verminous toxin.

I have chosen especially the example of an ascaridian toxin, for I have seen published a little time ago a great work on the non-toxicity of this parasite and of certain other parasites. It is, however, very easy to convince oneself of the contrary.

The best proof that the parasites secrete toxins is that the organism absorbs these toxins and elaborates antibodies, of which research permits us to make the diagnosis of helminthiasis. You know what great service to the clinicians the serum diagnosis of echinococcosis renders. Personally I have had occasion to study the serum of more than 450 cases who have been suspected of hydatid cysts, and in 70 to 80 per cent. of these the laboratory diagnosis has been very useful for the doctor treating the case. And these antibodies are to be found in the serum of cases even when they are infected by all other parasites whose toxic actions were not suspected before.

The short time that I have at my disposal does not permit me, unfortunately, to enter more into detail nor to forward certain other experiments of mine. I would only insist upon the result of these new researches, that helminthiasis is, above all, characterized by an intoxication, slight or severe, acute or chronic, produced by the toxic products which the parasite secretes. Since the mouth organs of the parasites or of the larva permits it to fix itself on the intestinal wall, or to penetrate into the internal organs, it produces mechanical lesions as well as functional troubles. In other cases it carries with it microbes which cause an infective disease which can be serious and even mortal. Thus, in helminthiasis as well as in other diseases, complications can ensue which may be more serious than the original disease, which finally it completely masks.

Our helminthological knowledge strives after practical applications. It is indeed very important for a clinician, and, above all, for a clinician working in an area infested by parasites, and especially in tropical countries, to take account of all the clinical symptoms which can be easily explained by the action of worms. It is also important for an investigator to know that many of the parenchymatous lesions, and especially those which are found in the centre of the haematopoietic organs, are not alone due to the action of microbes, but can be produced spontaneously by verminous infection.

REFERENCE.
[1] *Compt. Rend. de la Soc. de Biol.*, T. lxx, p. 337

DISCUSSION.

Dr. W. F. Law (British Guiana) said: The question of toxins in helminthiasis is important as throwing light on the pathological appearances and clinical symptoms found in these cases. We have recognized for a long time, from clinical observation, that there must be an active toxin, but as far as I know there has been no scientific proof of its existence, so that Dr. Weinberg's paper is exceptionally valuable. In a paper on ankylostomiasis in the *British Guiana Medical Annual* of 1892 Dr. Ferguson called attention to the pathological appearances seen in ankylostomiasis, laying special stress on: (1) White softening of the brain; (2) a catarrhal and ulcerative condition of the large gut; (3) a delicate cirrhotic change in liver, spleen, and kidneys. Drs. Daniels and Conyers in the same journal for 1895 speak of a fatty change in these organs. All these changes are most probably brought about by the action of the toxin. In the same paper Dr. Daniels draws attention to the presence of haematoidin, and also of a deposit of iron-bearing granules in liver, spleen, and kidneys. These two deposits he looks on as evidence of haemolysis, and are therefore further evidence of the presence of a toxin. Dr. Daniels also calls attention to the fact that one of the taenia produces intense anaemia, though not a blood-sucking parasite. I have myself seen a case of intense anaemia in an otherwise perfectly healthy East Indian, apparently due to the presence of the *Distoma crassum* and *Amphistoma hominis*. Neither of these are blood

feeders, and yet their expulsion resulted in rapid disappearance of the anaemia. A further evidence of toxic action is to be found in the pyrexia so common in ankylostomiasis. This is very frequent, and appears to be due to the presence of a toxin. So that we have strong clinical evidence of the existence of a toxin, and Dr. Weinberg's paper gives us the scientific proof of what we long knew must be the explanation of many symptoms of these diseases. The toxin theory explains the very constant appearance in these cases of intestinal parasites of what we looked on as intercurrent disease, but which may be due directly to the toxin produced.

BLOOD DETERMINATION IN A CASE OF KATAYAMA'S DISEASE.

By Fleet Surgeon BASSETT-SMITH, C.B., R.N.

THE disease in the following case was contracted in June, 1911, near to Hankow, China, in the Yangtse Valley. Early fever was present, some irregularity of bowels followed with progressive anaemia, but there were few other symptoms. On return to England the patient's condition steadily improved, and now, one year after the onset of the disease, he is apparently well.

Blood Observations.

Relative Count.	Polymorpho-nuclears.	Mono-nuclears.	Lympho-cytes.	Eosinophiles.	Basophiles.
Sept. 13th, 1911: White, 12,300	36%	12%	14%	38%	1
Oct. 14th: Red, 4,500,000	29.5	7.5	18.0	45.0	—
White, 16,000... ...	—	—	—	—	—
Nov. 10th: Red, 3,700,000	20.0	4.7	16.5	58.0	—
White, 25,000... ...	—	—	—	—	—
Dec. 14th: Red, 5,200,000	33.0	4.0	16.0	47.0	—
White, 24,000	—	—	—	—	—
Dec. 26th: White, 25,000	20.0	7.0	14.0	59.0	0.5
Jan. 1st, 1912: Red, 4,800,000	19.0	3.0	14.0	64.0	—
White, 28,000... ...	—	—	—	—	—
Jan. 6th: Red, 4,080,000	23.0	3.0	11.0	63.0	—
White, 28,000	—	—	—	—	—
Feb. 13th	26.0	6.0	19.0	49.0	—
Feb. 20th	31.0	8.0	16.0	45.0	—
Feb. 26th: Red, 5,200,000	48.0	2.5	11.0	38.0	—
White, 28,000	—	—	—	—	—
July 16th	—	—	—	30.0	—

The patient is now feeling quite well and has returned to his duty. The characteristic ova were found in small numbers in the stools for seven months.

COPRA ITCH.

By ALDO CASTELLANI, M.D.,

Director, Government Clinic for Tropical Diseases, Colombo, Ceylon.

IN people having to do with copra, handling it, etc., in Ceylon, I have very often observed an extremely pruriginous dermatitis, somewhat resembling scabies. I have observed it both in the coolies and in the European supervisors of labour. The term "copra," as well known, is applied to the dried kernels of the cocoanuts. From fresh cocoanuts the kernels are removed, exposed to the sun for a couple of days; a portion of the kernel crumbles away: this is copra dust. From the kernels cocoanut oil is prepared, and other products.

Clinical Symptoms.—The first impression on seeing a patient suffering from the condition, which from convenience sake I shall call "copra itch," is that he is suffering from scabies. The hands, arms, legs, and sometimes the whole body except the face, present rather large, extremely pruriginous papules frequently covered by small bloody crusts due to scratching; pustules and furuncles may be present. The eruption starts generally on the hands, and from there spreads to the arms, legs, and trunk.

Pustulation, as already stated, may be present, induced by secondary pyogenic infection caused by scratching, and the polymorphic appearance of a scabies eruption, consisting of papule vesicles, excoriations and pustules, may be found. In contrast to true scabies no real burrows or cuniculi are found.

The eruption has in my experience very little tendency to heal spontaneously; I have seen cases in which the eruption has been present for three or four months.

Etiology.—The eruption is in all probability due to a sarcoptes, which, according to the zoologists to whom I have given specimens, is a new species. It is larger than *Sarcoptes scabici*, and is plainly visible to the naked eye. In some samples of copra dust received from infected mills this sarcoptes was simply swarming, enormous numbers of white minute bodies (the sarcoptes) being visible moving about. This sarcoptes is 1 to 2 mm. in length, has four pairs of legs and several long, stiff, hairlike formations; the male has a well-developed penis. The sarcoptes of copra itch does not appear to bury itself in the skin; it apparently induces the dermatitis in the same manner as *Pediculoides ventricosus* (Newport), which lives in diseased cereals, produces an eruption in people handling such cereals; but further investigation is necessary to settle this point.

Experimental Reproduction of the Disease.—I have made repeated experiments in persons who have volunteered. By rubbing in copra dust not containing sarcoptes no eruption is caused. By rubbing in copra dust containing sarcoptes itching frequently begins very shortly after, and twenty-four to forty-eight hours later an extremely pruriginous papuloid eruption often develops: the same result is obtained by picking out of copra dust the sarcoptes and placing them (alone, without any dust) on the skin underneath a piece of cloth. A few individuals seem to be unaffected by the presence of the sarcoptes or the copra dust containing it.

Diagnosis.—As already stated, the eruption on superficial examination can easily be taken for scabies; true burrows, however, are not present, and the two sarcoptes are morphologically different.

Treatment.—Naphthol and balsam of Peru are, in my experience, very useful in the treatment of the eruption. In adults a 10 to 20 per cent. beta-naphthol ointment may be used, or balsam of Peru and vaseline in equal parts; for women and children the following ointment is very useful, causing very little irritation of the skin: Beta naphthol, 30 grains; balsam of Peru, 1 drachm; vaseline, 1 oz. The ointment should be applied at night after a hot bath.

NOTE ON THE IMPORTANCE OF HYPHOMYCETES AND OTHER FUNGI IN TROPICAL PATHOLOGY.

By ALDO CASTELLANI, M.D.,

Director, Government Clinic for Tropical Diseases, Colombo, Ceylon.

THE study of bacteria is so engrossing, and has given results of such magnitude, that one is apt, perhaps, to overlook the importance, from a medical point of view, of organisms higher than bacteria—the Hyphomycetes and other orders of fungi.

The investigation of fungi in relation to disease began, as a matter of fact, long before that of bacteria. In 1837 Remak discovered the parasite of favus, which was more completely described by Shonlein in 1839. Between 1841 and 1844 Grüber described the fungi found in thrush and ringworm. Later the great discoveries made in bacteriology overshadowed vegetal parasitology,* though the researches of Bollinger, Blanchard, Manson, Sabouraud, Brumpt, and others have shown the importance of vegetal parasites in the etiology of disease, especially in the

* The term *vegetal parasites* is generally used to indicate parasitic vegetal organisms of higher order than bacteria.

tropics. There is little doubt, in my humble opinion, that further investigation will tend to increase the importance of vegetal organisms higher than bacteria in the same manner that the great medical importance of animal organisms higher than protozoa has already been recognized. In this paper I propose briefly to touch upon some diseases due to fungi which I have observed during my practice in the tropics, and which may possibly be of some practical interest. Vegetal parasites may attack any organ and system of the human body—the integumentary system, as well known, is the most frequently affected, the nervous system the most rarely.

Mycotic Affections of the Nervous System.—In 1904 from the pus of a cerebellar abscess I grew an extremely delicate streptothrix; it was Gram-positive and acid-fast; no club-like formations, as in actinomyces, were present in microscopical preparations. This streptothrix grew comparatively well on sugar media, very slowly and scantily on ordinary agar. On all media the colonies had a black pigmentation. Abscesses of the brain and cerebellum due to true actinomyces have been described by several authors. In cases of general infections due to saccharomyces and endomyces-like fungi abscesses containing such fungi may be found in the brain and spinal cord, as in other organs of the body.

Eyes.—I have seen two cases, in Cingalese children, of a conjunctivitis apparently due to an endomyces; the conjunctiva was highly inflamed, there was photophobia and purulent discharge. The microscopical examination showed, in addition to pus cells, numerous yeast-like bodies. No gonococci or any other bacteria were present. Agar and various sugar-agar tubes were inoculated with the pus, and an endomyces-like fungus was grown. Unfortunately the sugar reactions were not investigated at the time, and the cultures having been lost I am unable to classify this organism. It is to be noted that, not rarely, at least in the tropics, spores of various fungi are found in the slight secretion which so often collects at the angles of the eyes even in normal people, but these spores apparently play only a saprophytic rôle. I have never observed fungus infection of the deeper structures of the eyes, but these have been recorded by several authors. In ulcers of the cornea *Aspergillus fumigatus* (Fresenius) has been found several times (keratomycosis aspergillina).

Rhinomycoses.—Yeast-like and other fungi are often observed in the nasal mucus; they may play only a saprophytic rôle or they may give rise to an inflammation of the mucosa. Recently a little native boy was brought to me by his parents, who stated that he had been suffering for the last three months from repeated attacks of severe sneezing, and that they had observed that on blowing the nose minute black dots were coming out in the mucus. Microscopical and cultural investigations showed this case to be one of aspergillosis due to *A. niger*.

In the literature cases of aspergillosis of the nose due to *A. glaucus* and *A. fumigatus* have also been described.

Otomycoses.—Various fungi may be present in the external auditory canal without causing any symptom. In some cases, however, the fungus multiplies abundantly, and may be the cause of a local inflammation, or apparently may facilitate the formation of wax plugs. In several cases I have found an endomyces, which I have called *End. rhoi*. I have recently been able to study its cultural reactions, and these not having been previously published, I give them here (see Table I).

In two cases of otomycoses I found a fungus belonging to the family Mucoraceae, *Lichteymia ramosa* (Lindt. 1886); it was present in great quantity, and the patient complained of tinnitus aurium and deafness. It is interesting to note that this fungus is found often in the nasal mucus of horses, and both my cases were Tamil muttus (horse-keepers). Various authors (Siebenmann, Böke, Hackel, etc.) have recorded cases due to *Lichteymia corymbifera* (Cohn), *Rhizomucor septatus* (von Bezold); Maggiora and Gradenigo found *Saccharomyces ellipsoides* (Rhees) in a case of chronic otitis media. The same authors found a new species of saccharomyces (*S. roseus*) in the Eustachian tube.

Aspergillomycosis of the ear is comparatively frequent: I have seen several cases in Ceylon, apparently due to *A. fumigatus* (Fresenius). Cramer observed *Aspergillus niger* (von Tiegham); Wreden, *Aspergillus flavus* (De Bary); Siebenmann, *Aspergillus repens* (De Bary); and *Aspergillus nidulans* (Eidam). Fungi of the order Basidiomycetes, family Ustilagineae, have also been observed: *Ustilago carbo* and *Tilletia levis*. Of the order Hyphomycetes, *sensu stricto*, *Trichothecium roseum* (Persoon, 1801) has been observed in a few cases.

I may here mention that the best treatment I have found for the various forms of otomycosis is syringing with hydrogen peroxide 2 parts, and alcohol 1 part.

Alimentary System.—Mycotic affections of the tongue (lingua nigra, lingua pilosa) are met with; some pigmented patches are due in some cases to *Oospora lingualis* (Gueguen); in other cases to *Cryptococcus linguae pilosae* (Lucet, 1901); in others to *Rhizopus niger* (Ciaglinski and Hewelke, 1893). Fungi of the genus Actinomyces, as is well known, may attack the organ.

Thrush of the tongue, as well as of the oral mucosa in general, is as common in the tropics as in temperate zones. It is generally stated that it is due to *Endomyces (oidium) albicans*. It would seem from my researches, the results of which have been published in other journals, that there is in reality a plurality of species of endomyces producing the affection, and that the term *Endomyces albicans* has been used in the past to cover a number of different species.

A very serious disease in which, according to Le Dantec and others, fungi play an important rôle, is sprue. The intestinal hyphomycetic flora of some "sprue" patients is in fact very abundant. The microscopical examination of the frothiest portions of the stools of these patients often reveals numerous yeast-like bodies and mycelial filaments, which can also be seen in the ulcers on the tongue and gums. I have grown six different species, four of which I have investigated more thoroughly, and have called: *End. enterieus*, *End. faecalis*, *End. intestinalis*, *End. rotundus*. It is to be noted, however, that three of the species isolated I have observed also in normal individuals, or in persons suffering from other diseases. Table II (p. 1210) shows the sugar reactions of the four species.

The further investigation of the hyphomycetesis in sprue is worth while continuing. Even if, as seems probable, the Le Dantec theory is not correct, these fungi might play a subsidiary etological rôle in producing certain symptoms—for instance, the frothiness of the motions.

It is well known that in certain patients a strong alkaline treatment alleviates some symptoms. I have in my mind the case of a European gentleman suffering from sprue, in whom the attacks of white frothy diarrhœa were greatly ameliorated by using a strong alkaline mixture prescribed for him by Mr. Cantlie, one of the authorities on this disease. This patient never travelled without this mixture.

Possibly the administration of alkalis by reducing the acidity of the intestinal contents, which are generally very acid in sprue, may hinder the growth of the intestinal hyphomycetes, which, as is well known, grow much better in acid rather than in alkaline media.

Mycoses of the Respiratory Organs.—In the tropics bronchial and broncho-alveolar affections, due in all probability to fungi, are of common occurrence. The cases

TABLE I.

	Litmus Milk.	Glucose.	Levulose.	Maltose.	Galactose.	Saccharose.	Lactose.	Mannite.	Dulcite.	Dextrine.	Raffinose.	Arabinose.	Adonite.	Inulin.	Broth.	Peptone Water.	Indol.	Gram.	Gelatine.	Semini.
End. rhoi	A Alk.	AG	AG	AS	AGS	AG	0	0	0	0	0	0	0	0	C	C	0	+	0	0

TABLE II.

	Litmus Milk.	Glucose.	Levulose.	Maltose.	Galactose.	Saccharose.	Lactose.	Mannite.	Dulcite.	Dextrine.	Raffinose.	Arabinose.	Adonite.	Inulin.	Broth.	Peptone Water.	Indol.	Gram.	Gelatine.	Serum.
End. enterieus	Alk	AG	AG	AG	AG	AG	0	A	0	A	0	0	0	0	C	C	0	+	0	0
End. faecalis	A D P	AG	AG	AG	AGS	AGS	0	0	0	0	0	0	0	0	C	C	0	+	0	0
End. intestinalis	AD	AG	AG	AS	A	A	0	0	0	0	0	0	0	0	C	C	0	+	0	0
End. rotundus	AC	A	A	A	A	0	A	0	0	0	0	0	0	0	C	C	0	+	0	0

A, acid; Alk, alkaline; G, gas; C, clot (milk), clear (broth and peptone water); D, decolorized; P, peptonized; S, slight; 0, negative result.

of bronchomycosis I have observed in Ceylon may, according to the fungi found, be classed as follows:

1. Cases of brocho-endomycosis (broncho-oidiosis) due to fungi of the genus Endomyces (oidium).
2. Cases of broncho-aspergillosis and penicilliosis due to aspergilli and penicilli.
3. Cases of broncho-streptotrichosis and broncho-actinomycosis due to the fungi of the genus Streptothrix and Actinomyces.
4. Cases of broncho-mucormycoses due to fungi of the family Mucoraceae, such as *Rhizomucor parasiticus* (Lucet and Costantin), and *Lichtheymia corymbifera* (Cohn).

I should like here to say a few words on what is called in Ceylon "tea-factory cough" Coolies working in tea factories are often observed to deteriorate in their general health, losing flesh and becoming easily tired; at the same time they develop a cough with muco-purulent expectoration. The physical examination of the chest reveals nothing—except occasionally a few coarse râles. If these coolies are taken away from the factory and sent to work in the fields, all the symptoms slowly disappear.

A similar affection I have occasionally observed in tea-tasters. Tea-tasters, in order to judge of the quality of teas, not only taste infusions, but frequently fill their hands with tea-leaves and bury for a moment their noses in it, snuffing it up: in this way a certain amount of tea dust enters their nasal cavities, and with the tea dust the micro-organisms which are found in it. I have examined a number of samples of tea and tea dust, and the micro-organisms present, as a rule, in Ceylon are:

1. Fungi of the genus Endomyces—constantly.
2. Fungi of the genus Aspergillus and Penicillium—frequently.
3. A peculiar streptococcus different from *S. pyogenes*—frequently.

All or some of these organisms may be found also in the nasal cavities of tea-tasters, and in the expectoration of people suffering from so-called "tea-factory cough."

For eleven months I insufflated every day into the nostrils of a guinea-pig samples of tea and tea-dust; when the guinea-pig died the examination of the lungs showed a broncho-alveolitis; microscopically, in smears and sections of the lungs, numerous round yeast-like cells were present, and culturally an endomyces fungus was grown.

Table III contains the commonest species of endomyces which I have isolated from sputum in cases of bronchial affections in Ceylon; probably many of these species play only a saprophytic rôle, but two at least—*End. tropicalis* and *End. paratropicalis*—are, according to my experiments, pathogenic.

Mycoses of the Genito-urinary Organs.—Several authors have put on record cases of urethritis with black discharge due to *Aspergillus niger* (von Tieghem, 1867). An old Tamil coolie came some years ago to the clinic, complaining of black urethral discharge dating from several months back: he stated that he had not had sexual contact for several years. The discharge was purulent and presented numerous black granules; a few cocci were present, but no gonococci. The granules consisted, under microscopical examination, of numerous mycelial threads and spore-like bodies. Various sugar media were inoculated and a fungus was grown, producing a black pigmentation. The cultural characters were very similar to those of the fungus found in tinea nigra—namely, *Foxia mansoni*.

Thrush-like affections of the vagina are not rare. In a little Cingalese boy 5 or 6 years old I saw a thrush-like condition of the glans penis due to an endomyces.

Aspergillosis and *penicilliosis* of the vulva and vagina are occasionally met with. Actinomycosis and sporotrichosis of the genital organs, male and female, as well as occasionally of the kidneys and bladder, may occur.

Mycoses of the Skin.—Diseases of the skin and hair due to vegetal parasites are extremely common in the tropics. Some of the fungi found are the same as those observed in

TABLE III.

	Litmus Milk.	Glucose.	Levulose.	Maltose.	Galactose.	Saccharose.	Lactose.	Mannite.	Dulcite.	Dextrine.	Raffinose.	Arabinose.	Adonite.	Inulin.	Starch.	Broth.	Peptone Water.	Indol.	Gram.	Gelatine.	Serum.
End. albicans (Robin)	AC	AG	AG	AGS	AG	Av. S	0	0	0	0	0	0	0	0	0	C T P	C	0	+	+	+ S
End. tropicalis (Castellani)	A	AG	AG	AG	AG	AGS	0	0	0	0	0	0	0	0	0	C	C	0	+	0	0 B
End. paratropicalis (Castellani)	A Alk	AG	AG	AG	AG	AG	0	0	0	Av. S	0	0	0	0	0	C T P	C	0	+	0	0
End. pinoyi (Castellani)	0	AG	AG	AG	0	0	0	0	0	0	0	0	0	0	0	C	C	0	+	0	0
End. bronchialis (Castellani)	0	AG	AG	AG	0	AGS	0	0	0	A	0	0	0	0	0	C	C	0	+	0	0
End. guillermondi (Castellani)	Alk	AG	AG	AS	A	AG	0	0	0	0	AGS	0	0	0	0	C T P	C	0	+	0	0
End. negrii (Castellani)	A B	AG	AG	AS	AGS	AG	0	0	0	0	AGS	0	0	0	0	C	C	0	+	0	0
End. nivea (Castellani)	Alk	AG	AG	AG	AG	AGS	0	0	0	0	AG	0	0	0	0	C	C	0	+	0	0
End. [illegible]	A	A	A	A	A	A	A	A	0	AS	0	0	0	0	0	C T P	C	0	+	0	0
End. bronchotrophicalis (Castellani) ...	AC	AG	AG	0	AGS	AG	AG	0	0	0	0	0	0	0	0	C	C	0	+	0	0
End. [illegible]	A	AG	AG	AG	AG	AG	0	AS	0	0	0	0	0	0	0	C	C	0	+	0	0 P
End. rugosus (Castellani)	ACS	A	A	A	A	A	0	0	0	0	0	0	0	0	0	C	C	0	+	0	0
End. krusei (Castellani)	0	AG	AG	0	0	0	0	0	0	0	0	0	0	0	0	C	C	0	+	0	0

A, acid; [illegible] (broth and peptone water); D, decolorized; P, peptonized (milk); T P, thin pellicle (broth); Alk, alkaline; [illegible]; B, black or brown colour taken by the medium; 0, negative result—namely, neither acid, nor clot in milk, [illegible], non-production of indol, non-liquefaction of gelatine or serum, as the case may be.

temperate zones, others are peculiar to the tropics; it is to be noted, however, that, owing to the enormous increase in traffic and intercourse between tropical countries and Europe, fungi which were considered to be strictly tropical have spread to countries situated in temperate zones. I have been asked by several persons interested in the subject to reprint a small table I published some years ago with the classification of tropical dermatomycoses, quoted also in the manual written by Dr. Chalmers and myself, and to bring it up to date. Tropical dermatomycoses may be classified as follows:

Tropical Dermatomycoses.

Genera.	Species.	Condition Caused.
I.—Due to fungi of the genera Saccharomyces, Cryptococcus (Kitzing), Zymonema (Splendore)	*S. gilchristi* (Vuillemin) and other species	Blastomycosis.
II.—Due to fungi of the genus Sporotrichum (Link, 1809)	*S. beurmanni* (Matruchot and Ramond, 1908); *S. asteroides* (Splendore, 1910); *S. indicum* (Castellani, 1908)	Sporotrichosis.
III.—Due to fungi of the genus Pityrosporum (Sabouraud, 1895)	*P. cantliei* (Castellani, 1898)	Tropical seborrhoea of children.
IV.—Due to fungi of the genus Hemispora (Vuillemin, 1906)	*H. stellata* (Vuillemin, 1906)	Hemisporosis.
V.—Due to fungi of the genera Aspergillus (Micheli, 1727) and Penicillium (Link, 1809)	*A. barbae* (Castellani)	Aspergillosis of hairy parts.
	P. barbae (Castellani)	Penicilliosis of hairy parts.
VI.—Due to fungi of the genera Aspergillus (Micheli, 1725); Penicillium (Link, 1809); Monilia (Parsoon, 1801); Montoyella (Castellani, 1907)	—	Pinta.
VII.—Due to fungi of the genus Trichosporum (Behrend, 1890)	*Tr. giganteum* (Behrend)	Piedra.
VIII.—Due to fungi of the genera Discomyces Rivolta, 1870); Madurella (Brumpt, 1905); Indiella (Brumpt, 1905); Aspergillus (Micheli, 1725); Oospora	—	Madura foot.
IX.—Due to fungi of the genus Malassezia (Baillon, 1889)	*M. tropica* (Castellani)	Tinea flava.
X.—Due to fungi of the genus Microsporoides (Neveu Lemaire, 1906)	*M. minutissimus* (Burchardt)	Erythrasma.
XI.—Due to fungi of the genus Foxia (Castellani, 1908)	*Foxia mansoni* (Castellani)	Tinea nigra.
XII.—Due to fungi of the genus Epidermophyton (Sabouraud, 1907) and Trichophyton (Malmsten, 1845)	*Ep. cruris* (Castellani); *Ep. perneti* (Castellani); *Ep. rubrum* (Castellani); *Tr. nodoformans* (Castellani)	Dhobi itch.
XIII.—Due to fungi of the genus Trichophyton (Malmsten, 1845)	*Tr. albiscicans* (Nieuwenhuis)	Tinea albigena.
	Tr. blanchardi (Castellani)	Tinea Sabouraudi.
XIV.—Due to fungi of the genus Endodermophyton (Castellani, 1908)	*End. concentricum* (Blanchard); *End. indicum* (Castellani)	Tinea imbricata.
	End. castellanii (Perry)	Tinea intersecta.

Of the above dermatomycoses I may, perhaps, be allowed to say a few words regarding the etiology of three which I have constantly investigated during recent years:

1. Dhobie itch.
2. Tinea flava et nigra.
3. Tinea imbricata.

Dhobie itch—or tinea cruris, to use the term introduced by Macleod—has been known to tropical practitioners for many years, and Manson and others had found out that it was due to trichophyton-like fungi. In 1905 I suggested that it should be separated from the ordinary forms of tinea corporis, and I stated that the fungi found in it were different from the trichophytons found in the European ringworm. I named the fungus most frequently found in Ceylon cases *Tinea cruris*. In 1907 Sabouraud in a masterly manner investigated the condition in Europe, which he called tinea inguinalis, and the fungus, *E. inguinalis*. There is no doubt that the condition described by Sabouraud under the term "tinea inguinalis," and many years previously by Hebra with the term "eczema marginatum," is the "dhobie itch" of tropical authors.

Dr. Sabouraud, who has kindly examined my cultures, has come to the conclusion that the fungus *Tr. cruris* found in most of the cases in Ceylon, is identical with the fungus which he called *E. inguinalis* found by him in France. I would take this opportunity, however, to emphasize the fact that dhobie itch, at least in the tropics, is not due to a single fungus but to several different species, each of which gives rise to a slightly different clinical variety of the disease. Up to now I have found in Ceylon four different fungi:

1. *Epidermophyton cruris* (Castellani, 1905), syn. *Ep. inguinalis* (Sabouraud, 1907), *Tr. castellanii* (Brook, 1908).
2. *Ep. perneti* (Castellani, 1907).
3. *Ep. rubrum* (Castellani, 1909), syn. *Ep. purpureum* (Bang, 1911).
4. *Tr. nodoformans* (Castellani, 1911).

Ep. cruris grows on maltose agar very slowly—colonies orbicular-shaped or acuminated of a yellowish colour, later white. It has no pyogenic properties, and does not invade the hair follicles. It is the cause of the most usual type of dhobie itch, so well known to every tropical practitioner, with the festooned red patches on the inside of the thighs and elevated margin.

Ep. perneti was first described by Pernet; it is similar to *Tr. cruris*, but the growth is much quicker and the cultures at first have a delicate pinkish colour. It is rare, at least in Ceylon, and the type of dhobie itch caused by it is practically identical to that produced by *Ep. cruris*.

Ep. rubrum.—This fungus is characterized by the beautiful deep red pigmentation in Sabouraud and glucose agar. It has so far been found in Ceylon by me and in Europe by Bang and Sabouraud. It produces a kind of dhobie itch having a great tendency to spread from the groins and axillae—the usual seats of the eruption—to other parts of the body. The affected parts often present from the very beginning an eczematoid appearance.

Tr. nodoformans is characterized by the peculiar brick-red colour of the cultures in Sabouraud agar: this colour is lost in subcultures. It is the cause of a peculiar type of dhobie itch, characterized by the presence of deep nodules along the edge of the eruption. It may attack the hair follicles and spread to various parts of the body. Dr. Chalmers and myself saw once a case presenting a nodular eruption due to this fungus in the groins, and at the same time presenting a patch of sycosis due to the same organism on the right cheek.

Tinea flava.—I venture to touch on this dermatomycosis as by most writers it is still confused with the ordinary pityriasis versicolor. The disease is characterized by yellow patches on various parts of the body, the parts affected in order of frequency being the face, neck, chest, and abdomen. The fungus is a malassezia—*M. tropica* (Castellani, 1905)—which, microscopically, is hardly distinguishable from *M. versicolor* of pityriasis versicolor. The usual pityriasis versicolor, as found in temperate zones, is not of so light a colour as *T. flava*, never attacks the face, and is easily curable.

Tinea nigra.—I mention this disease, as, apparently, judging from the literature, it appears to be very little known. It was first decribed by Manson in 1872 in China, but his observations were forgotten, as they were not quoted by him in his subsequent publications. I redescribed it in Ceylon in 1905. It is characterized by the presence of black patches due to a fungus, which I called *Foxia mansoni*. This fungus grows well in all media, its colonies being of a jet black colour. It may attack Europeans: a distinguished member of our profession developed a small patch on the palm of the left hand after a trip to Burma.

Tinea imbricata.—The etiology of this disease has been the subject of numerous controversies. Manson first in 1872 described a trichophyton-like organism in the squammae; with the laboratory technique of that time attempts at cultivation could not be carried out. Blanchard

considered it non-cultivable, and called it *Tr. concentricum*; on the other hand, Nieuwenhuis stated that it was quite easily cultivated, and was characterized by the crateriform shape of its colonies. Nieuwenhuis's experiments were not confirmed. In recent years the general opinion—especially among Continental authors—was that aspergilli-like fungi were the cause of the disease. Tribondeau described fructifications somewhat similar to those of an aspergillus, and created for the fungus the genus *Lepidophyton*. Wehmer describes it as a true aspergillus, and calls it *A. tokelau*.

From the results of the investigations I have carried out in Ceylon, which I have published elsewhere,[1] I think I am justified in stating that aspergilli and aspergillus-like fungi have nothing to do with the disease; and when they are found in the squammae they are saprophytes or contaminations. For the fungi which, according to my researches, are the true cause of tinea imbricata I have established the genus *Endodermophyton*, of which I have found two species in Ceylon cases—*End. concentricum* and *End. indicum*.

To grow these fungi from the scales it is necessary to use a certain technique, the particulars of which I have given in previous publications; once grown, however, subcultures are easily obtained.

End. concentricum on glucose agar (4 per cent.) shows a growth with cerebriform or crinkled surface. The growth and the medium show a slight amber colour, which later may become of much deeper hue. Duvet generally absent.

End. indicum, on the same medium, shows a growth with surface somewhat convoluted or furrowed; a portion of the growth, often the central, is of a deep orange, red-orange, or pink-orange colour, the rest of the growth appearing white and powdery, being covered by a very short, delicate duvet.

I venture to say that the above two fungi are the real etiological agents of tinea imbricata in Ceylon, as by inoculating cultures of either I have reproduced the disease, typically, in human beings.

I end this note with the hope that I may be excused for its somewhat sketchy nature. My intention has been to show the importance of fungi in tropical pathology by touching, without any prearranged order, on some of the various mycoses of which I have had personal experience in tropical countries. I should be glad if this modest note should in any way stimulate research on vegetable parasitology in relation to disease.

REFERENCE.
[1] *Journal of Tropical Medicine*, 1911.

ON THE TREATMENT OF ELEPHANTIASIS OF THE LEGS BY LYMPHANGIOPLASTY.

BY

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I. CLINICAL OBSERVATIONS.

MANY attempts have been made of recent years to devise a satisfactory method of dealing with elephantiasis of the legs; but, it must be admitted, the results of most of the new procedures have hitherto failed to confirm the expectations of their originators.

The most hopeful and, at the same time, the most rational and practical of the proposed methods appeared to be that first advocated by Mr. W. Sampson Handley in the *Lancet* of January 2nd, 1909, in a paper entitled "A Prospective Cure of Elephantiasis by the Operation of Lymphangioplasty." Mr. Handley elaborated his thesis and described his procedure in more detail in his Hunterian Lectures on the Surgery of the Lymphatic System, reported *in extenso* in the BRITISH MEDICAL JOURNAL of April [illegible].

Enjoying rather exceptional opportunities for repeating Mr. Handley's experiments, we wish to record our experience of a short series of cases, which have yielded interesting but, on the whole, uniformly disappointing results. In effect, we have found that so long as the patient is kept absolutely recumbent after his operation the results are apparently most flattering; but as soon as he begins to be up and about the swelling rapidly returns, and in a short time the leg is just as swollen as it was before the operation. It does not matter how long rest is enforced, the result is the same once the action of gravity comes into play.

Mr. Handley, in his summary of the results of the operation, writes: "To my mind lymphangioplasty has failed to establish its position in the treatment of elephantiasis." And again: "It would appear that in the lower extremity, as contrasted, for instance, with the arm, the strenuous opposition of gravity nullifies the effects of the operation as soon as the limb is allowed to hang down for even a short period daily. The operation, indeed, *does* supply the channels which are missing, but, as I have already insisted, it does not provide a motive force. It is unable to fight against the full vertical pressure of gravity in the lower limb."

While our clinical results are entirely in accord with these statements, our findings in and around threads, taken from the limbs two or three weeks after lymphangioplasty, and in others experimentally introduced into the subcutaneous tissues of guinea-pigs, appear to show that, quite apart from the action of gravity, the artificial lymph channels do not persist for any length of time; and that there is finally an obstruction to lymph return from the obliteration of lymphatics in the neighbourhood of the inserted thread. In all our cases Mr. Handley's technique has been carefully followed. The legs were prepared for a week before operation by painting them daily with a 2 per cent. solution of iodine in rectified spirit, after removing any specially thick skin by the application of salicylic acid and resorcin ointment. The patient was kept at rest during this time with the leg well bandaged over a mass of wool from the toes to the groins. The threads were introduced and ran up the inner side of the leg from the instep well on to the abdominal wall, and sometimes a second set were introduced on the outer side.

Record of Cases.

CASE I.

Yussef-el-Nahas, a young Egyptian fiki-preacher, aged 25, was admitted to Kasr-el-Ainy hospital from Faraskour, Lower Egypt, on April 26th, 1910, with well-marked elephantiasis of the right leg, which had started a year before, and had gradually increased with recurrent attacks of fever and swelling. *Filaria nocturna* were found in the blood. The foot and lower part of the thigh were much swollen and covered with rough thickened skin. After the usual preparation lymphangioplasty was performed on May 14th under stovaine anaesthesia. At the first dressing four days later the skin lay in folds and all the measurements of the limb had very considerably diminished and so remained till June 6th, 1910, when the patient was discharged. He was seen fifteen days later in the out-patient department, and the leg was just as swollen as before operation, if anything rather more so, especially on the dorsum of the foot.

CASE II.

Ahmed Mohammed Foada, aged 70, an Egyptian boatman from Damietta—one of the principal centres of elephantiasis in Egypt—was admitted on April 26th, 1910. Advanced elephantiasis left leg. Rapid onset and increase since first attack of fever six months ago. Some lymphangiectases below and varicose groin glands. No filaria found. Lymphangioplasty, May 14th; discharged sixteen days later, practically no swelling. Seen in out-patient department after a fortnight, swelling as bad as before, but skin more supple and not so thickened.

CASE III.

Charib-el-Sayed, an Egyptian fellah, from Giza near Cairo, aged 18. Admitted June 23rd, 1910. Elephantiasis of left foot and calf. Filaria absent. Operation July 2nd, followed by expected improvement which persisted till his discharge. He did not return to out-patient department, and could not be traced.

CASE IV.

Mohammed Ismail Khalil, an Egyptian pedlar, aged 22, from Boulac, Cairo. Admitted July 3rd, 1910. Had an inguinal abscess opened five years before and repeated attacks of fever and pain and an ever-increasing swelling in the left leg. No filaria found. Operation July 9th. Circumference of foot 26 cm., reduced after operation to 25.9 cm.: of calf 42.6 cm., reduced to 35.2 cm.; of knee-joint 44.4 cm., reduced to 39.4 cm.; and of thigh 48.2 cm., reduced to 42.5 cm. Seen in the out-patient department five weeks after operation, all the old measurements had returned and were even exceeded.

Case v.

Mohammed Aly-el-Ashairy, an Egyptian café-keeper, aged 25, from Embabeh, near Cairo. Admitted August 2nd, 1910. Marked elephantiasis of the left leg, said to have followed a wound from a bit of glass on the sole of the foot. No filaria. Operation a week later and reduction of all measurements by 5 cm., but a month later, in the out-patient department, all his swelling had returned.

Case vi.

Mohammed Farag, an Egyptian clerk, living in Cairo, aged 32. Admitted October 6th, 1910, with two years' history of elephantiasis of the whole of the left lower extremity. No filaria. Operation and results precisely similar to other cases.

Case vii.

Hassan Ahmed El-Sakka, an Egyptian boy of 15. Admitted October 28th, 1910. Elephantiasis of right foot and leg. No filaria. After operation perfect result for ten days, when the boy got out of bed and walked a little. Almost immediate return of the swelling, which disappeared rapidly after the insertion of a second series of threads on the outer side. While still free from swelling, a strip of skin 17 cm. long by 3.3 cm. wide was excised from the middle of the calf and a narrower strip from the front of the ankle. The swelling slowly returned as soon as the boy began to walk, and but little ultimate benefit resulted.

Case viii.

Mohammed Mikhawi Suleiman, an Egyptian fellah, aged 25, from Bibeh, Upper Egypt. Admitted November 26th, 1910. Swollen left leg since an incision into a plague bubo in the left groin eighteen months ago. Swelling confined to the thigh and not like a true elephantiasis. Improved rapidly after operation, and, up to the time he was lost sight of, appeared to be more likely to derive permanent benefit from the lymphangioplasty than any of the other cases.

Many other cases could be quoted, but in all the swelling was temporarily reduced within a few days of the operation, but returned and persisted even after the first day's walking.

Our best thanks are due to Dr. Tewfik Omar, resident surgical officer, for the care he has taken in the preparation of these cases for operation and for his skilful after-treatment.

II. The Conditions after Lymphangioplasty in a Healthy Patient.

To examine the condition of threads introduced into healthy tissues, the operation of lymphangioplasty was performed on a patient with a healthy limb by Dr. Aly Ibrahim; and twenty-one days later a block of tissue containing a portion of the thread and the surrounding tissues was cut out and examined. The piece of tissue was embedded in celloidin and sections cut out and stained by Professor A. R. Ferguson, who reports as follows:

The thread is seen in both longitudinal and transverse directions, more particularly in the former, the fibrils of the thread are slightly separated, and between them leucocytes have made their way from their margins inwards. Peripherally the thread is closely invested by an extremely cellular tissue in which are set considerable numbers of active phagocytes (giant cells). Some of them are pointing directly inwards towards the frayed-out margins of the thread. The tissue in which the giant cells lie is composed of young connective tissue corpuscles, and is crowded with polynucleated leucocytes. A few newly-formed blood capillaries occur in this tissue also. Externally to this layer is a well-defined concentric zone of comparatively dense fibrous tissue, which gradually merges into the surrounding fibro-adipose subcutaneous tissues. The few lymphatic channels seen in the neighbourhood of the smaller arteries of this region are the seat of a lymphangitis, as indicated by a leucocytic infiltration in and around their walls, of the same nature as that noted above at the site of the thread. From the dense tissue and apparently progressive nature of the reaction which has taken place round the introduced thread, it does not appear probable that anything of the nature of a lymphatic channel sufficient to maintain a permanent drainage of lymph from the surrounding tissues into the canal round the thread could occur.

III. Condition of Thread and Surrounding Tissues after Lymphangioplasty for Elephantiasis.

Our next experiment was to cut out a thread which had been inserted in the course of the operation of lymphangioplasty on a patient with elephantiasis of the leg. The line of the thread was marked at the time of the operation, and twenty-one days later a piece of tissue, 1 in. in length, consisting of skin, subcutaneous tissue, and the thread, was removed *en bloc* and examined. It was seen at once that the thread, apparently quite unaltered, slid up and down in a thick-walled canal of fibrous tissue, and was only with difficulty retained in its place in the section. Microscopical sections were cut with some difficulty owing to the looseness of the thread, and showed the following appearances. Professor Ferguson again reports:

When this piece of tissue was removed the thread, although *in situ*, was very loose, and during the preparation of sections, cut from celloidin blocks, has unfortunately dropped out. The section, therefore, shows a well-defined space surrounded by a cellular tissue, having essentially the same features as that described as existing round the thread in healthy tissue. The cellular reaction in degree, however, is much less, and the numbers of the giant cells in particular are much reduced. The surrounding lymphatics of the district are marked by collections of lymphatics; but in a considerable number of sections examined no traces of these cells were found entering into the walls of the channel left by the thread; and it is highly probable that with the further development of fibrous tissue immediately around the site of the thread any already existing lymph channels in this area would be obliterated by pressure.

The vessels in this tissue, and particularly the medium-sized arteries, are the seat of chronic sclerotic changes especially met with in the new formations of elephantiasis.

IV. Experimental Lymphangioplasty in Healthy Guinea-pigs.

To further determine the fate of buried silk threads in the subcutaneous tissues the operation of lymphangioplasty was performed by Dr. Aly Ibraham on a series of guinea-pigs, and the sections of threads and surrounding tissues subsequently examined by Dr. Anis Onsy. The details of technique were approved by Professor W. H. Wilson, Professor of Physiology, and the preparation and examination of the specimens controlled by Professor A. R. Ferguson, Professor of Pathology.

With the strictest aseptic precautions, a thread of No. 3 silk was introduced under the skin, and ran from the lower part of the abdomen through the subcutaneous tissues of the thorax into the axilla in each instance. Five hours before each animal was killed a small quantity of diluted Chinese ink was injected into the immediate neighbourhood of the distal end of the thread to test the permeability of the surrounding lymphatics. The axillary glands were subsequently dissected out, and were invariably found to contain black pigment granules in their substance.

After the animals had been killed, a length of tissue containing the thread was dissected out, and fixed in a 10 per cent. watery solution of formalin. The specimen was gradually dehydrated in alcohol, and then embedded in paraffin, whence sections were cut and examined microscopically.

The first guinea-pig was killed *two days* after the lymphangioplasty, and it was evident that very little change had occurred in the tissues along the track of the silk. The pigment granules were thickly massed around the thread, and became fewer and fewer from this centre outwards to the periphery of the section.

At the end of *four days* the second animal was examined, and now a cellular infiltration had begun in the immediate neighbourhood of the thread. This consisted mainly of a mass of round and polymorphonuclear cells. Small thin-walled, obviously newly formed, blood vessels had made their appearance, and the granules of pigment could still be seen lying in close contact with the thread. The third animal was examined *six days* after the operation, and considerable changes were apparent in the tissues. The thread was now surrounded by thin-walled blood vessels lying in a richly cellular infiltration, in which the polymorphonuclear cells were much less numerous than in the former section. The lymph spaces at the periphery only were black with pigment granules (Fig. 3). *Twelve days* after operation the fourth animal was killed, and at once it was remarked that an extensive fibro-cellular reaction had occurred, which had obliterated the pre-existing lymph spaces in the immediate neighbourhood of the thread. New vessel formation was very active, and there was no sign of pigment about the track of the thread.

From the animal examined after *fifteen days* the section showed that the thread was completely enveloped in a thick mass of fibro-cellular tissue containing but few blood vessels and with very little cell infiltration beyond it. New connective tissue corpuscles of spindle shape were numerous, and there was no deposit of pigment for some distance round the thread, owing to the blocking of lymphatic spaces by the progressive development of fibrous tissue.

In the specimen removed from the animal *a month* after the operation the fibrous tissue encapsuling the thread was relatively thin and laminated, and contained many spindle-shaped cells. Trabeculae of connective tissue were seen passing inwards into the thread, and breaking it up into strands. These trabeculae contained numerous new blood vessels. The individual strands of the silk were enveloped in a dense cellular infiltration consisting mainly of round cells, and there was also some surrounding haemorrhage.

It is to be specially remarked that up to the sixth day after operation the pigment granules were most numerous around the thread, showing that the original lymphatics still persisted up to this stage. After six days and up to a month the granules were found only at the periphery and were entirely absent from the neighbourhood of the thread, which certainly seems to

indicate that the lymphatic circulation along the course of the artificial lymphatic—the thread—becomes gradually blocked and finally ceases about fourteen days after the operation.

Conclusions.

1. Clinically, it is abundantly evident that lymphangioplasty fails to effect anything but a very temporary improvement in elephantiasis of the legs. The swelling is very markedly reduced within forty-eight hours after the operation; but the improvement persists only so long as the recumbent position is maintained. Within at most twenty-one days after the operation, or as soon as the patient begins to walk, the swelling invariably returns and no permanent improvement results.

2. The examination of the tissues surrounding threads introduced during the operation of lymphangioplasty in cases of elephantiasis, and also around threads introduced into healthy tissues of man and of guinea-pigs, supplies very adequate reasons for the failure of the operation.

Important as the action of gravity may be in contributing to the failure to maintain a new artificial lymphatic circulation, it appears that this want of success is due in far greater degree to definite reactive changes in the tissues immediately around the thread, which soon isolate the new lymph tube from the surrounding lymphatic areas and eventually completely obliterate it.

Briefly the series of changes in the tissues around buried longitudinal threads in the subcutaneous tissues are as follows:

1. For a short time the threads, by virtue of their capillary action, drain the surrounding tissues of the lymph contained in them.

2. The threads in the tissues soon excite a definite cellular reaction, which leads comparatively soon—from fourteen to twenty-one days—to the formation of a dense and progressively contracting fibrous tissue. This walls off the thread and crushes the adjacent lymphatics out of existence, and thus effectually prevents any absorption of fluid into the space immediately around the thread itself. These fibrous changes, occurring around the ends of the thread, as well as along its whole length, eventually completely isolate it, and it may then perhaps be compared to a long worm lying within an impermeable sheath.

3. The thread is later penetrated by rows of cells, running in along its fibrils, which must eventually lead to its complete disintegration; and the formation of a solid column of dense fibrous tissue along which no absorption of fluid of any kind can possibly occur.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CASE OF LOCKED TWINS.

I record this case on account of the extreme rarity of locked twins. Professor Munro Kerr writes: "According to v. Braun it only occurred once in 90,000 cases in the two Vienna cliniques."

On August 24th, 1912, I was called to a woman (Zulu) who had been in labour three days in a kraal, in an inaccessible part of Alexandra County.

I found her lying in the hut. She was somewhat blanched. The pulse was scarcely perceptible, but there was no sign of much blood. The abdomen was very protuberant and extremely hard. Pains had evidently stopped and the uterus was in a state of tonic contraction. A cord was prolapsed, hanging quite a foot from the vulva, and the feet of a child seen on slightly separating the labia. The cord was greenish, with a putrid smell. A diagnosis of twins was almost immediately apparent, and it certainly crossed my mind that they might be locked. I pulled the legs, but that was sufficient only to stretch the body; the head was stuck.

I put in a hand and found the neck, as I thought, elongated. It was certainly slightly twisted. There was a second head, evidently fore-coming, wedged into the hollow of the neck on the left side. I could feel the head belonging to the breech-presenting child above this. There was no doubt at all now of the condition. As far as I could feel, the diagram in Dr. Munro Kerr's book (after Bumm) exactly illustrates the condition.

I tried to push up the second (fore-coming) head, but could not; I had no one to give an anaesthetic. I then decapitated the breech-presenting baby. The state of the cord showed it was already dead. The head of the second immediately came forward into the pelvis. I had some little difficulty in putting on the forceps but eventually delivered a living child, with the cord twisted spirally round neck and back. The first head afterwards immediately presented by the severed neck. I easily removed it between finger and thumb, using no force whatever. There was no excessive loss of blood.

Both placentae were adherent, and I had to remove them manually. The lower was low down on the left of the cervix. I suspect that the pressure of the second head might probably have prevented it bleeding. The upper was up towards the fundus. They were joined together by a membrane about 2½ to 3 in. across, otherwise they appeared to be quite distinct. Both the mother and child were alive and apparently going on well a week afterwards. I was afraid of sepsis after so much handling, and when one thinks of working in a Zulu hut in semi-darkness on the floor, with no help whatever (I could not even speak the language) it must be that from their surroundings, Zulu women have gained a certain amount of immunity from septicaemia, etc.

The woman was a primipara, married five years without any children. Her husband had died some time previously and probably was not the father of these children. She was at full time and the children were large and well nourished. The friends who came in a week later said that the child was "large and strong."

She had come to the surgery (20 miles away) previously, saying she was three months pregnant. I diagnosed it as four months, but did not discover twins.

I think the above treatment advised by Dr. Munro Kerr in his book is the best, inasmuch as a young practitioner under difficult circumstances was able, without very great difficulty, to deliver a living child, without, apparently, undue damage to the mother.

Ian Macdonald, M.B., Ch.B.Glasg.,
Deputy District Surgeon, Deputy Health Officer, Alexandra County, Natal.

GLACIAL ACETIC ACID IN PSORIASIS.

It is a common occurrence for men in all lines of medical practice to come across cases of psoriasis either directly or concurrently with some other trouble. All are agreed as to the chronicity of the disease and also as to its intractability to treatment, notwithstanding the many methods which are in vogue with a view to terminating the trouble. The case which came under my observation was that of a seafaring man who had been troubled with psoriasis for many years incessantly; it presented a light, silver, scaly aspect, which had persisted on the extensor surfaces and had resisted all methods of treatment. Local treatment by glacial acetic acid proved successful within a week or two. Considerable time has now elapsed since the treatment was used and there has been no return of the affection. This is the first time the patient has been free from the scales since he began to be troubled many years ago. There was a certain amount of smarting following the application of the acid but it was not severe.

Whalley Range, Manchester. G. T. Cregan, M.B., Ch.B.

The late Dr. Reginald Edward Thompson, for some years consulting physician to the Brompton Hospital for Consumption, left estate of the gross value of £7,195, of which the net personalty has been sworn at £7,058.

The next meeting of the German Congress of Internal Medicine will be held at Wiesbaden in April, 1913 (15th to 18th). The principal question proposed for discussion is the nature and treatment of fever.

The number of medical students in the several universities of Austria on May 31st of the present year were as follows: Vienna, 2,183, of whom 128 were women; Graz, 453, of whom 12 were women; Innsbrück, 244, of whom 4 were women; Prague (German University), 414, of whom 19 were women; Prague (Czech University), 764, of whom 28 were women; Cracow, 481.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

Section of Diseases of Children.

Friday, October 25th, 1912.

Mr. A. H. Tubby, President, in the Chair.

Precocious Development.

Dr. E. C. Williams described a case of precocious development in a boy aged 6. Six months prior to his admission into hospital on May 9th, 1911, his parents had noticed that his development was abnormal. His weight was 4 st. 2 lb. and height 4 ft. 2 in. He had a slight moustache; his voice was deep like an adult's. He was slow in intellect and in movement. Hair was abundant over the pubes; no axillary hair. The external genitals were fully developed. No bronzing of the skin. Heart and lungs normal. No abdominal tumour. The pulse varied from 72 to 88 per minute; blood pressure 110 mm. Hg. The boy remained in hospital five weeks, during which time he put on 11 lb. He was seen again on October 15th, when his weight was 5 st. 5 lb. 5 oz. and height 4 ft. 4½ in. There was evidence of rapid growth but none of increased sexual development. He was in excellent health.

Cases and Specimens.

The following were among the exhibits:—Dr. Edmund Cautley: (1) *Tetanoid spasms* in an infant. Attacks of rigidity had occurred about every half an hour since it was 10 days old. (2) A girl, aged 3 7/12 years with *Amnesic aphasia*, following an acute illness, which was either encephalitis or serous apoplexy. Dr. J. Porter Parkinson: *Haematuria* in a syphilitic girl aged 8. The case was shown to elicit opinions as to whether the haematuria was due to the syphilis. Some oedema had occurred, and the urine contained a little albumen, but no casts. Dr. F. J. Poynton: *Congenital family cholaemia* in a girl aged 8½. The fragility of the corpuscles tested on four occasions was 0.6, 0.65, 0.65, 0.65. Dr. C. R. Box: A similar case for which excision of the spleen had been performed with benefit. Mr. P. Maynard Heath: A case of *Genu valgum* due to rarefaction and deformity of the shaft of the femur. The patient was a girl aged 8½ years. Dr. Reginald Miller: A case of *Cerebral maldevelopment* (? sclerosis) with infantilism and idiocy. Mr. T. H. Kellock: *Traumatic pancreatic cyst* in a patient, aged 11, who had been knocked down and kicked by a horse. Several weeks later an abdominal swelling had been found by the doctor at school, during routine medical examination. This had been opened and drained and the wound had healed. It contained about 50 oz. of a greenish opalescent fluid, which proved to be pancreatic. Mr. Sydney Stephenson: A girl, aged 9½, with ocular torticollis. Apparently it had been developed by a voluntary effort of the child to obviate double vision, and had become stereotyped. The sterno-mastoid and neck muscles were not rigid. Mr. Philip Turner: A case of lateral sinus thrombosis which had recovered after operation. The patient was a boy aged 14. Dr. T. R. Whipham: A girl, aged 7, with atrophy of the muscles of the forearms and of the thenar and hypothenar eminences, and interossei. It was a case of either poliomyelitis or myopathy. Dr. Alexander Morison: A specimen showing a *Deficient foramen ovale septum*. Dr. Cautley: A *Tuberculous right kidney* from a child aged 12 months. It was in an uncommonly advanced stage of the disease for the child's age.

Section of Medicine.

At a meeting on October 22nd, Dr. Frederick Taylor in the chair, Sir J. F. H. Broadbent discussed aneurysms of the aorta communicating with adjacent vessels, and described a case in point. Rupture of aneurysm into the right auricle was, he said, but rarely met with. In the present case the symptoms followed directly on an accident, the patient survived four months, and there was recurrent effusion into the right pleural cavity.

The patient, a shunter, aged 40, was well until twelve weeks before admission, when he was caught between the buffers of two railway trucks and severely crushed. He suffered from dyspnoea and shock, and was put to bed, where he remained till admission to hospital, when it was found that he had oedema of the scrotum and lower extremities, but neither cyanosis nor oedema of face. Both eyes showed subconjunctival haemorrhages. The temperature was 97° F., respirations 24, pulse 100, and collapsing rapidly, the typical pulse of aortic regurgitation. The apex beat was not visible or palpable. Cardiac dullness extended 1 in. beyond right margin of sternum. ½ in. to the left of the vertical nipple line. A diastolic murmur was audible in the fifth left space. A loud blowing diastolic murmur was audible over the aortic area, conducted down the left border of the sternum, and most intense at the level of the third left costal cartilage. There was also a blowing systolic murmur at the aortic cartilage. The abdomen was distended, and the abdominal walls and scrotum oedematous; the liver was enlarged. Some 28 pints of fluid was drawn off from the right pleural cavity, and 4 pints drained away from the legs. During the month 42½ pints were aspirated from the right pleural cavity. The pulse increased to 120, and became gradually weaker. Vomiting was succeeded by acute mania, and he died on the day following the latter. At the *post-mortem* examination the pericardium contained about 6 oz. of clear fluid, and both pleural cavities contained much fluid. The lungs were oedematous, and partially collapsed, but there were no adhesions. The liver was greatly enlarged, congested, and showed an advanced "nutmeg" condition. The right auricle was enormously dilated, admitting the closed fist. The tricuspid orifice was very much dilated, and the hand could be passed through it into the ventricle. Above the attached border of the left cusp of the tricuspid valve a portion of the endocardial lining of the right auricle was seen to project into the cavity of the auricle. In the centre of this bulging portion was a small linear tear, half an inch long, opening externally into the aorta. Behind the right posterior cusp of the aorta was a small saccular dilatation immediately above the valve. The aortic valves were normal and not thickened. During life the symptoms seemed to point to traumatic rupture of the aortic valve, causing aortic incompetence: but the recurrent pleural effusion in such large quantity, rather than general oedema of lung, seemed quite inexplicable. When the leakage took place the right auricle was probably not filled.

Dr. Parkes Weber thought it possible that, in spite of the traumatism, there might have been syphilis in the case. If so, the chronic pleural effusion was explicable. The President described some cases, which he published in 1884, of rupture into the pulmonary artery; he considered such cases were closely allied to that now described. There was no constancy about the presence of a diastolic murmur, at least with regard to the pulmonary artery, and he thought the whole question should be re-investigated in the light of the cases now on record, of which there must be a considerable number, for the symptoms were not sufficiently helpful in diagnosis. One could not conclude that the symptoms in one case would be present in another. Sir John Broadbent replied.

Section of Otology.

At the opening meeting of this session on October 18th Dr. Dundas Grant, in a short presidential address, reviewed the present position and aims of otology. Infection via the ear and the sinuses had extended the work of the aural surgeon into the cerebellum and cerebrum, to deal with the resulting abscesses there, and this work justified the Section in taking its place among the scientific societies of the world. While still remaining conservative and practical, otologists should welcome the aid of physicists, physiologists, and mathematicians, and apply data supplied with a due sense of proportion. With recent advances in the pathology of the ear tympanic operations might well be resuscitated. Reliance should be placed on no one method of testing or investigation; this particularly applied to labyrinthine conditions, in which the issues were so often those of life and death. Subsequently there was an examination of cases, the following being among those shown. Dr. Dan McKenzie recorded a case of *Lateral sinus thrombosis, with meningitis*, in a man aged 25, who had had middle-ear suppuration for fourteen years, vertigo and rigors, and a temperature oscillating between 100° and 104° F. A mastoid operation revealed a fissure in the posterior meatal wall leading into a very large cavity filled with cholesteatoma, while pus was welling up from the bulb. Two days later, as pyrexia and rigors continued, the jugular vein was tied and resected in the neck, and the lateral sinus groove opened inwards towards the bulb. Five days later, as the meningeal symptoms were but little relieved, the labyrinth was opened, and a wire drain was inserted in the internal

auditory meatus, but as it did not act well it was removed. Lumbar puncture was twice performed, owing to recurrence of meningeal symptoms, and improvement dated from this time. Mr. RICHARD LAKE: A specimen from a fatal case of otorrhoea with right *Temporo-sphenoidal abscess*. The patient, a man aged 39, had had an offensive discharge from the ear for many years. He suffered from giddiness and was constipated, and later his temperature was 103° F., and pulse 68. The discharge from the left ear was free and offensive, and was regularly syringed with a solution of lysol. One or two stools passed were characteristic of enteric, and there was muttering delirium, with subsultus tendinum and carphology. Widal reaction was negative. A radical mastoid operation was performed on the left side, and a patch of caries found in the region of the superior horizontal canal. This was scraped. The labyrinth contained pus, and no stapes were present. The symptoms pointed to pus in the cerebrum, but exploration revealed none, though a large amount of serous fluid escaped near the fissure of Rolando. The cerebro-spinal fluid showed moderate lymphocytosis, no pus cells, and very few epithelial cells. *Post mortem* there was found a temporo-sphenoidal abscess on the right side, and an infarct more than an inch in diameter in the right lung, but the latter was not infective. Dr. H. J. DAVIS: A horsebean removed from the middle ear of a boy aged 7 during a radical mastoid operation, the boy having suffered from prolonged otorrhoea. Facial paralysis ensued. The sequestra removed with the bean contained the outer wall of the canal of the facial nerve.

SECTION OF PSYCHIATRY.

THE first meeting of this Section was held on October 22nd, Sir GEORGE SAVAGE delivering a presidential address. In its course he remarked that the value of statistics depended chiefly on the collectors. Workers should accept with an open mind experimental psychology and psychic analysis. One was asked what were their uses, but one should not always seek for immediate results. There would seem to be a need for several special subcommittees in the Section to follow certain lines of inquiry. It was easy to be misled by the senses, and there was nothing so useful to mankind as a prudent unbelief; agnosticism in science was not infidelity. Bodily and mental relations were sometimes difficult to follow. He remembered a young woman in Bethlem Hospital suffering from acute mania who, after some weeks, became sane but paraplegic. The paralysed state lasted for some time, to be replaced by mania once more. If certain patients with glycosuria became insane the sugar disappeared from the urine. In respect of heredity he saw direct transmission of a habit in such a simple thing as handwriting, and neurologists and psychiatrists had been impressed by the passing on of nervous disorders from one generation to another. They were now content to say that a tendency was transmitted, rather than a definite entity. The speaker did not believe in the transmission of any definite mental disorder, though at least one-third of all patients admitted into asylums had insane blood relations. It was notable that in the recently published report of the Irish Commissioners in Lunacy the general conclusion reached was that alcohol was of relatively small importance as a cause of insanity in that country.

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting on October 24th, Dr. C. J. MACALISTER (Vice-President) in the chair, Dr. A. J. WALLACE, in a paper recording 4 cases in which he had performed *Hebosteotomy*, expressed a belief that the operation was useful in the minor degrees of contraction where the passages were fully dilated and the child alive. On the Continent it had been performed indiscriminately, and had had very bad results. Dr. A. A. BRADBURNE, in a note on *Lacrymation*, related cases in which alteration in secretion was due to [illegible] canines, and protested against the use of the [illegible] as a cause of tears. Dr. G. A. [illegible] on *Abdominal tuberculosis in adults* based on 7 cases, chiefly meningeal. The condition had occurred chiefly in males between 30 and 45 years of age, and was always secondary to tuberculous disease elsewhere. It had been suggested that the condition was due to the use of tuberculin, but in Dr. Crace-Calvert's experience it had occurred most in cases where tuberculin had not been used. As an explanation of the preponderance of male over female cases, he suggested that men worried more over being ill, were more anxious and irritable than women. The symptoms were insidious and obscure, and a non-acute type of onset was common. Diagnosis depended on the severe persistent headache in a subject showing evidence of tuberculosis, especially when accompanied by optic neuritis, Kernig's sign, and mental derangements. Lumbar puncture showed increased quantity of secretion, turbid or clear, an excess of lymphocytes, and in 80 per cent. tubercle bacilli were found. The result was invariably fatal in adults, in from nine days to seven weeks. Dr. C. J. MACALISTER had seen relief from the use of wet cupping over the parietal protuberances, and in children had seen recovery after the use of mercurial inunction. Dr. W. PERMEWAN questioned the justifiability of the use of tuberculin, as it seemed to him that intracranial tuberculosis was frequent where that remedy had been used. Dr. J. HILL ABRAM thought lumbar puncture was not needed for diagnosis, and he disapproved of its use if a general anaesthetic were required, as the psychical disturbance had a bad effect on the patient, and the method frequently gave no positive result. He quoted a case of intracranial tuberculosis that had apparently been cured by tuberculin. Dr. LLOYD ROBERTS spoke of temporary aphasia as an early symptom in these conditions; he had seen 3 cases. Dr. R. BUCHANAN described the method of using tuberculin at the Kennington Dispensary, where the lobing of leucocytes was taken as the indication for the dosage. Dr. PERCY MARSH said he had found among children that lumbar puncture gave no result, the relief of symptoms being only very transitory. Tuberculin had proved of no use. After some further discussion Dr. CRACE-CALVERT replied.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

AT a combined meeting of this society and of the Nottingham Division of the British Medical Association on October 23rd, Mr. W. G. LAWS in the chair, Mr. R. W. DOYNE of Oxford delivered a short address dealing with word blindness and allied conditions. The condition occurred when the visual memory centre in the cortex of the left angular gyrus was defective, and such defect might be either congenital or acquired. Word blindness was more common in boys than in girls. Except in regard to reading the children were generally highly developed, being quick-minded and having good memories. Sometimes the difficulty existed only in relation to printed letters, and did not extend to numeral figures. Children of this order were best taught by women, their visual memory being educated by training them to recognize words as a whole instead of letter by letter. In this connexion reading classes were especially useful. In reference to education of the brain as a whole the speaker expressed the opinion that the present system of teaching children was in effect merely one of cramming. The winner of scholarships was in other respects than that of book work often a very dull boy possessed of only a second-class brain.

WE learn from the *Deutsche medizinische Wochenschrift* that a paid medical member will be appointed to the City Council of Berlin as City Medical Councillor. This appears to be one of the first acts of the new Oberbürgermeister, Wermuth. Our contemporary expresses the hope that the salary will be sufficiently attractive to secure a really good man for the post, and that the election will be made without any political, sectarian, or party considerations.

ON September 26th the foundation stone of a surgical and neuro-surgical clinic in connexion with the Psycho-Neurological Institute was laid in St. Petersburg. Each clinic has 30 beds, and both are to be named after the famous surgeon, Pirogoff. The cost, which is estimated at 30,000 roubles, is to be defrayed by an anonymous benefactor. At the same time the foundation stone of a clinical institute for the investigation of alcoholism was laid. Towards the cost of this building the Russian Minister of Finance has contributed 400,000 roubles.

Reviews.

TREATMENT BY FASTING.

The translation of Dr. Guelpa's book on *Autointoxication and Disintoxication*[1] is an extension of a paper which was read at the London meeting of the British Medical Association in 1910 on "Starvation and Purgation in the Relief of Disease" (British Medical Journal, October 8th, 1910). On the cover the book is called "Fasting in Diabetes," and throughout "Treatment of Diabetes" is used as a headline to the pages; this is misleading, as the number of cases in which the treatment has been tried is limited and the results are hardly convincing. The translator's introduction, which occupies twenty-seven pages, does not supply this want, as he gives only one case observed by himself, and, although there was some improvement, a single case proves nothing. In the case quoted from a paper by Dr. Bardet the amount of sugar passed is about ten times as much as the carbohydrates taken in the diet! and the table on page 17 gives figures which we are unable to reconcile with the usually accepted analyses of such a diet.

However, to turn to the book itself—the plan which Dr. Guelpa recommends is entire abstinence from food of all kinds for three days, during which time the patient may drink as freely as he pleases of water, weak tea without milk, toast and water, fruit infusions, etc., and must take a bottle of Hunyadi Janos water daily. He claims that under this treatment there is entire disappearance of any painful or uncomfortable sensation of hunger, and extraordinary diminution of the number of bacteria present in the intestines; a marked diminution of thirst, suppression or marked diminution of perspiration; regular sleep; steadying of the pulse and lowering of the blood pressure, and increase in the percentage of haemoglobin, and in the number of red and white blood corpuscles. Most of the twenty-seven cases treated were not diabetes, but included such conditions as winter cough, obstinate sciatica, obesity, severe headache, pulmonary congestion, muco-membranous gastro-enteritis, alcoholic fever, various eye troubles, anaemia, and melancholia. Dr. Leprince reports on thirteen cases of eye trouble where Guelpa's method was employed as an adjunct to other treatment.

After the period of complete abstinence Guelpa recommends a week of milk diet, and then, after a second abstinence for three or four days, he gives the following diet:—Breakfast: Coffee or tea without milk. Lunch and dinner: Clear soup, salad, one or two apples or pears, with tea or other non-nutritive drinks as desired. In special conditions he allows an ounce or so of bread or a dish of cooked vegetables. The chapter by Dr. Oscar Jennings—the use of the method in the treatment of morphine addiction—does not add much to our knowledge, as it has rarely happened that he has found cases suitable for the treatment, but he gives two examples in which he found it useful, and he sums up his impressions of it by saying that, "without vaunting it as a 'cure,' it may be looked upon as a most valuable adjunct to treatment in many cases."

Fasting cures are popular in America, and undoubtedly there are many conditions in which it has long been recognized that abstinence from food or the taking of only minimum quantities of nourishment favours recovery. It is, however, an essential part of Dr. Guelpa's treatment that fasting should be accompanied by free purgation. Although the author has not placed before us evidence which is altogether convincing, we commend the book to our readers, and think that with due precautions the method should have a trial in suitable cases.

ANIMAL POISONING.

In his *Vergiftungen durch Tiere und Animalische Stoffe*,[2] Dr. F. Kanngiesser has prepared a companion work to his earlier volume on vegetable poisons. It is got up on the same plan and the method of treatment is similar. The aim of the author is to give a brief account of the various kinds of poisonous animals, the nature of their products, the symptoms to which these give rise, and the most advisable treatment. The volume is small, but he has succeeded very well; at the same time much of the information is necessarily scrappy and unsatisfactory. A considerable number of references to more comprehensive works is given, but these are not in every case the best that could be cited. Practically every class from protozoa to vertebrata yields instances of poisonous animals, and there is much diversity of means by which they inflict damage. There are the stinging threads of coelenterates, the bites and stings of insects, the spines of fishes, and the fangs of snakes. Again, there is the large class of internal parasites, many of which give rise to substances of a poisonous nature. The author deals not only with these, but also with substances of animal origin which are used medicinally—for example, cantharides, thyroid extract, and adrenalin. A few remarks are made on the subject of meat poisoning, but it cannot be said that they are particularly lucid. The section dealing with anaphylaxis and serum intoxication is little more instructive. Short reference is made to diseases due to disorder of internal secretions, such as exophthalmic goitre, osteomalacia, and puerperal toxic conditions. The sections devoted to arthropods as carriers of disease and to rabies are outside the scope of the book, but their inclusion is not unjustifiable, and on the whole, we think the information collected by Dr. Kanngiesser will be found generally serviceable and accurate.

SYPHILIS AND PARASYPHILIS.

For the class of readers to which it is offered no more suitable book could be found than Mr. Bayly's *Clinical Pathology of Syphilis and Parasyphilis*.[3] It is a small, compact, and attractive volume which is easy to read and handy for reference. Its scope of treatment is intermediate between that of the textbook of general bacteriology and that of the special monograph. It is thus particularly suited for students and practitioners who desire to possess a more intimate knowledge of the subject than can be acquired in the course of ordinary training, without having to sift for themselves the large mass of conflicting opinions which can only be satisfactorily tackled by those with an extended experience. The main theme of the book is, naturally, the Wassermann reaction and its various applications; it is practically the first and last word in the volume. Salvarsan and mercury treatment also receive considerable attention, more especially in regard to their effect upon the Wassermann reaction. The author, like the majority of experienced authorities, is a firm upholder of the original technique of the reaction, and although he admits the value of several modifications, not only in regard to labour-saving but also by reason of greater delicacy in certain cases, he considers that none of them possess the same value for general diagnostic purposes. He has given a succinct account of the method, and has explained many of the difficulties which may arise, but in a few cases his explanation would only be completely intelligible to those who have had some practical experience. He is, further, an enthusiastic believer in the virtues of salvarsan, and he teaches that the ill effects which have been ascribed to its use have been grossly exaggerated and are practically non existent. The intravenous method of administration is carefully but simply described. A useful chapter is devoted to the subject of syphilitic anaemias, which do not usually command the attention which their importance appears to deserve. The concluding chapter deals with the relation of syphilis to life insurance, and the somewhat drastic suggestion is made that the Wassermann reaction should form part of the routine examination of all candidates for life insurance. In view of the effect which syphilis may have in shortening life, and of the ease with which the presence of the disease in a latent form may be missed, the suggestion is essentially a good one, and its adoption would certainly stimulate increased activity in laboratories

[1] *Autointoxication and Disintoxication.* An account of the new fasting treatment in diabetes and other chronic diseases. By G. Guelpa (Paris). Translated by F. S. Arnold, B.A., M.B., B.Ch.Oxon. Introduction by the Translator, and a chapter on the use of the method in the treatment of morphine addiction by Oscar Jennings, M.D. (Paris). London: Rebman, Limited. 1912. (Cr. 8vo, pp. 152. 5s. net.)

[2] *Vergiftungen durch Tiere und Animalische Stoffe.* By Dr. F. Kanngiesser. Jena: Gustav Fischer. 1911. (Post 8vo, pp. 49. M. 1.)

[3] *The Clinical Pathology of Syphilis and Parasyphilis.* By H. W. Bayly, M.A., M.R.C.S., L.R.C.P., Pathologist to the London Lock Hospitals, etc. London: Baillière, Tindall, and Cox. 1912. (Fcap. 8vo, pp. 208; plates 3, figures 22. Price 5s. net.)

of clinical pathology. The only serious misprint in the book is on page 67, where Throma-Zeiz occurs.

Dr. MULZER'S book on the diagnosis of syphilis by biological methods[4] is intended to afford practical instruction in the various methods of demonstrating the *Spirochaeta pallida*, and the technique of the Wassermann reaction. Most of the stains which have been recommended for demonstrating the spirochaete are accurately described, and special attention is paid to the examination of this organism by means of dark ground illuminations. What may be noted in passing is a revival of a method introduced into microscopy by the Rev. J. B. Reade, as long ago as 1838. As regards the Wassermann reaction, the original method and its chief modifications are minutely and clearly described. The author regards this reaction as useful in differential diagnosis, but of doubtful value as regards prognosis and treatment. In an appendix to this (second) edition, mention is made of Wolff-Eisner's attempt to obtain a cutaneous reaction in syphilis, but the work of Noguchi on this subject is too recent to have been included in this book. For those familiar with the German language Dr. Mulzer's book can be recommended as an excellent practical handbook.

Dr. STADLER, in this clinical monograph on syphilitic disease of the aorta,[5] points out how relatively modern has been its recognition, although in the eighteenth century the connexion of aneurysm with syphilis had been recognized by Lancisi, Morgagni, and Scarpa. He dates the real appreciation of the relations of syphilis to arterial disease from Heubner's monograph on syphilitic disease of the brain arteries, published in 1874, although Heubner considered that the affection was limited to the middle-sized and smaller vessels. The relation to aneurysm was first brought clearly before the profession in the paper on aneurysm in the British army, by Surgeon-Major Welch, published in the *Medico-Chirurgical Transactions for 1876*. Since then the work has been carried on both from the histological and from the clinical side, especially during the last ten or twelve years. The evidence in favour of the syphilitic nature of the lesion is the history of syphilis and the occurrence of other syphilitic symptoms in the same patient, its occurrence at a relatively early age, the presence of miliary gummata in the coats of the vessel and of syphilitic lesions in other organs. Spirochaetes have been found, but only rarely, as might be expected if we consider that when the cases came to *post-mortem* examination the disease has generally run its course. The Wassermann reaction certainly proves that the patient has had syphilis, but not necessarily that the aortitis is syphilitic. The author believes syphilis of the aorta to be very common, for his experience at Leipzig showed that in 211 out of 256 cases it was present, and in 117 was the cause of death. It is also common in cases of congenital syphilis; Rach and Wiesner found it in 67.4 per cent. of the cases of congenital syphilis examined by them. The disease occurs at all ages, but is most common in the later half of the forties. In a great many cases it has been difficult to ascertain the date of infection, but this appears to have been, as a rule, about twenty years before death; the shortest period was five years. It is often associated with tabes and general paralysis of the insane. The early symptoms are pain behind the sternum and in the left shoulder, with diminished strength and shortness of breath, the latter being due, in the author's opinion, to loss of the proper function of the aorta; inequality of the radial pulses is often found owing to the localization of the disease around the orifices of the arteries. There is also generally increased systolic blood pressure. Hypertrophy of the heart is, as a rule, absent, but pulsation in the episternal notch can generally be perceived, and the author draws attention to an abnormal displacement of the heart's apex to the left when the patient lies on his left side. There is also some increased breadth of dullness in the second and third left interspaces and over the upper half of the manubrium. The *x* ray photograph shows the shadow of the vessels to be broader and more deeply toned. The second aortic sound is accentuated, and there is often a systolic murmur heard at the top of the sternum. According to Curschmann the heart sounds may be audible over the left supraspinous fossa. Insufficiency of the aortic valves often occurs with the characteristic symptoms and signs, and where the coronary arteries or their orifices are involved early angina pectoris may occur. In writing of the treatment the author points out that the use of salvarsan has often been followed by fatal results, although Weintraud has had good results with small doses, 0.2 to 0.4 gram. repeated two to four times by intravenous injection. But at Leipzig they have been content to stick to mercury and potassium iodide. He thinks the course should be repeated at intervals of three to six months, and that the patient should be warned against over-exertion, the abuse of alcohol, tobacco, coffee and tea, and against overloading the stomach and bowel. He is strongly of opinion that such cases should be treated in a hospital or nursing home, and points out that the results are more favourable than in ordinary aortitis deformans, but that a complete restoration of structural integrity is hardly to be hoped for. The book is a good account of the subject, and has a full bibliography of recent papers.

[4] ... Berlin: Julius Springer. 1912. (Demy 8vo, pp. 57; Abbn. 20, Tfln. 4. M. 4.80.)

[5] ... Krankung. Von Dr. Ed. ... Mit 1 Tafel. Jena: Gustav ...

SEWAGE DISPOSAL.

UNTIL about the middle of the last century the disposal of sewage presented few problems, for the simple expedient was adopted of discharging it into the sea, or into the nearest watercourse. With the rapid increase of industrial centres which then took place, it came to be realized that some other steps must be adopted, at any rate as regards watercourses, if these were to be saved from becoming huge open sewers, dangerous to the health and offensive to the noses of the neighbouring inhabitants. The alliterative aphorism, "the rain to the river, the sewage to the soil," was glibly used by sanitary engineers to persuade the local authorities of those days to embark upon schemes of sewage disposal based on the principle of broad irrigation. Sewage farms came into existence, and it was predicted by some enthusiasts that they would become sources of revenue to those localities in which they were placed. It is well known that these sanguine expectations have not been realized, and it was not long before other methods, including those by precipitation or by chemical treatment, were put forward as a solution of what had in course of time become a serious problem. A still further development took place some sixteen years ago, when Mr. W. J. DIBDIN suggested the adoption of that form of biological treatment of sewage which is now known as the aërobic method. This was graphically described by Mr. Dibdin in a lecture delivered last year at the Royal Sanitary Institute, and the lecture has since been elaborated by the author and published as a pamphlet.[6] The biological action which is essential to molecular disintegration of sewage is very clearly explained by Mr. Dibdin, and he then goes on to describe in some detail the construction of a pair of contact beds, one filled with coarse and the other with finer material. After using coke, clinker, and similar substances in the contact beds, the idea suggested itself of utilizing thin layers of slate, superimposed one on the other at regulated intervals, in the belief that there would be a much greater area of exposed surface than when substances of an irregular outline were used. The early experiments of Mr. Dibdin were carried out at the Sewage Works at Sutton, Surrey, and have been described by Mr. C. CHAMBERS SMITH, formerly engineer and surveyor to the Sutton Urban District, in his pamphlet, *Economy in Sewage Disposal*.[7] Mr. Smith is an ardent advocate of the biological treatment of sewage, but he favours the adoption of percolating filters, which he considers have the advantage over contact beds in that they may be constructed without artificial walls. He admits that the problem of the disposal of sludge has not been entirely solved by the adoption of the bacterial treatment, but he points out that, notwithstanding this, such treatment has led to a great reduction in the cost of purifying

[6] *The Rise and Progress of Aërobic Methods of Sewage Disposal*. By W. J. Dibdin, F.I.C., F.C.S., etc. London: The Sanitary Publishing Co. (Demy 8vo, pp. 59; 49 illustrations. 1s.)

[7] *Economy in Sewage Disposal*. By C. Chambers Smith, M.Inst.C.E. London: The Sanitary Publishing Co. (Demy 8vo, pp. 32; 4 illustrations. 1s.)

sewage. In addition to the account of the Sutton sewage works Mr. Smith gives in a condensed form a large amount of information which cannot fail to be useful to those who may be called upon to advise concerning sewage disposal schemes.

So many of the American cities and townships are situated on the banks of large rivers that the urgency of dealing with the sewage before it enters these waterways has not been so apparent as in this country. Within the past twenty years, however, many sewage-disposal works have been established in the United States. Some of these, together with the whole question of sewage disposal as it concerns many of the constituent States, is ably discussed by Mr. GEORGE W. FULLER in his work on *Sewage Disposal*.[8] One section of the book deals with the composition of sewage and the behaviour of bacterial and bio-chemical processes in its decomposition. In another section arrangements for screening, settling tanks, septic tanks, chemical precipitation, and electrolytic treatment are described. Methods of filtration are considered at some length, but the most interesting portion of the book to British readers is that devoted to an account of American experience in the disposal of sewage by dilution in inland streams, lakes, tidal estuaries, and the sea. The author asserts that dilution is a proper method of sewage disposal when by dispersion in water the impurities are consumed by bacteria and larger forms of plant and animal life, or otherwise disposed of so that no nuisance results. The dilution method is adopted at Washington, where the sewage of 800,000 persons is discharged ultimately into the River Potomac, and apparently without nuisance or risk to health. As an instance of the facility with which self-purification is carried on in streams, the author states that at New Orleans the muddy Mississippi river water showed during 1901–2 almost no trace of sewage pollution, either as to organic matter or disease germs, although on the watershed the sewage of about nine million persons was discharged into the stream or its tributaries. The value of the work is greatly enhanced by the inclusion of a most comprehensive index to the contents, which has been compiled with a great deal of painstaking care.

It is quite as important to construct adequate conduits for the conveyance of sewage to outfall works as it is to have those works of a suitable type, and in the *Main Drainage of Towns*[9] Mr. F. NOEL TAYLOR sets out with a considerable amount of detail the best methods that should be adopted in the construction of these conduits. Although a large portion of the work is of necessity devoted to technical matters, of interest solely to engineers, there are several chapters of distinct interest to public health officers. That on the ventilation of sewers is a sound exposition of present-day views on the subject, and contains a good deal of information which will be new to most readers. A long and informing chapter on house drains describes good and bad traps and sanitary appliances, and gives instructions as to the best methods of testing drains. In a later chapter there is described and illustrated a system of disposing of the sewage from a small country house by means of a septic tank and by other methods. The large number of well-executed illustrations is very helpful in making clear some of the textual descriptions, though for the most part these are remarkably lucid. Cross-references are freely made use of, and place the busy reader on good terms with the author, though in one place at least (on page 128) the reference is incorrectly given, and on the same page the well-known Shone's ejectors are described as Stone's. But these are trivial matters in a work which is packed full of useful and correct information.

NOTES ON BOOKS.

THE first three volumes of the *Practical Medicine Series*[10] for 1912 relate respectively to general medicine, general surgery, and diseases of the ear, nose, and throat. The publication consists of a series of ten volumes a year, each dealing with some one or more branches of medicine by giving abstracts of such papers as have been published in the previous twelve months and are judged by the editors to be worthy of special notice. These editors are usually men well known in their speciality in America and elsewhere; the editors in chief are Professors GUSTAVUS HEAD and C. L. MIX, both of Chicago.

In a pleasant fluent fashion Mr. H. JEFFS, discoursing *Concerning Conscience*,[11] gives us the result of his reflections as well as of his experiences as a lay preacher, in regard to the innumerable moral perplexities and temptations of modern everyday life. The book is not ambitious: its author disclaims in his preface the intention to indulge in philosophical or theological speculations, with which he not unreasonably considers the market already overstocked. But he says—and we can well believe him—that he is surprised that just such a book as he has here attempted has been hitherto lacking, inasmuch as he has found the task of writing it very difficult. Nevertheless, he has persevered; and we can fairly congratulate him upon the result. Keeping throughout in close touch with actuality, he has dealt with a number of typical instances of moral pressure, commercial, domestic or professional, indicating the spirit and method in accordance with which each contingency should be met. If his counsel does not lean overmuch to the side of austerity, it certainly indicates lines of conduct far higher than those which commonly prevail. And it is addressed not to heroes, but to average folk.

In a compactly printed book, Mr. F. L. RAWSON discourses, from the point of view of "Christian Science," upon things in general and the fallacies of most other points of view in particular. With every admiration for his industry and erudition, we do not feel that *Life Understood*[12] sheds real illumination upon the primaeval mysteries. To deny the existence of unpleasant facts on the plea that, being "evil," their reality is incompatible with divine goodness, is merely a *petitio principii*. Particular "evils" are not necessarily evil in the ultimate sense; they may well serve some indispensable purpose. Humanly speaking, both good and evil are abstractions, and, as such, in respect of real entity, alike subject to qualification. It is not so obvious as Mr. Rawson assumes that the world would be a better place or life a finer thing without any of those factors which he so confidently, not to say arrogantly, condemns or denies. In our opinion the rapid growth of the "Christian Science" cult is largely attributable to a widespread sense of the need of a more courageous and affirmative attitude towards life and reality. So far it may be considered a healthy sign; on the other hand, the power for good of this leaven of merit is unfortunately minimized by the falsity of its doctrines and the huge presumption of its claims.

Writers of books on nursing commonly exhibit a somewhat unhappy tendency to deal at disproportionate length with what may be called medical student subjects, but no such defect is visible in *First-Year Nursing*[13] by Miss MINNIE GOODNOW. On the contrary, nursing duties pure and simple are dealt with almost exclusively. In addition all the statements made are succinct, while the illustrations are excellent. For this reason it should be a very useful book to put into the hands of a person who has commenced a nursing training but whose acquaintance with the technique thereof is yet small.

[8] *Sewage Disposal*. By George W. Fuller. New York: McGraw-Hill Book Company. (Med. 8vo, pp. 782. 25s. net.)

[9] *The Main Drainage of Towns*. By F. Noel Taylor. London: Charles Griffin and Co. (Med. 8vo, pp. 325; 350 illustrations. 12s. 6d. net.)

[10] *The Practical Medicine Series*. Series 1912, vols. i, ii, and iii. Chicago: The Year Book Publishers. 1912. (All Cr. 8vo, annual subscription 10 dollars, separate volumes 1.50 dollars each.)

[11] *Concerning Conscience: Studies in Practical Ethics*. By H. Jeffs. London: James Clarke and Co. 1912. (Post 8vo, pp. 278. 3s. 6d. net.)

[12] *Life Understood from a Scientific and Religious Point of View, and the Practical Method of Destroying Sin, Disease, and Death*. By F. L. Rawson, M.I.E.E., etc. London: The Crystal Press, Limited. 1912. (Demy 8vo, pp. 675. 7s. 6d. net.)

[13] *First-Year Nursing*. A textbook for pupils during their first year of hospital work. By Miss Minnie Goodnow, R.N. Illustrated. Philadelphia and London: W. B. Saunders Company. 1912. (Demy 8vo, pp. 328).

THE fourth Congress of Physiotherapy will be held at Berlin in March, 1913 (26th to 30th), under the presidency of Professor His. The principal subject proposed for discussion is the treatment of disturbances of the circulation. The work of the congress will be divided among four sections: (1) Hydrotherapy, balneology, seaside and climatic treatment; (2) electro-therapy and radium-therapy; (3) orthopaedics, movement treatment and massage; (4) dietetics. There will be an exhibition in connexion with the Congress.

An Address

DELIVERED AT THE ROYAL ARMY MEDICAL COLLEGE ON THE OCCASION OF THE PRIZE-GIVING, OCTOBER 29TH, 1912.

BY

SIR HENRY MORRIS, BART., F.R.C.S.ENG., F.R.C.S.I.,

CONSULTING SURGEON TO THE MIDDLESEX HOSPITAL, AND EMERITUS LECTURER ON SURGERY AT THE MEDICAL COLLEGE; FOREIGN CORRESPONDING MEMBER, SOCIETE DE CHIRURGIE, PARIS; HONORARY MEMBER, MEDICAL SOCIETY, STATE OF NEW YORK.

In addressing a company such as this, I am unfortunate in that I cannot speak from personal experience or from first-hand knowledge of the attractive combination of the medical and military professions to which most of my hearers belong.

It is simply as a clinical teacher and lecturer for over thirty-five years in a London hospital and medical school—in which capacities I have necessarily taken part in the general medical education of many students who subsequently joined the medical service of the army or navy—that I am in any way qualified to speak to you on this occasion.

I shall not, therefore, presume to criticize or discuss either military medical education or the career to which it leads; but, instead, I will venture to make a few remarks on the history of the army surgeon and the gradual development of the Royal Army Medical Corps.

But, in the first place, allow me on behalf of my audience and myself to congratulate those of you who are the recipients of prizes to-day.

These prizes ought to afford you a double gratification—first, because they are the rewards of industrious and successful study; and, secondly, because they serve to perpetuate the memory, and carry with them the names of some of those who have done so much to promote the progress of your profession.

In the next place, let me say to the unsuccessful competitors, "Do not be disheartened or discouraged by your present failure." I have often heard and seen quoted on prize-giving occasions the verse ascribed, probably wrongly, to Solomon, which says: "The race is not to the swift, nor the battle to the strong, neither yet bread to the wise, nor yet riches to men of understanding, nor yet favour to men of skill; but time and chance happeneth to them all."

Doubtless this often is so! Still, it is not for me to attempt to lift up the hearts of the unsuccessful by disparaging the successful, by uttering a single word which might seem to throw doubt upon the full merit and rightful success of those who have carried off the laurels.

Rather, I would remind you of the numerous opportunities in the future which your many-sided profession, which will take you to all parts of the world, affords you of gaining honours and distinctions in scientific research, in preventing or curing disease, or in some administrative or executive capacity.

The other day I came across a reprint of an article on "Life in a Hospital," written in 1883, by Walter Besant. The author of *All Sorts and Conditions of Men*, in describing the hospital life of patient, nurses, and medical students, said of the latter that when they went into practice they would cease to learn much more, but would simply follow by rule of thumb what they had been taught at the hospital; that though the Huxley or the Darwin of the next generation might be among them, only a few would have any enthusiasm for science or their profession. The author did not limit his remarks to medical students only, but applied them to the Church, the law, the teaching profession, and all others.

In 1883, however, the Royal Army Medical Corps did not exist, or assuredly Sir Walter Besant would have made it an exception to his far too sweeping sarcasm.

The army medical officer of the present day, with the facilities afforded by this well equipped college and its attached hospital for acquiring knowledge under its eminent professors and teachers; with the advantages of the proximity of the college to large civil hospitals, libraries, museums, and medical societies; and with periods of study-leave and periodical examinations carrying with them acceleration of promotion graduated by a scale of passing marks, is little likely to stagnate or fossilize. If he does so, his fate is to lose his commission. Compulsory retirement for slackness or ignorance is, however, I am glad to hear, a very rare occurrence.

It is a matter of surprise that, although throughout the ages doctors have served with armies and have been the trusty confidants and friends of the leaders of armies, whether emperors, kings, or other less exalted persons, yet that no consolidated military medical system existed in the British army until the latter part of the nineteenth century—nothing approaching it, I believe, before 1882.

In times as remote as that of the siege of Troy army doctors were held in the highest esteem. The two sons of Aesculapius, Machaon and Podalirius, were, according to Homer, very important persons indeed in the Greek army. Recall what a stir was made in the third great Trojan battle, when Paris, "the spouse of Helen, dealing darts around," struck Machaon in the right shoulder. The wounded surgeon was carried off the battlefield by Nestor in that grand old warrior king's own chariot; and Achilles, sulking in his ship, having watched the progress of the battle, sent Patroclus to inquire what had happened. It was when describing these events that the poet exclaimed:

> A wise physician skilled our wounds to heal
> Is more than armies to the public weal.

Recall, too, that amidst all the greatest heroes of the Greek army—Agamemnon, Ajax, Ulysses, Achilles, and many others—Machaon was always spoken of as "the great Machaon," as in the following lines from Pope's translation of the *Iliad*:

> Of two famed surgeons, Podalirius stands
> This hour surrounded by the Trojan bands;
> And great Machaon wounded in his tent
> Now wants that succour which so oft he lent.

Those of you who are Fellows or Members of the Royal College of Surgeons of England are no doubt aware that Machaon and Podalirius are to this day commemorated being represented as the supporters of the shield in the coat of arms and common seal of our College.

In the sixth and fifth centuries, during the wars of Persia with the Asiatic States, Darius I (521–485 B.C.), the "King of the whole civilized world," and "the King of Kings," as he called himself, as well as his successors, had Greek physicians and surgeons in their suites.

In the accounts of the wars of the Persians against the Greeks we read of the physician Ctesias of Cnidus as being for seventeen years (414–398 B.C.) in the service of the kings of Persia. Ctesias is specially remembered, not as constantly accompanying Artaxerxes II (404–359 B.C.), but as being a great historian, like Herodotus and Xenophon, of the Persian wars. The Persians, to their honour, conducted their wars with great humanity, and treated their prisoners with kindness, and in many instances even with liberality and favour.

Philip, an Acarnanian, was physician and surgeon to Alexander the Great, and accompanied him through his Asiatic wars. There is an interesting story told of them. When Alexander was lying seriously ill at Tarsus a letter reached him warning him that Philip had been bribed by Darius III to poison him. Having read the letter, Alexander handed it to Philip to read, and after doing so swallowed a potion which Philip had prepared for him. This proof of the unshaken confidence of the king in his physician was soon followed by Alexander's recovery.

In the second century of the Christian era the illustrious Galen was specially summoned by Marcus Aurelius to be with him in his campaign in Northern Italy. But evidently Galen did not like being an army surgeon, even though in attendance on the emperor, because, when Marcus Aurelius was afterwards setting out to conduct the war on the Danube, Galen begged to be left behind, alleging that such was the will of Aesculapius; consequently he was allowed to remain at Rome, and was charged with the care of the health of young Commodus, the unworthy and licentious son of the noble-minded Marcus.

In the fourth century an eminent Greek medical writer, Oribasius, the friend of Julian, accompanied that cultured but eccentric emperor in his wars against Persia, was with him when he was wounded, and at his death, and was one of the very few persons to whom Julian confessed his apostasy from Christianity.

Skipping over the centuries of the Dark Ages, we find that the most noted surgeon in the sixteenth century was Ambroise Paré. He served with the army for thirty years in the wars of François the First and three other kings of France; and had the courage to rebuke Catherine de Medici for her religious bigotry. He enjoyed the love and confidence of the French soldiers to so great a degree that his mere presence sufficed to reanimate a disheartened garrison or a half-beaten army.

Of the great English surgeons of the Tudor period two may be mentioned—Gale (1507–1587), who served in the army of Henry VIII., and Clowes (1540?–1604), in that of Elizabeth's reign.

A great surgeon under the Stuart dynasty, equally popular and successful in military and civil practice, was Richard Wiseman (1622–1676), a Londoner born, who joined the Royalist army in 1643, and accompanied Prince Charles with his troops into exile. Wiseman was the first of the barber surgeons who emancipated surgery from the state of subordination to the physicians. He wrote in so clear and simple a style that his works were selected by Samuel Johnson, when writing his dictionary, as a mine of good surgical nomenclature. Wiseman underwent repeated imprisonment for the Royalist cause, but, after the Restoration, Charles II made him his sergeant-surgeon and gave him a pension for life.

In the time of the French revolution and far into the nineteenth century the most renowned surgeon with the French armies was Baron Larrey (1766-1842). Larrey was both a great surgeon and a great administrator. He was the first military surgeon who was ever mentioned in dispatches; he was the inventor of the flying ambulance, the idol of the French soldiers, who called him the "hero of humanity," and was spoken of by Napoleon as being the most honest man he had ever known.

Among the medical officers under Wellington there was one whose name is a household word in the army medical service. Sir James McGrigor was with the army in the Peninsular War from 1812 till the restoration of peace in 1814. Then he returned home, and was made Director-General of the Army Medical Department in the following year (1815), a post which he continued to hold for thirty-six years. As an army doctor he was quite a genius. He had great courage and self-reliance, but possessed also consummate tact and administrative ability, qualities so essential for one who has subordinates to direct and control. He instituted army medical benevolent funds. He raised the Army Medical Service to a higher standard than it had ever attained before. Wellington could not speak sufficiently highly of him, and the medical officers who had served under him presented him with a service of plate valued at a thousand guineas. It was through his influence with the Duke of Wellington that the medical officers of the British Army came to be mentioned in dispatches. It is difficult to say whether it was by the officers or the rank and file of the army that he was most respected and beloved.

Other military medical notables of the end of the eighteenth and early part of the nineteenth century were Sir John Pringle, Munro, Jackson, and Fergusson, but time will not permit me to do more than name them.

In the Indian Medical Service in the nineteenth century the names of two officers stand out very prominently. Both served with distinction in the Burmese wars.

Sir Ranald Martin, C.B. (1793–1874) was an authority on medical topography, on military sanitation, and on the effects of tropical climates on European constitutions, and he wrote the article on hospitals in Holmes's *System of Surgery*. He will ever be remembered as the introducer of iodine in the treatment of hydrocele. After settling in London he was made Inspector-General of Army Hospitals, and a member of the epoch-marking Army Sanitary Commission, of which Sidney Herbert was chairman.

Sir Joseph Fayrer, Bart. (1824–1907), was connected with the Indian Medical Service for forty-five years from 1850. He was very successful as a field surgeon in Burma, was a prolific writer on Indian climatology, on the pathology of Indian diseases, and on sanitation. He lectured at the London College of Physicians on tropical diseases and on Indian fevers. His work on venomous snakes was considered the best book on the subject which had ever been published. He was elected to all sorts of honours, and was a personal friend of King Edward VII. He was also a keen sportsman to the very end of his long life.

Brigade-Surgeon Henry E. Busteed, M.D., C.I.E., who died this year at the age of 78, was formerly in the Honourable East India Company's service, and is celebrated for his *Echoes from Old Calcutta*.

This brings us down to the present day, but I must not venture to allude to men still living who have done honour to the Army Medical Service and received honour through it.

The lessons taught by Sir James McGrigor were well nigh forgotten in the long peace between Waterloo and the Crimean war. Yet there was in the interval a man—Dr. Henry Marshall—whose name seems to be almost forgotten nowadays, although I was shown one of his books ready to hand in Professor Melville's private laboratory in this college on Thursday last. Marshall (1775–1851) saw much service at home and abroad, and was appointed Inspector-General of Military Hospitals in 1830. By his labours he prepared the way for many of the reforms which were subsequently made or proposed. He wrote reports on the health of the troops in different stations, which were laid before Parliament. He was the first to prove the value of military medical statistics. He wrote a book of instructions for young medical officers on recruiting and other subjects, and he made suggestions for the advancement of military medical literature. Dr. John Brown in *Horae Subsecivae* wrote a long chapter on "Dr. Henry Marshall and Military Hygiene." Sidney Herbert must have been well acquainted with Marshall's writings; and Lord Panmure when Secretary of State for War declared that Marshall's *Military Miscellany* was his Bible in all that related to the welfare of the soldier. Marshall died in 1851, three years before the Crimean war.

The science of sanitation was little known in the early part of the nineteenth century, but between the Peninsular War and 1851 it had made great strides, and the system of army hospital administration which prevailed in 1814 was consequently out of date in the Crimean period. Hence the shortcomings born of a long peace as revealed in the military hospital at Scutari, and amongst the sick and wounded before Sebastopol, shocked the public mind and raised a terrible outcry in the press.

During the Crimean war and in the years immediately following, several circumstances occurred which tended to promote the welfare of soldiers, the improvement of military medical education, and the reform of the Army Medical Service generally.

(*a*) In the first place, Sidney Herbert (1810–1861), afterwards Lord Herbert of Lea, was "Secretary at War" on the outbreak of the Crimean campaign in March, 1854, and in 1856 he was made chairman of a Royal Commission appointed to inquire into the sanitary condition of the army and of the military hospitals and barracks. He had gained an intimate knowledge of the defects of the service and knew the crying need there was for reform, and one of the leading principles which guided him, and to which he frequently referred, was that it is easier to prevent disease than to cure it; that the duty of the army doctor was to keep soldiers in health as well as to treat them when sick and wounded.

One has only to read in Lord Stanmore's life of him some of Sidney Herbert's letters to various persons in authority to realize how earnest and insistent he was to have only the right persons selected for the Royal Commission, to have the scope of the inquiry as wide as possible, and to obtain a promise that the findings of the Royal Commission should be made use of without delay to strengthen the hands of the executive in bringing about reforms.

(*b*) Another very important circumstance was Parkes's great work on hygiene. Sidney Herbert was the chief apostle of Army Medical Service reform, and he was fortunate in having as a contemporary Edmund Alexander Parkes who was just ten years his junior. Herbert made great use of Parkes's knowledge of hygiene. He sent him to Turkey in 1855 to select a site for, and to superintend a large civil hospital to relieve the pressure on the military hospital at Scutari. During the formation of the Army Medical School at Fort Pitt—the first school of the kind in this country—Parkes was frequently consulted by Sidney Herbert. On the opening of the school in October,

Parkes accepted the Chair of Hygiene, and organized a system of instruction which stood the test of subsequent years.

After the school was transferred to Netley in April, 1863, Parkes published his *Manual of Practical Hygiene*, which was at once appreciated throughout the civilized world, and on his death, in 1876, Baron Mundy, the Professor of Military Hygiene in the University of Vienna, in concluding his biographical sketch of Parkes, said: "All the armies of the Continent should at parade lower their standards craped, if but for a moment, because the founder and best teacher of military hygiene of our day, the friend and benefactor of every soldier, Edmund Parkes, is no more."

(*c*) Another circumstance, and one which was at once beneficial to sick and wounded soldiers, was the friendship of Florence Nightingale with Mr. and Mrs. Sidney Herbert. This intimacy led Miss Nightingale to write to Mrs. Herbert to make the proposal that she (Miss Nightingale) should be permitted to go to Scutari to help in the military hospital there, and take with her a number of nurses voluntarily provided by the benevolence of a private institution of charitable ladies.

This letter crossed in the post one from Mr. Herbert to Miss Nightingale, proposing to her that she, as the only person in England fitted for the task, should go to Scutari with a staff of female nurses appointed by Government, and with all the advantages which such authority carried with it. Miss Nightingale at once accepted the appointment, and we all know the marked success which attended this previously untried experiment.

How firmly the scheme took root, and how it has developed, is shown by the fact that whereas only 40 nurses went out with Florence Nightingale to Scutari, 800 were employed in the South African war; and one of the recommendations of the Royal Commission on that war is that the employment of female nurses in fixed military hospitals for the care of the wounded and such of the sick as can be suitably nursed by females should be on a larger scale than during the greater part of the war.

(*d*) Other events soon happened which brought in their train great benefit to the sick and wounded in time of war. After the Italian campaign in 1859 the question of the neutrality of the wounded was first ventilated by a Neapolitan doctor (Palasciano), and about the same time a Swiss philanthropist (Henri Dunant) published his *Recollections of Solferino*, in which he described what he had witnessed on the battlefields of Italy. The result was an international conference held at Geneva in 1863, from which took origin the international society known as the "Red Cross Society."

The Geneva Convention was signed on August 22nd, 1864, when fourteen different States pledged themselves to regard as neutral, in time of war, the sick and wounded and all belonging to a military nursing staff. The Red Cross, which became the badge of the society, was henceforth acknowledged by every European State.

Amongst the earliest and most zealous promoters of the Red Cross Society was Queen Augusta of Prussia, afterwards to become the German Empress Augusta. The work of the society became her chief object of thought, and in the Austro-Prussian war in 1866 she introduced the newly-developed hospital system. When peace was restored the "Union of Women Workers," which Queen Augusta had founded, continued its usefulness in epidemics and other disasters among the civil population. Again, on the outbreak of the Franco-German war in 1870, the Queen was the leading spirit of 2,000 committees for sending "help to the Rhine." These committees dispatched to the seat of war 677 private hospitals and a German corps of volunteer nurses consisting of over 4,400 males and 1,703 females, besides many millions of marks worth of clothing and other requisites for the comfort of the sick and wounded.

Now, the mother of the German Empress Augusta was Maria Paulowna Grand Duchess of Weimar, and the Grand Duchess was the daughter of Paul I, the Czar of Russia (1776–1801), by his second wife Maria Feodorowna. This lady originated, and during her lifetime directed, so many benevolent schemes for the good of the Russian soldiers and civil population, that after her death her son had to establish a special bureau to carry them on.

The Grand Duchess, in her little State of Weimar, founded the "Patriotic Union of Women Workers," which was the prototype of the much larger "Union of Women Workers" which half a century later was founded by Queen Augusta under the Red Cross.

I refer to the splendid work of these great ladies, the Czarina Feodorowna, her daughter, and her granddaughter, as well as to the fact that Sidney Herbert was the son of the eleventh Earl of Pembroke by his second wife, who was a Russian lady of great intellect and vigour of mind, and the daughter of Count Woronzow, for many years the Russian Ambassador in England, in order to point out how much the armies as well as the civil populations of Europe have been indebted to the initiative, the labour, the example, and the hereditary influence of Russian women. It is probable that Herbert's great work was instigated and influenced largely by the character and training of his Russian mother as well as by the circumstance of the Crimean war.

Herbert's Russian family connexion exposed him to the suspicion that he was to blame for the breakdown of the military organization in the Crimea; but the Roebuck Committee proved that, on the contrary, Herbert had made the most strenuous efforts to prevent and correct the errors and failures which unhappily occurred.

Time will not allow of my attempting even to epitomize the chequered course of army medical reform since the time of Sidney Herbert; nor to enumerate the grievances and complaints of army medical officers which led to such a dearth of candidates for the service during the last decade or more of the nineteenth century.

The removal of these disabilities and causes of unpopularity was largely due to the exhaustive inquiry, and to the report and the recommendations based on that inquiry, of the Subcommittee of the British Medical Association on Army Medical Reform. In that report, which was published in March, 1897,[1] the formation of a consolidated army medical corps as an integral part of the army, with military rank and titles and better pay for its officers, promotion by merit, shorter tours of foreign service, more holidays, opportunities for study leave, increase in the army medical establishment, and various administrative reforms were all earnestly advocated.

It was a little more than one year after the issue of this report—namely, on May 4th, 1898—on the unique occasion of the first banquet ever given by a Lord Mayor of London to the medical profession, that the Marquis of Lansdowne, then the Secretary of State for War, announced that the Army Medical Staff and the Medical Staff Corps would be formed into one corps, and that Her Majesty had signified her pleasure that the new corps should be called the "Royal Army Medical Corps" and should be given military titles up to and inclusive of the rank of colonel.

I was present on that occasion and I well remember the joy and satisfaction with which that announcement was received by the whole medical profession. I recall also the many laudatory things said of the medical officers of the army by Lord Russell of Killowen and by Lord Lansdowne, who, be it remembered, is himself a descendant of that brilliant and remarkable man, Sir William Petty, M.D., who was Physician-General to the Army in Ireland in 1662.

And here I will venture to remark that the consolidation into a royal corps and the granting of military rank and titles must never lead the army medical officer to forget that his first duty is to be a good doctor, and to maintain a high standard of professional efficiency; and that he should also endeavour to increase the well-being of his patients by relaxing as far as possible the rigid discipline of military hospitals.

Since 1898 we have had the South African war, and the report of the Royal Commission on the care and treatment of the sick and wounded during that war, based on evidence taken on the spot. We had in May, 1901,[2] another report, with recommendations for the reorganization of the Army Medical Service, drawn up by a subcommittee of the British Medical Association; and in the following October (1901) was issued the Report of the Committee on Organization of the Army Medical Service,

[1] BRITISH MEDICAL JOURNAL, 1897, vol. i, p. 732.
[2] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, May 4th, 1901.

appointed by the Secretary of State for War,[3] and presided over by the Right Hon. St. John Brodrick himself. Finally, there followed in March, 1902, the Royal Warrant[4] confirming the important changes recommended by the Organization Committee.

It is interesting to read side by side the Report of the South African Royal Commission, published in 1901, and the letters of Sidney Herbert in the *Memoirs by Lord Stanmore*, published in 1906.

Nearly every one of the suggestions of the Royal Commission for remedying defects had been made by Sidney Herbert fifty-five years before. Such is the procrastination in bringing about reforms which have to be paid for by the Government, and the disastrous want of which is not perpetually, but only in times of war, evident to the British taxpayer.

Thus the recommendations of the Royal Commission as to (1) the increase and greater elasticity of the staff of officers and orderlies; (2) arrangements enabling medical officers to keep themselves abreast with advances in medical and surgical knowledge; (3) the employment of female nurses in fixed military hospitals; and (4) the appointment of officers with special knowledge of sanitary science, were all repeatedly made by Sidney Herbert.

Over and over again Herbert drew particular attention to several other matters also commented upon by the Royal Commission—namely, (1) the delay and privations caused by the army medical officers having to requisition other departments for necessaries for the sick and wounded; (2) the excess of clerical work which had to be done by the principal medical officers; (3) the desirability of making it known that medical officers have the power to buy at Government expense requisites which are essential during a campaign; and (4) the advisability of medical officers not showing resentment or factious opposition to well-meaning though injudicious benevolent persons anxious to distribute charitable gifts amongst the sick and wounded.

Herbert also anticipated the Organization Committee of Mr. Brodrick in suggesting the establishment of an Advisory Board, or, as Herbert called it, a "Medical Council," with the Director-General at its head.

Herbert's recommendations on the subject of medical education and the foundation of a military medical school where military medical subjects should be taught, after meeting with much resistance, which probably few War Ministers but himself would have overcome, did result in the establishment of the Fort Pitt School at Chatham.

In the report of the Royal Commission, as also in Herbert's letters, there are frequent allusions to suffering and loss of life, due to the exigencies of military strategical movements and to unforeseeable misadventures which no Army Medical Service, no matter how efficient, can prevent.

Amongst such causes of sickness, suffering, and death are insufficient transport and the lightening of kit and the shortening of provisions on forced marches, want of drinking water, prolonged exposure to extreme heat or cold, gales, floods, and sand storms, some or other of which may at any time occur in campaigns, whether in the Crimea, the Nile Valley, South Africa, or elsewhere.

It is worse than injustice, it is cruel and cowardly of malicious or ignorant writers to condemn the Army Medical Service for the horrors and miseries arising from these causes.

Yet the service has not escaped in the past, and must not expect to escape in the future, abuse and obloquy of this kind.

What is satisfactory is that, on official inquiry, it has always been shown that such slanders are unfounded, and that the army medical officers, with rare, if any, exception, no matter how overworked at the time, were indefatigable and ever ready to imperil their lives in the discharge of their duties, either in hospital or in the field. So long as this can be said, and so long as army medical officers maintain a high standard of professional proficiency and a high reputation for humanity, they will continue to add to the glory and lustre of their corps, they will acquire honour and renown for themselves; they will bring relief, consolation, and health to the soldiers, and promote efficiency and economy in the Imperial and Indian armies.

[3] BRITISH MEDICAL JOURNAL, 1901, vol. ii, p. 1025.
[4] Ibid, 1902, vol. i, p. 815.

LITERARY NOTES.

AT the National Conference organized by the Joint Committee of the Independent Labour Party and the Fabian Society in connexion with the "War against Poverty Campaign" which was opened on October 11th, Mr. Sidney Webb, speaking of destitution, is reported to have said:

> On a memorable occasion the present King had said: "If preventable, why not prevented?"

This is an instance of the manner in which things said by one person are put into the mouth of another. The process goes on till sayings—and it may be added, jokes—which were already legendary thousands of years ago are fathered on any person who happens to be prominent at a given time. Many of the "smoking-room" stories of the present day may be found in Apuleius (born *circa* A.D. 125), and his *Golden Ass* is believed to be a *réchauffé* of much older materials. It was Edward VII when Prince of Wales who, in his presidential address to the seventh International Congress of Hygiene and Demography, held in London in August, 1891, in speaking of the improvement of sanitary conditions, said:

> Although the heaviest penalties of insanitary arrangements fall on the poor, who are themselves least able to prevent or bear them, yet no class is free from their dangers or sufficiently careful to avert them. Where could one find a family which has not in some of its members suffered from typhoid fever or diphtheria or others of these illnesses which are especially called "preventable diseases"? Where is there a family in which it might not be asked, "If preventable, why not prevented?"

A report of the whole address will be found in the BRITISH MEDICAL JOURNAL, August 15th, 1891, p. 349.

It is a strange instance of the perversity of the human mind that, whilst moralists and novelists join hands in denouncing the misery caused by drunkenness and avarice, few of them have attempted to paint the equally unpleasant effects of gluttony. Yet no reader of *Le Cousin Pons* is likely to forget the fate of the unhappy musician whose love of good cheer condemned him to lead the life of a parasite at the table of his rich relations, and whose troubles all arose from his inability to abandon the dinners that afforded him such heartfelt satisfaction. It is hardly surprising that Balzac should have felt his hero's sufferings so keenly, since, according to Dr. Cabanès, whose article on "The Temperament of Balzac" appeared in the September number of *L'Hygiène*, the great man himself was not entirely exempt from the same failing. Notwithstanding his almost monastic life, Balzac had all the true Frenchman's appreciation of good cookery: and whenever the overwhelming pressure of his work allowed him a little breathing space he loved to gratify his taste for certain favourite dishes. As a rule he ate very little meat, but consumed vast quantities of fruit, of which he was inordinately fond; and whilst at work on one of his innumerable masterpieces he was quite content to live for days on a diet of eggs and black coffee, the latter being carefully prepared by himself after a particular recipe. Directly, however, he permitted himself a short respite from his almost unceasing labours, his natural appetite reasserted itself and assumed its normal proportions. What these proportions were may be judged from the menu of a dinner eaten by him on one occasion, to the stupefaction of an entire roomful of people. This meal consisted of a hundred oysters, twelve cutlets, a duckling with turnips, a brace of roast partridges, and a sole, together with the usual hors-d'oeuvre, side dishes, and dessert, the whole being washed down by various choice brands of wine. We are told by one of the eye-witnesses of this gastronomic feat that by the time Balzac had finished nothing remained on the table but the bones. Perhaps it was only the natural result of this reckless abuse of a magnificent constitution that Balzac died when little over 50 years of age, a worn-out and prematurely aged man, at a time when he should have been in the full flower of his physical and intellectual vigour. Balzac's love of good wine is shared by many of his countrymen, who will doubtless appreciate M. Francis Marre's rules for choosing wines, which appeared in the September number of *L'Hygiène*. The same number also contains a most interesting account by M. André Mesureur of the famous Mohammedan hospital at Tunis, whilst Madame Augusta Moll-Weiss has contributed some excellent advice on the training and hygiene of young servants.

National Insurance.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

The tenth meeting of the State Sickness Insurance Committee appointed by the Annual Representative Meeting, 1912, was held on October 24th.

Dr. J. A. Macdonald was in the chair, and the other members present were:—*England and Wales:* Dr. R. M. Beaton (London), Dr. T. M. Carter (Bristol), Dr. Major Greenwood (London), Dr. S. Hodgson (Salford), Miss Frances Ivens, M.S. (Liverpool), Mr. Herbert Jones (Hereford), Dr. Constance E. Long (London), Dr. E. J. Maclean (Cardiff), Dr. James Pearse (Trowbridge), Dr. E. O. Price (Bangor), Dr. Lauriston Shaw (London), Mr. D. F. Todd (Sunderland), Dr. D. G. Thomson (Norwich), Mr. E. B. Turner (London), Mr. E. H. Willock (Croydon). *Scotland:* Dr. John Adams (Glasgow), Dr. R. McKenzie Johnston (Edinburgh). *Ex officio:* Mr. T. Jenner Verrall (Bath), Chairman of Representative Meetings), Dr. Edwin Rayner (Treasurer).

Apologies for absence were read from the President (Sir James Barr) and Dr. J. S. Darling (Lurgan).

Report of Council to the Divisions and Representative Body.

The Committee spent the greater part of the long session in considering the draft report for presentation to the Council. The several parts of the report were adopted after emendation for presentation to the Council at its meeting on Thursday, October 31st.

The full text of the three parts of the report as emended and approved by the Council for presentation to the Divisions and the Representative Meeting is printed in the Supplement.

Advertisements for Tuberculosis Medical Officers.

Advertisements sent by two county Insurance Committees for insertion in the Journal were considered (Dorset and Fife), and the Committee resolved that these advertisements should not be inserted in the Journal, the salaries offered in both cases being insufficient.

Conference of Holders of Colliery Appointments.

It was arranged that the conference of holders of colliery appointments should take place on Wednesday, November 6th, at Newcastle-on-Tyne. It was arranged that representatives from the following colliery areas should be invited to attend:

Scotland,	Lancashire,
Northumberland, Durham, and Cleveland,	Midlands,
Cumberland,	Wales (to include possibly one from the Bristol area),
Yorkshire,	

At the request of the Committee, Mr. Tom undertook, in consultation with the Medical Secretary, to make the necessary arrangements, and the Committee resolved to recommend the Council to authorize the Chairman to submit to the Representative Meeting direct a report of the conference.

The following is the draft agenda paper for this conference:

1. General question of the position of the holders of colliery appointments as affected by the National Insurance Act.

Note.—The following resolutions were passed at a similar conference held at the office of the Association on November 8th, 1911:

1. That this meeting is not in favour of contracting out of the Bill for the provision of medical benefit.
2. That this meeting is of opinion that the minimum capitation [illegible] should be 8s. 6d.
3. That in those areas where it is found possible to arrange [illegible] the families of insured persons, the [illegible] on be fixed on a basis of 8s. 6d. per person per annum, but in no case less than 6d. per family per week be accepted.

2. Present arrangements as regards payment for colliery contract practice throughout the kingdom, with suggestions as to any proposed alterations.

3. Question of the desirability of a uniform rate (not necessarily method) of payment being adopted by holders of colliery contract practice.

4. Question of the recovery of arrears of subscriptions due to strikes, etc.

5. Any resolutions or suggestions forwarded by the various meetings of colliery surgeons held to elect and instruct representatives to such conference.

6. Any other business.

Treatment of Tuberculosis.

The Chairman reported that he had approved the scheme for Stoke Newington, and the Committee approved his action.

The scheme for Oldham was considered, and the Committee expressed its inability to approve it in so far as the appointment of the medical officer of health and his assistant as tuberculosis officers with clinical duties was concerned. The scheme for Hampshire was also considered, but a decision postponed in order that further information might be obtained.

Miners' Provident Relief Societies and Accidents.

The Committee resumed the consideration which it had postponed at a previous meeting for further information, the question of whether appointments held under miners' provident relief societies involving the treatment of accidents should be resigned, and adopted the following resolution:

> That, as from the Provisional Medical Regulations it is clearly intended that accidents should be included in medical benefit, the appointments referred to should, under the terms of the pledge, be resigned.

REMUNERATION OF PHARMACISTS.

The following statement has been issued to the press by the Insurance Commissioners:

The Pharmaceutical Standing Committee on Insurance were received to-day (October 25th) by the Insurance Commissioners at Buckingham Gate. The question of whether the remuneration of pharmacists under the Act should be calculated by reference to a tariff was discussed, and a model tariff, which had been prepared by the committee, was submitted to the Commissioners. It was agreed that the Commissioners could not approve any tariff in such manner as to make its adoption binding on Insurance Committees generally. But the Commissioners were willing to accept the principle of remuneration by reference to a tariff and to accept a model tariff (if any such tariff could be agreed) as being of such a nature that if submitted by any Insurance Committee as part of their arrangements under Section 15 of the Act the Commissioners would be prepared to approve it. The Commissioners further accepted the principle that there should be, in the case of preparations dispensed, a separate charge for each item of the prescription, for the container (if supplied at the cost of the Medical Benefit fund) and for the work of dispensing. The committee appointed Messrs. P. F. Rowsell, J. P. Gilmour, D. Arnott, E. S. Waring, and W. J. V. Woolcock as a subcommittee to discuss and arrange the details with the Commissioners.

NATIONAL SCHEME FOR THE TREATMENT OF TUBERCULOSIS.

State Grants to County Councils.

At the present time it may be useful to recall attention to a letter addressed by the Chancellor of the Exchequer to Mr. Hobhouse, Chairman of the County Councils Association, at the end of last July, setting out the contributions which the Government was prepared to make towards the cost of a national scheme for the treatment of tuberculosis.* After recalling the fact that the Government had

* British Medical Journal, August 10th, p. 322.

provided the sum of £1,500,000 towards the capital expenditure required for the provision of sanatoriums and other institutions, he went on to say that under the Insurance Act an annual sum of nearly £1,000,000 was provided for the treatment of insured persons suffering from tuberculosis. He then went on to state that in view of the opinion that schemes for the treatment of tuberculosis should relate to the whole of the community, and that they should be organized and carried out by the councils of counties and county boroughs, the Government was prepared, in response to the representation of the County Councils Association, to place at the disposal of the Local Government Boards of the three kingdoms an annual sum representing, approximately, half the total estimated cost of treating non-insured persons, as well as the dependants of insured persons.

It should be remembered that the Insurance Act—Section 17 (1)—authorizes an Insurance Committee, if it thinks fit, to extend sanatorium benefit to the dependants of insured persons. It is not at present anticipated that the annual fund available under the Insurance Act will suffice for the dependants of insured persons as well as the insured themselves.

Capitation Fee for Domiciliary Attendance.

The following communications deal with the proposal that a fee of 6d. per head on the total number of insured persons should be substituted for the payment for services rendered in the domiciliary treatment of tuberculous patients. It should be noted that the position is complicated by the fact that the larger scheme includes not only insured persons, but also their dependants and uninsured persons. This point was not dealt with by the Chancellor of the Exchequer in his statement to the Advisory Committee, or in his reply to Sir Philip Magnus's question in the House of Commons.

Dr. E. G. Hamilton Williams (Colwall, near Malvern) writes: I desire to call attention to an aspect of Mr. Lloyd George's new proposals in regard to sanatorium benefit, an aspect which has so far received no attention.

In his speech before the Advisory Committee, on October 23rd, he stated that he proposed to give the doctors a capitation fee of 6d. per annum for each insured person, to cover the cost of treatment of tuberculosis, this capitation fee to be in lieu of the payments for attendance, fees for which have, in many cases, been already arranged.

What will be the effect of this new proposal?

1. It will tend to put a stop to the zeal which was being aroused amongst doctors in regard to the detection and treatment of tuberculosis. Many doctors were beginning to study the use of tuberculin, and were devoting much more care to the detection of early cases of pulmonary tuberculosis, and the county and city bacteriologists were having many more specimens of sputum sent to them for examination for tubercle.

The reason for this activity in regard to tuberculosis were twofold.

First, it appeared that we were, at last, to be given the opportunity of successfully treating cases of tuberculosis among the poor.

Secondly, the fees promised for this treatment under sanatorium benefit were comparatively good.

Mr. Lloyd George gave as one reason for his new proposal that it would prevent a doctor being exposed to the temptation of keeping a patient at home for domiciliary treatment when it might be better for the patient that he should be sent to a sanatorium. It might be a temptation, but, if necessary, the chief tuberculosis officer should be able to prevent this, and, moreover, under his new proposals Mr. Lloyd George's argument cuts the opposite way, for with payment by capitation fees it will clearly be a temptation to the practitioner to get every case sent to a sanatorium, in order that he should be relieved of the trouble of treatment and, in the case of tuberculin, of a form of treatment involving much time, trouble, and care.

2. The new proposals will be to the detriment of the public purse.

In a sanatorium each case will cost between 20s. and 30s. a week to treat, and in many cases the dependants will have to be supported while the breadwinner is away, whereas it is now the experience of an increasing number of doctors that many cases can be treated most successfully at home and with the patient still at work. The cost of such treatment is only about 10s. a week, and thus, on financial grounds, is infinitely superior to treatment in a sanatorium. The new proposals will give an enormous impetus to the building of sanatoriums—that is, the spending of money on bricks and mortar.

But the new financial proposals are as detrimental to the doctor as to the public:

1. With regard to fees, many Insurance Committees have already agreed to pay a fee of 5s. for the first report on any case, and a fee of 2s. 6d. for each consultation, and of 5s. for each consultation accompanied by an injection of tuberculin, the Committees supplying the tuberculin free of cost. They are also agreeing to pay mileage when the patient is seen at his own home.

2. In any case of pulmonary tuberculosis treated with tuberculin, it is usual to give about two injections a week—that is, at intervals of three or four days. Thus each such case under domiciliary treatment would bring in about 10s. a week to the doctor treating it.

3. Such cases are generally under treatment for a period of at least six months, and may require to be kept under the treatment for as long as two years. I will take the shortest period—namely, six months; this, at 10s. a week, gives £13 for six months' treatment of *one* case.

4. Let us suppose that under the Insurance Act a doctor had 500 insured persons on his list, for each of whom under the new proposals he would receive 6d. a head per annum (total £12 10s.). Of these 500 persons many will, under the Act, be unselected lives. One might, therefore, on a quite moderate basis, estimate that 5 per cent. would be tuberculous and require treatment at one time or another. But as I wish to keep quite on the safe side, let us suppose that only 1 per cent. are thus affected. If these five have domiciliary treatment with tuberculin, the doctor would receive in fees, for six months' treatment only, the sum of £65 (5 + £13 = £65). But if Mr. Lloyd George's new proposals are accepted he will only receive £12 10s. for twelve months' treatment, no matter what the number of cases of tuberculosis he may have.

In short, if the new capitation fee of 6d. per head in lieu of fees for attendance is accepted the profession will make an extremely bad bargain.

If the profession refuses to work the sanatorium benefit under the altered conditions, Mr. Lloyd George will only have himself to thank.

Dr. Major Greenwood (London, N.E.) writes: At the present crisis it will be necessary for the profession to note very carefully the profound change that has been made by the recent utterances of the Chancellor of the Exchequer with regard to sanatorium benefit as it affects the general practitioner. The whole of the emoluments that it had been thought would have been derived by the profession from the working of this benefit has been swept away, and in its place an extra sum of 6d has been added to the capitation payment for medical benefit. For the last three months every effort has been made to preserve to the profession as much of the treatment of tuberculosis as possible. Now it is to its pecuniary interest to shunt as much of it as it can on to the hospitals and special institutions dealing with the treatment of that disease. All the certificates and treatment included under the domiciliary duties has become part and parcel of the ordinary medical benefit, and as there is nothing to limit the claims in that direction the increased burden thrown on the practitioner cannot but be regarded with grave apprehension.

It will be remembered that one of the chief inducements put forward by the Chancellor in favour of the medical benefit under the old conditions was that the practitioner would be freed from the obligation of attending numerous cases of chronic pulmonary disease, and that where they were called upon to do this work they would be recompensed by suitable fees in proportion to the work done. All this is now changed. Every particle of the work will be required for the addition of 6d. to the capitation payment. It is true that £1,600,000 has been added to the net amount out of which the capitation payment is to be made. But the burden of all extras has been thrown on to the profession, the proper cost of which was admitted

by the Chancellor before the Liverpool meeting to be about £2,000,000.

In addition entirely new conditions are demanded. It is stipulated that the attendance afforded shall be of a better character than that hitherto supplied. There are to be more visits and more time given to individual patients; and last, and not least, simple records are to be kept, open to official inspection. Where the gain to the profession comes in it is difficult to see, and requires an eye of faith to discover. A duty certainly devolves on the medical apologists of the action of the Chancellor to explain to their incredulous brethren the practical advantages likely to be derived from the acceptance of this latest offer: and until this is done a very considerable number of us will consider that the last position of the profession in respect to medical benefit is worse than the first.

BIRMINGHAM GENERAL PRACTITIONERS' UNION.

At a meeting held on October 28th of the West Birmingham Ward (which comprises the North and West Parliamentary Division of the city) the following resolution was carried unanimously:

> That this meeting of the West Birmingham ward of the Birmingham General Medical Practitioners' Union considers the terms suggested by the Government opens a way for an honourable compromise; and considers it advisable for the Representative Meeting (to be held in London) to give full powers to the State Sickness Insurance Committee to reopen and complete negotiations, in order that the medical benefits may come into force on January 15th, 1913.

AN INVITATION MEETING IN FAVOUR OF ACCEPTANCE.

It is announced that "a meeting of members of the medical profession in favour of accepting the terms offered by the Government under the National Insurance Act" will be held on Tuesday, November 5th, at the Westminster Palace Hotel, at 4.30 p.m. The meeting will be invited to adopt the following resolution: "That the terms offered by the Government to the medical profession are acceptable." The resolution appears to be both defective and redundant. It is defective because it does not state by whom the terms are considered acceptable. Had it been completed by the addition of the words "to those attending the meeting," its redundancy would have been apparent, for only those "in favour of accepting the terms" are invited to attend the meeting, and, as they are all in favour of accepting the terms, to adopt a motion to the effect that the terms are acceptable seems a pure work of supererogation, which is defined as the "doing of more than duty requires." It should be clearly understood that those who attend the meeting will only express each his own individual opinion. The meeting will have no representative character or authority, and the members of the general press are invited to take note of this fact. The promoters of the meeting also are, we [illegible] the following memorial for signature:

> [illegible] need for Medical Benefit are considerably higher than those previously offered. There is a definite promise that the whole situation will be reviewed in three [illegible] think therefore that it is possible for the medical profession to accept service under the National [illegible]

[illegible] of the medical profession in every part of the country will be held during the next few weeks, when the present position will be fully discussed with the assistance of the full report which the Council of the British Medical Association is issuing this week. It is open to the medical men who consider that the terms offered by the Government to the medical profession are [illegible] meetings; it is, indeed, clearly [illegible] that they may take their share in the momentous decision now to be taken. We do not think that [illegible] purpose, but rather the contrary, can be served by private meetings of persons all pledged to one common.

Dr. Addison requests us to state that the statement appearing in the *Daily Mail* of Wednesday, October 30th, wherein it was suggested that he was a party to a meeting the purpose of which was to create dissension in the ranks of the profession on the question of Mr. Lloyd George's offer under the Insurance Act, is incorrect. "I am well aware," he writes, "that amongst other misstatements which have been circulated respecting myself has been one that I have favoured an undertaking directed against the British Medical Association. I have never in public or in private encouraged any such enterprise. On the contrary, I have often pointed out how mistaken a policy it would be, and, so far as I could, I have tried to serve the Association, whilst I have not hesitated at the same time to say wherein I disagreed with its proposals."

CORRESPONDENCE.

The number of the British Medical Journal for this week has been issued under considerable difficulties. Special arrangements have been made to publish the report of the Council to the Divisions and the Representative Body, and this document is necessarily so long that it occupies practically the whole of the space of the Supplement. The Editor has received numerous letters on the present position of the profession in regard to the insurance scheme. Owing to their number and the length of some it became apparent that it would be impossible to publish all of them in this issue, if the other insistent calls upon the space at disposal and on the resources of the printers were to be met. A few of the letters which follow are printed in full, but the majority are curtailed in the attempt to give a fair representation of the various views expressed. As will be seen, most of the letters received by the Editor are very critical of the offer recently made by the Government. It should be added that the Medical Secretary has also received a number of letters, and that in the large majority of these the writers express opinions in favour of the acceptance of the terms now offered.

THE TERMS AND CONDITIONS NOW OFFERED.

Dr. James Holmes (Bury) writes: Mr. D. Lloyd George having announced a considerable increase in the suggested amount of remuneration for medical work done under the Insurance Act, and having accepted the principle of "periodical revision," I feel my letter of October 5th has been fully justified. I am therefore emboldened to write again. The condition of affairs is such that a compromise might be made, and I believe the following would be fair.

Remuneration.—The profession to accept for one year the amount Mr. Lloyd George suggests. A fair and ample scale of fees to be fixed and the capitation fee to be rearranged at the end of the year, according to the value of the work done. Afterwards the capitation fee to be rearranged at fixed periods on the same basis. Mr. Lloyd George suggests three years for a trial, but inasmuch as the medical profession consider the proposed remuneration too little, each might give way somewhat. The capitation fee might with advantage be under two divisions, town and country, with two subdivisions, chronic invalids with old persons in one, and young healthy persons in the other. These divisions would make absolutely no difference in the total amount to be paid, but only in the sharing amongst the medical men.

Removal from Panel.—Place this in the hands of the General Medical Council or even its Executive Committees. This body is partly nominated by the Government and partly by the medical profession. It is most jealous of the good name of the profession and would never countenance a man receiving fees and not giving a fair return for them. This would be "infamous conduct in a professional respect" and punishable accordingly. Let it be empowered to consider complaints made either by Insurance Committees or by Medical Committees. I would, however, give the local Insurance Committee the power to remove an insured person's name from any list if it thought fit to do so during the current year at the request of the insured person. At present our patients are free to leave us at any time they like if not satisfied, so we should be

no worse off than we are now. The facts that a medical man might at any time lose a patient if he be not properly attended, and at the end of the year any or all on his list, would be a great inducement for him to try and give reasonable satisfaction.

Wage Limit.—Here I touch on most difficult ground. Though I think I see good reasons why there should be, at present, a wage limit, so far I have never heard a good argument for one. A wage limit amongst the insured would be most difficult to enforce, whereas if we accept the limit of the Act this difficulty would almost vanish. The most patent reason for a wage limit is fear of underpayment. If we are assured of full payment for our work, then this fear ceases. If, therefore, the scale of fees upon which the capitation fee is based be a satisfactory one, I think we might accept the £3 limit. If, however, the profession concede this point, then a medical man on the panel ought to be at liberty to say, "I can only have so many insured persons on my list." Otherwise, a man with a first-class reputation might be so overburdened with insurance work that he would not have time for his ordinary practice. This right to limit the list would, however, be subject to the panel, as a whole, being sufficient. Of course, such a man could protect himself by refusing to be on the panel, but I think the larger the panel and the better the men the more confidence it will inspire.

Extras.—These must always be somewhat difficult to check and the amount must of necessity be fluctuating. Possibly, if medical men must notify all extras immediately they are incurred, on post-paid forms so that the local Insurance Committee, if they thought fit, could inquire into any or all at once, a sufficient check would be established.

While the above ideas are not such as I as a medical man would prefer, yet they form a fair ground for compromise.

Dr. Hamilton S. Faber (Cricklewood, N.W.) wites: If the new grant is accepted it should be with the following provisos:

1. The profession should be allowed the option, in all cases, of doing the dispensing if they wish. It has always been the practice to dispense for this class of patient, and we should have to continue so to do for the wives and children. Presumably there is supposed to be a profit in it, otherwise it would not be offered to the chemists. Some men do not wish to dispense, mainly on account of the time and trouble it takes; but this should not cause them to prevent their more energetic brethren from so doing. Good drugs are more likely to be dispensed by the doctors, to whose advantage it is to get a contract patient well quickly, and there is nothing to prevent the chemist from using the cheaper and inferior brands of drugs, such as the non-alcoholic tinctures.

2. The extra 6d. should be finally allocated to the doctor. The profession should not lend itself to working under what is tantamount to a bribe for cheap dispensing this extra 6d. should be a *sine quâ non*.

3. In order to prevent vexatious and trifling calls at night, and not necessarily to increase the earnings, a small sum should be charged to the patient and not to the State—say 1s. I have been summoned to a minor case at 11 o'clock at night because it was washing day and they were too busy to send before. Had there been any fee payable by them they would not have sent. If the State pays the night fee it would be immaterial to the insured whether they made vexatious calls upon their medical attendant or not.

4. Only the certificates of incapacity to the State should be given free, not to companies, and only meagre information, such as name of illness, dates of visits and consultations, should be given. In a practice as busy as mine it would be necessary for me to keep a secretary if I had to supply much information.

5. In the case of expulsion of a doctor from the panel, he should have appeal to the General Medical Council. This is the body to which the profession always has been subject, and is the one to which most people would bow, whether members or not of the British Medical Association.

I think these five suggestions should receive consideration at all the meetings of the profession, and that without them the terms should be refused. At present the 8s. 6d. is a misnomer. The profession is being offered 6s. 6d.: the rest goes to the chemists, and is of no more use to us than the other expenses of working the Act.

Dr. W. Gordon (Exeter) writes: The profession will be wise to scrutinize most closely the Chancellor's latest offer.

1. *What is it?* 8s. 6d., inclusive of drugs and extras. The sanatorium benefit (6d.) is a separate matter, and cannot properly be considered in connexion with it. In passing, however, it may be pointed out that the adequacy of this 6d. is impossible to decide.

2. *Where is the advance?* (*a*) The Chancellor himself has told us (last week's Supplement, p. 435) that "the extras demanded by the medical profession would certainly have cost 2s. at the very least; and unless some system of checking these extras, which I have never been able to devise or discover, be found, it would be much nearer 3s., or even 4s."; (*b*) 1s. 6d. is allowed for drugs, with 6d. extra if required. I have made careful inquiry of able chemists who have given special attention to this point. They assure me that I am amply justified in saying that this 6d. will be required for drugs, if proper drugs are properly supplied, with no extravagance of any kind; that the price of drugs has risen greatly of late and is still rising; and that German experience has shown the drugs cost considerably more than 2s. a head. (*c*) Therefore, as the "floating 6d." goes to the chemist, this pretended "concession" is simply a contract for extras at "the very least" possible figure, and this offer merely amounts to 6s. 6d. a head for medical attendance and extras, and we must not forget that it is not "guaranteed."

3. *What is the work required for this 6s. 6d.?*—No longer as in the old club days are selected lives to be dealt with, but all sorts and conditions of lives—the chronic invalid, the tuberculous not entitled to sanatorium benefit, the malingerer, the victim of vice, and worst of all, perhaps (since women usually entail far more attendance than men) the domestic servants, the shop girls, the factory girls. And all of these will be entitled to extras, which, as the Provisional Regulations show, include minor operations, anaesthetics, special visits, night visits, mileage, consultations (except the consultant's fee), setting of fractures, reductions of dislocations and treatment of abortion or miscarriage in so far as these are not included in the maternity benefit. They are also entitled to certificates which may or may not require a statement of diagnosis; and records are to be kept of their illnesses and the attendances given, for the information of the lay controlling bodies—work not only very considerable in itself, but sometimes violating professional confidence, and occasionally laying the practitioner open to the most mischievous ignorant attack.

4. *And under what conditions?* Under the control of lay bodies, mostly composed of men wholly incompetent to pronounce a just judgement in professional questions, of lower tradition and intelligence than their medical servants, and armed with dangerous punitive powers though lacking even the ordinary qualifications of a common juryman.

5. *How does the 6s. 6d. compare with the old club rates?* Sir William Plender's report tells us that the annual charges for attendance on the working classes was about 4s. 5d. a head, whilst the price of drugs was 5d. This gives 4s. a head per annum for attendance. But in many cases a considerable proportion of club patients, whilst paying for their medical benefit, never went to their club doctor, but to some one else for treatment. Putting these at one-third of the whole, the real remuneration per patient per annum is seen to have been, not 4s., but 6s., and this for men, for picked lives, and generally not inclusive of extras. Again, the same report shows that, whilst the remuneration was as stated, only 1.7 visits were paid annually per patient. Under the Act it is reasonably certain that the number of visits will not be less than 5. If 4s. be paid for 1.7 visits, nearly 12s. should be given for 5.

Mr. George refers to the Contract Practice Report of the British Medical Association, and remarks that the vast majority were satisfied with 6s. or less, including drugs. But he forgets that this report did not contemplate a State-aided service. The replies dealt not with what was a fair remuneration, but with what was, in the patient's circum-

stances, a possible and reasonable payment. It should never be forgotten that club practice was semi-charitable, and that when the State steps in private charity naturally and properly stops. In a State-aided service the doctors must be remunerated on a business footing. He also forgets that the club doctor had the payments of all the club members, whereas under this Act he will have no such monopoly.

Lastly, the club doctor was comparatively independent as compared with the "doctor on the panel," and that if he resigned his club a number of his old club patients might remain with him as private patients and many others in a similar rank might come to him for advice, whereas under the Act "free choice of doctor" only means "free choice of doctor on the panel" and the man who resigns will probably cut himself off from all patients who are insured persons, and these will include many in a higher rank of life than the club patients have been.

Reviewing soberly the amount of the offer, the real meaning of it, the work demanded for it, and the conditions of that work, and comparing these with the remuneration, work and conditions of work in the club practice we have rightly condemned, I find it impossible to imagine the mental attitude of those men, some not undistinguished, who are advising the profession to regard it with favour. To my mind the profession would be insane to accept service under such preposterous terms.

May I urge on my professional brethren these points of policy:

1. To stand fast by the position they have deliberately and most justifiably taken up.

2. To make clear that our fight is not a financial one, but above all things to maintain the liberty of our highly technical and intellectual labours from the control of lower intelligences already proved incompetent.

Dr. H. Cameron Kidd (Bromsgrove) writes: The comments of the press of all political shades, together with what one hears said on every side, makes it perfectly clear that, while we have so far had the support, generally speaking, of public opinion in the stand that we have made, we should quickly lose that support if we refuse now to recognize that the Government has made an honest attempt to meet us and has offered us terms which represent practically the limit which the taxpayer can be expected to bear.

It is equally clear to those who know (as I do after twenty-five years of mixed general practice) the practical side of club work, that the terms now offered will give us a very satisfactory return for our work.

A single Foresters' lodge which used to pay me about £12 per quarter on the old terms of 4s. a head per year has already made sixty new young members, and this quarter, still on the old terms, has paid me £15. At 6s. a head this £15 would have been £22 10s., at 7s. 6d. a head it would be over £28, and on the terms now offered —8s. 6d. a head (for the old 4s. included all drugs) it would be over £31; and of the sixty new members already made, there is hardly one who would have been a paying private patient in the event of illness; all are picked young lives, passed by me, and all are members who would have been welcome in the club on the old terms.

It will be apparent that the loyalty of all of us to the British Medical Association will be very severely strained if we are asked to refuse such an offer as this. I say nothing of higher motives: the helping instead of hindering of the noblest effort of social legislation that our generation has seen, except that personally these would have prompted me to accept the original terms, [illegible] confidence in the pledge of the Chancellor of the Exchequer that any amendment found necessary after, say, two years' working of the Act, would be [illegible]

Dr. W. Courtenay Milward (Honorary Secretary, Cardiff Division and Cardiff Provisional Committee) calls attention to the following passage in the [illegible] Chancellor of the Exchequer to the [illegible]

"[illegible] . . . that a sum of 7s. is to be assured on the basis of the amount which is to be paid to the doctor for his [illegible]

and asks: Who is there among us who would dare to say what this very disingenuous proposal is worth in hard cash, especially when it is certain that the chemists will not—in fact, cannot—even consider a hard and fast capitation fee for themselves?

Then as to the three new conditions. To one accustomed to the constantly increasing clerical work of the Poor Law medical service (some of it demanded by the Local Government Board entirely outside the terms of our contracts), the prospect of furnishing all the certificates and reports which may hereafter be required is indeed appalling, and suggests that the new terms are but little better than the old. And when to all this is added the extra time and attention required by demand No. 3, we may well pause and ask whether, in the matter of remuneration, we shall not be positively worse off than we are at present in respect of our worst paid contracts, and whether, in the matter of conditions, we shall not be compelled to work under surveillance somewhat similar to that of a Dartmoor convict.

As most of us are working pretty well full time at present, the future will present as alternatives either a large increase in the number of working hours a day or a large increase in the numbers of the profession. There will, of course, be plenty of work to justify the latter, but of payment for work done . . . ? The already dangerously small incomes of many of us would suffer almost to the the point of extinction. Do let us look more than an inch beyond our noses, and prevent, while it is still possible, the establishment of a huge, cheap, and nasty club, having many of the worst features of the existing Poor Law medical service—that scandalous travesty of the practice of medicine in which nearly all that is of any value represents the charity of its medical officers.

Dr. T. Archibald Dukes (Croydon) writes: We are winning, but to gain victory we must still stand steadfast.

We claim as a right that insured persons should pay us at the same rate as our private patients. Our private practice is taken away to make insured persons. To ask us to attend them for a less amount than that established by the law of supply and demand is to ask of us charity.

Even the unfair Plender report showed that the doctor's average income is more that £750. This makes the present income of our profession more than £21,000,000 a year.

For the medical attendance of one-third of the population the Government provides less than £5,000,000 (6s. 6d. or 7s. a head). If we have been doing this work in the past and been paid at an average rate for it, we have received one-third of £21,000,000. Therefore the Government should offer us more than £7,000,000, or a rate of 10s. a head.

On the other hand, if in the past we have not done the medical work required by this Insurance Act, then we have earned £21,000,000 by attending the other two-thirds of the population; for the extra attendance required by the Insurance Act on this third of the population we should at the same rate be paid £10,500,000, equal to a rate of 14s. a head.

Since some of the work is new, while some we have always done and been paid for, the fair rate lies between these two amounts, say, about £9,000,000, or a rate of 12s. a head.

In fact, however, we have done most of this work in the past as charity, and have not been paid for it. The Government assumes a right to our charity, and offers to pay us at such rates as it is estimated would repay us the out of pocket expenses of our charitable attendance. Sir William Plender estimates that 7s. is rather more than those expenses, and so he says the Government offer is "fair, if not generous." To take from us paying practice and offer us instead unprofitable charity rates is not fair. To make our past charity a reason for reducing our future income is not generous. To try to make our charity unlimited, permanent, and compulsory is outrageous.

If the Government cannot afford 12s. a head for insured persons, let them own that our attendance upon them remains a charity, and fix a low income limit. Therefore, also, leave each panel doctor his clear right to refuse to attend upon any particular insured person. Give the doctors free choice of patients, and trust to their admitted generosity. Then we could exact at least gratitude as our reward. Because this work is our charity we refuse to keep records of it. The efficiency of the service is maintained by the free choice of doctors. To maintain that freedom of competition each insured person should have the right to make his own arrangement with any doctor off the panel.

Even if the Government double their offer of payment, so long as we doctors have to undertake the whole risk of insurance, we demand control of the administration of medical benefit.

Dr. T. B. F. Emnson (Scotter, Gainsborough) writes: Mr. Lloyd George's announcement places the Insurance Act on a firm basis, and we may heartily congratulate ourselves on the part we have jointly played in welding the Act into a workable form: and our stormy petrels on both sides, who have served their profession in their own way but from very different standpoints, may rest and recuperate for three years.

The time has now arrived for careful consideration of the proposed methods of remuneration. It appears to me that the alternative methods suggested by the Commissioners may with advantage be reduced in number. Personally I should prefer simple capitation without extras, except those we have been accustomed to, such as expensive instruments and apparatus supplied to patients for permanent use. I think the capitation system is certain to find favour in the end because of its simplicity, but we have to recognize that we are not at present united on this point, and I wish to suggest for consideration whether we cannot reduce the alternative methods of remuneration to two or at most three, and then allow each medical man to adopt the method he prefers.

Dr. Gilbert E. Cope (Westminster) writes: I was very surprised and sorry the other day to see that, after Mr. Lloyd George had made public the revised list of medical payments in connexion with the National Insurance Act, the Wandsworth Division of the British Medical Association hurriedly met, and, to my mind, very precipitately and unfortunately decided to have nothing further to do with the Government scheme because everything which we wanted had not been granted.

Surely such action is comparable to that of the spoilt child who will not eat bread and butter because he can't have cake.

Of course, we are all desperately concerned as to the future of our practices, and how we are going to keep our establishments going and our heads above water, but I do contend that the common sense attitude now is to accept the compromise terms of the Government. We shall, I am certain, retain the esteem of the public by so doing, which I am equally sure we shall lose if we go on "haggling." The terms are only for three years, and none of us can say without actual trial how the rearrangement of our practices is going to affect us financially.

We have repeatedly quoted the Post Office terms (8s. 6d. per head including medicine) as being one reason for refusing the 6s. previously suggested, and quite justifiably: but now we have got the same terms or better, how can we, without making ourselves look either foolish or mercenary, refuse these terms and—well, continue with bad debts or some public medical service yet to be devised, approved, and proved workable. Personally, I am not in the least sanguine of the British Medical Association being able to start and continue a public medical service: but suppose it could be done and was commenced. We have the word of the Government that if we do not agree to the panel system of the National Insurance scheme, it will at once commence to organize a State medical service. This for some year or two would not be altogether successful, no doubt; but in many districts it would be worked, and what about the British Medical Association public medical service in those districts? There would be incessant friction and strife, and the profession would in the long run come off second best both in prestige and pence in the fight with the Government.

Medical services are run by medical men in some towns now, and apparently successfully; but how about next year when these services have tilted against these State doctors?

For myself, although I should like our full demands to have been conceded, I am satisfied that the present figures are a reasonable compromise, and as they are only trial figures for three years, I am sure we should do well to accept them.

Dr. A. A. Fell (Colchester) writes: It is said that in asking 8s. 6d. as a capitation fee from an insured person and a less sum from a dependant we are inconsistent and are giving our case away. That is not so. It has always been a very fair and necessary custom in medical practice to ask a higher fee from a rich man than from a poor man. A State and employer-aided insured person is richer than his unaided dependant; therefore, we ask a higher fee from the former.

Putting aside numerous small defects, the Public Medical Service of the British Medical Association is impracticable for the following reasons:

1. Few members of the public will join because it is voluntary and expensive.
2. The cost of management will be prohibitive if there are few members.

It is stated that if our Public Medical Service fails and if we cannot come to terms with the Government, then our position will be undermined by the formation of a Government public medical service. The Government is not likely to undertake the formation of such service on account of its enormous cost. Such a service to be of any practical use and to attract doctors must be well paid. Therefore a Government public medical service, if formed, will be a financial asset to the medical profession, just as the Army Medical Corps is now one of our financial assets.

What are we to do if no settlement is arrived at with the Government and if our public service scheme falls to the ground? We occupy an impregnable position both tactically and in its justice and right. We have merely to hold our ground to win all along the line.

Let us say as a body to all approved societies: You have our six cardinal points, grant them, and we will serve you faithfully.

The approved societies backed by the Government and by the employers can grant our terms—we have only to stand firm and they will grant our terms.

Dr. J. S. Manson (Warrington) writes: The increased offer of the Government, the conciliatory speech of the Chancellor, and the eloquent and distinct lead given by Sir Clifford Allbutt should induce the profession to accept service under the National Insurance Act. The terms are provisional for a period of three years, and experience will show how the regulations and the working of the Act will require modification so as to ensure efficiency and satisfaction to all concerned. The apparent success which has attended public medical service schemes in small areas must not be taken as a criterion of what would happen in a national system of such services.

Dr. Bertram W. Bond (Godalming) writes: It is sincerely to be hoped that no medical man will allow himself to be deceived by Mr. Lloyd George's fine attempt to bluff the profession into thinking that his second offer is an improvement on the first. The first offer was as follows:

4s. 6d., *plus* extras, *plus* attendance on tuberculous patients.

In his speech before the Advisory Committee the Chancellor distinctly states that it was originally intended that extras should be given, and quoted the demands of the profession for extras as being equivalent to a sum from 2s. to 4s. per head. The remuneration for tuberculous patients promised to be quite a fair one, and far better than the capitation fee of 6d.; in fact, Mr. George admitted that the alteration would be "economical to the State."

If we take the lowest figures quoted above for extras, we thus get:

4s. 6d. *plus* 2s. = 6s. 6d. *plus* tuberculosis fees;

as against the present offer of:

7s. (inclusive of tuberculous fees) *minus* 2s. = 5s.

In addition to this reduced remuneration, all medical men should note that:

1. The cardinal points are still ungranted.
2. We are expected to act as clerks to the Commissioners in supplying notes on cases.
3. We are to guarantee an improved medical service.
4. We are to be dictated to as to how often we should visit patients and as to how much time and attention we give them.
5. If the latter is unsatisfactory to the patients we may be arraigned before a court of inquiry dominated by a majority of laymen.
6. The same may happen if use is not made of the most modern means of diagnosis.
7. We must be ready, night and day, to attend any insured

person, drunk or sober, possibly miles away from home, for a consideration infinitely inferior to the old sweating terms of the clubs.

Dr. Charles S. Patterson, M.B., M.R.C.S. (Rural Representative, Hungerford, Reading Division, British Medical Association) writes: The Chancellor's special pleading in favour of sweating by the State instead of by the friendly societies may be safely passed over. Because a number of club practitioners whose necks had become hardened to the yoke said they would be satisfied with five or six shillings, are we all to be forced into the same slavery?

My practice was made by hard work, and the expenditure of over £1,000, not to speak of the first cost of professional education. Now my patients are taken away by law without compensation. What care we whether Sir Clifford Allbutt or any other medical or surgical knight give this scheme his blessing. What does he know about the general practitioner's business? Nothing, and less than nothing. We country doctors are men well educated in our profession, many of us skilled by long experience, known and respected by our clients and neighbours. The Government for its own ends seizes our business without compensation. Compensate us fairly and many of us will shake the dust of this ungrateful country off our feet, and seek some other corner of the world where even the skilled labourer is worthy of his hire. The Chancellor denies that a state medical service is being instituted. Why is the scheme to be revised in three years' time? In order that the schemers and the enthusiasts may have time to attract students into a whole-time scheme, and then the blow will be struck. The National Medical Service is sketched, all under the rule and governance of the medical officer of health, who is either a professional rival or, if a whole-timer, absolutely ignorant of general practice. For what is the present scheme but a State-paid medical service, where the least possible price is to be paid and the greatest harassment is to be inflicted on the wretched slaves who enlist or are trepanned to serve?

The Chancellor offers the provision of drugs to the country doctor,

and, of course, there is no doubt at all that that to a very large extent will be taken into account when the doctors among themselves come to discuss the question of mileage.

What a reflection on an honourable body of men—probably the hardest worked and worst paid section of our profession! Here is a direct invitation to recoup ourselves for our miles of bad and inferior road travelling by giving our patients equally bad and inferior drugs.

Thank God I, for one, can safely say, after a quarter of a century of practice, that I have made no difference—and never will as long as I practise my profession—between the drugs supplied to patients, be they rich or poor, private, contract, or pauper.

The country practitioners may be poor, but we are honest. As to what Sir Clifford Allbutt and Dr. Norman Walker said, it should be remembered that they do not represent the profession. The loyal members of the Advisory Committee resigned their seats long ago. One reads with surprise Professor Sims Woodhead's views, as given by Sir Clifford Allbutt, but memory takes me back to when I worked under Dr. Woodhead twenty-eight years ago in the University of Edinburgh—then, as now, his head was so far above the clouds that he did not see the toils with which baser spirits were entangling his feet.

Sir William Plender made a somewhat peculiar pronouncement on the Chancellor's offer—"that the remuneration which is now offered by the Government is a very fair remuneration to the doctors, if not, indeed, generous." The words of this offer are generous, but the offer is not. One is instinctively reminded of the words of St. James: "And if one of you say unto them, Depart in peace, be ye warmed and filled; notwithstanding ye give them not those things which are needful for the body; what doth it profit?"

Comparisons.

Dr. W. B. Vaile (Aldershot) writes: The new proposals of the Chancellor will no doubt receive careful consideration, but I am convinced that the more care that is devoted to them the less satisfactory to him will be the decision of the profession.

His proposals, as he admits, do not satisfy our six points, and as we are all pledged to accept nothing less, I fail to see the danger of the split in the profession that he so earnestly desires.

The new proposals have, however, an academic interest, and I append a "deadly parallel" showing the conditions of contract practice, (*a*) at present, (*b*) under the public medical service, and (*c*) under the Insurance Act.

Be its defects and difficulties what it may, a public medical service means freedom and self-respect. It may interest Messrs. Mills and Harford (whose disinterested efforts on our behalf will not, I am sure, go unrewarded) to know that a service is running in several towns, notably at Southampton, where it has given satisfaction to all parties for nine years.

	At Present.	Public Medical Service.	National Insurance Scheme.
Fees	4s. per annum	10s. 10d.	6s. 6d. to 7s.
Income limit ...	None	Strict	*None.*
Free choice of doctor	None	Absolute	Very doubtful.
Extras	Few	Full list	*None.*
Protection against night calls, Sunday calls, etc.	None	Ample	None.
Bookkeeping ...	Little or none	Little or none	Very much.
Certificates expected	On and off	On and off	Unlimited.
Reports	None	None	Unlimited.
Dispensing	In our own hands	In our own hands	Prescriptions.
Control	Lay, but local	Entirely in our own hands	Entirely out of our hands; lay and stranger.
Hearing of complaints	,,	,,	By laymen largely.
Locums or assistants	Allowed	Allowed	*Forbidden.*
Special exams., *e.g.*, bacteriological	Not expected	Given as extra	*Demanded free.*
Treatment	Simple only	Simple with extras	Every kind conceivable.
Personal misconduct	Barred	Extra	Included free.
Hours	Unlimited	Strictly limited	Unlimited.
Clinical records ...	Unheard of	Unheard of	*Demanded.*
Troublesome patients and chronics	,,	Can be refused, or made private patients	*Must* be attended by *somebody*, and at normal rates.
Mileage	Over three miles	Over two	None.
Inspectors	Unheard of	Unheard of	*Insisted upon.*
Red tape	Little or none	Absolutely none	*Unlimited.*
Net result ...	Drudgery	Freedom	Slavery.

Dr. George N. Biggs (London, W.) writes: It behoves every member of the profession to look most carefully into the details of the latest offer made by the Chancellor of the Exchequer. According to him it is a most generous concession, and he is supported in this by those gentlemen who have remained upon his Advisory Committees after the profession had decided to ask them to retire.

What I wish particularly to point out is, however, that as usual, when the Chancellor gives with one hand he takes away with the other, and so leaves us worse off than before.

I think a careful examination will show that, as a profession, we should have been better off by accepting the 6s. offered last year with extras and the sanatorium benefit with its extra fees than to work under the present offer.

The First Offer.	*The Present Offer.*
4s. 6d. for the doctor and 1s. 6d. for drugs.	7s. for the doctor; 1s. 6d. for drugs; 6d. extra, which, if not used for drugs, will go to the doctor, making a possible maximum for him of 7s. 6d.
Extras for night visits, slight operations, mileage, etc.	No extras at all.
Tuberculosis benefit, with extra fees.	Tuberculosis included in above.

The utmost, therefore, that the medical man can obtain is 7s. 6d., with all extras cut off and the tuberculosis work

added. Moreover, the Chancellor makes this advance conditionally—first, that all certificates necessary to enable patients to obtain sickness or disablement benefits are to be given gratuitously; secondly, simple records of patients' illnesses and attendances are to be rendered; thirdly, services in certain respects, which have not yet been defined, must be improved, the medical man, where necessary, being required to resort to modern methods of exact diagnosis.

Against these may be set the promise to establish a central fund for the payment of drugs in cases of epidemics. It should be noted, however, that this promise is very vague indeed, no sum being mentioned, nor is there any indication from whence it is to come, by whom it is to be administered, or who is to decide on the question of the actual occurrence of an epidemic. The authority, when an appeal was made, might either demur or grant such a paltry sum that it would be useless, and in this case the medical man would obviously be seriously out of pocket for carrying out this service.

In dealing with matters of this kind, it is absolutely necessary that everything should be clearly and distinctly stated, so that no one may be under any misapprehension. The third clause requires the most careful consideration, however, for modern methods of special diagnosis are very expensive. Take, for instance, the Wassermann reaction, which costs £2 2s. (that is, six years' contribution expended upon a single examination), although there is, it is true, at present one firm which is carrying out this reaction for 15s. 6d., but even this would take two years' contributions. X-ray examinations, also, are at the present time necessary for the correct diagnosis of fractures, calculi, aneurysms, and pulmonary tuberculosis; it might even be construed to include the examination of the larynx, oesophagus, and stomach by the direct method; a cystoscopic examination of the bladder, or the passage of the ureteral catheter in cases of kidney diseases, blood examinations and counts, the estimation of urea, and an examination of the faeces or test meals. Its extreme vagueness constitutes its greatest danger, and if these methods are required, some arrangements should be made for their institutional provision, the want of which is one of the most serious failings of this ill-considered Act.

My desire in thus drawing attention to Clause 3 is that general practitioners may be quite aware of the fact that they may be called upon to undertake these methods at their own expense, in which case the offer of 7s. is little better than a farce.

If modern methods of diagnosis are to be made use of, the same will be demanded in treatment, and for this the sum of 1s. 6d., and if necessary 2s., is to be devoted. The idea seems to be prevalent that over-drugging will be prevented by not allowing a larger sum. That indiscriminate drugging is to be discouraged is true; but there is under the Act a far greater danger of the opposite extreme.

Now, it so happens that some of these methods of treatment are very expensive; take, for instance, a case of syphilis, which at the present time, with very few exceptions, must be treated by at least two intravenous injections of salvarsan, at a cost of about 10s. 6d. each, followed by inunctions or injections of mercury, combined in certain cases with potassium iodide, in large doses by the mouth. Potassium iodide is also very expensive—in fact, most drugs have risen at least 20 per cent. in cost during the last two or three years. In the above case two or three more Wassermann reactions are necessary during the two years following the treatment, bringing the total cost in this case to about £10—that is about twenty-nine years' contribution. The doctor will have to provide this sum out of his own pocket.

Again, take the question of treatment by vaccines, and here in almost all cases, if the best results are to be obtained, an autogenous one must be prepared, and this will cost £3 3s. It is also a well-known fact that cases of myxoedema require treatment by the administration of thyroid extract during their whole life, etc. Yet no extras are to be allowed, and it is well to accentuate the fact that upon us as medical men will fall all the costs and risks of insurance, whilst all the credit for philanthropy will be given to the Chancellor.

Dr. W. Bickerton Edwards (Seven Sisters Heath, South Wales) writes to emphasize the following points in the recently issued regulations and speech of the Chancellor of the Exchequer, which he thinks should make it absolutely impossible for any one to take service under the Insurance Act: Let me assume that a general practitioner has allowed his name to be placed on a panel. What exactly would his position be?

His practice will no longer be negotiable.

He will have lo t all security of tenure, and will no longer be his own master.

His practice will undergo periodical rearrangement.

He must send in quarterly accounts.

His books must be open for inspection.

He must make elaborate returns, and for these returns there must be no charge.

He must give certificates but will not be paid for them.

He will be absolutely under lay control—of a committee that cannot possibly understand anything of medical matters.

He must be prepared to be dictated to by this committee as to the number of times they think a patient should be visited, etc.

They shall decide whether his work is properly done or not.

He must apply to them and give notice whenever he leaves his practice; and even when this important body has condescended to allow him a day off or his annual holiday he must not employ an assistant or locumtenents, but must appoint another doctor of the panel to attend his patients in his absence. This means that he is compelled to introduce to his patients a man who is in active opposition to himself.

He may report a patient for misconduct to this committee, and if the charge is proved they have the power of punishing him—"the patient"—by transferring him to another doctor on the panel. He may be haled by a patient or clique before the committee, and they may bring any charge they like against him. In 99 cases out of 100, because the committee is a lay one, the charge will be upheld, and the practitioner will be knocked off the panel, or, in other words, ruined. The inconsistency in the punishment meted out to the patient on the one hand and the unfortunate practitioner on the other needs no comment.

He will not be allowed to dispense his own drugs where a chemist is available lest he give them inferior medicines. Should there be no chemist, the authorities will make a convenience of him and allow him to dispense. The chemist is assured of his payment, and of extras in case of epidemics. During epidemics, for wear and tear of horses, cars, and self he has to look forward to smaller pay and more work.

Free choice of doctor is promised the patient and mileage to the doctor, but we find that the panel doctor will get no mileage for attending a patient who resides within three miles of any other medical man on a panel—that is, free choice is limited within a radius of three miles, and mileage is to a very great extent a myth.

He must take on the aged and chronic that the Insurance Committees themselves refuse, and must be prepared to receive and attend any undesirables the Committee see fit to allot him when they distribute them throughout the panel.

He dare not object to frivolous calls and night messages.

He cannot press for his accounts for attendance on the women and children.

He dare not remonstrate with the impudent or drunken patient.

Is there not a periodical rearrangement and what remedy, under lay control, has he when those he has offended canvass against him and apply the inevitable screw?

He must treat inclusively any venereal case that may come to him.

Expenses of Practice.

Dr. G. Percy Joy (Willesden, N.W.) writes: If conditions and remuneration are fair it should surely be possible for a good average general practitioner, working a reasonable number of hours, to make a sufficient income from this class of practice alone to enable him to live and to support and educate a family without financial strain. If he is to be efficient he must have leisure to read and think, he must have an annual holiday, and he must have a motor car.

Now 2,000 patients with a right to demand a full measure of attendance, commanding such a man's best efforts, assisted by every means that modern diagnostic methods require, will undoubtedly keep him fully occupied (indeed, he might well be worked literally to death in times of special stress).

What return is he to have under the Chancellor's latest offer? £700 gross—the Chancellor speciously suggests a possible £750.

The professional expenses of such a man—a consulting and waiting room, lighting and warming of same, maid to answer door, telephone, stationery and postage, books, instruments, emergency drugs and dressings, motor car and chauffeur (or boy to clean car, in which case the doctor is entitled to be paid as chauffeur), expenses of locumtenent during holiday—will not easily be made to fall below £300. Thus, at his best, having won success and proved himself capable of service to the nation, his

utmost earnings for so long as he can hold his own are to be £450 (probably £400) net. If his health fails or if his popularity wanes, his income must rapidly diminish. His one hope of earning the income he is worth will lie in entering the fiercer conflict that will be waged for any patients who will pay better fees, and thus freeing himself from the slavery of the national service.

The Chancellor is willing to "trust" him to check drugs and extras, but not to pay him for such extras as those to which he will be admittedly fairly entitled. The fact, as every one with practical experience as a general practitioner knows, and as is patent to all unbiassed judges, lies in the Chancellor's own statements:

1. That the medical profession has made out a case for increased payment; and
2. That the Government's method of meeting the admittedly justified demand for this consists in offering an inclusive fee less than the minimum grant demanded (8s. 6d.), coupled with additional conditions of service, and the refusal of any payment for mileage or for extras (apart from major operations and specialist fees).

In regard to drugs. If the country doctor can make anything out of supplying drugs, the Chancellor is good enough to suggest that this can be regarded as a set-off to the mileage allowance of which he is to be defrauded, for it is granted that mileage is a fair charge.

I hope the Association will take steps to expose publicly the unfairness of the Chancellor's sneer in regard to the "insufficient powers to negotiate" of its Committee. The profession have never been granted their minimum demands. It still remains for the Chancellor to supply a basis for negotiation.

Dr. Henry Edward Gough (Northwich) writes: After carefully reading through the statement of the Chancellor and the discussion upon it, as reported in the Supplement for October 26th, I am struck by the omission of any reference to the "expenses" of a practice.

At present any practitioner in a country or country town district has working expenses which vary from £300 to £500 per annum, and the payment of these expenses is the crux of the problem. In all but exceptional districts the main income of a practice is derived from private patients who do not pay income tax, and the working expenses (consulting-rooms, attendance, telephone, motor car or horses and man, and assistant) are incurred and paid for by the private practice, the clubs and parish appointments being quite a secondary and subsidiary matter. The Insurance Act will alter all this and convert the main part of a practice into "club" work, out of which the expenses will have to come, as the private practice will be so restricted that it will not stand the expenses being debited entirely to it; it is very clear that any scheme of club work which does not allow a margin for these expenses is foredoomed a failure.

Health Risks of Medical Practice.

Dr. W. H. Spurgin (Newcastle-on-Tyne) writes: I consider we ought to obtain a pension for worked-out medical officers under the Insurance Act, upon the Government superannuation scheme. This to me appears most necessary, and we should hold out for it. Now is our opportunity. Personally, I have four friends who have suffered by inoculation from patients and their health ruined; one died therefrom and left a large family wellnigh penniless. We must safeguard ourselves as far as possible.

Rural and Town Doctors.

Dr. A. Paget Stevenson (Hurworth-on-Tees, Darlington) writes: As a country practitioner may I call attention to the monstrous new proposals of Mr. Lloyd George to the profession generally, but more particularly to those of us that have to work the rural districts? We are to receive the same fee as our town brethren. No consideration for mileage and inaccessibility of places we have to go to, and no help of trams and good lighted roads at night. We are, however, to get 1s. 6d. for drugs and dispensing, which the town men will not get. This is no new offer, we have always had that, and I shall be very surprised if the chemists do not prove that there will be no profit in 1s. 6d., and refuse to supply drugs at that figure.

I trust that in the new negotiations nothing will be settled until the just demands of every branch of the profession have been considered and righted.

At each concession (so-called) of Mr. Lloyd George we have had additions to our work.

Dr. M. Tylor (Wisbech, Cambs.) writes: The Act provides that doctors shall not themselves supply insured persons with medicines because, in spite of the fact that it is to their interests to get their patients well as quickly as possible, they might be tempted to unduly cut down the drug bill to their own advantage. As the Chancellor said, when introducing the bill on May 4th, 1911, "there ought to be no inducement for underpaid doctors to take it out in drugs." In the light of what has happened since, the use of the word "underpaid" is instructive. The Provisional Regulations of October 1st, 1912, provide that drugs and appliances shall be a first charge on the amount available for medical benefit. That the Commissioners and the Advisory Committee could imagine for a moment that such an unfair arrangement would be accepted by the doctors passes belief; at any rate, the Chancellor has hastened to delete that particular regulation. Now comes the extraordinary part. There are chemists in towns; therefore town doctors are not to be trusted to dispense medicines under the Act. But in the country districts there are no chemists; therefore the doctors in the country must be trusted in this respect. The doctors cannot, however, be trusted with regard to mileage fees, so it is ingeniously suggested that they shall recoup themselves for their mileage expenses out of the allowance for drugs. Here we have a direct inducement, suggested by the author of the Act, for "underpaid doctors to take it out in drugs." What of the position of the country practitioner who lives in a small country town which also supports one or more thriving chemists? Seventy-five per cent. of the practitioners in the Isle of Ely—a purely agricultural district come under this head. His lot would be indeed a happy one. Nothing for his mileage, no extras—except for major operations and other specialist services, whatever that may mean—nothing for his drugs, except a possible 6d. for not using them, but, on the other hand, 7s. and plenty of records to keep.

The Chancellor states, "If the remuneration is increased the service must be improved." By his new proposals he admits that the original remuneration was inadequate; does he also mean that under those terms the service also was to have been inadequate? Was not a proper standard to have been reached and maintained under those conditions? Medical men have always assumed that a thoroughly efficient service would have to be given under the National Insurance Act. Therefore we demand fair conditions and adequate remuneration. What encouragement do these proposals give to a practitioner anxious to keep up to date, to employ "those modern means of exact diagnosis," to cultivate some special branch of medicine or surgery in which he may be interested? Is the insured person to be encouraged to go to a medical man who is not on the panel for services which the latter might well be in a position to render, but which it will not be worth his while to perfect himself in because he knows he can claim no fee. However keen a man may be, the fact that he may profit by his keenness is bound, in the vast majority of cases, to stimulate him to further efforts. Nowadays the medical profession is often spoken of as a trade union, but it differs from most trade unions in that there is no curbing of the individual; if a man is a quicker, cleverer, or harder worker than others he can reap the benefit. I am convinced that such proposals as we have before us, instead of, as imagined by Sir Clifford Allbutt and Professor Sims Woodhead, raising the level of the work of the mass of general practitioners, will lower it. I suppose a man may be forced to do good work, but he can be encouraged to do much better work, and that is the method I believe the Commissioners should adopt if they have the interests both of the people and the doctors at heart.

Dr. T. Cumins Askin (Woodbridge) writes: Mileage is a matter of vital importance to us, and we must insist upon a very substantial increase in our capitation payment, even should it unfortunately and most unfairly mean a diminution in the fees of the town doctors. It is just as

well for the latter to bear this in mind, so that they can induce the Government to establish a central fund to deal with mileage in accordance with your excellent suggestion, and thus make sure of receiving their 7s. or 7s. 6d. in full. The work of the doctor in town is child's play compared with that of the country doctor. His patients live more or less in a row, and he experiences little if any difficulty in sending serious and troublesome cases to hospital. If a consultation be required, even when the patient is unable to pay an adequate fee, a kind *confrère* is always willing to come to the rescue. But what about the doctor in the country? The nearest hospital may be eighteen miles away; the nearest doctor eight or nine.

Special and night visists are a serious thing when they involve a journey of four, five, or more miles. And it is not simply a case of distance. Many of our patients live off the beaten track. If it is necessary to leave the practice for even the short space of twenty-four hours a locumtenent has to be provided and paid for. The shortest illness will also render this necessary. It is true in the past we have had contract patients living three and more miles away, and we have attended them for a ridiculously small sum because they were poor, but there has been no compulsion about it, and we have known that at any time we could make a change if desired. Our patients have also known this, and the knowledge has done much to save unnecessary calls, etc. This liberty—our greatest asset—will now vanish. The compensation must therefore be very real.

The cost of drugs and dispensing will be relatively greater to us than to the chemists, because of the necessity of ordering small quantities at a time, and owing to carriage. The very great expenditure of valuable time must also be taken into account, so that it is absurd to talk of dispensing as a privilege which is to be a set-off to mileage.

Whatever decision we come to, we cannot possibly agree to supply surgical and medical appliances for an inclusive fee of 8s. 6d. or 9s.; nor can we be responsible for such extras as fractures, dislocations, anaesthetics, serums, vaccines, tuberculin, oxygen, bacteriological examinations, and consultations. Quite apart from the financial aspect of the case, we must think of the freedom and independence of the medical profession.

Proposed Referendum.

Dr. John D. Davies (Swansea) writes: I would submit that it is urgently necessary that a referendum should be taken in each Division, and answers asked to the following question:

Are you in favour of accepting the terms offered by the Government?

A large majority of the profession do not attend the meetings of our Divisions, so that it is hardly fair to conclude that the voice of a meeting is necessarily the voice of the Division.

It is very evident that if we arrange terms with the Government, the fight will then be beginning, as the difficulty will be with the uninsured. Attempts will be made all over the country to form medical aid associations for the treatment of these. In Swansea and other places the friendly societies have convened meetings to consider the question, and one of the leading lights at one of the meetings warned the members that they must put their feet down, to prevent the doctors attempting to constitute the sum fixed by Government as a standard for the uninsured. This would have the effect, of course, of completely annulling any benefit from an increase in the rate for insured persons, and we should have the increased work required by Mr. Lloyd George's conditions.

Another question might be added to a referendum:

If you are in favour, but the majority of the profession decide against accepting, do you pledge yourself to fall in with the majority?

The Wage Limit and a Pooling System.

Dr. T. S. Finch Hudson (Tipton) writes: I practise my profession in a working-class neighbourhood for a living, and I believe that, with a proper adjustment of fees and wages to suit each particular locality, an entirely efficient medical service could be established with the money Mr. Lloyd George has at his disposal. Simply pay for work done; this would benefit doctor and patient alike, by giving most attention to serious and chronic cases and abolishing the hateful club system. Naturally, the country doctor must have larger fees than the town doctor; the man also who makes many night visits, and so shortens his life, should be paid handsomely for his sacrifice. Leave the adjustment of fees and of wage limit to the profession, and let the profession in return guarantee that the total for the whole country shall not exceed 9s. a head: if the amount is less, set aside the balance for a year of exceptional sickness, when 9s. may be exceeded, or pool the balance or loss each year, as the case may be. With regard to Mr. Lloyd George's remarks on the fact that in the year 1905 a vast majority of medical men considered 6s., to include drugs, was sufficient, it should be pointed out to him that this proposal was coupled with a low wage limit and medical examination before admission.

Income Limit.

Dr. W. G. Tottenham Posnett (London) writes with regard to the income limit: The following fact will show how we must hold out on the income limit. A patient of mine employs many hands at piece-work; they earn on an average £7 a week each. These men have joined various societies and stamp their own cards every week, as they say they may as well get whatever benefits there are under the Act, and besides which they might have to pay income tax if they cannot produce a card. Swindling the Chancellor of the Exchequer through his own Act!

We have the battle in our own hands, and, if we stick together and insist on our cardinal points, they must be conceded, or the Act falls to the ground. One cannot make bricks without straw, and we are the straw in this brick.

Dr. W. T. Freeman (Reading) writes: It occurs to me that one way of meeting the wage limit difficulty might possibly be that the Chancellor's last offer should be accepted in the case of insured persons earning £2 a week and under, and that insured persons earning more than £2 a week should themselves pay an additional 6d. per quarter.

Another grievance does not appear to be removed. As I understand the bill, any person that has been insured for five years and upwards will always be able to receive medical benefit, no matter what his income has ultimately become.

The Interpretation of "Income Limit."

Dr. Samuel E. Johnson (Moseley, Birmingham) writes: I have just seen in writing the decision of the Insurance Commissioners in a case where a clerk earning £3 a week, was also earning £40 per annum in his spare time, namely, that such person must be insured under the Act. The following explanation was given: "Where a person is employed by more than one employer each employment should be considered separately."

It appears to me that from the point of view of the medical profession this decision is one which may seriously affect them, as it follows that a person earning £150 per annum from four different employers, that is, £600 in all, will be able to receive the medical benefits under the Act in return for the very paltry contribution paid for same.

Mileage.

Letter from the Chancellor of the Exchequer.

We have received the following correspondence from the Secretary to the Insurance Commissioners:

Gillingham, Dorset.
October 24th, 1912.

Sir,

In your statement to the Advisory Committee made on October 23rd it is clear that you are offering the same capitation fee to country practitioners as you are to those practising in a town. This is obviously unfair. For instance, a town doctor could look after a thousand patients within a two or three mile radius of his surgery, and could do the whole of his work on foot or with occasional hiring. A country doctor would be compelled to keep a motor or a trap and a couple of horses to do the same amount of work, his radius

being from six to eight miles. It appears that you do not consider it to be a matter of practical finance to allow an extra sum for mileage. On the other hand, you say that, "as far as the rural districts are concerned, the drug problem does not arise between the doctor and the chemist—in very few of them are there any chemists available, and therefore the doctor will have to provide his own drugs. . . . The rural doctor will be in a better position than the town doctor as far as the drugs are concerned. On the other hand, he will be in a worse position as far as the distances are concerned which he has to travel to see his patients."

I live in a small country town of some 3,400 inhabitants, with a radius of six or seven miles. There are two chemists here. Of course, there are thousands of other country towns similarly placed. As I shall have to hand over 1s. 6d., or possibly the extra 6d. in addition, to the chemist, you will see, from the above extract from your own statement, that I shall be unfairly treated as compared to my town brother, who has practically no mileage, and almost equally so compared to the doctor in the outlying village.

I feel confident that the vast majority of country doctors, *most of whom practise in small country towns*, will strongly resent this. I would therefore ask you the following, practically based on your own statement: Would you be ready to allow the country town doctor to receive the total of 9s., as you would do to his village *confrère*, and allow him to do his own dispensing as hitherto, even though there may be two or three chemists in the town? This might, perhaps, to some extent repay him for his mileage.

As a member of the Provisional Committee for the Dorset Branch of the British Medical Association, I should be extremely gratified to have as early a reply to this letter as possible. I think it might be a powerful incentive to doctors to come to an agreement with the Government proposals, and to remove a sense of great injustice at the flat rate being applied to country doctors.

I cannot but think that you would be willing to give this matter your gravest consideration.

With your permission I should be glad to publish this letter and your answer in the BRITISH MEDICAL JOURNAL.

Yours faithfully,
(Signed) R. W. MORGAN, M.D., B.S.

The Right Hon. Lloyd George,
Chancellor of the Exchequer.

House of Commons.
30th October, 1912.

Sir,

I am directed by the Chancellor of the Exchequer to advert to your letter to him of October 24th, and to state that there is nothing to preclude the arrangements made under the Act from being such as to meet the points which you raise, both as regards mileage and as regards the supply of drugs.

On the question of mileage, it is true that no part of the new grant which Parliament will be asked to make is specifically ear-marked from the outset for this purpose, but this does not prevent such an arrangement from being made. The Government considered the possibility of ear-marking part of the grant for mileage, and for other "extras," but found great difficulty in the way of so doing. Had the British Medical Association responded to the Chancellor's invitation of June the 26th to appoint a committee to negotiate with him, it might have been practicable to ear-mark an appropriate portion for special purposes, including mileage, as they would have been able to give him some assistance in arriving at adjustments which would be generally acceptable to the medical profession.

In the absence of such assistance, and having regard to the great difficulty of providing any efficient check upon "mileage" and other "extras" except by the co-operation of the profession, the Government considered it better, while providing a sum for medical remuneration which should fairly cover the cost of all attendance given by the general practitioner (including any suitable provision for mileage and any "extras" that form part of medical benefit) not to attempt to ear-mark any portions of the fund for specific purposes. The Chancellor clearly indicated, however, that the distribution of the sum so provided, and the assignment of special portions to special purposes, would be largely a matter for the medical profession. Any proposals on the subject which appear to command the general support of the profession will receive most favourable consideration from the Insurance Commissioners and the Insurance Committees.

On the question of the provision of drugs in rural districts, the Chancellor desires me to point out that the provision of drugs will be placed in the hands of the doctor whenever the patient has not convenient access to a chemist, which would usually mean in a rural area, where there was not a chemist within a mile of the patient. In the case of the country town, which you instance, although doubtless the insured persons resident in the town itself would be supplied by the chemists carrying on business in the town, arrangements would presumably be made for the doctors to provide medicines for those who resided in the rural districts outside the town.

Yours faithfully,
(Signed) E. A. GOWERS.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

On October 24th Mr. G. S. Paternoster, assistant editor of *Truth*, continued his evidence, giving the Committee further information with reference to the methods of vendors of secret remedies. He discussed in some detail the advertisement of "cures" for alcoholism and the tobacco habit. One of these, on behalf of which it was claimed that it could be used without the patient's knowledge, contained sugar of milk and tartar emetic, the latter being a poison scheduled under the Poisons Act. Apparently, however, this could be sold broadcast, and no authority made any attempt to stop its distribution. Quacks making a speciality of complexion cures, Mr. Paternoster remarked, did almost the largest amount of advertising of any. One of these recently promoted a "lean" cure, but this proved unsuccessful. Apparently there was less money in making lean people fat than in making fat people lean. With regard to dental institutes, the witness referred to the fact that many of these bore the name of a lady of title. He stated that these ladies were paid for the use of their names. Replying to the Chairman, he said that a member of the peerage lent his name to a concern of this kind, and in conversation with him (the witness) on the matter, remarked: "What was I to do to make a living? The only thing was to go into the quack medicine line of business." The witness did not suggest that all persons of more or less distinction whose names appeared in advertisements received payment. During his twenty years' connexion with *Truth* there had been few libel cases against that journal in respect of its campaign against proprietary medicines. A good many writs had been received, but the matter usually ended there.

The Chairman: Have you expressed yourself in *Truth* as freely as you have here?—Rather more strongly. (Laughter.)

Continuing, Mr. Paternoster said it was surprising how many testimonials were obtained by proprietary medicine vendors. He believed those who wrote them genuinely believed that they had been cured. He added that he had found no indications of real scientific knowledge behind the much-advertised remedies he had examined.

The Chairman: The effect of your evidence is to show that there is an almost inexhaustible field of folly in which any clever scoundrel can almost certainly reap a rich harvest? That is so.

As to possible reforms, the witness suggested a full disclosure of the active ingredients of the medicine, and that for the protection of the public pocket it should be an offence to publish a misstatement with reference to the contents or effects of any preparation.

In reply to Mr. Bathurst, the witness said that undoubtedly the passing of more stringent laws with regard to quackery in the United States had led to a great influx of vendors of various nostrums in this country. The only way to stop this was to have similar restrictions here. He agreed that an international agreement whereby the restrictions could be made uniform in all countries would be very desirable. He did not agree that it would be safer to prohibit the advertisement of any remedy claiming to

cure a disease which the medical faculty declared to be incurable. It would be unfair to deny the possibility of a layman discovering something that might be of value in this respect.

Professor Cushny, M.D., F.R.S., Professor of Pharmacology at University College, London, gave evidence on behalf of the Therapeutical Section of the Royal Society of Medicine. He divided proprietary medicines into three classes: (1) those that were directly injurious — for example, preparations of acetanilide; (2) preparations which were useless because they contained no active ingredients; these were indirectly injurious because they encouraged delay; and (3) medicines whose effects were not objectionable, but for which special properties were claimed which they did not possess; widely advertised aperients were in no way superior to the preparations of the *British Pharmacopœia*. The witness also mentioned that there was an objection to the legitimate proprietary preparations which were protected or registered under a number of different names. The remedy for the widespread use of proprietary medicines which first of all suggested itself was the education of the public. The Royal Society of Medicine thought it hardly fair that this should be left entirely to the medical profession. With the exception of the work done by *Truth* and one or two other organs, there was very little done to educate the public on this question. The second direct measure he advocated was that the contents of the preparation should be stated on the label, and that the claims made should have some relation to the qualities possessed by the ingredients. If the labels were made a warranty, a satisfactory constancy of composition would be obtained also. The protection of the registered name of a proprietary medicine, in his opinion, should be limited as in the case of a patent, and not go on from generation to generation. It would be an advantage if the publishers of the *British Pharmacopœia* would do something to popularize the various simple remedies of which the formulae appeared in that work. He could not make any definite suggestions as to how this was to be done or how the education of the public in regard to secret remedies was to be advanced.

Mr. O'Grady: Do you think the publication of the ingredients on the labels will have much effect?

The Witness: *A priori* I should not have thought it would, but in the United States it appears to have had a very marked effect.

Mr. Glyn Jones: Is the practice of using the old-fashioned household remedies decreasing?—I think it is.

Is that regrettable?—In my experience I should hardly regret some of them going out.

Mr. Glyn Jones: Is that a reminiscence? (Laughter.) Do you think it would be an advantage for the public to have some therapeutical knowledge?—I think it is a pity they have so little. They should be informed of everything they can possibly grasp. I think medical knowledge should be much more widely distributed than it is.

The Chairman: How, in your opinion, will the Insurance Act affect the sale of proprietary medicines and the general question of self-medication?—One hopes that the doctor, being made easily available, will be called in, instead of self-medication being adopted.

EGYPT AND THE SOUDAN.

Lord Kitchener, in his report on the administration and condition of Egypt and the Soudan in 1911, refers to one or two matters in connexion with public health.

Hospitals.

There has been a continuous extension of hospital work during the year and a great increase in the number of attendances. The total attendances for ophthalmic aid numbered 236,000. The new permanent ophthalmic hospital at Assiut is in full working order, and other institutions of the same kind will be opened during 1912 at Mansura, Beni-Suef, and Zagazig. That at Mansura is nearly completed. These ophthalmic hospitals are being erected all over the country. Though reforms in this direction can only be gradual, ophthalmic work is being extended to all the rising generation, and a system for the supply of first aid in cases of acute ophthalmia is to be introduced in the villages as soon as a sufficiently expert staff can be trained.

Infant Mortality.

The small reduction in infant mortality observed in the previous year was not maintained. The deaths occurred chiefly among children under 4 years of age. They are due to violent fever and diarrhœa, which have fatal results before assistance can be given, and want of care and sanitary surroundings are the causes assigned. In each village there are at present one or two barbers, possessing some rudimentary skill, and it has been arranged that these men shall go through a short course of training, either in the Markaz hospital, or under direction of the Markaz doctor, and such of them as do not show proficiency in learning the elementary work of a hospital assistant will be replaced by others. After this course the men will be sent out to their villages under the supervision of the Markaz doctor, and will be supplied with the more ordinary medicines, including some appropriate to infantile diseases. These medicines will be put up in proper doses, so that in cases of critical illness they can be administered at once by the hospital assistant as a first aid until a doctor can be warned. The dispensary thus established will be free to the inhabitants, and close touch will be established between the staff of the Markaz hospital and the villages. The barbers are not intended to be medical practitioners, but they will be taught to carry out simple duties efficiently, and, in particular, to conform to the instructions of the authorities of the eye hospitals in cases of ophthalmia. Steps are also being taken to give some regular training of a similar kind to the midwives, one of whom is to be found in each village.

Plague.

There was an increase in the number of declared cases of plague from 1,238 in 1910 to 1,656 in 1911; the mortality was slightly over 60 per cent., as compared with slightly under 50 per cent. in 1910. The increase was due to the severity of local outbreaks rather than to any great extension of infected areas, as the number of localities infected was only 151, as compared to 177 in the previous year. The number of pneumonic cases was 178, a slight increase as compared with 1910. These cases were practically confined to Upper Egypt. The increase was due to a severe bubonic and septicæmic outbreak at Kom Ombo, an estate consisting of land recently reclaimed from the desert. As it is brought under cultivation a mixed population of the lowest classes is recruited from the neighbouring districts, and this fact, combined with the lack of organization in a new community, no doubt presented conditions which favoured an outbreak of the severest kind. In general the plague inspectorate staff has been increased, and improvement has taken place in consequence in village discipline and in the rapidity and accuracy with which information is obtained. A special service of investigators has been established with a main research station at Assiut, in charge of Dr. Petrie, who has had considerable experience on the Plague Commission in India, as well as in China and Manchuria.

School of Medicine.

Twenty-seven students gained the diploma of the School of Medicine in 1911, and fifty new students were admitted.

Soudan.

The health of the Soudan during 1911 was excellent, and no serious epidemic occurred, with the exception of an outbreak of epidemic pneumonia at Zeidab. The provision of a small infectious hospital is one of the most pressing needs for Khartoum. A large portion of the Lado has been investigated in regard to sleeping sickness and the "fly areas" mapped out; much credit attaches to Captains Drew and Thompson, R.A.M.C., in this connexion. The Kala-Azar Commission has done valuable work under Captain Marshall, R.A.M.C.

Dr. J. M. Jackson, President of the American Southern Medical Association, has appointed a commission to study the means of preventing malarial fever. The chairman is Dr. Charles F. Craig of Washington, and among the members is Dr. W. S. Thayer of Baltimore.

British Medical Journal.

SATURDAY, NOVEMBER 2ND, 1912.

THE COUNCIL'S REPORT ON THE PRESENT SITUATION.

THE ordinary quarterly meeting of the Council of the British Medical Association was summoned for 10 a.m. on Thursday, October 31st, when, after the transaction of some formal business, the Council proceeded at once to the consideration of the present position of the profession in relation to the provisional Regulations[1] issued by the Insurance Commissioners under date October 1st and the proposals made by the Chancellor of the Exchequer, on behalf of the Government, in his speech to the Advisory Committee on October 23rd,[2] and in his answer to Sir Philip Magnus's question in the House of Commons on the same day.[3] It will be observed that, in reply to a question by Mr. Worthington-Evans on October 28th, Mr. Masterman said that the modifications in the provisional Regulations to carry out the changes rendered necessary by the announcement of the Chancellor of the Exchequer were being drafted. He also stated that if the total cost of drugs in any district exceeded the total money available during the period of contract with the Insurance Committee, including the sum provided by the 6d. for each insured person which is divisible between the doctors and the chemists (if the total cost is between 1s. 6d. and 2s.), the bills would be discounted on some agreed system.

The Council had before it a draft report prepared by the State Sickness Insurance Committee. This report consisted of three parts: the first related to the action taken by the State Sickness Insurance Committee since its appointment by the Annual Representative Meeting at Liverpool last July; the second consisted of a statement comparing the provisional Regulations as to medical benefit with the cardinal principles of the Association, and with decisions on the State Sickness Insurance Committee, as to matters which should be included in the Regulations. In this part of the report the statement of the Chancellor of the Exchequer on October 23rd was analysed. The third part of the report discussed the present position of the medical profession in relation to the National Insurance Act and the future action which the Association should take.

The whole subject was debated at length in connexion with this draft report, which was discussed paragraph by paragraph. The discussion was still proceeding when it was necessary to send this part of the JOURNAL to press, but special arrangements having been made, the full text of the Report of Council to the Divisions and Representative Body will be found, with certain appendices, in the SUPPLEMENT for this week.

We believe that all the members of the Association fully appreciate the seriousness of the present position, and that they will study the report now issued as a preparation for attending the meetings of the Divisions which will be held during the next fortnight. We understand that arrangements for meetings in many Divisions have already been completed, and that in others an announcement of the date and place of meeting will shortly be made. We can only again appeal to every member of the Association to make arrangements to enable him to attend the meeting of his Division. Under the constitution of the Association, it is only by such personal attendance that a member can effectively express his views and influence the policy of the Association.

[1] [illegible]

[2] [illegible]

[3] BRITISH MEDICAL JOURNAL, October 26th, p. 1159.

HEREDITY IN RELATION TO INSANITY.

AMONG the factors in the advancement of social progress one of the most powerful is the popularization of medical science. In the general diffusion of knowledge of the laws of health lies the hope of the formation of an intellectual atmosphere in which superstition and imposture cannot live. By means of it people are enabled to co-operate intelligently with the doctor—a matter of the greatest importance in regard to the success of treatment. Moreover, the popularization of medical science "makes for righteousness," to use Matthew Arnold's phrase, in the broadest sense. It not only impresses on the mind the dangers of self-indulgence and evil living, but, by teaching how man's mental outlook is influenced and his actions determined by his physical constitution and his environment, it creates that large understanding which is the source of sympathy and of active helpfulness. To fulfil this purpose, however, not only must the scientific gospel be sound in substance, but it must be preached by the right men and in the right way. More harm than good is likely to be done by platform orators and writers of catchpenny books. The popularizer should be a master of his subject, who has himself enlarged the domain of knowledge, and who lives on the peaks above the clouds of self-advertisement. Such a one may be trusted not to utter claptrap and not to disfigure truth by covering it with cheap decorations. An example of the best kind of popularizer is Dr. Mott, whose additions to knowledge in neurology and insanity give him the right to speak with authority, while he has a gift of exposition which enables him to make difficult subjects clear to the intelligent lay mind.

Among the social problems that most urgently call for solution at the present time is the prevention of insanity and the treatment of the feeble-minded. To the discussions on this question Dr. Mott has made many contributions of the highest value from the practical as well as the scientific point of view. One of his most fruitful researches has been on the relation of heredity to insanity—a subject of fundamental importance in regard to the prevention and treatment of mental disease. In its remote consequences insanity is a peculiarly insidious menace to the welfare of society; in its immediate effects it is a heavy burden on the much suffering ratepayer. Therefore, it is well that public attention should be called to the direction which scientific research is taking in the endeavour to discover its causes, and to the conclusions to which that research seems to point. There was a deep truth in Robert Lowe's cynical remark when the democratic spirit began to assert itself, that we must educate our masters. There was a special appropriateness, therefore, in an address delivered by Dr. Mott to members of the London County Council on June 26th. It is gratifying to note that the address was so much appre-

ciated that it has been printed for the Asylums Committee and issued as a pamphlet. We hope it will be widely read, for in these days of eugenic enthusiasm there is a danger that people may be carried away by false or doubtful doctrines into hasty action. Here we can only indicate a few of what seem to us to be the most important points of Dr. Mott's teaching.

He has made a close study of a number of pedigrees of persons suffering from various forms of mental disease, and the results go to confirm the truth of Maudsley's conclusion: First, that a person does not inherit insanity, but a predisposition or tendency; and, secondly, that the tendency comes from the stock. The unsound strain need not show itself in the stock in any form of actual insanity; it may appear in some allied nervous disorder, in hypochondriasis, in suicide, in feeble-mindedness, in dipsomania, in epilepsy in one or other of its manifold forms, and other periodical nerve storms, in eccentricity, in religious fanaticism, in the melancholic suspicious temperament, in selfish cunning, avarice, and meanness. In this investigation of pedigrees the patients were selected, not because they showed a large number of members of the ancestral stocks as being degenerate or insane, but because a complete family history for three generations could be obtained. Analysis of the total number of 3,188 cases, made up from 1,450 families, showed that in the insane offspring of insane parents daughters were much more numerous than sons; and amongst insane members of the same family (brothers and sisters) sisters were more numerous than brothers. This preponderance of females should be correlated with the fact that there are more women in asylums than men. The reasons assigned for the greater liability to insanity in women are summarized as the physiological emergencies connected with reproduction and the less stable equilibrium of the woman's nervous system. Dr. Mott adds as an important—in many instances, perhaps, the only—cause, the enforced suppression by modern social conditions of the reproductive functions and the maternal instincts in women of an emotional temperament and mental instability. For purposes of comparison, Dr. Thomas investigated and compiled the pedigrees of some 32 of Dr. Mott's hospital patients admitted for various diseases. There were in these pedigrees 1,000 living representatives and 250 dead. There were 8 who had been in asylums, and in 8 others there were records of fits. The pedigrees of two of these patients furnished nearly all the cases of insanity and epilepsy. One was suffering from neurasthenia, and in the pedigree were members who had suffered from epilepsy, migraine, insanity, hysteria, deafmutism, and imbecility, suggesting a neuropathic taint in the ancestry. The other suffered from exophthalmic goitre, and there were several neuropathic members in the stock. Dr. Mott ascertained that a far greater number would be found in the stocks of any 32 insane patients. Certain forms of mental disorder—such as epilepsy, recurrent and delusional insanity—are much more likely to be transmitted than others; they are transmitted in the same form, or more frequently in some other indicative of the neuropathic taint.

In considering the question of marriage, a study of the relatives and pedigrees has convinced Dr. Mott of the importance of looking back into the stock and ascertaining whether there are many lines of defective heredity and whether with some such lines there are others of sterling worth. "For often enough" (he says) "with insanity and epilepsy we find great talent and civic worth, and even genius." The chances of insanity occurring in the offspring are much greater when there is a dual neuropathic inheritance.

Dr. Mott points out, however, that now and then, even from an apparently unknown or even bad stock, a great man arises. We have no right, he states emphatically, to say that because a parent is insane the children must necessarily be insane or useless to the race. This should be a warning to the eugenists not to allow themselves to be carried too far by their zeal for the betterment of the race, or there is a chance of their reducing mankind to a dead level of dull mediocrity. In rooting up the weeds they run the risk of destroying the flowers. It is significant that almost every man of genius of whose ancestry anything is known should have had a trace of neuropathy in himself and a history of nerve disease of one kind or another in his relations. Experiments of breeding in the human subject have mostly been failures. The attempts of Frederick the Great's father to "propagate procerity," as Dr. Johnson said, resulted in offspring not exceeding the average standard of height. A systematic experiment in human stirpiculture was made in the Oneida community in Central New York. The object was primarily the increase of sanctity in succeeding generations. The offspring—such as survived—though "on the whole somewhat above the outside average in physique and intellect," showed no sign of special sanctity. The failure of these experiments should give the eager eugenist pause. Even if we succeeded in rearing a race of tall men and women, there is no certainty that their brain power would be commensurate with their stature; and a nation of stupid giants would not be so efficient either as citizens or as fighting men as persons of ordinary development of mind and body.

At present the feeble-minded and other undesirable members of the population breed far more freely than the classes who form the backbone of the nation. It is evident that if no restriction is placed on the propagation of the unfit, the result must be degeneracy of the race. Fortunately for the human race there is always a tendency to regression to the normal average of the species operating with natural selection. Nature if left to herself prevents the multiplication of the unfit by increasing their susceptibility to disease in successive generations, and thus in time exterminating them; or, in accordance with the law of "anticipation," the onset of the disease is hastened and the unsound members of the stock are weeded out before they can transmit the baleful inheritance. This natural process of elimination has, however, now been to a large extent neutralized by the concentration of effort on the preservation of life without taking thought of the race. The advance of hygiene, with all its beneficial results, has brought in its train the disadvantage that it preserves, and tends to preserve still further, the least desirable elements of the population. Hence the weeds of civilization are growing in even ranker luxuriance and threaten to choke such good seed as there is.

What, then, can be done to check the decay of the race? It has been suggested that the surgeon's knife is the instrument of social salvation. The unfit of both sexes, it is urged, should be sterilized. Enactments legalizing this method of dealing with the matter exist in several States of America, but the most eminent authorities, such as Professor Davenport, referred to by Dr. Mott, hold that further investigation is required to justify the practice. At the International Congress of Eugenics, held in London last summer, it was stated by Mr. Bleecker van Wagenen,

who presented the report of the Committee of the Eugenic Section of the American Breeders' Association, that "the sterilization laws already enacted in the United States would have to undergo vigorous attacks in the highest courts before compulsory operations were performed, with the probability that there would eventually be material modifications of them."[1] For our own part, however, we feel strongly with Professors Bateson, Karl Pearson, and Arthur Thomson that we are still too much in the dark about the laws of heredity and about mental deficiency to justify so drastic a measure. Moreover, public opinion in this country is not ripe for such an experiment, and it may be confidently asserted that in the light of such knowledge as is at present available no proposal in that direction would receive the sanction of Parliament. We fully agree with Dr. Mott that what has to be done is to educate the public conscience in regard to the responsibility of parenthood, encouraging the propagation of the fit and discouraging the propagation of the unfit. Congenital imbeciles should be segregated, now that Nature's stern method of elimination is counteracted by the agency of man. But in dealing with those who come under the very vague definition at present possible of feeble-mindedness the greatest caution is required. Indiscriminate sterilization of men in whom the sexual desire would still burn with uncontrolled fierceness, and of women who would inevitably be the prey of the voluptuary, would cause the most disastrous evils to society. Restriction of marriage would lead to increase of propagation of degenerate children bearing the further stigma of illegitimacy. Moreover, any legislation of that character would be received with suspicion: the cry of one law for the rich and one for the poor would be raised. We commend the following weighty words of Dr. Mott to the attention of all social reformers: "I often think that a number of people who are crying out about the monetary burden of supporting the unfit are themselves not doing their duty to the race. Many have no children or they restrict the births. Moreover, one does not find the numbers in the family increase with the income. When hereditary health—as shown by longevity, fertility, and mental stability in a stock—is regarded as a greater asset for happiness in the family and the nation than hereditary wealth, then will be the time for the rich and comparatively prosperous to suggest the desirability of sterilization of the pauper imbecile and insane. For no one supposes that it would be carried out in all classes."

X-RAY BURNS AND MALINGERING.

A FULL report has recently been published in a German contemporary of a clever trick played upon the staff and students of a hospital by a hysterical girl.[2] She was the daughter of a gardener, and a housemaid by vocation, and five years ago, when 14 years of age, she was admitted into hospital in Munich, and the vermiform appendix was removed. That structure showed little evidence of disease. She was discharged at the end of seventeen days. Within a few months, according to the patient's statement, vague abdominal pains set in with nausea and, on more than one occasion, faecal vomiting. In the summer of 1908, in July, 1909, and in March, 1910, exploratory abdominal operations were performed. The catamenia appeared in September, 1909, and the flow was said by the patient to be very free. She underwent curetting, but the scrapings proved to be portions of normal endometrium. In September, 1910, she returned to the Munich hospital and has been under observation there ever since. She stated that she suffered from severe menorrhagia, constant sacral and abdominal pains, and great agony during defaecation. Yet she looked in good health. The *x*-ray treatment was tried on account of the uterine haemorrhages, as it had proved satisfactory in other cases in the hospital. After four sittings all seemed well, and the skin of the abdomen showed no lesion of any kind, not even slight pigmentation or reddening. Unfortunately, one day in July last year, the patient was brought before a large class, the rays were applied and the necessary precautions explained. The danger of burns, about which the girl had not previously heard, and the frequency of that complication, were impressed on the students, but, unfortunately, they also impressed themselves on the patient. Three days later she declared that the last application of the rays had caused slight burning pains, and that an ulcer had appeared on the right side. Dr. Hirsch discovered a necrotic ulcer as big as a florin, a burn of the third degree on the lower border of the cicatrix of the incision made for the removal of the appendix. It was the first "burn" ever observed in a patient under treatment in the *x*-ray department of the hospital, and before the fifth or public sitting there was not so much as a trace of temporary erythema. The ulceration extended, and Dr. Hirsch publishes a photograph showing sores all over the abdomen up to the inframammary region. The patient was sent to the skin department, where she was closely watched, and the ulcers healed perfectly. Then malingering was suspected, and the patient ultimately admitted that she had applied a brown fluid (commercial hydrochloric acid) supplied by a neighbour. Doubts were now raised about the uterine haemorrhages, and by means of an occlusive pessary, applied during two successive periods, it became clear that the blood which stained the patient's underlinen was not of menstrual origin. The abdominal pains had evidently been to a great extent imaginary. The patient had deceived several physicians and surgeons who had seen her independently of each other. Hirsch believes that, when she gets the chance, she will forsake the out-patient department of the Munich hospital and manage to earn sympathy on false pretences elsewhere, even at the price of a second curetting or a fifth laparotomy.

[1] [illegible]
G. Hirsch, *M[illegible]* [illegible] September, 1912, p. 555.

THE CULTIVATION OF MALARIAL PARASITES.

THE school of tropical medicine of the medical department of the Tulane University, Louisiana, which is under the direction of Dr. Creighton Wellmann, recently sent an expedition to Panama to study the cultivation of the malarial parasites *in vitro*. The expedition consisted of Dr. Charles Cassedy Bass, Assistant Professor of Tropical Medicine and Hygiene, and Dr. Foster Mathew Johns, Assistant in the Laboratories of Tropical Medicine and Hygiene. Dr. Bass had already succeeded in cultivating the plasmodia, but many details remained to be elucidated and confirmed. The expedition proved that the malarial plasmodia could be grown in human serum, in Locke's fluid (from which calcium chloride was omitted), and in human ascitic fluid. It was found that in the majority of cases dextrose must be added to the medium to secure satisfactory growth. It was ascertained that the most favourable temperature for the cultivation was about 40° C. Positive cultures were obtained from 29 cases of aestivo-autumnal malaria, 6 cases of tertian, and 1 case of quartan. Cultures were carried on for four generations from the parent culture before the expedition left Central America, and it is thought probable that it will be possible to maintain them indefinitely. The expedition was made possible through the kindness of a friend of the school, who remains anonymous. The United Fruit Company, which had already contributed £5,000 towards the

expenses of the school, placed their steamships and other equipment at the services of the expedition free of charge. Colonel W. C. Gorgas, chief sanitary officer of the Panama Canal zone, and members of his staff placed all the material of the hospitals there at the disposal of the expedition.

PROPOSED MEMORIAL TO DR. BUSTEED.

To every one who takes an intelligent interest in India the name of Busteed is well known as that of the author of that fascinating record of Indian life of a past generation, entitled, *Echoes from Old Calcutta*. Brigade Surgeon Henry Busteed, C.I.E., formerly in the medical service of the Honourable East India Company, died early in the present year, at the age of 78. A letter bearing, among other well-known signatures, those of Lord Curzon of Kedleston, Lord MacDonnell, and Sir Henry Mortimer Durand, has appeared in the press, in which it is said: "Those who were in India during the last quarter of the nineteenth century, and all who are interested in the stirring tale of the rise of British power in that country, must be sensible of the great debt due to Dr. Busteed for the sagacious and indefatigable researches which he conducted into the history of 'Old Calcutta,' for the light which he threw upon the life and conversation of our countrymen in that city, and for the graphic pictures drawn by his careful pen of one of the most momentous periods in the growth of our Indian Empire, the days of Warren Hastings and Impey, of Francis and Clavering, and Madame Grand. It is not too much to say that Dr. Busteed rediscovered 'Old Calcutta' and brought again to life a crowd of interesting figures who once trod that famous stage." The writers add that it is felt that some memorial of him should be placed in the premier city of India, which he loved so well, and which owes so much to his inexhaustible knowledge and untiring erudition. It is hoped that it may be possible to place a bust in the Victoria Memorial Hall in Calcutta, which is now in course of erection, and will, when completed, be the National Gallery and Valhalla of India. Contributions will be received in England either by Sir James Bourdillon, Westlands, Liphook, or by Messrs. Richardson and Co., 25, Suffolk Street, Pall Mall; and in India by Messrs. Grindlay and Co., Calcutta.

THE TITLE OF ARCHIATER.

The recent death of the physician to the Pope, Dr. Giuseppe Petacci, whose official title was "Archiatra Pontifico," recalls the "Archiatri Palatini" of ancient Rome. According to Withington, the first who bore the title in Rome was Xenophon, chief physician to Claudius. He is said to have been the last Asclepiad. Then came Andromachus, physician to Nero, and the inventor of a famous theriac or antidote. After Andromachus the title was borne by Demetrius and Magnus under Antoninus Pius and Marcus Aurelius. The title is not purely Roman, as it is applied in inscriptions to the physicians of Eastern kings, such as Mithridates of Pontus. It may possibly even be traced to Egypt, where the title "chief physician" was very common, and was applied to the most ancient known practitioner of medicine. Under Alexander Severus, and especially under Diocletian, physicians who had the good luck to bask in the sunshine of the imperial favour could hope for almost any dignity, and their children were exempt from all taxes and public duties. They were placed in the higher ranks of the imperial hierarchy. Gibbon says: "In this divine hierarchy (for such it is frequently styled) every rank was marked with a most scrupulous exactness, and its dignity was displayed in a variety of trifling and solemn ceremonies which it was a study to learn and a sacrilege to neglect. The purity of the Latin language was debased by adopting, in the intercourse of pride and flattery, a profusion of epithets which Tully would scarcely have understood and which Augustus would have rejected with indignation. . . . To the magistrates of sufficient importance to find a place in the general state of the Empire were accurately divided into three classes: (1) The Illustres; (2) the Spectabiles, or respectable; and (3) the Clarissimi, whom we may translate by the word 'honourable.'" There were titles of inferior dignity, such as Egregius and Perfectissimus. In fact the Emperors, as they gathered all power into their own hands, sought to pacify and perhaps delude the officials who held semblance of authority by high-sounding titles. This showed a great knowledge of human nature, and even at the present day titles which have lost all trace of any meaning they may ever have had have a distinct value in other markets besides Vanity Fair. The Archiater of imperial days seems to have ranked sometimes among the "Spectabiles," sometimes in the lower grade of "Perfectissimi." Their president had the title of Count. The highest offices in the State were not beyond the reach of a lucky doctor. Vindicianus, a medical practitioner, was Proconsul of Africa, and another member of the profession, Ausonius, father of the poet, was Prefect of Illyria. These were not isolated instances of the height to which medical men could rise under imperial favour. The title was continued by the Popes, and a history of the pontifical Archiatri by Gaetano Marini was published at Rome in 1784. Among them was the famous Guy de Chauliac, author of the *Chirurgia Magna*, who was Archiater to Clement VI at Avignon. The Archiatri Palatini must not be confused with the Archiatri Populares. The latter were State doctors, of whom a certain number were allotted to each city according to its population. They corresponded to the public physicians of Greek cities. The privileges which Augustus had bestowed on the whole profession were restricted by Antoninus to five or ten physicians in each city, according to its size, who were elected by the municipality and neighbouring landowners, and who in the reign of Constantine had acquired the title of Archiatri Populares. At Rome it was not till A.D. 378 that an archiater was appointed by decree of the Emperor Valentinian for each of the fourteen districts of the city. They were allowed to carry on private practice, and in addition to attendance on the sick poor they had to teach the art of healing to pupils. The imperial edicts, says Withington, direct that the greatest care should be taken in their election, which was preceded by some sort of examination; but they do not seem to have had any control over the profession generally, and, as in ancient Greece, the practice of medicine was open to anyone. The institution, however, doubtless had a favourable influence on medical education.

A FORGOTTEN POET-PHYSICIAN.

Few probably now read the poems of Dr. Mark Akenside, yet, in his own day, this well-nigh forgotten poet not only enjoyed considerable popularity, but also received the commendation of one who, although an acknowledged master of the same art, was not likely to err on the side of generosity. When the manuscript of Akenside's *Pleasures of Imagination* was submitted to Dodsley, that publisher, thinking the price of a hundred pounds—which was demanded by the author—somewhat high, submitted the work to Pope, who, having looked into it, advised him not to make a niggardly offer, "for this was no every-day writer." Accordingly, the poem was published in 1744, when its author was only 23 years of age, and ran through a good many editions. Akenside was born in 1721 at Newcastle-on-Tyne, and at the age of 18 began the study of theology at Edinburgh, with a view to becoming a Presbyterian minister. Two years later he abandoned this intention and went to Leyden, where, after three years' study, he obtained his doctor's degree in medicine. On his return to England he set up at Northampton, but, finding no scope there, owing to the great popularity of a previously established practitioner, he removed

to Hampstead, and thence, after two years, to London. In London his poetical fame seems to have proved serviceable to him: he found a generous patron in a Mr. Dyson, who allowed him £300 a year. But for this timely aid it is to be feared that the poet-physician would have fallen on evil days; for, although there is reason to believe that he was a zealous and competent practitioner, such professional success as he enjoyed seems to have been rather of an academic than a financial nature. The practice of medicine appears to have had a depressing effect upon the rival muse, for as time went on his poetical effusions diminished, both qualitatively and quantitatively, their place being usurped by dissertations upon dysentery, the origin and use of the lymphatic vessels, a method of healing white swellings of the joints, and similarly prosaic topics. However, he published two collections of odes, and made considerable progress with a new version of *The Pleasures of Imagination*, which, nevertheless, remained incomplete at the time of his death. That his professional attainments were above the average is indicated by the facts that he became physician to St. Thomas's Hospital and to the Queen, and delivered the Goulstonian lectures in anatomy, and, in 1759, the Harveian oration. In 1770, in his forty-ninth year, his career was brought to an abrupt close by a "putrid fever" at a time when it seemed in a fair way to be crowned by increased repute and prosperity. As a poet Akenside, in the twenty-six years that followed the appearance of his first poem, not only did not surpass but failed to maintain the level of that production. "His great work," says Dr. Johnson, "is *The Pleasures of Imagination*, a performance which, published as it was at the age of 23, raised expectations that were not amply satisfied. It has undoubtedly a just claim to very particular notice as an example of great felicity of genius and an uncommon aptitude of acquisitions of a young mind stored with images and much exercised in combining and comparing them. . . . His images are displayed with such luxuriance of expression that they are hidden, like Butler's Morn, by a 'Veil of Light'; they are found fantastically lost under superfluity of dress. The words are multiplied till the sense is hardly perceived; attention deserts the mind and settles in the ear. The reader wanders through the gay diffusion, sometimes amazed, sometimes delighted; but, after many turnings in the flowery labyrinth, comes out as he went in. He remarked little and laid hold on nothing." This is excellent, if somewhat severe, criticism. Johnson goes on to praise Akenside for the skill displayed in his versification, which is indeed remarkably fluent and musical. "In the general fabrication of his lines he is perhaps superior to any other writer in blank verse." On the other hand, he has hardly a good word for the later poems. "When he lays his ill-fated hand upon his harp, his former powers seem to desert him. . . . Of his odes nothing favourable can be said." *The Pleasures of Imagination* is not an easy poem to quote from. It maintains throughout almost the same unvarying level—a high one, certainly, but monotonous in effect, for lack of the vivifying shock of an occasional uprush of the divine afflatus. It could hardly have been of himself that Akenside was thinking when he wrote:

> The high-born soul
> Disdains to rest her heav'n-aspiring wing
> Beneath its native quarry. Tir'd of earth
> And this diurnal scene, she springs aloft
> Thro' fields of air, pursues the flying storm,
> Rides on the volley'd lightning thro' the heav'ns,
> Or, yoked with whirlwinds and the northern blast,
> Sweeps the long track of day.

On the other hand, the following description of the joy that attends a convalescent's first outing augurs well for the tact and sympathy of the future physician:

> Fair the face of Spring.
> When rural songs and odours wake the morn,
> To ev'ry eye; but how much more to his
> Round whom the bed of sickness long diffused
> Its melancholy gloom! how doubly fair
> When first with fresh-born vigour he inhales
> The balmy breeze, and feels the blessed sun
> Warm at his bosom, from the springs of life
> Chasing oppressive damps and languid pain.

PITYRIASIS ROSEA.

THE abnormal summer of 1912, whatever its effects on farm produce in this country, has not much affected the annual crop of pityriasis rosea in at least four of the larger skin clinics in London. Most cases occur between February and May, but autumnal cases are not at all uncommon. It is one of those diseases which once seen is not necessarily remembered, and its diagnostic importance, in view of its comparatively harmless nature as compared with that of a luetic roseola, can hardly be overestimated. Syphilis is probably never mistaken for pityriasis rosea, but the converse is by no means the case. The distribution of the eruptions in the two diseases roughly corresponds, and it is this feature which is perhaps responsible for the mistakes that are sometimes made. Neither rosea nor roseola is common on the face, and the former practically never occurs on the scalp, hands, or feet, and is rare below the elbows and knees. It tends usually to radiate from the axillae or groins on to the chest, upper arms, abdomen, and thighs in front, on to the shoulders, back, loins, and buttocks behind. The history of a "herald patch" (the *plaque primitive* of Brocq) is a valuable hint to the diagnosis when the patient volunteers the information. In both diseases the patients are usually young adults, and in both diseases the sex incidence is about equal. In pityriasis the rash is always macular in type, but the size and colour of the spots, the presence of rings with a brownish or yellowish centre, and the presence of pruritus, are all variable features, and in the diagnosis the greatest stress should always be laid on the following five points: (1) The superficiality of the lesions; it is very difficult to feel them. (2) The absence of enlarged glands, especially of the nuchal and epitrochlear. (3) The absence of throat trouble and marked headache. (4) The general condition of the patient, who is usually in no worse health than if he had ringworm. (5) The presence of the very typical macule, with its dry, scaly covering or ring and its pale brownish, or yellowish, easily wrinkled centre. With a lens every lesion is seen to be scale-topped from its incipience, and even in pinhead-size lesions the scales can be appreciated. In the ring type the scales are at the periphery, forming a "collarette," with the lace points directed to the centre. It is important to note that the scales are very fine and dry, not greasy, as in seborrhoeic dermatitis, or adherent *en masse*, as in psoriasis, or of late appearance, as in the roseola of syphilis. They are best seen in an early case, and may completely disappear as the rash grows older, so that a case of five weeks' duration requires very careful investigation. Where there is the slightest doubt a Wassermann reaction is called for. On the other hand, it should be borne in mind that (1) a secondary syphilide is infiltrated and usually palpable, and very often of a coppery hue; (2) typical enlarged hard glands in the groins and neck, etc., are contemporaneous with or precede the rash; (3) throat symptoms are very rarely absent and severe headaches quite common; (4) a patient with syphilis is ill, anaemic, and very frequently feverish; (5) scaling, not very commonly present in a roseola, is always a late feature—that is, it becomes more obvious as the rash fades—the scales are not characteristic. Where there is the slightest doubt recourse should be had to the Wassermann test. Pityriasis rosea may be confused with seborrhoeic dermatitis, but a glance at the scalp, and the greasy scales and the tendency to follicular grouping in the latter condition, should prevent error.

In treating the eruption, tar baths, a 2 per cent. ichthyol ointment or paste, or calamine lotion will be found most useful in cases where pruritus is a feature; for a rapid cosmetic result, exsiccation by frequent application of salicylic alcohol (1 per cent. to 70 per cent.) and dusting powders is the best treatment.

KIAMIL PASHA.

This week it has been announced that at the very height of the war troubles the Turkish Ministry has gone out of office, and that Kiamil Pasha has become Grand Vizier or head of the Cabinet. It is ill policy to swap horses when crossing a stream; but if any one, writes a correspondent, is well calculated to justify such a change, that man would certainly seem to be Kiamil Pasha. Apart from his great experience and well-known abilities, he possesses a peculiar capacity for seizing upon essential points and reconciling conflicting opinions. Our correspondent had an opportunity of observing this faculty when attending a formal discussion over which Kiamil Pasha was presiding. The subject was what steps should be taken in the event of an outbreak of plague, and there were some fifteen speakers, ten of them medical men and the rest civilian and military Turkish officials. The medical men represented nearly every European nation and many different schools of thought, while the Turkish officials also had various conflicting opinions on administrative methods and other aspects of the question. Each expressed his opinion in turn, the languages used being French, Italian, Greek, English, and Turkish, and throughout Kiamil Pasha sat silent. Watching him as he sat back in his chair, with one foot drawn up under him, playing with a string of beads, and occasionally turning to place his seal on letters which were brought into the room for his signature, it might well have been concluded that he was paying no attention whatever to the matter. Indeed, the only evidence to the contrary was that as each speaker ceased he raised his eyes and nodded a signal to some one else present that his view was sought. But when each of the debaters had had his say, it became evident that Kiamil Pasha had not missed a word or thought, despite the multiplicity of languages used and the greater or less amount of scientific knowledge which some of the medical speakers paraded. In a short speech he succinctly brought out the principal contention of each speaker, considered how far their various views tallied, and finally sketched a fashion in which a practical policy could be based upon them. The promptness with which he separated the wheat from the polyglottic chaff and seized upon all the essential points was a lesson in clear thinking, while his review of the speeches was evidence of a remarkable memory, considering how long the sitting lasted.

MEDICAL LATIN.

The prophetic soul of Dr. Charles J. Whitby, dreaming of things to come, foresees[1] an organization for the regeneration of society of which the medical profession is to be the nucleus. As its activities will become cosmopolitan, "it will agree," he says, "as to the adoption of some universal language." This does not necessarily follow, by the way, but it is certain that it would be well if it did so agree. "The claims of Esperanto," Dr. Whitby goes on, "will, no doubt, be considered, but I am inclined, upon the whole, rather to advocate the revival of Latin." We have ourselves for years advocated, not the revival of Latin—for it is not dead—but its employment as the international language of science. Dr. Rolleston, in his inaugural address on Universities and Medical Education—an abstract of which appeared in the Journal of October 5th—also referred to the want of a universal language, as shown by the construction of artificial substitutes such as Volapuk, Esperanto, Ido, Neutral, and by the movement for the adoption of a simplified form of Latin as an international language under the name of "Latino." As Mr. Micawber said of "gowans," we are not exactly aware what Latino is; but we think that while we are about it we might as well learn Latin, as for instance it is used for lectures and debates in Roman Catholic Colleges. A difficulty in the way is that Latin is falling so much out of common knowledge that it is sometimes successfully used, as all language is, according to Talleyrand, as a means of concealing thought. A French paper recently told the following story, which may quite possibly be true. Some years ago a French ship in quarantine in the roads of Mauritius was visited every day by the medical authorities. Friends of the passengers, journalists, and privileged members of the public, took the opportunity of going out in the little vessel that carried the sanitary authorities, and conversing at a distance with those confined on the ship. One day the ship's doctor indulged in a little joke to relieve the weariness of quarantine. He confided to an inquiring reporter the news that a case of "pigritis" had just occurred on board in the person of one of the officers as the result of having nothing to do. It was pitiful, he said, to see the unhappy man, but he assured the reporter that all necessary precautions were being taken. The same evening a local newspaper solemnly announced that a fulminating case of pigritis had occurred on board the vessel. The next day the sanitary inspector came on the scene. In reply to his anxious inquiry the ship's doctor informed him that the case was fairly serious. The patient had little appetite and was suffering from great muscular depression. Asked if he feared contagion, the doctor said he feared the whole ship's company would be attacked. When this became known it caused great alarm in the town. A large stock of disinfectants was ordered. The inhabitants talked of nothing else. "Just think," they said to each other, "a new disease hitherto unknown in Mauritius. But these infernal epidemics of hot countries! There is always something new being discovered in that line!" Next morning there was a special meeting of the council of health. It was proposed to take strong measures. Luckily one of the members remembered that *piger* is the Latin for lazy, or "pigritis" might have been included among notifiable diseases; a bacteriologist would then have discovered the microbe, and doubtless, a new vaccine would have been prepared. There have been frequent occasions to note in reports of meetings and so forth sent for publication how closely the members of our profession resemble Shakespeare in having "little Latin." Since the agitation about the Insurance Act began the changes have been rung on such forms as *per capitem* and *per capitum*. But these do not scratch Priscian's head so badly as caught *in flagratio, infertilis masculinus* (apparently intended to denote male infertility) which we have recently come across in leading medical journals of the United States. Better "Latino," or even Esperanto, than this kind of thing.

[1] *The Doctor and his Work*. London. 1912.

LONDON SCHOOL OF TROPICAL MEDICINE.

The annual dinner of the London School of Tropical Medicine was held on Wednesday, October 23rd, at Princes' Restaurant, General Sir Reginald Talbot in the chair. Among those present were Lord Sheffield, Sir Ronald Ross, Sir Ernest Shackleton, Sir Francis Lovell, Fleet Surgeon P. W. Bassett-Smith, Professor W. J. Simpson, Professor R. Tanner Hewlett, Dr. F. M. Sandwith, Dr. A. J. Chalmers, Dr. J. W. Barrett, Dr. G. C. Low, Dr. Purves Stewart, Dr. C. W. Daniels, Mr. Herbert Read, Mr. R. B. Carter, Mr. J. Cantlie, and Mr. P. Michelli. After the usual loyal toast, in which allusion was made to the recent gracious donation of £100 by the King, had been duly honoured, Sir Ronald Ross proposed the toast of the London School of Tropical Medicine. He said that the school had obtained money, but

he did not think it had received enough from the capital of the Empire; indeed, Liverpool had given more than London. He paid a compliment to Mr. Joseph Chamberlain and Mr. Austen Chamberlain for their work in connexion with the school, and said that some of the officials of the Colonial Office were working for the cause of tropical medicine in a manner that could not be too highly praised. The Chairman, in acknowledging the toast, referred to Mr. Chamberlain as the greatest Colonial Minister this country had ever had. Altogether 1,240 students had passed through the London School. The Board of Education now recognized the school and had under consideration the question of a grant for a more complete course of sanitation and hygiene. The International Congress of Medicine had for the first time established a Section of Tropical Medicine. The principal event of the year, as far as the school was concerned, was the legacy of £10,000 from Lord Wandsworth. In conclusion, the Chairman appealed for greater support for the school. Sir Patrick Manson, who also responded, said they expected that in a very short time they would have a school with very much better accommodation than the present institution possessed. The realization of this hope had been made possible by the generous help of a number of distinguished public men, including the Lord Mayor and Mr. Lewis Harcourt. He also bore testimony to the work of Mr. Austen Chamberlain and the Colonial Office. It had long been in contemplation to make efforts to enlarge the scope of the teaching in tropical hygiene and sanitation. He strongly recommended the responsible authorities to consider a scheme for teachers in these subjects. He hoped that a scheme of pensions would be established, so that men engaged in the work of tropical medicine would not be persuaded away into other walks of life. In regard to research during the past year, he referred to Dr. Wenyon's expedition to Bagdad and Asia Minor for the purpose of solving some of the mysteries of Oriental sore. One point he had established was that this disease could be acquired and yet not show any clinical manifestation until five or six months after the period of infection. This Dr. Wenyon had done by inoculating himself with the virus of the disease, and he was therefore to be ranked as one of the martyrs of science. Dr. Bahr's expedition had resulted in a great deal of precise knowledge. He had brought out one new point of interest in pathology—namely, that the passage of a germ through an intermediary host sometimes resulted not only in the modification of the pathological properties, but also in the biological habits of the germ. Dr. Bahr had now gone on another expedition to Ceylon to study sprue, a disease of enormous importance to tropical colonies. Dr. Leiber was about to proceed, as interim Wandsworth Scholar, to West Africa to study parasitic diseases. Next year the Wandsworth Scholarship would be open, and would offer a magnificent opportunity for an ambitious man.

LECTURES AT THE ROYAL COLLEGE OF PHYSICIANS, LONDON.

The Bradshaw Lecture on the diagnosis and treatment of incipient pulmonary tuberculosis will be delivered by Dr. D. B. Lees at the Royal College of Physicians, London, on Tuesday next, and the Horace Dobell Lecture on insect carriers of bacterial infections by Dr. C. J. Martin, Director of the Lister Institute, on November 21st. The FitzPatrick Lectures, by Dr. Raymond H. P. Crawford, will be delivered on November 7th, 12th, 14th, and 19th; the subject of the course is echoes of pestilence in literature and art. The first lecture will deal with the great Antonine plague, the second with the black death, the third with the great plague of Milan, and the fourth will continue the history down to the end of the eighteenth century; the second and third lectures will be illustrated by lantern slides. The lectures will be delivered at 5 p.m. on each day.

MEDICAL HISTORY.

What is practically a society for the study of medical history has been established in London after many years of hesitation and delay. It starts under good auspices as a section of the Royal Society of Medicine, and the first meeting will be held on Wednesday, November 20th, at 5 p.m. Similar societies have long been in existence in the United States, in Germany, and in France, with the happiest results. It is intended to give a wide interpretation to the term "medical history," and it is hoped that exhibits will be a feature of the meetings. There will also be an educational aspect, and one or more lectures will be delivered annually by recognized authorities on the subject, and all practitioners and medical students will be at liberty to attend them. Those who wish to join the new section, which already contains 128 members, should communicate with the honorary secretaries of the section at the Royal Society of Medicine, Wimpole Street, W.

Sir Patrick Manson had the honour of being received by the King on October 26th, when His Majesty invested him with the insignia of a Knight Grand Cross of the Most Distinguished Order of St. Michael and St. George.

Mr. Charles Alfred Ballance, M.V.O., M.S., F.R.C.S., Surgeon to St. Thomas's Hospital, has been appointed by the Home Secretary to be Chief Surgeon of the Metropolitan Police in succession to the late Mr. Clinton Dent.

The case of Stevens *v.* the British Medical Association terminated on Thursday afternoon in the disagreement of the jury.

Medical Notes in Parliament.

National Insurance Scheme.

Medical Benefit.

On October 28th Mr. Worthington-Evans asked a series of questions with regard to medical benefit.

He asked first whether it was intended to repeal the Regulations, dated October 1st, 1912, now in force as to the administration of medical benefit under Clause 28, in which the cost of drugs and appliances was made a first charge on the amount available for medical treatment.

Mr. Masterman said that the necessary modifications in the regulations were being drafted to carry out the changes rendered necessary by the announcement of the Chancellor of the Exchequer.

Mr. Worthington-Evans asked how a man of the age of 65 and upwards, who had been a member for many years of a friendly society which had now become an approved society, could in future obtain medical attendance and treatment for which he had hitherto paid 1d. a week; and whether any part of the proposed grant of £1,650,000 would be applied in paying the increased cost of his medical attendance.

Mr. Masterman said that he was not aware of any reasons why the cost of medical attendance of the persons referred to would be increased by the operation of the Act or the proposed new arrangements.

Mr. Worthington-Evans then asked whether if it were found that that was the general anticipation of the friendly societies some part of the grant would be given to those old people who otherwise would cease to get medical benefit.

Mr. Masterman said he had no control over the grant, but would inquire into the subject.

Mr. Worthington-Evans asked out of what funds drugs and appliances to be provided in connexion with medical benefit under the National Insurance Act were to be paid for if their average cost in England equalled the average cost in Germany, say 3s., and thus exceeded the 1s. 6d., or possibly 2s., per person allowed for in the scheme recently announced by the Chancellor of the Exchequer.

Mr. Masterman said: The conditions attaching to the sale of drugs, the articles required to be supplied, the persons

able to claim them as part of benefit, in Germany differ so widely from the conditions in this country, that it is impossible to institute any useful comparison between the two. If the total cost of drugs in any district exceeded the total money available during the period of the contract with the insurance committee (including the sum provided by the 6d. for each insured person which is divisible between the doctors and chemists, if the total cost is between 1s. 6d. and 2s.), the bills would be discounted on some agreed system; but all evidence in this country shows that except in cases of abnormal sickness (which are to be met by a special fund) the cost is far below the sum available.

Sir H. Craik asked if the remuneration of the doctors for their scientific work would be dependent on a chance increase in the cost of drugs? Mr. Masterman replied in the negative. The doctors would receive a certain amount as a fixed sum. Beyond that sum there was sixpence, which was available between doctors and chemists in accordance with the amount of drugs prescribed.

Sir H. Craik: It will vary? Mr. Masterman: To the extent of sixpence.

Mr. Hills asked the Chancellor of the Exchequer (1) what provision he proposed to make to secure adequate medical attendance and treatment, as provided by Section 15 (2) of the Act, for cases requiring more than could be afforded by a practitioner of ordinary competence; (2) whether his attention had been drawn to the fact that under the regulations of the Insurance Commissioners, dated October 1st, 1912, the cost of any consultation with a second doctor would fall upon the medical practitioners upon the panel collectively, since the amount available for their collective remuneration would be diminished by the consultant's fees; whether he really intended thus to discourage the recourse to a consultant in grave cases which, in order to secure the adequate treatment which the Act provided required a consultant; and (3) whether the regulations made by the Insurance Commissioners, dated October 1st, 1912, contemplated provision only of such medical treatment as could be undertaken by a practitioner of ordinary competence; and whether this was a breach of Section 15 (2) of the Act, which contemplated treatment adequate to the disease whatever its gravity.

In a written reply Mr. Masterman said that the regulations referred to had been drafted in compliance with the provisions of the Act, and fully carried out the intentions of Parliament. Full regard had been had in calculating the amount available for the provision of medical benefit under the Act, to the various forms of treatment referred to, in so far as they fell within the scope of medical benefit under the Act.

Doctors and Friendly Societies in Ireland.

Mr. Devlin addressed the following long question to the Chief Secretary for Ireland:

Whether his attention has been called to a meeting of Dublin medical practitioners held under the presidency of the President of the Royal College of Surgeons, at which resolutions were adopted to the effect that every doctor practising in Dublin should be requested to sign a pledge not to accept service with any insurance or benefit society or any medical appointment unless the local medical committee were satisfied that the payment was an adequate remuneration, and that every city doctor who is a medical officer to any benefit society of whatever kind be required to make a demand on his society for such rate of remuneration as the local medical committee shall consider proper, and, if such be not granted, he must resign his office, and no practitioner shall be allowed to take it, and that a black list be formed on which the names of practitioners who refuse to sign the pledge shall be placed, such list being published in the medical colleges, and it to be understood that everyone who appears thereon shall be boycotted by means known to the medical profession; whether, seeing that this resolution is an infringement of the law as advocating intimidation, he will order a prosecution where it can be shown that, in consequence of pressure brought to bear on medical practitioners by the local medical committee appointed at the meeting referred to, such doctors who had undertaken work for friendly societies or insurance committees resigned their appointments; whether he will consult the Irish law officer as to whether licensing corporations in Ireland have power to remove from their registers the names of medical practitioners who refuse to recognize the authority assumed by the Dublin medical committee; and, if not, will he take steps to protect medical practitioners who are prepared to work for friendly societies or to undertake the administration of the National Insurance Act in Ireland?

Mr. Birrell replied that the resolutions actually passed at the meeting referred to were not quite accurately set out in the question. He was advised that the resolutions and pledge were not in themselves illegal, and that the licensing corporations in Dublin were not in any way controlled by either the resolutions or the pledge. The Government was not aware that any doctor had been removed from any register for refusing to recognize the views of the Dublin Medical Committee. If there should be anything which amounted to an infringement of the law the question of what action should be taken would be considered.

In answer to a somewhat similar question put by Mr. Devlin on the relations between Dublin medical men and friendly societies, Mr. Lloyd George said that he was aware of the resolutions passed at the meeting of September 24th, which, however, related to the licensing corporations and not to the General Medical Council. He understood that the General Medical Council had always held that it could not deal with questions of remuneration, and in any case its decisions were open to review in the courts.

Tuberculosis Cases in London.

Mr. Touche asked the President of the Local Government Board how many persons suffering from tuberculosis, and entitled under the National Insurance Act to sanatorium benefits, had been provided for by the London County Council; and how many cases were waiting for accommodation. Mr. Burns said that, according to figures supplied to him on October 26th, the London Insurance Committee had recommended 114 insured persons for sanatorium benefit, and this they were receiving. He was not aware that there were at present any insured cases waiting for accommodation. On October 26th the Committee had forty-seven vacant beds available, in addition to the services of dispensaries.

Hospitals.

Mr. Fell asked whether the Insurance Commissioners proposed to take over the Brompton Hospital for Consumption; and if this was part of a scheme to take over all the hospitals in the country for the purposes of the National Insurance Act. Mr. Masterman replied that the answer to both parts of the question was in the negative.

Highlands and Islands in Scotland.

Mr. Catheart Wason asked when the report of the committee appointed to inquire into the necessities of the Highlands and Islands under the National Insurance Act would be issued, and the Marquis of Tullibardine asked whether the committee was not intended to inquire not only into the medical service but into the necessities of the Highlands generally. Mr. Masterman, in reply, said that he believed that the reference had been narrowed to what was required under the National Insurance Act, but the committee were still investigating the wider question. He was unable to give an exact answer as to the date of the publication of the report. In reply to the Marquis of Tullibardine Mr. Masterman said that before finally settling with the doctors in the Highlands and Islands of Scotland the conditions under which they would work the Insurance Act the report of the committee would be awaited.

Women's National Health Association (Ireland).

In reply to Sir J. Lonsdale, Mr. Birrell said that the Local Government Board in Ireland had advised all county councils to make immediate arrangements for the treatment of consumptives belonging to their respective counties, and had not interfered in any way with the discretion vested in county councils of providing sanatoriums for the inhabitants of their counties either by establishing such institutions themselves or by entering into agreements with persons having the management of such institutions. The same principles of distribution would be observed whether a county council acted in concert with or independently of the Women's National Health Association. Responsibility for maintenance and upkeep of sanatorium buildings provided by the Women's National Health Association devolved on that association as occupants of premises held on trust for general

sanatorium purposes. The estimated amount of expenditure out of the sanatorium grant on Peamount was £17,945, according to particulars furnished to the Local Government Board by the architects and the Women's National Health Association. The expenditure at Rosseclare was estimated to come to less than £1,700. Pending the completion of the institutions, and until an account had been taken between expenditure in respect of temporary provision and expenditure which permanently supplied contracting counties with beds, the exact cost per bed taken permanently could not finally be ascertained.

Mr. T. M. Healy asked whether each county would be entitled, if it required it, to an equal share in the Imperial grant. Mr. Birrell said that any county which contracted with any association would have charged against its share of the total grant the actual cost supplied out of the £25,000.

In reply to further questions, Mr. Birrell said that the counties which did not align themselves with the Dublin body would be entitled to the payment of an equal share on a population basis. The money had been doled out to the association on certificates of expenditure verified and examined by the Local Government Board.

Insurance Stamps.

In reply to Mr. Denman, Mr. Masterman said that the sales of health insurance stamps during the first quarter amounted to a weekly average of 13,008,773.

Ireland and Medical Benefit.

Mr. John Redmond asked whether, in view of the additional grant which it was proposed to make in respect of medical benefit under the Insurance Act, he would consider the question of devoting a sum of money towards making good the cost of certificates for sickness and invalidity benefits in Ireland, and whether he was still of the view that the extension of medical benefit to Ireland was a matter to be decided by the wishes of the Irish people themselves. The Chancellor of the Exchequer said that he was taking the opinion of the Irish Insurance Commissioners upon the first point, and hoped soon to be able to make an announcement. As regards the latter part of the question, he had always made it clear that the question of extending medical benefit to Ireland was a matter entirely to be determined by the Irish people themselves.

Medical Inspectors (Ireland).—Mr. Mooney asked the Chief Secretary for Ireland what practical knowledge and experience the medical inspectors of the Local Government Board of Ireland possessed regarding the erection, equipping, and administration of sanatoriums and tuberculosis dispensaries; in what recognized sanatoriums and tuberculosis dispensaries in Great Britain or on the Continent they acquired their experience; whether, in view of the fact that the Local Government Board required a six months' special course for medical superintendents of sanatoriums and tuberculosis medical officers, he would state whether the medical inspectors of the Local Government Board had had a similar training; and, if not, whether the Local Government Board would afford their medical inspectors an early opportunity of obtaining such training? Mr. Birrell: The medical inspectors of the Local Government Board have been clearly associated with the erection and administration of sanatoriums established by public bodies in Ireland, such as Heatherside Sanatorium in county Cork, Crooksling Sanatorium in county Dublin, and the Abbey Sanatorium near Belfast. They have by personal inspection become familiar with the construction, arrangements, and methods of management adopted in other sanatoriums and tuberculosis dispensaries in Ireland, as well as in similar institutions in England and Scotland. There was no necessity for the medical inspectors to undergo the special course of instruction referred to, [illegible] that they were not, in the discharge of their duties, called upon to engage in the diagnosis and treatment of tuberculosis. Mr. Mooney asked why the Local Government Board required more efficiency in the superintendents than in their own inspectors. Mr. Birrell said it depended on the nature of the duty. It was one thing to consider the construction and arrangement of a sanatorium, and another thing to deal with this disease.

Sleeping Sickness.—Mr. Newdegate asked the Secretary of State for the Colonies whether he was aware that Dr. F. Mehnarto (Dr.Med. Heidelberg, Dr.Phil. Berlin) had recently infected and then cured animals of sleeping sickness by the injection of a serum; that these experiments were conducted under the personal supervision of Dr. Jolly, Professor of Physiology, of the South African College, Capetown; whether he was aware that Dr. Mehnarto also performed the same experiment on himself with successful results; and whether, in view of the fact that a Commission was in existence at present to try and find a remedy for sleeping sickness, which was costing the British Government a considerable sum of money annually, he would take steps to see that advantage was taken of the discoveries of Dr. Mehnarto in those colonies where sleeping sickness prevailed. Mr. Harcourt said: The director of the Tropical Diseases Bureau informs me that he has seen some papers briefly describing experiments performed by Dr. F. Mehnarto on rabbits for the cure of sleeping sickness, but that it was not possible for him to form an estimate of their value. It was stated in the papers that some of the experiments had been performed in Dr. Jolly's laboratory at Capetown. There was no mention of Dr. Mehnarto having performed similar experiments on himself. Before I can take steps to see that advantage is taken of the discoveries of Dr. Mehnarto, it is needful to ascertain whether these discoveries are of value, and I suggest that Dr. Mehnarto should bring his work before some scientific society or offer it to some scientific journal for publication. If it has the value which he appears to claim for it, there will be no difficulty in having it published and discussed by competent critics. When this has been done, I shall be glad to consider the matter further.

Royal Army Medical Corps.—In reply to Mr. Perkins, Colonel Seely said that the grant of furloughs to soldiers of the Royal Army Medical Corps rested, as in the case of other branches of the army, with the discretion of the commanding officer. Nothing was known at the War Office of any unusual curtailment during the present year, or of any necessity for obtaining five signatures in every case.

Post Office Staff Medical Services.—In reply to Mr. Cawley, the Postmaster-General said that the amount expended on medical services for employees of the Post Office during the last three years was approximately as follows:

	£
Year ended March 31st, 1910	54,700
Year ended March 31st, 1911	55,800
Year ended March 31st, 1912	56,400

Defective and Epileptic Children. In reply to Mr. Acland Allen, the President of the Board of Education said that there were 318 separate education authorities in England and Wales: 147 had taken some action under the Elementary Education (Defective and Epileptic Children) Act in 1899. In fifty-one areas schools or classes had been established by the local authorities, and, in addition, schools or classes had been provided from other sources in eleven areas. With reference to the fourth part of the question, perhaps he might be allowed to refer the hon. member to the report of the Chief Medical Officer of the Board of Education for 1910. The matter he referred to was dealt with on page 208. The latest available figures showing the number of children in schools established under the Act were for the year 1910-11, and were as follows:

	Number of Scholars on the Register.	
	London.	Rest of England and Wales.
In schools for physically defectives...	3,036	1,677
In schools for mentally defectives ...	6,925	5,428
In schools for epileptics		377
Total	9,961	7,582

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

MANCHESTER AND DISTRICT.

The Manchester and Salford Provident Dispensaries.

A good deal of doubt has occurred in Manchester and Salford as to whether the resignations which have been sent in referring to club appointments were resignations of the whole club, including the non-insured as well as the insured, or whether they only applied to attendance on the insured members of the clubs. It has been held that strictly and literally the wording of the form of resignation meant the resignation of the whole club appointment; but as it was undoubtedly the intention only to deal with the insured in this way, and to leave the question of attendance on the uninsured to be dealt with separately, some doubt has arisen in the minds of the medical officers of the Manchester and Salford Provident Dispensaries, some of them holding that they had intended to resign the whole appointment, while others claimed that they would be at liberty to go on attending the uninsured as formerly. Thus when the General Secretary of the Dispensary Association inquired which was meant, it was impossible to give any definite reply. In order to obtain a general agreement and combined action, a meeting of the medical officers was held last week at the Grosvenor Hotel, Manchester, and it was unanimously agreed to inform the General Secretary and all the local secretaries of the Provident Dispensary Association that the resignations applied to the whole appointments, including the uninsured as well as the insured. Further, it has appeared to the Provisional Medical Committees of Manchester and Salford that the present is a most favourable opportunity for dealing with the whole question of club practice for the uninsured. This was communicated to the meeting of the medical officers of the provident dispensary, who accordingly resolved to call on all the medical officers to refuse to enter into any new agreement with the Provident Dispensary Association for attendance on the uninsured, except through the Provisional Medical Committees. This is an extension of the work originally contemplated for these committees, but as they include both members and non-members of the British Medical Association, it has been thought that they were suitable bodies to deal with this general question.

Ancoats Hospital.

The annual report of the Ancoats Hospital again records a great increase in the work of the hospital. The number of accidents treated during the year 1911–12 was no fewer than 24,747, as compared with 23,890 in the previous year, and the out-patients 11,705, as compared with 10,547, while the in-patients were 1,538, as compared with 1,430. On the contrary, the home patients show a decrease from 1,710 to 1,402. Taking the whole work of the hospital, the report says that during the past ten years the number of out-patients and accidents has trebled, and it is a source of regret that so large a proportion of those who should be treated as in-patients had to be sent away owing to lack of accommodation. The financial position of the hospital continues to be a source of anxiety, for while the expenditure has been £10,407, the income is only £7,588, leaving a deficiency of over £2,800, though of this about £1,000 was for necessary repairs and alterations, and to a certain extent is abnormal. Thus, though the board feels that there is urgent need for further extensions, it is unable to take steps to meet the want, as the support given by the public is not sufficient to carry on even the present work of the institution.

CHESTER.

Medical Men and Municipal Affairs.

At a meeting of the Chester Town Council on October 23rd, Dr. A. Mann, the Chairman of the Public Health Committee, presented its report for the last time, and in acknowledging a resolution of regret at his decision to give up his work in connexion with the council delivered a short address. During his long tenure of office he had been much indebted to the present medical officer of health and other officers of the council. The Mayor had rightly said that the reputation of the city largely depended on the way in which the duties of its Public Health Committee were performed. A progressive sanitary policy was not possible without heavy expenditure. Twelve years ago the sanitary organization of Chester was ineffective and inadequate; it was still small, but was now thoroughly efficient and as well staffed as any in England. He regretted more had not been done towards the rehousing of the working classes. If the people throughout the country could be rehoused and the milk supplies adequately protected, tuberculosis, he believed, would be so materially diminished in twenty-five years that the many sanatoriums and tuberculosis dispensaries now being brought into existence would perhaps be objects mainly of antiquarian interest. The true enemies of tubercle bacilli were sunlight and fresh air, and these and a healthy decent home were the right of every man, whatever his wages, who did an honest day's work. At the present time there was a regrettable tendency to burden the health departments of the country not only with the prevention of tuberculosis, but also with its treatment. Preventive measures were rightly allotted to that branch of the medical profession formed by the medical officers of health, since they were men specially trained to devise and carry them out, but treatment fell within the scope of another branch of medicine, which was also specially trained for that purpose and quite capable of fulfilling it. Dr. Mann has been a member of the town council for the past twelve years, and during ten of them has been either chairman or deputy chairman of the Public Health Committee. He also represents the council on the Port Sanitary Authority. In 1904 he was sheriff.

Chester Infirmary.

The rebuilding operations now in progress at Chester Infirmary are to include the provision of a new operating theatre, the expenditure thereon being provided by the family of the late Mr. James Taylor as a memorial to him. Mr. Taylor was connected with the infirmary for some forty years, and at the time of his death was its senior honorary surgeon. The total amount required to complete the alterations and extensions of the infirmary is £40,000, of which sum £29,000 has so far been collected.

LONDON.

London County Council.

Medical Officer's Report on the Medical Treatment of School Children.

The Board of Education, in sanctioning the continuance until December 31st, 1912, of the present arrangements for the medical treatment of school children by the London County Council, made it a condition that the Council would forward a full report by its medical officer on the working of the scheme. This report has been prepared and issued to members of the Council. It describes in detail the growth of the present system, as to which particulars have appeared from time to time in the British Medical Journal since December, 1908. The difficulties that arose in connexion with treatment through the agency of the general hospitals, and the steps taken to overcome those difficulties, are related, and the report describes exhaustively the precise methods adopted at every hospital and medical treatment centre included in the Council's scheme. A statistical table appended shows that during 1911–12 provision existed for the treatment of 38,020 children, and that the number who attended the hospitals and centres was 27,647. The percentages of cases failing to complete treatment were 13.5 in eye cases (16,670 attended), 13.6 in ear, nose, and throat cases (9,814 attended), and 20.3 in ringworm cases (1,112 attended). Of the 10,188 children who were prescribed spectacles, 8,401 (or 82.4 per cent.) obtained them. Of the 9,814 children treated in the ear, nose, and throat departments, 5,674 were operated upon. In the course of his report the medical officer (Dr. W. H. Hamer) mentioned that the three special classes for myopic children in London were proving a marked success. Additional provision of this kind was needed, particularly in the east, south-east, and west of London.

BRISTOL.

Honorary Degrees.

In the list of honorary degrees conferred by the Bristol University published in the Journal for October 26th, p. 1162, the name of Dr. D. S. Davies, Medical Officer of Health for the City and Port of Bristol, who received the honorary degree of LL.D., was inadvertently omitted. Dr. J. Michell Clarke and Mr. F. R. Cross were also the recipients of the degree of LL.D.—not LL.B., as printed in the paragraph referred to.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

A County Medical Officer of Health and Private Practice.

An interesting case has just been before the Ross-shire County Council regarding the position of the medical officer of health for the county, Dr. Bruce (Dingwall), relating to private practice in this district.

According to the minutes and correspondence submitted to the last meeting of the Ross-shire County Council it seems that the committee received in May last a representation from Drs. Adam, Duncan, and Pender Smith to the effect that they had occasion to believe that the county medical officer of health had entered into some form of agreement with another medical man for the carrying on of his consulting or other practice, and, further, that the county medical officer of health had not adhered to the terms of his appointment, as he had all along engaged in a visiting practice, paying visits in the season to patients residing in the hotels and houses of Strathpeffer, and also to patients residing in various parts of the county, without the invitation of other practitioners.

The appointment of county medical officers of health is regulated by the provisions of Section 52 of the Local Government Board (Scotland) Act, 1889, which *inter alia* enacts that the medical officer "shall not hold any other appointment, or engage in private practice or employment, without express written consent of the council." Under this provision the county council on October 7th, 1890, unanimously agreed—

> That Dr. William Bruce should be allowed to continue to act as medical officer of health of the Burgh of Dingwall, and to engage in purely consulting practice in medicine and surgery, giving advice only in his consulting-rooms in Dingwall and Strathpeffer, except when attending consultations on the invitation of other practitioners, but being bound to give work falling under his duties as medical officer of health of the county precedence of all other engagements.

The committee, after inquiry, expressed the opinion that the partnership complained of was against the terms of the appointment of the county medical officer of health, and that, unless it was departed from, they would have no alternative but to deal with the matter. With regard to the question of private visiting practice, they pointed out to the medical officer of health that the complaining doctors had stated that they were prepared to go into details, but before doing so wished to appeal to him as to whether he should not make this unnecessary. On June 18th last Dr. Bruce intimated that he had terminated his [illegible] with Dr. Douglas as from July 15th last.

A further representation was afterwards received from the complaining doctors to the effect that the medical officer of health had not enforced the usual stipulation in partnership agreements, as Dr. Douglas, whom he had brought to Strathpeffer as his partner, had made arrangements to continue in practice there. They further pointed out the omission from the medical officer of health's letter of any reference to their appeal with regard to their assertion that he had all along engaged in a visiting practice. In a letter addressed by Dr. Bruce to the members of the Public Health Committee he denied the charges, and submitted that the minute of the county council quoted above must be read in the light of what is understood by the term "consulting practice" in the medical profession, for it was by that he was guided when he accepted the appointment. He contended that a "consulting practice" literally and strictly confined to the four walls of one room is unknown in the profession; that it would be prejudicial to the interests of the patient and inconceivable to any one conversant with the conditions of medical work: and that there was a well-recognized meaning attached by medical men to a purely "consulting" practice. He stated that he had not taken up a family practice nor had he ever been at the call of the resident public; that he had endeavoured to abstain from advising a patient who did not come to him at the direction of a medical man, and to secure, in correspondence with his regular attendant, approval of the treatment suggested, and, in fine, that he had adhered to the essential spirit of the agreement, and had always endeavoured to obviate the possibility of his practice interfering with the efficient discharge of his duties as medical officer of health.

The committee held a further inquiry into the matter, and after hearing statements, and Dr. Bruce having expressed regret if at any time he had transgressed the letter of his agreement with the county council, recommended the county council to take no further action in the matter, on the distinct understanding that the terms of the agreement were hereafter observed. Further, the committee resolved to submit a copy of the agreement with the county medical officer of health to the Local Government Board, and to ask for its interpretation of the terms.

The Local Government Board in its reply states that the terms on which consent was given to Dr. Bruce to engage in consulting practice were clear and explicit. The words limited Dr. Bruce to seeing in his own rooms cases which had been sent to him by another medical man, or to meeting another practitioner in consultation. They did not admit of his visiting patients at the written request of some other doctor. In giving this view the Board expressed no opinion on the question whether or not Dr. Bruce has complied with the conditions on which he was appointed.

This opinion was communicated to Dr. Bruce, who made the following intimation to the County Council through the County Clerk:

Dingwall, October 11th, 1912.

My dear Sir,

I have received the copy of the communication from the Local Government Board which you kindly sent me. To save further discussion and to end an unpleasant matter, I beg to state that I frankly accept the interpretation of the Local Government Board upon the minute under which I hold the appointment of M.O.H. for the county.

Will. Bruce, M.D., M.O.H.

Edinburgh Royal Infirmary and the Insurance Act.

The following official communication has been issued by the clerk to the managers of the Edinburgh Royal Infirmary:

> The managers believe that considerable misunderstanding exists in the minds of the public as to the meaning and effect of the resolutions arrived at by the board at the special meeting held on July 15th last. These resolutions were as follows:
>
> 1. That in present circumstances insured persons being entitled to medical benefits under the Insurance Act should not be treated in the out-patient department of the hospital except in accident cases, urgent cases, and suitable consultation cases.
> 2. That the honorary staff shall be entitled to exercise the option (recognized in private practice) to decline to meet any practitioner in consultation should such a course be considered advisable, but always provided that no patient shall be denied immediate advice or treatment if that be requisite on medical grounds.
> 3. That the question of investigating the circumstances of applicants for the benefits of the hospital by means of almoners or otherwise is one which will require time and care in consideration owing to its undoubted complexity. The managers will, however, give the subject their most careful attention in due course.
>
> The first resolution is the one which has given rise to comment, and it is with regard to it that explanation seems especially required. As will be observed, it is only to apply to out-patient cases, with this important reservation, that in respect of these all serious, urgent, and proper consultation cases will continue to be attended without question as heretofore. In other words, there will be no change in the policy of the infirmary in the reception or treatment of persons coming to the institution, with the sole exception of those attending as out-patients whose injuries or ailments are of such a nature as could readily receive proper attention from the ordinary practitioner. This modification will involve no hardship on the working classes, who under the Insurance Act will be provided with ordinary medical attendance, nor will it in any way limit the usefulness of the institution. The greatest work of the Royal Infirmary is, of course, done through the in-patients in the wards, and as regards these the position will

be that as cases calling for hospital care they are, *ipso facto*, urgent cases, and will be admitted and treated as freely as in the past. All dependants of insured persons who are suitable cases will continue to receive the treatment as formerly.

With regard to resolution No. 2 it will be recognized that the interests of the patients are carefully safeguarded, while resolution No. 3 contains a promise to consider the question of instituting some method of inquiry with a view of preventing hospital abuse.

The managers are satisfied that these simple resolutions are only such as the great body of subscribers will unanimously approve of, and they are confident that the bringing of them into operation will neither form a hardship to the public nor lessen in any way the beneficent work performed by the institution.

Sir Thomas Clouston on Self-Control.

Sir Thomas Clouston gave a lecture in Dundee last week on public morals from the medical and scientific standpoints. In the course of his remarks he said the study of evolution was a dominating idea, and was affecting more or less every department of science. If life had gradually been evolved from the most minute form, then the conclusion was inevitable that men's minds were the result of evolution. Self-control was the keystone of the archway of life. In mental diseases, control was the first quality to be lost, and the last quality to be regained. Everybody knew that alcohol generally was the cause of crime; and everybody knew that the use of alcohol tended towards the loss of self-control. Alcohol in this country was unfortunately taken to a preposterously and dangerously large amount. Future measures must take into consideration the constitution of the brain. The doctor, clergyman, teacher, policeman, and others, would be needed to improve morals, and measures of prevention were better than punishment. Slums also should be abolished.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Local Government Board and Complaints against Medical Officers.

The recent sworn inquiry held by the Local Government Board into a complaint against Dr. Laverty, of Rathfriland, shows the evils that attend the present method of dealing with such complaints. As the result of the inquiry has not yet been published, nothing need be said about this particular case beyond that the midwife of the dispensary district laid before the guardians a complaint that Dr. Laverty had neglected his duties in attendance on three cases as medical officer of Rathfriland. As usual in these cases, solicitors were employed by the guardians, the nurse, and the doctor; the inquiry was public and the evidence was published in the local press. In meeting such complaints the doctor is in all cases put to considerable cost and trouble in vindicating himself, and, no matter what the verdict, a certain amount of opprobrium is sure to result from the mere fact that an inquiry is held. A case recently reported, where a woman swore that the doctor had introduced a button hook into her daughter's eye when examining it, and thus caused her to lose the eye, is an example of the absurdity of many of these charges. The Provisional Regulations for medical benefit provide that all complaints against practitioners shall be investigated in private by a board of seven, three of whom shall be medical men, and no solicitors are allowed to be present. As medical benefits do not apply to Ireland, these regulations will not come into force here; but might not a somewhat similar course be adopted by the Local Government Board when making an inquiry into a complaint against a Poor Law medical officer? The medical practitioners of South Down have sent a letter to the Local Government Board protesting against the position of Poor Law medical officers with regard to complaints as to their professional conduct. The letter points out that these complaints are often of a frivolous or malicious character, and made by persons unable to pay damages for libel or slander. It protests against such inquiries being held in public and the publication of the evidence in the press, and suggests that the presence of one or at most two members of the board of guardians would be quite sufficient to represent the interests of the ratepayers. The presence of solicitors is stated to be undesirable, and it is urged that questions involving matters of professional conduct can only properly be dealt with by a tribunal composed largely of the profession. It is to be hoped that this matter will not be allowed to rest until some change for the better has been made, and to this end it might be well that medical men in other parts of Ireland should consider the advisability of memorializing the Local Government Board on the lines of this protest.

Treatment of Tuberculosis in Ireland.

Last week the Conjoint Committee of the British and Irish Medical Associations published a model scheme which has been drawn up in accordance with the various resolutions which have been passed during the last few months at the various meetings of the Conjoint Committee duly reported from time to time in our columns. The following minimum scale of fees is recommended:

	s.	d.
(*a*) For filling up Form Med. 2, including visit, if necessary, and examination of patient	5	0
(*b*) Consultation with tuberculosis officer (including visit, if necessary)	5	0
(*c*) Quarterly reports...	5	0
(*d*) Consultation at doctor's residence or surgery ...	2	6
(*e*) Visit at patient's home	2	6
(*f*) Night visit (8 p.m. to 8 a.m.)	5	0
(*g*) Special visits	5	0

No special fees for injections of tuberculin provided by central authority.

(*h*) Beyond the first mile, 1s. per mile one way.

Remuneration for Domiciliary Attendance.

Left to local Medical Committee subject to minima:

Report ... ... 5s. 0d.

Visit ... ... 2s. 6d. with mileage.

No special fee for injection.

The following resolution of the Sanatorium Subcommittee is also included in this scheme:

> September 4th, 1912.—(*a*) That efforts be made to prevent the imposition on medical staffs of all voluntary hospitals and other charities of gratuitous medical work on behalf of State-aided patients. (*b*) That no tuberculosis dispensary should be opened, or beds provided, for treatment of those in receipt of sanatorium benefit at a voluntary hospital or infirmary, except on the condition that the organization is entirely independent of the voluntary hospital or infirmary: the accounts of the department being kept separate, and the services of all medical practitioners being paid for. (*c*) That every sanatorium, however small, should have a resident medical superintendent.

This raises the question whether the general hospitals should be recognized as capable of providing sanatorium benefits or not. At present a large proportion of the patients in the general hospitals throughout the country are suffering from tuberculosis in some form or other. At present—in the Dublin general hospitals, at any rate—a large proportion of the patients in the surgical wards are affected with various forms of tuberculosis (bone disease, tuberculous glands, renal tuberculosis, etc.). If these cases are to continue to be treated in the general hospitals some arrangement will have to be made whereby some return must be made to the hospitals for their maintenance, and a further sum must be set apart for the remuneration of the members of the medical staff who attend them. This immediately leads to a difficulty, as the majority of the hospitals in Dublin are supported by the charitable public. It has been suggested that special wards should be set apart for the treatment of these cases, and that separate accounts should be kept, so that the expenses of this department should not be included in the expenses defrayed from the subscriptions to the charity.

Domiciliary Treatment for Tuberculosis Patients.

At the last meeting of the County Meath branch of the Women's National Health Association the following resolution was passed unanimously:

> That we, the County Meath branch of the Women's National Health Association, earnestly beg the National Health Insurance Commissioners and the Local Government Board to reconsider their decision as to their refusal to allow the county and city Insurance Committees to give a certain sum weekly for nourishment to tuberculosis patients receiving domiciliary treatment. We wish to point out that if these patients had been recommended for sanatorium treatment they would have cost their Insurance Committee at least £1 per week: therefore, in common justice, they should receive a certain sum for nourishment certified as necessary by the tuberculosis officer, nourishment being an

essential part of the treatment, as drugs alone for persons who cannot themselves obtain suitable food are not as efficacious in effecting a speedy cure. That copies of this resolution be sent to the Irish National Health Insurance Commissioners, the Local Government Board, and the President of the Women's National Health Association.

Academy of Medicine in Ireland.

The President of the Royal College of Surgeons (Dr. R. Dancer Purefoy) took the occasion of the first meeting of the Surgical Section of the Academy of Medicine for this session to entertain the members of the Councils of the Royal College of Surgeons and of the Surgical Section of the Academy and other friends at a supper last week in the College of Surgeons.

Correspondence.

THE SECRET OF LIFE.

Sir,—The leading article on "The Secret of Long Life" in the Journal of October 26th discusses in an admirable manner the principal points connected with long life. May I be permitted to say a few words on the subject as one who has occupied himself with it for sixty years and more? It was the occurrence of the premature death of some men in the midst of a very useful life, some who had only just begun to earn the fruit of hard work, some who had left their families in great distress, which had directed my attention in an early period of my professional life to the investigation of the causes which seemed to have brought on untimely death, and to the means by which this might be avoided; and I think I may say that this study has led to the prolongation of my own life and that of a large number of my patients. It is justly said in your leader that "the most essential thing is to come of a long-lived ancestry," and "that the habit of long life is engendered somehow, and is often transmitted to the descendants." This is very true; but I have convinced myself that long life may be obtained also by a great number of persons whose ancestry has not been long-lived by careful attendance to the laws of health; while, on the other side, many descendants of a long-lived ancestry may shorten their lives considerably by disobedience to these laws.

The tendency to early death is as inheritable as that to long life; it is, therefore, important to counteract this adverse tendency, and it is possible to do so in almost all cases to a greater or lesser degree. I could describe many instances to prove this, but for want of space I will restrict myself to my own case.

My father and my mother died in their 60th year. My father died of cerebral apoplexy; his family was gouty, and for several generations the cause of death was apoplexy or an allied affection of the brain between the ages of 68 and 75. They had all lived freely with regard to wine and food. My mother died from "dropsy" and effusion into the pleural cavities; she had had a weak heart and had suffered from frequent attacks of bronchitis. Her father and grandfather had died from "dropsy," and none of them had reached the age of 70 years.

My health, as a young man, was not robust. I had a poor digestion, and my muscular system was so weak that I was regarded absolutely unfit for military service. I felt that I had to fight the tendency to cerebral affections, from early disease of the blood vessels of the brain; and, besides, the tendencies connected with a weak fibre of the heart on my mother's side. I arranged my manner of living in accordance, especially by maintaining great moderation in eating as well as in drinking, and by taking much active exercise. The result is that I now in my 89th year enjoy very fair health.

I am sure that medical men can do much in prolonging the lives of their patients, especially those with a poor family history, by finding out the causes of the early death of the ancestors of their patients, and by adapting their advice as to diet, physical exercise and work to combating the hereditary tendencies, especially those to inheritable diseases.

The great value of [illegible] in maintaining health and prolonging life is acknowledged, but the [illegible] right, is not sufficiently attended to, although it is most important.

Breathing exercises are likewise but imperfectly appreciated, and yet their influence on the prevention of disease, on the maintenance of the vigors of the organs of circulation and respiration, is most beneficial. These exercises ought to be practised not only in the house but the habit of deep inspiration and expiration ought also to be practised on the daily walks in the open air, the increased inhaling of which is an additional advantage.

A somewhat uncertain point is sleep. Some persons of great intelligence assert that they require eight hours, as you say of Mr. Frederic Harrison, while Lord Strathcona "makes a point of not sleeping longer than six hours a day." From very numerous observations I infer that for most adult persons six hours is quite enough. As to myself, I have during the thirty most active years of my life never been more than six hours in bed, and have rarely had more than five hours of much interrupted sleep. After the age of 60 I have given up evening correspondence and substituted for it the study of Greek coins, and this has much improved my sleep.

Your leading article closes with the famous words of the *Regimen Sanitatis* of Salerno. Let me close with the words which Shakespeare puts into the mouth of Old Adam:

> Though I look old, yet I am strong and lusty,
> For in my youth I never did apply
> Hot and rebellious spirits in my blood,
> Nor did not with unbashful forehead woo
> The means of weakness and debility;
> Therefore my age is like a misty winter—
> Frosty but kindly.
>
> *As You Like It*, Act II, Scene 3.

—I am, etc.,

London, W., Oct. 29th. Hermann Weber.

THE SURGICAL TREATMENT OF RECTAL CANCER.

Sir,—I have read with much interest Mr. Harrison Cripps's paper on this subject in the British Medical Journal, October 5th, 1912, and while I am quite in agreement with many of his statements with regard to this very important subject, and fully realize the valuable pathological work which Mr. Cripps is doing and has done in the past in the elucidation of this disease, he makes certain statements in his paper which cannot be allowed to pass unchallenged.

He says: "As regards the sigmoidoscope, it is worse than useless, being at times positively misleading. Cancer can never be diagnosed to a certainty by sight alone; touch only by indicating hardness and friability has to be relied upon." Such a statement as this in these days is really astonishing. While no one will deny the value of the expert finger in diagnosing rectal cancer, Mr. Cripps would apparently condemn all cases of cancer high up in the rectum, which it is impossible to reach with the finger, to go undiagnosed. The enormous improvement in the treatment of cancer of the rectum which has lately taken place is due largely to the fact that diagnosis is now much more exact, and is made much earlier owing to the use of the sigmoidoscope, and it would indeed be putting back the clock to cease using this instrument in diagnosis. So far is Mr. Cripps's statement from the truth that diagnosis by means of the sigmoidoscope is the most exact method of diagnosis for rectal cancer that we have ever had. Cancer can be more certainly diagnosed by sight than by touch; and, quite apart from this, my own practice, and, I believe, that of other surgeons, on detecting a growth high up in the bowel by means of the sigmoidoscope, is at the time to remove a small portion of the growth and send it to an expert pathologist for examination. Surely this is a far more certain method of diagnosis than the mere feeling of a lump in the bowel by even such an experienced examiner as Mr. Harrison Cripps! The use of the sigmoidoscope has enabled us to diagnose cases at a much earlier stage than was hitherto possible, and with much greater certainty than was the case when palpation was the only method for arriving at the truth.

Another statement of Mr. Cripps, I think, requires correction. He says: "An overwhelming percentage of cases" (that is, of rectal cancer) "are situated within 6 in. of the anus, and therefore can be dealt with from below, probably not 10 per cent. originating above this height." This is certainly not the case. From my own experience, founded upon the cases at St. Mark's Hospital

during a number of years and from a fairly extensive private practice, I should say that the commonest situation for cancer of the rectum is the recto-sigmoidal junction, above the peritoneal reflection and out of reach of the finger. Such cases must, of course, pass undiagnosed by Mr. Cripps, as he has no means of arriving at a diagnosis when the growth is in this situation. But since the use of the sigmoidoscope has enabled us to detect growths high up in the bowel just as easily as those in the lower part of the bowel, it has been found that the growths in the former situation appear to predominate. My own figures show a percentage as follows:

Above the peritoneal reflection	...	63 per cent.
Below ,, ,,	...	37 ,,

Dr. Tuttle's figures on the same point from the last edition of his book are:

Above the peritoneal reflection	...	72 per cent.
Below ,, ,,	...	28 ,,

These figures do not include growths in the sigmoid flexure.

These figures speak for themselves, and had Mr. Harrison Cripps been in the habit of using the sigmoidoscope for diagnosis I am sure he would long ago have discovered the fallacy of the figures he quotes.—I am, etc.,

London, W., Oct. 28th. P. Lockhart Mummery.

Sir,—Mr. Harrison Cripps, in his interesting address on the "Surgical Treatment of Rectal Cancer,"[1] condemns the use of the sigmoidoscope in the diagnosis of rectal cancer, and states that it is "worse than useless."

An opinion such as this, expressed by a leading rectal surgeon in opening a discussion on rectal carcinoma, will tend to discredit the diagnostic value of the sigmoidoscope in the eyes of the general practitioner, and, if the statement goes unchallenged, to lend colour to an assumption that this opinion is shared by other rectal surgeons. I venture to think that no such view is held by any of my colleagues at St. Mark's Hospital, or by those who make constant use of the sigmoidoscope in out-patient departments.

Though the sigmoidoscope takes no part in the diagnosis of low-lying rectal carcinomata which are within reach of the finger, it is of the greatest value in the diagnosis of early carcinoma high up in the rectum or low down in the pelvic colon. It enables a diagnosis to be made with certainty, which can be made in one other way only, and that by exploratory operation. When used constantly in the out-patient room, as at St. Mark's, it is often the means of discovering a carcinoma which is wholly unsuspected. Were it necessary, in support of my contention, I could produce a number of cases in which a diagnosis of early carcinoma has been made by the sigmoidoscope and followed by successful removal of the tumour, when no such diagnosis could have been made by digital examination.

During the discussion which followed Mr. Cripps's paper only one speaker commented on Mr. Cripps's reference to the sigmoidoscope to dissent from it, and for this reason I venture to protest against the discouragement of a valuable aid to the early recognition of high rectal cancer by one speaking *ex cathedra*.—I am, etc.,

London, W., Oct. 29th. C. Gordon Watson.

RASHES OCCURRING DURING THE PUERPERIUM.

Sir,—Will you allow me to comment on the paper of Sir John Byers on this subject? His conclusion (4 *b*) that—

> From a person ill of scarlatina there may be conveyed to a lying-in woman septicæmia, arising from the secondary septic changes which are apt to take place in the throat, etc., in scarlatina,

appears to me to have been absolutely disproved in the great papers by Dr. Boxall, to which Sir John Byers refers, but which do not seem to have influenced his judgement as I think they should have done; and it is implicitly negatived by a sentence in his next paragraph, that—

> The latter (*a*) should be avoided by modern aseptic and antiseptic precautions.

Boxall showed that when scarlet fever was present in the wards of the General Lying-in Hospital, the morbidity among the patients who did not get scarlet fever was not in the least raised; and Sir John Byers says that septicæmia, in a puerperal woman who has been exposed to scarlatinal infection, is to be prevented by "aseptic and antiseptic precautions." In other words, it is the fault of a careless doctor or nurse, and not of the scarlatina.—I am, etc.,

London, W., Oct. 26th. G. E. Herman.

THE WASTE OF MEDICAL EXPERIENCE.

Sir,—The note in the Journal of October 26th under this heading should be carefully read and digested by every practitioner. I read it with great interest, and while doing so my thoughts at once reverted to a letter by Dr. J. Dewar in the Journal of November 17th, 1900, p. 1473, bearing on the same subject. In the course of this letter he says:

> A country practitioner told me three or four years ago what I did not know, and which no consultant and no one else whom I have come across knows—namely, that calomel, when placed on the tongue in doses of one-sixth of a grain, and repeated every half-hour for twelve or eighteen hours, always aborts a quinsy. Since then I have always adopted this simple treatment, and have never found it fail.

I was at the time much struck with this statement, and determined myself to adopt this treatment, which I too have never found to fail if given early and in the free suppuration stage. Some years ago I read notes of 5 cases treated by this method, at our local medical society meeting. Unfortunately I cannot now find my notes, but there was one very interesting point I had noticed, and to which I draw attention. In three of the cases I commenced treatment before there was any apparent sign of suppuration. The quinsy was aborted within eighteen hours, and there was no purging of the patient.

In the other two cases there was evidence that suppuration had commenced within the tonsil. In these two cases the treatment was not only of no avail but strongly purged the patient.

Why, in the one case, calomel should cure and not purge and in the other case purge and fail to cure is a conundrum I leave to the expert to explain, but I cannot help reiterating the complaint of Dr. Dewar that enough is not done to obtain from the general practitioner throughout the country the results of unexplained observations. The old country doctor is as a rule rather timid and averse to relating before his local medical society observations which he cannot explain, for fear of being laughed at by the young doctor and for fear of being considered unorthodox. Surely there ought to be some way of gathering in the life experience of these men instead of allowing their valuable observations to die with them.—I am, etc.,

Torquay, Oct. 28th. G. Young Eales.

"THE DOCTOR AND HIS WORK."

Sir,—In your leading article of October 12th under the above title, in the course of your kind review of my book, you very naturally call attention to the close resemblance of its designation to that of a previous work by Mr. Brudenell Carter. I feel that I owe an explanation to that gentleman, and I trust, therefore, that you will allow me to say that until I read your article I was not aware of the existence of his book, *Doctors and their Work*. For this oversight I tender him my apology.—I am, etc.,

Bath, Oct. 28th. Charles J. Whitby.

FLANNELETTE: A DISCLAIMER.

Sir,—In the *Daily Express* of to-day's date, a full-page advertisement of "Non Flam" appears in which a quotation from evidence given by me before the Departmental Committee appointed to inquire into the law relating to coroners' inquests, etc., is given as follows: "Dr. Parry of the Children's Hospital, Brighton, in giving evidence before the Home Office Committee, says: 'Practically every death or serious accident from burning is from a flannelette garment.'" This is placed close under the following words: "Non Flam. The only safety flannelette Fabric that is *really* safe!" I have two complaints to make against the Non Flam firm. The first is that my name is used by them without my permission. Perhaps as it is a quotation from a public document I have not much right to object to this. My second complaint is

[1] British Medical Journal, October 5th, p. 843.

more serious. The evidence I gave before the Committee was to show that it was impossible to substantiate the claims of Non Flam as a fireproof material, and that after a few washings in the ordinary way the fabric burnt readily. (I burnt some specimens of washed Non Flam before the members of the Committee, and showed how easily it flamed.) It is under these circumstances that I desire to protest against the use of my name.—I am, etc.,

L. A. PARRY.

Hove, Oct. 28th.

Medico-Legal.

STEVENS v. BRITISH MEDICAL ASSOCIATION.

WHEN the court resumed on Thursday, October 24th, Dr. Campbell was cross-examined by Mr. Gregory. He said that he had been in practice since 1864, and had treated a number of patients suffering from tuberculosis. He had used various remedies, and had had a fair amount of success. He had used cod-liver oil and hypophosphite of lime, and some of his patients had got better. That treatment, however, was abandoned. Some of the cases so treated appeared to get better. He had also treated with a view to improving the general health. Under Mr. Stevens's treatment the improvement was more rapid. When dealing with consumption the prognosis was uncertain. Recovery was sometimes a surprise to the doctor. Arsenic was a specific in neuralgia. He called anything a specific which was a success. He gave Mr. Stevens's mixture to from 15 to 20 persons since 1906. Since December, 1907, he had treated 30 persons for tuberculosis; none of them had died. All the persons he had treated were cured—that is to say, they had got rid of the cough and were able to resume work. During the five years prior to 1907 he had treated 50 to 60 persons, and had cured them all.

Mr. Gregory: Then you have discovered a cure?—I do not regard the disease as fatal in every case. I was in a favourable climate. I attribute cure more to climate and surroundings than the actual drug.

Continuing, witness said that he would recommend that the medicine be used under medical advice.

Mr. Gregory: Assume that a man was living in a crowded city, would he have much chance?—No. If living in unfavourable circumstances, this medicine would not be likely to cure him.

Continuing, he said that to advertise this physic for any one to take, and to say that any one so buying and taking it would be cured, was going too far. There were different stages and forms of the disease; in some forms and stages there was no hope of recovery. Where, for instance, there were cavities and the lungs had broken down this physic was of no avail. These were the persons who would be the first to grasp at any offer to cure.

In re-examination, witness said that if treated with cod liver oil the patients he had mentioned might have been cured. Tuberculosis was not a germ-disease.

Mr. Justice Pickford: Did you go on using this substance [illegible]? No, I exhausted my stock. I [illegible] because I found they got on [illegible] treatment.

Continuing, witness said, in answer to Mr. Tindal Atkinson, that in one case there was a cavity, and that patient was cured.

Mr. Day, a clerk in the employment of the Great Northern Railway Company, [illegible].

Dr. John William Samuel, M.R.C.S., L.R.C.P., practising at Acton, said that in August 1910 he attended the last witness, Acton, [illegible] abdominal wall and [illegible]. When he came under his care he had not much hope of him. He was [illegible] and was gradually fading away. On August 19th he heard of Stevens's remedy. Mr. Stevens then sent him a sample bottle with the analysis. He used the sample bottle after having shown the analysis to his patient. The effect on the patient was that his appetite [illegible]. He kept on administering it. Mr. Stevens came [illegible]. He [illegible] better. He [illegible] to be able to [illegible] from time to time. [illegible] in the middle of June until September [illegible]. The patient [illegible] in April 1912. In his [illegible] he made a remarkable statement when he first came to him: witness thought he was going to die. In his view the medicine had curative properties. He was not anxious to [illegible].

In cross-examination by Mr. Colam, witness said that the [illegible] from which the patient was suffering produced [illegible] and great depression. He could not [illegible] one of a cure from tuberculous abscess. [illegible] or naturally or artificially opened the [illegible] slowly. The discharge from the [illegible] one under his treatment. The [illegible] described [illegible] the medicine [illegible] described [illegible] tubercle bacillus. This must also [illegible] That was what gave him [illegible].

Mr. Colam: Carbolic acid would kill a germ? Yes, but it is an irritant.

The mere fact that a substance kills a germ proves nothing?—I think it does.

A hundred different things would kill germs?—Yes.

Continuing, witness said that although a substance would kill a germ in the test tube, it did not follow that it would kill germs in the body. There were lots of things that would improve the appetite. Moreover, it would be a great point gained to impress the patient with the fact that you had got a specific. His appetite returning and the abscess discharging, he might, having hope given him, have recovered although the medicine had no curative effect. The man had not been under his care since September, 1911.

In re-examination witness said that, as far as he could recollect, the abscess began to discharge three months after the treatment commenced. It was his opinion that the patient could not have recovered without Mr. Stevens's medicine. Hope was one of the distinguishing characteristics of tuberculous patients. They had intervals of despair. This was not, in his view, a case of cure by suggestion. The discharge from the abscess ceased to be so purulent after the treatment.

Miss Marian Olley, living at Sangley Road, Catford, a typewriter, said that she had been cured of consumption after taking Mr. Stevens's remedy for eighteen months, and that in December, 1911, Dr. Mitchell Bruce gave a certificate to that effect. She had gone to see him as an eminent member of the profession at the suggestion of Mr. Stevens. The certificate stated that the condition of the patient was such that the lungs were healed, and that she might resume her place in society. There was no reason why it should recur in healthy surroundings.

The Rev. G. Hall said that when in the West Indies in July, 1905, he had sudden haemorrhage from the lungs. He was brought home, and he saw Dr. Maguire in Seymour Street. He treated witness with a series of injections of haemasaxin daily for six week. The treatment did him good, and after six months he was able to undertake light work. In August, 1906, he was able to do light duty at Bexhill, where he stayed for eighteen months. In the winter of 1907 the haemorrhage suddenly commenced again, and lasted nearly two months. He was in bed for five months. He had given himself up as hopeless, but then went to Bournemouth, and was treated by a doctor at Bexhill. He began to take Mr. Stevens's medicine in 1908, having heard of it through a clerk in Mr. Stevens's office. He used it regularly for a year. It had a gradual effect until in November, 1909, when he was certified by Dr. Maguire to be free from disease. He was then presented with the living he now held. He had never been away from work for a single day since that date.

In cross-examination, Mr. Hall said that he had suffered much from malaria in the West Indies. He finished with Dr. Maguire's treatment at the end of six weeks. He only took Mr. Stevens's remedy internally. It was then put up in the same form as that in which it was now supplied to him. He took it when he had a cough.

Mr. Hudson Evans, M.R.C.S., L.R.C.P., practising at Lewisham, said that he began using Mr. Stevens's remedy in January, 1912. In March he commenced treating a girl suffering from hip disease with the medicine. Her condition had greatly improved, but he could not say to what the improvement was due. There was no known drug which had any effect on disease of the hip. In another case a patient developed tuberculous glands at the side of the neck. She was operated on. Six months ago she developed a tuberculous swelling under the right knee. He was of opinion that in this case Mr. Stevens's extract did good. He had treated 25 pulmonary cases during the present year. The witness proceeded to give particulars of these cases. J. H. B., a baker, living under unhealthy conditions, developed phthisis in May. Witness sent him to Brighton, where he stayed for some time. Two days ago an examination failed to disclose any trace of the disease. F. E. C., aged 25, five years ago had phthisis. He was sent to Eversfield Hospital. He came back and joined the Territorials. In March, 1912, he again broke down and went back to hospital. His condition now varied. W. H. K. had tubercle of the left lung seven years ago, from which he recovered. It subsequently returned, but there was now a complete absence of tubercle bacilli. He had been treated with Mr. Stevens's extract. A. H., aged 26, had pleurisy in August, 1911. In October, 1911 she had a bad cold, after which she had patches of what appeared to be tuberculosis about the lung. Under the treatment her condition seemed to vary. He could not promise any cure early recovery. A. G. was a young man who had an attack of influenza. It subsequently appeared that he had tuberculosis. He was sent to Herne Bay. T. G., a small tradesman, who undoubtedly had tubercle, was taken ill in June. He was now at Herne Bay and had written to say he was getting on all right. Witness was a member of the British Medical Association, and it was no [illegible] for him to give evidence against them. He had never tried krameria in lung trouble. In 9 out of 25 cases treated since January, 1912, he found no trace of disease.

Cross-examined by Mr. Colam: Of the 9 cases in which there was now no trace of tubercle, 6 undoubtedly had tubercle to begin with. In some of his cases, as he had already said, there was a doubt as to whether there was tuberculosis. He could not like to say there was an absolute cure in any case until four or five years had elapsed. He always administered Mr. Stevens's medicine by the mouth. Although a tubercle bacillus [illegible] that did not destroy the disease. Some [illegible] consumption cases took a miraculous turn. He had no [illegible] found out anything which would cause the bacilli to [illegible] to the medicine. In nearly every case he had sent his patient [illegible].

to the country, but he never sent a patient away to the country until, by the treatment, he had arrested the disease.

Re-examined, witness said that all drugs had come into use as the result of experiment. Quinine and quassia had thus come into use. One ought not to dogmatize on 25 cases, but so far as he has gone he was encouraged to continue the treatment. He had tried guaiacol in 2 cases.

Mr. Williams having given evidence,

Mr. Archibald Stewart, chief clerk to Messrs. Dyer and Dyer, South African merchants, said that he was in charge of the import department. He had to send each year to Mr. Stevens two to four sacks, described as bags of roots. This started in 1908, and they had been coming fairly regularly ever since. They commenced to arrive in June, 1908, and the last parcel came in September, 1912. He could not say how much the bag held.

Dr. F. A. de Boissiere, practising in Camden Town, said he had treated two cases with Mr. Stevens's medicine, and found it effective.

In cross-examination, he said he had not found tubercle bacilli, and had not examined for them. In one case the effect of the medicine appeared to be that the patient was able to keep her food down.

Dr. Thomas Muirhead Martin said he was practising in the North-East of London. When he was in practice in the North of England he suffered from bronchial trouble. So bad was he that he sold his practice and came south. In June, 1911, he began using Stevens's remedy. The effect of the drug appeared to be that it stopped the cough and seemed to clear up the lung. It appeared to him to have some medicinal properties. He had not tried it on patients, but had tried it on his children. He was a member of the British Medical Association.

In cross-examination he said that while he had all the symptoms of tuberculosis, he had never examined his sputum.

Mr. Colam: Have you had tuberculosis or have you not?—Not quite.

Dr. Souttar, practising at Wimbledon, said that when he first read the analysis of Stevens's remedy he thought that Stevens was a fraud. A few months ago he had a case under his care which he thought was hopeless. He subsequently met Mr. Stevens and began to use his remedy, and had found it efficacious.

The hearing was adjourned.

Miss Elisia Bohm said that in 1899 she was suffering from her chest and pleurisy. In the spring of 1903 she was ill again, and in March, 1904, she went to see the plaintiff at Capetown. He gave her a bottle of herbs which she used. She told Mr. Stevens that she was suffering from —

Mr. Holman Gregory: I object to her telling us what she told Mr. Stevens. It is hearsay.

Mr. Justice Pickford: This is a question of bonâ fides. What she told Mr. Stevens is evidence to show that he believed he had effected a cure.

Continuing, witness said that Mr. Stevens charged her nothing for the remedy.

Cross-examined, witness said she went to South Africa as a last resort, and that she nearly died on the way out. She got gradually worse there.

Mr. Gregory: Were you very ill on board ship?—Yes, with my cough. The doctor on board gave me a remedy for my cough which did me no good.

Continuing, witness said she did not improve for a long time in South Africa and her voice went. She lived in the open the whole of the time. Mr. Stevens saw her in his office at Capetown. She did not hear the word "Sacco," but he was not selling it to her knowledge. The remedy she had was described as a herb and she took it in an infusion. It caused much expectoration, and after three weeks of taking the herb she was entirely different and she was able to sleep.

Re-examined, she said that she had never had pleurisy since.

Captain James Bailey, formerly of the Cape Mounted Police, said he saw a report of this case in the paper and communicated with the plaintiff's solicitor. He had heard of a root used by natives in South Africa for cases of affection of the chest and lung trouble. The root was *mu'kloko*, that would be the nearest phonetic spelling. He recognized the word in the reports of this case. He had never heard of Mr. Stevens before.

Cross-examined by Mr. Holman Gregory, witness said that this substance was used with other herbs. It was used for superficial wounds. From what he had seen, it had astringent properties. He had seen the plant. It was a tuber, something like a small Spanish onion when fresh. The natives dried it, mashed it between stones, and then macerated it in water. For external use they used it green. It had a powerful styptic, possibly an antiseptic, use.

In answer to Mr. Justice Pickford, witness said the natives used it constantly.

Re-examined, witness said he could not give the English meaning of the term. The dried powder produced was very like it.

Mr. Gregory: But that is a long root cut up into pieces?—That looks to me like the centre of an elongated tuber. I have usually seen it as a green root, about the size of a small carrot —as much and a half in diameter.

Mr. Charles Henry Stevens, the plaintiff, said he resided at 251, Worple Road, Wimbledon. He was born at Birmingham in 1880. In 1897 he lost a stone and a half in weight in six weeks, and he then consulted a doctor in Birmingham, who said it was lung trouble. He subsequently consulted a specialist, who said he was suffering from tuberculosis. He was advised to go to South Africa. He went straight to Bloemfontein, and shortly after his arrival he had some conversation with a Dutchman from Maseru, on the borders of Basutoland. This man told him of a native cure for consumption [illegible] an Englishman a few years before. Eventually he went to Maseru, and two days later the native who had the remedy came to see him. His name was Kagaitse. The medicine was awful-looking stuff; he had taken it out of the ground and crushed it between two stones. He told plaintiff to boil it and take the tea of it night and morning. The first week he thought it would kill him; it seemed to be too strong, and made him vomit for two hours every morning. After two months he was well except for slight expectoration. He continued it for more than two months. He had taken it ever since. The cough left him entirely after two or three months. He left Capetown early in January. Before leaving the district he obtained a supply of the stuff from the native. He was in Africa from October, 1897, to January, 1898. He visited a doctor in Birmingham on his return, who said that the trouble had quite cleared up, the only trace being a little dullness at the apex of the left lung. Although he lost weight during the first week he put on weight afterwards. He gave the remedy to many persons in England, and it seemed to have beneficial results in every case. He was accepted as a volunteer on the outbreak of the South African war. The same doctor in Birmingham examined him. He (the doctor) put his recovery down to the climate, and laughed at the remedy. When he first saw the native he referred to it as a melisen root—meaning, probably, medicine. He did not hear of umckaloabo until 1905, and then from a native who was collecting roots for him. After serving in the Capetown Police, he started a cycle business, and had a fire. He was uninsured. He then returned to Maseru and got some more of the root from the native who first attended him. He afterwards collected a stock of it, having found out many localities in which it grew, and made arrangements for supplies to be sent to him. He saw Dr. Anderson, medical officer of health at Capetown, and showed him fifty testimonials. Dr. Anderson said it did not interest him. Dr. Gregory, medical officer of health for Cape Colony, also refused to have anything to do with it. Having failed to interest the medical profession, he advertised it as "Sacco," and carried on the business of selling it, the results being, so far as he could ascertain, very satisfactory. Later on he turned the business into a limited company called Sacco, Limited. He did not attempt to get money shares. Even the directors were given their shares. The directors evidently wanted to help themselves very freely.

Mr. Justice Pickford: Do you mean they wanted to take too large a share of the profits?—Yes, and I left the company practically without compensation.

Continuing, witness said he then went to Johannesburg and started a company called Lungsava. It was there that he first started to mix chijitse with umckaloabo. The herb chijitse had great healing properties; applied to a cut finger it would stop bleeding. The compound he now sold still contained umckaloabo, but it was now prepared in a different way. He only used the kernels of the root and extracted the fibrous matter. When *Secret Remedies* was published he was doing a very large business. He had sent circulars to thousands of medical practitioners and had received thousands of letters from them, though often with requests not to publish their names. Counsel then referred to the article which had appeared in *Truth*, and then read a number of anonymous testimonials which the plaintiff had received from various parts of the country. Continuing, witness said that subsequent to this article *Truth* commenced putting his advertisements in that paper. Since 1906 he had received a number of letters from doctors. In his transactions with persons using his remedy he had used two forms of guarantee, but now the guarantee was not printed. It was contained in a letter, and he guaranteed that health would improve within three months to the satisfaction of the patient or his doctor, otherwise the money would be returned. About £60 out of £4,500 was returned in sums of £2 12s. 6d. A Mr. Langford took three months' treatment. Witness never saw him personally. He got "silica on the lung," and his complaint had nothing to do with tuberculosis. He was very satisfied at first, and paid for the first course of treatment. The witness naturally did not return the money. He eventually died, but witness did not know the cause of his death.

Mr. Tindal Atkinson: Do you use any krameria in your mixture?—No; I never knew of it until this case was commenced, and I never bought an ounce of it. Continuing, witness said the first attack made upon him was in the BRITISH MEDICAL JOURNAL on August 22nd, 1908, at pp. 506, 518. It was headed, "Stevens's Consumption Cures." That had no immediate effect on his business, except that many doctors who had been using his medicine stopped using it. But after the publication of *Secret Remedies* he soon noticed a reduction in his receipts. They dropped from £4,400 in the first year to £2,900 in the second year. He also got numerous postcards from persons calling him a quack and giving him other abuse. He would have been ashamed of himself if there had been any truth in the statements. On August 28th, 1908, he wrote a violent letter with reference to their article, saying he would have been only too willing to give them opportunities of testing his discovery. On October 30th, 1908, the General Secretary of the Association wrote to him to say that the Association proposed to take no action with regard to his letter. He had during the whole of his time tried to get the medical profession to accept his remedy. He even offered to the Brompton Hospital to be inoculated with the disease and then cure himself.

Cross-examined by Mr. Gregory: He knew fifteen years ago that cure for consumption depended largely on climate. He had treated thousands of persons for consumption. He went to South Africa for the first time when he was ill in October, 1897. He came home in January, 1898. He went to South Africa in February, 1902, to join the Cape Mounted Police. He was with that force until March, 1903, when he formed the New Hudson Agency, a cycle business in Capetown, which he ran until about May, 1904. At Capetown he started the Sacco business, and remained there until May, 1906, when he went to Johannesburg, where he sold Lungsava, and remained there for about fourteen months, until July, 1907. There he got supplies of herbs to bring over with him, and after two months he came to England, and had remained ever since.

Mr. Justice Pickford: When you left the Sacco business in Capetown, did the company continue to carry on business?—Only for a short time.

Continuing, witness said he was sent to South Africa as his last chance. He kept in the fresh air on the way out.

Mr. Gregory: Have you ever told this story, that you were taken to see this Kaffir by a Dutchman, before this case?—Yes; but it was not published. I told it to a representative of the *Transvaal Leader*.

Continuing, he said he had been warned by a cablegram that the article had appeared in *Truth*. He had never told his London representative of the history of the finding of the drug. He never told his friends that he had had tuberculosis, because they would always treat him like a leper. They would not believe he was cured. It was a mistake to say, as had been said in the article in *Truth*, that he was in the Cape Police at the time he made the discovery of the drug. The mistake was only a slight one. Mr. Whiteman knew he had been in the Cape Police, but did not know for how long. He did not tell the story about the finding of the drug in the Bramley action.

Mr. Gregory: Did you ever study under a doctor?—I studied with doctors, but have not studied under a doctor in the modern sense.

Did you say to *Truth*, "I first got the cure which I discovered by accident"?—Yes, and so I did. It was an accident that I met the native.

Did you say that this native was curing natives of consumption?—No. A cure of natives has never been mentioned.

Continuing, witness said he began using the "cure" in 1898. He did not then call it by any particular name; he did not name it until 1904, when he put "Sacco" on the bottle. He never gave the name of the root until he came to London. The native whom he saw in 1897 was 60 or 70 years of age. It was the same man that he saw in 1904. He corresponded with him between 1897 and 1904 as to getting more stuff. The native could read and write English, but witness had none of the native's letters with him. The native sent him roots from time to time by post.

Mr. Gregory: He must have been an intelligent native! Where did he live?—In a mud and stick hut. I paid him in South African bank notes.

Continuing, witness said that the plant varied in height. The [illegible] particular, but near the stem there were little [illegible] Leaves would sometimes spring up from [illegible] Some of the leaves spring from the stalk, some from [illegible] He could not recollect having seen it in blossom. The [illegible] according to the ground. It was either 8 in. long or [illegible] like a carrot. A young root was almost [illegible] The bark of the old roots was black.

Mr. Gregory: Through whom do you get the root?—Natives [illegible]

[illegible] you purchase it?—Must I say?

Mr. Justice Pickford: If you object to mention the name [illegible]

Mr. Gregory: I do not exactly [illegible]

We [illegible] of the person with whom you communicate [illegible] I am getting all I can [illegible]

Mr. Justice Pickford: Who writes to you to say that he is [illegible]

[illegible] The letter was written down and handed to the learned counsel.

Do you never write to any one to ask for more?—He knows I am always wanting it.

Mr. Gregory: Do you send him money for it?—Yes.

Have you any entries in your books with regard to it?—Yes, but the books only show part of the payment. I generally send the money by postal order, but do not keep the counterfoils. If the company sends money there is no entry in the books as to its being sent.

Continuing, he did not keep copies of the letters sent to the man in South Africa. It was a private matter.

Mr. Justice Pickford: We shall sometime have information as to what the company consists of.

[illegible] and he was not an original shareholder, but he now had one share. He accounted to the other shareholder, and there was an auditor who audited the books each year. When the company was formed he sold the business to it. He also sold them the recipe. He never let any one know it. He also sold them the remedy, but certain documents were sealed [illegible] that should anything happen to him [illegible] consisted of umckaloabo as it came from [illegible] to use the root just as it was, with no addition. He advertised Sacco freely in South Africa as an "absolute cure in all cases of consumption." The business flourished, and in a short time he was making a net profit of £3,000 a year.

Mr. Gregory: Why did you leave Capetown in such flourishing circumstances?—It is a very long story. Unfortunately there was litigation. A man commenced to blackmail me for £30, and that used up all my spare cash.

Continuing, when he started selling Sacco the business rapidly grew. The sales of Sacco did not begin to die away until the litigation in which witness was mixed up took place. That affected his personal reputation, and the business declined. It was not worth while staying at Capetown, so he came home. He put a document into the bank, describing to some extent what Sacco was; but the document would not have been complete without the assistance of the man who got the root for him. At that time there was more than one man collecting.

Mr. Gregory: What became of the recipe?—I do not know what became of it. The company continued in business and went into liquidation in July, 1906.

Continuing, witness said that the company had £1,200 to £1,300 worth of crude herb powder in stock. That was umckaloabo. He did not know what the action of the drug was. He had mentioned it in one of his circulars as a vegetable germicide. It was his belief then that it entered the blood and killed the bacilli, but he could not be quite sure. That it did cure consumption he had no doubt.

Mr. Justice Pickford: Did you leave instructions with the Sacco Company so that they could manufacture this substance?—Yes, they could have done so with the assistance of the man, but he refused to have anything to do with them.

Continuing, witness said he may have covenanted with them not to compete with the company, but he was absolved from that covenant by a resolution. He set up in Johannesburg as "The South African Institute of Medicine." That was for the cure of consumption and miner's phthisis. That was cured by umckaloabo and another plant, of which he did not know the name. He sold Lungsava, which contained umckaloabo and chijitse, and this plant which he did not know. There was one Lungsava for phthisis and one for silicosis. The reason he gave up selling it in Johannesburg was because he sold the business.

Mr. Gregory: Were you convicted of any offence there?—Yes, for doing that which specially belonged to the medical practitioner. I was fined £10 in the first place. On appeal the appeal was dismissed, but one judge was in my favour.

Was that the only time you were convicted?—No. I was convicted again later. Conviction did not prevent me trying to save people's lives.

How long after?—About six months. He was then fined £25 on each of two counts for advising miners to use Lungsava, but in his view the fines were heavy, because he had done good in two cases.

Mr. Justice Pickford: Why should the magistrate fine you more because you did good?—He was vindictive. I proved that I had done good.

Continuing, he said that before the conviction he had sold his business to D. Rose. Miners' lungs were full of dust. He could not suggest how the remedy worked; he knew it did work. Because a thing was a germicide it did not mean that it had no other effect. He did not give D. Rose the prescription of Lungsava, or tell him where he could obtain the root. He simply sold the business. He was to have the physic if he bought his ingredients from the witness. About that time he tried to promote a company to sell Lungsava in England. The company was never brought out. Everybody at that time in Johannesburg was hard up, and it was not a success. The prospectus was produced. He had heard of chijitse some two years before. It was a herb in common use among the Kaffirs. He had looked into the South African *Materia Medica*. He did not find it described in that book at all. He did not go to any botanist or other person to ascertain what the herb was. The name he got from a Kaffir who collected roots for him. He saw a native heal a cut with it in less time than it took to tell it. He tried it on himself.

Mr. Gregory: But you were healed at that time. What good did it do? It made my chest feel more comfortable. I say it is soothing to the throat and chest.

How does medicine administered internally affect the lungs? I do not know.

Had you found that umckaloabo was efficacious to stop bleeding from the lungs?—Yes, but with the other remedy added it was more efficacious.

Continuing, witness said he saw what was put in *Truth*. He was quite sure that if he had continued advertising in *Truth* the attacks would not have appeared. He thought he was justified in publishing extracts from articles in *Truth* when Mr. Labouchere did the same. Mr. Labouchere had published advertisements announcing it was an absolute cure, but he had no copies in court; a copy was subsequently produced. He arrived in England about the beginning of December, 1907; he had somewhere about £1,000. He started selling his remedy a few days after he arrived, and began advertising in the *News of the World* and other Sunday papers. He did not advertise in any daily papers at that time. When people wrote to him in his advertisements he replied to them. Sometimes he had duplicated forms of letters in which to reply to them. He got some times 10 or more answers in a week. The highest figure he paid in advertisements in the Sunday papers in any one year was £600 or £700.

Mr. Gregory: Had you any fixed price for the medicine?—In 1908, I had; usually £2 12s. 6d. for a three months' course.

Did it vary?—If the patient was too poor to pay, he paid nothing; sometimes half. Sometimes I charged more—as much as five or six times more—when the patient had more medicine, and I judged of the amount by the reports sent me by the patients.

Continuing, witness said he sold it to approximately 1,000 persons in the last year, seeing 4 or 5 in 100 personally. In reply to the advertisements he would get an answer in detail. In one of his advertisements he was described as having gone through "unexplored country" and "as having spent thousands of pounds."

Mr. Gregory: Is that true?—It was drawn by an advertising agent, and it is exaggerated. I did not read it carefully, but I suppose I must take responsibility for it.

You wrote: I only returned to England to prove my cure to the satisfaction of the British Government?—That was the principal reason. I hoped to convince the medical profession, and through them the British Government.

Mr. Justice Pickford: How did you hope to convince the Government?—Through the medical profession.

Mr. Gregory: Did you write to patients, "Should my treatment make you sick for the first few days, it is a sign that you are undoubtedly consumptive"?—Yes; I did not draw that up, but there is a great deal of truth in it. That circular went out for a very short time.

Continuing, witness said that if a consumptive had expectoration amounting to 2 oz. a day, the medicine would first increase it and then it would diminish. He would not undertake to cure a man whose system had been so weakened by the disease that he was dying. He had, however, cured a man whose lung was the size of two five-shilling pieces.

Mr. Gregory: What must be the condition of a man's lungs in order to enable you to cure him?—It depends on many things besides the lungs.

Mr. Gregory: Show me any one advertisement in a newspaper where you qualify the statement that you can give an absolute cure?—I will look for them. The whole thing seems to depend on the meaning of the word "cure."

What do you mean by the "cure"?—I attach the same meaning as the medical men give to the antitoxin in diphtheria. If given in time it is a cure.

Mr. Justice Pickford: Do you think that is the meaning the ordinary reader would attach to it?—Yes; the ordinary reader would not apply it to a case which had only two or three days to live.

Mr. Gregory was proceeding to read articles in *Truth*.

Mr. Tindal Atkinson: I do not know how these are relevant. There is an action pending against *Truth*.

Mr. Gregory: I merely wanted to refer to the articles in *Truth* where a protest was made against publication of parts of the articles which appeared in that journal.

Continuing, witness said he did not consider that it was fair to set out only extracts. He published the whole article in South Africa. His agent had improperly published abstracts here.

A paragraph about the witness appeared from year to year in *Truth's* cautionary list. One reason why he left Capetown was that he was an undischarged bankrupt. That was not the sole reason. He was made bankrupt for about £1,500, but he had paid everything except £500, which he did not owe and never would pay. He was prosecuted for perjury at Capetown, but was acquitted. As a result he had a number of actions brought against him, which were expensive. There was not a debt which he admitted owing when he left South Africa. In the early part of 1908 the composition of his cure was exactly the same as it was to-day. The injection which he used consisted of umckaloabo dissolved in water. He had also been experimenting with another solution which he only used on one patient very far advanced.

Have you been obtaining tuberculin, either directly or indirectly?—No; I would not give it to a dog of mine.

The court adjourned at this point.

On the resumption of the case on Monday, October 28th, the cross-examination of the plaintiff was continued.

Witness said he had treated a man named Langford, a South African miner, who had been told that the fee for a three months' course was £7. He had offered to pay £14 if cured, and for the carriage of medicine in case of failure. As to whether the price was high, witness said opinions differed. People who had been cured did not object. Langford suffered from miner's phthisis.

Mr. Gregory: I suggest that this disease does not consist merely of the hardening of the lung through inhaling dust?—Nothing of the sort. You know nothing about it. There is no inflammation. The lung becomes quite hard.

Continuing, witness said that when Langford complained of his slow progress, he wrote, "Rome was not built in a day." The man eventually died. When a friend of the widow wrote suggesting that as she was in poor circumstances the witness might return the money paid for a treatment that did not do its work, the witness replied that he considered it had done its work, as the miner had improved for a time. He received £10 but did not press for £6 10s. which was still owing. He had not guaranteed a cure. There were cases of miner's phthisis which he could not cure as they were too far gone. Outdoor treatment was not a cure for consumption where the disease had a fair hold. He had heard of mild cases being so cured. In another case where the patient had died he was asked to return the £2, not by the man's wife but by a friend of the patient. He was subsequently sued in the Southampton County Court for this sum.

Did the judge say this to you: "No, you may not appeal. I will now say what I think. I think that this is an intentional and well-considered fraud"?—Yes. He believed the other side. On an application for a new trial, the counsel for the applicant admitted that the defendant was entitled to it.

Mr. Justice Pickford: Is that so?

Mr. Gregory then read a report of the case in a paper, in which the learned counsel who appeared for the plaintiff in the county court admitted that technically a new trial might be granted.

Mr. Justice Pickford: That was not the sense in which I understood the witness to make the statement.

Continuing, witness said that on June 15th, 1907, he had a visit from a Mr. Archer, who came with his mother. He said he had been at the Brompton Hospital.

Mr. Gregory: Did you say the Brompton Hospital is no good?—I never said such a thing. I said it was a hopeless case, which I could not cure.

On June 26th did they pay you £2 12s. 6d.?—Yes, the lady paid for three months' treatment for her son.

On September 16th did he write you saying that he was no better, and asking for the money?—Yes, and I wrote telling him that I could not prevent his getting fresh cold.

It appeared from the letter, which Mr. Gregory continued to read, that the witness wrote: "I do not consider yours is a hopeless case."

Mr. Justice Pickford: If you told them it was hopeless in June, how came you to tell them that it was not hopeless in September?—I told the mother it was hopeless in June, but I told him the contrary in September in order to buoy him up.

Continuing, witness admitted that in December, after the boy's death, the mother wrote to say that the boy had not improved under his treatment. He replied to that, that he only intended to return the money if some benefit was not received. The remedy did not fail in this case, the boy's strength failed.

Mr. Justice Pickford: How do you distinguish between strength failing and the cure failing?—In this case he overdid it; he did too much. He walked too much.

Mr. Gregory: According to you, the young man was writing an untruth when he said, "you promised to return the money," and, "I followed your treatment"?—It is a lie. I think it is his mother's composition.

Continuing, witness said that in November, 1911, he sent medicine to, and saw, two clerks in the service of the Great Northern Railway Company, who were suffering from tuberculosis. He believed he gave them physic, and that he did not sell it to them. He did not ask such men to pay; they were in the last stages of the disease. They both died of consumption. A Mr. Smith also came to him as a personal friend. He was the manager's assistant. He said that owing to the two young men being ill, he was nervous about himself. Witness examined him, but did not tell him that his lung was diseased. He merely said it was abnormal.

Mr. Gregory: Did you not tell him that his lung was diseased and had been for three years?—No.

Did you give him a hypodermic injection?—Yes, because he was a friend and there was a danger of his getting consumption. I also asked him to let me have his sputum for examination.

Continuing, witness said that this man subsequently wrote him that he had consulted three doctors who told him that there was nothing wrong with him. Returning to the books, witness said he did not think there was any entry in his books to show that money was sent to South Africa. In 1908-9, £457 17s. 6d. was spent on drugs and herbs. The total sales were £4,415, and there was stock in hand to the value of about £300. The words which he now complained of were first published on August 22nd, 1908, and he commenced the present action in June, 1911. He sent the medicine to his own analyst in December, 1911. The analysis made in 1908 was false as it could be. The reason why he did not proceed before was that he hated litigation, and did not expect that *Secret Remedies* would be so widely circulated.

Mr. Gregory: Why did you not send the medicine to the analyst before?—I do not want to answer that, as I might say some unpleasant things about the British Medical Journal. I had it analysed by Mr. Lord.

Continuing, witness said he was not sure whether he read an article in the British Medical Journal in September, 1909. He knew Dr. Porter, the medical officer of health of Johannesburg, and he got into hot water there through using witness's remedies. He also knew a Dr. Turner in South Africa. He also knew the senior Government analyst at Capetown.

Mr. Gregory: Would all these men be likely to know of the use of this drug by native doctors?—No, because they ignore the native doctors and know nothing about them.

Continuing, he said that when he was in Capetown he was carrying on a cycle business. He knew a tailor, called Myers, who was selling a remedy for consumption on his behalf. It was untrue to say that Myers had been selling the cure for years. He paid Mr. Myers £50 a month, and on one occasion when he paid Myers £50 he asked for £100. Witness then discovered deficiencies in his account, and decided to have nothing more to do with him. He paid Myers £50 a month because he had befriended him, and £30 a month for rent. The tailor was selling the stuff under the name of Stevens and Co. The accounts were not kept in his name, but he could draw cheques under a power of attorney. He never dreamt that Mr. Myers would rob him.

In re-examination, witnessed produced a bag of the root which he had obtained from South Africa. The bag was opened, and was said to contain chijitse and umckaloabo. He had been receiving it through Messrs. Dyer and Dyer since 1908. Smith, when he came to see him, said he had had a cough and

expectoration for six years. As to Archer he did not think he could cure him but he might ameliorate his condition.

Mr. Tindal Atkinson: Do you guarantee that a patient will not catch cold?—No.

Continuing, witness said that Bramley's case was not brought on the guarantee. Miner's phthisis was quite different from ordinary consumption. It was looked upon as incurable. His medicine was quite harmless; it would be impossible for it to do any one any harm. He was not anxious to enable other people to discover from where he got his materials. He did not pretend to give a man a fresh lung. As to the sickness after taking the medicine that was the necessary result. After two doses a lot of mucus would disappear from the stomach.

Mr. Justice Pickford: I do not understand your answer, "I do not pretend to give a man a fresh lung."—I mean I can cure a man who is in the beginning of the disease and might be given up by other persons.

Mr. Justice Pickford read from an advertisement issued by the plaintiff which stated that when patients had been given up by the doctors and disease was "slowly devouring all but your soul and bones" they should "send a postcard to Stevens." Does he now say that he only cures the disease in its incipient stages?

Mr. Tindal Atkinson: I don't suggest that he cures cases which are hopeless.

Mr. Neuter, F.I.C., Analyst to the Metropolitan Asylums Board, said that he was asked to test Stevens's consumption cure. His analyst made up two mixtures, one according to Stevens's recipe and the other according to the recipe on p. 32 of *Secret Remedies*. He thought the two were quite different.

Mr. Hodgson, an ironmonger from Clacton-on-Sea, having been called to prove that he was cured by the plaintiff, and Mr. James Muirhead, J.P., having been called,

Mr. Tindal Atkinson said that that concluded the plaintiff's case.

Mr. Gregory called Mr. E. F. Harrison, B.Sc., analyst and consulting chemist, of Chancery Lane, for the defence. Witness said that he did most of the analyses for *Secret Remedies*. He ordered a bottle of Stevens's medicine, and received one with a number of documents. Upon analysis he found that it contained no medicinal activity except tannin and glycerine. His experiments showed that the medicine bore a strong resemblance to krameria.

Mr. E. F. Harrison, continuing his evidence, said that he made his analysis of Mr. Stevens's medicine in June, 1908, and that it occupied him a week. He made another analysis in April of this year, when he found that it contained, as compared with the first analysis, alcohol 14.3 instead of 22 per cent.; glycerine 7.1 parts in 100 instead of 1.8 parts. The tannin and ash were nearly the same as before, and the extractive was somewhat less. The general character of the medicine was about the same.

Cross-examined by Mr. Tindal Atkinson: He was paid for the analyses. He did not know whether Mr. Stevens supplied the medicine to him as a patient. He could not say that if the medicine contained tannin it was not prepared from the root. He did not know where the root came from or what it cost to get it, and his estimate in *Secret Remedies* that the medicine cost 1½d. was based upon its containing krameria.

Mr. Tindal Atkinson: Yet you stand in that box and say you [illegible] that it is krameria?—No, I don't.

Would not any one reading the book think you had satisfied yourself that this was krameria?—No, certainly not.

Continuing, witness refused to agree that if there were curative properties in this remedy the whole charge of swindling had gone. Counsel then read extracts from *Secret Remedies*, of which the witness admitted he was the author.

Mr. Atkinson: Did you wish to charge Mr. Stevens with being a swindler?—I wished to convey the impression that a prima facie case had [illegible]

[illegible] No.

[illegible] having heard the medical evidence in this case, would [illegible] still [illegible] swindler?—It is a somewhat nice point. [illegible] appears to be very carefully worded before I can [illegible] it. I am waiting to hear the evidence criticized by medical men.

Witness said he had read the preface, and agreed that the analyses were carefully made. He did not remember having [illegible] medicine or compound mentioned in the work. He did not [illegible] experiments since the action was brought. It would now be impossible to get the medicine which he had in 1908.

Mr. Tindal Atkinson: Would you like to taste a decoction of krameria and Stevens's preparation?—I am willing to do so.

Mr. Gregory: I object unless the medicines come from an [illegible]

Mr. Justice Pickford: If the medicine comes from an independent [illegible] may be fair, but Mr. Gregory is entitled [illegible] mixture which has not been prepared by an impartial person.

[illegible] tasted the two decoctions. The flavours, he [illegible] There was a slight difference [illegible] of alcohol in one and glycerine [illegible] of a letter read which Mr. Stevens [illegible] Medical Association, but had made [illegible]

[illegible] Mr. Gregory, witness said that the [illegible] the plaintiff on the above-named letter meant nothing to any medical man. The herbs muckaloabo and chijitwe were unknown to the profession. He had no knowledge even now, except that he gathered from the evidence that umckaloabo belonged to the natural order Polygonaceae. Colour tests were very difficult. He could find no alkaloid in the medicine he analysed. Not only that, he would definitely prove there was none there. He tested for a number of other active substances. Krameria was used for throat trouble at times; but he did not know this from making tests. The tannin in the krameria decoction was almost identical with the tannin in Mr. Stevens's mixture.

Mr. Charles Edward Sage, consulting and analytical chemist, F.I.C., etc., said that at one time he was pharmacist for the Mount Vernon Hospital, and had had much experience of analysing drugs. On April 24th, 1912, he was handed a bottle of Stevens's mixture. The mixture contained by weight, alcohol, 11.23; glycerine, 6.84; tannin, 1.04; organic colour substance, 2.76; mineral matter, 0.2; water, 77.93. The solids dissolved when the mixture was warmer. The solid substance consisted of one of the decomposition products of tannin. He found no alkaloids at all. He knew of five kinds of krameria, but was only acquainted with three. As to colour reactions, his opinion was that they were so modified by the presence of other substances that it was difficult to draw any conclusion from them. On testing a decoction of krameria, he found that it was similar to, but not precisely the same in its reaction as, Stevens's mixture. He was not satisfied that it did not contain krameria.

Cross-examined, witness said there was something in addition to tannin which he could not identify. It was a red-coloured substance which he could not follow up. Tannin occurred in many plants. He would not discard the colour tests altogether. In making tests the presence of glycerine would prevent precipitation. Treating Stevens's mixture and tincture of krameria with NaOH produced the same result so far as colour was concerned. When treated with HCl the colour was practically the same.

In re-examination witness said he was trying to identify something besides krameria, but he could find no other active medicinal ingredient.

Mr. Norman Reginald Williamson, M.B., B.Ch., who was in charge of the out-patients at the Royal Infirmary at Rudderscfield, said that in 1908 he filled up a form for Stevens's medicine and obtained six bottles. His colleagues at the hospital were not very favourable to Mr. Stevens and they confiscated the medicine, so he obtained a fresh supply. He tried the medicine, hoping for the best. It never succeeded. Two patients died; he would not say that was the cause. He would not advertise Mr. Stevens, so he washed the labels off the bottle. On October 29th, 1908, he posted a letter to Mr. Stevens, stating that the medicine had been of no use, and asking him not to send any more pamphlets. He was attending as a witness merely because he saw the case in the paper. When the second lot of physic came he tested it, and found that a mixture made of syrup, kino, and krameria was very similar to that of Mr. Stevens's. At that time he knew nothing about *Secret Remedies*; it had not been published, and he had not seen the BRITISH MEDICAL JOURNAL, and was not a member of the Association.

Cross-examined by Mr. Tindal Atkinson, he said the first consignment was half a dozen bottles in a box. His colleagues said that it was derogatory to his position to communicate with Mr. Stevens. The house-surgeon knew nothing about the composition of the stuff. There were hundreds of things which had tannin in them. He tested it side by side with krameria. He tested it before he gave it to his patients. He thought krameria was harmful; but the quantity was so small that it would do no harm. He went on giving it for three weeks to one patient. In one case it showed some signs, but the patient said it was doing no good. He was testing it against his own medicine.

In re-examination he said that he tasted Stevens's medicine before he gave it to his patients. He had no interest in the case.

Mr. Wm. Smith, a clerk in the employ of the Great Northern Railway Company, examined by Mr. Colam, said he had paid a visit to Mr. Stevens to inquire about two fellow clerks who had been treated. Upon his telling Stevens of his symptoms, Stevens gave him the impression that he was suffering from consumption. He subsequently gave him an injection and told him not to worry. The witness, however, was nervous about himself and went to see three doctors, who reassured him.

Dr. Howard Distin gave evidence to the effect that he had examined Mr. Smith and came to the conclusion that he was quite healthy. There was nothing abnormal about his lungs.

Mrs. Sarah Archer, examined by Mr. Gregory, said that she went to see Mr. Stevens with her son on June 26th, 1908. The boy told Mr. Stevens he had consumption brought on through pneumonia, and that he had been to the Brompton Hospital. Mr. Stevens said: "I can cure him." Witness said: "Can you cure him; he has been to Brompton Hospital?" Mr. Stevens said that Brompton was no good, and that his terms were £2 1s. 6d. for a three months' course. He also said that if they put £25 in a bag he would not take it out until two medical men certified a cure. She paid 5s. for a first lot of physic to study the progress of the disease; later on they paid £2 12s. 6d. The son took the medicine according to instructions, but he got worse, and sometimes became prostrate. She did not know that he was suffering from an affection of both lungs.

She did not know that her son had written to Mr. Stevens. He did not improve when he took Mr. Stevens's medicine. He was able to walk before he took it.

Mr. Atkinson: Did he catch a fresh cold? That was what Mr. Stevens said when I told him that the treatment was doing him no good.

Dr. Theodore Dyke Acland, Physician to St. Thomas's Hospital and Consulting Physician to the Brompton Hospital, said the whole of his medical life had been spent in the study of tuberculosis and diseases of the chest. Tuberculosis and miner's phthisis had both been mentioned. The origin of tuberculosis proper was the tubercle bacillus. The disease could not originate *de novo*. It was a specific form of inflammation which took the form of small nodular masses round the blood vessels. That was the form it took in children. If the poison was taken by inhalation into the lungs, the result was tuberculous bronchopneumonia. Miner's phthisis was a chronic disease of the lung caused by the inhalation of solid particles of dust. If the dust was flinty, the disease was called silicosis. In the case of stonemasons, potters, and grinders the same thing went on, leading to the formation of great masses of fibrous tissue. The irritation caused by this dust made the lung more susceptible to ordinary phthisis, the subject being likely to get that disease superimposed. When a man had consumption he was formerly thought to have one foot in the grave. A man might be tuberculous without knowing it. A large proportion of the population had had it in the lungs. If the disease was unarrested, cavitation took place. Minute ulcers were formed owing to the blood supply being cut off. The whole lobe of a lung being scooped out might lead to the healing of the patient. The cure of tuberculous places might take place: (*a*) By absorption; (*b*) by becoming calcareous; (*c*) by becoming fibrous; (*d*) by expectoration. As far as was known, there was no way of curing this disease. Every kind of antiseptic had been tried, and failed because the infected place was *de facto* cut off from the circulation. The tubercle bacillus was entrenched behind its inflammation, and nothing put into the blood could reach it. The method generally tried was that of increasing the power of resistance. Since Dr. Koch's great discoveries of 1883 and 1890, another method was that of giving tuberculin injections. The object of that was to make the body work out its own salvation. He never said he cured patients, but he had put them in such a position that they recovered. Applying the tuberculin and serum treatments in time, many patients recovered. Much depended upon the nature of the complaint. It did not follow that because a man had a cavity in his lung he was incurable. It was very easy, however, to say by looking at a patient's temperature chart whether he was incurable, and there were, alas! many such in the country. He had been through all the evidence and he found no proof of any cure by Mr. Stevens's mixture. One doctor had said that as a result of taking the medicine in one case the sputum had diminished, but on the evidence there was no safe deduction to be drawn. In another case Dr. Grün had said: "The boy had no temperature but the disease was very active." That was an absolute contradiction in terms. It was impossible. Unless he had fever he could not have active disease. The same doctor had said (with reference to another case), "The disease was said to be more or less latent but was very acute." That was like saying a cold bath was very hot. In another case the patient had been told that "The fire was out," "that the disease was dead and he must keep it dead," and "that his lung was like a dried-up piece of leather." That did not convey to him that the patient was suffering from tuberculous trouble. As to the fourth case mentioned by Dr. Grün, the patient died. It was said that he died of pneumonia, but it was quite evident that he died of some acute inflammation of his lung.

Mr. Gregory: Even if he did die from pneumonia, what deduction do you draw from that?—That the medicine was of no effect.

Continuing, witness said that the test adopted by Dr. Grün to prove the absence of tubercle bacilli was absolutely useless. It would prove that bacilli were present, but was not a safe test that they were absent. That was his actual experience. With regard to another case in which the patient had his chest operated, that was a treatment for bronchitis. The case in which a man, after coming out of the sanatorium, had coughed up a large amount of sputum was a perfectly ordinary case. The cavity was cleared out. He knew two men who lived for twenty-nine years after such an occurrence. The medicine had nothing to do with it. As to the doctor at St. Leonards, there was no evidence in his (witness's) opinion that the drug had cured any one of these three people. With regard to Charles Day, the clerk in the Great Northern office, there was no evidence that the physic cured him. To give a man who had an internal abscess a medicine of this character was gambling with his life. The man owed his life to the fact that the abscess burst externally instead of internally. He had known cases of that kind where an abscess had broken internally and the patient had recovered without the use of any drugs. He won the toss.

Mr. Justice Pickford: Who? Mr. Stevens?—No, my lord, the patient. He would probably have died if it had burst internally.

Questioned with regard to a witness who had said that she was discharged from the Brompton Hospital as incurable, witness said it was probable that when in the hospital she had injections of tuberculin, and had febrile reactions. In the result she probably got discontented and left. Patients were often unwell after an injection. It would ultimately have had a good effect upon her. There was nothing unusual in her case. She was all right after two years.

Mr. Justice Pickford: It was a genuine case of tuberculosis? Was she cured by tuberculin, Mr. Stevens's medicine, or by nature?—By nature, my lord.

Continuing, witness said there was nothing in Mr. Stevens's medicine which was a germicide. Even assuming that the use of the medicine assisted the cough, that was no evidence that it was a germicide. A mixture containing a vegetable product containing tannin with glycerine would assist a cough. With regard to the clergyman who had been called, there was no satisfactory evidence that he had recovered. Witness had not examined him, but he did not look as if he had recovered. As to another patient who was alleged to have recovered, many cases got well without drugs. One patient had said that one dose of the medicine had stopped blood spitting. That was impossible, even if the medicine was a powerful germicide.

WORKMEN'S COMPENSATION.

Typhoid Fever an Accident.

In the case Cartlidge *v.* Grant and Sons (Tunstall, September 11th), a bricklayer sought compensation in respect of typhoid fever alleged to have been contracted while working at a cesspool. In giving judgement, His Honour said that the question arose, Was this a disease which might be called and properly described as an accident within the meaning of the Act? In this case the operation of cleaning the cesspool took place on one day in October, 1911, and whatever the day was, it was a particular operation which took place on one day and one day only. On that particular occasion the man had to lay the footings of a new wall, which extended for some considerable distance. In the course of that work he came upon an old disused cesspool. The cesspool was cleaned out or partly cleaned out. This man's primary duty was to lay a wall across the cesspool. The whole operation only took two or three hours, with an interval for dinner. He accepted the applicant's statement that the cesspool was very foul, and that the stench was most objectionable. He said to his employer that it was "hot stuff," and his employer said it was, and that he must get on with it as quickly as he could. Although the cesspool was said to be cleaned out, the evidence was that it was not entirely cleansed, and that there were parts of the objectionable matter adhering to the sides and bottom of the cesspool and to some of the old bricks. In building up the new footing the man had to make use of the old bricks to some extent, and he could not keep his hands entirely free from the objectionable matter. He took his pipe out of his waistcoat pocket with the hand with which he laid the bricks, and put it in his mouth and tried to smoke, but found he could not do so, as he felt too sick. He put two fingers down his throat, the idea being to make himself vomit. He went on with the operation for two and a half hours, getting further and further away from the place. He was ill the next day, and from that time forward for the next week or so. A doctor was called in, and within the ordinary period of incubation in that disease it was found that the man was suffering from typhoid fever, and he was sent to the fever hospital. On those facts he found that during the period which the man worked at the cesspool he did, in fact, contract typhoid germs. It was said by medical men the germs might be carried into the system, and they were generally carried either by food or the fingers, and in this case his opinion was that it was carried into his system by the fingers, and resulted in fever. It was suggested that it might have been carried in by food. Applicant was a healthy man, and his family with whom he lived were healthy. He had the same food as his family, and no one else suffered from typhoid fever. On these facts he was driven to the conclusion that typhoid was contracted during the operation on that day. Then came the question: Was it incurred by accident? Was there sufficient definiteness as to time, place, and circumstances? The circumstances were clear and the operation was clear. As to the day, he thought that, too, was clear. He was bound to say that in the present case there was some doubt, but he thought it was on the right side of the line. It might be that if the case was taken higher the Court of Appeal would say that he was wrong. He awarded compensation at the rate of 17s. 2d. per week for the period between October 28th, 1911, and February 25th, 1912.

THE number of persons who graduated in medicine in Italy in 1910 was 643. The number of students registered in all the universities of the kingdom in the academic year 1910–11 was 4,326.

THE number of male wage earners engaged in agricultural pursuits in Great Britain is estimated to be about 800,000; their average weekly wage is estimated to be a little over 18s. The number of women, boys, and girls so employed is said to be 550,000, and their average weekly earnings would appear to be a little under 10s., but the amount is probably very unequally distributed throughout the year.

MESSRS. F. H. ANGUS AND CO., of 83, Wigmore Street, have published a new catalogue descriptive of the hiring and second-hand scientific instrument department established by the firm a year or two ago for the benefit of those whose work has outgrown their apparatus, or who wish to try some particular experiment without involving themselves in any large outlay.

Public Health AND POOR LAW MEDICAL SERVICES.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Dublin.—The report of the medical officer of health of Dublin for 1911, just published, contains some features that are satisfactory. There was only a fractional decrease in the birth-rate, and the death-rate was more than 1 per cent. below the average for the last ten years. But the chief impression after reading the report is one of horror at the terrible conditions under which the very poor in Dublin still continue to live. There are 21,133 single-room tenements in the city. Of these more than 2,000 are occupied each by five persons, nearly 1,500 by six persons, 854 by seven persons, 431 by eight persons, and 146 by nine persons. The history of the tenement system in Dublin is traced in the report, showing how, owing to the gradual exodus of the rich people from Dublin to the surrounding country, luxurious houses declined into unsightly areas of disease and squalor; this is specially true of the north side of the city, where large numbers of big houses are filled from roof to basement with the families of the very poor. The inspection of these tenement houses occupies the attention of forty sanitary officers, each of whom is responsible for about 1,600 rooms. This supervision is quite inadequate, and the sanitary accommodation is a blot on the tenement house system in Dublin. Side by side with the overcrowded tenement houses are 519 waste spaces, on which 1,294 houses once stood, and there were more ruinous houses and waste spaces in 1911 than in any previous year. No doubt a great deal has been done in recent years to improve this evil, but this report will convince anybody that the work has only been begun, and that it is in crying need of early completion. As showing the large amount of sanitary work that is being done in Dublin at present, the following details may be quoted from the last fortnightly returns of the medical officer of health. During the two weeks ending October 12th, 1912, 83 samples of food were collected for analysis, 1,655 insanitary defects discovered, 1,243 defects remedied, 583 notices to abate nuisances served, 74 sanitary summonses heard, 22 magistrates' orders for abatement of nuisances made. The following were inspected: 3,637 houses, 9,456 rooms, 58 common lodging-houses, 43 offensive trade premises, 140 workshops, 271 dairy yards, 697 milkshops, and 133 slaughterhouses. From this list of work done in a fortnight it would appear that the 40 sanitary officers are kept busy.

Walsall County Borough.—The estimated population of Walsall at the middle of 1911 was 92,273. The birth-rate during the year was 28 per 1,000, and the death-rate from all causes 15.8 per 1,000. The rate of infant mortality was 152 per 1,000 births. Of the 424 deaths occurring among children under twelve months old, no fewer than 113 were due to diarrhœa and enteritis. Several pages of the report are devoted to a consideration of infantile deaths. A large proportion of the children who died from diarrhœa were bottle-fed, and this, writes the medical officer of health, Dr. Harry Shore, could hardly surprise any one who had opportunity of observing the plague of flies which swarmed everywhere and over everything in the more crowded streets and courts of the town. On another page he states that the more frequent removal of domestic and other refuse from the vicinity of houses is most requisite. It is surprising to find that in a town of the size of Walsall refuse is still disposed of by depositing it on tips, and that no destructor has been installed. In spite of the recommendation of Dr. Shore as to more frequent removal, the Streets Committee of the Corporation decided to adhere to the practice of emptying ashpits only on receiving complaint from the tenant or owner of the dwelling to which the ashpit adjoined. As a fact, the inhabitants have the remedy in their own hands, for the Corporation is liable to a daily penalty for failing to empty an ashpit at the expiration of seven days from notice having been given by the occupier of the house in question. The Corporation would be well advised to give effect to the advice of its medical officer of health in this matter, and also in that relating to the establishment of a public abattoir. It must be next to impossible with the limited number of inspectors (four) to inspect satisfactorily the forty-three private slaughterhouses in the borough. The only isolation hospital is one devoted entirely to the isolation of typhoid fever. Cases of scarlet fever, of which in 1911 there were 229, with three deaths, are all treated in the homes of the patients. Among about 1,100 houses inspected during the year under the Housing Regulations, over 600 had defects requiring to be remedied, and 76 were represented by the medical officer of health as unfit for human habitation. There is evidently plenty of work ready to the hands of the sanitary authority if it would only bestir itself.

City of Westminster.—The population of the City of Westminster at the 1911 census was 160,261, compared with 185,011 in 1901. The birth-rate in 1911 was 14.7 per 1,000 and the death-rate from all causes 12.5 per 1,000. The medical officer of health, Dr. F. J. Allan, points with satisfaction to the progressive improvement in the death-rate since the formation of the city. The average death-rate in the previous ten years was 18 per 1,000, and in the last ten it was only 13.6 per 1,000. Infant deaths, which had been for many years as high as 164 per 1,000 births, have been during the past ten years to 115 per 1,000. There was a low death-rate from diarrhœal diseases, a fact ascribed by Dr. Allan to the frequent inspection of tenement houses, resulting in a higher standard of cleanliness and the removal of insanitary conditions, the instruction given to parents by the health visitors, and the extension of the system of the daily removal of house refuse and the general cleanliness of the streets. Ophthalmia neonatorum has been compulsorily notifiable since March 13th, 1911. Notifications of 16 cases were received during the year, and 7 others were discovered by the health visitor in the course of her work or intimated by the inspectors of midwives. In each instance the health visitor visited the house in question daily or less frequently, as the circumstances demanded, and took steps to see that proper medical and nursing attention was secured for the child. The means adopted in Westminster for the prevention of consumption include the visiting of notified cases at their homes by the phthisis visitor or by voluntary health visitors, who give instructions as to measures of personal hygiene and precautions against infection, etc.; examination of suspected and "contact" cases in the families of patients attending certain special and general hospitals; bacteriological examination of sputum; educational training by a short stay at a sanatorium at the cost of the city council; prolonged sanatorium treatment at the cost of charitable and other organizations; convalescent homes, boarding-out treatment, and the provision of additional food for delicate children in consumptive families by charitable bodies; provision of sputum flasks and disinfectants, beds and bedding to enable patients to sleep alone or in outdoor shelters; disinfection of rooms, bedding, clothing, etc., after death or change of address; and the removal of insanitary conditions of dwellings and workplaces.

NUMBER OF VACCINATION MARKS.

JACOBUS.—The difficulty as to the question of the number of vaccination marks has been commented upon frequently. Where a parent consents to a child being vaccinated, but objects to four scarifications being made, a clear explanation of the disirability of affording the greatest possible protection will often overcome the objection. In cases where the parent insists upon having only two or three insertions, the area of the scarifications should be made larger than if four were obtained. Public vaccinators are required by the regulations under which their contracts are made to aim at securing four vesicles. In exceptional cases, where fewer than four insertions have been made, the public vaccinator is required to enter the fact in his register, and he may be called upon to give an explanation to the medical inspector of the Local Government Board. If unsatisfactory or frequently recurring the grant available for that public vaccinator might be cancelled. A public vaccinator would be most indiscreet who offered a bonus to the parents of children who showed on inspection four good vesicles. The case would be different if some such course was adopted by a Government in sympathy with vaccination. In some countries something of this kind is done. In Spain, for example, a lottery ticket is given to the parent of each child vaccinated. At present the tendency of recent legislation has been to discourage vaccination in this country.

HOURS OF ATTENDANCE AT SURGERY.

HERNIA.—A district medical officer, who is non-resident, but has a surgery within his district, asks if the guardians can fix the hours he is to spend at the said surgery.

**** The guardians have no power under the Poor Law Orders to fix such time. It would be otherwise if the medical officer on his appointment had agreed to spend a certain time each day at this surgery. Under the Metropolitan Dispensaries Order of April 22nd, 1871, power was given to fix a time where dispensaries were provided by the guardians, but Article 10 of that Order contains the following: "And we do hereby order, as regards every such officer (district medical officer) *when a dispensary shall have been established for his district*, that it shall be his duty," etc. This clearly implies that where the guardians do not provide dispensaries the provisions of this order are not binding on the district medical officer.

Universities and Colleges.

CONJOINT BOARD IN ENGLAND.

THE following candidates have been approved at the examination indicated:

FIRST COLLEGE (*Part IV, Practical Pharmacy*).—G. Arnfield, O. Bailey, A. R. Bourgault-Ducoudray, E. R. Chambers, W. H. W. Cheyne, F. Collar, H. E. Cresswell, R. S. Fawssett, A. P. Fox, M. R. V. Ford, J. L. A. Grout, M. S. Hamilton, F. C. Harrison, J. A. Hart, W. O. Holst, E. L. Hopkins, T. H. W. Idris, J. W. Kemp, G. Lynden Bell, C. V. N. Lyne, W. Marriott, R. Moses, H. F. Mullan, A. E. Panter, J. A. Perera, A. C. Pickett, L. C. Smith, M. L. Treston

Obituary.

FRANK M. POPE, M.D.Cantab., F.R.C.P.Lond.,

CONSULTING PHYSICIAN TO THE LEICESTER INFIRMARY.

It is with extreme regret, a regret which will be shared by a very large number of members of the British Medical Association, that we have to record the death of Dr. Frank M. Pope, of Leicester, in his 57th year. He had not been in quite his usual robust health for some months, and about two months ago suffered an attack of cerebral haemorrhage; after some temporary improvement a fatal extension occurred on October 26th.

Frank Montague Pope was the son of Mr. Thomas Pope, of Harewoods, Bletchingley, Surrey, and received his early education at the Leeds Grammar School. At the age of 16 he became a pupil of one of the members of the staff of the Sussex County Hospital, Brighton, and attended that hospital for some years. He then entered Magdalene College, Cambridge, and graduated B.A. in 1877, taking honours in both parts of the natural science tripos.



Photographically. FRANK M. POPE. [Elliott and Fry, Ltd., London.

From his earliest years, stimulated in that direction no doubt by Dr. Gorse physician to the Middlesex Hospital, an old friend of the Pope family, he had desired to enter the profession of medicine, and his period of work at Brighton was in preparation for this. On leaving Cambridge he went to St. Bartholomew's Hospital; he obtained the diploma of M.R.C.S.Eng. in 1879, and two years later graduated M.B. at Cambridge. He became in succession assistant house-surgeon to the Great Northern Hospital and house-physician to the Royal Hospital for Diseases of the Chest, City Road. He was also for a time resident at the small-pox hospital, Stockwell.

In 1883 he went to Leicester as a partner of Dr. Mutch, who very shortly afterwards left Leicester, and Dr. Pope then struck out a line for himself in medicine. In 1886 he became a Member of the Royal College of Physicians of London in preparation for his candidature for the appointment of Honorary Physician to the Leicester Infirmary. A closely contested election ensued, the appointment then being determined by the votes of all the governors of the Infirmary, who numbered about 800. Dr. Pope was elected by a small majority, and the governors at the same time instituted the office of assistant physician and appointed the rival candidate to that office. For the ensuing twenty-six years Dr. Pope was a valued member of the staff of the Leicester Infirmary, and for the ten years preceding his resignation last March he was senior physician and chairman of the medical staff. During his chairmanship important alterations and extensions of the infirmary took place, and he was keenly interested in each successive development. On his retirement he was elected consulting physician. He was also consulting physician to the Leicestershire and Rutlandshire County Lunatic Asylum; a visitor of private lunatic asylums in the county of Leicester, and a member of the Advisory Committee of the Society for the Feebleminded.

Dr. Pope became interested in the British Medical Association soon after he settled in Leicester, and before long gave so much time and energy to the work, that for some years its fortunes in the Midlands east of Birmingham largely depended on him. He made himself thoroughly acquainted with its machinery, was returned to the Council, of which he was the senior member at the time of his death, served on many committees, and frequently intervened with effect in debate. Holding his opinions strongly, confident in his cause, and no respecter of persons, he often had the courage to say what others were thinking with a force and directness which usually hit the mark, though sometimes, perhaps, it overshot it. That he was sincerely and unselfishly devoted to the interests of the profession and thoroughly believed in the value of the services which the Association could render to it, was evident in all he said and did, and especially in the advice he gave in moments of difficulty. He took opposition in good part, without rancour, and his own disinterestedness was always evident. He held many offices in the Association. He was Secretary of the Section of Medicine at the annual meeting at Nottingham in 1892, and President of the same section at the annual meeting at Leicester in 1905. In the organization of that meeting he worked hard, and not a little of its success was due to his labours and influence. To the interest he took in the scientific work of the Association and in its Library, and to his chairmanship of the Science Committee, Mr. Andrew Clark refers below.

He was president of the Leicester Medical Society in 1900, when its centenary was celebrated. He presided over the dinner given by the society on that occasion, which was attended by a number of distinguished guests.

Dr. Pope was a man of great energy, and found vent for his activity in many directions. In his early years in Leicester he was much interested in the work of the St. John Ambulance Brigade. He was chief surgeon to the Leicester division at the time of his death, and was an honorary associate of the Order of St. John of Jerusalem. For his energetic work in local organization during the South African war he received the South African medal, and when the Territorial Force was constituted he became lieutenant-colonel of the Fifth Northern General Hospital, and was an officer available on mobilization.

Dr. Pope was not a voluminous writer; he was the author of an essay on resorcin in the treatment of gastric ulcer, of papers on intestinal antiseptics, on colitis polyposa, on the cause of mental deficiency in children and of a careful description of a remarkable case of ochronosis. He was one of the first to call attention to the reckless sale of diachylon in the Midlands as an abortifacient, and wrote on the acute plumbism which may be produced in this way.

Dr. Pope was a man of sturdy build and athletic habits. When at Cambridge he was captain of the Magdalene College Rugby Football team: later in life he became an ardent golfer, and attained considerable skill in the game. He was a genial companion, and seemed always blessed with an enviable equability of temper. His strong sense of humour probably saved him many a heartache, and was one of the secrets of his influence with men of very diverse temperaments.

Dr. Pope leaves a widow and one son, who is now at Cambridge. Great sympathy will be felt with them in their bereavement.

The funeral, which took place on October 30th, was attended by many members of the staff of the Leicester Infirmary and other members of the profession in Leicester and the Midlands. The British Medical Association was represented by Dr. Carline (Lincoln) and Mr. Guy Elliston, the President of the British Medical Association by Dr. Pratt, the Nottingham Medical Society by Dr. Boobbyer, the Cambridge University Graduates' Club by Mr. G. R. Girling. A detachment of the St. John Ambulance Brigade was present, as were also the Matron and representatives of the staff of the Leicester Infirmary.

Mr. ANDREW CLARK, who was Chairman of the Council of the British Medical Association during part of the time for which Dr. Pope served on it, writes:

I gladly accept the invitation to write a few words in appreciation of Dr. Pope, more especially as regards his work in connexion with the Association. His death must have been a great shock to many who knew him, and had seen him so recently, apparently in perfect health. He was a member of the Council during the whole of my term of office as Chairman, and I was always struck with the trouble he took to make himself acquainted with all matters that appeared on the agenda for the meetings, and, having formed an opinion on any subject, he always expressed himself boldly and fearlessly. He was an active worker on several committees, and I may mention that the Association is much indebted to him for very good work and many valuable suggestions on the old Premises and Library Committee, of which he was a member during the time of the rebuilding. Another committee in which he was much interested was the Scientific Grants Committee, which was abolished under the new constitution in favour of the Science Committee, of which he became a member; at the time of his death he was its chairman. To it the supervision of the Library was allotted, and many of the improvements in its arrangements and in the establishment of a lending library are due in a great measure to his energy and guidance.

ANDREW DUNCAN, M.D.LOND., F.R.C.P.LOND., F.R.C.S.ENG.,

PHYSICIAN TO THE SEAMEN'S HOSPITAL SOCIETY.

As briefly recorded last week, Dr. Andrew Duncan died in a nursing home on October 17th, at the close of a long illness. Born in 1850, he entered Cholmeley School, Highgate, a few years after the revival of the old foundation, under a somewhat famous schoolmaster, John Dyne. He passed on to King's College Hospital in 1868, and became M.B.Lond. in 1874. He held sundry tutorial appointments until the end of 1878; he then entered the Indian Medical [illegible] years later to commence a [illegible] London as a specialist in tropical diseases.

The foregoing is a skeleton outline of a life which [illegible] included much more public honour than ever [illegible] of Andrew Duncan. His record in what [illegible] the student portion of his career has [illegible] in brilliancy. Entering [illegible] Hospital as a scholar, he won, [illegible] and senior scholar- [illegible] examination in 1874 the gold medals [illegible] midwifery, as well as honours in [illegible]. He also won the gold medal at the [illegible] examination in 1876, and a year later was admitted [illegible] as a junior [illegible] College [illegible] there; the post of house-physician at the Seamen's Hospital, Greenwich; and the medical registrarship at Charing Cross Hospital. After taking the fellowship he returned to his own hospital as surgical registrar, and then moved to St. Mary's as medical tutor and pathologist.

A man with such a record could not possibly have been overlooked when vacancies on the ordinary staffs of hospitals and schools were going; but unfortunately, instead of remaining in London, he decided to join the Indian Medical Service.

The first year or two of his connexion therewith was in keeping with his early career, for, entering as second on the list of successful competitors, he won the Parkes medal at Netley, and very soon after his arrival in India, won distinction under Lord Roberts in the Afghan war of 1878-80, being mentioned in dispatches and severely wounded at the battle of Charasiab.

But apart from these features the twenty years or so he spent in India must be regarded as in the nature of an eclipse, for though he received the steps in rank to which his seniority at various dates entitled him, his abilities were never utilized by his being appointed to any of the important civil appointments commonly held by officers in the Indian Medical Service. Duncan, indeed, was regarded by many as exemplifying a belief commonly held in regard to many services, though rarely expressed otherwise than *sotto voce* by those who are still members thereof. This is, that mental brilliancy, even when accompanied by a capacity for hard work, is no passport to success, but may even prove somewhat of a handicap to a man who is not also possessed of a dominant personality.

While still a junior officer Duncan wrote a paper on sanitation, which was regarded as a reflection on his superiors, and *post hoc* or *propter hoc* his career in India was of the nature stated. He would no doubt have been wiser to keep his views to himself, but that those views were right is proved by the fact that most of the practices which he condemned have now long since been abandoned; while the same views, when expressed in the form of an essay, won him from the home authorities the Parkes Memorial prize. On completion of twenty-one years' service he resigned upon pension, and took up work in London, where his arrival was welcomed. He was very soon appointed physician to the Seamen's Hospital Society, and was elected a fellow of King's College in 1902; while later on he became lecturer at the School of Tropical Medicine, an examiner in tropical medicine at London University, and a lecturer on tropical diseases at Westminster Hospital medical school. He was also physician to the Western General Dispensary, and in 1907 was elected to the fellowship of the Royal College of Physicians. A good deal of his time was occupied in literary work, sometimes published under his own name, sometimes anonymously. Among books there stand to his credit *The Prevention of Disease in Tropical and Subtropical Campaigns*, this being an extension of his Parkes essay and, in effect, a textbook on tropical diseases. It was published while he was still in India, and later on there appeared *A Guide to Nursing in the Tropics*, and *The Practitioner's Guide*; of the latter he was joint author. He was also the writer of several articles on tropical diseases in the third edition of Quain's *Dictionary of Medicine*, and published a good many papers in *International Clinics* on allied subjects. Personally he was a high-spirited man, absolutely sincere in his friendships and in the expression of his opinions, and of cheerful, fearless disposition.

DR. HEARSEY, P.M.O. Nyasaland Protectorate, in his *Sleeping Sickness Diary* for June states that 13 additional cases of sleeping sickness have been notified during the quarter ending June 30th, 1912. These, added to the 63 cases previously recorded, brought the total up to 76. Two cases of the disease had also been recorded from Portuguese East Africa, one a European elephant hunter, the other a native. As regards the latter, Dr. Wigan, who reported the case, states that the man had pain and weakness of his legs, with tenderness to deep pressure, marked anæmia, enlarged lymphatic glands, rise of temperature in the evening, and numerous trypanosomes in the blood. Administrative measures are now being carried out in Nyasaland to prevent the spread of the disease, and it is to be hoped that these will be successful.

Medical News.

THE annual dinner of the Royal Navy Medical Club will be held at Princes' Restaurant, Piccadilly, on November 9th, at 8 p.m.

DR. HENRY EDGAR WILLIAM HOFFMEISTER has been appointed a member of the Fourth Class of the Royal Victorian Order.

THE late Sir William Japp Sinclair, Professor of Obstetrics and Gynaecology at Victoria University, Manchester, left £856.

THE name of Dr. A. M. Williamson has been added to the Commission of the Peace for the county and city of Edinburgh.

THE late Mr. Leonard Arthur Bidwell, Dean of the West London Post-graduate College, left estate of the gross value of £12,223, of which the net personalty has been sworn at £8,305.

THE Swedish Medical Society has conferred the Retzius gold medal on Dr. John Newport Langley, Professor of Physiology in the University of Cambridge, for his works on the nervous system.

DR. H. COLLEY MARCH (Portesham), Dr. W. Burrough Cosens (Dorchester), and Dr. Peter William MacDonald (Dorchester) have been appointed Justices of the Peace for the county of Dorset.

THE Honorary General Secretary of the Seventeenth International Congress of Medicine, to be held in London next August, asks us to state that no photograph album of the congress is either issued or contemplated by the authorities of the congress.

THE *Aberystwyth Observer* for October 26th contains a notification from Dr. G. R. E. Bonsall of his intention to resign from the Municipal Council, on which he has held a seat for the last three years, and an editorial note on the subject expresses the general regret at this decision, Dr. Bonsall having proved himself of great assistance during his tenure of office.

IT is announced that the Liverpool School of Tropical Medicine is arranging to send an expedition to Jamaica and the West Indies with the co-operation of the Colonial Office. This will be the twenty-ninth expedition made under the auspices of the school. The expenses of these expeditions are estimated at about £30,000.

A NEW catalogue of their various microscopes has recently been brought out by Messrs. Leitz (18, Bloomsbury Square) together with some pamphlets descriptive of a special eyepiece for demonstration purposes of recent invention, and a haemacytometer representing an adaptation by Professor Sahli of Hayem's method of corpuscle counting.

THE Departmental Committee on the Public Veterinary Services, of which Sir Alfred Hopkinson, K.C., is Chairman, held its first meetings on October 18th and 19th, at Winchester House, St. James's Square, when witnesses representing the Colonial Office, India Office, the Army Veterinary Service, the Royal Veterinary College, London, and the Royal Veterinary College of Ireland, Dublin, gave evidence.

THE annual dinner of the staff and past and present students of the Royal Dental Hospital of London will be held on Saturday, November 23rd, at the Hotel Metropole (Whitehall Rooms), under the presidency of Mr. J. Howard Mummery. Gentlemen either now or formerly connected with the hospital or medical school who may not have received special notice, and who desire to be present, are requested to communicate with the Dean at the Royal Dental Hospital, 32, Leicester Square, London.

ON October 26th the first annual dinner of the Beit Memorial Fellows for Medical Research was held at the Florence Restaurant, London. A large number of Fellows were present, and the meeting proved a great success. Letters were received from Mr. Otto Beit and Mr. James K. Fowler, expressing regret at their unavoidable absence, and conveying to the Fellows their best wishes for the success of the evening. It was unanimously resolved that telegrams should be sent to both these gentlemen conveying the greetings of the Fellows, and the hope that they would be present at the next dinner. It was also resolved that the dinner should become an annual event, to which all past and present Fellows should be invited, and that it should be held on the fourth Saturday in October in each year. Dr. F. W. Eldridge-Green has undertaken to arrange the dinner for next year, in succession to Dr. E. Hindle, who was responsible for the arrangement of the first dinner.

IT will be remembered that at the end of April Mr. Wedgwood in the House of Commons asked the Home Secretary whether he could see his way to extend the terms of reference to the Committee inquiring into industrial diseases that could be added to the third schedule of the Workmen's Compensation Act so that they might consider the addition of writer's cramp among the diseases for which compensation is payable. Mr. Ellis Griffith, who replied, said that the Home Secretary would be prepared to consider the question, but that no representations had previously been made to the Home Office on the subject. The Home Secretary has now requested the Departmental Committee to consider and report to him whether writer's cramp should be included under the Act. Any communication on the subject of the inquiry should be addressed to the Secretary to the Committee at the Home Office.

THE members of the Associated Physicians of Long Island recently adopted a resolution prepared by a special committee, setting forth the necessity of educating the public to a better understanding of the value of necropsies in the advancement of science. In adopting the report (says the *Medical Record*) many of the medical men present agreed to sign a form containing a request that in the event of death their heirs should consent to the performance of a necropsy, since it was their opinion that in beginning a campaign of education to overcome the popular dislike of a *post-mortem* examination, it was their duty to set an example. In connexion with this matter, we may recall the fact that at a time when a violent prejudice existed against dissection, James Macartney, whose teaching of anatomy was a powerful influence in the development of the Medical School of Trinity College, Dublin, offered his own body for dissection, and induced a number of notable persons to follow his example.

WE are informed that the first general meeting of the State Medical Service Association, which was inaugurated at Liverpool in July last, was held in London on October 25th. The secretary reported that as a result of sending out 625 circulars 135 medical men had become members and a few laymen. The chairman, Professor Benjamin Moore, laid stress on the fact that the great aim of the association was gradually to educate the medical profession and the public to the need of a State medical service, which should put professional advice at the ready disposal of every member of the community who needed it, with a view to the prevention of disease. An executive committee was appointed, with Dr. G. A. Heron as chairman, and arrangements were made for the formation of district branches. Negotiations for the issue of a weekly journal, as the official organ of the association, to be entitled *The Medical World*, were completed.

THE usual monthly meeting of the Executive Committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on October 18th, Dr. F. J. Allan in the chair. The accounts presented showed that there was a diminution in the number of claims for the month of September, and, although the amount paid away was heavy, it was under the expectations. The audited accounts and balance-sheet for the half-year ending June 30th were presented. The funds of the society now amount to over a quarter of a million and provide ample security for the satisfaction of any claims that may be made. That large funds are required is evidenced by the fact that over £15,000 was paid in sickness benefit last year, and that this sum is likely to be exceeded during the current year. The bonuses being paid to members who attain the age of 65 and to the representatives of those who die before that age amounted to £1,200 for the period under review. That this result has been attained is due entirely to the successful and careful management of the society since its inception in 1884. The management expenses, which cannot exceed 10 per cent. of the premium income, have never come up to this allowance. The business being carried on under a system of mutual self-help, each member doing his best to promote the interests of the society, has combined to make it one of the most successful societies of its kind. Prospectus and all further information, from Mr. Bertram Sutton, Secretary, 33, Chancery Lane, W.C.

Letters, Notes, and Answers.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

ANSWERS.

Aberdonensis.—Formerly, when C.M. was a necessary accompaniment of M.B., the former had no distinctive hood. The same now applies to Ch.B.; in Aberdeen, Ch.M. has been assigned a hood of white silk lined with crimson silk. The shape of the hood indicates the university.

Bristol.—We are advised that the simplest and most reliable sphygmomanometer is either Martin's modification of the Riva-Rocci or Leonard Hill's. Both are fitted into a box, and are easily carried about.

LETTERS, NOTES, ETC.

The Storage of Reprints.

Dr. S. G. Scott (Oxford) writes: Envelopes are cheaper than portfolios and quite efficient. I use the strong large envelopes in which the *Proceedings of the Royal Society of Medicine* come to me. These hold all reprints I have at present, except those from *La Cellule* and the *Philosophical Transactions of the Royal Society*. They also cost me nothing.

Telephonic Communication with Hospitals.

Dr. Ralph W. Leftwich (London, S.W.) writes: What a pity it is that your paper is not more widely read! The lay press has been almost hysterical in lauding the wisdom of the committee of the Guernsey Hospital for introducing telephonic communication between infectious patients and their friends; but the idea is over twenty years old. A reference to the British Medical Journal for October 28th, 1882, will show that under the heading "The Telephone *versus* Infection" I made this very suggestion.

Foreign Bodies in the Bowel.

Mr. A. R. McCullagh, L.M.S.S.A.Lond. (School Medical Officer, West Hartlepool), writes: On August 15th I was called to see a little boy who had swallowed a halfpenny. I found it had passed into the stomach. Three days later I was again sent for to see the same boy as he had swallowed another halfpenny. I found that this also had passed into the stomach. I instructed the parents to give him dry bread, porridge, very little water or liquids of any sort, and on no account to purge him. He suffered no pain of any sort and did not exhibit any untoward symptoms at all. Exactly six weeks after swallowing the first coin he passed both halfpennies together in the same motion. Both coins were much discoloured and seemed very thin and smooth.

The Rule of the Road.

Dr. William Ewart (London) writes: Regulations have their history; that of our present traffic is quite modern; but customs are immemorial. When, as in this instance, two customs are in complete opposition, they cannot claim like [illegible] correct instinct and sound reason. Our own [illegible] the better claim to both, on the physiological foundation of "handiness," which means right-handedness, whether in tackling the horse or a foe. This applies to both riding and driving, though this vexed question is [illegible] in connexion with the latter. As horses [illegible] and riding before roads, we might, [illegible] from the horseman than the driver: he still leads our military transports, and probably led the custom in driving. For reasons of right-handedness, the [illegible] to mount [illegible] side of the road is always for him the near side. If his journey lies ahead, he need never leave it, and is still on the proper side of the road for dismounting. Should it lie the other way he crosses the road, and is still on the left side. As he starts so he rides. The other custom is less direct: the first thing it [illegible]

Treatment of Whooping Cough.

L. writes: The reply of "M.R.C.S." to Dr. Bain's inquiry is [illegible] a full dose of potassium bicarbonate [illegible] paroxysm of coughing with the desired [illegible] I was led in some [illegible] to [illegible] by [illegible] the rectum as [illegible] by Dr. [illegible] in the *New York Medical* [illegible] case I was greatly [illegible] of application. The [illegible] to me to be [illegible] (), instead of the [illegible] counting normally [illegible] one of the important hormones, and one that is a factor in the induction of normal sleep.

The Function of the Periosteum.

Dr. W. J. Rutherford (Swindon, Wilts) writes: The views expressed by Sir W. Macewen, and given in the summary of his address on bone development (British Medical Journal, September 28th, 1912, p. 766), appear to be somewhat reactionary, both as to his idea of the change of type of one form of adult tissue cell to another (chondrocyte into osteoblast), and also as to the complete impotence for osteogenesis of the periosteum. These views are displayed in his recently published booklet on *The Growth of Bone* (1912) at greater length than is possible in the report of a lecture demonstration; but it seems evident that, to some extent at least, he has been anticipated by an earlier worker in the same field. Intermetamorphosis occurring between adult tissue cells, although it might have been an idea acceptable to Ovid and to the elder Pliny, will probably be repudiated by every one acquainted with the concepts of general biology, but with this I do not intend to deal.

It appears to one studying Sir William Macewen's work that the reactionary attitude he has adopted towards this harmless, necessary tissue and its function is more apparent than real, and is due more to a matter of terminology than anything else. Where the majority recognize two layers—an outer fibrous and an inner cellular layer containing osteoblasts and functional in bone formation—Sir W. Macewen seems to confine his idea of the periosteum to the outer fibrous "limiting" layer, and probably would class the deeper layer of the periosteum as the most superficial layer of the bone. If this is a just paraphrase of his view in this matter, it cannot be seen where he has fallen out of line with accepted teaching except in the matter of words and names—things sufficiently barren in themselves.

If otherwise, then, as has already been stated, he has been anticipated, for in the seventeenth century Clopton Havers—whose name is sufficiently familiar—published a little work called *Osteologia Nova*, and devoted considerable space to a discussion of the probable function of this membrane. Even if it were admitted, he argued, that the periosteum serves no useful purpose at all, yet Nature, being elegant in all her parts as well as provident, "it is for decency"! This is about the most extreme way imaginable of formulating the anti-osteogenetic position, and the idea of the periosteum acting as a sort of physiological fig-leaf to the otherwise naked bones has something peculiarly delightful about it.

Infrequent Action of the Bowels.

Dr. W. H. Parkinson (King's Lynn) writes: The following case, which has been under my notice for the last twelve months, presents certain features which are, I think, sufficiently uncommon to make it of general interest. William P., aged 26, who was under my care for severe headaches, informs me that for the last eighteen or twenty years he has not had the usual daily evacuation of his bowels. After two or three days of constipation he will have one or two normal motions, followed the next day by profuse watery diarrhoea. This is succeeded by two or three days' constipation, and so the cycle recurs. This series of events occurs with great regularity, and is quite unaffected by changes of diet. He is in perfect health, and there is no reason to suspect that there is any intestinal growth which might account for the alternate diarrhoea and constipation, because the history is too long, and, moreover, there is no evidence of any decomposition of the intestinal contents. I take it to be a case of unusual rhythmical contraction of the muscle of the bowel wall. Rhythmicality is a common physiological phenomenon. The heart, diaphragm, and menstrual cycle are familiar examples of it, while the intestine itself usually exhibits rhythmical movements of two kinds: (1) Pendulum-like movements; (2) peristaltic movements. I believe that in this instance the peristaltic movement gradually increase to a maximum and then sink to a minimum, which is followed by another increase, and in so doing exhibit a third variety of rhythm.

A Correction.

Dr. Frank Moxon (London) writes: I shall be much obliged if you will kindly give notice of the error in my article on the treatment of 1,305 London County Council school children at Moorfields Eye Hospital, published in the Journal of October 19th, 1912. The error was pointed out to me through the courtesy of Mr. A. Hugh Thompson, Ophthalmic Surgeon. The error was in my use of the term "isometropia" in the table classifying the errors of refraction. I had used the term wrongly, and the cases classed under that term should have been classed along with the cases of anisometropia.

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The Huxley Lecture

ON

RECENT ADVANCES IN SCIENCE IN RELATION TO PRACTICAL MEDICINE.

SOME PROBLEMS IN INFECTION AND ITS CONTROL.

DELIVERED IN THE CHARING CROSS HOSPITAL

BY

PROFESSOR SIMON FLEXNER, M.D.,

DIRECTOR OF THE LABORATORIES OF THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, NEW YORK.

I EXPERIENCE a high sense of honour on this occasion, with which is mingled no less trepidation, in view of the master in whose memory this lectureship was founded, and the great names that in the past have been linked with the post I am to-day asked to fill. I must believe that Huxley would have felt a deep interest in the theme which I have chosen to discuss before you, and would have found in its intrinsic importance a compensation for any shortcoming that may appear in the presentation. For Huxley evinced a penetrating appreciation of that branch of biological science that has come to be called bacteriology, and as President of the British Association in 1870 devoted his address to an illuminating examination of the doctrine of abiogenesis, or spontaneous generation, *versus* the doctrine of biogenesis, or descent from living ancestors. This subject, long holding a merely academic interest, had become, in the two decades immediately preceding, the ground over which the conflict raged, and out of which was to emerge the modern science of microbiology. While Huxley clearly pointed out that Redi in the seventeenth century and Spallanzani in the eighteenth had delivered the first telling blows that later, through Pasteur, led to the overwhelming defeat of the spontaneous generationists and the establishment on an indisputable basis of the extrinsic origin of the contagious and infectious diseases, he did not fail to perceive in the discoveries just being made in reference to fermentation, putrefaction, and certain fungus and other diseases of insects, the herald of the new science that was to throw its protecting mantle, not about men alone, but about all the higher animals and even about the plants, in order that the useful and indispensable should be protected from that inevitable contest in nature between higher and lower forms of life which constitutes disease and leads to premature decay and ruthless destruction.

Bacteriology has, up to now, distributed its favours unequally, but we must not be daunted by this circumstance. It has yielded, in some instances, knowledge of diseases of small, and withheld, in others, knowledge of diseases of great importance. In respect to the common and highly contagious diseases—measles and scarlet fever, for example—progress has been slight. A ray of hope has been cast upon this quest by the announcement[1] that measles can be caused in the monkey by inoculation of infected blood, but this awaits certain confirmation. Similar announcements have been made recently regarding scarlet fever.[2] Since a flood of knowledge has always suddenly flowed from the successful transmission of an obscure disease to the lower animals, these reports have been viewed with eager expectation.

In the case of scarlet fever I fear the expectation is not yet to be realized. We[3] spent last winter in the study of this subject, and failed completely to infect or produce scarlet fever in a wide variety of lower monkeys. Possibly, but not certainly, the higher anthropoid ape, which is still less removed from the human species, is subject to inoculation.[4] The path of success in relation to the refractory diseases is marked by heavy obstacles, but it must be travelled none the less. How often, indeed, has crowning success come to the brave, thoughtful and adventurous when all but an expiring glimmer of hope had gone! Witness in this connexion the sudden conquest of syphilis, in which the initial victory was won when it was ascertained that anthropoid apes can be infected experimentally. There followed in rapid succession the discovery of the causative spirochaete, the Wassermann clinical test, and the drug salvarsan, the usefulness of which outruns the wide bounds of syphilis itself.

But even after such a victory the drama had not come to an end. The spirochaetal cause could now be discovered regularly where it had been as constantly missed before; doubts and disbeliefs in it were quickly yielding before the rapidly accumulating evidence; but the micro-organism itself resisted all attempts at artificial cultivation. That the spirochaete is a parasite nicely adjusted to living tissues was clear from the difficulties surrounding the experimental inoculation of animals. Now this act also has been played.[5] The *S. pallida* has yielded to artificial culture by Noguchi, and the method sufficing for it has suddenly exposed the whole class of disease-producing spirochaetes, and some innocent species as well, to cultivation and exploitation under laboratory conditions. It is obvious that the more nicely a parasitic organism is adjusted to its host the more difficult it will be to cultivate it outside the host, and the more quickly it will lose in culture its pathogenic power. The *S. pallida*, which for so long resisted the efforts to transmit it artificially to animals and then to cultivate it outside *in vitro*, loses after a few generations, as was to be expected, its disease-producing virulence, while the blood parasites of relapsing and tick fevers in man and spirillosis in fowls, which are less strictly parasitic, and pass a stage of their life in biting insects, retain this power for many generations. In turn, the culture of the *S. pallida* has yielded luetin, which by causing a local allergic or hypersensitive skin reaction has provided clinical medicine with a new means of detecting latent luetic infection.

POLIOMYELITIS.

With this introduction on the more general theme of the hour, I shall invite you to follow with me somewhat minutely the biological investigation of a disease that is still claiming the absorbed attention of both physicians and people—namely, poliomyelitis or infantile paralysis. The disease has just been making the rounds of the world, coming as a very unwelcome intruder to many different countries. Until the present pandemic it was surrounded with mystery and fortified by superstition. It is the story of the working out of the natural history of poliomyelitis, now elucidated in many ways, that I propose to tell you. I have been led to choose this particular disease as my theme both because it has claimed much of my attention during the past several years, and because it illustrates admirably certain general truths to which I desire to call your attention.

Poliomyelitis has been endemic in Northern Europe for many years, but it is only five years since it started on that unique, and as yet unexplained, movement that has carried it around the globe. In America there is no previous history of a general prevalence or epidemic, although local outbreaks of infantile paralysis have from time to time arisen. Some significance attaches to the fact that the first two foci of the present epidemic—I say present, because since 1907 the disease has prevailed severely each summer and autumn at some places in the United States and Canada—arose in the Atlantic Coast cities and in the State of Minnesota in the middle West. The former receive the mass of emigrant population from Europe, and the latter, secondarily, the large contingent of Scandinavian emigrants. The imposition of the infection upon America can thus be accounted for, but no explanation is afforded of the many years of immunity while Scandinavians were constantly arriving, and for the penetration of the disease to other European countries and to far distant parts of the world. However, within the pandemical period the disease has taken on new activity in Norway and Sweden, and as recently as 1911 the latter country has suffered a severe visitation.

On clinical grounds Scandinavian observers[6] had recognized the essentially infectious nature of poliomyelitis, and had followed the evolution of the outbreaks and traced the connexion between many of the cases. They became the defenders of the notion of human carriage, and, by establishing certain unusual clinical forms of the disease—such as the meningeal and abortive—placed this idea on firm ground. The notion was further extended to include healthy carriers of the infection who act as intermediaries between the actively ill and the new victims of infection. These views have all alike been

treated with more or less scepticism by the medical profession; in how far they have come to be supported by later acquisitions of knowledge will appear.

Experimental Transmission.

Apart, then, from these deductions, disputed and disputable, because not supported by certain tests, five years ago the mystery of the disease was wholly unfathomed. The outlook was suddenly brightened when Landsteiner and Popper, in 1909,[7] announced the successful transmission of poliomyelitis to monkeys; but the high hopes raised were as quickly damped by the failure to propagate the experimental disease beyond the first generation. This obstacle was immediately removed when intracerebral was substituted for intraperitoneal inoculation, as was done by Lewis and myself[8] and by Landsteiner and Levaditi.[9] By this means the disease could be, and has been, transmitted through an indefinite number of monkeys. The inoculating matter is, first, the sterile spinal cord of a fatal human case, and afterwards the spinal cord of paralysed monkeys.

The choice of the intracerebral route as superior to the intraperitoneal was not haphazard. All the severe effects of poliomyelitis are inflicted on the nervous system, and upon reflection this fact at once suggested that the parasitic cause of the disease must find favourable conditions for multiplication within the nervous tissues. When the material carrying the germ is put first into the peritoneal cavity it must traverse the blood before it can reach the nervous system, and the blood, as we know, has the power to destroy many forms of germ life. It could, of course, also be reasoned that the specific parasite, in nature, cannot enter the nervous tissues directly, but must use some external route to reach them, and it must, therefore, be capable of surviving outside the brain and spinal cord; and it could be further reasoned that an inoculation into a more accessible part of the body than the brain and spinal cord should be effective, and if effective would bring stronger proof of the actual existence of a parasite in the inoculated matter. This reasoning is unconvincing for two causes: First, the monkey is not naturally subject to poliomyelitis and is, therefore, presumably more difficult to infect at all than is man, so that what may suffice to cause infection in man may fail in the monkey; and, second, it might be possible for pathogenic microbes to reach the central nervous system even in man without entering the blood at all, so that in nature the infectious cause of poliomyelitis might avoid the blood altogether. That this possibility really exists has been proved by experiment as we shall see. Doubtless the first material inoculated into the abdominal cavity carried, besides the living parasites, toxic or other injurious substances that promoted infection in the monkey, but when the nervous tissues of the monkey were similarly injected, being less harmful, the inoculation failed. Bacteriology contains many instances of a similar and, apparently, of paradoxical nature.

The discrepancy has been further elucidated, as will soon appear, but in the meantime it is desirable to inquire whether still other routes of infection do exist for the monkey. Since nervous tissue is favourable for the parasite it was injected into large nerves—such as the sciatic—in order to ascertain whether these furnished a suitable medium of propagation. The parasite grows along the nerve until the spinal cord is reached and produces injury of the cord first at the point of entrance before it extends to and attacks other parts. The injection into the nerve causes no symptoms, but paralysis of the innervated muscles appears after the lapse of a time sufficient for the necessary multiplication of the parasite and its passage into the spinal cord.

Meanwhile, the inoculated monkey shows no other signs of illness, and no other organ is severely affected; the injury is centred upon the nervous tissues. And not only does the parasite grow or flow along the nerve, but it ascends along the spinal cord from lower to higher levels, and eventually reaches the medulla and brain. At last the centres governing respiration are involved, and death by paralysis ensues.

We have now been able to arrive at several important conclusions. The monkey can be made regularly to develop an experimental disease, agreeing in all essential respects with poliomyelitis in man. Inoculation is necessary, since keeping healthy and paralysed monkeys together does not lead to infection. The parasitic cause of the disease can traverse the blood, in the monkey, to reach the central nervous organs, but with difficulty, while it easily traverses the peripheral nerves. That the natural, spontaneous disease, so called, in man, and the induced disease in monkeys are very alike, is further shown by microscopic study of the spinal cord and brain, which exhibit changes that are identical.

Pathological Effects.

The pathological effects are of two kinds: Injury to nerve cells not in the anterior grey matter alone but in the posterior grey matter of the spinal cord and in the intervertebral ganglia, medulla, and brain; and cellular invasion of the pia arachnoidal membrane of the spinal cord and medulla that follow the blood vessels into these parts and pass into the adjacent grey and white matter. The altered vessels permit an escape of albuminous fluid and blood cells into the meshes of the membrane, where they mingle with the cerebro-spinal liquid, and into the spaces in the tissue composing the solid white and grey matter. Sometimes the nerve cells, sometimes the meninges, vessels, and supporting tissues, suffer most. When the nerve cells are extensively injured the paralysis is marked; when the meninges are much affected the symptoms are like those of meningitis. The virus of poliomyelitis displays a high affinity for the nervous tissues, but it is the wide involvement of the nutritive vascular system in the pathological process that subjects the sensitive nerve cells to so high a degree of injury and destruction.

The microscopical conditions we observed in the course of our experiments were suggestive of two things: First, the nature of the parasite itself; and second, the process of generation of the effects or lesions themselves. Up to this time no definite parasite could be detected in the nervous tissues either in human beings or monkeys, nor was anything of the kind found in the blood or other organs. The scarcity of polynuclear leucocytes in the altered cerebro-spinal liquid and spinal cord itself spoke against a simple bacterial parasite. The large number of mononuclear cells spoke rather for a protozoal parasite. Neither could be found, although the most varied methods of staining and cultivation were employed. There remained the possibility of the parasite being invisible or ultramicroscopic and filterable. This it proved to be, for when a portion of the spinal cord of a recently paralysed monkey was made into an emulsion with sterile distilled water or simple saline solution and then centrifugalized to remove the coarse suspended matter and afterwards pressed through a Berkefeld earthenware filter—which excludes ordinary cells, bacteria, and protozoa—the clear liquid resulting was still capable of transmitting the disease. The activity of the filtrate is very great, since a fraction of a cubic centimetre still suffices to cause paralysis and death. The only distinction to be noted between the action of corresponding amounts of the emulsion and filtered fluid is that the former acts more quickly, as would be expected from the fact that it contains a greater number of the invisible organisms. This difference is soon compensated by the multiplication of those in the filtrate, so that the end is the same. By employing somewhat greater quantities of the filtrate for inoculation, the incubation period of the disease can be made the same as that following the use of the emulsion. The disparity is strictly a quantitative one, since the filters retain a part of the minute organisms in their pores and thus reduce the number escaping with the filtrate. The greater the quantity of protein matter present in the fluid the fewer the parasites that pass the filter, and merely because the large protein molecules themselves tend to be held in the pores, and thus render them impervious for the minute organisms. For this reason, also, fluids containing small numbers of the filterable parasites, but still sufficient to cause infection in the crude state, may fail, when filtered, to produce disease, merely because those retained by the filter so far reduce the numbers as to bring them below the surely infecting dose. This reduction sometimes leads to another effect—namely, the slight degree of infection that forms the starting point of active immunization. By building upon such a beginning a high and enduring state of immunity has been achieved.

Filterable Parasites.

The first filterable parasite was discovered by Loeffler fourteen years ago in the fluid lymph obtained from the vesicles of cattle suffering from foot and mouth disease. At the present time eighteen diseases are known that are believed on good ground to be caused by this class of minute living organisms. One alone among them is on the verge of visibility—the parasite causing pleuropneumonia of cattle. It alone has certainly been obtained in artificial culture. The methods of artificial cultivation need still to be worked out: and once they are discovered it is a safe prediction that control over the diseases produced by ultramicroscopic parasites will be quickly increased. The degree of infectivity of certain of the parasites—or viruses as they are also called—is almost fabulous; $\frac{1}{1000}$ c.cm. of a filtered 2½ per cent. suspension of a spinal cord of a paralysed monkey suffice to cause infection and paralysis in another monkey; $\frac{1}{10000000}$ c.cm. of infected lymph suffices to produce foot and mouth disease in a healthy calf, and the blood of fowl suffering from chicken plague is still active after being diluted with water 1,000 million times.

Three affections of human beings are contained among the eighteen diseases caused by filterable viruses. They are yellow fever, dengue, and poliomyelitis. With one exception—mosaic disease of tobacco—the remaining fourteen are maladies of domestic animals and include among them foot and mouth disease, horse sickness, cattle plague, sheep-pox, rabies, vaccinia, hog cholera, and chicken plague. We can at present form no reliable conception of the biology of this class of parasite, although the virus of pleuropneumonia shows affinities with the bacteria, while that of yellow fever, that passes a stage of its existence in mosquitos, probably belongs to the protozoa. It should be remembered that we possess no criterion of their presence other than the power to produce infection. Probably the list of these pathogenic parasites would be increased if methods were known for testing their symbiotic relations or co-operative effects with the usual bacteria and protozoa. Rous's[10] discovery of a filterable agent that causes sarcomatous tumours in the fowl has opened up new fields to exploration. We can make a rough guess as to their sizes, since some pass through thick filters the pores of which are smallest, while others pass the more porous filters with larger interstices only. Were the viruses as large as one-fifth the size of the influenza bacillus they would be beyond visibility with the most powerful optical system of the modern microscope. The dark field microscope and the instrument devised for employing, for photographic purposes, the ultra-violet rays of the spectrum, that has doubled the potential power of the microscope, have failed to bring them into view. On the whole, they resist drying well, and show considerable resistance to disinfecting agents.

The ultramicroscopic viruses employ no single means of effecting entrance into the body. Some utilize insects to inject them into the blood. Mosquitos inoculate the parasites of yellow fever and of dengue in man and among animals the virus of horse sickness: while flies inject the virus of parrot fever, and worms, and other insects, through mere contact with infected and then with uninfected tobacco plants, disseminate the parasite of mosaic disease. The viruses of rabies, vaccinia, and fowl-pox, gain entrance through skin wounds; those of hog cholera, foot and mouth disease, and chicken plague, by swallowing, while the parasites of variola and of pleuropneumonia are inhaled with air. These are the main channels, but not the sole routes of infection, since viruses that ordinarily enter the body by the respiratory mucous membrane may occasionally enter through a skin abrasion, etc.

Immunity.

It is significant that upon recovery from this class of infections a high and enduring degree of immunity is left behind. We have no knowledge of toxic substances, in the common sense, being produced by the filterable viruses, and therefore know nothing of the formation of antitoxins or bodies that neutralize poisons. The principles upon which the immunity depends appear to be chiefly microbicidal or substances that act directly upon the living parasites and destroy them. In some instances it has been possible to produce an actively immune state without at the same time causing severe disease by employing for inoculation modified and weakened viruses, and viruses combined with immune serums carrying the corresponding microbicidal substances. Once a certain active immunity is obtained it can be heightened by repeated injections of more active materials until a high degree is achieved. In the same manner immune animals that have recovered from disease are capable of having this immunity reinforced by subsequent injections of the active virus. Blood taken from the immune animals has been employed in practice in two ways: to protect for a brief period exposed animals from acquiring infection, and to bring about an actively immune state through inoculation with adjusted mixtures of virus and corresponding immune serum. The injection of viruses into animals not themselves subject to infection has, in a few instances, yielded immune serums. In this way a serum for foot and mouth disease has been prepared in the horse. Speaking generally, homologous serums are more active than heterologous, or, in other words, an immune cattle serum will act better in cattle than will immune horse serum; but curative serums in a real sense have not yet been produced for this class of diseases.

It is of great interest to determine the correspondence between the general data I have just reviewed and the special facts of poliomyelitis which have been shown to arise in consequence of an invasion of the nervous tissue by an ultramicroscopic or filterable virus. We may proceed to check off rapidly the main facts: The virus stands midway in point of size between the finest and coarsest examples. It passes readily through the more coarse and slightly through the finest filters. It is highly resistant to drying, light, and chemical action. In dust, especially within protein matter, it survives weeks and months; in diffuse daylight indefinitely, and resists the action of pure glycerine and carbolic acid in one-half per cent. solution for many months. When animal tissues containing the virus suffer softening and disintegration or disorganization by mould, the virus survives. Recovery from poliomyelitis in man and monkey is attended and produced by an immunization of the body. During this process microbicidal substances appear in the blood that are capable of neutralizing the active virus. This acquired immunity has, in the monkey, been reinforced by subsequent injection of large quantities of the living virus. Active immunity can be achieved by first injecting minute and later large amounts of the virus, and an adjusted mixture of immune serum and active virus will confer a beginning low active immunity capable of being heightened. Certain alien large animals, among which the horse and sheep are especially worth mentioning, are subject to immunization through injections of emulsions of the spinal cord and brain of paralysed monkeys, and can thus be made to yield serums possessing microbicidal power, and capable of conferring, as do human and monkey immune serums, a degree of passive immunity. Thus far no immunizing effect has been accomplished with the dead virus. Unless some growth and multiplication take place no immunity arises.

The Mode of Infection.

These facts show a close correspondence between the properties of the virus of poliomyelitis and those of the ultramicroscopic organisms in general. There remains to be considered the data bearing upon the manner of entrance of the poliomyelitic virus into the body, or, in other words, upon the mode of infection. Analogy with other diseases produced by filterable viruses excludes no one of the possible modes, since their manner of entrance is widely varied, as we have seen. This question is of the utmost importance, since with all diseases prevention is far better than the most perfect cure, and for poliomyelitis there exists at present no specific or true curative treatment. Moreover, for the most part, when the disease is first recognized, it has already caused irreparable damage, and, though the more general examination of the spinal fluid obtained by means of lumbar puncture for purposes of diagnosis may possibly lead to a much earlier recognition of the disease, yet its prevention will always remain the result to be aimed at. It is quite certain that an understanding of the mode of infection would lead inevitably to the framing of measures of prevention that with reasonable certainty could be expected to exercise control over the epidemic spread.

Two answers may be returned to the question—one based upon observation of human cases of poliomyelitis, and the other based upon experimental tests arranged to elicit specific replies. The first answer cannot achieve anything higher than strong probability; the second, to be valid, must explain the phenomena attending the human infection, as well as those of the experimental disease.

We are asked to account for certain data, of which the following is a brief statement. Epidemic poliomyelitis is pre-eminently a disease of early childhood, and finds the highest percentage of its victims in the first five years of life, but does not wholly spare older children or even adults. It is admittedly infectious; and while it is true that many more instances of single than of multiple cases occur, yet multiple ones are not by any means rare. The prevailing views on this topic are being modified rapidly by the recognition of the abortive and ambulant examples of the disease. The period of greatest prevalence is during the months of August, September, and October in the northern hemisphere, and the corresponding months in the southern hemisphere, but the epidemic begins in the early spring and summer months, and the disease does not wholly disappear during the winter months. It does not, therefore, necessarily die out at any period of the year. In endeavouring to trace the avenue of entrance of the virus into the body certain facts regarding its distribution in the body should be recapitulated and considered.

The infectious agent of poliomyelitis attacks chiefly the central nervous system. Indeed, it has been detected regularly in the spinal cord and brain, and in the mesenteric lymph nodes among all the internal organs. It has also been detected in the mucous membrane of the nose and throat, and in the mucous secretions of this membrane, and in the mucous secretions of the stomach and the small and large intestine. The virus has not been detected in such important organs as the spleen, kidneys, liver, or bone marrow. The fact is significant, but in attempting to interpret it account should be taken of the circumstance that at present we possess one means only of detecting the virus, and that is its transmission to monkeys, in which it produces characteristic paralyses and anatomical changes. On this account small quantities of the virus may conceivably escape discovery. However, the conclusion is none the less inevitable that detectable amounts of the poliomyelitic virus exist only in the few situations and organs mentioned. The distribution of the virus is identical in human beings the subjects of the so-called spontaneous poliomyelitis and in monkeys in which the experimental affection is produced. Nor does it matter how the experimental inoculation is accomplished, and whether the virus is introduced by injection into the brain or large nerves, or subcutaneous tissue or peritoneum, or whether it is merely applied to the nasal mucous membrane, which, it should be emphasized, next to direct intracerebral injection, affords the surest means of causing the experimental disease. In whatever way the infection is produced purposely, the distribution of the virus in infected monkeys is the same as in infected human beings.

The virus is one that is not known to increase aside from the infected body, and hence, in order that it shall be capable of propagating poliomyelitis, it must secure a means of escape from the infected animal. The escape is now known to occur along with the secretions of the nose and throat, and the discharges from the intestine. We are obliged, therefore, to ask ourselves what the means are by which the virus confined within the interior reaches these external surfaces of the body.

Let us begin by disregarding for the moment the essential point of the way in which the virus probably enters the body in infected human beings, and give our attention to the way in which it escapes in the infected monkey into the nose, throat, and intestines. We may first consider the instance in which the virus is deposited in the brain, in which it becomes sealed, as it were, and cut off apparently from the exterior of the body. Having been injected into the brain, the infectious micro-organism constituting the virus multiplies both within and about the brain tissue at the site of inoculation. As multiplication progresses, the virus leaves the original site of injection and wanders through adjacent and distant parts of the central nervous tissues, becoming implanted in the medulla, the spinal cord, and the intervertebral ganglia, as well as reaching the pia arachnoidal membranes, or meninges, in which it also spreads. Ultimately, when the virus becomes sufficient in amount, it brings about anatomical changes in the nervous system, one of the results of which is paralysis. The period intervening between the inoculation and the appearance of paralytic symptoms may be as brief as two or three days, or as long as three, four, or five weeks. The great disparity in this period depends upon the amount and quality of the virus, as well as the degree of resistance of the inoculated monkey.

The virus, which has found its way to the meninges, does not long remain in the cerebro-spinal fluid, with which it escapes in part into the blood, where it does not appear to undergo any further increase in amount, and indeed seems even incapable of surviving for long. A part also of the virus contained within the cerebral fluid escapes regularly by way of the lymphatic channels surrounding the short nerves of smell that pass from the olfactory lobes of the brain to the mucous membrane of the nose. It has long been known that there is an intimate connexion between the lymphatic vessels of the nasal mucous membrane and the lymphatic spaces of the pia arachnoidal membrane. The virus, once having gained the mucous membrane of the nose, may even escape into the mucous secretion, with which it is carried into the mouth and in part swallowed, or it may become established in the substance of the nasal membrane, where it undergoes subsequent multiplication and increase. As a matter of fact, both these things occur. The virus escapes with the secretions partly externally to the infected body, and a part of it is swallowed with the secretions themselves, while a persistent infection of the secretions is maintained by means of the increase that takes place in the membrane itself. In this way is assured the escape of the virus directly into external nature, as well as the contamination of the gastro-intestinal cavity, with the discharges of which it becomes commingled. Once implanted upon the intestine, multiplication not improbably continues for a time, and another source of invasion of the body is thus afforded the parasite. From the intestine it reaches in some amount the mesenteric lymph nodes, and thus enables us to account for the occurrence of the virus in those lymphatic nodes, which thus form a notable exception to the general internal organs of the body.

We have now followed the route by which the poliomyelitic virus implanted within the apparently closed cavity of the skull reaches the exterior of the body. It is obvious that in the spontaneous form of the infection in man no such mode of introduction of the virus can occur. The virus must, indeed, enter the human body by some external channel, after which it seeks and becomes implanted upon the central nervous system. It is known that in monkeys the virus is incapable of passing the barrier of the unbroken or slightly abraded skin, of being taken up from the stomach or intestine unless the functions of these organs are previously disturbed and arrested by opium, and it is further known that it traverses with difficulty or even not at all the substance of the lungs. On the other hand, it is established that the virus passes with readiness and constancy from the intact or practically intact mucous membrane of the nose to the central nervous system.

To illustrate this point I wish to describe briefly an experiment. The spinal cord of a paralysed monkey always contains the virus we are considering. If a camel's hair pencil or pledget of cotton is covered with some of the broken-up tissue of such a cord and painted upon the mucous membrane of rhesus monkeys, these animals will develop in due time the paralysis and other symptoms of poliomyelitis. Hence the virus enters the body from this surface even though no gross injury has been inflicted upon the membrane.

The Olfactory Nerves.

We should now ask ourselves if the virus actually ascends to the brain by the direct path of the olfactory nerves or indirectly after first entering the blood. This is the same question that has been buffeted about in regard to epidemic meningitis. The meningococcus is found in the nasal mucus of persons in contact with cases of meningitis, and in the sick themselves. It is not dis-

puted that the meningococci settle on this membrane, but opinion is divided as to whether it goes at once to the membranes of the brain or first penetrates into the blood. To produce meningitis in monkeys it does not suffice to inoculate the nasal membrane; the meningococci must be injected into the meninges themselves. But so inoculated they escape in part along the nerves of smell into the nose. The virus of poliomyelitis is so active that implantation in the nose does suffice to cause infection. If a monkey is sacrificed about forty-eight hours after an intranasal inoculation and the brain and spinal cord are removed, and then the olfactory lobes, portions of the medulla and spinal cord are separately inoculated into other monkeys, infection is produced by the olfactory lobes alone, since in this brief period the virus has not reached other and more distant parts of the nervous organs. Were the virus distributed by the blood, the medulla and spinal cord would have become infective, rather than the olfactory lobes, since they exhibit a greater selective affinity for the parasite. The conclusion is unavoidable that the virus ascends by the nerves of smell to the brain, multiplies first in and about the olfactory lobes, and, in time, passes, as I believe, into the cerebro-spinal liquid, which carries it to all parts of the nervous organs. We have already learnt that the virus can pass along a large nerve, such as the sciatic, which carries it first to the lumbar cord, whence it ascends to higher levels. We need not, therefore, be astonished to find that it can wander along the olfactory nerves and then descend to lower levels. The large peripheral nerves are prevented anatomically from becoming infected in nature, while the small olfactory filaments are advantageously placed to act as the means of transportation.

Hence the view I desire to place before you: That the nasal mucous membrane is the site both of ingress and egress of the virus of poliomyelitis in men. Support for this view is found also in the study of the microscopic changes in the meninges and the central nervous tissues. Since the virus survives in the dried state it may be carried in dust; and in one instance it has been detected in sweepings from the room occupied by a person ill with poliomyelitis.[11] Its distribution as spray in coughing and speaking is readily accomplished, and by this means both active cases and passive carriers may conceivably be produced. Still, one link in the chain of causation of poliomyelitis as here outlined remained to be forged. The clinical evidence is strong in suggestion that human carriers of the poliomyelitic virus exist. The virus has now been detected in the secretions of the nose, throat, and intestine of persons suffering from abortive or ambulant attacks of poliomyelitis.[12] The unrecognized examples of the abortive disease play a highly important part in the dissemination of the virus, through which the area of infection is extended, and the number of the attacked increased. A similar part has been accorded by clinical observation to the healthy virus carrier, and the healthy carrier is the last to be detected, and his existence confirmed experimentally. The obstacles in the way of this confirmation are considerable, but not insuperable. It is to be remembered that we possess no means of discovering the virus except that of animal inoculation. Should the experimental results arising from the inoculation of the secretions of the nose and throat of such healthy carriers be confirmed, the evidence for the mode of infection as here outlined would be complete. The membrane of the nose and throat is far more vulnerable in young individuals, whence arises the greater prevalence during childhood of those diseases the causes of which seek this avenue of entrance into the body. Among them are included diphtheria, measles, scarlet fever, and meningitis.

Would the establishment of the respiratory avenue of entrance of the virus exclude all other modes of possible infection? By no means. Plague bacilli are known to be inoculated into man by rat-fleas; but the pneumonic form of the plague is admittedly caused by respiratory inoculation. Diphtheria arises upon the mucous membrane of the throat, but can develop in a wound of the skin; the virus of small-pox enters by way of the throat and nose, but can enter by a skin abrasion; the virus of foot and mouth disease is taken in with food, but produces infection when injected into the skin. Hence, at the moment while knowledge is still recent and not yet perfect, the too absolute adherence to one point of view is to be avoided.

Possible Insect Carriers.

Indeed, the preponderance of cases in the late summer and autumn months early suggested an insect carrier of the infection. House-flies can act as passive contaminators, since the virus survives upon the body and within the gullet of these insects. It has not proved possible thus far to infect the common varieties of mosquito and the body and head louse, while success has resulted in one instance in producing infection in bed-bugs, which were made to feed upon the blood of inoculated monkeys. The virus remained alive within these insects for a period of many days. The inoculation of monkeys with a filtrate prepared from them gave rise to characteristic paralysis and anatomical lesions. This result is significant, since it shows that insects are capable of taking up the virus from the blood where it exists in minimal quantities, and in harbouring it for a considerable period in an active state; but it does not show that multiplication occurs within them, or that in nature they act as the agents of inoculation. A tentative announcement has been made recently by Rosenau[13] that the stable fly (*Stomoxys calcitrans*) can take up the virus from the blood of infected monkeys and reinoculate it into healthy ones, which will become paralysed. The experiment awaits confirmation, and, after confirmation, convincing application to the circumstances surrounding infection in human cases of poliomyelitis.

Domestic Animals.

The frequent prevalence of epidemics in sparsely populated country districts has led, moreover, to consideration of domestic animals as sources of the infection. Paralysis of dogs, horses, pigs, and fowls, has been observed not uncommonly, but thus far without clear correlation with paralysis in man. Perhaps the most frequently observed coincidental paralytic diseases have been between hens and human beings. Undoubtedly since the wide prevalence of epidemic poliomyelitis, the existence of a paralytic disease among barnyard fowls has been more commonly noted. Possibly the condition has not actually become more frequent, but owing to the circumstance mentioned it has been oftener observed. It appears that the paralysis among fowls is caused not by lesions of the central nervous system, but by lesions of the peripheral nerves, and is due to a peripheral neuritis. It has not been found possible to transmit by direct inoculation the paralytic disease from chicken to chicken, or from chicken to monkey, or from paralytic monkey to chicken. However, it has been found possible to develop the paralysis in the laboratory by keeping the chickens in confinement for some time, and by supplying them an unusual and improper form of food. It has proved as little possible to transfer the paralytic affection of dogs from one individual to another by direct inoculation, or from dog to monkey, or from paralysed monkey to dog, or to set up paralysis in monkeys by inoculating them with nervous tissue obtained from paralysed pigs, or to produce paralysis in pigs with the virus of paralysed monkeys. These failures do not, of course, exclude the possibility that a reservoir for the virus may exist among domesticated animals that do not even respond to its presence by developing paralysis or other conditions which could be recognized as resembling poliomyelitis in man.

The manner of action of the virus of poliomyelitis in rabbits provides an illustration which shows how necessary it is to avoid general deductions in this field. At first it was strenuously denied that rabbits could be infected at all with the virus of poliomyelitis, and the examples of supposed successful inoculation reported were entirely disbelieved; but it must now be accepted that young rabbits occasionally, but by no means generally, are subject to inoculation with the virus of poliomyelitis, at least after it has passed through a long series of monkeys. Apparently a small percentage only of the inoculated rabbits develop any obvious symptoms, and these die, as a rule, during convulsive seizures which come on suddenly. A given virus has up to the present been sent through a series of six rabbits, after which it has failed to be further propagated. From the sixth series it has been reimplanted on the monkey, in which animal typical paralysis has been produced. It remains to add that the rabbits which succumb to the inoculation do not show any characteristic alterations of the central nervous system or other organs, as far as has been

determined. The monkey, on the other hand, invariably shows the typical lesion of the central nervous system.

Sporadic Cases.

Long before epidemic poliomyelitis had the wide distribution or claimed the attention now accorded it, instances of infantile paralysis were known to every one. Almost every community could point to one or more examples of the condition, and no one entertained the suspicion that the cause of the paralysis was an infectious or even contagious disease. Are these isolated cases of paralysis occurring among infants of the same nature as the epidemic paralysis, or has there merely been a confusion of names? We possess means that permit an answer to this important question. Recovery, as you recall, is associated with enduring immunity, and the person or animal immune to poliomyelitis carries in his blood principles that neutralize the virus causing the disease. The blood of normal persons or animals lacks this property in any real degree. The test is, therefore, easily made: a mixture of the serum of the blood and virus are prepared, and after being in contact for a time, is injected into a monkey. Thus it has been determined that the two diseases are caused by the same parasite, and it has been found that the neutralizing principles are still present as long as twenty-five years after the attack of paralysis, and doubtless persist through life. This test has been employed likewise to identify abortive cases of poliomyelitis in which paralysis has not appeared at all.

There is nothing unique in this apparently paradoxical situation. Most, if not all, the epidemic diseases prevail at some time as sporadic affections—that is, as diseases of occasional occurrences. This is true of influenza, plague, and particularly of meningitis, with which poliomyelitis displays so many affinities. Knowledge is still very imperfect as to just what happens when an epidemic spread of a sporadic disease takes place. Sometimes conditions arise that favour rapid transference of the infecting microbe from individual to individual through which a rise in virulence is accomplished, very much as is done every day in the laboratory to enhance the potency of cultures. In respect to poliomyelitis, as seems also to be the case with meningitis, a fresh importation of an already enhanced virus probably occurs and is the immediate cause of the epidemic. The introduction may be at one point or at several points simultaneously, according to which the epidemic arises in and spreads from a single centre or from many foci. Finally, sports or abnormally virulent parasites appear, prevail actively for a period, and then become reduced to an average degree of intensity, perhaps never to rise again. Some of the exceptionally severe epidemics of which history tells us may be thus accounted for. Such sports have been encountered in laboratories in regard to both pathogenic bacteria and protozoa.

Strains of Varying Virulence.

Are biologically different strains of a poliomyelitic virus known? The evidence at hand is to the effect that different strains or races certainly exist if virulence be taken as the measure. German, Austrian, and French pathologists found that of the human specimens of spinal cords submitted to them for study, about one-half could be inoculated successfully into monkeys, and less than this number could be propagated through successive animals. In America all the original specimens were successfully inoculated, but certain samples were far less active than others. At the beginning many of the inoculated monkeys survived the infection, sometimes with, sometimes without, enduring paralysis of leg or arm. Later, fewer survived, and after many passages of the virus from monkey to monkey, all became infected and all succumbed. The Swedish virus of 1911 appears to be the most powerful yet studied.[13] This is indicated by the fact that saline washings of the nose and throat and intestine could be inoculated successfully, after removal of all bacteria through filtration, in nearly every instance. In America it has been difficult to procure infection with these materials, from which it has been concluded that the virus displays degrees of infectiousness for monkeys. There are reasons for supposing that similar variations exist for man himself.

We may not, and probably shall not, know certainly whether this variability is restricted to the quality of virulence or whether true types or races of the virus exist until artificial cultivation has been accomplished. Bacteriology has been singularly enriched recently by discoveries relating to biological types of certain microbes, and practical medicine is destined to benefit largely by the strong light which they have thrown upon perplexing questions of specific therapeutics. I am tempted to lead you aside a little way into this subject, just because it is so full of suggestion and promise, and not merely with promise, since the fruits of discovery are being already tasted.

The Pneumococcus: a Digression.

The pneumococcus causes many kinds of inflammation and one typical disease that prevails everywhere—namely, acute lobar pneumonia. Not infrequently there attends the pneumonia, and sometimes there appears independently, such inflammations as peritonitis, pleuritis, and meningitis, caused also by the pneumococcus. Now pneumococci possess in common biological features regarded usually as sufficient to distinguish them—namely, form, staining properties, growth, virulence, and solubility in bile salts. But they have another quality that serves to distinguish them more finely, revealing different types among apparently similar organisms. By testing pneumococci from many different sources against an immune serum prepared with a single kind of the coccus, it has been found that the cocci are not all alike, but that a predominant type and several subsidiary types occur in nature.[14] Such a serum prepared with a given type of pneumococcus is neutralizing alone for that one, and for no other one. The clinical reports on the antipneumococcus serum employed as a curative agent are contradictory, and one cause for this is now apparent.

Pneumococcus meningitis can be produced in monkeys by injecting subdurally, by lumbar puncture, a virulent culture of pneumococcus; it is invariably fatal. Antipneumococcus serum alone injected subdurally can change the outcome very little. But this infection is subject to combined chemo-therapy and serum-therapy, in which the chemical agent consists of sodium oleate that alone attacks and dissolves the pneumococcus. Acting separately in the body, sodium oleate can accomplish little; it requires the assistance of the immunity principles. Acting together, the two agents quickly bring the infection under control, and recovery follows. This happens even after the pneumococci have entered the blood stream and begun to multiply there. The effects of the soap and serum compound are, however, restricted to the type of pneumococcus represented by the immune serum in the mixture.[15] When the type of micro-organism and serum differ absolutely no therapeutic action follows. This obstacle to the practical employment of this method of specific treatment will doubtless be reduced or even wholly set aside by preparing a true polyvalent immune serum that will represent not many cultures of the pneumococcus taken at random, but the several types or races occurring in nature. We already know the number to be few.

It has become the custom to speak of these types of microbes as resistant or "fast," but the term is relative merely. The fact and degree of fastness will be revealed by the source of the test serum. But within a given microbic species this quality of resistance may well appear against chemical bodies as well. Pneumococci, for example, vary in properties by gradual gradations in the direction of the streptococcus, which besides differing in still other biological properties chances not to dissolve in bile. The gradients of pneumococci approaching the streptococcus are progressively less acted upon by sodium oleate. The trypanosome of sleeping sickness is less subject to the therapeutic action of certain organic arsenic compounds in some regions in Africa than in others. The antimeningitis serum suppresses the growth and multiplication of most meningococci, but not of all. This quality of fastness is not alone innate, but can be developed artificially as a mutation both against serum principles and chemical drugs, and may persist. Infectious diseases showing a strong tendency to relapse in course of recovery are caused by microbes tending to flourish as races or types. Relapsing fevers that pass through three or four exacerbations on the way to recovery are attributed to spirochaetes assuming a corresponding number of distinct forms. Infections tending to many relapses, of

which lues is an example, are attributed to parasites capable of flourishing in many such types, of which one part is innate and the other the result of mutations under the influence of curative serum or drug. Fortunately there appears to be no parasite capable of performing indefinite mutations: and experience is teaching that the more precise, specific, and vigorous the means employed to control infection, the smaller the risk of mutation and the greater the probability of suppression of the parasitic agent of disease.

Specific Treatment of Poliomyelitis.

In 1886[16] Theobald Smith first clearly pointed out that the injection of dead bacteria confers active immunity to subsequent inoculation with virulent materials. Now the employment of dead bacteria is widespread, both for preventing and for healing disease. Wright especially is to be credited with the general application of the method to therapeutics. While the limits of value of inoculation, as it is termed, are not yet defined, and it promises, theoretically, more for the subacute and chronic than for the acute infections, I am inclined to the belief that to be really effective attention will need more and more to be accorded to the question of specific type in the infecting bacteria.

In pursuing the devious courses of infection, of which examples have just been given, the fact has emerged that the effectiveness of curative means will be determined not only by the intrinsic qualities of the parasites, but also in a high degree by the manner of location and distribution of the parasites themselves within the infected host. Whether they have a general distribution throughout the blood and tissues, or whether they are confined within an important organ or part, may be the factor determining the ease with which they can be reached, not only by the natural curative principles of the body, but also by artificial curative agents introduced into the body.[17]

The parasite, struggling to survive, withdraws at one time into situations to which the curative substances gain access imperfectly and with difficulty, causing thereby local infections more or less cut off from the general circulation and the curative substances purveyed by the blood. This is the condition met with in focalized inflammation and in infections of specialized portions of the body, such as the great serous cavities, that receive a modified and dilute lymph secretion carrying reduced quantities of the protective principles contained within the blood. The quality of lymph in the several serous cavities and in the various tissues is not the same, and the lowest limit of strength is reached by the cerebro-spinal fluid that functions as the lymph of the brain and spinal cord. The exclusion of dissolved substances from the cerebro-spinal liquid is a provision of great importance but is not an unmixed good, for while it affords protection to the sensitive nervous tissues from injurious chemicals, it deprives them also of curative principles. Happily this deficiency has now been superseded by a method of direct local treatment by injections that has given excellent results in meningitis, and is now being employed in luetic affections of the meninges and central nervous organs with encouraging results.[18]

Remote as some of them may seem, the considerations to which I have called your attention have a bearing, more or less vital, upon the problem of a specific and effective treatment of poliomyelitis. Poliomyelitis is not a disease with a very high mortality; its chief terror lies in its appalling power to produce deformities. When death does occur, it is not the result, as in many infections, of a process of poisoning that robs the patient of strength and consciousness before its imminence, but is caused solely by paralysis of the respiratory function, sometimes with merciful suddenness, but often with painful slowness, without in any degree obscuring the consciousness of the suffocating victim until just before the end is reached. No more terrible tragedy can be witnessed.

I have already laid before you certain facts regarding immunity in poliomyelitis, and it remains to be added that the employment for treatment of the immune serum, taken from monkeys or from human beings, exercises a definite, if not very strong, protective action upon inoculated monkeys. Either the disease is prevented altogether or its evolution is modified in such a manner as to diminish its severity. When the virus used for inoculation is highly adapted to the monkey and thus very virulent, it is more difficult to control the result than when it departs less from the original human type, and is less active.

The immune serum has thus far acted best when it was injected into the subdural space on several successive days. This is in conformity with the fact that however introduced into the body the virus establishes itself in communication with the cerebro-spinal liquid where it propagates for a time. After a time the virus localizes in the nervous tissue itself and becomes accessible not only from this liquid but, probably, from the general blood also. The serum introduced into the subdural space soon escapes into the blood, and thus a double action is secured; on the one hand, it reaches the nervous tissue directly from the cerebro-spinal liquid, and on the other hand with the blood. An immune horse serum at first gave disappointing results, but latterly its employment by intramuscular injection has given more promise. But none of the serums mentioned can be regarded as having more than touched the fringe of the problem of a cure for the disease.

Such brilliant success has been recently recorded in respect to the specific chemical therapeutics of infection that an effort has been and still is being made to attack the problem from this quarter. Here also only a starting point has been secured, and the subject merely opened to further experimentation. The point of departure which we have adopted is the drug hexamethylenamin (urotropin), which possesses a degree of antiseptic action in the body and is known to be secreted into the cerebro-spinal liquid. When the drug is administered by the mouth it can be detected by chemical tests in the liquid in a short time. When inoculation of virus and administration of the drug are begun together, and the administration continued for some days afterwards, the development of the paralysis is sometimes, but not always, averted. Hexamethylenamin lends itself to modifications by the addition of still other antiseptic groups to its molecule. We have tested a large number of such modifications, and have found certain ones to exceed the original compound in protective power, and others to promote the onset of paralysis. This is the common story of drugs. None are wholly without some degree of injurious action upon the sensitive and vital organs of the body. But manipulative skill has already succeeded in eliminating the objectionable and improving the valuable features of drugs so that they exert their action but little upon the organs and severely upon the parasites, when they become useful as therapeutic agents. This process may be called sundering the organotropic and parasitotropic effects. Whether this can be successfully accomplished with this class of compounds cannot be predicted. But if not, the quest will be transferred to still other drugs. When it is accomplished, the victory will be won. By whom will the victory be won, and when? Ours is the office of story-teller and not the vision of the prophet.

Concluding Tribute to Huxley.

In giving Huxley to science the Charing Cross School of Medicine conferred a great benefit upon the world. In imbuing him with the ideals of biological science it performed an especial service for America. For, in 1876, Huxley journeyed to Baltimore to deliver the address at the formal opening of the Johns Hopkins University, at which time he outlined in essence the plan of medical education which, twenty years later, was adopted and put into practice at the Johns Hopkins Medical School. The example of this wise foundation, inspired by Huxley, has acted far and wide throughout the United States as a regenerating force upon medical education.

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The Bradshaw Lecture

ON

THE DIAGNOSIS AND TREATMENT OF INCIPIENT PULMONARY TUBERCULOSIS.

Delivered at the Royal College of Physicians, London, on November 5th, 1912.

BY

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(*Abstract.*)

William Wood Bradshaw, M.D., F.R.C.S., M.R.C.P., in memory of whom this lectureship was established by his widow, was a Member of this College engaged in general practice. It seems appropriate, therefore, that the Bradshaw lecturer should select a subject in which general practitioners are specially interested, and should endeavour to elucidate questions of diagnosis and of treatment in such a manner as shall be helpful to them in their daily work. No subject is more important to the general practitioner than the diagnosis and treatment of incipient pulmonary tuberculosis; no morbid condition more frequently claims his attention; in none is a correct diagnosis and a suitable treatment more necessary for the welfare of the patient and for the reputation of the practitioner. . . .

At this time, when a national effort is being organized, and when large contributions from the national resources are to be furnished in support of this effort, it is highly desirable that the most effective measures and, as far as possible, the least costly should be adopted, so that the greatest possible benefit may be secured, and the funds provided may be most economically administered. This unexpected but most welcome therapeutic opportunity is a call to the medical profession to consider carefully what measures they will recommend. It is ours to direct this campaign. Are we quite clear in our minds as to the precise measures which ought to be employed?

The lecturer then briefly reviewed the statistical evidence as to the prevalence of tuberculosis, and arrived at the conclusion that about 50,000 deaths from pulmonary tuberculosis occurred every year in the United Kingdom, and 20,000 more from other forms of tuberculosis.

After pointing out that the pathological, clinical, bacteriological, and experimental work of the last few years had shown that the problem of tuberculosis might be resolved into two separate problems of unequal magnitude arising from the action of two distinct types of the *Bacillus tuberculosis*—the "bovine" and the "human"—he went on to say that the bovine type was found chiefly in tuberculosis of the abdominal organs and of the cervical and bronchial glands, and even in these almost exclusively in early childhood. It appeared, he said, to have very little influence in the production of pulmonary tuberculosis, and as five-sevenths of the total mortality from tuberculosis was due to disease of the lungs, it was quite clear that the complete annihilation of the bovine type of the bacillus would make very little difference to the mortality from phthisis. The crucial point of the struggle against tuberculosis in general was whether it was possible to abolish phthisis. If pulmonary tuberculosis could be annihilated, there would be no spread of infection by means of sputum, and there would be little or no infection of other organs in the patients themselves. For the answer, he said, we must go far back to the individual case of incipient pulmonary tuberculosis and to the individual medical practitioner who is called upon to diagnose and to treat it. The abolition of pulmonary tuberculosis is possible on two conditions only: first, that every practitioner shall learn how to detect the disease at its first appearance, long before any bacteriological evidence is available; and, secondly, that a method of treatment can be employed by the practitioner, in the patient's own home, which will be simple, harmless, completely effective, and yet inexpensive.]

I. The Diagnosis of Incipient Pulmonary Tuberculosis.

At present the great majority of general practitioners do not feel justified in giving a definite diagnosis of incipient pulmonary tuberculosis until the bacillus has been found in the patient's sputum, either by themselves or by some acknowledged bacteriological expert. This is unfortunate, for the disease is often present for weeks or months, and may have spread extensively in the lungs before a positive bacteriological report can be given. A negative bacteriological report may be entirely misleading and, indeed, calamitous in its results, for it may delude the patient and the practitioner into a false sense of security, so that the disease goes on its way unchecked until its manifestations become too plain to be any longer ignored. The fact that no bacilli can be detected in the sputum is no proof whatever that they do not exist in the lungs.

Value of Percussion.

The most recent monographs and articles in the medical journals all, with one consent, in considering the diagnostic evidence of incipient pulmonary tuberculosis, lay stress on auscultation and say very little about percussion. Yet the auscultatory signs may be very slight indeed when the percussion signs are well marked and entirely distinctive. Quite large dull areas may be present in the positions characteristic of a tuberculous infection of the lungs, and yet there may be few or no evidences of local catarrh; there may be nothing abnormal observable by the most careful auscultation, except a defect in the entry of air.

In incipient pulmonary tuberculosis the earliest signs are local areas of dullness with defective air entry as the only constant auscultatory phenomenon, though some catarrhal sounds may possibly be present in addition. The tuberculous invasion is as a rule very slow and insidious, as if the bacillus found great difficulty in establishing itself. For weeks or months the process may continue with very little general indication. Even cough may be entirely absent, no pyrexia may be detected, and loss of weight, malaise, flushing, or occasional night sweats may be the only symptoms.

Sites of Dull Areas and Method of Percussion.

If any practitioner will acquire the habit of carefully and invariably examining the heart and lungs by accurate percussion before using his stethoscope, he will enormously increase his ability to form a correct diagnosis, and will gain invaluable indications for treatment. But at what part of the thorax may the practitioner hope to detect the earliest indications of an incipient pulmonary tuberculosis? He will naturally turn to the "apex" of the lung, and on consulting some of his authorities will be instructed to percuss above the clavicle to detect a disease which such authorities imagine to commence at the extreme summit of the lung and to advance steadily downwards. The progress of the disease has even been divided into "stages" in accordance with the distance downwards from the summit attained by the morbid process, the affection of the lower lobes being often ignored altogether in such classification. Yet it was pointed out more than twenty years ago, in a valuable paper by Sir James Fowler, that *post-mortem* examination of the precise site of the earliest tuberculous process showed that it did not begin in the summit of the lung, but at a spot about an inch and a half below the summit, from which the morbid process may extend backwards and also downwards. Sir James Fowler showed that a second localization in the outer part of the upper lobe at the same horizontal level is also extremely common, and that a third early focus is very frequently present at about an inch and a half below the summit of the lower lobe on each side.

Can we detect these local areas of incipient pulmonary tuberculosis by accurate percussion? If we are to succeed in this attempt it is essential to adopt a correct method of examination. For the investigation of the front of the chest the patient *must lie on his back on a comfortable couch*, and must be completely at his ease and with his muscles relaxed. It is impossible to obtain an accurate result from percussion of the front of the chest while the patient is standing or sitting erect; the habit of physicians to examine such patients in the erect position has been the cause of the delay in the recognition of the true picture of the localization of an early pulmonary tuberculosis. If the patient is in the recumbent position on a comfortable couch which supplies an adequate resistance, and at the same time allows of complete muscular relaxation, it is quite easy by careful percussion to detect such areas in the first and second intercostal spaces which correspond to the statements made by Sir James Fowler, if it be remembered that a distance of an inch and a half in the collapsed lung of the *post-mortem* room will correspond to a distance of two inches or more in the air-containing lung during life. Of course, it is important to adopt a proper method of percussion. Let the practitioner practise light percussion on the terminal phalanx of a finger of his left hand firmly pressed on the spot to be percussed (the rest of that hand and forearm being kept away from the patient's chest wall). After a little careful practice of this method he will have no difficulty in determining in a case of incipient pulmonary tuberculosis dull areas in the inner and in the outer part of the first intercostal space on each side. The second and the third interspaces must then be examined in the same way, and the remaining parts of the anterior wall of the chest and also the axillary regions. For the posterior aspect of the thorax the patient should be sitting erect with his back to the practitioner; he should place his hands on the anterior aspect of the opposite shoulders, should bend gently forwards and relax his muscles. Careful percussion should then be practised over the inner and the outer parts of the suprascapular fossa on each side, and also over the posterior end of the spine of the scapula and the surrounding region. In a case of incipient pulmonary tuberculosis a dull area will be found in the inner part of the suprascapular fossa, quite close to the first and second dorsal vertebrae (a region normally resonant), which corresponds anteriorly to the dull area in the inner part of the first intercostal space. Similarly, a dull area (smaller in size) will be found in the outer part of the first intercostal space, and a very definite dull area, as large as or even larger than the area first described, will be found in the upper part of the lower lobe at the extremity of the spine of the scapula.

In examining the subclavicular dull areas more carefully, it will be found that they can usually be traced downwards into the second intercostal space, being in this space smaller but nearer together than in the first space. In a severe case the outer part of the second space may be involved, and (more rarely) the dullness may extend under the anterior fold of the axilla into the axillary region. It should also be observed that though at first the dull area in the inner part of the first space extends quite up to the sternum, as the patient improves resonance begins to appear at the sternal edge and may extend from 1 to 2 cm., so that the focus of morbid action is situated at about a finger-breadth from the sternum.

There are, therefore, six dull areas to be detected in the upper part of the lungs in a case of incipient pulmonary tuberculosis, two in each upper lobe and one in each lower lobe. Over these dull areas the only auscultatory phenomenon in many cases is a defect in the air entry. Even the deepest possible inspiratory effort on the part of the patient produces very little inspiratory sound at these localities, while in the lower part of the lungs the air entry may be much more distinct. On careful auscultation one may sometimes detect a slight crepitant sound with inspiration or with expiration also; it may or may not vanish after the patient has coughed. Occasionally the inspiration will be slightly "wavy" in rhythm; occasionally the expiration will be slightly prolonged. At this stage of the disease there is rarely any increase in the conduction of voice sounds.

The six dull areas above described may all be present and even of considerable size, while the supraclavicular region, corresponding to the summit of the lung, may be still very fairly resonant, though the clavicle itself may yield a dull note in the positions corresponding to the dull areas below.

These six areas at the four apices are the most important and the most easily detected part of the morbid signs of an incipient pulmonary tuberculosis. They do not represent the complete picture, far from it, as I shall show presently. But they are sufficient for the diagnosis. They are, I believe, invariably present in all cases of early pulmonary tuberculosis, though in a small minority certain areas about the angle of the scapula (of which I shall speak later) may become unusually definite, especially if any pleurisy develops over them.

Diagnostic Value of Typical Dull Areas.

To prove that these typical dull areas are not produced by any other type of disease is obviously more difficult, and requires a much wider range of careful clinical observation. Yet I believe it to be the fact. The condition which may simulate them most nearly is the tendency to lobular collapse of the apices which is not uncommon in feeble children; but this condition rarely, if ever, attains to the typical symmetrical distribution of the six dull areas of pulmonary tuberculosis. An influenzal or pneumococcal bronchopneumonia does not usually affect the apices in this definite and symmetrical fashion, and the distribution of the dull areas caused by pulmonary infarcts is very different.

Extended observation is, of course, necessary to attain to absolute certainty that these six dull areas are not produced by any other infection, but at all events it is quite clear that they justify a very strong suspicion of a tuberculous infection present or past.

It must be carefully noted that the discovery of these six areas does not necessarily prove that the tuberculous infection which has produced them is active at the time when they are discovered. For, though they diminish in size as the patient improves, they do not entirely disappear. It is probable that these old dull areas caused by former tuberculous infection remain during the rest of the patient's life. They are, no doubt, in large part due to local fibrosis—small pulmonary scars. How long they may yet contain living bacilli, which may under favourable circumstances again start a morbid process, it is impossible to say. Certainly for some months after apparent recovery these areas ought to be very carefully watched, for an increase in the size of any of them may explain doubtful clinical symptoms, and may show the necessity for renewed treatment. But after a time they may certainly become completely quiescent.

It is always wise, on the first discovery of the typical areas at the four apices, to consider carefully whether there are any indications of present activity, such as tenderness, pyrexia, cough, haemoptysis, or local crepitant sounds. Whenever any reasonable ground for suspicion of active disease exists, a week or ten days of rest in bed with continuous antiseptic inhalation should be instituted as a precautionary measure. The result will often show that this treatment has been wise, for the active signs will subside, and the dull areas will become definitely smaller.

Progress of Case indicated by Measurement of Dull Areas.

When the practitioner has detected the existence of the six typical dull areas at the four apices in a case of suspected pulmonary tuberculosis, it is most important that he should carefully measure their diameter, and should keep a record of their size at the time of their first discovery, which can be compared with subsequent measurements made at intervals of three or four weeks. I have a large number of such records, and find them easy to make, and of the greatest service in prognosis and in estimating the progress towards recovery. The size can be determined with very considerable accuracy, though not, of course, with mathematical precision. To measure them in inches or centimetres would give a false idea of the amount of exactness possible under the circumstances, and would alarm the patient by the use of tape measures. But the measure by finger-breadths is made during the routine process of physical examination and without the patient's knowledge. The finger-breadth

is a measure which is invariable for the same observer; it is (very literally) always at hand, and it admits of quite sufficient clinical accuracy. After a little practice it is possible to estimate the size of a dull area to one-sixth or even one-eighth of a fingerbreadth, approximately equivalent to one-third and one-quarter of a centimetre.

[The lecturer then related eight recent (unpublished) cases. The first six were very early cases, in which an *x*-ray examination was made, so that the results of both methods of examination could be compared. The seventh case showed that a slight relapse, due to excess of exercise, gave evidence of increase in size of some of the dull areas, and that rest and continuance of the antiseptic inhalations rapidly brought about subsidence of this extension. The eighth was a much more chronic case, which had made remarkable improvement under the use of continuous antiseptic inhalation. The practitioner would soon find the advantage to be derived from a careful observation of these six areas and would do well at first to confine his attention to them, but there were many other positions on the chest wall where small dull areas might be detected in an early case.]

Other Dull Areas.

On the anterior wall of the chest a small dull area can be discovered by careful percussion in the third intercostal space on each side, above the nipple or somewhat more internally; and further out in the same space there is on each side a dull area below the anterior fold of the axilla. On the right side, internal to and below the nipple (in the region of the middle lobe of the right lung), there is a very definite dull area, with resonance between it and the border of the right auricle (which normally extends a fingerbreadth outwards into the fourth space, and in these cases of early pulmonary tuberculosis sometimes as much as a fingerbreadth and a half). Nothing corresponding to this area can be detected on the left side, for in this position there is the dullness due to the heart. But on both sides there is a small dull area in the anterior part of the axilla at about the level of the fourth space or fifth rib. Posteriorly there is always a dull area at the angle of the scapula on each side, and another a little externally in the posterior axillary region. When the infection in this region extends to the surface of the lung and sets up a local pleurisy, as is not uncommon, these two areas unite into one, especially if any pleural effusion occurs. If the patient improves and the effusion is absorbed, the dullness diminishes and the two separate areas can again be distinguished. But if the pleural effusion increases, it may produce a large area of dullness with defect of air entry, vocal resonance, and vocal fremitus.

If the horizontal line through these two areas be prolonged towards the spine a third area is met with on each side near, but not close to, the spine. These areas also are very constant. At a slightly higher level there is an interesting difference between the two sides, for on the left side a dull area is found at the posterior edge of the scapula, about two fingerbreaths above the angle, while on the right side the position of the corresponding area is not at the scapular edge, but always nearer to the spinal column in about the sixth space. This is a remarkable and invariable difference, which evidently depends on the different anatomical division of the lungs into three lobes on the right side and two on the left. Furthermore, in the upper part of the back on each side three small separate dull areas can often be detected, and below the angle of the scapula there are also several dull areas detectable in positions which are arranged in a kind of regular pattern.

This remarkable grouping of small dull areas may usually be detected by careful percussion in quite early cases of pulmonary tuberculosis. Their relative positions are practically invariable. From their scattered and symmetrical distribution and from the slight differences between the two lungs which I have described, it seems clear that they must correspond to the ultimate distribution of the bronchial tubes in their most direct course. The dullness and lessened air entry are probably caused by multiple local centres of infection giving rise to local collapse, followed by local bronchopneumonia of a very chronic type, and finally fibrosis.

Of these dull areas the largest are always the six at the apices, as previously described. For the apical region is the least expanded in ordinary respiration, and in a tuberculous infection of the lung (especially if it at all implicates the pleura) there appears to be a reflex inhibition of respiration, just as the diaphragm movements are checked by even a local peritonitis. In an early stage of pulmonary tuberculosis the fluorescent screen will often show a marked limitation of the inspiratory movement of the diaphragm, sometimes unequally on the two sides. There can, I think, be no doubt that a similar reflex inhibition of the other inspiratory muscles is common in pulmonary tuberculosis. Every physician must have observed how difficult it is to induce such patients to take a long deep breath and thoroughly to expand the chest. This failure of expansion in its turn makes the local conditions more favourable for the development of the tubercle bacillus—another instance of a "vicious circle" in disease. Thus the morbid process develops more rapidly in the apical areas, and these areas are the most prone to soften down into irregular cavities.

Diagnostic Value of X Rays.

[The lecturer then discussed the value of the *x* rays in diagnosis, and pointed out that this method of examination might reveal changes about the root of the lungs, opaque areas and radiating lines due in all probability to chronic morbid changes in root glands, and to peribronchial and perivascular fibrous thickening. These chronic changes might possibly in any case be very old, absolutely quiescent, and might form no part of the really active morbid process.

Very great care was required in the interpretation of the radiographic picture. It showed much which was probably of little present importance, it showed less distinctly the earliest indications of active mischief, which might be more distinctly detected by careful percussion, and it confused the localization. A practitioner who did not feel able to rely on his own percussion would do well to obtain an *x*-ray picture, taken and interpreted by an expert. But a practitioner who had learnt to trust his own percussion did not need radiography to enable him to arrive at a sound conclusion. Dr. Lees continued:]

Pathological Process.

It is clear from the percussion results already stated in this lecture, and from the *x*-ray findings which confirm them, that an incipient pulmonary tuberculosis consists in the carriage of tubercle bacilli, almost certainly by inhalation, to the finest bronchial tubes and alveoli in areas scattered freely over the lungs, followed by morbid changes which advance more rapidly in the upper part of both upper and lower lobes. From these infected areas the morbid process advances along the lymphatic sheaths of the bronchial tubes and of the blood vessels till it reaches the glands—pulmonary, bronchial, and tracheal. It seems to be possible in young children for the bacilli to make their way to these glands without any apparent implication of the pulmonary tissue. Probably this is due to the greater freedom and activity of the lymphatic circulation in early childhood.

An examination of the *post-mortem* records of the Hospital for Sick Children, Great Ormond Street, shows that in the majority of children dying from tuberculosis the chief seat of the infection is in the bronchial and tracheal glands and in the lungs. This infection is often extremely virulent, the glands being greatly enlarged, caseous, and often breaking down; frequently they involve the pulmonary tissue by contiguity or by rupture into a bronchus. (The lower lobe of the right lung is specially prone to suffer in this way.) An acute miliary tuberculosis of the lungs is a frequent result. When the process is more chronic an implication of the apices of the lungs, resembling that found in adults, may occur, and even in very young subjects cavities are not rare. In this group of cases the implication of the cervical glands is usually much less marked, while the mesenteric glands are often normal. In a smaller number of cases the implication of the bronchial and tracheal glands and of the lungs may be very slight or even absent, while the cervical glands, and still more frequently the mesenteric glands, are caseous. But even these may be but little affected while the peritoneum is crowded with tubercles, as if the bacilli made their way through the intestinal wall, leaving little or no trace of their passage, just as happens in the lungs.

The first group of cases are almost certainly due to inhalation of bacilli of the "human type," while in the second group the infection appears to enter by the alimentary canal. Probably these are often due to the "bovine" bacillus.

In adults the local chronic tuberculous changes in the lungs are much more commonly observed than in children, and the implication of the glands is much less marked and much less virulent. Also the spread of tuberculosis along the lymphatic sheaths of the blood vessels until the cerebral meninges are attacked is much less common in adults than in children. But both in children and in adults the disease begins, not at the root of the lung, but in the finest bronchial tubes and in the alveoli, in scattered areas which show a characteristic localization.

To sum up this discussion, I would claim that the first of my two questions may now be answered in the affirmative. It *is* possible for any general practitioner of medicine, by the adoption of a correct method of examination and the exercise of a little care and patience, accurately to diagnose the existence of an incipient pulmonary tuberculosis long before any bacteriological evidence can be obtained. It is not necessary for him to wait for a positive bacteriological report, and he will be foolish indeed if he allows a negative report to shake a diagnosis which is founded on an accurate physical examination. The possibility of a correct diagnosis is, in more senses than one, *in his own hands.*

II. The Treatment of Incipient Pulmonary Tuberculosis.

It is quite certain that sanatoriums have been extremely useful, and that by their help many patients have been restored to health. Yet it must also be sorrowfully confessed that many patients who have lived in a sanatorium for six months, at a very considerable cost, are still not completely cured, and that numerous instances of subsequent relapse occur, so that in the minds of many practitioners there is a growing scepticism as to the curative value of sanatoriums. And when we consider the matter carefully we see that, though the treatment by absolute rest, abundance of fresh air, and abundance of nutriment places the patient under the most favourable circumstances for fighting his battle with the invading bacilli, it does not include any organized attack on the bacilli themselves. It is the consciousness of this that has led many to desire to make trial of tuberculin. But is there no simpler and less dangerous method of direct attack? Is it quite certain that ordinary antiseptic drugs are of no value in the treatment of pulmonary tuberculosis? On the contrary, it is quite certain that some cases have markedly improved under the use of large doses of creosote. Of late the value of injections of a preparation of which iodine appears to be the active agent, has been prominently advocated in France. And a letter in the British Medical Journal from a practitioner who had been using tuberculin and whose supply was exhausted related that he had substituted injections of carbolic acid and had obtained better results. But creosote by the mouth is apt to cause much disturbance of the organs of digestion, while hypodermic injections are apt to be painful, and require the most scrupulous precautions against sepsis.

Treatment by Continuous Inhalation of Antiseptic Vapours.

Why not administer these antiseptic drugs by a method of inhalation? If a patient inhales a combination of antiseptic vapours persistently, day and night (except when actually taking food), by the principle of diffusion of gases the antiseptics must make their way into the pulmonary alveoli, if the inhaler be worn for a sufficient length of time. This is surely indisputable. And if antiseptic drugs like creosote, carbolic acid, and iodine are dissolved in alcohol, ether, and chloroform, there must be a gradual absorption of these anaesthetic agents into the blood, for this is an ACE mixture, and we know that if used in greater strength it would prove the absorption by producing general anaesthesia. The slow absorption of these agents in a very dilute condition must carry with them into the blood the antiseptics dissolved in them. How these may be transformed in the blood it is for physiological chemistry to determine, but it seems likely that some antiseptic influences will thus be carried by the blood stream to the tuberculous foci, which will then be attacked both from without the lungs and from within.

Certain other properties of this combination of drugs deserve attention. First with regard to the alcohol, we have learnt from the remarkable observations of Professor Collingwood and Dr. W. H. Willcox how much the stimulating and tonic effect of oxygen given by inhalation is increased by passing the oxygen through absolute alcohol. Dr. Willcox has calculated the amount of alcohol absorbed, and finds it to be very small; yet it exercises a most remarkable influence, as has subsequently been proved by administering oxygen bubbled through alcohol in cases of cardiac failure. The effect of the continuous inhalation of an antiseptic mixture in which alcohol is the solvent must therefore be a tonic and stimulating influence constantly at work. Another constituent of the mixture—ether—will act similarly, and perhaps more strongly. Lastly, chloroform has a local sedative influence, and strongly tends to diminish cough. I therefore recommend, and have constantly employed, the following formula for a solution to be used for continuous antiseptic inhalation:

℞ Creosoti	...	℥ii)
Acidi carbolici	...	℥ii)
Tinct. iodi	...	℥i) = ℥i
Sp. aetheris	...	℥i)
Sp. chlorof.	...	℥ii)

Menthol and formalin appear to me too irritating, and unsuitable for continuous inhalation.

The results of treatment which claims to be "scientific" must be tested not simply by the assertion of the patient that he is "better" (have we not all heard of the *spes phthisica?*), but by diminution of pyrexia, of cough, and of sputum, by increase in weight, and by careful observation and record of the physical signs.

The lecturer then presented in a table (not here reproduced) the results obtained in 70 cases treated with the formula above stated, which had been already published in the medical journals.* The most recent of the cases had ceased treatment a week ago. The condition of each case in October, 1912, with very few exceptions, had been ascertained by letters directed to the patient or to the medical man who sent him. The answers had been pleasant reading, for they had shown the most satisfactory results in nearly all cases, and they had been full of gratitude. Out of the 70 cases there were:

Complete recoveries	...	48
Probably complete recoveries ...	...	3
		51
Cases incompletely cured ...	...	10
Final result not known	...	2
Died	...	7
Total	...	70

Of the 10 incompletely cured, 9 had improved remarkably; 1 had deteriorated. Of the 7 deaths, 1 was due to apoplexy after recovery from the lung disease, 1 was hopeless when first seen, 2 abandoned treatment, 1 died from haemoptysis, 1 from abdominal tuberculosis, and 1 from tuberculous meningitis.

In 19 of the cases in this series a bacteriological examination of the sputum was made. The results were as follows:

	Cases.	Recovered.	Chronic.	Died.
No tubercle bacilli present ...	8	8	—	—
Tubercle bacilli found in 10: Small or moderate number	6	4	2	—
Many	4	3	—	1
Totals	18	15	2	1

The rapid gain in weight was worthy of notice. The gain in the first three weeks of treatment in 33 cases showed an average of 3.8 lb., the total gain in weight in 59 cases an average of 12.4 lb. In every one of the 70 cases both lungs were found to be affected, but in

* Cases 1 to 30 in the British Medical Journal, December 11th and 18th, 1909; Cases 31 to 50 in the *Lancet*, November 13th, 1910; Cases 51 to 70 in the British Medical Journal, April 6th, 1912.

almost all one lung was more affected than the other, though the difference was usually slight. In 2 cases only were the right and left lungs about equally affected. In 44 cases the right lung was more affected than the left; in 24 cases the left lung was more affected than the right. Thus in this list of 70 cases the right lung was chiefly attacked nearly twice as often as the left.

The lecturer said that the idea of administering antiseptic drugs by the air passages in cases of phthisis suggested itself to physicians thirty years ago. He referred to the use of the method by the late Sir William Roberts and the late Dr. Coghill and to the simple inhaler of perforated zinc designed by Dr. Burney Yeo in 1881.* Dr. Wilson Fox in 1885 had recommended the use of antiseptic inhalations, Dr. Beverley Robinson of New York had followed the recommendations of Dr. Yeo and had published evidence of the value of the method in phthisis and especially in laryngeal tuberculosis. Dr. Muthu had also used solutions of menthol and formaldehyde, employing them for six or eight hours daily. Dr. Garry of Cairo had also published good results, and the late Dr. Huggard of Davos had, ten or twelve years ago, used inhalations day and night continuously with success.

The lecturer then continued as follows:]

Method of Inhalation Treatment.

For the last seven years I have treated all my cases of pulmonary tuberculosis (except some seen in consultation at a very advanced stage) by the method of continuous antiseptic inhalation, by means of a Yeo's inhaler, and the antiseptic solution of which the formula is stated above. In adopting this plan of treatment it seemed to me that certain conditions were necessary if the greatest possible amount of benefit was to be obtained.

1. The inhalation *must be continuous*, the inhaler being worn all day and all night, except at meal-times.

2. At the beginning of the treatment a *period of rest in bed is essential*. The importance of this in the treatment of tuberculosis is well understood in sanatoriums. In addition the compulsory rest directs the patient's attention to the necessity for careful and thorough use of the method.

3. Digestive disturbances, anorexia, and diarrhœa or constipation must be treated by appropriate drugs.

4. The patient must be supplied with a *sufficiency of easily digested food*. Malted milk dissolved in (scalded) milk given at the end of each of the four meals has proved invaluable for this purpose.

5. *Careful disinfection of the mouth* with equal parts of Sanitas fluid and water four times daily, after the milk, has been always ordered. As soon as the patient has begun to make definite progress carious teeth should be stopped or removed. Antiseptic sprays may be used for unhealthy conditions of the fauces, and a spray of cocaine, eucalyptus, and parolein to relieve any nasal obstruction.

6. *Smoking* must be absolutely forbidden.

These are the principles on which the 70 published cases were all treated.

I advise, therefore, that whenever a practitioner has reason to suspect that a patient is infected with incipient pulmonary tuberculosis, and has by careful percussion detected the presence of the six characteristic dull areas at the four apices, he should carefully note the size of these areas, the morbid sounds present, and the patient's weight; and at once order a period of rest in bed for seven, ten, or fourteen days, according to the extent of the dull areas and the acuteness of the symptoms. Two Yeo's inhalers (each costing only 6d. or 1s.) should be procured, so that they may be used on alternate days and may be properly cleansed by immersion in boiling water and careful drying.

The solution of which the formula has been already mentioned should be supplied, and the patient instructed to pour six to eight drops on the felt of the inhaler *every hour* [illegible] and once or twice during the night if [illegible]. Nearly all patients soon become [illegible] the inhaler at night. The object [illegible] piece of felt *constantly* saturated with the solution, but so that none of it wets the [illegible]. The [illegible] of the inhaler should be carefully wiped before it is applied, and a little vaseline or lanolin cold cream smeared over the nostrils and upper lip at first.

By simple precautions like these, with the use of an inhaler of proper size, any irritation of the skin of the nose or lips may be avoided. The possibility of such irritation is the only disadvantage of the method, and it may be avoided if careful instructions are given at first. The inhaler must be worn persistently and removed only at meal times. After the first day or two the patient, while in bed, may read, write, do hand work, or play simple games. Dyspepsia and anorexia may be treated with sodium bicarbonate, nux vomica, and a vegetable bitter given a quarter of an hour before meals three times daily. The patient should be encouraged to eat freely of plain nutritious food, and at the end of each of his four meals he should drink slowly a half-pint of fresh milk which has been raised to the boiling point and allowed to cool, and to which two teaspoonfuls (gradually increased to a tablespoonful) of malted milk has afterwards been added. The bedroom windows should, of course, be kept open, but the patient must be kept warm in bed and protected from draught. After his meals he should always rinse his mouth with equal parts of Sanitas fluid and water. Smoking must be absolutely forbidden. When the necessary period of rest in bed is at an end the patient may be allowed to sit up in his room still wearing the inhaler persistently. Two or three days later he may be allowed to lay it aside for an hour in the morning and take a short walk out of doors. But when he returns he must at once replace his inhaler. At the end of three weeks the practitioner should again weigh his patient and again carefully record the size of his dull areas. Almost invariably a considerable gain in weight, often from 3 lb. to 5 lb., will be discovered, and the size of the dull areas will be found to be definitely smaller. Cough will be much diminished—in many early cases it ceases altogether; sputum will be less and more easily expectorated; and the temperature chart will be more satisfactory. The patient generally feels so much better that he is quite willing to continue the treatment. He should now be instructed to practise simple breathing exercises three times daily in order to obtain a better expansion of the lungs. The inhalation treatment should be continued persistently (except for an hour in the morning) during the next four weeks, at the end of which time the weight should again be taken, and the size of the dull areas carefully ascertained and recorded. If the progress of the case has been satisfactory during the first seven weeks it may now be possible to reduce slightly the number of hours of inhalation, but such reduction should be very gradual. The danger at this period is that the patient, feeling himself better, should grow careless. If he does, there is a considerable chance of a relapse, which will necessitate a return to bed for a fortnight with continuous inhalation. Experience shows that the patients who are most conscientious and persevering in carrying out the treatment improve most rapidly and are least liable to relapse. A very early case may, perhaps, be able to return to ordinary life after three or four months of treatment, but one in which cavitation has occurred will need six months or longer. After apparent recovery the patient will do wisely to use his inhaler for one or two hours daily, and also at night, for a further period of six months. Whenever he is conscious of having "caught cold," he should remain in bed for a day or two days, and practise continuous inhalation all the time.

This treatment by antiseptic inhalation can be carried out in the patient's own home if the hygienic and sanitary conditions are satisfactory. It is not usually necessary to send the patient to a sanatorium, so that there is a great saving in expense, and the practitioner does not lose charge of him. But where the home conditions are unsatisfactory it will be wise to send him to a sanatorium at which he will be permitted to carry out the treatment by inhalation. No idea of change of climate or foreign travel or sea voyage should be entertained until he has been through a course of inhalation treatment, and even then he must take his inhaler with him and use it freely.

I now venture to claim that my second question, as well as the first, may be answered in the affirmative. It *is* possible to provide the practitioner with a simple, inexpensive, and very effective form of treatment which can be used in the patient's own home.

[illegible] found advisable to increase the size a little for cases [illegible] treatment needs. This [illegible] inhaler (M), the original type as Yeo's inhaler (L); both are made by Squire and Son.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF PATHOLOGY.

Professor WALKER HALL, President.

PRESIDENT'S INTRODUCTORY REMARKS.

In the course of a short address initiating the proceedings of the Section, and after allusion to the fact that a number of the most eminent authorities on the subjects to be discussed were present, Professor Walker Hall said: We are sometimes apt to forget that the Annual Meeting of the Association affords us the important advantage of coming into close contact with those who are working on the advancing line of knowledge in the subjects selected for discussion. Although through the medium of our JOURNAL a summary of the proceedings may be read in the remotest hamlet or colony, the mere printed account does not convey the stimulus obtained by the actual participation in the discussions. Such a stimulus tends to stir us from the grooves and ruts of everyday routine, and enables us to look at ordinary things through other glasses. If I read aright the signs of the times, a demand for post-graduate study and stimuli is being more widely prepared, and the universities will find it necessary to provide courses to suit the needs of their particular districts. It may happen that social developments will lead to the distribution of official and semi-official appointments upon the merits of post-graduate attainments, and so make our life-work one of repeated periods of study as well as of daily bedside observation; but whether this be an incentive or not, there is every reason to suppose that it will be more and more necessary to keep abreast with the advances of laboratory investigations; hence these meetings will gain importance in the eyes of the members of the Association engaged in general practice. On the other hand, the laboratory worker finds it of great value to meet and to talk with those who are confronted with the problems of the individualities as well as of the diseases of patients, and we may reasonably hope for larger interest from this quarter as well. Our programme has been arranged with the deliberate idea of bringing forward subjects of everyday interest to the general practitioner.

DISCUSSION ON BRIGHT'S DISEASE.

OPENING PAPERS.

I.—J. LORRAIN SMITH, F.R.S.,

Professor of Pathology, University of Manchester.

IT is admitted on all hands that the correlation of the clinical and pathological findings in cases of Bright's disease is one of the most difficult questions in medicine, and this difficulty arises from the complexity of the problem.

In the kidney there is a very complicated secreting apparatus, and a blood supply in which the blood passes through two sets of capillaries, as well as a lymph circulation the conditions of which are very little understood. To explain how each of these elements is affected in the condition of inflammation is the problem presented to the pathologist.

For some time I have been making observations on granular kidneys, and it is with this subject that I propose now to deal.

The result on the kidney of the various inflammatory lesions that affect it is the atrophy, degeneration, and disappearance of the secreting tubules, the thickening and obliteration of the lumen of the blood vessels, and, on the other hand, there follows the growth of the fibrous tissue stroma; the fibrous tissue survives and grows while the other tissues atrophy and disappear. The presence of fibrous tissue, beyond the very limited amount which is normally present, indicates that, in the area where it is found, there has been, in some form or other, a preceding inflammation, and it is worth while considering the problem of Bright's disease from the point of view afforded by a study of the distribution of fibrous tissue.

It is usual to discuss nephritis as it takes the form of an acute attack with more or less direct sequelae, and the problem then is to discover on which particular structures in the kidney the attack has fallen. It may fall on the glomeruli, on the tubules, or the stroma, and it is from a study of the problem in this way that we have learnt most of the known facts: but there are limitations to the application of this conception due to the fact that the various structures can be only partially separated from each other, and therefore, when the function of one structure is disturbed, the others suffer also, though it may be in a less degree. Inflammation tends to cause necrosis especially of the epithelium, and following on this there is a growth of the fibrous stroma, and by the growth the stroma replaces the tissues which have been destroyed. It is, however, not an equivalent replacement, and the organ as a whole decreases in size. In this respect nephritis resembles infarction of the kidney, where the fibrous growth which follows is always small in amount. So also the fibrous overgrowth following arterio-sclerosis of the larger renal vessels is always scanty, and there are large depressions in the cortex corresponding to the arterio-sclerotic areas. In the kidney there is observed also an abundant growth of fibrous tissue in cases of chronic parenchymatous nephritis, where the tubules show atrophy of the epithelium and degeneration. The exact stimulus to the growth of fibrous stroma in such a case has never been determined. Necrosis, if it occurs in such cases, can be only of the partial kind described by Albrecht, in cloudy swelling.

If we leave aside the controversies as to the exact sequence of events in various types of nephritis and compare the different forms as regards the distribution of fibrous tissue during the chronic stages of the disease, we find that there are two types of fibrosis: (1) That in which the fibrous tissue appears diffused through the cortex more or less uniformly; (2) that in which the fibrous tissue is distributed in patches, while the other areas of the cortex are unaffected. The stroma has not increased at all in certain areas, while in the affected areas it has increased very markedly, and replaces, more or less completely, the tubules and glomeruli and blood vessels. It is, therefore, a circumscribed or patchy fibrosis.

Diffuse Fibrosis.—This form is seen in its earliest stages in the large white kidney. If the nephritis is of comparatively recent origin, say of six months' standing, the kidney is large and pale in colour; the capsule is not thickened nor adherent; the cortical surface is quite smooth and the organ has the appearance of degeneration rather than of fibrosis. The microscope shows the presence of a large amount of fibrous tissue distributed uniformly throughout the cortex and in such a way that in a section it would be impossible to find a tubule or glomerulus or blood vessel that is not surrounded by a layer of fibrous tissue. From this change in the structure we may infer that the function of the tubules is interfered with, because it is obvious that the tubule will lose in efficiency when separated from its blood vessels by a strand of fibrous tissue. We may also infer that the nephritis affected the whole structure of the organ, and has left as a sequela a correspondingly general fibrosis.

The tubules show characteristic changes: the epithelium is very much atrophied, the part of the cell protoplasm next the lumen having broken away, and the lumen has the appearance of dilatation. The glomeruli are, as a rule, enlarged, and some of them may show signs of the fibro-hyaline transformation associated with nephritis of long standing. There is also marked fatty degeneration. Globules of fat are seen in the secreting epithelium very generally, and they are also plentiful in the stroma. The

appearance suggests that the globules in the stroma are derived from the epithelial cells of the tubules from which they have passed to the spaces of the stroma.

It is the abundance of fat in the epithelium and interstices that has given the name of "large white kidney" to this condition. At the stage which I have described the fibrous tissue has not contracted. It is still oedematous and soft, so that the cortical surface has as yet no granularity.

The functional changes correspond with the alterations in structure. The urine is scanty and loaded with albumen and casts; the patient has general oedema, and finally dies of uraemia. The secreting power of the kidney, both as to solids and fluids, has been damaged, and as we have seen from a study of the fibrosis the whole kidney is diseased. The kidney contains no tissue which can carry on the function, still less is there any secreting tissue which shows signs of hypertrophy. There is everywhere atrophy of the epithelium and everywhere fibrosis. The patient with this type of disease as a rule survives only a short period. Many die before the subacute stage is reached, a considerable proportion die in the subacute stage a few months after the acute attack; rarely does the patient live for many years.

It is to be noted, however, that patients do occasionally survive, and we must also point out that while the whole

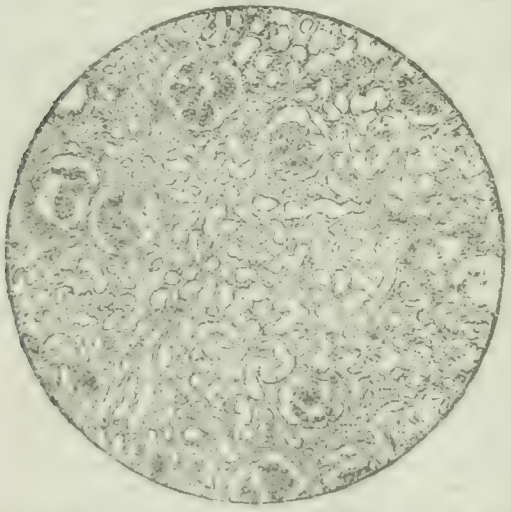


Fig. 1.—Section of kidney cortex, low power, in a case of large white kidney. The patient was a boy aged 15, who died nineteen weeks after the acute attack. Atrophy of epithelium and growth of intertubular stroma and fatty degeneration in epithelium and stroma universal throughout the cortex.

kidney is diseased it is evident, as we pass from area to area in examining the cortex, that one area is more severely damaged than another. The fibrous new growth is more plentiful in one area than another. It is probably not going too far to suggest that a kidney with a large amount of relatively less affected tissue is able to maintain the renal functions for a correspondingly longer period, and therefore the period of survival varies.

Patchy Fibrosis.—The kidneys are small in size, weighing 2 oz. and 3 oz. each instead of the usual 5 oz., and it is to be remembered that even this reduced kidney contains much functionless fibrous tissue in its cortex. The cortical surface is granular and the sulci between the granules are red, while the granules are pale. The redness which has given the name of "small red kidney" is due to congestion of small capillary-like vessels in the fibrous strands, which are widely dilated with blood and are thereby a great contrast to other vessels in the same area, with very much thickened walls and narrowed lumen. The cortex [illegible] diminished in size, and the mouths of the [illegible] too prominent and rigid. The cortex may be [illegible] partly from the absence of the congestion [illegible] presence of fatty degeneration. This, however, is never so marked as that seen in the cases of diffuse fibrosis.

[illegible] examination shows as an outstanding [illegible] structure the presence of areas in which fibrous tissue is abundant and where it has led to atrophy, compression, and disappearance of the tubules. The fibrous tissue has not only surrounded them, but it has contracted and led to their compression. The glomeruli in this area are transformed into masses of hyaline fibrous tissue. Bordering on the areas just described, and roughly corresponding to them in size, are areas of cortex in which there is no fibrosis whatever. The tubules are in the normal relation to each other, and to the blood vessels; and these and the glomeruli are normal in structure. The tubules in which the normal relationship has been preserved may show cells in a condition of hypertrophy. The disease in this case is a localized circumscribed effect, and the hypertrophy of the epithelium is due to an effort on the part of the surviving normal tubules to compensate for the loss of those which occupied the areas now in a state of fibrosis. In such a case the kidney secretes a large amount of urine, but it contains little or no albumen, and casts are rare. The blood pressure gradually rises, and the patient dies from uraemia, cerebral apoplexy, acute infections, such as pneumonia, pericarditis, pleurisy, etc. As a rule, the disease runs a prolonged course, and the fact that the patient survives is due to the presence in the kidney of islets of normal secreting tubules and glomeruli, which are so normal that

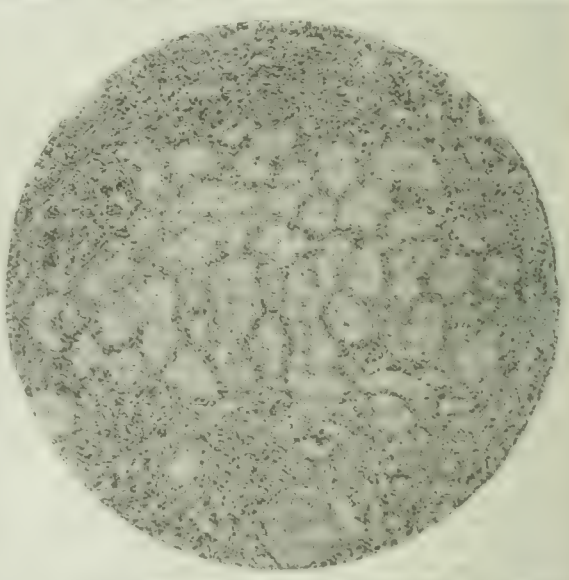


Fig. 2.—Low power magnification of section of cortex in a case of chronic interstitial nephritis associated with gout. In the centre is an islet of normal cortex, showing a normal glomerulus with more or less normal tubules (dilated). Surrounding this are fibrous areas in which the stroma has increased, the tubules have atrophied, and the glomeruli are hyaline and fibrous.

they can pass into a condition of hypertrophy. Since it is on these islands that the prolongation of the patient's life depends, I need not point out that the efforts of the practitioner in attendance are and should be directed to the maintenance of them intact. The patient, however, has a diminished amount of kidney tissue, and a strain which could produce no harmful effect on a normal person, such as muscular exercise, will give rise to albuminuria in a patient with a kidney of this kind. The question naturally arises, Is this merely albuminuria, or have we to deal with the kind of effect from which springs the gradual slow progress of the nephritis in such cases? This is a question of fundamental importance in practice; but data are not yet available to furnish the answer.

So far I have dealt with the problem as it is presented in the contrast between large white kidney and granular kidney. The large white kidney, however, is but a stage in the development of the sequelae of parenchymatous nephritis.

If we take the other stages of the condition we find the same type of structural changes present. In acute scarlatinal nephritis, for example, we may find very marked exudation, not only of fluid but also of cells, into the renal tissue. This is diffuse, but at the same time one area as compared with another may be so intense as to have a focal appearance.

The difference is brought out in the photograph from a case of scarlatinal nephritis. In the centre of intense

reaction the tubules have disappeared and have been replaced by the cells of inflammatory exudation, but in neighbouring areas the tubules still remain.

The same contrast is brought out in the small white kidney which is the more chronic form of the diffuse nephritis. Here the changes, though diffuse in distribution, vary in degree from one locality to another. This is brought out in the accompanying photograph (Fig. 4).

It has been held by various pathologists that the chronic interstitial nephritis or, as I prefer to call it, localized nephritis, has its origin in vascular disease. It is so different from the parenchymatous type in its form and development that its origin in the same kind of nephritis seems at first sight improbable. Does it ever happen that a case of undoubted diffuse nephritis terminates in a genuine granular kidney of chronic interstitial nephritis? This is difficult to prove; so difficult, indeed, that Sir Clifford Allbutt is inclined to doubt his former belief in the sequence.

That diffuse nephritis recovers completely in certain cases, however, is admitted, and we can conceive of cases in which recovery was irregularly complete; where certain areas completely recovered, while others passed into a state of fibrosis, with complete destruction of function following. That such is the case would seem to be the explanation of the late Dr. Dixon Mann's well-known case of post-scarlatinal nephritis. He published an account of

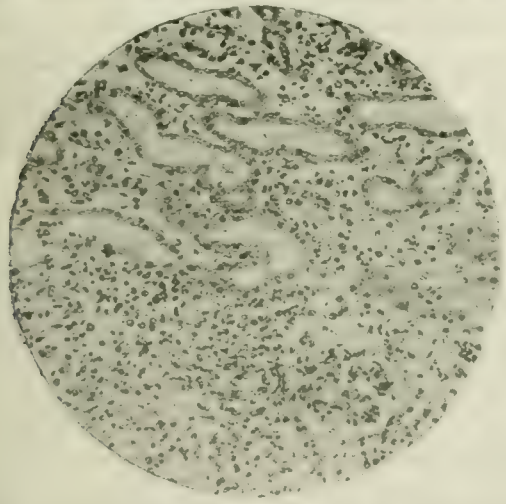


Fig. 3.—Section of kidney cortex, low power, from a case of scarlatinal nephritis. The cellular reaction is intense and universal, but varies from one area to another.

this case, along with a report on the histological changes by Professor Delépine, in the *Lancet* of 1895:

> The patient had scarlet fever, and developed nephritis of the typical parenchymatous form. There was only partial recovery, and albumen was found in the urine at the six to eight examinations which Dr. Dixon Mann carried out each year for a period of 28 years. The patient died of uraemia. The kidneys weighed about 2 oz. each, and they showed adherent thick capsule, contracted cortex, and granular cortical surface.

This case shows on microscopic examination a form of patchy fibrosis, but, as might be expected after so long a period, the fibrosis has invaded a very large part of the cortex.

The case affords as clear proof as we could obtain that a parenchymatous nephritis may subside to such an extent that patches of cortex are left in a condition approaching the normal. This is not a commonly observed sequence, and it would be worth while for clinical observers to record cases which clearly illustrate this sequence.

Such a sequence cannot be shown in the ordinary cases of chronic interstitial nephritis; and, indeed, the time and mode of onset in this disease are, in the majority of cases, exceedingly obscure. We cannot, however, attach much weight to this argument, since Sir John Rose Bradford has shown that there is a type of diffuse parenchymatous nephritis in which there is not only an absence of symptoms till near the end of life, but the patient can give no account of the onset. The origin of the conditions which lead to granular kidneys is not more obscure than this.

The explanation of granular kidney as the result of arterio sclerosis of the small arteries and capillaries has a certain amount of evidence in its favour. It is in accord with the insidious origin of the condition; the localized fibrosis is, in many respects, similar to that seen in cases of multiple small embolisms; the absence of symptoms in connexion with the function of urinary secretion and the great prominence of the vascular changes also find a very simple explanation.

On the other hand, these arguments are not altogether convincing. The localization of the disease may be due to other causes than the blood vessel distribution. In pyelonephritis, such as that accompanying stone, or in tuberculous pyelonephritis, there is a form of localized patchy inflammation and fibrosis where the distribution of the inflamed areas is not determined by the blood vessel distribution.

As regards changes in the urine, one need only point out that they are never quite completely absent. There may for a period be no albumen or casts in the urine, but it is not unusual for both to be found, and any strain on the kidney may be followed by the appearance of albumen. On the other hand, in the quiescent periods we would not expect to find albumen and casts in the urine since the

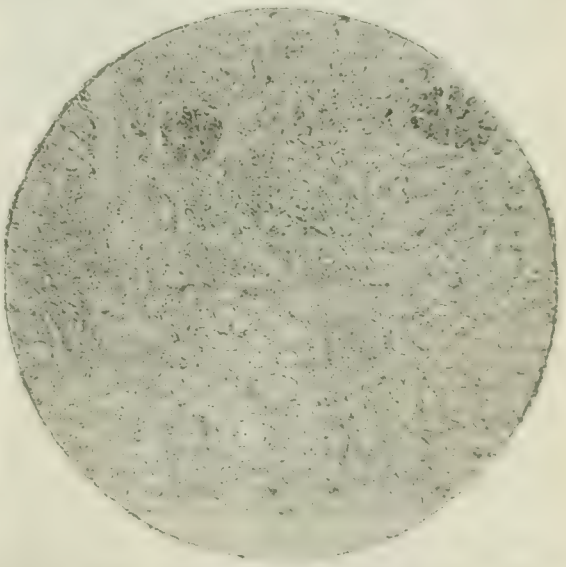


Fig. 4.—Section of the kidney cortex in a case of small white kidney. There is universal fibrosis, but there is considerable variety in the extent to which different areas are affected. In contrast to the large white kidney section this shows more compact fibrous tissue and advanced hyaline fibrous changes in the glomeruli. There is a clear history of well-established symptoms six months before death.

urine is secreted by glomeruli in tubules approximately normal, and those areas or patches affected are completely functionless. In other words, the damaged tissue which might secrete abnormal urine is in such a condition of atrophy that it does not secrete at all. Finally, the prominence of the blood vessel changes in granular kidney is admitted, but the explanation that suggests itself for this is that in these cases the process has been at work for a long period of years, and the slowly formed sclerosing process and the accompanying degeneration have had ample time to form. Vascular and glomerular changes, similar though not so marked, are to be found in the small white kidney.

To enable us to come to a clear decision on this question it would be necessary to have further insight into the meaning of localization of structural changes in general as the result of a general pathological process. A similar difficulty arises in connexion with widely different forms of disease. Dr. Rolleston has pointed out that a comparison may be drawn between the conditions of the fibrosis (diffuse) in hypertrophic cirrhosis of the liver and in the atrophic (localized) form. In the latter case there is a patchy lesion in the areas of which the secreting liver tissue is being destroyed, and, alternating with this, islands of approximately normal and active liver cells, which not infrequently show some degree of hypertrophy. In the case of hypertrophic cirrhosis, again, the growth of

fibrous tissue is more rapid and more diffused, and this tissue being the more recently formed, is vascular and cellular rather than fibrous. The localization of the process in these contracted conditions is exceedingly obscure.

Another comparison from a different field of pathology is obtained in studying fatty degeneration of the heart. In one type the fat is deposited in the muscle fibres in well defined areas and in the other it is present in a diffused form and is found in each fibre. Here also the localization remains to be explained.

It is unnecessary to adduce further illustrations of the localization in organs and tissues of effects which are due to generally distributed toxins or other irritants, and it is impossible here to enter on a fuller discussion of the physiological basis of this form of localization. My purpose has been to show that in the contrast between the localized and diffused fibrosis we find one of the most definite and significant distinctions in the pathology of nephritis, and a distinction which must be kept in view when an attempt is made to classify in detail the various forms of Bright's disease.

In conclusion, I would like to put before the Association an analysis of the records of 1,710 *post-mortem* examinations carried out in recent years in the Royal Infirmary, Manchester, and I have to express my indebtedness to Dr. Anderton for his help in working out the results.

Of these cases, 395, or 23 per cent., showed the presence of granular kidney at the time of death. Of these, 276 were uncomplicated cases of Bright's disease. So that about 16 per cent. of all the cases died from Bright's disease.

TABLE I.

In 1,710 consecutive *post-mortem* examinations the kidneys were found to be granular in 395 cases, or 23 per cent. This group includes cases of chronic interstitial nephritis, small white kidney, and arterio-sclerosis of the kidney. Of these cases, 62 per cent. were men and 38 per cent. women.

The age distribution of the cases was as follows:

Age.	Per Cent.	Age.	Per Cent.
10–20	0.25	50–60	26.25
20–30	2.25	60–70	23.5
30–40	10.50	70–80	6.25
40–50	28.75	80–90	0.75

The period during which granular kidney is most common is from 40 to 70 years of age. After the age of 70 there is a very marked decrease in the number of cases observed. The decade of 40 to 50 is the period during which the largest number of cases occur.

TABLE II.—*The Immediate Cause of Death.*

	Per Cent.
Uræmia	6.75
Cerebral haemorrhage	14.0
Heart failure and disease of vessels ...	33.0
Inf[illegible] genito-urinary organs ...	1.75
A[illegible] ...	11.75
Tuberculosis	2.75
Other causes, including accidents ...	30.50

The cases of heart failure, etc., may be subdivided into:

	Per Cent.
1. Chronic cases associated with general passive congestion	20
2. Cases of acute failure from myocarditis, malignant endocarditis, atheroma of the coronary arteries, aneurysm of the aorta, etc. ...	13

In this table we have placed cases of cerebral haemorrhage in a separate group; they should, however, be considered also as belonging to the group in which the cause of death is to be found in the disease of the circulatory system. When the two groups are added together they amount to 47 per cent. of the total, or nearly half the number.

Table III shows an interesting uniformity in the average weight of the hypertrophied heart at the different periods. It would suggest that the capacity of the heart to hypertrophy is limited in some definite way, either by the limitation of the demand or by a limitation of the response on the part of the muscle because of the abnormal metabolic conditions of the organism. It is clear, however, that the response is not so much limited in conditions of lead poisoning.

TABLE III.—*Average Weight in Ounces of the Heart in all Cases.*

Normal = 11.

Age.	Oz.	Age.	Oz.
10–20	11½	50–60	15.4
20–30	14½	60–70	14.5
30–40	16.1	70–80	14.5
40–50	14.3	80–90	14.3

Of the whole 395 cases, 276 were uncomplicated by any other disease, and if these be taken separately the weight of the heart averages 14.85 oz.

The average combined weight of kidney in these cases, if we exclude those of active or passive congestion, was below the normal average of 9 oz. in 75 per cent.

Among the 1,710 cases, 41 were from tradesmen in whose occupation there was a risk of lead poisoning.

Number of cases	41
Granular kidney	21
Average weight of heart	18.8 oz.

The average combined weight of the kidneys in these cases was 8.7 oz.

TABLE IV.—*The Association of Arterio-sclerosis with Granular Kidney.*

In 144 cases uncomplicated by any other disease the following results were obtained:

	Per Cent.
Atheroma of aorta, cardiac and cerebral arteries...	30.6
Atheroma of aorta alone	15.0
No atheroma	22.0

In the remaining 32 per cent. atheroma occurred in one or more of the three sets of vessels.

Cases of Cerebral Haemorrhage.

Number of cases	55
Average combined weight of kidneys	7.8 oz.
Weight of heart	15.2 oz.

The analysis of the results as regards disease of the blood vessels is of interest. There is no atheroma visible to the naked eye in 22 per cent. of the cases where an examination of aorta, cardiac and cerebral arteries was made. This is remarkable, because it has been shown that granular kidney is not a very common occurrence till after 40 years of age, when the time of arterio-sclerosis is approaching. That so large a percentage should show so little evidence of arterio-sclerosis is confirmed by the fact that in a great proportion of the remaining cases arterio-sclerosis was of a very limited type, occurring in only one of the three sets of vessels.

Finally, the cases of cerebral haemorrhage are characterized rather by the small size of the kidneys than by the excessive hypertrophy of the heart muscle, but on neither point do the results show striking differences as compared with the other cases.

II.—Sir CLIFFORD ALLBUTT, K.C.B.

SIR CLIFFORD ALLBUTT, in a paper read for him by one of the honorary secretaries, dwelt on the cardio-vascular changes, first attempting, however, to simplify the nomenclature, which was unnecessarily complicated, different names often being used to denote the same lesions. He discussed the condition of "granular kidney," and disbelieved entirely in the condition described as "potential Bright's disease" by Straus. It was not a renal condition in any sense. Hyperpiesis he considered to be a malady, not "granular kidney," but resembling it in the increased blood pressure and the proneness to apoplexy, but was curable.

III.—J. F. GASKELL, M.D., M.R.C.P.Lond.,

Belt Memorial Research Fellow.

THE thesis[1] that I desire to maintain is that in the conditions grouped under the term "Bright's disease"

[1] The evidence on which rest the conclusions reached in this paper will be found in the *Journal of Pathology and Bacteriology* for January, 1912.

permanent damage to the kidney is always a result of glomerular changes. These glomerular changes may arise in two ways: (1) As the result of inflammatory processes; (2) as the result of vascular alterations. On these lines a satisfactory grouping of the morbid anatomical conditions may be arrived at which is in accordance with clinical experience.

Temporary changes in the tubules which give rise to a transient albuminuria are extremely common, and arise from a great diversity of causes, but do not, in all probability, give rise to permanent changes and are completely recovered from. They arise during the course of any febrile disease, and also as the result of the introduction and subsequent excretion of poisons gaining access to the circulation. In this group come the conditions set up experimentally by various poisons, conditions which, therefore, have no bearing on nephritis proper. The most extreme example of this type of change is met with in the toxaemia of pregnancy; the poisoning of the tubular epithelium here may be so acute that the whole cortex of the kidney becomes necrotic; yet if the glomeruli be examined they will be found to be unaltered. The change in this group is due to the excretion of toxic material through the normal excretory channels—namely, the epithelial cells of the tubules; the group may therefore be called the "toxic group." As has already been stated, these changes, if not accompanying a fatal termination, are in all probability completely recovered from, the tubular lining cells possessing a remarkable power of completely reclothing the tubules of the organ. Interstitial changes are slight or absent in this group.

I will now consider the group of cases which are of a true inflammatory type; it includes three forms:

(*a*) *Glomerulo-tubular nephritis*, a general inflammation of the whole organ;
(*b*) *Embolic focal nephritis*, a form peculiar to cases of ulcerative endocarditis;
(*c*) *Acute interstitial nephritis*.

Glomerulo-tubular Nephritis.—This form, in my opinion, represents nephritis proper and is essentially an inflammation of the whole organ, all structures being affected, both all tubules and all glomeruli. As in inflammations elsewhere, it is accompanied by a marked inflammatory exudate which gives rise to an oedema of the whole organ, and is mainly responsible for the marked increase of size found in the cases of shorter duration. The glomerular changes are characteristic. Three distinct stages of this condition are met with:

1. The early acute stage, found in patients dying within a week or two of the onset of the disease. The organ is tensely swollen and oedematous, and red points may be seen over the surface consisting of haemorrhages into the glomerular capsule space and the convoluted tubules belonging to it, which surround it. The glomeruli are all swollen and tensely fit the capsule space or even extend down the first part of the convoluted tubule. There is considerable interstitial oedema and the tubular epithelium is swollen and desquamating. This stage is clinically haemorrhagic in type.

2. The subacute or reparative stage, found in patients dying some months after the onset of the disease. The condition is commonly known as chronic parenchymatous nephritis or "mixed" nephritis. The glomeruli are *all* altered and often show points of adherence of one or more capillaries to Bowman's capsule. The interstitial oedema is very great—it is, in fact, comparable to great general oedema found throughout the body in these patients. There is also a considerable formation of new fibrous tissue. This interstitial increase is, to a great extent, the cause of the great increase in size of the organ. The tubular epithelium is in all stages of degeneration and desquamation, though at the same time a fairly complete layer of flat young epithelial cells may be observed lying on the basement membrane. The distension of the tubules with fluid and débris partly accounts for the increased size of the organ. This form is clinically albuminuric in type.

3. The chronic or sclerotic stage, occurring in patients whose primary attack took place a year or many years before; often known as secondary contracted kidney or small white kidney. The organ is greatly contracted, owing to the contraction of the interstitial fibrous tissue and the disappearance of the interstitial oedema. A large number of glomerulo-tubular systems are destroyed; these glomeruli are hyaline in appearance and are blended with the surrounding tissue, which consists of fibrous tissue containing atrophic remains of t i ı tubules. The still existing glomeruli have recovered as far as is possible, but usually show signs of previous inflammatory changes in points of adherence to the capsule. The capsule space is thus divided into pockets, which now have become lined with new capsule epithelium. Any fibrous strands running across the capsule space become also similarly lined; this may give rise to the appearance of laminated cell layers occupying the capsule space. The tubules belonging to these glomeruli are greatly distended and lined by a flattened epithelium. These patients usually die from uraemia, a termination which can be explained on the lines of Rose Bradford's experiments as being due to the destruction of a sufficiently large amount of kidney substance.

This sclerotic stage of glomerulo-tubular nephritis is always accompanied by cardio-vascular alterations. The blood-pressure is increased and the heart is hypertrophied, the hypertrophy being specially marked in the wall of the left ventricle. Experiments by Pässler and Henle have bearing upon these changes, as they tend to show that heart hypertrophy can be experimentally produced by the removal of just a little less kidney substance than is necessary to produce the uraemia of Rose Bradford's experiments.

The other two inflammatory forms may now be briefly considered.

"*Embolic focal*" nephritis occurs always in connexion with ulcerative endocarditis, and is due to the lodging of minute emboli from the valves in one or more capillaries of the glomerular tuft. The glomerular picture is therefore characteristic; one part of the glomerulus is the site of what is really a small abscess, while the rest of the capillaries are normal. Another characteristic is the occurrence of a varying number of normal glomeruli—that, is to say, the changes are found only in a portion of the glomeruli and only in a portion of the glomerular tuft, instead of being diffuse throughout the organ as in glomerulo-tubular nephritis. This form is essentially haemorrhagic in type. As recovery practically never takes place in ulcerative endocarditis, it does not have the opportunity of giving rise to a chronic lesion.

"*Acute interstitial*" nephritis occurs in the early stages of scarlet fever, giving rise to few or no symptoms. It is characterized by infiltration of the interstitial tissue round the vessels and round the glomeruli with cells, mainly of the plasma-cell type, the glomeruli themselves being unchanged. This change is not peculiar to the kidney, but occurs also in the liver and other organs. As the patients in whom this form has been found *post mortem* have always died in the early stages of the disease, it is improbable that any secondary chronic conditions arise from it.

The vascular group may now be discussed. This subdivides into two forms: (1) The senile arterio-sclerotic type; (2) the "primary" contracted kidney.

Senile "Arterio-sclerotic" Kidney.—This is by far the commonest form of contracted kidney found; it is characterized by its extremely small clinical significance. The changes are due to the spreading in of those senile degenerative arterial changes which start in the aorta and occur to a greater or less extent in all old people. The changes spread into the interlobular and afferent arteries of the kidney in an extremely irregular manner. The destroyed atrophic glomeruli are arranged round and belong to those interlobular arteries which are most markedly affected. The nodules formed by the atrophy of the glomerulo-tubular systems are therefore arranged according to the distribution of the interlobular arteries—that is to say, in a wedge-shaped manner. Now this form of kidney contraction is not accompanied by any great heart hypertrophy or any increase of blood pressure. The pressure in the glomeruli belonging to the more diseased interlobular and afferent arteries therefore falls below the 30 mm. necessary for secretion, the function of the glomerulus and its corresponding tubule disappears, and the system shrinks and atrophies. The requisite excretion of urine is easily accomplished by the many sound glomeruli belonging to the better interlobular arteries. The clinical symptoms in this form are very slight,

polyuria and a slight trace of albumen, especially in the early morning urine, being the main ones. The condition has, as has been already mentioned, very little clinical significance apart from the general arterio-sclerosis.

Primary Contracted Kidney.—This is known in Germany as genuine "*Schrumpfniere.*" Though of vascular origin, it differs widely in its clinical significance from the previous form; it is at the same time far more uncommon in a form so advanced that the kidney is microscopically altered, as other organs are also affected, notably the brain, and death frequently occurs before the kidney change is sufficiently advanced to be observable to the naked eye. The condition is essentially primarily a vascular one, and consists in a peculiar change occurring in the small arterioles of the kidney, brain, spleen, and possibly other organs. The change takes the form of a great increase of the intimal layers of the arterioles accompanied by a considerable deposit of fat in these layers. It is according to Jores, who first correctly described it, a true arterio-sclerotic change. Its incidence is, however, on an entirely different part of the circulation to that in the senile form; the former attacks first the smallest arterioles, the latter the largest arteries, in particular the aorta. Accompanying this arteriole change occur great increase of blood pressure and great hypertrophy of the heart. This is the condition in which those enormous hearts are found which have been referred to by some authors as an idiopathic hypertrophy of the organ. The changes in the small arteries of the brain usually lead to the common cause of death—namely, haemorrhage into the basal ganglia of the brain, the pons, or the medulla. The kidney changes are in many cases macroscopically unrecognizable, as they consist merely of increased thickness of the wall of the small arterioles with fat changes. It is only when the arteries are so thickened that the lumen is obliterated that the glomeruli lose their function and are destroyed; for the high blood pressure is able to supply blood to the glomeruli at sufficient pressure for secretory purposes through an artery with a very great diminution of its lumen. Inasmuch as the change probably comes fairly suddenly, the secondary inflammatory reaction is usually well marked, and thus gives rise to appearances suggesting an inflammatory cause for the condition.

To recapitulate, the condition of the kidney is characterized microscopically by great thickening of the arterioles, a change which is frequently found in kidneys macroscopically normal. This arteriole change is accompanied by high blood pressure and great heart hypertrophy, which frequently lead to death from cerebral haemorrhage. The age of these patients is younger than that in the senile form, usually ranging from 40 to 55; the senile changes are rarely well marked in patients under 60.

In conclusion I will state in tabular form my classification of those forms of kidney disease which I have considered:

1. Toxic—due to exogenous or endogenous poisons.
2. Inflammatory.
   - (*a*) Glomerulo-tubular nephritis. Nephritis proper.
     - (1) Acute.
     - (2) Reparative. Large white or mixed nephritis.
     - (3) Sclerotic. Secondary or small white.
   - (*b*) Embolic focal nephritis. In ulcerative endocarditis.
   - (*c*) Acute interstitial nephritis. Scarlet fever, early stage only.
3. Vascular.
   - (*a*) Arterio-sclerotic contracted kidney. Senile form.
   - (*b*) Primary contracted kidney. High pressure form.

Throughout this paper I have purposely avoided using the terms "chronic interstitial nephritis" and "red granular kidney," as they are indefinite terms used in many different senses by different observers.*

DISCUSSION.

Dr. THEODORE SHENNAN (Edinburgh) said: I have thought it might be a useful contribution to the discussion if I placed before you a few of the difficulties which are met with in the *post-mortem* room in the diagnosis of morbid changes in the kidney, and which, in place of lessening with experience, rather increase as I proceed to present themselves under new aspects. One must, of course, assume that we all admit that mixed forms of nephritis are the rule, and when a separate form of nephritis is named, this means only that a given change predominates. An important difficulty is the nomenclature. Terms such as "large white kidney," "small white kidney," "small red kidney," "granular contracted and contracting kidneys," "subacute diffuse nephritis," "chronic parenchymatous nephritis," are not used by all pathologists to indicate the same morbid changes, and, still worse, the pathologist's connotation of some of these terms does not always correspond with that of the clinician. The first five of these terms should be abandoned, or at least modified; or, preferably, descriptive anatomical terms substituted. I object especially to the term "large white kidney," which is applied not only to kidneys the seat of subacute parenchymatous nephritis, but also to amyloid (waxy) kidneys in which there is a large amount of chronic parenchymatous or interstitial change. "Small red kidney" and "granular contracted kidney" may mean either arterio-sclerotic atrophy or chronic interstitial nephritis, or a combination of these changes. Above all, I object to the term "granular *contracting* kidney," which has absolutely no reason for existence, seeing that it is merely an assumption that the kidney is contracting. One is as much entitled to suppose that it is increasing in size, particularly as regenerative changes may frequently be seen in the epithelium of the tubules. Leading on from these remarks, I would urge the fuller recognition of arterio-sclerotic atrophy of the kidney as an individual condition which should be placed with the atrophies rather than with the nephrites. In the kidneys of old people, and occasionally also in younger persons, this change is sometimes seen, as a practically pure condition, unaccompanied by interstitial changes. I think this would assist in simplifying our diagnosis in the case of the small granular kidneys which are so often slumped together under the name of chronic interstitial nephritis. Nevertheless, one recognizes that a combination of arterio-sclerotic atrophy and chronic interstitial nephritis is one of the commonest met with in the *post-mortem* room. This is easily understood, if one remembers that the same toxin may cause both the arterio-sclerosis and the interstitial changes.

I agree with those who regard arterio-sclerosis and atheroma as distinct diseased conditions of arteries and refuse to accept the hybrid term "athero-sclerosis" introduced by our German colleagues. The term "subacute diffuse nephritis" presents some difficulty. It is a convenient term if always used to denote the uniform involvement of parenchymatous, glomerular, and interstitial elements throughout the kidney, with loss of or irregularity of the vascular markings, but I have frequently seen and heard it applied to kidneys which did not show these characters. It is very difficult to understand how the changes arise in the "subacute diffuse nephritis." Is the diffuse interstitial change secondary to and dependent on a primary diffuse parenchymatous nephritis, or does the original toxin act equally on the interstitial and parenchymatous elements? Should one connect the constantly occurring proliferation of the epithelium lining Bowman's capsule with the parenchymatous changes or with the glomerular and interstitial changes? I incline to the former.

I would next refer to the small kidney with distinctly thickened capsule which on stripping leaves the outer surface of the kidney finely granular. The thickened capsule is *not* always firmly adherent, yet microscopically there is increase of connective tissue along the interlobular vessels and capsular veins. I am not inclined to place this with Dr. Gaskell's "primary contracted kidney" on account of the thickening of the capsule, but place it amongst the chronic interstitial kidneys. The most strongly adherent capsules occur, in my experience, in kidneys which show more general increase of the interstitial tissue. To assist in diagnosing between the arterio-sclerotic kidney and the chronic interstitial I have been in the habit of paying special attention to the condition of the glomerulus and Bowman's capsule. When there is thickening of Bowman's capsule, forming a distinct fibrous zone round about the glomerulus, this change being associated with proliferative changes within the tuft, I regard the condition as chronic interstitial or

* [illegible] in my [illegible], 1912.

glomerulo-interstitial. When there is simple atrophy and hyaline degeneration of the tuft which becomes adherent to the Bowman's capsule, this showing no thickening, I regard the condition as secondary to arterial changes. I would point out that thin paraffin sections are essential for the purpose. From examination of frozen sections only one frequently diagnoses an increase of connective tissue which does not exist. Frequently also a collapse and atrophy of the tubules gives an appearance of increase of connective tissue which is not existent, but simply depends on a large amount of connective tissue being concentrated in a given space as a result of that tubular collapse, and I object to the terms "contracted" or "contracting" being applied in such cases.

There is, next, the important question of the relation of different changes, as representing successive stages of the same process. One must admit the probability of this, although it is seldom demonstrable. Alterations appear very frequently not to progress beyond the stage in which the kidney is enlarged and of increased consistence, a stage which some denote as "subacute" and others as "chronic." I believe that "chronic" is the correct term for some of these forms of nephritis. I have, however, examined kidneys which appeared to connect up the acute glomerulo-interstitial nephritis, with coincident parenchymatous changes, the type of which is the post-scarlatinal kidney, or that which I have seen in cases of fulminant epidemic cerebro-spinal meningitis, with the contracted chronic interstitial nephritis, with localization of the connective tissue, principally along the lines of the interlobular vessels.

In two cases I have seen real, small, pale, chronic parenchymatous kidneys. Some authorities are inclined to doubt the existence of this kidney. I do not refer to the kidney with pale grey or yellow tubular areas. One of these kidneys, which I examined specially and which is figured in *Post-mortems and Morbid Anatomy*, showed very little increase of connective tissue, no distinct thickening of the arteries, and practically no adhesion of the capsule. There was considerable proliferation of the epithelial lining of Bowman's capsule, and there was an appearance in many of the tubules of marked regenerative changes. This explained, to my mind, the origin of the large, smooth prominences on the outer surface, some about 5 or 6 mm. in diameter, and suggested that the changes might be somewhat analogous to those regenerative changes which characterize the so-called "coarse cirrhosis" of the liver.

I have not time to consider further the relation of arterial changes to the interstitial changes, but would urge that it might lead to good results if one were systematically to follow out the changes in kidneys in syphilitic cases, or in cases in which ulcerative endocarditis has led to subacute changes. In these cases the date of the infection is known approximately and such cases might afford important data which would increase our knowledge of the processes which occur and the stages through which they pass.

In conclusion, I would urge the difficulty of properly explaining these pathological changes and correlating the clinical and *post-mortem* findings, unless there be closer co-operation between the clinician and the pathologist. If the functional changes be more minutely worked out during life, there is a greater possibility of discovering at the *post-mortem* examination the anatomical changes which correspond to them.

Mr. S. G. Longworth (District Asylum, Melton) said he would like to ask whether, in kidneys in which multiple small cyst formation was found in the cortex, this condition indicated the character of the underlying microscopic changes, or whether it was simply an advanced condition associated with the various kinds of kidney fibrosis?

Dr. H. de Carle Woodcock (Leeds) said: As a clinician—one of those who have been referred to by the pathologists with such kindly, complacent, and persistent pity—I would wish that the discussion had taken even a wider scope. Much has been said concerning the changes occurring in the heart, the liver, the spleen—changes, apparently, varying as the kidney structure varies. The change in the structure of the arterial wall especially has received attention, but not a word as to the changes in the contents of the blood vessels.

Dr. F. Craven Moore (Manchester) said: It is my purpose to draw attention to the deficiencies in our knowledge of such disorders of metabolism as may occur in association with destructive diseases of the kidneys, either primarily or secondarily, rather than to attempt to make them good. Apart from certain experimental investigations and isolated observations in cases of human nephritis, the great bulk of the extensive analytical and physico-chemical investigations in cases of nephritis has been concerned with the estimation of the secretory capacity of the damaged organ. The difficulties of metabolic investigations where the main excretory mechanism is at fault are very considerable, and the certain elimination of fallacies seems wellnigh impossible; for not only has the imperfect and inexplicably variable excretory capacity of the diseased kidneys to be reckoned with, but also the possibility of other organs, as the skin and alimentary mucosa, vicariously assuming an excretory rôle. In such cases the difficulty of assigning any particular result to a perversion of metabolism or to excretion is patent, and we must, I think, look rather to the appearance of products of incomplete nitrogen metabolism than to variations in the sum of metabolism for evidence of perversion. It has been assumed that a diminution in the amount of kidney substance may produce a disturbance of general metabolism quite apart from the impairment of the excretory capacity of the organ. This view was maintained by Rose Bradford, who found experimentally that the removal of not more than one-fourth of the total kidney weight was followed by great wasting and an increased excretion of urea. A repetition of these observations by Bainbridge and Beddard, on the other hand, led these observers to interpret the wasting and the increased urea excretion as being but the expression of starvation. It has been determined that in dogs bilateral nephrectomy proves more rapidly fatal than ligation of both ureters, and that the injection of either normal serum or renal juice into nephrectomized animals will prolong life even beyond that of animals in which only the ureters have been ligatured. When it is recalled that there is on record an authentic case where a human being survived some eleven days after the excision of a solitary kidney, it is difficult to feel satisfied with any deductions from these rapidly fatal experiments. Such observations as have been made on the human subject suffering from nephritis are curiously negative in evidence of any general disturbance of metabolism. In uncomplicated nephritis nutrition may be maintained with adequate dieting, and the oxygen intake and the carbon dioxide excretion remain within normal limits. Investigations of nitrogenous metabolism which have been sufficiently prolonged to eliminate the curious and unaccountable variations in nitrogenous excretion characteristic of nephritis have shown that nitrogenous balance is maintained—it may be for a time there is a loss, then for a time a gain, followed, it may be, for weeks together by a balance, but the sum of the whole is a balance, the variations excretory. What few observations have been made on the products of endogenous purin metabolism seem to indicate no abnormal relations. That a perversion of nitrogenous metabolism may obtain is seen in the relative increase of ammonia nitrogen to the total nitrogen; this is especially evident in uræmia, where it may attain 18 per cent. of the total nitrogen. Of the amido-acid nitrogen, although previous investigations have failed to demonstrate any relative increase, yet I believe that further research in this direction with the modern methods would be well worth the time consumed, certainly it would give us some clue to the functional capacity of the liver.

SOME FALLACIES IN THE ROUTINE TESTING OF URINE.

By Hugh Maclean, M.D.Aberd., M.Sc.Liverpool,
Lister Institute.

The subject of fallacies in urine testing is a large one, but from the point of view of general medical practice the routine testing of urine in many cases practically resolves itself into an examination of this fluid for protein and

sugar. For practical purposes there is little doubt that the detection of these substances is of more material aid in diagnosis than any test for other pathological ingredients of urine. The detection of protein is comparatively simple, and in nearly every case a strict examination according to the methods suggested in the textbooks will settle the point. In the case of glycosuria, however, the matter stands on a different footing, and in this paper I propose to deal shortly with the subject of urine testing for sugar and the fallacies connected with it.

The great difficulty experienced in testing for sugar by the ordinary reagents is that of interpreting correctly the reaction obtained. The two tests in use in this country are Trommer's test and Fehling's test, and when sugar is present in abundance they are as satisfactory, if correctly applied, as any chemical test can be. It is otherwise, however, in the case of small amounts of sugar—here ambiguous reactions are obtained, the interpretation of which gives rise to much difficulty and confusion. The only help the textbooks give is summed up in the two words, "interfering substances," though how and why they interfere and what these substances exactly are is left to the imagination of the reader.

Trommer's Test.

Trommer's test has the advantage of simplicity; a solution of copper sulphate and sodium hydroxide are the only chemicals required. On the other hand, the test is somewhat difficult of application, and unless certain precautions are adopted quite erroneous results may be obtained. Any one can test this for himself by taking a urine of specific gravity of 1017 to 1018. Of this urine two portions of 5 c.cm. are taken, and to one is added first 1 c.cm. of a 10 per cent. solution of $CuSO_4$, and then half its volume of 15 per cent. sodium hydroxide; to the other the alkali is first added and the copper afterwards. In the case of the first urine, to which the copper was added before the alkali, it will be seen that a deep blue solution is formed, whereas in the other much of the cupric hydrate remains undissolved. On heating the blue solution a precipitate may be obtained, while the other mixture does not change. When this urine is tested by other means it is found to contain only the normal trace of sugar; it is therefore obvious that care must be taken in performing Trommer's test not to add the copper before the alkali. On the other hand, if excess of copper is added even after the alkali, a "sugar-free" urine will sometimes give a reaction. These results are attributed to the presence of creatinin by Schulz and by Salkowski. A solution of creatinin behaves in exactly the same way, as there is some evidence that this substance is the cause of the anomalous reaction. How it acts is not well understood. On the whole, Trommer's test is an unsatisfactory one from the clinical point of view, for it often gives rise to errors no matter how it is performed.

Fehling's Test.

Fehling's test depends, of course, on the same reactions as Trommer's test, only in this case the reagent itself contains the cupric hydroxide in solution. It is simpler than Trommer's test, and in practice a few cubic centimetres of the urine are boiled with an equal amount of the solution; if a red or yellow precipitate appears in a short time the test is positive and sugar is present. In many cases, however, it is very difficult indeed to decide whether or not a trace of sugar is present. On just heating the mixture of urine and Fehling's solution no change takes place, but after a minute or so it becomes opalescent and greenish in appearance, and if left to stand a slight precipitate may gradually settle out. In other cases nothing happens even after the urine is heated for a considerable time, but on standing a more or less well-marked precipitation takes place; again, after boiling for some time a dirty opalescent greenish milky liquid without any sign of a definite precipitate may be seen, or the solution may have merely changed to a greenish colour and all stages from a faint dirty green appearance to a definite yellowish mixture containing undoubted evidence of a precipitate may from time to time be observed in clinical work. The significance of these ambiguous reactions has not been sufficiently dealt with in the literature, and their explanation has never been seriously attempted. Some years ago I made some experiments on the subject, in order, if possible, to determine the factors on which these anomalous reactions depend, and the following explanation may help to make the matter more clear.

If we take a normal urine which gives no reaction with Fehling's solution when treated in the ordinary way, and add to this urine a small amount of sugar, it is often found that no evidence of the added sugar is indicated by this test. Since Fehling's solution is capable of detecting one part of glucose in 125,000 parts H_2O (0.008 per cent.), it is obvious that lack of delicacy is not the cause of the failure in this case. Since, therefore, small amounts of sugar capable of giving a distinct reaction in aqueous solution give no reaction when added to an equal amount of urine, it is obvious that urine must contain something which prevents small quantities of sugar from reacting normally with Fehling's solution. This substance is creatinin, which is normally present in urine in sufficient abundance to interfere with Fehling's test. Creatinin is capable of holding in solution the reduced suboxide of copper formed as the result of the action of sugar on the cupric salt, and so the mixture gives no evidence of a precipitate indicating the presence of sugar.

For this reason normal urine, which contains an appreciable amount of sugar, gives no reaction with Fehling's test. It will be seen that the action of creatinin is in this case more beneficial than otherwise, for it prevents mistakes being made with physiological urines containing only the normal amount of sugar.

The action of creatinin, however, does not end here: it further possesses the property of materially modifying the nature of the precipitate when there is a slight excess of sugar present. If, for instance, we take a 0.3 per cent. sugar solution, and to one portion of this add a few milligrams of creatinin, it will be found that the precipitate obtained on heating with Fehling's solution is distinctly yellow and finely divided; without the addition of creatinin a dense red granular precipitate separates out.

The explanation generally put forward is that the yellow precipitate consists of reduced cuprous hydrate, while the red one is composed of the reduced oxide. Cuprous hydrate, however, is so unstable that it is difficult to accept this explanation; again, it entirely fails to explain all the different shades between green and yellow so often observed. It is more probable that the colour of the precipitate formed depends on the fineness of the granules, for microscopic examination of these different coloured precipitates shows that some relationship exists between the colour of the precipitate and the relative size of the particles. In a urine which after boiling for some time gives a dirty greenish, opalescent solution, the modified colour is due to the fact that the precipitate of cuprous oxide is present in an exceedingly finely divided state. In the case of a greenish-yellow precipitate the particles are still very fine but rather coarser than in the last; with a yellow precipitate they are somewhat larger, and this increase in the size of the particles goes on until in the case of a distinct red precipitate the size of the individual granules is much more marked. It is probable that all the precipitates are really composed of cuprous oxide. The causation of these ambiguous reactions is easily explained in the light of the above observations. In examining a urine containing just the normal trace of sugar the equivalent amount of Fehling's solution is reduced in the ordinary way, but the creatinin present holds the reduced cuprous oxide in solution, so that no change is apparent to the eye. When the urine contains just a slight excess of sugar the creatinin present is not sufficient to hold the cuprous oxide in solution, but it modifies the nature of the precipitate, so that it separates out in an exceedingly finely divided form. These fine particles floating in the liquid give a dirty milky greenish appearance to the fluid. These ambiguous precipitates are just modifications of the normal form and nearly always indicate a slight excess of sugar above the amount present in normal urine. In concentrated urines these ambiguous reactions constantly occur without in any way indicating that the total amount of sugar excreted is at all in excess of the normal, though the amount per cubic centimetre of urine is naturally somewhat above the average.

Of course, it is obvious that the presence of a sufficient amount of some other reducing body glycuronic acid

would act in the same way, but observation shows that sugar is really the substance which most often gives these modified reactions.

Again, in certain urines it is only after boiling with Fehling's solution for some time that a result is obtained; this is due to the fact that though the creatinin holds in solution the cuprous oxide formed during the initial stages of boiling, yet the creatinin itself is gradually destroyed by the alkali, and a point is reached at which the creatinin present can hold no more cuprous oxide in solution; at this point a precipitate settles out.

Even normal urine, when boiled long enough with Fehling's solution, will give a distinct precipitate, so that Fehling's test is positive in every urine if the heating is sufficiently prolonged.

The following extract from one of my papers on the subject indicates shortly what happens in normal urine, and exactly the same mechanism is present in pathological urines with excess of sugar:

> The chief reducing substances present in all normal urines are uric acid, carbohydrate material of which the larger part seems to be dextrose, and creatinin. Uric acid and sugar, however, differ greatly from creatinin in regard to the time required to cause reduction. Both substances, in the percentage in which they occur in normal urine, are capable of effecting reduction almost immediately on the boiling point being reached; in the process of reduction they undergo destruction.
>
> Creatinin, on the other hand, reduces very slowly indeed. When a normal urine is boiled with Fehling's solution, the uric acid and sugar present almost immediately reduce their equivalent amounts of the solution: no effect is perceived owing to the fact that the reduced suboxide is held in solution by the creatinin; after boiling for a very short time the full reducing effect of both acid and sugar is completed. On continued boiling the creatinin gradually causes further reduction, at the same time becoming gradually diminished in amount: part of it is probably converted into creatin while part is destroyed.
>
> Ultimately a point is reached at which the suboxide reduced by the sugar and uric acid, added to that reduced by the creatinin itself, is no longer capable of being held in solution by the amount of creatinin and its derivatives actually present in the urine at that moment; at this point precipitation occurs.
>
> Thus it will be seen that the reaction obtained from a normal urine is very similar in character to that obtained from a urine containing more than the normal amount of sugar, the chief difference being that the more sugar present the quicker the reaction occurs.
>
> In the presence of great excess of sugar the effect of creatinin is of course quite obscured and of no practical importance. It will be seen that the influence of creatinin on Fehling's solution is very marked and important, though somewhat different from that ascribed to it in the textbooks, where its action is generally considered in relation to its direct reducing power. This direct action occurs but slowly, and is therefore very insignificant when Fehling's test is used in the ordinary way; its direct inhibitory action, however, explains many points which are otherwise obscure, and for which no definite explanation has been forthcoming.

In general, therefore, it may be taken for granted that a urine which gives an ambiguous reaction with Fehling's solution contains a slight excess of sugar per c.cm. This may be due to concentration or other causes, and its significance must be estimated from a consideration of other details of the case. When certain drugs are being given similar reactions may, of course, occur.

It is hoped that these remarks will make clear the mechanism of anomalous reactions obtained in testing urine for sugar with Fehling's solution, and so render their interpretation more easy. In doubtful cases fermentation with yeast, formation of the osazones, and other more or less complicated tests must be applied.

On some Causes of Glycosuria.

With regard to the significance of a slight excess of sugar in the urine, it may be unimportant or of great importance. The facility with which certain factors produce glycosuria has hardly been sufficiently realized, and in this direction alcohol has a very pronounced effect. I once examined a number of urines from patients suffering from the effects of alcohol—most of them acute cases—and in almost every instance sugar was present. This led to further experiment, and it was found that in many cases the ingestion of comparatively small amounts of alcohol induced fairly well marked glycosuria; in some people really trifling amounts produce this effect. In the case of six temperate persons who had dined out, and whose urines I had an opportunity of examining, sugar in small amount was found in five of these. All the cases cleared up in a day or two.

Again, after certain drugs, such as $CHCl_3$, it is known that the urine reduces Fehling's solution, and this has been ascribed to the presence of glycuronic acid, but in many cases at least it is due to sugar, for nearly all these urines are fermentable.

These urines show only occasional sugar reactions, and the presence of sugar seems to be of little importance; but when a urine constantly gives even an ambiguous Fehling's reaction, and no cause such as drugs, alcohol, etc., can be found, it may be of grave significance as indicating the onset of diabetes.

DISCUSSION.

Dr. P. J. Cammidge (London) said: The many fallacies in connexion with Trommer's and Fehling's tests make it necessary that great care should be taken in interpreting the results. For clinical work I have for some time made extensive use of Benedict's test, which has the advantage of using a simple solution that keeps indefinitely, and requiring only a very small quantity of urine, and with very satisfactory results. Slight reactions for sugar are always important, and, unless it can be proved by a test meal of sugar that the cause is quite a temporary one, should raise a suspicion that the patient is a potential diabetic, and the diet should be worked out on the basis of the experimentally determined sugar tolerance.

Professor Walker Hall pointed out that in glucose test meals it was imperative to exclude the action of protein as a great irritant of the sugar-producing mechanism. He considered that it was advisable to diminish the intake of protein a little below the average on the days when the glucose was given.

Sir Bertrand Dawson (London) said: Dr. Maclean's paper throws further light on an important question. It is important to know whether unexpected reduction of Fehling's reaction is due to sugar or not in any given case, and it is interesting to note that in Dr. Maclean's experience in many cases the reducing substance is sugar. What is the significance of occasional glycosuria? In the first half of life it certainly does mean increased liability to diabetes, and can never be ignored. Sugar, if it appears after big and luxurious meals, whether you style it alimentary or not, denotes such liability. From the point of view of the medical adviser it should lead to insistence on caution always being exercised as regards carbohydrate food, especially sugar. From the point of view of the medical adviser to insurance companies it should lead to loading the premium or decline of the proposal. In any doubtful case it is wise to give a test meal of 100 grams of pure glucose and test the urine afterwards. The healthy body should be able to deal with that quantity of sugar without glycosuria appearing.

THE EXCRETORY FUNCTION OF THE INTESTINE AND ITS RELATION TO DISEASE.

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The concretions not infrequently found in the intestine and appendix are in their descriptions usually dismissed with a term such as faecal concretion, faecal accumulation, or enterolith. Yet, when they are carefully examined, they are often seen not to be of so simple a nature. The object of this communication is to show that their chemical composition, their structure, the time and site of their occurrence, reveal many common factors in them, in whatever part of the intestine or its appendages they may occur. A consideration of these factors points to a possible solution of their formation and suggests that they are manifestations of some abnormal condition in the excretion of the intestine and its appendages. I have previously[1] called attention to the close similarity in the chemical composition of the intestinal sand so frequently found in cases of mucous colitis, and of the concretions in

the appendix. In this note I describe and show concretions formed in the intestine itself which have closely allied composition; and call attention to certain conditions in the gall bladder which appear to suggest that gall stones may in some way be due to a similar anomaly of excretion on the part of the gall bladder.

Intestinal Sand.

Most of the published analyses of this material have referred mainly to its inorganic constituents, which are largely calcium compounds. In analysis I have published[2] it is shown that nearly half of the material consists of organic matter. Of the inorganic matter one-half is calcium. The total fatty acids constitute nearly one-fifth of the material. Half of the calcium present is present as calcium phosphate, the remaining half being present as a soap of saturated fatty acids.

Appendix Concretions.

I have shown in the same communication that appendix concretions are undoubtedly formed in the appendix itself by the successive deposition of layers of material formed by the mucous membrane lining its wall.

That the appendix has a secretion or excretion which, under abnormal conditions, could form these concretions is to be seen in any appendix in the *post-mortem* room. Sir William Macewen has demonstrated the presence of such a secretion during life. Schmidt[3] states that the intestinal mucous membranes excrete inorganic salts, such as those of iron, calcium, and phosphoric acids, and also fatty substances. Recently Mr. Paul has kindly supplied me with an appendix which he removed which shows this in a striking manner. The appendix is constricted at about its middle, and behind this constriction is, not a concretion, but a small collection of material which consists of mucus, a fair amount of fat compounds, and some calcium soaps. The specimen shows the material being extruded into the intestine. The amount was too small to allow of quantitative estimation. A case of Mr. Parker's illustrates a further degree of this same process. This appendix, removed from a man aged 41, is unusual in shape, and opens into the caecum by a very wide orifice. Distal to this orifice, behind a constriction, is a marked hypertrophy of the muscular layers. This extended for about half the length of the tube. Beyond was a dilated portion full of white pultaceous material. Some of the material was examined qualitatively and shown to contain calcium soaps and calcium carbonate, the latter apparently in fair quantity. The calcium carbonate was probably formed by the reduction of the calcium soaps.

As a result of these findings I have suggested that appendix concretions are due to the secretion or excretion into its lumen of a material rich in calcium soaps the fatty acid radicles of which are of the saturated type.

The close resemblance in chemical structure between appendix concretions and true intestinal sand, and the finding of intestinal sand so commonly in cases of mucous colitis, which clinically is frequently associated with disorders of the appendix, thus suggests a common factor in the etiology of these two conditions.

This factor I believe to be the abnormal excretion of these soaps and allied compounds by the mucous membrane. This view is further supported by the examination of other concretions, obtained from the intestine, which I have recently had the opportunity of examining.

Intestinal Concretions.

The commonest cause of intestinal obstruction produced by an extraneous body in the lumen of the gut is ascribed to the so-called faecal masses, the next commonest being gall stones, and rarest of all the concretions, calculi or enteroliths with which this note deals. Of 669 cases of intestinal obstruction at the London Hospital in thirteen years 69 were attributed to faecal accumulation, 15 were due to gall stones and only 1 to a concretion.

As the work mentioned above shows that appendix concretions are not, as is usually thought, merely faecal concretions, so the true intestinal concretions I describe [illegible] a chemical consideration of so-called faecal concretions in the intestine may reveal that they are in many cases the result of some abnormal process of the intestinal mucosa and not a mere accumulation of faecal material.

The presence of cholesterin in the first intestinal concretion shown would suggest the possibility that some of the large so-called gall stones supposed to have ulcerated through into the intestine may have been formed or enlarged in the intestine itself.

The first intestinal concretion shown is from a patient suffering from acute intestinal obstruction. It was situated in the small intestine in the upper part of the jejunum. Recognizing the unusual character of the mass, Mr. Paul kindly sent it to me to examine. It is about the size of a small Tangerine orange. In the centre is a raisin, around which is a bright yellow pultaceous mass held together by a stroma of vegetable material. The exterior was stained by faecal material. It was found to contain 31.4 per cent. of fat—of this 74 per cent. was present as combined fat having the low iodine value of 18 per cent. The unsaponifiable material was isolated, and proved to be cholesterin. That this was not a concretion such as is sometimes formed by the administration of large quantities of olive oil was proved by the nature of the fat.

This concretion is obviously not a gall stone, and points to the deposition round a nucleus of material excreted from the wall of the intestine, the interesting feature being that it contains cholesterin.

The second intestinal concretion was kindly sent to me by Miss Ivens, who removed it from a female aged 18. The patient had always had, as she described it, a delicate stomach. There was no history of colitis, nor had she taken olive oil or saline purgatives. After a period of alternating diarrhoea and constipation, she suffered from pain, retching, and flatulence, and six weeks later vomiting. The mass, causing a partial obstruction of the intestine, was found in the lumen of the small intestine at the lower end of about 10 in. of hypertrophied gut, which was firmly contracted round it.

The concretion is about 4 in. in diameter, round, white, concentrically laminated, and built upon a nucleus probably of degenerated epithelium. The whole mass is soft and friable, and has a soapy feel and appearance. The dried material contains 33 per cent. of calcium, 25.6 per cent. of neutral fat, and 7.7 per cent. of combined fat. There is a fair amount of phosphate and oxalate, and traces of other inorganic salts.

The third specimen consists of a number of concretions passed per anum by a typical case of mucous colitis. They are oval, averaging about 1 in. in length, and consist almost entirely of neutral fat. Large numbers were passed over a period of some months. The patient had previously not taken any oil or fat in excessive quantity. The fat in the specimens is saturated. As bearing upon the deductions to be mentioned later, it may be stated that after the continuous administration of olive and cod-liver oils (unsaturated) these concretions ceased to appear, and the mucus disappeared from the stools, the patient gaining 20 lb. in weight in three months, with the relief of all symptoms.

The examination of the three specimens described in no way suggests that they are due to faecal accumulation. In neither of the first two cases was any note made of the sacculi so common with faecal accumulations. Their chemical composition further points to their having some other origin, and I would suggest that they, like intestinal sand and appendix concretions, are the product of an excretion from the intestinal mucosa.

Gall Stones.

The well known work of Naunyn which attributes the formation of gall stones to a lithogenous catarrh needs no recapitulation.

The usual classification of gall stones into the single cholesterin stone and the multiple pigment stones is incomplete. The purest cholesterin stone always contains some pigment, while the common cholesterin stone invariably contains a good deal of pigment which is always present as a calcium salt, and, further, calcium carbonate is usually present, as it is in the outer layers of the specimen shown. This mixture is the usual finding in the common gall-bladder stones.

Naunyn and his pupils conclude that cholesterin is not a specific product of liver secretion, neither is it a product of ordinary metabolism. It is often considered a decomposition or cleavage product of protein, because of its frequent occurrence in necrotic tissues, such as atheromatous

abscesses, old infarcts, and necrotic areas, but it must be remembered that in these foci there is always marked fatty changes and often calcification.[5]

Work which Mr. Branch and I did on the fatty acids in cod-liver oil suggests the possibility of cholesterin being a cyclical compound formed by the condensation and rearrangement of fatty acid molecules.

With regard to the presence of calcium, the following points may be noted as showing that it is not necessarily due to any change in the bile itself.

An increased calcium content in the food does not under normal conditions increase the calcium content of the bile. When bile is concentrated to produce precipitation of the pigments they are deposited as free pigments, and not as calcium salts. The presence of calcium pigment stones is not associated with an excess of calcium in the bile. This evidence is against the formation of the cholesterin, the calcium and the fatty acids, from the bile, and therefore gall stones are probably the product of the bladder wall.

That the material formed in disorders of the gall bladder is not confined to the cholesterin or calcium salts of bile pigments is shown by the two following cases.

In a case of Mr. Paul's, a male, the symptoms suggested the presence of gall stones. Intestinal sand was found in the stools. When operated upon there were found in the bile passages and neighbouring portions of the intestines numerous very small brownish-red granules, but no stones. An analysis of these granules showed that they contained fat in large quantity.

In similar circumstances Sir B. G. A. Moynihan,[6] operating for gall stones, found in three cases not stones in the gall bladder, but a peculiar condition of the wall, which was studded and impregnated with a white deposit, which, from its appearance in the photographs shown, looks like the material described in Mr. Parker's appendix case quoted above.

Certainly in Mr. Paul's case, and possibly in Sir B. G. A. Moynihan's, there was a disorder of the gall bladder, where fatty acid compounds entirely replaced the usual cholesterin and pigment, which, as a rule, are in greater amount than the fat compounds.

In another case, which showed symptoms undoubtedly like those of gall stones, Mr. Paul did an exploratory operation, and no gall stones were found. Some time later, the symptoms still persisting, an examination of the stool was made. A large number of crystals were seen, which appeared to be those of cholesterin.

Most of the conditions I have described have been looked upon as inflammatory.

The formation of calcium and fatty acids, or soaps, or the further stage of reduction of these, calcium carbonate, is common, as we have shown, in atheroma, in caseating and calcifying glands[5]—processes of degeneration rather than of catarrh or of inflammation.

Intestinal concretions and intestinal sand occur in cases of colitis, and here again an inflammatory condition is supposed to throw out these calcium or fat compounds or mixtures of them, or even, as I show in one of the specimens, cholesterin. The form of colitis with which they are usually associated is not inflammatory. I show a mucous cast from the case mentioned above in which there was no evidence of any inflammatory condition, either clinically or by leucocytes in the stool, and yet when examined it is found to contain fat and crystals of inorganic salts.

I would suggest, therefore, that all the concretions I have described are due to an excretion of the mucosa of the intestine or its appendages. That the intestine has important excretory functions is well recognized. It is certainly the organ for the elimination of the heavy metals, and it is probable that calcium is excreted into the intestine. The presence of fatty acid compounds in all these concretions requires explanation. In the fat metabolism of the body the tissues utilize mainly unsaturated fat. Hitherto it has been accepted that all fats are completely combusted to carbon dioxide and water. But the presence of saturated fat compounds in degenerative processes, such as atheroma, necrotic glands, and in fatty degeneration of the cells and other conditions, suggests the possibility of saturated fatty acids being a burden on the animal economy. If this be so, is it not possible that the intestine is an excretory organ for the waste products of fat metabolism, as is the kidney for proteins, and the lungs for carbohydrates? Should this be a possible explanation, it is not difficult to recognize that under abnormal conditions of fat metabolism the intestine would be called upon to excrete these bodies, and such concretions as the above, containing saturated fat or insoluble calcium soaps, be so formed.

In the narrow lumen of the appendix these soaps, etc., would easily cause obstruction. I have shown that lesions can be produced without an actual concretion, by the deposition of the soaps in the mucosa and submucosa—so diminishing the vitality of the part and thus allowing of infection.

In the yet wider lumen of the biliary passages there is room for the onward flow and elimination of the material produced, and it is only when the process goes on a stage further and the mucous membrane produces allied bodies which are more easily precipitated that concretions are formed, though the two cases of Mr. Paul and Sir B. G. A. Moynihan suggest that symptoms may be produced even in the earlier stages. Is it not possible that these are the cases in which a cure is ascribed to olive oil, which as an unsaturated fat influences fat metabolism, and so minimizes the excretion of the abnormal compounds?

In the still wider lumen of the intestine there is ample room for the production and elimination of these bodies, and it is only the effects such as mucous colitis which are noted, but on rare occasions the process is so advanced and rapid that even here the concretions may be formed and produce obstruction.

I would therefore bring forward the view, tentatively, that all these disorders I have referred to are not due to local disease at their site of origin, but that they are the outcome of a general metabolic disorder, which throws upon the intestine or its appendages the onus of excreting deleterious products.

While I have confined myself mainly to pathological data there is not wanting further clinical evidence to show a relation between these various (apparently widely) different diseases of the intestinal tract.

In a study of the statistics of the disturbances in the gastro-hepatic-duodeno-pancreatic physiologic system occurring in the Mayo Clinic, W. C. MacCarty states: "The figures are sufficiently significant to keep in mind as possible evidence of the probable fact that the inflammatory process in the appendix causes disturbances in the bile passages directly or indirectly." Is it not possible that a common factor may be at the bottom of both conditions?

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DISCUSSION.

Dr. Cammidge (London) said the excretory functions of the intestine were probably much more important than was generally supposed, and it appeared probable that the heavy metals and fats were so excreted. He had found that in colitis the saponified fats and inorganic oil were nearly always increased, and in some forms of metabolic disturbance due to disease of the ductless glands, apart from the pancreas, the same conditions appeared to hold good.

THE INVESTIGATION OF PUNCTURE FLUIDS AS AN AID TO DIAGNOSIS AND TREATMENT.

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The advances made in medicine during the past twenty years have been almost entirely due to the special scrutiny of materials derived from the patient rather than by examination of the patient himself. Foremost, probably, amongst these materials are to be reckoned certain fluids obtained from the body by puncture, the examination of which gives us extra data essential for accurate diagnosis. No group of investigations in clinical pathology yields greater possibilities of help than this group, and I am

framing my remarks to-day largely with a view of stimulating the profession to more frequent application of these possibilities.

Technique.—This is all-important, and at the risk of being thought unduly rudimentary I shall refer to it in some detail. Like all methods of examination, the success of these punctures depends very much upon the ease and skill with which they are performed. Even the prick which is necessary for a blood count—which, by the way, is really the investigation of a puncture fluid—even this can be done clumsily and painfully, as many a patient knows to his cost. A man once told me that the only thing which stood out clearly in his memory after a prolonged time of delirium in typhoid fever was being roused by the efforts of his doctor to extract blood from his hand by the repeated and ineffectual jabs of a large needle. What shall I say of less simple procedures? Of the brutal trocars used not infrequently to puncture the chest, screwing up the skin, and bursting through it by sheer force, rather than by making a sharp, clean wound, and of other atrocities?

Quite often the suggestion that a puncture is advisable in the interests of diagnosis and of treatment is met by pleas of avoiding pain and discomfort; it is therefore the duty of the practitioner to disabuse the minds of the patient and his friends on this score by surprising them with prompt and skilful manipulations. And to this end no amount of care in the preparation of the needle and its adjuncts is wasted. Given such care, puncture of almost any region of the body should be comparatively painless. The two great essentials to successful puncture are sharpness and cleanness of the needle used—sharpness judged by looking at the point of the needle, if in doubt, by a lens; and cleanness, not only from bacterial contaminations by boiling, but from traces of rust. Even a little rust on a needle causes pain.

A simple, but effectual, method of avoiding this is to rub the needle up and down the fine brown emery powder which is found on a box of safety matches before it is boiled. Needles should always be provided in duplicate, and should be kept in spirit when not in use. They should not be used too many times; needles are cheap and a doctor's reputation for skill is dear. If a fine needle can be used no anaesthetic is necessary. But in all cases where a needle of larger bore is used, or where, as in pleural or joint or lumbar puncture, the length of the needle necessitates its being fairly stout, the preliminary use of a local anaesthetic is advisable. A few drops of novocain are injected by a very fine needle beneath the skin of the puncture area, and the operator waits until the skin is insensitive. A small incision is then made by a sharp thrust of a scalpel, and the puncture needle is then pushed steadily to the required depth. There are two classes of patients in whom a general anaesthetic is advisable—in children (not infants) who cannot understand that their co-operation is necessary, and in adult patients who are delirious. By giving a general anaesthetic in these cases sudden changes in the position of the body are avoided during the procedure.

The various punctures which from time to time are indicated as affording help in diagnosis or treatment fall into three groups:

I. *Puncture of Certain Cavities.*
- (*a*) Pleural sac.
- (*b*) Pericardial sac.
- (*c*) Peritoneal sac.
- (*d*) Spinal theca; lateral ventricles.
- (*e*) Joints; bursae.

II. *Puncture of Certain Solid Organs.*
- (*a*) The lung.
- (*b*) The spleen.
- (*c*) The liver.
- (*d*) Lymph glands.

III. *Puncture of Certain Adventitious Structures.*
- (*a*) Abscesses.
- (*b*) Cysts.
- (*c*) Growths.

Of the dangers or ill effects of these punctures I have little to say, because I hold that when performed with care and discretion, these are practically non-existent. Personally I always regard the business seriously, that is, I do not carry out such things as pleural or lumbar punctures in the out-patient or consulting room, because I am not prepared to run such risks. The patient is in bed, and remains there for at least twenty-four hours afterwards. I believe this reduces the after effects to a minimum, and, if one of the very rare disasters seen after a puncture should occur, it is obvious that it has not occurred because of any lack of proper precautions. Headache of temporary duration, and on one occasion a herpetic eruption, are all the ill effects I have seen following lumbar puncture; but the patient who developed herpes was suffering from early general paralysis of the insane.

If too much cerebro-spinal fluid is removed, however, the headache may be intense and prolonged, and a clumsy lumbar puncture may be followed by much local pain. Sudden or rapid death, as by vagus inhibition, has followed puncture of the chest wall in a few rare instances. When, a few years ago, I advocated lung puncture as a valuable aid to diagnosis in certain cases, it was urged that the proceeding was dangerous, owing to this last-named event. But this criticism takes no stock of the fact that negative pleural punctures are performed in thousands of cases every year, and these must all be in reality lung punctures. Yet in deciding to puncture the chest, to settle the question of the presence of a pleural effusion, we do not consider we are subjecting the patient to the risk of sudden death. Puncture of the pericardial sac should probably never be performed unless the diagnosis between dilated heart and pericardial effusion is quite clearly made out. And puncture of the liver is by some authorities regarded as attended by risks which are avoided by incision.

The fluid obtained by either of the above punctures is subjected to four methods of investigation:

1. Cytological.
2. Chemical.
3. Physical.
4. Bacteriological.

These methods constitute the complete examination; one or other of them is usually of special importance, according to the nature of the case under investigation.

The chief use of puncture methods is to assist diagnosis. Time prevents my specifying with any completeness the variety of ways in which this assistance is given. I will refer to a few. (1) The cytological examination of pleural fluid enabled Widal and Ravaut to enunciate a formula by which, with a very high degree of probability, an effusion is known to be of tuberculous or of pyogenetic origin. A marked preponderance of lymphocytes is in favour of tuberculosis, whereas a marked preponderance of polymorphonuclear cells is in favour of pyogenetic infection. With somewhat less certainty the formula may also be applied to other than pleural exudates. (2) Chemical examination of puncture fluids from serous sacs enables us to judge to what degree they are transudates or exudates. The cerebro-spinal fluid obtained by lumbar puncture in cases of parasyphilitic disease is often shown to contain a globulin, demonstrable by the ammonium-sulphate test. Excess of urea in this fluid is, perhaps, one of the surest signs of renal inadequacy. (3) The help derived from bacteriological investigations of puncture fluids is everywhere apparent; the demonstration of the causal microbe in meningitis, in arthritis, in pleural effusion, and in pneumonia, is an everyday occurrence, when by no other method could it possibly be undertaken. These are some of the specific points that are capable of elucidation. In not a few instances the very existence of the disease is determined by the puncture, when without it the diagnosis is a matter of probability at most. The best instance of this is the diagnosis of meningitis. Several of the symptoms of meningitis are by no means pathognomonic, and are occasionally seen in the toxaemia of typhoid fever, pneumonia, septicaemia, and middle ear disease. On the other hand, the less equivocal signs of meningitis are frequently absent early in the disease, when diagnosis is of paramount importance. From the state of ambiguity and speculation in which the practitioner is placed he is able, again and again, to arrive at a certain diagnosis by means of lumbar puncture.

The first step in successful treatment is an accurate diagnosis, and this, as has been seen, is much assisted by

the investigation of puncture fluids. The puncture itself is by no means devoid of therapeutic value at times. The drainage of a pleural effusion and of an ascites has been known as a means of treatment since the earliest days of medicine. Repeated lumbar punctures are certainly of benefit in certain cases of meningitis, whether due to the meningococcus or to other infections. Pyaemic joints may not seldom be saved from free incision by judicious aspiration, and the same applies to some forms of tuberculous abscess. A patch of bronchopneumonia will occasionally resolve, and the disease comes to a sudden end a few hours after a lung puncture. Considerations of this kind, however, scarcely come within the scope of our discussion.

DISCUSSION.

Dr. Purves Stewart agreed with practically everything Dr. Horder had said with regard to the types of cell found in leucocytosis of the cerebro-spinal fluid. Whilst he agreed that pyogenic infections usually produced a polymorphous leucocytosis, whereas tuberculous infection usually produced a monomorph leucocytosis, this rule was not absolute, for, during convalescence from a pyogenic infection of the meninges, the cerebro-spinal fluid passed through a later stage of monomorph leucocytosis on the way to recovery. Further, during an acute attack of tuberculous meningitis, the leucocytosis was not infrequently of a polymorph type. He therefore believed that it was not the particular organism which determined the type of the leucocytosis, but the acuteness of the infection—an acute infection producing the polymorph, a subacute or chronic producing the monomorph leucocytosis. Moreover, even an infection was not essential for the production of leucocytosis. He himself had experimentally injected the spinal theca in monkeys with a sterile emulsion of carmine when studying the lymph paths within the spinal cord. In every case there was produced a temporary polymorph leucocytosis, subsiding within a few days to a monomorph leucocytosis, and ultimately clearing up entirely. The speaker had never found it necessary to give a general anaesthetic in order to perform a thecal puncture, even in wildly excited or violent patients. He described a method whereby one could perform thecal puncture even on a violent patient by fixing his knees to his chin by means of a roller-towel or a strong portmanteau-strap.

Dr. Theodore Shennan (Edinburgh) congratulated Dr. Horder on his paper, but wished he had continued to give more details from his wide experience. He suggested keeping needles in a solution of 1 part lysol in 12 parts of dehydrated spirit, having found that by this means rusting of the needles was avoided. He confirmed Dr. Stewart's remarks as to the occasional occurrence of polymorph leucocytes in tuberculous fluids, particularly in pleuritic conditions. He asked for details as to the preparation, fixation, and staining of films from puncture fluids.

Dr. Horder, in reply, said: I quite agree with Dr. Purves Stewart that in some cases of tuberculous meningitis the cell content of the cerebro-spinal fluid is largely polymorphous, and not lymphocytic. These are usually rather acute cases. I have described, on the other hand, cases of meningococcal meningitis in which the cell content is largely lymphocytic, and not polymorphous. These were chronic cases. This gives a clue to the apparent variations from the formula which I quoted: the nature of the cell exudate is determined by the rate of its formation rather than by the nature of the infection. The formula must be taken as a general rule, and not as an invariable fact. Dr. Bernstein will find a very useful summary of the cell changes in cerebro-spinal fluid of acute anterior poliomyelitis in Dr. Mervyn Gordon's contribution to Dr. Reece's recent report to the Local Government Board on this disease. It is there shown that a moderate lymphocytosis exists in this condition, but that, if a careful consideration be given to all, and not one, of the tests applied to the fluid, it is not difficult to differentiate between the disease and meningitis.

THE ASSOCIATION OF CHRONIC DUODENAL ULCER WITH MORBID CONDITIONS OF THE ILEUM, APPENDIX, AND COLON.*

By D. P. D. Wilkie, M.Ch., F.R.C.S.,
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During the last two years a considerable amount of evidence has been brought forward, chiefly by operating surgeons, regarding the association of chronic duodenal ulcer with some lesion lower down in the alimentary tract. Thus, MacCarty and McGrath, Moynihan, and Paterson have noted the frequent coexistence of duodenal ulcer and chronic inflammatory mischief in the appendix; whilst Lane has found a tacking down, and kinking of, the lower end of the ileum in his duodenal ulcer cases. Before any far-reaching conclusions can be drawn as to the exact etiological relationship between these morbid conditions a large number of careful observations must be made both in the operating theatre and in the *post-mortem* room.

During the past year I have sought in the *post-mortem* room for evidence on this question, and in this time have encountered ten cases of duodenal ulcer. It is of interest that in only two of these cases had the duodenal trouble given rise to symptoms sufficiently clear to lead to a diagnosis during life; and in eight of these cases death was due to some other disease. The important point, however, was that in every case there were unmistakable signs of old inflammatory mischief in the lower bowel, and in most of them this was the outstanding feature in the examination of the abdomen.

The cases may be divided into two groups, first, those in which disease in the appendix was found—five cases belonged to this group: and, secondly, those in which the the appendix was healthy but the colon showed signs of old inflammatory mischief and was crippled by adhesions.

Group I.—*Appendicitis and Duodenal Ulcer.*

Case I.—This was a man, aged 26, who died after operation for perforative appendicitis and general peritonitis. He had suffered from recurring attacks of appendicitis—two or three in the year—for ten years before the final and fatal illness. At the *post-mortem* examination a typical scar was seen on the anterior wall of the duodenum, ¾ in. from the pylorus. The fibrous contraction round the ulcer had resulted in a moderate stenosis of the duodenum at this point. On opening the duodenum two ulcers were found, one on the anterior wall, the second on the posterior wall just opposite. The former was represented by a shallow depression with a curious glazed surface; it had evidently almost healed over; the latter was a typical punched-out chronic ulcer.

Case II.—This was a young man, aged 21, who died six days after operation for general peritonitis secondary to gangrenous appendicitis. He gave a history of pain in the abdomen for fourteen days before admission to hospital, but of no previous

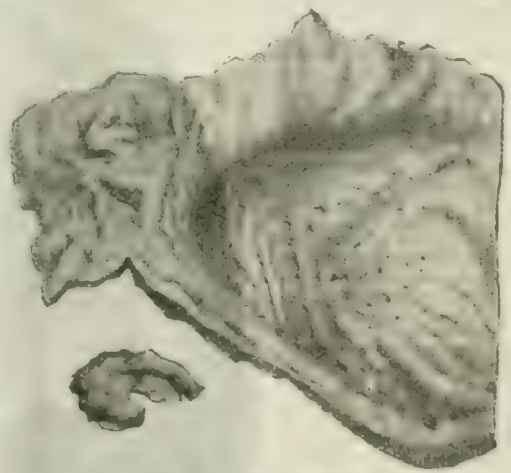


Fig. 1.—Case II, Group I.

abdominal trouble. A history was very difficult to obtain, however, on account of his toxaemic condition. At the *post-mortem* examination a chronic duodenal ulcer, the size of a threepenny

* These observations were made in the Pathological Department of the Edinburgh Royal Infirmary, and I wish to express my indebtedness to the staff of that department for their courtesy in allowing me to examine the cases.

piece was found on the posterior wall of the first part of the duodenum ¾ in. from the pylorus, and in addition there were numerous acute haemorrhagic erosions in the stomach.

CASE III.—This was a boy, aged 16, who died from toxaemia four weeks after operation for general peritonitis secondary to acute appendicitis. At the *post-mortem* examination several loculated abscesses between adherent coils of intestine were found, and in addition a portion of omentum was seen to be fixed by old-standing adhesions to a scar on the anterior surface of the first part of the duodenum. Microscopic sections of the duodenal wall at this level showed that there was no active ulceration, but merely the fibrosis associated with a healed ulcer.

CASE IV was that of an old man who died of mediastinal lymphosarcoma. Two chronic "kissing" ulcers were found

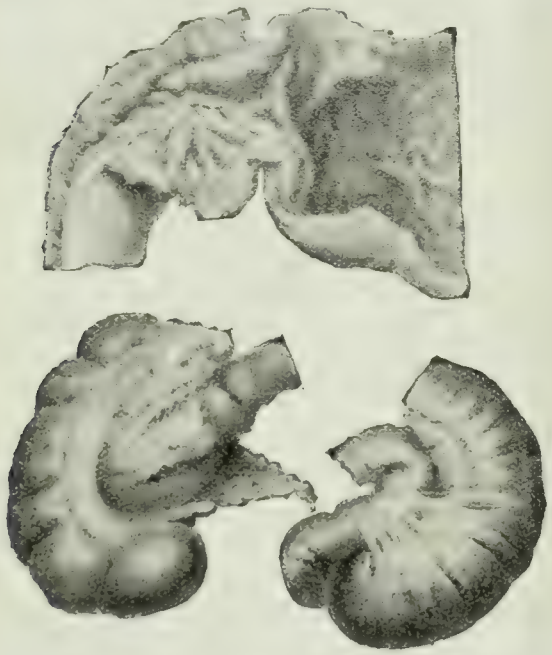


Fig. 2.—Case IV, Group I.

in the first part of the duodenum; in the lower part of the abdomen several coils of ileum were bound by old adhesions above which the small intestine was somewhat distended. The appendix was represented by a small stump ¾ in. long and by two small nodules attached to the meso-appendix, but entirely separate from the stump. There had clearly been a former attack of appendicitis, with sloughing and spontaneous amputation of the appendix. In the history of his previous health it was noted that for six or seven years he had suffered from periodic attacks of indigestion and abdominal pain, and at one time had passed tarry stools, but his mediastinal trouble had quite overshadowed this.

CASE V. This was a man, aged 62, who died from peritonitis due to the perforation of a large duodenal ulcer at the upper border of the first part of the duodenum, just beyond the pylorus. The lower end of the ileum was seen to be bound down to the brim of the pelvis and to the inner aspect of the caecum by old adhesions, on freeing which the appendix was disclosed. It showed clear signs of chronic inflammatory trouble, its distal end was enlarged and club-shaped, and the tip was not only adherent to, but was firmly incorporated with, the wall of the ileum.

In these five cases the coexistence of duodenal and appendicular disease was highly suggestive of some inter-relationship.

GROUP II.—*Duodenal Ulcer and Pericolitis.*

In the remaining five cases of ulcer the appendix showed no visible pathological change, but the outstanding feature in the examination of the abdomen in each case was the marked degree of pericolitis present.

CASE VI.—This patient, a man, was admitted to hospital suffering from advanced general peritonitis, and gave a history suggesting duodenal ulcer; the abdomen was opened and a duodenal ulcer, typical but without perforation, was found. The appendix was not at fault, though there were old adhesions in the caecal region, and accordingly the abdomen was simply drained. Death ensued on the following day, and at the *post-mortem* examination there were discovered the signs of an old suppurative perityphlitic process which had lit up and ruptured into the peritoneal cavity, leading to general suppurative peritonitis. There was a chronic oval ulcer on the anterior wall of the first part of the duodenum ¾ in. from the pylorus, and the puckered cicatrix of an old healed ulcer on the posterior wall just opposite.

CASE VII.—This was a man aged 56, in whom death had followed a late operation for a perforated duodenal ulcer. A typical history of five years of intermittent pain had been obtained. A perforation the size of a threepenny-piece on the upper border of the first portion of the duodenum had been closed and a gastro-enterostomy performed. At the *post-mortem* examination, apart from the duodenal trouble, attention was at once directed to the ascending colon, which was firmly bound to the parietal peritoneum of the right flank by dense adhesions; the omentum was caught up in these, and on separating it old-standing fibrous cicatrices in the wall of the colon were revealed. Viewed from the mucous aspect, the colon showed merely puckering at the site of the cicatrices. The caecum was considerably dilated above this, but the appendix showed no abnormality.

CASE VIII.—This was an old man who died from chronic Bright's disease. In this case a stellate scar on the anterior wall of the duodenum, to which a fringe of omentum was adherent, marked the site of a chronic ulcer which from the inner aspect was seen to have almost healed over. There was well-marked pericolitis of the descending and pelvic portions of the colon, both of which parts were thickened, bound down by adhesions, and in part enveloped by adherent omentum. The colon above this point was dilated and showed evidence of pronounced faecal stasis. The appendix was healthy.

CASE IX was that of a man, aged 22, who died from pneumonia. At the *post-mortem* examination a dense fibrous stenosis of the duodenum half an inch from the pylorus was seen. This corresponded to a typical punched-out chronic ulcer on the anterior duodenal wall. There was also very pronounced chronic pericolitis, the transverse colon being bound to the descending colon for about 12 in. by a mass of adhesions and giving the typical "double-barrelled shot-gun" appearance. The caecum, ascending and first part of the transverse colon were all distended with gas and scybalous faeces; the pelvic colon was collapsed. On the left side of the abdomen, alongside the descending colon, several coils of small intestine were loosely bound together by old fibrous adhesions. In this case

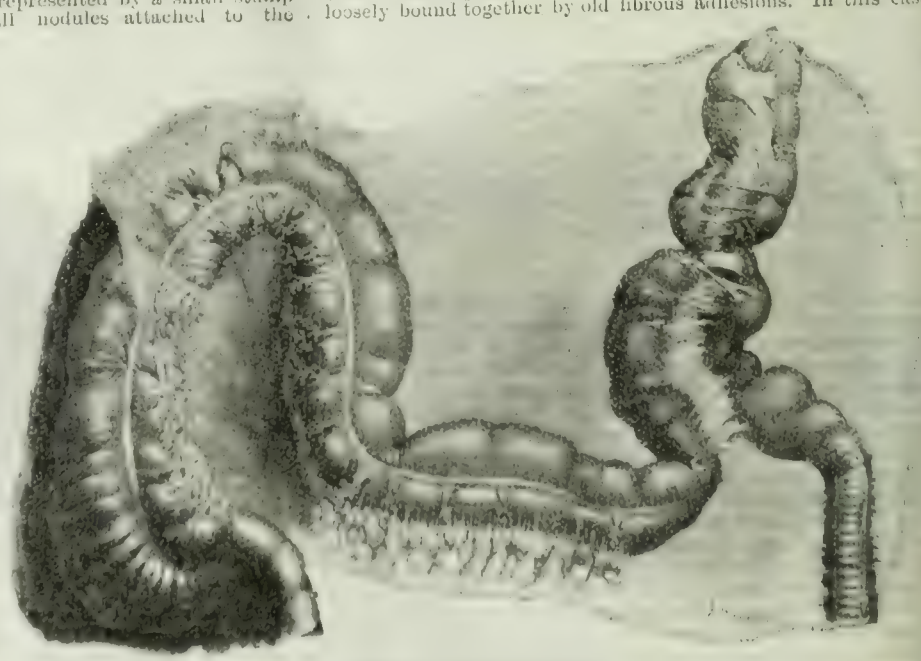


Fig. 3.—Case IX, Group II.

there had undoubtedly been a marked degree of chronic stasis in the colon.

CASE X was a man aged 62, who had died of aortic and mitral disease. In the history of the case it was noted that he had

suffered from a severe attack of "cramp in the stomach" eight years before his fatal illness. At the *post-mortem* examination dense adhesions concealed the first portion of the duodenum, and on separating these the scar of a healed ulcer was found on the upper border of the duodenum, half an inch from the pylorus. In this case the transverse colon in its middle third was bound to the root of the mesentery of the small

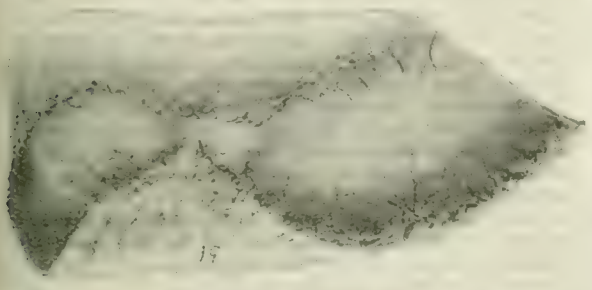


Fig. 4.—Case IX, Group II.

intestine by old-standing adhesions which anchored the colon firmly. The appendix was healthy, but the last three inches of ileum were fixed to the pelvic brim and to the front of the sacrum by what appeared to be old inflammatory adhesions which enveloped and constricted the ileum at this point, the intestine above being slightly dilated and hypertrophied.

In all these five cases a duodenal ulcer was associated with evidences of old-standing inflammatory trouble in the colon.

These *post-mortem* findings go to swell the evidence we already possess that duodenal ulcer is usually associated with some trouble lower down in the alimentary tract. It would appear that, whatever be the primary cause of the ulcer, a chronic intoxication from an infective lesion, or merely from faecal stasis, is the factor determining the chronicity or periodicity of the duodenal trouble. They indicate that at operations for the relief of duodenal ulcer a search should always be made for such lower bowel lesions; and that, where possible, these should be treated as being essential elements in producing the symptom-complex for which the operation was undertaken.

THE ETIOLOGY OF DISSECTING ANEURYSM.

BY

T. SHENNAN, M.D., F.R.C.S.Ed., Pathologist, Royal Infirmary, Edinburgh, and J. H. HARVEY PIRIE, M.D., F.R.C.P.Ed., Assistant Pathologist, Royal Infirmary, Edinburgh.

THE commonly accepted explanation of dissecting aneurysm is that it originates in a splitting of the endothelium covering a softened atheromatous patch, or over an atheromatous plate, followed by dissection of the blood into and along the media, with rupture sooner or later to the exterior of the aorta.

We wish to deal with a group of dissecting aneurysms in which there is no atheroma and no gross changes in the intima, and in which the important pathological changes affect the middle coat. Such cases appear to be sufficiently numerous to merit detailed consideration. In most of the cases we have examined the rupture of the intima has taken place in the ascending part of the aorta, a short distance above its origin. In a few cases rupture occurs at the commencement of the ascending aorta near the attachment of the obliterated ductus arteriosus, and occasionally it takes place in the descending aorta.

The last variety is difficult of explanation, and may sometimes depend upon the rupture of an intercostal or lumbar artery. Seeing that we have not had any opportunity of examining cases of this kind, we shall confine our remarks to dissecting aneurysms originating either in the ascending aorta or at the commencement of the descending aorta.

The explanations advanced by different writers have been classed under three headings: (1) Increased blood pressure due to hypertrophy of the left ventricle; (2) actual trauma; (3) degeneration of the wall. Seeing that several of our cases have shown no hypertrophy of the left ventricle, and that similar cases have been reported, we consider that any satisfactory explanation must disregard this factor, and account for the rupture in absence of any great increase in the blood pressure.

Actual trauma or severe unusual strain may also be excluded in many cases, so that this factor can be admitted only with the reservation that though often present it is not absolutely essential. The remaining factor—degeneration of the wall—is, we hold, the important factor in the causation of dissecting aneurysms.

Before dealing with the pathological changes which occur we may consider shortly the forces to which the wall of the aorta has to offer resistance. First, there is the *resistance to expansion*, which must be greatest where the diameter of the tube is greatest—that is, in the ascending portion.

Secondly, there is the *recoil* of the blood during diastole, which we presume has an effect comparable to that of the water hammer. This force will be greatest also at the commencement of the aorta. Thirdly, there is what we may term a *vibrating motion* in the wall, between the greatest expansion of the tube and its greatest contraction. This effect will be greatest also near the commencement of the aorta, and where the vibration is greatest there will be a great tendency to degeneration.

The principal agent which Nature provides to resist these forces is the elastic tissue of the media, of which the fibres and laminae are arranged transversely and obliquely. These laminae give the effect of a tube composed of multiple layers, and the stress upon these must increase as one passes outwards in the wall. Between the laminae are the muscular fibres and connective tissue, the latter close to, and, as it were, clothing the elastic tissue. These two elements may act like check cords, the connective tissue checking over-extension and the tonic contraction of the muscular tissue allowing the strain to come gently upon the elastic tissue.

Elastic tissue in either real or premature old age tends to undergo changes which render it more brittle; and if the other two elements also undergo degeneration, as is constantly seen in these cases, the effect is that the media will more readily give way even under a strain which under ordinary circumstances could not be regarded as pathological.

The principal changes we describe affect the middle third or junction of the middle and outer thirds of the media. This is the position in which engineers note degenerations of tubes of uniform structure—and conceivably this may be applicable in the case of the aorta—but a more important reason for this localization is that this is the area which is farthest removed from its nutritive supply, whether from the vasa vasorum or from the lumen of the vessel.

The changes we have noticed are fatty degeneration of the connective tissue closely apposed to the elastic laminae; increase of the connective tissue between the laminae, and its hyaline degeneration; thinning or varicose thickening of the elastic fibres with rupture of these, and sometimes rupture of numerous adjacent fibres leading to formation of "faults" in the media; atrophy and disappearance of the muscle fibres sometimes over a considerable area in the middle and also in the outer part of the wall.

In the intima of the normal aorta there may a distinct elastic lamina about its middle part. There are, in addition, numerous fine elastic fibrils embedded in its connective tissue, and, further, the inner strands of the elastic tissue of the media are condensed so as to form an inner elastic lamina. In the neighbourhood of the ruptures we have found that these layers of elastic tissue, as well as the fine fibrils in the intima, become teased out, and to a great extent disappear. There is fatty degeneration disposed in lines parallel to the lumen, and this is at times very marked in the neighbouring, innermost, layers of the media.

With the occurrence of these important changes in the media and in the intima it is easy to understand that when the media gives way the intima will tend to bulge into the hollow thus produced, and readily ruptures.

The dissection along the media at the junction of the middle and outer thirds appears to depend mainly upon the degenerative changes occurring in that part, and also on the fact that the outer layers of elastic tissue in the outer third of the media are frequently closer together than normal, as it were condensed, so as to afford greater resistance.

In many cases the aneurysm after progressing along the

media ruptures back into the lumen. This may occur in the iliac vessels or even in the femorals. This result must be due partly to the fact that the pressure within the aorta is reduced more quickly than that within the aneurysm, but, as we have not yet been able to demonstrate any excessive degenerative changes in the intima at the point of re-entrance, we are not able to afford a complete explanation as to why it should rupture internally and not externally.

Most of the aneurysms rupture externally at the commencement of the aorta, usually into the pericardium. This must be because the outer layers of the media and the adventitia have to withstand not only the original pressure within the aorta, but an increased pressure within the sac of the aneurysm, the height of the pressure depending upon the size of the rupture.

The principal changes were demonstrated by means of the lantern.]

THE RÔLE OF THE GASTRIC JUICE IN THE PATHOLOGY OF GASTRIC ULCER.

(With Lantern Demonstration.)

By C. BOLTON, M.D., F.R.C.P.,
University College, London.

THE part played by the gastric juice in producing and maintaining gastric ulceration is a useful subject for discussion, since a knowledge of this aspect of the question is particularly useful to the practitioner of medicine in the treatment of the disease.

It is quite impossible to obtain an exact idea of the influence of the gastric juice in this connexion by the study of human pathology alone, and the diversity of the opinions which have been expressed at various times is a proof of this statement. The chief reason for this is that in any given case of gastric ulcer the pathological processes present involve so many factors that it is quite impossible to assign to each its proper significance and value. By experiments on animals we can isolate these factors and study the influence of each separately.

I propose, therefore, to give you very briefly the results of an experimental inquiry into this question, which have been published separately at intervals during the past few years.

The method by which I have produced these experimental ulcers in the first instance is one which I described some years ago, and consists in the injection into the animal of a toxic serum which has the property of attacking its gastric mucous membrane and producing gastric ulcers. Whether the serum reaches the stomach through the general blood stream or is injected directly between the coats of the stomach does not matter. In either case ulceration is produced, but in the former general toxic symptoms result, and the animal may die, whilst in the latter only slight symptoms result, and an ulcer is formed at the site of injection. The method of injection into the stomach wall is, therefore, the most convenient to employ when one is studying the healing of the ulcers, because an ulcer can be produced in any position in the stomach, and of any size, without the animal suffering more than a few hours' inconvenience from the general toxic effects of the serum. The serum is that of an animal which has been immunized by repeated injections of the gastric cells of another animal.

The two animals in which ulcers have been produced in these experiments are the guinea-pig and the cat—in the former by injection of immune serum obtained from the rabbit, and in the latter by injection of serum obtained from the goat. The lesions produced by this serum are necrotic in character. The necrosis involves the mucous membrane, and the result is an ulcer extending to various depths. It may only involve the submucous tissue, or may reach to the peritoneum, and perforation result.

The part played by gastric juice in the formation of these ulcers I have found to be a very important one. In fact, if the gastric juice be temporarily put out of action, ulceration fails to appear at all, although the animal dies from the general poisonous effects of the serum.

In order to demonstrate this, two guinea-pigs of the same weight are injected via the peritoneum with the same dose of serum. A solution of sodium bicarbonate is introduced into the stomach of one of them in order to put the gastric juice out of action whilst the poison is acting. If a lethal dose of the serum has been injected both animals will die within twelve hours. The stomach contents of the animal which has received the soda will be alkaline in reaction, and its mucous membrane be quite normal to the naked eye, whilst the stomach contents of the other will be acid in reaction, and the mucous membrane will show the usual black patches of necrosis and ulcers. Hence the serum does not produce the necrosis of the gastric cells, but brings about some change in them which renders them susceptible to the action of the gastric juice. The process is, therefore, one of digestion of the gastric mucous membrane by the gastric secretion owing to some change which has occurred in it. What that change is I cannot say, because no microscopic alteration can be seen in the cells before they are digested.

It does not appear to me to be due to the removal of any specific resisting power possessed by the gastric cells, because I have shown that other blood poisons, which cannot have any influence in this direction, are able to likewise bring about self-digestion. It is undoubtedly a question of the infliction of a certain amount of injury upon the cells, and necrosis and ulceration are produced merely because the cells happen to be exposed to the action of a digestive fluid.

The establishment of this principle is of great importance, because it demonstrates how blood poisons, of which we are at present ignorant, may produce their effects upon the stomach. We know that one important cause of gastric ulcer in the human being is bacterial invasion of the body either as a septicæmia or from some local, and perhaps unsuspected, focus of infection. The organisms, or their poisons, gain entrance to the gastric mucous membrane by the blood stream. It is not necessary for them to kill the gastric cells, but if a certain amount of damage is inflicted upon the latter, the gastric juice is then able to complete the death of the tissue and so produce an ulcer. This explains why these bacterial ulcers are found so much more often in the stomach than in other parts of the body. The same remarks apply to the ulcers found in other intoxications of the body—as, for example, in burns. In almost half the cases such toxic ulcers are single, and many instances are on record of the transformation of such acute ulcers into chronic ones.

This action of poisons circulating in the blood suggests that certain substances introduced into the cavity of the stomach may produce a similar effect, and we already have one protoplasmic poison present in the gastric juice—namely, hydrochloric acid. The effects of hyperacidity of the gastric juice are interesting. The amount of HCl present in the guinea-pig's stomach contents is the same as in man—namely, about 0.2 per cent. One may introduce into the guinea-pig's stomach solutions of HCl of any strength up to 0.7 and 0.9 per cent., depending on the weight of the animal, and no lesion is produced, but with strengths above these necrosis and ulceration are produced. In the human being the percentage of HCl never reaches these limits, and therefore hyperacidity alone, such as is found in disease, is unable to produce ulcer, but I have been able to show that it is *potentially* able to do so, and that in the presence of another poison a hyperacid gastric juice will do more damage to the stomach wall than one of normal acidity. In order to demonstrate this two guinea-pigs of the same weight are injected via the peritoneum with the same dose of serum. A solution of HCl, of any strength between 0.3 and 0.7 per cent.—in other words, an innocuous fluid—is introduced into the stomach of one of them at the same time.

In the twenty-two experiments of this series which I have done the result was in all cases the same. The gastric lesions in the stomach of the animal which had received the HCl were much more marked than those in that of the control animal. So that HCl, of such strengths as may be found in the condition of hyperacidity in disease, is able to act as a poison for the gastric cells. I have found precisely the same results to occur in the case of other acids, including biliary acids. The results with acetic acid are interesting, because vinegar, which is sometimes largely consumed by a certain class of individual, contains 4 per cent. glacial acetic acid. I found a 0.5 per cent. solution, or one of any strength above this, to markedly increase the lesions produced by gastrotoxin.

Lactic acid, on the other hand, which is formed by bacterial fermentation in the stomach under certain conditions, is not so potent in this respect, but 3 or 4 per cent. solutions will cause an increase of the lesions.

The rapidity of formation of an ulcer of the stomach varies according to the activity of the gastric juice. After a meal of 100 to 120 grams of meat the cat's stomach is usually not empty till a period of about twelve hours has elapsed, whilst after a meal of 6 oz. of milk it is empty in three hours. The stomach of a 3,000-gram cat will hold, when fully distended, a little over half a pint, but the animal will only drink about 6 oz. at once.

I conducted a series of experiments in which half the animals were fed on meat and half on milk, an ulcer being produced in each cat by local injection of immune goat's serum. When the animal is fed on a meat diet, so that the walls of the stomach are exposed to the prolonged action of the gastric juice, the slough is rapidly formed, and has separated by the fourth day in most cases, a clean ulcer resulting. In the case of animals fed on milk, however, the period of formation of the ulcer is longer. In two cases the slough had not separated on the seventh day, and in two other animals, killed on the eighth and eleventh days respectively, a small slough was still adherent to the centre of the ulcer. The same result is seen in the case of fasting cats. When the stomach is empty the ulcer may not appear at all, or, if it does, it is quite superficial. We see therefore that, when all the conditions necessary for the production of ulcer are present, the rate of formation of such an ulcer and also its extent are largely dependent upon the condition of the gastric juice. In the human being acute ulcer is initiated in several ways, but in all cases, by the action of the gastric juice, the different lesions are eventually converted into precisely the same kind of ulcer, so that in most cases it is impossible to say how the ulcer took its origin.

I now pass to a consideration of the influence of the gastric juice upon the healing of experimental ulcers.

The healing of acute ulcer was first studied in 40 guinea-pigs and 21 cats on a normal diet, and I found that in all cases healing occurred in about three weeks, the exact time depending on the size of the ulcer.

In order to test the effect of hyperacidity of the gastric juice, ulcers were produced in 24 guinea-pigs. Half the animals were put on a normal diet and half on an acid diet, which consisted of food soaked in 0.6 per cent. HCl. I had previously found that by feeding the animals on such a diet it was possible to keep the stomach contents permanently hyperacid to the extent of about 0.27, or 0.3 per cent. This investigation showed that the ulcers in the animals fed on an acid diet passed through precisely the same stages as those of the animals fed on a normal diet, and that they healed up in the same time. The same results were obtained in a series of cases in which a diminution of the acidity of the stomach contents was present. Half the animals were fed on food soaked in a 4 per cent. solution of sodium bicarbonate, which effects this result, and half were fed on a normal diet. In each case healing occurred in practically the same period of time.

When the motor power of the stomach is interfered with, however, a definite delay in the healing of the ulcer occurs. Pyloric stenosis was produced in cats by constricting the first part of the duodenum with a piece of rubber tubing.

Retention of food in the stomach was thus produced and consequent dilatation of the organ. Ulcers were produced in a series of cats having pyloric stenosis, and in normal cats as controls. I found that motor insufficiency of the stomach definitely delayed the healing of the ulcers for at least twice the normal time.

The delay in the healing occurred during the early stages, before the single layer of cells, which eventually develops into glands, had completely covered the base. The cause of this delay was not due to a fault in the epithelium but to necrosis of the connective tissue base of the ulcer—so that the epithelial cells had no granulation tissue over which to grow—and also to excessive formation of fibrous tissue in the base, the young glands having no cellular stroma in which to proliferate. These conditions were due to the retention of food in the stomach, which allowed of a prolonged action of the gastric juice upon the connective tissue base of the ulcer.

The time of healing of acute ulcer also depends upon the quality of the food, for the same reason. We have seen that meat is retained in the stomach longer than milk, and that it produces a greater flow of gastric juice. In a series of experiments in which half the animals were fed on meat and half on milk, I found that the ulcers of those fed on milk healed up more rapidly than those of the meat-fed animals.

The delay occurred in the early stages of healing and was due to the condition of the base of the ulcer. When once the base was covered with a single layer of epithelial cells so that it was thus protected from the action of the gastric juice, the further changes in this layer progressed at a rapid rate.

The glands of this regenerated mucous membrane were more irregular and not so perfectly formed as in the condition of normal healing, because of the excessive formation of fibrous tissue in the base, resulting from the irritation of the gastric juice.

In the treatment of a case of gastric ulcer, therefore, the acidity of the stomach contents should be kept low by the administration of alkalis. The diet should be free from irritants, and should consist of foodstuffs which remain only a short time in the stomach and excite only a moderate flow of gastric juice. If there is present dilatation of the stomach and retention of food owing to muscular insufficiency, which resists medical treatment, or pyloric stenosis, gastro-enterostomy should be performed.

DISCUSSION.

Sir BERTRAND DAWSON said: No one worker has contributed so much to our knowledge of gastric ulcer as Dr. Bolton. The present paper is, if possible, even more interesting than his previous contributions, because it throws some light on the formation of chronic ulcer, and it is the chronicity of ulcer in the human being which needs explanation. Clinical experience bears out the view that the stage of acute or mucous ulcer often shows evidence of microbic or toxic invasion of the stomach, whereas in the stage of chronic ulcer the chief factor at work is the hydrochloric acid. Stomachs likely to be the seat of mucous ulcers usually show normal or lowered hydrochloric acid content, and their fasting contents disclose microbic growth, whereas most chronic ulcers have a raised hydrochloric acid content, and their fasting contents are sterile. The observation that other acids will favour ulceration is important, and the speaker inquired if Dr. Bolton had made any experiments with citric acid. The reason why the cats who were fed on meat healed more slowly than those fed on milk was probably because the stomachs containing meat emptied more slowly than those containing milk. Middle-aged people with gastric ulcers show evidences of delayed stomach emptying independently of pyloric constriction.

SECTION OF BACTERIOLOGY.

Professor JAMES RITCHIE, President.

DISCUSSION ON VACCINE-THERAPY.

OPENING PAPERS.

I.—JOHN EYRE, M.D., M.S.Durh.,
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PREPARATION AND STANDARDIZATION OF VACCINE.

SPEAKING of prophylactic inoculation, some ten years ago it is true, Wright said that the best results would not be obtained until perfect asepticity and *accurate standardization* of the vaccine had been secured. But this dictum applies just as forcibly to therapeutic inoculation, and yet at the present day it would be difficult to find half a dozen men who employ the same technique in the preparation and standardization of their vaccines.

I therefore propose rapidly to review the materials and methods available in this connexion. I cannot, however, refrain from touching first upon that much debated point—the relative values of stock and autogenous vaccines.

There is much to be said in favour of each. Speaking generally, it will be conceded that the natural progress of any bacterial infection is in the direction of recovery, and that the natural process of recovery consists in the elaboration of a sufficiency of specific antibodies in response to the stimulus afforded by the infecting bacterium, to ensure the neutralization of its noxious products, and eventually the destruction of the infective agent. Given accurate methods of bacterioscopic diagnosis, intelligently and carefully applied, so that the isolation of the infective agent is attained, we have in the autogenous vaccine subsequently prepared a material which will provoke the formation of antibodies absolutely specific for the bacterium responsible for the infection.

Now, it is a matter of common knowledge that if members of the same species of bacteria are isolated from different sources, the biological characters exhibit such a close family resemblance that we are justified in applying the same type-name to each; yet, when we study each strain minutely, it is quite usual to find that one strain possesses some peculiar feature which is not shared by the rest. Some years ago Washbourn and I isolated four strains of the pneumococcus from four different individuals, and, after some months of study, decided that they were absolutely identical in all their characters. We then tested the protective properties of an antipneumococcic serum prepared by Pane against each of these strains in turn, and discovered that though efficient in the case of each of three of these strains, the serum was powerless to prevent the onset of fatal septicaemia in those animals inoculated with the fourth strain. In other words, the antibodies elaborated in response to the stimulus provided by some strains of pneumococci are not sufficiently specific to ensure the destruction of all strains of pneumococci.

Again, it is common knowledge that certain biological characters of bacteria can be profoundly influenced by variations in the environment. Penfold has shown that by repeated passages *in vitro* through media containing lactose, a strain of the typhoid bacillus can become endowed with lactose-fermenting powers. Analogous changes can be induced in bacteria *in vivo*; thus, by carefully arranged passages, a strain of *M. melitensis*, originally almost without pathogenic properties for the rat, when inoculated in any way other than intracerebrally, can be taught to produce fatal results when injected subcutaneously into that rodent. Again, I have observed during the course of a *B. coli* cystitis treated with vaccine that the infecting organism undergoes minor changes in its biological characters, which necessitate the preparation of a fresh vaccine from this modified bacillus, if a complete cure is desired. The final suggestion I would put before you concerns the infection where it is impossible to identify the responsible organism—although it has been obtained in pure culture—without an extended series of cultural and other observations. Here identification can wait until the vaccine has been prepared and the treatment of the patient initiated. All these points emphasize the necessity for the employment of autogenous vaccines whenever possible.

But an autogenous vaccine is not always possible, and under these circumstances stock vaccines find their chief application. Time in treatment is a very important factor, and the preparation of, for instance, a vaccine of the tubercle bacillus occupies weeks, or even months; a streptococcus from the cellulitis affecting the begrimed hand of a working man out patient may require several days for its isolation in a state of purity; it may not be possible to isolate the gonococcus from a female arthritis case until the next menstrual period perhaps two weeks distant. In all these instances it is preferable to avoid delay by instituting treatment with a stock vaccine, since stock vaccines can always be kept on hand ready for use. The supply, too, can be replenished from individual organisms as they occur in the routine work of the laboratory—the stress and strain of isolating bacteria in a minimum number of hours is thus avoided. But stock vaccines have two disadvantages—both real. The first and most important I have already mentioned namely, that the antibodies elaborated in response to the injection of stock vaccine may not be sufficiently specific to effect the complete cure of the patient. The second concerns the use of vaccines by those who have had but little experience in bacteriological work. The man who has had one or two successes in the field of vaccine-therapy is sorely tempted to treat subsequent bacterial infections with stock vaccines of what he *thinks* may be the responsible micro-organisms, without the essential preliminary of a bacteriological diagnosis. In the early days of diphtheria antitoxin we know many cases of pneumococcic or pneumobacillary membranous sore throat were treated with serum, and the absence of beneficial effects led to adverse criticism of serumtherapy by isolated individuals, and a subsequent reluctance to exhibit it in cases of true diphtheria. So in the present day a man might be induced to administer stock vaccines of streptococcus or catarrhalis in a case of arthritis associated with a pyorrhoea due in reality to *Staphylococcus pyogenes aureus* infection. No harm would be done, it is true, beyond a disappointment to the patient and the loss of valuable time. Next with regard to the question of virulence. Here I would express my conviction that a virulent culture provides a much more satisfactory vaccine than one prepared from an avirulent strain of the same organism, although I am fully aware that in prophylactic inoculations—as, for example, against typhoid—it does not appear to detract from the value of the vaccine when it is prepared from attenuated laboratory cultures far removed from the human body. This fact in no way militates against the conviction I have expressed. A vaccine made even from an avirulent culture may provoke the formation of sufficiently specific antibodies to ensure the destruction of a fairly large dose of virulent bacilli when first introduced into the body, whilst similar antibodies formed in response to the same stimulus might well be insufficiently specific to neutralize the noxious matters elaborated by those virulent bacilli after they had established a footing in the tissues of the host. From what I have already said, it will be obvious that if I am forced to use a stock vaccine, my preference is for one compounded from many different strains, rather than from a single representative of the required species, since when a large number of strains are employed there is a greater probability that one or other may provoke the formation of the antibody to the peculiar toxin of the organism which is responsible for the infection to be treated.

Turning now to the preparation of a vaccine, my remarks bear primarily on the preparation of an autogenous vaccine; at the same time but little variation will be needed to fit them to the preparation of stock vaccines. First, rapidity is an essential factor in the isolation of the responsible microbe. The fewer subcultivations that are needed the more closely will the organism, when eventually isolated, correspond to the one residing in the patient's tissues. Perhaps as a counsel of perfection, to which, however, I personally endeavour to attain, I would say that no organism further removed from the human body than two subcultivations upon nutrient media shall be used in the preparation of vaccine. In so brief a period as this, practically never extended beyond forty-eight hours, the amount of attenuation that the organism undergoes is a negligible quantity, whilst its fermentation properties, as tested by the various sugar reactions, will have undergone no material change. This rapidity of isolation predicates something more than the shrewd suspicion as to the identity of the organism under observation, it demands an intimate acquaintance with the biological characters of that organism. Many are the devices that on occasion have to be resorted to in isolating the responsible microbe. Sometimes we depend upon selective media in the preparation of our cultivation; for example, *Bacillus coli* may be readily isolated if the material is at first inoculated into bile salt broth, incubated at 37° C. for about four hours, and then plated upon nutrose agar. The pneumococcus, on the other hand, is very often more conveniently isolated by inoculating the material directly into a rabbit and recovering the organism in pure culture from the heart blood.

Again, antiserums of high agglutination titre are often exceedingly useful. I have recently had to isolate *M. melitensis* from an impure first culture in which the associated organism was *Bacillus subtilis*. Here the application of *melitensis* antiserum completely agglutinated the cocci, and a pure culture was readily obtained from the deposit. On another occasion, a mixture of *Streptococcus longus* with *Bacillus coli* prompted the converse of

this method of procedure. Thus *coli* antiserum was added to the mixture and the streptococcus obtained in pure culture from the supernatant fluid after centrifugalization. The actual culture to be employed in the preparation of the vaccine should be one grown on a solid medium under optimum conditions, that is—optimum reaction of the medium, the optimum temperature, the optimum atmospheric conditions, and, above all, for that incubation period which will give the maximum of living virile bacteria and the minimum of dead and dying individuals. Suspension of the bacterial growth should be carried out in a fluid menstruum of sufficient density to obviate either plasmolysis or osmosis. The fluid I prefer is 0.1 per cent. solution of sodium chloride. The bacterial growth may be first washed from the surface of the medium by spraying with this fluid, or it may be removed from the surface of the medium by the aid of a platinum spatula, and mixed with the fluid.

Whichever plan is employed, a homogeneous emulsion must be ensured by thorough agitation of the mixture. I think all will be agreed that for this purpose an electrical shaker has no equal, while the addition to the mixture of sterilized glass beads promotes an even emulsion. Occasionally it happens with members of the *catarrhalis* group, or of the diphtheroid group, that clumps of bacteria resist all attempts at separation. Suspensions containing such clumps should be thoroughly centrifugalized, and the deposit discarded. Attempts at standardization of the resulting homogeneous emulsion have been practised by bacteriologists since vaccines were first employed. In a paper published more than eighteen years ago, the directions for preparing an anticholera vaccine were practically these:

> Use glass test tubes 16 cm. long by 1 cm. diameter, containing 10 c.cm. of sterilized agar. Slope the agar in the tube at such an angle that the surface of the medium is 10 cm. long, inoculate with the cholera vibrio, incubate at 35° C. for twenty-four hours. Emulsify the growth in 6 c.cm. of half per cent. carbolic acid solution, and when the germicide has killed the bacteria in the emulsion, divide the emulsion into six doses.

The many fallacies involved in such a method of standardization are so obvious that I need hardly refer to them. Another ingenious method of standardizing was one used for a time by Wright, in which the opacity of the emulsion formed the basis of standardization, and, when necessary, the emulsions were diluted until a layer 1 cm. in depth was just sufficient to obscure the image of the test object when viewed through it. Gravimetric methods of standardization have frequently been proposed, and will ultimately, I believe, supersede all others. They are, however, all subject to the serious disadvantage of requiring considerable time for their execution. As we shall shortly have before us a communication dealing with gravimetric methods, I do not propose to say more about them here.

The most convenient methods of standardization in use at the present time deal with the actual enumeration of the micro-organisms in the emulsion. This may be done directly with the help of a haemocytometer chamber—a method which gives in practice very accurate results. The tiro, however, will find that the active Brownian movement interferes to a certain extent with the accuracy of his results, and many of us use intra-vitam stains, such as neutral red, for the purpose of simplifying the method. Enumeration by plating has many advocates, but here again the time factor militates against its general adoption. Two, and sometimes three, days' incubation are essential, to enable all the individual micro-organisms deposited in the plate to have time to form visible colonies; and the method of decimal tube culture has to a large extent superseded plating. In this, as the name implies, the emulsion is diluted, and decreasing tenths of a given unit are added to successive tubes of fluid media. The majority of us, however, enumerate by means of stained films in which comparable volumes of the emulsion, and of standardized "known" emulsion, are mixed and examined microscopically; or preferably equal volumes of the emulsion and normal human blood.

In either of these methods a perfectly homogeneous emulsion free from clumps is essential for accuracy. With a standardized emulsion as the known quantity errors are frequent, even when formalin has been used for killing the organisms in the emulsion, owing to variations as time goes on in the staining reactions of the organisms, so that, after all, the use of human blood for comparison is probably as accurate as any method, and given normally healthy individuals working in a laboratory, the variation in the red corpuscle content of the unit volume in different workers is a negligible quantity. The sterilization of the emulsion after standardization is carried out by many by a process of autolysis. Others sterilize by the addition of comparatively powerful germicides. With these two methods I do not propose to deal, as, owing to the inherent biological qualities observed even in different strains of the same species of bacteria, sterilization may not be completed for a considerable period.

> For example, out of eight strains of typhoid bacilli which were permitted to autolyze, three were sterile in twenty-four hours, another three in forty-eight hours, the seventh strain at the end of six days, and the eighth not until ten days had elapsed. Of the same strains sterilized by the addition of a half per cent. phenol, six were killed within twenty-four hours, the remainder not until the end of four days.

Mechanical disintegration in some form of grinding apparatus preferably operated at the temperature of liquid air is probably the most satisfactory method that can be used. For not only is it efficient and rapid, but, as we know from the observations of the late Dr. McFadyean, it sets free antigens which are not available in the vaccine as ordinarily prepared. Unfortunately, the cost of the necessary apparatus is too great to permit of its general application. So that, after all, sterilization by heat is the method that most of us employ.

In this connexion I would suggest that the lowest possible temperature which suffices to kill the individual bacteria is the most suitable for our purpose, since it is essential that changes of the molecular arrangement of the bacterial protoplasm, particularly in the direction of heat-coagulation, should be carefully avoided. I would further suggest that exposure to the thermal death point of the bacterium employed for a period of one hour is the most suitable. The sterility of the emulsion should be determined subsequently; but experience will show that if attention is paid to the maintenance of the requisite temperature throughout the exposure—by the adoption of some method for keeping the water in the water bath in constant movement—sterilization is effective, and the vaccine can be used with confidence, even before its sterility has been confirmed by the lack of growth in the subcultures.

The final stages in the preparation of the vaccine—such as the dilution, the bulbing or bottling, etc.—I do not propose to deal with.

With regard to dosage, I would only express the opinion, founded upon my own experience, that when virulent autogenous vaccines are employed, care should be exercised in the selection of the initial dose. This should be small, probably not exceeding 5 million, whilst, when dealing with attenuated stock cultures, the initial dose may be anything from ten or a hundred times as large. Again, it has been stated that age does not affect the immunizing qualities of a vaccine. My own impression is that, as a vaccine grows old, the dose must be very considerably increased to obtain similar results, and so strong is my conviction upon this point that at the end of six months, if needed for so long a time, I destroy a vaccine and prepare a fresh brew.

To summarize: my preference is for a virulent autogenous vaccine not more than two generations removed from the human body, cultivated under optimum conditions, suspended in 0.1 per cent. saline, emulsified by shaking with glass beads in an electrical machine, centrifugalized if necessary, standardized against normal blood, sterilized by exposure in a water bath of a temperature corresponding to the thermal death-point of the organism in question for one hour, dilution to the requisite extent with 0.25 per cent. tricresol solution, and employed in small doses during its efficient period of from three to six months. From what I have already said it is obvious that there are many points upon which vaccine-therapists might agree to adopt uniform methods, but such is our ignorance—or, speaking only for myself, my appalling ignorance—of many fundamental facts in bacterial biology, that I fear the time is not yet ripe for absolute uniformity of procedure, even in the preparation of vaccines.

II.—J. FREEMAN, M.D.Oxon.,
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LABORATORY TESTS AS A GUIDE TO INOCULATION TREATMENT.

MOST of us in this Section must consider that vaccine-therapy is now an important method of treatment, and every one must realize its great possibility for the future. The only question is how these possibilities can best be realized. At present there seems to be a tendency—quite a natural and easily explainable tendency—to underestimate the help which may be derived in the future from laboratory testings. In considering the help derived, and to be derived, from laboratory work it is necessary to go back to the beginning. How did vaccine-therapy as we know it arise? We all know that what we now call vaccine when inoculated into an experimental animal will produce immunity against the substances in those vaccines, and this immunity can be demonstrated in samples of blood taken from the animal. If the vaccines are of dead bacteria, then by laboratory tests we can show the production of immunity against living bacteria of the same species. Without this demonstration it is difficult to imagine how vaccine-therapy could have been developed. People might have advocated it as "toxi-therapeutics" on the principle of "the hair of the dog that bit you," but they would have obtained no following.

Without laboratory demonstrations of changes in immunity the idea of vaccine-therapy is irrational; with them it is not only rational but obvious. These laboratory tests are, then, the very foundation stones on which vaccine-therapy is built.

So much for these laboratory tests being the foundation stones of vaccine-therapy; let us see how inoculation treatment was built on this foundation. It was found that when an infected animal was inoculated with a dead vaccine corresponding to the infection changes were produced in immunity, and suitable doses would produce an increase in immunity. These changes were demonstrated by laboratory tests of the animal's blood, and in this way and by these tests a system of dosage was built up. Now, proof of the correctness of this building up is afforded when, on looking back at a long series of cases, it is obvious that they have been deriving benefit from the vaccines.

Now it may be said that this benefit to the patient has been—or, at any rate, might have been—the guide; but I think that any one who has tried to build up a system of doses under such a guidance will know how difficult it is; for in giving a dose one is not inoculating a long series of cases, one is inoculating an individual man, woman, or child, and the effect of the dose is masked by extraneous circumstances; one is left wondering whether the patient got well because of, or in spite of, the dose. May I give two examples of this difficulty? During the last three years I have been treating children suffering from whooping-cough with a vaccine made of Bordet's bacillus; unfortunately, I can make no blood test as to the efficacy of each dose, and it is quite impossible to judge from an individual case whether the doses are doing good or not. I therefore made statistics with a most elaborate system of control cases, and these statistics point to good having been done by the vaccine. But I have an uncomfortable feeling that statistics can be made to prove anything, and I hesitate to advocate this treatment; but, given a moderately reliable blood test, and I feel I could clear up my doubts in a couple of months. The other illustration is that of vaccination for hay fever. Time and again active immunization has been attempted from the homœopaths who made one smell hay during the winter, down to Dunbar's most careful and ingenious work—but always without success as far as active immunity was concerned. Then my friend Mr. Noon demonstrated with a quantitative ophthalmo-reaction that he could produce an increase of immunity by inoculating suitable doses of a pollen extract. The results of treatment built up on these lines have emphatically proved the value of his laboratory testings.

Have, then, all inoculations been controlled by tests? We know that they have not. Owing to the great difficulties of the tests it is often unreasonable or even impossible to make them. But in a way it may be said that all doses have been controlled to some extent by blood testings. Information obtained by laboratory work on one occasion will be of help on another occasion—perhaps with a different patient, perhaps to a different inoculator, perhaps it will even be used by analogy in combating a different micro-organism; those inoculators who say that they do not believe in laboratory tests are in the last resort acting under the guidance of those who do. Even those in this country who in the administration of tuberculin make it a boast that they reject all help which did not come from Koch are building over a foundation of blood tests. When Koch commenced his inoculations there was loose talk of "toxi-therapeutics," but as knowledge accumulated so the idea of immunity became more definite. The demonstration that a dose of typhoid vaccine would increase the typhoid agglutinating power of the inoculated animal suggested to Koch that his doses of tuberculin might be controlled by measuring the tubercle-agglutinating power of his patients. He well knew the value of specific laboratory guidance in supplementing the non-specific clinical evidence, although the agglutination of tubercle bacilli was and is a tricky and uncertain procedure. He said:

> The attempts to protect people against tuberculosis by immunization have been tried for several years, but they have been greatly handicapped because we possessed no reliable means of telling what result had been obtained with each single attempt. But the former uncertainty is at one blow removed now that the agglutination reaction puts in our hands a means of making certain, step by step, whether we in our attempts are working in the right direction.

When Koch visited the inoculation department of St. Mary's Hospital shortly before his death he was considering the possibility of obtaining guidance from the complement-deviation method. He was keenly interested in the use to which we had put the tuberculo-opsonic index in following out the effect of doses and studying autoinoculations. He expressed the opinion that future advances in the use of tuberculin could only come about by similar careful study of the changes produced in the blood.

So much for the help we have derived from blood tests in the past. Will they be required in the future? We can do without them only if all is now plain sailing. But we know that our paths are simply beset with problems. Take, for example, the case of an infection where the lesion is extensive and hidden; we know that Nature's method of cure is for the microbic substances of the lesion to stimulate the body to the production of immunity—by autoinoculation, in fact. The giving or withholding of a vaccine should entirely depend on whether these autoinoculations are insufficient, adequate, or excessive.

How can one tell of this? Surely the most satisfactory way is by blood testing. I am tempted to say that the only way beyond guessing is by blood testing. Then again, if a dose of the appropriate vaccine is given, in such a case its effect will be at least twofold: it will initiate some process of immunity on its own account; it will also provoke an autoinoculation from the lesion which will stimulate a second process of immunization; and this, again, may react on the lesion, and so on. I take it that the different doses given say, of tuberculin in cases of phthisis are different ways of meeting these difficulties; you may perhaps give so minimal a dose as to produce some small quantity of immunity and yet no autoinoculation; a larger dose may produce an autoinoculation of just a satisfactory strength for the patient; or one may attempt to produce such a degree of immunity with the dose that the body can snap its fingers at any attempt of the lesion to autoinoculate. The results may be good or harmful, and this will depend on whether the dose is appropriate to the extent of the lesion and its autoinoculation.

Clearly here are difficulties, and clearly here we need help. How shall we pick our way? How shall we even tell whether a method has done good or harm? Hardly by the help of statistics, for the cases would not be comparable; in all probability a man following one method would pick suitable cases, while another man would take the derelicts; and, in any case, "results" depend more on the sanguine temperament of the recorder than on anything else. On the other hand, a phenomenon of immunity observed in the blood as the effect of a dose will give us specific information; this may be understood or misunderstood, but if it is in the least degree understood it will help us with other cases.

The autoinoculation difficulty is not the only problem awaiting solution: any one who has attempted vaccine therapy could give a string of them. For instance, what effect on immunity has rest, or fatigue, or food, or fresh air, or worry? What is a good constitution? What is "feeling fit"? One need not labour the point, for there are obviously plenty of problems. If we can get reliable specific information as to what changes in immunity are going on in a patient, we shall be enormously helped in treating that patient with a vaccine.

Just one more glance at this side of the question before we consider the disadvantages of laboratory testing. Sometimes the connexion between an inoculation and the foundations of vaccine-therapy become too flimsy to be safe. Nearly every one here must have come across examples of this in the case of doctors habitually using vaccines who do not know the difference between a vaccine and a serum. This suggests to me a man who talks about cricket and who yet believes that they use goal posts in the test matches. If such a man had ever had his attention directed to laboratory testings he could never have gone so far astray. If we once lose sight of the guidance of immunity, it seems to me that we shall take to giving vaccines like so much tonic.

Let us now consider the *disadvantages* of laboratory testing—and some of these are very real, some are exaggerated, and some, I think, untrue.

In the first place there are the difficulties of carrying out laboratory tests—physical, technical, financial, and so on. Probably time will produce new methods or will lessen the difficulties; but doubtless for this reason alone nine-tenths or even ninety-nine hundredths of inoculations are and will be given without testing.

So much may be granted; but it may be further urged that laboratory methods are not only difficult but fallacious. In the first place it has been said that the functions of shed blood have nothing to do with the powers of immunity of the patient. Take, for example, the agglutination test in typhoid fever; it is true that Widal proclaimed that the reaction now known by his name has nothing to do with immunity, and that he would renounce all claims to credit if this were so, but no one believes this now, and his statement has been forgotten or forgiven. The bactericidal powers of the blood are clearly protective in function. That extraordinary phenomenon phagocytosis cannot be an accident; every one must believe that it is used by the body to guard against bacteria: and if so, then anything which affects phagocytosis, by which I include the opsonic power of the blood, will clearly affect our powers of immunity.

All this will probably be granted; it is more likely that critics will say that the laboratory methods of testing these things are inaccurate, and therefore misleading.

In the first place I should point out that if vaccine-therapy has been built up on and by blood testing, then the success of vaccine-therapy is itself a proof of the soundness of the blood testings. But setting this aside, let us consider the reliability of the methods. Of course, it is not possible within the space of a few minutes to consider the accuracy of all laboratory methods; let us confine our attention to the one most often employed—that is, that of the opsonic index. It is most often employed because, as opposed to most others, this method is of general application, and also seems to register changes in immunity more quickly than other methods will do. When in addition to its more frequent use one considers that it is also the most difficult and troublesome, it is easy to understand that it is likely to be the method most often criticized. I have even heard it suggested (generally on the telephone) that the opsonic index, or the opsonic theory (whatever that may be) is exploded. What about this?

I take it that no one doubts the opsonic function of the serum; that can be demonstrated to any one capable of receiving a demonstration, and is just about as certain as the clotting power of the blood. But people might possibly doubt whether there is a difference in this opsonic function in health and disease, and, if so, whether the difference can be measured. Let me give a case which I think proves that it can.

My colleague, J. Wells, died of a laboratory infection; he felt a chill and found he had a raised temperature. There were no physical signs whatever. His blood was tested to every organism which seemed likely—typhoid, para-typhoids, tubercle, glanders, Malta fever, and so on. To all he was at first normal, but later, while remaining normal to the others, he was found one day to have an opsonic index of 1.4 to glanders, which on the next day rose to 1.87. From that time forward the patient's glanders opsonic index fluctuated, and was generally between twice and three times normal. For weeks and weeks no other help to a diagnosis could be obtained, till at length there developed in the calf of his leg an abscess, which yielded glanders bacilli.

This is more than an instance; it is wellnigh a crucial experiment, and such examples could be multiplied almost indefinitely to show that this opsonic test really does correspond to some change in the immunity of the patient. And if this is proved, then we must take it that the big fluctuations shown by the opsonic index to occur owing to autoinoculation are due to some real change in immunity; and if the changes after autoinoculation are real, then surely the changes detected after inoculation are real also. And if the big fluctuations in the index correspond to changes in immunity, why not the small ones? Clearly the whole question is one of degree of accuracy: as one looks for smaller and smaller differences, so the errors of technique will play a larger and larger part. If they are small they should not be disregarded, but taken with a grain of salt.

What of the accuracy of the tuberculo-opsonic index. It is in dealing with the tubercle bacillus that the method is most often employed, and it is here that one finds most criticism. Now, in the first place, one cannot have a glanders opsonic index which means something and a tuberculo-opsonic index of no value, but in any case it is easy to give instances where the tuberculo-opsonic index is obviously giving useful information about immunity in the patient. Perhaps I may quote one. The treatment of a phthisis case was to be controlled by blood tests; the doctor reported that the case was an extremely early one, with practically no rise of temperature, and a very small and apparently stationary lesion: in fact, he described it as an eminently suitable case—bound to do well. Blood tests showed fluctuations in the opsonic power indicating that big autoinoculations were going on. In a series of letters I urged the doctor to keep the patient more rigidly at rest, but I could not stop the autoinoculations, and therefore did not commence inoculations, to the annoyance of the doctor, from whom I heard no more. Four weeks later I heard that the patient was dead; I do not think with our present knowledge we could have saved him, but certainly if a dose had been given his rapid collapse would have been ascribed to it.

Here, again, the question is, How small are the changes which can be measured without being unduly masked by errors in the technique? Personally I am convinced that the method can be used with very great accuracy, though, of course, it can be very inaccurate on occasion. This inaccuracy would be a danger, but we have a great safeguard in the fact that the man who does the work always has a very good idea as to its accuracy: this is particularly the case if he is of a critical temperament, and controls his work effectually by testing several normal bloods. If the worker himself is allowed to interpret the meaning of any figures he obtains, he will know how big a grain of salt to apply to them.

It is, of course, not the index which is of value, but the interpretation placed on it as indicating some change of immunity in the patient; in this connexion it may be pointed out that more information can be obtained (and the method made safer) if a series of blood specimens are tested together, and attention is paid not only to individual indices, but also to the trend of any changes in those indices. This question of interpretation brings me to my last point with regard to the opsonic index—the results may be perfectly accurate, but their meaning misunderstood (may even be unexplainable at present). One remembers how physicians denounced the Widal test as faulty merely because patients with typhoid fever (but making a poor fight against it) failed to form agglutinins. The same sort of thing happens with the opsonic index, owing to insufficient knowledge. For example, a senior physician several years ago wished to "test the value of the tuberculo-opsonic index." For this purpose he admitted a patient with phthisis, and the blood was found to have

an opsonic power of 1.45 to tubercle. After a month of careful nursing and rest in bed the index dropped to slightly subnormal on several testings—which, of course, is the result to be expected. But the physician's comment was "I take him in ill with a high index, and then send him out cured with a low index; what is the good of the index?"

The alternative to blood testing is clinical evidence as a guide to inoculation, and of course no sensible man will neglect any clinical evidence he can get, and this will be of special value where the lesion can readily be observed. But the absence of any specificity of clinical evidence is a terrible handicap; anything which happens to the patient after the dose tends to get credited to the dose although it may be a sheer accident, and one has to pick out the significant facts from a mass of irrelevant details. Even the temperature of the patient, which is supposed to have a direct bearing on immunity, may remain normal while quite considerable immunization processes are proceeding; and if the temperature is abnormal it is quite non-specific, and so may be misleading.

I should like to quote cases to show how misleading a combination of extraneous circumstances and the imagination of the patient may be. Numbers of them occur to me, but I must cut myself down to one. In the Inoculation Department of St. Mary's Hospital it is often desirable to make a serum diagnosis of the infection before proceeding to treatment. It saves explanations if the patient is allowed to think that a small quantity of salt solution inoculated subcutaneously is the first dose of vaccine. At the next visit I record the result of this supposed dose. About 20 per cent. say that it had no definite effect, and 40 per cent. that it did good, and 40 per cent. that it did harm. This is, of course, because anything which occurred to them after the dose tends to get ascribed to it. Occasionally the patient gives surprisingly precise details. For example, one patient told me that she had felt "all overish" on the bus going home, and thought she was going to faint; she felt drowsy that evening and next morning, but after that began to improve, and since then had been feeling better than she had done for years. All this produced by ½ c.cm. of salt solution. Now one does not want vaccine-therapy to be built up on non-specific evidence of this sort.

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ON THE METHODS FOR STANDARDIZATION OF BACTERIAL PREPARATIONS FOR INOCULATION.

THE desirability of a common method of preparation and standardization of such potent agents as bacteria used for inoculation is obvious. Both the qualitative and the quantitative factors demand consideration, but at present in regard to neither is there any uniformity of agreement as to the methods which are most suitable.

With regard to the qualitative standardization, which is the more difficult problem, we lack still any numerical basis for estimating the potency of a suspension of dead bacteria. The estimation of toxic power, or minimum lethal dose, is not suitable, working as we are with dead bacterial bodies freed from exotoxins. As for toxin action due to the presence of endotoxins, this does not furnish a practicable subject for standardization, and it is open to question the degree to which the immunizing reaction which is aimed at in inoculation is bound up with the production of anti-endotoxins. The apparent toxic effect which the inoculation of bacteria may have on an individual suffering from disease is widely different from any effect produced in a healthy individual.

The most reliable indication as to the potency of a bacterial preparation would be afforded by the degree of immunizing response set up by its injection into a healthy animal. Here it would be necessary to decide which aspects of the process of immunization demand consideration. But if arbitrarily we take only the phagocytic power of the blood into account, we are faced with another factor over which we have no control—that is, the variations manifest between different individuals in the way in which they respond to an inoculation. Still, there is the possibility that it might be found practical by averaging to determine a "minimum immunizing dose" for any preparation—that is, the smallest average dose which serves to produce or to increase demonstrably the immune substances present in the blood.

At the present time the general agreement seems to be that the most that can be done is to aim at the highest degree of efficiency attainable, which implies the greatest potential pathogenicity. In the absence of any physiological standard obtained by experiment, it is probable that this aim at high potency is quite a satisfactory means of qualitative standardization. It corresponds very much to the aim at securing great chemical purity of alkaloid substances, apart from physiological tests. The method to be employed for this purpose is to obtain a pure culture from a highly virulent infection, without recourse to subculture; to employ that culture medium which gives the most active growth and which best conserves its pathogenicity, and to make it up at that stage of the growth when it contains the greatest number of active individual organisms before the stage of degeneration, involution, and death has developed to any extent. In its sterilization the least possible disorganization of the bacterial protoplasm is desirable. These various factors differ, of course, with individual types of bacteria or individual strains. The microscope, I think, is a useful aid toward deciding the best stage of growth at which to make up a preparation and the comparative value of different modes of sterilization, since the staining capacity of the organism supplies a fair measure of the preservation of the bacterial protoplasm.

Though a qualitative standard is still lacking, there is no reason for neglecting the importance of a quantitative standardization any more than we do with pharmacopœial drugs not physiologically tested. Although the standardization of New Tuberculin preparations by a quite satisfactory method of weighing has been before us as an example, the method of enumerating bacteria has been commonly adopted and has only tended to confusion in dosage. The ingenious method of Wright has been generally made use of, perhaps on account of its being considered a simpler and shorter procedure. Actual experience does not bear this out. With certain bacteria which tend to auto-agglutination, the securing of a suspension as uniform as is necessary is tedious or unsatisfactory. The counting of the blood corpuscles for the test adds to the time taken up. Error may arise from the staining of the bacteria being poor. The personal factor in the enumeration may furnish another. Then, in the case of coccal or diplococcal forms, it is an arbitrary matter what is to be counted as an individual, and the depth of staining may introduce difficulties in this respect. Again, the standardization is based on the enumeration of only a small sample of the whole. But the chief objection to enumeration is one of principle. If it is the mass of bacterial protoplasm which we wish to judge of, we are faced by the fact that organisms vary enormously in size in any one culture at different stages of growth and also as between different strains. In a bacillary culture, at any one time, there may be all grades between almost coccal forms and long filaments. Certain organisms, such as those habitually growing in filamentous forms, do not lend themselves to enumeration. This method also precludes any attempt to compare the doses for inoculation of different kinds of bacteria. A valuable paper[1] by W. James Wilson and C. Dickson has recorded the margin of error in enumeration tests, and has shown how much greater it is than that given by gravimetric methods.

I have long been convinced that a method of weighing was greatly to be preferred, and I have accordingly adopted it consistently for the past six years, and have no reason to discard it. The method adopted has been similar to that used in making Koch's tuberculin.

Bacteria are grown in whatever is the most suitable medium, most commonly an inspissated serum. If a bouillon is used, it must be free from any phosphatic deposits. The growth is transferred to centrifuge tubes, being washed off a solid medium with 0.9 per cent. saline solution. It is then centrifuged in an electric machine. The supernatant medium is removed by pipetting, and replaced by fresh saline solution. The tubes are then shaken up and again centrifuged. Then the saline fluid is pipetted off and replaced by a smaller amount of distilled water. The suspension, now free from culture medium and saline, is again finally centrifuged, and then the deposit is transferred by means of a pipette to an agate mortar. The addition of a few drops of distilled water serves to clear away any deposit adhering to the tube or the pipette. The deposit,

consisting now solely of the bacterial protoplasm, is dried out on the mortar in an oven or desiccator. It forms a scale on the surface, which is then rubbed down into a fine powder with the agate pestle, or is scraped off as a scale preparation and transferred to a glass tube, in which it may be stored indefinitely till required for use. For this, the whole powder is weighed in a chemical balance, or a desired quantity is weighed out. This is then ground up on an agate mortar in a few drops of saline solution to form a uniform paste, which is finally made up to the volume desired to give the stock suspension of suitable strength.

So far I have not mentioned the method of sterilization adopted. It has been my practice to use chloroform and toluol for preserving suspensions during the process of making up, if this was not completed straight away, and also for the final dilutions. It was found that this often served to sterilize the preparation satisfactorily, and I consequently adopted it, where rapidity was not of importance, in preference in suitable cases to the use of heat. The chloroform and toluol is added to the growth in the centrifuge tubes when first filled from the culture tubes. It has been found that coccal forms are readily sterilized by this means, while the bacteria of the *Coli* group are more resistant. Heat sterilization is, of course, necessary for certain forms of bacteria. In this connexion I may mention that at any rate tubercle, staphylococci and streptococci do not appear to be impaired in their immunizing capacity by a temperature of 100° C., but the rule to be followed is to use the lowest temperature necessary.

Apart from the technical side of this question, I should like to dwell with some emphasis on the clinical significance of the adoption of a gravimetric standard. One has found that, as far as one may judge of it from the study of the phagocytic power of the blood and also of the clinical results in disease, inoculations of bacteria produce, weight for weight, whatever their variety, practically similar effects. This observation has simplified the subject of dosage enormously. Instead of having to consider the number of millions of bacteria of each type which one is to inoculate, one has a common standard for all, which helps one's judgement greatly. The outcome is that similar doses of, say, tubercle, staphylococci, coli, etc., are used in infections with these organisms. It is wholly the clinical condition—its acuteness or extent—which determines the suitable dose.

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THE object of all who belong to the progressive school of medicine is to convert medicine from an art into a science, that is, to replace opinions by figures. In many branches, notably in the treatment of infective diseases and in diseases of the cardio-vascular system, measurements of various kinds have been systematically made for several years, and considerable progress has been made towards putting the matter on a scientific basis. In immunity some of the most successful work has been done in prophylactic inoculations against typhoid, in the experimental study of which the bactericidal and agglutinative power of the blood was systematically measured, and the results of the treatment have been strikingly successful. All the early work of Wright's school in curative treatment by vaccines was also checked by the study of the opsonic index, with results that we all know.

One point has become abundantly clear in all these scientific experiments, that is, that the phenomena observed, being vital processes, are variable, and consequently, to obtain any information of value, it is necessary to carry out a large series of observations in each case. In experiments on blood pressure, for instance, carried out on the human subject, it is found that the inoculation of any drug will raise the blood pressure for the time being. The effect is a psychical one, and a series of observations on the blood pressure is required before the actual effect of the drug can be estimated. In the measurement of immunity, the test of the greatest delicacy is no doubt the estimation of the opsonic index, and the observations of Dr. Freeman first established the variability of the opsonic index in cases of infection, and an auto-inoculation experiment can be employed as a crucial test for infection.

We cannot, however, have it both ways, and if the value of the auto-inoculation test is the variability of the opsonic index which is thereby demonstrable, it follows that a series of observations must be made before any results of value can be obtained. This, of course, adds enormously to the practical difficulties of carrying out such observations, and those who have the good fortune to work in a laboratory devoted to observations of this kind often fail to appreciate the difficulties which stand in the way of those who are unable to take part in a similar division of labour. I have reluctantly come to the conclusion that it is a counsel of perfection to insist on the control of inoculations by the use of the opsonic index. In addition to that, the high degree of technical skill required is a serious drawback to widespread use of the method, for it is undoubtedly quite possible to send specimens of the same serum for estimation to several different laboratories conducted by capable authorities, and to get different results from each of them. I do not wish for a moment to suggest that the method is not one of value. The fact that in one laboratory alone four apparently healthy persons at work there have been diagnosed as tuberculous, before any symptoms or physical signs were present, all of whom ultimately developed undoubted infections, is sufficient in itself to prove the soundness of the method. But since such varying results are given by different observers, it is certain that some more fool-proof method is necessary for ordinary use.

I would suggest that the thing to aim at is the macroscopical rather than the microscopical test. Agglutination and haemolytic experiments, even if they are qualitative rather than quantitative, are more satisfactory and conclusive than numerical estimates of the opsonic kind, and I think that the haemolytic experiments of Dr. Emery and Captain Nesfield in the diagnosis of tuberculosis are most important and suggestive.

This is a bacteriological meeting, and therefore clinical work is, no doubt, somewhat at a discount, but, as a clinical physician, I feel that no discussion on the therapeutic use of vaccines is complete without emphasis being laid on the importance of clinical examinations in cases undergoing specific treatment. I hold that the attitude of Sir Almroth Wright in practically omitting clinical observation was justifiable, and indeed valuable, as a striking means of indicating the importance of specific treatment. He said, in effect, that he would treat bacterial infection and let the results of the infection look after themselves, and he has had, as we all know, an exceptional measure of success; but we do not all stand on the same plane as Sir Almroth Wright, and ordinary people will not get successful results unless they regard vaccine-therapy as a means of treating the cause of disease, and recognize that the effects and contributory causes must be removed by clinical means.

To take a simple instance in which I am personally interested: The importance of oral sepsis as a cause of disease is now generally recognized, but the prevalence of gingivitis, which is the preliminary stage of pyorrhoea alveolaris, has to be personally investigated to be understood. The presence of a septic focus on an inflamed surface connected with the mouth, to which many infected articles have access, and the fact that this septic focus is placed at the inlet of the alimentary canal, makes the importance of the condition apparent. Gingivitis appears to be in the majority of instances an infection with the *Streptococcus brevis* of the mouth, though doubtless other organisms may be involved. The condition is notoriously intractable by ordinary clinical methods, and it is obviously a case in which vaccine-therapy is desirable; vaccine-therapy, however, will have no effect except on the organisms which are actually within the tissues. It is clear, therefore, that all foreign substances, such as tartar, dead and loose teeth, which harbour bacteria and are out of range of the vaccine, must be systematically removed by clinical means. It is, in my experience, extraordinarily difficult to get thorough local treatment carried out, but it is essential to permanent success in the treatment of the condition itself or of the metastatic infections which may arise in consequence of it.

The doses employed in vaccine-therapy vary very much

in the hands of different workers. The followers of Sir Almroth Wright sometimes employ doses as small as $\frac{1}{10000}$ mg. of tuberculin (bacillary emulsion), and their maximum dose does not often, I think, exceed $\frac{1}{100}$ mg. Dr. Camac Wilkinson gives doses of 5 mg., five thousand times as much as Wright's maximal dose, and both claim and achieve good results. The difference is prodigious; if such differences obtained on the question of the dosage of tincture of digitalis, they would vary between 15 minims and 7½ pints—nearly a gallon. In the manner of gonococcal infections, Wright's school gives doses varying between 2½ million and 50 million. Dr. Allen gives 200 million to 1,000 million. Such differences of opinion must be very confusing to persons who are not experts. We can only conclude that the correct doses of tuberculin and other vaccines have yet to be estimated.

In the case of vaccines other than tuberculin, consideration of these facts brings one directly to the question of the standardization of vaccines. In the first place, there is no doubt that the efficiency of different strains of organisms employed as vaccines is very variable, and it is and must remain difficult to allow for this factor in attempts to devise a universal method. But the method of counting ought to be agreed upon, for the one adopted in any given case will seriously modify the supposed strength of any vaccine. My friend Dr. Braxton Hicks has carried out a large series of comparative experiments in the Pathological Laboratory at Westminster Hospital in methods of counting bacteria, and recently published his results.[1] He used Wright's method, the direct method of counting on the Thoma-Leitz slide, and a method of his own, namely, that of mixing the vaccine to be estimated with a standard suspension Gram-negative or Gram-positive bacteria, and counting a Gram-positive vaccine against a Gram-negative suspension, or vice versa, the standard being estimated by the methods of dilution and culture employed in sewage estimations. Dr. Hicks tells me that, with any vaccine estimated by all three methods, he has found Wright's always the lowest, his own the highest, and the Thoma-Leitz method between the two. He has found the numbers obtained by his method compared to Wright's as 4 to 3. Probably this offers at any rate a partial explanation of the comparatively small doses successfully employed by Wright's school.

This does not explain the small dose employed by the same school in tuberculin treatment, since the tuberculins are estimated gravimetrically. Wilson and Charles Dickson[2] have recently advocated the gravimetric method of standardizing other vaccines, which is one which certainly ought to be considered in any standard scheme, as it has the great advantage of being macroscopic. I regret to have been unable as yet to try it.

With regard to tuberculin, I have to confess myself as an advocate of the small dose. I have recently had some instances of the value of small doses in the treatment of phlyctenular ulceration, in a series of cases treated at Westminster Hospital in conjunction with Mr. Brooksbank James.

In one case, stated to date "from birth," lacrymation was relieved; in the second intense conjunctivitis was relieved and an opacity reduced in size; in the third, with an inflamed sclerotic and corneal opacity, the pain was relieved; in the fourth, sclero-keratitis and closely cornea, there was apparently perfect cure; in the fifth, with keratitis of ten years' duration, there was reduction in size of the nebula, and an ophthalmic report of great improvement.

In the first three cases $\frac{1}{20000}$ mg. (bacillary emulsion) was never exceeded, in the fourth and fifth $\frac{1}{2000}$ mg. was reached. The fifth case is one of [illegible] year, and can be kept fairly well; the [illegible] mg., and if the dose is increased to $\frac{1}{20000}$ mg. she [illegible] advantage that the results of treatment are [illegible] mated at sight, and with these experiences I am unable to overcome my sense of the risk of large doses.

I should like to demonstrate a modification in apparatus suitable for the preparation of vaccines in small quantities, such as are required for individual cases, for which, as a rule, test tubes are used, which have one or two disadvantages. They are wasteful, which is a matter of some importance in laboratories where economy has to be closely considered, and there is also a mechanical disadvantage. After introducing the vaccine the test tube is heated and drawn out into a long nozzle and the nozzle is sealed up. After shaking, the end of the nozzle containing a few drops of vaccine is cut off and reserved for standardization, and the test tube sealed again before the vaccine is sterilized. The difference between the calibre of the test tube and of the nozzle is considerable, and if a sufficiently long nozzle is left to allow of the test tube being sealed again easily after the extremity is cut off, masses of bacteria sometimes accumulate in the nozzle, from which they are not dislodged in the shaking process, and thus are not properly broken up.

The test tube may be replaced by a modification of Wright's recurved blood capsule made on a large scale. A long piece of wide glass tubing, with an outside diameter of about 7 mm. and an internal diameter of 6 mm., is cleaned and sterilized by heating to a sufficient temperature in the blow-pipe flame. The tube is heated again at a point 10 cm. from the first spot and again drawn out. The tube is cut in the middle of the drawn out part, and the diameter here should be not less than 1½ mm.

A capsule is thus prepared with a body 10 cm. long and with each end drawn out into a capillary extremity. One extremity is gently heated in a Bunsen flame at a point 2 cm. or 3 cm. from the body of the cylinder, and bent into a curve till the two limbs are at right angles to one another. It is then heated again at a point 2 cm. or 3 cm. from the extremity and bent in the opposite direction to rather less than a right angle, so that a Z-shaped curve is made. The curves must be gradual, so that the lumen of the tube is not unduly compressed. The vaccine is prepared in the ordinary way by rubbing the culture off agar slopes into salt solution. The liquid is withdrawn into the capsule as follows:

The agar tube containing the salt solution and the roughly suspended organisms is held in the left hand in a position as nearly as possible horizontal. The capsule is held horizontally in the right hand with the straight end pointing to the right, and the vertical limb of the curved end pointing upwards. The open extremity of the curved end is now introduced into the liquid which passes by capillarity up the tube, and when it gains the first curve, the tube is converted into a siphon, and the fluid accumulates in the capsule. The capsule must be held so that the straight extremity points slightly upwards, so that no fluid enters its straight capillary end, so as to obstruct the passage of air. A capsule of this size easily holds 3 c.cm. of vaccine with ample room for shaking, and this quantity is generally sufficient for an individual case. When sufficient fluid is collected, the straight end of the capsule is sealed in a Bunsen flame. The curved end is now cut off and sealed so as to leave a short nozzle, and the same is done afterwards with the straight end. It is easy to leave a nozzle of such a length that it can be cut off with sufficient liquid for the purpose of standardization, but without leaving a kind of backwater in which masses of organisms can accumulate. After agitation one end is cut off for standardizing, and the tube is sealed up again, while the opposite end remains to be cut off after the vaccine has been sterilized, to withdraw a sample for testing the sterility.

The organisms in common use which give the greatest trouble to break up are some of the streptococci and some diphtheroid bacilli. With regard to streptococci, it has long been known that a trace of sodium hydrate added to the vaccine sometimes assists in breaking up; about 1/50 c.mm. of normal NaOH to 3 c.cm. of salt solution is generally sufficient. A mechanical contrivance which is of considerable assistance is the following:

The nozzle of the capsule is cut off and a strand of platinum wire [illegible] cm. in length is twisted into a spiral, sterilized, introduced into the capsule, and fused into the nozzle. It acts something like an egg-whisk, and is more efficient than the addition of glass beads in breaking up the clumps of organisms.

Diphtheroid bacilli will break up readily on the addition of a trace of hydrochloric acid to the suspension. If the vaccine is estimated by standardizing against blood a very minute trace of acid only must be used, or the blood corpuscles will be haemolyzed.

For bacteria which resist these methods prolonged shaking should be carried out, and the capsule should then stand in a vertical position until the larger masses accumulate in the lower nozzle; this may then be cut off and rejected, and shaking should be renewed. Sufficient organisms for a weak vaccine will often be found to be present in the residue.

These small modifications have been found of service in the course of routine laboratory work, and their use in suitable cases will result in some saving of time.

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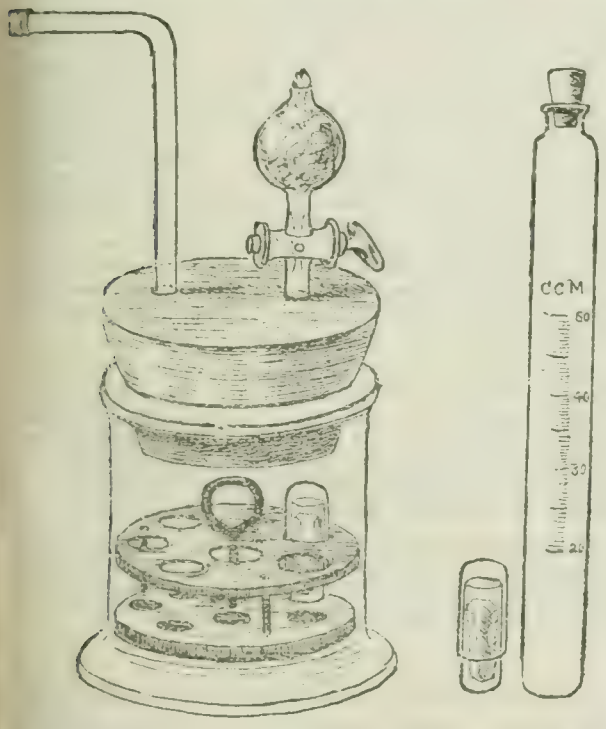
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THE USE OF A GRAVIMETRIC METHOD IN THE STANDARDIZATION OF VACCINES.

I THINK it will be admitted by all that the expression of the dosage of vaccines, like that of all actual remedies, in terms of weight is the most natural and scientific method. Methods in which the dose is arrived at by counting the number of bacteria present in a suspension have been almost universally employed in this country and in America, due to the influence of the pioneer of vaccine



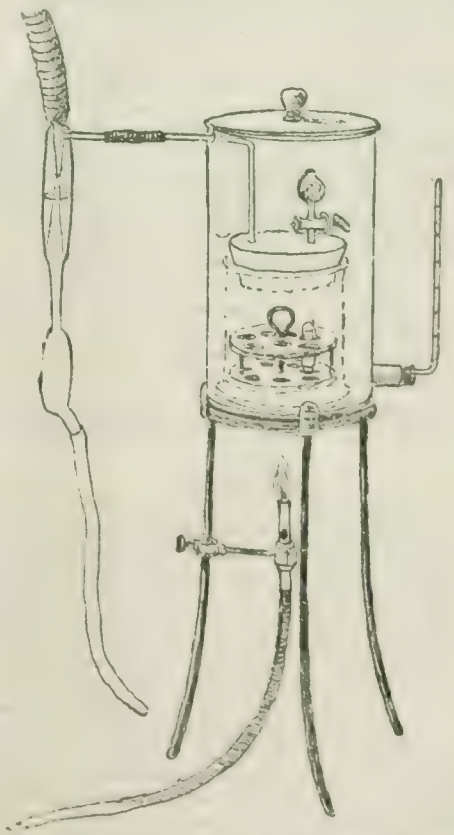
therapy, Sir Almroth E. Wright. The technique of the teat and capillary pipette in the Laboratory of Clinical Pathology has caused the balance to vacate the honoured position which it is accustomed to hold in other scientific laboratories. The fact that the balance is still employed in the standardization of one of the most active remedial agents known—tuberculin—inspires some of us with the hope that it will become again the most delicate and treasured instrument in the bacteriologist's armament and that the standardization of vaccines on a gravimetric basis will produce the uniformity of dosage which is so much to be desired. What has commended the counting method to the clinical laboratory worker of this country is the rapidity in which the standardization can be effected. Absolute accuracy has never been claimed for it, and the work of Leishman and his colleagues has shown that the error in the determination may be very considerable if the original method of Sir Almroth Wright is used. The following factors appear to interfere with the accuracy of the method: (1) The difficulty in securing a perfect film in which the ratio of germs to cells shall be constant throughout, (2) the clumping of bacteria, (3) the bacteriolysis and autolysis of the bacteria, (4) the fact that during the process of fixing and staining a proportionately larger number of the bacteria than of the more bulky red cells may be washed away.

In a recent paper[1] Dr. Charles Dickson and I attempted to obtain a correlation between the dried weight and the number of bacteria present in a suspension in distilled water. The number of bacteria present was estimated by Wright's method. This probably resulted in an underestimation of the bacteria, since in the blood films the red blood cells occupied about one-third of the superficial area of the slide, and probably concealed many of the bacteria. But as our aim was to ascertain what weight of dried bacteria was represented by the number of bacteria, as determined by Wright's method, our object was attained. In the following table a summary of the results obtained by us is given:

Organism.	Dose expressed in Millions.		Dose expressed in Milligrams.	
	Minimum.	Maximum.	Minimum.	Maximum.
Streptococcus (3,400 million=1 mg.) ...	6.8	68	0.002	0.02
Gonococcus (4,500 million=1 mg.) ...	45	900	0.01	0.2
Meningococcus (3,000 million=1 mg.) ...	300	900	0.1	0.3
M. melitensis (14,000 million=1 mg.) ...	700	1,400	0.05	0.1
B. coli (6,400 million=1 mg.)	16	240	0.0025	0.0375
B. typhosus (8,000 million=1 mg.)				
In treatment	100	250	0.0125	0.03125
In prophylaxis	500	1,000	0.0625	0.125
B. pyocyaneus (3,400 million=1 mg.)...	34	1,020	0.01	0.3
B. pneumoniae, Friedländer (4,400 million=1 mg.)	44	..	0.01	...
Staphylococcus aureus (3,000 million=1 mg.)	150	900	0.05	0.3
B. tuberculosis	...	...	0.00005	0.005

It is now my practice to standardize all vaccines by the gravimetric method. It has been found that by the following procedure the standardization can be effected more accurately and quite as rapidly as by the counting method:

A piece of weighed platinum foil (1.5 in. by 1 in.) is sterilized by heat and held by a pair of Cornet's forceps. Over the centre of the upper surface the growth from a culture on agar of the micro-organism is smeared. To avoid contamination of the foil it is useful to cover the pans of the balance with discs of platinum foil, the one on which the rectangular piece is to be placed being sterilized by heating in the flame. This is not



necessary if the rectangular foil is rolled up and placed in a tubular glass weighing bottle, but I have an impression that more accurate and constant weighings can be obtained without the use of a glass weighing tube. The platinum foil on which the growth has been smeared is now rolled up and placed in a short sterile glass tube covered over with a loosely fitting cover and then placed in the desiccating chamber. This* consists of a

* Made by Baird and Tatlock.

short round glass jar fitted with a rubber bung and contained in a copper vessel, kept at a temperature of 42° C. Penetrating the bung are two glass tubes, one of which is connected by a short piece of glass tubing to a Sprengel pump, whilst the other has a bulb filled with cotton-wool, which acts as a filter when air is admitted by a stopcock to the desiccator at the end of the experiment.

It has been found that ten minutes in the desiccator suffices for complete desiccation. The platinum foil is then weighed, and the dried bacteria are made into a uniform suspension by spreading out the foil in a sterile porcelain dish and rubbing it with the rounded end of a sterile hard glass tube which has been moistened with a drop of saline solution, more salt solution being gradually added. The same procedure is used as in the preparation of an emulsion of tubercle bacilli, but the time required is only two to five minutes. The emulsion is placed by means of a sterile pipette into a graduated test tube (the old form of Stokes's tube is convenient), and saline solution used for washing out the dish is added until the necessary degree of dilution is obtained. In most cases this procedure is unnecessary, since a uniform emulsion can usually be obtained by closing the Stokes's tube containing the foil and diluting fluid with a rubber cap and giving it a few shakes after it has been a few minutes in the sterilizer. The tube is then placed in a Hearson's water-bath sterilizer at a temperature of 55° C. to 60° C. for one hour, and is afterwards placed in bottles or bulbs in the usual way.

I find that in practice the following amounts may be regarded as suitable doses: Streptococci $\frac{1}{500}$ mg., *B. coli* $\frac{1}{300}$ mg., staphylococci $\frac{1}{100}$ mg.

Probably in no condition are the results of vaccine therapy so successful as in the cases of infection with *B. coli*. I have used as an initial dose $\frac{1}{300}$ mg. of dried colon bacilli, and the results have been exceedingly good. Most of these have been cases of cystitis and pyelitis, but one was a case of gangrenous appendicitis, and here the vaccine probably saved the patient's life.

The advantages of the gravimetric method are:

1. That with a sensitive balance constant results are obtained.
2. It is rapid and involves no strain on the eyes.
3. It can be applied to cultures of all bacteria growing on solid media, whether these form uniform emulsions or not—for example, vaccines of streptococci, *Micrococcus catarrhalis*, *B. tuberculosis*, streptothrix and diphtheroid organisms can be accurately standardized. The addition of a pinch of sodium bicarbonate to the diluting fluid (as suggested by Wright) is of great assistance in emulsifying the last named.

Small clumps vitiate the results in Wright's method, but to a very much smaller extent the gravimetric estimation of dosage; it can therefore be used for standardizing sensitized vaccines.

4. It brings into line the dosage of bacterio-proteins with that of other medical remedies.

REFERENCE.

[1] A Rapid Gravimetric Method of Standardizing Vaccines, by Drs. W. James Wilson and C. Dickson: *Journ. of Hygiene*, xii, 1, 49 (1912).

DISCUSSION.

Dr. W. M. CROFTON (Dublin) stated that he had found the haemocytometer method of estimation most convenient. He was further of opinion that the opsonic index yielded uniform results in the hands of one individual. As it was carried out it indicated the fluctuation of the most labile content of blood serum, but not of the more specific antibodies. He had therefore come to the conclusion that if the dose of the vaccine was only sufficient to keep the opsonic index at its highest point, it was often insufficient to produce sufficient specific antibodies to cure the case, and for this reason, while the opsonic index was useful for diagnosis and for spacing the doses, it should not be used to indicate the size of the dose which should be reached. He agreed with Dr. Eyre that since there was no such thing as a standard patient, and since variations in virulence and in the strains of microbes existed, no standardization was at present possible.

Dr. C[illegible]HANK (Dumfries) expressed dissatisfaction with the present attitude of bacteriologists toward vaccine treatment. It was necessary, before any discussion on the standardization and control of vaccines could be of use, that a clear [illegible] of the *rationale* of vaccine-therapy should be settled. Vaccine-therapy had been introduced as a method of treatment for chronic infections, whereas it was now being used in acute infections, where the patient was obviously very ill, and was presumably suffering from the effects of the infecting organisms.

Professor ERNEST GLYNN (Liverpool) said that Leishman found that typhoid vaccine made from virulent cultures was no more effective than less virulent cultures. The speaker had found that counting in a modified Thoma-Zeiss chamber gave higher and more accurate results than Wright's method.

Dr. JAMES RITCHIE (Edinburgh) drew attention to the importance of Dr. Freeman's statement that while it was desirable always to follow the course of a vaccination by serological methods, it was, in the great majority of cases, impracticable to do so. This practically meant that usually the effects of any dose could only be estimated by its clinical effects. Taking into account the very different views put forward as to dosage, and the very different methods used for the standardization of vaccines, it was evident that the vaccinator in every case set out on a voyage of discovery, not knowing what adventures might befall him, even before he was well out of harbour. The speaker could bear out Dr. Freeman's remark as to the profound ignorance displayed by many practitioners who were using vaccine-therapy, and considered that the application of vaccine by such people was little short of criminal.

In the course of his reply Dr. EYRE agreed that the gravimetric method of standardization gave the most accurate results and had many advantages over the counting methods. On the other hand, he could not agree that there was any correspondence in the doses given by weight, any more than when the other methods were applied. He instanced the case of *Bacillus typhosus*.

Dr. FREEMAN, in reply, expressed himself with caution in regard to the method of standardizing vaccines, and merely pleaded for a control by the opsonic index method whenever this became possible.

ON THE DIRECT CULTIVATION OF TUBERCLE BACILLI FROM TUBERCULOUS TISSUES.

By JOHN CRUICKSHANK, M.B., Ch.B.,
Pathologist to the Crichton Royal Institution, Dumfries.

WITHIN recent years numerous methods to facilitate the detection of tubercle bacilli have come into use. These so-called concentration methods depend for the most part on reagents which are capable of causing disintegration or solution of sputum, pus, or other infected material, while leaving tubercle bacilli contained in such material comparatively unaffected. By the employment of such agents tubercle bacilli present in large volumes of material can be brought together into small bulk and their detection by microscopical methods thus greatly facilitated. The more scanty the organisms the greater is the advantage of employing concentration methods. Of the various procedures which have been suggested, probably the most satisfactory and at the same time the most simple is the use of antiformin.

This reagent, introduced by Uhlenhuth[1] (1908), consists of a mixture of sodium hydrate and sodium hypochlorite in certain proportions, the latter varying somewhat in the various preparations now in the market. As originally used by Uhlenhuth, it consisted of sodium hydrate 7.5 per cent., with sodium hypochlorite in such amount that 100 grams of the mixture liberated 5.3 grams of chlorine gas. For ordinary purposes equal parts of liquor sodae chlorinatae (*B.P.*) and 15 per cent. sodium hydrate serve very well. Such a mixture produces rapid disintegration and solution of pus, mucus, caseous and other material, and destroys the majority of organisms, while it leaves tubercle and other acid-fast bacilli unaltered. The latter organisms, along with a certain amount of material which resists the solvent action of the antiformin—pigment, granular detritus, etc.—are obtained in the deposit which comes down on centrifugalizing the mixture or on allowing it to sediment.

It has been demonstrated by Meyer,[2] Hasenclit,[3] Goerres,[4] Hüne,[5] Boardman,[6] and others, that antiformin is of considerable service in the detection of tubercle bacilli in sputa which have yielded negative results with ordinary smear preparations. These workers have found that from 7 to 17 per cent. of sputa negative by the ordinary method were positive after the use of antiformin. Other workers have not found the number of positive results to be so high. The differences in the figures obtained are probably dependent on the classes of case which have been chosen for examination. Antiformin obviously will be of the greatest service where the series examined includes a large number of sputa with very scanty tubercle bacilli. It has been as an aid to microscopical diagnosis that antiformin has been for the most part employed, but the method is also applicable to the direct cultivation of the tubercle bacillus from tuberculous material. The disintegrating effect of antiformin on pyogenic organisms is very marked, and the sediment from treated material is, except for the presence of tubercle bacilli, usually quite sterile. It has been shown by Uhlenhuth that tubercle bacilli after antiformin treatment are still pathogenic for animals and capable of growth. By the use of antiformin Uhlenhuth obtained a number of direct cultures on glycerine agar. The latter medium is, however, not the most suitable for obtaining growth. Results of more satisfactory nature are obtained by the use of Dorset's egg medium, as the results of Park and Krumwiede[7] and of the English Commission have abundantly demonstrated. With this medium Brown and Smith[8] have succeeded in obtaining cultures by means of antiformin from 33 out of 35 positive sputa.

The importance of direct culture need not be emphasized. Not only are the difficulties attendant on animal injection and the fallacies which not infrequently arise in interpreting the results of injection avoided, but the saving of time and trouble is very considerable.

In this paper the method adopted in obtaining a number of direct cultures from various tuberculous tissues by the use of antiformin is given in detail, with observations on the cultural characteristics of the organisms thus isolated.

Method.—To the sputum, sediment from urine, or other fluid a 15 to 20 per cent. dilution of antiformin is added, and the mixture allowed to stand, solution being aided by occasional vigorous shaking. Where large volumes of sputum are to be dissolved stronger solutions of antiformin may be used with advantage, but the resulting mixture in any case should not contain more than 15 per cent. antiformin. (This is not necessary if the sediment is to be used only for microscopical purposes.) As a rule, with the majority of sputa one volume is readily dissolved by three or four volumes of antiformin, but the amount of antiformin added to any particular specimen depends on the consistency of the sputum. Complete solution can usually be obtained within a comparatively short time, depending on the nature of the material under treatment. One or two hours is usually sufficient for sputa, but longer may be necessary with more refractory material such as thick caseous matter. In the case of solid tissues such as tuberculous lung or gland the material is cut up into small fragments and rubbed up in a mortar with a small amount of antiformin; the latter is then poured off and the material again treated. In this way by repeated rubbing with small amounts of antiformin, the solution of a considerable amount of material can usually be obtained in a comparatively short time. Efficient antiformin should always produce distinct liberation of gas during the process of causing solution. The antiformin mixture is then centrifugalized and the sediment which results is washed twice with sterile water or saline solution. A microscopical preparation should then be made as a control to estimate the number of bacilli present in a loopful of sediment. The washed sediment is inoculated on various culture media, of which plain egg (Dorset),[9] glycerine egg (Lubenau),[10] and animal tissues (Frugoni)[11] have been found to be by far the most satisfactory. As will be referred to later, it is probably advisable in each case to use all three media.

Egg Medium.—This has been prepared as follows: Two or three absolutely fresh eggs are washed and the shells sterilized by washing with undiluted formalin. The shells are allowed to dry and the eggs broken into a sterile dish. The yolks and albuminous portions are thoroughly mixed by gentle stirring (frothing is to be avoided), and the mixture is strained through sterile gauze. The volume is measured, and to three parts of egg one part of sterilized 0.85 per cent. NaCl solution is added. In the case of glycerine egg, one part of 6 per cent. glycerine in 0.85 per cent. NaCl solution is added to three parts of egg. A few drops of alcoholic basic fuchsine (sufficient to give a distinct pink colour) are added, and the mixture placed in sterile tubes. (The addition of a colouring agent is of distinct advantage in aiding the detection of early or very scanty growth.) The tubes are then placed in the sloped position high up in the steam sterilizer and coagulated (three to five minutes). Care is necessary at this stage not to expose the tubes for any longer period than is absolutely necessary for coagulation, otherwise bursting of the medium results. A smooth [illegible] should be obtained. The tubes are further sterilized by heating at 105° C. for twenty minutes on two successive days, all the valves of the autoclave being tightly screwed down before heating is commenced. To prevent drying of the medium on [illegible] glycerine bouillon may be added, and a small amount should be allowed to remain in each tube at the time of inoculation. The presence of moisture in the cotton-wool stoppers must, as far as possible, be avoided, otherwise, owing to the length of time during which the tubes are incubated, mould-[illegible]. After inoculation the tubes should be sealed with paraffin wax. Uninoculated medium is best kept in the ice-chest.

Animal Tissue Media.—This is prepared by Frugoni's method. Fresh rabbit lung or other tissue, after soaking for an hour in 0.85 per cent. NaCl solution, containing 6 per cent. glycerine, is sterilized by autoclaving at 120° C. for half to three quarters of an hour, and is then supported over the surface of 6 per cent. glycerine bouillon, so that the tissue surface is kept moist by capillary attraction and by condensation. Tissues obtained at *post-mortem* examinations may also be used; these are sterilized by boiling or by autoclaving. I have found that the preliminary treatment with glycerine salt solution is not necessary.

Results.

In all about sixty growths have been obtained, the majority from tuberculous sputa. Urinary sediments, cerebro-spinal and joint fluids, lung and gland tissues have also given successful results. A small number of failures occurred in the earlier part of the work, but these were attributable to faulty technique, such as too prolonged treatment with antiformin or insufficient washing. With increased experience almost uniformly successful results have been obtained.

Egg Media.—In the case of the glycerine egg media growth appeared in most cases in from twelve to twenty-four days, the amount of primary growth depending in general on the number of bacilli present in the inoculated material. This, however, has not always been the case, as in a number of instances scanty growths were obtained from material which, microscopically, showed abundant bacilli. It has not been determined whether this was due to variability in resistance of individual organisms to the action of antiformin, as seems most likely, or to the varying viability of the bacilli in the original material. Greater difficulty has been experienced in obtaining growths from the tissues of acute tuberculous cases (injected animals, for example) than from those of chronic tuberculosis. Sputa from cases of chronic phthisis generally have yielded rapid and abundant growths. The character of the cultures has depended on the amount of growth. Individual colonies appeared as white, firm masses, raised in the centre and markedly rigid, the edges having an irregularly scalloped appearance. More abundant cultures showed a raised growth, white and firm, becoming wrinkled as incubation was prolonged. Pigmentation has been observed in only a few cases, and in these only after a prolonged incubation or after standing at room temperature for some time. On plain egg medium there has been in the great majority of cases very scanty or no growth, and in no case has growth been obtained only on plain egg. Subcultures from glycerine egg on plain egg have grown fairly abundantly, though in most cases much more slowly than similar cultures made at the same time on glycerine egg. All the cultures have therefore been of the "eugonic" or human type. This agrees fairly closely with the results of Park and Krumwiede,[12] who have found that bacilli of the "dysgonic" or bovine type are seldom found in connexion with tuberculosis of the lungs in adults. The series of sputa which I have examined were found on examination of the records to be all from adults. In one case the cerebro spinal fluid from a child of 3 months gave a growth of human type. Dr. Gilmour, Gartloch Asylum, who has also used the method, has, in addition to sputa, obtained growths from a tuberculous joint and a tuberculous knee. No bacilli were demonstrable microscopically, even after prolonged examination, in these fluids after treatment with antiformin.

Animal Tissues.—In the case of animal tissues growth is usually more rapid, appearing as a rule in from seven to fourteen days. In a few cases growth was visible in three to five days. The characters of the cultures on animal tissues were practically the same as those on glycerine egg media, though in general much softer and more moist. It is worthy of note that although the growths

on the tissues were in direct contact for considerable periods with the glycerine bouillon in the tubes, it was only in a very few cases and after prolonged incubation that growths on the surface of the bouillon resulted. On the other hand, the tendency of the cultures to grow on the condensation water has been very marked. In a number of cases the spread up the walls of the tube was so marked that the cotton-wool stoppers were contaminated. The superiority of the glycerine egg and the animal tissues over glycerine serum, glycerine agar, and glycerine bouillon has been abundantly demonstrated. Glycerine egg medium has been found to be for routine purposes the most reliable. It is to be noted, however, that media containing glycerine have been shown to be more suitable for the growth of the human type of bacillus than for the bovine (Moeller,[13] Beck,[14] Cobbett,[15] Park[8]). The latter apparently grows most readily in primary culture on media without glycerine, such as plain egg. For purposes of culture it is, therefore, advisable in all cases to inoculate tubes of each medium. The power of different tissues to afford a suitable medium for the growth of tubercle bacilli has also been tested. Lung tissue from the ox, sheep, dog, rabbit, and guinea-pig, liver and kidney of the rabbit and guinea-pig, human lung and thyroid gland, have all given satisfactory growth. On the whole, the lung of the rabbit, ox, and sheep have given the most abundant growths. The lung of the dog and the various tissues of the guinea-pig were the least satisfactory.

Summary.

1. By the use of antiformin direct cultures of *B. tuberculosis* have been obtained from over 60 sputa and other specimens of tuberculous material.

2. The marked superiority of egg and animal tissues over other media for the growth of tubercle bacilli has been substantiated.

3. All the cultures obtained have been of the human type.

4. The method is of very great efficiency for obtaining, directly and rapidly, pure cultures.

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DISCUSSION.

Dr. JAMES RITCHIE (Edinburgh) congratulated Dr. Cruickshank on having demonstrated so completely that direct cultures of the tubercle bacillus could be so uniformly obtained. He felt that some of the disadvantages of animal experiment could thus be overcome. In certain cases it was practically impossible to distinguish by inspection the granulomatous lesions produced by Pfeiffer's pseudo-tuberculosis bacillus from those due to the tubercle bacillus. He agreed with Dr. Cruickshank that some modification was necessary of the statement in the textbooks regarding the readiness with which the tubercle bacillus could be grown on glycerine media. It was only applicable to cultures which had long been accustomed to grow on such media. In primary and early secondary cultures the growth was relatively scanty, and, in the case of the bovine varieties, difficult to obtain at all.

Dr. HERBERT HENRY (Sheffield) asked Dr. Cruickshank what were his methods of obviating certain difficulties. The question of time limit—that is, the time during which the antiformin was allowed to remain in contact with the sputum or tissues—was important. Antiformin killed tubercle bacilli if left in contact long enough. Another difficulty resulted from the presence of sporing organisms, moulds and yeasts, which were not destroyed by antiformin until long after the tubercle bacilli were dead.

Dr. LEDINGHAM (Lister Institute, London) said that in the routine examination of sputum for tubercle bacilli at the Lister Institute of Preventive Medicine, the use of antiformin had only to a very small extent increased the percentage of positive results.

In his reply, Dr. CRUICKSHANK stated that in the majority of cases solution of sputum could be obtained in about two hours, provided that the mixture was well shaken. Sporing organisms had not been met with. The cultures had been obtained from 60 out of 70 specimens of sputum examined. He had only met with difficulty in obtaining growth in glycerine broth in the primary cultures. Old cultures grew fairly readily in the majority of specimens of glycerine broth.

A STUDY OF THE PYROGENETIC PROPERTIES OF B. TYPHOSUS.

By E. C. HORT and W. J. PENFOLD.

(From the Lister Institute of Preventive Medicine, London.)

To what is the fever producing effect of *B. typhosus* due? Is it due to the products of lysis or extraction of the organism, or is it due to the products of the action of the organism on the medium on which it grows? In typhoid fever in the human subject have we to deal with fever resulting from an anaphylaxis, the sensitization taking place during the period of incubation? Such are some of the questions on this subject which call for investigation. Unfortunately previous work on this subject has not given satisfactory results.

Sirotinin (1886), for example, observed the effect of intravenous injection of *B. typhosus* on the temperature of rabbits. At that time, however, the method of identification of the organism was not in a satisfactory state. And his observations on temperature were made so infrequently, the first observation being usually twenty-four hours after the injection, and in no case less than three hours, that he naturally missed the characteristic effects of injection of cultures of this organism on temperature.

Bouchard and Krehl (1895), again, described fever after injection of *B. typhosus* cultures in animals, and Krehl found falls of temperature in the case of doves, and recently Schittenhelm, Weichardt, and Hartmann have studied this subject in dogs. No one, however, of these observers took the precaution of freshly distilling the water used, or of using stored autoclaved water which had been autoclaved in sealed vessels immediately after distillation. This is absolutely essential in all experimental fever work, as we showed in 1911. We believe, therefore, that the pyrogenetic power of the *B. typhosus* has not been studied by any observer with due attention to the numerous precautions which recent experimental fever work of our own has shown to be necessary.

Our experiments with *B. typhosus* were all made on the rabbit. The injections were intravenous and the temperatures were taken in the rectum with Kew-certified thermometers. The thermometers were carefully tested from time to time.

As before mentioned, one of the first requisites of any experimental fever research is purity of reagents. The authors have shown that the injection of pure distilled water causes a fall of temperature; this is illustrated in the accompanying Chart 1. The fall varies, as a rule,

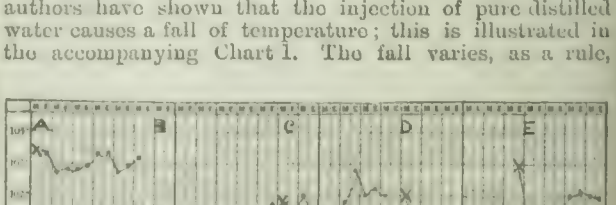


Chart 1.—Water controls.

TABLE I.

	No. of Animal.	Weight.	Water in c.cm.		Date of Injection.
A	260	1,297	12.0	1/108	March 25th, 1912.
B	277	1,690	18.0	1/93	April 17th, 1912.
C	273	1,406	18.0	1/78	April 16th, 1912.
D	X	2,080	52.0	1/40	(?) 1911.
E	Y	2,112	87.0	1/24	(?) 1911.

between 1° and 2° F. in rabbits, or more with larger injections. The injection of uninoculated nutrient broth in quantities of ½ to 1 c.cm. into rabbits of 2 kilos causes very slight rises of temperature. In quantities less than ½ c.cm. it does not produce fever even if injected in distilled water, so that the high temperature obtained by injection of small quantities of typhoid broth in distilled water must be due to either the *B. typhosus* itself or to products of its chemical action on the medium. The accompanying charts illustrate some of the points we wish to bring forward.

Temperature Curves showing the Effects of the Injection of Rising Quantities of B. typhosus Broth in Constant Quantities of Water.

Chart 2 shows the effect on temperature of injection of mixtures of *B. typhosus* broth with distilled water. The different curves represent the temperatures of different animals. All the animals were injected on the same day, each with one two-hundredth of its body weight of distilled water to which volume rising quantities of *B. typhosus* broth were added. The mixtures were injected intravenously as stated. It will be noted that the initial temperatures were not quite the same, but, making allowances for these differences, we

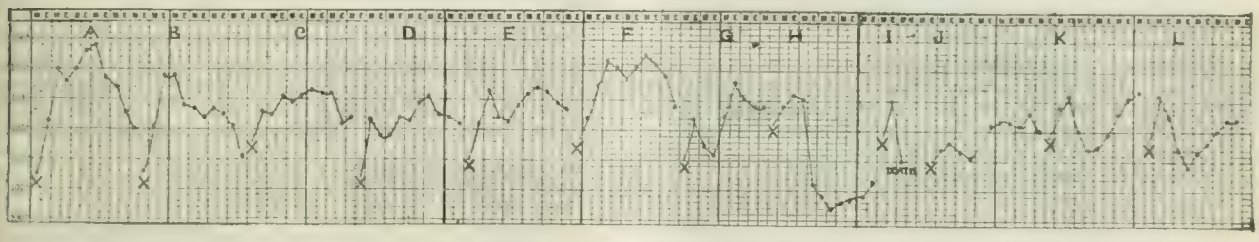


Chart 2.—Heated typhoid broth diluted (rising quantities of broth and constant quantities of water).

TABLE II.

	No. of Animal.	Weight.	Heated T.B. Broth in c.cm.		Water in c.cm.		Date of Injection.
A	382	1,576	0.01	1/157,600	7.88	1/200	1912. May 5th.
B	385	1,576	0.05	1/31,520	7.88	1/200	"
C	380	1,520	0.10	1/15,200	7.60	1/200	"
D	383	1,463	0.20	1/7,315	7.31	1/200	"
E	381	1,800	0.40	1/4,500	9.00	1/200	"
F	378	1,406	0.50	1/2,812	7.03	1/200	"
G	377	1,463	0.60	1/2,438	7.31	1/200	"
H	375	1,800	0.70	1/2,571	9.00	1/200	"
I	400	1,800	0.80	1/2,250	9.00	1/200	"
J	379	1,913	1.00	1/1,913	9.56	1/200	"
K	374	2,250	1.30	1/1,730	11.25	1/200	"
L	376	2,476	1.50	1/1,650	12.38	1/200	"

All brindle rabbits.

notice that the highest temperatures of the series are in animals A and B, which received the smallest dose of typhoid broth. Further, the two largest doses of typhoid broth are characterized by curious notch temperatures, neither of which attains a great height. This curious notch type of chart we have found to characterize not only *B. typhosus*, but also *B. pyocyaneus*, *B. coli*, and other organisms, and is usually, but not invariably, due to a large dose. There is, perhaps, a depressant body present in addition to the pyrogenetic, or possibly it may be the effect of a larger dose of a single body.

Rabbits H and I, which had very similar doses, showed the most profound intoxication. L died in one hour, and H had a fairly marked fall. We note that the intoxication is not proportional to dose. Our next point is to show the effect of injection of constant quantities of *B. typhosus* broth and rising quantities of water.

If a series of animals be injected with a constant quantity of typhoid broth and rising quantities of water from 5 to 30 c.cm., we find that if the dose of typhoid broth be small the increased dilution gives increased fever. If, on the other hand, the dose of typhoid broth be a little larger, with smaller quantities of water, we find that more fever results than if no water be added. The largest quantities of water may cause a profound depression, and very frequently they result in death. These latter experiments we have already communicated to the *Journal of Hygiene* (1912), and on that account we do not propose to show illustrative charts. The general result is, however, that added water greatly increases the intoxication. Further, if the dose of typhoid broth is not sufficient of itself to cause intoxication as indicated by fever, the addition of water brings it out. This is also true if the water be given before the broth into the opposite ear vein, and does not, therefore, depend on *in vitro* extraction of the *organisms*.

Our next experiments deal with the source of the pyrogenetic agent in typhoid broth.

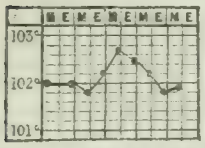
We wished to determine, in other words, if this pyrogen of *B. typhosus* broth is derived from bacterial cytoplasm or from the broth itself. If eighteen hours *B. typhosus* broth be centrifuged for half an hour and the deposit be made up to the initial quantity of broth by means of distilled water, and if then the pyrogenetic effect of this be compared with that of the supernatant fluid, it will be found that the two are about equally pyrogenetic. We have tested this by injecting small quantities of each in doses of water equal to $\frac{1}{25}$ of the body weight of the respective animals, and we found similar fever curves to result in each case. We deduce therefore from these experiments that the disintegrated organisms cannot themselves be the source of the pyrogen, though this experiment does not exclude the possibility of extractives from the living organisms being the pyrogenetic agents. We have endeavoured to remove the pyrogen from the bacilli by washing with either distilled water, saline, or broth, but none of these methods are effective, though it occasionally has happened that washing has appeared to diminish the pyrogenetic power. This is, however, exceptional. We are therefore inclined to believe that the pyrogen is not a bacterial extractive. We then examined the properties of *B. typhosus* pyrogen as regards heat and oxidation.

The pyrogen of the *B. typhosus* is, we find, markedly thermostable. It withstands autoclaving at 120° C. for twenty minutes. Both unheated *B. typhosus* broth and the heated gave rise to the same type of fever on injection into animals. This thermostability we also found in the case of the pyrogen of sterile water and saline which we showed to be due to a contamination capable of passing bacterial filters.

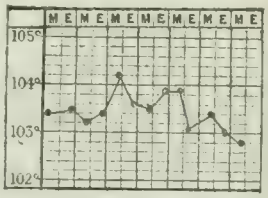
Oxidation, on the other hand, appears instantly to remove the pyrogen. If hydrogen peroxide, for example, be added to a centrifuged deposit of typhoid broth and then removed by the centrifuge and the deposit made up to its original volume with distilled water, we have found the deposit to be quite apyrogenetic. Simple standing in the cold room of the almost dry deposit has the same effect in diminishing the pyrogenetic power.

The immediate violent intoxication of *B. typhosus* as shown by high temperature or collapse conditions with low temperature, is in sharp contrast to the results of injection of certain strains of *Staphylococcus aureus*. In the case of the latter organism the disturbances of temperature

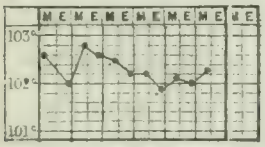
following injection of the dead organisms are negligible (see Chart 3). In the case of the living organism no effects are apparent till the next day. We have carried out a large series of experiments with different strains of these



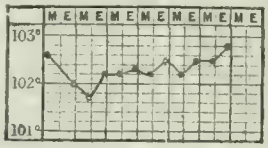
Date of injection, June 6th, 1912. 0.2 staphylococcus, 0.8 water, boiled.



Date of injection, June 17th, 1912. 1 c.cm. staphylococcus emulsion.



Date of injection, June 10th, 1912. 2 staphylococcic, 1 c.cm. water.



Date of injection, June 17th, 1912. 1 c.cm. thick staphylococcus, 2 c.cm. water.

Chart 3.—The staphylococcus emulsion in each case consisted of one standard loop of a twenty-four hours agar slope culture in 1 c.cm. of pure water.

organisms, and we constantly have found a most marked contrast. The intoxication with *B. typhosus*, alive or dead, is immediate in respect of fever or collapse, whilst the intoxication produced by certain strains of *Staphylococcus aureus* never occurs with dead organisms, and is delayed in the case of the living.[1]

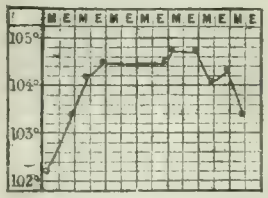
Anaphylaxis.

Friedberger and Mita (1912), in a paper on so-called anaphylactic fever, studied the effect of intravenous injection of foreign protein into guinea-pigs. They injected the protein, made up to 1 c.cm. volume in saline, into a vein in the neck which had been exposed by dissection of the animals after being fixed on an operation table.

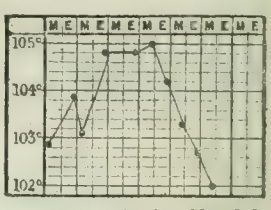
Friedberger and Mita distinguish the following doses of protein poisons worked with:

(1) The dose, for example, of serum just sufficient to give a fall of temperature, called the "limit of fall."
(2) The dose just smaller than the limit for fall which causes no disturbance of temperature. This they call the "upper constant limit."
(3) A still smaller dose giving a rise they call the "fever limit."
(4) The highest quantity less than that causing fever which has no effect on the animal's temperature they call the "lower constant limit."

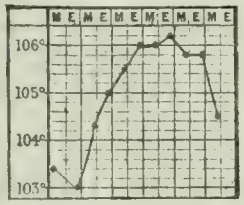
They state that these points are so affected in anaphylactic animals that one millionth of the quantity may suffice to produce any of the respective fever limit working with some varieties of proteins. We have shown elsewhere that the guinea-pig is a very unreliable animal for temperature observations,[2] and is in fact quite useless for the purpose. In Friedberger's experience it is quite easy to determine doses of certain proteins which give the effects indicated, and the establishment of these points, he states, has enabled him to discover anaphylaxis in animals at a very early date. Now Friedberger and Mita have shown in their paper (see Chart 1) that the method they used for intravenous injection of the guinea-pig caused a fall of over 1° C., although the material injected was only 1 c.cm. of normal saline; 1 c.cm. was the standard quantity of saline with which they worked, and still they establish these various "limits" on considering movements of temperature (see curves in their paper) of less than half a degree. This, of course, [illegible] their deductions. Further, if the method of [illegible] and the saline injection gave a fall of over one degree, it is difficult to see how they were able to obtain any of these limits with accuracy, and still more remarkable is it that they found no disturbance of temperature at all in so many of their animals. In uninjected animals, especially guinea-pigs, still more in animals that



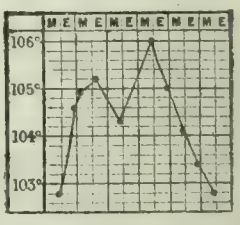
Date of injection, April 16th, 1912. 0.1690 c.cm. *typhosus* dilution.



Date of injection, May 3rd, 1911.



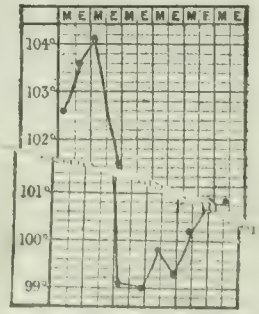
Date of injection, April 23rd, 1912. 0.49 c.cm. *Bacillus typhosus* broth.



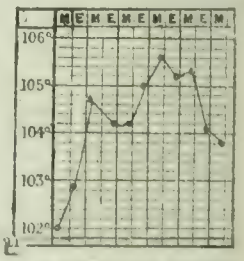
Date of injection, May 4th, 1912.

Chart 4.

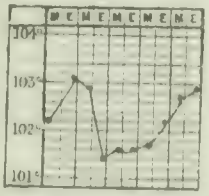
have had dissection of the neck done and injections given, it is practically never possible to get the straight line temperature these workers describe. We would draw attention to the fact, also, that no precautions were taken



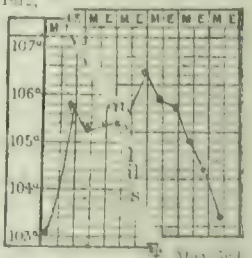
Date of injection, April 24th, 1912. 0.54 *typhosus* broth.



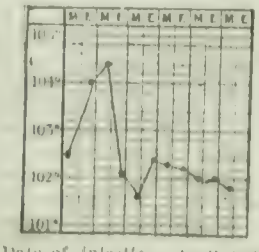
Date of injection, May 3rd, 1912.



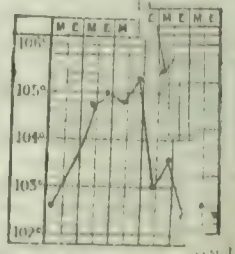
Date of injection, April 25th, 1912. 0.588 *typhosus* broth.



Date of injection, May 3rd, 1912.



Date of injection, April 18th, 1912. 0.1463 c.cm. *typhosus* dilution.



Date of injection, May 4th, 1912.

Chart 5.

by giving control injections to ensure that the saline employed was apyrogenetic. That the apyrogenetic character of the saline must be demonstrated is admitted to be necessary now on all hands, even if the saline contains no organisms, as we have repeatedly shown. All this

[1] *Journal of Hygiene*, October, 1912. [2] Ibid.

objections being considered, we cannot take their evidence on anaphylactic fever as satisfactory.

We find, as stated by Friedberger and Mita, that small doses of the poison of, in our case, *B. typhosus*, give fever under conditions where large ones would give a fall. Alteration, on the other hand, of the conditions—for example, increase of the volume of diluent—completely alters the effect, as we have shown. Moreover, we frequently noticed sharp rises followed either by deep falls or by notches—that is, moderate falls and secondary rises of temperature. The regular simple temperature responses they have been able to obtain with all doses are quite unlike our experiments with *B. typhosus*. According to Friedberger and Mita, anaphylaxis to foreign protein can be demonstrated by the temperature method in spite of the fact that the stage of preparation has only lasted one day.

The accompanying charts (4 and 5) show the amounts of fever obtained in normal and prepared animals with the same dose of *B. typhosus* culture. Chart 4 shows that the fever response of the same animal to the same quantity of the same strain of *B. typhosus* was practically identical on first and second doses. It must be stated, however, that where on the first injection notch temperatures were obtained, the depressing effect was often absent on the second injection, perhaps suggesting immunity to the depressant body or effect. (See Chart 5.) We have been unable so far to obtain evidence that sensitization plays any important part in the causation of the long interval in typhoid fever between infection and onset of high fever. In short, in view of our experiments, with multiple injections of various organisms, we can at present find no justification for belief in anaphylactic fever in the sense hitherto described. The credence hitherto given to the conception has, we believe, arisen through non-recognition of the various fallacies that we have shown to be inherent to the study of experimental fever.

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DISCUSSION.

Dr. JAMES RITCHIE (Edinburgh) said that he had been much interested in Dr. Penfold's results, as it seemed to him that they had a bearing on the possibility which many observers overlooked, that in certain circumstances pyrexia might be an indication of a beneficent reaction on the part of the organism. He drew attention to the fact that in the cases of some previous observers, who had studied temperature changes occurring after the introduction of pyrogenetic agents, insufficient attention had been paid to the technique of taking the rectal temperature in experimental animals. This point had been emphasized a good many years ago by Lorrain Smith. Dealing with the possibility of anaphylaxis playing a part in pyrexial manifestations, Dr. Ritchie asked Dr. Penfold whether he had tried a third injection given immediately after the effects of the second had passed off, in cases when the second injection had produced a rise of temperature equal to that caused by the first injection. If there were an anaphylactic element there ought to be no effect following such a third injection.

Mr. H. W. ARMIT (London) agreed with Dr. Penfold that there was no evidence, either in the data contained in the paper or in Friedberger's work, that the fever of enteric was due to an anaphylactic phenomenon, but he ventured to express the opinion that rabbits were unsuitable animals either to prove or disprove this suggestion. In his experience the anaphylactic shock in rabbits was limited to a sudden fall in blood pressure. At times paling of the ears and visible mucous surfaces could be seen, but he regarded it as comparatively rare to meet with those symptoms of shock, such as were almost always seen in guinea-pigs.

A CASE OF PYAEMIC ACTINOMYCOSIS WITH AN ACTINOMYCOTIC ENDOCARDITIS.

By GEORGE DEAN, M.A., M.B., C.M.,
Professor of Pathology, Aberdeen University.

IN the majority of cases of actinomycosis the spread of infection occurs by continuity. Spread by the lymphatics is denied by many authorities, who maintan that unless a blood vessel is perforated, extension of the disease occurs by continuity only.

Dissemination of the infective material by the blood stream with the formation of metastatic abscesses occurs, as a rule, only in the late phases of the disease.

Kanthack (1893) in recording such a case referred to the "extreme rarity" of the condition, and pointed out that it was interesting that in one of Israel's first cases the disease was of a pyaemic nature. At that time hardly any such cases had been recorded with the exception of Ponfick's (1882) two cases, in one of which an actinomycotic mass had burst into the jugular vein, and produced metastases in the heart, spleen, and brain; in the second case there were metastatic abscesses in the wall of the heart. A number of cases have been recorded since that time by, among others, Abée (1897), who reports and refers to a few similar cases, and by Harbitz and Gröndahl (1911) who give an account of 87 cases of actinomycosis which occurred in Norway. Although at the present time we cannot regard the pyaemic form as so rare as it was regarded in Kanthack's time, it is certain that in the majority of even the fatal cases the spread is by continuity.

In relation to the present observations, it is interesting to note that, though in a number of cases the pericardium and myocardium have been recorded as the sites of actinomycotic infection, in only one case have I been able to find a record of actinomytic infection of the endocardium.

Ponfick's second case, to which I have referred, had actinomycotic foci—the one in the right auricle and ventricle, the other in the left ventricle.

In Abée's case (3) there was present actinomycotic myocarditis. Abée also refers to a case of König's (1884), in which there were foci in the pericardium and myocardium.

Harbitz and Gröndahl (1911) also recorded several cases of actinomycotic pericarditis and myocarditis. Among the cases described by these writers is the only previously recorded case of actinomycotic endocarditis to which I have been able to obtain a reference. In their group of pulmonary cases they describe Case VIII as having, with other lesions, "endocarditis acuta (actinom.) aortae cum aneurysm." It is to be regretted that this record is so brief, as it leaves considerable doubt as to the exact nature of the condition.

The primary site of invasion of actinomycosis is often difficult or impossible to determine. From an analysis of 87 cases Harbitz and Gröndahl deduced the following figures:

Cervico-facial form	45 per cent.
Pulmonary	25 ,,
Intestinal	5.0 ,,
Skin	2.3 ,,

Out of 26 abdominal cases, 14 cases (9 certain, 5 probable) had their origin in the appendix, which, as will be seen, appears to have been the primary site of the infection in the case about to be recorded. In none of these cases could a primary infection of the mucous membrane be found.

Case of A. S., Farm Servant, Aged 22. Admitted to the Royal Infirmary on July 9th, 1910.

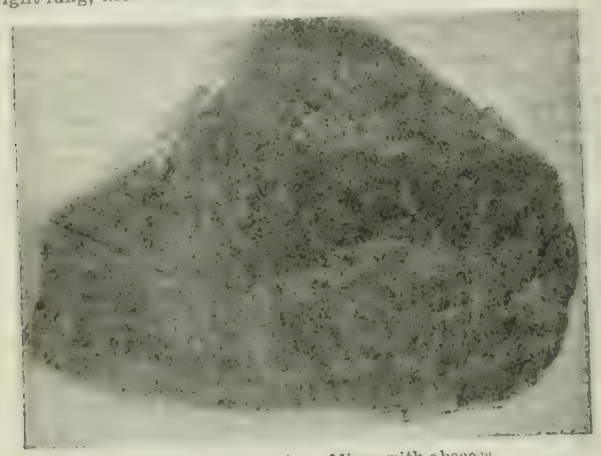
A gangrenous appendix was removed by Dr. Fred. Smith, to whom I am indebted for the specimen of the appendix. The patient was dismissed on July 22nd, 1910, and though relieved was never really well, and was readmitted on October 24th, 1910. An abscess of the chest wall was opened on December 6th, 1910. On January 31st, 1911, an abscess of the right lung having developed, pneumotomy and scraping were performed after partial excision of three ribs. The patient died on April 12th, 1911.

Autopsy.

The autopsy was made on April 12th, 1911. The cicatrices of the incisions of the appendix and other operations were seen. Two of these, over the region of the right lobe of the liver, terminated in an area of superficial ulceration, with a diameter of at least 2 in., and which was covered with pus. A sinus ran from this in the direction of the liver. The tissues in this region were markedly oedematous and partially gangrenous, and of a greenish-blue colour. A probe could not be passed by the sinus into the abdomen. It was probably caught in the recent adhesions over the liver, which will be described.

The Heart.—There were opacities in the endocardium of the left ventricle. On the auricular aspect of the mitral, ½ in. from the free margin, there was a small nodular vegetation about the size of a split pea, somewhat warty in appearance. There was slight arterio-sclerosis of the aorta.

The Lungs.—The right weighed 1 lb. 13 oz. The pleural cavity contained 2 oz. of blood-stained serous fluid with particles of fibrin. There were recent fibrinous adhesions, and the fissures were glued together with a fibrinous deposit. In the centre of the upper lobe was an abscess cavity the size of a walnut. Scattered throughout the rest of the lung were numerous nodules from the size of a millet seed to the size of a bean, and the majority of these, on section, were found to be small abscess cavities. All the abscesses contained yellow, foul-smelling pus. The left weighed 1 lb. 11 oz. There were recent fibrinous adhesions between the layers of the pleura. The lung was in a similar but less advanced condition to that of the right lung, the abscesses being on the whole smaller.



Photograph of section of liver with abscess.

The Liver weighed 5 lb. 6 oz. On the lateral surface of the right lobe was an area 2 in. by 1 in. covered by fibrinous adhesions, and the liver in this region was of a dark slate-blue colour, resembling the appearance described in the case of the corresponding area of the abdominal wall. After removal two sinus openings were observed in this from which exuded evil-smelling chocolate-coloured pus. The openings appeared to have been sealed off by the fibrinous adhesions. On section these were found to open into a large sharply defined cavity, 3 in. by 2 in., with a slightly honeycombed reticular structure containing liver débris and chocolate-coloured pus. Fatty infiltration of the liver was present, and a slight amyloid reaction was obtained.

The Spleen weighed 1 lb. 8 oz. and measured 8½ in. by 6½ in. Contained no abscesses. Proved to be a typical sago-waxy spleen.

Kidneys.—Right weighed 7 oz., left 8 oz.; no abscess present. Slight parenchymatous nephritis with waxy degeneration: "large amyloid kidney."

The Appendix Vermiformis, which had been removed at the operation, was obtained after the *post mortem* examination. It was about 6 in. in length, and the thickness of the forefinger, and somewhat tortuous. The walls were greatly thickened, and the lumen, which was almost occluded in parts, contained hard faecal material.

Histological Examination.—It is unnecessary here to enter into a detailed description of the microscopical structure of the various tissues. The abscesses in the right lung and liver had the ordinary appearance of actinomycotic abscesses and nodules. By the Gram and Gram-Weigert methods the actinomyces could readily be demonstrated in large masses within the abscess cavities. The lung presented many appearances of great interest. A number of the vessels were found to be thrombosed, the thrombi containing the characteristic branching mycelial filaments. Many of the appearances suggested that the material within the vessel had come as emboli, several of these being found at the division of the vessels. There was evidence of interstitial pneumonia round about the foci, and at other parts the alveoli contained a fibrinous deposit. In this case giant cells were not a pronounced feature.

In the appendix no complete evidence of the actinomycotic origin of the process could be found, though a considerable number of sections, at different levels, were cut and examined. In certain of these Gram-positive filaments were present, but no rosette arrangement could be made out.

It is necessary to give a rather more detailed account of the appearances found in the endocarditis. The vegetation stained with haematoxylin and eosin showed wart-like masses, the surface parts of which consisted of a material partly homogeneous, partly granular. The bulk of this stained with eosin, but a few rounded masses took a deep blue haematoxylin colour. The eosin-stained areas were evidently homogeneous and granular fibrin, the deep blue, calcareous material. At the base of the vegetation there were numerous rounded, angular, and spindle-shaped cells indicating beginning organization. A few smaller foci of polymorphonuclear and mononuclear leucocytes were present. Stained by the Gram or Gram-Weigert methods, here and there throughout the vegetation, mycelial filaments were seen, and in certain parts definite rosettes were present. The clubs could be made out indistinctly in the haematoxylin section. Many of the calcareous points appeared from their outline to be degenerated rosettes. No other organisms were present.

This condition, therefore, appears to be a case of true actinomycotic endocarditis. In a mixed infection it is conceivable that the condition might be due primarily to pyogenic cocci, but in the present case this is not probable, for if a coccal infection had occurred in a patient with resistance lowered as in the present case, it would, in all probability, have progressed. Neither in the endocardium nor in the other lesions were cocci present, though the occurrence of a few round actinomycotic bodies makes it difficult to be certain of this. This indicated that there had been no mixed pyaemic infection, even though the surface ulcers and the sinuses contained cocci.

The history of the case and the appearances found in the appendix make it probable that this was the primary focus of infection. It is possible that extension of the infection occurred by the portal vein to the liver and through the diaphragm or chest wall to the lung, and thence to the heart.

The chief point of interest in the case is, from its rarity, the occurrence of an endocarditis due to the actinomyces.

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DISCUSSION.

Dr. BEATTIE (Sheffield) raised the question whether the sago-waxy spleen was produced by a pyogenic coccus or by the actinomyces. Professor G. DEAN replied that he was satisfied that it was actinomyotic in origin. He regarded the ray fungus as a pyogenic organism. There were records of absolutely pure cases in which an amyloid spleen developed.

THE VARIATIONS IN THE MORPHOLOGICAL CHARACTERS OF BACTERIA AND THEIR REACTION WITH SUGARS UNDER DIFFERENT CONDITIONS.

(Abstract.)

DRS. J. M. BEATTIE AND A. G. YATES (Sheffield) read a paper on the above-named subject. Dr. Yates spoke first. He said that in order to test the value of the sugar reactions in the classification of streptococci, 21 strains were used. These were derived from various sources. They were all inoculated into animals, and on the basis of their pathogenic effects were divided into the three following classes:

1. Those producing septicaemia.
2. Those producing rheumatic arthritis.
3. Those producing no effect.

In class 1, producing septicaemia, there were 15 strains. On examining their sugar reactions, 9 distinct varieties were found, and, adopting the classification of Gordon, this group contained representatives of no less than 4 of his varieties — namely, *S. pyogenes*, *S. salivanus*, *S. augmosus* and *S. faecalis*.

In class 2, producing rheumatic arthritis, there were 13 strains. The sugar reactions of this group showed 6 varieties. Of these, one corresponded to *S. faecalis*, three to *S. salivanus* and its variants, and two did not correspond to any of Gordon's varieties.

In class 3, producing no effect, there were 9 (? 10) strains. According to their sugar reactions, there were 5 distinct varieties, including *S. salivanus*, *S. augmosus*, and 3 strains which did not correspond to any hitherto described variety. They could not help concluding from these results that the sugar reactions were of little value in the classification of streptococci, as they give us no idea of the probable pathogenic effect of the organism in question. Further, they had found that the sugar reactions of the individual strains of streptococci were not constant. This was tested in two ways: (1) after repeated subculture and (2) after passage through animals.

1. After repeated subculture. The results here were fairly constant, but in every case the inulin reaction was modified, becoming positive when it had been negative, or vice versa.

2. After passage through animals. Five strains were used. In the first the clotting of milk became negative. In the second the mannite reaction became positive. In the third the raffinose and salycin reactions became negative and the power of clotting milk was lost. In the fifth all the reactions were changed, except raffinose and acid production in milk. The conclusion which they were compelled to draw from these results was that the sugar reactions of an organism depended more upon the environment in which it had been living than upon its inherent properties.

They had found also that it was possible to modify the morphological appearances of certain organisms by altering the conditions of growth, especially in relation to time and temperature.

In working with the necrosis bacillus, they found that when grown on agar at 37° C. for twenty-four hours, the cultures consisted entirely of short oval bacilli. If, however, examined after only four hours' growth, the culture contained very numerous long filaments.

Exactly the same thing was found on examining cultures grown at room temperature. In forty-eight hours the cultures consisted almost entirely of long filamentous forms. If examined, however, after four days' growth, the filaments had all broken up, and nothing but short, almost coccal, forms could be seen. Cultures of the typhoid coli group were found to possess the same tendencies, but in a less marked degree. Long filaments in many cases were found in the early growths which disappeared if incubation was continued. Moreover, the bacilli in the early growths were longer than those in the older cultures.

It seemed clear, therefore, that the long filaments often found in cultures of these organisms represented an early stage of development, the filaments subsequently breaking up into bacilli. One bacillus, however, with which they had worked showed changes of an entirely different character. When grown at 37° C., long thick filaments with irregular staining were produced; if incubation was continued, they lost these staining properties, became vacuolated and finally broke up. The same organism, however, when grown at room temperature produced a copious growth of short, deeply staining bacilli, with no trace of filament. They had not identified the organism, but it was probably non-pathogenic.

These observations suggest that in describing an organism its appearance under different conditions of temperature and after varying intervals of growth should be given.

DISCUSSION.

Professor George Dean (Aberdeen) said that these results were of great importance as indicating that examination of cultures should be made at shorter intervals than twenty-four hours. He agreed that the results obtained with the necrosis bacillus showed that many workers had been misled in regard to the difficulty in the isolation of this organism. He himself had been led in error in this manner. He had often regarded the filamentous forms as involution forms.

Dr. Penfold (London) referred to the work of Ainley Walker on the streptococci, and questioned whether the changes in the sugar reactions were really due entirely to environment. He asked the authors whether they had sufficient evidence that the individual sets of germs in which the changes in the sugar reactions had been observed were all derived from a single organism.

Dr. Beattie, in reply, stated that they were quite satisfied that they had been dealing with a single organism the characters of which had undergone changes.

OBSERVATIONS ON BROWNIAN MOVEMENT, WITH SPECIAL REFERENCE TO THE ANTHRAX SPORE.

(*Abstract.*)

Professor E. Emrys-Roberts (Cardiff) read a paper compiled by himself and Dr. S. B. Walsh. He said that he had made the observation that anthrax spores suspended in tap-water exhibited practically no Brownian movement. This led them to investigate the phenomenon, and incidentally to endeavour to elucidate some points in connexion with Brownian movement.

In their investigations they made use of *Staphylococcus aureus* and Indian ink granules as controls, on account of their approximate size to anthrax spores, and also because the one could be taken as typical of dead particles and the other of living particles, both exhibiting well-marked Brownian movement. First of all, they worked out the time factor, and at the same time to a certain extent the diluent factor, using tap-water, distilled water, normal saline, 0.5 per cent. formol, 4 per cent. formol, and 10 per cent. formol—all made up in normal saline fluid—as suspensory fluids. The results were noted at room temperature, and therefore to this extent they introduced the temperature factor. The results may be briefly stated as follows: Whereas *Staphylococcus aureus* and Indian ink granules were found to exhibit well-marked Brownian movement in each and all the suspensory fluids at the end of a week, the anthrax spores showed little or no movement from the commencement, although the anthrax bacilli which were present did show Brownian movement. The temperature factor was more fully worked out by repeating the same experiments at 37° C. and 54° C., the results in each case being identical with those obtained at room temperature.

In order to test the vital factor, *Staphylococcus aureus* and the anthrax spores were killed by heat, but this was found not to affect the results in any way. In the next place, the weight factor was investigated. By making a mixed emulsion of all three sets of particles in tap-water and centrifugalizing, a most striking result was obtained; the particles arranged themselves in three layers—black, white, and yellow—from above downwards, indicating that anthrax spores occupied an intermediary position between the Indian ink granules, which were the lightest, and the *Staphylococci aurei*, which were the heaviest. This inference was verified by pipetting off portions from each layer and staining them suitably. By suspending portions of the respective cultures and the Indian ink granules in small tubes, containing increasing percentages of glycerine in water, they were able approximately to judge their specific gravities, and the results bore out and confirmed those obtained by the centrifuge.

The viscosity factor was determined by using as the suspensory fluid glycerine and cedar-wood oil on the one hand and ether on the other. It was found that in cedar-wood oil and in glycerine Brownian movement was almost suspended throughout, whilst in ether the movement was somewhat increased in the case of Indian ink granules and *Staphylococcus aureus*, but there was no appreciable increase in the case of anthrax spores.

The osmotic factor was easily disposed of, since, whatever inferences might be drawn from a comparison between *Staphylococcus aureus* and anthrax spores, such inferences could not be maintained between *Staphylococcus aureus* and Indian ink granules. Next, in order to determine

whether the property apparently possessed by anthrax spores was unique or was shared by spores in general, they worked out the spore factor, using the spores of tetanus, *Rauschbrand* and *subtilis*. It was found that these spores in the order named exhibited an increasing Brownian movement in comparison with anthrax, thus demonstrating that the property of comparative immobility is common to spores in general, and apparently decreases with the resistance of the spores.

Finally they endeavoured, by passing currents of electricity of from 1 to 2 volts, to discharge any electric charge the particles might have been endowed with, and thus to arrest the movement, but without success. So far, therefore, they were able to determine: that the observations of the peculiar behaviour of anthrax spores were fully confirmed; that the relative behaviour of anthrax spores, *Staphylococcus aureus*, and Indian ink granules was not altered by length of time or by differences of temperature; that the supposition held that formol added to the suspensory fluid arrested Brownian movement was without foundation; that the vital, weight, osmotic, and electric factors played no part in the determination of the movement; that the viscosity factor bore out what one would expect from the physical standpoint; and, lastly, that the peculiar behaviour of the anthrax spores was to a certain degree shared by other spores.

The opinion advanced by certain physicists that Brownian movement is an indication of the molecular movement of the suspensory fluid does not appear to explain the conditions found. In the first place, it is exceedingly difficult to suppose that the vast multitudes of molecular forces required to set in motion a single one of the particles could act in unison; moreover, if the supposition were granted, the only way to explain the comparative immobility of the anthrax spore would be by suggesting that it was provided over the whole of its surface with ultramicroscopic spicules, which would tend to neutralize the effect of one set of forces by the bombardment directed on the spore surface of sets of forces acting in other directions. This supposition is far removed from their conception of the anthrax spore, as an exceedingly smooth, highly refractile body.

The more generally accepted theory, that Brownian movement is based upon unequal differences in surface tension between the particles and the suspensory fluid, was felt to be a more reasonable explanation. It was noted that in the case of *Staphylococcus aureus* and Indian ink granules, tea-cup attraction was well marked, especially in the latter, whereas in the case of anthrax spores the attraction to the sides, though not absent, took an appreciable time to become marked. Had the anthrax spores refused to exhibit tea-cup attraction, the authors would have been obliged to postulate a molecular arrangement of the spores counterbalancing the differences in density between them and the suspensory fluid, which postulate would have broken down, because suspensory fluids of different densities were employed. The potential energy present by reason of the differences of density at the surface of the Indian ink granules, as compared with the suspensory fluid, would appear to be converted into actuality by the supposition that the particles contain local impurities, leading to unequal differences of surface tension at different points of the particles. Similarly, variations in the thickness of the envelope of the *Staphylococcus aureus*, or differences of the protoplasmic content becoming manifest through the comparative permeability of the envelope, would be adduced to explain the unequal differences of surface tension necessary to convert the potential into actual energy and hence into Brownian movement. As regards the anthrax spores, on the other hand, a reasonable supposition to account for their comparative immobility and slow tea-cup attraction is to postulate their possession of an envelope so nearly perfectly uniform that no unequal differences of surface tension exist, and hence no conversion of potential into actual energy. It would further seem that the tea-cup attraction varies with the exhibition of Brownian movement, suggesting that particles in oscillatory movement move more rapidly to the side than particles practically at rest. The supposition that the anthrax spores possess an almost uniform surface is quite in keeping with the usual conception of these bodies, while the exhibition of Brownian movement on the part of anthrax bacilli again bears out the idea that structurally they resemble *Staphylococcus aureus*.

Finally, in order to put to the test the theory that the absence of Brownian movement in the case of anthrax spores was due to uniformity of surface, experiments were carried out with antiformin and hydrochloric acid as follows: 50 per cent. antiformin, incubated at 37° C. for forty-eight hours: result, pronounced Brownian movement of anthrax spores; 50 per cent. of antiformin, first at 100° C. for five minutes, and then at 37° C. for forty-eight hours: result, the same; 50 per cent. HCl at 37° C. for forty-eight hours, practically immobile; 50 per cent. of antiformin at 37° C. for twenty minutes: pronounced Brownian movement; 50 per cent. antiformin brought to boiling: result, the same. It will be noted that 50 per cent. of hydrochloric acid at 37° C. for forty-eight hours produced no effect whatever, while the exhibition of 50 per cent. antiformin for only twenty minutes at the same temperature produced results similar to those produced by much more intensive treatment with the same reagent. Antiformin was chosen because of its well-known property of attacking cellular material; and judging by the results obtained, which were to an extent corroborated by the inability to obtain growths from the spores so acted upon, this reagent would appear to have so altered the surface of the spores as to produce inequalities sufficient to bring into play the forces leading to the production of Brownian movement, and this result would appear to strengthen the theory that Brownian movement is due to unequal differences of surface tension between the particles in question and the suspensory fluid.

At the outset it was hoped that it might have been possible to have come across a suspensory fluid which would abolish Brownian movement, or else to have evolved a method of arresting it, since in counting vaccines by the Thoma-Zeiss method considerable difficulty is always experienced by reason of this phenomenon, but the results of their observations would appear to hold out no hopes in this direction.

The authors finally express their indebtedness to Mr. J. H. Shaxby for his interest and assistance.

ON THE BACTERIOLOGY OF AN INFECTIVE DISEASE OCCURRING IN RANGOON.

By Captain A. Whitmore, I.M.S.

It is with some reluctance that I venture to ask your attention for a few minutes while I present to you a very brief description of the bacteriology of what is, I believe, a hitherto undescribed infective disease. Under ordinary circumstances, it is probable that the suggestion that the disease is "new" to medical knowledge would suffice to rouse your keen interest, but in this case it so happens that the disease is at present, at any rate, only of local importance, and the infected locality (Rangoon in Burma) is so very far away that your interest should be only lukewarm. However, the knowledge that one of the greatest drawbacks to which a lonely worker in the East is subjected is his freedom from the remotest criticism of his fellow-workers has overcome this reluctance, and it is with the object of eliciting criticism that I put this brief note before you.

As the only account of the disease as yet published has but just appeared in the recent number of the *Indian Medical Gazette*, and has probably been read by none here present, it seems to me essential that before proceeding to the purely bacteriological portion of my subject, I should give you some idea of the disease itself. While Pathologist at the Rangoon General Hospital it happened that my attention was drawn to the occurrence of several true glanders infections in man. The importance of this subject from a public health point of view led to our special attention being directed to its detection, and while so engaged we were struck by the fact that, in addition to the few cases which bacteriologically were easily proved to be true glanders, were several others in which, though the manifest lesions appeared to be typical of glanders, yet our bacteriological findings did not confirm such diagnosis. At first we were inclined to attribute this bacteriological confusion to our own inefficiency, but later we discovered that these seemingly mistaken bacteriological results bore a striking resemblance one to another,

and that with this similarity in bacterial findings was associated a similarity of lesions—that, in fact, we were probably dealing with a disease distinguishable by both constant bacterial pictures and characteristic gross lesions. An experience of ten months has amply confirmed this view. The disease has been met with thirty-eight times in all. It is probably a septicaemic disease. Unfortunately, in all but one of our cases bacteriological examinations have not been undertaken until after death, but in such cases it is usual to be able to recover the bacilli from the heart's blood, and almost invariably they can be recovered readily from spleen cultures. In the only non-fatal case we succeeded in isolating the bacilli from the peripheral blood during the attack.

Associated with this septicaemia there are gross lesions in many organs. Generally these lesions occur in the lungs, and these lung lesions are strikingly similar in their acute form to those so commonly present in acute glanders of man. Some characteristic specimens of these lesions are shown in the museum. In addition to these pulmonary lesions, there are frequently gross lesions in other organs, such as the liver and kidneys. A grossly infected kidney is shown in the museum.

Upon the clinical aspect of the disease I do not propose to enter, except to say that clinically the disease may resemble glanders very closely indeed.

The bacillus causing the disease occurs in very large numbers in all the acute lesions, and may be seen in large numbers in smears taken from these lesions. It can be readily isolated in pure culture not only from the obvious lesions, but also usually from the spleen of infected persons, and frequently from the heart's blood.

The bacilli, as seen in smears from the lesions of an infected organ, are rod-shaped bacilli, about the size and shape of the *Bacillus mallei*; they stain readily with all the usual stains, but are not acid-fast, nor do they retain the stain when stained by Gram's method. Stained with Leishman's stain, they show a well-marked bipolar staining, the poles being stained a dark purple, while the bodies are blue.

Growth upon all the usual culture media is rapid and luxuriant, and occurs under both aërobic and anaërobic conditions, though more luxuriantly under the former.

For the first twenty-four hours the growth in broth is not very luxuriant, although as early as the end of the tenth hour of incubation it can be seen as a diffuse, faint haze; after twenty-four hours there is a general turbidity of the broth and a pellicle begins to form at the surface; this pellicle gradually thickens, until at the end of the fourth or fifth day it is a tough, resistant, wrinkled skin.

Upon ordinary peptone agar the growth appears in from eight to ten hours as moist, translucent, slightly raised colonies; in forty-eight hours these colonies have become opaque and thick, and are of a cream colour. In agar cultures of over a month's growth the colonies are dry with the middle portions wrinkled, and their colour is brown with a tinge of pink.

Upon salted agar, the salt being 1½ to 2 per cent. in strength, growth is slow, and appears as a thin layer, rather like a thin coating of white paint. A smear preparation from a salted agar culture shows that the bacilli are growing in dense felted masses, composed of very long sinuous filaments. If the strength of salt is over 2 per cent., growth is so slow that, in order to secure this curious change in the appearance of the bacilli, it is advisable to inoculate a large number of these, sufficient to form immediately after inoculation a thick, visible streak.

Upon glycerine agar containing 12 to 15 per cent. of glycerine the growth is rapid and luxuriant, but at the end of the second day the lowest third of the culture begins to acquire a wrinkled appearance, and this wrinkling rapidly extends to the whole growth, until after little more than a week's incubation the growth has become heaped up and rugose, not unlike a thick growth of tubercle bacilli.

Upon gelatine at a temperature of 18° to 22° C. growth is rather slow, but at the end of the third day of incubation there is a white streak of visible growth, and beneath this liquefaction of the gelatine slowly takes place. In stab cultures this growth produces very characteristic appearances; at the end of the third day there is a faint white streak of growth along the whole needle track, and at the surface the growth is spread out in the shape of a small white disc; by the fourth or fifth day the gelatine just below this surface disc is obviously liquefying; and by the end of the week, or a little later, the liquefaction has progressed to form a small cup of liquefied gelatine covered by a thick wrinkled pellicle; while along the rest of the inoculation stab is a white line of growth with extremely fine dots distributed in a radiating manner out into the surrounding clear gelatine.

Liquefaction of the gelatine has occurred in every case, but the actual rate of the liquefaction has varied considerably with the different strains of bacilli inoculated.

Upon potato a vigorous growth appears in twenty-four hours. As a rule at its first appearance the growth has been of a cream colour; but with bacilli from one or two cases the initial colour has been light yellow, not unlike that of young cultures of *Bacillus mallei*, but this yellow colour is very quickly lost. The potato round the growth is not discoloured, nor is there much spread of the growth away from the line of inoculation.

In litmus milk growth readily occurs. For the first three days there is no marked change in reaction, but later the casein is precipitated, a thick white fluffy sediment collects at the bottom of the tube, the whey becomes thick, and a violet-coloured scum dotted with white spots is formed on the surface.

The various sugared media have been inoculated with the bacilli, but, though growth is vigorous, there has never been the slightest gas formation in any of these media.

In young cultures upon all media the bacilli are actively motile, but this motility is almost entirely lost as the cultures age. In agar cultures the motility is often so diminished by the beginning of the third day that cultures examined then would be accepted as those of a non-motile organism. In broth cultures the bacilli retain their motility for a longer time, but after the tenth day of incubation they have become practically non-motile.

When present the motility is of a curious serpentine character.

We have no evidence of spore formation under any conditions, but our observations on this point are meagre.

The cultural and other characteristics upon which we rely for distinguishing this bacillus from other pathogenic bacteria are, I think, fairly obvious; those which we find of particular utility in the rapid identification of the bacillus are:

1. The rapid and luxuriant growth upon ordinary peptone agar.
2. The wrinkling which occurs so early in the growth upon glycerine agar.
3. The pellicle formation at the surface of broth cultures.
4. The appearances of gelatine stab cultures at the end of the third day, and after one week's growth.
5. The curious tangled masses of long filamentous bacilli found in cultures upon salted agar.
6. The active serpentine motility of the bacilli in young cultures, and its early disappearance as the cultures age.

When a rough preliminary examination of smears from diseased organs is being made, the bipolar nature of the staining with Leishman's stain is exceedingly useful in arousing an early suspicion of the nature of the infection.

For testing the pathogenic effects of the bacilli upon animals we have made use of guinea-pigs only.

Both subcutaneous and intraperitoneal inoculations into these animals have been made, and all strains of bacilli have been found markedly pathogenic. In all our experiments the animal has shown signs of very serious illness within a few days. At first the dosage of bacilli used was very large, 20 minims of a twenty-four hours' culture being injected as a dose, and in these cases the animals were either dead or moribund within forty-eight hours; but in the later experiments, made for diagnostic purposes, very much smaller doses have been given.

The results of the large inoculations have already been mentioned while describing the investigations into our first two recorded cases of the disease. The guinea-pigs die of a septicaemic disease, with well-marked local lesions depending upon the site of infection. With the large intraperitoneal inoculations the animals die so rapidly that the inflammation of the testicles, which occurs in the male pig, may not have time to develop to any very obvious extent; the swelling and redness may be so slight as to be easily overlooked; this no doubt happened in our first experiment. Therefore, if the occurrence of these characteristic local inflammations is to be utilized for diagnostic purposes, a very small dosage is requisite: we have found that half to one minim of an eighteen hours' broth culture, given either intraperitoneally or subcutaneously, is an ample and useful dose. This dose, given intraperitoneally to a male pig, causes a very well-marked and characteristic Strauss's reaction, which is obvious within thirty-six hours of the injection. Within the fourth or fifth day from the time of inoculation the guinea-pig is obviously seriously ill, and may die, even within five days' of injection: however, the exact dates of obvious serious illness and death have varied very considerably with the strains of bacilli used.

A small dose given subcutaneously gives rise to a rapid induration of the tissues around the site of injection, and this infiltration, or induration, is due to a matting of the tissues by a thick caseous exudate; in the caseous matter, which can be easily expressed, the bacilli are extremely

numerous, and can be readily demonstrated. This rapid local increase of bacilli after inoculation, and the obvious accompanying inflammatory exudate into the tissues, are extremely useful in demonstrating the presence of bacilli, when they exist in very small numbers in any infective material.

The onset of serious illness is, of course, later with a subcutaneous than with an intraperitoneal infection, but in all cases serious and fatal illness has occurred, and, as a rule, has developed within seven days of infection.

Feeding experiments with contaminated food and drink have been carried out, and, so far as infection of the animals is concerned, have always given positive results. For purposes of clinical diagnosis, such experiments are too protracted to be serviceable, yet they have proved of great value as a convincing proof that the bacillus isolated from the lung and other organs of man is the cause of the illness; for by food infection we have succeeded in setting up in guinea-pigs a fatal septicaemic disease characterized by lesions of the lungs exactly similar to the human lung lesions. We have carried out four such experiments, and in all four cases have caused fatal illnesses; and have been able to demonstrate after death extensive lung consolidations due to this bacillary infection. These experiments will be referred to again when considering the method of infection in man.

In the first cases of the disease observed by us the lesions of the lungs were so obvious and striking that we were not unnaturally impelled to the view that we had to deal with a "lung disease," and that it was in the lungs alone that gross evidence of infection was to be expected. It is true that in the second case the recovery of bacilli from the spleen proved that, at any rate bacteriologically, the disease was more widespread; but at that time we failed to appreciate the importance of this observation. However, the isolation of bacilli from the heart's blood in Case III afforded further proof of the general nature of the infection, and in subsequent cases we found that the presence of bacilli could be generally demonstrated in the spleen as easily as in the macroscopic lesions of the lungs. We therefore adopted the view that the disease was essentially a "lung disease"; just as in typhoid fever though the most obvious lesions are confined to the intestine, the infection is general, so also in this disease, with its gross and obvious lesions restricted to the lungs, the local nature of the lesions gave no clue to the possible extent of the infection throughout the body.

These are the characteristics of the bacillus, as determined by us in Rangoon, and they have been found constant in all strains of the bacillus; but I would remind members of the Section that in Rangoon we have been working, not in a well-equipped laboratory with laboratory servants well trained to accurate methods, but that we have had to endeavour to do our best under somewhat adverse circumstances, and therefore while I have no doubts whatsoever as to the accuracy of our own results, there are, I think, many points in our bacteriological description which require more accurate investigation than we have been able to afford. Recently, by the kindness of Dr. Eyre, I have been permitted to repeat these cultural tests of ours in his laboratory. Upon the accurately standardized media used there, I have found that the growth upon glycerine agar, containing the high percentage of glycerine described by us, is very feeble, and does not accord with our description. From the few experiments I made there it appeared to be likely that growths similar to those obtained by us in Rangoon would be obtained on glycerine agar containing about 8 per cent. of glycerine. Personally I do not doubt that it is only a matter of short experiment to determine the exact percentage of glycerine necessary, but it is certainly important to note that up to the present I have failed to demonstrate in London the characteristics of growth upon glycerine agar which we have described from Rangoon. Upon gelatine also, as prepared in Dr. Eyre's laboratory, I have found growth exceedingly slow, so much so that although on using a very thick inoculation upon a gelatine slope I obtained liquefaction of the gelatine, yet the ordinary inoculation of a few bacilli failed to give liquefaction with the very slow growth which occurred, and the characteristic gelatine growths obtained by us were not obtained in England. However, here again I do not doubt the essential accuracy of our Rangoon observations, but we have been working with gelatine nothing like as firmly solid as Dr. Eyre's media, and also I do not suppose that our temperature observations should be regarded as accurate, for we have had to depend upon an ice chest as our cool incubator.

In other respects, the behaviour of the bacillus in Dr. Eyre's laboratory was, I think, similar to that in Rangoon. Dr. Eyre, moreover, was kind enough to confirm our observations as to the lesions caused by the inoculation of a small dose of the bacillus intraperitoneally into a male guinea-pig.

I had hoped to have had a series of tubes of dead cultures on view in the museum showing all the cultural characteristics described, but unfortunately the parcel seems to have miscarried in the post, and has not yet come to hand.

Such is the bacteriological description of this Rangoon disease. I am very well aware that the description leaves very much to be desired, addressed as it is to a company of expert bacteriologists; but I hope that it has not been uninteresting, in one respect at least, as an example of the great and growing difference between our present-day methods of working and acquiring medical knowledge and those not long ago in vogue.

DISCUSSION.

Dr. Eyre (London) confirmed the views expressed by Captain Whitmore in regard to the bacillus and the lesions caused by it. He was inclined to the opinion that the differences in cultural behaviour in the Rangoon experiments and those conducted in his laboratory were chiefly due to differences in the culture media. The lesions produced by the bacillus were so like those produced by glanders that in showing the characteristics of Strauss's reaction in the guinea pig, for teaching purposes, he found that it was immaterial whether he selected the guinea-pig infected with true glanders or one which had been inoculated with the Rangoon bacillus.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

OPERATION FOR EARLY MAMMARY SCIRRHUS.

The following case of mammary scirrhus must, I venture to think, be the earliest on which an operation has ever been carried out.

The patient is a lady aged 46 years. Seventeen years ago she had a small tumour removed from the left breast, which proved on examination to be a small cystic adenoma. This I know to be correct, as she had kept the tumour in spirit, and I have had the opportunity of verifying the statement.

In May, 1911, she consulted me about a small lump in the skin, situated above the superior internal quadrant of the right breast, about 2 in. below the right clavicle, and 2 in. external to the border of the sternum. This I removed under local anaesthesia, and was satisfied that it was a simple sebaceous cyst of the skin; the wound was sutured with a single horsehair stitch, which was removed after eight days.

In August of the present year she again consulted me, when three minute tumours were palpable in the situation, but not in the substance, of the scar of the operation last referred to. These I also removed under local anaesthesia.

The tissue excised was examined by Mr. S. G. Shattock, who reported that the chief nodule was no larger than a pea (7 mm. in diameter), and that on section it exhibited to the naked eye the macroscopic characters of a mammary scirrhus, which was confirmed on microscopic examination, the histological structure being perfectly typical of that disease.

Without delay I thereupon removed the whole breast, together with the pectoral muscles, and cleared out the axilla.

Mr. Shattock reported that there was no carcinomatous disease in any part of the breast, or in the structures removed, and made the following comments:

He had never heard of a primary mammary scirrhus of so small a size having been detected and removed; one reason for its early detection was doubtless the fact that it arose in the very periphery and thinnest part of the breast, and that the presence and particular situation of the previous scar must have directed the frequent attention of the patient to the spot itself. Its origin beneath the scar was not a coincidence; nor was it a reason either for supposing that the lesion previously removed was other than a sebaceous cyst. The sequence was best interpreted as indicating that the breast was in a particularly vulnerable condition—one, that is, in which a cancerous growth might have been incited by a very small degree of injury, the immediate cause of the growth being some trivial damage sustained by the outlying piece of mammary tissue at the antecedent operation.

Under these circumstances the subsequent removal of the whole breast, as a prophylactic measure, was quite justifiable, although the rest of the gland contained no carcinomatous focus.

Wimbledon. J. Edwin Bates, M.B., B.C.Cantab.

DELAYED CHLOROFORM POISONING ASSOCIATED WITH SEPSIS.

A girl aged 12 years, active, wiry, and with a good constitution, suffered from pain in the abdomen and vomiting, and had a temperature of 101° F. Symptoms being regarded as due to eating some strawberries, a dose of castor oil was given. Next morning the bowels acted, and the temperature was normal; however, some pain was still present in the lower part of the abdomen, but she was able to get up and lie about on a couch. The same evening, as the pain returned and she was sick again, I was sent for. The abdomen was flat, held rather stiff, but no more rigid over one part than another; there was no local tenderness, but pressure in the right hypochondrium caused pain referred to the right iliac fossa. The pulse was 108 and the temperature 99.6°. Next morning the temperature was 102.4° F. and the pulse 130; she had had one or two attacks of pain in the night.

Operation was advised and performed within forty-eight hours of the first symptom and within twenty-four hours of my first seeing her. The appendix was found to be perforated and gangrenous as to its last inch and a half; it was hanging free over the pelvic brim with half a pint or more of clear non-odorous fluid in the peritoneal cavity: the appendix itself had practically no mesentery, and had to be shelled out of its peritoneal coat; the peritoneum covering the caecum and adjoining part of the ileum was very much inflamed. The operation took fifty minutes, and a large drainage tube was passed down to the pelvic floor with a gauze wick inside it. The patient was put into a sitting position, and salines given per rectum, half a pint every two hours, and well retained; the anaesthetic used was chloroform, and she was some time coming round from it, but she did not require much, and the last ten minutes of the operation she had none; the exact amount used was unfortunately not known, but she was anaesthetized by my partner, who has a large experience in anaesthetics.

After the operation her pulse was 100, a fall of 20 as compared with before the operation. She passed a good night with several hours' sleep, no pain or vomiting. The wound was dressed, and considerable serous discharge found on the dressings. Thirty-six hours after the operation she was first noticed to be jaundiced: she was given castor oil by the mouth, which acted in three hours—a clay-coloured motion floating in thin dark fluid, containing some altered blood. Only a little serous discharge was found on the dressings. She was given some glucose by mouth, but vomited it, and it was then given by the rectum. The urine was high coloured, and contained a good deal of albumen, but there was no smell of acetone; the abdomen was soft all over, and was not tender; both temperature and pulse were about 100.

Sixty hours after the operation she became delirious and noisy, and eventually maniacal; there was very great thirst, and large quantities of water and glucose were administered by the mouth at this stage. The temperature was 91 and the pulse 104°. A fleeting erythematous rash was noticed on the flanks, the spleen was enlarged and the bowels opened several times with calomel. The urine passed was in good quantity and high coloured. Stupor, coma, and convulsions supervened, and death occurred eighty hours after operation, with temperature 109.4° F. The cerebro-spinal fluid was clear and not under pressure. Several injections of antistreptococcic serum were given, and also a stock vaccine.

No *post-mortem* examination was made, but the case seems clearly to be a combination of chloroform poisoning and sepsis. She could probably have survived either separately, but it is the combination that is fatal in these cases. The case should be compared with the one reported on p. 794 of the British Medical Journal for September 28th, 1912, and emphasizes the fact that ether, and not chloroform, should be used as the anaesthetic in these cases.

W. A. Rees.

A METHOD OF GIVING NITROUS OXIDE WITH THE ADDITION OF ETHER IN MINOR SURGERY.

Having witnessed the very painful recovery after nitrous oxide administered for the opening up of a whitlow, and having once had a somewhat similar experience myself, it occurred to me that the following method of giving nitrous oxide and ether has not received the attention it deserves.

The mention of ether is sufficient to call up a vision of violent emesis; administered, however, as an addition to nitrous oxide in the following manner, it will be found to be the exception for the patient to be sick, and not the rule.

The nitrous oxide anaesthesia is conducted in the usual way (an ordinary Clover bag being attached to the gas apparatus), but after the inhalation of the first bag of gas, which is, of course, refilled, the ether is turned on fairly quickly until the indicator stands at full ether. On the commencement of stertor the anaesthetic is withheld. This will give an anaesthesia about twice the length of N_2O alone. If a longer anaesthesia than this is required air is given from time to time. No to-and-fro breathing takes place at any time during the administration.

The difference to the feelings of the patient on recovery from a short though painful operation after this anaesthesia and N_2O alone has to be experienced to be fully appreciated.

J. K. Pedley,
Tunbridge Wells. Dental Surgeon.

COMPLETE INVERSION OF THE UTERUS.

On July 29th last I attended Mrs. P. in her second labour. She is about 25 years of age, of slight build and nervous temperament. Chloroform was given towards the end of the first stage, and on account of some delay in the second the forceps were applied and delivery effected quite easily. There being delay in the expulsion of the placenta ergot was given and steady pressure made over the uterus for about a quarter of an hour, but no traction made on the cord. At this stage the patient suddenly complained of sharp pain in the abdomen and the placenta was expelled from the vagina with a firm mass of tissue adhering to it which on examination was found to be a completely inverted uterus with the placenta still attached. This was peeled off and the uterus replaced into the vagina and steady pressure with the hand made for about ten minutes, by which time the uterus was restored to its normal position. More ergot was then given and firm pressure applied to the uterus through the abdominal wall for about half an hour. The organ was then felt well contracted in its normal situation. There was only moderate haemorrhage and very little shock. For a few days there was a slight rise of temperature, but the patient made an excellent recovery, and a vaginal examination a month after showed everything quite normal. In an extensive midwifery practice of over thirty years I have never before met with a case of inversion, and as it is stated in books to be very rare, once in about 180,000 cases, I am giving a brief history of the case thinking it may be of some interest to my fellow general practitioners.

Wealdstone, Middlesex. George H. Butler.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

SOUTH MIDLAND BRANCH.

At a meeting of this Branch on October 10th, Dr. Wickham spoke of a peculiar case of *Arthritis of the knee*, apparently following slight injury, in which various forms of treatment had been tried over many months without success. During the whole of the time the patient had slight sycosis of the chin, and the use of vaccines prepared from this eventually led to a complete cure. Dr. Robson read notes of a case of sudden onset of *Complete paralysis of both arms and legs*, seven days after a head injury. There was also complete anaesthesia of the limbs, but no bladder or rectum trouble. The plantar reflex was flexor. Dr. Robson showed how he arrived at the conclusion that the whole trouble was functional, after having discussed the various possibilities. This proved to be correct, the man being shown at the meeting, having recovered completely in the course of ten days. Dr. Hichens and Dr. Haigh read a short paper on *Familial jaundice*, and exhibited one member of the affected family. The cases were characterized by a partial jaundice almost constantly present, an enlargement of the spleen, and a peculiar heart murmur, which was quite different from a haemic murmur. Dr. Hichens considered that the jaundice was haematogenous, and was due to increased friability of the red blood corpuscles. Mr. Odgers showed 5 cases illustrating the *Extended operation for mammary carcinoma* introduced by Sampson Handley. The cases had been operated upon from five to three years ago.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, October 28th, 1912.

Sir W. Watson Cheyne, President, in the Chair.

Hedonal Anaesthesia.

Mr. C. M. Page, in a further communication on hedonal anaesthesia, said he injected the drug into the saphenous vein at the internal malleolus at a temperature of 105° to 110° F. He had had no fatal case attributable to the anaesthetic, and considered that those reported were due to overdosage. Safe anaesthesia was usually associated with a skin reflex. The cases unsuitable were (1) aged subjects and especially those with marked arterio-sclerosis, (2) cases in which there was active pulmonary disease, (3) cases in which the heart was not sound. The drug had been exceptionally successful in (1) cases of goitre including 5 of Graves's disease, (2) cases of shock associated with haemorrhage, (3) cerebral and spinal cases, (4) cases in which there was considerable post-operative pain. The method for properly chosen cases had a definite value, but was not free from danger, the latter being chiefly due to the ease with which an overdose could be given.

Dr. Z. Mennell, in a paper on hedonal infusion anaesthesia, with special reference to its uses in intracranial surgery, said this method had been used in 310 cases at St. Thomas's Hospital since Mr. Page published his 200 cases. No death had occurred within twelve hours. The saphenous vein was chosen (1) because it is out of the way, (2) as a convenience to the anaesthetist, enabling him to take the blood pressure in the arm, (3) the vein is large and easily exposed, (4) there is no need for special apparatus as suggested by Moynihan. It is especially important to note the respiration, skin reflex, blood pressure, and the pulse. The following were contra-indications to its use: (1) Any operation about the air passages which caused haemorrhage into them, without preliminary laryngotomy, (2) cases of high blood pressure, (3) cases in which anaesthesia could be obtained as safely and as satisfactorily by other means. Hedonal was indicated in (1) operations in the neck—goitre, including Graves's disease, (2) ventral hernia, (3) intracranial operations. In the last it had special advantages—the anaesthetist was out of the way, any posture of the patient was possible as long as there was a free airway, there was no initial fall of blood pressure: it was possible to proceed further with the operation, thus avoiding a second stage; there was no vomiting afterwards, the prolonged sleep afterwards was invaluable, saline infusion could be given at once without further incision.

Mr. Percy Sargent said that hedonal had been used in 43 intracranial operations done by him. No deaths had occurred due to the anaesthetic. The operative fatality within the first forty-eight hours, possibly partly due to the anaesthetic, was as follows: In 60 chloroform had been given, with mortality of 20 per cent.; in 29 ether, mortality 13 per cent.; in 31 hedonal, mortality 3 per cent.

Mr. Barrington Ward, in a paper on hedonal anaesthesia, its use in children, said he had employed it in 70 cases, with one fatality, in which lymphatism had been found after death. In only one other had he experienced any anxiety. Hedonal could not be extolled as a safe anaesthetic. It had certain advantages. It was a pleasant anaesthetic for the patient, and free from discomfort. For the operator excellent muscular relaxation was obtained, and the anaesthetist was out of the way. In acute empyemata in children, with hedonal, respiration was quiet, and no explosive coughing occurred. The after-results were excellent, sleep being procured for five to seven hours, and vomiting and acetonuria being absent or never serious. There were not a few disadvantages. Its immediate effect was probably as dangerous as chloroform; the estimation of the depth of anaesthesia was difficult; the slowness with which it was excreted demanded very careful administration, as after over-dosage resuscitation was almost a forlorn hope. The vein might be difficult to find and fit with a cannula. It was contraindicated in short operations, and in the usual list of operations, because of the time consumed. The indications for its use were therefore few. It was especially valuable in brain operations, in cases where the lung condition contra-indicated inhalation anaesthesia, and where the child dreaded another anaesthetic.

Mr. J. F. Dobson quoted records from the Leeds General Infirmary, where 436 cases had been anaesthetized by hedonal. Of these, 44 had died (10 per cent.). During the same time the total operations had been 2,302, with 164 deaths (7.1 per cent.); 1,866 operations were performed by the old methods of anaesthesia, with 120 deaths (6.4 per cent.). He thought that most to be feared were pulmonary oedema, pneumonia, pulmonary thrombosis, infarction of the lung, and shock. The figures showed the frequency of pulmonary complications after hedonal. It was not suggested that in all the cases quoted the death of the patient was due to the anaesthetic; in all it was, in his opinion, a factor, and in many the chief.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Surgery.

Friday, October 25th, 1912.

R. D. Purefoy, F.R.C.S., President, in the Chair.

Subtentorial Decompression.

Mr. A. A. McConnell showed a case of cerebellar tumour for which Cushing's subtentorial decompression operation had been performed. Before operation the patient had headache, vomiting, partial optic atrophy, vertigo, and ataxia. She was also subject to seizures, in which all the muscles were thrown into a state of tonic contraction. The localizing symptoms were: Tinnitus in left ear; diadocokinesia, which was well pronounced on the left side; and constant deviation to the left side on walking. Optic atrophy was also more marked on the left side. Wassermann's reaction was negative. At the operation a tumour was palpated in the left cerebellar hemisphere. There was a free flow of cerebro-spinal fluid from the eighth to the tenth day, when the sinus closed. There had been no recurrence of headache, vomiting, vertigo, or tonic muscular spasms since operation. Hedonal was the anaesthetic used, the patient being in the prone position.

Hedonal.

Mr. H. de L. Crawford reported 30 cases of hedonal anaesthesia. In all full surgical anaesthesia had been

obtained, and no death had occurred that was in any way attributable to the drug or the method by which it was administered. The following complications had developed after operation: One case of slight bronchopneumonia and one of acute oedema. The latter condition occurred in a boy of 17 years, who had been operated on for inguinal hernia. The dose injected was 1,250 c.cm., and the period of deep sleep lasted eighteen hours. The symptoms—fast pulse and fast respiration—subsided on propping the patient up and clearing the air passages. The cases included eight operations for cancer, two for brain compression and eight laparotomies. The greatest advantages noticed with the anaesthetic were the slight amount of blood lost in head cases and the very marked abdominal relaxation. The anaesthetic was contraindicated in the young and vigorous, who were not going to be subjected to severe loss of blood, and who were not collapsed. In the aged cachectic, on the other hand, the anaesthetic had been found most valuable. In the discussion which ensued, Mr. W. I. de C. Wheeler mentioned that he had been using omnopon in simple operations, and so far had found it satisfactory. When given before the administration of ether patients when anaesthetized would remain so for hours. There was a complete absence in every case of anything in the nature of cyanosis. The procedure was very simple and the contraindications were practically *nil*. Dr. Kirkpatrick, in referring to the point that the anaesthetist could administer hedonal in such fashion that he could be out of the way of the operator, said it should not be overlooked that, no matter how the anaesthetic was given, the anaesthetist must have access to the patient's head. Mr. Crawford, in his reply, said that with regard to the danger of cyanosis if the anaesthetist remained at the patient's feet instead of at the head, he found it necessary to stay at the patient's head, and to signal when the tap was to be turned off. He considered the anaesthetic as safe as any other in practice.

ROYAL SOCIETY OF MEDICINE.

Section of Anaesthetics.

Friday, November 1st, 1912.

Dr. J. Blumfeld, President, in the Chair.

Death after Hedonal Anaesthesia.

Dr. G. A. H. Barton, in recording a death after hedonal anaesthesia, said that the virtues of a new anaesthetic were apt to be overestimated. One heard of the successes, but little of the deaths; he had only found three, including the present case, reported in the journals up to date; but these were excessive, considering the small number of administrations. Rumours of unreported fatal cases, however, were rife, and it was in the hopes of eliciting some definite information on the safety of hedonal, and as to the class of case in which it was contraindicated, that he reported this fatality.

The patient was an ill-nourished tailor, who had lately been on strike. There was no complaint of cough, and his respirations and temperature were normal. Nothing was noted amiss with his lungs. The pulse was, of course, rather poor. The operation was opening and draining both frontal sinuses, the posterior nares being first plugged with a sponge. The induction was very quiet in three and a half minutes, and after the injection of 400 c.cm. he appeared to be under. The rate of flow was slowed down, and at the end of five minutes the patient had received nearly 500 c.cm., and operation was commenced. The rate was now cut down to the slowest possible, and remained at that.

The anaesthesia was apparently one of the quietest and best the speaker had ever obtained. The only adverse point about it being that the patient's colour was dusky throughout. This the speaker attributed at the time to the post-nasal plug and to a towel over the mouth causing some obstruction. The operation lasted one and a half hours; 1,000 c.cm. were infused in all. A quarter of an hour before the termination of the operation the infusion was stopped and oxygen administered; this speedily improved the colour. No blood got into the air spaces during the operation, and the post-nasal plug was removed at its termination. The patient when the speaker left was still unconscious, but apparently in good condition. He died two hours after without regaining consciousness.

Dr. Trevor read an account of the *post-mortem* findings, and said he attributed death to heart failure while the patient was suffering from the toxaemia of tuberculosis, such death having been hastened by the administration of hedonal and by interference with respiration through bleeding into the trachea. The man was anything but a fit subject for an anaesthetic, and his privations owing to the strike had reduced him very much. The blood in the trachea was not frothy, and probably some of it was of *post-mortem* origin. There was a mottled or "tigroid" condition of lung.

Dr. Z. Mennell said he had given hedonal in 56 cases of cerebral surgery and not one death occurred within twelve hours of the operation. He had given it 198 times altogether, and at St. Thomas's some five hundred administrations of the drug had been given. It was contraindicated (1) in operations which would cause bleeding into the larynx or trachea, (2) patients with high blood pressure, (3) patients in whom anaesthesia could be obtained as safely and satisfactorily by other means. For cerebral surgery the drug was almost ideal. The prolonged sleep after the operation was often most useful and obviated the necessity of giving a narcotic. The rate at which he now gave the drug was 100 c.cm. every two or three minutes. Rapid administration produced cyanosis, which he regarded as the greatest danger signal in connexion with the drug. The corneal reflex was valueless; the skin reflex on the sole—causing toe movement and drawing up of the leg—was much more useful. One of his early cases died within eight hours of operation (enucleation of a cancerous tongue in an old man), and *post-mortem* a clot 4 in. long was removed from the larynx. By giving ¼ grain of morphine at intervals one patient was able to take as little as 240 c.cm.

Dr. Silk considered that the doses of hedonal recommended and used were too large. There seemed to be a difficulty in giving just sufficient to get the patient under while not giving too much. No doubt hedonal could be usefully employed as an adjunct to other anaesthetics. The advocates of hedonal now abandoned their recommendation of it as a universal anaesthetic, and acknowledged its limitations.

Mr. J. D. Mortimer reminded those present that Dr. Barton published a short note on the case now detailed immediately after its occurrence, and he thought this should be done far more frequently when difficulties and disasters appeared during the trial of new methods. He knew, indeed, of two fatalities not mentioned that evening, and, so far as he knew, unreported, although they happened some months ago.

Dr. Barton replied. He thought that if the reflexes were abolished hedonal became dangerous, and if the skin reflex was allowed to persist that the anaesthesia would be unsatisfactory.

Intratracheal Insufflation of Ether.

Dr. Silk explained the working of Dr. Elsberg's apparatus. He had had difficulty in introducing the catheter, but when once in position the anaesthesia was good. Mr. G. E. Gask and Mr. H. E. G. Boyle showed their apparatus. Mr. Gask said that the apparatus was mainly intended for intrathoracic operations, and the anaesthesia was quite satisfactory. Mr. Boyle explained the working of the apparatus, but, as he had only done 20 cases, he was not prepared to discuss the merits or otherwise of the method. Dr. Shipway showed and explained the working of an apparatus made after the pattern of Kelly's.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

At a meeting on October 24th, Dr. Stanley Riseley, President, in the chair, Mr. G. H. Pooley described a series of cases illustrative of the *Importance of ocular symptoms in general disease*. They included instances of orbital cellulitis being the first observed effect of osteomyelitis, a case in which a localized redness of the eye had led to the discovery of diabetes, a squint which led to a diagnosis of pachymeningitis, and another muscle error which was for long the only warning of the growth of a cerebral tumour. There were also some cases in which embolism of retinal arteries occurred in apparently healthy young women who subsequently developed mitral disease. There were many patients who came for relief from headache by

spectacles, but were found to be suffering from renal trouble or tumour. The paper was illustrated by lantern slides. The following were among the cases and exhibits of other members:—Mr. E. F. Finch: Two boys, aged respectively 8 and 10 years, who had both had a fall three and five months previously. One was a case of *Coxa vara*; the patient had never been laid up, and the mother had brought him merely on account of his limping. The other case was one of *Tuberculosis of the hip*, the first evidence of which had also been limping and pain in the knee. Skiagrams taken by Dr. Rupert Hallam showed separation of the head of the femur in the case of coxa vara, while another series illustrated the different conditions in the region of the hip-joint. Dr. Arthur Hall: (1) A case of *Intention tremor* of about five years' duration in an elderly man. No family history of tremors or other nervous disease. The tremor was quite distinct from the simple senile variety, and in certain respects simulated paralysis agitans. The condition did not seem to be getting markedly worse. (2) A case of *Intrathoracic tumour* in a little boy suffering from diabetes insipidus. The tumour was probably a mass of tuberculous glands at the root of the right lung.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

At a meeting on October 25th, Mr. Freeland Fergus, President, in the chair, Dr. Albert A. Gray gave a lantern demonstration on oto-sclerosis. This condition, he said, used to be called dry catarrh of the middle ear, but the more modern work of German observers had shown that the middle ear was not actually affected, and that the condition was due to an abnormal growth of the bone surrounding the oval window, whereby fixation of the footplate of the stirrup was brought about. A preparation from the temporal bone of a woman who had suffered from oto sclerosis for eighteen months before death (this being the earliest case yet recorded from which specimens have been obtained), showed a ring of diseased bone round the oval window. Microscopic sections of the part showed that the change in the bone was one of rarefication, the bone having become spongy and containing large spaces filled with marrow. The diseased bone stained deeply, and thus was seen to be sharply delimited from the normal bone which formed the capsule of the labyrinth. Nothing abnormal was observable in the organ of Corti. A preparation from a more advanced case showed similar changes in the bone, with, in addition, extension of the disease to the footplate of the stirrup. The sharply defined limitation of the disease negatived the view that the process was inflammatory; the appearance presented was rather that of new growth. On the same ground he would exclude infection from the middle ear as a cause. The disease had been attributed to changes in the blood supply, and was certainly common in association with such conditions as arterio-sclerosis and syphilis, but often occurred independently of them. Probably the view of Manasseh of Strassburg, that oto-sclerosis was a nerve disease, was correct; the lack, however, of sufficient fineness in existing methods of research prevented the recognition of the nerve lesions in early cases. In support of this view were the facts that tinnitus was a very common early symptom, that the disease was nearly always bilateral, and that the conditions which aggravated it were chiefly such as exhausted the nervous system. As illustrating heredity in oto-sclerosis, the exhibitor showed genealogical trees of a number of families, many members of which were oto-sclerotic. In certain of these families the phenomenon of antedating was apparent, and in others was seen the very marked effect produced in a later generation by the union of two strains in which the tendency to oto-sclerosis was only slight. Certain of the family histories suggested also the possibility of an association between oto-sclerosis and deaf-mutism.

The President of the Roentgen Society and Lady Mackenzie Davidson held a reception at Prince's Galleries, Piccadilly, on Tuesday evening last, to meet the Council and [illegible] of the Society. The guests had an opportunity of seeing the pictures in the gallery, and were afterwards entertained at supper.

Reviews.

THE CAUSE OF SHORT SIGHT.

Dr. Levinsohn's little work upon short sight[1] is a well-written account of his views and experiments. It commences with a critical review of the solutions of the problem which have been brought forward, and shows that not one of them adequately explains the pathological process. The book is beautifully printed in clear type upon light paper of a matt texture, giving no reflection of light. The German is easy and straightforward, there is a commendable absence of that rhetorical style which makes some German scientific works so difficult to read, nor are there any contractions which are sometimes even more puzzling to the English translator.

The author takes it for granted that the large mass of statistics now at our disposal show definitely that close study induces myopia, or at any rate causes it to increase in severity. All modern theories are founded upon this fundamental hypothesis. For many years the German authorities have paid great attention to the myopia problem, which is a very serious one in that country, where 50 per cent. of the educated classes are short-sighted. The schools have been well lighted and ventilated, proper desks have been fitted; in fact, nothing that medical science could suggest has been left undone. With what result? Frankly, with practically none! Hermann Cohn, the great advocate of school hygiene in ophthalmic matters, examined a number of medical students in 1866, and again in 1908. In each case he found the appalling percentage of 60, with an average degree of three dioptres. That is to say, that more than half of all German doctors have fairly advanced myopia! Levinsohn points out that if several years of careful prophylactic measures have had no influence upon the incidence of myopia, the hypothesis upon which these measures are founded must be faulty; the measures adopted are, therefore, in some way defective in scope or nature.

It has been suggested that, as near work causes myopia, the acts of accommodation or convergence, or both, must be the responsible factors. It has been assumed that these muscular movements raise the intraocular tension, and so cause a gradual lengthening of the bulb. Stilling singles out the superior oblique for especial blame. The researches of Hess and Heine have, however, conclusively proved that the strongest spasm of accommodation is unable to raise intraocular tension in the slightest. It has also been shown that no action of the external muscles has the slightest influence upon intraocular tension. The same is true for position. If an animal be held head down, the retinal vessels show no congestion and tension remains normal. The changes, too, found in a myopic eye are totally different from those known to be the result of increased tension, whether seen in infantile glaucoma (buphthalmos) or in true glaucoma. We may take it as proved, therefore, that the lengthening of the posterior segment of the eye, as seen in myopia, is not due to increased intraocular tension. It is not caused by the action of any of the intrinsic or extrinsic muscles. The author's theory is simple: When the head is bowed over a book or in writing the eye falls slightly forward, and so pulls on the optic nerve and stretches the posterior pole of the eye. Levinsohn first attempts to show that none of the contents of the orbit, neither the muscles, the nerves, blood vessels, ligaments, or fasciae take up the weight of the eye; it all falls upon the optic nerve, which has not sufficient bend in it to allow the eye to fall forward without tension on the retina. This, says, Levinsohn, causes all the changes at the nerve-head and the gradual stretching of the sclera. It has actually been shown by Birsch Hirchfeld that when the head is held horizontally with the face downwards the eyes come forward 1.7 mm. The author has confirmed these results by the use of a capsule which he placed on the eye and connected with a Marey's drum, and obtained a graphic record. He considers that, as muscular tissue is very elastic, it cannot hold up the eye; in fact, were it to depend upon the

[1] *Die Entstehung der Kurzsichtigkeit.* Von Dr. Georg Levinsohn. Berlin: S. Karger. 1912. (Roy. 8vo, pp 88; Abb. 5. 2s. 6d. or M. 2.50.)

muscles, the proptoses would be 5 mm. in the horizontal position. The author has hung young cats, rabbits, and dogs in bags head downwards for several hours a day for periods as long as ninety days, and in 12 cases he says he has increased the refraction in the myopic sense. The increases range from 1 to 4·5 dioptres. In no case did he find any anatomical changes at the nerve head.

It would appear that the author's destructive criticism of the older myopia theories must be accepted, since none of them account for the facts. But we must at once say that we hold the same view about his own theory. Levinsohn has evidently forgotten that the muscles of the eye are not mere elastic bands; they have a tonus, and when they are divided the eye becomes slightly proptosed, as he himself mentions. The refraction of the animals used was determined by retinoscopy and by the refraction ophthalmoscope, and by several independent observers. We notice that the refraction noted before the experiment varied from 1 D. to 3 D., which is not what one would expect. In any case retinoscopy under such adverse circumstances is not very reliable. It is difficult enough in a human baby to get an accurate estimation; in a kitten it must be immensely more so. We should like to have these experiments confirmed before accepting them with any confidence. But there are objections to the theory upon much wider grounds. The worst forms of myopia are more common among labourers than among the educated classes (Hertel, Otto and Ankele, Siebenlist, Jaspers)—a fact which lends no support to Levinsohn's theory. Again, it is quite common to find extreme myopia up to 20 D. in one eye, the other being normal. Why should the weight on the eye stretch it on one side and have no action upon the other? Again, high myopia in children under school age is far from uncommon, and many of these children have never been at any work. Myopia is far rarer in England among the cultured classes than in Germany: the figure would be nearer 10 per cent. than 50 per cent., and yet our young doctors bend over their work almost as long as the Germans do. The key to the whole problem may be afforded by the fact that since games have been introduced into the Swedish schools myopia has been remarkably less common. The close confinement of German boys, the long hours, and lack of exercise leads to loss of tone, which in many cases causes the sclera to become flabby and distensible; and as it stretches it becomes still more distensible, a vicious cycle being set up. The low forms of myopia are probably due to a slight overgrowth in length. The baby's eye is hyperopic, it gets less hyperopic, but the final stage may be hyperopia, emmetropia, or slight myopia.

CATHOLICISM AND SCIENCE.

It has been considered necessary to demonstrate the fact that men of light and leading in science were also devout Catholics, and found no difficulty in maintaining both positions simultaneously. With this object a book has been published, under the editorship of Sir Bertram Windle,[2] containing biographies of Thomas Linacre, Andreas Vesalius, Nicolaus Stensen, Aloisio Galvani, Laënnec, Johannes Müller, Sir Dominic Corrigan, Angelo Secchi, Johann Gregor Mendel, Louis Pasteur, Albert de Lapparent, and Thomas Dwight. It is interesting to note that of these twelve men seven were members of the medical profession—a fact which is in itself a refutation of the old saying, *Ubi tres medici duo athei*.

The lives are by various authors. Professor Pye, of University College, Galway, deals with Linacre, whom the Royal College of Physicians of London honours as its founder. Linacre was one of the early humanists, and though he has left little or no trace in science, he did much for its endowment at Oxford and in London. He was physician to Henry VIII, but abandoned the profession to enter the Church in 1510. He was the friend of More, Erasmus, Colet, and of all the leading humanists in his time. His writings are chiefly translations from Greek, made directly from manuscripts, into Latin. They include the works of Galen in many volumes. He was also the author of a series of grammars, and it has been suggested that Browning had him in mind when he wrote his "Grammarian's Funeral," apparently on no better ground than that "*Calculus* racked him."

Vesalius is treated by Professor J. J. Walsh, who shows once more that in Italy, under the very nose, if we may say so, of the Pope, dissection was carried on publicly and extensively. The difficulty met with by Vesalius in procuring material in his own country, and sometimes in Italy, was due not to religious feeling, but to the sentiment that up to the passing of the Anatomy Act in 1832, made "resurrection" the chief source of supply of dissecting-rooms in this country. Dr. Walsh takes pains to refute the inferences of Sir Michael Foster and others from some passages in Vesalius's great work that he was a sceptic. He was, we take it, one to whom Don Pedro's description of Benedick in *Much Ado About Nothing* might have been applied: "For the man doth fear God, howsoever it seems not in him by some large jests he will make." This was a type very common in the sixteenth century, and is illustrated by Rabelais and Erasmus, who, however freely they may have spoken, never openly severed themselves from the Church.

Stensen, whose life is written by Sir Bertram Windle, was a remarkable man and had a remarkable life. He was by birth a Dane, and as a student at Copenhagen discovered the duct of the parotid gland, which still bears his name. He was professor of anatomy at Padua, and afterwards at Copenhagen. He extended his scientific researches to geology, in which he is now recognized to have been a pioneer. During his stay in Italy he became a Catholic, and later he took priest's orders. He afterwards became a bishop in Germany, where his labours as an ecclesiastical administrator left him no time for the prosecution of his scientific work. Of Laënnec an appreciative account is given by Professor Collingwood, of University College, Dublin. His faith and piety were no less remarkable than his intellectual power. It would be superfluous here to give a summary of his work, which is so well known. An account of him was given in the Journal of July 6th, 1907. We may call the attention of the writer to the fact that Laënnec's Christian names were not "René Théodore" but "René Théophile Hyacinthe." Johannes Müller is dealt with by G. A. Boulenger, F.R.S. Born at Coblentz in 1801, he first thought of becoming a priest, but after consideration decided on medicine. Of his work as a biologist it would be superfluous to speak. He was the master at whose feet sat most of the physiologists of the first half of the nineteenth century. Though some of his writings show a somewhat materialistic tendency of thought, he never dissociated himself from the religion in which he was brought up. The life of Sir Dominic Corrigan is told by the late Sir Francis Cruise, who knew him well. He was an eminent physician who contributed something to medicine, but he seems rather out of place among men of science.

Thomas Dwight succeeded Oliver Wendell Holmes in the Chair of Anatomy at Harvard. His anatomical work had reference largely to variations in the human skeleton. He was President of the American Anatomical Association, and his election to that position shows the value placed on his scientific work by his colleagues. He was also a man of the deepest religious faith, and an active controversialist on behalf of his church when circumstances seem to call for it. Professor McWeeney, in his account of Pasteur, gives one of the clearest accounts of the scientific work of that great investigator we have ever seen. The Rev. G. A. Elrington gives a lucid summary of the work of Mendel. Here, as in the case of Stensen, one cannot help regretting that the scientific work of such a man was interrupted by the press of official business thrust upon him as Abbot of an Augustinian monastery. Professor William Bergin, of University College, Cork, gives a short account of Galvani and Volta, recognized pioneers in electrical science. Father A. L. Cortie, S.J., himself an astronomer of note, records the achievements of the famous Jesuit astronomer, Angelo Secchi, and Father John Gerard briefly relates the life of Lapparent, a prominent geologist, who in 1907 was appointed Permanent Secretary to the Académie des Sciences in succession to Berthelot.

The book is illustrated with portraits.

[2] *Twelve Catholic Men of Science.* Edited by Sir Bertram Windle, M.D., Sc.D., F.R.S. London: Catholic Truth Society. 1912. (Cr. 8vo, pp. 252.)

CAUSE AND TREATMENT OF GALL STONES.

THIS monograph on gall stones, by Dr. GRUBE and Dr. GRAFF,[3] is most appropriately the joint work of a physician and a surgeon, for if the diagnosis, prophylaxis, and early treatment of the disease usually fall to the former, it is ultimately upon the latter we must generally rely to effect a permanent cure. In their preface the authors say that their object in writing is to afford practitioners a guide to the recognition and a counsellor in the treatment of this very common, most painful, and distressing disease, and in our opinion they have written a book which fulfils their aim, although perhaps it might be said that the recent valuable contributions on this subject by Professor Hans Kehr (BRITISH MEDICAL JOURNAL, July 28th, 1906, p. 199), Aschoff and Bacmeister (BRITISH MEDICAL JOURNAL, May 21st, 1910, p. 1237), and Ludwig Arnsperger in *Albu's Encyclopaedia* (BRITISH MEDICAL JOURNAL, May 18th, 1912, p. 1134) fairly occupy the ground. Of the books to which we have just referred, that of Aschoff and Bacmeister is the most important, since it would revolutionize the doctrine of the etiology of gall stones as taught by Naunyn. The authors of the present volume accept unreservedly the new teaching, which is that pure cholesterin stones may form in aseptic gall bladders, but that all other forms are the result of infection, and that the inflammation is not the consequence of the gall stones, but that these are the result of an inflammation set up by bacterial infection. They are convinced that the best operation is complete removal of the gall bladder with or without drainage of the bile passages, and they say that while the ideal of a mortality of 0 per cent. can, perhaps, never be attained because of the risk from pneumonia, embolism, collapse and anaesthetic accidents, yet the operation will have the most favourable results if it is not too long delayed. At the same time they would reserve surgical treatment for those cases which have not yielded to medical treatment or those in which the condition is undermining the health and happiness of the patient. They give the following indications for operating: (1) Chronic or recurrent pains which are so severe that the patient's capacity for work and enjoyment of life are interfered with; (2) all acute inflammatory processes which point to a severe infection, so that peritonitis, perforation, and cholangitis are to be feared; (3) all chronic inflammatory processes with septic symptoms; (4) chronic obstruction of the common bile duct; (5) cases which suggest the idea of cancer. They give the following as the conditions which an operation must fulfil: (1) It must remove the cause of the disease, especially the inflammation; (2) it must open up the passage of the bile ducts; (3) it must, as far as possible, prevent the new formation of gall stones. Dr. Grube is somewhat sceptical of the value of specific remedies for the solution or expulsion of gall stones, and relies more upon diet and the free use of alkaline mineral waters. In infection of the gall bladder following typhoid fever he urges the persevering use of urotropin, which is excreted by the bowel, and has the specific power of killing the typhoid bacilli.

THE UNDERWATER INTERNAL BATH.

DR. ANTON BROSCH, the author of a monograph on the "underwater internal bath,"[4] is of opinion that the tendency of modern therapeutics is to revert to the use of natural forces for the cure of disease. So far, internal water treatment has been chiefly confined to its use by drinking and enemata or irrigation, but lately both gynaecological examinations and massage under water have been introduced with success, and he is of opinion that there is a great future in store for the underwater method. Any increase of pressure inside the body causes discomfort or pain, but when this is compensated by increased external pressure the patient feels nothing, and large quantities of fluid penetrate high up into the bowel under low pressure, so that it may be used without risk of over-distending the bowel or tearing adhesions, and even in the presence of inflammatory adhesions, exudations, or peritonitis. He claims that his method is not only not disagreeable, but produces a marked sensation of well-being. It may be used with any kind of water, hot or cold, or hot and cold water may alternate. He recommends its use for all neurasthenic conditions, especially of sexual origin, for constipation, and even for cancer of the bowel. He believes it is more likely to conduce to the prolongation of life than Metchnikoff's sour milk treatment. The objects to be attained are: (1) The giving of an enteroklysm by permanent irrigation; (2) this must be carried out under water; (3) all risk of high pressure or of injury through the quality of the irrigation stream must be avoided; (4) the communication of infectious diseases must be prevented; (5) there must be no soiling of the external bath water; (6) insanitary contamination of the bath waste water must not be allowed. These conditions are not easily realized, but Dr. Brosch has invented an apparatus which he calls the "enterocleaner," a saddle-shaped pan upon which the patient sits in the bath; the pan communicates by one tube with an irrigation pail, and by another with a closed pail, which receives the contents of the bowel. The mechanism is so arranged that the patient sitting in the bath can regulate its action by himself. The author claims for this method the good effects of such a radical operation as that of Arbuthnot Lane, without any of the danger necessarily attending so grave a surgical operation.

MEDICO-LEGAL EXAMINATIONS.

THE small volume by Sir JOHN COLLIE on *Medico-Legal Examinations and the Workmen's Compensation Act*[5] (1906) will be useful to those medical men who have not had many opportunities of acquiring experience in the examination of claimants for compensation for damages. The author has gained his knowledge by being an examiner to a large corporation and to an insurance office, and the many entertaining examples from his routine work which he relates clearly display his sagacity. The book contains chapters on the detection of fraud, contracting out, a summary of the compensation laws, the intention of the Workmen's Compensation Act, and proposed amendments. There is neither table of contents nor index, and the book would be improved by the addition of these. On the subject of hernia the author is informing; he states that with a perfectly-fitting truss any one can do manual labour. If, however, he were an employer of labour he should never employ any one with a hernia, even though he wore a truss, for workmen are careless and the day arrives when the truss does not fit; strangulation may occur and the employer will be held liable. An announcement which ought to attract the attention of operating surgeons—for it is no doubt founded on personal observation—is that "one is loth to recommend operation for radical cure, as some 15 to 20 per cent. of attempted radical cures are failures." This is interesting, as some authorities say that the recurrences should be under 5 per cent. for inguinal hernias.

The author alleges that medical certificates of unfitness for duty are too easily procurable, and he holds that greater use should be made of medical referees, particularly at the arbitration, in view of the conflicting statements of partisan witnesses. Sir John Collie has many suggestions as to the amendment of the Workmen's Compensation Act, of which doubtless notice will be taken in the proper quarter when the question of an amending Act comes before the House of Commons. For example, he thinks there should be a right of appeal from the decision of a medical referee to a board of three medical referees. In Schedule 1, Section 15 of the Act, which sets out that the county court judge may refer a matter to a medical referee on application being made to the court by both parties, he thinks that the words "either party" should be substituted for both parties. We have the impression that the words stood so in the bill when it was introduced.

[3] *Die Gallensteinkrankheit und ihre Behandlung vom Standpunkt des inneren Mediziners und Chirurgen.* Von Dr. Karl Grube, Prof. in Bonn, und Dr. Henry Graff, Prof. und Dirigierender Arzte der [illegible] des Marienkrankenhauses in Bonn. Jena: [illegible] (Roy. 8vo, pp. 178; mit 5 lithogr. Tafeln und [illegible] M.)

[4] *Das unterwasser Innenbad.* Von Privatdozent Dr. Anton Brosch, unter mitwirkung von Dr Otto Von Aufschnaitter. Zweite vermehrte Auflage. Leipzig und Wien: Franz Deuticke. 1912. (Roy. 8vo, pp. 118; Abb. 10. M 3; K. 3 60.)

[5] *Medico-Legal Examinations and the Workmen's Compensation Act.* By Sir John Collie, M.D., J.P. London: Baillière, Tindall and Cox. 1912. (Demy 8vo, pp. 128. 5s. net.)

On the matter of the use of the medical assessor, the author is a strong advocate of freer facilities being given to either party to a suit to have a medical assessor sitting with the judge. The book will no doubt be serviceable as an elementary treatise on the subject with which it deals.

NOTES ON BOOKS.

In a leather-clad volume of vest-pocket size entitled *Prescribers' Formulary and Index of Pharmacy*[1] Mr. T. P. Beddoes of the London Skin Hospital has endeavoured to supply the information that a prescriber is likely to need and to obviate any uncertainty as to what drugs any ordinary pharmacist is likely to have in stock. The matter, which is well arranged, falls into four parts, internal, regional, and external treatment, and synthetic preparations, definite prescriptions of proved value in addition to doses of individual drugs being supplied. It is a favourable specimen of volumes of this order.

A sixth edition has been published of Miss Oxford's *Handbook of Nursing*.[2] The matter throughout has been carefully revised by, among others, certain members of the staff of Guy's Hospital. It is as an offspring of the training of that institution that the book may be regarded, since its foundations are more or less extensive notes of the lectures on nursing, surgery, and medicine, delivered to probationers thereat. Although the book is very readable as a whole, the information supplied is at times distinctly sketchy and not very systematically arranged.

[1] *Prescribers' Formulary and Index of Pharmacy.* By Thomas Pugh Beddoes, M.B., B.C.Camb., F.R.C.S.Eng. London: Baillière, Tindall, and Cox. 1912. (Pott 16mo, pp. 144. 2s. 6d. net.)

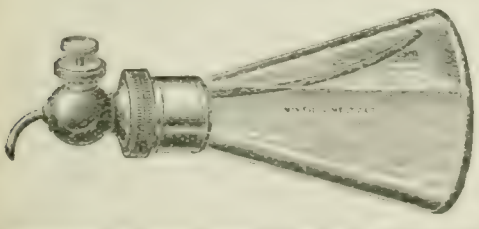
[2] *A Handbook of Nursing.* By M. N. Oxford, of Guy's Hospital. Sixth edition. London: Methuen and Co. 1912. (Cr. 8vo, pp. 327. 3s. 6d. net.)

MEDICAL AND SURGICAL APPLIANCES.

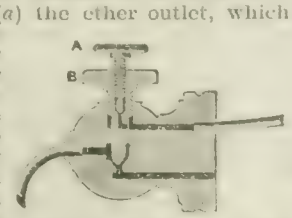
Continuous Drop Bottle for the Administration of Ether by the Open Method.

Mr. L. Ernest Acomb, M.R.C.S.Eng., L.R.C.P.Lond., D.P.H.Oxon. (Honorary Anaesthetist, Newport and County Hospital), has devised a drop bottle to meet the essentials of a good bottle, which are, he considers:

(*a*) That when not in use there should be no escape of ether; (*b*) that it should be able to be carried in a bag without leaking; (*c*) that it should give a continuous drop of the required size at equal intervals, these intervals being made longer or shorter at the will of the anaesthetist; and (*d*) that the bottle should be large enough to obviate frequent refilling, and should be of a convenient shape.



The bottle, of glass, is of a capacity of about seven ounces, is conical in shape, has a wide base, has no shoulder, so that the ether is entirely used up, and the ether surface always covers the outlet. A metal collar is firmly fitted to the neck of the bottle, over which the upper portion is screwed. The upper portion consists of a solid bulb having two channels in it, (*a*) the ether outlet, which projects beyond the bulb as a small tube, and (*b*) the air inlet. The amount of ether allowed to flow through the outlet is regulated by the screw B. This screw is so adjusted that a drop of any size may be obtained at desired intervals, and when screwed up it allows no ether to flow.



The air inlet is obtained from the flattened screw A, which pierces B and allows air to enter through the air inlet tube projecting to the bottom of the bottle. To use the bottle, the air inlet screw A should first be loosened, then the controlling screw B regulated. The bottle is made by Messrs. Mayer and Meltzer.

THE MOTOR SHOW.

FROM THE MEDICAL MAN'S POINT OF VIEW.

By H. Massac Buist.

The eleventh yearly International Motor Car Show promoted by the Society of Motor Manufacturers and Traders, and opened at Olympia, Kensington, on November 8th, under the patronage of the King, has a special message, or perhaps one might say series of messages, for the medical man, whose requirements may be considered to lie almost wholly along the line of products for those of moderate means. The first thing he must be sure of if he gets a car of any sort or size is reliability.

The sum of money at his disposal in the way of initial expenditure on the acquisition of a vehicle has often been such as to lead him in the wrong direction of goods that are merely cheap in nominal price without possessing those qualities of enduring service which alone can make them of value to the owner. Hitherto, let us bear in mind, the limited scale of output of the average manufacturer, combined with the tendency to divide it up between a wide range of models, has resulted in the impossibility of greatly reducing the price, while during the past twelvemonth, strikes and other troubles apart, the coming into force of the Insurance Act alone is adding to the cost of producing cars to an average extent of about £4 a chassis in the case of home-made goods. Further, in cars of high quality, no matter what the power, there is a fairly general tendency not to reduce but slightly to increase the cost. Analysis proves, however, that in such cases, more is always being offered for the increased cost either in the way of additional accessories, or of proportionately larger or more powerful engines, or in the standardizing of larger sizes of tyres, and so forth, so that in point of fact there is no case in which a 1913 car is dearer than the current types; on the contrary, in the majority of cases, if we compare this year's with next season's types, it is to find that the newer patterns provide much better value for the money.

The Outstanding Note of the Exhibition.

Possibly the ordinary visitor to the Motor Show could go to and come away from it without gleaning the least hint of what was of most significance in it, alike to the prospective purchaser and to the motor industry in Europe. He would see each maker's wares, including those of the Wolseley Company, which he would think very good value, and would merely wonder why the smallest 12-h.p. model was no longer marketed. The brief explanation is that this, our largest motor carriage manufacturing concern, owned by Vickers, and which hitherto has followed the general practice in providing a many-model programme, has abandoned that and is devoting the whole of its shops to the production of two models, being besides prepared to lay down, in batches of only fifty at a time, a very large six-cylinder type. When it is had in mind that the Wolseley shops at Birmingham can be measured by the half mile, it will be appreciated that for all practical purposes this, our largest firm, is concentrating on two models only. Moreover, the lesser of them is not the 12-h.p. but a 16–20-h.p., worm-driven, four-cylinder machine embodying various improvements on the 1912 pattern, and possessing, besides, better coachwork than has hitherto been fitted, as well as the necessary provision for the equipment of a self-starting apparatus; yet the price of the whole is only a few pounds more than the cost of the now abandoned (1912) 12-h.p. type. When the model offered for 1913 has been examined by men in the motor trade, not a few have spoken of it as being marketed at a cut price; but this is quite incorrect, for there is as good a profit on it as on any vehicle the Wolseley Company has yet put on the market. There has been no elimination of features from the design, and as much material and workmanship as ever goes to the production of the vehicle, while more expensive automatic machinery than before has been included in the factory equipment for the purpose of producing it, so that the sole explanation of this offering of so much better value for money is that, instead of turning out the type by a hundred or two at a time, a minimum of four thousand identical vehicles is to be produced at the factory at the end of twelve months; this means that the usually wasteful period of "turning over," as it is

called, is eliminated, and the works are to be kept going at full output for every week in the twelve months to the effecting of further economy.

A Fresh Way to give Better Value.

But it were quite erroneous to conclude that this is a copying of American methods. On the contrary, it is everything that is not done there, as anybody might gather who considers the size of the Wolseley shops, for they occupy about as much ground as so-called American motor car factories whence issue machines at the rate of tens of thousands a year. The explanation is that the American principle, particularly in cheap car production, would be more correctly described as assembling from parts produced by specialists than as manufacturing cars, whereas the British method consists in producing practically every part of a car at the works whose name it bears. Hence there is no possible comparison, nor any attempt on the part of the British industry to reproduce American scales of output. It has been very hard to convince the British motor manufacturer that if he had the pluck to try it he would find he had a market for a thousand cars where he imagined he had an opening only for a hundred; and it remains true that we have not markets for ten, twenty, thirty, forty, and even a hundred or more thousand cars of a single type in any given twelvemonth, which is the situation that obtains in America. Why none should fail to take note of the Wolseley development, therefore, is that it gives the European public the true advantage that should come to it from the competition between the European and American motor industries, and a solution of the problem, from a manufacturer's point of view, of how to keep the industry going in this country in legitimate fashion and without embarking on anything so disastrous and useless as a policy of imitation. We may take this Wolseley example as illustrating the all-important point of a vehicle designed in a particular country to suit the requirements of the conditions under which it is to be used. Moreover, it will be found during next and the following seasons that the move which this concern has just made will practically settle the future policy of other motor manufacturers in Europe. Already by far the majority of them are inclining to give up the many model policy which divides an output of a thousand or fifteen hundred cars between anything from four to eight models. All the firms that have made most distinctive hits lately are content with either three or two-model programmes, as instance under the former head the Sunbeam concern, which has revealed itself to be the producer of the outstanding car of the last twelve months in competition, and under the second heading the Crossley firm of Manchester, which has also come to the front in another way since the holding of the last motor show. Time was, of course, when manufacturers were feeling their way, and when the motor business was a much more personal affair than it is to-day; hence they found themselves tempted to try and produce cars of every conceivable size and power, so that there might never be an excuse for them to miss an order. To-day the error of that policy is beginning to be realized all round, for surely it is impossible that any one firm can expect to give the best value for money in the matter of every size and make of car. This is the age of specialization in motor cars as in other affairs, and the realization of the fact is what will make the motor season of 1913 a historic one; incidentally it will prove of greater service to the medical man than any it has been possible for the industry to render him in the past.

A Possible Objection Answered.

The medical man is unwise unless he treats his motoring as a strictly business proposition, hence he may be [illegible] to raise a very practical objection against what [illegible] all the fruits of this new era in car production. Thus he may say: "Good, I can manage to pay the extra few pounds to get a larger size of car and a more perfect vehicle than the type that was previously within the range of my purse; but it will be of little use to me because I [illegible] the extra cost of running it." It is safe to [illegible] that if there is any section of the motoring community which, as a whole, uses its cars in a reasonable manner, it is the medical fraternity. The vehicles are needed for strictly business service, which is quite a different thing from scorching. Let us suppose that the medical man finds that a given 12-h.p. car will do all in the matter of speed that he needs, and that he is faced with the proposal to get a 16-h.p. for only a few pounds more. Being a quite up-to-date machine embodying the latest refinements, provided the owner is prepared to drive it in the same manner as the 12-h.p. machine in regard to accelerating the rate at which he climbs hills and the manner in which he applies the brakes, there need not be a five-pound note a year difference in the outgoing or running costs of using the larger and more powerful vehicle for doing precisely the same amount and kind of work, and, as such a machine will be able to do that work so very much more easily than a less powerful one, it follows that there would be a saving in the actual wear and tear bill in using the larger vehicle. And the owner has all the time the advantage of enjoying the use of a more luxurious machine, for a car never runs better than when it is working well below its maximum power. He has, besides, that extra body accommodation which is possible with the larger chassis. The cost, in other words, is the same if the conditions of use are reproduced exactly; but if the owner wants to use the larger powered car as near to the top of its performing as he would if using the lesser powered one, and wants to travel about the country at 30 per cent. greater speed and very possibly to put 25 to 40 per cent. on to mileage year in and year out, the costs will go up very appreciably. But that is a matter entirely optional with the owner.

The Age of the Self-starting Car.

These remarks have been necessary because we are arrived at the time when we must deal with quite a fresh phase of motoring, and one which furnishes not only the key to the meaning of the present exhibition, but which will enable the medical man to understand also the developments which will follow in its train next year and the year after. Compared with this, in fact, the other features of the show are of minor importance; yet, happily, some of them are of most direct interest to the profession. It may be recalled that last year I wrote in these pages of the coming of what may be styled the first positive self-starter in the combination Cadillac electrical device which started the engine, fired the mixture in the cylinders, and lighted the vehicle. Though stowed away in an insignificant corner of the building, that exhibit constituted the outstanding feature of the show, as may be judged from the fact that in the twelve months that have since elapsed this device has proved its worth in the hands of 12,000 users, as well as under a Royal Automobile Club test of an unprecedentedly severe character, in that it consisted first of choosing three cars at random from a consignment and of starting each of them up 1,000 times by the electrical energy stored aboard them, and without affording any opportunity, such as a run along the road, for those supplies to be replenished; yet there was not a single falter. Then to try the efficiency of the lighting and firing system the machine was taken over a period of a fortnight up and down the highways of the country with the full set of lights on all the time, including the whole of the luncheon intervals—a test to which no car electric lighting system has ever been submitted. It came out absolutely all right, the only thing that happened being that one or two bulbs blew out; they, of course, have nothing whatever to do with the plant. We see bulbs blow out on tube railways, as well as in our own homes, any day. Moreover, this device is now brought forward in a further improved form which reduces its weight, size, and number of parts. The single voltage system has been successfully adopted in place of the double variety, thereby eliminating the controlling switch, much wiring, and other parts. The voltage regulator governs the charging of the battery in automatic fashion, reducing to a minimum the attention needed on the part of the user.

Independence for the Medical Man.

The net result of this development as concerns the industry in general was that at the motor show held in America in the early months of this year nearly every manufacturer found it necessary to fit some so-called starting device, the vast majority of them proving to be utter failures, a circumstance probably to be accounted for in

large measure by the fact that they had not been sufficiently tested. Be that as it may, as regards motors marketed in Europe, the influence of the self-starter—which is of not a little importance to the medical man, since with the advent of detachable wheels, car maintenance contracting businesses, and so forth, it is now possible for him to dispense with the services of a motorman to accompany him on his rounds—is apparent at the present show in a variety of directions. Thus the Lanchester concern comes forward with an apparatus consisting of a dynamo mounted on a bracket projecting from the brake casing and chain-driven off the transmission shaft. The dynamo spindle is fitted with a pinion meshing with teeth cut on the flywheel. The pinion is slid in the gear with these teeth by means of a starting lever placed conveniently to the driver's left hand, the ignition of the engine being automatically retarded whenever this lever is worked, so that should it have been left advanced by any oversight no harm can be done. After starting up the motor the dynamo charges the cells and, when needed, serves to light the car. Another device is brought forward on the six-cylinder White petrol car; all that is necessary is for the driver to pull a lever on the dash, whereupon a dynamo that is driven by chain from the magneto shaft starts the engine, the batteries furnished being powerful enough to supply current sufficient for turning the motor over for about half an hour. As soon as the engine begins running under its own power the speed of the electrical starting motor is increased, whereupon it becomes automatically a generator for recharging the batteries up to the necessary amount. These batteries also supply the current necessary for lighting the vehicle. It will be noted, however, that both these devices are of a supplementary character, and do not fire the mixture in the cylinders.

In another direction there is a simple spring device introduced by the Star firm, and so designed that should it fail to start the motor before its energy is expended a crank can be put in in the ordinary way, and, by the employment of reduction gear, the spring can be wound up with no more force than a child can easily exert, whereupon it is ready to do its work again. This device does not turn the crank-shaft many times, but while it is working it turns it very fast—at 300 revolutions a minute—so that it is guaranteed that any engine in proper working order that can be started up on the magneto by hand would be easily started by this apparatus.

Variations of the Compressed-air System.

The Newton and Bennett self-starter of the compressed-air sort has long been a feature of the S.C.A.T. machines, on which it is standardized, as is another air-compressor device on the Adams cars; but new apparatus of this sort is brought forward this year by the Wolseley Company, which combines the device with an automatic tyre inflator. The minimum pressure which will start the Wolseley motor when warm is about 50 lb. to the square inch, but when cold it is advisable that the minimum pressure available should be 100 lb. to the square inch; therefore a maximum pressure of at least 300 lb. is provided for in the device, the apparatus consisting of a compressor, a reservoir, a distributor, a valve and junction box, and dashboard control mechanism. The compressor is of the two-cylinder vertical type. When fully charged the reservoir is capable of starting up the car about thirty times.

Yet another variety is the Sunbeam engine starter, which takes the form of an air engine set at the rear end of the near side above the engine crank chamber, and which, by moving a pinion into engagement with teeth cut on the flywheel, couples up the air engine with the car engine. The air-compresser itself has its crank case formed in one with the lid of the gearbox. It should be pointed out that the compressed air is not admitted to the cylinder of the air engine, which works under entirely normal conditions when rotated by the air engine, precisely as though it were being cranked by hand, though the rate of turning is much faster. Thus there is no need for valves in the cylinder heads, or of distributing valves, such as is required on the ordinary atmospheric starter; while, when the car is running, none of the parts of the air starter are in motion, both air-compresser and air engine being then disengaged from their drive.

Another variety is the Delaunay-Belleville device, which takes the form of four horizontal air cylinders opposed in pairs, and set transversely athwart the frame of the car between the two dumb-irons immediately in front of the radiator, where the appearance is not greatly improved by a block of metal, though that is doubtless a minor matter.

What is of significance is the fact, illustrated at this show, that one after another of the leading motor manufacturers are realizing that the age of hand-cranking is rapidly passing, and that serious, varied and extensive practical efforts are being made to evolve the self-starting motor car. The welcome sign is that in another twelve months every maker will be coming forward with self-starting motor cars on some principle or other, the more so in that we see already that it is possible to do this in a variety of ways, each quite practical of its kind. That is surely good enough to go on with. We can wait a few seasons before determining which shall be the ultimate type or method.

Of Mechanical Developments.

Turning now to general mechanical tendencies, changes in these are not numerous. Mors comes forward with a new type of so-called valveless motor: the Germaine firm from Belgium produces a 20-h.p. model equipped with a Daimler-built form of double sliding sleeve engine, and the 40 to 50-h.p. Peugeot car has a combination sleeve and poppet valve motor: while Argylls introduce a more popular powered single sleeve valve engine, dispensing with the junk ring hitherto deemed essential to sleeve valve engines, and Darracqs introduce two more popular rotary-valve controlled engines. It cannot, however, be said that the poppet valve engine ceases to enjoy what is practically a monopoly of patronage, while certain practices characteristic of it are being incorporated into other types. Thus, in the first place, from the very beginnings of competition work in the years when Mors and Brasier were successively supreme the cylinders were off-set in relation to the crank-shaft, a practice which we likewise find embodied in the standard design Sunbeam, which has never met a defeat in any of the many big competitions and world's records it has essayed this season. Hence it is not surprising to see that quite a number of cars—including, for example, the new Belsize, the Singer, some Peugeot models, and an Excelsior car—also have the cylinders off-set in relation to the crank-shaft, while perhaps more interesting still is the fact that in the new Daimler double sliding sleeve valve motors this system is introduced to the extent of 13 millimetres in combination with longer connecting rods and a longer travel for the sleeves, so that there is not only more perfect closing of the ports at slow engine speeds, but also a gain in smoothness of working, therefore of efficiency and absence of vibration through reduction of side-thrust and friction. One of the features of last year's practice, too, was the introduction by British makers of silent chains for working the distributing gear in the guise of cam and magneto shafts as well as water circulating pumps on poppet valve motors, a system first found possible by Daimlers with the sleeve valve engine type. This is now adopted by quite a number of poppet valve firms, including Cadillac from America, Adler from Germany, Excelsior and Métallurgique from Belgium, De Dion and Vinot from France, and Vauxhall and Swift in England, so that we see that the sleeve-valve engine is gaining from poppet-valve engine practice, and the poppet-valve engine is gaining from sleeve-valve engine practice, which is as it should be. The Darracq rotary valve, moreover, is now chain-driven.

Power Transmission, Suspension, and Coach-work.

A few years ago there was a great vogue for the worm drive, which has gained extra adherents this season, too, in the new 30-h.p. Sheffield-Simplex model, as well as the 15 to 20-h.p. Armstrong-Whitworth, which exploits the overhead type, and sundry French makers now, including the small Brasier car, the 50-h.p. eight-cylinder De Dion, and, at option, the 25-h.p. four-cylinder and the 26-h.p. eight-cylinder types, as well as the Grégoire. But it would be quite erroneous to conclude from this that the bevel drive is going out. In fact, it never looked more like holding its own, for it has now been proved possible to

make on commercial scales bevel gear that does not undergo any distortion in the process of case-hardening. It is admittedly a more efficient form of drive, provided it can be manufactured perfectly accurately in order to make it as equally silent working as the worm variety, though in the case of very small bevel gear with what one might style only a few notches on the tail of the propeller shaft, there is, as M. Brasier points out, some advantage, instead, in having the worm drive.

There is not much change in power transmission, though, particularly in the case of smaller cars, quite a number of manufacturers are reverting to the principle of superposing the gear shafts instead of placing them in a common plane. This undoubtedly makes for enhanced silence of working. In regard to braking, the areas of the surfaces have been made of still larger proportion as an almost general practice, while the means of hand adjustment is being made more ready and accessible. Daimler puts the hand brake lever in a gate, to give the driver the opportunity of choosing whether he will declutch or not when the rear wheel brakes are applied. By reason of the mania for low-seated streamline bodies, the tapered bonnet and dash, with the petrol tank placed in a dust-raising position behind the back axle, is unfortunately becoming a somewhat general practice, for it is undoubtedly a retrograde step. Happily we may regard the development as purely in the nature of an ephemeral vogue.

Suspension has not undergone many changes. Quarter elliptic, lark-heel springs are evidently going to be used fairly widely for the little cycle type of car that is coming along—as instance, Peugeot and Humber practice—among others which will be further illustrated at the Cycle Car Show to be opened on November 26th in the same building as the current one, while, though the Wolseley Company is among those that have taken out patents for cantilever springs for big-powered cars, it does not show any at Olympia, nor does Rolls-Royce, though it has standardized its cantilever sort for 1913, and has this form of suspension on its trials car outside the building. There has been, however, a considerable spread of the practice of carrying the back springs below the axle, on the system that, for worm-driven cars from below the back axle, has three big advantages, and which has long been used by Renault with bevel drive. It was standardized by Wolseleys with worm-drive some time ago, while Daimlers and Peugeot are among the firms taking newly to it, and De Dion may be described as reviving it, in that it was a standard practice of their cars in 1899, when it was abandoned because the public did not appreciate the gains of it in those early days. As the system is likely to grow, it may therefore be pointed out now that by this means, with worm-drive below the back axle, there is less movement and consequently wear of the universal joints on the propeller shaft, less vibration and easier springing on rough roads, and less wear on the back tyres, the reason being that, with the spring attached below, springs and propeller shaft are parallel and spring about the same lateral centre in the case of worm-driven cars, hence the rear axle rises and falls in a natural arc.

Lastly, there are notable developments in coach-building by Lanchester, who builds up wooden bodies on a metal frame, so that coach-work, as well as car, have frames each fitting the other perfectly; and by the Birmingham Small Arms firm, that builds up its bodies in pressings of steel, mounted and cross-tied on a metal frame and standardized in four colour schemes. The gains of both systems embrace the possibility of replacing damaged doors, panels, or coach-work parts by return of post from stock, the end of the era of the coach-builder who makes his parts fit by chopping and paring with a chisel.

Features of individual car exhibits will be dealt with in subsequent articles.

The Show opens on Saturday, November 16th.

The Lord Mayor of the city of Vienna who were recently on a visit to London voted on their return home a sum of 5,000 kronen to be sent to the Lord Mayor to devote to any charitable object in the City that he pleased. Sir Thomas Crosby, in virtue of this discretionary power, has sent the whole sum to St. Bartholomew's Hospital, which at present is urgently in need of funds. The sum in English money is equal to about £206.

DISCUSSION ON HEREDITY AND DISEASE AT THE PATHOLOGICAL SOCIETY OF MANCHESTER.

AT a meeting of the Pathological Society of Manchester on October 9th, over which Mr. J. W. SMITH presided, a discussion took place on heredity and disease.

The subject was introduced by Dr. ARCHDALL REID, who, after some preliminary remarks on the nature of evidence and proof in biological questions, said:

Let us see whether we cannot reach a reasonably certain conclusion about the problem in heredity which most concerns us as medical men—namely, the problem as to whether parental disease tends to render degenerate the offspring subsequently born. By the word "degenerate" I mean innate degeneracy dependent on germinal change, of which the proof is that it tends to be transmitted to descendants.

Likenesses and differences between parent and offspring are of two kinds—inborn and acquired. The inborn likenesses and differences are due to germinal likenesses and differences. The acquired likenesses and differences arise because parent and child have developed under similar or dissimilar conditions. Inborn differences are usually called "variations"; acquired differences are termed "modifications."

Darwin noted that offspring tend to vary from their parents, and that in every species a large proportion of offspring perish. Thereupon he made the reasonable inference that there was natural selection—that is, he supposed that, as a rule, the individuals who had varied so that they were well fitted for the struggle for existence had carried on the race, while those who were worse fitted were eliminated before they had contributed their quota of offspring. On this inference he founded another equally reasonable—namely, that it was this natural selection of the fit and elimination of the unfit that had caused species to differentiate from ancestral types and from one another.

Let us see whether we cannot substitute observation for inference, and so establish Darwin's hypothesis. The evidence I am about to bring forward should particularly appeal to medical men; it is by far the most decisive evidence known to me—indeed, it is the only decisive evidence in existence. Darwin, his followers, and opponents drew their evidence from plants and lower animals. It is impossible to observe whether natural selection does or does not occur among wild types. We are not sufficiently familiar with the details of their lives. Consider our most familiar animals and plants—for instance, sparrows, house-flies, and the grasses of our lawns and fields. How little we know about them; so little that we cannot observe whether any particular kinds of individuals tend to be weeded out or to survive. But now consider our own human species with every detail of whose existence we are familiar. Man has been termed by naturalists Nature's rebel son who has escaped from selection. You know from your own experience that this is not true. You have observed many human beings perish young, even in infancy, while others survive and see their grandchildren. Of what do those who have not contributed their quota to the species die? As you know, in the vast majority of cases, of disease. What kind of disease? Common experience and public health statistics all over the world tell us mainly of microbic disease.

Now, the question arises, are diseases selective? You know from your own experience that tuberculosis is selective. You know also that tuberculosis tends to run in families, and, therefore, that the diathesis is inborn and tends to be inherited. What you observe so clearly in the case of tuberculosis you may observe with more or less clearness in the case of every lethal disease. Here, then, is natural selection not inferred but actually observed. Man is no rebel son who has escaped from selection, but a dutiful and sorely disciplined child. And not by disease only is he disciplined. Here, in this great city of Manchester, for instance, he meets a complex of lethal conditions that weed him out most stringently. Only individuals who are very resistant to the conditions which prevail in crowded places can survive in great cities, and especially in their lower quarters.

As regards Darwin's second inference, that natural

selection is the cause of evolution, it is common knowledge that every race is resistant to every disease in proportion to its past experience of that disease. If this be so, selection by diseases must have been a cause of evolution in the human race. There is plenty of evidence which demonstrates that the negroes of West Africa who have been long and severely weeded out by malaria are more resistant to it than the natives of India, who have suffered less, and who in turn are more resistant than Englishmen who have not suffered at all, or very little. Englishmen are more resistant to tuberculosis than Africans, and much more resistant than the natives of the Western Hemisphere, to whom tuberculosis was unknown before it was introduced—like measles, whooping-cough, small-pox, and many other diseases—by Columbus and his successors.

The migration of diseases to the Western Hemisphere furnishes a most instructive lesson. We in England, for instance, have been afflicted by our domestic diseases from a remote and savage past. As the population grew more settled and dense, the conditions that favour the spread of such diseases as pass from man to man grew more and more; selection constantly increased in stringency. At last no man escaped infection unless he was innately immune, or death unless he was innately resistant. The race met this increase of stringency by a corresponding evolution, and thus became capable of enduring the hard conditions imposed by civilization. Only a race which has undergone evolution against the diseases of crowds is capable of civilization. When Europeans migrated to the Western Hemisphere they introduced the hard conditions, not gradually but suddenly, to the aborigines, who could not in a few generations achieve the evolution which we had achieved only during the course of thousands of years, and at the cost of thousands of millions of lives. At once, except where defended from sudden civilization by virulent malaria, the natives of North and South America, Australasia, and Polynesia rushed swiftly to extinction. At the present day they have vanished over vast areas.

The case is very different in Asia and Africa, which have been in communication with Europe, and in which our diseases, though less prevalent, have been scourges from old time. In Asia and Africa, as a rule, we cannot colonize, we can only conquer. The natives, sufficiently resistant to our diseases, do not make way for us, and their own local diseases defend them.

The mere political results of man's evolution against disease are of almost incalulable magnitude. The human races of one half of the world are dying, and are being replaced by races from the other half. A quite disproportionate part in this great movement has been borne by our own race. It has seized on the larger part of those regions in which the aborigines were incapable of civilization by reason of their lower powers of resisting the diseases of crowds and where they were undefended by malaria.

Negroes furnish a beautiful example of evolution. Tuberculosis has prevailed among them, but, owing to climatic and other conditions, not nearly to such an extent as among us. From very early times there has been an immense migration of negroes to Southern Europe and Asia. Even in recent times the Dutch and English between them imported 12,000 negro soldiers to Ceylon, whence they never returned. Yet from the Malay Peninsula to Spain can be found no trace of negro blood. The immigrants all perished, chiefly of tuberculosis. About 400 years ago there began a large migration of negroes to the warmer parts of America, where they were taken to replace the even less resistant aborigines who had perished. Engaged in agriculture in a country where white men and tubercle bacilli were yet infrequent, they persisted, though at sore cost. As the conditions slowly grew worse they slowly evolved powers of resistance. To-day their descendants are found, even in the cities of America and Europe, though it is still said that every other adult negro perishes of consumption.

I need not multiply instances. In the time at my disposal I cannot flatter myself that I have offered very convincing proof, but I think if you will go into the evidence more thoroughly than I have had time to do here, you will find that the whole of the evidence accords with the theory of natural selection.

Many other explanations of evolution besides natural selection have been formulated. It is necessary in order to prove my case to show that these are not in accordance with the observed facts. I have time to notice only two—the Lamarckian hypothesis, which is relatively very old and is still held by many medical men, and the Mendelo-mutationist hypothesis, which is relatively new and is very fashionable with biologists.

According to the Lamarckian doctrine, the acquirements of the parent tend to be transmitted to the child, so that they reappear in the latter, not as acquirements, but as inborn traits. Of course this means that all agencies affect the race in the same way as they affect individuals. Thus it is supposed that, if you give a race plenty of fresh air, exercise, and food, and make everything splendid for its individuals, you will ultimately have a splendid race; whereas if, for instance, you crowd it into slums, you will have a degenerate race. A race exposed to malaria should on this hypothesis be rendered weaker and more liable to malaria. The Lamarckian hypothesis is directly opposed to the theory of natural selection. If the one is true the other cannot be true.

Now I have already considered crucial examples which enable us to decide between the two theories. Consider tuberculosis. What is the effect of this disease on the individual? It injures and weakens him in many ways; it benefits and strengthens him in no way. According to the Lamarckian doctrine a race that is exposed to tuberculosis should steadily deteriorate till it becomes extinct. According to the Darwinian hypothesis, the only effect which tuberculosis should have on a race is to make it more resistant to tuberculosis. Now turn to Nature, and see what has actually happened. You will not be able to find a single race in which that disease has caused deterioration, but hundreds in which it has caused an evolution of resisting power. Malaria, urban life, alcohol, and many other death-dealing agencies, also furnish crucial examples. In every instance the Lamarckian doctrine is decisively negatived.

Now let us consider the Mendelo-mutationist hypothesis. There are two ways in which a child may vary from its parents: by fluctuation and by mutation. Fluctuations are just those ordinary inborn differences which distinguish offspring from their parents and one individual from another of the same race. Mutations are sharper contrasts; they are sports—such things as hare-lip, club-foot, albinism, haemophilia, colour-blindness, idiocy, and extra digits. They are almost infinitely rarer than fluctuations. It is only true in a limited sense that the difference is one of magnitude. Fluctuations shade into one another: mutations do not. Fluctuations in parents tend to blend in the offspring; mutations behave like sexual characters and do not blend. On the Darwinian hypothesis selection is by fluctuations, evolution proceeds up a smooth inclined plane; on the mutationist theory evolution proceeds by a series of leaps. Now turn to our crucial examples. Consider tuberculosis. In this country there is every shade of difference between extreme susceptibility to the disease and extreme resisting power. We find similar shades of difference in the case of every other disease and ill condition—in fact, wherever it is possible to observe clearly, not merely to infer. Obviously, then, fluctuations are selected. Again, if the differentiation of races had occurred by selection of mutations, we should expect half-castes and their descendants to illustrate Mendelian laws in their resemblances to and differences from their parents. There is no evidence of this. Racial characters always blend.

The conclusion we reach, finally, is that Nature selects fluctuations, and that this selection is the cause of evolution. And now, from the medical point of view, we reach the heart of the matter. What is the cause of variations? Do they occur because the experiences undergone by the parent alter the germ plasm, or do they arise spontaneously in the sense that they are the results of the normal life, growth, and division of the germ plasm? For example, does parental disease cause offspring to be different to what they would otherwise have been, or do such innate changes as we see in the offspring arise quite independently of anything which happened to the parent? Consider such a disease as malaria, which in West Africa attacks the whole population, and for prolonged periods soaks every germ cell in virulent toxins. If malaria is a cause of variation it must everywhere produce the same kind of

variation. Now, obviously, if all the children in a generation vary from their parents in the same direction, natural selection is abolished. There remains no material for choice. The race of negroes must then drift in a given direction till it becomes extinct. The opposite is what happens. As we have seen in the case of malaria and every other infective disease, the race does not degenerate but undergoes protective evolution. We must conclude that variations are normally spontaneous.

Most biologists believe not only that natural selection is the cause of evolution, but also that variations are commonly caused by the direct action of the environment on the germ plasm. But these suppositions are contradictory; they cannot both be true. A race that drifts, that constantly degenerates, cannot undergo evolution. Doubtless the germ plasm is constantly injured by such things as malaria, but you must think of it as a living entity which, like other living things, tends, if it survives, to recover from injury. Life could not persist on earth, could not change in adaptation to changing surroundings, unless variations were commonly spontaneous. It is quite another thing to say that they are always spontaneous. It is quite probable that malaria, for instance, does sometimes alter the germ plasm of individuals so that it does not recover and does not die, and so causes variations. Such permanent alterations are injuries from which no recovery is made. Doubtless different strains of germ plasm vary in resisting power, and the weaker are unfavourably altered and so weeded out. There is thus a Natural Selection which tends perpetually to render the germ plasm insusceptible to the influences which act on it from without.

Professor HICKSON said he had accepted the invitation to take part in the discussion with hesitation on account of his ignorance of disease, but he would like to express some views from a biological standpoint. In the first place, it had struck him in reading papers on inheritance in man that the evidence was often unsatisfactory in one way or another. The reason seemed to be that man presents many great difficulties for such investigations. In one striking characteristic he differed from all other animals—in the extraordinary length of his period of juvenility. Civilized man reached physical maturity at about 15 years of age, mental maturity much later. Man appeared to require for his proper development a long period in which he might be influenced by his environment. In his adult form man was much more a creature of his environment than other animals. It thus became extremely difficult in man to distinguish between innate and acquired characters. Another difficulty was that man was a very slow breeding animal. It was thus difficult to get a sufficiently large number of cases of transmission of a particular character. Few statistics included more than three or four generations, or 100 to 150 individuals. In studying heredity in peas or in mice biologists were not satisfied with less than several thousand individuals. There was a third difficulty, not peculiar to man but common to all placental mammals, in determining whether a character was really innate or not. There was the possibility of the transmission of characters by the placental blood. Such characters were, of course, not innate. This term could only be applied to characters transmitted through the germ cells. For these reasons he was always sceptical of statistics from human beings bearing on the transmission of acquired characters. On another point he must differ from Dr. Reid. He thought it very doubtful if a hard and fast line could be drawn between fluctuations and mutations. There were, undoubtedly, mutations which were transmitted without blending, but there were others in which there appeared to be only a difficulty of blending. In the case of an extra digit blending could only mean the production of an extra half digit. Now, in experiments on poultry an ardent Mendelian had shown that the transmission of an extra toe obeyed Mendelian laws, but on analysis of the figures it appeared that many of the extra toes were only half-toes which could equally well be interpreted as blending. So far as he could judge, he was inclined to agree with Dr. Reid that there was no evidence of the transmission of acquired characters of disease in the human race.

Professor WEISS said that his studies were even more remote from human pathology than those of Professor Hickson; at the same time some interesting experiments had been made on immunity to disease in plants which did not quite agree with Dr. Reid's conclusions regarding immunity in man. Professor Biffen of Cambridge had experimented with certain disease-resisting varieties of wheat, and it appeared from these investigations that immunity to the rust disease of wheat did not present itself in a series of gradual fluctuations, but that immunity was probably due to the absence of a certain factor—possibly some chemical substance—which, when present, rendered the wheat susceptible to disease. The character which conferred immunity in this plant was therefore more like a mutation than a fluctuating variation. Experiments of this kind were, however, very difficult, and it seemed likely that the problem was not so simple; the more recent investigations of Nilsson Ehle in Sweden appeared to indicate that resistance to disease was due to a combination of several factors. At all events, Nilsson Ehle had obtained, by crossing, some races of wheat which were more resistant than either of the parental forms, and this seemed incompatible with the view that immunity depended upon a single inheritable factor.

Dr. REYNOLDS said that it was in the affections of the neuro-muscular system that the best examples of the hereditary transmission of disease were found. The insanities, the neuroses, and the muscular heredity diseases should be studied in this connexion, and attention should not be confined to the bacterial and infective diseases. Dr. Reid doubted whether acquired characters could be handed down by heredity. To deny this seemed a most dangerous and immoral doctrine, as it would mean a total disregard of environment. There was not the faintest doubt that syphilis could be handed down. One result of denying the possibility of acquired disease being handed down would be that there must have been an extraordinarily bad race to start with. Where had diseases come from? Mental diseases tended gradually to eliminate families. Where was the fresh stock of insane people coming from? It was surely possible to create insane families. "Take," he said, "the children of parents as stolid and as little neurasthenic as you like. One of these takes to drink, or some other vice, or to living in a close atmosphere, or is otherwise exposed to unfavourable conditions, and the offspring of that particular backslider may begin to have some neurosis which may be passed on to his descendants." There must, Dr. Reynolds thought, be an acquired heredity of disease. Dr. Reid asked if it were possible to conceive that a degenerating race could evolve by natural selection. Probably not, but in one sense degeneration and evolution went hand in hand; for was not the degeneracy of the feeble stock necessary for its extinction and for the selection of the better stock?

Dr. MUMFORD said that he had been engaged for a number of years in trying to form an estimate of the comparative effect of heredity and circumstance in causing a manifestation of morbid qualities. He had studied a number of families through five or six generations. It was necessary that such families should be related, and should include maternal as well as paternal ancestry over more than two generations. He had succeeded in getting sufficient information concerning about a hundred such related families, and was able to note the onset of epilepsy, alcoholism, consumption, and heart failure, and also to watch the conditions under which these disappeared. It seemed to him that outward circumstances and conditions had a very powerful effect on healthy as well as on morbid growth and that heredity influences were often capable of wide modification. Thus, if a part of a family was much reduced in circumstances by the early death of the father, or other conditions arose which impaired family nutrition, a diminution in family vigour occurred and morbid conditions appeared. His studies led him to question the correctness of Dr. Reid's view that a nation becomes sober largely because it becomes immune to alcoholism by the alcoholic families dying out. It seemed to him more probable that generations became more sober because wiser methods of bringing up children were adopted, and fuller social interests prevailed so that the nervous system was less under the sway of uncontrolled emotions. Early death from heart failure at the age of 45 to 60 seemed very largely hereditary, but even here the nutritional power on the part of the mother had great influence in modifying

the tendency, for the children who composed the middle of a family and were born during a period of enhanced nutritional power in the mother were often stronger and exhibited to a less extent any hereditary weakness than the firstborn or those born when the maternal nutritional power was decaying. Maternal nutritional power, capable of raising the level of vigour of a generation sufficiently to throw off morbid heredity, was often accompanied by longevity.

Dr. Reid, in reply, said he could not agree with Professor Hickson that it was more difficult to study heredity in man than in the lower organisms. The observer's power of study was commensurate with his familiarity with the object studied. As to statistics, he had appealed to the present and past of nations and races, and not to two or three generations. He held that mutations were transmitted like sexual characters—namely, without blending—and that very many examples of Mendelian inheritance were sexual traits.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

On October 30th Dr. W. E. Dixon, Professor of Materia Medica at King's College, Cambridge, gave evidence of a general character on behalf of the British Medical Association. He spoke of the harm done through the administration of proprietary remedies without previous expert diagnosis. Referring particularly to headache powders, Professor Dixon said that such a dangerous drug as acetanilide ought not to be administered in any circumstances. The witness endorsed the opinions expressed by previous witnesses that a vendor of a proprietary remedy should be held responsible for the claims made on behalf of the preparation, and that the rights of a firm in a particular compound invented by them should only remain in force for a limited period. He held that the present law was greatly in need of amendment, but at the same time he felt that if the law as it existed were enforced the evils might be very considerably mitigated. The Merchandise Marks Act gave power to public authorities to prosecute in cases in which representations were made which were obviously fraudulent. The powers conferred by this Act should be made compulsory instead of optional. With regard to the declaration of the ingredients on the label, he feared that in the case of the more objectionable preparations the proposed law would be circumvented by the use of special names signifying nothing. He regarded the proposal as advantageous because he thought it was the mere secrecy of proprietary medicines that impressed the public.

Replying to Dr. Chapple the witness said he would regard it as a fraudulent claim to state that any remedy was a certain cure for a disease.

Replying to further questions, the witness said that no useful drug had been introduced into medicine in the last thirty years except through the laboratories and pharmacologists. It was impossible for a layman or even for an ordinary medical practitioner to make these discoveries. Results could only be arrived at under absolute conditions and under control.

In reply to Mr. Lawson, the witness said he did not condemn all proprietary medicines without respect to the claims they made. There were genuine and legitimate preparations on the market in respect of which the proprietors were entitled to the benefit of the skill exercised in their production. Various cod-liver oil emulsions came into this class. He would put the vendor of secret remedies on the same level as the qualified chemist and make him responsible for the purity of the ingredients used.

On the question of the number of similar synthetic preparations known under different names, the Chairman asked why doctors did not prescribe the formulae given in the *British Pharmacopœia*. Professor Dixon replied that, in his opinion, medical men ought to do this, and the younger generation would do so.

Mr. O'Grady: There are about fourteen million people insured under the Insurance Act. Are not these the people who are the principal purchasers of proprietary remedies?

Professor Dixon: I do not agree with that. The clergy are as bad as any. (Laughter.)

Mr. Lawson: And the British Medical Journal recently discussed whether Nonconformists were not specially addicted to secret remedies.

Mr. O'Grady: If, as a result of the Act, all these people go to a doctor, will not that do away with the necessity for special legislation in respect of quackery?

Professor Dixon: You are assuming that a man goes to a doctor first and gets well. But suppose he goes and does not get well—that the doctor tells him he is incurable. No one ever gives up hope, and when a man sees an advertisement, "I will cure cancer," he reads the testimonials and wastes his money in trying the preparation.

Mr. Glyn Jones: Is it right that we should be indebted to private enterprise for our knowledge of new drugs?

Professor Dixon: We are not entirely, I am glad to say. The pharmacological departments of our universities have contributed their quota. In reply to a further question, the witness said he did not agree that the rank and file of the medical profession did not want the patient to know what was in the prescription given him.

The Chairman: Is the fact that doctors' prescriptions are still written in Latin a survival of the day when doctors sought for their prescriptions the same secrecy that proprietary medicine vendors seek to-day?

Professor Dixon: You are asking me a historical question. My answer would be that I am not an authority on that.

The Chairman announced that the Committee had received from the United States Government a copy of the new amended American Food and Drugs Act which became law on August 20th last. In this Act misbranding was made an offence—a clause providing that if the article contained any statement on the package or label regarding the curative or therapeutic effect of the preparation which was false or fraudulent, the vendors were liable to prosecution.

The witness said that this appeared to him a distinct step in the right direction.

After the Committee had consulted in private for some time, the Chairman stated that no further medical evidence would be called for the present, but that at its next sitting the Committee would hear a witness on behalf of the Proprietary Articles section of the London Chamber of Commerce.

MEDICAL SCHOOL FOR TUBERCULOSIS.

The new medical school of the Royal Hospital for Diseases of the Chest, City Road, was opened on October 17th, when Sir William Osler took the chair, and Professor Nietner of Berlin delivered an address on the modern combat against tuberculosis amongst children.

The Council and staff of the Royal Hospital for Diseases of the Chest consider it to be their duty as a special hospital for diseases of the chest to provide training for medical officers of tuberculosis dispensaries and sanatoriums, and more specially for general practitioners, and through the generosity of one who fully realizes the great value at this juncture of affording facilities for such training they have been able to build an out-patient department, equipped with all details for research work and scientific instruction on modern lines, and with special accommodation for a tuberculosis dispensary. But it is not only hoped to constitute the hospital as a training centre for those who wish to qualify themselves for dispensary and sanatorium appointments, but also as a special training centre for tuberculosis nurses. In Germany it has long been recognized that efficient training is indispensable for the domiciliary work connected with the dispensary system; above all, training in the collection and interpretation of data. The properly trained observer can be relied upon to procure the right sort of information, and this will conduce to economy, both of financial expenditure and of effort. Arrangements are being made to receive nurses for two years' training or for shorter courses of post-graduate teaching. In these circumstances it was held that no one could be better fitted to give the inaugural lecture than Professor

Nietner, who is the General Secretary of the German Central Committee for the Prevention of Tuberculosis. Founded in 1895 by the Reichskanzler of that day, Fürst von Hohenlohe, it was designed to link up all schemes and associations throughout the German Empire which have as their object the prevention of tuberculosis. The President is the State Secretary of the Interior for the time being. The council includes representatives from the Federal States, the Imperial Board of Health, and the Imperial Insurance Board, as well as a number of high officials and medical experts. The Central Committee co-operates closely with the various invalidity insurance institutions, by which such local organizations as bid fair to prevent permanent ill health are liberally supported. The State gives a yearly grant of £3,000. The working of the Central Committee presents an admirable object-lesson in organization and the avoidance of overlapping. It is the arduous duty of the General Secretary, in his advisory capacity, to travel throughout the empire, and all new local schemes and associations are carefully studied by him.

Professor Nietner's Address.

Professor Nietner stated that when the Central Committee was first established its efforts were mainly directed to the care for the still curable diseases, the means for so doing being amply provided by the invalidity insurance institutions. But latterly the trend had become ever stronger towards prophylaxis. It was realized that prevention must begin with the child. This truth was practically ignored during the early history of the campaign against tuberculosis in Germany, for little was definitely known about the incidence of this disease in childhood, and the latent tuberculosis of infancy was almost an unknown factor. Kirchner in Germany first pointed out that though the incidence of tuberculosis amongst adults was steadily decreasing in Germany, the children of the nation did not participate in this decrease.

Professor Nietner said that the researches of the last ten years have brought to light facts that point to the conclusion that in a very large majority of cases infection occurs during childhood, and, indeed, in the first years of life. Hamburger declares that 90 per cent. of all children up to the completed 12th year are infected. Schlossman has gone so far as to say that tuberculosis is a true children's disease, is acquired during childhood, and must be prevented, treated, and healed during childhood. The fact stands beyond a doubt that in by far the greater number of cases the source of infection can be traced to the human subject suffering from "open" tuberculosis, and that infection is acquired through the close intercourse resulting from family life within the walls of the home. Only those preventive measures can, therefore, hope for success which keep this fact constantly in mind. But to prevent the child from becoming infected in his home without weakening those family ties and responsibilities which are so essential to the moral health and true happiness of the nation is a social problem of the utmost complexity. Professor Nietner deprecated drastic schemes for completely separating the child from his family, though every care should be taken to safeguard it in its own home. Professor Nietner denied that tuberculosis was a "school disease," and maintained that the school could not justly be held responsible for the spread of infection. He attached the utmost importance to the careful organization of the school medical service in the battle against tuberculosis, and said that to the school doctor alone was the power given to prevent latent tuberculosis developing into active [illegible] in the children examined by him, and kept under [illegible]hful supervision. With a complete State organization [illegible] school medical supervision, the discovery and recovery should be possible of a large number of children wh[illegible]ght otherwise become later on a serious strain on the economic resources of the nation by developing active tuberculosis during the wage-earning period of life. Germany could boast of a very large number of agencies for promoting the health and welfare of children, and these were closely linked with the school medical service. In the sanatoriums for children the practice of imparting some school teaching was rapidly gaining ground. Finally, Professor Nietner said that he attached great value to the use of tuberculin in the treatment of tuberculous children, and claimed good results from it if properly administered.

CHARING CROSS HOSPITAL MEDICAL SCHOOL AND THE UNIVERSITY OF LONDON.

University Laboratories of Public Health.

The final step in the negotiations which have been conducted for some time between the authorities of King's College and of Charing Cross Medical School was completed by the handing over of the laboratories of public health and bacteriology to the university on Thursday, October 31st. The proceedings were rendered the more interesting by the fact that the Huxley Lecturer, Professor Simon Flexner, the Director of the Rockefeller Institute in New York, was asked to declare the laboratories open, and to hand them over to the university.

The Dean of Charing Cross Medical School (Dr. William Hunter) gave an account of the changes. He pointed out the great advantage to the medical education of students which resulted when the preliminary and intermediate subjects in science were studied in the university. Last year the Charing Cross School, after due consideration and on his advice, had transferred the teaching of these subjects to King's College, and the rooms hitherto used for instruction in physics, chemistry, biology, anatomy, and physiology had thus become available for other purposes. The school would not lose by this transference, and the university undoubtedly reaped an advantage. In order to bind the medical school and the university more closely together, and to further the interests of university education, he conceived the idea of devoting space thus set free to public health and bacteriological laboratories, which, as part of King's College, would relieve the congestion in the college itself, and bring the Charing Cross School into intimate association with the university. The professorial and teaching staff of King's College in these subjects had been transferred to the new laboratories, where senior students and qualified public health workers would be received.

Professor Flexner dwelt on the importance of public health teaching and investigation. Bricks could not be made without straw, and since the Governments of both America and England did not supply straw enough to make the scientific bricks with, it devolved on private initiative to supply the want. One advantage of the amassing of colossal fortunes in the United States was that it had been rendered possible for the rich to carry out this function. Carnegie had given 25 million dollars for the foundation of the Carnegie Research Institute in Washington, and Rockefeller had given 10 millions for the institute in New York. If he did not misinterpret the signs of the times, further large financial assistance would be given to the research in preventive medicine in his country. He hoped that England would take this lesson from the new country. He then formally handed over the laboratories to the university.

The Hon. W. F. D. Smith, Chairman of King's College, who received the gift in the name of his college, spoke of the benefits of reciprocity between the two institutions. He looked forward hopefully to the carrying out of a large amount of important research and post-graduate work in the laboratories.

Principal Headlam, of King's College, spoke of the extremely pleasant nature of the negotiations which had led to the result now being celebrated. The step would, he believed, lead gradually to the building up of a much greater institution.

The Principal of the University of London, who also spoke, addressing himself to the upper rows of students, said that the future of the medical school and the university lay in the hands of the gods—the students themselves.

The Laboratories.

The building in Chandos Street is but thirty years old, and it was found that considerable structural alterations would not be required for the adaptation of the laboratories to their new purpose. Some new windows have been made, and the internal equipment adapted to its new purpose. On the north side of the buildings the upper floor is now devoted to bacteriology. There is a large well lighted and adequately equipped laboratory to accommodate about thirty students for the teaching of advanced

bacteriology. Professor R. Tanner Hewlett, who is in charge, has every reason to be satisfied with his new teaching quarters, and the class will find more room and better surroundings than they had in the old laboratories in King's College. Adjoining, there are the research laboratory, a fair-sized room with the makings of a good home for original investigation, and the accessory rooms, including a large one for the Profesor of Bacteriology. Although not included in the university set of laboratories, the lecture theatre, and the *post-mortem* room, with its dependent apartments for operative surgery work, bacteriological, and other investigations, are conveniently at hand.

On the floor below, also to the north, is the Public Health Department of King's College under Professor Simpson. The laboratory for chemical analysis, the adjacent rooms, and the theatre, which leads off the main laboratory, are all admirably suited to the routine teaching of sanitary science. The accommodation for students here is approximately the same as in the bacteriological department, and the apparatus and other equipment are entirely satisfactory. In the basement a room for photomicrography has been arranged. We congratulate Dr. Hunter on the completion of a work of high importance for medical education.

Complimentary Dinner to Professor Flexner.

The occasion of the delivery at Charing Cross Hospital by Professor Simon Flexner of the Huxley Lecture, published in this issue, was seized by the students, present and past, of the hospital to entertain him, as chief guest, at their annual dinner on October 31st at Gatti's Restaurant. Over 160 members of the Charing Cross Medical School and their friends gathered together to show their appreciation of the great American bacteriologist, who, as he afterwards said, received so many expressions of appreciation that he was almost overcome. Dr. Mott presided.

Dr. Mott, in proposing the toast of "The Hospital Medical School," recalled the greatness of the school, as reflected in many eminent men. Huxley, Wharton Jones, Livingstone, Joseph Fayrer, and many others were recalled from the past, while a gold medallist at the London M.D., and others who had achieved greatness in the present generation also came in for their share of praise. In referring to Dr. Hunter's work and the relations of the school with King's College, he said that the most important factor of a laboratory was its cerebral equipment. He was satisfied that Charing Cross was safe in this respect.

Mr. Duff, the Chairman of the Council, and Dr. Huntly responded, and the latter sketched the changes which had come over the hospital since its foundation close on 100 years ago.

Dr. Galloway, in proposing "The Guests," related how in days long past a Hermitage of St. Catherine had stood almost where the hospital stands to-day. In this hermitage hospitality was given to wandering Welshmen. On the other side of what was now the Strand a Priory of St. Mary was founded by one William Marshall, who was an Irish-Welshman. This hospice was noted for its hospitality to foreignors, chiefly from Gascony, Spain, and the Pyrenees. Though Henry VIII disturbed these admirable arrangements, the practice of hospitality, at times voluntarily accepted and at times not so, was still continued at Charing Cross. Among the guests whom he selected for special honour he named Dr. Sandwith, Colonel Skinner, Professor Muir, Mr. Duff, Mr. Verity, Dr. Oxford, Dr. Headlam, and Professor Flexner.

Professor Flexner, who replied, spoke of his connexion with the Johns Hopkins University and Hospital, and with the Rockefeller Institute, and of his indirect connexion with Charing Cross Hospital. In thanking them for all the hospitality and pleasant things which had been said of him, he added: "And for your forbearance, for I have given you a stiff dose to-day, and you took it well."

In his reply to the toast of "The Chairman," Dr. Mott said that at last the preliminary arrangements had been completed for the establishment of a hospital for acute mental disease, which had been rendered possible by the generosity of Dr. Maudsley. He hoped that some day a diploma in psychiatry would be established

LITERARY NOTES.

Among other books announced by Messrs. Smith, Elder and Co., for publication on November 14th, is *The Land that is Desolate*, which is said to contain Sir Frederick Treves's impressions of travel through the Holy Land as it is to-day.

Dr. F. M. Sandwith, the Gresham Professor of Physic, has prepared for the Research Defence Society a pamphlet on Sleeping Sickness. It will be published by Messrs. Macmillan and Co.

To the *Edinburgh Review* for October Mr. Victor Plarr, the Librarian of the Royal College of Surgeons of England, contributes an interesting article containing some unpublished letters of Sir Walter Scott to Joanna Baillie. The "Baillie Letters," now in the Library of the College, have already, says Mr. Plarr, been in great part reprinted. Letters of Pope, Swift, and Arbuthnot, which form part of the collection, were published by Mr. Aitken in 1892, in his *Life and Works of Dr. John Arbuthnot*, while many of Scott's letters to Joanna Baillie—who, it may not be superfluous to remind the present generation, was a poetess held in high esteem in her day—were incorporated in Lockhart's *Life*, or in Mr. Douglas's *Familiar Letters of Sir Walter Scott* (1890–92). There remain, however, some twenty of Sir Walter's letters to Miss Baillie and other members of her family, which seem to have escaped the attention of editors, probably, Mr. Plarr conjectures, because Scott's handwriting was difficult to decipher. Joanna Baillie, whose house at Hampstead was a meeting place during more than half the nineteenth century of literary artists and literary men, was the daughter of a former minister of Bothwell on the Clyde, whose wife was the sister of John and William Hunter. Matthew Baillie was her brother. We are promised further references to him in a subsequent article. The present one deals almost entirely with Scott's efforts in connexion with the production of plays by Miss Baillie, who, as a dramatist, was regarded by him and many of her contemporaries as second only to Shakespeare!

The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, amounting to about £36, will be made on July 14th, 1913. Essays intended for competition may deal with any subject in medicine, but they must be unpublished. They must be typewritten in English or accompanied by an English translation, and received by the secretary of the college on or before May 1st, 1913. Each essay must be sent without signature, but must be marked and accompanied by an envelope bearing the same mark and containing the name and address of the author.

The *Pall Mall Gazette* of October 24th supplied a notable example of things one would rather have expressed otherwise. Speaking of the Lister Memorial our contemporary referred to the creator of modern surgery as the "great septic reformer"! Social reformers are often septic enough in appearance at any rate—but it would be enough to make Lister turn in his grave if he could hear himself described as "septic."

Professor Abel, who has hitherto edited the *Journal of Pharmacology and Experimental Therapeutics*, has asked Professor A. R. Cushny to undertake the duties of joint editor, and has invited a number of representatives of British pharmacology to serve as associate editors. Among them are Sir Lauder Brunton, Professor Cash, Dr. W. E. Dixon (Cambridge), Professor S. Flexner (Rockefeller Institute for Medical Research), Sir Thomas R. Fraser, Professor J. N. Langley (Cambridge), Professor C. R. Marshall (St. Andrews), and Professor R. Stockman. By this arrangement, the pharmacologists of Great Britain will have an equal representation in the *Journal* and an equal interest in its future progress. The Williams and Wilkins Company, of Baltimore, the present publishers of the *Journal*, have arranged with the Cambridge University Press to issue the *Journal* in this country. The *Journal* is issued bi-monthly. Each volume consists of six numbers and contains over 500 pages. Three volumes have already been published, and the arrangement came into effect in vol. iv, which commenced in September, 1912.

British Medical Journal.

SATURDAY, NOVEMBER 9TH, 1912.

THE CHANCELLOR DEFINES.

IT may be gathered from the motion proposed by Dr. Beaton at the meeting of the Council on October 31st, as reported in the SUPPLEMENT this week (p. 500), and from some of the letters recently received and also printed in the SUPPLEMENT, that some members of the Association are considering a third course, which they regard as intermediate between the alternatives contained in the antepenultimate paragraph of the report of Council to the Divisions and Representative Meeting. The motion was in effect to invite the Representative Meeting to take into consideration the recent offer made by the Chancellor of the Exchequer, on the ground that it affords the British Medical Association an opportunity of conferring with him and the Commissioners as to the points on which the demands of the profession have not yet been met.

The first alternative presented in the Council's report is to accept the scheme embodied in the Act, the Provisional Regulations, and the Statement of the Chancellor of the Exchequer to the Advisory Committee on October 23rd, subject to the consequential amendment of the Regulations, and subject also to the conditions and safeguards set out in paragraph 114 of the report of the Council. If the Representative Meeting should be disposed to consider this alternative course, it may well decide that the necessary conditions are not adequately set out in paragraph 114. This is the opinion of some of our correspondents, and their view will probably be shared by many silent members. The third course proposed to the Council was to indicate to the Divisions and the Representative Meeting that there were three possible courses—that is to say, as it was tersely put, "to accept, to confer, or to reject." The Council did not accept the proposal to put this third course into its report; the argument that it was undesirable for it to appear to give a lead to the Divisions and the Representative Meeting having perhaps most weight.

Some consequences which would appear necessarily to follow acceptance of the middle course demand careful consideration. It would mean negotiation. The negotiation would have to be carried on, not with the Commissioners, but with the Government—that is to say, practically, with the Chancellor of the Exchequer, who might, if he were convinced that it was necessary, cause the Insurance Commissioners to take action under Section 78 of the Act.

If negotiations are to be reopened, it must be with the Government. Mr. Lloyd George, the responsible member of the Government in this matter, has said that if he is to negotiate, the ambassadors of the profession must have full powers. Only the Representative Meeting can appoint such plenipotentiaries. It could, of course, give them strict and definite instructions, and would no doubt do so; but it seems that if it is to proceed on this line it would be bound to allow something to their discretion—some margin for compromise and for adjustment of details.

During the course of the discussion by the Council of that part (B) of the report which contained a comparison of the Regulations as to medical benefit with the cardinal principles and the decisions of the State Sickness Insurance Committee attention was drawn to a considerable number of points in the Regulations and in the statement of the Chancellor of the Exchequer on October 23rd which were ill-defined or ambiguous. The Chairman of Council pointed out that the State Sickness Insurance Committee had considered these matters and felt that there were several points which needed elucidation, but that they could only be cleared up by the Chancellor or the Commissioners. The Committee had considered itself precluded by the resolution of the Representative Meeting at Liverpool from getting that information by way of application to the Chancellor or the Commissioners. After carefully considering the terms of the resolution, the Council, believing that it was its duty to be in a position to give the Special Representative Meeting the fullest possible information, authorized the Chairman of Council and the Chairman of Representative Meetings to address a letter to the Chancellor of the Exchequer asking for further information as to certain points which were regarded as obscure. The letter addressed to the Chancellor of the Exchequer and his reply are printed in the SUPPLEMENT (p. 506 et seq.), together with a brief letter received as we go to press from the Chairman of the Joint Committee of Insurance Commissioners with reference to certificates, and to medical attendance given by a deputy in the unavoidable absence of the practitioner.

It will be seen that the points as to which the Council asked for specific information were the nature of the increased services to be required from medical men who may consent to serve on the panel; a clear definition of medical benefit, with a distinct indication of the services which will not be required from practitioners on the panel; the method proposed for the provision of mileage, especially in rural districts; the exact scope of the "abnormal drug fund:" the scope of the restriction with regard to the employment of assistants, and the proposed capitation grant for non-institutional treatment of tuberculous insured persons. In dealing with the amount of remuneration, the letter called particular attention to Regulation 28 ("amount applicable for payment of practitioners"); to its provisions strong exception has been taken by the profession. The Council emphatically adopted the view that payment for mileage should come from some centralized fund, pointing out that if a deduction were made in respect of mileage from the amount available in each insurance area considerable injustice might result. In a mixed urban and rural district rural practitioners would absorb much of the fund in mileage, while in a very scattered district mileage might absorb nearly the whole of the fund.

In his reply, the Chancellor of the Exchequer defines "increased service" as an increased service compared with that obtained under many contract practice systems in the past, and with that which the majority of the insured, in view of their restricted means, could afford to obtain on the lines of private practice. It is further explained to be such service as the best opinion in the profession itself would expect from a general practitioner in his ordinary work. The intention to appoint inspectors is maintained, but an undertaking is given that such inspectors shall be medical.

With regard to modern methods of exact diagnosis, it is stated that practitioners on the panel will not be expected to undertake work beyond the ordinary scope of general practice. If a practitioner finds more elaborate methods of diagnosis necessary, his duty will end in advising the patient as to the steps he should take, and the Government hopes that in so far as facilities in the shape of expert

assistance do not now exist it will be able to encourage their development and organization. As to records, the Chancellor of the Exchequer indicates an intention of supplying free of cost to all practitioners on a panel books containing special forms, similar to visiting lists in ordinary use, showing the name and address of the patient, the name of the society, the number of visits, age, sex, and nature of illness. The confidential nature of such records is recognized, and it is proposed that they shall be open to inspection only to those officers within whose specific duties it would fall to deal with them. With regard to the definition of medical benefit the Chancellor's contention is that the range of services expected should be defined only in general terms. He insists on a distinction between two different kinds of extra services—those which fall within the scope of medical benefit and those which do not. Specialist's services, not rendered by practitioners on the panel, are stated to lie outside the scope of the arrangements to be made by the Insurance Committees. As to services of a special character rendered by a general practitioner, the Chancellor adheres to his scheme, which would include payment for all such special services in the capitation sum set aside for the remuneration of the medical profession, though that capitation sum could be distributed on various different systems, as indicated in the second part of the first schedule of the Regulations.

With regard to the amount of remuneration, it is stated that Regulation 28 is now being redrafted, and that, taken with the conditions of the new grant, it will secure that a sum equivalent to 7s. per head of insured persons (including the sanatorium 6d. for domiciliary treatment of tuberculous persons) shall be available for the remuneration of medical practitioners on a panel throughout Great Britain. It will be applied solely to medical remuneration "without deduction for drugs or administrative expenses or any other purpose," but mileage is to be paid out of it. The possibility of establishing a central fund for mileage is admitted, but it would appear that the present intention of the Government is that this fund should be formed by way of deduction from the total amount available for medical benefit; this, we take it, is not the sort of centralized fund the Council desired to see established.

It is stated that the "abnormal drug fund" is to be used to prevent the extra 6d. for drugs being drawn upon when the extra demand for drugs was clearly due to abnormal sickness. The fund would be available not only in cases where that 6d. had been exhausted in the provision of drugs but also in cases in which it had not been so exhausted. With regard to assistants, the Chancellor holds that the Regulations in conjunction with the free choice of doctor by patient will afford proper latitude for the employment of assistants while tending to check any abuse. The domiciliary treatment of tuberculosis of insured persons is defined as such amount and kind of attendance as in the best interest of the patients can be given by the general practitioner himself. The 6d. from the sanatorium fund is to be used solely for the remuneration of the doctor, without deduction for the provision of drugs or for any other purpose.

Mr. Masterman's letter does not appear to add much, if anything, to the information already in the possession of the profession.

A perusal of the full text of the Chancellor's letter will, we think, show that while it clears up some important points it leaves others still in need of further and better definition.

ILLNESS AND INTELLECT.

It has often been noted that much of the world's work is done by invalids. It is not to men of healthy digestion and restful temperament, "such as sleep o' nights," that we owe the great revolutions that make human history. In the sphere of action we find that Cæsar, Mahomet, and Napoleon were epileptic; Augustus was a valetudinarian; Luther's last years were disturbed by almost constant ill health; Calvin was in himself almost a pathological museum. Richelieu was ailing during the greater part of his life, and his last years were embittered by some painful and loathsome disease of the rectum, which did not, however, till near the end interfere with his mental activity. Chatham suffered much, even in boyhood, from gout—the disease of statesmen, as it has been called. Our own Sydenham was a prey to the same disease, and sought comfort in the thought that many wise men were subject to the same infirmity. Macaulay's hero, William of Orange, was a martyr to asthma; Frederick the Great was of delicate constitution and frequently ill. John Hunter, who had his full share of the irritability of genius, died of angina.

Passing from the field of action to science and literature, we see how the fixity with which Newton "intended his mind" on his problems made him nervously excitable and almost shook his reason; how Darwin was prostrated by two hours of work daily, and obliged to lie on his back the greater part of the day, and seek relief from intellectual tension by listening to the reading of novels. We see Swift's life overshadowed by the fear of insanity which finally claimed him as its prey. Johnson was scrofulous and melancholic; he said of himself that he had been mad all his life—at least, not sane. Scott dictated the *Bride of Lammermoor* during such intervals of lucidity as were left him when taking large doses of opium for agonizing "spasms." Havelock Ellis, in his *Study of British Genius*, says that by analysis of the records in that literary *campo santo*, the *Dictionary of National Biography*, he found that 15 per cent. of men of letters and 16 per cent. of poets suffered from ill health during the active part of their lives, and it is not rash to conjecture that this does not represent anything like the whole truth.

The connexion between genius and nervous disease has been recognized from the time of Aristotle, and although few at the present day hold the theory in the crude form enunciated by Lombroso and his disciples—that genius is a form of neurosis—it is generally admitted that men of genius frequently come from families with a neurotic taint, even if no such weakness be discernible in themselves. Among those who were actually insane for longer or shorter periods are Pascal, Rousseau, Cowper, and Tasso, to mention only a few. Shakespeare is by some numbered among the "neuropaths"; Gustave Flaubert was epileptic; Chateaubriand has lately been described by his doctor as a marked example of hysteria. Of the eccentrics the name is legion. It can easily be understood how genius is connected with instability of the nervous system, and how this instability may be increased by the strain of production or overwork.

The association of gout with intellec is so frequent that it can scarcely be accidental. The disease manifests itself, roughly speaking, in one of two forms according as the poison concentrates its attack on the joints or is diffused throughout the system by the blood. In the latter case the brain is affected.

like other parts, and this gives rise to a state of general gloom. On the other hand, when the joints have to bear the brunt of the assault, the mind seems to undergo a kind of lustration, the effects of which show themselves in increased clearness and vigour. It may be said that arthritic gout has something of the action which Falstaff attributes to sack: It dries all the "foolish, dull, and crudy vapours" which environ the brain and "makes it apprehensive, quick, forgetive [inventive], full of nimble, fiery, and delectable shapes; which delivered over to the voice (the tongue) which is the birth, becomes excellent wit." One might indeed argue that Falstaff's own wit was due to gout; does he not say, "A pox of this gout"? On the other hand, it is at least conceivable that genius may be the cause of gout. The disease is not unlikely to be induced in persons of strong frame by the want of exercise due to conditions of literary toil, perhaps aided by excesses in eating and drinking. It is nothing to the purpose to say, as Mr. Havelock Ellis does, that many of the most gouty persons in his list of "intellectuals" have been extremely temperate both in food and in drink. The argument used by the wolf against the lamb may fairly be brought to bear on this point. Although there are dark places in the pathology of gout on which the searchlight of medical investigation has not yet thrown its beams, one thing is certain—it is inherited. However temperate a man may be, he must often suffer for the gluttony and drunkenness of his ancestors, and the conditions of intellectual life, together with the strain on the nervous system which brain work necessarily causes, favour the manifestation of the inherited tendency. As examples of gout in literary men we need only mention Milton, Rochefoucauld, Gibbon, Samuel Johnson, Henry Fielding, Congreve, Walter Savage Landor, William Morris, and Sydney Smith. Among painters there are Rubens and Claude Lorraine; among actors Charles Kean. One character common to all these men, differing as they do in most other respects, is the strong sense of their writings, the robust virility of their artistic expression. Other diseases, in which uric acid is believed to play a leading part—rheumatism, gravel, and especially stone—are common in men of the most varied genius; to take the first examples that come to hand, we may mention Erasmus, Luther, Montaigne, Harvey, Leibnitz, Bossuet, Morgagni, Buffon, d'Alembert, Jean Jacques Rousseau, Voltaire, and Benjamin Franklin. Samuel Pepys hardly finds a fitting place in this galaxy, but, apart from his remarkable administrative capacity, he stands alone as a writer, and he used to celebrate each recurring anniversary of his having been cut for stone. Whether Carlyle suffered from gout or not, his "biliousness" certainly left its mark on his prophetic denunciation of shams and of contemporary mankind in general.

In strong contrast with the gouty men of genius are those tainted with tuberculosis. In these the predominant quality is a somewhat feverish excitability and tendency to mental exaltation followed by periods of mental dejection. The names of Sterne, Novalis, Keats, Stevenson, and John Addington Symonds will immediately occur to all lovers of letters; among musicians there is Chopin.

We are accustomed to look upon the manifestations of genius through the clouds of suffering as examples of mental power subduing the infirmities of the body. But it is held by some that the disease itself may be a direct stimulant to production. Dr. Charles B. Reed, of Chicago, goes so far as to say that we owe many of the literary masterpieces of the world to the action of poisons in the author's blood. In the July number of the *Forum* he says: "We are not prepared at present to insist that toxins are essential to achievement, nor that an obscure toxin will convert mediocrity into genius, but rather to suggest that the presence of such a substance in the circulation may, and does in many instances, accelerate and intensify the expression of existent intellectual tendencies." His argument is that many an author has attained eminence, "not in spite of a serious toxaemia, but possibly on account of it," the poison acting as a powerful stimulant to the brain and nervous system.

Owners of creative brains, according to Dr. Reed, are compelled to work by the toxins they elaborate, and he thinks it is not too much to say that the periods of active production probably stand in close relation to the ebb and flow of the toxic tide. Heine's genius reached its highest point during the last years of his prolonged confinement to his "mattress grave." Of the febrile affections whose toxins are stimulating, Dr. Reed selects pulmonary tuberculosis as the type, "not alone on account of its bacterial origin and the peculiar suitability of its toxins, but because its frequency and chronicity provide ample opportunities for study." He refers to the books written by John Addington Symonds while slowly dying from consumption, and quotes a letter written by him from Davos in 1882, in which he says: "If I am doomed to decline now, I can at least say that in the five years since I came here dying I have had a very wonderful Indian summer of experience. The colours of life have been even richer, my personal emotions even more glowing, my perception of intellectual points more vivid, my power over style more masterly than when I was comparatively vigorous. It seems a phase of my disease that I should grow in youth and spiritual intensity, inversely to my physical decay. It is almost pain to grasp the loveliness of the world with so much intensity when the body is so dragging."

Of Stevenson it is said that, "while prostrated by a pulmonary haemorrhage, he wrote out in three days the first draft of *Dr. Jekyll and Mr. Hyde*." During this period, says Dr. Reed, his toxic stimulation was so great and his mental systematization so complete that he neglected for hours at a time to remove the thermometer that had been placed in his mouth. His wife writes from Hyères: "After a terrible haemorrhage he fell a victim to sciatica, and was temporarily blind from ophthalmia. All light was excluded on account of his eyes, and his right arm was bandaged to his side on account of the haemorrhage. To circumvent fate he had a large board covered with paper laid across his bed, and on this on a large slate he wrote out with his left hand most of his poems in the *Child's Garden of Verses*." Under the influence of a favourable climate and life out of doors Stevenson's bodily health and vigour improved greatly. The tubercle seemed to be arrested. What, asks Dr. Reed, was the result? Necessarily, the quantity of toxin thrown out was diminished, or at least did not exceed the dosage to which he was accustomed, and he keenly felt the deprivation. Colvin says that during this year, 1894, Stevenson found himself unfit for serious imaginative writing, and a consciousness of the loss caused him many misgivings. He wrote to Charles Baxter as follows: "I am come to a dead stop. I never can remember how bad I have been before, but at any rate I am bad enough just now; I mean as to literature. In health I am well and strong. I take

it I shall be six months before I shall be heard of again." He died of apoplexy eleven months later, but Dr. Reed does not doubt that a subsequent exacerbation of the tuberculous infection would have been accompanied by a period of unusual literary activity.

We may carry the subject further. It is well known that Goethe, who lived to a splendid old age, was seriously ill in youth. Some think the affection was tuberculosis; others hold that it was syphilis. But we are not aware that any one has attributed to this disease an inspiring effect on the creative faculty of the brain. Sir Andrew Clark undoubtedly suffered from tuberculosis in early life, but his work was done after he had cured himself.

What one would like to know is under what conditions tuberculosis is an inspirer of genius. Invalidism would have the effect of enabling a man to give his mind steadily to work, even if it were but for short periods at a time. We know that Scott's infantile paralysis, according to himself, laid the foundation of his multifarious reading. A boy who cannot join in the ordinary sports of his contemporaries, if he has anything in him will be driven to develop his faculties. Stevenson has left us an inspiring example of what can be achieved in spite of almost constant bad health. The theory of stimulation by toxins is ingenious; but there must first be the creative faculty to respond to stimulation. If genius were a by-product of the tubercle bacillus, the question of the sanatorium benefit and the tuberculosis dispensary would have to be considered from a new point of view. Already eugenists in their blind enthusiasm are threatening to stamp out the germs of possible genius; it would be a serious thing if the Chancellor's well-meant efforts should complete the work of destruction in another direction.

THE URGENT NEED OF A STREET AMBULANCE SERVICE FOR LONDON.

THE perils of London streets arising from the increased use of mechanically propelled vehicles has been engaging the attention of Parliament and of the Home Office. The published statistics are sufficiently alarming and fully justify the outcry which has arisen. More than 400 persons were killed by mechanically propelled vehicles within the metropolitan area in 1911, and many thousands were injured more or less seriously. Motor omnibuses were responsible for 95 fatal injuries and 1,690 non-fatal injuries. Motor tramway cars killed 27 and injured 2,459 in the twelve months of 1911. The enhanced peril of the modern motor traffic is yet further brought out when we find that in 1901–10 no fewer than 561 fatal and 22,946 non-fatal accidents were due to trams and omnibuses, against 217 fatal and 6,718 non-fatal accidents attributable to such public vehicles in the years 1891–1900, when they were mostly horse-drawn.

We do not enter into the rival claims of motor omnibuses and electric tramways, but there is one aspect of this question in which we are deeply interested and which appears to have been strangely overlooked in the public discussions which have taken place. We allude to the provision that is made, or rather not made, in the metropolitan area for dealing with the thousands of non-fatal accidents in the public streets. As long ago as 1901 this matter engaged the attention of the London County Council. They devised an excellent scheme for a rapid ambulance service, summonable by telephone to the site of the accident and equipped with comfortable automobile conveyances, with all necessary appliances to secure the prompt and easy removal of the sufferer either to hospital or to his home. They introduced clauses into a Parliamentary bill to enable the County Council to establish and maintain such a service in London. The City Corporation opposed these powers being conferred upon the Council in so far as they would extend into the area of the City Corporation. It was stated at the time that the police also opposed the County Council's proposals, and though they passed the Commons they were rejected in the Lords. The City Corporation, having control of their own police, however, at once set about establishing an ambulance service of its own. It immediately achieved a notable success, and daily the City automobile ambulances may be seen engaged in their beneficent work—even in the crowded streets the traffic makes way for them—so that the sufferer is landed in hospital within a few minutes of the receipt of the telephone call.

The rejection of the County Council's scheme was followed by the appointment of a Departmental Committee. In 1909 that Committee reported that the present mode adopted in the County of London for handling the injured was "gravely defective," and caused "much preventable detriment and suffering."

In 1909 Sir William Collins introduced and carried through Parliament a bill to enable the London County Council to establish and maintain a rapid ambulance service, summonable by telephone, similar to that which had proved so successful in the City. We are, however, unable to learn that any practical step has been even yet taken to put this Act into operation, notwithstanding the increasing number of accidents in our streets, and the immense amount of suffering occasioned by the present haphazard and gravely defective methods which are employed. Last month the Chairman of the General Purposes Committee, when interrogated on the subject, replied that that Committee was "making exhaustive inquiries, and when its negotiations were concluded it would report to the Council." We are not surprised that this callous reply was received with ironical cheers or jeers. No further inquiry is needed: the Departmental Committee inquired for two years. The case for a modern adequate ambulance service for London has been amply made out. The London County Council is the only public authority which is entrusted by statute with providing such service. The precise cost of maintaining an ambulance station is known as the result of the City's experience. We have heard of offers made to the County Council by one or two hospitals of sites for such stations, and we have been informed that the use of an up-to-date ambulance has also been offered to it. A relatively small expenditure for maintenance annually would remove a reproach which is now amounting to a scandal. We recently heard of a case of a woman with a compound fracture of the leg, due to a motor omnibus accident, being removed to hospital on a hand barrow. It is idle for the County Council to endeavour to thrust its responsibility on to other authorities. No other local authority in London can attempt the work without being liable to be surcharged. It is the County Council's responsibility alone. At the election of that body nearly three years ago a majority of its members were pledged to put the powers of the Metropolitan Ambulances Act (1909) into operation. Their tenure of office terminates next March. Unless the present Council speedily redeems its pledge it will be justly accused of having abused its trust.

Meanwhile the Home Secretary's replies in the House of Commons are far from satisfactory. The need for additional public control over motor omnibuses, their number and routes, may call for some investigation as well as the question of contribution to the repair of the roadways they destroy; but as regards the provision of a street ambulance service, not investigation but action is needed, and the proposed Select Committee ought not to be made an excuse for further delay. If the Home Office and the County Council would cordially co-operate, an adequate service might be in working order before the close of the year.

TUBERCULIN IN AUSTRALIA.

A few years after the death of Mr. James Brown, twenty years ago, there was established in his name a memorial trust, and one outcome was the foundation of a sanatorium at Kalyra, South Australia. It is under the general medical supervision of Dr. Charles Reissmann, who is now on a visit to Europe with a commission from the Commonwealth Government to inquire into and report on the systems of dealing with tuberculosis in Great Britain and Europe. He informs us that the Australian quarantine rule in regard to the landing of consumptives is no longer a dead letter. Any passenger deemed to be suffering from tuberculosis, even in an early stage, is usually absolutely excluded; at the best he is allowed to land only on execution of a heavy bond, which binds himself to leave Australia if not pronounced to be recovered at the end of six months. This rule is applied impartially, and includes first-class passengers. It is well that the fact should be generally known, since, although it is much less common to send consumptive patients to Australia than formerly, it appears to be done much more often than the experience of individual medical men on this side might perhaps suggest. The latest report relating to the Kalyra sanatorium in question shows that its administration has certain features of special interest. On the discharge of a patient a notification is sent on a special form to the medical man on whose recommendation he was admitted. It gives the date of the discharge of the patient, his address, the results of treatment at the sanatorium, and full details as to his condition on the day he left, including a note as to the dose of tuberculin which he last received. Another form is sent at regular intervals to every patient after his discharge, requesting him to fill in certain details as to the existing condition of his health and ability to work. A third form is a diagram representing in one figure both sides of the chest, as well as the back and front, thus enabling any lateral lesions that may exist to be graphically displayed. Altogether the charts and tables in use in the sanatorium number as many as thirty-four, certain of them showing the present condition of all patients discharged during each of the past six or seven years. In the year 1905-6, of 39 patients classed as in Stage I (Turban) 12 are dead, 11 cannot be traced, and 16 are alive. Of 51 classed as in Stage II. 35 are dead, 8 cannot be traced, and 8 are alive. Of 47 classed as in Stage III. 40 are dead, 5 cannot be traced, and 2 are alive. In other words, of patients in all stages discharged from the institution between six and seven years ago, 38 per cent. are still alive. It is known that a large proportion of the patients who cannot be traced have left South Australia, and that the others are probably still living, since no record of their death can be discovered. The systematic employment of tuberculin as a curative agent was commenced at Kalyra in 1909-10. In the earlier years the percentage of patients at all stages discharged "apparently cured" varied from 13.6 to 26.7; in the later years the corresponding percentage varied from 28.6 to 35.9. In order to show that this difference was not due to more careful selection of patients for admission, those classified on admission as being in Stage I were separately considered. In the three years before the introduction of tuberculin treatment the percentage of those cases discharged as "apparently cured" was 62.1, and in the three subsequent years 78.7. While these figures are held to disprove selection, they do not prove absolutely, it is pointed out, that it is to the introduction of tuberculin treatment that the improvement in the later years is due. Even among cases properly classed as first-stage cases there are considerable differences, individuals varying in recuperative power, and different strains of bacilli also varying in virulence. Nevertheless, Dr. Reissmann thinks that the evidence justifies the conclusion that tuberculin as now used at the sanatorium is of value and that its administration should be continued. The tuberculin used is a mixture of T.R. and T.O.A., the reason for the admixture being that T.R. is an endotoxin, whereas T.O.A. is an exotoxin, and, since in pulmonary tuberculosis each of these poisons is found, it is thought advisable to attempt to create active immunity against both of them. Fresh dilutions from concentrated solutions are made weekly: the dose administered varies from a mixture containing 0.0000025 mg. T.R. and 0.000125 mg. T.O.A. to a maximum in a very few cases of 1 mg. T.R. and 50 mg. T.O.A. The dose on each occasion is determined by careful consideration of the existing state of the patient and of his previous record. Should a definite temperature reaction of 1° F. follow the administration of a dose, and should a similar rise occur when the same dose is given after an interval of eight to ten days, the treatment is discontinued. The treatment otherwise consists of rest and graduated exercise at stated intervals, together with inhalation of various vapours when they seem to be required. The death-rate in South Australia from pulmonary tuberculosis has been falling for over two decades. In 1911 it was only 0.68 per 1,000, and the mean for the five years ending the beginning of this year was only 0.81, whereas in England the mean rate for the five years ending 1909 was 1.16 per 1,000—a much higher figure than in South Australia, but a much lower one than in nearly any European country.

THE PARASITE OF CANCER.

History repeats itself with a somewhat monotonous regularity in science as in other departments of human activity. This is particularly the case in regard to cancer. Some say that there is no parasite of cancer, others declare with equal confidence that they have seen it. The shades of the countless parasites which have been "laid" long since were so real and so obvious in their time that it is no use telling the protozoological Scrooge that they were but phantoms; for him they existed. We have now to announce a new parasite if it is not one of the old spectres resurrected—and to discuss it, without being able to say whether this time the problem which has baffled so many has at last been solved. Dr. Robert Behla,[1] Director of the Medical Department of the Royal Prussian Statistical Office in Berlin, dogmatically asserts that he has succeeded in cultivating a protist (*Blastozoon globosum*), which he holds to be the true cause of cancer. The article is written in a tone of assurance which does not inspire confidence, and is overloaded with technical detail to such an extent that the true object of the discussion is hidden from view. The fundamental claims and arguments might have been set forth in two pages instead of thirteen, and the strength of the latter would have gained considerably thereby. On one point we can agree with the author without hesitation—namely, that his experiments must be carefully and thoroughly controlled by capable workers. The results of these control

[1] *Deutsche Medizinalzeitung*, October 19th, 1912.

experiments must, however, be set forth in a very different manner to that adopted by Dr. Behla. Brushing aside a mass of *a priori* argument in favour of the existence of a parasite, we come to alleged facts. Certain appearances in new growths have for a long time been recognized. At first they were regarded as evidence of the existence of parasitic bodies; later, the view generally accepted was that they were cell inclusions. It is not quite clear to which appearances Behla refers, since he states that the so-called parasites of Schmidt, Doyen, Plimmer, Leopold, Jaboulay, and others, are not identical with his. At any rate he has succeeded in cultivating these round bodies in excised portions of the periphery of non-ulcerating new growths, to which he adds a fluid consisting of 100 grams of extract prepared by allowing distilled water to act on raisins (sultanas), in the proportion of 1 part of raisins to 10 of water, for twelve hours, and 5 grams of grape sugar filtered and sterilized. The piece of growth is placed in the warm fluid directly from the body—that is, before it has time to cool down—and is incubated at once. The growth is tested after three days. Subcultures can be made on gelatine or agar, etc., acidified with tartaric acid, but the bodies will not grow on these mediums directly. The statement made is that the same parasites are obtainable from the majority of malignant growths, but not from all and not from benign growths. It is said that the parasites are neoplastic, which must mean that Dr. Behla has injected the cultures into suitable animals and has obtained typical malignant growths, but such experiments are not detailed. He also says, again without detailing how the tests were carried out, that the serum of persons suffering from cancer agglutinates these cultures. He has found the protists in various organs affected, but not in the blood. Other statements contained in the paper might be adduced, such as the view of the author that the parasites belong to the protists, and not to the protozoa, and so forth, but these details need not concern us at present. What we wish to bring out is that a well known careful observer professes to have cultivated certain parasites from malignant growths and from malignant growths alone; that these parasites are supposed to be but one stage in a complicated life-cycle of a protist, and that certain evidence is adduced in support of the contention that these bodies are the living cause of carcinoma, sarcoma, and the other diseases usually included under the term "cancer." The work will be repeated by those who are skilled in sterile working, and, as the author points out, in three months the question might be settled. In the meantime we await further evidence.

THE ODOUR OF SANCTITY.

The phrase "odour of sanctity" is often heard, but few, perhaps, have ever asked themselves what it means, or whether it has any meaning at all. Scoffers have applied it in a literal sense, associating it with the fact that many saints have regarded washing as a sinful indulgence; to them, as to the demons in the *Dream of Gerontius*, the word "saint" connotes a bag of bones—

> That rattle and stink
> E'en in the flesh.

The phrase has now come to be used in a mystical sense. Yet it is unquestionable that it was in a former day often intended to be taken literally, as indicating a perfume of holiness, which might be regarded as a counterblast to the sulphurous fumes generally associated with the evil one. Sometimes, no doubt, the odour of sanctity is nothing more than a trick to delude the credulous, as in the case of a Maronite nun of whom Renan heard in Syria. She was considered a saint mainly, it would appear, on the ground that a smell of incense came from her, and pervaded her cell. After her death the convent was pulled down. During the work of destruction pipes were found in the wall, and through these came the fumes of incense. This discovery caused great scandal. Renan characteristically said: "We really are too merciless in disclosing the pipes which carried the incense fumes. Sometimes I say to myself that it would have been better not to touch them, and to leave the worshippers in their edifying belief." In Mallory's history of Prince Arthur he says that when Sir Launcelot's companions found him dead they noticed "the sweetest savour about him that ever they smelled." The odour of sanctity is a real thing, but there is nothing miraculous about it. Some thirty years ago Dr. W. A. Hammond, in a paper read before the American Neurological Association, called attention to the fact that the odour of sanctity ascribed to the saints by Goerres had a neuropathic explanation. He pointed out[1] that odours were emitted during conditions of hysterical excitement, of sexual excitement, and of religious exaltation. Sometimes the odour may have been due to disease. In patients who have long suffered from suppurative conditions it has been observed that an aromatic odour somewhat resembling that of strawberries is produced in consequence of the invasion of the pus by the *Bacillus pyocyaneus*. Before the antiseptic era blue pus was often observed in wounded persons, and its characteristic odour was well known. Again, patients who have been treated with turpentine diffuse an odour of violets, and that their urine has this odour is a common observation. Dr. George Dumas, of Paris, some time ago made a critical investigation of a number of cases in which mention is made of the odour of sanctity in the lives of certain saints, and he supplies physical explanations of them. The odour varies, being compared to the smell of the lily, the rose, the violet, the pineapple, and so forth. Subject to special modifications, Dumas gives the following general formula for the odour of sanctity: $C_6 H_{12} O_2$. He explains the odour of sanctity in the case of Saint Teresa by diabetic acetonaemia. It is well known that the breath of diabetics has a sweet smell. Dr. Dumas's theories are plausible, but the most interesting thing to us about his essay is that he accepts as facts statements which used to be dismissed as fables, and seeks for rational explanation of them. This is the true spirit of the scientific inquirer. But the explanation is, after all, only a hypothesis, for there is not, as far as we are aware, any kind of proof that the noble woman whom that Philistine of genius, Macaulay, called the "mad nun of Avila," actually suffered from diabetes. Something akin to the odour of sanctity has, it is said, been perceived at spiritualistic séances, and was supposed to be of psychic origin. This gave rise to a good deal of scoffing, but, as has been said, it is quite possible that perfumes accompanied the manifestations, and there is no need to have recourse to the spirits for their production. It may be added that scientific testimony to the possible reality of the halo of sanctity has also been adduced. Féré[2] believed that he witnessed the phenomenon in the case of two women, victims of migraine, in whom during an attack there suddenly appeared around the head an orange-coloured light stretching out from it for 20 centimetres. At the same time the skin had an orange tint. In one of these patients the phenomenon lasted several hours, in the other but a few minutes. He refers to the case of a third woman who was often suddenly awakened by a feeling of anxiety; on these occasions, he says, a halo was visible about her head. It may be added that phosphorescent sweating has been seen in certain rare cases after eating phosphorescent fish, or even as an idiopathic phenomenon. An instance in which the body linen became luminous after extraordinary exertion is on record. The phosphorescence is believed to be due to bacilli.[3] These facts

[1] *Neurological Contributions*, vol. i, 1881.
[2] *Revue de médecine*, No. 4, 1905.
[3] Malcolm Morris, *Diseases of the Skin*, p. 557.

may help to explain statements made by hagiographers and certain appearances sworn to in trials of alleged witches.

THE HOME OFFICE AND FLANNELETTE.

Some fifteen or twenty years ago an ingenious individual first contrived to deal with cotton in such a way as to produce a fabric resembling one of pure wool at a fraction of its cost. The next step—doubtless taken not by an inventor, but by a salesman—was to dub the material "flannelette," and to suggest to the public that it was in all respects quite as desirable a material for undergarments as flannel itself. Flannelette in appearance resembles real flannel, possesses some of the advantages of the latter—namely, it is soft and warm to the feel—and, owing to its initial fluffiness of surface, retains a good deal of body heat. But when it has been washed several times flannelette soon loses its warmth-retaining powers, and from the beginning most makes are highly inflammable. The latter fact only became known to the general public when deaths due to the use of flannelette became a standing item on lists of inquests and when this Journal and others had repeatedly drawn attention to the dangers of this substance. Furthermore, recognition of this new danger did not lessen the annual mortality from injuries by burning, especially in children, for so soon as the manufacturers became aware that the sale of flannelette was imperilled they countered by adding to their trade description of the article terms suggesting that their own particular product was uninflammable and therefore devoid of risk. There are methods by which flannelette can be rendered uninflammable, but only one or two firms have even attempted to apply them. Hence the deaths continued. That was the position some three or four years ago, and it remains almost unaltered at the present time, the annual roll of deaths being practically as high as ever. Nearly all the flannelettes on the market burn almost as rapidly as cotton-wool, and with one or two possible exceptions those specifically described as non-inflammable are little better. This is not a case to which the maxim *Caveat emptor* can properly be applied, the vast majority of the purchasers of flannelette being quite poor people who are at once tempted by the price and deceived by the terms under which it is sold. It is the Home Office which should intervene in the matter, and it practically admitted its responsiblity a year or more ago by appointing a Departmental Committee to consider the question of deaths from burning brought about by flannelette. Since there was no practical result therefrom, it was recently approached by a deputation from the National League for Physical Education and Improvement, which for two or three years has been active in the matter. The case for intervention was ably set out by Professor Howard Marsh, Sir Lauder Brunton, and Mr. T. C. Taylor, M.P., the latter indicating that the desire was that if it were impossible to prevent altogether the sale of inflammable makes of flannelette, false descriptions of its quality in regard to inflammability should be rendered definitely illegal. The reply made on behalf of the Home Office was to the effect that the Home Secretary was fully aware that the public was being deceived in the matter, but he was advised that it was impossible to deal with the question by an amendment of the Merchandise Marks Act, that there would be considerable difficulty in setting up a standard by which the non-inflammability of any given product could be tested, but that any suggestions on the subject would be considered. This was indeed but cold comfort; the Home Secretary has already had the suggestions of his own Committee, but has done nothing, and further suggestions from outside bodies seem likely to find their way to the pigeon-hole. No doubt there are difficulties, but with such difficulties it is the duty of the Home Office to deal, so the reply made would seem to be a confession of weakness and utility.

THE ROYAL MEDICAL BENEVOLENT FUND GUILD.

The annual meeting of the Royal Medical Benevolent Fund Guild, whose appeal is largely to the wives and daughters of medical men for their help in money and service, took place at the Mansion House on Friday, November 1st, with the Lady Mayoress in the chair. Lady Tweedy, the president of the Guild, in presenting the annual report, said that in order to encourage self-reliance it had been decided to grant loans, in certain cases, either with or without interest according to circumstances. She added that the work of the Guild was growing in every direction, but the increased membership hardly kept pace with the appeals for help, and visitors were badly needed. From every centre came the same complaint, that many subscriptions had either been reduced or refused altogether, owing to the increase in taxation and in the cost of living; in consequence the fund lacked the means to respond to a number of applications. During the past year it had been compelled to refuse help in several cases, whilst in others the amount given had been less than usual. Despite the decrease in subscriptions, however, the treasurer (Mrs. Scharlieb, M.D.) was able to report that owing to the generosity of friends the Guild had done well financially, the receipts amounting to £1,625 as against £900 last year. Stepney, which was not usually regarded as a rich district, had sent £50, the proceeds of a concert; and an annual income of £100 had been promised, under certain conditions, by a lady who took a deep interest in the work of the Guild. Thanks to the improvement in its finances the Guild had been enabled to purchase a ten years' annuity of £100 a year; but funds were still urgently needed to meet the inevitable expenses incurred in carrying on the work. An interesting account of the work of the visiting committee was then given by Mrs. Liveing; and another speaker suggested the extension of the good offices of the Fund to struggling doctors who were endeavouring to bring up and educate their children on pitiably inadequate incomes. The meeting concluded with a special appeal for gifts and subscriptions towards the Father Christmas branch of the Guild.

MEMORIAL TO ADMIRAL SIR FREDERICK WILLIAM RICHARDS.

The brother officers and friends of the late Admiral of the Fleet Sir Frederick Richards having expressed a strong desire to honour his memory, a meeting will be held at the Royal United Service Institution, Whitehall, London, on Wednesday next, November 13th, at 12.30 o'clock, when the project of instituting a memorial will be discussed and an executive committee will be appointed. As the work of Sir Frederick Richards, essentially patriotic in intention and in effect, was of inestimable, if unobtrusive, benefit to his country and remains a high example of devotion to duty in the Royal Navy, it is hoped that the meeting, which is open to all, may be representative, not only of the navy and the army, but of the nation at large. Sir Frederick Richards was a broad-minded, warm-hearted man, and ever a very good friend of the Royal Naval Medical Service. His memory is venerated by many officers of that service, who will, without doubt, be glad to take their share in the proposed memorial.

The British Association has appointed a committee on colour vision and colour blindness. The committee consists of Professor E. H. Starling (chairman), Professors F. Gotch, Leonard Hill, A. W. Porter, and A. D. Waller, with Dr. Edridge-Green as secretary.

At the meeting of the Surgical Section of the Royal Society of Medicine, to be held on Tuesday next, November 12th, at 5.30 p.m., there will be a discussion on sarcomata and myelomata of the long bones. Sir Alfred

Pearce Gould will deal with the clinical diagnosis, Sir John Bland-Sutton with the pathology, Mr. G. E. Gask with prognosis, Mr. A. Reid with *x*-ray appearances, and Sir Frederic Eve with treatment. Among other speakers will be Mr. R. C. Elmslie, Mr. Ernest Shaw, Mr. C. R. C. Lyster, Mr. Gwynne Williams, Mr. Ironside Bruce, and Mr. S. G. Scott.

Medical Notes in Parliament.

National Insurance Scheme.

Sanatorium Benefit.

Mr. Fell asked on October 30th if only one-fifth of the consumptives in this country would be entitled to sanatorium or any other benefits under the National Insurance Act; and if the Secretary to the Treasury could give any estimate of the amount of the charges which would fall on the local authorities in respect of the consumptives who would not be entitled to benefits under the National Insurance Act, but who would have to be placed in sanatoriums by the local authorities under another Act. Mr. Masterman replied that only insured persons or dependants of such persons could be treated at the expense of the National Insurance Fund. The number of these would bear a continually increasing proportion to the total number of consumptives, and it was probable that they would ultimately form a large majority of the consumptive persons in the country. The Insurance Act also contained provisions whereby sanatoriums and other institutions for the treatment of tuberculosis might be made available for non-insured persons. He was unable, however, at present to give an estimate of the cost of the treatment of the consumptives who were not insured persons or dependants of insured persons.

In reply to a further question by Mr. Fell, Mr. Masterman said he should not think that more than one-fifth of the people at present suffering from consumption were employed persons.

On October 31st Captain Gilmour asked whether the Insurance Commissioners had made any regulations as to the terms under which patients would be admitted to sanatoriums for treatment; and if his attention had been drawn to the fact that in some cases the patient was required to provide an outfit of clothing to the value of £5. Mr. Masterman said that no regulations had been made by the Insurance Commissioners as to the terms under which patients would be admitted to sanatoriums for treatment. Such terms were primarily a matter for agreement between the Insurance Committee and the managers of the sanatorium, but the arrangements made required the approval of the Commissioners, and they would not approve of any agreement which would impose upon an insured person the liability mentioned in the question.

Sir Edward Beauchamp asked whether the Insurance Committee of a county had power to extend sanatorium treatment to dependants of insured persons resident in the county; and whether any Insurance Committees had made the necessary arrangements for the treatment of such persons. Mr. Masterman replied that the answer to the first part of the question was in the affirmative. Some Insurance Committees had already made arrangements for treatment of dependants, and the Commissioners proposed to issue a circular letter recommending that other Insurance Committees should consider the question of extending sanatorium benefit to the dependants of insured persons.

Mr. Fell inquiried if that would mean an increased charge. Mr. Masterman replied that there was sufficient money already available.

Mr. Guiney, on November 1st, asked the Chancellor of the Exchequer what reasons were adduced for sending tuberculous patients from Munster to the Newcastle sanatorium, county Wicklow, when there was accommodation available in Munster at the Heatherside sanatorium, Doneraile, and the charge reasonable: and where were the hospitals available in Munster for the treatment of chronic tuberculous patients situate. Mr. Masterman, in reply, said the local Insurance Committees were responsible for making the most suitable arrangements for each person entitled to sanatorium benefit. They were not restricted to making arrangements with institutions in their own area, and the decision as to where a particular individual should be sent necessarily depended upon several considerations, including the cost of travelling and of maintenance, and the character of the treatment required. No institution in Munster had yet been approved specifically for the treatment of advanced cases of tuberculosis.

In reply to Mr. Fleming, Mr. Masterman said that his attention had been called to a resolution passed by the Reading Insurance Committee with reference to existing accommodation for cases of tuberculosis, and he understood that the Insurance Commissioners had supplied the committee with a list of approved sanatoriums to which insured persons suffering from tuberculosis might be admitted. The complete separation of Poor Law institutions from sanatorium treatment under the Act was a principle definitely embodied in the bill in its passage through this House, and he had no reason to believe that the House had any desire to reverse that decision.

On November 4th Mr. Remnant asked the Chancellor of the Exchequer with regard to a man at Barking who, after making several applications to the Essex Insurance Committee for sanatorium benefit, had been compelled to obtain the benefit elsewhere, and inquired whether the Essex Insurance Committee would be directed to refund the cost. Mr. Masterman replied that he was informed by the Essex Insurance Committee that at the time of the application referred to they found that the attitude of the local medical profession rendered it impossible for them to obtain the necessary medical report on the applicant's physical condition. Consideration of the application was consequently deferred until October, and when the case came up at the first meeting of the committee in that month it was found that the applicant had made a private arrangement for treatment in a sanatorium. He was communicating further with the Insurance Committee with regard to the case.

Mr. Touche asked the Chancellor of the Exchequer on November 5th if he was aware that, according to the information available at the Local Government Board, over 2,300 persons of sixteen years of age and upwards, and over 750 under sixteen years of age, suffering from tuberculosis, were being treated in the Poor Law infirmaries and Metropolitan Asylums Board's institutions, many of whom presumably would be entitled, under the National Insurance Act, to sanatorium benefit; that the cost of the treatment of these patients involved a very large expenditure, which was at present a charge upon the poor rates of the metropolis; and could he say what provision out of the National Health Insurance funds it was intended to make for those cases. Mr. Masterman in reply said that the National Insurance Fund could only be charged with the cost of treating insured persons and the dependents of insured persons, but the National Insurance Act and the Finance Act, 1911, had made available a sum of £1,500,000 to aid the provision of sanatoriums and other institutions in which both insured and non-insured persons might receive treatment.

Mr. Fell asked if certain definite sums had been assigned for the payment of the sanatorium benefits under the National Insurance Act; and if those sums formed a part of the general fund and would be available for the general expenses of the Act. Mr. Masterman replied that definite sums were allocated under Section 16 (2) of the National Insurance Act for the provision of sanatorium benefit. Those sums were not available for other purposes of the Act. The Act definitely allocated certain sums that must be devoted to sanatorium benefit.

On November 5th Captain Clay asked whether the National Insurance Commissioners had power to pay rent for an insured person who had been ordered domiciliary treatment for tuberculosis and who was destitute owing to his inability to earn a living? Mr. Masterman replied No. He was advised that the Commissioners had no power to authorize payments of insured persons' rent from the funds available for sanatorium benefit under the National Insurance Act. Sickness benefit of 10s. a week (or 7s. 6d. for women) would, however, be payable after the six months' waiting period, under the ordinary conditions, to insured persons who were receiving domiciliary treatment in their own homes.

In reply to Mr. Pollock, Mr. Masterman stated that the numbers of persons who died through tuberculosis in 1910 in England and Wales, in Scotland, and in Ireland were 51,317, 8,517, and 10,016 respectively. No figures were

available as to the number of persons suffering at the present time, and no estimate could be formed except on the basis of an assumed ratio between deaths and cases, which was necessarily speculative and must vary in the different forms of tuberculosis. The proportion of tuberculous persons who might obtain treatment under the Act would, if insurance committees extended the benefit to dependants, might ultimately exceed 50 per cent.; but as only those who had been at work at some time subsequent to July 15th could be insured, the present proportion must be, and remain for a time, very much lower.

Mileage Allowance.

Mr. Charles Bathurst, on November 1st, asked whether, in the revised system of payment of the doctors for their services under the National Insurance Act, any difference would be made in the mileage allowance for urban and country practitioners respectively. Mr. Masterman replied that no part of the new grant which Parliament would be asked to make was specifically ear-marked for mileage, but that did not prevent an arrangement for this purpose being made. The distribution of the total sum to be provided for medical remuneration, and the assignment of special portions to special services, was largely a matter for the medical profession, and any proposals which appeared to command the general support of the profession would receive careful consideration.

Medical Benefit.

Mr. Laurence Hardy asked the Chancellor of the Exchequer on November 4th whether, when he laid down as one of the conditions for the medical service in connexion with the National Insurance Act that the practitioners should in future resort to modern means of exact diagnosis, he intended to include under this head all the expense of examination of blood, sputum, etc., and the cost of vaccine treatment, within the ordinary allowance granted to the medical profession; whether under the term "medical appliances" such articles as trusses and other appliances of a similar character were included, and would they be paid for out of the extra 6d. allocated for unusual expenditure; and could he state what was the authority which was to decide whether a doctor had or had not resorted to the most modern means of diagnosis. Mr. Masterman, in reply, said that it was generally recognized, by none more than the medical profession themselves, that the standard of contract practice up to the present had been on the whole far from satisfactory. Now that the State was providing a very substantial increase in the remuneration of the medical profession, it was proposed that the standard should also be improved, and it was contemplated that, in consideration of this increased remuneration, the practitioner on the panel would provide medical treatment for the benefit of the insured persons to the same extent and on the same lines that he would for his patients in his ordinary private practice. Trusses were not included in the list of appliances which was scheduled to the Regulations, and therefore would not be paid for from the amount allowed for drugs and appliances. It would be for the Commissioners to decide whether a proper standard of diagnosis and treatment was being maintained by the medical practitioners who undertook the attendance and treatment of insured persons. It would not be practicable at present to foreshadow in detail the methods which the Commissioners might from time to time find it advisable to adopt in order to satisfy themselves in this respect. He might say, however, speaking broadly, that it was intended to rely at the outset to a great extent on the co-operation of the local medical committees and the medical profession generally to secure the object in view.

Mr. C. Bathurst asked whether, in the revised system of payment of the doctors for their services under the National Insurance Act, any difference would be made in the mileage allowance for urban and country practitioners respectively. Mr. Masterman said, in reply, that no part of the new grant which Parliament would be asked to make was specifically earmarked for mileage, but that did not prevent an arrangement for this purpose being made. The distribution of the total sum to be provided for medical remuneration, and the assignment of special portions to special services, was largely a matter for the medical profession, and any proposals which appeared to command the general support of the profession would receive careful consideration.

Mr. C. Bathurst asked whether it was realized that the expenses under that head of the rural practitioners were considerably more than those of the urban practitioners? Mr. Masterman replied that was so, but rural practitioners would have several compensating advantages in other arrangements, such as the provision of drugs.

Sir H. Craik asked if the remuneration left to the doctors would depend upon the largeness or the smallness of the amount they required for mileage? Mr. Masterman said no special payment for mileage would be included in the total amount, amounting, he thought, to something like 9s. per head for doctors and drugs. Sir H. Craik said that the doctors would lose as the mileage increased. Mr. Masterman replied that the doctors would get the mileage allowance.

Mr. Falconer asked whether any allowance for mileage to country doctors would necessarily come off the allowance to the town doctors? Mr. Masterman replied not necessarily; it all depended upon what representations were made by the medical profession as to how best to distribute the money.

Mr. Lloyd asked whether the doctors would not lose if the mileage increased? Mr. Masterman said that the mileage would be paid to the doctors.

Sir G. Younger: Out of the General Fund?

Tuberculous Sailors and Soldiers.

Mr. Astor asked the Secretary of State for War how many beds in sanatoriums, as distinguished from beds in hospitals, military or otherwise, were available for the reception of insured persons in His Majesty's forces suffering from tuberculosis. Colonel Seely answered that soldiers who developed tuberculosis were discharged from the army and then became entitled to sanatorium benefit. The method by which treatment in sanatorium could best be ensured for them was at the moment being investigated.

Mr. Astor also asked a similar question with regard to insured persons in His Majesty's navy suffering from tuberculosis, and Dr. Macnamara replied that there was no special sanatorium accommodation set apart for the persons referred to. Patients were treated in the ordinary hospitals.

Sanatorium Grant (Ireland).

Mr. Hugh Barrie asked the Chief Secretary for Ireland what was the share of the county of Londonderry, on a population basis, of the £145,000 given to Ireland for sanatorium purposes, and what would be its proportion of the sum remaining since the grant of £25,000 was made to the Women's Health Association for the erection of a sanatorium at Peamount, co. Dublin. Mr. Birrell said that if the whole £145,000 had been distributable between county areas in proportion to population, the share of the county of Londonderry would have been approximately £3,300. The share of the county in the sum of £120,000, which was available for immediate distribution on population basis, was £2,729. As regards the balance of £25,000, he referred the hon. member to the reply given to the question asked on the subject by the hon. and learned member for North-East Cork on October 17th (BRITISH MEDICAL JOURNAL, October 26th, p. 1159).

Housing in Scotland (Royal Commission). In reply to Mr. Munro Ferguson, Mr. McKinnon Wood said that he was satisfied that the terms of reference to the Housing Committee included inquiry into urban and rural housing generally.

Experiments on Living Animals. Mr. Lansbury asked the Home Secretary if the formation of his new advisory body to assist him in the work of granting licences and certificates for experiments on living animals, as recommended by the Commissioners in their report of last March, was now completed; and, if so, whether the names of the gentlemen composing that advisory body could be made public. Mr. McKenna said that he had not yet been able to complete the arrangements, but hoped that the matter might be settled before long.

THE recently formed Municipal Waterworks Association held its first meeting in London a short time ago. It already has 100 members, representing 21 municipal authorities of over 50,000 population concerned with the water supply of 16,000,000 people. These and other facts were brought out at a luncheon given by Mr. E. B. Barnard, Chairman of the Metropolitan Water Board.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

Treatment of Tuberculosis.

With reference to the letter from the Local Government Board on the subject of the arrangements to be made in London for the administration of sanatorium benefit,[1] the Public Health Committee, in a report to the London County Council on November 5th, admitted the need for a central organizing authority in each county, owing to the number and distribution of municipal, charitable, educational, and other institutions which would form part of the machinery for dealing with tuberculosis. The scheme of supervision outlined in the report of the Departmental Committee on Tuberculosis centred upon the county councils, and there was nothing in that report inconsistent with the view that it was contemplated that in London, as in other parts of the country, the authority to be entrusted with the organizing and supervisory duties should be the County Council. This was consonant with the special position held by the County Council in London with regard to public health. If this were the intention of the Local Government Board it was essential that the point should be made quite clear and the necessary authority provided. The Public Health Committee felt that the Council would not desire the settlement of this question to interfere with the provision at the earliest possible date of institutional treatment for persons in the county suffering from tuberculosis, and the committee proposed, therefore, without prejudice to any future action, to make preliminary inquiries as to the provision of the necessary temporary accommodation. Meanwhile, the committee recommended that the Local Government Board be asked whether it intended to place the London County Council in the same position as other county councils in regard to tuberculosis treatment.

Commenting on this proposal, the Finance Committee remarked that the letter from the Local Government Board gave rise to many questions which would involve considerations of great financial importance to the Council. As to the suggestion that the Public Health Committee should communicate with the Metropolitan Asylums Board and other authorities, the Finance Committee was of opinion that in the present uncertain state of affairs nothing should be done which would in any way commit the Council to any particular course of action with regard to making either permanent or temporary arrangements.

At the meeting of the managers of the Metropolitan Asylum District on November 2nd a letter was read from the Local Government Board, informing the managers that the Government had come to the conclusion that it would be impracticable to obtain the necessary legislation in the near future to remove the obstacles to the managers providing the sanatorium accommodation required for London for the purposes of the National Insurance Act. The Board stated that in the circumstances it was not possible to adopt the suggestion of the Departmental Committee on Tuberculosis that the managers of the Metropolitan Asylum District should provide some of the institutions required. The recommendations of the Departmental Committee could best be met by some friendly arrangement between the managers and the London County Council, and the Local Government Board had written to the Council to this effect.

The letter was referred to the Law and Parliamentary Committee pending the receipt of a communication from the London County Council.

Medical Control of Farmfield Inebriate Reformatory.

The Public Control Committee stated that, having regard to the fact that a very large percentage of the women admitted to the Farmfield Inebriate Reformatory had proved quite unsuited for detention there, and that many cases were of a very troublesome and refractory nature, the question had arisen whether the existing arrangements under which the reformatory was managed were the most advantageous. At present there was a lady superintendent who was the principal officer at the institution, and the medical side of the work was performed by a visiting medical practitioner. The duties attaching to the position of superintendent of such an institution were onerous and exacting, and the committee was of opinion that the responsibilities were such as could not reasonably be expected to be undertaken successfully by a woman. The alternative was that a fully qualified medical man should be placed in charge of the reformatory, having regard especially to the fact that during the last few years the complexion of the work there had undergone a great change. The value of the appointment of superintendent was approximately £200 a year, and the present medical officer received a salary of £120 a year, out of which he had to provide medicines. The committee's proposal was not likely to cause an increased expenditure, as, in its opinion, it would be possible to obtain a suitable medical man for the combined positions at a salary of £300 a year, with fire, light, and residence.

On the recommendation before the Council:

> That the Council do approve the principle that the officer in charge of the Farmfield Reformatory shall be a fully qualified medical man, and that the Public Control Committee be authorized to take the necessary preliminary steps to give effect to the resolution,

some discussion arose as to the best method of securing the efficient management of the institution. An amendment was moved that the words "or woman" be inserted after the words "fully qualified medical men."

Mr. M. Tasker said he must protest against the proposal to ask a man with full medical qualifications to accept this position at a salary of a paltry £300 a year. The Council required the services of a man who had specialized in a particularly disagreeable and difficult branch of work. The proposed salary was about half the sum the Council should offer.

The Rev. Dr. Scott Lidgett thought that the institution should be controlled by a medical man, a competent woman being appointed to the principal staff. In work of this special nature the sympathetic influence of a woman was of even more importance than medical treatment. It would be an advantage, perhaps, to secure the services of a woman with a medical qualification. The influence of a matron must be inferior to that of a woman who was capable of undertaking the scientific medical treatment of this terrible complaint. The wisest course would be not to prejudge the question by barring out all possible women candidates, but to decide after the replies to the advertisement had been received.

Mr. W. Haydon, Chairman of the Public Control Committee, mentioned that one of the duties that fell to the officer in charge of the reformatory was the superintendence of a farm of 400 acres attached to the institution. He agreed that the sum suggested by the committee as a suitable salary was too low, but he believed that for the successful management of the institution there must be a medical superintendent.

Mr. Yeo thought the proposed salary ridiculous; it should be at least £600.

In reply to a question, the Chairman of the Committee said the appointment was intended to be a whole-time one.

Mr. Edward Smith asked if it was intended to put a medical man in charge of a 400-acre farm; the institution appeared to require a steward and a matron as well as a medical superintendent. He urged that the report should be taken back and a complete statement made.

A question then arose as to whether or not board was to be included in the emoluments of the position, and, after Mr. T. Hunter had expressed the opinion that a whole-time medical superintendent was not needed for an institution containing only 100 patients, the Chairman of the Committee took back the report, promising to submit a more exhaustive review of the working of the establishment.

The Medical Treatment of London School Children.

Arrangements for the Year 1912–13.

The Education Committee of the London County Council on November 6th had before it a long report by the Children's Care Subcommittee as to the arrange-

[1] British Medical Journal, October 26th, p. 1163.

ments to be made during 1912–13 for the medical treatment of London elementary school children.

The subcommittee proposed that provision should be made during the year ending July 31st, 1913, for the treatment of 48,613 defects, or, omitting minor ailments, of 39,238 defects. During the year ending December 31st, 1911, the total number of eye, ear, nose, and throat defects and ringworm cases treated was approximately 65,000, and during the year ending July 31st, 1912, 60,000. It was estimated that one-third of the defects would be dealt with apart from the arrangements made by the Council. On this basis, and taking 60,000 as the number of defects which would be found on inspection to require treatment during the year 1912–13, provision for the treatment of 40,000 was necessary. The subcommittee was of opinion, however, that provision for the treatment of 39,238 defects would be sufficient, so far as that proposed for eye, ear, nose, and throat defects were concerned, but it was possible that some extra accommodation for the treatment of ringworm might be needed. The question of some further provision was receiving consideration.

The authorities of the institutions included in the scheme sanctioned by the Board of Education until December 31st, 1912, were willing to renew the agreements, but in five cases this consent was conditional. The following particulars were given with regard to the more important conditions:

1. *Deptford Children's Health Centre.*—The committee was unwilling to allow the Council to select the surgeons, as was now the case at treatment centres provided by medical practitioners.

2. *Miller General Hospital.*—The governing body was willing to renew the agreement in the event of the Council not being able to make other satisfactory arrangements.

3. *The Metropolitan Ear, Nose, and Throat Hospital.*—The governing body required that the capitation payment should be increased to 6s., as the anaesthetists now required payment.

The subcommittee recommended that the existing agreements with the London, the Miller General, the Royal London Ophthalmic, and the St. Mary's (Paddington) Hospitals be renewed upon the present conditions until July 31st, 1913, and that the agreements with the undermentioned hospitals and centres be renewed until July 31st, 1913, with the modifications indicated in each case.

1. *Belgrave Hospital for Children.*—The number of ear, nose, and throat cases to be dealt with to be reduced from 1,500 to 1,000 a year.

2. *Charing Cross Hospital.*—The number of eye cases to be dealt with to be reduced from 500 to 250 a year.

3. *Deptford Children's Health Centre.*—The selection of the doctors to be made by the Council from nominations made by the committee of the centre; the services of an anaesthetist on two sessions a week to be utilized, and the agreement to provide for the length of the session to be two and a half hours.

4. *Metropolitan Ear, Nose, and Throat Hospital.*—The capitation payment to be increased from 4s. to 6s. a case.

5. *Norwood School Treatment Centre.*—The number of eye (refraction) cases to be increased from 440 to 880 a year, and the number of ear, nose, and throat cases to be reduced from 1,320 to 440 a year. The committee to be guaranteed against loss a sum not exceeding £15 in the event of the agreement terminating on July 31st.

6. *Woolwich and Plumstead Cottage Hospital.*—The agreement to be renewed, subject to satisfactory premises being provided; and the committee of the hospital to be informed that it was not possible to accede to a request for an increased grant in respect of nursing treatment.

7. *Wandsworth School Treatment Centre.*—The number of ear, nose, and throat cases to be dealt with to be reduced from 1,320 to 880 a year, and the number of ringworm cases to be increased from 150 to 220 a year.

8. *Royal Eye Hospital.*—Provision to be made for the treatment of 4,000 cases a year, but unless the committee of the hospital was prepared to make arrangements for the treatment in the special children's department of all the children attending the hospital from London elementary schools, the Council to guarantee payment on 3,000 only.

The subcommittee did not propose to renew the agreement with the governing body of the Hospital for Sick Children, Great Ormond Street, owing to the insufficiency of cases to justify special arrangements for treatment being continued. The committee described in detail the arrangements which are to be continued at the various hospitals and centres for "following up" after-treatment.

Considerable discussion took place at the meeting of the Education Committee on the question of the continuance of the present arrangements, the statement being made that the attempts to secure treatment through the agency of the voluntary hospitals had been, on the whole, unsatisfactory.

The Chairman of the Subcommittee (Mr. Anderton), however, declared that in all cases the arrangements now proposed to be made would follow the lines of those which had received the entire approval of the Board of Education as carried out at the London Hospital.

Major Levita appealed for the inclusion of the treatment of tuberculosis in the Council's scheme.

Mr. R. A. Bray moved an amendment to provide that in districts not comprised in the area of any of the proposed schemes one or more school clinics, under the direct management of the Council, be established, in order that their value might be tested, and that they might afford a guide to the proper sum which should be paid in grants towards the maintenance of centres privately established.

This proposal was rejected by 19 votes to 10.

Dental Treatment.

The subcommittee also stated that it had had under consideration arrangements for the dental inspection and treatment during the year 1912–13 of children attending elementary schools.

In order that dental treatment might be of permanent value, it was necessary that arrangements should be made for each child to be reinspected by the school dentist, and any further treatment which might be required as the result of such re-examination carried out. It was proposed that the area from which children attended the centres should be so arranged as to enable the inspecting dentist to visit each school once a year. Children examined for the first time when 6 or 7 years of age would come under the notice of the inspecting dentist when 7 and 8 years of age respectively under the existing scheme, but it would be necessary to make special provision for the reinspection of children after they reached the age of 9. Arrangements for such an extension of the scheme will shortly receive consideration.

With regard to the accommodation for treatment for the year 1912–13, the Board of Education had already approved arrangements for treatment at the Fulham Dental Centre, the St. Marylebone General Dispensary, and the Wandsworth School Treatment Centre until July 31st, 1913, and it was suggested that the four agreements provided for the dental treatment of children, which would expire on December 31st, 1912, should be renewed. The authorities of the centres were willing to continue the work, subject, in the case of the St. George's Dispensary, to the Council allowing a nurse, as at the Norwood and Wandsworth centres. This had been approved. The committee of the Deptford Children's Health Centre objected to the selection of the dentist by the Council, but the subcommittee did not see its way to waiving this condition. In the cases of the Deptford Children's Health Centre and the St. George's Dispensary, it would not be necessary to guarantee a minimum capitation payment. It was proposed to open additional centres at Islington, Peckham, St. Pancras, and Woolwich. Additional inspecting dentists and three additional temporary school nurses would be required in connexion with the proposed new centres, and the provision of two other centres was under consideration. The cost during the first year of the four new schemes would be £1,976, excluding administrative charges.

A proposal that provision should be made for the dental treatment of not less than 50,000 cases a year was rejected by 16 votes to 14, Mr. Anderton stating that it was difficult to persuade parents to send their children for dental treatment, and that in the present state of public opinion treatment could not be secured for so large a number as 50,000.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

PRIVATE PRACTICE OF PUBLIC MEDICAL OFFICERS.

A NEW indignity has been thrust upon the medical profession in Ireland. Hitherto a dispensary doctor in the country, though he had to discharge his public duties for a miserable pittance, after submitting to election by men who, as a rule, were entirely incapable of discriminating between the qualifications of candidates, had the right to charge what fees he liked for any private practice he was able to obtain in his district. Now this is to be done away with. The Swinford Board of Guardians at their last meeting decided to adopt the following scale of fees for private practice, to which the candidates must agree before appointment.

Midwifery Cases.

When a call is made between 7 a.m. and 7 p.m., £1; when the call is between 7 p.m. and 7 a.m., £1 5s.; for each subsequent visit, 5s.

All other Cases.

For the first visit, 10s.; for each subsequent visit, 5s.

Attendance at Medical Officer's Residence.

Fee to be charged to any person who attends at the doctor's residence for advice and treatment and unable to pay the doctor's usual fee, 2s. 6d. These fees shall include the supply of all necessary medicines, which must be given by the doctor at his own expense.

The Problem of Hungry School Children.

A public meeting was recently held at the Mansion House, Dublin, in support of the Ladies' School Dinner Committee. Sir Charles Cameron, who occupied the chair in the unavoidable absence of the Lord Mayor, stated that the city was, on the whole, a poor city; that an unduly large proportion of the people of the city were very poor was shown by the fact that though there were 32,000 houses in Dublin, 360,000 people lived in less than 6,000, and that 30 per cent. of these families had each only a single room. In other parts of the United Kingdom the children of the poor enjoyed advantages not possessed by those in Ireland. There was no organized medical inspection as in England. The authorities in England had been given power to supply food for children who were in very indigent circumstances. In Ireland the authorities had no such power. The imposition even of one penny on the rates would produce a sum that would meet the wants of a very large number of children. The following resolutions were passed:

That this meeting calls upon the Irish members of Parliament to get the Free Meals Act extended to Ireland in a form suitable to this country.

That, failing the extension of the Act, the Corporation of Dublin should make a grant to meet the immediate needs of the school children.

At present such a rate would not be legal, and the Corporation would be liable to surcharges for it, but it is hoped that leave will be obtained from the Local Government Board to raise the necessary money.

Royal Veterinary College.

At the opening of the thirteenth session of the Royal Veterinary College of Ireland, Professor J. J. O'Connor, M.R.C.V.I., delivered an inaugural address. He stated that it was estimated that about 30 per cent. of the cattle in Great Britain and Ireland were tuberculous, although the majority of these appeared in perfect health; the veterinary surgeon, however, had in tuberculin an infallible diagnostic agent for the disease in the living animal, even when in a latent form, and from his special training in veterinary pathology he could readily recognize the tuberculous udder and carcass, and was thus in a position, if called upon, to protect the public against the ingestion of milk and flesh containing the germs of the disease. The transmission of the disease from bovines to man could be largely, if not entirely, prevented by employing the services of the veterinary surgeon in the inspection of dairy cows and meat. Private abattoirs would soon be abolished, and every town would have its veterinary meat inspector, so that the inhabitants of Ireland would no longer be at the mercy of the ignorant or unscrupulous meat vendor, who was at liberty to sell to them, without fear or hindrance, the carcasses of all the diseased cattle in the surrounding country. With regard to the recent outbreak of foot and mouth disease in the country after a freedom from it of thirty years, it might not have proved so serious if a veterinary surgeon had been called in to attend the sick animals instead of a quack, for he would have diagnosed the nature of the disease at once. A Departmental Committee of veterinary experts, he said, had just been appointed to investigate the disease, the locale of the inquiry being India, where there was unlimited material for the purpose, the contagion being widespread throughout that country.

Trinity College Bicentenary Memorial Fund.

At a meeting of the medical graduates of Trinity College, held last July during the bicentenary festival week, it was decided to raise a fund by subscriptions from old students to establish a permanent memorial. It is hoped that the fund will provide a second travelling prize. Already a considerable sum has been promised, and a list of subscriptions is to be published at an early date.

Housing and Town Planning Association.

Last week a conference of members of this association was held in Dublin, the Countess of Aberdeen presiding. In addressing the meeting, Lady Aberdeen gave figures from the returns of the last two censuses showing what had already been done in Ireland to improve the dwellings of the poor. The homes throughout the country were divided into four classes—the old cabin of one room with one window, the third class with one to four rooms and windows, the second class with five to nine rooms, and the first class with nine or more rooms. During the last ten years first-class homes had increased all over Ireland by over 11 per cent., and second-class houses by 12 per cent.; third-class houses had decreased by 26 per cent., and fourth-class houses by 50 per cent. The percentages in towns were very similar. There had been a reduction of one-roomed tenements throughout Ireland of over 20,000 during the last ten years. The aim of the association, she said, was to bring together all earnest social workers who felt the burden of the present housing conditions. The following motions were carried:

1. That the urgent problems of housing and economic planning of urban and other areas throughout Ireland demand united and educative action on the part of the urban authorities, voluntary organizations, and others interested.
2. That the State should provide financial facilities for urban and other housing schemes not less favourable than have been provided for those in rural districts under the Labourers' Acts (Ireland).
3. That legislation codifying existing statutes and extending the powers of urban and other authorities for the acquisition and development of sites for housing schemes is urgently necessary.

In the evening Mr. Henry Vivian, J.P., Chairman of Tenants' Co-partnership, Limited, delivered a lecture on housing and health.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Medical Conditions in the Highlands.

The committee appointed by the Treasury to inquire into the medical, sick nursing, and hospital provision in the Highlands and Islands held a meeting in Oban on October 28th. The evidence received was entirely from members of the medical profession in Argyllshire. The witnesses were Dr. Roger MacNeill, M.O.H. for the County, Drs. Macnicol, (Taynuilt) Grant (Ballachulish), Mackay (Appin), MacDonald Ross (Morvern), and Mackechnie (Bunessan).

All the witnesses gave great prominence to the desirability of increasing the emoluments of the profession, more especially in outlying parts, insisting that at present inadequate medical attendance was due to insufficient remuneration. A minimum salary, it was urged, should be assured, and with a view to that and for other reasons a State medical service was strongly recommended, local resources having already been strained to the utmost in endeavouring to attract competent medical men. It was also held that the efficiency of medical attendance was hampered by the existing parish delimitations, and that it was very desirable that there should be a redistribution in the medical administration areas. A strong contrast was drawn between the position of the ecclesiastical and medical professions in several of the parishes, one parish in the county being mentioned where there were about a dozen churches and manses and only one doctor's house, and that inferior to any of the manses.

The nursing system in the county, which is mainly controlled by the Argyllshire Nursing Association, was found to be superior to any as yet investigated by the committee, but the number of nurses, according to the evidence, is still inadequate, several of the island parishes being without any nurse. Strong testimony was borne to the high qualifications of the nurses and their devotion to the service. A real drawback in the nursing service was stated to be the difficulty at times of finding suitable

accommodation for the nurse when a case demanded her absence from home: a bell tent had in some cases been provided for her accommodation.

Other suggestions for the improvement of the medical service were the provision of good seaworthy motor boats in certain places and motor cars for doctors, the development of the existing post-office telephone system, with a view to making it available for direct communication not only between doctor and patient, but also between doctor and nurse; the advantages in the case of the islands were held to be obvious.

Dr. Roger MacNeill gave a full account of the efforts made by the local authority to combat tuberculous disease in the country, and to the invaluable service rendered by the Argyllshire sanatorium at Oban. At present one of the principal difficulties was that the majority of cases were received only after they had entered on the incurable stage. Domiciliary treatment of the disease had not yet been carried out to any extent.

The committee afterwards visited the sanatorium, and the members expressd themselves highly satisfied with the institution and its situation.

The committee sat again at Oban on the following day to hear witnesses from South Uist and Barra. Dr. Riordan (Daliburgh), the Rev. Father MacDougall (Daliburgh), the Rev. Father Hugh Cameron (Castlebay), and the Rev. Father Macphail (Eriskay) gave evidence which went to show that in these islands the problem of medical attendance was peculiarly difficult owing to their isolation and the inability of the great bulk of the people to pay adequate fees. Medical men were not easily attracted to the islands, nor did they remain long even when the parish council paid a salary out of proportion to the number of paupers for whom the doctors were ostensibly appointed. The service was detrimentally effected by frequent changes. To retain the services of doctors resort had been had to a club system by payment of 5s. per "smoke," but so far this method had been unsuccessful, and the total amount received from club fees and the salary paid by the parish council was not by any means adequate remuneration. A large amount of illness was stated to be unrelieved by medical treatment. In one district this was put as high as 40 per cent., and this estimate was borne out by the high percentage of uncertified deaths. The difficulty of travel throughout the islands was also dwelt upon, and mention was made that even if a doctor could afford to keep a motor car or motor cycle, the people strongly objected to their use, as, owing to the unfenced roads and the nature of the country, they feared their horses would be scared. The necessity of a nursing service was strongly urged. There was no nurse, it was stated, in South Uist, with a population of 5,000 people, and in Barra there was one, and she had only a maternity training. In the case of the island of Eriskay, owing to the difficulty of access in the winter time, a resident nurse would be very useful. Tuberculous disease, both pulmonary and non-pulmonary, had spread rapidly in recent years, and demanded the immediate attention of the authorities. It was held that its prevalence was due, to a large extent, to underfeeding and bad feeding of infants. Hardly any mothers nursed their children, who were almost from their birth fed on oatmeal; there was at all ages an excessive indulgence in over-brewed tea. A regrettable fact was that the cow's milk, which should be devoted to the infant's use, was given to the calf to force its growth. Eggs were also seldom or never used, but bartered at the local merchant's for tea and other commodities. Physical deterioration consequently resulted, and the capacity to withstand tuberculosis or other infection was decreasing.

From the Arisaig and Knoydart district, the Very Rev. Canon Chisholm, Arisaig; the Rev. Angus Macrae, Morar; and Mr. James Macrae, Knoydart, gave evidence, dwelling especially on the difficulties in the parishes of Glenelg, Arisaig, and Moidart owing to the sparse and scattered population, the mountainous character of the country, which was largely intersected by arms of the sea, making it extremely difficult for doctors and nurses to reach patients.

The committee continued its sittings at Oban on October 30th. Witnesses examined from the remote districts of Ardnamurchan and Acharacle were the Rev. John Smith (Kilchoan), Mr. J. Campbell (crofter, Kilmorey), and Dr. Macnaughton (Salen, Loch Sunart), who has been in practice in the parish of Acharacle for thirty-two years. The needs of that district have been brought under the notice of the Local Government Board; the witnesses examined at this sitting made a strong case for establishing a resident medical man at Kilchoan, and paid a tribute to the generosity of Mr. Rudd, the proprietor, in aiding in the provision of nurses throughout the district. For the whole district of Lochaber the case was presented by Dr. de Sylva (Arisaig), Dr. Brander (Fort William), Canon Macintosh, Mr. George Malcolm, and Provost Young (Fort William). From their evidence the question of medical attendance presented much the same features as in other similarly situated districts visited by the Commission. Special reference was made to the part played in the prevalence of tuberculosis by the milk supply, and to a discovery recently made as to the spread of the disease through the medium of the crofters' milk cows, with which the sanitary authorities are less able to deal than in the case of the farmers' byres, which are usually registered. The closing of the Invergarry railway was referred to as having affected the medical service in the eastern part of Lochaber district very adversely. The Rev. Malcolm MacCallum, Chairman of the Lorn District Committee of Argyll County Council, gave evidence as to the medical service in the county and in the Highlands generally, particularly from its financial aspect, and made suggestions as to the local and imperial grants for the betterment of the existing inadequate arrangements.

At the meeting of the committee on November 1st, which was held in Glasgow, evidence was taken as to the working of the dispensary system of medical attendance in Ireland, and more particularly in the poorer and sparsely populated districts. The two medical witnesses were Dr. Coey Biggar, medical inspector under the Local Government Board, and Dr. Warnock, a medical practitioner from Donegal. The statements submitted showed that the doctor's total emoluments, notwithstanding the heavy rating and the somewhat liberal Government subvention, were not always attractive, nor was there such a method of promotion as might be expected under a system controlled by a Government department. The security of tenure, subject to an appeal to the Local Government Board, was an advantage. As regards medical administrative areas, the nursing and hospital provision in Ireland appeared to be much superior to what obtained in Scotland. A striking fact, however, was that, notwithstanding the very complete system of medical attendance, the uncertified deaths in certain districts of the West of Ireland were still as high as 40 per cent.

Dr. Gilmour (Islay), Dr. Hunter (Lochgilphead), and Mr. Thomas Kay (Ardfern) were also examined as to the medical provision in their respective districts.

The committee held its final sitting in Glasgow on November 2nd. The witnesses examined were Her Grace the Duchess of Montrose, Cameron of Lochiel, Sir Donald MacAlister, and Mr. J. R. Motion, Inspector of Poor, Glasgow.

The Duchess of Montrose gave evidence as President of the Govan Nursing Institute regarding the system of modified training of nurses intended for service, more particularly in the rural parts of the country, which she had been able to establish in that institution. These nurses were doing excellent work in such parts of the Highlands as were fortunate enough to secure their services, but there were far too few of them. It was strongly held that further means should be devised to extend this beneficent provision by the training of many more women for attendance on the sick poor, and more especially on cases of maternity. She hoped that steps would be taken at an early date to increase the training capacity of the institute.

On the general question of medical provision valuable information and advice was given by Sir Donald MacAlister, Principal of Glasgow University. From his intimate knowledge of the Highlands and of the medical provision therein, and more particularly in his capacity as President of the General Medical Council, his opinions as to the solution of the problem before the Commission were regarded as of the greatest importance. The character of the service generally as regards the personality of the medical man, his environment, remuneration and prospects, and the too often precarious nature of his

tenure of office, were discussed, as were also the most feasible means for the amelioration of existing conditions as regards not only better remuneration, but also the more direct control of appointments and dismissals, with special reference to a gradual development of a system which would lead eventually to a State medical service. As a special factor in the problem of adequate medical service, prominence was given to the fact that the majority of medical practitioners, owing to the expense more particularly of providing a locumtenent, rarely got a holiday. This was regarded as detrimental, not only to the doctor, but to the patients. A holiday would not only recoup the doctor and enable him to stand the strain of country practice, but if, as was frequently the case, he attended a post graduate course at a university centre, his efficiency would be very materially advanced in another direction. Most doctors, again, made but a bare subsistence, and consequently could not provide for old age, the result being that many of them had to continue in practice after age and infirmity had impaired their efficiency for such practice as was expected of them. In these circumstances the advisability of recommending a scheme of superannuation was pressed upon the Commission.

Interesting information was also supplied by Cameron of Lochiel as to the general conditions in Lochaber, and more particularly on his own extensive estates, where a club system of medical attendance, which included whole families, had been in vogue for many years. The effect thereon of the Insurance Act and its adaptation to the special circumstances were discussed.

Mr. J. R. Motion, Inspector of Poor, gave evidence as to the arrangements for medical attendance on the 2,146 boarded-out children under the jurisdiction of the Glasgow Parish Council. The attendance was satisfactory, and he bore testimony to the spontaneity with which the medical men had aided the council in the discharge of this most important part of their public duties. A further and most important step had recently been taken in the provision of expert dental treatment for those children, who were now, in that and other respects, much better off than the native children of the Highlands and Islands.

The committee has spent six weeks in visiting the Highland counties, and has examined over 200 witnesses. It is expected that its report and recommendations will be issued early next year.

Incidence of Ophthalmia Neonatorum in Scotland.

The Local Government Board for Scotland has issued to local authorities in Scotland a circular and an accompanying report by Dr. T. F. Dewar, one of their medical inspectors, on the incidence of ophthalmia neonatorum in Scotland. It is pointed out that local authorities can apply to it the provisions of the Infectious Diseases (Notification) Act. Numerous local authorities in England have made ophthalmia neonatorum notifiable, but only a few Scottish authorities have done so. Statutory notification prevails throughout Switzerland, Germany, Austria, France, and in fifteen of the United States of America, the aggregate population of the last being upwards of 38 millions.

A report on this subject was issued by the British Medical Association in 1909. Its conclusions were to the effect that:

1. Ophthalmia neonatorum accounts for upwards of 10 per cent. of all cases of blindness.
2. The number of cases of ophthalmia neonatorum shows a slight but steady decrease, so far as can be judged by returns from British lying-in hospitals and departments and from eye hospitals.
3. It is still, as it has been for many years, the cause of at least one-third of the blindness in all inmates below the age of 16 or 18 years in British blind schools and asylums; and
4. Ophthalmia had been found to occur amongst cases attended by medical practitioners, as well as amongst those attended by midwives.

The last conclusion is significant in view of the statement that, if suitable precautions are taken, the disease can be prevented.

Dr. Dewar conducted an inquiry in twenty of the largest towns in Scotland, directing his attention in particular to the following points in view:

1. The present incidence of ophthalmia neonatorum expressed as far as possible statistically, and its relative incidence in past and present periods.
2. The extent to which it is at the present time a cause of blindness, both absolutely and relatively to other maladies productive of blindness in youth.
3. What proportion of cases of ophthalmia neonatorum are due to gonococcal infection and therefore directly associated with venereal disease.

The conclusions arrived at as a result of these inquiries are:

1. That it is the general but not invariable belief among those who are engaged in ophthalmic work and general practice in Scotland that ophthalmia neonatorum is less prevalent than it was twenty-five or even ten years ago; that actual loss of vision from this cause is less frequent than heretofore all are agreed. Nevertheless, the disease is not so uncommon, nor grave impairment of vision as an effect of it so rare, that it can be regarded lightly or with indifference. Basing an approximate estimate on a review of all the facts and opinions which he had been able to glean, Dr. Dewar says that it would seem that even at the present time about 500 cases occur annually in Scotland, and that of these 30 to 40 suffer some impairment of vision, and 5 to 10 become economically blind. Dr. Dewar states that these figures understate rather than exaggerate the truth.
2. Among those with whom Dr. Dewar discussed the question of ophthalmia neonatorum and its prevention, a considerable majority expressed an opinion in favour of its inclusion among the notifiable diseases; he also expresses the opinion that if the facts regarding the prevalence, preventability, and dire results of ophthalmia neonatorum were brought prominently to the notice of local authorities, further action, based upon the circumstances and needs of each area, might well be left to the initiative of the local authorities themselves.
3. The opinion was submitted very generally that, apart from or in addition to statutory notification of ophthalmia neonatorum, much might be done to restrict its incidence and still more to control its ravages were a Midwives Act for Scotland (on lines generally resembling the English Act) to be passed by Parliament.

School for Defective Children at Paisley.

The latest addition to Paisley's educational equipment is a new school for the training of defective children, formally opened on September 24th, and constructed to accommodate 320 pupils. Outside Glasgow, Edinburgh, and Govan (to be incorporated with Glasgow next month), this is the first school of its kind in the country, and is fitted with all modern requirements for the training of children suffering from physical or mental disabilities. For the physically defective there are on the ground floor eight class-rooms, each accommodating 20 pupils. Play hall and dining hall are conveniently situated, the latter accommodating 160 children. The mentally defective have eight similar class-rooms on the first floor. There are four playgrounds, each of which has a sand-pit for recreation purposes, and the front portion of the site is laid out in plots for special instruction in the cultivation of shrubs and plants. An open-air class-room, with a system of folding doors for protection from wind and rain as required, has been provided for tuberculous children. The cost of the building is £9,600, and pupils will be admitted from Renfrew, Barrhead, Neilston, and Johnstone districts as well as from Paisley. Physically defective children will be brought to school in special motor conveyances.

AT the municipal elections in Portsmouth, contests took place in ten out of fourteen wards. In two there were medical candidates, and in one Mr. C. P. Childs was returned by a majority of 57 votes.

THE "Pass the Bill" Committee proposes to hold a demonstration in the London Opera House, Kingsway, on the evening of November 12th, in support of the Criminal Law Amendment (Commonly called the White Slave Traffic) Bill. Many important societies—religious, social, and political—are uniting to give further publicity to the strong determination daily growing in force that this bill shall be passed without the weakening amendments made in Grand Committee. Particulars of the meeting can be obtained from the Secretary, "Pass the Bill" Committee, 19, Tothill Street, Westminster.

THE Lord Mayor, attending in semi-state, opened on October 31st a considerable extension of the business premises of Messrs. John Bell and Croyden. In the course of a short speech, Sir Thomas Boor Crosby mentioned his friendship with a son of the John Bell who founded the business in 1798. The original shop was a well-known landmark in Oxford Street until some four years ago, when it was amalgamated with the business founded by John Bell's original assistant, and moved to 50, Wigmore Street, under the title of John Bell and Croyden. A feature of the firm's new departure is an arrangement for the hire of all appliances required in the sick-room.

Correspondence.

ACCOUNTS FOR FEES UNDER THE NOTIFICATION ACT.

SIR,—A matter has been occupying some of my attention officially lately which I think is worthy of recording in the JOURNAL, for the benefit of the profession in this country. Under the Notification of Diseases Act, as is known, certificates are required to be sent in to the medical officer of health by practitioners attending persons who are the subject of such diseases as are notifiable.

For these certificates a fee is payable by the local authority. A procedure has lately been adopted by many of these authorities under which a form is issued to practitioners with a demand that this should be filled up giving a detailed account of these certificates, and a statement is made that unless this account be made up no fees will be paid under the Act; in one instance brought to my notice an actual refusal was made and the fees withheld. It cannot be too widely known that this demand for an additional "account" is without any legal authority at all; and that if a practitioner is refused his fees on the ground that he has not made up this account such refusal is absolutely illegal.

In order to make this clear I brought the matter before the Local Government Board, and received a reply which will, I trust, prevent this imposition on the part of local authorities from being repeated. From the reply I herewith extract that referable to the point involved:

> I am to state that they have informed the Council that the Infectious Diseases Act, 1889, requires the local authority to pay for each certificate, and that the Board are not aware of any legal obligation resting upon medical practitioners to send to the authority a statement of fees apart from the certificates themselves.

This letter is signed on behalf of the Local Government Board by the Assistant Secretary, and is dated September 24th, 1912. I had a similar reply and statement in December, 1911, from the Local Government Board in respect of the action of local authorities requiring medical practitioners under the Tuberculosis Regulations, Article VI, to submit "accounts of fees" due in respect of such notifications. I trust, therefore, that this extra task which the local authorities have endeavoured for some time illegally to cast upon medical men will not be countenanced or acceded to by them. Our duties of notification rest with the issue of the certificates, and the payment, small as it is, automatically follows the issue, but as a matter of convenience we have permitted it to remain in abeyance until the quarter following the date of the notification.—I am, etc.,

A. G. BATEMAN.

Medical Defence Union,
4, Trafalgar Square, W.C.,
Nov. 4th.

GENERAL PRACTITIONERS AND CONSULTANTS.

SIR,—Will you grant me a little space to draw attention to a matter which seems to me to open up the question of the relationship of the general practitioner to the consultant?

The Council of the British Medical Association has made an appeal for no mean subscription to its Defence Fund, as well to the consultant as to the general practitioner. Now, it is obvious that the Insurance Act, which is admittedly seriously endangering the position of the latter, is of far less serious importance to the former. If, then, the practitioners of the profession expect the consultants to help them in their fight, is it not only just and fair that they should begin to regard them in a less prejudiced light than has too often been the case hitherto, and look upon them rather as willing colleagues and helpers than as being a body of men who are always ready to "damn by faint praise" and rob them of their patients when sent to them? That there are black sheep in every fold must be admitted; but such are pretty generally recognized, and can therefore be avoided; but that the main body of the consulting branch of the profession should be tarred with the same brush is neither fair to it nor creditable to its sister branch. Repeatedly one hears accusations made against consultants for "seeing patients without the knowledge of the doctor," for "retaining and treating patients sent to them," and for "operating upon patients without informing the doctor." When will the general practitioner recognize the fact that, no matter what rules we as a profession may make, the public is, and will insist on remaining, a perfectly free agent, considering itself at liberty to go to whatever doctor it pleases and whensoever it pleases? When will he understand that at times a patient will tie the hands of the consultant by absolutely refusing to allow him to communicate with his doctor, and will, as has happened to me on several occasions, transfer his case to another consultant if he refuses to examine him in the absence of such permission? Again, does the general practitioner always "play the game" as he expects the consultant to play it? Let me give an instance: Comparatively recently three patients, all in need of operation, came to me without the knowledge of their doctors, not knowing the rule. All were willing that I should communicate with these gentlemen, and in each case I did so. What was the result? In not one of the cases did I receive the courtesy of a reply, nor did any of the patients return to me for operation.

I have in my possession a letter from a general practitioner whose patient, coming to me without his knowledge, absolutely refused to allow me to write to him till her operation had been done, threatening, if I refused to see her, to go elsewhere. The operation was for a scirrhus of the breast, which both her doctor and his partner assured the lady did not exist. (I sent these gentlemen the microscopical proof of this cancer later.) The letter accuses me of diagnosing a cancer which was not there; of "sharp practice" in taking their patient; and of contravening the ethics of the profession.

I have no wish, Sir, to raise an acrimonious discussion, nor to induce a "washing of dirty linen" in the press, but I do think that the time has come when some steps should be taken to clearly define the relationship of the consultant and general practitioner, and to recognize the indisputable right of the public to be considered free agents and not the prescriptive right of the first medical man they happen to go to. For, until this is done, and the honour and honesty of the consultants cease to be fair game for those who so frequently impugn them, it is hardly in the best of taste to expect the consulting branch of the profession to put its hand deeply into its pocket to help those who are so ready to throw stones at it.

For the sake of the many loyal and good friends I have among the general practitioners, I am willing to help to the best of my ability, but I am sure that many of my fellow-consultants will support me in my contention, and hope that something may soon be done towards creating a better understanding between the two branches of our profession.—I am, etc.,

LAWRIE MCGAVIN.

London, W., Nov. 1st.

THE SURGICAL TREATMENT OF RECTAL CANCER.

SIR,—It was my privilege to hear the able address delivered by Mr. Harrison Cripps in Liverpool in July as an introduction to the discussion upon rectal carcinoma, when I was struck by, and not a little surprised at, his remarks upon the value of the sigmoidoscope in diagnosis. I was diffident about criticizing the views of so distinguished an authority at the time, but as the question has been raised by your correspondents, Mr. Lockhart Mummery and Mr. Gordon Watson, my old chiefs at St. Mark's Hospital, I may venture to add a brief contribution to the discussion and to join them in advocating the claims of the sigmoidoscope.

On referring to the notes of the cases in which I have employed endoscopy during the present year, I find no fewer than five examples of carcinoma which defied diagnosis by digital examination as the growth was beyond the reach of the finger, and in which an accurate diagnosis was arrived at by the aid of the sigmoidoscope. In three of these, in order to put the question beyond doubt, small portions of the growth were removed by long forceps and submitted to microscopical examination, with the result that the pathological reports confirmed the clinical diagnosis.

In another case—that of a man in whom a high rectal carcinoma was suspected on account of the fact that the

finger reached the lower edge of a mass involving the bowel wall—a small portion of the overlying mucous membrane was removed through the sigmoidoscope and shown on microscopical examination to be normal, giving rise to the suggestion that the swelling was not a primary carcinoma of the rectum, as was proved by the after-events.—I am, etc.,

HAMILTON DRUMMOND, F.R.C.S.Edin.

Newcastle-upon-Tyne, Nov. 4th.

SIR,—I have read with much interest both the kindly remarks and criticisms by Mr. Lockhart Mummery and Mr. Gordon Watson on my address at the Liverpool Annual Meeting on the surgical treatment of rectal cancer (BRITISH MEDICAL JOURNAL, October 5th). As to the criticisms, I, like St. Paul, am willing to justify myself.

At the meeting a printed table (Table A) was handed round. Owing to its length (seventy-two pages), this was not reprinted in the JOURNAL, but is accessible. The table gave the details in chronological order of every case of rectal cancer seen by me in private practice. It was explained that hospital cases were omitted owing to the difficulty of following the subsequent history.

The table in each case gives the date, the name of the medical attendant, sex, age, duration of symptoms, *height of disease* from anus, treatment adopted, and result. Owing to the date and name of medical attendant, an opportunity is offered of correcting any error.

Part of the criticism of your correspondents was directed to my statement that "in an overwhelming percentage the disease is situated within six inches of the anus, probably not 10 per cent. originating above that site." In the table referred to the position or height in inches is given in 442 cases out of 445. In 381 cases the disease was within six inches, or 86.4 per cent. The remaining 61 cases are described as "high up"—that is, above measurable distance but not necessarily above six inches. This amounts, if all were included, to 13.7 per cent.

My rectal cancer cases have always been measured with the same keenness as a big game shooter measures his heads, and I am confident of their general accuracy, and they support my statement that, "as shown by Table A, an overwhelming percentage of cases are situated within 6 in. of the anus." Assuming that all the 61 cases described as "high up" were above 6 in., the figure would be 13.8 per cent.; but as some of these cases were undoubtedly, though not measurable, within 6 in. of the anus, the statement that "probably only about 10 per cent. are above this height" is substantially correct.

In considering the wide divergence between my statistics and those given by your correspondents, it must be remembered that all my cases were in private practice. The great majority of these were sent to me by their own medical attendant, who had already detected the disease by digital examination. While it is not unlikely that some of the higher cases, that is, beyond digital detection, had been referred to the physician as "colitis," or some trouble high up.

Mr. Mummery gives his measurements "as above and below the peritoneal reflection," apparently considering this as the equivalent to my "6 in. above the anus," but it should be remembered that experimental injections of plaster-of-Paris show that 3½ to 4 in. is the average height of the reflection, and not 6 in.

Your correspondents infer that had I made more use of the sigmoidoscope more higher cases would have been detected. This is not so. If symptoms of cancer are present and an ordinary examination has failed to detect a growth, a thorough bimanual examination is resorted to under an anaesthetic, and if disease is present it is very rarely missed. It is in these cases that the sigmoidoscope has failed to assist me.

Mr. Mummery says cancer "can be much more certainly diagnosed by sight than by touch." This is not so—at least, to me, and I adhere to my statement "that cancer can never be diagnosed to a certainty by sight alone; touch only, by indicating hardness and friability, has to be relied on."

This is especially so in an early stage of rectal cancer, where the disease frequently begins as a small flat infiltration in the submucous tissue. At first this is covered by an almost normal-looking mucous membrane, ulceration being a later stage. The fact, however, that it is hard and firmly adherent to the subjacent tissue discloses its malignant nature, and for this touch alone has to be relied on.—I am, etc.,

London, W., Nov. 4th. HARRISON CRIPPS.

RASHES OCCURRING DURING THE PUERPERIUM.

SIR,—May I say, in reply to Dr. Herman's letter in the JOURNAL of November 2nd, p. 1249, (1) that since 1883-84, when Dr. Boxall's sixteen cases of scarlatina occurring during pregnancy and in the puerperal state, which were of a mild type, were observed, bacteriology has become a science, and that it has been shown that secondary septic changes which are apt to occur in the throat, etc., in scarlatina depend upon the presence of organisms (streptococci, etc.) identical with those met with in the uteri of patients suffering, after delivery, from certain forms of puerperal infection (puerperal septicaemia or puerperal fever), and found in fatal cases in the tissues of their bodies? A similar type of secondary septic infection is seen in diphtheria, the only difference being that in diphtheria the specific organism causing that disease has been isolated, while there is still some doubt as to the exact *materies morbi* of scarlatina. (2) Dr. Boxall's results prove the truth of my conclusions that true scarlatina is rarely conveyed to a lying-in woman, and that any risk of its being carried from the septic focus in the throat, etc., may be avoided by modern aseptic and antiseptic precautions which Dr. Boxall rigidly employed at the General Lying-in Hospital. (3) I have been greatly influenced in my judgement on this question of the relationship of scarlatina to the puerperium by Dr. Boxall's monograph, to which I have referred in my paper. It is interesting to find that modern bacteriological research is in accordance with and explains and confirms his careful observations and his practical results. For clearness, let me repeat the conclusions at the end of my paper:

1. Scarlatina is rarely encountered during the puerperium.
2. When it does occur during the puerperal period it is, as a rule, a mild disease, that is, with the use of modern aseptic and antiseptic precautions.
3. What has been called "puerperal scarlatina" is almost always a form of septic infection with a rash resembling the eruption seen in true scarlatina.
4. From a person ill of scarlatina, there may be conveyed to a lying-in woman either:
   (*a*) A true scarlatina; or
   (*b*) Septicaemia, arising from the secondary septic changes which are apt to take place in the throat, etc., in scarlatina.

The former (*a*) occurrence seems to be rare, while the latter (*b*) should be avoided by modern aseptic precautions.—I am, etc.,

Belfast, Nov. 4th. JOHN BYERS.

THE "EDINBURGH REVIEW" ON SECRET REMEDIES.

SIR,—In your article in the JOURNAL of October 26th commenting upon my essay in the current number of the *Edinburgh Review*, I venture to think that you have inadvertently misrepresented the gist of my argument, for your readers must have inferred that I was attempting to defend secret remedies, whereas my chief object in writing the article was to assist in the public exposure of their worthlessness. I believed, however, that before taking legislative measures towards suppressing a trade dealing in millions per annum, and bringing in a revenue of hundreds of thousands to the Treasury, it would not be irrelevant to hear what the trade had to say in its own defence, more especially since an official pamphlet had been issued on their behalf by the section concerned of the London Chamber of Commerce. I was careful to dissociate myself from their arguments; and I confess it never occurred to me that, in merely reciting the defence they had set up, I should be accused of "parading my impartiality" or "opening the case for the proprietors," particularly after I had devoted considerable space to quoting from *Secret Remedies* the analyses of several of the most egregious nostrums I could find, and had

concluded by advising the public "to have nothing to do with secret remedies," but to purchase the two "amusing and admirable volumes," *Secret Remedies* and *More Secret Remedies*. You describe me as an "uncertain guide" because I quoted from the pamphlet the claim that proprietary medicines are unsurpassed for simplicity, uniformity, and cheapness. But really, Sir, I am not responsible for the statements in the pamphlet; and when you rejoin that "it is abundantly proved that secret remedies are not uniform," you are stating a truth of which I furnished ample illustration in the course of my article. Your critic, moreover, is in error in attributing to me an intention of bracketing antipyrin, urotropin, "tabloid" preparations, etc., with such things as tuberculozyne or Beecham's pills. I mentioned those important bodies purely to emphasize the fact that the publication of their composition or method of manufacture had not prevented them from remaining valuable paying properties; and I adduced them in opposition to the plea of the trade that publication of formula must ruin the property. In short, I believe that I am fully as antagonistic to secret remedies as you are, and that I have condemned them in language not less strong than your own. Finally, as to my "parade of impartiality," permit me, Sir, to draw your attention to the advice which you were good enough to give me in your review (June 8th) of my recent book on Bergson's philosophy: "Purely destructive criticism, by the very fact of its obvious lack of sympathy and of the insight inseparable therefrom, is apt to miss its mark."—I am, etc.,

London, W., Nov. 1st. HUGH S. ELLIOT.

ANAESTHETICS IN EXPERIMENTS ON ANIMALS.

SIR,—I find that a passage in the report of the Royal Commission on Vivisection has conveyed the impression that I regard the frequent use of anaesthetics as unnecessary in experiments on animals. I wish to state in the most unqualified manner that I regard the use of anaesthetics as right and necessary in every case where appreciable pain would otherwise be inflicted, except in the cases (provided for in existing legislation) where the object of the experiment is of sufficient importance, and would not be attained if anaesthetics were used, or where, if the animal were allowed to recover, the after-effects of the anaesthetic would cause more pain or discomfort than the operation.

I also wish to state that in any experiments I may do I comply strictly with the existing law, although, as I stated in my evidence before the Commission, it in some respects defeats its own objects and causes much unnecessary trouble to those engaged in the advancement of medical knowledge.—I am, etc.,

London, Nov. 4th. M. S. PEMBREY.

THE SECRET OF LONG LIFE.

SIR,—May I correct the following errors in my letter printed in the JOURNAL of November 2nd, p. 1248:

1. The superscription ought to be "The Secret of Long Life," the word "long" having been forgotten.

2. In the paragraph on "breathing exercises," "vigour" ought to stand instead of "vigors" of the organs.

3. In the quotation from Shakespeare, "a *lusty* winter" ought to stand instead of "a *misty* winter."—I am, etc.,

London, Nov. 4th. HERMANN WEBER.

The Services.

ROYAL ARMY MEDICAL COLLEGE.

WE published last week the address delivered by Sir Henry Morris after he had presented the prizes at the Royal Army Medical College on October 29th. Before the presentation Colonel B. M. Skinner, M.V.O., Commandant and Director of Studies, addressing the Director-General and Sir Henry Morris, spoke as follows:

Ladies and Gentlemen,

I have the honour to report on this occasion, which closes the twenty-first session in London of the Junior Class of Instruction, that the number of lieutenants on probation has been—for the Royal Army Medical Corps 26, and for the Indian Medical Service 12. These gentlemen, after having become duly qualified in civil medical schools and in many cases having held resident appointments in hospitals of this country, have been under instruction at this College in subjects outside the scope of their previous training. These subjects have a special bearing upon hygiene and sanitation, and upon the pathological and traumatic conditions incidental to the soldier, whose service leads him sooner or later into tropical countries. And to these subjects must be added instruction in the administration of the army, especially in relation to military hospitals both in peace and war. Although the curriculum has opened up ground which was entirely new to most, I am pleased to report that the young officers have taken to their work with zeal and energy. The result of their work as shown by the examinations just concluded has been very good on the whole. Some of the candidates, as was to be expected, have exhibited greater powers of assimilation than others, with the result that the relative positions gained at the entrance examinations have become somewhat altered. And these relative positions may undergo further modification at the completion of the course at Aldershot, to which they proceed to-morrow. There are certain prizes awarded to those who excel in the examinations. In announcing the names of the prize winners, I wish to mention those who gained the distinction of "proxime accessit."

Herbert Prize: Highest aggregate	Lt. J. D. Wilson, I.M.S.	530.5/700
First Montefiore (Military Surgery)	Lt. J. D. Wilson, I.M.S.	85/100
Second Montefiore (Military Surgery)	Lt. L. A. P. Anderson, I.M.S.	80/100
Prox. acc.	Lt. T. E. Osmond, R.A.M.C.	77/100
Tulloch Memorial (Pathology)	Lt. R. A. Flood, R.A.M.C.	147/200
Prox. acc.	Lt. T. Poole, R.A.M.C.	134/200
Fayrer Memorial (Pathology)	Lt. J. D. Wilson, I.M.S.	148/200
Prox. acc.	Lt. J. B. Hance, I.M.S.	147/200
Parkes Memorial (First Hygiene)	Lt. J. B. Hance, I.M.S.	145/200
De Chaumont (Second Hygiene)	Lt. E. B. Allnutt, R.A.M.C.	144/200
Prox. acc.	Lt. H. C. Todd, R.A.M.C.	142/200
Ranald Martin (Tropical Medicine)	Lt. J. Hare, R.A.M.C.	95/100
Prox. acc.	Lt. J. B. Hance, I.M.S.	93/100
Marshall Webb (Military Medical Administration)	Lt. J. Hare, R.A.M.C.	87/100
Prox. acc.	Lt. L. T. Poole, R.A.M.C.	80/100

I cannot close my report without expressing regret at the loss the College is sustaining by the departure shortly of Colonel Melville, our Professor of Hygiene. His work has been that of a master in his subject, and his labours in the field of the soldier's physical work and training will have lasting results, some of which he will observe in that magnificent army we furnish to India, where he is now going. On behalf of my staff I wish him God-speed.

Surgeon-General Babtie, C.B., Deputy Director-General, after Sir Henry Morris's address made a short speech, appreciative of it, and asked for a vote of thanks, which was accorded with acclamation. The company, numbering about 200, then proceeded to the mess for tea, the Commandant and officers being "at home."

ROYAL ARMY MEDICAL CORPS.

THE King has been pleased to grant his licence and authority to Major Howard Ensor, D.S.O., M.D., R.A.M.C., to accept and wear the decoration of the Third Class of the Imperial Ottoman Order of the Medjidieh presented by the Khedive of Egypt in recognition of valuable services rendered.

THE estate of the late Mr. Clinton Thomas Dent has been declared at a net value of £116,263. His will directs that his medical and surgical books shall be given to the students' library at St. George's Hospital, and that a sum of £1,500 shall be offered to the Belgrave Hospital for Children subject to certain conditions, and that in default of their acceptance it shall be paid to St. George's Hospital.

Medico-Legal.

STEVENS V. BRITISH MEDICAL ASSOCIATION.

Continuing his evidence on Wednesday, October 30th, Dr. Dyke Acland said, in answer to Mr. Gregory, that, with regard to the cases referred to by Dr. Evans, he had seen many similar cases cured without Mr. Stevens's remedy. In sanatoriums everything was done which gave the slightest reasonable ground for success. They had sometimes to refuse cases which were hopeless. A considerable number were sent away with the disease arrested, and when he compared the figures with those put forward by one of the doctors called on behalf of the plaintiff he did not think that the plaintiff's figures proved anything remarkable. With reference to the lady who went to South Africa and was cured after using Mr. Stevens's remedy for three months, he thought she was under conditions in which patients do recover entirely. He had heard of numerous "cures" for consumption since he had been in practice, and it was generally alleged that people had been cured by them.

Mr. Tindal Atkinson: How is this evidence?

Mr. Justice Pickford: Mr. Gregory wants to show that the fact that they recovered does not show that the medicine did it.

Continuing, witness said that many people recovered under treatments to which no fair-minded man would ascribe any specific action. The statement made by Mr. Stevens that under his treatment tubercle cavities would fill up so that they could not be discovered showed that he knew nothing about it. It was impossible to replace lung tissue. A statement had been made by one doctor that he had seen tuberculosis of the throat cured by this medicine, and that he had not known such a cure before. If he had never seen a case of tuberculosis of the larynx cured before, that showed that he had not seen much of tubercle. The statement that the lung of a man who suffered from silicosis became as hard as stone was absurd.

The witness was then cross-examined.

Mr. Tindal Atkinson: You treat Stevens's cure with contempt?—Who said so?

I say this from the answers you have given. Do you quarrel with it?—I do.

What is the view you take of it, then?—I don't think it is of any use.

Your view is that it is absolutely useless as a treatment for consumption?—I believe it is useless.

Are you positive that it is useless?—I am positive that is my opinion.

No, no, that won't do. I want a definite answer.

Mr. Justice Pickford: He cannot say more than that; he thinks it is useless.

Mr. Tindal Atkinson: The defence has gone further than this. They do not say it is a matter of opinion.

Mr. Justice Pickford: I do not see that the witness can say more than he has said.

Mr. Atkinson: Why not? I am entitled to an answer to my question.

Continuing, witness said it was his opinion that the medicine was of no use. On the evidence they had heard in the case he thought an honest man could not believe in its efficacy.

Mr. Atkinson: Do you include in that sweeping condemnation all of the doctors called in this case by the plaintiff?—I do not know what they think.

You have heard, sir, what they think. Do you class them as dishonest men?—If the doctors who have heard the evidence still believe in it I shall be sorry to say that they are not honest.

They are dishonest, sir, out with it?—Well, yes, if you like to put it that way.

That is a very strong thing to say?—Certainly.

Continuing, witness said he had not heard the letters which Mr. Stevens had received from doctors in different parts of the kingdom and in South Africa.

Dr. Acland: May I say something, my lord. I ought not to have said that they were dishonest. A man may be mistaken without being dishonest. I am quite prepared to believe that they may honestly have come to an erroneous conclusion.

Mr. Atkinson: You may say that, having given a contrary opinion a minute ago?—You were taking it in a different way.

Counsel then read the anonymous letters from doctors saying that they had applied his treatment with advantage.

"I have read those letters to you," he said, do you say that the person who received them could not honestly believe in the efficiency of the cure?—He had some reason for it, certainly.

In re-examination, witness said that the plaintiff had brought no evidence to prove that he had got a cure for the great white plague, or that his physic destroyed the germ of consumption, nor had he any ground for saying, "When the disease is devouring everything except your soul and bones, send a post-card to Mr. Stevens and he will cure you." Nor was there ground for saying that after five years' sanatorium treatment less than 3 per cent. of the people treated were able to follow their occupation.

At the conclusion of his evidence, Dr. Acland said that he wanted to make himself perfectly clear. He did not attribute dishonesty to those who disagreed with him. No one who knew him would think he did. A man might be honestly mistaken.

Sir R. Douglas Powell, examined by Mr. Gregory, said he had had a long experience of tuberculosis. Having read the shorthand notes of the evidence, he did not see that any cure was to be attributed to the specific action of the drug. He had known recoveries in circumstances similar to the circumstances of each case said to have been cured, and he ascribed those recoveries to appropriate treatment and the natural forces in the patient. Having described the proper treatment of tuberculosis, he said the patient had to fight the disease and the doctor had to help him to do it. He had himself examined a woman said to have been cured by Mr. Stevens. He found no evidence of extensive lung trouble in the past. His experience of patients relating what they had been told—especially ladies—was that they were rarely accurate. He agreed entirely with what Dr. Acland had said as to the specific cases of "cure" mentioned in the evidence.

Cross-examined, he said a man might be perfectly honest and yet be mistaken.

Mr. Atkinson: Would you feel justified in calling the doctors dishonest who say they still believe in the efficacy of Stevens's cure?—I should not call them dishonest, and I would add that my friend Dr. Acland did not do so.

Would a doctor attending a patient be in a better position to judge of the condition of that patient than a person merely reading the shorthand notes of the evidence?—That depends very much on the doctor. I don't think he would necessarily. He might be able to judge better than one who sees what he writes down.

Continuing, he said that he had not tried the remedy himself. Medical men were open to conviction whether discoveries came from laymen or not provided the truth of them was established. Mr. Atkinson read from an article in the British Medical Journal which pointed out that Harvey's discovery, the open-air treatment of tuberculosis, Pasteur's discoveries, Lister's antiseptic system, the laryngoscope, and other things had at first been refused acceptance by a large part of the profession.

Mr. Atkinson: Was not electricity looked upon with suspicion?—It was.

And massage as an unclean thing?—Yes; but your remarks, wherever they come from, are tremendously exaggerated with regard to every point you have raised.

You say you don't agree with anything I have read?—I do not say that.

Continuing, witness said that it would make no difference to his view of a cure that it was introduced by a layman; not, at least, if it was shown to be a cure. In the present case it had been claimed that the cure killed the bacillus and cured the patient, but the drug appeared to him to be worthless.

Dr. Frederick William Price, in the course of his evidence, said that he had seen Mr. Smith, who had been examined by Mr. Stevens. There was nothing abnormal in his lungs. In cross-examination he said that the average course of consumption lasted from five to seven years. It did not follow a flat course, it had ups and downs; and it was quite possible there might be an improvement for some months. It was not right to attribute the improvement to bread pills or to whatever was being administered.

Mr. Atkinson: Would you not consider that a fresh drug should be tried before being denounced?—Not necessarily.

Would not your answer be against the introduction of any fresh drug?—A fresh drug is usually introduced by experiments on animals.

Dr. Arthur Latham, of Portland Place, a member of the Commission on Tuberculosis at Berlin, said that he had studied the treatment of tuberculosis for seventeen years. Twenty per cent. of sufferers from consumption, he told the court, got well, in spite of treatment, or with any treatment they might have. Dr. Latham added that he had seen people get well whom he thought had got no chance. For instance, there was a case of a man suffering from tuberculosis of the throat and lungs. He had advised this man to go into a home for the dying. The man had refused. Instead he went to a farmhouse, and in a year returned recovered. The witness then said, I will go so far as to state that I never venture to say whether a man is going to get better or not.

Counsel: Has change of climate a beneficial effect?—Dr. Latham: It is difficult to say. I remember a man who went to Davos for a year, and then to Colorado, without good results. He then established himself at Southend-on-Sea, and got well.

The witness went on to say that some one—he believed Mr. Stevens—came to him some years back with a material called Sacco. "I told him that Brompton Hospital was always willing to test cures provided all the cards were put on the table, and experiments conducted on animals," said the doctor.

In cross-examination he said he had never tested Stevens's cure.

Mr. Atkinson: Before you condemn a thing should it not be tested medically?—Provided the test is carried out on proper lines.

According to you there is no known cure for consumption?—No known drug will cure it.

And there never will be?—Probably there never will be.

The witness said a new cure for consumption was brought to him every two or three months. "They always say that cures have been effected by it," he said. "They may make the patient feel better for a time, but that is due to the mental effect and hope."

This concluded the evidence in the case.

In the course of his address to the jury, Mr. Holman Gregory said that the interests of the public lay at the very bottom of

the case. It was of the utmost importance that when a man said he had a cure there should be full, free, and fair criticism of his cure. It would be a sad day for England when a jury took a narrow view of a criticism of what such a person stated, and enabled such a man to go forth and say: "All that I have said is right; a jury has said so." It was a remarkable fact that none of the doctors called on the part of the plaintiff continued to use the medicine after it had stopped coming free. There was no evidence to show that it killed the bacilli of consumption. The plaintiff's advertisements said that his medicine cured people suffering from "consumption in the third degree." Fancy the effect of that upon the unfortunate sufferer! The man with one foot in the grave was prepared to fly to any remedy. As to the price of the medicine, no evidence had been given as to the actual cost. The plaintiff's statements were made to catch the eye, and to bring in money. There never yet was a quack advertisement which did not quote cures, and point to cures as the result of the remedy; but they must not overlook the fact that Nature was always trying to cure the patient. He had said: "I have found the cure for the Great White Plague." It was remarkable, although he had given evidence for the plaintiff, Dr. Grün had not continued to use the remedy. Healthy living was the best cure for consumption; that was reflected in Acts of Parliament. He asked the jury to say that there had been adduced before them no evidence that the remedy was a cure, and that the plaintiff had no justification for the statements which he made.

Mr. Tindal Atkinson, replying on the whole case, said the reason there had been delay in bringing the action was that the defendant wanted to have evidence of further experience in the use of the drug. It was for the defendants to prove that the drug was useless. All that their witnesses were able to say was that they were not satisfied that this was a cure. That was not sufficient. It appeared that it was an analyst, not a doctor, who was the libeller. It was for the defendants to prove that it was not a cure, and that the plaintiff knew it was not. After reviewing the evidence, counsel said that the charge of dishonesty had been withdrawn by one of the most eminent witnesses for the defendants. Eminent medical men refused to test the medicine. It was anathema to them. They would have nought to do with it because a layman had invented and was making money from it. The medical profession were always slow to accept these new ideas. He asked for substantial damages.

JUDGE'S SUMMING-UP.

Mr. Justice Pickford, in beginning his summing up, which was very full, said that the case was important, because if the plaintiff had been accused wrongfully of dishonourable conduct it was important for him that he should be cleared; but it was also important that the defendants, representing the medical profession, should not improperly be confined in their criticism of any new remedy that was being sold or pushed among consumptives or other patients. He continued: Something has been said about the invariable tendency of the medical profession to oppose everything. I doubt if any such tendency exists at all. At any rate, I think we may say that the medical profession would be most reprehensible if they were to take up every nostrum, considering the number we know there are in the world, without examination and give it to their patients; and if they think that people are being deceived into spending money and hope for things which are worthless they have a right to say so. Of course, in saying so, they must not go beyond the bounds of what is fair to the person whom they are criticizing. The case is important from that point of view. It does not seem to me that your verdict, whichever way it goes, necessarily involves a pronouncement as to whether this is a good and valuable remedy for consumption or not. I doubt very much, with all respect to you I can speak for myself whether you and I would be a very satisfactory tribunal to decide such a thing. Probably a suggestion made to me by a distinguished French professor that such a matter as that ought to be decided by independent medical or chemical gentlemen is most valuable, but it does not seem to me really that it is necessarily involved in your verdict. I have not the slightest doubt that whichever way your verdict goes it will be treated by one side or the other as determining that question, but that question is not involved at all. What the plaintiff says is this: "You say of me that I am fraudulently and deceitfully pretending that I have a good remedy, and that I know it is not a good remedy, and that therefore, with full knowledge that I am deceiving the public, I am putting this remedy before them." That is his complaint, put shortly. He says that they say of him that he is knowingly putting an absolutely worthless thing before the public and working upon the fears of people in the last stage of consumption in order to put a worthless thing before them. It might very well be that he is entitled to a verdict, even although you thought this was not a thing of any use at all, if he honestly believed that it was, because the accusation against him from his point of view is that he has knowingly put a worthless thing before the public. Although it may be of no value, if he honestly thought it was and said nothing more than what he honestly thought, this would be a libel upon him which would not be justified. In that case, whether it be good or bad, he would be entitled to your verdict if you were to take that view of the evidence. On the other hand, what the defendants say, as I understand their case, is this: "We did not go as far as that, but what we did say and what we do say is that, looking up on your system of putting this thing before the public, looking at the advertisements, and looking at what you claim for this remedy in those advertisements, you were claiming that this remedy could do what you knew it could not do. Although it might do something, you were claiming that it would cure cases in a very advanced stage of the disease when you knew quite well, and indeed have admitted in the witness box, that it could not cure those advanced cases." If that is so, and if they prove that, they might be entitled, and probably would be entitled, to your verdict, although you might think there was some value in the drug. That is the first defence. Then, as a second line of defence, they say that, even supposing they have not actually proved that to be the case, at any rate the plaintiff's conduct and his method of advertising and the wording of his circulars was such that what they said was only fair comment upon those circulars, and, therefore, was comment which they were entitled to make. To support a verdict for them it is not necessary that you should find that this is a worthless thing. There may be some value in it, although the plaintiff might, for the purpose of making money, have claimed more for it than it could do. Therefore it does not seem to me that your finding necessarily involves whether this is a good remedy for consumption or not. In considering the case you must not allow yourselves to be run away with by words that have ambiguous meanings. A good many words have been used, and necessarily used, in this case. I refer to such words as "efficacy," "cure," "swindler," and so on. A thing may be efficacious up to a point, but if you say it is efficacious a long way beyond that point when you know it is not, then it is not efficacious in that sense. I need not give you an instance of "cure," because I think most of the witnesses have said that "cure" is used in different senses by different people. When you come to the word "swindler," or anything of that kind, you must look at what kind of a swindler he is accused of being, if he is accused of being a swindler at all. It is dangerous to jump to a conclusion by taking one of those words without stopping to think in what sense it is used, and how it ought to be applied in this case.

His Lordship then reviewed plaintiff's history down to the time when he commenced to advertise in this country, quoting largely from the advertisements and circular letters. In considering the bearing of the defendants' article, and whether the defendants had justified it, either as true or as fair comment, the judge said that what the jury would have to say about it depended in a great measure upon the view they took of the circulars. If the jury considered that these circulars, although perhaps in exaggerated language, only fairly represented that this was a good thing that people ought to take, he, the learned judge, did not know that there would be any harm in it, or that the defendants could justify the comments they made; but if the jury thought the advertisements were intended to convey to persons suffering from this disease, and to persons especially of no great education and not much medical knowledge, that no matter how bad the disease was, short, of course, of being on the actual point of death, this was a cure, and in substance the only cure and the absolute and certain cure, then it would be a question for the jury whether they did not honestly and fairly represent what he had said in evidence was his belief at the time of the effect of this drug. There were certainly expressions about the third and last stage, about advanced stage, and about persons who had been given up by sanatorium doctors, and they might bear that construction. If the jury thought that was the construction to be put upon them, then it could hardly have been done for any other purpose than the sale of the medicine, and the jury must consider whether the extent to which he believed this remedy was efficacious was fairly and honestly expressed. It was necessary to distinguish and consider in what sense the words were used. A man might think that in a very early stage the remedy might be of some use. He did not know where or how. The plaintiff said in one of the advertisements that it absolutely killed the bacilli, but that the learned judge supposed was only a conclusion from the fact that the disease went. He did not know where or how, but he might honestly believe that, taken at a certain time and up to a certain point, the medicine might be useful, but he might not believe, and have no reason whatever to believe it, when applied to any case however advanced, and to a case given up by every doctor and by every sanatorium in the country. Which was the right construction to put upon the circulars and documents was one of the important matters the jury had to consider. The learned judge then read extracts from the article, and quoted the results of the analysis:

"The medicine was a clear red liquid, and analysis showed it to contain, in 100 fluid parts, 21.3 fluid parts of alcohol, 1.8 parts of glycerine, and 4 parts of solid substance; this solid substance contained about 1 part of tannin and 0.2 part of ash, the remainder being extractive. No alkaloid was present, and no other active substance could be detected. The solid substance agreed in all respects with the solids of decoction of krameria, or a mixture of this decoction with a little tincture of kino. The formula thus appears to be approximately rectified spirit of wine 23.7 parts by measure, glycerine 1.8 parts, decoction of kramerin (1 in 3) to 100 parts by measure, or it may be made with tincture of kramerin. Estimated cost of ingredients for 2½ fluid oz., 1½d."

Now, gentlemen, it has been said that that is the foundation for the whole of this libel, and that, when it is once displaced and once shown that this stuff is not made of kramerin, there is practically an end of the case. I confess it does not strike me exactly in that way. This is an analysis which may or may not be correct. Mr. Harrison still says it is a correct analysis of what he got in 1908. It may be that Mr. Harrison was wrong in his conclusion that this was kramerin and kino; it may be

that were something else: it may be that it was unchecked [illegible]. That is not the whole foundation of the article. The foundation of the article is that Mr. Stevens is claiming for it something which he knows that he cannot perform. Mr. Harrison says he does not believe in it because he believes it is krameria. He does not say that in so many words, but, assuming that is what he does say, and supposing it is shown that he was wrong, that it was not krameria, it takes some of the foundation upon which he formed his conclusion away. But whether Mr. Harrison was right or wrong, further analysis has not revealed, as far as analysis can reveal. Anything in the remedy or otherwise, so far as its qualities in dealing with tuberculosis go, that there is not in krameria. I do not say, mind you, that because analysis cannot find it it is not there. I am not putting that before you. It seems to me that this discussion about the analysis does not come to very much, in face of the fact that the analysis which has been made, although it may be shown negatively that Mr. Harrison was wrong, does not show positively that there was anything in these two roots which could deal with the bacillus or the disease of tuberculosis. If the analysts had been able to say: "Yes, we have found something which showed a chemical result or an analytical result which convinces us that this is a germicide or something which will deal with tuberculosis," then this conflict about the analysis would have been very much more important than it is now. The analysts called on behalf of the plaintiff were, first, Dr. Hehner, then Mr. Dalkin, and, in a lesser degree, Mr. Lord. I say in a lesser degree Mr. Lord, first, because he is a bacteriologist and not a chemist, and secondly, because since 1908 he has been, I think, in Mr. Stevens's employment. I do not say cast him out altogether, but I do say he is certainly not, to my mind, so important a witness as Dr. Hehner and Mr. Dalkin. There was some question about Mr. Dalkin as to the way he got his sample. That comes to nothing; it was given to him in a straightforward manner. There is nothing to be said against Mr. Dalkin. I do not know which analysis is the right one. It may be that Mr. Harrison is wrong in his analysis. He does not say it was krameria, but he says he does not know of anything else that is more like it. If he was wrong, then some part of the foundation of this article may have gone. In my opinion it does not go further than that. If it does go further than that in yours you will say so. Now, dealing with the rest of the article, it undoubtedly does say that Mr. Stevens is knowingly claiming for this drug a power and effect which he knows it has not got; that he is claiming that it will cure even in the very worst cases, in the third and last stage, when he knows it will not. It does undoubtedly do that. The defendants say that is all it does. The plaintiff says, No, it does more than that. It not only says that, but it says that he, Stevens, is unwingly claiming this for something which he knows is no use at all. Which of those meanings is to be attached to it is a matter for you to say, reading it over. Whichever the meaning is, have the defendants proved it? That is the first question. They must prove that it is true. I should think you would be of opinion that, whichever is the meaning, it is a defamatory article, because it is saying, Whether it is worth nothing or whether it is worth something you are putting it before these unfortunate people as something which will cure any case—in fact, as almost the only cure, and you are doing that to induce them to come to you and pay money. Now have the defendants proved that? Part of that must depend on what you think of the circulars themselves, and part must depend upon the other evidence as to what was before Mr. Stevens at the time.

Now I do not intend to go into every single case that has been put before you, but I shall have to go into some of them in order to see what the effect is. Broadly stated, it seems to me the defendants' case with regard to that is this: There is nothing in any one of those cases that cannot be clearly referred to something altogether apart from the plaintiff's cure. One of the doctors called on behalf of the defendants—I think it was Dr. Latham—put it very clearly: In order to see that a drug is really doing good, and that it has an effect of itself, you must, in a sufficient number of cases, be able to say that those cases show some different cause, run a different course, and act in a different way to those that come under ordinary treatment. If you do not find that, he says, you cannot say it is the drug that is doing it, because you have ordinary treatment at the same time. That is what I gather from what he said.

Now, gentlemen, you have had a number of cases put before you. First of all we had Dr. Grün, then Dr. Naylor, then Dr. Campbell, then Dr. Evans, then Dr. Sames, and then Dr. Deboissiere. It is important, I think, to see the conclusion that those doctors came to. Dr. Grün said he considered it had a specific effect that is to say, not only an effect upon the symptoms, the cough and so on, but a specific effect upon the disease. He also said he could not say it would cure all cases. Dr. Naylor said he did not consider the medicine an entire cure from what he had seen. Dr. Campbell said: "To say the medicine would cure all cases is too strong a statement": and he also added that hygienic conditions and climate were in his opinion more important than any drug. Dr. Evans said he could not speak with certainty to its efficiency yet. You will remember that he was the gentleman who tried it upon the greatest number of cases—twenty. I do not think Dr. Sames or Dr. Deboissiere expressed any opinion of that kind. Now those are the conclusions to which the doctors came, and they came to those conclusions upon the cases which they told you about. Of Dr. Grün's cases the first was the case of a patient who was not cured: he said he was better, but not cured. The [illegible] of the boy at Shoreham. He said there was a cavity in [illegible] that there was tubercle bacilli in the sputum, that he [illegible] the drug, and at the end of three months there was [illegible] to be found in the lung and no bacilli. The third case was the case of the patient named Cross who has been called before us. He was certified by four well-known doctors to have tubercle bacilli. That is, of course, what the patient told Stevens, and, as far as it goes to bona fides, the fact that Mr. Stevens was told so, is a matter to be considered, but the fact that the man said so does not prove that he was so certified; and when he was asked what was told him he does not mention tuberculosis at all. He said: "He told me he was suffering from bronchitis, inflammation of the lungs and pneumonia." Then the fourth case was the case of a man named Hersee, a gardener, who died. He is said to have died from pneumonia. As far as I remember we have no evidence at all, not even a certificate, as to what he died from; but he died, and therefore one cannot draw conclusions from that.

Then Dr. Naylor was the next. He gave four cases, and in each of those he says quite clearly that in his opinion this drug did good. The first case he does not suggest to be cured. It is still at a standstill, as I understand it. The second is a case which, perhaps, you ought to consider, and consider it with another case—that of the man Day. Dr. Naylor's second case was the case of a patient who had been treated in the ordinary way—sanatorium treatment, hospital treatment, open air treatment, and so on—but who had got a very bad cavity in the lung, and a very bad place in the [illegible]. Day was the man who had an abscess in the lung and an [illegible] abscess in the testicle. In the one case, Dr. Naylor's second case, after taking the medicine, a great deal of the lung was thrown up, there was a very bad fit of coughing, and a great deal of the lung was thrown up. In the other case, the abscess burst externally, and that was before the plaintiff's medicine was taken. After the throwing up of the lung in the one case, and after the bursting of the abscess in the other case, the patients recovered. According to all the medical men there are cases—they are rare, but they do happen—in which, if the whole of the diseased part of the lung is thrown up, or if the whole of the abscess, either by operation or by bursting, is removed, the patient recovers; and what is said about those two cases, which are two of the most striking cases, is that that is the sort of thing that happens, and that they are no proof that Mr. Stevens's drug had anything in the world to do with it. The doctors who were in attendance—each of them—think it had. They think that Mr. Stevens's remedy had something to do with it, and that in one case it was the cause of it, and in the other case the doctor said he could not say positively whether it was the cause of it or not. Now it has been said that the doctor attending the patient can, of course, tell better than any specialist who only hears a record of the case. Given the same qualities in each man, no doubt that is true; but even without so intimate a knowledge a specialist may be just as well able to judge. That is the reason you go to a specialist, in order to get his special knowledge in addition to the man who is attending upon you. You must take it into consideration that the doctors who were attending on these people say that in their opinion this medicine had a beneficial effect, and what is perhaps of more importance in this case they reported it to Mr. Stevens, and if they thought so and told Mr. Stevens so Mr. Stevens would have a right to think so too. Then Dr. Naylor's next case was a case in which there was surgical treatment. What is said about that is that the surgical treatment may have been the cause of the amelioration, and not Mr. Stevens's drug. The other case was a case in which there still remain enlarged glands. Dr. Naylor thought they were due to tonsilitis, but I suppose no one could be absolutely positive as to whether they were due to tonsilitis or to a continuation of the disease in the system. Dr. Campbell was the next. He says that in his opinion, in the cases he treated, this mixture unquestionably did do good. He says the cases treated with the plaintiff's medicine improved more rapidly than other cases, otherwise the improvement was the same; it was somewhat more rapid, but it was otherwise the same. He also said what I have already told you, that he ascribes more to good climate and hygienic conditions than to the action of the drug: and he also said: "To say the medicine would cure extreme cases is too strong a statement: it cannot be done, and to say that would be wrong." Dr. Hudson Evans also gave a number of cases—twenty, I think. I do not think it is necessary for me to go through them all, and for this reason—the summing up of them all is that he believes sufficiently in the efficacy of this mixture to go on and use it further, but he cannot speak with certainty as to its efficacy yet. Dr. Sames spoke of Day. I have already dealt with Day's case. I do not think Dr. Deboissiere said anything that makes it necessary for me to call your attention to anything in detail.

In addition to those, you have the cases of Mrs. Whiteman, of Miss Bacon, of Miss Olley, and of Mr. Hodgson. Considering the way those cases have been commented upon, I do not think it is necessary for me to go into them at any length. You have heard the suggested explanations: you have heard the evidence of the patients themselves; and you have also heard in some cases the evidence of the doctors who attended them; and you will be able to form your opinion as to whether they do or do not prove the value, and to what extent they prove the value, of this drug.

Now, in opposition to those cases several expert gentlemen have been called on behalf of the defendants—Dr. Acland, Sir

Richard Douglas Powell, Dr. Price, and Dr. Latham. They are very eminent gentlemen. You have heard their comments upon these cases, and you have also heard their cross-examination. With regard to Dr. Acland's cross-examination I have just one word to say. Dr. Acland said—and was sorry for having said it, and corrected it—that if these doctors who had been called for the plaintiff still continued in the opinion that this was a cure for consumption, he thought they must be dishonest. He withdrew that, and he said he thought they must be mistaken, and that a man might honestly be mistaken. What particular belief of the doctors he had in his mind at that time I do not know, and it is for that reason that I think you have to look carefully at exactly what these doctors did say. If the plaintiff was representing that he could cure any case of tuberculosis, even in an advanced stage, what he calls the third stage, and that he could make practically certain of curing those cases, I do not think those doctors would have expressed that opinion. They have expressed the opinion that this stuff is of value. It may be that it is of value; it may be that it is not; but I do not think any of those doctors expressed the opinion that it would be right to put this before the public, and before those persons suffering from consumption, as a medicine that would be practically certain—I do not say absolutely certain, because any case may go wrong—to cure consumption even in the third stage when the patients have been given up by other doctors, and by sanatoriums. And when Dr. Acland says that the testimonials which the plaintiff got certainly afforded material to believe in the efficacy of his remedy, again I say you must consider "efficacy to what extent." As Dr. Acland says, I should think you could hardly deny that, after all these testimonials which the plaintiff received from medical men, he must have believed that it was a good thing. He may be wrong. It may be that it only allays symptoms and does not touch the real disease at all. He may be wrong, but I should think it is very difficult to say that he had not material before him upon which he could honestly come to the conclusion that it was doing good in some cases and was of value up to a certain point. It is also important to consider whether those reports that he had from the doctors, and the reports he had from the cases, would lead him to the belief, if he did believe it, that his medicine would cure in the sense that I have put before you, that is to say, in the sense of curing with practical certainty advanced cases, even in the last stage. If you think that in these circulars and letters he did represent that it would cure such cases with practical certainty, then you have to consider whether he believed that, or whether he had reasonable material upon which he could honestly come to the conclusion that the cure was as good as that.

Now, gentlemen, I do not think it is necessary to go through any more of the facts with you. Whether you take the defendants' construction of this article or whether you take the more extended construction that the plaintiff asks you to take, I should think there can be no doubt that it is defamatory, whichever construction you take, because on the defendants' case it is saying: You were dishonestly telling people that this stuff would practically cure every case, however advanced, when you knew it would not. If he was doing that he was dishonest. If you take the more extended view that the plaintiff asks you to take, it is this: "You knew not only that this would not cure advanced cases, but you knew it was wholly valueless when you were telling them that it would cure consumption." If it means that, then it is a still greater aspersion. If it is an aspersion, the defendants, in the first place, say it is true. That they have to prove. I do not say it is necessary for them to prove it by the evidence which they have called alone. It is an answer if they prove it on a review of the whole of the evidence. The onus is upon them to prove it, and they must prove it either by cross-examination of the plaintiff's witnesses, or by calling witnesses of their own, or by both. If they have proved it there is an end of the matter. If they have proved that in substance Mr. Stevens was knowingly putting before the public, and before those suffering from consumption, claims in respect of this medicine which he could not in the slightest degree believe, and that it was done for the purpose of getting money, then, as it seems to me, they would have substantially proved what is stated here. Of course they would not prove [illegible] word; but they would also, of course, have to prove that he set out consciously and deliberately to deceive. If they have proved that he did what I have said, then probably you would be of opinion that they have proved that also. At any rate it is for you to say, first, what is the defamatory meaning contained in the article, and secondly have they proved it? If they have substantially proved it, then they are entitled to your verdict. If they have not proved it, then there comes another question. They say: "Even supposing we have not been able to convince you, the jury, that what we said is all true, all proved, we are entitled to your verdict if we did this honestly as a comment upon a matter of public interest." That question has not been discussed, and there is no doubt about it. Then the question will be: Are the comments that they made fair? It has been laid down more than once that a comment cannot be fair if it imputes improper motives. It is quite established [illegible] correct now. If the facts upon which you are commenting are such that they fairly give rise to an inference of dishonest motives, then if you honestly write about them and do not exceed the inference that can be fairly drawn, you are protected, even though that inference might convey an imputation. But there are two things to be considered: First, you must not mix up the facts and the comment in such a way that nobody can tell what is fact and what is comment; and, secondly, the facts upon which you comment must be correct. You must not invent facts or misstate facts, whether negligently or not. You must not incorrectly state facts, and then upon these incorrect facts comment so as to impute improper motives or improper conduct to anybody else. It has been quite clearly laid down by the House of Lords that that is so; and what is said by one of the learned lords is this: "To say that because a comment contains a personal attack it cannot be fair, is wrong. A personal attack may form part of a fair comment upon given facts truly stated if it be warranted by those facts, in other words, in my view, if it is a reasonable inference from those facts." Therefore, if the defendants here have correctly stated the facts upon which they are commenting, if they have fairly and honestly commented upon those facts without any spite or ill feeling or other bad motive, then they will be protected, even although they have not been able to prove every word of what they have said, because they would only have commented fairly upon what is a matter of public interest. The two things are very near one another in this case. In my opinion it is very difficult to distinguish between them, because if the plaintiff did make improper claims for this medicine which he knew to be improper for the purpose of getting money, then it seems to me that the defendants would have proved practically what they said, subject to the question whether what they have written meant something more than that; and, on the other hand, if the plaintiff did not do that, then to say that he did would be misstating the facts. Therefore I cannot see that in this case there is very much distinction between the two. But you have these two matters to consider: First, have they proved it is true? If it is true, you need not trouble about fair comment. Secondly, if you do not think it is true, then have they fairly and honestly commented upon a correct state of facts? If they have, they would be protected, even though they have not proved exactly what they have said.

Now, if you think the defendants are entitled to a verdict, of course there is an end of the matter, and you need not bother about damages. If you think they are not entitled to a verdict, then the plaintiff is entitled to damages, and the question will be, what damages? He has not claimed any special damage, that is to say, any actual money loss. But if the defendants have imputed to him dishonest conduct in the way that has been described so often both by the learned counsel and by myself, I do not think we differ very much about the kind of dishonest conduct that is imputed; and if there is no reason or ground for it, and there is no sort of aspersion upon his conduct at all, then you would give him not extravagant but substantial damages—considerable damages—because it is an imputation of dishonesty, an imputation that ought not to be made unless there are grounds for making it. If you think that they have not justified entirely what they have said, but that the plaintiff's conduct and the way he behaved with regard to this remedy was such that he brought it a good deal upon himself, that would be a matter which you might be entitled to consider in the damages, and then you probably would not give him so much. I do not know that I can give you any further direction about the damages. If you think there is no ground for this attack at all, the damages should be substantial; on the other hand, if you think that, although it is not proved, his conduct has been such as in a great measure to bring the matter upon himself, then you will take that into consideration in the reduction of damages.

After some discussion with counsel, the learned judge further told the jury that it was for the defendants to justify all their observations. The justification of part only would not be sufficient.

The jury then retired, and after nearly two hours' consideration returned to the court, when the foreman stated that there was no possibility of agreeing, and the judge said that there was no alternative but to discharge them.

ACTION FOR WRONGOUS DISMISSAL AND SLANDER AGAINST AN ASYLUM SUPERINTENDENT.

SHERIFF-PRINCIPAL MACKENZIE has dismissed an appeal for wrongous dismissal and slander raised by Malcolm John Monk, late deputy head attendant in Inverness District Asylum, against Dr. Mackenzie, medical superintendent of the institution. Pursuer claimed £500 in name of damages. The slander, it was stated, was written in a certificate given to pursuer. His lordship held that from the rules governing the institution and employees, the defender had power to dismiss pursuer either for assault on a patient, which was the reason assigned for his dismissal in the leaving certificate, or for failing to report at the earliest opportunity that he had been obliged to use force towards a patient, which was alleged by pursuer to be the ground on which he was, in fact, dismissed. In view of the public position which the defender occupies, his lordship was of opinion that pursuer could not be allowed a proof in support of his claim unless he not only averred that defender acted maliciously, but that he set forth facts and circumstances from which malice might be inferred. The statement in the leaving certificate was privileged. His lordship awarded expenses to defender.

A CHARGE DISMISSED.

BEFORE the Axminster magistrates on October 29th a charge was brought against Dr. B. G. Pullin by Mr. J. R. M. Mallett, of Seaton, of committing perjury in a county court action heard twelve months ago at Axminster. The statements were in regard to a *post mortem* examination on complainant's child, respecting which Mr. Mallett had alleged professional

negligence against Dr. Tonge, of Seaton. It was now alleged that Dr. Pullin stated that the brain at the *post-mortem* examination was not examined. Dr. Pullin was also alleged to have said that he was never asked whether Dr. Tonge was right in his diagnosis. It was complainant's case that both these statements were false. Among the witnesses examined were the shorthand writers present at the county court action. At the close of the complainant's case it was submitted that there was no evidence to go to a jury, and the magistrates, without hearing witnesses for the defence, dismissed the case. Mr. Schultess Young (for complainant) said he would apply to be bound over under the Vexatious Offenders Act to prefer a bill of indictment against Dr. Pullin at the assizes. Mr. J. A. Hawke (for defendant): By all means, let him. I don't know that you can prevent him.

CLAIM FOR NEGLIGENCE AGAINST A DENTIST.

On October 17th the Sheriff-Substitute for Glasgow gave judgement in an action for damages brought against a dentist. The allegation was that while extracting some of the plaintiff's teeth under gas the defendant had exhibited negligence and want of skill, which had resulted in a tooth or part of a tooth falling into the plaintiff's larynx and thence into her lung, subsequently setting up a grave and prolonged illness, accompanied by blood spitting. The operation was performed on November 25th, 1911, and the plaintiff fell ill immediately afterwards; the doctor who attended her had difficulty in diagnosing the symptoms, which, he stated, had not suggested to him the idea of a foreign body having found its way into the lung. On January 3rd, 1912—that is, thirty-eight days after the operation—the plaintiff, according to her statement, coughed up with some blood a piece of tooth, which she threw away, after showing it to a friend. A month later she coughed up more blood, and had done so at intervals ever since up to the time of the action. Her sputum contained no tubercle bacilli.

The Court held that there was no proof that the plaintiff's illness was due to the presence of a foreign body, such as a tooth, in her lung, or that any tooth or piece of tooth had ever fallen into her larynx. The fact that such accident had occurred was merely a supposition, while there was no proof whatever of any negligence or want of skill on the part of the defendant. On the contrary, what evidence there was as to the precise facts of the operation supported the belief that all usual and necessary precautions had been taken during the operation, and that no tooth nor part of a tooth had been allowed to fall into the plaintiff's throat, and judgement for the defendant, with costs, was returned.

The defendant was represented by Messrs. Turnbull and Findlay, acting on the instruction of the Medical and Dental Defence Union of Scotland.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Degrees.

The following degrees have been conferred:

D.M.—A. R. Wilson.
B.M., B.Ch.—J. L. Birley.

Medical Fellowship.

Mr. H. C. Bagett, B.M., B.Ch., has been elected to a medical fellowship at Magdalen College.

UNIVERSITY OF LONDON.

Faculty of Medicine.

A meeting of the Faculty was held at the University on Friday, November 1st. The Dean (Dr. Sidney H. C. Martin) was in the chair.

Dr. Reginald Cecil Wall, M.A., M.D., F.R.C.P., was elected Secretary to the Faculty.

The constitution for 1913 of the Boards of Studies with which the Faculty is concerned was decided; as was also the constitution of the Board of the Faculty for the remainder of 1912.

A report of the Board of Studies in Hygiene and Public Health for the provision in London for the post-graduate teaching of these subjects was presented, and, after some discussion, referred to the Board of the Faculty for report.

Sir Alfred Pearce Gould, K.C.V.O., M.S., was unanimously elected Dean of the Faculty for the period 1912-14.

NATIONAL UNIVERSITY OF IRELAND.

At a meeting of the Senate on Wednesday, October 30th, Sir Christopher Nixon was reappointed Vice-Chancellor of the University, and representative of the University on the General Medical Council.

A Travelling Studentship of £200 a year, tenable for two years, in Medicine (Anatomy), was awarded to Henry L. Barneville, B.A., M.B., B.Ch., B.A.O., University College, Dublin.

UNIVERSITY COLLEGE, CORK.

President's Report.

The report of the President of University College, Cork, for 1911-12 states that the number of students during this session was 430, as against 415 during the session 1910-11. Of the 430 students, 358 were matriculated, 48 were non-matriculated, and 24 were post graduate. The number of new students was 142. The work done during the session was of a satisfactory character.

The college had sustained a grave loss in the death of Professor George Laurence, the first occupant of the Chair of Law of Real Property. Though retired from the active duties of the Chair of Physiology and Anatomy, the news of Professor Charles's death had been received in University College with sorrow, his connexion with the college dating back to 1875. During a period of thirty-two years Professor Charles filled his professorship with great distinction, and on his retirement founded an annual gold medal in the college, to which his name is attached.

The President, in referring to the different faculties, draws attention in particular to that of the engineering school, the new laboratories of which are now almost complete, and contains an installation of apparatus which is unrivalled in the country, particularly in the testing machines of various kinds. A very large amount of public work was carried on in the engineering laboratory with the aid of this equipment.

Perhaps one of the most notable advances made by the college in the past year was the taking over of the old Cork football grounds, now known as the University Athletic Grounds. The President referred to two very necessary requirements if the college is to go on to further developments. The first, which he declares is essential, is to obtain separate university powers for Cork. He hopes "the governing body will not be wearied by my perpetual insistence on this matter, but it is the most urgent question in connexion with the college, and the moment that a favourable opportunity arises no time should be lost in making a determined effort to secure the boon which we have every right to demand." The second necessity was to raise by subscription from the citizens of Cork a fund sufficient to purchase the freehold of the various portions of land on which rent has at present to be paid.

The report closes with a reference to the harmonious relationships which have existed between the academic and non-academic members of the first governing body and the president himself. "We have had a very arduous task laid upon us; it was one which necessarily gave rise to many differences of opinion, but none of them have in the least strained the feelings of friendship which have existed from the beginning between the members of the governing body, the Academic Council, and myself."

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

A comitia was held on Thursday, October 31st, Sir Thomas Barlow, Bart., K.C.V.O., President, being in the chair.

Admission of Members.

The following gentlemen, having passed the required examination, were admitted Members of the College: John Davis Berry, M.B.Camb., L.R.C.P., and Ardeshir Koyaji Contractor, M.B.Lond., L.R.C.P.

Licences.

Licences to practise physic were granted to ninety-five gentlemen who had passed the necessary examinations.

Diploma in Tropical Medicine.

In conjunction with the Royal College of Surgeons of England, the diploma in Tropical Medicine was granted to Dr. E. S. Marshall.

Announcements.

The President announced that the Weber-Parkes Prize for 1912 had been awarded to Mr. John Alexander Douglas Radcliffe, M.B., Pathologist to the King Edward VII Sanatorium, Midhurst. He also announced that the adjudicators for the next essay in 1915 were: Sir J. Kingston Fowler, K.C.V.O., Dr. F. J. Wethered, and Mr. L. S. Dudgeon, F.R.C.P. The subject chosen was: An original research on the treatment of pulmonary tuberculosis with substances which are especially antagonistic to the specific organism and its products. This work must have been chiefly carried out since the year 1911.

Communications.

The following communications were received: (1) From the Secretary of the Royal College of Surgeons of England, dated July 25th and October 22nd, reporting proceedings of the council of that college at meetings held on July 25th and October 11th. (2) From the University of Dublin dated August, 1912, thanking the college for sending delegates to the bicentenary celebration and for presenting an address on that occasion. (3) From the Curator of the City and County Museum, Lincoln, thanking the College for presenting to the Museum the collection of antiquities made by the late Dr. O'Neill.

Discussion on Sanatorium Benefit.

Dr. W. J. Tyson, speaking with reference to sanatorium benefit under the Insurance Act, called attention to the great importance of associating the treatment of tuberculosis in all its phases with the existing hospitals, in order that medical students may have every access to the study of the disease and

its treatment. He referred to the letter written by Sir William Osler to the *Times*, and to a leading article which had appeared in the BRITISH MEDICAL JOURNAL. He said that schemes for working the benefit were been propounded in numerous districts, but the subject of the special education of medical practitioners and students in regard to tuberculosis had not been fully discussed. Pulmonary tuberculosis was likely to be dissociated from general hospitals and medical schools. The study of the disease ought to be linked up with the schools, and the general hospitals should have beds for patients suffering from tuberculosis. He thought the college should take the lead in drawing attention to the danger of students passing through the schools without opportunities of studying the disease. An appeal ought to be made to the Government to see that this great question is put on a proper basis. Dr. Tyson explained the scheme for the County of Kent.

Dr. H. P. Hawkins stated that the authorities of St. Thomas's Hospital had decided to form a central institution for tuberculosis, in order that students might study the cases. A dispensary separate from the hospital had been started with a whole-time officer. It was practically a new institution for the treatment of tuberculosis in the Borough of Lambeth.

Dr. H. W. G. Mackenzie said that if tuberculous patients were withdrawn from the general hospitals students would have to go to the special hospitals if some other arrangements were not made. Tuberculosis had to be studied in connexion with other morbid conditions of the body. As subscriptions to the chest hospitals were falling off, they seemed likely to perish from inanition. These hospitals had rendered great services to the public, and if they were closed a great means of combating the disease would be lost. He explained the measures which were to be adopted at the Brompton Hospital both in regard to the treatment of patients in association with the surrounding boroughs and with regard to a teaching scheme whereby practitioners and students could obtain tuition for from three to six months.

Sir Richard Douglas Powell pointed out that as at present arranged the treatment of tuberculous patients was to be carried out by "specialists" in various districts, and patients were to be drafted into sanatoriums. He would greatly regret if the patients were taken out of the hands of general practitioners. He laid stress on the necessity of studying pulmonary tuberculosis in connexion with general diseases, but up to the present no proper provision had been made for tuberculous patients at general hospitals. He would like to see general practitioners told off to attend patients in small sanatoriums. In large cities resident medical officers would be necessary, but a visiting staff should also be attached. In the first instance, however, practitioners must be properly educated with regard to tuberculous disease. A central bureau should be established for the scientific study of tuberculosis and for periodically distributing the knowledge acquired.

Dr. C. Theodore Williams drew attention to the unsatisfactory arrangements made in connexion with some of the dispensaries which had been scattered through the country. He strongly advocated keeping the dispensaries in connexion with existing large hospitals.

Dr. W. C. Wilkinson drew attention to the financial problem of the tuberculosis question, and said that the funds proposed could only under the present scheme supply treatment to a limited number of patients. He thought that dispensaries should be mainly for treatment and not for prophylactic purposes.

Dr. Norman Moore also urged that the profession was now concerned with a movement which might greatly affect the teaching at large hospitals, and expressed the hope that the College would appoint a committee to consider the matter.

Dr. F. E. Fremantle referred to the appointment of medical officers of health as tuberculosis officers, who were asked to exercise as to the steps which should be taken in their districts. Those officers were isolated from the profession in that they had to give advice to lay bodies. The College could carry great weight with county councils. He also referred to the endowment for research contained in the Act.

The President urged that the Government and the public should be enlightened on the subject. If a committee were appointed he thought that the whole subject of the sanatorium [illegible] should be considered.

Dr. David Finlay proposed that the whole subject should be referred to the committee which had been previously appointed in the College to deal with the Insurance Act, with the addition of Dr. Tyson. This was seconded by Dr. Tirard and carried.

Appointments.

In accordance with reports dated October 30th received from the Committee of Management the Corporation and Municipal Technical School and the King William School, Castletown, Isle of Man, were added to the list of institutions recognized by the Examining Board in England for instruction in chemistry for [illegible] and the West Bromwich Municipal Secondary [illegible] and King Edward's School, Birmingham, for instruction in [illegible]. The Naval Medical College at Greenwich was [illegible] laboratories [illegible] for the course of instruction for the D.P.H., and the East Ham Borough [illegible] Hospital to the list of [illegible] fever hospitals; the [illegible] of medicine in [illegible] to Dr. E. D. Macnamara at [illegible] Hospital was [illegible] having the conditions of the regulations of the Local Government Board in England.

Committee of Management.

Dr. Norman Moore was re-elected a member of the Committee of Management.

Library.

Books and other publications presented to the library during the past quarter were received, and the thanks of the College ordered to be returned to the donors. The Harveian Librarian (Dr. Norman Moore) announced that the President had presented some letters of Harvey. A most hearty vote of thanks was accorded to the President for this splendid and uncommon gift, and, as a special mark of the appreciation of the Fellows, the thanks were given under the College seal.

After some further formal business, the President dissolved the comitia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE ANNUAL REPORT.

THE annual report of the Council for the year 1912, which will be presented to the meeting of the Fellows and Members at the Royal College of Surgeons, Lincoln's Inn Fields, on Thursday, November 21st, at 3 p.m., has been issued. The agenda of the meeting will be issued on November 18th, and copies may be obtained by Fellows or Members on application to the Secretary.

RECORD OF THE YEAR'S WORK.

At the annual meeting last year four resolutions were passed. The first referred to the resignation of the late Sir Henry Butlin; the second to the attitude assumed by the Council of the College toward the Chancellor of the Exchequer in regard to the National Insurance Bill; the third dealt with the admission of Members to the Council; and the fourth required a balance sheet of assets and liabilities to be included in the next annual report of the Council. The Council decided not to take any action in reference to the third resolution, and did not pass any motion by means of which the proposal embodied in the fourth resolution would be carried into effect.

National Insurance Act.

The action of the Council in refusing to send representatives to the meeting which the Insurance Commissioners proposed to hold with representatives of the medical profession on February 2nd, 1912, is recorded. An account is given of the steps taken by the Council, together with the representatives of the Royal College of Physicians, the Medical Faculties of Universities and the Society of Apothecaries, to consider what attitude the medical profession should adopt toward the working of the Act. The action of the Council in relation to the pledge drawn up by the British Medical Association is recorded, and it is recalled that a meeting was held with the staffs of the London hospitals, and that this meeting decided by an overwhelming majority to support this pledge.

The Licence in Dental Surgery.

The consideration of the Board of Examiners in Dental Surgery of the report of the Inspector of the General Medical Council on the final examinations for the Licence in Dental Surgery has led to the issue of a revised synopsis of surgery and surgical pathology, which will come into force on May 1st, 1913.[1] Very little is added to the scope of the examinations, but a more systematic arrangement is adopted.

Dental Education.

A statement was presented by the Council to the Royal Commission on University Education in London, relative to dental education. The opinion was expressed that dentistry was not a subject of such breadth of scope as to justify the award of a university degree. The ordinary dental curriculum should, therefore, not lead to a university degree, and the diploma of the Royal College of Surgeons was satisfactory and sufficient. It was further set out that the abolition of private apprenticeship would be premature at present, but that encouragement should be given to students to take instruction in dental mechanics in the dental laboratory of the hospital they attended.

The Central Midwives Board.

Mr. C. H. Golding Bird, a member of the Central Midwives Board, had pointed out in his report on the proceedings of the board the difficulties arising from the continued employment of unqualified women under the plea that they are not acting "habitually and for gain." In some instances these women had an arrangement with a doctor who did not attend the case unless specially called, though a retaining fee of 2s. 6d. was paid. Strong action had been suggested for dealing with these cases. It has been decided that the time has arrived when midwives should be required to record the pulse and temperature of the patient systematically. The position of the medical man called in on emergency by a midwife under the National Insurance Act was also referred to.

Prizes.

The Jacksonian Prize for 1911 was not awarded. The Joli Tomes Prize for the period 1909-1911 was awarded to Mr. Arthur Hopewell-Smith, and the Begley Studentship was given to Mr. Alan Cecil Perry.

Gift.

A marble bust in the entrance hall, museum hall, and corridor has been presented to the College by the widow of a member of the College.

[1] BRITISH MEDICAL JOURNAL, June 22nd, 1912, pp. 1457, 1458.

Finance.

The gross income of the College amounted to £25,840, an increase of £137 over the preceding year. The increase was derived partly from fees for the Licence in Dental Surgery, partly from fees for the diploma in Tropical Medicine, and partly from emoluments for the hiring of rooms at the Examination Hall. On the other side of the balance sheet an increase of £287 was recorded. The total expenditure for the year amounts to £23,769, leaving a balance of income over expenditure of £2,071, as compared with £3,221 for the previous year. The museum claimed an amount of £4,157, which was £242 more than last year and £1,200 more than the average for the ten years ending 1907-8. The chief items are—salaries £2,697, furniture and fittings £519, specimens, glass, etc., £326. The expenses of the library were £94 less than in the previous year. On the other hand, the extraordinary expenditure amounted to £1,661, including £980 for the reconstruction of Rooms VII and VIII.

The sum of £10,125 had been paid on account of the new Examination Hall in Queen Square. The assessment of the new Examination Hall was considerably lower than that of the old building.

Diplomas.

During the year 376 new Members and sixty new Fellows were admitted. In addition, thirty-nine diplomas in public health, nine in tropical medicine, and 100 licences in dental surgery had been granted.

Museum.

Important alterations have been carried out in the museum. The invertebrate specimens have been transferred to a new room (VIII), built where the librarian's house used to stand at the east end of the museum, and the surgical instruments have been placed in a second new room (VII) in the same section. This cleared the space of Room III for specimens illustrating the general principles of pathology. A new department is being arranged dealing with the medico-legal specimens. A large number of important additions to the existing series have been made, and some of the older specimens replaced. The specimens illustrating the growth of bone in the Hunter collection having lost their original colour, Hunter's experiments have been repeated, and new preparations have been set up. A new catalogue of the Gynaecological Section of the Pathological Collection has been completed and the series newly arranged and labelled. Some important material has been added to the Anthropological Series, including crania and skeletons of native Australians, some rare specimens illustrative of the osteology and diseases of the ancient Egyptians, material from Buenos Aires, the New Hebrides, Borneo, etc., and some very valuable skulls and skeletons of the ancient inhabitants of Britain.

CONJOINT BOARD IN SCOTLAND.

The following candidates have been approved at the examinations indicated:

First College.—J. Pearson, W. J. Sweeney, A. M. Morris, Elfrida H. B. Coghill, H. C. A. Haynes.

Second College.—G. B. Charnock, T. W. Drummond, J. S. A. Rogers, J. J. de Waal, M. Seeraj, G. L. Stanley, J. F. Sweeney, A. C. Taylor, N. A. Martin, W. H. O'Grady, B. C. Haller, W. H. Wray.

Third College.—S. Swaminathan, N. R. Whitaker, V. H. Wardle, R. M. Paterson, Amabile Caruana, J. E. Kitchen, W. T. M. Sebeta, A. M. Burge, D. S. Graham, J. K. Venables, A. I. Clarke.

Final.—A. G. Cowper, J. McFarlane, D. S. Puttanna, N. R. R. Ubhaya, W. Martin, E. M. Marcar, W. Watson, A. F. D'Sousa, C. J. L. Patch, H. Mathewson, W. Lessey, H. S. Dastur, V. C. H. Dearden, J. I. Arnold.

Obituary.

Deputy Surgeon-General Joseph Christian Corbyn, who died at Cheltenham on October 24th, entered the Bengal Medical Service as Assistant Surgeon on November 24th, 1851, became Surgeon on April 8th, 1864, and Surgeon-Major on November 24th, 1871, retiring, with a step of honorary rank, on January 1st, 1879. He saw much active service in the Indian Mutiny. First he served with the Amritsar column, then accompanied the Kashmir Force under Sir Richard Laurence to Delhi, and took part in the siege and capture of that city. He next served at Jhajjar and Rohtak, and had medical charge of the 3rd Sikh Cavalry at Lucknow, and was present at the final capture of the place. With the same regiment he served in the force under Sir Edward Lugard in the North-West Provinces and Bihar, and shared in the relief of Azamgarh; and later, under Brigadier Douglas, in the pursuit of Koer Singh, and was present in every action fought by that force. With the same troops he served in the final expulsion of the rebels from the Jagdespur jungles, and the quelling of the disturbances in the Shahabad and Gaya districts. He held the Mutiny medal, with clasps for Delhi and Lucknow.

Medical News.

Dr. E. L. McSheehy, a retired surgeon-major of the Army Medical Staff, and the present mayor of Wimbledon, has received and accepted an invitation of the town council to continue in office for a further year.

The chairman of King Edward VII Hospital at Windsor has received from Prince Christian a cheque for £1,557 odd, the balance of the Windsor Memorial Fund to His late Majesty. The amount is to be retained as an endowment fund.

The special course of lectures and demonstrations announced to be given at the National Hospital for the Paralysed and Epileptic, Queen Square, by Dr. Kinnier Wilson, Dr. James Collier, and Dr. Hinds Howell, will not be held.

Lady Lowther is holding a St. John Ambulance Association class at the British Embassy, Constantinople, the lecturer being Mr. S. Osborn, F.R.C.S., of the St. John's Gate Medical Staff, and the examiner, Dr. Clemow, Physician to the Embassy.

The annual dinner of the Harveian Society of London will be held at the Hotel Great Central, Marylebone Road, on Thursday, November 14th, at 7 for 7.30 p.m. The chair will be taken by the president, Dr. H. J. Macevoy. The charge for tickets is 8s. 6d., exclusive of wine.

The Glasgow University Club, London, will dine at the Trocadero Restaurant, Piccadilly Circus, on Friday, November 29th, when Professor Dudley J. Medley, M.A., will take the chair. Members desiring to be present are requested to give notice to the honorary secretaries, 30, Seymour Street, W., as early as possible.

Among the papers to be read at the meeting of the Royal Society on Thursday next will be one by Mr. J. W. Cropper, M.B., on the development of a parasite of earthworms; another by Mr. James Thompson on the chemical action of *Bacillus cloacae* (Jordan) on citric and malic acids in the presence and absence of oxygen; and a third by Mr. G. W. Ellis and Mr. J. A. Gardner on the excretion of cholesterol by man when fed on various diets.

The eighty-seventh Christmas course of juvenile lectures, founded at the Royal Institution in 1826 by Michael Faraday, will be delivered this year by Professor Sir James Dewar, LL.D., D.Sc., Ph.D., F.R.S., Fullerian Professor of Chemistry. The lectures will be experimentally illustrated, and the subjects are as follows: Alchemy, Saturday, December 28th, 1912; Atoms, December 31st; Light, January 2nd, 1913; Clouds, January 4th; Meteorites, January 7th; Frozen Worlds, January 9th. The lecture hour is 3 o'clock.

There appear to be some thirteen or fourteen candidates for the appointment of medical officer of health for the City of London, shortly to be vacated by Dr. William Collingridge. They are all of them more or less well-known medical officers of health, six being at work in London, five in charge of large provincial cities, and two in charge of counties. The appointment is primarily in the hands of the Sanitary Committee of the Corporation, which will deal with the applications on November 26th. The candidate finally selected will be expected to take up duty on March 20th, 1913.

The idea of the memorial to Shakespeare, unveiled in Southwark Cathedral by Sir Sidney Lee on November 4th, originated with a member of the medical profession. Sir Sidney Lee, in the course of his address, remarked that the monument he had just unveiled was the fruit of the energy of Dr. R. W. Leftwich, who combined with his beneficent practice of the healing art a rare love of Shakespeare and of the place in which the company had gathered to do him honour. It had been Dr. Leftwich's wish to erect in Shakespeare's memory a Gothic cenotaph resembling and forming a pendant to the neighbouring tomb of the poet Gower, and, thanks to the generous response made to his appeal by English and Americans alike, this wish had been realized. The memorial, which is the work of Mr. Henry McCarthy, a well-known ecclesiastical sculptor, consists of a semi-recumbent figure of the poet in alabaster enclosed in a Gothic shrine, in front of which are shields bearing the arms of Shakespeare, Bishop Talbot, Canon Thompson (the late rector), and Dr. Leftwich. The short dedicatory service which accompanied the unveiling was preceded by an organ recital, by Mr. Edgar T. Cook, of extracts from the works of Shakespeare's contemporaries, Orlando Gibbons and Byrd, and the prayers were read by the Bishop of Southwark. Amongst those present at the ceremony were the American Ambassador, Sir Thomas

Barlow, Sir Bryan Donkin, Sir Frederick Bridge, Professor Gollancz, Dr. Leftwich, Mr. Edmund Gosse, Sir George and Lady Alexander, Mr. and Mrs. Kendal, and Mr. H. B. Irving.

Public Health AND POOR LAW MEDICAL SERVICES.

REPORTS TO THE LOCAL GOVERNMENT BOARD.

Mallwyd Urban District.—It appears from the report (new series, No. 68) to the Local Government Board of Dr. Morgan J. Rees that the Mallwyd urban district, in the County of Merioneth, though technically urban, is rural in character, for the population of some 750 persons is scattered over an area of about 14,000 acres. It is stated the housing conditions are very unsatisfactory, and that no steps have been taken to put in force the housing regulations of the Housing, Town Planning, etc., Act, 1909. A lack of decent unoccupied houses results in the occupation of dwellings quite unfit to be inhabited. There are no building by-laws, and no supervision is exercised over new houses, with the result that in quite recent years two houses were built back to earth. The water supply is, for the most part from dip-wells, open to contamination in many ways, and even a small supply belonging to the district council is liable to be polluted at the source. Slaughter-houses and dairies and cowsheds are subject to little or no supervision; as a consequence they are kept in a very unsatisfactory condition. The cowsheds especially are dirty and ill kept, and appeared as though they were never cleaned out. Dr. Rees asserts that the district abounds in conditions inimical to the health of the inhabitants, and that little has hitherto been done by the district council to secure removal or amelioration of those conditions. In such a small district, however, the resources are not very great. A penny rate produces less than £9, and the salaries of the medical officer of health (Dr. D. W. Morris) and the inspector of nuisances, even excluding the contribution from the Exchequer grants, absorb an amount nearly equal to a twopenny rate.

Barnstaple Borough.—Dr. S. W. Wheaton's report (new series, No. 69) has special reference to the incidence of typhoid fever in the borough of Barnstaple. Since compulsory notification came into force in the borough in 1896 there has been no single year in which cases of the disease were not notified, the smallest number being 3 in 1896 and 1898, and the largest, 49, in 1911. In only four years were no deaths recorded. During the sixteen years 1896–1911 there were altogether 213 cases and 28 deaths. The population of the borough at the last census was 14,488. Dr. Wheaton states that there are many circumstances in Barnstaple which would favour the spread of typhoid fever when introduced. Some of these are especially related to the polluted condition of the River Taw, at the estuary of which shellfish, principally cockles and mussels, are gathered, and in which bathing opposite the principal sewage outfall is greatly indulged in during the summer months. The possibility of water supplies, milk, or ice cream being causative factors of the outbreak in 1911 was considered by Dr. Wheaton, who was of opinion that they could all be excluded. In the Derby area, where the disease was most prevalent, the housing conditions are described as very unsatisfactory, the dwellings being old, dilapidated, and damp, with many unpaved or badly paved backyards. Water-closets are universally used in the town, but the pans in many instances were found in a filthy condition and the structure of the closet buildings dilapidated. No doubt was entertained that insanitary conditions generally, including defective drains, were responsible for the spread of the disease, and personal contact was a factor. The isolation hospital accommodation in the borough is very meagre, and consists of the upper portion of the old county gaol, the ground floor of which is used as a storehouse for property belonging to the town council and for housing a steam disinfector. The building projects into the cattle market and has no curtilage. The nurses' rooms and the kitchen all communicate directly with the wards, which themselves are intercommunicating.

PAYMENT OF VACCINATION AND NOTIFICATION FEES.

U.S.—Under the contract which every public vaccinator has with the guardians, he is required to make out an account at the end of every quarter of the sums payable to him. If, however, the public vaccinator fails to send in such account at the right time, and six months elapses before he does carry out this duty, the claim for these fees is statute barred under the Public Authorities Protection Act. With respect to fees under the Notification Act, no such barring occurs, as each certificate is in itself a claim and an account for the fee due, and no further statement is necessary. The local authority has no power to compel medical practitioners to send in an additional account; still less, failing such account being sent in within six months, can they claim that the account is statute barred. Our correspondent may be referred also to the letter from Dr. Bateman published elsewhere in this issue.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

E. D. S. desires to hear of any charitable institution which would take in two boys, aged 10 and 13, suffering from Friedreich's ataxy. Their father earns 12s. weekly; he has seven young children.

B. desires to hear of an institution for a lad aged 11 suffering from phthisis and a complaint of the spine; the boy is able to walk about a little. The father is a farm labourer, and unable to contribute towards his maintenance.

*** The case appears to be one which should be dealt with by the county council under the tuberculosis scheme; application might be made to the clerk of the county council.

Income Tax.

A. W. is now an outdoor assistant at a salary of £200 a year. Prior to April last he was an indoor assistant at salaries of £132 for one year and £118 for earlier years. The surveyor of taxes wishes to assess him at £200.

*** So long as our correspondent remains an assistant he is entitled to have his income-tax liabilities based on his average earnings for the three years preceding the year of assessment. No tax should therefore be payable for the current year and none for next year, the average income being below £160.

ANSWERS.

Senex.—Hypodermic tablets are prepared with various bases according to the nature of the active ingredient. As a general rule saccharum lactis is employed; in other cases it may be sodium chloride or sodium sulphate. A minute proportion of antiseptic is sometimes added, but this is hardly necessary. This information is amplified to some extent on page 759 of the *Extra Pharmacopœia*, fifteenth edition, 1912.

Venetian Fever.

Dr. P. de Blasio (ss. *Cretic*) writes, with reference to the inquiry by "M.," published on July 6th, that, from his knowledge and from inquiries recently made, he is able to state that there is no special fever peculiar to Venice.

LETTERS, NOTES, ETC.

Rheumatism and Phthisis.

Agaricus quotes in support of the statement that consumption does not affect the rheumatic the following extract from a paper on the morbid diathesis, by Sir Dyce Duckworth, published in the *Practitioner* for January last: "One of the most remarkable features of the arthritic diathesis is its resistance to the inroads of tuberculosis. . . . The bacilli of tubercle will not flourish in a rheumatic soil."

Infrequent Action of the Bowels.

M. C. W. writes: Dr. Parkinson's letter on constipation (November 2nd, p. 1260) recalls to my mind my great-aunt's "rule of health." My father, also a medical man, often discussed the matter with her. She declared she "never had taken, and never would take, an aperient." She was a spinster in good circumstances, led an active life, and lived very sparingly. She would often go as long as *six weeks* without an evacuation, and *if* at the end of that time she felt uncomfortable, she would put on a leech over the liver, and this always relieved her. Of course all this *ought* to have killed her, but inasmuch as she was 98 when she died, I do not think it did.

A Correction.

In the Journal of September 28th, p. 794, the letters D.S.O. were printed after the signature of Major F. J. W. Porter, R.A.M.C. It is, of course, unnecessary to say that this was in no way due to Major Porter.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

Note.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

An Address

ON

DUTIES OF THE STATE IN REGARD TO TUBERCULOSIS.

Delivered before the Manchester Medico-Ethical Association.

BY

ARTHUR RANSOME, M.D., F.R.C.P., F.R.S.

I do not think that the State should undertake the treatment of disease. It should rather turn its attention in the direction of its prevention. Indeed, the results of many other enterprises undertaken by the State or by municipal authorities prove that it is improbable in the highest degree that State officials can succeed in the treatment of tuberculosis as well as do at present the several voluntary agencies. It is possible that the State may rightly concern itself with the medical treatment of its own employees, as in the Post Office or in the navy and army; but, even for them, this work will probably be better carried out by men who are not under State supervision. Again, it will be said that the State necessarily provides medical treatment for those unfortunate persons who, owing to poverty, are, as paupers, entirely dependent upon the State: and this is true. But who will say that the Poor Law medical service is a model of what medical treatment by the State ought to be? Is not this very service an object lesson as to the results that are likely to follow when the State goes out of its province and tries to undertake the treatment of disease? Notwithstanding the noble and self-sacrificing conduct of many Poor Law medical officers, this department of medical practice is undoubtedly the lowest and the worst. It is degrading to the doctor, and it is unwelcome to his patients. It is degrading to the doctor because he is compelled to attend people who have no confidence in him; and it is unwelcome to the poor because the doctor is imposed upon them by the State, and because they have no choice as to whom they should have to attend them. If there be any one who doubts these statements let him read the report of the Poor Law Commission of 1909. He will find that it is full of evidence of the unsatisfactory nature of this sample of State interference with medical treatment.

I shall inflict upon you only one or two samples of this evidence.

1. That the present plan of medically assisting the poor under the Poor Law is not an efficient system. (*Report of Poor Law Commission*, 1909, Q. 42509, par. 2.)

2. That in too many unions outdoor medical relief begins and ends with a bottle of medicine, and that the bottle of physic is a very curse. It is responsible for what may be called the mortality of delay. (*The State and the Doctor*, p. 83.)

3. That under the Poor Law there is practically no sanitary supervision of phthisis in the home of the patient. . . . Phthisis cases are maintained in crowded, unventilated houses. It is not regarded as any part of the duty of the district medical officer to take any steps to prevent disease, either in the way of recurrence in the same patient, or in its spread to other persons. (Ibid., p. 84.)

From first to last, in short, the outdoor medical service of the Poor Law has no conception of the public health point of view.

Much the same conclusions are reached when we consider the indoor treatment of paupers by the State; but on this point I will only quote a few passages from *The State and the Doctor*:

The best Poor Law infirmary falls markedly below the standard of the London hospitals.

It is, we think, impossible to avoid the conclusion that the Medical Branch of the Poor Law, now becoming an exceedingly costly service, is, at almost all points, in a far from satisfactory condition.

In short, from the beginning to the end of a Poor Law expenditure of over £4,000,000 annually upon the sick, there is no thought of promoting medical science or medical education, practically no idea of preventing the spread of disease, and little consideration of how to prevent its recurrence in the individual. (P. 128.)

Lastly:

To take the sick out of the Poor Law is, as we now see, the only way to put an end to what has inevitably a bad psychological reaction on personal character. (P. 260.)

The case is entirely different with regard to the public health service. Neither with the work of its officials, nor with the numerous hospitals under its control, now spread all over the country, is there any fault to be found; but, surely, this result must be ascribed to the fact that here the State is attending mainly to its legitimate business, and is endeavouring not to *cure*, but to *prevent*, the spread of disease.

Under the crude and ill-considered clauses of the Insurance Act, however, it seems certain that an attempt is again to be made by the State at the treatment of tuberculosis, as well as of other diseases. Moreover, though it is somewhat difficult to find our way amongst the mazes of this Act, it seems probable that this treatment is to be carried out under very doubtful conditions.

In the first place, the ordinary treatment of a consumptive patient is to be conducted under the odious "contract" system, a system which has notoriously failed in the instances of Poor Law and of club practice. On this point I fully endorse what has been said by Dr. Buttar in his recent letter to the *Morning Post* (September 16th, 1912):

It is a pity that legislators who embark on revolutionary methods, such as the Insurance Act, do not, in the first place, get their minds thoroughly impressed with certain truths, such as the following. All contract practice is bad: some contract practice is necessary; therefore, keep your contract practice within the smallest limits possible; and State service, though sometimes necessary, is not ideal. Therefore, foster rather the healthy growth of a natural system, that has developed in the course of ages, altering it gently only in such conditions as quite preclude its use.

Again, though an enormous sum has to be put aside for the establishment of sanatoriums and, perhaps, of dispensaries, these institutions will have to be mainly under the control of local Insurance Committees, who will be for the most part ignorant of medical science. The medical attendants of the institutions will be appointed by these authorities, and there will be no certainty that the doctors chosen will be competent to undertake the treatment of the multifarious forms of tuberculosis. Their chief recommendation to office will most likely be their acquaintance with some member or other of the local authority.

Much of the money assigned for the purpose of the sanatoriums and of other objects will be wasted in various ways, especially in the erection of State buildings and in the carrying out of local "fads." We may be very sure that the local Medical Committees, appointed as a sop to Cerberus, will have very little voice in the matter. Hitherto our medical brethren seem to have hesitated to criticize this part of the chaotic scheme laid before them, partly, perhaps, because it is the most popular part of the Act and partly because of the proverb against looking a gift horse in the mouth. Certainly the Royal College of Physicians expressly excluded sanatoriums from their purview when the bill was submitted to their consideration, and other associations of medical men have taken the same course. It is, however, very important that the subject should be seriously dealt with by medical critics before it is too late and before the funds assigned for the purpose are in process of being squandered.

These illustrations may, perhaps, suffice to show that, in these several cases at least, the State has failed to take up efficiently the treatment of disease, especially of tuberculosis; and that, in the plans adumbrated by the Insurance Act, it is equally certain to fail.

In its ill-advised efforts the State is, in fact, departing from the wise counsels of that great political economist, John Stuart Mill, and is establishing permanent machinery to do work that could be better done in the future by voluntary agencies. Thus, in his monumental work on *Political Economy*, he says (vol. ii, p. 607):

A good Government will give all its aid in such shape as to encourage and nurture any rudiments it may find of a spirit of individual exertion.

And again:

Government aid, when given merely in default of private enterprise, should be so given as to be, as far as possible, a

course of education for the people in the art of accomplishing great objects by individual energy and voluntary co-operation."

What, then, are the duties of the State in this regard? I venture to assert that they are summed up in the one word *prevention*.

Unquestionably, one of the most important duties of a State is the prevention of all disease that has been proved by medical science to be preventable. Happily, in this country this duty has not been neglected so far as most of the so-called zymotic diseases are concerned. Many hundred thousand lives have thus been saved by the energy of our public health services.

It is, however, only within recent years that tuberculosis has been fully recognized as a preventable disease, and still more recently that it has come to rank as an infectious disease. It is true that in Italy and some other warm countries consumption has been reckoned for many years an infectious disease; but it was not until Villemin, in 1865, proved the fact by direct experiment, that it can be said to have fairly taken its place among the infectious disorders.

There are, however, several points in relation to the infectivity of tubercle which must be taken into account in considering the duties of the State in regard to its prevention. These points are, in brief:

1. First, the tenacity of life of the bacillus of tubercle, when fed with suitable material, and when left for long periods under what are known as unsanitary conditions.

2. Its resistance to ordinary disinfectants, to putrefaction, freezing and thawing, etc.

3. Its rapid loss of virulence under the influence of fresh air and sunlight.

4. The incubation period, and the temperature of growth, of the organism. It is no longer regarded as a pure parasite, existing only at the temperatures of the mammalian body. Many observers have now succeeded in growing it within wide ranges of temperature; and I have myself grown it in the condensed vapour of human breath, and in that from ground air, at ordinary English spring and summer temperatures.

5. The infectivity of tuberculous dust, under differing circumstances of light and air.

6. The association of the bacillus of tubercle with other organisms, such as the *tetragonus*, and various other cocci.

7. The varying powers of resistance to infection offered by the human body. And, lastly,

8. The researches as to the relations between bovine and human tuberculosis.

All these subjects have now been carefully studied, and will have to be taken into account in any concerted scheme for the prevention of the disease.

It must never be forgotten that infection by tubercle is conditional, and that the conditions under which it can take place are mainly three. They are: (1) The presence of a virulent form of the bacillus; (2) a susceptible body to receive it; and (3) such external circumstances as are favourable to infection.

Unless all these conditions are present it is unlikely that the disease will spread infectively through any community. Even when both the bacillus and a susceptible person are present, if the surrounding circumstances be such that the virulence of the microbe is destroyed before it can reach its victim, then no infection will take place.

There are, therefore, at least three distinct directions in which the State can employ its energies in the campaign against tuberculosis:

1. It can take practical measures to abolish the bacillus.

2. It can so improve the physical condition of the people as to diminish their susceptibility to the disease; and

3. Most important of all, it can so amend its favourite haunts as to destroy its power for evil.

These, certainly, are no easy tasks to set before the State, but they are none of them impossible; and the mere attempt to carry them out must end in the amelioration and lessening of the disease. We will consider them in order.

My friend, Mr. J. W. Sharpe, has called my attention to the fact that Herbert Spencer is usually all [illegible] the interference of the State with private concerns, especially by coercion. He quotes as follows from *Facts and Comments*, p. 24 (ed. 1902): "The notion that a society is a manufacture, and not an evolution, vitiates political thinking at large, leading to the belief that only by coercion can benefits be achieved. In an evil shown [illegible] then it must be suppressed by law. In [illegible] by an Act of Parliament."

1. *The Destruction of the Bacillus of Tubercle.*

It was perhaps natural that, immediately after Koch's discovery of the specific germ of tubercle, and after the proofs of its infectivity which he adduced, a popular cry should have been raised for stringent measures against infection. It was already known that the disease is very rarely congenital, and therefore it followed that nearly all of the 300,000 persons then suffering from it in England must have contracted the deadly complaint either directly from some other invalids, or indirectly by infection from tuberculous dust. It was logical to conclude that, if all these sufferers were treated like lepers and shut off from the rest of the community, and if other sources of infection such as tuberculous meat or milk were stopped, the disease would soon cease to exist, and the problem of its prevention would be solved.

There arose, accordingly, loud demands for compulsory notification of all cases of tuberculosis; the penalization of spitting; gratuitous examination of sputum, etc., for the bacillus; disinfection of the dwellings and clothing of tuberculous persons; the provision of sanatoriums and of "homes for advanced cases," of dispensaries, and of colonies for quiescent cases. The State supervision of all cattle, and the formation of non-tuberculous herds, were also called for.

These measures are indeed all of them likely to be of great use, and will probably all have to be brought judiciously into action, sooner or later; but these reformers have underrated the difficulties in the way of their task. Moreover, in some respects they go beyond, and in others they fall short of, the requirements of the case. Thus, if they were applied without discrimination to all cases of tuberculosis, they would inflict sore punishment upon many perfectly harmless individuals, and would brand them as if they were lepers. Dr. Koch himself, in his last Nobel Lecture, sums up the case thus:

> Patients with closed tuberculosis are to be regarded as quite harmless. Even those who suffer from open tuberculosis are harmless so long as the tubercle bacilli expelled by them are prevented by cleanliness, airing, etc., from infecting. The patient becomes dangerous only when he is personally uncleanly, or becomes so helpless in consequence of the far-advanced disease that he can no longer see to the suitable removal of the sputa. For the healthy the danger of infection increases with the impossibility of avoiding the immediate neighbourhood of a dangerous patient—that is, in densely inhabited rooms; and quite specially if the latter are not only overcrowded but also badly ventilated and inadequately lighted.

The case could hardly be better put. Moreover, on the other hand, they would only remove some of the sources of infection, and would leave many others almost untouched. They would not cope with the dangers arising from the cases of incipient or of "walking" phthisis, nor from those who, if the measures were insisted upon, would undoubtedly hide the nature of their complaint.

They would also leave the most frequent sources of infection untouched. They would probably be of use to diminish the number of infecting persons, but they would do little to meet the many sources of ill health or of other diseases, which prepare the way for the attack of the germs that had escaped the net, and which would continue to be only too abundant in unhealthy surroundings.

The State would therefore have to resort to further measures, and it should at least consider whether it were possible to do anything to diminish the second condition of infection—namely:

2. *The Susceptibility to Infection by Tubercle.*

It is not necessary to inflict upon you a discussion of the various forms of susceptibility to tubercle, whether inherited, constitutional, or acquired. It will be sufficient to point out that, though this condition of infection is difficult to remove entirely, it may be greatly mitigated.

With healthier homes, purer air in workshops and in places of public assembly, absence of microbic dusts, with better food and less alcoholic drinking—and all these reforms are attainable under wise governance—there would assuredly be fewer hosts for malignant guests in the shape of pathogenic microbes.

The measures that the State can take to mitigate the second condition of infection by tubercle are, therefore, identical with those required to meet the third—namely:

3. The Removal of Unhealthy Surroundings.

The State is fully competent to deal with this part of the subject; and again its duty may be stated in one word—sanitation.

First, by the provision of healthy homes. Tuberculosis has been rightly termed a "house disease." I have myself shown in my paper on tuberculous infective areas, published in 1888, that the disease clings to certain districts in Manchester and Salford, and even to certain houses, and similar observations have been made by Dr. Niven and by Dr. Flick of Philadelphia. Dr. Flick says: "Of all diseases, tuberculosis, more than any other, is a house disease. It is implanted in the house, develops in the house, and it matures in the house."

Dr. Koch, also, in his Nobel Lecture, remarks: "Tuberculosis has been frankly and justly called a dwelling disease."

Obviously, then, the first duty of the State is to see that the people are healthily housed; and not only must the houses themselves be properly constructed, under stringent "building by-laws," but by wise "town planning," by the destruction of neighbouring unsanitary property, by proper drainage and water supply, and by other measures, the air that circulates around these houses must be kept pure, and all such sunlight as this country affords must have full play upon them.

Fresh air and sunlight are the best disinfectants for the virus of tubercle; and it is therefore the duty of the State to see that these important requisites are provided so far as may be possible. No one can, indeed, be compelled to open the windows of a dwelling, but householders can at least be tempted to do so by securing for them as far as possible the purity of the outside atmosphere.

The subject of ventilation as regards the prevention of tuberculosis is a very large one. It is probable that in confined air there exists some special nutriment which either serves to prolong the life of the bacillus or which increases its virulent properties, this special element being either the organic matter exhaled from human bodies or the emanations from polluted ground air or from badly drained subsoils.

It follows, therefore, that the State must not only make provision for cubic space in dwellings and for the admission of so many cubic feet of air to them, but that it must also see that this air is fairly pure, and that the ventilation shall sweep away "air sewage" from these rooms and from all places where human and other beings congregate. Hence, also, in town planning, and in the reconstruction of unhealthy areas, free course must be given to the winds of heaven: there must be no blind alleys or courts, and any pollution of the atmosphere must, as far as possible, be mitigated.

The ventilation not only of schools but of all places of public resort—such as churches, chapels, theatres, even of public houses, restaurants, and shops—must be placed under State control; and all work-places and factories must be kept as clean as possible and well supplied with fresh air.*

The height of buildings in the streets must be correlated with their width; and ample "lung space" must be provided in the shape of public parks and playgrounds.

The State will also be strictly within the scope of its legitimate action if it provide for the dangerous cases of open tuberculosis, if it subsidizes homes for the dying and tuberculosis dispensaries, and if it assists the formation of herds of cattle, free from disease, as has been done in Denmark. But again I venture to protest against its meddling with the treatment of the disease in any of these cases.

In concluding this address, pray let me apologize for having once again repeated what has already been many times told. I am conscious that I have been preaching a very old sermon; but, in mitigation of my offence, let me plead that my remarks have really been addressed to our rulers, that the State is well known to be very thick-headed, and that, as Jan Ridd said of the Devon folk, "At Oare, you must say a thing three times, very slowly, before it gets inside of the skull of the good man you are addressing."

* With reference to the last-mentioned places, I cannot help turning aside for a moment to complain of the recent retrograde step taken by the present Home Office in lowering the standard of ventilation of work-places and factories, which had been fixed by a former Committee of this Office. In place of restricting the amount of respiratory impurity, 9 vols. of CO_2 per 10,000 vols. of air, they now permit 11 vols. This is distinctly a retrograde step.

TUBERCULOSIS IN GENERAL PRACTICE.

WITH SPECIAL REGARD TO TUBERCULIN TREATMENT.

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The question whether tuberculin can be looked upon as a rational therapeutic measure or not is still being thrashed out, but any one who has had any experience of this method must have realized its undoubted value. For the last two years I have had the opportunity of treating a fair number of cases of tuberculosis, and in consequence I have dipped somewhat deeply into the subject to gain as much knowledge of its management as possible. The progress in the knowledge and administration of tuberculin has been very marked within the last two years or so. Tuberculin must not be looked upon as the Alpha and Omega of treatment—it is an adjunct, and a very important one; in fact, one may go so far as to put it in the very forefront of therapeutic measures. One thing is certain: no practitioner is justified in undertaking vaccine-therapy without a good knowledge of, at any rate, the theory of immunity.

When tuberculosis follows on such diseases as whooping-cough, measles, etc., latency must always be kept in mind. Pleurisy is one of the most insidious diseases of a tuberculous nature in its development. An exciting cause of tuberculosis is excessive indulgence in *alcohol;* his lowered vitality makes the alcoholic an easy victim. In addition he passes on a susceptibility to tuberculosis to his offspring (Lauder Brunton).

Urinary Tuberculosis.

I have had two cases under my care: one showed improvement for a time, but relapsed and left off coming to the hospital; the other is still under my care at his home. In both cases the tubercle bacillus was present. If the kidneys are severely affected tuberculin may not only be useless, but, so far as we know at present, harmful.

In wide areas of infection of the bladder Pardoe found tuberculin not successful; the reason for this may be that these cases are mixed infections; the early and circumscribed are likely to be pure cases of tuberculosis, and in these better results may be looked for. Pardoe found that he got a site reaction more or less severe depending upon the dose. He found that the local condition was hyperaemia or deep congestion, which might be followed by sloughing. If the ureters are both affected suppression after large doses is a natural consequence, but with present day knowledge should never be possible. All cases of renal tuberculosis should be examined with the cystoscope.

Glandular Tuberculosis.

In the case of the cervical, those most commonly affected, the seat of infection is invariably in the nose and throat. When bronchial glands are affected, the superficial veins, tributaries of the intercostal veins, are prominent. There is usually a dry cough and some rise of temperature. In cases in which the abdominal glands are affected, if they cannot be felt, in addition to the usual constitutional symptoms, flatulence and prominence of superficial veins, either in the portal area or that of the inferior vena cava, may be observed. This was well shown in the case of an adult whom Sir Lauder Brunton was good enough to see with me. All these glands cases do well under tuberculin.

Tuberculosis of the Skin—Lupus Erythematosus and Vulgaris.

These cases yield more readily to tuberculin treatment if the temperature is normal or subnormal than when the temperature is raised. I have not observed a rise of temperature in lupus erythematosus, but I have seen a case of lupus vulgaris with a temperature of 99: the patient had been under the light treatment in London. After cessation of light treatment for a short time the condition relapsed rapidly, but is now yielding to tuberculin treatment. A low opsonic index in lupus is an indication for tuberculin treatment; a high opsonic index indicates light treatment (Bulloch). A case of lupus of the interior of the nose affecting the inferior turbinate has improved, but is yielding very slowly. The most gratifying result I have

ever had has been in an eye case, the condition yielding readily to treatment, all constitutional signs disappearing rapidly. In another eye case complicated with lupus erythematosus the eye symptoms have cleared up, and the lupus erythematosus is yielding.

Joint.

I have had one case of tuberculosis of the knee-joint, in which relief of pain and general improvement followed the use of tuberculin and the patient was able to return to his business.

General Treatment.

As the nose and throat form one of the points of attack of the tubercle bacillus, proper attention should be paid to this area. Enlarged tonsils and adenoids, when present obtrusively, should be removed. The individual should be taught how to breathe: he should be advised as to his clothing, which should be warm and light. In the case of the poor the question of housing is difficult of solution. All that they can be recommended is to keep their windows wide open night and day, to do away with all carpets with the exception of a bedside mat, to wash floors with some antiseptic once a week, to fold all clothes and not hang them up, to have no curtains, and to wash all bedclothes at least once a fortnight; exercise should be regulated according to the temperature, and due attention paid to body cleanliness. All milk should be boiled and food generally well cooked. These may appear trivial details, but it is astonishing how necessary they are. The district nurse takes their temperature daily and records it.

I am unable to express a very definite opinion in favour of sanatorium treatment for the poor, except in the very early cases. At the same time it is much easier to deal with a case in an institution where treatment and the necessary discipline can be enforced. A poor patient may be sent to a sanatorium for six months; he comes out much relieved, and after a short time looks out for a job; he probably has to go on short commons for a time before he is able to get suitable work, and very soon after starting breaks down and returns to the sanatorium, or is sent to an outdoor shelter at the workhouse, does another three or six months' cure, comes out relieved and goes through the same round of troubles as before, and finally is marked down as being unfit for any more work. This is not an imaginary picture; I have three cases in my mind—one has recently died, and the other two are in the last stages of the disease, both receiving outdoor relief at the present time.

Everything depends upon an early diagnosis and treatment at the tuberculin dispensary with pecuniary assistance for himself and dependants. The additional advantage of the home treatment is the opportunity it gives for getting at the contacts. We advise strict precautions as to the disposal of sputum, and insist upon oral cleanliness. The case is reported to the health authorities, and they in turn give directions, and in case of death deal with the disinfection of the premises. We advise hospital cases to apply to the Poor Law authorities for assistance in the way of extra food, and they usually get it.

Patients suffering from urinary tuberculosis should be as careful in the disposal of their urine as those suffering from pulmonary tuberculosis have to be with their sputum. I am of opinion that these urinary cases should be notifiable.

Diagnosis.

At the present day the diagnosis of tuberculosis must to a great extent depend upon the region affected and the possibility of demonstrating the presence of the tubercle bacillus. In pulmonary tuberculosis with sputum this is practicable; in urinary and cerebral tuberculosis it is also possible to obtain the tubercle bacillus; but there are cases of pulmonary tuberculosis where the sputum is scanty or absent. In glandular tuberculosis, tuberculosis of the eye and bone and joints, there is no possibility of obtaining the bacillus.

Generally speaking the evidences of active tuberculosis are [illegible] the subjective symptoms, and [illegible] The general practitioner should be conversant with von Pirquet's test and the gradual improvement noted on the administration of tuberculin, which are the most reliable tests.

Tuberculous antibodies are present in the blood of most people, whether tubercle is active, latent, or completely cured; it therefore follows that von Pirquet's test cannot be said to be diagnostic of active tuberculosis unless the rapidity of the reaction and its marked character are taken into consideration. There are fallacies in von Pirquet's test; in advanced tuberculosis reaction may be absent, owing to the oversatisfaction of antibodies, and in some cases of acute and rapidly fatal tuberculosis it is absent, owing no doubt to toxic surcharge. In children von Pirquet's test is of distinct value. It may be used as a test of the sensitiveness of the patient to tuberculin, and thus it may act as a guide to dosage.

Prognosis.

In selected cases the results of tuberculin are most hopeful, and even in unfavourable ones the improvement is such as to justify one in recommending it in quite advanced cases. In early cases, with or without rise of temperature, the outlook is good. Mixed cases are not unfavourable for treatment unless there is evidence of no reaction to tuberculin. In very acute and so-called galloping cases tuberculin may fail.

As it is held that nearly all cases of tuberculous meningitis are terminal of a general infection, it is obvious that treatment of any kind is not very hopeful; but if, as I believe, some of these cases are examples of "meningism," then the prognosis is certainly not bad. Cases of meningitis have recovered and remained apparently cured for some time, and then relapsed and died.

The more I see of tuberculosis, the more am I impressed with the fact of the necessity for the recognition of the disease in children and its treatment then. Amongst the poor, owing to lack of proper food and housing, the prognosis cannot be as favourable as in the class able to afford a more leisured existence. In tuberculous disease of the eye, my experience, although limited, leads me to regard the outlook of tuberculin treatment as most favourable.

Surgical tuberculosis reacts well to treatment, and on the whole one is justified in giving a favourable prognosis.

The unfavourable signs may be summed up as follows: High pulse-rate, high blood pressure, loss of weight, continuing elevation of temperature, and no improvement in the physical signs and the subjective symptoms. The favourable signs are: A fall in temperature and a corresponding improvement in the subjective symptoms, improvement in pulse and blood pressure, increase in weight, cessation of cough and sweats, disappearance of bacilli.

Sometimes the temperature drops without improvement in the other signs. This is distinctly unfavourable, and often the patient survives but a short time.

Specific Treatment.

There may be said to be two schools at work in the tuberculin or specific treatment of tuberculosis—one which holds that doses large enough to cause reaction are beneficial, and the other which holds that the dose administered should be so diluted as to cause no toxic action, or "reaction," as it is now popularly called. My experience began with the former mode of treatment, but now I take every precaution to avoid a reaction by giving a very small dose to begin with and very gradually increasing the amount and strength of succeeding doses.

I am now using Sahli's method of administering tuberculin. He has always held that very small doses of tuberculin was the correct method in treatment, and his aim all along for the past ten years has been to avoid reaction. He holds that the specific effect of all tuberculins, whether human, bovine, old or new, is the same; that the active principle of any of those tuberculins is the same; and that the beneficial effect depends upon the strength and mode of its preparation. He uses Béraneck's preparation, and gives the following as his special reasons for his preference:

1. The chemical nature of the preparation. It has a large content of specific immunizing substances, while the use of peptone free culture medium practically excludes non-specific toxins. The high specificity of Béraneck's preparation is clearly proved by the fact that tuberculous, and only tuberculous, patients react by fever to minute doses of tuberculin, the healthy tolerating large doses without displaying any signs of reaction.

2. It is a true solution of tubercle bacillary protein held in solution as an acid albumen. It is, therefore, superior to all tuberculins not filtered through porcelain, and especially to bacillary emulsions in which high dilutions cannot be accurately prepared, owing to their non-homogeneous character.

3. It is supplied ready for use in suitably graduated dilutions and the absolute amount of tuberculin guaranteed.

Sahli's dilutions are on the scale that each dilution is twice the amount of the one above. Philip of Edinburgh uses Béraneck's tuberculin, but makes his dilutions on the decimal scale. Philip's dilution is the same as Sahli's at two points.

Cause of Reactions.

Various theories as to the causation of tuberculin reactions have been advanced.

1. The summation theory attributes the general reaction to the addition of the injected tuberculin to that already preformed in the focus and circulating in the organism, and the focal reaction to its addition to the focal toxin.

With regard to the summation theory, it should be remembered that the further away from the focus of disease the less tuberculin there is. From this it will appear that if tuberculin is injected into the circulation there will be a greater focal reaction than a general reaction. Moreover, a focal reaction will be obvious when no general reaction can be detected; this, I take it, is in favour of the individual.

2. The difference theory supposes that the tuberculin calls forth an antitoxin, and that if too much tuberculin is injected the amount of antitoxin necessary to cope with it being insufficient a reaction results (general and focal).

3. The theory which regards innate sensitiveness as the chief factor is disproved by the fact that the sensitiveness is not a fixed condition, but is the result of the tuberculous condition present in the individual. Normal individuals are not sensitive to tuberculin, infected individuals are.

4. Wolff-Eisner supposes that when tuberculin is injected into an infected organism it unites with the lysin which is present as the result of the disease infecting the organism, and that the large molecule of tuberculin is split up by the lytic action, forming tuberculinolysin.

Sensitiveness to tuberculin must be looked upon as a favourable sign in the treatment of tuberculosis; this does not mean that pronounced reactions are desirable, they must be avoided; but if a reaction is not evident clinically how is its presence to be realized? Sahli says by an increased leucocytosis, but for all clinical purposes the temperature and the subjective symptoms must be the guides; if there is no rise in temperature and no marked increase in focal signs and no malaise, it is justifiable to assume that the dose is not too large.

At the Inselspital, Berne, Professor Sahli is now using Koch's old tuberculin as lymph is used in vaccination. He begins, say, with two marks on the arm twice a week, increasing the number to four twice a week; in advanced pulmonary tuberculosis he found that the patient made a general improvement, as shown by an increase in weight and lowering of temperature; there was never any increase in the physical signs in the lung but a gradual improvement. By this method a very much stronger dose of tuberculin can be given.

As the negative phase is concurrent with the rise of temperature and even prolonged beyond its fall (Wright), injections every day or every third day are wrong, as the negative phase would not be complete before another injection is given. It is wrong to give tuberculin in large enough doses to cause a rise of temperature, and it is this procedure which is no doubt responsible for some of the failures in tuberculin treatment. I have found that in my early cases, where I did get a rise of temperature as the result of improper dosage, the complete reaction lasted three or four days. There was a rise above normal, then a fall below normal, and a gradual rise to normal. I now give such small doses as will obviate a rise of temperature. If the temperature is subnormal, it rises gradually to normal under graduated dosage. In two cases (eye and knee) I gave an excessive dose, with the result that the temperature reached 103°, and there was headache, sickness, loss of appetite, and cough (tuberculinism). These symptoms disappeared on the third day, and were followed by a feeling of well-being, and by an improvement in the local conditions. The knee case had a return of pain in the joint during the three days; in both I returned at the end of a fortnight to the smallest dose of the weakest dilution that they had had previous to the overdose. Cases with cavity and haemorrhage should be treated with very great circumspection; as tuberculin causes focal congestion it is obvious that there is a grave risk of causing haemorrhage in the one and increasing it in the other. I always begin by keeping the patient three days in bed; when going from one dilution to a stronger, I keep the patient in bed a day. If the blood pressure is low tuberculin will raise it; a high blood pressure, however, is not to be aimed at. I do not administer tuberculin during menstruation.

The immunity arising out of the use of tuberculin can in no sense be considered to be passive. The individual may show general tox-immunity, yet the focus of the disease may remain unhealed. On the other hand, the focus may heal without the individual showing a general tox-immunity. Again, focal healing may take place, and the individual show intense sensitiveness to tuberculin, healing being brought about by a local tox-immunity.

I have been in the habit of making the injections into the extensor aspect of the forearm. The place where the injection is to be made is rubbed with a piece of cotton-wool soaked in ether, and either a little tincture of iodine is applied to the place or a drop of some antiseptic, such as 1 in 2,000 mercury perchloride, placed on the arm and the puncture made through it. In lupus cases I sometimes make the injections into the diseased area, the point of the needle being entered just outside the area of the disease and the contents being injected into the diseased area. Sometimes a reaction takes place at the point of injection, but so far I have only found this marked when the dose has been very strong. In two of my cases, the eye case and the knee case, this local reaction was well marked, and in the eye case sanious material escaped some weeks after; in the knee case it was absorbed.

In young children I sometimes give tuberculin by the mouth. It has a distinct effect on the disease when given in this way; if too large a dose is given a big reaction will result, but will not be so marked as if the same dose were given subcutaneously. It should be given on a fasting stomach, the most favourable time being 6 a.m. As Béraneck's tuberculin is not made up with an antiseptic, the syringe should be made scrupulously clean for each injection. If the needle is kept in absolute alcohol, this should be removed before use, as alcohol inhibits the action of the tuberculin.

I have hitherto used T.R. human. I have not noticed any such difference in the results in the use of B.E. human, bovine T.R., or a combination of the two, or a combination of T.R. human and bovine, as to make me prefer them to weak doses of T.R. human.

Cases with a low blood pressure react well to tuberculin, as before said, the blood pressure rising. Cases with a high blood pressure, quick pulse, and fever require very small doses and rest.

Some cases of mixed infections do well, others do not, but I have not had sufficient experience to dogmatize. In mixed infections and advanced cases with mixed infections tuberculin may do good. I am treating four of these cases at the present time, and so far they show signs of improvement.

With regard to the time between each dose, I have usually allowed a week to pass; this, at any rate, is on the safe side.

Wright says that in the negative phase there is a diminished content of protective substances in the blood; the positive phase follows with an increase. At the close of the cycle there is a certain amount of protective substances remaining. The phases are affected by the strength of dose; too strong a dose prolongs the negative phase. The cycle lasts about three days, and, allowing a rest period of a day, this would bring the period between each dose very nearly to a week; but, as the aim should be to avoid reactions by giving small doses, a three-day interval is not unreasonable; injections may therefore be given twice a week. It is advisable that the injections should be given about 11 a.m., and the temperature taken twice in the twenty-four hours, or every four hours until 9 p.m.

REFLECTIONS ON THE IMPORTANCE OF TOXIN SATURATION OF TISSUES,

CONSIDERED IN RELATION TO THE TREATMENT OF PULMONARY TUBERCULOSIS.

BY

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AT the outset it may be stated that this paper has been written with the object of offering a plea for the comparatively simple methods of treatment of this disease, and to draw attention to some of the more important aspects of tuberculin treatment.

There is good reason for believing that a sharp line of distinction should be drawn between tuberculosis attacking fixed organs (a condition which is often referred to as surgical tuberculosis) and tuberculosis attacking mobile organs, the important organs in this connexion being the lungs, though to a far less extent tuberculosis of the pericardium, joints, and alimentary canal might be included. The lungs being constantly in motion and very vascular become when attacked mechanisms for the distribution of toxin.

The course of events which follow when tubercle bacilli invade the lung is very various. In many cases the local tissues will be able at once to destroy the bacilli, otherwise the bacilli will grow and form toxins, which, if of low virulence and the local tissues are resistant, may end in the bacilli, though not necessarily being killed, becoming surrounded by more or less dense fibrous tissue. Unfortunately, in many cases, at some one or more points, destructive processes obtain the upper hand, and although the fibrous tissue tends to limit destruction and at the same time to import a measure of rigidity into the affected lung, the disease continues to spread slowly.

If the bacilli be a little more virulent, they may give off just enough toxin to destroy the immediately surrounding tissues, although not enough to reach healthy tissues beyond, in which case the symptoms of a general character will be slight, but the disease will gradually destroy the surrounding lung tissue; this may be the explanation of those insidious cases in which the lungs are found to be extensively diseased, without any very marked general precedent symptoms.

If the bacilli be even more virulent, and give rise to so much toxin that it cannot all be anchored to the surrounding tissues, and, as there will be less possibility of the production of much fibrous tissue, and there will thus be more mobility of the diseased focus, it will follow that some of the toxin will reach healthy tissues, where antibodies will be formed, which, on again reaching the diseased area, will tend to inhibit the growth of the bacilli there situated. If they completely inhibit growth, a cure will have commenced. If, however, there be so much activity, or the body tissues as a whole yield an insufficient amount of antibody, then the healthy tissues arrive at a condition which I shall call toxin saturation; no antibody can be produced, and the toxin circulating in the system will assist the activity of the bacilli, the disease will rapidly spread, and death speedily follow, unless means are at once taken to counteract this grave condition, and produce once more a condition of hyposaturation. Such a state of affairs does not occur in tuberculosis attacking relatively immobile tissues.

From this it follows that if we are to treat this malady successfully, means for determining the condition of the tissues with reference to saturation by toxin will be of enormous importance. I am of opinion that this is not a difficult matter if all the measures at present at our command be taken. The most important method is an accurate record of the temperature taken in the rectum (by any other method very little information of value can be obtained); the patient should be kept in bed for this purpose. If it is found that the temperature taken in the rectum before rising in the morning is above 36.5° C. (97.7 F.) I am of opinion that the tissues are approaching a condition of toxin saturation; or, if the temperature during the day, when the patient is at rest in bed, rises higher than 37.5° C. (99.4 F.) the same conclusion may be arrived at. The temperature taken before rising is by far the most significant in cases which are only slightly febrile, and it should be further noticed that the temperature taken at 9 p.m. should be lower than the afternoon temperature. In cases in which the disease is only slightly active, where almost all the toxin is neutralized by the tissues at the seat of the disease, although the temperature may consequently deviate from the normal, yet the remaining tissues of the body may be in a condition considerably removed from saturation by toxin. The symptoms of saturation are the classical symptoms of pulmonary tuberculosis. The mildness of the symptoms in some cases is due probably to toxin saturation being incomplete, at least at all hours of the day and night. A night's rest often sufficiently restores the balance, the patient being thus enabled to struggle on a little longer. It may be concluded that when night sweats occur, saturation is complete at least for part of the twenty-four hours. A temperature such as the above only indicates that the balance has been restored, and gives no indication in itself of the capacity of the tissues to deal with toxin; it follows, therefore, that individuals with the balance only just restored, and those who have a large capacity for dealing with toxin, will exhibit similar temperature charts.

It is, however, comparatively easy to distinguish between these cases by the following methods. If it is found that a very little exercise causes the temperature as described above to deviate from the normal—that is, if on the following day, the temperature taken in the rectum before rising in the morning is higher than 36.5° C. (97.7° F.) the tissues are nearly saturated with toxin. On the other hand, if a large amount of exercise causes no increase of this temperature, it follows that either there is no approximation to toxin saturation, or else the bacilli are so shut away from contact with the tissues generally that only an inappreciable amount of toxin can reach them, even after violent exertion, or that the tissues of the body have become tolerant to toxin. It follows, therefore, that, besides being useful as a method of treatment in chronic cases, the capacity to do a large amount of work without unfavourable symptoms is a circumstance indicating a favourable prognosis. The method of treating cases by severe physical exertion with the intention of distributing toxin to the healthy tissues and the consequent production of immunity is disadvantageous in so far as it produces activity in the diseased focus, and advantageous in so far that any toxin so distributed can act on a very large number of different tissues.

Another method of gauging the amount of toxin saturation is to administer tuberculin. The action of tuberculin on an organ previously infected with tuberculosis may be threefold: (1) Action at the site of inoculation; (2) general reaction, indicated by temperature and symptoms of malaise; and (3) action upon the diseased focus. Neither (1) nor (2) denotes the presence of active tuberculosis, but only indicates that the tissues of the body have been so changed that they are able to activate the injected tuberculin. The general reaction will therefore be absent in the case of persons who have never been infected and in those in which tolerance to the activated tuberculin has been achieved, though a cure may not have taken place. If a sufficiently large dose be injected, it follows that there may be a severe general reaction, even in cases of surgical tuberculosis, but as the disease is local, there will be no great danger of the reaction persisting; the reaction will occur rapidly and will be soon over; when lasting for a prolonged period, it indicates renewed activity in some vascular tuberculous focus.

If a small dose such as 0.00003 c.cm. of P.T.O. be administered to a patient with high fever, there will be no reaction at the site of inoculation, because the tissues at this spot will be toxin saturated, the symptoms, however, will become markedly more severe, and the signs of activity in the affected portions of lung will be considerably increased. If a larger dose be administered the symptoms will be more pronounced. In such a case tuberculin has been administered unwisely to a patient whose tissues are saturated with toxin, the toxin injected presumably reaches the tissues involved in the disease, and assists its spread.

On the other hand, if a similar dose of tuberculin be administered to a patient having a temperature ranging permanently above 37° C. (98.6° F.), but not reaching

higher than 37.6° C. during the twenty-four hours, when the patient is in bed, one of three events may occur: (1) There may be no local reaction, the temperature will probably be raised slightly and headache or sickness may be complained of; in this case also it may be assumed that the tissues are saturated with toxin, and that the tuberculin has been harmful. Or (2) there may be a local reaction at the site of injection, and within a few hours the temperature may conform to the normal, and be as low as 36.5° C. (97.7° F.) the next morning. In this case it is probable that the bacilli in the diseased tissue are only slightly active, and the toxin produced is not sufficient in amount to have saturated the tissues completely. Or (3) there may be no local reaction, but an increase of temperature during the next twenty-four hours, together with other symptoms of intoxication; after this preliminary rise, the temperature may fall to normal. In this case it is assumed that the tissues at the site of inoculation were unable to deal with the whole of the tuberculin injected, and therefore some of this reached the actual focus of disease and stirred it up to greater activity, producing as a result more autogenous tuberculin, which, on reaching tissues in other parts of the body not saturated with toxin, caused the production of antibodies, which, on reaching the diseased tissues, inhibited the action of the bacilli. This latter method is not a very satisfactory means of bringing about a cure, for if the focus of disease, owing just to the right amount of antituberculin not being formed, is not inhibited, it will probably cause extension of the disease and a persistently abnormal temperature.

If a suitable dose of tuberculin be administered, we can gauge from the result whether toxin saturation is almost complete or otherwise, for if a small dose causes a rise of temperature in a case where the temperature was previously normal, we may assume that toxin saturation is almost complete. It should be remembered that when it is thought necessary to use tuberculin for diagnostic purposes, the tissues will, as a rule, be considerably removed from toxin saturation.

A transient rise of temperature does not necessarily imply any increase of focal disease, but is due to the activation of the injected tuberculin in a patient who is obviously intolerant of any considerable amount; the symptoms being slight, it will therefore follow that if this activated tuberculin result in the formation of large amounts of antibody, as may well happen where the tissues have been comparatively uninjured by autogenous tuberculin, after a transient feeling of malaise, enormous improvement may follow. On the other hand, supposing the patient be nearly toxin saturated, the activated tuberculin, even if the dose be small, may stir up tuberculous foci, and the primary reaction may be continued into the fever, caused by increase of the disease.

It seems sufficiently obvious that if a patient be able to utilize without injury large doses of tuberculin, the prognosis is relatively good. The disadvantage of using large doses for diagnostic purposes would seem to be that they establish a tolerance to the poison, which destroys sensitiveness and necessitates large doses of tuberculin being used in the after-treatment.

When tuberculosis attacks non-mobile organs such as the skin, bones, cornea, brain, choroid, etc., toxin saturation is unlikely to be present; at the same time tolerance to any considerable amount of tuberculin is unlikely to have been achieved; in such cases relatively small doses of tuberculin, administered at considerable intervals in order to avoid destruction of sensitiveness, may bring about a cure without producing a focal reaction. If we are quite sure that the products of ulcerative destruction can be got rid of without danger, we may give larger doses if we are sure the larger doses will not stir up disease elsewhere which is quiescent. The avoidance of focal reactions when we are treating tuberculous tumours of the brain would seem essential. In glandular tubercle the minimum dose should be administered which is active, and no effort need be made to destroy sensitiveness, whereas the production of focal reactions may cause enlargement instead of diminution, and where the glands are deep-seated serious consequences may follow.

In administering tuberculin to cases of pulmonary tuberculosis we have to consider first the presence or absence of toxin saturation. This is discovered by putting the patient to bed and taking the rectal temperature as advised above. If the temperature be normal we then try the effect of exercise; if this does not cause a rise of temperature we may begin with a small dose of tuberculin.

In order to obtain a correct notion as to the administration of tuberculin to cases of pulmonary tuberculosis, they may be divided into classes:

1. Very early cases, without fever, which may have been diagnosed by injections of tuberculin, a safe procedure in so far as [illegible] and far removed from toxin saturation. In these cases the unsaturated tissues are able to make use of a comparatively large dose of tuberculin, and, although the general reaction may be severe, it will only be transient. If the same dose be repeated it will be found that a certain amount of tolerance has been established to the poison.

2. Cases commencing with haemoptysis without previous symptoms; such cases are, for obvious reasons, not toxin saturated, and may be treated on the same lines as surgical tuberculosis, or, perhaps better, by means of gradually increasing doses of tuberculin given every five days, just keeping the tissues sensitive. In any event, big doses in such cases are unlikely to produce serious symptoms, though for greater security a relatively small dose should be commenced with.

3. The ordinary so-called early case, which is slightly febrile, where, as a rule, toxin saturation is, or is almost, complete. These cases must be treated by rest in bed and ordinary sanatorium treatment until their temperatures are normal, when very small doses of tuberculin may be commenced, advantage being taken of their recovery to allow of the destruction of a certain number of bacilli by means of the tuberculin, which will in itself aid the restoration to hyposaturation.

4. Cases which have existed for a considerable period, and where, owing to fibrosis and highly resistant tissues, toxin saturation is not complete, but where the disease slowly spreads locally. These cases are also best treated by the method above described.

5. Cases with extensive disease, where, owing to prolonged auto-intoxication, a considerable degree of toxin tolerance has been established. These are cases which have lost their sensitiveness, and may show a subnormal temperature. In these cases tuberculin may be administered, commencing with a small dose and rapidly increased until such a point be reached that they again become sensitive, and benefit may then be expected.

6. Cases exhibiting a large amount of caseous disease it may be well to treat as cases of surgical tuberculosis with small doses repeated at intervals of at least a week, in order to avoid ulceration of large masses of diseased tissue—a process not without danger.

In gauging the amount of sensitiveness upon which a cure depends, advantage may be taken of the reaction at the site of inoculation, and for this purpose the back of the forearm is most suitable. The absence of redness or swelling at the site of injection may be due either to toxin saturation being complete or to tolerance on the part of the tissues to the dose injected. Absence due to the first cause will be accompanied by fever and other symptoms. Absence due to the second cause will be unaccompanied by any symptoms. In the first case the tuberculin should be stopped for a time and the patient confined to bed; in the second the dose can be increased without injury. Carl Spengler has pointed out the relationship between the reaction at the site of injection and the focal reaction; in order that use may be made of this phenomenon it is essential that the injections be made on the back of the forearm.

There is some reason for thinking that it may not be wise to give the injections too often, or to increase them too rapidly, as by that means sensitiveness is too quickly destroyed, before the bacilli still capable of being reached by the antibodies have been destroyed.

In those cases in which any degree of toxin toleration has been acquired, when giving tuberculin great care must be taken to watch symptoms and physical signs, as there is reason to suppose the giving of tuberculin to such cases may hasten the fatal event, without any marked deviation of temperature.

Finally, I should like to draw the attention of those who are called upon to treat this disease, even if tuberculin be not used, to the paramount importance of preventing toxin saturation occurring in early cases, for it should be remembered that in such cases if the sensitiveness be preserved it may be possible, by comparatively simple measures, such as absolute rest followed by graduated exercise, to bring the disease to a standstill. Unfortunately, the neglect of rigid treatment in such cases allows of so much increase in the diseased process that all kinds of complicated measures may be required before a successful issue is obtained. The object of treatment should be to

cure the disease where possible without using up healthy lung tissue in the process. Whether it is so important to avoid using up sensitiveness with a liberal hand is not quite so clear, but at any rate we should avoid confounding toxin toleration with immunity.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF DISEASES OF CHILDREN.

Mr. ROBERT JONES, President.

PRESIDENT'S INTRODUCTORY REMARKS.

AFTER welcoming the members of the Association and the visitors to Liverpool and to the meetings of the Section over which he presided, the Chairman called on Mr. H. J. Stiles to open the discussion on the after-results of the major operations for tuberculous disease of the joints.

DISCUSSION ON THE AFTER-RESULTS OF MAJOR OPERATIONS FOR TUBERCULOUS DISEASE OF THE JOINTS.

OPENING PAPER.

By HAROLD J. STILES, M.B., F.R.C.S.Ed.,

Surgeon to the Chalmers Hospital, Edinburgh, and Surgeon to the Royal Edinburgh Hospital for Sick Children.

WHILE I fully appreciate the honour of being invited to open this discussion, I am equally alive to the difficulty of the task which has been set me. The opinions which have been expressed with regard to the radical treatment of tuberculous joints have changed so much within recent years that the time has now come when it is hoped that a more definite decision may be arrived at regarding the indications for and the place to be assigned to radical procedures. Such a decision can only be come to after a careful analysis of the results which have been obtained by such procedures.

During the fourteen years that I have been surgeon to the Royal Edinburgh Hospital for Sick Children I have advocated and practised conservative treatment in the earlier stages of tuberculous joint disease. In cases, however, in which the disease has progressed in spite of conservative treatment, and in those in which the disease was already far advanced when the children were brought for advice, I have always deemed it expedient to resort to operative procedures. By operative procedures I wish it to be understood that I mean procedures sufficiently radical to remove, as far as possible, the whole of the disease. In this paper I shall not, therefore, refer to those half-hearted measures which I believe to be the reverse of beneficial.

As the time at my disposal is all too short to enable me to do anything like adequate justice to so wide a subject, I feel that I shall be pardoned if I base my remarks entirely on my own personal experience. I shall confine myself, therefore, to the results of the major operations performed for tuberculous disease of the large joints at the Royal Edinburgh Hospital for Sick Children during the decennium from 1901-1911. I shall leave out altogether the consideration of the shoulder and wrist joints; tuberculous disease in these joints is relatively infrequent, and the material at my disposal has not been sufficient to enable me to bring forward statistics which would add to the value of this discussion. With regard to the other large joints, my material comprises 205 resections, of which 63 were of the knee-joint, 59 of the hip-joint, 54 of the elbow-joint, and 29 of the ankle-joint.

The hospital records of each of these cases have been carefully epitomized and arranged in tabular form in order that the more important facts might be brought out and statistics compiled. Moreover, every endeavour has been made during the last three months to trace the individual patients, and to get as many as possible to return to hospital in order that they might be personally examined, and a record of their present condition obtained.

In this work I have been fortunate in obtaining the co-operation and assistance of Dr. John Fraser, who was formerly my house-surgeon and private assistant, and who has recently been appointed assistant surgeon to the hospital. Were it not for his help I could not have presented my results with anything like the same statistical accuracy. Let me here also take the opportunity of thanking those of my professional brethren who have taken so much trouble in the examination of those patients who lived remote from Edinburgh, for the purpose of filling up the special forms embodying the various questions asked in order that an exact estimate of the patient's present condition might be arrived at. In spite of all our endeavours unfortunately 66 patients (32 per cent.) could not be traced.

Knee-joint.

My statistics show that in tuberculous affections of the knee the disease has originated much more frequently in the synovial membrane than in the bone.

In primary synovial cases all surgeons are agreed as to the successful results to be obtained by conservative means provided the patient is presented for treatment at a sufficiently early stage of the disease. Unfortunately, however, by the time patients of the hospital class are brought for treatment the disease has frequently already reached the stage of destruction of cartilage, articular caries, and periarticular abscess.

Some surgeons prefer to open the abscess and continue conservative treatment in the hope of obtaining Nature's cure by ankylosis. Under the term "conservative treatment" is included iodoform injections, Bier's congestion, *x* rays, and tuberculin. My own opinion is that this line of treatment has proved so uncertain in its results that it is better, when the disease has reached the stage I have referred to, not to proceed with or continue conservative treatment, but to perform a radical operation which has for its object the removal of all the disease and the production as quickly as possible of a firmly ankylosed joint in good position.

As far as the prospect of curing the disease goes, excision gives better results in the knee than in any other joint, but at the expense, of course, of loss of mobility. The preservation of the other functions—namely, stability and weight-bearing capacity—can almost be guaranteed. In diffuse tuberculous disease of the knee-joint I have practically given up all operative procedures which do not aim at producing osseous ankylosis. Simple synovectomy, either alone or combined with division of the crucial and lateral ligaments, rarely gives satisfactory results. Unless the crucial ligaments are divided there is great risk of recurrence, due to incomplete removal of the disease at the posterior aspect of the joint, especially in the pouches behind the condyles.

With regard to the technique of the operation, it is a matter of no great importance which of the various incisions are employed, provided free enough access be obtained to enable the whole of the diseased synovial membrane to be removed. Having removed all the diseased soft parts, only sufficient bone need be taken away to ensure osseous ankylosis. The simplest, as well as the most certain, means of ensuring firm and accurate apposition of the bones is to nail them together. If properly introduced, the nails do no harm, and the patient is quite unconscious of their presence. Not only do they ensure osseous union, but they also render the after-treatment much easier. The firm fixation afforded by the nails does away with any necessity for complicated splints, and plaster of Paris need not be employed until after the wound is soundly healed. While introducing the nails

the surgeon should satisfy himself that the assistant is holding the bones accurately and firmly in position. Each nail is pushed through the skin immediately below the tuberosity of the tibia, and then driven obliquely upward into the opposite femoral condyle. Care must be taken that the nails are kept sufficiently parallel to the bones to prevent their points from penetrating the popliteal surface of the femur. In older children two nails are introduced, but in young children one is sufficient. The nail should be of such a length that by the time it is passed well into the femur only about ½ in. is left projecting outside the skin: the advantage of this is that the head of the nail may be covered by the dressing. Square nails are preferable to round ones, as they do not loosen so readily. They are removed at the first dressing, three weeks after the operation. In the child I prefer a simple double long splint, with a cross piece which supports the legs a little above the heels. For the first forty-eight hours the affected leg is placed in the vertical position. This position has the advantage not only of reducing the after-bleeding to a minimum, but it also favours the venous and lymphatic return, while in little children it effectually prevents urinary contamination of the dressings. At the end of forty-eight hours the vertical support is removed and the limb placed in the horizontal position.

The only difficult part of the operation is the accurate sawing of the lower end of the femur. This should, of course, be done in such a way that there is no angular deviation of the leg when the tibia is brought into firm apposition with the femur. The cosmetic result is better if just a trace of flexion is obtained, and it is still better if the patella is preserved; the articular surface of the latter should therefore be removed, as well as a small slice of bone from that portion of the lower end of the femur with which it comes in contact—namely, the upper and outer part of the trochlear portion.

Since I have employed the nails I have generally found that the knee becomes firmly ankylosed in from three to six months.

When tuberculous joint disease in children is secondary to an osseous focus, that focus is much more frequently met with in the metaphysis (growing end of the diaphysis) than in the epiphysis. In the case of the knee, however, the primary focus is sometimes met with in one or other epiphysis, and my experience has been that these epiphyseal foci are commoner in young children, the explanation, no doubt, being that the centres of ossification in the epiphyses appear very early. The results of radical treatment are obviously less satisfactory when there is a primary epiphyseal focus, since complete removal of the focus necessitates more or less interference with the epiphyseal cartilage. It is in these cases that the operation is liable to be followed, not only by considerable shortening, but sometimes also by angular deformity.

When the disease begins in the lower metaphysis of the femur it generally comes to the surface in the region of the trigone, and, unless the disease is very far advanced, it can be removed without interfering with the joint.

When both the epiphysis and metaphysis are involved excision cannot be expected to give a good result. When the condition is further complicated with sinuses, amputation is usually preferable to excision. If, however, the patient's general condition is satisfactory, and the osseous disease is not too extensive, it may be advisable to give excision a chance, as a good result is sometimes obtained.

During the ten years from 1901–11 there have been 63 excisions of the knee, and of these 38 have been traced. The average age at the time of operation was 5 years; 39 (62 per cent.) were below 6, and 24 (38 per cent.) between 6 and 12 years of age. Fifteen and a half months was the average duration of the disease before operation was resorted to. An abscess or sinus was present at the time of operation in 32 (50 per cent.) of the cases. In 23 of the cases there was osseous as well as synovial disease, the former being sometimes in one bone, but in the majority of cases in both.

Thirty-three (52 per cent.) of the cases were in hospital for less than thirty days after the operation: 17 between thirty and sixty days, and 10 over sixty days. In the last 20 cases the average stay in hospital after operation was twenty-four days, whereas in the first series of 20 cases it was forty-seven days.

Healing by first intention resulted in 53 cases, while in 9 cases the wound broke down or recurrence set in within a month after operation. Twelve out of the 63 cases required to be subsequently amputated, and of these 9 were in patients under 5 years of age. Six out of the 12 have been traced: 1 died eighteen months after the operation, the others are alive and in good health. In all of these cases there was destruction of cartilage and articular caries; 6 were complicated with abscesses, 2 had sinuses, and one of the latter had a primary focus in the upper end of the tibia. The ninth case had a primary focus in the lower end of the femur. In three of them the notes state that the advisability of amputation was seriously considered at the time of excision. Of the three older children in whom amputation was subsequently necessary, all had extensive destruction of the joint—one with a primary focus in the femur, another with a focus in the tibia, while the third had a large extra-articular abscess, and was in a very debilitated condition at the time of operation.

There were 4 deaths—one from tuberculous meningitis a month after operation, one from measles, one from general tuberculosis three months later, and one eighteen months after amputation from general tuberculosis.

Of the 30 cases that have been traced and recently examined, there was absolute ankylosis in 29 cases and slight movement in 1 case. In 27 instances there was a little flexion, the leg was absolutely straight in 1 case, and in a position of genu recurvatum in 2 cases. The flexion averaged 10 degrees, in one instance there were 20 degrees, and in one there were 90 degrees. There was a tendency to genu valgum in 3 instances.

Some surgeons, while advocating excision of the knee for tuberculous disease in the adolescent and adult, are opposed to it in children. The two main arguments adduced by the ultraconservative school against excision of the knee for tuberculous disease in children are: (1) That even in advanced cases the disease may ultimately become arrested with an ankylosed limb in good position, provided sufficient time and attention be given to the case, and provided also open-air treatment is superadded. (2) That a natural cure, so produced, avoids the excessive shortening which is supposed to result from excision in childhood.

Is there any real justification for this nightmare of excessive shortening about which one hears so much?

First of all, with regard to the nature of the shortening. The ultimate shortening which presents itself at the termination of the growth period is a combination of: (1) The immediate or primary shortening which corresponds to the amount of bone removed at the time of operation; and (2) the secondary or diaphyseal shortening which results from deficient growth subsequent to the operation. It is true that the growth of the femur takes place more from the lower than from the upper epiphysis. This, however, is fortunate, because in excising the hip the whole of the epiphyseal cartilage is removed, while in the case of the knee the upper portion of the epiphysis—namely, that which becomes the so-called epiphyseal plate of cartilage, is not removed, at any rate in primary synovial and early osseous cases. In primary synovial disease of the knee, even when the articular cartilage has become completely destroyed and the subjacent bone involved, the amount of bone removed in order to get beyond the disease seldom amounts to more than 1 inch.

The question to be ascertained, therefore, is—How far does the operative interference with the epiphysis interfere with the subsequent growth of the diaphysis? If this growth is not seriously interfered with, then the chief, indeed the only, argument against excision of the knee in children falls to the ground. The fact that excision is followed by a stiff joint is no argument against the operation, because it is only in those cases in which ankylosis would also result from conservative means that the operation is advised. The full extent of the secondary diaphyseal shortening unfortunately can only be ascertained in patients who have completed the growth period. The cases I am dealing with have been operated on within the last eleven years, so that comparatively few have reached this period, but it is satisfactory to note that those that have have all had less than two inches of shortening. In those cases which were primarily synovial the shortening has been less than two inches. Taking the cases in which the exact amount of shortening could be ascertained, it

was found that in one there was absolutely no shortening, so that the operation must have stimulated growth of the diaphysis to compensate for the primary shortening. In 9 cases there was less than 1 in. of shortening; in 12 there was between 1 and 2 in.; in 3 it reached 3 to 4 in., while in 2 it amounted to 5½ in. The average amount of shortening in the femur was 1.23 in., and in the tibia 0.93 in. It was found, however, that in those cases in which the shortening exceeded 3 in. a secondary cuneiform resection had been performed for subsequent angular deformity.

It is not unreasonable to suppose that the shortening would be more marked in cases in which the excision was performed during early childhood. Fortunately, however, this holds true to a slight extent only. For example, a patient, now 12 years of age, who had his knee excised when only two years old, has only 1¼ in. of shortening. Another patient of the same age, whose knee was excised at the age of 3 years, has 1½ in. of shortening.

Next, with regard to the effect of the shortening on the function of the limb, it is to be noted that, when the knee is ankylosed, a certain amount of shortening is a distinct advantage, as it enables the patient to clear the ground in walking without having to lift up the pelvis on the affected side. In one or two cases the shortening has not been quite sufficient to compensate for the ankylosis, the result being that the patient has been obliged to wear an addition to the sole on the *sound* side. This happens when there has been no subsequent growth shortening, and when the primary shortening is less than ¾ in. It is of interest to inquire what is the amount of shortening preferred by an adult who has a stiff knee. I inquired carefully into the matter from a patient, a chemist, aged 19, whose knee was excised when he was 11 years of age. He had 1¾ in. of shortening (femur 1 in., tibia ¾ in.). When I expressed surprise that he had no addition to his boot, he remarked that he had tried it but found that he walked better without it. As far as my observations have gone, I find that patients with not more than 1¼ in. of shortening do not require an addition to the boot. Should an addition of 1 in. be required, this amount is not likely to give rise to much inconvenience—in short, we are well within the mark when we state that the patient experiences little or no inconvenience from an amount of shortening which does not exceed 2 in.

We have now to consider to what extent the results of excision are marred by the subsequent development of angular deformities and curvatures at or in the neighbourhood of the resection. When these conditions are present they not only give rise to marked deformity but they also aggravate the shortening. Fortunately these complications are comparatively rare, but when they do occur they take place almost invariably in children, and they usually develop within the first year or two after operation. Flexion deformity is due to the formation of an angle either at the junction of the two bones or to curvature of the lower part of the shaft of the femur. In genu recurvatum the tibia may either be bent forwards at an angle at its junction with the femur, or the forward curve may be at the upper part of the tibia. While angular deformity at the site of operation may be due to faulty sawing or paring of the bones, it is more frequently the result of having to encroach upon the epiphyseal cartilage in order to remove completely an osseous focus. The deformity which is produced by a curvature above or below the junction of the two bones is a static condition due to bending of the bone at the end of the diaphysis rather than an error in the technique of the operation. This latter deformity comes on more [illegible], and is later in its onset than is the case with [illegible] bending at the seat of operation.

Out of the 63 cases 3 required cuneiform resection for [illegible]atum, one for excessive flexion, and one for [illegible] combined with slight flexion and incomplete [illegible]. The 3 *genu recurvatum* cases were 4, 7, and 9 years of age respectively at the first operation. In the first case, one of advanced synovial tubercle, the cuneiform resection was done eight years after the excision. The patient is now 14 years of age, and although she has 5 in. of shortening and 5° in. added to the boot, she is able to get about perfectly well with out the aid of any support. The second case had, at the time of the original operation, extensive disease with an extra-articular abscess. The cuneiform resection was performed four years later. Unfortunately she cannot be traced. The third patient had advanced disease with a sinus on the outer side of the knee. The cuneiform resection was done two years later. She is now 18 years of age, and when seen recently she was found to have a straight and firmly ankylosed limb with 4 in. of shortening. She was in excellent health and able to get about without inconvenience.

The patient with a right-angled flexion ankylosis was operated on when 8 years old for advanced synovial tubercle. The cuneiform resection was done three years later, but we have failed to trace her. The patient with varus deformity had her knee excised when she was 3½ years of age for advanced synovial disease. Cuneiform resection was done five years later. She is now 11 years old, and when seen a few weeks ago there was a slight amount of varus and flexion along with a trace of movement. There are 5½ in. of shortening, but in spite of this she is able to walk about without any support.

In all the knee cases which have been traced up to date one was pleased to find that the general health of the patients was excellent, that there were no sinuses, that the scars were all completely decolorized, and in every instance the patient was able to walk without the aid of any support or apparatus. In one instance there was marked lameness—namely, in the patient with right-angled ankylosis; in fifteen instances it was almost impossible to detect the limp, more especially after correcting the shortening.

Hip-joint.

While many surgeons are not opposed to excision in advanced tuberculous knees in children, it would appear that the majority have been so dissatisfied with excision of the hip that they have almost abandoned it. Some go so far as to say that it is practically unjustified. I hope to show that this is by no means the case.

Unfortunately, the upper epiphysis of the femur comprises merely the articular head of the bone. The neck, which represents, therefore, the metaphyseal portion of the diaphysis, is mainly intra-articular. When a primary osseous focus occurs in the upper end of the femur, it is almost invariably situated in the metaphysis—that is to say, in the neck of the bone—so that it is quite easy to understand how it is that a focus in this position should perforate into the joint at a comparatively early stage of the disease.

The joint may also be involved secondary to a primary osseous focus in the acetabulum. In Lexer's illustration of the distribution of the nutrient artery to the ilium a well-marked leash of parallel vessels is seen passing towards its acetabular extremity, and it is no doubt by this route that the tuberculous embolus generally reaches the acetabulum. The acetabular extremities of the three elements which go to form the innominate bone are analogous to the metaphyseal extremities of the diaphyses of the long bones.

In many cases of advanced tuberculous coxitis, the skiagram shows, and the operation confirms, the frequent presence, in addition to the diffuse synovial disease, of a focus either in the neck of the femur or in the acetabulum. It is in these primary osseous cases, in which the disease has become advanced in spite of conservative treatment, that excision is in my opinion indicated. I refer to the stage when there is destruction of the cartilage and subjacent bone, along with migration of the acetabulum; when either the joint capsule is distended with fungous granulations and tuberculous débris, or an extra-articular abscess has already formed. If the clinical signs and the skiagraphic appearances indicate that the disease is in a comparatively early stage, conservative treatment may often be persevered with, even although an abscess be present, because, as Mr. Jones points out, such an abscess may become absorbed, and if this should not take place it sometimes becomes cut off from the joint during the healing of the latter, so that it is often better to deal with it at a later date. If, on the other hand, the abscess is associated with advanced disease of the hip, it is in my opinion advisable to [illegible] in and excise instead of first opening the abscess. It is not wise to delay the excision until sinuses have formed, the adoption of such a course is largely responsible for the bad results which have been obtained by excision and for the disrepute into which the operation has fallen

The advantages of operating at an advanced stage of the disease, but before the formation of sinuses, are that the pain and suffering are immediately got rid of, sleep is restored, appetite returns, and there is a striking improvement in the general health. The small amount of disease which is left behind as the result of the operation is, as a rule, easily overcome by the active local tissue changes associated with the healing process. The time necessary to bring about such a result may be counted by weeks instead of months, or even years, as is the case with conservative treatment; moreover, the healing is much more likely to be permanent, and there is less tendency to recurrence. After the wound is healed and the limb put up in plaster-of-Paris, the rest of the treatment can usually be carried out satisfactorily at the patient's own home.

Before proceeding to statistics I may briefly refer to one or two points in the operative technique which specially contribute to bring about a good permanent result. Kocher's posterior angular incision is to be preferred to any other, as in addition to giving good access to the upper end of the femur, it affords the best access to the acetabulum. After retracting the split gluteus maximus, the insertion of the gluteus medius is detached by dividing the periosteum from the posterior superior to the anterior inferior angle of the trochanter, and then detaching the insertion along with a layer of cartilage upwards and forwards until the upper and anterior borders of the trochanter are exposed. The insertions of the gluteus minimus and pyriformis are next detached. The posterior part of the capsule, now fully exposed, is incised in the coronal plane over the projecting head of the femur, and the opening is extended right up to the margin of the acetabulum. By rotating the limb inwards as fully as possible, and at the same time pushing the thigh well upward and backward, the head of the femur is readily projected through the opening. The whole of the neck of the femur should be removed, not only with the object of removing the bone focus, but also to give free access to the acetabulum. If no focus be present in the head or neck of the femur the acetabulum is investigated. It is often necessary to divide the attachment of the capsule along the dorsal margin of the acetabulum, thus converting the original incision in the capsule into a T-shaped one.

Having removed the synovial and osseal disease as completely as possible, the next question is, What procedure should be adopted in order to obtain the best functional result? In the case of the hip-joint, stability and weight-bearing capacity should take precedence over mobility, and with this object in view, after paring and rounding off the upper part of the trochanter, it should be planted into the acetabulum by placing the limb in the abducted position, after which the remains of the capsule, along with the deeper muscles, are united over the trochanter with interrupted catgut sutures. Another layer of sutures brings together the edges of the gluteus maximus. If there is no mixed infection the wound should be closed without drainage.

Care is taken to maintain the hip in the abducted position during the entire period of the after-treatment. At the end of three weeks or so, when the wound is soundly healed, a plaster-of-Paris case is substituted for the abduction splint, the limb being still maintained in a position of abduction.

It is now several years since I adopted the plan of removing the whole of the neck of the femur, and of implanting the trochanter into the acetabulum with the limb in the abducted position. I should like to take this opportunity of emphasizing the importance of the procedure, because I am of opinion that any success I may have had with excision of the hip for tuberculous disease is mainly due to its observance. If the leg be kept in the straight position after the head and neck of the femur have been removed, there is nothing to prevent a subsequent displacement upwards of the femur. The osseous stability of such a joint is lost, the pelvis being slung to the leg merely by the remains of the capsule and certain of the muscles which pass from the pelvis to the femur. The result is that when the patient begins to bear his weight on the limb the trochanter becomes more and more displaced from the acetabulum in an upward and backward direction. The result is progressive shortening, adduction, and flexion deformity, with increasing disability and lameness.

It is true that the abducted position predisposes to ankylosis, either complete or partial, but this is more than compensated for by the stability secured. Moreover, ankylosis generally spells permanent cure. An ankylosed hip in good position—that is to say, with the limb abducted, and at the same time very slightly flexed and a little rotated outwards—is certainly preferable to the progressive deformity and lameness which is associated with displacement of the femur upwards.

During the ten years from 1901-1911 there have been 59 excisions of the hip, and of these 40 cases have been traced. The average age at the time of operation was 5½ years; 33 were below 6 years of age and 26 between 6 years and 12. Eighteen months was the average duration of the disease before operation was resorted to. Twenty-five of the cases had been under conservative treatment for more than twelve months. An abscess was present at the time of operation in 45 of the cases (76 per cent.). In 53 there was osseous as well as synovial disease, the former being sometimes in one bone, but in the majority of cases in both. Usually, however, the disease was too far advanced to say whether the disease in the bone was primary or secondary. As far as one was able to judge from the condition found at operation, it would appear that the head and neck of the femur were more especially involved in 18 of the cases, while the acetabulum was chiefly affected in 9. When the condition showed distinct evidence of a primary osseous lesion, this was most frequently met with in the under surface of the neck of the femur—that is, in the metaphysis.

With regard to the mode of excision, the anterior route was employed in only 8 cases, nearly all of which were amongst the early series; 4 were done by an external incision, and the remainder by Kocher's postero-external angular incision, this method being employed even in cases where there was an anterior abscess.

Twenty-six of the cases were in hospital for less than forty days after the operation, 15 between forty and sixty days, and 18 over sixty days. Forty-eight patients were discharged with the wound completely healed and the limb maintained in the abducted position by means either of plaster-of-Paris or an abduction splint. In 9 cases the wound was not completely healed.

In 3 cases disarticulation of the hip was subsequently performed on account of recurrence of the disease, followed by sinuses and hectic fever; one of these died four days after the operation. In one of these cases the acetabulum and the whole of the ilium were removed at the same time. This patient improved for a year or so, but returned later with persistent sinuses, and died in hospital a few days after an operation performed with the object of bringing about their closure. Five cases returned with slight recurrence of disease necessitating further operation. Forty-three cases were found to be well, and with the limb in good position when they returned from two to six months later to have the plaster removed.

As regards the mortality: Out of the 40 cases traced there were 12 deaths: 2 died in hospital of tuberculous meningitis, 9 died within six months of general tuberculosis, and the twelfth eighteen months later from the same cause.

With regard to the present condition of the remaining patients who have been traced, the results were good in 19 cases—that is to say, the general health was excellent, the hip ankylosed, no sinuses, the scars completely decolorized, and any shortening, adduction or flexion only very moderate. Out of these 19 cases the exact amount of shortening has been ascertained in 15. It was found to vary from ¾-in. to 3 in., the average being 1¾ in. The shortening was, of course, partly due to the diminution in the length of the femur, and partly to its displacement upwards. Fortunately, the patient with 3 in. of shortening had no adduction, and only very slight flexion, so that he was able to walk exceedingly well. He had ¾-in. added to the sole and 3 in. added to the heel of the boot; there was no scoliosis.

In the cases where the results were less satisfactory, the shortening was aggravated sometimes by flexion, sometimes by adduction, and occasionally by both, but in only one case was the deformity sufficient to call for a

subsequent osteotomy. In one case—a girl aged 15, whose hip was excised seven years previously—there was found to be 5½ inches of shortening, 4 inches of which were due to actual shortening of the femur. There was slight flexion, a good deal of lordosis, and two small sinuses. She was well nourished, and her general health was excellent. Strange to say, she had been going about all these years without any addition to the boot, and had been using crutches all the time. With the addition of a 4-inch patten to the boot, there is no doubt she will be able to dispense with the crutches. The only other patient who uses crutches is a girl, aged 12, whose hip was excised six years ago. There are 3 inches of shortening, along with considerable flexion and lordosis. The condition is further complicated by the presence of sacro-iliac disease.

It would seem from these statistics that the reported amount of shortening following excision of the hip has been exaggerated. Fortunately, the growth of the femur takes place more especially from the lower epiphysis. In many cases the shortening is due to upward displacement and adduction, and, as I have already pointed out, this can be to a large extent prevented by the technique I have recommended. In cases in which there is marked adduction at the time of operation, the adductors should be divided when the hip is excised.

The age of the child is no contraindication to excision. For example, a child, now 11 years of age, had its hip excised when it was only 1 year and 8 months old. There is now only 1½ in. of shortening, and she walks exceedingly well. It must be insisted, however, that in very young children the disease runs a more acute and rapid course, and the prognosis is on the whole less favourable. They are more likely to die either of general tuberculosis or tuberculous meningitis.

Elbow-joint.

Turning now to the elbow-joint, we find there have been 54 excisions of this joint during the ten years. While the disease occurred with about equal frequency in the two sexes, it was found that the right elbow was affected in 32 instances, the left in 22, the difference being due, probably, to the greater use of the right arm. In 67 per cent. of the cases the disease began before the age of 5 years, while in 32 per cent. it showed itself within the first two years. It would appear, therefore, that the age of incidence of tuberculous disease of the elbow is lower than in the other large joints, and it is possible that this may be due to the earlier functional activity of the upper as compared with the lower extremities, and to the greater liability of the former to slight traumatisms. As a result of this early age incidence we find that a relatively large proportion (55 per cent.) of the excisions were done in children under 4 years of age. Taking the whole series of cases the average duration of conservative treatment before operation was eight months. In 28 cases the disease was complicated with abscess formation, while in 10 cases there were sinuses.

In 14 cases the disease was primary synovial; in the remaining 40, one or other, or all three, bones were also involved. The humerus was involved in 20 cases, the ulna in 13, the radius in 3, while in 8 cases more than one bone was involved. While in many instances the disease was so advanced that it was difficult to say definitely whether it had begun in bone or in synovial membrane, there remained quite a number of cases where the appearances presented at the operation pointed to the joint having been involved secondary to a primary focus, most commonly in the lower metaphysis of the humerus. The reason why the elbow-joint is so liable to become early involved secondary to a primary focus in one of the metaphyses is that the epiphyses at the elbow are so small that the metaphyses are consequently intra-articular. In exceptional cases the osseous focus becomes localized and encapsulated, in which case it may often be dealt with without opening into the joint; especially is this the case in regard to the upper end of the ulna. In other cases the primary metaphyseal focus spreads up the diaphysis, but such cases do not fall to be considered in this discussion. In those cases, however, in which the disease had spread both into the joint and up the diaphysis it was necessary to combine excision of the joint with a subperiosteal resection of as much of the diaphysis as was diseased. Clinically, the degree to which the diaphysis is involved is indicated by the length of the thickened portion of the diaphysis, the thickening being due to the deposit of new subperiosteal bone, just as occurs in tuberculous dactylitis. If the radical treatment be undertaken before the tuberculous focus has reached and destroyed the periosteum, the resected portion of the diaphysis is usually re-formed, so that the shortening is not so great as might be anticipated, and a useful limb almost invariably results in spite of the extensive nature of the operation. When, on the other hand, the disease is allowed to progress until the tuberculous process has involved the periosteum, the operation is very prone to result in a flail, though moderately useful, joint.

In excising the elbow-joint Kocher's method by an external J-shaped incision was almost invariably employed. In separating the triceps from the olecranon its continuity with the periosteum was maintained whenever possible. After separating the triceps, it was found an advantage, especially when the olecranon was diseased, to remove this process before reflecting the soft parts off the condyles, as by this means the lower end of the humerus is more easily cleared. If there be no focus of disease in the humerus, it is sawn across at the level of the upper part of the epicondyles, the resulting sharp corners being removed. If a focus of disease be revealed on the sawn surface, it often suffices to remove it by thorough curetting. If, however, the focus be more diffuse, the periosteum is separated and the bone is sawn at a higher level, well clear of the disease. In some cases it is impossible to remove all the disease without dividing the bone through the lower part of the medullary cavity. It is well to remove the coronoid process as well as the head of the radius, whether these bones be diseased or not, otherwise a stiff joint will almost invariably be the result. The whole of the diseased synovial membrane should be removed, care being taken to leave behind none of the pouch between the triceps and the back of the lower part of the humerus. At the floor of the wound is the diseased synovial membrane covering the anterior ligament. As a rule, it is necessary to remove this ligament along with the synovial membrane. Occasionally, however, the diseased membrane may be curetted and the ligament left intact. Unless special care be taken diseased synovial membrane is very liable to be left in the recessus sacciformis which surrounds the neck of the radius within the orbicular ligament.

If there be no primary focus in the upper end of the ulna, the plan recommended by Kocher may be adopted—namely, to saw off the articular cartilage so as to leave a concave surface. Before applying the saw, the anterior ligament, along with the insertion of the brachialis anticus, should be slightly separated subperiosteally from the front of the coronoid process.

When the disease involves the upper part of the shaft of the ulna as well as the olecranon, the bones of the forearm must be resected to a level well beyond the disease. After splitting the periosteum longitudinally, the ulna may be shelled out, either from above downwards, after opening into the joint, or from below upwards before the joint is opened into. The radius, whether diseased or not, should be divided at the same level as the ulna, care being taken not to injure either the biceps tendon or the posterior interosseous (deep radial) nerve. The edges of the split periosteum are united with catgut sutures. In more advanced cases, where the disease has extended through the capsule, involving the periarticular surface, and invaded the structures around the joint, the removal of all the infected tissue is a matter of great importance. Freedom from recurrence, and, what is more important, the avoidance of a subsequent amputation, depends very largely upon the thoroughness with which this part of the operation is carried out. The presence of sinuses still further complicates the operation.

As regards the after-treatment, in a case of average severity in a young child, the writer is in the habit of keeping the forearm extended and supinated for the first fortnight or so, complete rest being ensured either by bandaging the limb to the side of the chest, which is thus converted into a splint, or by placing the arm at right angles to the trunk and applying light weight and pulley

extension, the extension tapes being stitched to a leather glove from which the fingers have been removed.

During the next fortnight the elbow is kept alternately flexed and extended for a period of forty-eight hours. At the end of a month the arm is supported in a sling, and the child is encouraged to begin to use it.

If the joint shows signs of becoming flail, the limb should be fixed in plaster-of-Paris in the flexed position for some weeks. If, on the other hand, it be evident that ankylosis is going to result, the arm should be fixed in plaster-of-Paris for some weeks at a little less than a right angle.

As regards the results, in practically all the cases the wound was healed when the patient left the hospital, the average stay in the institution after operation being twenty-nine days. Of the 54 excisions, 34 have been traced. Of these, 6 died subsequently of general tuberculosis from three months to two and a half years later. One of these had also tuberculous cervical glands, while in another the axillary glands were tuberculous. In none of the 6 was there any family history of tubercle, and the probability is that they were cases of bovine origin.

Some degree of local recurrence occurred in 8 cases, 1 of which falls to be classed among the deaths. Only 1 required subsequent amputation. Of the remaining 6 the recurrence took the form either of an abscess or sinus, with slight disease in the subjacent bone. In all of these healing was brought about by a comparatively trivial secondary operation, but unfortunately 5 of them cannot be traced up to date, and in the 1 that can be traced the elbow was found to be ankylosed at an obtuse angle.

In 6 of the patients whose present condition cannot be ascertained the reports last obtained were all very satisfactory.

When we come to the 34 cases that have been traced and examined quite recently, we find that 10 may be classed as distinctly good results—that is to say, the range of movement at the elbow was good and the muscular and weight-lifting capacity very satisfactory. The elbow was ankylosed in 6 instances; at a right angle in 3, with pronation and supination retained in 2; at an obtuse angle in 3, with pronation and supination also retained in 2. The patients with a right-angled ankylosis could put their hand to the mouth as well as button the collar. In 7 cases the joints were somewhat flail, so that passive movements could be made in preternatural directions. While this was the case the patients were able to execute active voluntary movements, apart from those entailed in lifting all but light articles. In 1 case the limb was so flail as to be almost useless. In 1 patient there was considerable cubitus valgus, but the movements and muscular power were both good.

With regard to the shortening, the average amount was 1½ in. (¼ in. in humerus and 1 in. in forearm), the maximum being 2¾ in. and the minimum ½ in. It appears, therefore, that the amount of shortening after excision of the elbow for advanced tuberculous disease in children can hardly be used as an argument against the operation. The reason for the comparatively slight amount of shortening is that in the case of the humerus growth takes place chiefly from the upper epiphysis, while in the bones of the forearm it proceeds chiefly from the lower epiphyses. This is all the more fortunate because in excising the elbow all the epiphyses of the joint are completely removed.

With regard to the results obtained by excision of the elbow as compared with those following excision of the knee, it may be said that the former are better than the latter in the presence of extensive osseous disease, because in the elbow a useful limb may be obtained in spite of the removal of the epiphyses along with the ends of the diaphyses. In the knee this cannot be done without giving rise to extensive shortening, and, in all likelihood, to loss of stability as well. Hence the one secondary amputation after excision of the elbow as compared with twelve after excision in the knee.

It must, I think, be admitted that the only way in which conservative treatment can possibly bring about a cure in a case of advanced tuberculous disease of the elbow is by the joint becoming ankylosed, and in the majority of cases this condition is brought about only after suppuration and sinus formation, and the prolonged and tedious treatment which these complications entail. By excision, on the other hand, not only do we arrest the disease, but, as the statistics show, in the majority of cases we are able to procure for the patient a movable joint.

Ankle-joint.

Of the 29 cases of tuberculous disease of the ankle-joint operated on during the decennium already mentioned, the disease was primary synovial in 6 cases, while in 23 cases it was both synovial and osseous. The astragalus was involved in 15 cases, the os calcis in 5, the tibia and fibula in 2, and the scaphoid in 1. In those cases in which it was manifest that the disease was osseous in origin, the primary focus was almost invariably situated in the head or neck of the astragalus.

In 13 of the cases the disease began in children between 2 and 4 years of age, while in 21 out of the 29 cases the operations were performed in children between 1 and 4 years of age. Seventy-two per cent. of the cases had an abscess (generally at the outer aspect of the ankle) at the time of excision, and 30 per cent. were complicated with sinuses.

With regard to complete removal of the disease, this can be satisfactorily effected by adopting Kocher's plan of dividing the anterior and external lateral ligaments of the joint and then completely dislocating the foot inwards. For this purpose a long J-shaped incision is made at the outer aspect of the joint. The two peroneal tendons are divided and turned aside. Exposure of the interior of the joint is so free that there is no difficulty in removing the whole of the diseased synovial membrane. If a focus be present in the astragalus, it is readily dealt with, and, if necessary, the whole bone may be removed. The removal of all the disease having been effected, a point of great importance is to see that the foot comes into the right-angled position without a tendency either to inversion or eversion. The ultimate functional, as well as cosmetic, result depends largely on the accuracy with which this step of the operation is carried out. If the astragalus itself is not diseased, all that is necessary is to slice off its upper articular surface in such a way that the remainder of the bone fits accurately into the tibio-fibular arch, which is also denuded of cartilage. When it is necessary to remove the astragalus completely, the upper articular surface of the os calcis should also be removed, and its breadth must be reduced by chiselling off the sustentaculum. If this precaution be not taken, permanent deformity may result from displacement outwards of the foot with a corresponding projection of the internal malleolus. It may be necessary also to shorten somewhat the external malleolus and to gouge away a little of the outer surface of the os calcis so as to leave a small hollowed-out surface to receive it.

The next important point is to see that during the after-treatment the bones are kept accurately and firmly in position so as to obtain either an osseous or a firm fibrous ankylosis. For this object I am again in the habit of using a long square nail, which is introduced through the skin of the heel and then driven through the os calcis and remains of the astragalus (if this bone has not been completely removed) up into the tibia for a couple of inches or so, care being taken to see that the assistant is meanwhile holding the foot in the best possible position. Before closing the wound the divided peroneal tendons are sutured and replaced behind the external malleolus. In cases where there is a mixed infection, drainage is provided by passing a tube across the front of the ankle beneath the anterior tendons, and bringing it out through a buttonhole opening just in front of the internal malleolus. The nail is removed after three weeks, and the ankle is then put up in plaster-of-Paris.

The result of such an operation for tuberculous disease of the ankle cannot be regarded as satisfactory if the patient needs subsequently to wear any form of support. This will not be required if both malleoli are retained, and if the foot is more or less firmly ankylosed. If in addition to this stability the foot is also in good position—that is to say, at a right angle, without either inversion or eversion—the result may be regarded as very satisfactory, and is finally preferable to any form of disarticulation at the ankle joint. One great advantage of this operation in children as compared with adults is that in the former the ankylosis at the ankle-joint, if complete, is largely compensated for by the development of an increased

amount of movement at the anterior and mid-tarsal joints.

With regard to my own results, of the 29 cases in which excisions were done, 25 have been accounted for. Two died within three months of operation, 1 from bronchopneumonia, and 1 from tuberculous meningitis. One, who had also hip-joint disease, died a year later from general tuberculosis. In 6 cases amputation was subsequently performed for recurrence of the disease; 5 of these cases have been traced, and in each instance the patient has a good stump and is able to get about well; their general health is excellent.

Of the six amputations it is interesting to note that four of them were complicated with sinus formation and mixed infection at the time of operation, so that here, just as in the other joints, we see the importance of not allowing sinuses to form before proceeding to excision of the joint. I do not wish to infer from this that the presence of sinuses necessarily contraindicates excision; as a matter of fact, in 4 out of the 9 cases which had sinuses excision was followed by a good result; in the ninth case the patient died.

In each of the 5 cases which could not be traced the hospital records showed the condition to be very satisfactory some months after the operation.

Of the 15 cases which have been traced and recently examined, there were 2 in which the ankylosis was not complete, slight flexion and extension being permitted. In 1 case only was there a discharging sinus; in the other 14 the wounds were firmly healed and the scars completely discoloured. In every case the patient was able to walk well without the aid of a support of any kind.

As regards the position of the foot, in one instance there was a slight amount of equinus, which, according to the skiagram, appeared to be due to the remains of the head of the astragalus preventing further dorsiflexion on account of its being fixed to the region of the anterior border of the lower end of the tibia. One case had a tendency to varus, while in 4 instances the foot had taken up a slight valgoid position with increased prominence of the internal malleolus and a tendency to flat-foot. In 1 case in which both ankles were excised, but the astragalus not completely removed, the os calcis pointed more downwards than normal. The astragalus was completely ankylosed both to the tibia and to the os calcis. The patient, however, walked well, although she was inclined to "stump" upon the heel. There was a slight degree of talipes plantaris owing to an arching downwards of the foot in front of the mid-tarsal joint, an attempt, no doubt, to compensate for the alteration in the axis of the os calcis. In the remaining cases the results were excellent and the foot was in good position.

As regards the effect of the excision on the length of the limb, the shortening varied from almost nothing to 1½ in., the average being not quite ¾ in. In some cases the operation had no effect upon the length of the foot, while in others the shortening varied slightly, ⅝ in. being the maximum. In no case was it necessary to make a uniform thickening of the sole of the boot, but in those cases where there was slight valgus deformity it was found an advantage to have the sole thickened on the inner side.

Formerly, Syme's amputation or one of its modifications used to be almost the routine operation for advanced tuberculous disease of the ankle; even at the present day many surgeons do not look upon excision of the ankle with favour, partly because of the difficulty of removing all the disease, but mainly, no doubt, on account of the unsatisfactory after and functional results which have been obtained.

I think, however, the above results fully support the contention that in excision of the ankle we possess a means not only of preserving the foot but also of retaining its usefulness.

When we come to realize that the excisions I have referred to in this paper were only performed at an advanced stage of the disease, I submit that the results [illegible] bear out the wisdom of having resorted to radical [illegible]. My own opinion is that if the same cases had been [illegible] by conservative and less radical means we should [illegible] a much higher percentage of amputations [illegible] and the [illegible] the whole would have had less useful limbs. In those cases in which a useful limb would have been obtained by non-operative means the duration of the treatment would require to be infinitely longer than would have been necessary if radical measures had been attempted.

The last point I wish to emphasize is that in these advanced cases the general health of the patient begins to improve much more rapidly after the disease has been removed than is the case when conservative means are employed. Nothing in the course of my investigations into the after-results of these cases has impressed me so much and so favourably as to find that almost without exception those patients who have survived and been cured of the disease are now in robust health.

While, therefore, I am convinced of the great benefit to be derived from radical means in advanced cases, I am equally satisfied that these operations will be less frequently called for now that the profession has begun to realize the importance of early diagnosis, and that a cure is generally to be obtained, at this stage of the disease, by conservative treatment in the open air. It is, perhaps, too soon to state definitely how far the administration of tuberculin and the application of *x* rays contribute to the cure.

	Excisions.	Good.	Useful.	Bad.	Amputations.	Deaths.	Not Traced.
Hip ...	59	19	4	3	3	12	19
Knee...	63	24	5	1	12	4	18
Elbow	54	10	15	1	1	6	21
Ankle	29	9	4	1	6	3	6
Total	205	62	28	6	22	25	64
Percentage	30	13½	3	10¾	12	31	

DISCUSSION.

Mr. A. H. TUBBY (London) said: The conservative and climatic treatment of tuberculous disease of the joints and bones has received, and most deservedly so, a great deal of attention lately, and the time has come when the position as it is to-day should be carefully considered. The Section is to be congratulated on the opportunity of hearing a paper by Mr. Harold Stiles which is very original and illuminating. Nevertheless, two points must prove to be of the greatest importance. One is the fact that whilst in children their response to general measures is great, there is very little tendency in them to the formation of a barrier of sclerotic tissue around the affected area, and it therefore follows that operative interference on them is likely to be followed by the dissemination of tubercle into the healthy and cancellous vascular spaces of bone in the neighbourhood of the operation, with the probable advent of that disastrous condition of diffuse tuberculous osteomyelitis. The second point is the guide afforded by carefully-taken stereoscopic Roentgen-ray pictures. By them we are enabled to ascertain the exact locality of the tuberculous deposit, the direction of its spread, and the response or otherwise of the infection to palliative or conservative treatment. Upon data such as these, obtainable by direct observation and not only upon clinical inference, must depend the course which shall be adopted—whether it is operative or conservative. As to the knee-joint, if operation is required, even in children, I give the patient excision over every other form. What is wanted is a firm, stable limb, free from disease, and this can be secured by excision. Mr. Stiles referred to a plastic method of utilizing the patella in this operation, and advocated screwing the femur, tibia, and the patella together. I think that osseous union is best secured thus, and that the cause of fibrous ankylosis is that movement is allowed to take place at an early date between the sawn bones. I agree with Mr. Stiles that shortening of the leg following excision has been made too much of. With regard to the hip joint, it is some years since I performed in children the formal operation of excision of the hip. I have done it in adults, and then fixed the upper end of the femur in the acetabulum and in the abducted position, according to Mr. Stiles's valuable suggestion. At the ankle I believe better results can

be obtained by conservative than by operative methods. At the elbow, where the great object is to preserve as much movement as possible, if operation is decided upon, I advocate and perform excision. Finally, I wish to point out that the practice and the bias of the surgeon in any direction depend to a large extent upon the class of case he meets with and the conditions under which he is compelled to treat them. I am, however, convinced that if all cases could be secured early and treated on climatic and conservative lines the necessity for major operations would almost if not entirely disappear.

Mr. R. C. Elmslie (London), unlike the two previous speakers, spoke not from his experience of operating, but from observations made in the invalid schools of the London County Council, upon some 2,000 cases of tuberculous disease of the bones and joints treated by every surgeon in London. He felt that it was one thing for Mr. Stiles, with his careful attention and detail in operating and after-treatment, to perform these radical operations, and quite another to advocate these measures as the method to be adopted in general by surgeons who would not give the same attention to detail. Radical operations fell into three groups: (1) Excisions (partial or complete) of the joint; (2) excisions of bones or of portions of bones; and (3) removal of local foci in the bone. The last two scarcely came into this discussion; but in relation to them the importance of routine and expert skiagraphy already alluded to by Mr. Tubby required to be emphasized. On commencing to work in the London County Council schools six years ago, Mr. Elmslie stated that he had no bias against excisions of the joints. But the results that he saw very soon made him a very strong advocate against these operations. Coming to excision of the hip, undoubtedly this in the majority of cases cured the disease. Inasmuch as the disease was in the majority of cases acetabular as well as femoral, it was not possible to remove it entirely. Possibly the cure of the acetabular disease was due to the upward dislocation which almost invariably took place, and which relieved the acetabulum of pressure. Perhaps this explained the fact that Mr. Stiles obtained a lower percentage of cures after excision than was evident in the London school children, for Mr. Stiles did his best to prevent dislocation. With regard to excision of the knee, Mr. Elmslie referred to statistics of 213 cases of old tuberculous disease of the knee collected by him. In some cases the deformity was truly terrible—for example, a boy of 10 with 6½ in. shortening and 60 degrees genu varum; a girl of 12 with 8½ in. of shortening and 40 degrees flexion; a woman of 35 with 7 in. shortening and 40 degrees genu valgum. Of 89 cases, 25 had been subjected to re-excision for deformity and 1 to osteotomy; 3 had undergone a third excision. In only about a quarter of the cases was there any other scar than that of excision. These deformities occurring after excision of the knee had been previously investigated by Hofmeister in a series of 107 cases operated upon in Bruns's clinic. His conclusion was that under the age of 9 excision of the knee was an unjustifiable operation; under 14 it was bad; over that it was a satisfactory operation. Partial excisions of the knee might lead to a fibrous ankylosis. What were the reasons for advocating these radical measures? Was it not a fault of the whole hospital system of the attempt to treat these cases as hospital out-patients, with only occasional periods of in-patient treatment when some such condition as an abscess required treatment? These children should be treated as in-patients of special hospitals. As soon as sufficient special hospital treatment had been provided the desire to carry out these radical measures would cease among surgeons.

Mr. G. H. Edington (Glasgow) said: I have listened with great pleasure to the previous speakers, and from close attention to the remarks of Mr. Stiles, Mr. Tubby, and others I find that many opposing opinions are held. It is apparently not possible to reconcile these opinions, but I believe that the truth lies between the extremes. It seems to me that in considering the subject of operation the natural method of cure must not be lost sight of. In recovery without operation we have either bony ankylosis, fibrous union (with very limited movement), or fair movement. Of these, bony ankylosis is most satisfactory. Recurrences are not common, and if they take place it is an easy matter to treat them. In fibrous union there is slight movement, and in this case, as also in the case of joints with freer movement, there is, I believe, greater liability to recurrence, because of the probability of trauma of the fibrous tissues masking the healed foci. Again, in these cases of fibrous union there is a great probability of deformity. Ankylosis occurs in the hip-joint more frequently than in the knee and elbow, hence operation to produce ankylosis is more frequently required in the latter. In the case of the knee, stability is aimed at, and excision is the operation, with after-treatment prolonged sufficiently to obviate yielding of the bony union. As regards the elbow, it has been stated that the chief function of the upper limb is mobility as compared with the stability of the lower limb. This is quite true, but I question if the mobility chiefly depends on the elbow-joint. The movements of the shoulder, wrist, and fingers are together of greater importance. I mention this because surgeons seem to attach great importance to obtaining a movable joint after excision of the elbow. The actual power of the joint after excision is not always defined. I find that nearly always flexion is much weakened, and raising anything in the hand is accomplished by a shoulder, and even a body, movement. Then recurrence, if it take place, has a chance of invading a considerable area of soft tissue. For these reasons I am not the least disappointed if my cases of excision of the elbow proceed to ankylosis; if they do so, the position of the greatest usefulness is carefully arranged for—namely, forearm at right angles to arm and semipronated.

Mr. Edred M. Corner (London) said: When the London County Council appointed inspectors of their school children a great opportunity was afforded to us to ascertain the remote results of operations on tuberculous joints. Mr. Elmslie has taken advantage of this and has introduced to us what these are. Deformities of the knee are more frequent than deformities after operation on other joints; therefore I will largely confine my remarks to the knee-joint. Post-operative deformities of the knee-joint are, I believe, more frequent after erasion operations than they are after formal excisions. This is, I believe, due largely to the smaller percentage of instances of bony union. Deformity after erasion of the knee may occur in two periods—before bony union has taken place and after bony union has taken place. Any deformation occurring in the first stage is due to the action of the muscles of the thigh, or to the bones falling apart. After bony union has occurred deformity is due to irregularities of growth produced by irregularities in the distribution of the disease, operation, and cicatrization. These deformations are the natural result of operation, and must therefore be expected and met. They must be met by splintages. They are met by splintage in the conservative treatment of tuberculous disease of joints. This is the reason why deformities are at present more frequent after operation than after the so-called conservative treatment. Tuberculous disease of the ankle is of worse prognosis than tuberculous disease in other joints. Amputation is required in at least one-fifth of these cases.

Mr. G. C. E. Simpson (Liverpool) was in favour of conservative treatment in tuberculosis of children; it was essential where hospital beds were at a premium. If the deformity was first reduced and the child then fixed by some form of splint which an intelligent parent could attend to, it could be treated as an out-patient with every hope of obtaining a good result in the majority of the cases, even though after-treatment might need to be considerably prolonged. The cases required seeing at gradually increasing intervals at the hospital, in order to find out which parents were sufficiently intelligent and careful. In Liverpool they were fortunate in having an excellent Invalid Children's Aid Association, by whose help surgeons could provide splints, stays at the seaside for bad cases, and special food. This association also supervised cases recommended to them, and prevented them from discontinuing treatment or neglecting it by visiting the homes at intervals. They also secured continuity of treatment for those cases sent to convalescent homes by inviting the surgeons to meet the medical officer of the home at intervals. With such committees of the

Invalid Children's Aid Association, financed, if necessary, by the municipal authorities, and supplemented by special schools, conservative methods of treatment would be possible and consistent with good results.

Mr. H. J. STILES, in reply, agreed that conservative treatment, when financially and otherwise practicable, gave admirable results: he also agreed that a high degree of skill in the surgeon was demanded for the successful performance of these difficult operations on joints. His opinion was that at least 50 per cent. of the cases of hip disease had tuberculosis of the acetabulum, as well as of the femur, and that operation should not be postponed until the acetabulum was destroyed. In conclusion, he exhibited a number of lantern slides of skiagrams of ankylosed knees and hips with tuberculosis, at various periods after operation.

DISCUSSION ON THE DYSPEPSIAS OF CHILDHOOD AFTER THE PERIOD OF INFANCY.

OPENING PAPER.

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DYSPEPSIA in childhood is necessarily a wide and ill-defined subject, and if we are to discuss it profitably one must begin with some sort of classification of its varieties. Many subdivisions are possible, but I propose to adopt three—(1) gastric, (2) intestinal, and (3) hepatic dyspepsia—according as the apparent seat of disorder is in the stomach, intestine, or liver respectively. It must be noted, however, that although such divisions are recognizable in the abstract, yet clinically and in the concrete, mixed cases are oftener met with in which two or more of these varieties occur in combination.

Gastric Dyspepsia.

It will be generally admitted that organic disease of the stomach is very rare in childhood. I have never myself seen, for example, a case of indigestion in a child which was due to ulcer or malignant disease of the stomach, frequent causes though these are of dyspepsia in the adult. Gastritis, however, is a form of organic disease which cannot so easily be dismissed. In the acuter form it certainly seems to be not very uncommon in childhood, but whether chronic gastritis or "gastric catarrh" is a frequent cause of dyspepsia at this period of life is more open to doubt. That such a condition is often *diagnosed* every one knows, but whether it really exists is another matter. The question could only really be settled by test-meal evidence, and that, in the case of children, is almost entirely lacking. It is noteworthy, however, that in the adult most cases of chronic indigestion which were formerly attributed offhand to gastric catarrh are now known to be due in reality to some form of functional disturbance, and I strongly suspect that this would be found to hold good of the child also. Certain it is that vomiting, which is one of the most constant symptoms in chronic gastritis, is a rare event in the dyspepsias of childhood.

It has been suggested that a slight degree of pyloric stenosis, which persists as a sequela of the hypertrophic stenosis of infancy, may be a cause of gastric dyspepsia in later childhood. I confess, however, that I am very doubtful about this. Organic dilatation of the stomach, which would be the necessary consequence of such a stenosis, appears to me to be very rare in childhood, whereas in the vast majority of cases of recovered hypertrophic stenosis which I have been able to follow there has been no lasting [illegible] gastric function. I have, however, seen [illegible] occurring vomiting in children which might own this origin, and it is a point which we might [illegible]

Turning to functional gastric dyspepsia, we have to consider disorders (*a*) of secretion, (*b*) of motility, (*c*) of [illegible]

(*a*) The absence of [illegible] evidence, which I have already deplored, makes it [illegible] to dogmatize about the existence of disorders of secretion in childhood. We know, however, that hyperchlorhydria occurs in infancy, and as it is apparently common in early adult life it seems probable that it occurs in childhood also. As pain is its chief symptom, however, and as children have great difficulty in describing and localizing their sensations, it is a condition which one is rarely justified in diagnosing. The opposite condition of diminution or absence of gastric juice (achylia) is probably rare in the child, just as it is in the adult, but I have met with at least one well-marked example of it in a girl of 8 in whom it had supervened in consequence of a long period of inanition the result of hysterical vomiting and anorexia. It is not, however, necessarily associated with any symptoms of dyspepsia.

(*b*) Disorder of the motility or tonicity of the stomach is, I would suggest, by far the commonest cause of gastric dyspepsia in childhood, just as it is in the adult. Here again we lack the definite proof afforded by test-meals, but this can be made up for by *x*-ray examination after a bismuth meal. I have not myself yet made any such examinations, but it would not be difficult to do, and I would suggest it as a profitable line of research in this field. Meanwhile, and pending the collection of such evidence, I think that one is justified in inferring the existence of defective tone and motility in those cases—and every one will admit that they are numerous—in which a well-marked splash can be elicited over the stomach some hours after a meal. Children in whom this is present make up a goodly proportion of the cases commonly spoken of as suffering from "mucous disease" or the "neurasthenia of childhood." They are usually of poor physique, badly nourished, and exhibit many of the stigmata of the "morbus asthenicus," and suffer from abdominal pains and physical and mental depression.

(*c*) Of the disorders of sensibility in the stomach the most probable is hyperæsthesia (gastralgia) and it is possible that this may account for some of the cases of pain referred to the upper abdomen so often met with in children. From the nature of the case, however, the existence of gastralgia is almost incapable of proof, and there seems at least to be no doubt that in the form in which it so often occurs in young women (hæmorrhagic gastralgia or gastrostaxis) it is practically unknown in childhood.

Intestinal Dyspepsia.

By intestinal dyspepsia one means a form of indigestion which is mainly characterized by such symptoms as intestinal flatulence, colic, and derangement of the bowels, either in the direction of constipation or looseness. Cases of fever of apparently intestinal origin—the so-called "food fever"—would also come into this group, and most clinicians will agree that it is a large one and embraces, indeed, perhaps a majority of the cases of dyspepsia met with in children beyond the period of infancy. The pathology of such cases is obscure, but three hypotheses seem tenable. The condition might be due (1) to defect of certain digestive ferments, (2) to the presence of an abnormal intestinal flora, (3) to a lop-sided diet which contains an excess of one of the nutritive constituents, probably carbohydrates.

I do not propose to discuss the *pros* and *cons* of each of these hypotheses in detail, particularly as we have so little positive evidence to guide us; but I would only suggest, for the sake of discussion, that the third possibility mentioned is that which seems the most likely. At all events, the great amelioration of symptoms produced in these cases by a rigid cutting down of the carbohydrates in the food strongly favours this view.

Hepatic Dyspepsia.

Disorder of the hepatic function may reasonably be inferred when symptoms of dyspepsia occur along with a deficiency of colouring matter in the stools. This, as every one knows, is not an uncommon event in childhood, and children who frequently exhibit such pale motions seem specially liable also to suffer from periodic vomiting, migraine, and so-called "bilious attacks," all of which are well-recognized intercurrent episodes of dyspepsia at this period of life. The nature of the disorder of the liver in these cases is obscure. It was suggested by the late Dr. Cheadle that one had to do with a functional arrest of bile-secretion, a condition to which he applied the term "acholia." More complete analyses of the stools than

have yet been made are required before this hypothesis can be either verified or disproved, but it must be borne in mind that the absence of bile may be more apparent than real, and that the pallor of the motions may be due to a diminished absorption of fat concealing the presence of bile pigment. This is certainly the case in the condition termed "coeliac disease," in which colourless stools are such a prominent feature.

It seems possible, too, that an interference with the hepatic functions may be due to a temporary overloading of the hepatic cells with glycogen or fat, and if the Hippocratic axiom be true that "*Curationes naturam morborum ostendunt*," one would find support for it in the undoubted benefit to be derived in these cases from a reduction of the amount of fat and carbohydrates in the diet. The point is one, however, which, from its numerous implications, is well worth discussion.

I have said that the above varieties of dyspepsia, which I have briefly sketched out, are usually combined in practice to form a dyspeptic "symptom-complex," the commonest of which undoubtedly is the condition to which Dr. Eustace Smith has applied the term "mucous disease." Although we are all very familiar with this condition, its real nature is very difficult to analyse, for one has practically only got the symptoms to go upon. I would suggest, however, for purposes of discussion, that this common form of indigestion is due to a defective tone and motility of the stomach combined with an intestinal dyspepsia, the consequence of an excessive use of carbohydrates. An element of hepatic inadequacy is also frequently superadded, for many—perhaps most—of these children pass pale stools at times, and they are not infrequently the subjects of recurring or cyclical vomiting.

Etiology of Dyspepsia in Childhood.

As regards the etiology of dyspeptic conditions in childhood I would lay stress upon the importance of congenital predisposition. Many children, I think, are born dyspeptics. They come of dyspeptic and neurotic families; during their infancy they have difficulty in digesting milk, and when later childhood is reached they still continue to exhibit dyspepsia in various forms. Many of these children are examples of the condition described by Stiller as the morbus asthenicus and present the bodily configuration characteristic of that state narrow subcostal angle, feeble muscular development, etc.—to which he has directed attention. In later life they tend to swell the ranks of the neurasthenics and nervous dyspeptics. Amongst the factors which may produce acquired dyspepsia it is common to attach great importance to dental caries. For my own part I think there is a tendency at the present day to over-emphasize this cause. At all events I have not been able to trace any constant association between caries of the teeth and the occurrence of dyspepsia. Of greater importance, I think, is the non-use of such teeth as the child has, that is, defective mastication or "bolting" of the food. That this is a fruitful source of dyspepsia in childhood I think there can be no doubt.

Of dietetic causes the chief, undoubtedly, is the excessive use of carbohydrates. A diet which contains these constituents in too high a proportion disturbs digestion in various ways, for it is bulky, it is fermentable, and it tends to make too great demands on one class of digestive ferments. Again, a diet which contains too much carbohydrate is apt to contain too little protein, and protein starvation, as is well known, tends to lessen digestive power. It is also apt to be a sloppy diet which lends itself readily to "bolting" and which favours the production of flatulence.

In these high pressure days one has frequent opportunity of noting the part played by over-strain, both physical and mental, in producing and maintaining dyspepsia in the growing child; over-anxiety about lessons or games saps digestive power at this age just as much as business or digestive worry does in later life. It is a cause which, I think, tends to become more and more operative, and to which it is the duty of this Section to direct attention.

Treatment.

If we are agreed as to the causes of dyspepsia in childhood there is little room for differences of opinion as to treatment. It is important, however, not to take too narrow a view of the subject. Dyspepsia in the child, as in the adult, is more often a symptom of general ill-health than a mere local derangement of function, and in this respect it differs from the dyspepsias of infancy in which local factors are usually of most importance. Hence in treatment one has first to regulate the whole life of the patient, and this embraces the consideration of the hours of work, of play, and of sleep, and, in fact, a critical study of the whole environment. I am strongly convinced of the immense value of change of air in all cases of chronic dyspepsia in childhood, although its *modus operandi* is not always clear. It usually involves, however, a respite from the tyranny of lessons, along with more exercise in the open and the mental stimulus of change of scene. All of these no doubt play a part in bringing about that quickening of the general metabolism which reacts so favourably upon digestive power. As to the relative advantages of seaside and mountain air there is room for divergence of opinion, but I would only say that for my own part I think that mountain air is to be preferred in most cases.

Dietetic rules I would regard as second in importance to general hygienic measures, and would only state in general terms that in the great majority of cases what is required is the construction of a better balanced diet, in which the carbohydrates are not over-represented, along with the proper regulation of meals and education in mastication.

Drugs are of minor importance, but in most cases aperients are required, and do more good than any other medicinal agent. Alkalis, rhubarb, and bitters especially nux vomica—are all very helpful in their own sphere, but acids and ferments are rarely called for. Ferruginous tonics and such preparations as cod-liver oil and malt extract, which are on the border line between drugs and foods, must be employed with great discrimination.

I am aware, gentlemen, that I have dealt in but a brief and sketchy fashion with what is a very large subject, but my object has been to point out the gaps in our knowledge and to present as many points as possible for criticism and discussion rather than to describe fully conditions with which everyone here is already familiar.

DISCUSSION.

Dr. H. R. Hutton (Manchester) said: I desire first to express my indebtedness to Dr. Hutchison for his presentation of the subject in so large and comprehensive a way. On a few only of the many points raised do I propose to touch. In my experience those children who recover from the early conditions of congenital pyloric stenosis do not in later years suffer to any marked extent from dyspepsia. Imperfect and irregular contraction of the stomach, as revealed by the *x* rays in conjunction with bismuth meals, is certainly present in some cases of dyspepsia associated with pain and a tendency to vomit. In other cases of dyspepsia the pain appears to be caused by irregular circulation through the intestine, due apparently to the binding down of the coils of intestine by adhesions, as shown by *x* rays and bismuth. Dental caries, by leading to deficient mastication, is, in my opinion, a frequent cause of dyspepsia. Hurrying children through their meals, both at home and in school, acts in the same way and commonly leads to dyspepsia. Rest before meals I look upon as an important part of treatment. Heredity of the dyspeptic diathesis and of rheumatism is very often marked in these cases. Variety in diet I look upon as essential.

Dr. C. Paget Lafage (Manchester) said: I agree that cases of gastric ulcer are very rare in childhood. I have only seen two cases which I should regard as likely to be what is usually called gastric ulcer, and these were in girls about 12 to 14 years old. I also agree that congenital pyloric stenosis very seldom causes symptoms of dyspepsia in later years. Cases I have watched after they had been cured by medical treatment have shown no symptoms, and one case, who died of intercurrent disease, still had the thickened pylorus. With regard to atonic dyspepsia, to my mind it is interesting to note the part played by the general diseases, such as rheumatism and tuberculosis, and in the hospital class of cases, especially of chronic underfeeding, in the production of a general lowering of the

bodily functions, and an atonic dyspepsia. In many cases treatment directed to the general condition, and in others a few doses of tuberculin make a wonderful improvement in the child's digestive powers. I do not wish to overestimate the part played by tuberculosis, but we have evidence that tuberculous glandular affection of the mesenteric glands is often undiagnosable and unsuspected, and many of these cases have an indefinite dyspepsia which clears up as the child overcomes the disease. Further, I have records of several patients, watched over a long period, who at first suggested periodic vomiting and had attacks at monthly intervals. But these attacks tended to become more and more frequent, and finally culminated in a general illness, which was almost undoubtedly an attack of tuberculosis. Therefore, though I feel that periodic or cyclic vomiting does occur and should be recognized, I feel that it is rare and that we should be careful not to use the term loosely to cover all cases of indefinite recurrent dyspepsia, which may be due to other causes. Much the same can be said of chronic intestinal indigestion. We all see undoubted cases of this nature, and it is recognised as a clinical entity, and by no means rare. It can also be cured by suitable dietetic measures. But my experience has been that there is often an underlying cause, and cases, which are typical in their symptoms, may turn out to be of a much more serious nature. With regard to the dietary, the influence of dental caries and the hereditary predisposition mentioned by Dr. Hutchison: I have been struck with the difficulty of getting some children, who, as infants, have been brought up and probably overnourished on foods predigested, or containing too much carbohydrate, to chew and take the wholesome foods necessary to them later on. This often leads to a tendency to dyspepsia in later life. The importance of properly exercising the salivary glands and the other digestive organs by means of chewing is to my mind great, and dentists have shown us the influence a diet containing too much soft and carbohydrate food has on the teeth. It is not only the toxic effects of the carious teeth, but also their poor power of breaking up the food. It follows that we should take care to prescribe and introduce, slowly if necessary, a diet that contains foods that need chewing and digesting, so that the digestive organs will attain proficiency through exercise.

Dr. FRANK EVE (Hull) submitted that lack of tone of the stomach was often a part of a pot-belly condition, and hence the lack of tone of the muscles of the abdomen must be first cured by massage and exercises, and remembering that these muscles never get rest when in the vertical position. Hence the success of horizontal rest. He suggested that "stitch in the side"—a common complaint, especially in delicate children who take exercise after heavy meals—might be confused with dyspepsia, and be due to stretching of the mesentery of a loaded stomach or bowel. He asked the question whether air-swallowing, which was a rare but important cause of dyspepsia in adults, occurred also in children. He remembered a delicate schoolfellow who had symptoms suggestive of this condition. He submitted that in such an academic discussion on a clinical subject the definition of the disease was apt to be a pathological one. In this case the pathological definition was easy—a disorder of digestion; but this shirked the diagnosis entirely. A clinical definition of this disease based on symptoms, he submitted, was impossible in this protean disease. The assortment of symptoms suggesting dyspepsia were loss of flesh and appetite, abdominal pains, vomiting, diarrhœa, constipation, pale stools, mucus in the motions, flatulence, furred tongue, pot belly, attacks of biliousness or fever, fetid breath, fretfulness, sleeplessness, and languidness. No single symptom or even small group of them was conclusive of dyspepsia, but might be due to other diseases, such as tubercle of the peritoneum or bowel or early tubercle in the meninges, or pretuberculous debility or phthisis, threadworms or roundworms, nervous debility, [illegible] abdominal pain, the symptom most [illegible], might be due to many other [illegible] peristaltic efforts to pass [illegible] tubercle, stones, "stitch," and also there was poor [illegible] action of the child. He [illegible] uncertainty of diagnosis in many of these cases.

Dr. JOHN HADDON (Hawick) emphasized the importance of food, fresh air, and exercise in the causation and treatment of dyspepsia at any age whatever and whatever the classification adopted. He held that bread, being a cause of intestinal stasis, was not a fit food for any one. The only safe diet, that of Adam in the Garden of Eden, was fruit alone. And not less important was the provision of rest for the nervous system, secured by total fasts of three days' duration. Appendicitis he regarded as a nervous reflex.

Dr. CLIVE RIVIERE (London) drew attention to a clinical group—namely, children who suffered from infancy up with want of appetite. Such children were seen, perhaps, more among the children of their friends than among their patients—the children generally of thin, sallow, pale, nervous, and restless type. Otherwise, in many cases, no definite dyspeptic symptoms existed apart from absence of appetite. They had often never been under medical advice. Such children persistently stuffed, but often with well-chosen food. It was a question whether such cases were the result of a nervous defect, neurasthenia, or whether generally an underlying gastro-intestinal dyspepsia, perhaps the result of feeding when food should be withdrawn. If the former—neurasthenia—could Dr. Hutchison say whether stuffing was the right method of treatment with a view to improving nutrition, or should such cases, with an eye to a possible catarrh, be starved occasionally as a part of treatment, and, if so, how was such starvation best arranged—whether complete starvation for a time or a lowered diet over a few days at certain intervals? The condition referred to was a burden to parents and children; and if they could be taken as a type, which their appearance suggested, it would be a great help to know at the outset what line was most safely followed. The speaker agreed that dental caries as a cause of dyspepsia was over-estimated. When it did come in it was as tenderness preventing efficient mastication and causing bolting of food; but a more important cause of such inefficient chewing was, in his opinion, the absence of training in early life caused through the too long continuance of slops.

Mr. EDRED M. CORNER (London) remarked that Dr. Hutchison referred to the great difficulty in obtaining objective evidence with regard to the dyspepsias of children. This was certainly so, and was an excuse for the following remarks: Any excess in amount of food above what the child can digest and absorb will be carried along the alimentary canal, and will "go bad." This "going bad" is associated with the presence of micro-organisms, which will congregate and exert their superlative effect in the ileo-cæcal region. An item only, but the most dangerous, in the ileo-cæcal region is the appendix—its inflammation, appendicitis. Hence I would suggest that appendicitis is an absolutely necessary corollary to continued intestinal dyspepsia. This theoretical argument has a practical basis. The removal of the appendix in some children is followed by enormous benefit (examples were cited). The appendices in these cases are often passed as "normal." But they are not so, being long, tortuous, often angulated, dilated, and frequently containing faecal matter. With these abnormalities are associated two others at least—a movable cæcum and widely distributed enlargement of the mesenteric glands. The wide distribution of the enlargement of these glands shows that the inflammation of the appendix is only an item—the most dangerous item—of the complicated condition of prolonged intestinal dyspepsia.

Dr. J. CLAYTON (Leamington), referring to the questions as to ætiology and treatment in children's dyspepsias, asked: Are we to understand that most of these dyspepsias are really of a nervous origin, without an underlying anatomical basis? In comparison with dyspepsias of adults, where we find nervous dyspepsia without inflammatory change of a chronic or subacute nature rare, here we are asked to believe that it is the rule. Dental caries, tuberculosis, etc., or infection somewhere seem to be almost essential causes. In the so-called rheumatic cases, is this observation made merely on the result of response to salicylates? Because this inference is fallacious. As to treatment, seeing that the origin may be appendicular,

scarcely universal prescribing of purges is a dangerous practice. The rapid improvement when one has a child in hospital under treatment, to my mind negatives the suggestion that these dyspepsias are of a nervous origin.

Dr. R. B. McVittie (Dublin) noted that many of these cases were anaemic, very thin, and active and restless, swallowed their food too quickly, and slept badly, and had dilated hearts, and the question arose how much of the benefit following removal of the appendix was due to the rest in bed and removal from the influence of over-anxious and restless parents. A diseased appendix did not stand alone, but was associated with a more or less diseased condition of the caecum and ileum: and it was difficult to see how the removal of so small a portion of the diseased tract could have such a wonderful effect if it were unsupported by the long rest, regulation of diet, and good nursing. He would therefore suggest that a long rest under favourable circumstances, with abdominal massage and the use of olive oil, be given a fair trial before resorting to operation except in acute cases.

Dr. G. H. Hume (Newcastle-on-Tyne) asked what the treatment ought to be if an attack of appendicitis occurred in a child who was known to be liable to attacks of cyclic vomiting, and quoted a case. A child 8 years old some six months ago had a definite attack of appendicitis associated with acetonuria. Ought that child to have been operated upon? What was the risk of producing post-anaesthetic narcosis in a child predisposed to acetonuria?

Dr. R. Hutchison, in reply, put in a strong plea for logic and sanity in the discussion. To regard any great proportion of the dyspepsias as due to appendicitis, or to abdominal tuberculosis, or to a want of a fruit diet, would be, he thought, narrow and erroneous in the highest degree. A wider outlook was essential, for the causes of dyspepsia were manifold. He thought that great value attached to Dr. Hutton's *x*-ray observations in dyspepsia, and trusted that they would be continued. To treat gastric atony, a disease due to dilatation of the stomach, with the ultra-bulky fruit diet advocated by Dr. Haddon, he regarded as simply insane. The growing child demanded a diet rich in protein before all, and this could not be supplied by fruit. He believed that some few cases of dyspepsia, in children as in adults, could be cured by the removal of a diseased appendix. Such cases, however, were few, and were hard to diagnose. As regards treatment, the vast majority of dyspeptic children could be cured if the practitioner had a free hand. The use of laxatives, as distinguished from purgation, and above all a change of scene and life, were the most important items of it. Few of these dyspepsias had an organic basis. In answer to Dr. W. E. Hume, he advised that, after the cyclical vomiting was over, the child should be given glucose and an alkali, and should have the appendix removed under other anaesthesia.

FIBROUS AND FIBRO-CYSTIC OSTEITIS.

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The occurrence of benign cysts in the long bones has long been recognized. But their diagnosis and treatment have received too little attention, so that we still find them mistaken for sarcomata, and sometimes see amputation carried out where conservative measures would suffice.

The more common varieties of bone cysts are intimately connected in their pathology with fibrous osteitis; in fact, there are good grounds for suggesting that the two conditions are different manifestations of one disease. The several varieties of pathological changes found may be classified thus:

1. Localized fibrous osteitis. A distended shell of bone exists, partitioned by trabeculae, the contents consisting for the most part of a cellular fibrous tissue. In this are small portions of bone which show evidence of active deposit by osteoblasts, and of active absorption by osteoclasts. Small fragments of cartilage may also be present, and there may be patches of myxomatous degeneration and even of necrosis.

2. Localized fibro-cystic osteitis. A condition similar to the first, but including small cysts.

3. Generalized fibro-cystic osteitis (von Recklinghausen's disease). A similar condition occurring in many of the bones of the skeleton.

4. Cystic osteitis. Single, or more rarely multiple, cysts, tending to expand the bones only in their later stages, and often leading to spontaneous fractures. These fall into two classes:

(*a*) The cyst has no definite lining.

(*b*) The cyst has a lining which may be well defined, and capable of being peeled from its interior, or may simply consist of altered bone. In either case the wall shows microscopically the changes of fibrous osteitis.

Other cysts occur in the long bones, more particularly those which result from the degeneration of endosteal sarcomata, myelomata, chondromata, and myxomata. But these do not seem to have any clear relationship to fibrous osteitis.

The following five cases illustrate fibrous and fibro-cystic disease:

Case I.

E. O., a boy aged 9, on May 12th, 1909, fell and fractured his right humerus immediately below the surgical neck. A skiagram taken in the ordinary routine showed that the fracture had occurred through a cystic space in the bone. There was slight uniform expansion of the bone, the upper limit of the space being ¾ in. below the epiphyseal line: the outline of the cavity was sharp, the bone around not sclerosed; a clear thin shell of bone covered the cavity, except where interrupted by the fracture, and the cavity itself was not divided by trabeculae.

A diagnosis of endosteal sarcoma was made, and on May 24th an exploratory operation was performed. On removing a portion of the outer wall of the cavity the latter was found to extend vertically for about 2 in.; it contained a little viscid blood-stained fluid. The interior was scraped, a little soft tissue coming away. A frozen section cut immediately showed spicules of bone surrounded by osteoclasts, with large intervening areas of young and cellular fibrous tissue. Unfortunately no permanent sections were made. The wound healed well; no splint or after-treatment except massage was adopted.

A year later the arm was strong and well; the humerus could still be felt to be expanded at the site of the disease. The skiagram showed that there was still a small cystic space chiefly on the inner side, and that the bone around was sclerosed.

In May, 1912, three years after the fracture, a skiagram showed that the cystic space was larger and more central in position; the sclerosis around was slight; the upper margin of the cyst was now about 2½ in. from the epiphyseal line, so that it has been displaced downwards considerably by growth.

Case II.

C. R., a boy aged 7, fell on November 28th, 1910, and fractured his left humerus just below the surgical neck. A skiagram showed the presence of a cystic space, similar in all respects to that found in Case I. On December 15th, the fracture having united, the cyst was opened by the removal of a portion of its outer wall, and the interior curetted; practically nothing could be got away, the cyst being lined by hard bone. The wound healed quickly, and the arm was treated by immediate massage and movement.

A skiagram taken on January 2nd, 1911, showed abundant callus formation under the periosteum and some sclerosis above the cyst.

These changes were more evident by January 18th, at which date the new periosteal bone was sufficient to produce an apparent expansion of the bone. By December 29th, 1911, a small space was still present on the inner side of the bone, with a little expansion of the bone and an appearance of trabeculation of the cyst. There was considerable sclerosis of the bone on the outer side of the cyst at the point at which the wall had been removed.

In a skiagram taken on May 24th, 1912, eighteen months after the operation, the cyst had enlarged: its upper margin was now 1½ in. further from the ephipyseal line than it was in the first skiagram.

Case III.

A. S., a boy aged 14, on September 12th, 1910, broke his right humerus in throwing an india-rubber ball. A skiagram showed a cyst at the site of fracture, just above the insertion of the deltoid.

The cystic space in this case showed slight evidence of trabeculation; otherwise it exactly resembled the other cases; the upper margin of the space was about 1 in. below the epiphyseal line. The cyst was not explored, but the splint was kept on and the arm massaged for six months; a good strong arm resulted.

A skiagram taken on September 26th showed abundant periosteal callus. One taken a month later showed good union with an apparent expansion of the bone and sclerosis around the cyst. By November 9th the cyst showed a definite trabeculated appearance, as if bone trabeculae had grown into the cavity from the impacted fragments. In March, 1911, this appearance was still more evident. By September, 1911, one year after the

fracture, the bone showed a moderate expansion, there being now little sclerosis, and the cystic space being apparently subdivided by trabeculae of bone, the appearances being now very like those in the next case. Since that time the condition has not altered.

CASE IV.

E. B., a woman whose exact age was doubtful. In 1880, at the age of 15 (?) was admitted at St. Bartholomew's Hospital, with the history that two years before she had fallen and injured her right thigh; she was able to get up and walk home, but the pain continued for some weeks. Ten days before admission she again injured the hip, since then there had been much pain, and a swelling had appeared.

A hard swelling was found in the upper part of the right femur, as if the bone was thickened by about 1 in. It was slightly painful, but hip movements were free. A diagnosis of chronic periostitis of the femur was made.

Two years and four months later she was readmitted, her age being now given as 16, six months before she noticed that the right thigh was bent. There was then a sudden bowing outwards in the right femur about 3 in. to 4 in. below the great trochanter, the bone being thickened at the bend; the tissues around were hot and slightly tender. The right thigh was 1½ in. shorter than the left, the whole limb was, however, 2½ in. short (this probably alluded to the total apparent shortening.) Under ether Mr. Smith, by the exercise of slight force, fractured the femur; he thought that there was disease at the point of curvature. A long splint was applied, the shortening was then ¾ in. On returning from the convalescent home four months later the girl walked without crutches, but with a slight limp; there was not more bowing, but the bone was more thickened at the bend; the shortening was now 1½ in.

The patient was next seen by me at the Metropolitan Hospital on July 7th, 1907, twenty-nine years from the time of the first injury; she came for the provision of a high boot, but walked with crutches and put very little weight upon the limb. The shortening was now 3½ in.; the femur was much thickened in its upper part and bowed outwards. There was fixed adduction at the hip-joint, but except for this the movements at this joint were free. A skiagram showed that the neck, trochanters, and upper 3 in. of the shaft of the femur were expanded, rarefied, and curved; the expanded area was subdivided extensively by trabeculae. The lower limit of the diseased area was sharply marked off from the rest of the shaft. The history given was so inaccurate as to lead to the supposition that the condition had arisen quite recently; a diagnosis of endosteal sarcoma was made, and amputation advised. This was refused, and the patient lost sight of for eighteen months. She then returned, and the condition was found to be absolutely unaltered. Having in the meantime seen the patient of Mr. Robert Jones (Case V), I was able now to make the diagnosis of fibrous osteitis, and I advised the correction of the deformity by the removal of a wedge. This was, however, refused. Since that time the patient has been under observation from time to time, and the condition has not altered in any respect.

CASE V.

J. O., a boy of 10, came under the care of Mr. Robert Jones in June, 1906. He had a fall upon the leg some (? six) years before, there being, it was said, no fracture. The tibia had commenced to bend after this. The middle of the shaft of the bone was very greatly thickened and bent almost to a right angle. At this point the tibia was very greatly expanded, the expanded area being subdivided by trabeculae. An exploratory operation was performed, and the deformity corrected by the removal of a wedge of the diseased tissue. In June, 1912—six years after the operation the leg was straight and strong, the tibia being a little thickened. A skiagram shows that there is still an area of expanded and irregularly trabeculated tissue which shows a transverse line across it apparently at the site of the operation.

The wedge of tissue removed was sent to me by Mr. Jones. It was covered by a thin shell of compact bone. The deeper part consisted of fibrous tissue of varying density with occasional spicules of bone, these showed signs of extensive absorption by osteoclasts, while in places there was also active deposit by osteoblasts. Small areas which macroscopically looked like cartilage consisted of dense fibrous tissue with a whorled arrangement. The whole tissue was very vascular.

In all the forms of fibrous and fibro-cystic osteitis the onset, as far as can be accurately traced, occurs in childhood or adolescence. Several cases have been recorded at a later age, but it is difficult to prove that in these the condition has not originated in childhood. For there is often so little disability and so few symptoms that until some accident calls attention to the condition it is apt to be overlooked. Bloodgood analysed the cases recorded in which there might have been a late origin, and concluded that there was very little evidence to prove that the condition could originate after adolescence. In Case IV of my series, if the old notes had not been obtainable, it might have been concluded that the pathological lesion in the femur had originated in middle life.

Situation.—This has been carefully analysed by Bloodgood and by Silver. Cysts have been found in almost every long bone, but they most frequently occur in the *femur*, *humerus*, *tibia*, and *fibula*. In these they arise most often, possibly always, near the epiphyseal lines, the upper end of the humerus and of the femur being the most favourite spots. It must be remembered, however, that a cyst which originated near the upper epiphyseal line of the humerus in a child of 8 will have moved some considerable distance down the shaft by the time that growth is complete. This point is well illustrated in Cases I, II, and III in the series. At the upper end of the femur there is little growth, so that a lesion in that situation will not tend to be displaced.

Fibrous osteitis most frequently occurs in the femur, usually at the upper end; its next commonest situation is in the tibia.

Symptoms.—Cysts of the long bones most often produce no symptoms until a spontaneous fracture occurs; occasionally the cyst causes expansion of the bone so that a swelling occurs, and advice is sought for this. Very rarely there is pain. In fibrous osteitis the first symptom is either swelling or deformity, the latter being due to bending of the softened bone. Here, again, pain is absent or slight.

In cases first seen on account of a fracture, most often the cyst is discovered in a skiagram taken in the ordinary routine. Less frequently a swelling is noticeable at the site of fracture. In cases attending for swelling or deformity there is a more evident reason for taking the skiagram upon which the diagnosis must ultimately depend. The differential diagnosis is of the greatest importance. The other conditions that are most likely to give rise to difficulty are endosteal tumours (sarcoma myeloma, and chondroma) and central abscess (either tuberculous or subacute septic). Possibly, also, central focal tuberculosis, central gumma, echinococcus cysts, fracture without displacement and with callus formation, and periostitis may give rise to trouble. But these should, as a rule, be easily distinguished by the skiagram.

The important points in the diagnosis of a cyst are:

1. In the history, the absence of pain or swelling except in the later stages, the perfect function of the limb up to the time of fracture, and the absence of muscular wasting.

2. The bone is not altered in length.

3. In the skiagram the cyst is evenly situated in the centre of the shaft, there is often no expansion, the cavity is not extensively divided by trabeculae, there is no sclerosis of the bone around, but the cyst is completely covered in by a thin shell of subperiosteal bone, and there is no point at which this shell is broken through, unless by a fracture, and finally there is no periostitis.

In true sarcoma there is more often pain, swelling, and wasting of the limb. In the skiagram the tumour is not necessarily quite central, is not so even, and tends to burst through the shell of surrounding bone.

The same remarks apply to myeloma, except that this does not tend so easily to burst through its capsule; in this also the skiagram shows a very definite division of the cavity by trabeculae.

Enchondroma of the long bones is extremely rare, if the tumours of the phalanges are excepted. There is a possibility that the few recorded cases of cysts of the phalanges in which cartilage and myxomatous tissue have been recognized in the contents are really cases of cystic degeneration of enchondromata, and are not analogous to the other cysts of the long bones. In a case of enchondroma of the upper part of the shaft of the humerus lately in St. Bartholomew's Hospital under the care of Mr. Gask the condition closely simulated the three cases of cyst recorded above.

The patient was a boy aged 11, who had a painless swelling of the left humerus, just above the insertion of the deltoid, which had certainly been present for a year. It had only become painful after an injury a fortnight before admission. There was evident atrophy of the muscles, but the function of the arm was good. The skiagram showed that the tumour was not quite central, that it had expanded the bone on the outer side, was subdivided by trabeculae, and that there was a little sclerosis of the surrounding bone. A diagnosis was not definitely made, but the tumour was thought to be a sarcoma. An exploratory incision showed the tumour to be solid, so the length of the humerus containing it was resected.

Looking at this case after operation, it appears that the wasting, the irregular expansion of the bone, the trabeculation, and the sclerosis around were all against the diagnosis of cyst. The appearances in the skiagram,

however, very closely resembled those of the partly healed cysts in Cases I and II in the series described above.

In central abscess there is, of course, usually pain, swelling, and muscular wasting. Very occasionally, however, an abscess may closely simulate a cyst.

A boy, aged 13, attended St. Bartholomew's Hospital for a painless swelling of the left forearm, of five months' duration and slow growth. There was no history of injury or other cause. The swelling consisted of an expansion of the radius; there was no inflammation of the skin, and except for full extension of the wrist was free. The radius was a little thicker than that of the other arm. A skiagram showed the bone a little expanded by a cyst-like space, which was not quite central in position. There was a little sclerosis around, and the space was not subdivided by trabeculae. Upon removing a portion of the wall of the cyst, the contents were found to consist of thick caseous pus, which was sterile on culture. The cavity was swabbed out with carbolic and healed well.

The diagnosis in this case was in doubt up to the time of the operation. Looking back at it, three points should have helped in the diagnosis of abscess—the position of the cavity (not quite central), the sclerosis of the surrounding bone, and the lengthening of the radius as compared with that of the opposite side.

Fibrous osteitis most often has attention called to it by the presence of swelling or of deformity. In the skiagram there is evident expansion of the bone, with a thin shell of bone around. The area is extensively subdivided by trabeculae, and is very uneven in density. There is a sharp line between the diseased area and the neighbouring bone. The condition closely simulates myeloid sarcoma, and in the absence of a history of long duration a diagnosis may not be possible until an exploratory operation has been carried out. As a rule, however, both cysts and fibrous osteitis stop short at the epiphyseal line, whereas myelomata tend to infiltrate the epiphysis itself.

Most writers upon the subject emphasize the difficulty of diagnosis of fibrous osteitis and of cysts, and state that a final diagnosis is only possible after exploratory operation and microscopic examination. Whilst this is to some extent true, in the large majority of cases a diagnosis can now, in the light of experience, be made by means of careful clinical and skiagraphic examination. In the series of five cases described above a correct diagnosis was so made in the second and third cases of bone cysts, and in one case of fibrous osteitis after the second such case had been seen.

Pathology.

This has been extensively studied by many observers. Virchow's hypothesis was that the cysts are due to a degeneration in cartilaginous tumours. Whilst this is possibly true of some of the cysts of the phalanges, the extreme rarity of chondromata of the larger long bones renders it improbable that the more ordinary type of bone cyst could originate in this way. Further, although small fragments of cartilage have been found in fibrous osteitis, these have been so small and so intimately bound up with the other tissues as to make it very improbable that cartilage was the original tissue present.

A traumatic origin for the cysts is assumed by some. But although an accident is a frequent incident in the history it is most often a late occurrence.

The third hypothesis is that cysts arise from liquefaction in a localized patch of fibrous osteitis, that in fact the two conditions are manifestations of one disease. In favour of this are the similarity of situation, the occurrence of both conditions in young subjects, and the microscopic appearances in the walls of the cysts. The progress of Case III recorded above suggests another possibility in at least some cases.

In this patient the skiagraphic appearances at the time of the fracture are characteristically those of a cyst, the space being clear and showing very little sign of trabeculation. A year later, however, the appearances closely resemble those of a fibrous osteitis, the diseased area being extensively subdivided by trabeculae; is it possible that the cyst has been transformed into fibrous osteitis as the result of the fracture? It is probable that many of these cysts have escaped recognition in the past; they are most often found incidentally in the routine skiagraphy of fractures, and unless all fractures are so skiagraphed, cysts at the site of the fracture are almost certain to be missed. A cyst of the upper end of the femur could not progress far without a fracture occurring; might not this accident transform the cyst into a solid fibrous osteitis, and so explain the frequency of this condition in the femur? Such an explanation gives us no further insight into the pathology of the two lesions: it is only thrown out as a further suggestion concerning their relationship. Beyond the opinion that fibrous osteitis is an inflammatory lesion, we must at present acknowledge that we know nothing of its pathology.

Treatment.

The most important point in treatment is that this must be strictly conservative. Curettage, crushing of the cyst wall, or resection of the affected portion of the bone are the measures usually advocated. In the light of experience even resection seems to be an unduly severe measure which should not be called for in the treatment of a bone cyst. For after curettage even the thinnest shell of remaining periosteal bone seems to suffice to maintain the proper continuity of the bone until sclerosis has taken place.

In Cases I and II curettage has undoubtedly effected a functional cure, but in each the cyst is still present, and is in fact enlarging. In the third case, in which after fracture no treatment other than splinting and massage were carried out, a functional cure has also resulted, but the pathological lesion is still present, although it has altered greatly in appearance, and it is as large as ever.

In any future case of cyst I shall adopt curettage with crushing in of portions of the cyst wall. Resection, if carried out at all, should be done subperiosteally.

In fibrous osteitis, as illustrated by Cases IV and V and by a case reported by Mr. Lawford Knaggs, the disease may last over many years without causing great disability, so that conservative treatment is again called for. Correction of the deformity by force or by operative measures may apparently be safely carried out, for in Case IV union occurred after Mr. Smith's manipulations, and in Case V the wedge-shaped osteotomy carried out by Mr. Jones has had a most successful issue. In the latter case not only has good strong union resulted, but in addition the disease seems to have been arrested.

In Mr. Lawford Knaggs's case, after the disease had lasted from adolescence until the age of 53, a sarcoma arose in one of the affected bones. This appears to be an instance of a sarcoma arising in "an abnormal tissue in a state of ill-regulated activity, which continues in this condition for many years, and shows no tendency to cure." It is strictly analogous to the instances of sarcomata of the bones arising in osteitis deformans.

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ON SPASMODIC CONTRACTION OF THE PERONEI IN FLAT-FOOT.

BY

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AND

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IN 1902 Mr. Robert Jones described a form of flat-foot due to spasmodic contraction of the peroneal muscles, and he has since demonstrated it on numerous occasions to visitors to his clinic. Nélaton and other Continental surgeons also recognized the importance of the condition many years ago, and some indeed suggested that such contraction had a greater part than faulty functional use in the causation of flat foot.

The presence of contraction of the peronei as a complication of flat-foot is recognized in most of the recent orthopaedic textbooks, and even by some of the students' manuals of surgery, but detailed descriptions of the condition are not given; this is the more unfortunate as peroneal spasm is found to be very common in flat-foot, when once attention has been directed to its existence, and the condition is very resistant to ordinary methods of treatment.

In the last three years about 120 cases have been treated at the Royal Southern Hospital, Liverpool.

Cases occur in both sexes, and nearly 90 per cent. of the patients are between 14 and 20 years old. In 35 per cent. there is a history of sprain or injury, and no doubt owing to this 62 per cent. of the cases occur in males. In many others the onset appears to be determined by the change from school life to an occupation which involves long hours of standing.

The first symptom in these latter cases is often pain on walking after the patients have been standing for a long period; the duration and severity of the pain increase till it is almost constantly present, and swelling of the feet commences.

In some early cases there may be merely valgus of the ankle without any loss of the arch of the foot; in others there is a little dropping of the arch: the deformity cannot be rectified actively or passively, owing to slight contraction of the peronei, unless the patient's attention be diverted from his foot.



Fig. 1.—Severe double peroneal flat-foot. The loss of the arch and abduction at the mid-tarsal joint are well seen. On the left side the peroneal tendons are prominent.

In later stages the peroneal spasm is more marked, and there may be oedema or thickening of the sheaths of these muscles—the foot is rigid and the general appearance is that of osseous flat-foot. Inversion by ordinary force is practically impossible and the attempt causes severe pain. If the surgeon, while holding the foot firmly, makes the patient alternately flex and extend the knee and engages him in some interesting conversation, he will find that inversion can be accomplished by a sudden forcible twist. It will be found that the arch is restored and no osseous changes are present; on relaxing the grip the peronei at once cause a return of the deformity and the attempt to again invert causes severe pain. Under an anaesthetic the spasm relaxes, the foot is no longer rigid and appears normal.

In the most advanced cases some degree of osseous change is superimposed; in these cases complete adduction at the mid-tarsal joint and restoration of the arch is no longer possible, even during anaesthesia, without the use of great force, though the foot can be inverted at the ankle-joint.

At all stages pain and tenderness on pressure are found at some or all of the following points: the deltoid ligament, the calcaneo-scaphoid ligaments, the anterior part of the ankle-joint, the external surface of the os calcis (near the external malleolus), and the peroneal tendons. The patient often says the pain is relieved by removing his boots.

Painter of Boston has investigated the condition and finds some proliferation of connective tissue in the tendon sheaths.



Fig. 2.—Double peroneal flat-foot.

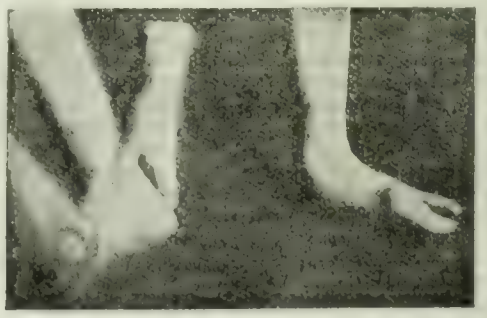


Fig. 3.—Same case as Fig. 2; shows rectification of the arch by forcible manipulation.

Illustrative Cases.

CASE I.

Errand boy aged 14. Pain in foot at night since commencing work two years ago. Occupation involves long hours and much standing.

Right Foot.—Pain and tenderness on pressure over anterior aspect of ankle-joint and calcaneo-scaphoid ligament; valgus of ankle; loss of arch; abduction at mid-tarsal joint. Head of astragalus can be felt in the sole. Slight spasm of peronei; when this is overcome foot appears normal.

Left Foot.—No pain or tenderness on pressure. Slight valgus of ankle; good arch; no peroneal spasm.

CASE II.

Girl aged 16. Light housework only. Pain in ankles since leaving school three years ago. Has been treated by plaster and supports without benefit.

Right Foot.—Pain and tenderness over calcaneo-scaphoid ligament. Poor arch; no eversion or abduction; slight peroneal spasm.

Left Foot.—Puffiness all round ankle, especially on inner side. Pain in foot and ankle generally; no special tenderness on pressure. Very flat, everted and abducted at mid-tarsal joint. Head of astragalus very prominent on inner margin and sole—practically on ground. Peronei very prominent and rigid; when this was overcome foot could be fully inverted.

CASE III.

Boy aged 16; work one and a half years; standing nine hours a day. Six months ago began to have pain in left foot on sitting down after standing; pain now constant.

Left Foot.—Tenderness on pressure behind internal malleolus, over front of ankle and anterior tibio-fibular articulation. Pain in calcaneo-scaphoid ligaments. Very flat foot with no arch, and marked separation between sustentaculum and navicular. Marked spasm of peronei; good arch on usual manipulation.

CASE IV.

Boy aged 14, still at school. Has had no pain, but noticed foot looked flat about one year ago.

Left Foot.—No pain or tenderness on pressure. Very flat foot. Wide separation of os calcis and scaphoid. Head of astragalus ½ in. from ground. Thickening of peroneal sheath and spasm of peronei. Full rectification of arch possible by usual manipulations, but caused great pain.

CASE V.

Boy aged 15. Butcher's boy for six months; seven to fifteen hours a day on feet. Pain in feet commenced five months ago, usually after midday, and feet were swollen in the mornings. Three months ago pain got worse, and he noticed alterations in the shape of his feet. Is now unable to work; walks with difficulty, with feet everted and abducted.

Both Feet.—Tenderness on pressure over upper and internal aspects of head of astragalus, over anterior aspect of ankle-joint and over the peroneal tendons. Very flat feet, abducted at mid-tarsal joints, and marked convex inner margins; sustentaculum and scaphoid separated by over one inch. Left hallux rigidus; right severe hallux valgus. Puffiness and oedema over peroneal sheaths and external malleoli; peronei very tense and rigid on attempt to stand on tiptoe or at active or passive inversion. Full rectification was possible by usual manipulation, but gave severe pain and caused clonus of peroneal muscles. The deformity at once redeveloped on relaxing the grip.

CASE VI.

Boy aged 15. At work one year; long hours. Sprained foot while jumping eight months ago; pain better in three weeks, but commenced again one month later. Tenderness and pain

internal lateral and calcaneo-scaphoid ligaments. Slight pes foot. Peronei rigid on attempt at active or passive inversion.

Case VII.

Dock labourer, aged 22. Four months ago fell 36 ft. on to his feet; was in bed seven weeks, but since recovery has had pain in feet at night after walking.

Right Foot.—Least painful; no tenderness on pressure. Thickening of posterior part of foot; loss of arch; no peroneal spasm. Skiagram shows crushing of os calcis.

Left Foot.—Pain in os calcis, internal lateral ligament, and peroneal tubercle and insertions. Tenderness on pressure over external lateral ligament and anterior aspect of ankle-joint. Peroneal tendons prominent and rigid; sheath not thickened. Slight inversion of foot possible, but further rectification of the arch, either active or passive, is resisted by intense spasm of peronei. Full reduction is possible by usual manipulations. Skiagram shows no bone injury.

Case VIII.

Male, aged 30, labourer. When 12 years old was at work in a brickhouse; he had pain in his ankles after an accident. 1901: Treated for peroneal flat-foot by exsection of peronei; wore outside irons and inverted boots for six months, and was then cured. 1908: Had an injury to left ankle; pain recurred in that foot. 1911: Injury to right ankle followed by disability in that foot, and is now unable to work.

Left Foot.—Flat and everted; spasm of peronei; some osseous change. No pain or tenderness on pressure. Arch cannot be fully restored by usual manipulation.

Right Foot.—Pain and tenderness on pressure over calcaneo-scaphoid ligament and at tip of external malleolus. Flat everted foot with early osseous changes and marked peroneal spasm.

Treatment.—Exsection of peronei, wrenching and inversion in plaster.

There is another paper dealing fully with the treatment and after-treatment of these cases, so it will not be alluded to in detail.

Mechanical measures are of little avail in this condition, unless combined with operative treatment of the peroneal muscles. Whatever the etiology of peroneal flat-foot may prove to be, we would plead that it should (temporarily at least) be classified separately from other forms of static flat foot, in order to ensure a wider recognition of its importance and of the special measures called for in its treatment.

In conclusion, we would wish to thank Mr. Robert Jones for suggesting this paper and for his kind advice and assistance in its preparation.

SPASMODIC CLUB-FOOT.

BY

T. R. W. Armour, M.B., Ch.B.Edin.,

AND

Naughton Dunn, M.B., Ch.B.Aberd.

The treatment of spasmodic flat-foot is a subject which you, Sir, have made particularly your own, and you and those of us in Liverpool who belong to your school adopt methods which are not much employed or, perhaps, even approved of elsewhere; and I wish to refer to a new mode of treatment recently suggested by Mr. Naughton Dunn, one of the house-surgeons at the Royal Southern Hospital, which seems to me to break new ground in the treatment of spasmodic deformities and to be capable of further development.

In the paper read by Mr. Simpson before this Section attention was drawn to the large percentage of flat-foot associated with spasm of the peronei muscles, and it was maintained that this condition was so common as to warrant its being classified in a group by itself. If this holds good from a clinical and pathological point of view, it does so with even greater force from the operative standpoint. It is more than fifteen years since you, Sir, first showed that it was useless to attempt the treatment of this spasmodic flat-foot without operative interference, which threw the peronei muscle out of action for a shorter or longer period of time according to the severity of the case.

For this purpose there are three courses which can be followed, and they can be conveniently mentioned in order of the length of time for which they neutralize the spasm they are devised to deal with: (1) Division of the tendons of the peroneus longus and brevis, either subcutaneously with the tenotome, or better through an open incision with removal of portions of the tendons; (2) crushing the musculo-cutaneous nerve at a point just after it is given off by the external popliteal in the substance of the peroneus longus, for the purpose of producing paralysis of the longus and brevis; and (3) transplantation of the tendon of insertion of the peroneus longus to a new insertion on the inner side of the foot, with division of the peroneus brevis.

The operation of exsection of an inch of each peroneus tendon is one devised by Mr. Robert Jones.

A short incision is made behind the lower end of the fibula, and the common sheath of the two tendons is opened. It not infrequently shows signs of chronic irritation in the shape of excess of fluid or of thickening of the sheath. The tendons are isolated on a blunt dissector, cleared for the space of about 1 in., and this portion of each is removed. After the skin has been sutured the foot is wrenched round with a Thomas's wrench until it is well inverted and the ankle flexed to a right angle. The foot is then kept in this position by means of an external splint and a figure-of-eight bandage.

On rare occasions it may be necessary to tenotomize the tendo Achillis or even the peroneus tertius. The foot must be kept in inverted attitude for three to five weeks, according to the severity of the case, and then the patient may be allowed to walk, wearing a specially modified boot with an outside leg iron to maintain slight inversion. Attention must now be paid to the muscles of the leg, especially the inverters, and also to those of the sole, and massage, tiptoe and inverting exercises must be carried out assiduously. The first question which arises about this operation is naturally with reference to the subsequent union of the peronei. A good portion of the tendons is removed, and the inversion of the foot increases the gap still further. The answer to the question is that there is never the slightest anxiety about the union of the tendons, but that, in fact, there is danger, if the after-treatment is neglected, that they will unite too soon and the condition of spasm relapse. For this reason the exsection is preferable to the simple tenotomy. Every now and then one comes across a case where correction of the eversion seems to involve an amount of strain on the tendo Achillis; possibly these are cases where the tendon should have been divided, but this has not been done. The patient complains of pain running up the line of the tendon, and there is a good deal of thickening of its sheath. Relaxation of the strain upon the tendo Achillis by adding to the height of the heel of the boot is usually sufficient to deal with this complication.

The operation of crushing the musculo-cutaneous nerve was suggested by Mr. Naughton Dunn a few months ago, and has now been performed on seven cases.

An incision 1½ in. long is made a fingerbreadth below and behind the head of the fibula, the deep fascia is incised over the interval between the outer head of the gastrocnemius and the peroneus longus. The external popliteal nerve is exposed lying just under the deep fascia and running into the peroneus longus. It is traced for a short distance into the muscle, and the division into its three terminal branches is found; the musculo-cutaneous branch is then caught and crushed in a pair of Spencer Wells compression forceps. It is important also to catch and crush a small muscular branch to the peroneus longus which enters the muscle high up and is very constant; failure to attend to this detail is followed by relapse of the spasm in less than twenty-four hours. The foot is now wrenched and splinted as before.

Our experience up to the present has been that the patient is able to walk well and without pain at the end of a week, and that the foot can be inverted voluntarily. The peronei are out of action for at least six weeks, and attention to massage and the exercises for the flat-foot can be given at an early date, and the patient can be allowed to walk with a boot and iron. The cutaneous anaesthesia resulting from the nerve crushing is unimportant, being confined to a small area about the size of a crown piece in front of the ankle-joint. So far we have no reason to fear that the peroneal palsy is likely to be permanent; indeed in the case of one boy who has not devoted sufficient attention to his flat feet, the spasm has returned, and he does not walk so well as he did a fortnight after his operation.

Transplantation of the peroneus longus to the inner side of the foot is performed in exactly the same manner as it is for paralytic talipes valgus.

The foot is wrenched into good position first of all. Then the tendon of the peroneus longus is exposed through a small incision on the outer side of the foot, just before it curls round the cuboid, and is divided with a tenotome as it lies in its

groove in this bone. The tendon is again exposed through a second small incision behind the lower end of the fibula. If the common sheath is well opened and the longus tendon well cleared it is often possible to pull it through into the upper wound without prolonging this down to meet the lower incision; it is desirable to avoid connecting the two incisions, if possible, as the long wound produced thereby does not heal at all well; under any circumstances the external annular ligament should not be divided. A subcutaneous tunnel is now made with a curved periosteum detacher, leading from the wound behind the fibula to the inner side of the foot, where a third incision is made in the skin over the scaphoid and is carried down to the bone. The peroneus longus is brought through this tunnel and out through the third incision, and the peroneus brevis is now divided and the wounds on the outer side of the foot closed. The operation is completed by the stitching of the transplanted tendon to the edges of the incision in the periosteum of the scaphoid with one or two silkworm gut sutures, which should take in some of the connective tissue in the neighbourhood. The third incision is now closed and the foot splinted in the inverted position as before. The after-treatment calls for no further comment save that a longer period of rest is required to ensure that the peroneus longus has gained a firm hold upon its new insertion.

Each of these three operations seems to me to have its own advantages. The exsection method is the simplest, and is free from all possibility of awkward complications. The operation book of the Royal Southern Hospital shows that 100 cases were subjected to this operation in a period of twenty months. I am unable to give figures to indicate the results of these 100, but I can state with confidence that the percentage attending the out-patient department for a longer period than three months after the operation is less than ten. The after-treatment must be carried out most thoroughly, and any delinquency on the part of the patient is apt to be followed by relapse of the spasm, as the peronei are thrown out of action for such a surprisingly short time.

The nerve crushing is in an experimental stage; so far we have had no untoward results, and the patients can walk well and without pain at an early stage; in this way the massage and exercise treatment can be begun early, and carried on freely from the beginning without fear of relapse of the spasm.

The tendon transplantation is a fairly extensive and complicated procedure, and I believe that it should be reserved for more severe cases where the deformity is considerable, and where, owing to the length of time during which after-treatment must be continued, there is risk of return of the spasm and consequent failure. In the case of an elderly woman in whom the deformity was marked in both feet I performed the exsection operation in one foot and the transplantation in the other; the latter method met with an earlier and better result than the former.

May I touch for a moment upon the class of case with a rigid osseous flattening of the arch and peroneal spasm? I have noted four cases in which this was associated with considerable bowing of the tibia, and I have come to recognize this as a most difficult kind of case to deal with. In two of them exsection of the peronei was performed twice, and the feet were kept inverted for several weeks, only to relapse as soon as the patients had walked for any length of time, notwithstanding boots, irons, and exercises. I feel that this obliquity of the lower end of the tibia has some influence in preventing the patient from regaining his plantar arch. In the two cases referred to I ultimately removed a wedge of bone from the inner side of the foot, and was able to remodel the arch and obtain for the patients feet on which they are now walking without pain. I have to thank Mr. Robert Jones for the free use I have been able to make, not only of his clinical material, but also of his writings.

PHYSIOLOGICAL SCOLIOSIS.

By Dr. Mark Jansen,

Leyden.

We all know that the human spine has a tendency to bend with its convexity to the right side in its mid-dorsal part. We know this from our scoliotic patients, who mostly have the hump on the right side of the back, and in normal persons we may detect, even through the clothes, that the right shoulder blade is very often more prominent than the left. The low and high dorsal parts, moreover, have a tendency to deflect to the left side. This is confirmed by all statistics on lateral curvature, be they made in England, France, Holland, Germany, Austria, or Switzerland. So the human spine has a tendency to bend in three characteristic curves—a left low dorsal, a right mid-dorsal, and a left high dorsal curve.

If a number of straight sticks are placed vertically on end and pressure be made to bear upon them so that they bend, as many sticks will curve to the left as to the right, and graphical statistics indicating the place and the direction of the flexion will be symmetrical. This difference from the human spine must be the reason why all investigators have intuitively ascribed to physiological causes the tendency of the human spine to form the three characteristic curves, which implies that external forces causing scoliosis act as many times to the left as to the right. Cheselden, the English anatomist, who about a century and a half ago discovered the predilection of the mid-dorsal part to deflect to the right side, ascribed it to the position of the heart on the left. Bichat, half a century later, put it down to right-handedness, and during the last hundred years the balance has been between varied forms of these two opinions. However, apart from the fact that neither inversio cordis nor left-handedness are necessarily attended by an inverse tendency of the spine, both of these hypotheses are untenable; they imply that the right mid-dorsal convexity is the primary one—that is, that in cases of physiological scoliosis, where one or two of the three curves are missing, the mid-dorsal one should be the only one present; in other words, that the mid-dorsal curve by itself—that is, as a single curve—should occur oftener to the right than to the left. However, in Schulthess's graphic statistics we find that the mid-dorsal scoliosis occurs quite as often to the left as to the right.

From Schulthess's graphical statistics drawn up on 1,140 patients we may gather that four clinical forms of scoliosis show asymmetry in their statistics, the statistics of all other forms being symmetrical. The asymmetry appears to be formed by combinations of the physiological curves.

1. The left low dorsal occurs about 100 times oftener than the right low dorsal.
2. The left low dorsal and right mid dorsal about 100 times oftener than those in the opposite direction.
3. The left low dorsal and right mid dorsal and left high dorsal about 80 times oftener than the inverse conditions; and
4. We find that the left total scoliosis occurs 135 times oftener than the right total scoliosis.

The left total scoliosis, it must be observed, very often shows signs of a right mid dorsal curve, and must therefore be considered as a variant of the preceding form (3).

So, if the asymmetry of scoliosis statistics may be considered to be due to physiological forces, and we call the three characteristic curves from below upwards a, b, and c, we must distinguish four clinical forms of physiological scoliosis:

1. A single form (a) of physiological scoliosis.
2. A double form ($a + b$) of physiological scoliosis.
3. A treble form ($a + b + c$) of physiological scoliosis; and
4. The left total $a + c$—that is, $a + b + c$—from which b is missing).

In all forms of scoliosis with asymmetrical statistics the lowest of the three physiological curves thus appears to be present. Hence the lowest of the three physiological lateral curvatures is the primary curve; and in the low dorsal part of the spine must be the asymmetrical physiological force which we are now going to point out.

All muscles of the locomotor apparatus are arranged symmetrically on the skeleton; but the muscles of the diaphragm are attached asymmetrically to the vertebral column. The crura externa and media are indeed arranged symmetrically; but they are only thin bundles. The crura interna, however, which run from the fourth lumbar vertebra up to the first, are strong muscles, and at the height of the twelfth dorsal they both bend over to the left side, so that either all or most of the bundles of the right crus internum cross the mesial plane in order to spread out in the left half of the diaphragm. Therefore every inspiration pulls the twelfth dorsal and first lumbar vertebrae to the left with greater force than to the right.

We have registered the inspiratory movements of the inframammillary regions in rickety children and found

that the left one is regularly pulled inward more deeply than the right: and a 5-year-old child under our observation with a double form of physiological lateral curvature aggravated her left low dorsal at every inspiration, even if she were lifted from the ground by the head. Hence there can be no doubt that the asymmetry of the diaphragm is the cause of the single form (*a*) of physiological lateral curvature.

But it also accounts for the other forms; the stronger pull of the left diaphragm is transmitted through the left lung, which is thus distended with greater force than the right. The apex of the chest on the left side is pulled down with greater force than on the right; and at the same time the first dorsal vertebrae are pulled to the left—in which, by the way, the bronchi take a considerable part. It must be remembered that the two lungs, elastic, distended bodies as they are, are situated in front and on both sides of the spine. It may be known that the sum of their tensions is the cause of its normal mid-dorsal backward curve; and, similarly, the difference in tension between the left lung and the right—that is, the greater tension in the left lung—imparts to the mid-dorsal part a tendency to deflect to the right side. Hence the double $(a+b)$ and the treble $(a+b+c)$ forms of physiological lateral curvature are only different degrees of asymmetrical action of the diaphragm. The left total form of physiological lateral curvature—as has been proved by Scholder, Weith, and Combe in Lausanne—in a considerable measure takes its origin in school, whereas the other forms of lateral curvature exist previously and are only aggravated by school. Hence the left total form is initiated later on in life than the three other forms of physiological lateral curvature—that is, at a time when the spine is less flexible and is, by the asymmetrical pull of the diaphragm, sooner made to deflect to the left than to bend in three curves. Hence the fourth form $(a+c)$ of lateral curvature is due to asymmetrical action of the diaphragm at a later period when the spine and its ligaments have become relatively firm (Fig. 1).

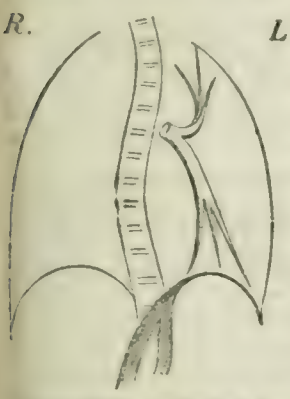


Fig. 1.—Scheme indicating the effect of the asymmetrical traction of the crura interna diaphragmatis on the spine and ribs.

The asymmetry of the diaphragm thus gives a ready explanation of the four forms of physiological lateral curvature. It disentangles the complicated puzzle which the chapter of scoliosis has hitherto presented. Moreover, it explains all other characteristic symptoms of physiological lateral curvature—

1. Why physiological lateral curvature should far more frequently consist of two or three curves than any other scoliosis—in 70 per cent. of the cases it consists of two or three curves, whereas the lumbar scoliosis (although it is situated lower in the spine) has a second curve only in 46 per cent. of the cases.

2. Why physiological lateral curvature is often accompanied by a lordosis in the dorsal part of the spine—the crura diaphragmatis have a component working in a sagittal direction.

3. Why the middle one of the three curves is most liable to enlargement so as to become the outstanding deformity. Although it has been initiated by the difference in strength between the two halves of the diaphragm, it gradually comes under the influence of the sum of the tensions in the two lungs.

4. Why in the male the high dorsal curvature is present oftener than in the female. In the former diaphragmatic inspiration is stronger.

5. Why children with severe rickets—though more in danger of getting scoliosis in general—are less often affected with physiological lateral curvature. The diaphragm pulls the flexible ribs in an inward direction without its tendinous part being much lowered, and thus without greatly affecting the vertebral column.

In other words, the flexibility of the ribs in severe rickets diminishes their resistance to the pull of the diaphragm, and thus diminishes the possible effect on the spine.

Thus the asymmetry of respiratory traction on the spine explains all phenomena of physiological lateral curvature. We should therefore speak of respiratory scoliosis and its four forms: the single (*a*), double $(a+b)$, treble $(a+b+c)$, and left total form $(a+c)$ of respiratory scoliosis.

The question arises, Why should the diaphragm be asymmetrical? Vierordt has proved that the left lung is far less easily distensible than the right; and the same holds good of the heart with respect to that part of the right lung which lies symmetrically to it. Thus, the inspiratory distension of the contents of the left half of the chest requires greater strength. So the arrangement of the crura interna in the left half of the diaphragm must be considered to be an adequate one, and is probably dependent on the left position of the heart.

It is known that in quadrupeds the heart rests on the sternum near to the mesial plane, and has its axis almost parallel to that of the trunk. In apes its base descends and its apex moves to the left in proportion as the biped gait is adopted. Thus the tendency towards asymmetry in the human spine is probably the consequence of the biped gait. Respiratory scoliosis thus probably stands on a line with right-handedness, which functional asymmetry is also considered to be the result of the left position of the heart and the consequent difference in blood supply between the right and left hemispheres of the brain.

The above considerations furnish the ground why we should forbid parents to make the children sit before they can walk. As long as the spine is tender and flexible the effect of the asymmetrical traction of the diaphragm is enhanced and accentuated by the power of gravity. After the first months of lying on its back the child should be allowed to lie on its ventral parts. It will lift the head and strengthen the muscles of the back. It will learn to crawl and creep before it stands. Thus the child should get on to its legs by its ventral parts, not by its posterior parts. The phylogenetic process of the development of the human gait should be repeated ontogenetically. By the adoption of this principle in the education of our children respiratory scoliosis, which has hitherto amounted to one-third of all cases of scoliosis, will, no doubt, largely be reduced.

IMPERFORATE ANUS WITH PERINEO-SCROTAL ORIFICE.

By George H. Edington, M.D.Glasg., F.R.F.P.S.Glasg.,
Assistant Surgeon, Western Infirmary; and Extra Honorary Surgeon, Royal Hospital for Sick Children, Glasgow.

Writing on imperforate rectum, Sir Charles Ball[1] considers that "it appears to be quite useless to attempt from published cases reliable statistics as to the relative frequency of the various forms of congenital malformation. Probably a considerable number of infants die annually from intestinal obstruction the result of imperforate rectum, without the exact condition having been ascertained." While this may be true as regards the rectum, it is unlikely that imperforate anus (associated or not with rectal defect) will be overlooked, and we are able with some certainty to form an opinion as to the relative frequency of the different malformations of this orifice.

Cases of anal malformation are not of very great frequency relatively to the total births,[2] but in practice they occur sufficiently often, and are varied enough to warrant a classification of the different varieties. It is not my intention here to go into the various forms which the malformation may take. I wish to describe one of the rare varieties which recently came under my notice.

Baby R., a male infant aged 2 days, was seen on January 31st, 1911, with a history of imperforate anus, but with the napkins showing the stains of meconium.

Examination showed that the anal depression was shallow and was not in normal communication with the bowel, and from it arose in the median line a nodulated ridge of some dark

(Fig. 1). Anteriorly, this ridge was continued into the perineal raphe. The raphe, from the edge of the anal depression forwards to the back of the scrotum, was translucent, and of a blue colour, suggesting a tube containing meconium. On it, just behind the scrotum, there was a small black spot, in size rather less than the head of a pin, and although there did not seem to be any actual orifice, it seemed probable that it was from this point that meconium had escaped.



Fig. 1.—Appearance of parts when first seen.

Stripping the raphe backwards towards the anal depression with the finger emptied it, and caused the blue colour to disappear. On lifting the finger the colour reappeared from behind forwards, in a way which resembled the rising of the mercury in the thermometer. The raphe was cut across about its middle, and a probe passed along it backwards and into the rectum. The whole raphe was then excised back to the anterior edge of the anal depression, and with some difficulty a probe was passed through the orifice here and into the bowel. The proctodeal ridge was then split, and the rectal canal opened up on the probe. The mucous membrane was brought down and sutured to the skin, and a small rubber tube stitched into the canal.

The child was sent home well in about a week's time.

Microscopic sections, longitudinal and transverse, were made of the tissues removed, and showed that the raphe was tunnelled by a canal, the wall of which was composed of firm fibrous tissue and lined with stratified squamous epithelium. The anterior extremity of the canal communicated with the surface, the epithelial lining being continuous with the epidermis of the raphe. The seat of communication corresponded with the black spot noticed at the time of operation.

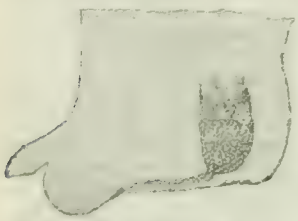


Fig. 2.—The parts in section (diagrammatic).

I lost sight of the patient; but I recently learnt from his mother that he had died at the age of 8 months from obstruction of the bowel. The cause of obstruction was a "lump of flesh" growing over the anus, and appearing first when the child was about 2 or 3 months old.

Remarks.

This case raises several questions. Of these the first is whether the abnormality is anal or rectal. The microscopic sections do not show any structure corresponding to a sphincter; but the lining membrane of the abnormal perineal canal is clearly a continuation of the epidermis. Tuttle[2] postulates, in the case of anal abnormality, the presence of a sphincter, *plus* pavement epithelium extending upward in the abnormal opening. I think, however, that we may rightly assume, even in absence of a sphincter, that we have here an example of anal malformation. The absence of a sphincter is not surprising. As already mentioned, there was a normally situated, though poorly developed, anal depression. This would properly be the seat of development of the sphincter.

The next question is the relationship of the abnormal canal to embryonic structures. Its subcutaneous situation, together with the presence of the raphe immediately over it, points to its having been formed by the fusion of the external genital folds. The continuity of the raphe with the median ridge in the proctodeal depression indicates that the union of these folds has been excessive, and has extended backwards over the proctodeum. The presence of the ridge, however, does not necessarily imply complete imperviousness of the proctodeum. It is well known that in such circumstances perviousness, though incomplete, may exist, and examples have been recorded by various observers. Such have also been figured by Ball and Tuttle.[3] In these cases meconium escaped, and subsequently faeces, through an aperture on one side of the ridge. In the present case there was a proctodeal opening, which was situated in the ventral part of the depression, and not median, so that it was closed by the raphe. From it the subcutaneous canal extended forwards on the perineum, to open at the back of the scrotum. The canal was, however, too small to be of practical use, and almost complete retention of meconium had resulted.

It is not possible to be certain as to the development of the malformation; but I would suggest that there had been perforation of the ventral portion of the proctodeum with a subsequent excessive fusion of the external genital folds, and that the epiblast of the inner surfaces of these folds had, so far as the perineum was concerned, persisted to form the lining membrane of a subcutaneous canal. This canal had remained open at its anterior end, and had communicated behind with the opening of the proctodeum.

References.

[1] Ball, *The Rectum*, London, 1908, p. 36. [2] Tuttle, *Diseases of the Anus, Rectum, and Pelvic Colon*, London, 1903, p. 47. [3] Ball, loc. cit., pp. 43 and 46, and Tuttle, loc. cit., p. 53.

A RECENT CASE OF LORENZ'S OPERATION, DEMONSTRATING BY X RAYS THE DEVELOPMENT OF THE ACETABULUM.

By W. S. Haughton, M.D., B.Ch.Dub.

Any one who makes a close and constant study by *x* rays of the changes in bone structure which accompany varying conditions, such as the growth of young bones, or the repair following a fracture, or the buttress lamellae formation which strengthens the dangerous curves of rickets, cannot help being struck by the thought that these changes are "reflex phenomena," and are the direct result of new stimuli, which may in a measure be considered as "physiological."

In the normal growth of children and young animals, it is a well known fact that the development of any structure is largely determined by the amount of functional use it gets. This amounts to a general rule, and it is not confined to the early period of life only. In adult life excessive use will at first lead to hypertrophy, and a corresponding disuse to atrophy.

There is abundant and unmistakable evidence in the *x*-ray appearances of bone to prove both aspects of this general law. For instance, if we take the growth of the lamellae of bone: under normal conditions we have the well-arranged mechanical design in which the lamellae of the bone may be divided into two definite systems, one of which is designed to act as "compression lamellae," and the other as "tension lamellae." The number and thickness of these can be shown to be approximately proportional to the activity of the limb in question, and its functional activity may then be expressed in terms of "lime salts."

If we examine the repair of bone following a fracture, especially one which has united at a faulty angle, *x* rays show us new lamellae springing into existence, to act as supports or buttresses at any weak points. These new lamellae must arise in response to forces acting along the new lines of "thrust" in the bone, created by alteration in its axis, and as such may be regarded as a "reflex deposition" of lime salts in response to new stimuli. This is eminently physiological in its character, and may be compared to the growth of bone in young animals.

If we turn to the "abnormal lamellae" developed in the rickety changes in long bones, where normal curves become exaggerated, we again find new lamellae developing at the summit of these curves, if the child is permitted functional use of the limbs. Borrowing the language of the engineers, and considering a long bone as a "beam under strain," these lamellae on the convex side of the "neutral axis of the beam" are of course in tension, and those on the concave side in compression. Thus we see the strengthening and growth of the bone proceeds along lines well defined by mechanics, and that it is the physiological result of functional use in each of the three instances mentioned above.

Lorenz has fully realized all this in his splendid conception of the "bloodless method" of dealing with "congenital dislocation of the hip-joint," and the principles which underlie his method are another example of the physiological development of bone as the result of functional use.

I need not describe the technique of the "Lorenz method" to members of this Section, who are all familiar

with it. But I would just call attention to the fact that, broadly speaking, it may be divided into two stages, the first of which is passive and the second active, so far as the child is concerned.

During the first or passive stage, the child remains three to six months in plaster: in this period the efforts of the surgeon are directed, first, to replacing the head of the femur in the normal acetabular site, and then maintaining it there. Little growth of acetabular bone takes place in this period, unless the child be unusually active in its plaster case.

The second stage of Lorenz treatment is properly described as the active stage; because in it the surgeon not only permits, but actually encourages, the functional use of the limb, by getting the child to paddle about on the floor on a suitably sloped stool. The thigh bone is, of course, restrained at a proper angle, and held up to its work on the acetabulum by a plaster case or other appliance. During this stage the surgeon just exercises sufficient restraint to maintain the good position which he obtained in the first instance. This stage of functional use is the period of physiological activity. And it is in this stage that we may expect bony development by deposition of lime salts. And it is actually in this period that we find the best *x*-ray evidence of growth taking place in the ossific centre for the head of the femur, and in the bony elements forming the acetabulum.

These skiagrams (handed round) demonstrate the development of the hip-joint, and have been selected from a number taken in a case of Lorenz treatment recently under my care. They represent certain well-defined stages in the treatment.

The first was taken just before treatment commenced in a child of 22 months. The left hip was affected. The head of the femur is seen in the usual position dislocated upwards away from the acetabular site. The shortening of leg measured 1 in. The skiagram shows well the elevation of the gluteal fold on the affected side. There should also be noted the diminutive size of the ossific centre for the head of the femur, and the apparent shortening of the neck, due to anteversion; also the flattened, deficient acetabulum.

In the other skiagrams the following points deserve attention:

(*a*) The relative size of the ossific centres for the head of the femurs.

(*b*) The relation and approximation of head of femur to centre of acetabulum.

(*c*) The backward ossification and subsequent development of bone in the cartilaginous plate at the bottom of the acetabulum.

(*d*) The backward development, and subsequent ossification shown in the upper half of the acetabulum.

(*e*) The angle between the surface of dorsum ilii and upper part of acetabulum. This is approximately a right angle on the good side, but obtuse on the affected side, and gradually approximating to a right angle as treatment proceeded.

One of the skiagrams records the condition reached after six months of treatment, and marks the transition from the passive to the active stage—that is, from bed to paddling about on the "sloped stool." This child was very active and took much exercise in bed, while in the plaster. This skiagram shows the head of the femur reduced to correct position opposite the centre of the acetabulum. Points to be noted are the growth in relative size of the ossific centre for head; also the growth of the upper half of socket, which, however, is still deficient and containing hummocks of cartilage; likewise the development of angle between dorsum ilii and socket.

A third skiagram represents the progress reached after twelve months' treatment, the latter six being active, in plaster on a sloped stool, with the leg gradually approaching the vertical position. The head and all parts of the socket have advanced in bony development, and the head is now racing its fellow of the opposite side for equality in size.

A fourth skiagram shows the condition fifteen months after Lorenz's operation, the last three months being spent in an appliance of poroplastic and steel to limit motion of hip during walking, which was freely encouraged, careful massage and passive motion of hip being employed daily.

This last skiagram shows the ossific centre for the head developed by treatment almost equally in size with the normal; the head more closely approximated to pelvis in the normal manner: the upper half of socket extending a more perfect arch of bone over the head, by functional use in carrying the weight of the body; consolidation of this bony arch; the angle between the dorsum ilii and upper part of socket has almost reached the normal right angle; and, finally, the bony development of the cartilaginous plate at the bottom of the acetabulum is now, with its fellow of the opposite side, racing in a "dead-heat" for the normal.

These skiagrams help to emphasize the value of *x* rays in appreciating at its true worth this splendidly conceived treatment of Lorenz.

DISCUSSION.

Dr. MURK JANSEN (Leyden) said: In accordance with what German authors have almost unanimously taught these forty-four years, Dr. Haughton conceives the lamellæ in human bones to be due to *traction* (as on the convex side of femur neck) and to *pressure* (as on its concave side). From a few hundreds of sections made through the various bones of the body we have been led to conclude that they are the result of pressure only—namely, the pressure exerted by gravity and muscle action. In coxa vara the lamellæ on the convex side of the upper femur end become thinner, or even disappear, instead of becoming thicker, as must be expected, according to Cullmann-Meyer's old theory. In ankylotic hip-joints the lamellæ gradually disappear altogether. There, as in ankylotic knee-joints, the compact tissue of the neighbouring shafts of the long bones may be seen to continue through—and replace—the cancellous tissue. Thus the trabeculæ on the convex side of the upper femur end should be considered as the result of pressure exerted by muscles which move the femur in the hip-joint. Bone substance, once formed, when submitted to traction only, gradually disappears.

TUBERCULOUS INFECTION AND TUBERCULOUS DISEASE IN INFANCY AND CHILDHOOD.

By C. PAGET LAPAGE, M.D., M.R.C.P.,
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DURING recent years, chiefly as a result of the introduction of tuberculin and of the tuberculin tests and of careful pathological and experimental investigation, it has been shown that tuberculous infection and tuberculous disease are far more common than had been supposed.

To make a distinction between tuberculous infection and tuberculous disease may be wrong pathologically, but clinically some such distinction is necessary. If we are to have a clear conception of tuberculosis, we must recognize the difference between an infection that has been successfully resisted and shut off and active disease which is causing general symptoms, however slight.

The work of Hamburger, von Pirquet,[1] Mantoux,[2] McNeil, Shennan,[3] and others has shown that tuberculous infection in the poorer classes of our large towns, where opportunity for infection is abundant, is almost universal, and, further, that much of it occurs during childhood. Again, pathological evidence shows that latent tuberculous disease is by no means rare.

This paper is an attempt to summarize the results of three years' work on tuberculosis in the out-patients' department and ward of a children's hospital. The methods adopted can be conveniently divided into four heads: (1) Pathological, (2) the cutaneous test, (3) the *x*-ray examination, (4) the general physical examination.

Post-mortem Evidence.

Taking first the *post-mortem* evidence based on the valuable and complete series of records made by the pathologist, Dr. Mair, during the last six years: About 50 per cent. of all cases examined *post mortem* showed macroscopic and easily demonstrable tuberculous lesions. But figures drawn from hospital statistics must not be taken as an indication of the general nature of tuberculosis in children, because in-patients are necessarily a selected class of case.

Statistics which give more correctly the general incidence of tuberculosis in childhood are easy to find. For instance, Ganghofner[4] of Prague found that, of

autopsies on children dying of causes other than tuberculosis under 1 year, latent tuberculosis was present in 7.1 per cent., from 1 to 2 years in 16 per cent., and from 6 to 8 years in 26 per cent. Morse[5] in America found that under 15 years tuberculosis was present in 25 to 35 per cent., and over that age in 65 to 75 per cent.

Evidence of a similar nature abounds all over Europe and America.

The most striking point shown by the *post-mortem* examinations on tuberculous children at Pendlebury is the frequency of affection of the glands.

Either the abdominal or the thoracic, and often both, were affected in 99 per cent., if enlarged glands were counted as tuberculous, or in 88 per cent. if caseous glands only were counted.

It is interesting to note that the abdominal glands were affected in a larger proportion of cases than the thoracic (about 10 per cent. more often). Other observers (Guthrie,[6] Shennan,[7] Still[8]) have found that the thoracic glands were more often affected, and perhaps local conditions may explain the difference.

In 30 per cent. of the cases the disease seems to have been primarily abdominal.

There was often disease of the glands, with no accompanying macroscopic tuberculous disease of the organs or areas drained by those glands; and, further, in many cases, although there was disease of the organ with accompanying glandular disease, yet in other parts the glands, and glands alone, were affected.

This evidence points to the probability of the spread of tuberculosis from one set of glands to another, and throws doubt on the theory that tuberculosis of the glands is always secondary to a lesion in the area drained by those glands.

The Cutaneous Tuberculin Test.

The tuberculin tests can, I think, be held to be specific, because experimental and pathological evidence shows such a close correlation to their results.

The interpretation of the results is not so easy; a reaction can be held to show that the tissues have been in contact with the tuberculo-toxin, but the degree of the reaction depends largely on the state of the resisting powers at the time.

Before attaching any importance to a reaction it must be noted: (1) That the reaction disappears temporarily during acute intercurrent disease such as measles; (2) that advanced cases in whom the tissues are saturated with tuberculin often give no reaction; and (3) that faulty technique, such as using too weak tuberculin or inefficient means of application, may be responsible for errors.

With these exceptions a reaction means that infection has occurred, but does not necessarily mean that the child is ill with tuberculosis. A good reaction often means high resisting powers, and many such cases are those with disease limited to the glands or serous membranes and in whom the general prognosis is good. Therefore a reaction is not necessarily of bad omen, and may be of good omen as indicating a successful power to resist tuberculosis.

On the other hand, an absence of reaction may be of bad omen; though in young children it indicates an absence of tuberculous infection.

One thousand children attending my out-patient department and in my ward at the Manchester Children's Hospital during the last three years have been tested by the cutaneous tuberculin test with 25 per cent. tuberculin. (I am now using undiluted tuberculin as recommended by McNeil[9]).

During the age period 0-2 years, 32 per cent. of all cases tested, and 14.7 per cent. of those entirely free from signs, symptoms, or history reacted; the frequency steadily increased with increasing age until during the age period 10-14 years, 60.8 per cent. of all cases and 51.2 per cent. of those entirely free from signs, symptoms, or history reacted.

It must be pointed out that, though these figures refer to the hospital type of case, they are probably below the real level, because there are difficulties of observation in out-patients, and because only 25 per cent. tuberculin was used. On the other hand, hospital children are ill children, and a larger proportion of them show tuberculosis than do normal children.

[illegible], Hamburger and Monti[10] at Vienna, at a hospital for acute infectious diseases, obtained a reaction in at least 50 per cent. of the children. McNeil[9] in hospital children under 1 year found a reaction of 14.1 per cent., and this frequency rose with increasing age until from 11 to 14 years 55 per cent. showed a reaction. These results are practically identical with mine.

McNeil[9] also, in 170 industrial school boys, from whom active tuberculous disease had been eliminated, found a reaction in 59.4 per cent., their ages varying from 6 to 16 years.

Evidence from the X Rays.

I have been able to compare my results as regards pathological and tuberculin test evidence with figures published by other observers, but I have not been able to find a detailed analysis of a series of cases examined by the *x* rays, because their symptoms pointed towards tuberculosis, but did not lead to a definite diagnosis. In all some 150 cases were examined, most of them being of the indefinite type; a few cases of definite tuberculosis and a fair number of children attending the hospital for diseases other than tuberculosis and not giving any history or signs to point to that disease were also examined. Cases with a history of exposure to house infection were not regarded as free.

The examinations were all made by Dr. Bythell, skiagrapher to the hospital, and myself; he agrees with the conclusions expressed here and states very similar ones in his book.[11] The examination is, I think, quite reliable, and it is extremely simple and easy to perform. To ensure freedom from bias the skiagrapher should not read the report of the physical examination until after he has given his opinion of the screen picture. After he has given his report he can, while still looking at the chest, discuss and examine for special features with the physician. The evidence of these examinations is very striking, and is, in my opinion, another important link in the chain of evidence that goes to show the extreme frequency of tuberculous infection in childhood.

Of 120 cases 29 were negative, 23 suspicious, and 68 positive. The mediastinal glands, as distinguished from the bronchial, showed 100 negative, 5 possible, and 5 positive. The roots of the lungs, including lesions of the bronchial glands, showed 34 negative, 18 suspicious, and 68 positive. The apices showed 112 negative and 8 positive.

In the following table the relation between the clinical examination and the *x*-ray examination is shown. A clinical examination called negative meant that the patient showed neither signs, symptoms, nor history of tuberculosis, and a clinical examination called suspicious only meant that the patient showed general symptoms and perhaps a history of infection. Cases showing localized physical signs or bacilli in the sputums were classed as positive. It must also be remembered that the *x* rays only show intrathoracic tuberculosis, and this may account for apparent discrepancies.

Clinical Examination.	Total.	*X*-ray Positive.	*X*-ray Negative.	*X*-ray Suspicious.
Negative	15	4	11	0
Possible	15	4	8	3
Suspicious...	50	27	11	12
Probable	10	6	2	2
Positive	30	27	2	1

56.6 per cent. of the children examined because they showed indefinite symptoms on clinical examination were found to have intrathoracic tuberculosis, healed or active, and the *x* rays often revealed unsuspected areas of disease.

26.6 per cent. of those free from signs, symptoms or history were found to have tuberculous lesions. The disease was nearly always at the roots, either as disease of the bronchial glands or of the lung tissue, and the apices were very seldom affected.

Thus in children, pulmonary tuberculosis usually starts at the roots and spreads therefrom.

The frequency of intrathoracic glandular tuberculosis is now well known, but it is the bronchial glands that are most often affected, and the space in front of the spine, which is held to represent the mediastinum, can be seen

to be clear in most cases. Therefore mediastinal glands large enough to cause percussion changes must be regarded as rare. Knowing, then, that tuberculosis nearly always starts at the roots, we can appreciate the difficulties of diagnosis from ordinary physical examination' and I have been impressed with the difficulty of diagnosing early disease which may be quite evident on the screen. The *x* rays are therefore of great value in clinching the diagnosis. Further, they very often distinguish active from passive disease.

Summary.

In the light of such results as these—and I could quote many more convincing sets of figures concerning the pathological and tuberculin test evidence—our ideas of diagnosing tuberculosis in childhood must change, as indeed they have been changing for some years.

We must not wait even for definite physical signs, far less for bacilli in the sputum. We must not look to the apices, and even a negative physical examination of the roots must not be held to exclude intrathoracic disease. Neither must we wait for the appearance of masses in the abdomen, nor of fluid before diagnosing abdominal tuberculosis.

If we are to succeed in our treatment we must use the special methods of diagnosis, in conjunction with the evidence from the history and physical examination. I by no means wish to underrate the value of the physical examination; on the contrary, in conjunction with a careful history, it forms our only reliable basis for selection. But our suspicions should be aroused by what are slight general symptoms—as cough, loss of weight, irregularity of temperature, rapid pulse and pallor, and especially by a history of infection.

Perhaps I might mention that pallor is by no means always associated with anaemia, many cases of marked pallor showing a good percentage of haemoglobin and red blood corpuscles; possibly it is a want of tone of the blood vessels or the skin.

Tuberculous infection is therefore almost inevitable in large towns, and it must often occur in childhood without giving rise to illness sufficiently pronounced to attract attention; or the indefinite illness, if noticed, is put down to some other cause, such as rheumatism or underfeeding. Occurring at an early age tuberculous infection often leads to fatal results, but later in childhood it may lead only to a temporary debility and then become quiescent. Such quiescent disease, which can only be diagnosed from the history, the *x*-ray examination, and the tuberculin test, is not infectious, and since it is so widespread it is not necessary to notify every case that gives a reaction to tuberculin. To do so would be to overwhelm those engaged in preventive measures and to stultify their efforts.

Tuberculous disease in children is very different from that in adults. All through childhood it tends to become generalized, and a large proportion of the deaths are due to tuberculous meningitis. The glands are very often affected, and the disease may make considerable progress in them before it spreads to other parts or gives localizing symptoms. Therefore we must not look for definite physical signs before making a diagnosis of tuberculous disease. We must rely on the history, the general symptoms, and the special methods of diagnosis if we are to begin treatment early.

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A SYSTEM OF PRINTED ANAMNESIS QUESTIONS FOR CHILDREN OUT-PATIENTS.

By F. C. EVE, M.D.Cantab., M.R.C.P.Lond.,
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A YEAR ago I was oppressed by the monotony of the limited number of questions which it was necessary to ask the parent at children's out-patients.

To avoid this I devised the following scheme of anamnesis questions to be asked by the nurse. All questions are so couched as to be answerable Yes or No. If the answer is Yes, the nurse underlines that question in black ink, which shows up clearly on the red print.

Continuation sheets are used which prevent any writing on the back of papers. This should always be avoided as involving confusion of sequence and dirty papers.

The paper has three subdivisions, the first applying to all children, and the other two being filled up in cases of infants in arms and tonsil cases.

After one year's trial of these forms, I have noticed only three questions which I should like to add if there were room—that is, inquiry as to faints, bilious attacks, and worms—but the mother is unlikely to forget the latter.

The advantages of these forms, which I should now be very loth to dispense with, are: (1) More complete histories than otherwise possible; (2) the mother has read over the questions and has prepared her answers (or should have done); (3) great gain of speed; (4) the doctor knows exactly where to glance for his information.

The system is, of course, inapplicable to the multifarious diseases of adults, though, perhaps, it might be suitable for gynaecological cases.

The limited number of questions which have thus been found to embrace the routine diseases of childhood is in itself instructive.

No. Day of Attendance. If from the Country State Village and Doctor.

Name. Age.

Temp.

Date.

What are the CHIEF troubles you wish your child cured of?

How long?

Any PAINS? In Head, Chest, Body, or Limbs? and for how long?

If DIARRHOEA, how many motions a day? How long?

Any VOMITING? If so, how long has it lasted?.....weeks or days.

Any COUGH? " " " .....weeks or days.

Any loss of Appetite? " " .....weeks or days.

Much loss of Flesh? " " .....weeks or days.

Much loss of Sleep? Any night terrors? Is it languid?

Does it generally want much opening medicine, or little, or none?

Is there any CONSUMPTION amongst the child's relations?

INFANTS require these further particulars:

Is it breast-fed? Every.....hours, or irregularly?

Is it bottle-fed? Every.....hours, or irregularly?

What do you put in the bottle?

Any solid food given?

Are the MOTIONS unhealthy? Very Offensive? Any Curds? Slime? Green? Much Wind? Blood?

Is it ravenous? Always crying? Teething?

Is it taken out for an airing every fine day? or.....times a week?

If a Mouth-breather or School TONSIL CASE:

Is the child troubled with snoring? Frequent Colds?

Frequent sore throat? Deafness? Running Ears?

(*The above symptoms will be noted by the Nurse; any further symptoms must be told to the Doctor.*)

[*Space for doctor's notes.*]

DATE.	PRESCRIPTIONS.	PROGRESS.	WEIGHTS.
year			

The following printed leaflet is handed in the waiting hall to the mothers of new patients:

KINDLY READ THIS AT ONCE.

Mothers of new patients are requested to read through the questions printed inside their books at once.

Think out the answers carefully, so as to be ready to reply without wasting valuable time.

If you don't, you may lose your turn.

When it is your turn next to go before the Doctor, take care:

1. To have the child's clothes all ready to slip off the chest and body.
2. When your bell rings step briskly across to the Doctor's chair.
3. Don't make him have to repeat his questions.

Remember that 100 people may suffer for any time you may waste.

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

LANDEL ROSE OSWALD, M.B., President.

DISCUSSION ON THE PSYCHOSES OF THE CLIMACTERIC.

OPENING PAPERS.

I.—R. PERCY SMITH, M.D., F.R.C.P.

THE psychoses of the climacteric—that is, of the period of life in women at or about the time of cessation of menstruation and termination of the reproductive function—form an important group of cases. I do not intend here to discuss the question whether there is a "climacteric" in men.

According to the statistical tables of the Lunacy Commissioners for England and Wales, published in their sixty-fifth annual report to the Lord Chancellor, the climacteric period is given as a cause or associated factor in 8.2 per cent. of all the cases of female patients admitted to public and private asylums and registered hospitals in the years 1907, 1908, and 1909. When division is made into the two classes of private and pauper or rate-paid patients, it is found that mental disorder at the climacteric exists in a larger proportion in the private than in the pauper class, the figures for the former being 11.2 per cent. of admissions and for the latter 7.8 per cent. It is also an interesting fact that in the private class the percentage of admissions of climacteric cases, namely, 11.2 per cent., is considerably larger and, in fact, nearly double that of senile cases, which is given as 6.3 per cent., whereas in the pauper class the percentage of admissions of senile cases is 1 per cent. higher than that of climacteric cases, the latter being 7.8 per cent., as compared with 8.8 per cent. of senile cases.

This does not necessarily imply that there is a smaller proportion of cases of senile insanity in the private class, but no doubt is largely accounted for by the well known fact that there is in the poorer class a tendency for senile cases to be sent to asylums more readily than in the private class, in consequence of the burden which a patient who has ceased to be a wage earner, and for whom the expense of special care at home cannot be afforded, entails on the family. In the private class a senile patient can be more readily provided for and nursed at home. When the two classes are taken together the percentage of senile cases (8.5) is slightly higher than that of the climacteric cases (8.2).

From the greater incidence of climacteric cases in the private class it would appear that there is a factor at work which does not operate in the pauper class, and in my opinion this is to be found in the fact that in many of the former unfulfilled hopes, unemployment with much time for introspection and for dwelling on the symptoms connected with the change of function, consciousness that the prime of life has passed, and that henceforth the individual is entering on the downward slope of life, lead to morbid thoughts and the development of a psychosis.

It is interesting that of 1,871 cases of insanity in women [illegible] Hospital in the eleven years 1885 to [illegible] which I have notes and which passed [illegible] observation and care, the number of cases in [illegible] climacteric was considered to be a cause or [illegible] factor amounted to 118, or 6.3 per cent. of the [illegible].

[illegible] to all patients of the private class the [illegible] why they should show a much smaller [illegible] than appears in the whole [illegible] marized in the tables of the [illegible]ers. It should be said, however, that [illegible] Bethlem Hospital form rather a special [illegible] a very large proportion of them being scantily [illegible] with [illegible] goods come from the class [illegible], such as governesses, school [illegible], [illegible], musicians, artists, [illegible] nurses, whom the climacteric finds already provided with a métier in life, and the necessity of earning a living, and would, therefore, have less time for introspection and sitting with their hands folded.

Social Condition.

When we consider the civil state of climacteric cases admitted to asylums it will be found that statistics show a much higher percentage of married women and widows than of single women. In the *Journal of Mental Science* for April, 1894, my former colleagues, Dr. Edwin Goodall and Dr. Maurice Craig, published statistics relating to 102 patients at Bethlem Hospital and 120 at Wakefield Asylum, showing that of the former 42.1 per cent. and of the latter 21.5 per cent. were single women. In addition to my 118 Bethlem Hospital cases I have in the last fourteen years seen 101 climacteric cases in consulting practice, of whom 34.5 per cent. were single women. It would seem, therefore, at first sight that climacteric insanity is much less likely to occur in single women than in those married or widows, and specially so in the pauper class. But it appears by the tables of the Commissioners that, whereas in the general population in the decade from 45 to 54 there is 1 single woman to about 6 married or widows, the proportion rises to 2 to 5 in cases of climacteric insanity. The conclusion, therefore, is that, taking all classes together, single women are more likely to break down at the climacteric than married women or widows, although the actual number of occurring cases is greater in the latter.

Age Incidence.

The age at which the menopause occurs varies greatly in different women. Among my Bethlem Hospital cases was one woman in whom the catamenia ceased spontaneously at 38 and another at 39 after oöphorectomy. Among those occurring in private practice was one of the age of 38 who had ceased to menstruate for two years, and in whom the "change" was said to have begun three years before that; another who broke down with climacteric beginning at 38½. At the other end of the scale may be mentioned, among others over 50 years of age, one who had ceased to menstruate at 52, and who subsequently had an attack of mental depression every year until she came under observation at 61; another in whom the menopause occurred at 54 and was followed by mental depression, and a third in whom the menses were still occurring irregularly at 59.

Of great interest are the cases in which the menopause came on early as the result of operation. In addition to the one mentioned above among my Bethlem Hospital cases I have seen the following in private: One at 34, after removal of ovaries for tumour; one at 38, after ovariotomy 3½ years before. In other cases insanity has supervened after operation at a time when the menopause might perhaps have been expected shortly, as, for example, one woman of 47 in whom double ovariotomy had been done five years before; one of 51 whose uterus had been removed four years before by vaginal hysterectomy for severe haemorrhage, ovaries not removed; one of 49, whose menses had ceased since excision of the uterus and one ovary three years before; one of 45, whose uterus and ovaries had been removed five years before; and one of 47, whose ovaries had been removed five years before.

The average age of my private cases has been 48.9, as compared with Goodall and Craig's 46.7 for Bethlem cases and 47.5 for Wakefield Asylum cases.

Heredity.

In my 101 private cases I have found a heredity of insanity, neuroses, alcoholism, and drug habits in 58 per cent., a rather larger proportion than in the figures given by Goodall and Craig. In 6 cases, in addition a child of the patient had either broken down mentally before the mother or had been congenitally imbecile. In 8 per cent. there was a family history of alcoholism either direct or collateral.

It is of course much more easy to obtain a family history in private than in pauper cases, and the above figures, compare with those given by the Commissioners from all institutions in England and Wales, by which it appears that out of a yearly average of 655 first attack cases admitted where the climacteric was assigned as a cause, in 29 per cent. was there associated a heredity either of insanity, epilepsy, neurosis or alcoholism.

Correlated Factors.

According to the same tables in 39 per cent. of the cases the climacteric was assigned as a cause without any correlated factor, but in 19 per cent. there was mental stress either sudden or prolonged, and in 7.6 per cent. the patient was alcoholic. Of my 101 cases in private 6 were alcoholic and 3 had drug habits.

Previous Attacks.

No figures are given by Goodall and Craig as to the frequency with which the patients had previously suffered from insanity, but in going through my 118 Bethlem Hospital patients (which cover the cases they summarized) I find that in 41, or 34.7 per cent., there had been one or more previous attacks, and in my 101 private cases I find a percentage of 33 of previous attacks. In many of these the previous attack had been at some critical period.

The following are instances of this:

Case I.—First attack at 17; second attack at 35, puerperal; third attack at 52, beginning within a year of the menopause, hypochondriacal melancholia; recovered.

Case II.—First attack sixteen years before, puerperal; second attack after husband's death; third attack at 49, catamenia ceasing, melancholia; recovered.

Case III.—First attack at puberty; second attack at 50, three months after menopause, melancholia, suicidal; recovered.

Case IV.—First attack after love disappointment; second after father's death twenty years ago; third at 47, catamenia ceasing, melancholia.

Case V.—First attack fifteen years ago, puerperal; second at 49, catamenia ceased 5 months, melancholia.

Case VI.—First attack at 17, recurrent depression since, at 49 melancholia with self-accusation and delusions of persecution.

Case VII.—First attack at puberty; a second attack later; third at menopause at 48, simple melancholia; recovered.

In many of the others there had been one previous attack or recurrent attacks of depression or excitement or alternating states, so that the case might be classed in the "manic-depressive" group.

With regard to the question as to whether insanity occurring at the climacteric should be regarded as a special form or may, at any rate in many instances, be merely conditioned by the fact that a mind which has previously been disordered from one cause or another is likely to give way again at an epoch when the nervous system is specially liable to be unstable, it is important to take note of Professor Kraepelin's altered views on this subject.

It is well known that he has hitherto limited the term "melancholia" to cases occurring at the climacteric and the pre-senile period of life. In the eighth edition of his *Psychiatrie* (vol. ii. p. 534, published in 1910) he refers to the fact that a further investigation of his cases of melancholia led to the conclusion that in many instances the patient had had other similar attacks, often abortive or at long intervals, and that many of those regarded by him as already permanently damaged had recovered after long periods. He expresses himself, therefore, as no longer able to ascribe an independent importance to his cases of melancholia in the former limited sense.

In vol. i. p. 115, referring to the influence of the climacteric, he says: "Dahin gehört vor allem das manisch-depressive Irresein das nicht selten in dieser Zeit erst einsetzt." He recognizes, therefore, that cases occurring at the climacteric are often instances of manic-depressive insanity which may begin at that epoch.

Forms of Mental Disorder.

All observers are agreed as to the frequency of prodromal symptoms in connexion with insanity beginning at this period.

Sir George Savage, in a paper on the neuroses of the climacteric, published in the *Transactions of the Medical Society of London*, vol. xvii, gives a comprehensive summary of these, pointing out that "any normal symptom, bodily or mental, which may occur with the menopause may be so exaggerated as to become morbid." He refers to the feelings of fullness in the head, flushings of heat, and sensations of cold, or feeling as if something had suddenly given way in the head, or as if the head were empty or the brain dead. Such feelings are, of course, common also in younger cases, perhaps especially where there has been a history of self-abuse. Again, he refers especially to uneasy feelings in the skin, leading to delusions of persecution, or to obsessive ideas of dirt and infection. Commonly there is great irritability or change of affection, and with diminished sexual function, delusions of changed personality, or hypochondriacal sexual ideas may arise. In other cases there are doubts as to the conduct of the husband, leading to delusions of jealousy. In others, on the other hand, there arises increased sexual desire either for normal intercourse or leading to self-abuse, associated with the failing reproductive function. Pelvic or general discomfort or pain may be accompanied by a proneness to alcoholism or drug habits. In single women there may be an outburst of unsatisfied sexual desire, and sexual paranoia may result.

Sir T. Clouston[1] writes of the normal psychology of the climacteric as consisting of

> a lessening of sexual desire, affections change from the mate to the progeny, the imagination loses its force and fire, poetry and action are alike less craved for. The instinctive feeling of sexual difference is lessened. There is less energy and less spontaneity and originality.

Sir Felix Semon[2] considers that the menopause is by far the most fertile cause of sensory neuroses of the throat in women. These neuroses are of the paraesthetic or neuralgic type, and never anaesthetic. They may precede the menstrual irregularities or be associated with the other common symptoms of the menopause, and in some cases lead to hypochondriacal depression or suicidal tendency.

Among early symptoms related to the throat I have seen the following: "Feeling that the food stops in the throat," that the "bones and muscles of the throat are broken," "throat feels constricted," "choking feeling," "feeling that the throat is clogged up." In other cases the patient was clutching at her throat.

Dr. R. A. Gibbons, in a lecture on Pruritus Vulvae,[3] refers to the fact that

> most of the cases of true pruritus vulvae are in women who are passing through, or have passed through, the climacteric period.

Goodall and Craig[4] well sum up the prodromal symptoms as follows:

> Insomnia, alteration in temper, neuroses, noises in the head and ears, and deafness, hallucinations of the various senses; suspicions, jealousies, false accusations; failure of attention, impairment of memory; sexual perversions (eroticism, frigidity, masturbation, etc.).

When definite mental disorder develops there is no doubt as to the great predominance of the depressed or melancholic forms of insanity at the climacteric.

Thus, of my 118 Bethlem Hospital cases, 82, or 69.5 per cent., were classed as melancholia, and of 101 cases seen in private 69 were of that type. Of 68 cases of first attack of insanity at the climacteric, 42, or 61.8 per cent., were cases of melancholia, whereas of 33 not first attack cases, 24, or 72.1 per cent., were depressed.

Melancholia at the climacteric may present any of the usual clinical varieties. There may be simple depression with lack of energy, slowness of thought and reaction, inability to concentrate attention, lack of volition, feeling of being of no use, insomnia, headache, constipation, and desire for death; or there may be more pronounced melancholia with self-accusation of wickedness, delusion of perdition or of having committed the unpardonable sin. Again, there may be the type associated with delusions of poverty and ruin—"no money, no food, no clothes"; or the agitated, restless type with varying delusions leading to chronicity and death; or again, depression with suspicion and dread of persecution.

Very prominent are the cases of hypochondriacal melancholia, often with delusions as to the pelvic viscera or generative organs. For instance:

> A woman of 49, with delusion that she smells, and is decaying, and is rotten with syphilis, asks her husband to shoot her, committed suicide at home by hanging, her husband having refused to put her under care.
>
> Another, of 53, complains that her tongue is too big, that her head will burst, that the left side of her head is getting bigger, that her chin and forehead are altering, and her legs also, and that she has "nothing to sit down on."
>
> Another, of 46, feels that the bones and muscles of her neck are broken, that food stops in her throat, groans and howls, and refuses food.
>
> Another, of 50, has no stomach, heart, or lungs, is not a human being, and her body is entirely changed.

Another, of 47, feels clogged up, thinks her abdomen is swollen, "inside feels quite dead," "bowels never act."

Another believed that her sexual organs had changed into those of a dog.

Kraepelin lays stress on the frequency of states of depression in cases occurring for the first time after the age of 50, and believes that a form of depressive disorder exists that he formerly classed with melancholia, and still wishes to separate from manic-depressive insanity. In this condition there is great agitation, tearing the hair, self-picking, biting and scratching, tearing clothes, resistiveness, delusions of damnation or perdition, persecution by evil spirits and inimical powers, hallucinations and suicidal tendency, ending finally in confusion, collapse, and death. He doubts whether this is a clinical entity or "delirium acutum." It occurs most commonly in women in the sixth decade of life.

Maniacal states of various types—pure mania, confusional or delirious—occur with much less frequency in first attack cases at the climacteric than states of depression, but are more common in the not-first attacks, though not so common as states of depression.

Chronic delusional insanity, or paranoia, was found by Goodall and Craig in 9.8 per cent. of the Bethlem Hospital and 14.1 per cent. of Wakefield cases. In my private practice I have found it in 16 out of 101 cases. It is worthy of note that this form of mental disorder only occurred in 1 out of 33 not-first attack cases, but in 15 out of 68 first attacks, or 22 per cent., outnumbering the maniacal cases.

Of the 16 delusional cases 5 were in single women and 12 were of the sexual delusional type, either persecutory or amorous. This large proportion of sexual cases is very noteworthy.

The following examples may be given:

1. A single woman of 45, whose sister was hysterical, and who had had an early love disappointment, began at the climacteric to think that enemies had prevented her marriage, that she was watched while dressing and in the watercloset, that people talked of love affairs immorally, and made cruel remarks about her appearance, sneered and made fun of her.

2. A married woman of 50, with strong insane inheritance, and an alcoholic husband, began to think that her character was aspersed, that the clergyman made indecent gestures and suggestions from the pulpit, that people sneered at her, watched her in the watercloset, and made remarks about her, and annoyed her by flashing lights at her.

3. A married woman of 46, whose father had had "brain fever," began to think she was watched, that the clergy were against her, that scandals were spread about her, that she was "cut dead" by people who nudged one another and made "mocking smiles."

4. A married woman of 46, who developed the delusion that her husband was poisoning her "per vaginam" during intercourse, that he was unfaithful to her, and would kill her, and that her daughter was immoral. This was associated with eroticism, stripping herself naked and demanding sexual intercourse.

5. A single woman of 51 believed she was watched and her food poisoned, that the papers referred to her, that "horrid things" were called out about her, and that she was in a "bad house." She talked of her "cracked admirer," who she thought was waiting outside the house for her.

6. A single woman of 49, who had been operated on for fibroid of the uterus one year before, developed an insane passion for the doctor; wrote passionate letters to him with such terms as, "My darling king"; "Sweetheart, do let us meet"; "Darling, do come; I just adore you." She believed that messages were sent from him in the *Daily Mirror*, and pestered him with most undesirable attentions.

7. A single woman of 51, whose mother and sister were insane, and whose catamenia had ceased, developed a fixed delusion that some one had taken advantage of her and that she would have a child; that sexual wrong had been done to her; that she was pregnant by a cat's afterbirth; and that she had swallowed filth.

8. A married woman of 52, whose father and sister were alcoholic, became deluded that her husband had been married before his marriage to her; that he had a son who was not hers to whom the property would [illegible] he had been married [illegible] before [illegible] and that [illegible] the [illegible], and that spies were watching her.

In all the delusional cases the disease remained chronic.

Krafft Ebing[6] found paranoia with primordial delirium of persecution in 36 out of 60 climacteric cases. In a very small number of cases primary dementia or general paralysis occurred.

When dementia rapidly supervenes the case may be looked upon as an example of pro-senile insanity ending in dementia.

A widow of 56, whose husband had committed suicide eleven years before and whose daughter had become insane, began immediately after the climacteric to think of marriage again, talked of it to a gentleman, and believed that men wanted to marry her. It was found that her memory was failing, that she lost her way, became apraxic, and did not know her address or the date. She became demented.

In many cases of whatever type eroticism or self-abuse was present. In one case the patient and her sister and her maid all became insane, with self-abuse as a prominent symptom. In another, from whom the clitoris had been removed four years before, there were severe orgasms occurring several times a day, with bruising of the thighs and great prostration. She also had drug habits.

It seems desirable to give shortly the details of the cases where operations on the uterus or ovaries had been performed and where insanity subsequently occurred:

1. A married woman of 34; father insane; ovaries removed three years before for tumour; catamenia ceased; subsequently delusional insanity, with jealousy of husband and delusion of his infidelity; ideas of persecution by drugs and electricity; result chronic.

2. A single woman of 47; father eccentric and paralysed; double ovariotomy five years before; catamenia ceased; six months depressed; fear of suicide; train panic; dread of being alone; certified.

3. A married woman of 38; ovariotomy three and a half years before; catamenia ceased; morphine habit since operation, at first due to pain; delusions of poisoning, stealing, and conspiracy by husband and doctors to make her ill; chronic.

4. A married woman of 51; father drug habit, sister neurotic, two sons stammer; vaginal hysterectomy four years before; ovaries not removed; catamenia ceased four years; gradual onset of hypochondriacal depression with invalidism and solitude; delusion that she was a vile woman; had changed to stone; self-accusation of excess in sexual intercourse; refusal of food and suicidal; after improvement for a time relapsed and became chronic.

5. A married woman of 49; three years before excision of uterus and one ovary; catamenia ceased since operation; three years hypochondriacal melancholia; delusion of having cancer, anthrax, uric acid, worms, and microbes; thinks she has the "germ of oxalic acid," and that tetanus and locomotor ataxy are the same; chronic.

6. A single woman of 45, had been the mistress of a married man; uterus and ovaries removed five years ago; catamenia ceased from that time; symptoms of early climacteric from that time not removed by ovarian extract; outburst of acute maniacal excitement with delusions of grandeur, constant motor restlessness and flight of ideas, ending in dementia, with chronic excitement.

7. A married woman of 47; oöphorectomy five years before; catamenia ceased; since operation nervous, sleepless, easily tired, avoids people, suspicious of servants and of theft, "watched," believing herself accused of theft, detectives after her, mysteries and conspiracies going on; chronic delusional insanity.

8. A married woman of 41, whose father was intemperate; two months before admission to Bethlem Hospital oöphorectomy had been performed for depression recurring at each catamenial period; no immediate relief followed; attack of melancholia with self-accusation and suicidal tendency, and feeling as if something had gone from the brain. She recovered after seven months in Bethlem Hospital.

Prognosis.

The prognosis in climacteric insanity depends largely on the nature of the case. Clouston found 57 per cent. of recoveries out of 228 cases. Goodall and Craig found 35.29 per cent. in the cases of which they collected statistics at Bethlem Hospital, recognizing that in many cases the patient only remained under care for twelve months, and that recovery might have occurred subsequently. At Wakefield, however, they found 40.8 per cent. of recoveries. My statistics of cases at Bethlem Hospital, covering a longer period and a larger number of cases, show a percentage of recoveries of 42.3.

In analysing cases seen in private one has to make the reservation that often one cannot learn the subsequent history, as the patient may be seen only once in consultation, but as far as I have the figures, out of 68 first attack cases 26.4 per cent., and out of 33 not-first attack cases 33.3 per cent., recovered.

It might naturally be expected that patients who had had previous attacks from which they had recovered, and whose insanity might be classed in the manic-depressive group, would show a greater tendency to recover again than those breaking down for the first time at the climacteric, and of my first attack cases of melancholia at least one third became chronic, but only one-sixth of

the not-first attack cases. The cases of hypochondriacal and of agitated melancholia are very unfavourable to recovery. Two of my first attack cases of melancholia died, but none of the not-first attack cases.

All the cases of delusional insanity became chronic.

Speaking from a small number of cases whose insanity occurred subsequently to operation, as recorded above, the prognosis as to recovery seems to be very unfavourable.

Kraepelin[6] remarks that it is doubtful whether involution (Rückbildung) of the ovaries and cessation of internal secretion is the most important or, indeed, the only cause of disturbances at the climacteric, yet the loss of the generative glands cannot be unimportant for mental balance. He also refers to the disappointed hopes that removal of the ovaries would cure psychical disturbance.

One important question in prognosis is as to the effect of the climacteric on pre-existing insanity. I do not refer here to the fact noted above—namely, that a patient who has been liable to attacks of insanity may break down again at the climacteric, but to the hope always expressed by the relatives of patients who have for a long time been insane that "at the change" there will be an amelioration of symptoms. In my opinion this hope is a false one, and I do not remember to have seen a patient recover at the climacteric whose insanity had been long pre-existing. Patients suffering from melancholia may, of course, recover after many years, but apart from the climacteric.

Treatment.

The treatment of the psychoses of the climacteric is practically the same as that of psychoses occurring from other causes—attention to sleep, digestion, bowels, feeding, and asylum care if the symptoms necessitate it. As the majority of the cases are of the affective or melancholic type the possibility of suicidal tendency should always be borne in mind and skilled supervision should be provided. In most cases the disorder so alters the relationships of home life that if an asylum is not necessary, at least borderland care is. The administration of ovarian extract has been recommended, and one of the operation cases I have recorded had been treated in this way for some time, but insanity subsequently occurred. Kraepelin remarks that he has unfortunately found no good result from it.

Transplantation of ovarian tissue has been resorted to in some cases after oöphorectomy, with a view to lessen the symptoms of early menopause, and was recommended by Dr. H. S. Davidson in a paper read before the Edinburgh Obstetrical Society on March 13th, 1912, and also by Engel in an address before the Berlin Medical Society.[7] It would be interesting to hear the opinion of gynaecologists present as to its value.

With regard to psycho-analysis, there is no doubt that in some of the cases a careful investigation of the history has revealed a suppressed "complex" dating from many years before which has played a part in the patient's mental disorder. One interesting case of this nature occurred in a single woman who recently came under my care. An intimate female friend broke down mentally, self-abuse being a prominent symptom. My patient then developed mental depression with self-accusation and suicidal tendency. She believed herself to be responsible for her friend's illness, and eventually revealed that many years before there had been sexual irregularity between them, and this "skeleton in the cupboard" had now risen up and assumed an exaggerated importance. In my experience, however, attempts at explanation of the patient's symptoms on the purely psychical basis have not obviated the necessity of adopting the other well-recognized methods of treatment which experience has shown to be valuable for the cure of insanity whether arising at the climacteric or any other period of life.

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II.—Charles J. Macalister, M.D., F.R.C.P.,

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In the short time at my disposal it will only be possible to make a sketchy and perhaps somewhat hypothetical survey of the pathology and treatment of the psychoses and neuroses of the climacteric in their relationship to general medicine, and I propose to deal with some general principles rather than enter into any details concerning the numerous morbid conditions which are ascribable to this period.

The climacteric referred to is only one of a number which occur in the lives of every human being whether male or female, and it is interesting to note that the phenomena which characterize each and all of them have certain similarities so far as their effects upon the nervous system are concerned.

A person who lives to be aged completes a long cycle within which are numerous others. The cardiac and respiratory functions each represent cycles which are completed within seconds of time. Periodicity marks the healthy diurnal performances of the functions of the alimentary system, and the phenomena of sleeping and waking are other examples of the same kind of thing. Menstruation and ovulation are distinctly cyclical, and there are reasons for believing that there are annual, or at all events seasonal, cyclical periods during which we may infer that some metabolic changes take place if we may judge by the way in which gouty and kindred disorders prevail in the spring and autumn. Lastly, there are the larger cycles which mark the milestones of life—the first lasting from the very moment when the ovum begins to grow until birth. Then comes the period of infancy and its transition to that of childhood. Thence the passage through the phase of puberty to adolescence, from adolescence to maturity, and finally the menopastic period and its male equivalent which mark the end of life's greater activity and the commencement of the final stage of senescence. The familiar expression, "Wheels within wheels," so often made use of when complicated and incomprehensible problems are being discussed, literally expresses these facts concerning life and the difficulties connected with the solution of their explanation. Shakespeare roughly indicated the characteristics of the parts played by the individual in his oft quoted "seven ages" of life, but it would require a biologist of no mean poetical imagination to put into words a description of the bodily changes which take place at the various transition periods to which I have made reference.

It seems to be doubtful whether the climacteric here referred to is ever normally symptomless so far as the nervous system is concerned; indeed, it would be rather wonderful if it were so when we consider the essential physiological changes which take place. This transition period, which probably lasts for years, and of which, in the female, the menopause is only an item, is associated with alterations in function and secretion, and changes in bodily chemistry and structure which include the nervous system, not only directly and perhaps locally, but also in a general way through the altered metabolic conditions which take place. My impression concerning the psychoses and neuroses of this time of life is that they depend in the main upon morbid conditions connected with this changing metabolism involving a faulty bodily chemistry, which either produces toxic effects upon the nervous system or by disproportion of essential elements (for example, over-production of some secretion on the one hand or its under-production or perversion on the other) leads to some inco-ordination of function and consequent disease. Although there is no real analogy between the two cases, one is reminded of the nervous distress which is brought about by the physical inco-ordination of organs which are accustomed to act in concert and harmony; for instance, in the case of an ocular paralysis causing double vision, giddiness and vomiting are often excited owing to the reception of impressions by the retinae in unaccustomed axes. Again, changes in the ear and semicircular canals and other organs of equilibration similarly give rise to distressing neuroses which are not due to any structural changes in the nervous system itself. It is quite unnecessary for any diseased condition to be present in order to produce such disturbances. It is quite sufficient to have two senses which commonly act in accord thrown out of their usual relationships to one another. Somebody (I think it was Trousseau) ascribed the symptoms arising from such conditions to what he termed "cerebral surprise," due to the reception of stimuli accustomed to be received in association

having their relationships dislocated, so to speak. An example of this is experienced in the giddiness which some people suffer from when they stand on the edge of a precipice. The visual centres, being accustomed to having solid ground around them, become upset by the fact that the muscular sense tells the brain that solid ground is being stood upon, whereas the visual sense conveys the impression that a vast space is beneath the feet. The visual and muscular senses are thus out of co-ordination, and giddiness and nausea are consequential symptoms.

One might quote numerous other examples of the same kind of thing, but it is unnecessary, my purpose being served if I suggest that the chemical inco-ordinations which are so apt to occur at the climacteric periods may in the same way, by causing faulty stimulation, lead to the production of neuroses and psychoses of various kinds without necessary structural changes in the nervous system being present.

In order to illustrate my meaning, I shall take you back for a few moments to the climacteric of puberty, because it presents symptoms which contrast with those of the later one, and a lesson may possibly be derived from their study. If a child is carefully observed who is passing through this period, it will often be noted that, in addition to the marked psychic changes—which need not be recited, they are so well known—a distinct constitutional change occurs: the ruddy cheeks and robust habit of body and the warmth and activity of the child give place to a tendency to blueness; the face and extremities look cyanosed and the latter are cold; apathy and syncopal attacks are common accompaniments. Vascular spasm is characteristic. All of these symptoms disappear, more or less, when menstruation is established, but sometimes they remain or recur, and the persistence of pathological Raynaud-like symptoms, I believe, accounts for some of the peculiar dyspepsias of young women.

As I pointed out in a paper read some years ago,[1] it is possible that the perforating ulcer, so common in young womanhood, and so frequently preceded and accompanied by these Raynaud-like phenomena, including amenorrhœa, depends upon vascular spasm of the wedge-like capillary tufts arising from the coronary arteries.

It is significant that the administration of thyroid may relieve the amenorrhœa and other symptoms by co-ordinating, as I think, with some other secretion. The symptoms are like those produced by overdosage with ergot, and I am informed by my friend Dr. Titherley that ergot is a hormone-like body similar to phenylethylamine and parahydroxyphenylethylamine, which are derived by elimination of CO_2 from certain amino acids present in protein. They are degradation products of some protein bodies, and are sometimes known as animal ergot. It is a question whether adrenalin is one of these. Anyhow, the symptoms and effects which I refer to are such as might be due to such a body, and one does not know whether its influence may be exerted directly upon the vasomotor system or whether it produces its effects by acting upon and regulating one of the thyroid functions, which are probably added to at this period of life.

In this connexion we must not forget that there are anatomical and physiological reasons for suggesting the chemical natures of the various climacteric changes. During fetal life the adrenal cortex is of very large size; at birth it may be nearly as large as the kidney (Keith), and in young children it is much larger in proportion than it is in adults. Then comes the thymus, which fades and becomes vestigial with the termination of childhood. The thyroid manifestly has important secretive duties during this period, but at puberty it in turn enlarges and evidently adds to its functions, especially in the girl, and it probably works in collaboration with the adrenal or with the pituitary or other secretions. Normal sexual characteristics seem to depend upon the co-ordinative secretion of these glands, and it is reasonable to believe that many of the psychoses and neuroses of the climacterics depend upon their inco-ordination—temporary it may be, until the glandular developmental balance is established.

Is there any clinical or pathological proof of this? I believe so. I have not had opportunities of making *post-mortem* examinations, which are very conclusive, but my clinical experience, added to the experiences of others, goes to suggest it. Two cases in point have recently presented themselves.

The first was an adolescent girl who since puberty had developed a degree of melancholia with delusions of fear. She had the usual cold extremities, slow breathing, and general apathy so common in these cases. Menstruation was not in abeyance, but she was always worse at these times, and had on one occasion threatened suicide. From what I could gather, there were erotic propensities. What at once struck one concerning her was the large growth of downy facial hair on the sides of her face and on her lip and chin, and on examining the abdomen there was a marked male distribution of the pubic hair. Professor Ernest Glynn, in his exhaustive paper on the Adrenal Cortex, its Rests and Tumours, has referred to this condition being associated with hyperplasia of the adrenal cortex, a condition which in the female is associated with male characteristics and in the male with more maleness.

The other case was one of a young man who presented female attributes and female distribution of the pubic hair. He had one small testis, the other undescended. He also had some other indications of metabolic abnormality, including gastralgia and vascular spasm, in fact the prodromata which so frequently antecede gastric ulcer in the young woman.

In reviewing the neuroses and psychoses of the later climacteric, and on considering its known physiology it seems reasonable to infer that they depend in the main upon inco-ordination of secretive function, now no longer dependent upon a want of balance in the establishment of glandular secretion, but rather due to its gradual and perhaps unequal decadence. Some want of equality in the process no doubt accounts for the vascular disturbances—flushings and heats and tachycardia and a host of other well-known symptoms—and for the loss of tone, too, in the nervous system, both visceral and parietal, which are so apt to occur and account for the common mental upsets which accompany them. What wonder is there that greater variations give rise to pathological mental disturbances of greater or less intensity, extending from the realms of hypochondria to those of actual insanity? Just as the onset of menstruation at puberty is but a factor in a complex process, so the menopause is, as I have frequently said, only an item in the menopastic climacteric, and we have proof of this in the fact that males present indications of a change just as females do.

Sir Henry Halford was the first to refer to this, and his classic description of the symptoms is quoted by nearly every writer on the subject. They include indefinite feelings of ill health, periodic darting pains in the head and chest, disorders of digestion, weakness, loss of flesh and mental strength, and, importantly, insomnia. In addition to this he describes a quicker circulation, sensations of numbness and burning of the palms and soles, gloomy and desponding thoughts amounting to impressions of poverty, and so forth. There is irritability of temper, and withal an aged appearance. Some or all of these symptoms may exist from four or five months to two years before the balance is restored and complete recovery usually accomplished.

Surely these transitions from the normal to the abnormal are metabolic or chemical in origin, and the future treatment of them will consist of a kind of biochemical orthopaedics (the term was suggested to me by Dr. Jansen of Leiden in the course of a conversation) to restore chemical co-ordination by means of the administration of hormones or internal secretions or other bodies yet unknown which may be suggested by future experiment as a means to an end.

I regret very much that in the quarter of an hour which is the limit of time permitted one cannot elaborate a subject so full of interest. One realizes that "in Nature's infinite book of secrecy" we are still seeking for knowledge concerning these obscure problems, and we must look for further enlightenment, not from the single endeavours of the clinician or of the biochemist or pathologist, but from their co-operative work and usefulness to one another.

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III. T. B. GRIMSDALE.

THE climacteric, or menopause, is the time of life when menstruation ceases, and it is supposed that at the same

time the ovaries cease to functionate. It is unnecessary to discuss the relations between menstruation and ovulation further than to say that there is no doubt that they are intimately connected, and that they do in all probability synchronize more or less as a general rule. When the climacteric is established the production of ova by the ovary ceases.

There is, however, a second function of the ovary besides the production of ova which exercises a profound influence on the general economy of the body, and this function also ceases at the menopause. This function is similar to that of the other ductless glands, and it is supposed that there is some internal secretion from the ovary that is responsible for the general development of the sexual characteristics of the female and for her general well-being. Marshall says:

> In the human female double ovariotomy, if carried out before puberty, besides preventing the onset of puberty and the occurrence of menstruation, produces noticeable effects on the general form and appearance, as may be seen in adult women in semi-barbarous parts of Asia, where the natives perform this operation upon young girls. Such women are said to be devoid of many characteristics of their sex, and in certain cases to present resemblances to men.

It is well known that if both ovaries are completely removed from a woman during her sexually active life she will cease to menstruate, and she will pass through what is known as an acute menopause. If a small portion of an ovary is left behind at the time of operation, it is sufficient to avert or greatly modify the symptoms. These symptoms consist of a general nervous irritability, often despondency, flushes of heat, perspirations, and often palpitation.

The acuteness of the symptoms varies with the age of the patient, and as a rule they continue for eighteen months or two years. In one case in which I had to remove the ovaries for salpingo-oöphoritis in a woman aged 36 the symptoms were terribly severe. She was nervous, rather tremulous, had some palpitation, and she had waves of heat passing over her body and face, attended by intense flushing of the face, and followed by such profuse perspirations that she was obliged to change her clothing; this occurred several times a day, and was most persistent in spite of treatment; it continued for more than seven years. Curiously enough, her thyroid seemed to diminish in size, and in the end her symptoms were improved by thyroid extract.

In these cases of artificial menopause the symptoms are often relieved by the administration of ovarian extract, and I believe to a much greater extent by the transplantation of ovaries, although of this I have no personal experience. A remarkable case is related by Andrews, where Glass transplanted a healthy ovary from a girl of 17 to a patient, aged 29, whose ovaries had been removed two years before. The ovary was sutured in the normal situation. The patient had been much troubled by menopause symptoms. Six days after the transplantation of the ovary she had erotic dreams; sixteen days later she had uterine haemorrhage for two days; six months later another uterine bleeding, lasting three days. Eight months after the operation she was perfectly well. This all goes to support the presumption that there is an internal secretion of the ovary.

The internal secretion of the ovary is supposed to be formed in the follicle and in excess as the follicle is becoming ripe, which suggests an explanation of the nervous symptoms at each menstrual epoch.

According to Fraenkel the corpus luteum of pregnancy is to be looked upon as a ductless gland and it has been suggested that it may be that the ovary secretes two distinct internal secretions, one which has its effect on the nutrition of the embryo and its surroundings and another which has a more general effect on the nutrition and general changes in the body.

There is evidently a very close inter-relationship between the various ductless glands themselves, and their connexion with the sexual organs is definitely established in the adrenal cortex and pituitary hypophysis, as also in the thymus.

The connexion between the sexual organs and the thyroid was well known to the ancients, and they recognized that in pregnancy the thyroid gland became enlarged. Catullus in the *Epithalamium* says:

> Non illam nutrix oriente revisens
> Hesterno poterit collum circumdare filo.

Of this I will give you the following rendering by Professor Strong:

> Never again her nurse at break of day,
> Performing service at her mistress' beck,
> Will twine the yestreen ribbon round her neck,
> That neck has grown in size since yesterday.

A relation between the ovaries and the thyroid gland is shown in a very striking manner in the case which I now relate. A woman, aged 32, suffering from goitre with exophthalmos and marked symptoms of thyroidism, tremors, great excitement, very rapid pulse, etc., was in the Royal Infirmary under the care of Dr. Buchanan. She complained much of pain in the lower abdomen, caused by pelvic inflammation. At his urgent request, and with considerable misgiving, I opened the abdomen and removed with some difficulty both tubes which were full of pus and both ovaries.

The patient made an easy recovery from the operation, but, to our surprise, the goitre and the exophthalmos entirely disappeared, together with the symptoms.

The explanation I do not propose to attempt, but merely say that it suggests some intimate relationship between these two glands.

Noel Paton in the *Journal of Physiology*, 1904, has shown the effect the thymus has on the growth of the testes, and Henderson has shown the effect of the testes on the thymus. The presence of each gland has a restraining influence on the growth of the other. In the guinea-pig, if the thymus is removed, the testes grow, and average considerably more in weight than the testes in normal animals of equal weight. Paton was unable to try the similar experiment in the female, as the guinea-pig's ovary was so small that it was "not practicable to compare its weight in thymusless and normal animals." Similarly Henderson showed that the removal of the testes causes a persistent growth and a retarded atrophy of the thymus gland.

Glynn, in the *Quarterly Journal of Medicine*, 1912, calls attention to the enlargement of the adrenal cortex during breeding, pregnancy, and after castration, and to the small size in deficient sexual development, as additional evidence of the association of the cortex with sex characters. He further says the functional association of the adrenal with the pituitary and other ductless glands, and the appearance of certain sex abnormalities in acromegaly and pineal tumours, indicate that a true solution of the connexion between the adrenal cortex and sex will only be found when the interrelationships of the various ductless glands are better understood.

The balance between the various ductless glands is evidently most mysterious and complicated, and when one gland of the group is suddenly thrown out of action, as happens with the ovary at the menopause, it is hardly surprising if that balance is disturbed. It is during the time of the readjustment of the balance that symptoms occur. There is increased excitability, muscular tremor, palpitation, flushings, and perspirations.

One can hardly fail to be impressed with the striking resemblance these climacteric symptoms bear to those of hyperthyroidism. It may be that the ovary and the thyroid have some sort of relationship similar to that between the testes and the thymus, and that when the ovary ceases to act the thyroid influence is increased.

The neuroses and psychoses of the climacteric which present themselves to the gynaecologist are not very numerous.

I should say that most women pass through the menopause without any complaint sufficient to make them consult a doctor; it is only in the neurotic that severe discomfort is experienced.

The commonest manifestations are the flushings and sweatings, which come on at irregular intervals, and generally attack the face and head. With these are frequently associated tingling in the arms and hands.

Pruritus vulvae is also rather common, although this is frequently not a pure neurosis. In many cases palpitation is complained of where no cardiac lesion can be detected. Paroxysms of palpitation occur without discoverable cause. They may arise when the patient is in any position, or even during sleep.

Flatulent distension is also a common complaint, and this, combined with the amenorrhœa, may lead to the suspicion of pregnancy.

This peculiar condition, known as "pseudocyesis," occurs every now and then at the climacteric, although it is not altogether limited to that age; the condition occurs with equal frequency in women who have and who have not borne children.

When the patient presents herself, it is usually late in the supposed pregnancy; there will then be great abdominal enlargement, and she will always complain much of the fetal movements.

I do not intend to say anything more about the psychoses beyond mentioning headache, depression, loss of memory, and some confusion of thought as being of common occurrence at the climacteric.

As regards prognosis and treatment, true menopausal symptoms will clear up when the climacteric is over—that is, in eighteen months to two years—but many symptoms which come on at the climacteric and aggravate that period are really not peculiar to and dependent upon the menopause. These manifestations it is difficult to disentangle and apportion to their proper place. It has been rather the custom to class all the ills that happen to a woman at the climacteric as due to the menopause changes. It has been my endeavour to try to limit the symptoms as much as possible to those dependent upon the change. Concerning treatment I need say nothing—I have no panacea. All we can do is to alleviate.

I am reminded of the words of Kipling:

> There are sixty different ways
> Of composing native lays,
> And every single one of them is right.

DISCUSSION.

The PRESIDENT said there were probably no organs of the human body regarding whose functions more theories could be held than the ductless glands, and he agreed with Tandler that in each sexual organ there were two parts, a generative part and one devoted to internal secretion, the nature of the last in the case of the ovaries being unknown, no specific substance having been isolated. He supported the view that all the ductless glands played an important part in the symptoms of the menopause, and that all had some relation to sex. When the climacteric occurred it might be safely passed if the ductless glands, apart from the ovaries, were functionally active, but if one of them was affected, the balance was not readily restored, and a neurosis or psychosis resulted. The condition was a toxæmia, and the result of some disturbance in the wilderness of metabolism.

Speaking of insanity following removal of the ovaries, he said he had notes of six cases in which after oöphorectomy had been performed insanity followed, and he believed that the psychosis occurring then was of an unfavourable type, more so than that occurring after a normal menopause. It was characterized by a deterioration of the moral fibre of the person and by excitement with delusions, often of the most unpleasant character. Cases of post-operative insanity were more unfavourable as regards recovery than their symptoms and history would lead one to expect, and with this the nature of the anæsthetic used might have something to do—chloroform, it was said, being more frequently followed by post-operative psychoses than ether. In any case the insanity which occasionally followed the surgical menopause was of unfavourable prognosis.

He held that there had been no increase during the last twenty-five years in the frequency of certifiable insanity occurring at the climacteric period, but he had recently seen a large number of minor psychoses and neuroses occurring at this period in patients presenting themselves for treatment at the department for nervous and mental [illegible] hospital. He considered that brains robust enough to withstand the stress occurring at puberty [illegible] able to pass successfully through the changes initiating the period of decay, but he pointed out that in the climacteric psychoses the percentage of those who had had a previous attack of mental illness was large. There was considerable evidence in favour of the belief that the ductless glands exercised an influence in the production of symptoms hitherto believed to be peculiar to the reproductive organs. Glynn believed that the adrenal cortex was concerned with the growth of sex characters, and others that it generated a hormone which had a special influence on the reproductive organs. Some years ago he examined a large number of adrenals from cases of insanity, and in several in whom there had been symptoms of sexual disturbance he found the cortex enlarged. Goitre had developed after the removal of both ovaries. He quoted the opinion of Schenk that the adrenals, ovaries, and testicles have a definite relation to each other, but thought that while there was such a relationship much further work would require to be done before accurate conclusions could be arrived at.

The climacteric psychoses were more frequent among the private class of the insane than among the pauper; in his experience, in the proportion of 38 out of 500 admissions in the former, and 30 out of 500 admissions in the latter. Those figures were lower than quoted by others, but it was his custom to label such cases only as climacteric as were uncomplicated with other exciting agencies, and where it could justifiably be assumed that the insanity was the immediate outcome of the change of life. He gave details of two unusual cases at present under his care, and considered, while there was no form of insanity peculiar to the climacteric period, that conditions of depression were most commonly met with. He had seen dementia supervene at the climacteric period in two cases without previous acute mental disease. He spoke of the frequency with which conditions of religious despondency were met with, and contrasted those with the converse state of religious exaltation so frequently associated with the sexual transformation and excitation of adolescence and of hysterical and epileptic forms of insanity, as pointed out by Lewis. Uncomplicated cases of climacteric insanity were of favourable prognosis, very favourable in his opinion, as contrasted with the prognosis of all cases of insanity in women when taken collectively. Recovery was more likely to be permanent the more nearly the psychosis realized the character of a true insanity dependent on the period of life. He thought psychologists took too grave a view of these psychoses, probably because they saw only the worst types. The minor psychoses and neuroses occurring at this period—of which he gave illustrations—were almost always recovered from, and in them, as in others, the time element was an important factor in treatment. Even in the mildest types there was some depression, many ill-defined nervous symptoms, neuralgias of various kinds, unstable emotional states, and changes in the affections.

As regards the climacteric in men, he had not frequently met with cases dependent largely or entirely on that condition. The reproductive function played a smaller part in a man's life, and he agreed with Barnes that there was nothing to compare with the almost sudden decay of the organ of reproduction which marked the middle age of woman. The grand climacteric in man was later than in woman. It varied more in the individual, was not accompanied by such definite symptoms, and marked more the beginning of the period of senile decay than the period of cessation of the reproductive functions.

His treatment of the developed psychoses was largely one of symptoms, and he had had no success in the use of ovarian or other organic extracts. In the treatment of the milder psychoses, he considered that great benefit resulted from removing the patient from the daily round of household duties and from her familiar surroundings. The patient's general condition was usually unsatisfactory, and holding the views he did of the causation of the condition, it was naturally his practice to keep the excretory organs of the body in full activity, and, having rectified any physiological error, to wait patiently for the re-establishment of harmonious co-operation of the organs to the altered conditions of middle age.

Dr. W. MAPLE SMITH (Bromsgrove) said: I thought it might be of interest to examine the associated factors in cases of insanity occurring in female cases between the ages of 40 and 50. The number of direct admissions of such is 97; the largest number (19) were cases of recent melancholia, which, together with the recurrent and chronic cases, form a third of the total. The manias, manic-depressive cases, delusional insanity, amentia, and

second dementia are nearly equal in number, whilst a few cases of imbecility, epileptic insanity, and general paralysis make up the number.

Causes.—Under hereditary predisposition, mental and physical stress, the various causative factors have been grouped, and the menstrual history has been ascertained in the majority of the cases. What strikes one at once is the great frequency with which menstruation is apparently quite natural, or has shown alteration long before or long after the onset of the mental illness. It is therefore difficult to satisfy oneself that this has any important causal effect in precipitating the attack of insanity. In a small percentage of cases the symptoms appear to be more closely related to menstrual cessation or abnormality, and might reasonably be said to follow on directly. This, however, is the exception. On the other hand, there is usually a clear history of physical stress of one kind or another, and frequently also unusual mental stress from which the mental illness dates. In many cases there is a hereditary predisposition. Careful inquiry sometimes elicits the fact that there has been a history of mental alteration long before the onset of the climacterium; then some unusual mental or physical stress has occurred to precipitate the attack.

In the group of *recent melancholias* the attack always appears to have definite causal factors, and menstruation is natural. I think it is an important point to note that in one case there was amenorrhœa four months prior to admission; this continued during the acute attack. The patient is now recovering, but she suffers from obstinate menorrhagia. She has had a number of relapses, which were definitely due to constipation, and disappeared when this was corrected.

Chronic and Recurrent Melancholia.—In one case of chronic melancholia, who is now becoming demented, there is a history of recent menorrhagia, apparently closely associated with the onset of the mental symptoms. The menorrhagia continues and dementia is supervening. The patient shows marked congenital mental defect and valvular heart disease. In the recurrent form there are two cases in whom the mental symptoms might be said to be associated with menstrual derangement. It follows, then, that in all kinds of melancholia there are three cases out of thirty-three in whom the change of life may be said to be associated with the onset of the mental attack.

Recent, Chronic, and Recurrent Mania.—In the series of 12 cases classified under these headings, no satisfactory relationship between the climacterium and the onset of the mental symptoms could be ascertained. In one patient suffering from recent mania, menstruation was irregular and painful, but there was a history of prolonged mental stress and ill-health. In another (recurrent form) the age on first attack was 41, but there is a strong hereditary predisposition to neurosis, insanity and alcoholism, and the patient herself suffers from goitre and valvular heart disease. In the manias, therefore, the climacterium need not be regarded as a determining factor.

Manic-depressive Insanity.—In this form of illness there is a more frequent history of menstrual irregularity than in other forms, but as a rule the onset of the symptoms have been noted by the relatives prior to the menstrual disturbance, and it is very difficult to satisfy oneself that there is a definite relationship between cause and effect.

Delusional Insanity.—The same difficulty presents itself with regard to this form of insanity. The onset of the mental symptoms is usually not associated with the stoppage or irregularity of menstruation. In one case of hysterectomy the mental disturbance followed immediately upon the operation. In three other cases there is a history of menstrual disturbance, but in one of these the present is the second attack, and there is a distinct history of prolonged mental stress, a family history of direct epilepsy, and the patient herself is neurotic. It is possible that in Case 2 the climacteric onset may have been a determining factor, but there is a history of long-standing slow alteration of the mental state.

Amentia.—Eight of this series of 12 cases were suffering from acute bodily illness on admission, and died shortly afterwards. With regard to the others: (1) Menstruation had stopped four years prior to admission; (2) menstruation is natural; the patient suffers from large goitre; (3) alteration of disposition followed severe operation three years ago; (4) menstruation ceased, (?) history defective.

Dementia, Secondary.—In this series of 12 cases, with the exception of one, the mental breakdown follows alcoholism, head injury, cerebral softening, or other factors. In one case the alcoholism is recent, and there is a history of late menstrual irregularity which might be primary.

General paralysis, insanity with epilepsy, and imbecility comprise the remaining 10 cases, and I do not consider that the change of life has anything whatever to do with the onset of the symptoms peculiar to these conditions.

Out of the 97 cases it follows that in only 6 cases has a history of definite onset of mental symptoms followed menstrual derangement associated with the climacterium. The number of cases is very small on which to base general conclusions, but they indicate that with the exception of recent melancholia there is little to indicate that the change of life is associated with any particular kind of mental derangement more than another. Further, that something like more than 90 per cent. of cases of insanity occurring at this time are due to factors already known or still unknown, but not dependent on climacteric changes. In the remaining 6 or 7 per cent. mental derangement may follow menstrual change as the result of this natural process having *per se* gone wrong.

Treatment.—In common with the experience of others, I have noticed no amelioration of symptoms following the use of ovarian or other gland tissue under ordinary circumstances, but in the case of delusional insanity following hysterectomy distinct benefit followed the use of ovarian tabloids up to a certain point. But the symptoms having shown a tendency to recur, a liquid extract of sheep or cow's mammary gland has been found to check the symptoms.

Dr. Greenlees (London) asked whether, in the experience of the introducer of this discussion, operative interference in cases of the insanity of the climacteric period, was beneficial, and quoted a case in his practice in which it was intended to perform ovariotomy in an otherwise incurable case, but at the operation adhesions were so extensive that the surgeon decided not to proceed further.

Dr. Alexander (Liverpool) had never known insanity follow removal of both ovaries, except in women already neurotic. He did not believe removal of ovaries tended to cause insanity, and thought, therefore, that the internal secretion played only a small rôle in the production of the climacteric insanities.

Dr. David Blair (Lancaster) referred to the absence of pathological appearances in the uterus and ovaries in cases of climacteric insanity where there were well-marked delusions of pregnancy. He referred to a case where one suprarenal was greatly degenerated.

Dr. Devine (Wakefield) referred to the work of Dreyfus, who included all the climacteric insanities in the manic-depressive group. Dr. Devine did not entirely agree with this; he thought the climacteric formed one of the most distinctive types, offering a very beautiful biological study, and illustrating the influence which a particular epoch exerts on the content of the psychoses occurring at this period.

Dr. Purves Stewart (London) desired to speak of the neuroses and psychoses of the climacteric from the point of view of the neurologist—that is, from a point intermediate between that of the alienist and that of the gynæcologist. Restricting his remarks to the nervous affections commencing at the climacteric, and carefully excluding those not uncommon cases in which the menopause merely produced an exacerbation or a fresh attack of a pre-existent nervous or mental malady, Dr. Purves Stewart found that cases of climacteric neuroses and psychoses were nevertheless very numerous, probably more numerous than Dr. Percy Smith's statistics showed. But the vast majority were of the mild or minor type, a class of case that was more likely to come to the physician or to the general practitioner than to enter the august portals of the alienist.

Several groups of minor climacteric neuroses might be

mentioned. Of these the commonest were associated with the cardio-vascular system—for example, paroxysmal tachycardia, sudden sensations of flushing, or coldness in the head, trunk, or limbs. These sensations might be associated with visible redness or pallor of the skin. One particular form of paroxysmal cutaneous erythema was specially common at the climacteric. It consisted in a patch of redness of the neck, shoulders, and upper part of the chest, limited above by a line corresponding to the area innervated by the trigeminal nerve, the upper border of the erythema thus including the angles of the jaws and running along towards the chin just above the lower border of the mandible. Paroxysmal sweating was also common. Attacks of vertigo, with or without tinnitus, but as a rule unaccompanied by deafness, were probably due to transient changes in the circulation of the labyrinth. Variations of cerebral circulation possibly accounted for the headaches and other forms of cephalic discomfort, and possibly also for part at least of the mental anergia, the emotional instability, and the irritability of temper, of which the climacteric woman (and her non-climacteric friends and family) complained so bitterly. Phobiae and obsessions of various sorts were also particularly common in climacteric women.

He had made a considerable number of observations on the blood pressure in patients at the menopause, and although the results were far from constant, on the whole he thought that the majority of climacteric cases had a subnormal systolic pressure.

The major neuroses, on the other hand, in his experience, were relatively less frequent at the menopause. An important exception to this statement, however, was in the case of the artificial menopause following oöphorectomy during full sexual vitality. He had seen a number of cases of severe hysterical tremors, functional paraplegia, profound psychical changes, etc., without actual insanity, in young women from whom the ovaries had been removed for ovarian or uterine disease. At the physiological menopause, on the other hand, grave hysterical phenomena were relatively uncommon, with one exception—that of pseudocyesis or false pregnancy, which was specially common at the time of the climacteric, and might be met with in stolid, level-headed women without other apparent nervous stigmata. When he was an undergraduate, his first case in obstetric practice was one of this sort. He well remembered sitting up for many anxious nights with an apparently experienced multiparous patient who believed herself to be on the verge of labour. After several fruitless weeks he went for a holiday, and on his return found that, despite the combined efforts of the patient and of various obstetric fellow-students, the case had turned out to be one of false pregnancy after all.

As regards the treatment of the climacteric neuroses and psychoses, he thought that a good deal could often be done to alleviate the patient's symptoms. Change of scene, removal from domestic worries, and careful attention to all the bodily functions were all important. For the minor cardio-vascular symptoms and the various subjective feelings of discomfort, he was in the habit of prescribing ammonium bromide, valerian, and aromatic spirits of ammonia, and frequently with highly satisfactory results.

In his experience ovarian extract was of comparatively little therapeutic value, except in the artificial menopause. Why this difference as compared with the neuroses following the ordinary menopause? He suggested that, inasmuch as the climacteric was as much a physiological event as was puberty, any attempt to add ovarian secretion to the [illegible] at the normal climacteric was essentially unphysiological. Instead of juggling with a secretion which normally should be diminishing at the menopause, they should try to help the patient to develop the activity of the other internally-secreting glands, so as to attain a new physiological equilibrium, an equilibrium which was [illegible] the pre-climacteric equilibrium as this latter condition was different again from the condition prior to puberty. Thyroid extract, pituitary extract, cerebral extract, etc., were all worthy of trial in suitable cases. In addition, [illegible]ging suggestions and kindly reassurance of the patient were invaluable during the [illegible], until she attained the condition of post climacteric equilibrium.

Dr. PERCY SMITH, in reply, said he was glad to hear that Dr. Grimsdale believed that transplantation of ovarian tissue would relieve the symptoms of artificial menopause, and agreed with him that most women passed through the menopause without nervous symptoms unless they were neurotic. He was glad to find that Dr. Oswald's statistics as to cases agreed closely with his own. He had also met many cases of "borderland" psychoses at the climacteric in his out-patient department at St. Thomas's Hospital. Dr. Maule Smith's cases were cases between 40 and 50 years of age, and not therefore necessarily cases of climacteric insanity. With regard to Dr. Greenlees's question, he did not think operation should be done in any case unless there were definite signs of ovarian or uterine disease, and agreed with Dr. Alexander that it was commonly where there had been neuroses before that the patient broke down after the operation. With regard to Dr. Devine's remark, Kraepelin had adopted Dreyfus's criticism.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE CONTAGIOUSNESS OF LEPROSY.

ALL authorities on leprosy will agree with Dr. Lindsay Sandes that the disease is contagious. The vexed question is, How does the contagion take place? Some abrasion of the skin or mucous membrane would appear to be necessary. Black, a former assistant medical officer on Robben Island, noted some years ago that the disease often manifested itself first in the nose, beginning with a small abrasion or ulcer of the mucous membrane. Stickler,[1] out of 153 cases examined, found that 126 showed ulceration in the nasal cavity. The habit, common enough at home, and more so in hot climates, of picking the nose with the finger-nail, would account for the primary ulceration or abrasion. Thin[2] discusses the question of contagion at some length. The disease does not appear to be contagious in the same way as measles, small-pox, and other diseases are. Impey and Hansen[3] also seem to think that some abrasion is necessary. Ross, after a search of the careful records kept on Robben Island for forty-five years, discovered one case of contagion; in this case we have a distinct history of a wound. The boy pricked himself with a fish-hook whilst with the lepers. One well-known case seems at first sight to go against the theory that an abrasion is necessary, the case recorded by Dr. Hawtrey Benson in 1877. I am not aware that it has been recorded whether the Irishman who contracted leprosy after wearing his leper brother's clothes was free from abrasions and scratches; probably he was not. I do not agree with your correspondent of April 20th, or with Dr. Lindsay Sandes, that to contract leprosy after seven years' service amongst lepers is more an unfortunate than an inevitable result. Probably due to carelessness, working or operating, while there was a scratch or cut on some exposed part. Many of the medical officers and the majority of the leper attendants on Robben Island have had longer service than this, and no cases have been recorded. Mosquitos appear to be incapable of spreading the disease. Arning[4] describes his experiences in the Hawaiian Islands, and his experiments prove that mosquitos do not convey the disease.

It is difficult, indeed almost impossible, to get a reliable history from a coloured patient: they almost always trace the beginning of their disease to a cold, and invariably inform us that their friends and relatives are quite healthy. In the white races it is easy to get a reliable history, once one has gained the leper's confidence. I have amongst my notes an accurate history of several cases, all of which favour the hereditary theory. I append a few.

CASE I.—Patient a tubercular leper; mother, brother, and father died lepers.

CASE II. Mixed leper; father alive, a leper; on his mother's side, mother's father a leper.

CASE III. Patient a tubercular leper; mother a tubercular leper; father mixed leper; sister tubercular leper; son by outside woman a tubercular leper.

CASE IV. Patient a tubercular leper; sister a mixed leper; father and mother were both lepers.

I was informed by one of the attendants at the Leper Asylum at La Laguna, Las Palmas, an asylum which is most beautifully kept (unfortunately it is situated in the middle of the town) that a large proportion of the inmates were near relatives. On the Upper Zambesi, Portuguese East Africa, leprosy is very prevalent amongst the tribe called the Sennas. Natives of this tribe do not marry outside their own tribe. Whether the disease is spread amongst this particular tribe solely by contagion, or whether the hereditary taint plays an important part in the transmission of the disease, I know not.

C. R. Maitland Pattison,
Late Assistant Medical Officer, Robben Island Leper Settlement, etc.

References.
[1] Manson, *Tropical Diseases*, fourth edition, p. 533. [2] Thin, *Leprosy*, p. 150. [3] Impey, *Handbook on Leprosy*, p. 27. [4] *Journal of Leprosy Investigation Committee*, No. 2.

A CASE OF BENNETT'S FRACTURE.

A man about 25 years of age was sent to the out-patient department of the Swansea Hospital with a note to the effect that he had a dislocation of his thumb which could not be kept in place. The injury was received in a fight whilst delivering an "upper-cut." A diagnosis of Bennett's fracture was made and confirmed by the skiagram.

Although the lesion is described in the more modern surgical textbooks, it is said to be frequently mistaken for a subluxation backwards of the thumb, as in this case. No doubt the reason for this is that the description of this injury as a special fracture is not so generally known as might be expected, for the diagnosis presents no difficulty if this fact be borne in mind. The treatment of this lesion is well described in Thomson and Miles's *Manual of Surgery*.

C. Leonard Isaac, M.B., B.C.Cantab.,
Swansea. F.R.C.S.E.

NO DRESSINGS FOR SURGICAL WOUNDS.

I read with interest the contributions by Messrs. Madden and Dalton in your issue of September 28th, following that of Mr. Alcock,[1] on the use of iodine as the sole application to operation wounds.

The writers of these articles suggest that the satisfactory wound healing obtained by this method is due to some intrinsic property of the iodine solution.

I do not think that this is so.

During the last twelve months or more I have dispensed with any dressing for certain operation wounds; boracic or talc powder is dusted on to the surface of the incision at the conclusion of the operation and again after the stitches have been removed about seven days later. If the wound is in a moist area, powder is more frequently applied.

I at first used this method only in the case of hernia wounds in children, but I have latterly extended its use in adults to inguinal and abdominal wounds, when the support of a bandage has not been considered necessary. The total number of cases I have so treated is 133:

Children.—Hernias	...	...	...	34
Other cases	...	...	...	7
Adults.—Hernias	...	...	...	56
Laparotomies	...	...	...	16
Other cases	...	...	...	20

Healing took place by first intention in all cases except one—a femoral hernia. In this instance the infection was evidently of deep origin.

The skin wounds have shown hardly any sign of local reaction, certainly much less than those which I have seen treated by repeated painting with iodine. In all cases care was taken to obtain close apposition of the skin edges in the whole length of the incision. The preliminary skin preparation was carried out in most cases by the application of a 2 per cent. solution of iodine; in a few days a 5 per cent. solution of cresol in methylated spirit was used. I do not put this method forward as being particularly novel, but I quote it in order to show that an exposed dry wound heals excellently without the application of any antiseptic.

St. Thomas's Hospital, London, S.E. C. M. Page, M.S.Lond., F.R.C.S.

[1] British Medical Journal, February 3rd, 1912.

Reports
on
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

NORTHERN HOSPITAL, LIVERPOOL.

A CASE OF DEATH FROM INTESTINAL HAEMORRHAGE.

(Under the care of Mr. Murray and Dr. Bushby.)

[Reported by Max Greenberg, M.D., Ch.B.]

The following case is recorded because of the unusual nature of the complaint, and also on account of the difficulties in connexion with the diagnosis and the treatment:

Mrs. S., a married woman, aged 50. Had had two children. Menstruation ceased at age 34. She was sent into hospital on June 24th, 1912, on account of pain in the right side of the abdomen. She attributed this pain to a strain caused by lifting a heavy box three months previous to admission; otherwise there was nothing in her previous history which threw any light upon her present trouble. The pain subsided a few days after this strain, only to come on again whenever she exerted herself.

On June 18th, whilst attending to her household duties, she was seized with sudden severe pain in the right side of the abdomen. She was obliged to take to her bed, and remained there till the day of admission to hospital. She vomited frequently from June 21st to the 24th. Had always suffered from constipation. No history of jaundice and no haemophilic history.

Condition on Admission.

Her general condition strongly suggested that there was some acute trouble in the region of the gall bladder. The right rectus muscle was very rigid, but a definite mass could be made out just below the ninth costal cartilage, and there was marked tenderness on palpating over that area. The breath was very foul.

On June 25th she vomited twice; castor oil was given and an enema administered; the evacuation was dark but not blood-stained.

The following day the bowels acted and a little blood was present; breath still foul.

On June 27th she vomited twice, and there was a large quantity of bright red blood with stool; pain in hypogastrium very severe.

On June 28th the abdominal pain became so severe that morphine had to be administered hypodermically, and at this site there appeared an extensive subcutaneous haemorrhage. As the extravasation of blood might have been due to the needle wounding a vein, the skin of the other forearm was pinched, and in a short time a definite ecchymosis followed. It was therefore clear that we had to deal with a patient suffering from a grave blood disorder, and by no means a suitable subject for an abdominal operation. We kept her under observation for another two days, and then transferred her to one of the medical wards, in charge of Dr. Bushby, where she remained comparatively well for five days. Her breath had become sweet, and no more blood appeared in her stools.

On July 5th, five days after her admission to the medical ward, she again began to complain of pain, but in the left iliac fossa, and on examination a definite lump was made out in that region. On the following day a severe attack of melaena set in; she lost 4 pints of blood, the pulse became rapid and feeble, and she died of haemorrhage.

Post-mortem Examination.

Skin pale, with subcutaneous haemorrhages.
Lungs congested and oedematous; no fluid in pleura.
Heart soft and pale.
Small Intestine.—No ulceration.
Large Intestine. — Extensively ulcerated. Many shallow ulcers, chiefly run transversely to gut; elongated and irregular in shape, more circular towards sigmoid. Roughened bases, confined to mucous membrane only.
Liver fatty and soft.
Gall bladder distended, and containing sand.
Kidneys.—Left, soft; weight 5 oz. Right, weight ½ oz. Capsule adherent and thickened; irregular surface. Kidney substance entirely disappeared, except a very small piece in centre. Ureter patent.

Except as a complication of typhoid fever, it must be very rare for a person to die in hospital from intestinal haemorrhage. The enlargement of the gall bladder and pain in that area at first suggested biliary colic, but when large quantities of blood were got rid of by the bowel a different light was thrown upon the case, and made it still more difficult from a diagnostic point of view.

Mr. Murray thought it wise to postpone operation for a few days, and when his attention was directed to the subcutaneous haemorrhages he decided not to operate, and consulted Drs. Bushby and Warrington, who also came to the conclusion that the case should be treated in a medical ward. At this stage the patient had improved greatly; she was free from pain, and the bowel evacuations were normal.

With regard to diagnosis, Henoch's purpura, ulcerative colitis, ulceration of gall stone into bowel, and malignant disease of the large intestine were considered, but it was difficult to come to a definite conclusion. Although ulcerative colitis strongly suggested itself, yet the subcutaneous haemorrhages could not be accounted for.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

DORSET AND WEST HANTS BRANCH.

At the autumn meeting of the Dorset and West Hants Branch, Dr. Bottomley, Vice-President, read a paper on *Neuritis*, true and false. He pointed out that the term "neuritis" had been much more frequently used of late for a variety of pains. He then discussed the diagnostic value of the symptoms of neuritis—the pain, anaesthesia, wasting, paraesthesia, and vasomotor disturbances. He expressed the opinion that some painful conditions, which it was the custom to call neuritis, would be more accurately termed toxic neuralgia and other referred pains; he related cases showing that pains referred from the viscera to the chest sometimes extended to the arms, while those referred to the lumbar region sometimes extended to the lower limbs, and that in both cases the pain in the limbs was accompanied by such sensations as pricking, burning, and numbness. He considered that no distinction could be drawn between such sensations and those which are termed "acroparaesthesia," and suggested that a painful impulse arising in the viscera might radiate to that part of the spinal cord connected with the sensory nerves for the limbs, and, at the same time, by affecting the nerve cells whose function was to deal with touch and heat, give rise to feelings of pricking and burning, as well as pain. Such subjective sensations simulated, in his opinion, very closely the symptoms of neuritis; from the point of view of treatment it was important to distinguish them. Mr. R. Mercer called attention to diabetes and alcohol as causes of neuritis; he said that indefinite pains were usually called rheumatic, but were sometimes caused by such serious conditions as aneurysm or calculus. Dr. Manning was convinced that rest was the best cure for neuritis. He had used ionization, and had been particularly pleased with the effect of salicylic ions. Dr. Alexander mentioned some cases where neuritis had been simulated by malignant tumours. Dr. Saberton asked Dr. Bottomley whether deficiency of HCl in the stomach had any influence in the etiology of neuritis. Dr. Girling asked whether paralysis of the soft palate necessarily had a diphtheritic origin, or whether other organisms were capable of giving rise to neuritis of the palatine nerves. Dr. Middleton agreed that neuritis was too frequently diagnosed. He recommended counter-irritants in the treatment of the condition. Dr. Simmons agreed with Mr. Mercer that aneurysm should be excluded before a diagnosis of neuritis was made. He was much impressed with the value of ionization, and had had personal experience of the relief it afforded. The President (Mr. F. Winson Ramsay) disagreed with a statement Dr. Bottomley had made that the pain felt at McBurney's point in appendicitis was a referred pain. Dr. Bottomley replied. Mr. C. B. Thomson read notes of a case of *Tetanus successfully treated by Taccetti's method of carbolic acid injections* after the injection of antitetanic serum had failed. The period of incubation was eight days; the injections were commenced on the twelfth day (the fourth after the onset of symptoms), when the patient seemed moribund; 30 minims of a 5 per cent. aqueous solution of carbolic acid were injected every two hours; 139 injections were given, equal to 210 grains of carbolic acid; the urine was scanty at first, but there was never any sign of carbolic acid poisoning. The patient was shown in good health. The President congratulated Mr. Thomson on the successful result. The discussion was continued by Dr. Batterbury, Dr. Le Fleming and Mr. Belben.

YORKSHIRE BRANCH.

At a meeting held at Scarborough on October 26th, Dr. Hardwicke showed a case of an *Unusually large thyroid*. As the removal of the tumour was impossible, owing to the condition of the patient, a 4 in. tracheotomy tube had been introduced, through the thyroid into the trachea, and had been in position for five years. The patient, a farm labourer, had worked ever since. Dr. James Allan (Leeds) showed a uterus from a girl, aged 15, enlarged and hypertrophied, and presenting no cervical canal. Dr. Cuff (Scarborough) read notes on a case of influenza. An old lady who had suffered from senile dementia for some time contracted influenza, and in a few weeks her mental condition had improved in a marked degree. Dr. Oldfield (Leeds) read a paper on the *Treatment of fibroid tumours of the uterus* from an experience of over 200 cases. He said he was far from believing that every fibroid tumour of the uterus should be operated upon, and even when the growth was found to be of considerable size, unless symptoms were directly referable to it, they might safely ignore the advice of their American and Continental friends, and leave it alone. He had met with between 20 and 30 cases where fibroids of some size had produced few or no symptoms. He mentioned that sometimes patients with sterility due to a fibroid did not complain directly of that symptom; this was the case particularly with Jewesses. It could not be claimed, however, that the removal of the fibroid would always cure the sterility. The medicinal treatment of menorrhagia due to fibroids was discussed, and it was concluded that drugs had little or no effect on that symptom, rest in bed being the best means of checking the loss. In patients anaemic from menorrhagia it was shown how inadvisable it was to persist in expectant treatment of the disease, even when the patient was approaching the climacteric period, for the extreme anaemia and the accompanying cardio-vascular changes lessened the safety of operative treatment. As to the treatment of fibroids during pregnancy and labour, although commonly met with, Dr. Oldfield remarked that he had found it necessary to interfere surgically in only one case, and expressed the opinion that, generally speaking, the best results were obtained by non-operative treatment. In illustration of this point several cases were mentioned. The operative treatment of fibroid tumours was next briefly referred to. It was pointed out that although myomectomy was the ideal operation, in that the uterus was left to perform its function, the operation was not quite as safe nor as easy as the radical operation, that the symptoms sometimes recurred, and that patients often remained sterile. Hystero-myomectomy, leaving the cervix, appeared to him to be the most satisfactory operation. As a general rule it was a very safe operation, and the results were equal if not superior, regarded from every point of view, to those of any other abdominal operation. The various changes that take place in fibroid tumours were illustrated by examples, and the dangers of the infections and degenerations were commented on. There were 175 cases in all which came to operation with 3 deaths—120 abdominal operations (myomectomy and hystero-myomectomy), with 2 deaths; 51 vaginal operations with 1 death. In conclusion, he again emphasized the necessity for operative interference when (1) anaemia developed; (2) urinary or pressure symptoms manifested themselves; (3) in cases where infection or degeneration had supervened.

In the list of mayors elected on November 9th are the following members of the medical profession: Dr. S. R. Alexander, Faversham (re-elected); Dr. J. P. Atkinson, Saffron Walden (re-elected); Dr. E. Cureton, Shrewsbury; Alderman Dr. Fern, Congleton (re-elected); Dr. W. S. Gibb, Hartlepool (re-elected); Alderman Dr. O. Wynne Griffith, Pwllheli (re-elected); Dr. G. W. Joseph, Warrington (re-elected); Alderman Surgeon-Major E. L. McSheehy, Wimbledon (re-elected); Dr. W. B. Maurice, Marlborough; Dr. J. Rafter, Bootle; Dr. H. Stallard, Newark; Alderman Dr. Young, Bolton.

Reports of Societies.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Wednesday, November 6th, 1912.

Mr. J. M. Cotterill, President, in the Chair.

Perforated Duodenal Ulcer.

Mr. J. W. Struthers analysed 26 cases of perforated duodenal ulcer which had fallen to his experience. The ages ranged from 14 to 69 years, but the majority were between 30 and 50. The series included 1 female. As to previous digestive history, there were marked dyspeptic symptoms, especially pain and flatulence, but only rarely vomiting and melaena, in 17 cases; slight and quite indefinite symptoms in 5; and a complete absence of dyspepsia in 4. A negative dyspeptic history was therefore of no value in excluding duodenal ulcer. In no case were these symptoms premonitory of perforation. After the initial acute pain and shock there might occur apparent improvement; in 4 cases this was so marked as to make diagnosis difficult, and in them on operation the leakage was found to be slight. In all the perforation was on the anterior duodenal wall, 1 to 1½ in. from the pylorus. As to the operation, he had found chloroform the safest anaesthetic, without the previous exhibition of a sedative; it might be supplemented by ether in the later stages, if necessary. He closed the perforation by infolding the pyloro-duodenal junction and suturing with No. 2 or 3 non-chromicized catgut. Excision of the ulcer was unnecessary. If the condition of the patient permitted he advised the addition of a gastro-enterostomy in every case, both to obviate the effects of a duodenal stenosis, which might be considerable, and also to prevent the recurrence of ulceration. While swabbing out excess of peritoneal fluid, he regarded lavage as unnecessary and probably harmful. After the completion of the operation a dose of morphine or heroin sufficient to procure a few hours' sleep was given; water was allowed from the first; fluid food by the mouth in twenty-four hours, and soft food in a few days. His results were—2 deaths before operation and 5 after it, making 19 recoveries out of 24 operated cases. Of the 19 recovered cases, the after-history had been obtained in all but 2, showing a complete recovery of health in 14 and the recurrence of some dyspepsia in 3.

The President said that melaena had been a commoner feature of these cases in his experience. In cases of doubtful diagnosis he advised two separate incisions—the first, suprapubic, which could serve later for drainage, and the second over the duodenal region. Professor Caird thought ruptured duodenal ulcer was more serious than gastric ulcer. Though general lavage was not necessary, he never omitted to wash out the pouch of Douglas, and always left a suprapubic glass drain. Mr. Cathcart thought peritoneal lavage, though not necessary in small effusion, should be done if the effusion were large. In the latter cases subphrenic abscesses might result from the omission of this procedure. The presence or absence of previous digestive symptoms might be due to the presence or absence of inflammation round the ulcer. The hunger-pain and other symptoms were not pathognomic of duodenal ulcer, but were due to hyperchlorhydria. Professor Thomson said he had never seen a case of perforated duodenal ulcer die of shock, and he agreed as to the advisability of gastro-enterostomy. In his experience perforating duodenal ulcers were not frequently associated with haemorrhage and melaena. Mr. Wallace recalled 3 cases in which the reaction and improvement after perforation were very marked, and in all of which the aperture was the size of a shilling. He quoted from one large series of statistics to show that the addition of gastro-enterostomy did not appreciably increase the percentage of cures. Mr. Miles said the leakage after perforation was generally slight, a result probably due to the immediate closure of the pylorus. He had once seen during operation a duodenal ulcer perforate, and the only escape was of a small jet of air. He used silk for suturing, and generally washed out the peritoneum. Gastro-enterostomy should be done, if not adding to the patient's risks. Mr. Dowden said local pain on abdominal percussion was an aid in diagnosis. He had done pyloroplasty in 5 cases, with four good results. He always washed out the peritoneum freely. Mr. Wilkie said that the first part of the duodenum had a precarious arterial supply, and this was probably a factor in causation, especially in men over 48 who had worked hard, drunk hard, and showed arterio-sclerosis.

ROYAL SOCIETY OF MEDICINE.

Clinical Section.

Friday, November 8th, 1912.

Sir William Osler, Bart., President, in the Chair.

Exhibition of Cases.

The following cases were shown, amongst others:—Dr. M. A. Cassidy: A woman, aged 26, with *Rheumatoid arthritis*. She had the disease in an advanced stage, and had been bedridden and unable to stand for more than a year. Other methods of treatment having failed, she had been fitted with a Hoefftcke's splint, and could, when exhibited, walk without attracting attention. Mr. Wilfred Trotter: A man, aged 49, who had suffered from advanced *Carcinoma of the epiglottis*, with involvement of the glands. He had been treated by operation without laryngectomy in November, 1910, and no recurrence had followed. The case was shown as an instance of the curability of advanced carcinoma of the upper opening of the larynx, and to show that cure could be effected without removal of the whole larynx. Dr. W. Essex Wynter: *Acholuric jaundice* in a woman aged 22. Bilirubin was present in the serum but not in the urine. The question of operation by splenectomy was raised. Mr. Lawrie McGavin: (1) Two cases in which resection of the caecum, ileo-caecal valve, appendix, and 10 in. of ileum had been successfully performed—in the first for chronic appendicitis, in the second for obstruction following an entero-anastomosis. In the latter a ventral hernia had followed and was cured by filigree implantation. (2) The case of a man aged 24, in whom the caecum, ileo-caecal valve, appendix, and 5 in. of ileum had been resected for sarcoma. The patient's desperate state had necessitated the use of a *Murphy button* for anastomosis. The button had not been shifted for four years and caused no inconvenience. Dr. F. E. Batten: Celluloid splints as used in the treatment of *Acute poliomyelitis*, illustrated by two cases. The advantages of the splints were that they were easily made, extremely light, fitted the leg accurately, could be applied within the first few weeks of the disease, were not expensive, and could be worn not only during the earlier, but also during the later, stages of the disease. Mr. E. C. Hughes: Two cases of congenital *Syphilitic disease of the knee-joint* in a boy and girl aged 12 and 13 respectively. Mr. Donald Armour: Chronic circumscribed *Inflammation of the corpora cavernosa*. It was painless and caused dorsiflexion of the penis on erection. The patient denied syphilis, and it had not reacted to antisyphilitic treatment. Dr. James Galloway: (1) *Tuberculous peritonitis* in a boy aged 10. The case was shown on account of the early and extensive infiltration of the omentum with adhesions to the anterior abdominal wall and the special involvement of the superficial structures in the neighbourhood of the umbilicus. (2) A case of *Sclerema cutis* (adultorum). It had improved considerably by vigorous massage. Dr. Robert Hutchison: A man, aged 39, with *Hirschsprung's disease*. The whole of the colon was enormously distended and constipation was obstinate.

Section of Laryngology.

At a meeting on November 1st, Mr. Herbert Tilley, President, in the chair, the following were among the exhibits: A man, aged 21, from whom Mr. Tilley had removed a large fibroma by the nasal route. The cheek and lip were turned up on one side and the ascending process of superior maxilla removed. The base of the growth was freed by scissors, and a wire snare also employed. A laryngotomy was not employed in the first instance, but recourse to a tracheotomy was found to be necessary later. Dr. Fitzgerald Powell recommended a preliminary laryngotomy as a routine in these cases. Mr. Harmer related the easy removal of a pulsating growth where he employed temporary ligature of the external

carotids. Mr. PATERSON remarked that these cases, though rare in this country, were more frequent in Austria. Dr. DUNDAS GRANT recommended the use of a raspatory for the removal in early cases, and considered the antrum as the common site of origin. The PRESIDENT, in his reply, insisted on the convenience of a preliminary laryngotomy, and advised the more frequent employment of Voltolini's method of electrolysis. Dr. DAN MCKENZIE: A case in which *Denker's operation* for maxillary antrum suppuration had been performed. The anterior corner walls of the cavity were removed so as to connect the opening in the canine fossa with that made in the inferior meatus of the nose. There was no deformity in this case, though such had been reported in other cases. It was possible to look directly into the antrum. The PRESIDENT mentioned that the lacrymal duct had been damaged in the performance of Denker's operation, and this had given rise to a great deal of trouble. Mr. TWEEDIE: Specimens of epithelioma from a man in whom both tonsils and the cervical glands on both sides were affected. Sir STCLAIR THOMSON related an instance in which both tonsils were sarcomatous. Sir FELIX SEMON suggested contact infection. Sir STCLAIR THOMSON: Two cases of Killian operation for frontal sinus suppuration. They were shown to illustrate (1) the severe pain for which the operation was performed; (2) the satisfactory cosmetic effect; (3) the complete cure of suppuration. He recommended the immediate closure of the frontal wound or delayed closure, according to circumstances. In some instances it was more dangerous to leave open than to close. The use of a frontal and orbital dressing pad was important. Mr. PATERSON recommended that the frontal wound should be left open one week. Dr. WATSON-WILLIAMS advised closure after forty-eight hours and the use of paraffin one year later to improve any deformity. Dr. DAN MCKENKIE said his practice was to insert sutures at the time of operation and adjust these later. Mr. HOPE advocated the use of massage to loosen the scars. The PRESIDENT insisted on the importance of keeping the frontal wound open, for any invasion of the cancellous tissue led to fatal osteomyelitis. Dr. HUNTER TOD: A case of *Malignant disease* originating in the sphenoidal sinus, which developed proptosis as the first symptom. There was no pain, thanks probably to the removal of the anterior and sphenoidal wall and the relief of tension.

SECTION OF OPHTHALMOLOGY.

AT a meeting on November 6th, Sir ANDERSON CRITCHETT, President, in the chair, the following were among the exhibits:—Mr. HERBERT FISHER: A case of *Subhyaloid haemorrhage*. This term should, he thought, be abandoned, as the haemorrhage was intraretinal; "semilunar retinal haemorrhages" would be appropriate. Mr. A. W. ORMOND: A case of *Pemphigus of the conjunctiva*, followed by essential shrinking. The patient was aged 24, and his condition as well as his sight were now so bad that he pleaded for something to be done. Mr. Ormond proposed to clear away the conjunctiva as much as possible and substitute mucous membrane from elsewhere. Mr. FISHER mentioned a corresponding case, in which a vaccine made from the contents of the patient's own vesicles was administered for some time, but without marked benefit. Mr. E. NETTLESHIP read notes of a case in which a sarcoma of the choroid was seen as a small spot of disease, about years before the diagnosis of tumour was made, and twenty-five years before removal of the eye. The case showed the importance of watching over long periods, when possible, the behaviour of certain solitary spots or patches of dusky discoloration that were occasionally seen in the choroid during ophthalmoscopic examination. Such solitary, non-inflammatory patches might sometimes be the counterparts of the minute sarcomatous growths, of which nine or ten examples had been accidentally discovered after death during the last few years. Mr. Nettleship also read a joint communication by himself and Mr. A. HEAD THOMPSON on an extensive pedigree of *Leber's disease* of the optic nerve. It illustrated the occurrence of the malady in females, recovery in some cases in both sexes, descent to all the children of one of the affected women, diabetes with blindness of unknown nature in one member, high infantile mortality in the very large family of one affected man, and absence of influence of the optic nerve disease upon prospect of life. Mr. A. W. ORMOND described a case of *Retino-choroiditis juxta-papillaris* in a man aged 20. The condition came on suddenly. On awakening one morning the patient noticed he could not see clearly with his right eye. He had had a little pain in it a week previously. On examination there was found keratitis punctata, and a patch of acute choroiditis touching the upper margin of the optic disc and spreading upwards. Oedema of the retina spread over and beyond the patch. Vessels which passed over the inflamed area were partly obscured, and the arteries diminished in size; there was also some haze in the vitreous. Von Pirquet's reaction was positive. The inflammation gradually subsided, and the patient now had full visual acuity, but a large sector of his field of vision, stretching from the blind spot to the extreme periphery, was entirely absent, and he had no perception of light in the area affected. The defective area in the field of vision was clearly due to the obliteration of a branch of the central retinal artery by the pressure of the inflammatory swelling. Under the title "Retino-choroiditis juxta-papillaris" Professor JENSEN, of Copenhagen, published four similar cases in Graefe's *Archives* in 1909.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on November 1st, Dr. G. P. SHUTER, President, in the chair, the following were among the exhibits:—Mr. ASLETT BALDWIN: A case of *Tuberculous disease of the knee-joint* in a girl aged 12. The right knee-joint was distended with fluid, there was some thickening of the synovial membrane, but a remarkable absence of pain, tenderness, and rigidity. The disease dated back about eight months. There were no signs of congenital syphilis, a Wassermann reaction was negative, but a positive von Pirquet reaction was obtained. Mr. E. P. ISAACS COKE: A case of *Polycythaemia* in which the erythrocytes varied between 6 and 12 millions. The complexion of the man during ten years' observation had always been of a deep red hue, the mucous membrane almost purple, and the conjunctivae injected. Before a severe haemorrhage, following the extraction of some teeth, the spleen was 2 in. below the costal margin; a month later it was only just palpable. The patient suffered from headache, giddiness, and general weakness. Rest seemed to be the only treatment from which he derived benefit. Mr. T. C. STOREY (for Dr. H. J. DAVIS): *Hernia cerebelli* in a boy aged 8, following the evacuation of a cerebellar abscess six months ago. The hernia was kept bandaged under pressure, and had completely disappeared. Dr. GRAINGER STEWART remarked that in his experience this was the most successful method in dealing with cerebral herniae. Dr. F. S. PALMER: Two cases of characteristic *Friedreich's ataxia* in a brother aged 16 and a sister aged 18. In each case the disease seemed to have some relation to an attack of influenza acquired about three years ago. The only other child in the family, a brother aged 19, was healthy, both parents were alive and well, and no history of nervous disease could be traced in previous generations nor among the collateral branches. Dr. H. PRITCHARD: A case of *Aneurysm of first part of the aorta* coming through sternum in the region of the third right costal cartilage in a man aged 43 years. He had been in the army, and served through the South African war. Dr. Pritchard drew attention to the signs of pressure on the superior vena cava not a common phenomenon, but well seen in this instance. The patient gave a positive Wassermann reaction, and had much improved under treatment with iodides and rest. Dr. A. E. SAUNDERS and Dr. A. C. D. FIRTH: A series of eight *Cretins* and two children affected with goitre. Dr. FIRTH, when showing his four cretins, desired to draw attention to the fact that frequently at the commencement of thyroid treatment the patient became bald, and afterwards grew a stronger and thicker crop of hair. Also that occasionally an overdose of thyroid might result in the production of glycosuria. The girl, aged 14 years, mentally rather backward, developed slight glycosuria on taking 7 grains daily. She had been under treatment since the age of 6 months, and now took 5 grains daily. Dr. T. GRAINGER STEWART: A case of pituitary tumour in a man aged 52. Progressive failure of vision during the

last seventeen years, commencing in the temporal fields, had reduced the patient to such a condition that he only retained a reduced nasal field in the left eye. He became pale, waxy looking, and adipose. Loss of hair was a marked feature, and he showed regression towards the female type. Testicular atrophy developed years ago, and along with these changes an increase in the size of the hands and the malar region of the face. There was an increased sugar tolerance, and an *x*-ray examination revealed enlargement of the sella turcica. Some signs of acromegaly were present, but in the main the symptoms pointed to a loss of function of the posterior lobe, or hypopituitarism. Mr. Bishop Harman referred to 2 cases he brought before the society last year. They had been under treatment for two years, and had remained quite stationary. In one case thyroid extract, 15 grains per diem, was administered for a month, then a rest for a fortnight; the patient said she appreciated an improvement in her condition each time she resumed the extract. In the other case a man who lived in the country attended the local slaughter-house, and extracted the pituitary body of sheep and oxen for immediate consumption! In neither case had any acromegalic symptoms appeared. Dr. J. Bernstein: Two cases of *Glossitis due to syphilis*, and wished to point out the frequency of a negative Wassermann reaction associated with chronic tertiary lesions in acquired or congenital cases: One was a woman, aged 35, suffering from congenital syphilis. The tongue showed chronic thickening with fissures, and obstinate dyspepsia was a secondary result of the painful condition of that organ. In spite of the presence of Hutchinson's teeth and a family history of syphilis, the Wassermann reaction was negative, but this would not prevent immediate treatment with salvarsan. The other was a woman, aged 75, showing chronic superficial glossitis of a different type, the tongue being glazed. In this case the Wassermann test gave a positive reaction.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

At a meeting on November 8th, Dr. J. Dobson, President, being in the chair, Dr. Maxwell Telling, in a paper on the clinical aspects of primary intrathoracic malignant disease, expressed a belief that the condition was much less rare than it was said to be. The possibility of its presence should be borne in mind in all cases of intrathoracic disease presenting unusual features. In such case stridor was often a comparatively early sign. Mr. Lawford Knaggs showed two cranial specimens, one presenting a wound of the superior longitudinal sinus resulting from a dog-bite, and the other a necrosis following a burn. The latter was associated with extradural suppuration and septic thrombosis of the superior longitudinal sinus. Mr. W. Gough showed a specimen of *Epithelioma of the vulva* involving the rectum, and emphasized the importance of a very wide removal of the growth in such cases. Mr. A. D. Sharp showed a girl, aged 12, suffering from laryngeal tuberculosis, which began by a deposit of small yellow tubercles along the free border of the epiglottis. Three weeks later the whole of the epiglottis and the loose folds of the larynx presented typical pseudo-oedematous thickening, and tuberculin (B.E.) was given. After the first dose the tubercles began to resolve, and after four injections the epiglottis returned to its normal size. The patient had had seven injections, and now there remained only a small deposit in the left arytenoid region.

LIVERPOOL MEDICAL INSTITUTION.

At a pathological meeting on October 31st, Mr. F. T. Paul in the chair, the following were among the specimens of malignant disease exhibited:—Mr. Courtenay Yorke: *Carcinoma of the œsophagus*, involving both recurrent laryngeal nerves. During life there was complete patalysis of the larynx. Dr. R. E. Harcourt and Mr. Bickerton: An epibulbar *Melanotic sarcoma* in a woman aged 37. Mr. Arthur Evans: An *Epithelioma* in appendicitis scar. Drs. Buchanan and Lissant Cox: Carcinoma of an *Accessory thyroid*, or of the thyroglossal duct. Mr. Thelwall Thomas and Dr. Rees: (1) Papilloma of the prepuce, showing early malignancy: (2) malignant breast, showing pigmentation due to haemorrhage from previous operation. Mr. F. T. Paul gave a photomicrographic demonstration, with lantern slides, of epitheliomata of varying degrees of malignancy, and pointed out how an accurate prognosis could be given from the appearances of the sections. His opinions had been confirmed by the subsequent histories of the cases. Dr. Hubert Armstrong read a note on a case of endothelioma of the heart, and demonstrated the sections and drawings made for him by Professor Möckeberg. The tumour was a lymphangio-endothelioma of the A–V node, causing heart-block with Stokes-Adams syndrome in a boy aged 5 years. The case had been reported in full in the *Deutsch. Archiv. f. klin. Med.*, March 13th, 1911. Dr. Wakelin Barratt, in a paper on recent experimental investigations in regard to the production of immunity to carcinoma, called attention to the fact that many living tissues from the mouse or the fetal mouse appeared to have the power of producing immunity or of arresting the growth. The tissues used must be living. Mr. F. T. Paul thought the cure of carcinoma by therapeutic methods was far distant, but hoped that experimental research would be continued with vigour. Dr. Blair Bell believed that a method for treating cancer therapeutically was within sight; if not an absolute cure, at least one which would supplement surgical procedures. Mr. Rushton Parker was particularly impressed by the modest and restrained manner in which the various facts in Dr. Barratt's paper had been put forward. It was most important that no false hopes should be raised.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

At a meeting on November 1st, Mr. Freeland Fergus, President, in the chair, Professor A. R. Ferguson, of Cairo, in a lecture on bilharzial disease, said its distribution throughout the East was largely determined by the great religious pilgrimages, especially that to Mecca, where the disease was very prevalent. It occurred also in Cyprus, Mauritius, and the West Indies. It had been carried by troops engaged in the South African war to many parts of the Empire, and similarly by American troops from the Philippines to many parts of the United States. The great number of remedies for haematuria used by the ancient Egyptians, and the existence of vesical calculi in mummies of almost every dynasty, suggested its existence in Egypt from the earliest times. Dr. Ruffer, of Alexandria, had demonstrated calcified bilharzia ova in the kidney of a mummy of one of the later dynasties. It was most probably by bilharzial disease that the strength of the armies of Alexander the Great and of Napoleon was so greatly reduced during their respective occupations of Egypt. At present the disease was extremely common in Cairo; the speaker had been able to demonstrate by special methods the presence of ova, recent or calcified, at as many as 61 per cent. of 600 consecutive autopsies on male subjects. Infection took place from man to man; there was no intermediate host. The ova were expelled with the urine or faeces, and if they fell into fresh water they developed in a few minutes into active ciliated embryos (Miracidia). These could hardly infect by the gastro-intestinal tract, as they succumbed to even three minutes' exposure to 1 in 2,000 hydrochloric acid; nor could they probably penetrate the unbroken skin. Infection doubtless occurred by a mucous surface, possibly the genital, but more probably the nasal, as the habit of ablution before prayers as practised by the poorer Moslems favoured this route. After its entrance the Myracidium became a sporocyst, and found its way to the liver. The sporocysts were male and female, and infection usually took place with both sexes simultaneously. If so, the young worms developed from the sporocysts, passed into the portal vein, united sexually, and then made their way in couples into its smallest branches, especially to those of the inferior mesenteric vein. There in the walls of the bladder and colon occurred the chief deposition of ova, from which arose the main symptoms of bilharziosis. If, as occasionally happened, the infection were chiefly by male sporocysts, the resulting damage to the tissues was not great, as the male worms developed therefrom did not pass beyond the larger branches of the portal vein. If the infection were mainly a female one, the resulting female worms lingered in the liver till a subsequent infection with male sporocysts allowed of sexual conjunction, when the conjoined worms were able to migrate as described. But

while still in the liver the female worms produced immature ova, characterized by an obliquely placed lateral spine which, penetrating through the walls of the portal radicles, irritated the Glissonian tissue and produced a peculiar form of hepatic cirrhosis.

GLASGOW OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

AT a meeting on October 23rd, Dr. LINDSAY, President, in the chair, the following were among the exhibits: Dr. W. RITCHIE showed (1) uterus with fibroids; (2) tuberculous salpingitis. The peritoneum was found studded with tubercles. Hysterectomy was done on account of fibroids. Dr. LINDSAY delivered a presidential address on the ovary in relation to sterility and abortion. He desired, he said, to submit some impressions gained as a family physician in relation to the physiology and pathology of pregnancy along with evidence which appeared to give them some degree of plausibility. It was common knowledge that childbearing often ceased years before the cessation of menstruation, and that only very occasionally was it continued up to the menopause. It was common knowledge also that long intervals sometimes occurred between the birth of children and that during these intervals health was normal, and that there was evidently nothing to prevent conception taking place. What was the nature of this incapacity for childbearing? Was it pathological or physiological? In cases where the cure of some morbid condition resulted in the cure of sterility the sterility was properly designated pathological. But the question was whether the periods of lessened fertility which occurred generally among women were of this character; the fact of their being common was against their being so and pointed to physiological origin. If they were physiological, then current notions of the relationship between menstruation and ovulation must be revised. Ovulation might go on in absence of menstruation, but could menstruation go on in the absence of ovulation? Menstruation was abolished when the ovaries were excised, but that effect need not be due to abolition of ovulation; it might be due to the cessation of other activities of the genital glands. A menstruating uterus might be found associated with a newly ruptured follicle in the ovary, but the association was not as frequent as had been supposed. Between a follicle lately ruptured, one nearly ripe, and one degenerating, the distinction was not easy to make; at the best, opportunities for making observations on the human subject were infrequent. On that account evidence derived from the lower mammals had been given more weight than rightly belonged to it. Oestrus or "rut" in animals was homologous with human menstruation, inasmuch as the uterus underwent similar changes. Oestrus was accompanied by ovulation, and so long as it was always so the inference that menstruation was likewise accompanied by shedding of ova was not unreasonable. But it had been found that in some animals oestrus and ovulation occurred at different times. In bats oestrus occurred in autumn, but ova were not shed till later, the semen being stored in the uterus during hibernation. Some monkeys menstruated regularly, but it was almost certain that ova were shed only during a brief sexual period. Some of the phenomena of childbearing postulated a variability at different terms in the production of ova. Ovulation sometimes followed a cycle of its own: usually its periodicity agreed with menstruation. If a large series of births be arranged according to the age of the mothers, a curve was obtained which represented the rise and fall of fertility within the childbearing period; the curve rose rapidly to its maximum height between 29 and 30 years, and then fell rapidly. Age was not the only influence; it was modified also for a particular [illegible] on of life. If a woman had a child in the [illegible] and after ten years' widowhood married at 35, her chances of issue were greater than those of a virgin marrying at the same age. Something of this kind was [illegible] in domestic animals. It seemed clear with [illegible] to the lower animals, and probably was true in [illegible], that the reproductive function tended to [illegible] abeyance when it had not been active at the appropriate time. That was a consideration which had not received the attention it deserved from those who had exercised their minds on the falling birth rate.

Reviews.

CHEYNE AND BURGHARD'S SURGICAL TREATMENT.

THE second volume of CHEYNE and BURGHARD'S *Manual of Surgical Treatment*[1] has been enlarged and revised in its new edition. It deals with the surgical affections of the soft tissues and the bones, and contains also a division on amputations. The authors have continued to avoid the mistake of placing before the reader a number of alternative methods without comment, and the book is therefore not only a record of methods but a guide of much value. As an example may be taken a very common affection—tuberculous adenitis; in the description of treatment the different states and stages of the disease are separately discussed, and definite recommendations are made under each heading. Alternative methods of treatment are, of course, discussed, but in relation to the variations met with in the different diseased conditions, and are not set out simply as a catalogue. Another example of this method to which the reader may turn with profit is the description of the treatment of tuberculous teno-synovitis; it will be remembered that the first volume of the new edition contains a chapter on the use of tuberculin. New operative methods are also adequately described and illustrated—for example, arteriorrhaphy, and Matas's reconstructive method in the treatment of aneurysm. The following sentence sums up the authors' position on the question of the operative treatment of fractures:

> At the present time it is not considered justifiable to leave the patient with an ununited or badly united fracture, or even a recent fracture in bad position, if the fragments can be maintained in proper position by means of an operation.

There follows a discussion of the particular types of fracture for which operation is required. Another statement to which it is worth while to direct attention is found on p. 281:

> While we are not prepared to discard splints entirely we think that massage and careful passive movement may be associated with them to a far greater extent than has been the case hitherto, not only without risk to the union but with actual advantage to the patient.

Some surgeons will consider that this sentence might justifiably be strengthened. In discussing the treatment of so-called acute suppurative periostitis the following recommendation is made:

> When there is a considerable collection of pus beneath the periosteum three or four days after the commencement of symptoms the case is probably one of primary periosteal inflammation, and the medulla need not be opened at once.

Both the statement and the advice are open to doubt, and many surgeons hold that under such conditions the only safe line of treatment in a case of average virulence is to open the medulla without delay. The third division in this volume gives an account of the general principles governing the performance of amputations and of those procedures which are most frequently useful. The wisdom of not loading the text with the many named operations which are only performed nowadays on the cadaver is to be commended.

The third volume of the *Manual* corresponds to volume iv and part of volume v of the first edition. It deals with the surgical affections of joints, of the spine, and of the head and face. In every respect it has been brought up to date, and the revision has been thorough and adequate. The first section, on the treatment of joint diseases, is less altered than the others. There are, however, descriptions of new operative measures, and many new pictures illustrating them, in particular operations on fracture dislocations, unreduced dislocations, and recurrent dislocations. Incidentally it may be noticed that the patient who is about to have a dislocation of the shoulder reduced (Fig. 5) has a very healthy-looking joint outline. In tuberculosis alone do we find operative measures less advocated; as the authors say, operations for this disease "are diminishing in number every year." Arthroplasty

[1] *A Manual of Surgical Treatment*. By Sir W. Watson Cheyne and F. F. Burghard. New edition, entirely revised and largely rewritten with the assistance of T. P. Bent and Arthur Edmunds. In five volumes. 1912. London: Longmans, Green, and Co. (Med. 8vo, vol. ii, pp. 698; figs. 252, plates 4. Vol. iii, pp. 655; figs. 271. 21s. net each.)

for ankylosis is among the new measures described and illustrated. The section on surgical affections of the head and face is enlarged to the extent of about 40 pages. Operative procedures for tumours of the brain are more fully described, and new measures, such as temporal and occipital decompression, are included. The article on the treatment of trigeminal neuralgia also is rewritten; the method by alcohol injections is described, and the operation recommended for removal of the Gasserian ganglion is that by resection of the zygoma and the low route. An important improvement in this edition is the redrawing of many of the old illustrations as well as the provision of new ones. There can be no question that the methods described throughout represent established and approved surgical procedure.

THE TREATMENT OF CONSUMPTION IN GENERAL PRACTICE.

The history of the treatment of consumption affords an apt illustration of a common human failing. We "all with one consent praise new-born gauds, though they are made and moulded of things past," and each novelty in the way of treatment has been taken up in turn, only in many cases to be dropped in favour of the next. To the older generation of physicians who have watched these fluctuations of therapeutic fashion during the last thirty years they must all of them, if rightly used, appear to be of some service, although none may be credited with the virtues that were attributed to them on their entry to the therapeutic stage. Cod-liver oil, hypophosphites, creosote, open air, forced feeding, sanatoriums, and tuberculin have all had or are having their day, and although some are apt to be discredited, it must not be forgotten that they have each achieved some measure of success as adjuncts in the control of the disease. In a large work[2] on the subject of the treatment of tuberculosis in general, Professor Albert Robin of Paris has examined the whole subject in a critical spirit, and laid down what, from his point of view, should be regarded as the correct lines to follow. The keynote of his teaching rings round the organism of the patient rather than that of the micro-organism with which he is affected. The tuberculous virus is widespread, but it only flourishes in certain cases and not in all. Amongst infected persons there is an obvious variation in their powers of resistance, and it is assumed that this must be traceable to some physical conditions which should be amenable to detection. Professor Robin has for many years past maintained that two such conditions can be discovered in the tuberculizable organism. The first of these consists in a variation from the normal interchange of gases during respiration. He has found that in most cases of infected persons there is a larger intake of oxygen during respiration, and that this phenomenon may be equally demonstrated in persons not as yet actually tuberculized but who have become infected at a later period. He thus sees in this altered interchange of gases an indication of susceptibility to tubercle. His second pretuberculous condition, to which he attaches much importance, is the variation in the fixation of mineral substances in the course of alimentation. These views have been subject to much adverse criticism at medical societies and congresses, but his faith remains unshaken and his therapeutic teaching is largely influenced by them. He lays down five general principles as a guide to the general management of tuberculous disease. He is altogether opposed to tonic treatment and excessive feeding, but lays stress upon the need for supplying the mineral constituents in which the tuberculous patient is deficient. He counsels the use of general antiseptic methods, advises local treatment of tuberculous foci whenever it is possible, and is in favour of antitoxic medication. In many chapters, and at great length, he sets forth the details of each of these in turn. Cod-liver oil, arsenic, and antimony are credited with powers of control over successive oxygenation, while bone dust, carbonate of lime, fluorides, silicates, and preparations of magnesium are relied upon to supply the needful mineral constituents. Antisepsis is achieved by inhalation, and tuberculin is to be used as an antitoxic. Of the latter Professor Robin is obviously sceptical, but he uses it as an adjunct to the older methods. It will thus be seen that he is not among those apt to praise new gauds, but gives full credit to the powers of once-vaunted methods of treatment which in his long experience he has found to give good results. The book is a very full one, dealing with the subject in every possible way. It is well arranged and well indexed, and should be of great service as a work of reference in the hands of all who are not dazzled by the latest discoveries, but can look at the disease as a whole and weigh the many conflicting points which arise in its treatment in the mental balance.

[2] *Traitement de la tuberculose.* By Albert Robin, Professor of Clinical Therapeutics in the Faculty of Medicine in Paris. *Thérapeutique usuelle du praticien.* Third series. Paris: Vigot Frères. 1912. (Demy 8vo, pp. 640. Price 8 francs.)

HYPNOTISM IN DISEASE.

Dr. H. Crichton Miller, in his book on *Hypnotism and Disease*,[3] has attempted the difficult task of writing a book suitable alike for practitioners and laymen. He gives a concise history of the origin, growth, and uses of psychotherapy, a subject of which hypnotism is an important branch. For the profession it is merely an introduction to the subject, and not a textbook; for the public it is a common-sense statement, free from exaggeration. It can be put into the hands of an intelligent and educated patient, who by its perusal will be helped to understand the *rationale* of the treatment.

The book points out both the uses and limitations of hypnotism. It makes no claim that it is a panacea, but draws attention to those psychic and psycho-physical conditions in which it should be chosen early as the best remedy at our command rather than relegated to the position of a last resource.

A good deal of evidence is brought to prove that hysterical and weak-minded persons are the least susceptible of cure by hypnotic suggestion, and that teachers and soldiers and persons subject to self-discipline form the best subjects. Dr. Crichton Miller looks upon such treatment as but an introduction to the longer process of re-education. "The fundamental therapeutic requirement" of neuropaths, he says, "is to regain control of their mental activities." "There are scores of mind-wanderers who regularly and unrestrainedly indulge in the vice of introspection." For these re-education consists at first in the practice of such simple exercises as rhythmic breathing, or recording certain objects seen during a walk, or the mechanical exercise such as crossing out a certain letter in the column of a newspaper. Such tasks develop concentration and attention, speed and accuracy. In a brief discussion of psycho-analysis, the author, while acknowledging the great value of Freud's work, controverts his claim that hysteria is always the result of a suppressed sexual trauma, and considers his elaborate technique by no means always necessary in unearthing a "submerged complex."

The use of "collective hypnotism" is considered to be specially helpful in the treatment of unusually self-conscious patients, such, for instance, as those who complain of morbid blushing, in whom nervousness may be so great as to make them unable to receive hypnotic suggestion when they are the sole object of the physician's attention.

Dr. Crichton Miller has something fresh to say about the treatment of the drunkard as distinguished from the dipsomaniac, who is a "psychopath from the beginning." He considers the treatment of the drunkard is "wrong in incidence and character." At present the severity of his punishment increases with the number of his convictions, whereas his actual moral responsibility decreases as the vice takes stronger hold upon him. This, it is contended, indicates that the early punishment should be most severe and of a deterrent character.

[3] *Hypnotism and Disease: A Plea for Rational Psychotherapy.* By H. Crichton Miller, M.A., M.D. (Edin. and Pavia), with an introduction by Charles Lloyd Tuckey, M.D. London: T. F. Unwin. 1912. (Cr. 8vo, pp. 252. 5s. net.)

DISEASES OF THE RECTUM.

Probably no department of his work gives the practitioner more worry and annoyance than that associated with diseases of the lower bowel and rectum. It is a misfortune that patients too often do not seek advice till disease

is well advanced and the symptoms intolerable, and it is a double misfortune that patients are encouraged to treat themselves with the many quack remedies blatantly advertised. A work, therefore, like Dr. Samuel T. Earle's *Diseases of the Anus, Rectum, and Sigmoid*[4] will be warmly welcomed, as it is a complete study of the subject. The author's method is to give the results of his own experience, and at the same time to quote very freely the opinions and descriptions of others, chiefly his own countrymen. We cannot find that any part of the subject has been omitted. Indeed, we rather think that the author has permitted too much expansion. The chapter on Hirschsprung's disease, that on membranous colitis, the section on appendicostomy, and much of the anatomical and physiological chapter might quite well have been omitted without loss, but with great gain to the compactness and readableness of the work.

Constipation bulks largely in the author's mind, and in the book to the extent of thirty-four pages. A long quotation on the treatment of constipation by psycho-therapy, from the work of Dr. Lyon, of Buffalo, is introduced: it is a dissertation which has for its text, "The final cause of habit constipation is habit"; it discusses fully, training in habit, accessory stimuli to action of bowels, and demands from the physician unlimited self-confidence, moderate knowledge of psychology, and from the patient enthusiasm with active co-operation.

In such a book the section on pathology and treatment of rectal cancer must always attract the reader's attention, but especially this year in view of the address and discussions in the Surgical Section of the Annual Meeting.

Dr. Earle regards medullary cancer as the most malignant form of rectal cancer—in the Address in Surgery it was held to be the least malignant. He holds that the sacral and perineal route is the most suitable for removal of all tumours within the first 5 in. of the anal margin, and that in any case it is sufficient to cut through the bowel 1 in. above and below the tumour, thus differing from some of the more radical opinions expressed in the discussion on rectal cancer in the Surgical Section. Of adenoma of the rectum the author says "this tumour must be regarded as originating from cell nests." The last phrase is usually reserved for a distinctive appearance in sections of epithelioma, and should, we think, not be used in any other connexion. We do not know what the author means by "cell nests."

The illustrations are on the whole well done, but the text is much too diffuse. The book is undoubtedly a good one and will commend itself to any surgeon, whether this class of work comes much his way or not.

IMMUNITY.

The translation of Citron's *Immunity*[5] is not by any means an unmitigated success. Whatever may be the claims of the translator as an authority on the subject, he certainly does not have much claim to be regarded as a writer of good English. The text bristles with grammatical eccentricities and expressions which are not current on either side of the Atlantic. In addition, punctuation marks are scattered about with a delightful inconsequence, which gives many a sentence a wonderful and sometimes unintelligible appearance. It is, indeed, to be regretted that the translator did not seek the assistance of one who might have corrected these vagaries, for the volume has much to commend it. It is a book for the beginner in immunity, and it does not pretend to give an exhaustive treatment of the subject. Its aim is practice rather than theory, though, at the same time, care is taken to explain as far as possible the meaning and object of the various processes, for, as Citron remarks, the growing tendency to teach diagnostic immunity without a general knowledge of the principles on which they depend is much to be deplored. The author also, and very rightly so, insists on the exceedingly great importance of control tests, a point which is so apt to be missed or even ignored by

[illegible] *nold*. For the use of
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[illegible] J. P. Lippincott Company.

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[illegible] by A. L. Garbat, M.D.
Philadelphia: F. Maxinum & son and Co. 1912. (Med. 8vo, pp. 220; illus. 27, plates 2, charts 8. 8/6 net

beginners. The general teaching, in fact, is sound, and although we might take exception to the ultra-German views which pervade the book, and which the translator has not toned down to any extent, we can recommend it as a thoroughly accurate exposition of the subject. The method of treatment is consistently critical, and if the author shows himself biassed in regard to certain particulars, it is hardly more than one should expect, in view of the present state of opinion affecting many of the problems of immunity. A number of illustrations accompany the text, most of which are fairly serviceable.

SCHOOL DENTAL CLINICS.

The book on *School Dental Clinics: their Foundation and Management*,[6] by Mr. C. E. Wallis, is written in a businesslike manner that will appeal to lay and professional minds alike; a study of its pages should do much to convince educational authorities that the benefits to be derived from school dental treatment are out of all proportion to the cost incurred. The dangers of oral sepsis and its relation to the incidence of many conditions of disease, notably tuberculosis, are briefly but clearly set out, and attention is very rightly drawn to the fact that the establishment of dental clinics would be a most useful adjunct to the battle against tuberculous disease. There will be found some tactful hints as to the best methods of dealing with apathetic or aggrieved parents, and valuable suggestions for encouraging children to take an interest in the care of their teeth and for overcoming the very natural dread with which they regard the dentist's chair. The chapters dealing with equipment and the best method of working treatment centres are detailed and practical, and it is interesting to note that inquiries prosecuted by the author seem to show that the moneys at present allocated for the maintenance and equipment of clinics of this kind are sufficient for the purpose if reasonable economy and proper management are exercised. An interesting account is given of the system that prevails in Germany, and full information concerning the various dental clinics that have been established in this country, illustrated by some excellent photographs. This useful little book deserves to be widely read, and can serve a twofold purpose—first, by lightening the labours and preventing the natural mistakes of those who are about to establish, or who have already established, a dental clinic, for they will find ready to hand a concise treatise dealing with every detail of establishment, maintenance, working, and equipment; and, secondly, by demonstrating to a wider circle of readers that the dangerous conditions which arise from oral sepsis can be prevented at a comparatively small cost, and so enlist their sympathy and active interest in the promotion of further clinics.

NOTES ON BOOKS.

Dr. Alban Köhler's work on the Roentgen rays in surgery[7] is the first volume of Heinz Bauer's library dealing with the technique and application of physical science to medicine. The author claims to be particularly well qualified to write such a work, as he was formerly in surgical practice, and therefore well acquainted with the need of surgery for the help of Roentgenology. His effort is to present to the surgical world a concise statement, with illustrations, of the field opened up for surgery by the discovery of the Roentgen rays. There are chapters on the history of the Roentgen rays, technicalities, the discovery of foreign bodies, the demonstration of fractures and dislocations, diseases of bone, abscesses at roots of teeth, and calcareous and tuberculous deposits in the lungs. The illustrations are perhaps the most telling part of the book. The author presents four plates, each of which contains on an average fifteen reduced photographs reproduced with remarkable clearness. They are exceptionally good specimens of skiagraphy; some are, indeed, suspiciously clear, and have a "touched-up" look, but surgeons and radiographers will find in this little book some very interesting specimens of good Roentgen-ray work.

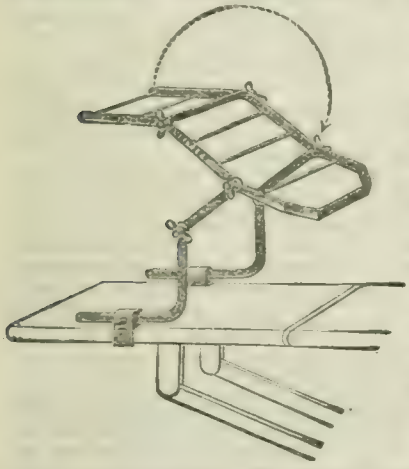
[6] *School Dental Clinics: their Foundation and Management*. By C. E. Wallis, M.R.C.S., L.R.C.P., L.D.S. London: Claudius Ash, Sons, and Co., Ltd. 1912. (Roy. 8vo, pp. 80; 16 illustrations. Price 3s. 6d. net.)

[7] *Das Röntgenverfahren in der Chirurgie*. Von Dr. Alban Köhler, Spezialarzt für Röntgenologie in Wiesbaden. Berlin: Hermann Meusser. 1911. (Roy. 8vo, pp. 79; Tfn. 4; figs. 17. Preis M. 5.75.)

MEDICAL AND SURGICAL APPLIANCES.

Anaesthetist's Screen.

Dr. D. Dougal (Manchester) writes: The accompanying illustration shows a new screen which I have devised for use in abdominal gynaecological operations, and which is now being used at St. Mary's Hospital, Manchester. It consists of a horizontal platform, connected below to two vertical supports. The platform is composed of three sections jointed together, the joints controlled by thumb-screws at each side. The sections can thus be fixed at any angle to each other, and at the same time the whole platform may be raised or lowered by means of a joint on each of the vertical supports. Each of these supports is connected below to a horizontal rod running in a socket, and this can be fixed in any position by another thumb-screw. By this means the platform is moved backwards or forwards, according to the size of the patient. The whole apparatus is made of light metal, and easily fitted to any operating table. It may also be quickly removed in case of emergency. When the screen is in use the anterior section is lowered till in contact with the patient's chest. The remaining sections are then adjusted according to the inclination of the table or the convenience of operator and anaesthetist. With the patient in the Trendelenburg position, it is unnecessary to use all three sections, in which case the posterior one is folded forwards (in the direction of the arrow in the diagram) on to the section in front. The sterile cloths are then spread over the platform which now forms a horizontal shelf for the surgeon's instruments, thus preventing their slipping off the table, as so frequently happens in these cases. In addition, the anaesthetist is kept well out of the operation area, and has plenty of space in which to carry out his manipulations without being encroached upon by the operator. The screen, which has been made for me by Messrs. Mayer and Meltzer, has been found specially suitable in those cases where the Trendelenburg position is used. Here the surgeon is not always able to maintain a rigid asepsis within his field of operation, and at the same time the anaesthetist is considerably hampered in his work by instruments and sterile cloths slipping on to the patient's face.



MEDICINAL AND DIETETIC PREPARATIONS.

Maltesco.

We have recently examined a mixture of malt extract and cod-liver oil with peptones and albumoses prepared from beef; this preparation is put forward by the Nutresco Company (Maritzburg, Natal) under the name "Maltesco No. 3." It is a thick mixture, bearing a general resemblance to the usual mixtures of malt extract and cod-liver oil, but with a slight meaty flavour. Analysis showed it to contain 11.4 per cent. (by weight) of the oil, and the very high proportion of 21.6 per cent. of protein; reducing sugars calculated as maltose were 40.3 per cent. It is evident that the food value of such a product is high, and since it contains about four times as much albuminoid substance as an ordinary malt extract with cod-liver oil, it should prove valuable as a nutrient. Our results did not confirm the claim made that the diastatic power is high, very little digestive effect on starch being shown; but the preparation would hardly be taken with starchy foods in the way that a plain malt extract is sometimes taken, and diastatic power is therefore of little importance.

On November 7th Dr. Manfield was presented by the residents in Shenstone and district with an oak instrument cabinet and a purse of money on the occasion of his marriage. In making the presentation many remarks were made appreciative of Dr. Manfield's services to the village and neighbourhood.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

Vendors of Proprietary Medicines.

The first witnesses on behalf of the vendors of proprietary medicines were heard by the Committee on November 6th.

Mr. John Charles Umney, managing director of Messrs. Wright, Layman and Umney, Ltd., proprietor's of Wright's Coal-tar Soap and other proprietary articles, was the first witness. Mr. Umney stated that he was the first chairman of the Proprietary Articles Section of the London Chamber of Commerce, and the present chairman of the Chemical and Drug Section of the Chamber. He was vice-president of the Proprietary Articles Trade Association, a pharmaceutic chemist by examination, and a Fellow of the Society of Public Analysts.

The Chairman mentioned that as the preparations of the witness's firm had not been mentioned at all before the Committee, it would not be necessary for him to give evidence in regard to them.

Mr. Umney stated that he was not aware of any proprietary medicine attaining more than a transient commercial success that did not possess distinct medicinal value; he excluded illicit preparations. The kind of frauds that had been attacked in *Truth* were of a totally distinct class from household proprietary remedies. They related largely to mechanical devices and to cures which were obviously fraudulent. One ground for his statement as to the failure of useless remedies was that many of the failures in the advertising agency trade were largely due to undertaking undue risks on this class of business. He could state of his own knowledge that many of the analyses set out in *Secret Remedies* were inaccurate. In the analysis of Woodward's Gripe Water on p. 149 of *More Secret Remedies*, a most important constituent was omitted, and those given were inaccurate. In this case the missing ingredient was difficult to find by chemical analysis, but he was rather surprised that it had been omitted. The witness intimated that he was prepared to give the correct formulae in the cases in which he alleged that the particulars given in *Secret Remedies* were inaccurate, providing he had the permission of the proprietors. If the preparations were submitted to the Government Analyst, he certainly thought complete results would be obtained. Asked for other examples in which he charged inaccurate analyses, witness mentioned Doan's Dinner Pills, on page 69 of *Secret Remedies*. In this case, he said, a most important constituent had been omitted. It was discoverable, but not easily so by chemical analysis. The witness also alleged that the ingredients given of Keating's Cough Lozenges, on page 18, were inaccurate.

In reply to a suggestion by Dr. Chapple that the witness should be asked to try and get permission from the various proprietors to supply the correct formulae, the Chairman intimated that the Committee should discuss this in private before asking the witness to do so.

The witness went on to say that from his own knowledge and experience the greatest care was taken by a large number of the leading proprietors to ensure the very highest efficiency in the drugs they purchased, and to ensure accuracy in such ingredients as admitted of standardization by chemical analysis. He added that four out of five of the preparations mentioned in *Secret Remedies* were unknown to him. The publication of formulae, as suggested by most of the medical witnesses, would be of very little advantage to those whom ostensibly the suggestion was intended to protect. Grave harm would be inflicted upon those proprietors who had spent large sums of money in building up a demand for a legitimate proprietary medicine. The publication of such formulae would undoubtedly lead to the imitation of the particular preparation. Such imitations, as a rule, would consist of goods of a lower grade, which would be sold in large measure as a result of the advertising of the original firm. That would obviously not induce less self-medication, but merely change the maker from the present proprietor with a reputation to a large number of competitors, and if it led to reduction in price, that from the self-medication point of view would not be an advantage. Further, the publication on the label of the formula of a preparation containing a dangerous drug, and one liable to induce drug habits, would be of

considerable danger, in that it would be a clear guide as to the amount of the particular objectionable drug contained, and assist the purchaser to know how it could be obtained and also the limit to which the drug could be taken to get the desired effect. He had never heard that any complaint had been made that a remedy which did publish its formula did not contain any or all of the constituents stated on the formula; any offences of that kind must be very rare, or one would have heard of them, and no drastic alteration of the law was necessary to meet that suggestion. The witness gave a number of instances in which proprietary medicines in various forms were the basis of medicines contained in the *British Pharmacopœia* and the *Pharmaceutical Codex*.

With regard to the sale of acetanilide, antipyrin, and phenacetin in the form of headache powders, from his observation and trading he was able to state that the amount of these chemicals sold through pharmacists in the form of tablets and powders was very considerable, and probably exceeded that sold in the form of proprietary medicines. The Pharmaceutical Society had power to extend the schedule of the Poisons Act, with the consent of the Privy Council, so that the sale of really dangerous drugs could be limited.

As to the objection taken in some quarters to the presence of alcohol in proprietary medicines, the witness said there were very few proprietary medicines containing more alcohol than was necessary for strictly preservative purposes. The proportion of alcohol present did not as a rule exceed that in the prescriptions of medical men prescribed under probably similar conditions to those under which the proprietary medicines would be taken. With regard to medicated wines, objection was taken that in the majority of instances the public was ignorant of the fact that the preparations contained alcohol. That he held to be quite an erroneous assumption, in that the wines were only to be obtained from persons licensed to sell wines, and they were as a rule more expensive than the similar "basic" wines, and most of them stated, in fact, that they were wines. He was confident that the present fiscal regulations and restrictions were a sufficient safeguard to the public. The witness considered that the censorship of advertisements would be impracticable and also extremely difficult owing to the natural variations of opinion from time to time as to the value of a particular preparation. A newly-introduced drug, which to-day might be held to be a quack remedy, might in five years' time find a place in the *Pharmacopœia*. He could vouch from his own personal experience of difficulties which had arisen in connexion with the work of the Customs authorities in the Commonwealth of Australia, while their censorship of advertising had really effected little beyond the change of a few adjectives. As an instance he mentioned that the Customs authorities of Australia asked his firm to remove from the wrapper of Wright's Coal tar Soap a quotation, "The only true antiseptic soap," from the British Medical Journal of forty years ago. The authorities gave as a reason that, although the statement might have been true forty years ago, it could hardly be true to-day.

The Proprietary Articles Section of the London Chamber of Commerce offered certain criticisms of the suggestions of the British Medical Association with regard to legislative steps necessary. The section considered that the publication on each package of the name and quantity of the ingredients would afford no real assistance or protection to the public against fraudulent articles, and would be a most unfair interference with valuable proprietary rights. The suggestion that the labels should be made to constitute a warranty and that false trade descriptions should be made an offence was difficult to deal with on account of the generality of the language employed. A label which contained false statements under existing law might form the foundation of civil or criminal proceedings. The suggestion that the provisions of Section 6 of the Food and Drugs Act should apply to proprietary medicines the Chamber considered impracticable. Large [illegible] in the Director of Public Prosecutions, in the police, the Board of Trade, the Board of Customs and Excise, and in the Pharmaceutical Society. No objection would be taken by the section to the enlargement of the Patent Advertisements Act to include [illegible] in newspapers and exposure in shop windows. Mr. Umney presented the following suggestions on behalf of the section:

Any proposed amendment of the law which would compel owners of proprietary articles to expose trade secrets or declare ingredients except in regard to poisons would be strongly opposed. The evidence had shown that most of the alleged abuses arose in connexion with the sale of abortifacients and anti-conception remedies. The members of the section desired to dissociate themselves entirely from this class of business, and considered that as regards these remedies there might be stringent restrictions with regard to newspaper and circular advertising. As regards some of these, the Offences Against the Persons Act, 1861, already provided remedies at law. As regards female ailments, the public advertisement of remedies for these should be in simple language, such as not to imply that the medicine was recommended for improper purposes, and the statement might appear prominently on the label that where suppressed menses were due to pregnancy the preparation would have no effect. The public advertisement of medicines claiming to cure such diseases as cancer, rupture, locomotor ataxy, diabetes, syphilis, and so on, might be made illegal, and no statement should be made on the label that the preparation would cure such diseases.

As regards other proprietary medicines, it was felt very strongly that no case had been made out for any interference with the large and reputable trade in these medicines.

Any amending legislation might be based on the following lines:

1. Every manufacturer or representative in this Kingdom, before offering a proprietary medicine for sale, must procure from the Excise a certificate of registration.

2. Such manufacturer or representative, when applying for the certificate of registration, shall furnish the following particulars: (*a*) a list of the medicines proposed to be made or imported; (*b*) the principal address of the manufacturer or representative in this country; (*c*) for the use of the Inland Revenue Department the name of any poisons, and—if the maximum dose recommended shall exceed the average or mean dose mentioned in the *British Pharmacopœia*—the quantity of poisons in such medicines shall be given. The department that takes the registration shall send to the Secretary of the Pharmaceutical Society a copy of any certificate issued in respect of any proprietary medicine containing poison.

3. Every package of medicine issued shall contain the number of the certificate. No vendor shall indicate that the certificate in any way affects the merit of the article, and no reference to such certificate other than that provided by statute shall be made on any label, circular, or advertising matter. The department to have the power to refuse or cancel the certificate for the sale of medicine sold contrary to the law or that does not correspond to the certificate of registration. Any manufacturer who may be refused a certificate or have it cancelled to be entitled to a full statement of the reasons and to have a right of appeal to the courts.

4. Proper penalties to be imposed on any manufacturer or dealer knowingly selling proprietary medicines contrary to the law.

In reply to questions by the Chairman, the witness stated that any firm of proprietary medicine manufacturers might be elected a membership of the London Chamber of Commerce; it was no part of the functions of the section to exercise control over the medicines sold.

Mr. Cawley asked why proprietors of remedies who complained that inaccurate formulae had appeared in *Secret Remedies* had not brought actions for libel against the British Medical Association. The witness replied that the proprietors would have to state the true formulae in order to prove their case. Mr. Cawley suggested that if they definitely proved that an important ingredient was omitted it would be sufficient to obtain a verdict, and, asked whether a remedy would not be helped in the public estimation if such an action were brought in the courts and the proprietors won. The witness replied that he might as well begin an action against the General Medical Council for including a formula in its *Pharmacopœia* in imitation of his own.

Mr. Cawley: You do not believe in the advertising value of the law courts?

The Witness: There are two sides to the account. I think that proprietors of reputable remedies do not want to fight for the benefit of owners of four-fifths of the remedies mentioned in the book which have hardly been heard of.

Further questions to this witness by members of the Committee were postponed to the next sitting.

Mr. C. H. Ratcliffe, joint managing director of Messrs. A. J. White, Ltd., manufacturers of Mother Seigel's Curative Syrup, was the next witness. He stated that this preparation did not contain any scheduled poison, but it had eleven different vegetable extracts not mentioned in the analysis in *Secret Remedies*. This analysis, witness

stated, was almost grotesque in its incompleteness. He did not wish to name the vegetable extracts the syrup contained, but he claimed that they all possessed distinct therapeutical qualities. The relation of aloes to the group of extracts in this preparation was as 25 to 181, which he thought sufficiently demonstrated the inaccuracy of the analysis in *Secret Remedies*. The witness was opposed to the suggestion that the formula or the active ingredients should be stated on the label of a proprietary medicine, and stated that the publication of particulars in *Secret Remedies* had led to imitation and interference with the trade of his company. He also claimed that proprietary medicines, on the whole, contained drugs of better quality than those dispensed by medical men to their poorer patients. In this connexion he referred the Committee to Dr. Hart's book, *How to Cut the Drug Bill*. His experience was that the censorship of advertisements in Australia had been futile.

The Chairman: On the question of extravagant claims, you claim that Seigel's Syrup is a cure for dyspepsia and liver complaints. Is that accurate?

The Witness: In the proper acceptance of the word "cure," yes. In the United States we have had to change the word "cure" to "remedy."

The Chairman: Is it true that Seigel's Syrup is a purely vegetable compound?

The Witness: The position with regard to hydrochloric acid in minute quantities is that it is put in so that it will maintain the vegetable extracts in a state of fine division and so make possible the maximum therapeutic effect. In reply to further questions, the witness stated that he was not aware that Seigel's Syrup was prohibited in Germany except on the prescription of a doctor.

THE MENTAL DEFICIENCY BILL.

When Parliament rose in August the Standing Committee to which this bill had been referred had passed the first ten lines of the first clause.

On reassembling in October there were 27 pages of amendments to the remaining 67 clauses of the bill. The bulk of these, however, are drafting and non-contentious amendments or consequential on the fundamental changes proposed by the Government, and adopted by the Committee, in deference to adverse criticism of the original proposals in the bill in regard to the constitution of the central authority.

Board of Control.

It will be remembered that the Government had agreed in the summer to deal first of all with Clauses 1 to 5, which set up the central authority, and then to pass on to Clause 17, which defines the persons who are regarded as mentally defective, within the meaning of the Act, and the circumstances which are to render a mentally defective person subject to be dealt with under the Act.

As far as the central authority is concerned, the objections to the original proposals of the bill, to set up under the Home Office a totally new body of Commissioners, separate from, and in addition to, the Lunacy Commissioners, were set forth in these columns on the introduction of the bill, and it is a matter of satisfaction that these objections, which were generally held by the profession, and particularly by that section of it which is specially concerned with lunacy administration, have been for the most part removed by the Government amendments.

The meetings of the Standing Committee during the first few weeks of the autumn session have thus been devoted to such questions as the number of qualifications of the Commissioners, their mode of appointment, tenure of office, salaries and duties.

The following are the principal points settled by the Committee in regard to these matters:

The new body is to be known as the Board of Control. The paid Commissioners are to be twelve in number if necessary, but at present only eleven will be appointed. The four legal Commissioners, who may be practising barristers or solicitors, are to be appointed by the Lord Chancellor, the rest by the Home Secretary: thus the main responsibility is transferred to the Home Office. One of the three unpaid Commissioners and one of the paid Commissioners are to be women. It is not required that the three additional Commissioners to be appointed, including the paid woman Commissioner, shall be medical practitioners.

So far as the profession is concerned, the addition to the numbers of the Commissioners and the single Board of Control will possibly meet with approval, and there appears to be nothing in other details that calls for special mention from this point of view.

It was not till the last day of October, after disposing of Clauses 1 and 2, that the Committee was able to turn its attention to Clause 17, which, read together with Clause 25, is undoubtedly the crucial clause of the bill.

Repeal of the Idiots Act, 1886.

At the outset, it is important to bear in mind that, before the Committee rose in August, Mr. McKenna announced the intention of the Government to insert a clause repealing the Idiots Act, 1886. The original draft of the bill expressly provided that nothing in this Act should affect any power exercisable with respect to idiots and imbeciles by the Commissioners in Lunacy or other persons under the Idiots Act; that is to say, some of these patients were to remain under the Commissioners in Lunacy, and some would come under the new Commissioners proposed by the bill. When it was decided to entrust the control of defectives of all kinds to one and the same central authority, it was clear that that authority would be dealing with idiots and imbeciles under three separate statutes, namely, the Idiots Act, the Lunacy Act, and the present bill. This would have led to overlapping and confusion in administration, and the Idiots Act had to go.

This decision, though recognized as inevitable, has been met with regret on the part of those voluntary institutions which have for many years carried on good work under its provisions. It was, perhaps, an anomalous and somewhat crude piece of draftsmanship; but its provisions were extremely simple, and on the whole worked very satisfactorily. Had the term "mental defective" been used throughout its title and provisions as was originally intended, and had monetary powers, such as are granted in the present bill, been added to it, it would probably have sufficiently met the needs of the case, and have rendered unnecessary the present demand for further legislation. As it is, from the very first defectives of all degrees have been received and trained in the institutions registered under its provisions, although the terms of the certificate militate somewhat against this, and there was no provision for the supply of adequate accommodation by local authorities. In view of the repeal of this Act it is very important that clauses should be introduced in the present bill to cover the hiatus thus created without undue disturbance to existing institutions, and in particular to provide against large numbers of idiots and imbeciles falling outside the bill, by reason of the fact that in most cases they do nothing to make themselves subject to be dealt with under Clause 17 (1) as now amended. The Home Secretary has expressed his intention to frame clauses dealing with this position of affairs. In this relation it may be well to call to mind the statement recently made by the Home Secretary that the Government does not propose that any person should be compulsorily detained in a home unless such person for some reason or other has already come in contact with the law or is being dealt with by the law.

A proposal was made by Mr. Dickinson that idiots and imbeciles should *ipso facto* be subject to be dealt with under the Act, but this was rejected; it is therefore important that special provisions dealing with them should be framed.

The passage of Clause 17 was undoubtedly rendered smoother by the announcement made by the Home Secretary that he would move the omission of Subclause (1) (*e*), which made those defectives subject to be dealt with in whose case it is desirable in the interests of the community that they should be deprived of the opportunity of procreating children; and also of Subclause (1) (*f*), which empowered the Secretary of State to specify other circumstances which should make a defective subject to be dealt with under this Act.

The opinion of experts is that medical knowledge is not sufficiently advanced to afford definite guidance by which

the possible abuses that might occur under such a provision as the former could be obviated, and it is without surprise or regret that the profession views the disappearance of this proposal.

With regard to the latter, it appears to be unwise to leave such large powers to the Secretary of State without reference to Parliament, and in its place a subclause has been adopted by the Committee which empowers the Board of Control to specify in regulations circumstances which make persons injurious or dangerous to themselves or to the community, and so make them subject to be dealt with.

Any objection there might be to this has been removed by a further amendment proposed by Mr. McKenna to the effect that all regulations must be laid on the tables of both Houses of Parliament for thirty days before becoming valid.

Most of the hostile criticism directed against the bill has been in regard to these provisions, and though the opponents in Committee are not very numerous, they have found considerable support in the country, and their attack will be deprived of much of its force when the bill again comes before the full House, by the withdrawal of these paragraphs.

Children.

The very important question of the position of children under the Act came up on November 5th, and a statement was made by the Home Secretary of the general policy of the Government, which will be received with hearty approval by those who are most conversant with this difficult problem.

In the first place the Defective and Epileptic Children Act, 1899, is to be made compulsory. Hitherto its application has mainly been confined to a few urban districts. Moreover, owing to the insufficient provision for those children who were incapable of deriving benefit from mere schoolroom methods, these schools tended to be clogged with a class of children for whom they were not quite appropriate. The proper function of such schools is as a sorting ground or as a temporary provision to assist some children who are only backward and need temporary special assistance or as the best method of educating a certain grade of the feeble-minded throughout their school life, with the hope and prospect of preparing them sufficiently to take their place in the world.

These schools cost the ratepayer more for each child than the ordinary schools and it is highly desirable that no child should remain permanently in them who is not likely to derive the intended benefit from them. Any child removed to a home under the bill will still be a charge on the education authority. This will prevent any financial inducement to the authority to send children to homes without good cause; the education authority will have power to transfer a child to a home without the consent of the parents. Presumably this arrangement will only endure so long as the child is of school age, after which the control and responsibility of the education authority should cease.

The actual clauses carrying these proposals into effect have not yet been framed; at present all that has been passed in this respect is Subclause (*d*) of Clause 17, making all children discharged from a special school or class subject to be dealt with under the Act.

It is understood that in order to make the Defective and Epileptic Children Act compulsory, a separate bill will be required. Presumably, when this is brought in, the provision for homes under that Act will be modified or repealed, as they will be rendered superfluous by the present bill.

Definition of "Mentally Defective."

As regards the definitions of defectives in 17 (2), one of the changes obviously desirable was to make them more readily applicable to children, in the original form the definition is ambiguous in this respect, being based on the capacity or not to earn a living.

Of the various amendments proposed to the definitions of "imbecile" and "feeble-minded," those standing in the name of the Home Secretary seem on the whole to be the most satisfactory. The definitions thus modified read as follows:

(*b*) Imbecile; that is persons who are capable of guarding themselves against common physical dangers, but who by reason of mental defect existing from birth or from an early age are incapable of earning their own living, or in the case of children incapable of being taught to earn their own living.

(*c*) Feeble-minded persons; that is to say persons who may be capable of earning or being taught to earn their own living under favourable circumstances, but are incapable through mental defect existing from birth or from an early age of managing themselves or their affairs except under suitable supervision or, in the case of children, of receiving benefit from the instruction in the ordinary public elementary schools.

It will be seen that this omits the phrases "competing on equal terms with their normal fellows" and "managing their affairs with ordinary prudence" which were certainly equivocal and calculated to raise a smile in the House of Commons. The form now suggested seems workable, not open to serious criticism, and as good a subdivision as the nature of the material to be classified permits.

All the amendments put down to these forms are open to criticism for one reason or another, and are only attempts to modify the form of words. The basis of the form now adopted is that recommended by the Royal College of Physicians to the Royal Commission.

Moral Imbeciles.

In regard to moral imbeciles important amendments are proposed by Mr. Dickinson, making it necessary that the condition should be a permanent mental defect and that the vicious or criminal propensities should be habitual. This is important, as it is undesirable to certify a child as a moral imbecile who, as sometimes happens, is merely passing through a phase of this kind.

"Mentally Infirm Persons."

Coming to "mentally infirm persons"—the last group of persons to be regarded as defectives within the meaning of the Act—there is a strong feeling that, however desirable it may be that some steps should be taken to relieve the asylums of the growing burden of these old people who could very well be cared for at less expense elsewhere, nevertheless, this class is both in its nature and in the nature of the treatment required, quite different from the other classes of defectives defined by the bill. It is a group of persons that can and ought to be dealt with under the Lunacy Acts in such a way as to meet the objections referred to above. Moreover, many members of this class are adequately provided for under the Poor Law, and it seems an unfortunate proposal to introduce this group into a measure which in its origin and its actual provisions is designed for a totally different set of persons.

The definition itself is much open to criticism. Mental infirmity cannot be said to arise from the decay of the faculties; this is simply another way of expressing the same fact.

If this subclause is added to the bill, there is little doubt that there will be a widespread tendency to discharge mentally infirm persons from asylums and flood the new institutions that are to be established under the Act, or use up money for purposes quite alien to the main purposes of the measure.

Notification of Cases.

Clause 18 deals with notification. In its present form it includes all defectives. The duty is imposed upon overseers, relieving officers, district medical officers, medical officers of health, and constables. An amendment is now proposed to add any registered medical practitioner who has seen or examined any person whom he has reason to believe is defective. This appears to be an intrusion into the privacy of the home life and a further invasion of professional secrecy, which is hardly called for in the interests of the public or the individual.

If there is to be any notification at all it should certainly be limited to those who are deemed subject to be dealt with under the Act, and the private medical practitioner should not be called upon to report cases coming to his knowledge in the course of his practice. Nothing would be more calculated to cause parents to refrain from seeking medical advice in regard to children who are backward or who might be supposed to be defective.

The other provisions of the Act will give all the statistical and other information as to individuals that can reasonably be required.

Voluntary Boarders.

There remains one other important problem awaiting solution, and that is how and how far provision should be made for allowing persons to become voluntary inmates of houses or institutions under the Act.

There is a strong feeling in favour of something being done in this direction on the part of members of the Standing Committee, based doubtless on the desire to mitigate in some degree the compulsory aspect of the bill. There is also the precedent of similar provision in the Lunacy Acts.

It is certainly very desirable that the voluntary principle should obtain recognition, as otherwise there will be reluctance on the part of large sections of the public to take advantage of the care and management available for defectives, if certification is to be necessary in every case. On the other hand, it is necessary that such limits should be imposed on the employment of this method as not to reduce it to an absurdity, or to defeat the principle of compulsion aimed at in regard to those who have become subject to be dealt with under the Act by reason of having come in contact with the ordinary law in one of the ways specified. Thus it would be unreasonable to extend this liberty of judgement to idiots, imbeciles, moral imbeciles, or senile dements.

This leaves the feeble-minded only to come within the purview of such a clause, and of these it should only be applicable in the case of those who are not subject to be dealt with under the Act.

This will readily be conceded when it is considered that the voluntary status must be accompanied by the right of the individual to discharge himself. The extension of this right to those who have become subject to the Act would tend to defeat its object.

A convenient extension of the principle might be made in regard to all defectives under the age of 21 in regard to whom parents or guardians might be empowered to place them in homes without certification, but subject to notification to the Commissioners, which would be required in the case of all voluntary boarders.

If such a clause were inserted and if the new clauses, already foreshadowed, provide for idiots, imbeciles, and moral imbeciles of all ages more or less on the lines of the present Idiots Act, then Clause 25 might be limited to feeble-minded defectives under 21 who are subject to be dealt with under the Act, but in whose case it is not desired to apply the full judicial procedure by order—that is, to allow them to be received on a simple medical certificate as outlined in the clause.

Every class of case will thus be provided for in such a way as to cause the least possible offence, and yet without avoiding official supervision and without interfering unduly with the liberty of the individual.

Proposals somewhat on these lines have been made, but they seem to require considerable amendment to free them from objection.

Another proposal has been put forward for the provision of receiving houses or wards. This idea is borrowed from the corresponding plan in regard to lunacy work, in which it has received the strong approval of the medical profession. It was embodied in the proposals of the Royal Commission, which included lunatics in its scope. It is very doubtful, however, whether it is needed or applicable to the very different type of case contemplated by this bill, and it would seem likely to introduce unnecessary complications and expense.

On the whole the Government must be congratulated on the energy with which it is pushing forward the measure, and on the great improvements it has embodied in it. These have tended to consolidate instructed opinion in the House, and to render more easy its passage into law.

A [illegible] association for the stamping out of epidemic poliomyelitis has been founded at Stockholm.

WE learn from the *London University Gazette* that the second edition of the *Guide to the Libraries of London*, by Reginald A. Rye, Goldsmiths' Librarian, has been published. It has been very considerably enlarged, and is illustrated by sixteen photographic plates. A table of the hours during which the libraries are open has been added. Copies may be obtained at 2s. 6d. net, or 2s. 10d. post free, on application at the university, or they may be ordered through Messrs. Hodder and Stoughton and other booksellers.

THE MOTOR SHOW.

CARS FOR MEDICAL MEN.

By H. Massac Buist.

The Motor Show, which opened at Olympia, Kensington, a week ago, has evidently evoked wider interest than any previous one of the series, which now totals eleven. The outstanding novelties and general tendencies of motor-car construction revealed at the show were dealt with in an article published in the British Medical Journal last week, and as the exhibition closes to-night it remains to deal in more particular detail with the new points embodied in a few typical cars suitable for the service of the medical man. It may be noted, as a general observation, that wellnigh all types can be obtained in what are called Colonial models—as instance the 15-h.p. Napier—which nowadays consist chiefly in having stronger axles, steering connexions and springs, lower gear ratios to accommodate larger wheels and high ground clearance. The matter of coachwork for cars for medical men overseas has not yet progressed to any great extent—that is to say, the general practice remains to paint and varnish the body in the ordinary way, and we note that in the majority of our overseas possessions paint and varnish do not stand the rigours and rapid changes of the climate. The only thing that will come out successful under that heading is the metal sheet, steel type of body painted and stove-enamelled, bicycle fashion. That we have in several American types, and it is plain from the enterprise of the Birmingham Small Arms Company, for example, that we shall not be lacking it as a more or less general British practice in the course of a very few years.

Novel Middle-Powered Single Sleeve Argyll.

The Argyll single sleeve valve engine, with elliptical movement, was one of the novelties of last year's show, when, it will be remembered, some doubt seemed to exist as to the validity of the patents under which it was made. Not only has that since been absolutely settled, with the result that Argylls have emerged triumphantly from the Law Courts, but also in the hands of the public the system has been proved practical. It was, however, available only in a large nominal 25 h.p. machine, whereas this year the Argyll Company, while still retaining its 12-h.p. poppet-valve engined car, brings forward a four-guinea-tax 80-mm. cylinder bore by 130-mm. piston travel single sleeve valve engine in which it has been possible to do away with the junk ring on the head, thereby reducing friction and achieving a considerable gain of simplicity, for hitherto it had been deemed essential to equip sleeve valve engines with this device. The new chassis is, therefore, a middle-powered machine, though, like most of the 12–16 Treasury rating cars, it may be confidently looked to to give double its nominal rating at maximum—that is to say, 30-h.p.—so that here is a machine that will accommodate strongly-built coachwork. The live axle-drive is of the overhead worm system; another feature is the diagonal mode that enables all brakes to act at once, whether controlled by hand or foot, according as may be convenient to the driver at the given moment.

Worm-driven Armstrong-Whitworth Types.

The cutting down of the maximum space allotted to any one stand has been the prime cause in preventing the Armstrong-Whitworth firm showing separate chassis this year, all the cars being mounted with bodies of various types. There are altogether four models, the largest being a 30–50-h.p. six-cylinder vehicle that is supplied with bevel or worm drive at option, whereas the other three four-cylinder models are all equipped with the worm drive. One of these is a four-guinea-tax 80 mm. by 135 mm. piston travel vehicle of 15–20 nominal rating, while another type has a bore measurement 5 mm. larger, and a fourth model has engine measurements of 100 by 120 mm. Thus all purses are catered for. In the general design little change has been made, but there are some interesting details about the complete vehicle, as instance the manner in which the bonnet of the six-cylinder chassis merges into the special type of scuttle dash forming an integral part with the unbroken limousine-landaulette body [illegible], while the latest fashion is followed in providing windows

that drop quite out of sight in their frames. Some new ideas in bodywork for smaller covered cars are furnished in the 17-h.p. "Elswick" landaulette, carried out in grey with upper parts of black, the upholstery being grey.

Two Fresh Adler Types.

The increasing popularity of the Adler cars, which is one of the three foremost German makes, and that are handled in this country by Messrs. Morgan, of Long Acre and Bond Street, is illustrated at the show by the introduction of two new four-cylinder models, both of which come under the four-guinea tax rating. The little 14 to 18-h.p. machine has 75 mm. engine bore by 120 mm. piston travel, while the chassis, rated at 15 to 25-h.p., has 80 mm. bore by 130 mm. piston travel. A feature of these vehicles is that the camshafts are driven by enclosed silent chains, while the valve action is rendered additionally quiet by a double closing movement achieved with roller levers worked by the camshaft; the valve dampers are also of original design. An excellent example of a small car for a doctor is the coupé-landaulette Morgan body on a 10-h.p. Adler chassis with a concealed dicky seat at the back and patent self-acting and balanced headpieces. By means of this, without rising from his seat, the occupant can, without effort, change the vehicle from an open to a closed type, or the other way about.

Clement-Talbot Features.

While it makes no change in its engine ratings, there has, nevertheless, been a great change in the three four-cylinder Clement-Talbot models, rated respectively at 12, at 15, and at 25-h.p. Briefly, the principles of design now embodied in these are a reproduction of those proved so eminently satisfactory on the 20-h.p. six-cylinder type. This is a vehicle which, having balance discs on the crankshafts and such-like features, is rendered extraordinarily flexible as well as free from vibration, hence, excellent as the Clement-Talbot four-cylinder cars have been in the past, there is no gainsaying that a big forward stride has been attained in applying the six-cylinder principle to them. There would not, perhaps, be much in it if the manufacturing were not of the most conscientious type, as instance the manner in which each crankshaft is balanced and in which the reciprocating parts are also tested to ensure that each shall weigh precisely the same as its fellow. The Talbot is one of those cars which combines high efficiency for engine size with uncommon durability under hard conditions of service. An examination of the improved models reveals that there has been no reduction of strength in any of their features. The 12 and the 15-h.p. types may be especially recommended to the consideration of medical men, in that the running costs of them are low.

Chenard-Walcker's Popular Powered Models.

In the new 11.9-h.p. R.A.C. four-cylinder Chenard-Walcker of 69 by 130 mm. engine measurements an enclosed silent-chain drive is used for working the magneto. This little vehicle is perhaps unusual for this class of car, too, in that the gear-box gives four speeds forward with the direct drive on the top one, and is sold with standard four-seater body. The firm, of course, markets another model of 12-18 h.p. type, which also comes under the four-guinea tax by reason of the bore measurement being 75 mm., and this may be called a long-stroke motor in that the piston travel is precisely double the length of the bore—namely, 150 mm. The firm no longer makes very high-powered vehicles, for the third type is also a four-guinea taxer, having engine measurements of 80 mm. bore by 150 mm. piston travel, which are the proportions which have proved most widely successful in competition on the part of the Sunbeam firm—for example, this year, in the Grand Prix and in the twelve and thirteen hours and thousand miles world's records irrespective of engine size on the track. These little four-guinea tax vehicles nowadays have engines pro- more efficient than the average cars motors, though the purchaser must be warned against the tendency to overtax little engines of this kind.

New Valveless Darracq Types.

The Darracq firm revealed characteristic boldness and originality when it came to we last year with a new style of engine working on the Otto cycle principle, yet employing neither poppet valves nor the sliding sleeve sort. Instead there was a cylindrical rod which turned horizontally and performed all the functions necessary in connexion with admitting gas to the cylinders and allowing the vapours to escape from them, and at the same time represented a reduction of over a hundred parts needful to the fitting of poppet valves to a four-cylinder engine. There has been a further development in the matter of construction this year in that this rotary distributor is now chain-driven from the crankshaft, with the result of further economy of power and gain of silence, as well as of simplicity. The system has answered so well, moreover, that the 22-h.p. model introduced last year is now supplemented by two small types—one of nominal 12-h.p. with a cylinder measurement of 75 mm. and a piston travel of 120, and the other a nominal 16-h.p. with 85 mm. bore by 130 mm. pistol travel, so that the smaller chassis comes under the four-guinea tax and the larger under the six-guinea tax. There has been a change in the works management of this since the last show.

The Double Cross of Lorraine.

While the chief novelty of the Lorraine-Dietrich programme, presented by Messrs. Charles Jarrott and Letts, consists of the introduction of a new high-powered model rated at 40 to 75-h.p., with the very big engine measurements of 125 mm. bore by 175 mm. piston travel, the outstanding features of the firm are still the middle-powered cars—namely, the 18 to 20-h.p. type, which is shown in chassis form, and more particularly the 12 to 16, with single landaulette coachwork in dark green and white, fine lines, black mouldings and wings. The scheme is at once subdued, substantial, and thoroughly practical. All these models are supplied at option with one or other of two angles of rake to the steering column, so that individual owners' requirements as to coachwork can be readily accommodated.

Bodywork for Town Carriage Service.

Whilst the majority of medical men need cars more or less suitable for knockabout work, there are, none the less, others who have need of luxuriously appointed town carriages. Such, therefore, will find the exhibition of the Métallurgique Company more than ordinarily interesting by reason of the quite remarkable work that is put into the Van den Plas bodies, which show the cabinetmaker's craft at its best. Moreover, these bodies are applicable to all sizes of vehicles, as instance the little 10-h.p. two-seater *de luxe* body. As to the chassis, these range from 10 to 90-h.p., the features being practically identical in all types and varying merely as to proportions, as instance the distinctive V-shaped coolers, also the spring drive for minimizing the shock in power transmission. The camshaft and magneto machine are now driven by internal silent chains, while a direct acting pump forces oil from the sump to the main bearings through the hollow crankshaft to the big ends, and so up the connecting rods to the gudgeon pins. In the little 10-h.p. model the petrol feed is by gravity from a dashboard tank, while all springs are of the semi-elliptical sort.

New Napier Features.

The Napier programme presented by Messrs. S. F. Edge consists of three six-cylinder types, and the distinctive 15 h.p. four-cylinder machine with the flywheel at the front end and other out of the ordinary features, in connexion with which it is to note that for 1913, for an additional cost of £15, this model is equipped with a four-speed gear-box with double ball bearings under the brake drum. Rudge-Whitworth detachable wire wheels, including a spare one, are supplied at an inclusive charge for the *de luxe* chassis, as well as on the extra strong Colonial model which lately went through an extremely interesting Royal Automobile Club test to prove its cooling efficiency and so forth. On the long wheelbase chassis for service at home the final drive is by worm from under the back axle, but for the rest of the Napier models the silent bevel form is fitted. It is to be noted that the footbrake has been greatly improved as to system and enlarged as to area. This chassis has now been sufficiently long before the public to have proved the correctness of the design, which has been still further refined, and the suitability of the workmanship. The six-cylinder types have also been

remodelled, but the refinements are nearly all of an extremely detailed character, a description of which the exigencies of space do not allow.

Interesting Wolseley Developments.

The Wolseley compressed-air system of engine starter and its policy of making 4,000 cars of the 16 to 20-h.p. type having been referred to in these columns already, it remains merely to add that in the matter of design last year's models are closely followed, but many of the details are quite new. Thus, while on the six-cylinder type the Wolseley two-jet carburetter is retained, on the four-cylinder model a modified S.U. type is employed, while the lubrication system of the engine has been improved, being a combination pump-feed and splash system. Spoons are attached to the big end bearings, which dip into troughs that are kept replenished by a gear-driven oil pump, while the difficulty of smoking has been overcome in a highly ingenious manner by altering the shape of the pistons. The cam and magneto shafts are driven by silent chains. The open bodies have been redesigned to allow more comfortable seating accommodation and leg room, while folding wind screens provided with self-contained patented joints have been standardized, and the new patent type of spare wheel carrier, consisting of an aluminium dummy hub mounted on a strong bracket, which in turn is rigidly attached to the main frame, is included in the equipment. When it is desired to remove the wheel the whole of the bracket springs upwards and allows it to be withdrawn from the well in the running board.

A Charron with Hydraulic Transmission.

While there has been little occasion to make any alteration in the chassis details of the Charron cars, staged on the stand of the London Motor Garage, and ranging from the 10-h.p. four-cylinder type to the 30-h.p. six-cylinder variety, there is, nevertheless, one of the most remarkable exhibits in the show here in a 15-h.p. Charron chassis shown equipped with the long-awaited Lentz hydraulic transmission, which is furnished not in the clutch, as has been tried by various makers, but in a forward extension of the back axle casing, so that it looks like a combination gear-box device. This firm, incidentally, contracts for the service of motor carriages for private use, on inclusive terms, embracing motormen's wages, maintenance, and, in fact, everything for a fixed sum.

The David Brown Triple Bill.

The Huddersfield engineering house of David Brown and Sons shows three varieties of cars—one make the Otto-cycle engined four-cylinder 12 to 16 and 20 to 30-h.p. Dodson cars, which have been brought up to date by the furnishing of a four-speed gear-box controlled on the gate-change principle; the other the two-stroke Valveless motors, which have only six working parts each; and the third a series of Belgian cars, known as the Sava vehicles, which have been successful in the Grand Prix d'Ostende race. The new Valveless model is of 19.9-h.p. and replaces the 25-h.p. type. It is also fitted with a four-speed gear-box controlled on the gate-change principle and with a David Brown worm-driven back axle, as well as with ball bearings to all the wearing parts except the big ends. The Sava cars are made in the 14 to 18 and in the 18 to 26-h.p. type, and have the exhaust valves over the inlet, as well as worm-driven back axles.

The Studebaker Corporation.

The famous Flanders and E.M.F. cars, handled in this country by the Studebaker Corporation, are represented at this show on the stand of Messrs. H. E. Hall of Tonbridge. The Flanders is, of course, in general details, a smaller scale edition of the E.M.F., of 102 mm. bore measurement by 115 mm. piston travel, the lesser powered machine having measurements of 92 mm. by 96 mm. respectively, and being 10 in. shorter in the wheel base. The larger is constructed on more ambitious lines, and seems worth the extra cost, for after all both these American vehicles are marketed at astonishingly low prices, complete with flush-sided bodies, head lamps and acetylene generator, side and tail lamps, and tool kit.

The New Model Worm-Driven Phoenix.

There is introduced this year a new model, four-cylinder, worm-driven Phoenix car, designed on wholly fresh lines for this firm, with taper helmet type of bonnet and radiator in front of the dash. It is a little three-guinea-tax vehicle with cylinder bore measurement of 69 mm. and piston travel of 100 mm. All four cylinders are cast in one, and other details of the latest practice are followed. The nominal rating is 11.9 h.p., the valves with adjustable tappets being enclosed by a detachable cover. The minimum ground clearance is 9 in., and three forward speeds are supplied. The 12.9-h.p., two-cylinder Phoenix—that comes under the four-guinea tax—is also retained.

Accessories.

Leathern-treaded Dunlop Pneumatics and Detachable Wire Wheel.

Since the last motor show the Dunlop firm has achieved a remarkable degree of success alike with the leathern-treaded, steel-studded type of non-slipping tyre and with the detachable wire wheel which it then introduced. Both these types have had an interesting history during the last year. For example, the leathern-treaded type has been so successful that the steel-and-rubber treaded variety of non-skid has been abandoned, while the detachable wire wheel is not only adopted as a standard fitting by quite a number of British motor manufacturers, there has, besides, been set up in France a special factory to build it there under licence, with the result that a number of French motor car manufacturers are standardizing it this season. In neither device has there been any call to make a change, for both were well tried before they were placed at the service of the public, and they had, besides, been reduced to an extremely simple form. As for other Dunlop products suffice it to say that the ordinary pneumatics have scored notable successes in holding the world's records on the track for the performance of the Sunbeam cars for twelve, thirteen hours and a thousand miles, while the minor novelties on the stand embrace a tyre pump with a gauge let into the handle so that the dial can be read without stooping.

The Avon Novelties.

The Avon India-rubber Company of Melksham, Wiltshire, not only stages the now familiar tyres with steel-studded treads, with square rubber treads, and with round rubber treads, it besides introduces two new patterns. One of these is equipped with extra heavy moulded grooves, kept flat as to the tread facing, the transverse grooves themselves being deep and narrow and the tyres designed to stand up well under pressure. The other novelty is the fashioning of the tread to consist of a number of fine flutes or ridges, designed, nevertheless, to be of the flat type. Again, in face of the advent of the cycle car, which will be attracting attention at Olympia from November 25th onwards, it is interesting to note a new combination pattern of tyre brought forward by this firm specially for this class of work. The tread of this consists of rubber bars combined with steel studs. The rubber bars are set in three rows circumferentially round the tread, the gap between each bar being filled with a steel stud.

Lancashire-built Tyres.

The special feature of the "Steelrubber" pneumatic tyre treads made by Wood-Milne, of Preston, is the combination of extremely fine steel fibres with the best Para rubber designed to produce a practically flint-proof, non-skidding, and extremely durable tread. The Egyptian cotton casing is woven in endless fashion. The range of designs for the new season include the "Griprib" tread evolved to overcome the disadvantages of the ordinary three-ribbed patterns, by reason of the fact that this new type does not stick in tram lines. Among the accessories on this stand is the new type of foot-pump fitted with automatic registering gauge.

The Pioneer Vulcanizer.

The Harvey Frost firm, which pioneered the tyre vulcanizing business alike for garages and private owners, must have occasion to feel pardonable pride at the present time when a wide variety of firms are making a big feature of vulcanizers of various sorts. The initial type, with the cumulative experience of years in the service of the public behind it, more than holds its own, for its value lies in the amount of money saved to the motorist by the proper utilization of the process. The latest types of these

vulcanizers are sold each complete in itself, and so designed that by the aid of moulds made to correspond to any design of tread, and which can be easily fitted, all patterns of tyres can be repaired. The process, of course, consists in the application to the damaged part of plastene, which eliminates the risk of over-curing, to make good the defect. By the application of a uniform and governed steam heat the freshly introduced material becomes an integral part of the tyre, ceasing to be plastic but retaining full elasticity. A wide variety of types of these vulcanizers are staged.

The exhibition closes on Saturday (November 16th).

ROYAL COMMISSION ON DIVORCE.

THE Royal Commission on Divorce and Matrimonial Causes appointed in November, 1909, has presented its report.

The Commission was instructed to inquire into the present state of the law and the administration thereof in divorce and matrimonial causes, and applications for separation orders, especially with regard to the position of the poorer classes in relation thereto, and the subject of the publication of reports of such causes and applications.

The Commissioners were unable to agree on some of the most important points raised, and there is in consequence a majority and a minority report. The Majority Report is signed by Lord Gorell (chairman, late President of the Divorce Court), Lady Frances Balfour, Mr. Thomas Burt, Lord Guthrie, Sir Frederick Treves (who was added to the Commission in June, 1910, in the place of Sir Rufus Isaacs), Judge Tindal Atkinson, Mrs. Tennant, Mr. Edgar Brierley (stipendiary magistrate, Manchester), and Mr. J. A. Spender. The Minority Report is signed by the Archbishop of York, Sir William Anson, and Sir L. T. Dibdin.

EQUALITY OF THE SEXES.

The Commissioners unanimously recommend that whatever grounds are permitted to a husband for obtaining a divorce from his wife, the same grounds should be available for the wife in a suit against her husband.

GROUNDS FOR DIVORCE.

The majority recommend that the law should be amended so as to permit of divorces being obtained on the following grounds:

1. Adultery.
2. Desertion for three years and upwards.
3. Cruelty.
4. Incurable insanity after five years' confinement.
5. Habitual drunkenness found incurable after three years from first order of separation.
6. Imprisonment under commuted death sentence.

The Commissioners in the minority do not accept these recommendations, but they concur in the recommendation that a party should be entitled to obtain, and the court have jurisdiction to pronounce, a decree of nullity in the following cases:

GROUNDS FOR NULLITY.

(1) Where the other party is of unsound mind at the time of marriage, or is in a state of incipient mental unsoundness, which becomes definite within six months after marriage, of which the first party was then ignorant, provided that the suit be instituted within one year of the marriage, and there has been

[illegible]

to epilepsy or to recurrent insanity, and such fact is concealed

[illegible]

time of the marriage, with a similar proviso to that last mentioned.

[illegible]

me of the marriage, with a similar proviso

[illegible]

to be pregnant at the time of

[illegible]

to her husband, with a similar proviso to

[illegible]

willful refusal to consummate the marriage.

Insanity as a Ground for Divorce.

With regard to the question of insanity as a ground for

[illegible]

Treves, Bart., for the following memorandum on the evidence dealing with the question which was received by the Commissioners.

SIR FREDERICK TREVES' MEMORANDUM.

General Statistics.

It would appear that there are 150,000 registered insane persons in the United Kingdom; of this number probably some 70,000 are married. Dr. Clouston estimates that should incurable mental disease or defect become a ground for divorce, some 41,000 married persons would be affected by the change in the law. Of the 150,000 insane, about 50,000 (that is, one-third) are the subjects of incurable secondary dementia; 35,000 are classed as congenitally feeble-minded, while 20,000 are the subjects of alcoholic dementia. From Dr. Coupland's figures it appears that cases of delusional insanity represent 10 per cent. of the total number of the insane, and senile dementia 3.4 per cent. According to Dr. Clouston, there would be among the total number of 150,000 insane, only about 1,000 examples of recurrent or alternating insanity, and of this number 500 may be assumed to be married.

With regard to *recovery*, two-thirds of the inmates of asylums may be regarded as incurable. The maximum percentage of recoveries is 35; of these 35, 10 may be expected to relapse and 25 to remain sound. Dr. Coupland shows that of those who recover—

88.8	per cent.	recover	within the first 2 years.	
9.1	,,	,,	in from 3 to 5 years.	
1.6	,,	,,	,,	6 to 10 years.
0.5	,,	,,	,,	11 to 20 years.

With these figures those of Dr. Clouston closely agree. Of examples of recovery after twenty years he records only 4 instances out of 5,000 cases of recovery. Of puerperal insanity it is affirmed that 80 per cent. recover, while the rest usually become demented.

In the matter of the *ages of the married insane*, Dr. Coupland gives the following table:

	Age.	Males.	Females..
Married insane ...	(Below 45 ...	43.6 per cent. ...	56.0 per cent.
	(Above 44 ...	56.4 ,, ...	44.0 ,,

Practice of other Countries.

In the following countries insanity is a ground for divorce: Germany, Sweden, Switzerland, New Zealand, Bulgaria, Denmark, Norway, Russia. In the first three named countries the insanity must be of three years' duration and incurable. In New Zealand the respondent must have been confined in an asylum for a period or periods not less in the aggregate than ten years within twelve years immediately preceding the filing of the petition, and is unlikely to recover. In the other four countries no details are forthcoming.

Medical Testimony.

Thirty medical witnesses have appeared before the Commission. To ten of these the question as to insanity was not put; of the remaining twenty, twelve were in favour of making insanity a ground for divorce, seven were against the proposal, and one was undecided. Two of the medical witnesses who were in favour of the proposal based their conclusion almost entirely on the ground of eugenics (Dr. Rentoul and Dr. David Walsh). Of the eleven specialists in mental disease among the above number, four were in favour of insanity as a ground, while seven were against. Dr. Savage obtained from 82 medical officers of asylums an answer to the question "Is insanity a justifiable ground for divorce?" Of these, 51 were in favour of insanity being a ground, 29 were against the proposal, and 2 were indifferent. Certain of those who replied in the negative did so on religious grounds. Of the total number of medical men whose opinions have been obtained, 65 were in favour of insanity as a ground, while 36 were against.

The attitude of specialists in mental disease towards the present question calls for some comment. In the first place exception is taken to any legislation which would place insanity in a category distinct from that of any other disease. Such action, if taken, would be regarded as a "retrograde step." It is only within comparatively recent times that lunacy has been scientifically studied and treated. It was at one period regarded not as a disease, but as a demoniacal possession, the manifestations of which were to be ruthlessly restrained. The lunatic was treated not as a sick man but as a common brawler, and was locked up as being a disturber of the peace and a public nuisance. It is only in quite modern times that insanity has been regarded as a disease, [illegible] from other deviations from health. [illegible] of insanity as a disease, there followed its treatment upon scientific lines, and a

those humane principles which underlie the management of other disorders. The alienist naturally protests against any measures which will place insanity once more in a position apart from that occupied by other maladies, and among such measures he ranks the regarding of insanity as a ground for divorce. This view was expressed in the evidence of Dr. W. D. Moore and others. Then, again, the medical officer of an asylum very properly considers the interests of his patients as the first concern in any legislation dealing with the insane, and would be disposed to object to any enactment which might prejudice in any way the welfare and comfort of those under his charge. This attitude is made evident in the examination of several of the witnesses.

As regards the Commissioner in Lunacy he is officially "the guardian of the insane." His duty is to protect the interests of the insane. As Dr. Copland expresses it, he "holds a brief for the insane," and under these circumstances a Commissioner could hardly be expected to favour any action which would, in his opinion, be possibly unfavourable to those for whom he is responsible.

One witness, Sir James Crichton-Browne, expressed himself as opposed to divorce on any ground.

Arguments against Insanity as a Ground for Divorce.

1. Arguments based upon religious grounds, as represented by those who oppose divorce on any plea, or would permit it only on the ground of adultery.

2. Arguments based on principle. Marriage, it is contended, should be dissolved only by death or misconduct. To dissolve it for insanity is to dissolve it for misfortune. The French code, for example, gives extended grounds for divorce, providing a most liberal interpretation of what may constitute misconduct. Some of the grounds legalized have been considered trivial, but insanity is not recognized in any way, since it is regarded as a misfortune.

3. The practice of other countries. In only eight countries is insanity regarded as a ground for divorce. In Germany, insanity as a ground for divorce was made legal by only a small majority—namely, 161 to 155.

4. The proposal is opposed to the spirit of the marriage vow. The marriage tie is binding "for better for worse, for richer for poorer." The vow is thus expressed:—"Wilt thou love her, comfort her, honour and keep her in *sickness* and in health; and, forsaking all other, keep thee only unto her, so long as ye both shall live?" Insanity is a disease, a misfortune. The fact that it may be brought about by evil living does not affect the morality of the position. Such evil living may belong to the time before the marriage was contracted, and may have been long abandoned.

5. The insanity which is made a ground for divorce may have been brought about—in part at least—by the misconduct of the petitioning spouse. In many cases the husband's conduct has been "the immediate and direct cause of the wife's insanity." "Some insane patients are made insane by sexual perversions of their marital partners."

6. If insanity be made a ground for divorce, there is nothing to prevent other chronic and incurable diseases from being made grounds—such diseases, for example, as hopeless paralysis, malignant affections, and advanced phthisis. If once the principle be admitted that sickness or mere physical misfortune may afford a ground for divorce, it would be illogical not to admit any persisting malady as a reason for the dissolving of the marriage tie.

7. Patients have recovered after twenty and more years of insanity, and thus if insanity of limited duration became a ground for divorce an individual on recovering may find that he or she had been divorced, and that the partner who should welcome the return of the invalid had already married another.

8. The knowledge that insanity might be a ground for divorce would suffice to hurry some married persons of poor health or of unstable mental condition into actual insanity. This has been specially urged in connexion with puerperal insanity. The knowledge that insanity was a ground for divorce would act very prejudicially with many of the insane, would hinder their recovery, and possibly aggravate their mental condition. Certain of the insane (notably those subject to delusional insanity) "would most deeply resent divorce proceedings," and would be caused "mental torture" by the knowledge that divorce was possible. It would add, moreover, additional terror to the present stigma of insanity.

9. In many cases the insane patient—if divorced—would lose a friend and be deprived of the comfort to be obtained from the visits of the sane spouse.

10. It is said by many medical men that there must often be a great difficulty in establishing the fact that a case is absolutely incurable. In all contested cases a field for controversy and for conflicting medical evidence is certain to be opened up. The poor could not afford to pay for the special medical evidence demanded by these cases. The insane person would often be undefended or possibly be defended by the children who would place themselves in opposition to that parent who was endeavouring to obtain a divorce.

11. It is allowed that hardships are met with in connexion with insanity among married people, and that the conditions existing have led to immorality, to irregular unions, and to neglect of children, but if divorce be granted for incurable insanity of five years' duration, it is obvious that in the majority of instances the evils complained of will have been already encountered before the five years are completed, especially when the subjects of the action are young.

12. A husband may bring an action for divorce in order to avoid paying any longer for the maintenance of his insane wife. This is not unlikely to be the case among the poor, and the cost of maintenance of the wife would then apparently fall upon the rates.

Arguments in Favour of Insanity as a Ground for Divorce.

1. The instituting of divorce proceedings on the ground of insanity would be perfectly voluntary. It is not to be supposed that action would be taken so long as the healthy spouse had any real affection or regard for the insane partner.

2. It is estimated that there are some 41,000 married persons in the United Kingdom who are hopelessly insane. Among these the largest class would be composed of those suffering from secondary dementia. Of such it is said that they "have no proper interest in life, are quite unable to care for themselves or to manage their affairs." They "have so lost the power of proper feeling that the fact of their divorce would make no painful impression on their minds, or no impression at all." "Their affection for their relatives is perverted or dead." They "are for the most part incapable of deriving any comfort from the visits of their friends." They have no civil or other rights, are held by no obligations, and would be personally absolved from any contract entered into when they were of sound mind. To them their wives or husbands are as strangers, and, indeed, these subjects of dementia are, except in a physiological sense, "virtually dead." With regard to the marriage contract they are unable to understand it, to remember it, to fulfil its obligations, or to consent to annul it. Even their property is disposed of for them, while at the same time they are kept in close and compulsory confinement. It is contended that the hopelessly insane are, as parties to any contract, practically non existing.

3. There is abundant evidence to show that in cases of insanity among married people great hardships may be inflicted upon the sane spouse and immorality in various forms encouraged. When the insanity is incurable, the sane spouse is not only denied the enjoyments and advantages of married life, but is condemned—often whilst still young—to a compulsory celibacy, which may extend to the end of his or her days. The sane spouse is unable to add healthy legitimate children to the State. The rich man may be denied a heir who would inherit his position and property and continue the family name. The poor man, whose wife is in an asylum for life, must find a housekeeper to manage his home and take care of his children. The woman who is deprived of her husband loses a protector and supporter. As a result, irregular unions, immorality, and the production of illegitimate children are inevitable. The wife has in some instances been driven to prostitution, the children of the legitimate union are apt to be neglected, and the economic troubles incident to the support of two families may be acute. There is no doubt but that the hardships which are almost inevitable whenever a husband or wife is confined for life in an asylum tell more hardly upon the poor than upon the rich, and that the demand for relief in a large series of cases is very pressing.

4. It is urged that if incurable insanity be made a ground for divorce, it would be necessary, or at least logical, to admit any other incurable disease to the same claim. But insanity considered in relation to the marriage tie occupies a position which is unique, and which serves to distinguish it from every other disorder of the body. The great majority of the incurably insane are incapable of carrying out any of the obligations incident to marriage. In a few instances they may be capable of fulfilling the physiological obligation of marriage, but apart from this they are as if they were non-existent. As examples of diseases which may be placed in the same category with insanity in relation to divorce, have been cited hope-

less paralysis, malignant disease, and phthisis. The subjects of these maladies, however, may be still charming and helpful companions, may be capable of managing the affairs of their households, and be able to bestow upon their partners in the fullest degree and to the last days of their lives that love, comfort, and honour which are enjoined by the marriage vow. There is, moreover, one feature in insanity which applies to no other of the diseases named—the incurably insane are removed from their own homes and are confined and isolated in an asylum. Anything approaching family life is impossible in the case of the lunatic, but that life remains but little disturbed in the case of other hopeless diseases. So far as public opinion is concerned, the sympathy of many would extend to the young husband about to divorce an insane wife who no longer even appreciated or recognized his existence, but the whole world would condemn a man who divorced his wife for paralysis or consumption.

5. It is said that the incurability of insanity is difficult to determine. This is acknowledged by all; but all, at the same time, allow that that difficulty is insignificant if a time limit be given. Dr. Savage—who is opposed to making insanity a ground for divorce—states that if five years be allowed, and a definite medical inquiry be held, the risk of miscarriage would be "almost negligible" (35,985), and would not involve "one case in a thousand." The figures already given of the percentages of recoveries (as estimated in periods of years), show how very small is the risk of error in the case of those who have been continuously insane for over three years. When it is claimed that persons have recovered after 20 years' confinement in an asylum, it should be added that the number of those who recover after 10 years is only 0.5 per 100. It is suggested that at the present time errors of judgement creep into decisions in connexion with divorce for adultery, and that this possibility of error is no greater than may be conceived should insanity be made a ground of divorce. As to whether there have been instances where a patient has recovered after having been divorced for insanity, it is stated that in Saxony these cases have been "very few," while in Prussia "such a case has never happened."

6. It is affirmed that the insanity of the respondent may be due to the misconduct or ill treatment of the petitioner. While this assertion is accepted, those who advance it allow that, except in the case of insanity due to syphilis, the charge would be almost impossible to prove. Lunacy following directly upon syphilis does not come within the proposed category to which insanity as a ground would be confined.

7. It is said that the knowledge that insanity may be a ground for divorce would cause a person of unstable mind to become an actual lunatic. This assertion is directly contradicted by certain of the eminent specialists who have given evidence. (See, for example, the evidence of Dr. Hyslop, Dr. Clouston, and Dr. Jones.) Further, it is claimed that if insanity were made a ground for divorce, the condition of those who are actually insane would be aggravated. It is allowed by all that the subjects of delusional insanity "would most deeply resent divorce proceedings." According to Dr. Coupland's tables, the examples of delusional insanity represent only 10 per cent. of the total number of the insane. As to the general question, Dr. Mott does not think that the possibility of divorce would have an injurious effect on the insane, and from his inquiries he says that German physicians do not think that the divorce law of Germany acts to the detriment of the lunatic *qua* lunatic. Dr. Savage's view of this question of injury to the insane is that it is a possibility but not a very serious one.

8. The contention that the insane spouse, if divorced, would lose such comfort as may be derived from the visits of the sane spouse, is met by the declaration that the insane person contemplated in the suggested alteration of the divorce laws is so far mindless as to have lost all affection, and to be incapable of deriving enjoyment from the visits of friends.

Suggested Proposals if Insanity be Allowed to be a Ground for Divorce.

That insanity be a ground for divorce—

1. When the individual has been continuously insane and confined to an asylum for not less three (or five) years.
2. When the insanity is found to be incurable to the satisfaction of the Court.
3. When the age of the insane person is not over 45 years.
4. Any Commissioner in Lunacy to have power to intervene in any proceedings for divorce, on behalf of the insane person.

Supplementary Matters needing Decision.

A. The position when the petitioner has been guilty of adultery.

B. Questions of property, marriage settlements, provision for the insane wife if divorced, and the guardianship of the children of the marriage which has been dissolved.

C. The question of costs for expert medical evidence in cases where the parties are poor.

Comments on the above Proposals.

I.

There is a general feeling that an attempt to form a schedule of the types of insanity for which divorce might be claimed would be impracticable, and that the only determining factor in establishing incurability should be time. The majority of the witnesses who spoke upon this point were in favour of three years. The position as between three and five years is as follows: In order to afford speedy relief to those hardships which arise from the marriages under consideration, and to minimize the immorality which may follow therefrom, the shorter term of years is to be recommended. On the other hand, incurability can be much more certainly determined if five years' continuous insanity be insisted upon. There is a general agreement of opinion that if the test of five years be applied the risk of error is almost negligible. In Germany, Sweden, and Switzerland the term required is three years, and there is no evidence to show that any notable miscarriage of justice has resulted therefrom. There are certain cases where it would be possible to state with assurance that the individual who has been insane for three years is absolutely incurable. In such instances it is hard that the sane spouse should have to wait two years more before obtaining relief. As the Court has to be satisfied that the incurability of the individual has been proved to its satisfaction, it would seem, from the evidence given before the Commission, that little injustice would be likely to ensue if the term were made three years. In New Zealand it is not insisted that the insanity should be continuous, but there does not appear to be any advantage in the requirements adopted by that country.

The term of three years would practically exclude both general paralysis of the insane and recoverable puerperal insanity. The term of five years would make that exclusion absolute. There would appear to be no sufficient grounds for placing delusional insanity in a special category, and for requiring that it should have existed for such a period as ten years. Every case of delusional insanity should be considered upon its merits, and the Court would have to be satisfied that in each particular instance the insanity was incurable. In like manner there would appear to be no practical value in the proposal that in recurrent insanity the respondent should have had a certain number of attacks before an action for divorce could be taken. In this form of insanity, as in the delusional type, the two requirements would be that the lunacy had been continuous for three (or five) years, and had been shown to be incurable to the satisfaction of the Court. These cases of recurrent insanity present great and special difficulties from whatever point they may be viewed. For example, Dr. Hyslop says that he has seen recovery in recurrent mania, due to alcohol, after the thirty-seventh attack of mania, but he adds: "Each recovery was productive of nothing but misery to friends and relations."

It has been proposed in the evidence that in the case of a criminal lunatic who is detained during His Majesty's pleasure, a ground for divorce should exist without any further conditions being fulfilled. Dr. Hyslop points out that this might involve a gross injustice in the case of a young married woman, who, in an attack of puerperal insanity, murders her child, and is sent to Broadmoor. Such a woman might recover in a few months, and might then find that she had been divorced by a husband who had availed himself of this opportunity of getting rid of her.

The "criminal lunatic," whether confined during His Majesty's pleasure, or whether he has become insane since the committal of the crime for which he is at the time imprisoned, should be treated so far as divorce proceedings are concerned in precisely the same manner as any other insane married person. The number of criminal lunatics in the United Kingdom is said to be about 1,000.

II.

There is a general opinion that in dealing with the question of incurability, the evidence of three expert

medical witnesses (including the asylum medical officer in charge of the patient) would enable the Court to come to a decision on the point named.

III.

The proposal that the age of the patient should be specified, is based upon these grounds:—The main objects in making insanity a basis for divorce are to relieve certain grievous hardships, and to remove conditions which may lead to immorality. Both these contingencies must be most marked when the parties are young. When the marriage has existed for many years these two pleas for divorce may have little force. Public opinion may not be opposed to a divorce for insanity in a case where the parties concerned are young, and the marriage has not been of long standing, but the criticism may be adverse when the marriage tie has existed for many years, and the parties have reached middle life. The arguments based upon inducements to immorality would be less convincing when the husband and wife are no longer young.

Stress has been laid upon the impossibility of the sane spouse being the parent of healthy and legitimately born children, and of the fact that when one spouse is insane, illegitimate children may result from irregular unions formed by the sane partner. Both these arguments are weakened, and in the case of the women are practically put aside, when the age of the respondent must not exceed 45 years. This suggested age limit will also prevent divorce from being obtained on the ground of senile dementia, a form of mental disease which many demand should be excepted from any proposed legislation. An alternative suggestion, intended to meet the points which have been already raised, is that no action of divorce for insanity should be permissible when the marriage has existed for fifteen years. This proposal would not prevent senile dementia from being made a ground of divorce, nor would it be satisfactory on general grounds in the case of persons who had married in middle life.

SIR THOMAS BOOR CROSBY.

Shortly before resigning the office of Lord Mayor of London, Sir Thomas Boor Crosby, M.D., extended the generous hospitality of the Mansion House to a large party of members of the medical profession, chiefly resident in London, and a few other guests. The invitation was to meet the Presidents of the Royal Colleges of Physicians and Surgeons. Both Sir Thomas Barlow and Sir Rickman Godlee responded to the principal toast of the evening, which was given by the Lord Mayor, who referred to his long and active connexion with the medical profession, and to the efforts he had made during his year of office to systematize and extend the use of special hospitals for teaching purposes. He made some references also to the insurance schemes, and insisted that the medical profession deserved generous treatment from the State, and that by so acting the State would reap a rich reward. Sir Thomas Barlow also made reference to this subject, touching lightly upon the proposals as to a State whole-time medical service, which he considered was contrary to the genius of the country and must destroy the family doctor, and declaring that the maintenance of the voluntary hospital system, though some State subsidy might in future become necessary, would afford in the future as in the past the greatest possible guarantees for the best treatment of patients.

The Lord Mayor proposed the health of Dr. Léon Blanc, Mayor of Aix-les Bains, who briefly responded. Afterwards the health of the Lord Mayor himself was proposed by Sir William Church, and drunk with much cordiality.

Among those present were: Sir William Osler, Bart., and Sir T. Clifford Allbutt, Regius Professors of Medicine in the University of Oxford and Cambridge respectively; the Director-General of the Medical Department of the Navy (Sir James Porter); the Principal (Sir Henry Miers), the Vice-Chancellor (Dr. Herringham), and Chairman of Convocation (Sir Edward Busk) of the University of London; Sir Frederick Treves, Bart., Sir R. Douglas Powell, Bart., Sir Dyce Duckworth, Bart., Sir Watson Cheyne, Bart., Sir Henry Morris, Bart., Sir Lauder Brunton, Bart., Sir Francis Champneys, Bart., Sir William Church, Bart., Sir Anderson Critchett, Bart., Sir James Goodhart, Bart., Sir Robert Morant, K.C.B., Sir David Ferrier, Sir A. Pearce Gould, K.C.V.O., Sir J. Rose Bradford, K.C.M.G., Sir Malcolm Morris, K.C.V.O., Sir William Bennett, Sir John Tweedy, Sir Frederick Hewitt, Sir Shirley Murphy, Sir Anthony Bowlby, Sir George H. Savage, Sir Cooper Perry, Sir William J. Collins, Dr. Theodore Williams, Mr. C. A. Ballance, and Dr. Frederick Taylor.

On November 9th the usual ceremony took place at the Law Courts, when the Recorder of London (Sir Forrest Fulton) introduced the new Lord Mayor to the Lord Chief Justice, who was accompanied by Mr. Justice Darling and Mr. Justice Avory. After introducing Sir David Burnett the Recorder presented the retiring Lord Mayor, and described the events of his year of office. Sir Thomas Crosby, he said, who entered upon the duties of the chief magistracy at a more advanced age than any of his predecessors, had filled that position with dignity and success. One of the leading events of the mayoralty was the visit of the King and Queen to St. Paul's Cathedral to render thanks for their safe return from India. In the early days of his mayoralty Sir Thomas Crosby received Lord Grey, upon whom was conferred the freedom of the City, and later he entertained Mr. Borden, the distinguished and popular Prime Minister of Canada. The retiring Lord Mayor did his utmost to mitigate the consequences of the coal strike, holding a conference of municipal authorities at the Mansion House. He also opened a fund for the relief of the widows and orphans of those who were lost in the *Titanic*, and in all over £400,000 was collected. His public services had been recognized by the grant of the honorary degree of Doctor of Laws of the Universities of Dublin and St. Andrews. Sir Thomas Crosby and his daughter, who had officiated as Lady Mayoress, would carry with them the heartiest good wishes of their fellow-citizens on their retirement into private life.

After addressing the Lord Mayor Lord Alverstone turned to the retiring Lord Mayor, who, he said, did not require to justify his conduct in that position. His fellow-citizens and friends had already announced in the most public way their appreciation of what he had done. It was remarkable that a man who was now 82 could have successfully gone through the great labour and strain of the office of Lord Mayor. He would have in his retirement the good wishes of his fellow-citizens and the affection of his friends.

TREATMENT OF CANCER.

In a paper by Dr. Bashford written at our invitation and published in the British Medical Journal of May 27th, 1911, incidental references were made to a method of treating cancer followed by Dr. James Fenwick of Accrington, particulars of which had been published in the British Medical Journal of March 6th, 1909, p. 589. Dr. Fenwick having complained of such references and of his name appearing at all in such an article and in such connexion, we and Dr. Bashford desire to express our regret to Dr. Fenwick that any references should have been made to him and his said treatment in such number, and to withdraw unreservedly any expressions which could be interpreted as an imputation or reflection upon his professional or personal honour, standing or ability.

It is proposed to establish an Italian Radiological Society. It is intended that the head quarters of the society shall for the present be at the Radiological Institute of the civil hospitals of Genoa. The organizing committee consists of Professor Vottorio Maragliano, Dr. Giacomo Pesci, Dr. G. B. Cardinale, and Professor David Vallebona.

An influential committee has been formed to promote a fund which is to be devoted to commemorate the eminent services to both rich and poor of the late Dr. John E. Banking, who was killed in a motor accident recently. For over thirty years he rendered most devoted and most successful services to the General Hospital at Tunbridge Wells, and it is proposed to apply the fund in some practical way for the benefit of the sick and suffering poor; the form which the memorial will take must depend upon the amount forthcoming. It is hoped that the sum will be a substantial one, so as to admit of some form of permanent endowment. Cheques may be sent to Mr. F. Wadham Elers, chairman, General Hospital, Tunbridge Wells.

LITERARY NOTES.

SIR SHIRLEY F. MURPHY has been appointed editor of *Public Health*, the official organ of the Society of Medical Officers of Health, in succession to Dr. G. F. McCleary.

We have received from Messrs. Henry Sotheran and Co. their latest catalogue, *Bibliotheca Criminalis*, comprising a collection of State and criminal trials of great historical and sociological interest. It is much more than an ordinary catalogue, most of the publications being accompanied by notes giving a summary of their contents, and calling attention to interesting or peculiar facts connected with them. The works included in the catalogue serve to illustrate in a striking way the social condition of England, more especially in the eighteenth century.

In the JOURNAL of November 2nd we gave some specimens of medical Latin, which by the way could easily be paralleled by samples of journalistic, clerical, and legal Latinity. Most busy practitioners will probably agree with the father of Samuel Parr. The famous scholar was the son of a general practitioner at Harrow. After laying the foundations of his classical learning at that great school, family circumstances made it advisable that he should be apprenticed to his father at the age of 14. He himself said that for a physician he might have done well; "but for a surgeon, never." Among his reminiscences of the medical period of his life he used to relate that even at that early age his critical taste for pure Latinity made him a severe critic of the prescriptions. "Father," he would say, glancing his eye over one, "here's another mistake in the grammar." "Sam," replied the unclassical father, "damn the prescription; make up the medicine!"

Reference was made in the JOURNAL of November 2nd to Mark Akenside, the poet physician. As was there said, probably few now read his poetry, but his name still figures in textbooks of literary history and in biographical dictionaries. He is interesting to us because he was a physician, but it is unpleasant to know that in a rough age he was remarkable for inhumanity to poor patients. The famous J. C. Lettsom was a pupil at St. Thomas's Hospital. In Pettigrew's life of him it is related that among the physicians there at that time was Akenside, the author of *Pleasures of the Imagination*, which the young man had read with great admiration. Lettsom anticipated great pleasure from coming under the notice of the great man. But, says Pettigrew:

> Great, however, was his disappointment in finding Dr. Akenside the most supercilious and unfeeling physician that he had ever known. If the poor, affrighted patients did not return answer to his queries, he would often instantly discharge them from the hospital. He evinced a particular disgust for females, and generally treated them with harshness. It was stated that this moroseness was occasioned by disappointment in love, but hapless must have been that female who should have been placed under his tyranny. Lettsom was inexpressibly shocked at an instance of Dr. Akenside's inhumanity, exhibited towards a patient in Abraham's ward to whom he ordered bark in bolusses, who in consequence of not being able to swallow them so irritated Akenside as to order the sister of the ward to discharge him from the hospital, adding "He shall not die under my care." As the sister was removing him in obedience to the doctor the patient expired. One leg of Dr. Akenside was considerably shorter than the other, which was in some measure remedied by the aid of a false heel. He had a pale, strumous countenance, but was always very neat and elegant in his dress. He wore a large white wig and sword. Lettsom never knew him to spit, nor could he bear any student to spit in his presence. One of these gentlemen, not yet standing at some distance behind him, trod on his artificial heel and spit in the person that spit in his face. Akenside would order some of the patients on his visiting days to follow him with brooms to clear the way and prevent any person too nearly approaching him. On one of these occasions Mr. Foster, one of the governors, approached him with some familiarity. "Know," said he, "thou art a beast." On one occasion his anger was raised to a pitch by the answer which Mr. Baker, a surgeon, gave to the doctor on his inquiring of the latter respecting the progress of a boy, which had some time before undergone the operation of trepanning. "Sir," said Mr. Baker, "what study do you suppose requisite for a surgeon?" "I find," replied Akenside, "you are no surgeon, so I shall say no more on the subject." He then turned round from Baker with impetuosity, and would not speak to him for a considerable time afterwards.
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> He, however, would sometimes condescend to explain a case of disease to the pupils, which always appeared sagacious; and, notwithstanding his irritable temper, he was more followed than another physician who was "as condescending as Akenside was petulant." Akenside is mentioned by Johnson in a letter to Mrs. Thrale, dated August 23rd, 1877 (see *Letters of Samuel Johnson, LL.D.*, collected and edited by George Birkbeck Hill, Oxford, 1892). Johnson writes:
>
> At Litchfield? Yes; but not well. I have been trying a great experiment with ipecacuanha which Akensyde (*sic*) had inclined me to consider as a remedy for all constrictions of the breath. Lawrence indeed told me that he did not credit him, and no credit can I find him to deserve. One night I thought myself the better for it, but there is no certainty. On Wednesday night I took ten grains; the night was restless. On Thursday morning I took ten grains; the night again was restless. On Friday night I took twenty grains, which Akensyde mentions as the utmost that on these occasions he has ventured to give; the night was perhaps rather worse. I shall therefore take truce with ipecacuanha.

Birkbeck Hill, in a note to this passage, says that Akenside used to frequent Tom's Coffee House in Devereux Court, close to Johnson's haunts, where, no doubt, the two men often met. One evening, it is related by Sir John Hawkins, "Saxby of the Custom House" attacked the profession of physic, which Akenside defended. "Doctor," said Saxby, "after all you have said, my opinion of the profession is this: the ancients tried to make it a science and failed: and the moderns to make it a trade and have succeeded."

Benjamin Franklin, as appears from his letters and writings, was a great advocate of fresh air. In a letter on the causes and cure of smoky chimneys, written "at sea" on August 28th, 1785, to Dr. Ingenhousz of Vienna, physician to the Empress Maria Theresa—the same physician who was one of the first to expose the pretensions of Mesmer—Franklin takes occasion to say that some are as much afraid of fresh air "as persons in the hydrophobia are of fresh water."

> I myself had formerly this Prejudice, this *Aërophobia* as I now account it, and dreading the supposed dangerous Effects of cool Air, I consider'd it as an Enemy and clos'd with extreme care every crevice in the Rooms I inhabited. Experience has convinced me of my Error. I now look upon fresh Air as a Friend; I even sleep with an open Window. I am persuaded that no common Air from without is so unwholesome as the Air within a close Room that has been often breath'd and not chang'd. . . . You Physicians have of late happily discover'd after a contrary Opinion had prevail'd some ages that fresh and Cool Air does good to Persons in the Small Pox and other Fevers. It is to be hop'd that in another Century or two we may all find out that it is not bad even for People in Health.

He goes on to speak of the "Air in close Rooms where the perspirable matter is breath'd over and over again by a number of assembled People" as being hurtful to health:

> After being in such a Situation, many find themselves affected by that Febricula which the English alone call a Cold, and perhaps from the Name imagine that they caught the malady by going out of the Room when it was in fact by being in it.

He returns to the subject of fresh air in a letter on the art of procuring pleasant dreams, written to a young lady when he was 80 years of age. He says:

> Another means of preserving health to be attended to is the having a constant supply of fresh air in your bed-chamber. It has been a great mistake the sleeping in rooms exactly closed and in beds surrounded by curtains. No outward air that may come into you is so unwholesome as the unchanged air often breathed of a close chamber. As boiling water does not grow hotter by boiling longer, if the particles that receive greater heat can escape; so living bodies do not putrefy if the particles so fast as they become putrefied can be thrown off. Nature expels them by the pores of the skin and the lungs, and in a free open air they are carried off; but in a close room we receive them again and again, though they become more and more corrupt. A number of persons crowded into a small room, thus spoil the air in a few minutes and even render it mortal, as in the Black Hole at Calcutta. A single person is said to spoil only a gallon of air per minute, and therefore requires a longer time to spoil a chamber full. But it is done, however, in a proportion, and many putrid disorders hence have their origin. . . . Physicians after having for ages contended that the sick should not be indulged with fresh air, have at length discovered that it may do them good. It is therefore to be hoped that they may in time discover likewise that it is not hurtful to those who are in health, and that we may be then cured of the aërophobia that at present distresses weak men, and makes them choose to be stifled and poisoned rather than leave open the window of a bedchamber or put down the glass of a coach.

These extracts are taken from one of a series of papers entitled The Medical Side of Benjamin Franklin, published in the *University of Pennsylvania Medical Bulletin*, by Dr. William Pepper.

British Medical Journal.

SATURDAY, NOVEMBER 16TH, 1912.

MUNICIPAL CONTROL OF TUBERCULOSIS IN AMERICA.

It is not only in matters of commercial enterprise that the nation has reason to heed the emphatic advice to "wake up." Publications without number have appeared, pointing out the ideal course to pursue in the practical handling of tuberculosis; every one is agreed upon the main points, but anything like organized action is still in abeyance. While we in this country have been dreaming, some other countries have indeed woke up. In the City of New York a system has now been in force for eight years which not only embodies the best ideals but has put them to the test, and thus an amount of practical experience and information has been acquired which deserves the closest attention of all antituberculosis workers in the great towns which still lag behind in the onward march.

The Department of Health of the City of New York, quickly recognizing the value of a system which in its inception was largely dependent upon charitable effort, began in 1904 to establish tuberculosis clinics for the early recognition of the disease among the poor. They undertook to assist incipient cases to obtain the necessary hygienic surroundings, to supervise the mode of life of the established cases, and to remove, wherever possible, the advanced cases from close association with the healthy. Full advantage could thus be taken of the various public institutions, while information was continually being diffused amongst the most ignorant by leaflets and by word of mouth in the various languages current among the labouring classes of the city. Regular visitation of the patients in their own homes by the nurses attached to each clinic has probably done more than anything else to popularize the system.

A report by Dr. John S. Billings, jun.,[1] recently published, gives a detailed account of the gradual progress of the work, the difficulties encountered, and the results achieved. The public importance of the movement would appear to have called forth a generous dole of public money, and from small beginnings in makeshift buildings the work is now carried on in some instances in specially constructed clinics described as being models of convenience. The main clinic at Brooklyn, it is said, is the largest and finest in the United States. The description given in the report proves that no expense has been spared to make it so.

Scattered throughout Greater New York there are no less than thirty-two clinics, linked together for the most part by the Department of Health. Similar methods of examination, registration, visitation, and treatment are carried out in all of them, and in the German and Italian quarters the special needs of these nationalities are cared for. The popular belief that Jews are more or less immune to the disease is altogether discounted by the experience of the clinics among the very large Hebrew population in the city, notwithstanding the fact that patients belonging to this nationality are, as a rule, more appreciative of the hygienic precautions that are impressed upon them than are others in a similar rank of life.

Periodical examination by specially trained physicians and visitation by the nurses attached to each clinic, together with the uniform system of recording histories and progress, has, it is stated, enabled a really effective control to be kept over a very large number of tuberculous persons. The medical services rendered were given gratuitously at the outset, but the extension of the work has necessitated the appointment of salaried officers, who are still assisted by a large staff of volunteer workers. The nursing staff render valuable service both in the clinics and in the homes of the patients: receiving the doctor's opinion and instructions at first hand, they are able to assist the patient and his friends in carrying out the prescribed course of life, and are in turn able to report to the doctor the conditions under which the patient has to live. Tuberculin injections are not employed to any great extent, because no hospital facilities are at hand for keeping patients under sufficiently close observation. Recognizing the importance of extra diet in certain cases of pulmonary tuberculosis, the Health Department formerly made grants of milk and eggs to some of their clinics, but during the last few years the supply has been discontinued. The system of registration is very complete, and Dr. Billings's report contains a full description of it. By its means the transference of a patient from one clinic to another does not involve interference with the continuity of treatment or record.

As an adjunct to the tuberculosis clinics some day camps have been established, where a considerable number of patients, and especially children, can be kept under observation under the most favourable conditions during the day time.

The statistical results of the clinics and camps prove a steady decline in the death-rate, and in course of time must apparently show a similar decrease in the case incidence. The most difficult, but perhaps the most essential part of the whole system of supervision, is the segregation of the infective patient.

Amid much that is uncertain, there is no sort of doubt as to the danger to the community of the patient who is constantly spitting up infective bacilli. The educated sufferer may so dispose of his excretions as to become comparatively harmless, but the thousands of uneducated patients are constantly spreading the disease broadcast, and there is but little hope of the eradication of consumption so long as they are permitted to do so.

New York supplies an object lesson which should be taken to heart by all municipalities. The advantage of combined action is universally recognized; the cost can now be calculated, and it only remains for local authority to supply the energy for united effort. The State provision of sanatoriums is but a small part of the whole. The real mischief is steadily going on in the homes of the people, and it is there that sympathetic help and material assistance is needed. The Health Department of New York has shown the world how it can be given

[1] *The Tuberculosis Clinics and Day Camps of the Department of Health.* By John S. Billings, Junr., M.D. No. 2, Monograph Series. July, 1912. New York: Department of Health. 1912. (Demy 8vo. pp. 123.)

THE RACE OF LIFE.

THERE is a striking passage in Oliver Wendell Holmes's *Autocrat of the Breakfast Table*. Although it must be familiar to all admirers of the writer in whom, like righteousness and peace, medicine and literature met and kissed, it will still bear partial quotation. Holmes says: "Nothing strikes one more in the race of life than to see how many give out in the first half of the course. Commencement Day always reminds me of the start for the Derby, when the beautiful high-bred three year olds of the season are brought up for trial. That day is the start, and life is the race. Here we are at Cambridge, and the class is just graduating. . . . Ten years gone, first turn in the race, a few broken down, two or three bolted. Several show in advance of the ruck. *Cassock*, a black colt, seems to be ahead of the rest. Those black colts commonly get the start I have noticed of the others in the first quarter. *Meteor* has pulled up. Twenty years. Second corner turned. *Cassock* has dropped from the front and *Judex*, an iron grey, has the lead. But look how they have thinned out, down flat—five—six—how many? They lie still enough; they will not get up again in this race. . . . Thirty years. Third corner turned. *Dives*, bright sorrel, . . . begins to make play fast. . . . But who is that other one that has been lengthening his stride from the first, and now shows close up to the front? Don't you remember the quiet brown colt, *Asteroid*, with the star on his forehead? That is he. He is one of the sort that last; look out for him. The black 'colt' as we used to call him, is in the back-ground, taking it easily in a gentle trot. There is one they used to call the filly on account of a certain feminine air he had. Well up, you see. The filly is not to be despised, my boy. Forty years. More dropping off, but places much as before. Fifty years. Race over. All that are on the course are coming in at a walk. No more running. Who is ahead? Ahead! What! and the winning post a slab of white or grey stone, standing out from that turf where there is no more jockeying or straining for victory. Well, the world marks their places in its betting book, but be sure that these matter very little if they have run as well as they knew how."

The exclamation of Abernethy on entering his crowded lecture theatre one October, "Good God, gentlemen! what is to become of you all?" is historical. Various attempts have been made to answer this question. The most thoroughgoing is that of Sir James Paget. In the *St. Bartholomew's Hospital Reports* for 1869 he published a short paper entitled, "What Becomes of Medical Students?" in which he gave the results of an inquiry as to the careers of a thousand of his old pupils up to fifteen years after they entered the school. Of the whole number, 23 achieved distinguished success, 66 considerable success, 507 fair success, 124 very limited success, 56 failed entirely, 96 left the profession, 87 died within twelve years of beginning practice, 41 died during their period of studentship. Of the 41 who died, 4 fell victims to fever caught in the hospital. Of the 87 who were taken away early in their career as practitioners, 21 died of "diseases incurred in their duties." From these figures, which may be taken as representative, it will be seen that, while comparatively few achieved conspicuous success, more than half were fairly successful. It may be said here that "considerable success" is ascribed by Paget to those who gained high positions in the public services or leading practices in good districts, or who retired with money earned in practice, or gained much more than ordinary esteem and influence in society. "Fair success" is defined as having a practice that enables a man to live, maintaining a good reputation, or holding ordinary appointments in the public services. The number of those who for one reason or another fell by the way is relatively large. Paget's statistics may be compared with the results of an inquiry made by Dr. Squire Sprigge, and published by him in his book, *Medicine and the Public* (London, 1905): Of 250 men who entered a well-known London hospital in 1879, 187 qualified and 63 did not qualify. Of the 187, 9 met with distinguished success, 45 with considerable success, 25 with fair success in the services—2 of these might be included in a higher class; 46 met with fair success in practice, 5 left the profession after qualification, 6 discontinued medical study as pupils, 2 died during pupilage, 23 died within twelve years of commencing practice, and 6 failed entirely. If the "considerable" and "fair" successes are added together, the conclusion is that 116 men out of 187—that is, 66 per cent.—of qualified medical men from one metropolitan medical school "have reason to be satisfied with their professional careers."

To few is it given to reach the highest pinnacle of success. The race is to the swift and the battle to the strong; but the factor of survival also comes into play. A man is often left at the top because death has swept away those who might have disputed the pride of place with him. And of those who die in their youth, there must always be some of whom we might say, as Newton said of the young mathematician who died in his 34th year, "If Cotes had lived, we might have known something!"

If we are asked, What constitutes success? our reply is that we agree generally with Sir James Paget. If it is to be measured by the amount of money made, there are many quacks who are more "successful" than most doctors. Success should be estimated by the amount of good done, by the respect and confidence of the profession, by honestly won reputation among the public, and by the fragrance of actions which smell sweet and blossom in the dust. To gain success of this kind a man must, of course, have a sound knowledge of his work and must know how to apply that knowledge. But something more is required. The "good bedside manner" is often referred to by novelists as if it were merely the art of ingratiating oneself with the patient and his friends. It is often implied that it is nothing more than diplomacy of a somewhat doubtful character and even that there is in it a touch of charlatanism. It is undeniable that this is occasionally the case, but it is more often the patient's fault than the doctor's. There are persons who cannot bear it even to be hinted that there is anything about them that smells of humanity. In handling such a situation diplomacy is called for in the patient's own interest.

Sir William Jenner, who was incapable of artifice of any kind, used to say that the manner mattered little as long as the doctor was in earnest and conveyed the impression that he was putting forth all his knowledge and skill for the benefit of the sufferer. Still the man who, "having been praised for bluntness, doth affect a saucy roughness," may drive a patient weakened by suffering to despair. Abernethy's manner was worth a thousand a year to Astley Cooper, according to the testimony of Cooper himself. The secret of the "good bedside manner" in the right sense of the phrase is the power of impressing one's personality on the patient so as to

inspire him with the confidence and the lively hope of cure that play so large a part in recovery from illness. This, whether it be called "personal magnetism" or "suggestion," is a positive though indefinable, quality. Without it mere scientific knowledge is of little avail. It makes the difference between the successful and the unsuccessful doctor. Another quality which is essential to success is the possession of a businesslike mind and habits. Sir James Paget said he had known more failures in the medical profession through want of this quality than from any other deficiency; "more than the utterest want of scientific or even of good practical knowledge." It is almost needless to add that a strict conformity to the highest standards of professional honour is indispensable for such success as an honest man cares to gain. Madame de Maintenon's maxim, *Rien n'est plus habile qu'une conduite irréprochable*, holds good in regard to the practice of medicine as well as to the slippery paths of court life. In a word, character tells more than knowledge. As Paget says in commenting on the results of his inquiry: "Nothing appears more certain than that the personal character, the very nature, the will of each student has far greater force in determining his career than any helps or hindrances whatever." This is why brilliant students often fall out in the race, leaving the field to the "Asteroids," who make less display at first, but gain quietly and surely on their more showy competitors.

THE PITUITARY BODY.

None of the ductless glands has attracted so much attention during the last few years as the pituitary body. Physiologists, pathologists, clinicians, and speculative philosophers have combined to investigate its condition in health and disease, each using his own methods of research, each attaining some measure of success in his conclusions. The amount of work done and the number of observations made have been great; still greater the number and variety of the highly speculative (and useless) theories developed to explain the possible actions of the internal secretion of the pituitary gland; yet the positive advance made in the comprehension of its place in the human economy is small; the number of the undisputed facts known about its activity and influence is still smaller. The literature of the subject is enormous, and grows daily. We have before us two books, both excellent in their different styles, in which the slow growth of knowledge about the pituitary gland and the immense difficulties met with in its acquisition are clearly to be traced. Delille[1] first gives a straightforward account of much of the literature of the subject, the various researches on the actions of pituitary extracts, the conclusions drawn by the various writers; later he gives his own clinical experimental and pathological observations. He concluded—writing three years ago, it must be remembered—that the anterior lobe of the pituitary body was an actively secreting gland, though its extracts appeared to have no physiological action on injection or ingestion, and that the posterior or nervous lobe was devoid of all glandular function, although its extracts had marked influences upon the heart and blood vessels, the kidney, metabolism, and bodily growth. His account of the connexion between the pituitary gland and acromegaly and gigantism was necessarily far from clear; for it was not at that time apparent that the hyperpituitarism producing giant growth or acromegaly might pass on into a stage of dyspituitarism or hypopituitarism—to use a barbarous but convenient termir ology—in the course of time. Delille's clinical experiences led him to conclude that pituitary extract should be given when it was desired to raise the blood pressure and slow the heart or to procure diuresis; it was particularly indicated in exophthalmic goître and in cases of hypopituitarism.

Professor Cushing's[2] far more ambitious essay is certainly the most complete and the most valuable contribution to the pathology of the pituitary body that has yet been made, and it defines with the utmost fairness and precision the point to which the physiologist and the pathologist have advanced in the definition of its functions, the recognition and treatment of its disorders. After a brief summary of the anatomy, physiology, pathology, and chemistry of the gland has been given some two hundred pages are devoted to the detailed and well illustrated study of 47 patients with pituitary disorders, all carefully detailed and discussed by Professor Cushing. About one hundred pages on the incidence, symptomatology, and treatment follow. The posterior or nervous lobe of the gland is described as made up of neuroglial fibres radiating from the infundibulum; in the spaces between the fibres are, sometimes, faintly eosinophile hyaline bodies "which seem to arise either as a form of secretion from the cells of the pars intermedia or as an actual metamorphosis of migrating epithelial cells." Cushing and Goetsch have claimed that the cerebro-spinal fluid actually contains a substance with the properties of extracts of the posterior lobe itself. There seems no reason to doubt that the secretion gets into the ventricles through the infundibulum. Entering into the circulation in excess, this secretion produces glycogenolysis and glycosuria; but if its amount is diminished (as in hypopituitarism due to operation or disease) an abnormally high tolerance to sugar may be acquired, with the resultant accumulation of fat. The degree of this acquired tolerance may be of diagnostic utility, and certainly forms a basis for rational treatment with pituitary extract. Professor Cushing gives a critical analysis of his cases, a lucid exposition of the considerations that lead to the placing of any one of his patients in the classes of past or present hypo-, dys-, or hyper-pituitarism. His main interest would seem to lie in the clinical surgery of his cases, the indications for operative treatment, and the precise form that operative interference should take. Many of his conclusions are supported by the results of experiments upon dogs and puppies made by himself and his assistants. His remarks upon the connexions between the pituitary body and the other ductless glands, hibernation, infantilism, precocious sexual development, diabetes insipidus, and countless other curious or unusual happenings in medicine, are often most interesting, and show a wise restraint in the use of the imaginative faculties that cannot be too warmly recommended to the attention of most of those who busy their pens on the subject of the hypophysis. In style and matter alike the work does the greatest credit to American surgery and experimental physiology. It should become a classic, and may be warmly recommended to all neurologists, surgeons, and clinicians.

[1] *L'hypophyse et la médication hypophysaire. Étude expérimentale et clinique.* Par M. le Docteur A. Delille. Paris: G. Steinheil. 1909. (R. roy. 8vo, pp. 352. Fr. 6.)

[2] *The Pituitary Body and its Disorders: Clinical States produced by Disorders of the Hypophysis Cerebri.* By H. [illegible], M.D. Philadelphia and London: J. B. Lippincott Co. [illegible] 8vo, pp. 351; 319 illustrations. 18s. net.)

THE REPRESENTATIVE MEETING.

THE Representative Body of the British Medical Association will assemble at the Connaught Rooms for the Special Meeting on Tuesday, November 19th, when the chair will be taken by Mr. Verrall, Chairman of Representative Meetings, at 10 a.m. The notice convening the meeting proposes that it shall be continued on the following day. Under the regulations of the Association any Representative Meeting can (By-law 41) adjourn from day to day until the completion of its business; the quorum (By-law 40) is at least one-half of the number of Representatives "appointed to attend such meeting." As a Representative points out in a letter published this week, it is important that every Representative should arrange to stay until the business of this most momentous meeting is completed; this includes the confirmation of the minutes, and a quorum must be kept until this is done. The resolutions adopted at the special meetings of Divisions, which constitute the instructions to their Representatives, are reported in the SUPPLEMENT, so far as received up to Thursday morning, November 14th. So far as can be gathered from these resolutions, the opinion seems to be general that the terms and conditions of service with respect to medical benefit before the profession are not satisfactory and cannot be accepted as they stand at present. There is, however, clearly a considerable body of opinion that they afford a basis for opening negotiations with the Government with the object of securing alterations which may make the conditions and terms set out in the Provisional Regulations for Medical Benefit and the statements of the Chancellor of the Exchequer acceptable. So far as we can see, the only way in which this view could prevail would be for the Representative Meeting to find some way of delegating to a committee the power to negotiate and to come to terms in its name and under its authority. Under the regulations of the Association, the power to take a referendum is strictly limited to a case in which the Council (Article 32 (*b*)), by a majority of not less than two-thirds of the votes given on the question, decides that the resolution does not properly represent the wishes of the Association, and that a referendum is expedient. The referendum is to meetings of Divisions summoned for the purpose of considering the resolution (Article 32 (*c*)). If the aggregate number of votes given for the resolution at all the Division meetings shall exceed the aggregate number of votes given against the resolution at all the Division meetings, or if no vote shall be given at any Division meeting against the resolution, the same shall be deemed to have been approved on a referendum. Neither the Representative Meeting nor the Council has power under the regulations to take a referendum of individual members, much less to take a plebiscite of the profession, as has been suggested by some of our correspondents. As will be seen by the report of the proceedings of the Council on October 31st, a proposal was then made that the Council should recommend each Division, after discussion in divisional meeting, to take a ballot by postal card of its members and of non-members. The Chairman pointed out that the Divisions had no right under the constitution of the Association to take such a vote. It was suggested that there was nothing to prevent any Division from doing this if it wished; the Chairman agreed that this was so, but said that it could not be of any effect, and that the Divisions could not spend any of the Association's funds on such a purpose.

ANTIVIVISECTIONISM IN GLASGOW.

THE antivivisectionists—or, at any rate, one fraction of that motley body—are on the warpath in Scotland. A few weeks ago there was an exhibition of the usual kind in Buchanan Street, Glasgow, followed by a newspaper controversy in which all the old "platform facts" were again put forward. The antivivisectionists appear to think that age cannot wither nor custom stale the freshness of their traditional fables, and as they appeal to ignorance and sentimentality, they have doubtless good ground for the belief. In an address delivered by Dr. Hadwen he replied to a statement by Sir George Beatson, to the effect that experiments on living animals had been necessary for certain surgical operations, by saying that he had in his pocket a letter from Professor Lawson Tait, "who stated that vivisection had done nothing for surgery, but led to horrible bungling." Tait was doubtless a bold operator in his own sphere, but his testimony as to the value of vivisection outside that sphere carries little weight with the profession. Then, of course, we have Sir Frederick Treves's statement as to the futility of some experiments made on the suturing of the intestine. That statement was made in an address on some rudiments of intestinal surgery which appeared in the BRITISH MEDICAL JOURNAL of November 5th, 1898. Sir Frederick Treves has over and over again complained of the use that has been made of it by antivivisectionists. In the *Times* of April 26th, 1902, he made a strong protest, in which he said that those familiar with the controversial methods of the antivivisection party would not be surprised that certain of his remarks had been cunningly isolated from the context and had been used in advertisements, pamphlets, and speeches to condemn all vivisection experiments as useless. He concluded by declaring that no one is more keenly aware than himself of the great benefits conferred upon suffering humanity by certain researches carried out by means of vivisection. Dr. Hadwen is either aware of this protest or he is not. If he is aware of it, he can scarcely be acquitted of the charge of disingenuousness; if he does not know of it, he has spoken without proper inquiry into the facts. Sir William Ferguson, whom he also cited as a witness against the usefulness of vivisection, was a great operator; but he was not a scientific surgeon, and his greatest admirers will not be disposed to attach much value to his opinion on the question of vivisection. It must be remembered, too, that he was not speaking of vivisection as it is practised in this country nowadays. The rest of the address calls for no comment. Mention must, however, be made of an amusing incident which occurred after the orator had finished. Dr. Charles Walker (we quote a report which appeared in the *Glasgow Herald* of October 25th) said he took it from Dr. Hadwen's views as to the germ theory of disease that he would not believe him if he said a tube he held contained a micro-organism that would produce a specific disease. Dr. Hadwen replied that he would not. Dr. Walker thereupon said that he would prophesy on a piece of paper, which he would place in a sealed envelope and hand to the chairman, exactly what results would follow if Dr. Hadwen would allow him to inject into him some of the culture from the surface of the jelly contained in the tube, and he challenged Dr. Hadwen to allow him to do this. He was not going to tell what the bacillus was going to be. If he did so, Dr. Hadwen would not be injected. He could not make the prophecy unless he knew he was going to isolate the bacillus and knew exactly what it was going to do. Dr. Hadwen replied he would not be such a fool as to allow any culture, so-called, or any so-called germ beneath his skin, because they could not inject any one of those germs without inoculating at the same time the environment with which it was associated. To this Dr. Walker retorted that it was obvious that Dr. Hadwen did not believe sufficiently in the cause he was advocating, or value it sufficiently high to run any risks. He added that he would use the culture with due antiseptic precautions, and would do the same to himself as to Dr. Hadwen, without

the antiseptic. Dr. Hadwen replied that he would not be such a fool as to accept the challenge. In reply to further questions by Dr. Walker, he said he did not believe in antiseptics in relation to surgery; while, in answer to Dr. Cathcart, he added that he was perfectly prepared to be bitten by as many plague fleas as they liked. He maintained that the flea could not convey disease. The challenge would hold good also with regard to malarial mosquitos. Dr. Hadwen probably knows that he is tolerably safe in offering to be bitten by malarial mosquitos or plague fleas in this country. But in regard to Dr. Walker's bacilli he would seem to be in the same state of mind as Hurree Babu in *Kim* who was afraid of "hypothetical devils" in which he did not believe. This we partly understand, but we should like a little more light as to the "environment" of the bacillus which he fears so much. And how is an "environment" inoculated?

SEASICKNESS.

In spite of the experience of centuries the etiology and treatment of that very distressing condition, seasickness, is still more or less of a mystery even to the most highly-reputed members of the faculty. In the latest contribution to the literature of the subject, Dr. Joseph Byrne, himself an acute sufferer, has made an exhaustive inquiry[1] into the causation of seasickness founded on a complete system of experiments carried out mainly on himself. He has, in his own words, "made a thorough study of the semicircular canals as affected by rotations, aural irrigations, and galvanism." In addition he subjected himself in a truly heroic manner to the utmost discomfort in many trips on angry seas, making careful observations the while of his blood pressure, pulse, urine, sensations, and so on. A large part of the book is given up to a minute and careful description of the anatomy of the semicircular canals—so minute and careful in fact that it is to be feared these pages will only appeal to the ultra-specialist. The same remark applies to the accounts of the many experiments to which the author submitted himself and friends in the quiet and privacy of his home. The general reader will find more interest in the studies in seasickness based on the actual experiences of sea voyages. The author spared himself not at all, but deliberately sought out the times and places most likely to produce the maximum effect. His observations on the necessity of teaching students the general principles underlying the treatment of seasickness are particularly well timed, for as a rule this matter, which is most likely at some time or other in his career to occupy the attention of the practitioner very seriously and test his skill to the utmost, is left severely alone by teachers of medicine. In regard to the treatment of seasickness, Dr. Byrne has not yet found a never failing remedy. He has little new to add to the rules for the general management of a case. So far as drugs are concerned, he is of opinion that hyoscin should never be used, whilst "morphine was also found to have disagreeable effects notwithstanding its effect in enhancing the circulatory function." Bromides he found to have little to recommend them, whilst he is altogether opposed to cocaine, which, in at least one instance when used by a dentist, produced all the phenomena peculiar to profound labyrinthine disturbance. Atropine he found to assist in counteracting the psychical depression, which is so marked a symptom of seasickness, and at the same time in regulating some of the incidental circulatory disturbances. The book is a notable contribution to the literature of a subject of universal interest, which has in the past been left too much in the hands of the advertising quack.

[1] *From the Physiology of the Semicircular Canals and their Relation to Seasickness.* By Joseph Byrne, M., M.D., LL.B. New York: S. T. Dougherty; London: H. K. Lewis. 1912. (Post 8vo, pp. 578 12s. 6d. net.)

THE "DEAD SPACE" OF THE RESPIRATORY PASSAGES.

A paper by Drs. C. G. Douglas and J. S. Haldane in the current number of the *Journal of Physiology* raises a question of pathological interest which, as they point out, may prove to have clinical importance. The paper is founded on an investigation of the capacity of the air passages under varying physiological conditions, and is concerned especially with variations in the "dead space"—that is, the capacity of the air passages connecting the alveoli of the lung with the air outside the body. It is a dead space so far as respiratory exchange goes, and variations in its capacity are an indication of contraction or dilatation of the bronchi with corresponding changes in the resistance to air flow. General physiological considerations suggested that the maintenance by the smaller bronchi of a certain resistance to air flow is of as much importance for the even distribution of air throughout the lung substance as is the resistance of the arterioles for the proper distribution of blood throughout the body. If these bronchi remained constant in diameter whatever the flow of air, the resistance would either be excessive during hyperpnœa or insufficient during quiet breathing. The results of the experiments showed an extent of variation which seems to have surprised the experimenters, and is certainly very noteworthy. The condition of the subject (Dr. Douglas in all cases) varied from rest in bed to the exertion involved in walking five miles an hour. The dead space increased very strikingly, and was four times as great in the latter as in the former. The increase in the number of respirations was slight and not uniform. The volume of air breathed, nevertheless, was increased by walking at five miles an hour to about eight times, the alveolar ventilation and discharge of CO_2 to about twelve times the resting values. The enormous increase in the volume of air breathed, therefore, was almost entirely due to increase in the depth of each inspiration. The depth increased from 457 c.cm. when resting in bed to 3,145 c.cm. walking at five miles an hour, but the respirations only increased from 16.8 to 19.5 a minute. Even so the breathing was far from being maximal. The authors observe that the local or central reflexes by which the state of contraction or dilatation of the bronchi in various parts of the lung is regulated are not yet understood, though the existence of broncho-dilator as well as broncho-constrictor nerve fibres has been demonstrated by Brodie and Dixon. They think it probable, however, that the regulation is as perfect as that of the arterioles, for failure in the regulation would result in imperfect arterialization of the blood, and probably also in emphysema. Whether besides asthma, in which the bronchi are unusually constricted, there are abnormal conditions of bronchial dilatation also is, they point out, an interesting clinical question.

CHEMICAL CONSTITUTION AND THERAPEUTIC ACTION.

Modern therapeutics is being enriched daily by additions to our knowledge of the relation between the chemical structure of drugs and their action on the body. Two or three years ago we reviewed an interesting work on this subject from the University of Bristol.[1] Another worker from the same university, Dr. Oliver C. M. Davis, writes in the September number of the *Bristol Medico-Chirurgical Journal* on the relationship between toxicity and chemical reactivity in certain benzene derivatives. The toxicity of some substances appears to depend upon the rate at which they are decomposed, but this is not so with others. For instance, acetanilide and phenacetin have, the author has shown, almost identical rates of hydrolysis, but the latter

[1] *The Chemical Basis of Pharmacology.* By Francis Francis, D.Sc., Ph.D., and J. M. Forbes-Brickdale, M.A., M.D.Oxon. London: Edwin Arnold. 1903. (British Medical Journal, 1903, vol. ii, p. 1187.)

substance is far less toxic than the former. Again, in the case of the toluidines the toxicities are proportional to their chemical affinities, but with the chlorbenzoic acids inversely proportional to these constants. The explanation offered is that toxicity must depend upon three factors: The first is the affinity of the compound for protoplasm—that is, the ease with which the "anchoring group" (which in the case of the toluidines is NH_2) becomes attached to the living molecule. The second is the vigour with which the anchored molecule behaves towards the protoplasm; and the third is the rate at which it gives rise to excretion products. If there is a great affinity between the anchored molecule and the protoplasm the pharmacological action will be correspondingly great, but it will be diminished by any factor which increases the rate of excretion of the drug. The readiness with which a compound reacts with protoplasm may be called its "physiological affinity." The "toxicity constant" might then be expressed by the ratio between the "physiological affinity" and the "excretion constant." The speculative nature of these suggestions is sufficiently obvious, but the facts Dr. Davis brings forward are a contribution to this important, though difficult, subject. It is to investigations along these lines that we owe already some most valuable drugs, such, for instance, as atoxyl and salvarsan.

SHAKESPEARE AND SLEEP.

NOT so long ago critics were practically agreed that Shakespeare never allowed even the shadow of his own personality to show on the mirror which he held up to Nature. Every one knows Matthew Arnold's sonnet:

> Others abide our question: thou art free.
> We ask and ask—Thou smilest and art still
> Out-topping knowledge.

Now it is coming to be seen that, even if Shakespeare did not, as Mr. Frank Harris contends, portray himself in various disguises in many of his characters, we get at least some glimpses of "the man Shakespeare" in the plays. One example of this is the habit of brooding on death, of which there are many examples. In most of us there is what may be called a subsoil water of thought, or it may be feeling, into which the mind, when not occupied with other things, is apt to fall. Long ago it was pointed out by Professor David Masson that when the soul of Shakespeare "swooned into itself" the thought of the sleep of death and what dreams might come in it would rise to the surface. It is scarcely within our province to discuss the supposed self-revelations of the dramatist, but we may be allowed to call attention to a thing on which he dwells with such insistence that we cannot help thinking he gives expression to a personal experience. This is sleep. What poet has described insomnia as Shakespeare has done, not once but over and over again? There is the famous soliloquy of Henry IV beginning—

> How many thousand of my poorest subjects
> Are at this hour asleep! O sleep, O gentle sleep!
> Nature's soft nurse, how have I frighted thee,
> That thou no more wilt weigh my eyelids down,
> And steep my senses in forgetfulness?

When troubles gather round Macbeth, his wife says to him:

> You lack the season of all natures, sleep.

Then there is Macbeth's terrible sob of remorse after the murder:

> Methought I heard a voice cry, Sleep no more!
> Macbeth doth murder sleep, the innocent sleep;
> Sleep that knits up the ravelled sleeve of care,
> The death of each day's life, sore labour's bath,
> Balm of hurt minds, great Nature's second course,
> Chief nourisher in life's feast.

Then like the wail of a lost soul:

> Still it cried, Sleep no more to all the house.
> Glamis hath murdered sleep and therefore Cawdor
> Shall sleep no more. Macbeth shall sleep no more.

Iago, when his poison is working in Othello's spirit, says exultingly:

> Not poppy nor mandragora,
> Nor all the drowsy syrups of the world,
> Shall ever medicine thee to that sweet sleep
> Which thou ow'st yesterday.

In the *Sonnets*, in which we prefer to believe, with Wordsworth, even against Browning, that Shakespeare unlocked his heart, there are several references to the same subject. In the twenty-seventh we have the true note of the worst form of sleeplessness:

> Weary with toil I haste me to my bed,
> The dear repose for limbs with travel tired,
> But then begins a journey in my head
> To work my mind when body's work's expired.

In the next one he says:

> How can I then return in happy plight
> That am debarr'd the benefit of rest?
> When day's oppression is not eased by night,
> But day by night, and night by day oppress'd?

These are but a few instances which might be gathered from the poet's works, in which, speaking of sleep, "he call'd him soft names in many a mused rhyme." In reading medical writings referring to insomnia it is easy for one who knows what it is from his own experience to distinguish between those who bear the scars and those who have never felt the wound. One justly famous and most humane surgeon says that if a man sleeps ill one night he can make up for it the next; we find the explanation of this want of sympathetic insight in his statement that he had only had two sleepless nights in his life. Although Shakespeare is said to have trod the world unguessed at, we hazard the guess from the ever-recurring note of the blessedness of sleep that the "myriad-minded man" who saw into the very depths of human nature by intuition had himself told the weary footsteps of the hours through many a sleepless night.

VOICE TRAINING FOR THE CLERGY.

EVERY ONE knows that an affected intonation is common among the clergy in reading and often in preaching. Its effects on the vocal organs are so characteristic that they are designated by a special name—"clergyman's sore throat." That this is the result of faulty voice production is shown by the fact that the condition is comparatively rare in actors and others who use the voice much more than clergymen. The need of voice training for the clergy has long been felt, and isolated attempts have been made here and there to make it a part of their preparation for the ministry. But no general effort has, as far as we are aware, been made in that direction. The evil is felt by none more keenly than the clergy themselves. We learn with interest, therefore, that a school of voice production has been established at Oxford. A conference was recently held at Christ Church, at which Dr. Scott Holland, Regius Professor of Divinity, presided, and among those present were Sir William Osler and Mr. Ernest Waggett. The object of the meeting was to bring the needs and importance of the school before the public. Mr. Waggett said that the bad speech of the clergy was really a matter for tears. The strain of listening put on hard-working men was quite unfair. He guaranteed that nine men out of ten who spoke with their chins bent towards their chests, leaving the space of an inch between the collar and the back of the neck, would mesmerize the average listener to sleep in twenty minutes. Catarrhal affections were more common in England than in any other part of this hemisphere. When trying to make themselves heard in church the clergy endeavoured to get over the defect by straining their voices. This resulted in further increasing vocal defects, and the more this was so the greater had to be the strain. The expert voice-producer taught them so to use their voice that they could do their ordinary duties without any fatigue. The proper carriage of the

voice and articulation of syllables, which he regarded as essential for the proper equipment of a clergyman, could be taught to an intelligent person in three weeks. Sir William Osler said he did not think there was any voice of the same natural sweetness and softness as the English voice. They wanted the natural softness and natural characteristics of the voice brought out by training, and it was only when persons were young that defects could be successfully overcome. The Master of Pembroke and the Rector of Exeter also spoke, and Dr. Scott Holland, in summing up the discussion, said they had to take to heart what had been said, and then become aware that they had a duty. He asked them to do their best to see that this school of voice production had full support; if so that meeting would not have been held in vain. We note with satisfaction, mingled with some surprise, Sir William Osler's description of the English voice. It is pleasant to know that it sounds sweet and soft to his ears, and this makes it all the more deplorable that it should so often be marred in the utterance. We mumble and swallow our words and distort our vowels in a manner which makes our splendid language sound to the foreigner like a jargon. The reason was long ago given by John Milton in his *Tract on Education* (1644), where he says: "For we Englishmen being farre northerly doe not open our mouthes in the cold air, wide enough to grace a southern tongue, but are observed by all other nations to speak exceeding close and inward: so that to smatter Latin with an English mouth is as ill a hearing as law French." As a matter of fact, according to actual tests that have been made, the Englishman's voice does not carry nearly so far as that of the Italian. Doubtless a right system of voice production would do much to remedy this defect, and we hail the institution of the Oxford school as a step in this direction.

PHARMACOLOGY AT OXFORD.

The new Department of Pharmacology was opened on Saturday, November 9th, when the Reader in Pharmacology, Dr. J. A. Gunn, delivered an inaugural address. A distinguished company attended, which included the Vice-Chancellor, several heads of houses, graduates in medicine, and resident members of the university, as well as the local members of the medical profession. The Regius Professor, in introducing Dr. Gunn, briefly sketched the history of pharmacology in the university, and enumerated the previous teachers in the subject, special mention being made of the services rendered by Dr. Smith Jerome, who had been lecturer for ten years. Dr. Gunn took as the title of his lecture, "The New Pharmacology." He referred to the antiquity of the use of drugs not only as remedies but also as lethal weapons, such as arrow poisons, and in the ordeal. He inferred that considerable accuracy in the dosage and knowledge of these drugs must have been acquired by observation of their effects. He mentioned that the skin of toads had been used in primitive times for the relief of dropsy, and that recently a body similar to digitalis had been isolated from it by Abel, and that its therapeutic effect was again being tried on patients. It behoved pharmacologists, therefore, to look with respect upon the ancient uses of crude drugs. In the nineteenth century knowledge of the action of drugs became more precise, and in these investigations other actions of great importance were discovered, such as the action of physostigmine on the pupil. In the twentieth century inquiry was specially directed to specific therapeutics; quinine for malaria and mercury for syphilis were specific remedies discovered by chance. A tribute was paid to the brilliant work of Ehrlich in this field. Finally, he gave an example in the recent work of Cushny and Mackenzie on digitalis of the great results that may be expected in the future when an expert pharmacologist works in connexion with a clinician of experience. In thanking Dr. Gunn for his lecture, the Regius Professor reminded the Vice-Chancellor (the Principal of Brasenose) that Withering's monograph on the use of digitalis was inspired by the results of its use on a previous holder of his office. An adjournment was then made to inspect the new pharmacological laboratory, which is situated in the front of the main building of the museum, and has been fitted up with all modern requirements. Tea was served in an adjoining department, where editions of the work of Dioscorides on materia medica were displayed.

THE INSURANCE ACT AND THE PROMOTION OF TEMPERANCE.

Sir Alfred Pearce Gould, in the tenth Lees and Raper Memorial Lecture which he delivered in Norwich a few weeks ago, suggested[1] that the National Insurance Act should be made a means of testing the effects of alcoholic drinks upon health and longevity. Such a test would be free from the objections sometimes taken to the sources of information at present available. The knowledge that assured abstainers are longer lived than non-abstainers, and that the mortality and sickness rates in abstaining friendly societies are lower than those of the non-abstaining societies is derived from what may be described, without disparaging the accuracy or conscientiousness of the records, as temperance sources. There are two camps, each believing that it alone has the truth. Sir Alfred Pearce Gould suggests that in any amending Act there should be a clause to group the members of approved societies into abstainers and non-abstainers, keeping separate records of each section. "Let us apply it with a bold hand," he says, "in the matter of alcohol to the insured. It will certainly elicit the truth here as elsewhere, and that is all we want. Brewers and distillers ought to join us in asking the Government to give us the opportunity of making this great experiment." Applied to 14 millions of people, a test such as this would in a few years show whether the truth was with those who advocate or with those who condemn the use of alcohol. Sir Alfred Pearce Gould believes that alcohol increases susceptibility to and the virulence of cancer. In alluding to the lower premiums accident assurance companies charge abstainers, he omits to state that it is the more rapid recovery of abstainers from injuries, as well as their comparative immunity from accident, which enables the companies to make the reduction.

TRAFFIC PROBLEMS AND TOWN NEEDS.

"The man who builds a house," says Mr. Paul Waterhouse,[2] "even if he only spends three hundred pounds upon it, takes the precaution of spending three hundred shillings on an architect and a plan; but the town which is worth a hundred thousand times as much, perhaps a million times as much, is built by random accretion, by accident, by whim, by error." Here, in a sentence, we have the genesis of the uncomeliness of many towns, with their incongruous groups of buildings and narrow, irregular streets. To widen narrow streets is expensive, is often to treat a symptom rather than touch the disease, and where streets intersect increases the volume of the transverse streams of traffic. Mr. Waterhouse proposes to prevent traffic blocks at such crossings by carrying one street over the other on arches and by "gyratory crossings." The gyratory crossing is a circle as at Oxford Circus, but, instead of driving across it, the streams of traffic circulate at its circumference. This remedy for traffic stagnation requires little structural

[1] *The Best Way of Promoting Temperance Reform.* The Tenth Lees and Raper Memorial Lecture by Sir Alfred Pearce Gould, K.C.V.O., M.S., F.R.C.S. London: Macmillan and Co., Limited. 116 pp.; 4d net.

[2] *Old Towns and New Needs: also the Town Extension Plan.* The Warburton Lectures for 1912. By Paul Waterhouse, M.A., and Raymond Unwin, F.R.I.B.A. Manchester: The University Press. (Fcap. 4to, pp. 62; figs. 9. Price 1s. net.)

alterations, and Oxford Circus seems a good spot for testing its merits and its applicability to the ever-growing needs of London's traffic. Every town ought to have a well thought out extension plan, so as to avoid otherwise inevitable, expensive, and piece-meal makeshifts. Mr. Raymond Unwin shows that to huddle buildings into small spaces is economically unsound. If 340 houses are erected on an area of 10 acres, each plot measures 83½ square yards for building and back yard, and costs 10s. 4½d. a square yard; if, however, only 152 houses be built on the same area, each plot contains 261 square yards at a cost of 4s. 9¼d. the yard. A weekly ground rent of 8d. is paid for the small plot, one of 11¾d. for the large plot, with its ample space for play-grounds, tennis courts, bowling-greens, and drying-grounds. If two shops offered marbles at eighty-three for 8d. and 261 for 11¾d., the youngest player would know which was the better offer. Owing to the greater area of land required by reducing the number of houses to the acre from thirty-four to fifteen, the owners of the land, as a whole, would receive the same return in increment, after allowing for the loss of agricultural value, and this would reduce the ground rent of the larger plots from 11¾d. to 8½d., or only a halfpenny more than that of the crowded plots. When houses are crowded together, there is a disproportionate provision of roads—one of the most expensive and least advantageous forms of open space. Much is hoped from the Town Planning Act. Garden cities have proved that town planning is commercially, hygienically, and aesthetically successful, eradicates slums, and provides dwellings fit for a race which lives, not by bread alone, but needs recreation, culture, and an outlet for spiritual aspirations.

INCOME TAX ALLOWANCE FOR DEPRECIATION OF MOTOR CARS.

Recent correspondence has shown that difficulties still arise in obtaining the proper income tax allowance due under this head. The Inland Revenue authorities adhere to the position that no annual allowance for the depreciation in value of a car used for the purpose of a profession, but the Board of Inland Revenue have clearly laid it down that as an alternative the cost of renewal of the car is admissible as a professional expense in the year in which it is incurred. In considering the question of claiming this expense it should be remembered that an allowance for cost of renewal will be due whether the old car be replaced by a more expensive car or by one less expensive. It will, however, only be possible to claim so much of the expenditure as represents a repetition of the cost of the original car. There is no guide in the Income Tax Acts to fix the proper calculation of the cost of renewal in cases where the old car is sold and the sum realized is put towards the cost of the new car, but the official view is that the "cost" of the old car should be regarded as the difference between the purchase price and the sum realized when it is sold. The effect of this view is that when a car that originally cost £400 is replaced by one costing £600, the old car being sold for £100, the renewal allowance will be £300 only. In our opinion the proper method of arriving at the amount of the expense incurred by replacing the old car is to consider the actual cost of renewal as being the sum actually expended in connexion with the change, that is, £600 less the £100 obtained for the old car. The allowance on this principle would be £500, since no expenditure beyond the original cost is regarded as made solely for the purpose of renewal. As the former method of calculation has, in fact, the sanction of the Board of Inland Revenue, although we believe it to be not invariably adopted, it will be well to see that the surveyor of taxes does not object to the method in cases where it operates in favour of the practitioner, a position that arises when the new car costs less than the car it replaces. Thus, if in our example the price of the new car were £300, the whole of this sum should be claimed as cost of renewal, notwithstanding that a sum of £100 towards the expense may have been obtained by disposal of the original car. According to the Revenue view, the "cost" of the old car should be taken to have been £400 less £100, and the sum spent on renewal £300.

SCHOOL CHILDREN AND MEDICAL INSPECTION.

Within the next few days the London County Council will issue the report of the Medical Officer (Education) for 1911. The report is memorable chiefly from the opening sentences, in which Dr. James Kerr writes: "With this report the series for which I have been responsible during the past ten years is concluded. An attempt has been made to lay the foundations of school hygiene, as a study of natural interest and value, on the basis of problems worked out on scientific lines by the staff of the department." Dr. Kerr's work, briefly and modestly outlined in these few words, has been of national importance. Long recognized as a pioneer in the subject of school hygiene, he has overcome his opponents by converting them to be his supporters and has had the satisfaction of being able to hand over the medical treatment of school children in the London area from the education to the medical department as a going concern. Dr. Kerr rightly emphasizes in his report that the knowledge gained of school hygiene is far ahead of practice, and contends that it is necessary to look beyond the school to the home. The study of school children in the schools has been valuable in helping to demonstrate that among the evident wants of the community are room to live, increased space for play, food, and opportunities for cleanliness. He looks forward to the time when a statutory limit should be assigned to the number of people who may live on a certain area of land, and when for each defined area buildings should only be allowed to cover a small proportion of the surface. While the statement is not in any sense novel, it is of value that it has been printed in the report, for it points the way to a development in the direction of improving the nurture of the people.

The next session of the General Medical Council will begin on Tuesday, November 26th, when the President (Sir Donald MacAlister, K.C.B.) will take the chair at 2 p.m.

Medical Notes in Parliament.

National Insurance Scheme.

Medical Benefit.

Sir Philip Magnus asked the Prime Minister on November 7th whether he would afford, at an early date, an opportunity to the House for the discussion of the question of the increased Treasury grant to be set aside for medical benefit, and of the terms suggested for the employment and the remuneration of doctors taking service under the National Insurance Act. The Prime Minister replied that he feared he was not in a position to make any statement at present. Sir Philip Magnus asked if an opportunity for the discussion of the question could be afforded prior to the Representative Meeting of the doctors to be held this month. The Prime Minister said he would see if that was possible.

Mr. Hudson asked the Chancellor of the Exchequer on November 7th whether, in the case of payment to doctors under the National Insurance Act of 7s. per person for attendance and 1s. 6d. for drugs, either amount would in any case be liable to deduction. Mr. Masterman, in reply, said that it was intended that the 7s.—namely, the 6s. 6d. per insured person for medical attendance and treatment under medical benefit and the 6d. for the treatment of tuberculosis, should be applied solely to remuneration of medical practitioners on the panel; and that the

1s. 6d. should be applied solely to meeting the cost of drugs and appliances, a further 6d. being divisible between chemist and doctor, according to the cost of the drugs ordered. Neither amount would be subject to deduction for any other purpose.

Mr. Chiozza Money asked the Secretary to the Treasury if he would state the actuarial value to a male person 16 years of age of the additional grant to doctors for medical benefit in connexion with the National Insurance Act? Mr. Masterman said that the actuarial value of the additional grant it was proposed to make from the Exchequer for medical benefit was for a boy of 16, £3 0s. 3d.

Mr. Glazebrook asked the Chancellor of the Exchequer on November 8th whether the system of payment for work done, under which domiciliary treatment of tuberculosis was undertaken by the British Medical Association, was affected by the arrangements announced by him in his speech to the Advisory Committee; whether the system of capitation payment was to be substituted; and if so, whether the capitation payment per insured person would cover the domiciliary treatment of tuberculous dependants. Mr. Masterman replied that the temporary arrangements made between the Insurance Committees and the doctors in certain areas to which he understood reference was made would not be affected during the period ending January 14th. The answer to the third part of the question was in the negative.

On November 11th Sir Philip Magnus asked by what arrangement an insured person, temporarily resident in another county than that in which he ordinarily resided or in another part of the same county, and taken suddenly ill, would be able to secure medical benefit under the National Insurance Act; and whether a qualified medical practitioner not on any panel would be recognized as able to give a certificate? Mr. Masterman replied that the arrangements referred to in the first paragraph of the question would be found in the Provisional Regulations relating to medical benefit, especially paragraphs 44 and 45. He was not clear as to what certificates the hon. member referred to in the second paragraph of his question. Sir Philip Magnus: Is that in the Regulations? Mr. Masterman: Regulations, paragraphs 44 and 45. They are laid before the House at present.

Sanatorium Benefit.

Mr. Masterman, in reply to Mr. Douglas Hall, said that he was informed that thirty-five applications had been received by the Isle of Wight Insurance Committee, and that arrangements were being made for the treatment of such cases. The Insurance Commissioners were communicating further with the committee with reference to the arrangements.

Mr. C. Bathurst asked the Chancellor of the Exchequer on November 11th whether 7½d. only per insured person was now available to county councils for the provision of sanatorium benefit after the deduction of 1½d. for administration. Mr. Masterman said that the whole sum of 1s. 3d. was available for sanatorium benefit, of which 6d. could be allocated to domiciliary treatment of patients recommended for such benefit. The proportion of the sum to be allotted to expenses of administration was not yet determined.

Mr. C. Bathurst further asked the Chancellor of the Exchequer whether it was now proposed to provide sanatorium treatment for all poor persons suffering from tuberculosis, one-fifth only of whom were insured persons, under the National Insurance Act: and, if so, whether the whole or, alternately, one-half of the cost involved would be defrayed out of the Imperial Exchequer. Mr. Lloyd George replied that the statement in the question was misleading. The number of insured persons and their dependants in a short time would probably include more than four-fifths of the total number of persons suffering from tuberculosis in this country. All these might receive treatment under the National Insurance Act. The Government had promised assistance to the local authorities in dealing with the treatment of tuberculosis amongst the remainder of the population, and the exact form of that assistance was still under consideration with the representatives of those authorities.

In reply to Mr. John Walsh, on November 12th, Mr. Mastermann said that he was unable to distinguish the exact sum received in respect of insured persons, [illegible] the cost of the several benefits of the Insurance Act, in the county and city of Cork from those received in respect of other insured persons in Ireland. Nine applicants from this district were receiving treatment for tuberculosis, eight of them in sanatoriums. The exact cost of their treatment could not yet be stated, as it was still being continued. No applicant had been refused benefit.

Mr. Astor asked the President of the Local Government Board on November 12th whether he was aware that several hundred beds owned by the Metropolitan Asylums Board now stood empty; and whether it was proposed to take steps to make these beds available for the institutional treatment of consumptive insured persons in London? Mr. Burns replied that negotiations were, he understood, in progress with a view to seeing whether any of the accommodation of the Metropolitan Asylums Board could be made available for the institutional treatment of insured persons suffering from tuberculosis.

Mr. Astor further asked the total number of the separate institutions owned by the Metropolitan Asylums Board; the total number of beds in such institutions: and the maximum, minimum, and average area of land unoccupied by buildings attached to these institutions. Mr. Burns said that he was informed that there were twenty-eight separate institutions now under the control of the Metropolitan Asylums Board, which afforded a total accommodation of 20,181 beds. Without resorting to actual measurements the area of unoccupied land could not readily be given.

Mileage.

Mr. C. Bathurst asked the Chancellor of the Exchequer on November 6th whether he realized that the cost incurred by a medical practitioner in visiting his patients over a wide agricultural area with a scattered rural population, such as Salisbury Plain or the Cotswold Hills, far exceeded that incurred by an urban practitioner; and whether, under such circumstances, he would more nearly equalize the doctors' remuneration for their services under the National Insurance Act by granting a special mileage allowance to the former. Mr. Masterman, in reply, said that, as he had previously pointed out, there was no reason why the total sum to be provided for medical remuneration should not be distributed amongst the doctors, with the co-operation of the medical profession, in such a manner as to equalize the remuneration for the services of town and country practitioners.

Captain Murray asked on November 7th what arrangements it was proposed to make to safeguard the interests of the country doctors in Scotland in regard to mileage allowance. Mr. Masterman said that the method of distribution of the amount available for medical remuneration was largely a matter for the medical profession themselves, and the Government would favourably consider any proposals which commanded the general support of the profession. He added that the regulations provided for the adoption of any method of remuneration which might be considered desirable for any county in Scotland where, owing to sparseness of population, difficulties of communication, or other special circumstances, the normal methods of remuneration appeared to be unsuitable.

Certificates.

Mr. Hudson asked on November 7th whether doctors responsible for attending members of approved societies under the National Insurance Act would be required to issue certificates to the societies for such insured persons. Mr. Masterman replied that practitioners attending persons insured under the Act would be required, in consideration of the remuneration received under the new grant which Parliament was to be asked to make, to give to insured persons attended by them the certificates required for the administration of sickness and disablement benefit under the Act.

[illegible]

Mr. Hudson asked on November 7th whether, under the National Insurance Act, doctors chosen by insured persons could depute their assistants to attend to their patients. Mr. Masterman, in reply, said that when a practitioner on the panel was precluded by urgency of other professional duties, absence from home, or other reasonable cause, from giving personal attendance to an insured person under his care, he might depute an assistant to act on his behalf.

Medical Assistants.

Sir Philip Magnus, on November 11th, asked whether a medical practitioner, accepting service under the National Insurance Act, was permitted to have a qualified assistant who was not a partner, and to employ such an assistant in visiting some of the cases of illness that might arise within the thirty mile area over which his contract practice, under Section 3 of Part I of conditions of service for practitioners, was required to extend. Mr. Masterman replied: "Yes, in the circumstances, but only in the circumstances, described in paragraph 6 of Part I of the First Schedule to the Regulations recently issued relating to the administration of medical benefit under the Act."

Allowance for Drugs.

Mr. Bridgeman asked on November 11th what processes of diagnosis of blood, sputum, etc., would be included in the list of those for which payment was to be covered by the allowance for drugs. Mr. Masterman replied that such methods of diagnosis as were presumably referred to in the question would, so far as employed, come under the heading of medical treatment and not of drugs. It was not possible to state in advance what particular methods would be employed by different practitioners, but, as already stated, practitioners on the panel would not be required themselves to undertake work demanding skill and experience beyond that which the ordinary practitioner could properly be expected to possess.

Medical Education.

On November 11th Mr. Moore asked if the General Medical Council would continue to exercise any supervision in Ireland over medical education or professional conduct if the Government of Ireland Bill should become law. The Prime Minister replied: "Yes, subject to any future Irish legislation."

Mr. Moore further asked if they might have a Nationalist standard for medical education in Ireland. The Prime Minister: If the Irish Legislature so determine.

Vaccination.

Vaccination Officers' Fees.—On November 6th Mr Snowden asked the President of the Local Government Board whether any vaccination officer is paid a fee for recording the date of the statutory declaration; and if so, was the fee the same in amount for recording the vaccination certificate. Mr. Burns: So far as I am aware, the answer is in the negative. Mr. Snowden also asked if the Local Government Board had written to the Bristol Guardians requesting them to consider again an application from their vaccination officers for extra remuneration in consequence of their losses owing to increased number of exemptions; whether the guardians had declined to adopt the suggestion, and whether, after further correspondence, they were prepared to pay to the two whole-time vaccination officers a salary suggested by the Local Government Board. Mr. Burns said that after discussing the matter with the chairman and clerk of the guardians he had decided that the two officers should receive a salary of £150 and £130 per annum.

Appointment of a Deputy.—Answering a question by Mr. Pointer regarding the appointment of Dr. O'Hagan as deputy during the absence of one of the Croydon public vaccinators on leave of absence for six months, Mr. Burns said he was aware of the facts mentioned. The two cases of abnormal results alleged to have followed vaccinations by Dr. O'Hagan had been investigated by an inspector, and in neither case did he consider any blame attached to Dr. O'Hagan.

"Doubtful" Vaccination.—Mr. Burns, replying to a question by Mr. Sutton, said that in those cases in which no information as to the vaccinal condition was given in the certificate of death had hitherto been grouped under the heading "doubtful." But a modification of this arrangement had already been under consideration and would be adopted in future.

Vaccinal Condition. On October 29th Mr. McKinnon Wood, in answer to a question by Mr. Black, said it had not been the practice of the Local Government Board (Scotland) to publish information regarding the vaccinal condition of small-pox patients, but it would be given in future reports.

Small-pox at Kirkcaldy.—Mr. McKinnon Wood, replying to Mr. Wilkie, gave particulars of the ages and vaccinal condition of the cases of small-pox in Kirkcaldy up to October 24th. There were 14 vaccinated cases, ranging from 11 to 57 years of age; 2 "doubtful" cases 47 and 46 years respectively; 3 unvaccinated cases 17, 51, and 47 years respectively; 5 other vaccinated cases were so mild as to be undetected until undoubted cases of small-pox occurred in the same family. There had been 7 deaths—vaccinated, ages 23, 33, and 38 years; doubtful, 47 and 46 years; unvaccinated, 47 years. One child infected before birth—vaccinated the second day—died when 7 days old. Two of the deaths among the vaccinated were of women in childbirth.

Pure Bread.—In reply to Mr. Charles Bathurst, who asked the President of the Local Government Board when he proposed to introduce a pure bread bill, or to take any other action on the reports by Drs. Hamill and Monier-Williams in reference to the bleaching and adulteration of flour, Mr. Burns said that the bill was in preparation, that it would be general in character and not confined to bread. In reply to another question by Mr. Charles Bathurst, Mr. Burns said that no experimental investigations had been made by his department into the effect upon the teeth and upon the nutritive value of bread, and the removal of the ferments from flour in the process of roller milling. In view of the minuteness of the changes which took place in flour as the result of the action of ferments contained in it, he was advised that there would be great difficulties in making any satisfactory investigation by means at present available of the effect, if any, on nutrition generally or on the condition of the teeth produced by the action of ferments in flour. The matter was not one which called for consideration in connexion with the question of adulteration and sophistication of flour and flour products.

University of London (Site).—Mr. Barnston asked the President of the Board of Education whether the offer of the Board to receive a deputation on the question of the future site of King's College would include the intimately related question of a site for the University of London. Mr. Pease replied that the Senate of the University had not suggested that the question of a site for the University of London should be raised by the deputation. If, however, they desired to make any statement on the subject, the Board would, of course, be prepared to receive it.

The Peamount Sanatorium.—In reply to questions, Mr. Birrell said on November 7th that the grant to the Women's National Health Association, which was arranged at a conference of representatives of the Treasury, the Irish Local Government Board, and Insurance Commissioners, had been mostly spent. Peamount had been certified by several experts as suitable for a sanatorium, and the fear that it would be a source of danger to the residents in the neighbourhood was at variance with the best medical opinion, and the difficulty about the water supply had been overcome.

Hague Opium Convention.—Dr. Chapple asked on November 12th whether the Government had ratified the Hague Opium Convention, and whether it had any information regarding ratification by any of the other Powers. Sir E. Grey said that the reply to both points was in the negative. For the reasons of the delay in ratifying he referred to Articles 22 and 23 of the Convention. Except in the now unlikely event of all the Powers signing the Convention and supplementary protocol before December 31st, 1912, ratification could in no case take place until after that date. He hoped to lay the report of the British delegates on the table in about a fortnight.

At a meeting of the Royal Statistical Society to be held on Tuesday next, November 19th, at the rooms of the Royal Society of Arts, John Street, Adelphi, W.C., a paper will be read by Dr. Dudfield, entitled "Still-births in Relation to Infantile Mortality." The paper will deal with the report of a special committee appointed by the council of the Royal Statistical Society to inquire into the systems adopted in different countries for the registration of births (including still-births) and deaths, with reference to infantile mortality.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Ulster Medical Society.

The opening meeting of the Ulster Medical Society was held in the Medical Institute, Belfast, on November 7th. The outgoing president, Dr. McKisack, occupied the chair, and, after the minutes had been read, introduced the new president, Richard Whytock Leslie, M.D., LL.D., of Strandtown, Belfast. Dr. Leslie, in his opening address, referred to the loss the society and the profession had sustained in the deaths of Dr. H. Whitaker, formerly medical superintendent officer of health for Belfast, and Lieutenant-Colonel McFarland, both ex-presidents of the society; Dr. Park, formerly coroner for North Down, and Dr. James S. Dickey, whose early death all so deeply deplored. He then touched upon some of the numerous questions that had interested the profession during the past year, and said that no offer with regard to the Insurance Act should be accepted without the most careful scrutiny. Dr. Leslie finally turned to the results of his experience as medical officer to the Campbell College, one of the largest secondary educational schools in Ireland, which was conducted on the lines of the large boarding schools of England. Several tables of statistics illustrated the address, and many interesting points were demonstrated.

Professor Lindsay moved a hearty vote of thanks to Dr. McKisack for his conduct in the chair and his services to the society during the past year, and to the president (Dr. Leslie) for his most interesting and instructive opening address. This was seconded by Professor Sir William Whitla, and passed by acclamation.

Dr. McKisack and Dr. Leslie returned thanks. Tea and coffee were provided by the new president.

Training of Tuberculosis Officers.

One of the qualifications required by the Local Government Board for candidates for the post of tuberculosis officer appointed by the county councils is a six months' post graduate course of instruction in the diagnosis and treatment of tuberculosis. In July a considerable number of medical men applied to the Allan Ryan Home and Collier Dispensary in Dublin for a course of instruction, and were given a fortnight's course, for which a certificate was obtained. These institutions found that a six months' course of instruction was more than they could conveniently undertake, and therefore asked the ten general hospitals in Dublin which are recognized by the colleges and governing bodies for clinical teaching to combine with them in giving a complete six months' course. At present a decision has not been arrived at, but the clinical hospitals have under consideration a scheme to give instruction in tuberculosis work if the Local Government Board will accept their certificate as a necessary part of the six months' course. In the mean time, however, the Local Government Board has accepted a scheme for a six months' course at the Allan Ryan Home and Collier Dispensary alone. It is computed that there will be about forty of these appointments to be filled, and a sufficient number of medical men to fill about 75 per cent. of these posts have already entered their names at these institutions.

Presentation to Professor Dixon.

Professor A. Francis Dixon, to whose initiative was due the recent bicentenary celebration of the School of Physic, Trinity College, Dublin, and to whose ability and untiring energy the event owed so much of its marked success, was presented on Wednesday, November 6th, with a study timepiece bearing the following inscription:

> To Professor A. Francis Dixon, Sc.D., from his colleagues in the Medical School of Trinity College, Dublin, as a token of their cordial appreciation of the ability and energy which contributed so largely to the success of recent Bicentenary Celebration.

The presentation was made by Dr. James Little, Regius Professor of Physic, who paid a well-merited tribute to Professor Dixon as the moving spirit in the whole proceedings, and to the skill and tact which he brought to bear throughout.

Irish Workhouse Association.

At a meeting of the Executive Committee of the Irish Workhouse Association, held in Dublin last week, the following resolution was unanimously adopted, on the motion of Mr. R. R. Leeper, F.R.C.S.I., seconded by Dr. Katharine Maguire. It was agreed to forward copies to the Chief Secretary and the Irish members of Parliament, and to the Vice-President of the Local Government Board of Ireland:

> Having regard to the report of the Royal Commission on the Care and Control of the Feeble-minded, which shows that in Ireland in 1906 there were 25,415 mentally defective persons not provided for in asylums, of whom 66.05 per cent. were in need of immediate provision, as against 44.95 of mentally defective persons in England and Wales, and 34.57 per cent. in Scotland, we are strongly of opinion that this valuable measure, the Mental Deficiency Bill, now before the House of Commons, should be made applicable to Ireland.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Dysentery in Glasgow.

In his fortnightly report Dr. A. K. Chalmers, medical officer of health for Glasgow, directs special attention to notes prepared by his assistant, Dr. Wright, regarding the occurrence of two groups of cases of dysentery and one isolated case in Glasgow. In the first group four members of one family residing on the south side of the city were removed to Ruchill Hospital on September 12th, and two days later another sister developed the disease and was removed to hospital. It was learnt that two French ketches had discharged a cargo of onions during July and August at the dock close to where the family resided. The boy who first sickened was stated to have occasionally frequented the docks, and may thus have become infected. He died in hospital on September 15th. In the second group all the members of one family (six in number) were affected and were removed from a two-apartment house in Bellgrove, about two miles from the docks. In this case exhaustive inquiry into the possible source of infection had negative results.

Coathill Fever Hospital Inquiry.

On November 1st the Local Government Board issued its report on the recent inquiry into the administration of Coathill Fever Hospital, Coatbridge, regarding which members of the Town Council had made charges which involved the medical officer, matron, and members of the nursing staff. The report is a complete vindication of the hospital staff. The report deals at some length with Bailie Lindsay's relations to the various complaints, etc., and the Board states that in their view much of the trouble that has arisen has been due to his conduct. With regard to Matron Stenhouse, the report says that in the view of the Local Government Board the local authority acted hastily and harshly, and would be well advised on all future occasions of this kind to give officials due notice of such serious complainst against them. As to other matters the report shows that there is no evidence that any members of the staff of the hospital or any patient had been intoxicated at any time. There are, however, grounds for the belief that on occasion alcohol was somewhat freely partaken of at the hospital by members of the Committee, but the Board desires to state that they find absolutely no grounds for rumours as to irregularities and improprieties having taken place at the hospital. As to the allegation against the administration of the hospital made by Councillors Colt and Agnew at the meeting of the Town Council on February 29th, the report shows that these gentlemen failed to adduce proof or furnish any substantial basis for the accusations which they had made. The Board recommends that no alcoholic liquor should be kept at the hospital for the use of visitors or members of Committee.

Glasgow New Central Dispensary.

The Lord Provost formally opened the new Central Dispensary buildings at Richmond Street, consisting of three flats with a roof garden. Provision is made for an out-patient department, medical and surgical wards, an operating theatre with sterilizing and anaesthetic rooms adjoining, and other adjuncts. It is intended to develop specially an orthopaedic department.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

MANCHESTER AND DISTRICT.

The Lancashire County Council and the Treatment of Tuberculosis.

Considerable delay has taken place in the area of the Lancashire County Council in making arrangements for the treatment of tuberculosis, and even yet no definite plans have been published.

At the meeting of the county council on November 7th the chairman of the Public Health Committee stated that the committee had recommended the county council to undertake to provide sanatorium benefit for all persons suffering from tuberculosis within their administrative area, so far as the expenditure could not be met at the expense of the Lancashire Insurance Committee or by the contributions of the patients themselves. That recommendation was made, however, on the assumption that the Insurance Committee would have supplied to them a fund calculated at the rate of 1s. 3d. per head of the insured persons, and estimated to amount to £32,000 or £33,000 per annum, which would be sufficient to pay in full for the number of insured persons requiring treatment in sanatoriums and not less than one-third of the cost of the dispensaries, so as to leave £9,000 or £10,000 for expenditure upon domiciliary treatment. The recent announcement of the Chancellor of the Exchequer that out of the 1s. 3d. per head 6d. was to be specially appropriated to an annual fund to be distributed among the doctors and chemists for domiciliary treatment, would prevent the Insurance Committee from paying their full share of the cost of the dispensaries and of the cost of treating insured persons in sanatoriums. The committee proposed to substitute for the original undertaking a more specific resolution, clearly showing that the undertaking was given subject to the conditions not being altered in a manner that would throw increased burdens on the county ratepayers.

The council, after a brief discussion, decided to undertake to provide sanatorium benefit for all persons suffering from pulmonary tuberculosis within its area, subject to the following conditions: (1) That the Government contributes three-fifths of any capital expenditure that may be incurred on sanatoriums (such contribution not to exceed £90 per bed), and four-fifths of the capital expenditure on dispensaries. (2) That the Lancashire Insurance Committee pay the county council their proper proportion, but not less than one-third of the annual cost of maintaining and administering the dispensaries. (3) That the Lancashire Insurance Committee undertake to use for insured persons the institutional accommodation provided by the county council when there is vacant accommodation, and to pay the full charge for each patient sent by their order so far as their funds will extend. (4) That the annual income of the Lancashire Insurance Committee for sanatorium benefit is not reduced below that provided for by the National Insurance Act, 1911. (5) That the county council shall not be liable to make up any deficiency in the funds of the Lancashire Insurance Committee to meet the full charge for persons sent by their order for institutional treatment, if such deficiency is caused by the expenditure of that committee on any purpose other than dispensaries. (6) That the Government guarantee to pay annually or half-yearly one-half of the annual expenditure incurred by the county council in carrying out this undertaking.

If these conditions were approved by the Local Government Board, the Health Committee was authorized to establish dispensaries; to appoint three tuberculosis officers at a salary of £500 and not more than eight [illegible] officers at a salary of £300; and to agree with the Insurance Committee as to their proportionate shares of the cost. The Health Committee was also authorized to make arrangements with the county boroughs for co-operation in the provision of dispensaries and sanatoriums. Pending the consideration of the scheme by the Local Government Board, it was resolved to appoint one tuberculosis officer at a salary of £500 and two at £300 each.

As a large number of the Divisions of the British Medical Association in Lancashire have members residing or practising in the county area as well as in their respective town areas, a good deal of overlapping exists, which can only be met by practically all the Divisions, in addition to their respective local Medical Committees, electing representatives to serve on a County Medical Committee, and steps are now being taken with this object.

The Salford Royal Hospital.

The most remarkable feature recorded in the annual report of the Salford Royal Hospital is the large increase in the number of in-patients, which reached the total of 2,415, as compared with 1,464 in the previous year. This is explained by the fact that the extension of the hospital was opened last year, though from lack of funds 35 of the additional beds have had to be kept unoccupied, in spite of constant applications for admission. In addition to the above, the hospital, with its Pendleton Branch, gave treatment to 11,454 out-patients, 14,838 accidents, and 2,101 home patients. The chairman of the annual meeting, Sir William Mather, stated that the total cost of the extensions was £66,429, and of this sum £10,500 remained to be raised. There was a deficit also on the annual income of about £950. On the urgent request of the medical board the committee had decided to provide an electro-therapeutic department, and, including the cost of this, it appeared that the sum of about £12,000 was necessary to pay off the liabilities of the hospital. The chairman generously offered to guarantee £5,000 towards this amount, to be paid at the end of the year, on condition that another £5,000 was raised from other sources, or if the full amount of £5,000 was not raised he guaranteed an amount equal to the fund collected. He had a strong feeling that a democratic country could not long leave the hospitals in the unhappy condition in which they had been in the last ten or fifteen years. It was not at all necessary to interfere with private charity, but a grant from the Exchequer for the purpose of freeing hospitals from debt would be a useful application of public money. He did not agree with the opinion that the Insurance Act would play havoc with the finances of hospitals. After the meeting, Sir William Mather unveiled a bronze tablet placed in the hospital in memory of the late Dr. J. Dixon Mann, who was first appointed physician in 1882, and remained on the active staff until his death last year. For twenty-five years Dr. Mann was the lecturer to the nurses of the hospital, and the help he gave them was so highly appreciated that the past and present nurses have decided to erect a separate memorial at their own cost.

LIVERPOOL.

Health of the City.

It is gratifying to note that the death-rate in the city during the current municipal year is the lowest on record, the general rate being 17.3 per 1,000 of the population, against 17.9 two years ago, the decline being most marked in infant mortality, the rate of which was 120 per 1,000 births, the lowest on record, the average within the last five years being 144. The diminution in typhoid still continues, the deaths being only 14, of which 6 were imported cases. The deaths from scarlet fever were 68, again the lowest recorded. The same could not be said either of measles or whooping cough, although the deaths were fewer than last year.

In reference to the abolition of slums, the houses dealt with during the current municipal year of the Liverpool Housing Committee numbered 953, of which 747 were included in proposed new schemes. Closing and demolition orders had been made in respect to 206 houses, 20 houses had been demolished, 10 improved and rendered sanitary, and the remainder awaited demolition or improvement. The total dwellings were now 2,662, of which 2,109 were restricted for the dispossessed. The total cost for housing and demolition to December 31st last was £1,095,131 9s. 7d., the net annual charge for interest and sinking fund being £37,094 9s. 6d., equal to 2½d. in the £ on the rates. Nine new schemes are now in hand, involving expenditure of about £280,000 in the acquisition of sites and dwellings, the demolition of 747 houses, and the displacement of 2,468 persons. It is intended to provide accommodation for those persons of

the working class who will be displaced by the scheme. There still remain about 3,000 insanitary houses to be dealt with, these being of the worst type, all being back to back, without through ventilation and separate sanitary conveniences.

The principal feature of the work during the past year was the opening of the Bevington Street scheme dwellings by the Countess of Derby in June last. A large deputation from Germany visited that area in August last, followed by another in September, under the auspices of the National Town-planning Council. Both deputations were unanimous in their approval. The last-named association was promoting a vigorous campaign to more speedily do away with slumdom, and intended to point to Liverpool as an example.

LONDON.

London County Council.

Ambulance Service for the Metropolis.

An urgency report by the General Purposes Committee was submitted to the London County Council during its proceedings on November 12th, dealing with the question of the provision of an ambulance service for London, authority for the establishment of such a service having been conferred on the Council by the Metropolitan Ambulances Act, 1909.

The General Purposes Committee observed that the powers conferred upon the Council by the Act were permissive only. The Council, in approving in 1905 an experimental scheme for the establishment of an ambulance service, was presumably satisfied at that time that such a service was necessary. It had now to be considered, however, whether such material improvement had taken place in the provision of ambulances in the last six years as to render it unnecessary for a municipal service to be established and maintained, and whether the needs of the county could be met by subsidizing existing organizations or by an organization which might be instituted by private enterprise.

The Committee had, therefore, obtained information as to existing ambulances from the Metropolitan Police, the Port of London Authority, the Metropolitan Asylums Board, the Metropolitan Water Board, the borough councils, boards of guardians, and the principal hospitals. The most important provision was made by the Metropolitan Police, which maintained 199 ambulances at police stations, and 137 placed in streets. The Port of London Authority was effecting great improvements in its ambulance facilities, and when these were complete the service would consist of 4 motor ambulances, 41 litters and litter under-carriages, 43 stretchers, and 38 awnings. The equipment was designed for the service of the dock premises, and would not prove more than adequate for that purpose. The Metropolitan Asylums Board possessed 8 ambulance stations, which combined had accommodation for 184 men and 60 nurses. There were immediately available 62 horse-drawn ambulances, 17 petrol-driven ambulances, and 11 petrol-driven omnibuses; 11 more motor ambulances were to be acquired. The Board's ambulance service was instituted for the conveyance of infectious cases, but during the last ten years it had been necessary to provide for the conveyance of non-infectious patients to the imbecile asylums and children's institutions. In the last three years no fewer than 5,000 non-infectious cases were conveyed in the Board's ambulances. The Metropolitan Water Board had no ambulance facilities; in twenty-five boroughs no ambulances were under the direction of the borough council. There was small provision in Battersea, Fulham, and Poplar. As to the boards of guardians, in twenty cases the ambulance provision was not available for public use in case of street emergency, and in ten cases it was; the ambulances were principally used for conveying patients between the workhouses and the infirmaries.

In regard to the provision at the hospitals, the following had no ambulances: Bolingbroke, Guy's, Kensington and Fulham, King's College, London Homœopathic, Middlesex, St. George's, St. John and St. Elizabeth, West London. The following had one hand ambulance each: Charing Cross, London Temperance, Metropolitan, Miller General, Poplar, St. Bartholomew's, St. Mary's, St. Thomas's, Royal Free, Westminster, Great Northern Central (used occasionally for cases of accident occurring near the hospital). The London Hospital and the North London or University College Hospital had one horse ambulance and a hand ambulance each. The St. John Ambulance Association appeared to have no general organization for dealing with ordinary street accidents, its work being confined to rendering assistance on all occasions when crowds congregated in any large number.

A conference of the London boards of guardians, held in 1907 to consider the ambulance question, passed the following resolution:

> That this conference is of opinion that an effective ambulance service for London can be established and maintained without expense to the public rates, by co-ordinating and developing the existing services, and by empowering the Poor Law authorities of the metropolis—namely, the Metropolitan Asylums Board and the boards of guardians—to place the ambulances they possess at the disposal of the public.

Mr. Lyon Thompson, the chairman of the conference, had suggested that the ambulances of boards of guardians might be used for street accidents, private telephones, such as those in chemists' shops, being utilized by consent for the purpose, and that thus an efficient service would be available in a comparatively short time at a very small expense.

The General Purposes Committee thought there was much in the contention that there already existed in London material which, with efficient co-ordination and organization, would furnish an adequate ambulance service. It appeared to be the duty of the Council to undertake this co-ordination. In response to an inquiry addressed to the Home Office and the Local Government Board as to whether the ambulances maintained by various existing authorities could be utilized, the Home Secretary had stated that police ambulances were all available for use in street accidents, and were habitually used in this way. The Local Government Board stated that, although it approved of the principle of a united ambulance service for London, it was advised that it had no power to sanction or authorize the utilization for such a purpose of the ambulances provided by the Metropolitan Asylums Board, the borough councils, boards of guardians, and other authorities. Legislation would be necessary to empower those bodies to enter into agreements on this matter with the Council.

In view of this expression of opinion by the Local Government Board, the Committee considered that the Council should seek parliamentary powers next session to enable the authorities referred to to enter into agreements with the Council, and that the Home Secretary should be asked to procure the provision of a larger number of suitable appliances to be maintained by the Metropolitan Police. The Committee had not consulted beforehand the authorities concerned, as it was necessary to decide at once if it was intended to apply for parliamentary powers. It could not but think that the various authorities would be willing to assist in the provision of an efficient and, at the same time, economical ambulance service for London.

Discussion.

Mr. H. L. Jephson moved the following amendment to the proposal:

> That the Committee do forthwith prepare a scheme (*a*) for utilizing such existing appliances as are available, (*b*) for providing such further appliances as are necessary for completing an efficient service for the County of London, and (*c*) that the Council do assume control of the whole service.

Mr. Jephson expressed regret that, although this matter had been under consideration for years, the report of the Committee to the Council should have been presented at less than a day's notice. The question was one of deep interest to the public. He had just received the return of the "killed and wounded" by accidents in the streets of London. The numbers had risen from 175 people killed and 9,505 injured in 1902 to 410 people killed and 19,157 injured in 1911. Mr. Jephson sketched the history of the ambulance question in London. Apart from the hand ambulances and wheeled litters of the Metropolitan Police there was practically no provision in London for those stricken down in the streets. One of the great disadvantages of the lack of a system of proper ambulances was the great injury done to sufferers through being conveyed to hospitals in unsuitable vehicles. Many distinguished physicians and surgeons had expressed the opinion that the provision of an ambulance service should be undertaken by the Council. The late Dr. Danford Thomas had frequently called attention to the need of an ambulance service, and Sir William Collins in 1904 stated that nearly 70 per cent. of casualties were taken to hospitals in cabs and carts. This represented an enormous amount of unnecessary suffering, and a proper ambulance service would

save many lives. London was behind all the big cities of the world in this respect, and the increase of swift motor traffic made the question all the more urgently in need of attention.

Mr. W. C. Johnson seconded.

Mr. Ernest Gray, Vice Chairman of the Committee, said that Mr. Jephson's proposals meant that the Council should seek to control all existing ambulance services and to provide others. An efficient ambulance service, however, postulated the existence of men capable of readily utilizing it. It was one thing to have a machine, but, unless the persons who used it were properly trained, they might do infinitely more harm than good. The Departmental Committee emphasized the importance of further training of the Metropolitan Police. The first thing an officer had to do was to decide what kind of ambulance—hand or motor—was needed, how the patient was to be handled, and where he was to be sent to. All this presupposed a large amount of training. When the actual vehicles and their drivers were provided, only a small portion of an efficient ambulance had been installed. Having regard to the extent of the provision that already existed, it was ridiculous that the Council should provide a further number of ambulances. Those available at present stood idle for a great part of the day, and all that was necessary was to obtain the amendment of the law which would enable them to be made available. The Council could not obtain control of the whole ambulance system because it could not control the police, on whom the principal reliance must be placed in this matter. The result of any further division of authority would be constant disputation as to the responsibility for the non-removal of those who had met with accidents in the streets.

Mr. Edward Smith pointed out that Parliament had already made the County Council the ambulance authority for London. The ambulances of the boards of guardians were fully utilized at present, and those of the Metropolitan Asylums Board were principally intended for the conveyance of persons suffering from infectious diseases. A suggestion which might be of value was that the services of the fire brigade should be utilized in connexion with an ambulance service. At any rate, the seven central ambulance stations originally proposed would only cost £14,000 a year, and the present proposals would involve further protracted delay.

Mr. Lithgow thought it unnecessary to go to Parliament for further powers, when those already conferred upon the Council had not been used. This was essentially a medical matter, and in the last issue of the BRITISH MEDICAL JOURNAL there was a very able article pointing out that the only authority which could effectively undertake the provision of street ambulances was the County Council.

On a division the amendment was lost by 65 votes to 42, and the recommendations of the Committee were approved.

PECKHAM MEDICAL TREATMENT CENTRE.

This institution, at 412, Old Kent Road, was opened by Dr. Hamer, medical officer to the County Council, on November 8th. By the invitation of the Chairman and Committee, about one hundred persons visited the centre, including members of the profession in practice in the locality, members of care committees, and teachers. The Chairman (Dr. Capes) asked Dr. Hamer to declare the centre open, and gave an account of the negotiations that had brought it into existence and of its purpose and methods. Dr. Hamer spoke of the ancient fame of the Old Kent Road, and declared the centre open; and after votes of thanks to him, to the Secretaries, and to the Chairman, the premises were inspected. They consist of a waiting-room, a consultation-room for eye and throat cases and for minor ailments, an *x*-ray room, an operating theatre, and rooms for preparing the patients for operation and for subsequent recovery. The centre commenced work on Monday, November 11th, the following staff having been appointed by the London County Council:

Anæsthetists.—A. D. Bronchley, M.D.Aberd., and B. A. Richmond, M.D.Lond.

Nose, Throat, and Ear.—J. H. Clatworthy, M.D.Lond., M. G. Dyson, F.R.C.S.Eng., and W. G. Stone, M.D.Oxon.,

Ringworm: Treatment by X Rays.—G. B. Batten, M.D.Edin.
Eye Cases (Refractions).—J. T. Clark, M.B.Glasg., D.P.H.
Minor Ailments.—R. P. Marshall, M.R.C.S., L.R.C.P.

Special Correspondence.

BUDAPEST.

The Normal Temperature of the Body.—Tuberculin.—The Physiology of the Secretion of Uric Acid.—Carbohydrates in Diabetes.—Mental Troubles due to Arterio-sclerosis.—Salvarsan in Mental Disorder.—The Change of the Infectivity of Rabies under the Action of Certain Factors.—Tuberculosis from National Economical Point of View.—Horse Meat.

AT the recent meeting of the Hungarian physicians and natural historians, a paper was read by Professor L. Detre on the normal temperature of the body. He had been enabled to compile his table of figures by means of experiments made on the tuberculous patients of the Charité Hospital in Budapest and on the healthy inmates of a military barracks. The result of these experiments proved that in adults between the ages of 15 and 45 the normal temperature of the body was as follows: 36.2° to 36.4° C. in the morning, 36.3° to 36.7° C. an hour or two after lunch, and 36.2° to 36.5° C. in the evening. If the temperature were taken in the mouth the thermometer should register below 37°. Anything above that figure may be regarded as a sure sign of fever, the unfailing herald of bacterial infection, although in nearly every student's textbook 37.1° C. to 37.3° C. are put down as normal temperatures. In most cases, however, such figures indicate the presence of latent tuberculosis; and it is the imperative duty of the physician to make a thorough examination of the patient in order that any tendency to phthisis may be checked at the onset.

Dr. Detre was followed by Professor Friedrich, Sanitary Adviser to the King and Director of the State Insurance Office, who gave some account of the results obtained from his inoculations with tuberculin. These results have, on the whole, been decidedly favourable. Many of the inoculated patients have been enabled to earn their own living for years, whilst their weight has become stationary, and there has been no sign of haemoptae. On the other hand, in cases of tuberculosis of the larynx, the results have been far from satisfactory; and any improvement in the patient's condition following the inoculation has been merely subjective, and can, therefore, hardly be counted as a triumph of the new serum.

The attention of the Faculty was next called by Dr. M. Szántó to a mistake very frequently made by doctors, who diagnose uric acid diathesis on the strength of one examination of the urine. They seem to forget that the patient's daily diet accounts for a considerable proportion of the uric acid found in the urine; and it is well known that if more than the usual quantity of meat is consumed and supplemented by such foodstuffs as liver, heart, kidneys served with marrow (a favourite Hungarian dish), etc., the acid will increase to a noticeable extent. All this, however, has nothing to do with pathology. Dr. Szántó concluded by warning his hearers never to prescribe alkaline mineral waters containing lithia for patients suffering from uric acid, and advised them to order in their place saline waters, which have a distinctly beneficent effect in such cases.

Dr. A. Torday, who spoke on the employment of carbohydrates (particularly oatmeal) in diabetes, reported very favourably on the results of this method of treatment. He has found that not only is the monotony of the diabetic's meals pleasantly varied by the introduction of fresh foodstuffs, but that the carbohydrates have usually an excellent effect in diminishing the quantities of meton and diaceton. In Dr. Torday's opinion, oatmeal is the best carbohydrate for this purpose; but in its absence other kinds of starchy food, such as rice or wheat, can be used in the form of soups.

The direct relation between arterio-sclerosis and various

types of nervous and mental disorders was then discussed by Dr. S. Fischer, who remarked that the knowledge of this fact was particularly important from the point of view of forensic medicine.

An interesting paper on the effect of salvarsan in mental cases was read by Professor T. Donath, who, from the month of October, 1910, to January, 1912, had made use of this drug in 107 cases. It should be added, however, that out of this number only 48 were suffering from actual syphilis of the nervous system. The results of the treatment, said the Professor, were particularly satisfactory in cases of syphilitic hemiplegia and paraplegia. In the case of the former two-thirds of the patients recovered; whilst in every case of syphilitic epilepsy the attacks ceased entirely. Salvarsan was even more successful as a treatment for severe headache. Out of the 30 cases of syphilis of the brain which came under Donath's care, 11 were completely freed from pain; whilst anaesthesias, analgesias, paraesthesias, and fainting fits also vanished after a course of treatment by salvarsan. The psychical effects of the drug are equally remarkable. In the case of 7 of Donath's patients the memory was considerably improved; whilst the general mental condition of two-thirds of the whole number was greatly bettered and 10 were completely restored to their normal state. As regards locomotor ataxia (of which 31 cases in the initial stages of the disease were under Donath's observation), the patellar reflex seems likely to recur even after a course of treatment; whilst in 2 cases of tabes the memory was improved, and in two others the bodily and mental functional activities were both restored. In 28 cases of incipient paralytic dementia the pupillary reaction recurred in 3 cases, and the tendon reflexes in one. In 4 cases the gait, and in all the speech, improved after treatment, one case of "dysarthric" speech being completely cured. In 9 cases an improvement was effected in the intelligence of the patient, and 4 were so far restored to health as to become once more capable of earning their own living. It is interesting to learn that in addition to its other advantages, salvarsan helps materially to improve the body weight, and in cases of paralysis progressiva is excellent when supplemented by nucleinic acid of sodium, a combination used invariably in these cases by Professor Donath.

The question of a time limit with regard to infection from rabies was discussed by Dr. Kouradi, who described his efforts to discover how long the body of a dog which has died of hydrophobia remains infectious. Having been called into court to pronounce judgement on a dog buried three months previously, he found that no experiments had ever been made for the purpose of settling once and for all how long the infection lasts in such cases. He was obliged, therefore, to bury for a certain period the bodies of dogs and rabbits which had died of rabies, and from them perform, at stated intervals, intramuscular and intra-arachnoidal inoculations on other animals. By these means he was able to prove to the satisfaction of the court that in this instance the earth does not act as a disinfectant, and that even at the end of three months the body of the dead animal is only a little less infectious than the very day it was buried.

A short paper on tuberculosis statistics in Hungary was then read by Dr. Pécsi Dani, who stated that the annual death-rate from consumption in Hungary showed an excess of 40,000 as compared with the death-rates of other European countries. These deaths, he said, could be prevented in Hungary just as they are prevented in England, France, and Germany, if only the Hungarian Government directed its energies towards the improvement of public hygiene. The whole question was one of money; but if the Government were once persuaded to disburse the necessary sums it would prove without fail to be the most remunerative investment it had ever undertaken.

The use of horseflesh as an article of diet was advocated by Dr. Szalkay, who described it as being at once wholesome and nourishing. It was necessary, however, to overcome the prejudices of the lower classes and teach them its true value as a foodstuff, and for this purpose he suggested the distribution of free pamphlets on the subject about the streets and the erection by the municipal authorities of restaurants where horseflesh should be a usual dish at the table d'hôte meals.

Correspondence.

THE URGENT NEED OF A STREET AMBULANCE SERVICE FOR LONDON.

SIR,—I was glad to see by your leading article under the above heading in your last issue of the JOURNAL that you are again bringing to the front the deplorable and discreditable deficiency in Greater London of a proper system of rapidly moving ambulances.

We ought long ago to have followed the admirable plan of the City of London, and of other cities at home and abroad, in this respect.

Having myself travelled and spent a good deal of money and much time and thought in preparing evidence for the Departmental Committee, when, as President of the Royal College of Surgeons, I was called upon to appear before that Committee, I have often felt that my own efforts, and those of others also, have been utterly wasted in that no good to the public has resulted therefrom.

My own view, as given in my evidence and arrived at after prolonged investigation and deliberation, was that the ideal plan is to put the Metropolitan Police in control of a motor ambulance system; but that, failing the police, the Metropolitan Asylums Board is the next best authority to be entrusted with the work. The least suitable body to undertake such control is, in my humble opinion, the London County Council. I will not take up your space by repeating my reasons for this view, as they are fully stated in my evidence before the Departmental Committee.

My object in writing is to point out that the parliamentary bill passed in 1909 has been an obstruction and the cause of delay; and that had the matter been placed in the power of either the police or the Board, a rapid ambulance system would have been in full working order in the metropolis long ago.

The London County Council has neither the stations, nor the ambulances, nor the working staff for the ambulances; the Metropolitan Asylums Board has all these.

It would be very little trouble and (comparatively) very small additional expense for the Board to increase as far as necessary the number of its stations, its carriages, and its staff; and with its present great experience the Board would work the system more satisfactorily and very much more economically than could the London County Council. Furthermore, unless I have been incorrectly informed, the Metropolitan Asylums Board is not only able but is also willing to provide and work a motor ambulance system for street accidents and non-infectious cases, and could do so without the least delay in making a beginning.—I am, etc.,

London, W., Nov. 11th. HENRY MORRIS.

SIR,—Your article on the urgent need of a street ambulance service for London draws a well-timed attention to a grave blot on London administration. Your history of the position, however, is hardly complete, and omits to state that the Departmental Committee appointed by the then Home Secretary, Mr. Herbert Gladstone, in 1909, reported "that under the circumstances at present prevailing in the metropolis the most efficient and economical system is to be found in an extension of the service of rapid ambulances which has been initiated by the Metropolitan Asylums Board . . . and we recommend that the Metropolitan Asylums Board should be authorized by Act of Parliament to apply their funds to the establishment of a service of non-infectious ambulances for the transport of 'street cases,' and to enter into agreements and generally to co-operate with the Metropolitan Police for this purpose." A Minority Report was appended by Sir William Collins, a member of the Committee, who adhered to his pet project of entrusting the work to the body of which at that time he was a member. In the following session Sir William Collins, with a laudable but none the less disastrous pertinacity, brought in a bill to authorize the London County Council to establish the service, whereupon Mr. H. Gladstone, ignoring his Departmental Committee and lending all the influence of Government support to the bill, secured its passage into law. It is more than probable that had Mr. Gladstone foreseen that at the subsequent elections a decisive Moderate majority, pledged

to more economical methods, would be returned to the London County Council, he would have acted differently.

The plain fact is that the Metropolitan Asylums Board is the one body in the metropolis that possesses the facilities, the equipment, and the experience for inaugurating a general ambulance service without delay, and with the least expense to the ratepayers. For over forty years it has conducted a widely extended ambulance service in connexion with the infectious diseases of London, and for several years past it has undertaken an increasing service for the transport of non-infectious cases of all kinds—a service necessarily limited by the absence of statutory powers, but tacitly permitted because it meets so obvious a need. Further, by substitution of a rapid motor service for the old horse traction, which is now completed, it has thrown out of use two ambulance stations, and has set at liberty large portions of the stations in use, all of which could be readily set apart and isolated for a separate service for accidents and other emergencies of illness. Recently, moreover, it has taken over from the boards of guardians the casual wards of the metropolis, and in a few months found it possible to put out of use several of them. It may be reasonably conjectured that these could be turned into auxiliary ambulance stations, and that even some of the casual wards in active use have premises sufficiently large to admit of the station of one or more ambulances during the day.

In the face of the existence of such facilities ready to hand employing buildings built by ratepayers, which would be otherwise unused, it is not surprising that the London County Council has apparently been reluctant to embark on a scheme of its own which must be costly, and is demonstrably unnecessary, and, therefore, extravagant.—I am, etc.,

London, W., Nov. 12th. H. WILLINGHAM GELL.

CONTINUOUS INHALATION IN PULMONARY TUBERCULOSIS.

SIR,—Your report of Dr. Lees's interesting lecture on the treatment of pulmonary tuberculosis by continuous inhalation should be widely read by all medical men who are daily engaged in grappling with this terrible disease. Having employed this method of treatment during the last fifteen years or more, I can fully endorse Dr. Lees's main contention that continuous inhalation is one of the most efficient means in arresting the disease. In his lecture, however, I am mentioned as using an inhalation of formaldehyde and menthol, which Dr. Lees thinks is irritating, and, therefore, unsuitable. To correct any possible misunderstanding I should like to add a word of explanation about inhalation methods employed in our sanatorium for many years.

We never use formaldehyde alone. We use two or three solutions each containing three or four antiseptic drugs. We administer formaldehyde in 2½ per cent., and gradually increased to 5 per cent., strength (in the form of gas, not in watery solution) combined with creasote, terebene, pumiline pine, and dissolved in rectified spirit and chloroform. Such a mixture makes a pleasant combination. In the majority of cases with no laryngeal complication, formaldehyde used in this way is not at all irritating. In fact, it has the effect of hardening the mucous membrane of the air passages, and is, therefore, easily tolerated. But in a few cases where it is not tolerated, or to give variety and change after a few weeks of treatment, we also use a mixture containing guaiacol, iodine, terebene, pumiline pine, combined with rectified spirit and chloroform. Employing the inhalation as we have done, day in and day out, for weeks and months, we find it best to give the patients a choice of two or three solutions, as they are apt to get weary and tired of using the same mixture over and over again all the time. A little difference in the antiseptic mixture, both in colour and in smell, makes a new impression upon the mind, and gives a fresh endeavour and stimulus to persevere in the treatment.

After all it is in perseverance rather in any special antiseptic mixture that the secret of success lies. It is for this reason that the inhalation treatment in the majority of cases cannot be successfully carried out at home as Dr. Lees avers. For one thing it is not possible to have perfect sanitary and hygienic conditions in every home. The next is, while it is found difficult for patients to be strenuous in using the inhalation for eight to ten hours a day in a sanatorium in spite of the constant vigilance and encouragement of the physician, how is it possible for a consumptive with a weakened will, all alone and surrounded with a hundred adverse influences at home, to carry out the treatment day and night and for weeks and months? Thirdly, it is not continuous inhalation alone that is going to arrest the disease. We found that it must be combined with fresh-air treatment and graduated exercise. It is only by combining these three main forces together and directing them against the enemy with sustained effort and perseverance that permanent and satisfactory arrest of the disease can be achieved.—I am, etc.,

Mendip Hills Sanatorium, Wells, Nov. 11th. C. MUTHU.

SIR,—In the abstract of my Bradshaw Lecture published in the BRITISH MEDICAL JOURNAL there is an unfortunate misprint which I hope you will allow me to correct. It is stated on page 1271 that "the most recent of the cases had ceased treatment *a week* ago." The word "*week*" ought to be "*year*."

May I also add to the table giving the bacteriological results the statement that in the nineteenth case no tubercle bacilli were found (though caseous cervical glands had been removed), but many streptococci?—I am, etc.,

London, Nov. 11th. DAVID B. LEES.

BLEEDING AND BLISTERING.

SIR,—You will, I am sure, agree with me that the lay press is not a suitable place in which to discuss differences in medical treatment, so I am writing to you, as I cannot allow some remarks made by Sir Victor Horsley in a letter to the *Times* of November 8th to pass unchallenged. He there writes that it is far better "to prevent a disease than to attempt to cure it by such barbarous and antiquated means as bleeding and blistering." We shall all of us, of course, support the proposition that prevention is better than cure, but I venture to say that very few physicians will approve of the adjectives Sir Victor Horsley has applied to two such valuable remedial measures as bleeding and blistering.

It would almost seem as if his devotion to surgery had obscured his judgement. I cannot in a letter enumerate all the cases in which bleeding is of inestimable service, but I may mention a few: Cases of high arterial tension with cerebral symptoms, uraemia, dilated right ventricle especially in connexion with pneumonia, the pain in thoracic aneurysm, etc.

Then as regards blistering. It curiously happens that this very morning I received a letter from a distinguished surgeon about a patient I sent him, in which he writes: "I prescribed a blister over the joint." For my part I have found blisters invaluable in many joint and other affections, and the introduction of the salicylate treatment of acute rheumatism has not done away with the advantages of blistering the joints on which the late Dr. Herbert Davies laid so much stress. To let two such valuable methods of treatment be disparaged by a man so well known as Sir Victor Horsley might tend to prevent their employment in suitable cases.—I am, etc.,

London, W., Nov. 11th. F. DE HAVILLAND HALL.

ACCOUNTS FOR FEES UNDER THE NOTIFICATION ACT.

SIR,—The Notification Act requires a district council to pay 2s. 6d. for each non-pauper, non-hospital notification delivered to their medical officer of health, but a notification is not a demand for cash. You cannot make a legal demand for cash upon any sanitary authority by delivering it to their medical officer of health. If the council does not pay you may recover your fee by an action in the county court, but before you do you will have to satisfy the court that you have made demand, and furnished the council with particulars of your claim. Moreover, before you sue any district council you are bound to give them one month's notice of your intended action, and render full particulars of your claim.

Why all this quibble about making out an account? Is an account worth nothing? The average medical man does not require to open his mouth and see what the district council will send him in respect of notification

fees. He wants to know which notifications he is being paid for when he signs the receipt for fees, and the sanitary authority, of course, wants to have the same information to put before the Local Government Board auditor.

It is not the duty of the medical officer of health to run across to the clerk's office daily and tell him that Dr. Blank is entitled to 2s. 6d. for a notification received, nor is it the duty of the medical officer of health to make out an account for Dr. Blank each quarter day.

Surely the essence of this subject is contained in the last three lines of Dr. Bateman's letter (November 9th, p. 1338)—"as a matter of convenience," a quarterly account of fees demanded, and a quarterly payment of them, with receipt endorsed on the account itself! Then there will be no question of "statute barred," for a ratepayer of the parish from January to December, 1912, only will not need to go before the Local Government Board auditor and object to the allowance of Dr. Blank's account for a debt contracted before July, 1911, before he became a ratepayer.—I am, etc.,

Kendal, Nov. 9th. R. MUSGRAVE CRAVEN.

PROPOSED COMMISSION ON DIET AND DISEASE.

SIR,—The JOURNAL of October 19th contains many facts of the greatest interest and importance on many subjects, but those with regard to food and drugs interest me especially. How a medical man can lend himself to the forcible feeding which is causing such an uproar is a puzzle to me. Nothing would induce me to force food on any one who was not hungry, and there can be no doubt that so soon as true hunger was felt by the most obstreperous suffragette she would be glad to eat anything, and think it uncommonly good. I had a talk with one of the suffragettes who had been in prison and would not eat, and she told me—what I knew from my own experience, as well as from that of others—that in two days she had no desire for food, and could have gone on fasting with pleasure. Not only is there no danger in fasting, but it is actually curative, as a Roman Emperor taught his physicians. He suffered from disease, not neurasthenia, and all the efforts of the best physicians at his command only made him worse. He resolved to end his life by starving himself to death, and would take no food. To the astonishment of his physicians he got well. I was once consulted in a case where a young man was trying fasting as a cure, refused to eat, and frightened his parents. On the twenty-ninth day of his fast he walked sixteen miles, and was free from the malady which had so grievously afflicted him, so that we need not be afraid of any one dying through fasting for a few days, even in a prison.

The effect of a saltless diet, in curing oedema, which has been recently discovered, and the cause of sleepiness after food, which Dr. Frederick Taylor is trying to discover, emphasize the need there is for the profession to "wake up," and begin to study the physiological action of food: and then, I have little doubt, our food will become our physic. In this connexion I may say that, in a local newspaper, a man who had been reading the exposure of quack remedies—a most creditable publication—came to the conclusion that doctors should be asked to write their prescriptions in plain English. Whatever harm might result from such a practice, it shows how dangerous it is, as this man put it, for those who live in glass houses to throw stones. After all that can be said, either for or against the profession, at the present crisis we require to walk warily; but, so far as I can see, there is nothing that would raise it, in the eyes of the people, so much as to be able to tell them how to live so as to prevent disease, and that cannot be done until we know more about the action of different foods than we do at the present time. Such an investigation would be an excellent addendum to the exposure of the quacks, since it might prevent any one requiring to use such nostrums.—I am, etc.,

Hawick, Oct. 19th. JOHN HADDON, M.D.

ILLNESS AND INTELLECT.

SIR,—Is it not nearly time the myth of the extent "of the world's work done by invalids" was decently interred? At any rate, do you not think the pages of a scientific journal should be the last to give the ridiculous idea a new lease of life? True, probably, no one could bring greater ability to the task, and you have certainly exhibited in no small degree the depth of your erudition. Yet what effect had your article on my mind? Exactly the opposite you intended, for, on your own showing, the morbidity amongst individuals exhibiting genius is remarkably low. Only "16 per cent. of poets suffered from ill health during the active part of their lives." What a good thing for the pocket of the profession that so few people become poets! In the course of 2,000 years three—a whole trio—great generals were epileptic. Really, we must draw the attention of our negligent War Office to the fact and urge them to cashier immediately all officers not epileptic. How on earth did Hannibal and Marlborough and Wellington manage? Probably, if you examined the evidence, you would find it as positive that they had epilepsy as that Caesar and Mahomet had. I see now why Luther was such an effective force in his prime. Obviously because "his last years were disturbed by almost constant ill health." Really, Sir, with care, some of us may attain fame yet if only we also take care that our old age is sufficiently troubled by ill health.

If it were only to tilt at your paradoxes—for it cannot be that you are serious when you so confidently assert that "It is not to men of healthy digestions . . . that we owe the great revolutions that make human history"—I would not waste my leisure or your valuable time, but a much more serious purpose lies behind. At the present time the more thoughtful people are doubting the efficacy of our methods of improving the human race. In spite of the humanitarian zeal, legislation, sanitation, and education of the last century, these people are satisfied that our last state is worse than our first. They demand the cause. Our present type of politician tells them, You require more laws which I will pass, and all will be well. The sanitarian says, Stamp out tuberculosis and then—Elysium. The educationist says, Ignorance is the cause, therefore educate to 16 or 18; or every one should have a university education, and then—heaven on earth. The bewildered individuals turn to the scientist, and he in his "blind enthusiasm" says, Take care of your breeding. Then along you come, and you say, if you do "there is a chance of reducing mankind to a dead level of dull mediocrity" (November 2nd, p. 1237). In Heaven's name, why? And again (November 9th, p. 1327), "Eugenists, in their blind enthusiasm, are threatening to stamp out the germs of possible genius." Indeed! How? From the article of November 2nd one assumes that you mean by prohibiting the marriage of insane and feeble-minded persons. This is to stamp out the germs of possible genius. In the article of November 9th you are more concerned about the toxins of tuberculosis as a genius inspirer, with somewhat lingering thoughts towards the poison of gout, which, when it affects the *brain*, leads to "a state of general gloom," but when only the *joints* are affected, "the mind seems to undergo a kind of lustration." Curious, isn't it? And this is the kind of stuff that is to enlighten the "blind enthusiasm" of the diabolical eugenist. Not much light there, at any rate.

Here is a concrete example which may show us to what extent we differ: I attend a family where there are three children. The eldest is eccentric and liable to outbursts of intense passion. The second has epileptic fits. The third, a young woman of very prepossessing appearance, has already been an inmate of an asylum, and has been discharged "cured." The family history exhibits insanity, talent, and civic worth. What advice would you give as to their marriage? I, in my "blind enthusiasm," have assured them that in my opinion it is a most reprehensible crime for any of them to even think of marriage.

In your issue of November 2nd you make a point of the fact that in the pedigrees of insane persons occur lives of sterling worth. Naturally; why not? According to the figures you give there exists 1 insane person amongst 150 (8 in 1,250) of the general population—probably a very accurate estimate, since on January 1st there were in asylums 1 in 269, and to these must be added those insane not yet certified and those discharged as "recovered" and "not recovered." In 1911 these alone numbered 9,754. Obviously the actual or potential insane person has a choice of 149 sane mates, in whose ancestry we may expect only about 1 insane person in 150 to appear. As

a result of this there is no need to wonder that the ancestry of their insane offspring, if any, should exhibit sterling worth. There exists a further fallacy. It has not yet been shown that what may be called "acquired" as opposed to "hereditary" insanity requires a neuropathic or psychopathic strain. For example, general paralysis of the insane may appear in stocks showing much less than the usual average of 1 insane in 150. Too little is made of this fact. We do not differentiate sufficiently as to the type of the insanity, which it is very necessary to know, when we are discussing the offspring of an insane parent. It naturally follows, if the assumption that some forms of insanity are "acquired" and not "hereditary," that, as Dr. Mott states, "We have no right to say that because a parent is insane the children must necessarily be insane or useless to the race." Further, if an insane person marries a normal individual, it is not to be expected that *all* the children shall become insane even if the assumed neuropathy be a simple "unit character." According to theory, only 1 insane in 4 children is to be expected, or if the apparently normal parent is really a "simplex," as the American observers call him, 1 in 2, and the others may easily contain your problematic "germ of genius." If the assumed neuropathy is not a simple "unit character," the proportion of insane will be still less.

We need not, therefore, wonder that sterling worth appears either in the ancestors or the descendants, yet surely we are not for that reason to idly fold our hands or inform these people, as you seem to suggest, to marry early and often, so that in our "blind enthusiasm" we may not be guilty of "stamping out the germs of possible genius."

What we need is more definite investigation, so that we can state dogmatically that such and such things will necessarily follow marriages of this type. I think we already know sufficient to give good guidance, but you say not, because of this possible genius trouble. You assume, absolutely on no sufficient grounds, that the genius comes from the insane stock. I assume, on more probable grounds, that it comes from the untainted stock, and the individual concerned is not also prohibited from marrying because the tainted has been, and if he marries another untainted person then I think the chances of the genius appearing is greatly enhanced.

For goodness sake do not, next week, urge the eugenist not to attempt the elimination of syphilis—a desire very near his heart—for fear of reducing the chances of the appearance of prospective Shakespeares and Goethes.—I am, etc.,

Manchester, Nov. 10th. JOHN D'EWART.

THE SURGICAL TREATMENT OF RECTAL CANCER.

SIR,—I would like to endorse the views expressed by Mr. Mummery and Mr. Gordon Watson with regard to the use of the sigmoidoscope in the diagnosis of high-lying rectal cancer.

By means of this instrument we can see such growths, and surely, in the matter of diagnosis, sight can be educated as well as touch.

Again, we can accurately remove pieces from the growing edge of a high-lying rectal growth by means of long crocodile forceps passed through the sigmoidoscope.

Mr. Harrison Cripps, in adhering to his statement "that cancer can never be diagnosed to a certainty by sight alone; *touch only*, by indicating hardness and friability, has to be relied on," rather loses sight of this use of the sigmoidoscope.

By this means, in conjunction with the microscope, I have been able to diagnose rectal cancers which were outside the reach of the finger. This does not necessitate the use of an anæsthetic, and is a much more accurate and scientific method of diagnosis than a bimanual examination under an anæsthetic, as advocated by Mr. Cripps. Surely a small early high-lying carcinoma could hardly be detected by this bimanual method.

It would be interesting to hear other proctologists' opinions on this question, but surely few will agree with the statement that the sigmoidoscope is worse than useless in the diagnosis of rectal cancer.—I am, etc.,

H. GRAEME ANDERSON,
Assistant Surgeon to St. Mark's Hospital.

London, W., Nov. 12th.

ROENTGENOLOGY AS A SPECIALITY.

SIR,—Finding that there is a certain amount of uncertainty about the relations which should exist between the roentgenologist and the doctor who sends the patient to him, and also that the medical man in attendance has some difficulty in explaining to the patient the position of the roentgenologist, I think it may be as well to reproduce the resolutions passed at the Berlin Congress of the German Roentgen Society, April 14th, 1912, defining the status of the specialist in roentgenology:

1. Roentgenology is a duly authorized medical speciality, just as are laryngology, ophthalmology, etc.
2. The roentgenologist is a medical specialist, and as such, in accordance with the usual medical custom, he is called in as a medical consultant by the patient or his physician, in order to make or confirm the diagnosis.
3. The roentgenologist makes use of the Roentgen examinations in addition to the usual clinical examination. He alone decides what particular procedure shall be employed—radiography, radioscopy, orthodiagraphy, or teleoroentgenography.
4. All plates, diapositives, tracings, orthodiagrams, and teleoroentgenograms prepared for the diagnosis of the case are the property of the roentgenologist, just as histological preparations belong to the consulting pathologist. The roentgenologist will, however, as a matter of courtesy, be always ready, if requested, to place his prints and plates at the disposal of the consulting physician.
5. The supply of negatives or prints to sick clubs and insurance companies is a matter of special arrangement. Moreover, in urgent cases it is the usual custom of the roentgenologist to place the skiagram at the disposal of the surgeon.
6. The roentgenologist may at his discretion place a copy of the plate at the disposal of the patient, either gratuitously or on payment of a fee. This should, however, only be done in those cases where it will cause no harm or needless anxiety to the patient.

I may add that these resolutions were adopted by the American Electro-Therapeutic Association at the twenty-second annual meeting, September 12th, 1912.—I am, etc.,

F. HOWARD HUMPHRIS, M.D.Brux.,
London, W., Oct. 22nd. F.R.C.P.Edin.

Obituary.

ARTHUR HENRY BENSON, M.A., M.B.(T.C.D.), F.R.C.S.I.,

OPHTHALMIC SURGEON TO THE ROYAL CITY OF DUBLIN HOSPITAL.

WE regret to announce the death, which occurred on November 6th, of Dr. Arthur Henry Benson, at Donnybrook, Dublin. He was a son of the late Dr. Charles Benson, M.D., one of the founders of the Royal City of Dublin Hospital, and a younger brother of Sir Hawtrey Benson, the President of the Royal College of Physicians in Ireland. Dr. Benson had a distinguished career in Trinity College, Dublin, where he graduated in Arts in 1875, and in Medicine in the following year. He then went abroad and studied under the leading ophthalmic surgeons on the Continent. In 1883 he was appointed Ophthalmic Surgeon to the Royal City of Dublin Hospital, which post he held until his death. In 1881 he took the Fellowship of the Royal College of Surgeons in Ireland, and in 1886 the M.A. degree was conferred upon him by Trinity College, Dublin. He was also appointed surgeon to the Throat and Ear Hospital in Dublin, and when its place was taken by the Royal Victoria Eye and Ear Hospital in 1904, he was appointed surgeon to the latter institution. He was a Fellow of the Royal Academy of Medicine in Ireland, and a member of the Ophthalmological Society of the United Kingdom. For many years he was university examiner in ophthalmic surgery in the University of Dublin, and examiner in ophthalmic and aural surgery in the Royal Colleges of Physicians and Surgeons in Ireland.

Dr. Benson published many papers in the *Transactions* of the Ophthalmological Society and the medical journals, his most important contributions being on modern operations for trichiasis and treatment of stenosis of the nasal duct. In 1894, in recognition of his arduous work in organizing the Kosmic Fête in the previous year, the directors of the Royal City of Dublin Hospital resolved that one of the ophthalmic wards of the hospital should be called the "Arthur H. Benson Ward."

Though for the past year Dr. Benson was unable to

attend to his hospital duties owing to heart trouble, it was hoped until quite recently that he would recover and be able to resume his work. By his untimely death the members of the medical profession in Dublin have sustained a severe loss.

FREDERIC BAGSHAWE, M.D.Cantab., F.R.C.P.Lond.,

CONSULTING PHYSICIAN, EAST SUSSEX HOSPITAL, HASTINGS.

Dr. Frederic Bagshawe, of St. Leonards-on-Sea, was taken ill with acute pneumonia on October 28th, and breathed his last on November 2nd. By his death St. Leonards loses its oldest practising physician, and one of its best known public men.

Frederic Bagshawe came of an old Derbyshire family. He was the grandson of Sir William Bagshawe of Wormhill Hall, Castleton, and the Oaks, Derbyshire, and the son of the Rev. E. B. Bagshawe, Rector of Eyam, by his marriage with Miss Partridge, of Bishop's Wood, Hereford. Born in 1834, he was educated at Rossall and Uppingham Schools, St. John's College, Cambridge, and St. George's Hospital, London. He took the degree of A.M. in 1861, and that of M.B. in 1863, became M.R.C.P.Lond. in 1864, and commenced practice in Connaught Square, W. He was appointed physician to the Western General Dispensary, where he had for a colleague Dr. (afterwards Sir) William Broadbent. He also held, for a short time, the post of assistant medical officer at the Hospital for Sick Children. In 1865 he took the degree of M.D.



Frederic Bagshawe.

Photograph by Elliott and Fry, London.

During the later sixties his health obliged him to winter in the South of France and to pass part of the year at St. Leonards. Until the outbreak of the Franco-Prussian war he practised alternately at home and abroad, but in 1870 settled permanently at St. Leonards. He acquired an extensive medical practice, and his professional status was marked in 1879 by election to the Fellowship of the Royal College of Physicians.

He had in 1871 been appointed assistant physician to the Hastings, St. Leonards, and East Sussex Hospital, to which he became physician in 1882 and consulting physician in 1907. To promote the welfare of this institution was his aim and interest for over forty years. His devotion to it was displayed not only in the diligent and cheerful performance of his hospital duties but also in the labours of himself and Mrs. Bagshawe in connexion with the rebuilding of the hospital in 1887, and in many (often anonymous) donations to its funds. Within the last year a much-needed high-pressure steam sterilizer was provided by him at a cost of nearly £100.

Local medical organizations, such as the Provident Dispensary, the Sanitary Aid Association, and the District Nursing Association, owed much to his sympathetic support. He was an active member of the local Medico-Chirurgical Society, which he joined in 1867, and of which he was the president in the years 1878, 1879, and 1880.

In all movements affecting the public health of the borough Dr. Bagshawe played a prominent part. At the Health Congress held at Hastings in 1889 he was chairman of the Section of Preventive Medicine. Nor was his activity confined to matters allied to medicine. Education claimed a large share of his attention. He was at one time a member of the school board. The existence of the Hastings and St. Leonards Ladies' College is in part due to his exertion and influence. He was till his death chairman of its council, in which he had been a leading spirit for nearly thirty years. In 1897 his fellow townsmen recognized his public services by making him, on the same day, mayor and alderman of Hastings. He was subsequently made a J.P. for the county of Sussex.

He was an old member of the British Medical Association, and was president of the South-Eastern Branch in 1883. He was for many years the local treasurer of the British Medical Benevolent Fund.

Dr. Bagshawe had an extensive acquaintance with spas and watering places, both British and Continental. He was an original member of the British Balneological and Climatological Society and one of its early presidents.

Shooting and fishing were his chief recreations. His friends are glad to remember that not only were his mental powers retained to the end, but that his bodily strength enabled him to enjoy a day's shooting so late as a fortnight before his death.

In politics Dr. Bagshawe was a staunch Conservative: by religious conviction a moderate Churchman. He took a keen interest in the formation of local Church Lads' Brigades, and strove to encourage their rifle shooting by the presentation of a silver challenge shield for annual competition.

Dr. Bagshawe was twice married—in 1859 to Miss Frances Boss, and in 1870 to Miss Emily Dickinson, a sister of his friend, Dr. Howship Dickinson of St. George's Hospital.

A Brother Practitioner and Friend for thirty-six years (Mr. C. A. Brodribb) writes:

Of the personal characteristics of Dr. Bagshawe, none but those who, like the writer, had the privilege of knowing him for many years can worthily speak. Behind a veil of great reserve and self-restraint there lay a store of unbounded kindness and generosity. His good deeds were indeed freely bestowed on his countless friends, and yet no one of them knew the kind or degree of his goodness to others. His unfailing courtesy and patience to all—to the unthankful, the irritable, and even to the unworthy—made him universally beloved and respected. Apart from his high professional skill, his many patients have lost a true friend. His high sense of honour and his deep and sincere religious convictions make him a noble example for his many friends to try to imitate.

Such lives are lights to help us on our way.

Dr. Leonard Williams writes: Dr. Frederic Bagshawe, of St. Leonards, was a highly-esteemed and most valuable member of the Society of Balneology and Climatology. When the society was founded in 1895 he became an original member. He was elected a vice-president with a seat on the council in the following year, and four years later became president of the society. In 1906 he was made chairman of the council, an important office which is held for three years.

Dr. Bagshawe was a very regular attendant at the meetings of the society, and although he did not intervene much in the debates either upon the internal affairs of the society or upon the scientific questions brought forward, his opinions were always sought and listened to with the respect and attention to which his experience and large-mindedness entitled them. His unvarying courtesy of manner, which amounted to gentleness, concealed strong opinions to which he held with the tenacity of real conviction. In the social gatherings of the society Dr. Bagshawe was a well-known and warmly-welcomed figure.

Although he had sensibly aged in appearance during the last few years, he has passed from amongst his many friends with his faculties unimpaired and his heart still young. He will be remembered amongst us as an example of the best type of health resort practitioner, conscientious in his work, courteous in his manner, seeking a real brotherhood with the members of his profession, and true to the best standards of what is known as an English gentleman.

We regret to announce the death of Dr. Rafael Ulecia y Cardona, of Madrid, which took place on November 2nd. He was the founder, proprietor, and editor of the *Revista de Medecina y Cirugia Practicas*. To him the first dispensary for children suffering from diseases of the chest owes its establishment. Dr. Ulecia was a member of various scientific societies, a Grand Cross of the Civil Order of Beneficence, and a Commander of the Order of Isabel la Catolica.

We regret to announce the death of Geheimrat Wilhelm Ebstein, which took place on October 22nd, in his seventy-seventh year. He qualified as *Privatdozent* at Breslau in 1869, and was afterwards appointed professor and director of the medical Poliklinic of that university. In 1877 he was appointed professor of internal medicine at Goettingen, a position which he held till 1906. He was the author of a large treatise on practical medicine, and he wrote much on subjects connected with medical history. As a physician he was perhaps best known in connexion with the treatment of obesity.

Dr. Frank Harrison Low, who died recently from pneumonia after four days' illness, received his medical education at King's College, London, and the University of Aberdeen. He took the diploma of L.S.A. in 1875 and that of M.R.C.S.Eng. in 1876, in which year he also took the degrees of M.B., C.M.Aberd. Dr. Low took great interest in *x* ray and electric matters, and was medical officer of the *x*-ray department of the Polyclinic. He was a vice-president of the West London Medico-Chirurgical Society and honorary secretary of the Roentgen Society, as well as a member of the British Medical Association.

The Services.

ROYAL NAVY MEDICAL CLUB.

The annual dinner of the Royal Navy Medical Club was held at the Princes Restaurant, Piccadilly, on November 9th, and though not the first dinner of the Royal Navy medical officers, was the first held under the auspices of the newly formed club.

A very enjoyable evening was spent, which gave the large number of members who attended an opportunity of renewing old friendships and forming new ones. The president on this occasion was Surgeon-General Sir James Porter, K.C.B., Medical Director-General of the Navy, who in the course of his speech, after alluding to the advance made of late years by medical officers in their work and profession, referred in feeling terms to the loss sustained by the Navy through the recent deaths of Sir Herbert M. Ellis, K.C.B., and Deputy Surgeon-General T. J. Crowley. Between the toasts Mdlle. Anna Grondal contributed greatly to the enjoyment of the evening by her delightful singing.

The success of this meeting of the club warrants the hope, and indeed the expectation, that its popularity in future years will be well maintained.

The following members were present:

Surgeon-Generals: Sir James Porter, K.C.B., M.D. (Medical Director-General of the Navy), Sir T. D. Gimlette, K.C.B., A. W. May, C.B., Alex. J. J. Johnston, C. Pearson (ret.) *Deputy Surgeon-Generals:* J. J. Dennis, M.D., J. Lawrence Smith, M.V.O., M.B., George Welch (Deputy Director-General of Medical Department), A. G. Wildey, T. J. Lilly, F. W. Pryn. *Inspector-Generals:* J. D. Henwood (ret.), J. McC. Martin, [illegible] Theo. J. Preston (ret.). *Fleet-Surgeons:* L. E. Darbnell, E. T. Yeo, A. Gaskell, J. Menary, W. L. Martin, A. R. Bankhart, C.V.O., M.B., J. D. P. McNabb, A. E. Wightman, C. J. Mansfield, M. L. B. Rodd, J. H. Pead, E. C. Thomas, A. W. [illegible] P. W. Bassett-Smith, A. Kidd, W. H. Pope, W. R. [illegible] J. Moore, E. J. Finch, H. Spicer, M. H. Knapp, R. A. Finch, H. W. Gordon Green, J. W. Philip, J. F. Hall, F. Fedarb, H. F. Hewitt, J. J. Walsh, W. G. Axford, R. H. Browne, J. C. E. Wheler (ret.), R. Hill, F. H. Nimmo, R. D. Jameson, Alex. F. Harper. *Staff Surgeons:* Robert Hughes, Henry Hunt, R. W. G. Stewart, W. K. Hopkins, C. B. Fairbank, H. L. Geoghe[illegible] A. F. Fleming, G. E. Macleod, John Martin, D. V. Lowndes, C. A. G. Phipps. *Surgeons:* G. B. Scott, A. G. V. French, G. W. M. Custance, G. P. Adshead.

INITIATION IN THE SCOTTISH COMMAND.

[illegible] with the Scottish [illegible] etc., in, it is stated, prac- [illegible] the use of disinfectants for [illegible] and not disinfection. The [illegible] of faulty conditions [illegible] corrected, and reliance [illegible] er to remove decomposing deposits rather than upon surface disinfection or deodorization by chemical reagents. In future the use of disinfectants by units is forbidden, except upon the advice of a medical officer. Medical officers are forbidden to countersign indents of officers commanding units for disinfectants without previous reference to the sanitary officer of the command.

TERRITORIAL RECRUITS AND EYESIGHT TEST.

Special attention has been directed to the number of men, otherwise physically fit, who in the Glasgow Territorial units are rejected on account of defective vision. This cause of failure seems to be getting more common year by year.

SCOTTISH TERRITORIAL MEDICAL UNITS.

In his report on the training of the troops under his command during 1912, Lieutenant-General Sir Bruce Hamilton, Commander-in-Chief of the Scottish Command, says of the medical units: The Field Ambulances belonging to the Mounted Brigades and the Highland and Lowland Divisions trained independently. The technical training in these units is excellent, and they are in this respect thoroughly efficient and fit for the duties which would be required of them on mobilization. It is satisfactory to note the excellent effect of the numerous regimental tours and exercises which were held during the individual training season. Officers have now an increased knowledge of general tactics, and they are beginning to be able to adapt themselves to the tactical situation and to handle their units in accordance with its necessities. The General Hospitals trained at Aldershot, Portsmouth, Woolwich, and Shorncliffe have received satisfactory reports.

Universities and Colleges.

UNIVERSITY OF OXFORD.

The following degrees have been conferred:

D.M.—A. H. Hogarth, M. Davidson.

UNIVERSITY OF CAMBRIDGE.

The following degrees have been conferred:

M.D.—J. R. C. Canney, J. W.B. Bean.
M.B.—J. C. John, W. L. Johnson.

UNIVERSITY OF LONDON.

Meeting of the Senate.

A meeting of the Senate was held on October 23rd.

Examiner in Chemistry.

Dr. H. R. Le Sueur, of St. Thomas's Hospital Medical School, was appointed Internal Examiner in Chemistry for the first examination for medical degrees, to be held in December, 1912, and July, 1913, and the second examination for medical degrees, Part I, to be held in March and July, 1913, in place of the late Dr. Wade.

Exemptions in Medicine for External Students.

Section 4 (ii) of the Exemptions in Medicine for External Students (Blue Book, September, 1912, page 211) was amended to read as follows:

> (ii) Registered Medical Practitioners who shall have passed the First Examination for Medical Degrees and the Second Examination for Medical Degrees, Part I, may proceed to the Second Examination for Medical Degrees, Part II, and the Third Examination for Medical Degrees without observing the intervals prescribed by the Regulations, on producing certificates that they have gone through the required course of training at any time previously; provided that candidates entitled to the foregoing exemption whose Matriculation, or exemption therefrom, dates from January in any year, shall not be admissible to the Third Examination for Medical Degrees before May of the next year but one ensuing; and similarly, candidates whose Matriculation, or exemption therefrom, dates from June or September, in any year shall not be admissible to the Third Examination for Medical Degrees before May of the third year ensuing.

Appointments.

Sir Alfred Pearce Gould, K.C.V.O., has been elected Dean of the Faculty of Medicine, and Dr. F. Taylor, Chairman of the Committee of Medical Members of the Senate.

Intercollegiate Courses in Physiology.

The Intercollegiate advanced courses in physiology for the Honours, B.Sc., Examination, arranged by University College, King's College, Bedford College, and the medical schools of St. Bartholomew's Hospital and Guy's Hospital are open without fee only to students of the participating colleges and schools. Students requiring further information regarding the courses should address their inquiries to the heads of the laboratories at which they will be delivered: University College (Professor Starling, F.R.S.), King's College (Professor Halliburton, F.R.S.), Bedford College and St. Bartholomew's Hospital (Dr. Edkins), Guy's Hospital (Dr. Pembrey).

Semon Lectures in Laryngology.

On January 22nd and 24th, 1913, at 5 p.m., two lectures under the Semon Lecture Trust will be delivered at University

College by Dr. Peter McBride, M.D., C.M. The subject of the lectures will be "Sir Felix Semon: his Work and its Influence on Laryngology." The forthcoming lectures will be the first to be delivered under the foundation established in May, 1911, by Sir Felix Semon, K.C.V.O., M.D., who transferred to the University for the foundation of a lectureship and medal in laryngology a sum of money amounting to £1,040, presented to him by the British laryngologists on his retirement from practice. Admission to the lecture will be free, by ticket obtainable from the Secretary of University College, Gower Street, W.C.

Lectures in Microscopy.

A course of six lectures on methods of illumination as applied to microscopy will be given at Charing Cross Hospital Medical School, Chandos Street, W.C., by Mr. J. E. Barnard, F.R.M.S., at 5 p.m. on Thursdays, beginning on November 14th.

M.D. Examination: University Medals.

In connexion with the M.D. examination for internal and external students in July, 1912, the university medal in Branch I (medicine) was awarded to Mr. Theodore S. Lukis, B.S., of St. Bartholomew's Hospital, and that in Branch IV (midwifery and diseases of women) to Mr. George Maxted, B.S., of Guy's Hospital.

UNIVERSITY OF MANCHESTER.

Chair of Pathology.

MR. A. E. BOYCOTT, B.Sc., M.A., M.D., B.Ch., has been appointed to the Chair of Pathology, vacant through the resignation of Professor Lorrain Smith on his appointment to the Chair of Pathology in the University of Edinburgh.

Dr. Boycott was elected to a classical scholarship at Oriel College, Oxford, in 1894. He became Fraser Research Scholar in 1899, graduated in medicine in the University of Oxford in 1902, and proceeded to the degree of M.D. in 1904. In 1903 he was elected a Fellow of Brasenose College in recognition of the researches in pathology carried out by him. Dr. Boycott has had a wide experience of teaching and of hospital work in connexion with pathology. He held the position of Gordon Lecturer in Pathology at Guy's Hospital, and afterwards was for two years on the staff of the Lister Institute of Preventive Medicine; he then returned to Guy's Hospital, being appointed lecturer in pathology there. He is well known for his pathological researches, and notably in the subject of ankylostomiasis in Cornwall, and the prevention of caisson disease.

Obstetrics and Gynaecology.

The following appointments have also been made: Lecturer in Obstetrics and Gynaecology, Mr. W. E. Fothergill, M.D., in addition to Mr. A. W. W. Lea, M.D., who already holds the position of lecturer in these subjects. Assistant Lecturer in the same subjects, Mr. W. Fletcher Shaw, M.D. Mr. W. K. Walls, M.B., M.R.C.S., L.R.C.P., has been appointed Lecturer in Clinical Obstetrics and Gynaecology.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE Honorary Secretary of the Society of Members of the Royal College of Surgeons of England (Dr. Sidney C. Lawrence) informs us that at the annual general meeting of Fellows and Members to be held at the Royal College of Surgeons of England, Lincoln's Inn Fields, W.C., on Thursday, November 21st, at 3 p.m., the following resolutions will be moved on behalf the above Society:

1. Sir Victor Horsley, F.R.C.S.Eng., will move: "That this twenty-eighth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council of the College, which, as now constituted, only represents those Members who also hold the Fellowship; and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation."

2. Dr. W. G. Dickinson (Honorary Secretary of the Society for fifteen years) will move: "That this meeting regrets that the Council has not called a special general meeting of the Fellows and Members to consider the National Insurance Act, 1911."

Medical News.

DR. WILLIAM LESLIE MACKENZIE, medical member of the Local Government Board for Scotland, has been appointed a member of the Royal Commission to Inquire into the Housing of the Industrial Population of Scotland.

AT the meeting of the Royal Meteorological Society at the Surveyors' Institution, Great George Street, Westminster, on Wednesday next, at 7.30 p.m., a paper will be read by Dr. H. R. Mill on the unprecedented East Anglian rainfall of August 26th, 1912.

A DISCUSSION on town planning in relation to the development of the South Yorkshire coalfield will be opened by Dr. A. B. Dunne, M.O.H., Doncaster Rural District, at a provincial sessional meeting of the Royal Sanitary Institute to be held at Doncaster on November 23rd, at 11 a.m.

IN response to an inquiry by the Medical Secretary of the British Medical Association, the publishers of the *Medical Who's Who* state that it is their intention to include in the publication the names of all members of the medical profession who make returns on the form sent. This statement removes the objection to the publication on the ground that it was a limited list.

AT the meeting of the Medico-Legal Society on Tuesday, November 26th, a discussion on legal responsibility in relation to some states of mental weakness will be introduced by Dr. Robert Jones. The meeting will take place at the house of the Medical Society of London, Chandos Street, London, W., at 8.30 p.m.

THE President (Sir Francis Champneys, Bart., M.D.) and the Council and Fellows of the Royal Society of Medicine will be at home to members of the profession at the new house of the society, 1, Wimpole Street, W., on November 27th, 28th, 29th, and 30th, at 8.30 p.m. There will be music and epidiascope and cinematograph demonstrations, and smoking will be allowed.

THE fifty-ninth session of the Royal Society of Arts will be opened on Wednesday evening by Lord Sanderson, Chairman of the Council, who will deliver an address and distribute the medals. On December 4th Mr. A. Zimmermann will describe the manufacture of sugar from wood and its economic importance, and on December 11th Dr. F. Mollwo Perkin will read a paper on synthetic rubber. The Cantor Lectures, to be delivered on December 2nd, 9th, and 16th by Mr. C. R. Darling, will deal with methods of economizing heat.

A MEETING of the Medico-Psychological Association of Great Britain and Ireland will be held at the house of the Medical Society of London, Chandos Street, London, W., on Tuesday, November 26th, under the presidency of Dr. J. G. Soutar. Papers will be read by Dr. Sidney Coupland on death certification and registration and by Drs. David Orr and R. G. Rows on the subacute and acute inflammatory reactions produced in the spinal cord by infection of its lymph stream. The members will dine together at the Café Monico at 7 p.m. on the same day.

ON Friday, November 29th, Professor Metchnikoff of the Pasteur Institute, Paris, will deliver the Lady Priestley Memorial lecture of the National Health Society at the house of the Royal Society of Medicine, 1, Wimpole Street, London, W. The subject of the lecture, which will be delivered in French and illustrated by lantern slides, is the warfare against tubercle. Tickets of admission can be obtained from the secretary of the society, 53, Berners Street, Oxford Street, W.

THE debate on sarcomata and myelomata of long bones, held by the Surgical Section of the Royal Society of Medicine on Tuesday last, will be continued on Tuesday next, November 19th, at 5.30 p.m. On this occasion the debate will be opened by Mr. George E. Gask, who will deal with prognosis, and Mr. Archibald Reid, who will discuss the subject from the *x*-ray point of view. Mr. S. G. Scott, Dr. Ironside Bruce, and others will also speak. We are requested to state that the numerous museum specimens, kindly lent by the various metropolitan museums, will remain on view until the next meeting.

IN place of the former electrical department at St. Bartholomew's Hospital, of which Dr. Lewis Jones was medical officer in charge, with Dr. Hugh Walsham as assistant medical officer, there have been created recently two separate departments. One of these will be devoted entirely to *x*-ray work, and Dr. Walsham was appointed medical officer in charge on October 7th. The second department will be occupied with the electro-therapeutic work, including ionization, diathermy, muscle testing, etc., and Dr. Cumberbatch, formerly chief assistant in the electrical department, has been appointed medical officer in charge. The electro-therapeutic department will remain in its present quarters, while the *x*-ray department will be moved elsewhere when more rooms can be obtained.

AT the meeting held at the Royal United Service Institution on November 13th, to promote the establishment of a suitable memorial to the late Admiral of the Fleet Sir Frederick Richard, a letter was read stating that the King "heartily sympathizes with the proposal, and will have much pleasure in subscribing to a fund for that purpose." Admiral of the Fleet Sir Gerard Noel, who was in the chair, said that Sir Frederick Richard had done more for the navy and his country than any naval man since Nelson. A resolution to institute a memorial was carried unanimously. Mr. Austen Chamberlain, in moving the resolution, suggested that, if the memorial were to be true to the spirit of the man and to reflect his character, it ought, if possible, to take some form which would be of assistance to brother officers of the great service whom in lifetime he delighted to honour and to whom he had left an imperishable example of noble devotion to a great and noble service.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisments, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

EGO asks for advice in the treatment of dilatation of the stomach with excessive free hydrochloric acid.

VERITAS asks for advice in the treatment of a patient, aged 60, who suffers from acute irritation of the prepuce and about one inch inside the urethra after straining at stool or when standing.

CAN ANGLO-SAXONS COLONIZE THE TROPICS?

DR. RICHARD ARTHUR (Parliament House, Sydney) asks for the opinion of those who have had experience of such places as the West Indies, British Guiana, Mauritius, Ceylon, and India as to whether there is any hope of the successful and permanent settlement of British-born or descended people in regions between Cancer and Capricorn. At the present time, he states, the subject of the colonization of the Northern Territory of Australia has come into the realm of practical politics, and there are many in the Commonwealth, including those in authority, who insist that only Anglo-Saxons, or, failing them, Northern Europeans—such as Danes and Swedes—should be encouraged to settle there, especially as the wives and children of the workers will have to remain continuously in the tropics.

INCOME TAX.

D.P.H. has recently been appointed to a more remunerative post after making his income-tax return at the place of his former appointment. He wishes to know whether he is bound to make a new return, and whether he is entitled to deduct removal expenses.

* * The income tax liability in the case of a person holding an office is on the amount of the salary or fees received for the financial year from April 6th (unless the office is merely incidental to the carrying on of a general practice). It will therefore be necessary for our correspondent to make a new return showing his salary from the date of commencement to April 5th, 1913, and he should at the same time point out [illegible] requires any assessment that may have been made at [illegible] address to be amended. Removal expenses are not allowed as a deduction.

ANSWERS.

[illegible]: In reply [illegible] 3rd, p. 284), [illegible] found a [illegible] r, x or xv of [illegible] kept off the [illegible] ment taking [illegible] the other 69. [illegible], germs, [illegible] think [illegible] kept his [illegible] but [illegible] [illegible] [illegible]

A Clinical Study

THE AVENUES OF RHEUMATIC INFECTION:

BASED UPON EXAMINATION OF 75 CASES OF SYDENHAM'S CHOREA.

By WILLIAM P. S. BRANSON, M.D., M.R.C.P.,

ASSISTANT PHYSICIAN, ROYAL FREE HOSPITAL; CHIEF ASSISTANT, DEPARTMENT FOR DISEASES OF CHILDREN, ST. BARTHOLOMEW'S HOSPITAL.

This study was undertaken in order to provide some data (with a view to rational treatment and prophylaxis) concerning the extent of the relation between rheumatic infection on the one hand and infective processes in the nose and throat on the other. The data put forward in it are based upon a personal and *ad hoc* examination of 75 cases of Sydenham's chorea, taken as they came; and no case has been admitted to the series if any doubt was felt as to the diagnosis.

My particular thanks are due, and I offer them, to Dr. Morley Fletcher, from whose service for diseases of children at St. Bartholomew's Hospital most of the patients were drawn, and who has helped me in many ways; also to Dr. A. E. Gow and Dr. E. A. Cockayne, Casualty Physicians to that hospital, who have been most kind in giving me access to a number of cases.

The Gravity of Rheumatic Infection.

The rheumatic affections, subacute rheumatism and chorea, constitute a graver menace to middle and later childhood than any other single disease process. Elmslie[1] has shown that more than half the deaths among children at the London County Council schools for the physically defective are due to heart disease; and it appears that some 86 per cent. of the cardiac anomalies to be met with at those schools are acquired affections.[2] Moreover, the *post-mortem* records of a children's hospital have shown[3] that more children between the ages of 8 and 15 years die from heart disease than from any other single cause, not excepting tuberculosis. It must be accepted that rheumatic infection stands to middle and later childhood in a threatening relation not unlike that of epidemic diarrhœa and tuberculosis towards the first three years of life; and this merely on the score of present fatality. Yet no one needs to be reminded how small a part of the indictment against rheumatic infection is comprehended by its present fatality: nor how many are the victims of it who survive a childhood of intermittent invalidism with no other prospect than that of a brief and crippled maturity spent under the shadow of recurring failure of the heart. It would be difficult to exaggerate the mischief brought about by this infection.

The Present Position.

The extent of these depredations measures the extent of therapeutic failure; and it is a sense of the greatness of the failure which has prompted this attempt to collect some facts in order to clear the ground. For the present position of our efforts to combat rheumatic infection is unsatisfactory and anomalous. I submit that the sparring of bacteriologists as to the precise identity of the rheumatic agent has preoccupied clinicians to an undue extent. No serious person, I imagine, doubts any longer that the agent is a micro-organism of some kind; and if this be admitted, precise identification of it becomes a matter of secondary consequence. At all events, clinicians need not wait for this consummation before applying the common rule of conduct in the presence of infections—namely, to detect the avenue of infection, if possible, and by means of local treatment at the earliest moment to limit the mischief and obstruct its recurrence.

How do we stand as regards the detection of the avenue or avenues of rheumatic infection? I know of a good many physicians and surgeons who hold and teach that the tonsils are a common port of entry; the literature abounds with references to tonsillitis as a frequent manifestation of rheumatism, and with hints that in the tonsil we may have the starting-point of the infection. One might expect the treatment of the tonsil to bulk large in the advice of our authoritative writers on rheumatic affections. Yet, with the single exception of Dr. Poynton,[4] I have not met one writer in any of our leading textbooks on medicine who makes serious reference to the treatment of the pharynx. Written allusions to the importance of treating the naso-pharynx seem to be rare in medical literature generally; but of course they exist. Senator[5] has written of the etiological relation between the nose and rheumatic arthritis. Menier[6] has recorded "a case of chorea minor cured by the removal of adenoid vegetations." De Ponthière[7] speaks of "the naso-pharyngeal origin of chorea." Turner and Stewart[8] speak of hypertrophied tonsils as favouring relapse of chorea. And no doubt there are others. But it is a fact that there is no popular recognition of what so many individuals hold to be true—namely, that the infection of rheumatism gains access in a large majority of instances by way of the nose or pharynx. It seemed to me, therefore, that a collection of some facts might help to popularize this view, the acceptance of which, in my judgement, is of the greatest moment.

The Choice of Chorea for Investigation.

The origin of this investigation (if I may be permitted a brief retrospect which is not without relevance) was as follows: Some years ago, while conducting a routine examination of a school of some 500 girls for the London County Council, I met with 13 examples of acquired heart disease hitherto unsuspected. When the statistics came to be tabulated it appeared that I, having at the time no theory to establish, had recommended no fewer than 10 of the 13 for operative treatment on account of nasal obstruction or tonsillar hypertrophy. My attention was naturally engaged by the circumstance, and I set about collecting data concerning the relation of rheumatic affections to nasal and pharyngeal anomalies. But here arose the difficulty that, owing to the vagueness of articular manifestations in the rheumatism of childhood, it was frequently difficult to feel confident of the diagnosis. Moreover, even if the relation were as close as seemed likely to be the case, there was little hope of establishing the thing as a fact unless it were possible to examine a series of patients within a short interval from the beginning of symptoms; for manifestations seemingly so trivial as nasal catarrh and sore throat do not live long in the recollection, particularly of parents of the hospital class. This early examination proved to be unattainable, since the invasion of juvenile rheumatism is commonly so insidious that it is usual for weeks, and often months, to have elapsed between the commencement of symptoms and the bringing of the patient for treatment. I therefore turned to chorea as being a symptom more easily diagnosed with confidence, and one which might be expected to bring the patient before the doctor while the lesion giving entry to the infection was still in progress, or at all events in time to secure a record of such catarrhal or inflammatory antecedents as might have heralded the appearance of movements.

Relations of Chorea and Rheumatism.

It may be objected that Sydenham's chorea has not been proved to be a rheumatic manifestation. Undoubtedly, until the bacteriology of the two affections has been established demonstration must be lacking. But I think the circumstantial evidence no longer admits of reasonable doubt that the two are but different signals of one disease process. Every one admits that the relation is a close one, and some[9] have long since declared for the unity of them. I myself had doubts before this inquiry, but they have been dissipated completely by the following considerations.

I.

The proportion of choreic children exhibiting, or having in the past exhibited, articular manifestations is put by various authors at figures ranging from 26 per cent. to 56 per cent.[10] This high proportion, whichever extreme be taken, seems to admit of two solutions only. Either the diseases depend upon the same infection, or they depend upon two infections which, though distinct, are yet mutually favourable each to the other. Now, if the two were essentially independent, one would expect to see with great frequency pure cases of chorea free from borrowed rheumatic symptoms. As a fact, if inquiry be made, it is

relatively exceptional to meet cases of chorea lacking a well-defined history of pains in the limbs or joints. In the present series the results were as follows:

Reliable information in 67 cases.	
History of rheumatic fever or pains ...	71.5 per cent.
Doubtful history of pains	7.4 ,,
No pains...	20.8 ,,

Dr. M. Fraser's series of 300 cases at the Children's Hospital, Paddington Green,[1] is not dissimilar in effect.

Previous joint rheumatism	50 per cent.
Concurrent rheumatic fever or heart murmur	27 ,,
Total	77 ,,

Therefore, unless it be assumed that heart affections and pains in the limbs or joints are regular symptoms of pure chorea, or that chorea and rheumatism, though independent diseases, are yet incapable of appearing apart in more than from 20 to 30 per cent. of instances, one must conclude that the two are but varied manifestations of the same disorder. And of these three hypotheses the last is certainly the easiest to accommodate.

II.

If rheumatism and chorea be due to the same infection one might expect them to manifest the same seasonal characteristics. As a matter of fact, their seasonal prevalence is not identical. The data available for estimating the monthly incidence of chorea in this country are limited, I believe, to the charts given by Dr. Morley Fletcher, which relate to 574 cases only. Although these figures have not sufficed to produce an even curve, they show the tendency of chorea to become prevalent somewhat later in the year than does rheumatic fever. (See Chart.)

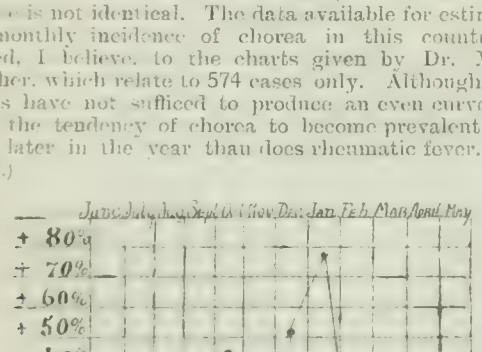


Chart showing incidence of rheumatic fever and chorea in [illegible] of mean monthly value. Dated from [illegible] Chorea; 574 cases, adapted from [illegible] *Great Ormond Street Hospital Reports*, vol. xxxii, p. [illegible] 1,958 cases, adapted from Phillips, [illegible] vol. ii, part i, p. 630.

This discrepancy is susceptible of a simple and adequate explanation. Those who have examined carefully a number of cases of chorea will agree that there are commonly, if not always, two stages in the development of choreic movement. The first is a stage of potential (or, as Dr. Miller calls it, latent) chorea; the second the stage of frank movement. This prechoreic phase may endure for many weeks. It is marked by emotional irritability and fretfulness always; sometimes by obvious change in disposition; often by headaches and intellectual dullness; and is a pronounced and constant feature when it is looked for. It must be regarded as the index of some subtle factor at work upon the central nervous system. Given a nervous system thus disequilibrated the moment of emergence of choreic movements becomes a matter partly of temperament, partly of chance; or, rather, a matter of the interaction between temperament and chance. For in such circumstances the most trifling emotional stress assumes a power of disturbance out of all proportion with [illegible] and the more temperamentally unstable the child is the lower is the limit of psychical stimulation competent to convert potential into active chorea. It is legitimate to speak in this dogmatic fashion, for the evidence that psychical shock is an exciting cause of choreic movements is altogether too strong to be overlooked or credited to coincidence. Making allowances for the forgetfulness of the youthful patients and for the transiency (as far as overt manifestations go) of emotional outbreaks in early life be they never so violent while they last, and making allowances also for the necessarily partial knowledge of parents in this particular, it is surprising how often a plausible story of precedent shock or abnormal excitement is forthcoming. In this series it was obtained in 41 per cent. of the cases offering reliable information on the subject. Further, the reality of this psychical relation is confirmed by the efficacy of isolation in abating the movements of choreic children who have failed to respond to mere rest in bed.

If it be admitted that emotion can, and does frequently, act as an exciting cause of choreic movement, we arrive at the following intelligible, and I think satisfying, conception of chorea. Just as the poison alcohol, or the tubercle bacillus, acts upon different susceptible individuals in different ways, attacking this tissue in one subject and that in another, so does the rheumatic infection exercise a selective action upon the tissues of those susceptible to it, venting itself mainly or wholly upon arthritic structures sometimes, sometimes upon fibro-tendinous tissues predominantly, sometimes upon the nervous system or parts of it. The subtle factor mentioned above as being responsible for the cerebral manifestations of the pre-choreic period is the infection of rheumatism (or its diffusible poison, as seems to me more likely) acting upon a specifically predisposed nervous system. It is only when the nervous system has been thus suitably prepared that the emergence of choreic movements becomes possible. Whether they will appear at all, and, if so, the moment of their appearance, are matters to be resolved by the chance incidence or absence of emotional stresses.

If the existence of a pre-choreic period be admitted—a period, that is to say, during which the rheumatic poison is slowly undermining the stability of the central nervous system—then the postponed prevalence of chorea as opposed to rheumatism becomes a witness for, rather than against, the essential unity of the two.

III.

The frequent occurrence of rheumatism and chorea in the same individual at the same time; their frequent appearance in the same individual at different times; their mutual interchangeability among the various members of a rheumatic or choreic stock; their common liability to be complicated by heart affections of identical and unique character: all these clinical commonplaces combine to supply a weight of circumstantial evidence for unity which is almost irresistible.

Pathology of Chorea.

The scanty of the material at my disposal has left me as completely convinced as anything short of actual demonstration can do that chorea is nothing more than a symptom led up to by the action of the rheumatic poison upon nervous tissues of an emotional, that is to say feminine, type. This conception agrees well with all the facts known to me concerning chorea, with one possible exception: I mean the undoubted fact that chorea is of more frequent occurrence among the poorer classes than among the well-to-do—a circumstance at first sight contrary to expectation. Yet it does not, I think, vitiate the conception. For the minor degrees of loss of health which are comprehended by the prechoreic phase, though they may fail to attract the attention of a hard worked mother in the labouring class will not pass unnoticed in the case of children more favourably situated; with the result that whereas the prechoreic child of poor parents continues to be exposed daily to the efficient determining causes of choreic movement, the other is daily sheltered from them, and thus escapes more often than her poorer sister the final term in the series they have so far shared.

I think I cannot do better than conclude this section of the subject by citing a most suggestive history as regards this issue.

A man who has had rheumatic fever himself on three occasions has two daughters, aged 8 and 12 years respectively. The younger exhibits well marked chorea and complains of pains

...ints, but is free from lesions of the heart. The elder complains of generalized articular pain and stiff neck, and has organic valvular disease of the heart, but is free from movements. Their history is as follows: Three months ago the younger girl developed a bad sore throat (severe enough to lead to the fear that it meant diphtheria), and movements one week later. She is described as very excitable, and is said to have had rheumatic fever at 3 years of age and chorea at 6. Two weeks after the onset of sore throat in the younger child the elder was similarly affected, and within a few days was attacked by articular pains and general stiffness but remained free from movements. This girl is described as being much less excitable than her sister. She has had two previous attacks of rheumatism, in her sixth and seventh years, but has never suffered from chorea.

On all these grounds I submit that the unity, as regards identity of the infection, of chorea and rheumatism is established beyond reasonable doubt, and that the following data concerning the naso-pharyngeal history and condition, though drawn from choreic patients, are applicable to the rheumatic infection generally, at all events during childhood.

General Considerations Relative to Paths of Infection.

Although it is probably true that an infecting agent can, on occasion, traverse an intact mucous membrane and subsequently excite a constitutional infection, it is nevertheless certain that in a vast majority of instances a local inflammation or breach of surface is a necessary intermediary. Sometimes the local lesion is pronounced, as happens with measles and scarlet fever; sometimes it is apparently trivial, as may happen with pyogenic infections and syphilis. But it exists wellnigh always. Now when we find, in the case of a common infective malady, that an immense amount of clinical observation has left the path of infection still obscure, we may be pretty certain either that the portal is some unobservable portion of the alimentary canal, or that entry occurs elsewhere under cover of some frequent and intrinsically insignificant phenomenon which has masked the more important mischief-maker. This statement has been proved to be true of malaria and the insect-borne diseases generally, and probably has a wide application. Under the circumstances which exist in this country, therefore, we are entitled *a priori* to suspect that the rheumatic infection gains an entry under cover of some common lesion of a mucous surface, and experience tells us that a sore throat is a frequent precursor of rheumatic fever. So both reason and observation make out a *prima facie* case in favour of the main thesis I am urging.

Naso-pharyngeal Data.

A. Of the 75 children, 21.2 per cent. had already been operated upon, at some time prior to the current attack of chorea, for the relief of "tonsils and adenoids." I am unable to say what proportion of ordinary school children of corresponding age and sex and class have undergone this operation. The medical officer to the Board of Education has stated, on the basis of five million examinations, that 8 per cent. of school children require it.[1] While I am confident that this is far too low an estimate, for London at least, and do not feel disposed to press the significance of this considerable proportion of previous operations among choreic children, I think the fact may be taken as unbiassed evidence that naso-pharyngeal anomalies of a pronounced kind are common among them. This evidence gains weight when one reflects how many children of this class escape operative treatment through the carelessness of their parents, however urgent be the call for it; and that if the operation has actually been performed in 21.2 per cent. of the cases one may look to find lesions calling for operation in a much larger proportion.

B. As regards nasal and pharyngeal inflammations of consequence, the following items were accepted as evidence:

1. Enlargement of the tonsils or tonsillar lymphatic glands in the neck,
2. Obvious mouth-breathing.
3. Excoriation of the nostrils, or pus in the nasal passages.

One or other of these manifestations existed in 88 per cent. of the cases, and often several of them together.

There is no standard available for strict comparison with this finding. Macleod Yearsley found,[11] as a result of 1,246 examinations, that enlarged tonsils or adenoids were present in 42.9 per cent. of school children, and this is the highest estimate I have met with.

The details making up the 88 per cent. are as follows:

1. Tonsils enlarged, including those previously operated upon	... ...	62 per cent.
2. Tonsillar glands enlarged	... ...	65 ,,
3. Existing inflammation of nasal passages (53 cases —		
(*a*) Soreness or excoriation of anterior nares	... ...	11
(*b*) Pus in anterior nares	... ...	10
(*c*) Muco-pus streaming from naso-pharynx	... ...	6
Total	... ...	50 per cent.

I submit that on this evidence one is entitled to say that the active phase of the rheumatic infection is fairly consistently attended by inflammatory lesions about the naso-pharynx, whether there be a causal relationship between the two or not.

Inquiries as to this relationship yielded the following results.

A satisfactory antecedent history was forthcoming with respect to 52 attacks, 46 belonging properly to this series and 6 being previous attacks sustained by members of the series. Among these 52 there was a definite history of a closely precedent acute lesion of the nose or throat in 39, or 75 per cent. The details are as follows:

Closely precedent	sore throat	... ...	16
,,	,, sore nose or nasal catarrh	... ...	12
,,	,, operation on tonsils	... ...	2
,,	,, scarlet fever	before this attack 1 before previous attacks ... 5	6
,,	,, diphtheria	before this attack 1 before previous attacks ... 1	2
,,	,, measles	... ...	1

It appears, therefore, that in a high proportion of instances with regard to which information is forthcoming, inquiry will elicit a history of closely precedent nasal or pharyngeal inflammation, sore throat being the commonest lesion, with some acute nasal affection as a good second.

Some Incidental Matters of Importance.

Firstly, it has been a frequent experience in the course of the collection of these data to find a blank denial given to the question as to precedent throat trouble, and yet to find on examination tonsils sometimes of enormous size. This suggests that historical evidence underestimates heavily the frequency of precedent throat affections sufficient in themselves to account for the entry of an infection by way of the tonsils, and also that the tonsillar inflammations productive of chronic hypertrophy are not necessarily painful to any great degree.

Secondly, excoriation of the anterior nares, often attended by scab formation on the inner aspect of them, is a fairly common event in chorea. My attention was not attracted to it until the series had advanced some distance, but when it was looked for it was found with tolerable frequency. Straton,[14] in 1885, called attention to this conjunction, but I have found no later mention of it. He says that chorea in early life is characterized first by sores in the nostril or pharynx, malaise, blunted intellect, vague pains and swellings of the joints, some degree of paresis, and finally, disorderly movement. He instances three children attending the same school. One little girl had a sore nose, became stupid, developed a cardiac murmur and tender metatarsal joints, and finally chorea. Shortly afterwards another little girl exhibited precisely the same course of symptoms, ending in chorea. Presently the brother of the second child developed a sore nose, with a fissure at the anterior margin of the nares, and became more stupid than his sister, but never exhibited any movements. The choreic sequence, that is to say, was arrested in his case in the prechoreic phase. I believe this lesion is an important and not uncommon one, and has a definite relation to the entry of the rheumatic infection.

Thirdly: Authorities upon scarlet fever hold that chorea is a very rare sequel of this affection. Caiger[15] does not mention it. Priestley[16] puts the figure at 0.2 per cent., which gives a frequency for chorea among scarlet fever patients less, according to Osler,[17] than that observed among patients at a general hospital. The matter is vital to my argument; for if it be the fact that chorea seldom follows scarlet fever, while rheumatism is known to do so

with moderate frequency, the fact would be almost conclusive evidence against the essential unity of chorea and rheumatism. In the present series only one of the current attacks could be brought into relation with immediately precedent scarlet fever. But there were five others, recurrent attacks, with regard to which it was convincingly stated that the first or (in one case) second bouts of chorea had followed close in the wake of scarlet fever. Fourteen of the 75 children had suffered from scarlet fever, and of them no less than 6 had developed chorea shortly after their return from the fever hospital. The discrepancy between these figures and those of the fever hospitals is explained by a consideration of the history of the only attack in the series which was closely associated with scarlet fever. The child returned from the fever hospital and was kept at home for three weeks, during which she exhibited no movements. She was then sent back to school, and the very next day was observed to be jerking herself about. It seems clear that the ordered placidity of a fever hospital exercised in her case, and presumably in the others, a sedative influence upon a nervous system already in a state of potential chorea, and that the withdrawal of this steadying influence combined with exposure to the chances of everyday life admitted the determining factor, emotional stress, which in the case of the child under discussion was provided by her first visit to school since her illness. There is no other assumption than this which will account for the otherwise singular fact that chorea should be actually rarer in a fever hospital than among the common run of hospital patients; but the fact chimes well with the conception of chorea given above.

Fourthly. It is quite certain that amputation of the tonsils is ineffectual for any other purpose than the removal of a physical obstruction in the airway. The tonsillar remains or tonsillar lymphatic glands were still enlarged in all but 3 of the 16 children previously operated upon, and of those 3, 1 had been treated by enucleation.

Conclusions.

1. That Sydenham's chorea and rheumatic fever are due to one and the same infecting agent.

2. That the action of the rheumatic poison upon a specifically predisposed central nervous system produces a characteristic nervous instability which may precede the appearance of choreic movements by some weeks, and may in other cases itself constitute the sole evidence of the choreic tendency, the phase of movements never becoming developed at all.

3. That the emergence of choreic movements is determined by emotional stimuli acting upon a central nervous system thus previously disequilibrated.

4. That the commonest avenue of rheumatic infection is the tonsil, and next to it the nose.

5. That the first essential of rational treatment of rheumatic infection is restoration of the upper air passages to a healthy condition.

6. That irrigation and thorough cleansing of the nasal passages, combined with antiseptic treatment of the nose and pharynx, should be a routine item of antirheumatic treatment; and that the operation of enucleation should be performed without delay upon all rheumatic children who exhibit chronic enlargement of the tonsils or of the tonsillar lymphatic glands.

7. That chorea is a common sequel of scarlet fever, but that the appearance of movements is usually postponed until the patient has left the fever hospital.

Statistical Table.

Total number of cases		75
Proportion of girls to boys		5.25 to 1
		10 years
of rheumatic fever or chorea		
nother	6	
nother	9	
	8	
		23 (34.3%)
r aunt	15	
family history		38 (56.7%)
Colour		
	16	
	27	
		42
Brown	8	
Dark	9	
Immediately precedent shock (51 cases)—		
Plausible history present in		41 %
Condition of heart (75 cases)—		
Normal in		30 (40%)
Organic disease in		25 (33.3%)
Doubtful murmurs in		20 (26.6%)
Relation to scarlet fever (67 cases)—		
No previous scarlet fever	53	
Previous scarlet fever	14	
No chorea or rheumatism as direct sequel	6	
Chorea as direct sequel	6	
Rheumatism as direct sequel	2	
Enlarged movable lymphatic glands along lower border of mandible, unexplained by condition of teeth or gums, in	4	
Present condition with regard to tonsils and tonsillar glands of 15 cases previously operated upon by amputation—		
Tonsillar glands enlarged	13	
Remnants of tonsil enlarged	7	
Tonsillar region healthy	2	

Table showing Age at Onset of First Attack of Chorea (70 Cases).

First attack occurred at—

4 years of age in	2 cases.	11 years of age in	6 cases.
5 ,, ,,	4 ,,	12 ,, ,,	6 ,,
6 ,, ,,	9 ,,	13 ,, ,,	3 ,,
7 ,, ,,	12 ,,	14 ,, ,,	2 ,,
8 ,, ,,	9 ,,	15 ,, ,,	1 case
9 ,, ,,	9 ,,	16 ,, ,,	1 ,,
10 ,, ,,	6 ,,		

Table of Recurrences (73 Cases).

The current attack was the first in	38 cases.
,, second in	21 ,,
,, third in	11 ,,
,, fourth in	3 ,,
,, fifth in	5 ,,

Percentage of recurrences = 54.7.

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A POSSIBLE TEST IN THE DIFFERENTIATION BETWEEN HUMAN AND BOVINE TYPES OF THE TUBERCLE BACILLUS.

BY

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THE most reliable test which we possess in the process of differentiation between human and bovine tubercle bacilli is the inoculation of certain animals (most commonly the rabbit or the calf) with a small known quantity* of the organism under investigation. If the infection results in a rapid dissemination of the disease and the speedy death of the animal, it may be affirmed that the bovine bacillus is the organism present.

* The exact amount varies in the case of the rabbit; 0.01 mg. of the dried bacilli is the most suitable quantity (Royal Commission Report).

it, on the other hand, the resulting lesions are few and tending to be retrogressive, and death ensues after a very considerable interval of time, or from some intercurrent disease, the infection may be classified as human.

The inoculation is made intravenously, and the dissemination of the disease is a general one. When the inoculation is made locally, there results a localized development of tubercle, and the degree of local reaction varies according to whether the human or the bovine bacillus has been the causative factor.

A distinction can be drawn between human and bovine bacilli by the local reaction, as well as by the general reaction produced in these animals.

The difficulty lies in appreciating the degree of local reaction. In subcutaneous or intramuscular injection finer distinctions are impossible. It is necessary to make use of some structure in which the changes are distinct and definite. I have found that the ideal situation in which to demonstrate such is the synovial membrane, and more especially the synovial membrane of the knee-joint of the rabbit.

By the degree of reaction, clinical and pathological, consequent upon inoculation of the joint with a small quantity of bacillary emulsion one can differentiate between the human and the bovine types of tubercle bacilli.

Technique.

Rabbits were employed in the various experiments. The test is best demonstrated when an emulsion of the bacilli is injected into the part, but it may be carried out with pus or other pathogenic fluid; it is essential, however, that no mixed infection be present.

I have chosen the knee-joint as being the most convenient and accessible. Admission to the interior of the joint is gained by strongly flexing the joint and inserting the needle by the side of the ligamentum patellae.

It is not necessary to weigh out any exact amount. I make up a thin emulsion, and inject 1 c.cm. It is difficult to define the standard of the emulsion, but it is usually of such a density that one can read through it the leader type of a newspaper.

The sequelae are distinct. If the human bacillus is introduced, there are few resulting changes: the synovial membrane becomes slightly thickened, and there is some excess of fluid in the joint—there is no degree of stiffness and no joint pain; the animal continues to put on weight or remains constant.

If the joint is examined three or four months later, there is found to be a chronic synovial tubercle. It is rare to find any degree of disease in the bones or articular cartilages or throughout the body.

When, on the other hand, the bovine bacillus is injected, the changes are rapid and acute. About ten days after inoculation the animal becomes cripple, the joint becomes swollen and painful, the limb takes up a permanently flexed position; there is a progressive and continuous loss of weight. Examination of the joint three to four weeks after inoculation shows the presence of acute synovial tubercle; the interior of the joint is full of caseous débris, the articular cartilages are eroded; there are foci in the neighbouring bones and throughout the body; the lungs, spleen, and kidneys are diseased. Nothing could be more striking than the distinction clinically and pathologically.

In the following table the results of fifteen applications of the test will be found. In twelve of these, strains of bacilli isolated from bone and joint tuberculosis were employed. These strains had been fully investigated by me, and the details will be found in a paper published in the current volume of the *Journal of Experimental Medicine*. In the remaining three cases pus from clinically tuberculous lesions was employed.

Summary of Experiments.

No.	Animal.	Date of Inoculation.	Date of Examination.	Clinical Condition.	Post-mortem Examination.	Result.	Control Experiment.
1	Rabbit; weight 2,100 grams	February 10th	May 15th; 3 months later	Some thickening of joints; no limping or pain	Chronic synovial tubercle	Human	Human.
2	Rabbit; weight 1,890 grams	February 10th	May 20th; 3 months later	Thickening of joint; no pain	Chronic synovial tubercle	Human	Human.
3	Rabbit; weight 2,000 grams	February 10th	June 10th; 4 months later	Slight hydrops of infected joint	Chronic synovial tubercle	Human	Human.
4	Rabbit; weight 1,980 grams	February 14th	March 11th; 1 month later	Joint swollen, painful; animal cripple	Acute tubercle: joint full of caseous débris	Bovine	Bovine.
5	Rabbit; weight 1,750 grams	February 15th	February 25th; 10 days later	Joint distended with fluid; animal cripple	Acute synovial tubercle; joint full of caseous débris; general tuberculosis	Bovine	Bovine.
6	Rabbit; weight 1,800 grams	February 15th	March 8th; 21 days later	Joint distended; knee flexed and painful; losing weight	Acute synovial tubercle; caseous material in joint; general tuberculosis	Bovine	Bovine.
7	Rabbit; weight 2,100 grams	February 17th	March 10th; 20 days later	Acute change in joint; losing weight	Acute synovial tubercle; tubercle in lung and spleen	Bovine	Bovine.
8	Rabbit; weight 1,900 grams	March 8th	August 8th; 5 months later	No change beyond slight synovial thickening	Chronic synovial tubercle; no general tuberculosis	Human	Human.
9	Rabbit; weight 2,200 grams	March 8th	July; 4 months later	No change beyond synovial thickening	Chronic synovial tubercle; no general tuberculosis	Human	Human.
10	Rabbit; weight 1,980 grams	April 8th	April 20th; 12 days later	Evidence of acute arthritis; joint flexed	Acute synovial tubercle	Bovine	Bovine.
11	Rabbit; weight 2,100 grams	April 9th	April 19th; 10 days later	Evidence of acute arthritis; animal cripple; losing weight	Acute synovial tubercle	Bovine	Bovine.
12	Rabbit; weight 2,000 grams	May 3rd	May 26th; 23 days later	Evidence of acute arthritis; animal cripple and losing weight	Acute synovial tubercle; joint full of caseous débris; losing weight	Bovine	Bovine.
13	Rabbit; weight 2,100 grams	May 3rd	May 26th; 23 days later	Evidence of acute arthritis; cripple and losing weight	Acute synovial tubercle; caseous débris in joint; losing weight	Bovine	Bovine.
14	Rabbit; weight 2,000 grams	May 3rd		Thickening of joint; no evidence of acute change; weight constant		Human	Human.
15	Rabbit; weight 1,970 grams	April 9th	May 9th; 1 month later	Evidence of acute arthritis; losing weight	Acute synovial tubercle; general tuberculosis	Bovine	Bovine.

The control experiment quoted above was the intravenous inoculation of the rabbit with 0.01 mg. of the culture.

Advantages of the Test.

1. It may be applied equally readily with bacillary emulsion, with pus or other pathogenic fluid.*

2. The distinctions in the degrees of reaction produced in the joint are absolute.

3. The result of the test is apparent in a comparatively short time; if no acute signs are present three weeks after inoculation the test may be taken as indicating a human infection, and vice versa.

4. The test is specially recommended by its simplicity.

Conclusions.

(*a*) Just as the general reaction of the rabbit to infection by the human or bovine bacillus varies greatly in degree, so does the local reaction.

(*b*) The best situation in which to demonstrate such a local reaction is the synovial membrane of the knee-joint.

(*c*) Infection of the knee-joint of the rabbit with a bovine bacillus produces an intense reaction with acute synovial tuberculosis; infection with the human bacillus results in a chronic synovial thickening.

(*d*) The test is of value as quickly distinguishing between the human and bovine types of the tubercle bacillus.

I have to acknowledge my indebtedness to Dr. James Ritchie, Director of the College of Physicians' Laboratory, Edinburgh, for his guidance and advice; also to the trustees of the McCunn Research Trust and the Carnegie Trust for defraying the expenses of the research.

* The fluid is centrifuged and an emulsion of the deposit injected.

THE SOIL AND THE SEED IN TUBERCULOSIS.

BY

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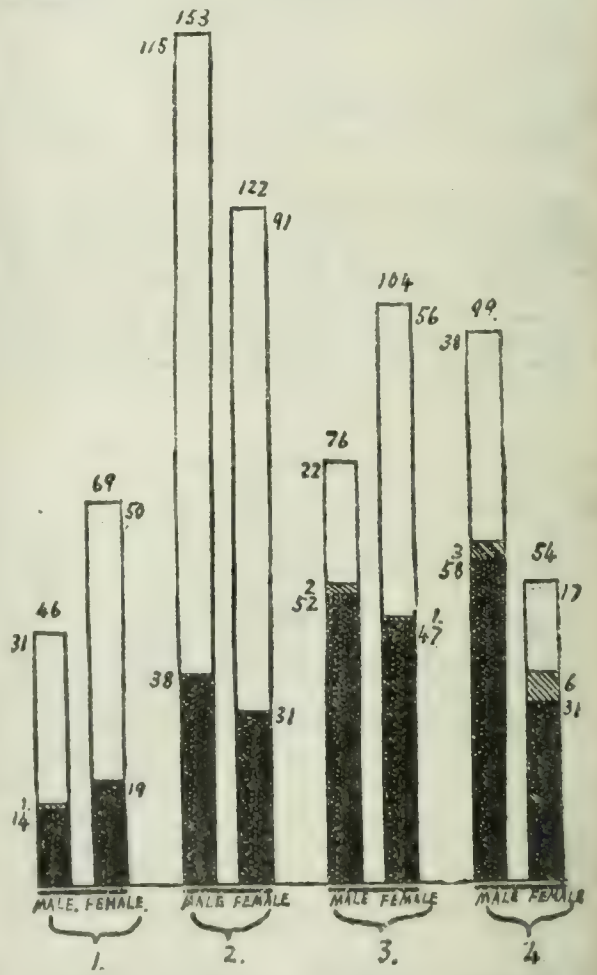
THE battle of the soil and the seed—*hérédité du terrain ou hérédité du grain*—has been waged for a century around tuberculosis. If one accepts congenital tuberculosis as a possible but infrequent occurrence, the issue is then centred upon the existence or non-existence of a direct transmitted predisposition to the disease. Those physical signs regarded as evidence of a tuberculous diathesis in childhood are too well known to require recollection, and have generally been ascribed to a transmitted weakness of tissue as the result of tuberculosis in the parents. To D. J. Hamilton[2] the physical signs of this predisposition were so well marked that he held it to be a true inherited strain of a variation which took place far back in the history of the race. Others have suggested that these physical signs, so far from connoting an inherited predisposition, are the expression of the actual infection of the child after birth. Some years ago, believing in an inherited predisposition, I attempted to controvert this suggestion by a collation of all the myths that had haloed round that blessed word "diathesis."[1]

The practice of a tuberculosis dispensary demonstrated to me that which was first proved by R. W. Philip—that childhood is the age at which tuberculous infection is most frequent. If we admit the frequency of tuberculous infection in childhood, it is certain that the actual presence of so profound a neuro-muscular toxin as the tuberculous toxin will exercise a more powerful influence on the metabolism of the child than the influence of a far-off inherited strain. It is not from that standpoint that the question is approached in this paper, but from a consideration of the amount of tuberculous infection among a "contact" population in relation to the absence or presence of the tubercle bacillus in the expectoration of the original patients.

A diagnosis of early pulmonary tuberculosis is made when the following signs are present: Philip's small glands above the clavicle, diminished tidal expansion on the affected side, rapid tailing off of the resonant area [illegible] clavicle, relative dullness, alteration—usually a [illegible]ening—of the inspiratory murmur on the affected side, *plus* the presence of a positive tuberculin reaction.

From the dispensary during the year ending December, 31st, 1911, the "contacts" (persons living in the same household) of 204 cases of pulmonary tuberculosis were examined. A total of 723 contacts were examined, of whom 420 were found to be healthy, 290 infected with tuberculosis of the lung, and 13 with other forms of the disease. In all 41.9 per cent. of contacts were infected. Of the original patients, some were infectious, having tubercle bacilli in the sputum, while others were non-infectious at the time, since no tubercle bacilli were found. The amount of infection in the contacts showed a marked relationship to exposure to infection. In the families of those in an infectious stage of the disease, the majority (60 per cent.) were infected with tuberculosis. In the families of non-infectious patients, the majority (75.5 per cent.) were healthy. The actual figures are given in the accompanying tables (p. 1435), the original cases being divided into four groups—non-infectious males, non-infectious females, infectious males, and infectious females.

The results are shown graphically in the following diagram:



White portion of columns = actual number found to be healthy.
Shaded portion of columns = actual number found to have tuberculosis.
Black portion of columns = actual number found to have pulmonary tuberculosis.

If we combine certain of these age groups, the amount of infection at different periods of life in relation to exposure or non-exposure to immediate human infection appears as follows:

In Children under the Age of 15 Years.

211 were in relation to non-infectious patients, and 92, or 43.6 per cent., were infected.

161 were in relation to infectious patients, and 120, or 74.5 per cent., were infected.

In Adults between the Ages of 15 and 25 Years.

41 were in relation to non-infectious patients, and 5, or 12.1 per cent., were infected.

63 were in relation to infectious patients, and 42, or 66.6 per cent., were infected.

TABLE I.

Type of Original Case.	Number of Cases.	Number of Contacts.		Number Healthy.		Number found to have Pulmonary Tuberculosis.		Number found Tuberculous	
		Males.	Females.	Males.	Females.	Males.	Females.	Males.	
Non-infectious Males (No tubercle bacilli found)...	32	46	69	31 (67.4 %)	50 (72.4 %)	14 (30.4 %)	19 (27.5 %)	1 (2.1 %)	—
Total		115		81		33		1	
Non-infectious Females (No tubercle bacilli found)	69	153	122	115 (75.1 %)	91 (74.5 %)	38 (24.8 %)	31 (25.4 %)	—	—
Total		275		206		69			
Infectious Males (Tubercle bacilli found)	55	76	104	22 (28.9 %)	56 (53.8 %)	52 (68.4 %)	47 (45.2 %)	2	1
Total		180		78		99			
Infectious Females (Tubercle bacilli found)	48	99	54	38 (38.3 %)	17 (31.4 %)	58 (58.5 %)	31 (57.4 %)	3 (3.0 %)	6 (11.1 %)
Total		153		55		89			
All Types	204	367	256	106 (28.9 %)	214 (83.6 %)	162 (44.1 %)	128 (50.0 %)	6 (1.6 %)	(2.7 %)
Total		723		420		290		15	

In Adults over the Age of 25 Years.

138 were in relation to non-infectious patients, and 6, or 4.3 per cent., were infected.

109 were in relation to infectious patients, and 38, or 34.8 per cent., were infected.

From these figures it would appear that childhood is the age at which tuberculous infection of the lung is most frequent, and that where children are exposed to contagion from their parents the amount of infection is almost double that which exists in children of patients in a non-infectious stage of the disease. Between the ages of 15 and 25 the amount of infection is five times greater in those exposed to immediate human infection than among those not so exposed. Over the age of 25 there is very little tuberculous infection, except in relation to patients in an infectious stage of the disease. Again, while the child is most vulnerable, the danger of exposure to infection diminishes as life advances.

Why 43.6 per cent. of the children of non-infectious consumptives should show signs of tuberculous infection,

TABLE II.—*Showing the Age and Sex Constitution, and Amount of Infection among a Contact Population.*

Age Groups.	Contacts of Non-infectious Males.						Contacts of Non-infectious Females.						Contacts of Infectious Males.						Contacts of Infectious Females.					
	Males.			Females.			Males.			Females.			Males.			Females.			Males.			Females.		
	Healthy.	Pulmonary Tuberculosis.	Tuberculosis.	Healthy.	Pulmonary Tuberculosis.	Tuberculosis.	Healthy.	Pulmonary Tuberculosis.	Tuberculosis.	Healthy.	Pulmonary Tuberculosis.	Tuberculosis.	Healthy.	Pulmonary Tuberculosis.	Tuberculosis.	Healthy.	Pulmonary Tuberculosis.	Tuberculosis.	Healthy.	Pulmonary Tuberculosis.	Tuberculosis.	Healthy.	Pulmonary Tuberculosis.	Tuberculosis.
0-5	6	5	1	10	2		17	10		14	4		7	8	1	8	2	1	3	6	3	4	6	4
5-10	4	7		4	9		15	15		14	15		3	14	1	2	12		3	11		1	13	2
10-15	4	1		4	4		9	10		18	9		1	11		3	5		2	10		4	7	
15-20	3	1		1	1		7	1		6	2		4	6		5	8		3	8		1	4	
20-25				3			7			9			2	5		2	6		3	4		1	1	
25-30	1			6			1	1		2			1	3		3	2		2	2		1		
30-35	1			8			18			7	1		1	2		4	5		2	4				
35-40	4			6	2		16			6						6	3		5	4				
40-45	3			3			11			7			2	3		9	2		4	4		1		
45-50	1						7	1		5						4			4	1		3		
50-55	2			1	1		3			1						3	1		3	1		1		
55-60				1			2			1						1	1		2					
60-65	1			1			2			1						6			2					
65 + ...	1			2									1											
Totals	31	14	1	50	19		115	38		91	31		22	52	2	56	47	1	38	58	3	17	31	6
	46			69			153			122			76			104			99			54		

Grand total = 723.

whether this is the result of infection from other sources, and what is its relationship to the amount of infection in the children of healthy parents, will be the subject of further investigation. The fact here demonstrated is that at all age periods of life it is the infectious consumptive who is the immediate source of by far the largest amount of disease among those living in relation to him.

Influence of Sex in Contacts.

INFECTIOUS PATIENTS.

In Children under the Age of 15.

87 males were exposed to infection, of whom 68, or 80.4 per cent., became infected.
74 females were exposed to infection, of whom 52, or 71.6 per cent., become infected.

In Adults between the Ages of 15 and 25.

45 males were exposed to infection, of whom 35, or 77.7 per cent., became infected.
36 females were exposed to infection, of whom 24, or 66.6 per cent., became infected.

In Adults over the Age of 25.

43 males were exposed to infection, of whom 12, or 27.9 per cent., became infected.
48 females were exposed to infection, of whom 9, or 18.7 per cent., became infected.

According to the English mortality tables from 1881 to 1910, females are less liable than males to succumb to pulmonary tuberculosis under the age of 5, more liable from 5 to 20, and less liable at later ages. In the incidence of infection as determined above, there was no reflection of this, as males appeared to be more liable to infection at all age periods.

NON-INFECTIOUS PATIENTS.

In Children under the Age of 15.

104 males were not exposed to infection, of whom 49, or 47.1 per cent., became infected.
107 females were not exposed to infection, of whom 43, or 40.1 per cent., became infected.

In Adults between the Ages of 15 and 25.

19 males were not exposed to infection, of whom 2, or 10.5 per cent., became infected.
22 females were not exposed to infection, of whom 3, or 13.6 per cent., became infected.

In Adults over the Age of 25.

76 males were not exposed to infection, of whom 2, or 2.6 per cent., became infected.
62 females were not exposed to infection, of whom 4, or 6.4 per cent., became infected.

It is of considerable interest to compare these percentages with certain figures published by J. Edward Squire in 1895 in *The Influence of Heredity in Phthisis.* In the 1,000 families investigated there were 275 in which neither of the parents were phthisical, and in which 24.87 per cent. of the children became phthisical. In my 101 cases of non-infectious tuberculous patients shown above, 26.4 per cent. of the children and contacts developed pulmonary tuberculosis.

Sex of Patients in Relation to Infection of the Contacts.

INFECTIOUS PATIENTS.

Children under the Age of 15 Years.

79 were in relation to infectious males, and 55, or 69.6 per cent., were infected.
82 were in relation to infectious females, and 65, or 79.2 per cent., were infected.

Adults between the Ages of 15 and 25.

38 were in relation to infectious males, and 25, or 65.7 per cent., were infected.
25 were in relation to infectious females, and 17, or 68 per cent., were infected.

Adults over the Age of 25.

63 were in relation to infectious males, and 22, or 34.9 per cent., were infected.
46 were in relation to infectious females, and 16, or 34.7 per cent., were infected.

Under the age of 15 the amount of disease in the contacts is distinctly greater among those in relation to infectious females than among those in relation to infectious males. The difference is still perceptible between the ages of 15 and 25, but over that age it disappears. This points to the quantity of infection as having a direct influence in the causation of the disease among the contacts, for children are likely to receive a more massive dose of infection from the female parent than from the male.

NON-INFECTIOUS PATIENTS.

Children under the Age of 15 Years.

61 were in relation to non-infectious males, and 29, or 47.5 per cent., were infected.
150 were in relation to non-infectious females, and 63, or 42 per cent., were infected.

Adults between the Ages of 15 and 25.

9 were in relation to non-infectious males, and 2, or 22.2 per cent., were infected.
32 were in relation to non-infectious females, and 3, or 9.3 per cent., were infected.

Adults over the Age of 25.

45 were in relation to non-infectious males, and 3, or 6.6 per cent., were infected.
95 were in relation to non-infectious females, and 3, or 3.2 per cent., were infected.

There are three factors, on one, two, or all of which successful inoculation with tuberculosis may depend. From experiments on animals we have a right to assume that the amount of infection has a definite bearing on the fact as to whether or not the infected organism develops tuberculosis. In susceptible animals of the same species a massive dose will be followed by development of the disease, where a smaller dose has been successfully resisted. Secondly, it will be generally admitted that, given the same amount of infection, a person in a low state of general health is more likely to develop the disease than a person in good health. The third possible factor is heredity, it having been held that there is a transmitted predisposition to tuberculosis, whereby under equal conditions of infection the children of tuberculous parents are more liable to develop tuberculosis than the children of healthy parents.

It is known that, while some 60 per cent. of the total population has been infected with tuberculosis, a less proportion actually develops the disease. That in itself proves nothing. The fact that the disease does not advance in all who are infected may have a relationship to one or more of the three factors—to the amount of infection, to the resistance as represented by the general health of the infected person at the time, or to some hereditary qualities in his make-up.

There is a greater incidence of tuberculosis among children exposed to infection from their parents than among children not so exposed—the children of healthy parents. That in itself does not prove that exposure to infection is the determining cause, for it does not eliminate the factors of general health and heredity. It is a fair query to ask, "Would the amount of infection required to infect the children of tuberculous parents be sufficient to infect the children of healthy parents?" To answer this question it would be necessary to have the children of both classes of parents exposed to the same conditions of infection. This does not occur under actual conditions of life, but let us grant it. Suppose that the same amount of infection was sufficient to infect the children of tuberculous and of healthy parents. In that case heredity would be eliminated, and infection alone would remain as the determining element. Suppose that the dose of infection sufficient to successfully inoculate the children of tuberculous parents were not sufficient to inoculate the children of healthy parents. That is no proof that the immunity of the latter is due to the absence of a transmitted predisposition present in the former, for there is still the factor of a possible difference in the state of their general health.

It is a complex equation, but is yet capable of solution, provided we are able to prove that susceptibility or immunity to an equal amount of infection is associated with the presence or absence of some factor which is not hereditary.

When we apply the above test as between the children of infectious tuberculous parents and the children of non-infectious tuberculous parents, the issue rapidly clears. Both these groups are the children of tuberculous parents, the question of whose infectiousness is simply an incident in the disease, and the heredity of their children in regard to tuberculosis is the same. Let us put the question, "Would the same amount of infection required to infect the children of infectious patients be sufficient to infect the children of non-infectious patients?" Granted it were

possible, which it is not, that each group receive an equal amount of infection. Then if the same amount of infection were to equally infect the children in both groups, it would follow that infection must be the principal determining cause of the disease. Again, if the same amount of infection which infected the children of infectious cases did not infect the children of non-infectious cases, it is clear that this difference in susceptibility would be due to some factor other than transmitted qualities common to both, and other than the amount of infection which we postulated as common to both. There is no alternative but that the greater susceptibility in the children of infectious tuberculous patients would be due to a variation in their general health, as representing a lowered resistance to infection. It is also obvious that this variation in general health in the children is in relationship to the presence or absence of infectious qualities in the parents. That is to say, susceptibility to tuberculous infection is dependent in an equal degree upon the amount of infection and the general health of the infected person, and that in the case of children the general health is lowered as a direct result of the presence of infectiousness, as distinct from the amount of infection, in the parents. Heredity has no place in this equation.

Is this theorem compatible with clinical facts and experience? It has been shown that in two groups of children, whose heredity is the same, there is a larger proportion of tuberculosis among the children of infectious parents than among the children of non-infectious parents. At first sight this might appear to indicate that exposure to infection in this case was the sole determining factor. That is not so, for before we could prove it the factor of general health would require to be common to both groups. It would be essential that the children of both classes of parents should be of the same physique, the same development, should have the same amount of nourishment, and should be in similar circumstances of home life. Such conditions, however, immediately render any comparison impossible. The infectious parent is generally in a more advanced stage of the disease, which has begun to affect the smallest circumstances of his life. He is less fit for work, his employment is intermittent, and his wages are less. The female with advanced disease is less able to look after her house and children. She is often laid up, meals are less regular, and the selection and preparation of food is indifferent. All these *immediate* factors tell on the children. They are poorly nourished and ill covered, so that windows are kept closed for warmth. This alone will lower their resistance to tuberculosis and to any other infectious disease, and render them more susceptible than the children of parents in a non-infectious stage of the disease—the heredity of both groups of children being equal, and the amount of infection being equal.

Conclusions.

1. There is more tuberculosis among the children of consumptives than among the children of healthy parents.
2. This may be due to their exposure to infection, to their lowered general health, or to their heredity.
3. There is more tuberculosis among the children of infectious consumptives than among the children of non-infectious consumptives.
4. This must be due to exposure to infection *plus* lowered general health, inseparable from it as the result of the stage of the disease in the parents.
5. Therefore it is not heredity which determines whether the children of consumptives will develop the disease, but the existence of certain immediate factors which are under our control.

It is not necessary to argue the case further, but it is possible to imagine a last stand being made for the influence of heredity on the following lines: "Granted an equal exposure to infection and an equal lowering of general health, would the children of healthy parents develop the same amount of tuberculosis as the children of consumptives?" If they did, it would prove that heredity had no influence whatsoever. If they did not, it would indicate that the absence of a tuberculous heredity protected them from infection (incidentally simplifying the tuberculosis problem to an extent no one has dreamt of), and that the presence of a tuberculous heredity was the determining cause in the development of tuberculosis among the children of consumptives, which has been proved to be impossible.

Owing to the rapidly increasing number of tuberculosis dispensaries in this country, the data on which these deductions are based may be tested on an unprecedented scale. If they be corroborated, it means that the influence of heredity is disproved once and for all. Of greater import, it will imply that if our present activity against tuberculosis be augmented we may look with confidence to the total eradication of this disease. On the other hand, should it be proved, as has too long been taken for granted, that soil and seed are independent factors, then, even by a direct attack on the seed (by diminishing the sources of the tubercle bacillus), it would be more difficult to completely exterminate the malady so long as the soil remained (as represented by inherited qualities). This is not so. The children of infectious tuberculous patients and of non-infectious tuberculous patients are all the children of consumptives. The difference in their susceptibility to infection is the direct result of the stage of the disease in their parents. What has been termed for a century "soil" is really the result of the pathogenic action of the "seed." Soil and seed are not independent factors, for they are one and the same. If, then, by the co-ordinated Edinburgh system, the disease is controlled at every point, the resistance of the population exposed to infection will also be raised. The truth is this—*that the seed creates the soil.*

References.

[1] Halliday Sutherland, *Edin. Med. Journ.*, 1908. [2] D. J. Hamilton, quoted in ibid.

A NOTE ON RAT-BITE FEVER, WITH REPORT AND TEMPERATURE CHART OF A RECENT CASE.

By ROBERT W. CRUICKSHANK, M.B., C.M.,

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This disease seems so rare in this country, so far as reported cases go, that I think the case described hereafter may be of some interest.

Rat-bite fever, or sokòdu or sokòshio, is a disease, according to Castellani and Chalmers (*Tropical Medicine*), which has been known in Japan, and also in China, for a considerable time and many cases are cited by them, but, so far as I have been able to find, the only cases in this country were three reported by Dr. T. J. Horder[1] (1909–10) and a case in a girl of 3 (1895) by Dr. George S. Middleton (Glasgow).[2] In America several cases have been noted.[3]

In the Epitome of Current Medical Literature (British Medical Journal, August 24th, 1912), a case is quoted by Cesare Frugoni, published originally in the *Berl. klin. Woch.*, February 5th, 1912, which he claims to be the first case occurring in Europe diagnosed clinically and carefully observed. There appear, however, to have been at least two others, one in France and one in Spain.[3]

Diagnosis.

Castellani and Chalmers give the following points:

1. Occurrence of a rat bite.
2. Incubation period of from one to twenty-one days.
3. Periodic form of fever.
4. Negative results of bacteriological culture. (Since then a special parasite, protozoon associated with the neosporidia, has been alleged as the cause. Certain blood changes also noted.)[4]
5. Spontaneous recovery after prolonged duration of disease.

Symptoms.

Three types are described (Miyake):

(*a*) Febrile with a marked eruption.
(*b*) Afebrile with nervous symptoms.
(*c*) Abortive.

The feverish state is accompanied by an eruption of purplish spots. The wound heals during incubation—fever begins abruptly. The site of the bite becomes red and swollen, dropsy may appear, local gangrene is found in some cases. Onset with chilliness, headache, marked weakness, fever, and eruption of dusky-coloured purple spots. Pain may be felt in the abdomen, and diarrhœa may occur. The pulse is rapid and weak, and a feeling of precordial pain and palpitation is complained of. Breathing short; delirium may be present. The disease runs a prolonged course, and recurrences are common at varying intervals.

In one case quoted by Hora[5] there were ten relapses a year for a period of seventeen years.

Case.

J. C., aged 51, a gentleman of stout build, accustomed to outdoor sport, was out with his dog on July 8th, 1911. The dog seized a rat and shook it, but did not quite kill it. J. C. went "to finish it off" and caught hold of the hind legs of the animal, intending to strike its head on the toe of his boot. The rat at this moment turned round and bit the middle finger of his right hand, immediately over the joint between the first and second phalanges on the dorsum. The bite bled a little; the patient sucked the wound well and bathed it, but thought little more of it and it healed up. He noted at the time that the rat seemed to be unhealthy—"mangy." About July 17th or 18th the finger became somewhat red and swollen over the joint, but as the patient was subject to attacks of articular rheumatism, he put the swelling and redness down to this, and did not then associate the condition with the bite. On July 21st (thirteenth day after the bite) he noticed in the centre of the swollen area a bluish coloration, and on the 22nd this had become almost black.

I saw him first on this date. The finger was much swollen (brawny induration), red and tender, extending from the knuckle to the distal end of the second phalanx, the chief point being on the dorsum and over the joint between the first and second phalanges. Here there was a bluish-black spot about the size of a sixpence, the margins of which showed slight vesiculation and the centre appeared to be ulcerating. I was then told of the bite, and looked upon

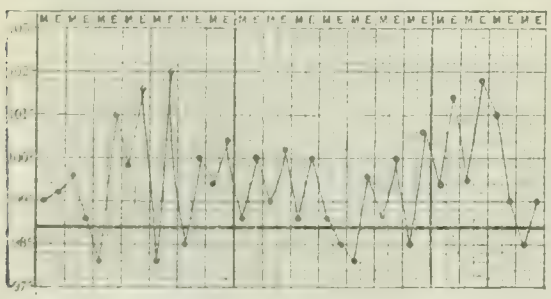


Fig. 1.—Temperature during early fever, twenty-eighth to forty-fourth day (August 5th to August 22nd). Character of temperature lasting four and a half weeks.

the condition as due to some septic infection. It was treated by application of pure carbolic acid, followed by fomentations of lysol lotion.

For the next few days there was little change in appearance but there was a gradual spread of the discoloration and increase in the ulceration. There was no distinct fluctuation to be made out, but the blackish part felt boggy and soft; the cubital and axillary glands were not affected. The temperature was normal and subnormal. On July 27th he was seen by Mr. E. C. Bevers (Oxford) in consultation, and it was decided that the part should be thoroughly opened. This was done under gas, an incision being made on either side of the middle phalanx of the finger down to the bone, and a gauze drain passed through from one end to the other. Absolutely no pus was found, but the tissues were gangrenous and the bone of the middle phalanx was found bared and roughened. The gangrenous process had spread further in the depth than the blackened surface of the skin indicated, and we concluded that if no improvement followed in twenty-four hours the finger should be amputated at the metacarpo-phalangeal joint. Treatment by antiseptic bath and fomentations was continuously used. Purplish spots showed on the forearm and the under side of the upper arm.

The condition next day showed a still further encroachment of gangrene towards the knuckle. The finger was amputated and the wound packed with gauze and left open for free drainage. Next day the hand and forearm were placed in a continuous bath—mercury bichloride 1 in 4,000—for twenty-four hours, and afterwards in warm boric acid solution. This treatment was kept up for seven or eight days. The wound remained clean and healthy and began granulating. The process continued in a quite normal manner, and the wound was completely healed on the sixteenth day after operation. At no time was any pus to be detected.

The temperature remained normal and subnormal until the eighth day after operation. About this time (August 5th, twenty-eighth day after the bite) the patient complained of intense headache, chilliness, nausea, and feeling of general ill-being. He was sleepless, the face flushed, conjunctiva injected, and the temperature and pulse were raised (see charts). The wound appeared quite healthy, but on the forearm were two dusky, purplish spots, irregular in shape, slightly raised, about the size of a sixpence. On the inner side of the upper arm were several other spots of the same character, six or eight in all. The skin between the spots was not discoloured, nor were there any surface inflamed lymphatic channels such as one sees in acute septic conditions of the hand. The lymphatic glands at the elbow and in the axilla were not palpable nor tender to touch. The patient complained of joint pains in the other arm, and on this also a few spots appeared, similar in character and distribution, but not so bright in colour; there was swelling, pain, and larger dusky spots on both ankles also, but this I attributed at the time to articular rheumatism, to which the patient was subject. He also complained of pains in the abdomen. The temperature and pulse gradually rose until August 9th (fifth day), when it reached 102°. On the following morning it fell to 98 with perspirations during the fall; the temperature rose again that night to 100°. During the height of the early attacks sensibility was dulled, with a tendency to mental wandering—"night-

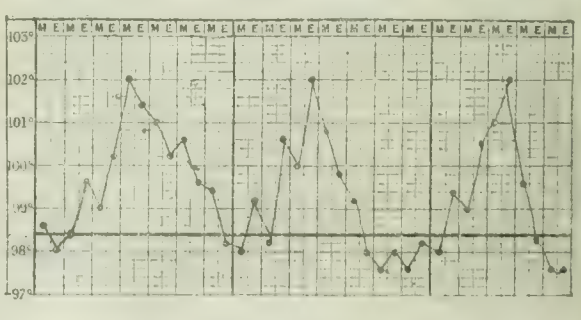


Fig. 2.—Showing the character of the temperature during the later period of fever (from September 15th to October 3rd), and lasting for ten and a half weeks.

mare." The evening temperature for the next four nights reached about 100°, falling a degree or more in the mornings. This was followed by a fall to normal and subnormal for thirty-six hours, then an increasing evening rise for five days, when it ultimately reached 101.8°.

During this higher range the patient's symptoms were again much the same as described during the attack beginning on August 5th. The rash, which had been duller in appearance, again showed up brightly. The range and character of the temperature remained much the same for four and a half weeks, periods of moderate fever rising daily for a few days to an acme of about 102° evening, then falling quickly two or three degrees by next morning. After this, for the next ten and a half weeks, the periodic character of the fever was marked. Onset fairly rapid (two or three days), then highest point; somewhat more rapid fall, then a period of normal and subnormal temperature for about four days.

During the fifteen weeks there were fifteen feverish attacks, all characterized by the same general symptoms. The longest period between the acme of attacks was eleven days, the shortest (the last), which proved to be an abortive attack, was five days. The intermediary attacks showed eight, seven, and six days' intervals.

The patient himself realized the regularity with which his illness and discomfort came, and quite dreaded the Friday, Saturday, and Sunday, and looked forward to the other days of the week.

The disease apparently, in this case, ceased suddenly with an abortive attack about the fifteenth week. The temperature was recorded for a month longer and was normal or subnormal.

During the illness the pulse-rate fluctuated with the

temperature, and towards the end of the illness the heart showed distinct signs of weakness, the first sound becoming faint and signs of dilatation being present. The patient became much thinner and lost over 14 lb. in weight. The bowels throughout were constipated; there was no enlargement of liver or spleen. Urine showed no albumen but often deposit of urates. No late rash was noted.

Convalescence was very slow and he suffered much from headache. He was not able to get about much for six months after the bite, but up to the present time no distinctive manifestations have occurred, though he still occasionally complains of giddiness and headache.

Treatment by various drugs—aspirin, phenacetin, quinine, sodium salicylate, sodium sulpho-carbolate, etc.—did not seem to influence the course of the disease. The two first named were useful when headache was severe. Later on tonics containing strychnine proved useful and the condition of the heart began to improve.

Unfortunately, at the time the finger was amputated the diagnosis of the disease had not been made and a thorough blood examination and culture were not instituted. Later on the patient refused to allow this examination.

For some time the diagnosis was difficult. When Mr. E. C. Bevers had seen the case we concluded that the rat bite was undoubtedly the cause of the condition, and he was kind enough to look up the subject and found Dr. T. J. Horder's article. From the description of those cases and from the after-history of this case the condition became evident.

A short time before the patient was bitten he had been using a virus for the extermination of rats, but whether this could in any way be associated with the disease I cannot say.

A very complete article on this disease is published in the *International Clinics*, Series XXI, vol. iv.

Since writing the above I find a case of rat-bite fever was described at a meeting of the Royal Academy of Medicine in Ireland on December 15th, 1911, by Dr. O'Carroll.[6]

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[1] *Quarterly Journal of Medicine*, 1909-10, vol. iii, p. 121. [2] *Lancet*, June 11th, 1910. [3] Article by Frederick Proescher, M.D., Pittsburg, Penn., *International Clinics*, Series XXI, vol. iv, p. 77 *et seq.* [4] Ogata, *Deut. med. Woch.*, 1908, No. 25. [5] Castellani and Chalmers, *Tropical Medicine*. [6] British Medical Journal, January 6th, 1912.

A RULING HABIT STRONG IN DEATH.

BY

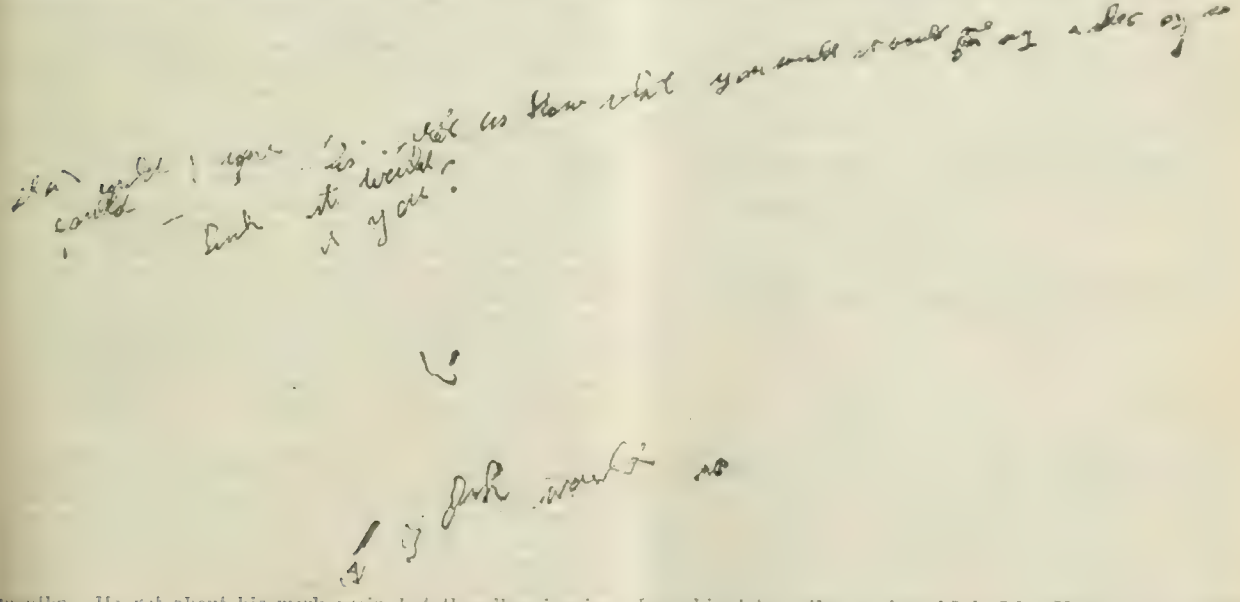
C. H. WATTS PARKINSON, M.R.C.S.Eng., L.S.A.

The case here reported presents, I think, many points of interest.

X. Y., aged 63, the senior partner of a firm of engineers largely interested in Government and other contracts, with works in South London, an old-school friend of mine, had for some years been failing in health. Five years ago he had rheumatic fever with heart affection, and I saw him with his medical attendant, Dr. Matthews, of New Cross Road. This illness was followed by Bright's disease, but under Dr. Matthews's care he got about again much as usual. Three years ago he had a large carbuncle, which laid him up for two months. He got about his work again, but the albuminuria continued. He could not be induced to take proper care, but exposed himself in all weathers and took long cycling rides with his son. He kept on his work as usual until May, 1912, though his disabilities increased. He then became dangerously ill, the symptoms being those of heart and kidney disease accompanied by cardiac asthma. Dr. Matthews impressed on him the necessity of giving up his work, but he was unwilling to do so, and asked me to see him. I visited him on June 9th. He was then improving as to the acute symptoms, but was clearly unfit for work owing to advanced heart and kidney disease and arterial degeneration. I pressed him to resign himself to the inevitable, and, with Dr. Matthews's consent, undertook to arrange a consultation.

He improved somewhat, however, under treatment, and insisted on trying a few weeks' change at Boscombe; but on July 7th I heard from his wife that he had not benefited by the change, and had made up his mind to return home on July 8th. On July 7th he was pretty well and cheerful; he went up to bed about 10 p.m., and was laughing and joking with his wife and son. About 11.30 he was seized with a very violent attack of breathlessness, and got out of bed. His wife found him lying on the floor. With the help of her son he was got on to the bed; it was observed that his left side was useless. He asked for the asthma medicine and various things, and talked sensibly, though his voice was somewhat peculiar. Dr. Richardson, of Boscombe, who had been sent for, gave full instructions, but made a serious prognosis.

The patient talked incessantly until daylight, when his speech became more and more unintelligible, his neck began to swell, and he grew more unconscious. At 10 a.m. on July 8th he appeared quite unconscious, but he went through the motion of taking out his eyeglasses, putting them on taking his fountain pen from his pocket, and then writing a letter on the bedclothes. During this morning he tried at times to throw off the bedclothes to get out of bed to pass water; and his wife thought, when she took his hand and asked him to kiss her, that he pressed her hand and pursed up his lips.



I saw him late on the evening of July 8th. He was lying on his back in bed quite unconscious. His face and neck were swollen, his eyes half closed, and the eyeballs prominent. Breathing was somewhat stertorous, quick and irregular, the mouth partly open, and the tongue swollen and dry. The pulse was full and hard, he was quite comatose, and apparently in a hopeless condition. On the morning of July 9th he was quiet and seemed quite unconscious; he was breathing heavily and unable to swallow, but at 10 a.m. he again began to go through his habitual procedure when about to write. His wife was inspired with the idea to see if he could write, and got a writing pad with some paper, put his fountain pen in his fingers, and guided his hand to the right place. He began to write a long and evidently business letter, crossing his t's, and when he thought he had got to the bottom of the first sheet of paper, he turned it over with his little finger (a habit of his) and went on writing on the second sheet.

He continued quite unconscious all day, and on the morning of July 10th made no motion or attempt to write, and continued

until the following evening, when the breathing became easier, the swelling of the neck went down, and he swallowed a little fluid given him by Dr. Richardson; a trying cough came on, and his chest seemed clogged up and his mouth full of blood. He died on July 12th, having given no sign of consciousness or answer to his wife's frequent appeals to notice her since July 8th. During the illness there was no action of the bowels, and nothing swallowed until the evening of July 11th, but urine was passed regularly up to the last.

I have set down carefully the account given me by his wife, who was constantly with him. Mr. F. was very methodical in his habits, and had little tricks and habits which were quite characteristic. He went to the works every day about 9 a.m. and had a general look round, and sat down in his office at 10 a.m. to look to his correspondence, and it was at this hour that on July 8th and 9th he began to try and write on the bed; evidently it was a business letter. His partner had written to him that an important customer had called at the office respecting a large order, but would wait to see Mr. F. himself on his return, and probably the letter he attempted to write was in reference to this appointment. The writing, although words, as will be seen from the facsimile, are quite clear here and there, is not sufficiently connected to be intelligible, but I think this was due to the insurmountable difficulty of keeping the pad in apposition with the pen; this, indeed, is clear from the writing itself. The fact that no attempt to write was made after July 9th was, I think, due to continuing haemorrhage. Clearly this was a case of ingravescent apoplexy. I am content to record the facts and leave the explanation to others.

EIGHTIETH ANNUAL MEETING

OF THE

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Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

PROCEEDINGS OF SECTIONS.

SECTION OF NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

LANDEL ROSE OSWALD, M.B., President.

DISCUSSION ON THE DIAGNOSIS AND TREATMENT OF COMPRESSION PARAPLEGIA.

OPENING PAPERS.

I.—ERNEST S. REYNOLDS, M.D.Lond., F.R.C.P.,
Physician to the Manchester Royal Infirmary.

In opening the discussion I am at once confronted by the term "compression paraplegia," which taken literally limits the discussion to a paralysis of both legs and sometimes of [illegible] arms, and caused by something actually compressing the cord. If taken thus literally, however, the discussion might not include a considerable number of interesting and important cases, amongst others those of unilateral compression, those of secondary new growths (in which paraplegia may not be present), those very difficult cases of compression paraplegia in the early stages, and also intramedullary tumours.

Causes.

It is necessary, however shortly, to mention the principle causes of compression paraplegia, and it is simplest to work from without inwards.

First, aneurysms, chiefly in the dorsal region and after [illegible] sending in a tongue of tissue [illegible] vertebral spaces (naturally causing [illegible] and parasitic cysts, generally hydatids, similarly reaching the cord from subpleural or superficial connective tissue.

Secondly, affections of the vertebrae. Traumata, such as fracture dislocations and injuries without apparent breach of continuity (about which I will say something later in considering diagnosis in "compensation" cases); syphilis very rare; tuberculous caries most common of all, principally in the dorsal region, and often causing symptoms only secondarily and sometimes by quite simple and transient cord changes, such as oedema; tumours, generally malignant, sometimes primary, either sarcoma or myeloma, or secondary, carcinoma, sarcoma and lymphosarcoma, often with a very small primary growth in the breast, sometimes overlooked, or removed two or three years ago, or rarely a growth in an old enlarged thyroid gland.

Thirdly, the spinal meninges. Here it is of course possible that the cause, if a tumour, may be in the dura mater only, an important point from a surgical standpoint, but often the pia arachnoid is also affected. The affections are: Haemorrhages seldom causing marked spinal symptoms if extrathecal, but marked symptoms if intrathecal; inflammations, spreading from without, as from bedsores; slow chronic inflammations causing local thickenings either in the dorsal or lumbar regions, or in the cervical region (cervical hypertrophic pachymeningitis), sometimes possibly the result of injury; tubercle and syphilis, the two commonest affections; and tumours, extra-dural chiefly in the dorsal region, sarcoma, fibroma, lipoma, and intra-dural arising from the inner surface of the dura mater, or from the pia arachnoid, such as sarcoma, fibroma, psammoma, myxoma, lipoma, endothelioma, or parasitic cysts. Intramedullary growths may of course cause compression of the cord from within outwards, and if possible, especially for surgical reasons, should be diagnosed from extramedullary growths; they are more rare than meningeal tumours, and include solitary tubercle, glioma, sarcoma, gumma, and myxoma. Tumours of the cauda equina, of course, must not be forgotten.

Symptoms and Regional Diagnosis.

Obviously in dealing with paraplegia one should first mention *the motor symptoms*. These may vary from a mere feeling of tiredness and heaviness of the legs to a total loss of power, which may be due to an atrophic paralysis if the cauda equina or lumbo-sacral cord is affected, a spastic paralysis if only some part above this is involved, or a flaccid (not necessarily atrophic) paralysis if a part above the lumbo-sacral cord is completely divided.

If the lesion is in the cauda equina there is an atrophic paralysis of the leg muscles; this is usually limited to those supplied by the sacral plexus, but if the lesion is extensive nerves not higher than the third lumbar may be affected. If in the conus terminalis only (that part of the cord below the origin of the second sacral nerve), the only muscles paralysed would be those of bladder and rectum. In the lumbo-sacral enlargement below the second lumbar root the paralyses would be atrophic with loss of knee-jerks. Anywhere above this there would be, in the parts below, as a rule spastic paralysis; but if the cervical enlargement is involved, an atrophic paralysis of muscles supplied from the area involved by the lesion and, of course, a spastic condition below.

It would take too long to go into the whole question of Bastian's theory, put forward in 1890, of a flaccid paralysis (without marked atrophy of muscles, no great alteration of electrical reactions, and no affection of the gray matter in the lumbar cord), which occurs with a total transverse lesion of the cord in the cervical or lumbar regions. I published a summary of the subject in *Brain*, 1895, and an excellent more recent account of the matter is to be found in the *Medical Chronicle*, vol. xxxvii (1902-03), p. 101, written by Dr. Warrington. This later account on the whole confirms Bastian's view that if the lesion is total, involving, therefore, the destruction not only of the pyramidal tracts but also of the mesencephalic long efferent fibres in the antero-lateral regions of the cord, a flaccid paralysis ensues. It must, however, be remembered that there may be, as I showed some years ago, a total anaesthesia and total paralysis below a dorsal lesion, but with markedly spastic paralysis. The only new contribution I can give to this subject is that of a gentleman who had a flaccid paraplegia due to a dorsal dural tumour at the sixth dorsal level; this flaccidity lasted for many months, and was gradually replaced by a typical spastic condition of the parts below the lesion.

Ataxia.

In three cases I have seen—two of caries and one of tumour—there has been present considerable ataxia on walking; in two of the cases the ataxia was very similar to that met with so commonly in disseminated sclerosis; while in the third, where the pressure was high up in the cervical region, the ataxia was more of the cerebellar type. Whether this ataxia is due or not to pressure on the posterior parts of the cord I cannot say, but most likely it is so. It is obvious that its presence may increase greatly the difficulties of diagnosis.

Sensory Phenomena.

Here we must consider tenderness and pain on movement or on application of a hot sponge, local constant spinal pain at the seat of the lesion, and pain along nerves involved in the lesion; also various types of paraesthesia and anaesthesia.

Tenderness on pressure and on the application of a hot sponge may occur with many if not most of the lesions causing compression, such as chronic localized meningitis, caries, or tumour. It is, of course, of some significance, but is largely discounted by the fact that it is such a marked feature in many cases of neurasthenia, especially of the type well called "spinal irritation," of traumatic neurasthenia, and even in malingering, and the fact that the situation of the tenderness in these functional cases is most commonly at the sixth or twelfth dorsal spines does not help one much. A more useful diagnostic sign is the character of pain on movement, for in the case of tumour, especially of the vertebrae, movement causes an agonizing pain almost characteristic, though again it must be remembered that osteo-arthritic affections of the spine may cause great pain. As regards local constant pain in the vertebrae, this may be very severe, and is of a burning or stabbing nature, and is found principally either with aneurysm or with new growths, and not so much with other causes of compression.

Pain along the course of nerves may be very severe, almost of a neuralgic character, sometimes accompanied by numbness of the same area, the well-known anaesthesia dolorosa. This pain may be due to pressure on nerve roots, and, if so, is of great value in localizing the seat of the lesion; it may be unilateral or bilateral down both arms, or as a girdle pain, or down both legs, varying, of course, in position according to the nerve roots affected. And here I would like to emphasize the great importance of Charcot's dictum that double sciatica is almost invariably due to pressure on nerve roots or nerve trunks, and a similar rule applies to cases of double "brachial neuritis." Other pains along nerves may be due to pressure on sensory fibres in the cord, in which case, however, the pain is referred to an area of distribution considerably below what one would expect from the situation of the cord lesion.

Various types of paraesthesiae, tinglings, formications, and indefinite numbnesses difficult to test objectively, may occur at the seat of or below the lesion in compression paraplegia, but these are much more common in disseminated sclerosis, as will be mentioned below.

Finally, of course there may be total anaesthesia to all types of sensation below the lesion, and here must be mentioned the well-known rule that the upper limit of the anaesthesia is below the level of what one would expect from the actual position of the lesion itself; and this will be found to be much more the case if the upper limit of anaesthesia be tested on the back rather than on the front of the body. For instance, in one of my cases a lesion in the neighbourhood of the sixth dorsal root caused an anaesthesia with an upper limit at the seventh intercostal space in front, but of the eleventh intercostal space at the back, the upper limit of anaesthesia being thus a line almost at right angles to the vertical line of the body, instead of obliquely downwards and forwards from the seat of the lesion, as one might have expected.

Deformities of the spinal column are found principally in three types of compression paraplegia—namely, traumata, caries, and tumour. The spine may be held in a more rigid condition than usual to lessen pain, the natural curves may be exaggerated, or there may be a lateral curvature. A point to be remembered in the case of traumata is that there may be great compression without obvious deformity. In caries, of course, the deformities are well known, but in tumours they are not so common. In two or three cases of secondary vertebral growths I have noticed a peculiar, somewhat indefinite thickening of the vertebrae and the parts covering them in the lower cervical region, and in another case of "double sciatica" the cause was made evident by a great thickening of the spine in the dorso-lumbar region. The importance of an examination of the spine in cases of loss of power or pains in the legs cannot be too strongly emphasized, and yet it is remarkable how frequently such an easy procedure is not performed.

Ocular symptoms, manifested by alteration of the size of the pupils, may occur if the lesion is above the second dorsal root. If merely irritative the pupils may be dilated, but more frequently, perhaps, there is a contraction (sometimes unilateral) from paralysis of the dilating sympathetic fibres, and in such a case painful stimulation, say, of the skin of the neck, will fail to dilate the pupil as normally occurs.

Cardiac symptoms may arise from a lesion of the accelerator fibres of the heart running down the cord from the fourth ventricle, and if irritative will quicken the pulse, if paralytic will slow it.

Similarly, respiratory paralysis of some or all of the intercostal muscles may occur, breathing being carried on by the diaphragm innervated by the third and fourth cervical roots. In one case which I saw with my colleague, Mr. Thorburn, the lesion was above the origin of the phrenic nerves and respiration was carried on for some days by the extraordinary muscles of inspiration in the neck only.

Various symptoms of vaso-constriction, such as pallor and coldness of the paralysed parts, with a dry harsh condition of the skin; or of vaso-dilatation, as shown by oedema of the skin and accumulation of fluid in joints such as knees or ankles may occur, as well as penile erections, according to the situation of the lesion.

The principal visceral lesions relate to the bladder and rectum, in which as regards localization we may take the bladder as a type. If the lesion is a destructive one of the lowest parts of the cord the bladder will be in a cadaveric position—a mere flabby bag through which the urine dribbles from the ureters. If the lesion is in the dorsal region the affection of the bladder is such that it works automatically by pure reflex action independent of the will; and there may be an intermediate condition of retention overflow in which the sphincter is in a state of spasm but the detrusor is paralysed.

The sweat glands may in an early stage be in a state of paralytic hypersecretion, but in a late stage fail entirely, leaving the skin dry and harsh.

Trophic changes in the skin, referred to above, may occur. Herpes may occur and, if so, often help to localize the lesion; it may be unilateral, but in one case I saw it was bilateral.

Bedsores may occur, especially if the nursing is not of the best. If the lesion is intramedullary, bedsores may be very acute, very rapidly spreading, and quite beyond the prevention or control of the nurse.

The urine should always be carefully examined for Bence Jones albumose with its very typical reaction, the deposit falling at a much lower temperature than does albumen, and the nitric acid coagulum dissolving with heat to reappear on cooling. This peculiar type of albumose is associated with myeloma, which, when it is present, may affect the vertebrae, and sometimes a definite history of previous injury can be obtained. I think these cases are probably commoner than is supposed, as I have myself seen four such cases in the last three years.

Before dismissing the symptoms of compression paraplegia I should like to allude for a moment—as to my mind they are most important and are much commoner than is usually supposed—to those cases of growths of the vertebrae which are secondary to growths elsewhere, especially of the breast. These have been admirably dealt with by Sir William Osler in a paper in the British Medical Journal some four or five years ago. They are important for this reason, that, although they may cause definite symptoms of cord compression, yet very many in the early stages only cause symptoms exactly resembling certain cases of neurasthenia or of hypochondriasis, and are often diagnosed as such, not only to the discomfort

of the patient but even more to the discomfort of the practitioner.

The account given above of the symptoms of compression paraplegia will perhaps be sufficient as indicating the methods to be used in diagnosing the seat of the lesion, and unless one's memory is very good, reference may be made to tables and diagrams in the textbooks referring to both motor and sensory innervations of definite areas. Nor must we forget the value of radiography, but I would warn my hearers not to place too trusting a reliance on this method, using it only as a servant and not as a master.

Diagnosis of the nature of the lesion is often a much more difficult problem than the diagnosis of its seat. Traumata may give little trouble, but when one has to separate inflammations, tubercle, syphilis, tumours, and parasites, difficulties will arise. The diagnosis of parasites may be mere guesswork unless there is definite evidence of their presence in some other part of the body. Localized thickenings of the membranes, again, may never be suspected but only be found on operation; tubercle may be quite easy to diagnose on general principles, but at other times, as, for instance, solitary tubercle of the cord, may be impossible to separate from gumma or new growth. Syphilis, thanks to the Wassermann reaction, is now simpler than was formerly the case, and a definite history of infection is always a strong point in favour of its presence as a cause of the paraplegia. It would take too long to mention the many ways in which syphilis may affect the cord and its surroundings, varying as they do from a syphilitic caries to an intramedullary gumma, but I might mention how very difficult it is to differentiate a transverse syphilitic lesion causing paraplegia from Erb's type of syphilitic spinal paralysis, a systemic affection of the pyramidal tracts.

Finally comes the diagnosis of cord tumours. Having excluded the affections above mentioned, tumours must very strongly enter into our minds, not only as to their presence, but whether intramedullary, meningeal, or vertebral, and, if possible, their pathological nature. An important point is the history of the steadily progressive nature of the symptoms, and, moreover, as Schultze has pointed out, the fact that in spite of the advance of the symptoms they do not extend upwards. A primary growth elsewhere may be of great importance in the diagnosis.

In vertebral growths swelling or deformity may be found, and pain on movement or pressure is very great; in meningeal growths pain and symptoms of nerve root irritation, limited in distribution, first occur, and are followed by steadily increasing paralysis and anaesthesia. In intramedullary tumours there are symptoms of a transverse spinal lesion of gradual onset and root symptoms are absent or slight, and there may be dissociation anaesthesia, loss of sensation to pain and temperature, but retention of tactile sensation. Occasionally, as Schultze has mentioned, pain may be absent in meningeal tumours, and in such a case exact diagnosis may be impossible.

As regards the nature of the new growth, a correct diagnosis may be made if the growth is secondary, and these, by the way, are usually extramedullary, but otherwise it may be impossible to differentiate between glioma, sarcoma, solitary tubercle, or gumma.

Diagnosis from other Diseases.

There are numerous affections of the nervous system in which one may be in doubt at first that one was dealing with a compression paraplegia, and in some the diagnosis from [illegible] called Little's disease), [illegible] of subacute combined sclerosis, [illegible] spinal leg [illegible] in the [illegible] case, the peculiar [illegible] of the affected limbs, and the [illegible] phenomena should be [illegible]

[illegible] may simulate a cervical [illegible] atrophy of arm muscles and [illegible] there is also [illegible] in the arms, a jaw clonus, an extraordinary absence of sensory symptoms, and a gradually increasing bulbar paralysis.

Progressive muscular atrophy, again, may simulate a cervical compression lesion, especially as in some cases, besides the typical atrophy of the muscles of the upper limb, there may be some pain in the arms and sometimes an increased knee-jerk. But the disease is a very slowly progressive one, the atrophic muscles show marked fibrillary contractions, give no reaction of degeneration, at any rate for a long time, and there is no anaesthesia.

Cervical ribs may easily suggest a unilateral compression (and rarely, if double, a bilateral compression) of the cervical cord, causing, as they do, marked sensory phenomena, pain, and anaesthesia, as well as muscular atrophy, but an *x*-ray photograph generally clears up the diagnosis, and there are, of course, no symptoms in the legs.

In syringomyelia, again, one has generally an atrophy of arm muscles, with a spasticity of the legs, but pain is absent, and there is generally a marked analgesia, but no anaesthesia; the sensory phenomena often have a peculiar patchy distribution, trophic changes, and arthropathies may be present with a lateral curvature. Generally such cases are due to a central gliomatosis destroying the central parts of the cord, and compressing the outer parts from within outwards. The duration is often very long, and the disease may intermit.

Haemorrhage, thrombosis, and embolism of the cord may simulate compression, but the very sudden onset of symptoms should, as a rule, be sufficient for a diagnosis, although symptoms from genuine compression (even non-traumatic) may be rather sudden in onset.

Localized acute myelitis is rapid in onset; early bedsores may occur, and there are no root pains. But a subacute myelitis may resemble closely a compression lesion, especially when it is remembered that the cord lesions from compression may be merely those of oedema or acute myelitis, and not an actual crushing of the cord itself.

In subacute combined sclerosis (described some years ago by Putnam and Dana, and more recently by other observers) there is at first a spastic paraplegia, which gradually passes on to a flaccid paralysis, with loss of knee-jerks, and much ataxia, but there are no symptoms of real cord compression.

In hysterical paraplegia, and also in cases of malingering after injuries (especially slight injuries), and "strains of the back" in compensation cases, considerable difficulties may arise as to whether one is not really confronted with a compression of the cord, and such cases are often a great anxiety lest injustice be done to the patient. In making a diagnosis the whole circumstances must be taken into consideration; and as regards details, the absence of the toe-lifting sole reflex, of true ankle clonus, of atrophy, of abnormal electrical reactions, of a gait typical of true disease—and this can only be properly estimated by seeing the patient walk with bare feet—and of sensory phenomena distributed in proper anatomical positions, and not as occurs in hysteria and malingering in anatomically impossible positions, such as anaesthesia bounded by a transverse line in the neighbourhood of a joint; remembering always that, if any doubt finally remains, the patient must have the benefit of it.

I have left until the last disseminated sclerosis, which is by far the commonest organic affection of the nervous system, at any rate in the Manchester area. In most of the cases there cannot be any confusion with cases of compression paraplegia, but in others, especially, of course, those in which the obvious symptoms are apparently caused by a patch or patches in the dorsal region, the diagnosis from compression paraplegia may be difficult. There may be considerable pain in the back, slight girdle sensations, slight anaesthesia or paraesthesia in the legs, affection of bladder and rectum, a marked spastic gait, and [illegible] abdominal reflexes. But as a rule there is no severe pain in the legs (although I have seen one case with much pain in one leg), the anaesthesia is comparatively slight and cannot easily be defined by objective testing; there is nearly always considerable ataxia, as well as spasticity; there is a history of gradual onset (though sometimes the onset is rather acute). Other aids in the diagnosis are a previous history (often many years before), of some eye [illegible], such as partial blindness or double vision, [illegible] temporary in character; or there is a very slight affection of speech, very slight ataxia of the hands, or numbness of the fingers.

Treatment.

There can be no doubt that, as a rule, the only treatment for compression paraplegia is surgical. The only cases where non-surgical treatment is justifiable are syphilis, those in which the cord is obviously crushed without chance of repair, and possibly some cases of tuberculous caries. If the case is clearly syphilitic the usual remedies are, as a rule, sufficient if the paraplegia is due to real compression from gumma or gummatous inflammation: and if the symptoms are in reality due to chronic syphilitic changes not causing compression, operation is of no more use than is any medical treatment, which of course cannot remove a scar.

As regards tuberculous caries, the rule should be, I think, to operate and relieve compression rather than to trust to prolonged rest, which may, as one knows, sometimes allow the compression to subside, but always with the great risk that the cord may be permanently damaged.

I have seen such good results from laminectomy that I now often urge it should be done not only in cases of *certain* cord compression, but also in those doubtful cases where after most careful consideration it appears likely that compression *may* be present, and, having made up one's mind, the earlier the operation is performed the better for the patient.

II.—Sir Victor Horsley, F.R.S.

Sir Victor Horsley said that he approached this matter from the point of view of the surgeon called upon to relieve the compression. Paraplegia was, of course, a symptom, not a disease, and the failure to recognize this fact had often led to its treatment symptomatically instead of surgically. No one would dream of waiting to operate in cancer until the glands were affected, and in the same way in these cases under discussion none should await the onset of paraplegia. Turning to the indications for operation the speaker first alluded to fractures of the spine due to direct violence. These fractures always caused compression, though often there was no deformity. Also the circulation might be cut off and fragments driven in. Such cases should always be operated upon at once. With regard to those due to indirect violence, all partial cases and also moderate cases should be operated upon; but with severe fractures many points had to be taken into consideration before deciding. The position of the injury at once gave a guide. If there were evidences of vaso-motor paralysis—carmine blush of arms, etc.—such cases were hopeless, and he had always refused to operate. In fractures of the dorsal and lumbar region the question was one of anatomical evidence. Severe laceration of the cord always negatived operation, but partial or moderate cases should be operated upon. Sir Victor pleaded for a revolution in the treatment of fracture cases in the matter of position of the patient. Lying in bed was to be avoided; the normal position was vertical, and sitting up in bed, even suspension, etc., were to be advocated as soon as ankylosis was completed.

Turning to tumour-compression, early diagnosis was all-essential. Frequently at the operation where tumour had been diagnosed, none was found, but only thickening of the meninges. With regard to caries paraplegia there ought to be no such thing in clinical medicine, and its occurrence was clearly a fault of too long delayed surgical treatment. Lastly, the speaker referred to the invaluable aid of radiography in caries, and said that often the amount of tuberculous disease could be made out in this way.

DISCUSSION.

Dr. C. M. Hinds Howell (London) said: In a discussion such as this it will not be out of place to refer to the pathology of certain cases of compression paraplegia, as this throws an important light both on diagnosis and treatment of these cases. I have had the opportunity of examining *post mortem* 14 cases of this kind during the last four and a half years at the National Hospital, Queen Square—4 spinal caries, 9 tumour, 1 circumscribed serous meningitis.

The first case to which I wish to draw your attention was one of the kind described by Horsley as "circumscribed serous meningitis." In this condition adhesions form in the subarachnoid space, with the result that cerebro-spinal fluid becomes encysted and gradually produces compression of the cord.

In the case in point the patient's symptoms of gradually increasing spasticity and weakness in the lower extremities dated from two years previously, and there was, in addition, relative but not complete sensory loss as high as the [illegible] dorsal segment. The man's age was 52, and he was very stout and a bad subject for operation. He died shortly after operation, at which the cyst referred to had been opened and the cerebro-spinal fluid evacuated. The cord was carefully examined by various methods (Weigert Pal M[illegible] haematoxylin and eosin), but no pathological changes or secondary degeneration was found.

We do not know how or why the adhesions to which I have referred, and which result in the formation of a cyst, are produced. In the case in point there was no inflammatory condition present in the leptomeninges, nor any evidence of syphilis, either of which might conceivably be predisposing circumstances in its production. One knows from the recovery which has taken place in similar cases after operation that loss of function precedes alteration in anatomical structure, but this case furnishes material proof of the truth of this, and is therefore of importance. It shows that symptoms may exist for so long as two years, at any rate, without irreparable damage being done to the cord. Of course, this should not be used as an argument for waiting too long before calling in surgical aid, but at the same time it shows that surgical interference may prove successful, even when symptoms have existed for a considerable time.

If the pressure is more pronounced structural changes take place in the cord, to which the term "pressure myelitis" has been applied. The name is unfortunate, as there is no inflammatory condition proper present, but softening is produced, either owing to the production of ischaemia from pressure on vessels or actual thrombosis, or caused by the development of oedema. In any of these cases proliferation of neuroglia takes place in the affected segment and secondary degeneration results.

With regard to extramedullary tumours, these are for the most part, if primary, situated within the dura. Extrathecal primary growths are certainly more rarely met with, and only one such case is included in these nine cases of extramedullary tumour. It is not possible, I think, to say with certainty before operation whether a tumour is extrathecal or intrathecal. It might be thought that the intrathecal growth would give rise to loss of function more rapidly than extrathecal; but this entirely depends on the rate of growth of the tumour. In one of the nine cases an intrathecal growth (a myxosarcoma) had been present for five years, and had taken three years to produce complete paraplegia; in the extrathecal case the symptoms had developed completely in less than a year. It is not always easy to diagnose the position of the tumour with regard to the spinal cord. In some cases the lesions due to the growth are found in the cord, immediately beneath the tumour, and sometimes on the side opposite to the growth. Again, in some cases the damage takes place centrally, leaving the more peripheral parts of the cord relatively intact. Again, in other cases of tumour of slow growth pachymeningitis is produced which may give rise to symptoms of itself, due to vascular disturbance or root involvement quite apart from the tumour. It is an interesting fact that there were two primary extramedullary tumours present in one of the nine cases of spinal tumour that I have examined *post mortem*. It is important to remember the possibility of such an occurrence, as it may introduce difficulties in the way of diagnosis. In the case mentioned the two growths (fibro-sarcomata) were close together, and would have been discovered at operation. The case came too late into hospital, and in consequence no operation was performed. It would be interesting to hear if Sir Victor Horsley has experience of such a condition occurring more often.

Turning now to spinal caries, we find the commonest cause of paraplegia to be compression of the cord within the theca, by tuberculous débris, or abscess pressing backwards through the posterior common ligament. The mechanism here is practically the same as that which operates in cases of extramedullary tumour. Bony compression very rarely occurs, but occasionally a sequestrum of bone separates and causes compression by so doing. But there are other causes of paraplegia than direct pressure on the cord. These are: (1) Ischaemia of the

cord produced secondarily to the development of pachymeningitis; (2) the production of acute localized oedema of the cord. It seems to me very doubtful if either of these conditions once formed can be benefited by operation. The former may take place in two stages, which are well illustrated by the specimens exhibited herewith.

In the first stage the outer part of the dura becomes involved by the tuberculous inflammatory process, which gradually surrounds it. As a result of this fibrous tissue forms, and as occurs elsewhere, contracts with direct effect on the vascular supply of the cord. In the specimen exhibited here, this has resulted in central softening and necrosis. In a case of this kind operation will naturally produce no good result, nor will it in the next case, which is simply a more advanced type of the condition I have just described. In the specimen exhibited the shrinkage and contracture of the fibrous tissue has proceeded further, and the cord is involved to such an extent that it has undergone complete disorganization.

With regard to those cases in which acute oedema occurs without direct pressure on the cord there is, as a rule, no marked bony deformity, and the nature of the case may be overlooked, unless a radiograph is taken. As an example of this kind of case I would like to quote the following:

A. R., aged 30, admitted into the National Hospital under the care of Dr. Tooth. Duration of the disease, fifteen months: duration of paralysis, seven months; no power of voluntary movement in the limbs; reflex movements still strong. Spasticity present with ankle clonus and extensor plantar response. Slight prominence of ninth, tenth, and eleventh dorsal spines. Operation was performed by Mr. Sargent. It was seen at operation that there was no obvious pressure on the cord either by caseous material or by bone, nor was there any pachymeningitis or tuberculous granulation tissue within the spinal canal. The theca was drawn on one side and a pointed probe was used to test the bodies of the vertebrae. This discovered an abscess cavity, which was scraped out, from 1 to 2 drachms of white caseous material being removed. Five weeks after operation the patient developed symptoms of meningitis, and a week later died as a result of diffuse tuberculous cerebro-spinal meningitis. I made the *post-mortem* examination.

On opening the spinal canal the dura mater was found to be entirely free from any pressure, either from bony displacement or tuberculous exudation. At the seat of operation the bodies of several vertebrae were found to be carious, and there was a cheesy exudation under the posterior common ligament over a distance of several inches, but this had exerted no pressure on the outer surface of the dura, and there was no adhesion between the dura and posterior common ligament. When the dura was opened, the spinal leptomeninges were seen to be the seat of what proved to be tuberculous meningitis, which was much more pronounced in the cervical and upper dorsal segments of the cord than at the lesion at the tenth dorsal segment. The ordinary shape of the cord was unaltered, but the tenth and eleventh dorsal segments felt distinctly soft on palpation, as contrasted with the rest of the cord.

[illegible] from all segments of the [illegible] wards, and examined by [illegible]lin and Weigert-Pal methods.

[illegible]ation by haematoxylin and eosin revealed the following: [illegible] of the cord was well pre[illegible] retained their relative [illegible] meningitis of tuberculous nature was [illegible] marked in the cervical region, and hardly [illegible] segments of the cord at all. [illegible] much engorged, and the inflammatory [illegible] perivascular spaces was intense. No [illegible] any of the sections. (4) The [illegible] in the softened [illegible] smaller [illegible]. The appearances [illegible] to oedema, and excludes dis[illegible] due to softening from direct [illegible].

[illegible] the presence of oedema, [illegible] is sufficient to produce secondary degeneration in the tracts of the cord.

I have laid some stress on this case because the condition does not seem to be very well recognized, and also because it illustrates a complication that is to be feared [illegible], the development of tuberculous meningitis following operation on a carious spine.

A matter of importance from a clinical aspect that I would like to mention is that pressure will affect the longest neurons first, and it may take some time before the shorter ones are involved. For this reason motor paresis usually precedes sensory loss, a fact which may indicate greater vulnerability of motor as compared with sensory neurons, and also may be misleading as the earliest sensory disturbance may point to the level of the compression as being much lower than it eventually proves to be.

As a physician, I must protest, with very great deference to Sir Victor Horsley, against his position that paraplegia ought to be prevented in spinal caries by early operation. I quite agree that paraplegia ought to be prevented, but not, in my opinion, by early operation. I think if spinal caries is properly treated medically, paraplegia will hardly ever develop. That, at any rate, is the experience of Dr. Gauvain, at the Treloar Home for Tuberculous Children at Alton, where, I am told, there has only been one case of paraplegia in a very large number of cases of spinal caries, which have been cured by appropriate medical treatment.

Dr. WARRINGTON (Liverpool) said that statistical inquiries, chiefly by American authors, had shown that operation, after fracture dislocation where total transverse section of the cord appeared from the symptoms to be probable, was attended by a somewhat less mortality than when a waiting treatment was adopted. Nevertheless, the enormous mortality in such cases, the results of *post-mortem* examination and the little benefit that could follow, even if life were preserved, made the desirability of this immediate operation in his opinion very doubtful. Continuing, he said: Compression of the spinal cord, from caries of the vertebrae, is not very often seen, and no doubt this is rarer than was formerly the case. Perhaps the next common form is a compression from secondary malignant deposits in the bones, other forms of new growths or aneurysm. The interest in these lies purely in the diagnosis, and I therefore do not propose to say anything about them beyond remarking on the sinister significance of a localized pain radiating from the spine. I have several times seen this symptom in women in good general health, coming on two to three years after a removal of a carcinoma of the breast, and have watched or heard of the melancholy sequel. As a rule the diagnosis of a primary compression is not very difficult, for, as tersely put by Allen Starr, "in no other form of disease of the cord do the symptoms of transverse myelitis of gradual onset coincide with the symptom of persistent pain." I do not think that nowadays a syphilitic lesion is likely to be overlooked. The chief difficulties are in the diagnosis of painless compression and in disseminate sclerosis of the spastic paraplegic type.

As my contribution to the debate I should like to mention briefly three recent cases. The first is an example of a difficulty in diagnosis and failure to find a compression. This case being the first in eight under my own immediate observation in which the surgeon has not revealed the expected lesion has a special personal interest:

A young married woman of 26, some nine months ago began to be weak in the left lower limb, a month later the right lower limb was affected. Inability to hold the urine was also noted at this time. On admission the patient was a healthy looking young woman with no medical antecedents of importance; the cerebro-spinal fluid was normal, and the blood gave a negative Wassermann reaction. There was the most intense spastic paraplegia and considerable incontinence of urine. Distinct but slight loss of sensation of the skin of both lower limbs, especially of the left, and extending on the trunk as high as the costal margin. The level was well defined, posteriorly the anaesthesia reached to the level of the tenth dorsal spine. The loss of sensation included all forms, but was perhaps more obviously a loss to pain and temperature than to touch as tested by cotton-wool. It is important to note that there was a zone of some alteration of sensation in the direction of hyperaesthesibility capping the anaesthesia, and also a slight feeling of constriction (Fig. 1). If the level of the loss of sensation were taken as the guiding line, the site would be in the seventh or eighth segments; if the hyperaesthesia were considered, the affected segment might be the sixth or even the fifth. The abdominal and epigastric reflexes were absent. This might be explained on the assumption of a lesion at the level of the sixth to the eighth segments, but it also directed the attention to the possibility of disseminate sclerosis. There was also a very slight nystagmus, rarely visible unless the eyes were rotated to the extreme right, and then only appearing after the eye had been for a time fixed in this direction. Further, there was myopic astigmatism, with unaided vision of $\frac{6}{9}$. Beyond these, no other signs could be found suggestive of the disseminated lesion. The optic discs, fields of vision, etc., were healthy. Also, the history was not such as is commonly found in this disease. However, considering the protean manifestations of disseminate [illegible] and the absence of definite pain, it was with some [illegible] that I asked my colleague Mr. Monsarrat to expose the cord.

seventh, and eighth segments were clearly revealed. On cracking the dura the fluid spurted out a distance of several feet, and on laying bare the cord several opaque strands of tissue were seen between the dura and pia arachnoid. There was certainly no compression, nor could Mr. Monsarrat find anything either by vision or exploration with a probe at the lower part of the incision.

The patient recovered satisfactorily from the operation. I should like to ask, Was this a case of disseminate sclerosis? And, if so, Was the error in diagnosis due to undervaluing the significance of the nystagmus or of the condition of the abdominal reflexes? Or was the site of a compression, for example, of a cystic meningitis, wrongly diagnosed? The uppermost limit of the hyperaesthesia indicated a site as high as the fifth segment; the limit posteriorly of the loss of sensation, namely, at the tenth spine, indicated the seventh segment. Lastly, what is the value of the apparent increase of pressure of the fluid? This seemed so great as to exclude a compression which in any way blocked up the subdural space above the site of the puncture.

I find it still difficult to interpret this case. The extraordinary symptoms of disseminate sclerosis may simulate those produced by many other pathological conditions, yet there may be a danger of too frequently diagnosing this disease. On the other hand, my colleague made so thorough an exploration that it is difficult to understand how any gross lesion could have been overlooked.

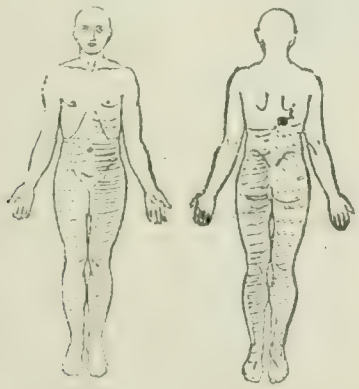


Fig. 1.—No lesion found on operation. Well defined loss of sensation as high as the level of the eighth dorsal segment in front, below this touch (cotton-wool), pain (pin prick) were distinctly diminished. Temperature sensibility, especially to heat, was even more impaired. Above this line on the left side a band of hypaesthesia extended slightly higher. Posteriorly the loss of sensation reached the level of the tenth dorsal spine. Both on the anterior and posterior aspects the loss of sensation was more marked on the left side.

The next case is one of meningeal cyst of the cord.

Mr. R., aged 45, had complained of a stiffness in the left lower limb for about eighteen months; this had increased during the last six months, and the limb noticed to be distinctly weak. Lately at night-time he became aware of "jerkings" and "jumping" of the leg. There had been no pain, though he had constantly experienced a dull aching along the groin of the left side. Mr. R. was a healthy looking man, and no evidence of disease beyond that of the nervous system was obtained. The medical antecedents seemed unexceptional. The cerebro-spinal fluid was normal. Mr. R. was very little incapacitated by his disease, conducting a large business and going about much as usual. In walking a slight but readily discernible drag of the left lower limb was seen, and on testing the various groups of muscles some loss of power fairly equally distributed was discovered.

The knee-jerk on this side was increased, and slight ankle clonus, together with extensor plantar response, were elicited. The functions of the cranial nerve were normal, and nothing pointing to any disseminated disease was discovered beyond a slight complaint of tingling in the fingers of the left hand. The left abdominal and epigastric reflexes were brisk, the right feeble. Cremasteries equal and brisk. Knee-jerk, ankle-jerk, and plantar response on the right side normal. There was a slight hesitancy on micturition, and the testicular sensibility diminished on the right side. The sensory disturbance was important, and its nature is shown in Fig. 2.

The clinical picture was, therefore, one of fairly typical hemilesion of the cord, and this was considered to be at the level of the eighth dorsal segment.

Operation was advised and performed by Mr. Keith W. Monsarrat on February 2nd, 1912. There was a preliminary injection of morphine ¼ grain, with scopolamine and atropine of each $\frac{1}{150}$ grain. The fifth dorsal spine was defined and a median incision was made, commencing ⅔ in. above this and ending about 4 in. below. The spines of the fifth, sixth, and seventh dorsal were removed and the laminae of [illegible] the laminae of the fifth dorsal subsequently removed with cutting forceps. The dura was overlain with a gelatinous connective tissue in excess of the normal. When the dura mater was bared a whitish object could be seen moving inside with the pulsations; above this the pulsation was definite, below it no pulsation could be seen. The dura mater was incised above this spot and cerebro-spinal fluid spurted out under marked pressure, although the head was low and the pelvis raised. On opening up the dura the whitish object above referred to was found to be a cyst, with whitish opaque wall and enclosing clear fluid; it was attached to the inner surface of the dura and was connected with septa in the form of thin membranous adhesions between pia arachnoid and dura, which appeared to shut off the subdural space above from the subdural space below, forming a complete partition. The wall of the cyst was removed, the cyst overlaying the cord on its left lateral aspect, and there was visible diminution in the calibre of the cord at this spot. The remainder of the membranous material was stripped out and partly cut away with scissors. The dura mater was then sewn up with a continuous suture of fine silk, the spinal muscles brought together with interrupted catgut stitches, and the skin with a continuous silk stitch. No drainage. The surgical recovery was uneventful and happy.

On February 17th it was noted that the plantar reflex of the left side had changed its character and was often of the flexor type.

On March 1st a full examination of the patient could be made. There was a barely discernible loss of power in the left limb and the disturbance of sensation had greatly diminished, though the same qualitative changes were recognized.

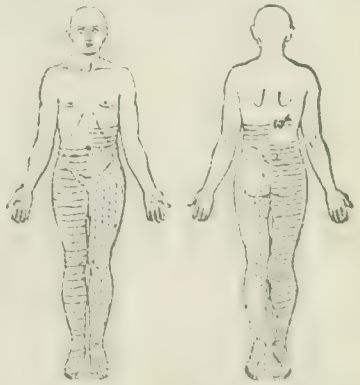


Fig. 2.—Circumscribed arachnoid cyst, showing disturbance of sensation. On the right side marked loss of cutaneous sensibility, especially to pain and temperature. On the left an abnormal "ticklish" sensation elicited on stimulation; vibration sensation diminished. No loss observed in sense of position.

On March 5th the patient left the hospital. He has been seen several times since, remains in excellent general health, the subjective sensations of stiffness have nearly disappeared, and there is practically no incapacity in walking.

The third case is remarkable, both on account of the clinical aspect and for the unusual nature of the lesion, and will be related by Dr. W. Grant McAfee, who was resident officer during the time the patient was in the Northern Hospital, and who has kindly worked up the pathological material.

Dr. W. Grant McAfee (Liverpool) said: This was a case of spastic paraplegia due to a vascular tumour of the lower part of the cord. The patient was a healthy-looking young unmarried woman aged 27. There was an obscure illness ten years ago, from which the patient made a complete recovery. Beyond this no important medical antecedents could be ascertained. Her present illness began some six years ago, with gradually increasing pain across the back at the region of the lumbar spines, and was aggravated by movement. The pain struck down the gluteal region to the hip and was chiefly felt in the left side. It is noteworthy that the anterior aspects of the pelvis and thighs were never the site of pain. Shortly after the onset of pain motor weakness was noticed and this gradually increased. Up to one year ago she was able to walk with assistance, but for the last six months power had been completely lost.

On examination the patient presented the most intense spastic paraplegia, the rigidity being so great that the limbs, when lifted from the bed, remained for a time elevated and interlocked from adductor spasm. Of late jerkings and drawing up of the legs had greatly troubled the patient. Some straining

and difficulty were experienced in emptying the bladder but there was no incontinence. The disturbance of sensation was as indicated in the diagram (Fig. 3). It will be observed that some hypersensibility to touch caps the anaesthesia. The disturbance to temperature recognition was very distinct and sometimes the patient gave paradoxical replies, the cold of ice being experienced as warmth. No other signs of disease of the nervous system could be elicited, the abdominal reflexes were very feeble but could just be obtained. Lumbar puncture and chemical and microscopical examination of the cerebro-spinal fluid showed no abnormality. A compression was diagnosed and the first lumbar segment given as the site of the lesion. Accordingly Mr. Monsarrat exposed the cord at the appropriate place. The cord appeared covered with a congeries of dilated blood vessels encircling it almost as far as its termination. Any attempt to relieve the patient was seen to be impossible and the wound was closed. Unfortunately, intractable vomiting set in and death occurred on the third day.

A full *post-mortem* examination could not be obtained, but the portion of the cord was removed through the surgical wound. On examination of this by the naked eye the conclusion formed at the operation was confirmed: the posterior part of the cord was covered by, and on section appeared to be infiltrated with, a vascular network. Microscopical specimens were prepared and stained by the Weigert-Pal, Van Gieson, and acid orcein methods. Examination of these showed that the growth consisted of dilated veins and comparatively large arteries, showing fibrillation of the elastic laminae and great proliferation of the intima. The etiology of the condition has not been

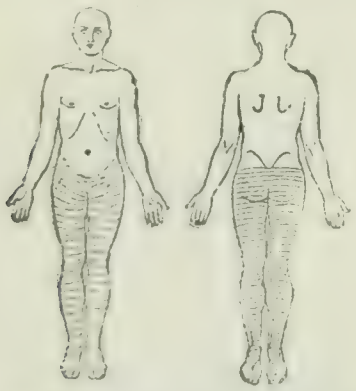


Fig. 3.—Vascular tumour of lower end of cord. Below the level indicated touch (cotton-wool) was recognized. Pain (pin prick) rarely recognized and pressure pain also lost. Recognition of temperature much impaired and paradoxical answers given.

determined. Several pathologists have examined the specimen. A specific origin has been suggested.

Dr. Grainger Stewart (London) said the subject which Dr. Reynolds and Sir Victor Horsley had opened for discussion was both large and interesting, and he intended to confine his remarks to two aspects of the subject, namely, the differential diagnosis of the various types of compression paraplegia and the distinctions between intramedullary disease and compression of the cord.

The physical signs and symptoms of compression paraplegia arose from involvement of the spinal cord or its surrounding structures, and were determined by the site and nature of the compressing agent. Thus the symptoms might be referred to the spine itself, to the nerve roots, or to the cord or portions thereof. They might be divided into local and remote: the local being due to the direct action of the lesion upon the spine roots or cord, the remote arising from interference with the conducting motor and [illegible] of the cord. He would like to emphasize the [illegible] extramedullary compression could give rise to signs of [illegible]dullary lesion, that these signs might be present [illegible] and even years, and yet that removal of the [illegible]on might cause their complete disa[illegible] that in a large number of cases [illegible] were due to interference with the [illegible] of the spinal tracts, and not to their de[illegible].

Taking the meningeal cases first, there were two distinct types of *chronic* leptomeningitis—diffuse and circumscribed. In the *d*[illegible] was first a slowly progressive but [illegible] weakness of both lower extremities with extensor responses; this was followed later by slight but widespread local signs such as broad girdle sensations and paraesthesia without definite sensory loss, and later still by definite local sensory loss, which became greater than the remote sensory loss if such occurred. The spastic weakness and the sphincter trouble increased. It was typical of these cases that the superficial abdominal reflexes were obtainable long after the development of typical extensor plantar responses.

In the *circumscribed* cases the upper level of the compression was more definite, and developed earlier, though relatively not so rapidly as in cases of tumour. The cord was either compressed by thickening of the membranes or by the damming-up of cerebro-spinal fluid owing to adhesions between the leptomeninges and pachymeninges; in the latter case the membranes were distended above the constriction, and the cord did not pulsate below that level, although in many cases incision of the membranes was followed immediately by the restoration of pulsation in the cord—a sign which was of good prognostic significance. In cases of so-called arachnoid cyst cerebro-spinal fluid was collected to form a local cyst within or under the arachnoid. In these cases the clinical symptoms were often more like those of tumours, but complicated by being bilateral at an early stage. *Chronic pachymeningitis* was commonly syphilitic, but sometimes tuberculous. The lesion was often confined to one side, giving rise to early and intense local root symptoms, followed by signs of compression of the corresponding side of the cord. Eventually the cord was surrounded, both root and spinal symptoms becoming bilateral.

Intradural Spinal Tumours.—These might be divided into two classes: (1) Firm circumscribed tumours; (2) softer and not circumscribed. In the former the tumour was generally round in transverse section and spindle-shaped in longitudinal section, lying parallel to the long axis of the cord. The clinical picture was very constant and typical, first root symptoms on one side—if the roots were involved—followed later by the progressive onset of signs of unilateral pressure on the cord, the motor weakness being on the side of the tumour; the sensory loss on the opposite side extending to a level three to five segments below that of the compression. The sensory loss usually followed the motor loss, but sometimes preceded it. Later signs of bilateral compression developed, one of the earliest being the onset of sphincter trouble and bilateral spastic weakness. When this had lasted for some time the sensory loss became bilateral, and then extended almost up to the level of the compression. If the roots were not affected, the nature and seat of the growth must be inferred from the mode of development of the physical signs.

Soft non-circumscribed growths spread rapidly to surround the cord, and there was no long interval between the onset of root or unilateral cord symptoms and the development of bilateral cord symptoms. These cases progressed rapidly and soon became completely paralysed.

Dural and Extradural Tumours.—Where the tumour was attached to the dura it simulated closely intradural tumours arising from the nerve roots. Tumours which merely pressed upon the dura did not produce cord symptoms until a late period, and when they commenced they were bilateral and intense. The explanation of this was found in the sudden compression of the cord between the tumour and the opposite side of the bony canal. This might also account for the relatively severe degeneration of the cord on the aspect furthest from the tumour.

Caries and Vertebral Tumours.—In these cases the earliest symptoms were as a rule referred to the bone, and even when this was not the case movement of or pressure on the affected portion of the spine aggravated or caused local or root pain.

The diagnosis between compression paraplegia and other forms of nervous disease could only be made by the recognition of the signs of involvement of the spine and nerve roots as evidence of an extramedullary lesion, and, failing these signs, by the accurate observation of the mode of onset of the symptoms and the absence of signs indicative of some general nervous affection. He would not take the presence of nystagmus as negativing a diagnosis of spinal tumour, as he had noted its occurrence in five cases of spinal tumour, in two of which it led to delay in the recognition of their

true nature. They were at first diagnosed as cases of disseminated sclerosis.

It was abundantly proved that extramedullary pressure might cause signs of intramedullary lesion, that these signs might persist for months or years, and yet completely disappear as the result of removal of the compression.

Dr. F. E. Batten (London) said he intended to deal only with one point—namely, the presence of thermo-anaesthesia in spinal lesions and its value in the diagnosis between intra- and extra-medullary tumours of the spinal cord. The presence of thermo-anaesthesia, either in the form of complete thermo-anaesthesia below the level of the lesion or in the form of a Brown-Séquard paraplegia, would suggest that the lesion had an intra- and not an extra-medullary situation. The former was an inoperable, the latter an operable, condition. The point could best be illustrated by reference to two cases, the former that of a young man who complained of weakness and wasting of the small muscles of both hands, with gradually increasing weakness of arms and legs. He had thermo-anaesthesia below the cervical region, and signs of pressure on the pyramids. He had little or no pain. Such a symptom-complex suggested a syringomyelia or central gliomatosis. He was treated with antisyphilitic remedies without success. The patient was then told that the cause of his trouble was probably situated within the spinal cord, and under these circumstances operation could do no good. The patient wished to take the chance of operation. A condition of pachymeningitis was found, and the man made a fair though not complete recovery. The growth in this case was said to be an endothelioma. The second case was that of a man with a Brown-Séquard paralysis of gradual onset below the level of the seventh thoracic segment. He complained of no pain. The loss of sensation on the affected side was limited to the appreciation of heat, cold, and pain. The question of an intra- and extra-medullary lesion was raised. Mr. Sargent performed a laminectomy, and a tumour was found at the level of the sixth thoracic root. The speaker expressed the opinion that thermo-anaesthesia could be used as a diagnostic point between intra- and extra-medullary lesions. He entirely disagreed with Sir Victor Horsley, who had expressed the opinion that all cases of paraplegia due to spinal caries should be operated upon. He considered that such cases should never be operated on.

Sir Victor Horsley, in reply, said that the children treated by rest were not cured, and that the disease would relapse later in life. Operation gave good, not bad, results.

TUMOUR OF THE ANTERIOR PART OF CORPUS CALLOSUM EXTENDING INTO THE LEFT FRONTAL LOBE: MOTOR APRAXIA.

By J. Michell Clarke, M.A., M.D., LL.D., F.R.C.P.,
Professor of Medicine, University of Bristol; Physician to Bristol General Hospital.

The patient was a pilot, aged 53. Fourteen years previously he had been laid up for six or seven months with an indefinite illness, non-febrile, and attributed to overwork; for a part of this time he was "not quite right in his head."

In May, 1909, he was taking a ship out of dock, when the mate failed to carry out his orders, and the nervous apprehension of an accident brought on a feeling of "gurgling," or "twitching" in his throat, with great shortness of breath. From the description of those near him he appeared to have difficulty in speaking, could not give his orders properly, hesitated and stammered. No muscular twitchings, giddiness, or loss of consciousness occurred; he recovered quickly, and took the ship across the Bristol Channel. Similar attacks, on each occasion caused by excitement, had occurred six months and three years previously. In June, 1909, I saw him first, and found no evidence of organic disease; the optic discs were normal; except for a slight trace of albumen in the urine he seemed perfectly healthy. Speech was normal, and there was no affection of the larynx, nor of the lips or tongue.

Until April, 1910, he seemed quite well, and was actively at work; at this date he was found one day, whilst at Milford Haven, lying in his bunk unconscious, and was taken to the hospital. On recovering consciousness he had right hemiplegia, from which he recovered in about six weeks, but from this time he complained of defective vision in the right eye. There was no squint.

In June, 1910, he was at home, able to work and to spend most of his time outdoors. He now first suffered from very severe headaches, generally localized to the right fronto-parietal region; they were unaccompanied by vomiting. These attacks of headache continued during the rest of the illness.

In August, 1910, on account of progressive failure of sight, he saw Mr. Richardson Cross, who found double optic neuritis, with much swelling of the discs, most intense in the right eye.

In November, 1910, he had an epileptic fit, followed by several epileptiform attacks, mostly slight, and lasting about ten minutes. The convulsions began on the right side, became general, and were followed by temporary loss of speech and tremor of the limbs.

In December, 1910, whilst out walking, he suddenly lost power in his right leg and fell; there was no loss of consciousness. After this he did not leave the house: the right leg never regained full power, and the left leg shortly afterwards became weak so that he could not walk.

In January, 1911, he took to his bed. He could just manage to stand and to walk a few steps with help. Since June, 1910, the mental condition had slowly deteriorated, although there were intervals in which it was almost normal. He became dull, apathetic, drowsy, forgetful, and neglectful of his dress and appearance. At times he would lie in bed in a stuporous state, taking no notice of his surroundings. At other times, though not stuporous, he was disorientated as to time and place, and did not recognize his children.

On February 11th, 1911, I saw him for the second time: he had then been lying in semi-stupor for three weeks. He replied to questions, but was soon fatigued.

On February 20th he was admitted to the Bristol General Hospital.

State on Admission.

He looked fairly healthy, but had a peculiar expression—a "puzzled" look on his face. Pulse rate 88, respiration 20, temperature 97.4°. Tongue moist, furred, slightly tremulous. Thoracic and abdominal organs normal; the urine contained a trace of albumen. On admission there was no loss of control of the sphincters. He could not stand or walk, but could just sit in a chair if supported. The mental condition was one of dullness and apathy, with great defect of memory. He had practically no memory of any events since the seizure in 1911. He was disorientated as to place, thinking he was in the Milford Hospital; sometimes he thought he had been to his home that day. He constantly mistook persons in the ward for his own relatives, but recognized his daughter when she came to see him. He had no power of sustained attention. On the other hand, he answered questions with fair intelligence, although very slowly. His defective vision must also be borne in mind. Sometimes he would count numbers or sing to himself for half an hour. He was never jocular.

Eye Symptoms.

Vision was nil in the right eye, and little more than perception of light in the left. Double optic neuritis, with much swelling of and around the discs; no haemorrhages. The right disc showed commencing atrophic changes. Pupils equal, dilated, reacted to light; the left did not react to accommodation. No squint; no nystagmus.

Other special senses normal.

No paralysis of the facial, lingual, palatal, or laryngeal muscles. Speech slow but quite distinct. Swallowing normal.

Limbs.

The legs could be moved in bed: they were paretic, but not absolutely paralysed. The movements possible were not ataxic. The legs were very rigid, and the spasm could not be relaxed. The sense of position was not lost. The arms were weak, but not paralysed. At times he was constantly moving his hands and arms in an irregular fashion or picking at the bedclothes. All the movements of the upper limbs were clumsy and awkward, so that he could not be trusted to feed himself, but there was no true ataxia. On movement a fine tremor of both arms was noticed.

After some days' observation it was quite obvious that although he could move the left arm and hand, he never attempted to use them; for instance, he never employed the left hand when he tried to feed himself, and this drew attention to the marked condition of apraxia in this limb. With the right hand he could on command do such actions as opening a matchbox and taking out the matches, or opening a penknife. Any such action was impossible with the left. He could not carry out any simple movement requested of him with this hand, and the request only resulted in his waving the limb about in an indefinite way, the same motion being repeated whatever he might have been asked to do. This repetition of the movements was striking. Sometimes he appeared to be satisfied that he had thus carried out the movement required of him, but more often he tried to supplement the left by the right hand: in fact, the way in which he tried to help the left hand with the right was a striking feature. After carrying out an action with the right hand he could not repeat it with the left. He could recognize common objects simply by contact when they were placed in his right, but very rarely when placed in his left hand, but if he once succeeded in thus recognizing an object, he called all succeeding ones by the same name. There was no affection of

common sensation to touch, prick, or thermal stimuli on either hand or arm, and it may be said here that sensation appeared to be unaffected everywhere over the body.

It may be objected that in the man's dull mental state the above observations could not be accurately made, but favourable moments were seized, and great care taken by doing only a few tests at one time not to fatigue him, so that I think the above statements are correct, especially as the apraxia of the left was in marked contrast to its absence in the right arm.

Reflexes

Deep reflexes increased in both upper extremities; knee-jerks both exaggerated, especially the right. Double ankle clonus. Abdominal and cremasteric reflexes present on both sides.

Plantar reflex extensor on right, flexor or indefinite on left side. Lumbar puncture showed the cerebro-spinal fluid to be under considerable pressure. The fluid was clear and normal in all respects. Noguchi's and Fleming's tests negative. For a few days after the puncture his mental condition improved, but on March 2nd he was decidedly worse, and incontinence of urine appeared. The diagnosis was made of a tumour in the corpus callosum and left frontal lobe.

Decompression Operation.

On March 3rd a decompression operation was done with the object of relieving the headaches, preserving the remnant of sight, or possibly ameliorating this and the mental condition. He vomited several times after the operation, but made a good recovery from it. The operation made no alteration in his condition. He grew worse very gradually, and died on April 3rd.

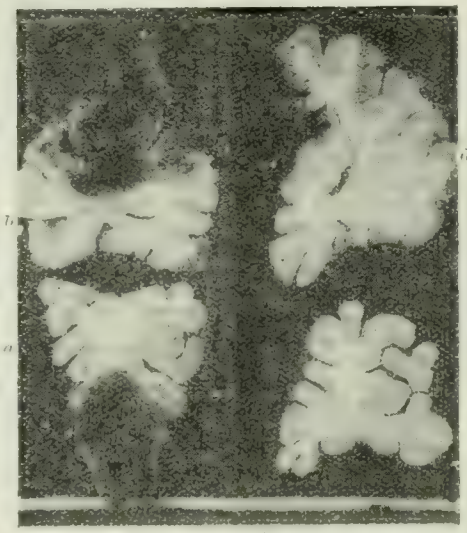


Fig. 1.—Vertical sections through frontal lobes. *a*, Through anterior part of left frontal lobe showing anterior extremity of large cyst; this section is inverted. *b*, A little further back, showing the same cystic cavity, which here compresses and destroys left superior frontal gyrus, and also on inner side damages callosal and marginal gyri. The small slit in centre of white matter below cyst is the tip of anterior horn of lateral ventricle. *c*, *d*, Right frontal lobe normal.

Post mortem a large tumour was found originating in the anterior part of the corpus callosum, and extending into the left frontal lobe. The tumour had destroyed and replaced the genu of the corpus callosum, and also the fibres which pass into the left frontal lobe and prefrontal area (forceps minor); the corresponding fibres passing into the right frontal area were somewhat compressed, but not destroyed by the tumour. In addition there was a large cyst in the white centre of the left frontal lobe, which also destroyed the fibres passing to and from the cortex of the left prefrontal area, and at its posterior part an area of softening interrupted the fibres passing from the left cortical leg centres to the internal capsule.

Passing from before backwards, in a section through the anterior part of the frontal lobe (Fig 1), about 1 in. behind the anterior pole, a large cyst in its outer part underlies and cuts off the connexions of the superior frontal, marginal and tip of callosal convolutions (limbic lobe).

A little further back (Fig. 2) the cyst, occupying the centre of the left frontal lobe, cuts off the frontal convolutions subcortically. The main tumour forms a large mass lying above the genu of the corpus callosum between the frontal lobes, and on the left side the callosal and most of the marginal gyri are destroyed. Behind this the tumour replaces the body of the corpus callosum, spreading laterally by the forceps minor along the internal superior wall of the anterior horn of the lateral ventricle; also into the callosal gyri, more especially on the left side. The cyst is smaller, but cuts off the superior frontal gyri, and below an area of oedematous and softened brain lying subcortically to the middle and inferior frontal gyri must have greatly damaged and interrupted the fibres proceeding from them. Broca's convolution and its subcortical connexions were outside the limits of the diseased parts. Still further back (Fig. 3) the posterior extremity of the cyst appears still in the white matter of the superior frontal convolutions, and well in front of the precentral gyrus. The tumour mass in the corpus callosum is now smaller, and extends downwards into the body of the fornix, especially on the left side.

Behind this the smaller posterior end of the tumour is entirely in the fibres of the corpus callosum passing into the left hemisphere, and a patch of softening just external to it interrupts the fibres passing from the cortical leg centres to the internal capsule.

This case, then, adds another to the list in which motor apraxia has been found in tumours of the corpus callosum. In Dr. Wilson's excellent paper on the subject[1] will be found several cases of lesions of the corpus callosum and frontal lobes in which this symptom occurred. The points to which he particularly draws attention in the conclusion of his paper are (1) that apraxia has been proved sometimes to be unilateral; (2) that it is much more frequently associated with lesions in the left hemisphere; (3) the significance of disease of the corpus callosum in the development of apraxia, especially where the apraxia is homolateral; (4) its occurrence when the whole of the cortex of both hemispheres has been normal, with the exception of the left frontal area.

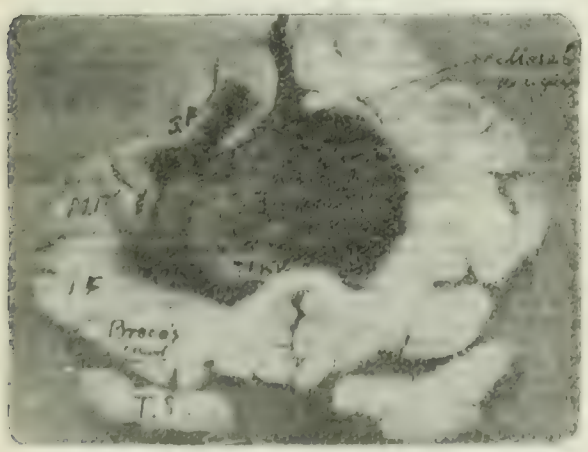


Fig. 2.—[illegible] (the large, [illegible] upwards. [illegible] in Fig. 1; [illegible] anterior, middle and inferior frontal gyri). "Callosal (marginal)" points to those gyri on left side commissured between tumour and [illegible]. Tip of [illegible] does not infiltrate, nor destroy fibres issuing from it.

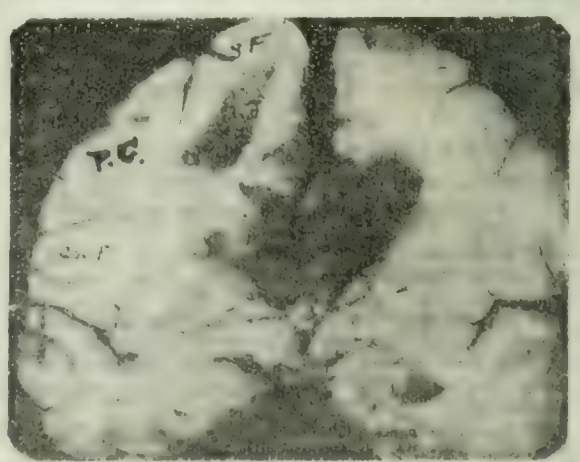


Fig. 3.—Vertical section further back shows above and [illegible] anterior extremity of cyst; a patch of softening below it [illegible] in this figure) interrupted course of fibres from cortical [illegible] tres. The tumour has destroyed and replaced the corpus callosum. Below the tumour on the left is seen the internal capsule, not damaged, on the right the fornix, and directly below septum lucidum. S.F.: Superior frontal gyrus. Asc.F.: Ascending frontal gyrus.

Subsequently to his paper there is Dr. Tooth's case of tumour of the mesial half of the left frontal lobe and of the genu and anterior half of the corpus callosum, in which there were paresis, slight spasticity, and some apraxia of the left arm.[2] A case is reported by Liepmann and Maas in which there was apraxia of the left arm and hand with perseveration and right hemiplegia. A large area of softening involved the white matter under the frontal gyri, gyrus fornicatus, and paracentral lobule, and especially the left half of the corpus callosum in the anterior three-quarters of its extent, as well as its area of origin in the left hemisphere. The right hemiplegia was due to a separate lesion in the pons.

In Goldstein's case[4] there was well marked left-sided motor apraxia; an area of softening involved the corpus callosum in its whole extent, and also the following parts of the *right* hemisphere: the white matter and part of cortex of paracentral lobule, the white matter and all cortex of gyrus fornicatus and posterior portion of mesial cortex of superior frontal convolution. In the abstract it is not stated whether this patient was right or left handed.

It would seem, then, that motor apraxia is a valuable localizing sign of tumours or lesions of the corpus callosum. The inference will be certain if the motor apraxia follows or accompanies the hitherto recognized signs of a tumour of the corpus callosum—that is to say, gradually developed hemiplegia, first on one side of the body and then on the other, affecting the legs more than the arms, with sometimes a rapid loss of vision unaccounted for by the degree of optic neuritis present, or the delayed appearance of optic neuritis, and, at some time in the progress of the case, mental disturbance. If, as is held by many authorities, the cortex of the first and second frontal convolutions has a guiding and controlling and co-ordinating influence over general movements, as the left third frontal convolution has over the movements of speech, then it will be in lesions of the genu of the corpus callosum and of the fibres spreading thence into the left frontal lobe that we shall expect to find motor apraxia especially well marked. The evidence so far points to this being the case, but at the same time motor apraxia may be produced by lesions in other than the frontal lobes and corpus callosum; thus Kroll[5] reports three cases of motor apraxia in which the frontal lobes appeared macroscopically healthy, but pathological lesions were found in the supramarginal gyrus, and he accordingly ascribes the symptom to lesions of the white matter of this gyrus. The value of motor apraxia in the diagnosis of lesions of the corpus callosum at present lies in its association with other signs pointing in the same direction. As the diagnosis of such a lesion is often very difficult, so definite an additional sign is a valuable aid.

In the case above related the cyst in the left frontal lobe was of haemorrhagic origin. The attack of apoplexy followed by right hemiplegia was probably due to a large haemorrhage into this lobe, the apoplectic focus being subsequently converted into a cyst. The leg was predominately affected because the cortical leg centres were cut off from their subcortical tracts, whilst the tract from the cortical arm and face centres lay posteriorly to the lesion. To sum up: The chief points in this case are the long history, the apoplectic seizure followed by right hemiplegia, with regain of power in the arm, but leaving the leg paralysed; the subsequent paralysis of the left leg, the signs of affection of both pyramidal tracts, the late occurrence of optic neuritis; the loss of sight in relation to optic neuritis, which was neither very acute nor showed marked atrophic changes; the peculiar mental condition of drowsiness, apathy, and disorientation; and the motor apraxia and perseveration, together with the absence of disorders of sensation.

References.

[1] Contribution to the Study of Apraxia. *Brain*, vol. xxxi, 1908, p. 164 seqq. [2] *Rev. Neurol. and Psych.*, vol. vii, 1909, p. 975. [3] Ibid., vol. vii, 1909, p. 116. [4] *Neurol. Centralbl.*, 1907, p. 898. [5] Abs. in *Jahresb. d. Neurol. u. Psych.*, xiv, 1911, p. 388.

THE NATURE AND TREATMENT OF EPILEPSY.

By William Alexander, M.D., F.R.C.S.

I have been requested to describe my views of the nature and treatment of epilepsy. In complying it will be necessary to treat the subject in outline rather than in detail, owing to the shortness of the time at my disposal.

By epilepsy I mean the so-called essential epilepsy where the fits are the only evidence of defect. Hemiplegics, imbeciles, idiots, feeble-minded people, and lunatics may also have fits, but the fits are not the main disease, and although the fits may be arrested the major disease remains. An imbecile boy has had his fits arrested for eight years, but remains an imbecile. An idiot has had the fits reduced to a small number compared with the daily attacks he formerly suffered from, but his brain is degenerating and his habits are becoming more and more depraved.

An intelligent, open-hearted, and lovable girl had recurrent attacks of mania accompanied by violence. Her epileptic attacks became less frequent, but her attacks of mania increased in number, and she had to be sent to an asylum. Some would call her mental attacks "psychic equivalents"; I would prefer to look upon them as evidence of insanity, and I base my opinion on the ground that epilepsy can be arrested and the other disease remains. I am not concerned with any of these cases to-day.

In the beginning all sorts of patients were sent to our homes at Maghull, provided that they suffered from "fits."

When we learnt that we could arrest the epilepsy, but that the complications remained and made our work of no practical value, we had to revise our position, and we now only retain patients who, except for the epileptic manifestations, are able to take their place in the struggle for existence.

Epilepsy, then, is the result of a *condition, probably a circulatory disturbance, often accompanying* the diseases I have named, but a condition capable also of being produced by trauma and by many obscure causes, and in all these cases the epilepsy is capable of arrest. For instance, in 23 hemiplegics the attacks were arrested in 2 cases, or 8.6 per cent. In 25 imbeciles the attacks were arrested in 3 cases, or 12 per cent. In 174 healthy children the attacks were arrested in 29 cases, or 16.6 per cent. As we would expect, otherwise healthy epileptic children are more successfully treated than otherwise defective epileptic children, but we need never despair of some success in arresting the attacks even in the most hopeless cases.

Malnutrition of the Grey Matter of the Encephalon.—I need not remind my hearers of the popular theory that attributes epilepsy to the malnutrition of the cortical cells of the grey matter of the cerebrum. I want to make a suggestion in regard to the malnutrition. For about ten years I have been much impressed during my exploratory operations on epilepsy with the constant presence of oedema of the pia arachnoid. The fluid is clear and somewhat flocculent, and varies in quantity from speckled white streaks that accompany the vessels to a layer of such a depth as to conceal completely from the sight of the operator the cerebral convolutions.

In focal epilepsy the oedema is most marked at the focus of the disease. In non-focal epilepsy it is distributed more or less unequally over the motor area on both sides of the brain.

The fluid lies enmeshed in the pia and visceral arachnoid, so that the cortical brain cells live, as it were, in a marsh, and a consequent malnutrition of the cortical cells that spells epilepsy may be due to this condition. In a paper in the *Lancet* of September 30th, 1911, I have dealt with the matter at more length than is possible here, and to that paper I would refer any who wish to pursue the subject.

Precipitin Reaction in Epilepsy.—Recently Dr. D. M. Alexander, Assistant Superintending Medical Officer at Maghull, has discovered a reaction produced by a precipitin evoked by some substance present in epileptic body fluids but not in normal human serum. We do not know to what this clue may lead. A preliminary note on the matter will be found in the *Liverpool Medico-Chirurgical Journal* for July, 1912.

Treatment of Epilepsy.—The treatment of epilepsy must be early, continuous, and persistent for several years, and all the more if the attacks become arrested. It is during the periods of arrest that in the past valuable time has been lost. When attacks have ceased for only a few weeks means of treatment are generally abandoned, often directly against medical advice, in the false belief that a cure has been effected; and when a recurrence takes place it is supposed that previous treatment has failed, and consequently patients and friends seek other advisers. Finally, after a number of similar

episodes, resort to quacks takes place, and when they fail colonies receive the victims of ignorance and mistreatment. As showing the chronicity of the disease, 158 of our cases had trodden the *via dolorosa* of epilepsy for twenty years and upwards before they applied for admission to our homes. 281 had been ill for ten to twenty years. 224 had been ill for five to ten years, and only 60 had been admitted in the first year of their illness. In 24 cases the previous duration of the disease was unknown. Out of all these chronic cases the disease had been arrested in 92 for varying periods ranging from three months to seventeen years, as ascertained from an examination of our records in May last.

Effects of Early Treatment on the Results.—Where the disease had not existed for more than ten years the arrests amounted to 12 per cent.; whilst in those cases where the disease had existed for upwards of ten years the "arrests" were only 8 per cent.

Patients admitted within a year of the commencement of the disease had the fits arrested in as many as 15 per cent. of the cases. (The arrests in all the cases since the establishment of the homes are just under 10 per cent.)

If we exclude all arrests under a year we have the following successful results:

Disease arrested for	12 months	...	...	16 cases.
,, ,,	18 ,,	...	...	7 ,,
,, ,,	2 years	...	...	13 ,,
,, ,,	3 ,,	...	...	12 ,,
,, ,,	4 ,,	...	...	1 case.
,, ,,	5 ,,	...	...	6 cases.
,, ,,	6 ,,	...	...	1 case.
,, ,,	7 ,,	...	...	6 cases.
,, ,,	8 ,,	...	...	2 ,,
,, ,,	17 ,,	...	...	1 case.

The treatment consists, broadly speaking, in enabling the patients to lead a normal life during the intervals of their attacks, to continue their education if of school age, to acquire and work at a suitable occupation if beyond the school age, to be restored to the society of their equals, and to secure liberty and independence of thought and of action as far as is consistent with safety; and the amount of liberty a patient in a colony has is absolute freedom compared with the restrictions on a patient's liberty even in the most sympathetic family circle.

A normal life means at Maghull a mixed diet, in which meat only occurs once a day, and then in moderate quantity, with fruits and vegetables in their season. Three meals a day, and a light supper of gruel, bread and milk if desired by the patients. Matutinal attacks are treated by some simple diet before arising from bed. Tea, coffee, and cocoa are allowed in a very weak form. Tobacco and alcohol are not allowed. Plenty of sleep—eight to nine hours—is allowed, but sloth is not encouraged.

Occupation.—Every patient works at something on the farm or in the gardens, the joiner's shop, the smithy, or the wood shed, basket making, looking after the cattle and the poultry. The women have laundry work, cooking, housemaid's work, and needlework.

The number of hours engaged in work by each individual is read out on Saturdays, and is treated as a matter of importance, so as to encourage the industrious and stimulate the lazy. Those who learn to work steadily and can be relied upon receive small gratuities occasionally, by which they can buy a new article of dress, or subscribe to the football, tennis, or cricket clubs.

Sports.—Their sports are managed by committees elected by themselves. Both as regards work and play, our object is to arouse individual interest and personal endeavour, and to restore to patients such a look of intelligence and thought as can be seen on the face of an ordinary normal individual who is pursuing some business or occupation.

We do not encourage introspection or analysis of symptoms, but endeavour to turn the attention to outside matters unconnected with the disease.

Education of Epileptics.—This is a most important item in the treatment of the disease. As a rule, when epilepsy appears education ceases, not only as regards the acquirement of the three "R's," but also in regard to self-control and self-culture, etc. Now this, I think, is a great mistake. If the patient is an essential epileptic, nothing but good can arise from a judicious amount of mental work, and the acquirement of the three "R's" can be successfully pursued, although the time occupied in their acquirement may be a little greater than usual. More personal effort is necessary on the part of the teacher, but with patience and skill the results of the literary education of epileptics is gratifying.

Mechanical work, nature studies, drill, are useful agents in training epileptics as well as other children, but it is very necessary that the three "R's" should be acquired if the scholars are to be of any use in actual life. If a child cannot read, write, and do some arithmetic, how can he learn to be a joiner—to make estimates, or to translate plans into constructive work? I think you will all say that this is reasonable and necessary, but I am forced to insist on this part of the education of epileptic children, on account of the tendency of education authorities and education inspectors to treat epileptic patients as feeble-minded and not to trouble about their literary education. The teachers are very glad to follow their lead, as it is much easier to keep the children occupied with bead threading, dabbing with colours, paddling with clay, and the other hundred and one occupations invented by teachers for occupying the minds of infants and imbeciles.

The system in vogue of educating the feeble-minded is not suitable for sane epileptics. What we want is the normal system of teaching healthy individuals modified to meet the exigencies of the attacks.

Medicines.—A long experience of the treatment of epilepsy convinces me that we cannot depend entirely on hygienic treatment of the disease. A carefully arranged medicinal treatment will increase the number of arrests of the fits in a very material degree. Potassium bromide I never use as a routine treatment. It is a very necessary and powerful agent for crises, and we could not well do without it; but if constantly used in the large doses commonly prescribed, there is in my mind no doubt of its baneful influence on the mind and brain. The routine medicine at Maghull, where such is considered necessary, is borax and sodium bromide. The maximum dose of each is 20 grains three times a day given in barley water. We have tested most of the compounds of bromide that have been recommended, and we do not find any to come up to the success of our own mixture supplemented as it is by a normal healthy life.

Treatment in Private Practice.—As a general rule the only part of the colony treatment that is understood and that can be carried out in private practice is the medicinal treatment. Relatives will attend to the distribution of medicine, but the other conditions, even when they are understood, which they often are not, cannot be carried out. And even the medicine, owing to many adverse influences, ceases to be given if the fits cease to occur. Again and again have private patients come back to me after a long cessation of attacks complaining that the fits had returned, and almost invariably I found that the administration of medicine had ceased or become so irregular as to be ineffective.

The operation of draining the cerebral oedema or "fenestration of the dura mater" has been performed by me in a number of cases; these are recorded in the *Lancet*, September 30th, 1911, before referred to. It will be seen from a perusal of that paper that a large number of patients were benefited very much. The operation is undertaken in focal cases, and in such cases where, as often happens, no tumour or gross lesion presents itself, and I think the operation of fenestration should be performed wherever oedema is present and where from the absence of a lesion nothing else can be done.

My experience leads me to the conclusion that when the treatment of epilepsy is carried on as I have described above, the outlook of an epileptic will become much brighter and more hopeful than it has been in the past.

DISCUSSION.

DR. BATTEN (London) said that he agreed entirely with the line of treatment advocated by Dr. Alexander, and he hoped the time would soon come when institutions such as Maghull would be available for the treatment of epileptics in other parts of the country. He thought that the use of bromides was of the greatest value in dealing with epilepsy, and no harm resulted from the use of that drug. It was the abuse of the drug which did harm. He asked Dr. Alexander if he had examined the fluid from the oedematous areas which he found on operation. The

...ser was not in favour of operation in the treatment of ...epsy, though he admitted the diminution in the number ...ks might occur as the immediate result of the operation.

Dr. Warrington (Liverpool) considered that treatment ...bromides, combined with other medicines, was most ...al. He often gave digitalis with bromide. Was there ...ny evidence that the potassium, as contrasted with ...sodium salt, was injurious? He had always felt that ...great dimculties in the study of the pathology of this ...ase were the secondary changes that must occur after ...profound disturbances following epileptic discharges ...the facts of inheritance. Who had any knowledge of ...the brain of a potential epileptic?

Dr. Blair (Lancaster) deprecated Dr. Alexander's ...paration of sane and insane epileptics.

Dr. Michell Clarke (Bristol) expressed his appreciation ...of Dr. Alexander's work and interest in his paper. He ...ked as to what experience he had had as to the effect of ...elimination of salt from the dietary. He was inter...sted to hear that Dr. Alexander allowed his patients meat ...ce a day; he himself thought that patients did best with ...ss meat than this; a certain number also were improved ...by being placed on a so far as possible purin-free diet ...for a time. As to bromides, he agreed with what had ...been said by Dr. Batten—treatment by bromides was most ...effectual when begun early after the appearance of the ...first fits, and should be then continued steadily; after the ...fits had lasted for some time it was less effectual. Recently ...he had found benefit from addition of small doses of pilo...carpine to the bromide. He hoped that the movement ...which was now spreading throughout the country for the ...segregation of the feeble-minded would also embrace an ...adequate provision for the care and education of epileptics ...in country colonies.

Dr. Charles Williams (Chester) quite agreed with Dr. ...Alexander as to the value of the operation of fenestration of ...the dura mater in cases of intractable epilepsy, and related ...a case operated on by Dr. Alexander a few years ago when ...the patient (a little girl of 7) had thirty or forty fits per ...diem. After the first operation on one side the fits ...decreased to half that number, and after the second ...operation they ceased altogether.

The President (Dr. Oswald), in summing up the dis...cussion, gave it as his opinion that bromide induced mental ...reduction but was useful in chronic cases.

ON THE USE OF BRAIN EXTRACT IN THE TREATMENT OF VARIOUS FORMS OF INSANITY.

By W. Maule Smith, M.D., M.R.C.P.Edin.,
Barnsley Hall Asylum, Bromsgrove.

The earlier observations were made after the administra...tion of an extract prepared from the brains of fetal calves. The results were so pronounced, but the supply of such ma...terial so limited, that the experiments were continued ...with extracts prepared from the brains of healthy full-grown sheep and cattle.

Preparation.

The extract is prepared by boiling finely divided brain ...tissue in a mixture of alcohol and ether for a lengthened ...period, then straining through fine muslin. When per...fectly cold the supernatant fluid is decanted from the ...heavy deposit. This deposit is carefully poured ...into boiling normal saline solution to which glycerine ...has been added. Experience has shown that 30 c.cm. ...of the deposit, when added to 1,000 c.cm. of the boiling ...saline solution, forms an opalescent emulsion with practically ...no sediment. It is free of alcohol and pleasant to the taste.

The chief points so far noted are: (1) That the extract ...must be made as soon as possible after the animal is ...killed—delay renders the preparation almost valueless; ...(2) the younger the animals are, the greater is the thera...peutic effect of the extract: (3) the thick white fluid ...obtained after the tissue has been boiled and strained keeps for a lengthened period, and can be added to the saline solution as required.

The emulsion is rich in cholesterin and in a substance which reduces Fehling's solution. It was originally pre...pared to obviate the great expense entailed in using cholesterin on a large scale. It appears to have advan...tages over this substance both in administration and action. It also appears to have a more potent effect than the dried preparations sold under the name of "cerebrin."

It is of the utmost importance to find some substitute for the hypnotics and sedatives at present in common use. Useful as such drugs of the sulphonal, chloral, and bromide families are, their administration over any length of time is attended with such serious secondary effects on the nutrition and mental state that any remedy which pro...mises to give the sedative effect without the concomitant impairment of nutrition merits a wide trial. This can be claimed for the present preparation.

Cases Treated.

1. *Chronic.*—The cases which form the majority of those treated during the past eight months are those of the chronic forms of excitement and depravity of habits, on whom the usual tonic and sedative methods had been tried without inducing more than a temporary quiescence; others belong to the chronic insane who are liable to out...bursts of extreme violence as the result of delusional and hallucinatory excitation. A third group under treatment are the chronic epileptics.

2. *Recent.*—Amongst the cases of recent insanity which have undergone treatment are those suffering from dementia praecox, confusional insanity, and melancholia.

I propose taking seriatim the various groups of cases treated, and mentioning the chief features noted about each.

A. *Dementia.*

Of these 12 female cases of secondary dementia only 1 is a recent admission, and she has shown the most decided alteration in the mental symptoms. When admitted last month she was completely disorientated, unable to under...stand what was said to her, usually mumbled when spoken

Dementia.

No.	Admitted.	Age	Date of Treatment.	Weights.		Result.
1	Mar. 18, 1909	60	June 17, 1912	May, 8 st. 1 lb. July, 7 st. 12 lb.		Not improved.
2	July 12, 1907	40	June 17, 1912	July, 5 st. 9 lb.		Not improved: patient suffering from chronic phthisis.
3	April 5, 1910	48	June 24, 1912	July 6, 8 st. 10 lb. July 17, 9 st. 8 lb.		General health greatly improved; mental health improved.
4	July 29, 1908	49	June 24, 1912	June, 6 st. 11½ lb. July, 7 st. 1 lb.		Mental state improved: physical [illegible]
5	May 5, 1908	34	Mar. 21, 1912	Feb., 7 st. 0½ lb. May, 7 st. 6 lb. July, 9 st. 0 lb.		Emaciation and extreme mindlessness: great im[illegible]
6	Nov. 15, 1911	62	June 5, 1912	June, 7 st. 6½ lb. July, 7 st. 0 lb.		[illegible]
7	Nov. 15, 1911	60	June 8, 1912	June, 9 st. 13 lb. July, 8 st. 11 lb.		[illegible] zema of arms;
8	July 4, 1907	53	April 2, 1912	April, 8 st. 2 lb. May, 8 st. 4 lb. July, 7 st. 12 lb.		[illegible] dence;
9	Nov. 15, 1911	71	June 23, 1912	June, 7 st. 12 lb. July, 7 st. 11 lb.		Much improved.
10	June 5, 1912	62	June 10, 1912	Not taken		Chronic mania of 30 years' duration: improved for a time
11	Nov. 21, 1911	61	June 18, 1912	June, 9 st. 10 lb. July, 9 st. 8 lb.		Not improved.
12	Feb. 24, 1903	51	June 29, 1912	July, 6 st. 12 lb.		Diarrhoea and haematoporphyrinuria; severe [illegible] and limbs; recovery.

to, could not stand or walk, and lacked all facial responsiveness. During one night she developed oedema of the tongue from some unknown cause, and was then given the extract on June 23rd. The oedema passed off in two days, and she began to take food voluntarily. She has gradually got stronger, is rational, can get up, walk about, and attend to herself.

The other cases are of long-standing duration, and show various degrees of mental dissolution. Some still show evidences of chronic excitement with tendency to violence, others restlessness and resistiveness, 4 out of the 12 cannot be said to have improved. Of these one shows considerable congenital mental defect, another suffers from chronic phthisis.

Another has outbursts of homicidal violence, and the fourth has been in an asylum for about thirty years.

The others have unquestionably undergone decided improvement. They are all cases which formerly required a sedative in some form, but they are now rarely unmanageable and sleep well at night. The general nutrition has shown the most marked change. In one case emaciation was advanced and the patient in a state of mindlessness. In February last she weighed 7 st.; she now weighs 9 st., and there is a concomitant improvement in the mental state.

Five others suffered from skin rashes of various kinds and recurrent boils, which resisted other forms of treatment but which have now cleared up.

Although there is not an invariable increase in weight, there is certainly an appearance of improved nutrition always present.

B. *Delusional Insanity.*

Eight cases suffering from this form of mental illness have been under treatment. Of these, two show no appreciable improvement—one shows distressing delusions of organic sensibility, the other is a recent admission in whom hallucinations are pronounced.

No. 1 has improved in the sense that she does not now affect statuesque attitudes, refuse her food, and fail to attend to herself because of her being dominated by "voices." The hallucinations are still present, but she has lately given less attention to them, takes food, and sleeps well; and although she registers a loss in weight, she appears in a state of improved nutrition.

Nos. 5 and 7 are cases showing strong tendencies to violence, marked delusions of identity and of grandeur, who were liable to outbursts of treacherous or open violence and whom it was necessary to control by sedatives. Lately the symptoms have entirely altered; they are now willing helpers, rarely show excitement, and do not tend to violence. The delusional state is much fainter. An interesting point to be noted is that in the beginning of this month the extract was not given to No. 5 for three days. There was an immediate recurrence of the former symptoms of abusiveness and threatening, but these have again disappeared.

Delusional Insanity.

No.	Admitted.	Age	Date of Treatment.	Weight.		Result.
1	Jan. 12, 1912	43	April 25, 1912	April 25,	7 st. 12 lb.	Losing weight, but now taking food well voluntarily; mental state much improved.
				May,	6 st. 12 lb.	
				July,	6 st. 0 lb.	
2	Aug. 2, 1910	[illegible]	May 6, 1912	May 6,	9 st. 6 lb.	Delusions affecting organic sensibility; not improved.
				May 25,	9 st. 0 lb.	
3	May 25, 1912	36	June 1st, 1912	June,	8 st. 0 lb.	Not improved.
				July,	7 st. 10 lb.	
4	July 8, 1910	46	April 12, 1912	April 11,	9 st. 3 lb.	Mental state greatly improved, but patient shows loss of weight; food well taken and nutrition appears good.
					13 lb.	
5	Oct. 18, 1908	49	July 14, 1912	April,	10 st. 7 lb.	Mental state shows signs of early improvement.
				July 17,	10 st. 7 lb.	
6	July 5, 1907	50	May 30, 1912	May,	8 st. 0 lb.	Mental state improved; is in good health, but has lost slightly in weight.
				July,	7 st. 6 lb.	
7	[illegible] 1910	38	June 7, 1912	June,	7 st. 4½ lb.	Greatly improved, both mentally and physically.
				July,	7 st. 9½ lb.	
8	July 3, 1907	49	June [illegible], 1912	June 30,	7 st. 13 lb.	Mental state improved; physical health stationary.
				July,	8 st. 0 lb.	

C. *Manic-Depressive Insanity.*

Only 5 cases have been under treatment, and on the whole there has not been any marked reaction. One who is extremely hysterical and liable to recurrences of almost major hysteria improved very much to begin with, but this has not been maintained. In No. 2 there was not the uncontrollable excitement present on former occasions, nor the impulsiveness to violence. Usually at such times she has had to be nasally fed, but on this occasion she has taken food voluntarily. No. 4 showed considerable mental and physical improvement during the early part of the year, but she is again passing through a period of excitement. Her general health, however, this time continues

Manic-Depressive Insanity.

No.	Admitted.	Age	Date of Treatment.	Weight.	Result.
1	Mar. 6, 1912	48	Jan. 4, 1912	Jan., 6 st. 8 lb. May, 6 st. 5 lb. July, 6 st. 10 lb.	Not improved; patient is extremely hysterical and liable to episodes; improved for a time, but has relapsed; is in good health.
2	July 13, 1907	53	—	July, 6 [illegible] 8 lb.	Excitement less intense and prolonged when under treatment.
3	Aug. 16, 1911	40	May 25, 1912	May, 8 st. 0 lb. July, 7 st. 12 lb.	Not improved.
4	Jan. 14, 1911	47	Jan. 22, 1912	Jan., 7 st. 3 lb. May, 8 st. 1 lb. July, 7 st. 13 lb.	Not improved; patient greatly improved in general nutrition at the commencement, but mental symptoms have recurred.
5	Aug. 12, 1907	50	Feb. 5, 1912	Feb., 7 st. 6 lb. May, 8 st. 6½ lb. July, 8 st. 6½ lb.	During the last attack the patient did not reach such a degree of mental degradation as on former occasions.

Epileptic Insanity.

No.	Admitted.	Age	Date of Treatment.	Weight.	Result.
1	July 12, 1907	42	—	Feb. 14, 9 st. 2 lb. May 25, 9 st. 0 lb. July 17, 9 st. 0 lb.	Improved.
2	July 12, 1907	40	Jan. 30, 1912	Feb. 14, 7 st. 9 lb. May 25, 8 st. 0 lb. July 17, 7 st. 9 lb.	Improved.
3	Aug. 15, 1911	40	Mar. 23, 1912	Feb. 14, 7 st. 6 lb. May 25, 7 st. 7 lb. July 17, 7 st. 12 lb.	Not improved.
4	Nov. 29, 1911	37	Mar. 20, 1912	Feb. 14, 9 st. 11 lb. May 25, 10 st. 0 lb. July 17, 9 st. 4 lb.	Not improved.
5	Sept. 5, 1911	31	Feb. 1, 1912	Feb. 14, 7 st. 8 lb. May 25, 8 st. 4 lb. July 17, 8 st. 12 lb.	Not improved.
6	July 23, 1909	32	Feb. 29, 1912	Feb. 14, 6 st. 6 lb. May 25, 6 st. 4 lb. July 17, 6 st. 6 lb.	Improved.
7	Dec. 18, 1908	52	Feb. 14, 1912	Feb. 14, 7 st. 9 lb. May 25, 7 st. 10 lb. July 17, 8 st. 0 lb.	Improved.
8	Nov. 15, 1911	21	Apr. 25, 1912	Feb. 14, 6 st. 5 lb. May 25, 6 st. 5 lb. July 17, 6 st. 3 lb.	Not improved.
9	Feb. 22, 1912	44	Mar. 7, 1912	Feb. 14, 6 st. 11 lb. May 25, 7 st. 1 lb. July 17, 7 st. 2 lb.	No change.
10	April 17, 1908	27	Mar. 11, 1912	Feb. 14, 8 st. 4 lb. May 25, 7 st. 10 lb. July 17, 7 st. 15 lb.	Not improved.
11	Jan. 30, 1908	20	Jan. 25, 1912	Feb. 14, 8 st. 11 lb. July 17, 9 st. 2 lb.	Improved.
12	Nov. 17, 1908	22	Jan. 22, 1912	Feb. 14, 5 st. 13 lb. July 17, 6 st. 5 lb.	Improved considerably under fetal brain extract; ordinary extract produced oedema [illegible], No. 15 [illegible]
13	Dec. 28, 1910	11	Jan. 4, 1912	Feb. 14, 4 st. 0 lb. July 17, 2 st. 13½ lb.	

good. In the case of No. 5 recurrence of the present period of excitement has not been attended by the utterly depraved behaviour that has been present on former occasions. The patient also improves in health.

D. *Epileptic Insanity.*

The idea of giving the extract arose in an attempt to find some agent for controlling the severity of the fits: so far as I know every form of treatment has been tried with the exception of fetal brain.

An extract of this was prepared and given to two cases of imbecility who suffered from fits of the utmost severity. During the month I was able to give it, the number per week was reduced from twenty to five in the one case; and in the other the severity was so altered that the fits became of the nature of *petit mal*.

Later the ordinary extract was substituted. In no case has the number or severity of the fits been reduced; but in the inter-fit period there is a very noticeable modification of the mental state. The patients are easier to manage, less given to grumbling and discontent, and outbursts of violence are rare and of shorter duration.

E. *Confusional Insanity.*

With regard to the insanities of recent origin probably the most striking results are obtained in this form of mental illness. There can be no question of the almost immediate modification of the mental and physical states. The improvement of food appetite, the onset of sleep, the rapid disappearance of the secondary signs of autointoxication, such as furred tongue, sordes of teeth and lips, herpes, and the exhausted expression peculiar to such patients, are most noticeable. Coincident with the disappearance of these the mental state becomes calm, the hallucinations wane, restlessness, confusion, and noisiness are allayed and disappear, and the patient enters into a state of convalescence within thirty-six hours. Case 1 was a typical case of acute delirious mania—restless, mindless, noisy, refusing food and vomiting everything given, herpes, sordes, and constipation. She was given the extract five days after admission. Next day the vomiting stopped, she slept, became less agitated, and took food. Convalescence is progressive.

Cases 3 and 5 showed similar states of delirious excitement, which in both cases commenced to clear up immediately after taking the extract. In the case of No. 5 the improvement has been so pronounced that her friends insist on having her at home. In No. 3 the extract was stopped on July 7th, but the patient in a day or two commenced to experience a feeling of ill being and hypochondrialism, which were the initial symptoms of her illness prior to admission. With the recommencement of the extract the symptoms have practically disappeared.

No. 4. Chorea, intense hallucinations of hearing urging her to an act. The patient made two determined efforts to reach her children, whom she thought were outside, by pushing her head through a pane of glass. On both occasions she cut herself severely. Sedatives only induced transient quietude; they were stopped altogether. The extract was substituted, and attended with improvement within the usual time. There has been no recurrence; the patient is now in an advanced state of convalescence, and will very likely be discharged in the near future. The chorea has disappeared.

Case 2 showed a marked degree of malnutrition on admission, and suffered from septic skin rashes. She now takes food voluntarily, and the skin is now quite healthy. She is almost deaf, and the basis of her illness is probably delusional insanity.

No. 6, a case of long-standing excitement, passed into a state of extreme physical prostration, attended with emaciation; temperature, 101°. A comatose state supervened, with muttering delirium and subsultus. A day or two after the extract was given improvement set in, the delirium passed off, and the patient took food herself. She collapsed somewhat suddenly on July 6th, and at the *post-mortem* examination death was found to be due to haemorrhagic pancreatitis.

Amentia (Confusional Insanity).

Admitted.	Age	Date of Treatment.	Weight.		Result.
July 5, 1912	37	July 11, 1912	July,	6 st. 5 lb.	Great improvement in nutrition and in mental state.
Dec. 2, 1911	47	April 16, 1912	April, May, July,	5 st. 4 lb. 6 st. 10 lb. 6 st. 3 lb.	Nutrition greatly improved; mental symptoms less acute; patient partially deaf.
April 1, 1912	44	April 23, 1912	April, May, July,	7 st. 4 lb. 8 st. 5 lb. 8 st. 0 lb.	General health greatly improved; mentally, convalescence advanced.
Jan. 13, 1912	48	April 8, 1912	April, May, July,	7 st. 10½ lb. 8 st. 1 lb. 8 st. 5 lb.	Health much improved; chorea disappeared; convalescence advanced.
May 31, 1912	45	June 1, 1912	June 14, July 17,	8 st. 0 lb. 10 st. 13½ lb.	Great improvement in general health; patient to be discharged.
Sept. 5, 1911	33	May 14, 1912	April,	9 st. 0 lb.	Patient, from being in a state of complete prostration and emaciation, rallied and gained in weight; ultimately died of haemorrhagic pancreatitis.

F. *Dementia Praecox.*

Fourteen cases have been under treatment, and the rule has been that cases of any degree of recency have improved; 8 cases have definitely reacted; and of the remaining 6, 2 are of long standing. Of those that have improved, 3 are in an advanced state of convalescence and 2 have passed from a state of emaciation to one of good health. Unfortunately, the mental symptoms in these two have not altered in the same ratio, but they are manageable without the aid of other treatment. In addition to improved appetites for food and sleep and general health, there is a definite reduction in the degree of katatonia and negativism.

Dementia Praecox.

No.	Admitted.	Age	Date of Treatment.	Weight.		Result.
1	Sept. 5, 1907	27	June 26, 1912	June, July,	7 st. 8 lb. 6 st. 9½ lb.	(Old standing.) Not improved.
2	Jan. 28, 1909	25	June 5, 1912	June, July,	7 st. 4½ lb. 6 st. 12½ lb.	Not improved.
3	Sept. 17, 1910	37	May 21, 1912	May, July,	7 st. 8 lb. 8 st. 11½ lb.	From October to May patient physically prostrate and mentally mindless; improved, but has relapsed.
4	April 26, 1911	22	June 21, 1912	June, July,	10 st. 0 lb. 10 st. 6 lb.	Much improved.
5	June 16, 1910	36	Mar. 19, 1912	Mar., May, July,	7 st. 5 lb. 7 st. 12½ lb. 8 st. 6 lb.	Greatly improved physically and mentally.
6	July 27, 1911	30	—	Jan., May,	5 st. 12 lb. 7 st. 5 lb.	Greatly improved physically; mental convalescence advanced
7	Oct. 19, 1911	22	Feb. 9, 1912	Feb., May,	6 st. 10 lb. 8 st. 0 lb.	Greatly improved physically; mental convalescence advanced.
8	Mar. 19, 1912	20	April 2, 1912	April, May, July,	6 st. 7 lb. 7 st. 2 lb. 7 st. 0 lb.	Improved mentally and physically.
9	July 19, 1911	27	July 2, 1912	July 2, July 17,	7 st. 6 lb. 7 st. 12 lb.	Much improved mentally; is gaining weight.
10	Sept. 10, 1911	30	June 10, 1912	June, July,	8 st. 4 lb. 8 st. 6 lb.	Not improved.
11	April 30, 1912	28	May 16, 1912	May, July,	8 st. 0 lb. 8 st. 2 lb.	Not improved.
12	June 30, 1912	22	July 4, 1912	July 4, July 17,	8 st. 10 lb. 8 st. 9 lb.	Is showing signs of early convalescence.
13	July 6, 1910	32	June 28, 1912	June, July,	8 st. 0 lb. 8 st. 0 lb.	Not improved.
14	May 22, 1912	19	May 24, 1912	Not taken		Not improved.

G. *Melancholia.*

Patients suffering from melancholia in one or other of its forms also show decided improvement. With two exceptions, the 9 cases treated have gained in weight; one

Melancholia.

No.	Admitted.	Age	Date of Treatment.	Weight.	Result.
1	Apr. 8, 1911	54	Mar. 15, 1912	Mar., 9 st. 0 lb. May, 9 st. 6 lb. July, 8 st. 4 lb.	Greatly improved mentally; during this recurrence (recurrent melancholia) the patient has not been suicidal, has always been so before.
2	Oct. 11 1909	39	Mar. 24, 1912	Mar., 7 st. 3 lb. May, 7 st. 2 lb. July, 7 st. 4 lb.	Chronic melancholia; patient has improved mentally.
3	Sept. 8, 1911	47	June 9, 1912	June, 8 st. 0 lb. July, 9 st. 2 lb.	Patient shows a great improvement both mentally and physically.
4	Dec. 24, 1911	39	April 2, 1912	May, 7 st. 10 lb. July, 7 st. 13½ lb.	Much improved mentally and physically.
5	Nov. 13, 1911	51	May 14, 1912	May, 5 st. 0 lb. July, 5 st., 5 lb.	Improved mentally; attack of diarrhœa May 29th–June 6th; recovery; patient emaciated.
6	June 25, 1911	51	Feb. 8, 1912	Mar., 10 st. 8 lb. May, 10 st. 7 lb. July, 10 st. 10 lb.	Greatly improved mentally.
7	Mar. 2, 1912	38	June 6, 1912	June, 8 st. 1 lb. July, 8 st. 9 lb.	Greatly improved mentally.
8	Mar. 20, 1912	55	May 22, 1912	May, 6 st. 10½ lb. July, 7 st. 13 lb.	Mentally and physically improved.
9	July 5, 1911	62	April 18, 1912	Apr., 9 st. 5 lb. July, 9 st. 3½ lb.	Mentally improved.

has lost 1¼ lb. since April; the other, a recurrent case, has lost 1 st. 2 lb. since May, but on former recurrences the patient has invariably been actively suicidal; on the present occasion she has never reached the depths of mental distress, and has always denied inclination to suicide. She is now showing distinct signs of improvement.

Cases 3 and 6, who formerly spent their day weeping bitterly and complaining that all their food went into their lungs and choked them, now employ themselves usefully and are progressively improving.

Case 4 showed unsurpassed distress both day and night at the idea of her being condemned and in the power of Satan, whose medium for evil she was. It would be difficult to find a case in whom the agony, hopelessness, and despair were more marked than in this patient. Prior to admission she made a desperate attempt to end her life by exposure and sheer starvation. No improvement was recorded four months after admission; she was then given the extract during the height of a paroxysm of acute dis- at Easter. Since then the whole complexion of the case has altered; she now occupies herself usefully and takes an interest in others, she has slept well without the aid of any sedative, and morbid brooding and concern for her spiritual welfare are reduced to practically nothing.

At present I am not prepared to give any particulars as to other effects which this preparation has on the processes of digestion and the blood, or to offer any but the merest suggestion as to its action. That it has a powerful influence in various diseased mental states there is little room for doubt. If it can be shown that the various constituents of brain tissue are altered in various diseases, then the supplying of these in an easily assimilable form may induce the re-establishment of healthy working and so lead to a disappearance of the mental symptoms.

THE RESULTS OF THE WASSERMANN REACTION IN 150 CASES OF MENTAL DISEASE.

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Since 1906, when Wassermann and Plaut first demonstrated the relation between syphilis and general paralysis by obtaining a series of positive Wassermann reactions with the cerebro-spinal fluid of general paralytics, a considerable number of similar investigations with the serum and cerebro-spinal fluid of patients has been carried out both in this country and abroad. In the main the results of these later investigations agree with those of Wassermann and Plaut, but one fact is still unaccounted for—namely, that the percentage of positive results with cerebro-spinal fluid ranges from 100, which was obtained by Morgenroth and Stertz, to 41.5 obtained by Schölberg and Goodall. In the case of the serum, too, of general paralytics, similar, though less extensive, variations are recorded. Boas and Plaut obtained 100 per cent. of positive results with the serums of 139 and 147 cases respectively; whereas Schölberg and Goodall obtained only 75.5 per cent., and Marie, Levaditi, and Yamanouchi only 59 per cent. of positive results with general paralytic serums.

In endeavouring to find an explanation of these discordant results, it occurred to Dr. Shaw Bolton and myself that it might be advisable to examine a long series of cases and to separate them into groups which are clinically different, such as acute, subacute, and chronic; also to consider the male and female cases separately; likewise the juvenile, adult, and senile forms of the disease; and, lastly, to examine microscopically the brains of as many of the cases as possible with a view to ascertaining whether or no there be any correlation between a positive Wassermann reaction and the microscopic changes found *post mortem*. This somewhat ambitious programme has not yet been carried out in its entirety, as many of the patients are still alive, but we hope to be able to write a complete account of these investigations at some future date.

Technique.

The technique employed was practically the original Wassermann method, which was demonstrated to me by Dr. H. R. Dean, of the Lister Institute, to whom I would here express my indebtedness. The only departure from the original method was in the antigen extract which I employed. During the eighteen months that I was carrying out the investigations I had to use several extracts, and these were made in different ways. In a few of my earlier experiments an alcoholic extract of fetal syphilitic liver or of guinea-pig's heart was used. For a considerable number of experiments I used an acetone-alcohol extract of syphilitic liver prepared by the plaster-of-Paris method described by Dr. Candler in his paper in the *Lancet* of November 11th, 1911. I am indebted to Dr. Mott for a supply of this extract. Latterly I have used an extract similarly prepared, but from the liver of a case of juvenile general paralysis, and have found this extract work well for several months. In many experiments these extracts were controlled against one another, and also against an alcoholic extract of normal human heart. Before doing the actual experiment the haemolytic serum was invariably titrated in falling doses with guinea-pig's complement (0.05 c.cm.), and three times the minimal lytic dose was used for the test. All the necessary controls were put up, and the tubes were finally incubated for two hours at 37° C., and read the next morning after standing in the ice-chest overnight. In recording my results I use the numbers 1 to 7 to indicate the amount of haemolysis that has occurred. Thus, 1 indicates complete inhibition or a "strongly positive" reaction; 2 and 3 very slight and slight haemolysis respectively or a "positive" reaction; 4 indicates a considerable degree of haemolysis or a "partial" reaction; 5 means a very considerable degree of haemolysis or a "slight" reaction; 6 is given to a tube in which haemolysis is almost complete, and would only be taken as evidence of a "very slight" reaction in the case of a serum or fluid which has reacted positively on a previous occasion; 7 means complete haemolysis and a negative reaction.

Classification of the 150 Cases Tested.

In an investigation of this kind one of the greatest difficulties in tabulating the results is the correct diagnosis of the cases. If, for example, one only examined the blood or cerebro-spinal fluid of cases which were *obviously* general paralysis, one would get a higher percentage of positive Wassermann reactions than if one examined a consecutive series of general paralytics—those which were well-marked cases as well as the less obvious. Then, again, in a doubtful case of general paralysis, the diagnosis might be made to depend upon the result of the Wasser-

mann reaction, and if this were negative the case might be classed with the non-general paralytics. Obviously such a procedure would raise the percentage of positive results in general paralysis, and this may account for some of the very high percentages obtained by previous investigators.

In the present series of cases the diagnosis has invariably been made by an expert alienist—Dr. J. Shaw Bolton, the Medical Director of the Wakefield Asylum—independently of the Wassermann reaction, and in this way all bias has been, so far as possible, eliminated.

The 150 cases included in this series may be grouped as follows:

Group I. 30 cases, not general paralysis. The diagnoses were: Premature dementia, high-grade aments, hypochondriasis with mild dementia, imbecility with or without epilepsy, moral insanity, melancholia with confusion, acute and chronic mania, tuberculous meningitis, temporary psychosis, epilepsy following injury and alcohol, progressive senile dementia, dementia with coarse brain lesion, alcoholic dementia, and Broca's aphasia in ordinary dementia. Twenty-four were males and six females. The Wassermann reaction was negative in both the blood and cerebro-spinal fluid of all these cases.

Group II includes 6 cases of known syphilitics, all males, and without any symptoms of general paralysis. The blood was positive in 4 and negative in 2: the cerebro-spinal fluid negative in 5 and slightly positive in 1. On a subsequent occasion it was negative in this case too.

Group III includes 16 cases of doubtful general paralysis—11 males and 5 females. The reaction was negative in both blood and fluid in all these cases.

Group IV includes 3 cases of aberrant general paralysis, 2 males and 1 female. In 1 male the blood and fluid were both negative; in the other the blood was negative and the fluid positive; and in the female the blood was positive and fluid negative.

Group V includes 94 cases of general paralysis, or of dementia paralytica—70 males and 24 females. The results of the Wassermann reaction in these cases will be considered in detail a little later on.

Finally, there was one anomalous case of a woman whose blood and fluid both gave a strongly positive reaction, and who nevertheless shows no signs of general paralysis. Dr. Bolton has diagnosed her as a case of progressive presenile dementia.

In nearly every case the blood and cerebro-spinal fluid were drawn simultaneously, and in a large number of instances two or three different amounts of serum and cerebro-spinal fluid were used for the test. The serum was always inactivated at about 56° C., and 0.1 c.cm., 0.2 c.cm., and sometimes also 0.05 c.cm. was used. The cerebro-spinal fluid was not centrifuged unless there was any blood present in it: 0.25 c.cm., 0.5 c.cm., and latterly also 0.8 c.cm. of the fluid was used for the test.

Results of the Wassermann Test in 94 Cases of General Paralysis and Dementia Paralytica.

These 94 cases of general paralysis and dementia paralytica may be subdivided into four groups: (*a*) Those in which the blood and cerebro-spinal fluid both gave a negative Wassermann reaction—these were 22 in number, or 23.4 per cent.; (*b*) those in which the blood was negative and the fluid positive—9 in number, or 9.6 per cent.; (*c*) 7 in which the blood was positive and the fluid negative =7.4 per cent.; and (*d*) those in which the blood and fluid were both positive—56 in number, or 60 per cent.

These results may also be classified according as the serum or the fluid was positive or negative. In our series of 94 cases the serum was positive in 63, or 67 per cent., and negative in 31, or 33 per cent. The cerebro-spinal fluid was positive in 65—that is, 70 per cent.—and negative in 29—that is, 30 per cent. It will be remembered that Plaut, Marinesco, and others found the serum more often positive than the cerebro-spinal fluid; while, on the other hand, Marie, Levaditi and Yamanouchi, Raviart, and others have found the reaction more constant in the cerebro-spinal fluid than in the blood. My own observations seem to point to the conclusion that the reaction is slightly more constant in the fluid than in the serum, and, further, I very frequently observed that, when the blood and fluid were both positive, the reaction was stronger with the cerebro-spinal fluid than with the serum.

These results may be looked at from yet another point of view, according as the reaction was negative in *both* blood and fluid or positive in one or other or both of these fluids. As already mentioned, the blood and fluid were negative in 23.4 per cent. of the cases, so that in the remaining 76.6 per cent. the Wassermann reaction was positive in either blood or cerebro-spinal fluid or both.

I am sorry to have to weary you with another set of statistics, especially as my series is rather a small one to subdivide into male and female cases; but as this has not been done hitherto, so far as I am aware, and as the numbers obtained in this way are rather interesting and suggestive, I shall venture to give them to you.

As previously stated, my 94 cases included 70 males and 24 females. Of the 22 whose blood and fluid were both negative, 14 were males—that is, 20 per cent., or exactly one-fifth of all the males examined; whereas 8 were females, or exactly one-third of all the females examined. In other words, a female general paralytic is more likely to give a negative Wassermann reaction in the blood and cerebro-spinal fluid than is a male general paralytic. This result may be correlated with the clinical observation that cases of general paralysis are usually of a more insidious and chronic type in women than in men.

Of the 72 cases whose blood or fluid or both gave a positive reaction, 56 were males, or exactly four-fifths of the total males examined; and 16 were females, two-thirds of all the female general paralytics examined. When, however, we come to inquire into the percentages of males and females whose blood or fluid was negative or positive, we find that 33 per cent. of both males and females gave a negative blood reaction and 67 per cent. a positive reaction. With the cerebro-spinal fluid the numbers are rather different; only 28.6 per cent. of the males gave a negative reaction with the fluid and 71.4 a positive reaction, whereas 37.5 per cent. of the women gave a negative and 62.5 per cent. a positive reaction with the fluid. This seems to show that the blood of a female general paralytic may give a positive Wassermann reaction as frequently as that of a male, but that the cerebro-spinal fluid does so considerably less often.

I may mention that when a patient gave a negative result the observation was generally repeated two or three months later, and in some cases it was repeated twice. Many patients who gave a positive reaction were also re-examined, with the result that the reaction was often found to vary in intensity; but the details of these observations have not yet been worked out, and will be given in our fuller paper upon the subject. Lastly, I should like to make a few remarks upon the solutions of blood and cerebro-spinal fluid used. In a considerable number of cases a 1 in 10, 1 in 5, and 1 in 2½ dilution of serum was used for the test—that is to say, 0.05 c.cm., 0.1 c.cm., and 0.2 c.cm. of the neat serum. In one quarter of the number of cases the reaction was negative with 1 in 10 and positive with the other dilutions; and in nearly one-half the cases the reaction was less marked with 1 in 10 than with the 1 in 5 and 1 in 2½ dilutions. In 54 experiments in which the 1 in 5 and 1 in 2½ dilutions were compared, the reactions were of equal intensity in 29, rather more than one-half. In 22 the reaction with 1 in 5 dilution was less marked than with 1 in 2½, but in very few instances was the difference more than one degree on my scale 1 to 7, mentioned previously. In 3 cases the reaction was rather more marked with the 1 in 5 dilution than with the 1 in 2½. From these observations I would draw the conclusion that one cannot rely upon the results if only 0.05 c.cm. of serum is used, and that 0.1 c.cm. should always be used for the test. If enough serum is available 0.2 c.cm. can also be used, but this is not absolutely necessary. In my earlier experiments I used only 0.2 c.cm. of cerebro-spinal fluid for the test, but afterwards I used 0.5 c.cm., and later still 0.8 c.cm. in addition to the other two. Out of 44 cases in which all three strengths of fluid were used 24 gave a positive reaction of the same intensity with 0.2 c.cm., 0.5 c.cm., and 0.8 c.cm. Of the other 20, 5 gave a negative reaction with 0.2 c.cm. and a positive with 0.5 c.cm. or 0.8 c.cm. and the remaining 15 gave a less marked reaction with 0.2 c.cm. than with 0.5 c.cm. and 0.8 c.cm. Twice the reaction was negative with 0.5 c.cm. and good or partial with 0.8 c.cm., and once it was very slight with 0.5 c.cm. and positive with 0.8 c.cm. It follows, therefore, that at least 0.5 c.cm. of cerebro-spinal fluid

must be used when tested for the Wassermann reaction, and, when practicable, 0.8 c.cm. should also be used.

Conclusions.

The following conclusions may be drawn from these observations:

1. That in a considerable number of cases of general paralysis the blood and cerebro-spinal fluid may give a negative Wassermann reaction, even on repeated examinations. I am therefore unable to agree with McIntosh and Fildes, who state in their monograph on syphilis that "a negative reaction in serum in a suspected case of general paralysis will render this diagnosis improbable"; and again, that "a negative reaction in the cerebro-spinal fluid of a general paralytic is unusual."

2. That a negative Wassermann reaction is more likely to be obtained in the case of a female general paralytic than of a male.

3. That the blood is negative rather more often than the cerebro-spinal fluid in the case of male patients, but the reverse obtains in the case of female patients.

4. That at least 0.1 c.cm. of serum should be used for the test, and, where practicable, 0.2 c.cm. should also be used, but is not absolutely essential.

And lastly, that at least 0.5 c.cm. of cerebro-spinal fluid must be used, and, if possible, also 0.8 c.cm., otherwise a small percentage (about 4 or 5) of positive results may be missed.

DISCUSSION.

Dr. MCKENZIE (Glasgow) said that Gilmour had found that 0.05 to 0.1 c.cm. represented the optimum amount of blood serum necessary to give a positive Wassermann reaction. The cerebro-spinal fluid was different, and at least 0.5 c.cm. should be used in each case. More delicate results were obtained by titrating the complement and measuring the amount of complement deviated by the mixture of fluid and extract. They had obtained a positive blood and cerebro-spinal fluid result with 100 per cent. of 50 cases diagnosed independently.

OBSERVATIONS ON THE NATURE OF DEMENTIA PRAECOX.

By IVY MCKENZIE, M.B., and R. M. MARSHALL, M.D.

THERE is probably no department of clinical psychiatry to which recent research in pathology has afforded less assistance than that which concerns those cases which belong to the group designated by Kraepelin as "dementia praecox." About three years ago we began a series of investigations, which included the examination of the blood, cerebro-spinal fluid, and urine of patients which we regarded as belonging to this class. The presence of the cobra venom reaction (Much's reaction), the leucocytic state of the blood, and the relative increase or diminution of certain urinary constituents failed completely to provide us with data which could be relied on, either to distinguish these cases from other cases of insanity or the different varieties of "dementia praecox" from one another. Ross, for example, who did the cobra venom reactions for us, found that while that reaction was positive in some cases, it was also present in other cases of insanity, and could be obtained with blood serum from sources where there was no suspicion of nervous disease. Morton examined for us the cerebro-spinal fluid from a large series of cases, but only in two cases was any abnormality detected, and this abnormality did not serve to distinguish those cases from others in which an acute pathological process in the cerebro-spinal system was known to be present. These two cases are of some interest, however, and will be referred to later.

The unsatisfactory results of these observations suggested the advisability of prosecuting another line of research, and it occurred to us that some light might be thrown on the nature of the condition by a systematic examination of the progress of the disease in a selected number of cases in which the mental symptoms and somatic disturbances were pronounced and capable of analysis from the earliest stages. The commonly accepted descriptions and interpretations of the symptoms of the disease are based for the most part on psychological phenomena. Its origin and course has, as a rule, been traced in the anomalies of ideation and conduct which present the most outstanding features of the trouble, and, in the opinion of some observers, these anomalies themselves, in addition to being symptomatic, possess a causal relationship to the onset and progress of the disease. It is not our purpose on the present occasion to examine this method of interpretation. We recognize that an insane idea or an hallucination, *once it has arisen*, may exercise a determining influence on the mental state and conduct of the patient; and it is an important subject for psychological analysis to discover in a given case, if possible, what may be the original perversion, and to distinguish that from the secondary manifestations of disease which it carries in its train. Our object is rather to inquire what evidence there is for the supposition that dementia praecox is an organic brain disease in the sense in which that term is applied to general paralysis, cerebral endarteritis, or cerebral sclerosis.

It is a well-recognized fact that in any pathological entity which may be termed a "disease" the intensity and extent of the destruction or degeneration varies from case to case. This variation depends upon the amount of the noxious substance acting on the tissues and the duration of its presence; a contributing factor to the result is also the special liability of the affected tissue to succumb to the influence of the process. It was in recognition of these facts that we made a selection of certain cases which we regarded as exhibiting the more pronounced features of the disease. In the case of an epidemic of enteric fever or scarlet fever the nature of the disease in some cases can only be recognized because of the prevalence of the infection. It is therefore quite obvious that there is every likelihood that dementia praecox may appear in forms in which it cannot be recognized as such; and there may be cases whose identity is beyond question, but which nevertheless do not present those characteristics which would enable the observer to throw any new light on the nature of the process.

Sudden Onset of Acute Symptoms.

As we have already suggested, considerable emphasis has been laid on the fact that in many instances a careful scrutiny of the "previous history" of the case reveals certain traces of unusual disposition or conduct. This is interpreted as indicating the commencement of an abnormal psychological process which culminates in the full-blown illness. Be that as it may, the fact remains that in many cases the acute process which determines the dementia and characteristic features of the clinical entity is sudden in its onset, runs a definite course, and terminates in a state where there is obliteration or dulling of certain mental qualities. In the series of cases which we selected for particular observation the dementia which followed the acute process did not progress indefinitely. That is to say, the process would appear to have ceased so far as the brain degeneration was concerned, and the clinical complex was composed of those phenomena which manifested the readaptation of the nervous system in its damaged state to the environment. The period during which the acute process lasted varied from three months to nine months or a year. It was characterized, apart from the mental condition, by somatic disturbances of a very pronounced character. These varied in intensity in different cases. As a rule, they showed themselves in the form of: (1) Rise in temperature, which might be of a recurrent character at intervals of days, or might be more or less constant for weeks. (2) An increase of the leucocytes in the blood stream varying from 12,000 to 30,000 per c.mm. (3) Intestinal disturbances in the form of diarrhœa with foul smelling stools and meteorism. (4) Affections of the joints, with transient contractures. These joint affections sometimes resemble those met with in septic processes and in scarlet fever. (5) Marked salivation was a feature of the acute stage in some cases. (6) A general rigidity of the muscles (katatonia). (7) The cerebro-spinal fluid in 2 cases showed the presence of a considerable amount of albumen, globulin and albumose, in addition to a large number of mononuclear leucocytes. (8) In some cases the most acute phase of the disease was marked by the presence of what might be termed a "typhoid state."

It may be objected that these are not typical cases of dementia praecox, that they belong rather to the type of

which is regarded as "toxic." But it is on the ... at this point that the elucidation of the nature of ... disease depends. Such cases may not be the most ... because as a rule the disease manifests itself in ... form. The following cases, however, suggest ... symptoms are characteristic for the disease in ... general manifestations.

CASE I.

M. M. female, 40 years, suffered from dullness and depression ... months. She became acutely ill with fever, diarrhoea, ... salivation, and rigidity of the muscles. The cerebro-... fluid was increased in amount, contained albumen ... albumose, and a large number of mononuclear ... tes. There were no tubercle bacilli, and the Wassermann ... was negative. She died in the acute stage, suffering ... an intercurrent bronchopneumonia. During the acute ... she was stuporose. A necropsy was not obtained.

CASE II.

M. H., male, 40 years, had been suffering for six months from ... sion and disinclination to work. He became acutely ill ... fever, diarrhoea, and meteorism: the stools were very foul. ... was acutely katatonic. The cerebro-spinal fluid was under ... pressure; it contained a considerable amount of albumen, ... globulin, and also a large number of mononuclear ... tes. There were no tubercle bacilli, and the Wassermann ... was negative. The acute stage of the illness lasted ... four months. He gradually recovered from the somatic ... ances, but emerged from the illness presenting the ... mental state of dementia praecox. The dementia has ... increased during the two years subsequent to the attack.

These two cases were under observation at the same ... They were types of an acute toxic illness with ... cerebral involvement, either primary or secondary. ... the time it was impossible to state definitely what the ... ture of the disease was. The clinical picture suggested ... phoid fever, meningitis, or miliary tubercle; the blood, ... wever, was negative on bacteriological examination, and ... exciting cause could be detected. One case terminated ... ally, probably as a result of the pneumonia; the other ... revealed itself as typical of dementia praecox. ... condition of the cerebro-spinal fluid pointed defi... to a pathological process in the cerebro-spinal ... tem. The fluid in the case which recovered was ... six months after the acute process had passed off. ... would seem to be little doubt but that in each case ... symptoms were due to a lesion of the brain. The ... on must have been limited in extent, for although the ... entia is advanced in the case which recovered, there ... now no evidence of motor or sensory disturbance of ... kind.

... cite these cases in support of our contention that ... entia praecox is probably the result of a cerebritis ... ve over a short period, and terminating definitely, ... ing a partially destroyed brain, whose incapacity for ... nal adaptation gives rise to the characteristic mental ... ures of the disease. We have consulted the records of ... of the oldest dements under our observation, and ... found in some cases that the disease was ushered in ... what was termed at the time "acute mania." Twenty, ... y, and in one case fifty, years have elapsed since the ... t of the illness, and in the interval it would appear ... little or no progress of mental deterioration has ... rred. Those who have been in attendance on these ... for fifteen to twenty years testify to the stationary ... acter of the mental state.

... is, of course, a matter of frequent occurrence that ... patients in the stationary state suffer from recurrent ... ks of excitement and depression. But these inter... ... nt disturbances are no part of the disease; they are ... evidence of disturbance of mental balance in a ... ened brain, and when they pass off the mental con... ... of the patient is found not to have suffered further ... ioration as a result. It does, however, sometimes ... ... that a genuine recurrence of the original trouble ... place, and in such cases the patient emerges from ... cond attack more deeply demented.

... may reasonably be asked what explanation is offered ... ose indefinite prodromal symptoms which are not ... quently seen to precede the acute illness. Are these ... of the same process, or do they indicate, as some ... ers suggest, a condition of weak-mindedness or ... ility? Some authorities go so far as to designate all ... of dementia praecox the expression of a congenital ... l deficiency. We regard the early mental abnormali... ... such as suspicion, fear, want of initiative, lack of ... and sleeplessness as part and parcel of the ... itself. The acute stage which determines the deeper dementia may be ushered in by a severe mental shock, or any other circumstance which occasions a depression of organic vitality. This interpretation is suggested and supported by the fact that in cerebro-spinal meningitis, for example, the acute symptoms of the disease are not infrequently induced by the incidence of a severe blow on the head of a patient whose previous history shows that he has for some days or weeks been subject to headaches and vomiting indicative of a milder degree of infection. It is, moreover, a well recognized fact that the symptoms of chorea or exophthalmic goitre may be precipitated by a severe "mental trauma." It may be that dementia praecox occurs in some instances in cases otherwise mentally deficient, but no facts have so far been adduced to show any causal relationship between the disease itself and congenital defect.

On the other hand, it is claimed that hereditary predisposition plays an important part in the etiology of the process. This contention is usually put forward without any further inquiry as to its significance. We do not deny the importance of heredity in this context as a biological fact, but that does not involve the admission that the hereditary element constitutes *per se* a pathological abnormality. It is far more likely that the pathological factor is superimposed afresh on an otherwise healthy organism. There is no reason to believe that heredity is a more dominant factor in dementia praecox than in the subjects of a rheumatic diathesis. Every disease which is the manifestation of a constitutional organic reaction involves the presence of a predisposition, otherwise it would not occur. The importance of heredity as a factor in the etiological analysis of dementia praecox can only be of value if it can be shown that cases occur in which there is definitely no hereditary predisposition. Whatever value the elusive generalization of heredity may possess in analysing the factors of social hygiene, and whatever importance it may possess in the advocacy of the programme of eugenic propagandists, it certainly contributes nothing to our knowledge of the factors which contribute to the occurrence of dementia praecox in any individual case.

In summarizing the main results of our observations we may state:

1. The disease may present varying degrees of intensity, as do all other forms of disease. The ultimate effect will depend on the amount of brain tissue involved and destroyed. Some cases must undoubtedly be so slightly affected as to recover or never present evidence of mental disease sufficient to render its detection possible.

2. Some cases run a mild course and leave the patient in a state of mild imbecility. These are the cases which are produced as evidence of the congenital character of the disease, but they occur in patients who up to a certain age have been perfectly normal.

3. A considerable number are the subjects of a severe acute attack. These usually terminate in a deep dementia. But the dementia is not progressive. The mental state may change as a result of readaptation to changing environment, but the deficiency consequent on the acute attack does not increase, unless there is a renewal of the disease. Intercurrent attacks of excitement and depression may occur, but these pass off without accentuating the dementia, and are to be regarded as a transient disturbance of equilibrium of the nervous system which had already adapted itself to its environment on a lower plane.

4. The disease may occur at all ages. It is quite wrong to imagine that it is exclusively or even predominantly associated with the adolescent period. In our experience the attacks may supervene between the ages of 25 and 35. Its incidence may be determined by the strain which is almost universally placed on the nervous system with the changes of puberty and the climacteric period. It may, however, occur in early youth, and it is an open question whether some of the so-called feeble-mindedness or early mental deficiency may not originate from the same source. We have further observed a typical case occurring in a woman of 56 years.

5. The fact that the patients recover from the active disease as a rule, and live for long periods (beyond the average age), renders it impossible to correlate the symptomatic evidence of the disease with *post-mortem*

findings. We have, however, seen two cases which died from intercurrent disease in whose brains the evidence of tissue degeneration was present. These will be described later.

6. Our main thesis—that dementia præcox is anatomically a brain degeneration, progressive over a very limited period, and on cessation leaving the nervous system in a debilitated state—suggests that if the process itself is to be further investigated attention must be confined to the condition which exists when the somatic disturbances of temperature, digestion, circulation, and other organic processes are most pronounced. It is only over that period that the factors which possess etiological significance from the research point of view are active. In the later stages when the dementia has ceased to progress, as is the case in the great majority of asylum patients, the forces which produce the trouble have already been spent.

PSYCHASTHENIA.

BY

ALFRED T. SCHOFIELD, M.D., and R. MURRAY LESLIE, M.D.

IN medicine the class of disease that gives rise to the greatest diversity of opinion, and gives scope for the most prolific forms of nomenclature, is that of functional nerve diseases. Whether these are to be christened by their parentage or clinical features is still an open question. There are nowadays no physicians left, probably, who refuse to classify them at all, but many do so under protest, being perfectly bewildered amidst the weird assemblage of psychical and physical symptoms, and uncertain how to place them scientifically. Even the well-established disease that is so constantly before all physicians nowadays, called "neurasthenia," is considered by Dr. Collins (and, we doubt not, by many others) as "a clinical Colossus in the shape of a sphinx," and by Dr. Forel as an *omnium gatherum* of diseases thrown together under this title.

Progress in all that pertains to our knowledge of functional diseases of the nervous system is, without doubt, considerably retarded by an imperfect terminology, and the general term "neurasthenia" is made to connote practically all asthenic conditions quite irrespective of the particular portion of the peripheral or central nervous system that may happen to be affected. It would be more rational to sharply differentiate some of the groups of asthenia, although they may to some extent be correlated. It is surely inadvisable to place under the same category cases of ordinary nervous breakdown where the principal manifestations are emaciation, muscular debility, and incapacity for physical exertion with those other cases of asthenia of a cerebral type in which there may be no emaciation or muscular debility, but in which the manifestations consist almost entirely in diminished functional activity of the higher psychic centres, and characterized by deficient will power and self-control, defective judgement, and a general incapacity for mental work.

The name "psychasthenia" that heads this paper has consequently been more and more forced upon the notice of ourselves and other workers in the realm of functional nerve diseases as a means of lessening the size and improving the shape of this neurasthenic Colossus, and instead of leaving it a conglomeration of all abnormal nerve states, such as in the old days used to be vaguely dubbed "hysteria," to confine the name to a well-defined group of symptoms dependent on exhaustion of the nervous system.

Over forty years ago Beard invented the term "neurasthenia" for what used to be termed "the American disease."

Bauchet as long ago as 1857 described its symptoms, which are always those of weakness or overstrain. It is, as the name implies, a nerve weakness, and specially of the nerve centres in the brain.

Eichhorst, Dubois, and others deny that neurasthenia is a corporeal malady at all, and regard it as purely mental. Dubois declares that all neurasthenia is a form of psychasthenia, and argues that this is proved because its cure is ideogenic rather than somatogenic, with which opinion, however, we cannot agree, as we find physical treatment of all sorts of the greatest possible value in neurasthenia. It is, of course, true, as far as we know in our present state of ignorance respecting the true relations of mind and body, that no one can be merely physically ill, for in all cases there is a psychic element. This must not, however, lead us to overlook or deny the broad distinction that exists between a disease where the physical nerve centres are mainly at fault with one where the cause is the mind, of which they are but the instrument.

Neurasthenia may be, but is not always or even mostly, hereditary; and its exciting causes are nerve poisons of all sorts—malnutrition, fatigue, and overstrain—all of which are clearly of a physical nature and effect.

Before speaking of the necessity of distinguishing a certain well-marked class of these cases as psychasthenic one may point out the distinction between neurasthenia and hysteria. We regard the former as principally of physical origin (and especially when we have taken away all the psychasthenic cases) and essentially a neurosis, and the latter psychic or a psychosis. It is, however, quite true that the symptoms of hysteria are more distinctly physical than in neurasthenia, though the origin of the former is an aberration or disorder of the unconscious (or subconscious) mind, while the latter is fatigue of the higher nerve centres. Neuromomesis, the most marked feature in hysteria, is not found in neurasthenics.

Having, then, already one well-marked psychic nerve disease in hysteria and a physical functional nerve disease in neurasthenia, it may well be asked; Is there any necessity for a further classification of psychasthenia?

Let us repeat again that in these functional nerve disorders which are grouped together merely by etiology and symptoms, where no pathological research is of value and no organic change known, no hard and fast lines can be drawn. Indeed, the very term "functional" is probably only an expression of the present state of our ignorance; for it is probable that no disease exists without some organic basis. In spite, however, of this difficulty, and the fact that many authorities, such as Sir T. Clouston, recognize only hysteria and neurasthenia, we are compelled clinically to separate off from the latter a certain group of cases and class them apart as psychasthenic.

In 1904 Dunin wrote a paper on the "Partial Passing of Neurasthenia," which had a great effect in America; and in 1906 neurasthenia was only diagnosed three times in the Massachusetts General Hospital.

Janet first proposed "psychasthenia" for a large class of cases hitherto called neurasthenic; and this is largely followed by American physicians as a necessity of clear diagnosis, though they are keenly alive to the evil of multiplying names. Professor Allbutt deprecates the use of the term, which is certainly not yet general in England, though we would submit of considerable value. One may arrive best, perhaps, at what is meant by "psychasthenia" by differentiating it from neurasthenia and hysteria.

Psychasthenia is mental weakness, and is related to hysteria, feeble-mindedness, and other psychoses.

Neurasthenia is weakness of the nerve centres, and is akin to cardiasthenia, myasthenia, etc. Psychasthenia is seldom solely due to exhaustion or nerve strain. Neurasthenia always is.

Neurasthenia is generally acquired, and seldom inherited. The term "neurasthenia" is so obviously incorrect in psychasthenic cases that the new term is a necessity, and Dr. Collins, Professor of Mental Diseases in New York, declares it would be very unfortunate if the two were again confounded.

Between psychasthenia and hysteria the difference is as follows: In psychasthenia the seat of the malady is in the conscious mind, in hysteria in the unconscious. The bearing of this may not be obvious to those unused to these terms, but it means that in the former the patient is cognizant of the weakness, while in the latter he is not.

In psychasthenia as a result there is no neuromomesis, in hysteria it is constant.

Psychasthenia is distinguished by being often (Dubois says "always") hereditary, and, therefore, more difficult to cure than neurasthenia.

There is frequently a family history of some mental disturbance or neurosis.

There is often a congenital cause, such as alcoholic poisoning of the germ plasm.

Psychasthenia may, however, be acquired by unhealthy

auto-suggestion, or by prolonged masturbation (Courtney), or by profound shock. Courtney, however, goes so far as to say that not less than 75 per cent. are hereditary.

Its characters and symptoms are obsessions, a sense of unreality of things, delusions, phobias, loss of will power and concentration, doubts, anxieties, ideas of sacrilege, manias of cleanliness, order precision, compensation, expiation, and every variety of morbid conscience. Phobias may be of movements, objects, places, or ideas.

Psychasthenia is not so much exhaustion as maldirection, or imperfect action of the mind. It is, of course, increased when there is an inadequacy of the vital income to the vital expenditure, thus adding a physical cause.

The symptoms of psychasthenia are mainly mental, though there may be some physical signs; for instance, psychasthenia may lead to paraplegia. Such paraplegia is not classed as hysterical; there may be none of the signs of hysteria present. We may say in passing that we think we have had examples of all the symptoms we have enumerated, and have now under our care a marked case of psychasthenic paraplegia.

Professor Pierre Janet describes six varieties of psychasthenics: The doubter, the scrupulous, the criminal (homicide, theft, etc.), the inebriate, the sexual, and the excitable.

This class of case is becoming increasingly commoner, so much so that it may be definitely stated that it is psychasthenia rather than neurasthenia which is pre-eminently the disease of modern civilized life. Mental exhaustion is now far commoner than physical exhaustion, for the simple reason that the race in the modern battle of life is not to the physically strong but to the brainy.

The frequency of psychasthenia is quite as noticeable as the increase in insanity, and its immense importance may be gauged by the fact that in the opinion of our most distinguished alienists and psychologists there is no sharp line of demarcation between pronounced psychasthenia and incipient insanity. It can therefore be readily understood that the importance of diagnosing and treating cases of psychasthenia in their early stages cannot be overestimated.

The treatment of psychasthenia is difficult and tedious, and seldom gives those rapid and brilliant results that one finds in ordinary neurasthenia.

We must remember, too, that some use the term "psychasthenia" in a broader sense to include all forms of mental weakness and feeble-mindedness; and indeed, as all of us have some innate weakness somewhere, it is thus reduced to a question of degree; and physician and patient can here shake hands over a common failing.

It is pre-eminently in cases of psychasthenia that the patient's confidence must be won by the physician before any progress can be made in the cure of the malady. It is indeed the personal influence of the neurologist on the unconscious, and still more on the subconscious, mind of the patient that is the main factor in the practical therapeutics of psychasthenia.

Hypnosis, which, however, is now, according to Bernheim, Milne Bramwell, and others, reduced to mere suggestion, is of considerable use, and claims a large success. Our experience, however, has not been altogether favourable in these cases. Suggestive treatment in the case of psychasthenics may be direct or indirect, conscious or unconscious. Each individual psychasthenic must be treated on the merits of the case; the direct method may suit one and be harmful to another, and similarly with the indirect method. In all cases rest is essential (sleep, relaxation, cessation from work), suitable environment, freedom from worry, isolation if necessary, and, above all, adequate nourishment of the fatigued brain cells by sufficient pabulum. If there is general malnutrition of the body this must be corrected and modified, Weir Mitchell treatment be administered as in the case of an ordinary neurasthenic, while one or other of the suggestive methods of treatment may be utilized as an auxiliary. At all costs the vicious circle that has been established must be broken.

The physical condition in all cases undoubtedly should be raised to the highest state of efficiency, broad hygienic social relations should be established, the mind diverted into hygienically occupied by suitable employment, preferably of an altruistic nature—philanthropic or religious.

Such, then, are a few notes on this variety of neurasthenia that we desire to establish definitely as a distinct entity under the title "psychasthenia," as suggested by Janet; and we believe that increased clearness in diagnosis and treatment will result.

RE-EDUCATION OF THE ATTENTIVE CONTROL.

By H. Crichton Miller, M.A., M.D.

Most physicians will allow without hesitation that the subjective factor bulks far more largely in disease to-day than it previously did. Where our fathers earned their living off small-pox and enteric, we are reduced to phthisis and neurasthenia, and our sons will have to do without phthisis. But if the psycho-neuroses continue to increase at the present rate, our sons will not starve. In spite of this increase it must be allowed that we still tend to group morbid symptoms into "real" and "imaginary," and that most of us fail to realize the immense range of symptoms in which we should take account not only of the organic basis of the symptom, but also of the subjective value put upon that symptom by the patient. Instead we are apt to treat respectfully the organic basis and then to class the residue—the subjective exaggeration or prolongation—as "mere imagination." We fail more often than not to appreciate our duty, which is to train the patient to such mental habits as will enable him to apprise his own morbid sensations at something nearer to their face value.

The aim of this paper is to emphasize the psychic factor which is responsible for the undue inflation of the subjective value of our sensory experiences, and to point out the necessity for treating it and to indicate some suitable methods. We are all ready to admit the paramount importance of attention in our scheme of school education, but we sometimes fail to realize that the child who finishes his school education without having acquired an adequate degree of attentive control might as well have stayed at home, and that it is merely a chance whether in after-years he will fall into the hands of the magistrate or the physician for a course of re-education.

I submit, then:

1. That attentive control is the one aim of all true education.
2. That our educational system is attaining this object less successfully now than previously; and
3. That when failure of attentive control manifests itself in later life as ill health it falls to the physician to correct it.

Now, I daresay it will be objected that I am using attentive control as synonymous with will power. I reply by asking how will power is manifested apart from attention, and it is possibly because we have failed to realize this fact that we have done so little in the line of re-education. We say of our neurasthenic, "He is the victim of indecision; he cannot make up his mind on any subject; he has lost all will power;" but we do not appreciate the fact that if he regains control of his attention all these symptoms disappear. The tendency, in fact, of modern psychologists—and we may take men of such different standpoints as Ribot, Stout, Münsterberg, and McDougall—I say the tendency among them is to make will and attention synonymous; some of them say it, some of them only imply it. But modern psycho-therapy must accept it if it is to be of real value to a very large class of sufferers, and one which seems to be increasing at an alarming rate. Twenty years ago they were called hysterics; since then they have generally been referred to as neurasthenics, and now the fashion is to glorify them with the title of "psychasthenics." I will not give them a name because the question of diagnosis and terminology is not germane to my subject, and it will be dealt with in another paper before this Section. I shall use the non-committing term of "neuropath," being convinced that the members of this Section will recognize the type I refer to, and that they will not accuse me of wanting to re-educate indiscriminately all neurotic subjects. The individuals I refer to are chiefly women of ease and leisure; their education has been a failure, in the only true sense of education, owing either to unwise pampering by their parents, or insufficient discipline from their teachers. As children they

were said to be wilful or unmanageable, but in adult life they have become nuisances, not only to other people, but as much, and perhaps more, to themselves. Huxley defined the aim of all true education as follows: "To enable us to do the things we ought to do, when we ought to do them, whether we like them or not." He might well have extended his definition to thought as well as action. Münsterberg says: "Mere learning is no substitute for training of mental energy. Habitual rushing to new and ever new impressions may easily interfere with the development of persistence in character. Whether the will is allowed to start on one thing and then to be pushed to something else, or whether it is forced to hold on against all difficulties, makes the difference which counts for life. . . . An education which spoils the mind and never demands real effort, which simply follows the likings and interests, leaves the adolescent individual in a flabby and ineffective state. On the other hand, the training of attentive control ensures strength in any sphere, even though the gifts be small. . . . The mind that has learnt to resist distractions can hold its own in any field."

Aiken says: "I would define education—moral and intellectual—as attention."

Our notion of the relation between mind and body is so inverted that to tell a nervous invalid that his bodily ailments are due—at any rate in part—to mental causes, seems to him a gross underrating of their importance, yet the very same invalid may eagerly insist on "the supremacy of mind over matter," but not in his own case.

There is great necessity for the better understanding and disciplined training of the temperament which we contemptuously dub "neurotic" and generally allow to run to hopeless and irretrievable waste. When this temperament is accompanied, as it is not infrequently to a surprising extent by strength of character, it is capable of performing excellent work.

Then there is the artistic temperament. The artist lives by non-voluntary attention; his work demands a wholly different mental attitude to that of the lawyer, teacher, doctor, etc. We have to live by work which depends on conative attention; the associations of our minds must be continually selected if they are to produce good results. His associating mechanism will not produce "inspired work" if he controls it too much.

Poeta nascitur non fit, turned from a Latin epigram into a psychological aphorism, runs thus: The poet's associative mechanism is part of his ancestral inheritance; it cannot be developed like attentive control.

The artist, then, *qua* artist, has little control over his attention; if we try to develop that control we may spoil a good artist in trying to make a better citizen or a better patient. At the same time, we are bound to confess that the artist is generally so devoid of the power of determining his own area of consciousness that he is apt to be the victim of moods, of obsessions, of phobiae; a helpless victim in the grip of the most trivial abnormality of peripheral nerve stimuli. Shakespeare opined that the philosopher cannot "endure the toothache patiently." Lord Haldane differs, and says "he ought to do if he does not. At all events, he should endure it better than other people." If Shakespeare meant by philosopher the genus artist, I am convinced that Lord Haldane would not have challenged the truth of his statement.

In short, there are temperaments which, from the point of view of working efficiency, need the maximum attentive control available, and there are others—few, of course—which do not, but from the social and therapeutic points of view none can have too much.

It now becomes necessary to consider in some detail the views of attention offered by modern psychology. Roughly speaking, there are three descriptive and three explanatory [illegible]:

A. *Descriptive.*

1. As motor. (Ribot.)
2. As sensory. (Bastian, Sully, etc.)
3. As sensori-motor. (Wundt, Waller.)

B. *Explanatory.*

1. As [illegible].
2. As [illegible].
3. As both.

Ribot's view, which cannot be passed over because it is Ribot's, is that the muscular accompaniments *constitute* attention *plus* the objective side—that is, the state of consciousness which results. "Our only possible conception of will" is our idea of the action of the voluntary muscles. The obvious criticism of this view, made by McDougall, Stout, and others, is that an inseparable concomitant is not *ipso facto* a constitutive element of any phenomenon. The sensory description is equally extreme, but on the face of it less startling. Marillier expresses it thus: "A state of consciousness which is the result of the temporary predominance of one representation over the representations which are co-existent with it at any moment." According to this description, the original sensory excitation is reinforced by sensations caused by the muscular changes, which are themselves the result of the first excitation.

All one can say of this view is that it is more plausible than satisfying. We are driven to accept the mixed definition of attention as a sensori-motor phenomenon as laid down by Wundt, Waller, Külpe, and others. It is sensory in its contents, motor in its manifestations, and sensori-motor in its whole process.

Turning to the explanations, we have, first, the one-sided one of facilitation of ideas offered by Müller and others. Müller states that attention reinforces its object in three ways:

(*a*) Adaptation of a sense organ.

(*b*) Facilitation of excitation corresponding to stimulus in central nervous systems.

(*c*) Recollection of similar ideas previously experienced.

This explanation does not satisfy the man who realizes his own power to inhibit ideas.

Wundt goes to the other extreme and lays stress entirely on the inhibiting side of attention. He divides the process into two essential and two non-essential factors. The two essential are:

(*a*) Increase of clearness of definite idea, or group of ideas, accompanied by the feeling which is characteristic of the whole process from the beginning. (This factor Külpe rejects.)

(*b*) Inhibition of other available impressions or memorial images.

The two non-essential factors are:

(*c*) Sensation of muscular strain with the sense feelings which belong to them and which intensify the primary feeling.

(*d*) Intensification of the sensory contents of the apperceived idea by these strain sensations through the medium of associative coexcitation.

As regards (*a*), Wundt draws a special distinction between intensity and clearness, so that the limen of intensity and limen of clearness are not to him the same thing. The limen of intensity is equivalent to the threshold of consciousness—that is, we perceive only what rises above the level. On the other hand, the limen of clearness is the threshold of attention—that is, we apperceive only what reaches this higher level. The two processes to Wundt are independent though they may exert a certain influence on each other.

As regards Wundt's second factor—the inhibition of all impressions and memory images except those attended to—it has been associated by its author with the frontal lobes, the so-called "apperception centre." Naturally this has opened an easy line of attack for his critics (Münsterberg, Bastian, etc.), who charge him with having created a "faculty of attention," and of having located it in a definite region of the brain. Wundt replies that there is no "attention as such" but only "ideas attended to," and changes in ideas which constitute our "attending" are accompanied by physiological processes primarily in the frontal lobes. We must in any case admit that definite physiological conditions of a central character must be assumed as an invariable feature of the attentive process.

Finally, we come to the third explanation of attention as a combination of facilitation and inhibition of ideas. Exner is the chief exponent of this view, which certainly is the most satisfactory to the common-place man. He compares the inhibition to that of reflex action, in which an adequate stimulus can be prevented from provoking response by a higher centre.

Münsterberg's "working theory of attention" is a modification of Exner's. He regards attention as an act

of will; the entire process is dominated by the end in view, which is the unfolding with greater vividness and clearness of the given content. On the other hand, every act of will is an act of attention, in that the mechanism of a voluntary act is not conscious, but it is made possible by the apperception of the idea aimed at. To the practical psycho-therapist this is the view which naturally commends itself.

From all these views, mutually antagonistic as some of them are, there stand out the following points:

1. From the physiological standpoint the process is a sensori-motor one.
2. From the psychological standpoint it involves the facilitation of one idea with a corresponding inhibition of others.
3. The limen of intensity is distinct from the limen of clearness.
4. In practice we may regard attention and will as equivalents.

From the therapeutical point of view, we can now see the practical bearing of attentive control on subjective symptoms. The power to facilitate an idea is proportionate to the power to inhibit other ideas. The more absorbed the philosopher becomes in his book, the more patiently does he endure the toothache. In other words, to succeed in keeping the limen of clearness high implies a corresponding difficulty to apperceive a competing idea, and a probably proportionate difficulty to perceive it. But if the philosopher's toothache is constant it becomes obvious that the inhibition of its apperception depends on the degree to which he is interested in his book. In other words, we come to the question of pain and pleasure as determinants of attention. Sully looks upon all interest as a determinant of attention, while Stout maintains that interest is merely the result of attention. To most of us Sully's view will appeal forcibly. The power to endue an uninteresting task with interest is doubtless the function of the attention, but the very choice of an uninteresting task which involves considerable effort implies the existence of a more interesting and attractive task. Certainly Huxley could not have framed his definition of education if he had held Stout's view of interest as indissolubly connected with attention. In practice it will be found that patients who always ask for exercises that are less of the nature of drudgery are the ones that need those exercises most. The music student who is anxious to get on from five-finger exercises to sonatas is generally the one that needs the exercises most and is the least fitted to cope with the sonatas. In short, the individual who is best able to ignore painful sense stimuli is generally the one who can best maintain his attention on a subject that is not intrinsically interesting to him. This, then, is the practical quality that we want to cultivate in our neuropathic patient—the power of being able to determine his own area of consciousness, and that with the least effort compatible with certainly. The *malade imaginaire* keeps the threshold of his consciousness so low as regards his organic sensations that he is never without some sense stimulus sufficiently abnormal to enter his consciousness and to constitute a subjective symptom.

One more point must be mentioned before I pass to the more practical part of my paper. There seems to me to be a definite difference between concentration of the attention and mere fixation. The difference is most clearly marked when we discuss sleep. Obviously fixation of the attention is one of the essential conditions of going to sleep. The mind that gives itself up to an endless pageant of ideas represents one of the best known types of insomniacs. On the other hand, concentration and sleep are incompatible. I presume that Stout and Shand would class this phase of attention under their heading of non-voluntary as opposed to voluntary (which is equal to concentrated attention) and involuntary (which is equivalent to spontaneous). I merely mention this point because a great many victims of insomnia find this a real difficulty; they oscillate between a vacuous condition of spontaneous attention and a strained state of conative and concentrated attention.

Methods.

There are two methods which are so popular as hardly need mention—bodily relaxation and rhythmic breathing, but they may well be referred to in order that we may appreciate the exact psychological significance of such simple procedure.

Relaxation of body and cessation from any voluntary muscular contraction has two effects. In the first place it stops the numerous leaks of nerve energy with which our usually restless life is filled. To take McDougall's standpoint for a moment, it allows our nerve potential to rise for use in a given direction. We instinctively inhibit voluntary movements when our attention is intensely concentrated. As Stout points out, "Even the slightly disturbing movements due to breathing are inhibited, and we express this truth in the phrase 'breathless attention.'" James also has some excellent passages on this subject in *Talks to Teachers*. Now this inhibition must at first be a voluntary thing, and as such it demands attention. Therefore we make an effort of attention to inhibit voluntary movement, and thereby we attain the relaxed bodily condition which favours voluntary attentive control.

Münsterburg puts it thus: "Suppression of opposing movements secures inhibition of interfering thoughts. Shiftless minds are more directly forced into service by systematic control of motor response. Misapplication begins if motor activities, or even control of motor activities, are reinforced in such a way that they themselves enter into the centre of attention." The actual technique of relaxation is too simple to need description.

Rhythmic breathing is the other well-known method of developing psychic control. It has been practised by Yogi teachers for three thousand years; it forms the basis of all the New Thought cult; it is the kernel of all the quack "How to succeed" systems; and though its value is put down to absurd and fantastic explanations, it yet remains obvious that it is of some value, and it is for the psychotherapist to analyse it scientifically and to use it rationally. Normally we breathe automatically, and under given conditions the individual's type and rate of breathing is constant. Any deviation from this type and rate must be effected by voluntary effort; in other words, the automatic act must temporarily be made volitional. This demands no effort of concentration, but it requires constant fixation of the attention. The moment the attention is distracted, the breathing tends to revert to the automatic rate and type. It is obvious, therefore, that any predetermined type of breathing—slow, deep, with a pause, etc.—will serve the purpose, and that it is not the particular type of breathing that has the magic of effect, but merely the necessity for sustained attention, with the object of keeping up a certain type of breathing. It is interesting to reflect that the most skilled and enthusiastic "deep breather" can never attain voluntarily the perfection of rhythm which characterizes his breathing when he is pleased to leave it alone!

I hope I have said enough to make it clear that these two popular practices—namely, relaxation and deep breathing—though they are and have been exploited by magicians and quacks, are none the less of real value, and, further, that their value is based upon elementary psychological laws.

We come now to somewhat less commonplace methods, and here I should like to point out the very important difference between exercises which aim at holding the attention with the minimum of effort, and those which demand effort. The former are useful to prevent introspection and to "raise the threshold of consciousness" for the time being. The latter are developmental and more educative in their aim. A scholar who has broken down after an examination requires to make no effort of attentive control; he has probably proved his ability not only to control but to abuse his attentive powers. At the same time it may possibly be essential to prevent opportunities of introspection, and for him light literature, games of patience, and jig-saw puzzles ought to be indicated. On the other hand, the leisured society woman, who has never in her life attended successfully to anything less absorbing than a comedy or a horse-race, may well be ordered a variety of exercises which, being intrinsically less interesting, demand a much greater effort of concentration. The following examples are arranged in the order in which they demand concentrative effort, beginning with the easiest:

1. *Pointing* with outstretched arm or leg at a suitably placed mark. The co-ordination of some individuals will render this a very easy exercise, while others will find it

very hard to steady the limb. It is generally harder than the patient supposes, and therefore useful from a "humbling" point of view.

2. *Balancing* is a very similar exercise; at first it demands the most undivided attention, but as skill is acquired the patient can converse or think of other things. When this point has been reached, the exercises cease to be of use. A stick balanced on the finger is the form usually adopted, but balancing a suitable object on the head is an even better form.

3. *Letter games* (word-making) are fairly interesting, and if the element of speed is always present they are extremely useful.

4. *Reading a book upside down* is useful, as it is an exercise in which the patient's improvement can easily be gauged. The time taken to read ten lines of a given book in this way can only be reduced if the individual progresses in thought control.

5. *Writing with two hands* is very useful, and the improvement acquired after a fortnight's daily practice will encourage the patient.

6. *Recognizing words spelt backwards* is an exercise which baffles a great many patients, chiefly because of the difficulty of waiting to the end of the spelling before attempting a solution.

7. *Writing or drawing* with the eyes fixed on a looking-glass in which the paper is reflected is much the same as No. 5.

8. *Describing accurately* an object or picture which has been examined for a limited space of time introduces the element of memory, but it is most valuable for developing the powers of observation.

9. *Detailing a number of articles*, say ten to twenty, exposed for a short time, is much the same as the foregoing exercise, but observation counts for less and memory for more.

10. *Counting* with the eyes fixed on a given spot. This is an exceedingly difficult exercise, and perhaps one of the most illusory. Any one who is satisfied with his powers of concentration would do well to try to count to himself up to 100, slowly and without moving eyes or lips, and at the same time without allowing a single extraneous thought to occupy his consciousness for a moment.

11. *Following with a pin* the second hand of a watch is a particularly good exercise. It was devised by a patient of mine suffering from train phobia, who, in the first days of his travelling alone, used to banish the old phobia by frantic efforts to keep up with the second hand of his own watch.

12. Finally, I would recommend as, perhaps, the best all-round exercise the *striking out of a given vowel* from a column of the newspaper. Münsterberg, McDougall, and others consider this of great value. The exercise should be carried out with a view to three points:

1. Accuracy.
2. Speed.
3. Ignorance of contents.

The patient should be given a column of equal length every time. Speed and accuracy can be noted and improvement gauged thereby, but it is surprising how long the most conscientious pupil will take to acquire the power of finishing a column without knowing what the text refers to. It is desirable, but not so feasible, to alternate this exercise with its converse—namely, reading an article with the attention riveted on the subject with a view to ignoring misprints. This is the student's gift as opposed to the proof-reader's knack which is developed by the first form of this exercise.

In connexion with these exercises, reference must be made to Vittoz's most valuable work. It is marred by certain startling and unscientific theories, but none the less the value of his exercises cannot be gainsaid. He gives five classes of exercises for concentration:

1. The symbol of infinity or the figure "1."
2. The ticking of a metronome.
3. [illegible]
4. Affected parts of the body.
5. Ideas.

With regard to the first, it is often useful in conjunction with [illegible] as the patient fits his respiratory [illegible] concept of the symbol. The second consists in resisting the fatigue caused by monotony.

I have attempted to sketch out very briefly the necessity for re-educating the attentive control of many of our patients and to outline some of the methods. I am conscious of the imperfections of a paper which has necessarily had to be compressed into appropriate limits. I trust that, if I have failed to be exhaustive, I may have at least directed your attention to a subject which does not often enter the limen of the physician's consciousness.

THE NUCLEI OF THE NEUTROPHILE CELL IN ACUTE INSANITY.

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AT a time when increasing importance is attached to the examination of the blood of the insane, it may be of interest to give the result of some observations made during the past few months.

Although the white cell has again been the special object of examination, this communication does not deal with its variation in kind or number, but with the condition of the nucleus.

The nucleus of the so-called polymorphonuclear, polynuclear, or neutrophile leucocyte is a body which may be composed of one or more lobes. The majority of authorities agree that the division is rather a multilobular one than a multinuclear. The young cells are those with only one or two nuclei; the older cells have three, four, or five. Arneth, using this fact, considers that the young white cells, those with one or two nuclei, are less resistant and less able to combat an infection than the older ones with more nuclei.

He counted the number of the nuclei of the neutrophile white cells and divided them into five great classes. Placing these numbers in a horizontal row beginning on the left with Class I. which contained cells with only one nucleus, and ending on the right with Class V, which held the cells with five nuclei, he formed what he called the "neutrophilic blood" picture. Thus from a count of fifteen normal individuals he formed the following normal picture:

I.	II.	III.	IV.	V.
5 %	35 %	41 %	17 %	2 %

Miner and Ringer, whose articles in the *American Journal of Medical Science* first attracted my attention to this subject, and to whom I am indebted for some of the facts quoted in this paper, made the following blood picture from ten healthy men:

I.	II.	III.	IV.	V.
2.5 %	16.2 %	55.6 %	18.6 %	5 %

It will be noted that there is a marked discrepancy between the records of these two observers. The cells in Classes I, IV, and V, however, coincide fairly well, but in Classes II and III there is considerable disagreement. This, no doubt, is due to the difficulty there is to decide what actually must be considered a connecting strand in the nucleus and what must be considered as a separate nucleus. This matter will be again referred to at a later period. In order to obtain figures which could form graphic curves when tabulated upon a chart, a method was devised by which the cells in Classes I and II and 50 per cent. of the cells of Class III were added together. This is only an arbitrary method, but it serves the useful purpose of establishing a certain numerical standard to which the name of "index" has been given. By this method Arneth's index was found to be 60.5, while Bushnell and Trucholtz found a normal index of 67, Webb and Williams one of 65, Miner and Ringer 48.5. I examined the blood of a dozen healthy individuals and my index came to 57.

Perhaps it would be well to describe very briefly the technique of this work. The blood is drawn from the lobule of the ear, and the resulting drop touched with an ordinary glass slide; another slide is then placed against the drop of blood, and when the blood has run along its edge it is slowly drawn at an acute angle. The resulting film was then dried and stained by Jenner's method. As a general rule the next procedure was to examine the nuclei of a hundred cells under the oil emersion lens. It must be

... that the personal equation may enter very largely into the results that are obtained, but I think it is greatly diminished if the observer is a constant one and no other person is allowed to help in the blood counting. It is not always easy to decide into which class a cell shall be placed, and at times, more especially in the experimental part of my work, difficulties were met with, but following the rule laid down by Miner and Ringer, the following plan was adhered to: (1) Nuclei connected by a distinct isthmus are always counted as one nucleus. (2) Nuclei connected by only a thread are counted as two nuclei. In order to prevent a "complex" entering into the counts, and to minimize the personal equation as much as possible, the blood films were prepared by another person and marked so that the enumerator should not know whose blood he was examining.

This procedure was continued until I satisfied myself that a constant mode of the enumeration of the nuclei had been established in my mind. In addition to this no chart was formed of the cases under examination until the whole investigation was complete. However unreliable or inaccurate these results may be, at any rate they have been obtained honestly and free from the influence of any preconceived theory. A great deal depends upon the thinness of the film, and another point of importance is that the blood stain must be fresh. Thick slides make accurate enumeration of nuclei impossible.

Following the observation of the blood of normal individuals, the nuclei of cases of chronic insanity were noted with the result:

I.	II.	III.	IV.	V.
5.7	29.5	45.8	16.8	1.6

The resulting index is 57.8, which closely corresponds to my normal blood picture of 57. The subjects of this part of the investigation were all women in good general health, and included cases of paranoia, chronic mania, and melancholia and organic dementia. The next step was the examination of patients suffering from acute mental disorder. This was done by counting the cell nuclei of each female patient admitted who was the subject of an acute attack of insanity. The resulting neutrophilic index was 64.6. The count was the result of the examination of 10 cases, of which 2 were not first attacks.

In one case it was the patient's eighth attack and the index was 41; in the other it was the woman's third admission, and here the index was 51. These facts are mentioned because they direct attention to a similar phenomenon regarding leucocytosis in recurrent cases—namely, that the leucocyte count is low in recurrent cases of insanity.

Having satisfied myself that there are changes in the nuclei of the leucocyte in acute as compared with chronic cases, a systematic series of observations was commenced on three cases of acute insanity.

The subjects were chosen because they were typical of their kind and the symptoms were active.

Case I.

E. P., aged 37, married, had a baby a week before admission. The breasts were full of secretion and the patient much run down. She was suffering from excitement with confusion, was noisy, excited, restless, and disorientated.

The blood in this case, as in the other two, was examined every second day, in this case for nearly two months and a half. The first blood count was as follows:

I.	II.	III.	IV.	V.	Index.
17	38	37	8	0	73.5

The index fell at the end of four days, but then rose, till at the end of a fortnight it had reached 82.5. At this time the patient had to be tube-fed and catheterized. She slowly began to improve, and the index fell to 69.5, twelve and a half points above my normal. A week later she was not so well, a detailed blood picture reading thus:

I.	II.	III.	IV.	V.	Index.
14	41	31	13	1	70.5

Four days later she was much the same, and a differential qualitative leucocyte count read as follows: Polynuclear, 71 per cent.; large lymphocytes, 6 per cent.; small ditto, 10 per cent.; hyaline, 4 per cent.; and eosine cells, 9 per cent. This count is interesting, as it clearly points to the favourable nature of the prognosis as demonstrated by the marked eosinophilia. After improving a little, she relapsed and was emotional, and lost much confidence in herself; the index meanwhile rose to 81.5, the differential count being:

I.	II.	III.	IV.	V.
27	42	25	5	1

This rise of the neutrophilic index is not unlike the rise that occurs in leucocytosis. Gradually the index fell till it reached 70; at this point the reading was thus:

I.	II.	III.	IV.	V.	Index.
10	43	34	11	2	70

This count shows the interchange that is taking place in the numbers of the cell nuclei, how that Classes I and II are diminishing and Classes III and IV are increasing. A week later the patient was mentally recovered; the last blood count taken previous to her discharge read:

I.	II.	III.	IV.	V.	Index.
17	28	35	7	3	62.5.

When the graphic curves of a chart based on this case are studied, the point that strikes one most is the rises of the index, each rise rather less marked than the previous one.

It could not be said that they in any way corresponded to any particular mental state. They appear at regular intervals in this case, and no doubt are the response of the leucocytic mass to a call on the part of the organism for help to overcome a toxin.

Case II.

A. E. G., 29, married. She was very agitated on admission. Had recently been confined, and had considerable mammary secretion. She was very pale, anaemic, and unhealthy looking. The mental symptoms were those which are usually described under "agitated melancholia." Restlessness was constant, there were hallucinations of a terrifying nature. She never spoke, but crouched in towards the wall when addressed, and was spoon-fed. The blood of this patient was examined every second day for nearly four months. There was a history of a refusal of food for some days before admission, which may account for the low counts of 60 made upon admission and the second day after admission. At the end of a week the following blood picture presented itself:

I.	II.	III.	IV.	V.	Index.
15	40	35	8	2	72.5

Two days later the index rose to 79.5, and, with the exception of a fall to 72, remained at about this figure. Meanwhile the patient remained in bed; she was very agitated, unhappy, restless, and she never spoke. The neutrophilic index remained high, and a little over a month after admission it had reached 81.5; the detailed count being:

I.	II.	III.	IV.	V.
28	41	25	6	0

During the next month no marked change took place in the blood counts; the more acute mental symptoms, however, began to subside, the patient was now up, and, though still agitated, she had spoken and made an attempt to fold a bed.

The next month saw little change in the index, it remained high, and was usually between 78 and 82. The woman gradually lost the active agitation and unhappiness, but picked her face and chin, and was very indifferent to her surroundings. At the end of three months the index reached its maximum—namely, 87. At this time she had a count of 80 or over on six successive examinations.

The cells in Classes I and II remained very high. Blood counts continued to be taken even when it was seen that the prognosis was probably one of dementia. The index remained high, and a detailed account of the last examination read:

I.	II.	III.	IV.	V.	Index.
32	42	18	8	—	83

Speaking now, at a time when the disease has been in progress seven months, the patient's mental condition is

that of dementia, she is dull and indifferent, automatic and quite idle. The points that are of interest in this case are, first, the high neutrophilic index continued over a long period of time; and, secondly, there is no secondary rise of the index as seen in the first case, but rather a systematic and gradual ascent with no tendency to fall.

CASE III.

J. F., single, 41, farm servant. For the first two days after admission she was agitated, unhappy, and refused all food, and was fed by the nasal tube. Two days later she was confused and excited, noisy, abusive, and violent; this stage was followed at the end of a fortnight by a period of mild restlessness. The patient could not read or write, and her answers to questions were not very satisfactory; but a poor education, no doubt, is a factor in determining her weak-mindedness. A blood count taken the morning following admission was as follows:

I.	II.	III.	IV.	V.	Index.
26	42	27	5	0	81.5

The index during the next three weeks remained very high—with two exceptions, 80 or over—until it reached 87.5, and in two days later it mounted to 88. Now this is the highest neutrophilic index that occurred in any of the patients examined. These two very high counts, together with the subsequent fall of index, certainly simulate the crises referred to in the first case. The index again rose to 85.5, and then fell till it reached its minimum, 75.6, when it again rose to 85, this rise being followed by a fall and a week later another rise. The descent of the index was, after the two first marked crises, more or less suggestive of a "ladder" lysis.

The last count, taken at the end of nearly three months, showed the index to be 81. Throughout the illness it will be noticed the counts have been abnormally high. The mental state of the patient was certainly acute at the commencement of her illness, but her general condition did not suggest the absorption of much toxic material. After the first fortnight the patient's mental condition slowly returned to normal. She had an occasional slight return to restlessness and mild excitement, and she was inclined to be emotional, but, viewed broadly, she made an uneventful recovery. There is now a considerable amount of mental defect, but this is certainly congenital, and the woman has made, as far as she herself is concerned, a good recovery. Reviewing the figures obtained in the examination of these three women, it would be wrong to draw too sweeping conclusions from the amount of material, but one or two points can be made out.

Undoubtedly the nuclei of the leucocyte undergo changes in acute insanity. At the commencement of an attack of acute insanity, the leucocytes found in the blood show a tendency to possess a single or bilobed nucleus. It is unusual to find neutrophile cells with more than three nuclei, and though cells with four occur they are rare—cells with five nuclei are even rarer. As the attack [illegible] the leucocytes in Classes III and IV gradually increase in number at the expense of the cells in Classes I and II. Cells containing five nuclei were practically absent in the last two cases which were systematically examined.

Comparing the charts, it will be seen that whereas in two cases there is some apparent system in the rise and fall of the index, in the third there is no such systematic arrangement. We also see that in the cases that recovered the count was high to start with, and then came down; while in the woman whose attack ended in dementia the reverse occurred. In the course of her illness, instead of commencing high, the first two indices were only 60, and the count rose at the end of three months to its maximum. It might be said that in one case we are dealing with mania and in the other with melancholia, and that is true; but as yet the pathogenesis of mania and melancholia has not yet been clearly defined.

When the number of cases examined in a systematic manner is so small, it is perhaps premature to attempt to draw conclusions of a definite nature; but enough, I think, has been done to show that by Arneth's method we have learnt something as to the response an acutely insane person is making to eliminate a toxic material.

SECTION OF DISEASES OF CHILDREN.

Mr. ROBERT JONES, President.

AN OPERATION FOR WEBBED FINGERS.

By A. H. TUBBY, M.S.Lond., F.R.C.S.Eng.

THE fact that many operations have been devised to remedy this congenital deformity testifies to the inherent difficulties of obtaining a successful result.

At this moment I need not try your patience by describing to you various types of webbed fingers—suffice it, however, to say that they are four in number: (1) Those in which the fingers are joined by skin throughout—a very rare form, and susceptible to simple treatment, if care be taken; (2) union by skin and fibrous tissue through a varying length of the interdigital cleft; (3) the interesting "lattice form," in which the fingers are separated proximally, but united distally; (4) where the bone or other tissues are partially or completely fused together.

Difficulties arise chiefly in those instances where the union is by soft tissues as well as by the skin, and where some of the bones are joined; but very intractable and troublesome are those cases where each phalanx is completely blended with its neighbour. My remarks, however,

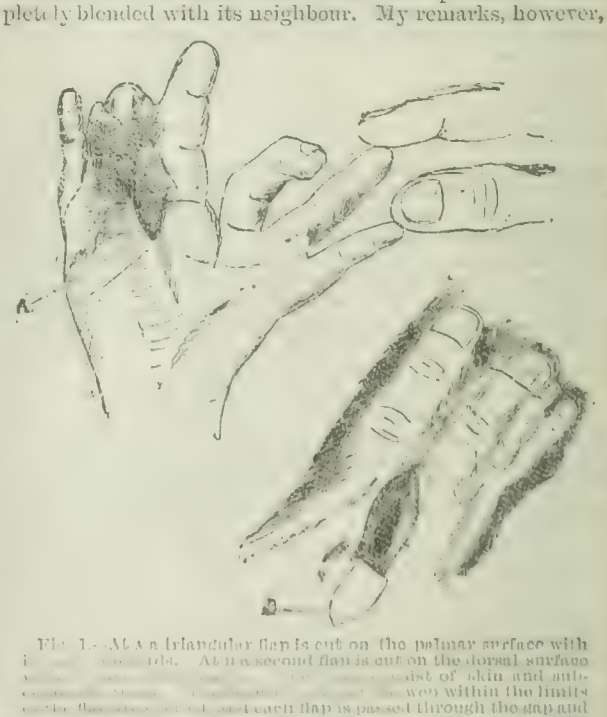


FIG. 1.—At A a triangular flap is cut on the palmar surface with its [illegible] At B a second flap is cut on the dorsal surface [illegible] consist of skin and subcutaneous tissue only, and are won within the limits of the [illegible] each flap is passed through the gap and its tip secured by sutures. (Figs. 1, 3, 4, and 5 were drawn by Mr. E. Rock Carling.)

are chiefly directed to union by soft tissues, and to union by some of the bones, but not all. Fortunately the last-named are as rare as they are troublesome.

Many methods of permanently separating webbed fingers have been devised, and they all have certain points in common which will be mentioned presently. One method is primitive in its simplicity, and entirely objectionable in its results. It consists of dividing the web, and then suturing together, at the base of the web the dorsal and palmar surfaces of the epithelium. If this were always possible the desired result would be quickly and easily achieved. It is not so, however, because the fingers are so closely placed together, and the thickness of subcutaneous and fibrous tissues is such, that the epithelial surfaces cannot be brought into apposition, with the result that granulation tissue appears and the web is re-formed. Another method is the insertion of a silver pin or some foreign body through the base of the web and its retention there until an epithelial-lined fistula is formed. This event rarely happens, except in the entirely membranous types; and even if it does so it is found that whilst healing is taking place the pin, and with it the fistulous opening, is

travelling slowly away from the bases towards the tips of the fingers; so that some of the web is left. More elaborate methods have been designed by Zeller, Félizet, Pilot, Norton, and Forgue.

To all of these operations certain objections are inherent; for in one or other particular they fail to fulfil the postulates of success, which may now be briefly enumerated. They are:

1. The formation of a permanent and large opening or fistula at the base of the cleft, and the significance lies in the word "large." This opening must be completely lined with epithelial tissue, and be in the position and have the natural direction of the interdigital cleft.



Fig. 2.—The author's apparatus designed to keep the glass rod in place and prevent it being forced by granulations towards the tips of the fingers. [From a drawing made by Mr. B. White, of Westminster Hospital.]

2. The fistula so formed must be stationary—that is, it must show no inclination to travel downwards.

3. No attempt should be made to deal with the remainder of the web until the fistula is completely healed.

4. When it is, the web is dealt with in such a way that the lateral raw surfaces become completely covered with skin.

5. Absolute asepsis from first to last is essential to success.

6 The fingers, when healed, must be watched and splinted, if necessary, to prevent any lateral deviation. They should also be massaged and moved daily to increase their suppleness.

In order to satisfy these requirements I have practised in several difficult examples of webbed fingers, where the union by soft tissues and by some of the bones as well was present, a form of operation the details of which are as follows:

Two triangular flaps of skin and subcutaneous tissue are cut. One is made on the palmar and the other on the dorsal surface. These are in the situation of the normal interdigital cleft. The palmar flap A (Fig. 1) has its base towards the tips of the fingers, and its apex pointing upwards, whilst the dorsal flap B is cut in the reverse direction. The dorsal flap is cut higher or more proximally on the hand than the palmar, because of the slope of the natural web from below backwards and upwards; and these flaps are large and generous, as it is found that a surprising amount of tissue is required to line thoroughly the surface of the foramen about to be made.



Fig. 3.—A glass rod, C, is passed obliquely through the gap, after the skin flaps have been sutured so as to line it.

In making the foramen at the base of the web a mere incision is insufficient. The soft tissues must be cut out until a clean circular opening, at least one-third of an inch in diameter, is made. The next step after the arrest of haemorrhage by forci-pressure, and not by ligatures, as the latter interfere with the healing process, is to draw each flap through the foramen, adjust them carefully with their epithelial surfaces opposed and looking towards the centre of the foramen, and fix them thus: The tip of the palmar flap is sutured to the lower edge of the dorsal aspect of the foramen, and the tip of the dorsal flap is fixed to the upper edge of the palmar aspect. Fine silkworm gut is found to be the best material for sutures. The flaps should be carefully adjusted within the foramen so as to lie snugly and evenly; and, provided they have been cut large enough, two lateral sutures may be inserted through each flap, one on either side of the apical suture. One cause of failure in this part of the operation is want of boldness in cutting large flaps.

Even with these precautions the foramen has an invincible tendency to contract to a minute hole, if it is not held distended, until it is completely healed. Further, it is found that any rod or pin, passed through a web and not firmly held, shifts about and irritates the parts. The result is ulceration below the foreign body, and the formation of granulation tissue above it, so that the rod gradually works down towards the tips of the fingers, and the web re-forms above it. It follows, therefore, that the rod must be held immovably.

I have devised an apparatus, neither complicated nor costly, to hold the rod in position; and, being made of glass and metal, it can be sterilized. It consists (Fig. 2) of a closely fitting metal wristlet, A, carrying two arms, B and B', which hold the glass rod, C (Fig. 3), in place by means of two screws, D and D'. It will be noted that the metal arm, B, corresponding to the palmar surface, is longer than the other, B'. The glass rod is therefore held obliquely, being inclined backwards and upwards, corresponding to the line of the normal interdigital cleft. The diameter of the glass rod should be ¼ to ⅓ in., according to the distance between the bases of the first phalanges. The wristlet and rod are now fixed in position (Fig. 4), and the parts are dressed. If the operation has been aseptic, very few subsequent dressings are required. The stitches, however, are removed on the sixth day, and the rod is replaced for another week or ten days. The fistula will then be found dry, lined with skin, and it is in the situation in which it was made and has not shifted. As an additional precaution, from the first, the hand and forearm are secured to two malleable iron splints, one on the dorsal and one on the front surface, and in the case of children it is advisable to bind the limb to the trunk.



Fig. 4.—Side view of the hand with the apparatus and glass rod, C, in place. The rod should be placed more obliquely from before backwards, so as to follow the natural line of the interdigital cleft.

When the surgeon has satisfied himself that the first part of the operation is a success, and not till then, he proceeds to the second part, as in Didot's method (Fig. 5).

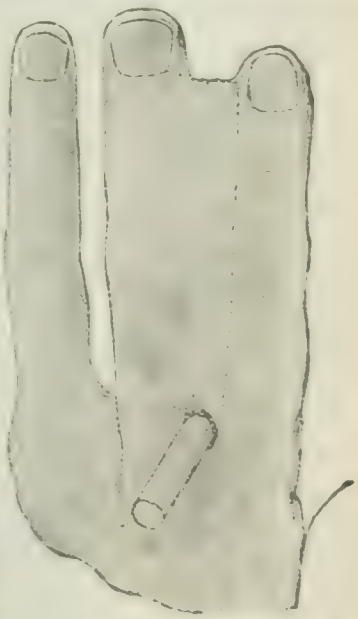


Fig. 5.—A fistula completely lined with epithelium, having been established at the base of the web; this is severed by rectangular flaps as in Didot's operation. The dotted line represents the outline of the dorsal flap; the palmar flap is cut with its base in the opposite direction.

An incision, nearly the length of the web, is made along the palmar surface of one finger from near its tip and terminating above just at the side of the fistulous opening; whilst below a short transverse cut is made, so that when the skin is dissected up a flap is formed. On the dorsum of the other finger a similar proceeding is carried out, except that the flap is in the opposite direction. The remaining tissues of the web are then divided, and the dorsal flap of one finger covers the palmar surface of the other and vice versa.

There are certain points to be observed in this procedure. These are: (a) the fingers are not of the same size, and the

flaps should be cut accordingly; (*b*) the flaps must not be cut too broad, otherwise raw surfaces will be left on the fingers; (*c*) the sutures must be most accurately adjusted at the base of the cleft, so as to leave no granulating surfaces. A widely opened foramen in this situation provides sufficient epithelium to prevent this, and the utmost care should be taken at this stage of the operation.

If it is found that the skin flaps are not sufficient to cover the raw surfaces without tension, the former may be undermined with a tenotomy knife, and in extreme cases I have had to resort to grafts taken from the thigh and sewn into position. There should, in any case, be no tension of the flaps, and no raw surfaces left to granulate.

Now, the point of this operation is to secure healing as quickly as possible. In order to avoid irritation, gauze should not be immediately applied to them, but strips of sterilized tinfoil placed on them or wrapped round very carefully. Then plain gauze is carefully applied in strips to each finger, after the glass rod has been again placed at the base of the cleft and fixed in position by the wristlet.

The hand is then bound up and the limb from the elbow downwards put into splints with the arm fixed to the side. The dressings are not removed for three weeks, and it will then be found that the raw surfaces have become entirely covered with epithelium, and the result is satisfactory. If there is any tendency to lateral deviation of the fingers, it can be met by applying a small malleable iron splint to each finger, and in any case massage and daily movement are required.

Where more than two fingers are involved, as in the complicated case shown in the figures, I advise that the separation of two fingers be completed before the others are touched.

DISCUSSION.

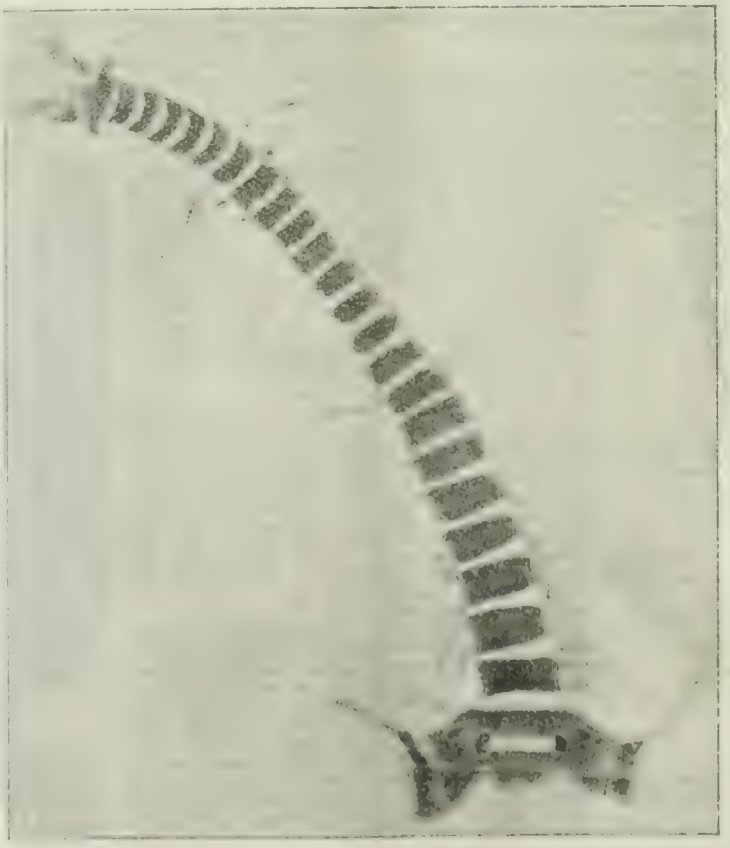
Mr. E. M. Corner (London) complimented the reader of the paper on having achieved a method of operation that would give satisfactory results in these very difficult cases.

SOME PRINCIPLES IN THE TREATMENT OF LATERAL CURVATURE OF THE SPINE BY EXERCISE.

By J. S. Kellett Smith, F.R.C.S.Eng.

The time available for the reading of any one paper is so brief that it is necessary to avoid argument and to lay down broad principles without having too much regard to exceptional cases.

The human spine is maintained in the erect position by the constant balancing action of certain muscle groups disposed in a direction more or less parallel to its own. It is capable of considerable lateral excursion, the extent of which may be shown in the living subject, or, better still, in such a preparation as was once made by Pirogoff to illustrate this particular question (Fig. 1). Pirogoff took a quite recent body, and, with the pelvis firmly fixed, allowed it to lean to one side. It was frozen in this position, and then, [illegible] he made a coronal section down through the bodies of the vertebræ. Fig. 1 depicts the face of the posterior section.



[illegible] extent of lateral [illegible] out of spine.

This figure illustrates forcibly what tends to happen when the spine is once moved out of its line of balance. The tissues here are in a state as nearly approaching the living [illegible] important the muscles are in [illegible] the fact that the prin- [illegible] of lateral [illegible] lumbar [illegible] Hence the [illegible] from it can [illegible] upon this region.

The usual case of lateral curvature implies muscular inefficiency, which may proceed from—

1. Inherent weakness as part of the condition of general constitutional asthenia.

2. Weakness following illness or the drain of rapid growth.

3. Overstrain caused by faulty position in standing, sitting, or following some occupation, and due to some physical defect (pelvic deformity, unequal standing height of the legs, wry-neck, errors of vision, etc.) or to the nature of the occupation (forward sloping writing, piano and violin playing, carrying burdens on one side, etc.).

4. Overstrain consequent upon deficient "muscle sense" prolonging a faulty attitude which would be quite temporary and harmless in the normal child.

The value of exercises in treating and in correcting the results of these various conditions assumes an importance which is even now not fully acknowledged. Without claiming too much or too little their sphere may be stated thus—curative in the majority of the milder cases, an indispensable adjunct in those requiring mechanical correction and support.

The number of exercises recommended for use is large enough to be embarrassing, for the simple reason that the spinal groups of muscles are brought into action in the vast majority of the movements of the body. A study of the anatomy of the deformity in the dorsal region is of great value in selecting the most efficacious.

The sternum is firmly anchored at its upper part by the stout first and second ribs and by the clavicles, whilst any lateral force below this is exerted through the more flexible ribs and their cartilages. In consequence the displacement of the sternum is remarkably small, even in the most advanced cases. The brunt of the thrust and torsion created by the lateral displacement and rotation of the

spine falls upon the longer ribs, and the deformity in shape arising therefrom (Fig. 2) results in fixing the curvature long before any wedge-shaped alteration of the vertebral bodies is developed. In other words, the spine, which in the earlier stages is "whippy" enough to present no trouble in itself, is prevented from going back to mid-line by the deformity of the ribs.

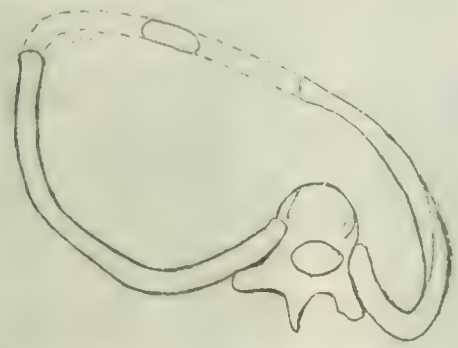


Fig. 2.—Horizontal scheme of advanced scoliosis.

The object of exercises is therefore twofold:

1. To overcome this fixity, to restore the correct form of the ribs as far as possible, and to render the thoracic skeleton so mobile as to be capable of being completely or partially restored to its normal position.

2. To strengthen up the spinal muscles to such a degree that they are capable of maintaining this improved position.

The first object is best gained by carrying out a series of movements in the "all-fours" attitude, in which the spine is relieved of superincumbent weight whilst the liberty of the subject is preserved. Also in this attitude the spine is automatically straightened out, both lateral and antero-posterior curves being affected.

Fig. 3 shows a record of the spine of an overgrown youth 17 years of age, whose trouble is due to a left leg ¾ in. shorter than the right and to close desk work for a year. On the left is the chart of his spine in the erect position, the vertical measurements being taken by calipers from a base line drawn through the posterior superior iliac spines. On the right is a tracing obtained from him on all-fours by placing a dot of printer's ink on the tip of each spinous process and taking a transfer on a strip of linen. The spine is shown to be straightened out, and the production of his triple curve from a single left convex curve is analysed.

The "all-fours" attitude, therefore, fulfils the great essential that all exercises shall be taken in the best possible position. Exercise in a faulty posture is capable of creating a curve, and still more of confirming a curve already present. This is illustrated in the case of a famous fighting man, who adopts a crouching attitude in which the spine is held convex to the left. This curve has now become fixed with him, despite his magnificent muscular development.

Exercises in the "all-fours" position are based upon a principle which may be illustrated by means of a model constructed of flexible metal gas-tubing to represent the spine, and copper wire to represent the pelvic and shoulder girdles (Fig. 4).

If [illegible] reproduction of the usual [illegible] in quadrupeds—namely, by moving the limbs [illegible] sequence—a simple curve of the spine

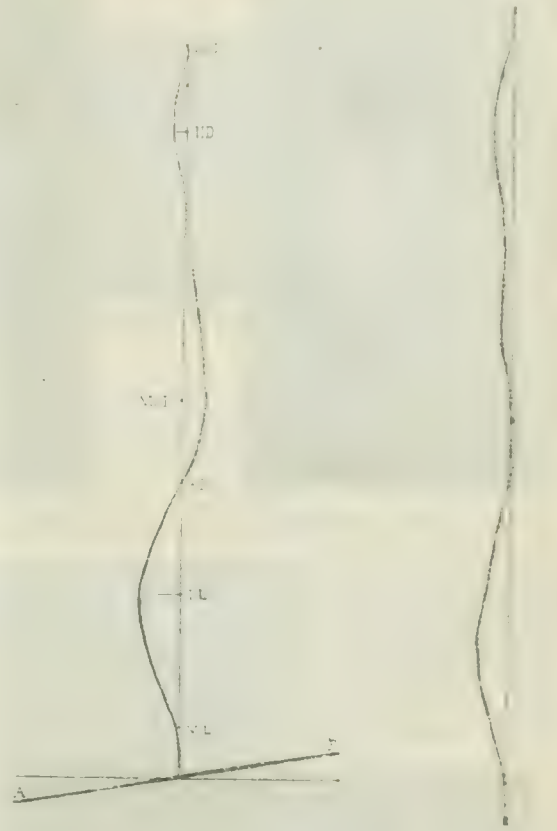
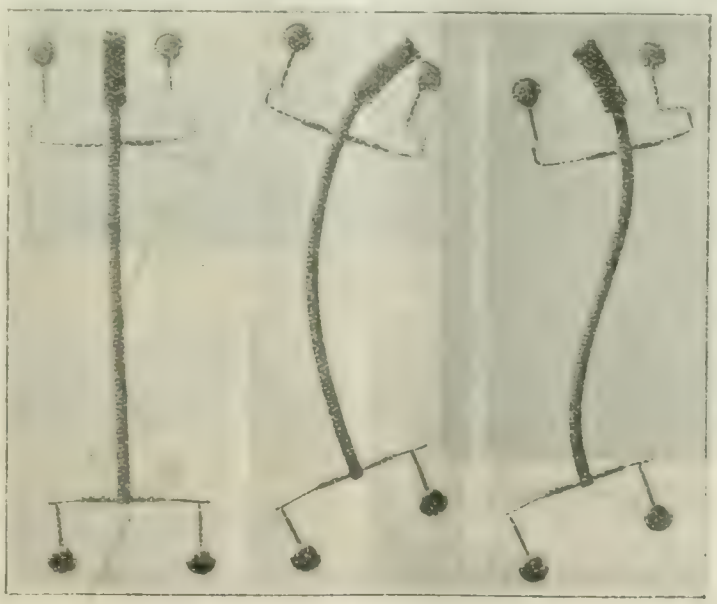


Fig. 3.—Spine in erect position on left, with the subject on all-fours on right.

is produced (Fig. 4, B), which will unfold a deformity of opposite convexity. Moreover, by increasing and decreasing the relative obliquity of the pelvic and shoulder girdles the chief effort may be thrown into the lumbar or dorsal region at will.

If, on the other hand, the patient imitates the pacing action of quadrupeds in which limbs of the same side are moved forwards together (Fig. 4, C), then a double curve of the spine is produced which will tend to neutralize a double curve in the opposite direction.

This effect upon the spine of obliquity of the pelvic and shoulder girdles may also be well shown in various attitudes of standing, sitting, etc.



A B C

Fig. 4.—Model to illustrate the creeping movements.

The actual exercises are three in number, and must always be associated with the names of Professor Klapp and Dr. Fränkel. Figs. 5, 6, 8, and 9 are from the originals in Klapp's book.

Exercise 1 is the most useful of the series and is founded upon the principle of Fig. 4, B. The patient (Fig. 5) goes

down on hands and knees and makes the first step forwards in such a manner as to unfold the dorsal curve (Fig 6).



Fig. 5.—Scoliosis. Grade III.



Fig. 8.—Movement to the left in Exercise II.



Fig. 9.—Movement to the right in Exercise II.

The importance of the dorsal curve, by reason of its fixity, has already been shown and this effort is made with as much energy as possible.

The next step is a quicker one, and if the patient be the victim of a double curve, as in this particular case, more attention is paid to the pelvic than to the shoulder girdle, with the object of throwing the main effort into the correction of the lumbar curve. It is not possible to deal



the case of Fig. 5.

here with details of movements,* but the progress along the exercise floor of the case illustrated may be represented diagrammatically as in Fig. 7.

Exercise II may be regarded as a variant of No. I, but places more strain upon the spinal muscles. It is founded upon the same principle, however, and is illustrated by Figs. 8 and 9.

Exercise III is made with the pacing step (Fig. 4, c), and is employed in cases of double curvature. Limbs of the same side go forwards together, and the movement correcting the deformity is made with great energy. It is in reality a forcible stretching movement, and the corrective position is maintained for several seconds (Fig. 10).

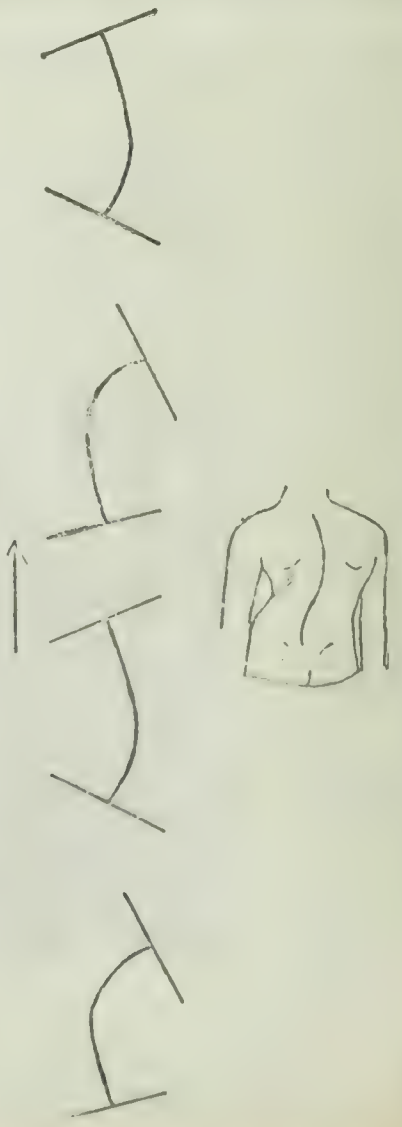


Fig. 7. Diagram of movements in Exercise I.

* For these consult author's book on the subject.

The next step is a simple one, and merely brings the body into position for a repetition of its more important fellow. From the low position assumed by the fore part of the trunk, this exercise is especially useful when the double curvature is accompanied by dorsal kyphosis.

These exercises must be regarded as powerful agents, and demand skilled supervision. [Tracings were shown from an unpromising case—a much deformed adult of 26 years, who had a progressive downwards history of ten years when treated with a mechanical support alone. The tracings were of the "sky-line" of the back at the level of the sixth dorsal spine, and were taken with a wax strip with the patient in the usual position—that is, bending forwards with the trunk at right angles to the legs, and with the arms hanging loosely down. They were taken between points on either side of the spine which occupy the same horizontal plane, and therefore give a true picture of the contour of the posterior part of the thorax.]



Fig. 10.—The low creeping movement employed chiefly in double curves with marked kyphosis.

As the spine grows more capable of occupying the mid-line the second series of exercises, designed to hold the advantage thus won, becomes more important. They are carried out in four positions—standing, sitting, prone on the floor, or on a bench—but they all have the same root idea, namely, the spine being stiffly held; the trunk is either made to perform movements of flexion and extension at the hip-joints whilst the arms are kept still, or is held in the position of strain (that is, flexed on the hips when sitting or standing, extended if prone) whilst the arms are active.

In all the exercises the spine must be stiffly held, so that the lumbar curve becomes as pronounced as possible, and the erector spinae muscles feel hard to the touch all the time the patient is working. Whatever position is taken up the programme is just the same as regards details of movements, which may be listed as follows (the terms *flexion* and *extension*, as applied to the trunk, meaning always its position in relation to the thighs):

	Trunk.	Arms.
I.	Flexion and extension.	By sides.
II.	Flexed, if standing or sitting. Extended, if prone.	Fists to shoulders. Shoot fists forwards. Recover.
III.	Flexion and extension.	Hands to back of ears.
IV.	Flexed, if standing or sitting. Extended, if prone.	Fists to shoulders. Shoot fists outwards. Recover.
V.	Flexion and extension.	Stretched above head.
VI.	Flexed, if standing or sitting. Extended, if prone.	Swimming movements (breast stroke).

These movements belong to no particular system: they are common to most, and are selected for their simplicity and because they concern the inefficient muscle groups in very direct manner. This is important, because the erector spinae muscles, although they may be large in mass, are often found to be singularly feeble in function when subjected to any sustained call. Figs. 11 and 12 give an idea of how these "straight-work" movements are carried out.

Two precautions are very necessary. First, the patient must do all the work with a level pelvis. For example, with a short leg a block of suitable thickness must sometimes be placed under the foot in a standing position, whilst in the prone position it must be remembered that if the ankles are made to touch when the extremities are unequal the pelvis will probably be side-tilted and the spine thrown into curve. Secondly, muscle fatigue must be carefully watched for. As a rule, the erector on the convex side of the abnormal curve is the weaker, so that fatigue is indicated by some "wobbling" of the spine and a tendency for it to drift into deformity. Exercise must be stopped at once and a short rest given.

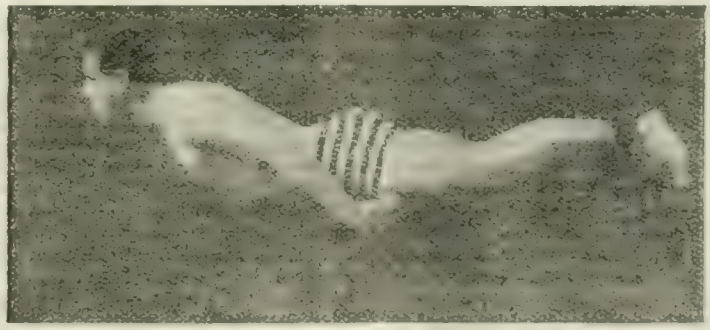


Fig. 11.—The starting position of Exercise No. I on the bench.



Fig. 12.—The starting position of Exercise No. III on the bench.

To these two series of exercises a deep-breathing exercise should be added in all cases for general reasons and for the promotion of thoracic symmetry and mobility. It is best performed with the patient lying on the back. During inspiration the arms are raised from the sides through a vertical semicircle until they come to ground stretched above the head. During expiration they are swept along the floor to the sides again, whilst the patient counts slowly or sings the scale. Moreover, if the movement is made with the arm on the concave side of the abnormal curve alone (the arm on the convex side thereof being kept to the side), then the forcible raising of the ribs on the concave side of the deformity tends to undo the scoliotic rotation of the spine by pressing the rib tubercles against the tips of the transverse processes of the vertebrae.

From the foregoing considerations it is possible to outline a scheme of treatment applicable to the ordinary case of lateral spinal curvature. It should be understood that the deformity may end in disaster if neglected; therefore, for a beginning period, varying with the case, the patient's life must be devoted to one thing alone—namely, to getting the spine straight. The programme of cure may be epitomized under several heads:

1. Exercises for one hour night and morning, the proportion of flexing and straight work to be strictly supervised. During the entire period of treatment a good half of the time is given to the flexing exercises. No. 1 occupies most of the time. Nos. 2 and 3 are introduced for an occasional few minutes. Since they are performed at the rate

of about six double movements to the minute it follows that the patient unfolds the abnormal curves some four hundred times each day. Deep breathing exercise to be carried out at each session, also upon waking and retiring.

2. All attention to be given to the abnormal region. General exercises *not* to be taken, but the daily walks and attendances at meals to be used as drills in training the patient to a sense of upright carriage.

3. Writing and reading at a desk, piano and violin playing, and all occupations involving strain and encouraging faulty attitudes, to be forbidden.

4. The spine must be relieved of weight as much as possible. Therefore bed must play an important part in the patient's life; ten to twelve hours are not too much. Any "brain fag" is to be avoided, but easy studies can be carried out in a good resting position."

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SPONTANEOUS EXPULSION OF FIBROID POLYPUS DURING LABOUR.

Ten days ago, in response to an urgent call for help from a local midwife, I attended a woman in her eighth confinement—her first abnormal one. She had been ten hours in labour. The midwife said she could not make out the presentation—"the child seemed strangely locked." On proceeding to examine, and just as I approached the patient, a large fibroid polypus was forcibly expelled through the vulva and precipitated over the edge of the bed on to the floor. Pyriform in shape, it measured 5½ by 4 by 2½ in. It bore no pedicle, but a breach in the capsule ¾ in. in diameter showed where a narrow one had had attachment. There was practically no haemorrhage either before or after the discharge of the tumour. On examination the os uteri was found fully dilated, and the fetal head bearing on the perineum. Delivery was completed naturally within a few minutes. The umbilical cord encircled the neck twice. The child was stillborn. The mother said she had felt no movement for a week; otherwise, she declared, she knew of nothing unusual either before or during her pregnancy. She has made a good recovery.

As I have not seen nor heard of a similar case during thirty years' practice, I think it worth recording.

Abertillery, Mon. C. Gordon Bennett, M.D.

OSCILLATION OF THE VEINS AT THE ROOT OF THE NECK AS A SIGN OF AURICULAR FIBRILLATION.

The splendid work of Mackenzie and others on auricular fibrillation has excited the interest of the profession to the highest degree, and its presence in certain cardiac affections must be eagerly sought for by all. In an article in the British Medical Journal Dr. Mackenzie gives as signs of its presence the disappearance of the presystolic murmur (in cases of mitral stenosis) and the records of the polysphygmograph and electrocardiograph. It appears to me that in some cases its presence may be actually seen by a study of the pulsation of the veins of the root of the neck. The following case illustrates this point:

Mrs. E., aged 70, subject of mitral regurgitation of long standing. Both ventricles dilated: the apex beat 1½ in. outside middle line, and area of cardiac dulness extending 2 in. to the right of the left border of the sternum. The patient has shown mode rate cyanosis for some years, but has been able for the most part to live a quiet life in comparative ease. Latterly [illegible] with alarming [illegible]. When the attacks pass off [illegible]. The ventricular systole of good volume [illegible] during some of these attacks, regular and about 80 to the minute. On [illegible] the root of the neck the veins are seen in rapid, undulation, in striking contrast to the regular ventricular beat of 80. Venesection to the amount of [illegible] in fortunately the attacks of palpitation and the dullness has to some extent decreased; it has, however, had little or no effect on the oscillation in the veins of the neck.

[illegible] this oscillation is not due to the impulse [illegible] ard wave of blood driven directly [illegible] rated by many more pictures than it has been through a largely incompetent right auriculo-ventricular orifice into the great systemic veins, because then the oscillation would be at the same rate as the ventricular systole. The movement in the veins can in my opinion be only explained by transmission of the rapid irregular oscillations caused by fibrillation of the right auricle.

Lewes. John R. Steinhaeuser, M.D.Lond.

A CASE OF ACUTE FORMALIN POISONING.

The interesting account of a case of acute formalin poisoning reported in the Journal for August 17th by Dr. Watt leads me to put on record the following brief account of a somewhat similar case that came under my notice some years ago.

A strongly built man, aged 30, was admitted to hospital suffering from acute perforative appendicitis. An operation was performed immediately and a gangrenous appendix was found along with diffuse suppurative peritonitis. Improvement after the operation was rapid, and in a week the temperature had almost reached normal, though there was a profuse local discharge of pus. When in this condition one evening the nurse in charge, after placing a thermometer under the patient's arm, left the ward for a few minutes, and on her return found the patient unconscious. Another patient in the ward then informed her that the moment she had left the ward the patient in question had got up, and had walked a few yards to a neighbouring press from which he had taken a bottle and drunk the contents. The empty bottle was found in the patient's bed, and proved to be one known to have contained about 3 oz. of 4 per cent. formaldehyde. I was telephoned for immediately, and on arrival about five minutes later found the patient quite unconscious; his face was strongly flushed, the breathing stertorous, and the pulse 96 to the minute, but steady and rather full. There was no discoloration of the lips or mouth, but there was a strong odour of formalin from the breath. The pupils were dilated, the conjunctival reflex present, and the conjunctivae deeply injected. The skin over the chest and abdomen was pale and moist. I immediately passed a stomach tube and washed out the stomach with strong saline solution and later with liquor ammonii acetatis. The first washings smelt most strongly of formalin, in fact overpoweringly so, and contained much altered blood. I continued the washing until no smell of formalin could be detected from the water as it siphoned back from the stomach. Before this stage was reached, however, the patient recovered consciousness; in fact, he began to revive as soon as the first large quantity of formalin had been evacuated, and was able very soon to explain in a dazed manner that he had been trying to get a drink of whisky. He slept well that night and next day seemed almost completely recovered, except for some slight pain in the throat. No abdominal pain whatsoever was complained of, and in a few days he was anxious to get food, though difficulty in swallowing, owing to the soreness of the throat, was complained of. The first motions after the incident were tarry and contained a little mucus, but later, though fluid, were free of blood.

The subsequent history was unfortunate: burrowing abscesses formed in the neighbourhood of the appendix wound, general septicaemia ensued, and death took place five weeks after admission.

At the *post-mortem* examination patches of fat necrosis were found in the abdomen; the interior of the oesophagus and stomach was extremely corroded, the most marked corrosion being found close to the pylorus. No signs of irritation were found in the duodenum or elsewhere in the alimentary canal. Apart from the changes commonly found in the organs in fatal cases of septicaemia, nothing else abnormal was detected.

The points that impressed me most in the case were: (1) The rapidity of the onset of unconsciousness, probably not more than three minutes elapsing from the time the formalin was taken until complete unconsciousness was present; (2) the rapid recovery of consciousness as soon as the formalin was removed from the stomach; (3) the complete absence of abdominal pain during the subsequent course of the case in spite of the extreme corrosion of the gastric mucosa; (4) the absence of all signs of inflammatory reaction in the stomach, the appearance of which resembled that seen in cases of acute fatal carbolic acid poisoning.

Dublin. T. Gillman Moorhead, M.D., F.R.C.P.I.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, November 11th, 1912.

Sir William Watson Cheyne, Bart., President, in the Chair.

Respiratory Neuroses.

Dr. Samuel West, in opening a discussion on the respiratory neuroses, divided them into two groups, according as they are associated with defective aëration of the blood or not. In the first group were asthma, laryngismus stridulus and the other laryngeal spasm, and whooping-cough; in the second, paroxysmal tachypnoea, the air-hunger of diabetes mellitus and allied conditions in uraemia, periodic respiration—either Cheyne-Stokes in type or grouped. He regarded asthma as a central respiratory neurosis, and emphasized its resemblances to epilepsy. It might alternate with epilepsy or insanity. Laryngismus stridulus was closely related to convulsions; another form of laryngismus was that due to hysteria. Whooping-cough, too, was associated with a neurosis central in origin, due to an infection associated with a specific catarrh. Paroxysmal tachypnoea, wrongly called "hysterical asthma," constituted a peculiar clinical group like paroxysmal tachycardia. It was a rare condition. The air-hunger of diabetes was probably due to a chemical poison. It developed abruptly, and a condition that was sometimes seen in uraemia resembled it. He contrasted Cheyne-Stokes breathing and grouped respiration. The latter was rare, occurring generally in the coma stage of meningitis in children. Cheyne-Stokes breathing as a pathological phenomenon occurred under various conditions, which might be referred to two clinical groups, according as it was associated with (*a*) some disease or morbid state of the central nervous system in which the prognostic import was that of the disease in which it occurred; (*b*) a failing heart. In these cases it was of very grave significance. Study of all these respiratory neuroses led to the same conclusion—namely, that they were the result of some irregular action of respiratory centres higher than those in the medulla. Sir David Ferrier thought that whooping-cough could not be described as a respiratory neurosis, nor could the irregularities of breathing that are sometimes seen in hysteria. He agreed that asthma was a true neurosis, and might occur without any source of peripheral irritation, and that it had close affinities to epilepsy. All the essential symptoms of the attack could be explained by the constriction of the bronchials by irritation of the vagus. It did not appear correct to describe it as a state of *expiratory* dyspnoea, for the *inspiratory* muscles were those which were fully contracted. Cheyne-Stokes breathing occurred under a number of pathological and normal conditions, and could be produced artificially in normal individuals. According to Haldane, Pembrey, and others, it appeared that excess of carbon dioxide caused hyperpnoea, whilst hyper-oxygenation caused apnoea, as in this condition there was no stimulus to the respiratory centre. Normally the respiratory centre maintained a fairly constant level of carbon dioxide pressure in the alveoli and blood; in certain conditions, however, it permitted wider variations, and the respiration became periodic or of Cheyne-Stokes type. He regarded this type of breathing as of grave import. Dr. Hector Mackenzie referred to cases of troublesome and noisy cough in young people, without organic disease, and to tachypnoea, and said that both could be remedied by such treatment as was usually employed in functional neuroses and by faradism. Asthma might cease after a severe illness, which favoured the view that it was a true neurosis. Dr. Leonard Guthrie thought that hypersensitiveness of the sympathetic system was closely related to respiratory embarrassment. He divided respiratory neuroses into somatic and psycho-somatic forms. There was a close relationship between asthma, "dead" fingers, erythema exudativum and urticaria, and between asthma and eczema. Dr. Farquhar Buzzard said that in double hemiplegia it appeared to be necessary to reinforce respiration by the use of voluntary muscles. In a case of laryngismus stridulus, the ganglion cells of the brain and cord had shown signs of hyperactivity. In two cases of Cheyne-Stokes breathing he had found marked changes in the cells of the medulla. The trend of scientific evidence was to inculpate the lower centres in this condition. Dr. F. E. Batten thought that in paroxysmal tachypnoea the respiration was always of the inverted type, the pause coming after inspiration.

ROYAL SOCIETY OF MEDICINE.

Section of Electro-Therapeutics.

Friday, November 15th, 1912.

Dr. Reginald Morton, President, in the Chair.

The Dangers of Electricity.

At this meeting an address, illustrated by the cinematograph, was delivered by Professor Jellinek of Vienna, who said that for many years he had been studying the dangers of electricity in their clinical, forensic, and other aspects. A question often asked was, Is the current dangerous? But the answer to it was often very difficult; in Vienna fatal results had ensued from touching the conductor of a 100-volt current, while there were instances of persons coming into contact with a 10,000 and even a 20,000-volt current without it killing them. To understand this, both (1) external circumstances and (2) individual or personal circumstances must be considered. The former included voltage, ampèrage, number of poles touched, and the time during which the current passed. In the second category were the resistance of the body, its condition, the path taken by the current, and the mental condition of the victim. Remembering the experience in Vienna, he could not agree with those who said that the limit of safety was an alternating current of 300 volts, and a continuous current of 500 volts. Indeed, one man, a mechanician, was killed by a current of only 65 volts, through touching an electric lamp. Electricians stated that one-tenth of an ampère could be borne by a man, but that was not always right. Often the touching of only one pole sufficed to produce an accident, because unsuspected earth conduction existed. In the question of protection from the effects of electric shock the most important rôle was played by the skin, and the resistance exerted by the skin varied with its thickness and its degree of moisture. Regard must also be had to the clothes and boots worn at the time, whether the victim stood on a carpet, and his proximity to such such things as gas-pipes, which were in direct contact with the earth. Accidents from the breaking of telephone wires were fairly frequent, and in one such case the victim's neck was practically cut or burned through. Experiments on horses showed that though most of the charge was conducted via the skin, some traversed the brain also. Electricity, like poisons, affected in different degree various animals and persons; tortoises and frogs were almost immune, while white mice and horses were most susceptible. Experiments on dogs seemed to show that death by alternating current was due to suffocation induced by violent spasms of the diaphragm, and his own general conclusion was that death from electricity was due to suspended animation or brain paralysis. Electro-pathology was very important from a forensic and social standpoint, and the physician was often called upon for an opinion in cases of claims for damages, and as to mode of death in particular instances. Sometimes it was the mode of death in murders and suicides. There was now in the University of Vienna an electro-pathological museum, and the knowledge already gained made it possible to reconstruct many cases of doubt and so determine the degree of culpability. Many deaths were due to short-circuiting. Skiagrams revealed rarefaction of bones produced by electric shock, and various severe lesions of tissues. These latter, fortunately, healed very favourably, and recognition of this fact had saved amputations in a number of cases. In one instance there was such severe damage to the leg that amputation at the knee had been urged, but was not done, and the man recovered. Usually wounds electrically produced were painless and healed without suppuration. This absence of pain was a useful point in connexion with cases of malingering and spurious claims for damages; also the scar resulting from electric discharges was smooth and supple. In regard to the immediate cause of death from electrical current, some said it was due to heart stoppage, others to paralysis of respira-

tion, and others, again, paralysis of the brain. All these views were in different cases probably accurate. The great point was that the cases could be quite hopefully treated by artificial respiration, especially the Schäfer method. If this fact had been generally recognized, many lives could have been saved. Even physicians did not always realize the degree to which life could be preserved after such an accident. The most precious moments were those immediately following the shock. The cinematograph demonstration given was one specially designed for the instruction of electrical workers and labourers; the film had been kindly lent by the Government of Austria.

Dr. H. Lewis Jones commented on the slight degree to which those who had non-fatal accidents from electricity suffered from various nerve conditions; yet one read of people bringing actions for damage on account of such symptoms after these accidents. Some deaths were due not so much to the actual passage of the discharge through the body as to the severe thermal effects. In one case the muscles and vessels of the implicated limb had been converted into a coagulum by the intense heat generated.

Professor Silvanus Thompson remarked that he had not witnessed a single bad electrical accident. Commonly the men employed at switchboards properly comprehended the dangers of the work. In this country a more or less grandmotherly Government made regulations which, if carried out, would always prevent such accidents as Professor Jellinek had described.

Mr. Scott Ram, Electrical Inspector of Factories, said it was frequently stated that the continuous current was more dangerous than the alternating, but he did not consider that was borne out by the facts. During the last ten years he had had to investigate forty-five deaths by electric shocks of 250 volts or less. Yet there were in that time only three from continuous current, though the use of the two kinds of current did not vary much. Sometimes the doctor did not give electrical cases a chance. He had known cases where a medical man had been called, pronounced life extinct and went away; and subsequently the victim's mates decided to "have another go at him," and succeeded in saving his life. In another case the doctor simply ordered the removal of the victim to a cottage hospital a mile away.

The President (Dr. Reginald Morton) expressed high appreciation of the lecture and the kindness of Professor Jellinek in coming such a long distance to deliver it. He commented on the need of a wide dissemination of such facts as had been brought out on this occasion, especially in regard to the immediate application of first aid. This was the more important, in that there was a tendency to neglect acquiring a knowledge of the proper thing to do, owing to the fact that a medical man might go through the whole of his professional career without being called to a case of supposed death from electric shock.

Professor Jellinek replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Medicine.

Friday, November 1st, 1912.

Dr. J. O'Carroll, President, in the Chair.

"Vitalism."

Dr. O'Carroll, in a presidential address, held that a physico-chemical explanation of life was quite unhelpful to the physician; however possible the *de novo* origin of life from unorganized matter might be, it was nevertheless impossible to predicate that only the same forces, physical or chemical, operated in a living as in a dead thing. In life new force or forces came into existence, for which no convenient name other than "vital" force had been devised. That force showed its existence in many ways, but chiefly in its capacity of resistance to extinction. Vital resistance begot an adaptability to circumstances, a division of function among the parts of a compound organism for better maintenance and defence of the whole individual, and finally a power of compromise between contending or hostile organisms of similar or different kinds. That division of labour and power of compromise implied a certain social order which seemed an embryonic form of social ethics. Unless the terms "chemistry" and "physics" were to be extended quite beyond any accurate meaning they could not include ethics among their connotations. If they did they would have as little value as Professor Schäfer ascribed to "vitalism." In the practice of medicine the "vital" conception of disease was all-important. It taught the physician to separate symptoms which were essentially morbid from those which indicated resistive or protective processes, and thus led to the adoption of treatment which would help and not obstruct the vital processes which made for survival of the individual.

LIVERPOOL MEDICAL INSTITUTION.

Thursday, November 7th, 1912.

Mr. Robert Jones, President, in the Chair.

Tuberculin Treatment.

Dr. Claude Rundle, in a paper on considerations of temperature in selection of cases for treatment by tuberculin, said that in cases in which temperature had been normal for a week or more, and he had begun the administration with a dose of 0.00005 mg. and increased it rapidly, the result was satisfactory. In a case with an evening rise of temperature to 99° F. or 101° F. many authorities discouraged the use of tuberculin, but in such cases the most brilliant empirical results had been obtained. When there was a superadded streptococcal infection, he found an autogenous vaccine valuable, and after the secondary infection had been overcome, tuberculin was of use when the temperature ceased to oscillate. In cases in which the temperature usually varied between 101° F. and 102° F., and never dropped to normal, the results of tuberculin were unfavourable.

Dr. Nathan Raw, in a paper based on 640 cases treated by tuberculin, said that the impression left on him was that in a great many cases permanent good was done, but where acute disease was complicated by a superadded infection little could be expected. In all cases general in addition to tuberculin treatment was desirable. It was difficult to decide in advance what cases would improve under the treatment. The author used Koch's new tuberculin, human and bovine, and he preferred a mild dosage. A temperature of 101° F. or more was a contraindication, as also was haemoptysis, owing to the local hyperaemia produced. In virulent infections tuberculin was of little use. Some of the best results were obtained in gland infections, and despite the fact that the infecting organism was often bovine, human tuberculin gave the best result. It was most important not to give tuberculin in any case in which there was pent-up pus or caseating material; all such deposits should be evacuated first, otherwise the treatment would cause local reaction and a general diffusion of the disease. As little as possible should be done with the knife beyond incision of the part to liberate the pus. His initial dose was one ten-thousandth part of a milligram. In making a diagnosis he used Moro's ointment for children and von Pirquet's test. They were useful, but in acute illness a positive reaction would not prove that the condition was due to tuberculosis. An old quiescent deposit would give the same reaction. It was not to be assumed that in an apparently cured patient a permanent immunity had been secured.

Dr. T. R. Bradshaw said he had watched Sir A. Wright's early work with great interest, and had seen very striking results, but his further experience had not been so favourable; in many cases there was only improvement at the beginning. A reaction to von Pirquet's test was not an indubitable proof of tuberculous infection.

Sir James Barr said he had found that many cases did very well with tuberculin treatment, but young subjects with bad digestions and rapid pulses did not improve at all.

Dr. Chace-Calvert used bacillary emulsion, and had not seen severe reactions. His dosage was one hundred-thousandth part of a gram, increased gradually. Tuberculin was not going to revolutionize the treatment of tubercle, and statements such as "with tuberculin victory over the disease was never in doubt," which he had seen in one publication intended for popular reading, were most undesirable.

Dr. R. J. M. Buchanan thought it would be a great advantage if some definite standardization of tuberculin

could be reached so as to allow real comparison of results obtained by various workers. In mixed infections tuberculin did little good.

Professor Ernest Glynn did not think glandular tuberculosis was so often due to bovine infection as did Dr. Raw, and he could not believe there was any advantage in treating bovine tuberculosis by human tuberculin or vice versa. The ideal would be to treat a subject of tuberculosis by tuberculin from his own bacilli.

In his reply Dr. Rendle said that he was aware that the public health service of the United States had reported unfavourably on the use of tuberculin, and that in France its use was much decried.

Dr. Raw, also replying, quoted experiments in cattle which proved that they could be immunized by human but not by bovine tuberculin.

UNITED SERVICES MEDICAL SOCIETY.

At a meeting on November 13th, Fleet Surgeon Bassett-Smith in the chair, Colonel Bruce Skinner showed that the mobility of an army was influenced by (1) the amount of transport requisite, (2) the amount of food procurable, (3) the amount of sickness amongst the troops, (4) the necessity of protecting both supplies and also medical units occupied by the helpless. Hence an army doctor must study war, in order readily to grasp the designs of the field commander and exercise a trained imagination in foreseeing and providing for any military situations that might arise. A field medical unit must never become clogged with sick and wounded, and such a condition could only be avoided by free evacuation towards the base. The fewer the sick and wounded retained at the front the more the supplies there were available for the healthy, and the nearer the base the hospital was situated the shorter the distance over which the supplies of equipment, personnel, appliances, and food for hospital use had to be transported, and the greater the technical efficiency of such units. The true hospitals, then, must be on the lines of communication, and the advanced medical units should consist mainly of ambulance transport. His final conclusions were as follows: (1) A force without sufficient medical transport loses mobility and requires additional Army Service Corps transport. (2) A force with adequate medical transport gains in mobility and needs less Army Service Corps transport. (3) The necessary evacuating transport must take the form of a medical unit, such as the "ambulance column" now proposed for the Indian army, because in the stress of war they could not rely on any other branch of the army to supply their needs, nor upon any improvised transport. The sphere of operations for this unit was between the field ambulances and the line of communication, working under the Deputy Director of Medical Services of the latter. (4) The organization of such a system of evacuation formed the crux of the medical problem in war.

SOCIETY OF MEDICAL OFFICERS OF HEALTH.

At a meeting on November 8th, Dr. E. W. Hope, President, in the chair, Dr. H. Scurfield read a paper on the *Need for infant management* being given a more important place in the medical curriculum. He said that the subject was so important that even in the admittedly crowded state of the curriculum a place should be found for it. It was supposed to be included in a course of midwifery, but was referred to only sparsely. As the result of infant consultations and the writings of those who had given special attention to the subject, it was at last being realized that such matters as the management of breast-feeding could not be left to the instinct of mothers aided by the advice of ignorant grandmothers. It was ludicrous to insist on the rights of the unborn child if after birth it might be gradually and insidiously done to death by some process of artificial feeding, undertaken perhaps quite unnecessarily, owing to a carelessly managed cracked nipple. It was frequently reported that excessive infant mortality-rates were due to the ignorance of the mothers, but the fact was there was nobody to teach the mothers, for doctors were not taught nor were midwives. If each medical practitioner began his career with a good substratum of knowledge of the subject, and if such knowledge were also imparted to each midwife in the course of her training, results would soon follow in the reduction of infant mortality. Dr. R. Dudfield said that the Metropolitan Branch of the society had prepared a standard scheme for child rearing. He also referred to the great good which was accruing from the formation of infant consultations. Dr. John Meredith thought there might be some standard method adopted, and referred to the practice prevailing in Somerset of breaking the nipple strings of babies by the nurses. Injuries to the breasts often followed, which in after-life might militate against the usefulness of the gland. Dr. Bostock Hill thought some good might be done by bringing the matter before the General Medical Council, although in the present overcrowded state of the curriculum it was difficult to decide which chair should deal with the subject. Mr. F. E. Fremantle said that at the Watford training school for midwives a mothercraft club had been started, at which the nurses could get practical knowledge of feeding results. He thought it would be better not to suggest another subject, but some method by which the whole curriculum could be permeated with the question. Dr. A. M. N. Pringle, while agreeing that there was a lack of knowledge among both medical men and midwives as to the management of infants, considered that it was of importance to give instruction in the management of the pregnant mother. Dr. H. Beale Collins stated as his experience that midwives recommended mothers to nurse their children, and doctors did not. Dr. A. H. Bygott said that the difficulty in teaching infant dietetics was that there were no beds in hospitals allotted to infants.

HUNTERIAN SOCIETY.

At a meeting on October 23rd, Mr. A. H. Tubby, in a presidential address, described the immediate cause of surgical shock as exhaustion of the vasomotor centre in the medulla. Among its chief primary causes was excessive loss of CO_2. It had been shown that CO_2 was the great stimulant of the respiratory centre, and it was essential to maintain it in proper proportion in the body. Its loss might be neutralized by injection of saline solution saturated with CO_2. Mr. E. G. Schlesinger, in a paper on *Intravenous anaesthesia*, said that this method had a very definite but limited application. The indications for giving ether intravenously were severe shock, haemorrhage, cases with complications of any kind, and those in which the patient was very nervous. Mr. H. C. L. Noel, speaking of paraldehyde as an intravenous anaesthetic, said it was best to dilute it so as to form a 10 per cent. solution saline. It was of use both in minor surgical procedure and as a preliminary to intravenous ether. Mr. C. M. Page, speaking of hedonal, said that reported fatalities had been due to overdosage, while the local thrombosis which was sometimes observed was brought about by the temperature of the solution being too high. It was contraindicated in general arterio-sclerosis, cardiac disease, old people, and in cases in which there was liability to post-operative bleeding into mouth or air passages. Cases suitable for its use were cerebral and spinal conditions and extensive cellulitis of the neck. Dr. Silk thought that Mr. Page's summary of the cases suitable or unsuitable for hedonal applied equally to ether. Mr. H. E. G. Boyle considered that the long period of unconsciousness following hedonal anaesthesia was not always a good thing, but both this and other infusion presented great advantages in large operations about and in the mouth. Mr. Ashley Daly considered that infusion methods should be confined to cases with lung disease and those requiring a saline solution. The method was inadvisable in jaw and mouth and throat cases. It did not offer any great advantage over the inhalation method, except in the two classes mentioned above.

At a clinical meeting at the Westminster Hospital on November 13th the following were among the exhibits:—Mr. W. G. Spencer: (1) A woman who had undergone an operation for *Varicose veins* in both legs. They had been treated by a spinal incision extending round the thigh and leg and the wounds had healed perfectly. (2) An infant suspended on a gallows as for a fractured thigh: twenty-four hours previously it had undergone operation

for a very large *Inguinal hernia*, and was now contentedly sucking its bottle. The PRESIDENT (Mr. Tubby): (1) A case of *Angioma* of the lower lip, tongue, tonsils, and fauces. (2) A case of *Cervical rib* in a boy, with weakness of the right arm following an injury. Mr. E. ROCK CARLING: A case of *Jacksonian epilepsy* following a fracture of the skull. Dr. CARLYLL (for Dr. Gossage): A man, aged 74, presenting occlusion of the superior vena cava: it was reported as probably due to a specific thrombosis. Mr. J. M. G. SWAINSON: Two cases of fracture which had been treated by operation; splints had previously been tried. The first case (under Mr. Tubby) was a transverse fracture of both bones of the forearm. The second case (under Mr. Carling) was a fracture of the upper parts of the shafts of the tibia and fibula. Skiagrams showed good union in both cases; slight shortening was present. Dr. PURVES STEWART: (1) A case of cerebral syphilis in a man of 28. (2) A case of disseminated spinal sclerosis in a woman of 46. (3) A case of extracerebellar tumour in a woman aged 28. A demonstration of clinical pathological methods and specimens given by Dr. R. G. HEBB and Dr. J. A. BRAXTON HICKS included a new way of estimating the strength of a vaccine by a standard bacterial emulsion.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on November 6th, Mr. W. G. LAWS, in a presidential address on "Man in the Making," cited instances to show how deep and persistent were the traces of the race history in the structure of the individual, and then proceeded to outline what was known of the more important of the races of prehistoric man, their physical characteristics, and the condition under which they lived, illustrating his remarks by diagrams and specimens of implements of various periods.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

AT a meeting on November 5th, Dr. CONSTANCE LONG, President, in the chair, the following resolution was adopted unanimously, and a copy of it directed to be brought to the notice of the Home Secretary:

> That the Association of Registered Medical Women feels strongly that medical training is of the greatest importance in dealing with questions connected with the diagnosis and treatment of the feeble-minded, and ventures to urge that one at least of the women Commissioners under the new Act should be a medical practitioner.

Dr. MAY THORNE gave an account of some of the theories which have been held in the past with regard to secondary growths in carcinoma of the breast, and subsequently reviewed the more recent theories, quoting the work of Stiles, Watson Cheyne, and Cheatle, and giving a full account of the permeation theory of Sampson Handley, who believed that cancer spread almost entirely by way of the lymphatics. Finally, she showed a series of lantern slides lent by Mr. Sampson Handley to illustrate the paper. Miss CHAMBERS, who also showed some microscopic slides, said she thought the lymphatic permeation theory could only be applied to special cases, and that it was rash to assert that cancer was never disseminated in the blood stream. She gave a short account of research work in rats and mice. In these animals the rate of growth varied greatly without definite reason; this could only be explained by assuming the presence of immunity processes; a sudden breaking down of immunity allowed metastases to develop. Miss STONEY gave proof of the efficacy of *x* rays in destroying cancer cells. The PRESIDENT then reported on the Chancellor's offer to the profession, and gave a lucid account of the present state of affairs with regard to the Insurance Act.

[illegible] International Congress on Diseases of Occupation will be held at Vienna in the autumn of 1914. The following subjects are proposed for discussion: (1) Fatigue [illegible] especially in relation to professional [illegible] such work on the nervous system; night [illegible] (2) Work in a hot and moist atmosphere. (3) Anthrax in workmen. (4) Pneumonokoniosis. (5) Injurious effects of electricity in certain industries. (6) Industrial poisoning (aniline, mercury, and lead). (7) Injurious effects of industrial work on the hearing.

Reviews.

THE LAND THAT IS DESOLATE.

SIR FREDERICK TREVES has added another to the books of travel wherewith he has beguiled the leisure and sometimes excited the envy of many who for lack of enterprise or opportunity do not tempt the pains and pleasures of foreign travel. The new book possesses this moral advantage over some of its predecessors, that it will be less apt to excite the passion of envy in the general. *The Land that is Desolate*[1] is Palestine, and the author gives such an account of its dreariness and ugliness, of the squalor of its towns and villages, of the exploitation of its holy rites, and of the vulgarization which follows in the train of hordes of tourists, that all the glamour seems to have disappeared. The present-day leanness of the land that one time flowed with milk and honey appears to be due to the Turks, the worst foresters in the world, who by their improvident cutting down of trees, which they never replace, seem really to have changed for the worse the climate, not only of Palestine, but of Thrace.

To the traveller who visits Southern Palestine in search of the picturesque, Sir Frederick Treves would say, "Go to Jericho." The road there from Jerusalem is dreary and monotonous, which may account for the sense in which the exclamation is used, but both the new and the old Jerichos are in an oasis of verdure in a barren land. And the Dead Sea, an hour and a half away, Sir Frederick Treves will not admit is appropriately named. It is, he says, when close at hand, a merry sea, for, as the wind ripples it, tiny waves, clear as crystal, break upon a beach of bright pebbles, and it is a kindly sea, for none can drown in its waters, though he found it possible both to dive and to swim under water. The sea, which he would call the Salt Sea, or Sea of the Plain, receives the Jordan, but has no outlet. The eastern wall of the lake is formed by the mountains of Moab, the western by the mountains of Judea. He saw the eastern wall coloured brick-red by the sun, so that the precipice was aglow as if lit by a furnace fire, while the western wall was shrouded in purple shadows, as if the heat were fading out of the stone, and he says:

> It thus comes to pass that the Dead Sea may appear to lie in the hollow of an enormous crucible of red-hot rock where its waters are being evaporated by some unseen fire.

The only building in all Jerusalem which he found beautiful is the Dome of the Rock, the Mohammedan shrine, commonly called the Mosque of Omar, on Mount Moriah, the site of Solomon's temple and the later temple of Herod. In the centre of the dome projects the actual rocky summit of the mount—an irregular mass of bare, natural stone some 5 ft. high, and nearly 60 ft. in its longest diameter. The only ceremony, if it can be so called, which he found impressive was the moaning by the wall, when, every Friday, devout Jews from many countries assemble under a lofty megalithic wall—one of the outer sustaining walls of the temple area—and lament the downfall of their city. Of the degrading superstition displayed by the Christian pilgrims; of the tawdry decorations of the Christian churches on spurious sites; and of the irreverent quarrels and fights of their priestly guardians he has many hard things to say, but none so hard as the passages he quotes from Dean Stanley. Of the insanitation of Jerusalem he gives some lurid hints. The way to the Dome of the Rock is through the cotton merchants' bazaar:

> This is a long, stinking tunnel, with a roof of solid masonry, and, on either side, immense cavernous vaults built also of stone. The cotton merchants have vanished; the place is deserted; while the massive crypts where the cotton was piled are now used for storing manure. As an illustration of Turkish views upon sanitation the place is not uninstructive.

He has little that is good to say of the majority of the religious or semi-religious institutions established by the Christians in Palestine, but he makes an exception for the British Hospital at Nazareth, which, he says, carries out without ostentation a valuable work of pure benevolence.

[1] *The Land that is Desolate: An Account of a Tour in Palestine.* By Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D. London: Smith Elder and Co. 1912. (Med. 8vo, pp. 295; Illustrations 45, map 1. 9s. net.)

Sir Frederick Treves was accompanied by Lady Treves and eventually they found their way to Damascus, and there in the "rose-red city half as old as time" at last found sights to stimulate the imagination and to delight the eye. He found, indeed, the view over the city one of the three or four finest in the world. Of people of many nations who throng the streets of Damascus, of its bazaars and gardens he has much to say that is pleasant to read, and he has this good word for one British institution, the hospital of the Edinburgh Medical Mission:

It is situated beyond the walls, in a pleasant suburb. . . . Here, in a garden full of flowers, is a hospital, which, without any regard to nationality or creed, has carried out for long a most admirable and benevolent work under the direction of Dr. McKinnon, who has been resident in Damascus for over twenty years.

The *Land that is Desolate*, in spite of its title, is a holiday book written in the holiday vein, which is well sustained in spite of many discomforts due to bad weather, unmade roads, filthy towns, and cosmopolitan hotels. Sir Frederick Treves carries the reader through it all in good temper and good spirits, and here and there lightens the way by phrases which are always apt and often striking, as when he says of the narrow streets of Jaffa (Joppa) that "they ramble and intertwine like the branches of a bramble bush," or of a caravan that the strings of camels and men walk in single file, "the camels with so supercilious a stride and the men with so weary a bearing that the camels seem to be driving the men into captivity."

The pictures in the book, all reproductions of photographs by the author, really illustrate the text. They are all good, but the best is the frontispiece showing the Dome of the Rock. Though only in black and white—and much of the beauty of the building must reside in its colouring—it goes far to justify the superlatives of the text.

MONOGRAPHS ON BIOCHEMISTRY.

To the admirable series of Monographs on Biochemistry, edited by Drs. Plimmer and Hopkins, a volume on *Oxidations and Reductions*[1] in the animal body is contributed by Dr. Dakin, one of the pioneer workers in this subject. He says:

The statements that fats and sugars are oxidized in the body to carbon dioxide and water, while proteins yield urea in addition, are no longer considered all-sufficient explanations of the chemical rôle of these substances in the animal economy; the study of chemical structure is rapidly changing the whole aspect of biological science, and we may confidently look forward to the time when the orderly succession of chemical reactions constituting the activities of the living cell will be resolved into their individual phases.

Most of the striking biochemical oxidations of the living cell may be imitated more or less satisfactorily by experiments *in vitro*, and there is no evidence that suggests that the oxidative processes of the living organism differ in any fundamental way from chemical oxidations known to take place in inanimate nature.

The proteins, fats, and carbohydrates are resistant to oxidation under ordinary conditions, and many theories have been put forward to account for the biochemical oxidation—for example, activation of oxygen by its polymerization as ozone, or resolution of the oxygen molecule by nascent hydrogen, or other reducing agent, with formation of water, and an atom of active oxygen. The view which receives support is that the living cells contain labile substances capable of taking up molecular oxygen from oxyhaemoglobin with the formation of unstable peroxides possessing marked oxidizing products. An extraordinary close similarity as regards the types of reactions exists between the oxidations effected in the body and those brought about by the simplest superoxide—hydrogen peroxide. Thus the saturated fatty acids in the body undergo oxidation in the beta position—for example, butyric acid yields aceto-acetic acid: hydroxy acids, such as lactic acid, are oxidized to ketonic acids, amino acids to lower fatty acids with liberation of carbon dioxide, water, and ammonia; glucose may be oxidized to glucuronic acid, benzene to phenol catechol and quinol, and so on. In every one of these cases the oxidation produced *in vitro* by hydrogen peroxide is the same. The author deals in turn with the fatty acids, saturated and unsaturated, the dibasic acids, alpha-amino, alpha-hydroxy, and alpha-ketonic acids, tyrosine, and other related aromatic substances, the oxidation and reduction of amino acids by micro-organisms, the carbohydrates, the purins, and the hydrocarbons, phenols, alcohols, etc. The monograph is one which deserves the closest attention on the part of all those interested in the problems of metabolism.

To the same series Dr. Cathcart has contributed an interesting volume on the *Physiology of Protein Metabolism*,[2] in which he discusses "the more important results published during the last decade, and their bearing upon the work of the earlier investigators." We note that gastric digestion breaks down proteins into products which give the biuret test only after weeks of action *in vitro*, but that the gastric juice helps trypsin to break the protein into amino acids. There is little, if any, absorption of protein in the stomach. There is a curious difference between the action of real gastric juice and that of pepsin powder, for while the former cannot, the latter can easily, break down caseinogen into amino acids. So, too, pancreatin is more powerful than pancreatic juice; test tube experiments may thus give a wrong impression as to the activity of the juices. While protein is mostly absorbed in the form of "abiuret" digestion products, undigested protein can be absorbed from the intestine. Dog's serum is much more easily absorbed from the dog's intestine than horse or ox serum. Ox serum *plus* extract of ox pancreas is absorbed much more easily than ox serum alone. It has been found possible to maintain an animal in nitrogenous equilibrium by feeding it with serum or egg albumen parenterally (by subcutaneous or intravenous introduction), and at the same time giving carbohydrate by the intestine: the intestine probably has a share in the preparation and use of the parenterally fed protein which is brought to it by the blood stream. Thus injected peptone disappears from the blood much more rapidly when the intestine is in than when it is cut out of the circulation. The balance of evidence seems to the author to be in favour of the hypothesis that the synthesis of protein in the body is a function of each individual cell, and that the material which is utilized in this synthesis is circulating in the form of amino acids or groups of these. Pavy held that the whole conversion of food protein into tissue protein was brought about by the lymphocytes in the intestinal wall, and that these by autolysis were resolved into blood proteins. Halliburton has reckoned that there is only about 1 gram of lymphocytes in the blood of a man, and it is difficult to see how this amount could tackle so large a job. All the evidence goes to show that de-aminization is a fundamental process in the metabolism of protein, particularly of that portion which serves for dynamic purposes. The transmutation of amino acids in the body is discussed; the growth of moulds on a medium containing potassium nitrate as the sole source of nitrogen affords evidence of the synthesis of amino acids, for a protein of complex structure is formed, from which glycine, alanine, leucine, glutamic and aspartic acids can be isolated. It is most probable that synthesis of amino acids can also take place in the body of the animal. In discussing the amount of protein daily required, Dr. Cathcart recalls observations of Hamill and Schryver, who found in seven physiologists, living on their ordinary diet, the average intake of protein was 90 grams per diem: also those of Haecker on two herds of cows, one of which was fed on a low protein diet. No particular difference was noted for two years, but during the third year the animals fed on the low protein diet began to fail, and became so ill that the experiment had to be stopped. Restitution of tissue protein is a very slow process when the diet is changed from a low to a high protein diet. The body can make use of its stores of protein during starvation because each tissue contains proteolytic enzymes capable of bringing about autolysis; it is probable that these enzymes are both proteosynthetic and proteoclastic.

It may be taken as practically proved that carbohydrate in some form or other is absolutely essential for the synthesis of protein within the tissues.

The "toxic" destruction of body protein in fever may be largely prevented by the intake of carbohydrate. Dr.

[1] *Oxidations and Reductions in the Animal Body*. By Dr. H. D. Dakin. *Monographs on Biochemistry*. Edited by Drs. Plimmer and Hopkins. London: Longmans, Green and Co. 1912. (Roy. 8vo, pp. 143. 4s. net.)

[2] *The Physiology of Protein Metabolism*. By E. P. Cathcart, M.D., D.Sc. London: Longmans, Green and Co. 1912. (Roy. 8vo, pp. 150. 4s. 6d.)

Cathcart himself has shown that creatin appears in the urine as the result of a fast, and disappears if carbohydrate be given. The ingestion of fat increases the output, while carbohydrate notably diminishes it. Leathes and Cathcart observed that voluntary work diminished the output of uric acid, even if the work were excessive; on the other hand, involuntary shivering produced by exposure to cold caused a very marked rise in the output of uric acid. We have cited enough to show how much of interest there is in this little volume, to which an excellent bibliography has been added by the author.

THE SERUM DIAGNOSIS OF SYPHILIS.

WHILE it may not often be possible for the practitioner himself to apply the "complement deviation" test of syphilis, there can be but one opinion as to the advisability of his mastering the theoretical aspects of the test, and this he may do by mastering Dr. H. NOGUCHI'S book on the *Serum Diagnosis of Syphilis and the Butyric Acid Test for Syphilis*.[4] The book, a review of which has been accidentally delayed, consists of two separate parts. The first deals with the Wassermann-Neisser-Bruck test and its numerous modifications. The reader is taken by easy stages through the necessary groundwork of haemolysis, antibody formation, complement fixation, and antigen action. The language is simple and readily understood, and by the aid of a number of diagrams and coloured drawings any difficulty in grasping the fundamental facts is avoided. The test as first introduced is then described in language equally clear and lucid, the fallacies and the causes and reasons of wrong results are noted and the author's own modification detailed. Other modifications are allotted, but scant space and the remaining part of the first division is devoted to a comparison of his method with the original Wassermann test. We are inclined to approve almost unreservedly of the presentation of the subject up to this point, but—and it appears to us to be a serious "but"—when he formulates his test in order that the medical practitioner may apply it to the serum of his own patients he treads on dangerous ground. A careful study of the description given of the variations obtained by different serologists, and experience of the frequency with which the same serum is differently interpreted, as far as the complement deviation test of syphilis is concerned, should have impelled him to hesitate before suggesting to the general practitioner that he could well undertake this work without special laboratory training, which all are not disposed to undergo. The performance of the Wassermann test, and of its modifications in fact, requires much technical skill and practice. It is not our intention in this place to discuss the merits or demerits of the Noguchi modification of the test. The reader of the book will gain the idea that it is superior to all others; the majority of serologists still prefer the original or Stern's modification. Be this as it may, the author is justified in pointing out to his readers what he regards as the advantages of his method.

The second part is a description of the author's method of estimating an increase of the globulin fraction in cerebro-spinal fluid or serum. The butyric acid test does not appear to have met with much favour, and the majority of workers, especially in German laboratories, prefer Nonne's magnesium sulphate and ammonium sulphate method. But here, again, the author is wise to describe his own in glowing colours. He should not, however, have introduced the subject as if the idea of utilizing this globulin estimation was his own. His description of the commencement of the test is fairly sound, and we agree in the main with his deductions. Perhaps a little more emphasis might have been laid on the value of the test when considered together with a cytological examination and with a Wassermann test both of the cerebro-spinal fluid and of the blood. A glossary of terms and list of methods of preparing various antibodies, etc., closes a book which is well worth reading, and which we can honestly recommend to the general practitioner, provided that he recognizes the technical difficulties in performing the Wassermann test, that there are many modifications of the test which enjoy as much popularity as Noguchi's, and that the butyric acid test is one for the approximate estimation of an increase of globulin.

OBSTETRICS.

PROFESSOR WHITRIDGE WILLIAMS has again taken the call for a new edition of his *Obstetrics*[5] as the occasion for a thorough revision. The result is that the new edition exceeds the last by twenty-six pages, but the use of a thinner paper makes a less bulky volume than the first edition. The revision has emphasized the merits which were acknowledged on former occasions, and the reader may turn to the discussion of any of the scientific questions underlying the practice of obstetrics, sure that he will find a fair and judicious presentment of the evidence on which conclusions must be founded. These reviews are all the more valuable in that, in directing his own service, Dr. Williams has touched at so many points the experimental work which has within the last generation become so important a factor in modifying opinion. The sections on the physiology and development of the ovum and on the physiology of pregnancy may be cited as instances where the excellence of statement is conspicuous.

The section on the toxaemias of pregnancy will be found of great interest. The patient suspense of judgement shown in face of the many theories of eclampsia may be commended, and the attention of those who are not already familiar with Dr. Williams's work on pernicious vomiting is sure to be engaged by his detailed discussion of this subject. As has already been pointed out in the BRITISH MEDICAL JOURNAL, Dr. Williams finds in the great rise in the urinary ammonia in toxaemic cases a criterion to distinguish them from those of neurotic hyperemesis. The methods of Kjeldahl and of Folin are used for estimating the total nitrogen and the ammonia, respectively, but they are so time-consuming that they require the service of a physiological laboratory. It seems probable that the methods of Groat and of Mathieson, based on the interaction of ammonia and formaldehyde to form hexamethylene tetramine, may prove both accurate and economical. Turning from the scientific foundations of obstetrics to questions of practice, Dr. Williams gives—and gives clearly—the result of his experience, and does justice to the literary evidence for methods he has not tried. His procedure is historical throughout, and gives an adequate presentment of the evolution of methods which has brought practice to its present standpoint. The general result is satisfactory, and the emotions evoked by the discovery that one's own pet methods are not included may be considered salutary. Each section is accompanied by a bibliography rather more extensive than is usual in a textbook, and there is an ample index. With such essential merits it is a matter for regret that rather numerous slips were noted as indicating somewhat slipshod proof-reading.

EDEN'S *Manual of Midwifery*[6] needs no introduction to the student of obstetrics, and the third edition at present before us fully maintains the reputation that it has so rapidly gained as one of the standard English textbooks on the subject. Unlike so many of its compeers, this book moves with the times, and we are pleased to note in the present edition a moderate insistence on the need for a rational asepsis in obstetrics, and the subject is one that might well be still further expanded in the future editions of this work, which we feel sure will be called for. The section devoted to the description of obstetric operations is a distinct improvement. This is a subject in which most definite guidance is desirable, more particularly by those who have not had the opportunity of obtaining their knowledge first hand. It has frequently been said of medical men that they are by nature conservative, and part with their old creeds with difficulty. A very striking example of this is supplied by the tenacity with which English obstetricians cling to a lengthy description of Bossi's dilator. The

[5] *Obstetrics: a Textbook for the Use of Students and Practitioners.* By J. Whitridge Williams, Professor of Obstetrics, Johns Hopkins University, etc. Third enlarged and revised edition. London: D. Appleton and Co. 1912. (Roy. 8vo, pp. 1007; figs. 668; plates 16.

[6] *Midwifery.* By Thomas Watts Eden, M.D., ... Third edition. London: J. and A. ... (Med. 8vo, pp. 719; 339 illustrations. 15s. net.)

ingenuity that devised its mechanism is undoubted; at the same time it is almost universally condemned as being far too dangerous to be of much practical service. The author claims that in this improved and enlarged edition he has still aimed at the production of a manual suited to the requirements of students and practitioners. He has succeeded. The language is concise, the printing is clear, and the illustrations excellent.

MILITARY HYGIENE.

The fourth volume of military hygiene,[7] by Professors Fischoff, Hoffmann, and Schwiening, deals with army diseases, more especially the infectious diseases. In the introductory chapter on the etiology of infectious diseases in general, Bischoff lays stress on the fact, which is not always recognized, that the prime source of infection in all diseases is the sick man. Water, food, air, and insects are commonly regarded and spoken of as the source of infection of the particular disease, but these are really only the distributing agents of germs derived from the infected host in the first place. The conditions of military life, which necessitate a large number of men being closely associated with each other during work and at meals, as well as sharing barrack rooms at night, greatly favour the spread of any infectious disease which may happen to be introduced into the community. During the manœuvre season the troops are brought into closer contact with the civilian population, and the supervision of food supplies, etc., cannot be maintained so closely as in barracks: this period is always followed by a rise in the incidence of certain infectious diseases, especially of typhoid and dysentery.

In discussing the general prophylaxis of infectious diseases, Bischoff states that for the spread of an infectious disease the following conditions must obtain: (1) A source of infection must be present. (2) There must be available distributing agents suited to the specific germ of the disease. (3) The germ must reach its new host by its proper point of entry—for example, the *B. typhosus* by way of the alimentary tract. (4) The germ must be capable of giving rise to infection in the host—that is, it must be virulent and in sufficient numbers. (5) The new host must be susceptible to the germ. In view of the above conditions it is obvious that the prophylaxis of the infectious diseases must vary according to the particular germ whose spread it is desired to control—for example, by isolating and destroying infected dogs we try to remove the source of rabies, while by vaccination we try to render the host incapable of being infected. Bischoff then gives a *précis* of the German laws for the prevention of infectious diseases, with a table showing how notification is to be carried out. Since February 28th, 1911, the military medical and civil medical officers of health are required to keep each other mutually informed of the occurrence of any infectious disease in their respective spheres of activity. In the German army the incidence of infectious diseases is steadily diminishing each year, largely in consequence of the thorough training given to German army medical officers in hygiene.

In the section on disinfection Hoffmann reviews the subject generally, and gives a short but very practical account of each of the best known chemical agents employed for this purpose, mentioning especially the purposes for which each is most suited. Formaldehyde vapour is apparently very favourably regarded for the disinfection of rooms, while antiformin is strongly recommended as a bacteriolysin (except for the tubercle bacillus) and for the disintegration and disinfection of organic matter. In discussing disinfection by physical means, Bischoff appears to favour the so-called "vacuum steam disinfector," of which several different patterns are described and illustrated. In this method of disinfection the pressure inside the disinfecting chamber is kept below that of the atmosphere by means of an exhaust pump; the temperature is consequently considerably below that of boiling point, so that woollen or leather articles are not damaged in the process. To render the disinfection efficient in spite of the low temperature, formaldehyde vapour is added to the steam.

Hetsch has been entrusted with the section on immunity, and in forty-seven pages gives a concise but lucid account of natural and acquired immunity, and of serum-therapy.

Nearly half the book is occupied with the epidemiology of the infectious diseases. Tuberculosis in armies receives full consideration: the table on page 175 and the chart on page 176 show how much more prevalent tuberculosis is in the French army than in the German or Austro-Hungarian: the value of tuberculin in diagnosis in detecting early cases of tubercle among soldiers is clearly demonstrated. Typhoid fever and the importance of carriers in the army are fully discussed, but the theory of its spread by dust receives scant consideration and even less approval. When describing antityphoid vaccination by Wright's method it is stated that the bacilli are killed by exposure to a temperature of 60° C. This was formerly the case, but at the present time a lower temperature is employed, as it has been found to be equally efficient while at the same time causing less unpleasant after-effects. In discussing paratyphoid fever it is stated that most of the cases are due to *B. paratyphosus* B, and that *B. paratyphosus* A has little influence in causing the disease. This is certainly not in accord with experience in India, where practically all the cases of paratyphoid fever are caused by *B. paratyphosus* A. Bacillary dysentery is well described as the scourge of armies. Statistics from the Franco-Prussian war are quoted showing that among the German troops there were 38,652 cases with 2,830 deaths, equal to one-sixth of all the deaths from disease. The part played by the body louse in causing the spread of typhus fever, as demonstrated recently by Nicolle, Wilders, and others, hardly receives the attention it deserves.

Among the non-infectious diseases which are included in this volume, heatstroke and the effects of alcohol receive most attention. Both are very fully dealt with: indeed, the minute classification of causes and effects becomes rather confusing and certainly somewhat trying to the reader. An ingenious explanation of *Fussgeschwulst*, which we may translate as swelled foot, ascribes the condition to uneven pressure suddenly applied to a foot the bones and muscles of which have become exhausted by prolonged marching. No mention is made of the fact that the German military boot affords singularly little support to the arch of the foot, and that *Fussgeschwulst* is especially prevalent in the German army. Schwiening's statistics on hernia, showing the number of recruits rejected for this complaint, as also the number of men who on examination were found to present a marked tendency to the development of hernia and the number of these men who did actually develop hernia, are most interesting and instructive.

This volume is fully equal to the high standard of its predecessors, and as a work of reference, in spite of the one or two minor criticisms which we have ventured to make, it should prove a welcome addition to all army medical officers' libraries.

NOTES ON BOOKS.

The fifth volume of the new series of *Butterworth's Workmen's Compensation Cases*[8] has been issued. It is edited by Judge Ruegg and Mr. Douglas Knocker, M.B., of the Middle Temple. It contains reports of all cases heard in the House of Lords and Court of Appeal in England and selected cases heard in the Irish Court of Appeal and Scottish Court of Session during the period October, 1911, to October, 1912. It is a curious commentary on the hope expressed when the Workmen's Compensation Act was introduced, to the effect that it would be administered with the help of few applications to the courts, that this volume of cases decided on appeal during one year contains nearly 700 pages, excluding a table of cases, a digest of cases, and a very excellent index.

To decide what words should appear in *The Nurses' Complete Medical Dictionary*[9] must have been almost as

[7] *Lehrbuch der Militärhygiene.* Herausgegeben von Professor Dr. H. Fischoff, Professor Dr. W. Hoffmann, and Professor Dr. H. Schwiening. IV Band. Berlin: Hirschwald. 1912. (Roy. 8vo, pp. 515; 2 tables, 39 illustrations. Price M.7; bound, M. 8.)

[8] *Butterworth's Workmen's Compensation Cases.* Fifth volume. Edited by Judge Ruegg and Douglas Knocker, Esq., of the Middle Temple. Sydney: Butterworth and Co., Ltd.; Calcutta: Butterworth and Co., Ltd. 1912. (Demy 8vo, pp. 772. 7s. 7d. net.)

[9] *The Nurses' Complete Medical Dictionary.* By Miss M. Theresa Bryan. London: Baillière, Tindall, and Cox. 1912. (Demy 32mo, pp. 205. Price 2s. net.)

difficult as to describe their meaning. On this account one is disposed to congratulate the authoress, Miss M. THERESA BRYAN. The definitions are clear, and, so far as we have been able to observe, few terms have been accorded admission which might better have been left out, whilst of terms which occur frequently in the daily life of a hospital few demanding explanation would seem to have been omitted.

The success of the crusade against consumption must in the long run depend upon the good sense of the community profiting by the teaching of the profession. The way of prevention has been clearly defined, and if every one could follow it consistently, the disease might be wiped out. But medical truths, like political fictions, must be repeated again and again in form suitable for the hearers' capacity of reception. Many small books of popular instruction have recently appeared, and another, *Hope for the Consumptive*,[10] from the pen of Dr. GREGSON, of Blackburn, may be added to the list of those which supply an adequate account, couched in terms which can be easily understood. The hope which he holds out to the consumptive centres round the success or failure of tuberculin, but involves careful attention to all the hygienic measures as well. The little pamphlet is well arranged, and is more than worth the modest price asked for it.

Though the industrial classes in America are no doubt very intelligent, one would hardly expect to find in *Electrical Injuries*,[11] a booklet designed for their benefit by Dr. C. A. LAUFFER, a minute account of the execution of criminals by electricity, coupled with a description of the *post-mortem* findings; nor yet a good deal of matter of a purely pathological order. On the other hand, one would naturally look in such booklet for distinct instead of sketchy descriptions of ways of rescuing a person in contact with live wires. The method of artificial respiration recommended, though described as the Prone Pressure method, is ostensibly that of Professor Schäfer, who demonstrated it himself at a meeting of the American Medical Association some years ago. Nevertheless, the directions given for its performance differ in some important respects from those of its author. The booklet, which is very short, concludes with chapters containing some not very explicit instructions in regard to first-aid work and personal hygiene. A number of examination questions thereon of a very elementary kind are given.

[10] *Hope for the Consumptive.* By A. H. Gregson, M.B. Blackburn: George Toulmin and Sons. 1912. (Crap. 8vo, pp. 60; illus. 6. Price 7d.)

[11] *Electrical Injuries: their Causation, Prevention, and Treatment.* Designed for the use of practical electrical men. By Charles A. Lauffer, A.M., M.D. Fifth edition, first thousand. New York: John Wiley and Sons; London: Chapman and Hall, Ltd. 1912. (Post 8vo, pp. 83. 2s. net.)

SEVENTEENTH INTERNATIONAL MEDICAL CONGRESS, LONDON, 1913.

THE MUSEUM.

A COMMITTEE, with Professor A. Keith, of the Royal College of Surgeons, as chairman, has been formed for the purpose of organizing a museum in connexion with the Seventeenth International Congress of Medicine, London, 1913. The arrangements have been entrusted entirely to this Committee, and it has been invested with the power of acceptance or refusal of any offered exhibit.

It has been recognized that the collection of material illustrative of recent advances in medical science in one centre possesses obvious advantages over the plan of leaving each section to collect and house the specimens and other material required by the readers of papers for their communications separately. A central museum offers to a large number of members of the Congress an opportunity of studying these advances from the available material, and this study is enhanced by the co-ordination of the various departments.

The Committee has drawn up regulations and the following plan of procedure. The museum will consist of exhibits illustrating the subjects which will be discussed at the various sections, and such other material as the Committee may deem of interest or importance. The Committee will emphasize the scientific side of medicine, to the exclusion of a commercial element. Excellent accommodation has been secured for the purpose at the Imperial College of Science, South Kensington, and the museum will be arranged in this place, as far as is possible, in correspondence with the sections of the Congress. The co-operation of the officers of each section has been obtained, in order that the collections may be worthy of the occasion. It has further been decided that inasmuch as the meeting is to take place in London, and as the visitors will doubtless desire to inspect the metropolitan hospitals and other great institutions, material will not be collected from the museums of the metropolis. The Committee is therefore seeking exhibits from provincial and foreign institutions and from private collections.

Medical practitioners and scientists who are willing to place at the disposal of the Committee material illustrative of recent advances in any branch of medical science are requested to communicate with the Honorary Secretary of the Museum Committee, Mr. H. W. Armit, Ravenhurst, Talbot Road, Wembley.

The Committee is prepared to defray the expense of transit of the exhibits and to insure them against damage and loss, and will take every precaution to return them in good condition to their respective owners.

Exhibitors will be invited to hold demonstrations in the museum on their own specimens.

Permission has been obtained from the Council of the Congress to keep the museum open for a few days after the Congress has ended, if it be found desirable to do so.

Preliminary List of Subjects.

1. ANATOMY.—Dissections. Macroscopical and microscopical specimens.

2. PHYSIOLOGY.—New forms of apparatus (to be shown by physiologists only). Records of recent observations. Anatomical specimens, with especial reference to reciprocal innervation.

3. GENERAL PATHOLOGY.—Muscular system of the heart. Grafting of normal tissues. The pathology of shock.

3A. CHEMICAL PATHOLOGY.—Pathological conditions due to the effect of diet. Clinical application of pathological chemistry. Chemical pathology of the alimentary tract.

4. BACTERIOLOGY.—Cancer. Filterpassers. Leprosy. Anaphylaxis.

5. PHARMACOLOGY.—Non-bacterial toxins and antitoxins. The results of thermal treatment.

6. MEDICINE.—Chronic arthritis. Heart failure. Diabetes. Haemolysis.

7. SURGERY.—Malignant disease of the large intestine. Tumours of the brain. Intrathoracic surgery. Arterial surgery.

7A. ORTHOPAEDICS. Treatment of spastic paralysis. Treatment of scoliosis. Treatment of ankylosis. Treatment of tuberculous disease of joints in childhood.

8. OBSTETRICS AND GYNAECOLOGY.—Cancer of the uterus. Haemorrhage from the placental site.

9. OPHTHALMOLOGY.—Chronic uveitis. Glaucoma operations.

10. DISEASES OF CHILDREN.—*Coli* infections of the urinary tract. Effect of the ductless glands on development. Surgical treatment of tuberculosis in childhood. Poliomyelitis and polioencephalitis.

11. NEURO-PATHOLOGY.—Motor aphasia, anarthria and apraxia. Tumours of the brain. The myopathies. Parasyphilis.

12. PSYCHIATRY.—The psychoses of infectious and autoinoculations.

13. DERMATOLOGY AND SYPHILOGRAPHY.—Exhibits of this section will not be included in the General Museum.

14. UROLOGY. Early renal and vesical tuberculosis. Malignant disease of the prostate.

15. RHINOLOGY AND LARYNGOLOGY. Neoplasms of the nose, accessory sinuses and naso-pharynx. Rarer forms of laryngeal tumours. Diseases of the trachea and bronchi. Bronchoesophagoscopy.

16. OTOLOGY. Exhibits of this section will not be included in the General Museum.

17. STOMATOLOGY. Periodontal diseases.

18. HYGIENE AND PREVENTIVE MEDICINE. The mortality of infants during the first four weeks of life. Visual defects in school children. Diseases of the lung due to dust.

19. FORENSIC MEDICINE. The forensic aspect of syphilis. The psychology of crime.

20. NAVAL AND MILITARY MEDICINE.—Transport of the wounded in hill warfare. Hospital ships. Water supplies in the field. Antityphoid inoculations. Sanitary organization in the tropics. Carcoon disease.

21. TROPICAL MEDICINE. Leishmaniases. Relapsing fever. Beri-beri. Plague. Tropical diseases of the skin. Filariases. Worms.

22. RADIOLOGY. Technical advances in radiography. Radiographic illustrating disease of various organs, etc.

SPECIAL DEPARTMENT. The technique of the Museum.

THE Faculty of Medicine of the University of Giessen has conferred the honorary degree of Doctor of Medicine upon Ernst Leitz, jun., of the optical firm of E. Leitz, of Wetzlar, and 18, Bloomsbury Square, London. The University of Modena conferred the degree of Doctor of Philosophy upon the senior partner of the same firm about a year ago.

THE MOTOR CAR SHOW IN RETROSPECT.

By H. Massac Buist.

The Motor Exhibition which closed at Olympia, Kensington, on November 16th contained such a multitude of novelties, all chiefly of a minor character, that it has been almost impossible to make acquaintance with all in the eight days during which the display has been open to the public. But the first and last impression is still that the main advance has been the tendency to fit self-starters and the further growth of the use of electric lighting systems, for plant are now being made on a smaller scale to suit middle and low-powered cars and slender purses.

Self-starting Appliances.

The self-starters of the electrical sort are fitted to the Cadillac, the White, the Crossley, the Lancia, and the Lanchester, the last-named firm using the Delco or Cadillac system where required.

The Crossley system, which has not been previously mentioned in these columns, consists of a dynamo mounted alongside the engine and chain-driven from the crank-shaft, epicyclic gear being contained in an extension of the dynamo bracket. The mere movement of a dashboard lever interposes this sun and planet gear between the chain drive and the dynamo spindle so that the dynamo has a 20 to 1 reduction when it is starting the motor, while the moment the engine begins firing under its own power the gear goes out of action in automatic fashion. In the event of back fire the drag on the brake that applies the epicyclic mechanism automatically releases the gear, which adds about 15 lb. weight to the dynamo. When the dynamo drives the motor, it is series-connected in automatic fashion by the lever on the dashboard. As the engine is driving the dynamo, the dynamo works a shunt wound generator for the purpose of charging the battery of accumulators which supplies the current for lamps and for starting apparatus. The Lancia has a Bosch auxiliary engine starting magneto mounted on the dashboard, and depends on the cylinders being already charged with gas.

The Adler, the Clement, the Star, and La Buire firms make use of the spring system, three of them using the Ever-Ready pattern already described in these columns, while the La Buire device is a combined spring and hand arrangement worked from the driver's seat by a side lever similar to a brake one. By means of a steel cord this lever works a ratchet starting crank in place of the usual starting handle. The lever is assisted by a spring. The ratchet starting crank is fitted with a centrifugal disengaging clutch that flies out of action in automatic fashion immediately the engine begins to turn under its own power, and which is also designed to free itself in the event of back-firing.

Electric Lighting.

Dynamo lighting sets are being fitted to an increasing number of cars. Thus the C.A.V. type, with the dynamo driven from the rear end of the cam-shaft, is fitted by Armstrong-Whitworth, Austin and Mass, while on the Daimler the same device is belt-driven from the front end of the cam-shaft, on the Brasier it is belt-driven from the water-pump shaft, and on the 20-30 h.p. Picard-Pictet it is driven from a pulley behind the clutch. On the Arrol-Johnston and the Briton the Rotax-Leitner type of dynamo is belt-driven from the cam-shaft, while on the Vulcan it is belt-driven from a pulley between the clutch and gearbox. The Delco system on the Cadillac is shaft-driven by the magneto-spindle, and on the Lanchester it is chain-driven from the transmission shaft behind the gearbox. The Scott-Crossley type of dynamo is driven by an enclosed chain from the crankshaft of the Crossley car. The Rushmore dynamo on the Lancia is belt-driven from the propeller shaft just behind the gearbox, and the Blériot dynamo on the 20-30 Picard-Pictet model is belt-driven from a pulley behind the clutch, while the Ducellier dynamo is mounted alongside the magneto on the Sheffield-Simplex, and is driven by a separate spindle. The Broit type on the Standard is belt-driven from an aluminium pulley between the clutch and gearbox, while the Lorraine-Dietrich has the C. J. L. machine.

Ignition.

In regard to ignition devices, not only the Bosch but several other makers come forward with magneto machines completely enclosed against the intrusion of dirt, dust, and damp, these machines being fitted as standard on quite a number of cars, including, of course, the Rolls-Royce. We may take it, indeed, that the enclosed magneto machine will be a general standard fitting in the course of a few years' time. The matter for marvel is that so many ordinary magneto machines stand up to their work so well in wet weather.

Refinements to Eliminate Vibration and Rattling.

A number of devices have been introduced at the show too, to prevent coachwork rattling, as instance notably the Van den Plas door-catch, whereby when the door is closed it is gripped tight to the remainder of the body on the Metallurgique chassis.

Absence of rattling as well as efficiency are aimed at in such devices as those for providing adjustment of an automatic sort to prevent the fan-belt slipping, as instance, notably, the Benz, Crossley, and De Dion practices. Another idea for preventing engine vibrations, causing either drumming or minor rattles of the coachwork, has been devised by Mr. Lanchester by furnishing a couple of spindles, each weighing only five pounds, and rotated in opposite directions at double the crankshaft speed. At high engine revolutions these serve as a check of no less than half a ton of force on the unbalanced forces of the engine, and give running as smooth as that on the best six-cylinder motors.

In regard to the question of suspension, while the great majority of the vehicles are fitted with supplementary shock absorbers, the explanation of this is chiefly that the firms responsible for them are interested in these accessories, for, frankly, the best sprung cars of the day are in need of no such auxiliaries, which rather increase the original plunge than act as any material check on the rebound, for which purpose only a very few of the devices have been designed, such as the Gabriel "Snubber," which has nothing whatever to do with the original plunge of the spring, but which comes into operation only when the act of rebounding is occurring. The fact is, the ordinary supplementary coil spring or telescoping pneumatic device came to us first from France, where roads are in much worse condition than here, and where, in consequence, the average chassis is supplied to the user with springs of a stiffness that would almost alarm the average British user. Such springs can stand softening by supplementary devices, which, nevertheless, do not interfere with the sufficiently stiff action of the main spring in preventing the axle bumping against the frame of the car when traversing pot-hole roads. But British cars for average home service do not, or should not, need any such thing unless the springing is mighty bad. Further, these devices are apt to increase lurching tendencies of the body at corners, which are not pleasant, also to let the tread of the tyres and the under portion of the mudguards come into contact when going over lumpy roads. We may take it that great and sudden as has been the vogue for the supplementary shock absorber, it will not endure as a general fitting for many seasons more.

THE CYCLE CAR AND MOTOR CYCLE SHOW AT KENSINGTON.

Points for the Medical Man of Slender Means.

On Monday next there will open at Olympia, Kensington, the third annual exhibition promoted by the Cycle and Motor Cycle Manufacturers' and Traders' Union, Limited, when there will be presented not only the latest models in motor cycles, which will be found to contain far more complete equipment than before—so much so, indeed, that one may be surprised at the amount which a motor cycle is expected to carry nowadays—but will also be notable as the first year in which the big manufacturing houses have come forward with propositions in the guise of cycle cars—that is, machines of a limited engine capacity (1,100 c.cm.) and chassis weight (6 cwt.), so that the running costs shall be down to motor cycle

scale, but which shall nevertheless be equipped with four wheels apiece and with bodywork providing enclosed seats.

It is, at the moment, impossible to give a more elaborate summary of the class than this, for the very simple reason that when it comes to mechanical details there is the widest conceivable divergence of view. More than a score of manufacturers have propositions to present to the public in this connexion, but scarcely any two of them seem agreed as to the manner in which to produce the cycle car in detail. Cheapness, of course, has been had in mind as one of the essentials; it is for this reason that quite a number transmit the power by the belt drive, which is sheer bicycle-maker's practice, whereas nearly all the big manufacturers are at least providing their machines with propeller shaft transmission, a gearbox of sorts, and a differential gear. In the main these are the houses we must look to, because we see in this initial action alone not only the exploiting of proper engineering practice, without which the cycle car cannot come forward as a serious proposition, but also the fact that full value for money can hardly be given by the small maker of this or of any other engineering product, by reason of the fact that only the man with the big output can afford to buy expensive machinery which can do repetition work of the most accurate sort in sufficient quantities to enable such expensive parts as differential gear and so forth to be supplied to vehicles that have to be sold for £125 or less, complete.

The Proposition Explained.

The interest of the medical man in the whole affair consists in this: that many doctors, particularly the younger men, begin with little or no capital, have long distances to travel each day, but cannot afford to acquire a car, though, for one or other of many reasons, they have no use for a motor bicycle or tricycle of any sort. Each must have a motor vehicle in which he can travel in an ordinary seat, but the costs must not exceed those of a motor cycle for maintenance. Consequently, for such there is no question about buying American cars of any cheapness whatever, because initial outlay is only one part of the problem; tyre bills and petrol consumption are quite 50 per cent. of it. Therefore, the only possible thing is the cycle car. Further, because any given cycle car may look attractive it is no reason that they dare invest in it. They cannot, for example, buy a machine assembled locally, and of a type more or less experimental, so that, in the event of any one part breaking, they would have to get a spare made specially, with results that would be extraordinarily expensive. Such men, in other words, must wait until the big firms take up this proposition, for the big firms have the capital to make in quantities and they have also the responsibility which compels them to store spare parts and so forth.

Further, while having for years past striven to work the big manufacturers up to the pitch of embarking on this new industry that it may be put on a really stable basis, I cannot conceive that any useful purpose is to be served by assuming that merely because they are now coming forward the problem is solved right away. An examination of what is being brought forward convinces me that the majority of manufacturers are regarding their programmes for this year as largely in the nature of the final experiment; that is to say, they have made what experiments they desire themselves, and what they now need is the experience of how these machines will answer in the hands of the public: 1913 is to be to the cycle-car movement the year of the great experiment. That is why so many various constructional systems are being essayed. We shall only know at the end of the season which are the most practicable in order that full value may be given for money. The method that must be adopted is for each maker to find not only how to produce a machine that will answer in the Midlands or the South country, but one which without alteration will answer equally well in the Highlands, in the wildest parts of Ireland, and even in the Dominions and Colonies, for medical men are needing these vehicles in every part of the world. There is a market here of the finest possible character, for where there is room for a [illegible] there is room for a hundred thousand cycle cars modelled dead to pattern. They [illegible] in the business, but we cannot get it going on that scale for at least twelve months. Meantime it is exceedingly satisfactory to find that a great number of the makers are beginning on lines which are obviously quite sound, and in this connexion the only puzzle at the moment is how the machines can be produced at the prices being asked. Even the prosperous medical man has an interest in this development, for the cycle car will be invaluable for station work, as a stand-by when one's own car may need temporary repair, as well as for running about at night after the motorman has done a full day's work driving and cleaning up his car ready for the next day, when consequently it is not desirable to disturb him.

Some Machines to Look Out For.

I do not propose to deal at length with individual cycle cars to be brought forward, as those more suitable for medical men will be more fitly reviewed in a succeeding issue, but I would point out that the propositions may be grouped under various heads, and that apparently the most that can be paid for a cycle car complete with lamps and all is about £185, and the least about £100. Further, for that maximum, or less, what is got is a cycle car in name and costs only; in all other respects it is a big car in miniature in that it has a block-engined four-cylinder motor, conventional steering, change speed gearbox and so forth, as instance notably, on behalf of the British manufacturer, the design brought forward by the Singer Company, or on behalf of Continental practice, the Baby Peugeot, wherein, however, the rear suspension is not of the conventional sort. These machines, however, like the other cheaper cycle cars, are primarily designed for two-seated service, and it will be a grave mistake if any user carries more aboard them, as many will be seriously tempted to do on occasion, for the all-sufficient reason that these vehicles are mighty efficient, being capable of a rate of travel along the road more approximating to the rate of the motor bicycle with side-car than to that of the cheap American vehicle.

Then we come to another group, which may be conveniently described at the moment as the £125 complete class. Of this, there are two notable and strikingly contrasted examples to be brought forward by firms of familiar name. One is the two-cylinder water-cooled Swift with conventional change speed gearbox, live-axle drive, conventional car springing, and all other details; and the other is the Humberette, with a V-set air-cooled engine, out of the ordinary suspension in front by a single transverse inverted semi-elliptic spring, and gearbox combined with the live-axle mechanism. These machines, like the rest, afford a conventional type of car seating, a scuttle dash, high doors beside the occupants, wind screens, and so forth. Then there is the belt-driven variety; very few of the firms of famous name in the motor or cycle industry are going to be associated with this, for though it is admittedly efficient, still it is not motor engineering practice, and is, after all, a makeshift method if for the money a satisfactory gearbox and differential mechanism can be devised.

The machines one has named so far are all constructed on the lines of providing the features characteristic of cars proper, whereas there are others—such as the Bedelia, and so forth—which are vehicles of a kind wholly fresh. Some of them, for example, have the seats, not side by side, but tandem fashion, so that there is a long and easy wheelbase and a very narrow machine. One ingenious vehicle that comes from France has the front axle attached centrally on a swivel principle, so that one wheel can jump a foot or more up into the air, and still the front suspension would not be upset in any way. This, however, is a questionable advantage, because, as far as the stability of the vehicle as a whole is concerned, it means that it is carried on three-point suspension, like a tricycle, and not at four points. The medical man will undoubtedly be better advised—in these initial stages, at any rate—to look rather in the direction of the most conscientious reproductions of car practice generally, as distinct from bicycle-makers' methods. That he will find easy to do if he visits Olympia during next week, for there are to be quite a number of attractive cars in miniature. He should see to it, too, that his machine has differential gear of some sort or another, if he does not want his tyres to scrape themselves away.

H. Massac Buist.

Nova et Vetera.

EARLY WORKS ON TROPICAL MEDICINE.

Dr. Charles Singer, Assistant Physician to the Dreadnought Hospital, has sent us a reprint of a paper contributed by him to the *Annals of Tropical Medicine and Parasitology* for May, 1912, entitled "Notes on Some Early References to Tropical Diseases." He begins with the reign of Queen Elizabeth, in the closing years of which the enterprise of seamen naturally gave rise to a literature adapted to their needs. In this literature medicine found a place, as in new and strange lands discovered and explored diseases equally new and strange were encountered. In 1598 there appeared a booklet by "G. W.", *The CVRES of the Diseased, in Remote Regions, Preventing Mortalitie, incident in Forraine Attempts, of the English Nation. La honra mas vale merecerla que tenerla. At London. Printed by F. K. for H. L. 1598.* This is, perhaps, the earliest work intended for sailors published in Great Britain. The "forraine attempts" were clearly voyages to tropical America, and the book may be regarded as reflecting the knowledge of tropical medicine gained by the early explorers. The Spanish motto means that it is better to deserve honour than to have it.

G. W., who was a layman in medicine, says:

The cause that induceth mee publiquelie to expresse the Cure of Diseases of such consequence (which) every judiciall conceite may perceive to have been the only prejudice to our Nation in the expeditions of our time to the Southerne parts: from whence they . . . have returned with renowned victorie, yet exceedinglie opprest withe extreame and penurious sicknesse, that hathe much more prevented the proceeding and performing of their pretensions than the power of Enemies, is not that a purpose, practitioner-like in Phisicke or Chirurgerie, to assume unto me anie knowledge in those Sciences and Faculties: But to possesse all men of remedies for such infirmities, as in my owne experience, have infinitelie impaired English Forces in intemperate Clymates, which I publish, for the good of those whom cause may compell to have use thereof, and would be so censured of all.

The author had voyaged principally to the Spanish Main. In his dedication to Queen Elizabeth he writes of himself that

In my unjust imprisonment in Spayne, it pleased God to afflict me with a *Tabardilla* Pestilence: whereof being in cure by an especiall Phisition of the King, I observed his Methode for the same, and such other diseases as have perished Your Maiesties people in the Southerne part. Which Remedies have since by my direction taken the like good effects.

The book opens and ends with verse, and even in his Index the author falls into numbers.

The following lines introduce the book, and serve the purpose of a table of contents:

The Booke's Content.
The burning fever, calde the *Calenture*,
The aking *Tabardilla* pestilent,
Th' *Espulas* prickings which men do endure,
Camaras de Sangre, Fluxes violent,
Th' *Erizipila*, swelling the Pacient,
The *Tinoso*, which we the Scurvey call,
Are truly here describ'd and cured all.

By "Calenture" Dr. Singer thinks the condition now classed as heatstroke or sunstroke are meant. The word by itself simply means fever, but it is possible that the author intended it to express malaria, which in Spanish is known as *Las Calenturas* (the fevers).

By *Tabardilla* he thinks the author means yellow fever, together with others of a haemorrhagic form of bilious remittent malarial fever, and perhaps sometimes dengue. We may note that it has recently been shown that the disease to which the term "tabardillo" is now applied in Mexico is typhus fever. *Espinlas* Dr. Singer is unable to identify, and the author's description does not throw much light on its nature. He says that to know the Espinlas the following characters will suffice:

The partie having the Espinlas will be giddie in the head and have pain and pricking at his breast as with many thorns: wherefore I thinke it is so called of Spina and Espina, the Latine and Spanish words for a Thorne.

But the pathognomonic sign is curious:

There will be upon the Huesso radio (*Anglice*, radial bone) or Focell, being the upper part of his armee, a hand breadth about the wrist, a little Kernell by which it is certainly knowne. And he that hath this Disease will not have appetite to meate and drinke.

By "*Camaras de sangre*, which is the Bloody Flux," forms of tropical dysentery are clearly meant. The writer, like all sailors then and for two and a half centuries afterwards, was familiar with scurvy, which he describes under the Spanish name *Tinoso*. It is, he says, "an infecting Disease, sufficientlie known unto Seafaring men; who by putrified meates and corrupted drinkes, eating Bisket flowrie, or foule crusted, wearing wet apparell . . . and slothful demeanour . . . obtained the same." The disease, he adds, is "so ordinary at Sea, as it hath seldome seen any Ship or Pinnice, to be foure moneths upon the Voyage . . . but some of the Companie have had this Disease." Exercise the author looked upon as a prophylactic, and "also it is a certaine and assured medicine against this Disease to have such quantitie of Beere, brewed with Graynes and Long pepper, as in the morning twice everie weeke there may be given a good draught to a man. . . . But White Wine or Syder, boyled and brewed with Graynes and Long peper, in like quantitie is very singular good. And it is not fit to suffer the gums to abound with flesh: and therefore sometimes let them bleede and cleere them withe strong Vinegar." Lastly, the patients should not "be suffered to eat any salt meates, if other may be had."

Dr. Singer says the earliest mention of sleeping sickness is usually considered to be in Winterbottom's account of the native Africans in the neighbourhood of Sierre Leone, published in 1803. But there is an earlier one, given by John Atkins, a naval surgeon, on his return from a voyage to West Africa. He saw the disease on the Guinea coast in 1721. His description, which is in the appendix to his little volume entitled *The Navy Surgeon*, is as follows:

The *Sleepy Distemper* (common among the negroes) gives no other previous notice than a want of Appetite two or three days before: their sleeps are sound and Sense and Feeling very little: for pulling, drubbing, or whipping will scarce stir up Sense and Power enough to move, and the Moment you cease beating the smart is forgot and down they fall again into a state of Insensibility, drivling, constantly from the Mouth as if in deep salivation; breathe slowly, but not unequally nor snort. Young People are more subject to it than the old, and the Judgment generally pronounced is Death, the prognostick seldom failing. If now and then one of them recovers, he certainly loses the little reason he had and turns Ideot.

The immediate cause he considers to be a superabundance of phlegm or serum extravasated in the brain, which obstructs the irradiation of the nerves. And the treatment is to rouse the spirits "by bleeding in the jugular, quick purges, Sternatories, Vesicatories, Acupuncture, Seton, Fontanels, and Sudden Plunges into the Sea; the latter is most effectual when the distemper is new and the patient as not yet attended with a drivling at Mouth and Nose." John Atkins lived from 1685 to 1757. He was a good observer and a man of some learning and independence of character. This independence led him into disputes and criticisms of his brother officers, which prevented his re-employment in the navy after his return from Africa. References to Atkins's work are found in the *Malay Medical Journal* for April, 1911, and the *Bulletin of the Sleeping Sickness Bureau* for August, 1911, p. 329, and an account of his life is given by Dr. Norman Moore in the *Dictionary of National Biography*.

Dr. Singer goes on to quote an early account of the sand flea (*Pulex penetrans*). The first writer who mentioned the insect seems to have been Fernandez de Oviedo, a Spaniard who wrote in 1547 a book entitled *Cronica de las Indias*. A description of it is also given in a book bearing the curious title, *Les Singularitez de la France Antaretique*. The book was published in 1558.

Dr. Singer's most interesting essay is illustrated with reproductions of title-pages of some of the old works which he has unearthed.

The seventh International Congress of Gynaecology, Obstetrics, and Paediatrics will be held at Lille in March, 1913 (25th to 29th), under the general presidency of Professor Pozzi, who will also preside over the Section of Gynaecology. Professor Audebert (Toulouse) has been chosen president of the Section of Obstetrics, and Professor Gaudier (Lille) of that of Paediatrics. Among the subjects proposed for discussion are chorion-epithelioma; cysts of the ovary and pregnancy; and the evolution of tuberculosis in sucklings. The General Secretary is Professor Oui (201, rue Solférino, Lille), to whom all communications relative to the Congress should be addressed.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

Owing to the exigencies of the parliamentary situation the Committee only held a short session on November 14th.

Action Under Existing Law.

The Chairman recalled the statement of Professor Dixon, in his evidence given on October 30th, that the Liverpool Corporation had put into force its powers under the Merchandise Marks Act, and that a severe fine was exacted in reference to the sale of a proprietary remedy in contravention of the provisions of the Act. The Committee had communicated with the Liverpool authorities regarding this statement, and in reply Dr. E. W. Hope, the medical officer of health, wrote that in 1907 information was laid against the vendors of a preparation stated on the labels to contain "the active ingredients and digestive qualities of the gastric juices in a highly concentrated and permanent form." The analyst reported the preparation to be "devoid of gastric juice or any digestive properties whatever." Owing to the impossibility of proving guilty knowledge against the vendor the case was withdrawn, and the stipendiary allowed the defendants five guineas cost.

Mother Seigel's Curative Syrup.

Mr. C. H. Ratcliffe, joint managing director of A. J. White, Limited, proprietors of Mother Seigel's Curative Syrup, was further examined. Questioned with regard to the attitude of the German authorities towards Mother Seigel's Syrup, the witness said he was without any information on the point. The company was not prepared to go to the expense of placing the preparation on the German market. He was not aware of laws affecting the sale of the remedy passed in Germany in 1903, although the matter had occupied considerable space in the *Chemist and Druggist*. He did not attach much importance to the statement in a book circulated by the founders of the business that:

> An old woman, Mother Seigel, on her last legs with dyspepsia, was led to wander through the lanes, and one day she chewed a leaf of a herb only found in those parts, immediately receiving relief.

The remedy did not now contain any "herbs only to be found in Germany," and he was not aware of any alteration in the ingredients since the business was established.

In reply to questions by Dr. Lynch and Dr. Chapple as to which forms of dyspepsia the remedy claimed to cure, the witness disclaimed any medical knowledge, and said the claims were based on the testimonials received.

The witness regarded the statement as to the estimated cost of ingredients attached to each analysis in *Secret Remedies* as likely to deceive the public. He thought the other expenses of preparation should be mentioned each time instead of in the preface only.

The Chairman: I am not concerned to defend this book (*Secret Remedies*), but I see no ground for a charge of unfairness in this connexion. The statement is perfectly clear.

Replying to the Chairman, the witness said he could not say upon what the claims made on behalf of the preparation were based when it was first introduced and no testimonials had been received.

Mr. Cowley: If the statements in *Secret Remedies* with regard to this preparation are false, as you stated last week, would it not have been well to bring an action against the British Medical Association?

The witness explained that the company was legally advised that it was doubtful if the statements in law constituted a libel. It could only be a trade libel, and that could not be proved without bringing evidence of special damage which would be difficult to obtain. The company had taken means to challenge the statements through its

[illegible] the information that when the [illegible] from a private to a public one, the [illegible] to the [illegible] ledge, earlier admission by [illegible] advertisements were "written down" to the knowledge of the public, and suggested that it was rather a case of the blind leading the blind. The witness agreed that, in view of the ignorance of the public, the meaning of statements in advertisements ought to be clear. He claimed that in the case of his company this principle was followed.

Before the Committee rose for the day Mr. Glyn Jones gave notice that in his questions he would invite the witness to consider the whole of the paragraphs relating to Mother Seigel's Syrup on pages 176–177 of *Secret Remedies*, and would ask him whether they contained one single definite statement of fact which he was prepared to deny.

LITERARY NOTES.

In a leading article published in the JOURNAL of November 16th, we wrote:

> There are persons who cannot bear it even to be hinted that there is anything about them that *smells of humanity*.

The words of Lear are "smells of mortality." Even the most exalted personages would admit that they are, in a manner, human; it is the idea of sharing the mortality of the common herd that is repugnant. Every one knows the story of the reader to a great personage in France who had tactlessly alluded to *le feu roi d'Espagne*. His master's wrath was only appeased by the hasty explanation that it was a title taken by Spanish kings.

No one who has ever come into contact with the inmates of our elementary schools can have failed to observe the enormous amount of deafness and ear disease found amongst the children of the English working classes. The terrible consequences of the combined dirt and neglect to which these cases are exposed in their own homes are commented upon in the October number of *The Child* by Mr. Charles A. Adair Dighton, who gives an interesting account of his method of treating the most frequent manifestation of ear trouble in school children—namely, the ordinary running ear. "The cause of discharging ears," writes Mr. Dighton, . . . "in 90 per cent. of cases is due to the extension of micro-organisms from the naso-pharynx to the tympanum via the Eustachian tube. Therefore the first step in the treatment of chronic suppurative otitis media, or discharging ears, is to clear up all disease in the naso-pharynx." This is effected by means of what Mr. Dighton calls "the posture treatment," which consists in removing the patient's adenoids, etc., together with any pathological exciting cause existing in the naso-pharynx, after which the patient is put to bed in a splint of the writer's own devising which forces him to lie on the diseased side. The pus in this manner being drained away, all that is then necessary is to cleanse the ear night and morning with mops of cotton-wool, and as soon as the discharge diminishes (that is to say, at the end of the first week) the patient is allowed to sit up and the splint is applied only at night, this also being gradually discarded as the patient acquires the habit of sleeping on the diseased side. The whole course of treatment should take little more than a month, and can be carried out in the patient's own home by the district nurse under the doctor's supervision. Moreover, Mr. Dighton claims for it the supreme merit of effecting a permanent cure (if applied at the first sign of discharge) in a large proportion of those cases which now have to be operated upon. The close relation between deafness and what appears at first sight to be undoubted mental deficiency, has often been discussed; and it is frequently a matter of some difficulty to determine whether a backward child is actually lacking in brain power or merely hard of hearing. Much useful information concerning the former state may be found in Mr. A. R. Abelson's interesting article on "Tests for Mental Deficiency in Childhood," which appeared in the October number of *The Child*. The same number also contained a moving account, by Mrs. Mary Higgs, of the miseries of the child vagrant; and a glowing panegyric from Herr Leopold Katscher on the manifold advantages of gardening as part of the ordinary school curriculum.

The International Institute of Social Bibliography was founded in 1905. The head quarters of the institute are situated in Berlin, and there are branch offices in Vienna, Paris, and London. The German Imperial Government is subsidizing the institute by granting it a yearly allowance of 15,000 marks, and many corporations and associations

contribute considerable sums to its maintenance. The chief object of the institute is "to assist in the scientific investigation of social subjects." One of the means to the attainment of this end is the publication of a monthly journal, *The Bibliography of Social Science*, in six different languages—German, French, English, Italian, Russian, and Hungarian. The editors are Dr. Hermann Beck of Berlin and Dr. Charles Kinzbrunner of London, and they are assisted by expert correspondents in all parts of the world. This bibliography includes the titles of books and articles in all the principal languages on social science in its widest meaning. Each issue comprises about 80 pages, and registers in the course of a year some 8,000 titles of books and 30,000 titles of essays and articles in periodical publications. The subject is distributed under twenty divisions. These are: Bibliographies and encyclopaedias, history of the social sciences and bibliographies, general sociology, special sociology, theory of political and social economy, applied economics, political science, practical sociology, statistics, demography, colonies, social history, commercial geography, and ethnography. Each monthly part of the *Bibliography* includes all published matter within its scope up to a date two months previous to the publication of each issue. A specimen copy will be sent on application to Mr. C. F. Clay, Manager, The Cambridge University Press, Fetter Lane, London, E.C., to whom all inquiries should be addressed.

Dr. A. Bernhard-Smith writes: Apropos of the doctor-poet, Akenside, recently mentioned in the BRITISH MEDICAL JOURNAL, perhaps you will consider the following quotation from Leigh Hunt's essay *My Books* of interest:

> I shall never forget the gratitude with which I received an odd number of Akenside, value sixpence, one of the set of that poet, which a boarder distributed among three or four of us, "with his mother's compliments." The present might have been more lavish, but I hardly thought of that. I remember my number. It was the one in which there is a picture of the poet on a sofa, with Cupid coming to him, and the words underneath, "Tempt me no more, insidious love!"
>
> The picture and the number appeared to me equally divine. I cannot help thinking to this day that it is right and natural in a gentleman to sit in a stage dress, on that particular kind of sofa, though on no other, with that exclusive hat and feathers on his head, telling Cupid to begone with a tragic air.

Reference was made in an article entitled "Illness and Intellect," which appeared in the JOURNAL of November 9th, to the fact that Scott dictated the *Bride of Lammermoor* during such intervals of mental lucidity as were left him while taking opium for agonizing "spasms." A full account of this illness is given by his friend James Skene in his *Memories of Sir Walter Scott*. The book was edited by Mr. Basil Thomson, and published by John Murray. Skene says:

> Under the infliction of a severe illness Sir Walter had for nearly two years to struggle for his life, and only the natural strength of his constitution at length enabled him to throw it off. But with its disappearance, although he was restored to health, disappeared also much of his former vigour of body, activity, and power of undergoing fatigue, while in personal appearance he had advanced twenty years in the downward course of life; his hair had become scanty and bleached to pure white, the fire of his eye was quenched, his step was more uncertain—he had lost the vigorous swinging gait with which he used to move—in fact, old age had by many years anticipated its usual progress, and had marked how severely he had suffered. The complaint, that of gall stones, caused extreme bodily suffering. During his severest attack he had been alone at Abbotsford with his daughter Sophia before her marriage to Mr. Lockhart, and had sent to say that he was desirous I should come to him, which I did, remaining for ten days, till the attack had subsided. During the course of it, the extreme violence of the pain and spasmodic contractions of the muscles of the stomach were such at times that we scarcely expected that his powers of endurance could sustain him through the trial, and so much was he exhausted by some of the attacks as to leave us in frightful alarm as to what the result had actually been. One night I shall not soon forget; he had been frequently and severely ill during the day, and in the middle of the night I was summoned to his room where his daughter was already standing at his bedside, the picture of deep despair. The attack seemed to be intense, and we followed the directions left by the physician to assuage the pain, which for nearly a full hour bid defiance to our best endeavours. At length it seemed to subside, and he fell back exhausted on the pillows; his eyes were closed, and his countenance wan and livid. Apparently with corresponding misgivings, his daughter at one side of the bed and I at the other gazed for some time intently and in silence on his countenance, and then glanced with anxious inquiring looks at each other, till at length I placed my fingers on his pulse, to ascertain whether it had actually [illegible] the sudden beam which brightened his daughter's countenance, and for a moment dispelled the intense expression of anxiety which had for some time overspread it, when Sir Walter, aware of my feeling his pulse, and the probable purpose, whispered with a faint voice, but without opening his eyes, "I am not *yet* gone." After a time he recovered, and gave us a proof of the mastery of his mind over the sufferings of the body. "Do you recollect," he said to me, "a small round turret near the gate of the Monastery of [illegible]athwick, and placed so as to overhang the street?" Upon answering that I did perfectly, and that a picturesque little morsel it was, he said: "Well, I was there when a mob had assembled, excited by some purpose which I do not recollect; but, failing in their original purpose, they took umbrage at the venerable little emblem of aristocracy which still bore its weather-stained head so conspicuously aloft, and, resolving to level it with the dust, they got a stout hawser from a vessel in the adjoining harbour, which a sailor lad, climbing up, coiled round the body of the little turret, and the rabble, seizing the rope by both ends, tugged and pulled, and laboured long to strangle and overthrow the poor old turret, but in vain, for it withstood all their endeavours. Now that is exactly the condition of my poor stomach. There is a rope twisted round it, and the malicious devils are straining and tugging at it, and faith, I could almost think that I sometimes hear them shouting and cheering each other to their task, and when they are at it I always have the little turret and its tormentors before my eyes."

He complained that particular ideas fixed themselves down upon his mind, which he had not power to shake off, but this was in fact the obvious consequence of the quantity of laudanum which it was necessary for him to swallow to allay the spasms. In the morning, after he had got some repose and had become rather better, he said, with a smile, "If you will promise not to laugh at me, I have a favour to ask. Do you know I have taken a childish desire to see the place where I am to be laid when I go home, which there is some probability may not long be delayed. Now, as I cannot go to Dryburgh Abbey—that is out of the question at present—it would give me much pleasure if you would take a ride down, and bring me a drawing of that spot." And he described the position minutely, and the exact point from which he wished the drawing to be made, that the site of his future grave might appear. His wish was accordingly complied with.

The effects of the mind on the body have, as we have often said, been well known to wise physicians, and have been put to use by them. Some remarkable examples are given by Montaigne in his *Essays*. In the First Booke, Chapter XX, he says:

> Some man peradventure, by the effects of imagination leaveth the pox or Kings evill heere, which his companion carrieth into Spaine againe: loe heere why in such cases men are accustomed to require a prepared minde, wherefore doe Physitians labour and practise before hand the conceit and credence of their patients, with so many false promises of their recoverie and health, unlesse it be that the effect of imagination may supple and prepare the imposture of their decoction? They knew that one of their trades ma-ter hath left written, how some men have been found, in whom the only sight of a potion hath wrought his due operation: All which humor or caprice is now come into my minde, upon the report which an Apothecarie, whilome a servant in my fathers house, was wont to tell me, a man by knowledge simple, and by birth a Switzer; a nation little vaine glorious, and not much given to lying, which was, that for a long time he had knowne a Merchant in Thoulouse, sickish, and much troubled with the stone, and who often had need of glisters who according to the fits and occurrences of his evill, caused them diversly to be prescribed by Physitians. Which being brought him, no accustomed forme to them belonging was omitted, and would often taste whether they were too hot, and view them well, and lying along upon his bed, on his belike, and all complements performed, only injection excepted, which ceremony ended, the Apothecarie gone, and the patient lying in his bed, even as if he had received a glister indeed, he found and felt the very same effect, which they doe that have effectually taken them. And if the Physitian saw that it had not wrought sufficiently, he would accordingly give him two or three more in the same manner. My witnesse protesteth, that the sicke man's wife, to save charges, for he paid for them as if he had received them, having sometimes assaid to make them onely with luke warme water, the effect discovered the craft, and being found not to worke at all, they were forced to returne to the former, and use the Apothecarie.

Another case illustrates a method of treatment which we have known practised with success:

> A woman supposing to have swallowed a pinne with her bread, cried and vexed her selfe, even as if she had felt an intolerable paine in her throat, where she imagined the same to sticke; but, because there appeared neither swelling or alteration, a skilfull man deeming it to be but a fantasie conceived, or opinion, apprehended by eating of some gretty peece of bread, which haply might pricke her in the swallow made her to vomit, and unknowne to her, cast a pinne in that which she had vomited. Which the woman perceiving, and imagining she had cast the same, was presently eased of her paine.

British Medical Journal.

SATURDAY, NOVEMBER 23rd, 1912.

THE LISTER MEMORIAL.

Lister's best monument is his work. The very success of the revolution which he brought about in surgery, however, tends, and will tend still more as the developments of his teaching lead further towards the goal at which he aimed, to overshadow his glory as a pioneer. His name is enshrined in the language of surgery, and will live as long as the art which he transformed into a science. But already there are many who, knowing nothing of the difficulties Lister had overcome, perhaps fail to realize the greatness of his achievement. And if this be true even of those of his own household who have entered upon his inheritance, it is far more true of the people at large who reap the fruits of his labours without knowing or heeding how these came to them. Statues and other memorials of soldiers, statesmen, and men who in various ways have played a conspicuous part on the world's stage, are erected almost every day; on the other hand, the man who gives his life to the discovery of the means of relieving suffering is too often without public honour in his life, and after death is quickly forgotten. The time will surely come when those who save life will stand higher in public estimation than those who destroy it; when those who strive for the welfare of the people will be more honoured than those who gain power by appeals to their passions. We welcome the proposal to commemorate one who has placed mankind under such a debt of gratitude in the hope that it may serve to impress a truer notion of greatness on the public mind. At the same time, it may be useful in preventing one of the world's greatest benefactors from fading into a *magni nominis umbra*. It may not be out of place to recall what has been done towards the fulfilment of the proposal.

It was stated in the Journal of July 27th that the Presidents of the Royal Society and the Royal College of Surgeons of England had taken steps to form a large and representative committee for the purpose of establishing a memorial to Lord Lister. That committee, which comprises the leaders of the medical profession besides a number of men distinguished in various spheres, appointed an Executive Committee to frame a scheme and draw up an appeal for subscriptions. On October 23rd a meeting was held at the Mansion House, under the presidency of the Lord Mayor, Sir Thomas Boor Crosby, M.D., in furtherance of the proposal. At that meeting a remarkable speech was delivered by Lord Haldane, who said that Lister's discoveries had been almost as fruitful in turning men's minds to the study of micro-organisms in the territory of medicine as they were in his own province of surgery. The discoveries that had been made in pathology, in tropical diseases, and all other diseases caused by micro-organisms, were due to the new zeal stimulated by the application of Listerian methods to the cognate study of medicine. The man who did that, said Lord Haldane, effected a revolution perhaps more definite, more precise, more far-reaching than anything done even by Darwin and Kelvin. It was fitting, he added, that the Government should be represented at such a meeting, for there was no part of the community that had not benefited by Lister's discoveries: all were his debtors, the humblest and the greatest.

We make no excuse for quoting these words of Lord Haldane, for they justify the appeal for a memorial of Lister that shall be truly national in character. The members of the medical profession may, even in these days when their future is hidden in lowering clouds, be trusted to pay their tribute to the Master to whom they owe so much. But it is necessary to insist on the fact that the public owes far more. If the scope of surgery has expanded to a degree undreamed of half a century ago; if the ravages of septic diseases have been vastly reduced; if incalculable numbers of men, women, and children who not so long ago would have been doomed to a painful death, or perhaps to prolonged suffering and permanent disablement, are restored to useful life—it is to Lister that all this is due. To the public, therefore, the promoters of the memorial may fairly look for a liberal response to the appeal for funds to commemorate one who did more for the relief of the sufferings, not of men only but of animals, than any man who ever lived.

We may remind our readers that, after considering many proposals, the Executive Committee came to the conclusion that the most suitable memorial would be one comprising: (1) A tablet with medallion and inscription in Westminster Abbey; (2) the erection of a monument in a public place in London; and (3) the establishment of an International Lister Memorial Fund for the advancement of surgery, from which either grants in aid of researches bearing on surgery, or awards in recognition of distinguished contributions to surgical science should be made, irrespective of nationality. In an appeal issued by Sir Archibald Geikie (Chairman of the Executive Committee), Mr. W. F. D. Smith (Deputy Chairman), Lord Rothschild and Sir William Watson Cheyne (Honorary Treasurers), and Sir John Rose Bradford (Honorary Secretary), it is pointed out that to carry out the proposals and commemorate Lord Lister's worth in a suitable manner a large sum of money will be required, and it is proposed to form committees in the provinces, in the dependencies of the empire, and in foreign countries, to take such steps as are necessary in order to co-ordinate the collection of subscriptions. Already a number of liberal donations have been received, Lord Iveagh having given £500, Lord Northcliffe £105, Sir William Watson Cheyne £100, Mr. Otto Beit £250, the Duke of Bedford £100, and Sir Ernest Cassel £100. Among the subscribers are Mr. Arthur Balfour, Lord Alverstone, Sir Squire Bancroft, Lord Justice Buckley, Lord Blyth, the Lord Chancellor, Lord Cowdray, Lord Justice Cozens-Hardy, the Duke of Devonshire, Sir James Dewar, Viscount Morley of Blackburn, Lord Moulton of Bank, the Marquis of Lansdowne, Lord Justice Kennedy, the Marquis of Salisbury, Sir Charles Mathews, Sir Arthur Pinero, Lord Rayleigh, the United States Ambassador, the Duke of Wellington, Sir William White, and Mr. Israel Zangwill. It is touching to see in the list of distinguished names a humble donation from a hospital patient of Lister's.

We have only to add that donations may be sent to the Treasurers of the Lister Memorial Fund, Royal Society, Burlington House, W.

It should be mentioned that, in addition to the memorial already mentioned, a suggestion has been made in Glasgow that one of the wards of the Royal

Infirmary in that city, where Lord Lister's antiseptic methods were first put into practice, should be preserved as a museum in which objects of interest associated with him and his discoveries might be exhibited. The Committee has been informed that the directors of the infirmary have given their sanction to this scheme. Objects, personal or otherwise, associated with Lister's life and work are earnestly desired, and will be gladly received by the Superintendent, Royal Infirmary, Glasgow.

BOVINE AND HUMAN TUBERCULOSIS.

In the *Bulletin de l'Office International d'Hygiène Publique* for August there is a long and interesting article on the relation between bovine and human tuberculosis, by the Director of the Italian Home Office Bacteriological Laboratories. In this article Professor B. Gosio traces the early opinions on the origin of tuberculosis held down to the year 1883, when Koch discovered the tubercle bacillus and upheld the unicist theory, and from that time onwards, until at the memorable congress in London in 1901 he pronounced in favour of the difference between human and bovine tuberculosis. The controversy resulting from this declaration is sketched, and the various opinions of men and countries and the different results of various experimenters are given. The questions of technique, virulence, and metamorphosis are all discussed calmly and judicially. Then follows a detailed account of the work done in Italy during the last ten years at the request of the Department of Public Health.

In this inquiry Italy, with its numerous districts presenting different conditions of life and offering many diverse circumstances, afforded favourable opportunities for the gathering together of evidence, while former work pointed out the line of research to be followed. This research had both a statistical and experimental side, and when necessary and possible the two types of inquiry ran parallel and mutually helped each other. The main conclusions are, that where there is much tuberculosis in animals there is little tuberculosis in man, and that where there is much tuberculosis in man there is little or no tuberculosis in animals. In an interesting summary presented by Professor Santoliquido he outlines the salient points in the main contribution and discusses this important thesis, "In tuberculosis, what has man to fear from bovine infection?" To come to a conclusion on this very important question he not only takes advantage of the enormous literature existing on the subject, but also considers the ten years' work in Italy, and decides that as far as Italy is concerned there is no relation between human and bovine tuberculosis except in rare cases, and that the true danger in tuberculosis resides in the human carrier—the phthisical patient. Moreover, he contends that where many peasants have become phthisical they have been congregated where human contagion was prevalent. He also concludes that in non-pulmonary forms of tuberculosis there is almost complete agreement in excluding the influence of bovine virus so far as the adult is concerned. In discussing the question of the prevalence of peritoneal tuberculosis in infancy he admits that milk may be a factor of some importance, although in a table in which he sets out the result of careful inquiry in agricultural and industrial districts he comes to the conclusion that the high percentage of peritoneal tuberculosis recorded by British observers as the result of milk drinking cannot be accepted for Italy. He affirms that in the north of Italy, where there is a grave diffusion of bovine tuberculosis and where milk is largely used, peritoneal tuberculosis is not proportionally increased; while in the midlands, where little milk is drunk and where often bovine tuberculosis is unknown, peritoneal tuberculosis is high. He argues that other facts—such as climate, heredity, and habits of life—must be taken into account in coming to a conclusion. In contradistinction to this, our Royal Commission on Tuberculosis came to the conclusion "that a considerable proportion of the tuberculosis affecting children is of bovine origin, and is due to cows' milk." In reviewing the whole position, Professor Santoliquido rejoices over everything done to give the people uncontaminated milk, and urges that all the defences against tuberculosis should be strengthened—propaganda, notification, disinfection, hygienic protection at work, dispensaries, homes for the predisposed, and suitable places for isolation. But, while giving a hearty welcome to all these, he insists that if we are to be successful in the social warfare against tuberculosis we must concentrate all our energies on the phthisical subject, for he is the real danger. Fight bovine tuberculosis by all means, he says, but let us remember that a healthy man has little to fear from bovine tuberculosis. He concludes his highly interesting note by laying it down that the fatal march of this contagious disease will not be stopped even for a moment simply by rendering meat and milk free from infection. In answer to the question whether animals and man can be reciprocally infected, the British Royal Commission reported that this was possible except in the case of avian tubercle. When we ask the same question of the Italian workers, they say with the Japanese, "where there is much tuberculosis in animals there is little tuberculosis in man," and affirm for themselves "that a healthy man has little to fear from bovine tuberculosis."

The difference between their results and those obtained in Great Britain, which at first sight appears irreconcilable, is probably to be explained by a real difference in the incidence of bovine tuberculosis in man in different countries. The investigations carried out in Edinburgh by Mr. Stiles, with the assistance of Dr. John Fraser and Dr. A. P. Mitchell, appear to justify the opinion that there is a noticeable difference in this respect even between Scotland and England. Full reports on these researches have not yet been published, and Mr. Stiles did not touch on the subject in the paper read to the Section of Diseases of Children at the Annual Meeting in Liverpool, and printed in our issue for last week. In his address on the pathology and treatment of tuberculosis of the bones and joints to the American Medical Association last year,[1] however, he said that Scotland was in the unenviable position of possessing a higher ratio of surgical tuberculosis in its population than is to be found in most countries, and that the bacteriological investigations in Edinburgh were confirming the opinion that a large proportion of surgical tuberculosis, at any rate in children, was of bovine origin. He related some very striking cases, and the inquiry now being completed by Dr. Mitchell, Ernest Hart Memorial Scholar of the British Medical Association, may be expected to throw much light on the subject. It will be noted that Dr. Fraser, in the paper published elsewhere in this issue, brings forward experimental evidence to show that in the rabbit infection of the knee-joint with the bovine bacillus produces an intense reaction with acute synovial

[1] *Journal of the American Medical Association*, 1912, vol. lviii, p. 527.

tuberculosis, whereas infection with the human bacillus results in chronic synovial thickening.

Professor Sheridan Delépine, in the very full examination of the question of the share taken respectively by human and bovine tuberculous products in the infection of young children which he gave to the annual conference of the National Association for the Prevention of Consumption last June, stated that as the result of prolonged study of the subject in Manchester he had come to the conclusion that it was possible to say, without fear of exaggeration, that not less than 25 per cent. of the tuberculous children under 5 years of age suffered from infection of bovine origin, and that this estimate was much lower than one based on probabilities would be.

THE SPECIAL REPRESENTATIVE MEETING.

THE Representative Meeting has decided not to bang, bar, and bolt the door, but to leave it ajar for the Chancellor of the Exchequer to push open if he will. It has chosen five of its most trusted leaders, who will hold themselves ready to confer with Mr. Lloyd George and to lay before him the reasonable demands of the profession. These five representatives will act as a subcommittee of the new State Sickness Insurance Committee, to which they will report the result of any conference it may be found possible and desirable to hold. In coming to this decision the Association shows itself long-suffering and consistent. It is consistent, for from the first it has expressed itself willing to work a national insurance scheme, provided that the necessary safeguards were established, and in particular that the defects in the National Insurance Bill as originally drafted — defects not removed during the passage of the bill through the House of Commons, and therefore persistent in the Act — were removed. The same willingness to work the medical benefit under the Act, provided it afforded conditions compatible with giving an adequate and efficient service, has again been expressed, and the Representative Body, as has been said, has consented to give a fairly wide authority to its special representatives to seek fair terms of arrangement and to report the result to the Association.

The meeting which assembled on Tuesday morning proceeded at once to the main business for which it had been called together, and to this end it decided to postpone the discussion of the report of the Council until it had dealt with the question whether service should be accepted or not under the existing conditions. The point was brought up at once by a resolution moved on behalf of the Bradford Division declining to take service under the Act and Regulations as at present existing, on the ground that they were unworkable and derogatory to the profession. This resolution was carried with very little delay by an overwhelming majority, after an amendment to replace the words "unworkable and derogatory" by "unsatisfactory" had been rejected. The question as to what action should in consequence be taken came upon a proposal to affirm that the recent offer of the Chancellor of the Exchequer afforded to the British Medical Association an opportunity of conferring with him and with the Commissioners as to the points on which the demands of the profession have not yet been met. The debate actually took place on an amendment affirming that the present situation afforded an opportunity for conference, "with a view to the settlement of the points on which the demands of the profession have not yet been met." The debate was very interesting, as may be judged from the report published in the SUPPLEMENT (pp. 564-7). It showed that the matter was regarded by different speakers from different points of view, depending to some extent at least on the conditions of practice existing in the several districts which they represented. Eventually, on being put to the vote, the amendment was carried by 107 to 84. It then became the substantive motion, when an amendment was moved proposing that the resolution declining to accept service under the present conditions should be sent to the Chancellor of the Exchequer with an intimation that any further proposals of the Government for meeting the grave objections of the profession would receive the careful consideration of the British Medical Association. This proposal was also debated at considerable length, and when it was about to be put a card vote was demanded. A card vote differs from a roll call in that each Representative is credited with the number of members in the Division he represents. The result showed that the votes cast represented 18,561 members, and that there was a majority of 23 in favour of the amendment, the figures being—Ayes, 9,292; Noes, 9,269. It was further stated that if a vote had been taken by a roll call the decision would have been reversed by a majority of 1, the figures being—Noes, 101; Ayes, 100.

In order that a declaration of policy shall be binding on the Association it is necessary that the resolution embodying it should be carried by a two-thirds majority. The figures of the card vote seemed to show that there was no prospect of obtaining such a majority, and this conclusion was reinforced by the comparatively small majority by which the previous amendment had been carried. The Chairman of the Representative Meetings reviewed the situation in a very statesmanlike speech. He pointed out that the votes appeared to indicate that there was no possibility of getting a definite mandate on any line which had actually been before the meeting up to that time—any mandate which could fairly be held to be morally binding upon the Association. The future of the Association, he said, depended upon avoiding a "cave," and he appealed to the meeting to keep its head and make no rash move in one direction or the other. He said that the condition of things upon which the Association had now to judge was completely altered by the various proposals contained in the Provisional Regulations, and the statement of the Chancellor of the Exchequer. Consequently he maintained that it would be improper to attempt to hold the Association strictly to the absolutely defined hard-and-fast decision of a few months ago. Unless the meeting took some middle course upon which those who held the two divergent opinions could unite, a course which would be a reliable and satisfactory guide for future procedure, the Association would be faced with a position in which the Divisions would be more or less at liberty to take each its own line. The public would look to the Association at this crisis to find some common ground. The meeting had clearly indicated that the recent offer of the Chancellor of the Exchequer did not afford an immediate opportunity of going to him, without restrictions or conditions, to talk over the situation, much less to appoint a committee with plenary powers. Mr. Verrall suggested that it might be possible to appoint a committee to report to the Council as to the terms which it might be found possible eventually to suggest for the adjustment of existing difficulties.

Such a committee might convey to the Chancellor the opinion of the Representative Meeting upon the various points at issue. The Chairman was followed by the Deputy Chairman, Mr. E. B. Turner, who spoke in a similar sense, pointing out that it was essential that the meeting should come to a decision which would carry the whole weight of the profession. The meeting at once resolved unanimously to instruct the Council to forward to the Chancellor of the Exchequer a copy of the resolution which it had passed on the previous day by an overwhelming majority, and to draw his attention to the points on which it would be possible for a conference between himself and representatives of the Association to take place. The machinery for carrying out this resolution was then discussed, and it was resolved to elect a State Sickness Insurance Committee in the same way as the previous Committee bearing this name had been elected by the Representative Meeting, but without power to co-opt, and a proposal to appoint a committee of five to interview the Chancellor of the Exchequer was carried. As members of this committee the meeting appointed the Chairman of Representative Meetings (Mr. Verrall), the Chairman of Council (Dr. J. A. Macdonald), the Deputy Chairman of Representative Meetings (Mr. E. B. Turner), Dr. R. M. Beaton (London), and Dr. T. A. Helme (Manchester). This committee of five was instructed to report the result of any interview it might have with the Chancellor of the Exchequer to the State Sickness Insurance Committee, whereupon that Committee would report to the Council. If as the result of the interview modifications in the terms and conditions now existing were proposed, the Council was instructed to report the whole matter to the Divisions in the United Kingdom; the Divisions would then be requested to call meetings to which all members of the profession resident in the area would be invited. At this meeting a vote would be taken as to whether the final terms should be accepted or not, the votes of all present and voting to be recorded in two classes, those of members of the Association and non-members respectively, the combined record of all such votes of members of the Association for or against acceptance of the terms to be decisive, the votes given by non-members to be recorded for general information.

This constitutes a new precedent in the administration of the Association which appears to be justified by the present crisis in its affairs, and the limited time available before an attempt can be made by the Government to put the medical benefits under the Act into force. The meeting spent the greater part of the remainder of the session in framing the instructions which should be given to the committee of five to guide them at their interview with the Chancellor of the Exchequer.

THE ANTIVIVISECTION CAMPAIGN.

THE action of the Edinburgh students who wrecked an antivivisection shop the other day is deeply to be regretted. It must be admitted, however, that they had considerable provocation. Park orators who incite any section of the community to a breach of the peace are promptly dealt with by the police. The concrete lies which these shops are intended to impress on the public mind are only less inflammatory than attacks on particular forms of religion because they excite so little interest among people in general. None the less, they are standing incitements to disorder, besides being offensive in themselves. We therefore associate ourselves with the dignified protest which Sir William Turner and the professors of the Edinburgh Faculty of Medicine have made against these exhibitions (see p. 1495). There would seem to be the less reason for adopting this plan of campaign at the present time since Dr. Hadwen, President of the British Union for the Abolition of Vivisection, has stated that the report of the Royal Commission was the death knell of vivisection. Representatives of other antivivisectionist societies have been eager in asserting their satisfaction with the report of the Vivisection Commission, although from the tone of their remarks one is tempted to think that the smile of triumph which they put on is really a sardonic grin. It may be, however, that the satisfaction is genuine. There is nothing, we imagine, that they would desire less than the abolition of vivisection, for if that were to come about their occupation and with it their importance would be gone. The situation is one to which Swift's famous argument to prove that "the abolishing of Christianity in England may as things now stand be attended with some inconvenience, and perhaps not produce those many good effects proposed thereby," seems to be applicable. He says it is urged "that there are by computation in this kingdom above 10,000 parsons whose revenues, added to those of my Lords the Bishops, would suffice to maintain at least 200 young gentlemen of wit and pleasure and freethinking enemies to priestcraft, narrow principles, pedantry, and prejudices, who might be an ornament to the court and town." Elsewhere he says: "I am very sensible how much the gentlemen of wit and pleasure are apt to murmur and be choked at the sight of so many draggled tail parsons who happened to fall in their way and offend their eyes: but at the same time these wise reformers do not consider what an advantage and felicity it is for great wits to be always provided with objects of scorn and contempt in order to exercise and improve their talents and divert their spleen from falling on each other or on themselves." We admit that there is a difference here, for the existence of vivisection, so far from preventing the spleen of its opponents from falling on each other, seems to promote this result. But that is another argument against the abolition of vivisection, for their internecine quarrels must give a zest to life which it would not otherwise possess and certainly helps to fill the columns of their otherwise extremely dull journals. To go on with Swift: "If Christianity were once abolished, how could the freethinkers, the strong reasoners, and the men of profound learning be able to find another subject so calculated in all points whereon to display their abilities? What wonderful productions of wit should we be deprived of from those whose genius by continual practice has been wholly turned upon raillery and invectives against religion, and would therefore never be able to shine or distinguish themselves upon any other subject. We are daily complaining of the great decline of wit among us, and would we take away the greatest, perhaps the only, topic we have left? Who would ever have suspected Asgil for a wit, or Toland for a philosopher, if the inexhaustible stock of Christianity had not been at hand to provide them with materials? What other subject in all art or nature could have produced Tindall for a profound author or furnished him with readers? It is the wise choice of the subject that alone adorns and distinguishes the writer. For had a hundred such pens as these been employed on the side of religion, they would have immediately sunk into silence and oblivion." To make the application, as the preachers say, what would Mr. Stephen Coleridge, Dr. Hadwen, or Miss Lind-af-Hageby, do to keep themselves before the footlights if vivisection were abolished? Their occupation would be gone, and although we cannot say we think the gaiety of nations would be eclipsed by their disappearance from the stage, a number of sentimental folk would doubtless feel the loss of the thrills of horror to which they have been so long accustomed.

THE BATTLE OF THE CLUBS IN AUSTRALIA.

OUR special correspondent in Sydney has from time to time kept the readers of the JOURNAL informed with regard to the controversies which have arisen between the medical profession in New South Wales and the friendly societies. A Warning Notice in respect of such societies in New South Wales has appeared in the JOURNAL since April, 1909. The Australasian Medical Congress in Melbourne in 1908 decided to enforce a wage limit of £204 per annum on the friendly societies, and the medical officers sent notice of termination of their contracts, where necessary. The friendly societies thereupon endeavoured to import medical practitioners from the United Kingdom. In 1910 the medical officers of the friendly society lodges in Goulbourn, New South Wales, endeavoured to induce the lodges to adopt a form of agreement approved by the New South Wales Branch of the British Medical Association, but they declined and formed themselves into an association; the note with regard to Goulbourn was accordingly added to the Warning Notice as to friendly societies in New South Wales in December, 1910. Recently, the medical officers of the friendly society lodges at Casino, New South Wales, have resigned their appointments on account of the failure of the lodges to make an agreement with them on the terms approved by the new South Wales Branch. Casino was added to the Warning Notice on October 5th, 1912. We understand that the lodges have formed themselves into a medical institute, and are informed that they are advertising in the United Kingdom in the hope of inducing medical men to go to New South Wales to take up the positions offered by the proposed medical institute at Casino. The medical profession in the State has very clearly expressed its opinion on the matter through the New South Wales Branch, and we feel sure that any medical man in this country who may see any advertisement of friendly society lodges or medical institutes in New South Wales will fully inform himself of all the circumstances before applying. Any information in the possession of the Medical Secretary of the British Medical Association will be supplied on application to him at 429, Strand, London, W.C., but full information can be obtained from the Honorary Secretary of the New South Wales Branch, Dr. R. H. Todd, Northfield Chambers, Phillip Street, Sydney.

A SUPERSURGEON.

WHEN a playwright sets out to deal with medical matters it is wonderful how wildly wrong he can go, and it would be hard to find a better illustration of this statement than the play called "Instinct," which is part of the present attraction at the Duke of York's Theatre. The incidents depicted take place in the house of an American surgeon, one Bradford Mandover, M.D., F.R.S., evidently a man of international reputation, since our own Royal Society has conferred on him a fellowship. But Mandover is not only a great surgeon; he is also a superman, or so his brother says. He is also, according to the same authority, a bit of a hero, for once when operating he cut his finger with the lancet, and, instead of stopping to attend to his own hurt as a lesser man would have done, he went on with the operation while the poison crept slowly up his arm. The brother is himself a doctor, and he tells the story in defence of his brother and to vindicate the honour of the profession; but really it would have been kinder to have kept it to himself. If it were to get about that the great surgeon was in the habit of operating with a lancet, and was so unskilled as to cut himself therewith, it could surely do no good to his reputation. Still the story serves to establish the point that there are heroes in the profession who will continue to operate even after they have cut their fingers; and that is certainly a very gratifying thought. The busy surgeon has no time to devote to his wife, a lady who is subject to "heart attacks" for which she takes sodium bromide. Her husband is repulsive to her, but she loves him all the same. When she meets him after an operation she recoils from him because there is a spot of blood on his cuff. Whenever she thinks of him she sees his great hands cutting and tearing. With a husband so absorbed in his work her life is naturally empty: and so is the nursery. The worst of these supermen is that they are so apt to be sterile. Neglected by her husband, she takes to her bosom a consumptive poet, not, be it understood, with any idea of filling the empty nursery, but simply to "mother" him, and so gratify her baulked maternal instinct. The poet comes to her bedroom to bid her farewell before she starts travelling for her health, and while there he has an attack of haemoptysis; as a result of syncope from haemorrhage he falls and fractures his temple—that being the description of the accident given by the brother, who is a physician. It is needless to say that there is only one man who could deal with such a condition, and that man is Bradford Mandover. An operation must be performed, and, as is usual in stage operations, it must be done immediately, and without moving the patient. At first Bradford refuses, but finally his superman surgeon's instinct gets the better of the primitive instinct which bids him turn out his wife's lover to die in the gutter, and he consents to let his great hands cut and tear at the poet whom the doctors, with enviable prognostic confidence, had previously given one year to live. His wife's words have not been lost upon him, seeing that before starting the operation he takes off his coat and rolls up his shirtsleeves. This leaves one with the comforting conviction that never again will he come home from his ghoulish work with bloody cuffs. It is fair to say that, in spite of its absurdities from the medical point of view, the play is theatrically effective, and raises the audience to great enthusiasm. Further, it is an excellent foil to the delicious little Barrie play which concludes the entertainment.

INJURIES AND DEATHS FROM ELECTRICAL CURRENTS.

ELSEWHERE in this issue will be found an account of an address by one of the very few medical men who have made any profound study of the injuries and fatalities brought about by electrical currents, namely, Professor Jellinek of Vienna. It is of interest despite the fact that Professor Jellinek had very little to add to what he said on the subject at the annual meeting of the British Medical Association in London in 1910.[1] One reason would seem to be the fact that since knowledge on the subject has become popularized in Austria under the influence of Professor Jellinek (the Austrian Minister of Labour in particular having instituted cinematographic lectures to the working classes on the dangers of electricity) the amount of material for study has greatly diminished; in other words, injuries and deaths due to electricity have become much less common in the Austro-Hungarian empire. Professor Jellinek noted this fact when speaking at the meeting mentioned, and the improvement has apparently continued. From what he had to say on these two occasions it would appear to be indubitable that there is no precise limit of voltage above or below which currents are dangerous or otherwise. A large number of circumstances influence the amount of injury any given current may do, and these are all liable to vary in each and every case. Hence the danger of a current cannot absolutely be predicted from its voltage; every current must, therefore, be treated with respect and caution what ever its assumed strength. One factor which Professor Jellinek regards as of much importance is the mental attitude of the patient towards the injury. If he believes he will inevitably suffer severely from contact with a live wire, or receives a shock unexpectedly, he is much more

[1] BRITISH MEDICAL JOURNAL, 1910, vol. ii, p. 745.

likely actually to succumb to its effect than would otherwise be the case. Forensically the point of chief interest, perhaps, is the fact that when a patient survives an electrical shock his recovery is very complete. It would appear that tissues so gravely burnt as apparently to be beyond recovery will nevertheless commonly do so without much pain or suppuration if given an opportunity. A conclusion of still greater practical importance is that very many cases of apparent death from electrical shock are, in the first place at any rate, merely examples of suspended animation, and that there is great chance of restoring the patient to life and complete health if artificial respiration is commenced with promptitude and skilfully maintained for an adequate period. A further point in first-aid treatment which was brought out by Professor Jellinek at Birmingham is that in dealing with persons apparently killed by electrical shocks, the head should not be lowered more than is essential for the application of first-aid treatment by the Schäfer method, for in many cases there are minute haemorrhages in the brain substance. Those conversant with the methods adopted in the laying of electrical wires can probably imagine for themselves how multiple are the circumstances in which shocks of a more or less dangerous character may be received, but they are best realized by pictures such as those by which Professor Jellinek illustrated both his paper before the Electro-Therapeutic Section of the British Medical Association in 1910 and his recent address at the Royal Society of Medicine. Some of them we reproduced in the year mentioned, and others can be found in an admirable atlas[1] devoted to the subject which was published by Professor Jellinek some three years ago. A copy of it can be found in the Library of the Association.

THE SUCCESSFUL DOCTOR IN THE SEVENTEENTH CENTURY.

Bernier, in his *Histoire Chronologique de la Médecine* (Paris, 1695), gives a summary in verse of the whole duty of medical man. It is addressed to young doctors who wish to succeed in their profession. The doctor who aspires to success, he says, must not be modest, but must do all he can to push himself forward, talking confidently with his brethren. He need not bother about further study, but should use every effort to establish useful connexions. For introduction into families women are useful. Fashionable ladies, devout women, coquettes—all should be conciliated. Every one, even the meanest servant, should be cultivated. The young doctor should bring all his science to bear on satisfying fools. Let him remember that what one says of him another will repeat, and it is from this gossip that celebrity springs. To get the reputation of having much business he must take care not to be found at home; when he is in bed, let his servants say that he has been called out to a case. Let him give out that he has to be up whole nights; that the longest days are too short for him; that he is called everywhere; in short, that the practice so much sought for by others comes to him against his will and overwhelms him. After this he should take care to remark casually that nobody is impudent enough to pay him with cold thanks. This is to make people believe that the harvest is ample and to set every one a good example. Even when his trouble is poorly paid, he should speak of the big fees that are forced upon him for a visit. This hint scattered among good friends may wake up those who are asleep. The young doctor should dress as much like a man of fashion as possible that he may gain the good graces of the ladies. In the street he should bow to one side and the other, courteously saluting every one he passes. He may ride in a chariot or be carried in a chair; two carriers in the street attract much attention. Do not, my son, cries the poet, rising to an enthusiasm befitting the theme, let a foolish modesty lose the chance of making profit. To be something of a quack is a useful thing to a doctor. Let him use well the time of visits, keeping the conversation, as far as he can, on his own merits. Let his successes be attested by dukes and marquises. Everything, it is urged, that can advance one's interest is legitimate; even self-praise is allowed. The poet concludes with an exhortation to the doctor to regulate his conduct by this wise advice, adding that "Virtue in this age is a chimerical good, and if you think of waiting for its help your science will be wasted and you will always crawl." If some parts of this exhortation remind us of the arts of Mr. Robert Sawyer, late Nockemorf, we have the satisfaction of knowing that at the present day the arts which were considered necessary to success in medicine in the seventeeth century are extinct. The puff, direct and oblique, self-assertion, subtle detraction, intrigue, and the whole art of scheming to attain the lofty ideal *monstrari digito et dicier, Hic est*—of course all these things are unknown in this age of professional probity.

THE ARYLARSONATES.

Some recent researches on the pharmacology of the arylarsonates, the group to which atoxyl belongs, were summarized by Dr. Fortescue-Brickdale at the Congress of Applied Chemistry.[1] The fact that atoxyl can cause trypanosomes to disappear from the peripheral circulation is generally known. Since the introduction of this substance in 1905 by Thomas and Breinl a number of allied substances have also been employed, both on experimental animals and in practice. Many of these have been found to have no trypanocidal action. On the other hand, some, such as acetyl-atoxyl, sodium-3-methyl-4-amido-phenyl-arsenate and sodium-3-methyl-4-acetyl-amido-phenyl arsenate, are trypanocidal for certain trypanosomes in experimental animals. An important factor in the production of this action appears to be the amido group. It is to be noted in this connexion that, in test-tube experiments, mixtures of animal serum and solutions of arsenic compounds which contain the amido group form chemical combinations, whereas compounds without amido groups do not combine with serum proteins. Ehrlich attributes the trypanocidal effect of atoxyl to the production of a reduced trivalent arsenic compound, but Breinl and Nierenstein believe that an oxidation occurs, leading to the formation of inorganic arsenic. Their view is that atoxyl when it enters the animal body is partly combined with the serum proteins by means of the amido group. This combination is then oxidized by a ferment, giving rise to nascent inorganic arsenic which destroys the trypanosomes. At the same time another portion of the atoxyl is reduced, the aniline being destroyed and the trivalent arsenic excreted in the faeces. The arylarsonates have been found of value in various forms of trypanosome infection. *T. brucei*, which causes nagana or tsetse fly disease in cattle, multiplies rapidly in the blood of small laboratory animals, and is thus a convenient member of the group for observation. The immediate effect of the injection of atoxyl is almost always favourable, but the trypanosomes recur in the blood after a longer or shorter interval in spite of repeated injections and few permanent cures have been obtained. Better results have followed the use of a combination of atoxyl with various dyes or with mercury salts. Possibly certain forms of trypanosome survive or are developed which are immune to atoxyl but not to some other drug such as mercury. The long course of infection by *T. gambiense*, the cause of sleeping sickness, makes observation on the ultimate effect of drugs very difficult. Mott, in a recent review of the question, inclines to the view that a cure

[1] *Atlas der Elektropathologie.* Von Dr. S. Jellinek.

[1] *Eighth International Congress of Applied Chemistry*, vol. xix, p. 115.

may take place if the disease is treated before the organisms have invaded the subarachnoid space. The difficulty is to know at what point in the course of the infection the nervous structures have become so damaged that the lesions are likely to be progressive, even if all the parasites were destroyed. In surra, the disease of horses and mules due to *T. evansi*, the most successful results seem to follow the use of atoxyl subcutaneously with arsenious acid by the mouth. In some groups more than 70 per cent. of animals naturally infected have been permanently cured by this method.

THE TRING MUSEUM.

On November 17th the Maccabaeans, a club of professional men of Jewish birth, gave a dinner in honour of zoological science, at which the Hon. Walter Rothschild, F.R.S., was the chief guest. Professor Meldola, F.R.S., who was in the chair, in proposing the toast of zoological science, coupled with it the name of Mr. Walter Rothschild, referring especially to Mr. Rothschild's entomological investigations and to the magnificent entomological museum which he has formed at Tring. Professor Poulton (President of the Linnean Society), who supported the toast, spoke of the readiness with which Mr. Rothschild and his collaborators at Tring placed the information in their possession at the disposal of other investigators, including the Oxford school, and of the thoroughness with which the monographs of the Tring Museum were prepared. Mr. L. Fletcher, V.P.R.S., Director of the National History Departments at South Kensington, referred to the fact that Mr. Rothschild was one of the trustees of the British Museum, and had given numerous valuable specimens to its natural history department; while the Rev. F. D. Morice, president of the Entomological Society, dwelt on the services of the Tring Museum to entomology, and mentioned the fact that the museum contained a million and a half specimens, and was the largest collection in existence. Mr. Walter Rothschild, in his reply, confirmed these statistics, and explained that the need for so large a number of specimens was to be found in the requirements of the study of variations in species related to climate and other environmental conditions, and was in part due also to the necessity for the purpose of research of obtaining a large number of specimens of each individual kind. The toast of "The Royal Society," given by Mr. Salaman, was acknowledged by Sir Archibald Geikie, president of the society. During the evening many references were made to the relation of entomology to medicine, and among the speakers were Sir Ronald Ross. The chairman claimed that the importance now found to belong to the mosquito in relation to malaria justified the systematic entomologist, but he, perhaps, hardly realized how little the systematist had done in this direction before the stimulus given to the study of mosquitos by the discovery of the fact that they were the bearers of the malarial disease.

PROGNOSIS OF HYDATID DISEASE OF HEART.

However incompatible a disease may be with the maintenance of life, prognosis is never safe. Supposing that a physician diagnosed hydatid cyst of the heart as big as an orange, he would probably allow the patient a very [illegible] of life. It might be assumed that such a [illegible] sought his opinion on account of urgent cardiac [illegible]. A report recently published by M. André Pélissier reminds us that such a cyst may give rise to no [illegible] at all, and may exist, for some time at least, without prejudice to the patient's life. A man came under the care of Dr. Thibierge at the Hôpital Saint-Louis for [illegible]. He had previously been subject to tuberculous [illegible]

[illegible] in coeur, Bull. et mém. de la Soc. Anat. de Paris.

disease, and when under Dr. Thibierge an attack of acute peritonitis occurred and proved fatal. Yet neither in the past history, nor in the course of the fatal illness, could any evidence of cardiac disease be brought to light. M. Pélissier states that the condition of the heart, as revealed at the necropsy, was truly astonishing. It appeared to be of a great size and irregular shape. A cyst of the dimensions of a very big orange had developed in the walls of the left ventricle, superiorly on its outer border. It extended backwards, covering the posterior aspect of the auriculo-ventricular groove, and was connected with the left auricular appendix by a bridge of reflected pericardium. The cyst was almost entirely invested by pericardium. There were two other hydatid cysts, both developed in the pericardium, small and pyriform. Both these and the large cystic tumours bore abundant daughter cysts: many in the largest were free, floating about in the characteristic clear watery contents. Although the heart was the seat of advanced hydatid disease, its cavities and its valves, and also its walls beyond the area of the large cyst, appeared quite healthy. This accounts for the absence of cardiac symptoms. A similar latency, Pélissier reminds us, has been noted in most cases of hydatid disease of the heart.

THE FUTURE OF THE MENTAL DEFICIENCY BILL.

One of the consequences of the recent check to the Government in the House of Commons and the resulting loss of time is that it has become inevitable that the legislative programme should be curtailed in some directions. The strain of attendance in Parliament prolonged through the winter months is accentuated by the work at Standing Committees in the mornings, and any relief that can be gained in this direction will ease the situation. With regard to the Mental Deficiency Bill, it was clear that a small and determined opposition had it in its power by dilatory tactics to prolong the Committee stage indefinitely and to make it impossible to get the bill through in the limited time available for the Report stage. The Government has therefore announced that it will not press the bill through all its stages this session, but it is anxious that the work so far done should not be thrown away, and has proposed to continue the consideration of Clauses 17, 7, 8, 12, 13, 20 and 24 in Committee, so as to round off the discussions that have so far taken place, and arrive at the fundamental principles as a basis on which a satisfactory and non-contentious bill may be framed for introduction next session. It is hoped that the opposition will thus be conciliated, and that rapid progress may be made with these clauses. There is some talk in view of the new situation of again pressing forward Mr. Stewart's bill, which passed through its Committee stage earlier in the year. It would appear probable, however, that the Government will strongly and successfully oppose the measure being carried in view of the progress made with its own measure, and its declared intention to press the matter next year.

"CONSUMPTION CURES" IN THE UNITED STATES.

The following interesting paragraph appears in the November issue of the *Pharmaceutical Era* of New York: "The observance of Sunday, October 27th, was characterized by the denunciation of 'fake cures' for consumption in thousands of pulpits in the United States, carefully prepared and scientifically correct criticisms and recommendations being the rule. The movement was unsectarian in character, was urged by President Taft in a letter in which he formally approved the plan, and had been carefully worked up by the sending of thousands of pieces of literature to clergymen, in which complete information was given as to fraudulent 'cures.' This literature was prepared in the offices of the National Association for the Study and Prevention of Tuberculosis in this city, and was sent for either directly or

through the many State and local antituberculosis societies scattered through the country. It is estimated that fully 100,000 clergymen were thus reached. From records on file in the office of the National Association it is estimated that fully 15,000,000 dollars yearly is spent by sufferers from tuberculosis in such 'fake' cures, and that the number of such 'cures' aggregates 500. None of these remedies will cure consumption, says the association, and no drug, gas, or other material has been discovered which, when eaten, inhaled, or injected into the system, will kill the germs of tuberculosis without doing serious injury to the self-doser. The only real cure for tuberculosis recognized by the National Association is a combination of fresh air, good food, and rest, taken under the direction of a competent physician, and this fact was emphasized generally in the national pulpits, with accompanying rhetorical blasts against drug fakirs in general and consumption cure 'specialists' in particular."

The Council and Senate of the University of Sheffield have approved the name of Mr. H. A. L. Fisher, of New College, Oxford, to be recommended to the Court of Governors for appointment as Vice-Chancellor of the University in succession to Sir Charles Eliot, resigned. Mr. Fisher, who is a Fellow and Tutor of New College, Oxford, is well known as a writer on political history.

Among the Fellows of the Royal Society recommended by the President and Council for election into the Council at the anniversary meeting on November 30th are Lieutenant-Colonel A. W. Alcock, Sir Ronald Ross, and Professor G. Elliot Smith. It is recommended that Sir John Rose Bradford and Professor Schuster should be re-elected secretaries. A Royal medal of the society has been awarded to Professor Grafton Elliot Smith, F.R.S., for his researches on the comparative anatomy of the brain. The Buchanan Medal has been awarded to Colonel William C. Gorgas, of the United States Army, for his sanitary administration of the works of the Panama Canal.

Medical Notes in Parliament.

National Insurance Scheme.

Medical Practitioners' Panel.

Sir Philip Magnus asked the Secretary to the Treasury, on November 14th, whether he would take steps to secure that a medical practitioner who was struck off the panel by decision after inquiry of the Commissioners should have the right of appeal to a court of law. Mr. Masterman replied, No. Any decision of the Commissioners must be arrived at after due inquiry in accordance with the procedure laid down in the Medical Benefit Regulations, but the matter to be inquired into was of an administrative nature, namely, whether the continuance on the list would be prejudicial to the efficiency of the service. Section 15 (2) (*b*) of the Act represented the deliberate decision of Parliament, which there was no power to reverse, that in any question arising in this connexion an appeal to a court of law would not be possible, or if possible, would not be advantageous to the profession or the practitioner concerned. Questions of a professional nature affecting the status of the doctor as a registered medical practitioner would remain, as hitherto, in the province of the General Medical Council.

Whole-time Service: Income Limit.

Sir Philip Magnus asked the Secretary to the Treasury, on November 14th, whether, for the purposes of the National Insurance Act, he would define what was meant by "whole-time service"; whether a person having an income of, say, £300 a year, who accepted a position as secretary, the hours of service being from 10 to 4, at a salary of £150 a year, was compelled to insure; and whether in that case, a medical practitioner, having agreed to take service under the Act, was required regularly to attend such person when ill for the sum of 7s. a year. Mr. Masterman said that the question of the correct interpretation of "whole-time service" in paragraph (*g*) of Part II of the First Schedule of the Act rested primarily in any specific case with the Commission acting judicially and upon consideration of evidence. Any person or his employer might apply for a formal decision of the Insurance Commissioners, under Section 66 of the Act, upon the point, and it would be impossible to give an answer in the case referred to with any certainty except upon a fuller statement of the facts than was possible within the limits of a reply to a question.

Insured Person's Illness.

Sir Philip Magnus asked, on November 14th, whether, in the event of an insured person taken suddenly ill in a county other than that in which he usually resided, he was required before being able to secure, under the National Insurance Act, medical attendance to produce such evidence as the committee, with the approval of the Commissioners, might determine; and, if so, whether he would state the nature of the evidence required to be produced. Mr. Masterman replied that the exact nature of the evidence to be required was to be determined before medical benefit commenced by the Insurance Committee, with the approval of the Commissioners, and the matter was receiving the consideration of the committees. Sir P. Magnus: Can the right hon. gentleman say the character of the evidence required? Mr. Masterman: When the committees have decided I shall be able to answer that question.

Bacteriological Examinations.

Lord Charles Beresford, on November 13th, asked the Chancellor of the Exchequer whether, in view of the present importance of bacteriological research, and of the fact that an increasing number of diseases depended for their diagnosis and successful treatment upon vaccines, serums, and reactions based upon bacteriological methods, His Majesty's Government intended to provide in populous centres laboratories for the service of insured persons. Mr. Masterman said that it was not the present intention of the Government to take the course suggested.

Sanatorium Benefit.

Lord Charles Beresford asked the Chancellor of the Exchequer, on November 13th, whether he was aware that for a considerable period the Portsmouth Board of Guardians had been doing what was now recognized in the National Insurance Act by way of provision of sanatoriums; and whether the Portsmouth guardians might receive a portion of the money which was being allocated for such provision. Mr. Masterman replied that Section 16 of the Act precluded Insurance Committees from making arrangements with Poor Law guardians, and in consequence it was not proposed to make grants under Section 64 to those bodies.

Lord N. Crichton-Stuart asked, on November 14th, how many sanatoriums had been built under the National Insurance Act; how many were in course of erection; and for how many plans had been passed by the Commissioners under the Act. The President of the Local Government Board replied that the Local Government Board had approved, under the National Insurance Act, 117 sanatoriums and hospitals, containing 4,597 beds. The erection of new sanatoriums and the extension of existing buildings were now under consideration generally by local authorities, who were formulating complete schemes for the treatment of tuberculosis. In reply to a further question, he said that a large number of suitable places not being used for other infectious diseases had been very wisely and economically devoted to tuberculosis.

Sir C. Kinloch-Cooke asked how many consumptives there were in the country, and what proportion the number 4,578 bore to that number. Mr. Burns replied that 70,000 people died in the United Kingdom every year and 300,000 were ill; 9,000 beds were wanted, and in four months, under the Insurance Act, accommodation had been provided for nearly 4,600.

Sir C. Kinloch-Cooke asked whether, as sufficient bed accommodation for 4,578 persons had been secured.

the remaining beds would be found in the next two months. Mr. Burns said that by the time the 9,000 required the beds he had not the least doubt but that that number would be available.

Captain Faber asked whether county hospitals, where other people were taken care of, were being used. Mr. Burns replied that in every case where the local authority could avail themselves of sanitary hospitals owned by county councils or borough councils they had done so; and where there was equally good or better accommodation in possession of voluntary institutions, they had very sensibly sent their tuberculous patients to these institutions. Sir C. Kinloch-Cooke asked whether there were not words in the Act which made it impossible for certain local authorities to take advantage of the Act. Mr. Burns said, No. Under Section 64 it was possible for a county council which previously could not provide hospital or sanatoriums now so to do, and in each of those cases he had sanctioned a token grant of £10 to enable them to proceed with their scheme.

On November 14th the Earl of Kerry asked how many county committees appointed under the National Insurance Act had submitted schemes for dealing with sanatorium benefit; and in how many cases such schemes had been approved or rejected by the Insurance Commissioners. Mr. Masterman said that all the county insurance committees in England had submitted to the Commissioners arrangements for the provision of sanatorium benefit. In all but one of these the arrangements for the treatment of persons recommended for the benefit had been approved by the Commissioners. In Scotland twenty-five county insurance committees had submitted schemes, of which twenty-two had received full and one partial approval, while the remaining two were now under examination. In Ireland twenty-eight county committees had submitted schemes, of which all had received approval as far as they relate to treatment in sanatoriums. In Wales all the county committees had submitted schemes and obtained approval for them. In the few cases in which no schemes had yet been submitted the Insurance Commissioners were in communication with the Insurance Committees on the subject.

Mr. Touche asked whether any, and, if so, what, arrangement had been made for utilizing the institutions under the control of the Metropolitan Asylums Board for treatment of persons suffering from tuberculosis who were entitled to sanatorium benefit; and if it was proposed to introduce an amending bill to enable the London Insurance Committee to enter into the necessary arrangements. Mr. Burns said that he had nothing at present to add to the answer which he gave on November 12th to the hon. member for Plymouth (BRITISH MEDICAL JOURNAL, November 16th, p. 1415).

In reply to Mr. Lardner, on November 14th, Mr. Birrell said that the Women's National Health Association had applied for £25,000, which had been granted. The committee of management of Newcastle Sanatorium had applied for £10,000, and the Local Government Board had intimated that any expenditure which the committee might undertake on behalf of county councils would, with the approval of these councils, be granted. The county councils had applied for a share of the grant on a basis of population, and the grants shown in the following statement had so far been approved, subject to details of expenditure being in accordance with the Local Government Board's requirements:

County Area.	Share of £120,000 allocated on the basis of population.			County Area.	Share of £120,000 allocated on the basis of population.		
Counties.	£	s.	d.	*Counties.*	£	s.	d.
Antrim	[illegible]	[illegible]	[illegible]	Tyrone	[illegible]	10	8
Armagh	[illegible]	19	5	Wexford	2,795	9	7
Clare	[illegible]	0	6	Wicklow	1,659	8	10
[illegible]	[illegible]	16	7				
[illegible]	[illegible]	[illegible]	6	*County Boroughs.*			
[illegible]	[illegible]	[illegible]	4	Belfast	10,576	12	3
[illegible]	[illegible]	[illegible]	3	Cork	2,095	14	10
[illegible]	[illegible]	14	10	[illegible]	8,351	6	1
[illegible]	[illegible]	[illegible]	1	[illegible]	1,052	16	8
[illegible]	[illegible]	17	3	Londonderry	1,114	15	2
Sligo	2,160	11	6	Waterford	750	15	9
Tipperary (N. Riding)	1,718	15	2				

Tuberculous Patients.

The Earl of Kerry asked, on November 14th, if any scheme made by a county committee on the basis of the 1s. 3d. per insured person *plus* a county rate for the treatment of all tuberculous persons in that county had been rejected by the Insurance Commissioners on the ground that 6d. out of the 1s. 3d. must remain intact for the purpose of domiciliary treatment. Mr. Masterman, in reply, said that the Insurance Commissioners had not rejected for the reason indicated any scheme of arrangements proposed to be made by an insurance committee with a county council. They had, however, found it necessary in some cases to advise insurance committees that such arrangements must be framed with due regard to the proposal that 6d. out of the 1s. 3d. per insured person available for sanatorium benefit should, after January 12th next, be allocated to that part of sanatorium benefit which consisted of domiciliary treatment.

Government Medical Service (West Africa).—Mr. MacCallum Scott asked the Secretary of State for the Colonies, on November 14th, how many European and non-European doctors, respectively, were in the medical service of the Government in the British colonies of West Africa. The Secretary of State for the Colonies said that the number (including those employed in the British protectorates) were respectively 206 and 8. In reply to a further question, Mr. Harcourt said that the number of Government medical officers in the British West African dependencies who were allowed private practice was 189 (including eight non-Europeans). In Sierra Leone, the Gold Coast, and Southern Nigeria they were allowed to use in their private practice drugs from the Government stores on payment. The rates charged were calculated at an amount varying from 25 to 35 per cent. over cost price, and in the opinion of the local administration there was no reason to suppose that this system gave the Government officers any advantage over private practitioners. Mr. Harcourt, in reply to a subsequent question, said he would consider the point of native doctors obtaining Government drugs for private practice. Mr. Harcourt further stated that natives in the employ of the British Government in West Africa received gratuitous attendance from Government medical officers. The allocation of that duty to individual medical officers was a matter of local administration. He had no information as to the extent to which the patient was allowed to exercise a choice of medical officer, where opportunities for such choice existed, but said he would obtain it. Mr. MacCallum Scott asked how many hospitals in British West African Colonies had and how many had not attached to them qualified medical attendants other than European. Mr. Harcourt regretted that he did not have the information asked for. The duties and stations of medical officers in West Africa varied continually, and were determined by the local administration in accordance with local exigencies.

Compulsory Notification of Ophthalmia. In reply to Mr. Pointer the President of the Local Government Board, on November 18th, said that he had sanctioned the compulsory notification of ophthalmia of the newly-born in 216 districts with a population of 11,497,277, and he was considering the question of extending the requirement of compulsary notification of this disease to the whole country. There was no present intention of extending sanatorium benefit to this disease under the National Insurance Act, or of making a grant in respect of treatment.

Cost of Public Vaccination. Mr. James Parker asked the President of the Local Government Board whether, in view of the decrease in the number of public vaccinations now being performed as compared with the totals before the passing of the Vaccination Act, 1907, he proposed to make a corresponding reduction in the forthcoming estimates for services connected with the administration of the Vaccination Acts, including the provision of calves and the manufacture and preparation of vaccine lymph. Mr. Burns replied that the amount estimated to be required in the current financial year in respect of the services referred to was considerably lower than the estimates for the period previous to the passing of the Vaccination Act, 1907. The practicability of still further reducing the estimate was receiving consideration.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

Tuberculosis Treatment.

Acting on the suggestion of the Local Government Board, the Public Health Committee of the London County Council addressed a letter to the Metropolitan Asylums Board, asking the managers to confer with the Council and the London Insurance Committee on the proposal that the County Council should make arrangements through the Metropolitan Asylums Board for the reception and treatment of insured persons suffering from tuberculosis.

At the meeting of the Metropolitan Asylums Board on November 16th the Chairman and Vice-Chairman of the Board were appointed representatives to confer with the Public Health Committee of the London County Council on the subject.

A request by the St. Pancras Borough Council that, subject to the consent of the Local Government Board to the appropriation of accommodation, advanced cases of phthisis might be received at metropolitan asylums, was referred to a committee for consideration.

Water Supply.

We have received the report (dated September 5th, 1912) of Mr. C. Perrin, Water Examiner appointed under the Metropolis Water Act, 1871, on the condition of the London water supply during the month of July, 1912. He states that the mean rainfall during that month at twelve stations selected as giving equal representation for all parts of the Thames Basin was 2.70 inches, being 0.45 of an inch above the average mean rainfall for that month during the previous twenty-nine years. The average daily natural flow of the Thames at Teddington Weir during the month was 737.4 million gallons, being 184.3 million gallons above the daily average for the twenty-nine preceding years. The maximum daily flow was 966.4, and the minimum 591.9 million gallons. The average daily flow of the Lee at Feilde's Weir was 51.822 million gallons, the maximum daily flow 72.837 million gallons, and the minimum 42.822 million gallons. The general rainfall of the whole valley above Feilde's Weir was 2.04 inches. The following statement shows the sources from which the water supplied by the Metropolitan Water Board during the month was obtained, the average daily supply from each source, and the relative proportions of the supply from each source:

District.	From the Thames.	From the Lee.	From Springs and Wells.	From Ponds.	Total Supply from all Sources.
Eastern	7,193,600	41,705,900	9,142,700	—	58,042,200
Kent	—	—	23,250,900	—	23,250,900
New River ...	14,425,200	21,409,500	15,757,400	83,900	51,676,000
Southern ...	66,046,700	—	1,938,100	—	67,984,800
Western	68,080,100	65,300	45,200	—	68,190,609
Supplies in bulk	1,786,903	—	438,807	—	2,225,710
Total ...	157,532,503	63,180,700	50,573,107	83,900	271,370,210
Percentage of total supply...	58.051	23.282	18.636	0.031	= 100

The total number of supplies furnished during the month within the Water Board's area of supply was 1,109,801. The total supply divided by a number of supplies shows a daily average of 243 gallons for each supply.

Mr. Perrin gives in an appendix the report on the results of the chemical and bacteriological examination of the London waters for the month of July by Dr. Houston, Director of Water Examinations, Metropolitan Water Board, and also an advanced report giving briefly the general chemical and bacteriological results for the month of August, 1912.

SOUTH WALES AND MONMOUTHSHIRE.

Infant and Domestic Hygiene.

The fourth year of the work carried on in concert by the health authority and the laity of Newport, with the object of improving infant and domestic hygiene, ended on September 30th, and the report relating to it confirms a general belief that it is working on the right lines. As many as three schools for mothers are now at work in the town, and the attendance thereat is increasing. Among the infants of these mothers the infantile mortality in the period under consideration equalled a rate of only 54 per 1,000, an excellent figure, seeing that the population of Newport is mainly industrial. Over 3,989 quarts of milk were supplied to 136 necessitous mothers (the number including nine expectant mothers and thirteen cases of twins), the total expenditure thereon being only £52 11s., although the milk was of excellent quality, containing nearly 17 per cent. over the official standard for milk fat. The classes for cutting out and making babies' garments proved highly popular. Up to the present a maternity benefit club has been maintained, and a considerable number of accounts have been opened and closed during the past years; it seems doubtful, however, whether this part of the work will be continued when the maternity benefit clauses of the National Insurance Act come into operation. The work of the society also includes the delivery of health lectures and the lending of patent playgrounds, these being enclosures some 4 ft. square, with sides about 2 ft. 6 in. high, in which small children can safely play without being constantly watched by their mothers. During the distress brought about by the coal strike the society organized a distress fund for the benefit of expectant mothers and of children under 2 years of age, and the mothers of such children. As for finances, last year, in consequence of material expansion of the work, the expenditure was considerably higher than in the previous period; but it amounted to a very small sum in comparison with the benefits in view. From the beginning of its labours the committee has worked hand in hand with the health department of the corporation, several of whose officials, including the medical officer, Dr. Howard Jones, and the honorary secretary of the society, Mr. P. E. Jones, are members of the staff of both bodies. The society has only two paid officers on its staff, these being two health visitors supplied and paid by the corporation. The rest are all voluntary workers, which accounts for the lowness of the expenditure—less than £115. That the society, whose full name is the Infantile Health Central Committee, is obtaining valuable results would seem to be proved by the figures relating to infantile mortality at Newport. The mean rate for the ten years ending September 30th, 1912, was 141.9 per 1,000 births, while in the year just concluded it was only 108.

Welsh Red Cross Unit.

At the request of the British Red Cross Society, a Welsh Red Cross unit has been organized by Mr. Lynn Thomas, C.B., secretary of the society for Glamorganshire. The unit consists of three doctors, three dressers, two cooks, five nursing orderlies, and five orderlies for general duty. Unfortunately, immediately before the unit started, Dr. Ivor Davies was taken ill. It left on November 12th for Belgrade, where, according to the dispatches of the war correspondents, the need for medical assistance is very great, owing to the fact that the city has been almost denuded of medical men in order to supply the Servian army in the field. The cost of equipping the unit was £1,500, and it is estimated that £1,000 a month will be needed for maintenance. Liberal contributions have already been made by many leading Welshmen; but an appeal is made for further contributions, which should be made payable to the Welsh Red Cross Society Balkan Fund and sent either to the Honorary Treasurer, Mr. David Davies, M.P., The Offices, Llandinam, or to Mr. Lynn Thomas, 21, Windsor Place, Cardiff.

King Edward VII Hospital, Cardiff.

At the last Board of Management meeting, Colonel Bruce Vaughan announced that the King Edward Memorial Fund in connexion with the hospital had now reached the

sum of £26,000. The retiring Lord Mayor (Sir John Curtis) had collected £1,600, and would have increased this sum but for the coal strike. Colonel Vaughan also announced the gift of 1,000 guineas from Mrs. Williams, of The Heath, to endow a bed, and a legacy from the late Mr. William Rees, of Cowbridge, of £720 for any object the finance committee thought proper.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

An Antivivisection Meeting.

An antivivisection meeting was held one afternoon last week in Dublin, and was addressed by Miss Lind-af-Hageby. In her speech she said that from the report of the Royal Commission they would see that the antivivisection movement had amply justified itself, the evidence given at the Commission showing that there was the greatest need for legislative measures to do away with the cruelty that was legally permitted under the Vivisection Act of 1856. She concluded by saying that the permission of vivisection of animals resulted in experiments on human beings, as the vivisection school brought about a lust for experiments that was dangerous. Lord Justice Cherry, who presided, apologized for the small attendance, explaining that it was due to the fact that a meeting for the Society for the Prevention of Cruelty to Children was being held just then. He called this a meeting of a kindred nature. Such a description would probably not be accepted by the majority of members of the latter society. We congratulate the Dublin public on their choice of meeting.

South Dublin Union and the Anatomy Schools.

Some time ago certain members of the Dublin Corporation proposed that in view of the demands made by the medical profession in regard to the National Health Insurance Act, the Dublin unions should by way of retaliation be asked not to send unclaimed bodies to the schools of anatomy. At the last meeting of the South Dublin Union a guardian moved that the sending of bodies of the destitute poor who die in the union to schools of anatomy was a most objectionable practice, and that the master be instructed to see that all bodies not claimed by relatives were decently interred. The mover said that to be consistent those in favour of the present policy should offer their own bodies after death to the anatomy school. It was answered that many did, and both the Chairman and a lady guardian stated that they would be quite willing to give their bodies. It was clearly pointed out that much harm would be done if this motion were carried, and that the poor would be the chief sufferers, as they would have to employ doctors who would be working in the dark owing to insufficient teaching, whereas the rich could go elsewhere for medical advice. The motion was defeated by 32 votes to 6.

Vaccination in Ireland.

Until recently Ireland has been little troubled in comparison to England by the antivaccination craze, but within the last few years agitators have been steadily at work throughout the country, and the results have been shown by the action, or rather want of action, of various boards of guardians. We are glad to see, therefore, that last week the Boards of Guardians of two districts showed their determination to enforce the Act. At Tullamore the medical officer in presenting his half-yearly report drew attention to the steady increase in the number of vaccination defaulters, and to the serious risk to the public health involved. It was decided by 10 votes to 4 to put the Vaccination Act in operation. The Navan Board of Guardians recently came to a similar decision, and at their last meeting the chairman refused to accept a notice of motion to rescind it. At the first annual meeting of the Dublin branch of the Irish Antivaccination League, held last week, the President in his address stated that the year had been very successful; both the Dublin unions had been pledged not to enforce the penal provisions of the Irish Vaccination Acts. All the Dublin members of Parliament had been approached, and had agreed that the law in its present form was intolerable and could not much longer exist. Two million children were exempted in Great Britain and small-pox had not increased; in fact it declined in proportion to the decrease in vaccinations. The branch had asked the Local Government Board to frame a regulation whereby the "conscientious objectors" would not be harassed, but had been told by the Board to go to Parliament. The same authority had admitted that arm-to-arm lymph was advocated and used by some medical officers. The secretary charged the Local Government Board with sending a letter to all relieving officers in Dublin asking them to disregard the orders of the boards of guardians, and to continue sending out the threats of prosecution and imprisonment, but it had been resolved to retaliate, and he was arranging to picket all the dispensaries.

Cerebro-spinal Meningitis in Fermanagh.

Another outbreak of cerebro-spinal meningitis (spotted fever) has occurred in county Fermanagh. A man has been admitted to Lisnaskea Union Hospital in a critical condition.

Election of Medical Officers.

At a meeting of the Monaghan Board of Guardians, Dr. Michael Coyne (Monaghan) was elected to the position of medical officer for Scotstown Dispensary District at a salary of £125 and £30 allowance for rent. At the last monthly meeting of the Waterford Corporation, Dr. J. J. Hogan, resident surgeon County and City Infirmary, was elected medical officer under the Tuberculosis Act. At a meeting of the Ballymahon Board of Guardians, a letter was read from the County Medical Association objecting to the appointment of an outsider as medical dispensary locumtenent, as the board of guardians had passed a resolution that these appointments should only be given to Poor Law medical officers. The chairman and several members said they would make any appointments they liked, and would not be dictated to by the Medical Association.

Consumption Sanatorium Destroyed by Fire.

Last week the Queen's County Sanatorium for Consumptives was totally destroyed by fire. The building, which stood in the grounds of the Queen's County Infirmary at Maryborough, was erected by public subscriptions, the foundation stone being laid at the end of September, 1910. In May, 1911, the sanatorium was opened by Lady Aberdeen, and handed over to the charge of the Committee of Management of the County Infirmary. The fire originated in one of the private apartments, and though help was rapidly given from the convict prison on the opposite side of the road, as well as from the district lunatic asylum and by the police, the whole structure, which was of wood and iron, was within two hours completely destroyed. The inmates, five in number, were removed to the infirmary, and a considerable quantity of the furniture was saved. The original cost of equipment and erection was about £1,000; it is stated that the damage is covered by insurance.

Salaries of Medical Officers.

At a recent meeting of the Carrick-on-Suir Guardians a resolution was moved to increase the salaries of the four medical officers, and fix a scale of increment for every ten years' service. The present salaries are the same as they were sixty years ago. Two medical officers have only £80 a year, and none have over £120, and their terms of service range from fifteen to twenty-eight years. On a division the voting was equal, and the motion therefore fell through. The Baltinglass Board of Guardians recently introduced an initial salary of £173, rising by quinquennial increments to £200 for the medical officer of Rathvilly District. The Local Government Board stated that this initial salary was much in excess of that paid as initial salaries in the adjoining districts; but as the guardians considered it suitable in the circumstances of the district, and confirmed their original resolution, the Local Government Board has decided not to offer any further objection, and has accordingly sanctioned the salary.

Women's National Health Association.

The Women's National Health Association obtained a grant of £25,000 out of the sum of £145,000 which is Ireland's share of the £1,500,000 voted to the United Kingdom for the erection of sanatoriums. Two sanatoriums have already been established with this money—Peamount and Rosscliare; but the hurry with which the whole thing has

been done, and especially the trouble about finding water at Peamount, has apparently bred suspicion in the minds of county councillors, and they may probably now regret the haste with which they made arrangements to take beds at Peamount. Last week the Tyrone County Council rescinded its resolution to this effect, and arranged that a scheme should be drawn up for making local provision for tuberculous patients. The latest suggestion of the Women's National Health Association is contained in a circular letter addressed to the boards of guardians throughout the country, inviting them to allow the association to employ the dispensary midwife to attend patients qualifying for maternity benefit, and saying that the association would supplement the salary of the midwife so as to make it £1 a week, on condition that the midwife gives up private practice and attends only such insured persons as the association may make an arrangement with, and looks after the babies for the first month after birth. This scheme, however, does not appear to have found favour with the various boards of guardians so far, most of them having merely marked it "read."

Foreshore of Belfast Lough.

The condition of the foreshore in Belfast Lough has long been the bane of public boards, public health officials, of private individuals dwelling in the neighbourhood, and of the ratepayer. The sewage from the city is partly deposited on these tracts, which are exposed for many hours twice in the day, and covered with shallow water for an equal space of time; in hot weather not merely does this sewage decompose, but huge quantities of the *Ulva latissima* collect, rot, and lie in malodorous heaps. At first bacterial treatment of the sewage was thought to offer the best solution of the problem; tanks were erected, and some £60,000 were spent; then sedimentation and destruction by copper sulphate of shellfish which furnished an anchorage to the ulva was advocated and another £60,000 spent; this was the plan prepared by the experts of the Royal Commission on Sewage Disposal. Now, however, this scheme is also to be brushed aside, and £100,000 is to be asked for to reclaim a huge tract of foreshore—over 700 acres—on the County Down side of the lough. The City Council and Harbour Commissioners have come to an agreement, and a bill is to be promoted. From a sanitary point of view the proposal would seem to furnish grounds for great hope; but the question is at once asked, Will it not simply transfer the old conditions lower down the lough? and what is to be done with the County Antrim side, where there are also large tracts of foreshore which are at times worse smelling than the County Down side? The public lose confidence in those who promote unfailing schemes that are tossed overboard in a few years, and financiers seem rather aghast at this piling on of burdens when both City and Harbour stock are so low and the future so uncertain.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Antivivisection Shops.

Two or three weeks ago a shop was taken in Shandwick Place and used for the purpose of an exhibition of the imaginary horrors of vivisection. The following protest was issued by Sir William Turner, the Principal, and a number of professors:

Certain antivivisection societies have, in London and elsewhere, adopted the method of renting shops in fashionable thoroughfares and displaying in the windows reproductions of animals or even stuffed animals, professing thereby to exhibit methods of torture which (according to the literature diffused by these societies) is perpetrated by medical men and physiologists upon dumb creatures. At the same time the truth is carefully concealed that an animal subjected to an operation is as completely anæsthetized as is a patient on a surgeon's operating table. The excuse is offered that the appliances displayed in these shops are actually supplied by the makers. But if the appliances used in hospitals were similarly displayed, with models of human beings fastened on them, the exhibition would be so grossly offensive to the public eye that the authorities would forbid it. In our opinion it is not really less offensive to display these travesties of operations upon animals, especially when we know that, by means of animal experimentation, knowledge has been gained (and could only have been thus gained) whereby a vast number of both human and animal lives have been saved and an incalculable amount of suffering has been alleviated. In this connexion we may quote the following from the report of the Royal Commission on Vivisection:

"To represent that animals in this country are wantonly tortured would, in our opinion, be absolutely false."

The occasion for this letter is the opening of a shop of this nature in one of our busy streets. Edinburgh has hitherto been free from the scandal of exhibitions of this kind, and we desire to protest against the establishment of one here as being both an outrage on public opinion and a slur on the memory of the many eminent men who, by their researches into the causation and treatment of disease, have raised the name of our city to so high a position in medical science.

The protest bears the following signatures: William Turner, Byrom Bramwell, Francis M. Caird, George A. Berry, J. Halliday Croom, Thomas R. Fraser, George A. Gibson, Harvey Littlejohn, James Ritchie, E. A. Schäfer, Alexander Russell Simpson, J. Lorrain Smith, Harold J. Stiles, H. Alexis Thomson, John Wyllie.

The exhibition was removed to Nicolson Street. On November 15th an attack was made by more than 500 students on the shop, which was wrecked. A free fight between the assailants and the police ensued. Several policemen and students were hurt and had to be taken to hospital. Ultimately, twenty-three students were arrested.

India.

[FROM OUR SPECIAL CORRESPONDENTS.]

The Pasteur Institute of India.

The report for the year 1911 has been drawn up by Major W. F. Harvey, I.M.S., and Captain H. W. Acton, I.M.S. The total number of persons treated in the institute was 2,268—1,971 Indians and 297 Europeans. Among these 43 deaths took place, 1.9 per cent. of treated. Of this number 14, or 0.6 per cent., were accounted failures. Only 1 death occurred among the Europeans treated. The disparity depends, according to the report, on a variety of circumstances favouring the European. Data are being collected in order to show the mortality among persons bitten at the same time but not treated. The financial position of the institute is sound. The income of the year was Rs. 69,949, and the expenditure Rs. 46,460. The investments amount to over a lakh of rupees. Useful additions have been made to the buildings. The institute performs, in addition to its proper function, a substantial amount of clinical and pathological research. Feeling reference is made to the death of Major G. Lamb, I.M.S., who, as director, took such a lively interest in the work of the institution, and devoted himself so sedulously and successfully to scientific investigation.

The Countess of Dufferin's Fund.

The twenty-seventh annual report of the National Association for Supplying Female Medical Aid to the Women of India, compiled by the honorary secretary, Lieutenant-Colonel F. O'Kinealy, I.M.S., sets forth the transactions of the year 1911. It gives evidence of continued progress of this excellent movement. The institutions supported in whole or in part by the fund are, as is shown by a map prefixed to the report, scattered thickly throughout the whole of the Indian empire, including independent native States. Working under the general control of a central committee are 13 provincial branches and 140 local and district associations. There are 177 hospitals, wards, and dispensaries for the treatment of women, and the number of women and children treated in these in 1911 was 1,254,677. There are 56 fully qualified lady doctors employed by the fund, 92 assistant surgeons, and 342 hospital assistants, besides numerous nurses and midwives; 586 women are undergoing medical education, which is a prominent object of the fund. Lady doctors are settling in private practice in increasing numbers in populous centres. Discussions are taking place regarding the raising of the status and pay of lady doctors, and even creating a "Women's Indian Medical Service," and regarding giving qualified lady doctors in charge of hospitals a more independent position. The finances of the fund are equal to its present requirements; but private

subscriptions are meagre, and the provincial Governments are unable to give increased grants in support of the proposed alterations.

ST. JOHN AMBULANCE ASSOCIATION.

The Indian branch of the St. John Ambulance Association was started in the year 1900, and during the first decade of its existence it has spread all over the Indian Empire. The report for the year ending September 30th, 1911, drawn up by the Honorary General Secretary, Major R. J. Blackham, R.A.M.C., Knight of Grace of the Order of St. John, indicates commendable activity and progress in teaching first aid, home nursing, and domestic hygiene to soldiers, police, railway men, students and scholars, mill employees, miners, and members of the general community. There are 10 provincial centres, 18 native state centres, 62 district centres, 8 railway centres, 3 town centres, and 8 others, making a total of 109 centres, in each of which the work of instruction and examination is keenly pursued. Indian officials and natives of position take an active interest in the proceedings, and medical officers lend willing aid in teaching and examining. The list of office-bearers, headed by His Majesty the King, is long and distinguished, and the catalogue of life members, which includes a great number of Indian nobles and gentlemen, is satisfactory, and will probably undergo increase as the objects and operations of the association become more generally known and appreciated.

Hong Kong.

[FROM OUR SPECIAL CORRESPONDENT.]

THE PUBLIC HEALTH.

THE colony of Hong Kong consists of an island of that name, together with a certain amount of territory on the adjoining main land. Only an area of some 48 square miles is under the control of the Sanitary Board, and it is to this portion that relates the joint report for the year 1911 of the principal civil medical officer, Dr. Atkinson, and the medical officer of health, Dr. Clark. Its estimated population is a little under 374,000, of which 18,837 persons are non-Chinese. In both sections of the population there is an excess of adults; and over half the whole population are between the ages of 20 and 45. The old type of Chinese dwelling in which the non-European population dwells is gradually being replaced by premises erected in accordance with the Public Health Ordinance of 1903, and a certain improvement in the healthiness of the native quarters is thus being brought about. During the year under consideration, however, progress was in some respects discounted by an influx of refugees from the revolutionary area of Canton, and this led to a certain amount of overcrowding. The corrected birth-rate is given as 6.9, but this is a figure of little interest, owing partly to the deficiency of women in the population and partly to registration of births being not compulsory. The general death-rate was 20.74 per 1,000, this being made up of a death-rate of 21.13 per 1,000 amongst the Chinese, and of 13.38 per 1,000 amongst the non-Chinese sections of the population. Analysed still further, the death-rate for Europeans and other "whites" was 8.7, for East Indians 17.9, and for races classed as mixed and coloured 23.8. The deaths from phthisis among the Chinese were equal to 10 per cent. of the total deaths in that community, as compared with 10.3 in 1910 and 10.7 in 1909, and those from other forms of tuberculosis bring up the percentage to 15.7. Considerable efforts have been made during the past few years to put a stop to the habit among the lower classes of spitting in public places, and on footpaths, walls, etc. Notices have been posted in many public places, lectures have been given, and leaflets distributed, calling attention to the dangers of the habit. It is hoped that by these means, coupled with an improved sanitary [illegible] death-rate from phthisis, which [illegible] be reduced. Plague accounted for [illegible] deaths, small pox for 272, typhoid fever for 107, [illegible] puerperal fever for 7, cholera for 5, [illegible] fever for 5, and scarlet fever for 1. Most of the [illegible] deaths occurred in the No. 9 health district, which contains many old houses with basements and defective walls. Active antiplague measures are constantly maintained, the aims including the exclusion of rats from all dwellings and the collection of all dead rats, these being placed when found in bins containing a carbolic acid disinfectant. There are 650 of these bins distributed throughout the city and its suburbs, and each of them is visited twice daily, and the rats therein taken for examination to the Government bacteriologist. Before the onset of the regular plague season—namely, from March to July—special efforts are made to destroy rats in various ways; by poison, by traps, and by bird-lime boards. All native dwellings are systematically cleansed and washed out at least once in three months with a flea-killing mixture. The measures also include lectures and addresses in explanation to induce the native population to participate in antiplague work. Some 87,000 rats were caught or found dead during the year, and 269 of them were found to be plague-infected. The cases of typhoid fever are regarded as largely due to the eating of raw salads, grown in Chinese market gardens in which it is customary to water and manure plants with diluted human excreta. Hence residents in the Far East should carefully avoid such articles of food as watercress and lettuce. The incidence of typhoid is chiefly on Europeans. The mean temperature throughout the year was 72.1, the relative humidity being 79. As many as 90.55 inches of rain fell, the figures for May and August respectively being 22.145 and 30.060. The maximum temperature in any month was 87.0 (June), and the minimum temperature 55.5 (January).

Special Correspondence.

VIENNA.

New Dissecting-Rooms for the Medical School at the University of Vienna.—New Regulations for Medical Service in the Austrian Mercantile Marine.—The Austrian Red Cross Society and the Balkan War.

THE lack of proper accommodation for students wishing to follow the anatomical classes, which was referred to in a previous letter (August 3rd, 1912), has caused a certain amount of ill-feeling in medical circles in Vienna, and has given rise to continual protests from the students, who feel that they are being unjustly defrauded of their rights. It was also the occasion of a most unusual decision on the part of the anatomical professors, which resulted in the granting of the "*numerus clausus*" for students of anatomy. It was the taking of this resolution by the professors that prompted the Board of Education (on which the responsibility for the existing state of things really rests) to grant funds for the erection of two new dissecting-rooms over the four already in existence. Unfortunately the new buildings, which will not be completed for another three months, are no larger than the old ones, and are therefore incapable of holding more than 125 students at a time. Since, therefore, in spite of the extra rooms, there will only be sufficient accommodation for 750 men, and there are over 1,500 applicants for admission to the anatomical lectures, it is not surprising that considerable indignation has been aroused by these half-hearted measures on the part of the board; and all those concerned have expressed the determination not to rest until Vienna possesses an anatomical institute worthy of her position in the front rank of science and medicine. The students are supported in this matter not only by their teachers, but by the whole profession and by the bulk of the public, who fully recognize the necessity for providing the future guardians of the public health with the means of obtaining a thorough knowledge of the science of anatomy.

New regulations concerning medical service in the Austrian Mercantile Marine have been issued recently by the Austrian Chamber of Commerce, in virtue of which every vessel trading under the Austrian flag or in Austrian ports is bound, if the number of her passengers exceeds 50 or the total number of persons on board over 100, to carry a fully qualified doctor on every voyage. Should the number of passengers exceed 300, or if the vessel carries, together with the crew, more than 500 persons, the ship's officers must include two doctors. Each vessel is bound to be provided with a properly equipped dispensary, where, if the occasion arises, a major operation

can be conveniently performed, and each doctor has the right to a private cabin for his own personal use. As regards fees, the third-class passengers and crew are entitled to gratuitous attendance and medicines, whilst the holders of first-class and second-class tickets are expected to pay the usual fees. These fees, by the way, are usually those customary at the port from which the vessel has sailed. As regards nursing, a female nurse is provided if the boat carries over 50 women passengers, two if the number exceeds 150, and so on. The doctor's salary is a matter of arangement between himself and his employers, but it is only fair to add that in the Austrian service this arrangement is usually by no means an unsatisfactory one.

Ever since the outbreak of hostilities in the Balkans the Austrian Red Cross Society, being the nearest of its kind to the seat of war, has dispatched numerous nursing and first-aid expeditions to every army in the field. As a rule, these parties consist of from four to eight surgeons (either the leading men from our big clinics or their assistants) and from ten to eighteen nurses, who carry with them everything that is necessary for operations and the dressing of wounds, Greece and Montenegro in particular being almost destitute of medical comforts. Reports have already reached us that the Red Cross volunteers are overwhelmed with work, for the losses amongst the combatants are enormous, and the medical and sanitary arrangements for the armies of the united kingdoms are hopelessly inadequate. It should be borne in mind that the Austrian branch of the Red Cross Society prepared to take the field at a moment's notice directly the trend of the political negotiations proved war to be imminent, and it was therefore the first to bring help to the Bulgarian and Montenegrin armies. As the number of wounded increases daily new relief expeditions are constantly leaving Austria, and these naturally constitute a severe strain on the resources of the society.

Correspondence.

THE URGENT NEED OF A STREET AMBULANCE SERVICE FOR LONDON.

SIR,—As a member of the London County Council, I have read with interest your leading article of November 9th and the excellent report of the debate in the Council of November 12th. I quite agree with the opinion expressed in your leading article, namely:

> It is idle for the County Council to endeavour to thrust its responsibility on to other authorities. No other local authority in London can attempt the work without being liable to be surcharged. It is the County Council's responsibility alone. . . . If the Home Office and the County Council would cordially co-operate, an adequate service might be in working order before the end of the year.

The Metropolitan Ambulance Act, 1909, is not an obstruction in the way, but the very instrument which enables immediate action to be taken. The public are indebted to Sir William Collins for his action and energy in the matter. It was only after the Home Office, on receiving the report of the Departmental Committee in 1909, declined to introduce legislation that Sir William Collins introduced his bill. When that bill was in Grand Committee in the Commons on August 17th, 1909, the question of the authority—whether the London County Council or the Asylums Board—was threshed out, and by 28 to 1 it was decided that the London County Council should be the ambulance authority for London.

Moreover, in the Lords, Earl Beauchamp, speaking for the Home Office, said:

> The position of the Home Office is this: There is an urgent need for the establishment of a good ambulance service in London; but, in the opinion of the Home Office, it would not be possible for the Metropolitan Asylums Board to undertake that duty now, and there is some fear that the public, at any rate, would imagine that the ambulance of the Metropolitan Asylums Board was liable to infection. . . . The London County Council would probably be able to use a certain amount of land and a certain number of stations, perhaps, and altogether, in the opinion of the Home Office, they are the proper authority to undertake the work.

Mr. (now Lord) Gladstone, the Home Secretary, also said:

> The Metropolitan Asylums Board was not constituted and was not specially designed as an administrative authority for the metropolitan area apart from the matters specially entrusted to it. Legislation would be required to do this, and he did not see the smallest chance of getting the House of Commons to accept such a body. That being so, the alternative proposal might involve dangerous delay, and all were agreed that this was a matter of urgency.

Thus the Home Office, which (most anomalously) is the police authority for the county of London, decided against the Asylums Board and for the County Council.

As you, Sir, say, "Not investigation, but action, is needed," not further parliamentary powers, with all the doubt and delay incident thereto, but the will and the small expenditure needful to put in force the beneficent powers already entrusted by Parliament to the County Council.—I am, etc.,

London, W., Nov. 18th. SAMUEL LITHGOW.

THE SURGICAL TREATMENT OF RECTAL CANCER.

SIR,—I have read with much interest Mr. Harrison Cripps's paper on the above subject, which appeared in the JOURNAL of October 5th, and I much regret that I was unavoidably prevented from attending the meeting and taking part in the discussion.

I have also read the criticisms offered by my colleagues, Messrs. Mummery and Gordon Watson, on this paper in the JOURNAL of November 9th, and Mr. Cripps's reply in the JOURNAL of the following week. I must say that I am entirely in agreement with my colleagues in their praise of the sigmoidoscope as a means of diagnosing high-lying carcinoma—that is, cases which are situated beyond the reach of the finger. Mr. Cripps, in his reply, adheres to his original statement—namely, that the instrument "is worse than useless, being at times positively misleading. Cancer can never be diagnosed to a certainty by sight alone; touch only by indicating hardness and friability has to be relied upon." No doubt the sense of touch is the more important when distinguishing between a benign and malignant neoplasm of the rectum. But in early cases where the lesion is still small—perhaps not larger than a shilling and situated beyond the reach of the finger—the sigmoidoscope will reveal its presence, when a bimanual examination can then be carried out under anaesthesia to determine, or rather to confirm, its nature. Had the lesion not been seen through the sigmoidoscope, it is more than likely that its presence would have escaped notice by the bimanual method.

In advanced cases the sigmoidoscope is not necessary, as the neoplasm, whether in the upper rectum or pelvic colon, can be felt by the bimanual method. But these are usually the "too late" cases! It is the early cases it is so necessary to recognize, in order that, by an early removal, the patient may have the best chance of a complete and permanent cure. I could instance several cases from my own practice in which, thanks to this instrument, a small and unsuspected cancer has been seen either in the pelvic colon or at the recto-sigmoidal junction, in which a diagnosis by the bimanual method would have been uncertain, if not impossible. Several of these cases afterwards underwent operation with the best results.

I cannot understand Mr. Cripps's objection to the sigmoidoscope; for the disease having been located by its use, further methods of examination can then be employed. For my part, I find the sigmoidoscope as indispensable for rectal work as is the cystoscope in urinary surgery.

I quite agree with Mr. Cripps in his statement, "that an overwhelming percentage of cases are situated within 6 in. of the anus," for this will include cases situated at the recto-sigmoidal junction, which modern anatomists place at 5 in. from the anus. I must, however, differ from him in his opinion, namely, "that therefore they can be dealt with from below," for I have found that in most cases of cancer at the recto-sigmoidal junction, and involving the entire circumference of the bowel, it is impossible to get above the growth satisfactorily by a perineal excision, and have had to open the abdomen in order to do so. I have therefore come to the conclusion that such cases are best dealt with by the combined operation.

I am glad to find myself in accord with Mr. Cripps when he says, "If the patch of disease is limited, only involving a portion of the circumference, it is a great advantage to remove the growth with a moderate margin free of disease and not the whole circumference of the bowel." I have had several of these cases of limited excisions where the growth has been confined to the posterior rectal wall and not larger than a shilling. They all did well and no recurrence has taken place, although the last was done over five years ago.

I fancy the real question now before the profession is: What is the best method of dealing with cases situated at the recto-sigmoidal junction or low down in the pelvic colon—cases which cannot be dealt with from above nor from below alone? For such cases four courses are open:

1. The combined operation, together with bringing the pelvic colon down to the anus.
2. The combined operation with a rectorrhaphy through a parasacral incision.
3. The combined operation with the formation of an abdominal anus and removal of pelvic colon and rectum.
4. Colostomy.

The first is the ideal operation, for the sphincter is preserved, and the patient subsequently has the use of the normal anus, but there is always the risk of some sloughing of the gut with resulting troubles.

In the second, excision of the coccyx, and probably part of the sacrum, increases the gravity of the operation. A stricture at the site of the anastomosis will form which requires treatment for some months by bougies, but the after-result is excellent.

In the third the patient is saddled with an artificial anus, but there is less chance of recurrence and more chance of recovery from the operation than in the other two.

As to colostomy, this should be reserved for all inoperable cases and for cases which, though operable, would be attended with too great a risk to life. Such is the case with males, and especially stout subjects. I believe that the combined operation in these is attended with a mortality of at least 50 per cent.

There is no doubt that women stand this operation far better than men; indeed, with them I have been uniformly successful.—I am, etc.,

London, W., Nov. 13th. F. Swinford Edwards.

Sir,—I was interested to read in the Journal of November 9th Mr. Harrison Cripps's reply to my letter and that of Mr. Gordon Watson's. I do not think I have anything to add to my original statements, as Mr. Cripps has not brought forward any fresh arguments. There is, however, one little misunderstanding I should like to clear up. Mr. Cripps's figures are taken from cases in private practice only, and he assumes in his letter that mine include hospital cases; but, as a matter of fact, the figures I gave were taken entirely from my own private practice and excluded all hospital cases, so that they were exactly comparable with those of Mr. Cripps. The difference in the percentages for cases of high and low carcinoma cannot therefore be explained on the assumption that his were private cases and mine were not, and I think we must infer that the difference is to be accounted for by the earlier diagnosis rendered possible by the sigmoidoscope. Many cases of high carcinoma of the rectum, which are at first out of reach of the finger and only diagnosable by means of the sigmoidoscope, in course of time get pushed lower down into the bowel and become easily palpable. Earlier diagnosis, which alone is made possible by the sigmoidoscope, may therefore possibly account for the much larger percentage of high carcinoma of the rectum occurring among my cases than among those of Mr. Cripps.—I am, etc.,

London, W., Nov. 14th. J. P. Lockhart Mummery.

Sir,—[illegible] which has appeared in the British Medical Journal of November 2nd, 9th, and 16th, as a result of Mr. Cripps's excellent paper in the Journal of October 5th, has interested me greatly. The early diagnosis of rectal cancer is of the utmost importance, and for this purpose the use of the sigmoidoscope in doubtful cases is indispensable. Indeed, I [illegible] say that a rectal examination cannot be considered to be absolutely complete unless such an endoscopy has been carried out. For this reason, I cannot agree with Mr. Cripps when he states that for the purpose of diagnosis the sigmoidoscope is "worse than useless, being at times positively misleading."

At the same time, I do not agree with Mr. Mummery that "cancer can be more certainly diagnosed by sight than by touch." Personally, I rely upon digital examination, and make use of the sigmoidoscope for the purpose of confirming the diagnosis, or to enable me to remove a portion of the suspected tissue for microscopical examination. The mere inspection of a neoplasm does not give much information in regard to consistency, mobility, and extent of possible permeation—points that are of much importance when arriving at a conclusion as to the nature of a growth and the prospects of a successful removal.

In regard to the height above the anus at which carcinoma of the rectum most commonly occurs, it must be remembered that, anatomically speaking, the rectum is only 4½ in. long, and therefore any growth involving the rectum is within easy reach of the finger. Growths implicating the terminal portion of the pelvic colon—that is, the portion extending from the left sacro-iliac synchondrosis to the middle of the third piece of the sacrum—can also, in most instances, be felt quite distinctly, and the presence of an early growth in this situation should not be missed by a careful digital exploration. When carcinoma attacks the pelvic colon at a higher level than this the growth is usually situated at or near the middle of the loop of the pelvic colon or at the commencement of the loop. In these situations the growth is entirely out of reach, and is often too small to be made out by bimanual examination, even under an anaesthetic, because it is of the circularly infiltrating or whipcord type which produces stenosis before any other symptoms signifying its presence are developed. In these cases the gradual onset of chronic intestinal obstruction is the symptom which brings the patient for relief, and laparotomy is the surest means of confirming the diagnosis. In such cases I have not found that the sigmoidoscope affords much information owing to the difficulty of introducing the instrument to the required level when the abdomen is considerably distended.

Mr. Mummery takes exception to Mr. Cripps's statement that "an overwhelming percentage of cases are situated within 6 in. of the anus, probably not 10 per cent. originating above this height." In a letter to the Journal of November 9th Mr. Cripps gives the percentage of his cases occurring within 6 in. of the anus as 86.4, and that of cases above the level of 6 in. as 13.7. I agree with Mr. Cripps's estimate, and in support of this I should like to draw attention to a collection of 59 specimens of cancer of the rectum and of the terminal portion of the pelvic colon which are in the museum of the Cancer Hospital. With three or four exceptions these specimens have been obtained from my operation cases, and can be seen by any one who may like to inspect them. The most striking point which this collection brings out is that there is not a single growth among the lot in which the lowermost border is at a greater height than 5 in. from the anal margin. The following table of the distances of the lowermost edges of the growths from the anal margin is interesting:

Distance above Anal Margin.	No. of Cases.	Percentage.
Between anal margin and 1 in. above it ...	30	50.8
Between 1 and 2 in. above anus	16	27.1
Between 2 and 3 in. ,, ...	6	10.1
Between 3 and 4 in. ,, ...	6	10.1
Between 4 and 5 in. ,, ...	1	1.6
Between 5 and 6 in. ,, ...	0	0

From this table it is apparent that only 7 of the 59 cases—that is, 11.8 per cent.—were above the level of 3 in. from the anus. The peritoneal reflection is approximately 3½ in. above the anal margin, and therefore, according to this evidence, only 11.8 per cent. of growths in the rectum and in the terminal portion of the pelvic colon occur above the level of the peritoneal reflection—statistics which differ considerably from Mr. Mummery's estimate that 63 per cent. of growths are situated above that level.—I am, etc.,

London, W., Nov. 18th. W. Ernest Mills.

THE TREATMENT OF NEURASTHENIA.

SIR,—Many of us have been anxiously awaiting Dr. Haddon's reply to Dr. Branson's letter and some explanation of his own of October 14th. In my experience neurasthenia is undoubtedly in most cases a toxaemia (which in all probability is sometimes the result of improper food). The temporary relief of such cases is comparatively easily secured by several methods, of which perhaps spa treatment with its eliminatory action is the most efficient and therefore the most satisfactory. To cure, however, the underlying cause in each case must be eradicated, and this is a much more difficult and tedious business. A large number of us are in a position to keep their patients under their own personal supervision and to ensure obedience, if Dr. Haddon will only kindly enlighten us as to the dietetic and other details of his three-day cure. Most of us are, I am sure, more open to conversion than, as he gives to understand, are medical superintendents of asylums, and are anxiously awaiting Dr. Haddon's prescriptions to enable us to cure many thousands of victims who suffer in a greater or less degree. —I am, etc.,

Llandrindod Wells, Oct. 26th. G. VIGERS WORTHINGTON.

SIR,—I was much interested in Dr. Brooks's article of October 12th, as I have frequently observed that chronic *B. coli* infections of the urinary tract are usually accompanied by symptoms of neurasthenia, and that these symptoms disappear after the use of autogenous vaccines, even in those cases in which the urinary infection remains unrelieved. I asked myself a question similar to the one which Dr. Donald asks in your issue of October 26th.

> 'If we make a careful bacteriological examination of the urine in all cases of neurasthenia, shall we not frequently find a bacterial infection?'

After a year's investigation I have come to the conclusion that a urinary infection is not common in neurasthenia, but it does not follow that absorption of faecal micro-organisms or their products from the bowel is not a frequent cause of neurasthenia, although the point is difficult to prove.

It is obvious that if the *B. coli communis* in the urinary tract may produce symptoms of a general toxaemia, there may be conditions under which this same constant inhabitant of the intestine may cause similar symptoms.

In the hope that absorption is followed by the development of specific agglutinins in the blood, I have in a fair number of cases of neurasthenia (some, it is true, with mucous colitis) isolated a number of bacteria from the faeces, made a vaccine of the one which agglutinated most readily with the patient's serum, and have already noted much improvement in each patient as the result of the administration of the vaccine.

Hitherto I have not encountered streptococci in the numbers mentioned by Dr. Brooks, and have not employed them in my vaccines.

If it is held that a coliform bacillus can be identified by fermentation tests, then my finding is that the responsible micro-organism may be one of several varieties of *B. coli*, and it follows as a practical drawback that a very laborious routine is necessary for the diagnosis and treatment of any particular case.

If, however, any of your readers have evidence of the efficacy of stock vaccines in such cases, it is possible that a simple and practicable method of treatment of neurasthenia on such lines might be discussed in your columns. —I am, etc.,

Birmingham, Oct. 26th. LEONARD G. J. MACKEY.

THE SCIENTIFIC ORGANIZATION OF PHYSICAL CULTURE IN ENGLAND.

SIR,—The science of gymnastics, which took shape and form in Sweden in the early part of the nineteenth century, seems to have reached Berlin in the early Forties, passed into Paris a few years later, and Dr. McLaren in the Fifties developed it in England. Himself a surgeon, he wrote the handbook of gymnastics for the army, and so gave gymnastics a scientific send-off. Why do trained medical men neglect the scientific study of physical training? Recently I saw some laymen appointed as superintendents of physical training. Why do we inside the medical profession not regularize the training and make it a truly scientific study carried on within our medical schools?

Until the past twenty years the social side of the student's life was little cared for. Clubs and gymnasiums for them were rarely found in our medical schools. To-day such side-shows are everywhere in evidence. But why is not the gymnasium definitely annexed to the physiological department of a medical school and a scientific medically trained teacher placed for physical instruction on the school staff?

A physical training demonstrator so appointed would regularly train the students who desired a course. The physiological action on the body would be observed. A mass of observations would be collected, and, finally, a certificate in physical training would evolve which would later on become a diploma. For army and navy medical competitions we should later on ask for a gymnastic certificate, and so take the young officers ready trained into the service.

Medical men so trained would gradually find their way into superintendents' appointments in important gymnasiums, and the physical training of the country would be based on possibly sounder lines. Anyway, a number of scientific men would be interested in it.

Medicine in its forward march must year by year annex new territories. The scientific physical training of the people is a field awaiting culture. Let us medical men scientifically cultivate it.—I am, etc.,

London, Oct. 27th. G. J. H. EVATT, Surgeon-General.

VISION OF SCHOOL CHILDREN.

SIR,—I read Mr. Moxon's report on his work in the special department for London County Council school children suffering from defective vision, at the Royal London Ophthalmic Hospital, published in the JOURNAL of October 19th last, with great interest, and as a colleague of Mr. Moxon's in that department, and having worked in the general refraction department at that hospital and elsewhere for the past seven years, and having consequently examined a very large number of school children, I can endorse his statements in every particular, and am in thorough agreement with his views and conclusions.

There are a few points I should like to draw attention to, in addition to, and in support of his conclusions:

The first and, in my opinion, most important is the prevalence of and increase in the number of cases of acquired myopia. Having worked so long in the refraction department of one hospital, I have had the opportunity of keeping a great many cases under observation for a number of years—a number of my cases which were a few years ago hypermetropic, as much as 3 D. or 4 D. in some instances, are now myopic. This I attribute very largely, if not entirely, to overwork, or injudiciously apportioned work; of this latter, sewing is the most fruitful source of eyestrain in very young children, leading to development of myopia. The children are encouraged to make very fine stitches, working often in a cramped position and in a bad light. Attention is drawn to this in many school inspection reports.

In the second annual report of the Ayrshire Secondary Education Committee for 1911 the medical officer lays particular stress upon this point, stating that sewing done by children at too early an age, and particularly fine stitching, is a most certain cause of eyestrain, leading to defective vision in after-years.

The school inspection reports for Forfarshire and Salop for 1911 contain similar remarks by the medical officers. In the school inspection report for Rutland (1911) the medical officer notes that little children under 4 years of age are made to do what is termed "back stitching," and that this is most detrimental to their eyesight. The needlework inspector has been obliged to revise the scheme of work for these little ones. For some years I had been noticing an increase in the number of cases of former hypermetropes which had become myopic, but I think of late there is a slight change for the better, now that school inspection and treatment has been put on a sounder footing. But much still remains to be done.

As Mr. Moxon points out, $\frac{6}{9}$ is not an unreasonably high standard. Most normal-sighted children can read $\frac{6}{9}$, and,

as is well known, many myopes have a high degree of visual acuity with correction. One of my own private cases, a young fellow of 19, could almost read $\frac{6}{4}$ with his full correction. I consider that every child that fails to read $\frac{6}{9}$ should be noted for examination by an ophthalmic surgeon. Of course children sometimes fail through nervousness, but this can generally be recognized with a little care and patience.

A class of case that is often overlooked is the high hypermetrope with good distant vision. Many such children who are very backward are often considered stupid or lazy, until it occurs to some one to have their eyes examined. On being fitted with suitable glasses, the result is often surprising, the whilom dunce becoming a bright and intelligent scholar.

I quite agree with Mr. Moxon as to the advisability of inspecting medical officers being supplied with notes of some kind, as to the cases of children who have been under treatment, to avoid their being sent back unnecessarily. Teachers should be instructed not to send cases back unless there is obvious deterioration in their vision, or obvious disease of the eyes. I suppose it happens to all of us to have cases referred back, and find that they are those that we were particularly satisfied with—for example, cases of high mixed astigmatism with between $\frac{6}{12}$ and $\frac{6}{9}$ vision. Some teachers appear to believe that any eye can be made to see $\frac{6}{6}$ with the correct glass. Some system by which the inspecting medical officer could be supplied with a brief note as to the character of the case—as, for example, "A. B., aged 12; high mixed astigmatism; vision $\frac{6}{12}$, satisfactory"—would save much needless travelling on the part of parent and child.

I should judge, from what I hear, that many teachers are anything but discriminating as to the capacity of their pupils for work. Recently I was consulted at the hospital by a mother, as to the advisability of her daughter doing home work. The case was one of low myopic astigmatism, which did not in any way suggest progressive myopia; the child had recently had a nervous breakdown, and the myopia had increased over 1D. in less than nine months. Comment is needless.

In the case of a number of school children written instructions are necessary to ensure their proper treatment by the teachers, but to do this in every case where it is necessary would add enormously to the surgeon's work, and be impossible on occasions, when one has to see between thirty and forty children in a morning, as happens when a number of cases come up for re-examination or inspection. In all the more important cases I endeavour, whenever possible, to give written instructions. Verbal instructions are, I fear, overlooked or ignored.

I make a point of seeing all young myopes once a year, and, of course, cases of progressive myopia more frequently. All cases of high astigmatism in which the vision does not come up to a satisfactory standard at the time of examination I order to report after three or four months, and it is often most gratifying to find that vision has improved to a surprising degree with constant wear of suitable glasses. Not very long ago I saw about half a dozen such cases in which vision had come up to little short of $\frac{6}{6}$, from less than $\frac{6}{12}$, after constantly wearing glasses for three or four months. In such cases I give instructions that as long as the glasses are comfortable, and fit, they need not report again. It seems to me unnecessary that such children should come up once a year as a matter of routine. If vision drops at all, or the frames get tight and uncomfortable, then they should report. I find that, as a rule, the better-class parents, who take an intelligent interest in the welfare of their children, are glad to carry out the doctor's instructions, and bring them up for inspection or re-examination, as directed, quite apart from any instructions on the part of the school authorities.—I am, etc.,

GEO. T. MOULD,
Chief Clinical Assistant, Royal London Ophthalmic Hospital (Moorfields).

London, W., Nov. 10th.

SEASICKNESS.

SIR,—In the BRITISH MEDICAL JOURNAL of November 16th you give an excellent notice under the heading of "Seasickness" of Dr. O'Byrne's very useful treatise. I have read this work with very great interest, as I have been collecting facts and data, having regard to this distressing ailment, since the year 1883. The advice given in this book is very good indeed; but, unfortunately, the seagoing public rarely reads medical literature, and I fear that unless it is possible to have Dr. O'Byrne's methods thoroughly taught at established schools, very few people will know about his very excellent advice. As a seasick sailor, with years of experience, I have found that those who suffer from this fell trouble look for some easy mode of procedure to recovery, and some sufficient remedy which will be easy to swallow. I have myself tried posturing; I have attempted to divert the attention to some other subject; I have bandaged myself, and endeavoured exercising will power to conquer my foe. But all in vain—

Mein Magen knurrt.

My sense of dignity has been lost; and with a green and troubled countenance I have paid tribute to the ocean. Fortunately, now I can enjoy a sea voyage, for I have found a simple, safe, and agreeable remedy in a combination of menthol and valerianic acid, which you in your columns both this and last year have commented on favourably as a remedy for seasickness, under the name of validol.—I am, etc.,

T. MAILLER KENDALL.

London, E.C., Nov. 18th.

THE ROYAL SOCIETY OF MEDICINE AND THE SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

SIR,—Considerable misconception as to the relations existing between the Royal Society of Medicine and the Society of Tropical Medicine and Hygiene appears to have originated as a result of some recent negotiations. For various reasons the council of the latter society has decided that amalgamation is at present impracticable, and that in the meantime the Society of Tropical Medicine and Hygiene must continue to exist as an independent body, but workers in tropical medicine all over the world fully recognize—none more readily—the services which the Royal Society of Medicine has rendered to the profession, and the advantages which accrue from access to its magnificent library, to its wealth of current Continental, American, and British literature, and to the help in research which is so readily rendered by an exceptionally qualified staff of librarians. Further, the desire of the Royal Society of Medicine to represent and embody in its constitution every branch of medicine has their natural sympathy, and when it can be shown that there is scope and opportunity for a Section of Tropical Medicine, their support will doubtless be freely accorded. Friction or inharmonious rivalry between the societies is inconceivable.—I am, etc.,

W. CARNEGIE BROWN.

London, N.W., Nov. 11th.

DIPLOMAS AND DEGREES.

SIR, I was very surprised on reading some of the remarks made by "Hall and Royal Colleges" in his letter under the above heading, which appeared in the BRITISH MEDICAL JOURNAL of October 26th. He states that "medical authorities of the day seem to consider that it is an undisputed fact that a man with any university degree must be superior to one possessing that of the Royal Colleges." This statement is not borne out by the attitude of the "medical authorities" to day.

The majority of house appointments at the big London hospitals are held by men with the M.R.C.S., L.R.C.P. diplomas, often in preference to men holding degrees. One of the highest authorities in the matter of making these house appointments told me that, with the exception of the Universities of Oxford, Cambridge, and London, no university degree has precedence to the M.R.C.S.Eng., L.R.C.P.Lond. And bearing in mind the unrivalled field of clinical experience men educated in London have at their disposal, I think it only reasonable to assume that the average man holding the diplomas of English Royal Colleges is quite as capable, well trained, and efficient a member of our great profession as one holding an M.B. degree.

Surely there has been too much nonsense written about the difference between degrees and diplomas. It is only fair to let a man's work speak for itself, and I venture to

say it will then be found the difference in the majority of cases does not exist.

I feel sure that many men who, like myself, hold the M.R.C.S.Eng., L.R.C.P.Lond., are more proud of it than if they held the M.D. degree of one of the smaller universities.—I am, etc.,

October 27th. HOUSE-PHYSICIAN, M.R.C.S., L.R.C.P.

ANTIVIVISECTION IN GLASGOW.

SIR,—Under the above heading you draw attention in a leading article to an address I recently delivered at St. Andrew's Hall, Glasgow, and make special reference to a quotation I gave from Sir Frederick Treves, which was published in your JOURNAL on November 5th, 1898. You remind your readers of the fact that Sir Frederick Treves has protested against the use made of his utterance, and you accuse me of either disingenuousness or of failure to make proper inquiry into the facts.

I plead guilty to neither charge. I have quoted Sir Frederick Treves fairly and squarely, and I repudiate his subsequent assertion that improper use has been made of his statement. I am unaware that he has shown in any single instance where I or any of my antivivisectionist friends have been guilty of the charge he makes against us. Allow me to quote what he said and what I repeated in Glasgow:

> Many years ago I carried out on the Continent sundry operations upon intestines of dogs, but such are the differences between the human and the canine bowel, that when I came to operate on man I found I was much hampered by my new experience, that I had everything to unlearn, and that my experiments had done little but unfit me to deal with the human intestine.

You refer to his protest in the *Times* of April, 1902. Well, here is what he said on that occasion:

> My solitary utterance on the subject of vivisection is contained in an address delivered at Birmingham in October, 1898. Speaking of suturing of intestine, I said that I had found that operations upon the intestines of dogs were useless as a means of fitting the surgeon for operations on the human bowel.

Pray, where have I misrepresented him? The remainder of your criticism embraces a fair report of what took place at my meeting in Glasgow, and calls for no further comment from me.—I am, etc.,

WALTER R. HADWEN, M.D., J.P.,
President, British Union for the Abolition of Vivisection.
Gloucester, Nov. 18th.

*** Dr. Hadwen uses a passage isolated from its context to convey an implication which Sir Frederick Treves has more than once strongly repudiated. If this is not misrepresentation, we are at a loss for an appropriate term. Perhaps it may be found in what Tennyson's parson said:

> That a lie which is all a lie may be met and fought with outright,
> But a lie which is part a truth is a harder matter to fight.

ANAESTHETICS IN EXPERIMENTS ON ANIMALS.

SIR,—Dr. Pembrey has written to you to say that the Royal Commission are wrong in conveying the impression that he regarded the frequent use of anaesthetics as unnecessary in experiments on animals.

Dr. Pembrey must have forgotten what he said in his evidence. Here are some of his statements:

> I admit I have done painful experiments, and I am not ashamed of admitting it. They are absolutely necessary.—Q. 14,084.

Again:

> Q. 14,090. . . . I think we ought to be given a licence to cover all experiments. I think that the Act is entirely antagonistic to the advancement of physiology. If we were given a licence for all experiments there would be no more cruelty. There would be a great saving of time and no limitation of work, and there would actually be in the long run a saving of life.
>
> Q. 14,091. What do you mean by a licence for all experiments? - I mean without any conditions.
>
> Q. 14,092. With or without anaesthetics?—Yes, without any limitation at all, and without certificates.
>
> Q. 14,093. That is to say, you are to put yourselves in the condition in this country which, I understand, physiologists are in in some parts of Germany, where there is no limit?—I think there should be no limit; that is to say, that a recognized physiologist should be given a licence to cover all experiments.

Dr. Pembrey is, of course, entitled to hold and express these views, but he is not entitled, when he discovers that they are unpopular, to say that he is misrepresented by those who condemn them.—I am, etc.,

London, S.W., Nov. 18th. STEPHEN [illegible]

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary council was held on November 14th, Sir Rickman J. Godlee, Bart., President, in the chair.

Issue of Diplomas.

Diplomas of membership were granted to eighty-nine candidates found qualified at the recent examinations.

Diplomas of the Licence in Dental Surgery were granted to five candidates found qualified.

National Health Insurance.

At the council meeting held on October 10th, a letter was read from the National Health Insurance Commissioners (England) stating that the question whether resident medical officers and other qualified resident officials at a hospital are employed by the hospital authorities under a contract of service has been submitted to them for a formal decision under Section 66 of the Act, and that a hearing of persons interested in the application will take place on Tuesday, October 22nd, at 2.30 p.m., at the Civil Service Commission, Burlington Gardens, and asking, if any representatives of the Royal College of Surgeons of England propose to attend the hearing, to be furnished with not less than three days' notice of the intention of such representatives to be present, statements in writing being admissible up to the day preceding that fixed for the hearing.

The following answer was returned to the above by the President, who was authorized by the Council to undertake this after the conference to be held at the Royal College of Physicians on November 15th:

"The Council of the Royal College of Surgeons has not had the matter referred to in your letter of the 3rd inst. under formal consideration, and do not propose to avail themselves of the opportunity afforded them of sending representatives to give evidence before your committee.

"In acknowledging your letter I may, however, point out:

"(*a*) That resident medical officers in hospitals naturally fall into two classes: First, those who receive small salaries or merely board and lodging, not because their services are not worth more, but because they discharge their duties for small payment in consideration of the advantage they gain from the instruction they receive in doing so; and, secondly, those who hold more or less permanent appointments and whose salaries exceed the income tax limit. Neither of these classes, therefore, appear to be employed persons under the meaning of the Act.

"(*b*) That, in the case of sickness, it is the invariable custom for such officers to be offered treatment in the hospital to which they are attached, an offer which is, in most cases, taken advantage of. It does not appear to be equitable to exact payment from both parties for that which is voluntarily given by one and for which the other has to pay nothing.

"(*c*) It is practically certain that none of those who receive low salaries, and could, therefore, conceivably be held to be insurable under the Act, would continue such insurance after the completion of their short term of office. The result of including them would therefore be that the hospitals would have to pay a perpetual tax in proportion to the number of these officers, who in their turn would have to pay for a few months for what under no circumstances could benefit them.

"It must not be forgotten that resident medical officers are most unlikely to join approved societies, and at the best, therefore, would only be deposit contributors."

Bradshaw Lecture.

The Bradshaw Lecture will be delivered by Mr. C. Mansell Moullin on Thursday, December 5th, at 5 p.m., the subject being "The Biology of Tumours."

The Schiff Home of Recovery.

Mr. G. H. Makins was nominated as a member of the Committee of Management of the Schiff Home of Recovery.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE Carmichael Prize for the best essay on the state of the medical profession in Great Britain and Ireland has been awarded by the Council to Mr. Nelson Hardy, F.R.C.S.Edin.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examination indicated:

D.P.H. (BOTH PARTS).—D. Adams, J. M. Bennett, *L. Bousfield, Captain, R.A.M.C., J. Burke, W. H. Date, M. Golding, Alice W. Macleod, A. E. S. Martin, A. S. Millar, W. M. Morison, and R. M. Wishart.

* With Honours.

CONJOINT BOARD IN ENGLAND.

At a meeting of the Comitia of the Royal College of Physicians on October 31st and of the Council of the Royal College of Surgeons on November 14th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon the following candidates:

A. Ashmore, E. Bach, *N. K. Bal, H. R. Bastard, G. E. Beaumont, P. L. T. Bennett, G. G. Bourdillon, R. St. L. Brockman, R. G. Brown, E. N. Butler, L. T. Challenor, P. C. Cole, L. G. Crossmann, K. F. R. Davison, A. E. L. Devonald, G. R. Dobrashian, S. Doraisamy, T. N. Doubleday, i. P. Duncan, W. J. I. Dwyer, T. L. Ellis, M. S. Esler, B. C. Ewens, L. G. Fisher, W. B. Foley, W. K. Fry, V. Gabriel, G. E. Genge-Andrews, D. M. Gibson, †E. A. M. J. Goldie, R. S. Graham, J. Greene, M. J. Haffey, D. B. I. Hallett, W. J. Hart, H. Harvey, H. J. B. Heelas, C. Helm, H. J. Holby, R. L. Horton, D. E. J. S. Hughes, A. Jackson, E. B. Jardine, D. D. B. Jay, H. W. Jones, R. A. Jones, S. Keith, C. Kennedy, W. J. T. Kimber, G. A. M. Leopold, T. P. Lewis, J. B. Lowe, W. C. D. Maile, *C. C. Marshall, L. A. Martin, G. O. Maw, *J. N. Mehta, N. M. Mehta, R. H. Miller, G. W. Mitchell, S. G. Papadopoulos, S. G. Platts, E. G. Reeve, W. R. Reynell, J. F. G. Richards, I. Ridge-Jones, G. H. Roberts, W. Robinson, H. C. Rook, G. A. Russell, C. M. Ryley, J. G. Saner, R. Saravanamuttu, F. R. Scott, A. S. Seabrooke, H. N. Sealy, W. J. D. Smyth, J. B. Stringer, A. L. Sutcliffe, W. F. Thompson, H. E. Thorn, *W. C. Toll, D. B. Truman, C. R. B. von Braun, J. R. Waddy, G. A. Walker, H. Walker, J. F. Ward, M. H. Watney, W. G. Watson, W. L. Webb, H. N. Webber, G. J. Whetham, A. Wilson, E. Wordley, A. M. Zamora.

*M.R.C.S. diploma already conferred.
†L.R.C.P. diploma not yet granted.

The Services.

It has been decided by the Government of India that officers in the bacteriological department are eligible for promotion to the administrative grade, and that on appointment to the department they are on probation for eight months.

Medico-Ethical.

The advice given in this column for the assistance of members is based on medico-ethical principles generally recognized by the profession, but must not be taken as representing direct findings of the Central Ethical Committee, except when so stated.

C. B. K.—Our correspondent's request that he should be afforded every reasonable opportunity of getting to know all the patients in the practice in which he is a partner is only reasonable, but he does not say that there was any stipulation to this effect in the partnership agreement. It is conceivable that there might be differences of opinion as to what should be considered "reasonable opportunity": for example, when A. goes away for his holiday B. ought certainly to be allowed to act as his locumtenent, and on all occasions when A. is unable to attend his patients B. should act for him. If A. allows these opportunities, on what other occasions does B. claim to be permitted to see A.'s patients?

Obituary.

DAVID MENZIES, M.D., F.R.C.S.E., EDINBURGH.

Edinburgh has lost a striking and delightful personality by the death of Dr. David Menzies. He had been suffering for nearly a year from cardiac disease, aggravated, if not brought on, by excessive devotion to his work; though he entirely appreciated its serious nature, the end came rather unexpectedly on November 8th. An Edinburgh man by birth, Dr. Menzies received his professional education at the medical school of the university, and became M.B., C.M. in 1876 and F.R.C.S.Edin. some three years later. After the death of his father he succeeded to a large practice, which eventually he greatly increased. Giving up his entire time and attention to the work of his profession, he built up an enormous practice, which up till the very last he kept together by constant, unsparing labour. He had an exceptionally large amount of obstetric work, and in this department he was specially expert. Few men enjoyed to a greater extent than did Dr. Menzies the affectionate regard of his patients, and by his urbanity, courtesy, and kindly disposition he made himself a universal favourite in the profession. It is impossible to conceive that Dr. Menzies had an enemy either among the public or in the profession. Notwithstanding the exacting duties of a large and widely scattered practice which absorbed his time, he made opportunity for frequently attending the meetings of the various societies in Edinburgh. His strenuous life permitted but few holidays, but nobody enjoyed a fishing holiday more than did David Menzies, and whether at work or play he was a genial companion.

In private life he was a man of singular charm and modesty, and adorned his profession by his upright personal character. His life was guided by the highest standards, and he has gone from us wearing the white flower of a blameless life.

THE LATE DR. ARTHUR H. BENSON.

DR. JOHN B. STORY (Dublin) writes: The obituary notice of my late friend and colleague, Dr. Arthur H. Benson, in the JOURNAL of November 16th, p. 1424, requires amendment in the following particulars: The first hospital appointment obtained by Dr. Benson was on the staff of St. Mark's Ophthalmic Hospital in 1880, after his return from study on the Continent. The Royal Victoria Eye and Ear Hospital was formed in 1904 by an amalgamation of St. Mark's Ophthalmic Hospital and the National Eye and Ear Infirmary. The Throat and Ear Hospital had no part or lot in this amalgamation. Dr. Benson and the other members of the staff of the two hospitals became surgeons to the Royal Victoria Eye and Ear Hospital on the amalgamation. He was an original member of the Ophthalmological Society of the United Kingdom.

A VERY senior representative of the medical profession in Bath passed away in October, in the person of Dr. ALBERT COPPINGER, who, though he had retired from practice some six or seven years ago, still had many warm friends among his colleagues, and consequently will be much missed. Dr. Coppinger, a son of a captain in the Royal Navy, belonged to the Irish branch of a very old Suffolk family, and received his medical education partly in Dublin, partly in Paris, partly in Edinburgh, becoming a Licentiate of the Royal Colleges of the latter city in 1865. On leaving Edinburgh he spent some time in travelling. His experiences at this time included charge of an emigrant ship, on which occurred a severe outbreak of cholera, and he grappled with the situation so successfully as to win official recognition of the courage and ability displayed by him. Later on he became resident medical officer of the Royal Mineral Water Hospital at Bath, and after some ten years in that office commenced private practice, and carried it on until the date of his retirement. He was an early member of the British Medical Association, and maintained his interest in its proceedings both on its scientific and medico-political sides to the end of his life, despite the fact that during the last three months he was a constant sufferer. As a practitioner Dr. Coppinger was especially successful in dealing with children, while the esteem he enjoyed in professional and general circles was partly due to his possession of a highly cultured intellect, partly to his ready sympathy with his fellows both in their joys and in their sorrows. Besides being an admirable French scholar, he had considerable knowledge of art and natural history, especially in relation to the habits and breeds of various birds. He also had a good knowledge of the work of engravers, and had got together an excellent collection of engravings and of books. Dr. Coppinger, who was a member of the Roman Catholic Church, is survived by his wife, a daughter of the late Mr. Thomas Pavitt, of Flint House, Leatherhead. On her decease Dr. Coppinger's estate is to be divided between six charities, one of which is the British Medical Benevolent Fund.

WE regret to have to announce the death of Dr. GEORGE TAYLOR GUILD, of Dundee, on November 15th. He was the son of the late Mr. Guild, a well known landed proprietor in Fife. He was born in 1868, and was educated at the University of Edinburgh, where he graduated M.B., C.M. in 1891. Early in his medical student days he decided to specialise in ear, throat, and nose diseases, and, besides devoting himself particularly to these branches of medical science at Edinburgh, he more fully equipped himself by further studies in Vienna and London. Some fifteen years ago he began his professional career in Dundee, and his ability was quickly recognized, not only in the city but in the surrounding counties. He was surgeon in the ear, throat, and nose department of the Dundee Royal Infirmary, and was lecturer in the

University of St. Andrews. For a number of years he was connected with the volunteer movement as an officer in the Artillery; he was fond of country life, an excellent shot, and a sound golfer. Dr. Guild is survived by a widow and two children.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are Dr. Oskar von Diruf, who attended Prince Bismarck as physician on the frequent occasions the great statesman took the "*kur*" at Kissingen, aged 88; Professor Hans Strehl, lecturer on surgery in the University of Königsberg, aged 40; Professor Lobker, for the last twelve years President of the German Medical Association, formerly lecturer on surgery in the University of Griefswald, and well known as a sanitarian, aged 58; Dr. E. Tavel, extraordinary professor of surgery in the University of Bern, aged 55; Dr. Oswald Kohts, emeritus professor of internal medicine in the University of Strassburg, aged 68; Dr. L. E. Golubiniu, extraordinary professor of internal medicine in the University of Moscow; Dr. E. Henss, lecturer on dermatology at Zürich; Dr. I. A. Demiskij, of Astrachan, who worked as bacteriologist in the Steppe region and accidentally infected himself with plague, aged 48; Dr. Paul Segond, professor of clinical surgery in the Paris Medical Faculty, and senior surgeon to the Salpétrière, aged 62; Dr. Henri Dor, of Lyons, formerly professor of ophthalmology in the University of Berne; and Dr. G. M. Tuttle, of New York, formerly professor of gynaecology at Columbia University, and one of the collaborators in the *American Textbook of Gynaecology*, aged 56.

Public Health
AND
POOR LAW MEDICAL SERVICES.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Southport County Borough.—The medical officer of health (Dr. J. J. Weaver) estimates the population of Southport at the middle of 1911 at 51,740. The net birth-rate for the year was 15.6 per 1,000 of the population, the death-rate 13.6 per 1,000, and the infant mortality-rate equal to 113 per 1,000 births. For some years the birth-rate of Southport has been low when given as a proportion of the total population, but it would be interesting to know whether it is really lower than the rest of England and Wales if stated as a proportion of the number of women at child-bearing ages. Dr. Weaver states that Southport is the first town in the United Kingdom to obtain a by-law against spitting on public footpaths; it has been in force in the borough since August, 1911. At one time serious complaints were made by residents and visitors alike of the offensive smells coming from sewer manholes in some of the principal streets. Eventually it was decided to close up all these openings and to instal Webb's sewer ventilating lamps. For the past seven or eight years they appear to have acted well, and few if any complaints are now made. Coincidently with the erection of the lamps there has been a marked decrease in the number of cases of typhoid fever in the town. During the ten years ending 1903 the average yearly number of cases notified was 36, and the deaths averaged 10. In the past eight years the notifications have averaged 7 and the deaths 1, per annum. The housing of the working classes is a serious problem in Southport, due in large measure to the high ground rents which are charged. On houses let at a rental of £22 per annum a ground rent of £3 per annum is charged. Many workpeople earning from 18s. to 24s. a week have to pay weekly rentals of 6s. to 9s. The whole question, Dr. Weaver asserts, is a serious one, and should engage the attention of the local authority, for, if nothing is done, not only will the working classes suffer and their position probably become worse, but the sanitary condition of the whole town, upon which its reputation depends, will be jeopardised. The Corporation will be well advised to give effect to the advice of its medical officer of health.

DR. GEORGE WHITESIDE ROBERTSON, of Edinburgh, has been awarded the medal of the Order of St. John of Jerusalem in England, in recognition of the conspicuous heroism and self-sacrifice he displayed after a railway accident in South Africa last year. The train in which he was a passenger ran over a steep embankment in the middle of the night at a spot many miles from assistance. Dr. Robertson, who sustained serious injuries, including four broken ribs, had himself carried round among the passengers, and rendered valuable service by directing the treatment of the most seriously injured until he collapsed through pain and exhaustion.

Medical News.

THE Duke of Northumberland has been elected Chancellor of the University of Durham in succession to Dean Kitchin.

THE fifth annual meeting of the Army and Navy Male Nurses' Co-operation will be held at St. James's Theatre, St. James's, S.W., on December 10th. H.R.H. Princess Christian will take the chair at 3 p.m.

THE annual dinner of the Royal Free Hospital and School of Medicine for Women will be held at the Trocadéro Restaurant, Piccadilly, on December 11th, when Mr. Stanley Boyd will take the chair.

THE students' annual dinner of the National Dental Hospital will be held at the Trocadero Restaurant, Piccadilly Circus, on November 29th, when Sir John Rose Bradford, K.C.M.G., will take the chair.

THE meeting of the Hunterian Society at the London Institute, Finsbury Circus, at 9 p.m., next Wednesday, is to take the form of a lantern demonstration of diseases of the eye by Dr. W. M. Ettles. All members of the medical profession are invited to attend.

AT the meeting of the Sociological Society to be held in the rooms of the Royal Asiatic Society, 22, Albemarle Street, W., on November 26th, Miss B. L. Hutchings will read a paper on fatigue and efficiency. The Hon. Sir William Mather will take the chair at 5.15 p.m.

A BILL is shortly to be introduced into the Reichstag to provide against the baneful effects of faulty infants' feeding-bottles. The bill contains paragraphs according to which bottles with tubes either of rubber or glass may not be manufactured, or sold, or offered for sale, or imported, or exported. The penalty for infringement of the law are either imprisonment or a fine not exceeding £15 and the confiscation of the articles condemned.

THE annual dinner of the Harveian Society of London was held at the Hotel Great Central on Thursday, November 14th, the President, Dr. H. Macevoy, in the chair. After the usual loyal toasts the President proposed the health of the Harveian Society, and Mr. D'Arcy Power proposed "The Kindred Societies," which was responded to by Mr. A. H. Tubby, President of the Hunterian Society. The toast of "The President" was proposed by Dr. Willcox, and Dr. Macevoy, in his reply, said he wished to acknowledge the assistance he had received from the secretaries, Dr. Carmalt Jones and Dr. Turtle, and proposed their healths.

THE National Association for the Prevention of Infant Mortality and for the Welfare of Infancy was formed in July, 1912, by the federation of the National Conference on Infantile Mortality, of the Department of the National League for Physical Education and Improvement, the Association of Infant Consultations and Schools for Mothers, and the Women's National Health Association of Ireland. The association has now arranged a post-graduate course on the feeding and care of infants with special reference to milk. The course will be given partly at the Marylebone General Dispensary, partly at the Lister Institute, and partly at Guy's Hospital. Among the lecturers are, at the dispensary, Drs. Still, Eric Pritchard, and Professor Kenwood; at the Lister Institute, Professor Harden and Dr. J. Arkwright; and at Guy's Hospital, Dr. H. Cameron. The fee for the course, which will be held from January 6th to 16th, 1913, is one guinea. Further particulars can be obtained from Dr. Janet E. Lane-Claypon, 18, Craven Terrace, Lancaster Gate, W.

AT the first formal meeting of the obstetrical society for the Midlands, which was brought into existence at Birmingham towards the end of last winter, it was resolved to substitute "Midland Obstetrical and Gynaecological Society" for the much longer title originally proposed. It was also arranged that the subscription should be 5s. annually, and that the dates of meetings should be the first Tuesday in the months of October, December, January, March, and April, the towns at which they should be held for the current session being Birmingham, Bristol, Cardiff, and Leicester. Subsequently the first president of the society, Professor Edward Malins, delivered an inaugural address dealing with the progress of obstetrics and gynaecology during the past twenty-five years. In its course he advocated the establishment of homes under direct or indirect public control solely for maternity purposes, and so arranged as to be suitable for the use on graduated payments of women belonging to all classes. The honorary secretary of the society is Dr. Beckwith Whitehouse, 52, Newhall Street, Birmingham.

Letters, Notes, and Answers.

QUERIES.

T. asks whether unpleasant symptoms have been observed after prolonged administration of helmitol.

SILVER asks whether injections of nitrate of silver to the prostatic urethra has ever been known to cause such a haemorrhage as to necessitate an external urethrotomy.

D. GEORGE F. NESBITT writes: I shall be much obliged if you or any reader could give me any information relative to "William Sheridan, Hibernus, M.D., 1805." The name is found in the form in Atkinson's *Book of Obstetrics* (Glasgow Medical Library). The man is known to have been alive in 1828. Information is sought as to where he practised, when and where he died, etc.

ANSWERS.

DR. RICHARD FURDON.—The publications of the Eugenics Education Society, which include Sir Francis Galton's *Essays in Eugenics*, would probably meet the requirements of our correspondent. The address of the society is 6, York Buildings, Adelphi, London, W.C.

W. M.—H. G. Fiedler and F. E. Sandbach's *First German for Science Readers* (Alexander Moring Ltd., De la More Printing Press, 32, George Street, Hanover Square, W.) would, we think, meet our correspondent's requirements. Besides an outline of grammar, it comprises a useful Reader. The *Münchener medicinische Wochenschrift* (J. F. Lehmann, Paul Heyse-str. 26, München), the *Berliner klinische Wochenschrift* (August Hirschwald, Verlag-buchhandlung, Berlin), and the *Deutsche medizinische Wochenschrift* (Georg Thieme, Reichsstrasse 2, Leipzig) are weekly periodicals of the highest standing.

F. X.—*Words to Wives on Pregnancy and Parturition*, by S. Bingham, M.R.C.S. (London: George Allen and Co., 1912. 3s. 6d.), will probably answer our correspondent's first question. With regard to the second, the following books might form the nucleus of a reference library on tropical subjects: *The Principles of Hygiene as Applied to Tropical and Subtropical Climates*, by W. J. R. Simpson (London: Bale, Sons and Danielsson, 1908); *The Maintenance of Health in the Tropics* (London: Bale, Sons and Danielsson, 1905); *The Maintenance of Health in Tropical Campaigns*, by Duncan G. and V. Churchill; *Sanitary Hygiene in the Tropics*, by Major Clemesha, I.M.S. (Calcutta: Thacker, Spink and Co., and London: E. and F. N. Spon, Limited, 1911); *Tropical Hygiene*, by Major R. J. Blackham, R.A.M.C. (Calcutta: Thacker, Spink and Co., and London: E. and F. N. Spon, Limited, 1912); *Tropical Hygiene*, by Major R. J. Blackham, R.A.M.C. (Calcutta: Thacker, Spink and Co., 1912); *A Text-book of Hygiene and Public Health*, by Bn. Ghosh and J. L. Dey (Calcutta: Hilton and Co., 1912). In addition to these, Castellani and Chalmers's *Manual of Tropical Medicine* will be found useful, as well also as entomological books dealing with mosquitos, tsetse flies, and other biting insects. As far as the writer is aware, there is no book dealing with sanitary engineering and law as applied to [illegible].

THE WASSERMANN REACTION.

OMEGA.—Wassermann's complement deviation test for syphilis is carried out as follows:

1. Reagents. A. Constants: Antigen, antibody, amboceptor, complement, and blood corpuscles. B. Variable: The serum of the patient.

Antigen.—Wassermann prefers the liver or spleen of a congenitally syphilitic foetus. The [illegible] is cut into very small pieces, and to [illegible] gm. is added 400 c.cm. of 0.85 per cent. [illegible] containing 0.5 per cent. [illegible] mixture should be shaken mechanically [illegible] in a dark bottle. The suspension is [illegible] and the brownish, opalescent fluid is [illegible] pical syphilitic serum [illegible] e diluted with saline [illegible], and centrifugalized, [illegible] the middle [illegible] saline fluid. At [illegible] of this suspen- [illegible] m and [illegible] blood [illegible] serum is used. The serum [illegible] ...ged blood, either rapidly by [illegible] or slowly on standing. Complement

Blood Corpuscles.—The suspension is prepared as described under amboceptor, a dilution being made from stock to represent 5 per cent. of the original bulk. The corpuscles should not be older than three or four days, and should be kept on ice.

The Test.—A large number of narrow test tubes should be carefully cleaned and placed in a convenient rack; 0.2 and 0.1 c.cm. of the patient's serum heated to 56° C. is mixed with 0.2 and 0.1 c.cm. respectively of antigen, and to each tube is added 1 c.cm. of a 1 in 10 dilution of complement. The same proportions are used, substituting the patient's serum by the standard syphilitic serum and also by normal non-syphilitic serum, both, of course, inactivized at 56° C. These tubes are filled up to 3 c.cm. with saline fluid, well shaken and incubated at 37° C. for one hour. A series of further controls must be put up, in which the remaining serum, the antigen, or the complement are left out and salt solution substituted. One further tube should contain no reagents save saline solution. To each tube after incubation 1 c.cm. of suspended blood cells is then added, and to all, save the tube containing only complement, 1 c.cm. of a 1 in 1,000 dilution of amboceptor (or twice the "unit") is added. All the tubes save one will have the volume of 5 c.cm., and this last named must also be made up to this quantity. The tubes are then well mixed and incubated for two hours at 37° C. They are then taken out of the incubator and placed in the ice chest over night. In the morning the results are read off. The degree of haemolysis in the tubes containing all five reagents will determine the nature of the serum, but complete haemolysis must be present in those control tubes in which the complement, amboceptor, and cells, and either normal serum and antigen, or antigen alone or syphilitic or patient's serum alone, are contained, while inhibition must be present when the test syphilitic serum and the other four reagents are used.

A large number of excellent descriptions of this test have been published, and we would refer "Omega" especially to the account given by Browning and Ivy McKenzie in their *Recent Methods in the Diagnosis and Treatment of Syphilis*, to Dr. Noguchi's *Serum Diagnosis of Syphilis*, to Dr. Mott's Morison Lectures (BRITISH MEDICAL JOURNAL, February 20th, 1909, p. 459), and Drs. Flashman and Butler's article on "Complement Fixation" (BRITISH MEDICAL JOURNAL, October 9th, 1909, pp. 1019-1025) *inter alia*. In spite of all these descriptions, however, there are numerous difficulties which have to be met, and which have led to the introduction of a large number of modifications. One of the chief difficulties of the test is the variability of the complement content of guinea-pig's serum, which is supposed to be a constant. If "Omega" intends to make practical application of the test, it would perhaps be worth his while to arrange to see a demonstration of the test at some well-equipped laboratory. Upon this point further advice could if desired be given.

LETTERS, NOTES, ETC.

LYSOL IN PHTHISIS.

DR. J. W. LANE (Weymouth) writes to suggest the use of lysol (pure) in the treatment of phthisis. He used it at first by vapour spray inhalations, but now prefers to inject subcutaneously a drachm of a 3 per cent. solution in distilled water, increasing by 1 per cent. daily up to 15 per cent.

REFLEX STIMULATION OF THE VAGUS CENTRE IN SEA-SICKNESS.

DR. A. T. BRAND (Driffield) writes: I have elsewhere (*Lancet*, June 29th, 1912, *Caledonian Medical Journal* for October) drawn attention to the value of reflex stimulation of the vagus centre and its vicinity by vesication of the skin over the course of the par vagum in the neck, immediately behind and below the angle of the lower jaw, quoting cases illustrative of the beneficial effect of this treatment in cardiac, respiratory, and gastric affections. There is one most distressing form of nausea and sickness, however, which I have had no opportunity of treating in this way—namely, that incidental to travel by [illegible] and it is reasonable to expect that this condition also would be benefited by reflexly influencing the vomiting centre. My object in making this communication is to urge those medical men who "go down to the sea in ships" to take advantage of their ample opportunities to test this method of treatment upon the victims of *mal de mer* who come under their care.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
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Each additional line	0	0	6
A whole column	2	13	4
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British Medical Association.

REPORT

OF

The Committee on Treatment of Simple Fractures.

CONCLUSIONS.

The following are the main Conclusions deduced from an analysis and full consideration by the Committee of the material collected by the Committee's Investigators: –

I. The statistics relative to the non-operative treatment of fractures of the shafts of the long bones in children (under the age of 15 years), with the exception of fractures of both bones of the forearm, show as a rule a high percentage of good results. These are unlikely to be improved upon materially by any other method of treatment. Operative results in children, expressed in percentages, are approximately the same as the non-operative. The relative figures are:—

Non-Operative Cases (Cases, 1,017) 90·5% good functional results (*See* Table V., page 1526.)

Operative Cases (Cases, 64) 93·6 % good functional results. (*See* Table V., page 1526.)

II. It is possible either by non operative or by operative treatment to obtain a high percentage of good results in children.

III. In comparison with the non-operative results in children, the aggregate results of non-operative treatment in those past childhood (*i.e.*, over the age of 15 years) are not satisfactory. (*See* Table V., page 1526.)

IV. From the analysis of the age groups it is clear that there is a progressive depreciation of the functional result of non operative treatment as age advances, that is to say, the older the patient the worse the result. (*See* Table VI., page 1526.)

V. In cases treated by immediate operation, the deleterious influence of age upon the functional result is less marked.

VI. In nearly all age groups, operative cases show a higher percentage of good results than non-operative cases (*See* Table I., page 1508.)

VII. Although the functional result may be good with an indifferent anatomical result, the most certain way to obtain a good functional result is to secure a good anatomical result. (*See* 1st paragraph, page 1525.)

VIII. No method, whether non-operative or operative, which does not definitely promise a good anatomical result, should be accepted as the method of choice. For this reason mobilisation and massage by themselves have not been found to secure a high percentage of good results. They are, however, valuable supplementary methods of treatment.

Similarly, of operative methods, those which secure reposition and absolute fixation of the fragments yield better results than methods which fall short of this: imperfect fixation of the fragments by wire or other suture has been found to be an unsatisfactory procedure in the treatment of fractures of the long bones, with the exception of the olecranon process of the ulna.

IX. Operative treatment should not be regarded as a method to be employed in consequence of the failure of non-operative measures, as the results of secondary operations (Classes B and C) compare very unfavourably with those of immediate operations (Class A). (*See* Table IV., page 1525.)

In order to secure the most satisfactory results from operative treatment, it should be resorted to as soon after the accident as practicable.

X. It is necessary to insist that the operative treatment of fractures requires special skill and experience, and such facilities and surroundings as will ensure asepsis. It is, therefore, not a method to be undertaken except by those who have constant practice and experience in such surgical procedures.

XI. A considerable proportion of the failures of operative treatment are due to infection of the wound, a possibility which may occur even with the best technique.

XII. The mortality directly due to the operative treatment of simple fractures of the long bones has been found to be so small that it cannot be urged as a sufficient reason against operative treatment. (*See* Table X., page 1528.)

XIII. For surgeons and practitioners who are unable to avail themselves of the operative method, the non-operative procedures are likely to remain for some time yet the more safe and serviceable.

INTRODUCTION.

The Fractures Committee, in presenting the Report on its investigation into the treatment of fractures pursuant to the instructions of the Council, desires to record its sense of obligation and thanks to all surgeons and surgical registrars who have so cordially granted facilities for the examination of patients and also to those who by clerical and other assistance have rendered the inquiry less onerous than it otherwise would have been.

The number of cases (over 2,900) on which the Report is based, and the wide geographical distribution of the centres of investigation, afford evidence that the results of all variations in treatment have been under review.

The analyses and deductions in respect of the non-operative cases are specially valuable, presenting, as they do, questions of great interest for deliberation.

With regard to operative treatment, it is a matter of regret that a much larger number than 208 have not been available for personal inspection. In this connection the Committee feels that it is unfortunate in being unable to include in the main Report the operative cases so kindly exhibited by Mons. A. Lambotte, of Antwerp, as the figures were made up and in type before the analysis of these additional cases could be completed. They are, however, analysed and appended to the *précis* on technique which Mons. Lambotte has been good enough to furnish and for which sincere thanks are due.

Mr. W. Arbuthnot Lane has also placed the Committee under a great obligation by acceding very cordially to a request for an account of his operative method.

The Committee very gratefully acknowledges its debt of gratitude to Mons. Just Lucas-Championnière for demonstrating a large number of radiographs and some cases, and for presenting a synopsis of his method for inclusion in this Report.

To Dr. F. Steinmann, of Bern, the Committee offers a warm recognition of his courtesy in supplying so generously an exposition of a procedure which is original and interesting.

The sincere thanks of the Committee are also offered to Prof. B. Bardenheuer, of Cologne, for a valuable set of volumes and papers illustrative of his extension method of treatment. Extracts from these will be found in the Appendix to the Report.

The Committee desires to mark their appreciation of the valuable services rendered by Sister May Sinzininex, who has with great care and accuracy analysed and tabulated the material embodied in the Report.

The thanks of the Committee and Association are due to Dr. A. D. Macpherson, Assistant Medical Secretary, and the office staff, for their untiring efforts on behalf of the enquiry. It would be impossible to name individually all others who have assisted, but it is hoped that they will accept this record of the grateful thanks of the Committee.

PART I. PRELIMINARY CONSIDERATIONS

The Committee was appointed by the Council of the British Medical Association in response to a recommendation to that effect by the Section of Surgery at the Annual Meeting of the Association held in July, 1910. The reference from the Council to the Committee was -

"To report on the ultimate results obtained in the treatment of simple fractures with or without operation."

The following are the members of the Committee: Mr. W. J. Greer, Newport, Mon., *Chairman*; Mr. J. Grant Andrew, Glasgow; Mr. Charles W. Cuthcart, Edinburgh; Mr. H. S. Clogg, London; Mr. Edward Dennesly, Wolverhampton; Mr. C. H. Fagge, London; Sir Victor Horsley, F.R.S., London; Prof. J. Rutherford Morison, Newcastle-on-Tyne; Mr. Herbert J. Paterson, London; Mr. P. W. G. Sargent, London; Mr. W. Taylor, Dublin; Mr. Wilfrid Trotter, London; Mr. Richard Warren, London; with the following *ex-officio*:—Prof. Robert Saundby, M.D., Birmingham, *President of the Association*; Dr. Ewen J. Maclean, Cardiff, *Chairman of Representative Meetings*; Dr. J. A. Macdonald, LL.D., Taunton, *Chairman of Council*; Dr. Edwin Rayner, Stockport, *Treasurer*.

The Committee was appointed in February, 1911, and held its first meeting in March, 1911.

The Committee decided to limit the inquiry to simple fractures of the long bones which occurred, or in which operations had been performed, in the period January, 1906, to December, 1910, inclusive. This period was chosen in order that no patient should be examined until at least six months had elapsed since the commencement of treatment.

A notice as to the formation of the Committee and its reference was published in the BRITISH MEDICAL JOURNAL and *Lancet* of April 8th, 1911, with a request to hospital surgeons and other practitioners interested kindly to communicate with the Committee if they could afford facilities for the examination of cases.

Subsequently the surgeons on the staffs of the general hospitals in the following towns were approached, through the respective surgical registrars, and asked to assist in the inquiry by affording access to their case books with a view to the examination of their patients and records by members of the Committee:—Birmingham, Bristol, Dublin, Edinburgh, Glasgow, Leeds, Leicester, Liverpool, London, Manchester, Newcastle, and Sheffield.

Investigations were conducted at the following hospitals, the number of patients (or records of cases, in the case of patients deceased) examined at each hospital being indicated in brackets:—Birmingham—General Hospital (116); Bristol—General Hospital (101), Royal Infirmary (151); Dublin—Adelaide Hospital (4), Dr. Steevens' Hospital (31) Mercers' Hospital (7); Edinburgh Royal Infirmary (131); Glasgow—Victoria Infirmary (100); Leeds—General Infirmary (324); London—Charing Cross Hospital (54), Guy's Hospital (423), Great Ormond Street Hospital (32); London Hospital (358); Metropolitan Hospital (20), St. George's Hospital (133), St. Thomas's Hospital (323); University College Hospital (28); Newcastle-on-Tyne—Royal Victoria Infirmary (50); Sheffield—Royal Infirmary (225).

METHOD OF INVESTIGATION.

The hospitals indicated were visited on certain days by two or more members of the Committee (referred to in this Report as "investigators.") Every patient whose case forms a part of the Report was seen and examined by a member of the Committee. The details of the cases were filled in on the inquiry form, a copy of which is appended. (See Appendix A.)

It is obvious that some allowance must be made for individual variation of judgment of the investigators as to the verdict on each patient, but after frequent discussions on the subject the Committee is of opinion that fair uniformity of standard has been secured. With regard to the terms good, moderate, bad, used by the investigators, the one to which the most precise significance can be attached is that in which a case is noted as having a good anatomical and a good functional result. This may be taken to imply that such result was perfect, or nearly so.

In no instance is the report of a case that of the surgeon who treated the patient.

The importance of guarding against the cases being in any way selected, either accidentally or otherwise, was kept before the Committee. All the patients who attended were examined and reported upon, if adequate information were available. Certain circumstances, however, tended to lead to the cases available for report at any given institution not being absolutely representative of the whole results of the institution. For example the necessary fixing of definite times of attendance caused the numbers available to include an excessive proportion of children, and so influences the results favourably. Again, the same circumstance led to the attendance of an undue proportion of adults more or less incapacitated or out of work. This would tend to influence the total results unfavourably. The cases reported on at Newcastle-on-Tyne were representative in an exceptional degree, as the visit of the investigators coincided with the coal strike, so that a large number of men normally in full work were able to attend. Taking these circumstances together, the Committee is of opinion that no serious fallacy is involved in utilising the results as recorded.

1. MATERIAL. Exclusive of cases investigated abroad, 2,948 patients attended for examination, making, together with the cases fatal during treatment, a total of 3,062 cases investigated in the United Kingdom. The inquiry forms relating to 122 of these were rejected by the Committee on account of insufficient details or because they did not come within the definition as to time limit or variety laid down by the Committee. A return was obtained from each hospital giving the total number of cases coming under the reference and treated during the period under review, the forms containing also details of all fatal cases occurring during the period. The Report is based on 2,940 cases personally investigated.

The following are the numbers of fractures of the different bones examined: Femur, 897; tibia, 485; fibula, 274; tibia and fibula, 831; humerus, 302; ulna, 80; radius, 123; ulna and radius, 109.

2. Definition of Terms and Methods of Analysis.

(i.) Operative treatment is defined as including any operation in which the seat of fracture is exposed with a view to reposition of the fragments.

(ii.) Three classes of cases are distinguished under operative treatment, namely: -

(a) Those cases in which operation is decided upon at once and is performed as soon as practicable. (Class A.)

(b) Those cases in which operation is performed on account of failure to obtain and maintain accurate apposition by means of external mechanical appliances. (Class B.)

(c) Those cases in which operation is performed for non-union, for deficient union, or for faulty union, whether in progress or complete. (Class C.)

Classes B. and C. consist of cases in which, in the judgment of the surgeon, non-operative treatment has failed, such failure being the reason for operation. It seems to the Committee that in these cases the opinion of the surgeon in charge should be accepted as a sound judgment upon the unsatisfactory nature of the primary non-operative treatment. These cases, then, are clearly failures of non-operative treatment. The Committee, however, has deemed it undesirable to include them under the non-operative cases, as the non-operative result was not seen by the investigator. As a matter of fact the number of such cases is so small that the inclusion of them would, as has been proved by calculation, have merely a fractional influence on the percentages. For these reasons classes B. and C. have been kept separate, and are available for comparison with the A. group of operative cases.

(iii.) It is deemed undesirable to include under the general head of operative treatment of fractures subsidiary operations such as are not covered by the definition contained in Paragraph (i.). This will apply to such treatment as:—(a) Tenotomies. (b) Osteotomies. (c) Excision of Joints. (d) Removal of callus or of projecting fragments. (e) Freeing of nerves. Cases in which a subsidiary operation has been performed are necessarily included in the non-operative material.

It is with Class A only, in the judgment of the Committee, that the results in non-operative cases should be compared.

3. Non-Operative Treatment.—Two types of non-operative treatment are generally recognised, namely:—

(a) In which fixation is adopted immediately, and is continued until union has taken place.
(b) In which mobilisation is adopted.

Massage may be practised in combination with either of these methods.

It was hoped to draw a sharp distinction between those cases in which massage had been one of the chief lines of treatment from the beginning, and those in which massage had been practised as subsidiary to other treatment; but the material was so small, and exact details so deficient, that the Committee had to relinquish this design.

4. The Committee was of opinion that as a supplementary inquiry an effort might be made to show the influence on the ultimate result of primary replacement of the fragments by manipulation under an anæsthetic, when controlled by X-ray evidence. This was found to be impracticable.

Classification according to the exact form of the fracture was not possible, owing to the paucity of detail, and it was not practicable to obtain any valuable information as to the correlation of the occupation of the patient with the degree of success which attended the treatment.

5. The non-operative and operative material is analysed on exactly parallel lines.

The Committee wishes to point out that the operative material available within the years selected is so small that it is undesirable to attempt to draw any final conclusion from this material, as to the relative value of operative and non-operative treatment. The results are given in comparable form for what they are worth, but the Committee wishes emphatically to state its opinion that the chief value of its Report lies in the data collected and analysed as to the result of non-operative treatment.

It may be pointed out that the collection of facts relating to the non-operative treatment of fractures is a very large one, and such as yields conclusions which have a considerable degree of finality. Thus, at any time in the future, further results of operative treatment could be analysed on the same basis and compared with them, and the relative value of the methods finally ascertained.

6. The primary headings under which the material is analysed are the individual fractures as indicated below, not the individual bones.

7. Conclusions as to the efficiency of treatment can be deduced only from:—

(i.) The diagram of the result (see page 1 of the inquiry form printed in Appendix (A)) filled in by the Investigator.
(ii.) Duration of absence from work.

8. It is obvious that (i.) embodies the chief material, and represents the considered judgment of the investigator (in doubtful cases of two investigators), formed as a result of his personal examination of the patient. In this judgment the wage earning capacity of the patient has been taken into account. The duration of the patient's incapacity to follow his or her usual occupation has, on the other hand, a certain independent value, and must therefore be considered separately. It must be recognised, however, that this period is not solely dependent upon the nature of the injury or the treatment adopted, but varies greatly with the temperament of the patient, the nature of his employment, and the attitude of the employer and of the employee as to compensation.

Unfortunately, the details as to the period of incapacitation are available only in a small proportion of the cases. The result of this is that while the non-operative material is sufficiently large to yield a fairly reliable numerical value for the average length of convalescence—the operative is so small that no corresponding figure of any value can be obtained. Of the various ways in which the results—as to the length of incapacitation—might be stated, the Committee has thought it desirable to give two, namely:—

(a) The average time of absence from work in those cases in which a good functional result had been obtained at the time at the Committee's examination.

(b) The percentage of cases of any given fractures in which permanent incapacitation was the result of the injury. (See Tables VII. and VIII., pages 1526-27.)

9. For each separate variety of fracture stated below a sheet has been drawn up, separate sheets for non-operative and operative treatment, for male and female patients, and for every age sub-division. (See Appendix (B).)

10. The Committee adopted the following Sub-Division of Fractures:—

Schedule of Fractures.

(I.)—*Femur.*

(a) Fractures of neck.
(b) Separated epiphysis of head (with or without fracture).
(c) Fracture of upper third of shaft.
(d) Fracture of middle of shaft.
(e) Fracture of lower third of shaft.
(f) Fracture of lower extremity involving knee joint.
(g) Separated lower epiphysis (with or without fracture).

(II.)—*Tibia.*

(a) Separated upper epiphysis (with or without fracture).
(b) Fracture of shaft.
(c) Separated lower epiphysis (with or without fracture).
(d) Internal malleolus.

(III.)—*Fibula.*

(a) Separated upper epiphysis (with or without fracture).
(b) Fracture of shaft.
(c) Separated lower epiphysis (with or without fracture).

(IV.)—*Tibia and Fibula.*

(a) Fracture of shafts of both bones.
(b) Pott's fracture.

(V.)—*Humerus.*

(a) Anatomical neck.
(b) Separated upper epiphysis (with or without fracture).
(c) Fracture of tuberosity.
(d) Fracture of surgical neck.
(e) Fracture of shaft.
(f) Supra of condylic fracture.
(g) Separated lower epiphysis (with or without fracture).
(h) Internal condyle; external condyle, capitellum.

(VI.)—*Radius.*

(a) Separated upper epiphysis (with or without fracture).
(b) Fracture of shaft.
(c) Separated lower epiphysis (with or without fracture).

VII.—*Ulna.*

(a) Fracture of olecranon.
(b) Fracture of shaft.
(c) Separated lower epiphysis (with or without fracture).

(VIII.)—*Radius and Ulna.*

(a) Fracture of shafts of both bones.
(b) Colles's Fracture.

Age Groups.

11. The Committee considered it to be of great importance to ascertain the influence of age on fractures treated on similar lines and accordingly adopted a detailed sub-division of age groups as follows:—

(a) 0 to 10 years.
(b) 11 to 15 ,,
(c) 16 to 20 ,,
(d) 21 to 25 ,,
(e) 26 to 45 ,,
(f) 46 to 60 ,,
(g) 61 years and over.

PART II. ANALYSIS OF MATERIAL.

1. ABSTRACTS OF INQUIRY FORMS FOR EACH FRACTURE.

In Table I. are given the results of the treatment of the various fractures arranged in age groups. The totals for each age group, and in addition the totals for I. Non-Operative cases, and II. Immediate Operative cases (Class A) are given.

The totals for the B and C operative classes are given separately.

After the operative cases, the number of cases in which a subsidiary operation was performed is indicated.

In the [illegible] given at the end of each group of non-operative cases [illegible] operations are included, in accordance with [illegible] paragraph 2 (iii) of the [illegible] the two columns [illegible] (1) The percentage of [illegible] subsidiary operations) in [illegible] functional result was good, (2) The [illegible] in which the functional result was [illegible] functional result moderate or bad. The two [illegible] added [illegible] age in which a good [illegible] respective of the anatomical result.

TABLE I.

ABSTRACTS OF ENQUIRY FORMS.

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result.			Functional Result.			Percent. of Good Anat. and Good Funct.	Percent. of Mod. or Bad Anat. with Good Funct.
			Good	Mod.	Bad	Good	Mod.	Bad		
I. (a) Femur—Neck. I. Non-Operative	0-10 M.	3	3	—	—	3	—	—		
	11-15 M.	1	—	1	—	1	—	—		
	16-20 M.	1	—	1	—	1	—	—		
	26-45 M.	14	4	7	3	5	4	5		
	26-45 F.	6	—	3	3	1	1	4		
		20	4	10	6	6	5	9		
	46-60 M.	20	4	10	6	5	7	8		
	46-60 F.	10	3	2	5	3	3	4		
		30	7	12	11	8	10	12		
	61 M.	15	1	7	7	2	5	8		
	61 F.	21	3	8	10	3	8	10		
		36	4	15	17	5	13	18		
	Total (M. & F.)	91	18	39	34	24	28	39	46·4 %	9·8 %
II. Operative A.	0-10 M.	1	1	—	—	1	—	—	100 %	
B.	16-60 F.	1	1	—	—	—	1	—		
I. (b) Femur—Separated Epiphysis of Head. I. Non-Operative	11-15 M.	4	2	2	—	3	1	—		
	11-15 F.	1	1			1				
		5	3	2	—	4	1	—		
	16-20 M.	4	1	2	1	2	—	2		
	Total (M. & F.)	9	4	4	1	6	1	2	44·4 %	22·2 %
I. c). Femur Upper third of Shaft. I. Non-Operative.	0-10 M.	27	25	1	1	27	—	—		
	0-10 F.	15	12	2	1	13	2	—		
		42	37	3	2	40	2	0		
	11-15 M.	3	3	—	—	3	—	—		
	11-15 F.	2	1	1		2	—	—		
		5	4	1	—	5	—	—		
	16-20 M.	7	2	3		4	1			
	21-25 M.	2	2			2				
	26-45 M.	9	2	2	5	6	1	2		
	26-45 F.	4	1	2	1	2	1	1		
		13	3	4	6	8	2	3		
	46-60 M.	17	1	6	7	6	6	5		
	46-60 F.	4		2	2	2		2		
		21	4	8	9	8	6	7		
	61 M.	4	1	1	2	1	0	3		
	61 F.	4		3	1		4			
		8	1	4	3	1	4	3		
	Total (M. & F.)	91	53	23	20	68	15	13	54·1 %	4·2 %
B.		1	1	—	—	1	—	—		
C.		[illegible]			5	2	—	5		
	Total (M. & F.)	104	4	[illegible]	[illegible]	71	15	18	60·0 %	

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result. Good	Mod.	Bad	Functional Result. Good	Mod.	Bad	Percent. of Good Anat. and Good Funct.	Percent. of Mod. or Bad Anat. with Good Funct.
I. (c) Femur—Upper third of Shaft. —*continued.*										
II. Operative A.	0-10 M.	2	2	—	—	2	—	—		
	11-15 M.	1	1	—		1	—	—		
Total	(M. & F.)	3	3	—	—	3	—		100%	
B.	11-15 F.	1	1	—	—	1	—	—		
C.	11-15 M.	1	—	1	—	1	—	—		
	16-20 M.	1		1	—	1	—	—		
	26-45 F.	1		—	1	—	—	1		
	61-80 M.	4		—	4	—	—	4		
Total C.	(M. & F.)	7		2	5	2	—	5		
I. (d) Femur—Middle third of Shaft.										
I. Non-Operative	0-10 M.	216	208	16	2	211	5	—		
	0-10 F.	49	44	5	0	42	5	2		
		265	252	21	2	253	10	2		
	11-15 M.	57	44	10	3	53	4	—		
	11-15 F.	6	4	1	1	5	—	1		
		63	48	11	4	58	4	1		
	16-20 M.	27	8	17	7	19	6	2		
	16-20 F.	2	2	—	—	2	—	—		
		29	5	17	7	21	6	2		
	21-25 M.	7	1	3	3	4	2	1		
	21-25 F.	—	—	—	—	—	—	—		
		7	1	3	3	4	2	1		
	26-45 M.	29	7	13	9	13	12	4		
	26-45 F.	3	2	1	—	2	1	—		
		32	9	14	9	15	13	4		
	46-60 M.	25	2	9	7	11	8	6		
	46-60 F.	5	—	3	2	—	—	5		
		30	2	12	9	11	8	11		
	61-M.	9	2	3	4	2	5	2		
	61-F.	1	1	—	—	—	1	—		
		10	3	3	4	2	6	2		
Total	(M. & F.)	436	304	84	38	364	49	23	67·8 %	13·2 %
B.		10	6	3	1	6	2	2		
C. .. .		9	4	2	3	7	—	2		
Subsidiary		2	—	—	2	—	—	2		
		457	324	89	44	377	51	29	67·1 %	
II. Operative— A. ..	0-10 M.	17	16	1	—	16	1			
	0-10 F.	5	5	—	—	5	—	—		
		22	21	1	—	21	1			
	11-15 M.	3	3	—	—	3	—	—		
	16-20 M.	1	1			1				
	16-20 F.	1	—	1		—	1			
		2	1	1		1	1			
Total	(M. & F.)	27	25	2	—	25	2	—	92·5	

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result. Good	Mod.	Bad	Functional Result. Good	Mod.	Bad	Percent. of Good Anat. and Good Funct.	Percent. of Mod. or Bad Anat. with Good Funct.
I. (d) Femur—Middle third of Shaft. —*continued.*										
B.	0-10 M.	2	2			2				
	0-10 F.	—	—			—				
	11-15 M.	3	2	1	—	2	1	—		
	11-15 F.	1	1			1				
		4	3	1		3	1			
	16-20 M.	1	1			1				
	16-20 F.	1	—	1			1			
		2	1	1		1	1			
	26-45 M.	2		1	1	—	—	2		
Total	(M. & F.)	10	6	3	1	6	2	2		
C. .. .	0-10 M.	3	3	—		3	—			
	0-10 F.	1	1	—		1	—			
		4	4			4				
	11-15 M.	2	—	1	1	1	—	1		
	16-20 F.	1	—	1		1	—			
	26-45 M.	2	—		2	1	—	1		
Total	M. & F.	9	4	2	3	7	—	2		
I. (e) Femur—Lower third of Shaft.										
I. Non-Operative	0-10 M.	29	28	1		28	1	—		
	0-10 F.	5	5		—	5	—	—		
		34	33	1		33	1	—		
	11-15 M.	11	7	3	1	10	—	1		
	11-15 F.	5	3	1	1	4	1	—		
		16	10	4	2	14	1	1		
	16-20 M.	9	7	2	1	9	—	—		
	16-20 F.	3	1	2	—	2	1	—		
		12	8	4	1	11	1	—		
	21-25 M.	—	—	—		—	—	—		
	21-25 F.	1	—	1		1	—	—		
	26-45 M.	1	—	—	1	1	—	—		
	26-45 F.	15	—	6	4	7	6	2		
		16	5	6	5	8	6	2		
	46-60 M.	10	5	2	3	5	5	0		
	46-60 F.	5	2	2	1	2	2	1		
		15	7	4	4	7	7	1		
	61 M.	4	1	1	2	1	1	2		
	61 F.	6	1	2	3	2	2	2		
		10	2	3	5	3	3	4		
Total	M. & F.	104	68	24	12	77	19	8		15·3%
B.	—	2	1	1	—	1	1			
C.	—	4	1	—	3	1	2	1		
		110	65	25	20	79	22	9	59·1	
II. Operative— A. ..	11-15 M.	1	1	—	—	1	—	—		
	16-20 M.	1	—	—	1	—	1	—		
Total	—	2	1	—	1	1	1	—		
B. ..	0-10 M.	1	—	1	—	1	—	—		
B. ..	21-25 M.	1	1	—	—	—	1	—		
Total B.	—	2	1	1	—	1	1	—		
C. .. .	11-15 M.	1	1	—	—	—	1	—		
	26-45 M.	1	—	—	1	—	—	1		
	46-60 F.	3	—	—	2	1	1	—		
Total C.	M. & F.	4	1	—	3	1	2	1		

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result.			Functional Result.			Percent. of Good Anat. and Good Funct.	Percent. of Mod. or Bad Anat. with Good Funct.
			Good	Mod.	Bad	Good	Mod.	Bad		
I. (f) Femur—Lower Extremity involving Knee joint										
I. Non-Operative	0-10 M.	1	1	—	—	1	—	—		
	11-15 M.	1	1	—	—	1	—	—		
	16-20 M.	1	—	1	—	1	—	—		
	21-25 M.	1	—	—	1	—	—	1		
	26-45 M.	3	3	—	—	3	—	—		
	46-60 M.	4	—	1	3	—	3	1		
	61- M.	1	—	—	1	—	—	1		
Total M. (no F.)		12	5	2	5	6	3	3	41·7 %	83·3 %
B. ..		4	—	1	3	—	3	2		
C. ..		2	—	1	1	—	1	1		
		18	5	4	6	6	6	6	27·7	
II. Operative— A. ..	26-45	1	—	1	—	—	1	—		
B. ..	26-45 M.	1	—	—	1	—	—	1		
	46-60 F.	2	—	—	2	—	1	1		
Total M. & F.		3	—	—	3	—	1	2		
C. ..	26-45 M.	1	—	1	—	—	1	—		
	46-60 M.	1	—	—	1	—	—	1		
Total M. only		2	—	1	1	—	1	1		
I. (g) Femur—Lower Epiphysis										
I. Non-Operative	0-10 M.	4	4	—	—	4	—	—		
	0-10 F.	1	1	—	—	—	—	1		
		5	5	—	—	4	—	1		
	11-15 M.	3	1	—	2	2	1	—	55·5 %	11·1 %
Total (M.& F.)		8	6	—	2	6	1	1		
C ..		1	—	—	1	—	—	1		
Subsidiary		1	1	—	—	—	1	—		
		10	7	—	3	6	2	1		
II. (b) Tibia—Shaft.										
I. Non-Operative	0-10 M.	119	114	1	1	117	1	1		
	0-10 F.	45	41	1	3	41	1	3		
		164	155	2	4	158	2	4		
	11-15 M.	47	45	1	1	45	0	2		
	61 M.									
	61 F.									
Subsidiary										

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result.			Functional Result.			Percent. of Good Anat. and Good Funct.	Percent. of Mod. or Bad Anat. with Good Funct.
			Good	Mod.	Bad	Good	Mod.	Bad		
II. (b) Tibia—Shaft —*continued.*										
II. Operative— A. ..	0-10 M.	6	6	—	—	6	—	—		
	11-15 M.	1	1	—	—	1	—	—		
	21-25 M.	1	—	1	—	1	—	—		
	26-45 M.	3	3	—	—	3	—	—		
	26-45 F.	1	1	—	—	1	—	—		
		4	4	—	—	4	—	—		
	46-60 M.	3	2	1	—	2	—	1		
	46-60 F.	1	—	—	1	1	—	—		
		4	2	1	1	3	—	1		
	61 M.	—	—	—	—	—	—	—		
	61 F.	1	—	1	—	1	—	—		
		17	13	3	1	16	—	1	76·5	17·6 %
..	11-15 M.	1	—	1	—	1	—	—		
..	26-45 M.	1	—	—	1	—	1	—		
		2	—	1	1	1	1	—		
C. ..	26-45 M	1	1	—	—	1	—	—		
II. (c) & (d) Tibia—Various. Lower Epiphysis.										
I. Non-Operative	0-10 M.	1	1	—	—	1	—	—		
	0-10 F.	1	1	—	—	1	—	—		
		2	2	—	—	2	—	—		
	16-20 M.	1	1	—	—	1	—	—		
Total	(M.& F.)	3	3			3			100 %	
Tibia—Internal Malleolus.	26-45 M.	2	1	1		1	1		50 %	
Fibula—Malleolus.	46-60 F.	1	1			1				
	61-F.	1	1			1				
		2	2			2			100	
III. (b) Fibula—Shaft.										
I. Non-Operative	0-10 M.	2	2			2				
	0-10 F.	5	5			5				
		7	7			7				
	11-15 M.	2	1		1	1		1		
	11-15 F.	1	1			1				
		3	2		1	2		1		
	16-20 M.	1	1			1				
	16-20 F.	1	1			1				

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result.			Functional Result.			Percent. of Good Anat. and Good Funct.	Percent. of Mod. or Bad Anat. with Good Funct.
			Good	Mod.	Bad	Good	Mod.	Bad		
IV. (a) Tibia and Fibula—Shafts. I. Non-Operative	0-10 M.	61	52	6	3	56	4	1		
	0-10 F.	11	10	1		11				
		72	62	7	3	67	4	1		
	11-15 M.	40	32	5	3	38	1	1		
	11-15 F.	4	4			4				
		44	36	5	3	42	1	1		
	16-20 M.	31	22	5	4	26	5			
	16-20 F.	2	1	1		1	1			
		33	23	6	4	27	6			
	21-25 M.	23	9	10	4	18	3	2		
	21-25 F.	4	1	2	1	3	1			
		27	10	12	5	21	4	2		
	26-45 M.	161	60	64	37	111	36	14		
	26-45 F.	38	12	18	8	20	12	6		
		199	72	82	45	131	48	20		
	46-60 M.	84	30	31	23	58	12	14		
	46-60 F.	47	16	17	14	17	22	8		
		131	46	48	37	75	34	22		
	61- M.	25	7	10	8	14	9	2		
	61- F.	17	7	5	5	7	8	2		
		42	14	15	13	21	17	4		
	Total M. & F.	548	263	175	110	384	114	50	44·4 %	25·6 %
B.		18	4	9	5	12	4	2		
C.		17	4	7	6	9	1	7		
Subsidiary		1	—		1			1		
		584	271	191	122	405	119	60		
II. Operative— A.	0-10 M.	1	1			1				
	11-15 M.	1	1			1				
	16-20 F.	1	1			1				
	21-25 M.	3	3			3				
	26-45 M.	9	5	2	2	6	2	1		
	26-45 F.	2	2	—	—	1	1			
		11	7	2	2	7	3	1		
	46-60 M.	3	3			1	2			
	61- M.	2	1	—	1	1		1		
	Total M. & F.	22	15	2	3	15	5	2	63·6 %	[illegible]
B.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
	16-20 M.	3	1	2		3				
	26-45 M.	6	2	3	1	4	2			
	26-45 M.	2	1		1	2				
		8	3	3	2	6	2			
	46-60 M.	1			1	—	1	—		
	61- M.	4	—	2	2	1	1	2		
	Total M. & F.	18	4	9	5	12	4	2	16·6 %	[illegible]

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result.			Functional Result.			Percent. of Good Anat. and Good Funct.	Percent. of Mod. or Bad Anat. with Good Funct.
			Good	Mod.	Bad	Good	Mod.	Bad		
IV. (a) Tibia and Fibula—Shafts. II. Operative —*continued.*	C. .. . 0-10 M.	1	1			1				
	16-20 M.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1		
	21-25 M.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
	26-45 M.	7	2	[illegible]	[illegible]	4	1	[illegible]		
	26-45 F.	[illegible]	[illegible]	[illegible]	1	[illegible]	[illegible]	1		
		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1	[illegible]		
	46-60 M.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
	61- M.	1	1			1				
	Total (M. & F.)	17	4	7	[illegible]	[illegible]	1	[illegible]	[illegible]	29·4 %
IV. (b) Pott's. I. Non-Operative	0-10 M.	1	1	—	—	1	—			
	11-15 M.	7	6	1	—	7	—			
	11-15 F.	1	1			1				
		8	7	1	—	8	—	—		
	16-20 M.	2	—	2	—	1	—	1		
	16-20 F.	2	1	1	—	1	1			
		4	1	3	—	2	1	1		
	21-25 M.	7	3	3	1	4	1	2		
	21-25 F.	4	2	2	—	2	2			
		11	5	5	1	6	3	2		
	26-45 M.	70	35	28	7	43	19	8		
	26-45 F.	43	27	10	6	19	14	10		
		113	62	38	13	62	33	18		
	46-60 M.	54	27	20	7	23	18	13		
	46-60 F.	29	13	12	4	9	13	7		
		83	40	32	11	32	31	20		
	61 M.	18	7	3	8	7	2	9		
	61 F.	8	1	5	2	1	3	4		
		26	8	8	10	8	5	13		
	Total (M. & F.)	216	124	87	35	119	73	24	37·5%	19·4%
B. ..		2	1	1		1	1			
C. ..		4	—	1	3	—	1	3		
Subsid. ..		2	—	1	1	—	1	1		
		254	125	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
II. Operative - A.	16-20 M.	1	1		—	1	—	—		
	46-60 M.	2	1	1	—	—	1	1		
	46-60 F.	1	1			1				
		3	2	1		1	1	1		
	Total (M. & F.)	4	3	1	—	2	1	1	50 %	
B. — ..	26-45 M.	1	1	—	—	1		—		
	46-60 M.	1		1		—	1			
	Total B.	2	1	1	—	1	1	—	50 %	
C. — ..	26-45 M.	1			1	—	—	1		
	46-60 M.	2	—	—	2	—	—	2		
	61-M.	1		1		—	1			
	Total C.	4	—	1	3	—	1	3		

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result.			Functional Result.			Percent. of Good Anat. and Good Funct.	Percent. of Mod. or Bad Anat. with Good Funct.
			Good	Mod.	Bad	Good	Mod.	Bad		
V. (a) Humerus—Anatomical Neck.										
I. Non-Operative	11-15 M	1	1	—	—	1	—	—		
	26-45 M	2	2	—	—	2	—	—		
	46-60 F.	1	1	—	—	1	—	—		
Total	—	4	4	—	—	4	—	—	80%	0%
Subsidiary	—	1	—	—	1	—	—	1		
II. Operative A.	46-60 M	1	1	—	—	1	—			
	46-60 F.	1	1	—	—	1	—			
		2	2	—	—	2	—	—	100%	
V. (b) Humerus—Upper Epiphysis.										
	0-10 M	1	1	—	—	1	—	—		
	0-10 F	3	2	—	1	3	—	—		
		4	3	—	1	4	—	—		
	16-20 M	1	1			1				
Total (M. & F.		5	4		1	5			80%	20%
II. Operative A.	0-10 F	1	1	—	—					
	16-20 M	1	1	—	—	1	—	—		
		2	2	—	—	2	—	—	100%	
V. (c) Humerus—Tuberosity.										
I. Non-Operative	26-45 F.	1	1	—	—	1	—	—		
	46-60 M	1		1	—					
Subsidiary	46-60 M	1	—	1	—					
		3	1	2		1	2			
V. (d) Humerus—Surgical Neck										
I. Non-Operative	0-10 M	3	3	—		3				
	0-10 F.	1	1			1				
	11-15 M	2	2			2				
	16-20 M	4	2	1	1	4				
	26-45 M.	5	3	1	1	3	1	1		
	46-60 M	6	5	1	—	6		—		
	46-60 F.	5	3	2		2	3			
	61-M.	7	1	4	2	3	4	3		
	61-F.	4	2	1	1	1	2	1		
Total		37	—	10	7	—	7	5	1-3	17·3%
B. ..		4	1			1				
C. ..		3	2	1		2				
Subsidiary		3		1	2			3		
Total	—	47	28	12	7	—	7	8		
II. Operative A. ..	11-15 F	1	1			1				
	16-20 M.	1	1	—		1				
	46-60 M.	1			1			1		
	46-60 F.	1		1			1			
		4	—	1	1	2	1	1		
	61 F.	1	1			1				
	61-M.	1	1			1				
Total A. (M. & F.		6	4	1	1	4	1	1	66·7%	
B. ..	0-10 M	1				1				
	0-10 M	3				3				
Total B		4	3			4				
C. ..	11-15 M	1		1		1				
	16-20 M	1	1			1				
	26-45 M	1	1			1				
7				1						

Fracture	Age Group (Years).	No. of Cases	Anatomical Result.			Functional Result.			Percent of Good Anat. and Good Funct.	Percent. of Mod. or Bad Anat. with Good Funct.
			Good	Mod.	Bad	Good	Mod.	Bad		
V. (e) Humerus—Shaft.										
I. Non-operative	0-10 M.	7	6	1	—	7	—	—		
	0-10 F.	6	3	1	2	4	2	—		
		13	9	2	2	11	2	0		
	11-15 M.	5	2	3	—	4	1	—		
	16-20 M.	11	6	5	—	11	—	—		
	16-20 F.	1	1	—	—	1	—	—		
		12	7	5	—	12	—	—		
	21-25 M.	1	—	1	—	1	—	—		
	21-25 F.	2	—	1	1	1	1	—		
		3	—	2	1	2	1	—		
	26-45 M.	14	9	4	1	10	3	1		
	26-45 F.	1	1	—	—	1	—	—		
		15	10	4	1	11	3	1		
	46-60 M.	13	11	2	—	12	1	—		
	46-60 F.	4	3	1	—	3	1	—		
		17	14	3	—	15	2	—		
	61 M.	3	2	—	1	2	1	—		
Total	M. & F.	68	44	19	5	57	10	1	64·5%	21·9%
B. ..		7	6	1	—	6		1		
C. ..		6	4	2	—	2	2	2		
Subsidiary		5	3		2	3	2	—		
Total		86	57	22	7	68	14	4		
II. Operative— A.	16-20 M.	3	3	—	—	3				
	21-25 F.	1	1	—	—	1		—		
	26-45 M	1	1				1	—		
	46-60 F.	1	1			1				
Total A.		6	6			5	1		83·3%	
B. ..	0-10 M.	1	1			1				
	16-20 M	1	1			1				
	20-21 F.	1	1			1				
	26-45 M.	3	3			3				
	61-M.	1		1	—		—	1		
T... F		7	6	1		6	—	1		
C. ..	0-10 F.	1	1			1				
	26-45 M.	1	—	1		1				
	46-60 M.	4	3		1		2	2		
Total C		6	4	1	1	2	2	2		
V. (f) Humerus—Supra-condylic										
I. Non-operative	0-10 M.	4	2	2		3	1			
	0-10 F.	2	2			2				
	11-15 M.	2	2	—	—	2	—	—		
	16-20 M.	4	—	4	—	1	3			
	21-25 M.	1	—	—	1	—	—	1		
	26-45 F	1	—	—	1	—	—	1		
	46-60 M.	2	—	2	—	—	1	1		
	61 M	1	1	—	—	1				
Total		17	7	8	2	9	5	3	41·1	11·1%

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result.			Functional Result.			Delayed Union.	Non-Union.
			1.	2.	3.	1.	2.	3.		
V. (f) Humerus—Supra-condylic. I. Non-Operative attained.										
			2	2		2	2	1		
			1	1			1			
			1			1				
			24	10	8	6	11	8	3	3
J. Operative A.	11-15 M.	1		1		1				
B.	0-10 M.	2			2	1	1			
	16-20 M.	1			1			1		
	21-25 M.	1	1			1				
	46-60 M.	1	1				1			
			5	2	3	2	2	1		
C.	1-10 M.	1	1				1			
V (Operative) Various.										
Capitellum. I. Operative A.	0-10 M.	1		1	—	1		—		
V. (g) Humerus—Lower Epiphysis. I. Non-Operative	0-10 M.	28	17	5	6	23	4	1		
	0-10 F.	10	3	5	2	8	2			
		38	20	10	8	31	6	1		
	11-15 M.	9	4	3	2	7	—	2		
	16-20 M.	3	2		1	2		1		
		50	26	13	11	40	6	4	44·0 %	22·0 %
Surgical Neck.		9		2	7	1	2	6		
B.		3	1		2	1	1	1		
C.		3		2	1		2	1		
		15	3	4	8	2	5	8		
VI. (a) Radius—Upper Epiphysis. I. Non-Operative A.	0-10 M.	7	5	1	1	4	2	1		
	0-10 F.	3	3			3				
	16-20 M.	1	1			1				
	11-15 F.	3	2	1		1	2			
		14	11	2	1	9	4	1	57·1 %	7·1 %
B.	0-10 M.	2	1		1	1	1			
	11-15 M.	1			1			1		
Total B.		3	1		2	1	1	1		
C.	0-10 M.	1		1			1			
	16-20 M.	2		1	1		1	1		
Total C.		3		2	1		2	1		
V. (h) Humerus—Ext. Condyle. I. Non-Operative	0-10 F.	1	—	1	—	1	—	—		
	0-10 M.	4	1	—	3	2	—	2		
	11-15 M.	6	4	2	—	5	1			
	16-20 M.	4	3	1		2	2			
	26-45 M.	1	1			1				
	61-0 M.	1		1			1			
		17	9	5	3	11	4	2	11·1 %	22·2 %
II. Operative B.		1	—	1	—	—	1	—		

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result.			Functional Result.			Delayed Union.	Non-Union.
			1.	2.	3.	1.	2.	3.		
V. (h) Humerus—Ext. Condyle. I. Non-Operative	0-10 M.	2	1	1			1	1		
	11-15 M.	1		1				1		
	16-20 M.	2		1		1		1		
	26-45 M.	1		1			1			
Total		6	1	4	1	1	2	3		
V. (e) (g) (d) (f) (c) (a). Humerus (various)—I. Non-Operative Subsid. Operation										
Shaft.	0-10 F.	1	1			1				
	11-15 M.	1			1			1		
	16-20 M.	1			1			1		
	21-25 M.	1	1			1				
	26-45 M.	1	1			1				
Total	(M. & F.)	5	3		2	4		1		
Lower Epiphysis	0-10 M.	4		1	3	1		3		
	16-25 M.	1			1		1			
	26-45 M.	2	1		1	1		1		
	16-20 F.	2	—	1	1		1	1		
Total	(M. & F.)	9	1	2	6	2	2	5		
Surgical Neck.	26-45 M.	2			1			1		
	46-60 M.	1			1			1		
	16-60 F.	1		1				1		
Total	(M. & F.)	3		1	2			2		
Supra-condylic	46-60 M.	1		—	1			1		
Excision of Tuberosity	16-60 F.	1	—	1	—	—	1			
Anatomical Neck.	61-	1								
VI. (a) Radius—Upper Epiphysis. I. Non-Operative	0-10 M.	1		1			1			
	11-15 M.	1	1			1		—		
Total		2	1	1		1	1			
VI. (b) Radius—Shaft. I. Non-Operative	0-10 M.	6	5	1		5	1			
	0-10 F.	7	5	2		6	1			
		13	10	3		11	2			
	11-15 M.	6	4	1	1		1			
	16-20 M.	5	4	1		5				
	16-20 F.	2	1		1	1		1		
		13	9	2	2	11	1	1		
	21-25 M.	2	1		1	2				
	21-25 F.	1	1			1				
		3	2		1	3				
	11-15 M.	3	1	1			1	2		
	26-45 F.	3	1	2		1	2	—		
		6	2	3	1	1	3	2		
	46-60 M.	2			2		1	1		
	46-60 F.	1	1				1			
		4	1		3		2	2		
	61-M.	2	1		1					
	61-F.	0								
Total	(M. & F.)	45	27	11	7	34	11	3	11·1 %	33·3 %
B.		2			2		1	1		
C.		4		3	1	1	2	1		
Subsidiary		3	1		1	1		1		
		9	1	3	4	2	3	4		

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result.			Functional Result.			Percent. of Good Anat. and Good Funct.	Percent. of Mod. or Bad Anat. with Good Funct.
			Good.	Mod.	Bad.	Good.	Mod.	Bad.		
VI. (b) Radius—Shaft. —*continued.*										
II. Operative										
A. .. .	0-10 M.	1	1	--	-	1	—	—		
	11-15 M.	2	1	1	-	2	--	—		
	11-15 F.	1	1	—		1		--		
		3	2	1		3	--	-		
	21-25 M.	1	1	—	-	1	-			
	26-45 M.	1		--	1		-	1		
	26-45 F.	1		1			--	1		
		3		1	1		--	2		
Total A. (M. & F.)		5	2	2	1	3	--	2	57·1 %	14·2 %
B.	26-45 M.	1		--	1	1		0		
	46-60 F.	1		-	1	1	—			
Total B. (M. & F.)		2		-	2	2	—		--	100 %
C. .. .	21-25 F.	1	—	1		1				
	26-45 M.	4	—	2	2		3	1		
Total C. (M. & F.)		5		3	1	1	3	1	--	25 %
VI. (c) Radius—Lower Epiphysis.										
I. Non-Operative	0-10 M.	4	3	1	—	3	1			
	0-10 F.	1	1	—	--	—	1	-		
		5	4	1		3	2	—		
	11-15 M.	6	3	2	1	5	1			
	16-20 M.	3	3		-	3				
	17-20 F.	1	1	-	—	1				
		4	4	--		4	—			
Total (M. & F.)		15	11	3	1	12	3		80·0	13·3 %
II. Operative— A. .	0-10	1	1			1			100	
VII. (a) Ulna—Olecranon										
I. Non-operative		1		1	—	1				
	0-10 F.	1		1		1				
	11-15 M.									
	16-20 M.	1	1			1				
	21-25 F.	1		1	—	1		-		
		3	1	2	—	3				
	46-60 M.	1			1		1			
	46-60 F.	1		1		1				
		2		1	1	1	1			
		6	1	4	1	5	1			
Total (M. & F.)		12	2	7	3	9	2	1	91·6	8·3 %
B. .		12	10	1	1	9	2	1	83·3	8·3 %
C. ..		6	4	1	1	5	1		83·3	16·6 %

Fracture.	Age Group Years)	No. of Cases	Anatomical Result.			Functional Result.			Percent of Good Anat. and good Funct.	Percent. of Mod. or Bad Anat. with Good Funct.
			Good	Mod	Bad	Good	Mod.	Bad		
VII (a) Ulna—Olecranon —*continued.*										
II. Operative A.	0-10 M.	1	1	—	—	1	—	--		
	16-20 M.	1	1	—	—	1	—	—		
	21-25 M.	1	1	—	—	1	—	—		
	26-45 M	11	10	1	—	9	2	—		
	26-45 F.	2	2	--	—	1	1	—		
		13	12	1	—	10	3	—		
	46-60 M.	2	2	--	-	2	—	—		
	61- F.	1		1	—	—	1	—		
Total	M & F.)	19	17	2	—	15	4	—	73·6 %	5·2 %
B. .. .	26-45 M	8	8	—	—	8	—	—		
	26-45 F.	1	1	—	—	--	1	—		
	..	9	9	—	—	8	1	—		
	46-60 M.	3	3	--	—	1	1	1		
		3	3	—	—	1	1	1		
Total B.		12	12	—	—	9	2	1		
C.	16-20 M.	1	1	—	—	—	1	--		
	26-45 M.	4	2	1	1	2	—	2		
	46-60 M	1	1	--	—	1	—	—		
	46-60 F.	1	--	—	1	—	—	1		
Total C.		7	4	1	2	3	1	3		
VII (b) Ulna—Shaft.										
I. Non-Operative	0-10 M.	6	6	—	—	5	1	—		
	0-10 M.	1	1	--	—	1	—	-		
		7	7	—	--	6		—		
	11-15 M.	3	1	1	1	3	—	--		
	21-25 M.	1	1	—	—	1	—			
	26-45 M	2	2	—	—	2	—	--		
	26-45 F.	1	1	—		1				
		3	3	—		3	-	-		
	46-60 M.	1		1		—	1			
	46-60 F.	1	1		-	1		--		
	61. M.	2	2	—	--	2	—	--		
Total	(M & F.)	18	15	2	1	16	2	—	77·7 %	11·11
B. .	--	2	--	1	1	—	1	1		
C. ..	—	2	-	1	1	1		1		
		22	15	4	3	17	3	2		
II. Operative— A.	61 M.	1	—	—	1		1			
B.	11-15 M.	1	—	—	1	—	1			
	46-60 M.	1		1	--		—	1		
Total B.	..	2		1	1	—	1	1		
C. .	16-20 M	1	—	1	-	1	—			
	26-45 M.	1	-	-	1	-	—	1		
Total C.	..	2	—	1	1	1		1		
VII (c) Ulna Lower Epiphysis.										
I. Non-Operative	11-15 M.	1	1			1	—	—		
	16-20 M.	1	1	—	—	1		—		
Total	..	2	2	--	—	2		—	100 %	

Fracture.	Age Group (Years).	No. of Cases.	Anatomical Result. Good	Mod.	Bad	Functional Result. Good	Mod.	Bad	Percentage of Good Anat. and Good Funct.	Percentage of Mod. or Bad Anat. with Good Funct.
VIII. (a) Radius & Ulna —Shafts.										
I. Non-Operative	0-10 M.	22	14	6		15		2		
	0-10 F.	7	4	1		6	1			
		29	18	7		21				
	11-15 M.	19	13			9	10			
	11-15 F.	6	3			4	1			
		25	16	8		13	11			
	16-20 M.	5	—	4	1	2	3			
	16-20 F.	1	—			1	—			
		6				3				
	21-25 M.	2	1	1		1	1			
	26-45 M.	7	4	3		2	4	1		
	46-60 M.	4	—	1		—	1	3		
	46-60 F.	3	1	2		2	1			
		7	1	3		2	2			
Total	M. & F.	76	37	26	13	42	21	0	28·6%	17·1%
B...		3		1	2	1	1	1		
C...		10	1	3		2	5	3		
		89	28	30	15	45	28	16		
Operative— A...	0-10 M.	1	1	—		1	—	—		
	11-15 M.	1	1	—		1	—	—		
	11-15 F.	2	2	—		2	—	—		
		3	3	—		3	—	—		
	16-20 M.	2	2	—	—	2	—	—		
	26-45 M.	2	—	2	—	—	2	—		
		2	—	2		—	2	—		
Total A.	M. & F.	8	6	2		6	2	—	75%	
B...	0-10 F.	1	—	1	—	1	—	—		
	11-15 M.	2	—	—	2	—	1	1		
Total B.	M. & F.	3	—	1	2	1	1	1		
C...	0-10 F.	2	1	1		1	1	—		
	11-15 M.	1	—	1	—	1	—	—		
	16-20 M.	2	—	—	2	—	—	2		
	26-45 M.	2	—	1	1	—	1	1		
	26-45 F.	1	—	—	1	—	1	—		
		3	—	1	2	—	2	1		
	46-60 M.	2	—	—	2	—	—	2		
Total C.	M. & F.	10	1	3	6	2	3	5		

Fracture.	Age Group (Years).	No. of Cases	Anatomical Result. Good	Mod.	Bad	Functional Result. Good	Mod.	Bad	Percentage of Good Anat. and Good Funct.	Percentage of Mod. or Bad Anat. with Good Funct.
VIII. (b) Colles's Fracture.										
I. Non-Operative	0-10 M.	1	1	—	—	1	—	—		
	11-15 M.	3	3	—	—	3	—	—		
	16-20 M.	2	1	1	—	2	—	—		
	21-25 M.	2	2	—	—	2	—	—		
	21-25 F.	2	—	1	—	2	—	—		
		4	2	2	—	4	—	—		
	26-45 M.	14	3	8	3	6	5	3		
	26-45 F.	2	1	1	—	2	—	—		
		16	4	9	3	8	5	3		
	46-60 M.	7	1	4	2	4	2	1		
	46-60 F.	7	1	5	1	4	4	3		
		14	2	9	3	8	6	4		
	61- M.	2	—	2	—	—	2	—		
	61- F.	5	—	2	3	1	4	—		
		7	—	4	3	1	6	—		
Total	M. & F.	47	13	26	8	27	16	4	57·4	34·7%
C.		1		1	—		1			
Total	M. & F.	48	13	26	9	27	17	4		
II. Operative A.	46-60 F.	1	1	—		1	—	—		
C. ..	26-45 M.	1	—	1	—	—	1	—		

2. For convenience of reference, the results of each individual fracture are set out in squares (Table II).

In the case of each fracture it is possible, according to the method of investigation adopted, to have nine different results, viz.: -

Good anatomical with **good functional** result.
Moderate anatomical with **good functional** result
Bad anatomical with **good functional** result.

Good anatomical with **moderate functional** result.
Moderate anatomical with **moderate functional** result.
Bad anatomical with **moderate functional** result.

Good anatomical with **bad functional** result.
Moderate anatomical with **bad functional** result.
Bad anatomical with **bad functional** result.

The number of each of these results in each fracture investigated is indicated in the squares.

The anatomical results are noted in the horizontal spaces and the functional in the vertical spaces of the square.

The non-operative results are given first (I.).

The operative Class A. next (II. Class A.).

The operative Classes B and C are given together.

TABLE II.

Femur—Neck.

I. NON OPERATIVE.

Cases: 91.

Anatomical	Functional: Good.	Mod.	Bad.
Good.	15	2	1
Mod.	8	19	12
Bad.	1	7	26

II OPERATIVE.

Class A.

Cases: 1.

Anatomical	Functional: Good.	Mod.	Bad.
Good.	1	0	0
Mod.	0	0	0
Bad.	0	0	0

Class B.

Cases: 1. Good anat. with bad functional result.

Femur Sep. Epiph of Head.

I. NON-OPERATIVE.

Cases: 2.

Anatomical	Functional: Good	Mod.	Bad
Good	1	0	0
Mod.	0	1	1
Bad	0	0	1

II. OPERATIVE.

Cases: 0.

Femur Upper ⅓ of Shaft.

I. NON-OPERATIVE.

Cases: 96.

Anatomical	Functional: Good	Mod.	Bad
Good	52	1	0
Mod.	12	10	1
Bad	4	4	12

II OPERATIVE.

Class A.

Cases: 3.

Anatomical	Functional: Good	Mod.	Bad
Good	3	0	0
Mod.	0	0	0
Bad	0	0	0

Classes B. and C.

Cases: 8.

Anatomical	Functional: Good	Mod.	Bad
Good	1	0	0
Mod.	2	0	0
Bad	0	0	5

Femur Middle ⅓.

I. NON-OPERATIVE.

Cases: 438.

Anatomical	Functional: Good	Mod.	Bad
Good	297	14	3
Mod.	56	20	7
Bad	11	11	16

II. Operative.

Class A.

Cases: 27.

Functional.

Anatomical.	Good	Mod.	Bad
Good	25	0	0
Mod.	0	2	0
Bad	0	0	0

Classes B. and C.

Cases: 19.

Functional.

Anatomical.	Good	Mod.	Bad
Good	10	0	0
Mod.	2	2	1
Bad	1	0	3

Femur—Lower ⅓ of Shaft.

I. Non-Operative.

Cases: 104.

Functional.

Anatomical.	Good	Mod.	Bad
Good	61	1	1
Mod.	12	12	0
Bad	4	6	7

II. Operative.

Class A.

Cases: 2.

Functional.

Anatomical.	Good.	Mod.	Bad
Good	1	0	0
Mod.	0	0	0
Bad	0	1	0

Classes B. and C.

Cases: 6.

Functional.

Anatomical.	Good	Mod.	Bad
Good	0	2	0
Mod.	1	0	0
Bad	1	1	1

Lower Extremity of Femur Involving Knee Joint.

I. Non-Operative.

Cases: 12.

Functional.

Anatomical.	Good	Mod.	Bad
Good	5	0	0
Mod.	1	1	0
Bad	0	2	3

II. Operative.

Class A.

Cases: 1. Mod. anatomical with mod. functional result.

Classes B. and C.

Cases: 5.

Functional.

Anatomical.	Good	Mod.	Bad
Good	0	0	0
Mod.	0	1	0
Bad	0	1	3

Femur Lower Epiphysis.

I. Non-Operative.

Cases: 9.

Functional.

Anatomical.	Good	Mod.	Bad
Good	5	1	1
Mod.	0	0	0
Bad	1	1	0

II. OPERATIVE.

Class A. = 0.

Class C.

Cases: 1. Bad anat. with bad functional result.

Tibia—Shaft.

I. NON-OPERATIVE.

Cases: 426.

Anatomical. \ Functional.	Good	Mod.	Bad
Good	317	15	5
Mod.	41	17	9
Bad	5	7	10

II. OPERATIVE

Class A.

Cases: 17.

Anatomical. \ Functional.	Good	Mod.	Bad
Good	13	0	0
Mod.	2	0	1
Bad	1	0	0

Class B. [illegible].

Cases: 3.

Anatomical. \ Functional.	[illegible]	[illegible]	[illegible]
Good	1	0	0
Mod.	1	0	0
Bad	0	1	0

Tibia—Lower Epiphysis.

I. NON-OPERATIVE.

Cases: 3.

Anatomical. \ Functional.	Good	Mod.	Bad
Good	3	0	0
Mod.	0	0	0
Bad	0	0	0

II. OPERATIVE.

No Cases.

Tibia—Internal Malleolus.

I. NON-OPERATIVE.

Cases: 2.

Anatomical. \ Functional.	Good	Mod.	Bad
Good	1	0	0
Mod.	0	1	0
Bad	0	0	0

II. OPERATIVE.

No Cases.

Fibula—Shaft.

I. NON-OPERATIVE.

Cases: 153.

Anatomical. \ Functional.	Good	Mod.	Bad
Good	108	14	5
Mod.	6	7	5
Bad	0	2	6

II. OPERATIVE.

Class A.

1 *Case*: Good [illegible].

Classes B. and C. = 0.

ibula External Malleolus.

I. Non-Operative.

2 *Cases*: Both good anat. with good functional result.

II. Operative.

No cases.

ibia and Fibula, Shafts.

I. Non-Operative.

Cases: 549.

Anatomical.	Functional. Good.	Mod.	Bad.
Good	244	17	2
Mod.	111	46	18
Bad	30	50	31

II. Operative.

Class A.

Cases: 22.

Anatomical.	Functional. Good.	Mod.	Bad.
Good	14	3	0
Mod.	1	1	0
Bad	0	1	2

Classes B and C.

Cases: 35.

Anatomical.	Functional. Good.	Mod.	Bad.
Good	7	1	0
Mod.	12	1	3
Bad	2	3	6

Pott's Fracture.

I. Non-Operative.

Cases: 248.

Anatomical.	Functional. Good.	Mod.	Bad.
Good	93	24	8
Mod.	23	40	25
Bad	3	10	22

II. Operative.

Class A.

Cases: 4.

Anatomical.	Functional. Good.	Mod.	Bad.
Good	2	1	0
Mod.	0	0	1
Bad	0	0	0

Classes B and C.

Cases: 6.

Anatomical.	Functional. Good.	Mod.	Bad.
Good	1	0	0
Mod.	0	2	0
Bad	0	0	3

Humerus Anatomical Neck.

I. Non Operative.

Cases: 5.

Anatomical.	Functional. Good.	Mod.	Bad.
Good	4	0	0
Mod.	0	0	0
Bad	0	0	1

II. OPERATIVE.

Class A.

Cases: 2.

Functional.

Anatomical.	Good	Mod.	Bad
Good	2	0	0
Mod.	0	0	0
Bad	0	0	0

Humerus Upper Epiphysis.

I. NON-OPERATIVE.

Cases: 5

Functional.

Anatomical.	Good	Mod.	Bad
Good	4	0	0
Mod.	0	0	0
Bad	1	0	0

II. OPERATIVE.

Class A.

Cases: 2.

Functional.

Anatomical.	Good	Mod.	Bad
Good	2	0	0
Mod.	0	0	0
Bad	0	0	0

Classes B and C. Nil.

Humerus Fracture of Tuberosity.

I. NON-OPERATIVE.

Cases: 3.

Functional.

Anatomical.	Good	Mod.	Bad
Good	1	0	0
Mod.	0	2	0
Bad	0	0	0

Humerus—Surgical Neck.

I. NON-OPERATIVE.

Cases: 40.

Functional.

Anatomical.	Good	Mod.	Bad
Good	18	4	0
Mod.	6	3	2
Bad	1	0	6

II. OPERATIVE.

Class A.

Cases: 6.

Functional.

Anatomical.	Good	Mod.	Bad
Good	4	0	0
Mod.	0	1	0
Bad	0	0	1

Classes B. and C.

Cases: 7.

Functional.

Anatomical.	Good	Mod.	Bad
Good	6	0	0
Mod.	1	0	0
Bad	0	0	0

Humerus Shaft.

NON-OPERATIVE.

Cases: 73.

Functional.

Anatomical.	Good	Mod.	Bad
Good	11	3	0
Mod.	14	5	0
Bad	2	4	1

II. Operative.

Class A.
Cases 6.

Functional.

Anatomical.	Good.	Mod.	Bad.
Good	5	1	0
Mod.	0	0	0
Bad	0	0	0

Classes B. and C.
Cases: 13.

Functional.

Anatomical.	Good	Mod.	Bad.
Good	7	2	1
Mod.	1	0	1
Bad.	0	0	1

Humerus.—Supra-condylic.

I. Non-Operative.

Cases: 18.

Functional.

Anatomical.	Good	Mod.	Bad
Good	7	0	0
Mod.	2	5	1
Bad	0	0	3

II. Operative.

Class A.
Cases: 1.
Mod. anatomical with good functional result.
Classes B. *and* C.
Cases: 6.

Functional.

Anatomical.	Good	Mod.	Bad
Good	1	2	0
Mod.	0	0	0
Bad	1	1	1

Humerus Lower Epiphysis.

I. Non-Operative.

Cases: 59.

Functional.

Anatomical.	Good	Mod.	Bad
Good	26	0	0
Mod.	10	5	0
Bad	3	5	10

II. Operative.

Class A.
Cases: 14.

Functional.

Anatomical.	Good	Mod.	Bad
Good	8	1	0
Mod.	0	2	0
Bad	1	1	1

Classes B. and C.
Cases: 6.

Functional.

Anatomical.	Good	Mod.	Bad
Good	1	0	0
Mod.	0	2	0
Bad	0	1	2

Humerus Capitellum.

I. Non-Operative.

No cases.

II. Operative.

Class A.
Cases: 1.
Mod. anatomical with good functional result.

Humerus Internal Condyle.

I. Non-Operative.

Cases: 17.

Functional.

Anatomical.	Good	Mod.	Bad
Good	7	2	0
Mod.	3	2	0
Bad	1	0	2

II. OPERATIVE.

Class A.

No Cases.

Class B.

1 *Case*: Mod.—Mod.

Humerus Ext. Condyle.

I. NON-OPERATIVE.

Cases: 7.

Functional.

Anatomical.	Good.	Mod.	Bad
Good	1	0	0
Mod.	3	3	0
Bad	0	0	0

II. OPERATIVE.

No Cases.

Radius Upper Epiphysis.

I. NON-OPERATIVE.

Cases: 2.

Functional.

Anatomical.	Good	Mod.	Bad
Good	1	0	0
Mod.	0	1	0
Bad	0	0	0

II. OPERATIVE.

No Cases.

Radius Shaft.

I. NON-OPERATIVE.

Cases: 47.

Functional.

Anatomical.	Good	Mod.	Bad
Good	25	3	0
Mod.	4	7	0
Bad	2	2	4

II. OPERATIVE.

Class A.

Cases: 7.

Functional.

Anatomical.	Good	Mod.	Bad
Good	4	0	0
Mod.	1	0	1
Bad	0	0	1

Classes B. & C.

Cases: 7.

Functional.

Anatomical.	Good	Mod.	Bad
Good	0	0	0
Mod.	1	2	0
Bad	2	1	1

Radius Lower Epiph.

I. NON-OPERATIVE.

Cases: 15.

Functional.

Anatomical.	Good	Mod.	Bad
Good	10	1	0
Mod.	1	2	0
Bad	1	0	0

II. OPERATIVE.

Class A.

1 *Case*: Good—Good.

Classes B. and C.

Cases: 0.

Ulna Olecranon.

I. NON-OPERATIVE.

Cases: 20.

Functional.

Anatomical.	Good	Mod.	Bad
Good	9	1	0
Mod.	6	1	1
Bad	0	1	1

II. Operative.

Class A.

Cases: 19.

Functional.

Anatomical.	Good	Mod.	Bad
Good	14	3	0
Mod.	1	1	0
Bad	0	0	0

Classes B. and C.

Cases: 19.

Functional.

Anatomical.	Good	Mod.	Bad
Good	12	3	1
Mod.	0	0	1
Bad	0	0	2

Ulna. Shaft.

I. Non-Operative.

Cases: 18.

Functional.

Anatomical.	Good.	Mod.	Bad.
Good	14	1	0
Mod.	1	1	0
Bad	1	0	0

II. Operative.

Class A.

1 Case: Bad Anatomical—Mod. Functional.

Classes B and C.

Cases: 4.

Functional

Anatomical.	Good.	Mod.	Bad.
Good	0	0	0
Mod.	1	0	1
Bad	0	1	1

Ulna.—Lower Epiphysis.

I. Non-Operative.

Cases: 2.

Both Good—Good.

II. Operative.

Cases: 0.

Radius and Ulna—Shafts.

I. Non-Operative.

Cases: 76.

Functional.

Anatomical.	Good.	Mod.	Bad
Good	20	8	0
Mod.	11	12	3
Bad	2	4	7

II. Operative.

Class A.

Cases: 8.

Functional.

Anatomical.	Good.	Mod.	Bad.
Good	6	0	0
Mod.	0	2	0
Bad	0	0	0

Classes B. *and* C,

Cases: 13.

Functional.

Anatomical.	Good.	Mod.	Bad.
Good	0	1	0
Mod.	3	1	0
Bad	0	2	6

Colles's Fracture.

I. Non-Operative.

Cases: 47.

Functional.

Anatomical.	Good.	Mod.	Bad.
Good	13	0	0
Mod.	11	11	3
Bad	3	3	1

II. OPERATIVE.

Class A.

Cases: 1.

Good anatomical, good functional result.

Class C.

Cases: 1.

Good anatomical with moderate functiona result.

3. The answers to the four following questions appear to the Committee to afford in a compact form the most important information with reference to the result of treatment of any given fracture :—

(i.) Of a given method, what is the percentage of good result—*i.e.*, a good anatomical combined with a good functional result?

(ii.) Of a given method, what percentage of results are bad both anatomically and functionally?

(iii.) What is the frequency of a good functional result when the anatomical result is defective?

(iv.) What is the frequency of an imperfect functional result if the anatomical result be bad?

The answers to these questions are given in Table III., which shows in four columns the number of each fracture which were reported as (1) good anatomically and functionally; (2) Bad anatomically and functionally; (3) Defective anatomically but good functionally; (4) Good anatomically but defective functionally.

If desired, further statistics can be compiled from the squares given above.

TABLE III.

I. Non-Operative.

(I.) LOWER EXTREMITY.

FRACTURE.	No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
FEMUR—					
Neck	91	15	26	9	3
Epiphysis of head ..	9	4	1	2	0
Shaft Upper ⅓ ..	96	52	12	16	1
,, Middle ⅓ .	438	207	16	67	17
,, Lower ⅓ .	101	61	7	16	2
Lower extremity involving joint	12	5	3	1	0
Lower extremity not involving joint	8	5	0	1	2
TIBIA—					
Shaft	426	317	10	46	20
Lower Epiphysis	3	3	0	0	0
Inter. malleolus	2	1	0	0	0
FIBULA					
Shaft	163	108	6	6	19
Ext. malleolus	2	2	0	0	0
TIBIA AND FIBULA—					
Shafts	549	244	31	141	19
Pott's	248	93	22	20	32
TOTALS .	2142	1096	134	331	115
		50·3%	6·1%	15·1%	5·3%

(ii.) UPPER EXTREMITY.

FRACTURE.	No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
HUMERUS—					
Anat. Neck	5	4	1	0	0
Upper Epiphysis ..	5	4	0	1	0
Tuberosity	3	1	0	0	0
Surg. Neck	40	18	6	7	4
Shaft	73	44	1	16	3
Supra-condylic ..	18	7	3	2	0
Lower Epiphysis ..	59	26	10	13	0
Int. Condyle	17	7	2	4	2
Ext. Condyle . ..	7	1	0	3	0
RADIUS—					
Upper Epiphysis ..	2	1	0	0	0
Shaft	47	25	4	6	3
Lower Epiphysis ..	15	10	0	2	1
ULNA—					
Olecranon	20	9	1	6	1
Shaft	18	14	0	2	1
Lower Epiphysis ..	2	2	0	0	0
RADIUS AND ULNA—					
Shafts	76	29	7	13	8
Colles's	47	13	1	14	0
TOTALS ..	454	215	36	89	23
		=47·3%	=7·9%	17·4%	5·0%

II. Operative.

CLASS A.

(i.) Lower Extremity.

FRACTURE.	No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad. Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
FEMUR—					
Neck	1	1	0	0	0
Upper ⅓ . ..	3	3	0	0	0
Middle ⅓ ..	27	25	0	0	0
Lower ⅓ . ..	2	1	0	0	0
Lower extremity involving joint	1	1	0	0	0
TIBIA					
Shaft	17	13	0	3	0
FIBULA					
Shaft	1	1	0	0	0
TIBIA AND FIBULA—					
Shafts	22	14	2	1	3
Pott's	4	2	0	0	1
TOTAL .	78	61	2	4	4
		78·2%	2·6%	5·1%	5·1%

(ii.) Upper Extremity.

Fractures.	No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
Humerus—					
Anat. Neck	2	2	0	0	0
Upper Epiphysis	2	2	0	0	0
Surg. Neck	6	4	1	0	0
Shaft	6	5	0	0	1
Capitellum	1	0	0	1	0
Lower Epiphysis	14	8	1	1	1
Supra-condylic	1	0	0	1	0
Radius—					
Shaft	7	4	1	1	0
Lower Epiphysis	1	1	0	0	0
Ulna—					
Olecranon	19	14	0	1	3
Shaft	1	0	0	0	0
Radius and Ulna—					
Shafts	8	6	0	0	0
Colles's	1	1	0	0	0
Totals	69	47	3	5	5

Class B.

Lower and Upper Extremity.

Fractures.	No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
Femur—					
Neck	1	0	0	0	0
Upper ⅓	1	1	0	0	0
Middle ⅓	10	6	1	0	0
Lower ⅓	2	0	0	1	1
Lower extremity involving knee joint	3	0	2	0	0
Tibia—					
Shaft	2	0	0	1	0
Tibia and Fibula—					
Shafts	13	3	2	0	1
[illegible]	2	1	0	0	0
Humerus—					
Surg. Neck	4	4	0	0	0
[illegible]	7	6	1	0	0
Supra-condylic	5	1	1	1	1
Lower Epiphysis	3	1	1	0	0
Lower condyle	1	0	0	0	0
Ulna—					
Olecranon	12	9	0	0	3
Shaft	2	2	0	0	0
Radius—					
Shaft	2	0	0	2	0
Radius and Ulna—					
Shafts	3	0	1	1	0
Totals	78	32	8	15	6

Class C.

Lower and Upper Extremities.

Fractures.	No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
Femur—					
Upper ⅓	7	0	5	2	0
Middle ⅓	9	4	2	3	0
Lower ⅓	4	0	1	1	1
Lower Epiphysis	1	0	1	0	0
Lower Extremity involving knee joint	2	0	1	0	0
Tibia—					
Shaft	1	1	0	0	0
Tibia and Fibula—					
Shafts	17	4	4	5	0
Pott's	4	0	3	0	0
Humerus—					
Surg. Neck	3	2	0	1	0
Shaft	3	1	1	1	3
Supra-condylic	1	0	0	0	1
Lower Epiphysis	3	0	1	0	0
Ulna—					
Olecranon	7	3	2	0	1
Shaft	2	0	1	1	0
Radius—					
Shaft	5	0	1	1	3
Radius and Ulna—					
Shafts	10	0	5	2	1
Colles's	1	0	0	1	0
Totals	83	15	28	17	7

An analysis of all the results, non-operative and operative, clearly shows the interdependence of the anatomical and functional result. The total number of cases in which a good anatomical result was obtained is 1,736, and in no less than 1,576 of these the functional result was also good.

In other words:—

If the anatomical result be good the functional result is good in 90.7 per cent.

If the anatomical result be moderate or bad, the functional result is good in 380 out of 1,279—*i.e.*, 29.7 per cent.

If the anatomical result be bad, the functional result is bad in 176 out of 330—*i.e.*, 53.3 per cent.

4. In Table IV. are compared the results of operative and non operative treatment.

TABLE IV.

Comparison of the results of Non-Operative and Operative Treatment.

I. Non-Operative.

No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
2596	1422	169	419	138
	= 54·3%	= 6·5	= 16·1	5·3%

II. OPERATIVE.

i.) Class A.

No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
147	108	5	9	9
	73·4	3·4	= 6·1%	= 6·1%

(ii.) Class B.

No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
78	32	8	15	6
	41·0	10·2	= 19·2%	= 7·6%

(iii.) Class C.

No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
83	15	28	17	7
	18·0	33·7	= 20·4%	= 8·4%

The figures in 1st and 3rd Columns added together give the number of Cases in which a good functional result was obtained.

In considering both the non-operative and operative results it must be borne in mind that the methods employed varied greatly, and also that the operative treatment of fractures is as yet in its infancy. There is reason to suggest that as operative treatment is more extensively used, and if in such operations the less efficient methods of fixing the fragments are discarded, the results will show a considerable improvement on those recorded. Non-operative treatment, on the other hand, is thoroughly established; though it must be admitted that some recent modifications have been introduced, but not yet extensively used, so that judgment on the results would be somewhat premature.

5. AGE GROUPS.

While the early analysis was based on the age groups defined in paragraph 11, it was found that for all practical purposes age groups might be condensed into children (0-15), and adult life (over 15).

An attempt has been made, on this basis, to determine the influence of age on the result of treatment.

TABLE V.

I. NON-OPERATIVE.

Under 15: 1,016 cases. Good functional result in 100·8 per cent.

Over 15: 1,580 cases. Good functional result in 45·1 per cent.

II. OPERATIVE.

Under 15: 93 cases. Good functional result in 93·6 per cent.

Over 15: 83 cases. Good functional result in 66·3 per cent.

In Table VI., three fractures are taken, and the percentages of [illegible] anatomical result out of [illegible] group.

[illegible] proportion of good results [illegible] group.

[illegible] groups makes it clear that [illegible] of the functional result of [illegible] advances; in other words, the [illegible] result.

TABLE VI.

PERCENTAGES OF GOOD FUNCTIONAL RESULTS FOR EACH AGE GROUP (3 FRACTURES).

TIBIA AND FIBULA.—SHAFTS.

0-10	93 per cent.
11-15	95 ,,
16-20	81 ,,
21-25	77 ,,
26-45	65 ,,
46-60	57 ,,
61	59 ,,

[illegible] SHAFTS.

0-10	72 per cent.
11-15	52 ,,
16-20	50 ,,
21-25	50 ,,
26-45	28 ,,
46-60	28 ,,

POTT'S.

0-10	100 per cent.
11-15	100 ,,
16-20	50 ,,
21-25	54 ,,
26-45	54 ,,
46-60	38 ,,
61-	30 ,,

6. PERIOD OF INCAPACITATION.

As already pointed out, the details as to the period of incapacitation are available only in a small proportion of the cases. The result of this is that while the non-operative material is sufficiently large to yield a fairly reliable numerical value for the average length of convalescence—the operative is so small that no corresponding figure of any value can be obtained. The results of the analysis of the material available are set out in Table VII. This Table shows, for each group of fractures (a) the number of cases in which the period of incapacitation was stated; (b) the average duration in weeks of incapacitation; (c) the number of cases in which incapacitation was permanent.

The cases are grouped into: I. Non-Operative; II. Operative. Each of these groups being divided into: (i.) Cases under 15 years of age; (ii.) Cases over 15 years of age.

TABLE VII.

AVERAGE DURATION OF INCAPACITATION.

I. Non-Operative.

(i.) UNDER 15 YEARS.

FRACTURE	No. of cases in which period of incapacitation was stated.	Average number of weeks of incapacitation.	No. of cases in which incapacitation was permanent.
HUMERUS—			
Anatomical Neck, Upper Epiphysis	1	8	—
Surgical Neck, Shaft	23	10·5	—
[illegible] Supracondyloid	18	13·5	—
RADIUS AND [illegible]	73	17·1	—
COLLES'S FRACTURE	1	3·7	—
FEMUR—			
Neck, Upper [illegible]	2	26·5	—
Shaft	19	14	—
[illegible]	3	14	—
TIBIA AND [illegible]			
Shafts	10	12·8	1
[illegible]	11	[illegible]	
	77	14·7	1

I. Non-Operative.

(ii.) Over 15 Years.

Fracture.	No. of cases in which period of incapacitation was stated.	Average number of weeks of incapacitation.	No. of cases in which incapacitation was permanent.
Humerus—			
Anatomical Neck, Upper Epiphysis	5	5·2	1=20%
Shaft, Surgical Neck	7	11·6	7=10%
Lower Epiphysis, Supra-condylic	17	17·1	3=17%
Radius and Ulna	61	20·6	4=6·2%
Colles's	34	17·1	5=14·7%
Femur—			
[illegible]	65	34·2	20=30·7%
Shaft	179	38·3	21=11·7%
Lower Epiphysis, Lower Extremity	8	14·7	2=25%
Tibia and Fibula—			
Shafts	673	29·7	41=5·1%
[illegible], Pott's Fracture	29	25·7	17=58%
Totals	1,121	27·6	121=9·0%

II. Operative.

(Class A.)

(i.) Under 15 Years.

Fracture.	No. of cases in which period of incapacitation was stated.	Average number of weeks of incapacitation.	No. of cases in which incapacitation was permanent.
Humerus—			
Surgical Neck, Shaft	1	8·1	—
Supra-condylic, Lower Epiphysis	4	8·7	—
Ulna and Radius—			
[illegible]	1	6	—
[illegible]	4	16·2	—
Tibia and Fibula—			
Shafts	3	9	—
Total	13	12·—	—

II. Operative.

(Class A.)

(ii.) Over 15 Years.

Fracture.	No. of cases in which period of incapacitation was stated.	Average number of weeks of incapacitation.	No. of cases in which incapacitation was permanent.
Humerus—			
Anatomical Neck, Surgical Neck, Upper Epiphysis	1	8	—
Surgical Neck .. .. Shaft	9	32·8	—
Supra-condylic, Lower Epiphysis	1	78	—
Ulna and Radius—			
Both Bones, Lower Epiphysis	25	19·4	2 = 8 %
Colles's	1	—	1 = 100 %
Femur—			
Shaft	2	62	—
Femur—			
Lower Extremity, Lower Epiphysis	1	26	—
Tibia and Fibula—			
Shafts	22	31·2	2 = 9 %
Pott's and Lower Epiphysis .	2	14·5	—
Total .. .	64	27·3	5= 7·8 %

SUMMARY OF TABLE VII.

All Fractures over 15 Years of Age.

	No. of Cases.	Average duration of incapacitation.	No. of Cases in which incapacitation was permanent.
I. Non-operative .. .	1,121	27·6	121=9·0%
II. Operative	64	27·3	5=7·8

It is clear that some of the cases in Class B, and all of the cases in Class C are really failures of non-operative treatment, and might reasonably be included in the non-operative cases. For the sake of completeness the cases in Class C are tabulated in Table VIII.

In Table IX the cases in Class C are added to the non-operative, and the average duration of incapacitation given for these two classes.

TABLE VIII.

II. Operative.

(Class C.)

(ii.) Over 15 Years.

Fracture.	No. of cases in which period of incapacitation was stated.	Average number of weeks of incapacitation.	No. of cases in which incapacitation was permanent.
Humerus	6	31·0	—
Radius and Ulna	16	54·4	1=6·2%
Colles	1	48·0	—
Femur—			
Shaft	9	71·3	4=44·4%
Lower extremity involving knee-joint and Lower Epiphysis ..	2	201·0	—
Tibia and Fibula—			
Shafts	15	49·2	3=20·0%
Pott's	2	20·8	—
Total	51	76·6	8=15·6%

TABLE IX.

AVERAGE DURATION OF INCAPACITATION.

All Fractures over 15, Non-Operative, and Operative Class C.

No. of cases.	Average duration of incapacitation—weeks.	No. of cases in which incapacitation was permanent.
1375	29·3	129 = 10·0 %

7.—FATAL CASES.

In Table X. is given the total number of cases of fractures of the long bones treated during the selected years, at the Hospitals in which cases were investigated.

From the following Hospitals statistics as to mortality rate were not obtained:—

Dublin—Adelaide Hospital, Mercer's Hospital. Glasgow—Victoria Infirmary. London—Metropolitan Hospital.

TABLE X.

Hospital.	Cases Treated Non-operatively.		Cases Treated Operatively.	
	Recovered.	Died.	Recovered.	Died.
1	576	7	13	0
2	75	4	38	1
3	1239	22	334	8
4	100	2	51	1
5	1459	8	121	0
6	981	9	46	0
7	4	0	50	0
8	632	19	23	0
9	149	0	17	0
10	1359	14	69	1
11	418	4	42	0
12	89	2	12	0
13	2231	7	52	1
14	931	8	121	1
15	1667	24	68	0
Totals	[illegible]	[illegible]	[illegible]	[illegible]

This Table shows that in 15 of the 19 Hospitals in which an investigation was held 11,946 fractures of the long bones were treated non-operatively, of which 129 had a fatal result, a mortality rate of 1·0 per cent.: the majority of deaths were due either to age, disease, or associated injuries.

1,040 cases were treated by operation, and of these a fatal result ensued in 8 cases, a mortality rate of 0·77 per cent.

The causes which in the non-operatively treated cases led to a fatal result, had a similar result in 5 of the cases treated operatively. The mortality rate, therefore, which may be attributed directly to operation is 0·3 per cent.

[illegible] there were three deaths directly [illegible]. These were due respectively to [illegible] and sepsis (1 case). According to the [illegible] under were due either to [illegible] or directly due to the [illegible]

[illegible] latter should not be attributed to operation, seeing [illegible] anæsthetics are employed so extensively in the non-opera-[illegible]

It is interesting to note that of the fatal operative cases, no less than 6 were operations undertaken after failure of non-operative treatment (Class C).

From which it is clear that the mortality rate of immediate operation (Class A) is exceedingly small.

Of the two fatal cases in Class A, one was that of a fractured femur associated with a ruptured femoral artery and a wounded femoral vein, in which gangrene resulted after a primary operation (wiring the femur) had been performed.

The second was a case of delayed chloroform poisoning, after an immediate operation for fracture of the humerus in a child.

APPENDICES.

APPENDIX (A).

(1)—ENQUIRY FORM.*

Case No.†.....

(†This No. will be filled in afterwards by the Committee.)

General result, defined as:—

	Good.	Moderate.	Bad.
Anatomical			
Functional			

BRITISH MEDICAL ASSOCIATION.

FRACTURES COMMITTEE.

[Private and Confidential.]

(1)
Bone .....

Treatment ...

Hospital at which treated (if any) .....

Visit: Date ..... 191 .

Initials of Committee's Investigator .....

NOTE. For meaning of Nos. (1), (2), (3), &c. see instructions to Investigators printed on separate sheet.

(Please write distinctly.)

Patient's Name .....

Address .....

Age ... years. Sex ... Occupation ...

Accident: Date ... 19 .. Nature of force (2)

Fracture: Site .....

Form ..

Treatment ..

With [illegible] to given [illegible] result by the Committee [illegible] here reproduced in [illegible], and not in the form in which [illegible]

Duration of stay in Hospital ..... weeks.

Duration of absence from work ..... weeks.

Special circumstances influencing treatment and result (7) .....

Skiagram :—Before treatment .....

After treatment .....

Results :

(A) Present condition of limb :

(*a*) Nature of Union .....

(*b*) Deformity .....

(*c*) Movement of joints .....

(*d*) Mechanical or pathological changes in joints .....

(*e*) Swelling of soft parts .....

(*f*) Circulation .....

(*g*) Pain .....

(*h*) Changes in muscles :—wasting .....

power .....

(*i*) Nerve-phenomena .....

(B) Present wage-earning capacity compared with former .....

(C) If fatal, cause and date of death .....

(2) INSTRUCTIONS OF THE FRACTURES COMMITTEE AS TO THE DETAILED INVESTIGATION OF THE CASES.

I. General Instructions as to the Detailed Investigation of the Cases.

(*a*) The sole object of the enquiry is to determine the relative advantages of the operative and of the non-operative treatment of fractures.

(*b*) The scope of the enquiry is limited to simple complete fractures of the principal long bones, viz., femur, tibia, fibula, humerus, radius and ulna, and is to include simple separations of the epiphyses of these bones.

(*c*) It is proposed to draw conclusions from those cases only of which full details of the injury, of the treatment, and of the final result can be obtained. For convenience in the conduct of the enquiry, investigation will be limited to cases in which the accident causing the fracture has occurred, or in which an operation has been performed, within the Years 1906-10 inclusive.

(*d*) The Committee desires it to be understood that such material as is placed at its disposal will be used for statistical purposes only, and that no results will be published in such a way as to lead to the identification of the source of any particular contribution.

II. Special Instructions as to the Detailed Investigation of the Cases.

Summary of Total Cases treated within the Period 1906-10 inclusive (Form "(8)").

(*e*) The Investigator will please see that the Summary of total cases treated within the Period 1906-10 inclusive is filled in by the Surgical Registrar or House Surgeon (irrespective of whether there were, or were not, any cases fatal during treatment within the Period).

Remarks on filling up Enquiry Form (Form "(6.)")

(A specimen filled-up Enquiry Form is enclosed herewith, (Form "(7)."))

(*f*) It is particularly requested that all the spaces for answers be filled in, including summary of general result at top of front page of Inquiry Form. If in any instance information is not available, this fact should be stated.

(*g*) All statements embodying a judgment upon the final result of any given case are to be made only by the Investigator specially appointed by the Committee to report upon the case.

(*h*) The special Enquiry Form (marked "(6), Fatal case") should be filled in with reference to *every* case within the Period fatal during treatment, non-operative or operative. The Investigator will satisfy himself as to the cause of death in each such fatal case and enter it in the appropriate space on the front page of the Form.

(*i*) *Notes upon Headings in Enquiry Form.*

(1) (Bone).
Simultaneous fractures of different bones occurring in the same patient are to be reported on separate Forms, except in the case of double fractures commonly associated, viz: those of the tibia and fibula, or of the radius and ulna. State which side.

(2) (Treatment).
Non-operative, operative, or whether operation was undertaken after failure of non-operative treatment.

(3) (Nature of force).
Direct or indirect.

(4) (Form).
Single or multiple; comminuted or linear; transverse, oblique, spiral or T-shaped; free or impacted.

(5) (Associated injuries).

(*a*) Remote: any important lesion elsewhere, affecting treatment.

(*b*) Local: extensive bruising, injury to vessels, nerves or muscles: effusion into joints.

(6) (Treatment).
Nature, and duration in weeks, of each form of treatment used, should be stated.

(7) (Special circumstances influencing treatment and result).
Favourable or unfavourable temperament or physique; pre-existing or intercurrent disease. State reasons for choice of treatment.

(8) (Skiagram: before treatment, after treatment).
State whether the diagnosis, treatment and estimate of result have been controlled by X-rays.

APPENDIX (B).

(*a*) NON-OPERATIVE.

Fracture ..... ; Sex ..... ; Age-Group .....

No. of Enquiry Form.	Age (years.)	Complications.	Anatomical Result.			Functional Result.			Duration of Absence from Work (weeks).
			Good.	Mod.	Bad.	Good.	Mod.	Bad.	

(NOTE.—The actual form provided space for 20 cases).

TOTALS									AVER-AGE:

(*b*) OPERATIVE.

Fracture ..... ; Sex ..... ; Age-Group .....

No. of Enquiry Form.	Age (years.)	Complications.	Anatomical Result.			Functional Result.			Duration of Absence from Work (weeks).
			Good.	Mod.	Bad.	Good.	Mod.	Bad.	

(NOTE.—The actual form provided space for 20 cases).

TOTALS									AVER-AGE:

APPENDIX (C).

THE OPERATIVE TREATMENT OF FRACTURES.

PELVIS OR TECHNIQUE.

By MONS. A. LAMBOTTE, Antwerp.

(With Special Plate.)

The treatment of fractures ought to be guided by two fundamental rules:—

1. To renew the anatomical form of the fractured bone.
2. To move at once the articulations to avoid articular stiffness and atrophy.

[illegible] re-constitution is of the highest [illegible] adult, in whom the articular surfaces [illegible] A good functional condition can be [illegible], but these cases are [illegible] possible that the slightest [illegible] pe of the bone leads to definite functional [illegible] ent pains. The usefulness of movement from the commencement is equally important and is admitted by everyone.

Operative treatment alone fulfils individually and conjointly both these indications in nearly all cases. Theoretically, any fracture being exactly and aseptically reduced ought to heal both readily and perfectly as a simple sub-periosteal fissure (greenstick); what practice confirms in all points.

The technique of osteosynthesis in recent fractures requires two principal points: Reduction and Fixation.

In old fractures these two are preceded by resection of the neck (osseous or fibrous) and the preparation of the ends.

To obtain correct apposition, it is absolutely necessary to possess an appropriate set of instruments. I employ for this operation a whole series of straight and bent forceps provided with teeth. I also utilise some spatulæ and various elevators. For the lower limb a traction apparatus, based on the principle of a lever, allows me to obtain traction of 150 kilogrammes with the hand.

Recent oblique fractures are reduced by longitudinal traction by means of forceps pulling the surfaces to the same level. Transverse fractures are more easily reduced by separating the ends whilst replacing the limb in position (angular replacement of the fragments). With a sufficient armamentarium the

N	Date of Operation.	Sex and Age.			
1	14th Au[illegible] 1[illegible]	F. 30	Fracture [illegible] lower end of right femur, exterior over-riding, wound of the left leg, fracgulus; bad powers of it, weight 120 kilo-	Sub-cutaneous clamp, osteo-synthesis, with	Death after many weeks of deep suppuration.
2	8th Jan., 1903	Girl, 6 days	re of the femur, subrmous over-riding, irre-	Suture with silver wire	Death from athrensia on the 8th day; wound united without reaction.
3	25th Sept., 1905	M. 45. Worn-out. Alcoholic	Double fracture of the diaphysis of the femur	Osteo-synthesis with the clamp, six staples	Death 20 days later from multiple haemorrhages; wound in good condition, the lower fracture united, the upper slightly suppurating, Septicæmia (?).
4	May 28th, 1905	M. 45. Alcoholic scoriosis	Old [illegible] the head of the femur [illegible] ums, and functional uselessness from pseudo-arthrosis	Reduction of the head of the femur	Death from acute pneumonia in 5 days.
5	July 5th, 1906	M. 18	Fracture of the diaphysis of the femur, riding	Osteo-synthesis with the clamp	Wound healed in 5 weeks. Fracture united. The patient walked with crutches. Sudden death from embolism (?). Nothing on autopsy.
6	[illegible] 20th, 1906	F. 72	of the femur	Screwing of the neck of the femur	Ordinary course for some days, then infection by wetting of the dressing by the urine. Suppuration. Secondary resection of the head and drainage. Death three months later from exhaustion.
7	March 5th, 1907	F. 74	Idem	Idem	Idem, death from slow septicæmia.
8	[illegible]pt. 17th, 1910	M. [illegible]	Old fracture of th[illegible] months) non-united	Reduction and clamp	Result, straightforward union, notwithstanding a slight suppuration. Six weeks [illegible] icitis o[illegible] by the [illegible]
9	June 4th, 1908	M. 50. Cardiac, obese	Dislocation, fracture of the iliac bone (accident on the railway)	Wiring of the pubis	Slow infection and suppuration of the cavity of Retzius. Death in 4 weeks.

[illegible]n, by ordinary manipulation, of *recent simple fractures* [illegible] presents any difficulty and always produces accurate pposition. The only difficulties occur with comminuted fracures. The technique of the reduction is here more difficult and aries according to the case: in principle, it is necessary always endeavour to reduce and fix the intermediate fragment to one the principal ends and thus change the comminuted fracture a simple one which is then easily reduced. In old fractures the diaphysis the difficulty of replacement varies: it is easy ith transverse fractures by employing angular replacement: is more difficult in oblique fractures, these require reduction y direct traction. Reduction obtained by ordinary manipuation ought nearly always to be maintained by *direct fixation*.

In certain jagged fractures, capable of impaction (tibia, dius, ulna) it is sometimes possible to dispense with fixation the fragments, but these cases represent a minimum number the fractures. Fixation can only be dispensed with with eat caution, if one would avoid painful lack of success. The [illegible] of direct fixation requires besides a fixation bandage hich removes one part of the advantages of operation. In the mur and humerus, fixation is advisable in all cases, it is indispensable in all oblique and comminuted fractures.

The fixation apparatus ought to respond to the following conditions: —(a) It should be easily applied, (b) easily removed, the fragments should be sufficiently firmly fixed so as dispense with a fixation bandage and permit the play of the eighbouring articulations. The majority of the apparatus commended for fixation is bad and ought to be abandoned. having experimented with a great number of them, I employ two: the hoop and the screw.

The hoop consists of strong metallic wire (soft iron, copper) to 2 mm., and constitutes the ideal method of fixation in fractures of the diaphysis; it is necessary only to have recourse to it when the length of the line of the fracture is inferior to twice the diameter bone.

The screw is applied in three ways: —

1. Direct screwing of the fragments (epiphysis).
2. Screwing with plates (prothesis).
3. Screwing with external protector (clamp).

The latter is the best procedure for transverse fractures of the tibia: I have renounced its employment for fractures of the forearm, and it is only exceptionally that I have recourse to it in fractures of the humerus and femur. The thickness of the muscular masses of the arm and thigh lay the latter open to secondary infections.

Screwing with brass plates (prothesis) gives excellent results in the forearm, the humerus, and the femur.

Whatever the technique employed, the condition that ought to dominate the whole surgery of fractures is Asepsis. It is necessary to operate with a mask to avoid contamination with the air, and with gloves to avoid infection by contact. It is absolutely necessary to avoid all digital manœuvres in the wound and all contact of the skin with the materials used for the sutures. The preparation of the wound is of great importance: personally I only intervene 8-15 days after the accident (save for special indications). Before the operation I inject nucleinic acid (1.0 centigramme the night before the operation, 5 centigrammes the two days following): I have the impression that this treatment is useful.

In splintering of the bone it is necessary to refrain from extracting and sacrificing the loose fragments. In a third of the cases, above all in the tibia, I have made, more or less, extensive re-implantation of the fragments (once half the length of the fibia, once the internal third of the clavicle). The union of these fragments is certain if the wound remains aseptic. The reposition of the splinters is of great importance because the loss of substance which would result from their removal would be the cause of slowness of union or even pseudo arthrosis. The danger of operative treatment is slight, if one operates under desirable conditions, it will become absolutely negligible when sufficient practice has been obtained in this branch of surgery. My statistics amount to 567 operations with nine deaths, 1½ per cent.

All the cases of death which I had to deplore concern fractures of the femur and pelvis. Some are not caused by osteo-synthesis. In three cases only septicæmia has followed osteo-synthesis with the clamp. This apparatus presents some danger to the femur. I have also employed it much less in fractures of the leg.

The other mishaps which are attributed to operative treatment are not well founded, when, as goes without saying, the operation has been correctly carried out. All the accidents with which one reproaches osteo-synthesis are only the consequences of infection. These infections are avoidable. They chiefly are produced in operations badly and slowly carried out, or the fragments are manipulated for too long a time. Asepsis in the surgery of fractures is only obtainable with a clean technique permitting of a quick and certain operation.

APPENDIX (D).

ANALYSIS OF CASES TREATED BY MONS. A. LAMBOTTE, OF ANTWERP, INVESTIGATED AT ANTWERP.

(Returns not received in time for inclusion in main Report.)

(All the cases belonged to Class A.)

LOWER EXTREMITY.

FRACTURE.	No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
Femur	13	10	0	0	2
Tibia	5	4	0	1	0
Fibula	1	1	0	0	0
Tibia and Fibula.. .	18	16	0	1	0
Pott's	1	1	0	0	0
TOTAL	38	32	0	2	2
		84·2%	—	5·2%	5·2%

UPPER EXTREMITY.

FRACTURE.	No. of Cases.	Good Anat. Good Funct.	Bad Anat. Bad Funct.	Mod. or Bad Anat. Good Funct.	Good Anat. Mod. or Bad Funct.
Humerus	11	8	0	2	2
Radius	1	1	0	0	0
Ulna	1	1	0	0	0
Ulna and Rad . .	5	2	0	0	1
[illegible] .. .	21	12	0	2	3
		57·1%	—	9·5%	[illegible]

TABLE IV.

[illegible]	Good Anat. [illegible]	Bad Anat. Bad Funct.	Mod. or Bad Anat Good Funct.	Good Anat. Mod. or Bad Funct.
59	44	0	4	5
	74·6	—	6·7%	8·4

APPENDIX (E).

METHOD OF PROCEDURE IN OPERATIONS ON SIMPLE FRACTURES.

[illegible] ARBUTHNOT LANE, M.S. Lond., F.R.C.S.

(With Special Plate.)

[illegible] especial precaution to secure asepsis, [illegible] operations a foreign body of some [illegible] wound and also because the soft [illegible] ted, bruised and inflamed and their [illegible] organisms is depreciated pro- [illegible] y have sustained. This is [illegible] duced by direct violence.

Previous to any operative treatment of fractures, satisfactory X-ray photographs of the injured parts are absolutely essential. They should be taken in at least two planes crossing one another at right angles in order that the operator should have the fullest information as to the nature of the fracture and the relationship of the fragments to one another. When it is impossible to obtain photographs in these two planes a stereoscopic arrangement often throws much light on the details required.

The skin should be thoroughly cleaned with ether, benzine, soap and water, and sterilized as far as possible by a suitable germicide. A useful method is to apply biniodide of mercury in methylated spirit first and then to employ tincture of iodine. How the cleaning is done is a detail, but if the epidermal layer is hard and thick it should be effectually removed by hot moist compresses and frequent scraping before any germicide is applied.

The plates used are of strong tough steel and should be carefully tested by the instrument makers before they are employed. Much discredit has arisen from the use of cheap plates which break either during or after the operation. There is no excuse whatever for the use of bad plates. In most cases the plate should be of toughened steel capable of being bent by powerful forceps in order that the plate should fit accurately a curved or variable surface. Sometimes, as in the case of old fractures with considerable overlapping of fragments a rigid plate is better as the bending strain it has to meet may be very great. The longer the plate and the greater the number of the screws the more secure is the hold of the plate on the fragments. It is necessary to have a considerable variety of plates to meet the special requirements of any particular case.

The screws are made up in several gauges and lengths. The gauges which are most useful are 3, 5 and 7, and the sizes ½, ⅝ and ¾ inch. They are so cut that the thread extends to the head, there being no barrel to the screw. The reason of this is that only the proximal layer of compact tissue is engaged by the screw, so doing away with an excess of metal and difficulty of finding the drill hole in the distal layer of compact bone.

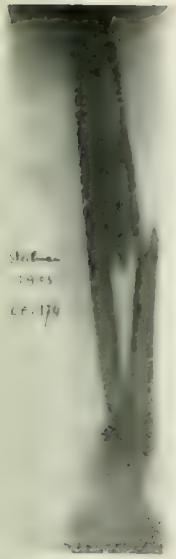
There is very little variety in the details of the several fractures, and when the surgeon has acquired a familiarity with their treatment, he soon learns exactly what plate is most serviceable.

One thing that cannot be impressed too strongly on the surgeon is that he must restore the fragments accurately to their normal relationship before he fastens a plate on to them. The mere fixation of a plate to fragments not in accurate apposition is as foolish as it is painfully frequent at the present time, and the patient is worse than better for the operation even if sepsis is avoided, which unfortunately is too often not the case. The operation is very liable to fall into disrepute because of the incapacity of the operator. There is nothing wrong with the principle, the fault is in its application.

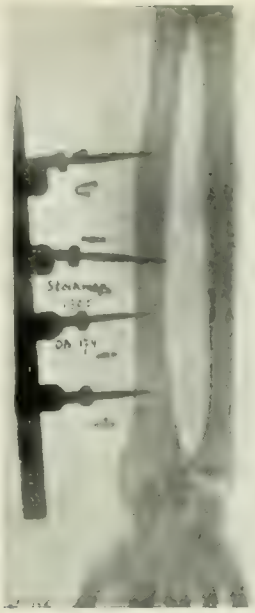
I endeavour to exclude the entry of organisms into the wound, and to minimise damage to soft parts by making an incision *of a length sufficient to allow of free and easy access to the seat of fracture.* The position and length of the incision is a matter of little concern in the case of fractures of the lower extremity, whereas in fractures of the bones of the arm much judgment may be required to avoid damage to nerves and muscles. A sterilised cloth is attached to each edge of the incision by specially constructed forceps in such a way that the surface of the skin of the patient is altogether excluded from view and consequently from the field of operation. All bleeding is controlled by the use of long forceps which are capable of exerting a pressure sufficient to obliterate the lumen of a vessel it left in position a reasonable time, so that it is never necessary to apply ligatures. These forceps, like all instruments used in these operations, are very long in order that the handles shall project beyond the wound area and not touch its surface. In this way the introduction into the wound of the gloved hand or any portion of an instrument which had come into contact with the glove is avoided. This is important since gloves are not absolutely reliable, partly because of the possible presence of punctures and partly because they are liable to be damaged by the use of the heavy instruments employed in these operations.

The ends of the broken bone are freely defined, the periosteum being divided and separated, if necessary. A length of each fragment is exposed sufficient to show the whole extent of the fracture and to carry plates long enough to retain the fragments immovably in accurate apposition.

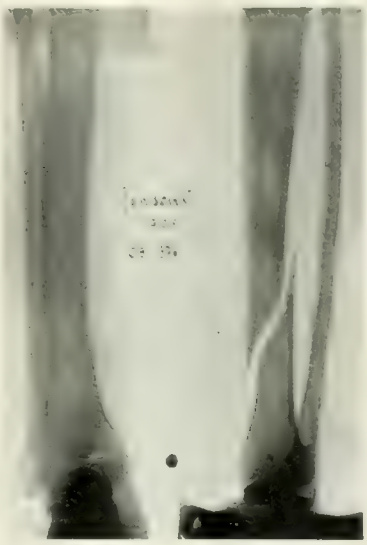
Very little force is requisite to bring the fragments into accurate apposition if proper means be employed to do so. In the case of a fracture by direct injury where there is much



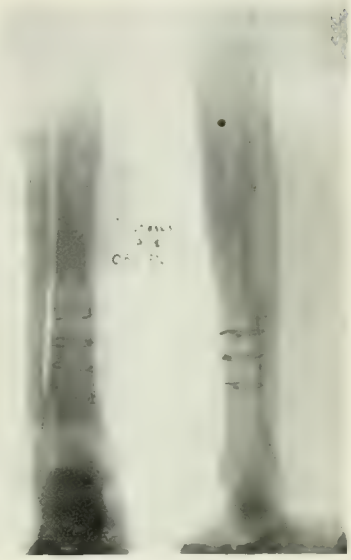
Fixateur (Lambotte).



Fixateur (Lambotte).



Cerclage (Lambotte).



Cerclage (Lambotte).



Plates (Lambotte).



Plates (Lambotte).



Screws (Lambotte).



Screws (Lambotte).

MR. ARBUTHNOT LANE: PROCEDURE IN OPERATIONS ON SIMPLE FRACTURES.



The photographs are taken before and after operation.

...g and shortening of the soft parts which form ties in ...gth of the fractured bone produ... ...derable over... ...g of fragments, a very great an... ...tion may have ...l upon the fragments before they can be brought ... apposition, and during the exercise of this force ...nt may become infected. If ...ther hand, the ...nts are protruded at a converging angle beyond the ...each in the grasp of a forceps, their ends may be easily ...t while extending the fragments on one another by ...tening the limb beyond the fracture.

... in the case of a fracture produced by torsion, where the ... is spiral in character, the fragments may be moved on ...ther along a double inclined plane by the rotation of ...al forceps, which grasp them, aided sometimes by an ...r which being rotated between the surfaces approxi... by the forceps moves them on each other with an ...ible power, the operator expending very little energy in ...cess. In other words, the accurate coaptation of frag... is brought about by the exercise of manual dexterity ... than by brute force.

... there is a comminution of the fragments the surgeon must ...the difficulty in the best way possible. It is usually ...d by fixing a long steel plate securely to the lower frag... and then fastening to the end of that fragment the ...t smaller pieces in sequence by means of small plates ...ews and subsequently securing the upper fragment to ...t steel plate.

... In old fractures, especially of the bones of the leg... ...h it is important that shortening should be avoided... ...not necessary to cut bone away ... all large areas of ...gments can be brought into ... since a con... ...le interval left between the fr... ...ll fill up with ... ...t be kept engorged w... This is best ... ...g the patient up on ... ...e limb being ...an apparatus by means of whi... the weight of the ...s transmitted through the tuber ischii to the ground. ... in the case of fracture of the femur I have not ...red it advisable to bring the edges of the deep fascia ...r with sutures. This allows of the free diffusion of ...nto the subcutaneous tissue, which picks it up rapidly. ...ls clips form the best medium for retaining the edges ...skin in accurate apposition. The coaptation of the skin ...may be the most difficult part of the operation because ...swelling of the soft parts. It is unwise to place a steel ...directly beneath the skin incision, and wherever ... it is well to bury the plate beneath muscle rather than ... under the skin. If the latter is done, care should ... prevent any prominence of the screws or plate in ...o avoid subsequent irritation. Should it be necessary ... a plate beneath the skin where it is liable to be pressed ... a heavy boot, etc., it is sometimes ad... ...t has done its work.

... should be adopted to prevent fixation of the joints by ... at regular intervals after the operation. This ...icularly to the knee-joint and to the several joints ... The surgeon should bear in mind the necessity of ... is movement when he is operating and should not ... ...ut in a very strong plate or plates with enough ...tain it in position with perfect security.

... ...les to operation are excessive comminution ... condition of the broken bone as renders it ... ...ding screws.

... ...hs of cases taken before and after operation ... ...rgeon a better idea of the nature of t... ... in which the fragments can and sh... ... normal relationship more clearly than any ... ...ption.

... 22nd, 1912.

APPENDIX (F).

TREATMENT OF FRACTURES BY MASSAGE AND MOBILISATION.

SYNOPSIS OF THE METHOD.

By MONS. J. LUCAS-CHAMPIONNIÈRE, Paris, Member of the Institute.

... principles relative to the treatment of f... ... been published for more than thirty ... ...:—through the Society of Surgery, in ...es; *Treatment of Fractures by Massage and Mobilisati...* in a bulky volume in 1895; *Summary of T... ... by Massage and Mobilisation*, a small volume, in 1910; *Treatise on Massage of the Limbs*, by Dagron, in 1905.

In English, numerous articles written by me hav... in the BRITISH MEDICAL JOURNAL; and at New Y... *Medical News* (Jan... 1900). I published a... article in the *Medical Annual* of 1909, an... tion to the meeting of the British M... Sheffield in 1908. In the *Index of Treatment*, 1908, wi... found an important article by Charles Cathcart. Finally, ... appeared in 1911 an important volume by Mennel *On Ma... and Mobilisation of Fractures*.

It would be premature to write afresh at much length ... the subject. The method, however, is sufficiently well known and established to make it useful to recapitulate its prin... conditions by enumerating a series of aphorisms which s... constantly guide the surgeon in his practice.

A certain amount of movement giv... the best condition for the repair of the seats of fractures.

Absolute fixation of the fragments diminishes th... production of the reparative elements.

Fixation of the limbs creates conditions which are disas... to the vitality of the limbs.

It causes bony atrophy, stiffening of the joints and tendinous sheaths, stiffness of the muscles and muscular atrophy. The rapidity of production of these lesions is very great.

The more promptly movement is carried out after the accident the more perfect will be repair, at the same time there ... ...oided the complications resulting not only from the ... ...sm but from the traumatism complicated by fixation or the mind.

Fixation, which appears to allay pain, does not allay it permanently, but only temporarily. Immediately the least movement is attempted the pain due to the condition ... fragments and to the lesions of the soft parts caused ... traumatism will be complicated by pains which result from the lesions due to the fixation.

Mobilisation, and especially a certain variety of ma... produce a series of phenomena which are favourable to r...

At first, anæsthesia, which ought to be the criterion of all treatment by massage.

This massage has immediat... multiple effects, of which th... ...te mechanism is diff... ...of which the ...ary and physiological ... ...ed.

Decrease, then disappearance, of pain.

Disappearance of muscular contractions. The result is disappearance of all the deformities resulting from ... contractions.

Rapid absorption of blood and serum; disappeara... œdemas and swellings.

Stimulation of secreti... of bone: rapidity and solidi... repair of the bone l...

Ease and completeness of repair of the torn membranes ... muscles; prevention or stiffening and muscular atrophies.

The mode of action of massage is difficult to explain. ... cannot be considered as merely ... of the effused liquids and s... violent th... tissues ... he mo... fact, its ... its use.

Its mode or act... ... extremely complex. I ... seems to act at o... time upon the peripheral nerve endings and upon all ... limb, on which it exercises a ...

It must always be ... centre, that is to say, fr... the centre, in an ascen...

It must include ... the actual site of the ...

Like all anæsthetising or sope... merist, it must never change its di... ... wrong way is ... of pain, in place of giving relief.

Its action is ... favourable the nearer it is employed to the actual time ... ...tism. The longer the pain of the fracture and the ... have lasted the more difficult will it be to obtain the ... effect of the massage.

To obtain such effect in the maximum degree, there ... always be observed a graduation which it is impossi... neglect.

Superficial pressures, having almost the form of caresses, should be used at the commencement of all massage, and once at the ro... ... return to superficial pressure.

When massage is associated with mobilisation, mobilisation should not be carried out except after the massage séance. If mobilisation is painful, massage should be resumed before carrying out mobilisation.

For massage, as for mobilisation, it is necessary emphatically to insist upon the important point that "commencement of movement should be as near as possible to the actual time at which the fracture has been produced." Secondary massage and mobilisation are not at all productive of all the benefits secured by immediate movement. Thus, to concede that massage shall be used from the second or third week after the traumatism is entirely to fail to appreciate the method. Such a procedure is a failure to understand the efficacy of the method, and makes certain of its good effect not being obtained. Such a mode of treatment can be advised only by a surgeon who has not understood the mode of action of immediate movement. Even such belated intervention is better than persistent fixation. But this is not the method which we have advocated.

Mobilisation of the limb is not at all the complete re-establishment of the amplitude of its ordinary movements. That amplitude is not directly sought in the manœuvres which accompany and follow bone and joint repair.

The surgeon should aim at the totality, the multiplicity of the movements, *but by degrees*. This multiplicity of movements restricted in their range entirely suffices for the future of the repair. A practice which consists in making as soon as possible the most extensive possible movements is calamitous in the large majority of cases.

Progression in the amplitude of the movements of mobilisation ought to be very slow at first.

Mobilisation should consist at first of passive movements, then of active movements.

As a general rule these active movements should be methodical, carefully-watched, gymnastic movements.

In certain rare circumstances the active movements can from the commencement be functional movements. But this is not the best condition.

As the time of the accident becomes more remote, the functional movements play a more important part in the return of function. But, in many circumstances, they should be carefully directed by the surgeon, who should indicate to the patient which are the movements to avoid and which are those to aim at.

In principle, all fractures can benefit from graduated movement.

In practice, certain fractures urgently require it, and are in fact properly treated only if such movement is carried out. These are, all fractures involving, or in the neighbourhood of, joints.

Only very young subjects can hope for complete restoration after fixation of the sites of articular fractures.

Fractures of the upper extremity of the humerus, fractures of the shoulder in general, fractures of the elbow, fractures of the wrist, fractures in the neighbourhood of the tibio-tarsal joint, fractures of the upper extremity of the femur, these articular fractures derive from the method such a result that their prognosis and treatment are transformed, and that these fractures, formerly very grave in their consequences, can become accidents without importance and without resulting functional alteration.

Certain fractures of the continuity of the bones accompanied by important contractions are amenable to this treatment. Such are the fractures of the clavicle and certain fractures of the humerus.

But the simplest fractures of the continuity of the long bones can, in a great number of cases, benefit by the method, which we have often applied to the middle of the humerus or the middle of the leg.

Experience has shown me the but slight importance, from the point of view of function, of a moderate shortening. I have even been able to demonstrate that this shortening may play a useful part in the phenomena of muscular repair. Thus [illegible] that the surgeon should cease to have in the first rank of [illegible] the question of shortening and of the [illegible] of the length and form of the [illegible].

One single class of deformity is truly interesting, for the remedy has to cause there, deviation from the axis, even if [illegible] be noted that, thanks to the early disappearance [illegible] muscular contractions, these deviations of axis are extremely [illegible] or impaction the deformity is only [illegible] of deviation not interfering with [illegible] as regards repair, [illegible]. It is a fortunate [illegible] to be respected. Forced reduction should be avoided. This is the case of the majority of fractures of the upper extremity of the humerus, of the greater number of fractures of the radius, and of most fractures of the neck of the femur.

The beneficent action of movement on the fractured limb is not only apparent in perfection of function. The first effect appreciated by the patient is the disappearance of pain. Very painful fractures, like those of the shoulder, the elbow, and the neighbourhood of the tibio-tarsus, are a remarkable example of this.

Rapidity of bony repair is abundantly demonstrated.

Solidity of the limb is obtained far more quickly than by means of fixation.

The stimulating effect of massage and movement in the development of callus even requires to be watched. In very young subjects, who secrete bone readily, it should be avoided, in order not to cause formation of excessive callus. Thus, as a principle, infants should not be massaged.

They, however, tolerate very well mobilisation without massage. In their case, massage should be reduced to a sort of superficial caress which suffices for the anæsthetisation of the part.

In all cases, and in conclusion, it must be noted that in this modern treatment of fractures the action of the surgeon by immediate mobilisation and massage is so powerful that it is necessary to watch it closely.

It is certainly of a more delicate application than the treatment by fixation. But its results are so superior to anything that can be achieved by fixation that it should become as generally used as possible.

So applied, it will reduce to an infinitesimal proportion the cases of fractures of which the habitually bad functional results have led surgeons to recommend immediate cutting down upon the seat of fracture. Operations can be had recourse to only in the quite exceptional cases in which the surgeon is reduced to absolute fixation by an insuperable tendency to deformity.

APPENDIX (G).

NAIL EXTENSION FOR FRACTURES.

ACCOUNT OF THE METHOD.

By Dr. F. STEINMANN, Privatdozent der Chirurgie, Bern.

The method of "nail extension" as put forward by me in a publication in the year 1907, is based upon the same principles as is that of continuous adhesive plaster extension, and will, along with the latter method, lead the way in the struggle towards the realisation of a treatment of fractures which aims at a combined anatomical and functional recovery, and by so doing alone makes ideal results possible. Every practitioner will agree with me that in a whole series of fractures he has not attained his object by adhesive plaster extension, because he could not exert a sufficiently strong pull. In these cases nothing remains to him but nail extension, that is to say, a method which exercises a continuous pull, as far as possible directly on to the peripheral fragment, exclusively by means of nails which are driven into or through the bones. (Fig. 1.)



[illegible] extension

The technique which I have found in the course of years to be the best is extraordinarily simple. It is as follows: A nail with a pointed, four-sided end, is bored through the lower end of the peripheral fragment and the extension is fastened to the projecting ends of the nail. The length of the nail chosen is determined by the thickness of the limb at the place of insertion, and the nail, together with a pincette or forceps, is sterilized by boiling, it is then seized by the forceps and its posterior end which, like the other, is four-sided, is fixed into a hand drill. The nail is now pushed in down to the bone at a spot which has been previously decided upon and disinfected, as for example, by painting with iodine; next it is bored through the bone until the point perforates the skin on the other side and

the ends of the needle project equally on both sides. The process of boring can be carried out either by means of the drill attached to the nail or of Doyen's trephine or by electricity. Driving the nail through the bone with a hammer is to be avoided because of the shaking of the site of fracture, as also any preliminary incision or even a preliminary boring of the track for the nail through the bone. If the soft parts are thick



Fig. 2.—Positions for insertion of nails (femur and tibia).

it is a good thing to draw the skin in the proximal direction in order to avoid cutting the skin with the nail loaded with the extension apparatus.

Anæsthesia for the driving through of the nail may be carried out by a short narcosis, but very easily also by local anæsthesia. After the driving through of the nail the sites of exit and entry are covered with antiseptic gauze and a thoroughly sterile bandage; the projecting ends of the nail are thus kept free from germs to a considerable distance, so that should the nail become loose and slide to and fro only sterile parts will enter the nail track. The bandage must in any case protect the nail region from the prying fingers of the patient.



Fig. 3. Positions for insertion of nails (lower end of tibia, os calcis).

In choosing the place for insertion of the nail we must take into consideration: First, that the nail must be altogether outside the fracture hæmatoma so that no infection takes place along the nail. To insure this in the case of fractures of the upper half of the femur we infringe upon the principle of direct attack upon the lower fragment, and insert the nail into the head of the tibia, and similarly in fractures of the lower half of the leg we drive the nail through the calcaneus. Secondly, we must avoid the medullary canal in order that, if the nail should become infected, osteomylitis may not result. Further, we avoid the joint capsule, because of the danger of joint infection. Finally, we spare the line of the epiphysis, although I have seen cases in which [illegible] red years before with absolutely no visible hal[illegible].

From these considerations we have found the following to be the most suitable positions for insertion [illegible].

One at the lower end of the femur [illegible]ly above the condyles, a second at the tibia about 2½ fi[illegible]s' b[illegible]



Fig. 4. [illegible]

the line of the knee joint (Fig. 2), so that the outer half of the nail comes to lie in front of the lower end of the styloid process of the fibula: another at the lower end of the tibia about two fingers' breadth above the line of the ankle (Fig. 3), so that the outer half of the needle passes in front of the upper end of the external malleolus: another at the os calcis 1½—2 fingers' breadth obliquely backwards and downwards from the tip of the external



Fig. 5.—Sites of selection (three) for upper arm.

malleolus, that is, at the junction of the upper and middle thirds of the line of union of the corpus and tuber calcanei.

For the upper arm the site of selection lies at the lower end of the humerus immediately above the condyles, or better, in the olecranon, or even perhaps somewhat further towards the periphery in the upper end of the ulna (Fig. 5). For the extension of fractures of the elbow and forearm, the site is on

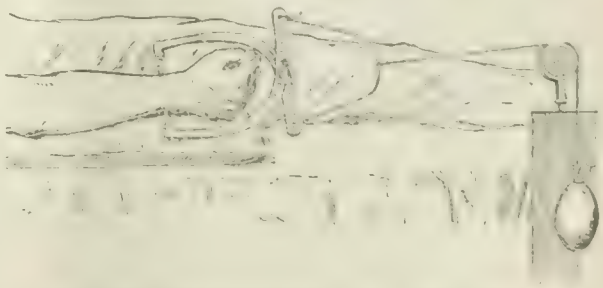


Fig. 6.—Site of selection (lower end of radius) for fractures of elbow and forearm.

the lower end of the radius, which is bored through about two fingers' breadth above the wrist joint from the dorsal side (Fig. 6). The thickness of the nail used should be from 3·5 mm.; its length varies with the thickness of the limb and must exceed it by a few centimetres. The upper ends of the two branches of my extension apparatus* are fastened over the

* Manufactured by Sanitatsgeshaft Schaerer A. J., Berne.

projecting ends of the nail, and the branches are fixed against one another in the right position by means of the wing screw which fastens together the two holes falling on one another. The extension grasps the lower ends of the branches on both sides (Fig. 7).

In carrying out nail extension, the great advantages of the method as compared with that of adhesive plaster extension at once become apparent. Nail extension allows us complete freedom as to the position of the extended limb. For thigh and leg fractures we may make use of Zuppinger's semiflexion, as we ourselves have done from the beginning. A second advantage is the possibility of giving to the force of extension any strength we wish. We ought not however to forget that the same weight acts much more strongly in nail extension than in adhesive plaster extension. Failure to take account of this stronger action led, earlier on, to unintentional considerable

I make use however, designedly, of such over-correction, first to make possible re-position of the fragments when this is [illegible] by projecting spurs, and secondly to combat injurious [illegible] especially in long, oblique or spiral fractures. There is no absolute normal for the strength of the pull and if I suggest that the weight to be used in recent fractures of the thigh is from 3-12 kg., in old fractures up to 25 kg., in recent fractures of the leg up to 5 kg., in old ones up to 12 kg. and in fractures of the upper and fore arm up to 4 kg., these figures are not to be taken as binding. We must always control the effect of the extension by the measuring tape and possibly by Röntgen rays and modify the extension according to the result. I do not need to enter upon the question of

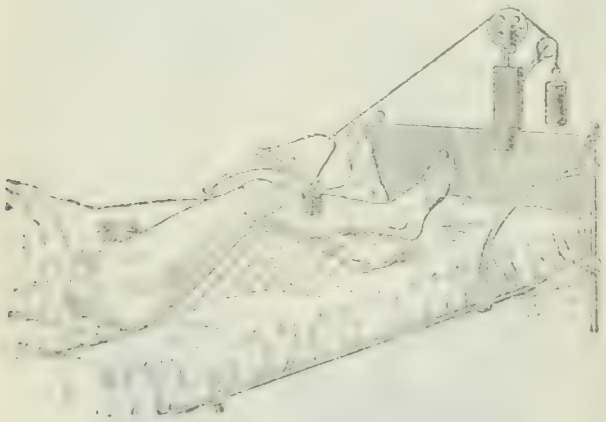


Fig. 7.—The two branches of the apparatus, and wing screw and attachment of weight.

[illegible]on, since this presents absolutely no difficulty. [illegible]ases I have found it sufficient to raise the lower [illegible]el of the bed.

Nail extension has been the cause of the greatest surprise to [illegible] by its comparative painlessness. I have been able [illegible]s of patients by this method without their [illegible] though a certain number of patients may [illegible] of pain for a short time, this pain is certainly not [illegible] according to my experience, is decidedly less than [illegible]laster; it certainly does not in [illegible] the method.

[illegible]n of the fragments is the [illegible] we wish to the pull. It [illegible] happens, drawn into the [illegible] of the pull, we can adopt the [illegible] to that of the upper with the [illegible] example in fractures of the upper [illegible] third of [illegible] by a pull directed strongly upwards and [illegible]d, the change in the direction of the pull [illegible] of the [illegible] back in [illegible] pull [illegible] An advantage of [illegible] with that of Bar[illegible] at our disposal, is that [illegible] that it requires only two points for its application,

and for the rest leaves the whole limb free for early functional treatment. We can begin forthwith with massage and electrical treatment of the muscles, together with passive and active joint movements. Nail extension better meets the requirements of early functional treatment than does any other extension method.

One disadvantage, however, stands over against these great advantages, that is, the danger of infection. This is undoubtedly the black side of nail extension. If the treatment is carried out according to my technique, no mishap ought to occur. Yet in a number of cases there have occurred in connection with the nail spots, delay in healing, decubital ulcers, abscesses, and obstinate fistulæ. I myself, out of nearly 40 cases of nail extension, have had one fistula of about three months' duration, and one of over a year, while in the remainder, the nail sites were healed after a few days or weeks. We must, then, direct all our efforts to combating this dark side of the method. For this purpose is needed in the first place an absolutely complete asepsis. I have always emphasized that doctors who are not willing to carry this out in the most rigorous fashion would do better to abandon the method. But this careful asepsis should not only be observed during the passage of the needle itself, but also during the whole duration of extension, and after the removal of the nail should be directed to the holes left by it. We may be still doubtful whether the use of a needle in two parts (though we have as yet no usable model of this), or whether certain protective coverings, etc., will be found helpful in the fight against infection. But in any case one point plays a very important *rôle* in infection of the nail canal, and up to the present has received too little attention, that is the *duration of the extension*.

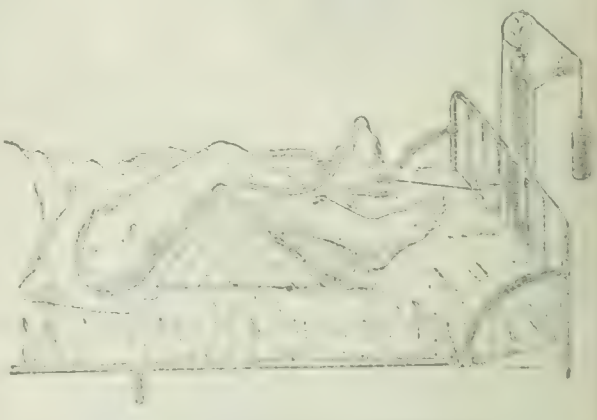


Fig. 8.—Pull directed so as to counteract displacement (of lower fragment of femur).

Our experiences, and so far as I can judge, those of other authors go to show that as a rule the infected cases have been those in which the nail had remained in position many, that is to say 5-8 or more weeks. *We must thus limit the duration of nail extension as far as possible* by the initial use of large weights to quickly correct, or even over correct, lengthways displacement of the fragments, and, if any consolidation has set in, but in any case as soon as possible, and at latest after three to four weeks, by removal of the nail extension or by replacing it by other methods, as for instance by adhesive plaster extension.

There ought undoubtedly to be added to our short sketch of nail extension an account of the modifications of the method brought in by other authors and by myself, as for example, extension by a nail on both sides which renders unnecessary the drawing through the whole nail track an end of the nail which can no longer be sterilized with certainty, but on the other hand has the disadvantage of loosening of the nail. A further modification consists in the so-called "splint [illegible] fractures of the leg especially [illegible] France, and which develops the extending force between [illegible] the upper fragment [illegible] ment. Although th[illegible] may fix the fractured segments of the limb more [illegible] the other hand more complicated, it diminishes [illegible] as to all the [illegible] hnique.

[illegible]chenbruche. Neue [illegible] Chirurgie I., Bd., [illegible] Enke, Verlag, Stuttgart.

And now with regard to the indications for the use of nail extension. I do not attempt to maintain that my method should replace that of adhesive plaster extension. Where we succeed with the latter and are in a position by means of it actually to bring about reposition there plaster extension is the method of choice. But experience has shown there to be a whole series of different fractures in which the latter fails to accomplish his object by the above method; these cases are naturally less numerous for those technically perfected in the method of adhesive plaster extension than for the majority of surgeons. We must, however, reckon with the latter. Among recent fractures, complicated ones are especially the ones which often do not admit of adhesive plaster extension, and which, therefore, up to now have often given miserable results. These are some of the most satisfactory cases treated by nail extension which, along with adequate extension, permits of unhindered access to the complicating wound and therefore of a rational treatment. But there are a large number of uncomplicated fractures in which, up to now, inadequate and bad results have been obtained with plaster extension and in which nail extension is able to do good service.

I agree with Körber, who till now has worked up the greatest material in nail extension cases and has done so very critically that nail extension is indicated for the lower limb in:—(1) Fractures of the upper third of the femur with a short upper fragment displaced to the front and outwards; (2) Dislocated transverse fractures of the middle third of the femur in which reposition is a matter of difficulty; (3) Fractures of the lower third of the femur with obstinate dislocation of the lower fragment backwards; (4) Knee joint fractures, especially if the diaphysis is driven into the epiphysis; (5) Fractures of the lower half of the leg with dislocation, not easily reducible, of the proximal fragment to the front; (6) Supra malleolar or malleolar fractures with much displacement.

Of upper arm fractures, according to Wilm, fractures of the lower end of the humerus are to be submitted to nail extension, and this also can well be applied to obstinate fractures of the forearm.

Nail extension has also been held to be specially indicated for comminuted, double, and multiple, fractures.

In addition to a complicating wound, other factors such as smallness of the available surface for attaching adhesive plaster, injuries of the skin, obesity, &c., may make plaster extension impossible, and forces us to have recourse to nail extension.

Perhaps the type of fracture which best rewards nail extension is that of old fractures, specially those in which as a result of accidental wound diseases or intercurrent illness or unfavourable complications such as eczema, decubitus, gangrene, &c., the methods first tried, as for instance adhesive plaster extension, either failed or could not be carried to a termination. Here nail extension, with its strength of action can still, after some weeks, remedy what has been neglected. Similarly nail extension may be expected to play a great *rôle* in war. When shot fractures reach the terminal hospital after many days or weeks, only nail extension will usually be adequate to make good the displacements and shortenings which have occurred. In recognition of this the Prussian army has incorporated my instrumentarium in its medical outfit for war. Nail extension has quite especially conquered for surgery the territory of old fractures which have healed with great deformity and shortening, inasmuch as in these, after a second artificial fracture, it has made good shortenings of many cm., even up to 11, 12 or 13 cm. With the method—as Kirschner says—we can undertake tasks hitherto impossible.

Nail extension is also used for the correction of other forms of shortenings of the limbs, as after scalariform sawing of the bones, further in the re-position of old luxations, in the treatment of coxa vara (Sprengel), in the mobilization of stiffened joints (Payr), and even for the correction of club foot. The method is so new that obviously the region for its employment is still not sharply defined. My purpose has been specially that of shewing you that in cases of fracture in which other methods fail, you no longer, as formerly, stand helpless, but have a method to fall back upon which can do good service under the most difficult conditions, and can even make good the unsatisfactory results of other methods.

APPENDIX (II.)

(I) THE TREATMENT OF FRACTURES WITH EXTENSION BANDAGES; AND THE RESULTS OBTAINED THEREBY.

By Geheimrat Prof. Dr. Bardenheuer, and Stabsarzt Dr. Graessner, of Cologne.

(From Publication in honour of the Opening of the School for Practical Medicine in Cologne, compiled by Prof. Bardenheuer. 1904. pp. 113-128.)

Perhaps there is no joint fracture in which an error on the part of the doctor treating it is so severely avenged as ankle-joint fracture, whether the error is one of diagnosis in looking upon fractures as distortions and treating them as such or of failure in treatment after a right diagnosis of fracture. Either the doctor immobilizes the injured joint too long and causes subsequent stiffness or he allows the foot to be used too early, so that deformities occur and cannot afterwards be removed. In either case function is and as a rule remains considerably impaired. Every doctor who has many cases of accident to report on knows how great these injuries often are. But even in those cases of ankle fractures which had been treated in large hospitals and in the treatment of which the right proportion of immobilization, movements and rest in bed, had been maintained, we found misplacements and inflammations which considerably affected the power of making a living. The treatment had always consisted in fixation of the foot in a containing bandage (usually a plaster bandage), so that we must acknowledge to ourselves that these bandages are not always in a position to remedy displacements and to prevent the harmful results of a joint fracture. We would, however, maintain that the extension bandages, as Bardenheuer has made use of them in the Cologne Municipal Hospital for the last twenty years, have not failed us in any fractures, not even in ankle fractures, and that, rightly used, good results will be obtained throughout.

When Bardenheuer's assistants reported on the results of extension treatment in ankle fractures—Loew (*Deutsche Zeitschrift für Chirurgie*, Bd. 44: on the results of fractures of the leg in respect of the accident insurance law) and Bliesener (the same journal, Bd. 55: on the functional results obtained through Bardenheuer's extension method in fractures of the lower limbs), their results were described by the one as fabulous, by the other as ideal. That these have been equally good also in the following years (1897—1903) should be made manifest in the following article. But first the method of carrying out Bardenheuer's extension must be shortly described. Bardenheuer has expressed himself more fully on the subject of extension in his text books, in the 1903 volume of the discussions in the German Society for Orthopædic Surgery, and finally in a larger work in the *Archives Internationales de Chirurgie*.

For a satisfactory carrying out of extension, beds are needed with a hard substratum, preferably a mattress, since the extended leg is not laid, as in the usual treatment, in a splint, but lies directly on the bed. It is desirable for the beds to be long: for hospitals we recommend beds of 2·4 m. in length and 0·85 m. in breadth. Further, a thoroughly adhesive non-irritant plaster is necessary. Formerly, in using the customary grey canvas adhesive plaster the onset of eczema often made it necessary to remove the bandage, and rendered the result of treatment a matter of doubt. Since we have used collemplastrum zinci on grey canvas (Helfenberg Chemical Works' and leukoplast (Beiersdorf), we have not again seen eczema occur even in this hot summer. We fasten the adhesive plaster strips, which are laid on the unshaved skin, by circular overlapping turns of perforated mild indiarubber plaster, 3 cm. in width. The adhesive power of this plaster is so strong that a length extension on the leg can be forthwith weighted with 25 kg. without disturbing the plaster.

As is known, Bardenheuer not only seeks to make good the dislocatio ad longitudinem by a pull lengthways, but also the dislocatio ad axim, ad latus, ad peripheriam through transverse and rotation pulls.

To apply lengthways extension to the lower limb, the malleoli and the anterior border of the tibia are first protected by strips of gauze, evenly laid on, and the strip of adhesive plaster then carried downwards on the outer side of the leg from behind the trochanter. The plaster forms a stirrup under the sole and goes up again on the inner side of the leg. These strips are made firm, as was stated above, by circular turns of

perforated adhesive plaster. The knee joint, however (as indeed all joints), and the thigh for four fingers' breadth above the knee joint are left free; the former in order not to injure the joint movements, the latter, in order that in any possible yielding of the circular turns of plaster, the knee joint shall not be compressed and its circulation interfered with. In fractures of the malleoli, and of the lower third of the leg, however, we carry the circular turns to the ankle in order to be able to exert an effect on the lower fragment. This effect will be strengthened if we sew up the loop of adhesive plaster close in front of the sole, or insert into it a buckle (like the buckle of braces). In loading the extension, a strong pull will be exercised on the malleoli and "spring" joint; the foot can be carried either outwards or inwards. It is often considered doubtful whether the skin surface, and therefore the surface for attack by adhesive plaster strips in supra-malleolar or malleolar fractures is not so small that the lower fragment cannot be influenced. The two Röntgenograms I. and II. should contradict this view.[2] This pull upon the lower fragment is however of great advantage especially in the treatment of malleolar fractures, since through it, the hinder part of the foot can be brought into the right position. This position is not always obtained by putting the foot into plaster of Paris; the foot certainly is supinated at Chopart's joint but without the deformity at the malleoli being corrected by the displacements in the talocrural joint. With the extension bandage by which the position of the whole foot including its posterior part is kept under lasting control this defect can always be avoided. As we have already said, the extension bandage is applied far above the seat of the fracture. This is often a cause of surprise. But, as Bardenheuer's experiments on the recent body have shown, it is a mistake to think that the action of the pull is thereby affected. The adhesive plaster strip reaching up above the seat of fracture is not so much made fast to the bone as to the movable soft parts. The characteristic force of extension, however, acts chiefly on the parts of bone lying peripherally from the fracture and finds in these its special point of attack, acting through the long strips which are pressed in by the circular turns of bandage. In this way only is it possible for us in a number of fractures to apply the necessary weight. Counter extension is effected by raising the foot end of the bed.

In all malleolar fractures we bring the length extension of the foot upwards (towards the toes, the ceiling) with a weight on an average of 1 kg. By this pull pressure is taken off from the heel and in addition it keeps the lower fragment more safely in position and prevents turning in of the toes. In ankle fractures which are to be put into a position of marked supination it serves as a substitute for the rotation strips which we formerly used. An adhesive plaster strip is applied to the dorsum and sole of the foot so as to form a loop over the tips of the toes. To give this extension the necessary hold, the circular turns must be firmly applied because in this way a hold is obtained at the heads of the first and fifth metatarsal bones. The same pull may also be effected if, after covering the heel with folded strips of gauze, the adhesive plaster is brought round the heel along both edges of the foot and sewn up over the tips of the toes; the latter arrangement is useful in luxation of the foot to the back, because in such a case a heavier weight is needed on the extension. For transverse extension we need a pull perpendicularly to the long axis of the bone. The transverse pulls are applied to the peripheral and central fragments and by drawing them in a frontal and in a sagittal direction to the long axis of the bone, remove the dislocation.

The method of application of a transverse extension is to carry an adhesive plaster strip round the circumference of the limb and to sew it in the middle of the side, so as to form a loop by means of which the pull will act. A hole is cut in the loop and the cord for hanging the weight is fastened to a piece of wood set in the loop.

Leverage of the fragments in more marked dislocation to the side is strengthened by the application of further transverse pulls through which the fractured ends are drawn to the opposite side from that to which they were dislocated and the fragments are drawn to the same side. The fragments [illegible] back to the long axis of the bone.

A further improvement introduced by Bardenheuer is the adoption of rotation pulls to make good any rotation of the fragments of bone and also the methods introduced by him of overcoming of depressions and the avoidance of differences of level.

The rotation pull is made by a single circular turn of an adhesive plaster strip to whose free end a loop is sewn.

[2] It has not been possible to reproduce here the Röntgenograms and other figures referred to in this Appendix.

For making good differences in level Bardenheuer uses the so-called "cradle," (Figs. 1, 2, 3.) The action is evident from the illustrations. The simplest form is that shewn in figure 3. Two transversely laid, somewhat bent sheet iron bars are joined together by lengthways bars, over which run rollers. The plaster strip is laid over the fragment which needs to be depressed, brought through under the wheels and suitably weighted at both ends.

In all these pulls to the side we let the cords to the sides of the bed simply hang over the bed side, not run over rollers. For the lengthways pull we introduce a roller at the foot end of the bed (Fig. 4), though a hole bored in the foot board would answer the same purpose. For carrying the pull upwards we use the pole shown in Figure 5.

We do not use any other apparatus, so that the reproach that the extension needs a great deal of complicated apparatus is not justified.

By means of the pulls we have described we can keep the fragments in lasting contact after reposition, even in cases of the most severe displacement, and we can bring about healing of the fragments in the anatomical sense as the appended Röntgen pictures prove. Even if it must be allowed that a fracture which has healed with some slight displacement of the fragments does not necessarily cause any considerable disturbance of function, yet a perfect apposition of the fragments offers great advantages. First in importance is the fact that the time of recovery is shortened. Bardenheuer does not agree with the opinion of Voelker that the long duration of treatment, as we have it, in the joining of the fragments by a stitch through the bone, is to be considered to be due to the scanty formation of callus resulting from the exact adaptation of the fragments. According to him the excessive callus is much more the expression of defective contact between the surfaces of the bone, just as an excessive scar formation in the soft parts is the expression of a defective apposition of the edges of the wound as in secondary wound infection with yielding of the edges. Bardenheuer hence speaks of bone healing by first intention, and desires in the healing of a fractured bone, just as of skin wound, a primary union with as little scar, that is callus, as possible. The importance of a small formation of callus in or close to a joint as far as function is concerned, is clear. Further, it is obvious that through accurate adaptation of the fragments in a joint fracture the irritation caused by fragments of bone on the synovial membrane, the periosteum, the joint capsule and the surrounding muscles, is avoided.

Finally the extension pulls, besides leading to the correct retention of fragments, allow of passive and active movements of the joints concerned, even during the special fracture treatment.

In this way stiffening of the joint is avoided, and also the other injuries which long resting of an injured joint, filled with an effusion of blood, brings in its train. Through early passive, but, above all, active movements, we maintain the elasticity of the muscles of the synovial membrane, and of the capsule; nutrition is aided, the development of œdema is avoided as a result of the furtherance of the blood and lymph stream, adhesions of the tendons with the tendon sheaths and with the surrounding tissue, inflammatory adhesions of the joint surfaces, the surrounding capsule and the muscles with one another, and inflammatory shortening, and atrophy of the muscles are all avoided. Bardenheuer's extension treatment gives a joint which, after the end of the fracture treatment, is so freely movable that a medico-mechanical after-treatment is for the most part unnecessary.

In applying the bandage after reposition of the fragments, a helper grasps with one hand under the heel, with the other round the dorsum of the foot, and powerfully extends the lower fragment. After removal of displacements, the foot should be in a position at right angles to the axis of the leg, midway between pronation and supination, and should be so rotated round the axis of the leg that the inner edge of the great toe be in a line with the inner edge of the patella, placed horizontally. As a rule, in malleolar fractures we put on an extension bandage, with the foot in a position of adduction. (Fig. 6.)

The pull *d* is first applied to draw the foot forwards (towards the ceiling) then the length extension *a* and the transverse pulls *b* and *c*. Through the pull *a* the foot is brought into adduction, through the transverse pull *b*, the lower end of the leg is drawn outwards, through *c*, the upper end is drawn inwards so that the lower end of the leg is levered outwards. The loading of the pulls is shewn in the illustrations.

The accompanying Röntgen pictures should prove the effectiveness of the bandage (Röntgenogram 1, *a* and *b* were taken before, *c* and *d* after the treatment of the fracture).

Warnings have often been given before as to keeping the [illegible] during [illegible] permanently in the varus position. We [illegible] good for many cases of adduction and [illegible] in such cases placing the foot in the position of supination would throw the fragments at the outer malleolus still further from one another. In these fractures a groove remains palpable at the outer malleolus even after recovery; œdema and a condition of irritation in the ankle joint remains present for some considerable time. Our custom, [illegible] to apply the bandage for adduction fractures in this way shewn in figure 7: the length extension pull *a* is [illegible] towards the outer side of the bed for the adduction of the foot: the transverse pull *b* inwards for the lower end of the leg, the transverse pull *c* outwards for the upper end of the leg. The foot remains in this position for 6 to 7 days; then we bring it into a position of slight supination (Röntgenogram II.)

In fracture of the anterior border of the tibia, a not very frequent accident, we bring the foot into as great dorsal flexion as possible by the pull to the front (towards the ceiling). We have always obtained a good functional result and never seen any limitation of dorsal flexion.

One point needs attention in the treatment of ankle fracture, namely, that of making good the diastasis between the tibia and fibula, which arises in many malleolar fractures. Often there is only a tearing of the lig. tibio-fibularia. In most cases, however, the ligaments are more resistant and more or less large fragments are torn out of the outer surface of the tibia. These fractures usually go along with a fracture of the fibula a little above the external malleolus. If such a diastasis is not removed the astragalus does not find the necessary hold in the fork of the ankle: flat foot develops and uncertainty of gait, etc. (Röntgenogram VII.) Clinically in this fracture we find a narrowly localized pain on pressure of the outer surface of the tibia. In such cases the plaster of Paris bandage cannot exercise the necessary pressure on the malleoli without inducing pressure gangrene. But the extension bandage brings about the removal of the diastasis through the length extension, if the limbs of the ansa are brought close together by means of a buckle just in front of the sole, and so a continuous pressure is brought to bear upon the malleoli (Röntgenogram III).

Lateral displacements of the foot, of small grade, are fully made good by means of the adduction and abduction extension bandages. On the other hand, in more severe displacements, in true luxation, the so-called dislocation fractures, the adduction and abduction position of the foot in the bandage is further strengthened by transverse pulls.

In luxation of the foot in the talo-crural joint outwards, the foot, which is laid in an adduction extension, is brought into more marked adduction by the transverse pull *d*, which is laid over the ankle. (Fig. 8, Röntgenogram VI.) Reduction is easily accomplished with the knee flexed by carrying out adduction and rotation of the foot to the inner side. Figure 9 explains the treatment of luxation of the foot in the talo-crural joint inwards.

Abduction extension. Strengthening of the abduction through the transverse pull *d*.

Reduction must be carried out through abduction and rotation of the foot outwards, the knee being bent. Figure 10 illustrates luxation to the front. Through the pull *d* the foot is flexed dorsally, through the longitudinal pull *c* it is drawn downwards (plantarwards) through the pull *d* to the back. Through the pull *a* the lower end of the tibia is pulled to the front, through *c* the upper end is pulled to the back, so that the lower end of the tibia is still more powerfully acted upon. (Pull *d* and *c* are transverse pulls which are sewn up at both sides of the bone and end in loops. Through weighting on both sides a powerful pull is exerted towards the back (substitute for the cradle pull). Reposition in incomplete luxation is arrived at by simple extension of the foot towards the back: in complete luxation it is a good thing to press the foot, strongly flexed dorsalwards, to the back and down and the lower end of the tibia to the front and produce a plantar flexion. (Röntgenogram IV.)

Luxation to the back is treated as in Figure 11. Through pull *c* the foot is pulled downwards plantarwards, through *b* in its long axis toewards, throught the cradle pull *d* the lower end of the tibia is pulled to the back; through *a* the upper end is pulled to the front, so that the lower end is levered towards the back.

In incomplete luxation the pull at the foot to the front, while the leg is pressed towards the back, is sufficient to bring about reposition. In complete luxation the foot must first be plantar flexed, then pressure be applied on the tibia towards the back and a pull on the plantar flexed foot towards the front and finally the foot be dorsally flexed (Röntgenogram V.)

If there be an accompanying displacement of the foot to the outer or inner side, this can be made good by carrying the length extension to the inner or outer side and by heavier weighting of the pull on the outer or inner side.

We use the extension bandage in complicated fractures if the wounds of the soft parts are small and we almost always use it in compound fractures. The neighbourhood of the wound is cleaned and covered with a smoothly laid strip of vioform gauze and with a mull compress. Over this the adhesive plaster strip is laid. When there is little secretion the vioform gauze remains until the wound heals and the extension bandage is taken off; otherwise it is changed as it may be necessary without the length extension needing to be taken off.

From the fifth day after the application of the bandage, onwards, the weights are dispensed with for an hour at the morning and evening visits and movements at the foot joint undertaken, first passive then active. Flexion, extension, and rotation are, however, only carried out so far as no pain is felt on the movements. After 3-4 days there is, as a rule, considerable active mobility.

All fractures are Röntgen-rayed before the application of the bandage; in severe displacements we apply the rays again immediately after the application of the bandage, otherwise first after eight days in order to be able to make good through different weighting of the pulls any small displacements which, though not perceptible clinically, may be shown by the rays.

The extension treatment lasts on an average –

For fractures of the malleolus externus ...	12 days,
,, ,, ,, internus ...	14 ,,
,, ,, ,, both malleoli ...	14 ,,
With accompanying marked luxation	16-18 days.

Our principle is to let all cases with ankle fractures, even if no displacement is present, lie in bed for 5 weeks. The body weight should only be borne on an absolutely firm bone. In extension treatment especially, the patients do not need to stand up as they do when fixative bandages are used, since the muscles in extension are not condemned to complete inactivity. Ambulant bandages we do not apply. The results of the extension treatment in malleolar fractures, as they are supplied in the following statistics, we have determined by questions addressed to sick clubs and trades unions. We have received information in the kindest manner from 35 sick clubs (some of fused information) and from the following trade unions, to whom we now express our thanks: –

1. Rheinisch-Westfälische Baugewerks –B.-G.
2. Hessen-Nassauische Baugewerks—B.-G.
3. Fuhrwerks B.-G.
4. Norddeutsche Holz –B.-G.
5. Lagerei B.-G.
6. Maschinenbau and Kleineisen-Industrie –B.-G.
7. Strassen –and Kleinbahn—B.-G.; and
8. der Königlichen Eisenbahn Direction, Cöln.

The questions we put were: –

1. If complete fitness for work was regained.
2. In case of complete fitness for work not ha[illegible] yet regained: –
   (a) Is the incapacity permanent?
   (b) What is the percentage amount of incapacity?
   (c) What is the cause of the incapacity?

In putting our questions we have followed the example of Loew and Bliesener in order to be able to compare our results. We have differed from them only in so far that we have counted amongst those in receipt of sick pay not only those in receipt of permanent sick pay, as Loew and Bliesener have done, but also those who at the time of preparation of the statistics were drawing sick pay. In what other way should we count persons who at that particular time were drawing sick pay, and about whom it was not yet established whether they would do so permanently? Our statistics embrace the time from 1897 to 1st April, 1903. We have collected our information in April, 1904. All those who at this time were receiving pay are included. It is clear that in consequence our results must compare unfavourably with those of Loew and Bliesener.

Besides ascertaining those in receipt of sick pay, we also were concerned in determining who, among the injured persons, [illegible] for work before the thirteenth week, who after this time. We have not estimated the exact duration of recovery, since this is so largely determined by external circumstances, particularly if it is a question of fitness for work before the beginning of the 14th week, since with regard to this time the kindness of the doctor and the goodwill of the patient will play a great part. But even after the end of the 13th week the reckoning is not uniform, since the procedure in different trade unions with repeet to full and partial pay is different.

In order to satisfy ourselves, personally, as to the results, we have sent for the people concerned, and the greater part have appeared for an after-examination; unfortunately, only 2 of the 7 in receipt of pay were amongst these.

We have for our statistics, reports on 149 cases of injury (1897–1903):

Fracture of a malleolus	86
Recovered before the completion of 91 days	75=87·2 %
Recovered after 91 days	11=12·8 %
In receipt of sick pay	0=0 %
Fracture of more than a malleolus ...	68
Recovered before the completion of 91 days	42=66·7 %
After 91 days	14=22·2 %
In receipt of sick pay	7=11·1 %

Thus for ankle fractures generally the following are the figures:—

Ankle fractures	149
Recovered before the completion of 91 days	115=77·2 %
After 91 days	27=18·1 %
In receipt of sick pay	7=4·7 %

Statistics of Loew (1891–1896):—

Fracture of a malleolus	68
Recovered before the completion of 91 days	58=85·3 %
After 91 days	10=14·7 %
In receipt of sick pay	0=0 %
Fracture of more than a malleolus ...	38
Recovered before the completion of 91 days	21=55·4 %
After 91 days	16=42 %
In receipt of sick pay	1=2·6 %
Ankle fractures in general	106
Recovered before the completion of 91 days	79=74·6 %
After 91 days	26=24·5 %
In receipt of sick pay	1=0·9 %

Statistics of Bliesener (1896–1897) –

Fracture of a malleolus	9
Recovered before the completion of 91 days	8=89 %
After 91 days	0=0 %
In receipt of sick pay	1=11 %
Fracture of more than a malleolus ...	21
Recovered before the completion of 91 days	18=85·7 %
After 91 days	3=14·3 %
In receipt of sick pay	0=0 %
Ankle fractures in general	30
Recovered before the completion of 91 days	26=87 %
After 91 days	3=10 %
In receipt of sick pay	1=3 %

Putting together our results and those of Loew and Bliesener, we obtain the following:—

Ankle fractures	285
Recovered before the completion of 91 days	220=77·2 %
After 91 days	56=19·6 %
In receipt of sick pay	9=3·2 %

For further comparison the statistics of Huenel and Jottkowitz may be taken.

Huenel, who first provided statistics of accidents reports in *Deutsche Zeitschrift für Chirurgie*, Bd. 38 ("On Fractures with respect to the Accident Insurance Law") on 40 malleolar fractures: of these 28=70 % were recovered, 12=30 % were disabled.

In any comparison with this result it is, however, to be considered that these cases were not treated on any uniform method, and to a large extent not in hospital. More informative is a comparison of our statistics with those of Jottkowitz (*Deutsche Zeitschrift für Chirurgie*, Bd. 42, "On Results of Fractures of the Leg in connection with the Accident Insurance Law"). Jottkowitz reports on 50 ankle fractures from the Knappschaftslazerett at Königshütte, the cases being all treated on a uniform method in the same hospital:—

Fracture of a malleolus ...	36
Recovered before the completion of 91 days	29 80·6 %
After 91 days	1 2·8 %
Disabled	6 16·6 %
Fracture of more than a malleolus ...	4
Recovered before the completion of 91 days	0=0 %
After 9 days	1 25 %
Disabled	3=75 %
Ankle fractures in general ...	40
Recovered before the completion of 91 days	29 72·5 %
After 91 days	2=5 %
Disabled	9 22·5 %

Jottkowitz does not mention whether the cases described by him as disabled were drawing permanent sick pay: the word "permanently" is to indicate permanent sick pay. It is mentioned that of the 149 cases with which our [illegible] had passed the [illegible] was 61 years old). In half of these cases the injury was fracture of both bones. 19 have become fully fit for work, 1 is drawing permanent sick pay of 33⅓ %. The restoration of the function of the injured joint in these older people must specially be taken as proof of the good effect of the extension bandage.

The following short extracts from the notes of the 7 persons in receipt of sick pay may be appended:—

1. N. 32 J.—Jumped a metre's length, the right foot twisted.

Fracture of the malleolus externus and of the whole external tibial surface with displacement of this fragment forwards. After 35 days left the hospital with good position of the foot. 33⅓ % on account of arthritis in the ankle.

2. L. 59 J.—Falling of an iron ladder from the outer side on to the right foot. Fracture of both malleoli and of the external tibial surface with luxation of the foot outwards and backwards. Discharged after 47 days with good position of the foot but slight impairment of flexion. Slight abduction position; on the sound side position of flat foot. Should wear a support. 33⅓% on account of inflammatory traumatic flat foot.

3. F. 28. J.—Fell with his left foot in a grating. Fracture of the internal malleolus and fibulæ supra-malleolaris.

Discharged after 31 days with a good position of the foot, slight impairment of dorsal flexion. 15% because of weakness in the foot.

4. M. 40 J.—Run over by an automobile. Fracture of the external malleolus and of the external surface of the tibia. Discharged after 45 days with slight limitation of movement. 20% because of weakness of the foot, until further notice.

5. F. 25 J.—Twist of the right foot. Fracture of the internal malleolus and supra-malleolar fracture of the tibia. Discharged after 48 days with good position of the foot without impairment of movements. 15% because of slight symptoms of flat foot until further notice.

6. W. 38 J. Twist of the foot. Fracture of the malleolus externus and of the external surface of the tibia. Left the hospital against medical advice after four weeks, with good position of the foot and good function.

10 % until further notice because of weakness of the ankle.

7. D. 31 J. Twist of the foot. Fracture of both malleoli and of the external surface of the tibia. Flat foot both sides. After 36 days discharged with good function.

10 % until further notice because of symptoms of flat foot.

In cases 1 and 2, permanent sick pay is probable even though not yet awarded. In the 5 other cases the bestowal of sick pay is only temporary. If, like Loew and Bliesener we only bring into our reckoning as receivers of sick pay those with permanent sick pay, we have for the years 1897-1903 only 2 = 1·3 %, for the years 1891-1903 4 = 1·4 %.

The greater number of fractures of both malleoli, as compared with the reports of Loew and Jottkowitz, is explained by the fact that we, as Bliesener had already done, believed it necessary to count among the combined ankle fractures that common form of fracture, the fracture of Dreieck at the outer surface of the tibia (Volkmann's fracture).

No one will doubt that our results collected from impartial accounts are truly good. Yet there remains behind, according to Borchardt (Handbook of Practical Surgery, 2nd edition), in about 25 to 30 % of the cases of malleolar fracture treated on other lines a limitation of the capacity of use of the foot of differing degree (up to about 50 % capacity for work).

Why is it that the extension treatment, in spite of its good results, does not find the general use which it deserves?

The objection is raised that it is difficult to learn, and because of the difficulty of the technique and the necessity for constant supervision is only suitable for use in hospitals. Bardenheuer has expressed his view with regard to these objections at the conclusion of his work, mentioned above, in the *Archives Internationales*. According to him treatment in hospital is indicated for fractures with great dislocation of the fragments, and for fractures into or in the neighbourhood of the joint; such treatment is almost always given in the large towns, if for no other reason because in these the Röntgen apparatus is always now provided, and a control as to the position of the fragments in joint fractures is indispensable. Gymnastic exercises during the special fracture treatment should only be carried out by the doctor himself or by trained persons under the supervision of the doctor. Bardenheuer admits that the extension treatment demands much care, diligence and a steady supervision. But the greater care and trouble is rewarded by the far shorter period of consolidation, still more by the shortening of and in many cases the dispensing with after treatment, but above all by the far better functional result. That these advantages far outweigh the

...tages of hospital treatment, the greater ... isolation of the patient from his family, etc., does ... need to be insisted on.

If, from the records of trades unions and disablement insur... were shown how many of those in receipt of sick pay ... unfitted for work or had a diminished power of work as a result of a fracture, the great number of these cases would cause astonishment. It is evident that a large sum would be saved to the State and a great amount of strength for work saved, by diminution of the number. Considered from this ... al standpoint an effort must be made in the large number ... ures to obtain as good functional results as possible and ... be done in most cases only in hospital. It is therefore ... the interest of the trade unions, but also of the community ... the State, which have often to step in to the aid of injured persons unfit for work, if not insured against accident, to aim at the treatment of recent fractures in hospitals, and of trade union cases preferably in special hospitals. Bardenheuer believes the last demand to be so far a just one, that he has divided from the other parts of the hospital a special department for fractures and consigns it to the care of an older assistant, who for the most part is only concerned with the treatment of fractures.

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(2) ON THE TECHNIQUE OF THE EXTENSION TREATMENT.

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Kommandiert zum Bürger-hospital.

(*From the Deutsche medizinische Wochenschrift, No. 39, 1908.*)

Bardenheuer's extension treatment of fractures is of such great interest that it seems to me well to call attention to certain changes which we have recently made in the technique of the method.

When the extension treatment is carried out on Bardenheuer's system, the transverse pull or, in the case of a pull to the back, the so-called "cradle pull" is indispensable. Formerly, for the application of these pulls, instead of the rather costly apparatus described in Bardenheuer's and Graessner's text book, we employed a "cradle," which was composed of two long bars, provided with wheels, the bars being joined to one another by transverse somewhat curved sheet iron bands. The strip of adhesive plaster, folded double, and made as usual out of canvas, was laid over the site of the fracture which needed to be pressed back, then carried through under the wheels and suitably weighted at both ends.

These cradles had the disadvantage of not being sufficiently steady; they were easily displaced and the pull, in consequence, was frequently transposed to sites lower than had been intended. Moreover, as the result of the tendency of the pull to move towards the back, the chief point of action came to lie more on the lower segment of the cradle. The result was that the upper part tended to be raised to the front, and the effect of the pull was naturally weakened.

I have tried to avoid this disadvantage by laying the cradle on an evenly firm surface, and by adding an adjustable sliding apparatus. This arrangement had the additional advantage of dispensing with a considerable part of the friction, unavoidable when the limb lay directly upon the mattress. Such friction was cried by Sprengel, amongst others, as a material disadvantage of Bardenheuer's method.

The board with its adjustable slide* apparatus consists of a polished beechwood surface, on whose sides, as is seen in the illustration, grooves are made: in these the slides are fixed at will with screws at the place corresponding to the desired pull. The slides are so arranged that they can be pushed towards the middle of the board and the distance between them can be adequately adapted each time to the circumference of the limb; for the rest their structure is similar to that hitherto in use, that is to say, they consist of rods over which the rollers run.

Formerly, in making the extension bandage, we used exclusively zinc oxide adhesive plaster on grey canvas: this was made firmer by overlapping turns of perforated mild india rubber plaster; both kinds of p... at the Helfenberg Chemical Works. Now ... only of He... the other p... children. Heusner uses for his adhesive fluid a solution of Venetian turpentine in spirit in the proportion of 1:2. According to his prescription, only the best turpentine is used—a clear fluid, like honey, of a yellow-green colour and pl... colour; the cheaper kind allowed by the pharmacopoeia possesses less adhesive power.

The solution is sprayed on to the limb by means of a spray apparatus (like an iodoform ether spray); then a strip, 8-10 cm. in breadth, of rough woollen or cotton material (thick cloth, fustian, beaver) is applied in the ordinary way to both sides of the bone—the malleoli and anterior border of the tibia are to be protected from pressure by smoothly folded strips of gauze—and fastened on by a few turns of bandage, with an accompanying light massage. In the stirrup at the sole of the foot is placed either a small piece of wood or—what, according to Heusner, is better—a roll in the form of a cotton reel, which indents less and can be easily moved.

Heusner finally surrounds his bandage with a starched gauze bandage, in order to give it greater stability. The latter is not, however, absolutely necessary, and the object can be attained by spraying some of the adhesive fluid on to the upper part of the thigh before the end of the bandaging, and applying the turns of bandage in this situation very carefully and somewha... firmly.

According to Heusner, the extension bandage is at once able to bear a weight of 20 kg. and more: it gives rise to no symptoms of irritation, and fulfils all the conditions of a thoroughly adhesive bandage.

It has various, not unimportant, advantages as compared with the customary adhesive plaster bandage:

(1) It is extraordinarily cheap. An extension bandage for a fracture of the thigh costs, with adhesive plaster, about 5 marks, while 300 gr. of Heusner's adhesive fluid, with which five bandages can be constructed, can be obtained from any chemist for 2 marks.

(2) It can be quickly applied. Heusner's bandage is in position in a short time—within a few minutes—a thing not possible, even in trained hands, in using adhesive plaster.

(3) It can be easily taken off without giving rise to any unpleasant symptoms whatever.

Just this last peculiarity is of special value. Anyone who has had the doubtful pleasure of taking off an adhesive plaster bandage in a sensitive person, even with the help of free use of ether or benzine, will be astonished at the ease and comfort with which the strips can be taken off after cutting through the encircling bandage.

We have used the resinous adhesive bandage in our large fracture department for more than a year, since Herr Geheimrat Heusner had the goodness to demonstrate it to us in person, for all fractures of the lower limb, and we are very much gratified by the result.

We are persuaded that it forms a great advance on the technique of the extension bandage, and we can, therefore, recommend it most pressingly to our colleagues, whether in private or hospital practice.

In using Heusner's resinous adhesive bandage, the possibility also presents itself of strengthening the action of the pull by means of a small modification. This is desirable in fr... the lower half of the leg accompanied by considerabl... ing. The usual extension bandage, whether it is applied in Heusner's way or in the way usual with us formerly, does not in this si...on suffice to fully make good the shortening. The surface for attack at the lower fragment is too short to afford an adequate pull, and the instruction to apply the circular plaster strips as far as beyond the ankle does not much alter matters.

My method is to carry a narrow strip of felt above the malleoli round the leg and to sew it at the side with exactitude to the long strips of the Heusner's bandage: anteriorly on the extension side the ends are united by a few stitches.

By this arrangement the lengthways pull surrounds the ankle like a cuff, and, naturally, exercises in this way a considerable force of pull.

I have succeeded by this method in completely removing the shortening in a series of spiral fractures and supra-malleolar fractures of the leg; I would, therefore, recommend it for adoption in suitable cases, though I would mention that extraordinary care must be taken with regard to decubitus.

* To be obtained from the instrument makers, Vogel-Grevenberg, Köln, Herzogstrasse; price 8 marks.

Remarks

ON

FURTHER EXPERIMENTS CONCERNING THE ORIGIN OF LIFE.

BY

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My work entitled *The Origin of Life* was based in the main on 196 experiments with hermetically sealed tubes whose contents had been exposed to high temperatures.

Since the date of its publication in the spring of 1911 I have performed a much larger series of experiments, as many as 280, and consequently should be in a position entitling me (1) to pass some judgement on the value of my previous results; (2) to deal more or less authoritatively with the doubts expressed by others as to the validity of my conclusions; and (3) to offer some useful advice to those who may wish successfully to repeat my experiments.

1. The Nature of the Problem and the Extent to which it has been Solved.

It has long been widely believed in the world of science that the occurrence of "spontaneous generation" is a myth.

This view gathered strength thirty to forty years ago, seeing that the experiments of Pasteur, and later those of Tyndall, induced them to urge it with much insistence; and because, moreover, it has seemed to be in accord with the practice found needful in bacteriological inquiries of growing importance.

In all their experiments Pasteur and Tyndall, as well as previous experimenters, made use of solutions of organic matter—mostly infusions of different kinds—heated to 100–105 C. for varying periods, and subsequently protected more or less securely from external contamination. All these solutions or infusions must have been more or less teeming with bacteria of different kinds, as well as with torulae and germs of common moulds. This would have been notably the case with hay infusions, which were so largely used by Tyndall.

These experimenters made no attempt whatever to exclude such organisms and their germs. They trusted to what was known and well established concerning the lethal influence of heat on living matter immersed in fluids, and consequently to their ability to sterilize the solutions and vessels used.

Having extinguished all life in their media and receptacles, they exposed them for varying periods to what were considered suitable incubating temperatures. Then, if evidences of fermentation showed themselves within the experimental fluids, they were seemingly content to account for it as a result of some error; while their numerous negative results impressed them so strongly that they were induced to favour a general conclusion far wider than was warranted by their premisses.

My own experiments have been of the same order, only much more stringent, seeing that instead of infusions of organic matter I have of late been dealing with saline [illegible] contained in hermetically sealed [illegible] ten heated to temperatures very [illegible] employed by my predecessors. [illegible] also contained some bacteria, [illegible] mould, though probably [illegible] in the organic

[illegible] logy Section of the Royal Society of

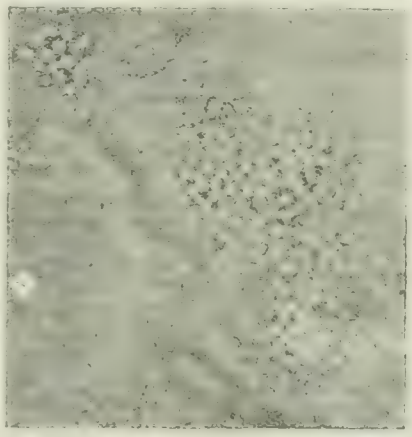


Fig. 1.—One of several groups of small torulae beneath the same cover-glass, as taken direct from a tube exposed to light containing a yellow solution, which had been heated seven months previously to 100 C. for twenty minutes on three successive days. × 700.

infusions dealt with by Pasteur and Tyndall, whose experiments have been believed to be so decisive.

Thus, if from the basis of their negative results they felt themselves warranted in proclaiming their belief that the present occurrence of "spontaneous generation" was a myth or chimera—a view which has been so widely accepted—how much stronger is my warrant for the opposite belief, looking to the very numerous occasions on which, when opening previously sterilized tubes and solutions, I have taken therefrom undoubted living organisms.

Even one such positive result free from all error is, of course, worth more than any number of negative instances. It will be well to consider, therefore, the various possibilities of error that have been suggested.

2. Reply to Criticisms.

Some of my critics—mostly not biologists, and presumably not thoroughly acquainted with bacteria and torulae—have supposed that what I have taken from my tubes have been mere pseudo-organisms such as Leduc, Herrera, Jules Félix, the brothers Mary, and other plasmogenists are able to produce from various saline solutions—bodies which undoubtedly often simulate organic forms with great exactness. This, however, is an absolute error not likely to be shared by biologists, and one which is shown to be erroneous by the fact of the free multiplication of my organisms when taken from their own media and introduced into other quite different nourishing fluids.[1]

Others do not doubt that the organisms found and photographed are real organisms, but cannot believe that they have really been engendered within the tubes.

Some of these suggest that the organisms found have rushed into the tube from the atmosphere when its neck has been filed off. But there is practically no inrush of air at this time; certainly none that would suffice to carry atmospheric germs at once through the fluid (about 1½ in. deep) to the sediment at the bottom of the tube, where the organisms are always found.

Others suggest that the organisms may have been contained in the pipette; but this is always thoroughly heated in a spirit lamp flame just before it is introduced into the freshly-opened tube. And when a small quantity of the sediment is obtained by the pipette, it is at once transferred to a thoroughly clean microscope slip, and covered with a cover-glass.

Then torulae are supposed by some of my critics to fall from the atmosphere on to the drop of fluid on the microscope slip, during the moment or two that it remains uncovered. This supposed explanation, however, of the presence of organisms found by me is mere unsupported theory, as any one would soon find who set himself to discover torulae in the way suggested, and by an examination of Fig. 1. That such formed organisms, and often in such numbers, could have been gathered from the atmosphere during the transit of the pipette for one or two feet from the mouth of the tube to the microscope slip, and before the drop of the solution is covered is, in fact, devoid of all probability, and will be shown to be so by the numerous cases subsequently to be referred to in which, during similar examinations of various series of other tubes (barren), no organisms whatever could be found.

Other critics are content to assume that the organisms found are not living. They believe them to be dead organisms, some of those pre existing in the experimental fluids, but killed by the heat to which they and the tubes have been subjected.

This objection requires to be looked at in more detail, because it is admitted that some few organisms may be found in the experimental fluids, derived from two of the constituents of such solutions—namely, the sodium silicate and the ammonium phosphate—the dilute phosphoric

[1] Solutio[illegible] of 5 per c[illegible] as well [illegible] as the ami[illegible] ired to in 7 [illegible]

acid, the liquor ferri permitratis, and the freshly distilled water being, however, free from them.

Any such pre-existing organisms would, of course, have been killed by the sterilizing process: but seeing that in each tube there would only be one to three drops of the dilute sodium silicate, either alone (in the yellow solutions) or in association with three or four grains of ammonium phosphate, as in the colourless solutions, these pre-existing organisms could never be very numerous within the tubes. It is very important to note, moreover, that



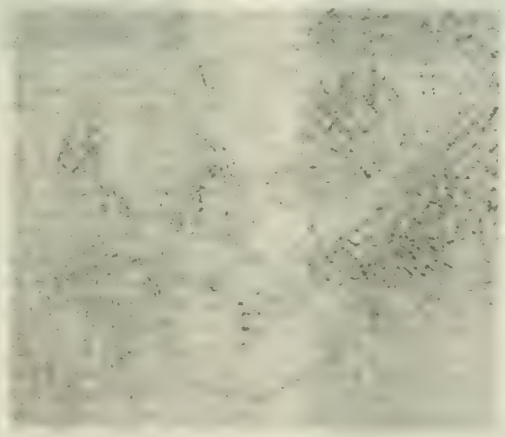
Fig. 2.—Large group of the [illegible] from this tube was ringed with [illegible] swarms of torulae were found beneath it.



[illegible] m, stained with eosin, from

nothing like well-developed torulae are ever to be seen in either of these newly prepared solutions. There are, however, often a few very minute spherical organisms (such as are shown in Fig. 14 of *The Origin of Life*), and, more rarely, a minute mould may be found when a control tube is opened, and some of the sediment is examined the day after the sterilizing process.

But let months elapse, with suitable exposure, before other tubes of the same series are opened, and then these minute "elementary organisms," as Professor Hewlett terms them, may be found in large numbers within the tubes, and staining freely with eosin or carbo-fuchsin. These primitive organisms are very slow and sluggish in their growth, requiring some months for origination and for their development from ultra-microscopic particles to the minute embryo bodies that are often so numerous, but which may not always be easily shown to be living in the way that is open for torulae and bacteria. Still when tubes containing them have been closed, and then left undisturbed for twelve months or so, they have often been found to have given rise to minute moulds, mostly of the Streptothrix type.



The fact, however, that such minute organisms are either very scarce or not to be found at all in control tubes, and to be abundant, as in Fig. 2, after months in other tubes of the same series which have never [illegible] been opened, is [illegible] evidence that they have developed in the tubes.

At other times, moreover, these [illegible] days, to be living by the [illegible] they undergo under the [illegible] *The Origin of Life*—that is, [illegible] tion on the microscope slip, [illegible] been ringed with para[illegible] certain nourishing [illegible]

[illegible] ation which [illegible] at p. 39 of

The so-called "elementary organisms" are, as I believe, to be regarded either as potential embryo torulae, or as fungus-germs. At times when they have been inoculated into a sterilized ammonic tartrate nourishing solution, swarms of full grown budding torulae have been found after a few days; while when left in their own tubes at ordinary room temperature for many months, minute moulds have, as I have said, been found within the tubes, one of which is shown in Fig. 4.

Finally, other critics, unable from the evidence adduced to doubt that what I have taken from my tubes have been veritable organisms rather than mere pseudo-organisms, that they have really been taken from the tubes, and that they have been really living organisms, fall back upon the only remaining means of staving off the conclusion that they have been engendered *de novo* within the tubes. They hint darkly that some *desiccated germs* (hitherto unknown) may have been able to survive in the heating processes to which I have had recourse, though these have included exposures from five to twenty minutes to temperatures ranging from 120 to 145 C., or else the method vaunted by Tyndall as lethal for all desiccated germs, and now universally trusted by bacteriologists as a safe means of sterilization.

Strange that this objection should be raised now, seeing that my earliest results in 1870 were disbelieved in by Huxley, Burdon-Sanderson, and others, because of the strength of their belief that bacteria and torulae could not survive a heat of even 100 C. for a few minutes in fluids, and seeing that Pasteur himself never thought it needful to use a higher temperature than 110 C. in any of his experiments. This objection is, however, a sort of refuge of the destitute, which has always played a large part in discussions concerning the *de novo* origin of life.

But where are the obdurate desiccated germs imagined to come from, and why have they hitherto eluded discovery?

They cannot exist in the yellow [illegible] about two or three drops [illegible] dilute [illegible] and four drops of [illegible] the half ounce of distilled [illegible] particular solutions which

I have found to yield a distinctly greater variety of organisms than the colourless solutions, into which desiccated germs might be introduced by the 3 or 4 grains of ammonic phosphate contained in each tube. Different kinds of mould have often been found in these yellow solutions, two of which are shown in Figs. 5 and 6.

Any such doubt is however easily solved by introducing 5 or 6 grains of this salt into one ounce of the sterilized ammonic tartrate nourishing solution, and boiling it merely for five instead of twenty minutes on three successive days.

Treated in this way ammonic phosphate crystals cannot be shown to contain living organisms capable of resisting even such comparatively low temperatures and short exposures, though the tubes may have been kept under favourable conditions even for seven or eight months. And that the suggestion is groundless in the present case is shown by the fact to which reference is made on p. 1545 touching the barrenness of tubes when their solutions have been made from old samples of sodium silicate or colloidal silica, though these solutions can be easily shown (by inoculating them from a turbid ammonic tartrate solution) to be still capable of favouring the free growth and multiplication of micro-organisms.

Further, it must never be forgotten that torulae and micrococci, which have so frequently been taken from the tubes (and more especially the former), are not known to



Fig. 5.—Mould of Streptothrix type, as taken from a tube containing a yellow solution which, after having been heated to 100° C. for twenty minutes on three successive days, was exposed to light for seven months. × 300.

be capable of resisting temperatures even of 60 to 70° C. for two or three minutes

3. Concerning the New Experiments and What Should be Done in Further Trials.

(a) Exposure to Daylight or in the Incubator.—One of the first points as to which I needed further information was the extent of exposure to direct sunlight that was advisable.

As related (*loc. cit.*, pp. 50, 56), I had found that exposure of the tubes inside a south window during the last three to four weeks before the opening of them (and in not very hot weather) was followed by good results, though I was always rather doubtful whether this was not merely due to the increased heat to which they and the solutions were thus subjected.

In the spring and summer of 1911 a number of tubes were exposed from the first inside a south window, the weather being unusually bright and warm during most of the time. The result was that when the time came for their examination the solutions were found to be nearly all barren. As I subsequently ascertained that the temperature of the window ledge on which the tubes stood [illegible] for some hours to 43° C., or even rather higher, I am disposed to think that the harm was probably more due to the prolonged and repeated high temperatures than to the effect of the mere actinic rays through the window glass and that of the tubes.

In view of this experience I now advise that all tubes exposed to light should be placed just inside a north, or, better still, a north-east window, unless they can be put into a conservatory, and protected there from the direct rays of the sun.

Tubes exposed to light should not be examined till nearly six months have elapsed in summer, or eight to twelve months when much of the time of exposure has been in colder and duller weather.

During winter months I have, however, of late made use of the incubator, maintained at 27° C. and at 37° C., and I prefer half of the time to be at the lower and half at the higher temperature. I cannot say positively at present whether it would or would not be desirable to use the higher temperature from the first; though I have found that a final temperature approaching 43° C. for two weeks has been distinctly harmful, often apparently killing plenty of torulae found when the tubes were opened.* Exposure to such a high temperature from the first, therefore, would probably prevent the evolution of organisms, and thus would explain the barrenness of the tubes that were exposed from the first to the hot sunlight of 1911

Tubes exposed in the incubator should not be opened under four to six months.

(b) New Combinations Tried.—As the organisms were often so scarce in the experimental solutions, and this

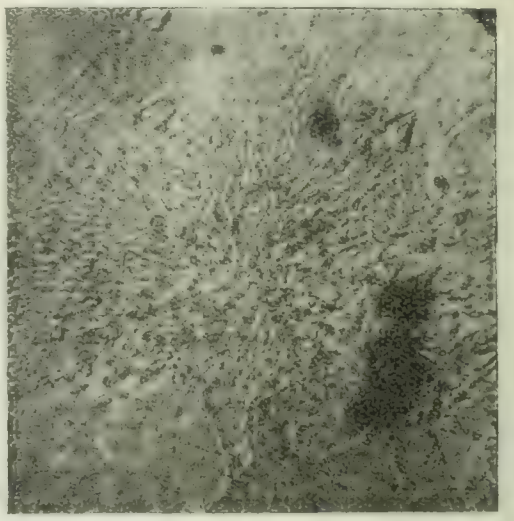


Fig. 6.—Part of a much larger mould of the same type as the last, as taken from a companion tube which had been similarly heated and similarly exposed to light for seven months. × 300.

might be considered due to the scarcity of carbon within the tubes, I made a series of tentative experiments trying to remove this disadvantage, as a result of which I found that the colourless solutions could be varied by the addition (to each fluid ounce containing the ordinary constituents) of 4 grains of neutral ammonic tartrate with 2 of sodic phosphate; and also by the addition to each ounce of 4 grains of ammonic carbonate, or 6 grains of pure glucose.

Trials with the first of these more complex solutions yielded torulae with one sample of sodium silicate, but not with another, though the organisms were not notably more abundant than they have previously been found to be in a similar solution without the additions indicated.

Those in which ammonic carbonate was added have all been barren; and those with the addition of glucose have also all been barren. In the latter case, however, the solutions were unfortunately made this spring with some of an old sample of sodium silicate.† Further trials with the addition of glucose ought therefore to be made.

None of these additions could be made to the yellow solutions without causing their complete decomposition.

Another variation in the solutions with which trials have been made has been the substitution of Kahlbaum's 10 per cent. sodium silicate for one of the ordinary

* On two [illegible] have been very numerous, but appa[illegible] ment multiplication could [illegible] growth and multiplication had been at [illegible] continuance of the high temperature had [illegible] after they had been in the [illegible] of any kind could be found. I [illegible] with three drops of a turbid ammonic [illegible] them in the incubator. At the expira[illegible] fluid had become slightly turbid, and was [illegible] bacteria

commercial preparations. This was used in the proportion of 14 drops to the ounce for the colourless solution, and 7 drops for the yellow solution; the quantities of the other ingredients being in each case those usually employed. But in all these trials the solutions have either been almost barren, or have only yielded bodies of an uncertain nature. Torulae have never been found in either of them, though in the yellow solution what appeared to be large sausage-shaped bacilli were taken from three tubes of the same series.

It seems clear, therefore, that in the ordinary commercial sodium silicate additional elements must be present that are not found in the 10 per cent. solution, and which, in some way, help to favour the evolution of living units.

(c) *Preparation of the Solutions.*—A very important point has only lately been thoroughly brought home to me, which is that too old solutions of sodium silicate must not be employed. I have carefully kept the solutions obtained in the spring of 1910, not only with the view of myself repeating combinations which I had previously found successful, but in order that I might give others desiring to repeat my experiments some of the actual materials used by me.

During the present year solutions prepared exactly as they had been in the previous summer and earlier have no longer been yielding torulae and bacteria as of old. I found first that the yellow solutions made exactly as they had been before became decomposed, and that the colourless solutions, which after the heating process should have yielded a slight amount of deposit, showed none at all. Thus many tubes were spoilt: and when by slight alterations in the number of drops of the dilute sodium silicate for the colourless solutions I succeeded again in producing a scanty deposit after heating, even then, after due exposures either to daylight or in the incubator, no torulae were found when the solutions came to be examined. The deposit itself, moreover, had not the same character as of old.

These irregularities caused much perplexity at first, but I have now come to the conclusion that they must be due to changes which have taken place in the stock supplies of sodium silicate that I have been using since the spring of 1910. That these have undergone some change is now, indeed, obvious, since at the bottom of each bottle there is a white cloudy deposit nearly an inch in depth, which has been gradually increasing. This was comparatively unheeded by me, as, when using either of the solutions, I had been accustomed to withdraw with the pipette only some of the clear supernatant fluid.

Several times during this year solutions that I have prepared exactly like those which formerly yielded a fair amount of torulae have proved after similar exposures, to be so barren that not a single torula could be found.

I had not suspected this kind of degradation with the ordinary commercial sodium silicate, though I had, nine months ago, recognized that the dilute colloidal silica with which I was so uniformly successful in 1910 had in some way lost its virtues, seeing that the next time I used it, after an interval of eight months, solutions similarly prepared and similarly treated no longer yielded torulae as before. I looked upon this as a well-known unstable fluid, liable to undergo change, but had not suspected that the commercial sodium silicate might also, though after longer periods, undergo changes, and similarly become less productive when used as a constituent of one of the previously fertile solutions.

How soon the colloidal silica undergoes these harmful changes I am at present unable to say, but I am afraid it does so even in the course of a few months. In his original description Professor Graham[1] said: "Another and eminently characteristic quality of colloids is their mutability. Their existence is a continued metastasis. . . . The solution of hydrated silicic acid, for instance, is easily obtained in a state of purity, but it cannot be preserved. It may remain fluid for days or weeks in a sealed tube, but it is sure to gelatinize and become insoluble at last.* . . . To the gradual manner in which colloidal changes take place (for they always demand time as an element) may the characteristic protraction of chemico-organic changes also be referred."

*The solution I have been using is so dilute that it never actually gelatinizes.

Dr. Rosenheim was kind enough to prepare and give me a new supply of the very dilute colloidal silica last November, and a few tubes were at once prepared in which it was one of the constituents. Two of these were examined after they had been only five and seven weeks respectively in the incubator, and no torulae were found after these short periods, while two others were opened after thirteen weeks, one of which had been in the incubator and one exposed to light, and in each of these latter tubes a moderate number of typical torulae were found.

Other solutions were made with it barely four months after it had been received. Two of these tubes were examined after seven weeks and no torulae were found, while others were recently examined after four to seven months, and they also, much to my surprise, have been barren. I fear, therefore, that this new supply of colloidal silica had already undergone some harmful changes even after the comparatively short period of four months.

The fact of the barrenness of solutions in which old samples of commercial sodium silicate or not quite fresh solutions of colloidal silica has been used, is of itself a convincing proof that the temperature to which these and other tubes have been submitted has sufficed to kill any organisms that the solutions may have originally contained. While the fact that organisms are much more abundant in them than they are in fresh supplies and that they go on increasing in these old stock solutions shows that their capability of favouring mere growth and multiplication of such organisms is in no way diminished. The remainder of my stock solution of colloidal silica is clear like water, but there is now a slight sediment which on examination is found to be composed of bacteria, toruloid corpuscles, fungus-germs, and minute moulds. Numbers of such organisms may also be found mixed with the white deposit in the bottles in which the old commercial silica has been standing.

I have, moreover, inoculated the barren solutions in many of the tubes of which I have been speaking with organisms taken from the old stock supplies, or with others growing in a contaminated ammonic tartrate solution, and have found that the organisms grew and multiplied freely in these previously barren tubes—thus showing that it was not the power of nourishing organisms which had been lost in the solutions made from the old supplies, but what, owing to some change, we can only regard as the capacity for engendering them. It also explained what for a time was a great puzzle to me, that is, why solutions precisely alike in their constitution and the conditions to which they had been subjected should at first be fertile, and then, when prepared at a later date, should be barren.

From what I have said, it seems clear that it is better not to work with ordinary commercial sodium silicate which is more than twelve months old, and that the dilute colloidal silica used should be only recently prepared.†

It must be recognized also that no two samples are exactly alike,‡ so that in order to estimate the amount of the dilute sodium silicate to be used when dealing with a new supply tentative trials must be made, as described at p. 30 of *The Origin of Life*. The aim for the colourless solutions being to obtain only a quite small amount of deposit after the fluid, boiled for ten to twenty minutes,

† Looking to the uniformly successful results that I obtained when working with the freshly prepared very dilute colloidal silicic acid, it is much to be desired that others should repeat these particular experiments. Dr. Rosenheim has kindly sent me the following details concerning the mode in which, by a modification of Graham's method, he prepared the weak solutions samples of which were given to me:

"66 c.c. of Kahlbaum's sodium silicate (10 %) were diluted to 200 c.c. with distilled water, and the solution was poured into an equal volume of water containing 20 c.c. of concentrated HCl."

"A specially prepared appendix from a sheep (see *Handbuch der Biochem. Arbeitsmethoden*, E. Abderhalden, Bd. 3, p. 10) was filled with the slightly opaque solution, and suspended in the dialysing apparatus of Wiechowski (see *Ibid.*, Bd. 3, p. 177). Dialysis against running distilled water was carried on for ten days until the dialysate was perfectly free from chlorides."

The first sample given to me was, according to Dr. Rosenheim, "a pure 0.01 % solution of colloidal silica" (see *The Origin of Life*, p. 52, note 2). Kahlbaum declined to supply any such solution, partly because of its instability.

‡ Quite recent experience leads me to think that the commercial product is now more variable than ever, owing, perhaps, to the fact that it is no longer much used by surgeons. Samples that have lately been supplied to me have varied very much, so that it is more than ever important to make use of recently prepared colloidal silica (November 23rd, 1912).

has been subsequently cooled; while for the yellow solution, when cooled, the aim should be to obtain also a minute amount of deposit from a fluid having a pale port wine colour, or else (when the amount of the silicate is at times only very slightly more) a pale canary yellow colour.

After trials of this kind have been made, the worker will know how many drops of the dilute sodium silicate with which he is dealing should be used to the ounce for the yellow and for the colourless solutions respectively; and he may be fairly certain that the results will be similar for the hermetically sealed tubes after the sterilizing process, if they have been charged with similar solutions.

In the actual preparation of the fluids a certain order should be observed. Thus, for the yellow solution it is important that the liquor ferri should be added to the distilled water first, and then the dilute silicate drop by drop.

Reversing the order generally leads at once to the formation of a dense precipitate. And the changes with different quantities of sodium silicate, added at the proper time, are often very surprising, as may be seen from the following example of the results obtained during the testing of a new supply of sodium silicate. In each trial 8 drops of the iron solution were used in an ounce of water, and when the one or more drops of the sodium silicate had been added the solutions were boiled for fifteen minutes and then allowed to cool. The results with different proportions of sodium silicate were as follows:

1 : 8 Fluid colourless. Deposit red and copious.
3 : 8 Fluid slightly yellow. Deposit red and copious.
5 : 8 Fluid reddish-yellow. Deposit reddish-yellow and copious.
6 : 8 Fluid yellow and slightly clouded. Deposit very minute in amount.
7 : 8 Fluid yellow and not clouded. Deposit moderate in amount.
8 : 8 Fluid of pale drab colour. Deposit drab and copious.

This sample of sodium silicate would not yield a solution of port wine colour such as I had often obtained with previous samples. With another supply, tested on the same day, the results were equally variable but different. In charging tubes with some of the supply the results with which are given above I used a 6 : 8 combination, as the deposit, with time, always tends to increase slightly.

For the colourless solutions I have of late been dissolving the ammonic phosphate and filtering the solution first, through the finest (No. 0) Swedish filtering papers, to remove minute impurities that may be found with the crystals, before adding the dilute phosphoric acid and then the dilute sodium silicate.*

Of late, in order to be able to pursue these studies where I live, in the country and away from a laboratory, I have been boiling the tubes for twenty minutes on three successive days rather than heating them as before to higher temperatures in an autoclave or an oil bath.

(*d*) *Examination of the Solutions.*—When examining the solutions I use a pipette about 8 in. long, having a bore of 3 mm., and provided with a rubber teat at its expanded upper extremity. It is desirable to take up with the sample of sediment only a single drop of the fluid, so that when this sample is transferred to the microscope slip it may be kept together under a carefully lowered cover-glass.

The specimen is then systematically searched through, beginning at one side of the cover-glass and working regularly up and down till the whole field has been carefully examined, at first with a ⅔ in. objective, or concurrently with that and a ½ in. with No. 6 eyepiece—and all the time using the nose-piece freely, so as to bring the higher power into use when anything like an organism comes into view. This answers well for the detection of torulae, but of course for bacteria only the higher power is of any use.

The light in all cases requires to be most carefully adjusted so as to get the right kind of illumination; and when the organisms are scarce and minute, their recognition may be much facilitated by running under the cover-glass a drop of a freshly filtered solution of eosin or of carbo-fuchsin.

* In [illegible] experiments made in conjunction with Sir William [illegible], both colourless and yellow solutions [illegible] five hours or more in order to get rid of [illegible] solutions might contain. The tubes charged [illegible] having been sealed, were boiled for twenty [illegible] days. Several of these tubes, which had [illegible] in the incubator for over six months, have [illegible] with the result that they have been found to contain [illegible], and moulds just as freely as in other similar solutions which had not been centrifugalized.

Conclusion.

There is one difficulty of a general character applicable to all experiments of this order, though not more to mine than to those of previous workers, to which it may be well to make reference here.

Many persons find it more or less impossible to believe that bacteria, torulae, and simple moulds should be products of so-called spontaneous generation, and that for two reasons.

In the first place they are not deemed simple enough to rank as primordial living things.

But what has been said on this head by others of late makes it desirable for me to repeat what I have often said before, namely, that new-born living matter, wherever and whenever it appears, must have its first beginnings as ultramicroscopic particles, which as they grow would at last become recognizable by the aid of the microscope as very minute spherical units.† These may in some cases go on to the formation of micrococci, of bacilli of different kinds, of torulae, or of germs which gradually develop into one of the simplest moulds.

When it is said, therefore, that such organisms are not simple enough to be regarded as primordial living things, it must not be forgotten that the real primordial formations are ultramicroscopic particles, and whatever the type produced—whether minute formless masses of jelly like the Monera of Haeckel, or blue-green algoid corpuscles—they also would in each case have to commence as ultramicroscopic particles.

It seems to me quite possible that in Nature both Monera and blue-green algoid corpuscles may be constantly appearing *de novo*.[2] But that is a mere supposition devoid of all positive evidence, as it must always remain till someone may be fortunate enough—whether chemist or biologist—to hit upon such combinations of materials as will, under necessarily restricted experimental conditions, suffice to engender either Monera or blue-green algae. For whatever the future researches of chemists may achieve in the way of synthetically building up the bases of protoplasm, when it comes to the demonstration of the production of actual living matter, they could never convince themselves or the world in general that they had succeeded in their quest till they were able to produce it under such restrictive conditions as I have had to cope with in my experiments—that is within hermetically sealed vessels which, with their contents, had previously been sterilized. They, like the biologist, would have to eliminate all pre-existing life and securely guard against contaminations, and what the chemist may then produce no one can say, though he is certainly never likely to produce living matter in tangible lumps, as recent vaticinations in regard to what "the chemist is going to do in his laboratory" would seem to intimate. It may be safely affirmed that living matter, like crystalline matter, must always begin from a collocation of its elements, and then can only, after a time, reveal itself as minutest particles tending to develop in this or that manner in accordance with the extremely varied nature of the initial molecular combinations. And for our sterilized solutions we can only suppose that the conditions are such as merely to permit of the production of ultramicroscopic particles that slowly, in the course of months (rather than in a few days after the manner of infection by pre-existing organisms), develop into bacteria and torulae, though the latter have the potentiality of growing into simple moulds.‡

† When it is said, therefore, that a belief in "spontaneous generation" would tend to contradict the experience of all mankind, "My reply is that Archebiosis may be occurring all round us, and that from its very nature it must be a process lying altogether outside human experience, and never likely to come within the actual ken of man" (*The Nature and Origin of Living Matter*, 1905, p. 144). While long previous to this, in *The Beginnings of Life*, 1872, vol. i, p. 267, I described what I then termed "plastic particles" (rather than "microzymae") as primordial particles of living matter, "between $\frac{1}{20000}$ in. and $\frac{1}{2000}$ in. in diameter"; and at pp. 293 97 I described the mode in which such particles might be seen to emerge in certain solutions from the region of the invisible, and then gradually develop into bacteria.

‡ As long ago as 1868 M. A. Trécul, an eminent French authority, in an important article entitled "Observations sur la levûre de bière et sur le *Mycoderma cerevisiae*" (*Compt. rend.*, t. 67, pp. 137, 212, and 1153), brought forward very conclusive evidence showing that *Torula cerevisiae*, *Mucoderma cerevisiae*, and *Penicillium*, as he says, "ne constituent qu'une seule espèce" (since these forms were shown to be mutually convertible); and, moreover, that torulae under the conditions which he described were constantly arising *de novo*, showing themselves first as minutest particles. See also the investigations of Hector Grassot (*Etude historique et critique sur les générations spontanées et l'hétérogénie*, second edition, J. Rousset, 1912, pp. 157–159) for further light on this subject, and a simple means of proving the *de novo* origin of torulae within the grape.

What real knowledge, however, have we, apart from experimental results, entitling us to come to any definite opinion as to what primordial living things should or should not be like? We know, indeed, that primordial crystals may be either simple or of very complex forms. Rather let us be content carefully to question Nature by way of experiment, and learn from her to think less of the other objection to bacteria and torulae being accepted as veritable products of spontaneous generation—that is, simply on the ground that they are well-known forms, instead of being something new and strange.

This latter one-sided objection, strongly raised by Huxley in 1870 in an address "On the Relations of Penicillium, Torulae and Bacterium,"[3] would necessarily disappear with the proof of "spontaneous generation," because then it would at last be realized that what took place in the experimental vessels must be *much more freely occurring in the world outside*, and that the bacteria, torulae, and moulds whose appearance is so ubiquitous must be constantly *originating* as well as multiplying all around us. We should, moreover, no longer have to postulate the existence everywhere in the atmosphere of inconceivably numerous and varied germs, always ready suitably to tenant every new possibility in the way of site, however unusual it may be.* To meet such requirements the atmosphere ought to present itself as infinitely more crowded with germs of the most varied kinds than it has ever been found to be by the many persons who have most carefully examined it from this point of view.

REFERENCES.

[1] *Phil. Trans.*, 1861, p. 183. [2] *The Nature and Origin of Living Matter*, p. 145. [3] *Quart. Journ. of Microscop. Science*, 1870, p. 355.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SCARLATINAL MEASLES.

A GOOD many cases have come under my notice during the last few years, when epidemics of scarlatina and measles have occurred at the same time, which could be described as above. The symptoms at the commencement depend on which fever has the start; in some of the cases the rash on the first day of my visit resembled scarlatina, but on the second measles. The rash when fully developed has the appearance of both combined, yet from its mottled condition one is inclined to diagnose measles. I find, however, that these cases always develop severe throat trouble, peeling, and very often Bright's disease.

About a fortnight ago I saw a case of undoubted scarlatina, and a week after the rash had disappeared well marked measles started, which proves that the two diseases can be in the system at the same time. I think this is very important, as in these cases the measles rash is often very much more pronounced than the scarlatinal rash, and the after-treatment (especially with regard to isolation and exposure to the weather) is very different.

West Hartlepool. G. F. E. MORGAN, L.R.C.P., M.R.C.S.

NECROSIS OF THE JAW FOLLOWING MEASLES.

IN the Epitome of Current Medical Literature (August 24th) Bindi refers to the rarity of necrosis of the jaw following measles. I have not here any access to works of exhaustive reference, so that I can say nothing as to the rarity of the occurrence, but if it is so rare I should like to add to the records a case which occurred in the Refugee Camp, Vredefort Road, Orange Free State, of which I was Principal Medical Officer during the war.

The patient was an infant aged 11 months, which had been attacked with measles eight days previous to admission to hospital. It was getting on, with no lung complications when the camp sister sent it in, fearing that it was developing cancrum oris, of which there had been a few cases. The left cheek was red, shiny, swollen and hard, but this condition was not confined to the soft parts of the cheek; the swelling was fixed to the maxilla, and evidently there was periostitis extending from the canine socket to between the positions of the first and second molars. An incision was made through the mucous membrane down to the bone, giving exit to a considerable quantity of thin sanious pus. Four days later the mucous membrane was found to be stripped from the alveolar margin to the extent already indicated, and the bare bone protruded. A few days later the bone seemed to be protruding more through the membrane, and was found to be quite loose and easily removed without an anaesthetic. The sequestrum was of exactly the same extent as described by Bindi, but extended a little further up into the body of the maxilla.

Bethulie, O.F.S. JOHN A. GRAHAM, M.B.

* See Fée, as cited by Hector Grasset (loc. cit., p. 37), and a much longer list given by Pouchet (*Hétérogénie*, 1859, pp. 336-339) of rare moulds found (but with constancy) only in rare and exceptional situations.

EPIDEMIC JAUNDICE.

HAVING had a good many cases of jaundice in my district during the last few months I have read with interest the notes that have lately appeared in the JOURNAL on the subject. The following four cases in a farmhouse are, I think, worthy of record. The eldest daughter had what appeared to be an ordinary attack of catarrhal jaundice towards the end of August. The attack ran the usual course, and she recovered in about a fortnight. Three weeks from the commencement of the eldest daughter's attack the next daughter (aged 24), a son (aged 20), and the youngest daughter (aged 9), were taken ill all about the same time and practically with the same symptoms—severe pains in the legs, headache, vomiting, epigastric tenderness, great prostration with a temperature of 104°. These symptoms were followed by jaundice, clay-coloured evacuations, and bile-stained urine. No enlargement of liver or spleen, as in the cases narrated by Dr. Lyons, could be discovered. The temperature became normal in about five days, and the jaundice gradually disappeared. Nausea and a great distaste for food continued for some days. In a fortnight all three patients were convalescent. Now comes the interesting part of these four cases. They had all been drinking water from a well, the sole water supply of the farm. This well is situated in the garden, and is 36 ft. away from the parish churchyard. A bacteriological examination of this water showed: *Bacillus coli*, over 1,000 per litre; streptococci, over 10,000. The bacteriologist pronounced the water "contaminated and unfit for drinking purposes." Father, mother, and two other children escaped unharmed.

Milverton, Somerset. CHARLES RANDOLPH.

A MODIFICATION OF THE BURRI METHOD OF DEMONSTRATING THE SPIROCHAETA PALLIDA.

A DISADVANTAGE of the Chinese ink method of demonstrating the *Spirochaeta pallida* is that unless the ink is prepared by centrifugalizing it, or, as Captain Frost, R.A.M.C., recommends, by the addition of tincture of iodine, the background is too coarsely granular to make the detection of *Spirochaeta pallida* easy.

I have found that a much more homogeneous field is obtained with less trouble by substituting for Chinese ink a suspension of collargol, made by adding one part of the powder to nineteen parts of distilled water, according to the makers'[1] directions. The powder is put into a black bottle (or an ordinary stoppered bottle wrapped round with carbon paper) and the water poured on it. After standing for a few minutes the bottle is thoroughly shaken, allowed to stand a few more minutes, and again shaken.

The suspension, which keeps good for months, is used for the demonstration of *Spirochaeta pallida* precisely as if it were Chinese ink; a drop of the suspected secretion and a drop of the collargol are mixed together at one end of a microscope slide, and, with the end of another slide, a thin film is spread just as in making a blood film. The specimen is examined as soon as it is dry with the aid of an oil immersion lens. The spirochaetes appear as delicate spirals on a reddish-brown field which is almost perfectly homogeneous.

L. W. HARRISON, M.B., Major, R.A.M.C.,
Pathologist, Military Hospital, Rochester Row.

[1] Chemische Fabrik von Heyden.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ST. PANCRAS SOUTH INFIRMARY.

A CASE OF PUERPERAL ECLAMPSIA, COMMENCING WITH AMAUROSIS: RECOVERY.

(Reported by Rose Jordan, M.D.Lond., Locumtenent Medical Officer.)

J. B., aged 19, unmarried, and pregnant for the second time, was admitted from the workhouse to the lying-in ward on September 4th, 1912, at 4.30 a.m., when she first complained of pains. At 4.45 a.m. she was delivered of a female child weighing 7 lb. 10 oz. The labour was easy and normal and the loss moderate.

She appeared perfectly well until 5.10 p.m. (twelve and a half hours after delivery), when she suddenly became blind; she was unable to distinguish light from darkness, and complained of severe headache. A catheter specimen of urine withdrawn at 5.20 p.m. contained a thick cloud of albumen, but no casts and no deposit. An enema was given, but returned clear. At 7.10 p.m. she vomited. At 7.30 she had a typical eclamptic convulsion, which was treated by chloroform inhalation. At 8.7 p.m. she had a second convulsion, more severe than the first, the face becoming cyanosed. At 9 p.m. the stomach was washed out by means of a rubber tube and glass funnel, a solution of sodium bicarbonate, one drachm to the ounce, being used; some greenish fluid was withdrawn; six drachms of magnesium sulphate dissolved in one ounce of water were left in the stomach.

At 9.10 p.m. the patient had a convulsion; blankets and hot bottles were packed round her. 9.55 p.m. A convulsion; 1 pint of normal saline solution was infused under the left breast. 11 p.m. She vomited greenish fluid: pulse 102.

Convulsions followed at 11.45 p.m., and on September 5th at 12.35 a.m., 1.15 a.m., 1.45 a.m., 2.30 a.m., and 3.5 a.m.

At 4 a.m., the bowels not having acted, a drop of croton oil was placed on the back of the tongue. At 4.10 a.m. a hypodermic injection of morphine sulphate ⅓ grain was given. At 4.20 a.m., the patient being restless, chloroform inhalation was repeated and one pint of normal saline solution was infused under the right breast.

At 5.50 a.m. she had another convulsion, and again at 9.55 a.m. Temperature 98° F., pulse 88. 10.5 a.m. Hypodermic injection of morphine sulphate ⅓ grain. Still no action of bowels, so croton oil repeated. 11 a.m. Continuous rectal infusion of normal saline solution begun and continued until 12.25 p.m., but not well retained.

At 11.3 a.m. convulsion; vomited greenish fluid. 11.20 a.m. Convulsion; very cyanosed. 12.30 p.m. Convulsion; chloroform given continuously.

At 1.40 p.m. the patient was removed on a stretcher to a ward of the South Infirmary, being kept under chloroform during the transfer; on arrival there a vapour bath at 120° F. was given for half an hour; the skin reacted well.

Up to this point she had had fifteen convulsions in six hours, and had remained unconscious during the whole time.

At 2.45 p.m., convulsion; chloroform inhalation recommenced; vomited about 4 ounces of greenish fluid. 3 p.m. Hypodermic injection of 5 minims of morphine given. At 3.30 p.m. the stomach was again washed out, and 2 drachms of brandy containing 1 minim of croton oil were introduced. 5.15 p.m. One pint 16 ounces of saline infused under the left breast. The patient remained quiet until 7.45 p.m., when she became conscious; she then passed 14 ounces of urine. 8 p.m. Bowels still obstinately constipated; olive oil enema given without result; vomited about 1 ounce of yellowish fluid. 8.30 p.m. Slept for an hour. 9.35 p.m. Drank 1 ounce of hot water, but vomited immediately. 10 p.m. Temperature 98.4°, pulse 92, respiration 24; bowels opened for the first time, relaxed; took sips of hot water. 6 a.m. Oil enema given, followed by soap enema, with fair result. During the night she took 15 ounces of water and 30 ounces of imperial drink.

September 6th: Vision not returned.

September 7th: Vision gradually returning, still misty. The patient was fully conscious, but had no memory of recent events.

September 8th: Vision normal.

Urine.—On September 9th (five days after the commencement of eclampsia) the urine contained no albumen. On September 14th a trace was found, and on September 20th a trace. The patient also complaining of headache during this period. After September 20th the urine remained free from albumen.

During her sojourn in the South Infirmary the bowels were never opened except by enemata, being quite unaffected by aperients. Ophthalmoscopic examination of the fundi showed nothing abnormal. Her mental condition was curious, and she appeared to have lost all memory of both the present and the previous confinements. Yet she was perfectly capable of looking after, feeding, and washing both herself and her baby. The puerperium was uneventful.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

Surgical Section.

Tuesday, November 12th, 1912.

Mr. G. H. Makins, President, in the Chair.

Sarcomata and Myelomata of the Long Bones.

Sir Alfred Pearce Gould (speaking on the clinical diagnosis of sarcomata and myelomata of the long bones) said that a sarcoma was distinguished by being a single firm, fixed lump, well defined, with an abrupt edge not nodular or lobulated. Periosteal sarcomata were globular and ensheathed the bone, and were liable to chondrification and calcification. Exostoses were painless and pedunculated, benign tumours with a broad attachment, especially if they happened to invade the bone, were extremely difficult to diagnose. Central sarcomata destroyed bone, but were rare at the epiphyses. Myelomata occurred at the epiphyses, were less rapid in their growth, and did not penetrate outside the bone or burst through into the joint. They were globular, and egg-shell crackling could be obtained over them; they did not extend along the shaft, and no new bone was laid down over them, as occurred in tubercle, syphilis, and serous osteo-myelitis. Pulsation occurred in the myelomata and the central sarcomata. Fluctuation occurred over the soft growths, but their varying consistency served to distinguish them from an abscess or a cyst.

Sir John Bland-Sutton said that even after a microscopic examination of a tumour he sometimes hesitated in making a diagnosis, and it was difficult to account for their varying malignancy. Some sarcomata, even after an early high amputation, recurred in a few weeks, whilst others remained free from secondary deposits for years. Myelomata occurred near the epiphyses of long bones in early life; they caused expansion of the bone, were very vascular, and liable to haemorrhagic changes. They were maroon in colour, but other red tumours occurred which were similar except in structure. The same parts were liable to the formation of benign cysts which might be due to spontaneous cure in a myeloma or changes in a perithelioma or cavernous naevus. There was no reason why cavernous naevi should not develop in the vascular medulla.

Sir Frederic Eve said he performed interscapulothoracic amputation for periosteal sarcoma of the upper end of the humerus. Periosteal sarcoma of the lower end of the femur he removed by amputation at the hip; he used the anterior racquet method, and dissected out the femoral glands and the muscles from the os innominatum; cocaine should be injected into the terminal nerve trunks to lessen shock. He had performed eleven amputations at the hip without a death. For periosteal sarcoma of the lower end of the tibia he amputated through the knee-joint. He agreed with the late Sir Henry Butlin that the central sarcomata were of mild malignancy owing to their having a bony capsule. If they had burst through the bone their malignancy was equal to that of periosteal sarcoma, and then had to be treated in the same way. Myelomata were sometimes of equal malignancy to the periosteal sarcomata. Three out of five of Butlin's cases died from secondary metastases. He thought that the malignancy of myelomata was greater for the proximal than the distal, and it depended more on their site than their histology. He performed erasion if the bony walls were thick, and injected the cavity with paraffin (melting point 110°), or used pieces of bone from a recently amputated limb. He resected the affected portion if the bony walls were thin. The tibia could be replaced by a portion of the fibula (autoplasty); in other situations he used bone from a

recently-amputated limb or from a corpse (bone grafting). It was often advisable to defer operation for microscopy; the infection from a preliminary incision had been exaggerated. He had treated 10 cases with Coley's fluid—7 without result, in 1 case the growth nearly disappeared, in 2 the secondary deposits became smaller. He did not recommend its use as a prophylactic to secondary deposits or for operable cases.

Mr. Hey Groves described 3 cases and thought it was open to question whether high amputation was ever justifiable for sarcoma. Probably the successful cases were ones which local removal would have cured.

Mr. R. C. Elmslie thought radical operation should only be performed when the diagnosis was certain; the clinical and *x*-ray appearances were quite sufficient to make a certain diagnosis between benign cysts and central sarcomata. If an endosteal sarcoma had not burst through the bone it should be regarded as a simple tumour until it had been proved to be otherwise. Exploratory incisions were of great use in diagnosis provided they went deep enough.

Further discussion was then adjourned, to be resumed on November 19th, when Mr. Gask demonstrated a table of 61 cases treated at St. Bartholomew's Hospital from 1902–1911. The final results substantially agreed with Butlin's tables, except that the mortality of the operations themselves had been greatly diminished. The prognosis and treatment of the myeloid sarcomata were good; of the 10 cases only one recurred. Sarcomata that contained cartilage had a relatively lower malignancy. The prognosis for periosteal sarcomata was very bad. In only 13 of the cases was there a history of injury, and it was often very slight. Mr. A. Reid said that the characteristic *x*-ray features of periosteal sarcomata were that a limited area of bone was affected, no new bone was laid down, spicules extended out at right angles to the shaft; later dense masses were formed around and along the shaft of the bone, though its continuity could still be made out. Mr. Shaw said that myelomata were practically benign. A section for microscopy should always precede amputation. All malignant cases should be registered so that the final results could be traced. Mr. Morton (Bristol) thought that myeloid sarcomata should be excised and the ends of the bones joined together, unless precluded by extreme shortening, for a more useful limb could be obtained by ankylosis than by bone grafting. Butlin's figures showed the deadly nature of periosteal sarcoma, and he thought that the results obtained by excision were as good as those obtained by high amputation. Mr. John Murray and Mr. Lister recorded a case of fractured humerus from a hydatid, in which the *x*-ray appearances were similar to those of an endosteal sarcoma. Mr. Ironside Bruce showed a series of radiograms illustrating the various diagnostic points: one of scurvy rickets in a single bone resembled a periosteal sarcoma. Mr. S. W. Scott said that the rate of bone destruction and repair indicated the degree of malignancy. The repair in myelomata was shown in the radiogram by the bone trabeculae, the denser these trabeculae the slower the growth. Repair in the periosteal sarcomata was shown by the periosteal striations. Mr. Orton recorded a case where the tumour disappeared under *x* rays; secondary growths afterwards occurred in the liver, but these also disappeared under *x* rays; the patient died later of secondary deposits elsewhere. Mr. Makins, in winding up the discussion, said he thought that the term "myeloid sarcoma" should be retained, as these growths occasionally led to secondary deposits. He was struck by Sir John Bland-Sutton's suggestion that benign cysts might be due to spontaneous cure of a myeloid sarcoma.

Obstetrical and Gynæcological Section.

At a meeting on November 7th, Dr. Amand Routh, President, in the chair, Dr. G. R. Drummond-Maxwell, after recording a case of *Eclampsia successfully treated by Cæsarean section*, formulated the following indications for this operation in eclampsia: (1) Fits occurring in a primigravida; (2) onset of fits with no signs of the start of labour; (3) a rapid succession of fits where consciousness is not regained and coma is deepening; (4) failure of advance of cervical dilatation after several hours of an expectant attitude with the prospect of many hours' delay before the second stage is reached; (5) absence of any definite signs of improvement after eliminative treatment has been carried out for several hours. The presence of all these indications constituted a case of such gravity as to render the operation justifiable. Dr. J. M. Wyatt drew attention to the operation for prolapse devised by Le Fort in 1877, the principle upon which it was based being that if the vaginal walls could be kept in constant contact with one another prolapse could not occur. In 1889 Andrè collected 40 cases treated by Le Fort's operation, 35 of which were successful. In the author's opinion the operation was of great value in cases of procidentia in old people where any form of pessary failed to keep the womb in position, and where laparotomy for fixation was contra-indicated. He then described the method of performing the operation as carried out at St. Thomas's Hospital by Dr. Tate, and recorded 8 cases, in 6 of which the after-history had been traced, and the result was successful.

Section of Otology.

At a meeting on November 15th, Dr. Dundas Grant, President, in the chair, Mr. Richard Lake and Mr. Ferguson Penny showed 2 cases of *Vertigo*, in which the blood pressure was very low, and in which, after producing rotation, the reactionary vertigo was excessive. The first was a man, aged 55, who had had slight bilateral deafness and tinnitus for twenty years. There had been no discharge, and his drum membranes were only slightly retracted. His giddiness recently had increased, so that at times he staggered and found difficulty in walking straight. Apparently he was a neurotic subject. On rotating him ten times in twenty seconds he had an intense vertigo, accompanied by vomiting; and the same symptoms were brought out by the application of the caloric test. After rotation the blood pressure was only 105. He was treated with half-drachm doses of ernutin thrice daily, with the object of raising his blood pressure, and since that treatment there had been no further vertigo. The dose was gradually reduced, and since its cessation the patient had remained well. The second patient was a woman, aged 49, who had had eight years' deafness on both sides, with tinnitus worse on the right. There had been no discharge, but she had paracusis Willisii. At the hospital she could only walk straight by fixing her eyes resolutely on an object in front of her. Rotation in the usual way brought on an excessive reaction, including nystagmus. After rotation the blood pressure was only 105. She was given strychnine and atropine, but four days later she reported that this made her worse. A month after the strychnine and atropine was commenced she was put on ernutin, three daily doses of ½ drachm: and after only two days she reported improvement—actions which previously had provoked severe vertigo now failed to do so. Temporary discontinuance of the drug resulted in a return of the symptoms. Dr. Grainger Stewart had reported that he could find no nervous disease in the patient. In reply to questions, the exhibitors said they knew of no cause for the low blood pressure, and the drug caused an immediate rise in that pressure. Dr. Dan McKenzie pointed out the possible danger of administering adrenalin in a case of high blood pressure, and said that careful watch on that pressure should be kept when treating a case of vertigo. Dr. H. J. Davis showed a case of *Labyrinthine vertigo* in a woman, aged 33, whose cochlear nerve was found to be functionless, and probably also the vestibular nerve. The opinion expressed was that a tumour implicated the auditory nerve before its entry into the internal ear. The Wassermann test gave a negative result.

Section of Diseases of Children.

At a meeting on November 22nd, Mr. A. H. Tubby, President, in the chair, Dr. Leonard Guthrie, in a paper on *Epidemic catarrhal jaundice*, said that during the months of November and December, 1911, and January, 1912, he had met with 10 cases of jaundice in children, whose ages ranged between 3 and 11 years. Two or more members of the same family had been affected in several instances, and the patients, with two exceptions, had lived in adjoining districts. Seven of the patients were related as brothers or sisters. The liver was enlarged in six cases, and greatly so in four. Apparently all cases began with definite malaise, and

probably slight pyrexia, but none of the patients was seriously ill. No relapses occurred, and recovery was uneventful in all. Similar small and mild epidemics of catarrhal jaundice had been especially frequent during the last three years in this country and in many other parts of the world. A distinction should be drawn between it and Weil's disease. It was probably air-borne. The mortality was very low, but deaths had occurred in other countries. The symptoms and pathology of the fatal cases were practically the same as in Weil's disease and in acute yellow atrophy of the liver. Epidemic catarrhal jaundice was regarded as a form of hepatitis resembling mumps in some particulars, and not due merely to mechanical obstruction of the common bile duct consequent on gastro-duodenal catarrh. Although no fatalities had been recorded in this country, the disease might at any time assume more serious proportions. The prognosis in any case should be guarded, and the question, Is jaundice catching? could no longer be answered by a direct negative. It was probably most communicable in its early febrile stage. The following were among the cases and specimens exhibited:—Dr. J. W. CARR: Partial *Hemiatrophy of the face and tongue* in a boy aged 9. It was accompanied by sclerodermia of the skin below the jaw. Mr. L. E. C. NORBURY: Spina bifida (meningocele) treated by operation at 5 weeks old. When 16 months old no hydrocephalus had resulted. Dr. ERIC PRITCHARD and Mr. DOUGLAS DREW: *Oesophageal stricture* in a boy aged 2. He could not swallow solid food. A skiagram showed a dilated oesophagus between the level of the suprasternal notch and xiphisternum and a stenosed portion below. Dr. G. A. SUTHERLAND: *Cerebral non-development* in a baby aged 7 weeks. It produced a spastic condition somewhat resembling tetanus, cyclic breathing, attacks of tachypnoea, fits of causeless crying ending abruptly, spells of yawning, twitching, but no definite convulsions. Dr. J. D. ROLLESTON: Pharynx and larynx from a fatal case of haemorrhage from the throat. Infection unknown. Dr. C. P. LARYNG: Primary *Carcinoma of the liver* in a boy aged 6 with secondary deposits in the lung. Both primary and secondary growths secreted bile.

MEDICAL SOCIETY OF LONDON.

Monday, November 25th, 1912.

Sir W. WATSON CHEYNE, Bart., President, in the Chair.

Exhibition of Clinical Cases.

THE following cases, amongst others, were shown: The PRESIDENT: Two cases illustrating the formation of a new joint. The first case was that of a girl, aged 12, who had suffered from ankylosis of the right hip-joint following tuberculous disease. Arthroplasty was performed on the lines of Murphy's operation. This consisted in clearing out the contained caseous material and paring the ridges of the acetabulum and the femoral head in order to allow of good apposition. As part of the operation, a fascial flap was folded round the head and stitched in position before it was returned to the acetabulum. The ultimate result was to obtain an almost perfectly mobile joint. The second case was one of ankylosis of the elbow in a girl, aged 15, following acute suppurative arthritis. An excision of the elbow-joint had been performed, retaining the radial head, and ankylosis had resulted. Arthroplasty after Murphy's method was done. Fascial flaps were turned in between the humerus and [illegible] of the forearm and stitched in position. A piece of fascia was also wrapped around the head of the ulna. [illegible] elbow joint resulted. Dr. F. S. PALMER: [illegible] two cases of Friedreich's ataxia in brother and sister, [illegible] They were well-marked [illegible] of the condition. The boy showed also marked [illegible] the arm, pectoral girdle and hand muscles [illegible] trophy. The interesting features in the girl's case were hyperextension of some of the fingers, bitemporal pallor of both optic discs, and electrical changes in the muscles. Dr. F. J. POYNTON: [illegible] tic [illegible] PAUL B. ROTH: A woman, [illegible] osteo-periostitis [illegible] Dr. A. E. [illegible]; Four cases illustrating cystic disease of the knee-joint of various origins. One case was tuberculous due to pyogenic [illegible] alveolaris. Diplococci, streptococci, and *M. catarrhalis* were grown from the right knee, but nothing from the left. Case 2: The sources of infection found were pyorrhoea alveolaris and a boil on the arm. Diplococci had been grown. Case 3: Suppuration of the subdeltoid bursa occurred, and the pus evacuated from it swarmed with *Diplococcus pneumoniae*. The patient had had pneumonia ten days before. Case 4: Only source found was again pyorrhoea alveolaris.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on November 15th, Dr. FREELAND FERGUS, President, in the chair, the following were among the exhibits: Mr. HENRY RUTHERFURD: (1) A gillie, aged 33, who, by *Rupture of the ligamentum patellae* in August, 1909, had been seriously handicapped in walking, rowing, etc. A plastic operation performed in October, 1910, whereby the quadriceps muscle was split and a portion brought down and fixed to the tibia, had given a very satisfactory result. (2) A man operated on six weeks ago for habitual *Outward displacement of the patella*. Removal of the attachment of the ligamentum patellae to the inner side of the tibia had resulted in much greater security in walking. Mr. Rutherfurd also described the following, among other cases of *Acute intestinal obstruction*: (1) A boy aged 12, in whom the obstruction had resulted from an irreducible intussusception. An ileo-colic anastomosis was effected and the boy did well for a week, but obstruction recurred, and it was found that the entire intussusceptum had sloughed. Death ensued from inanition. (2) A woman in whose case a fall from a chair was followed in three days by acute intestinal obstruction. This was relieved by making an artificial anus in the caecal region. Two months later the abdomen was reopened, and, the bowel being found normal, the artificial anus was closed. A year afterwards the patient was in excellent health. Mr. ALEX. MACLENNAN reported the following, among other cases: (1) *Chronic pancreatitis* in a woman aged 34, operated on in January, 1911, for removal of gall stones. These, with much gall-stone sand, were removed and the gall bladder excised. The pancreas was found enlarged and of stony hardness, and microscopic examination of a small piece removed showed marked interstitial fibrosis with partial atrophy of the gland elements. (2) *Acute gangrenous pancreatitis* in a woman aged 59, with a history of old-standing constipation, abdominal distension, and epigastric tenderness, and of more acute pain with bilious vomiting and shivering for about a fortnight before operation. A diagnosis was made of acute pancreatitis and cholecystitis. The thickened and adherent gall bladder was excised, and the pancreas, which was greatly enlarged, livid, and with necrotic patches, was punctured with forceps in several places and bled freely. Packing was left in for six days. Union was delayed beyond the tenth day, a circumstance apparently to be associated with the presence of fat necrosis. The patient ultimately made a good recovery. Dr. W. F. GUNN showed a young girl from whose biceps muscle he had removed an unusual tumour about the size of a hen's egg. The tumour, which was exhibited, was provisionally named a striped myoma, but its exact pathology had not yet been wholly determined.

BRISTOL MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on November 13th, Dr. WALTER SWAYNE, President, in the chair, Mr. EDWIN HARRIS, recording a case of *Congenital pyloric stenosis* which had died suddenly while under medical treatment, expressed the opinion that despite statistics to the contrary, operation should be performed more frequently. Dr. LAWSON advocated early operation, and pointed to the presence of fatty stools as a point in diagnosis, owing to the loss of the gastric acidity as a stimulus to the pancreas. Dr. STACK considered obstinate cases of vomiting in breast-fed infants usually due to pyloric stenosis. Dr. EDGEWORTH pointed out that the high mortality of operation cases was due to the limitation to the worst cases. Dr. MICHELL CLARKE described a case of *Pyocyaneus septicaemia*, in which the organism had been isolated from the blood and faeces during life. The symptoms were mainly meningeal in type, but there was no meningitis *post mortem*, and no

primary source of infection could be found. Dr. Scott-Williamson was of the opinion that *B. pyocyaneus* was not commonly found as a primary, but frequently as a secondary, infection. Drs. Munro and Nixon agreed that infections by this organism were among the most favourable for treatment by vaccines. Dr. Edgeworth stated that he had cured a case of ulcerative colitis by a vaccine of *B. pyocyaneus*. Dr. J. O. Symes, in a paper on a case of *Rheumatoid arthritis* in a boy aged 4, characterized by a chronic course with intermittent fever, rigidity of spine, and knees with articular and periarticular swelling and much muscular wasting, pointed out the close relations between rheumatoid arthritis and rheumatism. This was exemplified in this case by the occurrence of crops of subcutaneous nodules, and the isolation of the rheumatic diplococcus from the blood, spleen, and a lymphatic gland. Dr. Alexander advocated the use of sulphur in large doses for cases of rheumatoid arthritis. Dr. Carey Coombs agreed that pathologically and clinically cases of rheumatism and rheumatoid arthritis sometimes merge. Dr. Nixon regarded the case as rather one of myositis fibrosa, the changes being mainly periarticular. Dr. Fortescue-Brickdale, in a paper on *Gastric superacidity*, expressed the opinion that hyperchlorhydria was usually the result of a pathological condition, and seldom, if ever, a pure secretory neurosis.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

At a meeting on November 22nd, Dr. Joseph Dobson, President, in the chair, Dr. Bedford Pierce read a paper on *Psycho-analysis*, outlining its principles, and criticizing it as a method of diagnosis. In the discussion which followed, Dr. Devine urged its value both in diagnosis and treatment. Dr. Botham was of opinion that unless the mental attitude of the patient were changed in the process of psycho-analysis, further treatment was necessary in the direction of re-education. Dr. R. A. Veale showed a specimen of *Malignant disease of the liver and trachea*. The growth was exceedingly vascular, and there had been spontaneous rupture of the liver during life. Histological examination proved the tumour to be an endothelioma. Dr. Barrs showed a patient suffering from intracranial disease, in whom there were headache, double optic neuritis, and attacks of typical Jacksonian epilepsy, with indications pointing to a lesion in the neighbourhood of the left motor area. A *Decompression operation* had been performed by Mr. J. F. Dobson, who had removed a portion of bone in the left temporo-parietal region, without, however, opening the dura mater, and marked amelioration of symptoms had resulted. Subsequently, skiagrams had been taken by Mr. L. A. Rowden, and these were exhibited on the lantern screen. They showed a dark shadow of considerable size, apparently caused by a tumour springing from the inner face of the right temporal bone, and in Mr. Rowdon's opinion probably of the nature of an exostosis. Mr. W. Thompson showed a case of *Spontaneous fracture* of the radius and ulna, and another of spontaneous fracture of the femur. Syphilis was probably the responsible cause in both instances.

INFUSION ANAESTHESIA.

Our report of the remarks made by Mr. H. Edmund Boyle in the recent discussion on infusion anaesthesia at the Hunterian Society (British Medical Journal, November 23rd, p. 1473), misrepresented his views in an important particular. He did not emphasize the alleged advantages of infusion anaesthesia in large operations about the mouth, but criticized them. In such operations it was essential to guard the patient's larynx, and the anaesthetist was not in a position to do this when securing anaesthesia by an infusion method. The right method in such cases was to perform a preliminary laryngotomy and pack the pharynx, as suggested by the late Sir Henry Butlin. If to the laryngotomy tube were then added an extension devised by the speaker and an anaesthetic administered through it, the anaesthetist could pay full attention to the anaesthesia and yet keep out of the way of the operator.

The new Berlin crematorium will probably be in working order on December 1st. The municipality of Freiburg in Baden has sanctioned the erection of a crematorium.

Reviews.

DR. FARQUHARSON'S REMINISCENCES.

Dr. Farquharson is an old parliamentary hand, and therefore his pictures of the scenes he has witnessed and his descriptions of the machinery of parliamentary life could not fail to be interesting. He may be congratulated on the great success of his former volume, *In and Out of Parliament*, and the public has also reason to be satisfied, as it is this success that has led him to gather more memories from the same field.

His new volume,[1] which has been honoured by the acceptance of His Majesty the King, is written in as racy a style and as genial a spirit as the previous one. Dr. Farquharson tells us at the outset that his freedom from official relations to his old political leaders enables him, whilst retaining his former allegiance, to take a somewhat impartial view of their proceedings and to sprinkle praise and blame pretty equally along both front benches. Although Dr. Farquharson makes a declaration of impartiality, it is easy to see to which side his inclinations lean, and his personal feelings amusingly come through the judicial righteousness in which he has clothed himself as with a garment. He takes care that the Tory dogs do not have the best of it. This is only to say that he is human, and it is the relish of humanity that makes a book living. If, like Renan, though in a different way, he is *ondoyant et divers*, it is this very quality that makes the charm of the book. It is eminently readable.

Dr. Farquharson truly says it is only one who has spent a fair period of his life, as he has, in the House of Commons who can actually describe its inner workings. We may add that as of recent years the composition and general tone of the House have materially changed, his descriptions must be taken as applying to the quarter of a century or so in which he sat in that assembly. He begins by discussing the best way in which a man of ordinary intelligence can qualify himself to serve his country in Parliament. As a matter of practical political equipment he gives a very high place to a legal training. The habit of mind fostered by a study of the law enables a man to grasp quickly the small details in bills invented by lawyers. Dr. Farquharson, although—or, perhaps, because—he was medical officer to a great public school, seems to have a poor opinion of the training received there or at the universities. His estimate is somewhat discounted by the fact that it appears to be limited to "the average and undistinguished public school boy," and to "that even more helpless product of civilization, the pass man of Oxford or Cambridge." It is a curious commentary on this opinion of Dr. Farquharson that not a few of our statesmen at the present day, as in the past, have been quite undistinguished both at school and at the university. In spite of this there is a largeness of outlook, a balance of mind in these men, that are conspicuously lacking in other political leaders whose education has been in a narrower sphere.

The thing most fatal to success in the House of Commons, Dr. Farquharson assures us, is to be a prig, "which has been described as an animal over-stuffed for its size." His experience is that men of affairs who have been working at something definite, and who know something at first hand, and can tell it simply and practically, are most likely to get a hearing. He instances several men who made their mark in Parliament without academic training. Without wishing in any way to detract from the merits of such men, we would ask whether the dignity of Parliament would not be better upheld, and its work better done, by men who had received the education which teaches a man, in the words of John Henry Newman, "to see things as they are, to go right to the point, to disentangle a skein of thought, to detect what is sophistical, and to discard what is irrelevant"; which "prepares him to fill any post with credit, and to master any subject with facility; shows him how to accommodate himself to others, how to throw himself into their state of mind, how to bring before them his own, how to influence them, how

[1] [illegible] Right Hon. Robert Farquharson, P.C., M.D., LL.D. Author of *In and Out of Parliament*. With [illegible] the author never before published in [illegible]. 1912. (Med. 8vo, pp. 256. Price 7s. 6d. net.)

to come to an understanding with them, how to bear with them." Neither the *doctrinaire* nor the bigot is exclusively a product of academic training.

Dr. Farquharson expresses his opinion with the utmost frankness on all manner of political questions. Throughout his parliamentary career he never allowed the doctor to be submerged in the politician; he always remained loyal to his profession, and lost no opportunity in doing what he could to promote legislation on matters as to which his special knowledge enabled him to speak with authority. Debates on the lunacy laws gave him the opportunity of comparing the Scottish arrangements most favourably with the English. He was a consistent advocate of granting substantive rank to the officers of the Army Medical Department; he also strongly urged the better feeding and treatment of recruits and soldiers. He feels bitterly about the conduct of the Government at the time of the South African war, when Mr. Burdett Coutts, who, he says, had seen very little of the actual state of affairs, delivered a violent tirade against the Army Medical Department. The Government did not see fit to defend the doctors, but asked Dr. Farquharson to move the adjournment. He went down fully prepared, but his motion was blocked by a satellite of Mr. Burdett Coutts. He denounces this as a cowardly bit of work done in the interest of the Government, who could not face the exposure which he was ready to make of their total want of preparation for the sick, and who made the doctors, not for the first time, the scapegoats for their obstinacy and ignorance. He adds if he had time and space he could say a great deal more on this tempting subject, for it is one that touched him deeply as an old member of the service. We may be allowed to say that we wish he had devoted to this subject some of the space which he has given to the number of meals consumed in the House and the amount of postal business transacted there.

For six years Dr. Farquharson was in charge of the private business of the House, which gave him a kind of semi-official status, but his crowning honour was when he was unanimously elected chairman of the Scottish Liberal members, a position which he held very successfully till his retirement. On reviewing his political career he cannot, he modestly says, associate it with anything of importance. He passed no bill into an Act, and his name is associated with no measure or amendment. In his reference to this we think we perceive a note of regret. Yet he did not, like Gibbon, sit for years through the most important debates without finding the courage or the talent to speak in the House. And he may well be proud of the letter from Sir Henry Campbell-Bannerman read at a dinner given on the occasion of the formal termination of the parliamentary career of the Laird of Finzean. C. B. then said:

> The little friendly troop of honest Scots will not seem itself in future without "the doctor." His genial temperament, his courtesy and kindly demeanour, his cheerful spirit, his keen [illegible] aided by a good share [illegible] qualities attracted the affection of us all.

The feelings of his constituents were shown by the [illegible] testimonial subscribed for by [illegible] like.

Dr. Farquharson devotes a chapter to the passing of the private member, who, he says, owing to the growth of Cabinet power and official influence, will become as extinct for all practical purposes as the dodo. He gives an amusing description of the numerous ways in which [illegible]ry. After all, however, as he [illegible]emy of the private member is his own [illegible]

> The wearisome iteration and needless prolixity with which [illegible] the utter want [illegible] of others which [illegible] without offence, [illegible] the utter discourage- [illegible] new member and is [illegible] his mind until he learns philosophy

Question time, however, gives the private member his chance. Dr. Farquharson is quite sure that some members [illegible] to pick up [illegible] peg on [illegible] any great national [illegible] takes place there is a wild rush and scrimmage to be the first to heckle Ministers.

Another way of attracting attention commonly resorted to years ago was to point the moral by the exhibition of actual specimens. Dr. Farquharson believes that he was a pioneer in the method when he presented to the House a bottle containing the white and silvery ashes of a cow to show what a clean and even artistic process cremation really is. A misprint in an evening paper gave the incident special prominence, for it stated that the remains were those of a "count"! The demonstration was at any rate more effective, if less dramatic, than Burke's dagger. Dr. Farquharson is no lover of the Labour member as such, and he has a qualified admiration for the Irish member. For cranks and faddists he has a hearty dislike. He condemns the payment of members of Parliament.

A chapter is given to the question of suffrage for women, to which Dr. Farquharson is whole-heartedly opposed. He gives his reasons for the belief that is in him with a vigour of which we will only give one specimen:

> And worst of all the strain of hysteria runs through their minds when they become excited or overwrought, and makes them an easy prey to impostors of all kinds. If there is any possible bit of quackery which the mere man sees through at a glance, *cherchez la femme* and you will generally find her there or thereabouts.

This, we suppose, is one of the thunderbolts which he warns the reader at the outset he proposes to launch with partisan fury. We simply quote it as the expression of his opinion.

Of the speakers whom he has heard he naturally has much to say. We read with interest that the House always used to fill when Playfair was up, and Dr. Farquharson has heard him with delight expatiate lucidly on margarine, horseflesh, vaccination, and kindred topics, which would be the despair of the ordinary orator. Michael Foster was held in universal respect, and "all listened with delight to his rugged talk and the hearty staccato laugh which was the essence of the man." A graceful tribute is paid to Lord Ilkeston. The book is full of effective thumbnail sketches of men he has known or seen flit across the parliamentary stage.

The final chapter is entitled "How to Obviate the Tendency to Death." It is full of the ripe wisdom of experience expressed in a manner all the more convincing by reason of its moderation. We lay down the book with a feeling of regret that there is no more of it. As we understand that the demand for it is already very large, we hope this second success will encourage Dr. Farquharson to a fresh deliverance. It is a relief in these days of political fanaticism, post-impressionist art, and euphuistic literature to turn to these records in which the author, while telling of public work, gives a delightful portrayal of himself. No one can read this *Robert Farquharson intime*, as the French would call the book, without feeling the truth of the words, quoted above, in which he was described by his old political chief. We are sure that any who may be induced by this notice to read the book will thank us for the introduction to a singularly attractive personality.

THE NATURE AND METABOLISM OF FATS.

In a monograph of 138 pages Professor Leathes describes one field of biochemical study, that occupied by *The Fats*.[2] The early chapters give a detailed account of the fatty acids, glycerol and the glycerides, other alcohols and their fatty esters, and of certain more complex compounds of fatty acids, such as lecithin and cerebrone. For the last class no proper nomenclature has existed, but now that it is possible to define the common features of some of these substances, the author expresses the opinion with which we agree—that the existing terminology, including words like "phosphatides" and "lipoids," cries aloud for extermination. For compounds of fatty acids containing phosphorus and nitrogen, such as lecithin and kephalin, the term "phospholipine" is suggested, the termination implying a basic character and the presence of nitrogen, the rest of the word indicating the fatty acid radicle and phosphorus. Similar compounds, containing nitrogen but no phosphorus, are named "lipines." Some lipines are combined with galactose, and are therefore called "galactolipines"; cerebrone and the cerebrins would be included in this term. A description is given of the various methods used for the extraction and estimation of fats, including the modifications adopted

[2] *The Fats*. By J. B. Leathes, M.A., M.D., F.R.C.S. London: Longmans, Green, and Co. 1910. (Roy. 8vo, pp. 141. 4s.)

for the various tissues and for the determination of the melting point, acid value, saponification value, iodine value, and certain newer constants.

The volume concludes with a good chapter on the physiology of the fats. The modern views are fully yet succinctly stated, but so impersonally that the reader would not realize how much of our knowledge of the elaboration of fats before they are oxidized we owe to Professor Leathes and those who have worked with him. The author has not adopted the ancient plan of describing the so-called classical experiments in order to discredit them. Nothing but the living work on the subject finds a place.

The likelihood that fats may be converted in the body to carbohydrates, which is strongly supported by the low respiratory quotients observed by Pembrey in hibernating animals, and by the high dextrose-nitrogen ratio observed in diabetes mellitus, is discussed with caution, but it is admitted that there must be stages in which both proteins and fats are brought down to a similar condition, final common paths in metabolism: for the amino-acids deprived of their amino groups are already lower fatty acids; from these the formation of sugar is equally conceivable whether they are derived from fats or proteins.

The remarks on the phospholipines are of much interest. These bodies are hardly less universally distributed where the phenomena of life are to be observed than the proteins themselves. Indeed, some are inclined to think of protoplasm as an emulsion of proteins and "lipoids."

We can strongly recommend the book to all who are interested in this fascinating chapter of physiology and of chemistry. Like everything from Professor Leathes's pen, it is terse, accurate, and eminently judicial.

ORGANIC CHEMISTRY.

Mr. F. G. Pope's *Modern Research in Organic Chemistry*[3] deals with a very interesting subject, the complexity and extent of which makes it not very readily accessible to those not actually engaged in some branch of it. The enormous growth of organic chemistry in recent years is a commonplace, and one necessary consequence of its development is the introduction, or rather the evolution, of nomenclature and symbols which make it very difficult for any one whose study of the subject is a few years old even to follow a modern paper. To take an example at random from the book before us, we find that the systematic name of carvone is "Δ 6, 8, (9) menthadiene-one-2," while some of the structural formulae are things to marvel at. The author gives a concise account of the results of researches in the last few years in the following groups: The polymethylenes, the terpenes and camphors, the purine group, the alkaloids, the pyrones, and ketens, ozonides, and triphenylmethyl; while other chapters are devoted to the relation between colour and constitution, salt formation, pseudo-acids and bases, and the Grignard reaction. It is not very apparent what class of readers are especially in view, since a not inconsiderable amount of special knowledge seems to be assumed, and is necessary for following the text, while any one specializing in any of the matters dealt with would naturally study the original papers and go into them more fully than is possible in a summary such as the present. Probably the organic chemist desiring a succinct account of modern work in some other section than his own special one will find it very useful. With so much interesting matter in the book, it is not easy to choose any for special reference, but probably the chapter on alkaloids will be as interesting as any from the point of view of medicine. Twenty members of this group are dealt with; their constitution is stated and the steps by which it has been established related, the final proof in many cases having been given by preparing synthetically an alkaloid identical in all respects with the natural substance; those described include morphine, atropine, cocaine, hydrastine, and others used in medicine. The book is not quite free from minor errors; unfortunately, in the first formula which is given, for the purpose of illustrating the nomenclature used to locate double bonds, the double bond is put in the wrong place and one hydrogen atom too many is shown; and thus the explanation becomes only a mystification. On the same page is a reference to "ethylene, which forms the weakest ring," whereas ethylene is not a ring compound, and to Baeyer's "Spannung's Theorie," as though Spannung were the name of the originator, instead of "Spannungstheorie" (tension theory).

The large number of textbooks on organic chemistry is apt to be somewhat bewildering to an intending student, and their number is being constantly increased by a tendency on the part of teachers to provide books following the particular arrangement which they have found suitable, instead of utilizing those already existing; probably, however, the multiplicity of textbooks is, on the whole, a gain. *A Second Year Course of Organic Chemistry for Technical Institutes*,[4] by Mr. F. B. Thole, is one of the latest. As its title states, it is intended primarily for use in technical colleges, in one of which the author is lecturer in this subject. The greater part of the book is devoted to the aromatic series of compounds, but some of the aliphatic series appear in the tables in the appendix. The matter is presented in a condensed form, somewhat in the style of notes on a course of lectures. As an accessory to such a course, the book will doubtless prove useful.

Practical organic chemistry is a subject in which the medical student is apt to receive too little instruction rather than too much. It is of service to the medical practitioner in many ways besides the obvious one of enabling him to recognize abnormal organic bodies in the urine of his patients. Dr. Haas has provided a small book[5] on the subject, adapted more especially to the needs of medical students, and covering rather more than the ground of the syllabus of the practical examination in organic and applied chemistry of the University of London. He also expounds the theoretical principles underlying certain of the exercises, giving physical as well as chemical explanations of the tests and methods employed wherever necessary. First he goes through the various methods of preparation employed, then the chief means of quantitative organic analysis that would be used by the medical man, then the chief qualitative tests. An appendix contains a few useful pages on the properties of colloids, mass-action, and on other matters for which no place has been found in the text. Dr. Haas writes as a man who is primarily a physicist and chemist rather than one who has to deal with the problems of organic chemistry as they occur in practical medicine. For example, in discussing glycosuria he gives excellent accounts of the qualitative and quantitative estimations of glucose in the urine, but leave untouched the very important question that so often arises in medical practice, Does a given specimen of urine that reduces Fehling's solution contain glucose, glycuronic acid, galactose, or some other reducing substance? In the same way he gives the various tests used for the detection of acetone and of aceto-acetic acid in the urine, but does not mention the no less important beta-oxybutyric acid. Such pathological details as he does insert are not always indisputable; on p. 68 we read, "The increased output of oxalic acid which is produced in diabetes gives rise to the condition known as oxaluria." Photomicrographs of the ozazones of glucose, lactose, and maltose are given, and the use of the polarimeter is carefully explained. The book may be recommended to medical students working at practical organic chemistry.

TREATMENT OF SYPHILIS.

Dr. Leredde is well known as an advocate of intensive methods in the treatment of syphilis. In his most recent work, *La stérilization de la syphilis*,[6] he discusses the question of sterilization by salvarsan, by mercury, and by both drugs combined. He says that it is proved that the frequency of sterilization depends on the remedy used and the manner in which it is used. We should say that it depends more on the quality and quantity of the virus, and still more on the power of resistance of the patient.

[3] *Modern Research in Organic Chemistry.* By F. G. Pope, B.Sc.Lond., F.C.S. With 261 diagrams. London: Methuen and Co., Ltd. 1912. (Crown 8vo, pp. 346. 7s. 6d.)

[4] *A Second Year Course of Organic Chemistry for Technical Institutes.* The Carbocyclic Compounds. By F. B. Thole, B.Sc. Lond. London: Methuen and Co., Ltd. 1912. (Cr. 8vo, pp. 186. 2s. 6d.

[5] *Laboratory Notes on Organic Chemistry for Medical Students.* By Paul Haas, D.Sc., Ph.D. London: Macmillan and Co. 1910. (Pp. viii + 128, with 3 plates and 20 figures in the text. Price 2s. 6d.)

[6] *La stérilization de la syphilis.* Par le Dr. Leredde. Paris: A. Maloine. 1912. (Post 8vo, pp. 149; plates 5. Fr. 2.50.)

As regards the accidents following salvarsan, he rightly attributes many of them to faulty technique and to neglect of contraindications, but when he attempts to explain the so-called "neuro-recurrences" we cannot altogether accept his views. He says that these are of two kinds: (1) An inflammatory reaction, analogous to Herxheimer's reaction, affecting the meninges, occurring soon after injection of salvarsan; (2) later phenomena, syphilitic and non-toxic in nature, due to insufficient doses of salvarsan. He considers that the non-toxic nature of these "neuro-recurrences" is proved by their improvement under further treatment by salvarsan. This is not in accordance with the experience of Finger and Gaucher, who have reported cases which were not improved by further treatment. Leredde states that identical symptoms occur in cases treated with mercury, and in non-treated cases, and are due to meningitis. He attributes their greater frequency after salvarsan to localization of the meningitis. This is not convincing: it would seem more probable that the effects are toxic. Leredde, however, admits that salvarsan is toxic when elimination is deficient, and that it is dangerous when there is extensive disease of the heart and vessels, kidneys or nervous system. As evidence of sterilization, produced by the methods he describes, Leredde places chief reliance on the Wassermann reaction, which he regards as of immense diagnostic and therapeutic value, since it allows comparison between all the methods of treatment of syphilis, and control of the results. We would refer the author to the remarks made by Sir Henry Morris at the conclusion of the recent discussion on syphilis at the Royal Society of Medicine (*Proc. Royal Soc. Med.*, October, 1913), and would add that if the Wassermann reaction is, as many observers suggest, to be regarded only as a symptom of syphilis, there is no logical reason why the absence of this symptom should be regarded as a criterion of the cure of syphilis, any more than the absence of any other symptom of the disease.

In his monograph on treatment by salvarsan,[7] Dr. GENNERICH describes the treatment of syphilis by salvarsan, by neo-salvarsan, and by combined treatment with mercury. He considers neo-salvarsan inferior to the old salvarsan; the clinical signs are similar, but the effect on the serum reaction is less marked; however, he thinks neo-salvarsan useful in some cases, and for final injections after a course of salvarsan, because, owing to its neutral reaction, it does not cause the anaphylactic phenomena resulting in cyanosis, etc., which sometimes follow salvarsan. He does not regard this cyanosis as due to toxic action, but to chemical reaction or constitution. This seems rather a fine distinction. Dr. Gennerich recommends moderate doses of salvarsan—0.5 gram in men, 0.4 in women, 0.1 in children, and 0.02 to 0.05 in sucklings. He regards 0.6 gram as the maximum dose in adults. He holds Wechselmann's view that many of the accidents after salvarsan, especially instances of rigor, fever, nausea, diarrhœa, and, in severe cases, loss of consciousness, convulsions, and coma, are due to the presence of microbes in the saline solution, or distilled water used for injection, and believes that these set up acute hæmorrhagic encephalitis. An intensive course [illegible] according to Gennerich, consists of eight [illegible] a total of 4 grams of the drug [illegible]. For combined treatment with mercury he prefers calomel injections. Dr. Gennerich is an enthusiast [illegible] considers that in [illegible] mann re- [illegible] and mercurial [illegible] four or five weeks are sufficient for a cure, [illegible] rds. [illegible] [illegible] [illegible] years' time.

NOTES ON BOOKS.

[illegible] of the *Tropical Diseases Bulletin* [illegible] under the direction of the honorary [illegible] Diseases Bureau, has [illegible] Director, Dr. A. G. BAG[illegible] recent papers [illegible] malaria, blackwater [illegible]

Landkrankheiten. Von Dr. Gennerich. August Hirschwald, 1912. (8½, 5½, pp. 97. Mk. 2. Pr. 2s.

relapsing fever, and sleeping sickness. The bureau has also issued the *Tropical Veterinary Bulletin* (price 3s.), which is edited by Mr. A. LESLIE SHEATHER, B.Sc., M.R.C.V.S. It also consists of abstracts under the headings piroplasmosis, anaplasmosis, trypanosomiasis, and "miscellaneous." Among the diseases included under the last heading are Leishmaniasis, osteomalacia, and foot and mouth disease. The fasciculus also contains a bibliography of recent literature. The last number of the *Sleeping Sickness Bulletin* (vol. iv, No. 40) was issued in the autumn, and an index and title page will appear shortly. In future the account of the current literature on trypanosome disease which appeared in this bulletin will be embodied in the *Tropical Diseases Bulletin*, but it will be somewhat less detailed than formerly.

Dr. CHAPPLE has written a small volume on *First Principles in the Art of Physical Development*,[8] in which he upholds swimming as the most perfect type of exercise for development of the body, and urges the national importance of adequate provision of public swimming baths. The pulmonary ventilation is greater in swimming than in mountain climbing, and no exercise does more to open out the lungs and ensure their thorough expansion. The effect of cold baths on the skin and through the cutaneous nerves on the nervous system is of the utmost importance: there is much more in a bath than its mere cleansing property. The author writes in a clear and convincing style, and if his suggestions were generally adopted the nation would be far healthier.

The collected papers of the late Dr. CHRISTIAN FENGER of Chicago[9] cover nearly every branch of surgery, and number some 200. Their appearance in book form is due to the formation shortly after Dr. Fenger's death of a Fenger Memorial Association, which, among other things, established a fund for the promotion of medical investigation. The late Dr. Fenger, born in 1840, and a Dane by birth, commenced his medical career during the Danish war of 1864, and after serving with an ambulance in the Franco-German war of 1870, held for some years a post in the sanitary department of the Egyptian Government. In 1877 he went to the United States; he possessed neither money nor influence, but his abilities were quickly recognized. Commencing as a teacher of surgery and surgical pathology, he became Professor of Surgery at the College of Physicians and Surgeons of Chicago within six years, and subsequently held the corresponding appointment at the Rush Medical College. In 1900, on the occasion of his sixtieth birthday, he was the guest of some 500 Chicago medical men and old pupils, and was presented with his portrait. In the following year he was president both of the Chicago Medical and the Chicago Surgical Society, and in 1902 he died. The general character of the papers in the two volumes and some autobiographic notes make his personal popularity and his high professional repute quite comprehensible.

At its meeting in London last year, under the presidency of Mr. Harry Fenwick, the International Association of Urology discussed only three questions phosphaturia and oxaluria, the remote results of prostatectomy, and extensive resections of the bladder. Hence the portliness of the volume of *Transactions*,[10] which has been ably edited by Mr. JOHN PARDOE, the general secretary of this second congress, is due less to the number of discussions than to the colossal length of some of the papers contributed. It is scarcely remarkable, indeed, that little or nothing in the way of a real discussion seems to have succeeded the reading of any of them. Several of the principal papers are by English and American authors, and of all the more formal contributions abstracts are supplied in four languages.

The *Index to Practical Nursing*,[11] by Dr. BASIL COOK, Senior Medical Officer of Kensington Infirmary, is a kind of encyclopædia relating to the various procedures employed in practical nursing, and includes a useful paragraph headed "Don'ts." Throughout the volume the

[illegible] *Art of Physical Development.* [illegible] M.D., Ch.B., M.R.C.S., D.P.H. London [illegible] (Cr. 8vo, pp. 87, with illustrations. 1s.)

[illegible] *Works of Christian Fenger, M.D.* 1840 [illegible] delphia: [illegible] Company, 1912 [illegible] pp. [illegible]

[illegible] *International* [illegible] rapports et [illegible] Villard and Son; [illegible] [illegible] 10s. net.)

[illegible] H. Basil Cook, M.D., D.P.H. London: Baillière, Tindall, and Cox. 1912. (Double fcap. 16mo., pp. 171. Price 2s. net.)

directions given are so clear and concise that the book should be of much utility to probationer nurses, and might also be very useful to those who have to give lectures to them as a source of texts on which to dilate.

The publications of the Association of Standardized Knowledge now include, among others, *The Strategy of Nature, Axioms and Principles of the Science of Organization, Needs and Ideals*, and *Standardization in Education*.[12] They are part of a series now being published under the general title of the Synthetic Series, all being so written as to explain and illustrate the science of organization, as formulated by Mr. Marshall Bruce-Williams. It is claimed that this science is essentially practical and has immediate reference to most of the problems of the day. It rests on the axiom that all society is an extension of the individual, and includes three principles named duality, degree, and the line of least resistance. The essential difference between this and similar attempts to find formulae for the absolute in Nature is stated to be that Mr. Bruce-Williams has provided his science with a theoretic unit—an imaginary individual exceeding all actual individuals in every respect and measuring 100 in every sense, function, and faculty. The president of the organization is Mr. Bruce-Williams himself, most of the vice-presidents being army officers, including several officers of the Royal Engineers. Certain charts used in the pamphlet on *Standardization in Education* are stated to be applicable to all educational work, and enable it to be seen at a glance what progress, if any, is being made. The War Office appears to be making use of some of them.

The official report of the *Proceedings of the National Conference on the Prevention of Destitution*[13] last summer constitutes a useful record of current thought on a subject having many relations with the problems of everyday medical life. Many of the speakers were medical men, and the president of the public health section was Sir Francis Champneys. The other sections which shared the general work of the conference were entitled Education, Housing, Unemployment, Crime, and Inebriety. Most of the sections seem to have held eight sessions, and the proceedings occupy a royal octavo volume of nearly 800 pages, which, being very closely printed and naturally devoid of illustrations, present a somewhat formidable appearance.

A copy of *Low's Handbook to the Charities of London*,[11] which has reached us, is the seventy-seventh annual edition of this useful reference book. It is the senior publication dealing with the subject, and making its appearance in the third quarter of each year, contains accounts of changes which have taken place subsequent to the issue of other like books. The charities are placed in alphabetical order, and all those seem to be included which have their head quarters in London, wherever the actual work may be carried out.

Diaries.

The rapidly approaching demise of the year 1912 is borne in upon one by the receipt of a number of samples of a fresh issue of the original *Letts's Diaries*, which for some years have been published solely by Messrs. Cassell and Co. They are of all shapes and sizes, varying not only in the amount of space that they provide for daily entries, but also in regard to the general information they supply. The latter is in many cases carefully specialized, to meet the needs of those who pursue various occupations. How wide is the ground thus covered will be sufficiently indicated by mentioning that the specimens before us range between diaries for social and general business purposes and volumes for printers, nurses, and doctors. The binding in all cases is strong, and in some elegant. A further point not without importance is that each includes an insurance coupon of a comprehensive character. The diary for nurses includes plenty of space for recording details regarding the progress of cases, while that for doctors contains a well-arranged visiting list.

[12] *The Strategy of Nature.* (Crown 8vo, pp. 60. 2s. 6d. net.) *Needs and Ideals.* (Crown 8vo, pp. 23. 5d.) *Standardization in Education.* (Crown 8vo, pp. 14. 3d.) *Axioms and Principles of the Science of Organization.* (Royal 8vo, with many coloured charts and diagrams, pp. 21. 7s 6d.) London: The Association of Standardized Knowledge, 15-16, Buckingham Street, Adelphi, W.C. 1912.

[13] *Proceedings of the National Conference on the Prevention of Destitution.* London: P. S. King and Son. 1912. (Demy 8vo, pp. 795. Price 10s. 6d. net.)

[11] *Low's Handbook to the Charities of London.* Seventy-seventh year of publication. London: Charles H. Sell. 1912. (Post 8vo, pp. 250. Price 1s.)

THE CYCLE CAR SHOW.

FROM THE MEDICAL MAN'S POINT OF VIEW.

By H. Massac Buist.

There is no gainsaying that from the medical man's point of view the Cycle Car Show at Olympia, Kensington, which closes on Saturday evening, is a development of very considerable interest. To him it matters not that the Auto-Cycle Union's technical committee are floundering in vain endeavours to define what manner of machine a cycle car is, because he will deal only with those vehicles with a maximum engine volume of 67.1 cubic inches and a chassis weight not exceeding 6 cwt., and will not accept the Auto-Cycle Union's temporary definition by entertaining the idea of any three-wheeled vehicles, which he will regard as being motor tricycles, just as the Treasury does. Instead, the medical man has a present and, more particularly, a future use for what shall be evolved under the name of the cycle car with four wheels, and what shall therefore come under the two-guinea Treasury tax because that department regards any four-wheeled machine as being a car.

Indeed, if we are to be guided by what is staged at Olympia to-day, it is the addition of the fourth wheel alone that need be borrowed to justify the use of the word "car" in the style of this new hybrid vehicle. In the case of the bulk of the material presented for consideration, candour compels one to say that the medical man has no use for it yet. The reason is the very obvious one that too many of these vehicles have been hastily designed and produced at the last moment; in consequence, at least 80 per cent. of them have not been tested to anything like a sufficient extent. Further, inasmuch as reliability is one of the essentials for the medical man's service, and inasmuch as no fresh development can be proved reliable until it has had twelve months' service in the hands of the public—because things occur in these circumstances which never arise when the most conscientious and skilled tester is even deliberately abusing a machine to prove its power of resistance—it follows that the cycle car, as a general proposition, will have a vastly greater interest for him a year hence than it can have to-day.

Two Schools of Construction Contrasted.

There are, however, exceptional cases. Take that of the Swift concern, whose cycle car can scarcely be called an experiment, since it departs in so little from its already lengthy experience in small car construction. This machine, which is marketed complete for £125, follows car practice in that the vertical, water-cooled motor is a block casting, the three-speed gearbox is a self-complete unit, the suspension fore and aft is by semi-elliptic springs, the steering pillar is conventional, and the body gives two seats with high doors, the driver's being a little in advance of his companion's, which is recessed, on a principle employed in some of the early *coupe de l'auto* races for light cars, to give the maximum seating accommodation for a minimum car width. But in the matter of the frame, which is of the tubular sort, and the wheels, which are of the wire variety, and in sundry other details, cycle practice is introduced to bring the weight down to the limit of 6 cwt. prescribed for cycle-car chassis. The motor, too, instead of having four cylinders, for which there is alone a market in the car world, is a two-cylinder type of 75 mm. bore by 110 mm. stroke, so that the machine is of 7-h.p., according to Royal Automobile Club rating; actually, it gives considerably more power.

This firm, therefore, departs so little from its previous small car practice, and has, moreover, tested this vehicle to such an extent, that it is prepared to place as many of these machines in the hands of the public as it can produce this year, in contradistinction, for example, to the Rudge-Whitworth policy, which goes along the lines that, beyond having a fourth wheel, a cycle car must embody nothing whatever of motor car practice, but must be, instead, a machine built wholly on motor cycle lines, and, therefore, one which can be looked after by any motor cyclist, hence in the Rudge production there is no change speed gearbox controlled on the gate principle. There is neither chain nor propeller shaft drive, neither bevel nor worm back axle mechanism, nor differential gear. Instead, three belts are employed, also an air-cooled motor with a single cylinder of only 50 per cent. more capacity than the

standard 3½-h.p. Rudge motor bicycle engine. Yet, by reason of the complete vehicle scaling with body considerably less than the weight limit set for a cycle car chassis alone, this one-cylinder suffices to propel the machine easily at a speed of forty-five miles an hour, and it can be accelerated up to nearly a mile a minute.

It will be seen, however, that, in place of being a vehicle of familiar appearance, this is something fresh to our ken, and therefore necessarily largely experimental. The suspension is extraordinarily low, and, as staged at Olympia, the exhaust pipe has a clearance of scarcely more than 2 in. at one point, but such details as that are to be modified in machines subsequently to be produced. A point to note *à propos* of the Rudge is that these new-style vehicles, with their relatively fast speed powers and extraordinarily light weight, will certainly experience, among other difficulties yet to be overcome, trouble in the matter of holding the road. Hence it is interesting to study the extraordinarily low centre of gravity combined with the proportionately broad track of the Rudge. Most of the cycle cars staged at Olympia are far too narrow in the track, and the centre of gravity is proportionately much higher than in the motor car proper of to-day.

Fuel Consumption not yet Studied.

When pondering the question of the cycle car at a period when the price of petrol has reached the abnormal figure of 1s. 8d. a gallon, the first thing the medical man of moderate means would assume is that not only his tyre but also his fuel costs in the case of a vehicle weighing a quarter or at most a third of that of the ordinary motor car would be proportionately less. These are the times when we can get cars weighing 27 hundredweight unladen, to travel with two passengers twenty miles to the gallon as a matter of course, save in hilly districts. Judge, then, one's natural surprise at discovering by process of tedious and exhaustive cross-examination that there are mighty few of these cycle cars which will do more than thirty miles to the gallon. That reveals incidentally how little time there has yet been to study the scientific problems of the cycle car, for obviously machines of this weight must, within a year or two, be doing easily forty to fifty miles on a gallon, and there is no reason whatever why they should not be doing eighty miles to the gallon as a matter of course in the hands of the average user four years from now.

Apparently some of the best results in the matter of petrol consumption are to be got with the types of cycle cars that are such in name alone, as, for example, the Singer machine, which can be described only as a car in miniature. This is what might be called a *de luxe* pattern in cycle cars, for it is sold complete with hood, screen, spare wheel and tyre, lamp sets, horn, tools and so forth for £185, the motor being a four-cylinder block casting water-cooled, with 63 mm. bore by 88 mm. piston travel, while the drive is from the clutch by propeller shaft to a three-speed gearbox, which is combined with the bevel and differential mechanism in the back axle. Here is a type, therefore, which has certainly an appeal to the medical man, but which, equally certainly, is no mechanical novelty. It is, instead, a motor car produced on the most up to-date lines but on a scale so light as to come within the cycle car chassis weight definition, and therefore, with a small engine of a refined and balanced character and relatively wide range of revolutions, to give rates of travel at more than double the legal limit. As shown with covered two seats, coupé style coachwork, it looks quite a dainty car for doctors' use.

Humbers, on the other hand, incorporate much of cycle practice in their cycle car. It is marketed complete with hood, screen, horn, head and tail lamps at £125, which would appear to be about the average price of these vehicles. Nor does one see any immediate necessity for their being brought down to the sum of £100, which in the lay mind appears to constitute the main definition of a cycle car. In face of the fact that we are striving to evolve a wholly fresh type of machine, it were surely better that we should seek first to overcome all the mechanical difficulties, for then the market will be so [illegible] more principle of reproduction work, costs can be brought down to an extraordinary extent. The Humber car follows the Singer in that the gearbox is combined with the back axle, but for all its outward appearance suggesting the lines of a motor car, the Humber is distinctly the embodiment of cycle practice, including the tubular frame, the wire wheels, and the employment of an air-cooled, V-set, two-cylinder motor of 84 mm. bore measured by 90 mm. piston travel. A half elliptical transverse spring is used for the front suspension, while two quarter-elliptical springs are employed behind. The bonnet is of the sloping sort merging into the scuttle dash, and there are high side doors to the seats, which are well forward of the back axle, the whole machine having a neat appearance.

Machines mostly Under-tyred.

When one has in mind the fact that many of the forms of power transmission are somewhat on the crude side, and also that most of the vehicles are capable of a goodly turn of speed, there can be no gainsaying that the majority of them are under-tyred. The suspension is also obviously more suitable to a motor cyclist's habits of road travel than to those of persons accustomed to going about by car or carriage. Thus from the medical man's point of view a round dozen of machines may be dismissed from consideration by reason of their having friction drive, crude suspension, or what not.

But mention may be made of such types as the Chater-Lea machine, supplied complete with body and two-cylinder water-cooled motor at 135 guineas. This vehicle has channel section, pressed steel frame, inswept forward to afford wide steering lock, self-contained gearbox, and overhead worm drive in back axle. There is also the Acton-built Wilkinson 7-h.p. cycle car with 4-cylinder water-cooled motor, the gearbox giving three speeds forward with a direct drive on the top, also a reverse, and the live axle has a bevel drive and differential gear.

The makers of the Bowden brake are among those resolved to enter into this new industry, in consequence of which they bring forward the Tyseley car, named after the district in Warwickshire in which their factory is established. Though a two-cylinder V-set engine is employed for this, it is a water-cooled one. The machine has a distinct appearance by reason of the employment of a channel section pressed steel frame dipped pronouncedly between the two axles to afford low entrance, while the rear suspension is by three quarter elliptical springs, and the back axle is equipped with bevel and differential gear, the whole car weighing under 8 cwt. It is not designed for speed work, but rather to be suitable for refined service at between twenty-five and thirty miles an hour, the price being 160 guineas, including spare wheel and tyre, hood, screen, lamps, horn, and tool kit, while for the medical man it is furnished complete at 185 guineas with coupé body.

The 8-h.p. Arden cycle car, marketed at 117 guineas with hood and screen, has a gearbox giving three speeds and a reverse, with the direct drive on the top, together with bevel-driven back axle and differential gear. It is, perhaps, out of the ordinary in having three-quarter elliptic front springs and a frame fashioned of oak, reinforced by steel flitch plates and suitably stiffened by cross members. A twin-cylinder 8-h.p. engine is employed.

The Alldays' "Midget" light car is sold complete for £130, the equipment including an 8-h.p. twin-cylinder water-cooled motor and power transmission through a leather-to-metal cone clutch to a three-speed and reverse gearbox, and so by cardan shaft to a worm-driven back axle.

THE late Dr. Edward Woakes left estate of the gross value of £31,157, of which £25,874 is net personalty.

MR. J. B. BRADY, of New York, has given £40,000 to the trustees of the Johns Hopkins Hospital, Baltimore, to be used in founding the James Buchanan Brady Urological Institute as a separate unit of the hospital. In addition (says the *Medical Record*) Mr. Brady will during his life pay £3,000 a year for the maintenance of the institute, and will make ample provision in his will for its continuance. The trustees intend to erect a six-story building with special laboratories for research and accommodation for both public and private patients. The benefaction is an expression of Mr. Brady's interest in the Johns Hopkins Hospital arising from his recent stay there as a patient.

ALCOHOL AND MORTALITY.

The estimates of the numbers of deaths attributable wholly or in part to the abuse of intoxicants which have been published by various authorities differ extremely one from another. A little consideration makes it plain that many of these estimates rest upon dubious foundations, so that there is ample room for a thorough investigation of the problem. Mr. E. B. Phelps, the editor of a leading American insurance journal, has attempted to provide such an investigation.[1]

Mr. Phelps proceeded in the following way: A list of the 187 causes and classes of death scheduled by the United States census authorities was submitted to an insurance physician, and he was requested to select those causes in the case of which any male death between the ages of 20 and 74 inclusive could, in his judgement, have been due wholly or in part to the use of alcohol. From this list the physician selected 106 causes of death in which he thought alcohol might be a contributory factor. This selected list was then submitted to three leading insurance medical officers independently, and each was asked to state the percentages of deaths under the various headings in which alcohol might be deemed to have played a part. The means of the three percentages were then ascertained, and the total deaths from each cause multiplied by the mean percentage. Each product was taken to be the contribution of the corresponding disease to the sum of deaths attributable to alcoholism. For instance—one physician estimated that 80 per cent. of the deaths from cirrhosis of the liver were connected with alcohol, the other two put the percentage at 90 and 30 respectively. The mean of the three is about 67. In the registration area of the United States, 4,123 deaths attributed to cirrhosis of the liver occurred in 1908. By multiplying this by 0.67 the figure 2,762 is obtained as the number attributable directly or indirectly to alcoholic habits. Having obtained a figure for males (between 20 and 74) by this process, Mr. Phelps assumed, after discussion with various authorities, that the alcoholic mortality among females was about a fifth of the male rate, and on this hypothesis arrived at the total number of deaths for both sexes in the registration area. He then, with the help of various conjectures all described in detail, extended these results to the population outside the registration area, and finally concludes that the mortality of alcohol is about 5.1 per cent. of the mortality at all ages, or 7.7 per cent. of the total mortality at adult ages, and that about 66,000 deaths in the United States in 1908 were connected with alcoholism.

We frankly admit that an investigation of this sort, in which all the assumptions involved are fairly described and available for criticism, is superior to the random guesses of partisans. We also recognize that the engaging simplicity of the method will have an attraction for those—and they are many—who are repelled by the elaborate technical details of actuarial work. Having made these concessions, however, we must state with equal frankness that Mr. Phelps's inquiry seems to us open to the gravest possible objections.

The reader will already have noticed, from the figures relating to cirrhosis of the liver given above, that the estimates of the medical experts differed enormously one from another, and it may be advisable to give a few more examples. In 1908, 33,900 males between 20 and 74 died of pulmonary tuberculosis: one expert puts the alcoholic contribution to the total at 2 per cent., a second at 25 per cent, the third at 8 per cent. "Heart disease" is another large cause of mortality; here the estimates were 10, 30 and 8 per cent.

Mr. Phelps actually seems to regard these wide divergences of view with satisfaction, and remarks: "As a rule there is a vast amount of difference in the reliability of averages respectively based on 3 and 300 sets of observations; but when it so happens that there are extreme differences, in the former case the averages of these extremes are very apt to take the form of exceedingly broad averages." To submit this passage to technical statistical criticism would be breaking a butterfly upon the wheel, but we may be permitted to wonder how it is that an obvious interpretation of the divergencies did not occur to Mr. Phelps. Surely it is probable that in answering so vague a question as that proposed to the medical experts, the personal equation enters so largely into the matter that the conception of one observer is not comparable with that of another. Each man attaches a different meaning to such a phrase as "Male deaths . . . in the case of which alcohol may have been an important contributory factor, and sometimes the principal causative factor." In other words, we do not believe that different estimates can fairly be regarded as forming members of a homogeneous series the average of which has an intelligible meaning.

If our view be correct, it is needless to turn to criticisms of detail, but we may stay to remark that Mr. Phelps does not appear to use his own method consistently throughout. Thus, he wishes to compare the urban and rural mortality from alcohol. Being presumably (we are not familiar with the American official returns) unable to apply his process to the two types of district separately, he accepts Dr. Stevenson's view that the combined mortality from alcoholism and cirrhosis of the liver is a better indication of alcoholism than the deaths attributed to the latter alone, and assumes that the alcoholic mortalities in urban and rural districts are in the same ratio as the total deaths from the above-mentioned causes in the respective areas. We should have thought he would have multiplied each cause of death by the average percentage factor obtained from his experts' estimates before forming the ratio. This, however, is, as we have said, a detail. It seems to us that no solid contribution to the subject will be possible until some stringent definitions of terms have been adopted, and the heated nature of the controversies which seem inevitably to arise when the subject of alcohol is mentioned will render any general agreement on fundamentals extremely difficult. Whether any results, however obtained, is likely to affect the general attitude towards the problem of alcoholic intemperance is a question which may in its turn give rise to discussion.

[1] *The Mortality of Alcohol: A Statistical Approximation of the Deaths in the United States in which Alcohol may Figure as a Causative or Contributory Factor.* By Edward Burnell Phelps, M.A., F.S.S. New York: Thrift Publishing Company. 1911. (Sup. roy. 8vo, pp. 81. Price 2 dollars.)

SCIENCE NOTES.

In an extremely interesting little monograph on blood corpuscles and wandering cells,[1] Professor Franz Weidenreich, of Strassburg, thanks to a figurative and fluent style, turns what might well be a dull recital into a charming dissertation, full of suggestive ideas and livened by numerous illustrations. The secret, perhaps, of such a successful result lies in the fact that he has treated the matter from a broadly comparative point of view, and has endeavoured to demonstrate the why and the wherefore of the forms and functions of the various blood corpuscles by tracing their development, or rather by indicating their analogies, throughout the whole range of the animal world. At the outset he gives a general account of the cells found in the blood and lymph, especially remarking on their power of independent movement. He goes on to discuss the phylogenetic derivation of the vascular system according to Arnold Lang's theory—namely, that it arises by a splitting of the mesoderm between the primitive intestine and the coelom, and he fancies that the function of the blood as a carrier of absorbed material lends colour to this hypothesis. With regard to the colourless blood corpuscles, he takes exception to Ehrlich's system of classification according to the staining properties of their granules, and he maintains that the method is biologically unsound. These staining properties, he insists, give evidence only of simple chemical reactions and afford no indication of the morphological and genetic affinities of the cells in question. With regard to the nature and function of the granules, he has much that is interesting to say, and here, again, he is opposed to Ehrlich, who regards them as products of secretion. He points out that from experiment it seems not unlikely that the granules may contain reserve materials and that they may function in a variety of other ways. The mode and place of origin of the various forms of leucocytes have given rise to much discussion, and here, again, the author maintains that the generally accepted opinions are in need of modification and even of alteration in several important details.

[1] *Bluthörperchen und Wanderzellen.* Von Professor Dr. Franz Weidenreich. [illegible] Gustav Fischer. 1911. (Roy. 8vo, pp. 65. Price M. [illegible])

THE NEW INSTITUTE OF PHARMACOLOGY, UNIVERSITY COLLEGE, LONDON.

THE doctor has perhaps been too much identified with drugs in the past; now there is some danger lest disbelief in drugs should be carried too far. If our predecessors physicked too freely, that was due to their ignorance of the exact physiological and medicinal properties of the remedies they ordered on so generous a scale: and that ignorance led to the use of substances of the strangest and often most disgusting kind, which tradition mingled with superstition had credited with healing virtues. Till comparatively recent times pharmacology, like all other branches of medicine, was mainly empirical: and it is only during the last half century that it has been studied in the manner that alone can yield really fruitful results—that is, by the experimental method. Already that method has placed pharmacology on a really scientific basis.

Scientific Pharmacology.

One of the best expositions of the manner in which exact knowledge on the action of drugs has been and is being acquired is to be found in the evidence given by Professor A. R. Cushny before the Royal Commission on Vivisection. A summary of that evidence will serve to show the aims and methods of scientific pharmacology. Research is directed to the discovery of the manner of action of drugs in human beings when their mode of operation could not be seen by observation of their effects on animals either in health or in disease, particularly in health. The effects of purgatives are obvious, and therefore experiments on animals have added little to our knowledge of their action. But the effects of drugs which act on the brain, for instance, or the heart or the liver or the kidney, had necessarily to be worked out by experiments on animals. Taking digitalis as an example, he pointed out that digitalis was introduced into medicine [illegible] by Withering, who found that it was a remedy for dropsy; and it was used in that condition for a good [illegible]ars, more or less at random, because its mode of [illegible] not understood. [illegible]ube sought to discover how [illegible]ted by experiments on animals because he could [illegible]t do so in his patients. Lauder Brunton, too, sought [illegible] animals for the explanation of problems which he [illegible]ve in the human subject. Dr. Cushny pointed [illegible] he danger of trusting exclusively to clinical [illegible] or therapeutic advance was exemplified by [illegible] drug. Digitalis is undoubtedly of value in [illegible]pnœa, whereas in others it is useless. The heart action, however, discovered [illegible] methods, directed the clinician's attention [illegible] in relation to digitalis, and [illegible]mania in which the heart [illegible] benefited by digitalis. [illegible] to stop vomiting from [illegible] being given by the stomach, generally in the form of pills. The efficacy of the remedy was unquestioned by physicians until experiment showed that lead is absorbed only in small quantities and very slowly. This fact induced clinicians to make a more careful analysis of the cases in which they had been in the habit of using the remedy, with the result that it was found that it was not the lead but the opium given with it which was the efficient principle in stopping the bleeding.

These examples illustrate the usefulness of experimental research in enabling the physician to administer medicines with a precise knowledge of their action and to reject drugs that are proved to be worthless. Formerly the doctor could apply his remedies only on the general principle that their administration was followed by improvement in some cases which more or less closely resembled that he was dealing with; now that he has a much clearer view of the actual efficacy of drugs he prescribes with a definite purpose. Experimental inquiry has vastly increased the therapeutic resources of the medical practitioner. In the enormous output of new preparations from chemical laboratories there are many which prove useful in medicine. Dr. Cushny gives numerous examples of drugs—hypnotics, anæsthetics, antipyretics, cardiac tonics, vaso-dilators, diuretics, and so forth—with which the pharmacological laboratory has enriched practical medicine. All, however, must be carefully tested in animals before they are tried in man.

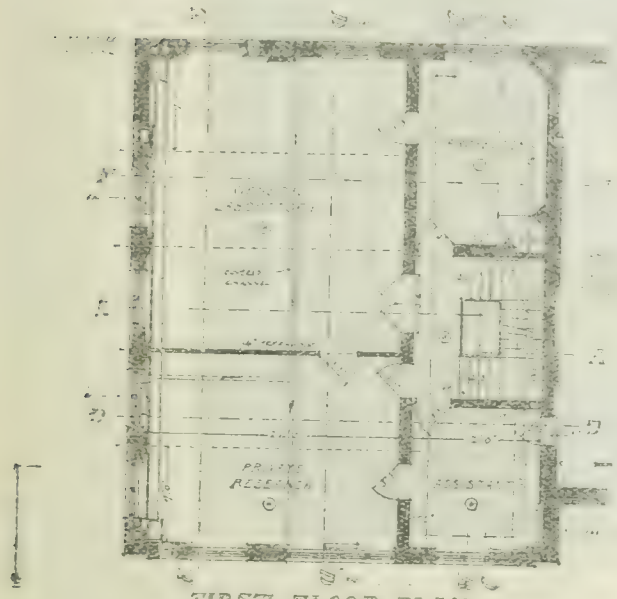


Fig. 1.—New Pharmacological Institute, University College.

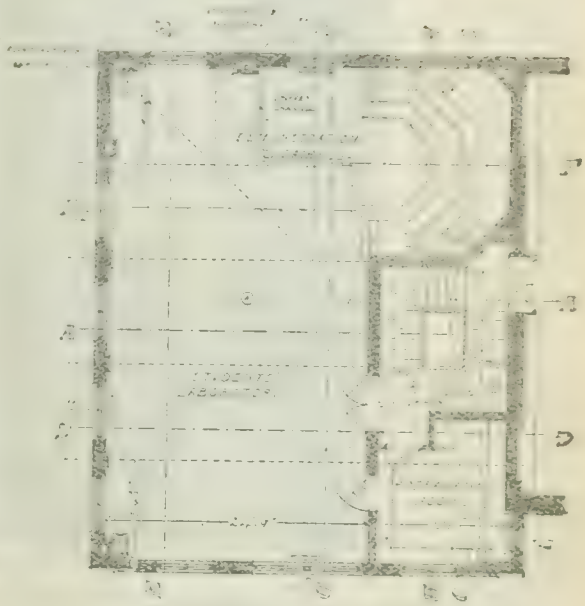
Standardization of Drugs.

One of the most important functions of scientific pharmacology is the standardization of drugs. Dr. Cushny gives some striking illustrations of the necessity of the experimental method for this purpose. He found that of two tinctures of digitalis supplied by a perfectly trustworthy firm, one was four times stronger than the other. It is plain that if a patient were treated with the weaker of these tinctures in the increasing doses necessary to obtain the therapeutic effect, and the treatment were inadvertently continued with the stronger in the same dose, the results might easily be disastrous. In the case of ergot, the conditions were even worse, for a large quantity of this drug on the market was practically inert and the preparations were, therefore, valueless. A doctor might thus, in an emergency where the patient's life was at stake, depend on the action of a drug which had no effect. In regard to cannabis indica, Dr. Cushny stated that he had personal knowledge that 20,000 lb. of the drug were offered for sale to a firm which, before completing the transaction, had a sample tested on animals; finding it inactive they refused the consignment. The same firm informed him that since the introduction of physiological assay they had had practically no complaints whatever as to the inefficiency of products of cannabis indica, quite a contrast to their experience before that time. This points to a source of misleading observation which has led to much error in the past. It accounts for the notorious fact that a drug which proves

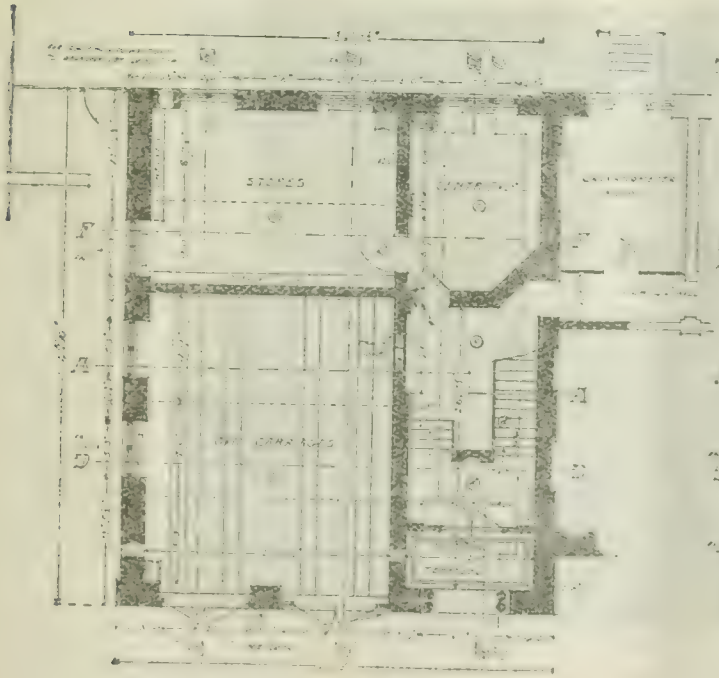
UNIVERSITY OF LONDON.
UNIVERSITY COLLEGE.
NEW PHARMACOLOGY LABORATORIES.



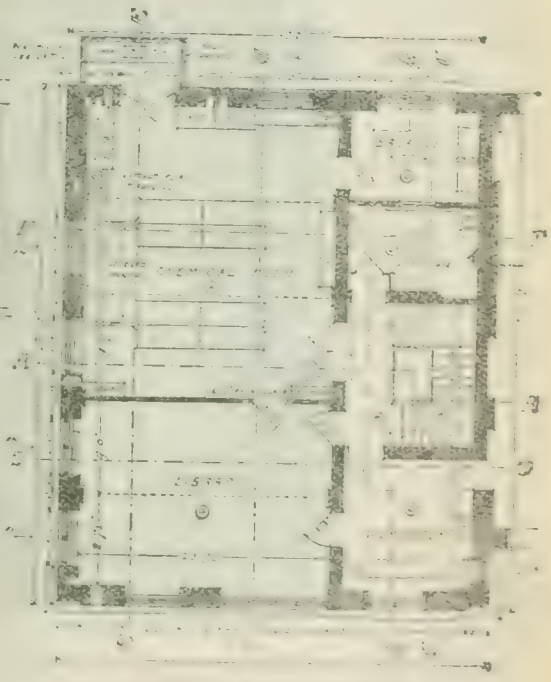
FIRST FLOOR PLAN.



SECOND FLOOR PLAN.



BASEMENT PLAN.



GROUND FLOOR PLAN.

SCALE OF FEET.

10 5 0 10 20 30 40 50

successful in the hands of one man is useless in those of another.

The New Pharmacology.

Enough has been said to show that if pharmacology is to be truly scientific it must be based on experimental research. It is obvious that doctors trained in a laboratory conducted on this principle will be incalculably better fitted for their life-work than the students of the older generation were with the perfunctory courses of practical pharmacy, attendance at which many of them did their best to escape. If the practitioners of the future have not such a miscellany of drugs at their command as their predecessors, those they have will be of proved value and they will be able to use them with a precise knowledge of their effects of the conditions in which they are applicable and of the manner of their use. Prescribing, which is almost a lost art, will become the application of a science.



Fig. 2.—Chemical laboratory; ground floor.

To bring about this desirable state of things is the work of the pharmacological institute. In the JOURNAL of November 16th reference was made to the opening of such an institute at Oxford; now we have to announce the completion of a fine building to be devoted to the same purpose at University College, London. We are indebted to the courtesy of Professor Cushny, who conducted a representative of the BRITISH MEDICAL JOURNAL all over the new building and explained the arrangements. To one who remembered the teaching of pharmacy in the Seventies the appearance of the handsome well-lighted laboratories, equipped with every appliance required for modern scientific work, was nothing less than a revelation. It was a concrete illustration of the most convincing kind of the progress of medical



[illegible] room; first floor.

rendered increased provision necessary for the laboratories of anatomy, physiology, and pharmacology, and plans were made for building three institutes for these sciences in the south quadrangle. The first of these to be completed was the Physiological Institute, which was opened in 1909. An illustrated description of this was given in the BRITISH MEDICAL JOURNAL of June 12th, 1909. Last year a donation of £5,000 from Mr. Carnegie made a further instalment possible, and plans were prepared by Professor F. M. Simpson, of University College, for an institute of pharmacology. The building was begun in the spring and is now practically complete. It will be opened on December 4th by the President of the Royal College of Physicians.

The site selected adjoins the new Physiological Institute on the east side, and the pharmacological building will thus form the east wing of the general medical building, while the proposed anatomical institute will complete the south quadrangle.

The new laboratory measures 42 ft. by 50 ft., running north and south, and contains three complete floors and a mezzanine floor beside the basement, the actual floor spaces thus amounting to about 6,000 square feet besides stairway and passages.

Special attention has been directed to obtaining the maximum amount of light possible on the three sides, the fourth forming the boundary wall with the Physiological Institute. On the lower floors the window space is the greatest allowed under the Building Acts, and the second story is lighted in addition from the roof. Throughout the building the lighting is thus entirely satisfactory.

The entrance to the building is by an open vestibule with pairs of Portland stone columns on either side. At night a pair of Bostwick gates closes the entrance. An oak screen with swing doors gives access to the staircase, which is of oak throughout, with panels of ironwork at the side and a dado of grey-green terrazzo panels set in [illegible] of white marble. The building is crowned [illegible] pediment of Portland stone, and the quoins [illegible]

of that material. The walling is light sand-faced Arlesey brick.

The ground floor is lined with white glazed brick throughout, and contains two rooms; one of these, 24 ft. by 18 ft., is used at present as a medical reading room, but it is intended to utilize it for pharmacological research when the anatomical institute is built and the medical library is provided for there. The other, 24 ft. by 30 ft., forms the chemical room of the institute, and will be used for advanced work in pharmacological chemistry. It is fitted up with two chemical benches and with fume cupboards, and, in addition, communicates with an open-air balcony on the south side, on which investigations with noxious fumes may be carried out. This floor also provides a workshop for the attendants, a balance room, and a small dark room for polariscope, etc.

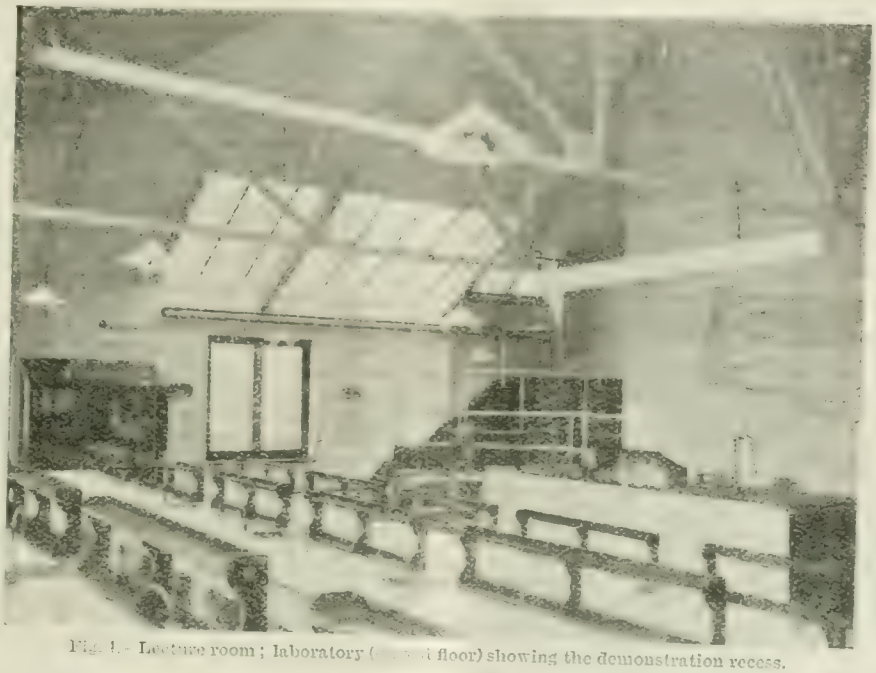


Fig. 1.—Lecture room; laboratory (ground floor) showing the demonstration recess.

The first floor is adapted for experimental research, and contains two small private rooms for the professor and assistant, and two large rooms, 24 by 18 ft. and 24 by 30 ft., for experimental research. The smaller of these is designed for work with the large kymograph, while the larger is to be used for smaller movable kymographs and other apparatus. One of the features of this floor is a wooden beam, 9 by 4 in., which stretches through both rooms at a height of 8½ ft. from the floor, and is rigidly supported in the walls and by iron straps from the roof girders. This carries a shaft with pulleys which are set in motion by an electric motor in the larger room, and which supply power for the large kymograph and for various other pieces of apparatus placed on tables near the beam. The beam carries also gas and water pipes with taps at intervals, from which the tables may be supplied. Wires run along it connected with an electric clock, so that time signals may be given at any point in either of the rooms. Lastly, the artificial respiration pump is connected with an iron pipe running along the beam with taps at five points, so that artificial respiration may be carried on in different parts of each room. Immediately below the beam a floor channel runs along the floor to carry off waste from water-driven apparatus. On each side of this, covered electric points are set in the floor, so that light and power are available throughout the laboratory. A long teak bench supported on cantilevers runs along the east wall beneath the windows in both rooms, and is supplied with water, gas, and electric power, and is used for smaller pieces of apparatus. All the ordinary pharmacological experiments are provided for on this floor. When special aseptic operations are requisite they will be performed in the adjoining aseptic rooms of the Physiological Institute.

A mezzanine floor is placed between the ground and first floor, and contains lavatories and store cupboards on one side, and a cement-floored room, 17 ft. by 12 ft., which is utilized for animals under special observation.

The second floor is lighted from three sides and also from the roof, and contains only two rooms—one a small preparation room, 13 by 14 ft., with the collection of drugs used in the lectures, etc.; the other, 48 by 25 ft. by 18 by 13 ft., is the combined lecture room, students' laboratory, and demonstration room. It is supplied with lecture table, with blackboards, water, gas and electric power, and projection lantern, and with tiers of experimental tables and seats which will serve for the practical work of the students. A new feature is the demonstration theatre, which forms a recess off the lecture room, and at which the more complicated experiments will be performed by the demonstrator. It measures 18 by 13 ft., and is furnished with three tiers of standing places, rising one above another, from which the spectators look down directly on the experimental table below. When a demonstration is given the students leave their usual seats in the body of the lecture-room [illegible] demonstration is finished. It is hoped in this way to



Fig. 5.—Kymograph room; first floor.

form a closer connexion between the demonstrations and the lecture and laboratory work than is possible when the demonstrations are given apart from these.

The basement of the building contains a large store-room and a room for heavy or noisy apparatus, such as large centrifuges. Room has also been found in it for the guns of the University Territorial Artillery Company. Animal houses lie at the back of the building, along with those of the physiological department.

Investigations in Progress.

Work has already been commenced in the laboratory, and investigations are being carried out on the relation of the thyroid secretion to various toxins, on the reaction of the heart to digitalis bodies, and on the action of drugs on the respiratory centre.

Formal Opening.

The institute will be formally opened by the President of the Royal College of Physicians on Wednesday, December 4th.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

At the sitting of the Committee on November 21st the examination of Mr. C. H. Ratcliffe, joint managing director of Messrs. A. J. White, Limited, the proprietors of Mother Seigel's Curative Syrup, was continued.

Mr. Glyn Jones put the question of which he gave the witness notice at the previous sitting—whether he was prepared to deny any statement of fact made in *Secret Remedies* with regard to Seigel's Syrup.

The witness replied that, having carefully considered the question, he found that he could not deny any of the statements, though he held that their spirit and intention were misleading. The language used appeared to have been carefully guarded in order to avoid making any statement which could be regarded as libellous.

As regards claims made on behalf of the preparation, the witness said that no general claim was made unless it was supported by testimony obtained during a long period. The company had no testimonials from medical men, but about twenty doctors were amongst the shareholders. A number of testimonials had been received from educated persons.

Replying to Mr. Bathurst, the witness said he did not consider it a misleading statement to say, "This syrup will cure anæmia." He did not suggest that when there were eleven different vegetable extracts in a preparation, one extract attacked one complaint, and a second another.

The Chairman asked the witness whether, since he disclaimed any knowledge of the therapeutic action of the drugs which he stated to be contained in the preparation, he could produce as a witness any member or employee of the firm who had medical knowledge.

The Witness: The company is advised by a doctor, but for obvious reasons he cannot be brought forward.

The Chairman: I am afraid if you cannot produce him the Committee cannot attach very great weight to that statement.

Sir Philip Magnus: Can you suggest any medical man who would give evidence as to the medicinal properties of the preparation?—I am afraid I cannot.

The Chairman called the witness's attention to the following statement which appeared on the package of Seigel's Syrup:

British Government stamp affixed to the cork inside. Guaranteed to be genuine.

He asked witness whether that statement would not mislead ignorant people into thinking that the Government stamp was a guarantee.

The witness replied that the statement was not there for [illegible] but, in the way the Chairman put it, he [illegible] and for the idea. The company [illegible] in removing its name from [illegible] could protect itself against [illegible]

[illegible] made by Mr. Umney [illegible] vegetable extracts [illegible] analysis would [illegible] with the report of the Government analyst [illegible] been received.

The examination of Mr. J. C. Umney, of Messrs. Wright, Umney and Layton, Ltd., owners of various proprietary preparations, was then continued. The witness stated that, having made an analysis, he was satisfied as to the presence of vegetable constituents in Seigel's Syrup, and, if he felt at liberty to do so, he could name the ingredients. Explaining his methods of analysis, the witness said he determined three of the vegetable ingredients by taste and smell principally, and if he had more material and more time he had no doubt that he would be able to determine the whole of them. He laid great stress on the importance of taste and smell, and the actual experience gained in the handling and preparation of drugs, in arriving at an accurate analysis of such a mixture as Seigel's Syrup. No analyst, however high his reputation, was capable of giving as trustworthy an analysis as was to be obtained in a manufacturing chemist's laboratory where preparation of drugs was constantly in progress. The witness was frequently consulted by professional analysts, and asked to give an opinion by taste and smell only as to composition of various mixtures.

In reply to Mr. Bathurst, the witness said he would probably be able to tell every ingredient in Seigel's Syrup by taste and smell alone.

Replying to Dr. Lynch, the witness criticized the views of Mr. Harrison, the analyst to the British Medical Association, as to the analysis of vegetable extracts, and said there were in the *British Pharmacopœia* 230 or more vegetable preparations, only 44 of which could be standardized by chemical methods.

The Chairman remarked that this was a most important statement, because, if correct, any one might put a few grains of extractive matter from a large number of drugs into a mixture, and there would be no chemical means of testing the claim that the preparation contained these. The witness said that if the quantities were infinitesimal that would be so.

In reply to Mr. Glyn Jones, the witness said his company did a limited business in stock mixtures for the use of medical men; these were sold to doctors who did their own dispensing. As to the cost of the ingredients of secret remedies, his view was that there was no relation, in the case of many drugs, between their medicinal value and their cost. On the practicability of making an analysis from a single bottle of such a preparation as Seigel's Syrup, the witness expressed the opinion that to make anything like a correct analysis about two gallons of material would be required. An analyst must be specially qualified by experience in handling drugs to analyse such a mixture.

The examination of the witness had not concluded when the Committee adjourned.

CANCER RESEARCH.

In the article by Dr. Bashford published in the Journal of May 27th, 1911, it was implied (p. 1230) that the managers of the Manchester Royal Infirmary had accepted money for the promotion of cancer research, but had forbidden experiments on animals to advance this end; and further, that contributions had been accepted from an antivivisection society. The Chairman of the Medical Board of the Infirmary (Dr. Ernest S. Reynolds) informs us that he has made careful inquiry into the possible basis of any charge of unworthy action by the authorities of the Infirmary, and is satisfied that they have absolutely no foundation. The research instituted at Manchester was into certain chemical problems relating to cancer, and from the nature of the research, experiments on animals were deemed to be unnecessary. We unreservedly express regret that an incorrect view of the attitude of the responsible managers of the Royal Infirmary should have been given in the British Medical Journal.

The late Mr. Thomas Bartlett, of Liverpool, in addition to other large public bequests, left £20,000 to the Home for Epileptics, Maghull, for the erection of a home to be called the "Thomas Bartlett Home"; a similar sum to Liverpool University for the establishment of scholarships for engineering students, and sums sufficient for the endowment of beds to the following hospitals: The Royal Infirmary, the Royal Southern, the David Lewis Northern, and the Stanley Hospital.

ROYAL MEDICAL BENEVOLENT FUND.

At the November meeting of the Committee [illegible] cases considered, and grants amounting to £280 [illegible] the applicants.

Appended is an abstract of the cases relieved:

1. Daughter, aged 50, of late M.D.Edin. Capital entirely exhausted by unavoidable expenses due to prolonged illness, and is now dependent on friends for shelter. Relieved three times, £34. Voted £12.

2. Widow, aged 80, of M.B.Lond. No income, but keeps herself by letting rooms, and receives slight help from a daughter. Voted £5.

3. Widow, aged 60, of L.R.C.P.Edin. Quite unprovided for at husband's death a few months ago, and finds great difficulty in obtaining employment. Voted £10.

4. Daughter, aged 61, of late M.R.C.S. Tries to maintain herself by taking boarders, but has nearly exhausted her small capital, and is in bad health. Voted £12.

5. Daughter, aged [illegible] of late M.R.C.S. Has been obliged to give up her profession on account of ill-health, and is consequently dependent upon her mother, an annuitant of this Fund. Voted £5.

6. Widow, aged 72, of L.R.C.P.Edin. Has [illegible] Voted £5.

7. Son, aged 18, of late M.R.C.S. Earns £50 [illegible] Has had little help towards the expenses of his mother's funeral. Voted £5.

8. Daughters, aged 60 and 55, of late M.R.C.S. No income: small earnings from needlework, and receive [illegible] Relieved eight times, £114. Voted £8.

9. Widow, aged 51, of L.R.C.P.Ireland. No income, and health feeble. Is temporarily in charge of a [illegible] has to find food, etc. Relieved five times, £60. Voted £12.

10. Widow, aged 54, of L.F.P.S.Glasg. Tries to maintain herself by receiving boarders, but finds [illegible] Relieved four times, £30. Voted £10.

11. Widow, aged 65, of L.R.C.P.Edin. Was left quite unprovided for at husband's death a few years ago, and has since developed a chronic complaint by which she is quite incapacitated. Is given a home by a sister, but asks help towards the unavoidable expenses of an attendant. Relieved three times, £36. Voted £12.

12. Widow, aged 75, of M.D.Lond. Her [illegible] is crippled by chronic rheumatism, and asks help to obtain a few small comforts and necessary clothing. Relieved seven times, £41. Voted £5.

13. Widow, aged 65, of L.R.C.P.Edin. Has a small pension but it is insufficient for bare necessities, and applicant is in bad health. Relieved five times, £37. Voted £10.

14. L.R.C.P.Edin., aged 55. Used to practise in Glasgow, but has been in bad health for some years, and is now incapacitated by spastic paraplegia. Is given a home by a sister, who can ill afford to help. Relieved eight times, £96. Voted £12.

15. Daughter, aged 67, of late M.D.St. And. Income less than 10s. a week, and in such bad health that active [illegible] impossible. Relieved seven times, £39. Voted £12.

16. Widow, aged [illegible] L.S.A. [illegible] unable on account of deafness and ill-health to [illegible] help from a small annuity, £8 a week. Relieved [illegible] times, £76. Voted £15.

17. Daughter, aged 65, of late M.R.C.S. [illegible] days been in delicate health. Relieved four times, £48. Voted £12.

18. Daughter, aged 60, of late L.R.C.P. Is mentally deficient and has been for many years dependent on a sister who is a nurse. Relieved seven times, £89. Voted £12.

19. Daughter, aged 59, of M.D.Lond. Used to partially support herself by teaching, but is now, owing to age and ill health, entirely dependent for shelter on a sister whose income is very small. Relieved twenty-nine times, £318. Voted £12.

20. Daughter, aged 58, of late L.S.A. [illegible] Slight help from a relation. Relieved thirteen times, £122. Voted £15.

21. Widow, aged 71, of L.R.C.P.Edin. Entirely dependent on an old age pension and the help from this fund. Eyesight failing and crippled by rheumatoid arthritis. Relieved five times, £65. Voted £12.

22. Daughter, aged 53, of late L.R.C.P.Edin. No income, and quite unable to maintain herself on account of chronic ill-health. Slight help from an uncle and a brother. Relieved three times, £32. Voted £12.

23. Widow, aged 67, of M.R.C.S. [illegible] Has [illegible] a pension of £[illegible] per annum, but requires a little further help. Relieved three times, £36. Voted £6.

24. Daughters, aged 60 and 54, of late M.R.C.S. [illegible] endeavour to support themselves by taking boarders [illegible]

25. Daughter, aged 64, of late M.R.C.S. [illegible] health very bad. Relieved six times, £72. Voted £18.

[illegible] may be sent to the Treasurer, [illegible] Wimpole Street, W.

LITERARY NOTES.

The Universal Medical Record, to the birth of which into the journalistic world we called attention in our issue of June 29th, takes for its province the [illegible] of "those [illegible] those indications of moving opinion, those suggestions of practical importance which deserve the attention of medical men [illegible] How well it fulfils this function will be gathered by a glance at the first half-yearly volume (January to June, 1912) now before us. It is not by any means a mere collection of abstracts: it contains valuable original articles, reviews, and excellent digests of recent knowledge on special subjects. The [illegible] practitioner will find it a most useful help in his [illegible]

An [illegible] On the St. Petersburg correspondent of the *Moscow Gazette* had learnt "from absolutely reliable sources" that the Czar's son is suffering from "[illegible]" It is no wonder that the little patient is said to be in a bad way.

The [illegible] in announcing that a patient had gone to hospital for operation, stated that "his [illegible]

[illegible] had followed Iago's advice to Roderigo and put money in his purse. Or did he expect that evacuation of what Rabelais calls the *pecuniaire* would be performed? If so, he [illegible] been agreeably surprised that his "nuance" remained with him throughout the ordeal.

Even [illegible] from the unseen by the spiritualistic admirers of that enterprising journalist, though to the [illegible] more amusing than edifying. Possibly, however, the example of Mr. Stead, who, it may be remembered, induced Mr. Gladstone to give his views of Mr. Lloyd George's budget, has stimulated a greater shade to give his impressions of present-day medical politics. The following letter, which is entitled "Sir Thomas Browne at the Representative Meeting," has been forwarded to us [illegible]

[illegible] understanding without examination and assenting unto [illegible] their nature and [illegible] no persuasion. Words in the mouth of a [illegible] turdy doubt [illegible] which would [illegible] be sold in [illegible] er. It is a [illegible] mpass the [illegible] [illegible] unded by a [illegible] will be engaged [illegible] [illegible] nevertheless certain [illegible] His [illegible] of his Art will [illegible] his Science will [illegible] His [illegible] secretary will receive no remuneration and his increased correspondence no corresponding consolation; and in the keeping of books there is no end.

These [illegible] have been delivered in [illegible]

[illegible] worthy recom[illegible]

Your [illegible] servant,

The autho[illegible] earth, thou[illegible] seem to show that he still[illegible]

British Medical Journal.

SATURDAY, NOVEMBER 30TH, 1912.

THE LATEST PROPOSALS OF THE GOVERNMENT.

THE attention of every member of the profession is called to the special notice issued to the profession by the State Sickness Insurance Committee of the British Medical Association this week, and published on the first page of the SUPPLEMENT.

The revised and final proposals of the Government with regard to medical benefit will be issued next week, and will be published in the issue of the JOURNAL bearing date December 7th. It is of the utmost importance that no arrangements, provisional or other, should be entered into with Insurance Committees or with any other bodies by local Medical Committees or Divisions of the Association, or by individual members of the profession, before there has been time and opportunity to consider the terms and conditions embodied in the new documents to be issued next week, and to decide whether or not the terms and conditions shall be accepted.

Local Insurance Committees in some parts of the country are anxious to set on foot arrangements for bringing medical benefit into force. The profession must everywhere reply that no discussion, even of a preliminary nature, can be entered on before the new position has been adequately considered by all members of the profession throughout the country.

The Divisions of the Association in the United Kingdom will hold meetings at the earliest convenient date. At these meetings every member of the Association will be called upon to vote whether he will or will not accept the terms now proposed. Members of the profession who are not members of the Association will be invited to attend these meetings and to express their opinion. The votes of all present and voting will be recorded in two classes—those of members of the Association and non-members respectively—and the combined record of all votes of members of the Association for and against acceptance will be decisive, the votes given by non-members of the Association being recorded for information.

On the day following the Special Representative Meeting last week a letter was sent to the Chancellor of the Exchequer transmitting the resolution adopted by the Representative Meeting on November 19th directing that a copy of the resolution expressing the opinion that the Regulations issued by the Insurance Commissioners and the latest proposals of the Chancellor of the Exchequer were unworkable and derogatory to the profession, and that as a consequence the medical profession declined to undertake service under the Act and Regulations as at present constituted. The letter further intimated that the Representative Body had chosen five special representatives to have an interview with him if he so desired. The Chancellor of the [illegible] tives to meet him, [illegible] on Monday morning. Mr. Lloyd George was accompanied by the Insurance Commissioners and certain officers of the Commission, and all the representatives of the Association were present—namely, the Chairman of Council (Dr. J. A. Macdonald), the Chairman of Representative Meetings (Mr. Verrall), and the Deputy Chairman of Representative Meetings (Mr. Turner), Dr. R. M. Beaton, and Dr. T. A. Helme, together with the Medical Secretary. In the afternoon the conference was resumed between the representatives of the Association and the medical members of the Insurance Commissions, and on the following evening the five representatives had a final interview with Mr. Lloyd George. A memorandum on the interview, embodying the views of the Chancellor of the Exchequer, was submitted to the meeting of the State Sickness Insurance Committee on Thursday, November 28th, and a special meeting of the Council of the Association has been summoned for Wednesday next, December 4th, to consider the memorandum and the observations of the State Sickness Insurance Committee thereon.

The Council in transmitting the documents to the Divisions will accompany them with a report on the situation.

THE HYGIENE OF THE BRAIN WORKER.

BRAIN workers, like those whose sphere of labour is more mechanical, suffer from what may be called in a special sense professional diseases. These depend partly on the nature of the work, partly on the conditions under which it has to be done. The life both of the scientific and the literary worker is one that places great strain on the nervous centres. The brain, like the muscles, is liable to fatigue when used too intensely or too long. This fatigue is the result of a process which brings about changes in the constitution of the blood. These necessarily react on the circulatory apparatus, causing more or less disorder in its action. This disorder is re-echoed throughout the system; the stomach, the liver, and other organs suffer to some extent, each after its kind. In a word, fatigue of the brain entails fatigue of the body generally. Even the muscles lose something of their vigour, and diminution takes place in the resistance of the body to harmful influences, such as heat, cold, and wet, and to the inroads of the microbes which, like Satan, are constantly going about the world seeking whom they may devour. It has been proved experimentally that brain work causes actual waste of tissue, an amount of organic refuse being thrown out of the body which corresponds to the intensity of the mental activity. It has also been shown by the thermometer that the brain is heated by work; this, of course, means increased combustion. An old physician, Sanctorius, who spent a large portion of his existence in weighing himself in a balance, proved that the body loses weight after mental, as after physical, exercise. Hence the very conditions of intellectual work tend to upset the balance of power in the organic functions of the body which constitutes health. When depressing influences, such as poverty, anxiety, pain or ill health, are added to these conditions, the strain of the intellectual life is at its maximum.

Among the main causes of the strain of brain work is the want of sufficient sleep. Some workers find the still small hours of night the best for production. With them we are not here concerned; we have in view those unfortunates who have perforce to steal from the night many hours that should be given to sleep. Want of sleep will in time wear out the finest and strongest brain. All sorts of diseases—neurasthenia, melancholia, disordered nutrition, convulsive disorders—result from want of sleep. Bacon was right when he said that nights passed without sleep shorten

life. Of course, as in everything else, the widest differences may be observed between one person and another in regard to the amount of sleep required. We are speaking of regular work, not of special efforts, when even men who normally need many hours of sleep will, under the stimulus of some important task that has to be finished within a given time, do with only a small fraction of their ordinary allowance. Scott said he could not work with less than seven hours of complete unconsciousness. On the other hand, there is Littré, who, during the last years of his life, never gave more than five hours, and often less, to sleep. As the story points a useful moral, it may be told in his own words. He had just begun his great dictionary when, at the age of 60, he had a serious attack of bronchitis. He recovered, but the illness led him to consider the situation in regard to the gigantic task he had undertaken. Assuming that he might reasonably expect to live till 70, he calculated that to finish his work in time he would have to work thirteen hours a day. He says: "My arrangement extended over the twenty-four hours of the day, of which it was essential that the least possible amount should be given to the current exigencies of existence. . . . I rose at eight o'clock in the morning—very late, it may be said, for a man pressed for time. Wait. While my bedroom, which was also my study, was being done, I went downstairs, taking some work with me. In this way, among other things, I wrote the preface to my dictionary. The Chancellor d'Aguesseau had taught me not to despise the moments in which there seemed to be nothing to do. His unpunctual wife always kept him waiting for dinner, and he presented her with a book, saying, 'Here is the product of the minutes passed in waiting for dinner.' At nine I went upstairs, and up to luncheon time corrected the proofs which had come in the interval. At one o'clock I was back at my desk, and there till three in the afternoon I did my work for the *Journal des Savants* which had elected me in 1855, and to which I made it a point to send my contribution regularly. From three to six I worked at the dictionary. At six o'clock I went down to dinner, which was always ready, for my wife was not like Madame d'Aguesseau. For this one hour sufficed. Getting back to my room about seven, I again took the dictionary in hand and did not leave it again. A first 'shift' carried me to midnight, when my family left me. A second took me to three in the morning. Usually my daily task was finished; if it was not, I worked on; and more than once, during the long days, I have put out my lamp and continued to work by the light of the rising sun. But do not let us make a rule of the exception. Most frequently three o'clock was the time at which I left pen and paper and put all in order, not for the next day, for it had already come, but for the next task. My bed was near at hand, almost touching my desk, and in a few minutes I was in it. Habit and regularity had extinguished all excitement of work. I went to sleep as easily as a man who had nothing to do, and it was thus that I got up at eight."

It may well be asked if Littré could have accomplished his task if he had suffered from insomnia. And how many intellectual workers could stop the activity of their brain as one stops a machine, and at once go to sleep? Napoleon could do this in the active period of his life, and Gladstone had the same invaluable power; it is on record that after he delivered his memorable speech in introducing the first Home Rule Bill he at once went home and slept peacefully while the debate raged fiercely in the House. In the case of Littré, however, it should be added that the want of exercise finally produced stiffening of the joints to an extent that towards the end made him almost incapable of movement. Apart from meals, his only recreation was change of work. But Nature is not thus to be cheated of her rights. Southey, too, thought to do without rest, passing from history to poetry and from poetry to the writing of review articles, and the end was that he sank into a state of imbecility, from which he was released only by death.

Of the manifold digestive troubles to which the brain worker is subject, little need be said. They are not in any sense peculiar to him. But they are grievous hindrances to production. As the poet says:

> Who'd pique himself on intellect whose use
> Depends so much upon the gastric juice?

Carlyle's sufferings from "bile" are writ large through many volumes of reminiscences and correspondence. Darwin, whose digestion was wrecked by years of seasickness, wrought a mighty revolution in scientific thought notwithstanding his feeble health, by carefully husbanding his strength and regularly using the few hours of each day he could work. Dryden prepared himself for the visitation of the divine afflatus by physic and "blooding." Byron, too, found a source of inspiration in Epsom salts, which he says acted on him like champagne. There can be no doubt that the liver, which was regarded by the ancients as the seat of the passions, is readily disturbed by mental emotions. Anxiety as to the fate of a book, an article, or a paper, or as to the result of an experiment, may not only disorder the function of the liver; worry may even indirectly cause organic disease. For this reason, among others, brain workers will do well to suppress feelings of jealousy and keep their temper under control. As Sir Andrew Clark used to say, only a very strong man can afford to be angry. Of that bugbear of modern life, neurasthenia—which our rude forefathers called the "vapours" and the "spleen"—it may be said that, like charity, it covers a multitude of sins—of commission on the part of patients and of ignorance on the part of the doctors. It may be the result of overwork, as of excesses in less creditable directions; and it reveals itself in a feeling of general unfitness for the struggle of life, sometimes accompanied by pain, especially a sensation of compression of the head, either on the top or all over, which the French picturesquely call the "neurasthenic helmet"—*casque neurasthénique*. A particularly unpleasant feeling is one as of an iron hand gripping the back of the brain. If this occurs habitually, it must be taken as a sign that the stress is near the point of what engineers call "breaking strain." Among other symptoms are pains in the back and elsewhere, dilatation of the stomach and utter disorder of the digestion, giddiness, disturbance of vision, hearing, and taste, over-sensitiveness of the skin, inability to walk any distance or to make an effort, and other nervous troubles which add to the patient's sufferings.[1] The very thought of work is torture, and the victim after a time falls into a state of melancholia.

"He jests at scars that never felt a wound," and it is easy for the lucky people who have "no nerves" to dismiss the sufferings of the neurasthenic as imaginary. It should be clearly understood that, whatever neurasthenia may be, it is a real disease. It assumes many different forms, but it is not a mere "ragbag of heterogeneous sets of symptoms," to use

[1] Gelineau, *Penseurs et Savants—Leur Maladies; Leur Hygiène*. Paris, 1901.

the happy phrase of Sir Clifford Allbutt, whose article in the *System of Medicine* (vol. viii, 1910) is a lucid exposition of an obscure subject. Dr. G. M. Gould, of Philadelphia, attributes most of the ills that flesh is heir to to "eye-strain"—that is, to use of defective eyes without correcting glasses. To this cause he traces the ill-health of Darwin, Huxley, Balzac, and, generally speaking, all invalids of literary or scientific distinction of the past hundred years. There is no doubt a substratum of truth in his theory, but he has built on it a vast edifice of questionable dogma.

Of the evils of alcohol and of the still more baleful enchantments of what Théophile Gautier called "artificial paradises" we need not dwell. Intellectual workers, because of the nervous exhaustion caused by their work, are, perhaps, more particularly exposed to become the bond slaves of such Circes. The consequences are known to all, and the only advice that can be given is not to trust to one's strength of mind, but to flee from temptation. It is a case in which the text, "He that loveth danger shall perish in it" is especially applicable.

As regards eating, the best counsel is that a man should be guided by his own experience of what is good and bad for him. Herbert Spencer burnt everything he had written while he avoided the flesh-pots, but many thrive on the Pythagorean diet. There is no special brain food. "Fletcherism"—which may be said to be the application to eating of the words of the poet, "The mills of God grind slowly, but they grind exceeding small"—has an element of good in it, for there are few of us who, like Gladstone, give thirty-two bites to each morsel; but if faithfully practised it seems to be, in a new sense, living to eat. Of smoking, we need only say that it is hurtful in excess, but exactly the same thing may be said of bread. What is excess? That each one must determine for himself.

In the matter of exercise, too, many men cannot do without a considerable amount; others keep "fit" with little or none. There is this to be said about exercise in relation to the brain worker—the time for it must be judiciously chosen. Like all effort, it entails expenditure of nerve force. There are few men like Lord Courtney, of whom Delane said that he required a walk of several miles to bring him down to the intellectual level at which he could educate the mind of the ordinary man. The brain worker should carefully husband his nervous energies.

A word of warning as to intermittent excesses in the way of exercise may not be out of place. Men who lead a sedentary life rush off to the country for the week-end and play golf or tennis, or take long walks all the time, returning to town on Monday feeling the reverse of "fit." They have, in fact, fatigued their muscles with work to which habitual inaction has made them unequal, and the result is that they are poisoned by an excess of waste products, engendered by the unwonted exertion. These toxic matters find their way into the blood and cause the general weariness which is the characteristic symptom of this kind of poisoning. It is these that cause what is known as "gymnastic fever," a sensation which is familiar to unseasoned Alpine climbers, and which can be shown by the thermometer to be a real thing, not a fancy. Till an antitoxin is discovered which shall neutralize the toxin of fatigue, we would urge all brain workers not to be too strenuous in their employment of the week-end holiday. It is an excellent thing in itself, but if abused is likely to lead to worse evils than those it is intended to counteract.

SPADEWORK IN EUGENICS.

Those who are desirous of arriving at an estimate of the present state of knowledge in all that concerns the science of genetics, the nature of the experimental work now being done in its various departments, the paramount views in regard to competing hypotheses, and the prospects, immediate or remote, of important practical applications, cannot do better than study *Heredity and Eugenics*,[1] a volume embodying the substance of a course of lectures delivered by the five authors in 1911, at the University of Chicago. The general aspect of the subject is dealt with in the opening chapter, which includes a brief account of the successive attempts at explanation of the fact of organic evolution, from Goethe and St. Hilaire to Mendel, de Vries, and Galton. In the section of this chapter in which he deals with heredity, Professor Coulter gives a lucid explanation of the Mendelian conception, of the extraordinarily illuminating and stimulating effect of which upon many lines of research the present volume bears abundant evidence throughout. In the second chapter the same writer deals from the cytological standpoint with the physical basis of heredity, favouring the current view which regards the chromatin as the carrier of transmissible characters. Here it is pointed out how aptly the observed facts of heredity, as formulated in Mendel's law, coincide with the typical phenomena of sexual fusion and fertilization, the essential feature of Mendelianism being (to quote Professor East, in a later chapter) "the segregation of potential characters in the gamete in a state of apparent purity, and their recombination by the law of chance through random mating." The advantage of sexual reproduction over parthenogenesis as a factor of evolutionary progress consists mainly in the new combinations which by the former method are constantly being brought about.

Professor Castle, in a chapter dealing with the method of evolution, champions Darwin's view of the paramountcy of selection as against the more extreme advocates of mutation. It is a mistake to suppose that Darwin overlooked the possibility of the sudden origin of new races. And experiment shows that new characters, at first feebly manifested, can be augmented and established as racial traits by artificial selection. Thus, from the descendants of a guinea-pig possessing an imperfectly developed fourth toe Professor Castle succeeded in producing a high percentage of well-developed polydactylous individuals. Mutation is to be interpreted as the sudden loss or profound modification of a given unit character. Its occurrence and importance are undoubted; on the other hand, the cumulative effect of slight, almost imperceptible modifications, affording a basis for the action of selection, is by no means negligible or even subordinate. A chapter of special interest to medical readers is that devoted to heredity and sex. In this the inadequacy of the evidence for the nutritional determination of sex is exposed. The author upon the whole favours the hypothesis that sex has its beginning in gametic differentiation, and is finally determined in the fertilized egg by the nature of the uniting gametes. Granted the truth of this theory, he sees little hope that the breeder will ever be able to control sex, except in the case of species where parthenogenesis is an alternative

[1] *Heredity and Eugenics*: A Course of Lectures summarizing Recent Advances in Knowledge in Variation, Heredity, and Evolution, and its Relation to Plant, Animal, and Human Improvement and Welfare. By William Ernest Castle, John Merle Coulter, Charles Benedict Davenport, Edward Murray East, William Lawrence Tower. Chicago: The University of Chicago Press; London: The Cambridge University Press. 1912. (Med. 8vo, pp. 319; figs. 98. 10s. net.)

method of reproduction. "In the higher animals male and female zygotes should for ever continue to be produced in approximate equality, and consistent inequality of male and female births could only result from greater mortality on the part of one sort of zygote than of the other."

In an interesting discussion of inheritance in the higher plants, Professor East shows how various departures from the normal ratio can be explained conformably with Mendel's law. One of the simplest examples is that of the dihybrid ratio, which obtains when the parents differ by two character pairs. This is the algebraic product of two (3 + 1) ratios. Variations from the normal ratio due to this cause afford instances of "latency of separation," and such aberrant or seemingly aberrant ratios occur where the full inheritance of a given character depends upon the interaction of two or more distinct and separable gametic factors. Another form of latency, called that of hypostasis, is mere invisibility of an inherited character, which is obscured by another (epistatic) character. The same writer calls attention to the interesting fact that, in addition to the uniting of the hereditary factors involved, the fusion of two gametes into a zygote, which constitutes an act of fertilization, effects a stimulation of the process of cell division resulting in growth and development. This stimulus is generally far more conspicuous in the case of a hybrid or heterozygote than in a pure bred (homozygous) individual. While it is in general true that the cross-breeding of species makes for vigour, it is found that species vary in their affinity to cross with other species. "With perfect ease of crossing the stimulus is roughly a function either of the number or of the kind of character pairs for which the individual is heterozygous."

Professor Tower gives details of some experiments conducted by Castle with a view to settling the question whether, and how far, somatic influences affect the germ plasm. These took the form of transplantation of the ovaries from guinea-pigs to others of a different strain. The experimenter's conclusion is that the egg-cell remains unaffected. Professor Castle's own experiments with beetles, which were subjected to abnormal conditions of temperature and humidity, gave similarly negative results. On the other hand, by a combination of external stimuli with selective accumulation, permanent modifications not merely of the colour but of the pattern-distribution in chrysomelid beeties were obtained. The present position and prospects of social eugenics are very briefly reviewed by Mr. Davenport, but he provides much interesting information with regard to the inheritance of sex-limited and other traits, and some striking examples of the significance of the quality of the human germ-plasm, and of its unlimited potentialities for good or evil.

PROGRESSIVE LENTICULAR DEGENERATION.

UNDER this title Dr. S. A. Kinnier Wilson describes in the current number of *Brain*[1] a group of cases which present such definite features as to justify the addition of one more to the list of known diseases. The paper is based upon the records of 12 cases (with 10 autopsies), of which 4 (with 3 autopsies) were studied personally by the author. In all, 14 cases are known to be described in medical literature.

[1] Vol. xxxiv, Part IV.

The chief features of the disease are tremors of the limbs, and later of the head and trunk, with stiffness and weakness of the muscles generally, causing difficulty in speaking and swallowing: the patient is emotional. The disease progresses with pyrexia, wasting, and muscular contractures, and ends fatally. After death the liver is found to be cirrhotic, and the lenticular nucleus of the brain is softened or destroyed on each side. It is a disease of the young, affecting both sexes, and runs in families, but is not known to be passed from parent to child.

The first cases, in a brother and sister, were described by Sir William Gowers in 1888, under the title "tetanoid chorea associated with cirrhosis of the liver." In 1890 Homén of Helsingfors and Dr. J. A. Ormerod in this country published cases in which the lesions in the lenticular nuclei were recognized and carefully examined.

The illness comes on insidiously in young people who have been in good health. In one case jaundice occurred four years before the hand began to shake, but in most the liver affection is unsuspected until it is found after death. The first striking feature is the motor disturbance. The tremor may be noted early in the hand, probably because the writing deteriorates: it is increased by attention—as, for instance, when trying to touch the nose with the finger. Involuntary tonic spasms follow, which easily become clonic. Stiffness affects all the muscles in course of time, except those of the eye: it causes the face and mouth to be immobile, and interferes with speech, mastication, and swallowing. The muscles are not paralysed, but, owing to their stiffness and weakness and to the contractures which develop, the patient is as badly off as if they were. The skin and tendon reflexes are unaltered, though the spastic muscles may make it hard to obtain them. The patients tend to become weak-minded, especially to laugh very easily, but when allowance is made for the interference with speech they can hardly be called demented.

In three of the more acute cases the illness lasted four months, six months, and thirteen months respectively. The temperature was high and irregular and emaciation rapid, the whole aspect of the patient suggesting an infective state. In nine chronic cases nutrition was maintained for a year or two, the disease proving fatal in from two and a half to seven years.

It is clear that these symptoms cannot be classed under any known disease. They differ from those of disseminated sclerosis in that there is no nystagmus or optic atrophy and the course of the disease is shorter. The motor tracts are not involved. The resemblance to bulbar paralysis is dispelled by a careful examination of the tongue and palate, which in progressive lenticular degeneration are stiff but not actually paralysed. In many respects there is a likeness to paralysis agitans, which, however, occurs at a later period of life and has a longer course.

Comparatively little is known of the part played by the masses of nervous tissue known as the basal ganglia. The lenticular nucleus is part of the corpus striatum. It lies between the cerebrum and the pons Varolii, in front of the optic thalamus and by the side of the internal capsule. Any gross lesion of this part could not fail to involve the internal capsule and cause the pyramidal tracts of the cord to degenerate; in this disease, however, the grey matter of the nucleus appears to be picked out by some selective agent, the pyramidal tracts being unaffected. The lesion varies from discoloration and sponginess to complete excavation. Microscopically, there is overgrowth of the glial tissue followed by degeneration. The cirrhosis of the liver is of the multilobular type,

and is found advanced in degree. The spleen is enlarged.

It may be supposed that some poisonous substance is present which has a special action on the lenticular nucleus, but whether it arises from the cirrhosed liver or is a common cause of both lesions can only be conjectured. There are no grounds for believing that syphilis is a cause. The author thinks that the disease is not microbial, but this opinion cannot be said to be established. Dr. Wilson is to be congratulated upon his exhaustive and convincing paper. If we have a regret, it is that the title leaves out all reference to the cirrhosis of the liver, which, although it commonly gives rise to no symptoms, appears to be an essential part of the disease.

THE DOMINION MEDICAL COUNCIL.

THE meeting for the organization of the Medical Council of Canada (Dominion Medical Council) was held in Ottawa on November 7th and two following days. Dr. Roche, Minister of the Interior (until recently Secretary of State) presided. Dr. T. G. Roddick was unanimously elected president; Dr. R. S. Thornton of Deloraine, Manitoba, vice-president. Dr. R. W. Powell of Ottawa was appointed registrar, and will take official control in June next. A representative executive committee of five was also elected, the president and vice-president to be *ex officio* members. Much work was done in the three days, and the regulations will now be submitted to the Governor-in-Council. To allow time for the completion of the necessary formalities the Dominion Medical Council adjourned until June, when it is hoped that practically everything will be ready for examination and registration as provided for in the Act. Every delegate was present, making in all thirty-one, and much enthusiasm was shown

WORLD-PROGRESS IN LLUMINATION.

THE flattering unction can be laid to the patriotic soul that at least in one respect Britain leads the world. Only a few years ago illuminating engineering might have been described as the Cinderella of industrial sciences. At present, thanks in great measure to the impetus which has been given to the subject in this country where the hygienist has been brought definitely into association with the engineer, it is claiming world-wide attention, and Britannia's trident might well be exchanged for a torch. Mr. Leon Gaster, the Honorary Secretary of the Illuminating Engineering Society, had a cheering tale to unfold at a meeting of that body on November 19th, when he summarized his observations made during recent visits to the Continent and the United States. In France a Commission on hygienic aspects of illumination has been appointed by the Government, and already is doing useful work. In Belgium the question of promoting a Government commission on the subject of illumination is to be brought before the authorities. At the Congress for the Prevention of Industrial Accidents held at Milan last summer, the subject of adequate illumination as an industrial safeguard was thoroughly discussed, and since then it has excited considerable interest in the Continental press. Most noteworthy is the fact that an illuminating engineering society has just been formed in Germany directly under Government auspices. It has been modelled on the lines of the three year-old British Society, and has been taken under the wing of the *Reichsanstalt*, the Government establishment at Charlottenburg, corresponding to our own National Physical Laboratory. In the United States this autumn Mr. Gaster found that a great deal of attention was being paid to the problems of illumination, particularly in their hygienic aspect. The American Illuminating Engineering Society is issuing to the public a small primer setting out the fundamental rules of good lighting, irrespective of the particular illuminant in use. The possibilities of the subject have even caught the eye of the editors of New York dailies. America is the chosen home of what is called the "Great White Way" movement, which has gained some footing even in suburban London. Certain streets are flooded with brilliant light, and the effect is spectacular in the extreme, but a little leavening of science into the enterprise would reduce glare and add greatly to public comfort. One hint from America has been taken by the Home Office, for it is the intention of that Department to establish a Museum of Safety in this country similar to the one in New York, and it is hoped that illumination will receive its due share of attention. The Home Office has also promised that a Departmental Committee on illumination shall be appointed to inquire, especially as to industrial lighting; another instance of its activity is the competition it has promoted for new models of miners' lamps, partly with a view to preventing nystagmus. The idea has since been followed up in Germany. A number of the lamps which had been awarded prizes in the British competition, when the first place was taken by a German inventor, were on view at the meeting.

SIR WILLIAM GAIRDNER AND CRIMINAL HEREDITY.

MR. J. D. SHAW, editor of the *Tasmanian News*, has sent an interesting communication to the *Scotsman* (November 21st), in which he recalls a letter addressed to that newspaper by the late Sir William Gairdner on the "Criminal Stigmata Theory" (September 3rd, 1896). In it the great physician related how many years before he had occasion to send a young clergyman, one of the ablest and most open-minded men he had ever known, to Tasmania on account of his health. He went on to say: "I suggested to him, as a point on which he might keep his eyes and ears, and also his mind open, in a quiet way (for there were obvious reasons against obtrusive inquiries into family histories), whether the descendants of the criminal colony, which was unquestionably the original British stock inhabiting Tasmania (or Van Diemen's Land, as it used to be called even in my boyhood), had retained in any degree the criminal or other undesirable taint, at the time of my friend's visit, which was at least a whole generation nearer the original settlement than the present date. Of course, even at that time it was necessary to allow for a considerable dilution of the original penal colony with new and better elements; but it was also reasonable to suppose (on the *necessitarian atavistic* theory, as one might call it), that the traces or 'stigmata,' or whatever a modern criminal anthropologist might call them, of persistent 'degeneration,' and criminal tendencies might still be found among such a population. The information I received was, on the contrary, that the Tasmanians were remarkably free from all such apparent 'reversions' of inherited instincts; and that whether judged by their actual criminal record, or by the number and quality of the insane in their asylums, the race now inhabiting this oldest and probably worst of our penal settlements was as orderly, as flourishing, and well-to-do as in any other colony; and altogether bore most favourable comparison with any other portion of the British stock at home or abroad." Sir William Gairdner, continues Mr. Shaw, did not receive all the information from the young clergyman; but through the late Dr. Andrew Smart, of Edinburgh. Mr. Shaw himself, who had lived twelve years in Tasmania, was asked to furnish the necessary data. This he did, and Sir William Gairdner wrote that the replies were in accordance with his original information, and were based at least on very plausible statistics. Mr. Shaw then sent a batch of printed and other documents, and in acknowledging them, Sir William Gairdner wrote on March 15th, 1897: "I am very much obliged to you for

your documents, and for taking so much trouble to satisfy my curiosity on a matter of public importance, which must, however, wait upon a time of more leisure than at present, as I am in the last week of the medical winter session, with almost overwhelming work." In a subsequent letter Sir William expressed the hope that he would be able to write on heredity, but there appears to be no evidence that he fulfilled this intention. In another letter to Mr. Shaw, Sir William wrote: "I look upon the case of Tasmania as one of the most hopeful and animating barriers to oppose to that kind of *quasi*-scientific pessimism which tends to look upon all criminal and insane tendencies as an ineradicable taint, and thus to circumscribe the action of free will in the individual, and discourage reformatory and punitive measures alike on the part of the State." It is a pity that Sir William Gairdner's final conclusions on the evidence he had collected were never formulated; at any rate, as far as we know, they have never been published.

CERVICAL RIBS.

Although the symptoms referable to the presence of additional ribs in the cervical region in man are well and accurately described in modern textbooks on surgery, the causes leading up to the presence of these "abnormalities" in the human species have so far been by no means satisfactorily explained. Dr. Stapley,[1] in the *Proceedings of the Royal Society of Melbourne*, has considered the question in connexion with some of the mammals that have abandoned quadrupedal progression; and the comparative method of inquiry that he has adopted accentuates the importance of this method when investigating many of the disorders to which man is liable. His main contention is that "cervical ribs develop in the human neck because the lungs have migrated towards and encroached on, the neck;" the facts he makes use of in support of this argument, if not convincing, are well worthy of consideration. He points out that the ribs of fishes, in which the neck is absent, mainly subserve the purpose of protecting the viscera and of giving rigidity to the skeleton. Higher up in the animal scale—for example, in lizards, in which the neck development is still of a low grade, the cervical ribs are continuous with the body cavity and assist in the respiratory movements. In snakes cervical ribs are numerous, but their main purpose is to assist in locomotion. In mammals the thoracic ribs are principally respiratory in function, and any extension upwards of the rib development helps these respiratory movements. The costal process is absent from the seventh vertebra of most quadrupedal mammals who have any extensive neck movement: its presence would only tend to limit such movement. "The seventh neck bone of such animals has been submitted to extinction of its rib vestiges by the hostile attack of neck flexion upon a thoracic base that has been made firm by the lateral pressure of the weight of the body." Hence the value of crawling and quadrupedal games in infancy as tending to keep the child's neck and thoracic girdle as true as possible to the mammalian type. When free neck movement is essential for the general welfare of the individual or species, such movement is not compatible with the presence of cervical ribs which tend to stiffen the neck. It is found, as a fact, that no quadrupedal mammal normally has cervical ribs; they are only found in those mammals that have abandoned this method of progression, such as the three-toed sloth, the porpoise, and man. Owing to man's erect position the relatively heavy heart has tended to gravitate downwards in the thorax, whereas the lighter lungs have been "floated" upwards, and the longer and narrower is the chest the greater is this tendency. The great disproportion in the frequency of cervical ribs in men and women is possibly explained by this fact.

[1] *Proc. Roy. Soc. Victoria*, vol. xxv (new series), Pt. 1, August, 1912.

A SHORT WAY WITH NOSTRUM VENDORS.

It is stated that the United States Post Office Department has ordered the arrest of 175 manufacturers of "patent medicines" on the charge of using the United States mails to advertise "quack" remedies. The names of the persons concerned will not be made known until the warrants have been executed, but it is stated that the list includes a number of millionaires. The action of the Post Office is said to be due to the recent Federal investigation into the many spurious articles offered to the public, which, it is understood, will result in the introduction of legislation for the better control of the "patent medicine" business.

CARLYLE AND DOCTORS.

In Mrs. L. B. Walford's *Memories of Victorian London*, just published by Arnold, it is recorded that, rambling with a friend about Chelsea one day, she came upon Carlyle, who looked old and worn. They were told that he would not see a doctor, and that he declared he would as soon see somebody else, whose name also begins with a D. A friend related the following story: "Did you ever hear how he turned on a poor country practitioner down at my brother-in-law's place, where he had an attack which frightened everybody, for it was uncommonly like cholera, and cholera was about? My brother-in-law took it upon himself to send for the village doctor, a worthy old fellow with a long-established practice, and you may suppose Aesculapius was not a little flustered and flattered at being summoned to such an illustrious patient. With the utmost alacrity he made his way to the Hall, and was shown upstairs to the patient's bedroom, but there his self-complacency received a rude shock. My brother-in-law told me he did not know which way to look when a shaggy head uplifted itself from the pillows and peered over the bedclothes. 'Who's that?' He replied that it was the doctor, whom he had thought it right to send for. 'Doctor?' thundered Carlyle. 'I'm for none of your doctors. Of all the sons of Adam, men of medicine are the most unprofitable.' And the poor unprofitable man of medicine found it impossible to obtain a hearing," said our informant, shaking his head, "and had to retreat ruffled and terrified. The worst of it was that his visit so annoyed and roused the Sage, that it put fresh spirit into him, and he began at once to get better, all the time railing at doctors, and triumphantly pointing to his own case as proving his point against the faculty!" This for all we know may be true, but the Seer of Chelsea, as all the world knows, was a man of moods, and there is a letter of his to Syme which shows him in an altogether different frame of mind. He says there that whoever else is in the wrong way, the doctor with his mission of healing is in the right. We may recall, too, the letter by Dr. Yeats read to the members of the annual meeting at Bristol in 1894 who were present at an excursion to Tintern Abbey. It was addressed to a firm of Edinburgh publishers who had sent him a book published by them written by one who hid his identity under the pseudonym "Therapeutes":

Chelsea 25th Feby 1859.

Dear Sir I have received your book which you were kind enough to send me, and I beg to return you thanks for the same. It is a book (unlike many that come to me here) of a serious nature, the fruit of long study, meditation, inquiry, and evidently of perfect conviction on your part.

I believe, and have long believed, the essential idea it sets forth to be not only true, but of the very highest importance to mankind, namely, that the Physician must first of all be a priest (that is to say, a man of pious nobleness, devoted to the service of the Highest, and prepared to endure and endeavour for that same, taking no counsel of flesh, and blood, as the theory of Priests is),—first of all, a real priest, and than that the whole world should take supreme counsel of him, as it does of its real or imaginary Priests or Pontiffs this long while back, and follow said counsel as the actual will of God,—which it would be were the Physician what I say.

It is curious to remark that Heilig in our old Teutonic speech is both Holy and also Healthy: that the words Holy and Healthy, as our antique fathers understood them, are one and the same. A thousand times has that etymology risen sorrowfully upon me, in looking at the present distracted position of affairs, which is horrible to think of, if we look earnestly into it, and which cannot well be spoken of at all. We, sure enough, have completely contrived to divorce holiness (as we call it) from health, and have been reaping the fruits very plentifully during these fifteen hundred years.

The notion of bringing our present distracted anomaly of a Physician into union with our ditto ditto of a Priest, and making them identical, is, of course, extremely chimerical: nor can one easily say what ought to be the first step towards bringing each of them back from his anomalous imaginary condition and nearer to veracity, and the possibility of coalescing. But I am very glad to see the idea started, in any form, under any vesture, and heartily wish you success in bringing it home to men's minds.

I remain, yours truly,

T. CARLYLE.

To Therapeutes,
Messrs. Sutherland and Knox,
Booksellers, Edinburgh.

It should not be forgotten that Carlyle's own brother was a doctor, and that in his correspondence he repeatedly acknowledges the kindness of Dr. Peyton Blakiston and other doctors to his wife and himself.

POISONING BY ARSENIC IN CARPETS.

A REPORT by Professor Kuttner[1] tends to show that, though the use of arsenic as a carpet dye is illegal in Germany, poisoning from this source is not rare. The victims complained of chronic diarrhoea, which was intractable at home but speedily disappeared on change of residence. When the patients returned home the diarrhoea recurred in spite of every dietetic precaution. The possibility that the diarrhoea was of nervous origin was at first entertained, for there is such a form of diarrhoea which can be cured by removing the patient from home surroundings. But the patients in question exhibited no signs of neurasthenia or hysteria. One of them, a man aged 32, complained of abdominal pain and the passage every day of six to ten watery motions. These contained unaltered bile pigments, muscle fibres, starch, fat, and mucus. A blood count showed secondary anaemia. After treatment in hospital for sixteen days he was discharged in perfect health, but a relapse occurred within a few days of his return home. Another stay of ten days in hospital was followed by recovery, succeeded again by a relapse on the patient's return home. Arsenic was sought for, and found in the bedroom carpet. A little later a second patient developed chronic diarrhoea, which ceased only when he changed his quarters. An analysis of his bedroom carpet showed large quantities of arsenic. His wife suffered from headaches and lassitude, but not from intestinal symptoms. A third patient developed severe diarrhoea at her first confinement, and for the following year and a half suffered from chronic diarrhoea, which reduced her to a state of profound emaciation and anaemia. Here, again, relief was obtained only by change of residence. Arsenic was found in the urine and also in her bedroom carpet. While the patient had slept with her windows open she had been quite well, and the diarrhoea occurred when, during the puerperium, they were kept shut. It is probable, therefore, that the arsenic reached the system by inhalation. In two women, aged 52 and 56 years respectively, who suffered from anorexia, lassitude, and a tendency to diarrhoea, the blood counts are said to have been characteristic of pernicious anaemia. The bedroom carpets contained arsenic, as did also the urine in one case. Regrettably enough, the urine was examined for arsenic in only two of these five cases. The absence of arsenic from the urine does not exclude arsenical poisoning; nor, on the other hand, does the demonstration of arsenic in a bedroom carpet establish a connexion between it and obscure toxic symptoms. But there is little doubt as to the connexion in the cases recorded, for the reasons given above. As arsenic is also employed in the manufacture of cheap linoleum, its presence in bedrooms must be common, and it is consequently advisable to suspect its influence in all cases of obscure anaemia and intestinal catarrh.

[1] *Berl. klin. Wchn.*, November 4th, 1912.

STERILIZATION OF THE SKIN WITH IODINE.

IODINE has never gone out of date as an antiseptic, and practical surgeons have taken to it and proclaimed its value freely during the past five years. Grossich wrote an important communication on the subject in the *Zentralblatt für Chirurgie* in 1908; Dr. Maylard reminded us in October, 1910, that Mr. Bryant employed iodine at the beginning of the Listerian age, and added a letter from that distinguished surgeon, including a statement that he had used it already in 1850, when dresser to Aston Key, on the occasion of an epidemic of hospital gangrene in Guy's Hospital, with results relatively favourable when compared with other therapeutic agents. In August, 1909, we published an important paper by Mr. Lionel Stretton on the sterilization of the skin of operation areas. He strongly advocated iodine on the strength of operative experience, which he tabulated. Dr. J. Wesley Bovée has published a monograph which deserves to be ranked with Mr. Leedham-Green's important communication read before the Surgical Section of the Birmingham meeting last year.[1] Dr. Bovée[2] states that it was recently employed in the Philippines for a Caesarean section. Dr. Bovée now employs a solution of iodine crystals and absolute alcohol. Bovée and Neate found that, as far as could be ascertained by making cultures of epidermic scrapings, weak solutions of iodine, even to 5 per cent. of the official (U.S.) tincture (which is about two and a half times as strong as the *B.P.* tincture), thoroughly sterilize the surface of the skin within from two to fifteen minutes after application. The cultures showed no colonies after incubation for three days. Pubic hair placed in iodine solutions of 5, 10, 20, 30, and 40 per cent. strength of the official U.S. tincture, respectively, for two, three, five, eight, ten, twelve, and fifteen minutes respectively, all showed growths after three days' incubation. When, however, 50 per cent. dilutions were employed, no such growths appeared. Control scrapings of the skin taken from the abdomen above the umbilicus over periods varying from two minutes to as many hours showed, when 40 per cent. dilutions were used, negative results as to colonies. Cultures from hair and skin that had been subjected to 50 per cent. tincture of iodine never produced growths. When Dr. Bovée's researches were discussed before a meeting of the American Gynaecological Society, Dr. Baldy declared that he had a profound distrust for anything which would relegate to the shades soap, water, and the nail-brush. Dr. Grossich has recently collected and revised his earlier published memoirs, embodying them in a monograph which deserves consideration.[3] He has considered all criticisms on his method in an appendix occupying nearly fifty pages in his recent publication. He refers to Major F. J. W. Porter, who follows out his method in its entirety, and to Mr. Lionel Stretton, who is entirely in accord with him as to the value of iodine, although he differs as to matters of detail such as the septicity and disinfection of hairs, a problem which Bovée has endeavoured to solve by the experiments to which we have just referred.

DISCOVERY OF ANCIENT HUMAN REMAINS.

For some time past it has been an open secret that a discovery of the very highest importance, as regards the early history of the human race, had been made in England. There was also a general agreement that no mention of the event should be made in public until those

[1] BRITISH MEDICAL JOURNAL, October 28th, 1911.
[2] *Trans. Amer. Obst. Soc.*, vol. xxxvi, for the year 1911, p. 111.
[3] [illegible] *Jodtinktur*. Berlin and Vienna: Urban and Schwartzenberg. 1911.

who are investigating the geological and anatomical aspects of the discovery had finished their labours and laid them in a completed form before one of the learned societies—in this case the Geological Society. By some means news of this find reached the daily press, and the accounts published are largely imaginary. It may be stated, however, that there cannot be the slightest doubt as regards the authenticity and importance of the discovery, and that a new form or species of primitive man has been found side by side with the remains of animals known to occur only at a late Pliocene or early Pleistocene date. The remains found indicate a more primitive and much older type of man than has yet been found in England. For further details we must wait until the experts have published an account of their investigations. We believe the human remains thus discovered are to find a resting-place in the Natural History Museum at South Kensington.

THE LISTER MEMORIAL.

One of the most liberal donations to the Lister Memorial Fund, to which attention was called in the Journal of November 23rd, is that of the Hon. W. F. D. Smith, who gave £500. Lord Rosebery has since given £50, and the total amount so far collected is about £3,650. It is particularly gratifying that among the contributors are so many who are not members of the medical profession. In addition to the names mentioned last week, we see in the list those of Sir James Whitehead (100 guineas), Lord Allerton (5 guineas), Mr. Waldorf Astor, M.P. (20 guineas), Lord Avebury (5 guineas), Mrs. Ayrton (5 guineas), Sir J. Wolfe Barry, (10 guineas), Mr. H. P. Boulnois (1 guinea), Mr. James Boyton, M.P. (20 guineas), Mr. R. H. Burne (2 guineas), Sir Arthur Church (1 guinea), Mr. C. Heath Clark (5 guineas), Mr. Henry Clarke, J.P. (5 guineas), Mr. F. C. Clayton (3 guineas), Sir John Duncan, J.P. (1 guinea), Mr. W. Fleming (1 guinea), Mr. Percy Freeman (1 guinea), Mr. Frederick M. Fry, M.V.O. (20 guineas), Mr. D. M. Stevenson, Lord Provost of Glasgow (10 guineas), Mr. F. DuCane Goodman (£10), Mr. Ludovic Goetz (10 guineas), Sir G. Taubman Goldie, K.C.M.G. (5 guineas), Lord Halsbury (10 guineas), Lord George Hamilton, G.C.S.I. (£5), Mr. Cornelius Hanbury (25 guineas), Mr. Cecil Harmsworth, M.P. (5 guineas), Mr. Alderman C. A. Hanson (10 guineas), Sir John Holder, Bart. (5 guineas), Sir A. B. Kempe (5 guineas), Sir John Larmor, M.P. (5 guineas), Mr. J. H. Lloyd (5 guineas), the Dowager Lady Loch (1 guinea), Sir Oliver Lodge (2 guineas), Sir Norman Lockyer (2 guineas), Professor R. Meldola (3 guineas), Mr. J. H. Morgan, C.V.O. (5 guineas), Mr. Henry Myers (2 guineas), Sir Andrew Noble (£10), the Hon. Sir Charles Parsons, K.C.B. (£10), Mr. J. Luard Pattisson, C.B. (5 guineas), Sir Robert Perks, Bart. (5 guineas), Mr. Francis Reckitt, J.P. (5 guineas), Mr. Leopold de Rothschild (10 guineas), Mr. Joseph Rowntree (5 guineas), Sir William Tilden (1 guinea), the Earl of Cromer (5 guineas), and Mr. Richard Winch (2 guineas). Among the medical subscribers are Sir Thomas Barlow, Sir Douglas Powell, Sir Hawtrey Benson, Sir William Turner, Professor Gilbert Barling, Sir Francis Champneys, Sir Frederic Eve, Sir Rickman J. Godlee, Sir Alfred Pearce Gould, Sir Donald MacAlister, Sir Trevor Lawrence, Dr. J. B. Hurry, Mr. Clement Lucas, Mr. A. E. Maylard, Sir Henry Morris, Professor F. W. Mott, Mr. Edmund Owen, Mr. Herbert W. Page, Professor F. T. Paul, Sir George Hare Philipson, Sir James Porter, Mr. D'Arcy Power, Professor R. Saundby, Professor Schäfer, Professor W. Thorburn, Sir Frederick Treves, Sir John Tweedy, and Sir Hermann Weber. We take this opportunity of reminding readers that donations may be sent to the Treasurers of the Lister Memorial Fund, Royal Society, Burlington House, W.

Mr. Austen Chamberlain has, it is stated, received £48,000 towards the £100,000 which he is raising for the London School of Tropical Medicine.

The new Pharmacology Laboratories at University College, London, will be opened by Sir Thomas Barlow, K.C.V.O., on Wednesday, December 4th. Lord Reay, Chairman of the College Committee, will take the chair at 5 p.m.

Medical Notes in Parliament.

National Insurance Scheme.

Medical Benefit.

Mr. Peto asked the Chancellor of the Exchequer, on November 26th, whether, in view of the resolution passed on November 19th by the Representatives of the Divisions of the British Medical Association, that the provisions of the National Insurance Act were unworkable and derogatory to the medical profession, and that the medical profession declined to take service under the Act and Regulations as at present constituted, he proposed to recast the Regulations for providing medical benefit in such a manner as should not be injurious to medical science and practice in this country; and, in any case, how he proposed to provide the medical benefit offered under the Act to insured contributors. The Chancellor of the Exchequer replied that he was requested last week by the British Medical Association to receive a deputation in regard to certain points in the Regulations relating to medical benefit, and he acceded to their suggestion. He was at present in communication with a committee appointed by the Association for that purpose. In the circumstances he considered that no statement could usefully be made.

State Medical Service.

Mr. Godfrey Locker-Lampson asked the Prime Minister, on November 25th, whether any estimate had been made of how long it would take to establish a State medical service; and whether, in the event of the medical profession refusing the terms of the Government, such a service could be formed in time to supply medical benefit from January 15th next. Mr. Masterman said that careful consideration had been given to the question of the best arrangements to make under the proviso to Section 15 of the Insurance Act, should it be found that the practitioners included in any list were not such as to secure an adequate medical service in any area; but he did not think it advisable at the present time to indicate what arrangements might have to be adopted in the circumstances suggested in the last paragraph of the question, which, on his present information, seemed to rest on a purely hypothetical assumption.

Mr. Harry Lawson inquired if any steps had actually been taken. Mr. Masterman replied that steps had been taken to see whether the doctors were going to serve in any district under the panel system.

Mr. John Ward asked if the matter could not be decided at once by handing over the money to the approved societies. Mr. Masterman replied that that was a possible alternative. But the first step was to carry out the system laid down in the Act.

Mr. John Ward: We could get it done for half.

Mr. Cooper asked, on November 27th, in view of the fact that Section 15 (2) of the Act established a right on the part of any insured person of selecting the practitioner by whom he desired to be attended, how this could be carried out in the event of a State medical service being set up. Mr. Masterman replied that the right of an insured person to select a practitioner on the panel was conditional upon a panel being set up. If in any area the practitioners on the panel were not such as to secure an adequate medical service, the Commissioners might under Section 15 (2) of the Act make such arrangements as they thought fit for the treatment of insured persons. A State medical service was among the alternatives so open to them, but such a service including many doctors might still offer opportunities of choice by the insured person.

"Visiting" of Persons in Receipt of Medical Benefit.

Mr. Sutton asked the Secretary to the Treasury, on November 26th, whether, in view of the fact that Section 14, Subsection (3), of the National Insurance Act,

1911, provided that Insurance Committees should make rules, *inter alia*, in respect of the visiting of persons in receipt of the benefits administered by them, the cost of such sick visitors and supervision would form part of the costs of medical benefit and the administration thereof which under Section 15, Subsection (6), and Section 61, Subsection (2), of the Act must be paid by approved societies to the Insurance Committees; whether, inasmuch as the Commissioners had also imposed upon approved societies similar duties in respect to the visiting of persons in receipt of the benefits administered by them, the cost of which work would constitute an appreciable item in the administration expenses of approved societies, it was the intention of the Commissioners to make regulations to prevent any unnecessary duplication of this work or to secure that approved societies should not have to pay twice over for their own system of sick visitors and for that of the Insurance Committees: and what steps, if any, the Commissioners proposed to take to secure that no person should be fined, penalized, or deprived of benefits for the same offence under both the rules of his approved society and under any regulations made under Section 14, Subsection (3), of the Act by the Insurance Committee for the county or borough administering the medical benefits. Mr. Masterman said that the Insurance Committees had, under Section 14 (3), the duty of making rules only in respect of benefits administered by them. If the question referred to visiting in connexion with sickness benefit, the rules of the Insurance Committee would apply only to deposit contributors, and no part of the cost, if any, would fall upon the sums provided for medical benefit and its administration. If, however, the question related to the administration of medical benefit, the model rules for its administration issued by the Commissioners for the consideration of Insurance Committees contained no provision for the appointment of visitors by Insurance Committees. A provision was inserted in the model rules to guard against the contingency suggested in the last part of the question.

Income Limit.

Sir Philip Magnus asked, on November 11th, whether a clerk receiving, as salary, less than £160 a year, who supplements it by other remunerative work so that his total income from all sources exceeds £160 a year, must become insured; and, if so, whether he can claim exemption from payment of income tax on the understanding that his income is under £160 a year? Mr. Masterman said that a clerk employed in whole-time service at a rate of remuneration not exceeding £160 a year would be insured as an employed contributor in virtue of that employment irrespective of the amount of any private income or of any remuneration that he might receive for other work. The answer to the second part of the question was in the negative; the liability to be insured did not affect and was not affected by the liability to pay income tax.

The Earl of Ronaldshay asked the Chancellor of the Exchequer, on November 26th, if a man whose income, when joined to that of his wife, exceeded £160 a year was liable to pay income tax upon the joint income; and if that was so, whether a man who was an employed person and whose income, in conjunction with his wife's, exceeded £160 a year, was not entitled to exemption from the provisions of the National Insurance Act. Mr. Masterman replied that the answer to the first part of the question was in the affirmative, subject to the exception under 60 and 61 Vict., c. 24, Section 5, where the husband and wife were each separately earning an income from personal labour and the joint income did not exceed £500. With regard to the second part of the question, he would refer the noble lord to an answer he had given on October 25th. In this answer Mr. Masterman pointed out that the question of insurance in the case of persons employed otherwise than by manual labour depended not on total income, but on rate of remuneration. Where a person employed in whole time service was remunerated at a rate not exceeding £160 a year, the provisions of the Act applied irrespective of any income which he might derive from other sources. His liability to pay income tax did not affect, and was not affected by, his liability to be insured. Where, however, a person who was employed within the meaning of the Act proved that he was either (*a*) in receipt of a pension or income of the annual value of £26 or upwards not dependent upon his personal exertions, or (*b*) ordinarily and mainly dependent for his livelihood upon some other person, he might claim a certificate of exemption, such certificate relieving him, but not his employer, of the payment of contributions.

Drugs, Medicines, and Appliances.

On November 21st Mr. Masterman informed Mr. Worthington-Evans that he was unable to state whether any Insurance Committees had made provision for the supply of proper and sufficient drugs and medicines and prescribed appliances to insured persons under the National Insurance Act; had yet published a list of the persons and firms who had agreed to supply drugs, medicines, and appliances within its area, or fixed a scale of prices therefor. The Commissioners were communicating with the Insurance Committees on the subject.

Triplets.

In reply to Mr. William Thorne, who, on November 25th, asked a question as to maternity benefit in the case of triplets, Mr. Masterman said that maternity benefit was payable in respect of a confinement, not in respect of the number of children born. In reply to a further question suggesting that some further allowance should be made, Mr. Masterman said that the Commissioners had no power in the matter, however sympathetic they might be. They had to carry out the decisions of Parliament.

Tuberculosis.

Mr. Astor asked, on November 20th, how many insured persons were examined for tuberculosis, and how many were diagnosed as having that disease in the period from July 15th to October 15th, 1912. Mr. Masterman, in reply, said that the Insurance Commissioners were asking the Insurance Committees to furnish a return which would supply the information desired up to date.

In reply to Mr. Astor, Mr. Burns, on November 25th, stated that complete schemes for detecting and treating tuberculosis had been submitted by the councils of 60 counties and county boroughs, and the Board had approved of the main lines of 33 of these. Schemes of a partial or temporary character had been submitted by 46 other such councils, and schemes for the provision of dispensaries had already been submitted by 16 metropolitan borough councils. Approval of such schemes was not withheld longer than was necessary. The total number of beds in the sanatoriums already approved by his department was 2,806; these came up to the requirements laid down by the Local Government Board.

Sanatorium Treatment.

On November 21st Mr. Astor asked the Secretary to the Treasury whether in the event of an insured person entitled to sanatorium benefit being recommended for institutional treatment through the tuberculosis officer in charge of a dispensary, and being sent to a sanatorium or other institution, the fee of 6d. a head now being offered by the Government to medical practitioners would still be paid to that insured person's medical adviser, or would be paid to the institution where he was being treated? Mr. Masterman said that the 6d. referred to was a capitation payment in respect of the treatment of tuberculous insured persons by general medical practitioners. The aggregate amount of these sixpences contributed in respect of all insured persons was to pay for the domiciliary portion of sanatorium benefit, leaving the remainder of the total sum allocated by the Act for such benefit to the institutional treatment.

The Financial Secretary to the Treasury informed Mr. Francis McLaren on November 21st that two applications only had been received from insured persons in the Holland Division of Lincolnshire. Of these one was in so advanced a stage of consumption that he died before he could be removed, and the other was now receiving treatment.

Hospitals and Insured Persons.

Mr. Cooper asked the Chancellor of the Exchequer, on November 27th, what arrangements he had made for insured persons requiring surgical and other treatment which could only be adequately given in hospitals and similar institutions, seeing that insured persons were no longer eligible for hospital treatment as necessitous persons. Sir J. Lonsdale asked if the right hon. gentleman

was aware that it was estimated that of the insured persons who would claim medical benefit after January 15th next at least 30,000 a week would need for their adequate medical treatment hospital provision, and what provision would be made for these persons in the event of their being unable or unwilling to secure treatment in the existing charitable institutions. Mr. Masterman replied that these questions would appear to be based on a misapprehension. Surgical and other cases which could not, consistently with the interests of the patient, be properly undertaken by a practitioner on the panel set up under Section 15, were not affected by the Act, and there would appear to be no reason why such cases should be less eligible in the future than in the past for treatment in hospitals and similar institutions. The average number of in-patients present in the hospitals at any one time would appear to be only a small fraction of the number suggested in the question.

Sir J. Lonsdale further asked if the Secretary to the Treasury was aware that voluntary hospitals had suffered severely owing to the withdrawal of subscriptions, and did he not think it necessary to enter into business arrangements with hospitals for insured persons. Mr. Masterman replied that business arrangements could be entered into between the hospitals and approved societies in the interests of insured persons under the Act. He had no information as to any decrease in voluntary subscriptions to hospitals in consequence of the Act.

Sir C. Kinloch-Cooke asked whether the funds of approved societies would not go down in that case. Mr. Masterman said that the societies would arrange, as some did at present, to contribute a certain amount to the hospitals in return for a certain number of beds being available for their members.

Poor Law Institutions.

Mr. Morrell asked the President of the Local Government Board whether he could give particulars of the draft Order relating to the management of Poor Law institutions, recently been prepared by a Departmental Committee; and whether the House would have an opportunity of discussing the matter before the Order was confirmed. Mr. Burns said that he understood that the Departmental Committee appointed to examine the existing Poor Law Orders with a view to their consolidation and amendment, contemplated drafting an Order dealing with the management of Poor Law institutions, but he had not yet received a report from them on the subject.

Seamen's Records of Sickness.

On November 26th, in reply to Mr. McGhee, the Secretary to the Treasury stated that the Insurance Commissioners were in consultation with the Board of Trade as to the most convenient method whereby the records of sickness required to be kept under the Merchant Shipping Acts may be made available to assist societies in calculating the commencement and duration of the sickess benefit of their members under the National Insurance Act.

Metropolitan Asylums Board.

Mr. Astor asked, on November 25th, how it was proposed to make the hundreds of empty beds in the Metropolitan Asylums Board hospitals available for the institutional treatment of consumptive insured persons in London? Mr. Burns repeated that negotiations were proceeding between the London County Council and the Metropolitan Asylums Board with a view to seeing if it was possible to utilize some of the accommodation. Nothing had been settled, but he understood that the matter was being dealt with as expeditiously as possible.

Mr. Astor asked whether the negotiations began before July 15th, when the sanatorium benefit began? Mr. Burns said he could not say the exact date of the beginning of the negotiations, but he knew for the last week or so both bodies had been doing everything that could be reasonably expected of them to come to an arrangement.

Lord Balcarres inquired if it would not be necessary to have legislation to bring that into force. Mr. Burns replied that it was possible that short of legislation the two bodies could come to an arrangement by which certain beds, or, perhaps, an institution or two, might be released for the purpose.

Medical Service in the Highlands of Scotland.

Mr. Macpherson on November 21st asked whether the Commission appointed to consider the position of the highlands of Scotland with reference to the medical benefits under the National Insurance Act had finished their inquiry: whether their report had now been presented; and if not, when it was likely to be presented? The Marquess of Tullibardine asked if the reference was not with regard to medical services, and not to medical benefits under the Insurance Act? Mr. Masterman replied that he thought the Insurance Act was the reason for appointing the Commission, but the reference was rather larger than with regard to the Insurance Act. He understood that the inquiry referred to was finished, and that the report was now being drafted, and would shortly be presented.

Scottish Universities. On Thursday last week, and again on Monday and Tuesday this week, the representatives of the Treasury were severely heckled by Mr. Hogge and others on the subject of grants to Scottish universities. The suggestion of the questions was that the Treasury had unwarrantably attempted to interfere with their internal administration, and that in the matter it was under the influence of the Carnegie trustees. The specific suggestions were that this year the Treasury, without consulting the Scottish universities, had imposed the establishment of a uniform and inclusive fee for medical undergraduates as a condition of additional grants; that the Treasury should induce the Carnegie trustees to desist from demanding from applicants for assistance the possession of the Leaving Certificate of the Scottish Education Department, as it was inferior to the preliminary examination held by the universities themselves, and wasted the time of prospective medical students by (among other ways) obliging them to study subjects afterwards useless to them; or alternatively make the Education Department hold examinations for this certificate twice instead of once a year. The replies elicited were to the effect that neither the Treasury nor the Scottish Education Department had anything to do with the Carnegie trustees in this connexion; that the establishment of an inclusive fee of uniform amount was a condition accepted by the Scottish universities several years ago, and that no objection had since been raised; that the rule of the Carnegie trustees in question (which was not absolute) was, in the case of entrants to the universities from secondary schools, usually salutary, and calculated to advance the interests of education. It had not the effect of excluding the most desirable type of student, and even if the final suggestion made were practicable no sufficient reason for adopting it had been adduced.

Cholera.—In reply to Sir H. Carlile, who asked the President of the Local Government Board on November 21st a question as to what special provisions were made for guarding against the risk of the importation of cholera from Turkey, Mr. Lewis said that the regulations of the Local Government Board, dated September 9th, 1907, contained the provisions which were in force for protecting this country against cholera. These regulations were based on the International Convention. Under the regulations the Customs officer was required on the arrival of a ship to ascertain so far as possible whether the ship was an infected ship or had come from an infected port, and to question the captain. If he found that the ship was an infected ship or suspected ship he was required to detain the ship and to inform the sanitary authority.

Sir H. Carlile further asked whether the Local Government Board would consider the urgency of taking special precautions at the present time with reference to this matter? Mr. Lewis replied that the Local Government Board was watching the situation very carefully, and would take all necessary precautions.

Hospitals at Calabar Native Doctors. On November 20th, in reply to Mr. Jowett, the Secretary of State for the Colonies said that there was a native and a European hospital at Calabar. They were administered by Government medical officers, but he could not say whether any of the officers in charge at present were natives. The question of allowing private practitioners to take charge of their patients after admission to hospital was under consideration.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

Salary of Tuberculosis Officer.

The Lambeth Borough Council recently agreed to establish a tuberculosis dispensary and to appoint a tuberculosis officer at a commencing salary of £300 a year. The scheme was submitted to the Local Government Board, which has addressed a letter to the Council, stating that it approved generally of the outlines of the proposed scheme, but that, having regard to the population of the borough and to the extent and character of the duties of tuberculosis officer, it appeared to the Board to be doubtful whether the proposed commencing salary of £300 per annum would be sufficient to attract medical men possessing the necessary qualifications and experience in the treatment of tuberculosis. Mr. J. McKeith, M.B., C.M., who was recently elected a member of the Council, supported the views of the Local Government Board, and maintained that the Council would not get the services of the best man for such a salary. The Council, however, adhered to its resolution to offer only £300 a year.

St. Andrew's Hospital, Dollis Hill.

On the summit of the plateau known as Dollis Hill, to the north of Cricklewood, and west of Hampstead Heath, an imposing building has sprung up within the last eighteen months. This building is part of St. Andrew's Hospital, a hospital for paying patients chiefly members of the Roman Catholic Church, and more especially of French Catholics. The building as it stands to day represents but a little more than one-half of the complete structure. The small beginning is to be accounted for on the usual ground—a lack of funds. It may be asked, How comes it that a new hospital is suddenly sprung upon the medical profession; what needs justify its existence, and why has the profession not been taken into confidence until the building is a *fait accompli?* The reply is that a certain lady of means, who desires to be nameless at present, placed a large sum of money at the disposal of Cardinal Bourne, for the purpose of instituting a work of charity. The scheme which was originally put forward could not be adopted for divers reasons, and it was therefore determined that the money thus generously given should be utilized for the above-named purpose. Being in its essence a Roman Catholic institution, the Archbishop of Westminster has decided that the charity shall be devoted chiefly, but not exclusively, to members of that Church, and in accordance with the wishes of the foundress a certain number of the beds are to be used chiefly for French-speaking patients. The advice of Dr. Norman Moore was sought and obtained in matters medical, and a staff has, we understand, already been selected. As the idea was to offer to inmates of the Catholic colleges and convents and young persons, strangers to London, as well as other persons of small means, a hospital where expert medical and nursing attendance could be supplied at a low cost, instead of leaving them between the gratuitous hospital and the expensive nursing home, it was thought that a more elaborate system for medical consultation would not be needed. The hospital is to be under the care of nuns, known as the "Poor Servants of the Mother of God," while the nurses are being trained apparently *ad hoc* at the London Hospital. A chaplain will reside in a separate house within the grounds, and we understand that the management will be vested in trustees, of which the Archbishop is one.

Eventually there will be 100 beds. The right wing and the central part has now been completed, and has room for 63 beds, of which 28 are in two large wards, and 35 in private rooms. The large wards are spacious apartments, with a couple of central ward fireplaces; that on the first floor is divided into two parts by a screen. The lighting is good, the appointments, walls, etc., are of the most modern type, and all the necessary rooms, including bathrooms, w.c.'s, kitchens, etc., are as they should be. The private rooms vary in size, some leading into one another by communicating doors. The cubic space in these rooms is ample—perhaps excessive, if the economic questions be weighed. Every modern convenience is present. In the basement are spacious rooms for fuel, for the heating plant, and for the control of the electric lighting. The kitchens also are in the basement, and the meals will be carried to the wards by electric lifts. On the ground, first, and second floors are apartments designed admirably for every modern hospital purpose. Every corner is rounded off; the flooring throughout the building, save in the hall and chapel, is terrazzo mosaic, the system of ventilation is efficient, the drainage system and the trapping of the gulleys, etc., is hygienic. There are rooms for clinical investigations, for examinations, and for the comfort of the patients. The operation theatre and its dependent rooms are also excellent and modern.

While the architects have been instructed to be lavish in air space for the patients, they have been required to find housing accommodation for too many nuns in a small part of the building. Each cell is of homely appearance, but Lilliputian, and the cubic air space scarcely reaches 900 cubic feet. At present some of the larger rooms have been cut off from the main part, and these are to be set aside for an isolation block. The nurses' quarters are a little better, and the Mother Superior and the Nurse Superintendent have good rooms. Above the isolation block there is a flat roof, which is to be used as an exercise ground.

The hospital stands in seven acres of ground, and the situation is good. The site cost £8,000, and the buildings erected up to the present have cost £51,000, and another £1,000 have been expended on making up the road and approach. The estimates involve the expenditure of £20,000 further on the building of the left wing. The total contemplated expenditure is £60,000, or £600 a bed. At present there is a debt of £10,000.

It is anticipated that the hospital will be ready for occupation early in January next, although much still remains to be done in furnishing. The architect of the building is Mr. R. L. Curtis, and the builders are Messrs. Patman and Fotheringham, Limited. Mention should also be made of the provision of motor ambulances for fetching patients from London, among many other convenient arrangements in connexion with the hospital.

London County Council.

Appointment of a Psychologist.

It was reported to the Education Committee of the London County Council on November 27th that thirty-eight applications had been received for the position of psychologist, to be employed as a half-time officer by the Education Department for a period of three years at a salary of £300 a year. After consideration of the qualifications and experience of six candidates interviewed, the General Purposes Subcommittee had come to the conclusion that Mr. C. L. Burt, M.A.Oxon., should be appointed. During the last four years Mr. Burt has held the position of lecturer in experimental psychology and assistant lecturer and demonstrator in physiology in the University of Liverpool.

The Committee approved the appointment of Mr. Burt.

Mentally Defective Children.

At the same meeting the Accommodation and Attendance Subcommittee reported that since the last survey of accommodation for mentally defective children was made in 1910 the number of such children had increased by 795. The increase was probably due to a great extent to the development of the medical inspection of elementary school children. Proposals for the provision of 395 additional places had recently been approved by the Council and the subcommittee submitted proposals for the provision of 430 further places by means of new schools at Hammersmith, Paddington, Hoxton, Bethnal Green, Lewisham, and Deptford. The estimated cost of the proposals on the basis of £40 a place was £17,200 for building only, and in those cases where additional land was required the cost of the necessary sites was estimated at £9,000.

The Committee agreed to the proposed schemes.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

New Tuberculosis Dispensary Buildings in Edinburgh.

The new tuberculosis dispensary buildings in Edinburgh were opened by Lord Dunedin on November 23rd.

The Secretary read a letter from Professor Edmund Brancek, of the University of Neuchatel, congratulating Dr. R.W. Philip on the efficient equipment against tuberculosis with which Edinburgh had been endowed through his efforts. A cablegram addressed to Dr. Philip by Dr. Herman Biggs of New York was also read, in which he said, "The dispensary is now everywhere regarded as the keystone of preventive measures."

Lord Dunedin, in some opening remarks, said that even the man in the street had now learnt that consumption was a communicable disease, and that it could be successfully combated in its earlier stages. One of the first men to wake up to the fact was Dr. R. W. Philip, and the communications which had been read showed that his work was appreciated abroad. In concluding, Lord Dunedin referred to the educational side of the work that would be carried on in the dispensary.

Sir Malcolm Morris, K.C.V.O., said that Dr. Philip began his work six years after the discovery of the bacillus of consumption in 1881 by Koch, at a time when there was not a tuberculosis dispensary in Great Britain or any other part of the world. The National Association for the Prevention of Consumption came into existence in 1898, and great good had resulted from the co-operation that now existed between the laity and the medical profession. He did not agree with the view recently expressed that the duty of the State was only to prevent disease, not to try to cure it. If the city or the municipal authority, or the Insurance Commissioners and the municipal authority, would combine to take away altogether, if it were possible, every single advanced case of phthisis and isolate it; if at the same time they assumed absolute control over the milk supply, and if they would make a penal law to stop spitting in covered places, he said emphatically it would only be a question of a reasonable time before tuberculosis as a general infection of mankind would be as dead as the dodo. He was a little nervous about the Insurance Act, because he was somewhat afraid that in connexion with a magnificent organization like this something might come to disturb the *status quo* and do an enormous amount of harm. He would therefore ask those in authority to be very careful before they interfered with this organization. He would ask them further not only not to interfere with it, but to increase its usefulness in every possible way, for in his view it would be much better for all to gain time before they plunged into bricks and mortar and the building of big sanatoriums which after a certain length of time might become perfectly useless.

Sheriff Crawford, in proposing a vote of thanks to Lord Dunedin and Sir Malcolm Morris, said that he hoped that the co-operation that existed in the past between the Corporation of Edinburgh and the Victoria Hospital Committee would be continued between the Hospital and the Insurance Committee.

The Victoria Dispensary commenced operations in 1887 in Bank Street. Four years later it was transferred to larger premises in Lauriston Place, but it has long outgrown the available accommodation. The extensive buildings which formed St. Cuthbert's United Free Church and Hall, in the heart of the districts from which most of the patients come, were acquired and are being adapted to their new purpose.

The tracery has been removed from the large windows on the north elevation and also from those on the south elevation. Steel casements, divided into large panes, have been substituted, and each division of the windows made to open so as to give the fullest natural ventilation to the main waiting-hall. The windows on the side elevations have been enlarged and fitted with double-hung windows.

The buildings include administrative and educational departments. The patients' entrance is from Spital Street. The waiting-hall occupies the space which formerly was the nave. The walls to the underside of the cove below the gallery have been covered with Carrara ware. The aisles have been divided up to form a series of consulting-rooms three on each side, with a male and female dressing-room, and a small dark room for the examination of throats. On the east side is the drug dispensary. The pilasters, cornice, base, and door architraves are of green Carrara ware, the rest of the walls being white. The walls of the consulting-rooms and dressing-rooms are covered with white tiles to a height of 5 ft. from the floor, the tiles being finished off with a green cope and base. The walls of the vestibule are treated similarly to the hall. The waiting-hall is lit by the large north and south windows, and in addition six large lights have been formed in the ceiling. Off the vestibule, on the east side, is an anteroom with a service window for the drug dispensary. Opening off the other side of the vestibule are the patients' lavatories, cleaners' store, and stair leading to the officer's house, which is situated on the first floor.

A broad staircase from the main waiting-room leads to a gallery which extends round three sides of the hall. On the east side are two research laboratories and an x-ray room, fitted up with the most modern installations for diagnosis and research. At the north end of the gallery is a room where it is intended to form a consulting library for students and practitioners. Off the west gallery there is a sitting-room for nurses. The remainder of this side is occupied by the officer's house, which has separate access from the outer vestibule.

The entrance for the medical staff is from Lady Lawson Street. Adjoining this entrance is the board-room, statistical department, museum, and a large lecture hall, fitted up so that it can be used for microscopical and cinematographic demonstrations. There is also ample cloak-room accommodation. Access is got from this part of the building to a very large basement below the waiting-hall and consulting-rooms. Part of this has been adapted and can be readily fitted for extension of the laboratory accommodation. The heating chamber is also situated in the basement, with separate access to a lane on the west side of the building.

The floors throughout the building at the street level are of concrete. The concrete is covered with terrazzo finish in the waiting-hall, vestibule, and consulting and dressing-rooms. Wood-block flooring has been used for the drug laboratory. The gallery and library floors are of oak, and the floors of the laboratories are of maple. The cost of the whole is estimated at £8,326. The architects are Messrs. Sydney Mitchell and Wilson.

An Abyssinian Substitute for Tea.

At the opening meeting of the session in Edinburgh of the Pharmaceutical Society of Great Britain, the inaugural address was given by Professor Ralph Stockman, who took as his subject Stimulant narcotics, with a special account of *Catha edulis*. The Swedish botanist, Forskal, who died in Arabia in 1768, was the first to draw the attention of Europeans to the leaves of *Catha edulis* as a stimulant. The plant grows wild in Abyssinia and the neighbouring mountainous districts along the coast of East Africa. Its use is said to be older than that of coffee. The leaves have a pleasant aromatic odour, and an infusion made from them has a markedly sweet and astringent taste, somewhat resembling liquorice. In the social life of the Arabians and Abyssinians the leaves play much the same part as tea, coffee, cocoa, and other well-known stimulant narcotics do among other peoples. Professor Stockman had obtained three alkaloids in a state of purity, to which he gave the names of cathine, cathidine, and cathinine. The first had an action something like a combination of morphine and caffeine. Cathinine had not the same drowsy or depressing effect on the brain, but acted more as a stimulant to the spinal cord. Cathidine acted as a muscle poison and a slight stimulant to the nervous system. Broadly speaking, the action of the leaves was essentially comparable to that of other vegetable products which are used by mankind as stimulant narcotics.

Institutions under the Inebriates Acts.

The eighth report of the Inspector for Scotland under the Inebriates Acts is concerned with the years 1910 and 1911. Since the passing of the Inebriates Act, 1898, ten institutions for the treatment of inebriety have been established in Scotland, four of them being licensed retreats, five certified

inebriate reformatories, and one a State reformatory; this is exclusive of any unlicensed premises there may be. At the end of 1911 seven of these institutions remained open, one retreat and two certified reformatories having been closed. The total accommodation for inebriate patients at the end of 1911 was 161. No new premises for the treatment of inebriety were licensed or certified during 1910 or 1911. The total number of receptions during 1911 was 166—112 males and 54 females—the largest number in any one year since the Inebriates Acts came into force. Of the total number treated, 19 were inmates of certified reformatories, and 12 were in State reformatories, the balance being inmates of private retreats.

The numbers in these certified and State reformatories are markedly less than in the earlier years of these institutions; this points to the conclusion that in Scotland the institutional treatment of the voluntary patient is more frequently resorted to, though at present there is no indication of greater numbers being compulsorily detained in the reformatories.

Greater Glasgow.

The extension of the boundaries of the city of Glasgow and the inclusion within the city of three densely populated burghs will increase considerably the work and responsibilities of the health department of the corporation. The first decision of the new corporation has caused some misgiving. The medical officer of health submitted a scheme with regard to the administrative control of tuberculosis, and, in accordance with that report, the Health Committee recommends that in order to give coherence to the scheme the medical officer of health be formally appointed administrative tuberculosis officer; that Dr. A. MacGregor, assistant to the medical officer of health, who is at present in charge of the work in connexion with tuberculosis, and has a salary of £225, be appointed supervising tuberculosis officer under the medical officer of health at a salary of £500 per annum; that five additional nurses be appointed to be attached to the various dispensaries at salaries of £80 each; that the medical officer of health be authorized to appoint, at salaries of £300 per annum each, three assistant tuberculosis officers to take charge of various dispensaries, the appointments to be made whenever the new dispensaries are in order. It is also proposed that two of the wards in Ruchill Hospital shall be used for a year for the treatment of persons suffering from pulmonary tuberculosis.

At the meeting of the corporation the minute embodying this recommendation was referred back for further consideration of part of it.

School Boards and Medical Certificates.

Difficulties have arisen in Lanarkshire between the school boards and medical practitioners regarding the resolution by the recently formed Monkland Medical Association that its members will grant no medical certificates in case of children detained from school unless the boards pay for these certificates. Certain of the boards insisted on the certificates being on soul and conscience the same as are produced to the court. These boards say that if such certificates are produced to them prosecution of the parents would be unnecessary, otherwise they have no alternative but to bring the parent into court, and he has to bring the doctor at his own expense to substantiate his defence. There were several cases of this nature before Sheriff Lee, who expressed the opinion that parents should be protected from needless expense and trouble. The point was also raised in connexion with several cases of prosecution in the Justice of the Peace Court, a doctor giving evidence for a parent that a child was unfit to attend school, when the case was found not proven. Their Honours pointed out that if the doctor had given a certificate which would have satisfied the school board neither he nor the parent would have had to come to the court.

Lieutenant-Colonel T. R. Macdonald, I.M.S. (Ret.).

In response to a formal request brought to him by a deputation, Dr. T. R. Macdonald, now of Inverness, visited the Island of Skye this month, in order to receive from the representatives of the parish of Snizort and South Snizort an illuminated address in acknowledgement of the services rendered by him to the islanders. The presentation was made at the United Free Church Manse of Snizort, where there was a large gathering, headed by the Rev. D. C. Macdonald, of Kilmuir. In acknowledging the address Lieutenant-Colonel Macdonald said it was not the first visible token of gratitude and goodwill that he had received from the islanders. They had presented to himself and his wife many gifts at the time of his actual departure from the island, and these and the address would be the most cherished of his possessions, and of those of his descendants. They would be valued as coming from the people of the "Isle of Mist," to whom they were proud to belong. Dr. Macdonald was for over twenty years an officer in the Indian Medical Service, and served also in Egypt during the first Egyptian campaign and the subsequent outbreak of cholera. Retiring with the rank of Lieutenant-Colonel, he devoted himself for a considerable number of years to the service of the Island of Skye, taking up work there as resident medical officer of the Gesto Hospital. During his tenure of this office he initiated and successfully carried through a movement which resulted in the provision of a Queen's nurse for Snizort and South Snizort, and in many other medical connexions greatly benefited the island. On finally giving up active medical work he took up residence at Inverness.

Memorial to the late Captain Simson, I.M.S.

An interesting ceremony took place in Edinburgh on November 21st, when the Rev. Dr. Kelman formally handed over to the University Athletic Club a beautiful clock erected in memory of the late Captain E. D. Simson, I.M.S., the University and Scottish International half-back. The clock, which has a single dial, has been erected in a central tower overlooking the balcony of the pavilion. It is the gift of the late Captain Simson's fiancée, Miss Eva Gray, daughter of the late Mr. A. R. Gray, Aberdeen, and bears the following inscription: "Virtute non verbis.—E. B. Simson, Captain, Indian Medical Service, student of Edinburgh University, 1901–1906; born 1882, died 1910." In handing over the clock on behalf of Miss Gray, the Rev. Dr. Kelman said:

"Captain Simpson was first capped in 1902, and played in seventeen international matches. His reckless pluck, unerring sureness, perseverance, tenacity, and resource were the qualities which made him one of the most brilliant Rugby players in the kingdom. In life, as in athletics, he played the game well."

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

The Ulster Medical Society.

The annual dinner of the Ulster Medical Society took place in the Medical Institute, Belfast, on the evening of November 21st. The President (Dr. Leslie) occupied the chair; on his right were Vice-Chancellor Hamilton of Queen's University, and on his left Dr. John Campbell, President of the Ulster Branch of the British Medical Association. The President gave the toast of "The King," which was received with customary warmth. Sir William Whitla then asked permission to speak, although his name was not on the toast list. He said that he often felt that their President should have some badge of office; that the absence of such insignia was a distinct want on more formal occasions. He was wearing at the moment the badge which the profession of Ulster had given him when he was President of the British Medical Association on its visit to Belfast in 1909. If the President and Fellows of the Ulster Medical Society would accept it, he proposed to hand over to them this badge, and he would suggest that living ex-Presidents and each new President should give a link to form a suitable chain, and suitable inscriptions should be made. This speech was received with loud cheers, and Sir William then placed the badge on the President, who returned the most hearty thanks on his own behalf and on that of the society to the donor. Its members knew that the institute and the society had a very dear place in Sir William's heart, and they all appreciated his thoughtfulness and generosity.

Subsequently the toast of "Our Guests" was proposed by Dr. R. J. Johnston, and was responded to by Vice-Chancellor Hamilton and Dr. John Campbell. Mr. Robert

Campbell then proposed the health of the President, who suitably replied, and joined with his own name that of the Honorary Secretary (Dr. Rankin), to whom much credit was due for all his manifold labours and for the success of the evening.

Gift to Royal College of Surgeons.

Last week a lecture was given by Dr. H. Macnaughton-Jones, at the Royal College of Surgeons, Stephen's Green, Dublin, to which the Fellows were invited by the President and Council. A large number accepted the invitation, and were much interested in the account the lecturer gave of the collection of specimens that he has presented to the College. The lecture was illustrated by lantern slides and a microscopical demonstration was given afterwards. The collection consists of miscellaneous specimens, illustrative of various points in surgery, mainly pertaining to gynaecology and diseases of women, and includes several rare examples of pathological conditions. It has been placed in a separate and distinct position in the museum. At the conclusion of the lecture Dr. Conway Dwyer proposed a hearty vote of thanks to Dr. Macnaughton-Jones for his much-valued gift, and for the explanatory lecture of which it was the subject.

Women's National Health Association.

At the last meeting of the Listowel Branch of the Women's National Health Association the Honorary Secretary submitted the report of the district nurse for the three months ending October 31st, 1912, from which it appeared that within that period no fewer than 96 patients had been nursed. The report from the Queen Victoria Jubilee Institute for Nurses was also read; it stated that the work done within the period mentioned was in every respect satisfactory.

Doctor's Superannuation.

Dr. Kilbride (Athy) having recently resigned his position as dispensary doctor, the Athy guardians granted him £117 as a superannuation allowance. The Athy No. 1 District Council last week granted him £7 16s. 8d. superannuation for having acted as medical officer of health for the district.

Special Correspondence.

PARIS.

Compulsory Notification of Tuberculosis.—Committee on Depopulation.—Consumption of Absinthe.—A Chair of "Phthisiology" for Paris University.—Foreign Students and Practitioners in France.

At the request of the Government, the Academy of Medicine has lately been discussing the advisability of rendering compulsory the notification of tuberculosis. Professor Letulle presented a very elaborate report concluding in favour of compulsory notification by the patient's family, or by the landlord, or, as a last resource, by the attending physician, who would deliver his certificate into the hands of the sanitary inspector, thus ensuring secrecy. Disinfection would also be obligatory, and in case of paupers would be carried out by the State. Dr. Letulle's proposals have aroused a veritable storm of opposition in medical circles. In the Academy itself they have met with practically no support after the eloquent condemnation passed on them by Professors Robin and Gaucher. The syndicates of medical practitioners in Paris and in the country have unanimously pronounced themselves against compulsory notification. The opposition, in fact, has been so general and so strong that, without waiting for the Academy's final decision, the Director-General of Public Health has just laid before Parliament a bill stipulating that notification of tuberculosis should be optional, but that in all cases of death from contagious diseases (including tuberculosis) disinfection of the lodging should be compulsory. It is hoped in this way to check to a certain extent the spread of consumption. The bill contains another article by which all strangers coming to reside in France will be compelled to be vaccinated unless they can adduce satisfactory evidence of having recently undergone vaccination.

Not content with the above measures destined to preserve life and health, the Government has once more decided to tackle a problem of paramount importance for the future of France—depopulation. A committee has just been appointed to inquire into the causes of what is really an alarming state of affairs and to propose suitable remedies. It is composed of men who stand high in the different professions (including politics), but it is doubtful whether much good will come of their labours. In the first place they are far too numerous (more than a hundred!) to do much solid work, and then they cannot, of course, alter the average Frenchman's aversion to large families—at least in the thrifty *bourgeois* class.

Consumption and depopulation are not, however, the only plagues that France has to contend with, and alcoholism well deserves to engage the attention and stimulate the best efforts of the Government. Despite the heavy tax established on alcoholic drinks a few years ago, the annual consumption of absinthe (the national appetizer) was 17 millions of litres in 1910 (it was 24 millions in 1900). Such are the statistics just published by the *Revue d'Hygiène*. It is rather interesting to note that whereas other kinds of spirits are much less in vogue in wine-growing counties, absinthe has lost none of its favour: in the Marseilles district the average consumption per head amounts to 2½ litres per annum. But how is the Government to put down the sale of alcohol when the dealers in spirits are among the most influential electoral agents?

And so alcoholism and consumption will go on killing every year the equivalent of a town like Lille in France or Portsmouth in England, despite the best endeavours of the medical profession. The latter has just heard with great interest of the Paris Faculty of Medicine's decision to establish a chair of "Phthisiology." Laboratories are to be erected for it in the gardens of Cochin Hospital with every modern improvement. The new professor, who has not yet been appointed, will be expected to devote his whole time to the problems connected with the pathology, prophylaxis, and treatment of tuberculosis, and it is understood that he is not to engage in private practice. As compensation for this renouncement he is to receive an annual salary of £1,000, which is more than double the amount received hitherto by the highest paid professors in the university.

French medical men have again been airing their grievances against foreign students and doctors at the meeting of the Paris Medical Syndicate held on November 24th. The number of foreign medical students in the French universities has increased very much during the last ten years. In 1900 they numbered 881, against 7,413 Frenchmen; in 1911 they were 1,289 to 7,490. Most of these foreigners hail from Russia; Turkey, Bulgaria, Roumania, and Greece are next in order. A large number of them go in for the competitive examinations leading to the minor hospital appointments. At the last examinations one-fifth of the appointed externes (clinical clerks or dressers) were foreigners; the proportion of foreign internes (resident medical officers) was about the same. The syndicate proposes that the proportion of foreigners admitted to hold the minor hospital appointments should not exceed one-tenth of the number of posts offered for competition. The higher posts will, of course, be reserved for Frenchmen, as is the case now. As for the practitioners, the figures in 1911 were for Paris only as follows: Total number of practitioners, 4,750: foreigners, 355—about 8 per cent. (including 10 British subjects). The syndicate suggests that this proportion be further reduced in the future by admitting as medical students those foreigners only that have passed the *Baccalauréat*—a very stiff examination for those who have not followed the French curriculum of secondary education. This motion practically embodies the law that has been enforced since 1906, and the exceptions have been so very few that it really does not seem that the French doctors have much cause for complaint. This prohibitive policy does not appear to be very wise if the interests of the health resorts be considered. Most British and American patients like to be attended by doctors of their own nationality when abroad, and they may refuse to patronize places where none are to be found.

Correspondence.

ANTIVIVISECTION IN GLASGOW.

Sir,—In Dr. Hadwen's letter under the above heading the following passage occurs: "I have quoted Sir Frederick Treves fairly and squarely, and I repudiate his subsequent assertion that improper use has been made of his statement."

The first part of this sentence embodies an important confession, for it shows that the antivivisectionist's idea of fair and square quotation is to cunningly isolate one particular sentence from its context in order to foist upon it a meaning which it obviously does not bear. The paragraph from my Birmingham address (delivered in 1898), when fairly and squarely quoted, reads as follows:

"Dr. Halsted expresses his conviction 'that there should be a law compelling all surgeons to practise on animals the operations for circular suture of the intestine and for intestinal anastomosis.' I hope this view will not commend itself to the legislators of this country. Many years ago I carried out on the Continent sundry operations upon the intestines of dogs, but such are the differences between the human and the canine bowel that when I came to operate upon man I found that I was much hampered by new experience, that I had everything to unlearn, and that my experiments had done little but unfit me to deal with the human intestine."

The champion of fair and square quotation would add to the above the following from a letter to the *Times* (dated April 18th, 1902), in which I protest against the outrageous methods of the antivivisectionist in connexion with this identical paragraph:

"No one is more keenly aware than I am of the great benefits conferred upon suffering humanity by certain researches carried out by means of vivisection."

With regard to the second part of Dr. Hadwen's statement, it is difficult to speak with moderation. For years the above observation of mine has been used in advertisements, pamphlets, and speeches as affording evidence that I condemn all vivisection experiments as useless. For years I have been so pestered with correspondence on the subject that I have had to keep in hand a supply of reprints of the *Times* letter above alluded to in order that I might deal with this ever-recurring matter with the least inconvenience. The communications I receive are for the most part of two types. Some open with such a sentence as "Is this another antivivisection lie?" while others libel me with the offensive assumption that I am opposed to vivisection, and conclude by asking me to speak at a drawing-room meeting against vivisection or to subscribe to a branch.

I hope that Dr. Hadwen will continue to make his fair and square quotations, for they are very efficient in exposing the pitiable controversial methods of his party, while, on the other hand, they provide the opportunity of sending wholesome literature to the many who seem—even in this enlightened age—to be still in some doubt as to the truth.—I am, etc.,

Kingston-on-Thames, Nov. 24th. FREDERICK TREVES.

AN OPERATION FOR WEBBED FINGERS.

Sir,—In the JOURNAL of last week (pp. 1464-6) Mr. Tubby publishes an article on the treatment of webbed fingers by a special operation which he fully illustrates. I have nothing to say against this operation, for I have never tried it; but I take up my pen in defence of a most simple and successful plan of operating devised by my late friend and colleague, Arthur F. Norton. Mr. Tubby dismisses this with the words, "More elaborate methods have been designed by Norton" and others, but which, according to him, "fail to fulfil the postulates of success." I have done the Norton operation many times, but have never found it "fail to fulfil the postulates of success," and I am of opinion that it will continue to be the operation for the defect when most of the other methods are forgotten. Norton always spoke modestly of his method, [illegible] I feel sure that there are many [illegible] who have found it answering all that could be desired of it, even in the worst class of cases.—I am, etc.,

EDMUND OWEN,
Consulting Surgeon to St. Mary's Hospital.

THE SOIL AND THE SEED IN TUBERCULOSIS.

Sir,—I have been much interested in reading Dr. Halliday Sutherland's article (November 23rd, p. 1434). The subject is important, and in our present zeal to eliminate tuberculosis it may be that we are hardly paying sufficient attention to the matter of the soil. Dr. Halliday Sutherland's data are perhaps hardly sufficient to base safe conclusions upon, but in any case it is difficult to see how they tend to prove that there is no such thing as hereditary predisposition to tuberculosis.

It is suggested that the excess of tuberculosis in the contacts of female cases is due to the close association of mother and child. There is a very good reason, apart altogether from increased opportunity of infection, why we should expect such excess. Female consumptives on the average come of worse stock than male consumptives. There is more tuberculosis in their ancestry. This is not a condition limited to phthisis. We see the same thing in insanity, imbecility, etc. It takes a worse heredity and worse conditions of inheritance to make a female defective than to cause a like defect in the male.

Again, it is suggested that the excess of tuberculosis among the contacts of infectious cases as compared with non-infectious cases is due solely to increased opportunity of infection. Surely, however, the two groups are not comparable?

The non-infectious group may even contain some cases which are not tuberculosis, and, further, the fact of the absence of tubercle bacilli in the sputum would suggest that the disease was milder in these cases on the average, or, in other words, that they had a higher immunity than the infectious group.

Some time ago the writer investigated the family history, obtained on admission, of patients who ultimately died in asylum of tuberculosis. It was found that there was a family history of tuberculosis in such cases much more commonly than in the general run of asylum population. Of course, as demonstrating the inheritance of a predisposition to tuberculosis, one would have been told that such evidence was useless, that such deaths might have been due to a long previous infection from their consumptive relatives.

There is only one way which might appear to offer a satisfactory solution. It has been contended that the elder born, especially the first and second, are specially predisposed to tuberculosis. (If this is not true it is worth disproving, as with the limitation of the family the proportion of elder born in the community is rising rapidly.) Now it might be assumed that this special predisposition of the elder born was due to something in their environment which did not occur in that of the younger members of the family.

But as I think it could be shown that there was again an increased predisposition to tuberculosis in offspring born of mothers who were becoming old, one could not have it both ways, and it might settle the argument.—I am, etc.,

Clifton, York, Nov. 23rd. D. W. HUNTER.

Sir,—In the current number of the JOURNAL Dr. Halliday Sutherland publishes an interesting statistical contribution to our knowledge of tuberculosis. Assuming the validity of Dr. Sutherland's data, which I do not propose to discuss, it appears to me that the fifth conclusion on p. 1437 is a *non sequitur*. The utmost Dr. Sutherland is entitled to conclude is that among the *children of consumptives* those exposed to special risks of infection *and* peculiarly unfavourable environmental conditions exhibit a higher proportion of actually consumptive persons than those not so exposed. No inference whatever can be drawn as to the cause of the difference, if any, between the percentages of tuberculous offspring in the families of consumptive and non-consumptive persons, since no data respecting the latter are provided. There is a substantive experiment, but no control experiment. Dr. Sutherland cannot even draw any conclusion as to the relative importance of the enhanced opportunities of infection on the one hand and the influence of an unfavourable home environment (due to the incapacity of a parent) on the other. I do not suppose that the most fanatical supporter of the doctrine of inherited predisposition imagines that to the children of consumptive parents the environment is a matter of

indifference, and I suggest that the problem of inheritance is hardly one to be disposed of in this summary fashion.—I am, etc.,

M. Greenwood, Jun.

Statistical Laboratory,
Lister Institute of Preventive Medicine,
Nov. 25th.

TUBERCULOUS INFECTION IN INFANCY AND CHILDHOOD.

Sir,—The paper by Dr. Paget Lapage was a valuable contribution to the important subject of tuberculosis in children. It may be mentioned, however, that though the evidence afforded by *x*-ray examination in the main supports the teachings of morbid anatomy, there are, in a few minor details, reasons for doubting the evidence to be conclusive.

One of these arises in connexion with abnormal conditions noticed at the apex of the lungs. My experience in the *post-mortem* room would lead me to say that it would be a great mistake to assume that because some defect is noticed near the apex of a lung that the defect is tuberculous.

With regard to the debated question of the frequency of tuberculosis of the lungs in children, I have always maintained that the *post-mortem* room shows the disease in a chronic form to be rare. I have also held that the majority of chronic affections of the lungs in children prove to be non-tuberculous. This applies not only to morbid conditions at the base of the lung, but also at the apex. Bronchopneumonia—especially, it seems to me, the bronchopneumonia of measles—frequently leaves behind dilatation of the bronchial tubes, and this dilatation not only may be as marked in an upper as in a lower lobe, but may be limited to an upper lobe. The majority of observers would probably consider a chronic affection of the lung limited to an upper lobe to be undoubtedly tuberculous. This I believe to be very far from the truth.

There is one other point which is of great importance: The *x* rays may detect something abnormal at the root of a lung; but what is the nature of this abnormal condition? Is the abnormal condition, assuming it to be tuberculous, still a source of danger? As the child grows older the risk of infection through the bronchial glands becomes less. At what age does the tuberculosis of the bronchial gland in most instances become quiescent?

This is one of the points upon which I consider that further information from the *post-mortem* room is required. Caseous bronchial glands, although possibly not quite so common as the *x* rays would lead us to believe, are sufficiently common to merit careful investigation. And not only does the life-history of these glands—if I may so express it—need to be carefully traced out, but there is great need for more definite information concerning the origin and termination of all chronic affections of the lungs in children, whether tuberculous or non-tuberculous.—I am, etc.,

Sidcup, Nov. 19th. Theodore Fisher.

INSANITY AS A GROUND FOR DIVORCE.

Sir,—The "arguments in favour of insanity as a ground for divorce" call for serious consideration from the profession.

1 and 2. Granted the possibility of divorce (*a vinculo*), the arguments are unanswerable. It is to be remembered that, although "the institution of divorce proceedings is perfectly voluntary," the possibility of that institution alters the relation between the parties to a marriage (just as the relation between brother and sister-in-law is altered by the possibility of "marriage" with a deceased wife's sister).

3 deals with the avoidance of the alternative between "enforced celibacy" and "irregular unions," and must be read with 5 (time limit as a test of incurability). As a practical fact, is not the first year of enforced celibacy the most difficult time?

4 deals with comparison of insanity with other incurable diseases, and concludes thus: "The whole world would condemn a man who divorced his wife for paralysis or consumption." I submit (1) that an increasing proportion of that "whole world" with its growing terror of consumption as a contagious disease and with the increasing "confinement and isolation in a" sanatorium of consumptives, will soon abandon this condemnation. (2) That the ground of "avoidance of enforced celibacy" will become quite naturally extended to cases of malignant and other disease of the genital organs, of paralysis involving the sphincters, or other conditions prohibiting normal marital relations.

6 deals with an alleged hardship where insanity is caused by the conduct of the sane spouse. This allegation cannot logically be expected to receive consideration if the avoidance of an alternative between "enforced celibacy" and "irregular unions" is the guiding principle. The opponents of divorce do not deny the existence of "hardships" (or suffering).

7 deals with the alleged aggravation of the condition of the insane spouse by the knowledge that insanity constitutes a ground for divorce. I invite comment on the two following cases:

A, a lawyer, aged 83, suffered from post-influenzal psychasthenia, with insomnia, depression, dread of insanity and possible suicide. He is now 84, well and clear-headed, and in active practice again. Could he have stood the added strain of the knowledge of a possible divorce?

B., the wife of a medical man, aged 55, had a similar condition lasting over twelve months, with constant dread of becoming definitely insane. She has since had another child and presented no return of mental symptoms throughout and is in good health now. Could she have stood the added strain of the possibility of divorce?

8 deals with the alleged comfort derived by the insane from visits by the sane spouse. I have not the necessary experience to deny that all insane persons who, for the safety of the community and themselves, are confined in an asylum are "so far mindless as to have lost all affection and to be incapable of deriving enjoyment from the visits of friends"; but is it true?

As men we must hold that divorce *a vinculo* is either possible or impossible (I hold the latter); but as a profession, asked for advice on technical points by a section of the community who hold it to be possible and desirable, we must carefully weigh the evidence concerned with those technical matters upon which we are qualified to give an opinion carrying weight.—I am, etc.,

St. Columb, Nov. 18th. J. R. R. Trist.

MODERN FRENCH VIEWS ON NEPHRITIS AND URAEMIA.

Sir,—In connexion with the discussion on nephritis at the Annual Meeting of the British Medical Association, reported in the Journal of November 9th, I crave permission to relate as briefly as possible the results of Professor Widal's investigations on nephritis and uraemia. They lead to an accurate diagnosis and prognosis of renal disease, and place the therapeutics of the same on a scientific basis. Widal's views are now followed by most of the French physicians, but they do not seem as yet to have met with sufficient recognition at the hands of the medical profession in England. This is my excuse for venturing to call attention to them.

By the work of its glomeruli and the elective action of its tubular epithelium the kidney normally insures the excretion of certain substances conveyed by the blood. This selection bears not only on the nature of the molecules that traverse the gland but also on the number of molecules to be eliminated. The disturbances of this complex function give rise to the symptoms met with in renal disease. Anatomical findings cannot always account for them, nor can etiological considerations. Hence the necessity of placing on a physiological basis any inquiry into the pathogenesis of renal manifestations.

Up to a very recent date the disturbances which generally mark the terminal stages of nephritis were grouped under one same heading—namely, "uraemia." They were considered to be the result of functional inadequacy of the kidney, leading to retention in the system of toxic products normally eliminated by the renal epithelium. As to the nature of those poisons and their corresponding clinical manifestations, there was much uncertainty. Widal has shown that in practice it is possible to recognize two essential kinds of retention—that of sodium chloride and that of urea. These two forms may be met with separately or in combination, but each gives rise to well-defined symptoms, easily recognizable, whatever the nature and cause of the nephritis or the morbid changes found in the kidney.

The cardinal sign of sodium chloride retention (chloruraemia) is oedema, peripheral and visceral. When this

appears in the course of nephritis, it is certain that there is relative but well-marked impairment of the renal excretion in regard to salt, and salt is the only substance that gives rise to oedema when retained in the system. Peripheral oedema can be seen: visceral oedema can be easily suspected when a rapid decrease takes place in a patient placed on a dechloridized diet. To this form belong most of the symptoms hitherto described as the respiratory and nervous manifestations of uraemia, hydrothorax double or unilateral (then most often on the right side), oedema of the lung (so-called albuminuric bronchitis), headache, eclampsia, coma, Cheyne-Stokes breathing. To these symptoms may be added vomiting and diarrhoea, the fluids thus eliminated containing a high proportion of salt. All these disturbances rapidly improve and disappear under the influence of a salt-free diet; they do not recur when the patient is placed on a diet containing an amount of salt proportionate with the excretory power of the kidney in regard to that substance.*

Very different is the clinical picture of urea retention etymologically (the only true uraemia). In this form the digestive disturbances generally occupy the front rank, and there is no oedema unless there be concomitant chloridaemia. The patient complains of loss of appetite, amounting to positive loathing for any kind of food. Attempts at feeding give rise to severe and obstinate vomiting. Ulcerations in the mouth and bowel are not infrequent, the latter giving rise to bloody stools. Drowsiness, gradually deepening into coma, is a common manifestation of urea retention. Pruritus, anaemia, and pericarditis are not uncommonly met with; the appearance of retinitis must be considered as of grave import.

Whereas chloridaemia is not in itself fatal if proper treatment be applied (salt-free diet and theobromine), urea retention is always a grave condition. According to the amount of urea found in the blood, it is possible to foretell, fairly accurately, the probable date of death. Normally the blood serum contains from 0.15 to 0.50 grams of urea per litre. In true uraemia this amount may rise to 4, 5, and even 7 grams. From Widal's observations which extend over a period of ten years, the following rule may be drawn: If the amount of urea per litre is 1 to 2 grams, the patient will probably die within the year; if from 2 to 3 grams are found, the chances are that he has but a few weeks to live. The end is near when the amount exceeds 3 grams. It is therefore most important to estimate the amount of urea in the blood in all cases of chronic nephritis, in order to detect true uraemia in its incipient stage, when suitable dietetic measures may still be of some avail, and later to gauge the patient's prospects.†

Such are the two essential forms of renal inadequacy that sooner or later appear in nephritis. They are as a rule preceded by a condition, more or less chronic, that may be marked simply by albuminuria (with or without casts and blood cells), or by the syndrome of high arterial pressure with slight albuminuria, headache, vertigo, cramps, numbness, etc.; accentuated aortic second sound with gallop rhythm. In this latter form accidents are to be feared such as profuse epistaxis, acute oedema of the lungs, haematuria, retinal haemorrhage, and, above all, meningeal or cerebral haemorrhage; or dilatation of the heart may supervene, and the clinical picture is then that of a cardiac case, the purely renal symptoms being thrust into the background.

Considerations of space prevent me from entering more fully into details of pathological physiology, technique, and treatment. I must be content with this elementary exposition of the four major urinary syndromes.

(*a*) The purely albuminuric syndrome.
(*b*) The syndrome of high arterial pressure.
(*c*) The syndrome of sodium chloride retention (chloridaemia).
(*d*) The syndrome of urea retention (true uraemia).

The physician should bear in mind that these different syndromes may be interwoven sooner or later in a higher or lesser degree, but they can be always recognized clinically and with the aid of the analytical chemist. Their knowledge is of the highest importance in regard to the estimation of the functional activity of the kidney, and to the prognosis and treatment of renal disease.—I am, etc.,

Paris, Nov. 24th. CHARLES G. JARVIS.

THE TREATMENT OF NEURASTHENIA.

SIR,—I hasten to reply to Dr. G. Vigers Worthington's letter. He asks for some explanation of my letter of October 14th. I have re-read it, and to any ordinary intellect it seems to me quite intelligible; but if he will let us know what special difficulty he has, I will try to remove it if I can. He says he is anxiously awaiting my prescriptions to enable him to cure neurasthenia, although I distinctly said in my letter that such cases must be under my own personal supervision, since it was the "will" that was awanting in the patient, which the doctor must supply. Perhaps that is his difficulty in my letter of October 14th, because he says he could keep his patients under his own personal supervision, and ensure obedience. I feel sure he has never tried to do so, and he could not ensure obedience unless he had his patient under lock and key. He wishes to see my reply to Dr. Branson's letter, in which he asks me to answer three questions; but I hope both he and Dr. Branson will now comprehend how useless it would be for me to answer his questions. Both of these gentlemen, as well as the crowd of correspondents my letter attracted—themselves victims of neurasthenia—remind me of my patients, when I began practice at Manchester, who seemed to think my account ought to vary directly with the number of bottles of medicine I gave them, for I had to dispense my own drugs, as I believe is generally still the practice of the general practitioner in England. I managed, however, to educate my patients, and when they appreciated the paramount importance of good advice, they were less anxious about the bottle. All of us are more or less like my English patients, in need of education in dietetics.

The little I have learnt has opened my eyes to the miraculous power of a knowledge of the physiological action of food in the treatment of every disease, and, having discovered how imperfect my education had been at the University of Edinburgh, I gave a course of lectures in Edinburgh two years ago on "Dietetics, or the Science of Human Life," hoping medical students would attend and learn what I had to teach, which would save them from neurasthenia, which I now regard as synonymous with disease. That same year, at an inter-university congress at Glasgow, a medical student proposed a motion to the effect that their teachers ought to be asked to teach dietetics. The motion was lost by a majority of one, because to pass such a motion would be dictating to their teachers. The following year, however, at the same congress, when it was held in Edinburgh, that motion was passed unanimously, but I have never yet heard that a chair, or even a lectureship of dietetics, has been originated at any of our medical schools. Now, however, that there is such a desire on the part of members of the Association for information as to diet in the cure of neurasthenia, I hope the Representative Body, in spite of its other business, may find time to discuss the question of appointing a committee to collect *facts* as to the treatment of disease without any drugs. I shall be glad to assist in any way I can, and if the Committee for Collective Investigation was resuscitated and this subject properly gone into, we would soon be able to cure any curable disease in a week, without even spa treatment at Llandrindod or any other wells.—I am, etc.,

Hawick, Nov. 23rd. JOHN HADDON, M.D.

RE-EDUCATION OF THE ATTENTIVE CONTROL.

SIR,—I was greatly interested in Dr. Miller's paper on re-education of the attentive control (JOURNAL, November 23rd, p. 1459), but on coming to the proposed exercises at the end of the paper I was reminded of the schoolmaster who said he had known boys spend more time in learning to read backwards than would have sufficed to conquer the minutiae of the Latin or Greek grammar.

A doctor once took a gentleman who was suffering from

intense melancholia for a country ramble; during the course of the walk the doctor, by example after example, interested his patient in the structure of plants and the habits of insects, and gave a lesson or two in geology. To the doctor's delight, and possibly to his astonishment, he found that by the time they had returned to the house again he had converted a suicidal melancholiac into an enthusiastic natural scientist, and from that time the patient pursued the study with such avidity that in the course of years he became an authority on the subject, and never again suffered from melancholia. One trembles to think what might have happened in this case had it not been for the skilful intuition or the fortunate insight of his medical attendant.

Any one who has ever taken an intelligent interest in the study of mathematics will know something of the old pleasure, something of the old enthusiasm, by devoting a few minutes every day to the solution of mathematical problems, and this is a study which makes for absolute accuracy, and accuracy is one of the objects of the re-education of the attentive control.

In my opinion the mental strain involved in learning to recognize words by listening to any one spell backwards would be far in excess of that required to acquire a language, and without either the pleasure or utility of such acquisition.

The pursuit of some useful knowledge would give a sense of added power, and a renewed sense of power would increase self-confidence, and self-confidence is what is lacking in many of the cases described by Dr. Miller.

But to give a patient any occupation which would carry with it either pleasure or enthusiasm looks like running away from Huxley's definition of the object of true education—to acquire the power to do something every day which one would rather not do. I contend that in the pursuit of almost any branch of useful knowledge sufficient difficulty will be met with to acquire enough of this power for all practical purposes; but to spend hours in striking out a given vowel from a newspaper column is, in my opinion, a degrading occupation, a waste of energy, and, whatever it may do in educating the attentive control, it cannot increase the patient's respect for himself, and, what is worse still, must remind him of his malady every time he resumes so hopeless a task.—I am, etc.,

Liverpool, Nov. 25th. W. BRAMWELL, M.D.

THE TRANSITORY BIGEMINAL PULSE.

SIR,—Sir Lauder Brunton's article appearing in the JOURNAL of October 19th suggests that the bigeminal pulse is due to a secondary cardiac rhythm, possibly of nerve origin.

The existence of such a rhythm is indicated by a considerable body of indirect evidence. In the rabbit, cat, and horse a nerve is present in the neck which runs up from the heart to join the vagus. Experimental observation shows that this nerve is in communication with cardio-inhibitory and vaso-inhibitory centres, and it has been further ascertained that the nerve exercises its function when under the stimulus of hypertension of cardiac muscle. This branch of the vagus receives the name of "the depressor nerve."

The depressor nerve, then, exercises its function when in presence of peripheral resistance, and thus becomes the instrument for the fulfilment of Marey's law which runs in these words: "The beat-rate of the heart is in inverse ratio with arterial pressure." Moreover, from experimental observation we know that beat-rate is increased when the vagi are cut, and slowed when they are stimulated. Whether the beat-rate be quick or slow, the time occupied by the systolic period of the cardiac cycle is constant. On the other hand, when the pulse is slow the diastolic period is prolonged, when it is rapid this period is curtailed.

From these observations it is obvious that the vagus is instrumental in controlling the beat-rate of the heart, and that its influence, modified by the quality of systole, is exercised in the diastolic period. This action of the vagus involves periodicity, and may therefore be described as rhythmical, the rhythm consisting of negative waves.

In the dual curve, which represents the bigeminal pulse, it is noticed that the diastolic period of the primary wave is short, while that of the secondary is long. This sequence of events—namely, a small wave succeeded by a large one—is a matter of common observation in rhythmical processes, consequently the occurrence of a weak wave in the vagal negative rhythm at any time may produce the phenomenon known as the bigeminal pulse.

In the normal radial tracing synchronized for comparison with apex and jugular curves, the dicrotic wave is noticed to start precisely at the same point of time as diastole begins. There are reasons which make it probable that the dicrotic wave is modified by depressor action. The connexion existing between the depressor nerve and the vaso-inhibitory centre has already been mentioned. It is also a matter of frequent observation that in neurotic subjects, while nerve centres are presumed to be highly impressionable, the dicrotic notch descends to the basic low pressure line, and the proportions of the dicrotic wave are considerably amplified. On more than one occasion I have noticed the normal radial curve assume a pronounced dicrotic form in the course of a single tracing.

That a vagal negative rhythm operating through the depressor nerve makes its influence felt in heart and arteries is not an improbable conjecture.—I am, etc.,

Streatham, S.W., Oct. 21st. H. WALTER VERDON.

HOSPITAL ABUSE.

SIR,—May I venture to call attention to a very serious subject requiring immediate action—namely, the proposed rebuilding of the Chelsea Hospital for Women? From what can be gathered it is to be reconstituted on a large scale on the same old bad lines of administration which have been over and over condemned for the last twenty years, and by nearly every metropolitan hospital still persisted in.

As regards in-patients there are two classes of persons. Those who can contribute are received into this hospital on condition that they pay half a guinea or more weekly. The income from this source last year averaged 5s. a week. Therefore more than half were admitted without payment. For this second class, who are unable to pay, there is already provision made in the workhouse infirmary, to which all are obliged to contribute. It has been suggested that the infirmary should be available for those under the Insurance Act and their dependants. Consulting surgeons might operate there as well as in other—the voluntary—hospitals. I hope that in time the infirmary may be open to consulting surgeons who might hold clinics there two or three days a week. The Chelsea Hospital would then be free to accommodate patients who prefer to pay but cannot afford the charges of private nursing homes.

The out-patient question is the most urgent. The new department is to be "thoroughly up to date and useful to treating patients." "Plenty of room." I am told that a shilling is now charged from patients. That shilling should go into the pocket of the doctor in the patients' own neighbourhood. A man who has been a few years in practice surely knows as much about common diseases as any senior student just qualified.

If the out-patient department be kept purely for consultations and for those sent up by general practitioners, the practitioner should be able to be present, or to get the consultant's opinion—if he wants it. At present, if a patient is admitted to any hospital, it is the exception for the man in attendance to know anything more of him or her. Consulting staffs are greatly wanting in courtesy. However, as regards the rebuilding, evidently the crowds who throng these waiting-rooms would be much diminished. Many of these applicants will be under the Insurance Act.—I am, etc.,

London, S.W., Oct. 21st. GEORGE CRICHTON, M.D.

PRACTICE IN IRELAND.

SIR,—Your special correspondent in Ireland drew attention in a recent issue of the JOURNAL to the action of the Swinford Board of Guardians, who have drawn up a scale of fees for private practice which candidates for public appointments in their district must accept, otherwise there is no chance of appointment. Surely the profession is strong enough to resist such terms!

It is bad enough to be "bossed" by publicans, small

farmers, shopkeepers, etc., who know nothing about qualifications of candidates, and often care little about the poor; but it is the last straw if we are going to let them arrange our private fees. Will they give a guarantee that there will be no bad debts?

The election of doctors in Ireland for public appointments certainly requires to be altered. It is ridiculous to say that a man is appointed because he is a friend of "so-and-so," is a native of the county, is a good fellow, quite disregarding his qualifications, age, experience, etc. Canvassing is allowable, and rigidly carried out, for nearly all appointments. This should certainly be prohibited, as it is generally in England. There are places at present in Ireland where a chief tuberculosis medical officer will some day be appointed. The salary is hardly yet fixed, the appointment has not been advertised, and yet doctors have long since canvassed all those who have a vote, and doubtless most votes are already promised. So after the advertisement appears, if a doctor with special practical experience in the treatment of tuberculosis applies, will he be appointed—will he have a chance? I think not.—I am, etc.,

November 11th. MEDICAL PRACTITIONER.

ASSISTANT MEDICAL OFFICERS IN ASYLUMS.

SIR,—A great and increasing difficulty is being found in obtaining candidates for the above positions, and at the present time, when so much attention is being devoted to the reasonable emoluments and just aspirations of the profession, a word or two on the conditions of the service may not be out of place.

The initial salary is good in most instances, averaging for a beginner £150 to £200 a year, with full board and lodging. Candidates are, however, beginning to find out that beyond this there is little else. In a service without any system of promotion except luck and what is known as "ability to pull the strings" able men find themselves in receipt of £250 to £300 a year after twelve, fifteen, and more years' service, living in two rooms, or perhaps sharing a sitting-room with a younger colleague, and bound hand and foot night and day to the institution, with little or no hope of advancement, and doing little more than marking time. It might seem reasonable to say they should leave and try something else, but the fact is many of them feel that, burdened as they have been for many years by routine duties that have no relation to medicine, they are ill adapted to return again to a pursuit requiring great initiative and much knowledge that in their case is rusty or forgotten. For one reason or another surgical work of any importance in most asylums is delegated to an outsider, and medical treatment in many cases carried out with a somewhat jealous eye on what is known as the "general maintenance rate." Leave generally consists of about two afternoons and perhaps evenings a week, unless some unusual circumstance stands in the way. All the rest of the time the assistant medical officer is at the disposal of the authorities. He is unable to establish a home, and his situation and the nature of his immediate surroundings precludes much social intercourse. He is under many restraints and has many distasteful duties. The latter must necessarily exist, but many of the former could, in the opinion of many of us, be usefully relaxed. Where the night work usually resolves itself into the mere giving of a hypnotic, or a short routine visit to the wards, it is not surely necessary to keep six or eight men on duty. A proportion of them could do their day's work and finish, say, at 6 or 7 p.m. and leave, with the superintendent's approval, their junior [illegible] to fulfil any simple task that may fall to them [illegible]. It would enable the senior men that wished to [illegible] to marry, and to all it would give a much-needed [illegible] of some relief from onerous and harassing conditions of life. As a result a much greater selection of candidates would present themselves for any vacancy that occurred, and much better work than is sometimes done now could be reasonably expected. Most subordinate members of the lay staff have these and other privileges, and why they should be totally denied to the entire medical staff below the superintendent is a mystery, and very injurious to the service.—I am, etc.,

[illegible] 17th. ASSISTANT MEDICAL OFFICER.

A PARASITIC MOULD OF THE HOUSE-FLY.

SIR,—The importance of the house-fly as a factor in the spread of disease is becoming daily more important.

One of the many methods that have been proposed for their destruction is the use of a parasitic mould, *Empusa muscae*, to the ravages of which house-flies succumb in large numbers in the autumn. This mould has hitherto resisted all attempts at cultivation, and recently a question was asked in Parliament about it.

It may therefore be of interest to your readers to know that the artificial cultivation of what appears to be this pathogenic fungus may be carried out, direct from the fly, in liquid horse serum three months old, from which it can be subcultured on to blood agar. The cultures in each case were incubated at 37° C.

A blood agar tube covered with the mould thus grown was sent by me to Mr. M. Massee, of the Royal Gardens, Kew, who is an expert in this class of organism. He kindly examined the growth and expressed the opinion that it was an *Empusa muscae*, the morphological characters of which had been modified by growth on artificial media.—I am, etc.,

H. DE RIEMER MORGAN.

The Lister Institute, Elstree, Herts, Nov. 27th.

STREET NOISES.

SIR,—You were good enough last September to grant me space in your columns to invite the support of the profession in approaching the authorities with a view to mitigating street noises. I have now to thank you very much for that favour, and to express my gratitude to those medical men who were kind enough to communicate with me. You and they will, no doubt, be pleased to learn that the authorities, following my representation, have issued an order prescribing the use of silencers for motor cycles after March 31st next, and have informed me that borough or county councils are empowered under Section 23, Municipal Corporation Act, 1882; Section 16, Local Government Act, 1888; and Section 5, London Government Act, 1899, to make by-laws dealing with the other noises complained of.—I am, etc.,

CHAS. MONK,
Lieut.-Col. I.M.S. (retired).

Burlton Lodge, Station Road, Barnes, S.W.,
Nov. 25th, 1912.

DOCTORS AND THE MANUFACTURE OF DRUNKARDS.

SIR,—As the executive of the National British Women's Temperance Association, we desire in rejoinder to your leaderette of August 3rd, entitled "Doctors and the Manufacture of Drunkards," to offer you our assurance that the appeal issued by our association to the medical profession on this subject was not intended by us to raise or perpetuate a charge against the profession, but, on the contrary, to assist in dissipating any justification still remaining for such charge.

Being already, but too fully, aware of the unreliability of evidence given by inebriates, to which you direct our attention, we desire to state that we issued our appeal to the profession, not upon the statements of these unfortunates alone, but also upon the past personal experience of many of our own members in regard to the prescription of alcohol in sickness or debility. It is, therefore, with the greatest satisfaction that we welcome the assurance of your JOURNAL that the medical profession is at this time as fully alive to the importance of temperance on the well-being of the people as are the members of our own temperance association, and we desire to thank you for the help and encouragement thus given us in the work for the community which we are now endeavouring to press forward with all the means, however inadequate, in our power, and which will be materially assisted by your endorsement of our views.—On behalf of the executive, I am, etc.,

47, Victoria Street, Westminster, S.W., Oct. 23rd. AGNES E. SLACK,
Acting Vice-President.

NEW DRUGS.

SIR, Professor Dixon's statement before the Parliamentary Committee on Patent Medicines, to the effect that no useful drug had been introduced except by a man

who had a laboratory, is about as amusing and as true as if he had stated that every man who had a laboratory produced a new drug.

I myself am responsible for the introduction of two new drugs, namely, calcium iodide and calcium permanganate, which appear to-day on every drug list issued, and are extensively used, although I have no laboratory and am but a general practitioner.—I am, etc.,

Swansea, Nov. 12th. G. ARBOUR STEPHENS.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ANNUAL MEETING OF FELLOWS AND MEMBERS.

SIR RICKMAN J. GODLEE presided at the annual meeting of Fellows and Members on Thursday, November 21st, at 3 p.m.

President's Address.

In presenting the Annual Report of the Council (see BRITISH MEDICAL JOURNAL, November 9th, 1912, pp. 1346-7), he referred to the loss which the College had sustained by the death of its Vice-President, Mr. Clinton T. Dent, and stated that the vacancy thus caused had been filled by the election of Mr. Edmund Owen to be a Vice-President. In reference to and continuation of the paragraph dealing with the National Insurance Act, he referred to four resolutions passed by the Joint Committee of Colleges and Universities in England (see BRITISH MEDICAL JOURNAL SUPPLEMENT, November 16th, 1912, p. 551). It was felt that it would be inadvisable at the present juncture to take any further action in regard to the attitude of the members of the staffs of hospitals towards the working of the Act.

After dealing with a few points contained in the report, he gave some details in regard to the financial aspect of the removal from the old examination hall to the new hall in Queen Square. The College of Surgeons had received as its share of the proceeds of the sale of the old hall the sum of £24,500. The freehold site of the new hall cost the College £11,600, and its share of the cost of building was £11,700. A sum of £700 still to be paid for equipment brought the total to £24,000. The amount remaining from the purchase money and a little more would be required for incidental expenses. On the other hand, they now possessed a freehold examination hall, as against one with a ground rent of £2,200 per annum, and the assessment of the new premises was only £1,800, as against £6,000 on the Embankment. A considerable economy in rates and taxes was thus effected.

Questions.

Mr. Sidney C. Lawrence asked a number of questions, to which the President replied.

National Insurance Act.

Mr. H. Nelson Hardy moved the following resolution:

> That this meeting of Fellows and Members approves and endorses the action of the Council taken during the past year in reference to the National Insurance Act, and agreeing with the Council's statement in its letter to the Insurance Commissioners dated February 1st that the administration of medical benefits cannot be carried out under the Act, as it at present stands, with due regard to the interests of the public and the welfare of the medical profession, trusts that in the coming year nothing will deter the Council from discharging its duty to its Fellows and Members as firmly and as faithfully as it has done in the year that is past.

The action of the Council in refusing to attend the conference suggested by the Chancellor of the Exchequer was, he said, very greatly to the advantage of the Fellows and Members, and was the most important action in their interests which had been taken in the forty-five years during which he had been attached to the College. The Council had been publicly scolded by Mr. Lloyd George; its members were told that they were unfit for their positions, and that the lowest strike committee in the land would not have acted as badly as they had done. The Council's deliberate opinion that the medical benefit could not be administered under the Act as it stood with advantage to the public and to the profession, and that no satisfactory arrangement could be arrived at without an amending Act, had been ignored. The British Medical Association had made a fine attempt to come to terms with Mr. Lloyd George, but after a long and painful struggle had given it up in despair. Another effort had, it was true, been made recently, but an overwhelming majority of the members had refused to take service under the Act and Regulations, on the ground that they were unworkable and derogatory to the profession. Mr. Lloyd George's last speech had shown how little importance could be attached to the varying moods of such a versatile Minister of the Crown. After dealing with various details, Mr. Hardy turned to the action of the conference with the hospital staffs, and asked for information as to the number of members who had signed the British Medical Association pledge. In conclusion, he stated that a direct resolution asking for an amending Act would carry great weight in the House of Commons.

Mr. E. B. Turner seconded the resolution. He agreed with all that Mr. Nelson Hardy had said, save that the British Medical Association had thrown the matter up in despair. After briefly referring to the deliberations of the Representative Meeting, he remarked that the action of the Council of the College in regard to this matter had assisted the profession in their fight. It had produced a great effect on the profession and on the public. The Association had felt grave anxiety in regard to the attitude which the consultants might take up, and here again the action of the College had been of great value, more especially in reference to the out-patients' departments of hospitals. He was delighted to feel that there was no material difference of opinion in the profession, and that the two great portions would fight together against a common foe. He urged that the money question had weighed least of all with the members of the Representative Body.

Sir Victor Horsley dealt with the question of remuneration under the Act, and pointed out that this was a very important matter, for if the Members placed themselves on a low level, the public would value them at the price they put on their services. He considered that the British Medical Association alone had fought this fight, and therefore honour should be given where honour was due.

Mr. Day having pointed out that the Act was a tentative one, on a three years' trial,

Dr. W. G. Dickinson moved as an amendment the deletion of all the words after "Insurance Act," and the addition of the words "as far as it goes." Mr. Lawrence seconded.

Mr. George Jones did not think that it would be advisable for the meeting to commit itself more than was necessary. He did not believe that Mr. Lloyd George had intended to interfere with the medical profession, and if he had interfered it was unintentionally. He compared the effect with that of the Education Act of 1870, and prophesied that in the course of the next forty years the profession would find out that the Act had improved its position. The amendment, on being put, was carried by 20 to 13, and was confirmed as a substantive motion.

Direct Representation.

Sir Victor Horsley moved the following resolution:

> That this twenty-eighth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council which, as now constituted, only represents those Members who also hold the Fellowship; and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation.

In moving his resolution, he said that the question of the fitness or unfitness of the Members of this College to govern their own affairs had been raised year by year, but the Council had always ignored the demands made for a true explanation of their conduct. The Members were qualified, both by knowledge and financially, to vote in the governing and management of the College. The Council had always held that the Members were unfit either to vote at the elections of members of the Council or to sit on the Council itself. Why did the Council consider the Members unfit? The members of the Council, he was sorry to say, had always treated the annual meeting with scant courtesy. No member of the Council had deigned to reply to their demands since 1910. The speaker then referred to the incident of 1907 and to the utterly futile report of that year. He sketched the history of this struggle, and said that the action of the Council in this matter was very reprehensible. After mentioning the terms of the reply given by Sir Henry Morris (whom he hoped to have seen at the meeting) in 1910, and which failed entirely to explain the situation, he referred to the memorial which the Society of Members had sent to the Prime Minister, and which was recorded in the report of 1907. He was trying to gather information as to what was passing in the minds of the members of Council. The methods adopted

would not serve to advance the interests of the College, but would undermine their position. The Council had sent a reply to the Privy Council on this subject of the questions raised in the memorial, and had further sent a deputation to prejudice the position in the minds of the Privy Council. Why could the members of the Council not state openly what reason existed for the refusal to admit the Members of the College into the Council? They had been told that if one or two representatives of the Members were admitted, they would probably ask for more seats. It was a monstrous thing to say, as had been said, that direct representation of the profession had proved a failure in the General Medical Council, and that this formed a reason why the College should not adopt it. It was further urged that the frequent discussion of socio-political subjects would alienate the present class of member of the Council were Members of the College admitted, and that within a short time these gentlemen would decline to sit in Council at all. (Laughter and "hear, hear" from the body of the room.) The Council had failed to give one valid or proper reason why it assumed this attitude. He claimed it as a right that a reply should now be given as to the real reason of this. The College was neither one thing nor another. It was neither the mediaeval guild which it was in 1435, nor was it a modern type of surgical institute. In the mediaeval guild every member of the craft had a word to say in the management of affairs. He proceeded to give what he described as a not literal summary of the regulations of the Guild, and concluded by a challenge to the Council to advance the best reason they could summon for considering the Members of the College unfit to participate in the management of their College.

Dr. Josiah Oldfield, in seconding the motion, said he had a high opinion and great respect for the professional capabilities of the members of Council, and for their knowledge of surgery, but it was one thing to be a good surgeon and another to be a good legislator. It was not necessary that the distinguished surgeon should possess that degree of common sense which was required in the management of affairs. The impregnable position in which the Council envelopped themselves was a subversion of ordinary government, and unjust. He supposed that the Members would be given the same answers that they had received year by year. He asked the President what he imagined would happen if Mr. Lloyd George could assume the same impregnable position as they had assumed. If he, like the Council, were protected by an unassailable fortress, instead of having to face the public to secure his seat in Parliament, where would the profession be in their fight for fair treatment? He maintained that a fight against the Council of the College was iniquitous. The Members contributed over £10,000 to the funds of the College, while the Fellows only brought in some £3,000. What was the ground for disenfranchisement?

Sir Alfred Pearce Gould took up Sir Victor Horsley's challenge, and denied that the Council considered the Members unfit to sit with them. The reason why they did not agree to admit Members into the Council was because the Council of the College was not a legislative body. The matters with which it had more especially to concern itself were the care of the most valuable museum of its kind in the world, the care of a library which deserved the high reputation it held, and the inspection and conduct of what he maintained were the most important and the finest examinations in surgery. He did not think that the Council would be better qualified to deal with these matters if Members were elected on it. The next reason was that an election in which all the Members of the College, who were scattered all over the world, took part, would be very costly, difficult, and, he thought, impracticable. In matters affecting the profession, the Members had the British Medical Association, which had proved [illegible] admirably fitted to safeguard the interests of [illegible] of the profession.

Mr. Fitzgerald remarked that while Sir Alfred Pearce Gould had disclaimed the suggestion that the Members were [illegible] on the Council, he had proceeded [illegible] they could not be considered fit to [illegible] Museum and the library.

Mr. [illegible] agreed with Sir Victor Horsley; and Dr. [illegible] maintained that, in spite of Sir Alfred Pearce [illegible]'s contention, the Council were legislators.

Mr. [illegible], in reply, said that he was disappointed [illegible] of the discussion. On the point [illegible] had been a marked failure. Only [illegible] members of the Council, [illegible] for Sir Alfred Pearce Gould, who was a teacher of his, he maintained that his points had not been met. They had been told that the Members could not help in the work of the College. That was not the case. They still did not know why the Council considered the Members unfit to sit on the Council. The arguments advanced were no answer to the question, and were quite unworthy of a deliberative and scientific body. He had expected a reply from the President, but it was now too late, since he had been called upon to reply. The President had failed in his duty, and had not given the Members what in courtesy and justice they should have received. He would not have an opportunity of remedying this omission until next year.

The motion was then put and carried.

National Insurance Act.

At this point the Members began to leave the theatre, and Dr. W. G. Dickinson moved the following:

> That this meeting regrets that the Council has not called a special general meeting of Fellows and Members to consider the National Insurance Act.

Mr. Sidney C. Lawrence seconded, and the President attempted to put the motion. A few Members voted for it, no one voted against, and the President declared the motion carried.

Vote of Thanks.

A vote of thanks to the President was moved by a Member, and was acknowledged by the President.

VOTES FOR MEMBERS.

Dr. Josiah Oldfield writes with reference to the remarks of Sir Alfred Pearce Gould:

As seconder of the resolution asking for "votes for Members" and "seats upon the Council," I venture to point out that Sir Alfred Pearce Gould's arguments are never likely to satisfy that intelligent body of Members who consider that since there are over 17,000 Members, who contribute over £10,000 a year to the College, while there are only some 1,500 Fellows who contribute under £3,500 a year—the sole government and administration and voting powers should not remain in the exclusive possession of the Fellows, but that Members also should have a voice in the spending of the money which they so largely contribute.

In short reply to Sir Alfred Pearce Gould I would maintain that surely a selected M.R.C.S. would be as capable of an opinion upon the Hunterian Museum as any F.R.C.S.! The Fellows had also seized the exclusive powers before the Hunterian Museum existed.

As to the library, it seems monstrous to suggest that because a man is not an F.R.C.S. he cannot help to administer a medical library.

As to examinations, since the majority of candidates are for M.R.C.S. examination it is surely a strong argument that men holding the M.R.C.S. diploma should be represented upon the body which settles the examination as to the number of members; one would have thought that Sir Alfred Pearce Gould would have been proud of them instead of bewailing them. It seems to me a most inconsequent argument, since it runs: You Members are so many and we Fellows are so few, *therefore* you shall have no voice and we will have all the voice.

The reply to the argument that holders of the M.R.C.S. diploma are scattered all over the world is that holders of the F.R.C.S. diploma are equally widely scattered. The final argument of cost is surely an unworthy one to throw at those who provide the largest of the funds of the College. And really the cost is comparatively trivial. My own society took the opinion of every M.R.C.S. throughout the world on the question of women's admission to the examinations of the College!

I venture to hope, therefore, that every M.R.C.S. will now join "the Society of Members of the Royal College of Surgeons of England" and stand shoulder to shoulder in the demand for an alteration of the Charter of the College if the Council persists in refusing any voice to the 17,000 Members of it.

Dr. W. G. Dickinson (Portishead) also writes:

I was very glad to hear Sir Alfred Pearce Gould's reply to Sir Victor Horsley on the question as to why Members of this College are not represented on the Council.

Sir Alfred Pearce Gould is such an eminently fair and reasonable controversialist that it is a pleasure to listen to him, and we may be certain that he said everything that can be said from the point of view of the Council on this matter.

I should like to be allowed to reply that the Council is already elected in the same way as most other bodies of a similar nature, but by a very limited electorate, namely, some 1,500 Fellows—and that the proposal is only to extend the franchise to the larger number of Members. It is also proposed that the Members should only have a restricted representation on the Council, say some half dozen seats, and that the remaining twenty-four should be elected as at present by the Fellows. Sir Alfred Pearce Gould cannot reasonably maintain that the discharge of the present limited functions of the Council would be in any way interfered with by the presence of Members, who are just as much interested in the welfare of the College as the Fellows.

We know, however, from other sources, such as the reply of the Council to the Privy Council, when this question was raised some years ago, that the College Council fears that the Members will introduce discussions on matters of socio-political interest which will disturb the lethargic calm in which that body is at present enwrapped. As to this, I will only say that nothing of the kind is to be expected. We do, however, claim that the College has another function which it persistently keeps in the background—namely, to look after the interests of its Fellows and Members. It does not even pretend to do this, and the presence of Members on the Council might induce an awakening to its duties in this respect. It had an opportunity of doing this in connexion with the Insurance Act, but instead, it only (in conjunction with other bodies) called a meeting of the staffs of London hospitals.

The statement that it is impossible to poll 17,000 Members can only be characterized as preposterous. It has been done already several times by the Society of Members, and would be quite easy for the College with its much larger resources.

In conclusion, I would only assert that the addition of a few Members would be a source of strength instead of weakness to the Council, and would put an end to an irritating domestic controversy which has existed at the College for over a quarter of a century.

FELLOWSHIP.

The following candidates have been approved at the examinations indicated:

FIRST FELLOWSHIP.—F. J. Anderson, A. R. Bearn, B. Biggar, M. W. K. Bird, E. C. Bradford, J. C. Brash, S. E. V. Brown, G. C. Chubb, P. S. Foster, V. Gabriel, J. B. Haycraft, S. H. Hodges, R. T. Jones, S. W. M. Jones, R. A. Kerr, A. A. Lees, A. S. Liebson, G. C. Linder, M. W. B. Oliver, A. C. Perry, D. D. Pinnock, E. D. Pullon, J. B. Stanley, J. O. Thomas, J. W. Tonks, D. Watson.

UNIVERSITY OF OXFORD.

The following have been appointed as examiners for medical degrees: *Organic Chemistry*, Dr. F. D. Chattaway; *Pharmacology*, Dr. W. E. Dixon; *Human Anatomy*, Professor Arthur Thomson; *Human Physiology*, Dr. W. Ramsden; *Pathology*, Dr. H. M. Turnbull; *Forensic Medicine, Hygiene, and Public Health*, Dr. F. J. Smith; *Medicine*, Dr. Theodore D. Acland; *Surgery*, Mr. George Heaton; *Obstetrics*, Dr. H. Russell Andrews.

UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

M.C.—A. H. Crook.
M.B.—A. H. Crook, B. A. Ployne, J. Winterbotham.
B.C.—B. A. Playne, J. Winterbotham.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examinations indicated:

THIRD M.B. (*All Subjects*).—*C. M. Jones (*a*), Westminster Hospital; C. J. Marshall (*a, b, c, University Medal*), Charing Cross Hospital; *J. Taylor (*a*), University College Hospital; C. Aldis, W. M. Ash, C. A. Birts, Florence H. Bousfield, R. Brewitt-Taylor, B. W. Brown, B. I. Cohen, T. P. Cole, Gertrude Dearnley, L. A. Dingley, H. T. Evans, W. B. Foley, J. M. Foord, G. E. Genge-Andrews, W. S. George, A. J. Gibson, C. Gibson, C. D. Grange, F. W. Hamilton, A. W. Hansell, A. W. Havard, B. W. Howell, A. H. Hudson, G. W. B. James, Mary S. Jevons, M. M. Khan, J. S. H. Lewis, R. H. Liscombe, Dorothy C. Logan, Emily C. Macirone, P. J. Monaghan, J. F. O'Connell, H. W. Parrott, P. T. Patel, Sara L. Penny, F. H. Rees, J. F. G. Richards, W. G. Rogers, E. G. Saunders, W. F. V. Simpson, H. K. V. Soltau, J. L. Stewart, J. Tattersall, F. R. Todd, E. A. Wilson.

Group I.—G. F. Bradley, J. M. Curé, A. L. Fitzmaurice, F. R. Fletcher, W. M. Glenister, J. M. Joly, T. P. Kilner, G. S. Miller, H. M. Rashbrook, W. Robinson, Margaret E. E. Smith, Mary A. van Ingen.

Group II.—J. Appleyard, E. Bach, A. C. L. Bilderbeck, A. B. Cardew, F. W. T. Clemens, M. J. Cronin, G. R. Dobrashian, A. R. Elliott, D. M. Gibson, R. L. Horton, F. H. Kelly, J. D. Lyle, G. R. Lynch, C. L. Pattison, W. B. Sanders, A. R. Sharrod, A. W. Venables, E. W. Wade, N. T. Whitehead, A. Wilson.

B.S.—F. C. McCombie.

* Awarded Honours.
(*a*) Distinguished in Medicine.
(*b*) Distinguished in Pathology.
(*c*) Distinguished in Forensic Medicine.

UNIVERSITY OF EDINBURGH.

Scholarships.

THE following awards for the session 1912-13 have been announced: The *Crichton Research Scholarship* in Physiology, Mr. J. A. Campbell; the corresponding scholarships in Pathology, Messrs. N. H. Bolton and D. M. Lyon; the *Sibbald Scholarship* and *Grierson Bursary* in first professional subjects, Messrs. J. Milne and J. Bennett; the *Grierson Scholarship* in Pathology, Mr. A. H. D. Smith; the *Grierson Bursary* in Materia Medica, Mr. T. Pullar; the *Crichton* and *Thomson Bursaries* in preliminary examination subjects, Messrs. G. W. Dunlop, L. Mackinnin, and J. Thompson; the *Neil Arnot Prize* in Natural Philosophy, Mr. J. Brown.

APOTHECARIES' HALL OF IRELAND.

THE following candidates have completed the examinations indicated:

INTERMEDIATE.—F. Duckworth, J. B. Barry, M. B. Kennedy.
FINAL.—S. Ram Rao, A. S. Dillon.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have been approved in the subjects indicated:

SURGERY.—*†T. J. Gibson, *†J. W. Harrison, *†G. R. Lynch.
MEDICINE.—*†H. E. B. Finlaison, *†T. J. Gibson, W. C. Himely, *†W. S. Hyde, E. M. Morris.
FORENSIC MEDICINE.—M. P. Dos Santos, A. M. L. Greaves, T. H. W. Idris, E. M. Morris.
MIDWIFERY.—G. R. Lynch, E. M. Morris, S. Zarehi.

*Section I. †Section II.

The diploma of the Society has been granted to Messrs. T. J. Gibson and W. C. Himely.

Medico-Legal.

O'SULLIVAN *v.* BRITISH MEDICAL ASSOCIATION.

THIS case was heard by the Lord Chief Justice and a special jury on November 22nd. A claim was made by Dr. Patrick Joseph O'Sullivan to recover damages from the British Medical Association for a libel said to have been contained in the BRITISH MEDICAL JOURNAL of October 7th, 1911. The defence justified the statements made so far as they consisted of allegations of fact. It was also alleged that the remainder of the article was fair comment upon matters of public interest.

The plaintiff appeared in person. Mr. A. Neilson (instructed by Messrs. Hempson) represented the Association.

The plaintiff, in opening his case, read the statement of claim to the jury. He said that at the date of the publication of the article of which he complained he was practising at 69, Queen's Road, Dalston, and was a candidate for the post of medical officer to the Shoreditch Guardians, and for the post of medical superintendent of the Homerton Infirmary, Hackney.

The Lord Chief Justice: What do you say is libellous, Mr. O'Sullivan?—I say the whole article is libellous, but I object particularly to the last part. Continuing, the plaintiff said that in September, 1911, he heard of this vacancy at Shoreditch. When he first applied for the post there was a disagreement between the guardians, and he was not appointed.

The plaintiff then entered the witness-box and said that he was M.D., Q.U.I. (1875). He had been assistant to a Dr. Ambrose at Dalston from May, 1911. His first application for the post of medical officer to the Shoreditch Guardians was rejected on September 27th. The article complained of then appeared. He complained of the expression: "Every man for himself and Dr. O'Sullivan for us all." There was profanity in it, and it was calculated to bring him into contempt. The part he most objected to was the passage which conveyed that he was a disgrace to his native land and to those with whom he had been associated in the army and at sea. The congratulation was something he also objected to.

In cross-examination, witness said that this was an appointment for the third division of Shoreditch. There had been a vacancy since before December, 1910. He had not heard that the payment was regarded as low. He did not then know that the defendant Association had made representations on the subject to the Local Government Board. He knew that there was a dispute before he applied for the vacancy, but he did not know that the guardians had received a letter from the Local Government Board.

Mr. Neilson: Did you know at that time that there had been a dispute between the profession and the guardians?—I knew there was a dispute, but did not know the details.

Continuing, witness said the guardians offered £110. He did not know that no doctor could be found to accept the post at £115. It was true that the guardians then raised the salary to £150. He did not know when he applied that the profession thought £150 too low. It was true that two out of three candidates withdrew their application on representations made by the medical profession. Dr. Ambrose knew about the dispute. He (witness) was not elected at that meeting, but he was elected for a year on October 25th. There were no other candidates, and he had been re-elected this year.

Dr. Alban Dixon, on being called as a witness, objected to give evidence on the ground that he had not been paid.

The Lord Chief Justice: You have come here, so I am afraid I can do nothing.

In the course of his evidence he said that prior to the appointment of the plaintiff he had been doing temporary duty. He sent a list of the cases he had been dealing with to the clerk to the guardians when he gave up work. He denied that he was bound to give details of the cases to the plaintiff as a matter of professional etiquette.

The Lord Chief Justice: This does not appear to help the plaintiff's case.

Continuing, witness said he saw the article a month after it appeared.

In cross-examination, he said he was going to apply for the post, but was warned by the Association. He was paid at the rate of £600 a year for his temporary work.

Dr. Henry Edward Garrett, a medical officer to the Shoreditch Guardians, said he saw the article at the time it appeared. He had not the honour of the plaintiff's acquaintance. He had never been introduced to him. The first time he spoke to him was on the night before last.

The Plaintiff: I am most anxious to make the acquaintance of the medical officers. They avoid me!

In cross-examination, witness said the dispute between

the guardians and the profession had existed long before the article appeared.

This concluded the plaintiff's case.

Mr. Neilson then submitted on behalf of the defendants that the plaintiff had shown no cause of action.

The Lord Chief Justice accordingly inquired whether the jury desired to hear anything further.

Mr. Neilson intimated that he had witnesses to call if the jury desired to hear them.

The foreman said they were agreed that it was only fair comment.

Judgement was therefore entered for the defendants with costs.

AN ACTION FOR FEES.

On November 19th the Lord Chief Justice, sitting with a special jury, heard the case of Duke *v.* Wilson and others, in which Dr. Benjamin Duke, of Windmill House, Clapham Common, sought to recover £630 14s., being fees for medical attendance on the late Mr. Edward Henry Brown, of Roehampton, and his family. The defendants alleged that the plaintiff charged a guinea a visit when he was only entitled to charge 10s. 6d. They also said that he had attended unnecessarily and unreasonably.

Mr. Walker, K.C., and Mr. Macnaughton appeared for the plaintiff; Mr. Gregory, K.C., and Mr. Watson for the defendants.

It appeared that the plaintiff had known the deceased for twenty years. In 1887 deceased went to Roehampton, a distance of five miles from Clapham. Consequently plaintiff always charged a guinea for each visit, and two guineas for a consultation. The fees were paid punctually down to 1909. In 1910 Mr. Brown suffered from dyspepsia, heart trouble, and carcinoma of the tongue. Sir Jonathan Hutchinson and Sir Douglas Powell both saw him. An operation was proposed, but abandoned owing to the condition of the patient's heart. He died on October 7th, 1911. The plaintiff did not send in the 1910 account as usual because of his patient's illness, but he did send it in June, 1911, by special request, when it amounted to £485. When the son and daughter objected to his charges in August of that year, he said that if they thought so he would discontinue his visits. Mr. Brown, however, still wanted him to attend. Altogether he had travelled about 5,000 miles to see Mr. Brown, and had spent some £250 on cabs.

Sir James Goodhart gave evidence to the effect that daily attendances were necessary.

A witness, called for the defence, said that when the bill for £485 was shown to Mr. Brown he had said it was too much, but that the (his) children might settle it after he had gone. The son of the deceased admitted that he had written to the plaintiff thanking him for his kindness and care of his father.

In addressing the jury for the defence, Mr. Gregory suggested that a guinea was an exorbitant fee for a general practitioner. Moreover, in this case, the deceased could not be cured, he could only be watched.

The Lord Chief Justice said that no evidence had been called by the defendants to show that the guinea fee was excessive. The charge that the plaintiff had attended unnecessarily in order to make money was a serious one to make against a medical man, and ought never to have been made without evidence, and it was to Mr. Gregory's credit that no mention of it had been made by him. It was a remarkable thing that the defendants had been unable to bring forward medical evidence to support their case.

The jury returned a verdict for the plaintiff for the amount claimed, and judgement was entered accordingly.

TREATMENT OF SCHOOL CHILDREN IN SCOTLAND.

A case of importance to school boards was argued by counsel in the Court of Session in Edinburgh on November 15th. The case was presented by the School Board of Glasgow on the one hand and Miss Allan, a ratepayer, on the other. The cases of [illegible] children are cited. These children required dental [illegible] but their parents were unable on account of poverty to provide the required treatment. The school board proposed [illegible] pay for the treatment out of the school fund, but was [illegible]ed with an action by Miss Allan, who contended that [illegible] board had no power to do what it proposed. The [illegible]ch payment by the board would be to throw the cost [illegible] upon the school rate. The board maintained [illegible] entitled to provide and pay out of the school fund [illegible] medical or dental treatment required in such [illegible]er (*a*) by providing the necessary apparatus and [illegible]aff at one or more schools or other places, or (*b*) by [illegible] children to be treated by competent private prac[illegible]als or infirmaries, and that at all events it [illegible] in cases where the parent was unable on [illegible] of ill health to provide the necessary [illegible] court made avizandum.

[illegible]TS.

A legal agreement must [illegible]ems thereof plainly stated, [illegible] and duly witnessed and [illegible] each of the parties having [illegible]arty with whom he con[illegible]ract. The [illegible] respondent appears [illegible] be in order [illegible] any stamp.

The Services.

INDIA.

CANTONMENT REGULATIONS.

THE British Committee of the International Abolition Federation has published in a pamphlet bearing the title, *Our Army in India and the Regulation of Vice*, the correspondence between it and the India Office on the rules, regulations, and practice in Indian cantonments with regard to prostitution and disease. The correspondence extends from October, 1909, to October, 1912. The pamphlet contains a reprint of Lord Kitchener's memorandum for soldiers in India (for insertion in the soldier's small book) and also of his memorandum on steps for the prevention of venereal disease. In the introduction, the committee states that the pamphlet has been issued in response to many requests for an answer to the question whether and to what extent, and in what manner, the State regulation of vice is still in force in Indian cantonments. As a general indication of the attitude of the committee we may quote one paragraph from this introduction:

> The existing conditions in India are defended on the ground of "practical results." But before attributing the marked and continuous decrease in venereal disease among the European troops in India to the effect of the 1897 rules, it should be borne in mind that in the Home Army a similar marked and continuous diminution of disease began immediately after the repeal of the Contagious Diseases Acts, and has continued without the aid of any of the practices to which we object. If the improvement in India is due to "sanitary control" of brothels, to what is it due in England? A reply to this question may be found in the official report on the health of the army in India for the year 1909, where the decrease is not attributed to the operation of the rules, but to a different set of factors, most of which operate equally in the two armies. As noted in former reports the steady annual decrease in these diseases may be ascribed to a variety of causes, chief among which are the personal influence of the commanding officers, the spread of temperance, the variety of games and amusements which fill up the spare time, the more thorough treatment of disease, by which relapses are checked, and finally the deterrent influence of the loss of service pay which those who contract these complaints have to suffer. It is from such influences as these that further improvement is to be expected, and to such influences the official toleration of brothels must be a hindrance rather than a help.

INDIAN MEDICAL SERVICE.

THE Government of India has sanctioned the introduction of "Organization, Administration and Equipment" as a subject in the examination of lieutenants of the Indian Medical Service for promotion to the rank of captain. This sanction will have effect from January 1st, 1914, to embrace all lieutenants whose commissions are dated January 28th, 1911, and those of any earlier batch who have not by that date completed their departmental examination for promotion. It has also been decided that lieutenants of the Indian Medical Service may be allowed to appear for their promotion examination on completion of one year's service.

Obituary.

WE regret to record the death, on November 16th, of Dr. GEORGE FORBES, of South Shore, Blackpool, in his 52nd year. It took place at Leeds after an operation undertaken for the relief of a condition from which Dr. Forbes had for some time been suffering. An Aberdeenshire man by birth, Dr. Forbes received his general education at Aberdeen Grammar School, and his professional education at the medical school of the university of the same city. After graduating M.B., C.M., in 1886, he practised for nine or ten years in Oldham; he then moved to Blackpool, where for the past fifteen years he had been a well-known figure and a highly esteemed personality. An old member of the British Medical Association, he was on the staff of the Victoria Hospital, and at one time was president of the Fylde Medical Society. He was a successful practitioner, possessing apart from his marked professional abilities a very happy power of inspiring confidence in his patients. A bright eyed, square-built man, with regular features, he had one manner for all classes, and his geniality and many sterling qualities had endeared him to a host of friends. By instinct he was an outdoor man, but he was one of the pleasantest of companions everywhere. Dr. Forbes was married, and is survived by his wife and two daughters, with whom much sympathy is felt.

DEPUTY SURGEON-GENERAL ALEXANDER MORRISON DALLAS, Bengal Medical Service (retired), died at Ealing on November 9th. He was born on July 5th, 1830, educated at Guy's Hospital, took the M.R.C.S. in 1855, and entered the Indian Medical Service as assistant surgeon on February 20th, 1856; becoming surgeon on February 20th, 1866; surgeon-major July 1st, 1873; brigade surgeon on December 1st, 1882; and reached the administrative grade as deputy surgeon-general on September 9th, 1884. Owing to ill health he was unable to put in the full term of five years in that rank, and retired on April 2nd, 1889. He was decorated with the C.I.E. on May 29th, 1886. He was serving in India at the time of the Mutiny but the Army List credits him with no war service. Most of his career was spent in civil employment in the Punjab. He entered the Gaol Department in that province in 1859, became Inspector-General of Gaols in 1863, and held that post for over twenty years, until promoted to administrative rank, when he became Surgeon-General of the Punjab. In the following year, 1885, the local rank and title of surgeon general was withdrawn from the deputy surgeon-generals at the head of the provincial civil medical administrations, and that of Inspector-General of Civil Hospitals substituted.

Public Health
AND
POOR LAW MEDICAL SERVICES.

ESTIMATES OF POPULATION.

DR. J. LLEWELYN PRICHARD (Medical Officer of Health, Aberdare) writes: In the SUPPLEMENT of the JOURNAL of November 9th the estimated population of Aberdare is given as 51,819. Taking the 1911 census population as 50,844 and 1901 as 43,365, I should very much like to know how you arrive at this result.

*** The estimated population of Aberdare in the middle of 1912 (51,819) is that estimated and published by the Registrar-General. The method of estimating post-censal populations is explained in the Registrar-General's last annual report, and the "factors" used for different towns for 1911, 1912, and 1913 are quoted. Thus, for Aberdare the inter-censal increase (7,465) is multiplied by the factor .13242746 and the product is added to the 1911 census population.

$$50,830 + (7,465 \times .13242746) = 51,819.$$

Medical News.

AN International Congress of Marine Hygiene will be held at Genoa in 1914.

DR. EDMOND RYAN, of Crumlin, Mon., has been appointed to the Commission of the Peace for the county of Monmouth.

DR. FRANCIS J. H. COUTTS (Kingston Hill), Dr. Thomas F. Pearse (Calcutta), Dr. Hugh Stott (Lewes), and Sir John Tweedy (London), have been elected Fellows of the Royal Sanitary Institute.

EARL FORTESCUE (Lord Lieutenant of the county of Devonshire) has consented to accept the office of President of the twenty-eighth congress of the Royal Sanitary Institute, to be held at Exeter from July 7th to 12th, 1913.

UNDER the will of the late Miss Elizabeth Stringer of St. Leonard's, Liverpool Royal Infirmary receives a bequest of £2,000; and the Convalescent Home for Women and Children, New Brighton, and the Hastings and St. Leonard's Hospital, £1,000 each.

SIR J. COCKBURN, M.D., K.C.M.G., Dr. R. J. Maitland Coffin, Major R.A.M.C. (T.F.), one of the honorary medical officers, and Dr. R. W. Henderson, a member of the Testing Subcommittee, have been elected members of the new council of the British Fire Prevention Committee.

FOR the consideration of the general meeting shortly to be held in Glasgow the directors of the Scottish Burial Reform and Cremation Society have issued their annual report. It shows that the prejudice against cremation is steadily, if slowly, being overcome. During the year ending September 30th, 1912, forty-four cremations were carried out in Scotland, compared with thirty-five in the previous year, making a total since the opening of the crematorium in Glasgow of 402. It may be mentioned that a special crypt for the reception of urns has just been erected in St. Columba's, the leading Presbyterian church in London.

AT the meeting of the Royal Society on December 5th, Dr. J. S. Haldane and his colleagues Dr. C. G. Douglas, Mr. Henderson, and Mr. Schneider will report the results of their physiological observations made on Pike's Peak, Colorado, with special reference to adaptation to low barometric pressures. A series of papers by various workers on processes operative in solutions, all communicated by Dr. H. E. Armstrong, will also be read.

A SELECT Committee of the House of Commons was appointed on November 27th to inquire into the circumstances which had led to the large and increasing number of fatal accidents in the metropolis due to motor omnibuses and other forms of power-driven vehicles, and to make recommendations as to the measures to be taken to secure greater safety in the streets. The Committee consists of Mr. A. Baker, Mr. Shirley Benn, Mr. Boyle, Mr. Stephen Collins, Mr. Goldsmith, Mr. W. Guinness, Mr. Harris, Mr. Kellaway, the Earl of Kerry, Mr. Morison, Mr. Munro, Mr. Nolan, Mr. W. Thorne, Lord A. Thynne, and Sir G. Toulmin.

BUTTERWORTH'S, a firm of publishers familiar to many generations of lawyers, is now turning some of its energies into medical directions. It has for some years had branches in India and Australia, and these are now to deal with medical books upon an extensive scale. The first catalogue issued by them contains the titles of many hundred modern works both by foreign and British authors, which will be promptly obtainable from the Calcutta and Sydney branches at the same prices as in this country. All medical men resident in these countries will, at their desire, be furnished at regular intervals with the names of books added to the list.

THE monthly bulletin for October of the Office Internationale d'Hygiène Publique contains a summary of deaths from certain diseases and groups of diseases in France, Germany, England and Wales, Belgium, Holland, Spain, and Italy for the four years 1906 to 1909. It has been prepared from official sources by M. Paul Roux, of the public health department of the Ministry of the Interior in France, and may prove useful to medical officers of health. It is illustrated by a chart in which the mortality from the various diseases and groups is compared in a manner very striking to the eye. England and Wales share with Belgium, Italy, and Spain an exceptionally high mortality from measles, and with Germany and Italy from pneumonia.

THE coroner, in summing up at the inquest with regard to the fire at Messrs. Barker's premises, Kensington, said that it would be interesting to know how many other buildings in London were in the same condition as the jury had been told Messrs. Barker's premises were, how the many negotiations were going on, and how many buildings were waiting before the necessary alterations were made. Mr. Edwin O. Sachs, chairman of the executive of the British Fire Prevention Committee, replies to these questions by the statement that there are upwards of 50,000 buildings in the metropolis to which the London Building Amendment Act, 1905, has not yet been applied; only 2,330 buildings had been scheduled for action down to June last, and only 1,203 had been considered by the Building Act Committee of the London County Council; of these 1,203, only 527 had at that date been satisfactorily equipped by the provision of suitable means of escape.

THE usual monthly meeting of the executive committee of the Medical Sickness, Annuity, and Life Assurance Society was held at 429, Strand, London, W.C., on November 15th, Dr. F. J. Allan in the chair. The claim account presented showed a margin in favour of the society as against the amount expected. The number of motor accidents showed a steady increase, and some had been serious, involving long periods of incapacity. No extra premium is charged to members using motor cars or motor cycles. The new proposals received were about up to the average, but the number of members desiring to insure for higher amounts had increased, and indicates that those who have had experience of the benefits derived from being insured in the society wished to be covered for the highest amount available under the rules. Under one of the present bonus schemes, should death take place before 65 the representatives of the deceased member would be entitled to an amount which increases automatically with the length of membership and the sum insured. Prospectuses and all further information can be obtained from Mr. Bertram Sutton, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, W.C.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

COMMUNICATIONS respecting Editorial matters should be addressed to the Editor, 429, Strand, London, W.C.; those concerning business matters, advertisments, non-delivery of the JOURNAL, etc., should be addressed to the Office, 429, Strand, London, W.C.

MANUSCRIPTS FORWARDED TO THE OFFICE OF THIS JOURNAL CANNOT UNDER ANY CIRCUMSTANCES BE RETURNED.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

N. asks for advice in the treatment of chronic urticaria in a woman, aged 24, employed in clerical work. The urticaria is of twelve months' duration. Treatment by diet, stomachics, atropine, and bromide has failed. Rest and change of air have been of temporary service.

SOMNILOQUISM.

O. C. asks for information as to the cause and treatment of talking in sleep, which, in the married state, may be very disconcerting to the partner.

DEFECTIVE EYESIGHT AFTER CONFINEMENT.

DR. J. A. WILSON (Cambuslang) writes: Within a few weeks I have seen three women, with short sight, who say their vision has become worse after confinement, the presumption being that the myopia has increased. I would be pleased to have information on this point from medical men in general practice. Of course, I do not refer to albuminuric conditions pure and simple.

MALE SERVANTS' LICENCE DUTY.

MEDICUS has in his service a boy who performs general work in connexion with the surgery, and does a little house work in his spare time, though not engaged to do so. The licensing authorities have come down upon him for a mitigated penalty of 10s. for omitting to take out a licence for the boy.

*** Although the proceedings of the officers of the council, as described in our correspondent's letter, seem to be somewhat high-handed, it is clear, on the facts, that the licence duty has been payable, and that the best course to pursue will be to pay the mitigated penalty applied for.

INCOME TAX.

G. J. G. [illegible] or of taxes with particulars of his gross [illegible] for the last three years. The surveyor now asks for the amount of the book debts at the end of 1910 and at the end of 1911.

[illegible] there are very exceptional circumstances in the case the surveyor's request is a distinct departure from the well-recognized practice of [illegible] with professional accounts on a cash basis. Our correspondent might point this out to the surveyor, and, if he persists, might communicate with the Board of Inland Revenue on the subject.

DEVONIENSIS [illegible] the question of [illegible] of a motor car [illegible] renewal. He also [illegible] raised by £200 without [illegible] of taxes will only [illegible]

*** The question of [illegible] depreciation of a motor car has been dealt with [illegible] of the JOURNAL. [illegible] legal title to [illegible] object to an allowance for the cost of [illegible] replaced. With regard to the deduction to be made from profits on account of [illegible] must necessarily vary according to [illegible] it is unusual for a less [illegible] allowed; the usual proportion is [illegible] allowed by the Act.

ANSWERS.

REBATE OF LICENCE DUTY ON MOTOR CARS.

M.D.—As our correspondent is not in practice and only uses his car to take him from his residence to the laboratories in which work is done, the clerk to the local authority is probably right in ruling that the case is not one that comes within the provisions of the Act granting relief from licence duty. The car is at present used for purposes that are not especially incidental to the carrying on of the medical profession as distinguished from any other profession.

HAEMORRHAGE FROM THE PROSTATIC URETHRA.

DR. JAMES MACMUNN (London, E.C.) writes: In reply to "Silver," I would like to say, in a fairly extensive acquaintance of the literature of such subjects, I never read of a case of haemorrhage from the prostatic urethra after injections of silver nitrate requiring external urethrotomy. I once saw, however, in the practice of a friend, copious bleeding following injections of silver nitrate where we thought we would be forced to do external urethrotomy. The bleeding was stopped by a simple expedient I had previously used in prostatic and urethral bleeding. A well lubricated condom was pulled over a French catheter, and tied, and over both an endoscopic tube, leaving about 2 in. of the condom and catheter at the distal end uncovered. Inflation through the catheter distended the uncovered part, and acted admirably by its pressure.

LETTERS, NOTES, ETC.

PHENOLPHTHALEIN AS A LAXATIVE.

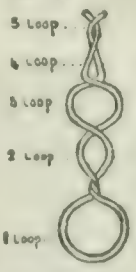
DR. J. C. MCWALTER (Dublin) writes: I think the late Dr. Thudichum was one of the first to draw the attention of the profession to the use of phenolphthalein as a tasteless laxative. It seems to be in danger of being neglected by the physician and exploited by the mere medicine vendor. I have given over 1,000 doses of it, and it is a laxative of unusual efficacy, singularly adapted to females and children. The dose is about ½ to 5 grains, and it should not be compressed, but may be given blended with chocolate.

REFLEX STIMULATION OF THE VAGUS CENTRE IN SEASICKNESS.

LIEUTENANT-COLONEL C. W. JOHNSON (Brighton) writes: Dr. Brand suggests trying vesication of the skin over the course of the vagi nerves for seasickness. Exactly twenty years ago I tried it on two officers of the I.M.S. on our way to India, who were prostrated and would not leave their berths. Within half an hour both felt well and were on deck, and had no relapse. One of them tried it on his wife, with the same success. I put some chloroform on two bits of lint, and put one on each side of the neck (between the mastoid and the angle of the jaw), and covered the lint with silk tissue. The patients kept it on until they could not bear the smarting any longer; I think about ten or fifteen minutes. Ladies with fair skins should be informed that a red mark is apt to be left on their necks for two or three days.

A CIGARETTE HOLDER.

DR. J. D. RECKITT (Kensington) has sent us a specimen of a cigarette holder which he has devised. The holder is made of brass wire, and the directions for use are: (1) Press upon the sides of No. 2 loop, No. 5 loop opens. (2) Place the cigarette in No. 5 loop, release No. 2 loop from pressure, when the sides of No. 5 loop automatically grasp the cigarette and hold it in position. (3) The holder can be used as a rest on table, etc., with lighted end of cigarette pointing upwards. It is claimed that the holder prevents staining of fingers, is suitable for any shape of cigarette, and does not spoil cigarettes like tubes do. The illustration shows the holder closed.



Closed.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

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Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Wednesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.

Presidential Address

ON THE

PRESENT POSITION OF TREATMENT OF FRACTURES.

DELIVERED AT THE LIVERPOOL MEDICAL INSTITUTION.

(With Special Plates.)

BY

ROBERT JONES, CH.M., F.R.C.S.I.(HON.), F.R.C.S.E.,

LECTURER ON ORTHOPAEDIC SURGERY, LIVERPOOL UNIVERSITY.

In the days of our forefathers fractures, amputations, herniotomy, and lithotomy formed the most important sections of surgical procedure.

With the discovery of the bacterial origin of inflammations and the advent of aseptic methods a new era in surgery began. Amputations were deposed from their former position as the great operations in surgery. New domains were conquered in the regions of the abdomen, the pelvis, the thorax, and the brain.

The rapid advances made during the last thirty years have cast a glamour over the eyes of the younger generation of surgeons. There has been so much to discover that was new, both to teacher and to student, that the treatment of fractures was for a generation allowed to fall into the background as a subject on which our grandfathers had said the last word.

In most of our medical schools the treatment of fractures has been definitely assigned to junior officers. Nor is this all. The demand for beds is so pressing that a house-surgeon will gain no favour if fractures are admitted in numbers or retained for long. Hence the immediate application of plaster and its attendant evils—stiff limbs, wasted muscles, non-union, and pressure sores. In each school routine methods have during the years become stereotyped, until at the present time it is possible to name, almost with precision, the school in which a man has been trained by the splints and methods he employs for the treatment of any particular type of fracture.

In very recent years it has become evident that the end of this régime is rapidly arriving. The advent of *x* rays has led men to think more of the results obtained by the routine methods of treating fractures. In this country this has culminated in the appointment by the British Medical Association of a Special Committee of Inquiry, whose report has now been published.

I desire to make a few remarks upon the report. It has been compiled with so much care, accuracy, and impartiality that it must always remain a document of the first importance. The committee deserves our sincere congratulations and thanks. It had a difficult task, and has performed it well.

With the general advance of surgery, and the immunity from disaster afforded by aseptic methods, there has been a great advance in the operative surgery on bones. At home and on the Continent a school has arisen which advocates almost as a routine the operative treatment of fractures. In England this school has a most inspiring leader in my friend, Mr. Arbuthnot Lane.

On reading the committee's report, it would seem at first sight that we have come to the dividing of the ways, and must prepare ourselves to face the question whether in future we are to treat most, if not all, fractures by immediate operation. For the last of the conclusions come to by the committee reads as follows:

> For surgeons and practitioners *who are unable* to avail themselves of the operative method, the non-operative procedures are likely to remain *for some time yet* the more safe and serviceable.

I am, however, very confident that the question is not "Must we prepare ourselves to admit that primary operation is to become the recognized routine?" There are two very real questions—first, "Can we improve our non-operative technique so as to remove the discrepancies which are in some instances glaringly apparent?" and, secondly, "Can we lay down any laws to guide us when we ought to operate at once?"

I can justly claim to have had a long and large experience of the treatment of fractures. As an orthopaedic surgeon I have necessarily been led to regard fractures as potential deformities, and in many instances the treatment I adopt is modified from the traditional method in order to anticipate and prevent subsequent impairment of function. In other cases I lay special stress on certain measures of after-treatment. And, again, I recognize that in a small minority of fractures I obtain a better result by immediate operation.

House-surgeons and others who come to me from different schools, or who, after working with me, have gone out into the world and pursued their studies elsewhere, often say that certain details to which I attach special importance are not accorded elsewhere the same amount of attention.

On careful perusal of the details of the report, I am inclined to think that perhaps these house-surgeons and others may be correct in what they say, for the results reported are not so good as they should be.

The fracture cases are classified by the committee into those treated by non-operative and those treated by operative measures.

The cases operated on are classified as:

(*a*) Cases in which primary operation was decided upon.
(*b*) Cases in which in the course of treatment good position was not maintained, and operation was resorted to as a secondary measure.
(*c*) Cases in which operation was performed on account of non-union or mal-union.

The last two classes should be counted among the failures after non-operative treatment, but controversy on this point has been avoided by their separate publication.

We are therefore left with clearly stated statistics of 2,596 cases in which no operation was performed, and of 147 in which primary operation was performed, and also two subsidiary lists of 78 and 83 cases in which secondary operation was performed on account of failure of non-operative treatment.

Now of the 78 cases in Class (*b*) in which it was recognized during treatment that good position was not being maintained, and operation was decided upon as a secondary measure, only 60 per cent. produced good functional results; while in Class (*c*), in which operation was performed for mal-union or non-union, only 38 per cent. of good functional results was obtained.

The lesson is therefore clear that whatever methods be adopted they must be efficient from the first. If a surgeon is doubtful whether he can treat a fracture efficiently by non-operative means, he ought to consider whether he cannot do better by operating at once. He ought not to say, "Well, we can see what becomes of it, and if it is not satisfactory we can operate later," for by so doing the opportunity of getting a good functional result may be irretrievably lost.

MAL-UNION AND NON-UNION.

Both mal-union and non-union are common occurrences, and are very often correlated. I see such cases every week, and I would offer a few suggestions which might prove useful in rendering such results less common. The angular deformities so common in the out-patient department (Fig. 1), and which are a reproach to surgery, can always be avoided. If we cannot always secure an end-to-end apposition, there can be no difficulty, with even the most primitive means, in securing a correct alignment (Fig. 2). This is of extreme importance in dealing with the lower extremity.

Deviation from correct alignment means alteration in structure in accordance with Wolff's law—that is, an effort made by Nature to adapt the parts to the deviated lines of muscular stress or to the deviated lines of the force of gravity. We know that such deviations produce buttressing changes identical with those of the hypertrophic type of osteo-arthritis. There may be mal-union in a case which has been wired with end-to-end apposition, the "mal-union" being due to a lateral or antero-posterior deviation causing erroneous deflection of body weight. This produces straining of the fracture and a stretching of structures in the joint both above and below the seat of fracture. It is within the power of every surgeon, if he be allowed a free hand, to secure a straight setting. I think the fault made by most practitioners is to be too

sparing with traction. In a femur with much displacement, especially in a strong, muscular subject, it is well to employ a pulley and not to be satisfied until the affected bone is of equal length with its fellow. If the bones are of equal length, there is usually hardly any overlapping and no lateral deviation. It is true that if the fracture is in the upper third the fragment may be influenced by muscular action, but the spasm abates and disappears very soon in the presence of unyielding and not intermittent traction. Mr. Dobie, of Chester, and I straightened by pulleys a femur which had been fractured four months with 3 in. of overlapping. This patient was over 30 years of age, and the break was in the middle third of the femur (Plate II). In another case—which I saw with Dr. Caine, of Rock Ferry—we were able to correct a lateral deviation by manipulation after several weeks. In another case, a few weeks ago, the pulleys were applied to the femur of an adult with 4 in. of overlapping four months after his accident; 2½ in. were gained, and I have confidence that I shall be able considerably to reduce or to obliterate altogether the remaining shortening after another application of the pulley. I merely mention this to show how much can be done in old and obstinate cases by means of properly applied force, and to suggest how much simpler all this would be in the case of a recent fracture. While exercising traction the anaesthesia should be deep.

Another cause of mal-union is inefficient splinting. The splint applied should be so constructed as to allow the continuance of extension and prevent any deviation from the normal line. Take, for instance, a fracture through the centre of both bones of the leg. Both bones are, of course, normally slightly bowed, and in reducing the fracture it is essential to remember this. If the leg be set absolutely straight body weight will be deflected to the inner side of knee and tarsus. This will mean a strained internal lateral ligament at the knee and a weak, painful, everted ankle.

Another cause of mal-union is the effect of body weight carried too early by recovering bone. How often have we noticed the bending of an apparently sound bone when the patient begins to walk. Why should this be so? There are two reasons. First, the surgeon has not anticipated the deformity and taken measures to prevent the erroneous deflection of body weight; and, secondly, we are all misled by our textbooks as to the period of complete consolidation of bone. Some years ago I recalled a number of cases of fracture of the femur which had left the hospital with very slight degrees of shortening. They left between the second and third month. Consolidation in every case seemed complete. When re-examined some months later further appreciable shortening had occurred. If other proof were desired, one need only refer to a fact which I have scores of times demonstrated—the refracture by manipulation of mal-united femora from two to four months old, proving that the new bone is by no means consolidated. In operating upon such mal-union, especially in the thigh, I have found the greatest advantage in a subcutaneous or open osteotomy directed obliquely and the immediate application of powerful pulleys.

The ununited fracture is often the result of surgical impatience. At the end of the fifth week the surgeon tests the fracture and finds it ununited. If he left it alone for another fortnight or more, consolidation would probably be secured. Instead of this, an examination is made twice or thrice a week, a consultant complicates the issue by a fresh manipulation, and what chance the dilatory bone had is soon gone. Non-union would rarely [illegible] union obtained proper attention. We [illegible] that a small percentage of fractures [illegible] do the rest. I [illegible] ing an effort to unite [illegible] than the [illegible] ced to the profession [illegible], H. O. Thomas (Figs. 3 and 4). It [illegible] of damming and percussion. [illegible] mallet the fractured ends were [illegible] r tube tied 2 in. or 3 in. above [illegible]. I have seen scores of un- [illegible] ple procedure.

[illegible] upon me when a boy. [illegible] Some months afterwards he came over to Mr. Thomas, who for several weeks percussed the fracture and tied a thin rubber tube above and below. At last it united, and Mr. Thomas said to me, "Shall we take the splints off?" "No," I suggested, "leave them on for another week." It was fatal advice, because next day the patient met a friend who said to him, "Come to the meeting of the faith healers." He went, and in full meeting they asked him to remove his sling and splint and hold up his arms in thankfulness for his recovery. He became their doorkeeper and leading light.

Perhaps the most obstinate of all ununited fractures is that which occurs in the tibiae of small children. I can record three such cases in my own practice, and I have seen several others (Figs. 5 and 6). They seem to resist any kind of wiring or plating and prove a veritable nightmare to the surgeon. I have secured firm union in two cases by transplanting a portion of the other tibia between and over the fractured ends. The autogenous transplantation of bone is a most valuable procedure in the treatment of ununited fractures.

Another practical point should be referred to when discussing delayed and unsound union. If a patient comes to me with pain over the site of an old fracture, especially when pressed upon, I suspect unsound union. If this be accompanied by marked callus exudation I feel quite sure (Figs. 7 and 8). In such cases, if there be faulty alignment, I definitely tell the patient that I shall be able to fracture the bone by simple manipulation regardless of duration.

[Mr. Jones showed a case in which the fracture was reset manually ten months after the accident.]

If we have to operate upon an ununited and mal-united limb, I would press upon surgeons the value of preliminary traction. An old overlapping fracture of tibia and fibula after traction by a pulley, and followed by extension for a week, may be fixed by plate and screws in much better position with less loss of bone than if operated upon at once. Powerful traction is not applied to the best advantage in the presence of a large wound (Figs. 9, 10).

Primary Operation.

The cases in the report in which primary operation was performed were only 147 in number, but in these good functional results were obtained in 79.5 per cent. of cases. These figures are not good, but it is only fair to suppose that many cases in which inefficient methods of fixation were adopted have necessarily been included.

We may, I think, safely conclude that if an operation is to be performed the fragments should be securely fixed with plates and screws. If the ends be merely wired together in the old method, skill has to be exercised to maintain a good alignment (Figs. 11, 12). The rigid plates will at least secure good alignment. A wired bone, in the absence of competent supervision, may be easily deflected. If the surgeon has mechanical skill, whatever operative method of fixation be adopted, he will probably obtain a good result.

If a comminuted fracture be operated upon, I would strongly advise placing all splintered pieces of bone in position rather than removing them. I frequently meet with non-union due to neglect of this precaution.

Cases not Operated on.

The number of non-operative cases is 2,596; in all full notes had been kept, and all were personally reported on by members of the committee. It is sufficiently large to give us some reliable statistics. Of these, good anatomical results with good functional results were obtained in 1,422, or 53.3 per cent., while good functional results were obtained in spite of moderate or bad anatomical appearances in another 16.1 per cent. Putting these together, we find that good functional results were obtained in 70.4 per cent. of cases, as against 79 per cent. of cases operated upon.

Taking all the statistics together, they prove that if the anatomical result is good the functional result is good in 90.7 per cent. of cases; while, if the anatomical result is bad or moderate, a good functional result is obtained in only 29.7 per cent. of cases.

These are very important figures and very disturbing, for there has been a tendency to take refuge in the fact that many cases in which the anatomical reposition of fragments is not good end in a good functional result.

Two years ago, in opening a discussion on fractures in the neighbourhood of joints, at the Royal Society of Medicine, I was responsible for the statement that I paid more attention to a correct alignment than to anatomical accuracy of reposition, and, in the case of fractures about joints, to function rather than to appearance.

At first I wondered if my former statement and the statistics now before me were in conflict. On consideration I think they are not, for, in dealing, as the report does, with fractures of long bones, correct alignment in fractures of the shaft can only be obtained by obtaining at the same time fairly good anatomical reposition. End-to-end apposition with an angle of deflection is less satisfactory than slight overlapping in the presence of correct alignment.

Fractures near joints present peculiar difficulties, and it is interesting to note that in the statistics of these fractures the percentage of good functional results, in spite of imperfect anatomical reposition, is exceptionally high.

Children.

Another important fact brought out by the inquiry is that the results of fractures in children up to the age of 15 are remarkably good—90.5 per cent. in non-operative cases, 93.6 per cent. operative cases; but in adolescents and adult life the results of treatment by non-operative methods show a steady deterioration as age advances.

It follows, therefore, that so far the results show absolutely no indication for routine operative methods in children. This is a momentous fact in justification of the harassed practitioner who desires to treat such cases without recourse to operation.

Fracture of the Neck of the Femur.

The failures shown in the results of treatment of fracture of the neck of the femur are startling. Of 20 cases occurring between the ages of 26 and 45 only 6 good functional results are reported; of 30 between 45 and 60 only 8 good results; and of 36 over 60 only 5. Of the cases at all ages only 16.4 per cent. show both good anatomical and functional result, and to these can be added 9.8 per cent. with good functional but not good anatomical results, making altogether 26 per cent. of good functional result. If we exclude the cases under 26 years of age, all of which ended in a good functional result, we arrive at only 21 per cent. of good functional results. This is a pathetic revelation, and surely more unsatisfactory than is warranted. It is not a question of old age and debility, where the fear of hypostatic pneumonia has been an excuse for abandoning rigorous methods of fixation. I know that the old method of treatment with the long Liston splint, weight, and pulley extension, is still often used. In a country village, where many factors may hamper a practitioner, it might not be easy to better this, but these are hospital statistics. The Liston splint and the weight and pulley should be discarded as wholly inefficient in all but very exceptional instances. To avoid or minimize deformity and obtain a useful limb it is essential to treat the femur in the abducted position.

The report does not refer to traumatic coxa vara—not at all an uncommon injury in childhood—but fractures of the neck of the femur occurring both in the young adult and old are grouped together. In the young and middle-aged there should be no difficulty in maintaining the limb in abduction, and whenever it is safe and practicable in the old an effort should be made at bringing the bones in apposition.

The mode of reduction is simple. A roller towel is placed around the patient's perineum to counter-extend while manual traction is applied to the limb. The traction should be continued until the correct length of limb is obtained. The limb should then be rotated inwards until the foot is at right angles to the table, and slowly abducted under tension. The abduction relieves the muscles which obstruct reduction, and it brings the outer fragment on to the inner. This position can be maintained by plaster-of-Paris bandage, but better still by the abduction frame illustrated in Fig. 13.

A question constantly asked refers to the disimpaction of fragments. If there be hardly any shortening and no rotation, leave it alone. If there be eversion and shortening, reduce it at once. It must be remembered that sometimes the only sign of a fracture of the femoral neck is eversion and pain, and the patient may even be able to lift the limb off the bed. The abduction frame secures stability for the pelvis and lower extremity, and the movements of the patient do not alter the tension in relation to the fracture. This rigidity at the seat of fracture favours repair with a minimum of friction, and thus frees the joint from embarrassing obstacles produced by excessive callus. In six weeks a Thomas's knee splint is applied with extensions, which safeguards the femur against upward displacement and allows of movement in different directions (Fig. 16). In older and more fragile patients where a question of hypostatic pneumonia arises, this Thomas's bed knee splint can be applied from the first, and the patient may be allowed to be well propped up. The report does not deal with the operative treatment of this condition: it has been extensively tried in America, and is now, I believe, pretty generally discarded.

Old cases frequently come to us where stiffness and great disability result. In quite a large proportion of such cases careful breaking down of adhesions with a course of massage effects a marked functional improvement. I am quite sure that the poor results chronicled in the report will be found to be due to two causes. First, inefficient reduction of deformity or no attempt at fixation; and secondly, too early attempts at walking. We should never forget that in such fractures the joint is often affected by traumatic arthritis, and that there is an unusually great strain upon the slender femoral neck. When the patient begins to walk I prefer him to wear a walking caliper to relieve the neck of the femur from the strain of carrying the whole of the body weight (Fig. 17).

Fractures of the Shaft of the Femur.

When we pass to fractures of the shaft of the femur in its upper, middle, and lower thirds respectively, the general proportion of good results is 58 per cent., 82 per cent., and 73 per cent. When, however, we take account of the ages a different story appears.

In the upper third the proportion of good results under 15 years of age is 95 per cent.; between 15 and 45, 70 per cent.; and over 45, 31 per cent.

For the middle of the shaft the figures are 97 per cent., 58 per cent., and 32 per cent.

In the lower third—94 per cent., 68 per cent., and 40 per cent.

The cases subjected to primary operative treatment reported in these three classes are 32 in number, with 29 good results—that is, 90.6 per cent. They were all cases under 20 years of age, so they are of no value for comparing operative with non-operative cases.

We should find out why the treatment of an adult is so much less satisfactory than that of a child. Let us exclude the cases over 45 years of age, for some of them must have been bad subjects, though even among these the results should be better.

Reverting to my personal practice and experience, I treat most fractures of the shaft of the femur in a Thomas's knee splint. This splint has only to be used for such fractures to be appreciated, and the merest tyro becomes an expert. In Liverpool there is no occasion to describe it, but its great advantages are quite overlooked by prominent surgeons in this country. I confess that when I have seen pictures of screws applied in a small infant's thigh I have experienced very mixed emotions, and when we read in the committee's report of an obstetrical fracture of the femur being wired in a child of six days, we are not surprised at the death which resulted, but we are surprised at the advocacy of such extreme methods of treatment.

Obstetric fracture in the newborn is best treated by a small Thomas's bed splint. The child can be carried about, nursed as usual, and the alignment is sure to be correct.

The splint is applied in the same way to older folk. The patient can be moved, lifted, and nursed without the slightest fear of muscular action telescoping the fragments, starting pains are unknown, and the alignment of the thigh is as nearly perfect as possible.

In certain fractures of the upper third of the femur when a marked deflection of the upper fragment occurs the abduction frame may be advantageously employed. At the end of six weeks the patient gets up and walks about in a walking caliper, and I am sure this physiological

exercise of the limb promotes good union better than any massage can.

Speaking as I do without any knowledge of the details of treatment adopted in the cases recorded in the report, I am persuaded the fault lies not in the way the fracture was set in the first instance, but in the fact that the thigh muscles subsequently contracted and produced too much movement of the fragments with overriding and shortening. If weight and pulley extension be used, every time the patient moves his body the muscles of the thigh are suddenly relieved of tension and then contract. If, however, a rigid system of extension is adopted, muscles cease to resist in from twenty-four to forty-eight hours. Of this I can give an interesting illustration. In 1902 I had a house-surgeon known to many of you who maintained an attitude of almost hostile criticism. He treated two cases of fracture of the femur just above the condyles on a Thomas's knee splint under my supervision, though his own inclination was to be orthodox and use a double inclined plane or a McIntyre's splint. Although both results were good he did not behave as one convinced. Some time later fate sent him a newsboy, aged 14, who had been run over just above the knee by a cab wheel, the tyre of which had stripped off the soft parts on the outer side, so that the fracture was plainly visible, with the lower fragment pointing straight back at the femoral artery. He cleaned up the wound, put up the limb in extension in a Thomas's knee splint. After fixation the femur was pointing uncompromisingly backwards, so he got ready a double inclined plane for use as soon as compression of the artery should appear. That night, when he dressed the wound there was no change. Next morning he was surprised to find the lower fragment tilted to an angle of 45 degrees. He tightened the extensions according to rule. Next morning the lower fragment was fully extended, and in line with the upper. The wound granulated and the bone disappeared. The last he saw of the patient was when the boy ran across Lord Street without a limp to sell him a paper. He has since told me that it was that case which finally convinced him of the truth of the teaching of the relaxation of muscles when a limb is fixed by an unyielding extension. The case is all the more interesting because the extension does not act directly on the gastrocnemius muscle so as to fatigue it. It is quite true that certain cases show some backward displacement of the lower fragment, and to obviate this division of the Achilles tendon is indicated.

Fractures of the Leg Bones.

Continuing an examination of the statistics before us, it is interesting to note that in fractures of the tibia alone anatomical results with good function were obtained in 74.4 per cent. of cases treated without operation, while the corresponding figure for cases treated by operation was 76.4. This clearly demonstrates how useful an intact fibula is as a splint for the tibia. When both bones are broken, the figures for good anatomical and functional results are 44.4 per cent. and 63.6 per cent. respectively. When, however, we include the cases in which the anatomical result was not good but the functional result was good, the figures are 70 per cent. and 68.1 per cent., the advantage being slightly in favour of the non-operative. This is a very interesting fact, for every surgeon aims at good alignment, and, when dealing with a leg, it is not so very difficult to get it, and it is interesting to find the report confirms our contention that Nature so admirably brings about a good functional result when alignment is satisfactory. The operative cases numbered only 22, and no doubt some of them were treated by wiring, and, doubtless, if plates and screws had been used by experts, the results might have been better.

If I were asked which fracture was the most difficult to treat in the lower limb, I should say fracture of tibia and fibula in the lower third. Much can be done by powerful extension with the aid of a pulley, by division of the Achilles tendon, or by the introduction of a lever through a small opening opposite the site of fracture; but frequently we have to be content with a good alignment and a moderate anatomical restoration. In many such cases I am brought to agree with Mr. Lane that an operation is best performed. I have always operated upon such fractures while the pulley is at work, being scrupulously observant of the sterility of my extension ropes (Fig. 18). For the successful application of extension in fractures of the tibia and fibula I would commend a Thomas's bed splint used as indicated on the screen (Fig. 19). I show the extension without the additional metal splints.

When we come to Pott's fracture an illuminating fact becomes apparent, for out of 246 cases, 124 gave a good anatomical result, while only 119 gave a good functional result. That is to say, only 48 per cent. of good functional results, the good anatomical being in excess of the good functional results. The operative cases are only 4 in number, but of these only 2 were good functional results—50 per cent.

These figures are interesting and instructive, for in Pott's fracture, as I have constantly stated, the crux of the matter lies not in fracture of the fibula, but in the outward and backward dislocation of the foot. This is well known, and every surgeon in reducing such a fracture endeavours to invert the ankle; but comparatively few take any measures to maintain inversion of the foot after the patient begins to walk. I see a large number of cases every year of traumatic eversion due to a Pott's fracture (Fig. 20). They are surely not due to so-called bad setting. Some cases do well for a month, and when the patient returns to work the callus begins to yield, and the valgus deformity reappears.

It should be part of the routine treatment to raise the inside of the heel of the boot when the patient is allowed up, so as to compel him to walk in a slight varus position (Figs. 21 and 22). If the patient is a heavy subject an outside brace should be added.

One cannot help feeling that the profession in this country has much to learn in the treatment of Pott's fracture and in its satisfactory early reduction. The statistics in the report of the committee compare most unfavourably with the results obtained in the Bardenheuer investigations printed in the appendix to the report. Of 285 fractures at the ankle 77.2 per cent. recovered before the end of three months; after three months, 19.6 per cent.; those in receipt of sick pay later were only 3 per cent. These results are confirmed by three other independent investigators, Jott Kowitz, Loew, and Bleisener. A most admirable investigation reported by Hitzrot, bearing the impress of thoroughness, appeared in the *Annals of Surgery* this year. The cases were collected from the records of the Bellevue and New York hospitals. Of the 64 cases of Pott's fracture reported upon, 38 cases were in individuals under 35 years, all had perfect function, and flexion and extension at the ankle-joint was practically the same in both legs, and there was no pain. Twelve cases were in patients between 35 and 50; function was perfect in all the cases, extension was normal but there was distinct limitation of flexion in all. Two cases had pain, aching in character, after prolonged use. Of 14 cases, in patients between 55 and 64, function was perfect in 4 only, 5 had practically a stiff joint, and the remainder had motion enough to walk satisfactorily on the level but had difficulty on any incline and on steps. Flexion and extension were limited in all.

A Pott's fracture should be reduced at the very earliest opportunity in spite of swelling or effusion. The consequences of delay are serious. To reduce the fracture the knee should be well bent, and it may be helpful at first to increase the deformity in order to disentangle the ends (Figs. 23 and 24). With the foot somewhat flexed, the surgeon should pull the heel well forwards, and push the tibia backward until he feels the dislocation of the ankle is amended. He should then direct all the force that is needed to slightly over-correct the valgus. Unless there is a split fracture of the posterior portion of the tibia, there is but little tendency to subsequent displacement. The usual half-hearted attempts made to reduce this fracture will fully explain the disastrous final results.

The presence of deformity in an ultimate result may be due to insufficient reduction or to incorrect deflection of body weight upon yielding bone. It is very common to see such cases many weeks or months later with feet everted, complaining of pain over the internal malleolus, the site of fracture, and in front of the ankle-joint. If the fracture be but a few weeks old, by the aid of a wrench the lateral deviation may be corrected; and if the tendo

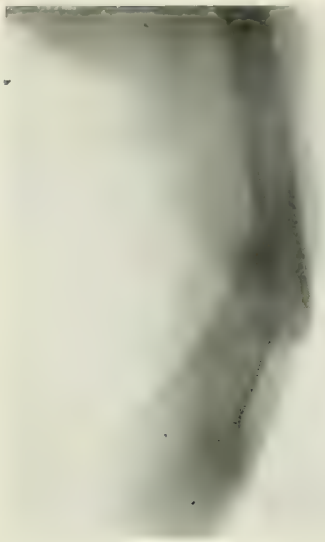


Fig. 1. Overlapping and angular union of lower third of femur.



Fig. 2.—Overlapping correct alignment—fractured femur.

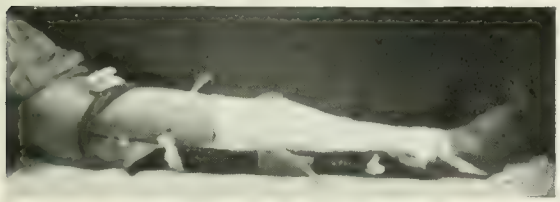


Fig. 3.—H. O. Thomas's method of applying rubber tubing for non-union of fractured femur.

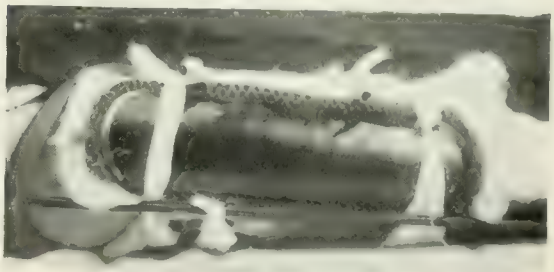


Fig. 4.—Same tied with side splints applied.



Fig. 5.—Ununited fracture of lower third of tibia—five years' duration.

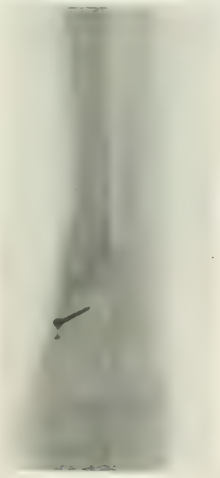
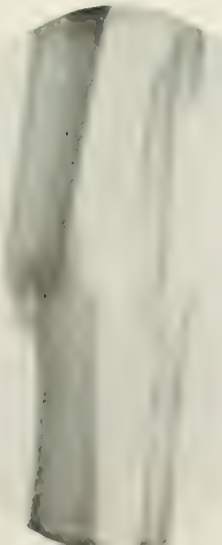


Fig. 6.—Same united after transplantation of tibia.





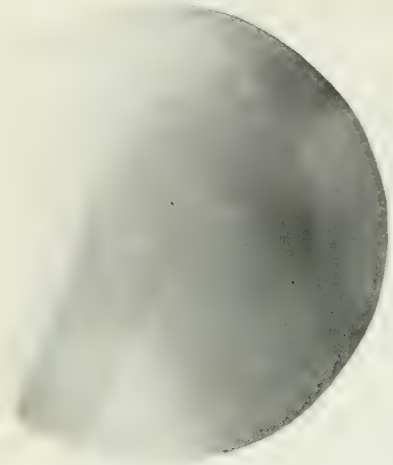


Fig. 26.—Fracture dislocation of surgical neck of humerus.



Fig. 27.—Fracture set and dislocation reduced.



Fig. 28.—Movement obtained.



Fig. 29.—Supracondylar fracture of elbow.



Fig. 30.—Same reduced by flexion of elbow.



Fig. 31.—Colles's fracture with method of reduction.

Achillis be divided the displaced ankle may even then be restored. Often, however, union is too firm, and operation may be needed to correct faulty alignment. This may be done by an osteotomy through the internal malleolus and through the fibula at the site of fracture.

When the eversion is very marked, a wedge should be taken from just above the inner malleolus, and an open division of the fibula made. The wedge through the tibia need only reach four-fifths through the bone. The wounds are then closed and the stitches removed in a fortnight. The limb is then fractured in order to rectify the error in alignment (Fig. 25). I frequently operate in two stages, both in this and in other malunited fractures and deformities, so that when the limb is fractured as a second stage we have merely to deal with a simple fracture which we can fearlessly subject to any manipulation.

Fractures of the Upper Limb.

In the report on fractures of the upper limb there are some points worthy of comment. Statistics do not seem to throw much light on the vexed question whether or not it is better to operate on fractures of the surgical neck of the humerus, for the percentages of good results are nearly equal by each method.

In fractures through the anatomical neck it is never necessary to do more than place the wrist in a sling and allow the arm to hang by the side. The same treatment may be employed in fracture of the surgical neck when deformity is not extreme. The abducted position is best, however, when it has been necessary to correct extreme deformity by extension in the abducted plane. Passive movement should not be begun too early—certainly not before the fourth week.

The range of movement which may follow severe injuries to the shoulder is shown by the case of a patient of 72, who fractured the surgical neck and also dislocated the head of the humerus (Figs. 26, 27, 28). Mr. Newbolt and I reduced it. The patient had no passive movement for six weeks, and he has recovered with an almost perfect range of movement.

I have so often preached the doctrine of the acutely flexed elbow that I am almost ashamed to return to it. Yet, in face of the valuable lessons of this report, one feels impelled to do so. Over 40 per cent. of failures, both by operative and non-operative methods, are here reported.

Is there any lesson to be learnt from this? The lesson to be learnt is that we must control the direction of our exudation of callus, and we must see that during treatment nothing happens to irritate the joint. The two main obstacles to recovery in function are blocking by callus and stiffness from traumatic arthritis. In the report of Hitzrot, to which I have already referred, he states that out of 52 cases in which the external condyle of the humerus was involved, 51 were treated by hyperflexion, and kept immovably in that position. All had perfect return of function, with no very appreciable deformity. I have for so long advocated this hyperflexed position that it is a satisfaction to find good reports coming from every clinic where this treatment is adopted. If we are to improve our statistics of good functional results we must recognize the hyperflexed and supinated position as our chief ally in the treatment of severe injuries to the elbow. For at least two weeks no alteration should be made in this position, and the first change should be that of lowering the wrist an inch or more. Passive movements should not be begun for at least three weeks. They should consist of only one movement in each direction, and then the arm should be replaced in a sling. This passive movement should be slowly and gently done, the fracture being protected from strain by the surgeon's hand. The passive movement which is so generally practised is positively harmful; it disturbs the uniting fragments of bones, and leads to fresh plastic effusion, excess of callus, and increased formation of connective tissue about the joint, all of which are conducive to increased stiffness.

With rare exceptions elbows will cease to trouble if the acutely flexed position be maintained and if passive movements be postponed. In nearly all the many cases I see with disability and deformity the story relates to rectangular splints, pads, bandages, and early movement. Callus exudation, bony displacement, and organized effusions oppose flexion, whether the elbows are treated by splints in the straight or in the rectangular position. The *x*-ray screen will at once show the advantage of the acutely flexed position (Figs. 29, 30).

In fractures above the condyles good functional results are reported in only 52 per cent. of cases. I have so often stated my views of the evil effects of early passive movement in these cases that I need not refer to it again. I hold the same views with regard to early passive movement in cases of fracture of the lower epiphysis of the humerus in children. I have also often deprecated operation on a growing epiphysis, and am interested to note that the results of operative treatment on these cases are rather worse than in those not operated upon.

It will surprise some to find that in fracture of the olecranon, while operation leads to a larger percentage of good anatomical results, the difference in the percentage of good functional results is very small—77 per cent. to 75 per cent. My experience is fully in accord with the findings of the committee in reference to fractures of the olecranon. It is astonishing what strong arms are often met with in spite of a pronounced fibrous gap. From the point of utility, my wired cases do not surpass those I have treated non-operatively; and unless the fragments are very widely apart the deformity is hardly appreciable. I confine myself to operating upon those cases where the displacement of the upper fragment is accompanied by rotation. The mechanical treatment consists in keeping the arm extended upon an anterior splint and passing a strip of plaster round the lower part of the triceps after having pressed the upper fragment firmly upon the lower. Weak extension is due to a yielding fibrous union resulting in a lengthening triceps. This is directly caused by too early traction on the upper fragment.

The results reported in fractures of both bones of the forearm in children are less satisfactory than they should be, and I think this must be largely due to faulty reposition and fixation. In the subperiosteal type no trouble should occur. The usual angular flexion should be corrected in incomplete supination. The best routine reduction is effected by traction and countertraction in the supinated position. Manipulation of the fragments is more particularly directed to correcting the tendency of the lower fragments to come together. If the fracture is in the upper third of both bones I usually fix the elbow. It is a safer proceeding for those with no great experience in the treatment of fractures to keep the forearm well supinated. The mal-united fracture, as we know, generally results in the forearm being in fixed pronation. If union is slow, it is helpful to fix the elbow in extension, and let the patient walk swinging his arm. The congestion that occurs will promote union. The disability we hear so much of is due to inefficient reduction, excessive callus exudation, and the consequent obstruction to the free movements of the flexors and extensors. The tragedies of tight bandaging are happily rare.

To me the most disappointing results are those relating to Colles's fracture. One could quite understand a pretty general failure to secure a strictly anatomical reposition—but only 57 per cent. of good functional results! Once a surgeon has learnt the method of reducing a Colles's fracture, he will hear no more of stiff or useless wrists (Fig. 31). I know of no easier fracture to manage.

The act of reduction is much easier to demonstrate than to put into words. The surgeon with his left hand (palm upwards) grasps the patient's left arm, placing the tubercle of his own scaphoid against the projecting lower end of the upper fragment; he then places his right hand (palm downwards) with the tuberosity of the scaphoid on the upper edge of the lower fragment, when, by a forcible approximation of both hands, the fragments are replaced in position. In some old-standing cases the use of the wrench may be necessary. The bones are kept in this position by means of metal splints until the third week, when gentle massage is begun. Functional failures are hard to recall. From the third to the fifth week massage should be vigorous. The mal-united cases which come to me are either totally neglected, badly reduced, or have been too strenuously moved almost from the date of accident. To those who have been accustomed to attend my clinics I would refer to the ease with which we are able to reduce Colles's fractures of many weeks' standing in disproof of the absurd contention that a recent case presents difficulties.

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CONCLUSION.

This is not the occasion to enter deeply into the ethical problems as to the attitude of the public in regard to fractures. It is nevertheless a question which largely affects us. Patients who call upon me are often armed with *x*-ray prints, which they authoritatively expound. Anything but a faultless end-to-end apposition imparts a warlike spirit. Twelve months ago a cadaverous neurotic called upon me. He unfolded four *x*-ray prints and type-written notes, with all the gesture appertaining to the criminal bar. The tibia was slightly overlapping. The function of the limb had been perfect for a year, but when he saw the crooked bone he was reminded, he said, of pains which he sometimes felt. He had climbed the Schilthorn since his injury, but would he not be wise in having an operation done?—if so, he was prepared! It would be well to educate the public, as such radiographs are being exploited to the disadvantage of our profession. It should be explained to them that no surgeon in his senses will guarantee an anatomical reposition by mechanical methods, or a functional success by a well conducted operation. The moment the public is brought to believe that a fracture which is not operated upon is evidence of neglect, the peace of mind of the doctor is at an end.

I have ventured to suggest several reasons why we do not meet with infinitely better results than are recorded in the report, and some of these reasons I would briefly summarize.

We should be carefully taught the principles governing the reduction of fractures and their correct fixation.

We should not be out-and-out adherents of an operative, a fixation, or a mobilizing school. We should be shown the value of steady fixed extension, in contradistinction to forcible intermittent pulls succeeded by periods of relaxation.

The value of a correct alignment in conjunction with complete obliteration of shortening should be appreciated. A reduction quite incomplete during the primary anaesthesia may easily be made complete during the following forty-eight hours. This correction is brought about by continued fixed extension, aided by appropriately placed pads; in other instances by approximating the lower to the upper fragment by posture of the limb.

We should study the causes of non-union from the clinical side, and in the application of splints avoid rigid [illegible] far compression. Splints should always be wider [illegible] protect. Delayed union in a certain [illegible] is inevitable. Care must be taken [illegible] lessly relegate such cases to the more serious [illegible] ununited fractures.

[illegible]t realize that the academic period of consolidation authoritatively asserted is not accurate, and that bones which appear firm to the hand will yield after many weeks to the incidence of body weight.

[illegible] fibrin exudation with pain on pressure most [illegible] evidents incomplete union.

After having corrected by pulling and manipulation delayed and ununited fractures, the mere change in position and accurate retention will often rapidly bring about bone union. To still further ensure success the bone may be percussed and elastic tubing applied above and below the fracture to produce congestion.

It should be taught that a mal-united fracture interferes with the function of the limb by deflecting the body weight from accurate incidence upon the joints above and below. Treatment should therefore be pre-[illegible]

[illegible] the elbow-joint should be fixed in [illegible]-flexion. Passive movements should [illegible] too early, and should be practised in [illegible] indicated. The radial deformity [illegible] should be completely rectified; the [illegible] little consequence. For Pott's fracture [illegible] the ankle should be especially [illegible] of the ankle secured. Steps [illegible] walking is begun to maintain the [illegible]

[illegible]ery, by perfecting our mechanical methods, the necessity for operation will be materially lessened, and we shall almost feel the sense of personal failure when the bone has to be exposed.

The indications for operation will clearly differ from the individual standpoint of [illegible] surgeon, and no rules can be laid down. The surgeon with least mechanical resource will operate most frequently.

Personally I operate upon the patella, certain fractures of the head of the radius, certain oblique or spiral fractures of the tibia, occasionally upon the olecranon, and upon any other case which may seem necessary. In mal-united fractures I operate with considerable frequency. In my opinion it is best to operate while the pulley is at work.

The authors of the report call upon us to bear in mind "that the operative treatment of fractures is yet in its infancy. . . . Non-operative treatment, on the other hand, is thoroughly established." This statement should be modified, for in a progressive science nothing ever is thoroughly established. Before we reach to new things we must ask ourselves if we have done the best by the old; and it is only by being critics of our own work that we can discover, each for himself, which procedure will in his own hands give the best result. We owe a debt of gratitude to Arbuthnot Lane. He has roused the surgical world from apathy on this question, and I feel assured that the reawakening will be to our common good, to the perfecting of our mechanical methods and the improvement of our operative technique.

The Bradshaw Lecture

THE BIOLOGY OF TUMOURS.

DELIVERED BEFORE THE ROYAL COLLEGE OF SURGEONS OF ENGLAND

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MR. PRESIDENT AND GENTLEMEN,—I am not going to attempt a definition of the word "tumour." I do not think that it is necessary: the time at my disposal is far too short, and I shall not employ the term in any but its most ordinary acceptation. The structures to which I refer are the growths, familiar to us all, that spring like buds from the normal tissues of the body, the texture of which they imitate more or less closely, draw all their nourishment from them, recognize no limits of size or shape, and never serve a useful purpose of any kind. They are so common that there is scarcely an adult without one, and they become so much more common as age advances, that in old people they can often be counted by the score.

ABSENCE OF ANY NATURAL LINE BETWEEN SIMPLE AND MALIGNANT GROWTHS.

Nor shall I attempt to draw any hard and fast line between innocent and malignant tumours. There is no such line. Nature has never drawn one, and though, for our convenience, we separate tumours from each other, and group malignant growths together upon one side and innocent ones upon the other, between the two there is a borderland of which no man can say to which side the growths belong, nor even whether they do not belong at one time to one side and at another to the other. Every kind of so-called benign tumour, as Bland-Sutton has shown, contains varieties that shade away indefinitely from the type species and at times become malignant. Malignancy is a purely clinical term, and metastasis is merely an accident of growth, absent from what are called benign tumours, not because the cells of which they are composed would not grow if they were disseminated, but because, owing to their having reached a more advanced stage of organization, they can no longer exercise their primitive power of detachment and autotransplantation, and therefore never are disseminated unless it is done artificially. The presence or absence of clinical characteristics such as these is not a satisfactory criterion for the classification of pathological growths. The system may have served in days gone by, when facts were few and little was known, but it should be abandoned now.

TUMOURS COMMON TO ALL ANIMALS.

And I shall not confine myself in what I have to say to the tumours that occur in man. Every kind of tumour is met with in other animals, especially in those in which, from domestication, or for other reasons, life is prolonged beyond the procreative age. So far as the biology of tumours is concerned, man is merely a highly specialized and much studied member of a class of mammalian vertebrata distinguished from all others by the ancient zoologists, not perhaps without a suspicion of humour, as *Homo sapiens*. As such I shall think and speak of him.

NO PROOF THAT TUMOURS ARE CAUSED BY PARASITES.

No proof has ever been brought forward that the structures commonly spoken of as tumours, simple or malignant, are caused by parasites. All that can be said of them for certain is that they grow out from normal tissues like buds, which refuse to be bound by the laws that control the development of the rest of the body. Their behaviour is that of foreign growths, parasitic on the tissues, and their presence is resented and resisted by the tissues among which they lie exactly as if they were foreign growths.

THE ORIGIN OF TUMOURS IN GROWTH UNCONTROLLED BY DEVELOPMENT.

A cell, or a group of cells in some particular part of the body, suddenly breaks off all relation with the rest. Development stops then and there. All idea of function disappears. Henceforth the cells in question never do any work or perform any duties. They have shaken themselves free from all responsibilities. All that they do is to grow and multiply until they build up a formless, shapeless mass, composed of elements resembling in general appearance the tissues from which they have sprung. The only faculty they retain is that of growth—a faculty common to all living tissues, so long as they are living: and the measure of their growth is only limited by the supply of food. So long as this continues good, no matter how the rest of the organism fares, they will continue to grow. But the growth of tumours differs from that of all other living structures in that it never serves any useful purpose. Tumours increase in size without aim or object. The cells of which they are composed are functionless. Like true parasites, tumours draw all they require for themselves from the rest of the body, give nothing in return, and thrive while it is being starved. They are the offspring of tissues that are no longer controlled by the laws that govern the growth and development of the body. The first thing, therefore, in considering the question of their biology is to try and form a clear idea of the nature of these laws, their origin, and how it is they can be set aside in this way.

THE LAWS OF DEVELOPMENT.

Their origin dates back almost to the beginning of all things, if not actually to that time when life made its first appearance upon earth, at least to a period so immeasurably remote that it is not in the power of our minds to form a conception of its distance. They came into being when the metazoa came into being, when for the first time the daughter cells of some primitive organism, failing to separate from each other after the parent had divided, as always had been done before, gained the advantage of combination over their fellows and founded the new kingdom. Immeasurably distant as that time is, for the oldest known of these living creatures, already very highly organized, are covered by 60,000 ft. of solid rock that has been deposited since they lived, there has been no change since. The laws that regulate the development of *Homo sapiens* now are the same as those that regulated the development of the hydra or its representative then. Each little mass of cells, consisting, it may be, of only a few units grouped together, whether it constituted the body of some primitive metazoon living in a remote geological epoch, or is formed by the division of a mammalian ovum at the present day, obeys these laws.

The Division of the Primitive Organism into Germ and Somatic Cells.

One of the chief factors that serves to distinguish living organisms from inert matter (though some doubt has been thrown upon this recently) is their power of absorbing and able to replace the constant waste of living, increase in size, and, when the limits of size are reached, increase in number. Their one aim and object, if such language can be allowed, is to sustain the germ of life and hand it on unimpaired in strength and vigour from generation to generation. In the simplest forms, and in the earliest stages of those more complex, all parts of the organism are endowed with equal powers. Every cell is capable of maintaining its own life, and every cell is capable, either by dividing or by throwing off buds, of maintaining the life of the race. What Weismann called the germ-plasma is shared by all alike. Very soon, however, both in the history of the race and in that of the individual, in accordance with the universal law of the division of labour, a distinction makes its appearance. The cells that compose the organism separate into two groups, distinguished from each other by the differentiation of their work. One of these becomes the germ organ, consecrated to the formation of living germs and the perpetuation of the life of the race. The other, which comprises all the rest—the somatic cells, as they may be called—furnishes the groundwork from which are built all the organs and tissues that are needed for the preservation of the life of the individual. In the smallest as in the largest, in the simplest as in the most complex, all the tissues of all the organs used in everyday life, whether the organism consists of an almost structureless body, such as that of the primitive hydra, or is elaborated to the degree of perfection that is reached in man, are formed and developed from these, the somatic cells.

At the first there is no difference that we can detect between the two kinds of cells. In the primitive metazoa, and in the earliest stages of the development of those ova in which such a question can be studied, one kind of cell can be made to replace the other, and undertake all its work. The two still possess equal powers. But as the differentiation of function advances the divergence soon becomes complete.

The Germ Cells.

From this time forth the whole energy of the germ organ is devoted to the production of ova, and the perpetuation of the race. It does nothing for itself. Supported and sustained by the structures formed out of the somatic cells to which it has given birth, it thrives and grows that it may transmit to the germs of the next generation all the powers it has inherited unimpaired. The race is continued without a break and generation succeeds generation: but except in the case of a few strange forms which seem to have persisted almost unchanged from time immemorial, the succeeding one is never quite the same as those that have gone before. There is always some modification introduced, however slight. No generation is exactly the same as that which preceded it. The daughter germs may appear to be exactly like the parent, but they never really are. Every germ cell before it divides or throws off a bud to form the daughter cell is modified in some way, be it ever so little. The somatic cells around it, upon which the maintenance of its life depends, themselves influenced by the ever-changing conditions around, cannot help influencing the germ cells in their turn. Always, therefore, before the germ cell is ready for division, it has become in some infinitesimal degree different from the parent that gave it birth; and thus, though the continuity of the germ plasma remains unbroken from the earliest ages to the present time, the germ cells, and through them the structures built up around them out of the somatic cells to which they give birth, little by little become modified, and transmit their modifications from generation to generation, until at last the forms produced are far different from those that first came into existence, and far more complex. Countless offshoots from the parent stock have been thrown off in the course of ages in all directions. Some of these, either because the supporting structures formed by the somatic cells around them became ill-suited to the requirements of the age, or because the vitality of the germ cells failed after a time, have died away and disappeared, leaving merely fossil remains of the skeletal supporting structures to show what manner of beings they were. Many, with infinite variety of structure, ranging from the simplest blastulaform to that of man, persist still. New ones,

day. But whatever the framework formed by the somatic cells around them, the germ cells upon which the maintenance of the race depends are all direct descendants of the germs of the original primitive metazoa, and obey the same laws of growth and development.

The Somatic Cells.

On the other side of the picture, in contrast with these, are the somatic cells whose mission it is to form the framework for the support of the germ organ and the maintenance of the life of the individual. These at the first were in all respects the equals of the germ cells. Like these they possessed the power of producing germs and of transmitting to their descendants all the properties they had inherited or acquired. But, as inevitably happens when specialization begins, as the somatic cells became more and more perfect in their own particular line of work, their other powers began to wane. The first to disappear was the power of producing living germs that should serve for the perpetuation of the race. In the primitive metazoa all parts alike possessed this power, but at a very early period, even before the days of the fresh water hydra, it had already become restricted to one small region of the body. This was marked off from the rest as the germ organ, and henceforth the power of forming ova was confined to this alone.

The next that was lost was the power of reproducing not the race, but the individual. In many of the lower forms of life, buds which are capable of developing into individuals as perfect as their parent can develop from parts of their body composed entirely of somatic cells. This, for instance, is common among Coelenterata, and even among animals so highly organized as marine worms, many of which are capable of throwing off fully developed offspring from indifferent segments of their own body. Traces of this power may be found among animals far more highly organized than these, but only in the very earliest embryonic stages of life. In adult age, when differentiation has advanced further, reproduction of the individual from the somatic cells never takes place. With the loss of this disappears finally all power of hereditary transmission beyond the individual. The somatic cells may still reproduce their kind, and transmit their qualities to other cells within the limit of the individual, never to the race.

Long after the power of complete reproduction has been lost the somatic cells are still able to reproduce parts of individual organs or portions of the body that have been destroyed or injured. Whole limbs and other appendages, for example, can be regenerated among crustacea; and, though in a much lower degree, there is evidence of the same power even in animals so highly organized as the Lacertilia. The curious little projections that occur sometimes in the human embryo, growing on the site of limbs that have been lost early in uterine life, may quite possibly admit of a similar explanation.

The next stage, that in which the somatic cells have lost the power of reproducing individuals and organs, but can still reproduce tissues similar to themselves, extends to a much later period both in the history of the race and of the individual. Comparatively extensive losses of simple tissues may be made good during embryonic life even among vertebrata; but as age advances this power, too, diminishes. In the adult it can be exercised only to a [illegible] extent, and in the case of the most highly [illegible] tissues, such as nerve and muscle, it is doubtful if it can be exercised at all.

Finally, all that is left to the somatic cells, all that [illegible] of the powers they originally possessed equally [illegible] germ cells, is that of simple growth, the ability to maintain size and structure unimpaired in the face of constant waste. Throughout, from the beginning of all things down to the present time, whether the development of the race is considered or its epitome, as shown in the development of the individual, the process is the same. As specialization and differentiation advance, as the somatic cells adapt themselves to the work of forming the structures upon which the maintenance and protection of the germ depend, step by step they lose all the power of [illegible]ion and transmission to the race they originally [illegible], until they retain only that of simple growth. The support of the germ organ has become the sole object of their lives. Every time case is given up that this may grow and bring forth living germs for the next generation each of which will in its turn build up a supporting framework to serve the individual for the time being, and then be thrown away. The somatic cells themselves, and all the organs and tissues formed from them, no matter how complex or how highly specialized they are, are sacrificed each generation and destroyed. Their purpose is achieved when once the new germs are able to build up a protecting framework of their own. They may die at once, as in the case of many insects, where the procreative act is followed immediately by death; or if it is for the benefit of the race, if they possess qualities that will be of advantage to the coming generation in the battle of life, as, for example, in the case of mammals, they may be continued a little longer, but the end is the same. The protective framework built up out of the somatic cells to serve the generation perishes with the generation; the continuity of the germ is preserved, to produce in each generation a framework for its own support, moulded, with more or less of modification, on the plan of those that have gone before.

The destiny which thus awaits the somatic framework is looked upon as quite natural where the simpler forms of life are concerned. When the next generation with its inheritance of living germ plasma is ready, the parent dies. Its mission is at an end. Its work is done and it disappears. But it is equally true of the more complex forms, no matter how highly placed in the scale of organization they may be; and it is true not only of individuals, but of communities of individuals which have grown up and developed under the rigid and pitiless laws enforced by Nature, in which sentiment has no place. Nowhere, perhaps, is there a better illustration of this than in the case of the honey bee, in which, as Tickner Edwardes has put it, the subordination not only of the individual but of the community to the conservation of the race seems to be pushed to its logical conclusion. Everything is subordinated to this one object. The lives of individuals are sacrificed wholesale under inexorable laws, if only it is for the good of the community. The aim and object of existence is the rearing of offspring, which in their turn shall devote themselves to rearing other offspring. There is a perpetual procession, in which each individual works and spends his life for some other individual, who will succeed him, and who in his turn will do the same. The individual is nothing, so long as the community prospers, just as in the living body the individual somatic cells and the structures formed out of them are nothing so long as the germ can fulfil its mission.

The Origin of the Laws of Development in the Mutual Relation of these Cells.

Whether the organism is a primitive metazoon which will never attain a higher stage of organization, or an ovum that will develop into the most highly specialized of mammals, the force that regulates and controls its development, as distinct from the power of growth, which is an inherent property of its cells so long as they are living, is the mutual influence that these germ cells and somatic cells exert upon each other and upon their fellows, compelled thereto by the differentiation in their work. It is this influence, working with the driving force of inheritance through countless ages, modified in some infinitesimal degree by the surroundings in each individual case, that frames the laws that guide and control the development of the body and the tissues that compose it.

The Origin of Tumours.

Tumours do not obey these laws. They are tumours because they do not. Whatever their structure, their growth and development are not conditioned in any way by the growth and development of the rest of the body. The degree of perfection to which they attain depends upon that of the tissue from which they spring, and the rate of their growth partly upon this, partly upon the supply of food they can get. Whatever their origin no relation, such as that which holds good between the germ and somatic cells, ever exists between them and the parent body. They simply live upon it like parasitic growths upon a host.

Tumours from Germ Cells.

As there are two kinds of cells developed in the course of evolution with gradually diverging functions, so there are two kinds of tumours, one springing from the germ and

the other from the somatic cells. With the former I shall not deal at any length. They may arise in various ways. Some are the product of fission of the primitive germ. In such a case, if the two halves contain an equal proportion of germ cells, and if they become separate from each other in the course of growth, two equal and perfect individuals result. Others originate by a process of unequal fission or gemmation, the formation of a more or less perfectly developed bud which grows out into a structure sometimes almost as complex as the parent. Others may be caused by the detachment and displacement, perhaps by accidental violence, of a few of the germ cells, which either remain *in situ* or are buried deep among the somatic cells and then begin to develop; and others, again, especially those which originate late in life, may be the result of some as yet unknown stimulation of germ cells that are lying latent in the germ organ. But whatever the mode of their origin, the essential feature of these tumours is that they are outgrowths from germ cells, and therefore possess, in greater or less degree, the same powers as all such outgrowths. The germ cells have been over-stimulated in some way, or over-fed, or injured, and as a consequence give birth to these irregular structures instead of, or in addition to, the natural ones. The difference between them is one of degree, not of kind.

Like the normal structures that are produced from germ cells, these abnormal ones form their own somatic framework, though, as might be expected, this differs widely in the degree of its perfection. At one end of the scale there may be a complete and separate individual, in all respects as perfect as the parent one, capable of maintaining itself and of perpetuating the race. At the other end, because the germ cells are either few in number or have lost much of their germinal power, there may be merely an irregular mass, a dermoid, built up out of the wanton over-production of epiblastic cells. In either case the different cells that compose these structures bear to each other within the limits of that structure the same relation (so far as their development will allow them) as that which exists between the different cells of the parent body. But no such relation ever exists between them and those of the parent. Except that they draw their food supply from it and give up their waste products to it, the cells of the tumour own no connexion of any kind with those of the stock from which it grew. They neither influence it nor is it influenced by them. Their relation to it is that of an independent organism, developed independently from the germ cells, deriving its nourishment from the parent in the same way that a parasite or a foreign growth might, or in a few exceptional cases absolutely and entirely separate.

Tumours from Somatic Cells.

Putting upon one side these, which are comparatively rare, all the rest, forming the vast majority of what are commonly called tumours, originate by a process of budding from the somatic cells after their differentiation from the germ cells has taken place, or from structures developed from them. These tumours owe their origin not to the action of germ cells, but to the release from control of what is left of the power of reproduction which the somatic cells originally possessed in equal degree with the germ cells, but which was suppressed as these cells became specialized for the support and maintenance of the germ organ.

A few of these tumours make their appearance very early in life, at a time when specialization is not yet far advanced and the powers the somatic cells originally possessed are but slightly impaired. They grow out as buds, which in some instances attain such a high degree of complexity that they will stand comparison with those I have already mentioned as originating from detached portions of the germ organ. Indeed, it is not always possible to say that this is not their real origin, and that their apparent descent from somatic elements is not actually due to their having originated from detached portions of the germ organ that have been accidentally displaced and buried among somatic structures. A few others take the shape of organs or parts of organs growing out as buds from the extremities or other portions of the body that develop comparatively late. Theoretically, these should be capable of being distinguished by the date of their appearance, but the early stages of the development of the mammalian ovum are so much compressed, and represent in the course of a few hours such an infinity of ages spent in the evolution of the race, that it is not possible to draw distinctions of this kind.

All these tumours, however, are comparatively rare. The total number is very small in comparison with that of what may be called ordinary growths. They nearly all originate early in life, though they may not always make their first appearance then, and they stand apart in a class by themselves. By far the greater number of the tumours that are developed from the somatic structures grow out as buds much later than this, long after the early stages of life have been passed and the differentiation of the tissues completed, and become more and more common as age advances. These rarely consist of anything more complex than simple tissues. The cells from which the buds originate have already reached such a high degree of specialization that they have lost the power of forming everything except tissues somewhat like themselves; more elaborate reproduction is no longer possible. If the parent cells have already reached their final adult stage the increase in size of the budding tumour is very slow. If, on the other hand, they are still immature and capable of rapid multiplication like those, for instance, that are present, often in considerable numbers, both in epithelial and mesoblastic structures, for the purpose of replacing the losses caused by the wear and tear of everyday life, or the destructive action of persistent irritation, growth may be very rapid. In the one case the resulting tumour is built up of tissues that have practically attained their full development; its increase in size is slow, and it never invades the rest of the body. In the other it consists of cells which retain so much of their primitive energy of growth that, if once released from the restraint of the laws that would compel their further development, they grow and multiply in a manner only surpassed by the cells that compose the germ layers of the embryo. They increase without limit, and without an attempt at higher differentiation, and they spread everywhere in the directions of least resistance, partly of their own efforts, by a process of autotransplantation, partly carried along in the blood stream, or in the lymphatic channels, and unless destroyed as foreign bodies by the tissues among which they lie, they reproduce their kind wherever they come to rest.

The Principle underlying the Growth of Somatic Tumours.

Whatever form is assumed by the tumours that originate from the somatic elements or the structures derived from them, the underlying principle of their growth is the same. The power that would compel the higher differentiation of the cells that compose them ceases to act. The cells that form the tumour bud cease to develop further and never do any work. They cease to bear any relation to the rest of the body, except that they draw their food supply from it and give up their waste products to it. They do not influence other tissues in any way nor are they influenced by them. They continue to grow and multiply, perhaps with all the greater energy because the force that would have been consumed in raising the cells to a higher plane of differentiation is available now for growth. The tumour cells go their own way, never rise to a higher plane, never do anything for the rest of the body, but, like parasites, devote the whole of their energy, which should work for the common good, to their own increase in size and number. What remains to them of their primitive reproductive power is released from all control and guidance.

How is it that the tissues at one small spot in the body are suddenly able to assert themselves in this way? How is it that almost from one minute to another they can shake off all allegiance to the other tissues, and, except that they are dependent upon the rest of the body for their food, grow upon it, entirely independently of its growth, and thrive while it may starve? How is it that from normal tissues, doing their normal work, they can suddenly develop into structures like parasites that drain the body of its sustenance and do nothing for it in return?

The Controlling Power of Hereditary Transmission.

There is only one answer to questions such as these. The progressive development of the organs and tissues of the individual, as of the race, is the outcome of the mutual relations that have been built up in the course of ages

between the infinite variety of cells of which the body is composed, transmitted from generation to generation. Environment and the actual working of the organs and tissues in the individual are but forces of the moment. The real controlling power is the hereditary transmission of the relations which the different parts of the body have exerted upon each other through immeasurable time, and which have been handed down in ever-increasing number from countless ages. It is this that directs development and differentiation, and keeps growth in check. If it fails from any cause; or if it is overpowered by the forces of the moment, whether they form part of the environment or originate in the body itself, development and differentiation come to an end, organs fail to attain their normal perfection, and tissues remain at that level of specialization at which they happen to be at the moment, incapable of work because of their imperfect development, but with their power of growth not only intact, but released from all restraining influence, and, it may be, even increased in vigour.

To put it very crudely, the tissues have become what they are in virtue of the accumulated effect of all that they have done for the rest of the body, and that the rest of the body has done for them through countless ages. Their differentiation is the outcome of the work of their predecessors. Each cell, as it comes into being, has its destiny marked out for it by virtue of the relations it bears to the rest. It is bound by the force of heredity to develop in one direction, and to reach a certain stage of perfection, that it may be able to carry on its work. But sometimes, just as the development of an organ is arrested without its power of growth being impaired, so the differentiation of a budding tissue may be arrested, and its power of growth be left unimpaired. Somewhere, in some part of the body, the force that should compel the evolution of the reserve cells, or of those young cells that are constantly being formed to take the place of those worn out, suddenly ceases to act. All progress comes to an end. It may be at an early stage, while the young cells still retain all their embryonic vigour; or it may be late, when they have all but reached their final form. In either case growth continues unimpaired, because growth and its consequence, increase in number which is the outcome of continued growth, are in no way dependent upon these relations. The work the tissues have done in the past has no influence over their power of growth except through the differentiation it induces. Growth—ceaseless, continuous growth—is a property inherent in living structures, so long as they are living—a property which is controlled and moulded by advancing differentiation, but which, if differentiation is checked, especially in its earlier stages, is capable of reasserting itself with all its old energy, or even with increased energy, as the force which would have been consumed in carrying specialization to a higher plane is now available for growth alone. The result is a tumour—an irregular formless mass of badly differentiated tissue which grows independently and continuously, which does not acknowledge any obligation, or do any work, and is so much a foreign element among the tissues in which it lies that its presence is resented and resisted by them in proportion to the activity with which its size increases.

If the power of hereditary transmission continues unimpaired throughout life, the development of the tissues is perfect and remains perfect; their work is properly carried out, and all the complex relations existing between them are maintained intact. If, on the other hand, it fails, as it may fail in advancing age from mere lapse of time, or when, owing to the long persistence of some local irritation, there is a very rapid production of myriads of young cells, the evolution of the tissues stops, it may be early in their life-history, or it may be late; growth continues, and the product becomes a tumour which continues to increase in size with a rapidity that depends upon the degree of differentiation already attained by the cells from which the bud first grew, and the supply of food that they can get.

It may be the fault of the tissues at that particular spot, and the origin of the tumour be purely local, as in the case of growths caused by α rays or by soot, agents which seem to be capable of making such tumours as papillomata and epitheliomata grow from the epidermis in any part of the body, in any person. Or it may be in some measure the fault of some other structure, perhaps far distant, with which the tissue from which the tumour springs stands in some working relation, and only the locality be determined by the local agent. In either case the essential feature is the cessation of the progress of differentiation and the removal of all restraint upon growth. Something—some one of the forces of the moment—has disturbed the relations that have been evolved in the course of ages between these particular cells and the rest of the body. The differentiation of the tissues which these relations have built up step by step through countless generations comes to an end; growth continues, and a tumour is formed.

Tumours due to Involution Changes.

Nor does this explanation hold good for those tumours only that spring from the somatic cells and are formed of more or less highly differentiated simple tissues. It is no less true of those strange growths that sometimes develop from fetal or embryonic relics, such as the post-anal gut, the thyroglossal canal, and many others. The hereditary transmission of the relations that have grown up between the various tissues of the body and of the structural features that have been produced by them, implies not only the progressive advance of those tissues that are of use, but no less, also, the recession and disappearance of those that have ceased to be of use. Evolution stops when the power of hereditary transmission fails; but so also does involution. Fragments of organs that should disappear and be absorbed persist, and, continuing to grow and to work after a fashion, become the nucleus of what are sometimes colossal tumours.

The Inheritance of Tumours.

In this way, moreover, and in this way only, is it possible to account for the apparent inheritance of tumours. Tumours, like other acquired features, are not inherited, yet there can be no question that certain families are much more prone to the formation of tumours, and of particular kinds of tumours, than others. It is well known how the power of hereditary transmission varies in strength in different families. Some special features are handed down unchanged from one generation to another, while others can scarcely be traced. The same thing is true of the tissues that build up those features. In some the hereditary power is so strong that they maintain throughout life the full perfection of their development, and growth is never allowed undue licence. In others the power is weaker and fails to a greater or less degree. Then if by any chance that part is exposed for a sufficient time to the action of one of the forces of the moment, so that, for example, it is necessary that the tissues should be replaced with great rapidity, the evolution of the young growing tissue stops because the driving power has failed, and growth, freed from its control, asserts itself with all its energy. It is not the tumours that are inherited, but the strength of the driving force that directs development and controls growth. This, in the case of some particular tissue, may fail in several members of the same family for generation after generation, just as may the transmission of some special feature.

THE SIMULTANEOUS GROWTH OF TUMOURS.

This, too, explains the well-known liability of homologous tissues to become almost at the same time the seat of similar tumour growths. Such an occurrence is most common in connexion with non-malignant tumours such as fibromata and lipomata, but it is not confined to these. I have known, for instance, duct carcinoma develop at the base of the nipple in both mammary glands within three months. The strength of the power which has guided the differentiation of the tissues through immeasurable time, and which controls their inborn capacity for limitless growth, is naturally the same in tissues of similar descent. It maintains its control, or it fails before the action of the forces of the moment in the same way in them all.

As it is the work of the tissues, their own and that of past ages, that step by step has made them what they are, it has been suggested that it is something connected with their work that cuts their evolution short and allows their power of growth to assert itself unchecked, and that the origin of tumour buds is to be found in a functional disorder of some kind. But while it is quite true the tissues that compose tumours never do any work, the failure to work

is the consequence, and not the cause, of the arrest of evolution. Tumour tissues are imperfect, and remain imperfect, and work cannot be expected of such. Their differentiation has been arrested before they were capable of work. Tumour tissues never work because, with the rarest possible exceptions, they never reach the perfection of maturity. The exception proves the rule; a few mammary adenomata attain such a high degree of perfection that secretion has been known to take place in certain portions of them. The vast majority falls far short of this.

The Arrest of Development of Organs.

If it is asked what could interfere with the power of hereditary transmission to such an extent as to cause the arrest of the differentiation of the tissues in one part of the body and the formation of one kind of tumour, or the arrest of their involution in another and the formation of another kind, I can only point to the analogy of the arrest of development of organs, and say that I can see no reason why such a power may not fail from mere exhaustion, as for instance in old age, either of organs or of individuals, when it is notorious that the liability to tumour growth becomes greater and greater, or from excessive action, as when an enormous number of young cells is produced with great rapidity in response to some persistent chronic irritation. Whether the action, or want of action, of any organ in the body could have a similar influence over the power of hereditary transmission and bring its work to a sudden stop it is impossible to say. There is one structure in the body at least that appears to be capable of abrogating the laws that control the growth of tissues and of enabling them to increase in size without limit; but we know too little of these things as yet. The study of physiology is of yesterday. At our best we have only a very general acquaintance with some of the most conspicuous individual actions of what may be called the gross mechanical apparatus of the body. We know next to nothing of the essential organs of life, those that really matter where growth and development are concerned. We are only just beginning to grasp the fact that many absolutely insignificant-looking structures, some of them almost microscopic in size, possess the most extraordinary power over growth, and even over life itself; and we are only just beginning to realize that no organ or tissue in the body exists for itself alone, but only in relation with every other organ and tissue. It may be that when we know more about these things some structure will be found which has some control over hereditary transmission and the development of tissues as distinguished from their growth. Until then—and it must be admitted the prospect is not a good one—all our hopes of finding such a thing as a cure for the growth of tumours (for amputation, though it may free the patient from the consequences, can in no sense be regarded as a cure) must rest either upon finding some remedy which, like Coley's fluid, can directly kill the tumour cells without endangering too greatly the vitality of the normal tissues, or upon stimulating to increased energy the normal tissues that surround the tumour until they are able to treat those degenerate cells that have failed to attain their full development and have continued to grow at the expense of the organism without being of any service to it, in the same way that the workers treat the drones.

Dr. Edgar Bates has examined all the children in the Dee and Washington schools of Ogden, Utah; 890 pupils were tested with the illiterate card, and 184 were found to be suffering from eyestrain. Of these 134, or 73 per cent., had headaches; 114 complained of symptoms originating in close work, and 57 of them stated that words became blurred; 34 had blepharitis. A gradual increase of cases was noted from the kindergarten up to the highest forms. Many of the pupils stated that their symptoms were first noted after an attack of measles or scarlet fever. Some of the children who complained of eyestrain were wearing glasses, but they had been fitted by an optician without the use of a mydriatic, which Dr. Bates considers futile; most ophthalmologists will subscribe to this opinion. In reading this paper, which appears in *Ophthalmology* for January, 1912, it is necessary to remember that eyestrain is far more frequent in America than it is here, and also that leading questions as regards headache were put to the children.

THE FUNCTIONAL NATURE OF THE CAECUM AND APPENDIX.*

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Every year the opinion gains ground that the great bowel, from appendix to rectum, has become, so far as man is concerned, a useless and dangerous structure. Exactly ten years ago (October, 1902) Dr. Barclay Smith[1] of Cambridge gave a clear expression of this new conception.

"If there is any truth," he wrote, "in the suggestions offered in this paper, they have an important practical application as regards the large intestine of man. From the nature of his diet a reliance on extrinsic digestive aid as is furnished by bacteria is no longer a physiological necessity. The statement is perhaps a bold one, but I am convinced that the large intestine is practically a useless encumbrance to him."

In the following year (1903) appeared Metchnikoff's famous book on *The Nature of Man*.[2] In that work (p. 69) the new conception receives a more decisive statement:

It is no longer rash to say that not only the rudimentary appendix and the caecum, but the whole of the large intestine are superfluous, and that their removal would be attended with happy results.

Before either of these statements had been made, Mr. Arbuthnot Lane[3] had reached the conclusion that the human caecum and ascending colon served, in a certain class of cases described by him, as a "cesspool," and put his new conception into practice either by excluding the great intestine from the digestive tract by "short-circuiting," or, at a later date, by its complete excision. The result of his operations shows (1) that life is possible without a great intestine; (2) that in certain cases the conditions of life are improved. It is very apparent that Mr. Lane's pioneer operative measures are finding every year an increasingly wide application, and that the views of Metchnikoff and of Barclay Smith are gaining in acceptation amongst medical men.

Theories regarding the Uses of the Caecum and Colon.

If these statements are well founded—if the great bowel is as useless and injurious as is said—then medical men are face to face with a condition which threatens the health and survival of modern civilized races. Before assigning so large a part of man's digestive tract to the list of his useless structures, it will be well to inquire what we know regarding the function of the great bowel as a whole, and the uses of its parts in the various members of the animal kingdom. Such an inquiry brings home to us that our knowledge of the function and significance of the great bowel is vague and unsatisfactory. We do not know, in any animal whatsoever, the exact function or functions of the great bowel; so far we have only guessed at them.

The subject is one which engaged the attention of John Hunter; in his collection there are many specimens which illustrate the structure of the various parts of the great bowel in all classes of vertebrates, but unfortunately he left only the briefest record of the conclusions he had formed regarding their uses. "If we could understand," he wrote, "the use of the ileo-caecal valve, then we should understand the uses of the caecum."[4] He observed that there was a material difference between the contents of the ileum and of the caecum; the contents of the caecum and colon underwent putrefactive changes, and in his opinion the ileo-caecal value was to prevent the putrid contents of the caecum from regurgitating within the ileum. In a case of gun-shot wound of the abdomen he observed that the colic contents had passed upwards in the ileum, a result which he supposed might be due either to a lesion of the nerve supply of the bowel or to a reversed action of the intestine. In the light of our modern knowledge it is interesting to note he had observed that the colic contents were not putrid at birth nor did the caecum of the newly-born contain gas. He was also familiar with the fact that the caecum was small, the colon short, and

* Abstract of a demonstration at the College.

the faeces of thin consistency in carnivora and allied animals, while the opposite was the case in vegetable feeding animals. Further, he recognized that animals with a perfect gastric digestion, such as ruminants, had comparatively small caeca, while in others, like the horse, with an imperfect gastric digestion, the caeca were large. He therefore recognized, a very important fact, that there could be an interchange of function between stomach and caecum. The task of describing and interpreting Hunter's specimens fell to Sir Richard Owen. The conclusion he drew from an examination of the series of specimens which illustrate the anatomy of the ileo-caecal region of the bowel was:

> Comparative anatomy concurs with the results of undesigned experiments, as in cases where artificial openings have been established in the human intestinal canal, in showing that a change to gastric digestion is repeated upon the food in the caecum; chemistry has also shown that the chyme here again becomes acidified, after having been neutralized by bile in the small intestine.[5]

Both Hunter and Owen recognized that the process of digestion underwent a sudden and decided change at the ileo-caecal orifice, but neither the one nor the other suspected that the digestive process was the result of a putrefactive action. That discovery, of course, belongs to modern times.

Reference has already been made to a paper[1] which Dr. Barclay Smith published ten years ago, one which has not received the attention its importance deserves. The theory formulated there has the merit of seeking to explain the anatomy of the ileo-caecal region. His theory is based on the justifiable assumption that all the digestive changes of food within the great bowel are due, not to any digestive secretion, but to the action of bacteria which find a permanent abode in the caecum and colon. He inferred—an inference which has been justified by the observations of Dr. Hertz[6]—that the antiperistaltic movements which Dr. Cannon[7] had seen to occur in the colon of the cat also occurred in the upper part of the human colon, and that the purpose of the ileo-caecal valve was to prevent the contents of the caecum and colon, which were undergoing bacterial digestion, from being forced by the antiperistaltic movements within the ileum, where a totally different digestion was in progress. So far as I know, this was the first satisfactory explanation offered for the presence of an ileo-caecal valve. Dr. Barclay Smith looked on the rich distribution of lymphoid tissue in the ileo-caecal region as stations furnished to protect the body from invasion by the bacterial hosts employed in the purposes of caecal digestion. He made the further assumption, which may or may not be warrantable, that our modern diet needs no bacterial action for its full digestion and assimilation, and that therefore the great intestine is a useless and injurious structure in the economy of modern man. Excision, however, is not the only remedy. There is an option; in place of appealing to surgery to adapt our digestive tract to our present dietary, it seems possible that we may discover a diet which is suited to our present digestive tract. Before we can do that, we must know something of the normal processes of digestion which proceed within the great bowel, not only of man and of animals allied to him, but of vertebrate animals generally.

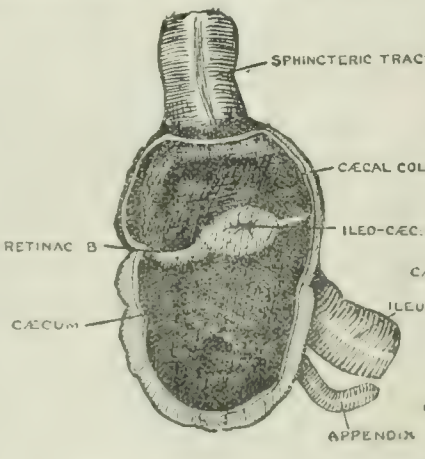


Fig. 1.—The human caecum laid open to show the ileo-caecal orifice, the retinacular bands, the caecal colon, and caeco-colic sphincteric tract. One-third natural size.

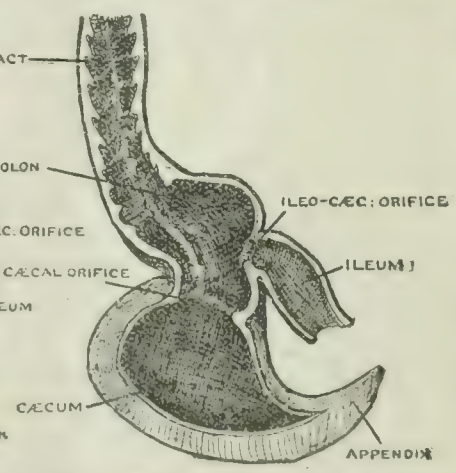


Fig. 2.—The caecum of the rat (twice natural size) laid open to show the same parts as are seen in Fig. 1.

Ileo-caecal Sphincter.

John Hunter, with his usual prescience, realized that a knowledge of the ileo-caecal valve would provide a clue to the nature of the caecum. In 1903, as a result of a series of observations on all classes of vertebrate animals, I came to the conclusion that there was always a functional muscular sphincter at the junction of the small intestine with the great.[8] It is present in the amphibian bowel, the reptilian, avian, and mammalian. When the great bowel undergoes retrogression, as it has done in bears and in their allies and in many forms of insectivora and edentates,[9] the ileo-caecal sphincter is the only visible structure which remains to mark the junction of the small intestine with the large. My observations led me to regard the ileo-caecal sphincter as a constant structure, its main function being to serve as a mechanism for regulating the passage of the contents of the ileum into the caecum, in much the same way as the pyloric sphincter regulates the passage of the food from the stomach into the duodenum.

Independently, Dr. T. R. Elliott[10] had observed the ileo-colic sphincter in action, and placed our knowledge of it on a much sounder basis. In May, 1904, he was able to announce that stimulation of the sympathetic nerves of the inferior mesenteric plexus causes it to contract, and at the same time the same stimulus brings about an inhibition of the neighbouring musculature of the ileum and colon; adrenalin, he found, had a similar effect. Dr. Barclay Smith and he[11] concluded that the strength of the sphincter was commensurate with the thickness of the muscular coat of the caecum and adjacent part of the colon, and that its purpose or function was to prevent the caecal contents being forced backwards into the ileum under the pressure caused by antiperistaltic movements. Sir William Macewen,[12] unaware of the observations made by Dr. Elliott or by myself, announced in the Huxley Lecture of 1904 that he had recognized the presence of an ileo-caecal sphincter and studied its action in a soldier who had a temporary window in the wall of his caecum. In this manner a most important step forwards was made in our knowledge of the caecum; we came to see that there is an elaborate neuro-muscular mechanism which regulates the passage of chyme into the caecum and prevents the regurgitation of the contents of the caecum into the ileum. The significance of the ileo-caecal orifice and sphincter is clear if we admit that they mark a point in the alimentary tract where one form of digestion ends and another begins.

Functional Divisions of the Caecum.

In my preliminary studies[8] of the ileo-caecal region of the bowel, I came to the conclusion that in the fully developed mammalian caecum, such as that of the rabbit or rat, there are three parts which appear to be demarcated for functional purposes (see Fig. 2). These three parts are:

1. The caecal colon, which lies above or beyond the ileo-caecal orifice; it is usually regarded as the commencement of the ascending colon, but a comparative study shows that it represents the primitive caecum of the lower vertebrates (Fig. 2).

2. The caecum proper, which lies below or proximal to the ileo-caecal orifice, and arises as a diverticulum from the caecal colon.

3. The apical or appendicular part, which is characterized by its narrow lumen and its thicker walls. Professor Berry[13] showed twelve years ago that it is lined by a mucous membrane laden with lymphoid tissue.

The same three divisions are to be recognized in the human ileo-caecal region—caecal colon, caecum and appendix (see Fig 1). In the rat's caecum there is a distinct sphincteric ring (caecal sphincter) at the junction of the caecum and caecal colon. In the human caecum this sphincteric ring (caecal sphincter) is permanently united with the ileo-caecal orifice, and forms the well-known retinacular bands (Fig. 1). The action of the caecal sphincter can be studied in the rat (see Fig. 3). At one minute (Fig. 3, A) the ileo-caecal orifice is closed and the caecal sphincter dilated; at another this sphincter is in action (Fig. 3, B), and the ileum opens directly into the caecum; other states are represented in Fig 3, C, D. As yet we know nothing of the action of the retinacula of the human caecum, but from what we know of their action in other animals we may safely infer that during caecal digestion they can regulate the passage of the colic and iliac contents to and from the caecum.

CAECO-COLIC SPHINCTERIC TRACT.

In mammals which have the caecum well developed, the first part of the colon—corresponding to the commencement of the ascending colon in man—is differentiated from the caecum below and the rest of the colon above by the degree to which its circular musculature is contracted (see Figs. 1 and 2). I regard this part as serving as a

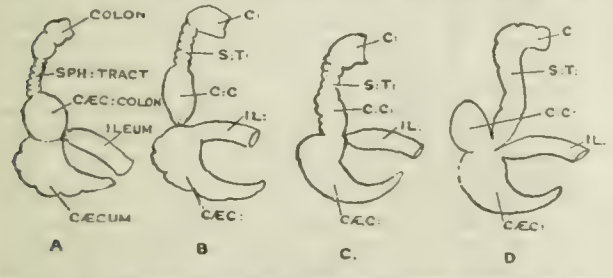


Fig. 3.—Figures illustrating four functional states of the ileo-caecal region of the bowel of rats. In A and C the ileo-caecal sphincter is closed; in B and D it is relaxed. In A and B the sphincteric tract is closed; in C and D it is open. Various conditions of the caeco-colic sphincter are shown in A, B, C, and D.

functional sphincter of the caecal colon. It is true that not one of the many experts who have watched the passage of a bismuth-laden diet have been able to verify the existence of this sphincteric tract. It must be remembered that it is hard to be certain of the movements in the ileo-caecal region; the bony pelvis prevents us from having a clear image, and the ascending colon always bends downwards in front of the caeco-colic junction, so that it is difficult to watch the passage of bismuth-laden chyme as it passes into the beginning of the colon. In the routine of abdominal operations the functional differentiation of the segments of the bowel is not observed owing to the paralytic effect of anaesthetics: in the routine of the *post-mortem* room the functional states are not seen because the putrefactive action of the caecal and colic contents soon destroys the vital action of the muscular coat of the great bowel. The three reasons which convince me I am right in differentiating a functional sphincteric tract are:

1. Its presence in all mammals with well-developed caeca. Comparative anatomists have failed to recognize it because in some animals, such as the horse, the caecal colon has become highly specialized and elongated, thus thrusting the sphincteric tract some distance away from the ileo-caecal orifice.

2. In young and healthy subjects, if formalin be injected by the arterial system, before putrefaction has destroyed the vitality of the musculature of the bowel, this tract will be seen (see Fig. 1 and also Professor Symington's drawing in *Quain's Anatomy*, vol. iii, Part IV, p. 190, 1896).

3. It is impossible to decompress gas from the caecum of the living; the caecum always contains gas; that is a necessary correlative of the process of digestion going on within it. The gas is locked up in the caecum just as it is in the cardiac part of the stomach; it cannot be pressed into the ileum because of the ileo-caecal sphincter; it cannot be pressed along the ascending colon because of the sphincteric nature of the muscular wall at the commencement of the ascending colon.

THE ILEO-COLIC REGION OF BIRDS.

The ileo-colic region reaches its highest specialization in graminivorous and vegetable feeding birds. A study of the avian mechanism helps us very materially to understand the working of the ileo-caecal tract in mammals. In Fig. 4 I have represented the termination of the ileum and beginning of the colon of a young ostrich. Between the ileum and colon there is a well-demarcated chamber corresponding to the caecal colon of mammals. It is separated from the ileum by a sphincter (ileo-colic), and from the colon by a caeco-colic sphincteric tract (Fig. 4). The two long caeca open from the caecal colon by a common orifice, which is guarded by a strong caecal sphincter. It is easy to see that the caecal colon is the feeder of the caeca; when it contracts, its contents, being shut off by the sphincters at its iliac and colic ends, are forced into the caeca or onwards into the colon.

It appears, however, that the caecal colon has also a selective function. In the valuable report[14] by the committee which recently inquired into grouse disease—Dr. Hammond Smith drew my attention to this source of information—a number of valuable observations are recorded. The rough fibres and débris of heather shoots and of moor fruit present in the chyme when it reaches the colic caecum are passed on to the colon through the sphincteric tract, while the more fluid matter is pressed into

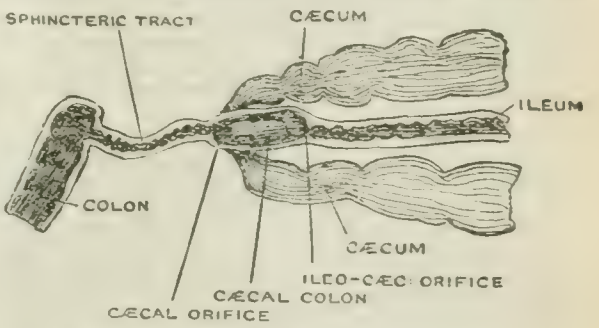


Fig. 4.—The ileo-caecal region of a young ostrich.

the caecum. Thus, the caeca, which together are twice the length of the small bowel in the grouse, are filled with fluid, alkaline chyme from the ileum; in the caeca its reaction becomes acid, probably from the bacterial digestive processes which take place in the caeca. The caeca are only partially and occasionally emptied, the caecal contents differing completely in character from the usual "droppings" of the grouse. Here, then, in its highest form we find the caecal colon acting as a selective mechanism and the caeca set aside as separate chambers for a special and apparently bacterial process of digestion and absorption.

EMPTYING OF THE CAECUM.

In rodents the caecum begins to pass into action as soon as food enters the stomach, but at no time does the caecum of any animal become completely emptied. It is well known that in animals which die of starvation the caecum and adjacent part of the ascending colon retain their normal contents, but the significance of this fact has not received the attention its importance merits. If the digestive processes undergone by food in the caecum and great bowel are due to bacterial action, then it is absolutely necessary that a caecal "batch" must be preserved to secure the continuation of bacterial digestion. Observations made by Elliott and Barclay Smith have an important bearing on the mechanism which secures the retention of the caecal batch. In carnivores, such as the cat, ferret, dog, stimulation of the sacral visceral nerves causes a constriction and emptying of the great gut from the caecum to the rectum. In vegetable-eating animals the effect extends to only the distal part of the colon; the proximal part of the colon—corresponding to the caecum, ascending colon, and the hepatic part of the transverse colon of man—are outside the influence of this emptying mechanism. Holzknecht and Dr. A. E.

Barclay[15] have observed the peculiar expulsory movements in the splenic part of the transverse colon. We know that expulsory movements occur in the colon at and distal to the splenic flexure. We must infer that the preservation of part of the caecal and colic contents is essential for the digestive economy of vegetable-feeding mammals, and if we admit that the digestive processes of the caecum and colon result from the action of certain bacteria we see why Nature has placed the proximal part of the colon outside the influence of the expulsory mechanism. In the proximal part of the colon antiperistaltic or retaining movements are observed, never the movements of complete expulsion. For the same reason we can explain the absence of the great bowel in all forms of fishes; the differentiation of the bowel into small and great intestine appears with the evolution of land-living, air-breathing vertebrates. A bacterial form of digestion, necessarily attended by the production of gas within the bowel, would upset the stability of gill-breathing, free-swimming forms. The digestive juices of fishes are notoriously strong. From the point of view of comparative anatomy, we must regard the great bowel as a part which has been elaborately modified and evolved, through the course of long ages, for a highly peculiar form of digestion.

Some years ago I noted the following facts relating to the digestive changes in the bowel of rats fed on oats. In the jejunum free starch was abundant; in the lower part of the ileum no starch reaction was obtained. It was not until the contents of the colon had reached the mid part of the transverse colon that the starch reaction became again manifest. These observations seem to indicate that cellulose digestion had proceeded in the proximal part of the colon, exposing fresh granules of starch which were absorbed in the middle and distal part of the colon.

THE ALLEGED VESTIGIAL NATURE OF THE APPENDIX.

For many years the appendix vermiformis has been regarded as one of the vestigial structures of man's body, an opinion which has prejudiced us against any real endeavour to discover its nature and function. Twelve years ago Professor R. J. A. Berry, on the evidence he then produced, came to the conclusion that the appendix should be regarded as a specialized part—not a retrograde part—of the caecum, and that is the conclusion which every one must reach who makes an impartial survey of our knowledge of the comparative anatomy and of the evolution of the human ileo-caecal region. At least in three separate orders of mammals the apical part of the caecum has become specialized and demarcated from the rest of the caecum in the form of an appendix. It has never been suggested that the appendix of the koala, wombat, rabbit, lemur, or of the anthropoid apes is a vestigial structure. So like are the caeca and appendix of the gorilla and chimpanzee to the same structures in man, that I know of no character by which an expert could tell the one from the other. In the anthropoids, as in man, the caecum and appendix undergo the same peculiar changes in passing from infancy to adult age. We know from their fossil remains that the great anthropoids are of extreme geological antiquity; were their appendices injurious or vestigial structures, there has been ample time to accomplish its complete suppression. Kelly and Hurdon, in their well-known work,[16] cite the small calibre of the appendix as evidence of its retrograde character; it is more in keeping with what we know of animal structures to regard the smallness of calibre as an adaptation to a peculiar but unknown function. We do not suppose the œsophagus to be a retrograde organ because it is narrow as compared to the stomach; we fortunately know the function of the gullet.

PROBABLE CAUSE OF DERANGEMENT.

Every one who is acquainted with the more recent developments of our knowledge of the surgery and pathology of the abdomen agrees that, in a large proportion of civilized men and women, the great bowel—especially the caecum and appendix—is abnormally liable to derangement and to disease, but as to the cause of that condition there is a diversity of opinion. No observations of recent years throw more light on appendicitis than those which Dr. Weinberg[17] made on chimpanzees dying in captivity. We have seen that the caecum and appendix have the same form in the chimpanzee as in man. In ten out of sixty-one chimpanzees appendicitis was found at death. We have no reason to suppose that in its natural habitat this anthropoid is specially liable to appendicitis—the evidence is purely negative; but as soon as the chimpanzee comes into captivity, and is placed on a human diet and exposed to human contagion, it becomes subject to a prevalent human disease. In the chimpanzee's case we blame the diet. Metchnikoff and Dr. Barclay Smith, as far as man is concerned, regard the appendix as at fault. When we think of how the diet of highly civilized races has changed—in quality, quantity, and character—in comparatively recent times, one must marvel that our organization, which was evolved to deal with a more primitive and more precarious supply of food, has accommodated itself to modern conditions so well as it has. We know that beyond the neolithic period, when cereals began to be cultivated, some six thousand years ago, there lies a vast hinterland of rude human existence, when man must have lived on the natural products of the country. With the discovery of fire and of the artificial preparation of food (we know that man had discovered the use of fire before the end of the Pleistocene period) the task of the alimentary system must have been greatly altered. The greatest changes, however, are those of more recent centuries—the concentrated nature of food, its plentiful supply, its highly artificial character. When we come to realize how slowly evolutionary processes have affected man's body in past times, we can hardly expect our internal digestive system to adapt itself to the rapid pace demanded by the ever-accumulating resources of civilization. The modern changes we see at work in our teeth and jaws have set in since neolithic times; we have every reason to suppose these are allied to, and contemporaneous with, changes affecting the whole alimentary system.

Thus an impartial survey of the evidence at present at the disposal of the anatomists indicates very plainly that we cannot hope to prevent or cure the ailments to which the great bowel is liable so long as we regard it as a hopelessly injurious or useless structure. On the other hand, if we regard it as having all the anatomical appearances of a useful structure, our outlook becomes hopeful if we can only discover what its uses are. If we only knew how to keep it suitably and profitably employed by altering our diet to meet its requirements, it will, we have every reason to think, serve us and future generations just as well as it answered the digestive needs of primitive and successful races in the past.

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WITH the approval of King Edward's Hospital Fund for London and the Charity Commissioners, an amalgamation of the British Lying-in Hospital with the Home for Mothers and Babies, Woolwich, the President of which is H.R.H. Princess Christian, has been provisionally arranged under the title of the British Hospital for Mothers and Babies. The subtitle of the latter institution, "National Training School for District Midwives," will be retained, and the joint hospital will occupy a new building, which is shortly to be erected at Woolwich for the purpose. The authorities of the British Lying-in Hospital have been led to this step by the rebuilding and alteration in character of the district around Endell Street, which has greatly reduced the number of its patients, whilst the addition of maternity wards to most of the large hospitals has also influenced their decision. They feel that the usefulness of the institution will be materially increased if it follows the population to the outskirts of London.

Remarks
ON
RECENT PROGRESS IN CONNEXION WITH SYPHILIS.

DELIVERED AT A MEETING OF THE HAMPSTEAD DIVISION OF THE METROPOLITAN COUNTIES BRANCH.

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OUR knowledge of syphilis has made such strides during the last decade that we are almost justified in saying much of what we were taught as students was wrong. A quarter of a century ago our masters were only beginning to free themselves from the great error into which John Hunter had fallen when he wrote in the least illuminating of his scientific contributions:

> The matter of gonorrhoea will produce either a gonorrhoea, a chancre, or the lues venerea; and the matter of a chancre will produce either a gonorrhoea, a chancre, or the lues venerea.

This statement, coming with all the force of Hunter's great authority, rendered the whole question of venereal disease chaotic where formerly there had been some glimmering of light. To the great loss of science, Hunter paid for the mistake with his life, since there is little doubt that he died of syphilitic disease of the arterial system, a result of the experiment upon which he based his inaccurate conclusion. In accordance with his teaching, mercury was given for a time in every case of venereal disease without method and merely for the relief of symptoms. It soon came to be recognized that gonorrhoea, at least, was a separate disease from syphilis, but it was not until bacteriology was well established that syphilis and soft sores were clearly distinguished from each other, and the oft-debated question of a single or dual poison was finally settled. It then became known that the gonococcus caused gonorrhoea, that Ducrey's bacillus, amongst other organisms, caused soft sores, and that syphilis was the result of some other poison. This poison still remained unknown, and was called "a virus," though curiously enough the disease itself was called by the euphemism of "specific." Most thoughtful persons had arrived at the conclusion that it was infective, and looked forward to the time when the actual organism should be discovered. Other points, too, had emerged from the darkness—that the three diseases were not mutually incompatible, that they had different incubation periods, and that they might exist in any combination in the same patient.

When we were students, only the more salient features in connexion with syphilis were recognized, and vast fields of the disease remained to be explored. Nothing was known—or at any rate was taught us—about its effects on the internal organs. Visceral syphilis was hardly recognized, and cerebral syphilis was denied. The conditions which are now grouped under the heading of parasyphilis were not even suspected; indeed, parasyphilis is so recent a term that it has hardly yet come into general use. It is a convenient expression for those conditions produced by long-standing syphilitic inflammations the consequence of, but not actually caused by, the direct action of the spirochaete itself.

Clinically I think that we were taught about syphilis as well when I was a student as we teach our dressers at present, but scientifically our masters had as much to learn about the disease as their pupils.

HISTORY OF TREATMENT BY MERCURY.

The first real advance was made when it became known that there was as much or even greater danger in a mild attack of syphilis than in one which was marked by more severe signs and symptoms, because the milder attack was apt to be imperfectly treated whilst the more severe one naturally led to more adequate treatment. The second great advance was made when it was recognized that mercury would cure syphilis, and that it was necessary therefore to give it systematically and not for the short periods when the signs of the disease were manifest. Both these advances in knowledge were perhaps beyond the reach of our masters. The first certainly was. Histology had first to show the existence of visceral syphilis where such a condition had been doubted or categorically denied. Pathological histology in its more difficult aspects, especially in connexion with the nervous system, is a thing of our own time, and has been brought to fruition by the work of our own colleagues and pupils. The training of a first-rate histologist was in some respects superior to that of a first-rate morbid anatomist of the type of Hunter, Baillie, or Paget. It led to the observation and correlation of more minute differences. The later school, therefore, when attention was turned to the problems of medicine, often produced splendid clinical physicians by whose labours the relationship of the parasyphilitic lesions to syphilis has been mainly proved. Clinical observation and pathological histology had reached their limits in syphilis just about the time that experimental medicine and bacteriology gave a new start to the study of the disease, and during the last ten years our knowledge of syphilis has been revolutionized by the focussing of these four lights of medicine upon it.

Clinical medicine had already shown that mercury was the most reliable and potent drug for the cure of syphilis. It had, indeed, been employed as a remedy for syphilis ever since the introduction of the disease into Europe at the end of the fifteenth century, but it had fallen somewhat into disrepute, owing to the reckless manner in which it was given. It was too often replaced by potassium iodide, guaiacum, arsenic, and other drugs which are now recognized as valuable adjuvants in the treatment, although they are wholly ineffective in the cure of syphilis. As a result of the abuse of mercury it was detested by the laity, for it was believed that every patient was salivated, and that it was never eliminated by those who took it. It was an everyday remark in the out-patient room when I was a student that "I won't take mercury," or "Please don't give me mercury." This fear seems wholly to have vanished, and the present generation has lost its inherited dread of the drug. Many medical men are still practising who hold that syphilis is not cured by mercury "unless the gums are touched," but such an assumption is wholly unwarranted. It shows that the remedy has been given with insufficient precautions, and on a system governed rather by routine than by that study of the individual case which should alone be followed in the treatment of every disease. Mercury was originally given by the mouth or by inunction, and wholly for the relief of symptoms. Blue pill in the earlier times and grey powder at a later period were the standard preparations. For those who could afford the expense and the time a visit to Aix for one, two, or three seasons of six weeks each enabled the inunction method to be employed with a minimum of inconvenience. Attempts were made from time to time to administer mercury by other channels than by the mouth and skin, but they were not extensively adopted until intramuscular injections had been made comparatively painless, and surgery had advanced sufficiently to ensure that their administration should be aseptic.

Professor Fournier in Paris, Professor Lang in Vienna, and Sir Jonathan Hutchinson in England must have the credit of administering mercury to cure syphilis, and not to cure the signs of syphilis. The success of their method of treating the disease by small doses of mercury, continued for long periods of time, is well seen in the general condition of the population in our large towns. Syphilis formerly left ineradicable traces upon multitudes of people. It is as rare now to see the signs which were formerly so familiar as it is to see a face badly marked with small-pox. Even in congenital syphilis it is constantly necessary to warn students not to place too much reliance upon the facial aspect or upon the absence of Hutchinson's triad—teeth, eyes, and ears—as an indication that syphilis is absent when other indications point to it as a factor in any given case. The advance of knowledge has fortunately given us more trustworthy tests than the clinical ones upon which reliance had formerly to be placed.

We cannot, however, take the whole credit to ourselves for this improvement. Mercury is, indeed, given earlier and more systematically than it used to be, and the patients are neither salivated nor insufficiently treated, as happened when they were only treated for the signs of

syphilis. But the general standard of health and hygiene has improved markedly during the last quarter of a century. Drunkenness is less common, and the resisting power of the individual therefore is greater. We must consequently refuse the whole credit for the improvement and give a share of it to the community at large. It is clear, at any rate, that the disease is not becoming more frequent, and it is equally clear that the outward stigmata of syphilis are not diminishing because as a nation we are becoming immune to the disease owing to a general syphilization.

Schaudinn's Discovery.

The advances I have mentioned hitherto all date antecedently to the year 1905—a year which must be for ever memorable in the annals of syphilis, because Schaudinn discovered the *Spirochaeta pallida*, and thus allowed of the possibility of a rational line of treatment. Schaudinn's discovery was not accidental. It was the end of a long series of researches undertaken to determine the cause of syphilis. The advance of bacteriology and the discovery of micro-organisms which produce the diseases now called infective—for example, tubercle, osteomyelitis, septicaemia, and others—led every scientific surgeon to the belief that syphilis belonged to the same group, although it presented certain peculiarities which did not bring it quite into line with the rest. Many observers brought forward many organisms, each of which was confidently affirmed to be the syphilis germ. Each in turn failed to prove his claim, and even as late as 1908 the more cautious pathologists preferred to speak of the virus of syphilis rather than of its micro-organism which had already been discovered for three years.

At last the German Academy of Science, at the instigation of Franz Schulze, the Professor of Zoology in Berlin, determined to devote serious attention to the subject. A commission of experts was appointed. Fritz Schaudinn, a young protozoologist who had already made his name in connexion with spirillar infection in birds and in the relapsing fever of man, was entrusted with the actual work of investigation. Erich Hoffmann, a recognized authority on syphilis, was associated with Schaudinn in the research that he might act from the clinical side. By good luck the very first case examined showed a number of motile spirilla which were at once obvious to the trained eye of Schaudinn. The patient was seen on March 3rd, 1905. She was found to have a primary chancre on the left labium majus, with several slightly ulcerated papules on the vulva. Subsequent examination of other cases of syphilis showed the existence of similar spirilla in varying numbers, both in the primary and secondary stages. Schaudinn's familiarity with protozoa soon enabled him to group these organisms into two classes—the *Spirochaeta refringens*, the larger organisms with few spirals and deeply staining, and the *Spirochaeta pallida*, smaller, more slender, with numerous spirals and staining with difficulty. He further determined that the *Spirochaeta refringens* is found in non-syphilitic affections as well as in some ulcerated syphilitic lesions, and that *Spirochaeta pallida* is found only in syphilis.

The discovery aroused great interest and much controversy, and I well remember the pride with which Metchnikoff demonstrated the spirochaete to us at the Institut Pasteur in Paris on May 13th, 1905. Schaudinn's contention that the *Spirochaeta pallida* was the cause of syphilis was further strengthened by the discovery of the organism in the liver and spleen of an infant with congenital syphilis, and it is now generally admitted that syphilis is a chronic spirillosis. The disease, therefore, has established its claim to be considered infective, and its peculiarities are explained by the fact that the infecting agent is a protozoon and not a protophyte like the bacteria and micrococci causing the other diseases in allied groups. Schaudinn, having completed his life's work, died at Hamburg of an obscure pelvic suppuration on June [illegible], 1906, at the age of 34. A man of modest and retiring [illegible], whose friendship it was a pleasure to have, [illegible] well have been spared to make further [illegible] science of protozoology, which he had already made his own.

Metchnikoff, in the meantime, had been doing equally [illegible] in Paris on the etiology of syphilis. He showed that the disease [illegible] not only upon the higher primates, but also upon monkeys, and his experiments proved that syphilis was not a purely human disease, as was generally stated, and that the infection was in the earliest stages as purely local as tetanus or hydrophobia. He showed that it took an appreciable time for the infection of syphilis to become generalized, and he was so sure of the truth of this important fact that he allowed one of his pupils to be inoculated from two patients who had syphilis, to wait an hour after the inoculation, and then to have the virus destroyed by the inunction of a mercurial ointment which was rubbed in for five minutes. A monkey inoculated at the same time and from the same cases developed a chancre. It was not treated by inunction of the mercurial ointment. The inoculations were performed on February 1st, 1906.

The Wassermann Reaction.

Various observers had worked from time to time at the serum reaction of syphilis, hoping to obtain by this means a test for the disease. In 1906, Wassermann, Neisser, and Bruck drew attention to the syphilitic reaction which is now commonly known as Wassermann's test. It is based upon the reaction, first published in 1901 by Bordet-Gengou, that haemolysis is prevented when the complement has first been incubated in the presence of cholera vibrios together with cholera immune serum. What was true of cholera proved to be true of typhoid, and hence came Widal's test. What was true of enteric was also shown to be true for syphilis, and thus Wassermann's test came into use. The reaction was developed by experiments upon apes, and as it proved to be reliable in their case it was soon employed for the recognition of syphilis clinically.

The general outcome of the work of Wassermann, Neisser, and Bruck has been to show that a positive reaction is given by syphilitic patients from five to eight weeks after infection—that is to say, from the tenth to the thirtieth day after the appearance of the primary sore, although the reaction has occasionally been positive as early as the eighth day. The reaction is not the earliest sign of the disease, therefore, nor is it the first proof that the syphilis has become generalized, because excision of the sore as soon as the test has become positive has still been followed by syphilitic manifestations in the ordinary way. The blood is usually employed for Wassermann's test, but the cerebro-spinal fluid has also been used with great success, more especially in cases of parasyphilis. Major Harrison states that in 489 cases where the test was applied it was positive in 71.8 per cent. of cases of primary syphilis, in 90 per cent of cases of secondary syphilis, and in 83.5 per cent. of tertiary syphilis. It was only positive in 50 per cent. of patients who were tested during the latent periods—that is to say, when there were no active syphilitic manifestations; but it was positive in 80–90 per cent. of cases of general paralysis of the insane, and in 50–75 per cent. of cases of tabes.

Major Harrison is justified in stating:

> The value of the Wassermann test lies in the fact that it enables a diagnosis of syphilis to be made in many cases from the fifteenth day after the appearance of the sore, and from three weeks to a month earlier than any assistance could be derived from clinical methods. Its value in this respect may not be as great during the secondary stage, because the clinical signs are then sufficiently clear, but in stages later than the secondary, where the malady frequently manifests itself in a manner which does not display the true character of the underlying disease, the test must be of the greatest assistance in affording evidence that the patient is, at any rate, suffering from syphilis in a more or less active form. Wassermann's reaction is also said to occur in sleeping sickness, which is also a trypanosomiasis, and in some cases of malaria, but for all practical purposes a patient in England who gives a positive Wassermann reaction is infected with *Spirochaeta pallida*, and is therefore syphilitic. (*A System of Syphilis*, vol. vi, p. 175.)

A negative Wassermann reaction does not necessarily exclude syphilis, but if it is repeatedly negative when the patient is not taking mercury, he is probably not syphilitic, for no spirochaete infection exists. The reaction is by no means ideal, and will probably prove capable of improvement. At present it is useful for a variety of purposes, and it is clearly an advance towards accurate scientific knowledge. It has shown already that the earlier a course of mercurial treatment is begun in acquired syphilis the sooner does the reaction become negative. It has thus set aside, once and for all, the teaching that mercurial treatment should not be commenced until the appearance of "secondary" symptoms. The test can also be applied to

measure the utility of other forms of antisyphilitic treatment, and it has met with marked success in gauging the value of the various organic compounds of arsenic. A time limit has hitherto been employed in the treatment of syphilis, the limit being quite arbitrary and varying with each surgeon's experience and preconceived ideas. It seems probable that by using the Wassermann test we shall be able to say when the spirochaete infection has been destroyed and, consequently, when mercury and arsenic may be safely discontinued. And if we can say when syphilis is cured we shall also be able to answer the many important subordinate questions which hang upon the main issue. The test also serves to differentiate those difficult cases of aneurysm, phthisis, white swelling of joints, and tumours of the testicle, by showing which are and which are not due to spirochaete infection. It is said, too—but of this I have no experience—that in infants it will distinguish between hereditary syphilis and syphilis which has been acquired during or shortly after birth. I confess that it took me some time to appreciate the value of Wassermann's test, and that at first I was inclined to undervalue it, but a better acquaintance with its help in difficult and doubtful cases has led me to think very highly of it.

The Principles of Mercurial Treatment.

The cause of syphilis being known and a test having been obtained, it has at last become possible to employ a rational treatment. Before 1905 it was indeed recognized that the disease could no longer be treated in a routine manner, but that each patient must be considered individually. It was recognized, too, perhaps on the analogy of influenza, that syphilis always picked out the weakest tissues in the body, or perhaps it would be more correct to say the tissues which had been subjected to the greatest physiological strain. In one person, therefore, the bones suffer most, in another the skin, in another the mucous membrane, in another the heart and arteries, and in yet another the central nervous system. Many tissues may be affected in a minor degree, but the brunt of the disease is generally borne by one or more structures.

Little by little, too, it had been learnt that syphilis was curable when treatment was persisted in for long periods of time, and that so long as mercury was given the particular preparation was of less importance than the duration of its administration. The adjuvant drugs, upon which too high a value had been placed when mercury was dreaded on account of the reckless manner in which it had been given, were gradually relegated to their proper position. Potassium iodide, guaiacum, sarsaparilla, arsenic, and the whole group of "blood purifiers" were made to give way to mercury by those who had the interest of their patients at heart and were not blinded by prejudice. Formerly, as I have said, our masters taught by precept and practice that it was enough to treat a patient when and so long as he had manifest signs of syphilis. Even at Aix active treatment alternated with long periods of intermission. For some years before 1905 the prognosis of syphilis had become more settled, and in place of a cheery optimism that the disease would work itself out, or the black pessimism that "once syphilitic always syphilitic," a patient would be told that a well regulated and prolonged course of mercury afforded him a fair chance of complete recovery without any of the disastrous results associated with salivation. Precautions were taken to put the patient into the best state of health to meet such a course, and the more especial sources of danger were foreseen and, as far as possible, guarded against. The mouth and teeth were put into the most favourable hygienic condition; the state of the alimentary canal was regulated, and it was understood broadly that whatever might be the cause of syphilis its virus acted most powerfully in the presence of pyogenic micro-organisms, and upon parts where there was a continuously increased blood supply.

Mercury was given in every case of venereal ulcer so long as the cause was unknown, and so long as a single poison was thought to be capable of producing either syphilis or soft sores. No question of diagnosis arose until it was recognized that there were two poisons, the one requiring mercury, the other curable without it. The typical hard sore of syphilis and the multiple soft sores were not difficult to distinguish, but as the general health of the population improved, drink became less fashionable, and cleanliness was held in higher esteem, the hard sore began to lose the characters assigned to it classically, and the differential diagnosis between it and a chancroid became less easy. The "parchment sore" was described, and later the non-indurated syphilitic sore. The dread of mercury persisted, and for fear of giving it unnecessarily the patient was left untreated until he showed unmistakable signs of syphilis. Perhaps the last thing learnt was that the poison of soft sores and the virus of syphilis were not mutually antagonistic, and that it was quite usual for a patient to become infected at the same time with chancroids and syphilis. Careful treatment would cure the soft sores before the incubation period of syphilus had expired, and the more serious disease might thus manifest itself when a favourable prognosis had already been given. From this danger we are saved by the timely use of Wassermann's test.

Blue pill, blue ointment, and grey powder served for many years as the vehicles by which mercury was introduced into the body of a patient with syphilis, but the advance of chemistry and improvements in pharmacy, with the gradual abolition of routine treatment, have led to the production of a great variety of mercurial preparations and a more varied method of administration. A great step in advance was made when the broad principle was established that mercury was the only cure for syphilis, and that it did not matter very much how it was given. Practitioners still exist who pin their faith on a single form of the drug and on one method of administration. It is abundantly clear that any method and any preparation is equally efficacious if it introduces sufficient mercury into the system and for a sufficient length of time to destroy the spirochaetes and the products of their action. We do not yet know and we have still to learn by scientific means how much mercury must be given and how long a time it requires completely to destroy the infection. Personally, I think that small doses for long periods of time are no less effectual than larger doses for the same period, and the small doses are certainly less dangerous. The time has almost arrived when we shall cease to guess, because the accumulated experience of many Wassermann tests will enable us to give a certain answer.

There is no need to employ one preparation of mercury exclusively even for the same individual. Grey powder, perchloride of mercury, and the iodides of mercury are interchangeable with good results. Neither is the administration method of the first importance. Inunction, pills, draughts, and powders held undisputed sway for many years. It is only within our own memory that these means have been displaced to any great extent. When mercury was given for a short time to cure symptoms a course was no great hardship, but as soon as it was given for prolonged periods to cure the disease a mercurial course became so irksome and distasteful to the majority of patients who had acquired syphilis that they shirked it when it was compulsory, or abandoned it altogether when it was entered upon voluntarily. It was often difficult in a long course to prevent gastric disturbance, whilst inunction could rarely be carried out satisfactorily in this country. Other methods were sought, and foremost amongst them was the use of intramuscular injections. Adopted on a large scale and with excellent results in the navy and in the army, intramuscular injections mark the division between the old and the new school in the treatment of syphilis. The old school believed in the efficacy of large doses of some particular preparation of mercury given for short periods; the new school thinks that smaller doses continued for many months are more certainly curative. It remains for modern research to show which is the better method. Intramuscular injections were run a little too hard at first. They were soon found to be unsuitable for every case, and their careless or injudicious use was sometimes followed by untoward results which detracted still further from their undoubted merit. The method is now finding its proper place as a valuable alternative to inunction and oral therapy in the treatment of syphilis. Its employment has emphasized the rule that duration and regularity of treatment are of more importance in the cure of syphilis than the quantity of mercury given or the exact method by which it is administered.

Treatment by Arsenic Compounds.

Knowledge had proceeded thus far in 1905 when the discovery of the spirochaete enabled syphilis to be classified

as a form of infective disease, other groups of which were well known. Hitherto it had been considered a disease apart, now it fell into its proper place in the scheme of classification of disease. Dr. H. Wolferstan Thomas, of the Liverpool School of Tropical Medicine, published the results of his treatment of trypanosomiasis with atoxyl, an aniline compound of arsenic. The paper appeared in the British Medical Journal of May 27th, 1905 (vol. i, p. 1140). The results were so satisfactory that by parity of reasoning atoxyl was soon used in the treatment of syphilis, at first for the disease produced experimentally in animals and afterwards in human syphilis. The drug relieved the symptoms, but was found to be so uncertain and dangerous in its action that its use was abandoned. It more than justified its existence, however, because Ehrlich, with the help of Hata and Wertheim, started, from it as a basis, upon an elaborate experimental research into the action of the organic compounds of arsenic as destructive agents for pathogenic parasitic protozoa. Experimenting at first with the pentavalent arsenic molecule contained in atoxyl they were soon led to the conclusion that the trivalent molecule was a more potent germicide, whilst it had a less poisonous action upon the tissues of the host. Various organic compounds of arsenic were successively produced and were put to the test of experiment. Many were clearly unsuitable, and as Ehrlich's work was purely scientific he did not trouble to give names to the various products, but contented himself with numbering them. The task is not yet ended, but occasional halts have been made when some serviceable body was obtained. No. 418, or arseno-phenylglycin, appeared for a time to answer the expectation of the master who started in quest of a substance which should destroy all the pathogenic protozoa with the least possible injury to the infected tissues. Further work showed that No. 592 or di-oxy-diamido-arsenobenzol was more useful, and in 1909 the hydrochloride of this body was prepared as No. 606, and sold as a commercial product under the name of "salvarsan." The remedy proved very serviceable, but it required a little additional preparation before it could be injected, and it had to be given carefully. It was not, therefore, ideal, and the quest continued. Early in the present year "914" came into use under the name of "neo-salvarsan." It has the advantage of being soluble in cold water, of not requiring any special preparation before it is injected, and of being at least as efficacious as salvarsan. The dose of salvarsan was 0.6 gram, and of neo-salvarsan 0.9 gram: but salvarsan was best administered in a pint of sterilized salt solution at a temperature of 105° F., whilst neo-salvarsan only needs to be dissolved in 6 oz. of freshly distilled water at a temperature of 60° to 70° F. Both salvarsan and neo-salvarsan should only be dissolved immediately before they are used, as prolonged solution seems to alter their chemical properties. Both preparations are as interesting scientifically as they promise to be valuable curatively. They are of scientific interest because it is the first time that pharmacology has embarked deliberately upon the preparation of a highly complex body designed to destroy infective micro-organisms. The problem to be solved was wholly different from that which has provided the vaccines and serums with which we are familiar. These aim at teaching the tissues to fight their own battles. Ehrlich and his fellow workers design to poison the infecting organisms without injuring the tissues of the host, and without necessarily calling upon those tissues to take any share in the process. It is pioneer work, therefore, of the highest order, not dealing with any individual disease, but with the cause which produces a whole group of diseases, each one of which may differ widely in its symptoms and effects. Syphilis, fortunately, is amongst the group of spirillar diseases which has been first attacked, and the work has been crowned with remarkable success. Not absolute, of course, because reactions which answer admirably in the laboratory are by no means uniformly successful at the bedside, where the conditions are much more complex and are less capable of control. The results already attained bear out the contention that the spirochaetes are actually destroyed by the intravenous injection of these organic preparations of arsenic. There is not only a marked and rapid improvement in the signs of syphilis after their use, but there is also evidence that a spirochaete infection which has been in abeyance can be roused by them into sufficient activity to cause the Wassermann reaction to become positive where before their injection it had been negative. Salvarsan and neo-salvarsan, therefore, may be used as tests for the presence or absence of spirochaetes, and it will be possible by their means to say whether or not a patient is cured of syphilis. We are not yet able to state, however, the exact destructive action of these remedies, nor how far their effects are lasting. It was hoped on their first introduction that a single injection would be sufficient to destroy all the spirochaetes. Such a result seemed unlikely, and the hope has not been borne out after a more extended experience. The general conclusion arrived at is that the earlier salvarsan or neo-salvarsan is given after infection the greater and more lasting is its therapeutic value, but in all cases the injections must be repeated at comparatively short intervals.

My house-surgeons at St. Bartholomew's Hospital have made great use of salvarsan and more recently of neo-salvarsan. Their results have been very satisfactory in causing the speedy disappearance of signs and in giving relief to the symptoms of syphilis. They find that a primary sore disappears more rapidly after an intravenous injection of salvarsan or of neo-salvarsan than when mercury is given; that gummatous ulcerations repair rapidly; that ulcerations of the tongue with leucoplakia, which are in the condition known as precancerous, clear up wholly if cancer is not actually present, but only to a modified extent if the deeper tissues have already become involved in an epitheliomatous growth. They have found, too, that the pain of periostitis and of osteitis in patients who have acquired or congenital syphilis is markedly improved. The results have not been so satisfactory, indeed they are negligible, as might have been expected, in cases of extensive syphilitic necrosis of bone where the pathological condition is due rather to the action of pyogenic organisms than to the *Spirochaeta pallida*. Neither have good results been obtained in cases of symmetrical synovitis of the knees, which we are accustomed to speak of as "Clutton's joints," possibly because there is a tuberculous as well as a syphilitic infection in the children who suffer from them.

Good as these results are, I do not think that the time has come or that it will come for several years when we should pin our faith entirely to these arsenic compounds as a cure for syphilis. They may and ought to be given in the treatment of syphilis with a view to shorten the course of the disease, but mercury should also be administered by some of the ordinary methods and for the usual length of time, lest in the end we find that we have trusted too implicitly to an incomplete scientific experiment. It is only three years since salvarsan was introduced. It has already been improved upon, and the technique of its administration has been simplified. The progress and the results are most satisfactory, but as the administration of these arsenic compounds is not incompatible with the use of mercury, every patient with syphilis should be protected from all risk of failure by the employment of both remedies. The final results to be obtained from arsenic are still unknown; we are well acquainted with the effects of mercury, and its limitations are known.

What has been said this evening will show that the knowledge and treatment of syphilis has been systematized and improved in a remarkable manner in our own lifetime. But if much has been done much still remains to be done. The discovery that a spirochaete is the cause of syphilis gives an individual and human interest to the peculiarities and behaviour of protozoa when they have learnt to become parasitic. A large amount of research has been devoted to the life-history of the protophytes, but much less attention has been given to the protozoa about which nearly everything has still to be learnt. It is certain that the tissues of the body are able to destroy them in many cases, even when they appear to have gained a secure lodgement, for the spontaneous cure of syphilis is of no infrequent occurrence. It is equally certain that they have a remarkable power of remaining latent for indefinite periods. In their normal life-history they show this proclivity, because in patients suffering from syphilis periods of seemingly perfect health are interspersed with recurrent periods in which signs of the disease are manifest. During these periods of inaction the spirochaetes may be roused by the administration of

salvarsan in many cases and by mercury less frequently, and there are few practitioners who have not seen the signs of syphilis become worse or more generalized whilst the patient was upon a mercurial course. Hardships, deviations from good health and other debilitating influences will often provoke syphilitic symptoms which might otherwise have remained in abeyance. It will be interesting to learn, as we probably shall do in the future, how and why these intermissions occur. There is already some evidence to show that the infective protozoa pass a part of their life-cycle in a resting stage, during which they are undiscoverable by any microscopical examination known to us at present. It is assumed that they become intracellular during this period, but more must be learnt about them before any definite statement is possible, and the resting stage may prove to be only one of many interesting peculiarities serving to distinguish protozoal infection from that of the vegetable microbes.

Lastly, the important question arises: What should be the treatment for a case of syphilis as it is seen in general practice? The broad answer is: Make sure of your diagnosis, and make sure of it as early as possible. This can be done soon after the initial lesion has appeared by finding spirochaetes in the chancre either by means of the ultramicroscope or by the Indian ink method. The diagnosis being thus made, it can be confirmed in a short time by employing Wassermann's test. It is not desirable to await this confirmation, because the earlier the organic arsenic compounds are given, the better are the results obtained from them. Neo-salvarsan should be given by intravenous injection, and it should be followed at once by a systematic course of mercury. The neo-salvarsan should be given on the clear understanding that a single injection will not be sufficient except in very exceptional cases, and it should not be postponed because the patient thinks it will do just as well later. The experience already gained shows that the later it is given in the course of the disease the less marked are its effects, and the more frequently must the injection be repeated. On the other hand, there is still too great a tendency to rely exclusively upon the organic compounds of arsenic, and it is necessary therefore to repeat that for the present neo-salvarsan must always be associated with a regular course of mercury controlled by repeated Wassermann tests. These tests should be made during the intervals when mercury is not being taken, for the presence of mercury may render the test negative, although the spirochaete infection still persists.

Potassium iodide should be reserved for the later stages of syphilis, and it should be given in short courses of 10 or 15 grains three times a day. I do not believe it is useful in the earlier stages, as there is no evidence that it destroys the spirochaetes, and it is wasteful to order it in 5 grain doses to be continued indefinitely, as is too often done, because the tissues quickly become habituated to its presence, and excrete it as rapidly as it is ingested. In the light of our present knowledge, a patient is cured of syphilis when he has been through a prolonged course of mercury, and repeated tests have shown that the Wassermann reaction is negative even when neo-salvarsan has been employed as a provocative, and if he has remained free from signs and symptoms for a year after cessation of all treatment.

A SEQUEL TO NOVOCAIN INJECTION.

BY

SIMONDS GOODING, M.A., M.D.CANTAB.,

AND

F. LEDGER ETHERIDGE, L.D.S.,

SOUTH NORWOOD.

THE following case is of interest, as in the past five years novocain has come so much more into general use that it is important for those who are administering it frequently to have brought to their notice any case of true or alleged poisoning.

E. P., an unmarried girl aged 20, in domestic service, at 5 p.m. on November 6th was injected with 40 minims of a 2 per cent. solution of novocain to have three upper incisors extracted. The operation was successfully performed, the patient stating afterwards that she felt perfectly well. She went home to supper with her parents, returning later to her mistress's house, where she carried out her usual duties, and went to bed apparently in good health at 10 p.m.—that is, five hours after the administration of the novocain.

The following morning her mistress called her as usual; she was unable to get a reply and allowed her to sleep on. The maid remained unconscious for the next twenty-four hours, and her mistress, becoming alarmed, sent for a doctor, who pronounced her to be suffering from cocaine poisoning. The girl's parents were then communicated with, and at their desire one of us (S. G.) saw her at 11 a.m. on November 8th, about forty-two hours after the extraction of the teeth.

The patient was a well-developed muscular girl who rather presented the appearance of a case of cerebral irritation. Her face was slightly flushed, but respiration, pulse, and temperature were normal. She resented any interference. The jaw was tightly clenched; she refused to attempt to swallow or to take heed of what was said to her. She kept her eyes firmly closed; on opening them the pupils were equal and dilated; they reacted to light. The deep and superficial reflexes were normal. She had passed neither urine nor motion under her. The bladder was found to be nearly empty, although according to the history she had been in an unconscious condition about thirty-eight hours. What urine there was was normal in consistence. The catamenia had just commenced.

As every effort to rouse her was useless, she was ordered 2 minims of croton oil, to be given in butter. By 6 p.m. she had considerably improved; though still drowsy she would answer questions. The bowels had acted as the result of the croton oil, and for that purpose she had been able to get out of bed. She had taken milk. Her jaw was no longer clenched, and she was now awake. Two hours later she went to sleep and slept until the morning, when again it was found to be impossible to rouse her, and at 11 a.m. on November 9th her condition was exactly the same as on the previous day. The croton oil was repeated, with the same effect; but when the patient got out for the bowels to act she was not allowed to go back to bed, but was assisted to dress, and at 6 p.m. she opened the door perfectly recovered, and has remained well since.

Novocain is believed to be four to six times less toxic than cocaine, so that ¾ grain, the dose administered, was not excessive. Liebl injected himself with 0.4 gram in 10 per cent. solution without producing any toxic symptoms; 0.75 gram, more than eight and a half times the dose given to this girl, caused temporary inconvenience for one and a half hours. Frequently 1½ grains is safely given by lumbar puncture.

There were no symptoms of poisoning when the girl went to bed five hours after the operation, and when first seen by one of us (S. G.) it was stated that she had been unconscious thirty-eight hours and yet there was no distension of the bladder and her clothes were unsoiled; as soon, however, as the croton oil acted she was obliged to wake up because she was under observation; probably, therefore, she had seized her opportunity to urinate secretly.

The curious relapse and ultimate instantaneous and complete recovery combined with the other points in the case, all point to it being a case of feigned coma in a hysterical subject rather than one of toxaemia due to a narcotic poison.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

RUPTURE OF A DERMOID CYST DURING PARTURITION.

I VENTURE to place on record the notes of the following case, as it presents unusual features.

At 2 a.m. on October 2nd I was called to Mrs. K., aged 35, who was in labour. This was her second pregnancy, the first child being 5 years old. The pains had started nine hours previously, but were said to have been weak and infrequent, and the waters had broken when the pains started.

The presentation was occipito-anterior vertex, the head just engaged in the brim, and the os was about the size of a half-crown; the pains were very weak and infrequent, occurring about every ten minutes. The woman's condition was excellent, she was not at all distressed, her pulse-rate was only 84, and I left her, returning about 10 a.m.

Her condition was then about the same, the pains still infrequent and weak; very little progress had been made; at 1 p.m. very little difference could be noted. At 5 p.m. the pains had increased in strength and were more frequent, so the patient was put under chloroform and forceps put on. After the first pull (which made little alteration) the forceps

were readjusted and delivery easily effected. Very little haemorrhage ensued, the placenta was easily expressed half an hour later, and the patient was left quite comfortable, with a firmly contracted uterus and a pulse of 90.

On seeing her at 11 a.m. next morning (October 3rd) I found that she had been vomiting continuously all night, and had been unable to retain even plain water; she had passed urine, but a soap and water enema had had practically no result. Her pulse was 100 but fairly full, and respirations 30. The abdomen was tympanitic, generally tender to light touch, distinctly distended, and showing some rigidity of both recti muscles at their lower ends.

The vomiting continued, and I asked my partner to see her, when we both agreed that surgical interference was distinctly indicated. She was removed to the Victoria Hospital, when Dr. Silva Jones, assisted by Drs. Hinks and Maxwell, opened the abdomen and found a ruptured dermoid cyst about 3 in. in diameter growing from the right broad ligament and hanging low down in the pelvis. Apparently this had been ruptured by the first pull of the forceps, and allowed the easy passage of the child's head at the second application.

A point of interest in the case was the violently irritating effect of the dermoid fluid contents on the peritoneum, as shown by the immediate onset of the vomiting, which became faecal eighteen hours after the cyst was ruptured, and the paralytic distension of the intestine.

The woman is making a good recovery, the only point of difficulty being to make the husband understand how a ball containing teeth and hair came to be inside his wife's abdomen.

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A CASE OF SCARLATINA DURING THE PUERPERIUM.

I WAS very interested to read Sir John Byers's paper on "Rashes occurring during the Puerperium" in the JOURNAL of October 26th, 1912. It so happened that I had at that moment a case of scarlatina which occurred on the second day of the puerperium.

I was called in to Mrs. M., multipara, who was in labour, on October 2nd. I arrived simultaneously with the district nurse, and found that the child and afterbirth were both delivered. The whole labour lasted about an hour. There was a small epidemic of scarlatina prevailing in the village at the time, so I had taken all precautions against introducing infection into the house, and I was glad I had not been called upon to make an examination or assist delivery.

On the evening of the second day the patient was somewhat flushed, had a temperature of 98.8° F., and complained of sore throat. I gave her a dose of oil and pil. ergotin, gr. iii, t.i.d. The next morning I noticed marked circumoral pallor, a heavily coated tongue, and flushing of the skin of the chest and back. The throat, too, looked very suspicious of scarlatina. When, in the evening, the temperature rose to 103° F., there was little doubt in my mind that the case was one of true scarlatina. But as there was a faint possibility the condition might be due to sepsis, I swabbed out the uterus with tincture of iodine, followed by an intrauterine douche of the same (1 in 160) and injected 10 million stock streptococcus vaccine. A careful search revealed no tears of the cervix, vagina, or perineum; the uterus, too, was empty and well contracted, and the lochia quite sweet. Furthermore, I rubbed in pure eucalyptus oil after Dr. Milne's method. Next morning the rash was well marked. The milk, which had at no time been secreted freely, now dried up and the child was weaned. In the evening of the fourth day there was a rigor (104.4° F.). The patient was now becoming very restless and worn out from want of sleep, so I prescribed pulv. dig., gr. ½, pulv. opii, gr. ½, quin. sulph., gr. i—one pill three times a day. The throat from the first was treated every two hours with carbolic oil 1 in 10. There was another rigor on the sixth day (105° F.), but after that the patient gave little cause for anxiety. At this time the baby was noticed to be peeling slightly and was very fretful, but otherwise all right. Mother and child were removed to hospital on the thirteenth day, the baby by this time peeling profusely all over, including the hands and the soles of the feet, whilst the mother showed only slight signs of roughening over the chest and abdomen. At the time of writing (fourteen days later) the mother is peeling profusely, most markedly so on the palms and soles, and I think no one would dispute the diagnosis.

There are one or two interesting points:

First, as to how the infection was introduced. As the district nurse had not been in contact with any scarlatina cases I could only surmise that I had myself brought it. But I learnt later that the mother of a man who had failed with scarlatina a short time previously, came straight from his home (where she had washed his clothes, etc.) to the house of the patient, and washed her linen and clothes the day before she was confined, and had also been in the room with her; so that the source of the infection is proved.

Secondly, an interesting point is the efficacy of the eucalyptus method of rendering scarlatina patients non-infectious. The contacts in this case were the husband, his daughter (aged 5 years), the district nurse, and myself. The husband and small girl had both been in the bedroom in spite of orders to the contrary. The district nurse was a very close contact, as, once the condition was diagnosed, she had to stay in the house and sleep in the same room as the patient—the dwelling being a four-roomed cottage. Mine, too, was naturally a fairly close contact. Not one of the four had had scarlatina, yet no one developed it. The nurse, however, got a very nasty "hospital throat" from nursing in such a small room, but nothing further.

I think the diagnosis cannot be doubted. The source of infection was traced, the patient had all the classical signs, and—most important of all—there was no digital examination of any kind made which could introduce sepsis, and the patient had no previous vaginal discharge.

The last point of interest was the mammary secretion. On arrival at hospital the patient expressed a wish to suckle her child, if her milk could be brought on again. I tried teaspoon doses of lactagol, advertised as a powdered extract of cotton-seed, three times a day. Two days later she began to give her child the breast occasionally; a week later she dispensed with the bottle altogether—*post hoc* or *propter hoc* I cannot say.

J. CHARSLEY MACKWOOD, M.R.C.S.Eng.,
Newick. L.R.C.P.Lond.

Reports of Societies.

EDINBURGH OBSTETRICAL SOCIETY.

Wednesday, November 13th, 1912.

DR. HAIG FERGUSON, President, in the Chair.

Marriage and Childbirth.

DR. HAIG FERGUSON, in the course of a presidential address entitled, Some twentieth century problems in relation to marriage and childbirth, said that though he approved of the general principles of the maternity clauses of the National Insurance Act, he feared that the fashion in which it was at present intended to carry them out was likely to destroy the efficiency of the teaching of midwifery. Normal cases were necessary for teaching, and under the present regulations it was almost certain that usually the woman would choose the less expensive attendant, the midwife, and by remaining at home, retain a considerable sum for herself out of the benefit. Hence only abnormal cases would go to hospitals, which in this way would be depleted of the bulk of their teaching material. The dispensaries, too, would cease to have any maternity department, yet there would be no corresponding benefit to labouring women in a city like Edinburgh if for the supervised and senior dispensary student there were substituted the uninspected midwife. The Act would do serious harm to hospitals unless (1) the recipient of the benefit were allowed to retain part for her own use if she went to a hospital, and (2) unless attendance by a senior student under the medical officer of the hospital or dispensary were allowed to count as attendance under the Act. In reference to the biological aspects of marriage, he pointed out an inevitable antagonism between Nature and medicine. Nature was constantly endeavouring to eliminate bad stocks, while, whenever life appeared, it was the duty of the medical profession to preserve it. Though society could not be organized on the principle of a stud farm, much could be done by the suitable training of individuals for their racial duties. Such training should begin with the first breath of life. There was much that was pernicious in present educational methods—for example, the constant preparation for examination of young girls aged between 14 and 18. Its cessation would result in a stronger race of women. The diminishing birth-rate was largely due to voluntary causes. There had been no great increase in sterile marriages during the last forty years, whereas there had been quite an abnormal increase in the number of small families.

ROYAL SOCIETY OF MEDICINE.

SECTION OF MEDICINE.

Tuesday, November 26th, 1912.

Dr. FREDERICK TAYLOR, President, in the Chair.

Intestinal Ulceration.

Dr. SIDNEY PHILLIPS described a case of fatal acute ulceration limited to the small intestine in a boy who had had rheumatism earlier in life. His parents and brothers and sisters were healthy. When seen he was pale and thin, the abdomen was tumid, and there was deep tenderness in the umbilical region. No other disease could be discovered. He got better, and left hospital, but returned later with abdominal pain and severe headache, vomiting and diarrhoea; the abdomen was more tender than before, and he had clammy sweats. The abdomen was opened in the mid-line; the appendix was found to be swollen, and there were many adhesions in its neighbourhood. The small intestine was intensely engorged with blood. The patient died the following day. Dr. Spilsbury found, at the *post-mortem* examination, blood-stained fluid in the peritoneum, the coils of intestine somewhat glued together and to the abdominal wall by recent plastic lymph. There was considerable haemorrhage into the mesentery, under the peritoneal reflection. There was no thrombosis of mesenteric vessels. The inner surface of the small intestine was much congested, and was denuded of mucous membrane over large areas, the submucous and muscular coats being exposed. The yellow areas appeared to be shallow ulcers. There were some slight pericardial adhesions. The ulceration was unlike that seen in typhoid fever or in tuberculous disease, or other known pathological cause of ulceration in the small intestine. There was evidence that colitis might result from the ingestion of frozen or otherwise preserved articles of food, and possibly this case resulted from a similar cause. The *post-mortem* lesions were more like those caused by tartar emetic than by anything else. Dr. LANGMEAD related a recent case in which similar *post-mortem* appearances were seen in a boy aged 9 years, who had suffered from scarlatinal nephritis three years previously. The kidney condition cleared up somewhat, but the uraemia from which he suffered later proved fatal. The intestines were deeply injected and adherent one to the other, and there was similar denudation to that described by Dr. Phillips in his case. There were also crateriform ulcers in all directions. Probably there would have been perforations but for the adhesions. Dr. MCCULLOCH suggested that the streptococcus might be answerable for the local lesion, and that the *post-mortem* findings resembled those of sprue.

Tachycardia.

Dr. C. E. LEA (Manchester) described four cases of auricular tachycardia. The first patient was a woman aged 40, who had typical mitral stenosis. There was a history of rheumatism, and she had an attack of paroxysmal tachycardia, arising in the auricle and persisting until death four days later. The pulse frequency was 150 to 160, and a tracing shortly before death showed the heart was passing into a state of fibrillation. During the tachycardia the patient was very prostrated, had intense thirst, and complained of great weakness. The second was a woman aged 50, who had what was thought to be a malignant condition of the throat, but it was acute lymphocythaemia, involving mainly the glands. A week before death the pulse-rate was 180 per minute. Here also there was great prostration and thirst. The third was a man aged 60, who was admitted because of dropsy and shortness of breath. He had had a healthy life and had not suffered from rheumatism. On admission the pulse-rate was 135, but 10-minim doses of digitalis three times a day brought down the pulse-rate in a short time to 80. It became a case of auricular flutter, and the auricular beats numbered about 260 per minute. The fourth was a man aged 50, who was in hospital as an ordinary case of cardiac muscle failure. He had had no rheumatism nor sclerosis. His pulse was noticed to miss occasionally at the wrist. In the last eighteen months he had not been free from the attacks more than three months at a time. The administration of digitalis improved him quickly after each attack.

Dr. GOSSAGE described a case of tachycardia which was quickly relieved by 5-minim doses of digitalis. Later the same patient got over the attacks without any treatment; hence the speaker considered the effect of the digitalis a coincidence. Dr. ALEXANDER MORISON pointed out that he described a similar condition in July, 1908, under the name "auricular tachycardia." Sometimes this abnormality might be not only seen but also heard.

Dr. COOK described a case in a lady in whom the symptoms seemed attributable to low blood pressure. She had been in bed four years, and her attacks were attended by extreme exhaustion and almost catalepsy, usually for a fortnight after the commencement of her monthly periods. Her blood pressure in these attacks was only 70 mm., and the pulse-rate rose from 84 to 160 and 180. Dr. Price examined her in one of these attacks, and determined that she had auricular fibrillation. Digitalis could not be taken, as it produced great sickness. The determining causes were supposed to have been typhoid fever some years before, and the shock caused by her father's death. Dr. GOODHART, jun., Dr. BATTY SHAW, and the PRESIDENT also discussed the paper, the last named commenting on the relatively small doses of digitalis which seemed to produce marked benefit. Dr. LEA replied.

PATHOLOGICAL SECTION.

AT a meeting on November 19th, Professor R. T. HEWLETT, President, in the chair, Dr. H. CHARLTON BASTIAN, F.R.S., delivered the address on "Further Experiments Concerning the Origin of Life" which was published *in extenso* in our last week's issue.

Effect of Radium on Muscle-Nerve Preparations.

Dr. W. S. LAZARUS-BARLOW and Mr. T. J. DUNBAR showed lantern slides illustrative of the effects of radium on the muscle-nerve preparations of the frog. The experiments were still in progress, but they demonstrated that the alpha rays had a marked effect in keeping up the irritability of the nerve and muscle. This was proved (1) by the longer survival of the radiated muscle-nerve preparation; (2) by the smaller stimulus it required to call forth a contraction as compared with the fellow muscle. Beta and gamma rays appeared to be without effect. The influence of alpha rays was exerted to some extent on the muscle fibres themselves (since a beneficial effect was observed in curarized muscle), but chiefly upon the nerve. There was reason to believe that the nerve-endings were uninfluenced, since a non-curarized muscle with the nerve cut close to its insertion behaved exactly like the curarized muscle. The experiments were a corollary to the finding of radium in the human subject by one of the authors.

Vaccine Treatment of Gonorrhoea.

Mr. J. E. R. MCDONAGH and Dr. B. G. KLEIN, in a paper on some points concerning the vaccine treatment of gonorrhoea, etc., observed that different strains of gonococci vary in virulence. They were not in the habit of using autogenous vaccines, but those prepared from a recently raised culture. Small doses repeated at from two to three weeks were preferable to larger more frequently given. The value of a vaccine could be estimated by its antigen value *in vitro*.

LIVERPOOL MEDICAL INSTITUTION.

Thursday, November 21st, 1912.

Mr. ROBERT JONES, President, in the Chair.

Dr. ARTHUR WALLACE, in a note on the control of *Eclamptic convulsions*, alluded to Dr. Leith Murray's suggestion that injections of magnesium sulphate solution into the spinal canal might be useful in eclampsia, as it had been found useful in tetanus. In two cases he had adopted it with success, employing a 25 per cent. solution of magnesium sulphate in a dose of approximately 1 c.cm. of solution for every 25 lb. of body weight. Dr. LEITH MURRAY, in discussing the note, said he did not think harm could be done by such injections, as, if there were any embarrassment of respiration, it would be a simple matter to wash out the spinal canal with an isotonic solution.

Dr. LLOYD ROBERTS, in a paper on the early symptoms of *Mediastinal tumours*, said he had treated recently thirty-six cases, The symptoms were due to the pressure on adjacent structures. When the large azygos vein was in question there was general anasarca of the body with effusion into the peritoneum and pleural cavity, but with no abnormality of the urine or the heart. In most cases the effusion was bilateral, but in some cases unilateral, when the pressure could be located to the region below the ninth dorsal vertebra where the veins of the two sides joined. Dr. T. R. GLYNN described the alterations in vocal fremitus as of value in diagnosing these tumours. He had found involvement of the spinal cord not infrequent, and in one case paraplegia had been the first sign of a growth. Dr. JOHN HAY alluded to the infrequency of general symptoms and cachexia in malignant disease of the root of the lung. Dr. W. PERMEWAN said that among the earliest symptoms he had noted a paralysis of the vocal cords on one side only, which did not cause any alteration of the voice. Dr. O. T. WILLIAMS mentioned a case in which a tumour giving rise to pain and a shadow in an *x*-ray photograph had disappeared under treatment, but had recurred with a fatal result within three years. Dr. R. J. M. BUCHANAN said that effusion into the pleura never gave the same complete absence of fremitus as an obstructed bronchus, and he had found an ineffective and irritative cough often an early symptom.

Dr. FRANCIS BAILEY, in opening a discussion on the *Technique of ether administration*, expressed an opinion favourable to the use of atropine, morphine, etc., if they were given in moderate doses, and from half to three-quarters of an hour before the anaesthetic. Mr. R. E. KELLY described the experiment of Henderson of Connecticut, who had in the laboratory reproduced all the errors of unskilful administration of anaesthetics, and so had demonstrated the causes of fatalities ascribed to status lymphaticus. The real cause of failure of respiration was deep breathing and intermittent anaesthesia; with over-deep breathing carbonic acid was not present in sufficient quantity to keep the respiratory centre active. Cardiac failure was due to prolongation of the struggling stage or to pain during the intermittence of administration. Anaesthetics should not be mixed, and no operation should be done under partial anaesthesia. Ether pneumonia was not due to the ether, but to septic saliva being present in the bronchi. Mr. THELWALL THOMAS agreed that anaesthetics should not be mixed. It was ether which should be used. The intratracheal method had a field of usefulness in cases in which respiratory movements interfered with the operation, as in difficult gall bladder cases, and in mediastinal and tracheal work.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.

AT meetings on November 7th and November 21st, Dr. STANLEY RISELEY (President) in the chair, Dr. HAROLD LEADER, in a paper on *Pneumococcal infections*, confined his remarks to cases occurring in early life. Some of the difficulties experienced in the differential diagnosis between fibrinous pneumonia and bronchopneumonia were considered. A brief review of the complications of pneumonia was given, special attention being paid to pericarditis, it being stated that this condition was commoner than was generally supposed, but that it was seldom diagnosed. Mention was made of other organs in the body occasionally infected by the pneumococcus either primarily or secondarily. Sections from a case of bronchopneumonia with empyema and pericarditis were on view, showing pneumococci in the lung, spleen, and kidney. Dr. A. E. NAISH, in a paper on the *Diagnosis of intrathoracic tubercle in childhood*, quoted figures to show the great discrepancy between *post-mortem* and general death statistics, as to the actual number of deaths from tuberculosis, the proportion of intrathoracic to abdominal tubercle and the age distribution. He concluded that a large number of young children must die annually from pulmonary tubercle in whom the cause of death has not been determined, and that these deaths occur mainly under the age of 5. The diagnosis frequently presents great difficulties, but in view of the fact that pulmonary tuberculosis is a frequent result of a primary infection of the mediastinal glands, the greatest attention should be bestowed on the physical signs and symptoms of the latter. The value of various physical signs was discussed. Mr. W. S. KERR showed a man with *Tonsillar calculi*, who had also a swelling in the region of the right submaxillary gland with typical signs of salivary calculus. Mr. ALAN TURNER showed two infants with *Enlargement of the spleen* and liver. One had marked leucocytosis with other signs of acute myelogenetic leukaemia. The other case was obscure with no leucocytosis or marked blood changes. In both the Wassermann reaction was negative. Dr. ARTHUR HALL, in a paper on *Remedies, ancient and modern*, expressed the opinion that some old-fashioned methods of treatment, as by leeches, linseed poultices, blisters, etc., might be more frequently used with advantage. He advocated the necessity of giving large doses of sodium salicylate in acute rheumatism, and referred to the use of "regulin" in selected cases of chronic constipation. Mr. W. W. KING showed the following specimens: (1) Torsion of the pedicle of a *Cystic teratoma of the ovary* in a patient whose symptoms strongly resembled those of a ruptured ectopic gestation; (2) *Malignant papilloma* of the ovary with secondary deposits in the omentum. The growth appeared to arise in a cystadenoma, but the great degeneration of the tumour made an exact diagnosis impossible.

HARVEIAN SOCIETY.

AT a meeting on November 21st, Dr. H. J. MACEVOY, President, in the chair, Dr. GOSSAGE, in a paper on *Heredity*, pointed out that the subject was inextricably mixed up with the question of evolution, and then discussed the three chief theories of evolution—that of Lamarck, that of Darwin, and the mutation theory. The evidence in favour of any of these was founded on the study of animals and plants, but they could be illustrated from human beings. Human evidence was, however, insufficient to establish any point. Lamarckism, or the inheritance of acquired characters, must be regarded as disproved by the work of Weismann. Between the other two theories it was at present impossible to decide. Darwinism failed to convince from the lack of conclusive evidence of evolution by the selection of fluctuating variations, while there were many difficulties to overcome and apparent exceptions to be explained before the mutation theory and Mendelism could be definitely accepted. Mr. W. H. CLAYTON-GREENE read a paper on some bacterial *Infections of the urinary tract*.

MEDICO-PSYCHOLOGICAL ASSOCIATION.

AT the quarterly meeting on November 26th, Dr. J. G. SOUTAR, President, in the chair, Dr. SIDNEY COUPLAND described the various classifications of causes of death used at Somerset House since 1838, and in consequence of recent changes therein put forward a new schedule for use in asylums. In the discussion which followed Dr. MERCIER pointed out that there was great difference of opinion as to what in any connexion constituted a cause; and even if there were any agreement on this point, it still had to be determined from what point of view a given circumstance was a cause. In the case of a deceased person who had had syphilis, and an aneurysm and a rupture thereof, which condition was the primary cause of death, which secondary, which the principal, which the contributory? Often the attributed cause was the one in which the certifier happened to take most interest. Dr. HUBERT BOND emphasized the desirability of asylum deaths being returned in such form as to be comparable with the forms used at Somerset House for those among the same population. In many cases no medical man could possibly say what was the principal cause of any given death, no matter how cleverly classifications were framed. Scientific accuracy would best be served by the abolition of any attempt to separate causes. Dr. ANDY COLLINS and others adopted a like view, the former also contending that the real primary causes of death were but few, and that the sooner this fact was recognized for statistical purposes the more accurate vital statistics would be.

Reviews.

OSLER'S "MEDICINE."

THE reviewer is tempted to feel that all that need be said of the new edition of OSLER'S *Principles and Practice of Medicine*[1] is that it has been published, and that the student of medicine should forthwith replace the older seventh edition by the new and latest one. True as this is, something is due to Sir William Osler on occasions like the present one. His textbook has become so universally accepted as "guide, philosopher, and friend" in matters of medical interest that he practically sets the current of medical ideas. So carefully does he keep his finger on the pulse of medicine that he has been accepted as the interpreter in the English language of contemporary points of view. There is scarcely any investigation of importance on the other side of the Atlantic or on this, including Continental centres of activity, which does not receive from his pen due consideration. So encyclopaedic is his erudition that his grateful readers are filled with wonder at the organization, the wide reading, and the carefully weighed verdicts which have made his textbook a criterion for the medical student and practitioner of what is accepted by the profession. The reviewer has grown old since the issue of the first edition in 1892; each edition has seemed to mark the advent of some forward step in medical science, and if asked to say what is the special feature the present edition accentuates, it would be answered that, as the author himself states, it is the extraordinary development of knowledge of infectious diseases, particularly in connexion with typhoid fever, tuberculosis, syphilis, certain tropical diseases, the sporotrichoses, poliomyelitis, and infections by the colon bacillus. Another feature which is very patent is the large addition to medical knowledge which centres around the principle largely enunciated by the English school of physiology, namely, of hormonic influence. The morbid states which can fairly well be attributed to disorders of internal secretion receive full consideration in a section which deals with diseases of the ductless glands, notably of the parathyroids and pituitary body. Infantilism, which but a few years ago was a subject hardly admitted within the pale of accepted entities, is now shown to be clearly crystallized.

No reference to the present edition, in which the original author has associated with himself Professor McCrae of Philadelphia, would be complete unless, besides noting the general tendencies it reveals, attention were called to certain particular features. One of special interest is the suggestion made by Dr. G. A. Gibson that the prognosis in pneumonia may probably be considered good if the blood pressure, measured in millimetres, does not fall below the figure which represents the pulse-rate per minute. A sign of special diagnostic value in meningitis is that due to the observations of Brudzenski, that flexing the head on the chest causes flexion at the hip and knee joint, and flexing one leg on the trunk produces the same movement in the other leg. Camptodactaly, described by Landouzy, is a curious limited extension of the ring and little fingers met with in pulmonary tuberculosis. The conditions described by Fournier as parasyphilitic affections may now be more reasonably described as quaternary syphilis. "Ptomaine poisoning" is an expression which it is now generally acknowledged should be replaced by "food or meat poisoning," but mytilotoxin still exists as the one example of a true ptomaine, which on ingestion causes symptoms, and which so far has not been demonstrated to be due to the action of bacteria upon the mussel.

Gout is dealt with most admirably from the modern standpoint, and we begin to see why it is that in man especially the complete oxidation of uric acid may be absent owing to the deficiency in "uricase." Sir William Osler runs atilt now and again against fashion, as when he says of "neuritis" that it has been replaced by "mucous colitis." The subject of urine examination also receives a disabling blow, and we can but agree it is deserved. It is pointed out that after 40 years of age, from the insurance point of view—and he would add from every point of view of the practitioner also—examination of the state of the arteries and of the blood pressure is more important than that of the urine. Attention is also called to the importance of using phenol-sulphonephthalein (Rowntree and Geraghty) as a means of testing the functional capacity of the kidney.

Room is wisely found for the recent work of Head and Gordon Holmes on the sensory tracts in the brain, whereby it enables them as it were to postulate, as a result of the occurrence of lesions in the neighbourhood of the thalamus, a sort of "sensory" spasticity parallel with the motor spasticity associated with lesion of the pyramidal tracts; impressions are disturbed and so exaggerated as to become painful. Those who desire a sketch of the significance of the Breur-Freund theory, stigmatized, as we think rather severely, as a "vogue," will find information in the section dealing with hysteria.

We have reserved for final reference some remarks on the subject of tuberculosis, a subject which in this country, at least, is at the present time receiving such close attention. First of all we must call attention to passages on page 159 (elaborated on page 161), in which references are made to specific reactions. We read that an animal inoculated with *dead* cultures of tubercle bacilli, if susceptible, becomes tuberculous and dies. Does Sir William Osler mean this, or is there some error in the correction of the proof? Secondly, we read that Koch found that "if to a guinea-pig with a subcutaneous focus of tuberculosis so caused a second injection of the bacillus (? living or dead) was given, healing occurred in the primary nodule, *and the animal did not die*." Those famous experiments made by Koch, and upon which he based his belief in the therapeutic value of tuberculin, have been made use of by various authors in support of the value of tuberculin, and on p. 227 Sir William Osler says, "unquestionably in suitable cases it [tuberculin] has a very beneficial influence." How salutary would it have been, therefore, if Sir William Osler had added to his remarks on Koch's original experiments a statement of the fact that there is no record (so far as we know) that Koch ever proved that he had cured an animal, suffering from experimental tuberculosis, by means of tuberculin. We know that the attempt to do so has also failed at the hands of others in more recent times, even in cattle in whom tuberculosis follows much more closely the chronic course met with in human beings than the acute course met with in guinea-pigs. When one thinks of the immense importance at the present day of a clear account from the pen of Sir William Osler of the true state of affairs with regard to the alleged cure in a specific sense of experimental tuberculosis, statements like the above are disappointing. Further, the italicized paragraph on page 231 gives rise to the feeling that over-enthusiasm has induced one of the accepted authorities of the day, in the face of the searching criticism uttered by Professor Karl Pearson, to be over-sanguine as to the value of early diagnosis, sanatoriums, tuberculin, etc., in the treatment of tuberculosis. It is quite true that the percentage mortality from pulmonary tuberculosis has from 1830 to 1891 very materially fallen, as judged by figures supplied by the medical profession themselves; the same source of information also shows that coincidently with the introduction of sanatoriums and of tuberculin, the percentage mortality has not fallen at the same rate as previously—in fact, is stationary in males, and is beginning to rise in females. It is true, as Sir William Osler says, our profession must acknowledge the arrival of the modern iatro-mathematical school; one of its chief contributions to the study of tuberculosis is to show that, despite all our enthusiasm for and belief in the so-called modern treatment, the disease is following in the lines of acuter forms of epidemic infection, and that the vaunted improvement in the death rate from pulmonary tuberculosis is due to natural rather than to therapeutic agencies. We ask Sir William Osler to forgive this criticism of the section of tuberculosis; other parts of it show how discerning and critical he is, and we are simply pointing to a "spot in the sun."

[1] *The Principles and Practice of Medicine.* By Sir William Osler, Bt., M.D., F.R.S., F.R.C.P., Regius Professor of Medicine in the University of Oxford; Honorary Professor of Medicine, Johns Hopkins University. Eighth edition, largely rewritten and thoroughly revised, with the assistance of Thomas McCrae, M.D., F.R.C.P., Professor of Medicine, Jefferson Medical College, Philadelphia. New York and London: D. Appleton and Co. 1912. (Roy. 8vo, pp. 1225; charts 20, figures 19. Price 21s. net.)

THE PROTOZOA.

PROFESSOR MINCHIN'S *Introduction to the Study of the Protozoa*[2] is really a more exhaustive and comprehensive volume than its title implies. It is certainly an introduction, but it is not in any sense an elementary one, and many readers will find in it information more than ample for their requirements. The aims of the author are obviously utilitarian and practical, but, while special attention is devoted to parasitic forms, the general arrangement of the work is such that they do not assume a position of inordinate importance. The book, in fact, is written on strictly academic lines, and the usual sequence of general introductory chapters, followed by special systematic parts, is adopted.

The early chapters contain a very full account of the organization and physiology of the protozoa in general. No subject, however debatable or intricate, is shirked, and Professor Minchin's exposition is in practically every case clear and reasonable. Some objection may be taken to the exuberance of detail, which occasionally tends to obscure the main theme, but this is wellnigh unavoidable in a volume of such comprehensive scope. On most disputed points—and there are many—Professor Minchin gives, as a rule, some definite guide. His extremely keen critical faculty enables him to estimate the value of the very numerous conflicting observations, but in summing up he at times displays a hesitancy which may prove disappointing to those in search of a dogmatic pronouncement.

The systematic part of the work gives an interesting account of the enormous wealth of form met with in the protozoa. It is well arranged and sufficiently full to afford an accurate idea of the affinities and systematic positions of the various groups. Considerable attention is devoted to problems of general biological interest, upon which the study of the protozoa may throw considerable light. These, which Professor Minchin terms the fundamental mysteries, include such subjects as sex and polymorphism, and the chapters dealing with these form particularly interesting reading. The phenomena associated with parasitism are brought prominently forward throughout the book, and the parasitic forms, especially those related to man, receive very full treatment. A few new technical terms have been introduced, the most important of which is the substitution of the adjective "chromatinic" for "chromatic" in reference to the chromatin elements. This appears to be well advised. A group which is of particular interest is the *Sporozoa*, which term the author retains "without prejudice to the systematic position of its constituents." At the same time the flagellate affinities of the *Telosporidia* are fully discussed. The identity of the blepharoplast, again, affords subject for some lucid exposition. The volume is very elaborately got up, but is rather expensive for its size. The illustrations, which are the work of Miss Rhodes and Mr. Brook-Greaves, form a particularly commendable feature.

TREATMENT OF INEBRIETY.

DR. HARE'S work on *Alcoholism*[3] is based upon the treatment of 868 cases admitted to the Norwood Sanatorium during a period of six and a half years. Of this number 762 were the subjects of alcoholism. The book is marked by candour, common sense, and moderation, and the clinical histories of numerous illustrative cases support the conclusions reached. Dr. Hare holds that though alcoholism may amount to a disease, in a very large proportion of the cases it is only an exaggerated self-indulgence, and to inculcate the doctrine that inebriety is a disease over which the drinker has no control is to destroy the greatest incentive to amendment.

The author shows conclusively that alcohol taken during only the pyrexial stage of acute illnesses sets up no after-craving. When alcohol is taken during the weakness and depression of convalescence the danger of establishing the habit is great. The patient who consumes medicated wines of high alcoholic percentage during convalescence incurs grave risk of becoming an inebriate, and the use of such wines has accounted for a number of relapses into inebriety. The chapter on causation shows that in all cases a physical cause for the habit should be sought. Even such things as high arterial tension, errors of refraction, want of accustomed exercise, and a heavy meal too near bedtime, have been found to keep up the habit. Dr. Hare divides alcoholists into intermittent and chronic drinkers. The former comprise the true dipsomaniacs, in whom there is a periodic crave for the drug, and the pseudo-dipsomaniacs, who drink at irregular intervals, with no crave until after the first glass. Chronic drinkers are the true inebriates, of whom there are two groups—the chronic inebriates, and those who, by a tolerance similar to that acquired by the opium eater, can consume large doses of alcohol and yet escape drunkenness. In the last group, alcoholism is a drug habit, and the sudden stoppage of the alcohol is as apt to be followed by untoward symptoms as the abrupt withholding of the opium-eater's drug. Numerous cases are given showing that, where tolerance is established, epilepsy and delirium tremens follow the abrupt discontinuance of the alcohol. The author describes how by "tapering off" the alcohol, delirium tremens and epilepsy may be avoided. He adopts the theory that a poisonous "anti-alcohol" forms, and this, if not neutralized by sufficient though gradually decreasing doses of the drug, starts the nervous sequelae. Prognosis is discussed, the Norwood treatment outlined, and statistics given; 51.82 per cent. of the cases were total abstainers when last heard from, whilst 45 per cent. relapsed. The observations on alcoholic albuminuria are, like the whole book, suggestive and practical. The work is a clinical record, likely to become the standard text-book for the guidance of all who have to grapple with the difficulties of the treatment of inebriates.

OTO-LARYNGOLOGY.

IN *The Operations of Aural Surgery*[4] Mr. C. ERNEST WEST and Mr. SIDNEY SCOTT have given in a very convenient form a description of all the common operations upon the ear, including those performed for the relief of the intracranial complications of chronic middle ear suppuration. A definite plan is followed throughout. One chapter is devoted to each operation in turn. First of all, the scope of the operation is exactly defined; next, the indications for performing the particular operation are tabulated, followed by a list of the contraindications. The preparation of the patient, general and local, is next described; a complete list of the instruments required is given, and then the technique of the operation itself is told in detail step by step. The descriptions are completed in each case by directions as to the dressings required, the after-care of the patient, and, where necessary, the sundry pitfalls into which the operator may stumble. The descriptions are admirable in every way, and the information is imparted in a clear and concise style. The advice as to the choice of operation is thoroughly sound and very lucidly expressed. The value of the book is increased by an appendix containing the notes of typical cases to illustrate the results obtained by the various operations, and the sundry difficulties which may arise afterwards. The book is well illustrated by excellent photographs, the majority of them representing instruments required in each case. There is only one criticism we should like to offer—and that is, that a few more diagrams to illustrate the stages of the different operations might have been inserted. The book is a thoroughly trustworthy guide for any one who wishes to undertake operative aural work.

In his book, *Diseases of the Ear, Nose, and Throat*, Dr. WENDELL CHRISTOPHER PHILLIPS[5] has endeavoured to present a comprehensive survey of the main diseases

[2] *An Introduction to the Study of the Protozoa.* By E. A. Minchin. London: Edward Arnold. 1912. (Med. 8vo, pp. 550, with 191 Illustrations. 25s.)

[3] *On Inebriety: its Causes and Treatment.* By Francis Hare, M.D., Medical Superintendent of the Norwood Sanatorium, Beckenham. London: J. and A. Churchill. 1912. Crown 8vo, pp. 282. 5s. net.)

[4] *The Operations of Aural Surgery.* By C. Ernest West, F.R.C.S., Aural Surgeon to St. Bartholomew's Hospital, and Sidney R. Scott, M.S., F.R.C.S., Assistant Aural Surgeon to St. Bartholomew's Hospital, late Aural Surgeon, Evelina Hospital for Sick Children. With Illustrations. London: H. K. Lewis. 1909. (Demy 8vo, pp. 215. 7s. 6d. net.)

[5] *Diseases of the Ear, Nose, and Throat, Medical and Surgical.* By Wendell Christopher Phillips, M.D., Professor of Otology, New York Post-Graduate Medical School and Hospital; Surgeon to the Manhattan Eye, Ear and Throat Hospital, etc. Illustrated with 545 half-tone and other text engravings, many of them original, including 31 full page plates, some in colours. Philadelphia: F. A. Davis Company; London: Stanley Phillips. 1911. (Roy 8vo, pp. 865. 25s. net.)

which occupy the attention of the oto-laryngologist, and to outline the principles of modern treatment applied to them. The work is founded on the lectures delivered by the author at the New York Post-Graduate School, and is designed to meet the needs of the general practitioner and surgeon as much as the specialist. In addition to describing fully the symptomatology of different diseases, the author, where necessary, gives a detailed account of the various operations most commonly performed, such as is usually only met with in the textbooks of operative surgery. These descriptions are accurate and up to date. The subject matter of the book is well written and clearly stated, and includes practical chapters on the direct endoscopy of the larynx, trachea, bronchi, and oesophagus. The book is well illustrated, and quite up to the high standard of the modern textbook.

Since Toynbee and Sir Morell Mackenzie wrote their classical books the output of "textbooks," "atlases," and "systems" on disease of the ear, nose, and throat, has been annually increasing, so that the needs of those knocking at the door of this special department have been amply provided for. Dr. KATZ, Professor PREYSING, and Dr. BLUMENFELD have produced a work[6] which is intended primarily for those already engaged in this *dreibund* of special practice. Inasmuch as it does not touch upon the A, B, C of the investigation and treatment of diseases of the ear, nose, and throat, it is not in the strict meaning of the word a textbook on the subject; neither, in spite of the abundance of plates in colour and photograph, can it be regarded as an atlas; nor is it a system, as it deals with only one aspect of those diseases—namely, the X, Y, Z of their treatment. It is essentially what the title states—a handbook of the special surgery of the ear and upper respiratory tracts. It covers a vast field contained within a small territory, and its appearance is more than justified by the remarkable development within a few years of this important territory. The handbook is comprised in four volumes, and each volume has several parts. The book has been published in fasciculus form, each containing one or more parts of a volume. Separate parts are not obtainable, but volumes I and II, or I and III, or I and IV are obtainable apart from the other volumes. Volume I is devoted to topographical anatomy and general matters, and volumes II, III, and IV to the surgery of the ear, nose, and throat respectively. It is impossible within the limits of our space to review adequately a handbook of this size. In addition to indicating the general scope of the book we can deal only with the more prominent features of the volumes and parts of volumes that have reached us. Bearing in mind the aim of the work, it is only natural that the topographical anatomy should occupy a large part of the first volume. To this section Professor Sobotta of Würzburg contributes the anatomy of the head, the buccal cavity, and the neck, including the oesophagus, the bronchial tree, and the mediastinum; Professor Onodi of Budapest, that of the nose and the accessory nasal sinuses; Professor Stenger of Königsberg, that of the ear; and Dr. Most of Breslau, an account of the lymphatic vessels and glands of the head and neck. Then follow short sections on anaesthesia and treatment by passive hyperaemia. The second half of the first volume deals with phlegmonous inflammations of the upper respiratory tract, general and specific treatment of septic diseases, the mechanical and bloodless methods of overcoming stenosis of the upper air passages, cosmetic operations, and the diagnosis of disease by means of the Roentgen rays. Volumes II, III, and IV cover the field of special surgery of the ear, nose, and throat. Amongst the many contributors to these three volumes we notice the names of the three editors. Dr. Katz writes on intranasal surgery, Professor Preysing on the surgery of the middle ear and of the labyrinth and intracranial complications, and Dr. Blumenfeld on intralaryngeal surgery. The work throughout is profusely illustrated and well printed, the articles, as we remarked in our preliminary notice in the earlier part of the year, contain much sound matter, and constitute a valuable work for reference.

[6] *Handbuch der speziellen Chirurgie des Ohres und der oberen Luftwege.* Herausgegeben von Dr. L. Katz, Dr. H. Preysing, und Dr. R. Blumenfeld. Würzburg: Ctur Kabitzsch (A. Stuber's Verlag). 1911.

MEDICAL JURISPRUDENCE.

THERE is no clue in the preface to Dr. C. O. HAWTHORNE'S book on *Forensic Medicine and Toxicology*[7] as to the circumstances in which it was written, but, from internal evidence, we rather judge it to be the published form of his lectures on the subject, and can easily understand why the book has reached a third edition. Dr. Hawthorne has an appreciation of the niceties of the English language, and he here presents his best to his readers and makes the chapters a treat to read, though we have to confess that we cannot find anything that is very new and startling in the facts; it is the way in which old facts are expressed that makes the charm of the book. Everything that a student requires is contained in the work, without any superfluous technicalities of use only to the specialist. Of all the excellences of the book we think the chapter on the differential diagnosis in cases of unconsciousness one of the best; it reads like a novel, but it is like an old favourite—it can be read again and again with increasing interest and benefit. We can cordially recommend these lectures, if such they be, to those, and they include most students, who think the subject dry, uninteresting, and tedious in its minuteness—a perusal of it will give them very different notions.

The second edition of Mr. RAMES CHUNDRA RAY'S *Outlines of Medical Jurisprudence*[8] is a great improvement on the first, of which an appreciative notice was published in our issue of May 13th, 1911, p. 1118. The present edition has been thoroughly revised and largely rewritten, and extended to about twice the size of its predecessor. It contains useful additions regarding such matters as insanity, life insurance, the detection of forged handwriting, malingering, etc. Throughout the book valuable information is given regarding laws, legal responsibility and procedure, and in the appendix there is an interesting and helpful comparison between English and Indian law as affecting different conditions and offences. The disposal of lunatics under various circumstances is clearly and summarily indicated. The author has evidently expended much well-directed labour on the preparation of this edition, which is admirably adapted to fulfil the objects for which the compilation was originally prepared—namely, to provide a handbook for lecturers and students and a work of ready reference for medical and legal practitioners in regard to matters affecting life and involving legal responsibility. For use as a textbook and for preparing for examinations no better treatise can be placed in the hands of teachers or students, and the busy practitioner will find easy access to any subject on which he may require accurate and concise knowledge. The work is, in short, a marvel of condensation and systematic exposition, and possesses cosmopolitan value.

NOTES ON BOOKS.

IN a pamphlet entitled *Instruments and Appliances for Operations*,[9] Lieutenant-Colonel R. H. CASTOR, I.M.S., has set forth some rules for the preparation and upkeep of operation rooms, and supplies an anatomically classified list of operations which includes information as to the position of the patient and the instruments used. The author's experience at the hospitals to which he has been attached has led him to think that such a book would supply a genuine need among medical officers and dressers. The preface contains two curious statements, one being to the effect that though the "chief aim has been to include a brief list of the different instruments required for operations," the lists given "are, of course, not complete," while the sections "on the eye, ear, and teeth are necessarily curtailed." It is hardly obvious why in such a volume the lists given should not be complete or any subject curtailed. Indeed, the less the frequency with which operations on certain areas are performed, the greater would seem to be the likelihood of those for whom the book is written requiring information concerning them.

[7] *Forensic Medicine and Toxicology.* By C. O. Hawthorne, M.D. Third edition. London: Edward Arnold. 1912. (Cr. 8vo, pp. 350; 6s. net.)

[8] *Outlines of Medical Jurisprudence and Treatment of Poisoning: for Students and Practitioners.* By Rames Chundra Ray, L.M.S. (Cal. Univ.). Second edition. Calcutta: Published by the Proprietor of the Hare Pharmacy. 1912. (Crown 8vo, pp. 466. Price Rs. 4, or post free 5s. 6d.)

[9] *A Short Guide to the Instruments and Appliances required for Operations and the Dressing of Cases.* By R. H. Castor, Lieutenant-Colonel I.M.S. Calcutta: Thacker, Spink, and Co. 1912. (Cr. 8vo, pp. 40; 1s.)

Truth Doll Show.

It was about the year 1880 that the first of the well-known *Truth* Doll Shows was held, and some two dozen dolls were exhibited to an admiring public before being distributed amongst the little inmates of various hospitals and workhouses. Since then the number of toys on view at each successive exhibition has increased to many thousands, and for many years past the *Truth* Doll Show has been more or less of a society function, and the *Truth* Toy Fund has brightened the lives of countless sick and lonely children. But money is needed to carry on this work of charity; and it is to this fact we owe the appearance of a dainty little book by Miss Muriel Harris, entitled *The Truth History of Dolls*.[10] This little volume, the proceeds of whose sale are to be devoted to the *Truth* Toy Fund, is well worth reading. From the very earliest times children of all races have played with dolls; and Miss Harris has traced the evolution of these miniature babies from the earliest known specimens in existence—the flat wooden playthings that satisfied the maternal cravings of the little Egyptian girl four thousand years ago—to the gorgeous creatures in Parisian toilettes that decorate the show windows to-day. Slight as it is, this history of the toys of bygone years is full of interesting matter, and bears all the marks of careful and systematic research. Her work has evidently been a labour of love to Miss Harris, who has handled her mass of material with considerable skill, and presented it to her readers in a concise and eminently readable form. Her book possesses an additional attraction in the clever illustrations of Mr. O. M. Hueffer, who has contributed a number of pen-and-ink drawings of different types of ancient and modern dolls.

Visiting Lists.

The edition of *Wright's Visiting List* prepared by Dr. Robert Simpson for the approaching year presents many good features, one being an ingenious system of interleaving, thanks to which a patient's name need be entered only once a month. The space for the names and entries is also interlined in red to avoid errors. Other good points are the provision of plenty of room for recording of cash payments and journal totals, as also for notes as to consultations and obstetric and vaccination engagements. Another useful feature is the provision of pages on which to record week by week all motoring expenses and other particulars, including distances run. The book is published in two forms; one of them, known as Form B, has no date entries, so can be used in any year. In each form six different sub-editions are obtainable, these varying in the number of patients a month for whom provision is made, the lowest being 40 and the highest 240. The prices vary from 5s. to 7s.

The sixty-seventh edition is now available of the diary and almanac for physicians and surgeons, published under the name of *Smith's Visiting List* by Messrs. Hazell, Watson, and Viney, of Long Acre. It is a very comprehensive production of the kind, and its popularity is well founded. Its special feature, perhaps, is the provision at the end of each week's entries of a journal page on which can be summarized the work done on each day. Apart from entries as to visits, there is plenty of space for the recording of cash transactions or bills sent out, and of notes as to obstetric engagements, including the agreed fee, the result of the case, and other points, such as patients' and nurses' addresses, and instruments and drugs required. The earlier pages, in addition to other memoranda, contain tables for calculating gestation periods, physiological data, and the addresses of institutions which cater for certain classes of patients. The list is published in four forms and several different bindings, some containing space for 25 patients only, and others for as many as 100. In some the journal pages are omitted. The prices vary from 2s. 6d. to 5s. 6d.

Christmas Books.

It is perhaps only on looking through the vast assortment of books intended for the delectation of the rising generation at Christmas time that one realizes how much the modern child has to be thankful for. The days are gone for ever when *The Fairchild Family* and a few severely moral tales of the same type were all that was considered fit reading for the young; and nowadays the schoolroom, and even the nursery, have a literature and favourite authors of their own. Foremost amongst the latter stands E. Nesbit, whose charming stories have long ago obtained for her a large place in the affections of children of all ages. Her latest book, *The Magic World*,[11] is a collection of fairy tales, and affords one more proof of her fertile imagination, her gift of narrative, and her thorough understanding of child nature. Her boys and girls are delightfully human and natural; and their marvellous adventures are the only point in which they differ at all from the living children for whose amusement they have been created. Mrs. Nesbit's little readers will find plenty of incident and excitement in these pretty stories, whose healthy tone renders them ideal occupants of the nursery book-shelves. *The Magic World* should prove an attractive Christmas gift for children of either sex, whilst its gay binding and the many excellent illustrations by H. R. Millar and Spencer Pryse should render it doubly pleasing to its fortunate recipients.

There are some books that, though primarily intended for the children, are read with almost equal pleasure by the grown-up members of the family. Such a book is *White-Ear and Peter*,[12] by Mr. Neils Heiberg, which will probably appeal to the sportsman and the natural historian even more forcibly than it will to a child. No one but a lover of animals could have written the life story of White-Ear, the half-tamed fox, who runs amok and finally returns to his native wilds. The contrast between his struggle for existence and the careless happy life led by his enemy, the fox-terrier Peter, is finely drawn; and the author has managed to show in subtle fashion how inexorable is Nature's law of retribution, which prevails over brute creation as it does over human affairs. It is a tragic little history, for the lives of most wild animals end in violence; and White-Ear expiates the crimes of a lifetime by a miserable death. But there is another and brighter side to the picture in the adventures of the terrier Peter, whose unbounded energy and high spirits lead him into all sorts of tight corners, and also in the half humorous, half pathetic descriptions of life in the stableyard and kennels. Mr. Heiberg is evidently a very close observer, and these studies of animal nature are admirably done. His book owes as much to its fresh and vivid character-drawing as to the interest of its plot; and the charm of the narrative is fittingly interpreted by Mr. Cecil Aldin in his beautiful coloured illustrations.

A book made beautiful by the illustrations, exquisitely reproduced, of Warwick Goble is the collection of *Folk Tales of Bengal*, by the Rev. Lal Behari Day.[13] The stories were taken down, for the most part, from the lips of an old Bengali woman, but the barber told three, and an old servant two, and two old Brahmans others. The author, from his experience as a boy, believes that the tales are genuine samples of the stories told to Bengal children for hundreds of generations. They are as fantastic as well can be, with all the inconsequence of the genuine fairy tale. And the coloured illustrations are altogether charmingly in the spirit of the text—princesses more lovely, king's eldest sons more handsome, gardens and glades more mysterious than the heart of the western man can image. It is a perfect gift book.

Another book of the same kind, issued by the same publishers, and illustrated with the same dainty imagination by the same artist, is the volume entitled *Green Willow and Other Japanese Fairy Tales*, collected from various sources by Grace James.[14] These tales will perhaps appeal more than those of Bengal to the British spirit. They are fantastic, as are all true fairy tales, but they have greater variety of subject, and seem to mean more, or to imply more, and to breathe a certain spirit of chivalry which cause them to fit better into the European scale. The seem to have appealed strongly to the illustrator, whose method produces the effect of illuminations on parchment. A more delightful gift for a girl with any moving of the artistic spirit could scarcely be found.

[10] *The Truth History of Dolls.* By Muriel Harris. Published by the *Truth* Publishing Company, Ltd. Sold for the benefit of the *Truth* Toy Fund. (Pp. 44. Price 6d.)

[11] *The Magic World.* By E. Nesbit. With illustrations by H. R. Millar and Spencer Pryse. London: Macmillan and Co., Ltd. 1912. (Post 8vo, pp. 290; illustrations 24. Price 6s.)

[12] *White-Ear and Peter.* The story of a fox and a fox-terrier. By Neils Heiberg. With sixteen coloured plates by Cecil Aldin. London: Macmillan and Co., Ltd. 1912. (Fcap. 4to, pp. 2 6s. net.)

[13] *Folk Tales of Bengal.* By the Rev Lal Behari Day. With 32 illustrations in colour by W. Goble. New York, London: The Macmillan Co. 1912. (Cr. 4to, pp. 288. 15s. net.)

[14] *Green Willow and Other Japanese Fairy Tales.* By G. James. With illustrations in colour by Warwick Goble. London: Macmillan and Co., Ltd. 1912. (Demy 8vo, pp. 290; illustrations 16. 5s. net.)

FRIEDMANN'S TUBERCULOSIS VACCINE.

ON November 6th Dr. Friedrich Franz Friedmann read a paper on the treatment of human tuberculosis before the Medical Society of Berlin. The early publication in the *Berliner klinische Wochenschrift* (November 18th) of this paper, and of the long discussion which followed, is all the more satisfactory, as many wild and garbled versions of the treatment have been published in the lay press. We cannot, of course, presume at this stage to pass judgement on the merits of the treatment, abundant though the clinical material already is, but before discussing it we would like to express approval of the reserve which was maintained until the vaccine had been tested for over two years, and many hundreds of patients had been treated. This reserve is all the more praiseworthy, as the rush from the laboratory to the publisher to peg out a claim to fame has become deplorably common.

Nature of the Vaccine.

In his introduction Friedmann reviewed the treatment of tuberculosis by vaccines from the first appearance of Koch's "Alt Tuberculin" to the present time. Attempts to produce a tuberculin that is both potent and non-toxic have failed hitherto; this appears to be inevitable so long as virulent strains of bacillus are used whose virtues are quickly lost by processes intended to rob them of their toxic constituents. Hence arose the idea of inoculating a non-virulent bacillus which can be injected without being first subjected to such processes. Attempts to cultivate such a non-virulent bacillus from human tubercle bacilli failed. Later, a non-virulent strain of tubercle bacillus was cultivated, which Friedmann injected first into himself, then into tuberculous adults, and finally into healthy children, without any permanent ill effects. No detailed account was given of the cultivation or characteristics of the bacillus in question, and it is to be hoped that this important point will soon be elucidated by Friedmann. In the course of the discussion on his paper, it was pointed out by the Chairman (Dr. Orth) that, for want of time, he had asked Friedmann to confine himself to the salient features of his treatment. We may, therefore, hope that further accounts of the bacillus, with special reference to its cultural features, will soon be forthcoming.

Effect of the Vaccine.

The vaccine, which has been administered to more than one thousand persons, is, according to Friedmann, perfectly harmless, whether it be given by the mouth, by intravenous or intramuscular injection, by conjunctival instillation, or by direct application to open tuberculous foci. The intramuscular and the intravenous routes have been most often followed, and one to three or more intramuscular injections are necessary in each case. Success or failure depends on the absorption of the vaccine. It causes a swelling varying from the size of a nut to that of a small apple at the site of the injection. Improvement begins during the absorption of this swelling, and is most rapid after it has disappeared. Should the swelling persist for weeks and even months, or should it break down and suppurate, improvement is sometimes arrested. In such cases a second injection is useless, as it only induces another abscess. It is a pity that Friedmann does not state the proportion of cases in which this failure occurred, but this omission is of less importance as the failures were largely reduced in number by changing the method of administration. Statistics embracing the early experiments would not, therefore, give a true picture of the results to be expected of the vaccine. It was found in cases of advanced tuberculosis of the lungs and bones which usually react but slightly, or not at all, to von Pirquet's test, that the first injection was always quickly and completely absorbed without much swelling at the site of inoculation. The second and third injections, however, caused large swellings. When von Pirquet's test was markedly positive and the disease advanced, no complete recovery could be expected after subcutaneous or intramuscular injections alone.

The immediate effects of a large intravenous injection appear to be fever and lassitude, which quickly pass off. Old cases of lupus showed immediate and striking improvement, which continued up to a certain point, when it ceased abruptly. An intravenous injection altered the reaction of the tissues to subcutaneous or intramuscular injections. They were rapidly absorbed without that local infiltration which seems to be necessary for healing. This drawback was turned to good account in those cases in which the swellings suppurated or failed to disappear.

Pulmonary Tuberculosis.

The vaccine was administered in 250 cases of pulmonary tuberculosis. After the local swelling, caused by the injection, had subsided, marked improvement followed in all but the most advanced cases. With these exceptions the results were most striking. Night sweats were the first symptoms to disappear. The temperature fell, and anorexia, lassitude, headache, dyspnoea, and pain in the chest vanished. Weight was gained, although the treatment was often ambulatory, and in no case was a patient incapacitated for work by the treatment. Many who had been invalided for several months returned to their work a few weeks after one injection. With the diminution of expectoration and cough, the physical signs of disease grew less. Recovery was also effected in a few cases of advanced laryngeal and intestinal disease complicating pulmonary tuberculosis.

In no case of pulmonary consumption was any injurious effect observed. The "normal coefficient of improvement" in pulmonary tuberculosis must, however, be taken into consideration as we read of the improvements which follow an injection. Arrest of the disease in its early stages is such a common result of any or no treatment, that a larger material observed over a longer period is necessary before the claims of the vaccine to a specific action on pulmonary tuberculosis can be made good.

Some patients in the last stages of the disease recovered in a striking manner. One suffered from extensive and active disease of the lungs and larynx. Tuberculin had aggravated the disease, and he had been totally incapacitated for five months. After three injections the patient improved rapidly, the disease appeared to be everywhere arrested, and for the past eleven months he had worked uninterruptedly for twelve hours a day. Another patient was demonstrated who had made a good recovery after suffering from night sweats, haemoptysis, and violent diarrhoea, which had lasted for six weeks. On the other hand, six patients suffering from advanced pulmonary tuberculosis and intestinal ulceration had died after a temporary improvement. Intramuscular injections evoked neither a focal reaction nor haemoptysis—an advantage which cannot be claimed for tuberculin.

Genito-Urinary Tuberculosis.

Eleven cases of urino-genital tuberculosis were treated.

One patient suffered from fistulous epididymitis. After five injections the fistulae were healed, and the painful swelling was reduced to a small, painless nodule.

Another patient suffered from persistent suppuration after the amputation of a tuberculous testicle. The remaining testicle became involved and fistulous, but the parents refused amputation. Two injections were followed first by increased suppuration and then by complete recovery.

One patient suffered from vesical tenesmus and renal colic, as well as pulmonary tuberculosis. After four injections weight was gained, expectoration ceased, and the urino-genital symptoms disappeared.

A young girl who suffered from tuberculosis of both kidneys and ulceration of the bladder, was given four injections, after which renal colic ceased, and the ulcers in the bladder were seen through the cystoscope to have healed.

Another case of tuberculosis involving the kidneys, the left ureter, the bladder, and the lungs showed marked improvement after two injections.

Surgical Tuberculosis.

Marked benefit is reported to have followed the treatment in all forms of surgical tuberculosis. Of 12 cases of tuberculosis of the bones complicated by fistulae, 9 were cured. Of the three failures, one was a moribund patient suffering from complete disorganization of the pelvis, peritonitis, and advanced amyloid disease, and two were 75 years old.

One young patient suffered from fungous disease of the knee, the circumference of which was 4 cm. greater than that of its fellow. There were six deep fistulae, and the vaccine was given as the only alternative to amputation. After two injections all the fistulae disappeared, leaving the knee painless, smooth, and no larger than its fellow.

Another patient, a girl aged 8, suffered from severe tuberculosis of both lungs, glandular enlargement, and fungous tuberculosis of the knee, which had been immovable for four months. Six days after a combined intravenous and intra-

muscular injection she began to walk, and in the course of five weeks the circumference of the knee had diminished by 3 cm. The glandular swelling diminished, and the pulmonary disease showed marked improvement.

Another child, whose elbow joint had been operated on for tuberculous disease, developed three fistulae at the site of the operation, which was painful and cyanosed. After one injection complete recovery took place in six weeks, and no relapse had occurred fifteen months later.

All the cures have so far been permanent, and thus differ from the temporary improvement sometimes observed in fistulae which cease discharging and become covered by livid, painful and oedematous tissues. Over 30 cases of tuberculous glands were treated with great success.

Conjunctivitis, Lupus, etc.

The various manifestations of scrofula, including conjunctivitis, phlyctenules, keratitis, and eczema, quickly disappeared; many tuberculous skin diseases were refractory, and success was often not attained till the combined method of injection had been adopted. Other obscure manifestations of tuberculosis, including articular rheumatism and sciatica, improved in an astonishing manner after a few injections.

A case of lupus of the axilla which had lasted for fourteen years yielded in a striking manner to the treatment, and in another case of lupus involving the larynx, palate, and pharynx, the improvement a few weeks after one injection was most pronounced. Recovery was effected in the case of a woman whose eczema of the hands and feet had proved refractory for twenty-four years to various methods.

Prophylactic Injections.

Prophylactic injections were given to 335 children, whose ages ranged from a few hours to 3 years. Only one intramuscular injection was given in each case. Von Pirquet's test was almost invariably carried out, and was found positive in about 2 per cent. of the new-born. Ninety per cent. of the mothers gave a positive reaction. Although in many cases over a year had elapsed since the vaccination, not one child had shown any sign of scrofula or tuberculosis, yet they were mainly recruited from tuberculous families.

In cases of twins, only one was vaccinated, in order that the other might act as a control. The injections caused neither fever nor any other symptom, but were followed in a few days by a swelling from the size of a pea to that of a cherry, which disappeared in the course of a few weeks. While it lasted von Pirquet's test was positive, but after its absorption the test was negative.

This inoculation of living tubercle bacilli into healthy children seems, at first sight, an heroic measure. Friedmann and his colleagues have evidently convinced themselves of its harmlessness, and they adopted it only after they had familiarized themselves with the action of the bacilli on many tuberculous individuals. But it is a far cry from the vaccination of tuberculous individuals to the injection of healthy children with living bacilli whose ultimate non-virulence must be taken on trust, even by those most familiar with their present characteristics. The changes in virulence which one and the same strain of germ may show in the course of cultivation are well known, and we may instance the experience of Pasteur, who successfully inoculated hens with a vaccine containing living cholera germs. After a time, however, the vaccine became highly virulent and infectious, and the cause of a serious epidemic among the hens.

Friedmann reports some interesting experiments made with his vaccine on guinea-pigs. He found that not only were these animals immune to doses several times larger than those given to man, but that the bacilli disappeared [illegible] soon after the injection, the animals being perfectly healthy when killed more than a year later. Guinea-pigs inoculated with virulent tuberculosis usually die about [illegible] but if a single injection of the vaccine were given the average length of the tuberculous guinea-pig's life was prolonged to 363 days. If the vaccine were administered before virulent human tubercle bacilli were injected, the guinea-pig lived four times as long as the control non-vaccinated guinea pig, also infected with virulent tubercle bacilli.

These results are not altogether satisfactory, as the chairman pointed out in the course of the discussion which followed, but experiments on animals as sensitive to the human tubercle bacillus as the guinea-pig cannot be applied to man without qualification.

Several of those who took part in the discussion recorded their experience of the vaccine and demonstrated cases. The consensus of opinion was markedly, even enthusiastically, in favour of the vaccine. Of the speakers who had practical experience of the vaccine, only one (Professor Blaschko) sounded a note of reserve as to its action on cutaneous tuberculosis. His failures he attributed to hypersensitiveness of the skin, which he hoped in the future to lessen by the method of simultaneous injection. Even this speaker, however, reported a case of combined cutaneous and subcutaneous tuberculosis of the hand which reacted satisfactorily to the vaccine after other forms of treatment, including tuberculin, *x* rays, pyrogallol preparations, and amputation of one finger, had failed to arrest the disease. Another speaker (Dr. Karfunkel) gave an account of 450 patients treated. More than 200 of these were phthisical; all benefited, some to a striking extent. Of 47 patients suffering from scrofula, all were cured, although many had been treated for years in vain by other methods. Of 22 patients with corneal ulcer, conjunctivitis, blepharitis, or phlyctenules, all were cured in a few weeks; yet in several cases the disease had lasted for years. The speaker's confidence in the treatment is shown by his prescribing it for his 6-year-old son, who was subject to attacks of bronchitis with fever which were traced to tuberculous enlargement of the bronchial glands. The injection was immediately followed by febrile bronchitis, lasting for four days; the attacks had not afterwards recurred.

These results seem excellent, but so many methods, now relegated to the rubbish heap, have also been hailed with indiscriminating enthusiasm that we cannot at present unreservedly accept the claims made for Friedmann's vaccine.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY MEDICINES.

On November 28th the examination of Mr. J. C. Umney, of the firm of Messrs. Wright, Layman, and Umney, Limited, who attended on behalf of the Proprietary Articles Section of the London Chamber of Commerce, was continued.

The witness said that he had written out two prescriptions which he suggested the Committee should have analysed by a private analyst and by the Government analyst; it would then be apparent how near or how far from the truth expert analysts succeeded in getting.

The Chairman thanked the witness, but said that the Committee was not prepared to go into a "competition performance" at that stage.

Dr. Lynch asked the witness whether he agreed that there were proprietary preparations which were sheer frauds. Mr. Umney replied that he would not say they were "sheer frauds," but some had not the merits of others. In reply to further questions, he said he did not think it would be impossible for an analyst of high skill, using every possible means, to detect all the constituents in a medicine. He could give eight or ten instances in which, to his own knowledge, the analyses in *Secret Remedies* were incorrect.

In support of the statement that valuable medicines had been at first regarded as the outcome of quackery, the witness mentioned ipecacuanha. During the reign of Louis XIV of France, Helvetius, the son of a Dutch quack, experimented with ipecacuanha, and had considerable success in treating cases of dysentery. The Dauphin was taken with that disease, and the Court physicians failing to cure him the quack was called in, and on administering the new drug effected a cure.

Dr. Lynch asked whether any proprietor of a secret remedy had made a valuable discovery or done anything more than turn to advantage the discoveries of other people.

The witness replied that the discovery of the correct combinations of various drugs was of value.

Dr. Lynch: What of the idiosyncrasies of the patient? Does not the physician in a great number of cases vary his prescription to meet the requirements of individual cases?—The Witness: He may, but not very often.

Yet the maker of a proprietary remedy has only one formula which he offers to all the world regardless of individual idiosyncrasies?—I do not deny the uses of diagnosis, and it is always open to people to consult a doctor as to whether a proprietary medicine will do them good or not.

In further examination the witness expressed the opinion that medicines which claimed to cure cancer, phthisis, diabetes, etc., should not be offered to the public. These diseases should not be handled otherwise than through the medical profession. Such a list of diseases must be open to revision from time to time as knowledge advanced. He thought the present law was quite capable of dealing with advertisements which were intended to deceive and defraud the public.

The Acting Chairman (Sir Philip Magnus): The Committee has had evidence that it is almost impossible for a person to obtain redress under the present law.—The Witness: There is no objection to an extension of the law if it is not possible now.

In reply to questions by Sir Henry Norman as to the provisions of the American law, the witness said there was nothing in the clauses as to misbranding which was not covered by the existing law in this country. In the United States it was necessary to state the presence of certain ingredients on the label, and that requirement corresponded to the pharmacy laws of this country, by which any poison could be added to the list without fresh legislation.

The Chairman (Sir Henry Norman) asked the witness whether, having regard to his high technical knowledge and scientific distinction, and to the fact that none of the preparations of his firm had been the object of hostile analysis, he was a fair representative of the proprietary medicine industry. Mr. Umney replied that he was not representing the whole of the owners of proprietary articles mentioned in *Secret Remedies*, because he had not heard of four-fifths of them.

The Chairman: But are you, so far as a large part of the proprietary medicine business is concerned, a fair representative?—Mr. Umney: I hope I am not (laughter).

Dr. Chapple asked: Supposing it were possible to abolish all proprietary medicines to-morrow, who would suffer most?—The Witness: The medical profession would benefit the most.

I am coming to that. Who would suffer most?—The public.

Do you really suggest that if proprietary medicines were abolished people would go to a doctor?—A good many would, especially when the insurance benefits come into operation.

I suggest to you that it is better for a person suffering from a malady to go to a chemist who, if it is anything more than a simple ailment, will refer him to a doctor, than for that person to read an imaginative advertisement and take the advertised mixture.—You must not assume that everyone who reads the advertisements of proprietary medicines is a fool.

Sir Philip Magnus: You take an optimistic view. (Laughter.)

The witness further expressed the opinion that doctors would be consulted very much more than they were at present if proprietary medicines did not exist, because these preparations now cured so many people that doctors did not get a chance.

In reply to Mr. Bathurst, the witness agreed that the reputable vendors of proprietary medicines would not suffer, and at the same time the public would receive more protection than it had at present, if the law were strengthened. He thought the suggestions of the Proprietary Articles Section of the Chamber of Commerce if adopted would meet the wishes of every one.

THE annual dinner of the Association of Public Vaccinators of England and Wales will be held at the Hotel Cecil, Strand, on January 31st, 1913.

THE new Wolseley autocar catalogue contains very full information as to the three chassis models on which this company intends to concentrate all its energies during the coming year. It is well arranged, and enables the reader to ascertain with precision the cost of any one of the three chassis as ordinarily fitted with body, hood and screen, as also with any modification of body structure which an individual purchaser may desire.

BRITISH RED CROSS SOCIETY.

WORK IN THE BALKANS.

THE British Red Cross Mission at the seat of war is now represented by a personnel of 213, made up as follows:

3	Directors (1 for Turkey, 1 for Greece, 1 for North Balkan States).
34	Medical officers.
35	Dressers.
1	*X*-ray operator.
9	Sergeants.
2	Clerks.
5	Cooks.
118	Orderlies.
6	Trained female nurses.

This list does not include interpreters, cooks, batmen, transport men, and other helpers engaged locally.

The first European Red Cross party to reach the seat of war was the British Red Cross Unit for Montenegro. This party, under Dr. Bradford, is established at Antivara, the seaport town of Montenegro. Here a base hospital was started on October 20th in a disused tobacco factory. This hospital is quite full, and during the armistice more wounded will arrive. Over 500 patients have already been dealt with. It is to this hospital that the six nurses mentioned above are attached. In addition to the hospital, dressing stations have been established at Rjeka, St. Nikola, and San Giovanni di Manua. Owing to the bad state of the roads most of the wounded arrive by water and the wounds are septic.

The Servian units of the society were last heard of at Uskub where a great many wounded had accumulated. These units had proceeded straight to the front on arrival. The Bulgarian units are also at the front, and are at the moment out of reach of communication. They were last heard of at Kirk Kilissi, but they have probably pushed forward with the advancing column. It is evident that they have had their hands more than full.

The Greek units of the society are in Salonica, which town they entered immediately after its capitulation. They are established in a derelict Turkish hospital, and have had a great mass of sick and wounded to deal with. This hospital is designed for 250 patients, but at the date of the last report (November 22nd) it contained 585 sick and wounded. The extra patients were lying in the passages, on the landings, and in the wall spaces. A Rest Camp is being established for such patients as are only suffering from exhaustion and starvation. The weather is unfavourable and, indeed, severe. The Duchess of Sparta applied to the society to send out six female nurses at Her Royal Highness's expense. These nurses, at first stationed at Athens, are now at Salonica, where they are doing excellent work.

The Red Cross Mission to Turkey has been much occupied. Its base hospital is in the Fine Art School at Constantinople on Seraglio Point. Minor hospitals for the sick have been established near the Chatalja lines. There has been much cholera and much dysentery, but the cholera is rapidly declining, and there is every hope that the epidemic is now practically over. Among the Red Cross staff at Constantinople is an officer of the Indian Medical Service who has had a large experience of cholera, together with a bacteriologist especially versed in tropical diseases. An ample supply of Turkish-speaking female nurses has been obtained locally.

According to telegrams from the various centres, no more personnel is at the moment required. Very large Red Cross expeditions have been sent out by Italy, France, Germany, Austria, and Russia.

Ladies inquiring at the society's office are surprised to be informed that none of the belligerents have made application for English nurses. The reason, however, is obvious. An ample supply of well trained hospital nurses is to be obtained much nearer at hand, namely, in Italy, Austria, and Germany. Nurses, indeed, are more easily obtained and at less cost from Southern France and Russia than from England. From Russia a large number of nurses have come in connexion with the Greek Church. The appeals that have reached the society have been for doctors and orderlies arranged in self-contained mobile units. These demands have been supplied by the British Red Cross Society and the other Red Cross Societies of Europe. If the military position remains unchanged no more personnel will be sent out.

The British Red Cross Society has dispatched to the seat of war, up to the present date, over 30 tons of medical and surgical supplies, together with 7 tons of food suitable for the sick, and not to be obtained locally. From every side most gratifying reports have been received of the work done by the English surgeons and their staffs.

THE INTERNATIONAL OPIUM CONFERENCE.

THE REPORT OF THE BRITISH DELEGATES.

A PARLIAMENTARY paper has just been laid on the table of the House containing the report of the British delegates to the International Opium Conference, which sat at The Hague in December, 1911, and January, 1912. Readers of the JOURNAL have already been informed in regard to the terms of the International Convention, which was drawn up by the Conference, and also as to the proceedings of the Conference during its numerous sessions.[1] The report just published, however, gives further light into the inner workings of the Conference, and sums up, from the British point of view, the achievements of the plenipotentiaries. It extends over twenty-seven pages, and is followed by three appendices dealing especially with administrative measures in India and the British Colonies in regard to opium and its derivatives. The report is signed by all the four British delegates—namely, Sir Cecil Clementi Smith, Sir William Meyer, Mr. Max Müller, and Sir William Collins. The chief points brought out by this document relate to measures in respect to the control of morphine, cocaine, and certain other alkaloids liable to become the occasion of addiction, and to the prominent part played by the British delegation in securing the incorporation of these measures in the Convention.

It appears that the task of the British plenipotentiaries did not prove altogether easy. They approached this portion of their labours with some apprehension. They say:

> Opposition to action on these lines was only to be anticipated, and since Germany has a practical monopoly of cocaine production, and claimed to have a satisfactory system of domestic control, her delegates were reluctant to embark on further measures which might sacrifice a lucrative German industry for the benefit of outside countries not represented at the conference. Their contention was that foreign countries should look after themselves by tightening their systems of police and customs control or by some similar measures.

We have reason to believe that while this is true of cocaine in regard to Germany, in the case of morphine there are large quantities manufactured both in Scotland and England, and a lucrative export trade exists in this country at any rate in respect of morphine and its sub-derivatives. The British delegates were therefore urging what amounted in some respects to a self-denying ordinance. They held that "it was essential that producing countries should co-operate to make the pernicious contraband traffic which had sprung up as difficult as possible," and that co-operation between the countries of origin and the importing countries is absolutely indispensable. To this end it appears that before going into the plenary session of the Conference the British and German delegates met, and in a cordial spirit agreed upon certain draft articles having for their object the control of the manufacture, sale, import, and export of morphine, cocaine, and their respective salts, medicinal opium, and all preparations containing more than 0.2 per cent. of morphine or 0.1 per cent. of cocaine. The resolutions containing these agreed articles were then submitted to the full conference by Sir Cecil Smith, who stated that the British Government "regarded this matter as so important that they decided not to take part in this conference unless the other Powers also accepted its special urgency." This speech "was vigorously supported by Dr. Wu-Lien-Teu, of the Chinese delegation, who gave a vivid picture of the harm done by morphine and cocaine in China; and later on Sir William Collins emphasized the divergences between the small quantities of cocaine and morphine required for bona fide medical purposes and the relatively large amounts produced." The resolutions were adopted by the Conference, and, together with others dealing with crude opium and prepared opium used for smoking, had all been passed before the delegates rose for the Christmas recess on December 22nd, 1911. As the report puts it:

> We had, in fact, as one of the French delegates epigrammatically remarked, painted in our picture, and what principally remained to be done was to deal with the best manner of framing it.

After Christmas there appears to have been a serious change of front. The delegates say:

> "When, however, we assembled on January 8th we were confronted by a very different state of things. Owing to certain new proposals which had been put forward on behalf of the German delegation, the Drafting Committee had found itself confronted with questions of substance" not only in regard to the effectuating clauses of the treaty but also in regard to the morphine and cocaine articles already passed.

We learn that "the German delegation, as a result of the conferences they had had with their Government in Berlin, were now desirous of introducing important modifications." The three British plenipotentiaries—for Sir Cecil Smith did not return to The Hague after Christmas—appear to have been placed in a position of great delicacy, necessitating no little diplomatic skill in order to make good the strong position taken by their Government from the first in regard to morphine and cocaine, and at the same time to bring the German delegation into line. It will be remembered that at that time Germany was in the throes of a general election, and we can well understand some hesitation on the part of the authorities in pressing at that juncture for any new and vexatious trade restrictions on an important industry. The German delegates had learnt at Berlin that "the categorical form in which the original articles were drawn up was not suited to the constitution and conditions of the empire," since the matters dealt with "were for the most part within the sphere not of the Imperial Government or Legislature, but of the individual States." A similar objection, we imagine, might have been urged on the part of the Federal Government of the United States, but no such plea was advanced by the American delegates. Further pourparlers ensued between the British and German representatives, and instructions were sought from home. The British Government replied deprecating the German amendments as diminishing the utility of the Convention, but discretion was given to their three delegates to negotiate, and reluctant authorization was given to agree if unanimity could only be thereby obtained. A compromise was eventually reached. By Article 9 the Powers pledge themselves to limit by law or regulation the manufacture, sale, and use of the drugs in question to medical and legitimate purposes only and to co-operate in order to prevent their use for other objects. Since the drugs in question include all preparations containing more than 0.2 per cent. of morphine or more than 0.1 per cent. of cocaine (Article XIV), this seems to be as stringent a control as we could have anticipated, although some of the subordinate articles appear to have been somewhat weakened in force by the German delegation's later proposals. The report, in summing up the results, says:

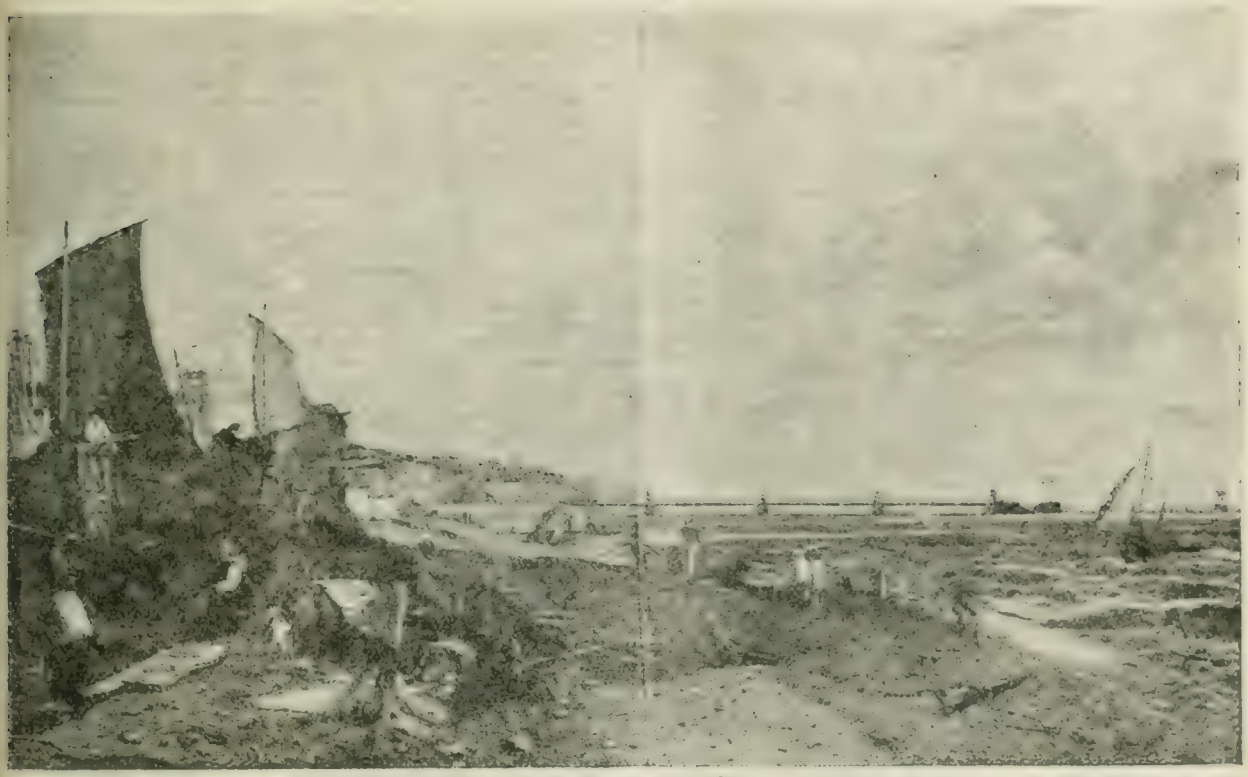
> The acceptance of restrictive measures in regard to morphine and cocaine stands to the credit of the British Government. . . . As matters now stand . . . the fact will remain that the convention has marked an important step in international ethics. . . . No Power which has participated in the conference, for example, can hereafter maintain that its obligations cease with adequate protection of its own subjects from noxious drugs; it is also pledged to help its neighbours as far as may be practicable towards the same end.

This is indeed a movement in advance, and the British Government, as well as their representatives, may be warmly congratulated upon having, in spite of difficulties, secured it.

A NEW catalogue has been issued by Messrs. Siemens Brothers, giving details of a clinical outfit by means of which a continuous record of the temperature of patients can be obtained, it is stated, without disturbing them, even when they are asleep.

LORD EMMOTT, Parliamentary Under-Secretary of State for the Colonies, has appointed Mr. H. R. Cowell, B.A., of the Colonial Office, to be his private secretary, in place of Mr. W. C. Bottomley, B.A., who has resigned the appointment on promotion. Sir John Anderson, Permanent Under-Secretary of State for the Colonies, has appointed Mr. A. B. Keith, D.C.L., of the Colonial Office, to be his private secretary, in place of Mr. Cowell.

[1] BRITISH MEDICAL JOURNAL, February 3rd, August 31st, and September 14th, 1912.



BRIGHTON ABOUT 1829.
[From a print of a picture by Constable.]

EIGHTY-FIRST ANNUAL MEETING

OF THE

British Medical Association,

BRIGHTON, JULY, 1913.

THE Eighty-first Annual Meeting of the British Medical Association will be held at Brighton next July. The President-elect, Dr. W. Ainslie Hollis, Consulting Physician to the Sussex County Hospital, will deliver his address on the evening of July 22nd, and the sectional meetings will be held on the three following days. As at present arranged there will be fifteen sections.

The Annual Representative Meeting will commence on Friday morning, July 18th, and the conference and dinner of the honorary secretaries of Divisions and Branches will be held on the previous afternoon and evening.

Brighton has during the last century grown very rapidly, and is now not only a seaside resort frequented by a very large number of visitors from London and the Midlands, both in winter and in summer, but is also the chief commercial town of South-Eastern England. With its sister borough of Hove, and its suburb of Kemp Town it extends for many miles along the coast and within recent years has also spread inland on to the slopes of the Downs, where many private residences have been erected. In addition to the gardens on the sea front it has many public parks, including Preston Park and Queen's Park. It is, of course, well provided with hotels and lodging-houses, and railway communications are excellent both with London and by through trains with the Midlands.

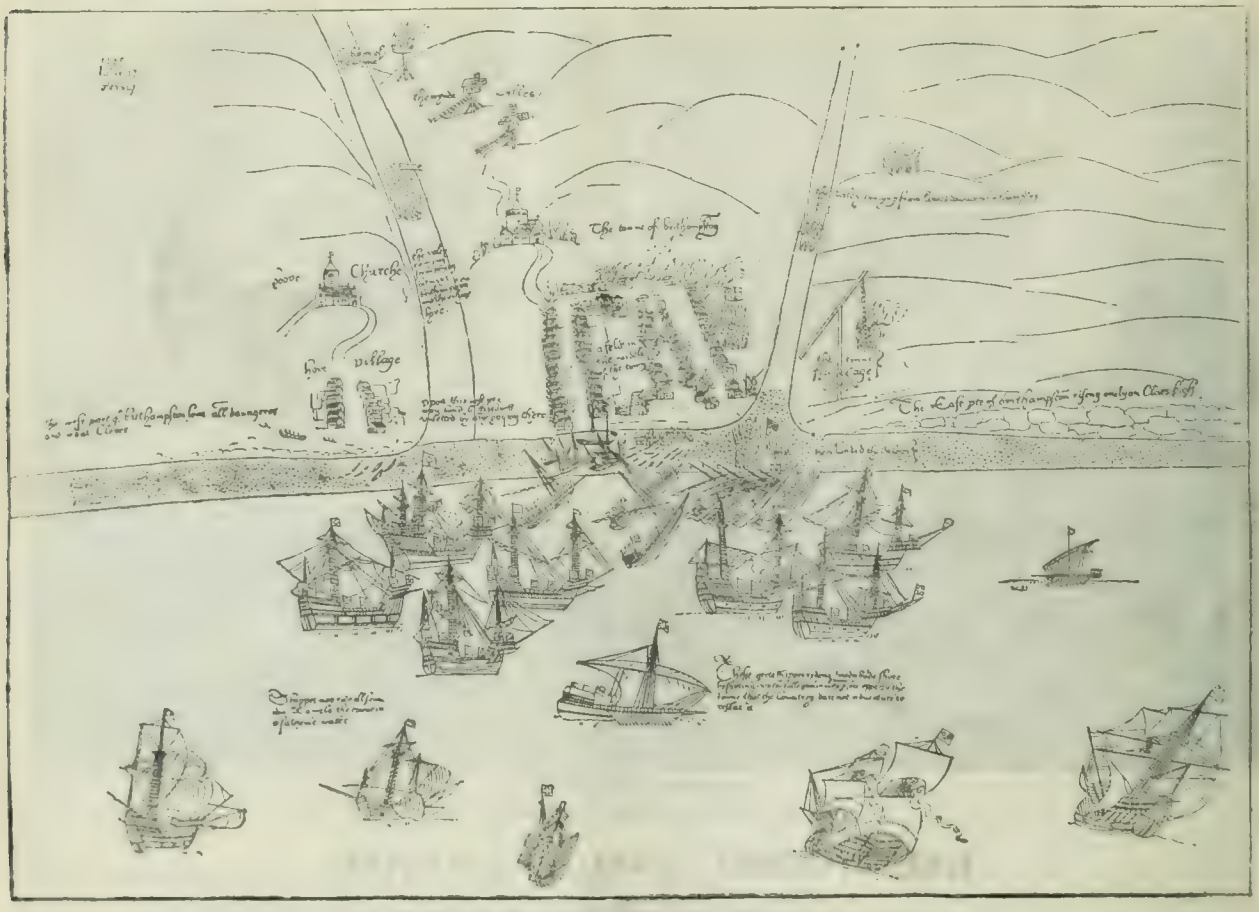
HISTORY OF BRIGHTON.

Brighton was known to Dr. Johnson as "Brighthelmstone," but almost a century before his day the name was sometimes shortened to its present form. The earliest mention of it is in Domesday Book, where it appears as "Bristelmestune"; in ancient documents it is variously written in that way, and as Bredhamston, Brighthelmsted, Brighelmsted, Brighamstun. A Sussex archaeologist has found no fewer than forty-five different spellings of the name. It would seem that Brighton was a place of some importance in the time of the Roman occupation, as about 1750 an urn was dug up in the neighbourhood of the town in which were a thousand denarii of different impresses from Antoninus Pius in the second to Philip in the third century. Later ashes and fragments of human bones were found enclosed in urns of Roman manufacture in some of the barrows near the town.[1]

Horsfield[2] discusses the derivation of the name, but comes to no satisfactory conclusion. He thinks, however, that the most probable explanation is that the town "took its name from that of some considerable person to whom it belonged, Brighthelm, and the Saxon *tun*, a dwelling." But who was Brighthelm? Hare says he was a

[1] *Ancient and Modern History of Lewes and Brighthelmstone, in which are compressed the most interesting events of the County at large under the Regnian, Roman, Saxon, and Norman Settlements.* Lewes: Printed for W. Lee, the Editor and Proprietor, and may be had of Messrs. Rivington, St. Paul's Churchyard, London. 1795.

[2] *The History, Antiquities, and Topography of the County of Sussex.* By Thomas Walker Horsfield, F.S.A. Published by Baxter, Sussex Press, Lewes; and Messrs. Nichols and Son, Parliament Street, London. 1835.



THE ATTACK MADE BY THE FRENCH FLEET UPON BRIGHTHELMSTONE, A.D. 1545.

[From a print in Horsfield's *History of Sussex*. Photographed by Donald Macbeth.]

Bishop of Selsey. An author already referred to[3] conjectures that Brighton may have suffered from the ravages of the Saxon invaders in the middle of the fifth century, and that the place fell to the lot of a leader named Brighthelm. He is inclined to think that most of the town and parish had belonged to the ancestors of Earl Godwine for many generations before the Conquest. They were Thanes of great possessions, but there is no record of them before Ulnoth, the father of Godwine. That there is some truth in this conjecture may, perhaps, be inferred from the fact that Harold, the son of Godwine, and afterwards King of England, succeeded his father in the lordship of two of the chief manors of Brighthelmston. After the Conquest it fell into the hands of William, and in Domesday Book it is described as one of the many lordships in the Rape of Lewes granted by the Conqueror to his son-in-law, William de Warrenne. Lee says that from the surnames of some of the most ancient families in the town, and from the speech and peculiar customs of the old natives, it has been conjectured that at some period, not long after the Conquest, a colony of Flemings had sought refuge from an inundation in their own country and settled at Brighthelmston. This conjecture, perhaps, receives some support from the fact that Matilda, Queen of William the Conqueror, was the daughter of Baldwin, Earl of Flanders, and may have induced her son-in-law to give shelter to her countrymen. Naturally fishing was the chief industry of the inhabitants in these early days; as early as 1086 they paid a rent of four thousand herrings to the Manor of Brighthelmston, and they also cured [illegible] of herrings, and it is said that besides [illegible] places in England, they had an export trade with the Continent.[4] This is not improbable, as the consumption of fish, owing to the observance of Lent and other fasts, was very large. The inhabitants, as is usual at seaside places, were divided into landsmen and seamen, the former living on the cliff, the latter, who largely preponderated in number, in two streets under it.

About the middle of the twelfth century part of Brighthelmston belonged to Lewes Priory, and it has been said that "this resigning the town into the hands of the monks was a fatal stroke to its ancient greatness." According to Horsfield, however, there is no shadow of evidence that Brighthelmston was anything but a small fishing village till the middle of the eighteenth century, when it began to acquire fame as a watering place. Till then there was a proverb, "Proud Lewes and poor Brighthelmston," which shows that Brighton was an inconsiderable place. It was never included among the Cinque Ports, which is a sufficient proof that its "ancient greatness" is a myth. In 1285 it had a separate constable. In 1313 John de Warren obtained a charter for a weekly market. In 1515 it was described by Hall as "a poore village in Sussex called Bright Helmston."

Throughout the reign of Queen Elizabeth it was a fairly thriving little place, and its prosperity was further increased by the addition to its population of a number of Huguenots who sought refuge there after the massacre of St. Bartholomew's. The place became sufficiently important for the appointment of commissioners by the Privy Council to adjust old-standing disputes between the seamen and the landsmen; the commission was executed to the satisfaction of all parties in 1580. The commissioners found that from time immemorial the place had been governed by two head boroughs sitting in the borough Court and assisted by a council called The Twelve. This constitution existed till 1772, when commissioners were appointed. During the reigns of James I and Charles I, the Brighthelmston fishery suffered severely from the competition of the Dutch, from foreign aggression, and from the disturbed state of the political atmosphere. The distress of the inhabitants is vividly set forth in the following petition addressed by them to Parliament:[5]

The petition of the poor distressed and much decayed fishing town of Brighthelmstone in Sussex, in most humble manner complaining, showeth unto you, honourable and worthy assembly,

[3] W. Lee, op. cit.
[4] Lee, loc. cit.

[5] Harleian MSS. in British Museum. Quoted by Horsfield, op. cit.

in former time, of long continuance, they were wont to have and employ at sea in times of peace the number of sixty fishing barks and boats which in some years were wont to bring into their town to the value of seven or eight thousand a year towards the relief and maintenance of themselves and families. But now within these three or four years since the time of war, by the force and rage of their enemies the Dunkerks and French men of war, they have been debarred from their former fishing voyages and the sea hath, as it were, been shut up from them so that they have not, nor could not go about their former affairs; but were exposed to extreme peril of the loss of their lives, liberty and goods; so that they had kept from their trade of fishing, and thereby had been hindered to the value of thirty-thousand pounds. And to add to these former hindrance and loss of time, they had received main great losses; fourteen of the best barks of their town had been taken and carried away by the enemy, most of them loaden with merchandize the price of worth thereof will equalize if not surmount the former sum; besides, many other of their poor neighbours have been chased ashore and pillaged by them. Yea, they have taken some of them not two leagues from their town, and have stript and taken from them that little parcel which they had; and now they are so encouraged against them and without help by aid of any ship by sea that they dared not go to sea to take any kind of fish or pass from port to port; but were in continual fear that one time or other they will land, break in upon them, and deprive them of their lives and liberties if some speedy course was not taken for relief herein. And, praying the house to take into their Christian and judicial consideration their most miserable and distressed state, and speedily to suffer and defend the coast with some of His Majesty's ships of war: and also to appoint some of them again the 1st of April next, for to defend their poor fishermen in their fishing voyages; and therein they should maintain the mariners a good part of the strength of this part of this Kingdom, or otherwise the sea coast would be wholly forsaken by seamen and left a forlorne and easy prey to the enemy which God of His great mercy defend!

The petition is signed by Joseph Rivett (Minister) and sixteen others. There is no date, but, according to Horsfield, internal evidence points to 1666, just before the conclusion of the treaty of peace at Breda between England and her three enemies, the French, the Dutch, and the Danes. The distress of the inhabitants continued and became so acute that in 1689 an order of Sessions for compelling the parishes of Bletchington, Haughton, Ovingdean, and Patcham, which had very few or no poor, to contribute to the payment of the poor of Brighton was issued.

Macaulay, in his *History of England*, Chapter III (State of England in 1685), gives the following account of the town:

> Brighton was described as a place which had once been thriving which had possessed many small fishing barques, and which had when at the height of prosperity contained above 2,000 inhabitants, but which was sinking fast into decay. The sea was gradually gaining on the buildings, which at length almost entirely disappeared. Ninety years ago [that is about 1758] the ruins of an old fort were to be seen lying among the pebbles and seaweed on the beach, and ancient men could still point out the traces of foundations on a spot where a street of more than a hundred huts had been swallowed up by the waves. So desolate was the place after this calamity that the vicarage was thought scarcely worth having. A few poor fishermen, however, still continued to dry their nets on those cliffs on which now a town more than twice as large and populous as the Bristol of the Stuarts presents mile after mile, its gay and fantastic front to the sea.

In the article on Brighthelmston in *Magna Britannica*, published in 1738, it is stated that about ninety years before—that is, about the middle of the seventeenth century—the town was a considerable place for fishing, with a population consisting of nearly 600 families, but that, since the commencement of the civil wars, it had much decayed owing to the causes set forth in the petition. "Nay," says the writer, "it is the opinion of the most judicious inhabitants that had not divine providence in a great measure protected them by their towns being built low and standing on a flat ground, the French would several times have quite demolished it, as they had attempted to do; but the low situation prevented their doing it any considerable damage, the cannon balls usually flying over the town. But the greatest damage to the buildings has been done by the breaking in of the sea."

Besides the depredations from foreign aggressors to which its position exposed it, Brighthelmston suffered much from the encroachments of the sea and from visitations of violent storms. Before 1665 the sea destroyed twenty-two copyhold tenements under the cliff. Among these were twelve shops with four stake places and four capstan places and three cottages, with part of the land adjoining them. There still remained 113 tenements under the cliff.

The Great Storms.

These were finally destroyed by two great storms which swept over the little town in 1703 and 1705. The former is particularly memorable to the student of English literature, as, if Macaulay's view is accepted, it furnished Addison with a line which made the fortune of his poem, *The Campaign*, and laid the foundation of whatever success he achieved in public life. In that poem he compared Marlborough in battle to an angel who

> Rides on the whirlwind and directs the storm.

Macaulay says the extraordinary effect which this simile produced when it first appeared, and which to the following generation seemed inexplicable, is doubtless to be chiefly attributed to a line ("Such as of late o'er pale Britannia pass'd") which most readers now regard as a feeble parenthesis. Addison, he points out, spoke not of a storm, but of *the* storm.

> The great tempest of 1703, the only tempest which in our latitude has equalled the rage of a tropical hurricane, had left a dreadful recollection in the minds of all men. Whole fleets had been cast away. Large mansions had been blown down. One prelate had been buried beneath the ruins of his palace. London and Bristol had presented the appearance of cities just sacked. Hundreds of families were still in mourning. The prostrate trunks of large trees and the ruins of houses still attested in all the southern counties the fury of the blast.

At Brighton the storm began about midnight on Saturday, October 27th, 1703, and continued for about eight hours with unbridled fury. Many houses were unroofed, others totally destroyed. The church leads were torn off and the two mills belonging to the town thrown down by the storm. Brighton had the ruinous appearance of a place that had been severely bombarded.

On August 12th, 1705, another terrific storm swept over the town, destroying a great many houses and blowing off most of the church leads. This storm wrecked all the lower buildings which had escaped the fury of former storms and inundations. Every dwelling under the cliff was destroyed and its very site hidden beneath a mound of beach.

On Monday, January 26th, 1795, Brighton was flooded as it never had been before. The inundation was caused by a sudden thaw with rain, which succeeded a frost of about a month's continuance. It melted the snow with which the ground was then covered so rapidly that the water ran in torrents from the circumjacent hills and completely deluged the Level, Castle Square, the Poole, and the Steyne to the depth of several feet.[6]

About 1713 the sea, which had destroyed everything below the cliff, began rapidly to encroach on the cliff itself. It was therefore found necessary to erect groynes to check the invasion of the beach by the onrushing waves.

In the Lansdown MSS., British Museum, are some topographical collections towards a History of Sussex made by John Warburton. He visited the coast at the beginning of the eighteenth century, and his remarks about Brighton show that he wrote very soon after the irruptions of the sea when ruins covered the beach.

> A good mile further [from Hove] going along the beach I arrived at Brighthemstead, a large ill-built irregular market town, mostly inhabited by seafaring men who choose their residence here as being situated on the main and convenient for their going on shore on their passing and repassing in the coasting trade. This town is likely to share the same fate with the last [which the writer describes as "a ruinous village called Hove which the sea is daily eating up. It is in a fair way of being quite deserted"], the sea having washed away the half of it; whole streets being now deserted and the beach almost covered with walls of houses [illegible] the lime or cement being strong enough when first made to resist the violence of the waves. The church stands on the downs at a furlong distance from the town; it is large, but nothing about it is worthy of remark or in the town; there not being any person of fortune in the town, but one Master's or Morley (?) a gentleman of good birth.

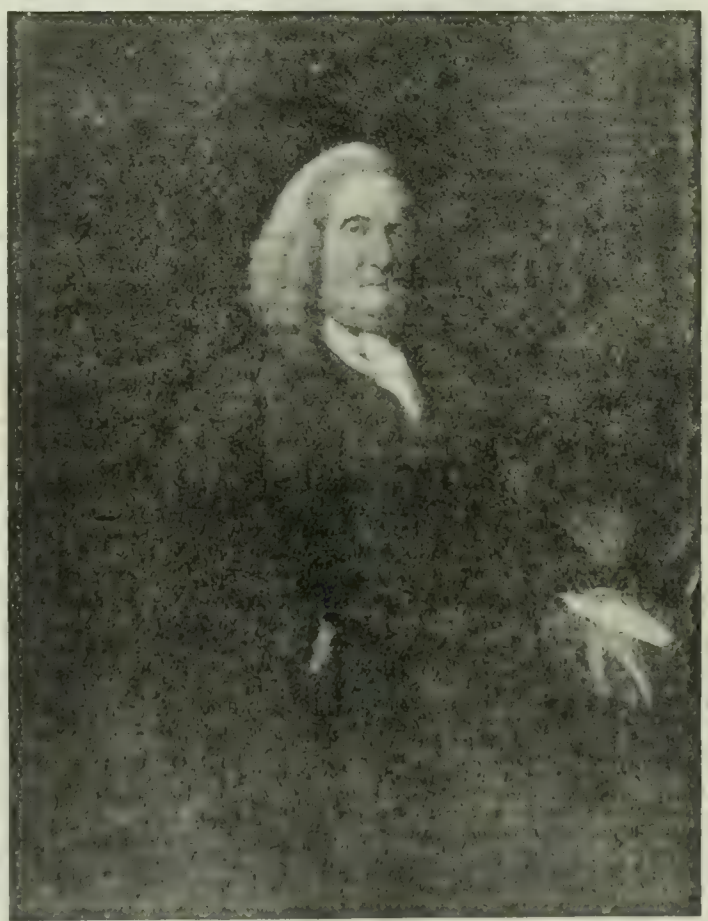
There would seem to be no doubt that at this time the town under the cliff was entirely demolished. Some portions were probably rescued and used for the construction of new houses, but a considerable part of the town was buried under the beach. In a few years scarcely a vestige of the old town could be traced, and the increasing

[6] Lee, op. cit.

mass of shingle was the only indication of the site of the "low and poor Bristelmestune." The walls of one of the streets that formerly stood under the cliff, called South Street, were discovered in 1818 by some labourers who were making excavations. These ruins were buried under a layer of beach more than 15 ft. thick. In a book entitled *A Tour Through the Island of Great Britain*, which appeared in 1724, there is the following description of Brighton. After giving a short account of Lewes, the writer proceeds:

From this town, following still the range of the south downs west, we ride in view of the sea and on a fine carpet ground for about 12 miles, to Bright Helmston, commonly called Bredhemston, a poor fishing town, old built, and on the very edge of the sea. Here again, as I mentioned at Folkestone and Dover, the fishermen having large barks go away to Yarmouth, on the coast of Norfolk, to the fishing fare there, and hire themselves for the season to catch herrings for the merchants; and they tell us that these make a very good business of it. The sea is very unkind to this town, and has by its continual encroachment so gained upon them that in a little time more they might reasonably expect it would eat up the whole town, above one hundred houses having been devoured by the water in a few years past. They are now obliged to get a brief granted them to beg money all over England, to raise banks against the water, the expence of which, the brief expressly says, will be £8,000, which, if one were to look on the town, would seem to be more than all the houses in it are worth.

Horsfield says that the "brief" here alluded to was obtained by virtue of Letters Patent under the Great Seal in 1722. The state of the town was very precarious. The portion of it under the cliffs had some years before been engulfed, and now the cliffs themselves with the buildings erected thereon were sapped by the advancing tide and immense masses fell every year into the sea. The erection of groins was determined on. Under the terms of the brief "there was raised by charitable contributions for the then deplorable sufferers the inhabitants of the town, money for building groynes, bulwarks and fortifications against the sea in order to preserve such parts of the said town as was then remaining," to the amount of £1,700. This sum added to local contributions made it possible to secure the town as far as the Steyne, which at that time was the eastern boundary. About the middle of the eighteenth century the condition of Brighton began to change for the better, the fishing trade increased, and visitors of distinction were attracted by the facilities for hunting, racing, and water parties, and, what was of much more importance, began to be known as a health resort. "Science," says Horsfield in his pompous way, "invited fashion and fashion . . . has in the short space of half a century transformed the 'poor fishing village of bright Helmston' into one of the gayest and grandest of our favourite abodes."



Dr. Richard Russell.

[From the picture by Zoffany in the Permanent Art Gallery, Brighton. Reproduced by kind permission of the Director.]

The Medical Makers of Brighton.

The impetus to this transformation was given by Dr. Richard Russell, of whom there is a most inadequate and inaccurate account in the *Dictionary of National Biography*, which does not even mention his connexion with Brighton. He is well worthy of a better record, and we are fortunately able to supply one which has the authority of the man himself.

Richard Russell.

Russell was the son of a London bookseller, and was born in 1687. "Having been educated" (says he in a letter to Dr. Addington, father of the statesman nicknamed by Sheridan "The Doctor," and known in history as Lord Sidmouth) "at Westminster School for eight years under the care of Dr. Friend, I directly applied myself to one of those arts, and afterwards to the rest which are generally looked upon as a necessary introduction to the knowledge of physic. Having gone through several courses of botany and anatomy under the most eminent professors of each, I put myself under a chemist of great business. During this period, at proper intervals, I read the book recommended to me by the most eminent physicians and attended the practice of several hospitals and infirmaries. Afterwards I went to Paris, where under the instruction of Monsieur Grégoire, the most celebrated man-midwife, I had a repeated insight of and likewise performed myself all the operations necessary in unnatural as well as natural births. Having taken a degree in physic at Rheims, where Dr. Pitcairn graduated, I returned to England; and having been examined by the London College of Physicians, received from them a diploma acknowledging the validity of the degree and granting me their license to practise." Upon the recommendation of Drs. Mead, Monroe, and Dod, Dr. Russell was chosen physician to the branch of Christ's Hospital at Ware in Hertfordshire; afterwards he removed to Henley, where he practised as a physician and man-midwife. This information is contained in a pamphlet written by Dr. Russell, the title of which gives the reason for its publication:

"*A letter to Dr. Addington of Reading on his refusal to join in consultation with a physician who had taken his degree abroad and was approved and licenced by the College of Physicians in London.*"

This was published in 1749, and in 1751 there appeared another pamphlet with a title-page to the following effect:

"*A letter to Mr. T. Bigg, late surgeon of St. Bartholomew's Hospital, occasioned by his having written a defamatory letter to Dr. Addington against Dr. Russel of Reading, which the former clandestinely communicated to many persons in order to excuse his not answering Dr. Russel's letter to him and to obstruct and hinder the course of his practice.*"

Of the merits of the quarrel, for which there must have been reasons beyond what appear in these explanatory title pages, we know nothing, and the details if known would be uninteresting. One may gather that Dr.

Addington took the line of the Tunbridge Wells physician in *Ferdinand Count Fathom*. It may be remembered that when Fathom started in practice his first patient was a girl suffering from hysteria owing to a disappointment in love. The family physician happened to be away, and Fathom's treatment was successful. When the physician returned he was in a great rage at having been supplanted, and refused to consult with Fathom, saying he was resolved never to consult with any physician who had not taken his degrees at either of the English universities. "Upon the supposition," replied Fathom, "that no person can be properly educated for the profession at any other school?" "You are in the right," answered Dr. Looby. "That is one of many reasons I have to decline the consultation." "How far you are in the right," retorted Fathom, "I leave the world to judge, after I have observed that in your English universities there is no opportunity of studying the art. No, not so much as a lecture given on the subject. Nor is there one physician of note in this kingdom who has not derived the greatest part of his medical knowledge from the instructions of foreigners." Looby, incensed at this assertion, which he was not prepared to refute, exclaimed in a most infuriated accent, "Who are you? Whence came you? Where were you bred? You are one of those, I believe, who graduate themselves and commence doctors the Lord knows how. An interloper, who without licence or authority come hither to take the bread out of the mouths of gentlemen who have been trained to the business in a regular manner and bestowed great pains and expense to qualify themselves for the profession. For my own part my education cost me fifteen hundred pounds." "Never was money laid out to less purpose," said Fathom, who, although he had never been at the trouble to take a degree anywhere, had the best of the argument. The passage gives a notion of the state of medical education in this country in the middle of the eighteenth century.

About 1752 Russell went to London and was soon after elected a Fellow of the Royal Society. He was subsequently appointed a physician to St. Thomas's Hospital. In 1750 he published in Latin his well-known *Dissertatio de Tabe Glandulari et de usu aquae Marinae in Morbis Glandularum*. This work again appeared in 1753 in an English translation with additions. This work brought him a number of patients, and he about this time removed to Brighton. In 1755 he published another work on diseases of the glands. It is entitled *Oeconomia naturae in morbis acutis et chronicis glandularum*. These works won for him a wide reputation, and his celebrity attracted numerous visitors to Brighton.[7] Russell was one of the most strenuous apostles of the new religion of sea-water, and had a lively faith in its virtues. He used it internally as well as locally in all kinds of tuberculous affections, and in scurvy, constipation, "flux of the belly," ozaena, skin eruptions, renal calculus, "scirrhus," and a number of other diseases. For the accommodation of the visitors a number of comfortable lodging houses were erected, and the fishing village grew into a town.

In early life Russell, before his visit to the Continent, had married the daughter and sole heiress of William Kempe, at whose death he became in right of his wife possessor of the deanery of South Malling, with the lands formerly belonging to the college. He died in 1759 while on a visit to a friend in London, at the age of 72, and was buried in the family vault at South Malling. The Rev. Dr. S. Manningham, of Jevington, celebrated him in the following lines:

> Clara per omne aevum Russelli fama manebit,
> Dum retinet vires unda marina suas.

The house occupied by Russell at Brighton, which was called Russell House, stood south of the Steyne on the site where the Albion Hotel was afterwards erected. We agree with Horsfield that it ought to have been preserved. There is, however, a street in the town named after him. A finely painted half-length portrait by Zoffany, which used to adorn the upper end of the ball-room of the Old Ship Tavern, was presented by the proprietor to the Brighton Corporation and is now in the Fine Arts Gallery. We are indebted to the courtesy of the Director, Mr. Henry D. Roberts, for the photograph reproduced on p. 1622.

[7] As it is on record that a certificate was granted on October 21st, 1683, by the parish officers to Francis Board, gentleman, for the King's Evil, it has been conjectured that sea bathing was even then in use for scrofulous complainte at Brighton.

Anthony Relhan.

After the death of Russell his place was taken by Dr. Anthony Relhan, who did much to increase the repute of Brighton as a health resort. In 1761 he published *A Short History of Brighthelmston*,[8] in which he says the town improved daily as the inhabitants, encouraged by the late great resort of company, seemed disposed to expend the whole of what they acquired in the erecting of new buildings or making the old ones convenient. He speaks of their new way of ornamenting the windows and doors "with the admirable brick which they burn for their own use" as having a very pleasing effect. Waxing prophetic, he says that if the increase of buildings in the next seven years should be equal to what it has been in the last, there will be but few towns in England that will excel this in commodious buildings. Elsewhere he says that some years have now elapsed since a mineral spring was accidentally discovered to the north-west of the town at the distance of half a mile.

> The peasants who first made the discovery, though unacquainted with the virtues of its water and even displeased with the taste of it, resolved to preserve it for the use of themselves and the sheep which feed around it; no spring besides appearing upon the service in all these downs, no pool of even stagnant water. The spring he says issues from the declining part of a little hill covered with firs. The soil around is loamy with various strata of bole, ochre, and umber. In some time this spring was observed to depose an ochrous sediment in its overflowings into a bottom where nature has provided a flat for a kind of reservoir. "The colour of this sediment having engaged many persons to speak of the water as containing a mineral in it, a gentleman now living there tried it for a complaint in his stomach for the relief of which he was then preparing to go to a foreign water and was effectually restored by it to his former health."

This case led others to resort to the spring for various complaints, some, it is frankly stated, without success, but others derived benefit therefrom. "Many more would have used it had not the uninviting manner in which the spring was kept disgusted them. At length the proprietor, encouraged by many applications, enclosed the spring with a brick wall, sunk an iron pot pierced with two holes for the water to flow in at, and covered it with a wooden top that locks down to secure it from the injuries of dirt, etc., leaving a free passage for the overflowing water to empty itself into the reservoir." But as the virtues of the spring, even with these improvements, were not sufficiently known it was but little used, says Relhan, "until last summer [1760], when many persons drank it on the spot and some few used it at home.' Several experiments had proved the water to be of the class "improperly stiled chalybeats," and presuming from the taste of it that it differed little from that of Tonbridge. From the injudicious use of the water many people suffered from slight fever, headache, and piles, effects due to the constipating power of the water due to the quantity of ochre contained in it.

> And if we reflect on its being drank in the same proportion as the Tonbridge waters, upon the idle presumption of their being alike, we shall have less reason to be surprised at these effects, since it appears by Dr. Lucas's account of the latter, which is extremely exact, that a pint of it contains but two grains and three-quarters of solid matter in it as far as evaporation discovers; yet that of Brighthelmston, subjected to the same operation, yields in the same quantity thirteen grains and nearly three-quarters.

Elsewhere he speaks of the extraordinary fecundity of the sheep which drink this water, but with cautious reserve he adds, "Observation, as far as I can learn, does not yet authorize any one to assert in its favour on this account as to the human species."

John Awsiter.

Writing in 1768 Dr. Awsiter[9] gives us a good idea of the bathing accommodation of Brighton at that time.

[8] *A Short History of Brighthelmston.* With remarks on its air and Analysis of its Waters, particularly of an uncommon mineral one, long discovered, though but lately used. By Anthony Relhan, M.D., Fellow of the Royal College of Physicians in Ireland. London: Printed for W. Johnston, in Ludgate Street. 1761.

[9] *Thought on Brighthelmston, concerning sea bathing and drinking sea water. With some directions for their use. In a letter to a friend.* By John Awaiter, M.D. Printed for J. Wilkie, in St. Paul's Churchyard, London. 1768.



Brighton about 1800.

The coast being open to the main sea, there was no shelter for the bathers from the wind, which set in to the shore almost constantly. He accordingly recommended that at least half the number of machines should be provided with screens projecting from the top of the door to the water, somewhat after the manner of those at Margate. These would keep off the wind and make the machines more private. We gather from him that the shore on the east of the town was allotted to ladies "without any mixture of gentlemen," and he suggests a further rule that no man-servant or inhabitant be permitted to bathe on that side of the town during the season. He says "sea water is a noble remedy for all diseases of the skin, old ulcers, and diseases of the glands. Even hereditary complaints have yielded to it." He seems to have been a somewhat credulous person, for he says that sea-salt properly applied is "a present cure for the bite of a mad dog." The *rationale* of the cure was supposed to consist in the action of the salt upon the malign virus of the wound before it could make any progress to infect the circulation. The salt, says Awsiter, by being dissolved in urine becomes more active, and is particularly assimilated to penetrate into any part of the body to which it is applied. This cure is given to illustrate the power of salt (the active principle of sea water) in destroying the acrimony and poisonous quality of sores and wounds, and as such disposing them to heal.

Hence be a proper use of seawater, obstinate breakings out, [illegible] inveterate sores on any part of the body, diseases of the [illegible] fistulas, and even cancers (if the parts are not too much [illegible] must be mentioned. Seawater bathing is serviceable [illegible] contractions of the limbs, palsies, [illegible] respecting cancers it may not be amiss to [illegible] keeping them constantly wet with cloths dipt [illegible] mineral waters, the malignity of them [illegible] performed. But I am inclined [illegible] Seawater is serviceable also [illegible] and one in particular: in cases of [illegible] I look upon seawater to stand before all other [illegible]

Awsiter's special contribution to the medical literature of Brighton is his recommendation of baths of sea water [illegible] different degrees of heat as the nature of the [illegible] require. For this purpose, he says:

I wish to see a set of baths erected. The building to contain these baths must be near the sea on account of the water. [illegible] the bathing room to be [illegible] in a plain [illegible] to the machines for preserving decency and [illegible] to those erected by the Duke of [illegible] where next to [illegible] and twelve [illegible] with a bath in each, a lobby [illegible] a space behind them the whole [illegible] and cold bath which [illegible] pumped out of the [illegible] room must be made [illegible] flue. There must be a communication by pipes from the copper, the baths, and a like communication from the reservoir, that the baths by this means may be attemperated to any degree of heat required; and here it is necessary to observe, unless ordered otherwise by the physician, that a hot bath should never exceed the natural heat of the body, and any medium between 50 and 80 degrees of Fahrenheit's thermometer will be a good standard; for if at blood heat it may overcome and weaken the party too powerfully, but while in the bath the heat must be kept up by the addition of hot water. There should be chairs provided also as at Bath to take the patient from and back again to the bedside.

As nobody showed any disposition to carry this suggestion into effect, he undertook what he called the "troublesome office" himself. In October, 1769, the foundation stone of a building was laid at a place sheltered from the wind, south-west of the Steyn called Pooke. Sea water was conveyed to the baths, which at first were seven in number. In Horsfield's day they were known by the name of the Original or Wood's baths, and were second to none in comfort and convenience.

Development of the Town.

From a survey taken in 1770 it may be gathered that the number of houses in Brighton amounted at that time to 598. In 1773 an Act was obtained for the appointment of commissioners for lighting and cleansing the streets, lanes, and other thoroughfares within the town, for the prevention of nuisances, the holding and regulating of a daily market, the building and repairing of groins, and so forth, and making the shore convenient for the landing of coal, a duty of sixpence on every cauldron being allowed. Soon after this Brighton became the yearly resort of several families of distinction, while many members of nobility lived there occasionally. The Duke of Cumberland, the "Butcher" of Culloden, who was one of Russell's first patients, had a house there, and the Duke of Marlborough, made it his summer residence. Other members of the aristocracy followed. With the enlargement of the town came the need of providing amusements, and a theatre was built in North Street in 1774. Before that time the only temple of dramatic art was a humble barn. Soon a larger building was required, and one was built in Duke Street in 1789. In 1807 a new theatre was built in New Road. Later developments do not come within the scope of this article. In 1786 a census of the town was taken, and the number of settled residents was found to be 3,600. The French Revolution helped to increase the population. In January, 1794, it was 5,669, an increase of more than 2,000 in eight years; and in 1891 the population was 185,402. The number of houses in 1794, according to a survey made in that year, was 1,221, more than double what it was in 1770.

(To be continued.)

ALCOHOL AND SOCIETY.

A COMMITTEE appointed early in 1908 by the Swedish Medical Society after several discussions on the subject of alcoholism has published a voluminous report on Alcohol and Society[1] which has already attracted a great deal of attention in Sweden, and if made generally available is likely to have much influence on opinion in other countries. The grant in 1909 of 3,000 kronor by the Swedish Government in aid of the committee's work invested the committee with a semi-official position.

The scope of the report, which occupies 390 pages, is wide, and it includes so many aspects of the case that even a short review of them all requires considerable space. The judicial and impartial tone of the report, in which evidence for and against various views on alcohol is carefully weighed, also renders it difficult to give a clear summary of the conclusions drawn. It is therefore possible to review only certain points of special interest in the report.

In the opening chapter it is pointed out that though various methods of investigating the different aspects of alcohol in relation to man are available, they have either not been utilized or the conclusions to which they point have been so distorted by rival factions that the perception of the public on this point has become blurred, and even responsible and powerful corporations have become callous. The opinions of medical men and other scientists on the effects of alcohol on the body have been so widely and persistently circulated without reservation or contradiction, that it is commonly believed that total abstinence, and therefore total prohibition, are founded on irrefutable scientific evidence. The reason why this propaganda has hitherto escaped criticism by medical men is to be sought in their appreciation of the good intentions of those who engage in it. The rejection of much of the evidence against alcohol does not necessarily imply the rejection of even the most rigid measures taken to repress alcoholic abuse, but on the other hand the danger of dogmatically founding a policy on a prejudiced and false basis is indicated.

In the earlier chapters of the report the effects of large and small doses on the organism, and the relation of alcohol to poverty, crime, and other conditions are discussed. In this section little is added to information already published; but the reports of previous investigations are carefully summarized, and much evidence which has become almost classical from frequent quotation is weighed and some of it found wanting.

Poverty.

The effect of alcohol in producing poverty is admittedly great, but statistical analyses on this point are, it is stated, so strikingly at variance that at present an estimation on this basis is impracticable. According to official statistics for the years 1907 and 1908, the proportion of cases in which drunkenness in Stockholm was the cause of claims on poor relief was only 0.4 per cent. Investigations in Stockholm for the year 1900 had shown that the proportion was as high as 51.7 per cent. The material used for this latter investigation was, however, limited. Similar comparative investigations in other parts of Sweden also showed great variations; thus, while the proportion in Oppmanna was only 5.8 per cent., it was 56.3 per cent. in Sveg. The enormous expenditure by the working classes on alcohol is well illustrated by a comparison between the sums spent in Stockholm on brandy and other highly intoxicating liquors and those spent in rent of lodgings consisting of one room and a kitchen. These sums for one year were 4.5 and 5 million kronor respectively. Yet the cost to the working man of beer was not included in this estimate.

Crime.

The effect of alcohol on crime is, again, a matter of everyday experience, but statistical analyses are, it is said, open to grave error. Wieselgren and Wirén have estimated that during the period 1877 to 1907 not less than 73 per cent. of convicted male criminals in Sweden attributed their crime to alcohol; that crime is four times oftener traced to temporary intoxication than to chronic alcoholism; and that alcohol has much less effect on crime among women. This auto-analysis, which is reported by prison chaplains, is open to the criticism that criminals, though unwilling to stamp themselves as chronic alcoholics, are ready enough to excuse their crimes by a plea of drunkenness. Even when crime has been committed in a state of intoxication, it may yet not depend on the intoxicant, for in many such cases the offenders are latent criminals whose alcoholism bears only an accidental relationship to their crime. An intimate personal knowledge of each criminal, it is held, is therefore necessary before crime can be traced to alcohol alone. On the other hand, a criminal may be subject neither to acute nor chronic alcoholism, yet his crime may be traced to the influences of a home in which either the father or the mother was alcoholic. Doubtless crime would be appreciably reduced by the withdrawal of alcohol from the community; but the report adds that the same result might be attained by stringent measures against drunkenness and the abuse of alcohol.

Heredity.

In a chapter devoted to alcoholism and heredity the investigations on which theories have been built are ruthlessly examined and rejected. The committee does not, it is true, deny the possibility of alcohol affecting the progeny of its victims, but finds that the sources of error to which most methods of investigation hitherto used were liable, render the conclusions to which they point invalid. The predominating error is the lack of distinction between cause and effect, and the failure to perceive that alcoholism, particularly in its extreme forms, is very often the outcome of a pre-existing psychic faultiness of constitution. For investigations on this point to be convincing it is, among other things, necessary that the material chosen shall not present marked psychic blemishes. Such an investigation, the committee considers, has not yet been undertaken; it would require both the critical faculty and a knowledge of psychiatry.

The work of the Galton Eugenics Laboratory on this subject is favourably reviewed, as it is not open to the criticisms to which earlier investigations are.

Disease.

The relation of alcohol to disease is a vast subject to which, it is said, much and inaccurate literature has been devoted. The committee concedes that venereal disease is often the outcome of a degree of intoxication sufficient to blunt moral susceptibilities; but finds it impossible to estimate the exact importance of alcohol in this respect. When the sale of intoxicating liquors was prohibited during the recent general strike in Stockholm, there was no diminution in the number of fresh cases of venereal disease recorded in the hospitals and polyclinics. Possibly enforced idleness may have counterbalanced enforced sobriety, but no increase in venereal disease has been observed during other strikes when the normal sale of alcohol was unrestricted.

Control of the Sale of Alcoholic Beverages.

Sweden, on account of her association with the Gothenburg system, has commonly been regarded as the pioneer of sobriety and of the public control of alcohol. This is partly true. But the conditions under which the sale of alcohol now exists in Sweden are still far from perfect, and the committee's comments on this score are anything but flattering. Though Sweden's alcohol bill per head of population is only one-third of Italy's, yet the abuse of alcohol in the former country calls loudly for reform. It is an error to attempt to estimate the harm done by alcohol by taking the average consumption of alcohol by a nation as a guide to this nation's abuse of alcohol; Finland, whose consumption of alcohol per head of population is the lowest in Europe, is now contemplating total prohibition as the result of the alarming abuse of alcohol.

In Sweden the sale of highly intoxicating liquors is in the hands of the *Bolag*[2] and of the private individual. The Bolag's shareholders are entitled to a profit not exceeding 5 per cent., the rest being allocated mainly to the central government and the county councils. Local authorities

[1] Alkoholen och Samhället. Betänkande Angaaende de Samhällsskadliga Inflytanden Bruket af Rusdrycker Medför Jämte Förslag till Systematiska Aatgärder för Deras Bekämpande i Sverige. Paa Uppdrag af Svenska Läkaresällskapet. Afgifvet af Utsedda Kommitterade. Stockholm: Isaac Marcus' Boktr-aktiebolag. 1912.

[2] "Systembolag" or "Bolag" is the term applied to a company the profits and management of which are under public control. In Norway a similar institution is called a "Samlag," and in both countries a share of the profits is devoted to temperance work.

are accordingly tempted to ease the rates by facilitating the sale of intoxicants, and it is notorious that rival Bolags compete with each other in this respect. In Stockholm the sale of intoxicants on the premises of the Bolag's thirty public-houses is permitted only when food is also eaten, 10 öre's worth of food being an enforced adjunct to 8 öre's worth of alcohol. This restriction has increased the sale of alcohol off the premises, and banished drunkenness from the public-houses to the homes and alleys. This allegation is illustrated by the statement that the Bolag's sale of alcohol for consumption off the premises is five times as great as its sale of alcohol on the premises. The Bolags have, it is true, converted the old drinking dens into bright and airy eating-houses, but they have also done much to destroy the eating-houses where no alcohol is sold. The young unmarried workman, therefore, is driven to seek his meals in places where cheap and nourishing food is commonly sold with alcohol. The sale of beer is exclusively in the hands of private interests, and the sale of highly intoxicating liquors by private persons yields a profit proportional to the amount sold. The individual's interest in the promotion of the sale of alcohol is thus deplorably great. The State, too, receives large sums from the various duties on alcohol; and the revenue, central and local, from this source is about 45 million kronor a year.

Recommendations.

The choice of the alternatives—total prohibition or restrictive measures confined to the abuse of alcohol—is discussed fully by the committee, which favours the latter course. The influence of total prohibition on drunkenness is still largely a matter of conjecture. In the American States, where total prohibition has been attempted, the results are equivocal, and in Swedish Lapland total prohibition was so futile that the experiment was soon abandoned. To be effective, total prohibition must include a ban on the domestic production of alcoholic beverages for home consumption. Now a solution containing as much as 14 per cent. of alcohol can be made from a saturated solution of sugar; and Sweden yields a plentiful supply of fruit from which agreeable alcoholic beverages can easily be prepared. The readiness with which alcoholic beverages can be prepared, and the opportunities for making money by the illicit sale of alcohol are, in the committee's opinion, the greatest stumbling-blocks to the success of total prohibition. The trend of public opinion in Sweden is towards the sacrifice of individual susceptibilities for the common good. The enforcement of total prohibition would, however, interfere with the liberty of many a law-abiding citizen whose loyalty to his country's laws must be seriously strained unless he is firmly convinced of the necessity for the laws. It is not enough that a majority shall be in favour of total prohibition; the minority must also be convinced that, before their personal liberty is restricted, all other methods of dealing with the abuse of alcohol have been tried and found wanting. Such is not the case in Sweden, and the committee has accordingly outlined a scheme, the principles of which are: The elimination of private interests in the promotion of the sale of alcohol, the restriction of the sale of alcohol for consumption at home, and the adoption of stringent measures against the notorious drunkard. The establishment of central and local authorities to deal with the regulation of the trade in alcohol is also proposed.

A striking feature of the report is the attempt to classify the subjects of alcoholism by a method both scientific and practical. The classification is too complicated for discussion in this brief review, and it should be studied in the original, together with the supplementary report of 173 pages, in which detailed histories of patients illustrating the various types of alcoholism are given. So few English-speaking people, however, possess an adequate knowledge of Swedish that a translation of the whole report would probably be a useful work.

Views of Swedish Temperance Organizations.

The publication of the report has stimulated temperance organizations to issue statements to the public, and we are indebted to the Executive of the Temperance Legislation League in England for the following information as to a manifesto adopted by the Swedish Templar Order at its annual meeting this year.

The manifesto begins by maintaining "that no complete and rational solution of the temperance problem can be reached unless prohibition of intoxicants throughout the whole country be adopted," and claims that all that is said in the Medical Society's report as to the ravages of alcohol, etc., is one of the most powerful proofs of the propriety of the demand made by temperance reformers for "the definite winding-up of the drink traffic." Nevertheless, the Templar Order will in the future, as in the past, "willingly be a party to all practical and partial reforms, even if they are only directed against the grosser abuses and aim at bringing about a more effective control of the distribution of intoxicants." Such partial measures, however, in its emphatic opinion, "can only temporarily, or to a certain extent, limit and restrict the destructive operations of the drink traffic"; they cannot "completely avert the alcohol danger." For this reason the Templars hope that the Government and the Riksdag "will take speedy and effective measures" to carry out the prohibition of intoxicants in Sweden.

"Since, however," the manifesto continues, "the winding-up of the liquor traffic, in view of the economic conditions associated with it, demands a certain transition period, the Templar Order urges that during this transition period all such measures be undertaken as are calculated to limit and to mitigate the operations of the liquor trade in the most effective way." The list of measures which the Order particularly recommends is of special interest to members and supporters of the Temperance Legislation League, including as it does a frank recognition of the principle of disinterested management, and an extension of the principle to the sale of beer. The measures recommended are:

1. The freeing of the State, "landstings," agricultural societies, and "communes" from financial dependence upon liquor revenues—a proposal which, to judge by the recently published report of the Swedish Royal Commission which investigated the matter, is not, at present, practical politics.
2. "The detachment of private economic interests from the sale of intoxicants and stringent restrictions in respect of 'off' sales."
3. New conditions for the sale of beer [*lit.* "a transformation in the sale of beer"] "with the object of removing private economic interests from it, and of ordering it in such a way that to carry it on may not defeat the effect of the restrictions which control the sale of "bränvin"[8] [that is, the native spirit now under the control of disinterested management companies]."

In this connexion provision should, it is urged, be made for a definite allocation of the profits from the sale of beer and for a new scale of excise taxation proportioning the tax to the alcoholic strength of the beer, as well as for new legislation to control the manufacture of wine.

4. The immediate enactment of local veto and also of a district veto "built upon it." The effectiveness of local veto to be safeguarded by special provisions for effecting the right of sale by breweries, delivery, etc.
5. Legislation for inebriates, and
6. Systematic and vigorous temperance educational work, including regular instruction on the alcoholic question in all public educational institutions, camps, barracks, etc.

[8] *Bränvin.* In Norway, at any rate, this is the generic term applied to all alcoholic beverages of and above a certain strength.

At the meeting of the Royal Society on November 14th Dr. J. W. Cropper, M.Sc., described the development of a parasite of earthworms. Bodies had been found within some of the epithelial cells of the vesiculae seminales of the earthworm which closely resembled "Kurloff's bodies" found within the lymphocytes of guinea-pigs. By means of the jelly method of examination the development of these bodies into free spirochaetes had been demonstrated in the same way that it had recently been shown that "Kurloff's bodies" also became spirochaetes. It was suggested that these new parasites should be called *Spirochaeta lumbrici.*

THE International Congress of Physical Education will be held in Paris in March, 1913 (17th to 20th). The Congress is under the patronage of M. A. Fallières, President, and M. E. Loubet, ex-President, of the French Republic. A committee has been formed, with the support of the Académie des Sports and the Comité National des Sports, for the organization of the congress. Dr. Gilbert, professor of clinical medicine at the Hôtel-Dieu, is the chairman of this committee, and Professor Weiss, member of the Academy of Medicine, is the General Secretary.

LITERARY NOTES.

IN the JOURNAL of November 30th there appeared an article entitled, "Carlyle and Doctors." Reference was therein made to a letter to Syme. To this may be added another which appears in Miss Hutchison Stirling's recently published *Life* of her father (Dr. James Hutchison Stirling), pp. 57, 58. The letter is dated January 18th, 1842. Carlyle writes:

> Practically, my advice were very decidedly that you *kept* by medicine; that you resolved faithfully to learn it, on all sides of it, and make yourself in actual fact an Ἰατρὸς, a man that *could heal disease*. I am very serious in this . . . . A steady course of professional industry has ever been held the usefullest support for *mind* as well as body: I heartily agree with that. And often I have said, What profession is there equal in true nobleness to medicine? He that can abolish pain, relieve his fellow mortal from sickness, he is the indisputably usefullest of all men. Him savage and civilized will honour. He is in the right, be in the wrong who may. As a Lord Chancellor under one's horse-hair wig, there might be misgivings; still more perhaps as a Lord Primate, under one's cauliflower; but if I could heal disease, I should say to all men and angels without fear, "*En*, ecce!"

From the *Chronique Médicale* we learn that Professor Landouzy, on the occasion of the recent visit of the "V.E.M." (*Voyages d'Etudes Médicales*) to Vichy, dowered medical language with two new words. *Ville d'Eaux* (watering place) was glorified into "*hydropole*," and the gods of healing who minister at these shrines received the title of "*crénothérapeutes*" (Κρήνη, a well or spring). We commend these inventions of the etymological mind to the attention of the Balneological Society. Dr. Alquier, of Vichy, which he appropriately styles "*hépatopole*," has written some verses on the subject. The idea is worth developing. "Dr. So-and-So, Crenotherapeutist, of Podagropolis," would be impressive on a professional card. There might, of course, be some rivalry among the various watering places about the designation suitable for each.

The October number of *Science Progress* (John Murray) contains, among other communications, the third part of a paper on theories and problems of cancer by Dr. Charles Walker; the text of a contribution entitled, "The Relation of Mind and Body," by Dr. J. S. Haldane, to a discussion in the physiological section of the British Association meeting at Dundee; Professor E. A. Minchin's opening address in a discussion on the origin of life at a joint meeting of the botanical and zoological section of the same body; and a "chemist's fantasy" on the origin of life, by H. E. A., who might say, in a scientific sense, with the gentleman in the immortal lines—

> I care not a fig
> For Tory or Whig,
> But I sit in a bowl and kick round me.

This seems to be the fantastic chemist's attitude with regard to the philosophers who—without much success—sought at the meeting of the British Association to clear up the mystery of the origin of life.

We had something to say in a recent issue as to the connexion between genius or intellectual superiority and insanity, and we quoted a few instances. Here are some more. Alexander the Great was the offspring of "a woman of half wild blood, weird, visionary, and terrible," while his father Philip was drunken and sensual. Alexander himself is called by Johnson "Macedonia's madman." Joan the Mad was the mother of Charles V. Frederick William of Prussia, the father of Frederick the Great, was drunken, hypochondriac, eccentric, and brutal. His portrait as drawn even by the flattering hand of Carlyle is a picture of moral insanity. Byron's mother was half mad, his father dissolute and eccentric. The father of Beethoven was so renowned for his drunkenness that his death is said to have caused lamentation among the owners of wine-shops. Richelieu, Kant, Hegel, each had an insane sister. Baudelaire boasted that he came of a stock of idiots or madmen, who all died unnatural deaths: it must be borne in mind, however, that nothing delighted him so much as *épater le bourgeois*. Renan's paternal uncle and his grandfather were insane. Schopenhauer had a large number of mad folk in his ancestry. Shelley showed many signs of want of equilibrium. Lombroso in his *Man of Genius* gives innumerable instances, but his statements must be accepted with a large dose of salt as his mind was absolutely uncritical, and he found insanity wherever he looked for it. But many other examples may be found in Nisbet's book, *Genius and Insanity*, in Max Nordau's *Degeneration*, and in Arvède Barine's essays on pathological literature. The subject is excellently dealt with by Grasset in an address on intellectual superiority and neurosis, and is discussed in some of its aspects by Dr. C. J. Whitby in his book *Makers of Man*.

The *Journal of Pharmacology and Experimental Therapeutics*, as has already been stated in the JOURNAL, is now edited by Professor Abel of the Johns Hopkins University and Professor A. R. Cushny of University College, London. With them are associated a number of well-known therapeutic authorities. Great Britain is represented on the board of associated editors by Sir Lauder Brunton, Professor Cash of Aberdeen, Professor W. E. Dixon of Cambridge, Dr. J. A. Gunn of Oxford, Sir Thomas Fraser of Edinburgh, Professor J. N. Langley of Cambridge, Professor C. R. Marshall of St. Andrews, Mr. F. Ransom of London, and Dr. H. H. Dale of London. The periodical is published in England by the Cambridge University Press. The September number, which is the first of the fourth volume, contains the following papers:—Dr. D. E. Jackson: (1) The Pulmonary Action of Vanadium, together with a Study of the Peripheral Reactions to the Metal; (2) On the Production of Experimental Cephalic Coma; (3) The Pulmonary Action of the Adrenal Glands. Dr. Arthur B. Eisenbrey and Dr. Richard M. Pearce: A Study of the Action of the Heart in Anaphylactic Shock in the Dog. Dr. A. H. Ryan: Studies in Absorption of Drugs from the Gastric Mucous Membrane (I.) Strychnine Nitrate. Drs. H. H. Dale and P. P. Laidlaw: A Method of Standardizing Pituitary (Infundibular) Extracts. The *Journal of Pharmacology and Experimental Therapeutics*, which is issued bi-monthly, is excellently printed and well illustrated, and we think the publishers are justified in the feeling of confidence they express that now the ablest representatives of pharmacology in Great Britain have joined forces with their American and Canadian colleagues the journal will henceforth serve as the medium of publication for the best pharmacological researches made in English-speaking countries.

There can be no doubt that one of the greatest social reforms of the nineteenth century was the abolition of child labour. But although that blot has been removed from the face of English civilization, and children no longer work for sixteen hours a day in mines or factories, there is still much to be done to improve the condition of those who are forced to bring grist to the family mill at an age when they should be at school. Mr. W. Harwood, whose article on child labour appeared in the November number of *The Child*, gives a dismal picture of the evil effects of the "half-time" system, which is still prevalent in certain districts in the North. In different parts of Yorkshire, Lancashire, Cheshire, and Derbyshire many children, once they have passed their 12th birthday, are both wage earners and scholars, that is to say, they continue to go to school for a few hours every morning or afternoon, as the case may be, and spend the rest of the day working for a trifling wage in some big factory. The drawbacks of such a system are obvious. Not only have the "half-timers" a disturbing and in many cases a decidedly bad influence upon their schoolfellows, but they themselves deteriorate very quickly. The long hours in unhealthy surroundings, the strain of overwork, even the monotony of the work itself, soon react upon the sensitive organism of a child, and with the most deplorable results. Even the strongest and most intelligent boy or girl, after a few weeks of this unnatural existence, becomes listless and jaded both in mind and body; and much needless suffering and ill health, and even loss of life, often results from a pernicious system that stunts the growth and ruins the health of the child at the most critical period of its life. Another side of the problem of preserving the health of our school children is presented by Sir James Crichton-Browne in an article on school hygiene which also appeared in the November number of *The Child*; and Dr. John D'Ewart, in the same number, discusses the question of "School Infectivity." The contents of the November number likewise include an interesting account by Dr. A. Mackenzie Forbes of the Children's Memorial Hospital at Montreal, and a short sketch of the rescue work carried on by the Church Army Dispensary and Medical Mission is given by the honorary secretary, Miss Walker.

British Medical Journal.

SATURDAY, DECEMBER 7th, 1912.

THE TREATMENT OF SIMPLE FRACTURES.

One of the most interesting features of the Surgical Section of the Annual Meeting of the Association at Liverpool was the presentation of the Report of the Committee on the Treatment of Simple Fractures. The cordiality of its reception was due to the prompt recognition that it contains a mass of material of immense value, and that the work has been accomplished quickly and thoroughly and in an unbiassed scientific spirit. The obvious sincerity and complete unanimity of the complimentary remarks of the speakers must have been a matter of great satisfaction to the Chairman of the Committee, Mr. W. J. Greer, of Newport, and his colleagues, and we feel assured that the whole body of the profession will unite in its congratulations and thanks.

The reference from the Council of the Association to the Committee was: "To report on the ultimate results obtained in the treatment of simple fractures with or without operation." The Committee was appointed in February, 1911, and within a month the investigation was begun. It was decided to limit the inquiry to simple fractures of the long bones which occurred, or in which operations had been performed, in the period of five years from January, 1906, to December, 1910, inclusive, so that no patient should be examined until at least six months had elapsed since the commencement of treatment. The method of inquiry adopted was in the first place to appeal to hospital surgeons and other practitioners interested to afford facilities for examination of cases. Next, arrangements were made for conducting investigations in the hospitals of twelve of the largest cities in the country. These hospitals were visited on certain days by two or more members of the Committee, who examined the patients independently of the surgeon in charge. Every patient whose case forms a part of the report was seen and examined personally by at least one member of the Committee. An elaborate form of inquiry for each fracture was drawn up, asking for information pertinent to the inquiry—the nature of the force, the site, form, associated injuries, treatment, duration of stay in hospital, duration of absence from work, result of skiagraphy before and after treatment, nature of union, condition of muscles and nerves, and present and former wage-earning capacity. The report is based on 2,940 cases thus personally investigated. When we consider the difficulty of following up hospital patients, the exacting nature of the form of inquiry, the frequent omission of some or other detail in routine reports, the possible loss of skiagraphs, the large number of cases investigated, we cannot help feeling that this Committee's work has been well and truly done.

It was soon apparent to the Committee that as it limited itself to cases treated not later than December, 1910, the disproportion between operative and non-operative cases must be great. And so, as a matter of fact, it is. The investigators examined 2,596 cases treated by non-operative methods and 308 treated by operative methods. These latter are divided into "three classes: A—cases in which operation was decided upon at once and performed as soon as practicable; B—cases in which operation was performed on account of failure to obtain and maintain accurate apposition by means of external mechanical appliances; C—cases in which operation was performed for non-union, for deficient union, or for faulty union whether in progress or complete." In Class A are to be found only 147 cases. It will be readily understood, therefore, that the Committee appreciates the fact that "the operative material available within the years selected is so small that it is undesirable to attempt to draw any final conclusion from this material as to the relative value of operative and non-operative treatment. The results are given in comparable form for what they are worth, but the Committee wishes emphatically to state its opinion that the chief value of its report lies in data collected and analysed as to the result of non-operative treatment."

Not the least interesting and informing part of the report is found in the appendices. These are mainly short original accounts of well-known methods of treatment of simple fractures by some distinguished surgeons. Members of the Committee visited Antwerp, where they saw the work of M. Lambotte, and he has contributed an illustrated account of his operative treatment. In Paris M. Lucas-Championnière was visited, and his views on the treatment of fractures by massage and mobilization are expressed in a synopsis from his own pen. Mr. Arbuthnot Lane, the pioneer of the operative method in this country, also contributes a short account of his methods; while the extension methods of Steinmann and Bardenheuer are shortly described by these surgeons themselves.

The conclusions to which the Committee has come are wisely placed on the first page; they are thirteen in number, and the whole of the work converges on them. The results of non-operative treatment in children are on the whole so good that they are not likely to be improved upon materially by any other method of treatment. But in patients more than 15 years old the aggregate results are not so satisfactory, and as people get older the functional result of non-operative treatment progressively depreciates. This fact is not so marked in cases treated by immediate operation. The ideal to be aimed at is a good functional result. The anatomical result may be indifferent and the functional result good, but that does not mean that there should be slackness in endeavouring to achieve accurate anatomical reposition. The method of choice should be one which promises definitely a good anatomical result; the methods of mobilization and massage have not been found to secure a high percentage of good results. If operative treatment is to be adopted, it should be undertaken at once, and not as a consequence of failure of non-operative methods. It should aim at accurate apposition and alignment and absolute fixation of fragments; the imperfect fixation of fragments by wire or other suture is unsatisfactory. The Committee recognizes that while rigid asepsis is essential a certain proportion of cases will go wrong in spite of the best technique. It is desirable that such operations should be undertaken only by surgeons of skill and experience, and in unimpeachable surroundings. To surgeons and practitioners who are unable to resort to the operative method under such conditions the non-operative procedures are

likely to appeal for some time as more safe and serviceable.

The general trend of the conclusions is a moderately strong advocacy of the primary operative treatment of a very large proportion of simple fractures. This was perhaps more pronounced in the short speeches of several members of the Committee when the Report was first presented to the Surgical Section. It is of value, then, to those who hesitate and also to those who appear not to hesitate to accept the new position, to read what Mr. Robert Jones has to say on the matter in his Presidential Address to the Liverpool Medical Institution. Mr. Jones recognizes at once that the results of the non-operative treatment as disclosed in the investigation of these nearly 3,000 cases are not nearly so good as they should be. If we take the Committee's figures, we find that a good functional result, irrespective of anatomical result, has been obtained in only 70.4 per cent. of the cases. But he is confident that the problem is not merely to ask the question whether primary operation is to become the recognized routine, but rather, in the first place, to improve non-operative technique, and, in the next, to lay down laws for guidance when to operate primarily. Mr. Jones's long and large experience leads him to advocate "treatment of simple fractures of long bones" in some cases "by means modified from traditional methods, and to anticipate and prevent subsequent impairment of function"; in others he lays special stress on after-treatment; and in others, again, though a small minority, he states that better results are obtained by immediate operation. He thinks, therefore, that we must not bind ourselves down to any one method or become fixed disciples of the operative school, or the massage school, or the splint and extension school. He suggests that the principles governing the reduction of fractures and their correct fixation should be more carefully taught; that the value of steady, continued, fixed extension with the limb in a proper posture should be more appreciated; and that the textbook periods of allotted time for consolidation of a long bone after fracture should be revised, that is, lengthened, since yielding at the seat of fracture often appears after the case has passed out of the hands of the surgeon. By perfecting mechanical methods the necessity for operation will, he thinks, be greatly lessened, and surgeons should, he says, feel almost a sense of failure when the bone has to be exposed. The personal equation will count for much. The surgeon who is a good handicraftsman will not require to operate so frequently as one who has little patience and less art.

Mr. Jones searches deeply for first causes of the indifferent results of non-operative treatment. These are not to be found in non-operative treatment as such, but in the methods of applying it. The difference between 70.4 per cent. of good functional results by non-operative methods and 79.5 per cent. of good functional results by operative methods is not so very great. May not that difference of 9.1 per cent. be bridged over by improvement in non-operative procedures, by more patient attention from surgeons, by longer stay in hospital, by more fostering after-care? The Committee points out that much better results are to be looked for in the future by primary operative treatment, that that method is still in its infancy, while the non-operative method is "thoroughly established." Here Mr. Jones joins issue with the Committee. He thinks we have no right to say that anything in a progressive science is thoroughly established. We must extract the best that is in the old before we can stretch out our hands to grasp the new. But there can be no doubt that a world of good has resulted from the recent focussing of surgical light upon fractures and their treatment, though that illumination would have been feeble enough but for the help of the less figurative and physically more penetrating Roentgen rays. Whatever the future may hold as to one method of treatment or another, it probably will still be best to judge each case on its own merits, not for the injury alone, but with an eye to the occupation of the injured man and his future efficiency in that occupation.

THE "QUEEN OF WATERING PLACES."

The charms of Brighton are so great and manifold and it is so accessible that it may be confidently predicted that the Annual Meeting of the Association which is to be held there next July will attract an unusual number of members and visitors. Elsewhere will be found a sketch of its early history and its development from a fishing village to a small town periodically devastated by storms, and suffering from the ceaseless encroachments of the sea, its chief industry always threatened by the enterprise of rivals on the other side of the Channel and its shores exposed to invasion by foreign foes.

Whenever there was war between this country and France Brighton suffered. In 1545 the French landed there, hoping to find a footing in England. This led to the building of a fort called the Block-house, which long afterwards shared the fate of most of the buildings on the front and was washed away by the sea. In 1588 it was threatened by the Armada, but the town had then six large and ten small cannon, and the inhabitants prepared to fight in defence of their country. Apparently they had no opportunity of displaying their valour. In 1793 the fear of a French invasion led to the formation of a camp of 10,000 troops at Hove, and two new batteries were erected for the defence of the town. We mention these facts to show that Brighton had for centuries a hard struggle for existence against the elements and other hostile influences, a fact which makes its growth into a large and prosperous town all the more remarkable. Another thing which hindered its development was the badness of the Sussex roads. Writing in 1751 Dr. John Burton propounds the riddle, "Why comes it that the oxen, the swine, the women, and all other animals are so long-legged in Sussex?" And he suggests the answer in the further question, "Can it be from the difficulty of pulling the feet out of so much mud by the strength of the ankle so that the muscles become stretched, as it were, and the bones lengthened thereby?" When George IV made Brighton fashionable, the road between London and Brighton was greatly improved, and in 1821 there were forty coaches running daily to and from London, besides a vast number of private vehicles.

Brighton, however, owes its rise to prosperity to Dr. Richard Russell, whose book in praise of the virtues of sea water and whose success in the treatment of glandular and other diseases then and long afterwards called "scrofulous" brought wealth to the town and fame to himself. This almost forgotten physician is the true founder of Brighton as a health resort. George IV made it fashionable, but the inhabitants of London-on-Sea should not forget the debt they owe to the author of the *Dissertatio de Tabe Glandulari*, published in 1750, which

brought numerous patients to Brighthelmstone. Russell does not claim to have been the first to note the salutary effects of sea water and sea air; this was known to the ancients. But, as Sydney Smith says, it is not the man who first observes a thing, but he who calls it aloud so persistently that he gets people to listen to him, who is the real pioneer in a new territory of science. Brighton was already a growing place when, thirty years after the publication of Russell's book, followed up by those of Anthony Relhan and John Awsiter—both of whose names, it may be said in passing, are barbarously ill-used in the histories—invalids went thither in search of health. We find Johnson with the Thrales there as early as 1770. Some years later we gather from Fanny Burney that social pleasures were by no means lacking. But with the advent of the First Gentleman in Europe fashion gave it what Johnson himself might have called "potentialities of growing rich beyond the dreams of avarice."

The orgies of the Pavilion made decent people look askance at Brighton, but the town continued to thrive on its gambling, drinking, and debauched patrons. After the death of George, Brighton became respectable without ceasing to be fashionable. Thackeray is the *vates sacer* of early Victorian Brighton. He often refers to it, but we are sure readers will forgive us for quoting the description in *The Newcomes* which forms the opening of the ninth chapter:

"In Steyn Gardens, Brighton, the lodging-houses are among the most frequented in that city of lodging-houses. These mansions have bow windows in front, bulging out with gentle prominences and ornamented with neat verandahs from which you can behold the tide of human kind as it flows up and down the Steyn and that blue ocean over which Britannia is said to rule, stretching brightly away eastward and westward. The Chain Pier, as everybody knows, runs intrepidly into the sea which sometimes in fine weather bathes its feet with laughing wavelets, and anon on stormy days dashes over its side with roaring foam. Here for the sum of twopence you can go out to sea and pace this vast deck without need of a steward with a basin. You can watch the sun setting in splendour over Worthing, or illuminating with its rising glories the ups and downs of Rottingdean. You see the citizen with his family inveigled into the shallops of the mercenary native mariner, and fancy that the motion cannot be pleasant; and how the hirer of the boat, *otium et oppidi laudans rura sui*, haply sighs for ease, and prefers Richmond or Hampstead. You behold a hundred bathing machines put to sea and your naughty fancy depicts the beauties, splashing under their white awnings. Along the rippled sands (stay, are they rippled sands or shingley beach) the prawn boy seeks the delicious material of your breakfast—meal in London almost unknown, greedily devoured in Brighton. In yon vessels now nearing the shore, the sleepless mariner has ventured forth to seize the delicate whiting, the greedy and foolish mackerel and the homely sole. Hark to the twanging horn, it is the early coach going out to London. Your eye follows it, and rests on the pinnacles built by the beloved George. See the worn out London roué pacing the pier inhaling the sea air and casting furtive glances under the bonnets of the pretty girls who trot here before lessons! Mark the bilious lawyer escaped for a day from Pump Court and sniffing the fresh breezes before he goes back to breakfast, and a bag full of briefs at the Albion! See that pretty string of prattling school girls from the chubby cheek, flaxen-headed little maidon, just toddling by the side of the second teacher, to the arch damsel of fifteen, giggling and conscious of her beauty, whom Miss Griffin, the stern head governess, awfully reproves! See Tomkins with a telescope and marine-jacket; young Nathan and young Abrams, already bedizzened in jewellery and rivaling the sun in oriental splendour; yonder poor invalid crawling along in her chair; yonder jolly fat lady examining the Brighton pebbles (I actually once saw a lady buy one), and her children wondering at the sticking plaister portraits with gold hair and gold stocks, and prodigious high-heeled boots, miracles of art, and cheap at seven and six."

Elsewhere we read: "The Countess of Kew loved Brighton, and preferred living there even when Londoners find such special charms in their own city. London, after Easter, the old lady said, was intolerable. Pleasure then becomes a business so oppressive that all good company is destroyed by it. Half the men are sick with the feasts which they eat day after day. The women are thinking of the half-dozen parties they have to go to in the course of the night. The young girls are thinking of their partners and their toilettes. Intimacy becomes impossible, and quiet enjoyment of life. On the other hand, the crowd of bourgeois has not invaded Brighton. The drive is not blocked up by flys full of stockbrokers' wives and children, and you can take the air in your chair upon the Chain Pier without being stifled by the cigars of the odious shop boys from London." So Lady Kew's name was usually among the earliest which the Brighton newspapers recorded among the arrivals.

Thackeray, too, evidently loved the place; it was he who called it "kind, cheerful, merry Doctor Brighton." "Hail," he cries in a burst of enthusiasm, "thou purveyor of shrimps and honest prescriber of Southdown mutton. There is no mutton so good as Brighton mutton. No flys so pleasant as Brighton flys, nor any cliffs so pleasant to ride on." The day of flys is long past. The railway was opened in 1841, and now the London citizen can travel up in luxury to his business and get home comfortably in time for dinner. There is also, of course, the motor, which if it has not yet annihilated time and space according to the prayer of the lovesick poet has singularly simplified travelling about the country. Coaches still run between London and Brighton in the summer, but these are not like the old coaches in which the whole drama of courtship with the strictest observance of the unities could be enacted in one journey.

Brighton is indeed changed out of all recognition from the "poore village in Sussex called Bright Helmston" which it was in 1515. Its population was at the last census 131,250. This number, of course, is very largely increased by visitors who flock there during the season. The fashionable season extends from October to about February; but apart from the "Sussex Fortnight" in July and August, the Goodwood and other races, there are several distinct seasons, which together extend over the greater part of the year. But Brighton is not a mere haunt of the "idle rich." William Black, who so loved the wild scenery of the islands of his native land, retired there, as he found inspiration in the fishing villages near it, the country folk, the multitudinous sea with its ever-changing aspects and its atmosphere, which, he said, "promoted meditation, and was fruitful of noble thought." Herbert Spencer spent the closing days of his life there, and the number of men of letters and science, artists and philosophers who place themselves under the care of "Doctor Brighton" is beyond computation.

ANTIVIVISECTIONISTS IN SCOTLAND.

IT was in accordance with the fitness of things that Dr. Hadwen's campaign in Scotland should give rise to demonstrations by rival agitators. On November 25th Mr. Stephen Coleridge, as fugleman of the National Antivivisection Society, delivered an address at Edinburgh. A discussion in which Dr. Berry Hart took part followed, and there seems to have been a good deal of plain speaking. Mr. Coleridge, as usual, took up the position of Falstaff, "I deny your *major*." He asserted that no good had come of cancer research, and refused to acknowledge that the discovery of antitoxin for diphtheria, tuberculin for phthisis, and antityphoid inoculation were the result of vivisection experiments. Apparently, in his opinion, they came to their discoverers by intuition, as Minerva sprang full armed from the head of Jupiter. It was stated by Mr. Stone that the Royal Commission had gone "as far as might have been expected" in support of the suggestions of Mr. Coleridge's society. Mr. Coleridge and his society are easily satisfied. Before the Commission Mr. Coleridge made a number of charges against the officials responsible for the administration of the Act almost as long as Zola's famous *J'accuse* in the Dreyfus case. The comment of the Commissioners is crushing. They say (p. 14): "These twelve charges of Mr. Coleridge's are the outcome of a ten years' investigation of the administration of the Act by the Department, conducted by an acute and indefatigable critic, supported, as he told us, with ample funds. We have indicated the points on which we think that the administration of the Home Office may be open to criticism, but we are of opinion that, on the whole, the working of the Act has been performed with a desire faithfully to carry out the objects which its framers had in view." Mr. Coleridge's bill, which those present were invited to support, does not explicitly provide for the abolition of vivisection, but by hedging it about with so many restrictions as to make experiments on living animals practically impossible, the bill—*si qua fata aspera rumpat* of parliamentary gestation—would strangle it, *tout doucement*, as Ambroise Paré would have said, with red tape. On November 26th Miss Lind-af-Hageby delivered an address at Glasgow. According to a report published in the *Glasgow Herald* of November 27th, she said there were two points to be specially considered in connexion with the question of vivisection—first, Was it right or wrong? secondly, What had vivisection done in the cause of science? Even supposing it were possible (which antivivisectionists denied) to alleviate human suffering and to prolong human life as a result of these experiments, that did not alter the fact that it was ethically wrong. It was said that the antivivisectionists grounded their arguments merely on sentiment, but sentiment was at the root of all the great things of life. The findings of the Royal Commission had, she said, all been in favour of greater restrictions. Regarding the experiments on animals, 95 per cent., she said, were performed without an anaesthetic. She cited cases in which animals had been kept alive for weeks or months after being operated on, and referred to the fact that dogs and other beasts were sometimes experimented on several times before being finally destroyed. This philanthropic lady does not seem to have deemed it necessary to explain that of the experiments done without an anaesthetic the vast majority were inoculations. We may also remind Miss Lind-af-Hageby that in regard to two of the experiments witnessed by her, and described in the book entitled *Shambles of Science*, the Commissioners came to the conclusion that she had misapprehended what had occurred. In view of the fact that some of the antivivisectionists show a disposition to insinuate that the Report of the Commission was in favour of their cause, it may not be out of place to quote once more the conclusions come to on the whole subject after an elaborate analysis of the evidence. These are as follows (p. 47): "(1) That certain results, claimed from time to time to have been proved by experiments upon living animals and alleged to have been beneficial in preventing or curing disease, have, on further investigation and experience, been found to be fallacious or useless. (2) That, notwithstanding such failures, valuable knowledge has been acquired in regard to physiological processes and the causation of disease, and that useful methods for the prevention, cure, and treatment of certain diseases have resulted from experimental investigations upon living animals. (3) That, as far as we can judge, it is highly improbable that, without experiments made on animals, mankind would at the present time have been in possession of such knowledge. (4) That, in so far as disease has been successfully prevented or its mortality reduced, suffering has been diminished in man and in lower animals. (5) That there is ground for believing that similar methods of investigation, if pursued in the future, will be attended with similar results." The Commission further stated (p. 57): "After full consideration we are led to the conclusion that experiments upon animals, adequately safeguarded by law, are morally justifiable, and should not be prohibited by legislation."

AMERICAN SURGICAL CONGRESS.

THE third annual meeting of the Clinical Congress of Surgeons of North America was held in New York from November 11th to the 16th, under the presidency of Dr. Edward Martin, of Philadelphia. Among the guests was Mr. Arbuthnot Lane. The work of the congress ranged over almost the whole ground of surgery. Dr. Martin took as the subject of his presidential address the surgery of the liver. Dr. W. J. Mayo discussed the surgery of the spleen. Dr. Abraham Jacobi, who was called upon as President of the American Medical Association, spoke of the standardization of medicine through the efforts of the congress and the association. He described the progress of surgery in an epigram: A decade ago it meant cutting; now it meant conservation. Dr. Crile gave an address on anaesthesia and "anoci-association," which, he said, meant the absence of harmful association, such as fear of the operation on the part of the patient. This exclusion of harmful association (we quote from the *New York Medical Journal*) was accomplished by putting to sleep all those cells which responded to the effect of general anaesthesia. Some of the brain cells, however, were not affected by the general anaesthetic, and it was the effect of the shock on these cells which produced a disastrous effect on the patient. This effect Dr. Crile proposed to prevent by blocking off sensation from the areas in the field of operation by the use of local anaesthesia. He first anaesthetized the patient with ether or nitrous oxide, and then introduced a local anaesthetic along the nerves leading from the operative field to the brain. As local anaesthetics he used novocain and quinine and urea-hydrochloride. Observations of a large number of cases showed that the temperature and pulse-rate of the patient generally rose the day before admission to the hospital. Both temperature and pulse-rate also rose after operation, this rise constituting what was termed "post-operative fever"; this, Dr. Crile was convinced, was purely a neurological creation. He said that one of the essential elements in anoci-association was the attention to every detail connected with the comfort of the patient. This involved a larger hospital force, a larger number of nurses, and greater individual care of the patient. It might be objected that the mere comfort of the patient was a secondary matter, but statistics showed that comfort was an important item in the power for the resistance of the disease. At the Lakeside Hospital the deaths under anaesthesia in 1898, under the ordinary methods, were over 6 per cent. in the first thousand cases. In the last thousand cases anaesthetized

under anoci-association the deaths amounted to 1.5 per cent., though the death-rate of all cases in the hospital was 2.5 per cent. The harmful effects of anaesthesia were due to trauma of the brain cells from shock conveyed to those cells not affected by the general anaesthetic. This trauma could be obviated by blocking the pathway of sensation from the field of operation to the brain. This was an essential element of the procedure. Nitrous oxide was to be preferred to ether for the reason that the former did not oxidize the brain cells with which it was brought into contact, as did the ether. He urged the adoption of this method to reduce both the morbidity and the mortality. Dr. C. H. Frazier, of Pennsylvania, in a paper on the surgery of the spinal column, said operation on the cord gave hope of good results in the removal of tumours. He described a case of vesical paralysis which had been much helped by the performance of an end-to-end anastomosis of the third ventral and the first lumbar roots. This was, he believed, the first application of the idea to man, though Hilmington had made an experiment on the last lumbar and the second and third sacral roots in dogs. The results of that experiment were hopeful, but there had been no histological study of the final results of the operation. Mr Arbuthnot Lane read a paper on chronic intestinal stasis, which he defined as a "delay in the transmission of the intestinal contents independent of whether it is accompanied by constipation or not." He considered the intestinal tract as a living sewerage system. Some portions were inhabited by bacteria which became harmful only when through some fault in the sewerage system they passed out of their normal habitat, infecting other organs which they sometimes even reached by entering the blood stream, from which they might affect organs not in direct contact with their original habitat. Stasis produced discoloration of the skin, and was a frequent cause of serious nervous affections. He cited one case of tic douloureux sent to him for excision of the ganglion; he short-circuited the intestine instead, with the result that all pain ceased after eight days. Degeneration of the breast, not infrequently ending in cancer, was often due to intestinal stasis. He did not believe that cancer could occur in the abdominal viscera except when there was stasis. He referred to cases of exophthalmic goitre which had been completely relieved by ileo-colostomy. The congress, which was attended by more than two thousand surgeons, passed two resolutions—namely, that the lay press should be invited to make public as often as possible information as to the signs of incipient cancer in women; and that every practitioner should be compelled to obtain a special degree certifying his competence as a surgeon before he was permitted to perform surgical operations. The standard of efficiency was to be set by national legislation.

ROYAL COMMISSION ON SEWAGE DISPOSAL.

The Royal Commission on Sewage Disposal, which was appointed in 1898, has issued its eighth report,[1] which deals with the question of the standards to be applied to sewage and sewage effluents discharging into rivers and streams and the tests which should be used in determining those standards. In the next and final report of the Commission there will be considered the methods of disposal not involving water carriage and the standards in regard to trade effluents. The Commissioners consider that the most delicate chemical index of recent sewage pollution of a river water is to be found in the amount of ammoniacal nitrogen present. But while this determination may be relied on to show very small differences in degree of existing pollution, it is not equally reliable in indicating the character of the pollution as shown by the effect which the discharge of a given sewage liquor is likely to have upon the stream. It was found that the tests which were based on the rate and degree of absorption of oxygen were the most trustworthy tests for determining whether nuisance was or was not likely to be caused by the discharge into a stream of a normal sewage or effluent. After discussing the relative merits of tests for estimating the amount of oxygen absorbed, the Commissioners express a preference for that which estimates the amount of dissolved oxygen taken up in five days rather than that involving the amount of oxygen absorbed from permanganate in four hours, although they admit that the latter has the advantage of being more speedily determined and somewhat easier to work. It is recommended, therefore, that the dissolved oxygen absorption test should be adopted for the purposes of a standard. The conclusion drawn from a long series of experiments is that if 100,000 c.cm. of river water do not normally take up more than 0.4 gram of dissolved oxygen in five days, the river will ordinarily be free from signs of pollution, and that if a river water normally gives a higher figure than this it will almost certainly show signs of pollution, except perhaps in very cold weather. There may be circumstances in which sewage, either partially treated or not treated at all in the accepted sense, may properly be discharged into streams or rivers. Claims for a relaxed standard may, in the opinion of the Commissioners, be entertained when it can be shown that a particular river water is of such quality and volume that when mixed with a sewage or sewage liquor of known or calculated strength and volume, it does not or would not take up more than 0.4 part per 100,000 of dissolved oxygen in five days, and where there is reason to suppose, or when it can be shown, that the river will receive no further pollution until it has recovered itself so far as not to take up in five days an amount of dissolved oxygen much in excess of that which it took up before receiving the first discharge. The chief factor to be considered in fixing any special standard is the dilution to be afforded by the stream.

[1] Eighth Report of the Commissioners appointed to inquire and report what methods of treating and disposing of sewage may properly be adopted by [illegible] and what tests for purity and sewage effluents should be [illegible]. (Cd. [illegible])

THE SOCIETY OF APOTHECARIES.

In accordance with established custom the Worshipful Society of Apothecaries, on November 29th, entertained at dinner the new Lord Mayor of the City of London and his sheriffs. The society itself was officially represented by its Master for the present year, Dr. W. Bramley Taylor, who since his retirement from practice in Camberwell has been living in Weybridge, and by its senior and junior Wardens, Dr. Martindale Ward of Sutton, and Dr. Meredith Townsend of Kensington. The two Royal Colleges and the Medical Society of London were also officially represented among the guests, while a large number of well-known medical men were present, either in the latter capacity or as hosts. In responding to the toast to himself, his colleagues, and the Corporation of the City of London, the Lord Mayor (Sir David Burnett) dwelt upon the close association of the medical profession with the work of the Lord Mayor of London; it was commonly through medical men that the large sums collected by Mansion House appeals were put to their intended purposes, and medical men played the chief executive part in the work of the Corporation in guarding the country against epidemic invasion by way of the Thames. The toast to the two royal colleges was proposed by the Senior Warden, who described them as having played the useful part expected of them in connexion with the opposition to Mr. Lloyd George's original proposals as to the medical clauses of the National Insurance Act. The toast was acknowledged first by Dr. Frederick Taylor, on behalf of the absent President of the College of Physicians, and on behalf of the College of Surgeons by Sir Rickman Godlee, who in the course of his remarks alluded to the claim of certain members of

the Royal College of Surgeons to take part in the election of the council of that body. It was true that in the aggregate members of the College contributed a large sum to its funds, but individually it was not an annual payment, but merely the cost of their examination and diploma. Strictly speaking, the council was not a governing body, and it should not commonly play a prominent part in medico-political connexions; nor, indeed, could it well do so, since it was fully occupied with its primary duties—namely, the safeguarding of the portals of the profession by holding proper examinations and the care of its library and the largest museum of a medical kind in the world. As for the National Insurance Act, it seemed to the speaker that insurance should not be both compulsory and contributory. Probably it would sooner or later become non-contributory, and in that case the medical profession would be in the hands of the State only. Meantime it was in the hands of the friendly societies, for, despite the fact that Mr. Lloyd George had at first recognized the objections of the profession to that position, he had subsequently raised the number of representatives of the insured to such an extent as practically to reproduce the original condition. An alteration of this arrangement was, perhaps, the most important point to which the speaker and his colleagues should attend. The toast to the Society was proposed by Sir Watson Cheyne, President of the Medical Society of London, who first supplied a kind of Mark Twain history of the rise of the three corporate medical institutions of London and their early relations, and then, adopting a more serious tone, expressed a belief that if ever a one-portal system were established (the specialized bodies limiting themselves to the granting of higher diplomas and degrees) the Society of Apothecaries would certainly play an important part in the arrangement. In acknowledging the toast, Dr. Bramley Taylor pointed out that the Society, though it originally depended upon general practitioners as examiners, had for many years past caused all candidates for its licence to be examined by members of the teaching staffs of the great hospitals and schools. The character of its licence had also changed, since it now covered not only the work denoted by the word "apothecary," but also medicine, surgery, and midwifery.

PHARMACOLOGY INSTITUTE, UNIVERSITY COLLEGE.

THE new Pharmacology Institute at University College, an illustrated description of which appeared in the JOURNAL of November 30th, was formally opened on Wednesday, December 4th, by Sir Thomas Barlow. Lord Reay presided, and among those present were the Vice-Chancellor of the University of London (Dr. W. P. Herringham), the Principal (Sir Henry A. Miers), the Provost of the College (Dr. T. Gregory Foster), the Dean of the Faculty of Medicine (Sir Alfred Pearce Gould), the Dean of the College Faculty of Medical Sciences (Professor G. D. Thane), the Dean of the College Faculty of Science (Professor J. P. Hill), the Professor of General and Inorganic Chemistry (Sir William Ramsay), the Jodrell Professor of Physiology (Dr. E. H. Starling), the architect (Professor F. M. Simpson), the Professor of Pharmacology (Dr. A. R. Cushny), the Professor of General Physiology (Dr. W. M. Bayliss), the Professor of Pathological Chemistry (Dr. Vaughan Harley), the Chadwick Professor of Hygiene and Public Health (Dr. H. R. Kenwood), Sir John Rose Bradford, Sir William Church, Sir George Savage, Sir John Broadbent, Dr. Sidney Martin, Professor Bradbury, and Dr. F. W. Mott. The proceedings began with a speech by Lord Reay, in which he traced the evolution of the College as an integral part of the University of London during the last five years. The Institute of Physiology and the new Institute of Pharmacology, he said, were parts of a great scheme for the development of the College, in which, among other new buildings, there were to be a new chemical laboratory and a new anatomical institute. He stated that he was now at liberty to announce that the name of the anonymous benefactor who gave £50,000 for the removal of the school to Hampstead, which left room for the expansion of the College and made it possible for it to be incorporated in the University of London, was Mr. Gwyn Evans. Sir Thomas Barlow, in declaring the laboratories open, contrasted the study of drugs as it was in his student days with the great opportunities now afforded by the laboratories. He dwelt particularly on the combination of lecture-room and laboratory—a combination which enabled the student to see the effects of drugs for himself and to witness experimental demonstrations of the actions of drugs. He made an amusing reference to the way in which the profession had recently been lectured by journalistic oracles on its attitude towards quacks, and showed what an amount of precise scientific knowledge was required to determine the therapeutic effect of a remedy. The Vice-Chancellor moved a resolution of thanks to Mr. Andrew Carnegie for his generosity in providing the funds for the building of the new pharmacology laboratories. This was seconded by Professor Cushny, who stated that this was the first laboratory of the kind erected by the generosity of a private donor in this country. A vote of thanks to Sir Thomas Barlow was moved by Sir Henry Miers and seconded by Professor Thane. The laboratories were then opened to the inspection of the visitors.

QUACK MEDICINES IN AUSTRALASIA.

WE learn from the *Australasian Medical Gazette* (October 26th) that, in reply to a question, the Minister of Customs stated in the House of Representatives that seven prohibitions of "quack medicines" had been made by the Commonwealth Government during the past twelve months, in some instances in consequence of palpably misleading claims as to the efficacy of the compound, and in others because of the nature of the preparations themselves. In addition, objections had been taken to the claims practically of omnipotency accompanying 230 nostrums of various kinds, and makers had been warned that "such extravagant claims must be deleted." It was understood that some goods the importation of which was objected to were manufactured in the Commonwealth. A perusal of local advertisements showed that extravagant claims were put forth which would not be permitted in connexion with printed matter accompanying imported medicines. The Customs Department had at present no power to exercise supervision over the local manufacture or advertising of goods. It is quite clear, says our contemporary, that such power must be given sooner or later. It is absurd to prohibit the importation of quack rubbish and to allow the local manufacturer of worthless but expensive nostrums to go unchecked.

A PLEA FOR THE PIGTAIL.

DR. BUDBERG has sent from Charbin[1] a defence of the Chinese pigtail—an appendage which the progress of European civilization now threatens with extinction. He maintains that the pigtail, like many other national customs, owed its origin to hygienic motives, and in one aspect formed the basis of China's ancient civilization. He assures us that the effect of the pigtail is a more active circulation of the blood, which benefits the brain. He writes: "The observation we hear now and then that Chinese without pigtails show less intelligence strikes me as not altogether unreasonable, as an active circulation of the blood will not fail to influence the nourishment and development of the brain." He relates how the Chinese give special care to the head even of a newly-born baby, and how it is shaved, and no cloth, cap, or soft pillow is allowed to interfere with the circulation of the scalp. When the child grows bigger, the hair is tied together in

[1] *Deut. med. Woch.*, No. 30.

bunches, so as to expose the skin to the air, and thus promote perspiration. Later the hair is grown so as to form a pigtail, and superfluous hair is shaved away. The effect of the pigtail is a high and smooth forehead, and a face free from wrinkles; and so even old Chinese show smooth faces and a juvenile appearance. When rolled up on the top of the head, the pigtail acts as a substitute for a cap, and protects the head from the glare of the summer sun and the cold of winter. It also serves as a neckcloth and a pillow. As a cord, it is ever at hand to check haemorrhage. In addition to these virtues, the author attributes to it an inner and a moral meaning, for it is the symbol of the common nationality of 400 millions of people. Thus have Europeans, in dread of the power of China, adopted a method of protection by enticing the Chinese to become Europeans, and cut their pigtails off. This is the opinion of a European who, as we see, is more Chinese than John Chinaman himself. He neglects to remind us that the pigtail was only introduced by the Manchus somewhere about the middle of the seventeenth century of the Christian era, although it seems to be the fact that at an earlier date Chinese men let their hair grow long, and gathered it into a knot at the top. Still it remains for Dr. Budberg to convince us that the European Delilah is really devising the ruin of the Chinese Samson by tonsorial methods.

THE ROYAL SOCIETY.

At the anniversary of the Royal Society, on November 30th, the officers nominated by the Council were elected. The report stated that this year the Government grants for scientific investigations amounted to £3,458. At the anniversary dinner in the evening the toast of the society was proposed by Sir Rickman Godlee, President of the Royal College of Surgeons, who recalled the fact that, of the presidents of the Royal Society, five had been members of the medical profession and three Fellows of the College he represented. The medical presidents were Sir Hans Sloane (1727), Sir John Pringle (1772), an authority on military medicine and hygiene, Sir Benjamin Brodie (1858), Professor Huxley (1883), and Lord Lister (1895). The investigations in physics, chemistry, and biology recorded in the transactions of the society had, he said, enabled medical science to outgrow the empirical condition which had led Pringle to assert that plague could only be transmitted by the air and had induced the French to build earthworks as a protection against it. The President, in his reply, referred to the celebration last summer of the 250th anniversary of the society, which had been attended by cosmopolitan representatives of learning and science, and had been commemorated by a volume containing the addresses delivered at the anniversary and by the reproduction in facsimile of the signatures to the first charter. In conclusion, he said that the society was not a wealthy corporation, but had carefully to husband its resources, and he therefore appealed to rich men to put the society in a stronger position to maintain and extend its efforts for the advancement of science. Before sitting down he called upon the new German Ambassador, who responded by a speech which has been widely reported in the press. The toast of "The Guests" was acknowledged by Professor Metchnikoff, of the Pasteur Institute, Paris, who said that the distinctions awarded by the Royal Society were everywhere recognized as expressing an independent and impartial judgement. He concluded by thanking the society for the honour it had done him by electing him to be a foreign member.

GOSPEL OF HEALTH ON THE STAGE.

It is almost universally acknowledged, save by the few who regard the theatre as a special hunting ground of the Evil One, that the stage, when necessary, can prove invaluable as a means of propaganda. The mediæval mystery plays were designed to bring home to their unlettered audiences the moral truths they had heard expounded in the pulpit; and similar methods are still employed by those who wish to gain a hearing from their fellow men. The latest attempt to popularize scientific doctrine in this fashion has been made by those votaries of modern hygiene who have at heart the extermination of tuberculosis; hence the production of a very pretty play by Florence Eaton and William Crossing, which was performed at the Court Theatre in the afternoon of November 27th, under the auspices of the Women's National Health Association of Ireland and the Women's Imperial Health Association. The scene of "The Triumph" (which is founded on Mrs. Eaton's book, *The White Demon*, is laid in an Irish village, where the Widow Murphy lies dying of consumption in her squalid cabin, and the demon Tuberculosis and his attendant imps are rejoicing over this addition to their long list of victims. Their hopes are dashed, however, by the timely intervention of the "good people" who take pity on the plight of the luckless Murphys, and teach them how to safeguard themselves from the attacks of the insidious enemy. They preach the gospel of fresh air, good food, and cleanliness as the royal road to health; and the play ends happily with the overthrow of disease by the spirits of Knowledge, Common-Sense, and their companions, headed by the life-giving Sunshine, and the restoration of the sick mother to health and to the arms of her rejoicing children. The play, which was very well received, was prettily staged and acted, the Irish parts, in particular, being delightfully played by well-known Irish actors. It was preceded by a prologue spoken by Miss Irene Vanbrugh, and witnessed by a large audience, which included the Earl and Countess of Aberdeen and several other well-known persons. The stage has been so frequently used to ridicule doctors and to propagate errors as to the healing art that we welcome this effort to make the stage a means of bringing the gospel of health home to the minds of the people.

DR. LATIMER OF SWANSEA.

The Swansea Division of the British Medical Association took the opportunity of Dr. Latimer's retirement from active practice in Swansea, where he has resided for forty-one years, to present him with a silver bowl. Mrs. Latimer was presented with an inlaid mahogany bureau. The presentation was made at a dinner, where expression was given to the respect and confidence which Dr. Latimer had earned during his long life of activity in Swansea. The hope was expressed that he would long live to enjoy his retirement to Tunbridge Wells, and would be able to continue his usefulness to the profession as the direct representative of Wales on the General Medical Council.

Surgeon-General Sir Anthony Dickson Home, V.C., whose interesting memoirs were reviewed in the Journal of July 27th, entered on his 87th year on November 30th.

It is announced that Mr. Austen Chamberlain has received intimation from the Governor of Mauritius that £200 has been voted by the Legislative Council as a contribution towards the fund which he is raising for the London School of Tropical Medicine. The fund has now reached £50,000.

The Royal Dental Hospital of London gave a clinical "At home" on November 23rd, the arrangements including demonstrations of the work done in its mechanical laboratory and x-ray department and histological exhibitions. There were also in attendance a number of patients whose cases typically illustrated the remedial treatment of different forms of dental disorder, including pyorrhœa alveolaris, as a cause of arthritis.

National Insurance Act.

THE REPLY OF THE GOVERNMENT.

THE Memorandum attached to the report of the Council to the Divisions published in the SUPPLEMENT this week is the reply of the Chancellor of the Exchequer to the observations made to him on behalf of the British Medical Association by the five representatives chosen by the Representative Meeting on November 20th.

The Memorandum is to be taken as expressing the final considered decision of the Government on matters which have been in controversy between it and the British Medical Association and the medical profession.

MATERIALS FOR JUDGEMENT.

The alterations in the terms and conditions of service to be rendered under medical benefit set out in the speech of the Chancellor of the Exchequer to the remaining members of the Advisory Committee on October 23rd, and in the Memorandum now published, have involved a revision of the Regulations, and the revised text is published in the SUPPLEMENT. For the full understanding of the alterations, and of the methods which the Insurance Commissioners propose to follow in order to bring medical benefit into force, certain other documents must also be studied. The first is a circular letter from the Insurance Commissioners to Insurance Committees explaining the administration of medical benefit, and making plainer certain matters as to the proposed working of the Regulations which are not easily discoverable from the perusal of the Regulations themselves. The second and third are model forms of agreement which an Insurance Committee might use with the doctors in its area on the capitation basis and on the payment by attendance basis respectively. The fourth is a model letter of invitation from an Insurance Committee to the doctors in its area to apply to be placed on the panel. All these documents are published in the SUPPLEMENT.

It is the bounden duty of every medical man in his own interest, and in the interest of his successors in the profession, and of its future welfare, to study carefully for himself the exact terms in which the answers and decisions of the Government are expressed in the Memorandum, the appended documents, and in the revised Regulations. The following paragraphs are designed only to serve as a general introduction, and do not profess to deal with all the points that arise.

The Government accepts some of the demands, refuses some, and with regard to others states that the terms of the Act render their acceptance impossible without an amending Act, or that they are matters to be adjusted locally by the Insurance Committees.

WHAT DOES MEDICAL BENEFIT INCLUDE?

The question what medical services are and what are not included in the term "medical benefit" was sought to be solved by asking the Government to state the services which an insured person would not be entitled to receive. The answer is that the point is to be determined by the terms of the agreement into which a practitioner on the panel would enter with the Insurance Committee. This, as set out in the first schedule to the Regulations, is such treatment as in the best interest of the patients can properly be undertaken by practitioners of ordinary professional competence and skill. The insured person would not be entitled to demand from any member of the panel services beyond those which every member of the panel might reasonably be expected to give.

Certain medical services fall within the Act; certain others are outside it. Those which are within the Act are such as can properly be undertaken by a practitioner of ordinary competence and skill. Those which are outside the Act are such as require special skill. The criterion is not the amount of time or anxiety involved, but the amount of skill necessary.

Such operations as the general practitioner can be reasonably expected to perform—operations not accounted major operations—and the administration of anaesthetics for the purpose of such operations, the non-operative treatment of fractures, attendance on miscarriages and abortions, the treatment of diseases due to personal misconduct, and visits, such as night visits and special visits which entail extra trouble, would be included among the services to be rendered under medical benefit, and would not carry any extra remuneration. That is to say, they would have to be rendered under the agreement with the Insurance Committee out of the fund formed in the area by the inclusive payment of 6s. 6d. a head of insured persons. The fund might be distributed among the practitioners on the panel of the area in one of the several ways noted below.

WHAT MEDICAL BENEFIT DOES NOT INCLUDE.

Medical benefit does not include major operations; and as an indication of what is intended by the term "major operations" the Memorandum instances trephining, laparotomy, operative treatment of fractures, amputations of limbs, and any operation requiring assistance, in the operation, of any additional medical practitioner besides the operator and the anaesthetist.

If a practitioner on the panel deemed an operation requiring special surgical skill necessary, his professional duty to his patient would preclude him from undertaking the operation when the circumstances were such that special surgical skill was available. In an urgent case where the services of a surgeon of special skill could not be obtained it would be the duty of the practitioner on the panel to undertake the operation without any extra fee. If, however, a practitioner on the panel were possessed of special skill, he would not be under an obligation to perform a special operation, except in emergency, as part of his ordinary attendance on a patient. If a dispute arose the medical practitioner would be entitled to refer the matter to the Local Medical Committee, and that Committee or the Insurance Committee would have power to refer the matter to a court of referees.

consisting of medical men and lawyers, to be set up for the purpose by the Government.

Diagnosis by means of the *x* rays, and pathological and bacteriological investigations, would not be services included in medical benefit. Such services must be provided in some way outside the system set up by the Insurance Act and must be paid for from some other source than the fund provided to defray the cost of medical benefit. Institutional treatment is not provided under the Act, except in respect of tuberculous patients admitted to sanatoriums.

Remuneration.

Stated generally, the amount of remuneration for medical services of all the medical practitioners on the panel in any area would be at the rate of 6s. 6d. for each insured person for a full year; but, save where a capitation system pure and simple was in force, the sum received by an individual practitioner in respect of each insured person might be less or might be more than 6s. 6d. If the insured person's name were only on the practitioner's list for less than a year, the payment would be reduced in proportion. If, for example, an insured person went to the seaside for a month and took the precaution to have his name transferred, his home doctor would only receive eleven-twelfths of 6s. 6d. Similarly, if an insured person removed from one place to another within the area of the same Insurance Committee, that Committee would make an adjustment between the practitioners on the panel of the different places affected.

The statement with regard to the remuneration to be paid for medical benefit makes it quite clear that, leaving out of account a possible addition which cannot exceed 6d. a head per annum from the floating drug fund, and the proposed capitation fee of 6d. for the treatment of insured persons suffering from tuberculosis, the amount of 6s. 6d. a head of insured persons will form a total round fund in any area out of which payment would have to be provided for every kind of service which any practitioner was under the obligation, by his agreement with the Insurance Committee, to render to insured persons on his list, save that in certain circumstances in rural areas a practitioner who was authorized to dispense for his own patients would receive the 1s. 6d. assigned to defray the cost of drugs and appliances.

The Government states that the way in which this total "area fund" shall be distributed cannot be determined by the Local Medical Committee, on the ground that the Act provides that it shall be determined in each area by the Insurance Committee after hearing the views of the Local Medical Committee, subject to an appeal to the Insurance Commissioners. Any one of three main principles of distribution might be adopted in an area—(1) Capitation pure and simple, the practitioner undertaking to give all medical treatment without mileage or other extras, and receiving in respect of every insured person on his list the full amount available for medical remuneration; (2) a smaller capitation fee for ordinary visits and surgery attendances with attendance fees for extra services; or (3) no capitation fee, but a fee for every attendance. In addition to these three methods, regard must be had to the probability that in some populous districts the application of the Harmsworth amendment to systems or institutions connected with works or collieries might involve the greater part of the insured persons in those districts. To this subject further reference is made below.

Persons Making Their Own Arrangements.

The attention of the Chancellor of the Exchequer was drawn to the passage in his speech at the Opera House on February 12th, in which he said that in any districts where there was no contract practice that form of practice would not be imposed. In such a case the money set aside for the doctors would, he said, be paid into the general pool of that area. The doctors would attend their patients on the same terms as of old, would send in bills against the general pool of the area, and if there was a balance the workmen would have to pay it. In the Memorandum it is stated that Mr. Lloyd George was referring only to the cases of injured persons who made "their own arrangements" under Section 15 (3) of the Act. The new grant towards the cost of medical benefit was intended to enable every Insurance Committee to secure that there should be in its area sufficient practitioners, whether acting on panels or under some alternative system, to attend insured persons in consideration solely of the remuneration provided by the Committee, the insured persons themselves being liable to no further charge for the services included in medical benefit. It would, however, be possible for any insured person to make his "own arrangements" with an individual practitioner, whether on the panel or not, on terms which would make him liable to pay to the doctor such amount, if any, as the doctor charged for attendance and treatment apart from drugs, during the year, beyond the amount available from the medical benefit fund.

Anaesthetics and Consultations.

The Government refuses to make any additional financial provision for the services of an anaesthetist—that is to say, the payment must come out of the area fund for medical benefit; under capitation pure and simple the practitioner would have to make his own arrangements. But the Government states that an insured person would not be entitled to a second opinion as part of his medical benefit, and where a second opinion was considered necessary the patient would have to make the arrangements—that is to say, the patient would not have a claim on any doctor on the panel other than the practitioner of his choice.

Mileage.

It was pointed out that though the question of mileage affected a relatively small number of practitioners it was a serious matter to them, and it was urged that it would be equitable to institute a Central Mileage Fund. This demand the Government is so far ready to meet that it undertakes to provide a small special fund to make increased provision for mileage in "exceptionally sparsely populated" districts - mountain, moorland, and fen. Otherwise it adheres to the decision that the cost of mileage must be provided out of the annual sum of 6s. 6d. a head of insured persons, the distribution of the sum to members of the panel, whether by a flat capitation rate or by a smaller capitation rate with separate payment for attendance, or by payments for each attendance, being left to be arranged locally in each area. At the same time it is stated that if an insured person should prefer to retain the services of a more distant practitioner in place of one residing nearer at hand, there was nothing to prevent him from making an arrangement with the more distant practitioner. The request put forward by the deputation that mileage should be reckoned at two instead of three miles from the practitioner's residence was not accepted. The point is not mentioned in the

Memorandum, and the distance is left blank in the Regulations.

RECORDS, REPORTS, AND INSPECTION.

With regard to records and reports, the Government states that the record of cases to be kept by practitioners on the panel would be short and simple, and that the books will be so prepared that the entry as to the nature of the illness and certain other particulars (but none by which the patient could be identified) will be separable, and would be used for statistical purposes only. The form in which it is proposed that the record should be kept is shown on a reduced scale at page 626 of the SUPPLEMENT. The Government undertakes that during the first three years no further report or information shall be required without the consent of the Local Medical Committee.

With regard to inspection, it is stated that medical officers of the Insurance Commission will report from time to time upon the general arrangements made by each Insurance Committee, upon the arrangements made by approved systems or institutions, and upon the contracts entered into by insured persons making their own arrangements. There would be no routine inspection of the medical practitioner's diagnosis and treatment, and the inspection would not include criticism of the treatment nor any interference between doctor and patient.

COMMITTEE OF INQUIRY.

To the representations of the Association that the tribunal before which a proposal to remove a practitioner from a panel would come should be a purely medical body with a legal assessor, the Government replies by undertaking that the Committee of Inquiry shall consist of medical men with one lawyer. This is an approximation to the procedure of the General Medical Council, which, when holding disciplinary inquiries, sits with a legal assessor. To the further request that the decision of this Committee should be final, the reply is that the Act does not allow the Commissioners to divest themselves of the responsibility of giving the final decision.

INCOME LIMIT.

To the request that a Local Medical Committee should have power to appeal to the Insurance Commissioners from a decision of the Insurance Committee as to income limit the Government replies that the Act places the discretion in this matter in the hands of the Insurance Committee, and therefore precludes such an appeal. To the request that the Government should lay it down that an Insurance Committee, in estimating the amount of income, should take into account receipts from all sources, it is replied that it is for the Insurance Committee to decide whether an income limit shall be fixed, and, if so, how the income shall be ascertained.

The Government gives its undertaking that in the first bill to amend the Insurance Act it will include a provision to meet the objection of the profession to being called upon to attend, on the terms offered, persons who, having been insured for five years, might under the Act remain in insurance as voluntary contributors, even though their income had subsequently increased beyond—often far beyond—the £160 a year.

DISPENSING.

The Government refuses, on the ground that the Act precludes such arrangement, to accept the proposal that practitioners should generally have the option of doing their own dispensing, but expresses its willingness to arrange that dispensing may be done in rural areas for insured persons residing more than a mile from a chemist on the panel. The term "rural area" is not defined.

HARMSWORTH AMENDMENT.

It was represented on behalf of the Association that the profession viewed with considerable apprehension the possibility of abuses arising under the Harmsworth amendment, which authorized the Insurance Commissioners to approve systems and institutions in existence at the time of the passing of the Act. Reason was shown for apprehending that approval would be sought for systems or institutions only colourably branches of previously existing systems or institutions, and that the drug fund might be diverted to other purposes. It was asked also how it was proposed that the free choice of the patient should be preserved, and canvassing obviated. To these representations it was replied that applications for approval would be carefully considered by the Commissioners; that contributions from medical funds for medical attendance or drugs and appliances must be kept distinct, and could not be diverted to other purposes; and that the patient retained free choice of doctor because he was free to choose or reject this method of obtaining medical attendance and treatment, and free to change at the end of any year.

REPRESENTATION ON INSURANCE COMMITTEES.

In view of the opinion that increased direct representation was not possible without an amending Act, the demand of the medical profession that it should have larger representation on the Insurance Committee was defined by the Association to be a demand that the medical members shall constitute not less than one-tenth of each Insurance Committee. In this the Government acquiesces, and undertakes that the Insurance Commissioners shall so exercise their right of nomination that the proportion of medical members shall be at least one-tenth.

MEETINGS OF DIVISIONS AND REPRESENTATIVE BODY.

The Council, in the report issued this week, has notified the Divisions in the United Kingdom that the returns of the voting at the special meetings to consider the present situation must be received at the central office of the Association not later than Wednesday, December 18th. This renders it necessary that the special meetings of Divisions shall be held in the course of the next ten days. The votes will be counted on December 19th, and the result reported to a Special Representative Meeting to be held on December 21st. Members of the profession who are not members of the Association will be invited to attend the meetings of the Division for the area in which they reside. The votes of non-members will be taken and counted separately.

The constitutional point raised as to the binding force of the result of the voting at the special Divisional meetings, which are to take place within the next ten days, was fully considered by the Council, which had before it counsel's opinion on the matter. It was pointed out that the Representative Meeting, in deciding that such a vote should be taken, did not claim more for it than that it would be a means of ascertaining the general opinion of the profession in the interests of the public, the Association, and the individual doctor. It hoped that the individual

would eventually be guided by the preponderating vote of the profession, but recognized that the vote would have no more than a moral effect, and would not be a binding decision of the Association.

The Council, in presenting to the Divisions the report of the interview of the five representatives with the Chancellor of the Exchequer stating the nature of the representations made to the Government, and indicating the character of the replies contained in the Memorandum, did not consider it desirable to add any recommendation containing advice on the question whether the terms as now set out should or should not be accepted. It looked upon its duty as ended when it had placed before the profession material for the formation of a judgement. It decided to summon a Special Representative Meeting to assemble in London on Saturday, December 21st. The inconvenience of the day was fully recognized, but so far as England, Wales, and Ireland are concerned, the following week will be broken by the Christmas holidays, and the desirability of not keeping the matter in suspense longer than necessary was a deciding consideration in fixing the earliest possible date.

The materials for a judgement are fully before the profession, and it will be for each member of it to record his vote on the question whether he is in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government. Though the result shown when the votes have been counted and the aggregate ascertained will not be a binding decision of the Association, it must carry great moral weight. The Representatives at the Special Representative Meeting on December 21st will be fully acquainted with the results of the voting in their own Divisions and throughout the profession.

The Last Word.

The Insurance Commissioners, we are given to understand, look upon the terms and conditions now set forth as the last word of the Government, and do not consider themselves under an obligation to invite Insurance Committees to postpone the promulgation of schemes for medical benefit in their areas until the decision of the profession has been ascertained. They are, in fact, issuing to Insurance Committees a Memorandum advising them as to the steps to be taken to bring medical benefit into force next month. This is accompanied by a model letter of invitation from an Insurance Committee to doctors in the area who desire to be placed on the panel, and model forms of agreement which Insurance Committees might invite doctors in the area to sign.

It is imperative that no negotiations or arrangements of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession, with Local Insurance Committees or otherwise, before the result of the deliberations of the Representative Body at its special meeting on December 21st is formally announced.

Mr. Masterman, in replying to a question in the House of Commons by Mr. Harmsworth, on November 29th, said that the Highlands and Island Medical Committee had on the previous day considered its report in draft, and it would be published at the earliest possible date.

Medical Notes in Parliament.

Lead Poisoning.—In reply to Mr. Charles Duncan, on December 2nd, Mr. Ellis Griffith stated that the number of cases of lead-poisoning in spelter works in South Wales reported to the Factory Department since July 1st, 1907, the date on which the Compensation Act came into force, was 77, of which 4 were fatal. He was unable to say in how many of the non-fatal cases the workman was disabled from earning full wages at the work at which he was employed, so as to come within the provisions of the Compensation Act. Since the beginning of 1910 the number of cases had shown a marked decrease, as compared with the figures for the years 1908 and 1909, the total being 26, of which 1 was fatal.

Flannelette Burning Fatalities.—In reply to Mr. Joynson-Hicks, Mr. Ellis Griffith said that the attention of the Secretary of State for the Home Department had been called to the number of deaths from burning through the use of inflammable flannelette. Except as regards the year 1904, for which a special return was obtained from coroners and published in the Judicial Statistics for that year, the only official statistics as to the number of deaths resulting from the ignition of flannelette clothes were those given in the annual returns of the Registrar-General, which were based on coroners' certificates. From the return for 1910, it appeared that the number of deaths from burning clothes in that year was 657, and in 67 cases it was stated that the clothes were made of flannelette. The Coroners' Committee inquired into and reported upon the question a little over two years ago, and in the circumstances he did not think that the appointment of another Committee was called for.

School for Tuberculous Children.—Mr. Wedgwood Benn, in replying to Mr. King, on November 27th, said that a class of tuberculous children had been held in Regent's Park for over a year, and the use of the bandstand had been granted to them. No change was proposed. No other applications of a similar nature had been received.

Scottish Universities.—The Treasury was again questioned, on December 2nd, in regard to the stipulation accompanying additional grants in aid to Scottish universities. The replies made were to the effect that such observations as had been received from the bodies in question or those concerned in their affairs related to the difficulty of determining the right amount of an inclusive fee for the medical curriculum rather than to the effect of such fee on extramural schools. It was also indicated that the Treasury had seen no reason for consulting the Scottish Universities Committee of the Privy Council, or for seeking an opinion as to the legality of the stipulation under consideration. The Treasury did not agree that if a prospective medical student who depended on a Carnegie grant failed to obtain a leaving certificate on any given occasion, such failure *de facto* delayed his entry to a university for as long as eighteen months. The real delay was only a year, for even in present circumstances a student who passed in March could not enter the university until October. Hence the Treasury saw no reason to vary the reply given last week, this being to the effect that it was not prepared to arrange for the holding of an autumn as well as a March examination for leaving certificates.

Insurance Act. The answers of Ministers to questions in Parliament as to the National Insurance Act will be found in the Supplement.

Vaccination in the Navy. Mr. Bentham asked the First Lord of the Admiralty, on November 28th, whether, in view of the continued increase of exemptions from vaccination, he was prepared to make vaccination optional to recruits for the Navy. The Parliamentary Secretary to the Admiralty, who replied, said that he could not undertake to recommend that the Regulations of the service in regard to vaccination should be relaxed.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

ADMINISTRATION OF SANATORIUM BENEFIT.

THE London County Council on December 3rd received a report by Mr. J. A. Dawes, M.P., one of its representatives on the Insurance Committee for London, as to the work so far accomplished by the Committee, particularly with regard to sanatorium benefit.

The report stated that, with a view to avoiding any delay in making provision when sanatorium benefit came into operation on July 15th, the Insurance Committee framed a temporary scheme, a temporary subcommittee being appointed for each metropolitan borough and for the cities of London and Westminster. These subcommittees were composed of representatives of the Insurance Committee, the local authority and the various classes of insured persons, and, where possible, persons representing the employers' interests.

The Insurance Committee had appointed a medical expert, on whose advice it decided as to the granting of benefit and as to the form that such benefit should take. As a rule the applicant was examined in the first instance by his own medical attendant after the necessary evidence had been furnished of his qualification to receive benefit. In cases in which the medical expert advised institutional treatment the Committee, if it decided to recommend sanatorium benefit, arranged for the reception of the patient in some approved institution. Where dispensary or domiciliary treatment was advised the case was remitted to the local subcommittee to deal with. In a number of cases the medical adviser recommended hospital treatment, owing to the case being too advanced to hope that it would yield to institutional treatment, or because the patient required to be kept under observation in the first instance. The following were the particulars of applications received for sanatorium benefit and the action taken with regard thereto up to and including November 8th, 1912:

Total applications		495
Not eligible		25
Recommended for treatment—		
Cases in sanatoriums	84	
Cases in hospital	12	
(Two cases to be discharged and arrangements in progress for domiciliary treatment.)		
Cases where domiciliary treatment arranged	34	
Cases where dispensary treatment arranged	35	
Cases where hospital (out-treatment) arranged	6	
Cases awaiting reply from Mount Vernon ...	6	
Cases recommended, but still to be dealt with	8	—185
Applicants who did not attend for examination—further arrangements to be made		6
Applicants awaiting examination—Form Med. II received...		89
Applicants in institutions—no liability		2
Applicants awaiting examination—papers sent to medical adviser...		32
Applications withdrawn		5
Applicants dead		5
Applicants referred to other county committees ...		15
Applicants who declined the treatment granted ...		2
Form Med. I received		128
		495

In most instances the Committee was paying 30s. a week in respect of patients sent to sanatoriums. Domiciliary treatment was arranged for in most cases through the patient's own medical practitioner on terms which had been temporarily agreed to by the Committee and approved by the Insurance Commissioners. For dispensary treatment the following had been approved by the Local Government Board:

Battersea Tuberculosis Dispensary.
Bermondsey Dispensary for Prevention of Consumption.
Finsbury Tuberculosis Dispensary.
Fulham Dispensary for Prevention of Consumption.
Tuberculin Dispensary, 263, Kennington Road, S.E.
Paddington and Kensington Dispensary for the Prevention of Consumption.
Borough of Poplar Dispensary.
St. Marylebone Tuberculosis Dispensary.
St. George-in-the-East Tuberculosis Dispensary.
Stepney Dispensary for Prevention of Consumption.
Whitechapel Dispensary.
Woolwich Dispensary.
Camberwell Dispensary for Prevention of Consumption.
Battersea Tuberculin Dispensary.

In a number of other cases it appeared that boroughs which had not at present any tuberculosis dispensaries had the matter under consideration with a view to establishing such institutions.

Schemes had been submitted by most of the temporary sanatorium subcommittees to provide for dispensary and domiciliary treatment, but these were only of a temporary character pending the final settlement of the question now under discussion between the Government and the medical profession as to the charges to be made for the treatment of tuberculosis, and pending also the formation of a more complete scheme of dispensaries for the whole of London.

The Committee had decided, on advice tendered by the Insurance Commissioners, not for the present to give sanatorium benefit to the dependants of insured persons, and this policy would be continued until a more clear idea had been obtained of the funds which would be available for the work. Particulars were being received from the various friendly societies with regard to insured persons in the county of London, but it would be some time yet before reliable figures were available as to the number of such persons, and as to the number of deposit contributories. The Committee was dealing with the question of the appointment of permanent district committees as provided for by the Act.

SANATORIUM BEDS IN LONDON.

As an outcome of the recent conference between representatives of the Metropolitan Asylums Board, the London County Council, and the London Insurance Committee (BRITISH MEDICAL JOURNAL, November 9th, page 1333) on the subject of the treatment of patients suffering from tuberculosis, a letter from the London County Council was read at a meeting of the Metropolitan Asylums Board on November 30th.

The clerk to the Council wrote that it was understood the Asylums Board had no vacant institution suitable for the purposes of a sanatorium, but that as a temporary measure the Board would be prepared to set apart a detached portion of one of their large country hospitals for the sole use of such tuberculous patients, to the number of about 500, as the London County Council might desire to send there. The County Council recognized that such an arrangement would not necessarily be a permanent one, but that such accommodation as was available at the moment would be made ready with the least possible delay, and that later the Board would be free to remove the patients to some more suitable establishment.

The suggestion of the County Council was that the Asylums Board should make this provision—appoint forthwith the necessary medical, nursing, and domestic staff, and supply all the requisite furniture and equipment for the reception of patients at the earliest possible date. Complete control as regards the selection and admission of patients and the length of their stay would be vested in or arranged by the County Council. The medical officers of the Council, of the Insurance Commissioners, and of the Insurance Committee would have the right to visit an inspect the institution and the patients at any time, but the Council desired that the Board, on account of its recognized experience in such work, should engage the staff, and undertake the general management of the institution. The Council would reimburse the Board of the entire cost, preferably by payment of a definite charge per head of the patients actually maintained, with a periodical adjustment according to the ascertained actual cost, or at a scale of charges according to the numbers maintained. Establishment expenses incurred prior to the reception of patients would be borne by the Council.

It was decided that the only institution available for the purpose at the present time was the Lower Southern Convalescent Hospital, and that the County Council be informed that, subject to the sanction of the Local Government Board, the Asylums authority would be prepared to allocate this hospital as a sanatorium under the Insurance Act on the conditions set forth in the Council's letter

The Hospitals Committee was instructed to take steps immediately for staffing, equipping, and opening the hospital as a sanatorium for tuberculosis patients with the least possible delay, the accommodation to be rendered available being 120 to 130 beds.

Warehousing Infectious Disease.

The Metropolitan Asylums Board on November 30th considered a proposal by the Hospitals Committee to appoint a research bacteriologist to inquire into the incidence and causation of zymotic disease. The Hospitals Committee stated that in November, 1911, Professor G. Sims Woodhead, the Board's consultative bacteriological adviser, made suggestions for the development of the Belmont laboratories and for extending the scope of the work there, and the Committee was of opinion that no further time should be lost in appointing a medical man trained in bacteriological research and capable of undertaking original investigations into the causation, infectivity, prevention, and treatment of zymotic disease. The several medical superintendents had been consulted in the matter and welcomed the proposal. Since 1870 the total number of admissions to the Board's fever hospitals had been upwards of 500,000, and the number of deaths nearly 40,000. Since the Board was constituted, about £15,000,000 has been expended in the provision of hospitals for, and in the treatment of, infectious sick persons, but no practical step had been taken with the view of ascertaining the causes of the diseases, sufferers from which were admitted into the hospitals. The total number of deaths from the principal epidemic diseases during the last five years in London had been 22,649, of which 10,199 (or 45 per cent.) were attributed to measles. The percentage of mortality of measles patients in the Board's hospitals in 1911 was 13.9. These facts alone justified a determined effort to save life, and to reduce the great expense involved in maintaining large isolation hospitals, but the desired results were only likely to be achieved when the causes of zymotic disease had been discovered. The time of the Board's bacteriologist, Dr. Cartwright Wood, was fully occupied in clinical investigations, in the production of antitoxic serum, and many other duties, and it would not be possible for him to undertake the work the Committee had in mind.

Some discussion took place on the recommendation. Canon Sprankling, who moved its adoption, pointed out that this country was very far behind others in the important work of original research. The reference back of the recommendation was moved on the ground that provision was made for research by the National Insurance Act and that the Board ought not to undertake a responsibility which properly belonged to the State.

Dr. Bousfield remarked that the Board had merely been "warehousing" infectious disease, treating symptoms, and making no investigations into the cause of disease. Expenditure on research would result in a saving of money to the ratepayers.

Professor W. R. Smith pointed out that the incidence of infectious diseases in London did not show any marked diminution, and the Board had done nothing to examine into the incidence of disease, although no other authority in the world had as wide a field for investigation and research.

The reference back was defeated, and the Board decided by a large majority to appoint, subject to the approval of the Local Government Board, a research bacteriologist, at a salary of £500 per annum, the Hospitals Committee being instructed to report further as to the details of the duties of the office.

MANCHESTER AND DISTRICT.

Cancer Research in Manchester.

At the annual meeting of the Christie Hospital for Cancer in Manchester, on November 28th, it was made clear that the facilities for research into the causes, prevention, and cure of cancer are seriously hampered by want of funds. The hospital has primarily to provide medical and surgical relief for persons suffering from cancer, precancerous conditions, and chronic ulceration, and also to provide a home for life for incurable cases which cannot be attended at their own homes, but when the hospital was established research work was distinctly contemplated as one of its main objects. During the past year 105 in-patients and 33 out-patients were treated, the number being about the same as in the previous year. The expenditure was about £330 more than the income. Voluntary contributions from patients and their friends have slightly increased, and averaged about £2 5s. for each patient, but the public subscriptions have for several years been falling off. This is specially regrettable in view of the statistics for malignant disease for Manchester. In the year 1911 no fewer than 750 deaths were certified as due to malignant disease, and the death-rate from cancer in Manchester has more than doubled in the last thirty years; it was 0.48 per 1,000 living in 1881 and 1.05 per 1,000 in 1911, and the increase was steady throughout the whole period. Whether this is partly due to improved methods of diagnosis or not, the fact remains that far more cases recognized as needing treatment for malignant disease are presenting themselves, and yet the public support of the Cancer Hospital is less than it was. The funds available are barely sufficient to meet current expenditure for treatment, and research work has to take its chance. In replying to a vote of thanks to the staff, Professor Wild said that since 1892, when the hospital was established, great additions had been made to knowledge of the disease, though a solution of its problems seemed to be no nearer. Laboratory work was very expensive, and therefore it was regrettable that the public subscriptions had fallen off. Dr. C. Powell White, Director of the Pilkington Cancer Research at the University, said that the search for the causes of cancer was an extremely difficult undertaking, as the direction in which to start was unknown. He warned the public against accepting reports of discoveries of cures for cancer, as no remedy had yet been found. He thought the future line of research would be largely chemical, and at present very little was known as to the chemistry of cancer. There was also much information to be gained from statistics showing what classes of the population were mostly affected, what were the occupations of the patients, and their distribution. He also drew attention to the notable advance that had been made in Manchester by the establishment of a large laboratory for microscopical and chemical work at the University. With the number of patients at the Cancer Hospital, it is a pity that the opportunities for research thus afforded should be even partly lost through lack of funds for research.

NEWCASTLE-UPON-TYNE.

The following is a syllabus of the winter scientific demonstrations arranged by the Newcastle-upon-Tyne Division of the British Medical Association, and to be given at the Royal Victoria Infirmary; all medical practitioners in the North of England are invited.

Friday, December 20th, 1912.—Dr. Horsley Drummond: Some Observations on Carcinoma of the Stomach. Professor Sir Thomas Oliver: Traumatism and Tuberculosis. Professor H. B. Angus: Tuberculous Disease of the Spinal Column. Dr. D. W. Patterson: Eczema, Its Etiology and Treatment. Professor Rankin Lyle: Menorrhagia.

Friday, January 17th, 1913.—Pathological Museum. Mr. N. McClay: Chronic Otorrhœa and its Treatment. Mr. A. M. Martin: Surgical Treatment of Joint Tuberculosis. Professor R. A. Bolam: Medico-Legal Tests for Blood. Mr. W. G. Richardson: Malignant Tumours of the Mamma, Diagnosis and Treatment. Mr. Hamilton Drummond: Hæmorrhoids.

Friday, February 21st, 1913.—Mr. F. C. Pybus: The Treatment of Tuberculous Glands in the Neck. Professor T. Beattie: Treatment of Pulmonary Tuberculosis. Dr. W. E. Hume: Some Points in the Diagnosis of Early Phthisis. Dr. George Hall: Cervical Ribs and their Results. Mr. R. J. Willan: Diagnosis and Treatment of Malignant Tumours of the Prostate Gland.

Friday, March 21st, 1913.—Dr. A. Parkin: Mentally Deficient Children. Professor D. Drummond: Arterio-sclerosis. Mr. J. D. Wardale: The Treatment of Ophthalmic Emergencies. Dr. James Don: Chronic Suppuration of the Accessory Sinuses. Dr. W. D. Arnison: Local Treatment of Rheumatic Arthritis.

It has been decided that each medical man who attends a meeting shall be asked to contribute 1s. in order to help defray expenses. Further information can be obtained on application to the Honorary Secretary of the Division, Mr. R. J. Willan, F.R.C.S., 25, Ellison Place, Newcastle-on-Tyne.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Glasgow Memorial to Lord Lister.

A meeting of the Executive Committee on the proposed memorial to the late Lord Lister in Glasgow was held on November 27th, when the principal business was to receive a deputation from the Royal College of Surgeons of Edinburgh for the purpose of discussing the practicability of co-operation between Glasgow and Edinburgh in establishing a Scottish national memorial. The deputation comprised Professor Caird, Mr. George A. Berry, and Mr. Stiles. It was indicated that such a memorial might take the form of research laboratories.

It was resolved to recommend that the Lord Provosts of Edinburgh and Glasgow and the Principals of the universities of the two cities, who are members of the London Executive Committee, should be requested to keep prominently before that committee the claims of Scotland for an adequate share of the grants proposed to be made in aid of research, and that these gentlemen should be entrusted with the duty of administering any funds that might eventually be apportioned to Scotland.

After the Edinburgh deputation retired the committee took into consideration the question of the character of the Glasgow memorial. It was resolved to recommend that subscriptions be invited (1) towards the erection in Glasgow of a monument to Lord Lister and to the provision of an endowment for the equipment and maintenance of the proposed Lister museum in the Royal Infirmary, accommodation for which will be provided in one of the wards in which Lord Lister first put into practice his system of antiseptic surgery, which ward the managers of the infirmary have agreed to retain for the purpose; and (2) towards the Lister international memorial fund promoted by the London committee. Subscribers will be requested to intimate what proportions of their contributions are to be assigned to the local and to the international funds respectively, but when no such intimation is given the Executive Committee may apportion contributions to either or both funds at its discretion.

Financial Difficulties of Glasgow Hospitals.

The report submitted at the thirty-eighth annual general meeting of the subscribers to Glasgow Infirmary shows the usual features of diminishing income and increasing expenditure to meet the ever-increasing demands on the hospital. The ordinary income was nearly £17,000 short of the ordinary expenditure, and to meet this deficiency not only the whole of the extraordinary income, derived from donations, legacies, etc., left after providing for extraordinary expenditure, was used, but a further sum of nearly £7,000 had to be withdrawn from the stock account, which has thereby been reduced to £6,612, so that another similar financial year would completely exhaust the unrestricted capital account. Clearly the financial position of the infirmary is far from satisfactory, and if it is to continue to make full use of its accommodation and appliances increased financial support must be forthcoming. During the past year two beds were endowed, bringing the number of endowed beds up to forty-two. The amount of work done by the institution is shown by the fact that the average daily number of in-patients was 553.50 as compared with 529.56 last year. Almost for the first time in the history of the institution the number of outdoor patients has diminished. The department which shows the largest relative decrease is the vaccination department, where the number of patients has decreased by 16 per cent. How far the Insurance Act will affect the outdoor department is not known: but if the managers, as is expected, adopt the plan of only treating emergency cases among the insured and those requiring special treatment, and those insured persons recommended to the outdoor department by medical practitioners for diagnosis and suggestions as to treatment, the work of the outdoor departments will be materially reduced.

Another institution which is being seriously crippled by lack of financial support is the Maternity Hospital. This magnificent institution, which is doing sterling work, has already had to close the gynaecological wards, and even with the field of work thus restricted is finding it a matter of ever-increasing difficulty to pay its way. It is hoped that its funds will benefit substantially as the result of the fancy dress ball which was held last week in aid of the institution.

Glasgow University Medico-Chirurgical Society.

Dr. James Devon delivered an address to this society in the University Union on "The Eugenist and the Rest of Us." He discussed the present eugenic propaganda, and maintained that it was impossible to put into practice under present economic conditions any reasonable system of eugenics. He deplored the fact that any body of men should, with the present limited knowledge of the laws of heredity as regards the human race, propose to take upon themselves any severe regulation of the lives of their fellow men, especially when many of the eugenists were either abstract philosophers or pure scientific investigators, with only a limited experience of the conditions of life among the lower classes of the community. Dr. Devon urged that energy should be turned towards perfecting the means of combating disease rather than towards attempts at obtaining the almost impossible ideal of a perfectly healthy community.

Aberdeen Royal Infirmary.

The new out-patient department in connexion with the Aberdeen Royal Infirmary was opened on November 25th without any formal ceremony. The new buildings have been erected at Woolmanhill, on the opposite side of the street from the present buildings, and include casualty, dressing, skin, dental, ear, nose and throat, and medical departments.

The Scottish Medical Defence Union.

The report of the council of the Medical and Dental Defence Union of Scotland, submitted to the recent annual meeting, disclosed a satisfactory position. Despite the fact that the year ending August 8th, 1912, was one of marked activity, it proved possible to carry forward nearly half the total income for the twelve months. Another satisfactory point was that while approximately ten years ago the reserve fund was only equal to 5s. 9d. a member, it has now risen to £2 1s. 8d. a member. The total membership is 1,215. There was ample evidence, the report stated, that the distinctive policy adopted by the council in dealing with claims against members and with difficulties arising out of professional practice was being increasingly recognized, and there had also been evidence during the year of the value of the services that the union rendered to members who required advice and assistance in troublesome matters, or defence in threatened actions. The claims made against members during the year against dental practitioners in particular were exceptionally numerous, but fortunately only a small number of them resulted in litigation. The council believes, however, that had the practitioners concerned in these claims been obliged to withstand them as individuals they would in many instances have had to compromise by a money payment. The council's policy in this connexion is that when a threatened action is brought before it with a view to defence, steps are taken to obtain full details, and thereafter the case is considered judicially with the object of ascertaining the probable result in the event of embarkation on litigation. Should the council be of opinion that the member's position is sound, intimation is made to the claimant that the circumstances have been carefully considered, and that the threatened action will be defended. In most cases the knowledge that the union had investigated the facts and was prepared to contest the claim was sufficient, the report stated, to deter intending litigants from proceeding further, especially as it was now well recognized that the union would not advise payment of a sum of money for the sake of settling with a troublesome litigant. The report also noted that in addition to matters involving legal considerations advice had been given in regard to many professional difficulties arising out of practice. Many of them were problems such as could only be solved by reference to a professional body, and a belief was expressed that the union had been of much service to its members in this connexion. A large number of members had taken advantage of the indemnity scheme, by which on extra

payment of a small premium full indemnification could be received against damages in actions unsuccessfully defended by the society on their behalf. With regard to the National Insurance Act the council held a watching brief. It was invited to send two delegates to confer with the Chancellor of the Exchequer on the matter, but decided instead to endorse the action of the British Medical Association.

Prevention of Blindness among Children.

The Public Health Committee of the Edinburgh Town Council at a recent meeting had under consideration Dr. Dewar's report on the incidence of ophthalmia neonatorum, and a letter from the Secretary of the Royal Blind Asylum and School, as to extending the provisions of the Infectious Diseases (Notification) Act, 1889, to include ophthalmia neonatorum. The committee agreed to make a recommendation to the effect that steps be taken to bring the disease within the scope of the Notification of Diseases Act, 1889.

Proposed Crematorium for Edinburgh.

At a recent meeting the Public Health Committee of the Town Council had before it an application from the Edinburgh Crematorium Society, asking for approval of a scheme for the erection of a crematorium in Warriston cemetery. The proposal is still at the initial stage, and the promoters are not yet in a position to give plans or details. The committee expressed approval of the general principle of the establishment of a crematorium in the city, and agreed to recommend that the Council should grant the request of the society, provided the plans submitted later are according to the regulations.

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Public Inquiries in Medical Cases.

A unanimously signed protest has been forwarded by the practitioners of South Down to the Local Government Board in connexion with the general practice of holding public inquiries into the conduct of professional men. It is pointed out that the complaints are often of a frivolous character, and are made by persons unable to pay for damages for libel or slander, and thus the practitioner is left without compensation for the annoyance and expense of defending himself, added to the inevitable loss to his reputation, which even a successful defence does not restore.

The protest also deals strongly with the custom of conducting the inquiry into such complaints in public, the evidence being fully reported in the local press, and it is pointed out that the presence of one or, at most, two members of the board of guardians at such inquiry would be sufficient to represent the interests of the ratepayers.

Representation by solicitors is also considered undesirable, and it is urged that questions involving matters of professional conduct can only be properly dealt with by a tribunal largely professional in formation.

The attention of the Board is called to the rules on this subject contained in the recently published National Health Insurance Regulations (1912), which recognize to some extent the claims mentioned. It is to be hoped that the Local Government Board will give this important matter early and sympathetic consideration. The practitioners of South Down deserve the thanks of their colleagues for calling official attention to these very real grievances.

Salaries of Dispensary Medical Officers.

At the weekly meeting of the Dundalk Board of Guardians a letter was read from three medical officers, [illegible] their salaries, owing to the [illegible] on their districts, the heavy working [illegible] and the fact that recent legislation and other [illegible] increased their [illegible] duties, whilst increasing the [illegible] decided to convene a special meeting to consider the matter.

The Tullamore Guardians, at their last meeting, increased the salary of the medical officer of the workhouse from £125, rising by triennial increments of £5, until £150 has been reached, the increase to be retrospective. The salaries of the several medical officers of the dispensary districts in the union were also increased from £120 per annum, by triennial increments of £7 10s., until the maximum of £180 is reached after twenty-four years' service, this increase also to be retrospective.

Vaccination in Enniscorthy.

The manner in which vaccination in Ireland is being neglected at the present time was plainly shown at the last meeting of the Enniscorthy Guardians, when a letter was read from the Local Government Board requesting them to take steps to enforce strict compliance with the Vaccination Acts, and pointing out that the number of vaccination defaulters in the union district was 1,646, and that this did not include Enniscorthy, where the number was not stated. The guardians have a resolution on their books refusing to enforce the vaccination laws, and they made no order, evidently treating the letter of the Local Government Board as a joke, one member remarking that the number of defaulters in Enniscorthy must have been too large to ascertain.

Dublin University Biological Society.

At the opening meeting of the thirty-eighth session of the Biological Society, held in the Graduates' Memorial, Trinity College, Dublin, Dr. W. Geoffrey Harvey delivered his inaugural address, in which he dealt with Rœntgen rays in medical diagnosis. He spoke of the subject from the physician's point of view, omitting from consideration all such purely surgical cases as were of traumatic origin, and all tumours, except in so far as, for diagnosis, they fell within a physician's sphere. In pulmonary tuberculosis radiographic findings were, he said, more valuable and accurate than either percussion or auscultation. The abdomen, he considered, was the field in which the *x* rays would eventually, if they had not yet done so, prove of greatest value to medical and surgical diagnosis in investigating the digestive and genito-urinary tracts. He insisted strongly on the necessity for correlating clinical with radioscopic findings. A discussion followed, in which Mr. A. E. Barclay, Mr. Richard Burrell, Professor J. Joly, and Dr. J. F. Wigham took part. A large number of members and guests were entertained afterwards at a smoking concert given by Dr. Arthur Ball, the outgoing President of the Society.

Dublin University College Medical Society.

The inaugural meeting of the third session of the Medical Society in connexion with University College, Dublin, was held last week in the Great Hall of the College, Stephen's Green, Dublin. The President, Dr. Denis J. Coffey, presided, and there was a large attendance.

Professor B. Collingwood, M.D., read a paper on some recent investigations into the coagulation of the blood and their practical application. More than one of the speakers deplored the great want in Dublin of endowment for research work of any kind, without which progress is almost impossible.

Oysters and Typhoid.

The City of Cork has been rejoicing in the fact that the number of cases of typhoid fever which occur annually has been steadily diminishing since 1908, when there were 88 cases; in 1909 there were 74 cases; in 1910 there were 54 cases; and in 1911, 32; and this year to date 23 cases. Within the last few weeks, however, 6 cases have been reported by the medical officer of health, and several of the cases have been attributed to eating oysters which have been taken from beds in the river. Dr. Donovan has recommended that samples should be taken from the exposed areas and submitted to bacteriological examination, that the sale of shellfish from such areas be stopped; that the fishmongers of the city be warned of this impending peril, and advised to use due precautions in the purchase of shellfish from doubtful sources; and that all shellfish found exposed for sale taken from contaminated areas should be seized and condemned.

New South Wales.

FROM OUR SPECIAL CORRESPONDENT.

Medical Inspection of School Children.

Systematic medical inspection of school children in New South Wales has been in force for nearly five years, and the report of the fourth year's work has now been issued. It states that 144 schools, comprising 255 departments, with an enrolment of 67,577 pupils, were visited by the medical inspectors. Of this total number of pupils, 16,909, or 25 per cent., were presented by the teachers for medical inspection on account of some physical defect: and of these children, 4,848, or 28 per cent., were found to be suffering from defects of vision; 5,750, or 34 per cent., were returned as suffering from post-nasal trouble; 2,025, or 13 per cent., from throat trouble; 651, or 3 per cent., from very defective teeth; 487, or 2 per cent., from swollen glands; and 1,509, or 8 per cent., from either defective hearing or ear trouble. These percentages refer only to children presented to the school doctors as defective cases. Of the enrolment of the schools visited, 7.2 per cent. were found to have bad sight, 8.5 per cent. had nasal trouble, 3.7 per cent. had throat trouble, and 2.2 per cent. defective hearing or ear trouble. The number of cases where action was taken by the parents on the medical inspector's advice has increased during the last two years from 25 to 36 per cent. But Dr. Grace Boelke, one of the medical inspectors, emphasizes the apathy which still exists among parents in regard to having their children placed under medical treatment. She remarks that parents do not take action and have their children's ailments remedied, because there appears to be a rooted conviction among a large number of people that these ailments are trifling and that the children will "grow out of them." Such an attitude is a stumbling-block to treatment, and, so long as attention to these defects cannot be legally enforced, a certain proportion of physically defective children will continue to be added to the population.

Friendly Societies in New South Wales.

Some idea of the extent of the operations of the friendly societies in New South Wales can be gathered from the annual report of the acting registrar of friendly societies. Only a few new societies were established during the year, but the number of branches has greatly increased. At the end of 1911 there were 1,769 branches on the register, being 134 higher than 1910. Of these 547 were in the metropolitan area, and 1,222 were in the country districts. The membership of the societies has increased from 149,142 to 164,780, and it is estimated that about 650,000 people in this State are sharing, to some extent, in the benefits provided by friendly societies. The earliest age at which members are admitted to full membership is 16 years of age, and as the male population above that age in April, 1911, numbered 571,000, one in every five of them was a member of a friendly society. The total amount disbursed annually on account of benefits now amounts to over £320,000.

A Tuberculosis Dispensary.

The New South Wales Branch of the National Association for the Prevention and Cure of Tuberculosis recently approached the Government with a view to obtaining financial assistance towards the equipment and maintenance of a tuberculosis dispensary. The Government made a grant of £500, and subsequently Mrs. Walter Hall presented them with a similar amount. After some delay suitable premises were secured, and operations have recently been commenced. The institution is open on two evenings and one afternoon a week. A nurse is being employed to visit the homes of the patients who present themselves at the dispensary, in order to instruct the inmates in the precautions necessary to prevent the spread of the disease. Sir Philip Sydney Jones, M.D., is the president of the institution, and the physicians in attendance at the dispensary are Drs. P. Boelke, F. G. Griffiths, G. L. O'Neill, and Złotkowski.

The Landing of Dead Bodies.

The Quarantine Act of 1908 confers upon the Minister of Customs power to prohibit the importation into the Commonwealth of any articles which, in his opinion, are likely to introduce any infectious or contagious disease. As it has been suggested that this might be done [illegible] of dead bodies, a proclamation has been published in the *Commonwealth Gazette* to the effect that the Governor-General, acting on the advice of the Federal Executive Council, has prohibited the importation into Australia [illegible] the body of any person whose death was due to quarantinable or other infectious or contagious disease. It is further set out that the importation of all bodies is prohibited unless they are accompanied by a properly attested copy of the official certificate of death, and by a certificate from the health authority of the country from which they are brought to the effect that death was not due to an infectious [illegible] or contagious disease. In all cases bodies must be enclosed in a strong and securely made coffin hermetically sealed.

Correspondence.

THE ORIGIN OF LIFE.

Sir,—On reading Dr. Charlton Bastian's paper, one question rises to my mind with reference to the appearance of organisms in his carbon-free silica solutions—Has he tried drying and heating them to a dull red heat to see if they char? If so, the solutions cannot be carbon-free, and must be contaminated, or silicon has been transformed into carbon.—I am, etc.,

University College, Cork, Nov. 30th. Marcus Hartog.

THE DIAGNOSIS AND TREATMENT OF INCIPIENT PULMONARY TUBERCULOSIS.

Sir,—I have read Dr. Lees's instructive and illuminating lecture in the Journal of November 9th, and would strongly recommend its careful perusal to every physician interested in the treatment of this deadly disease. There is only one way of establishing a diagnosis in incipient pulmonary tuberculosis, and that is by careful physical examination, especially percussion, as indicated by Dr. Lees, and as the future of the patient largely depends on the conclusions arrived at during the earliest stages, the importance of accurate investigation by purely physical methods cannot be over-estimated. It is only a short time ago that it was confidently proclaimed by several leading authorities that from 90 to 95 per cent. of the human race were affected in some way or another by tuberculosis, and as the great majority were presumed to have suffered from the pulmonary variety, the conclusion is inevitable that what is sometimes called the purely "scientific" method of investigation must have been responsible for such unwarrantable conclusions. Many, indeed, avowed that their opinions were based on the results obtained by the use of one or other of the tuberculin "tests," then accepted as reliable by a large proportion of physicians, but whose absolute worthlessness is now acknowledged by most experienced clinical practitioners.

The whole subject of pulmonary tuberculosis appears to be in a chaotic state, especially as regards treatment, and the present time appears to be opportune, when so much public money is about to be spent on the prophylaxis and treatment of this disease, for a thorough scientific inquiry into the various methods of cure now in vogue. This would appear to be imperative in the interests of the profession itself, for apart from the vital importance of ascertaining the best and safest treatment for such an extremely common disease as phthisis, it has to be admitted that the periodic exhibitions of pulmonary neurasthenia, in the shape of letters to the medical journals upholding the virtues of the many specifics, do not add exactly to the dignity of medicine or enhance its reputation as a scientific calling.

I believe much of the confusion that exists could be avoided by a thorough trial and systematic use of the method of treatment by continuous inhalation so successfully employed by Dr. Lees and many others, and from my own experience I can say unhesitatingly that better results are obtained than by any other procedure. It has also the great advantage of being safe (which is more than can be said for tuberculin and many of the other so-called specifics), easy to use, and very inexpensive. Recently I had two failures in succession, but they were both native Egyptian women who had already been subjected to various forms of treatment without obtaining any benefit.

In another case recently treated the results have been very remarkable. The patient was an army officer sent out here on special duty on account of his health. He had all sorts of treatment, including tuberculin, but was gradually getting worse in every way, and the haemorrhages from which he suffered were at times alarming. At my suggestion the army medical officer, under whose charge he was, used the continuous inhalation treatment (the formulae being the same as that recommended by Dr. Lees, except that spt. vin. rect. was used instead of spt. aeth.). His condition improved from the very beginning, and he now weighs 23 lbs. more than before the commencement of the treatment. There has been no haemorrhage or other bad symptom, although the patient remained in Cairo during the summer. The result, in this case, could not be ascribed to the incomparable Egyptian climate, as this officer had been in the country for a considerable time before undergoing the inhalation treatment, during which time his condition was getting gradually worse. —I am, etc.,

T. GERALD GARRY,
M.D., M.Ad.

Cairo, November 24th.

RESULTS OF OPERATIONS ON TUBERCULOUS JOINTS.

SIR,—The highly interesting and very valuable contribution in the issue of your JOURNAL of November 16th, by Mr. Harold Stiles, does not, to my mind, afford encouraging evidence as to the value of radical measures in the treatment of tuberculous disease of the joints.

When one of the admittedly most skilled and able of British surgeons can only point to a percentage of thirty good results, has a mortality of 12 per cent., and has to perform amputation in 10½ per cent. of those cases selected for radical treatment, one cannot but fear what the results would be in the hands of those less skilled and less experienced.

I think no more favourable argument for the extreme desirability of adopting conservative methods in the treatment of tuberculous arthritis could be advanced than is presented by this paper. With Mr. Stiles I most cordially agree that half-hearted measures are the reverse of beneficial, but I do feel that conservative treatment skilfully applied will give results which radical measures cannot approach.

A summary of the results of conservative treatment of surgical tuberculous lesions as applied at Alton, appeared in the *Lancet* of August 10th, 1912, and though these figures extend over only barely four years they form a contrast which may be not without interest.

I had hoped that others would comment on Mr. Stiles's paper, but the absence of correspondence and the extreme importance of the subject impels me to draw attention to a matter which so vitally concerns the interests of those afflicted with surgical tuberculosis.—I am, etc.,

H. J. GAUVAIN.

Alton, Dec. 2nd.

ASSISTANT MEDICAL OFFICERS IN ASYLUMS.

SIR,—I am much interested in the letter of "Assistant Medical Officer" in your last issue. As he puts it, "There is a great and increasing difficulty in obtaining candidates for the above positions." There are many reasons for this state of affairs, and some of these are outside the service.

I do not wish to be classed among the grumblers. Those of us who have lived in asylums for several years know the conditions of service. We entered the service under those conditions, and we must not grumble because we cannot have things all our own way. Nevertheless, there are ways of mending the present state of affairs. Reform is needed.

If "Assistant Medical Officer" is a member of the Medico-Psychological Association, he surely knows that this association is at present considering "the status of psychiatry as a profession in Great Britain and Ireland and the reforms necessary in the education and conditions of service of assistant medical officers." He will find a report of a special meeting of the association in the *Journal of Mental Science* for January, 1912, and if he is not a member I will be happy to lend him my copy. It is evident that we assistant medical officers have friends in the Medico-Psychological Association. At the same time the Medico-Psychological Association may not be sufficient for the needs of assistant medical officers. Many assistant medical officers cannot attend the meetings, as their superintendents are there, and the assistant medical officer must in many cases stay at home. Grievances cannot be ventilated under these circumstances. Hence I and several other assistant medical officers have for a long time advocated a society for assistant medical officers.

Until lately we have received little encouragement. Assistant medical officers are apathetic. They do not care to do or say anything that may prejudice them in the eyes of their medical superintendents or committees. If they are seniors, they hope to be made superintendents; if they are juniors, they wait to see what will turn up. There are signs, however, that there will some day be such a union of assistant medical officers. We at present await with loyalty and respect the action of the Medico-Psychological Association.

If it should be unable to help us, we must help ourselves. In that case the first thing to do will be to form a society, and the next to proceed to educate committees. Asylum committees are not all so bad as some medical officers seem to consider them. They require to be shown our position in a polite and proper manner. They do not know much about us, I am sure. There are many reasonable and sympathetic men on asylum committees. An enthusiastic superintendent or an energetic medical officer can, I have no doubt, work wonders with them. If they see that assistant medical officers are not merely birds of passage, that they wish to be enthusiastic and loyal and hope for recognition, much will follow.

I cannot help thinking that the reason that some of us suffer is that we are unknown. We hold the trump cards in our hands. There are amongst us future medical superintendents. Let us enlist their sympathy. Let us go forward with hope and determination, and all will be well. Union is strength.—I am, etc.,

W. J. ADAMS ERSKINE.

City Asylum, Nottingham, Dec. 2nd.

BLEEDING AND BLISTERING.

SIR,—The professional question which Dr. F. de Havilland Hall has raised in his letter is in my humble opinion of considerable importance. Two well-known textbooks, Thomson and Miles and Dr. Frederick Taylor's works, do not give the profession to understand that bleeding and blistering are barbaric or antiquated methods of treatment. On the contrary, I gather from perusing these manuals that bleeding and blistering find a place in surgery and Dr. F. Taylor, in recommending the practice of bleeding in various affections, very clearly points out in diseases of the heart producing dilatation the symptoms indicate bleeding. Referring to dilatation of the right heart, in the ninth and last edition, page 608, he says:

> The withdrawal of blood to the extent of 10 or 12 oz. by an opening in the basilic or external jugular vein at once relieves the engorged condition of the right ventricle, which can again contract efficiently upon its contents, while time is given for the action of diuretics, purgatives, and the special drugs which will be shortly mentioned.

And may I be allowed to remark that Dame Nature from all time has ordered a periodic flux of blood among the members of the feminine sex? The great Harvey has pointed this out in his writings. In practising bloodletting, then, we imitate Nature as in critical discharges of blood from the nostrils and the head, the thorax, and the abdominal cavities.

Several years ago I wrote a series of papers in the *Clinical Journal* on the Practice of Bloodletting, discussing in detail the whole matter from its usefulness to its abuse. If the future success of the practitioner is to be decided by his diagnostic skill, I know no head, thoracic, or abdominal operative procedure requiring such consummate practice and judgement as that of bloodletting, for is not the practitioner suddenly brought face to face with all the working forces of the body and their blood supply?—I am, etc.,

JOHN FREDK. BRISCOE.

Alton, Hants., Nov. 16th.

ANTIVIVISECTION IN GLASGOW.

SIR,—I am glad to see Sir Frederick Treves's letter in your issue of November 30th, as I was puzzled to understand what the "context" could be which I was charged

...th having omitted. Now that Sir Frederick Treves has supplied it, I think every unprejudiced reader will perceive that the quotation I made is really independent of it. It is a method, on the platform, to supply facts and not opinions. I think every antivivisectionist knows that Sir Frederick Treves upholds vivisection, and I invariably announce that fact as I did in Glasgow.

My point is that vivisection is an unscientific practice, inasmuch as we cannot argue from animals to man. It is in this connexion, and in this connexion alone, that I quoted your correspondent as an expert in a particular feature of abdominal surgery, namely, that of intestinal suture, and, as you yourself noted, I quoted other famous surgeons in regard to other features concerning which they could speak with equal authority.

The fact that Sir Frederick Treves is a believer in vivisection adds weight to his testimony that "such are the differences between the human and canine bowel that when he came to operate upon man he found that he was much hampered by his new experience, that he had everything to unlearn, and that his experiments had done little but unfit him to deal with the human intestine." His letter proves conclusively that I quoted him "fairly and squarely," and did not omit a single word of what he said upon the subject.

He says I ought to have added a remark he made in the *Times* four years later, to the effect that he "was keenly aware of the great benefits conferred upon suffering humanity by certain researches carried out by means of vivisection." But that was merely an expression of opinion upon "certain researches" which he failed to specify, otherwise I should have been prepared to answer him. What he did definitely specify I quoted in full—namely: "Speaking of suturing of intestine, I said that I had found that operations upon the intestines of dogs were useless as a means of fitting the surgeon for operations upon the human bowel." This expression fully bears out Professor Starling's dictum that "the last experiment must always be on man."

Sir Frederick Treves must excuse me if I place more reliance upon his facts derived from his own practical personal experience than I do upon his opinions in regard to the unspecified "researches" of others.—I am, etc.,

WALTER R. HADWEN, M.D., J.P.,
President of the British Union
Gloucester, Dec. 1st. for the Abolition of Vivisection.

THE HEREDITY OF LEPROSY.

SIR,—In his memorandum on the Contagiousness of Leprosy, in the JOURNAL of November 16th, p. 1386, Dr. C. R. Maitland Pattison refers incidentally to the heredity of the disease. In their report (1893) the Leprosy Commissioners in India came to the conclusion that leprosy was not hereditary, and since then further evidence has been forthcoming in support of the correctness of that conclusion. There is a very good reason for calling attention to the matter here, as Europeans who have contracted leprosy will be unnecessarily disturbed in their minds if they come across Dr. Maitland Pattison's memorandum.—I am, etc.,

GEORGE PERNET, M.D.,
English Editor of *Lepra* (the International
London, W., Nov. 30th. Journal for Leprosy).

CRIMINAL HEREDITY.

SIR,—In the JOURNAL of November 30th, p. 1568, you quote some remarks of the late Sir William Gairdner that "the Tasmanians were remarkably free from all such apparent reversions" of inherited instincts—that is, criminal. The following figures taken from the Transvaal census of 1904 may be of interest:

The proportions per 10,000 living males in prison:

Whites born in the Transvaal	...	...	7.42
,, ,, Britain	...	...	80.64
,, ,, Europe	...	...	72.59
,, ,, America	...	...	305.74
,, ,, Australasia	...	...	97.90
,, ,, Asia	...	...	6.34

The best behaved were white men born in Asia mostly of British parentage.

Some of these Australasians may have been born in Tasmania, the majority came from Australia.—I am, etc.,

GEO. TURNER.
December 2nd. Late Commissioner for Transvaal Census, 1904.

NEW DRUGS.

SIR,—I hardly think that Dr. Stephens's letter in last week's JOURNAL (p. 1582) requires an answer from me. He must surely know that inorganic salts which are absorbed act in proportion as they ionize, and that calcium iodide exerts the action of the calcium ion and the iodide ion; and so with the second substance he claims to have introduced into medicine. One can, of course, ring the changes with these salts indefinitely without producing anything new therapeutically. They are different combinations of ions, of which the action of each has long been known and more or less thoroughly investigated. One simple example will make my meaning clear: quinine nitrate might be introduced as a new drug, and I suppose we should all regard the claim as ridiculous, but if it were introduced as a new and for physical reasons superior method of administering quinine, it might possibly deserve our respectful attention.—I am, etc.,

Cambridge, Dec. 3rd. W. E. DIXON.

PROGRESSIVE LENTICULAR DEGENERATION.

SIR,—In your generously appreciative editorial of this week on my work on progressive lenticular degeneration, regret is expressed that the name proposed for this new nervous disease leaves out reference to the cirrhosis of the liver, which is, there can be no doubt, an essential part of the malady. May I be allowed to remark that my chief reason for not including that element of the affection in the title is that there are no symptoms during life referable to the hepatic cirrhosis? Clinically, as far as I have seen, the symptoms are exclusively nervous, and this being so, a neurological nomenclature appears to me desirable. Further, unless some shorter yet equally inclusive title for the disease can be suggested—and I should be only too delighted if it were—I am loth to add to its already somewhat lengthy denomination.—I am, etc.,

London, W., D... S. A. KINNIER WILSON.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

M.D.—H. B. Carlill.
M.B.—W. H. Cumin, D. Embolton, A. H. Gosse.
B.C.—W. H. Cumin, A. H. Gosse.

UNIVERSITY OF LONDON.

Proposed Club.

A MEETING was held at the university on Foundation Day (November 28th), the Principal, Sir Henry Miers, presiding, to consider the question of establishing a club for graduates, teachers, and officers of the university. In the letter convening the meeting it was stated that the Senate, while disapproving of the formation of a social club of which men and women undergraduates could become members, would welcome the establishment of a club for graduates, teachers, and officers, and would be prepared to consider an application for an annual subvention if the premises provided satisfactory accommodation for the meetings and business of undergraduates' societies and for other university purposes. A resolution moved by Mr. Wickham Hurd, LL.B., proposing the establishment of a club on the general lines approved by the Senate, was carried unanimously, and a committee was appointed to consider the best means of carrying the resolution into effect, with instructions that the club should be a members' club in preference to a proprietary club. The committee is to report to another general meeting. It was generally considered that the annual subscription should be moderate, and that every effort should be made to meet the requirements of provincial members, of whom it was hoped that a large number would join. The committee was, however, requested to consider and report on various schemes.

The Reitlinger Prize.

The Paul Philip Reitlinger Prize, offered this year for an essay embodying the result of some research work on a medical subject, has been awarded to Frederick James Fitzmaurice Barrington, M.S., University College Hospital Medical School, for an essay on The Innervation of the Bulbo-urethral Glands, and their Histological Changes during Activity. The prize, which is of the value of £30, was founded with funds given to the university by Mr. Albert Reitlinger in memory of his son, a student of St. George's Hospital Medical School, who died on December 3rd, 1911. Next year the prize will be awarded for the best essay on the influence of the conception of evolution on moral or social philosophy.

Medico-Legal.

AN UNQUALIFIED PRACTITIONER.

On November 23rd Mr. Dickinson, at the Thames Police Court, heard a charge preferred at the instance of the Medical Defence Union against one Ernest Alfred Edwards. It was alleged that the accused had unlawfully used the title "Doctor" in contravention of the Medical Acts, 1858 and 1886.

Mr. Bodkin (instructed by Messrs. Hempsons) prosecuted.

It appears from the report in the *East End News* that at a recent inquest the accused was called as a witness, and it was in consequence of a recommendation of the jury that proceedings were instituted. He had a card in his window which read "Dr. E. Edwards, M.C.S." Two witnesses had gone to the surgery. One of them, a Mrs. Cohen, saw the defendant, who diagnosed chest trouble and gave her medicine and pills. He used a stethoscope. The other witness, Mr. Tyrrell, said that "Dr. Edwards" told him he was suffering from bronchitis and bronchial catarrh, and that his bronchial tubes were closed, although witness had not even a cold. He paid 1s. for certain medicine and 1d. for the bottle.

The defendant denied having practised as a doctor. He had pulled teeth and had given medicine, but always reported a difficult case to a doctor.

In explanation he said that although he had seen Mr. [illegible] death was inquired into at the inquest, he had found his heart normal, although he died of syncope following pneumonia. He had had a doctor (Dr. Nunn) staying at his house, and it was he who invented the title M.C.S., telling him it meant Massachusetts College of Surgeons. He did not know Dr. Nunn's Christian name or initials.

Mr. Dickinson said it was quite clear what the defendant's intention was—clearly it was to make people going to him believe that he was a duly qualified practitioner. He now asked: Would the defendant admit that he was not such?

Defendant: Yes.

In the event Mr. Dickinson said the practice was very mischievous, and to prevent others following the defendant's example he would fine him £10 and £5 costs.

CERTIFICATES GIVEN BY MEDICAL WOMEN.

In a nullity case now pending an order was obtained for the wife to be medically examined. The court at first refused to accept a report from a woman doctor, but after argument on behalf of the Men's Society for Women's Rights, which has taken the case up, that a report from a woman doctor was in accordance with the requirements of the law, the court agreed to accept the reports of two women doctors nominated by the court. The objection must have rested on some misapprehension of the Medical Acts: under them all registered practitioners have the same status irrespective of sex.

NURSE'S LIBEL ACTION.

A MATERNITY nurse in the employment of the Board of Guardians of the Balrothery Union claimed £500 damages for libel from a lady living in the neighbourhood, who wrote to the guardians stating that there were great complaints amongst the poor about the way the nurse attended her cases. In [illegible] the jury after evidence on both sides had been [illegible] Judge said that it was the duty of any person in the community to call the attention of the proper authority to any neglect of duty by any person in a public position. The plaintiff, according to the excellent report of the medical officer, had discharged her duty with admirable care, but it did not always follow that a patient was satisfied with either her doctor or her nurse. The plaintiff had been completely [illegible] from any blame by the guardians, and her character [illegible] cleared beyond question. He was obliged to declare [illegible] on of privilege was well founded and that the verdict [illegible] the defendant, but he thought, having regard to all [illegible] stances of the case, that the defendant should pay the costs of the action.

A SWALLOWED TOOTH.

[illegible] and the Court of Session gave judgement on [illegible] 20th in an application for a new trial, in which Harry L. Richardson sued William Wallace Dickie, dentist, Glasgow, for £1,500 damages. The pursuer alleged that on [illegible] 1908, the defender [illegible] extraction of a tooth to fall [illegible] three years [illegible] ughed up the [illegible] At the trial in [illegible] rned a verdict for [illegible] The defender [illegible] [illegible] [illegible]

was ever ready to help without ostentation those who were in need. He died as he would have wished to die, "in harness"; he has passed, "his soul well knit and all his battle won"; and he has left behind him a career of unsullied reputation, an example of professional integrity, and the fragrant memory of a good man. J. P.

GEORGE FREDERICK ROUMIEU, M.A., J.P.,

CORONER FOR WEST SURREY.

The profession in West Surrey has heard of the death, at the age of 61, of Mr. George Frederick Roumieu with much regret. He was a man of fine physique, but fell a victim to cancer. He was born in Kent of Huguenot stock and had lived in Farnham for fifty years. He was educated at Christ College, Finchley, and Jesus College, Cambridge. He took his degree in 1877 and was called to the Bar in 1880. He had been coroner for West Surrey for thirty years. He had made many friends amongst all classes, and especially amongst members of the medical profession. He was essentially a doctor's coroner. When President of the Coroners Society he worked hard, though unsuccessfully, to get the Coroners Act amended, in order that honorary medical officers to institutions might receive fees for making *post-mortem* examinations and for giving evidence at inquests. He, further, always showed his interest in and sympathy with the profession in never allowing a jury to criticize a medical man's actions. When any juryman took it upon himself to suggest that the doctor should have acted otherwise than he did, his invariable remark was, "Gentlemen, your duty here is to determine the cause of death and not to criticize the action of a member of a noble and self-sacrificing profession." A man of pronounced opinions, to which he fearlessly gave expression, his nature was genial to a degree. He was given to much conviviality, and was often embarrassingly generous to his friends. A keen sportsman, a good shot, and one who could throw a fly for salmon or trout with any one, it was a great pleasure to him to entertain his friends at some country house in Scotland or the North of England during the shooting season.

He led a busy life, as besides his professional work he had many hobbies, and was associated with many business concerns. He was twice President of the British Dairy Farmers Association, and for many years he acted as Judge at the Royal and other shows of Dexters and Kerrys. He was a director of Welfords, Ltd., and of several local companies in Farnham. A born gardener, he had recently taken to market gardening as a hobby, and though the venture was doubtless not a great success commercially, he was content if it paid for the labour he employed. He was for many years a county magistrate, a member of the board of guardians, the rural district council, the urban district council, chairman of the parish council and the Farnham Joint Isolation Hospital Committee. He had done much work as a Freemason as a younger man, having twice held the position of Warden in the Province of Surrey, and at the time of his death he was P.Z. to the Cable Chapter. He leaves a widow and a daughter, the Rev. J. J. Roumieu of Reigate, besides a host of friends, to mourn his loss.

JAMES C. COX, M.D.Edin.,

LATE PHYSICIAN TO THE ROYAL PRINCE ALFRED HOSPITAL, SYDNEY, N.S.W.

J. C. Cox, whose death occurred in Sydney a short time ago, was one of the oldest practitioners in New South Wales. He was born at Mulgoa, some thirty miles from Sydney, in 1834. Early in life he showed great love for natural history, and it was this inclination that determined his father to put him into the medical profession. At that time the aboriginals were very numerous around their father's station, and he thus acquired a knowledge of their language and the native names for many of the indigenous fauna—a knowledge which stood him well in after years when he was associated with the Australian Museum. He was educated at the King's School, Parramatta, and also at the Sydney Grammar School. He was articled to a Sydney surgeon, the fee paid being £300. As a medical student he attended the practice of the Sydney Infirmary, and was present to assist the late Mr. Alleyne in the performance of the first operation under chloroform in Australia. He then proceeded to Edinburgh University, where he took the degree of M.D. He returned to Australia in 1858, and almost immediately was called upon to perform a very serious operation upon the late Dr. McEwen, and the success of this operation was the beginning of a very successful professional career.

It is believed that he was the oldest Fellow in Sydney, his membership dating back to the time when he reached his majority. He was also the oldest member of the Australian Club, and a few years ago he was entertained at dinner by the club in honour of the fiftieth year of his membership. On that occasion he made an interesting speech in which he recalled many incidents in the early history of the colony. Dr. Cox was the first lecturer on the principles and practice of medicine in the University of Sydney, and was physician to the Royal Prince Alfred Hospital. These positions he resigned some twelve years ago. He was also for many years chief medical referee of the Australian Mutual Provident Society, a position he only resigned last year.

Dr. Cox was equally well known for his interest in Australian history and natural science. He was president of the first New South Wales Board of Fisheries, and was well known as a conchologist. He was also president of the trustees of the Australian Museum.

Dr. Cox married three times, and is survived by his widow, two sons, and six daughters, one of whom is now the Countess of Lindsay. He was buried in his native town of Mulgoa, the funeral being attended by a large number of representative medical and scientific men.

One of the few remaining members of the medical profession who took part in the Crimean war passed away last week in the person of Dr. Charles Worthington Sparke, of Mansfield. Dr. Sparke, the son of a surgeon in the Royal Navy, was born in 1829, and eventually became a student of St. Thomas's Hospital, where he took the M.R.C.S. in 1855 and the L.S.A. in the following year. Almost immediately afterwards he joined the army in the Crimea as assistant surgeon in the Royal Artillery, and served with the batteries to which he was attached before Sebastopol and elsewhere until the end of the war. For these services he was awarded the British Crimean medal with clasps and also the Turkish medal. A few years later he settled down in Mansfield, where he acquired a considerable practice, holding appointments under the Poor Law and as Government inspector of recruits and pensioners. He had some taste for surgery, and it was largely due to his energies and influence that the Mansfield Woodhouse Hospital, which serves a large colliery district, was established some thirty-five years ago. At one time he was its senior surgeon. He also took an interest in the auxiliary services, and at one time held a commission in the Volunteer Battalion of the Derbyshire Regiment. He retired from practice a good many years ago, but continued to live in the neighbourhood.

Medical News.

DR. F. E. FREMANTLE, M.O.H. for Hertfordshire, has been chosen as one of the Unionist candidates for the parliamentary representation of Stockport.

THE President, Dr. Morgan Dockrell, and Council of the London Dermatological Society, will hold a conversazione at 49, Leicester Square, W.C., on Saturday, December 7th, at 8 p.m.

THE thirteenth annual West Somerset medical dinner will be held at the London Hotel, Taunton, on Tuesday, December 10th, at 7 p.m. The charge will be 6s. a head, exclusive of wine. Guests may be invited.

AT the meeting of the Pharmaceutical Society of Great Britain, to be held at 17, Bloomsbury Square, on Tuesday, December 10th, at 8 p.m., Dr. Owen T. Williams, Lecturer in Pharmacology at the University of Liverpool, will read a paper on cod-liver oil, illustrated by lantern slides, and Mr. W. Harrison Martindale, Ph.D., a paper on digitalis assay.

AMONG the lectures to be delivered at the Royal Institution before Easter is a course of six on heredity [illegible] by Professor W. Bateson, F.R.S., Professor of Biology at Cambridge. The Friday evening [illegible] on January 17th, when Professor Sir J. J. Thomson will deliver a discourse on [illegible] applications of the method of positive rays.

IT is stated that five sets of apparatus for the cremation of dead bodies have been imported into Servia for use on the battlefields.

AN antityphoid vaccine laboratory has recently been established at Nancy. Professor Chantemesse's vaccine is to be employed.

A DESCRIPTION of the diagonally compensated braking system on all four wheels is contained in an Album for 1913 issued free by Argylls, Limited, Alexandria, Dumbartonshire.

THE first meeting of the Southport Medical Society for the current session took place on November 27th, when Dr. W. A. Mackay, the new President, delivered an address on modern methods of diagnosis

THE next meeting of the Hunterian Society will be a clinical and pathological evening, which will be held on Wednesday, December 11th, at 9 p.m., at St. Bartholomew's Hospital, by kind permission of the authorities.

EXCELLENZ PROFESSOR CZERNY, of Heidelberg, celebrated his 70th birthday on November 19th. A street in Heidelberg has been named after him, and his old pupils have subscribed for a bust to be placed in the Samariterhaus.

As a result of the collections made on Queen Alexandra Day last summer a sum approximating £11,000 has been distributed between some sixty-five charities of a medical kind doing their work in or for London. The sums awarded ranged from £300 downwards.

THE annual meeting of the London Cremation Company will be held at the offices of the company, 324, Regent Street, W., on Thursday, December 12th, at 3 p.m. The report to be presented states that during the twelve months under review 592 cremations were carried out at Golder's Green, as against 531 for the preceding twelve months, being an increase of 61.

A DINNER, followed by a meeting of the Association of the Fellows of the Royal College of Surgeons in Ireland, was held on Wednesday, November 27th, at the Hotel Cecil, London. Lieutenant-Colonel Adye-Curran, President of the association, who was in the chair, said that the objects of the society were (*a*) to further the welfare of the College, and to safeguard the interests of its graduates; (*b*) to ensure that members of the association should take an active part in the proceedings of the annual or other meeting of the College; (*c*) to approach the council upon all matters affecting the material interests of the College and its graduates; (*d*) to give the council of the College all the support possible in all matters of professional interest when the association considered such advisable. It was unanimously resolved to form a council in London, and to take immediate steps to initiate an active propaganda. The Fellows who took part in the discussion were Lieutenant-Colonel Adye-Curran, Drs. John H. Dauber, Canny Ryall, Shepherd Boyd, Thomas North, Edward Yeates, Joseph F. Peart, Thomas Wilson, and Frederick Spicer. Any Fellow of the College wishing to join the association should communicate with the secretary, Dr. Andrew Charles, 64, Harcourt Street, Dublin; or with the London Secretary, Dr. Frederick Spicer, 142, Harley Street, London, W.

THE medical and other graduates of the University of Glasgow resident in and around the metropolis met together on November 29th for the half-yearly dinner of the London Glasgow Club. Professor Medley was in the chair, and among those present were Sir Donald MacAlister, Sir Henry Craik, M.P., and Surgeon General Babtie, V.C. In proposing the toast of the evening, Professor Medley suggested that the fact that he had been invited to take the chair was in itself good evidence of the excellent relations existing between the club and the university. The time when cordial relations did not exist between the senate of the university and a certain number of its graduates had long since passed. A committee of the general council, appointed ten years ago, had done much to bring the university and its graduates into closer relations. It had also brought about an extension of the Students' Union. A number of Glasgow institutions not previously connected with the university had recently been knocking at its doors; one of them, the Technical College in Glasgow, had already been affiliated. The directors of technical institutions felt that the applied sciences were not sufficient in themselves for the purpose of education, and were everywhere beginning to see the advantage of co-operation with institutions whose aim was the pursuit of knowledge for its own sake. The [illegible] institutions in Glasgow, and he was charged with a special message of thanks from the athletic club. The toast to "The Guests" was proposed by Dr. C. O. Hawthorne, and acknowledged by Mr. F. Henderson, of Glasgow. The medical honorary secretary of the club is Dr. David S. Roxburgh, 30, Seymour Street, Portman Square, W.

Letters, Notes, and Answers.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

INSPECTION OF MENTALLY DEFICIENT CHILDREN.

A SCHOOL INSPECTOR would be grateful for any forms of report on mentally deficient children, both on the physical examination side as well as on the physiological aspect. Any reference to a work containing a good anamnesis for examining mentally defective children would be welcomed.

ANSWERS.

DEFECTIVE EYESIGHT AFTER CONFINEMENT.

MR. KENNETH CAMPBELL (London, W.) writes: In reply to Dr. J. A. Wilson (Cambuslang), may I suggest that the defective eyesight in the cases he cites arises either from (*a*) detachment of retina or (*b*) haemorrhages into retina?

BENEDICT'S TEST FOR SUGAR IN URINE.

R. J. L.—A. R. Benedict recommended in 1911 the following solution in the place of Fehling's solution for the estimation of reducing sugars in urine, on the ground that the action is more sensitive and the solution keeps indefinitely: Copper sulphate, 18 grams; sodium carbonate, 200 grams; sodium citrate, 200 grams; potassium thio-cyanate, 125 grams; 5 per cent. potassium ferrocyanide sol., 5 c.cm.; water to 1 litre. The copper sulphate should be carefully weighed. The test is carried out as with Fehling's solution, the end point being the disappearance of the blue colour; 25 c.cm. of the mixture are reduced by 0.05 gram of dextrose, and by 0.053 of laevulose.

LETTERS, NOTES, ETC.

PHYSIC ON THE CARPET.

DR. CLIPPINGDALE sends us the following from the *Public Advertiser* for May, 29th, 1765: "A Bill for regulating the Practice of Physic was on the carpet when the last letters were received from Jamaica."

MODERN FRENCH VIEWS ON NEPHRITIS AND URAEMIA.

DR. CHARLES G. JARVIS (Paris, November 30th) writes: May I be permitted to correct a sentence appearing in my letter published in your last issue, and which, through the omission of three words, is meaningless. The sentence should read as follows: "Visceral oedoma can be easily suspected when a rapid decrease takes place in *the weight of* a patient placed on a dechloridized diet." For oedema of deep lying structures "melts" in the same way as subcutaneous oedema when salt is withheld from the patient's food and his weight decreases accordingly.

BRITISH RED CROSS STAMPS.

THE British Red Cross Society has issued three stamps from the design of Mr. Bernard Partridge with the view of helping its funds. The design is shown in the accompanying drawing. The stamps are of three denominations, green a penny, blue a shilling, brown [illegible] and it is suggested that they might be used to [illegible] to a Christmas card or to the envelope in which it is enclosed. The work which is being done by the British Red Cross Society is described in another column, p. 1647.



SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	2
Each additional line	0	0	9
A whole column	2	13	4
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London; no responsibility will be accepted for any such remittance not so made.

[illegible] to the Manager, British Medical Association, 429, Strand, London, W.C., not later than [illegible] if not paid for at the [illegible] rate.

[illegible] the rules of the Post Office to receive postal orders addressed [illegible] either in initials or numbers.

A Post-Graduate Lecture

CARDIOLYSIS.

BY

SIR ROBERT M. SIMON, M.D.,

SENIOR PHYSICIAN TO THE GENERAL HOSPITAL, BIRMINGHAM.

In 1902 Brauer suggested that, in cases in which it was suspected that the free action of the heart was hampered by adhesions of the pericardium to parts outside it, it would benefit the patient to remove some of the bony and cartilaginous framework of the thorax. He supposed that the precordial part of the chest wall would thereby become more flexible and oppose less resistance to cardiac expansion. It is probable, however, that the relief to the heart thus given may lie less in the softening of the wall against which it beats than in the removal of tight and tough adhesions to the fixed points like the ribs, and that relief may be expected from the removal of these adhesions.

Three of his cases were operated on, and 17 in all were recorded up to 1908. No death occurred as the result of operation, and benefit resulted in each case.

In 1908, Poynton and Trotter brought the case of a patient on whom the operation had been performed before the Royal Society of Medicine, and were of opinion that the proceeding had been justified by the improvement in the boy's condition. It must be remembered that when the operation has been performed, it has been done to relieve symptoms which have resisted all other methods of treatment, and often when, as in my own case, the patient has appeared to be on the very threshold of death.

Another case was referred to at this meeting in which death occurred three months after the operation owing to a fresh attack of pericarditis. From a surgical point of view the discussion narrowed itself down to the point whether or no the whole periosteum of the ribs should be removed—the authors of the paper concluding that the anterior periosteum only should be taken away, reossification under these circumstances not being likely to occur. Accidents to the left pleura, which comes close to the sternum, would in these circumstances be less likely to happen.

In my own case the left pleura was opened twice without any harmful result beyond a trifling pneumothorax, and I think it extremely probable that pneumothorax to any considerable extent is unlikely to occur, seeing that in every case in which cardiolysis is to be useful, the pleura and pericardium will be found to be united in dense adhesions which extend very much further to the left and right than the necessary incisions.

The pericardium is normally adherent to the central tendon of the diaphragm as well as to the sternum, and in a long-standing case of adherent pericarditis the adhesions between the two may be much more extensive than in a normal state. Whether it would be possible without danger to life to cut through these adhesions is a matter for consideration, as I do not doubt that the enlargement of liberty for a heart, if freed from its adhesions to bone, would be enormously increased by diminishing its area of anchorage to the diaphragm.

The following is in brief the record of the condition of my patient before admission and during his stay in hospital:

H. S., an office boy, aged 15, had enjoyed quite good health until the age of 12 years, when he had pleurisy on the left side and was in bed for three weeks. After he got better he felt quite well, but was told not to run, as his heart was affected. He had had growing pains in the legs since the age of 11, but never rheumatic fever. He had not suffered from sore throats. The family history was negative.

Ever since the pleurisy he had noticed that he had been short of breath on exertion. At first this was very slight and he took a good deal of exercise, especially swimming, but he had to give this up on account of shortness of breath. His employment in an office had involved walking upstairs. For a long time he had been quite unable to run, and recently the office stairs have tried him very much. Since February 17th, 1912, his legs and feet had been swollen. He went to bed on the 14th and his abdomen soon became very swollen. He was tapped and 9 pints of fluid were removed.

Condition on Admission.

On May 14th, 1912, when he was examined, he was pale, the cheeks and lips were cyanosed, and the conjunctivæ glistening and slightly oedematous. He was propped up in bed and had marked dyspnœa, which was increased by talking.

The cardiac impulse was forcible and heaving; it was not well localized, but was best felt in the seventh and eighth left interspaces in the mid-axillary line. There was bulging of the whole precordial region, the ribs being pushed out with each systole, while below and laterally there was systolic indrawing. The percussion area was extremely wide.

The first sound at the apex was loud, long, low-pitched, and booming; it was not followed by any definite murmur. The second sound was replaced by a distinct harsh diastolic murmur. There was a suggestion of a presystolic murmur. The first sound in the pulmonary area was followed immediately by a soft systolic murmur; the second sound was loud and reduplicated, and there was a diastolic murmur. There were double murmurs in the aortic and tricuspid areas.

The pulse was small, weak, of low tension, 112, regular.

There was some oedema of lungs at both bases and a little generalized bronchitis.

The liver was one finger-breadth above the umbilicus and tender; marked ascites was present. The fingers were slightly clubbed and reddened at the extremities; the legs were oedematous.

On May 17th 14 ounces of fluid were removed from the right pleura.

On May 29th the quantity of urine was very small. The pulse had been continuously above 100 since admission, and feeble; 7½ pints of fluid were removed from the abdomen.

On May 30th he seemed slightly better. On June 2nd the cardiac impulse was more localized and forcible under the seventh left rib, 5⅝ in. from the mid line.

Operation.

On June 17th the patient was anæsthetized with a mixture of nitrous oxide and oxygen, atropine and morphine having been injected subcutaneously first. Under the anæsthetic he was very bad, and artificial respiration was performed for a short time. Mr. Barling removed the sixth, seventh, and eighth costal cartilages and ribs on the left side for about 4 inches from the sternal margin, through a wound made by turning up a large flap of skin. During the operation the pleura was opened in two places and a pneumothorax produced. The pleura appeared healthy, but the pericardium was very adherent to the anterior thoracic wall. The operation occupied about twenty minutes. After the operation the boy was remarkably well and had comparatively little pain.

On June 21st his pulse-rate, which had almost always been above 100, suddenly fell to 60. He had been having "Guy's pills," one three times a day. On June 29th no diastolic murmur could be heard anywhere. The boy seemed more comfortable than he had been before, and his heart was smaller.

On July 2nd a tracing showed a totally irregular pulse without any trace of auricular systole.

Since July 12th the boy has been up and about. Although his pulse has been continuously irregular he is comfortable and much less cyanosed than formerly. His breathlessness has vanished and also the clubbing and redness of the [illegible]. He has no oedema, and is well able to walk up and down stairs at present.

It will be seen that there had been no definite history of rheumatic fever, though the so-called growing pains were probably of rheumatic origin, as, when he recovered from the attack of pleurisy at the age of 12, he was warned not to run because his heart was affected.

From the time of his pleurisy he was short of breath, but did a good deal of swimming until dyspnœa made him give it up. He remained pretty well until February of this year, when he had to give up work as an office boy because he could not climb the stairs to the office, and took to his bed on February 14th. His feet and legs were swollen, and he soon developed ascites which necessitated tapping and the removal of nine pints of fluid. I saw him in consultation with Dr. Hadley of the General Dispensary, and at the request of his friends admitted him to the General Hospital about the second week in May.

Prior to that date he had not shown any sign of improvement under any and every treatment, and I warned his friends that he was not likely to do well. They quite understood this, but wanted him to have the better nursing and comforts of a hospital. They agreed again when I proposed operation a few weeks later, after having failed to do more than temporary and very transient good by tapping the abdomen and pleura, and by the use of cardiac tonics.

Despite the various bruits that were noted by my house-physician, Dr. Wilkinson, I could never satisfy myself that there were valvular lesions enough to account for all of them, and became more and more impressed by the belief that there were not only adhesions between the fibrous bag and the serous sac of the pericardium, but that the

fibrous bag was adherent to the front of the thorax, the diaphragm, and the pleura.

In consequence of these external pericardial adhesions I imagined that proper muscular contractions of the heart wall had become impossible, and that the bruits might be due to distortion of the cavities and their openings. The boy was distressingly short of breath, very miserable and in great discomfort, and it seemed clear that death was imminent. Under these circumstances I felt that the separation of the external adhesions would at least give the heart some chance of proper contraction, would increase the comfort of the patient, though the risk of his dying under anaesthesia was recognized. Mr. Barling completed the operation in twenty minutes, and from the moment of recovery from anaesthesia the boy became more comfortable than he had been for months.

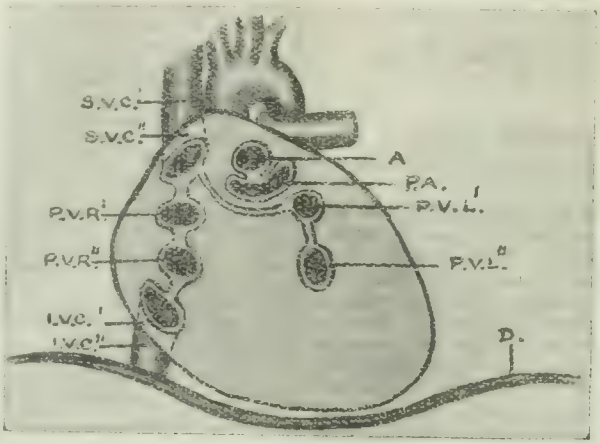
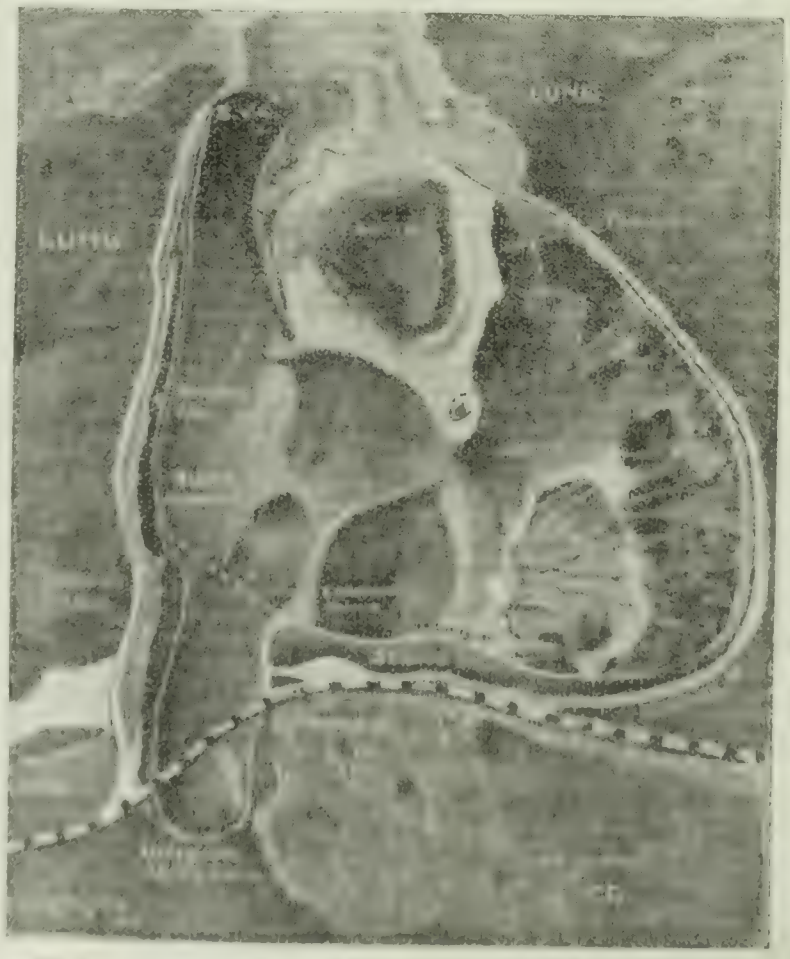


Fig. 1.—Diagram to show the openings in the pericardium after the removal of the heart. S.V.C.', Extrapericardial part of superior vena cava; S.V.C.'', intrapericardial part of same; P.V.R.', P.V.R.'', upper and lower right pulmonary veins; I.V.C.', intrapericardial part of inferior vena cava; I.V.C.'', extrapericardial part of same above diaphragm; A., aorta; P.A., pulmonary artery; P.V.L.' and P.V.L.'', upper and lower pulmonary veins of left side; D, diaphragm.

The patient has made an uninterrupted recovery in so far as breathlessness, distress, and oedema of legs or feet or abdomen are concerned. The liver has become normal in size, the enlargement of the spleen has disappeared, and, most important of all, the diaphragmatic movements, though still limited, have become more extensive, while the dilatation of the heart has been much reduced. All the bruits, with the exception of systolic mitral, have disappeared, and the boy can walk, sleep, and enjoy life.

Three days after the operation the pulse, which for months had never been under 100, dropped to 56. He was taking digitalis at the time, and, though this was very soon stopped, it has not once reached 100 again, but is usually between 70 and 80 and is fairly regular.

The pulse tracings indicated auricular fibrillation, and it is pretty certain that there is, as was to be [illegible] a considerable amount of [illegible] that it is impossible that he will ever be [illegible] he is alive and comfortable, and this [illegible] the operation.



Section of heart *in situ* to show inferior vena cava and its relations to pericardium and diaphragm.

The selection of a suitable case for this treatment involves the greatest care and prolonged observation. It is difficult enough to diagnose an adherent pericardium when the fibrous bag is united inseparably to the serous covering of the heart muscle, but to feel sure that in addition there are external adhesions to the chest wall and to the diaphragm is a most serious problem. It is a difficulty that must be faced, however, or the operation will be discredited and possibly some lives sacrificed. Probably the best way to succeed in making a diagnosis is to determine if there is any way of explaining the increased size of the heart as due to any other cause than old pericarditis.

These cases occur almost entirely in young people at the time of development, in whom it has been known that they have been suffering from heart disease of some standing. Generally speaking, disease of the aortic valves, Bright's disease, and adherent pericarditis are the only causes of hypertrophy of the heart in children, and it is fairly easy to satisfy oneself as to the existence of either of the first two causes, so, by methods of exclusion, arriving at the diagnosis of old pericarditis. Chronic myocardial degeneration will cause dilatation of the heart and an increase in the area of precordial dulness, but it is rare in children; it may occur, but is seldom rapid in its course. Adhesions of the pericardial membranes must in course of time result in myocardial changes, but, as already stated, they are slow in development, and simple pericardial adhesions may, and often do, exist for many years without imperilling life; so, if in a youth we find a fairly sudden and rapid failure of heart power, and are able to exclude disease of the aortic valves as accounting for the hypertrophy, we are forced to consider the question of external adhesions.

We are helped materially by two very important observations, the nature of the impulse and the movements of the diaphragm. The latter can be observed in two ways by radiography and by the movements of the abdominal wall. In inspiration the diaphragm descends, pushing

before it the abdominal wall; if this movement does not occur, the inference is that the diaphragmatic contraction does not take place, because it is adherent to the pericardium, which maintains an almost constant position, owing to its relations to the root of the lungs and the aorta and pulmonary artery, though its junction to the central tendon of the diaphragm causes it to descend a little when the diaphragm descends.

The impulse in these cases is often very diffused and the apex of the heart can generally be felt in the same position, not moving if the patient changes his position and lies on either side, the whole pericardium being anchored and fixed by adhesions. The limitation of diaphragmatic movement has a very important bearing on the liver. Physiologically it is compressed by the descent of the diaphragm, and in its turn presses on the vena cava, so that the blood from the hepatic veins is pumped up through the inferior vena cava into the right auricle. If the diaphragm does not act, this free passage of blood does not take place; it is dammed up in the liver, which becomes swollen, and, as in the case of H. S., may be felt as low down as the umbilicus. If, therefore, in a patient who has been known or suspected to have adherent pericarditis we find such enlargement, and this is not due to cirrhosis, we may feel pretty confident that the diaphragm is adherent to the pericardium, especially if the diaphragm moves less than normally, and the anterior wall of the abdomen does not protrude with inspiration.

The vena cava passes between the right and central lobes of the central tendon of the diaphragm, and it is more than likely that its shape may be altered and its lumen diminished by an increase of the connective tissue of the tendon, due to inflammatory proliferation.

This leads me to express the hope that it may be possible, by means of removal of this pressure on the vena cava, to still further increase the relief that the present operation of cardiolysis has rendered. It would, of course, necessitate a second operation on the right side, and it may indeed be impossible, as the vena cava is deep in the thorax and has very intimate relations with the phrenic nerve. Mr. Billington, resident pathologist at the General Hospital, has been kind enough to make a number of investigations for me on the relations of the inferior cava in the thorax, and finds that there is a very appreciable length of the vein, an inch or more, which is to be seen in the thorax between the points of piercing the diaphragm and entering the heart.

All the older textbooks speak of the vein as passing through the diaphragm and entering the pericardium immediately. This is certainly not the case, as the vein can be distinctly seen as stated for ¾ in. before it pierces the pericardium; the rest of it, comprising about ½ in., is within the pericardium and partially covered by the serous sac. The later textbooks speak of and illustrate this fact.

It is just this first part which may be affected by adhesions of the right pleura, which are very apt to occur in cases of anterior mediastinitis secondary to pleurisy or pericarditis. It is to the possibility of dealing with this condition that I venture to draw the attention of surgeons. The vena cava, when it leaves the diaphragm, is extrapericardial and is covered by fibrous tissue; what this fibrous covering is seems doubtful. It may be a derivative from the diaphragm or from the fibrous bag of the pericardium, or be independent of both. It is not covered by the pericardial serous sac until about ½ in. before it enters the right auricle. This ¾ in. of vena cava, which has as yet no connexion with the serous sac of the pericardium, is therefore very likely to be affected by any proliferation of connective tissue, such as occurs in mediastinitis; but it is equally obvious that adhesions of the two layers of the serous sac—namely, that overlying the heart muscle and that lining the fibrous bag of the pericardium—cannot affect this part at all.

It is possible, therefore, to understand why internal adhesions of the pericardium may occur without inducing any signs of pressure on the cava, such as obstruction to the entrance of the blood into the right auricle, and consequent increase in size of the liver. When such signs occur it would follow that we may assume that external adhesions have been formed. This interpretation, if correct, would explain why sometimes chronic pericarditis may exist for years without producing any symptoms, until gradually those of progressive myocardial degeneration assert themselves, and, on the other hand, why very rapid signs of heart failure without general valvular lesions may probably be found to be dependent on external pericardial adhesions.

It is in this latter type of case that cardiolysis may be expected to prove useful.

The anatomical conditions of the vena cava superior as regards its relation to the pericardium are exactly like those of the vena cava inferior, but the symptoms associated with pressure upon it will be those of delay of the venous circulation in the face and neck.

Cyanosis, which was so marked in the case of H. S., disappeared at once after the operation.

No attempt was made in this case to look for adhesions to the diaphragm or the veins, so it is clear that the beneficial result was due to the increased freedom of contraction from removal of the ribs, and by separation of the adhesions between them and the pericardium.

AN INTRACELLULAR PARASITE DEVELOPING INTO SPIROCHAETES.

Found by the Jelly Method of in Vitro Staining in Syphilitic Lesions and in the Circulating Blood during the Secondary Stages of the Disease.*

(With Special Plate.)

By EDWARD HALFORD ROSS.

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1. *An Intracellular Parasite of Guinea-pigs developing into Spirochaetes.*

By the jelly method of *in vitro* staining,[18] certain peculiar inclusions found embedded within the mononuclear leucocytes of the blood of guinea-pigs and known as Kurloff's bodies were shown to be parasites.[10] These same bodies, if examined by the usual methods involving drying and fixation, merely appear as opaque semi-stained "splodges," and therefore can be easily passed over as artefacts. Hence their true nature was not recognized until the jelly method was employed. The method enabled the development of this parasite, which was named *Lymphocytozoon cobayae*, to be demonstrated. It showed how the chromatin within the inclusion becomes formed into spirochaete-like bodies, and how, after the inclusion has burst, the spirochaetes swim freely in the blood. They can then be seen readily by the dark-ground illuminator as motile filaments swimming in the blood of the guinea-pigs. In addition to this, amoeboid forms were also observed. In the description of this parasite, the suggestion that these spirochaete forms might be microgametes (male element or spermatozoon) was quoted[7]; and the observations were made that the parasite produces anaemia, and that many of the infected guinea-pigs—a large percentage of guinea-pigs bought in England are infected—exhibited single or multiple white patches or tumours within the substance of the liver and spleen.

2. *The Histology of the White Liver Tumours of Guinea-pigs.*

Microscopic sections of these gumma-like tumours of the liver and spleen of guinea-pigs were then furnished me, and these showed that the tumours contained masses of mononuclear cells, the majority of which exhibited the cell inclusions known as Kurloff's bodies.

3. *The History of the Parasite of Guinea-pigs.*

Kurloff[1] thought that the cell-inclusions were vacuoles; another[4] suggested "Secretstoffe"; while again others[5] claimed their parasitic nature. More recently it has been maintained[9] that they belong to the Chlamydozoa or Cytoryctes. The supposition of their parasitic nature, however, led to conjectures as to the mode of transmission, and food, ectoparasites, and contact have been suspected. But I have already mentioned that by means of the jelly method these Kurloff bodies have now been proved to be living parasites; and observations point to the transmission of these parasites from guinea-

* Received October 11th, 1912.

pig to guinea-pig being effected at coitus, and also transferred from mother to offspring.

4. *An Intracellular Parasite of Earthworms developing into Spirochætes.*

J. W. Cropper[9] found similar cell inclusions within the fixed mononuclear cells of the vesiculae seminales of earthworms: these very closely resemble in appearance the parasites found in the blood of guinea-pigs. By the jelly method Cropper demonstrated the development of these earthworms' parasites through precisely similar stages to those undergone by Kurloff's bodies into free swimming spirochaetes (seen readily by the dark-ground illuminator) which are to be found in the seminal fluid of the infected earthworms.

5. *An Intracellular Parasite developing into Spirochaetes found in Human Syphilis.*

A review of the foregoing facts led to the examination of the sores of syphilitic patients by the jelly method, and cell inclusions similar to Kurloff's bodies were found at once. The first case examined suffered from a non-ulcerated Hunterian chancre, which was pricked with a needle and the blood placed upon a jelly and examined. Several of the mononuclear leucocytes exhibited distinct cell inclusions, each one of which was embedded within the cell cytoplasm itself, surrounded by a cell wall, and having a distinctly staining chromatin mass within its interior. In the same specimen round or pear-shaped bodies were seen lying free between the blood corpuscles; these were similar in shape, size, staining reactions, presence of chromatin nucleus, cytoplasm, granules, as those seen included within the cells.

Since then 143 cases of primary and secondary syphilis have been examined by this method, and the intracellular and extracellular bodies have been found in every case. They have been observed in the chancres, in the "hard shotty" non-suppurating glands removed aseptically, in the blood from the maculae and condylomata, in the ulcerated tonsils, and in the peripheral (finger) blood. And in consequence of the number which have been observed, their resemblance to the parasites of guinea-pigs and earthworms described above, and because of their characteristic appearance when seen stained by the jelly method, their parasitic nature is evident; and now various phases of their development have been demonstrated, and the mode of the production of the spirochaete seen. The interpretation which I place upon the phases of the development observed in this parasite are as follows: The small extracellular round or pear-shaped bodies, numerous in the chancres and glands homologous to the free, amoeboid forms of *Lymphocytozoon cobayae*, become included within the cytoplasm of the leucocytes, epithelial and other cells. Here they encyst themselves in a cell wall, grow, and their chromatin undergoes division and subdivision. These included bodies are very frequently seen in the depths of the chancres, glands, and sores. They are found multiple or single embedded within the cytoplasm of the large mononuclear cells; and as the parasites grow, the nucleus of the cell becomes distorted and squeezed. The chromatin within the parasite stains (on the jelly to be described) purple—each chromatin mass having in its centre a well marked very deeply staining dot. There may be one chromatin mass within the inclusion, or there may be as many as twelve, according to the size and stage of the development of the parasite. Each of these chromatin masses is either round or pear-shaped, and some of them may be seen apparently in the act of subdivision. In the full-grown parasite commonly found included within the large mononuclear cells squeezed from the deeper parts of the chancres, or found in the glands removed by operation, each individual chromatin mass will be seen to resemble the free, round or pear-shaped forms already described. In fact, the cell inclusion can be made to burst on the jelly by pressure on the cover-glass, and the contained young parasites extruded.

But there is another phase to be recorded. In some instances the chromatin mass within the cell inclusion gives rise, while still within its host cell and when it has reached full size, to several minute purple-staining, curled and twisted spirochaete-like tails (many of them closely resembling *Spirochaeta pallida*) similar to the spirochaete-like bodies seen in the inclusions found with the cells of guinea-pigs and earthworms. If these inclusions are burst the spirochaetes can be extruded.

All the forms here described have been seen in the chancres, glands, and sores of syphilitic patients, and also, but less frequently, as might have been expected, in the circulating blood. They have not been seen apart from syphilis, although a great many controls of blood and tissues have been examined on the jellies.

6. *Homologies between the Human Parasites found and the Intracellular Parasites of Guinea-pigs and Earthworms.*

The parasitic cell inclusion of the guinea-pig has been shown to develop into spirochaetes; the parasitic cell inclusion of the earthworms has been shown to develop into spirochaetes; the parasitic cell inclusion in human syphilis has been seen to develop into spirochaetes, and the presence of spirochaetes in syphilis is well known; but the human parasite has been found to develop into free, round, or pear-shaped bodies as well. It is true that free amoeboid forms were also found in the blood of guinea-pigs, and these have been mentioned by Hunter,[6] but their parallel development in the guinea-pig had not been observed. When these pear-shaped bodies were seen in human syphilitic sores a search for the parallel development of the homologue in guinea-pigs was made, and these bodies were found by J. W. Cropper in the large mononuclear cells of the peritoneal cavity of infected guinea-pigs; and he has now observed their complete development exhibiting stages exactly similar to those of the development of the pear-shaped bodies observed in human syphilides. This discovery in the guinea pig's

DESCRIPTION OF PLATE.

Fig. 1.—A small intracellular parasite commonly found in syphilitic chancres.

Fig. 2.—Division of the parasite chromatin; an inclusion found frequently in the mononuclear cells of the glands.

Fig. 3.—A cell from a chancre containing two parasites showing development. Note the copper colour of the parasites.

Fig. 4.—A mononuclear cell, from a chancre containing three parasitic inclusions, two of which show the development of the spirochaetes, the third being an early stage of the phase shown in Fig. 6.

Fig. 5.—A large mononuclear cell found in the finger blood of a case of secondary (macular) syphilis. It shows the formation of the spirochaetes from a central chromatin mass within the included parasite.

Fig. 6.—A parasitic inclusion found in a cell of the blood taken from a syphilitic papule: it exhibits the subdivision of the chromatin of the parasite and the mode of the production of the free forms

Figs. 7, 8, 9, 10.—The free forms—round and pear-shaped bodies—found commonly in the chancres, sores, and glands of syphilitics; they are amoeboid, stain in a characteristic manner, and are found in the earliest thickening which initiates the Hunterian chancre, as well as in all the manifestations of secondary syphilis examined up to the present time; they contain granules and a central chromatin mass, which at first sight appears as a vacuole containing a central dot, but if watched on the jelly it will be seen to stain as in Fig. 8.

Figs. 1, 2, 3, 6, 8 very closely resemble the development of the female element of *Lymphocytozoon cobayae*, the homologous parasite of guinea-pigs. The rabbit parasites show similar phases.

Figs. 3, 4, 5 very closely resemble the development of the spirochaetes or male element of *Lymphocytozoon cobayae* and of *Spirochaeta lumbrici*, the homologous parasites of guinea-pigs and earthworms. The rabbit parasites show similar phases.

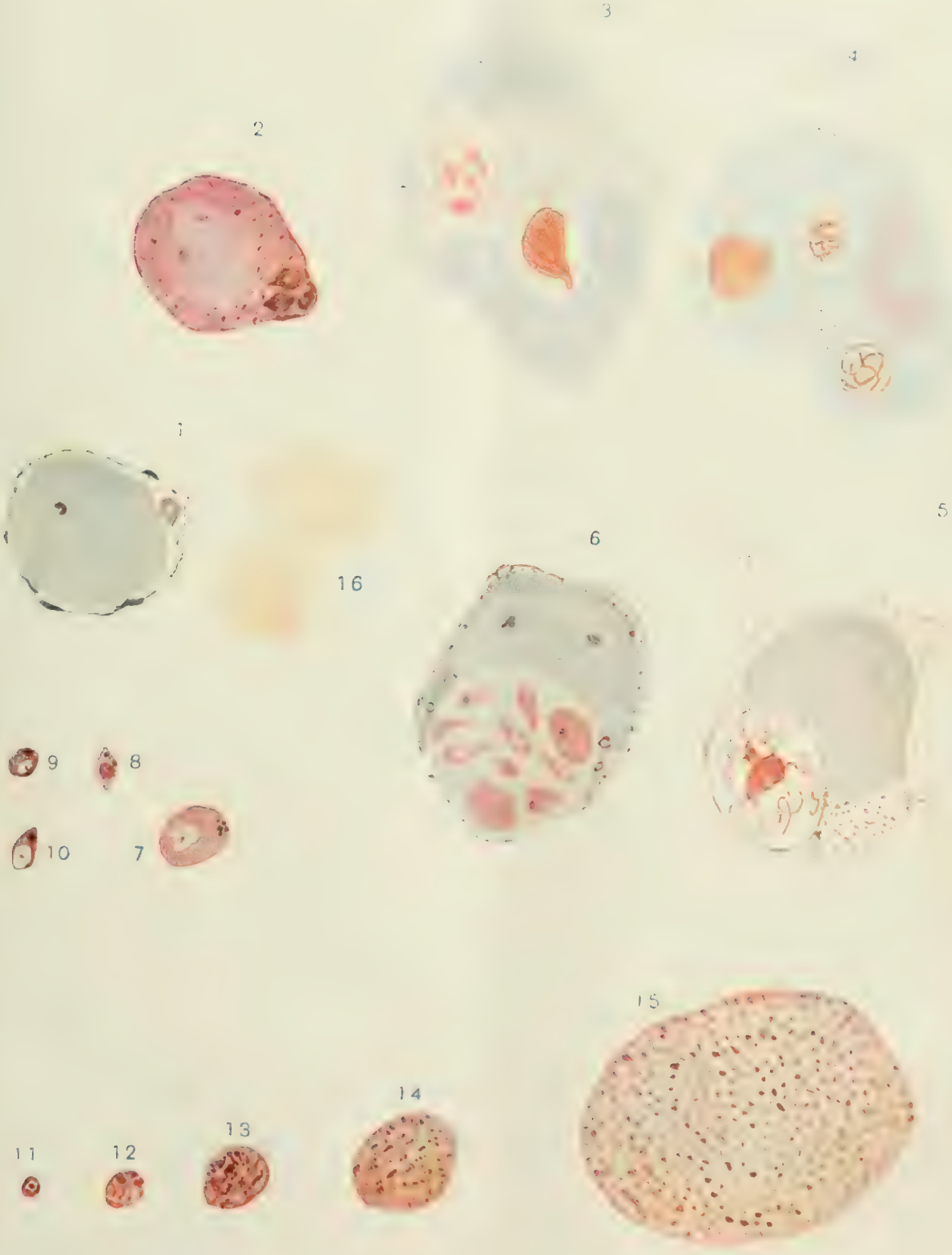
Figs. 11 to 15.—Peculiar bodies found in secondary and early tertiary syphilis. They occur frequently in the sores, non-suppurating glands, and have been seen in the blood of two tertiary manifestations. Similar bodies to these are commonly seen in the blood of guinea-pigs infected with *Lymphocytozoon cobayae*, where they appear attached to mononuclear leucocytes, and in the seminal fluid of earthworms infected with *Spirochaeta lumbrici*, where they appear free as pictured here. In the guinea-pig these large granular bodies produce buds, each one of which, when separated, contains chromatin.

Fig. 16.—Two red blood corpuscles drawn for size comparison.

The figures are copied from specimens of living cells stained *in vitro* by the jelly method.

[9] The parasite has just been found by Cropper in the peritoneal cavity of newly born guinea-pigs.

E. H. ROSS: AN INTRACELLULAR PARASITE IN SYPHILIS DEVELOPING INTO SPIROCHAETES.



E. H. Ross del ad nat.

cells appears to give credit to the suggestion that the spirochaetes are really microgametes or male elements, and, if this should prove to be the case, the possibility of some of the round or pear-shaped bodies being macrogametes or female elements must be considered. This, however, could only be proved by observing the act of conjugation, and convincing oneself of the observation. But further evidence exists as to this parasite being a protozoon having a cycle of sporogony in the fact that in the deeper layers of the secondary syphilides peculiar cells are to be found. These vary in size from that of a large blood platelet to that of an enormous cell larger than the eosinophile. These cells are spherical, are completely studded with multitudes of small chromatin copper-coloured staining granules. They have been likened to mast cells, but the variation of their size, their bag-like shape, the numbers of granules and absence of nuclei serve to distinguish them. I have only seen these cells in syphilities.

7. *The History of the Parasite of Syphilis.*

Klebs[1] appears to have been the first to consider the parasite of syphilis in 1879; Lesdorfer[11] and Döhle[12] also described parasites. But Stassano[13] seems to have been the first to find cell inclusions in the manifestations of the disease. Then Siegel[14] described his *Cytoryctes luis*. In that description he pictures certain flagellate bodies, the counterpart of which can be seen by the jelly method. These flagellated bodies very closely resemble the production of the spirochaete-like forms, but appear outside the cells. Schaudinn went to investigate Siegel's work and he discredited it. A few months later he produced his famous discovery[15] of spirochaetes swimming free in syphilides, and these were named *Spirochaeta pallida*, and have been very generally accepted as the causative agents of syphilis. Schaudinn's work was confirmed and proved by Metchnikoff and Roux.[16] It seems probable, however, that Stassano, Siegel, and Schaudinn can each claim to have discovered a phase of a parasite found in syphilities, though I understand that Siegel has lately modified some of his former views. It is important to mention that de Korte,[17] while house-surgeon at the London Lock Hospital, described in 1906 free round bodies in the chancres of syphilities, and "a cyst measuring 12 μ, containing crystalline-looking threads, the whole staining very faintly." He called these protozoa, and classed them with the Ciliata; his illustrations are very poor. Recently I have heard that Mr. McDonagh, F.R.C.S., surgeon to the London Lock Hospital, has found cell inclusions in syphilis. Intracellular stages of various other spirochaetes have been described by many authorities—Leishman, Andrew Balfour, Fantham, Hindle, Blanc—but the relations between the various bodies described above and the *Spirochaeta pallida* were not hitherto demonstrated.

8. *The Technic of the Jelly Method.*

The jelly method, as invented by H. C. Ross,[3] is as follows: 3 c.cm. of a 2 per cent. solution of agar in water, boiled and filtered; 1 c.cm. of Unna's polychrome methylene blue (Grübler), which has been previously diluted with two volumes of water—that is, 1 in 3; and 2 c.cm. of a solution containing 4.5 per cent. sodium citrate, 1.5 per cent. sodium chloride, and 0.225 per cent. atropine sulphate. This is boiled up together in a test tube and 0.3 c.cm. of a 5 per cent. solution of sodium bicarbonate ("alkali solution") added. Then a drop of this mixture when molten is poured on to a microscope slide and allowed to spread thereon, to cool, and to set. The chancre to be examined should be pricked with a large needle, and the blood squeezed from it so as to obtain the deeply situated cells. A drop of this blood—which, for convenience of conveyance and for the prevention of clotting, may be citrated with an equal quantity of 3 per cent. solution of sodium citrate and a 1 per cent solution of sodium chloride—is placed upon a cover-glass and inverted on to the set jelly. The blood spreads out between the cover-glass and the jelly in a thin film. In five minutes, when the cells have come to rest, the specimen can be examined under the microscope. The presence of the atropine in the jelly is optional, but it causes the cells to exhibit amoeboid movements, and this serves to differentiate the living cells from the dead ones, and the stain enables the cell contents to be distinguished clearly. The granules of the leucocytes stain scarlet while the cells themselves are still motile; then as the nuclei stain—at first a pale blue, but later a deep ruby red—the motility ceases for the cells die. At length the stain fades from the cells, some of which may burst, for the cytoplasm liquefies and the cell becomes disorganized. It is not easy to make bad specimens by this method, and the pictures obtained are clear, each cell standing alone.

The parasites described generally stain after the granules of the leucocytes, and they appear as copper-coloured bodies either free—when they exhibit amoeboid movements—or included within the larger mononuclear cells. Each parasite shows the copper-coloured cytoplasm which contains a varying number of granules which stain deeply. In the centre of the parasite its "nucleus" appears, at first unstained, when it may be seen as a clear space showing a black dot in its interior. If the parasite is watched, however, the chromatin of the nucleus will be observed to stain suddenly a deep mauve, and then as the parasite dies the stain fades, leaving it a colourless sphere. This achromasia occurs to all the cells, and it is therefore essential to observe the specimen early; but the included parasite sometimes retains its stain after its host-cell has become achromatic. Occasionally in the external sores of syphilis the free parasites may be found engulfed by the polynuclear leucocytes. But in the non-suppurating glands and in the peripheral blood the larger mononuclear cells contain them, and it is in these cells that the development of the parasite may be observed; as stated before, however, the numbers of infected cells are much smaller in the peripheral blood than in the glands and sores.

Some warnings are necessary. If the blood has been shed some time, or if there is too much alkali solution in the jelly, the cells may show diffusion vacuoles—small pink-staining dots, which may be mistaken for parasites they possess no chromatin, however—indeed, they contain no structure, and they grow in size as the specimen stands until they burst. The parasite, on the other hand, has a clear cell wall, and possesses definite internal protozoal structure. If the patient from whom the blood is obtained has received treatment, such as an injection of "606," or of mercury, the free parasites are reduced in numbers, apparently within a few hours, whereas the included forms remain as before. This observation is based on but a few cases, and may require modification hereafter.

9. *A Possible Means of Diagnosis.*

It is too soon to be certain whether the presence of this parasite in the sores or blood can be regarded as a means of diagnosing syphilis. The evidence at present is strong. It has been found in syphilis only so far. The parasite develops into spirochaetes closely resembling the *Spirochaeta pallida*. The homologous parasite of guinea-pigs also develops similarly into spirochaetes. The homologous parasite of earthworms also develops similarly into spirochaetes. Guinea-pigs infected with *Lymphocytozoon cobayae* and the resulting spirochaetes exhibit gumma-like tumours, in which the parasites are found. The history of the finding of the parasites and its homologues points to its connexion with the causative agent of the disease. Still, I cannot say yet with absolute certainty that this protozoon is the cause of syphilis. The quickest way of proving this point will be the examination of as many cases as possible, and if others will co-operate in doing this it will soon settle the matter. By this means we shall obtain the real value of the finding of this parasite as an aid to diagnosis. I have found them in the early induration which initiates the formation of the Hunterian chancre; so far, from that time onwards, they have been found in all primary and secondary sores examined.

10. *A Working Hypothesis.*

Perhaps I may be permitted a suggestion. There seems justification for the suggestion that the guinea-pig or rabbit parasites might produce in man a mild affection which would modify the human disease of syphilis in the same way as the vaccination of cow-pox has modified small-pox

Similar parasites to those found in syphilis have been found in the blood of rabbits. These rabbits exhibit chancres, bubóes, ulcers of the genitals, mouth, anus, etc., and some have white patches of the liver like the infected guinea-pigs. The rabbit parasites, which are very numerous in the sores, possess phases indistinguishable from the human parasites.

in the individual and in the community. It must be remembered that the believed parasite of small-pox and vaccinia—the *Cytoryctes variolae* and *vaccinae* of Guarnieri—belongs to a family of cell inclusions (Chlamydozoa) somewhat similar to those I have described. Therefore the suggestion seems worth following up.

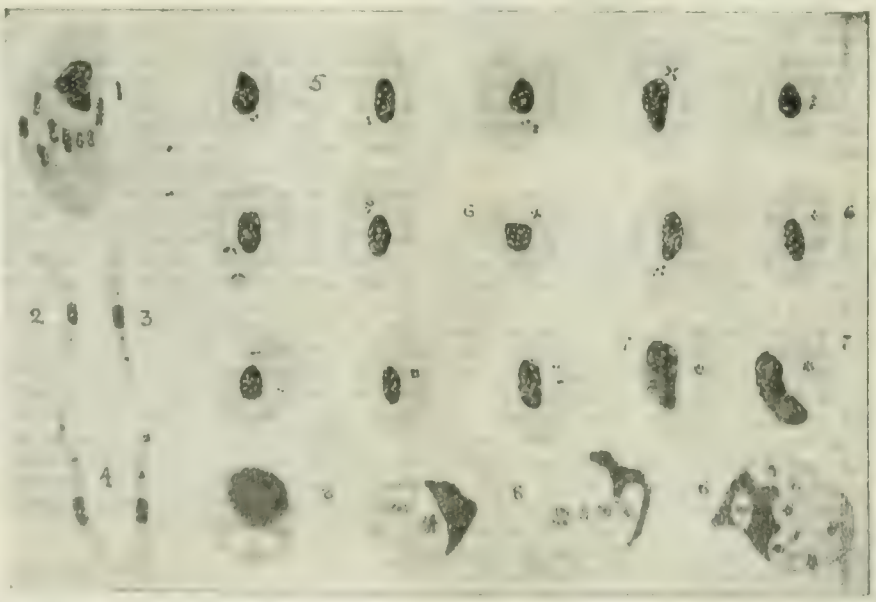
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THE "INFECTIVE GRANULE" AS THE INITIAL PHASE IN THE LIFE-HISTORY OF A HAEMOGREGARINE.

(Preliminary Note.)

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WHILE investigating the spirochaetosis of Sudanese fowls, Balfour of Khartoum [1] discovered that there occurred from time to time during the disease a period which he has called the after-phase, when the causal organism as such disappeared from the peripheral circulation, and when, coincident with this disappearance, the erythroblasts were found to contain certain curious intracorpuscular bodies which he maintained to be a stage in the life-history of the spirochaete in question. Such an interpretation was much disputed at the time and still meets with opposition, but Balfour himself since his original communications has done much to throw light on the exact significance of these intracorpuscular bodies.[2] Working with infected chickens in which a natural crisis has occurred, or in which an artificial crisis has been induced by salvarsan, he found by using dark-ground illumination that the spirochaetes break up into granules in the internal organs. These granules, to which have been given the name of "[illegible] granules," are [illegible] spirochaete from one or other [illegible] and which [illegible] life-cycle of the [illegible] slightly also in size.



In working with the blood of the Gadidae, in one species of which—*Gadus pollachius*—I have found a spirochaete, I have from time to time met with corpuscular inclusions which I believe to be of the same significance as the bodies described by Balfour in chicken spirochaetosis. Similar appearances have been described, too, in the case of certain other non-pathogenic spirochaetes.[3 4] Moreover, attention may be directed to the series of observations carried out by Sir William Leishman on the chromatin granules found to occur in the tissues of *Ornithodorus moubata* fed on blood containing *Spirochaeta duttoni*.[5 6]

In trypanosomiasis the so-called infective granule has been demonstrated by Major Fry,[7] and observations with regard to this body in *Trypanosoma gambiense* have been published recently by Lieutenant Ranken, of the Sudan Sleeping Sickness Commission.[8]

Buchanan,[9] too, in describing certain cultural phases of *Trypanosoma brucei*, ends with a rather significant remark:

> A marked feature, perhaps worthy of note, was the constant presence of free chromatin granules in nearly all the smears from the second day onwards. These were apparently derived from the nuclei of disintegrating trypanosomes, and possibly represented a first phase in development.

While searching some blood films taken in 1909 from specimens of *Solea vulgaris* infected with *Haemogregarina simondi*,[10] I noted that certain of the red corpuscles harboured in their cytoplasm two deeply staining granules having the appearance of chromatin. At the time I took these bodies to be of the nature of the centrosomic bodies described by Ross, Moore, and Walker.[11] Recently an opportunity has occurred of investigating a series of specimens of *Solea vulgaris* at Plymouth. In all of these fish *Haemogregarina simondi* could be demonstrated in the circulating blood or in the viscera. The parasite was examined in fresh blood, to which had been added N/2 sodium chloride containing a trace of certain dyes, in cultures of Nicolle's blood agar medium, and also in various fixed preparations. Most commonly the parasite occurs in the form of a colony of eight individuals all lying side by side inside the same red corpuscle, which is in consequence enormously enlarged (Fig. 1). The length of each individual varies from 18 to 22 μ. The anterior extremity is club-shaped, and often furnished with a small proboscis. The posterior extremity is thinner and tapers to a point, while the nucleus is situated somewhere in the middle third of the body. (Fig. 2.). While watching the escape of these parasites from infected corpuscles into the surrounding plasma I was struck by the fact that in many of the free haemogregarines one, two, or more bright refracting granules were found to emerge from the nucleus (Fig. 3) and to make their way through the protoplasm of the parasite to one or other extremity, in the majority of cases to the posterior extremity. In this passage from the nucleus to the posterior extremity these granules frequently divide, so that two granules which have emerged from the nucleus become four when they reach the posterior extremity. (Fig. 4.) Further, these granules are shaken free from the living haemogregarine as it swims among

the corpuscles. The free granules, which are frequently to be met with in pairs, each individual being apparently connected to its fellow by an invisible thread, are much more highly refractile, and appear to exhibit more marked Brownian movement than do the free leucocyte granules and the other granules to be found in fresh blood preparations. On one occasion a pair of granules which were seen to escape from a free haemogregarine were found overnight to have taken up a position actually inside a neighbouring red blood corpuscle. Moreover, these two intracorpuscular granules were found to have divided into four between 10.30 a.m. and 4 p.m. of the same day.

The extrusion of these granules from the nucleus of the parasite, their passage to the posterior extremity, and their liberation into the surrounding blood plasma, may be readily observed in films of fresh blood kept between slide and cover-slip, or in films made from blood kept in tubes of Nicolle's blood-agar medium. In the case of soles examined during May, 1911, granule formation occurred, as a rule, after the individual parasites had escaped from the host cell, whereas with soles examined in September, 1912, granule formation was in most cases marked while the parasites were still intracorpuscular.

In living blood the granules readily take on a red staining with polychrome methylene blue, and they also take up pyronin with great avidity. With fixation followed by Romanowski stains they are large and well marked, while with iron haematoxylin in sublimate fixed wet smears they appear smaller.

Again, in specimens of blood showing a heavy infection with *Haemogregarina simondi* red corpuscles are frequently found containing in their cytoplasm granules which are indistinguishable from and probably identical with the granules extruded from the haemogregarines. These granules may be spherical or pyriform in outline, and would appear to be undergoing division inside the corpuscle, for they are frequently to be met with in twos and in fours (Fig. 5). Adjacent granules are often found to be connected by a delicate thread of chromatin. These intracorpuscular bodies at first consist entirely of chromatin, but as they increase in size there appears round each a small clear zone of irregular outline (Fig. 6), which zone later becomes a definitely stained piece of protoplasm (Fig. 7). Phases showing this acquisition of protoplasm are met with occasionally in the blood stream, but more often in spleen and in liver smears. Also in spleen and in liver smears these bodies, composed of granules *plus* protoplasm, would appear to increase rapidly in size, so as to give rise to larger oval bodies which are distinctly haemogregarines (Fig. 8).

In the above short description I have not attempted to give the vertebrate life-history of *Haemogregarina simondi*, but have referred merely to a process of granule formation which presents a very striking resemblance to the formation of infective granules described in connexion with certain spirochaetes and trypanosomes.

A trypanosome of which I have preparations occurs in *Solea vulgaris*, but I have never met with this trypanosome in specimens of sole taken at Plymouth, and I have never found flagellates developing in any of my cultures.

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PROFESSOR EHRLICH has been elected a member of the Royal Bavarian Maximilian Order for Art and Science. This, we understand, is the highest distinction which Bavaria confers on scientists.

THE old "Freie Vereinigung der Chirurgen Berlins" (Free Union of Berlin Surgeons) has become extinct after an honourable and active life of a quarter of a century, and in its place a new society, called the Berlin Society of Surgery, has been formed. On November 11th Professor E. Sonnenburg, as President of the new society, delivered the opening address, in which he briefly sketched the history of the late union and indicated the lines upon which the new society would work.

C

THE PARASITES RECENTLY FOUND IN SYPHILIS.

By E. JENNINGS, D.P.H.CANTAB.,
LIEUTENANT-COLONEL I.M.S.

HAVING been informed by Mr. E. H. Ross that he had recently found a protozoal parasite always present in the lesions of secondary syphilis, and after he had shown me the details of the jelly method which he employs for its demonstration, I have repeated the technique and have examined some chancres and syphilitic blood. I have found the parasite which he described, and have traced some of its phases.

The jelly method: "coefficient jelly," consists of 2 per cent. agar, containing a sufficiency of saline solution to prevent cytolysis; 5 c.cm. of this is placed in a test-tube, and 0.4 c.cm. of Unna's polychrome methylene blue, and 0.4 c.cm. of a 5 per cent. solution of sodium bicarbonate in water is added: the total bulk of the mixture in the test-tube is then made up to 10 c.cm. This jelly is boiled, and when molten a drop is poured on to a microscope slide and allowed to spread into a thin film. When cool and set the blood or pus from a chancre is put on a cover-glass, and this is inverted on to the surface of the set jelly. The cells spread out between the cover-slip and jelly, and in a few minutes the leucocytes and parasites begin to stain, and can be examined.

The parasites appear as small, round, brown-coloured bodies lying free in the plasma. Each one contains some deeply staining granules and a vacuole (Fig. 1). Besides

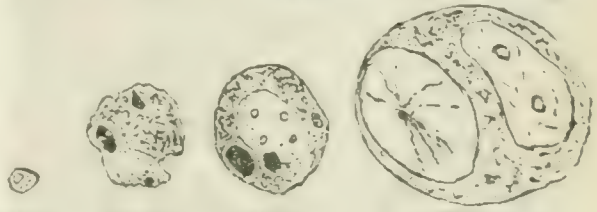


Fig. 1. Fig. 2. Fig. 3. Fig. 4.

these similar bodies are found enclosed within the mononuclear cells. In this situation they show up on the jelly as copper-coloured "inclusions," which on careful examination contain a stained structure (Figs. 2, 3). If the epithelial cells from the chancres are examined on the jelly, some of them also will be seen to contain these parasites, and some of these will be seen developed as pictured in Fig 4. In these the central structure of the enclosed "inclusion" has developed into a bunch of spirochaetes; these spirochaetes diverge from a central stained mass like the spokes of a wheel. Some of the spirochaetes show the curly, wavy forms so typical of the *Spirochaeta pallida*.

The jelly method is so very simple that I have written this note with the view of its general adoption as a means of diagnosis in syphilis. One has only to see the phases as drawn in Fig. 4 to assure oneself that here is the development of the causative agent of the disease. The process of making the jellies requires but a few minutes, and each tubeful suffices to make many specimens. The time occupied in making each specimen is short. These parasites can also be seen in the peripheral blood of syphilitics, but here they are more scarce, and for diagnostic purposes I advise the examination of chancres and sores when several cases are to be examined in hospital practice or in venereal wards. If there is time blood examination is as satisfactory.

ON CERTAIN BODIES FOUND IN SYPHILITIC LESIONS DEMONSTRATED BY THE JELLY METHOD.

By S. R. MOOLGAVKAR, M.R.C.S.,
HOUSE SURGEON, MALT LOCK HOSPITAL.

MR. E. H. ROSS, of the John Howard McFadden Researches, the Lister Institute, first drew my attention, at the end of August, to his paper on the development of a leucocytozoon of guinea-pigs, which was published in the *Royal Society Proceedings*, B., vol. lxxxv, February, 1912. On September 4th he demonstrated to me the "jelly" method.

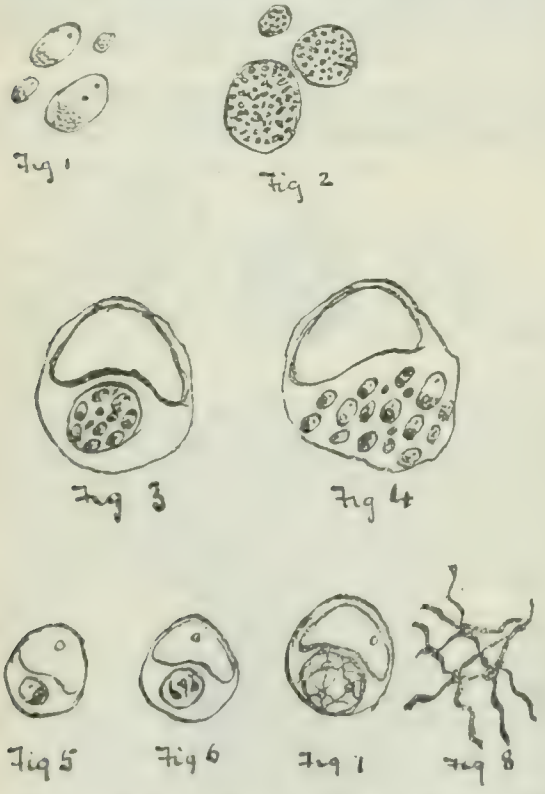
On September 9th he showed me some peculiar "bodies" which he had found by this method in syphilitic chancre scrapings. In consequence, I have followed this method, and here describe the bodies I have seen while working with the jellies myself.

I make the jellies as follows:

Agar, 1 gram; sodium chloride, 0.5 gram; polychrome methylene blue, 4 c.cm.; distilled water, 100 c.cm.; boil, filter, and store in test tubes. When required for use, the jelly is melted and a small quantity is poured on to a slide to cover an area of about a square inch and allowed to cool and set.

The syphilitic material to be examined is obtained from a hard chancre; a drop of the scraping is mixed with an equal quantity of a 3 per cent. solution of sodium citrate in water, and placed on a cover-slip, which is inverted on to the surface of the set jelly. Or a hard, "shotty" syphilitic gland is punctured with a Bayly needle and the gland squeezed; after a minute the needle is withdrawn, and the material contained in it is expelled into the citrate solution as before.

On the jelly the cells, leucocytes, epithelial cells, lymphocytes, stain a general blue; the "bodies" stain



red, and this serves to distinguish them readily. I have examined 25 chancres and 22 glands by this method, and have found the bodies in every syphilitic case. They may be described as (1) extracellular, (2) intracellular. The former consist of two forms: (*a*) Oval bodies 2 to 10 microns in diameter, containing a granular nucleus and one or two chromatin dots (Fig. 1); (*b*) bodies varying in size from 6 to 15 microns, in which I can find no definite nucleus, but they are completely filled with granules sometimes in violent movement (Fig. 2). (2) The intracellular bodies may be divided into two classes also: (*c*) A red-staining mass, embedded within the cytoplasm of large cells, containing several definite round or pear-shaped chromatin structures (Fig. 3). Sometimes this mass appears to have burst when the chromatin structures are found free inside the cell cytoplasm (Fig. 4); (*d*) a large mononuclear cell containing similar red-staining masses (Fig. 5), which show within their interior either chromatin rods (Fig. 6), or a skein or tangle (Fig. 7) of chromatin threads. Apparently these intracellular bodies burst out of the cells, for the threads can sometimes be seen near, but outside, the cells attached to a common chromatin ring (Fig. 8).

In addition to the above I have seen certain other forms about 10 microns in diameter, which stain very deeply and contain five to six chromatin granules. This form, which is free, frequently seems to divide into six daughters, each containing a chromatin granule. Occasionally in the glands, but frequently in the chancres, refractile bodies about a micron in size are found; each contains two chromatin dots. It is possible that this is but a phase, incompletely stained, of the free forms already described.

I am of the opinion that these "bodies" are parasites because of their peculiar staining reaction and because they develop while included within the cytoplasm of the cells of the chancres and glands. Up to the present I have only seen them in syphilitic subjects.

I beg to express my thanks to Mr. E. H. Ross for showing me the technique of the jelly method, and to the staff of the London Lock Hospital for permitting me to use the material obtained from their patients.

ON THE INFLUENCE OF METEOROLOGICAL CONDITIONS ON THE DEVELOPMENT OF TRYPANOSOMA RHODESIENSE IN GLOSSINA MORSITANS.

BY

ALLAN KINGHORN AND WARRINGTON YORKE.

(Sixth Interim Report of the Luangwa Sleeping Sickness Commission, British South Africa Company.)

In a previous communication[1] various observations were recorded which appeared to indicate decisively that the developmental cycle of *T. rhodesiense* in *Glossina morsitans* is influenced to a marked degree by the meteorological conditions to which the flies are subjected. It is unnecessary to repeat in detail the experiments upon which this conclusion was based, but the evidence may be briefly summarized.

1. At Nawalia, in the Luangwa Valley, where a relatively high mean temperature was experienced during the greater part of the year (75–84 F.), *T. rhodesiense* was readily transmitted at laboratory temperatures by both "bred" and "wild" *Glossina morsitans*.

2. At Ngoa, on the Congo-Zambesi watershed, where, during the cold season of the year, the mean temperature was much lower (59–63 F.), we were unable to transmit the parasite by means of *Glossina morsitans*.

3. The trypanosome was readily transmitted at Ngoa during the cold season by flies which were kept in an incubator at a mean temperature of about 80° F.

4. Corroborative evidence in support of this contention was afforded by an analysis of the valley transmission experiments, which showed that the largest proportion of infective flies was obtained in the hottest season of the year. Further, in the Luangwa Valley a larger percentage of "wild" *Glossina morsitans* were found to be infective during the hot season; and lastly, the percentage of flies naturally infected was very much greater in the valley than on the plateau.

During the past months further experiments were completed which indicated in the most decisive manner that the development of *T. rhodesiense* in *Glossina morsitans* is directly dependent on the temperature to which the flies are subjected.

A further attempt to transmit the parasite by *Glossina morsitans* at laboratory temperature was commenced on July 24th; 160 "wild" flies, previously shown to be non-infective by feeding on a healthy monkey, were utilized. They were fed for three days on a heavily infected guinea-pig, and afterwards for thirty-seven days on healthy monkeys, none of which became infected.

In all, therefore, a total of 680 flies were used in six attempts to transmit the human trypanosome by *Glossina morsitans* on the Congo-Zambesi watershed at mean temperatures ranging from 59 to 65° F., without obtaining a single infective fly, whereas at Nawalia, in the Luangwa Valley, of 330 flies used in similar experiments, 6, and probably 10, became infective at mean temperatures ranging from 75 to 84 F. Details of these experiments are given Tables I and II.

The incubator experiments described in the previous paper were repeated, but laboratory-bred flies were used instead of "wild" ones. Attention was drawn to the fact

TABLE I.—*Synopsis of Transmission Experiments with T. rh[illegible] Glossina morsitans, [illegible] Valley, N[illegible].*

No.	Date on which Started.	Season.	Number of Flies Used.	Variety of Flies Used.	Result.	Duration of Developmental Cycle: Days.	Mean Temperature during Developmental Cycle.	Absolute Maximum during Developmental Cycle.	Absolute Minimum during Developmental Cycle.	Relative Humidity per Cent.
							°F.	°F.	°F.	
1	Aug. 20, 1911	Dry	26	Bred	Infection	13	75.1	90.0	60.5	35.0
2	Nov. 14, 1911	Commencement of rains	16	,,	,,	15	83.5	93.5	74.5	44.8
3	Nov. 14, 1911	,,	57	Wild	,,	11	83.8	93.5	74.5	44.8
4	Dec. 29, 1911	Rainy	20	Bred	Negative	—	78.2	87.1	72.8	74.5
5	Jan. 12, 1912	,,	42	Wild	,,	—	78.0	85.7	72.8	74.2
6	Jan. 12, 1912	,,	42	,,	,,	—	78.0	85.7	72.8	74.2
7	Jan. 12, 1912	,,	23	Bred	Infection	19	77.9	85.7	72.8	75.4
8	Feb. 15, 1912	,,	104	Wild	,,	25	77.3	86.0	71.0	66.5

In the cases of the unsuccessful experiments, the mean temperature and the relative humidity have been calculated for the first thirty days only.

TABLE II.—*Synopsis of Transmission Experiments with T. rhodesiense and Glossina morsitans, carried out at Ngoa, Congo-Zambesi Watershed.*

No.	Date on which Started.	Season.	Number of Flies Used.	Variety of Flies Used.	Result.	Duration of Developmental Cycle: Days.	Mean Temperature during Developmental Cycle.	Absolute Maximum during Developmental Cycle.	Absolute Minimum during Developmental Cycle	Relative Humidity per Cent.
							°F.	°F.	°F.	
1	May 18, 1912	Dry	116	Wild	Negative	—	62.7	74.5	50.5	52.0
2	June 13, 1912	,,	90	,,	,,	—	59.1	72.4	42.0	52.0
3	June 14, 1912	,,	119	,,	,,	—	59.1	72.4	42.0	52.0
4	June 26, 1912	,,	19	Bred	,,	—	60.2	71.8	42.0	52.0
5	July 11, 1912	,,	176	Wild	,,	—	62.0	72.0	49.1	50.0
6	July 24, 1912	,,	160	,,	,,	—	64.7	76.1	51.0	47.0

that the low temperatures obtaining at Ngoa in the cold season were very unfavourable to the pupation of *Glossina morsitans;* in fact, so slow was the process that, in spite of the large number of pupae at our disposal, we were unable to procure sufficient flies for experimental purposes. The difficulty was all the greater as many of those which did emerge were malformed, and quickly died. In order to obtain a sufficient number of "bred" flies for this experiment we resorted to the expedient of placing the pupae, some of which had been deposited over two months previously, in the incubator (85° F). Within three or four days a large number of flies were procured.

The experiment was commenced on August 8th with 30 "bred" flies, to which were added 12 on the 9th, 11 on the 10th, and 3 on the 11th. These groups were fed for four, three, two, and one days respectively on a heavily infected guinea-pig, and afterwards on healthy monkeys. Parasites were found in the blood of the animal on which the flies of the fourth group were fed on the eighteenth day after the insects fed on the guinea-pig; so that, allowing five days for the incubation of the disease in the monkey, the fly was infective on the thirteenth day. The monkey on which the flies in Group 1 were fed became infected on the twenty-sixth day of the experiment, so that the duration of the developmental cycle of the parasite in the fly would be twenty-one days. As we cannot be certain that the infective fly fed on the infected guinea-pigs on each of the four days, the latent period in the insect may be anything from seventeen to twenty-one days. The animals on which Groups 2 and 3 were fed did not become infected.

It will be seen from Table III that the total number of flies used in the incubator experiments was 189, namely, 133 "wild" and 56 "bred." Of the "wild" flies 3 became infective, and of the "bred" 2, that is, 2.6 per cent. of the total number used. This figure is, however, hardly a fair estimate, as of the 133 "wild" flies only 78 were alive at the end of the first seven days of the experiment. This heavy mortality was probably due to the sudden change from the cold external air to the warm, dry atmosphere of the incubator. As a general rule, in our transmission experiments it was found that about 10 per cent. of the flies died during the first week. This was approximately the case in the incubator experiment in which "bred" flies were used, as, owing to the fact that the insects were hatched out in the incubator, they were not subjected to any sudden change of atmospheric conditions. We consider, therefore, that had the mortality of the flies in these two experiments been the customary 10 per cent. instead of over 40 per cent., the proportion of infective flies would be 3 of 90, instead of 3 of 133, or 3.3 per cent. instead of 2.2 per cent. This figure, 3.3, approximates closely to that obtained in the incubator experiment in which "bred" flies were used—namely, 3.5, and also to that obtained in the valley experiments—3.5.

The results of these series of experiments—namely, those carried out at Nawalia at laboratory temperatures 75–84° F., those made in the laboratory at Ngoa at from 59–65° F., and the incubator experiments at Ngoa 80.6–82.6° F.—show in a most conclusive manner that comparatively high temperatures—75–85° F.—are necessary

TABLE III.—*Synopsis of Experiments to Transmit T. rhodesiense by Means of Glossina morsitans kept in Incubator.*

No.	Date on which Started.	Season.	Number of Flies Used.	Variety of Flies Used.	Result.	Duration of Developmental Cycle: Days.	Mean Temperature during Developmental Cycle.	Absolute Maximum during Developmental Cycle.	Absolute Minimum during Developmental Cycle.	Relative Humidity per Cent.
							°F.	°F.	°F.	
1	June 30, 1912	Dry	61	Wild	Infection	14	80.6	87.8	74.5	36.0
2	July 1, 1912	,,	72	,,	,,	13	80.6	87.8	74.55	36.0
3	Aug. 8, 1912	,,	56	Bred	,,	13 and 21	82.6	89.3	77.0	72.0

TABLE IV.—*Synopsis of Experiments showing the Effect of Raising the Temperature on the Development of T. rhodesiense in Glossina morsitans.*

No.	Date Started.	Season.	No. of Flies Used.	Variety of Flies.	Laboratory Conditions.				Date on which Flies were put in the Incubator.	No. of Flies Alive at the time they were first put in the Incubator.	Incubator Conditions.				Remarks.
					Mean Temperature.	Absolute Maximum.	Absolute Minimum.	Relative Humidity per Cent.			Mean Temperature.	Absolute Maximum.	Absolute Minimum.	Relative Humidity per Cent.	
					°F.	°F.	°F.				°F.	°F.	°F.		
1	June 13th, 1912	Dry	90	Wild	59.1	72.4	42.0	52.0	July 24th, 1912 (41st day)	42	85.0	90.5	77.0	36.0	Three flies infective on 48th day.
2	June 14th, 1912	"	119	"	59.1	72.4	42.0	52.0	August 14th, 1912 (61st day)	38	83.0	91.0	77.0	72.0	One fly became infective about the 72nd day.

for the completion of the developmental cycle of *Trypanosoma rhodesiense* in *Glossina morsitans*.

In our previous paper we discussed the question whether any climatic factor other than temperature might possibly exert some influence on the development of the trypanosome in the fly. We referred especially to the relative humidity of the atmosphere, as the most favourable season of the year in the Luangwa Valley for successful transmission experiments appeared to be that in which the relative humidity was extremely low. Owing to the fact that the data at our disposal were insufficient, we were unable to come to any definite conclusion.

In order to decide the point, the relative humidity of the atmosphere in the incubator in the "bred" fly experiment described above, was kept at from 70–72.5 per cent. As the incubation period of the parasite in the flies (thirteen and seventeen to twenty-one days respectively), and also the percentage of infective flies obtained (3.5 per cent.) were approximately the same as those in other experiments in which the relative humidity was very low, we can only conclude that this factor does not exert any appreciable influence on the developmental cycle of *T. rhodesiense* in *Glossina morsitans*.

The following experiments were devised with a view to ascertaining more definitely the influence of temperature on the development of the parasite.

EXPERIMENT 1.

Two batches of "wild" *Glossina morsitans* (Batch A consisting of 95, and Batch B of 119) in which the possibility of the presence of an infective fly had previously been excluded by feeding the insects on clean monkeys, were fed for three consecutive days on a guinea-pig infected with *T. rhodesiense*. After being starved for a day, each batch was fed on a healthy monkey until the fortieth day after the first feed on the infected animal. Neither of the monkeys became infected. Batch A, in which there were 42 flies still alive, was placed in the incubator, whilst Batch B, in which there were now 58 flies, was kept at laboratory temperature. The sudden change from the laboratory to the warm, dry air of the incubator proved very fatal to the flies in Batch A, and on the forty-third day only 6 were alive. From the forty-first to the forty-seventh day the flies in this batch were fed on a monkey, and from the forty-eighth day on a rat. The rat became infected on the fifty-third day, so that, allowing five days for the incubation of the disease in the animal, Batch A contained an infected fly on the forty-eighth day after the first feed on the infected guinea-pig, and eight days after being placed in the incubator. As the monkey died on the forty-seventh day, we are unable to state whether the fly became infective before the forty-eighth day. The four flies still alive on the fifty-third day were fed on four clean rats, and three of these became infected. The monkey on which Batch B was fed was still negative at the end of sixty days, when there were 38 flies alive.

EXPERIMENT 2.

This is really a continuation of the former experiment. The 58 flies in Batch B were placed in the incubator on the sixty-first day after the first feed on the infected guinea-pig, and were fed from the sixty-first to the seventy-fifth day on a [illegible] (No. 145). Unfortunately the animal died on the seventy-sixth day, so that we were unable to determine whether any of the flies became infective. All the flies were dissected as they died, and one was found to harbour trypanosomes in the gut and salivary glands. Animals inoculated with the contents of these structures became infected with *T. rhodesiense*. As in our experience all flies in which infection was observed were capable of infecting animals by the bite, had the monkey (No. 145) lived a few days longer it would have been found to be infected.

In Experiment 1 the relative humidity of the air in the incubator was very low (36 per cent.), while in Experiment 2 the relative humidity was comparatively high (72 per cent.). In addition to confirming the view that a relatively high temperature is essential to the completion of the developmental cycle of *T. rhodesiense* in *Glossina morsitans*, and that the relative humidity of the atmosphere is not an important factor, these experiments afford more definite information. It is apparent that the earlier stages of the development of the parasite in the fly can occur at comparatively low temperatures (60° F.), and that trypanosomes can persist in this stage for at least sixty days. It is obvious that the developmental cycle of the parasite is not complete, since the flies are non-infective, and inoculation of the gut contents into susceptible animals is followed by negative results. For the completion of the cycle it is necessary for the temperature to which the flies are subjected to be raised to a considerable extent (75–85° F.).

It is interesting to note that the flies in Batch A (Experiment 1) became infective eight days, possibly less, after being placed in the incubator. This is three days less than the shortest incubation period observed in any of our successful transmission experiments, a fact which supports the view that the developmental cycle of the parasite in the fly had proceeded to a certain point at laboratory temperature (60 F.) before the insects were subjected to the higher temperature (80 F.) of the incubator.

The facts brought to light in this investigation afford a satisfactory explanation of some observations which have hitherto appeared to be contradictory. Kleine[2] was unable to transmit *T. gambiense* by *Glossina morsitans* on the Victoria Nyanza (altitude 3,700 ft.), whereas Taute[3] was successful on Lake Tanganyika at a lower altitude (2,680 ft.). Although we were unable to transmit *T. rhodesiense* experimentally on the Congo-Zambesi watershed in the cold season, nevertheless we found that a certain percentage of wild flies were infective. This apparent discrepancy may be explained on the assumption that the flies became infective during the warm season, and that a certain number survived into the colder season of the year.

CONCLUSIONS.

1. The developmental cycle of *T. rhodesiense* in *Glossina morsitans* is to a marked degree influenced by the temperature to which the flies are subjected. High temperatures (75–85 F.) favour the development of the parasite, whilst low temperatures (60–70 F.) are unfavourable.

2. The first portion of the developmental cycle can proceed at the lower temperatures, but for its completion the higher temperatures are essential.

3. The parasites may persist in the fly at an incomplete stage of their development for at least sixty days under unfavourable climatic conditions.

4. These observations afford an adequate explanation of the extremely long latent periods of trypanosomes in *Glossina* which have occasionally been observed by various workers.

5. The relative humidity of the atmosphere has apparently no influence on the development of the trypanosome in *Glossina morsitans*.

Ngoni, N. Rhodesia,
September 10th, 1912.

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SALVARSAN IN PERNICIOUS ANAEMIA.

BY

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As all evidence as to new treatment is of value, brief notes of the following case may be of interest. I believe it to be the first case treated on these lines south of the Tweed, and I publish it with the kind concurrence of my friends, Messrs. Dodd and Clarke, under whose care it was. I saw the patient first on May 23rd, 1912.

She had been very anaemic for more than a year and exceedingly ill in the previous summer, but had improved under large doses of arsenic, and been fairly well during the winter. Her blood picture in October, 1911, showed no signs of pernicious anaemia. On May 23rd she was very ill with daily fever up to about 101° F., almost unable to sit up or take nourishment, with very loud haemic murmurs all over the cardiac area; her colour was the characteristic lemon yellow. A film showed typical pernicious anaemia. On May 31st salvarsan 0.3 gram was injected intramuscularly. Within three days benefit was apparent, though local pain was severe for about a week. In four days the murmurs had almost disappeared, and the patient was much stronger. Blood examination on June 4th showed a distinct improvement.

On June 14th the improvement had continued, and the same dose was again injected in the buttock; this was followed by a sharp reaction; the temperature rose to 101° F. The patient looked exceedingly ill; the pallor and haemic murmurs returned, and she developed a large patch of dry pleurisy over the right back. This condition lasted a few days, when the fever slowly subsided and uninterrupted recovery set in. The blood examinations on July 2nd and 19th and August 7th (see table) showed a rapid change in the blood picture, and the change in the appearance of the patient was not less remarkable. She got quite a rosy look, and said she had not felt so well for years.

The blood reports speak more eloquently than any words, and I will only make two or three remarks further.

1. The rapid fall of temperature after the first injection suggests very strongly the destruction of some virus.

2. In another case I should certainly postpone the second injection as long as improvement was going on, for a week or two.

3. It is difficult to say to what the severe reaction after the second injection was due, possibly hypersensitization. I have come across pleurisy in another case after salvarsan.

4. It remains to be seen, I think, whether intravenous is equal to intramuscular injections where prolonged action is desirable, though the latter has undoubted advantages.

5. The results are so striking that though we know all cases do not react in the same way this treatment should always have a trial.

We have to thank Dr. Byrom Bramwell for sending us an advance copy of his paper, which I had the good fortune to hear at a meeting of the Association of Physicians in Glasgow in April, and also Dr. Galt for his kindness in taking much trouble about the blood examinations.

Date.	Red Cells.	Leucocytes.	Haemoglobin.	Colour Index.
			Per Cent.	Per Cent.
1. Oct. 3, 1911	1,425,000	5,550	30.0	1.0
2. May 24, 1912	800,000	9,050	18.0	1.0
3. June 4, 1912	976,000	9,150	36.0	1.7
4. July 2, 1912	2,372,000	6,900	63.0	1.19
5. July 19, 1912	3,792,000	8,300	90.0	1.0
6. Aug. 7, 1912	4,160,000	4,950	96.0	1.0
7. Oct. 8, 1912	4,704,000	6,300	110.0	1.05

Notes.

1. No anisocytosis or poikilocytosis and no nucleated reds; rather secondary anaemia due to toxic absorption.
2. Marked polychromatophilia and distinct though not extreme poikilocytosis and anisocytosis. Nucleated red cells common; 2 megaloblasts and 8 normoblasts counted with 200 leucocytes. The type is one of a true megaloblastic pernicious anaemia.
3. Marked polychromatophilia, slight poikilocytosis and anisocytosis; 4 megaloblasts and 1 normoblast in a very large number of fields.
4. Slight polychromatophilia. No anisocytosis or poikilocytosis. No nucleated reds after special search.
5, 6, and 7. Normal, except for the decreasing deficiency in red cells. The only point which is not absolutely satisfactory is that the colour index is still slightly above normal. This is possibly due partly to the fact that she went on taking largish doses of iron for some time.

Salvarsan 0.3 gram was injected on May 31st and June 14th.

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British Medical Association.

THE CYTOLOGY OF THE BLOOD IN PASSIVE IMMUNITY.

BY J. SHOLTO C. DOUGLAS, M.A., D.M.

(From the Pathological Departments of the Universities of Oxford and Birmingham.)

[ABSTRACT.]

A SERIES of figures obtained by determining the numbers of cells present in the peripheral blood of man and rabbits before and after the injection of various samples of serum have been analysed. The serums used were, in the case of man, normal horse, diphtheria antitoxin, and antistreptococcic, and for rabbits, normal and agglutinating rabbit and goat, diphtheria antitoxin (horse) and antistreptococcic (horse). As far as possible the figures obtained during the control periods were subjected to the method of least square, the resultant figure giving a measure either of any error due to the various manipulations to which the blood samples were subjected for securing the counts of corpuscles or of any variation in their numbers arising from day to day and due to natural causes. These may be termed respectively the "Mean Deviation of the Experiment," when the differences between counts on blood samples collected practically simultaneously from the same animal are considered, or the "Mean Daily Variation," where the differences observable from day to day are analysed. The advantage accruing from the knowledge of these is that the mathematical chances in favour of any alterations observed in the blood counts being due to the experimental injection and not to a natural error or variation can be ascertained.

In some instances, when the rabbits had been subjected to daily haemorrhage, the method of least square could not be used in the examination of the numbers of corpuscles, and another procedure had to be adopted. This consisted in comparing the average number of cells during the control period with the average number present on the days subsequent to the injections of serums. In the case of rabbits a fresh animal was used for each injection of any sample of serum, which took place by the subcutaneous, intravenous, or intraperitoneal routes. For man one individual served for all the inoculations of serums which were performed hypodermically.

The results of a consideration of the numbers of blood corpuscles in the peripheral blood during the control and during the experimental period may be summarized as follows:

1. The method of least squares can be satisfactorily applied to the analysis of the deviations and variations in a series of enumerations of the blood corpuscles, and of estimations of haemoglobin in the blood of man and of rabbits.

2. The "mean deviation of the experiment" for a series of estimations of haemoglobin and blood corpuscles in rabbits is independent of the hour of day and of small haemorrhages.

3. The "mean deviation of the experiment" is, in rabbits, greater for leucocytes than for red cells, and for red corpuscles than for haemoglobin, being on the average in this series of experiments 7.73 per cent. for leucocytes, 3.81 per cent. for red cells, and 1.28 per cent. for haemoglobin.

4. The "mean deviation of the experiment" was larger in a series of animals examined immediately they reached the laboratory than in another series which had been allowed sufficient time to become accustomed to their new environment.

5. The "mean daily variation" for the haemoglobin, red cells, and leucocytes was smaller in rabbits which had been kept some days in the laboratory than in those examined immediately they had been procured from the market.

6. The "mean daily variation" for blood cells becomes smaller as the day advances in the case of rabbits, and can

be reduced to 5 per cent. or less for the leucocytes and to 2 per cent. or less for the red corpuscles.

7. The "mean daily variation" appears to be independent of the hour at which the rabbits are fed.

8. The "mean daily variation" in the experiments on man was found to be smaller for both the leucocytes and the red cells at 3 p.m. than at noon.

9. The number of leucocytes in the blood of the man examined was greater at 3 p.m. than at noon, whilst the reverse was the case with the red corpuscles and the haemoglobin.

10. Evidence is adduced that in rabbits the leucocytes are more numerous at 2 p.m. than at either 10 a.m. or in the evening, and that this is independent of the time of feeding.

11. The increase in the number of leucocytes in man was proportionately the same at noon and at 3 p.m., when an artificial leucocytosis was produced.

12. The introduction of horse serum subcutaneously into man produces no change in the amount of haemoglobin or in the number of red corpuscles, but causes a leucocytosis.

13. The injection of antitoxin in man produced no specific recognizable alteration in the cytology of the blood, the rate of rise and fall in the number of leucocytes being the same whether a normal or the antibody containing serum was injected.

14. The introduction of antimicrobial (antistreptococcic) serum was followed by an absence of any leucocytosis in the case of man. This may depend either on a specific inhibitory action of some substance (? the "immune" body) in the serum, or on a physiological failure of the body to respond with a leucocytosis to an injection of serum which follows on a series of previous ones, each of which had succeeded in producing such a change, similar to the failure in the formation of antibody noted by Axel Jörgensen when an antigen was injected daily for a certain length of time.

15. The varieties of cells taking part in the leucocytosis as a response to serum injections in the case of man are (1) the polymorphonuclear and the cosinophilous group, and (2) the transitional and large mononuclear group, no change being demonstrable in (3) the lymphocyte group or (4) the mast cell group.

16. Daily small haemorrhages in rabbits—that is, 5 per cent. of their blood volume or less—produce a progressive diminution of equal amount in the haemoglobin percentage, and in the numbers of red corpuscles and white cells per cubic millimetre. This diminution is less than corresponds with the quantity of blood removed, the blood elements being partially regenerated. Very little sign of regeneration of the blood elements can be seen when 2 c.cm. of the blood are daily removed for eight or nine days.

17. No change could be detected in the haemoglobin percentage or in the numbers of red corpuscles in rabbits as the result of injecting rabbit, goat, or horse serums, whether normal or containing antibodies, by whatever route they were introduced.

18. No change could be demonstrated in the numbers of leucocytes in rabbits as a result of the introduction of rabbit or goat serums, whether normal or containing agglutinin, by whatever route they were injected, whilst a leucopenia was found to follow the introduction of an antimicrobial (antistreptococcic) serum, but whether as a response to some special substance (? immune body) present in this type of serum, or in response to the horse serum itself, is not altogether clear, since a suggestion of a similar response, though not great enough to allow of definite proof, may be present after the introduction of diphtheria antitoxin contained in horse serum. If the leucopenia should prove eventually to be in response to some substance specific to the immune serum, it might help to explain the poor results so often obtained when antimicrobial serums are used as curative agents.

[illegible] University of Montpellier have decided to [illegible] memory of the famous doctor of the [illegible] Rabelais. The model of the [illegible] executed by the well known [illegible], was exhibited in the [illegible] may be sent to Dr. Lavéran, [illegible] Paris Committee, 77, Avenue de Villiers, Paris.

Memoranda:

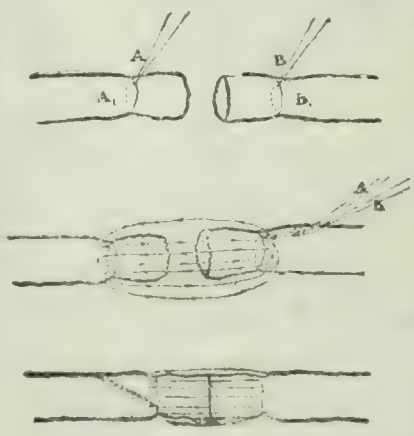
MEDICAL, SURGICAL, OBSTETRICAL.

AN IMPROVED METHOD OF TENDON SUTURING.

THE chief desiderata in the operation of tendon suturing are adequate strength and perfect smoothness of the site of union. The chief defect of the ordinary procedures is the violation of the latter detail involved by the presence of palpable knots and unsightly suture tags. The method to be described overcomes this defect and gives, I think, a bond as near perfection as possible.

The suturing material used is Japanese silk (Allen and Hanburys) for this happily combines great tensile strength with tenuity, a combination presenting obvious advantages in facilitating and giving smoothness of the bond.

Two long ligatures, A and B—one for each piece, proximal (A) and distal (B), of the tendon—are tied around the two portions (A_1 and B_1) of the tendon near the line of section, and knotted, not in the centre but near the side on its upper aspect. One end of the proximal ligature (A) is, or both ends thereof are, threaded on a curved needle. This needle is passed on the near side of the circular ligature (A) opposite its knot through the tendon (A_1) to its under surface; then below the line of section to the far side of the distal circular ligature (B); thereafter up through this portion (B_1) of the tendon to the upper aspect. It is now passed back again across and above the line of section to the starting point (A_1), and the penetrating process repeated as just described; and so on till the upper and lower surfaces of the tendon are occupied and the line of section bridged by the lengthwise sutures.



The points at which the needle leaves and enters the two pieces of the tendon are always corresponding, but in traversing the tendon the needle is given an oblique direction so as to emerge to one side of the preceding longitudinal suture.

When this vertical longitudinal suturing has been carried from one side of the tendon to the other the needle is made to emerge laterally, and the investing suture is effected now as before, but in the horizontal plane. Two or more of these are inserted as required. Thus the line of section is bridged above, below, and laterally by the silk so far much as in one of the usual and best methods. The chief improvement is now to be effected, and this is carried out as follows. It consists essentially in burying the knots and free ends.

If one thread has been used in the needle for the above procedure, this thread is made to emerge finally near the proximal knot. The two free ends of the proximal ligature (A) are thus brought together again; they are knotted, then threaded on the needle, which is made to penetrate the tendon in the immediate vicinity of the knot, and carried in a longitudinal direction for a little distance, and preferably in a wave-like manner, this so as to prevent the silk afterwards being drawn back towards its knot if that were possible when the tendon was put into action. After traversing the tendon these free ends are made to emerge therefrom at one side. In the latter manner the two ends of the distal ligature (B) are also similarly treated. These four ends, two emerging from either portion of the tendon, are now pulled upon and then severed by a knife flush with the surface of the tendon from which they are emerging.

If, however, the needle originally be threaded with both free ends of the proximal ligature (A) these finally are brought through the distal piece (B_1) of the tendon to appear in the region of the distal knot. The two ends of the proximal (A) and distal (B) ligatures are then knotted, the four ends threaded on a needle, and buried and cut in the same manner as before.

Whether the needle at first carries one or two threads will depend on the thickness of the silk; if a thick size be considered necessary the threads will naturally be more bulky and clumsy, but if a thin size will suit the double thread may be used if desired.

The above procedure may be somewhat modified by using one of the two threads of the one ligature (A) for the vertical suture and one of the two threads of the other ligature (B) for the horizontal suture, and then arranging

these threads so that a final knot is made on either side by one free end of each ligature. The free ends will then be buried in the usual way. This arrangement may increase the strength of the union if this, indeed, is necessary.

The ligatures in this method are so fine and the burying process of such a nature that the knots are not palpable nor perceptible, and of course the free ends do not appear. As perfectly smooth a surface as is practicable can be obtained by this means, the attainment of a perfect band being merely a matter of practice, whilst the method has the great advantage over all others that I know of in that there are no free ends left and no palpable knots. Thus union is not only extremely strong, permitting severe strain and immediate movement (active and passive) if required, but quite smooth, so that when the operation is done well the original site of section may elude any but close scrutiny.

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Kimberley, S.A.

OBSTRUCTED HERNIA IN AN INFANT.

ON November 21st, 1909, a child aged eleven months was sent to me. It had been vomiting incessantly and looked very ill. There was a very tense swelling in the right inguinal region, dull on percussion and irreducible. No impulse was found. I took the case to be one of strangulated hernia, although the bowels had been open that day after an enema.

An incision was made over the hernia, and on opening the sac a knuckle of very congested small intestine was seen. This felt almost solid. There was no difficulty in drawing down gut from either side of this loop, and no line of constriction was evident. On pressing the gut between the finger and thumb the apparent solidity of the loop was found to be due to a mass within it, which easily broke down on further pressure. The gut was then easily returned and the operation completed. The child made an uneventful recovery.

The mother had weaned the child on November 19th, and had since fed it on bread-and-butter. Evidently an undigested mass of this had got into the hernia, and could not get through it.

LEIGH DAY, M.D., B.Ch.Oxon.,
Assistant Surgeon, Essex County Hospital.

NEURALGIA IN A STUMP TWENTY-SEVEN YEARS AFTER AMPUTATION.

I WAS interested to read the report of a case of late neuralgia in an amputation stump, in the Epitome of Current Medical Literature for November 16th. I was called to a patient suffering from cerebral haemorrhage, which produced loss of power in the right arm and some thickening of speech. He was a stout, robust man aged 72. The right leg had been amputated above the knee twenty-seven years previously owing to a compound fracture of the femur. He had complained for some years of pain in the stump, more often at night, and frequently rubbed it to relieve the pain. On rising and walking about the pain disappeared, while in bed in the horizontal position it was unbearable. It was felt mostly on the posterior aspect of the thigh.

No neuromata nor any points painful on pressure could be made out. The skin was freely movable over the end of the bone, and was nowhere adherent. Examination of the urine failed to show any abnormal constituents.

I am inclined to the view that arterio-sclerosis causing anaemia of the nerves may have been the cause, and the occurrence of cerebral haemorrhage seemed to corroborate this.

C. J. B. BUCHHEIM, M.B., Ch.B.Glasg.
Caldercruix.

HERR MARTIN BRUNNER, the proprietor of an art gallery in Nürnberg, has founded a fund, to be called the Martin Brunner Fund, with a sum of M. 50,000 (about £2,500), for the purpose of encouraging research on cancer. An annual prize will be given for the most important work in connexion with the scientific investigation of cancerous disease and its prevention. The prize in 1913 will be £20, but in 1914 and subsequently it will be increased to £75 or £80.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

SALISBURY GENERAL INFIRMARY.

TWO CASES OF LOCOMOTOR ATAXY TREATED BY SALVARSAN.

(Under the care of W. W. ORD, M.D.Oxon.)

CASE I.

E. R., a railway signalman, aged 44, was admitted on April 20th, 1912. He was sent in by Dr. Thornton, of Salisbury, who had had him under observation for some weeks. Twenty-one years previously he had suffered from ulceration over both shins, which showed deeply pigmented, symmetrical, somewhat scaly scars. No history of other illness, except influenza. He denied having suffered from any venereal disease. Five months before admission he had an attack of "gastritis," with vomiting. Eight weeks before admission he began to suffer from coldness and numbness in the feet, and two weeks later the same conditions appeared in the hands. Progressive weakness in the legs and arms, with unsteadiness in walking, developed, and he was obliged to give up his work.

On admission he was quite unable to walk, though he could stand with difficulty. He complained of coldness, numbness, and tingling in the extremities, and of paroxysmal gastric pains. The knee-jerks were absent; sensation in the feet was almost absent, and on trying to walk he said he had "a feeling as if walking on cotton-wool." The right pupil did not react at all to light, the left only sluggishly. Romberg's sign was present. Wassermann's reaction was negative.

On May 16th 0.3 gram of salvarsan was injected. By May 26th the gastric pains had disappeared, and sensation in the feet was returning. Both pupils were acting sluggishly to light, and the left knee-jerk could just be elicited. On June 10th a second injection of the same strength was given, and the improvement continued. On June 25th he got out of bed for the first time, and was soon able to walk a short distance without unsteadiness.

He left hospital on August 3rd. Both knee-jerks were then present, the right not so active as the left; both pupils reacted quite actively to light; sensation in the feet was normal; he had had no return of the gastric pains, and he could stand with his eyes shut. After a short stay at a convalescent home he applied for leave to resume work, was passed by the surgeon representing the railway company, and is now fulfilling his duties.

CASE II.

F. G., a labourer, aged 50, was sent in by Dr. Morgan of Gillingham, on July 20th, as a case of locomotor ataxy. He had been under observation for a year. On admission he complained of giddiness, convulsive attacks, with almost total unconsciousness, coming on at any moment, and of loss of power in the legs for five months. He had had syphilis in 1887, and had three to four months' treatment with "vapour baths." In 1905 he had Malta fever, and recovered after four months' treatment in Valetta Hospital. About six months ago he began to notice that he had trouble in speaking, and developed a sensation of "pins and needles" in both hands and arms, but no abnormal sensations in legs.

On admission he could only walk with difficulty, with the usual ataxic gait. Romberg's sign was well marked, the knee-jerks were totally absent, sensation was diminished in both feet, the pupils did not react to light, speech was slow, and articulation difficult. There were no gastric or other pains.

He was given three intramuscular injections, each of 0.5 gram of neo-salvarsan, on July 27th, August 2nd, and September 1st. Improvement commenced almost immediately, and was steadily progressive. He was discharged on September 4th, all symptoms from which he was suffering on admission having disappeared.

I saw him a month after he had left hospital. He was then feeling quite well, and had resumed his ordinary work.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BIRMINGHAM BRANCH.

PATHOLOGICAL AND CLINICAL SECTION.

Friday, November 1st, 1912.

Mr. GEORGE HEATON in the Chair.

Renal Infantilism.

DR. PARSONS showed two cases. He said infantilism was a condition of retarded development in which the growth of the sexual organs was particularly backward. It had been traced to numerous causes, the imperfect functioning of various organs, or the presence of different diseases. By these means subgroups had been described. The cases shown were examples of a type apparently due to a perversion of the renal functions. The characteristic features were dwarfing of mind and body, associated with polydipsia and polyuria. The polyuria was extreme and the urine had the characteristics of a granular kidney of adults. Cardio-vascular symptoms might or might not be present. A few cases had been collected which showed no organic renal change, but a diabetes insipidus; in these the symptoms were less severe.

CASE 1.—Girl, aged 4½. Polyuria and polydipsia since birth: grew little, sat up late: fifth of six children, others normal; height 2 ft. 6⅜ in.; weight 21 lb. Physical and mental development of a child of 2 years. Pale, cyanosed, wasted. No genu valgum. No evidence of syphilis. Heart shows some hypertrophy of left ventricle. Arteries normal. Oedema variable, sometimes of face, feet, legs, vulva, with ascites. Urine, amount varies with oedema; specific gravity 1001.4; faint haze of albumen, occasionally absent; no casts; urea 0.8 per cent.

CASE 2.—Boy, aged 5½. Polydipsia and polyuria, probably since birth; marked since 2 years; weight at 2 years 16 lb.; sixth in family of eight; others normal. Physical and mental development 2 years; weight 16½ lb.; height, 2 ft. 3½ in. (measurement of a child 12 months old). Characteristic face; hands, feet and legs cyanosed and cold. Genu valgum; curved tibiae; enlarged radial epiphyses; rickety gait; heart, forcible apex beat in nipple line; brachial arteries thickened; urine very pale; specific gravity 1004; very faint haze of albumen; no casts. No evidence of syphilis.

The polyuria in these cases of renal infantilism produced a wasted, sallow, wrinkled facies, which was very characteristic.

Mr. GEORGE HEATON, Dr. SAWYER, Dr. WYNN, and Dr. EMANUEL discussed the communication, and Dr. PARSONS replied.

Progressive Lenticular Degeneration.

DR. SAWYER showed a man, aged 36, who was suffering from this affection. The disease had been first described as progressive lenticular degeneration by Dr. Kinneir Wilson, in *Brain*, March, 1912, and he had collected twelve examples of the malady. The pathological anatomy was a bilateral softening in the lenticular nucleus, especially in the putamen, associated with a glial overgrowth which afterwards broke down. There was also a multilobular cirrhosis of the liver. Dr. Kinneir Wilson considered that the lenticular degeneration was caused by a toxin originating in the liver; but Dr. Sawyer thought that the toxin was probably of alimentary origin, and that it caused both the cerebral degeneration and also the hepatic cirrhosis. He thought that the case he showed confirmed this view, for the disease had been present for seventeen years. The characteristic symptoms of the disease were rigidity of the voluntary muscles, generalized tremors, dysarthria, dysphagia, emotionalism.

The patient was a well-developed man of 36, and the first [illegible] commenced at the age of 19 years. [illegible] brilliant, winning many prizes at [illegible] were tremors in the right arm and [illegible] All the voluntary muscles of [illegible] and the rigidity did not pass off [illegible] rigidity there was great difficulty [illegible] but when the rigidity had [illegible] was performed rapidly. When the [illegible] it was a few minutes before he [illegible] it was difficult for him to gain [illegible] only due to the rigidity of [illegible] retropulsion. He was so [illegible] could be beat up for a little time, his head neither touching the pillow nor his feet the bed. The face was wanting in expression, and suggested Parkinson's mask in appearance. The mouth was often kept open and saliva dribbled from the angles of the mouth. Mastication was very slow, but there was no dysphagia. The eyes appeared prominent because of the contraction of the eyelids. The arms and hands were held in the position characteristic of paralysis agitans. There was a generalized tremor which often became quite riotous. Dysarthria was very marked, the speech being so drawn out that it was difficult to understand what he said. There were spasmodic contractions but no contractures. He was very emotional and often fell into severe fits of temper, so that he would strike people who went near him. There was usually time to get out of his way, as it took him some time to commence any movement. The reflexes were normal, the abdominal reflexes being extremely brisk. Sensation was normal.

The case differed in several important points from those described by Dr. Kinneir Wilson. The patient was older than most of the other cases, the duration of the disease was very much longer, there was only slight emaciation, there were no contractures, the severity of the symptoms varied considerably from day to day, and the dysarthria was of a different type. Remarks were made by Mr. GEORGE HEATON, Dr. RUSSELL, Dr. STANLEY BARNES, Dr. WYNN, and Dr. PARSONS. Dr. SAWYER, in reply, said that as far as he could ascertain, only the voluntary muscles were affected by the pseudo-spasticity, the extrinsic muscles of the eyeball escaped. There was no difficulty in swallowing, but mastication was very slow. There were no urinary symptoms. The patient could read quite easily and took an intelligent interest in current events, but it took him a long while to write a word, because of the rigidity of the muscles, but the letters were well formed. Sometimes the tremor would interfere with his writing. Dr. Sawyer thought the situation of the lesion in the cases of polio-encephalitis referred to by Dr. Parsons would have to be considered to be in the lenticulo-rubral tract, and not in the cerebello-rubral. As cirrhosis of the liver was undoubtedly due to a poison reaching the organ through the portal vein, it seemed legitimate to presume that in this case of lenticular degeneration with hepatic cirrhosis the toxin reached the organ in the same way.

Congenital Hypertrophic Stenosis of the Pylorus.

DR. EMANUEL showed two patients whom he had treated successfully for this disease. Mr. GEORGE HEATON, Mr. MILLS, Dr. SHOLTO DOUGLAS, and Dr. PARSONS discussed the cases, and Dr. EMANUEL, in reply, said that he had had no personal experience of the surgical treatment of these conditions, but, of course, many cases were cured in that way. He considered, however, that all these cases should first be treated by medical means, and that when the patient did not respond to this treatment, the surgeon should be asked to perform a gastro-enterostomy. This meant that the operation had to be performed on an emaciated infant, and one who could only with very great difficulty stand such a severe operation. He agreed that these children did not die from the atresia, but from some septic condition, such as gastro-enteritis. The septic condition was shown by variations in the temperature, and such patients were most unsuitable for operation. In most of the cases he used lavage, but it was frequently very difficult to remove the clots from the stomach through the catheter which was used. He considered that the indication for lavage was a sudden increase in weight of about 3 oz., for this showed that the milk or food the child had taken still remained in the stomach. He had tested about twelve normal stomachs of infants with water, and he had not found that the water did not pass through the pylorus in any. Hypertrophic stenosis of the pylorus was not congenital, for it occurred soon after birth, and in his opinion it was entirely due to spasm of the pylorus. He had not tested for hyperacidity in any of the cases which had come under his care.

Endothelioma of the Undescended Testis in a Male Pseudo-hermaphrodite.

DR. THOMAS WILSON reported a case:

The patient was aged 29, and when seen in February, 1910, there was found to be a fairly defined, rounded, tense, elastic tumour, extending from the pubes upwards to 2 in. below the umbilicus. The patient had been brought up as a woman, the voice was masculine, and there was rudimentary beard and moustache. The hair of the head was nearly 3 ft. long. The figure was markedly feminine, the breasts small, and the nipple areolae well formed. The pubic development was female. The labia majora were thin, and between them was a cleft, in the anterior portion of which there was a penis like organ 2⅝ in. in

length by ½ in. in thickness, with a well-marked glans. About 1 in. further back there was the opening of a mucous canal. In the right labium majus was a soft, elastic, freely movable, somewhat tender body as large as a hazel nut, which could be pushed into the inguinal canal. The urethra opened on the lower surface of the penis. On rectal examination a mass about the size of a cocoanut was found in the pelvis. The patient had menstruated fairly regularly. The pelvic tumour was partially removed by operation with great difficulty on account of the inseparable adhesions. A fleshy cord passing through the right inguinal canal to the swelling in the labium majus was pulled up and removed. The patient rapidly wasted, and died one month later. The fleshy cord contained a peritoneal pouch continuous with the general peritoneal cavity. At the distal end was an atrophied genital gland measuring 1 in. by ¾ in. Section of the gland showed a stroma of connective tissue in which there were numerous tubules which resembled the seminiferous tubules found in undescended testes. The growth was composed of cells of very various forms and sizes, and the cells in some parts of the growth appeared to proliferate from one side of the wall of the vessels. In the inguinal region the growth appeared to be spreading along the surface of the peritoneum.

In reply to Mr. GEORGE HEATON, Mr. FRANK BARNES, Mr. MILLS, and Dr. SHOLTO DOUGLAS, Dr. THOMAS WILSON said that the patient was evidently a complete pseudo-hermaphrodite of the male variety. The tumour was very rapidly growing, and it contained a large amount of haemorrhage. He maintained that it was an endothelioma, which, after all, was only a variety of sarcoma. A sub-committee was appointed to examine and report upon the nature of the tumour.

Lipoma of Thigh.

Mr. FRANK BARNES showed a large lipoma which he had removed from the inner side of the thigh of an old lady of 60. The tumour was pedunculated, and reached almost to the floor when the patient stood up. The skin over the lower portion had, two or three days before removal, become necrotic, and this caused the patient to seek the help of a surgeon after twenty years of growth. The tumour on removal weighed 30 lb.

BATH AND BRISTOL BRANCH.

THE second ordinary meeting of the session was held at Bath on November 27th, Dr. ROXBURGH, President, in the chair. Dr. R. WATERHOUSE showed a specimen of a *Brain containing Cysticerci cellulosae*. Dr. WATERHOUSE read a paper on *Aleukaemic leukaemia*, which was discussed by the PRESIDENT and Dr. MICHELL CLARKE. Dr. T. WOOD LOCKET read a few notes on the value of *Horse serum in general practice*, and the PRESIDENT, Dr. MICHELL CLARKE, and Dr. NEWMAN NEILD joined in the discussion which ensued. Dr. W. P. KENNEDY described some phases of *Fatigue*, and the PRESIDENT suggested others.

SOUTHERN BRANCH.

AT a meeting held on November 27th, Dr. F. W. JOLLYE, President, in the chair, Mr. CHILDE read notes of a case of malignant adenoma of the cervix uteri, and showed the specimen; also notes of a cystic hygroma of the neck, with specimen and photographs. Dr. W. P. PURVIS (Southampton) read notes of a case of duodenal ulcer, in which a gastro-colic fistula followed gastro-jejunostomy. A short discussion followed each paper, and the authors were thanked and congratulated on their result.

THE thirty-fourth Congress of Balneology, which this time forms a section of the fourth International Congress of Physiotherapy, will be held at Berlin in March, 1913 (26th to 30th), under the presidency of Professor Brieger. All communications relative to the congress should be addressed to the General Secretary, Geh. San.-Rat. Dr. Brock, Thomasiusstr. 24, Berlin, N.W.

A MEETING of the Executive Committee of the Dublin Centre of the St. John Ambulance Association was held on November 29th. Mr. Justice Ross was in the chair, and a resolution was passed expressing the deepest sorrow of the committee on account of the death of their esteemed vice-president, Dr. A. H. Benson. Arrangements were made for the formation of a first aid class for women after Christmas, for a first aid class for men, and for a home nursing class for women. Dr. J. Lumsden and Dr. Walter C. Stevenson were re-elected officers of the committee for the ensuing year.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, December 9th, 1912.

Sir W. WATSON CHEYNE, President, in the Chair.

Intestinal Stasis.

Mr. W. ARBUTHNOT LANE opened a discussion on intestinal stasis. He employed the term to indicate such an abnormal delay in the passage of the intestinal contents through a portion or portions of the gastro-intestinal tract as resulted in the absorption into the circulation of a greater quantity of toxic or poisonous materials than could be treated effectually by the organs whose function it was to convert them into products as innocuous as possible to the tissues of the body. When these poisons and their products of conversion existed in excess in the circulation, they produced degenerative changes in every tissue and organ in the body. Probably the textures of those organs which converted, carried or eliminated them suffered most. Probably the liver was the most important converter of the poisons, and the kidneys and skin were the chief excretors of the products of conversion. If the several operations on the drainage scheme had done nothing more than demonstrate the damage done by these poisons, the remarkable power of repair which the several tissues of the body exhibited on being freed from their malign influence, and the extraordinary improvement in the functioning of the organs of the body after operation, they had been fully justified. They had done more, since they had thrown light upon intestinal conditions which had simplified their treatment materially, and had put them upon a definite mechanical basis. Pigmentation of the skin, and the cold blue clammy hands, rapidly improved on eliminating the source of the poison. In Bright's disease, which was merely a product of chronic intestinal stasis, the occlusion of the large bowel was followed by extraordinary improvement in functioning of the kidneys. The great difficulty in intestinal stasis was that cases were recognized too late to interfere. Cancer of the breast or of the ducts of the liver or of the pancreas were all products of chronic intestinal stasis in the first instance, and were examples of conditions which might have been averted if the stasis were recognized early. The influence of these toxins on the nervous system was also very marked. He had seen a large adenoma of the thyroid subside after removal of the large bowel and typical symptoms of exophthalmic goitre rapidly and permanently disappear. The poisons might be absorbed from any part of the bowel and might be supplemented by poisons from the secondary results of their absorption such as from suppurating gums. The primary absorption from the intestine varied in importance not with the degree of stasis, but rather with the unfitness of that portion of the bowel to deal with organisms and poisons to which it was unaccustomed. In many cases the bulk of the absorption took place from the small intestine and not from the large, but the stasis in the small bowel was secondary to stasis in the large. The good results which followed short-circuiting and the disconnexion or removal of the large bowel were due largely to the fact that evacuation of the small intestine was facilitated. The point of greatest difficulty in the passage of material along the tract was in the last few inches of the ileum.

Mr. H. PLUMMER spoke of the appearances found *post mortem* in animals. Constipation was less common in them than in human beings, but enteritis commoner. Rickets and constipation were closely associated, the latter causing one symptom, anaemia. Suppuration of the gums was nearly always found—a condition he regarded as causative. Dr. ALFRED C. JORDAN showed many radiograms illustrating the points emphasized by Mr. Lane. No fact had become so firmly borne in upon him as that of the interdependence of the several parts of the gastro-intestinal tract. Mr. H. W. CARSON believed that infection played no part in the formation of the adhesions which produced kinks. Diagnosis between ileal kinks and appendicitis was difficult, and in operations for the latter free incision of the abdominal wall and good exposure of the parts was necessary. In ileal kink the caecum should be

fixed as well as the band divided. Mr. H. H. Sampson spoke of the relation of intestinal stasis to *B. coli* infection of the urinary tract. In cases of intractable bacilluria with subacute exacerbation, where there was probably unilateral or bilateral pyelitis, he suggested that intestinal stasis was not only the primary cause, but the essential factor perpetuating the condition. Dr. R. Murray Leslie said that in his experience the results of the operation were good, that it was surely better in advanced cases, when simple remedies had failed, to have recourse to this radical cure for intestinal stasis, than to leave the patient in a miserable state of suffering and chronic invalidism, rendering life almost insupportable and so lowering the resistive power of the tissues as to endanger life from intercurrent complications or otherwise.

Further discussion was adjourned until December 16th.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Wednesday, December 4th, 1912.

Mr. J. M. Cotterill, President, in the Chair.

Malingering.

Dr. Byrom Bramwell, opening a discussion on malingering, defined a malingerer as one who deliberately, wilfully, and knowingly protracted an illness for various purposes. Unconscious malingering did not exist. There had been a great increase in its frequency since the Workmen's Compensation and the Employers' Liability Acts. For example, before these Acts he had predicted a great increase in frequency of cases of concussion of the spinal cord in colliers, and that prophecy had been verified in recent years; and most probably there would be a further great increase if the National Insurance Act should come into full operation. There were varieties of malingering, and some of these were closely allied to valetudinarianism: (1) Healthy persons who simulated a disease or injury were rare, as in accused persons, schoolboys, and those desiring to escape military service. (2) Cases of previous disease or defect before an accident, where the patient might be conscious or unconscious of this previous condition. These cases sometimes raised the question of the relation of trauma to disease, and were often very difficult. (3) Cases of exaggeration of symptoms, in some deliberate but in many unconscious. The latter were really cases of valetudinarianism, and were the group most likely to give trouble under the Insurance Act. These patients simply did not get well, either until the question of compensation was settled or so long as they were in receipt of compensation. In some of those cases it was very difficult to distinguish between partial malingering and pure valetudinarianism. His own experience had been chiefly in nervous disease, but cases also occurred in ophthalmic work, in skin diseases, and in surgery. The diagnosis must be based on careful medical examination and opinion, and also on collateral non-medical evidence. Even in many non-compensation cases, and especially in nervous cases, it was often hard to differentiate functional from organic disease. There were certain positive signs of organic disease, such as localized muscular atrophy or nerve paralysis, bedsores, loss of knee-jerks, exaggeration of knee-jerks with the Babinski sign and ankle-clonus, paralysis of the sphincters, optic atrophy, absence of electrical reactions (though a paralysed muscle might give a faradic reaction). Various traps might be set for the patient. In certain cases prolonged observation and repeated examination were necessary. He outlined a procedure advisable for the detection of malingering under the National Insurance Act: (1) Exhaustive medical examination by the medical attendant (panel doctor); he did not think fellow-workmen would be of much use in this connexion. (2) In doubtful cases, examination by a specialist not on the panel, who would be independent of the parties and whose opinion should be unbiassed. (3) If necessary prolonged observation in hospital. (4) Time [illegible] hysteria and other conditions in [illegible] of organic disease.

The Pessimist spoke of the effect of benevolent legislation in decreasing the self-respect of injured workmen. Dr. George Mackay said that the detection of malingering was perhaps easier in eyework than in other branches, and described various tests and traps available in cases of alleged blindness in one eye. Sir Thomas Clouston showed the importance of the general constitution, especially in nervous people who furnished most of these cases. He had known cases of insane persons who deliberately exaggerated their insane symptoms for various purposes. Dr. Bowie called attention to the importance of preventing malingering, which would, under the Act, probably cost the State about £1,000,000 per annum. This would be done if the beneficiary were required to pay a portion of his sick benefit. Such a plan was already in operation in Denmark and elsewhere. Mr. Cathcart said that in cases of injuries of muscles, joints, and bones, it was important to let the patient tell his own story; also to observe the muscular development of the limb alleged to be disabled. Dr. Edwin Bramwell said that hysteria and malingering were two distinct conditions. There were cases of traumatic hysteria, as there were of traumatic organic disease, and the former were just as much deserving of compensation as the latter. Dr. Brock said there was no essential difference between hysteria, neurasthenia, and malingering, and the patient was to some extent to blame in all three. Dr. McKendrick maintained that unconscious malingering was possible. Dr. J. V. Paterson said that in eyework there was little discrepancy in expert medical evidence. In giving precognitions, a thorough examination often revealed genuine cases which slipshod methods overlooked. It was essential that the law officer should be assisted by a medical assessor, and that the latter should make an independent examination. He had nothing to say against the trade unions, but he condemned the methods of low-class speculative lawyers who worked up cases. The doctor should never collaborate with the lawyer, or attempt to make the best of a bad case. In his experience cases of gross malingering were rare, and the great bulk of his cases were of exaggeration where there was a genuine injury, and a sincere belief in the connexion of the injury to the state of vision. A fixed scale of compensation for identical cases would save much unnecessary litigation. Dr. Sym doubted if a tariff of compensation were practicable. He advocated the punishment of gross cases of malingering. Dr. Chalmers Watson said that some co-operation between the insurance companies and the patients was desirable. Effective treatment carried out immediately after the accident would prevent many cases of valetudinarianism. Dr. Pearson pointed out the frequent serious discrepancy in medical evidence, not merely in matters of opinion, but in questions of fact. This was not creditable to the profession. Dr. Dickson (Lochgelly) said that his experience in mining practice had taught him to regard every case of accident a malingerer until proved not so, and described the deplorable change of *morale* in the Fife miner since the Compensation Act. Dr. Bramwell replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

Section of Surgery.

Friday, November 29th, 1912.

Mr. A. Blayney in the Chair.

Dioradin in Surgical Tuberculosis.

Mr. R. Atkinson Stoney described the results of 28 cases of surgical tuberculosis treated by injections of dioradin. He had reported on 14 of these a year ago, since which 9 had received a second course of injections. He divided the cases into two classes, according as to whether they were complicated by sepsis or not. There were 15 non-septic cases, and of these 7 resulted in apparent cure, 4 were greatly improved and would probably end in cure, 2 were somewhat improved, 1 was not improved, and 1 which improved greatly for a time died later of tuberculous meningitis. In the septic cases there were 4 apparent cures, 2 were greatly improved and will probably result finally in cure, 1 was somewhat improved, and 5 were not improved, and 1 which improved died later of acute nephritis. Altogether there were 6 cases without apparent improvement; 5 of them were all practically hopeless cases, and could not be expected to respond to any treatment, but 1 case of epididymitis was a distinct failure, as it was discovered early, but progressed steadily and rapidly in spite of

injections, and was found at operation to be actively spreading. Having given over 3,000 injections, he could say that he had never seen them do any harm or give rise to any discomfort even if given subcutaneously instead of intramuscularly. The following were the conclusions that might be fairly drawn from these cases: (1) Dioradin injections are not a certain cure for all cases of tuberculosis; in some cases they will produce a cure more rapidly and more certainly than any other treatment. (2) Early cases of joint disease treated by injections, combined with ordinary methods of rest, good food, etc., will recover more rapidly and more surely than when treated without the injections. The same is probably true of glandular and other surgical affections. (3) In advanced cases with abscess formation, if injections are started before or at the time the abscess is opened, it will usually heal rapidly and the tuberculous process apparently come to an end and a cure result in a large proportion of cases. (4) Finally, in those cases complicated by septic infection, dioradin injections will generally reduce the temperature to normal, increase the appetite and weight, and lessen the amount of discharge, and in some cases even bring about a final cure, as in three of the cases reported in this paper. In reply to observations on his paper, he said that he had only treated 5 cases of phthisis with dioradin, and the results were not very satisfactory or definite. One remarkable case in which there were complications was given injections of dioradin, and the patient increased nearly a stone in weight, the sputum was reduced, and the cough relieved. He was not, however, sure how much of the improvement was due to the relief of the complications and how much to the improvement in the lungs. With regard to the question as to the advantage of radium in the preparation, test tube experiments were made with and without radium on tubercle bacilli, and as well as he remembered the destruction with the radio-active solution was three times as fast as that with the non-radium solution. The active principle in the solution was not iodoform but iodine. There was only one out-patient treated, and in that case injections were only given every second day. Many of the patients had previously been in hospital for periods from three to fourteen months without improvement. He had not formed any definite opinion as to cases that had previously been treated with tuberculin, but one of his cases—complicated with tuberculous cystitis—had been treated with tuberculin, and at first showed marked improvement; however, in spite of the continuance of the tuberculin injections she became worse, and dioradin injections were tried, and the patient got steadily better, and was now practically well. In other cases that had been treated previously with tuberculin the results of the dioradin treatment had been much the same as in those that had not received tuberculin.

ROYAL SOCIETY OF MEDICINE.

Section of Ophthalmology.

At a meeting on December 4th, Sir Anderson Critchett, President, in the chair, Dr. Leonard Hill, in opening a discussion on *The physiology of the intraocular pressure*, recorded some investigations undertaken by himself and Dr. Flack in conjunction with Mr. Thomson Henderson. They found that the pressure varied within fairly wide limits, and directly with the arterial pressure. In a previous investigation the speaker and Dr. Flack found that the pressure of the cerebro-spinal fluid and the pressure of blood in the cerebral veins was the same, and the two varied together. Various workers had made investigations, and it was found by viewing the retinal vessels with the ophthalmoscope that the flow ceased in them when the pressure reached that of the general arterial blood. Dr. Hill and his colleague punctured the cornea of a cat, and then on gently pressing the abdomen the iris on the same side immediately burst into haemorrhage; all the capillaries allowed the blood to escape, and that came off every time. The explanation was that the normal aqueous pressure was exactly counterbalancing the capillary pressure. The intraocular tension was said to be due to the elasticity of the lens, but it had no elasticity, for when removed it was a soft, pudding-like body. In the act of accommodation the muscle contracted, but continued to be of the same volume as the uncontracted muscle; on contraction it really moved inwards, as described by Thomson Henderson, and allowed the fluid to pass from in front of the lens either into the spaces of the ciliary body or into the spaces of the cribriform ligament and into the suprachoroidal space. Professor Starling, F.R.S., was not in close agreement with some of the interpretations which Dr. Hill placed upon the facts stated. The intraocular fluid was at considerable pressure, so there must be resistance against its flow from the eyeball. But if the pressure there was in consequence of the pressure of the blood in the vessels, the pressure of the intraocular fluid must go up with the rise of pressure in the vessels. When the carotid or subclavian artery was obstructed, cutting off the blood supply from the eyeball, the pressure came down; and it went up again in proportion to the amount of blood one allowed to enter those vessels. The blood pressure must be higher in the vessels all the way along than outside and than the intraocular pressure, and the quicker the rate of flow through the system of vessels concerned the greater must that difference of pressure be. There was no reason for saying it was impossible for a difference of pressure to exist between the capillaries and the fluid outside, but there was every reason for assuming there must be a difference. One could not know how much fluid came out until one ascertained what was the rate of transudation. If the pressure remained constant that rate was the rate of absorption. It was impossible to measure the pressure in the capillaries under normal conditions. By increasing the pressure of the intraocular fluid one brought up the pressure in the capillaries towards that in the arteries. At some future time it might conceivably be shown that the cells coming from the ciliary processes might act as regulators, but at present there was no evidence that they acted otherwise than as guiding and strengthening the filtering membrane. In regard to the relationship of the capillary to the venous pressure, he had never been able to understand Dr. Leonard Hill's position. Mr. Priestley Smith (Birmingham) said the normal pressure in the human eye certainly varied in different people and in the same person at different times, but what would be a fair average? A pressure of 60 mm. which had been mentioned would surely mean that the person had glaucoma. He agreed that the intraocular pressure was equal to the venous pressure at one point—that is, where the blood left the eye—but at every other point the intraocular pressure was lower than the blood pressure. As Professor Starling said, there could not be equality of pressure, or there would be no movement. Every probability seemed to be against Dr. Hill's view on that point. Further discussion was postponed.

Section of Anaesthetics.

At a meeting on December 6th, Dr. J. Blumfeld, President, in the chair, Dr. May Dickinson Berry gave an account of the administration of *Anaesthetics in America*, the greater part of which referred to observations made during a recent visit to the Mayo clinic at Rochester, Minnesota. That institution employed four hospital nurses specially trained in anaesthetics, and operations went on every morning in four theatres simultaneously. Open ether was used exclusively. The facepiece employed was a modified Esmarch covered with two layers of stockingette which after the first minute or two of induction was loosely surrounded by folds of gauze bandage. Ether was dropped on, slowly at first, then more rapidly, by means of a pledget of cotton-wool fitted into the cork of a pound or quarter-pound tin. The operation was begun in about five to eight minutes after the commencement of the anaesthetic. The patient was rarely so deeply anaesthetized as to show no reaction when the first cut was made, and throughout the operation, especially if this were abdominal, it was usual to see a lighter anaesthesia maintained than was generally demanded in Great Britain. Large abdominal retractors were used which probably rendered deep anaesthesia unnecessary. The anaesthetists, however, always had their patients well under control, and there was never vomiting or actual struggling, and the patient's condition was generally excellent. There had never been a death due to the anaesthetic at the hospital. After-sickness was usually slight, and ether bronchitis was stated to be unknown. Ether was given for all operations, including goitre (simple or exophthalmic), cleft palate,

tonsils, and adenoids, and even for small operative proceedings where nitrous oxide would have seemed sufficient. The amount of ether used was small; for operations lasting thirty to fifty minutes 4 oz. was the usual quantity; in one goitre operation lasting forty-three minutes only 2 oz. of ether was used. The speaker emphasized the very small use that was made of chloroform: in some hospitals it was almost prohibited. Another noteworthy point was the little use made of the eye reflexes. The eyes were almost everywhere left covered by protective tissue. Medical men who practised anaesthetics as a speciality were comparatively few, but were increasing in number, especially in the eastern cities. Many hospitals employed nurses who not infrequently had been trained at Rochester, preferring a specially-trained nurse to a comparatively untrained house-surgeon. In the discussion which followed, Mr. GEORGE E. GASK differed from Mrs. Berry with regard to the excellence of anaesthesia in America. The Mayo clinic was not typical of all American practice, for that surgical centre stood high above everything else in the States; from what he had seen in the other places that he had visited in America the anaesthesia was not up to the standard obtained in the hospitals of London. Surgeons interfered with the anaesthetist far more in America than in London. Open ether was given (and given well) at the Mayo clinic for everything; he did not know whether the freedom from ether bronchitis was due to the dry climate of America, but with regard to this point it must be remembered that the class of case dealt with at the Mayo clinic differed from the hospital cases in Great Britain; frequently patients had to travel hundreds of miles to get there, and so at the Mayo clinic they did not get the horrible fulminating cases that one got in London. Dr. J. F. W. SILK also laid stress on this difference in the type of patient treated.

HISTORY SECTION.

At the inaugural meeting of the History Section of the Royal Society of Medicine, held recently, Sir William Osler was elected President, and Dr. Raymond Crawfurd and Mr. D'Arcy Power Honorary Secretaries. A council was also appointed, and five Vice-Presidents—namely, Sir Clifford Allbutt, F.R.S., Dr. Richard Caton, Sir William Church, Sir Henry Morris, and Sir Ronald Ross. Subsequently the PRESIDENT gave some account of Sir William Petty, a seventeenth century professor of anatomy, and his work in connexion with the distribution of land after the Cromwellian conquest of Ireland. Petty was at the time physician-general to the forces in Ireland. The distribution entailed a thorough survey of the greater part of Ireland, a task which, according to the Surveyor-General, could not be completed in less than thirteen years. Petty offered to undertake and to complete it in thirteen months. This survey, which came to be known as the Down survey, was commenced in 1655, and still constitutes the legal record of the title on which half the land of Ireland is held. The text of Sir William Osler's remarks was a manuscript which he found bound at the back of two volumes of Petty's letters bought by him at the sale of the Phillips MSS. in 1911. Dr. CRAWFURD sought to show that the whole history of typhus fever bore out the modern belief that body lice are the infecting agents. Mr. D'Arcy Power exhibited some contemporary portraits of early medical workers. Dr. MICHAEL FOSTER exhibited two eighteenth century Italian diplomas.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on November 14th Dr. ECROYD, in a presidential address, said that two influences had been, and still were, inimical to medicine, namely, arm-chair speculation and dogma. The former was disappearing, but the latter remained, chiefly perhaps among the laity. In primitive times belief in a Godhead was universal, and disease was believed to be a punishment for sin. Hence the healing art fell into the hands of the priesthood; and the dogma of the supernatural causation of disease prevented any serious advance in medical knowledge. Though certain mental diseases could be analysed correctly only by the correlation of clinical material, yet they still came under the sway of dogma. Insanity and criminal responsibility were still, for instance, decided upon by laymen. Only the medical mind could realize that the will could only find expression through the medium of the brain alone, and that manifestations of the personality could move within the limits of "the normal" only if the brain were "normal" also. An individual was what he was by virtue of the sum total of the sensory impressions that had reached his brain. Psycho-analysis showed that even the forgotten events of childhood could exert influences in later life. How were these difficult matters to be decided if not by medical men? Yet the legal profession was still inclined to hold to the dogma of the absolute responsibility of many persons whom physicians knew to be insane. In criminal trials two decisions had to be arrived at—first, the guilt of the prisoner, properly decided by the jury; and, secondly, the degree of his guilt, the proper function of the judge. This latter function should be shared by the alienist and the student of criminal anthropology. The whole punitive system was based upon principles fundamentally unsound. The educational possibilities in punishment were its only justification, and any system of punishment which was the expression of the vengeance of society was doomed to failure. A time would come when the only sentence of courts would be indeterminate segregation, during which time the prisoner would work out his own salvation, and his education, guidance, occupation, would be left in the hands of educationists and of medical men of special training and experience.

ASSOCIATION OF REGISTERED MEDICAL WOMEN.

AT a meeting held on December 3rd, Dr. CONSTANCE LONG, President, in the chair, Dr. LOUISA HAMILTON showed a case of *Scleroderma*. The patient, a married woman, aged 35, had been attending the New Hospital for Women since April, complaining of a sensation of coldness below the waist. She had recovered from a similar attack two years previously. The skin and subcutaneous tissue of the buttocks, thighs, shoulders, neck, and arms were hard, and as though infiltrated with wax. She had improved greatly under treatment by thyroid extract. Dr. ELIZABETH LEPPER, speaking of the diagnosis of *Hydatid cysts*, said blood examination might prove useful in two ways: A differential leucocyte count showed eosinophilia to exist in some cases. This, however, while often absent in hydatid disease, was frequently present in cases of intestinal worms, and in carcinoma or gumma of the liver; as a precaution the faeces should always be examined. Secondly, a complement absorption test could be carried out on the same principle as the Wassermann test for syphilis. She had obtained positive results in 3 cases of hydatid disease, while 15 normal patients similarly tested gave negative results. Weinberg and others had obtained positive results in 75 to 100 per cent. of cases. Brauer, using an alcoholic extract of the cyst wall, obtained a positive result also in cases of syphilis and tapeworm. Miss Lepper's 3 cases had not given a positive Wassermann test, and 4 cases positive to the Wassermann test had been negative to the hydatid test. The blood serum might contain the antibodies a few weeks to several years after complete recovery from the disease; 1 case had proved positive to the test after six and a half years. Dr. GERTRUDE GAZDAR read notes of 2 cases of *Ulcerative colitis* associated with chronic interstitial nephritis. The patients were both males, one aged 9, the other 36. Dr. LOUISA ALDRICH BLAKE said that a surgical opinion was often asked in these cases. Ulceration was rarely found in the small intestine, the large intestine being affected in the majority of cases. Dr. ELIZABETH BOLTON described, among other cases, one of *Papilloma of the cystic duct* accompanied by gall stones. Dr. HELEN CHAMBERS, in an account of the *Action of radium*, said that clinically it diminished the discharge from malignant growths, relieved pain, and in some cases healed ulceration. Haaland had shown that radium exerted a direct influence on cancer cells, and that excised mouse cancer which had been exposed to radium did not give rise to growth when inoculated into healthy mice. The use of emanation in solution for injection into tuberculous and septic joints was suggested as likely to prove eminently useful.

Reviews.

THE ETIOLOGY OF PUERPERAL FEVER.

DR. GEDDES'S book[1] is an attempt to throw light upon the etiology of puerperal fever by means of statistical analysis. All the available data of cases of puerperal fever notified in different districts of Lancashire, the industrial characters of the districts, and their vital statistics, are set out in detail. Numerous diagrams are provided showing the incidence of puerperal fever and of other diseases upon the districts reviewed, the possible relations between different diseases, together with the fallacies which may underlie statistical returns, being considered. Dr. Geddes shows that the incidence of *notified* puerperal fever is almost uniformly heavier upon mining and industrial than upon residential and agricultural districts. He connects this with the greater frequency of accidents in mining and manufacturing communities, and argues that the transference of streptococci from infected wounds to parturient women is a principal factor in the etiology of puerperal fever. In the author's opinion medical practitioners are more likely to play an important part in such transference than are midwives, and he emphasizes the necessity of a strict observance of surgical cleanliness on the part of general practitioners.

Dr. Geddes has written an interesting book, and one which must have entailed an heroic amount of labour; it would however, in our opinion, be too much to say that his thesis is proved. The great difficulty in all such investigations is to avoid confusing causation with correlation. We cannot feel sure, for instance, that the difference between the puerperal fever-rate in mining and residential districts is an effect, direct or remote, of the difference in the frequency of accidents. There are other differences between the districts which Dr. Geddes has not been able to take into account. To mention only one, the age constitution of the married population may vary considerably, and it is not impossible that the age of a parturient is a factor of some importance in relation to the etiology of puerperal fever. We also doubt whether so complex a research does not require more precise methods of investigation than have been employed. For instance, the method of partial correlation would seem to find an application here. Dr. Geddes sometimes seems to draw conclusions with more confidence than is prudent. Thus, he finds that whereas the average number of cases of puerperal fever notified in the month of March for over a period of ten years was 4, but 2 such cases were notified in that month of the present year. This is a result Dr. Geddes is disposed to attribute to the diminution of accidents consequent upon the coal strike. The attribution may be correct, but if in a series of ten months 40 cases of disease occur, and if the distribution in months of the series be a random one, the chance is about one in five that we shall find 2 or less cases in a month. In other words, the improbability of such a result is not great.

These criticisms must not, however, be interpreted as a disparagement of Dr. Geddes's book, which is a useful contribution to the literature of an important subject. In particular we hope that the difficulties in comparing official statistics compiled by different departments, to which he draws attention, will be remembered by those responsible for the present system.

THE ADMINISTRATION OF ANAESTHETICS.

THE fourth edition of *Anaesthetics and Their Administration*,[2] by Sir FREDERIC HEWITT, will be welcomed by many who have profited by the excellent teaching of the earlier editions. So many changes have recently taken place in the art of administering anaesthetics that the author has undertaken no light task in bringing the volume thoroughly up to date; he has been assisted in the preparation of the present edition by Dr. Robinson. A marked feature of this edition is the wealth of illustrative cases; they are recorded with great care and accuracy, and form not only a practical basis for any theories which the author propounds, but also render possible a really practical system of clinical instruction, of not too elementary a type. This is a good feature not always found in works upon this subject. A whole chapter has been devoted to the subject of the injection of various alkaloids as a preliminary to narcosis. Not only are all the advantages claimed for the method described, but what is perhaps even more important—the contraindications to the various hypnotic and other drugs are clearly emphasized. The chapter on the administration of ether has been much amplified in order to include the more recent developments. A clear account of the open ether method is given and also of the method of intravenous infusion. Speaking of spinal analgesia Sir Frederic Hewitt describes the method of regulating the height of analgesia by means of the specific gravity of the injected fluid, but remarks when discussing the posture of the patient, "If not in a fit state to sit up the injection may be given in the lateral posture." This statement seems to be open to criticism. If a heavy solution of stovaine is used it is difficult to see the advantage of the sitting posture even for a few seconds, except, of course, when an analgesia of the sacral plexus only is required. The use of spinal analgesia in infancy is condemned, but we believe that excellent results have been obtained in young children suffering from such acute infective conditions as appendicitis and osteo-myelitis, cases in which post-operative acidosis is liable to occur. This edition has emphasized the merits of its predecessors, and the reader may turn to the discussion of any of the scientific questions underlying the art, with the sure feeling that he will find a fair presentment of the evidence upon which conclusions must be based. In again recommending this book to all who are interested in the science as well as in the art of administering anaesthetics, we may say that the present edition fully maintains the great reputation of the work.

The second edition of *Practical Anaesthetics*,[3] by Mr. EDMUND BOYLE, is a small volume which deals with the subject in a practical manner. At the outset the author points out that the anaesthetist has duties other than the actual administration during the operation—an examination of the patient beforehand, the selection of the anaesthetic, and the care of the patient during his return to consciousness are important parts of the anaesthetist's business. In regard to the after-treatment of a patient the author says, "The head should not be raised." This statement might with advantage have been qualified. Patients suffering from suppurative abdominal conditions depend much upon a semi-recumbent posture for their subsequent well-being, and surely a patient anaesthetized by ether is not jeopardized by having his head raised. Only a short description of the open ether method is given, whereas the various closed methods are dealt with at length. Dwelling on the great safety of ether, the author points out the wisdom of using it as a routine anaesthetic, and chloroform only in those exceptional cases in which it is especially indicated. The chapter on spinal analgesia is a contrast to the practical nature of the rest of the book. Lengthy details of dosage are given, but no attempt is made to illustrate the principles that underlie the practice of spinal analgesia. The author remarks that the dorsi-lumbar puncture between the twelfth dorsal and first lumbar spines is used for operations upon the abdomen and lower half of the body, and that the lumbar puncture between the third and fourth lumbar spines is used for operations upon the lower limbs and perineum. In other words, that the height of the analgesia is regulated by the height of the injection. But the usual method of regulation by the use of a heavy solution of stovaine, which is made to flow to the required height by gravity, is not mentioned. With the exception of this chapter the book is well and clearly written, contains much information in a concise form, and should be very useful to those for whom it is intended.

[1] *Statistics of Puerperal Fever and Allied Infectious Diseases.* By George Geddes, M.D., C.M. Bristol: John Wright and Sons; London: Simpkin, Marshall, Hamilton, Kent and Co. 1912. (Demy 8vo, pp. 121, 6s. net.)

[2] *Anaesthetics and Their Administration: A Textbook for Medical and Dental Practitioners and Students.* By Sir F. W. Hewitt, M.V.O., M.A., M.D.Cantab. Fourth edition, prepared with the assistance of Henry Robinson, M.A., M.D., B.C.Cantab. London: Macmillan and Co., Limited. 1912. (Med. 8vo, pp. 691; 71 figures. 15s. net.)

[3] *Practical Anaesthetics.* By H. E. Boyle, M.R.C.S., L.R.C.P. Second edition. Oxford Medical Publications. London: Henry Frowde, and Hodder and Stoughton. 1911. (Cr. 8vo, 219 pp.; figs. 16, plates 11. 5s. net.)

Dr. MORTIMER, in the preface of his book, *Anaesthesia and Analgesia*,[1] tells us that he has endeavoured to treat the subject in a manner which will be useful to the practitioner. Consequently historical references and detailed descriptions of complicated apparatus have been omitted, while full attention has been devoted to the practical side of the subject. The book is comprehensive, and deals with all forms and combinations of anaesthetics and analgesics, but does not seem to be of quite equal merit in all its parts. The chapters dealing with the various complications of anaesthesia and the different methods of infusing saline fluid are clearly written, and give valuable information, but, on the other hand, the open method of administration of ether is very briefly dealt with. Again, speaking of spinal analgesia, the author remarks that "a solution heavier than the cerebro-spinal fluid is used in order to regulate the action of the drug"; but he does not mention how by varying the position of the patient during the injection this regulation is brought about. He further states that the sitting posture is generally preferable for the injection, and that the patients should be kept sitting up for five minutes afterwards. This is very true if an analgesia of the sacral plexus only is required, but surely is contrary to practice for such cases as appendectomy, etc., when analgesia corresponding to about the fifth dorsal segment is required. Dr. Mortimer enters fully into the question of the preliminary injection of alkaloids and the advantages to be gained thereby. He also sounds a note of warning which will be appreciated by all who have had considerable experience in the use of these drugs. He points out that the prolongation of narcosis necessitates constant watching after the patient has been returned to bed, in order that a free airway may be maintained, otherwise considerable risk of asphyxia will be incurred. The book on the whole is clearly written. The instructions for the administration of the various combinations of general anaesthetics are both detailed and lucid, and should be of use to students as well as practitioners.

As a manual for students Dr. BLUMFELD'S handbook of *Anaesthetics*[2] leaves little to be desired. It has now reached a third edition, and is packed with useful information and practical hints. A system of cross-references tends to conciseness and lucidity, and a full index adds to its value. The distinction between too deep and too light chloroform narcosis, the *bête noire* of beginners, is well set forth. The first direction for ethyl chloride-ether induction might be amplified; it is a trifle obscure and is not assisted by the figure referred to. Some, too, might consider the method advised for induction by CE unduly slow and cautious. No mention is made of the value of oxygen in the chapter on the dangers of anaesthesia. In every fresh edition of a textbook for students the question of the substitution of more recent methods for old arises. If the author errs it is on the side of conservatism. In the present volume a brief but sufficient description is given of intravenous and intratheeal methods. One may perhaps hope that in the next edition Dr. Blumfeld will consider the time ripe to recommend the use of alkaloids and open ether as a routine procedure, to restrict the use of chloroform to the Vernon-Harcourt or Junker inhaler, and to advocate the more general use of ethyl chloride in the induction stage of anaesthesia.

The small textbook of *Dental Anaesthetics*[3] by Dr. WILFRED ALDERSON gives a very lucid account of a special branch of anaesthesia which, although most important, is frequently very briefly dealt with in works upon the general subject. The author describes very thoroughly most of the methods of administration of nitrous oxide gas, but fuller details of the nasal method might with advantage have been given. While agreeing with the author in his condemnation of chloroform as a dental anaesthetic, we cannot altogether accept the view that either by the open method is more generally useful than the continuous nasal gas. The book contains much practical information in a concise form which should prove very useful to those for whom it is intended.

[1] *Anaesthesia and Analgesia.* By J. D. Mortimer, M.D.Lond., [illegible] Manuals. London: Hodder and [illegible] 1911. (Dble. feap. 16mo, pp. 280; figs. 29. [illegible])

[2] *Anaesthetics: A Practical Handbook.* By J. Blumfeld, M.D. [illegible]. London: Baillière, Tindall, and Cox. 1912. (Cr. 8vo, pp. 222. 5s. 6d. net.)

[3] *Dental Anaesthetics: A Textbook for Students and Practitioners.* By W. F. Alderson, M.D.Durham, M.S., B.Hy., D.P.H. With a Contribution on Analgesia by John Bolam, L.D.S.Edin. Bristol: John Wright and Sons, Limited. 1912. (Feap. 8vo, pp. 108. 3s. net.)

THE AMERICAN PRACTICE OF SURGERY.

VOLUME VIII of the *American Practice of Surgery*[7] is sent out into the world by the editors, Dr. BRYANT and Dr. BUCK, with, we fancy, more than a sigh of relief. It is a huge undertaking to present a complete system of the science and art of surgery as it is practised by representative surgeons of the United States and Canada. The editors in a valedictory note express their indebtedness to those who are the real constructors of the edifice—the authors of the one hundred and two articles of which the eight volumes are composed. But, as they indicate, they have exercised their editorial functions in a moderately rigorous way, as they found themselves compelled to cut and to prune so as to keep the work within reasonable bounds and evenly balanced. Their duties, then, have been anxious and arduous, and we feel assured that the American medical world will give the result of their labours the hearty welcome which it deserves.

This bulky volume of over a thousand pages continues the description of the surgery of regions. It deals with intrathoracic surgery, the spleen, kidneys and ureters, liver, gall bladder and bile passages, and the genital organs of both sexes. There is a well-informed chapter on the law in its relations to the surgeon and the practice of surgery. This may not appeal to British readers, as, properly enough, only American cases are cited, but if the law is simply concentrated common sense British surgeons will find this chapter as interesting as any. Medical witnesses in any part of the world may well take to heart the advice here given to the surgeon as witness. He is advised to be well impressed with the importance of his office, to be thoroughly prepared in his case and all the medical and surgical points connected with it; to give his evidence coolly, firmly, and candidly; to avoid discussion with counsel, to preserve an unbiassed mind, and to exercise prudence in dealing with subjective symptoms. The article is written by Dr. Stephen Smith and Mr. Sydney Smith, LL.B., of the New York Bar.

The surgical diseases of the kidneys and ureters are dealt with in a most able article from the pen of Dr. James Bell, Montreal. Tuberculosis of the kidney forms one of its most important sections, and we find the discussion of this subject is eminently fair and frank. Diagnosis of tuberculous infection of one kidney is difficult, and the behaviour of the disease in the female is not the same as in the male. Opinion is general that in the female tuberculous infection of the genito-urinary tract commonly begins in the kidney, and in the male in the testicle. In the former thickening of the ureter, puckering, and bullae-like deposits around the ureteral orifice help materially to fix the site of disease. The final diagnosis of kidney tubercle must always rest on the demonstration of the bacilli in the urine by microscope or by inoculation experiments. In describing nephrectomy the abdominal route might have received more commendation than the author seems willing to accord.

In the article dealing with enlargement of thymus and its treatment, by Dr. Ransohoff of Cincinnati, the tendency for the enlarged thymus to become herniated after its capsule is opened is duly noted, though curiously the work of Olivier in this branch of surgery is not mentioned.

Diseases of the prostate are the subject of a good article by Dr. H. H. Ferguson of Chicago. Of all the operative measures proposed for dealing with enlargement of this organ, the author prefers the suprapubic operation of Freyer, and this surgeon is paid the compliment of having his operation described *in extenso* in his own words.

In the last part of the book administrative surgical work is dealt with in a fairly satisfactory manner, including many questions affecting hospital construction, though the author, Dr. Christian R. Holmes of Cincinnati, regrets

[7] *American Practice of Surgery.* A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Edited by Joseph D. Bryant, M.D., LL.D., and Albert H. Buck, M.D., of New York. Complete in eight volumes. Vol. VIII. New York: William Wood and Company. 1911. (Dble. demy 8vo, pp. 1158; figs. 406.)

that limits of space prevent adequate treatment of the subject. There are two features in the paper which we think worthy of special regard—the solarium or roof garden of many American hospitals, and the system of artificial lighting advocated. The solarium is now a recognized adjunct of the ward; where space is available the open areas around the pavilions serve the purpose, and in large cities the roof is the place. As the author points out, all kinds of infective diseases are benefited by open air methods, so in New York City we find open air roof wards in the lying-in hospital for use in cases of eclampsia, toxaemias of different kinds, abnormal pregnancies, and in the Presbyterian Hospital for tuberculous patients, and for cases calling for surgical operations. Even the severity of the New York winter does not preclude the use of the roof ward, for its glass walls and roof can be partially or completely closed if necessary. The photographs illustrating the text show how satisfactory though inexpensive these roof wards may be.

For artificial lighting the author prefers the Moore system, in which the light is supplied by glass tubes containing rarefied atmospheric air through which an electric current is passed. Its inventor claims that it is cheaper than any other system, that its light is the nearest approach to diffuse daylight known, that it can be regulated easily, and that it has been sufficiently tested to be regarded as reliable.

Of this ambitious work as a whole it may be said that it is well worthy of the attention of British surgeons, who will find from it that while American surgery is not essentially different from surgery in any other part of the world, American surgeons can write vigorously and pleasantly, and with full grasp of the subject.

THE DICTIONARY OF NATIONAL BIOGRAPHY.

THE second supplement to the *Dictionary of National Biography*,[8] containing biographies of noteworthy persons dying between January 22nd, 1901 (death of Queen Victoria), and the end of 1911, has been completed by the issue last week of the third volume. It contains the names of twenty-eight women, chief amongst whom is Florence Nightingale (of whose beneficent life Mr. Stephen Paget gives a just, full, and well-balanced account), and of 115 persons engaged in scientific pursuits, including engineering, medicine and surgery, exploration, and economics. Of the 557 memoirs, 115 fall into this category. Chief amongst them are the memoirs of Sir George Stokes, by Sir J. Larmor; of William Thomson (Lord Kelvin), by Professor Silvanus Thompson; and of Herbert Spencer by Mr. Hugh S. R. Elliot. Among the ecclesiastics are Archbishop Temple, Cardinal Vaughan, and Bishop Stubbs, the historian, who especially disliked "dinner parties, smoking, late hours, and committees." Of the politicians the chief are the fifth Earl Spencer and the first Earl of Kimberley; of the artists Watts and Whistler; of the men of letters Leslie Stephen and Goldwin Smith.

Sir Ernest Clarke's biography of Sir John Simon is sympathetic and well informed; but while bringing out well his share in the early stages of public health reform and his influence on others, his lieutenants and coadjutors, it perhaps does less than justice to him as a medical reformer. Simon saw more clearly than any of his contemporaries, and than many who succeeded him, that successful public health administration was impossible without an efficient organized medical profession, and that if that were not assured, sanitary administration would rest on empiricism, and be governed by red tape. He suffered temporary defeat himself, and his biographer here records that "the cause of sanitary progress was prejudiced by his retirement" in the full vigour of his faculties in 1876. But the principle for which he fought has gathered strength, and is present to the mind of most politicians even when their methods of applying it seem ill-conceived and ineffectual. Dr. H. P. Cholmeley contributes the article on Dr. Vivian Poore, which, while eminently just, will gratify his many surviving friends, and on the two Thomas Wakleys, the son and grandson of the founder of the *Lancet*. Dr. H. D. Rolleston has a number of articles, and among them special reference may be made to those on Sir Henry Pitman, the centenarian Emeritus Registrar of the Royal College of Physicians of London, and Sydney Ringer. Of the biographies contributed by Dr. Norman Moore, that on Frank Payne is the more successful; that on Sir Samuel Wilks seems, somehow, to fail to convey an adequate impression of his great influence through two generations of medical London. Dr. Brockbank gives an adequate account of Symes Thompson, and Dr. Rowlette is responsible for a sympathetic article on Conolly Norman as well as for the biography of Sir Philip Smyly. Mr. D'Arcy Power has written good brief biographies of Sir Thomas Smith, Sir Henry Thompson, Sir P. Heron Watson, C. G. Wheelhouse, and J. Smith Turner, the father of the Dentists Act, but he gives an incorrect impression of Sir Willoughby Wade's influence in the development of the British Medical Association, considerable as it was.

Few works have in recent years been more keenly criticized than the *Dictionary of National Biography*. Errors have been discovered, as was, indeed, to be expected in a work of such magnitude and so full of detail, but it has stood the trial well, and with its two supplements is an indispensable part of any British library which aims at completeness.

NOTES ON BOOKS.

THE fourth edition of *The Nutrition of the Infant*,[9] by Dr. RALPH VINCENT, is stated to contain a great deal of new matter, especially in relation to the bacteriology of milk, and to have been carefully revised throughout. It contains much information, but nevertheless must be regarded rather as a contribution to the study of the subject indicated than as a comprehensive treatise thereon. It is written from the standpoint of the upholder of one special method of rearing infants by artificial means, namely, the method of Rotch. Whatever may be said of its principles they are, as this volume itself admits, practically insusceptible of application except by those who are in touch with laboratories specially fitted for the work entailed, and able to avail themselves of the facilities thus offered. Even at the institution which Dr. Ralph Vincent has brought into existence, it has been found necessary to adopt the fat-whey method extensively in the out-patient department, and since the results are stated to have been extremely satisfactory one may almost expect this or some other equally simple method to creep into the wards, despite the predilections of the author for the Rotch method. In addition to other matter the book contains a chapter on proprietary preparations, but its contents suggest that less attention has been paid to this section than to the rest of the volume, and in this and other connexions there are points on which a reader may fail to obtain the information required by him.

The third edition of *A Guide to Promotion*,[10] by Captain S. T. BEGGS, has been made to conform with certain new regulations, and brought up to date in all respects, but otherwise is on all-fours with its predecessors. It is a purely technical work, in the sense that those for whose benefit it is produced are junior non-commissioned officers in the Royal Army Medical Corps, but conveys such a very clear conception of the way they have in the army in matters medical and surgical as to be of some general interest. It should also be useful to commissioned officers responsible for the training of the men in question.

The manner in which Mr. E. BROWN answers the question, *Can a Drunkard be Cured?* lacks the judicial comprehensiveness which should be the aim of any one who tackles the subject of alcoholism, and has spoilt what might have been a useful, if not very weighty, contribution to the subject.[11] He says inebriety is a disease, and regards the dipsomaniac as less curable than the chronic inebriate. If this opinion has been formed after the treatment of many chronic inebriates it is remarkable. Mr. Brown condemns inebriate homes, but gives no figures to show that the treatment he advises gives better results.

[8] *The Dictionary of National Biography*. Second Supplement. Vol. III (Neil-Young). Edited by Sir Sidney Lee. London: Smith Elder and Co. 1912. (Roy. 8vo. Pp. 738. Price, cloth 15s. (half morocco 20s.) net each volume.)

[9] *The Nutrition of the Infant*. By Ralph Vincent, M.D. Fourth edition. London: Baillière, Tindall, and Cox. 1912. (Demy 8vo, pp. 565; plates 17, figs. 23. Price 10s. 6d. net.)

[10] *A Guide to Promotion*. By Captain S. T. Beggs, M.D., Royal Army Medical Corps, Reserve of Officers. Third edition. London: Gale and Polden, Limited. 1912. (Cr. 8vo, pp. 448. 3s. 6d. net.)

[11] *Can a Drunkard be Cured?* By E. Brown, M.R.C.S. Eng., L.R.C.P. Lond. London: Francis Griffiths. 1912. (Crown 8vo, pp. 3[illegible]. 2s. 6d. net.)

He says that music is an incentive to inebriety, but recommends pastry, sweets, and fruit. "I defy any one," he says, "to feel a longing for a drink after he has been eating, say, a cheesecake." Mr. Brown's sheet-anchor is treatment by suggestion. Inebriates are cured by many agencies, suggestion among them, but to assert that in a series of cases suggestion is superior to other methods is to presuppose a conclusion a wider experience will confute.

The third edition of *A Handbook for Midwives and Maternity Nurses*,[12] by Dr. Comyns Berkeley, is considerably larger than its predecessor, and covers the ground indicated by its title very completely. The sections dealing with anatomy; with the physiology and pathology of pregnancy; with labour, the puerperium, and the care of the infant are all equally clearly written, and suitable illustrations are supplied. There are also sections on some allied subjects, and five very useful appendices, one of which deals with the early recognition of cancer, a second with venereal disease, and a third with nursing before and after the performance of a Caesarean section. Acknowledgements are made in the preface for assistance received from Miss A. Bloomfield, Miss E. Watkins, and Miss E. Greaves, who are the matrons respectively of Queen Charlotte's Hospital, the General Lying-in Hospital, and the City Lying-in Hospital. But, apart from this, the volume itself supplies evidence of its author's readiness to receive well-founded suggestions. It should prove of much value to midwifery pupils and their teachers.

"Truth Christmas Annual."

The approach of Christmas is invariably heralded by the appearance of a host of Christmas numbers, and one of the most popular has always been the *Truth Christmas Annual*,[13] whose mordant allusions to current events have delighted its readers for many years past. The present number of "The New Ingoldsby" contains several clever parodies of Richard Harris Barham's delightful verses, all of which have reference to the persons, places, and events which at the present moment are most prominently before the eyes of the public. A special feature of this year's annual is "Everylady," an amusing skit on the morality play, *Everywoman*, and a curious story called "The Middle Watch," whose plot centres round the unusual circumstances attending the birth of the longed-for heir to a European throne. The latter is in itself almost enough to ensure the success of any periodical in which it appears; but the present instalment of "The New Ingoldsby" is well up to its general average, and therefore needs no further recommendation. It is, as usual, profusely illustrated, and contains two large coloured plates.

Diaries and Calendars.

Messrs. John Walker and Co.'s diaries are so well known as to be beyond praise; they only need mention. Those issued this year present the usual variety of arrangement, size, and appearance, fitting them for the particular purposes of different classes of people. Those described as "a week at an opening" are made in five different sizes; the bindings range from workaday cloth to solid Russia. They can be had either in fast or renewable bindings. All are provided with a back loop and pencil and have the usual pockets for stamps and so forth. Then there are diaries of corresponding styles, in which there is a page for every day, and others with a page for every two days. All these diaries can be obtained in sizes suitable for the pocket. All are well printed on good paper, and each includes an accident insurance coupon. An especially useful form is that called the "loose-leaf" diary, which can be arranged to suit the convenience of the owner. They have the advantage that towards the end of the year all used pages can be replaced by others for the coming year. The calendars issued by the same firm are excellently adapted for the purpose they are intended to serve. We know of no diaries or calendars more suitable for persons of all sorts and conditions—business and professional men, and those who have to keep a note of their social engagements, or keep memoranda of any kind. The claim made by Messrs. Walker and Co. (that their publications represent the perfection of British manufacture in this line) seems to be fully justified.

[illegible] Comyns [illegible] London: [illegible] 1912. [illegible] "The New Ingoldsby." Price 1s.; [illegible]

MEDICINAL AND DIETETIC PREPARATIONS.

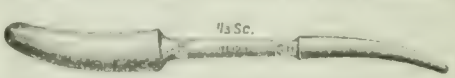
Nutresco Preparations.

The South African firm, whose malt and cod-liver oil preparation (Maltesco) we recently described, has several other products, one being Bovesco, another Carnesco, and and a third Pulvesco. The two former are meat extracts intended for ordinary and sick-room purposes respectively. Their conspicuous feature is the presence, in addition to other protein contents, of an exceptionally high proportion of albumoses and peptones. They thus provide a means of preparing rapidly a beef-tea which is nutritive as well as stimulating. The main difference between Bovesco and Carnesco would seem to be that the former contains a small proportion of celery, salt, and pepper, while the latter is left to be flavoured according to the individual tastes of invalids, and is somewhat more concentrated. The third product, Pulvesco, is, as its name suggests, a dry meat powder, mainly used for the preparation of other subproducts of the company, such as "Forced March" emergency biscuits and meat-pea-flour intended for the preparation of nutritive soups. Its percentage constituents are approximately as follows: Carbohydrates and fats, 45.6 per cent.; insoluble protein, 42.7 per cent.; soluble protein, 5.8 per cent. It is rich, therefore, in flesh-forming constituents. The firm, whose formal title is the Nutresco Company, Maritzburg, Natal, also makes meat tablets, Nutresco chocolate (Carnesco and chocolate), and discs or cubes known as Nutresco nuggets (gelatine and Bovesco), to be swallowed as they are or used for the preparation of soup on journeys.

MEDICAL AND SURGICAL APPLIANCES.

Uterine Dilator.

Dr. C. C. Stead (Hawkhurst) writes: The accompanying figure illustrates a new form of uterine dilators, which, I believe, are a distinct improvement on any other dilators on the market. They consist of three double-ended instruments and one other, which I have called a "pressor." The latter consists of a piece of metal roughly the shape of the proximal half of a door handle. The flat surface is bored with holes, into which the ends of the dilators fit; the more rounded surface fits comfortably into the palm of the operator's hand. By this means the operator is enabled to give exactly as much or as little pressure as is necessary without such great strain on his hands as is inevitable in using small sizes of double-ended instruments without some such device as the pressor. The dilators themselves consist of two conical ends (each 2½ in. long), joined together by a shaft (2½ in. long), giving a total length of 7½ in., which has been found by experience to be most convenient, the larger sizes being hollow, so that the air inside the uterus can escape. Special care has been given to the graduation of the dilators. In practice the greatest difficulty in using Hegar's and other dilators is in introducing the next size larger after the first, through the internal os, the distance of which from the external os averages 1 in. In this set of instruments the small end of each of the sizes (after the first) has the diameter, not of the previous size at its largest end, but of the previous size at a distance of 1 in. from that end. For example, take the two middle sizes: No. III begins with the diameter of 7 mm., increasing by 1 mm. every half inch, so that at 1 in. from its thickest end it is 10 mm. in diameter. Size IV is 10 mm. at its thin end, and can therefore be immediately inserted into the os internum, provided that Size III has been completely introduced. There being only four instruments in this set—namely, three dilators and one pressor—weight, space in the bag, and cost have been reduced to a minimum. I can confidently recommend the set to the profession, as it has proved handy and reliable both in my own hands and in those of the one or two friends to whom I have lent the sample set. They have been produced by Messrs. Weiss and Son, of Oxford Street, to whom I owe many thanks for the assistance they have given me, and the care they have taken in following out instructions.





The late Dr. Frank Montague Pope left estate valued at £2,635.

LONDON WATER.

The sixth annual report of Dr. A. C. Houston, Director of Water Examination, Metropolitan Water Board, on the results of the chemical and bacteriological examination of the London waters for the twelve months ended March 31st, 1912, has recently been issued. The results are carefully tabulated and the document is full of interesting details. In his introduction Dr. Houston states that the most notable events of the year under review were the passing of the Metropolitan Water Board (New Works) Act and the Thames Conservancy Act, 1911, and the prolonged summer drought and high temperature of that year. The Metropolitan Water Board in its New Works Bill (1911) asked for eight storage reservoirs and a new intake. In the face of strenuous opposition the Water Board deemed it prudent to withdraw their proposals regarding the intake and three of the reservoirs. Further, the Board indicated its readiness to abandon the "unrestricted right" to abstract 130 million gallons daily from the River Thames, in the hope that certain suggested alterations in the rules governing abstraction would meet with the approval of Parliament.

Parliament rejected two of the proposed reservoirs and cancelled the "unrestricted right," but granted only in part the concessions sought for in return. The fate of the bill was anxiously watched by those particularly concerned with the quality of the metropolitan water supply during its hearing by the Joint Committee of the Houses of Lords and Commons. Experience alone, says Dr. Houston, can fully show how far the form in which the bill emerged as an Act of Parliament is likely to affect the future purity of the supply. The greater part of the report is of a technical character, and only a short summary can be given here.

Bacteriological Results.

The results of the bacteriological examination are stated as follows:

Raw Water.—The averages of microbes per cubic centimetre for the twelve months were as follows: Raw Thames water, 9,155; highest, 18,219 (December); lowest, 2,516 (May). Raw Lee water, 15,071; highest, 42,586 (January); lowest, 3,647 (September). Raw New River water, 3,154; highest, 9,325 (December); lowest, 1,108 (May).

It is pointed out that these results have an important bearing on the abstraction figures. In a gravitation scheme, with a superabundant source of supply and huge storage reservoirs, the amount abstracted for storage purposes should be inversely proportional to the current impurity of the water. In the circumstances pertaining to the London supply this is only possible in a partial sense, but attention is again drawn to the fact that the amount of river water abstracted during the months when the river contains an excessive number of bacteria is so large as to emphasize the desirability of passing it through storage reservoirs antecedent to its filtration.

Filtered Waters (including Kent and Lee Valley Unfiltered Water).—The following statement indicates that the exclusive (that is to say, exclusive of samples containing 100 or more microbes per c.cm.) figures for the filtered waters were small, and the percentage reduction effected by the processes of subsidence and filtration remarkably good:

	Thames.	Lee.	New River.
Raw water (microbes per c.cm.)...	9,155	15,071	3,154
Filtered water (microbes per ...	17·2	28·4	15·4
Percentage reduction	99·8	99·8	99·5

It is pointed out, however, that too much stress must not be laid on percentage reduction of microbes. The worse initially the raw water, the easier it is to obtain a final filtrate yielding satisfactory results on the basis of percentage purification.

The order of merit, based on the exclusive figures, is as follows; the average number of microbes per c.cm. being respectively:

Kent, 9·3; Chelsea, 10·9; New River, 15·4; Grand Junction, 15·9; Kempton Park, 16·2; East London (Thames), six months only, 18·1; Lambeth, 18·3; West Middlesex, 18·7; Southwark and Vauxhall, 20·2; East London (Lee), 28·4.

Tests for Special Organisms.

The following are the results of tests for special organisms:

B. Enteritidis sporogenes Test.

Raw Waters.—34.6, 40.3, and 17.3 per cent. of the samples of Thames, Lee, and New River water respectively yielded positive results with 10 c.cm. of water.

Typical B. coli Test.

Raw Water.—The results, judged by this test, were unsatisfactory, having regard to the fact that the rivers Thames and Lee are known to be seriously polluted with sewage, and that there is every reason to suppose that the majority of the *B. coli* found in the raw waters are of human excremental origin. The New River contained *B. coli* in 1 c.cm. (or less) in 51.4 per cent., the river Thames in 88.3 per cent., and the river Lee in 87.1 per cent. of the samples. Taking a one figure average result, the average number of *B. coli* per cubic centimetre, according to this calculation, was as follows:

Typical B. coli per Cubic Centimetre of Raw Water.

	Arbitrary One-figure Result.
River Thames	19
River Lee	5
New River...	2

The "best month" results were remarkably good, and the average results were also satisfactory.

For the filtered waters a one-figure result per cubic centimetre of water—expressed as typical *B. coli* per 1,000 c.cm. of water—is as follows:

Kent, 1 to 2; New River, East London (Lee), Kempton Park, Chelsea, Grand Junction, 2 to 3; Lambeth, Southwark, and Vauxhall, 3 to 4; West Middlesex, 14; East London (Thames), six months only, 17; Lee derived water, New River derived water, Thames derived water, All London waters, 2 to 3.

It is noted that, whereas out of every 100 *B. coli* isolated from the *raw* Thames, Lee, and New River waters, 84.0, 85.5, and 85.6 respectively proved to be *typical B. coli*, the corresponding figures for the filtered waters derived from these sources were 53.8, 55.7, and 54.6 respectively. The collective results were 85.0 in the case of the *raw* waters, and 52.9 in the case of the *filtered*—including a proportionately small number of unfiltered water samples. This is a *proportional* statement, and does not refer to the actual number of *B. coli* in the two cases. On the average, for the year under review, the River Thames is more impure than the Lee or New River, particularly than the latter. As regards the filtered waters, it is noteworthy that on the average, and in the best and worst months of the year, the Thames-derived waters compare unfavourably with the Lee and New River-derived waters.

Comparison between the 1910–11 and 1911–12 Results.

Comparing the condition of London water in 1910-11 and 1911–12, Dr. Houston says that chemically the *raw* New River water yielded worse results in 1911–12. The *raw* Thames and Lee yielded better results except as regards turbidity, and, in the case of the Lee, oxidizable matter, as judged by the permanganate test. The New River-derived filtered water yielded worse results in 1911–12, while the Thames-derived and Lee-derived filtered waters either showed no change or an improvement. The oxidizable matter (permanganate test), however, increased in the Lee-derived filtered water during the period under review.

Bacteriologically, the *raw* waters contained more bacteria in 1911–12 as compared with 1910–11. The bacteria growing in agar and bile-salt agar at 37° C. were also increased during the period under review. The *B. coli* results were not widely different from those of the previous year. As regards the *filtered* waters, the results were slightly better in 1910–11 as compared with 1911–12.

Conclusions.

In conclusion, Dr. Houston says that about 80 per cent. of the London water supply is derived from sewage-polluted rivers. As judged by the usual chemical and bacteriological standards, the *raw* waters above the "intakes" for waterworks purposes are undoubtedly unsatisfactory in quality, particularly during the winter

months. Within recent years a marked improvement has taken place in the methods of purifying sewage so as to render the resulting effluents non-putrescible and *chemically* unobjectionable. Apart from sterilization, however, no known practical process has yet been found which turns out a "safe" effluent, *bacteriologically*, and the great majority, even of chemically satisfactory effluents, are swarming with extremental bacteria. It is possible that improved methods of purification will, in a chemical sense, keep pace with increasing pollutions of the Rivers Thames and Lee, but the outlook bacteriologically is less hopeful. Prospective legislation as regards sewage purification would seem likely to run on the common-sense lines of protecting the general interests of the community at large, leaving to individual authorities who venture to utilize polluted rivers for waterworks purposes the full responsibility of employing such superadded processes of purification as the particular necessities of their own case demand. Belief in the future "safety" of London as regards water supply ought not, it is pointed out, to depend on the chimerical hope that the Thames and Lee are destined to become progressively less impure, but on increased knowledge as to the best means of purifying the water before it is sent into consumption.

Although the *raw* Thames and Lee contain *B. coli* in undesirable numbers, faecal streptococci are seldom discoverable in 1 c.cm. amounts of the water. Further, the results of a most elaborate search for the typhoid bacillus and Gaertner's bacillus have yielded practically negative results under conditions of experiment which have been shown to be successful in the case of *artificially infected* samples. Dr. Houston does not, however, contend that these pathogenic microbes are in reality uniformly absent, but that, if present, their numbers must be so small that it is almost inconceivable that any of them could ever survive passage through the storage reservoirs and reach the filter beds, which in their turn remove about 98 per cent. of bacteria of all sorts.

Storage.

Dr. Houston calls attention to the striking fact that has been shown in his past reports that London is not really drinking merely filtered *raw* river water, but *raw* river water which by storage processes has been purified bacteriologically antecedent to filtration to a remarkable extent. If all the prefiltration waters were mixed in their respective proportions, the quality of the mixed water antecedent to filtration would be such that on the average about one-third of the samples would contain no typical *B. coli* in 10 c.cm. of water. When it is remembered that 88.3, 53.9, and 14.5 per cent. of the samples of *raw* Thames water contain typical *B. coli* in 1 c.cm., 0.1 c.cm., and 0.01 c.cm. respectively, the corresponding figures for the Lee being 87.1, 48.1, and 7.4 per cent., the transformation the river water has undergone *previous* to filtration becomes strikingly apparent. Nor does even this represent the highest level of efficiency. Under different and elastic regulations as regards abstraction of river water and a more complete system of "pooling" of stored water interests, over one-half the samples (individually as well as collectively) of prefiltration water ought to contain no typical *B. coli* in 10 c.cm. of water. Even putting sedimentation and devitalization completely on one side, he says, the "levelling" effect of storage renders the possibility of any sudden accidental concentrated and dangerous pollution of the river water above the "intakes" a matter of much less grave concern than would otherwise be the case. Storage, in this sense, is equivalent to dilution, inasmuch as it "spreads" the dose of poison over weeks or months, and it may, indeed, quite apart from any question of devitalization, render innocuous a microbial contamination which in a concentrated form would be apt to be highly dangerous.

Filtration.

Dr. Houston points out that the rate of filtration at the different works is unequal, and would seem to bear no apparent relation to the variable quality of prefiltration water. Other things being equal, the rate of filtration at a works should be largely governed by the quality of the water that is being filtered. All the filter beds should have separate filter wells for sampling purposes. It is not sufficient that the quality of the mixed filtered water is good; it is most desirable that each of the filtration units should be in *proven* and perfect working order. The desirability of using only stored water becomes the more apparent when it is remembered that when a filter bed is yielding unsatisfactory results the filtrate cannot, generally speaking, be run to waste until the reports are of a more reassuring character. Speaking generally, it would seem to be safer to use a coarse sand and filter rapidly when dealing with an *adequately* stored water than to use a fine sand and filter slowly when dealing with *raw* or inadequately stored river water. In the former connexion, as pointed out in a previous report, mechanical filters may play a useful part, owing to the ease and rapidity with which they can be cleaned, but it is possible that the old sand filters, if worked under slightly altered conditions (for example, using coarser sand and filtering more rapidly), may greatly increase their field of usefulness. The only way, apart from sterilization, of rendering the prefiltration water always comparatively, if not absolutely, innocuous, is by sedimentation, devitalization, and equalization—in other words, by storage.

Service Reservoirs.

Service reservoirs should never be so small as to lead to variable rates of filtration during the twenty-four hours, hence a "pooling" of service reservoir accommodation is desirable. The equalizing and delaying effect of even transitory storage in service reservoirs is the culminating step in the protection afforded to the water consumer.

The Water as finally delivered to Consumers.

Seven years' work on the London water question has convinced Dr. Houston that to a progressively increasing extent the Water Board are securing the reasonable if not absolute "safety" of the metropolitan water supply. As a counsel of perfection, he still feels bound to advocate the choice of an initially pure source of water supply; but his own results and experiments seem to indicate clearly that the evil effects even of an impure source can be largely, if not entirely, annulled by adequate storage and efficient filtration.

The Question of Accident.

Dr. Houston again points out that in addition to filtration and storage it is also necessary to guard against the possibility of accident. In this connexion questions of drainage, health of workmen, suction of impure water into water mains, laying of new mains, alteration to existing mains, condition of service reservoirs, etc., deserve attention. There is a growing tendency to regard any sudden accidental gross infection as of most dangerous significance, and to consider more constant but highly diluted pollutions as, relatively speaking, of lesser importance. The method of water purification now in progress (storage) renders the position "safe" as regards the river water provided that no fresh and dangerous contamination takes place in connexion with the storage reservoirs, the filter works, the service reservoirs or the delivery mains. Dr. Houston's final opinion is that the "*quality* policy" of the Metropolitan Water Board should be directed towards securing an "epidemiologically sterile" water (that is, a water containing none of the microbes associated with water-borne epidemic disease) *antecedent* to filtration by means of storage (sedimentation, devitalization and equalization), aided, if need be, by the occasional employment of supplementary processes of water purification.

Complaints from Consumers.

Dr. Houston says that relatively to the population very few complaints reach the department as to the quality of the water. During the period under review only ninety were received. The commonest compaints are as follows:

Presence of suspended matter, hardness, colour, deposit on boiling, smell, and taste.

Exceptional cases apart, investigation is made and samples are collected on the same day as the complaint is received.

Alterations to mains, fresh connexions, variations of pressure, and other matters common to all water supplies, account usually for the transitory and local pressure of suspended matter in the supply.

As regards *hardness*, the water varies only slightly in this respect, but consumers sometimes are of the belief that

some increase has suddenly taken place. The deposit of lime salts on boiling is another fact, which at times appears suddenly to strike the consumer as new. During the winter months of the year the water is browner in colour, but as compared with moorland supplies the London water may be considered, relatively, very free from brown coloration. As regards smell and taste the cause, if really existent, is usually found to be associated with foul cisterns. On several occasions dead and decomposing starlings, sparrows, bats, and mice have been found in the cisterns. Sometimes, however, the defects complained of appear to be due to imperfect circulation of water, to new mains, or to joints made with taste-imparting materials.

Research Work.

Several special researches have been undertaken during 1905–12 and eight reports have been issued:

A special report (First Research Report) on the vitality of the typhoid bacillus in samples of *raw* Thames, Lee, and New River water. Another research (Second Research Report) which occupied twelve months involved special search for the typhoid bacillus in samples (collected weekly) of *raw* Thames, Lee, and New River water. The results were negative. A special report (Third Research Report) on the question of storage was published in March, 1909. A report (Fourth Research Report) on the vitality of the cholera vibrio in *raw* river water was also published in the same year. A fifth report on research work was published in 1910, dealing with: (1) The results of the examination of samples of *raw* Thames and Lee water for the presence of the typhoid bacillus and Gaertner's bacillus; (2) the results of the examination of the *raw* river waters (Thames, Lee, and New River) for faecal streptococci; (3) the results of the examination of the pre-filtration water—that is, representative samples of practically all the London water (*raw*, stored, gravel, well, and mixed water) *antecedent* to filtration; (4) the negative results of the examination of samples of *raw* Thames, Lee, and New River water for the presence of Morgan's No. 1 bacillus; (5) the isolation of cholera vibrios from samples of *raw* river water *artificially* infected with only a few vibrios. A sixth report on the comparative vitality of "uncultivated" and "cultivated" typhoid bacilli in artificially infected samples of *raw* river water, with special reference to the question of storage, was also published in 1910. A seventh report was published in 1911. It dealt with (1) pathogenic microbes; (2) uncultivated bacilli; (3) temperature; (4) *B. coli*; (5) rapid sedimentation; and (6) coagulants. In the present year (1912) an eighth report on the softening, purification, and sterilization of water supplies (excess lime method) was also published.

The report is a most valuable document to all interested in the scientific and practical problems with which it deals, and Londoners in particular have reason to be grateful to Dr. Houston for his vigilance in watching over the purity of their water supply.

ANNUAL REPORT OF THE MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD.

THE annual report of the medical officer to the Local Government Board for England and Wales for 1911–12[1] consists, as usual, of the report proper and the appendices which contain, with other subsidiary reports, the auxiliary scientific investigations.

Diarrhœa and Enteritis.

In his general review of the public health in 1911 Dr. Newsholme states that the slight increase in the death-rate was due to the high mortality from epidemic diarrhœa. In order to obtain more reliable statistics the deaths from diarrhœa and enteritis under the age of 2 are to be taken together, for there is little doubt that cases of epidemic diarrhœa are often certified as enteritis. The mortality from diarrhœa and enteritis rose in 1911 to 43.7 per 1,000 births. The important question is whether there had been any improvement in the diarrhœa mortality which can be ascribed to sanitary efforts, and not to cool summers. The falls in 1908, 1909, and 1910 must be partly ascribed to the cool summers. The only recent year which can be compared with 1911 is 1899. During the third quarter of 1899 the mortality-rate per 1,000 births was 255, whilst in 1911, although the mean temperature was a little higher, the mortality-rate was 201. Thus there has been a definite improvement.

[1] The Forty-first Annual Report of the Local Government Board: Supplement containing the Report of the Medical Officer. (Pp. lxxx and 366. 3s. 8d.)

Enteric Fever.

The enteric fever-rate showed a slight increase, due probably to the hot summer. As the enteric fever-rate is one of the best indices of the general sanitary efficiency of a district, the local incidence of enteric fever is very interesting. The medical officer writes: "The counties of Durham, Lancashire, Northumberland, Yorkshire (West Riding), and Monmouth maintain an unenviable notoriety for avoidable loss of health and life from this disease, as well as for excessive infant and child mortality." Further analysis shows that four-fifths of the entire population live in sanitary areas with an attack rate of under 0.5 per 1,000. The complete extermination of enteric fever, therefore, seems to be within manageable compass. It would involve: (1) Sanitary reforms in certain districts; (2) protection from infected foods, such as milk, ice-cream, and contaminated shellfish; and (3) treatment of all cases under the best conditions. The eating of mussels has been incriminated in some epidemics, and attention is drawn to some from the river Exe.

Measles, Scarlet Fever, and Diphtheria.

The measles rate has shown a slight rise, and attention is drawn to the fact that in addition to the deaths directly due to measles there are also a large number of cases of deafness acquired from measles, and also many cases of death from tuberculosis where a latent focus of tuberculosis has been roused to activity by measles. The medical officer urges the advisability of instituting notification from schools as well as from medical men, arrangements for obtaining an accurate diagnosis by means of the employment of an adequate staff (medical and others), arrangements for isolation, urging upon the parents the necessity for obtaining medical advice, and, finally, advice by visitors upon the nursing and care of the patients. Both in London and in the provinces there has been for some years a steady fall in the death-rate from whooping-cough, due, probably, to better care of the infants. The rates for scarlet fever and diphtheria show a slight fall.

Small-pox and Vaccination.

Small-pox is now a very small item, but as the diminution of "home-produced" cases progresses, the small number of imported cases becomes relatively more important. The same remarks apply to both typhus and enteric in Liverpool. Vaccination is still on the decline. The percentage of vaccination has fallen from 59.8 to 55.8.

Poliomyelitis.

The medical officer makes little comment on the reports upon poliomyelitis in Cornwall and Devon beyond pointing out the difficulties due to ignorance of the mode of infection. A grant has been made in aid of research on this subject.

Puerperal Fever, Erysipelas, and Ophthalmia Neonatorum.

In regard to puerperal fever, erysipelas, and ophthalmia neonatorum, there is a need for more hospital accommodation. The numbers of cases are not large, therefore "the problem is a small one, but when it arises urgent in character."

Tuberculosis.

A large space is devoted to the administrative control of tuberculosis. The problems are discussed in a very broad and fair manner, with the general conclusion that all possible sources of infection, both human and bovine, must be attacked without waiting for solution of certain academical questions as to the mutability of the bovine, human, and perhaps avian, forms of bacilli. A more general attack on tuberculous milk is advocated, as is the attempt to trace the source of infection in different cases.

International Sanitary Conference.

The full report of the International Sanitary Conference in Paris to discuss and formulate regulations for the control of plague, yellow fever, and cholera is translated in the appendix, but probably most readers will be satisfied with the comment: "The new convention confirms the principle that efficient sanitary organization is the best safeguard against imported disease, and that quarantine and other measures that are burdensome to commerce and impede free communication between nations defeat their own ends by putting a premium upon evasion."

Plague.

It is satisfactory to learn that there was a slight diminution of the area in East Anglia which had been infected with rat plague. One human case was discovered, and this was apparently due to infection whilst skinning a rabbit caught in the infected area.

Food Inspection.

Food inspection and the researches of the food inspectors having raised a certain amount of apprehension that the bleaching of flour and the addition of improvers are not without danger, legislation is considered to be necessary, and it is stated that the Board has the question under its consideration.

Auxiliary Scientific Investigations.

In dealing with the auxiliary scientific investigations (which will be summarized in a later issue) Dr. Newsholme makes some exceedingly interesting remarks on presenile mortality. It is well known that there has been in the last few decades a remarkable decrease in the death-rate. On analysis it appears that the decrease is largely confined to the age periods under 45-50; there has been a slight increase from 65-75 in the case of men.

Thus for the age period of 20-25 England and Wales shows better figures than any other European country, whilst for the period of 55-65 (men) there are only two countries with a worse rate. The statistics show that the causes of death in this period are: First, disease of the heart and vessels; secondly, disease of the respiratory system, including pneumonia; and, thirdly, malignant disease.

Cancer is already the object of serious investigation by public bodies, but with the exception of rheumatic fever little is known as to the factors which produce vascular disease. It is intended to devote some time and money to the study of this problem, and as a preliminary Dr. Andrewes has written a summary of existing knowledge on the classification and origin of arterio-sclerosis.

Like its predecessors, the report of the medical officer is a lucid and fair-minded document, which not only reflects the present position of existing knowledge, but probably anticipates a good deal of future work. There is one notable omission; the only reference to syphilis is one which tends to minimize its influence on the production of ordinary arterial degenerations.

STATE AID OF RESEARCH INTO MENTAL DISEASES.

A CONFERENCE of representatives of a considerable number of asylums for the insane throughout the country, called by the Visiting Committee of the Cardiff City Mental Hospital, was held on December 5th at the Guildhall, London, to discuss the desirability of pressing for Government grants towards the cost of specific researches in mental diseases.

The representatives were welcomed by the LORD MAYOR OF LONDON (Sir David Burnett), and the LORD MAYOR OF CARDIFF (Mr. Morgan Thomas) presided over the subsequent proceedings.

The resolutions submitted to the meeting by the conveners were as follows:

> That this meeting of representatives of the Visiting Committees of Asylums of England and Wales is of the opinion (*a*) that the prevention of insanity by heredity transmission and of acquired and recurring insanity, as also the cure of acquired insanity, are of prime importance to the State; (*b*) that it is expedient that State aid be given in the shape of grants [illegible] scientific researches having for their object the prevention and cure of insanity, such grants to be made through the medium and upon the recommendation of His Majesty's Commissioners in Lunacy.
>
> That copies of the above resolution be forwarded to the Prime Minister, the Lord Chancellor, the Chancellor of the Exchequer, the Home Secretary, and the Commissioners in Lunacy.

The LORD MAYOR OF CARDIFF, in opening the discussion, spoke of the excellent work done in the comparatively few research laboratories at present attached to asylums. The English system of local government had delegated the administration of hospitals for the insane to local bodies, but often work might be done there that accrued to the benefit of the State; anything which tended to reduce insanity was of more than local advantage. Specific research often demanded expenditure far beyond what could be reasonably expected of a local institution, and in many cases medical superintendents and officers of asylums provided from their own private resources for research work. That was a state of things that should not be necessary. Under the Insurance Act the Government had set aside a grant of a million and a half to deal with tuberculosis, and a definite portion of this sum was earmarked for research work. Government grants were also available for research work in other departments of public health; indeed, it appeared that lunacy was the only disease in respect of which no research grants were made.

Sir GEORGE SAVAGE, in moving the resolution, referred to the advances of public opinion in regard to the treatment of the insane during the last forty or fifty years. Now, instead of the first consideration being to protect society from the dangerous lunatic, the treatment and, if possible, cure of the lunatic was regarded as of prime importance. Beside the "dominant" of heredity, there were a large number of causes of insanity, depending upon bodily and other conditions. It had come to be regarded as the chief function of the doctor to prevent disease, and if anything could be done to deal with such a disease as, for example, general paralysis of the insane, great benefit would accrue to the community. Although immediate results might not be obtained from research work, in the long run definite advances must occur, and this work could not properly be carried on by isolated efforts.

Dr. J. SHAW BOLTON, Superintendent of the West Riding Asylum, Wakefield, seconded the resolution. He alluded to the increase of insanity, mentioning that there were more than 135,000 certified lunatics in the country, or 1 to 259 of the general population. A diminution could only be brought about as the result of clinical, physiological, histological, chemical, and bacteriological research. Up to the present research work had been carried on by a few individuals, as the result of whose work the reputation of asylums had greatly increased. That this work had been possible was due to the public spirit of committees which had provided laboratories and means of research. Work of this kind which was not verified by others and tested in asylums throughout the country was of very little value, and it was important to give opportunities to medical officers of asylums of taking advantage of the work done in other institutions. The Government should contribute towards the cost of this work, because it was done on behalf of the public at large; grants would stimulate individual students and increase their sense of responsibility. At present it was not unknown for expensive research apparatus to lie about unused.

Sir THOMAS CROSBY, ex-Lord Mayor of London and President of Bethlem Hospital, considered that the *post-mortem* methods of research ordinarily employed in regard to insanity had not been productive. The misery caused by the terrible scourge of insanity was so widespread that it should be scientifically examined in the hope of reducing its incidence.

Dr. JAMES SOUTAR, President of the Medico-Psychological Association, explained that he was present as a representative of one of the registered hospitals for the insane and not as representing the association, which had not up to the present considered the question before the conference. He was entirely in sympathy with the principle of the resolution; in fact, he thought there should be some extension of its proposals. Nevertheless, he doubted whether it was wise for a meeting of representatives of visiting committees to express such definite views as regards the prevention and cure of insanity as were contained in Clause (*a*) of the resolution. That was not the place to discuss the effect of heredity in the transmission of insanity; many competent observers maintained that its influence had been somewhat overrated, and that its potency varied enormously in different cases. By approving of this portion of the resolution the meeting would be committing itself to the principle of the regulation of the propagation of the species. Examination of family histories over a long period showed that where a case of insanity occurred it was usually counterbalanced by a large number of competent persons from the same stock.

Neither could the meeting attempt to discuss the distinctions between acquired and recurring insanity—a matter which baffled medical men who had made a special study of this question. The meeting should content itself with urging upon the Government the importance of research in the direction of the prevention and cure of insanity. He also suggested that grants should be made towards the establishment of clinics for the treatment of cases of incipient mental disorder. In the case of well-to-do persons insanity, by being taken in time, was often checked because treatment—medicinal, dietetic, and general—could be carried out. Such persons went back to their ordinary mode of life without having been certified insane. The lot of the poor was in sharp contrast: they struggled against delusions and the signs of approaching insanity until they were taken to asylums. Clinics would be valuable schools for the young practitioner, who would learn to recognize the early symptoms of mental trouble, and this knowledge he could apply afterwards in general practice.

Sir N. W. HELME, M.P., agreed that clinics would be of immense value. He thought the proposed grants should not be made through the medium of the Commissioners in Lunacy, as that body was not controllable by Parliament.

Alderman CROWTHER, of the West Riding Asylum, thought there should be a pathological department attached to every asylum, and that the medical officers should have special knowledge of this subject. He considered that research would be best carried on at one national centre whose findings would be at the disposal of all the asylums. Such an institution should be provided entirely by the Government, and the results would be far more satisfactory than would be obtained as a result of grants to a number of isolated institutions.

Dr. E. S. PASMORE, Medical Superintendent of the Croydon Mental Hospital, urged that grants in aid would encourage emulation in scientific research amongst the medical officers of various asylums, and that more valuable results would be obtained as the result of work carried on throughout the country than at a central institution.

Dr. T. W. MCDOWALL, Medical Superintendent of the Northumberland County Asylum, said the medical profession had long desired to see the professional requirements of the junior men in the asylums improved. The difficulty was that most young practitioners had no idea of spending their lives as asylum officers, consequently they rarely applied their minds fully to the difficult problems peculiar to this class of work. From the isolated position of asylums those who were anxious to improve their knowledge of mental diseases had great difficulty in getting into touch with centres of teaching. The Medico-Psychological Association congratulated itself that it had succeeded in persuading several universities to open courses of instruction for asylum medical officers. Cambridge, Leeds, Manchester, Edinburgh, and Durham had instituted a diploma, but there were difficulties in candidates obtaining courses of instruction. On the question of mental clinics, Dr. McDowall mentioned that an experiment of a mental department of a general hospital with which he was acquainted was not successful, because few people realized when they were suffering from symptoms of incipient insanity. He did not agree with the suggestion of a central laboratory only; it was of the utmost importance to develop industry, research, and intelligence in every asylum throughout the country.

Dr. E. GOODALL, Superintendent of the Cardiff Mental Hospital, spoke of the work done in the laboratories of that institution, and remarked that research into mental diseases was becoming more and more difficult, recondite, tedious, and costly.

Ultimately the resolution before the meeting was carried unanimously in the following amended form:

> That the prevention and cure of insanity is of prime importance to the State; that it is expedient that State aid be given in the shape of grants towards the prevention, cure, and treatment of mental disease, and that copies of the resolution be forwarded to the Prime Minister, the Lord Chancellor, Chancellor of the Exchequer, Home Secretary, and Commissioners in Lunacy.

A deputation was appointed to wait upon the Home Secretary and the Commissioners in Lunacy to place

ASSOCIATION OF CERTIFYING FACTORY SURGEONS.

Annual Meeting.

THE annual meeting of the Association of Certifying Factory Surgeons was held at the Grand Hotel, Birmingham, on December 6th, the PRESIDENT, Dr. R. W. Edginton, being in the chair. The work of the council during the year was reviewed, the subjects exciting most discussion being the suggested amalgamation of associations of general practitioners holding public appointments and the proposed co-operation between certifying surgeons and officials of juvenile labour exchanges. As regards the former, there was unanimity of opinion that the association had satisfactorily fulfilled its function in the past, had received great assistance and worked most amicably with the British Medical Association in any troublous times which had occurred, was in a sound financial position, and that the loss of identity by being swallowed up would be distinctly detrimental. As regards the latter, it was acknowledged that it would be a distinct advantage to the work of the certifying surgeon if employment suitable to their physical condition could be secured, through the medium of juvenile labour exchanges, for those children who were rejected for employment for which they were physically unfit, and if treatment recommended for certain conditions which did not absolutely debar from employment were secured through the agency of these organizations. It was, however, pointed out that the certifying surgeon himself was able to secure suitable employment and treatment in a large number of cases coming under these classes. It was the general opinion that the Board of Trade should make arrangements for the payment of a small fee for each notification sent in by the certifying surgeon.

The following officers were elected for 1913:

President.—Dr. E. Rayner, Stockport.

Vice-Presidents.—Dr. R. W. Edginton, Dr. G. P. Bate, Dr. H. W. Langley Browne, Dr. T. E. Fliteroft, Dr. T. W. Heywood, Dr. W. F. Marsh Jackson, Dr. J. Dallas Pratt, Dr. A. Garrick Wilson.

Honorary Treasurer.—Dr. Thomas Watts.

Honorary Secretary.—Dr. W. F. Dearden, 168, Trafford Road, Manchester.

Honorary Corresponding Secretary for Ireland.—Dr. H. C. Manley, Whitehouse, Belfast.

Honorary Corresponding Secretary for Scotland.—Dr. A. Scott, Glasgow.

Honorary Corresponding Secretary for London.—Dr. W. H. F. Oxley.

Dinner.

At the dinner held after the meeting, the PRESIDENT, in proposing the toast of the city of Birmingham, mentioned the great changes, both architectural and sanitary, which, since he came to reside in Birmingham forty years ago, had been brought about by its great and most enterprising municipality, and expressed the gratification to himself and members of the Association at being honoured by the presence of the Lord Mayor.

The LORD MAYOR (Col. Martineau), in reply, said that being neither a doctor nor employer, but only a solicitor, he could not speak with a very great amount of authority on the value of factory supervision. From what knowledge he possessed of the industries of Birmingham, he thought that the problem which demanded serious consideration was how much inspection should be inflicted and how much risk should be taken. He was quite satisfied that the large firms fully realized their responsibilities, and needed very little looking after, but with the very large number of small employers in Birmingham, it was undoubtedly a question of what should be done. Competition was so great that a too severe dealing might kill many trades, and it became a question whether such should continue to exist at all in England, or should be allowed to go. He thought the small traders should be treated leniently, and brought by degrees to the standard which was undoubtedly desired by all.

In responding to the toast of "The Factory Department of the Home Office," given by Dr. C. A. GREAVES, Dr. T. M. LEGGE paid a high tribute to the *camaraderie* of the certifying surgeons, and thought that gatherings of that kind, bringing together heads of the department and certifying surgeons from all parts of the country, did more than anything else to cement the good feeling which

existed. Their work was of great service to the department, and the information they were able to provide was valuable in many ways. Though the certifying surgeon at the present time moved in a sea of unexampled calm, he thought that, arising out of the Insurance Act and the Tuberculosis Regulations, something more would be required from him before long. Though notification might not be required through his ordinary examinations for the certificate, something of the kind might become necessary under "special rules." The number of quite voluntary reports sent in at the end of the year went far to prove that the certifying surgeon exercised a most humanizing influence in factories, the establishment of recreative facilities, mess-rooms, and first aid being largely due to his efforts towards social improvement.

Mr. HARSTON (Inspector of Factories), in giving the toast of "The Association," remarked on the growing prominence of the medical element in factory administration, and said that whilst twenty years ago it was not regarded as necessary to have the profession represented in the governing body, now the chief inspector was a member of the medical profession, and there were two medical inspectors. There was no limit to the extent to which medical investigation could now be utilized, and he was satisfied that the association exercised a great influence on the proper carrying out of the work of the department.

The PRESIDENT, in reply, said that when the certifying surgeon was weighed in the balance twenty years ago it was the association that brought the scale down on the right side, and since that time its influence had been pronounced in the direction of improving the standard of work. He was quite convinced that an undue interference with the investigation of the causation of injuries due to accident would be detrimental to this progress. His own investigations in Birmingham led him into places where he would never go otherwise, and gave him knowledge he could never otherwise obtain. Without the intimate acquaintance with machinery and processes so acquired he would be quite lost in his judgement as to the suitability of particular occupation to special physical conditions in the applicant. This class of experience made a certifying surgeon an expert in accident risk, and it was the younger generation of workers that reaped the benefit.

The toast of "The Visitors" was proposed by Dr. W. F. DEARDEN, and Dr. SAUNDBY and Dr. O. J. KAUFMANN suitably responded.

LITERARY NOTES.

THE Syndics of the Cambridge University Press have decided to publish a series of volumes dealing with the various subjects connected with public health. The following are provisional lists of subjects, all of which will be treated by experts: A. The causation of tuberculosis, biting flies and disease, house flies and disease, ticks and disease, serum diagnoses, the bacteriology of foods, methods of *post-mortem* examinations, tropical hygiene. B. Sewage disposal, water purification, school hygiene, physical education, ventilation, soils, subsoils and climate in relation to health, fever hospital administration, sanitary law and practice, sound and unsound foods, domestic sanitation, offensive and noxious trades, chemical analyses of foods. The series will be under the general editorship of G. S. Graham Smith, M.D., University Lecturer in Hygiene and Secretary to the Sub-Syndicate for Tropical Medicine, of Pembroke College; and J. E. Purvis, M.A., University Lecturer in Chemistry and Physics in their application to Hygiene and Preventive Medicine, and Secretary to the State Medicine Syndicate, of St. John's and Corpus Christi Colleges.

IT has already been stated in the JOURNAL that the Rev. E. G. O'Donoghue, Chaplain to Bethlem Royal Hospital, is writing a history of that famous old institution. Chapters of it are appearing in *Under the Dome*, the quarterly magazine of the hospital. The number for July contains Chapters XX to XXIII, copiously and beautifully illustrated. This history is most interesting and bears evidence of the most painstaking research on the part of the author. The magazine is excellently printed.

ALTHOUGH the wholesale emigration which, during the last few years, has taken place from almost every district in Great Britain is undoubtedly a very serious evil, it is by no means a new one, at least in that portion of the kingdom which lies north of the Tweed. History teems with instances of Scotsmen who, from mediaeval times onwards, have left their native shores to earn name and fame abroad, for in those days the constant disturbances at home had to a certain extent the same consequences as the taxation of to-day. In the Middle Ages the majority of these early emigrants gravitated towards France; but in the seventeenth century Scotland seems to have furnished mercenaries to almost every army in Europe. Dugald Dalgetty was no solitary instance of a Scottish soldier of fortune seeking the bubble reputation in the service of a foreign Power. A prototype of the laird of Drumthwacket is to be found in the October number of the *Old-Lore Miscellany of Orkney, Shetland, Caithness, and Sutherland* (Part IV, vol. v), which contained an interesting account of an Orcadian gentleman who began life in 1589 as plain James King, and died sixty-three years later as a Scottish baron and a Swedish peer. Like Scott's immortal major, King fought under Gustavus Adolphus during the Thirty Years' War, and returned to his own country in time to play a prominent part in the struggle between Charles I and his refractory Parliament. His services to the royal cause were so considerable as to merit, on the one hand, the bestowal of the title of Lord Eythan, and on the other a sentence of exile; and the new baron therefore withdrew to Sweden, where his military career under the king guaranteed him a warm welcome and a safe retreat. He had already received a pension and the order of knighthood on retiring from the Swedish service five years previously; and the Queen, whose eccentricity in this instance does not appear to have obscured either her judgement or her good feeling, now created her father's former companion-in-arms a peer (under the title of Baron Sanshult of Doderhaltsi, and granted him a further pension and an estate in Calmar. Here he seems to have spent the next six years in peace; but his reputation as a warrior was evidently not forgotten at home. In 1650 he received a commission as lieutenant-general in the army enlisted by Montrose for his last fatal expedition, but the Swedes showed no alacrity in responding to his call, and the old soldier, having failed to raise the necessary troops, resigned his commission. He died two years later, in June, 1652; and his adopted countrymen testified their gratitude by a grand public funeral and a tomb in Riddarholm Church in Stockholm. His portrait is still preserved by the Swedish nation in the castle of Skog Kloster, a just acknowledgement of the faithful service which he rendered to the most famous of their kings. The same number of the *Old-Lore Miscellany* contains a detailed description by Mr. Alfred W. Johnston of the old Norwegian sword dance mentioned by Scott in *The Pirate*, which was still to be seen in certain parts of Shetland at the beginning of the last century, but which has since died out; and a short account of the Rev. John Morrison, well known in Scotland as the author of a number of the paraphrases. The illustrations include an excellent reproduction of the beautiful "Orkney Portrait" of Mary, Queen of Scots.

IN her *Memories of Victorian London* Mrs. L. B. Walford relates the following story:

> An old friend of mine, a clergyman, was travelling by 'train', and at Chester a fellow traveller got in, and they two had the compartment to themselves. The papers that day were full of Mr. Gladstone's illness, and my friend, who is an original and independent thinker, felt inclined to air his views upon the subject. According to himself, he thoroughly harangued his companion, enlightening him upon all the debatable ground, and pointing out both what the ailment really was and what ought to have been done for it, all of which was politely listened to, and not controverted.
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> "He did not seem to have any opinion of his own, and I had it all my own way," said my friend; "but you may judge of my feelings when at Euston Station my fellow passenger got out before me, and his man came and popped down from the rack a leather bag bearing the name of 'Sir Andrew Clark'! Sir Andrew Clark! The great London doctor who had been summoned to Hawarden expressly for Mr. Gladstone's illness. What an old fool he must have thought me!"

IT may be remarked that George Eliot in *Middlemarch* says that doctors have a special faculty, developed by much practice, of listening to nonsense without showing any sign of amusement.

British Medical Journal.

SATURDAY, DECEMBER 14TH, 1912.

NATURE'S ERRORS IN HEALING.

WE hear much in these days of healing by natural processes, and, of course, everybody recognizes there is a great deal of truth in the doctrine involved. It is not, however, by any means the new discovery it is thought to be by many enthusiasts of various mental complexions. The belief was largely acted on by many of the ancient Greek physicians. The Arabian physicians placed great reliance on drugs. Yet we find the great Arab. Rhazes, insisting that where a disease can be cured by diet drugs should not be used, and where simple measures suffice no complex treatment should be employed. No man left nature to her own resources more than Sir William Gull, who boasted that he hardly ever gave any physic. He wrote a paper with the ironical title, "Treatment of Rheumatic Fever by Mint Water," and a story is told of him that when a patient under his care at Guy's Hospital had made a good recovery from typhoid fever without medicine, and Gull congratulated him, the man ungratefully replied, "No thanks to you." Yet it was Gull who, in reply to someone who was speaking of the healing power of nature in some case, said "Nature is trying to kill the man." There is, in fact, besides the *vis medicatrix*, what we venture to call a *vis necatrix* of nature. It is in cases in which this baleful force is in operation that all the expectant methods, including faith healing, nature healing, and so forth, fail, and the healer's attitude at the bedside is accurately expressed by the gibe addressed to the Methodists of old as a meditation on death.

In the New York *Medical Record* of October 12th, Dr. Augustus Maverick deals in an interesting and suggestive manner with what he calls the blunders made by nature in treating disease. That nature does often go astray is what philosophers used to call the *ratio sufficiens* of the existence of the doctor. If nature were always successful in relieving pain, draining abscesses, and killing invading parasites there would be no room for medical art. Those who talk loudest of the healing power of nature must admit that in severe diseases, where she is left to take her course, the outlook for the patient is always bad. As Dr. Maverick puts it, "To turn a very ill person over to nature is like sending a dying consumptive to Egypt." "Compare," he says, "the breathless victim of pneumonia or the patient in the stupor of typhoid with one suffering from gall stones, who can be relieved by the knife, or the prey of malaria who can be cured by quinine." What can nature do in such cases? Go to! as Falconbridge said, we know her handiwork. It is death, speedy or lingering as the case may be, but always with suffering. In many cases of severe pain nature has no remedy; she allows the sufferer to faint or even die. Dr. Maverick invites us to consider nature trying to squeeze a renal calculus through sixteen inches of tubing one-fourth its diameter. Compare her workmanship with that of the surgeon and his knife. It is the surgeon who leaves least to nature to-day, and the progress of surgery is a record of triumph over diseases many of which were not so long ago considered to be within the province of the physician, who could do little for their relief and nothing for their cure.

Dr. Maverick points out that in ulcers and wounds the production of scar tissue is "nature's cure-all." This necessarily causes contraction, which on an exposed surface leads to disfigurement, or perhaps to the crippling of a limb; within the body, however, the results are terrible. Ulcers of the intestine, for instance, will in favourable circumstances heal well, but the cicatrization which is the result will gradually contract the passage. From this cause arise strictures of the pylorus, rectum, urethra and other passages, deformed joints, and many other conditions which cause infinite suffering, and unless relieved by art must in the long run prove fatal. A constricted pylorus may give rise to cancer; this is also frequently the final stage in nature's prolonged effort to heal an ulcer of the stomach, a torn cervix uteri, or a scarred gall bladder.

There is, again, acute inflammation, the swelling and pain of which are due not to the invading germ, but to the forces called in by nature to resist the enemy. We have heard from great surgeons of this being a natural process of cure and protection, and to a certain extent this may be admitted; but if the process takes place, say, in the larynx, nature if left alone infallibly kills the patient. Again, when inflammation goes on to abscess, nature may dry up the collection of pus, but she leaves behind adhesions to neighbouring structures; in other cases she with great pain will drive the contents of the abscess into the peritoneum. Who would leave an abscess of the appendix to nature when surgery is within reach? Nature may cure a stone, an inflammatory process in the intestine and elsewhere, but only after infinite suffering to the patient which may bring him to death's door. A cancer if left to nature is almost absolutely certain to cause death.

But it is not only in surgical cases that nature often proves herself inefficient. Dr. Maverick points out that of her own undoubted remedies nature often gives overdoses. Take the case of fever. It is now recognized to be a protective process, but when it becomes excessive it may kill the patient. Again, in attempting to compensate for what the failing heart and kidneys refuse to do, nature causes a great rise of the pressure in the vessels, and apoplexy may occur at any moment unless the doctor with appropriate remedies makes it fall. Cough is nature's method of removing irritating matter from the bronchial tubes, but nature often carries the cure too far—for instance, in phthisis, when it murders sleep, brings on bleeding, or helps the dissemination of infection. Persistent diarrhœa and over-production of callus leading to the entanglement of nerves are other instances of what may be described as excessive zeal in healing on the part of nature. Dr. Maverick concludes: "Let us realize once for all that, while it is human to err, it is also godly, and that in treating disease we do not have to follow too closely the rules laid down by a natural process which is more concerned with thinning out the whole race than with taking special pains to save individual members."

It may perhaps be said that in the great case of Nature *versus* Medicine Dr. Maverick plays the part of *advocatus diaboli*. But we think that in his main contention he is right. We have given only a few examples; the case against nature could be made much stronger. We may sum up the discussion with the aphorism that nature is very efficient when there is nothing particular the matter, as is happily the

case in a large number of human ailments. To those who place their whole trust in the healing power of nature, we would simply say: "There are cases of childbirth in which nature if left to herself would kill both the mother and the child." Is medical art superfluous in such circumstances?

A STUDY IN COMPARATIVE PATHOLOGY.

A BRIEF account was given in the JOURNAL of March 2nd, 1912 (p. 502) of some interesting work on pearl formation recently carried out by Dr. Jameson. His results have now been published in the form of a fully illustrated monograph which contains a complete critical review of recent work on the subject, with at the same time many important additions to our knowledge of shell formation and the process of repair following injury from mechanical and other causes. The subject has given rise to so much hypothesis and wild speculation that one is ready to welcome a really intensive study, as is that of Dr. Jameson, who has devoted the best part of a dozen years to the investigation. The chief value in his work, perhaps, lies in the opening up of a new line from the general pathological side.

The critical part of the monograph consists in a careful examination of the well-known "cestode theory" of the origin of pearls in the Ceylon pearl oyster, which has been fairly widely accepted since it was first published by Herdman in 1903, and which has taken its place in textbooks and popular literature as part of current zoological belief. This theory was announced as one of the principal results of a scientific mission undertaken for the Ceylon Government in 1902, and was subsequently elaborated in the work which has been carried on during the last ten years—first for the Ceylon Government, and later for the Ceylon Company of Pearl Fishers, formed in 1906. Herdman held that the centres of the most valuable kinds of Ceylon pearls contained, or consisted of, the remains of a tapeworm larva enclosed in a fibrous cyst, formed apparently by the surrounding connective tissue. The larva itself is a somewhat globular body with a knob-like proboscis, usually retracted within a toothed collar. Dr. Jameson, however, although finding these larvae throughout the tissues of the oyster, was quite unable to confirm the view that they occur in the centre of pearls or that they have anything to do with pearl formation. He believes that the dark bodies which often constitute the nuclei of pearls have as a rule a different origin. An important point which he insists upon is that a pearl can only arise within a sac of the shell-secreting epidermis formed in the subepidermal tissues, whereas these parasites occupy a more deep-seated position and have no such sac around them. He compares the condition of this parasite with that of the trematode (*Gymnophallus*) which gives origin to the pearls in the common edible mussel of our shores, and which normally stimulates the mussel to surround it, while still alive, with a sac of epidermal cells. Having arrived at the conclusion that pearl formation has no connexion with these tapeworm larvae Jameson proceeds to criticize Herdman's account of the life-history of the tapeworm. Herdman's idea was that the larvae in the oyster are the young stages of more fully developed larvae in the file fish and of adult tapeworms in large skates and sharks. The adult tapeworms are tetrarhynchs, that is, possess four retractile proboscises armed with hooks, whereas the larvae in the oyster have, as already mentioned, a single knob-like proboscis. At the same time larval tetrarhynchs do occur in other situations in the oyster, and Herdman suggested that these were advanced stages of the other larvae. This view is rejected, however, by such an authority as Shipley. With regard to the first-mentioned larvae Jameson believes that they are the young stages of an entirely different genus of tapeworms, namely, *Tylocephalum*. Admitting, however, that these larvae play no part in pearl formation the discussion of their life-history is robbed of much interest.

While the first part of Jameson's paper, attempting as it does to destroy an accepted theory, will probably attract most attention from the reader who has not specialized in the fascinating subject of the physiology and mechanism of the secretion of calcareous structures, the second part constitutes a most important contribution to our knowledge of the growth of the molluscan shell, and of the pearl which is a derivative of it. It contains a mass of descriptive matter, copiously illustrated, and abounds in new facts and bold and original interpretations of known phenomena. The structure of the various constituents of the shell is discussed, and the author, who is evidently a disciple of Bütschli, attempts to interpret them as the expression of the conditions under which calcium carbonate has crystallized slowly in the alveoli of a colloidal membrane. A very interesting point is that he ascribes the "lustre" of the pearl and of mother of pearl to the fact that the minute calcareous plates, which fill the alveoli of the albuminoid framework of the nacre, are little biconvex lenses, whose cumulative effect upon the light reflected from the successive layers of the pearl gives rise to this familiar and beautiful property.

As already mentioned, Dr. Jameson has been led to his conclusions as to the mechanism of normal shell growth by a study of the abnormal and pathological, and especially by an examination of the character of the "repair substances," which are secreted to make good an injury to the shell. Two constituents go to form the shell. The one is the albuminoid substance, conchyolin, which forms only a small part of a normal shell, but which in the event of injury can be poured out copiously; the other is the lime salt, the rate of secretion of which appears to be much less variable. When the shell has been injured and the animal is called upon to close a gap, the conchyolin is poured out, often at such a rate that a leathery membrane practically devoid of lime is formed. To this uncalcified membrane the author gives the name "amorphous repair substance." When the first effort at repair has been successful secretion takes place more slowly, and a certain amount of calcium carbonate is added, usually in the form of small scattered crystals, in the alveoli of the conchyolin. Sometimes these take the form of regular parallel rods. This "columnar repair substance," in its turn, passes over by imperceptible gradations of increasingly fine alveolar structure, through a material referred to as granular repair nacre, to the normal constituents of the shell. A study of these phases leads the author to the conclusion that the difference between the minute and regularly stratified alveolar structure of the nacre or pearly substance and the coarser substances, which can be readily reproduced in the laboratory, can be expressed in terms of the proportions of lime salts and organic substances secreted and of the periodicity of the secretion as determined by the control, or loss of control, of the secreting epidermis.

From this study of shell secretion the author goes on to a consideration of the structure of the dark nuclei which so often occur in the centre of pearls,

and which have been mistaken for the remains of tapeworm larvae. Apart from foreign bodies, such as sand grains and other granular matter of doubtful origin, the dark centres of pearls are for the most part made up of one or more of the aforementioned repair substances. The drawings of the centres of decalcified pearls, examined whole as transparent objects and again in section, show how dangerous it is to base conclusions on the appearance of the whole nucleus. Opaque bodies, which might well be mistaken in the first instance for the shrivelled remains of parasites, proved again and again on section to consist of concentric layers of amorphous and columnar repair substance such as might well be expected to result from the first efforts at secretion of a pathologically produced epidermal sac embedded in the subjacent tissues. Sometimes this repair substance surrounded a foreign body (not a cestode); sometimes no foreign nucleus could be detected. In many cases, especially in the inferior "muscle pearls," no nucleus at all was present, the pearl sac, however it may have arisen, having produced normal nacre from the first.

It is not altogether to be regretted that the author—partly, no doubt, from lack of material—has been unable so far to formulate a fresh theory as to the origin of the Ceylon pearl; he has wisely kept within the limits of his observations, but he implies that he is continuing his studies towards that end. He considers that future work will have to centre round the causes which lead to the formation of the epidermal pearl sac in the subepidermal tissues, and he apparently anticipates that in the case of the Ceylon pearl oyster, as in the edible mussel, pearl production will be found to be associated with a disease or infection, ultimately to be attributed to the specific action of one or more parasitic organisms. It is thus evident that, although he dismisses the cestode theory, he still clings to the idea of parasitic causation.

CLINICAL RESEARCH AND THE INSURANCE ACT.

The autumn session of the General Medical Council was of unusually short duration, and was chiefly devoted to the consideration of penal cases, so that there was not much other business of general interest: but on the last day a motion was proposed by Sir Clifford Allbutt and seconded by Dr. Langley Browne which raised questions of much importance to the future of medicine. In form it was merely an instruction to the Insurance Act Committee of the Council, which is a watching committee, to give attention amongst other matters to any arrangements made for providing laboratory facilities under the Insurance Act, and conferring upon it powers to make representations to the authorities on behalf of the Council upon matters which came within its functions.

It might have been passed as a mere administrative instruction of no great significance had not the proposer and seconder in their speeches developed its real importance. The arguments rested upon the assumption that the Government was prepared to take steps to afford to general practitioners who might take service under the Act facilities for the application of modern methods of exact diagnosis such as the use of the *x* rays, and pathological and bacteriological investigations, which are specifically excluded from the scope of medical benefit. Sir Clifford Allbutt said that there was some reason to hope that early next year a small expert committee would be appointed by the Government to go into the question very fully, and to inquire how existing institutions or new institutions might be developed, not only for the assistance of urban and rural medical men, but also for the purpose of research, and how they might be linked up with methods for affording ready opportunities for consultation with experts working along special lines. Were such a committee appointed, he said, the Council should be in a position to speak with authority as to the kind of plan best adapted for the interests of medical education. Two alternatives have been proposed, the one that there should be a central institution in each country, the other that the scheme should take the line of developing the many institutions which already exist in connexion with universities or independent medical institutions. It was for the latter alternative that Sir Clifford Allbutt argued.

Some of the speakers who followed seemed to take it for granted that the future of clinical and research laboratories lay in the hands of the Insurance Commissioners. But the several bodies of Insurance Commissioners are not well constituted for organizing a scheme of this kind. Sir Clifford Allbutt, after pointing out that the private practitioner, even if possessed of the technical knowledge, has neither the plant nor the time to carry out the investigations now every day and hour conducted in clinical laboratories, deprecated the establishment of great central institutions. In the first place, such would oftentimes be too far off, and involve too much delay; in the second, they would run a great risk of becoming too bureaucratic and degenerating into mere clearing houses. He advocated the decentralization of such work, and held that it could only be successful if carried out at local centres for clinical aid and research. The antagonism between officialdom and free learning is not new. It has existed since the revival of learning. The State, more or less vividly, at divers times and in divers places, realizes that it cannot advance unless new knowledge is acquired and men are trained in it. New knowledge cannot be acquired without research, and research is only rarely profitable in the pecuniary sense to those who engage in it. Research therefore seeks either for endowment or State subsidies. For a generation or so—for a couple of centuries, if we include astronomy—the State has been ready to pay trained persons for the application of new knowledge to purposes of public utility. Only quite recently is it beginning to perceive that it is worth its while—in fact, its duty—to pay competent persons to find out new knowledge. It is also beginning to be realized that, owing to the fact that in the more efficient workers the appetite for knowledge is as little to be ignored as the appetite for food or air, it is not possible to get even the best routine work out of persons confined to such work. The seats of free learning, and chief among these the universities, while ready to accept State help, and willing to train men for the service of the State, and not objecting to the State testing their competence for the public service by examination or otherwise, have always been chary of accepting State control of their means of research and methods of teaching. We take it that it was this feeling—a feeling corresponding to the innate constitution of the intellect—which underlay Sir Clifford Allbutt's speech, though it was directed to an immediate practical issue.

Since the discussion in the General Medical Council the position has in a technical, political, sense changed, for it is now specifically stated that

"x-ray diagnosis and pathological or bacteriological investigations would not be services included in medical benefit." They would not be services which the insured person would be entitled to demand, either from his doctor or from the Insurance Committee. But the need for such modern methods of medical diagnosis and treatment has increased, is increasing, and cannot be diminished by Act of Parliament. That the need for the assistance which a properly appointed clinical laboratory, where pathological and bacteriological examinations can be made and vaccines and serums prepared, is felt by general practitioners is common knowledge. Resort is had to the clinical and pathological laboratories which already exist in connexion with universities and hospitals. More than one university laboratory is already so largely made use of by private practitioners that it is, on this side of its work, more than self-supporting, though the scale of charges has of set purpose been made low.

VOTING IN THE DIVISIONS.

The reports of special meetings of Divisions called to vote on the question whether the Association should call upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government are published in the Supplement so far as they had been received up to the first post on Thursday morning. No attempt has been made to collect the votes, and no definite conclusion can be drawn in the present stage. The aggregate voting will be ascertained on Thursday, December 19th, and the result will be reported to the Special Representative Meeting called to meet in London on Saturday, December 21st. During the week several fly-leaves have been issued both for and against acceptance, and Dr. Addison has given an address in Birmingham discussing the terms now offered, and laying stress on the favourable aspect. References to these matters are made in the Supplement, where also some further particulars of the provisional arrangements which the Commissioners propose for medical benefit from January 15th to April 30th, 1913, are given. The decision now being taken is of momentous importance, and the machinery provided by the British Medical Association is designed to afford to every practitioner an opportunity of recording his vote. The last proposals of the Government have been very fully placed before the profession in the last issue of the Supplement; and in an editorial article published in the same issue of the Journal (page 1635) an endeavour was made to analyse the terms as succinctly as their complex nature permitted. The Council, in the issue of the Supplement of this week, has renewed its notice to the profession, pointing out that, pending the decision of the Special Representative Meeting and the publication of instructions issued under its authority, it is imperative that no negotiations or arrangements of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession with Local Insurance Committees or otherwise. The fact [illegible] fall this year on a Wednesday [illegible] ordinary routine of the pub[illegible]. Owing to the three days' [illegible] will be necessary to send the [illegible] printing date December 28th to press very early in the week, and no communication can be dealt with received later than the first post on Monday, December 23rd, and then only if of the briefest character. In order that the printers may be able to prepare for the early issue in the following week it will be necessary to go to press practically a day earlier than usual next week and correspondents who may desire to address the Journal are requested to bear this fact in mind.

A CANDID REPORT ON SANATORIUM RESULTS.

So much has been written and spoken of late years on the so-called sanatorium treatment of tuberculosis that the average layman has almost as full a knowledge of its methods as the average doctor. But although the same facts are available for consideration, there are still wide divergences of opinion both amongst doctors and non-medical observers. While the optimists probably claim too much, the pessimists undoubtedly recognize too little, and the truth lies between them. It is now possible to form some judgement as to the relative amount of arrest of disease that may be claimed as a result of sanatorium treatment. As compared with the hopes held out to consumptives in former days, the actual results are lamentably small. But steady progress has been made in the direction of prevention, if not of cure. An interesting account of the experience gained at the Bellefield Sanatorium in Lanark, has recently been published[1] by the Resident Medical Officer, Dr. J. W. Allan. His report differs from that of many such officers in that it is the work of an experienced hospital physician of over forty years' standing, and is characterized by the moderation and common-sense acquired by long experience of other than special lines of practice. A full description is given of the routine methods of treatment. The statistics of the results obtained give ample support to the writer's contention that sanatorium treatment is able to set the tuberculous patient on the high road to recovery, but that it should not be held answerable for the results that may follow if that road is subsequently departed from. Incipient cases can be brought to a standstill, but of the more advanced cases it may be said that the progress of the disease is usually slackened, but seldom entirely arrested. The majority of cases, even of advanced tuberculosis, leave the institution in better case than they entered it, but treatment for them has its limitations. These limitations are fully recognized, but do not afford reasonable ground for wholesale condemnation of the system. The dangers of infection, like all public scares, have been absurdly exaggerated, and so far from a sanatorium patient becoming a source of danger to others, his knowledge of needful precautions renders him far less dangerous than the consumptive who has had no such training. But the fear of being regarded as infective undoubtedly deters many young people with incipient or suspected disease from entering a sanatorium, and it is most desirable that the plain facts with respect to the treatment, its advantages and its limitations, should be more widely known. Dr. Allan puts the case for the sanatorium in very convincing form.

TINNING AND THE TINPLATE INDUSTRY.

Few of the Reports on Conditions of Employment and Manufacture issued by the Home Office have given such good descriptions of the processes of manufacture as those which appear in the report on tinning by Dr. Edgar Collis and Mr. H. Kelliteh.[2] After a brief account of the origin and development of the tinplate industry the writers describe modern processes. It appears that in 1750 there were only four tinplate works in England and Wales; in 1875 there were 75. The yearly output of tinplates is 927,500

[1] [illegible] Journal, November, 191[illegible]

[2] [illegible] H.M. Inspector of Factories. (London: Messrs. Wyman and [illegible] Fetter Lane, E.C. Price, 10½d.)

tous. About £2,000,000 is spent on wages annually. From its commencement it has always been a Welsh industry; 96 per cent. of the tinplate works are situated in the counties of Glamorgan, Caermarthen and Monmouth. The authors mention the particular types of accidents which may happen to the workmen in the various processes. In some of these the men are exposed to high temperatures, in others to dust and fumes. The accidents are for the most part burns and lacerated wounds of the hands and contusions of hands and feet caused by falling metal. In some of the processes women and girls are employed as well as men. Women are not exposed to the high temperatures or dust, but they carry heavy weights. It is not uncommon for girls of 16 to 18 years of age to carry bundles of iron plates weighing from 60 lb. to 70 lb. from the sheds where the bundles are opened to be pickled by men who plunge them into a fluid containing dilute sulphuric acid to remove any iron oxide which may be present. The carriers of plates cannot keep themselves clean, tidy, or dry, for the floors are wet. After being pickled the plates are placed in a "black annealing" furnace, so that they may become softened, and in order that any water stains may be removed. On withdrawal from the furnace the plates, after being allowed to cool, are passed through chilled cast iron rollers to receive a good surface. The plates become rigid and hard in consequence of the cold rolling, and are again annealed and pickled in a weaker acid solution before being dipped in the bath containing molten tin. Workmen in the tinning department are exposed to fumes from the flux pot, the fumes from burning palm oil or the grease which floats on the molten metal, and to dust from the materials used to clean the plates after they have been tinned. Zinc chloride is sometimes used as the flux agent instead of palm oil. Shortly after the introduction of this metallic chloride the men struck work, as they believed the fumes made them ill. When twelve years ago Professor Attfield investigated the matter, he found the atmosphere to be free from arsenic, which might possibly have been present had an impure zinc been used. Zinc chloride did not appear to him to be a cause of illness, but he thought that to the fumes of hydrochloric acid might be attributed such symptoms as coryza, dryness of throat, a sense of oppression in the chest, loss of appetite, nausea, constipation, and weakness of the limbs. To these complaints the fumes from the palm oil and grease probably contributed, owing to the acrolein and acrylic acid which they contain. Cleaning of the finished tinned plates with the sweepings of the floors of flour mills and rubbing off by means of pads of sheep's skin is a dusty process. All forms of hoods and mechanical exhausts have been tried as a substitute for hand cleaning, but only with qualified success. Taking the processes generally, the largest number of accidents occur in the melting department. Males suffer more from accidents than females—in the proportion of 10 to 1. Dr. Collis draws attention to the prevalence of cancer among tinplate workers, and to the large number of deaths from phthisis probably due to dust. Phthisis is specially prevalent among furnacemen and those who work at the rollers. The physique of youths from 14 to 19 is below that of Post Office candidates, but it is better than that of Sheffield grinders and cutlers. Mention, too, is made of the readiness with which workers in metal dust lose their power of chest expansion, a circumstance which tends to aggravate the harmful effect of dust upon the lungs. Taking the deaths from respiratory diseases, including phthisis, expressed as percentages of deaths from all causes, tinplate workers at the ages of 20, 25, and 35 give 54.6, 52.8, and 48.3, as against 45.9, 46.2, and 41.9 respectively for all males in England and Wales. Dr. Collis supplies an interesting table, showing that increased blood pressure accompanies small chest expansion. A draft of proposed regulations is printed in the appendix.

THE DISCOVERY OF CHLOROFORM.

WE learn from Mr. Alexander Spence, member of the Pharmaceutical Society and ex-bailie of the Royal Burgh of Linlithgow, that it is proposed to commemorate the centenary of the birth of Mr. David Waldie, who suggested the use of chloroform as an anaesthetic to Sir James Simpson. There has been a great deal of misunderstanding and controversy about this matter, and it is difficult, as it usually is in such matters, to get at the exact truth. We took considerable trouble to ascertain the facts in preparing an article on the history of anaesthesia which appeared in the JOURNAL of October 17th, 1896. Of the original experimenters, the only survivor at that time was the late Dr. George Keith, who wrote characteristically that it would be better if the whole business were buried in oblivion! Simpson's own account is as follows: "Latterly, in order to avoid, if possible, some of the inconveniences pertaining to sulphuric ether, particularly its disagreeable and persistent smell, its occasional tendency to irritation of the bronchi during its first inspirations, and the large quantity of it required to be used (more especially in protracted cases of labour), I have tried upon myself and others the inhalation of different other volatile fluids, with the hope that some one of them might be found to possess the advantages of ether without its disadvantages. For this purpose I selected for experiment and have inhaled several chemical liquids of a more fragrant or agreeable odour, such as chloride of hydrocarbon, etc. Then Mr. Waldie, a Linlithgowshire man, first named perchloride of formyle as worthy, among others, of a trial." Dr. Jacob Bigelow, of Boston, and Mr. Jacob Bell, a well-known London pharmacist, had both previously tried chloric ether, and Mr. Bell's experiments had been so successful that Mr. Lawrence used it in surgical operations. Bell, however, failed to recognize that it was the chloroform in the chloric ether which produced anaesthesia. Mr. Waldie, who was then connected with the Apothecaries' Company at Liverpool, seems to have guessed that chloroform was the active agent, and he promised to procure some for Simpson. There was, however, some delay in carrying the promise into effect, and in the meantime Simpson, who was not a man to let the grass grow under his feet, got some chloroform from Messrs. Duncan and Flockhart, of Edinburgh, and forthwith began to experiment with it on himself and his assistants, George Keith, Matthews Duncan, and others. The first trial of chloroform was made in Simpson's house on November 4th, 1847, and Miss Eva Blantyre Simpson, in her *Life* of her famous father quotes the following passage from a letter written by him to Mr. Waldie: "I am sure you will be delighted to see part of the good results of our hasty conversation. I had the chloroform for several days in the house before trying it, as after seeing it such a heavy unvolatile-like fluid, I despaired of it, and went on dreaming about others. The first night we took it, Dr. Duncan, Dr. Keith, and I all tried it simultaneously, and were all 'under the table' in a minute or two."[1] Let Mr. Waldie have all the credit of having suggested the use of chloroform. We therefore hope that the movement to place a bronze tablet, with a suitable inscription, on the house in Linlithgow where he lived, will receive the support of the medical profession. It is somewhat unfortunate, however, that in recent years exaggerated claims have been made on Mr. Waldie's behalf. He did not discover chloroform, which as a chemical substance was identified independently by Soubeiran in 1831, and Liebig in 1832. Nor was he the first to discover its anaesthetic properties. On March 8th, 1847, J. P. Flourens read a paper before the Académie des Sciences on the effects of chloroform on the lower animals, but as in the case of Humphry Davy's discovery of the pain-subduing power of nitrous oxide gas in 1800, no notice

[1] For a full account of the discovery of chloroform see BRITISH MEDICAL JOURNAL, October 17th, 1896.

was taken of the communication. Whoever first guessed or even showed that chloroform possessed anaesthetic properties, however, it is certain that its use in surgery and obstetrics was established by Simpson, but for whose brilliant and strenuous advocacy the agent would in all probability never have gained a footing in medical practice. It was his daemonic force that beat down all opposition, and it must be remembered that he had many powers of darkness—within as well as without the profession—to battle against. Therefore, James Young Simpson is truly entitled to be called the discoverer of chloroform.

THE WELFARE OF THE DEAF.

In the third of the series of lectures which Dr. Kerr Love, of Glasgow, is delivering at the Royal Sanitary Institute, under the auspices of the National Bureau for Promoting the General Welfare of the Deaf, the speaker claimed that if deafness was to be prevented there must be decent and healthy conditions for the children of the poor during the first years of life. Like a plant or other young animal, they must have room to grow, and simple, clean, and free conditions of life. This was the first step for the prevention of infantile or sporadic congenital deafness. This view was based on an inquiry into the home conditions of the inmates of the Glasgow Institution for the Deaf, numbering 180. The children whose homes were in Glasgow numbered 76, and in these homes grave conditions of overcrowding existed, the average number of inmates to each apartment being 3.145. Dr. Kerr Love did not claim that overcrowding was itself a cause of deafness, but that it connoted various unfavourable circumstances and direct causes, such as uncontrolled use of alcohol, parental neglect, and untreated syphilitic disease. It was to untreated syphilis that he pointed as the probable cause of a vast proportion of all cases of deafness observed during the first months of life, and he supported this suggestion by some twenty family records relating to cases in which the Wassermann test had been applied to every living child, and whenever possible to the mother. In these twenty families there had been 167 pregnancies, 93 children being still alive, and 74 had died in childhood, or had been born dead. Among the 93 living children as many as 30 were either deaf or blind, while many others presented, apart from a positive Wassermann reaction, other evidences of syphilitic inheritance. Dr. Kerr Love also suggested that untreated syphilis in the parents and unrecognized syphilis in the children probably lay at the root of much of the meningitis to which so many children succumbed. The remedy which he put forward was notification of syphilis whenever it appeared in children, followed by the immediate treatment of both mother and children. Even if fresh legislation were necessary for the purpose the cause was urgent enough to warrant it, but as a matter of fact recent legislation had placed the machinery required ready to hand. "Like most of my profession," he said, "I have many faults to find with the National Insurance Act. But maternity benefit will be claimed, even for dead-born children, and for all children who die shortly after birth; and if the Commissioners insist of a certificate of the cause of death, the syphilitic families will be discovered, and without any public disclosure of the reason for the step, treatment will be instituted which will counteract the poison in the blood of the mother, and will save the children of the future. The disease is very amenable to treatment, and it is because it is untreated that it passes down to the children."

PHARMACY REGULATIONS IN NEW ZEALAND.

In the autumn session of the House of Representatives of New Zealand this year two new clauses were introduced into a Pharmacy Bill then under its consideration. Briefly summed up, they made it an offence for a registered chemist to pay to any medical practitioner any money or other consideration by way of commission on prescriptions signed by him, or to supply to a medical practitioner prescription forms containing any notification regarding such chemist. The penalty imposed was £20. Adoption of these clauses was urged on the ground that the practices at which they were aimed were common in New Zealand and detrimental to the public interest. The Government maintained that these practices, if they existed at all, were limited to a very few individuals, but nevertheless accepted the suggestion conditionally on the law officers of the Crown finding that the clauses could properly be introduced into the bill as it stood. On the same occasion an attempt was made to introduce other clauses to the same effect, but specifying medical men, that is, forbidding a registered medical practitioner to accept or seek any kind of commission on prescriptions, or to use prescription forms bearing the name of a registered chemist. It was also suggested that it should be made illegal for a medical man to write a prescription in code form, that is to say, in such form that only a particular chemist could make it up, or to tell a patient where to present a prescription for dispensing purposes. The Government, however, refused to accept these further amendments, on the ground that whatever view might be taken of them a Pharmacy Bill was not the place for their insertion. The wisdom both of the accepted and rejected rules seems to us somewhat dubious. In every country there should be a general law against the acceptance of secret commissions, but in adopting the principle of such a law it can hardly be desirable to pick out any particular class of workers. Further, in the case of medical men and pharmacists the practices at which such laws aim are so foreign to the ideals of both occupations that, as the Government maintained, they cannot be generally prevalent in New Zealand. When they exist the best way to kill them is to foster and maintain a high tone among the persons concerned. Such fostering is part of the ordinary work of the British Medical Association in New Zealand, as elsewhere, and Government and other authorities as well as leaders of public thought in that State can greatly assist it in its task by habitually treating the medical profession with marked respect and courtesy. The suggested rule as to medical men refraining from directing patients where to get their prescriptions dispensed, and invariably writing their prescriptions in such fashion that any and every pharmacist shall be able to dispense them, stands in a different category. It would no doubt be an invidious practice habitually to tell patients to get their prescriptions dispensed at a certain pharmacy or to write prescriptions in code, but it is easy to conceive circumstances in which both practices would be not only legitimate, but highly desirable in the interest of the patient himself.

REFRACTIVE CHANGES IN DIABETES.

It is not at all unusual to find changes in the refraction of the eye in cases of diabetes. This generally takes the form of an increase in the refractive power; the patient becomes less hypermetropic or even myopic. The reverse change has, however, been noted by several competent observers. A transitory diminution in the refractive power takes place; the patient becomes less myopic or more hypermetropic. These alterations take place independently of the formation of cataract and are compatible with perfectly clear lenses. It is quite common, however, to find an increase in the refraction when actual cataract is developing, and the alteration in refraction may be a prelude to clouding of the lenses. In the *Annals of Ophthalmology* for January, 1912, Teutmayer of Philadelphia describes a case in which the patient's vision fell to $\frac{1}{60}$, but rose to normal with a lens of + 2.5 D. After a short time a lens of + 0.75 gave the best acuity. In this case and in others the alteration in the refraction was coincident with a fall in the amount of sugar excreted in the urine. The cause of the phenomenon is almost

certainly an alteration in the refractive index of the lens. A marked alteration in the refraction of an adult is always a pathological process, and in such cases the urine should be examined for sugar. When a myope begins to see clearly without his glasses he probably has diabetes.

THE CHURCH AND TEMPERANCE.

In the eleventh Lees and Raper Memorial Lecture, delivered in Manchester last month, the Bishop of Lincoln[1] attempted to explain the apathy of his own Church towards the policy of local option with which his own name is identified. Until the Church of England adopted the cause of temperance with greater seriousness and self-devotion, temperance legislation, he said, would be delayed. But it is a narrow view that sees in legislation the sole aim of temperance work; the Bishop left unacknowledged and unmentioned the quiet but invaluable work done in every diocese to inculcate a knowledge of the properties of alcohol and instruct the rising generation in temperance principles. This work, often done by the unbeneficed clergy, with none of the glamour of fiery speeches delivered before enthusiastic partisans, ought not to be passed over in stating the attitude of the Church towards temperance. And if, as Dr. Hicks suggests, religion is chiefly manifested in helping our neighbours, succouring the weak, and reforming the world, it is far from desirable to forget that the Police Court Mission, established by the Church of England Temperance Society, carries out that ideal. Dr. Hicks repudiated the glosses of those who assert that when the Bible praises wine unfermented grape juice was referred to, and preferred to rest the biblical sanction for temperance upon the broad principles running through the fabric of Holy Writ. If the Church of England errs in not pressing forward to the support of local option, it can justify its attitude by the example of other denominations, in which large numbers are not so much apathetic towards, but hostile to, the legislation Dr. Hicks advocates. Indeed, the education of the rising generation in the truth as regards alcohol is one of the best means not only of preventing intemperance, but of preparing the way for legislation, whether it be that advocated by the Bishop or others. For all legislation, but especially temperance legislation, must spring from and rest upon an enlightened public opinion.

[1] *The Church and the Liquor Traffic.* Eleventh Lees and Raper Memorial Lecture, by the Right Reverend the Lord Bishop of Lincoln, D.D. London: Macmillan and Co., Ltd. 1912. (Pp. 24. Price 3d.)

WHAT'S IN A NAME?

NOTWITHSTANDING Juliet's oft-quoted question there's much in a name. Byron said that Goethe was fortunate in the possession of a name sufficiently musical for the articulation of posterity, and pointed out that in this he had the advantage of some of his countrymen whose names might also be immortal—if anybody could pronounce them. If there is nothing in a name why should so many Levis and Lazaruses be so anxious to disguise themselves as Gordons and Sinclairs? A doctor with a name like Coffin or Death—and we have known instances of both—must be like a *memento mori* in a sick-room, and there are other names which lend themselves to cheap jokes inconsistent with professional dignity. On the other hand, there are names that come so trippingly off the tongue that they are in themselves almost a fortune to a doctor. It is lucky for a practitioner to have a name that marks him apart from his brethren. The value of this is shown by the importance rightly attached to the name under which they have won distinction by men whom the King delights to honour with a title. The recent death of Dr. Ramsay Traquair has reminded a correspondent of a Scottish contemporary of a passage in one of Robert Louis Stevenson's letters to J. M. Barrie: "My own uncle has simply the finest name in the world, 'Ramsay Traquair.' Beat that you cannot." On the other hand, Stevenson thought "Jerry Abershaw" the perfect name for a gentleman of the road. All novelists feel the subtle influence that lies in names. Dickens wandered about the streets studying the names over the shops and made lists of odd names for future use. Zola, we believe, did the same. But the fullest analysis of the relation between a man's name and his personality is given by Balzac of the sinister significance of the name "Z. Marcas." "That Z. which went before Marcas, which was seen on the address of his letters, and which he never forgot in his signature, that last letter of the alphabet. Marcas! Repeat to yourself that name composed of two syllables, do you not find in it a sinister significance? Does it not seem to you that the man who bears it must be a martyr? Although strange and barbarous, that name nevertheless has the right to go down to posterity; it is well compounded, easily pronounced, and short as all celebrated names should be. Is it not as soft as it is odd? But, further, does it not seem incomplete? I would not take it on myself to affirm that names have no influence on a man's destiny. Between the facts of life and the names of men there are secret and inexplicable concords or visible discords which surprise one; often correlations remote but effective are revealed in them." And Balzac goes on to interpret the hidden meaning of that hieroglyph "Z." "Do you not see in the construction of the 'Z' an impeded movement? Does it not represent the random and fantastic zig-zag of a tormented life? What wind has blown on that letter which in every language in which it has found a place commands scarcely fifty words?" "Examine," he again insistently calls upon the reader, "that name: Z. Marcas! The man's whole life is in the fantastic assembly of these seven letters. Seven! The most significant of the cabalistic numbers. . . . Marcas! Does it not give you the notion of something precious that is broken by a fall, with or without noise?" Balzac may perhaps be held to consider too curiously as to the significance of the name he has chosen for the hero of his short story. But there is a kind of relation between the name and the personality real enough to cause a shock when there is an incongruity between the qualities we had fancied the name to connote and those in the person when we meet him or her in the flesh. A well-fitting and sounding name is a distinct asset to a doctor. Parents should therefore be careful in choosing names for their progeny; how can a man, as Oliver Wendell Holmes says, call an innocent newborn child that never did him an injury "Hiram"?

THE OPHTHALMIC SURGEON'S ASSISTANTS.

EVERY manipulation of an eye which has been operated upon demands the greatest delicacy and gentleness; the slightest roughness may transform success into failure. The ultimate result of a cataract operation depends upon the exact observance of an elaborate technique both before and after the operation. In addition, the management of the patient himself is of vital importance: a tactful nurse will bring a patient to the operating table full of confidence and quiet courage, whereas a few unfortunate remarks may cause him to be nervous and, perhaps, almost unmanageable. In a paper headed "Some suggestions to those upon whose aid the success of the ophthalmic surgeon in considerable measure depends,"[1] Dr. Theobald gives much excellent counsel to assistants and nurses. The assistant's chief function is to fix the eye in an efficient and safe manner, any little awkwardness in a critical cataract extraction or iridectomy for glaucoma may cause extensive loss of vitreous. Sponging an eye, again, is a delicate act demanding great care. The observant assistant will often greatly help the operator by

[1] *Johns Hopkins Hospital Bulletin*, vol. xxiii, August, 1912.

raising the upper lid, and should learn to do it correctly without hampering the surgeon with his hands. The ordinary nurse commonly fails to realize either the extreme delicacy necessary in handling an eye or the deference due to eye instruments. If not watched, she will seize them and throw them all together into a basin. She requires careful training and instruction. Eye lotions must be of the correct strength and temperature, and swabs and tampons must be proportionate to the size of the organ which is being treated. The patient must not be exposed to glaring light when his eye is examined for the first time after an operation; a candle affords quite light enough. Dr. Theobald advises the dispenser that alkaloids should not be rubbed up in a mortar, a proceeding which is exceedingly liable to lead to contamination: it is sufficient to place the drug in a clean vial, pour in the water, and be satisfied with shaking. Finally, the after-care is as important as the operation, and demands even more experience.

BELGIAN ANTIQUACKERY LEAGUE.

THE Belgian Antiquackery League founded at Antwerp not long ago, under the presidency of Dr. Gunzburg, has already a considerable membership. Dr. W. Broeckhart has been appointed general secretary. The League has just issued a manifesto, addressed to the public and to the medical profession, in which it points out that it is proposed to study the products offered in such abundance to the public as tonics, invigorators, and so forth, and to distinguish between those which are really of use and those which may be harmful to health. We commend the following passages to a number of worthy persons who at present are active in minimizing the importance of a legal qualification: "The diploma demanded of doctors and pharmacists should arouse their sense of responsibility and be a guarantee of the interest it is their duty to take in the public health. It is the public that has insisted on the stringent tests which must be satisfactorily undergone by doctors and pharmacists in order to obtain their diplomas. It was in its own interest that the public, which did not wish to be at the mercy of the fraudulent exploitations of the quacks of a former day, saw the need of honest and devoted men possessed of sufficient knowledge to apply intelligently the recognized methods of treatment. Our confidence in these men should be sufficient to make us look to them for the necessary help in the safeguarding of the general health. Experience has shown that the medico-pharmaceutical body is worthy of this confidence; moreover, the solidarity of the human race makes it impossible to separate the interest of the patient from that of the doctor. The fight against quackery must be undertaken especially for the benefit of the sick." Elsewhere it is said that quackery is a sore that eats especially into nations where civilization has reached a high degree of refinement; "absorbing the living strength of a country, quackery gradually leads it on to decadence." Beginning with the simple abuse of drugs it goes on to belief in panaceas, the advice of mediums, the immoralities of secret massage, and definitely criminal manœuvres. We wish the Belgian League all success in its philanthropic campaign.

THE FIFE BRANCH.

DR. R. BALFOUR GRAHAM was entertained at a complimentary dinner at Kirkcaldy on December 6th, when he was presented with a rose bowl in recognition of his services to the profession as Secretary of the Fife Branch since its inception nine years ago. A large company gathered to do honour to the guest. Dr. Orr, President of the Branch, was in the chair. Mr. D. Wallace, C.M.G., Dr. Chalmers Watson, and Dr. Michael Dewar (Edinburgh), and several of Dr. Balfour Graham's friends from Leven were also present as guests.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

Milk and Dairies Bill.—A bill to make better provision with respect to the sale of milk and the regulation of dairies was presented by the President of the Local Government Board on December 10th, and ordered to be read a second time on Monday, December 16th, and to be printed. On the same day the President of the Board of Agriculture had informed the National Farmers Union that he hoped the bill, while fair to the general community, would not be unfair to agriculturists. It was important that there should be uniformity of inspection by local authorities, and he had been able to persuade the Treasury that it was fair that the country should compensate farmers for animals slaughtered in the interests of the country. A large sum would be necessary in the first place, but he believed that it would be a diminishing amount. If anything was to be done to get rid of consumption the root of the evil must be struck at.

Scottish Universities.—In response to further questions, on December 9th, the Permanent Secretary to the Treasury stated that its decision with reference to the four Scottish universities adopting a uniform and inclusive fee for degree courses was communicated to the universities in July, 1910, in a letter informing them that additional grants were being sought from Parliament. One of the bases of that decision was the approval of an inclusive fee expressed by the Elgin Committee, and it was reached after consideration of the observations on the report of that body by the Scottish Education Department.

Tests for Vision in the Royal Navy.—Mr. Peto asked on December 4th what regulations obtained in the Royal Navy as regards the tests imposed upon officers in respect to efficiency in colour and form vision; and whether, as regards the latter, the use of spectacles or other artificial aids to sight were permissible at sea? Mr. Churchill said he was informed that the regulations as regards form vision for all officers, other than medical, accountant, and chaplains, were that they must have full normal near and distant vision, as determined by Snellen's test types, without the aid of glasses. Colour vision was tested by the Edridge-Green lantern and assorted coloured wools, and all officers must be able to distinguish readily the primary colours. In the case of form vision no artificial aids to sight were permissible at sea, excepting in the case of those officers already mentioned, and also the use of telescopes and field glasses as an intermittent aid to normal distant vision. Mr. Peto asked whether the question of abandoning the wool test would be considered, seeing that it had proved wholly unreliable? Mr. Churchill replied that all those subjects were considered from time to time, and he believed the Admiralty test to be a good and safe one.

School Epidemics.—The President of the Board of Education, in reply to a question by Mr. Grant on December 10th, said he was aware that in some cases schools had been closed to avoid the reduction of grant which might follow from reduced attendance due to epidemic sickness. Such a measure did not always conduce to the effective control of epidemics, and should not be adopted except on competent medical advice. He was considering the reconstruction of the system of grants, but he was not in a position to make any statement on the matter.

Mental Deficiency Bill.—The Prime Minister has been questioned on several occasions as to the possibility of proceeding with the Mental Deficiency Bill this session, but has adhered to the decision not to do so. He has, however, promised that it shall be reintroduced early next session.

Insurance Act.—The answers of Ministers to questions in Parliament as to the National Insurance Act will be found in the SUPPLEMENT.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

London County Council.

The Maudsley Hospital.

It was reported to the London County Council on December 10th that the plans of the Maudsley Hospital for mental cases, prepared by the asylums engineer in consultation with the pathologist, Dr. Mott, had received the full approbation of Dr. Maudsley. The principal buildings provided for were: (1) The administrative building, which included a pathological laboratory and an out-patient department; (2) a hospital building of three floors, having on each floor a complete ward for eighteen male patients and two nurses or attendants; (3) a hospital building of three floors, having on each floor a complete ward for eighteen female patients and two nurses. The total number of patients to be accommodated was therefore 108. The provision of the pathological laboratory in the Maudsley Hospital buildings, which was an essential condition of Dr. Maudsley's original offer of £30,000, would involve the disuse of the present laboratory buildings at Claybury Asylum, and a scheme was being considered for their future use. It was anticipated that the ratio of nursing staff to patients in the hospital would be as 1 to 2.7—that is, 40 staff to 108 patients. The estimated cost of building was £48,000, and taken on the basis of 108 beds this was equivalent to £444 8s. 10d. per bed. Equipment would cost £8,000, or approximately £74 a bed.

Commenting on these estimates, the Finance Committee remarked that the cost of the buildings and engineering work in an ordinary asylum was between £230 and £240 a patient, but it was proposed to provide at the Maudsley Hospital an out-patient department and a pathological laboratory which were not provided in an ordinary asylum. Omitting the expenditure for these requirements the cost of building was reduced to £41,600, or just over £385 a patient. The difference was accounted for largely by the fact that the hospital was designed to accommodate and treat acute cases alone, and only a comparatively small number of these. It would appear, therefore, that a fair comparison could not be made between the cost of the hospital and the cost of a large asylum for 2,000 or more patients many of whom were chronic cases. Acute cases required a larger staff than chronic cases, because they must have constant attention and supervision, and, moreover, all the patients were to receive hospital treatment. Further, with the comparatively small staff at the hospital it was necessary to provide for a proportionately greater relief strength than at a large asylum, to allow for leave and for illness. These considerations had involved a relatively large expense for staff accommodation, which made the cost of a bed appear disproportionately great. It had also to be remembered that irreducible expenditure for the accommodation of a medical superintendent, medical officers, matron, and other chief officers, which in a large asylum was spread over 2,000 patients, was here spread over 108 only.

Family Histories of Mentally Defective Persons.

The discussions in Parliament of the Mental Deficiency Bill having drawn attention to the great importance of heredity in relation to mental defect, and to the lack of reliable scientific evidence in regard to the inheritance of feeble-mindedness, the Special Schools Subcommittee reported to the Education Committee of the London County Council, on December 11th, that it had decided to obtain particulars of a number of family histories in order to obtain data bearing on the question. If the inquiry was to be of substantial value, it should be fairly comprehensive, and it would be necessary not only that the family histories of at least fifty mentally defective persons should be examined, but also the family histories of fifty normal children, with a view to ascertaining the extent to which the two sets of family histories presented different problems. In connexion with similar inquiries into the family histories of insane persons in the London County Asylums, a set of questions had been drawn up, and it was proposed to use the same set on this occasion.

Proposed Formation of Panels.

We are informed by the Clerk of the Insurance Committee for the County of London that a letter has been addressed to all medical practitioners practising in the county inviting them to confer with the Insurance Committee, either personally or through some representative committee, as to the nature of the arrangements to be adopted for the medical attendance and treatment of insured persons entitled to medical benefit.

The notice given to the profession, and published on the first page of the Supplement for this week, applies, of course, to the circumstances now brought about in London, and no doubt in many other districts. The Council of the British Medical Association points out that, pending the decision of the Special Representative Meeting and the publication of instructions issued under its authority, it is imperative that no negotiations or arrangements of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by an individual member of the profession, with Local Insurance Committees or otherwise.

WEST YORKSHIRE.

Halifax and District Medical Society.

Address by Sir Berkeley Moynihan.

The third meeting of the 1912-13 session of the Halifax and District Medical Society was held at the Royal Halifax Infirmary on December 3rd. The President of the Society, Dr. T. H. Hunt, occupied the chair, and there was an unusually large attendance. Sir Berkeley Moynihan delivered an address, entitled "Some Remarks on Gallstone Disease." At the outset he alluded to the experiments on dogs by means of which the causation of gall stones had been demonstrated. A condition of stasis of the bile was necessary. The liver was the one great place where pathological organisms were destroyed and their débris passed out into the bile. Some of these, such as the *Bacillus coli*, pneumococcus, the influenza bacillus, and others, escaped the protective influence of the liver. In the formation of gall stones crystals of cholesterin were deposited around a nucleus of dead organisms, which might be described as the tombstone erected to the evil memory of the dead organisms inside. There were many heresies about gall stones. The most inveterate of all was that which ascribed inactivity to gall stones. Speaking academically, nobody had gall stones without symptoms sufficient to declare their presence. The inaugural symptoms were those of indigestion, flatulence, fullness, a feeling of weight half an hour after meals, acidity, heartburn, vomiting (which brought a feeling of relief), gooseflesh feeling in the skin, and pain, becoming more acute—due to distension of the gall bladder. These symptoms, it might be urged, were very common; so were gall stones. When the stone began to suffer some change of position then colic ensued. The gall bladder was not a reservoir for the bile, of which 20 oz. was secreted in the twenty-four hours, whereas the normal gall bladder capacity was only 1½ oz. The pain was sudden—inclined to be more on the right side than the left—and was felt distinctly through to the angle of the right scapula. Just as the onset of the pain was sudden, so it disappeared with equal abruptness; the muscular prostration and vomiting caused the symptoms to disappear. If the stone became impacted in the cystic duct, acute gangrenous inflammation might ensue, in which case it was safer to wait than to operate at once. Not 1 per cent. of the cases of acute cholecystitis were in need of urgent operation. The gall bladder had been known to distend to an enormous extent. In a case recorded in Paris it contained 5 gallons of fluid. In ordinary cases of hydrops of the gall bladder 10 or 15 oz. might be found. Occasionally a "natural cure" by means of a gradual withering of the gall bladder occurred, but Nature was a poor physician and a very bad surgeon. In some cases, after lying for a time in the cystic duct, the stone made a cavity for itself. The diagnostic symptom here was that a large number of very mild attacks followed each other in quick succession, a small stone being present in a duct of comparatively large size. Out of a large number of such cases which he had observed, 25 per cent. had not had at any time any

jaundice. He believed there was no medical treatment for the condition. Nobody had any right to believe that a gall stone could be absorbed after formation. They could not be dissolved. Patients were said to be cured at such places as Carlsbad and Vichy. They were said to have undergone repeated "cures" at such spas, but it was not so. A certain quiet might be produced, but all the time insidious morbid changes were going on. Experience was the name we gave to our mistakes, and he had found even malignant disease in cases which had undergone "cures." He regarded the medical treatment of gall stones as mere bluff. It was a case of keeping the growl quiet, but the dog was there all the time. Long ago it was definitely agreed that no one would suggest anything but surgical operation for stone in the bladder. The pathological consequences were just as great in the case of the gall bladder. Moreover, stones could be removed from the gall bladder with at least one quarter of the risk as in the case of the urinary bladder. Symptoms could be recognized early, and by means of early operation the gall bladder could be left to perform its functions—whatever they were. The Continental surgeons still were disposed to delay operation, but, as the mortality showed, their results were not so good. The English method, it was true, meant more operations, but the results were more satisfactory. That method was now adopted by the American surgeons, to whom, in conclusion, Sir Berkeley paid a high tribute. After some questions had been asked by Dr. Leech and Dr. Marshall, Dr. Drury proposed a vote of thanks to Sir Berkeley Moynihan for his most interesting and instructive address. Apart from the intrinsic value of such an address, he remarked, they had all been fascinated by the lucid and fluent style which had commanded the attention of his audience for an hour, without a single note of any kind. Dr. Fry seconded the proposal, which was enthusiastically adopted. Sir Berkeley replied, expressing his pleasure in visiting the society. Referring to his remarks about the American surgeons, he attributed their excellence to their habit of visiting Europe, where they studied minutely the methods adopted. Any useful suggestion was carefully noted, and was often improved upon. No detail, however trifling it might appear, escaped their critical observation and comment.

MANCHESTER AND DISTRICT.

Aged and Disabled Members of Friendly Societies.

It would appear from a letter sent to the Manchester Guardians by Mr. W. Stead, secretary of the Ancient Order of Foresters, that the Foresters and other friendly societies are now regretting the arrangement made between the British Medical Association and the conference of friendly societies, and embodied in Clause 15, 2 (*c*), of the Insurance Act. Under this section, which was agreed to by the Representative Meeting, persons who were members of a friendly society on December 16th, 1911, but who, by reason of being over 65 years of age or through permanent disablement at the date of the commencement of the Act, are not qualified to become insured persons, will be entitled to obtain medical treatment on the same terms as those arranged for insured persons, the money being provided out of the private funds of the societies. When this arrangement was agreed to, the societies were under some apprehension that their aged and disabled members, requiring a great amount of medical attention, would be left on their hands, and though the liability of the societies to provide medical treatment throughout life still remained, that medical men would refuse to undertake their treatment except for greatly increased fees. When, however, the British Medical Association agreed that these persons should be attended on the same terms as the insured, the societies felt themselves relieved of a difficulty, for though previously they had only paid on an average about 4s. a member a year, they were willing to draw on their funds sufficient to make this up to 6s. They now think that as the latest Government grant to the medical profession involves the societies in a greater liability than they expected, the Government ought to provide the excess amount. It is not possible at present to estimate how much this would be, but on the assumption that the aged and disabled persons referred to number about 300,000 throughout the country, and that the societies are responsible for 3s. a member more than they anticipated when they urged the British Medical Association to agree to this section, the excess cost will be between £40,000 and £50,000 a year. This will, of course, lessen each year as the aged and disabled members die off, but for some years to come it will involve a drain on the private funds of the societies which they consider the Government is morally bound to make up to them. But the Order of Foresters does not confine itself to this amount, for its Executive Council is of opinion that the State should make up to the societies the whole of the difference between the amount paid in the past, which averaged 4s., and the 9s. which will have to be expended for medical treatment, including drugs and appliances (and tuberculosis), under the new circumstances.

Cremation.

The report presented to the annual general meeting of members of the Manchester Crematorium, Limited, on October 15th, stated that during the year ended August 31st there had been 147 cremations. That number, it was stated, showed a gratifying increase on those of previous years, and brought the total since the opening of the crematorium in 1892 to 1,689. The report states that "there is no doubt that opinion in favour of cremation is steadily growing among undertakers."

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Research Defence Society.

The annual general meeting of the Edinburgh Branch of the Research Defence Society was held in St. Cuthbert's Church Hall on December 9th, Sir Alexander Simpson presiding.

The annual report, which was adopted, stated that the Edinburgh branch had made steady progress during the year, and had now 226 members and 116 associates. The public were awaking to a realization of the baseless nature of many antivivisectionist statements and the misleading character of their arguments. The Chairman said that some of the noblest men that ever lived had spent laborious years in making experiments to enable them to find out the causes of disease and the measures by which disease might be cured. Those men had been attacked by a certain group of people who were great lovers of animals. They were all great lovers of animals, but they had an intense desire to do what was best in eradicating the suffering of their fellow-men. Many of the experiments on animals were made for the sake of animals themselves. He referred to experiments made among horses, and said that all the kings' horses of all lands, when put into the balance, did not equal the value of the life of one single child.

Professor Lorrain Smith, referring to infantile paralysis (poliomyelitis), said clinical observation pursued during 135 years had failed to discover the nature of the cause further than to make it probable that it was of an infectious nature. Three years ago it was proved to be infectious by the experimental method, and it was found that when monkeys were inoculated with an extract of the diseased spinal cord they became paralysed and the form of the disease was the same as that seen in the children. At the present time nearly all the countries in the world had suffered from the disease in epidemic form, and the hope of dealing with it lay with the experimental method by which the cause had been discovered.

Professor Schafer said cutting operations upon animals were effected without the slightest pain. Often, although it was necessary for animals inoculated by disease to be actually left until the disease proved fatal, animals did not suffer in the same manner as human beings suffered. It was not right that a single human life should be sacrificed for the good of humanity when animals could be used for that purpose.

Treatment of Tuberculosis in Scotland.

At a representative conference of Scottish county and burgh Insurance Committees, representing over 70 per cent. of the total insured persons in Scotland, held in Glasgow on December 2nd, resolutions were adopted

protesting against the proposal of the Government to allocate to the doctors for domiciliary treatment of consumption 6d. out of the 1s. 3d. provided by the National Insurance Act in respect of each insured person for defraying the cost of sanatorium benefit in each year, on the ground that such allocation would seriously affect the administration of the sanatorium benefit. On December 9th the Chancellor of the Exchequer received a deputation which urged upon him the view expressed above, and also pointed out that in Scotland the conditions of insured persons were such as to render them highly unsuitable for domiciliary treatment- that they should receive treatment in a dispensary, hospital, or sanatorium. The Chancellor of the Exchequer replied that he must adhere to the present conditions, and the Insurance Committees must make the 9d. do and rely upon rating authorities to make up half the balance and the Treasury the other half.

Radium Supplies.

Some weeks ago Dr. Dawson Turner directed the attention of the Board of Management of the Royal Edinburgh Infirmary to the increased use of radium for therapeutic purposes and the desirability of adding to the quantity at his disposal in his work for the institution. The question was remitted to the Medical Managers' Committee, which submitted its report to a meeting of the general board on December 2nd. The report estimated the cost of meeting the request at £1,000, and stated that, though the committee recognized that radium was now being utilized in a much extended degree in the treatment of certain diseases, it did not feel justified in present circumstances in advising the expenditure of such a sum. Possibly if the general public were made aware of the desirability of more radium being provided, some one would come forward and generously enable the managers to meet the application received from Dr. Turner. In moving the adoption of the report, Dr. Playfair said that, though the medical managers believed that radium had a great future before it, and were impressed with the need of a larger supply, they did not feel justified in recommending any other course than that indicated. After some discussion, and the proposal and withdrawal of two amendments, the report was adopted.

Cremation in Glasgow.

At the annual meeting of the Scottish Burial Reform and Cremation Society, Limited, held at Glasgow on November 26th, it was reported that during the year ended September 30th 44 cremations had been carried out as compared with 35 in the previous year, and 26 in 1909–10, making a total since the opening of the crematorium of 420. The following passage is interesting: "The directors note with particular satisfaction the beginnings of what they are convinced marks a great forward step in the adoption of cremation. A special crypt for the reception of urns has just been erected in St. Columba's, the leading Presbyterian church in London, and previous cremation is being insisted upon in many cases of interments in Westminster Abbey and St. Paul's Cathedral. . . . The cremated ashes of the late Bishop of Truro have been deposited in Truro Cathedral."

The third International Congress of Neurology and Psychiatry will be held at Ghent in 1913. The proceedings will begin on August 13th. The congress is under the patronage of the Ministers of Justice and of the Interior; it is organized by the Belgian Societies of Neurology and Psychological Medicine. The congress will be held while the International Exposition is open at Ghent. All communications relative to the congress should be addressed to Dr. Crocq, 62, rue Joseph II, Brussels.

The Talbot Company, which has not taken part in speed competitions at Brooklands for some five years past, has recently brought out a booklet relating to the performances there of one of its cars on November 16th. It was one of the firm's ordinary four-cylinder cars, but despite its low nominal horse power—25—exceeded a speed of 113 miles an hour, a higher speed than had previously been obtained by any but the very largest racing machines. Copies of the booklet can be obtained by sending a postcard to Messrs. Clement Talbot, Limited, Barlby Road, London, W.

Special Correspondence.

PARIS.

Physical Education in France.—The Support of Working Women during the Puerperium.—New Researches on the Lipoids of the System.

A few years ago outdoor sports were practised in France only by a few enthusiasts who were looked upon as cranks, and in the schools physical exercises were practically unknown. It is interesting to note how French public opinion has altered in this respect, largely owing to British example and influence. A sign of the new times is to be found in the recent simultaneous announcement of an International Congress of Physical Education, to be held in Paris next March, of the formation of a Eugenics Society, of the foundation of a College for Athletes near Paris, and of the appointment by the Minister of Public Education of a committee to inquire into the best means of introducing into the public schools systematic teaching of physical exercises and the regular practice of outdoor sports. This committee numbers 36 members only—a very small number in comparison with the 400 of the recently appointed Committee on Depopulation. It is constituted chiefly of competent physical instructors and sportsmen, but includes two medical men. As to the Eugenics Society, its promoters are to be found among the Frenchmen who attended the last London Congress on Eugenics, which has opened their eyes to the possibility and the necessity of improving the physique of the race. In connexion with the Congress of Physical Education an exhibition is being organized which should afford many an interesting object lesson. A section will be devoted to miscellaneous documents on physical exercises: tracings, photographs, and apparatus for gauging the physical resistance of subjects in order to graduate the exercises according to their strength and development. Next to this purely scientific section will be found an industrial exhibition, wherein will be shown the more recent improvements in the industries connected with every outdoor sport, from fishing to aviation. An artistic touch will be given to the exhibition by the display of some of the most remarkable works of art (paintings, sculptures, engravings, etc.), illustrating the life of the athlete and of the sportsman.

The Senate has just passed a bill for the protection and support of women of the artisan class during confinement and the puerperal state. From the moment she takes to her bed each woman will receive a daily allowance, to be settled by the Minister of Finance. Her employers will not be allowed to let her go back to work till four weeks after the confinement, nor will they have the right to dismiss her on this score. On the other hand, the woman will not be allowed to do any work, apart from the discharge of simple domestic duties, under penalties of forfeiting her allowance. If the woman be received in a hospital, her allowance will be cut down to half the normal amount. If she remain at home, she will be under the supervision of a medical inspector, who will satisfy himself that she is implicitly following the directions laid down by the Bureau d'Assistance for herself and her child. This bill has been presented and ably defended by M. Strauss, well known for his active interest in public health, and a member of the Academy of Medicine, although not a medical man.

At a meeting of the Academy of Sciences, on November 24th, M. Iscovesco gave an interesting account of his researches on the lipoids of the body. He has found that in every organ, along with numerous lipoids physiologically indifferent, exists one lipoid that exercises a marked stimulating action on the corresponding organ when inoculated into an animal. This "homo stimuline" produces not only increased functional activity of the organ, but also a very considerable hypertrophy of the same. In some cases these lipoids stimulate at the same time other structures ("hetero-stimulines"). The lipoids of the ovary and testicle, for instance, belong to the first group: the lipoid of the thyroid to the second group. Injections of ovarian lipoid produce after a time considerable hypertrophy of the uterus and ovaries. This stimulating effect has been utilized by Iscovesco in 35 women suffering from ovarian inadequacy (amenorrhœa,

climacteric disturbances, etc.). The results in each case have been remarkable. As distinct from the ovarian lipoid Iscovesco has isolated a lipoid from the corpus luteum which appears to have a marked stimulating action on uterine involution after labour, and has also given very satisfactory results in vomiting of pregnancy. The lipoid extracted from the testicle stimulates the male genital system generally, and has been used with success in men suffering from neurasthenia, sexual impotence, senility, etc. In the red blood cells is to be found a lipoid which has a very decided stimulating action on the blood-forming organs, leading to an increase not only in the number of erythrocytes, but also in the percentage of haemoglobin. The lipoid isolated from the thyroid gland stimulates not only the thyroid, but also the adrenals, the heart, and the genital system. Iscovesco has also extracted a specific lipoid from the hypophysis, the adrenals, and the kidneys. His work forms an interesting addition to present knowledge of internal secretions, and may lead to important practical results.

VIENNA.

Action of the Austrian Government with regard to the Cholera Epidemic in the Balkans.—Abuse of Out-patient Departments.—Conflict between the Profession and the "Krankenkassen."

THE outbreak of cholera in the Balkans has given rise to considerable anxiety throughout Europe, but nowhere is it more keenly felt than in Austria-Hungary, where the business relations now interrupted by the war will be resumed directly hostilities cease, and must necessarily expose the whole country to infection. The deplorable lack of sanitation and complete disregard of prophylactic measures in the affected districts, combined with the decreased vitality of the population after an exhausting campaign, have caused the Austrian Board of Health to impose a strict quarantine on all travellers arriving from the Balkan States and Asia Minor, especially those who have come by sea. A special Cholera Committee, composed of the head of the Vienna Serum-therapeutic Institute, the well-known Professor Kraus, and four of his assistants, and the pathologist, Dr. Kannitz, Professor Weichselbaum's assistant, has been sent to Sofia for the purpose of investigating the epidemic at close quarters; and as plague and typhoid are also rife it has been provided with large quantities of Haffkine's serum. It has been ascertained through the Austrian diplomatic agents in the Turkish provinces of Asia that cholera has broken out in Syria and Aleppo, whilst the yearly pilgrimages to Mecca have imported both cholera and plague from India and China, and both diseases are raging fiercely in Persia and the deserts of the Kirghiz Steppe. It should be added that the Turkish Government has become so much alarmed that a formal application has been made to Vienna for medical volunteers whose sole duty will be to check the spread of cholera in the Turkish army.

There has always been a certain amount of friction between the administrative boards of our various dispensaries and out-patient departments on the one hand and the general medical practitioners on the other concerning the admission of patients to these institutions; and the grievances of the latter body have recently been embodied in a resolution passed by the Vienna Medical Council (*Aerztekammer*), and presented in the form of a petition to the State officials who control the public charitable institutions of this country. The discontent of the doctors arises chiefly from the fact that the dispensaries are at present frequently visited by persons who are well able to pay for medical advice, but who prefer to receive it at these places free of charge. The profession naturally desires to see such persons excluded from the benefits intended only for the poor, and it also wishes to see the members of a *Krankenkassa* (or State sick club) prevented from obtaining medical assistance in a similar manner. The [illegible] bound by law to provide their members with medicine and attendance, and only in the case of an operation is the patient entitled to hospital assistance. By sending one of their members to a dispensary the sick club evades its duty, and wrongs both the profession and the public. Should the club doctors be too few in number or the services of a specialist be required (the dispensaries have usually nothing but special departments), it is the duty of the club to provide whatever assistance may be required. The grievances of the doctors are only too well founded, and it is to be hoped that the authorities will find some means to redress them.

At the present moment the profession is busily engaged in readjusting the strained relations existing between its members and the *Krankenkassen* throughout the whole province of Lower Austria. Some little time back, by means of uniting all the sick clubs into one big corporation, the managing boards of these institutions took the profession completely by surprise, and actually drew up a new plan of medical service without going through the formality of asking the doctors they had appointed if the latter consented to work under the new terms. These terms, as a matter of fact, were considerably worse than the old ones from the doctors' point of view; and the natural result was an outburst of indignation, followed by the resignation of every doctor and a boycott of their vacated posts. There are at present, therefore, about 120 posts vacant in Lower Austria, and up to the present no blacklegs have been found who are willing to take them. Moreover, the financial situation of the clubs is becoming serious, since they are bound to pay each member's doctor's bills; and as their members are now charged the usual fees, the clubs find the present régime considerably more expensive than the former. There is every reason to believe, however, that a compromise will soon be effected and the interests of the profession safeguarded in such a fashion as to render a similar breaking of contract impossible in the future.

Correspondence.

RE-EDUCATION OF THE ATTENTIVE CONTROL.

SIR,—I read with considerable interest Dr. Crichton Miller's paper on the re-education of the attentive control, and also Dr. Bramwell's commentary upon it which appeared in the JOURNAL of November 30th.

I do not know what measure of success Dr. Miller has had in the methods which he advocates, but they hardly commend themselves to me either from the theoretical standpoint or the point of view of practical therapeutics. Given a subject deficient in the power of attentive control, it would seem advisable, at the commencement at any rate, to go on the lines of least resistance. However chaotic and inco-ordinate an individual may be in his power of selection of ideas and plan of action, there is presumably some one subject or another in which he is genuinely interested, provided only he can rise above the obsessing and entangling ideas which have so far morbidly predominated. If such a one can be interested in any pursuit which has a laudable and rational object in view, an object which commends itself to the patient as distinctly worthy of attainment for its own sake, it is manifestly immeasurably superior to any artificial procedure which carries none of these advantages.

The most damning indictment of such methods, however ingenious in elaboration and application, is that they tend to "fix" and keep before the patient's mental vision the very defect which it is proposed to eradicate. Even if it be contended that such mental exercises as Dr. Miller enumerates owe their peculiar value to the fact that they are difficult, that they involve considerable effort, and, if one may say so, successfully eliminate every element of pleasure and interest, that would hardly excuse them. However salutary it may be "to do something every day which we would rather not do," it must not be forgotten that this is not an end in itself, the real object being attained only when the "present disagreeable" becomes a "future delight." After all, the element of "interest" must eventually enter in, and the irksomeness of the task (which is purely relative and derives simply and solely from the patient's morbid point of view) disappears when once this attitude is rectified. We may hold what views we please as to the relationship of "attention" and "interest," but until something in the individual's consciousness is touched—call it imagination, interest, or what you will—until, in fact, he becomes an active and willing participant in the curative process, we are exactly where we were to start with. It follows that such end is best attained by

means of pursuits and occupations which, while involving in themselves abundant opportunities for cultivating concentration of mind (or power of attentive control), are not devoid of that imaginative appeal and purposive significance which can alone secure the intelligent co-operation and intellectual assent of the individual concerned. The cogency of this argument is increased by the fact, which is generally admitted, that the type of sufferer under discussion is oftentimes an individual of high mental endowments and considerable critical faculty, and any method of education which is adopted and which fails to take cognizance of these facts, and to enlist them in its favour, is inevitably doomed to failure.—I am, etc.,

Leeds, Dec. 3rd. J. E. Middlemiss.

Sir,—Dr. Bramwell's criticism of the exercises sketched in my paper on this subject is based on a complete misconception. I allow that I had only indicated and not described fully the type of case for which these exercises are useful, and I must therefore accept the blame for Dr. Bramwell's misapprehension. At the same time I would have expected that those whom my paper interested would have been able to diagnose their cases with sufficient accuracy to avoid misapplication of the exercises. Dr. Bramwell gives an example of "a gentleman suffering from intense melancholia" who was cured by stimulation of new interests. Now melancholia, as such, is not an attentive but an affective malady. To provide new interests for such an one is manifestly the correct treatment, whereas to attempt to redevelop his attentive control would be obviously incorrect. To arouse new interest, to provide new hobbies, to stimulate new enthusiasms, to facilitate distraction, all these things come into the sphere of the psychotherapist, and are of immense importance. But the subject is one I did not happen to be discussing. Interest and effort are the two factors that determine attention. Increase the interest, and the need for effort is less; eliminate interest, and the need for effort reaches the maximum. Dr. Bramwell's melancholic is at one end of the scale; the type I refer to is at the other. They can both attend if they are interested; the former needs interest provided; the latter needs to learn to become independent of interest. In other words, he must acquire the power of enduring an uninteresting task with interest by attending to it. I readily admit that to "take an intelligent interest in the study of mathematics" would be highly profitable to many of the cases I have in mind; but I submit that at the beginning it would be, to the majority of them, as irksome as any task I have described.

As to Dr. Bramwell's point about "mental strain," I can assure him that the patients I have in mind are not the least likely to suffer from it. By the time that any such danger appears the patient is cured.

I shall not trespass on your space further, but I think I have said enough to show that Dr. Bramwell's strictures are founded on an entire misconception of the nature of such cases as would benefit from re-education of attentive control.—I am, etc.,

London, W., Dec. 2. H. Crichton Miller.

ANTIVIVISECTION IN GLASGOW.

Sir,—I read Dr. Hadwen's letter in the British Medical Journal of December 7th with the most intense surprise. He says:

> I think every antivivisectionist knows that Sir Frederick Treves upholds vivisection, and I invariably announce that fact as I did in Glasgow.

I was present at the lecture with my senior assistant, Dr. H. E. Whittingham. We listened with great attention the whole time. Dr. Hadwen stated that experiments upon living animals had been proved useless. In support of this he quoted Ferguson, Lawson Tait, and Sir F. Treves, making the quotation of which Sir Frederick complained in his letter published on November 30th, p. 1578. He did not say that Ferguson died at a date which made his opinion on the particular points dealt with of little or no value; he did not point out that the opinion of a practising surgeon upon purely scientific questions was of little value unless supported by something beyond skill in operating; and he certainly did not audibly state that Sir Frederick upholds vivisection. If he did say anything implying this he did so in such a manner that the bulk of the audience could not have heard it, for both Dr. Whittingham and I were fairly close to the platform. He undoubtedly implied that Sir Frederick's opinion was directly opposed to experiments upon living animals. I have met many people since Dr. Hadwen's visit here who have expressed surprise that Sir Frederick was an antivivisectionist. Upon inquiry I have found that they had received this impression from the publications of Dr. Hadwen's and other antivivisection societies.

Dr. Hadwen says:

> It is my method, on the platform, to supply facts and not opinions.

A great part of his lecture here was devoted to abusing Sir George Beatson, with regard to whom he made many misstatements of fact. Another part was devoted to the immorality of drinking alcohol and the uselessness and danger of vaccination. With regard to experiments upon living animals, he stated that these were useless, which is not a fact but his opinion. He stated that no diseases were due to specific micro-organisms, which again is not a fact but his opinion. The only fact I heard him mention in the whole of his lecture was with regard to the size of micro-organisms. As these vary much in size, that which he gave is true of some of them, but not of the majority. He made this statement in order to lead his audience to believe his further statement that it was impossible to isolate such minute bodies.

At the end of the lecture I said that as Dr. Hadwen did not believe that any specific micro-organism could produce specific results, and that it was impossible to isolate any particular variety, I took it that he would not believe that I could foretell what would follow upon inoculation with a particular culture. He said he did not believe that I could do so. I then offered to give the chairman a sealed envelope containing a prognosis of what would happen if Dr. Hadwen allowed me to inoculate him. This he declined on the grounds that I could not inoculate him with the micro-organisms without their environment. With some difficulty I got him to admit that the culture medium was what he meant by the environment. I pointed out that this could be got rid of by using a centrifuge. Dr. Hadwen wanted to know what a centrifuge was, but there was hardly time nor was the moment opportune for a description of the apparatus or an explanation of the methods of using it and how easy it is to wash things even smaller than most pathogenic micro-organisms. I offered to inoculate myself in the same way as I proposed using with regard to Dr. Hadwen, and to pay his expenses from Gloucester, including a stay in a nursing home if necessary, with the sole condition that I was to use antiseptic precautions, in which Dr. Hadwen said he did not believe. Dr. Hadwen still refused on the grounds that my proposed experiment was not scientific. If it is not, then no experiments, chemical, physical, or biological, are scientific. It is unscientific to use blue litmus to find out whether a fluid is acid.

Dr. Hadwen tried, with what object I do not know, to make me say that I proposed to inoculate him with anthrax. I pointed out that I would only disclose the proposed micro-organism in the sealed envelope to be given to the chairman. I may say now that the inoculation would not have produced dangerous effects. He would, however, not have been able to conceal them from his admirers. The offer is still open. I should, however, if you would allow me, in case Dr. Hadwen accepts my invitation, propose to place the sealed envelope in your hands. I am prepared to place in it, besides the prognosis, a photomicrograph of the organism used, and to guarantee that I am able to recover the same organism from Dr. Hadwen's body when the symptoms develop. All this must be quite impossible unless specific micro-organisms produce specific results and unless it is possible to isolate specific micro-organisms.—I am, etc.,

Glasgow, Dec. 7th. Charles Walker.

THE ROYAL COMMISSION ON VIVISECTION AND THE HOME OFFICE.

Sir,—In an article in the current number of your paper you express the opinion that the comment on my charges against the Home Office in my evidence before the recent Royal Commission is "crushing."

No doubt you mean that it is I who am crushed; but, as a matter of fact, many of my accusations have received the best possible endorsement the Royal Commission could make, for they recommend that several of the abuses of which I complained should be terminated.

No doubt they sugared the "crushing" which they administered to the Home Office with this delightful emolient:

> "We are of opinion that, on the whole, the working of the Act has been performed with a desire faithfully to carry out the objects which its framers had in view."

Here they only credit them with a "desire" which their recommendations indicate were not, in their opinion, "carried out."

It must be remembered that Sir Mackenzie Chalmers, the permanent head of the staff of the Home Office, was one of the Commissioners, and having condemned many of the methods of his office in their recommendations, the situation called for the administration by them of some harmless anodyne to his feelings, to which I am sure we make him very welcome.—I am, etc.,

London, W., Dec. 10th. STEPHEN COLERIDGE.

*** We should have thought that Mr. Coleridge needed a "harmless anodyne" more than Sir Mackenzie Chalmers. Even his ingenuity in distorting the plain meaning of words cannot extract an anodyne to his feelings from the Report. We need say nothing more on that subject. But there is a matter as to which we should be glad of some enlightenment. What is the process of "sugaring" a "crushing" with an "emolient"? (the spelling is that of our learned correspondent). Mr. Coleridge is a critic of style; we presume, therefore, this nice derangement of epitaphs has a meaning not apparent on the surface.

DIET, DISEASE, AND HEALTH.

SIR,—The JOURNAL of November 30th contains some letters and articles which call for the candid criticism of those who can read between the lines, that the truth may be established and error abolished. Thus W. Bramwell, in his letter, tells of a case of intense melancholia being cured by his doctor taking him for a country ramble, and getting him interested in the structure of plants, the habits of insects, and geology. His success delighted and astonished the doctor, who no doubt attributed it, as Dr. Bramwell evidently does, to the mental influence of the lessons he received during the ramble; but they are wrong. Without the exercise, the lessons would have been useless; and if exercise can cure a suicidal melancholiac, as it did in that case, it will cure any curable disease, without any adjuvant. The one prescription by which Dr. Jephson, of Leamington, cured every disease was "walking," as was set forth in the JOURNAL, in some excellent verses, last year. By making lunatics work, the percentage of recoveries has been wonderfully improved, and, combined with proper diet, our asylums might soon be emptied.

Charles G. Jarvis's letter emphasizes the importance of the retention of sodium chloride and urea, both of which exercise will eliminate, and remove the symptoms to which such retention gives rise.

Had the writer of the leading article on "The Hygiene of the Brain Worker" been aware of the value of exercise, he would not have said that "All sorts of diseases—neurasthenia, melancholia, disordered nutrition, convulsive disorders—result from want of sleep." Far from that being true, too much sleep is worse than too little, for it is during sleep that secondary digestion takes place, which poisons the system by waste products.

Who the writer of that article may be I do not know, but I have little doubt it was he who gave us the excellent articles on ancient medicine, from the fact that he knows about Sanctorius, the value of whose work he seems to overlook, or even laugh at, for he calls him "An old physician, who spent a large portion of his existence in weighing himself in a balance." Had the facts which Sanctorius discovered by weighing himself 300 years ago been fully appreciated, the value of Dr. Jephson's prescription would have been understood, and walking would have taken the place of the drugs, which we owe to the alchemists. Sanctorius proved that the insensible perspiration which exercise promotes is of far more importance than the excretion from the bowels and the kidneys, and must be known before any disease can be properly treated. Some years ago, when I discovered that on giving up all animal food I lost stiffness and other symptoms which are generally attributed to advancing years, I began to study the physiological action of food. To do so satisfactorily I wished to know what weight I lost by skin and lungs, as well as by the bowels and kidneys, but how to get at that puzzled me. At last I thought that if I weighed myself as I got into bed and out of it, and deducted the weight of urine I had passed from my total loss of weight, I would know what I had lost by the skin and lungs. The observations and experiments I made gave me altogether different views of disease from those of my teachers, and I formed what I believe to be a new theory of disease, which I determined to publish; but that I might be sure it was new before doing so, I read through the history of medicine, and in doing so I learnt that Sanctorius had weighed himself just as I had been doing, and I was delighted to find that he also had found that he sometimes actually gained weight in the night, without anything having entered the body except by the skin or lungs from the atmosphere. I applied to Professor Schäfer, who seems to believe man will some day assume the rôle of the Creator, for an explanation of that simple fact; but he was not aware of it, would not believe it, and blamed my steelyard. I got the same steelyard he used, made by the same man, and got the same result with it; but having learnt that no steelyard could be relied upon for perfect accuracy, I had a balance hung up to my bedroom ceiling. I got the same result with it, and it was after I had had all that trouble and expense that I learnt that I had been anticipated by Sanctorius in spending a large portion of my existence in weighing myself. I did not, however, regret that I was so late in learning what Sanctorius had done and thought. He thought it was from the moisture in the atmosphere that he had gained weight in the night. That was my first idea also, and I put the dry and wet bulb thermometer by my bed and compared my loss of weight with the moisture of the atmosphere in my bedroom, but I could see no relation between the two, and, determined to find the true explanation, I began to read about hibernating animals. To my astonishment, I learnt that some were heavier after their winter's sleep than when they lay down, and the explanation given was that the oxygen of the atmosphere, by combining with the waste products of the vital functions, had formed fat. Whether that may be the true explanation or not I do not pretend to say, but it does not seem to me quite satisfactory, and if any member can offer any other explanation they will help to solve a problem of the greatest importance to the rational physician.—I am, etc.,

Hawick, Dec. 2nd. JOHN HADDON, M.D.

ARTERIAL HYPERTENSION AND VASO-DILATORS.

SIR,—Recent contributions on the subject of arterial hypertension make it plain that its presence is no proof of the existence of cardio-vascular sclerosis any more than its absence is evidence of the possession of healthy blood vessels. When present, chronic hypertension is, one may say, physiological in that it is the outcome of an endeavour on Nature's part to carry on the circulation in the face of mechanical disadvantages, caused by thickened arteries, renal sclerosis, or what not.

In view of these circumstances one is tempted to ask whether vaso dilating drugs can ever be of service, seeing that they can exert no efficient action on the faulty mechanical conditions, and that in any case their influence is so fugitive. To lower the pressure by such means must be about as useful as holding back the hands of a clock that is going too fast. By so doing we may, it is true, make it mark the correct time for a brief period, but if the regulator cannot be got at, the clock begins to gain from the moment we release the hands.

The only possible service that vaso-dilators can render is, conceivably, in cases of chronic hypertension complicated by angio-spasm in the forms so clearly portrayed by Sir William Osler in his lucid address on high blood pressure (page 1173), and in cardio-spasm manifested by the pains of angina pectoris. Even so, unless the patient

be ordered physiological rest in a degree commensurate with the severity of the arterial condition, in addition to diet and intestinal antisepsis in order to check the production and absorption of vaso-irritant toxins from the intestine, the attacks of arterial spasm or other high pressure mischief are sure to recur.

I may mention that I recently had under observation a gentleman, 58 years of age, with a pressure of 220 mm., apparently independent of renal sclerosis, who suffers from occasional attacks of right-sided hemiparesis with difficulty of thinking and speaking. So far these attacks have cleared up completely after a few hours. They are precipitated by a cold wind, a hot bath, or an attack of indigestion, and in the one attack I have actually witnessed yielded promptly to the nitrites.—I am, etc.,

Algiers, Dec. 6th. ALFRED S. GUBB, M.D.

OPERATIONS FOR GLAUCOMA.

SIR,—In the penultimate paragraph of his first letter (BRITISH MEDICAL JOURNAL, June 22nd, 1912) Dr. Fergus made three definite statements about my movements, supporting each with a date. In my reply (BRITISH MEDICAL JOURNAL, August 31st, 1912) I showed that every one of those statements was incorrect. On the basis of those three incorrect statements Dr. Fergus built the assertion: "These being the facts, it would appear that I used this operation nearly a year before Colonel Elliot did." In my reply (above referred to) I pointed out that Dr. Fergus first trephined on January 5th, 1909, and I on August 2nd, 1909, the interval being obviously just short of seven months, and not "nearly a year." Dr. Fergus in his latest letter (BRITISH MEDICAL JOURNAL, September 14th, 1912) modifies his position, and states that "Major Elliot's first communication . . . was in December, 1909, or nearly a year after I had done my first simple trephining operations." It appears to me unusual to reckon a period from one surgeon's date of first operation to another's date of publication. Would it not be more in accordance with scientific method to compare our dates either of first trephining or of publication? I am, moreover, at a loss to understand why Dr. Fergus should have introduced the question of the different meanings in which we used the word "home"; I submit that it has not the least bearing on the point at issue. Our statements are perfectly clear, and no confusion whatever has been introduced by the fact that we both use this word in different but fully recognized senses. In any case it boots little to argue about precedence when three other surgeons have been years in the field before us. I merely record these facts before passing on to my main point, as Dr. Fergus's method of conducting the controversy appears to me to be calculated, unintentionally no doubt, to hide the really important question at issue.

Dr. Fergus says that he still trephines, and only adopts the combination of trephining and cyclodialysis for certain cases. I should not venture to deny this. It is, however, a very different attitude from that which he took up when he spoke of "simple trephining" as "the operation which he had introduced into ophthalmic practice in the autumn of 1909." It is on that claim that I most unhesitatingly joined issue with him, on a question of facts. I have clearly shown out of Dr. Fergus's own writings that he definitely turned his back on "simple trephining" within three months of the date on which he first began to trephine, and that he insisted on every occasion on which he uttered any public statement on the subject that his operation was a *combination of trephining with cyclodialysis*. I have also shown that this was the view taken of the matter by such competent observers as Treacher Collins and Sydney Stephenson. If one thing more were needed to show that Dr. Fergus's actions justified such an interpretation being put on them by the profession at large, surely no better proof can be adduced than the evidence of his own colleague who works side by side with him in (if I mistake not) the same hospital in Glasgow. Dr. Ballantyne wrote (*Ophthalmoscope*, July, 1910), "but cyclodialysis has again appeared as an *integral part* of Fergus's sclerectomy with the trephine," and again, "but Fergus soon introduced a modification which now forms an *essential part* of his operation—namely, the passage of an iris repositor from the trephine hole into the sclera and cornea." The italics are my own. Dr. Fergus's written and spoken words may do his practice an injustice but they pin him to the combined operation, whilst his actions have apparently conveyed the same impression to those who work alongside of him. If he is not to be judged by these, what possible basis for argument can we find?

Dr. Fergus says that I have not accepted his word that he does not see the *Ophthalmoscope*. I regret that any words of mine should, with no intention on my part, have conveyed such an impression to him. Dr. Fergus wrote (BRITISH MEDICAL JOURNAL, June 22nd, 1912) of what he claimed as my admission of his priority in the use of the trephine, and as I cannot find that I have ever discussed that question outside of India except in the pages of the *Ophthalmoscope*, I naturally concluded that he had read the article in question. Dr. Fergus had also launched a somewhat unusual attack on me in the *Ophthalmoscope* for February, 1910, in reply to an article I had published in the pages of that paper (December, 1909), and it was only reasonable to expect that he would have looked out for a reply. He says he did not, and that settles the question so far as I am concerned. How he obtained the information that he used in his later letter is not apparent; it may have been from hearsay, or in some other way unknown to me. I personally should have taken care to see the written words first, before I built a case on them, and I credited Dr. Fergus with doing the same. In any case I desire to most unreservedly withdraw anything in my letter which may have unintentionally hurt Dr. Fergus's feelings by appearing to have been meant as a doubt of his word or as a slight on his personal honour. Though Dr. Fergus's methods of controversy may be such as I find it difficult to understand. I take the sanctity of his word for granted.—I am, etc.,

R. H. ELLIOT, M.D.,
Madras, Oct. 15th. Lieut.-Col. I.M.S.

ASSISTANT MEDICAL OFFICERS IN ASYLUMS.

SIR,—As an assistant medical officer of some years' standing, I have read the letters in your last two issues with considerable interest. Letters have appeared in the medical journals from time to time during the past ten years dealing with the grievances and general conditions of work of assistant medical officers in asylums. Recently the question of the status of the asylum assistant has been made the subject of inquiry by a special committee of the Medico-Psychological Association, and this committee is at present engaged in investigating the grievances of assistant medical officers. Some of these are undoubtedly real, others have exaggerated or fictitious importance attached to them. But there is an idea gaining ground, possibly as a result of the various letters published, that the asylum assistants are seething with discontent. In my opinion it is not the case that they are becoming disloyal because of their dissatisfaction, which previous letters seem to show. Unfortunately in these days, whenever any body of persons feel that their position or conditions of work are uncongenial the remedy at once suggested is to form a union, and they imagine that the trouble will be at once rectified. I doubt greatly whether much or even any benefit would accrue by the formation of a union or society of assistant medical officers. We assistants, the seniors at least, are specialists, and it ill becomes us to lower ourselves to the level of the illiterate worker. A society of assistants formed chiefly for and with the avowed object of airing grievances, would rapidly breed discontent and disloyalty in our ranks; the superintendents and committees would automatically and unconsciously take up an attitude of antagonism to any such union, and in consequence of these facts the interests of assistants would suffer greatly. To my mind assistant medical officers should attack the grievances under which they believe themselves to labour in a much more dignified manner.

I understand that the conditions described by "Assistant Medical Officer" in the JOURNAL of November 30th are among those at present under consideration for remedy by the special committee of the Medico-Psychological Association, but if they were stated fairly and squarely to the medical superintendents and asylum committees it is more

and there would be little need to cause an upheaval in the asylum service by the formation of yet another union.

The assistants in each asylum should take their troubles to their superintendent, telling him exactly what they wish, and I have little doubt but that he and the asylum committee would readily adjust matters favourably to the assistants. Should this trial fail, however, and the grievances not be remedied, it is in the power of each assistant to send a statement of his facts to the special committee of the Medico-Psychological Association, and he would find that the matter had come before a sympathetic body of men.—I am, etc.,

Stirling District Asylum, Larbert, Dec. 9th. C. H. G. GOSTWYCK.

SIR,—The letter of "Assistant Medical Officer" in the JOURNAL of November 30th, p. 1582, shows that reforms dealing with the conditions of service of asylum physicians are long overdue. Say a man qualifies at the age of 25. He then takes up junior hospital appointments or other active professional work in order to gain experience and assurance. After a few years he decides to take up lunacy. At 28 or thereabouts he is appointed junior medical officer in an asylum at a salary which usually begins at £150 per annum, living in. In about five years' time, when he is 33 years of age, he is perhaps getting his maximum of £300 or thereabouts, and still living in. From now till 40 he is in a continually anxious state of mind with regard to further promotion. Vacancies for the post of superintendent are few and far between, and are largely a matter of luck. Supposing he has not the good fortune to get one of these appointments at 40, he finds himself still earning what he did at 33, no prospects, and subject to the degradation of not being permitted to make a home for himself. Should he leave the asylum service now, he not only sacrifices his pension but takes up a totally strange line of work, and enters general practice under conditions which are decidedly not conducive to success. Again, his leaving the service is not in the interest of the patients. Obviously it takes a very considerable time to get to know four or five hundred people and their idiosyncrasies. It is also bad in an administrative sense, as it engenders a tendency for head attendants and others to usurp responsibilities which naturally belong to higher officials.

Why is this state of things permitted? One cannot believe that any common-sense and unbiassed man knowing the whole facts would not see injustice written in large capitals.

"Assistant Medical Officer" points out that the doctors in asylums are unable to establish a home, and says, "Why these privileges should be totally denied to the entire medical staff below the superintendent is a mystery." Now is it possible that the committees do not know the entire facts? It must be remembered that an assistant medical officer is expected to communicate through the superintendent with his committee, and as their deliberations are in private, the superintendent's side of the question is liable to be the only one taken cognizance of. Insanity itself is nearly three times more rife amongst the celibate than the married; one cannot believe that any committeeman knowing this fact, together with the many other dangers that asylum medical officers are subjected to, could not but appreciate the necessity of almost compelling asylum physicians to be married men. It is above all things necessary that those in authority in insane asylums should themselves be sane.

Does the superintendent identify himself sufficiently with his professional brethren? Does he look on his colleagues as a class apart, and not consider their dignity, status, etc., as identical with his own?

It is to be hoped that this matter will be taken up by the British Medical Association, and pressure brought to bear on those who are really responsible. Many medical men in the past have had their lives wrecked through the evils attendant on the present state of the asylum service, and reforms are long overdue. In the interests of the patients, is it too much to ask the Lunacy Commissioners to circularize the various local authorities with regard to reforms in the life of the asylums medical officer?—I am, etc.,

November 30th. X. A. M. O.

THE ORIGIN OF LIFE.

SIR,—Dr. Marcus Hartog asks whether I have "tried drying and heating" the organisms found in my tubes "to a dull red heat to see if they char," and my reply is in the negative, and that for two reasons. In the first place, the organisms are not taken from "carbon-free silica solutions." As I point out in a special section of my book *The Origin of Life* (Watts and Co., pp. 72–74), CO_2 would be contained in the distilled water and in the air above the solutions, not to speak of the possibility of the silicate of soda being contaminated with the carbonate of soda used in its preparation (see Roscoe and Schorlemmer's *Treatise on Chemistry*, vol. ii, part 1, p. 129).

The paucity of the carbon within the tubes is supposed by me to account for the fact that the organisms found are only met with in such small numbers. This latter fact supplies the second reason why I have never attempted to do what Dr. Hartog suggests. Such a procedure would not have been possible with minute microscopic organisms, in very small groups, in the midst of clouds of deposited silica.

I am concerned more with facts than with explanations, so that, after considering the question, all I could say was this: "Taken together, these facts are certainly very suggestive that silicon has replaced carbon, in part at least, in the formation of the protoplasm entering into the constitution of the organisms found within the experimental tubes." On p. 65 of the same book there is a hint as to how this all-important constituent of the solutions may act in leading to the *de novo* production of living units.—I am, etc.,

The Athenæum, S.W., Dec. 9th. H. CHARLTON BASTIAN.

NEW DRUGS.

SIR,—In your issue of November 30th Dr. Stephens, of Swansea, casts ridicule on Professor Dixon's statement that no useful drug has been introduced except by a man who has a laboratory, and submits his own case as an example of a general practitioner, without a laboratory, who has introduced two new drugs—namely, calcium iodide and calcium permanganate.

It would be interesting to know what claim Dr. Stephens has to be the introducer of permanganate of lime. My father—Mr. H. Bollmann Condy, of Battersea—introduced in the Fifties a whole series of the permanganates, including the lime compound, which he for years advertised in the medical journals as liquor calcis permanganatis. It was included in his exhibits at the International Exhibition, 1868, was mentioned by Professor Baron A. W. von Hofmann in his report on the products of the Chemical Section, and attracted the attention of Dr. Frankland, Dr. Letheby, Professor von Liebig, Playfair, and many other medical authorities. In 1862, and again in 1867, Mr. H. B. Condy was awarded medals for the introduction of the permanganates, including permanganate of lime, which he was the first to manufacture. These are surely credentials to the title of "introducer."—I am, etc.,

London, W.C., Dec. 6th. H. J. B. CONDY.

SIR, Had I been aware of the fact that Professor Dixon has established a definite relationship between ionization and therapeutic action I should have known that when he speaks of drugs he means elements.

Quinine nitrate, however, can hardly be described as an inorganic salt, nor does one expect to get ionization in colloidal solutions.—I am, etc.,

Swansea, Dec. 9th. G. ARBOUR STEPHENS.

THE twelfth annual meeting of shareholders of the Birmingham Crematorium, Limited, was held on December 5th. The annual report for the year, which ended on October 31st, was presented. During the period to which it related there were 41 cremations, as against 42 for the preceding year and 37 for the year 1910. The total number of bodies incinerated since the opening of the crematorium in 1903 is 262. During the year lengthy negotiations took place with the Corporation in regard to the possibility of the purchasing the company's business and undertaking, but the Corporation being unwilling to purchase, the negotiations came to nothing.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Degree.

THE following degree has been conferred:

D.M.—W. D. Sturrock.

Examination.

The following candidates have been approved at the examination indicated:

D.P.H.—*Part I:* J. C. Barucha, A. G. Macfarland, L. J. J. Orpen, H. G. T. Truscott Major. *Part II:* R. Donald, A. H. Tebbutt. *Both parts:* W. B. Hill, A. E. Jerman.

UNIVERSITY OF CAMBRIDGE.

Diploma in Psychological Medicine.

REGULATIONS for the examination for the diploma in psychological medicine have been prepared.

The examination will be in two parts. Any person whose name is on the *Medical Register* is admissible to Part I of the examination, which will consist of a paper and a practical and oral examination in the anatomy and physiology of the nervous system, and a paper and practical and oral examination in psychology. A syllabus of the subjects has been drawn up.

Candidates for Part II of the examination must at the time of entry be registered medical practitioners of not less than two years' standing, and must produce evidence of having had twelve months' clinical experience. The special board for medicine has suggested that this clinical experience should have been gained in a registered mental hospital of the United Kingdom, or in an asylum in the United Kingdom, or some other institution or licensed house recognized by the university, but this detail has not yet been formally passed by the Senate. The second part of the examination will consist of a paper, and clinical and oral examination in neurology, a paper in psychiatry, lunacy law, and asylum administration, and a paper giving a choice of subjects for an essay in psychiatry and a clinical and oral examination in that subject.

The examinations for the diploma will be held once in each year. There will be an examination for Part I beginning on June 3rd, 1913, and for Part II beginning on July 1st, 1913. In 1914 and in subsequent years the examinations for Part I will be held in Cambridge during May or June, and for Part II in London during March or April. A candidate who passes both parts of the examination will receive a diploma testifying to his competent knowledge of psychological medicine. Applications for further information should be addressed to Dr. C. S. Myers, the Psychological Laboratory, Cambridge.

The following degrees have been conferred:

M.D.—Alfred Whitmore.
M.B.—K. R. Armstrong.

UNIVERSITY OF LONDON.

A MEETING of the Senate was held on November 20th, the Vice-Chancellor (Dr. Herringham) presiding.

Appointments.

Dr. Sandwith was appointed External Examiner in Tropical Medicine for the year 1912-15, to complete the period for which the late Dr. Duncan was originally appointed.

The Vice-Chancellor (Dr. W. P. Herringham), Sir Alfred Pearce Gould, K.C.V.O., and Sir David Ferrier, F.R.S., have been elected chairmen of the Civil Service Committee, the Graham Legacy Committee, and the Physiological Laboratory Committee respectively.

D.Sc. Degrees.

The D.Sc. degree in Bio-chemistry was granted to Dr. Casimir Funk, of the Lister Institute of Preventive Medicine, and in Psychology to the Rev. Dr. F. A. Powell Aveling, of University College.

New Board of Studies.

In view of the increase of the provision for sociological teaching and research now under the control of the university, due mainly to the successive benefactions of Mr. Martin White and the recent endowment made by Mr. Ratan Tata, a new board of studies in sociology has been constituted as from January 1st next.

Examinerships in the Faculty of Medicine.

Notice is given that there are vacancies for one examiner in each of the following subjects: Medicine, Surgery, Forensic Medicine and Hygiene, State Medicine, Anatomy and Physiology, and two vacancies in Pharmacology.

Course in Physical Anthropology.

A course of lectures and practical instruction on physical anthropology will be given in the anatomy departments of University College and King's College by Professor D. Waterston and Dr. D. E. Derry. The course will begin on Tuesday, January 14th, at 4 p.m., at University College, and will comprise the following branches of the subject: Cranioscopy, craniometry, osteometry, anthropometry (on the living subject), estimate of stature, age and sex from bones, comparison with higher mammals (especially Anthropoidea), and race distribution and characteristics. Further particulars may be had on application to the Secretary of King's College or to the Secretary of University College.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examination indicated:

Diploma in Public Health.—D. Adams, J. M. Bennett, *L. Bousfield, Captain, R.A.M.C., J. Burke, W. H. Date, M. Golding, Alice W. Maclean, A. E. S. Martin, A. S. Millard, W. M. Morrison, R. M. Wishart.

*Passed with honours.

Obituary.

WALTER BERNARD, F.R.C.P.I.,

LONDONDERRY.

DR. WALTER BERNARD died suddenly at his residence, Buncrana, near Londonderry, on December 6th. His father was a captain in the old 60th Rifles, and marched with the reinforcements into Brussels on the evening of the battle of Waterloo, but was too late to take part in the memorable action.

Walter Bernard, who was born on May 1st, 1827, at Newmarket, county Cork, became M.R.C.S.Eng. in 1852, a Licentiate of the Royal College of Physicians of Ireland in 1858, and a Fellow of the same college in 1876. He was one of the few remaining members of the medical profession who took part in the Crimean war. He served as a civil surgeon throughout the entire campaign, and attended the wounded on the field of Inkerman. He saw the havoc worked amongst the British troops by small-pox and cholera, and in speaking of the campaign used to say that for every man shot fifty died of disease during the terrible winters of 1854 and 1855. On the voyage home from the Crimea he saved a man's life from drowning, and was presented with the Royal Humane Society's certificate. Dr. Bernard had practised in the north of Ireland for sixty years. For many years he enjoyed a large practice in Londonderry, and held many public appointments. He was a very old member of the Londonderry Branch of the British Medical Association. He leaves a widow. His life was deeply scarred by three great sorrows, the deaths of his three children.

EDWARD ALFRED BIRCH, M.D., F.R.C.P.,

INDIAN MEDICAL SERVICE.

BRIGADE-SURGEON EDWARD ALFRED BIRCH, of the Bengal Medical Service, retired, died in London on November 27th, aged 72. He was born on September 24th, 1840, educated at the City of Dublin Hospital and in the school of the Royal College of Surgeons in Ireland, and took the L.R.C.S.I. in 1861. Later on he acquired many other diplomas, the L.K.Q.C.P. in 1865, the F.R.C.S.I. in 1866, the D.P.H. Cambridge in 1878, the M.D. Brussels in 1879, the M.R.C.P. London in 1886; in 1892 he was elected F.R.C.P. London. Immediately after qualifying, he entered the Royal Navy as Assistant Surgeon in 1861, and served in the China war, being present at the actions of Kagosima and Simonoseki, in Japan. In 1865 he resigned his commission in the navy, and in the following year entered the I.M.S. as Assistant Surgeon on March 31st, 1866. He was promoted to Surgeon on July 1st, 1873, to Surgeon-Major on March 31st, 1878, and to Brigade-Surgeon on April 3rd, 1891; and retired from October 4th, 1893. In India he saw no war service, but spent almost all of his career in civil employment in Bengal, where he served in the Bihar famine in 1874, then for several years as Civil Surgeon of Hazaribagh, and from 1882 to 1889 as Superintendent of the Presidency European General Hospital in Calcutta. In 1889 he went home on furlough. On his return from leave he was appointed Principal of the Medical College, Calcutta, and held that post till he retired, except for a short interval in which he acted as Inspector-General of Civil Hospitals, Bengal.

Birch's name will, however, probably be best remembered as that of the author of a book in everyday use in India, consulted by most civil surgeons in their professional capacity, and by most other officers as parents,

The Management and Treatment of Children in India. This may be called one of the ironies of life, for Birch was not the original author of the book, which is probably the oldest professional work still in constant and regular use. It was written by Surgeon Henry Hurry Goodeve, of the Bengal Medical Service, and published on March 15th, 1844, as a very small volume, privately printed, under the title *Hints for the General Management of Children in India, in the Absence of Professional Advice.* A second edition was called for in less than six months, and issued on September 1st, 1844; a third followed in October, 1852, and a fourth in 1856. Even this fourth edition is a volume of the smallest octavo size and of only 138 pages. The fifth edition was edited by S. C. G. Chuckerbutty; the sixth by Joseph Ewart in 1872. The seventh edition, in 1879, was entirely rewritten by Birch, and this was the first with which his name was associated. A second edition was published in 1886, a third in 1895. By this time the book had increased in size to a large octavo volume of 476 pages; little if any of Goodeve's original work remained, and his name had been dropped. A fourth edition followed in 1902, and a fifth edition of Birch, which is the eleventh edition of Goodeve, is now in preparation, edited by Lieutenant-Colonel C. R. M. Green, I.M.S.

HENRY MARTINEAU GREENHOW,

SURGEON-MAJOR (RETD.), BENGAL MEDICAL SERVICE.

SURGEON-MAJOR HENRY MARTINEAU GREENHOW, of the Bengal Medical Service (retd.), died at Esher, Surrey, on November 26th, aged 83. He was born on September 26th, 1829, and received his medical education at Newcastle and at University College, London, taking the M.R.C.S. in 1853, and subsequently, when on furlough in 1859, the F.R.C.S. of both London and Edinburgh. He entered the Indian Medical Service as Assistant Surgeon on January 20th, 1854, was promoted to Brevet Surgeon, for his services in the Mutiny, from September 7th, 1858, was absorbed in that rank in regular course on January 1st, 1866, became Surgeon-Major on July 1st, 1873, and retired on August 20th, 1876. After his retirement, Dr. Greenhow tried his hand at literature, and was the author of several novels of Anglo-Indian life—*The Bow of Fate, Brenda's Experiment, The Tower of Ghilzai, The Emperor's Design,* and *Leila's Lovers.*

Dr. Greenhow served in the Indian Mutiny, and took part in the memorable defence of the Lucknow Residency. He was mentioned in the dispatch, dated September 26th, 1857, of Brigadier Inglis, commanding the Lucknow garrison; also in the Bengal General Order of December 8th, 1857, and in the *London Gazette* of January 16th, 1858. He received the Mutiny medal with two clasps, furlough for eighteen months counting as service, and, in addition, was credited with one year's extra service for pension as one of the Lucknow garrison.

Dr. Greenhow was the last survivor of the medical officers who took part in the defence of the Residency. The other medical officers mentioned in the dispatch of Brigadier Inglis were Surgeon William Brydon, 71st Native Infantry, the sole survivor of the retreat from Kabul in 1842, who was severely wounded, being shot through the loins while seated at dinner in Mr. Gubbins's house on July 21st, 1857; Surgeon John Campbell, of the 7th Light Cavalry; Surgeon George Mathieson Ogilvie, Sanitary Commissioner; Assistant Surgeon Boyd, 32nd Foot; Assistant Surgeon Joseph Fayrer, Civil Surgeon; Assistant Surgeon Samuel Bowen Partridge, 2nd Oudh Irregular Cavalry; Assistant Surgeon Robert Bird, Bengal Artillery; and Assistant Surgeon Edmund Darby, who died of wounds on October 27th. Surgeon John Baumatyne Macdonald also took part in the defence, and died of cholera in the Residency on August 8th. Boyd was an officer of the Medical Department of the British Army; Ogilvie was a member of the Bombay Service; all the others were Bengal men. Brydon, Campbell, and Ogilvie received the C.B.; Fayrer, Partridge, Greenhow, and Bird were all specially promoted to surgeon by brevet.

WE regret to announce the death of DR. ROBERT FLETCHER, whose name is known to the whole medical world by his association with Dr. J. S. Billings in the compilation of the *Catalogue of the Surgeon-General's Library* at Washington. Fletcher was an Englishman by birth, having been born at Bristol ninety years ago. He received his medical education at the old Bristol Infirmary and the London Hospital, and was admitted M.R.C.S.Eng. in 1844. He then went to America, and took the degree of M.D. at the Columbia University. He served as surgeon in the Civil War, and retired with the rank of Lieutenant-Colonel. He was afterwards promoted to be Colonel in recognition of his services in the war. He took a prominent part in establishing the Army Medical Library at Washington. Besides his work on the *Index Catalogue* of that library he was also with Dr. Billings in the compilation of the *Index Medicus.* When that periodical was revived, under the auspices of the Carnegie Institution of Washington, Fletcher was appointed editor. He was the author of several papers on anthropology and folklore, and his literary interests extended to the old English poets and dramatists. He lectured on medical jurisprudence at Washington, and later at the Johns Hopkins School, Baltimore. In 1910 the Council of the Royal College of Surgeons of England conferred upon him the honorary medal of the College for "distinguished labours eminently conducive to the improvement of natural knowledge in the art of healing." In a letter of appreciation of Dr. Fletcher and his work, quoted in the *Morning Post,* Sir William Osler says: "There were few men in the profession in the United States more widely respected, and those who had the privilege of his friendship knew him as a man in whom were combined in an exceptional way culture and character."

MAJOR-GENERAL ROBERT MAITLAND O'REILLY, Surgeon-General of the United States Army from September 7th, 1902, to January 14th, 1909, died of uraemia on November 3rd. He was born at Philadelphia in 1845. He was educated in the public schools of his native city, and his medical studies, at the University of Pennsylvania, were interrupted by the outbreak of the Civil War. In August, 1862, he was appointed in the military hospital service as an acting medical cadet, serving in various military hospitals up to the close of the war. Resuming his medical studies, he graduated in 1866. In May, 1867, he was appointed assistant surgeon in the army, with the rank of First Lieutenant, and thereafter his service was continuous and his promotion rapid. He saw a good deal of field service in the expeditions against the hostile Sioux in 1874 and 1890. General O'Reilly was physician to the White House during the two administrations of President Cleveland, of whom he was a warm personal friend. At the outbreak of the Spanish-American war he was appointed Chief Surgeon of the First Independent Division, and in December, 1898, he went to Jamaica to study tropical hygiene in reference to the American occupation of colonial possessions. He was a delegate to the International Conference for the Revision of the Geneva Convention which met at Geneva, Switzerland, in 1906. In 1903 General O'Reilly collaborated with Major C. Borden in a monograph on *Military Surgery* which was published in the fourth edition of Keen's modern textbook. General O'Reilly was a man of great personal refinement, and he did much to elevate the *personnel* and status of the Army Medical Corps through his tact, his unfailing courtesy, and his charming manners.

SURGEON-GENERAL JOHN EDWARD MOFFATT, who died at Upper Rathmines, Dublin, on September 20th, aged 80, had a singular and unusual career—thirty years in the Army and thirty years in the Church. He took the diploma of L.R.C.S.I. in 1850 and subsequently the M.D. of McGill University, Montreal. Entering the Army Medical Department as Assistant Surgeon on March 14th, 1851, more than sixty years ago, he served in the Kaffir war of 1851–53, and received the medal therefor. He retired from the army as a Deputy Surgeon-General on September 27th, 1882, with a step of honorary rank. Soon after his retirement in 1882 he was ordained as curate of Maryleborough, Ossory, and subsequently for twenty-six years held the incumbency of Milltown, Dublin. Such a combination of a medical with a clerical career, though certainly uncommon, is not unprecedented. John Leyden, the famous Oriental scholar, had been licensed as a preacher of the Church of Scotland before he thought

of entering the Indian Medical Service, which he did in 1802, after taking the degree of M.D. at St. Andrews, and the diploma of L.R.C.S.Edin., with only six months' study. John Taylor, after taking the M.D. at Edinburgh in 1804, went to Madras as a missionary for the London Missionary Society, was appointed Assistant Surgeon in the Bombay Service in 1808, and confirmed on March 26th, 1809. He died at Shiraz in Persia on December 6th, 1821. Buchan Warren Wright, who entered the Madras Service in 1829, and resigned in 1837, and William French Clay, who joined the Bombay Service in 1848, and resigned ten years later, both spent the rest of their lives as ordained clergymen of the Church of England. And the first medical missionary in India, John Thomas, a colleague of the famous Serampur missionaries, Carey, Marshman, and Ward, first went to India in 1782 as surgeon of the Indiaman, *Earl of Oxford*.

Brigade-Surgeon THOMAS STICK VEALE, late of the Bengal Medical Service, a veteran of the Crimea and of the Mutiny, died at Croydon, on December 1st, aged 81. He was born on March 25th, 1831, received his medical education at University College, London, and took the M.R.C.S. in 1854, the L.S.A. in 1855, and the M.D. of St. Andrews seventeen years later—in 1872. As soon as he had qualified he went to the East, and during the Crimea war in 1854–5 served in the Army Civil Hospital at the Dardanelles. Entering the I.M.S. as Assistant Surgeon on January 27th, 1858, he became Surgeon on January 27th, 1870, and Surgeon-Major on July 1st, 1873, retiring with a step of honorary rank on February 22nd, 1885. His whole service in India was passed in military employ. He served in the Indian Mutiny towards its close, in 1858, and gained the Mutiny medal, on the North-East Frontier of India, in the Bhutan campaign of 1865–66, receiving the Frontier medal, and in the second Afghan war in 1879–80, earning a third medal with clasp.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Professor Karl Kopp, head of the Dermatological Policlinic of the University of Munich, aged 57; Dr. J. E. Newcomb, Professor of Laryngology in Cornell University, aged 55; Dr. Seydel, Emeritus Professor of Forensic Medicine in the University of Koenigsberg, aged 74; and Dr. Ernest Tavel, Professor of Bacteriology and afterwards Extraordinary Professor of Surgery in the University of Berne, in his 55th year.

Medical News.

THE dinner of the West African Medical Staff will be held on January 15th at the Walnut Room, Grand Hotel, Charing Cross, at 7.30 p.m.

AT the meeting of the Royal Microscopical Society, at 20, Hanover Square, on Wednesday next, at 8 p.m., Mr. Frederick Enock will give a lantern demonstration on insect intelligence.

MR. A. W. MAYO ROBSON, C.V.O., F.R.C.S., Major, R.A.M.C. (T.F.), has been appointed a Knight of Grace of the Order of St. John of Jerusalem in England, and Dr. W. D. Drydone-Jack and Dr. Thomas Nelson have been appointed Esquires of the same order.

THE report adopted at a meeting of the Council of the Metropolitan Hospital Fund on December 9th showed a total collection for the current year of £67,972, of which £62,401 has been distributed among various institutions. In this the fortieth of the operations of this fund, the sum collected was £957 in excess of that received in the previous year. On the other hand, the total sum collected actually in places of worship was only £35,866, this being nearly £1,200 less than in 1911. Before the meeting concluded a special honorarium of £100 was voted to enable an extended holiday to be taken by Sir Edmund Hay Currie, the Secretary of the fund, who is now 79 years of age, and has shown great devotion to his work.

MR. T. WINGATE TODD, who since 1910 has been Lecturer in Anatomy in the University of Manchester, has been appointed Henry Willson Payne Professor of Anatomy in the Medical Department of the Western Reserve University, Cleveland, Ohio. Mr. Todd, who graduated in 1907 with first-class honours at the final examination for the degrees of M.B. and Ch.B. obtained amongst other distinctions, whilst a student in the university, the Tom Jones Scholarships in Anatomy and in Surgery. After graduation Mr. Todd was appointed Demonstrator in Anatomy, under the late Professor Alfred H. Young. In 1909 he was House-Surgeon at the Manchester Royal Infirmary.

THE Metropolitan Asylums Board has made arrangements for a three months' course of lectures and demonstrations in hospital administration for the benefit of candidates for the diploma in public health. They will be given at the Eastern Hospital, Homerton, by Dr. E. W. Goodall, on Tuesdays and Fridays, beginning January 7th, 1913; at the North-Western Hospital, Hampstead, by Dr. J. MacCombie, on Mondays and Thursdays, beginning Monday, January 6th; and at the Grove Hospital, Tooting, by Dr. J. E. Beggs, on Thursdays and Saturdays, beginning January 4th. The fee for the course is 3 guineas. A prospectus can be obtained from the Clerk to the Metropolitan Asylums Board, Embankment, E.C.; the class can be joined at any time, provided it is completed during the class beginning in April, 1913.

THE Royal Surgical Aid Society celebrated its jubilee last week by a luncheon held at the Cannon Street Hotel (the President, Lord Aberdeen, presiding), and a meeting at the Mansion House, with the Lord Mayor (Sir David Burnett), in the chair. Reference was made during the proceedings to the fact that the King, who is the patron of the society, has granted the use of the prefix "Royal" in its title. Tributes to the useful work of the Surgical Aid Society were paid by the Bishop of London and members of the clergy, and Lord Aberdeen pointed out that a very large proportion of the income of the organization went directly to the alleviation of suffering, working expenses being kept at a low percentage. Sir Frederick Treves, in moving a vote of thanks to Mr. Muirhead Little, Mr. T. H. Openshaw, and Mr. E. Laming Evans, the surgeons of the society, and to the honorary surgeons of branches, said he could testify to the immense value of the provision made by the society in completing the work of the hospitals. A special fund is to be raised in commemoration of the jubilee.

THE annual meeting of the Hospital Almoners' Council took place at Caxton Hall on Friday, December 6th, Sir James Goodhart, Bart. (Vice-President), in the chair. The report draws attention to the fact that the council now numbers among its members many representatives of London and provincial hospitals. During the past year almoners trained by the council have been appointed at two London hospitals, while others have secured posts as assistants. Two candidates are being specially trained for posts in the north of England and nine others are now in training. The chairman, in moving the adoption of the report, drew attention to the work of the council in stimulating a demand, which it is now called upon to supply, and made a reference to the importance of the recommendations of the special committee on out-patients of King Edward's Hospital Fund for London as they affect the future of the movement. Particular attention was drawn by various speakers as to the necessity of definite training and to the danger of the appointment of persons unable to benefit by the experience of their predecessors. The need for this training had been realized by those hospitals which had sent almoners to be trained by the council.

TO meet the feeling which it believes to exist among social workers for an elementary knowledge of the foundations of eugenics, the Eugenics Education Society has organized a course of lectures on the groundwork of eugenics which will be held at the Imperial College of Science, South Kensington, during next year. In the spring term (January 14th to March 20th) there will be a course of elementary biology with special reference to the reproductive system conducted by Mr. Clifford Dobell, M.A., Lecturer in Zoology, Imperial College of Science. The course will include practical and experimental work in laboratory. In the summer term (April to July) a course on heredity, including evolution, genetics, and heredity in man will be conducted by Mr. R. C. Punnett, F.R.S., Arthur Balfour Professor of Genetics in the University of Cambridge. In the autumn term (October to December) the course will deal with statistical methods applied to some problems in eugenics, and will be conducted by Mr. G. Udny Yule, University Lecturer in Statistics, Cambridge. The fee for the complete course of three terms is ten guineas, and for each separate term four guineas. Further particulars can be obtained on application to the Honorary Secretary of the Society, 6, York Buildings, Adelphi, W.C.

AT the annual dinner of the past and present students of the National Dental Hospital, on November 29th, Sir John Rose Bradford, who was in the chair, described dental surgery as a branch of general surgery which became specialized early, and showed, like other specialized branches, a certain tendency to drift away from its parent. It was no doubt true that dental surgery owed much to medicine and surgery, but it was equally true that dental surgery had reciprocated. The work done in connexion with pyorrhœa alveolaris and other septic conditions of the mouth had opened the eyes of clinicians to the dangers of apparently trivial affections. Again, too, though it was true that discoveries in medicine and pathology were doing much to render tropical countries more safely habitable, one of the most important questions that arose when the propriety of a given individual living in the tropics was under consideration was of a dental, not of a purely medical order: a sound mouth and teeth which could be got into good order were of the highest importance in enabling an individual to retain his health in hot climates and more or less uncivilized surroundings. A satisfactory account of the progress of the school was supplied by its Dean, Mr. Sidney Spokes. Some 20,000 patients had attended during the concluded year, so that there was ample clinical material, and none of the students sent up from the school had failed at their examination: one of them had been awarded the Smith-Turner exhibition, another taking second place. A scheme of amalgamation for teaching purposes with one of the medical schools of the university had been under consideration, but a definite conclusion had been postponed until the issue of the report of the Royal Commission on University Education in London. Reference to the report was subsequently made by Sir Alfred Pearce Gould, who said that he did not think that any medical or dental school that was doing good work had any reason to be nervous. Schools directly connected with the university might perhaps find it necessary to adopt certain changes, but he was certain that they would welcome any suggestion which spelt improvement, for every one recognized that methods of providing medical education had not reached their highest development. Other speakers during the evening were Dr. J. W. Pare, Mr. E. N. Perham, and Mr. R. R. Ward, the latter urging students to add to their licence in dentistry a degree or diploma in medicine.

THE reproduction of daylight conditions in artificial illumination was once the ideal of the illuminating engineer. But it seems now to be realized that the visibility of the orb of the sun in the heavens is not an advantage, and that diffused or reflected light is better. In the most modern lighting systems the actual light source is entirely hidden from view. At first the sources of light were tucked away in grooves around the walls a little below the level of the ceiling, but this tentative method of indirect lighting has given place to something more ambitious. In a paper read before the Illuminating Engineering Society on December 3rd, Mr. T. W. Willcox and Mr. H. C. Wheat described the system of illumination which is known in this country as "eye rest" and in America as "eye comfort." The lighting fixture in this [illegible] the form of a bowl containing highly efficient [illegible]. This bowl, which has an opaque under surface, [illegible] led from the ceiling of a room, and the whole of the light is thrown upwards. Thus by means of the excellent diffusing medium of the ceiling, with its large area of distribution, a gentle, glareless light, with softened shadows, is obtained uniformly over the room. The authors were mainly concerned with [illegible] and æsthetic questions, and the main physiological consideration they advanced was that direct brilliant sources of light in the line of vision cause the eye to tire and weaken more quickly than diffused light, and that the nerve energy expended in bringing protective mechanism into play produces brain fatigue. On the other hand, with indirect lighting in [illegible] only visible source of illumination, [illegible] striking directly into the eye.

It is a moot point whether the existence of glare, as in ordinary systems of lighting, makes it necessary to raise the intensity in order to produce a required visual acuity, but if this is the case a system of indirect lighting by which glare is avoided would require for the same visual [illegible] of illumination. The authors [illegible] of indirect lighting in offices [illegible] especially urged its adoption in [illegible] light sources are intruding to [illegible]. The main objections urged against the [illegible] the possible discomforts of an excessive [illegible] the flatness of the ceiling, the flatness of the effect, [illegible] of the light and the increase of cost. These

Letters, Notes, and Answers.

QUERIES.

SAMARITAN asks for advice as to the etiology and treatment of morning sickness in the early months of pregnancy.

SILVER desires references to the occurrence of abscess of the prostate gland or vesiculitis with abscess following the injection of silver nitrate to the prostatic urethra.

ENQUIRER asks for information as to the value of the treatment of malignant tumours by Antimeristem-Schmidt.

VARICOSE ULCERS.

J. H. M. asks for suggestions in the treatment of a case of long-standing varicose ulcers, two of them some inches in diameter. The patient is a man aged 62. He has had varicose ulcers for several years, and has been treated with all the usual lotions and ointments, Unna's paste, a solution of zinc sulphate, 4 per cent., and lastly with a mixture of acid carbolic liquidum and liquor picis carbonis. His occupation necessitates him getting about to a certain extent, but most of the day he is sitting in an office. Just lately the ulcers have commenced to spread rapidly, for no particular reason. Is calcium iodide, internally, any good in this class of ulcer?

INCOME TAX.

A. B., who resides in furnished apartments, has been applied to for payment of income tax, Schedules A and B, though he has no property.

The demand is evidently made through a mistake on the collector's part, which he will no doubt admit on the facts being explained.

TRIAL LENSES.

J. H. H. has a set of spherical lenses for testing refraction. He has no cylindrical lenses, and desires to know what selection of cylindrical lenses would be most useful to purchase—say a dozen in all.

The smallest outfit which would be of any practical use would be lenses running from 0.25 to 3 in quarters, and in halves from 3 to 5 or 6. They would have to be both + and − in these strengths. A double set of each would be very desirable if any real use were made of them. That would mean either 36 lenses or 72. Any less number than 36 we should not advise, and this would only mean a single set of + and a single set of − lenses.

ANSWERS.

VINDEX. Myopia may become apparent between the ages of 12 and 18 "indeed, at almost any age."

DR. H. J. THORP (Ipswich) writes, in reply to "Ego's" inquiry in the BRITISH MEDICAL JOURNAL of November 16th, p. 1428, for treatment of dilatation of the stomach, to suggest: (1) Lavage. (2) A well-fitting bandage or abdominal belt. (3) Keep up a free action of the large intestine by mild aperients and the following mixture: Sodæ bicarb. gr. x, acid. carbolic. mxx, tinct. nodi aqv. glycerine ʒss. aq. menth. pip. ad ʒi; t.d.s. (4) Starch food and saccharine substances should be taken sparingly.

LETTERS, NOTES, ETC.

TREATMENT OF WHOOPING COUGH.

DR. CHAS. EDW. WINCKWORTH (Shefford, Beds), writes: Your correspondent appears to have been in error in supposing that the dose of potassium bicarbonate in the treatment of whooping cough is due to the CO_2 that it contains. Many years ago the late Sir Morell Mackenzie and others made some useful experiments with this salt. It was found that its value consisted in its alkalinity, which lessened the viscidity of the phlegm. It appeared to have a decided expectorant effect upon the mucous lining of the larynx, and was of service in this respect to the disease. In 1874 I read a small book on pertussis, written many years before that date, that vinegar was an improper remedy for that disease, unless there happened to be bronchitis in addition, because it irritated the larynx and increased the cough. My father forthwith ordered the children's vinegar to be changed for a mixture containing potassium bicarbonate coloured with cochineal whenever an epidemic of whooping cough occurred. It appeared to be a useful remedy, and the remedy had unbounded faith in it.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

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SOME MANIFESTATIONS OF A HEALTHY HEART IN THE YOUNG FREQUENTLY TAKEN AS INDICATIONS FOR TREATMENT.

By JAMES MACKENZIE, M.D., LL.D., ETC.,

WHEN I was asked to take part in the discussion on the treatment of heart disease in the young, I cast my mind back on my experiences to see if I could usefully join in the discussion. On reflection, I was struck with the fact that I had seen a large number of young people who had been subjected to many forms of treatment because of the presence of certain phenomena which my experience had taught me were signs neither of disease nor of impairment. When I reflected further on why it was that members of our profession frequently misapprehended the significance of cardiac phenomena, I could only attribute it to the state of confusion in which cardiac symptomatology has been involved, and the manner in which it is taught in the schools. It seemed to me, therefore, that it might be profitable to place before you the results of some observations which I have made in the endeavour to appreciate the significance of certain cardiac phenomena, inasmuch as the first step towards treatment is a knowledge of what you are going to treat.

The Essential Purpose of a Medical Examination.

The main object of a physician's examination is to determine the value of certain symptoms of which the patient may complain, or the value of certain signs which the physician may detect. After the examination the essential questions which the physician has to answer before he considers the question of treatment are: What bearing has such a sign or symptom on the efficiency of the circulation? Does their presence indicate heart failure, or do they foreshadow its occurrence at some future period?

In order to show how difficult it may be to answer these questions I would refer to a deficiency in our knowledge which confuses and misleads those who seek an answer.

How this Purpose Fails.

(*a*) *In the Case of Irregular Action of the Heart.*—Let me illustrate this in a very simple fashion. Let us suppose a doctor detects in his patient or himself an irregular action of the heart, and he wishes to understand its significance. In other words, he wishes to answer the questions which I have just enumerated. Does the irregularity indicate heart failure at the present time, or does it foreshadow its possible onset at some future period? He turns to his textbook for enlightenment, but fails to find the answer to his questions. He may ransack a medical library and even then he will fail to get an answer, or the slightest suggestion as to how to approach the subject. Some large books ignore the subject, others deal with it in so perfunctory a fashion that no clear perception is forthcoming, while in the remainder the subject is dealt with in such a way that it merely bewilders the reader. Thus he will find such statements as that irregular action of the heart is of little or no importance; then a few pages further on the same writer will state that he rejects candidates for insurance if they show an intermission of the pulse at rare intervals. In the description of grave conditions, a passing allusion to irregular action of the heart may convey the idea that it is one of the signs of a serious condition, but there is not the slightest hint given to help the reader to differentiate the innocent from the serious.

(*b*) *In the Case of Murmurs.*—If it is desired to estimate the significance of a murmur, the same absence of reliable information is found here. This subject, which has received such long and exhaustive study, is invariably dealt with in such a manner that it would be impossible for the reader to glean information which might enable him to answer the questions which I have put, except perhaps in the case of some murmurs associated with advanced disease. Consider, for instance, the origin of the present day conception of the significance of heart murmurs. Within a few years of the discovery of the stethoscope the murmur was looked on as a sign of disease. This was at a time when the cause of the murmurs was not understood and before any one had watched individual cases long enough to find out what the influence was on the life of the person affected. Doubtless much has been done since then to throw light upon this subject; nevertheless, the early teaching has so affected the profession that the great majority of medical men to-day are labouring under the erroneous doctrines taught in the early days of auscultation, and so look upon murmurs as evidences of disease or impairment of the heart. Upon this imperfect conception of the meaning of murmurs another idea has been based—namely, the back pressure theory of heart failure. While this theory contains some element of truth, it is so applied as to give a totally false conception of heart failure in the great majority of cases. Thus we find cases with a mitral murmur, systolic in time, diagnosed as mitral disease, and, if there are no signs of heart failure, the individual is said to have "mitral disease, with good compensation." The very term "compensation" conveys the idea of impairment, and that a special effort of the heart has enabled it to combat this weakness. It is in consequence of this misleading conception of heart failure that we find the great majority of heart affections labelled by the murmurs which the heart happens to make, although the cause of the murmurs has nothing to do with the failure of the heart.

(*c*) *In the Matter of Prognosis.*—This great deficiency in our knowledge of cardiac matters comes out with irresistible force when an attempt is made to deal with prognosis. Practically every writer who gives the matter his serious attention is forced to admit that we do not possess the data on which to build a reasonable and sound prognosis. One of our greatest and most experienced clinicians, the late Sir William Gairdner, has accurately described the position of the medical examiner for life insurance in his method of estimating a life value. He says: "There is an incalculable element in most of the cases . . . which we deal with in the most curiously unsatisfactory way, either by rejecting the life altogether, or by putting on a big loading, which, it must be admitted, we assess upon no very sound or clear principles, or, on the other hand, by winking at the defect and passing it over." He points out that there are no reliable data on which to estimate the prognostic significance of murmurs and irregularities. This description of the absence of reliable data on which to base a prognosis holds good to-day, not only in life insurance, but wherever a prognosis is based on a physical examination.

I dwell with insistence on this great defect in our knowledge of the significance and meaning of cardiac phenomena, in order that you may better appreciate certain investigations which have been pursued with the purpose of clearing up these matters. I am far from saying that this deficiency has been made good, for that will require the continued labour of many observers; but there are certain lines which must be followed, if this object is ever to be attained, and these I will briefly indicate, and cite some of the results which have been achieved.

Method Employed to Find Out the Meaning and Significance of Signs.

Let us first consider irregular action of the heart. Shortly after entering general practice over thirty years ago, I was struck with the frequent occurrence of irregular action of the heart among my patients, but at that time the subject was dealt with in textbooks in such a way that no trustworthy estimate could be made of its nature or significance. I began in a very simple way to seek for some basis of classification, and was able to separate some of the irregularities into groups according to the different ways in which the chambers of the heart participated in their production. Later this subject was taken up by many other observers, who studied it both clinically and experimentally, and as a result of these labours irregular action of the heart, which until a few years ago was one of the most obscure subjects in clinical medicine, is now one of the best understood, and our knowledge is based upon sound physiological data. This separation of irregularities into groups according to the mechanism of their production is sometimes looked upon as being merely an academic exercise of little practical importance. As a

Read at a discussion on the treatment of heart disease in children at the Royal Society of Medicine on December 13th.

matter of fact it was a preliminary but absolutely necessary step to find out the bearing of these irregularities on the patient's present and future state.

How the Knowledge of the Significance of Irregularities was Acquired.

To find out the bearing of the different forms of irregularities on the patient's future necessitated a line of observation of much greater difficulty and perplexity. It entailed the watching of many individuals during long periods of years, observing young people growing up into manhood, seeing how the heart behaved during periods of strain, as hard bodily work, pregnancy and labour, illnesses, such as typhoid, pneumonia, influenza, and finding out how they reacted to remedies. When heart failure was present it was necessary to find what bearing the cause of irregular action had on the heart failure. In course of time I was able to suspect the cases in which certain irregularities would arise; these I kept in view, examining them from time to time, in order to detect the moment of onset of the irregularity, and also the changes which occasioned it. By this means, for instance, I was able to detect the changes which are coincident with the onset of the irregular heart, which we find in cases of auricular fibrillation. To give you some idea of the labour it has entailed to gain this limited amount of knowledge, I may say that I have taken tens of thousands of tracings, and the great bulk of these have been subjected to long and careful analysis. Such tracings are only incidents in the investigation, being invariably accompanied by a search, often prolonged, into other signs exhibited by the patient.

The Recognition of Irregular Action and its Significance.

To illustrate the importance of this work I shall direct your attention to the valuable information regarding some of the irregularities which has been obtained. The great majority of heart irregularities can be divided into four groups, all differing in the mechanism of their production and in their clinical significance.

(*a*) *The Pulsus Alternans.*—The first of these irregularities to which I would draw your attention is a form which is regular in its rhythm, a large beat alternating with a small one (Fig. 1). This irregularity, known as the

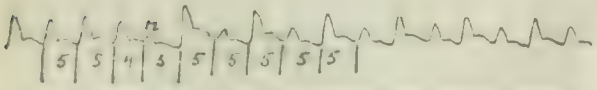


Fig. 1.—Tracing showing the alternate appearance of a large and small pulse beat—the *pulsus alternans*. The figures represent seconds, and the rhythm is regular except for the occurrence of a premature beat, *r*.

pulsus alternans, only occurs when there is great exhaustion of the heart muscle. It may be that the exhaustion is only temporary, as in the tachycardias which arise from an abnormal action of the heart, or it may arise from exhaustion due to such profound alterations in the heart muscle that it indicates in many cases an exhaustion so extreme that death will shortly follow.

(*b*) *The Irregularity of Auricular Fibrillation.*—The second of these irregularities is, as you will see, of a very



Fig. 2.—Tracing showing the disorderly character of the irregularity in auricular fibrillation.

disorderly kind (Fig. 2). It indicates the presence of fibrillation of the auricles, and from the point of view of the future life of the patient it has a very varied significance. I have collected over 1,000 cases of this form of irregularity alone, and it occurs in 70 per cent. to 80 per cent. of all the cases of heart failure with dropsy. Some of my patients have died within a few days of its onset; some have lingered for a few months; others have lived a crippled existence for years, while still others may have been little the worse for its appearance. I have endeavoured, by the study of other phenomena present, to find out the reason for these varied results, and I think we can now formulate with reasonable certainty the facts which guide us in a prognosis and the data on which to base a rational treatment.

(*c*) *The Extrasystole.*—The third form of irregularity is extremely common in adult life and rather infrequent in the young (Fig. 3). It is due to a premature contraction

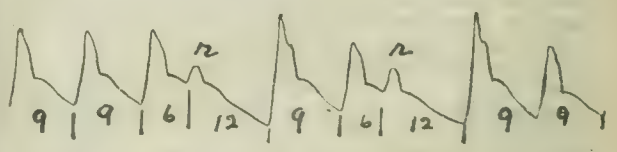


Fig. 3.—Tracing showing the occurrence of two premature beats or extra-systoles (*r*, *r*) in an otherwise regular heart. The figures represent tenths of a second.

followed by a long pause. The vast majority of people who show it are in good health and never suffer from heart failure. It may be present in heart affections and with serious heart failure, but an opinion of gravity should never be based on it alone, but on the presence of other signs of heart failure. When it is the only abnormal sign present it may be ignored, as far as its effect on the functional efficiency of the heart is concerned.

(*d*) *The Youthful Type of Irregularity.*—I wish to draw attention particularly to the fourth group—a group which is characterized by a variation in the length of the diastolic

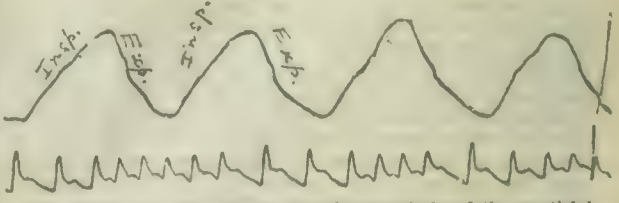


Fig. 4.—Tracing the irregularity characteristic of the youthful type. The phases of irregularity correspond in the main with the phases of the respiration (upper tracing), the slow period appearing during expiration.

period (Fig. 4). It is readily recognizable on auscultation by the varying length of the long pauses between the second and first sounds. So long may these be at times that the heart seems to miss a beat. It is frequently respiratory in rhythm, the slow beats occurring during expiration. At other times it may not be so accurately related to the phases of respiration, but it can sometimes be made so by getting the individual to breathe slowly and deeply. On classifying cases showing this irregularity I found the great majority of them were young people. Directing my attention to the occasion of its occurrence, I found that it would appear and disappear in the same individual for no perceptible reason. I found it so common that I have come to the conclusion that every healthy individual probably shows it at one time or another. I found it occurring most frequently and most markedly when the patient lay in bed after a febrile attack, but it is often found in boys and girls in perfect health. I have watched those showing it grow up and pass into adult life, and I have never found a single case where it has been associated with any form of heart failure, so that I now look upon it as being a physiological phenomenon and occurring in perfectly healthy hearts. How very important it is to recognize this view will be apparent later on.

The Significance of Murmurs.

In order to find out the significance of murmurs I followed the same lines as those I had pursued in determining the significance of irregularities. Here I shall not enter into the results of this inquiry into murmurs due to damaged valves, but shall restrict myself to those murmurs which are recognized as functional, and to those where it is doubtful whether they are functional or organic. These are always systolic in time, and their position of maximal intensity may be at the apex, base, or mid-sternum. The result of this inquiry showed that these functional murmurs in themselves were consistent with perfect health, and that their cause never led to the slightest sign of heart failure. Where these murmurs were associated with heart failure there were invariably evidences that the heart failure was the outcome of the myocardial condition and not of the supposed incompetent valves. In any given case with heart failure there was usually present some condition which impaired the functional efficiency of the heart muscle, and induced an exhaustion of it such as occurs in an exhausting illness, or with structural changes, as fibrous or fatty degeneration of the muscle wall. Now these conditions happen so rarely in the young, and when they do happen the evidences of actual disease are so striking, that I am justified in stating that functional murmurs in the young, in the absence of evidence of muscle affection, are signs neither of disease nor of impairment.

Irregularities and Murmurs Consistent with Perfect Health.

I have put this view to the test by watching a large number of individuals, and by following the lives of those showing these signs for such long periods that I have no hesitation in saying that murmurs and irregularities may be manifestations of a perfectly healthy heart in the young. The recognition of this fact is of great importance, for if the knowledge that healthy hearts do frequently present murmurs and irregularities was fully grasped, then the doctor would study his patient from a different perspective, and would cease to be obsessed by these and other seeming abnormalities, but would direct his search towards finding out how far the cause of these and other phenomena modified the functional efficiency of the heart.

Importance of Muscle Impairment.

When the fundamental principles underlying the production of heart failure are thoroughly understood, it will be realized that the heart failure, whatever form it may take, is due to an impairment of the functional efficiency of the heart muscle. So far, then, as heart failure is concerned, the significance of any sign must depend on how far its cause embarrasses the heart muscle in its work. It follows therefore that a murmur or an irregularity is only of significance when it is associated with some manifest impairment of the heart muscle, and that an inquiry must be made which will bring out the true meaning of any sign by searching for evidences of muscle impairment.

Signs of Muscle Impairment.

What are the evidences by which we can recognize affections of the heart muscle? Except for certain irregularities, which in rare cases give very important information, the evidence is somewhat limited.

(*a*) *Increase in the Size of the Heart.*—The first of these is a change in the size of the heart, due either to dilatation or to hypertrophy of its walls. Before we can assume that any increase in size is abnormal, we must first remember that there is no standard size, shape, or position, and that the variations which healthy hearts, especially in the young, can show, are very considerable. Doubtless in certain diseases of the heart the increase in size is so marked and so characteristic that little difficulty is experienced in recognizing it as a morbid condition. With functional dilatation, however, the difficulty of recognizing its significance is so great that evidence based upon increase in size, unless this is extreme, should never by itself be considered as sufficient evidence. If it is associated with persistent increase in the rate of the heart and marked loss of power, then it forms a valuable indication. But an apex beat in the fourth or fifth interspace, one inch outside the nipple line, is not in itself an evidence of muscle affection. It is well also to bear in mind that impairment of the heart muscle, dangerous to life, may be present without increase in the size of the heart.

(*b*) *Murmurs not Necessarily a Sign of Dilatation.*—A systolic functional murmur must not be considered as due to the dilatation, because these murmurs may not be the outcome of the dilatation. If a large number of healthy hearts be carefully examined it will be found that some show murmurs with the heart of a size usually assumed to be normal. These murmurs may come and go when there is no change in the size of the heart: they may be perceptible only when the individual is lying down or when he is standing up: sometimes they are only present when the heart is excited, at other times they are found when it is beating slowly and quietly. It frequently happens that though there may be marked dilatation, with and without considerable heart failure, no functional murmurs may be present. From such considerations as these we are forced to the conclusion that the mechanism which produces the murmur is something apart from that which provokes dilatation of the heart. The view so widely held that these systolic functional murmurs indicate regurgitation, and that in consequence there is a danger of this regurgitation embarrassing the heart and leading to heart failure, is merely an outcome of the back pressure theory and has no existence in fact.

(*c*) *The Condition of the Functional Efficiency of the Heart.*—The best and most accurate, and, in fact, the only reliable method of estimating the condition of the heart muscle is to acquire a knowledge of its efficiency, and, if it be inefficient, the extent of its limitation. This method consists in finding out how the heart responds to effort and recognizing the symptoms which indicate its exhaustion. In the limited time at my command I cannot enter into a description of the physiological principles involved in this method of estimating the state of the heart muscle, nor of the manner in which the symptoms are evoked. I shall only state that the chief symptoms are subjective, the individual himself being conscious of his limitations. This method may seem to you to be so obvious as not to need mentioning, but it is probably because it is so commonplace that its importance has never been appreciated. It may also seem so simple that any one can apply it; on the contrary the symptoms are at times so subtle and elusive that it requires very careful investigation before they can be appreciated. So many subjective sensations are connected with the circulation that it requires the most careful discrimination to find out those which are indicative of an exhausted muscle.

There is no doubt that many physicians have learnt from their own experience what I am endeavouring to place before you, but this knowledge is not conveyed with such precision and detail as to make their meaning clear. Thus, until recent methods were employed, the different forms of irregularity were never even classified on a basis of the slightest value for practical purposes. The method of estimating the heart's strength by testing the functional efficiency, which is the most essential part in every examination, has been to a great extent neglected. In proof of this, consider the insurance certificate which medical men fill up. All the questions are restricted to the physical examination and not one directed to finding out the functional efficiency of the organ, by which only the facts which are essential to a prognosis of the heart's condition can be ascertained. Notwithstanding, the books which are supposed to guide the medical examiner give no hint that such a method exists. The result is that I have seen individuals accepted at normal rates because a physical examination revealed no abnormality, whereas if an inquiry had been directed to the functional efficiency of the heart, the symptoms of exhaustion which heralded the unexpected death of the individual would have been revealed. On the other hand, I frequently see individuals rejected for life insurance because of the presence of some harmless manifestations, whose significance the examiner did not understand, and whose value he could not appreciate, simply because he failed to apply and to appreciate this method of testing the heart's efficiency.

The Method of Teaching Cardiac Symptomatology at Fault.

Probably the whole error arises from the manner in which the student is taught when he passes into the

medical wards. Here he is handed over for instruction in the physical signs to a clinical tutor, a teacher whose knowledge is so little in advance of his own that he does not understand the significance of the facts which he teaches. Under the care of this clinical tutor, at a time when he is most susceptible to impressions, he has hammered into him a certain kind of knowledge which remains with him and influences him during the remainder of his life. Thus, he is taught how to recognize the sounds of the heart, the size of the heart and its rate and rhythm, and what is supposed to be the normal in a healthy individual. Then he is shown, as a contrast, diseased conditions, with murmurs and muffled sounds, hearts of varying sizes, rates, and rhythm. Consciously or unconsciously, he gets the idea that a heart to be healthy must be of a certain size, the sounds clear and free from murmurs, and the rate regular. This idea may be sought to be modified by more experienced teachers later on, but I am certain that every medical man who passes out of his hospital training does so with a false conception of the nature of phenomena which a healthy heart can exhibit. How this works out in after-life I will show you immediately.

How this Imperfect Teaching Affects the Practitioner in his Work.

You may think I am dealing at too great length with the part which the medical man plays, but if we wish to appreciate the full consequence of our errors and misconceptions, we must know how they have arisen. In order to bring before you more clearly the significance of what I am trying to prove to you, I will refer to my own experiences. Some ten or fifteen years ago there arose a strange notion of the dangers of athleticism in schoolboys and college youths. I think this originated in London, but at all events it speedily spread over the face of the earth. Exponents of the idea did not limit their views to the medical press, but, if I remember aright, warnings were written in the lay press by some of our learned colleagues. So widespread did this doctrine become, that great numbers of boys returned to school with certificates of unfitness to play the usual games, to such an extent that in some schools one half of the boys were supposed to suffer from impaired hearts. At this time I was pursuing my work in an isolated town in the north, and I wondered what were the symptoms by which these enfeebled hearts were recognized, and what were the evidences of an athlete's heart. My boys played strenuous games and entered into occupations entailing severe bodily labour, but I never saw any of them unfit unless they had manifest disease of the heart. It was not until I came to London five years ago that the real solution dawned upon me. The first consultation which I had in London was concerning a young girl who had fainted. She lived in the country, and a London physician was [illegible] who recognized some form of [illegible] and had her removed [illegible] a course of what [illegible] treatment. She had had two courses and had been under treatment for three months when I was [illegible] remedy for this intractable [illegible] when I was told that [illegible] was a persistent irregular [illegible] I found to be the youthful type [illegible] sign so far from being a sign of [illegible] you already, presumptive [illegible] healthy heart. From this time [illegible] me in increasing [illegible] number of youths [illegible] hearts, or were sup- [illegible] because of some [illegible] to the heart's [illegible] these conditions of [illegible] experience had shown [illegible] a heart lesion. In addi- [illegible] many youths who have been [illegible] and other occupations which entail a preliminary medical examination, because of the presence of these manifestations of a healthy heart.

In my communications with medical men I have found the notion that a murmur or an irregularity is an evidence of disease so deeply rooted that it is simply impossible to get many of them to look at the evidences which point to the contrary. I have had a great deal of disagreeable correspondence with doctors after I have written to them about youths whose hearts I have pronounced healthy in spite of murmurs or irregular action. I have had replies to the effect that they have had great experience in this subject, and that they know I am wrong. I have asked such correspondents to recite to me the history of one single individual who has ever shown the slightest sign of heart failure, in whom these symptoms were found, and so far I have failed to get the history of a single case. Nay, more, although you will find in the writings of authorities grave warnings of the danger impending on youths who show these phenomena, yet I have failed to find the record of a single case in which these forebodings were realized. Considering how numerous are individuals showing these signs, and considering the strenuous games which are played and the strenuous lives that are lived, had these signs the gravity they are assumed to have, there would be on record many cases of heart failure, yet, as I say, literature is silent on the subject.

OBSERVATIONS UPON THE ACOUSTIC PHENOMENA IN MITRAL STENOSIS.

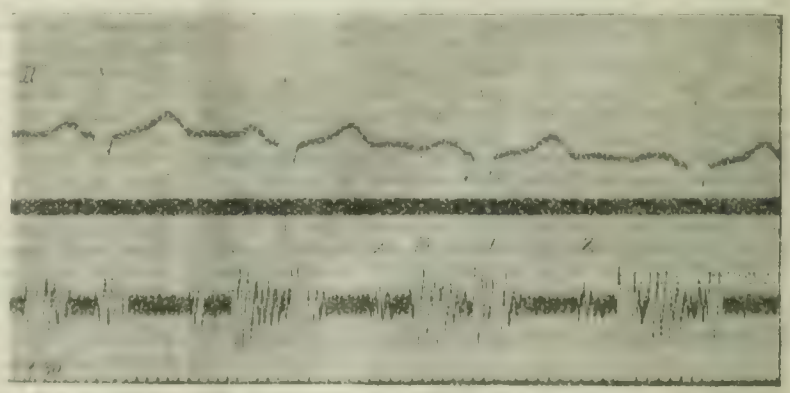
(Preliminary Communication.)

By THOMAS LEWIS, M.D.,

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Method.

Simultaneous electrocardiogram (lead *II*) and heart sound record are taken, the latter by means of a microphone and separate string galvanometer. The two curves lie side by side on the same photographic plate, and the time relations of first and second sounds and murmurs



[illegible] simultaneous electrocardiogram and heart sound record. The upper [illegible] *T*, the [illegible] summit, and *Q*, *R*, *S* and *T*, the ventricular deflections. A hard vertical line is drawn at the commencement of systole; a dotted vertical line at the commencement of ventricular diastole. The lower curve shows the heart sound record: *1* the first heart sound; *2* the second heart sound; *M* diastolic murmur. Taken from a case of mitral stenosis.

to the separate deflections of the electrocardiogram are calculated (Fig. 1).

Observations.

Preliminary observations, with a view to determining the time relation of the sounds at the apex beat to the electrocardiogram, were first undertaken in fifteen normal subjects.

1. The time relation of the normal first sound to the initial deflections of ventricular systole is variable. It may commence within 0.011 sec. of *Q* or within 0.002 sec. of *R*, or it may be delayed until 0.026 sec. after *R* or 0.039 sec. after *Q*. Usually it begins a little before or after the summit of *R*.

2. The time relation of the normal second sound at the apex to *T*, the last electrocardiographic deflection, is [illegible] also. It may commence 0.01 or even 0.04 sec.

[illegible] aided by a grant from the British Medical Association.

before the end of *T*, but more usually it starts at the end of *T* or 0.01 or 0.02 sec. afterwards.

The sound curves from cases of mitral stenosis were taken in two series—a series over the area at which the diastolic murmur was audible, and a control series over areas at which the murmur was inaudible.

The positions and duration of the murmurs were estimated after careful comparison of the two sets of curves.

1. The time relation of the first and second sounds in the control curves of mitral stenosis are practically the same as in normal hearts. The sounds are usually much more intense, though of similar duration to those of the normal heart.

2. When the heart is beating regularly and the sequence of contraction is normal, the shortest diastolic murmurs of mitral stenosis precede the first sound, and consequently precede the initial rise of intraventricular pressure. They lie in presystole.

3. Generally speaking the presystolic or diastolic murmur is not a crescendo: the crescendo is an effect of the proximity of the loud first sound. The vibration frequency of the murmur is from 41 to 107 per minute. The murmur begins from 0.05 to 0.22 sec. before the commencement of *R* and runs up to the first sound. Usually it occupies the whole or greater part of diastole.

4. When fibrillation of the auricles is present an isolated presystolic murmur does not occur; the fixed time relation of the murmur is to the early phases of diastole; the murmur runs over a variable proportion of diastole, according to the variation in the length of the latter; in the longest diastoles and in slow acting hearts there is a period of silence between murmur and first sound; in a shortest diastole the murmur may occupy its whole extent.

5. When heart-block is present the position of the diastolic murmur is largely controlled by the position of the auricular contraction.

It is concluded that the diastolic murmurs of mitral stenosis are due to the rapid onflow of blood through the stenosed mitral orifice. Those periods of diastole are occupied by murmurs, during which the velocity of flow reaches a certain grade. When the auricle contracts at the normal time and the heart beats slowly, the velocity tends to be greatest in presystole. Otherwise it is usually greatest in early diastole; these are the periods at which murmurs are most commonly audible.

REGIONAL ANAESTHESIA.

BY

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The greater attention recently devoted to the subject of anaesthesia, and greater knowledge of the subject, has revealed dangers that were before unknown and has shown how very much the ultimate well-being of the patient depends upon a careful selection of the method of anaesthesia used. It is quite obvious that the remote dangers of some anaesthetic drugs are far greater than the immediate, and it does not seem improbable that these sequelae may be more serious and far-reaching than we even now realize.

As the dangers of general anaesthesia in certain cases have been more fully appreciated, more attention has been devoted to the subject of local anaesthesia; so much so that if the condition of a patient is such that the administration of a general anaesthetic is likely to be specially dangerous, almost any operation of necessity can be successfully and painlessly performed under some form of local anaesthesia.

Until comparatively recent years local anaesthesia was very little used, on account of the toxicity of cocaine, the agent usually employed. But with the introduction of the comparatively innocuous substances, stovaine, novocain, and eucaine, considerable attention has been devoted to the subject, and great strides have been made in the technique of this form of anaesthesia.

Broadly speaking, local anaesthesia may be placed under three heads:

1. *Spinal anaesthesia*, in which some form of anaesthetic drug is introduced into the spinal theca.

2. *Local infiltration anaesthesia*, in this case a very weak solution of the anaesthetic drug is employed, and the whole area to be operated upon is infiltrated with the solution.

3. *Regional anaesthesia*, a stronger solution of the anaesthetic drug is employed, and a small quantity is introduced around the nerve trunks which supply the part to be operated upon at some part of their course which is anatomically accessible.

The choice of the one or the other of these methods depends upon the condition of the patient, the necessities, and also upon the site of the operation. It is fortunate that for those cases in which one form is not suitable another frequently is. The advantages of spinal anaesthesia in septic abdominal conditions, especially acute appendicitis in the young, associated with much toxaemia, and in those cases in which abdominal relaxation is required, such as the radical cure of large irreducible herniae, ventral herniae, cases of intussusception and prostatectomy, are too well known to require further discussion here.

For those cases, such as cysts in the upper part of the breast, subcutaneous lipomata, the radical cure of hydrocele, varicocele, and varicose veins, in which it is often difficult, if not impossible, to isolate the nerve trunks supplying the part, the wide infiltration method with a weak solution is certainly preferable.

Regional anaesthesia can be used for any type of operation upon any part of the body supplied by nerves which are at some part of their course anatomically accessible. By anatomically accessible is meant that the nerve shall lie in such a position that it is possible to pass a fine needle down to it, and so introduce the analgesic fluid. It is almost impossible to inject the fluid around a nerve lying amongst muscles, as the difficulty of gauging the depth from the surface is so great. Further, even if the needle is introduced into the neighbourhood of the nerve trunk, the point may easily have passed through a layer of fascia or the sheath of a muscle, so that however much fluid is introduced, it will not be distributed around the nerve. In some few instances this direction of the fluid by the fascia may be utilized to facilitate the injection, the nerve itself lying in some fascial compartment, which can be filled up with anaesthetic solution. The musculospiral nerve in the arm or the median at the wrist are both cases in point.

The characteristics of this form of anaesthesia are:

1. Granted that a suitable anaesthetic solution is introduced around the trunk of a nerve, the whole area supplied by that nerve becomes anaesthetic—bone, muscle, fascia, skin, etc.

2. The method can be used for operations upon inflamed tissues provided that the injection around the nerve trunk be made at some point well above the septic area.

3. The anatomical relations of the part to be operated upon are not obscured by oedema caused by a large quantity of injected fluid, as is sometimes the case with the wide infiltration method.

4. The anaesthesia lasts for several hours.

5. The anaesthetic area is clearly defined by the anatomical distribution of the nerves. Consequently there is no risk of suddenly overstepping the limits of the anaesthesia, with most unpleasant results to the patient.

A very important factor in the success or otherwise of this form of anaesthesia is the solution used.

Either eucaine, stovaine, or novocain may be employed, but the best results in my hands have been obtained with novocain. A 2½ per cent. solution of novocain in distilled water is prepared and sufficient sodium chloride added to make the fluid isotonic with the blood. The whole is then sterilized by boiling, which can be done without detriment to the novocain; it is, of course, absolutely necessary that this fluid should be sterile, and for this reason it should be freshly prepared for each case shortly before using. The formula of the solution is:

Novocain	2.0 grams.
Sodium chloride	0.5 gram.
Distilled water	to 100 c.cm.

5 drops of a 1 in 10,000 solution of adrenalin are added to each 20 c.cm. of solution immediately before use.

When the fluid is injected into the tissues the vessels are

constricted, and the solution consequently tends to be confined to the site of injection, so causing the anaesthesia to be more prolonged.

The apparatus required for the injection of the analgesic anaesthetic fluid consists of a syringe and a number of hollow needles; by far the most convenient form is the ordinary record syringe with glass barrel. This can be obtained in a variety of sizes; the most useful for this work is that graduated to 20 c.cm. A number of needles of different sizes and lengths, all detachable from the syringe barrel, are required.

The Technique of Injection.

It is absolutely necessary that this should be performed with the most rigid aseptic precautions. Under no circumstances should the injection be made through an inflamed area or very near an infected area. The skin over the point at which the injection is to be made should be prepared as for a surgical operation. A solution of iodine in ethylene dichloride used as a paint immediately before the injection is both convenient and effectual for this purpose. Some of the anaesthetic solution having been sucked up into the syringe, a very fine needle is introduced beneath the epidermis and a few drops of the solution injected, so that a minute blob is raised. This can be done with practically no pain. A slightly larger needle is next introduced through the blob down to the nerve trunk. When introducing the needle it is preferable to remove it from the barrel of the syringe, as it is much easier to gauge the exact position of the point if the heavy syringe is not in place. As soon as one is satisfied that the point of the needle is in the neighbourhood of the nerve trunk, the barrel of the syringe can be slipped into the wide base of the needle and the injection made.

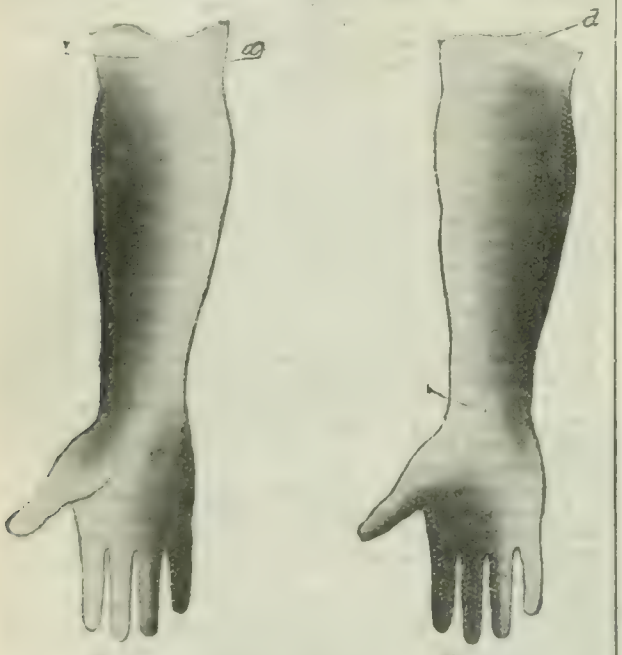


Fig. 1. Fig. 2.

Anterior aspect of hand and forearm.

The actual site of injection of course depends upon the nerve supply of the part to be operated upon. For instance:

To anaesthetize the index finger it is necessary to block the median and radial nerves; if it is desired to render the great toe anaesthetic, as for an operation for hallux valgus, it will be necessary to block the anterior tibial, musculo-cutaneous, internal saphenous, and internal plantar nerves.

It is frequently much easier to inject around a nerve trunk at a more proximal part of its course rather than around the actual branch which it is desired to anaesthetize. Consequently it is preferable to inject around the musculo-spiral nerve in the arm than around the radial in the forearm. Again, one would never think of injecting the anterior tibial or musculo-cutaneous nerves in the leg, but would most certainly inject the external popliteal trunk.

As a general principle, it is easier to inject around a nerve as it lies against a bone, as this provides a landmark which ensures that the right level is reached. It is very much more difficult to gauge the depth of a nerve than its position as regards surface marking. If possible, points should be chosen for injection where the nerve either lies against bone or on the deep fascia, not amongst muscles, etc.

The accompanying diagrams, prepared from actual cases, show some of the more convenient and useful points for blocking the nerve trunks and the anaesthesia following.

This method of anaesthesia demonstrates very clearly the remarkable overlapping of nerves in their distribution. Consequently it is often necessary to inject around more nerves than at first sight seems anatomically requisite.

In the illustrations the degree of analgesia is indicated by the depths of shadow; the darkest portions represent complete loss of sensation.

Anterior Aspect of Hand and Forearm.

Fig. 1 illustrates anaesthesia following blocking of the ulnar nerve behind the internal condyle (*a*) and musculo-cutaneous nerve at the outer side of the biceps tendon (*b*). The introduction of the fluid around the ulnar nerve presents little difficulty. The nerve is easily felt lying behind the internal condyle. The nerve should be defined with the fingers, the forearm being extended. Then, keeping the finger on the nerve, flexing the forearm, the needle is introduced just external to the bony point of the condyle and passed outwards, keeping the point close to the bone. The needle will now lie between the bone and the nerve; 2 or 3 c.cm. of the fluid are injected, the needle is then withdrawn a little, the point passed superficial to the nerve, and 2 to 3 c.cm. more introduced. After withdrawing the needle the fluid is to be gently massaged into the nerve with the fingers.

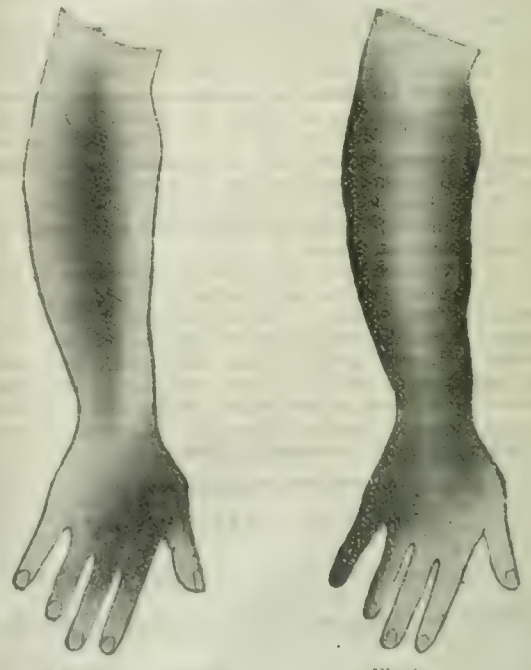


Fig. 3. Fig. 4.

Back of hand and forearm.

To inject around the musculo-cutaneous nerve, pick up the skin and superficial fascia between the thumb and first finger just external to the tendon of the biceps, thus gauging the thickness of the superficial fatty layer, pass the needle down to the deep fascia, and make the injection upon the surface of this layer.

Anterior Aspect of Arm and Forearm.

Fig. 2 illustrates anaesthesia produced by blocking the internal cutaneous nerve at the elbow and the median at the wrist.

To introduce the fluid around the internal cutaneous nerve the injection should be made about ¾ in. internal to the tendon of the biceps upon the surface of the deep fascia. As the internal cutaneous nerve is at this point in two portions, the injection must be planned to cover a correspondingly wide area.

The median nerve at the wrist is easily found: it lies directly behind the tendon of the palmaris longus muscle. If this muscle is absent, the injection should be made ½ in. internal to the tendon of the flexor carpi radialis muscle.

Back of Forearm and Hand.

Fig. 3 illustrates the anaesthesia produced by blocking the musculo-spiral nerve in the groove on the outer side of the humerus.

In order to find the musculo-spiral nerve, take a point midway between the angle of the acromion and the olecranon process. This is the point at which the nerve crosses behind the humerus, and in nearly every case it can be palpated just below this level as it winds downwards and forwards.

The position of the nerve being thus defined, the needle is passed down to it till the point touches the outer side of the humerus. A liberal injection is made, which passes upwards and downwards in the fascial compartment which contains the nerve in this part of its course.

Fig. 4 illustrates anaesthesia produced by blocking the musculo-cutaneous, internal cutaneous, and ulnar nerves.

Anterior Aspect of Trunk.

Fig. 5 illustrates anaesthesia produced by injection of intercostal nerves. On the left side the second, fifth, and eighth are shown. On the right side the nerves have been blocked, from the third to the tenth inclusive.

In each case the injection has been made just in front of the angle of the rib, consequently each intercostal nerve has been blocked well behind the origin of its lateral cutaneous branch.

The intercostal nerves, lying as they do behind the

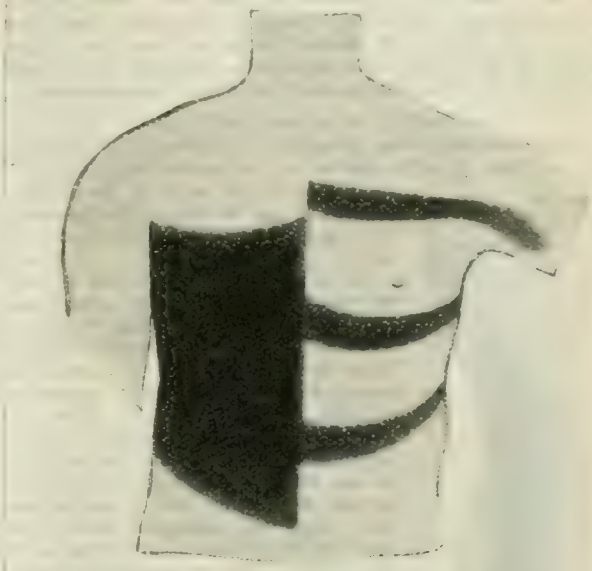


Fig. 5.

corresponding ribs in the subcostal groove, can be reached with ease and certainty, the ribs forming an excellent bony landmark to their position. The patient should lie on his back with the arm raised. The rib covering

Site of Operation.	No. of Cases.	Nature of Cases.	Operations.	Remarks.	Nerves Injected.
HAND	150	3 Injury 45 Cellulitis 102 Whitlows	Incision Amputation of digits Removal of necrosed bone	Anaesthesia complete	Median. Musculo-spiral. Ulnar.
WRIST AND FOREARM	17	4 Cellulitis 9 Ganglia 1 Amputation 2 Removal of subcutaneous tumour 1 Excision of head of radius	Incision Removal by dissection Removal by dissection	Anaesthesia complete 5 Cases completed under general anaesthesia Anaesthesia complete Anaesthesia complete Some sensation in the bone	Median. Ulnar. Musculo-spiral. Musculo-cutaneous. Internal cutaneous.
ARM	1	Old osteomyelitis	Removal of sequestrum	Complete anaesthesia of whole of arm	Brachial plexus descending clavicular.
THORAX	45	12 Adenomata of breast 2 Abscess of breast 3 Pericarditis 6 Empyemata 2 Abscess of lung 14 ? Intrathoracic conditions 1 Tuberculous rib 1 Tuberculous sternum 2 Bronchiectasis	Removal by dissection Incision drainage Removal of rib cartilage, drainage Removal of ribs, drainage Incision, drainage Puncture, incision, removal of rib Removal of rib Removal of diseased bone and sequestra from anterior and posterior surfaces of sternum Removal of ribs	Some sensation in 2 cases Complete anaesthesia	Intercostals.
ABDOMEN	6	3 Oesophageal obstruction 1 Acute cholecystitis 1 Cholelithiasis 2 Intestinal obstruction	Gastrostomy Removal of stones, drainage Removal of gall stones from gall bladder and common duct Colotomy; Paul's tube inserted into ileum	Complete anaesthesia, no pain when stomach was drawn out Complete anaesthesia Peritoneum sensitive Complete anaesthesia	Intercostals. Intercostals. Intercostals. Eighth and twelfth dorsal, ileo-hypogastric, ileo-inguinal.
FOOT	37	1 Sarcoma 3 Cellulitis 8 Hallux valgus 6 Injury 9 Hammer toe 10 Other conditions	Syme's amputation Incision Excision of head of metatarsal Excision of head of first phalanx; amputation	Complete anaesthesia	Internal popliteal. External popliteal. Internal saphenous. External saphenous. Posterior tibial.

General anaesthesia was used to complete the operation in 7 of the above cases.

Three of these were ganglia at the back of the wrists in fat patients. These occurred early in the series, and in each case apparently a few fibres of the musculo-spiral nerve had escaped.

In another case, an excision of the head of the radius, the soft tissues were quite anaesthetic, but the bone remained sensitive. Here again a few fibres of the musculo-spiral remained sensitive.

Two cases of adenomata of the breast had to be completed under general anaesthesia. Although the intercostal nerves corresponding to the position of the tumours were blocked some sensation remained, due apparently to an unusually low distribution of the descending branches of the cervical plexus.

the required nerve is defined, and the needle introduced through the skin a little below the level of this rib, and passed obliquely upwards until it touches the lower border. The needle is then withdrawn a fraction of an inch, the point depressed a little, and then pushed forward again. This manœuvre is repeated until the point just misses the lower border of the rib. The needle is then pushed on for about a quarter of an inch well into the subcostal groove, and the injections made.

Dorsal Aspect of Foot and Ankle.

Fig. 6 illustrates the anaesthesia produced by blocking the external popliteal nerve, which can be easily reached as it crosses the neck of the fibula; the nerve can be felt in this position. The needle is passed down to the bone.

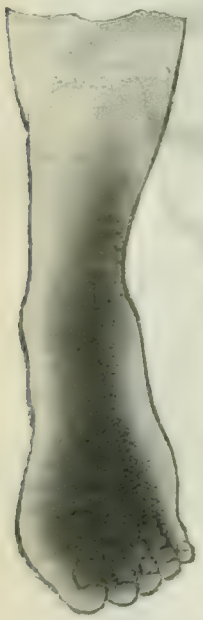


FIG. 6.

If following an injection of any of the foregoing nerves a complete anaesthesia corresponding to the distribution does not appear after a short interval, the needle should be reinserted, and a further quantity of the solution injected. The explanation of an incomplete anaesthesia is either that the solution is not evenly distributed around the nerve, or, in the case of the larger ones, that the analgesic fluid has not infiltrated the whole thickness of the nerve trunk, consequently some few fibres have escaped.

In the table on page 1703 is given a summary of the cases upon which this method has been used. These cases show that a very considerable variety of surgical procedures can be carried out under this form of anaesthesia.

The choice of the kind of anaesthetic to be used for any particular case must depend upon the special circumstances of that case. It is obvious that no such thing as a routine anaesthetic or combination of anaesthetics can be employed with the best result, since very varying conditions, both local and general, are present in different patients. Therefore, although it is not intended to suggest that regional anaesthesia should always be used where possible, it may safely be urged that this form of anaesthesia is very valuable in those not infrequent cases in which general anaesthesia is from some cause or another contraindicated.

The surgical treatment of severe whitlows, which forms so large a part of the work in hospital out-patients' rooms, is a very good example of the usefulness and convenience of regional anaesthesia. A long anaesthesia is required in order that the parts may be clearly defined and the exact limits of the suppuration made out.

Out-patients are frequently improperly prepared for a general anaesthetic, and a journey through the streets, even some hours after recovery from ether, cannot be regarded as desirable. The length of anaesthesia given by novocain is far beyond anything that is likely to be required for surgery of this description, and, of course, there is the great advantage of the absence of after-effects.

The dangers of operations upon the thorax are chiefly connected with the general anaesthetics employed, and it is in the surgery of this region that regional anaesthesia is invaluable. These patients are frequently very ill indeed, suffering from embarrassed respiration and circulation, especially in such conditions as large empyemata, abscess of the lung, and pyopericardium.

Further, there is that increasing class of case in which the operation of consolidation is undertaken for the cure of chronic empyemata, bronchiectasis, etc. Here the great operative dangers of general anaesthesia are obvious.

It is well known that one of the chief causes of pneumonia following operations is reflex rigidity of the chest and consequently inefficient expansion of lungs already to some extent damaged by a putrescent vapour and more or less mixed with anaesthetic sodden mucus. It is therefore clearly a great advantage in all cases involving a large wound of the chest wall to use a form of anaesthesia causing no pulmonary irritation.

Consequently it is in the surgery of the thorax that regional anaesthesia is most useful, and it is fortunately most easily and successfully carried out in this part of the body. Provided that the injection into the intercostal nerve is made well behind its lateral cutaneous branch, the whole thickness of the lateral wall of the thorax from the mid-line in front to within a few inches of the mid-line behind becomes anaesthetic. So that with equal facility a rib may be removed, the pericardium may be drained, or a tuberculous sternum treated.

Although the limits of this anaesthesia are really only defined by anatomy, yet it is quite obvious that there must be great objections to any form of local anaesthesia however perfect for any major operation upon the head, face, or jaws, and it is quite certain that few patients would face such an ordeal.

Finally, the uses and limitations of this method of anaesthesia may be very shortly summed up in two words—namely, anatomy and novocain. I should like to take this opportunity of expressing my thanks to the surgical staff of University College Hospital for the many facilities I have been afforded for the practice of this form of anaesthesia.

CASE OF STOKES-ADAMS DISEASE.

BY

JAMES LAW FALCONER, M.B., CH.B., F.R.C.S.,

ASSISTANT SURGEON, BOLTON INFIRMARY.

THE points of interest in the following case appear to me to be the occurrence of the disease in a woman, and the combination of all types of attack, namely, syncopal, epileptiform, and apoplectiform, in the one patient.

Mrs. A., aged 72, had enjoyed perfect health during most of her life—so much so, that she accomplished a 20-mile walk at the age of 70.

Seven years ago she consulted my predecessor for slight attacks of vertigo, which were put down to "liver." Off and on since then, whilst walking, she has had to stop and bend down to recover from what she called a "mazed" feeling.

In September, 1909, she was seen for attacks of giddiness. In these she had a distinct tendency to fall, and instinctively clutched at something for support, though no actual fall took place. About this time she noticed that she was short of breath on ascending stairs, etc. She was found to have a consistently slow pulse, between 30 and 40.

I saw her for the first time on July 4th, 1910. She was simply complaining of slight malaise. The heart was normal in size, and remained so subsequently. The first sound was rather weak, but no murmur was present. The pulse-rate was 44.

When seen on July 22nd she had had several "dizzy" attacks. Her pulse varied whilst I sat talking to her, being 34 at one time and 68 at another. Of this she was quite unconscious. She had a slight systolic murmur at the base, and her blood pressure equalled 225 mm. Hg.

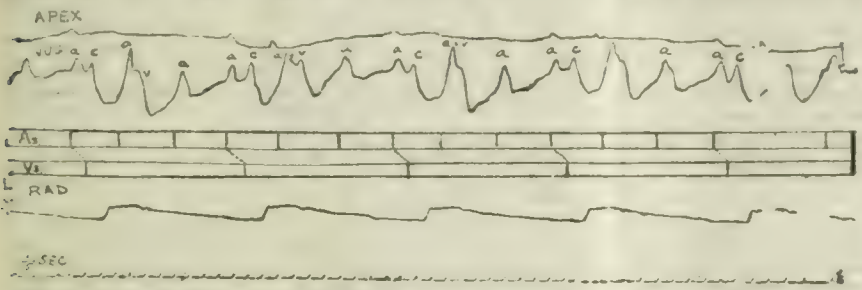
She was put on arsenic and potassium iodide, and for a few days felt much better.

On August 1st she walked some distance to a railway station, and on arriving there lost consciousness without any warning and fell heavily on the platform. She consulted me an hour later, when the only noticeable thing, apart from some natural nervousness and shock, was a slow, irregular pulse varying between 36 and 40. She refused to go to bed, and next day again fell whilst talking to a groom in her stables. She was seen at midday, and whilst sitting in her chair suddenly said, "I am off!" turned pale, showed some general facial twitching, and lost consciousness for a second or two. There was a little mental confusion for a minute or so, and then she resumed conversation quite in a normal manner. A diagnosis of Stokes-Adams disease was made, and she was sent to bed.

On August 3rd both the introduction of a nurse and the occasion of my visit signalized attacks similar to that just described, and from this time onwards she had frequent attacks—one or more during the day. They were of varying severity, and in many of them she certainly did not lose consciousness. She merely exclaimed, "Ah!"

some facial twitching ensued, and in a minute or so she would be all right once more. Formerly she had complained of a "singing in the ears." This vanished, and her trouble was always a "hot feeling at the top of the head." Marked irregularity of the pulse was noted before several of these minor attacks, and the jugular pulse was often found to be exactly double that of the radial. The blood pressure fell to 195 mm. Hg. She was treated with strychnine and belladonna in small doses, and also by liq. trinitrin in 1-minim doses three times a day. This was gradually raised to 3 minims.

She continued in this condition till September 20th, when Sir William Osler and Dr. Gibson saw her in consultation. The heart was found normal, save for a faint basal systolic murmur. The blood pressure was 250 mm. Hg, and the cardiographic tracings are here reproduced.



Tracing taken on September 20th, 1910, the blood pressure being 250 mm. Hg. It consists of apex, jugular, and radial pulsations with a time marker of one-fifth second. The interpolated diagram between radial and jugular pulsations indicates the events in the auricle (As) and the ventricle (Vs). It shows that only every third auricular contraction is followed by a ventricular; the rhythm is, therefore, of the 3:1 type, and the block is incomplete.

On September 22nd she had an attack in which she was unconscious for about a minute. The pulse fell to 27, and was very irregular both in time and strength. General spasmodic twitching of the facial muscles occurred at intervals during the day. The blood pressure was 230 mm. Hg.

September 26th. This morning she had several minor attacks with feelings of nausea and faintness. In the afternoon vomited after a glass of Apenta water; several other attacks of vomiting accompanied by an irregular pulse occurred during the afternoon. At 7.10 p.m. she vomited and became suddenly unconscious. The nurse said she went red for a few minutes, then pale. There was a general tremor for some seconds; then stertorous breathing began. The nurse gave her about 10 amyl nitrite capsules. When seen at 7.30 p.m. she was pale, clammy, unconscious. Pulse 144 and weak. Eyes turned up, and heavy stertorous breathing present. She was given $\frac{1}{30}$ grain strych. hypod., 1 grain also of Nativelle's digitaline, and 5ij of Hoffman's anodyne. There seemed to be an immediate response: the breathing became easier and pulse stronger. After a little the eyes became more normal, colour began to return to the face, the breathing was less stertorous, and marked general facial twitching ensued. For a few seconds the pulse became quite slow (40–50), accompanied by marked improvement in colour of face. Then back went the pulse to 140 again. Next ensued much restlessness, attempts to rise in bed, and she appeared to be going to vomit, but did not do so. Then the pulse began to beat in groups of 2, and subsequently became regular and slow. The patient quite gradually regained consciousness, made signs for a drink, confused speech returned to her, and then normal speech came back about three quarters of an hour after the onset of the attack.

September 27th. She rambled a little during the night, and for the first time her stools were offensive. In the temporary absence of the nurse she got out of bed at 5.45 a.m. and had another apoplectiform attack; this time everything was normal again in fifteen minutes, though she passed through the stages of engorgement, unconsciousness, stertorous breathing, etc., as before.

September 28th. Very weak. Pulse 40, regular. Blood pressure 140 mm.

October 4th. Very feeble during last week. Refused all food, save milk and champagne. Heart sounds weak, with a diastolic murmur. Blood pressure 150. Sleeping badly and feeling sick. Now and then vomiting a little; she has had no sign of any attack. Given pituitary extract and ernutine with no effect on blood pressure.

October 5th. Pain in right intercostal muscles and gonty swelling of left foot came on, and the next day she was much better in herself, but very irritable. Blood pressure 180 mm.

October 12th. All pain had gone after small doses of colchicum. Blood pressure 195 mm. Pulse 56, and irregular.

October 15th. In the morning she was thought to be very much better, and she had not had an attack for over a fortnight. Being a strong-minded person, she insisted in the afternoon on getting up to stool. She passed a small amount, then fell over and died.

The following notes of the *post-mortem* examination were kindly furnished by Dr. Gibson:

Post-mortem Examination.

The heart is larger than normal, and weighs 365 grams. The epicardial fat is moderate in amount. The apex of heart is formed by the left ventricle. The valves are normal and rather less sclerosed than is usually seen at this age. The right auricle and right ventricle are normal in size. Left auricle is normal. The cavity of left ventricle is slightly larger than normal. The columnae carneae are flattened. The muscular fibre of heart is everywhere pale and brownish. There is no sclerosis of endocardium of either right or left sides, either local or in relation with valves. The wall of the right ventricle and to some extent the left shows fatty infiltration from the epicardial fat. There is some hypertrophy of muscle of left auricle. The muscle of right ventricle is slightly hypertrophied, and that of left ventricle definitely so. There is no evidence of any gross lesion in the parts neighbouring upon His's bundle. The anterior coronary artery is definitely thickened and twisted near its opening into the aorta. This thickening is general with a few areas of fatty degeneration, but no calcification. The posterior coronary artery is similarly affected.

The kidneys show early thickening of the arteries and the irregular depressions on the surface of the cortex characteristic of the arterio-sclerotic kidney, but in a very mild degree.

Microscopic Examination.

The section taken along the long axis of heart through His's bundle shows very marked fatty infiltration of the bundle, but a fair number of fibres are still present. The artery accompanying the bundle shows no marked changes. There is increased formation of fibrous tissue in neighbourhood of and extending into bundle; also very markedly in the interventricular septum, where also there is very considerable fatty infiltration. The muscular fibres of the ventricle are hypertrophied, and show extreme brown atrophy, but the striation is good. There is fatty infiltration and some increased fibrosis of the auricles and hypertrophy of the muscle cells. The section taken at right angles to the direction of main trunk of His's bundle shows a lessening of its total bulk by fatty infiltration. The fibres that are present show their striation and stain normally. The artery and vein accompanying the bundle are large, and the former shows a moderate degree of arterio-sclerosis.

NERVOUS AND MENTAL SYMPTOMS IN A CASE OF ADDISON'S DISEASE.

BY

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SENIOR ASSISTANT PHYSICIAN, BETHLEM ROYAL HOSPITAL.

INTERNAL secretion in its relation to nervous and mental diseases has not, until quite recently, been considered seriously, or received the attention it deserves by those who are investigating the pathology of mental disorders. In view of the above fact, I think the publication of the following case will be of considerable interest to those who are researching, or who are contemplating research, in this branch of pathology. The case in question is one which affords valuable data of psychiatrical and surgical interest.

The patient, H. S. S., was a male aged 49, manufacturer's agent. His family history was very good, and with the exception of gonorrhoea his previous history gave no evidence of any mental or physical illness. Early in October, 1911, he complained of an inability to do his work, and his friends noticed that he was depressed and restless.

These symptoms gradually increased, and the patient realized that he was suffering from some nervous ailment.

Tremors of the hands, lips, and tongue now developed, and he became so restless and nervous that medical advice was sought. Neurasthenia was diagnosed, and the treatment adopted was the usual one of complete change and rest in bed with tonics and nourishing food. A favourable prognosis was given.

The patient, who was now in a country nursing home, developed the delusion that his face was altering in appearance. He became suspicious, more depressed, and steadily lost flesh. It is stated that no alteration in the patient's complexion was noticeable at this stage. The restlessness and tremors increased and the patient's memory and judgement became impaired. He now developed the delusion that his penis had disappeared. It is interesting to note that simultaneously with this delusion he persistently experienced hallucinations of smell and taste, with the result that he commenced to refuse food. He became unmanageable and was removed from the home.

On January 1st, 1912, I saw the patient for the first time in consultation with Dr. Dewar Forbes, of Edmonton, who had just taken charge of the case, and it was decided that certification was necessary. The following physical signs were present: [illegible]

Inequality of pupils (the left being larger than the right), with sluggish reaction to light. The knee-jerks were exaggerated, and the plantar reflex was flexor. Tremors of tongue, lips, and hands were marked. Cutaneous sensation was unimpaired, but there was a distinct loss of muscular tone in all the limbs. His speech was slow and slurred, and his handwriting irregular.

It was suggested at this stage that the case might be one of incipient general paralysis, and an unfavourable prognosis was given.

On the same day he was admitted to Bethlem Royal Hospital. He now complained of severe headache, and was restless, confused and very agitated. The pulse-rate increased to over 100, and was of low tension. Severe constipation was present, and caused anxiety for some time. Owing to the hallucinations of taste and smell the patient persistently refused food, and looked upon those around him with suspicion and a certain amount of fear. He was fed by tube, but fortunately this procedure was not necessary for long, as the patient began voluntarily to take food.

Nausea and occasional vomiting developed, and as numerous dental stumps were present they were extracted on the presumption that they might be the cause of oral and gastric sepsis. He, however, continued to lose weight, suffered from insomnia, and was cachectic (non-pigmented).

On April 30th the patient, who had now been in the hospital for four months, complained of abdominal pain and diarrhœa, and it was found that melæna was present. There was general tenderness over the abdomen and acute pain in the region of the hepatic flexure, with marked rigidity of the upper part of the right rectus muscle, suggesting some local peritonitis. Nothing in the nature of a definite tumour could be felt, but in view of the fact that the patient, in addition to the latter signs and symptoms, had suffered for some time with cachexia, loss of weight, and constipation, it was thought that a malignant growth might be present in the hepatic flexure of the colon. After consultation with a surgeon it was decided to postpone operation.

The pulse continued to be rapid (120 to 140) and of low tension, and the temperature rose occasionally to 100 F. for a few hours. The knee jerks were now almost absent. Asthenia, diarrhœa, and cachexia were very marked, and when going to stool the patient had frequent attacks of vertigo and syncope. His mental condition was, at this stage, one of agitation, restlessness, and apprehension. Memory, perception, and orientation were impaired, and speech was slurred.

These signs and symptoms gradually became worse, and the patient died on May 8th. On *post-mortem* examination no signs of general paralysis or other brain disease could be found, and, with the exception of a small adhesion at the brim of the pelvis, the whole intestinal tract was perfectly normal. So far this left the diagnosis in a state of obscurity, but on examining the adrenal glands they were found to be much enlarged, somewhat sclerosed, and on section macroscopically the right one showed a large haemorrhage, with numerous others of presumably earlier date. On microscopical examination the haemorrhages and sclerosis were confirmed, but no evidence was forthcoming to show the presence of tubercle bacilli.

On comparing the clinical data with the *post-mortem* findings a ready diagnosis could be made, and the cause of the death was certified as being due to Addison's disease.

HIGH-FREQUENCY CURRENTS IN TRIGEMINAL NEURALGIA.

By W. F. SOMERVILLE, M.D.Glas.,
MEDICAL ELECTRICIAN TO THE WESTERN INFIRMARY, GLASGOW.

THE beneficial influence of high-frequency currents in the treatment of various neuroses and neuralgias is well known to those who have carefully studied and applied this method of treatment, and the incredulity which is expressed in certain quarters only means, at least in many instances, that the treatment has been ineffective because it has been inefficient. It is curious to note the readiness with which the practice of electricity as a therapeutic agent is handed over by the profession to unqualified persons. What is true of other forms of electricity, and, indeed, of therapeutic measures generally, is true also of high-frequency currents. Unless used intelligently and not as a mere routine measure, and without regard to the wants of the individual patient, it is absurd to expect that good results will follow.

An illustration of the value of high-frequency currents when perseveringly and appropriately used, even in severe trigeminal neuralgia of long standing, may be found in the following record, and it is noteworthy that some form of electrical method, applied apart from skilled supervision, had previously failed to produce improvement. The lesson is obvious—that methods of treatment can only be judged fairly when they are put into operation under proper conditions; and, again, that both in their own interests and in those of their patients, medical practitioners would be well advised to retain in their own hands the use of electrical and other therapeutic measures, rather than to delegate those measures to those who, acting without knowledge, must necessarily act without judgement.

A widow lady, aged 60 years, in good circumstances, was sent to me in November, 1911, by Dr. John Love, of Glasgow, because of severe trigeminal neuralgia of eight years' duration on the right side. The attacks were frequent and severe, and even in the intervals between them, the patient lived under the constant fear of their return. All this had necessarily produced considerable prejudice to the general health. She had lately been at one of the English spas, and had been treated by ionization by a bath attendant, but without benefit. I began high-frequency treatment on November 2nd, 1911, and continued daily until Christmas, with very decided relief of the pain. During the break of the Christmas holidays the pain returned. Treatment was accordingly renewed, and was continued with one or two intermissions until June, 1912. By that time the attacks of neuralgia had completely disappeared, and the patient's appearance and general sense of well-being showed a corresponding measure of improvement. She reported herself in August 1912, when she had been absolutely free from pain for nine weeks. I saw her again at the commencement of October, when she informed me that, with the exception of a comparatively slight and transient attack she had suffered no pain, and that "to live was a pleasure." I met the lady in the street on November 27th, when she told me she was still free from neuralgic pain.

This is, of course, an impressive experience, but it is far from being exceptional. I have had many cases of neuralgia of all degrees of severity in which relief and often complete cure have followed the use of high frequency currents. The method is no doubt one which causes the medical attendant a certain degree of trouble, but I am sure that if the profession would give it personal attention, they would find it both valuable and reliable.

DR. G. V. WORTHINGTON writes from Luxor to deprecate the apprehensions which are stated to have induced some intending visitors to Egypt this winter to cancel their arrangements. The Turko-Balkan war has not, he says, created unrest among the Egyptians, and they will certainly not do anything to endanger the harvest they derive from winter visitors. A similar apprehension which was felt, he says, in England last year on account of the war in Tripoli was soon found to be groundless. Although fighting then took place on the borders of Egypt it had no disturbing influence whatever.

Memoranda:

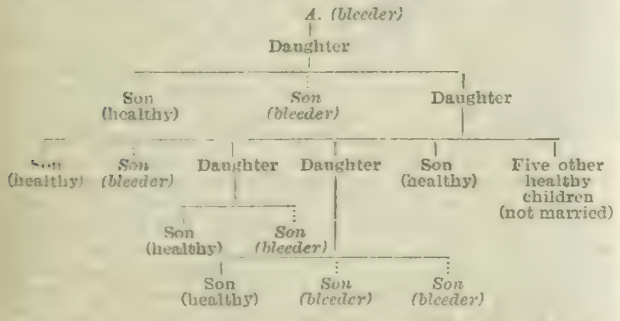
MEDICAL, SURGICAL, OBSTETRICAL.

HAEMOPHILIAC BLEEDING TREATED BY GALVANIC NEEDLE.

THE following case may be of interest, as I have not seen this form of treatment recommended in any textbook.

An infant of 2 years was brought to me a few days ago. He was a haemophiliac, and had got a trivial scratch on his tongue from a tooth. The lesion was on the extreme right margin, fairly far back. The child's pulse was almost imperceptible, and he was vomiting large quantities of swallowed blood. The bleeding had gone on continuously for twenty hours when I saw him. I applied liquor ferri perchloridi without any result; owing to the vomiting I could get no drugs administered internally, as everything was vomited immediately.

Owing to the position of the lesion, pressure was very difficult to apply. Accordingly, as a last resort, I decided to try needling, in the same manner as for a naevus. I did not like to risk giving an anaesthetic owing to the child's very collapsed state. I gagged open the mouth and caught the tongue in a large broad pair of tongue forceps and drew it forward. I then placed one needle in the centre of the bleeding area and the other about $\frac{1}{8}$ in. distant. On passing a 5-milliampère galvanic current, though, the bleeding caused by the insertion of the needles instantly ceased, and in two minutes there was no trace of haemorrhage, the surrounding area being white and somewhat swollen. One application only was necessary, as there has been no return of haemorrhage. The child's condition rapidly improved, the operation appearing to cause no shock. I give the child's family tree, as it seems of interest, inasmuch as it is the second sons of the female stock who are the bleeders; as far as I can learn, all the eldest sons were healthy. I am indebted to Dr. Gilbertson for permission to try my treatment in the case.



Sunderland. W. BRUCE, M.B., Ch.B.Edin.

A SHRIMP IN THE BRONCHUS.

THE following case may be of sufficient interest to merit publication.

On October 9th a child aged 8½ months was brought to my surgery. He had seized and bolted a shrimp. The immediate symptoms were choking and the issue of blood-stained fluid from the mouth. When first seen he was breathing with some difficulty, but there was no urgent dyspnoea, the symptoms resembling those of laryngeal obstruction. I explored the pharynx but could find nothing. Emesis was produced by divided doses of vinum ipecac. It was close on an hour before vomiting took place, and during this time all respiratory difficulty passed away. When vomiting did occur portions only of the shrimp were accounted for. As all urgent symptoms had passed away the child was sent home, and was directed to be placed in a steam tent. Next day I found the child apparently quite well, but on examining the chest found marked diminution of breath sounds all over the right side of the chest. Food was being taken well, and beyond occasional attacks of discomfort the child seemed quite well. There was no cough of any moment. I prescribed an expectorant mixture. On the following morning I learnt that about 10 a.m., after a violent attack of coughing, a large portion of the shrimp had been expectorated. The largest piece measured about ½ by ¼ in., and consisted of the head end and feelers, minus the carapace. The breath sounds were now normal.

It seems strange that the head end of a shrimp with the "legs" on, a highly irritable form of foreign body, should remain in a bronchus for some thirty-six hours without causing more serious symptoms.

Gillingham, Kent. C. COURTENAY LORD.

ARNICA DERMATITIS.

WHITLA, in the sixth edition of his *Materia Medica*, says of arnica: "Externally applied preparations of the root and flowers cause irritation of the skin, which may take on serious or even fatal inflammatory action extending to distant parts." A short time ago I had a case illustrating the truth of this statement which, in view of the popular idea of the efficacy of this remedy in bruises and sprains, may be of interest.

The patient, a young married woman, came to me with a history of having fallen a few days previously whilst going downstairs. A sympathetic friend advised an application of tincture of arnica to the bruised parts, and the treatment had evidently been carried out with great thoroughness. When seen by me the lumbar and sacral regions were covered with a red, angry, and extremely irritable erythematous rash. One side of the face was puffed, and there was a rash there in appearance very like urticaria. There was a similar rash on one forearm. I was assured that none of the arnica had been applied to these latter two parts. The rash and irritation subsided in a few days under combined treatment by saline purges and a sedative ointment.

I thought the case of interest because, though arnica has been expunged from the *Pharmacopoeia* as an uncertain and often dangerous remedy, it seems still to linger in the minds of some members of the public as a specific in certain forms of injury.

London, N. F. R. PROCTOR-SIMS, M.R.C.S., L.R.C.P.

SCARLATINAL MEASLES.

DR. MORGAN'S remarks on scarlatinal measles (JOURNAL, November 30th, p. 1547) prompt me to send the following notes:

On June 17th, 1912, I visited in succession, and for the first time, three houses practically next door to one another. In the first there were two cases of measles, and in the second one of scarlet fever. In the third there were two children ill in the same bed. The boy had been quite well until the previous evening, when he had complained of general malaise. I found him with a flushed face, a sore throat, and a well marked *scarlatinal* rash on his body. The girl had been out of sorts for a fortnight, but had only developed a rash on that day. She exhibited a typical *measles* rash with blotchy face, injected conjunctivae, and so on. By June 19th the rash had nearly disappeared on the boy and quite on his sister.

On the morning of June 20th the boy still had a sore throat, and one of the left cervical glands was much enlarged. The girl was playing about the room. In the evening, however, she was sick. Next day she had a sore throat and a slight but quite distinct scarlatinal rash, most marked on the chest.

By the morning of June 24th the boy was feeling very much better, and was peeling slightly on the chest. He was not so well in the evening. The next day his face began to assume a blotchy appearance, and by June 27th this was well marked. The body also showed a definite measles rash, though not a thick one.

The subsequent progress of both patients, and also of the patients in the other houses was uneventful.

I do not recollect seeing any other cases in which these two diseases have been so closely associated without any sacrifice of their individuality. But the way in which the symptoms of one specific fever will invade the territory definitely mapped out by the textbooks for another is often as puzzling as it is interesting. In the two cases I have described both diseases must for a certain time have been present together. There is no obvious reason why a slight alteration in the date of the primary infection in one of them should not have led in that patient to the appearance of both rashes on the same day. Possibly, but for the fact that the other case would have made things clear,

this might then have been described, quite naturally, as scarlatinal measles, instead of scarlatina and measles. I do not mean to suggest that the former term may not sometimes be an appropriate one.

James F. Blackett.
Audley, Newcastle, Staffs. M.D.Lond.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

ROYAL NAVAL HOSPITAL, PLYMOUTH.

NEEDLE IN APPENDIX.

(By W. Eames, Deputy Surgeon General, R.N.)

A boy, aged 15, was admitted on June 21st, with history of abdominal pain of an aching character, of six days' duration. It was referred to the right side of the abdomen between the umbilicus and Poupart's ligament. There was marked tenderness in this region, with rigidity of the right rectus muscle and some dullness on percussion. The patient felt well generally; the bowels acted normally, the tongue was fairly clean; the abdomen moved quite well with respiration; temperature 101.4°, pulse 80.

On the following morning, under an anaesthetic, I opened the abdomen through McBurney's point, and found marked adhesions between the caecum and abdominal wall, rendering the former almost immovable;



firmly attached was a large indurated tubular mass, evidently the appendix. After all adhesions had been carefully divided, the caecum, together with what proved to be the enlarged and indurated appendix, was brought out of the abdominal opening. An inch of the distal end of the appendix was apparently normal, but at its junction with the enlarged indurated portion remaining a black spot was observed, and was found to be the point of a needle, which occupied the whole of the distal part of the appendix, which was apparently healthy. The whole appendix was removed with the needle *in situ*, which is to be seen in the accompanying photograph, taken by E. Matthews, S.B.A. The whole appendix was 3¼ in. long, and in the thickest portion was ¾ in. in diameter.

The patient had no knowledge of having swallowed a needle, which evidently entered the intestinal tract in a food mass. The patient's post-operative progress was quite satisfactory.

The fourth congress of the German Urological Society will be held at Berlin, under the presidency of Professor L. Casper, on September 29th and 30th and October 1st, 1913. The subjects proposed for discussion are serology and vaccine therapy in urology, and vesical calculus.

A Russian physician, Dr. Hippolit A. Dominsky, has recently died of pneumonic plague caused by infection in the course of experimental research. A woman student of medicine at Moscow, O. M. Krasilnikowa, has also fallen a victim to pulmonary plague contracted in the discharge of her duties.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

Surgical Section.

Tuesday, December 10th, 1912.

Mr. G. H. Makins, President, in the Chair.

Filigree Implantation.

Mr. Lawrie McGavin, in a paper on the results of filigree implantation in the radical cure of hernia, said that he had operated on 314 herniae exclusive of femoral—263 inguinal, 51 umbilical or ventral. In 106 of the inguinal and 40 of the umbilico-ventral filigrees were used, 20 being double inguinal. The total wire filigree implantations numbered 166. Of the umbilico-ventral 36 and of the inguinal 6 occurred in women, mostly obese. The oldest patient was 72. A filigree was used for one or other of the following reasons: Hernia of large size, long standing, age, atrophy from truss pressure, a wide hernial gap, or the necessity for doing very heavy work. There was recurrence in 2 cases, one from sepsis, the other from the filigree having been placed on the extraperitoneal fat. Both had been operated on since without recurrence. Recurrence might, but rarely did, follow sepsis; more often it was due to faulty technique. Filigrees gave rise to no untoward symptoms, and after a short time they could only be removed *en bloc*. There was a slight increase in the danger of sepsis. Seven cases suppurated. After suppuration the filigrees became more firmly embedded; they should not be removed. Displaced wires in a sinus could be removed without disturbing the filigree. Herniae after appendicular abscess were difficult to cover over with muscle, and the appendix should always be removed before implantation. The separation of adhesions and reduction were the dangers in large herniae. His mortality for the ventro-abdominal was 10 per cent., for the inguinal 0.9 per cent. The increased mortality was due to the herniae being of huge size and occurring in less healthy subjects, and there was an increased interference with the tissues. Few, if any, herniae could be considered incurable, and filigree implantation was the only true radical cure in bad cases. The filigree he used was one with the wires separated ¾ in. and fixed by a central and two lateral longitudinal wires. For inguinal herniae he used two filigrees to allow the cord to pass. Mr. Jonathan Hutchinson thought that the cases had not been followed up for a sufficient length of time, and that filigree implantation was not the only radical cure. Many cases tended to recur in other situations after a radical cure. The percentage of deaths and suppuration was increased by filigree insertion. Still Mr. McGavin's paper would encourage him to use filigree more often. Mr. Stanley Boyd thought that the paper was a fair proof of the advantage of the filigree. He had lately used Kodak films instead of filigree. Mr. Barker agreed as to the use of the filigree except for inguinal herniae, which he thought could always be controlled by a Bassini; if used the filigree could be bifurcated so that two need not be used. Herniae occurred in other situations after radical cure as the patients exerted themselves once more. In some ventral herniae there was no other method of cure; filigrees inhibited the growth of organisms, and the scar after suppuration was stronger than usual. Mr. Sidney Boyd thought that filigrees were also useful in direct inguinal herniae, and that the increased risk of sepsis was of not much importance. Mr. McAdam Eccles said that the filigree was useful in the umbilico-ventral, but rarely necessary for the inguinal. The difficulty in the large herniae was the reduction of the contents, and he hoped that in future they would not be allowed to get so big. Filigree was of great value when much tissue had to be removed, and he had placed the filigree on the intestine itself. Mr. Jocelyn Swan said that he had obtained good results from the use of the filigree in ventral herniae; four years had passed without a recurrence. He had found it especially useful in cases where portions of the abdominal wall had had to be removed.

Mr. McGavin, in reply, said that his list did not include his later cases; in the earlier cases eight years had elapsed without a recurrence. Some 24 of the cases had

been repeatedly operated on previously without success. He considered wire filigree the only radical cure in these cases, because if the filigree was properly placed and the wound did not suppurate the condition would never recur.

Clinical Section.

At a meeting on December 13th, Sir William Osler, Bart., President, in the chair, the following were among the exhibits:—Dr. A. M. Gossage; A case of *Obstruction of the superior vena cava* in a man, aged 74, who had had syphilis in his youth. The obstruction was probably due to cicatricial contraction after a gumma in the upper part of the thorax. Mr. Ralph Thompson: Two cases of *Prostatic calculi*. In the first case operation had been performed by the perineal route, and one large and three small faceted pieces of stone, chiefly phosphatic, removed from the prostate. The patient made a good recovery. In the second case a skiagram revealed three prostatic calculi lying behind the pubes. Death occurred later from aortic aneurysm, and an examination *post mortem* of the prostate was obtainable. Dr. F. Parkes Weber: Family *Cerebellar ataxia* in two half-sisters, aged 15 and 4 respectively. In both cases the actual ataxia was very slight. In the second case spasticity of the gait and Babinski's sign pointed to the involvement of the cerebral motor cortex also. Also *Bilateral cervical ribs*, with atrophy of the hand muscles in two cases, girls aged 21 and 16½ respectively. Symptoms began about the time of puberty in both. In the second case the right seventh rib had been removed, an operation which had relieved the symptoms and improved power. In the first the right hand only was affected, and in the second the right hand was affected much more than the left. Mr. Philip Turner: *Sarcoma* of the foot in a man aged 72. Dr. W. Essex Wynter and Mr. John Murray: Subcutaneous *Drainage for ascites*, by means of a decalcified bone tube between the peritoneal cavity and subcutaneous tissue. Suppuration necessitated withdrawal of the bone tube fourteen days later, but the fluid had not reaccumulated. The case was one of hobnail liver in a woman. Dr. R. Hutchison: *Hirschsprung's disease*. The patient was shown at the last meeting and was shown again after treatment by brine enemata. The abdomen had become much flatter. Dr. A. F. Hertz: Case of organic *Hemiplegia* following typhoid fever, in which the plantar reflex was flexor, but Babinski's second sign—combined movement of the trunk and pelvis—was present. Mr. T. H. Kellock: A boy after *Pneumonotomy* for a large pin in the base of the right lung. Bronchoscopic methods had been unsuccessful. No empyema was present. The operation was performed from the back, a window being made in the parietes, the lung everted, its base incised, and the pin removed. Good recovery followed.

Section of Laryngology.

At a meeting on December 6th, Mr. Herbert Tilley, President, in the chair, the following were among the exhibits:—The President: (1) A case of *Necrosis of the cricoid cartilage* fifteen years after successful operation on the epitheliomatous anterior ends of the cords by Sir Felix Semon, to illustrate that sequelae of such thyrotomies were not necessarily malignant in character. By laryngoscopy a narrow glottis aperture surrounded by intensely congested cicatricial tissue was observed, while a pale granulation presented itself in the glottis. Dyspnoea, dysphagia, and tenderness on pressure were present. Tracheotomy and thyrotomy with resulting cure was performed. (2) A man, aged 68, with an enlarged tonsil treated five times by *Galvano-puncture*. Three punctures were made on each occasion. The enlargement was glandular, and shrivelled up rapidly, with relief to the catarrh and deafness. Dr. W. H. Kelson ascribed the result due to a property of the cautery to initiate absorption. Dr. Watson-Williams pointed out that these lymphoid hypertrophies were due to sepsis, while the cautery was antiseptic. Dr. Fitzgerald Powell remarked that the usual practice was to cauterize superficially and not to puncture. Dr. L. H. Pegler was of opinion that the cautery had been given up on account of the resulting pain. Dr. Dundas Grant referred to the neuralgic pains and closure of the lacunae as the reason for the disuse of the cautery. The President replied that his patient had not complained of pain. Mr. C. W. H. Hope and Dr. Emery: A case of *Gummatous rhinitis* treated with two injections of 0.55 gram of salvarsan. Remarkable improvement followed. Previously potassium iodide had been given with mercurial inunction for three months without improvement. Mr. F. H. Westmacott said that in his experience potassium iodide in 20-grain doses was still necessary after salvarsan. Mr. Logan Turner related the effects of *Nascent iodine* obtained by the use of sodium iodide and hydrogen peroxide lotion. Mr. Hunter Tod said his experience of nascent iodine was that only some of the cases improved, while the method was tedious. He recommended the curette; treatment of the nose should precede skin treatment. Sir StClair Thomson had not found arsenic of help, but relied on improved hygiene in spite of relapses. Dr. H. J. Davis related a case in which nascent iodine had caused the palate in one case to break down. Dr. D. R. Paterson: A chicken bone removed from the upper part of the oesophagus, where it was impacted for forty-eight hours. Dr. H. J. Davis: (1) A case of transverse passage of a Mauser bullet through the larynx, with destruction of both cords. (2) A spicule of bone removed by upper *Bronchoscopy* from the trachea of a boy, aged 5, suffering from dysphagia. Dr. Phillips had anaesthetized this patient with ethyl chloride, and then injected ether into the buttock. The anaesthesia was excellent. Drs. P. Watson-Williams and N. S. Finzi: Three cases of malignant disease which had benefited by *Radium treatment*. A patient, aged 69, with sarcoma of the left superior maxilla, was treated by operation in January, 1912, and the maxilla, with the exception of the roof, removed. The growth, a round-cell sarcoma, recurred eight months later in the roof. The roof was removed, but the pterygo-maxillary fossa had been invaded as well as deep glands in the neck. Dr. Finzi described the treatment with 200 mg. of radium with a platinum screen for four and a half to fourteen hours. He considered round-celled sarcoma and rapid maxillary epithelioma to be favourable cases. Mr. Herbert Tilley had found that squamous epithelioma gave unsatisfactory results with radium at the institute.

EDINBURGH OBSTETRICAL SOCIETY.

Wednesday, December 11th, 1912.

Dr. Haig Ferguson, President, in the Chair.

Pseudo-eclampsia.

Sir Halliday Croom, in a paper on pseudo-eclampsia, described the case of a secundipara, seven months pregnant, who had had severe fits for two days with marked coma. As the urine was normal and the toxaemias of pregnancy thus eliminated, and there was no evidence in the eyes or limbs of any nerve lesion, the diagnosis was extremely difficult. The patient died, and at the autopsy a cholesteatoma the size of a Tangerine orange was found in the brain, lying near the anterior end of the left cerebral hemisphere opposite the superior middle and inferior frontal convolutions. In another case the pseudo-eclampsia was due to meningitis. Dr. Berry Hart observed that if there had been no autopsy the case would have been called eclampsia without albuminuria. Dr. Ballantyne believed that there were, in fact, cases of true eclampsia without albuminuria, though they were rare. Dr. Fordyce mentioned two cases treated as eclampsia in which at the autopsy cerebral haemorrhage was found. Dr. James Young suggested that in such cases the haemorrhage might be really a sequel to the eclamptic seizure. Sir Halliday Croom, in reply, stated that, in view of the cases he had recorded and similar observations in literature, he was no longer inclined to believe in eclampsia without albuminuria.

True Eclampsia.

Dr. George R. Livingston read notes on five cases of eclampsia treated in a country practice. In the first three (treated by hypodermic injections of morphine sulphate), the mothers recovered and the children were born alive. The fourth patient had eclampsia in four successive pregnancies—namely, (*a*) fits and miscarriage about the fourth month; (*b*) fits and miscarriage about the sixth month; (*c*) fits and

miscarriage about seven and a half months. During this there was a severe pulmonary haemorrhage. On these three occasions the patients were treated with hypodermic injections of morphine sulphate. (*d*) During the fourth pregnancy thyroid extract was given prophylactically throughout, and the seizure did not occur till full time. Then morphine sulphate was again given and chloroform controlled the fits for several hours. The child was born dead and the mother expired several hours after labour. The fifth case was a primipara aged over 30, who was seen in deep coma. There was no dilatation of the os. Caesarean section resulted in the saving of both mother and child. The fits ceased after the operation.

Sir HALLIDAY CROOM referred to the unusual number of eclampsias the author had had in his practice in the country, and congratulated him upon his success with morphine sulphate. Dr. BALLANTYNE thought that the best treatment in a country practice was morphine sulphate, whilst in a hospital the best results were obtained by irrigation of the stomach, hot packs, etc. Dr. OLIPHANT NICHOLSON suggested that the fourth case reported might be one of chronic granular kidney. Dr. LIVINGSTON, in reply, said that in the intervals there never was any trace of albumen. The death of the patient was probably due to chloroform, which should never be used in any toxaemic state.

Exhibits.

The following were among the exhibits:—The PRESIDENT: A *Multilocular cyst* incorporated with the wall of the uterus and lined with epithelium. Dr. M. R. DRENNAN: A female fetus showing a large left-sided congenital *Diaphragmatic hernia*.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on December 6th, Dr. G. P. SHUTER, President, in the chair, Mr. SAMPSON HANDLEY, in a paper on *Pelvic appendicitis*, dealt with the characteristics of appendicitis when the appendix occupies a pelvic position. Early operation was specially important in pelvic appendicitis, because in the earliest clinical stage of the disease the appendix might be gangrenous or distended to the point of rupture, and because in the pelvis the formation of a small localized abscess round the appendix was the exception. More usually an unlocalized peritonitis resulted, which was very apt to produce inflammatory paralysis of the pelvic intestines. The pelvic ileum was intensely congested, oedematous, sharply kinked and immobile, while the ileum above the pelvis was distended but not inflamed. The obstruction was, moreover, a duplex one, for he was able to show from his cases that the pelvic sigmoid also was the seat of obstruction—a fact of great importance in treatment. Clinically the disease might be divided into three stages: (1) The stage of hypogastric colic, or ambulatory stage; (2) that of intestinal obstruction; (3) that of peritonitis. Frequently cases were first seen by a medical man in the second stage, for the subjective signs were less marked if the appendix lay in the pelvis. The clinical signs were next dealt with in detail. Pain on micturition, and the absence of rigidity and swelling in the right iliac fossa, were especially referred to. A retrocaecal appendicitis with trickling of pus into the pelvis might closely simulate a pelvic appendicitis. Moreover, a pelvic abscess was a common result of inflammation of a normally placed appendix; in such cases intestinal obstruction rarely resulted, and the prognosis was much better than in true pelvic appendicitis. In regard to treatment, seven cases operated upon during the first 48 hours after onset all recovered. Ileo-caecostomy was necessary in only two of these cases. Of 8 late cases, some of whom were first seen in a hopeless condition, 5 died. It was essential to decide definitely whether inflammatory obstruction was or was not present. In the presence of obstruction an ileo-caecostomy was necessary. Remembering that the pelvic visceral was also paralysed, it was necessary to provide a temporary safety-valve for the large intestine by tying a catheter into the caecum. Ileo-caecostomy combined with [illegible] was the method of choice for obstruction of pelvic inflammatory origin.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on December 13th, Dr. J. DOBSON, President, in the chair, the following were among the exhibits: Dr. WARDROP GRIFFITH: A woman, aged 26, in whom *Hemiplegia* had developed gradually though rapidly. The initial symptoms were partial loss of power in the left arm and leg, with feelings of chilliness in these limbs and also in the left side of the face. She was able to get to bed, but soon after lost the use of the left side of the body completely. Steady improvement is now taking place, two months after the onset. Dr. GRIFFITH was of opinion that an initial embolism had occurred, and this had been followed by thrombosis, and that the improvement was to be attributed to absorption of the clot. Dr. CHURTON: Two cases of *Angina* associated with marked arterio-sclerosis. Dr. WILFRED VINING: A patient exhibiting symptoms suggestive of *Friedreich's ataxia*. The indications were largely confined to the right side, and had been present for about twelve years. There was no evidence of heredity. Dr. MAXWELL TELLING: A case of *Locomotor ataxia* in a woman whose husband was a tabo-paralytic. Major SPENCER: A case of lympho-sarcoma treated with *Coley's fluid*. The patient was a man of 26, from whom a large mass of glands, diagnosed by the pathologist as lymphosarcoma, had been removed in March, 1912. Owing to rapid recurrence, a second operation was performed three weeks later, but it was not possible to completely remove the tumour. Treatment by Coley's fluid was commenced forthwith, and the dose gradually increased to 10 minims daily. The tumour was completely gone at the end of eight weeks, and there had been no recurrence up to the present time. Mr. LITTLEWOOD: A case of *Salivary fistula* following a gumma of the cheek. He had excised the fistulous opening and then dissected out the duct, having first passed a silver wire along it. A small steel tube was then passed into the duct, and tube with duct passed through the cheek into the mouth, an opening having been made for it through the outer edge of the masseter muscle. The end of the duct with tube *in situ* was secured by a catgut stitch, which was fixed around the last upper molar tooth, and the incision on the outer side closed. The result was satisfactory.

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting on December 5th, Mr. ROBERT JONES, President, in the chair, Drs. STOPFORD TAYLOR and R. W. MACKENNA showed the following among a large number of cases, photographs, and casts: (1) A girl, aged 8, with three varieties of tuberculous lesions—namely, lupus pernio affecting the fingers, lupus erythematosus, and pulmonary tuberculosis. Von Pirquet's test, positive. (2) A man suffering from *Darier's disease*. Under treatment with the *x* rays very marked improvement has been obtained, as shown by photographs taken before treatment was begun. (3) A case of *Lupus verrucosus* treated with zinc ions. The soft and pliable scar of almost normal colour was a striking feature. Photographs of the hands, showing the great extent of the disease before the treatment, were exhibited. (4) A case of *Chlorine acne* in a chemical labourer. The whole trunk of the patient before treatment was covered with large sebaceous cysts, which were removed by excision. The smaller lesions had been treated with the *x* rays with great success. Subsequently the same gentlemen read a joint paper entering into the whole subject of ionic medication in detail. They concluded, after describing the principles and technique of the treatment, that the widest field for its application was dermatology. The zinc ion gave excellent results in the treatment of lupus vulgaris, the resulting scar being soft, pliable, and elastic, and differing only slightly in colour from the normal skin. Ionization with zinc was the best method of treating intranasal lupus. The zinc ion would also cure many cases of rodent ulcer, and coccogenic sycosis might likewise be successfully treated with this ion. The chlorine ion would cure alopecia areata; ringworm of the scalp might be treated by the iodine or mercuric ion. The copper ion had been used for lupus erythematosus, and the magnesium ion would cure multiple warts.

Pigmented stains might be removed from the skin by ionization. The advantages of ionic medication were the ease of its application, its comparative painlessness, and the fact that it enabled remedies to be introduced into the actual protoplasm of the cell. Even greater results might be expected from ionic medication when some of the radioactive salts had been pressed into service

SCOTTISH OTOLOGICAL AND LARYNGOLOGICAL SOCIETY.

At a meeting at Edinburgh on November 30th, Dr. J. S. Fraser in the chair, the following were included in the proceedings: A report on 76 consecutive *Operations on the nasal accessory sinuses* was submitted by Drs. J. S. Fraser and Raymond Verel. The discussion which followed dealt chiefly with the method of treating antral suppuration, the general opinion being that where washing out the antral cavity did not lead to a cessation of the discharge resort should be had to the Caldwell-Luc operation: in the great majority of cases a cure could be confidently anticipated. Dr. J. H. Gibbs contributed a paper, illustrated by lantern slides and skiagrams, on *Dental surgery in relation to rhinology*. Speaking of developmental defects, he insisted especially on the importance of training young children to use their muscles of mastication for the purpose of widening the dental arches, and so increasing the width of the nasal passage. Dr. J. Kerr Love gave a lantern demonstration relating to the production of both *Congenital and post-nasal deafness* by congenital syphilis, and Dr. Carl Browning adduced some facts which tended to confirm Dr. Love's opinion that the aural condition was the result of an expiring syphilitic virus. Dr. Logan Turner showed 4 cases of lupus of the nasal mucous membrane treated by *Trommenstiel's method* (nascent iodine). Sodium iodide was administered in small doses at first. At the end of a week the amount was 30 grains in twenty-four hours. The nasal cavities were then carefully cleansed and packed with strips of sterilized gauze. The patients were instructed to keep these plugs moist with a solution containing hydrogen peroxide and a small quantity of hydrochloric acid and perchloride of iron. The results were more satisfactory than those of other methods of treatment. Dr. T. W. G. Ross read a paper on 15 cases in which the bone cavity after the radical mastoid operation was treated with *scarlet red*, and showed several patients in illustration. Epithelialization appeared to be hastened by this method. Dr. Milligan, among other cases, reported one of *Traumatic perforation of the oesophagus*. A rabbit bone had been swallowed ten days previous to the patient coming under observation. On oesophagoscopy no bone could be found, but at the level of the bifurcation of the trachea a small granulation was seen. Haemorrhage subsequently occurred, and the patient died on the twelfth day after the accident. On *post-mortem* examination a small patch of necrosis was found in the oesophageal wall. The adjacent mediastinal tissue was also black and necrotic, and the aorta was similarly affected in a small area in which there was a perforation. Dr. Farquharson showed a man who had suffered from severe dyspnoea as the result of a large cyst in the region of the right arytenoid and aryepiglottic fold. The cyst was incised but filled again and was again opened. It gradually disappeared under vocal rest and inhalations, and the movements of the cord slowly returned to normal. Dr. J. D. Lithgow described an intranasal radical operation devised by him for dealing with maxillary antral disease. The first of its two stages was the usual intranasal procedure, the removal of the lower and anterior part of the nasal wall of the antrum. If there were still discharge at the end of five or six weeks the second part of the operation was performed. This consisted in the removal by mean of scissors and snare of the anterior third of the inferior turbinal together with a large part of the adjacent antral wall. The after treatment could be carried out by the patient, and consisted in spraying the antrum with hydrogen peroxide, douching with saline, and insufflating ½ per cent. solution of menthol in parolein. The cavity could be inspected with the aid of the lateral mirrors made for the purpose, and curettage carried out if necessary. Dr. W. G. Portrr showed two cases of *Ozaena* treated by an autogenous vaccine of Abel's bacillus which was found in pure culture. Eighteen inoculations were given, ranging from 10 million at first up to 300 million at intervals of a week in the earlier period, and longer intervals in the later. The formation of crusts ceased and the odour disappeared. Communications were also made by Drs. J. M. Darling, Brown Kelly, J. Adam, W. T. Gardiner and H. H. Bolton.

GLASGOW SOUTHERN MEDICAL SOCIETY.

At a meeting on December 5th, Dr. James A. Aitken, President, in the chair, Dr. David Shannon advocated a more thorough clinical teaching of midwifery, pointing out that at any time after graduating one might be called on to conduct various operative procedures known to have a higher mortality than a gastro-jejunostomy or removal of an appendix. The importance of prematernity treatment of pregnant women was emphasized in the necessity for prompt detection of albuminuria, and by its proper treatment eliminating or minimizing the risks of eclampsia and also of the commoner conditions of hyperemesis gravidarum, acute and *post-partum* haemorrhage, death of the fetus, and subinvolution, which was much more frequent when albuminuria existed. A too common error was the diagnosis of contracted pelvis only when the patient was well advanced in labour. It should be diagnosed before labour began by the practitioner seeing his patient in the last month of pregnancy, and estimating the relative size of the child's head to the brim of the pelvis. Systematic care of the nipples before childbirth prevented much trouble in nursing and many complications. But it was during labour that the majority of mistakes were made. The mortality from puerperal infection was practically the same to-day as forty years ago. A large proportion also of gynaecological ailments following mild attacks of puerperal sepsis might be avoided by more complete asepsis during labour. Obstetrical operations were more dangerous than was generally understood. Andrews of Marburg had shown that even in lying-in hospitals the mortality from the induction of premature labour was nearly 2 per cent., from version 1.7 per cent., from application of forceps 2.8 per cent., from manual removal of placenta 8 per cent., while there was a rise of temperature in 50 per cent. of all cases. Hence such procedures could never be lightly undertaken. Interference in the second stage in most of the minor degrees of contracted pelvis was unnecessary if due consideration were given to the relative size of the child's head and the brim of the pelvis. During 1909 in Professor Munro Kerr's clinic there were 46 cases of contracted pelvis, and out of that number 25 cases with true conjugates ranging between 3¾ and 3¾ in. delivered themselves spontaneously without any fetal or maternal mortality. The majority of these women were in the second stage of labour many hours, and the results were perfect. A common and grievous error was frequent in these when the practitioner, finding no progress after some hours in the second stage, applied forceps and failed to extract the child. Caesarean section if now performed showed a mortality of 34.5 per cent., in place of the mortality of 2 per cent. which prevailed if section were carried out when forceps had not been applied. In occipito-posterior cases forceps were often applied too early. Early interference in face and breech presentations likewise led to mischief. Manual removal of the placenta, it should be remembered, was a dangerous procedure, and one should hesitate long before carrying it out.

GLASGOW OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

At a meeting on November 27th, Dr. Lindsay, President, in the chair, Professor Munro Kerr analysed a year's work in his ward in the Glasgow Royal Infirmary. It included 6 abdominal sections performed during pregnancy, 2 ovariotomies, 1 myomectomy, 1 appendicectomy, 1 intestinal obstruction, and 1 ruptured bladder with retrodisplacement of the gravid uterus. With the exception of the latter

all ended in recovery and without pregnancy being disturbed. These results were attained by handling the uterus with extreme gentleness, for abortion was liable to occur if the uterus were roughly handled. In all the cases the patients were kept under morphine for the first two days after operation. A number of papers relative to *Caesarean section* were then read. Dr. A. W. RUSSELL, describing the widened scope of the operation and its modification, described the extraperitoneal method of Frank as the most noteworthy of the latter. Its marked success depended on the ease with which the peritoneum could be pushed up from the bladder and uterus. The obstetrician had in this operation a means of helping a woman with much less risk than by the intraperitoneal method at a stage when labour was advanced. The risks of serious septic trouble were markedly diminished. Caesarean section by one method or another secured for mother and child in many difficult and abnormal cases better results than accrued from the older and often mutilating practices of high forceps, *accouchement forcé*, decapitation and embryotomy. Dr. LAURIE (Greenock) recorded a case of Caesarean section in which the operation was successfully performed for obstruction to delivery by a subperitoneal dermoid tumour. Dr. W. D. MACFARLANE, after recording corresponding treatment of a case of placenta praevia, stated that he had seen 5 cases during the past year in which he had found that the methods of Braxton Hicks and vaginal plugging had not given satisfactory results. It would have been possible in all the cases to perform Caesarean section easily with probable successful result both to mother and child. In 26 cases of placenta praevia treated by Caesarean section and reported by Krönig and Sellheim all the mothers and children recovered, and the operation was perfectly justifiable in the hands of one accustomed to abdominal surgery. It was the ideal treatment of central placenta praevia when the mother had not been infected by much handling and the child was viable. Dr. DAVID SHANNON described a case in which Caesarean section had been adopted at the third delivery of a patient whose perineum had been badly torn at each previous delivery. On the third occasion, considering the certainty of further tearing, and as the perineum was almost wholly made up of scar tissue, Caesarean section was advised and performed. She was sterilized at the same time by tying the Fallopian tubes, and made an excellent recovery.

HARVEIAN SOCIETY.

AT a meeting on December 12th, Dr. H. J. MACEVOY, President, in the chair, Mr. CHARLES W. M. HOPE, in a paper on *Suppuration in the nasal sinuses*, said many cases first came under notice on account of troubles otherwise than nasal; an instance in point was a patient who came to him on account of deafness in the right ear, due to middle-ear catarrh, the cause of the latter being a foul maxillary empyema on the same side. Dr. SPILSBURY, in a paper on *Injury as a predisposing cause of new growths*, said that tumours of the more superficial parts of the body were those in which a history of injury was most frequently obtained. Osseous tumours occurred with greater frequency in the bones more commonly injured, and in those parts thereof which were more superficial. In brain tumours, the tuberculous as well as the neoplastic, not only was there a frequent association with injury, but in some cases a remarkable relationship of the tumour to the injured area either immediately beneath it or in the *contre-coup* position. Again, in melanotic growths of the skin, injury or chronic irritation by clothes or otherwise appeared frequently to be a cause of tumour development. In testicular or mammary tumours injury was probably a less frequent predisposing cause.

[redacted] Eliot and Osborn, on behalf of the National [redacted] for the Prevention of Infant Mortality and for the Welfare of Infancy, appeal for funds for the purpose of [redacted] the outbreak of [redacted] lead [redacted] 1911. Mr. John Burns is the president of the association, and Dr. Barbara [redacted] is chairman of the executive committee. It has been arranged to hold a post-graduate course on the feeding and care of infants in London in January [redacted] The [redacted] is organizing an English-speaking Conference on Infant Mortality, to be held in London on August 4th and 5th; [redacted] particulars may be obtained from the [redacted] Hon. Sec., 4, Tavistock Square, London, W.C.

Reviews.

LEAD POISONING AND LEAD ABSORPTION.

THE book on *Lead Poisoning and Lead Absorption*[1] by Dr. LEGGE and Mr. GOADBY fills a gap and ought to be useful to certifying factory surgeons and medical men interested in the subject of occupational diseases. The lead question is approached from all points of view and very fully discussed. The book covers ground which neither of the writers single-handed could have adequately mapped out. After a short historical sketch of the chemistry of lead, the channels through which the metal or its compounds gain entrance into the body—the respiratory and gastro-intestinal tracts and the skin—are discussed. The writers are disposed to attach more importance to the respiratory than to the intestinal tract, since men when at work inhale considerable quantities of dust. That fine particles of dust reach the lungs is now generally admitted, and that lead dust is capable of being absorbed by the lung is now regarded as certain. Upon the question whether it is so exclusively the channel as the writers plead, and as Mr. Goadby's experiments appear to indicate, opinions are divided. Sir Thomas Oliver, in his Goulstonian Lectures and in his *Diseases of Occupation*, is quoted as one of the authorities who, while admitting the respiratory source of the absorption of lead, is not disposed to put aside the gastro-intestinal tract so entirely. Meliere's view—that absorption of lead dust by the lung is not proved, and that it is not a channel of absorption of practical importance, since dust inhaled must for the most part be deposited on the mucous membrane of the upper part of the respiratory tract and be absorbed from mouth and larynx—receives little support from the writers, who state that experimental evidence is entirely opposed to these suppositions. There has lately come into the field a strong supporter of the gastro-intestinal tract as opposed to the respiratory in the person of Saito, a Japanese investigator, who has demonstrated experimentally that even when lead is inhaled it enters the body mostly by the gastro-intestinal tract. There is less divergence of opinion in regard to the view that when lead dust is inhaled it is far more dangerous and produces symptoms earlier than when passed into the system directly through the intestinal canal. The mechanism of the absorption of lead is described in an interesting manner. In plumbism, as in other forms of poisoning and the administration of certain medicines, the white corpuscles of the blood are active agents of absorption and distribution. Inside these corpuscles lead enters into combination with the proteid constituents, and since the corpuscles with the absorbed lead do not readily stain so as to show the presence of the metal, the probability is that the lead enters into some peculiar combination with the protein such as peptonate or albuminate. Other writers have referred to the fact that the phagocytes in the gums take up and retain particles of lead, and that by means of the white corpuscles which have become the pus corpuscles in an abscess, lead is eliminated from the body.

In the chapters on susceptibility and immunity the reader will find valuable and interesting material. As regards the influence of sex and the greater susceptibility of the female to lead poisoning, the views advanced by Oliver years ago, and based upon his experience in Newcastle, are supported by the authors, who also speak in similar terms of the influence of alcohol as a predisposing agent for harm.

The pathology of lead poisoning is discussed at considerable length, and the various conflicting theories are impartially reviewed. While the paralytic physical signs and symptoms suggest a lesion of the peripheral nervous system, changes in the central nervous system as well are frequently found, particularly in advanced cases. Minute haemorrhages in the brain are not unknown. Mott found them. Westphal believes that there is degeneration of brain with oedema; so, too, does Chvostek. Kolisko found cerebral oedema in a case of acute saturnine encephalo-

[1] *Lead Poi[redacted]* By Thomas M. Legge, M.D.Oxon., H[redacted] of Factories, and Kenneth W. Goadby, L.D.S. [redacted] National Dental Hospital. International Medical Monographs. Edward Arnold. 1912. (Med. 8vo, pp. 516. 12s. 6d. net.)

pathy, while Quensel and Nissl observed changes in the cells of the cortex. In Steiglitz's experiments on animals anatomical changes were found in brain and spinal cord, while Prévost and Binet observed inflammatory changes in the peripheral nerves of rabbits after lead had been given for one month. The paralysis of lead poisoning is believed by the authors to be the result of minute hæmorrhages in the nerves supplying the affected muscles, or in the muscles themselves. The various forms of paralysis are described.

So far as the kidneys are concerned it is held that the changes principally affect the interstitial tissue. Anæmia is regarded as an early sign of lead poisoning. There is a diminution in the number of red blood corpuscles and occasionally a mild leucocytosis in the early stages of plumbism, the increase being mostly of lymphocytes and mononuclear corpuscles. A slight increase of eosinophiles has also been noticed, but beyond the diminution of red corpuscles none of these is constant or pathognomonic. Basophilia is more important since it is by many writers believed to be a reliable sign of plumbism. It is met with in other diseases and is not always easy to demonstrate. Recognizing this difficulty Legge and Goadby state that as it would be impossible to expect the general practitioner or the certifying surgeon to estimate the basophile content of the blood, "all such estimations would necessarily have to be performed at some properly equipped pathological laboratory such as at the present time many municipal authorities possess."

Attention is properly directed to the difficulty of stating from naked eye *post-mortem* appearances alone whether death was due to plumbism. Several points are laid down to be looked for in the dead body, but beyond two or three of them they are of doubtful value and could not be brought forward in a court of law.

The treatment of plumbism and the preventive measures to be used against lead poisoning are detailed at considerable length. The importance of periodical medical examinations is insisted upon. As the processes of manufacture of white lead, its compounds, and the presence of lead in metals are fully described, this book, as already stated, ought to find its way into the hands of certifying factory surgeons, works' medical officers, and all medical practitioners who take a thoughtful interest in this aspect of occupational disease.

PELLAGRA.

THE spread of pellagra in the United States of America during the last few years has occasioned something approaching to dismay amongst medical men in that country. Sporadic cases were recorded in the United States as long ago as 1863, and from time to time up to 1907 reports of the disease were received from several districts of the Southern States. By 1911 cases were notified from no fewer than thirty-four States, and in some of these the disease prevailed to a marked extent. Dr. NILES, in referring to the subject of etiology in his book on *Pellagra*,[1] deals fully with the damaged maize or "Zeist" theory, and gives records of experiments and observations tending to support it. Sambon's theory that pellagra is an insect-borne disease is also set forth, but the author is "unable to subscribe to it"; at the same time he does not attempt to dogmatize on the subject of etiology, which he thinks is still open. The varied signs and symptoms of pellagra in its cutaneous, gastro-intestinal, and cerebro-spinal aspects are fully dealt with. Perhaps the most interesting phenomena of pellagra are those affecting the nervous system; and of these, the mental depression, the hallucinations, and the dementia—conditions of mind which condemn the patients to lunatic asylums—from many points of view call for especial attention. In searching for pellagra cases in any country, the lunatic asylum is the first place to be visited, and, if for no other reason than the fact that the disease can be considered as a factor in lunacy, pellagra becomes of peculiar interest.

Beyond an account of changes in various organs in no way specific, the author finds nothing positive as to the pathology of the disease, and can tell us little not previously published. A specific treatment for pellagra has not been found. Lombroso employed arsenic, sodium chloride, and a liberal diet. Babes found benefit from atoxyl and sodium arsanilate. More recently transfusion and a pellagrous serum have been employed; and even surgical operations, such as appendicostomy or caecostomy, with irrigation of the colon, in the belief that the "pellagra-germs" frequented the colon, have been tried. The general treatment consists of dietetic and hygienic care of the patient; baths of various kinds are commended. Medicinal treatment varies with the stage of the disease; arsenic and potassium iodide have been most favoured. The prophylaxis of pellagra must at present remain uncertain, for until it is determined whether it is or is not a communicable disease nothing definite can be said. To those who uphold the "Zeist" theory, the withdrawal of damaged maize from the dietary of the community is a simple prophylactic measure; but if the infection is carried by an insect, all attention must be devoted to prevent that insect—a *Simulium*, according to Sambon—reaching the bodies of uninfected persons.

Dr. Niles's book is an excellent exposition of pellagra in all its bearings, as far as we know them to-day. As the author remarks, many of the opinions dwelt upon may be refuted to-morrow, but as a fair and unbiassed account of pellagra to date we could not desire a better. The illustrations are excellent, and the book is presented to us in a manner which at once commends itself to favourable notice.

THE PARENTAL AGE-FACTOR IN EVOLUTION.

THE questions which Dr. EWART has set himself to answer in his monograph on *Time and the Second Generation*[2] are of considerable interest, theoretical and practical, but also of no little difficulty. If we accept Professor Keith's estimate of the minimum antiquity of the human race as 1½ million years, it seems unlikely that appreciable evolutionary changes can be detected from generation to generation. Dr. Ewart, however, has with praiseworthy industry conducted a number of observations upon the relation between parental age and certain characters of the offspring: he claims to have demonstrated the power of the former to produce permanent and transmissible modifications of the latter, tending, under favourable conditions, from the simple to the complex, from the homogeneous to the heterogeneous, from the inco-ordinate to the co-ordinate—that is, conforming to the type of evolutionary advance as formulated in Spencer's well-known law.

The community which was taken as his field of observation was that of Middlesbrough, a thriving modern town of 105,000 inhabitants, mainly dependent on the iron industry, and comprising representatives of all the racial elements that have contributed to the nation as a whole. Between these various elements mating takes place, and Dr. Ewart is inclined to attribute the well-marked energy of the town to the inherent stimulus of the cross-breeding. The first point examined was the distribution of recent births in relation to parental (maternal) age; and this investigation showed a relative increase of births during the maturity period (mother aged 25 to 30) and a decline in those at the extremes of child-bearing life. Further inquiries had as their objects the estimation of the effects, if any, of maternal age upon the fertility of the mother herself, and upon the eye-colour, natural immunity, death-rate, stature, growth, sex, and mentality of the offspring. Dr. Ewart concludes that fertility is at its highest at or about the twenty-seventh year, and in this opinion he has the support of Matthews Duncan. The result of his various inquiries has led to his forming the opinion that children born when the mother is at or about this age show upon the average a distinct superiority in regard to the characteristics chosen for investigation, while at the same age-period the birth-rate for the two sexes is approximately equal. "The main point which cannot fail to strike us is," he says, "the coincidence in the general nature of the changes observed in relation to parental age. In all characters we have a rise up to about the twenty-seventh year, and then a fall."

Dr. Ewart appears to favour Weismann's hypothesis of the non-transmissibility of acquired characters, properly

[1] *Pellagra: an American Problem.* By G. M. Niles, M.D., Professor of Gastro-enterology and Therapeutics, Atlanta School of Medicine, U.S.A. Philadelphia and London: W. B. Saunders Company. 1912. (Med. 8vo, pp. 253; plates 18. 13s. net.)

[2] *Time and the Second Generation.* By Robert G. Ewart, M.D., M.Sc., F.R.C.S., D.P.H. Reprinted from the *Medical Officer*. London: 36-38, Whitefriars Street, E.C. 1912. (Demy 8vo, pp. 43. 1s.)

so-called. The new positive characters which tend to manifest themselves in the offspring of mature as contrasted with younger or older parents must, in his opinion, be credited to some force inherent in the germ itself, which at this time attains its maximum potentiality. Under the avowed influence of Bergson he, with that philosopher, regards *time* as a synonym for some creative impulse (*élan vital*) making for differentiation and racial progress. There will probably be less hesitation in accepting his further deduction that, by the selection of a series of matings conducive by the age of the parties to maturity births, a new type of human being might be obtained within comparatively few generations. But as, in Middlesbrough at least, the tendency is for such mature matings increasingly to prevail, the variations observed should be more conspicuous than they are, unless, as he inclines to believe, some counteracting influences favour the maintenance of the racial average. This question is considered, among others, in an appendix on Time and the Third Generation, in which the factor sought is identified as a diminishing fecundity among women born of mothers between the ages of 25 and 30. On the other hand, he finds that retrogressive tendencies are checked by the higher mortality prevalent among the offspring of parents at either extreme of reproductive life.

We congratulate Dr. Ewart on a valuable and suggestive piece of research, and recommend all who are interested in the important subject with which it is concerned to obtain and study his pamphlet.

SCIENCE AND THE OCCULT.

PROFESSOR GRASSET, in his recent work *The Marvels beyond Science*,[4] has very ably covered the field of inquiry generally known as psychical research, and has with no slight success separated the wheat from the chaff—and there is much chaff. Science is ever extending its boundaries however, and the "occult" of yesterday, as Professor Grasset puts it, "becomes the scientific fact of to-day." In the reclamation of this territory medicine has begun to play, and should continue to play, an important part. Already many phenomena which formerly were attributed to "the evil eye" have entered the domain of science, and now belong to what we call "the psychoses." Animal magnetism has become hypnotism; the divining rod, the turning of tables, and a certain number of mediumistic phenomena—all these have ceased to belong to "the occult." Professor Grasset excludes from his survey any consideration of the supernatural, which, as he points out, lies in the domain of theology, not in that of biology. The miraculous, strictly so called, is in his view neither scientific nor prescientific. The difficulties encountered in the investigation of the occult are great, one of the chief being that these phenomena cannot be reproduced at [illegible] that it is almost impossible to submit them to the strict tests of the laboratory. Professor Grasset divides the psychism of the human mind into what he calls the hyperpolygon or upper centres, and the polygonal or lower centres of activity, corresponding, we suppose, to what are ordinarily understood as the superliminal and subliminal consciousness of Myers. In normal circumstances both these centres act in consonance. In sleep, however, we have an example of physiological hyperpolygonal disaggregation, but whereas the upper centre is quite unconscious, the polygon remains active to a variable degree, and being uncontrolled by the hyperpolygon has free scope. In normal sleep these activities are purely sensory, resulting in what are known as dreams. In the waking state "absent-mindedness" is another example of polygonal independence.

Professor Grasset holds that the condition of affairs in hypnotic or provoked sleep is precisely analogous. The polygon of the hypnotized person, being cut off from the supervision and control of the hyperpolygon, is readily affected by suggestion on the part of the conscious mind, or hyperpolygon of the operator. It becomes, therefore, an automatic obedience to the idea suggested, affecting equally the motor or sensory centres. The motor activities of this polygon, indeed, may embrace every form of conscious motor activity, and although automatic and unconscious, are equally regulated and co-ordinated. The familiar phenomenon of "table turning" may be explained in this way. A medium, according to Professor Grasset, is a "person whose polygon is more active and more easily exteriorized than that of others." In such persons polygonal life and activity is notably intense, "while, further, they possess great power of hyperpolygonal disaggregation." With regard to their alleged power of calling up the spirit of the great departed, or assuming temporarily the personality of these, we can only say that the conversations supposed to have been carried on by the shades of Shakespeare and other immortals, pay no great compliment to our ideals of those great minds. Wundt, indeed, with a touch of sardonic humour, bitterly complains of the deterioration undergone by the spirits of the mighty dead. "They talk," he says, "exactly like idiots"! If the sublime hope of a survival after death is ever to be ratified by science, it will not be by such means. It would, indeed, be better, as Dr. Grasset says, to give up wishing for a future life, if we have to share it with such individuals.

[4] Professor Joseph Grasset, M.D. [illegible] London and Wagnalls Co. 1910. (Pp. 379.)

EFFECTS OF COMPRESSED AIR.

DR. LEONARD HILL'S investigations on the subject of compressed air sickness extend over a period of fifteen years, and their comparison with those of Continental workers, notably Paul Bert, has resulted in a volume entitled *Caisson Sickness*.[5] The author gives a graphic account of the evolution of deep-sea diving, and does not fail to note the important landmarks established by his predecessors. He lays stress upon the valuable experiments of Haldane and Priestley, which prove that "the effect of CO_2 on the breathing depends on the partial pressure and not on the percentage of this gas in the air breathed." From this it follows that whatever the pressure a diver is under he requires the same volume of air measured at that pressure. It appears that compression up to four atmospheres is not in itself to be feared. It is, indeed, better tolerated than rarefaction. The results of sudden decompression may be very serious, and include aphasia, paraplegias, myalgia, and Menière's syndrome complex. In his study of the pathology of the condition, the author points out that air embolism of the arteries of the spinal cord is the most constant lesion, because in fatty tissues the circulation is relatively poor, and they absorb much more nitrogen than water. The air bubbles are more numerous in the dorsal and upper lumbar cord than in the lumbar enlargement, where circulation is active. In connexion with caisson working, Dr. Hill makes the valuable suggestion that to prevent the air becoming too warm for efficient work it might be dried by passing it over trays of granulated fused calcium chloride before compression. The process, he states, is both economical and effective. The method of decompression is fully discussed, and as the result of many experiments on his own person Dr. Hill is convinced that the time necessitated for decompression can be much shortened by using in turn every muscle and joint, and by changing position frequently. This is an important point, as the time lost in decompression is considerable. The "stage" method appears on the whole to be the best for use in caissons. With regard to treatment nothing is so efficacious as recompression, but it is important that this should be carried out quickly to prevent permanent damage to the tissues by the air emboli. A recompression chamber ought to be available in all important deep-sea diving work. The book is a most valuable contribution to this important subject, and although highly technical in parts, one does not need to be a profound physiologist to appreciate and enjoy it.

[5] By Dr. Leonard Hill, F.R.S. London: Edward Arnold; New York: Longmans, Green and Co. 1912. (Demy 8vo, pp. [illegible]. 6s. 6d. net.)

NOTES ON BOOKS.

THE National Association for the Prevention of Consumption and other Forms of Tuberculosis held its yearly conference at Manchester this year, and the proceedings thereat are recorded in full in the volume which Mr. J. J. PERKINS, the honorary secretary of the association, has brought out under the title of the *Transactions of the Fourth Annual Conference*.[6] The conference lasted three

[6] *Transactions of the Fourth Annual Conference of the National Association for the Prevention of Consumption and other Forms of Tuberculosis*. London: Adlard and Sons. 1912. (Cr. 4to, pp. 287. 3s.)

days, in the course of which some fifteen papers were read and discussed. They supply a very fair conception of views current among the laity and the medical profession on the treatment of tuberculosis, though mainly in respect of its effect on the child population, and of the influence of the National Insurance Act on the work which sanitary authorities and voluntary societies have hitherto been doing.

Over twenty years have passed since HARE'S *Textbook of Practical Therapeutics*[7] first appeared, and a fourteenth edition has now been published. In the period indicated there have been very considerable changes of thought in therapeutics and several developments of importance, and to all these Professor Amory Hare appears to have paid due attention. Articles on salvarsan and vaccine therapy are included, while the prophylactic and therapeutic use of exercise in the treatment of chest disorders, the local and general application of heat and cold, and other subjects in the region of physio-therapy, are all dealt with at reasonable length. A further good point in this comprehensive and practical treatise is the number of illustrations introduced.

YEAR BOOKS.

Whitaker's Almanack[8] is a British institution. The first issue was for the year 1869, and was the work of the late Mr. JOSEPH WHITAKER, F.S.A., the founder also of the *Bookseller* and editor for some years of the *Gentleman's Magazine*. In the latter capacity he had made for himself a big commonplace book of miscellaneous information. It occurred to him that if this were arranged and pruned it would form a useful volume and meet a public need; that he was right in his opinion was shown by the fact that nearly forty thousand copies of the first issue were taken by London booksellers before the date of publication (December 10th, 1868). The first volume contained 360 pages; the paper-bound edition for 1913 contains 706 pages, and the half-bound 1,052. This includes advertisements, but many of them are in accord with the general character of the book, as, for instance, the list of schools. As usual there are in the new volume some special articles written for the occasion; among them we notice articles on the Insurance Act, on public and private wealth, and on labour unrest.

Under the title of *The International Whitaker*[9] has been brought out a kind of supplement to *Whitaker's Almanack*. As every one knows, the latter contains a good deal of information relating to various lands, and in the supplementary volume such information is extended so as to cover the more important features of the political constitution, history, geography, population, and commerce of every country in the world, including details as to the names of the principal officers of each State. The volume will no doubt receive a welcome.

A further offshoot, but one which has already attained popularity, is *Whitaker's Peerage, Baronetage, Knightage, and Companionage*.[10] A verbal purist might conceivably cavil at the last two terms in its title, but no one could well deny the value of its text. This presents in alphabetical order the names of all persons who legally or by courtesy have any kind of "handle" to their name, and of those who have received a British decoration, together with sufficient details for all ordinary purposes of such reference books.

The annual volume of *Who's Who*[11] continued for a good many years to grow in girth. This year's issue has increased in stature. Last year the height of the column of type was 6½ in.; this year it is 7½ in., an increase of 15 per cent., but the number of pages has only diminished by 6 per cent. The obituary list contains about 250 names. There is, therefore, presumably a considerable proportion of new biographies, and the publishers in a brief introductory note state that the number is continually increasing. A feature that seems to have been a good deal developed in recent years is the inclusion of the names of many persons eminent in the Dominions—an innovation corresponding with the increased interest in, and understanding of, their affairs. The biographies include also the names of many persons of world-wide distinction or celebrity—writers, artists, and politicians. The articles have been revised to the end of last August. It would be difficult to praise this publication too highly; no book of reference would be so often missed from the study table by any one engaged in public life, and it is hardly less indispensable to the newspaper reader.

The publishers of *The Englishwoman's Yearbook and Directory*[12] have again had the advantage of the co-operation of Miss G. E. MITTON as editor, and the issue for 1913 is fully on a par with any of its thirty-one predecessors. A very comprehensive volume, it includes accounts of practically everything that women do by way either of gaining a livelihood or passing their time, such accounts being both detailed and precise. Moreover, so far as they can be judged from the treatment of the subjects of which we have personal knowledge, the accounts are accurate. The same publishers and the same editor have also brought out a new edition of *The Writers' and Artists' Yearbook*;[13] this contains short notes on the preparation of "copy," and indications of the kind of matter accepted by various magazines and journals published in Great Britain, the Dominions, and America.

The "Garden Life" Pocket Diary[14] for 1913 is of the ordinary form of a backloop diary for the pocket, the diary proper showing a week in an opening. But the introductory matter is specialized. There are monthly notes on current work, lists of trees and shrubs with coloured and variegated foliage, of herbs, of Alpines, and silver-leaved plants for the rockery, and notes on the rules guiding judges at shows, together with other information the practical amateur gardener is likely to need from time to time. A useful book, therefore, for such persons. The same publishers issue an *Amateur Gardener's Diary and Dictionary* for 1913; it is in a sense the complement of the other, and would be a useful book for the garden room, or potting-shed. The diary shows on one page what ought to be done in each month, and on the other spaces for entering each day what has been done. The dictionary gives notes of all the principal plants in cultivation and their cultivation, with an appendix of plants, shrubs, and climbers for special purposes and aspects.

[7] *A Textbook of Practical Therapeutics*. By Hobart Amory Hare, M.D., B.Sc. Fourteenth edition. London: Henry Kimpton. 1912. (Medium 8vo, pp. 994; figs. 131, plates 8. 21s. net.)

[8] London. 1912. Paper edition (1s. net) containing 706 pages, and the half-bound edition (2s. 6d. net) containing the whole of the paper edition and 346 additional pages—a total of 1,052 pages.

[9] *The International Whitaker*. London. 1912. (Cr. 8vo, pp. 499. 5s. net.)

[10] *Whitaker's Peerage, Baronetage, Knightage, and Companionage*. 1913. London. (Crown 8vo, pp. 854. Price 5s net.)

[11] *Who's Who, 1913*. An annual Biographical Dictionary with which is incorporated "Men and Women of the Time." Sixty-fifth year of issue. London: A. and C. Black. 1912. (Demy 8vo, pp. 2226; 15s. net.)

[12] *The Englishwoman's Yearbook*. Edited by G. E. Mitton. Thirty second year of issue. London: Adam and Charles Black. (Crown 8vo pp. 432. Price 2s. 6d. net.)

[13] *The Writers' and Artists' Yearbook*. Edited by G. E. Mitton. London: Adam and Charles Black. 1913. (Crown 8vo, pp. 150. Price 1s. net.)

[14] *The "Garden Life" Pocket Diary* for 1913. London: Cable Publishing Co. 1s., or 1s. 1d. post free from the publisher, Hatton House, Great Queen Street, London, W.C. *The Amateur Gardener's Diary and Dictionary*, 1913. (Same publishers: price 1s., or in cloth, 1s. 6d.; post free, 1s. 2d. or 1s. 8d.)

MEDICAL AND SURGICAL APPLIANCES.

Anaesthesia-Finder.

DR. DAVID FORSYTH (London, W.) has designed the instrument shown in the sketch to facilitate the routine examination of cases of nervous disease. He writes: The anaesthesia-finder is for use in discovering and mapping out areas of cutaneous anaesthesia, hyperaesthesia, etc.—for the purpose, in fact, which, for want of anything better, a pin or a nib is usually made to serve. One end of the instrument (which is lightly made throughout) is



pointed but blunt for testing common sensation and provoking skin reflexes. The other end, expanded and smooth, is used like the head of a pin for hyperaesthesia; and, in addition, is serrated to carry a pledget of wool for detecting the finer shades of tactile changes. Either end serves, according to the case, for investigating pain and pressure sensations. The instrument has been made by Messrs. Down Bros., Limited, London.

THE PARLIAMENTARY COMMITTEE ON PROPRIETARY REMEDIES.

On December 12th the Chairman of the Committee (Sir Henry Norman) stated that the official analysis had been received from the Government Laboratory of the preparation which had been stated by Mr. J. C. Umney to be the subject of an incorrect analysis in *Secret Remedies*.

Mr. Umney, who was in the witness-box, stated that the Government analysis was not more accurate than that of Mr. Harrison: the ingredient alleged to have been absent was not mentioned in the Government analysis either, and certain ingredients that, in his opinion, were absent from the preparation were reported to be present. In reply to Mr. Glyn Jones, Mr. Umney stated that he knew of the ingredient which neither of the analyses disclosed from his own personal knowledge; he could taste and smell this particular ingredient. The committee-room having been cleared, Mr. Umney, with the consent of the proprietor of the remedy, informed the Committee of the name of the ingredient which he alleged the two analysts had not discovered. The Chairman said the statement would be submitted to the Government analyst.

Dr. Chapple questioned the witness with regard to the views of pharmacists as to the declaration on the label of the ingredients of proprietary medicines. He pointed out that 74 per cent. of the pharmaceutical associations throughout the country expressed the opinion that the declaration of ingredients on the label would injure the sale of proprietary articles; 70 per cent. of the associations were in favour of such a declaration being required, 24 per cent. answered in the negative, and 6 per cent. were doubtful. The witness expressed the opinion that if a vote were taken of the whole of the chemists in the country different results would be obtained. He did not agree that the inference was that the chemists would be willing to see proprietary articles suppressed, and would be able to supply cheaper and better articles in their place. He urged that a proprietary medicine manufactured on a big scale was more likely to be of uniform standard and quality than a medicine made up by different people all over the country.

Dr. Chapple mentioned various substances whose constituents were practically identical, but sold under various trade names at widely different prices. He suggested that it was unfair to chemists that it should be possible to deal with any particular substance in this way.

The witness stated that the manufacturer who popularized a particular drug under an invented name had to undertake considerable expenditure in order to bring the preparation to the notice of the medical profession, and he was entitled to his reward, although (witness admitted) he might get rather extravagant profits. He declared that the evil would cease when the medical profession prescribed drugs by their chemical names.

Dr. Chapple: You admit it is an evil?

Mr. Umney: It is an evil for which the medical profession is responsible. Sufficient time is not devoted in the curriculum of medical students to the study of the chemical action of drugs.

Questioned as to medicated wines, the witness denied that these preparations masqueraded as temperance beverages. He considered that the fact that it was called a wine was sufficient to indicate to the public that the preparation contained alcohol.

Mr. Edward James Hall, proprietor of Hall's Wine, gave evidence with regard to this class of proprietary article. He stated that Hall's Wine had been on the market upwards of twenty-five years. The original formula was the work of a medical man, and a meat extract which it now contained was added to the original ingredients on the advice of another medical man. The company claimed that a large part of its business arose apart from advertisement, through the recommendations of doctors. In its announcements the company constantly indicated that individual medical men recommended the preparation, but it did not publish any names.

The Chairman: Do you publish those statements with [illegible] permission?

The Witness: The testimonials are sent to us in the ordinary way without any qualifications. He added that a large number of doctors were shareholders in the company. No case had ever been brought to his notice of people suffering as the result of taking Hall's Wine. The witness handed in to the Committee a number of original testimonials received from medical men.

The Committee adjourned.

ANNUAL REPORT OF THE MEDICAL OFFICER TO THE LOCAL GOVERNMENT BOARD.

(*Continued from page 1674.*)

THE appendices contain much information of interest to the general practitioner. Dr. Reece, one of the medical inspectors, contributes a detailed account of the epidemic of anterior poliomyelitis in Devon and Cornwall. The isolation hospital accommodation provided by one local authority has been honoured by a photograph which we hope is unique. It shows empty rooms, and in one of them water stands several inches deep. Dr. Mervyn Gordon contributes a useful summary of our present knowledge of the etiology, histology, and immunity of poliomyelitis, with some good illustrations of the histology, whilst Dr. Hugh A. Macewen summarizes our clinical and epidemiological knowledge.

SPECIAL SCIENTIFIC INVESTIGATIONS.

Arterial Degeneration.

Dr. Andrewes contributes a report on this subject which affords within the space of about fifty pages a complete summary of our present knowledge, together with the results of his own work. It is excellent in every way, and can be recommended to all practitioners as the best extant exposition of the subject from the standpoint of pathology and etiology. After a description of the function and anatomy of arteries he discusses the life-history of normal arteries. The chief changes up to the age of 30 to 35 are in the intima thickening with splitting of the internal elastic lamina and the development of a band of longitudinal muscle fibres. In the media the elastic tissue increases up to the age of 35. After a further period of about ten years the degenerative changes commence. After a detailed review of the histological lesions and a new pathological classification, Dr. Andrewes gives a general classification based on both pathological and clinical data. This is briefly as follows. There are four groups:

(1) *Senile* form. This is characterized by a sclerosis of the *media* in the large and the small arteries commencing as a fatty degeneration and atrophy of the muscle cells and elastic fibres, which are succeeded by a replacement fibrosis and calcification. There is often, in addition, a thickening of the intima with hyperplasia of the elastic elements. It is practically identical with Mönkeberg's sclerosis. The intimal changes are, in typical cases, slight. The nodular form of arterio-sclerosis may coexist as an accidental feature, but is no essential part of the picture.

(2) *Diffuse sclerosis*, due to abnormal stress, is found in local arteries where there has been much extra work, as in the involuting uterine arteries, in athletes and labourers, in chronic renal disease, and possibly in hyperpiesis (Allbutt). The "finished article" is almost identical with the senile form, but in early cases there is a slight difference—a more marked increase in the elastic elements of the intima.

(3) *Nodular arterio-sclerosis*. This is the form which exhibits patches of atheroma. It is classed as a special form because it is often absent in the senile and high tension cases; it does not always coincide with the situation of the greatest stress, and it may occur in juvenile cases, where in some cases it strongly suggests local infection. It is most common in the aorta and the large vessels. The essential lesion is a degeneration (fatty, fibrous, and calcareous) of what was at first a hyperplastic thickening of the intima. It is most marked in the deeper layers of the intima, but is often surmounted by a fibrous growth which overshadows the essential lesion. When the nodules are confluent there is produced the condition which has been named "arteritis deformans."

(4) *Syphilis* gives rise to an endarteritis in the small arteries in the neighbourhood of gummata, and in the cerebral arteries, even in the absence of definite gummata. It also produces a *mesarteritis* in the aorta and large

vessels, which consists of infiltrations of lymphocytes and plasma cells along the vasa vasorum, while the elastic elements perish and are replaced by fibrous tissue. In this lesion the spirochaetes have been demonstrated. In discussing the causation there is a short review of the two main theories of arterio-sclerosis—the inflammatory theory of Virchow and the compensation theory of Thoma. It is shown how both theories explain some forms of the disease, whilst neither throws much light on the common form. Advancing age is one of the commonest causes of arterial degeneration, but there are great differences in different individuals. That these differences are in any degree hereditary is only an impression, and not based on scientific evidence. Mechanical strain is an important factor. The view that athleticism tends to early arterial decay is another example of personal impression rather than of evidence. The experimental evidence is stronger, as, quite apart from the adrenalin experiments, artificial production of local high blood pressure has been shown to be capable of producing arterio-sclerosis. Temporary rises, often repeated, seem to be able to produce the change.

Blood Pressure and Renal Disease.—With regard to the relationship between blood pressure and renal disease, Dr. Andrewes adopts Gaskell's views based on German work. Toxic causes are discussed. The theory that the high tension is due to suprarenal activity is discarded as lacking confirmation. Tobacco is regarded as "not proven," but under suspicion to a certain degree. Alcohol is also discredited as a cause of sclerosis, whilst the effects of lead and uric acid are not quite understood. Microbic toxins are certainly capable of causing the changes found in arteries, especially the toxin of diphtheria. Infections of the arterial wall as opposed to toxaemia is most important. Syphilis is a certain example in the case of the mesarteritis it produces. In all acute infections, whether in young or old, there are found almost constantly patches of fatty degeneration of the intima.

Acute inflammatory foci in the media have been found in typhoid fever by American investigators, and the author relates a case of septicaemia where he found inflammatory foci extending along the vasa vasorum into the media. There are some excellent plates to this article.

Epidemic Diarrhoea and Flies.

Dr. C. J. Lewis, of Birmingham, and Dr. Moore Alexander, of Liverpool, report on the frequency of "non-lactose-fermenting and non-liquefying" bacilli in the faeces of children in health and in epidemic diarrhoea. The following table gives the results:

	Healthy Children.		Diarrhoea Cases.	
	Non-lactose Fermenters.	Morgan (No. 1) Bacillus.	Non-lactose Fermenters.	Morgan (No. 1) Bacillus.
Lewis ...	38%	17%	95%	72%
Alexander	46%	9%	56%	15%

It will be noticed that the results in Liverpool were different from those in Birmingham. There is no obvious explanation. Lewis found Morgan's bacillus in nearly all (12). The Birmingham results appear to implicate a bacillus belonging to the group known as Morgan's No. 1 bacillus. The agglutination experiments did not give very definite results, and it was found when the agglutination with an immune serum was used as the test for a strain that under the heading of Morgan's bacillus there must be more than one strain with the same fermentation reactions. Alexander also found the bacillus of dysentery and the paratyphoid bacillus in some of his cases. In fatal cases (13) Graham Smith has studied the same type of organisms in the fly. He has shown that non-lactose fermenters are quite commonly found in the intestine of the fly, that they are more common in August and the early part of September, that Morgan's bacillus is also found, and that it is nine times as common in flies taken from houses infected with diarrhoea as in flies from non-infected houses.

The possibility of pathogenic organisms being taken up by the larva and then, after metamorphosis, being distributed by the fly, has also been investigated by Dr. Graham Smith. It was found that under these conditions *Bacillus enteritidis* and a sporeless form of anthrax perished during metamorphosis, but that non-lactose fermenters and anthrax spores could survive, and therefore render the fly dangerous to man. Morgan's bacillus can certainly survive, but *Bacillus typhosus* very rarely.

British Rat-fleas.

A contribution to this subject by Mr. C. Strickland and Mr. G. Merriman is highly technical, although of great importance. After a prolonged research the authors summarize the results: Only two species of fleas were at all common, although fifteen other rare species were found. These common kinds are the *Ceratophyllus fasciatus* and *Ctenophthalmus agyrtes*. The former has been shown to be capable of spreading plague in India under the conditions which obtain there. The latter does not bite man. The flea incidence shows definite seasonal variations. No correlation could be found between the sporadic cases of rat plague and the average number of *C. fasciatus* per rat.

Purification of Chalk Waters.

In the purification of chalk waters by the Porter-Clark softening process the calcium is precipitated by the addition of lime water and then filtered. It was shown that a moderate infection was totally removed, even when the filters were new and not coated with precipitate.

Preparation of Calf Lymph.

Dr. Blaxall, as a result of experiments with various substances, has found that treatment of glycerinated lymph with 0.1 per cent. of oil of cloves destroys the extraneous organisms without impairing the specific properties of the lymph.

LITERARY NOTES.

MESSRS. J. AND A. CHURCHILL will publish immediately a new work by Dr. F. J. Smith, physician to the London Hospital, entitled *Law for Medical Men*. The book contains extracts from Acts of Parliament especially applying to them.

The forthcoming January number of *Bedrock*, completing the first year of its publication, will contain among other articles The Warfare Against Tuberculosis, by Professor Metchnikoff, translated by Sir E. Ray Lankester; The Milk Problem, by Dr. Eric Pritchard; and Science and Spiritualism, by Sir Bryan Donkin.

The Syndics of the Cambridge University Press announce that they have recently taken over the publication of *The Biochemical Journal*, which has now become the property of and the official organ of the Biochemical Society. Further particulars of the society may be obtained from the honorary secretary, Mr. R. H. Plimmer, University College, London, W.C. The *Journal*, which will be issued from six to eight times a year, will be under the editorship of W. M. Bayliss, D.Sc., F.R.S., University Professor of General Physiology, University College, London, and Arthur Harden, D.Sc., F.R.S., University Professor of Biochemistry, Lister Institute, London. Inquiries concerning details of publication and all questions concerning subscriptions should be addressed to C. F. Clay, Cambridge University Press, Fetter Lane, E.C.

The latest issue of the yearly publication known as *The Saga Book of the Viking Club*, Part II., vol. vii, which appeared quite recently, is chiefly remarkable for showing the close intercourse which existed during the Viking period between Anglo-Saxon England and Scandinavia. The modern reader may sometimes be tempted to think that this intercourse consisted for the most part of murder and rapine on the one side and a dogged resistance on the other; but there seems little doubt that the Norse invaders found in this country something that was of far more importance to them than the booty they carried off from its shores. The conquered nation had still enough vitality to impose its civilization upon its savage conquerors, and an article by Dr. Alexander Bugge on the "Costumes, Jewels, and Furniture in Viking Times" shows us how eagerly the rough Northmen adopted the more polished customs of their vanquished foes, whilst the enormous influence exercised by the Anglo-Saxon Church over the spirit of Scandinavian Christianity is proved by the Rev. A. V. Storm in his account of the "Early English Influence on the Danish Church." Other items of interest

in the present number of the *Saga Book* include a short account of William Herbert's Scandinavian poetry by Mr. W. F. Kirby, and the second part of Dr. Harry Tett's most interesting article on "Miniatures from Icelandic Manuscripts," a number of which are reproduced.

Dr. Vilhelm Maar, lecturer on the history of medicine, to whom we owe the definitive edition of the scientific works of Nicolaus Stensen (better known to anatomists as Steno), has (we learn from *Paris Médical*) recently published the autobiography of J. B. Winslow, the anatomist. The original manuscript is lost, and the only copy known to be in existence is in the Mazarin Library, Paris. In a recent issue of the *Bulletin de la Société Française de la Médecine* Dr. J. W. S. Johnsson, of Copenhagen, has lately given an account of French physicians who practised in Denmark and Danish doctors who studied or practised in France. Among the latter Stensen and Winslow are conspicuous. Jakob Benignus Winslöw was born at Odense, on the Island of Fyen, in 1669; through his mother he was related to Stensen. He first studied theology at the University of Copenhagen, but suddenly turned his attention to medicine. He was prosector of anatomy for a time, and having secured a bursary for foreign study in 1697 he went to the Low Countries, where he worked under Bidloo, Ruysch, and others. In 1698 he proceeded to Paris, where he continued his anatomical and surgical studies, and in 1704 took the degree of Doctor of Medicine. Like Stensen he became a Roman Catholic, chiefly it would appear owing to the influence of Bossuet, so that he might have said, like Gibbon, that he fell by a noble hand. At this point the autobiography ends. Winslow died in 1760, when he had nearly completed his 91st year. His epitaph in the cloister of Saint-Etienne du Mont states in addition to his scientific distinction that he "Vir æque verax et pius, in pauperes summe misericors nullaque erroris aut vitii pravitate afflatus."

Gustave Flaubert was the son of a famous surgeon of Rouen who was the first—or one of the first—to resect the upper jaw. It has often been said that Gustave himself began the study of medicine and in particular dissected under the supervision of his father. Sainte-Beuve, Taine, and Jules Lemaitre all state this, and it has passed as a fact into literary history. But it would seem to be only a legend; at any rate, there is no documentary evidence in support of the statement. This has recently been pointed out by M. Descharmes in an article which appeared in the *Mercure de France* of September 1st. He points out that there is nothing in Flaubert's writings which shows that he had any special knowledge of medicine. When he had occasion to introduce allusions to medical matters he sought counsel of professional friends. Before writing the pages of the *Education Sentimentale*, in which there is an account of a child in the throes of diphtheria, he availed himself of an opportunity of being present at a tracheotomy; but the operation produced such an effect on him that he had to avert his eyes. In his correspondence we find his lifelong friend, Louis Bouilhet, who had been a medical student, "coaching" him on medical points, as Hippolyte's club-foot, the festering sores of the blindmen, the poisoning of Emma, in *Madame Bovary*. There is proof in unpublished letters that without such help Flaubert would have blundered grievously. In painting the horrors of hunger and thirst in *Salammbo*, he is shown to have borrowed as freely from the *Naufrage de la Frégate la Méduse*, by Alexandre Corréard, an engineer, and Henry Savigny, a naval surgeon, as Byron, in *Don Juan*, did from records of a number of shipwrecks.

Our excellent contemporary *L'Hygiène* has always been noted for the extreme beauty of its numerous illustrations, and the October number is even more than usually rich in this respect. Dr. L. Landouzy, the present Dean of the Faculty of Medicine in Paris, who has contributed a short account of the valuable collection of pictures now in the possession of the Faculty, has greatly added to the interest of his article by reproducing a number of them, principally portraits, most of which are almost equally valuable from an artistic as from an historic standpoint. These portraits include those of two early deans: François Dupont, who gained a certain fame as an amateur poet, and Michel Marescot, first physician and councillor to Henri IV; Guy Patin, the bitter defender of the privileges of the Faculty, and the author of the famous letters; Jean Hamon, the saintly Jansenist; Fagon, physician to Louis XIV; Jean-Baptiste Silva, whose fame even reached the ears and attracted the attention of the Empress Catharine of Russia; and Emilien-François Geoffroy, who spent several years in England, and was elected a member of the Royal Society; as well as those of Dupuytren, Laënnec, and Broussais. Two charming old prints of the ancient school of medicine are also included amongst the illustrations of this article, which contains some interesting details concerning the lives and careers of several of its most celebrated members. The same number of *L'Hygiène* contains an article by Dr. Orticoni on the hygiene of a modern army in the field; whilst Dr. "Horace Bianchon" writes on the latest theories of the eugenists, and Dr. Maurice de Fleury contributes the second part of his interesting series describing the various types of nervous disease.

The famous report on Animal Magnetism, a full translation of which was published in the Journal of December 9th, 1911, and January 20th, 1912, was the means of bringing the career of Mesmer in Paris to an inglorious end. But he seems to have made an effort to brazen it out, for Benjamin Franklin in a letter dated "Passy, April 29th, 1785," and addressed to Dr. Ingenhousz, referred to the prophet of the magnetic "tub" as follows:

> Mesmer continues here and has still some adherents and some practice. It is surprising how much credulity still subsists in the world. I suppose all the physicians in France put together have not made as much money during the time he has been here as he has done. And we have now a fresh folly. A magnetizer pretends that he can by establishing what is called a rapport between any person and a somnambule, put it in the power of that person to direct the actions of the somnambule by a simple strong volition only, without speaking or making any signs; and many people daily flock to see this strange operation.

The report was dated August 11th, 1784. It may be remembered that Ingenhousz was one of Mesmer's first opponents. He was born in Holland in 1730 and came to London about 1767, where he met Sir John Pringle, through whom he became physician to the Empress Maria Theresa in 1772. It was at the desire of the Empress that he made an inquiry into animal magnetism. After remaining in Vienna a number of years, he travelled in France, Italy, and other countries, pursuing his scientific studies. At last he settled in London and was elected a Fellow of the Royal Society. He had a controversy with Edward Jenner. He died in 1799.

Surgeon-General George J. H. Evatt writes: The following circular is interesting as showing that in A.D. 1641 Bishop Williams claimed a certain inspecting power over medical men at this period.

> Bishop Williams, of Lincoln Diocese, who eventually became Archbishop of York, held a Diocesan Visitation in A.D. 1641. Before this Visitation began he sent round to every Rector or Vicar of a parish the following questions as part of the visitation routine:
>
> *Question:* How many Physicians, Chirurgeons, and Midwives have you in your Parish? How long have they used their several sciences, or offices and by what authority, and how have they demeaned themselves therein? Of what skill are they accounted to be in their Profession?

Bishops continued to exercise the right of giving licences as late as 1785. The late Mr. Charles Williams published one or two of these licences in an article dealing with the barber-surgeons of Norwich. The licences issued by the various bishops probably did not greatly differ in terms, so that the following, given by the Bishop of Norwich in 1561, may be taken as a sample of such licences in general. It runs as follows:

> John by the sufferaunce of God Bishop of Norwich.
>
> To all the faithful flocke of Christ sendeth greeting. Whereas by the credible reports of dyvers worshipfull and honest men of the towne of Norwich one Thomas Bets hathe ben comended vnto vs for a perfight skilfull and practized man in the science of chirurgery, of whiche there commendacon as there certificate dothe testifie, to difficulte cure of dyvers pacyentes hathe ben the cause withoute any favor or affection. Therefor knowinge howe necessarye a membre a practized chirurgeon is to the comon welthe, knowe ye that I the sayed Bishop do authorize and license the sayed Thomas Betts to use, practize, and followe the sayed art and science of chirurgery as well within the sayed Cittie of Norwich, and the lyberties of the same as elsewhere within a holle diocse of Norff and Suff. charging hym nevertheless so to use the same his vocacon as yt maye growe to the glory of God and bodelye health of the Quene's Matties lovinge subjects. In wytnes heroof we have caused or seale to be putte thies p'sentes govan the xx]th day of March, in the yere of our Lord God, one thousand five hundredth threscore and one, and of or consecracon, the second yere.

British Medical Journal.

SATURDAY, DECEMBER 21ST, 1912.

DISCOVERY OF A NEW TYPE OF FOSSIL MAN.

THE quiet meeting room of the Geological Society in Burlington House on the night of Wednesday, December 18th, was crowded, and wore the air of expectancy which characterizes the House of Commons on the eve of a revolutionary budget. Mr. Charles Dawson, F.S.A., F.G.S., a well-known amateur geologist, and Dr. Smith Woodward, F.R.S., Keeper of Geology at the Natural History Museum, South Kensington, and Secretary of the Geological Society, took the Chancellor's place, and the budget they produced was an account of what may in moderate terms be described as one of the most important discoveries of fossil man yet made—not only in England but in all the world. The account reveals to us a new species of human being, one which links modern man in some respects very closely to the anthropoid apes. The fossil remains of this individual were exhibited, and the worked flints found with them in the same stratum of gravel.

The actual remains discovered are fragments of a massive skull, with bony walls nearly half an inch thick; the fragments are sufficiently complete to give, when fitted together, a fairly accurate picture of the greater part of the brain-containing part of the skull; the face, and the greater part of the forehead, are missing, but fortunately half of the lower jaw, with the first and second molar teeth *in situ*, was recovered. The front part of the mandible, which carries the incisor, canine, and premolar teeth, is also missing—but there is enough to show that in the region of the chin the conformation was identical with that of anthropoid apes. Not a single bone of the limbs or trunk was found.

The cranial fragments are deeply stained and impregnated with iron; they are mineralized just to the same extent as the bones of fossil mammals found with them. These include the tooth of a Pliocene elephant; the molar cusp of a Mastodon, the teeth of a hippopotamus, the bones of a form of deer, of a fossil form of beaver, and of an extinct form of horse.

The same stratum also contains samples of those eoliths—the most primitive of flint forms ascribed to human workmanship—which occur so plentifully on the Kentish plateau, twenty miles to the north of the scene of the present discovery. The eoliths are stained the same tint as the fossil bones and as the human skull. In the same stratum were also found two highly-worked flints, of that type known as the Chellean, which occur abundantly in the 100-foot terrace of the Thames Valley. The two Chellean flints, however, are of a fawn colour, not stained deeply like the fossil bones and eoliths. The human skull shows no marks of having been rolled and worn, but the fossil bones of the Pliocene animals are rolled and worn. Hence the readers of the paper gave it as their opinion that the human fossil bones were not of the same age as the Pliocene animals, but belonged to the much later date indicated by the flints, namely, to the middle of the Pleistocene period—the date at present assigned to the Galley Hill man. This opinion, however, was combated: their critics claimed the same age for the human fossil bones as that ascribed to the animal bones found with the human skull. There was thus a sharp divergence of opinion as to the antiquity of the human remains; in the opinion of the finders and their supporters they are Middle Pleistocene; in the opinion of some of their critics they are Pliocene. However that may be, the characters of this very ancient individual are of a more primitive type than any yet found in Europe. Of all known human fossil forms Pithecanthropus alone is more primitive.

Leaving the question of antiquity still undecided, we shall now turn to the narrative of the actual discovery. The scene of this "find" lies some nine miles north of Lewes, in the valley of the Sussex Ouse, which, rising in the Weald, breaks through the South Downs at Lewes, and enters the sea at Newhaven. After flowing eastwards past Sheffield Park the Ouse bends southward. On the north bank, at the bend, about a mile from the river and on a flat field near Piltdown Common, in the parish of Fletching, situated 80 ft. above the level of the river, there is a superficial bed of gravel 4 ft. thick. It is in this bed of gravel that the fossil bones were found by Mr. Charles Dawson of Lewes, who is a solicitor, we believe, by profession, but a geologist by inclination, and has done much these twenty years past to enlarge our knowledge of the geology of Sussex.

The manner of their discovery is both interesting and instructive. Four years ago farm labourers were digging or deepening a duck pond on the gravel bed; they dug out a "thing like a cocoa-nut," and threw the splinters on the rubbish heap near by. It was from this rubbish heap that Mr. Dawson recovered the greater part of the skull, but the lower jaw was dug out of the undisturbed stratum at a later date by the authors of the communication at the Geological Society. One is tempted to ask, How many fossil men have passed away in rubbish heaps, unrescued? In this case there was fortunately a Mr. Charles Dawson at hand.

It is the characters of this new type of man which will chiefly interest medical men. Turning first to the most important feature of the skull—the size of the brain chamber—one notes that its size falls inside the lower range of modern mankind. The capacity is estimated by Dr. Smith Woodward to have been "1,070 cubic centimetres, but possibly a little more." The same author regards the skull as showing female characters; a cranial capacity of 1,000 to 1,200 is not uncommon in aboriginal Australian women; 1,080 c.cm. is given as the capacity of the Gibraltar skull, which certainly belongs to the Pleistocene period. A cast of the cranial cavity was taken and submitted to Professor Elliot Smith for examination and description. Unfortunately little more than the general shape can be accurately made out; the left occipital pole shows, as in modern man, a great preponderance over the pole of the right occipital lobe. The brain is flattened and bun-shaped—pithecoid—as in Neanderthal man. As is generally the case in Neanderthal man, the bones of the roof of the skull are enormously

thick—in this case they are nearly half an inch thick (10 to 12 mm.), but show absolutely no sign of inflammation or of pathological disturbance. The skull is of average human length, 190 mm., and very wide, 150 mm., the width (cephalic index) being 78 per cent. of the length. The greatest width is situated low down, near the ear passages; the sides of the skull slope upwards to the crown, thus giving the crown of the head a peculiarly retracted appearance—recalling the contracted form seen in some microcephalic idiots.

If the shape of the brain and the thickness of the skull recall the characters of Neanderthal man—who flourished in Europe long after the Chellean period, to which the authors ascribe the Sussex woman, had come to an end—the other features are totally unlike those of Neanderthal man and are similar to those of modern man. The Sussex species of humanity therefore appears to be a predecessor or ancestor of modern man, not of Neanderthal man. The mastoid processes, the form of the ear passage and of the tympanic plate, the occipital ridges and muscular markings, the glenoid cavity and articular eminence for the mandible, are all as in man of the present day, whereas in Neanderthal man all of these features are of the form or type seen in anthropoids. In the Sussex woman the disposition of the temporal lines shows that the muscles of mastication arising from these lines were small—smaller even than in modern human races. The external angular process of the frontal has been preserved; it is stout but not prominent. Unfortunately the brow ridges are broken away, but the authors, from the vertical conformation of the upper forehead, infer that they did not form the prominent overhanging supraorbital ridges which are seen in anthropoids and in Neanderthal man. The forehead appears to have been of the modern human type.

In the lower jaw there are present features hitherto only known to occur in apes and anthropoids. The chin is not only retreating, as in a dog, but its lower border is sharp and curved inwards to form a flange for the attachment of the digastric muscles. The mylo-hyoid ridge is not the clearly raised sharp line seen in all known human mandibles, and, as in anthropoids, it is scarcely indicated. It seems impossible to believe that an animal with its mandible so framed, with the muscles of the floor of the mouth acting exactly as in anthropoids, could have possessed the power of speech. Yet the third frontal gyrus of the brain shows a considerable development.

It has been already mentioned that the incisor, canine and premolar teeth, with the part of the mandible containing their sockets, are broken away. This is unfortunate, because the space for teeth left in front of the molars, two of which are present, is exactly equal to that occupied by the front teeth in a chimpanzee. The mandible is very like that of a chimpanzee. It seems therefore necessary to suppose that the canine teeth were, if not pointed and projecting above the other teeth, of a much greater size—as regards their diameters—than in modern man. The anthropoid conformation of the jaw also supports the opinion that the canine teeth must have been of large size. The molar teeth, however, are not massive; the second is larger than the first, and the third, now lost, was also of the size of the second. They have five cusps each; the length of the crown of the second molar is 12 mm.; its width 11 mm. The molar teeth are similar in character to those of modern man; they are unlike the teeth of Neanderthal man.

ESSENTIAL CONDITIONS FOR MILK CONTROL.

On December 10th the President of the Local Government Board introduced a bill[1] to make better provision with respect to the sale of milk and the regulation of dairies in England and Wales. The bill provides for the registration of dairies, which term includes farms, cowsheds, or milkshops, and of dairymen; for the inspection of dairies, and the examination of cows; for the prevention of the sale of tuberculous milk, or of milk suspected of causing infectious disease; for the regulation of the importation of milk and for the establishment by local authorities of milk dépôts for the sale of milk specially prepared for infants. The Local Government Board is empowered to make Orders for the purpose of carrying the bill into effect with respect to a large number of matters connected with the production and distribution of milk, and such Orders, unlike the existing Regulations made under the Dairies, Cowsheds, and Milkshops Orders, will be applicable to the whole country, so that there will no longer be the scandal of a local authority composed to a large extent of interested persons refusing to regulate an industry in the public interests because it is feared that private interests will be interfered with.

The administration of the bill is left in the hands of the sanitary authorities, but, as regards rural districts and urban districts, if the council of the latter consents, the county councils are given concurrent powers with the district councils. County councils are also required to investigate the circumstances connected with a milk supply in a rural district suspected of causing infectious disease, and the provisions in this connexion, so far as they relate to England and Wales, in Section 4 of the Infectious Disease Prevention Act, 1890, are repealed. The prevention of the sale of milk from tuberculous cows is dealt with on the lines of what have come to be known as the model milk clauses, which have been incorporated in many local Acts. In the memorandum which prefaces the bill it is stated that the Board of Agriculture and Fisheries proposes to issue an Order under the Diseases of Animals Act, 1894, dealing with tuberculous cows, and providing for the payment of compensation in cases of slaughter by the local authority. When addressing a meeting of the National Farmers' Union recently, the President of the Board stated that he had persuaded the Treasury to make a grant for the purpose of this compensation, and that although he anticipated a large sum would be required in the first year or two, he believed it would be a diminishing amount, and eventually the burden on the Exchequer would be only a small one.

The administrative machinery provided by Mr Burns in his bill for dealing with tuberculous milk appears to be adequate for its purpose, and if the proposals of the Board of Agriculture and Fisheries as regards compensation for condemned animals are generous, even the dairy farmers themselves cannot take exception to it. It must not be forgotten, however, that the removal of tuberculous cows from dairy herds is not all that is required to render the milk supply in every way satisfactory. The reports of medical officers of health and of the medical inspectors of the Local Government Board have made us familiar with the most disgusting conditions associated with the production of milk. Cows whose

[1] The Milk and Dairies Bill. To be purchased either directly or through any bookseller from Wyman and Sons, Ltd., London; H.M. Stationery Office, Scottish Branch, Edinburgh, or E. Ponsonby Dublin. (Price 2½d.)

udders are caked with filth are milked in dirty sheds by men with unwashed hands. Huge accumulations of manure are to be found right up to the walls of unswept milking sheds, and through these masses of filth the cows have to trail on their way to be milked. Facilities for the cleansing of the milkers' hands and of utensils are often of the most meagre character, while the opportunities for accidental, though preventable, contamination of the milk from the cowshed to the consumer are many and serious. In order to secure improvement in these particulars, the Milk Bill provides for the inspection of dairies by the medical officer of health—a duty which is already imposed upon that official. We have no hesitation, however, in saying that the results of those inspections, and of the reports and recommendations which will be the outcome of them, will continue to be unsatisfactory, and for this reason: The medical officer of health is elected by, and may be dismissed at three months' notice by, the rural district council, the members of which in many instances are either themselves dairy farmers or their friends and neighbours. In a debate in the House of Commons as recently as June 5th last Mr. Burns, when defending the delay which had occurred in the introduction of the Milk Bill, stated that last year the London County Council, the metropolitan borough councils, and the Local Government Board had struck off the register no fewer than 1,144 milk shops out of a total of 9,000 because of the unsuitability of the premises for milk and dairy purposes. If that were done universally, he added, by all the local authorities, considerable advance would be made even under the existing limited power. It does not seem to have occurred to Mr. Burns that the officers who advised that these premises should no longer be on the register all have security of tenure of office against capricious dismissal. If it is necessary and right that they should have such security in localities where the weight of public opinion may be brought to bear, it is even more requisite that those officials who get little or no assistance from this source should have the same protection. For years past Royal Commissions and Committees have recommended that medical officers of health should not be removable from office except with the sanction of a central authority, and we have reason to know that the urgency of this reform has been impressed upon the Rural Housing Inquiry Committee, which is reporting to the Chancellor of the Exchequer, so that the Government is not ignorant of this necessity and importance. Opportunity was taken on the passing of the Housing, Town Planning, etc., Act, 1909, to give security of tenure to medical officers of health of county councils, who are far less likely to come into direct conflict with the owners of insanitary property, etc. If the Government has a real desire to improve the milk supply of the country, it will place medical officers of health of districts in a like unassailable position so long as they carry out their duties in a satisfactory manner.

THE APPEAL FOR THE MAINTENANCE OF UNITY.

THE State Sickness Insurance Committee, acting under the authority of the Council, has, on behalf of the British Medical Association, issued an earnest appeal for united action to the members of the profession who are not members of the British Medical Association, and the same appeal is made to every member of the British Medical Association. The full text of this appeal to the whole profession is reproduced at page 684 of the SUPPLEMENT this week. During the long and trying period which has elapsed since the Insurance Bill was first introduced the profession has maintained a remarkable solidarity and the result of that united action has been to cause the Government to make alterations in the terms and conditions of service of such a nature as in the opinion of a minority of the profession would justify it in consenting to work under the Act. The unity which has been so effectual in the past will be no less necessary in the future. The Council of the Association, therefore, appeals to every member of the Association to take no individual action in response to the recent proposals of the Government, but to await the decision of the Representative Meeting to be held this day, Saturday, December 21st. The members of the Representative Meeting have been quite recently in touch with the Divisions and have been instructed by the Divisions, and it would therefore be extremely unwise for individual members of the Association who have waited so long and fought so hard collectively now to act individually. The invitations to form panels which are now being issued to every practitioner by the various Insurance Committees, tell him that it is necessary that he should apply within a very short time, otherwise his name will not appear in the first list of doctors to be issued during the first week of January. It is hoped that members of the profession will decline to be hustled into any premature decision. Moreover, as we are reminded in the letter, 27,400 practitioners have signed an undertaking not to enter into any agreement except one satisfactory to the medical profession, and that even then not into an individual or separate agreement, but an agreement come to through the Local Medical Committee. The text of the undertaking, and of the pledge complementary to the undertaking, as well as the notice to the profession pointing out that it is imperative that no negotiations or arrangements of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession, with Local Insurance Committees, or otherwise, is printed on the first page of the SUPPLEMENT of this week. The Representative Meeting on Saturday will have before it all the material for a judgement; until then it behoves every man to leave the various documents sent out severely alone, and when the Representative Meeting has given its decision to follow that decision loyally and fearlessly, knowing full well that the best interests of the community and the best interests of the profession are one and the same.

MEDICAL SERVICE AND WORKMEN'S COMPENSATION.

PROFESSOR GLAISTER delivered at Glasgow University the eighth of a series of lectures arranged by the Glasgow School of Social Study and Training, taking for his subject medical service in relation to workmen's compensation. He discussed some details of the Act and the principles on which compensation was determined, pointing out that nowhere in the Act was the expression "accident" defined. In view of legal decisions that any defect or disease in a workman at the time of accident which might even directly contribute to or actually invite the accident was no bar to compensation, the question had become acute whether employees before engagement and periodically during employment should not be medically examined as to their fitness. Professor Glaister stated that the number of employers under the Act in 1909 was 117,391; in 1910, 134,820; and in 1911, 139,884. The number of employees in round numbers was respectively 6,570,000, 7,025,000, and 7,305,000. The fatal accidents numbered 3,341 in 1909, 3,510 in 1910, and 4,021 in 1911. The amount paid in each fatal case was fairly equal in these years, and averaged £154. The number of disabling accidents

in those years was 332.000, 378.000, and 419,000; the average compensation paid in each case was for each year £5 6s., £5 14s., and £5 16s. The number of medical referees in England and Wales had fallen from 223 in 1909 to 215 in 1911, in Scotland had increased from 82 to 86, and in Ireland from 45 to 46. Increased importance would seem to be attached by the legal advisers of injured workmen to the presence of a medical assessor with the judge at the hearing of evidence in arbitrations if they might judge from figures. In England in 1909 the number of times a medical referee sat as assessor was 240, in 1911 that figure had risen to 664; in Scotland the corresponding figures were 78 and 246, whereas in Ireland the rise had been very small—namely, from 57 to 66.

AURICULAR FLUTTER.

The persistent search into the nature of the heart's action in the human subject is steadily revealing the true nature of conditions which have hitherto been looked upon as so obscure as to defy solution. The far-reaching effect of the discovery of auricular fibrillation, and its bearing on heart failure and on treatment, has been repeatedly described in these pages. Quite recently an allied condition has been recognized and described, which supplies the interpretation of the nature of many forms of persistent and paroxysmal tachycardias. In 1887 MacWilliam stated that in applying a faradic current to the auricles they were stimulated to a series of very rapid contractions, to which he applied the name of "flutter." The ventricles did not respond to every auricular beat, but their rate was nevertheless much increased, often responding to one half of the auricular beats. The term "auricular flutter" was adopted by Ritchie and Jolly in 1910 to describe a case in which the auricle was beating at a rate of about 500 a minute. In two separate papers just published by Lewis[1] and Ritchie[2] a very full account is given of a number of cases, and it now seems that the condition is far more common than had hitherto been suspected. The recognition of this condition can occasionally be made out by the rapid pulsation of the jugular veins due to the contraction of the right auricle, but in the majority of cases the auricular contractions fail to cause a movement in the veins. The introduction of the electrocardiograph has placed in our hands the means of recognizing this condition, and both the authors just mentioned demonstrate auricular flutter by means of this instrument in a clear and convincing manner. With this instrument to guide them, they are able to describe the kind of case in which auricular flutter occurs, so that in many instances it will be possible to recognize its presence by the ordinary means of examination. The chief characters are to be found in the variation of rate and rhythm of the ventricle or radial pulse. In some there is a persistent increase in rate to 150 a minute, the ventricle in such cases responding to every alternate auricular beat. The rate may be slower than this and irregular, but under any form of strain, as excitement, the rate tends easily to increase. In some cases the ventricle may respond to every auricular beat, and the pulse may then attain a rate of 300 a minute. When this happens the output of the ventricle is so small that the individual may lose consciousness. In both papers there are interesting and important suggestions as to treatment, and the effect of the digitalis group of remedies upon this condition is very remarkable. In some cases, for instance, digitalis given in sufficient quantities sets up fibrillation of the auricles in place of the flutter, and when the drug is stopped the fibrillation passes off and the normal rhythm is taken up. Both authors are to be congratulated on having made a valuable contribution to clinical medicine.

[1] *Heart*, vol. iv.
[2] *Edinburgh Medical Journal*.

ANEURYSM OF THE UTERINE ARTERY.

Aneurysm of the uterine artery is extremely rare, but is an occasional cause of haemorrhage persisting after labour. In the case reported by Graily Hewitt in 1867 the patient received an injury on the fourth day from her husband, who came home drunk and knelt on her abdomen. Hemorrhages set in, and she died on the thirty-seventh day. Five other cases of uterine aneurysm have been collected by Dr. Huron W. Lawson of Washington,[1] and he adds a very instructive instance of *post-partum* flooding from rupture of an aneurysm in his own experience. Küstner reported a case in which the bleeding was ascribed to atony of the uterus until the aneurysm was discovered at the autopsy. Mars and Vogelsänger record cases in which flooding in the puerperium was due to uterine aneurysm. Reymond's case of aneurysm was not puerperal. Uterine haemorrhages began after the menopause and malignant disease was expected, but on exploration a circumscribed pulsating sac was detected in the right fornix. Abdominal section was performed, and an aneurysm of the right uterine artery exposed and dissected out; all haemorrhages ceased. Mundé's case was also non-puerperal. An abscess developed after the repair of a lacerated cervix. The collection of pus, which pointed in the left fornix and communicated with the cervical canal, was laid open. Two years later the patient suffered from throbbing in the left inguinal region. Aneurysm of the left uterine artery was diagnosed and exposed by abdominal section. The internal iliac was ligatured, and electrolysis subsequently practised as an extra precaution, with good results. Huron Lawson's patient underwent trachelorrhaphy ten weeks after a miscarriage in March, 1909. There was much haemorrhage when the scar tissue was resected, as the laceration was very old, and the patient had been fifteen times pregnant. It ceased, however, when the sutures were tied. In June she again became pregnant, and a live child was born spontaneously in March, 1910. On the fourth day the patient complained of pelvic pains running down the left thigh, and said that she had felt such pains occasionally from December, 1909. On the next day severe haemorrhage occurred; a tampon was passed into the vagina, and the patient sent into a hospital. The gauze was expelled on the day after admission during a fit of coughing. Violent haemorrhage ensued, and the uterine cavity was packed. A day later the bleeding returned, and the patient died on the seventh day of the puerperium. A small fibroid was detected in the anterior uterine wall, and an aneurysmal sac over one inch in diameter lay continuous with the left uterine artery, and opened into the uterine cavity. The sac was a false aneurysm, apparently due to injury of the artery during the operation for repair of the cervix one year previously.

[1] Aneurysm of the Uterine Artery, *Amer. Journ. Obstetrics*, vol. lxvi, November, 1912, p. 752.

THE WORSHIP OF HEALTH.

There is much talk of degeneration nowadays, and one of the many well-meant endeavours made to check our alleged downward tendency is constant talk about health. It is most desirable, of course, that hygiene should be taught in schools, and that grown-up people should as far as possible be shown the way of sanitary salvation. But it may be doubted whether popular teaching on these subjects does all the good that ardent reformers expect from it, and it is unquestionable that it is attended with certain disadvantages. Apart from inevitable differences of opinion which tend to breed confusion, the stress laid on health as an end in itself is, we think, not altogether wholesome. It leads to the shirking of the risks without which much work essential to the welfare of the community cannot be done; and it tends to the production of a race of valetudinarians. It is not men who were always taking thought for their life what they

should eat, and for their body what they should put on, whose names stand out in our rough island story. In reading the history of the Napoleonic wars one cannot but be struck by the endurance of the soldiers who fought in a dozen campaigns, bearing privation and taking half a dozen wounds as all in the day's work. It was such men as these who made our empire. Are we, then, degenerating? Physically, of course, we are larger and perhaps stronger than the fighting men of the days of chivalry; an average guardsman of to-day cannot buckle on the armour of the mediaeval knight, and this, we believe, holds good of other countries. But have we the hardihood, the *certaminis gaudium*, of the fighters of old? Anaesthetics have made us less willing to suffer even trivial pain; we shudder when we read Bell's description of the hospitals at Brussels after Waterloo, where the wounded under the knife were complimented on their "singing" by others awaiting their turn. We think it undeniable, too, that we have become more alive to the manifold dangers which surround us. Bacteriology has revealed the legions of invisible foes that ever threaten our health and life. The fear of the microbe now haunts the minds of many till it becomes an obsession. Such terrors are, as it were, the shadows cast by advancing science. But there are some who profess to believe that it is all the fault of the medical profession. A modern writer, M. Deschamps, says that the apotheosis of the doctor is a sign of national decadence. This recalls the vaticinations of Cato the Censor, who foretold that if Greek medicine once got a footing in Rome the end was not far off. Montaigne, who professed contempt for doctors, said: "There is no nation but hath continued many ages without physicke; yea the first ages which is as much to say, the best and most happy: and the tenth part of the world hath as yet no use of it. Infinite nations know it not; where they live both more healthie and much longer than we doe; yea and amongst us the common sort live happily without it." He evidently held the ignorant belief, which was afterwards made the basis of Rousseau's revolutionary teaching, that the people of the "first ages" were free from disease and vice. We know the "noble savage" better now, and we know that during his life, brief as it generally was, he was under the sway of medicine men, and his skull often bears the mark of a rude surgery. Doctors, so far from encouraging constant self-torment about the state of the stomach, the liver, the intestine, the pulse, and so on, are constantly exhorting nervous people not to worry about such things. As regards themselves, they take, to use the phrase of the late King of Italy, the "risks of the trade." No class of men hold their lives more cheap in the discharge of their duty. It is not the doctors, but the faddists and the quacks, who are the cause of the unhealthy worship of health which is one of the characteristics of the time.

THE DIAGNOSIS OF GASTRIC CANCER.

THE estimation of the amount of dissolved albumen in the stomach contents has been more than once suggested as a means of determining the extent in any given case of gastric digestion, but the practical difficulty has been to find a sufficiently accurate method. This has been overcome by Dr. W. Wolff, Physician to the Augusta Hospital in Berlin, and Dr. P. Junghans, Assistant Physician to the same hospital.[1] They use a solution made according to the following formula: Phosphotungstic acid 30 cg.; pure hydrochloric acid 1 gram; alcohol 20 grams; distilled water up to 200 grams. The gastric contents after an Ewald test breakfast are removed in the ordinary way, filtered and distributed in a series of six test tubes. In the first they place 1 part of gastric juice to 10 parts of distilled water; in the second, 0.5 to 10; in the third, 0.25 to 10; in the fourth, 0.1 to 10; in the fifth, 0.05 to 10; and in the sixth, 0.025 to 10. Then to each tube is added 1 c.cm. of the reagent. The amount of albumen is determined by the degree of dilution in which the presence of albumen is shown by a cloudy disc; if, for example, the first four tubes show an albuminous disc, while this is absent in the fifth tube, the amount of albumen is called 200, the degree of dilution being for the fifth tube 1 in 200. If the disc is absent only in the sixth test, the amount of albumen is 400. In simple achylia gastrica the amount of albumen was minimal, but where the achylia was associated with cancer of the stomach the quantity of dissolved albumen was distinctly high. Thus in 8 cases of clinically obvious gastric cancer the dissolved albumen was twice 200, once 400, and five times more than 400, so that the presence of a large amount of albumen points to the presence of cancer. These observations have been confirmed by Dr. K. Thiele working at the Augusta Hospital in Professor Ewald's wards. He examined 15 cases of simple achylia and 12 cases of unquestionable cancer of the stomach. In the former group the amount of albumen varied between 30 and 40; in 1 case it was 10; in 2, 20; in 10, 40; in 1, 60; and in 1, 100. In the last the *post-mortem* examination showed that there was no cancer in the stomach, but that the gall bladder was affected by cancer. In the second series the amount of albumen was on the average 200, and in only 2 cases was it as low as 100; in both the cancer being in the early stages, so that Thiele concludes that quantities below 60 indicate simple achylia; from 200 to 400 point to cancer. At 100 the question is doubtful, but the probability is in favour of cancer. Similar confirmation comes from Dr. Einstein, who has worked in the wards of Professor H. Strauss in the Berlin Jewish Hospital. Einstein, however, thinks it important to note the period at which the appearance in the test tubes is noted, as he finds that the appearances vary according to the time at which they are seen, and he suggests that in order to get comparable results the tube should be examined one hour after the addition of the reagent. He also attaches importance to the gastric juice being dealt with immediately it is withdrawn, so as to prevent any fallacy from putrefactive or other changes. He has only met with one case of cancer of the stomach in which the figure was as low as 100, but he has found this figure in certain cases of simple achylia, and he would therefore state his conclusion thus: In cases of apepsia, where the gastric juice contains albumen above 100, the indication is rather in favour of the cancerous nature of the stomach affection.

[1] *Berl. klin. Woch.*, May 20th, 1911; quoted in the *Semaine médicale*.

TREATMENT OF SURGICAL TUBERCULOSIS.

THE practice of injecting antiseptic and antituberculous substances into abscesses and sinuses in cases of surgical tuberculosis has been less followed in this country than it has been in France, notably by Calot. These substances have been many, but may be divided into two classes—those that have a sclerosing effect, and those that are expected to cause liquefaction of the tuberculous material. Iodoform, creosote, camphor, and thymol are the substances, alone or in combination, that have been most used, and the best results have followed on the use of those that most favoured liquefaction. Some of these injections, however, have produced dangerous and even fatal results. In a thesis[1] presented to the Faculty of Medicine of Paris, Dr. Jacques Tribes advocates the use of an aromatic oil which is known by the trade name of "gomenol." This drug is closely allied to cajeput oil, and is obtained by distillation from the young leaves of the *Melaleuca viridiflora*, a New Caledonian tree which belongs to the Myrtaceae. It has a high antiseptic value, and chemically approaches the composition of terpinol. Dr. Tribes has noted the effects of gomenol in 187 cases:

[1] [illegible] Medicine. 1912. (Roy. 8vo. pp. 82. Bgs. 12. Fr. 2.)

30 were chronic, such as Pott's disease, and are as yet incomplete, and 13 did not attend regularly; in the remaining 147 cases 25 open lesions were cured: of 122 cases of tuberculous lesions without wound 96 were cured without the formation of fistulae; in 13 temporary fistulae were formed, but healed quickly; in 10 fistulae formed with tuberculization of the skin, but ended with the formation of movable cicatrices. Three patients died from tuberculous meningitis during treatment. A solution of 20 per cent. in olive oil was used, and of this from 1 to 2 c.cm. is a dose. In this strength and dose it appeared to be free from danger and painless. A slight experience of the drug in this country is distinctly favourable, and we are inclined to accept Dr. Tribes's conclusion that gomenol is safe and effective. It certainly seems worthy of extended trial in this country.

THE PERILS OF PANHYSTERECTOMY.

The radical surgery of the uterus is one of the most remarkable features of gynaecology. Thirty years ago few operators removed large fibroids. Now the extirpation of the cancerous uterus with free dissecting away of the vagina below, the parametrium around, and the glands above it, is practised universally. Fibromyoma, or "fibroid," a non-malignant disease, is often treated by the radical operation (panhysterectomy). The older supravaginal or "subtotal" method, though it finds little favour with the younger school of gynaecologists, has its advantages. The cervix makes a good floor for the pelvic viscera, and when one or both ovaries can be preserved, the presence of uterine mucosa appears to aid in the object for which ovarian tissue is saved by the operator, the avoidance of a sudden menopause. More than one British operator has set forth the advantages of preservation of the cervix. On the other hand, just as Wertheim's radical operation for uterine cancer is sometimes followed by severe symptoms due to damage to the bladder and other adjacent structures, so panhysterectomy may entail bad consequences. A big hernial pouch may develop, pressing down the vagina and appearing at the vulva. M. Xavier Bender[1] reports an instance of far graver complication. A woman underwent removal of the vermiform appendix and the opposite or left uterine appendages in 1899. In May, 1908, she was operated upon for fibromyoma, and panhysterectomy was performed. In both instances a distinguished member of the staff of a great hospital operated. The first surgical proceeding caused adhesions and other complications, which rendered the second very difficult. A large incisional hernia developed, and lastly, sixteen months after the panhysterectomy, septic symptoms appeared with great abdominal pain, which was found to be due to extensive gangrene of the vaginal vault and neighbouring tissues. Haemorrhage set in, and an iodoform plug was applied. When the bleeding ceased abdominal section was performed. Though the tampon had been inserted with the usual care, a strip of gauze had been pushed through the friable sloughy tissues into the peritoneal cavity. There were strong intimate intestinal adhesions, which were separated, without, however, any damage to the walls of the bowel nor to the bladder. A big rubber drain was inserted into the vagina and the large hole which had formed in the sloughy tissue, but the patient died of septicaemia within a few hours. After-histories of radical operations of this kind ought always to be reported, as was done in this instance.

...ES OF SUCCOUR" IN MADRID.

... of the *Revista de los Hospitales*, Dr. ... gives an interesting account of ... for the succour and treatment ... of illness or injury. The ... Spanish capital, he says, is for this purpose divided into nine districts, each with its own separate organization and officials. In each of these districts there are two *casas de socorro*. Thus, in the whole city there are, in addition to the ten State hospitals, eighteen well-appointed ambulance stations. Each of these consists of a consulting-room, a small operating-room for urgent operations, an operating theatre, two bedrooms (one for the doctor on duty and another for his assistant), a place where clothes or other articles left by patients may be stored, and an apartment furnished with a *silla fuerte*, or strong chair, for the restraint of violent drunkards or lunatics until they can be removed to a suitable asylum or prison. In addition to their main function, which is, of course, the treatment of accidents or urgent cases, these houses of succour have another almost equally important. Gratuitous advice and treatment are given to the poor of the district, who resort to the stations in large numbers at the hours fixed for the particular class of diseases (eye and ear, nose and throat, and so on). Finally, with each station is associated a number of practitioners, who visit at their own homes such patients as are assigned to them with the necessary certificate of poverty. The *personnel* attached to each of these eighteen *casas de socorro* is as follows: A medical director, who presides over the whole; four *medicos de seccion*, who make the home visits; six *medicos de guardia*, who are on duty in alternate pairs in each twenty-four hours. These last are relieved for two hours each day, one (of the two on duty) from 12 to 2, and the other from 2 to 4. To replace these, there are twelve supernumerary doctors, who are on duty in turn from 12 to 4 p.m. In this way it is arranged that each *guardia* is on duty for four hours at a time, and each of the supernumeraries each twelfth day. There is also an obstetric physician to attend to the poor of the district. Lastly, this abundant staff is supplemented by a *practicante* (a senior student or lower rank of practitioner) and two nurses or attendants. Naturally, with an organization like this, with, at every moment of the day and night thirty-six doctors, eighteen *practicantes*, and thirty-six nurses, engaged exclusively to attend to urgent cases and accidents, whether among the poor or the rich, we may consider the public of Madrid to be well looked after in this respect. It should be added that the Red Cross Society has an admirably managed organization in Madrid, and has five stations in different parts of the city, where many cases are seen daily by medical men appointed for the purpose.

POST-GRADUATE INSTRUCTION IN CANCER.

The success abroad, especially in Germany, that has attended the efforts towards the earlier diagnosis of cancer, in order more successfully to apply operative treatment, has induced the medical staff of the Cancer Hospital, Brompton, to institute a series of clinical lectures on the diagnosis and treatment of various forms of malignant disease. At the present time the advanced operations on cancer have brought within the limits of operability cases that a few years ago would have been rejected as hopeless, but it must be granted that the appreciation of the results is not so widespread as it might be. It is becoming more and more apparent that so-called early cases demand as advanced an operative treatment as those seen relatively late; the earlier the diagnosis the more hopeful the result. Statistics of operations vary considerably, but it has been calculated, in the case of cancer of the uterus, for example, that approximately 40 per cent. of the cases seen are curable, using the convention of a five years' limit after operation. Such a figure can certainly be improved upon if earlier diagnosis were established. The Cancer Hospital has resolved to place its wealth of material at the service of practitioners and senior students. The members of the surgical staff, in conjunction with the pathologist, will demonstrate cancer in various

[1] ... *de Chirurgie de Paris*, April, 1912.

situations. The first lecture will be given by Mr. W. Ernest Miles on cancer of the rectum on January 22nd; and on each succeeding Wednesday similar subjects will be dealt with, such as tumours of the kidney (Mr. Swan), cancer of the tongue (Mr. Charles Ryall), cancer of the colon (Mr. Cunning), medical treatment of advanced cancer (Dr. T. J. Horder), inoperable cancer (Mr. Rowntree), cancer of the breast (Mr. Howell Evans), cancer of the uterus (Mr. Wilson), radium treatment of cancer (Dr. Knox), and the laboratory diagnosis of cancer (Mr. Leitch). The demonstrations will be given at 5 o'clock, an hour chosen as suitable to the majority of practitioners who may wish to avail themselves of the opportunities thus freely placed at their disposal.

THE ROYAL SOCIETY OF MEDICINE.

In order to give members of the profession an opportunity of visiting the society's new house, the council gave a series of four "at homes" on November 27th, 28th, 29th, and 30th, to which a large number of the profession in London and the vicinity were invited. Several thousands of medical men took the opportunity to inspect the premises and the facilities afforded to the profession by the society. The guests were received in the library by the President, Sir Francis Champneys, Bart. On the evening of the first day, the following were entertained before the "at home" at a dinner held by the Society's Council Club: Sir James Porter, K.C.B. (Director-General R.N.), Sir William Launcelot Gubbins, K.C.B., M.V.O. (Director-General A.M.S.), Sir Arthur Branfoot, K.C.I.E. (President, Medical Board, India Office), Sir Donald MacAlister, K.C.B., Dr. Langley Browne, Dr. R. Caton, Lieutenant-Colonel Sir Havelock Charles, Sir William Watson Cheyne, Bart., C.B., F.R.S., Dr. Latimer, Dr. James Little, Dr. Newsholme, C.B., Sir James Reid, Bart., G.C.V.O., K.C.B., Professor Robert Saundby, Dr. Norman Walker, Sir William Whitla, Mr. E. Parker Young. Amongst the chief attractions at the "at homes" were: An exhibition of Leduc's osmotic growths, by Mr. Deane Butcher; these growths simulate life to a remarkable degree, but are due to a purely physical process; a number of old and unique volumes, selected from the library of the society by Dr. Norman Moore, Honorary Librarian, and a demonstration by Mr. Charles Hewitt, Librarian, of old book plates, title pages, and curious extracts from some of the oldest books in the library; a cinematograph exhibition of phagocytosis, embryology, and other films of scientific interest, in the Robert Barnes Hall; an epidiascopic exhibition of specimens from the Royal College of Surgeons, selected by Mr. S. G. Shattock; a demonstration by Messrs. Leitz of their new projection apparatus, microscopes, and other scientific instruments.

THE BEIT MEMORIAL FELLOWSHIPS.

TEN Fellows were elected by the Trustees of the Beit Memorial Fellowships for Medical Research on December 12th. The fellowships are of the annual value of £250, and are held as a rule for three years, but the trustees have power in exceptional cases to extend the period for one year more. The subjects selected by the Fellows now appointed are for the most part concerned with metabolism and its disorders, and with bacterial diseases, their nature, prevention, and treatment. A Fellowship is continued to Dr. Ida Smedley, who is engaged at the Lister Institute in the investigation of the processes involved in the formation of fat in the organism. Dr. A. B. Macallum of Toronto, recently Austin Teaching Fellow in Bio-chemistry at Harvard, is working in Professor F. von Müller's laboratory in Munich at metabolism in disease, especially in relation to the formation and excretion of urea, ammonia compounds, and uric acid. Dr. Sydney Wentworth Patterson of Melbourne is to investigate at the Institute of Physiology, University College, London, diabetes and toxaemias of intestinal origin, especially the influence of different diets in the production of poisonous products. Dr. Casimir Funk of Berne, who recently received a D.Sc. research degree from the University of London, is to investigate the chemical nature and physiological properties of the substances concerned in the etiology and prevention of the so-called deficiency diseases (beri-beri, scurvy, etc.). This inquiry will be carried on at the Lister Institute. The subjects of the researches which Dr. D. V. Cow will undertake in the pharmacological laboratory at Cambridge are the diuretic action of certain tissue extracts (especially of intestinal mucous membrane), and the value of non-toxic organic compounds in the treatment of bacterial diseases. Dr. R. A. Chisholm, working in the pathological department of Guy's Hospital, is to investigate experimental nephritis. Miss E. J. Dalzell, M.B., Ch.M.Sydney, is to work at the Lister Institute at the etiology of gastro-enteric disease in infants, the influence of diet, and the protective and curative value of vaccine-therapy. At the Lister Institute, also, Dr. H. L. H. Schütze, of Melbourne, will study the modern absorption theory of the union between bacillary antigen and the antibodies of the blood serum. Dr. James McIntosh, formerly of Aberdeen, is to study in the bacteriological laboratory of the London Hospital Medical College certain problems concerning immunity to syphilis. The life-history of parasitic protozoa will be investigated by Miss H. L. M. Pixell in the protozoological laboratory of Bedford College and at the Lister Institute.

COLOUR VISION AT SEA.

THE Supplementary Question is understood to be very much disliked by Ministers, perhaps because it compels them to rely on their own knowledge without the mainstay of the permanent official. The practice is no doubt open to abuse, but it is occasionally effective in reminding the occupants of the Front Bench that they are mortal. Mr. Peto gave a pretty exhibition of the art of supplementary inquiry on Monday at the expense of the Parliamentary Secretary to the Board of Trade. He sought information, among other points, on the question why the tests for colour vision for persons serving in the Mercantile Marine are different from those for persons serving in the Royal Navy, and whether the Board of Trade intended to abolish the discredited wool test. Mr. Robertson readily replied that the Board of Trade was going, "at an early date," to adopt the tests recommended by the Departmental Committee, and that if his questioner wanted to know why the Royal Navy had adopted a better test, he must go to the Admiralty. Mr. Peto was probably prepared for an answer of this high and dry official kind, since the superior readiness of the Royal Navy to take early advantage of the progress of science is a very sore subject with the Board of Trade. At any rate, he came up on the other tack, and put in a supplemental shot by asking whether, in view of the fact that a very large number at present employed in the merchant service would be required by the navy in time of war, it might not be desirable to have the same colour vision test in both services. To this Mr. Robertson had no reply beyond a repetition of the statement that the Admiralty was the Admiralty and the Board of Trade was the Board of Trade, and that everything was correct in the best possible official world. From the First Lord of the Admiralty Mr. Peto elicited the statement that the test of colour and form vision was applied in the Royal Navy on entry, and again to officers who went through courses in the navigation school, and to any officer about whose colour vision any doubt might arise. The Board of Trade, therefore, can hope for no support from the Board of Admiralty, and after this disclosure of official inconsistency it is to be hoped that the matter will not be allowed to sleep.

INTERNATIONAL CONGRESS OF PHYSICAL EDUCATION.

It has already been announced in the JOURNAL that the International Congress of Physical Education is to be held in Paris in March (17th–20th), 1913, under the patronage of M. Fallières, President, and M. Loubet, ex-President of the French Republic. Among the honorary presidents are Professor Chantemesse, Dr. Landouzy, Dean of the Paris Faculty of Medicine, and Dr. Roux, Director of the Pasteur Institute. Professor Gilbert is Chairman of the Organization Committee; the General Secretary is M. Georges Weiss, Professor of Physics in the Faculty of Medicine. The British Committee includes Sir Lauder Brunton, Dr. A. Waller, and Dr. Cyriax. The work of the Congress will be arranged under different headings as follows:—I. Scientific group: Physiology of physical exercises (President, Professor Richer); cinesitherapy (President, M. Lucas-Championnière). II. Paedogogic group: Physical training in schools (President, Dr. Mathieu), military preparation, military gymnastics, riding, shooting, etc. (President, Dr. Chappuis, senator). III. Application group: Games and sports; touring, Alpine climbing, aviation, yachting, boating. IV. Female group: The physical education of women; influence of sports on the female organs; the improvement of the race through the mother, etc. There will be an exposition in connexion with the Congress under the presidency of Professor Gilbert. Dr. Cyriax, 4, Craven Hill, Lancaster Gate, W., who is President of the British Committee, will be pleased to give any further information that may be desired.

NOTICE TO CORRESPONDENTS.

OWING to the Christmas holidays it will be necessary to send the JOURNAL for next week (December 28th) to press on Monday next. Correspondents who may desire to address the JOURNAL are requested to take note of this fact. Communications cannot be received after Monday morning, and it will be difficult, if not impossible, to deal with lengthy communications received on that date.

Medical Notes in Parliament.

[FROM OUR LOBBY CORRESPONDENT.]

Compensation for Tuberculous Animals. On December 16th Mr. Runciman informed Mr. C. Bathurst that the compensation to be paid for animals slaughtered as tuberculous would be payable in connexion with the administration of the Board of Agriculture under the Diseases of Animals Acts. The Board proposed to make an order providing for the compulsory slaughter of bovine animals in certain cases suffering from tuberculosis, and for the payment of compensation by the local authorities. The Treasury had agreed to refund to the local authorities one-half of the net cost, and it was estimated that the amount so refunded by the Treasury would be £60,000 in the first year.

Colour Vision Tests. Mr. Peto asked, on December 16th the President of the Board of Trade for information as to why the tests in colour vision applied to those serving in the mercantile marine were different from those serving in the Royal Navy; whether it had been brought to his knowledge that the wool tests which were in previous use at Board of Trade examinations were wholly discredited in the way of reliability; and whether he would take into consideration the desirability of abolishing both present and proposed Board of Trade tests for colour blindness, with a view to substituting practical tests in colour vision under conditions as they prevailed at sea and under the ordinary circumstances of service in the mercantile marine. Mr. Robertson answered that the whole question of the colour vision tests applied to candidates for certificates of competency in the mercantile marine had been fully investigated by a strong Departmental Committee, and the tests which they had recommended for adoption would be brought into force at an early date. The reasons which led the Committee to recommend these tests would be found stated in their report. He must refer the hon. member to the Admiralty for information as to their reasons for adopting the colour vision tests used for officers in the Royal Navy. Mr. Peto said that in view of the fact that a very large number at present employed in the merchant service might be required to enter into the Admiralty service, was it not thought desirable to have the same colour vision test in both services? Mr. Robertson said that was a question for the Admiralty. The Board of Trade was proceeding on the recommendations of the Departmental Committee. On the same day Mr. Peto asked the First Lord of the Admiralty at what period the tests in colour and form vision were applied to executive officers in the Royal Navy; whether these tests must be undergone on entering the service; and whether once an officer had shown proficiency in these tests they were not further applied. The First Lord of the Admiralty said that these tests had to be undergone on first entry into the service. They were further applied to officers who went through courses in the navigation school, and also to officers as to whose colour perception any doubt might arise.

Medical Inspection of Recruits.—Mr. Jesse Collings asked the Secretary of State for War, on December 11th, how many men offered themselves as recruits during the years 1910 and 1911 respectively, how many of them were, on medical inspection, rejected as unfit for service, and how many of those passed as fit for service were, within three or six months of enlistment, discharged as unfit for service. Colonel Seely referred to pages 45, 47, and 57 of the General Annual Report for last year (Cd. 6065) for full information. The figures specially asked for were as follows:

	Year ending 30-9-10.		30-9-11.
Offered themselves as recruits (served with notice papers) ...	63,751	...	65,724
Rejected by medical officers (both before and after attestation, but before joing units) ...	13,735	...	12,304
Discharged within three months of enlistment for medical reasons	551	...	516

He added that no information regarding discharges for medical reasons of men with between three and six months' service was available.

Flannelette. The Home Secretary, in replying to a question by Mr. Joynson-Hicks on December 16th, said he was aware that various makes of flannelette were sold under misleading descriptions. With regard to taking steps either by legislation or otherwise to forbid their sale, he was waiting for suggestions as to the prescription of practical standards and tests with a view to the introduction of legislation.

Medical Treatment of School Children in Scotland. The Secretary for Scotland, on December 16th, informed Mr. Barnes that he was giving careful consideration to the case Allan *v.* the Glasgow School Board, in which the Scottish Court had decided that medical attention and treatment could not be given to school children.

Mental Deficiency Bill. Mr. Ellis Griffith, in replying to a question by Mr. Austen Chamberlain, on December 12th, said that resolutions in favour of legislation on the lines of the Report of the Royal Commission on the Feeble-minded had been received at the Home Office from 14 county councils, 44 borough councils, 110 education committees, 6 urban district councils, and 280 boards of guardians. Many of the bodies had sent in more than one resolution on the subject, and the total number of resolutions in favour of legislation received at the Home Office was about 800. He could not say how many resolutions had been received by other Government departments or Cabinet Ministers.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

TREATMENT OF TUBERCULOSIS.

Views of the Local Government Board.

THE Public Health Committee of the London County Council having asked the Local Government Board[1] to define the position it desired the Council to occupy in relation to the provision of sanatoriums and other residential institutions for the treatment of tuberculosis, the receipt of a full statement from the Board was reported to the Council on December 17th.

The Board wrote that as regards dispensaries it had acted on the view suggested in the report of the Departmental Committee that the unit should be the metropolitan borough, or combination of boroughs, and the borough councils had been invited to arrange for these institutions. As regards residential institutions, the Board thought that the county of London should be the unit, and that the County Council should make the necessary arrangements. Nevertheless, the County Council should formulate and submit to the Board a complete scheme for the metropolis, so that the work proposed to be done locally through dispensaries should be properly related to the whole scheme. The Board referred to its recent circulars,[2] in which an annual maintenance grant was promised of one-half the total net cost incurred within reasonable limits in treatment at dispensaries, sanatoriums, and hospitals, forming part of a scheme dealing with all persons in the area (whether insured persons or not), after deducting the sums received from Insurance Committees and from private patients. If the County Council were willing to make itself responsible for the provision of in-patient accommodation, the grant in aid in respect of this would be paid direct. The Board would be glad to receive the observations of the Council as to the final arrangements to be made with dispensaries. In any case it seemed important that the dispensary treatment should be brought into proper relation with the general scheme for the metropolis. The Board understood that the Council had under consideration certain facultative arrangements for the provision of residential accommodation required for insured persons, and in order to enable the Council to proceed in this matter the Board had made a nominal grant of £10 to the Council as an indication that it authorized the Council to provide sanatoriums and other institutions for the treatment of persons suffering from tuberculosis. As regards capital expenditure, the Board was prepared, subject to the consent of the Treasury, to make grants in aid in accordance with the recommendations of the Departmental Committee. So far as practicable, suitable existing accommodation should be utilized, and in framing a complete scheme regard should be had to the needs of the community and not to the needs of insured persons alone.

The Public Health Committee remarked that such important financial and other considerations were involved in this communication that it would be most inadvisable for the Council to express any opinion thereon until the letter had received full consideration by the committees concerned.

Temporary Sanatorium Accommodation.

Arising out of the arrangements entered into with the Metropolitan Asylums Board for the provision of temporary accommodation for the treatment of tuberculosis (BRITISH MEDICAL JOURNAL, December 7th, p. 1639), the Public Health Committee reported to the London County Council, on December 17th, that, as a result of a conference between the Council, the Asylums Board, and the Insurance Committee for London, details with regard to accommodation, finance, etc., had been arranged. Accommodation would be provided as soon as practicable for about 130 patients, to be increased gradually until provision for about 500 persons was available. The patients were to provide their own clothing, to undertake light work under medical supervision, and to be conveyed free of charge to the Council to and from the institution. The Council was not to be liable for any expenditure in respect of the burial of patients. The Council was to arrange with the Insurance Committee for the selection of insured persons to be treated in the institution. The Insurance Committee agreed to send patients to the Council's sanatorium rather than to any other institution, and to keep on the average 400 patients therein. The Council would pay the Asylums Board the actual cost incurred in providing for the treatment received, and the Insurance Committee would pay the Council £1 15s. a week for each insured person treated in the institution. A periodical adjustment would be made from time to time, based upon the actual expenditure incurred by the Council. As to the accommodation required, the Insurance Committee estimated that, in addition to those patients already receiving sanatorium treatment, there were at the present time about 140 insured persons to be provided for, and that the number of new cases would average at least 15 each week. It was probable, therefore, that the accommodation would be utilized as soon as provided.

The Local Government Board was prepared to make a grant of three-fifths of the expenditure, and it was estimated that the payment of £1 15s. a head a week to be made by the Insurance Committee would more than cover the expenditure, which fell under three heads—capital cost of adapting premises, establishment charges incurred prior to the reception of patients, and maintenance of the institution when occupied, including cost of treatment. For purposes of comparison it might be stated that London hospitals were treating insured persons suffering from tuberculosis at £1 10s. a week each, and it was to be presumed that the hospitals were not suffering loss in this respect. The Council had no power to act in this matter until a grant had been received under Section 64 (2) of the Insurance Act, and until authority had been given by the Local Government Board for the provision of institutions for the treatment of tuberculosis. The necessary grant and authority had now been received, as indicated in the letter reported above. The committee desired to emphasize the fact that these proposals related only to a temporary arrangement to meet an emergency. It was of opinion that by entering into the proposed arrangements the Council would not be committed to any particular or general scheme for the treatment of tuberculosis within the county.

In submitting a special estimate of £8,400 for the purposes of the scheme, the Finance Committee wished to make it clear that it approved the present proposal without prejudice to the larger question of policy that the Council would have to decide in the event of its being asked by the Local Government Board to frame a general scheme for dealing with tuberculosis.

METROPOLITAN ASYLUMS BOARD AND MEDICAL EDUCATION.

The Metropolitan Asylums Board on December 14th decided to ask the Royal Commission now sitting on the subject of university education in London to consider the desirability of the Board being represented on the Senate of the University of London. It was pointed out by the Law and Parliamentary Committee that since 1889 the hospitals of the Board had been available for the clinical instruction of students, and a certificated course of study at a fever hospital was now part of the five years' curriculum of every medical student. Classes were established in the various hospitals, and up to September last a total of 6,500 students had completed the course in the Board's hospitals. Facilities had also been provided for the study of small-pox by medical men and medical students when a sufficient number of cases were under treatment. In the last few years the Board had instituted classes for the instruction in hospital administration of qualified men desirous of taking the diploma in public health. The important part taken by the Board in medical education should be recognized.

THE DEPTFORD SCHOOL CLINIC.

The third report of the Deptford School Clinic or Health Centre for the school year ending July 30th is an interesting pamphlet recording the continuance of old and the commencement of new work. The report is really made up of four reports, three by the officers and the fourth by Miss McMillan, who started the scheme and still

[1] BRITISH MEDICAL JOURNAL, November 9th, pp. 1333; and November 23rd, p. 1493.
[2] See SUPPLEMENT, December 14th, p. 666.

superintends it. The "health centre" has been recognized by the London County Council, and up to a certain point carries out the work now happily being done at school treatment centres throughout London. This part of the work is called in the booklet "Council diseases," and comprises external eye troubles, errors of refraction, ear, throat, and nose diseases. In these departments the doctors estimate refraction, take out tonsils, operate for adenoids, and otherwise help the child. Wisely also the clinic is used as a centre of education for the parents, who are encouraged to take the necessary measures for improving the health of their children. Altogether 3,744 children were seen by the doctors in these departments, and such a great amount of good work was done that we are somewhat surprised at an evident lack of departments for minor ailments and for *x*-ray work. The work of the former would seem to be attended to by a capable nurse, who last year gave treatment to over 500 children; but it should be noted that in other London County Council centres a doctor is appointed for these minor ailments, and the nurse works under him and carries out his directions. Surely this is the better plan. This obvious defect in the organization should be remedied. There are probably some difficulties in arranging for an *x*-ray department at Deptford, but the energy which has broken out in so many interesting activities in so many directions should not in the next year's report be forced to write: "We endeavour to get our cases of ringworm treated at the hospital by *x* rays."

The dental department is evidently doing splendid work, and the report shows that the London County Council is slowly (very slowly, judging from the way the proposal for some new dental centres has been hung up) is beginning to see how necessary it is that the teeth of the children should be cared for, and cared for early. Two things show how carefully the work is done here; first, that while 2,794 children attended, the number of permanent teeth extracted was only 730; and, secondly, that 4,974 teeth were stopped.

Those in charge of this health centre are making many other pioneer efforts. The report on remedial gymnastics carried on at the Evelyn Medical Homes, where breathing exercises are taught, curvatures of the spine treated, and tooth-brush drill engaged in, are examples of good "following up" work. The infancy department, the open-air, day and night schools or camps, the shower-bath and its adjuncts, and the breakfast on Scottish oatmeal, are all in the right direction, and bid fair, if carried out wisely and universally, to win the children of the very poor into paths of cleanliness and health, thereby "cutting off at its source the supply of patients to fill the costly sanatoria."

Ireland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Clinical Training in Poor Law Institutions.

The Infirmary Committee of the Belfast Guardians lately received a deputation of medical students who waited upon them to support their request that the guardians would allow a certain number of senior medical students to be admitted as resident pupils. It was stated that on an average sixty medical students pass through the Queen's University each year; that the Royal Victoria Hospital can take thirty-two resident pupils each year and the Mater Infirmorum can take sixteen; and that opportunities for the remaining twelve were necessary. The students were selected by examination; they paid 15s. a week for board; they acted under the direction of the visiting staff and were not authorized to do any work on their own responsibility. Dr. Hall, on behalf of the visiting staff, supported the proposal. Ultimately it was decided to recommend their board to inform the Local Government Board of the request, and to ask it whether students were admitted as resident pupils in any other [illegible] and also whether it [illegible] scheme with the object of introducing the system into this workhouse. The Local Government Board should be requested to offer suggestions on the matter.

Treatment of Tuberculosis.

On the advice of Dr. O'Donohoe, the Longford Insurance Committee has decided to send patients to Peamount Sanatorium without the forms being filled by local doctors. The sanatorium doctors will be called on to decide if the cases are to be retained there or returned for any reason. If this be an effort at economy it would be curious to know what proportion of the fee for the doctor's certificate will be expended in the railway fares of unsuitable patients between Longford and Peamount.

At the last meeting of the Wexford County Council, the question of the adoption of a scheme for the administration of sanatorium benefits was considered. The Council had already rejected schemes on two previous occasions. Dr. Browne, Local Government Board Medical Inspector, and Dr. O'Donoghue, representing the Insurance Commissioners, were in attendance. Dr. Browne explained that the contribution required from the County Council was £800, which would be met by a rate of ½d. in the £. An amendment was moved to appoint a tuberculosis officer at a salary of £500, to include travelling expenses. Any grant from the rates was strongly opposed on the ground that £24,000 a year was already collected in the county under the Insurance Act, representing a rate of 1s. 2½d. in the £. The amendment was rejected by 10 votes to 6, and the original scheme was rejected without a division.

Salary of Medical Officers.

At the last meeting of the Dunshaughlin Board of Guardians the application of the three medical officers for an increase of salary was discussed. The three doctors were in attendance, and it was decided by a majority to increase the salaries by £10, and that triennial increments of £10 be paid to each on the completion of five years' service, until the maximum amount of £200 had been reached. The Clarecmorris Board of Guardians last week received applications from the four medical officers of the union for increases of salary. The doctors, two of whom have over forty years' service, complained that they were still in receipt of the same salaries as were fixed sixty years ago. A proposal to refer the applications to a committee was defeated by a majority, and the matter then dropped.

A Dirty Workhouse.

The Local Government Board Inspector's report on Longford Workhouse makes unpleasant reading. He says that he never, from the point of view of cleanliness, saw a workhouse in such a state. The inmates were disgracefully dirty; but he did not blame the officers, as there were neither lavatories nor baths. Owing to the disastrous fire three years ago, the house was totally inadequate, both as regards size and internal arrangements, and the people were only passably clad. The sisters of mercy and the doctor did their best under adverse circumstances for the sick poor, but they had not even a hot-water supply. The guardians have decided to remedy these matters when the new building is completed next autumn. Nothing is apparently to be done in the meantime.

Scotland.

[FROM OUR SPECIAL CORRESPONDENTS.]

Dr. David Livingstone Centenary.

Considerable interest is being aroused in Glasgow in the celebration of the David Livingstone centenary, which occurs in March next. A committee—representing the University, the Corporation, the Royal Colleges of Physicians and Surgeons and other public bodies—has arranged for an afternoon gathering in the university on March 18th, at which an oration on David Livingstone will be delivered. There will be a public service in Glasgow Cathedral on March 19th, and a Corporation reception on the evening of March 19th in the City Chambers. Further suggestions to perpetuate the memory of the explorer are the establishment of a fund to endow a memorial chair of geography in the university; the endowment of a Livingstone cottage hospital at Blantyre, his native village; and a scholarship at Anderson's College Medical School.

VITAL STATISTICS FOR SCOTLAND.

A report to the Registrar-General by Dr. James Crawford Dunlop, regarding the births, deaths, and marriages registered in Scotland during the year ending December 31st, 1910, has been issued recently.

Births.

Among the more noteworthy features of the Scottish vital statistics of the year were the lowness of the principal rates. The birth-rate, the marriage rate, the general death-rate, and the infantile mortality-rate were all below the average. Births registered during the year numbered 124,059, which is less than in any year since 1890; the birth-rate of the year was 26.19 per 1,000, the lowest Scottish rate yet recorded since registration began—that is, since 1855.

Marriages.

Marriages numbered 30,902, this being nearly 800 more than in 1909, but less than in all other years since 1896. The marriage-rate, which was 6.52 per 1,000, is slightly higher than in 1909, but lower than in all other years since 1888, and is the seventh lowest Scottish marriage-rate since 1855.

Deaths.

Deaths registered during the year numbered 72,268, and were less than those registered in any year since 1896. The death-rate of the year was 15.26 per 1,000, the lowest death-rate yet recorded, the next lowest and the only other rate under 16 per 1,000 being that of the previous year (1909), which was 15.85. The infantile mortality-rate was 108.3 per 1,000 children registered, which, though 0.6 above that of the previous year, was unusually low. There were only three lower in any year since 1855—those of 1859, 1879, and 1909.

Tuberculosis.

The death-rates from all forms of tuberculous disease and from phthisis continued to show a decrease, and both were less than in any previous year. The death-rate from phthisis was 115 per 100,000 of the estimated population, which is in great contrast to the rates in the latter half of the last century, for from 1855 to 1886 they were constantly over 200 per 100,000, and in 1860 and in 1870 were as high as 283.

Other Diseases.

Among other diseases the death-rates from which were comparatively low or lower than in recent years were enteric fever, whooping-cough, cerebro-spinal meningitis, pneumonia, and bronchitis. Among those the death-rates of which were comparatively high were scarlet fever, measles, and cancer. The death-rate from the latter disease continues to increase. It is now fully 25 per cent. higher than ten years ago, fully 50 per cent. higher than twenty years ago, and fully 100 per cent. higher than thirty years ago. It is very doubtful, however, how much of this apparent increase is due to an increased prevalence of the disease, and how much to improvement of diagnosis.

Centenarians.

An attempt was made during the year to verify the ages of persons stated to be 100 years of age or more at the time of death, and in nine cases the fact that the person was of such an age was completely verified.

Population of Scotland.

The population of Scotland in 1901 was 4,472,103 (2,173,755 males and 2,298,348 females). According to the preliminary report of the census of 1911, the population was 4,759,445 (2,307,603 males and 2,451,842 females).

A MAN was recently fined 5s. and costs by the magistrates at Portadown for having failed to provide a fireguard in his house, and thereby causing the death of his child, aged 7 years. As pointed out by the defendant's solicitor, there was a flaw in the Act, as it was only when the unfortunate parents were in distress after the accident had occurred that the authorities had power to bring the matter before the court. More young lives might be saved if an inspector had the power of bringing parents to court for not having a fireguard, without the necessity of waiting for the occurrence of an accident.

Special Correspondence.

PARIS.

Oxaluria.—Therapeutics of Radium. Multiple Cysts of the Liver.—Digitaline and the Blood Pressure.—Formation of Nucleated Red Blood Corpuscles.

AT the Congress of Medicine held recently in Paris, Professor Maurice Loeper discussed the pathological significance of excess of oxalates in the urine and in the different organs of the body. In health oxalates were present in the urine in the ratio of 0.5 to 2 centigrams per litre. Gelatines and substances rich in nucleïn increased the oxaluria; theobromine, urotropine, and caffeine seemed to have the property of eliminating calcium oxalate. Pathological oxaluria was present in diabetes, obesity, gout, intestinal sand, and chronic rheumatism, as well as in some affections of the liver and skin. Oxalates were found in excess in the blood in several pathological conditions, including asthma, some cases of chronic rheumatism, in diabetes in advanced cases, and in some disorders of the liver. That the kidneys were important factors in the elimination of the oxalates was shown by the fact that in certain cases of nephritis the oxalates in the urine were diminished. Oxalates were eliminated also in the bile. In cases of asthma oxalates were found in the sputum, showing that these salts were eliminated by the lungs. The effects also produced by oxalates were those of a neuromuscular toxaemia—rapid breathing and an increase followed by a fall of blood pressure. As regards treatment Dr. Loeper recommended the exclusion from diet of products rich in oxalates, such as cocoa, tea, pepper, coffee, green beans, spinach, and rhubarb. Potatoes, cabbage, tomatoes, lettuce, and almost all all fruits might be allowed, as well as meat in moderation. Alkalis should be taken, and the elimination of oxalates aided by the administration of urotropine, the salts of calcium and magnesium, and phosphoric acid.

Drs. Chirom and Rubins-Duval reported to a recent meeting of the Hospitals Society a case in which a condition diagnosed as cancer of the uterus was cured by radium. The neoplasm infiltrated the broad ligament, and after two applications of radium the case was dismissed as cured. Fifteen months later the patient died from spinal-cord disease. At the *post-mortem* examination no histological evidence of cancer was found in the cicatricial tissue which had taken the place of the previously existing cancer-cell growth.

M. Tuffier recently reported an interesting case of multiple cysts of the liver to the Surgical Society of Paris. The patient, a man aged 23, had a tumour in the right hypochondrium, with bulging of the lower ribs. The swelling was hard, bossed, and irregular, but not painful: a diagnosis of hydatid cyst was made. Operation was advised and a multilocular cyst was found. The contents of the various cysts varied from a bile-stained fluid to a clear transparent liquid. One cyst, containing thick turbid fluid, extended into the liver substance, and its enucleation demanded considerable care. These cysts were greatly enlarged biliary channels. There was no hydatid cyst. Eight similar cases found on *post-mortem* examination were recorded in literature.

Drs. Jené and Godlewski have recently undertaken some interesting work on the action of digitaline on the blood pressure, and on the daily variation in blood pressure in the normal subject. The cases examined consisted of 18 normal hearts, 10 patients with cardiac lesions with good compensation, 11 cases of cardiac insufficiency, 7 cases of renal and cardiac sclerosis, 1 case of tachycardia, and 13 control cases. The blood pressure was taken before and after the administration of the digitaline. Their conclusions are that although some irregular rises of blood pressure occur after the administration of digitaline in therapeutic doses, still the daily normal range of blood pressure corresponds to the elevations observed; in other words, digitaline has no constant action on the blood pressure in the manner heretofore accepted.

Dr. Feuillé, in a short communication to the Society of Biology, stated that in the blood of the rabbit preserved in the normal condition in the incubator in glass tubes, and also in the blood vessels (the dead rabbit remaining in the

incubator) he had observed normoblastic formation taking place from the already formed red blood corpuscles. He put forward the theory that the bone marrow should perhaps be considered rather as a locality for transformation during temporary stagnation of the blood corpuscles than as the seat of new formation of blood corpuscles.

BERLIN.

Locumtenents.—The Growth of Isolated Organic Tissues.—Central Heating.

SOME weeks ago a number of Berlin medical men held a meeting in order to regulate the question of substitutes for practitioners temporarily unavailable by their patients. It was brought about partly by a lack of suitable locumtenents, partly by the often exorbitant demands made by them, and partly by the disinclination of patients to be treated in the absence of their own doctor by a medical man unknown to them. At the meeting groups of about ten practitioners were formed, each practitioner binding himself, if chosen by the patient, to take the place of a colleague whom illness or some other reason may render unavailable. Fees will be regulated and fixed. The advantage of this arrangement for the patient is obvious, since it gives him a wide choice. At present the arrangement only applies to certain districts in the east of Berlin, but corresponding schemes are in view elsewhere.

Professor H. Braus (Heidelberg) recently gave a very interesting lecture at the "Urania," a Berlin institute where popular demonstrations relating to the progress of science often take place. The lecture was an exposition of the experiments of Carrel at the Rockefeller Institute, New York, who succeeded in making animal tissues grow when isolated from their connexions. On the present occasion the growth of nerves from brain tissue was illustrated. Having isolated a single ganglion cell from an embryo frog, he showed its growth on the screen. The rapidity of the growth amounted to 0.001 mm. per second; the length to 1 mm. For such experiments an institute has been planned in Berlin.

Nowadays it is exceptional in Berlin to build a house without central heating. Its advantage is great, but every now and then drawbacks from a hygienic point of view are urged. Dr. Wolff-Eisner has recently, in the *Deutsche medizinische Wochenschrift*, specified the disadvantages of this kind of heating. According to him, ill effects on health, especially catarrhs of the larynx, are caused by the very great dryness of overheated rooms. Besides this, the dust deposited on the pipes is partly organic in character and gets decomposed by heat: hence empyrheumatic products are mixed with the air of the room. As an answer to these statements, Professor Nussbaum has asserted, in the paper *Gesundheits-ingenieur*, that these disadvantages can occur only when the central heating is faulty or improperly used. The air does not become unduly dry unless the heating is continued uninterruptedly, and this is not the case in properly managed central heating. He adds that steam-air heating, as distinct from hot-water heating, allows of easy and quick regulation of temperature. The *Verband deutscher Zentralheitungs-Industrieller* has also taken part in the discussion. It maintains that the modern system of central water-heating, when executed by a competent firm, is the most perfect heating system in hygienic and technical respects. As to the combustion of the dust on the hot pipes, this evil can be rationally prevented by not hiding the radiators in cases or grates, but, as is mostly done now, by leaving them exposed, and decorated in accordance with the general scheme of the room; then, like the furniture, they are accessible to duster and brush. If no dust accumulates, no dust can burn.

THE German Congress of Medicine will hold its thirtieth meeting, as above at Wiesbaden in April, 1913 (15th to 18th), under the presidency of Professor Penzoldt of Erlangen. The principal subject proposed for discussion is the nature and treatment of fever. The discussion will be introduced by Dr. von Leyd of Heidelberg and Hans H. Meyer of Vienna. At the request of the Organizing Committee, Professor Lehnerdorff of Koenigsberg will deliver an address on the relations between anaphylaxis and fever.

Correspondence.

LORD LISTER'S EARLY CASE OF OPERATIVE TREATMENT OF FRACTURE.

SIR,—In connexion with the recent report on the Treatment of Fractures, and the address of Mr. Robert Jones, it may be of interest if I recall an early case of the operative treatment of fracture in the practice of the late Lord Lister shortly after his appointment to the chair of clinical surgery in Edinburgh, which made a vivid impression on my mind as a student.

A lad employed in a quarry in turning the handle of a winch to raise stone by a crane let go the handle, and as it rapidly revolved it struck him on the forearm. He received no medical treatment at the time, and many weeks afterwards presented himself at the Edinburgh Royal Infirmary with a useless arm. Lord Lister showed the case to his class, pointing out a badly united fracture of the middle of the shaft of the ulna, and a dislocation of the head of the radius. He expressed his intention of trying to break and reset the bone and to reduce the dislocation, pointed out the difficulty of effecting this owing to the lapse of time since the injury, and the necessity in the event of failure of cutting down upon and dividing the bone at the seat of fracture, and of excising the head of the radius if reduction were impossible after division of the ulna. After futile attempts to refracture the bone, this double operation was done under full antiseptic conditions, the wounds pursuing the normal aseptic course, the result being a perfectly useful arm. In those days, when some still flouted Lister's principles, his adherents regarded the case as a triumphant vindication of them.—I am, etc.,

December 14th. THEOBALD A. PALM, M.D.

*** The case recalled by Dr. Palm is, no doubt, that which formed the subject of Lister's paper, "On a Case illustrating the Present Aspect of the Antiseptic System in Surgery," published in the BRITISH MEDICAL JOURNAL, 1871, vol. i, p. 30, and reprinted in *The Collected Papers*, vol. ii, p. 165 (Oxford: The Clarendon Press, 1909). Any surgeon who will study these volumes will find not only that Lister in his practice anticipated methods which are only now becoming usual, but also that he discussed the problems arising with so much foresight and insight that he left little concerning principles for later elucidation.

TREATMENT OF INEBRIETY.

SIR,—May I ask you to give me space for a few remarks on Dr. Francis Hare's book on *Alcoholism*, and the review of it in the JOURNAL of December 7th, p. 1612? Dr. Hare's book is the first real attempt since the great pioneer work of the late Dr. Norman Kerr to deal adequately with the causes and treatment of alcohol inebriety. Dr. Hare has thrown much light on the causes of alcoholism not found in any existing book on the subject, and done much to show the necessity for a better understanding of the inebriate by the profession and by the public. The remarks on the causation of delirium tremens and alcoholic epilepsy and his suggested preventive treatment I am pleased fully to endorse, and hope that they will find their place in any future textbook dealing with these conditions.

I am disappointed to find that, so far from clearing up the vexed question whether inebriety as we meet it in medical practice is a vice or a disease, Dr. Hare in his book and you in your review of it give out once more that, "though alcoholism may amount to a disease, in a very large proportion of cases it is only an exaggerated self-indulgence." I am well aware that in making this statement Dr. Hare is merely corroborating the findings of the last Parliamentary Committee. That this conclusion is not the only one possible after many years' experience of inebriety and of inebriates is evident, however, from the following statement made by Dr. R. W. Branthwaite, late Medical Superintendent of the Dalrymple Home, Rickmansworth, and now His Majesty's Inspector under the Inebriates Acts, before the Twelfth International Alcoholic Congress. He said:

I do not believe any drunkard out of the eight thousand or so I have known has voluntarily and of intention made himself so.

On the contrary, I am convinced that *all who possessed sufficiently developed mental equilibrium to appreciate the seriousness of their condition*, have urgently and honestly desired and striven to lead a sober life, and failed in a struggle against *a defect or weakness* the magnitude of which a normally constituted individual is utterly incapable of fully realizing. (The italics are mine.)

Dr. Branthwaite (I think at the same Congress) has given the following definition of an inebriate:

> An inebriate is an individual who may or may not desire to live soberly, but in any case cannot, unless and until some change takes place in his mental state.

If we are to accept this statement of opinion and this definition, it seems to me that we must accept the fact that pathological inebriety (we are not concerned here with occasional self-indulgent drunkenness) is neither a vice nor a disease, but a symptom of psycho-neurotic or psycho-physical disease or defect. My own experience of nearly ten years' treatment of alcoholic and other forms of inebriety leads me to accept Dr. Branthwaite's statement and definition, and to regard inebriety not as a vice or a disease, but as a symptom of psycho-neurotic or psycho-physical defect or disease, curable or incurable in proportion to the amount of disease or defect which is present and responsible for the inebriety. The less defect or disease present the more curable is the inebriety, and vice versa, the actual degree of inebriety being of less importance. I think that such a view of the nature of inebriety need in no way inculcate the doctrine that inebriety is a disease over which the inebriate has no control, and so destroy the greatest incentive to amendment, while it removes from his mind the feeling that he is held altogether responsible for behaviour which he has earnestly striven against but failed again and again to amend. He should be taught that with his submission to and co-operation in treatment his condition is curable, and that the enormous difficulties in the way of self-cure are fully recognized and understood.

Your review calls attention to the need shown by Hare for looking for a physical cause for inebriety. Experience also shows the at least equal importance of looking for psychic causes, which are generally not so apparent or easy to discover. Nothing in Dr. Hare's book leads me to alter an opinion arrived at some years ago—that it is to psycho-therapeutic treatment *in its widest sense*, with the use of drugs as adjuvants and not in any shape or form as specifics, that we must look for a cure of pathological inebriety, alcoholic and otherwise.—I am, etc.,

J. W. ASTLEY COOPER.

Ghyllwoods, near Cockermouth, Dec. 10th.

AN INTRACELLULAR PARASITE DEVELOPING INTO SPIROCHAETES.

SIR,—May I be permitted to make a few remarks on Mr. E. H. Ross's paper in your issue of December 14th?

In January of this year, prompted by clinical and pathological observation, I inquired into the life-history of the organism of syphilis. The lymphatic gland suggested itself to me as the most likely place for the other phases to occur, and I accordingly looked for and found them there. Early in September of this year Mr. E. H. Ross, who had come to the Lock Hospital for some syphilitic material, was informed by my house-surgeon, Mr. Moolgavkar, that I had been working at the subject for some months. On September 14th Mr. Ross came to see me at the Lock Hospital; wishing to give him the same facilities for research as I had myself, from that day I placed all my material unreservedly at his disposal, and asked my house-surgeon to give him every assistance possible, and, moreover, I presented him with five sections in which practically the whole life-cycle can be followed out. Surely it is customary to acknowledge the source from which material is obtained when one's work is entirely dependent thereon.

One would imagine that the jelly method was the only means by which the life-cycle of the organism of syphilis could be worked out. For showing up the intracellular phases it is on the whole preferable to the *in vivo* method of staining with borax methylene blue, but cannot compare with it in the case of the extracellular phases. With the borax methylene blue the organisms remain alive for hours, allowing fertilization to be studied with ease, as I have shown, which is by no means the case with the jelly. The extracellular phases are the most important from a diagnostic point of view, as they are more commonly seen than the intracellular in latent and tertiary syphilis, where difficulty in diagnosis is most apt to arise.

Mr. E. H. Ross's article is stated to have been received on October 11th, and in the article the spirochaetal coil is mentioned and figured, yet in Mr. H. C. Ross's letter to the *Lancet*, written October 15th, it is stated that there is no coil in the human parasite.—I am, etc.,

Wimpole Street, W., Dec. 16th. J. E. R. MCDONAGH.

THE ETIOLOGY OF BERI-BERI.

SIR,—With regard to the interesting note on the etiology of beri-beri by H. G. Browning, on p. 69 of your issue of July 13th, 1912, I should like to submit the following. Briefly, Dr. Browning states that the native crew of a ship were divided into the deck crew and the engine-room crew, both eating from the same general stock of provisions. That beri-beri developed among the engine-room crew but not among the deck crew, and that the only difference between the two crews was the fact that the deck crew lived in dry quarters while the engine-room crew lived in wet quarters. He draws the conclusion that this points to dampness playing a large if not the largest part in the causation of beri-beri.

In view of the fact that such communications serve to throw doubt upon the theory that beri-beri is caused by a deficiency in the diet—a theory which I regard as a demonstrated fact—I believe some comment may serve a useful purpose.

In the first place, the facts are not given in sufficient detail to enable any definite conclusions to be drawn. It may well have been that because of some difference in taste, caste, or religion, the food actually eaten by these two crews may have differed, although they were drawn from the same supply.

However, even granting that the two crews ate the identical articles of food in the same amounts, this fact does not necessarily militate against the deficiency theory, since the conclusion that dampness played a part in the etiology rests upon the unproved assumption that the two crews differed in no other particular than the respective dampness or dryness of their quarters. They also differed in the kind and amount of exercise taken, the amount of fresh air breathed, and possibly in many other respects.

Vedder and Clark have shown in the *Philippine Journal of Science*, Section B, vol. vii, No. 5, 1912, that the nerve cells in the cord of fowls that had developed polyneuritis as the result of a polished rice diet showed anatomic changes closely simulating those found in the nerve cells of animals that have been greatly fatigued. Moreover, typical degeneration was found in the fibres of the brain and cord, in addition to the usual changes found in the peripheral nerves. It seems, from these observations, that the neuritis preventing substance, or vitamine, is a food-stuff or building stone essential for the normal metabolism of nervous tissue. If this is true, the case reported by Dr. Browning may be explained very simply in accordance with the dietary hypothesis as follows: The men in the engine-room crew performed heavy manual labour as stokers under the adverse circumstances of excessive heat, etc. The deck crew did not perform so much work. Under these circumstances the metabolism of the nervous tissue of the engine-room crew would be much more active than in the case of the deck crew, and a much larger supply of this essential vitamine would therefore be required by the former. The same diet which might contain sufficient vitamine to maintain the deck crew in health might be utterly inadequate for the engine-room crew.

This explanation is not stated as a fact, but as a distinct possibility, and as showing that Browning's deduction that dampness played a part in the etiology of beri-beri in this instance does not necessarily follow from his observed facts.—I am, etc.,

EDWARD B. VEDDER,
Captain, Medical Corps, U.S. Army.
Board for the Study of Tropical Diseases,
United States Army,
Division Hospital, Manila, P.I.,
October 16th.

ASSISTANT MEDICAL OFFICERS IN ASYLUMS.

SIR,—It is evident that Dr. Gostwyck and I agree more or less as to diagnosis, but differ as to treatment. I should like to make my meaning a little clearer, however. I suggested in my last letter that should certain eventualities not take place we might help ourselves by forming a society. I did not mean that this society should be an antagonistic body. Our methods would be, I had hoped, suggestive and not coercive. The principle objects of such a society would be to promote friendship between assistant medical officers, to stimulate them in their work, and to protect, support, and safeguard their interests in much the same way as the Students' Representative Council looks after the interests of students at a university.

Such a society, being composed of gentlemen, need not lower itself to the level of the illiterate worker. Take such societies as the Red Cross Society, the Motor Union, the London and Counties Medical Protection Society, the Medical Defence Union, the Research Defence Society, the British Medical Association; are these, I ask, lowered to the level of the illiterate worker? Such societies must be aggressive to some extent towards certain persons or conditions. Could the results accomplished by such societies have been accomplished by an individual alone? Would, for instance, the Commissioners in Lunacy pay as much attention to the request of an isolated assistant medical officer, specialist though he be, as they would to a request coming from a body representing most of the assistant medical officers in England; a request such as this, that new asylums should have quarters suitable for married assistant medical officers? I think not. The strength of such societies, as I have mentioned, is as the number of their members, the resources of the whole being available for the part.

I do not wish to go any further at present. This is the time for inactivity. We are waiting. There is some hope that the present state of affairs will be remedied. The question I would ask each assistant medical officer is this: "If you had a son who had qualified as a doctor, would you advise him to become an assistant medical officer in an asylum?" If not, why not?—I am, etc.,

City Asylum, Nottingham, Dec. 15th. W. J. ADAMS ERSKINE.

SIR,—The entire body of medical officers in asylums should be grateful to the BRITISH MEDICAL JOURNAL for the opportunity of discussing this subject in its columns. I have read the letters of "Assistant Medical Officer" and Dr. Erskine in your two last issues, and desire to express my appreciation and entire agreement

A certain number of recently qualified men at the outset of their career obtain an appointment as assistant medical officer in an asylum. Such a post held for a short time is not without useful experience and interest. But what of the men who continue in the service and do not take up ordinary practice again?

As an assistant medical officer of some years' standing, I must say that the prospects are little beyond those of a modest livelihood, free, indeed, from many of the worries of general practice of to-day, but yet having many limitations. The chances of the ordinary assistant medical officer obtaining a superintendency are probably not 5 per cent. Therefore men are not attracted in any great number, owing to want of certainty and the indefinite prospects of the service.

The medical superintendent receives a salary frequently double or treble that of his deputy. He has the general direction and responsibility, and his duties are largely administrative. His capacity for business management, rather than his professional qualifications or attainments, will most appeal to a lay committee, whose natural object is to keep the maintenance rate as low as possible.

But surely a fair scale of pay and recognized status for the assistant medical officer could be arranged by the asylum committee without any interference with the position and salary of the medical superintendent. In many cases the medical superintendent may lose touch with his profession more than the assistant medical officer does, and he may rarely assume any sole medical charge, but his position is assured and secure, and therefore he is free from anxiety regarding his future.

In the case of the assistant medical officer his happiness, comfort, and security of tenure used to depend largely on his relations with the medical superintendent. The Act of 1909, however, has given certain privileges and definite rights to superannuation, and now the committees of asylums are brought more intimately into relation with their staffs, and in many cases their relations with their medical officers are most cordial. Some, like myself, may be well treated and trusted as friends and colleagues, others are not. Therefore such a society of assistant medical officers as indicated in Dr. Erskine's letter would be of great advantage.

The chief points of asylum service as a career are indicated in the letter of November 30th. The advertisements always ask for an unmarried officer, and in few instances are married quarters provided; yet, when a superintendency falls vacant, a married man usually gets the appointment. This enforced celibacy is not good for the assistant medical officer; it is not fair to him as a citizen, and surely his work is as important as that of the other members of the staff.

The pay may commence at £150 per annum, but few of us, after one or two increments, rise to £250 or £300 even after many years of service. In other departments and services this is not so. The medical staffs should, like the others, have definite scales of pay.

There is a third point. The constant association with the insane, the lack of opportunities of social intercourse, the routine work and worries, may not suit every man, and I should not recommend any one who is not of equable and well-balanced temperament to take up asylum work. If a man be of quiet, steady habit of life and content with a modest fixed competency, he may find in his duties, his books, and in the entertainments and games, sufficient occupation and solace, but at present, I repeat, there is little inducement beyond this. It is not likely that many men will be found to devote themselves to special work which unfits them for other practice when the rewards are so uncertain.

Some steps should be taken to remedy the present state of affairs.—I am, etc.,

December 10th. T. P. G.

THE ROYAL SOCIETY OF MEDICINE.

SIR,—The phenomenal success of the Royal Society of Medicine—mostly due, as we must admit, to the skilful administration of the secretary, Mr. J. Y. W. MacAlister—its hydra-like advancement into fields of medical activity hitherto unprovided with the essential accessories of which development, the buoyancy and exuberant vitality of work of it has infused into the so-called medical society world, its the metropolis, its palatial home, and, above all, its valuable educative influence, are features which tend to the conviction that it has now outgrown its title. The meticulous suggestion, adopted at the general meeting of February 19th, 1907, of the present title was presumably based upon the fact that no one was able to foresee the brilliant success which the society was destined to achieve. The use of the word "society" is, I submit, a poor description to apply to the work now accomplished by the Royal Society of Medicine. A "society" merely means "a number of persons united in a community," and is applicable to any purpose for which a number of persons combines to promote a common object, as, for example, a trade union; whereas, the first purpose of the Royal Society of Medicine is that of an educative body, in the promotion of which a "community of persons" has united to advance the science and art of medicine.

There is only one word which aptly and fully expresses the objects and aims of such an organization, and that is "Academy." It possibly may have seemed immodest at the foundation of the Royal Society of Medicine to have endowed it at first with this title, but now it must be conceded that out of its abundant resources, it is possible for the society to live up to any title. Again, there is no "Academy of Medicine" in this country, nor anything which can be held to fulfil the mission of such an institution. Furthermore, the title of "Academy" carries with it the conviction of a higher tribunal than that of the word "Society." Thus, were the Royal "Society" of Medicine to become the Royal "Academy" of Medicine, the change in title might tend to raise as well as increase the influence of the already high standard of work,

the results of which the Royal Society of Medicine has become the means of disseminating throughout the world.

Another point suggests itself. Is posterity to be allowed to forget the great personal sacrifice of this generation, without which the creation of the magnificent heritage to which future medical generations will ultimately succeed would have been impossible? The American nation have not been permitted to forget the personal sacrifice of their forefathers by whom emancipation from British rule was secured. Similarly, though of course in a much less degree, I believe that the medical generations of the future should have an annual opportunity of being reminded of the strenuous personal efforts, the financial difficulties overcome by private generosity, and the personal interests surrendered, without which the scheme of the Royal Society of Medicine could never have attained fruition. An annual commemoration day of the society might thus come into being, consisting, with other details, of a lecture to be delivered by a distinguished representative of medical science, the lecture to be described by a distinctive title. By this means posterity will be reminded of their indebtedness, a rallying occasion of interest will be provided for the Fellows, and, following the steps of enterprise, the society could not fail to gain advantages by such evidence of additional and continuing vitality.—I am, etc.,

London, W., Dec. 9th. PERCY DUNN.

The Services.

REPORT ON THE HEALTH OF THE ARMY FOR 1911

THE fifty-third annual report presented to the Secretary of State for War by the Director-General, Army Medical Service, is very satisfactory.

The progress in military hygiene since the first report in 1859 has been truly marvellous; each decade of the past half-century showed improvement, slow and fluctuating at first, but culminating in the rapid advance of the past ten years, which it is noteworthy was coincident with the reorganization of the medical service into a consolidated Royal corps. As has been pointed out in previous reviews, the great betterment in army health statistics must, in accordance with the laws of averages in general vital statistics, touch a minimum somewhere, but that point is not yet reached.

Sir W. L. Gubbins, in his introductory letter, shows in the following table that the ratios for 1911 of admissions, invalids discharged, and constantly sick are the lowest on record, while deaths and home invaliding remain much the same as in 1910:

Ratios per 1,000 of Strength.

Year.	Admission.	Deaths.	Invalids Sent Home.	Invalids Finally Discharged.	Constantly Sick.
1889-1898	997.3	9.03	26.56	15.36	59.85
1899-1908	700.9	6.65	14.23	17.56	40.32
1909	501.8	4.10	10.34	8.65	28.86
1910	443.1	3.44	8.53	9.11	25.38
1911	421.1	3.47	8.71	8.09	24.28

Taking the average strength of the army as 220,000 men, this table shows since the century began a health gain equivalent to an annual addition of 6,164 men to its fighting strength, or, say, about two brigades of infantry.

Recruiting.

The number of recruits presenting fell short in 1911 of the decennial average; but this was in a measure met by the fewer rejections, largely owing to more reasonable views on the disability "loss and decay of many teeth," which experienced recruiters held were unnecessarily stringent after an outcry during the Boer war.

There was also a decrease of rejections under "defective development," which includes deficiency in height, weight, and chest measurement; but this may not be taken as meaning a general improvement in the average physique of the recruits, but rather greater care and skill on the part of the recruiters in avoiding rushing into the medical inspection room men obviously under standards. Medical officers have long advocated the employment of trustworthy and trained recruiters only on the recruiting staffs.

The shrinkage in the total recruits inspected can easily be traced to better general employment, and the serious drain of young men in emigration, especially from the rural districts of England and Scotland.

Invaliding.

That of 1911 was the lowest on record, but it must be borne in mind that for some years after the Boer war discharges continued swollen by a crop of disabilities contracted on active service.

The immense decrease—nearly two-thirds—in invaliding home from India is due to the sensible but long neglected plan of giving debilitated men a chance of recovering on the hills: it has acted admirably, and, as well known, came about by the initiative of the present Director-General when in India.

Sanitation.

The sanitary officers continue to give instruction in sanitation to all ranks and in all commands. This admirable system has for years been gradually leavening officers and men to wider collective and personal views of hygiene in all that relates to conservancy, disinfecting, cleanliness, water, and drainage.

Troops in the United Kingdom.

The sickness here does not call for much remark. Pneumonia is still the chief cause of mortality. Influenza, measles, and scarlatina were the chief infectious diseases: there was no small-pox; vaccination of men, women, and children is sedulously carried out by lymph from the Government Lymph Establishment at Hendon.

In commands the troops in the London District, as usual, have had the largest amount of sick inefficiency—much through venereal diseases. It is noted that expert officers of the Royal Army Medical College are making researches into the treatment of syphilis at the Military Hospital, Rochester Row, and find that "the administration of salvarsan, especially by the intravenous method, diminishes the time spent in hospital in each case."

Mediterranean Area.

In Gibraltar the aggregate sickness was somewhat higher from an increase in enteric cases: there is much difficulty in preventing infection from the insanitary adjacent Spanish town of La Linea, through the commingling of the civil population.

In Malta cholera was introduced among the Maltese from Tripoli, but not a single soldier was attacked: there was only 1 case of "Mediterranean fever" in an officer, and traced to goat's milk. "Sandfly fever" is being investigated by Captain Marett, R.A.M.C., as traceable to species of flies common both to Malta and Austria. In Egypt reports are satisfactory under all headings.

South Africa.

The improved conditions in this command are maintained, but there is still much to be desired in general sanitation.

India.

India, of course, always dominates, and it is thus truly satisfactory to find that "the report is the most favourable one ever recorded, and constitutes a record under all heads except for the fractional rise in the death-rate from all causes." Further, "the most notable features are the lessened incidence of enteric fever, malaria, and venereal diseases."

Paratyphoid has a close analogy to enteric but differs in certain particulars. Being less severe and less fatal it has a maximum incidence on new arrivals, and enteric inoculation has little influence on it; 85 per cent. of the European troops have been so inoculated.

Malarial admissions decreased by 3,045, and a steady war is kept up against the mosquito.

Of plague there were 9 cases and 6 deaths.

Cholera caused 38 admissions and 21 deaths.

Venereal diseases show steady decrease.

The volume under review presents as heretofore much to be commended in reports, tables, diagrams, and appendices, and in respect of condensation contrasts favourably with the more extended and voluminous reports of foreign armies.

Universities and Colleges.

UNIVERSITY OF GLASGOW.

Statistics.

THE report of statistics, etc., for the year ending September 30th, 1912, issued by the Secretary of Glasgow University Court states that the total number of students was 2,794 (including 681 women), an increase of 4 on the previous year. Of these 727 (including 82 women) were in the Faculty of Medicine. In that Faculty 122 degrees were conferred—M.D. with honours, 2; with high commendation, 1; with commendation, 10; ordinary, 11; M.B., Ch.B., with honours, 6; with commendation, 8; ordinary, 83; M.B., C.M., 1. The total number of members of the General Council of the University at September 30th was 8,245, as against 7,946 the previous year. During the year the teaching staff consisted of 35 professors, 65 lecturers, and 81 assistants and demonstrators. The salaries paid to the principal and professors amounted in all to £29,052, to lecturers to £11,154, and to assistants and demonstrators to £7,370. Pensions amounting to £5,493 were paid to retired professors.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary comitia was held on Thursday, December 12th, Sir Thomas Barlow, Bart., K.C.V.O. being in the chair.

Address of Thanks to the President.

In accordance with a resolution passed at the last College, a document under the College Seal was presented to the President, recording the thanks of the College for his gift of 11 autograph letters of Harvey. The address, which had been composed by the Registrar (Dr. J. A. Ormerod), was as follows:

Collegium Regale Medicorum Londinense
Praesidi suo
Thomae Barlow Baronetto,
Ordinis Regii Victoriae Equiti,
Pro Epistolis undecim Harveianis
Suo sumptu et labore conquisitis
Et in bibliothecâ Collegii depositis,
per hasce litteras
Sigillo communi Collegii apposito,
Gratias agit,
Et eximium illud donum commemorat.

The Senior Censor (Dr. S. J. Sharkey) was empowered to seal this document after the meeting.

Communications.

The following communications were received: (1) From the Librarian at Windsor Castle, dated November 1st, 1912, expressing the thanks of His Majesty the King for the gift of the *Life and Works of Dr. Caius*. (2) From the Secretary of the Royal College of Surgeons, dated November 15th, reporting proceedings of the Council of that College on November 14th. (3) From the Secretary of the Royal Sanitary Institute, dated November 26th, asking the College to appoint delegates to a Congress to be held in Exeter in July next. It was left to the President to nominate the delegates. (4) From the Secretary of the International Congress of Historical Studies, dated September 10th, asking the College to appoint a delegate or delegates to attend a Congress to be held in London in April next. Dr. Norman Moore was appointed delegate of the College. (5) From the Hon. Mrs. Pember, dated October 27th and 30th, offering to the College, on behalf of Lady Davey, two engravings relating to the late Dr. Hawes. The gift was accepted with thanks. (6) From the Insurance Commissioners, intimating that resident medical officers at hospitals need not be insured under the Act.

Alteration of By-law.

It was resolved to make an alteration in By-law 179. The by-law originally stood: "No Fellow, Member, Extra-Licentiate, or Licentiate of the College shall *assume the title of Doctor*, or append to his name the title of Doctor of Medicine, or the letters M.D., or any other letters indicating that he is a graduate of a university, unless he has obtained a degree [illegible] so to do." The words marked in italics have now been omitted.

Medical Education and Sanatorium Benefit.

A report was received and adopted from the committee appointed at the last comitia on October 31st (BRITISH MEDICAL JOURNAL, November 9th, p. 1345) to consider sanatorium benefit under the Insurance Act in its relation to [illegible] education. The following resolutions drawn up by [illegible] were agreed to by the College:

That [illegible] hospitals with medical schools be advised [illegible] treatment for tuberculosis, such depart[illegible] service of the hospital.

That [illegible] should consider [illegible] annual "approval" as regards sanatorium benefit.

That in localities where it is possible the services of consulting physicians and surgeons should be utilized for consultation in cases of tuberculosis under the Insurance Act.

In view of the questions that had arisen during the discussion, it was recommended that the members of the committee should be appointed as a "Watching Committee" to consider any future Insurance Regulations on the subject of tuberculosis in their relation to medical education.

It was further resolved that copies of these resolutions should be sent to the general hospitals with medical schools, and to the Insurance Commissioners and to the Local Government Board.

The Anatomy Act.

The President announced that after a conference with the President of the Royal College of Surgeons of England a deputation consisting of the Presidents of the Royal Colleges, and representatives of the universities, and of the Examining Board, waited on the Home Secretary and explained to him the difficulties which now existed under the Anatomy Act in reference to obtaining subjects for dissection. The deputation received a sympathetic hearing, and the Home Secretary undertook to lend his aid in the matter.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council was held on December 12th, Sir Rickman J. Godlee, Bart., President, in the chair.

The Examination in Anatomy and Physiology for the Fellowship.

A report was received from the Board of Examiners in the above subjects, making suggestions with regard to the physiological part of the examination. A memorandum was likewise read upon the same subject from a number of teachers in physiology. The matter was referred to a committee for consideration.

Diplomas.

Diplomas were granted to 30 candidates found qualified for the Fellowship at the recent examination.

Diplomas were also granted to 52 candidates found qualified for the licence in dental surgery. These candidates included one woman.

Recognition of Dental School.

The London Hospital Dental School was recognized as an institution for instruction in dental surgery.

The Recent Annual Meeting of Fellows and Members.

The Council made the following comments on the resolutions carried at the meeting of Fellows and Members held at the College on November 21st, 1912:

On Resolution I.:

> The Council are glad to find that their further action in connexion with the National Insurance Act has met with the approval and endorsement of the meeting of Fellows and Members.

On Resolution II.:

> The views of the Council with regard to the question of the direct representation of Members were fully set out in their annual report of 1907, and the Council do not think that any further statement from them is needed.

Resolution III was passed without discussion, as the meeting was breaking up. The Council did not think that any comment was needed.

International Historical Congress.

Mr. D'Arcy Power was appointed delegate to attend this Congress, which will be held in London from April 3rd to April 8th, 1913.

RESULTS OF EXAMINATIONS.

The following candidates have been approved at the examination indicated:

FINAL FELLOWSHIP.—W. P. Gowland, A. R. Finn, S. L. Graham, A. B. O'Brien, A. C. Morson, W. H. Trethowan, L. S. Wilson, W. Gilliatt, G. Ley, G. Viner, C. Mackenzie, R. M. Vick, R. Pearse, E. C. Allen, L. Bromley, H. L. Attwater, T. T. Hagins, E. C. Lindsay, W. S. Wildman, A. D. Gardner, E. L. F. Gould, W. Smith, J. O. D. Wade, S. H. Romanetto, I. Fahmy el Minawi, H. Platt, J. G. Saner, D. W. Howitt, K. Mackenzie, L. E. B. Ward.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

THE following candidates have been admitted to the Fellowship:

W. Anderson, F. A. F. Barnardo, Capt., I.M.S., W. W. Carlow, R. M. Gibson, W. C. Grosvenor, H. C. Hamilton, W.A.M.S., J. W. Hitchcock, J. A. Lee, J. H. G. Robertson, Capt., A.M.C., New Zealand, S. Robson, P. A. Ross, D. H. Russell, N. C. Shierlaw, J. E. L. Simcox, W. P. Walker.

Obituary.

CHARLES THEODORE WILLIAMS, M.V.O., M.A., M.D.Oxon., F.R.C.P.,

CONSULTING PHYSICIAN TO THE HOSPITAL FOR CONSUMPTION BROMPTON.

We regret to have to record the death on December 15th of Dr. C. Theodore Williams, well known for his writings on pulmonary tuberculosis, and especially its climatic treatment. He had been in indifferent health for some years, but many of his friends who saw him not many weeks ago hoped that he had to some extent regained his strength and activity, and the announcement of his death will be a cause of great regret.



The Topics Studio] DR. THEODORE WILLIAMS. *[Washington, D.C.*

Charles Theodore Williams was the second son of Dr. Charles James Blasius Williams, F.R.S., Physician to University College Hospital, one of the first in this country to use the stethoscope, and one of the founders and first members of the honorary staff of the Brompton Hospital. His mother was Harriott, the daughter of Mr. James Jenkins, of Chepstow, and one time High Sheriff for Monmouthshire.

Theodore Williams was born in London on August 29th, 1838. He received his earliest education at preparatory schools at Brighton, and was then sent to Harrow. After a year there he had a severe attack of rheumatic fever, which prevented his return, and he was then placed under the tuition of the Rev. Charles Bradley of Southgate. With him he remained for two or three years. Being then greatly improved in health he entered Pembroke College, Oxford. He graduated in arts with honours in natural science, proceeding to the M.A. degree in 1862. He studied medicine at St. George's Hospital and in Paris. He took the degree of M.B.Oxford in 1864 and that of M.D. in 1869.

Showing signs of delicacy of the chest soon after qualifying, he was sent by his father for two winters to the South of France and Italy, and there he personally acquired the local knowledge which supplied the materials for his small first book, *On the Climate of the South of France and Its Varieties Most Suitable for Invalids; with Remarks on Italian and other Winter Stations* (1867). This residence in the South of France with other measures successfully re-established his health, and he was able to live and practise in London thereafter.

In 1866 he was appointed demonstrator of anatomy and physiology at St. George's Hospital Medical School, and next year honorary assistant physician to the Hospital for Consumption and Diseases of the Chest, Brompton. He became physician in 1871 and consulting physician in 1894.

He received a good introduction to consulting practice by helping his father in his work and seeing his patients in his absence. He also assisted in the preparation of his father's views and experience on the duration and the treatment of consumption asked for by the *Lancet* after his father had given evidence for the defence in the action for libel brought in 1866 by Dr. Robert Hughes against the *Pall Mall Gazette*, which had accused Dr. Hughes of quackery in the matter of pretence to be able to cure consumption. The trial excited considerable interest, and resulted in a verdict for a farthing damages for the plaintiff. Theodore Williams went over his father's note-books containing records of 20,000 to 30,000 cases of all illnesses, and he found that the average duration of life in phthisical patients under his father's care over a period of twenty-two years had increased from the two years of Laënnec and Louis to eight years, and to above eight years in those who still survived, a considerably longer duration than any before on record. He drew up an elaborate paper on the subject, with the title "The Duration of Life in 1,000 Cases of Pulmonary Consumption among the Upper and Middle Classes," which was read and discussed at the Royal Medical and Chirurgical Society and published in vol. liv of its *Transactions*. He also became joint author with his father of a work *On Pulmonary Consumption: Its Nature, Varieties, and Treatment, with an Analysis of 1,000 Cases to Exemplify its Duration*, which was published in 1871. He contributed one-fifth of its thirty chapters, namely, those on family predisposition and other causes of consumption; haemoptysis and the haemorrhagic variety of consumption; duration; palliative treatment; treatment by dietetic and hygienic measures; and by climate. He compiled the statistical parts of the work from his father's notes, the results being incorporated chiefly in the chapters which he wrote himself. The work was well received, and Theodore Williams's share of it was looked upon as a very valuable feature of the book. It is interesting to read how Theodore showed his father the first tubercle bacilli (1882) which he had seen: "Verily, they seem the tiniest trifles to have such mighty effects; nevertheless search them out and give them no quarter till their antidote or bacillicide be discovered," wrote his father at that time. A second edition of the book, enlarged and rewritten by Theodore Williams, was published in 1882 with a slightly modified title.

In addition to giving special consideration to the expectation of life in consumptive people, Theodore Williams traced the influence of heredity in 1,000 private patients. As the result of his inquiries he came to the conclusion that 48.4 per cent. of cases of consumption were hereditary, in 12 per cent. the predisposition was inherited from the parents, and in 1 per cent. from the grandparents: whilst in the remaining cases there was a history of consumption in collaterals. With the discovery of the tubercle bacillus, and the recognition of its powers, under conditions of ventilation and habits of life favourable to its growth, of infecting people with no tuberculous history, the views as to heredity in the spread of consumption changed. Finally, Squire and others, by very careful investigations and inquiries, showed that the difference in the incidence of the disease in the offspring of tuberculous and non-tuberculous parents is very small.

In 1869, being much impressed with a paper by Sir Hermann Weber, read before the Royal Medical and Chirurgical Society, on the effect of high altitudes on the treatment of consumption, he visited Davos and examined many cases there. What he saw induced him to give full trial to the high altitudes, and the results which he obtained with over 400 cases formed the basis of his Lumleian lectures on Aërotherapeutics. His experience of the effects of high altitudes on phthisical patients was most favourable, and one most important result that impressed itself on him was that relapses were very few.

In 1876 Theodore Williams delivered the Lettsomian lectures before the Medical Society of London, his subject being "The influence of climate in the prevention and treatment of pulmonary consumption." The greater part of the four lectures consisted of a careful analysis of the results of various climates on cases under the care of his father and himself, with due reference to the results of other workers in the same field. The lectures were printed in the British Medical Journal in the year of their delivery, and published the following year in book form, after being revised and with large additions, chiefly under the headings of sea voyages and future health resorts.

The lectures were a very thorough and able presentation of the value of the climatic treatment of consumption, and did good work in bringing such an important subject in an accessible and readable form before the medical profession. They also stamped him as an authority on consumption. In addition to his statistical work, Williams carried out some observations and experiments in institutions which showed that by the adoption of reasonable precautions with regard to the disposal of sputum, the dust could be kept free from tubercle bacilli, and the spread of infection in this way be practically done away with.

He became a Member of the Royal College of Physicians in 1865 and Fellow in 1871. He acted as Censor in 1899–1900, and was on the Council in 1891–92–93. He read the Lumleian lectures in 1893, his subject being Aërotherapeutics in Lung Diseases. He was also a representative governor for the College of the University of Birmingham. He delivered the Harveian oration before the College in 1911 on Old and New Views on the Treatment of Consumption, afterwards published in book form (1911). In this he reviewed the various modern methods of treating consumption, giving his own experience of them. On the broader question of national attack on consumption, he was convinced that any comprehensive scheme should include the establishment of a large number of consumption hospitals scattered over the country in connexion with dispensaries and sanatoriums, and as a further link in the chain some form of labour colonies and exchanges should be available. He pointed out that the work was not for doctors only, but that local authorities should assist by dealing with overcrowding, the want of open spaces in cities, ventilation, sanitation, and by providing pure water and milk supplies.

Theodore Williams was one of those who conceived the idea and carried through its initial stages to successful institution of the National Association for the Prevention of Consumption and other Forms of Tuberculosis, which held its inaugural meeting May 4th, 1899, with the late Earl of Derby in the chair. The late King Edward was the President of the Association, and Williams was a member, and later vice-chairman, of the council and its organizing committee.

He was also a member of the advisory committee appointed by King Edward VII to adjudicate on the prizes offered for the plans for the erection of a sanatorium for tuberculosis on the best lines which past experience and original thought could suggest, and which resulted in the erection of the King Edward VII Sanatorium, Midhurst. On the completion of the sanatorium Williams was appointed consulting physician to it, and in 1907 received the M.V.O. in recognition of his services in the cause of consumption.

He was one of the founders of the Queen Alexandra Sanatorium at Davos, of which at the time of his death he was treasurer, member of council, and honorary physician.

Williams was an active member in his time of the London scientific societies, and was president at one time of the Medical Society, president and for many years chairman of council of the Medical Graduates' College and Polyclinic, twice president and treasurer for many years of the Royal Meteorological Society, and president of the Harveian Society, of the Life Assurance Medical Officers' Association, and of the Balneological and Climatological Society. He was also an honorary member of the Société Française d'Hygiène, and of the American Climatological Association. He was vice-president of the International Association for the Prevention of Tuberculosis, by which association he was awarded two medals. He was one of the four honorary presidents of the International Congress on Tuberculosis held at Washington, the other presidents being Koch, Landouzy, and Trudeau. He represented the British Government along with the late Dr. Bulstrode at the Tuberculosis International Congress held at Paris, and was special representative at the International Tuberculosis Conference held at Berlin.

He was not only one of the leading English supporters of the International Tuberculosis Congresses, but was also a member of the committee formed by the National Association for the purpose of arousing interest, collecting information, and inducing local authorities to send delegates to the meetings held abroad.

Williams took a prominent part in the proceedings of the British Congress on Tuberculosis and for the Prevention of Consumption in 1902. He was one of the vice-presidents, and opened the discussion on "Climatology: what influence has climate on the treatment of consumption, and how far can cases be grouped for treatment in certain climates?" In concluding a very full and able address he stated that, in his opinion, while not undervaluing the advantages of the hygienic treatment of consumption, a most potent weapon was to be found in climate, not only as proved by results, but because of the invaluable assistance it renders to hygiene and medicine. It was a very good second string to the sanatorium bow.

Besides the works alluded to above, Williams wrote many smaller papers for medical literature. Many of these were published in the *Transactions of the Royal Medical and Chirurgical Society*. He also wrote articles on asthma, hay fever, phthisis, Australasia, and South Africa for *Quain's Dictionary of Medicine*. Nearly all his writings were in connexion with phthisis in its manifold complexions, and many, of course, on the effects of climate on this disease.

He was a munificent benefactor of the University of Oxford, and in addition to founding two scholarships at Pembroke College, he founded four university scholarships for students of medicine. One of his most prized distinctions was his election to an honorary fellowship at Pembroke College.

He married, in 1868, Mary, daughter of John Gwyn Jeffreys, LL.D., F.R.S., a well known conchologist in the Victorian era. He is survived by his wife with whom much sympathy will be felt in her bereavement.

Deaths in the Profession Abroad. Among the members of the medical profession in foreign countries who have recently died are: Dr. Gustav Tiling, Professor of Surgery in the Helena Institute and Director of the Evangelical Hospital, St. Petersburg, and for some years editor of the *St. Petersburger medicinische Wochenschrift*; Dr. James Woods McLane, for many years

professor of obstetrics and gynaecology in the College of Physicians and Surgeons, New York, and formerly Dean of the Medical Faculty of Columbia University, aged 73: Dr. Elias von Cyon, for several years professor of physiology in the Medical Academy of St. Petersburg, author of a work on electro-therapeutics, a textbook of physiology, and a treatise on physiological experiments and vivisection (with atlas), published in 1876, aged 69; Dr. B. Panizza, sometime professor of hygiene and toxicology at Padua; and Dr. Edward Curtis, emeritus professor of materia medica and therapeutics in the New York College of Physicians and Surgeons, aged 74.

Medico-Legal.

MEDICAL TREATMENT OF SCHOOL CHILDREN.

THE First Division of the Court of Session has issued an important judgement with reference to the right of school boards to provide medical treatment for school children. The test case raised by Miss Allan as a ratepayer against the Glasgow School Board has already been referred to in our columns.

It concerned two school children requiring dental treatment whose parents were unable on account of poverty to provide it:

The School Board proposed to pay for the treatment out of the school fund, but they were threatened with an action of declarator and interdict at the instance of Miss Allan, who contended that the School Board had no power to do what they proposed. The effect of such payment by the Board would be to throw the cost of the treatment upon the school rate.

The Board maintained that they were entitled to provide and pay out of the school fund the appropriate medical or dental treatment required in such cases either (*a*) by providing the necessary apparatus and medical staff at one or more schools or other places, or (*b*) by sending the children to be treated by convenient private practitioners or at hospitals or infirmaries, and that at all events they were entitled to do so in cases where the parent was unable on account of poverty or ill health to provide the necessary medical or dental treatment.

Miss Allan, the second party, on the other hand, maintained that the Board were only entitled to provide for the medical examination and supervision of pupils attending schools within their district. She maintained that the Board were not entitled to expend the school fund in providing for individual medical or dental treatment either generally or even in cases where the parent was unable on account of poverty or ill health to provide the same so as to throw the cost upon the ratepayers.

The Court has decided that where any pupil in a school within the district of the School Board required individual medical or dental treatment the Board was not entitled to provide and pay out of the school fund under its administration for such medical or dental treatment either (1) by providing the necessary apparatus and medical staff at their own schools or other places, or (2) by sending the children to private practitioners or to hospitals or infirmaries. Their lordships also held that the Board was not entitled to make provision and payment as suggested in cases where the parent was, by reason of poverty or ill health, unable to provide the necessary medical or dental treatment.

The Lord President, in delivering the unanimous judgement of the four judges, said that while the Act compelled the School Board, if required by the department, to provide medical examination and supervision, Parliament, if it had meant to include treatment, could easily have said so. If Parliament had meant to give the power of incurring the enormous expense of the medical and surgical treatment of all children of school age, and charging it to the ratepayers, it would have done so by plain words which needed no sedulous construction to make them bear that meaning.

It has since been pointed out that the decision applies only to the fund in the hands of the School Board derived from the local rates, and would not apply to money voted by Parliament to the Scottish Education Department, which this year amounted to £7,500, and is mainly allocated for the medical treatment of tuberculous children.

Dr. A. BANKS RAFFLE, Barrister (School Medical Officer, South Shields Education Authority), writes: The publicity which has been given to the case of Allen *v.* the Glasgow School Board renders it necessary that the position under English law should be well known. The effect of the above case will probably be to hamper the work of commencing medical treatment of school children under authorities where it is not already carried out.

The Education (Scotland) Act, 1908, Sect. 4, only provides for medical inspection and supervision. The Education (Administrative Provisions) Act, 1907, which applies to England, provides for the medical inspection of school children, and "such arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of the children educated in public elementary schools" (Sect. 13, 1 (*b*)). Moreover, the Local Education Authorities (Medical Treatment) Act, 1909, Sect. 1, clearly interprets the meaning of Section 13 of the Act of 1907. The first part of this section runs: "Where any local education authority provides for the medical treatment of children attending any public elementary school," etc.

THE DIATHERMIC APPARATUS.

Alleged Negligence: Verdict for Defendants.

IN the case of "Freeman *v.* Hall-Edwards and Emrys-Jones," the hearing of which was commenced by Mr. Justice Ridley at Birmingham on December 9th, a claim was preferred by Mr. Osborne Francis Freeman against Dr. John Francis Hall-Edwards and Dr. Emrys-Jones of Birmingham for damages for alleged negligence. The defendants denied negligence and did not admit the alleged injuries. Mr. Parfitt, K.C., and Mr. Rowlands (instructed by Messrs. Rowlands) appeared for the plaintiff; Mr. Acland, K.C., and Mr. Joy (instructed by Messrs. Hempsons for the Medical Defence Union) for the defendants.

It appeared that in May, 1911, the plaintiff, acting on the advice of Dr. Bert Jordan and Dr. Stanley Barnes, went to have treatment by Dr. Hall-Edwards with a diathermic apparatus with a view to curing analgesia in the legs. The apparatus used by Dr. Hall-Edwards was invented by a German doctor. It was said to have been used for the first time on the plaintiff. Having seen Dr. Hall-Edwards on two previous occasions, the plaintiff went on June 6th, 1911, when he alleged that owing to the improper application of the electrode to his leg he suffered from a blister. The plaintiff said that his leg grew worse as time went on, and in September, 1911, eczema developed. It was only on January 25th that he recovered the use of his leg. He alleged that in consequence of being away from business he lost £400. Part of his business was tea-tasting. In cross-examination the plaintiff denied that he had used sticks to get about with prior to June 6th, 1911. It was untrue that he was unable before that date to get about by himself. He said when Dr. Emrys-Jones entered the room he drew attention to his leg, and if it had not been for that he would probably have lost his leg. He said he felt no uncomfortable sensation, and was in the position of being unable to feel pain. Some years before he had had twenty-four teeth out without an anaesthetic, so he could stand a little pain. He denied that he went to see Dr. Hall-Edwards either on June 8th or 12th.

Dr. Bert Jordan, the plaintiff's private medical attendant, said that the condition of the plaintiff's leg after June 8th was such as to indicate a severe burn.

Mr. Acland (cross-examining): Was not the plaintiff suffering from locomotor ataxy?

Mr. Parfitt: I object. It is not alleged in the pleadings that the plaintiff was suffering from constitutional disease, and to allow the point to be raised at this stage would be unfair.

Mr. Justice Ridley: I will rule against it.

Mr. Acland: I apply for leave to amend, but with a respectful protest that it is unnecessary.

Eventually the learned judge refused to allow the amendment.

Dr. Stanley Barnes also gave evidence. He was being questioned as to the probable effect of the disease from which the plaintiff suffered, when Mr. Acland outlined his defence. He said that Dr. Nagelschmidt, the inventor of the apparatus, had prepared a table showing the dosage to be given in using the apparatus. He (Mr. Acland) was prepared to show that, in view of what the witness stated to him, Dr. Hall-Edwards only gave half the necessary dosage.

The judge ruled the question out, indicating, however, that it did not hinder Mr. Acland's defence.

Dr. H. E. McCready having given evidence,

Dr. C. Williams, Electro-therapeutist to the London Homœopathic Hospital, explained the diathermic treatment; it was necessary for the electrodes to be in perfect contact with the body in order to prevent a destructive electric discharge. If there was not perfect contact, sparks were produced.

In cross-examination he said that the fact of sparks appearing during diathermic treatment was in itself evidence of negligence on the part of somebody.

A diathermic apparatus was then brought into court and explained by Mr. Acland.

Dr. Douglas Heath having given evidence,

It was proved by another witness that during the period when he was absent from work there was a considerable falling off in the turnover in the plaintiff's business.

Mr. Justice Ridley having ruled that there was a case for the defendants to answer,

Dr. Hall-Edwards, in giving evidence, said that since 1895 he had applied himself to the application of electricity for healing purposes.

At this point a question was suggested as to the skill of Dr. Hall-Edwards.

Mr. Parfitt: I shall take great care not to attack the skill or repute of Mr. Hall-Edwards.

Continuing, the witness said he had suffered from dermatitis in consequence of the use of *x* rays, and had been granted a pension by the late King. The machine in question had been in his possession for seven months before he used it on a patient. He had experimented with it daily. When the plaintiff came to his consulting-room in May he could only walk with difficulty, and had to be assisted upstairs. Every precaution was taken, and he never used more than half an ampère of current. He denied that a single spark had been seen. In his view the plaintiff had confused the high-frequency treatment with the diathermic treatment, as it was impossible to get the spark described with the diathermic machine. He did not remember Dr. Emrys-Jones pointing out anything to him. When the electrode was removed the whole surface was of a pinkish colour, which was usually the case owing to the warmth. Near the centre there was a small greyish-white patch about the size of a sixpence, which he considered of very slight importance. The nurse put some vaseline on it. He could not explain the result produced electrically, but was inclined to attribute it to some change of tissue.

In cross-examination by Mr. Parfitt, he admitted that a certain amount of experience was necessary for diathermic treatment, and could only be acquired by continuous practice and clinical observation. Half an ampère was not a high pressure diathermically. It was untrue to say that it was ten times the force used for the purpose of high-frequency treatment. As he knew of the plaintiff's analgesia, he took every precaution. The nurse never removed her hands except to get a little relief from the pressure. He did not admit that there was a bad contact or any sparking, nor was there any corrugation of the metal round the plaintiff's ankle. There was a certain amount of danger in every application he used.

Dr. Emrys-Jones, the other defendant, and Miss Gertrude Swan, the nurse who attended at the time, having given evidence,

Dr. L. Gamgee, senior assistant-surgeon to the Birmingham General Hospital, said that the appearance of a burn was partly due to the condition of the patient.

Dr. Frank Fowler said nothing had been omitted that a prudent man would have applied.

Dr. Francis Humphries also gave evidence.

Counsel having addressed the jury, and his Lordship having summed up,

The jury, after a lengthy deliberation, found a verdict for the defendants.

IRISH MEDICAL OFFICER'S LIBEL ACTION.

LAST week the hearing of an action for libel brought by Dr. T. F. Higgins, Coroner for the Queen's County, against Mr. D. Shaughnessy, farmer and shopkeeper, of Stradbally, was heard in Dublin before the Lord Chief Baron and a city special jury. The alleged libel was contained in a letter written by Mr. Shaughnessy to the clerk of the Athy Union, complaining of the condition of the doctor's dispensary at Stradbally, charging him with receiving money from medical relief patients whom he was bound to attend free, and suggesting that medicine bottles supplied by the board of guardians were appropriated by the doctor to his own use. The defendant stated that the letter was true in substance and in fact, and that it was a fair and bona fide comment made without malice, and that it was privileged. After a hearing extending over three days several questions were left to the jury, who found that the letter complained of contained certain charges, and that the defendant honestly believed them to be true, and made them to the guardians in the bona fide discharge of his duty as warden and ratepayer, but they added that there was malice on both sides. They assessed damages at one farthing, and judgement was given accordingly, together with a further sum of one farthing for costs. The Lord Chief Baron said that this was a verdict for the defendant. The counsel for the plaintiff objected to this conclusion on behalf of his client; and, on the resumption of the sitting of the Court on the following day, the judge said he had come to the conclusion that he was in error in entering a verdict for the defendant, and he accordingly changed it into a verdict for the plaintiff.

WORKMEN'S COMPENSATION.

Hernia and Strain.

In Dunlop and Co., Ltd., *v.* Smith, Court of Session, October 15th, it appeared that the applicant was working near bottomer at the employment of the appellants. On February 10th, 1912, while assisting another workman to replace a dropped hatch on [illegible] he felt himself and contracted hernia, which [illegible] for work. Sheriff-substitute Glegg (Airdrie) [illegible] as a matter of fact that the hernia from which Smith [illegible] did not originate in the strain of February 10th. It was present prior to that date, but was so small as not to incapacitate Smith for work or to make him aware of its presence. The strain of February 10th caused it to become more pronounced, and for the first time to incapacitate him for work. On these facts the Sheriff-substitute found that Smith was injured by [illegible] in the course of his employment, and [illegible] compensation.

The Court of Session affirmed the judgement of the Sheriff-substitute.

Public Health AND POOR LAW MEDICAL SERVICES.

POOR LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.

A COUNCIL meeting of this association was held at 34, Copthall Avenue, London Wall, E.C., on December 10th. In the absence of Dr. Balding, Dr. Holder (Hull) was voted to the chair.

A letter was read from Mr. H. W. S. Francis, Secretary to the Departmental Committee of the Local Government Board, thanking the association for its report on the draft order: "I have read the report with much interest, and it will be, I think, of material assistance to my committee." The council were of opinion that the association was much indebted to Drs. Thackray Parson and Toogood for the care they had given to the report.

Fees for Visiting Boarded-out Children.

A letter was read from Dr. Kinneir (Horsham) asking whether he was entitled to a fee of 2s. 6d. for quarterly visits to boarded-out children. He had always had this fee in the past, but was now refused.

The Honorary Secretary had written to the inquirer pointing out that under a Local Government Board Order issued at the end of 1911 these fees had been abolished, but in the same order it was advised that attendance on such children should be paid for as an extra, and that the work should not be put on the medical officer in whose district the boarding place happened to be as part of his ordinary duties. Not infrequently children belonging to all the districts of a union were sent to a boarding place in one particular district. It was not just that the medical officer of that district should be responsible for all these children, but as the law was he might have an order given him by the relieving officer to attend any of them. Dr. Holder said that in Hull the guardians employed him to attend such children, and paid him his own charges for the work. It was thought by the council that this was a very satisfactory arrangement, and a wish was expressed generally that other boards of guardians would follow the example of the Hull Guardians.

Attendance on Patients of Other Practitioners.

A letter was read from another member complaining that he had been required by his relieving officer to visit and give a certificate for a patient under the care of another doctor, who was willing himself to certify, and objected to another practitioner calling on his patient, and that the objection was upheld by the local profession. He had declined to carry out this instruction, and wished to know whether his duties required him to act in so unprofessional a manner.

The Honorary Secretary had written that unhappily under the Poor Law orders, a district medical officer was obliged to visit any patient, when he had an order from his relieving officer, whether under another doctor or not. In the case related relief had been asked for, and under a recent order relief could not be given without a certificate from the medical officer. It was quite clear that it was now one of the duties of a district medical officer to visit such cases if required, although it was to be regretted that the recent order tended to compel Poor Law medical officers to violate certain rules of professional ethics. At the same time it must be admitted that something similar occurred in the case of all public medical services.

The Winchester Case.

A letter was read from the Secretary of the National Poor Law Officers' Association, in which it was noted that no further steps were to be taken in regard to the matter of Dr. Todd and the Winchester Guardians, but the writer said, "In event of a repetition of similar action with reference to the appointment of a medical officer by any board of guardians in the future," that his association would at once take action.

Appointment at Leek.

The Honorary Secretary reported that in the matter of the appointment by the Leek Guardians of a medical officer resident five miles away from his district, the following letter had been sent to the Local Government Board:

October 9th, 1912.

Sir,

I am instructed by my Council to draw the attention of your Honourable Board to the frequency with which District Medical Officers are being appointed throughout the country, who are not resident in their districts, where there are resident practitioners amply fitted for the post. My Council note with regret that permission has been given to an appointment by the Leek Guardians for one year, where the officer resides five miles away from his district.

Not long ago the Maidstone Guardians appointed a country practitioner as medical officer to an urban district, a long way from his residence although there were two candidates among the five that presented themselves, living in the district.

The same abuse was recently attempted by the Newark Guardians, and a public scandal only avoided by the appointee after election retiring in favour of a practitioner resident in the district.

My Council would respectfully urge on your Honourable Board that the fact of a non resident practitioner having surgery within the district, ought not to weigh against the advantage of a resident officer. The emergencies most necessary to take precautions against, are cases of sudden illness occurring during the night. Residence alone, within

the district ... practitioner ... to afford those services to the sick ... which are ... from him by the public.

I am,
Yours truly,
MAJOR GREENWOOD,
Hon. Sec.

Rt. Hon. John Burns, M.P.,
President of the Local Government Board.

Resignations of Medical Officers at Burnley.

The council then considered the recent action of the district medical officers of the Burnley Union. They—nine in number—had just sent in their resignations on account of the inadequate remuneration for their services. The case had been taken up by the Burnley Division of the British Medical Association, and it was thought that no local practitioner would apply for any of the vacant offices. A circular had been issued by the Division, showing the respective salaries paid in adjoining unions, and the difference between the salaries there paid and those in the Burnley Union was very striking.

The council expressed the utmost sympathy with the Burnley practitioners, and after some discussion it was decided to memorialize the Local Government Board, pointing out the inadequate rates paid by the Burnley guardians, and requesting that no fresh appointment be sanctioned at the present salaries.

Sanatorium Benefit.

The subject of sanatorium benefit under the National Insurance Act in relation to the Poor Law next came under the consideration of the council. The Honorary Secretary drew attention to a recent meeting at Swansea of delegates from boards of guardians from all parts of Wales, at which strong exception was taken to the exclusion of paupers from treatment at the King Edward VII Memorial Institute. It appeared that it was now monopolized for the purpose of administering sanatorium benefit to insured persons. As the original object of this institution was to aid in a national crusade against tuberculosis, it was difficult to see how it could be carried out if the pauper class was altogether excluded from its operations.

The claim of the Poor Law medical officer for recognition in his attendance on phthisical cases in Poor Law practice was also considered. It was thought that in consequence of the National Insurance Act a new principle had been introduced, as medical practitioners outside the Poor Law were receiving from the State extra remuneration for attendance on such cases. No difference had hitherto been made with regard to the payment for the treatment of special diseases, and the basis of the remuneration of Poor Law medical officers had been the same as in the case of other practitioners. Now it seemed that while outside the Poor Law extra payment was to be granted for the treatment of a special disease, no extra payment was to be given to the Poor Law Medical Service for treatment of the same disease within the Poor Law. This did not seem just. If the principle were right in the one case, it ought to be recognized in the other.

The matter was finally deferred for further consideration.

Association of Whole-Time Medical Officers.

The council then considered the question of a closer union between all associations of part-time medical officers, to look after their common interests. The Honorary Secretary read some letters from Dr. Bellilos, of Wimbledon, on behalf of the Medical Officers of Health Association, in which it was suggested that there might be an amalgamation of all such associations by the formation of a central body consisting of delegates from the constituent associations, with a common subscription, and possibly a common journal; that the work of the present associations might still be continued through the sections. There had been a meeting of delegates on November 1st last, when they were represented by Dr. W... A subcommittee was there appointed to consider the matter further.

The council after some discussion decided that it would be willing to unite with other part-time medical officers' associations by means of a conjoint committee, but did not think it advisable to merge its independence in any central body. The Poor Law Medical Officers' Association included the Indoor Poor Law Medical Service, not a few of the posts in which were whole-time offices.

REPORTS TO THE LOCAL GOVERNMENT BOARD.

Oakengates (Shropshire) Urban District. (New Series, No 70).—The late medical officer of health of the Oakengates Urban District, where there is a population of about 12,060 persons, prior to resigning his office, complained to the Local Government Board that bad housing accommodation and the impossibility of proper isolation were responsible for the repeated occurrence of secondary cases of infectious disease in the district. The Board accordingly directed Dr. J. R. Hutchinson, one of the Board's medical inspectors, to inquire into the allegation. In a report recently issued Dr. Hutchinson states that it appears to have substantial proof. There are no cellar dwellings in the district, and only a few back-to-back houses, but a very common type of dwelling is one consisting of two bedrooms (one of which is little more than a landing on to which stairs open) and under these a fairly large kitchen and larder, the latter being ill-lighted and badly ventilated. Some are back-to-earth and very damp. Houses of this type are built in rows of eight or more, and are approached from behind by an entry in the middle of the row running under a bedroom. All available houses are occupied, including some with conditions which might possibly be held to render them unfit for human habitation. Dampness is a common feature, and is due to absence of damp proof courses and to a want of eaves gutters. Although the late medical officer of health reported adversely with respect to many houses, no serious attempt appears to have been made by the urban district council to effect a remedy. The water supply of many houses appears to be adequate, but there are said to be 226 the occupants of which depend for supplies on rain-water and unprotected shallow wells. The council's water main in many instances passes the doors of these houses. No provision has been made for the adequate isolation of cases of infectious disease in the district, although an analysis of the returns of houses invaded by scarlet fever and diphtheria in the five years ending December 31st, 1910, reveals the fact that more than one case occurred in no fewer than 30 per cent. of the total.

West Hartlepool County Borough. (New Series, No. 71).—The County Borough of West Hartlepool has a population of about 64,000 persons, and in the opinion of the Local Government Board there should be sufficient work in the town for a medical officer of health to devote his whole time to the duties of his office. With this opinion the county borough council does not agree, and has stated that the town was in first-class condition from a sanitary point of view, and that everything was so satisfactory that there would not be sufficient work for a whole-time officer. The report of Dr. E. P. Manby on the sanitary circumstances and administration of the town is quite sufficient to justify the Board in the position it has taken up. The present Medical Officer of Health, Dr. H. E. Gamlen, who was appointed in 1911, is said by Dr. Manby to be energetic and anxious to carry out his duties properly; he has made a considerable number of special inspections, but is handicapped by the calls of a large private practice. Dr. Manby points out that as the head of the Public Health Department in his district, the Medical Officer of Health must give some attention to detail in regard to the inspection of dwellings, of dairies, cowsheds and milkshops, and of all premises where food for human consumption is prepared or stored: but in addition there are broad questions to be considered and lines of policy to be evolved in regard to the public health of the district. In advising the Town Council to appoint a whole-time medical officer of health, Dr. Manby says that the council should not disregard the claims of Dr. Gamlen to the appointment, for he has already done much to acquaint himself with the duties of the office, and would soon be in a position efficiently to perform the extra work which is necessary.

Newport Pagnell Rural District. (New Series, No. 72).—The rural district of Newport Pagnell in Buckinghamshire has a population of about 20,000 persons, and the area of the district is over 67,000 acres. In this extensive and populous district there are only two inspectors of nuisances, each of whom, in addition to his ordinary duties, acts as building surveyor, supervisor of scavenging and street cleansing in certain districts, and as secretary of several parochial committees. The additional duties entailed by the Housing Regulations led the Local Government Board to believe that there should either be an addition to the staff or a rearrangement of the duties. This view is upheld by Dr. Wilfred Fletcher, whose report on the district has lately been issued. He states that on the whole there is a sufficiency of habitable houses for people of the working classes, though unquestionably much is required in the way of renovation and repair, the most striking defects being the disrepair of the roofs of thatched cottages. A noteworthy feature is the remarkably low rents charged for quite habitable dwellings. In one parish owned by one of the Oxford colleges, good cottages with two rooms down and two up are let at sixpence a week, and others with two rooms and a scullery on the ground floor and three bedrooms are let at one shilling a week. It is stated in the report that the Medical Officer of Health, Dr. Digby White, during the ten years he has held office, has been the means of effecting many improvements throughout the district. During his earlier years of service he found the district council very apathetic, but in recent years the members have shown more inclination to listen to the advice of the officers, and great improvements have been made with respect to water supplies, sewerage and house drainage, excremental disposal, etc. Dr. Fletcher suggests that, in view of the amount of work entailed on the Medical Officer of Health, and of the manner in which Dr. White discharges his duty, his salary of £120 per annum might well be increased.

DR. W. S. SYME has been re-elected honorary secretary and treasurer of the Scottish Otological and Laryngological Society. Its next meeting is to be held in May, at the Victoria Infirmary, Glasgow, under the chairmanship of Dr. Brown Kelly.

PROFESSOR GUIDO BACCELLI of Rome will shortly celebrate his 80th birthday. A committee has been formed to decide upon a suitable memorial of the distinguished physician and statesman.

THE Newry Port Sanitary Authority at its last meeting appointed Dr. Richard Flood as medical officer at a salary of £20 per annum. It was decided at the same meeting to advertise for a subsanitary officer at a salary of £5 per annum.

Medical News.

The Carlow Guardians have, by 13 votes to 5, rescinded a former resolution which ordered the prosecution of vaccination defaulters.

Sir Patrick Manson, G.C.M.G., and the late Dr. Andrew Duncan were appointed upon their retirement consulting physicians to the Albert Dock Hospital attached to the London School of Tropical Medicine. They have been succeeded in the wards by Dr. F. M. Sandwith and Dr. C. W. Daniels, while Dr. G. C. Low has been appointed [illegible] physician.

The Harveian Society will hold its meetings for the remainder of the present session at St. Bartholomew's Hospital, by the kind permission of the authorities. On the completion of the alterations now in progress at the London Institution, the society will, it is hoped, resume its meetings there, thus preserving a connexion of forty-six years' standing—or about one-half the time of existence of the society.

The Court of Common Council, at a meeting on December 12th, after two ballots, finally selected Dr. W. J. Howarth to succeed Dr. Collingridge as Medical Officer of Health for the City of London. The appointment, however, will not become active for some months, as it is not until March that Dr. Collingridge is expected actually to vacate his office. Dr. Howarth, a graduate of the Victoria University of Manchester, is at present Medical Officer of Health for the County of Kent, and before his appointment thereto had been medical officer of health for the borough of Derby and also for Bury. He was also some four or five years ago president of the Midland branch of the Society of Medical Officers of Health.

The third annual sale of work in aid of the funds of the Church Nursing and Ambulance Brigade of Young Women and Girls was opened by the Viscountess Frankfort de Montmorency at the Kensington Town Hall last week, when the Duchess of Westminster presented silver medals to four members of the corps in recognition of their services in cases of emergency in the London streets, one recipient having saved a woman's life by her prompt assistance. The brigade, which numbers 70 companies in London and the provinces and has over 4,000 members, in addition to those of the six Colonial contingents, was founded in 1901 for the purpose of training girls in first aid and ambulance work. Its members have already given evidence of the excellence of their training by the help they rendered in over 1,000 cases of sudden illness amongst the crowd during the funeral of the late King; and it is claimed that in time of war 40 auxiliary aid contingents, comprising more than 2,000 thoroughly trained and efficient girls, would be ready to take the field. The sale of work attracted a large number of visitors, for whose benefit an entertainment was given during the course of the afternoon by the pupils of Miss Laura Jefferies. In the evening the newly appointed officers of three London companies received their commissions, and a concert was held in which the Russian [illegible] Mademoiselle Marguerite Favronowa, took part.

The accounts submitted at the annual meeting of Livingstone College on November 28th unfortunately showed a considerable balance of expenditure over income during the year. Several previous accounts have revealed the same state of affairs, and there is now a relatively large deficit. Partly, perhaps, in view of this circumstance it is proposed to raise a special centenary fund of £10,000, of which £3,500 would be applied to clearing off a mortgage, and £1,500 spent on improvements, while the balance would form the nucleus of an endowment. It is to be hoped that the appeal will succeed, for the college does [illegible] work. This consists not in training missionaries [illegible] the care of doctors, but in providing them with such information as to [illegible] If he proposes to settle in a [illegible] country, where medical assistance [illegible] ce, and where he is certain to be [illegible] of followers for whose lives and [illegible] nsible. It is to be regretted [illegible] to not make it incumbent on [illegible] to become acquainted with [illegible] diseases, [illegible] make it [illegible] would [illegible] at Livingstone College [illegible] employed, not by [illegible] but by [illegible]

Letters, Notes, and Answers.

Authors desiring reprints of their articles published in the British Medical Journal are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

Correspondents who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

☞ *Queries, answers, and communications relative to subjects to which special departments of the* British Medical Journal *are devoted will be found under their respective headings.*

QUERIES.

T. H. G. would be glad to hear of any means of curing a blind external fistula following a small ischio-rectal abscess in a young lady who refuses to have an operation under a general anæsthetic.

T. W. inquires who there is a reliable apparatus for fusion training in cases of squint, cheaper than Worth's amblyoscope, and suitable for treatment.

Delta asks for suggestions as to the cause and possible cure of the following condition: A young man, 33 years of age, has lived in Norway for the last seven years; about twelve months ago large patches of his whiskers, beard, and moustache turned pure white in colour, the rest being jet black.

Glacial Acetic Acid in Psoriasis.

India writes: All who have had cases of psoriasis to deal with must have been interested to read Dr. Cregan's experience of treatment with glacial acetic acid (November 2nd, p. 1214), but those who for many years have been seeking in vain for a cure less trying than the disease must wish that your correspondent had been a little more explicit as to the method used. Would Dr. Cregan be so good as to tell us whether the application of the acid was made once only, or once a week, or once a day, or oftener; and also whether anything else, locally, such as an ointment for the prior removal of scales, or internally, was used concurrently with the applications?

ANSWERS.

Dr. Theo. M. Kendall (London) writes: If "Samaritan" will consult the *Medical Annual* for 1911 he will find there mentioned that a combination of menthol and valeranic acid, known as validol, is recommended as the best remedy for the vomiting of pregnancy. I have tried it with good results, and, if I am not mistaken, others have referred to this combination in the columns of the Journal.

Treatment of Varicose Ulcers.

Dr. J. H. Donnell (Hinckley) writes: In reply to "J. H. M.'s" inquiry (December 14th), I think he will find calcium iodide in 10-grain doses three times a day between meals, and a reliable ointment containing allantoin or common comfrey (*Symphytum officinale*), will most probably heal the ulcers up within a month. A few skin grafts with the ointment, applied later, would probably expedite the cure.

Dr. James MacMunn (London, E.C.) writes in answer to "J. H. M.": Apparently the first indications are to avoid sepsis or cure it, and to aid venous circulation. In ambulatory treatment I have found the mode of using dry boracic acid given in Thomson and Myles's *Surgery* excellent. When more "callousness" has to be met, I rarely fail with the following: (*a*) Refresh edges by some means; (*b*) strap on daily a slice of Turkey sponge sprinkled or not with iodoform, etc., or orthoform if sensitiveness be present (this occasionally). If these measures fail (*a*) pare and undermine edges, (*b*) make a few radiating incisions, (*c*) curette or not surface of ulcer, (*d*) apply the sponge and strap over so as to pull the released edges together as far as possible. Do this as often as necessary. Lying up, of course, is necessary, and ultimately, to save time, skin grafting must be thought of, but I have often cured extensive ulcers in a short time without it. Oxygen is good. Calcium I often found to aid, sometimes to fail.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Eight lines and under	0	4	0
Each additional line	0	0	6
A whole column	2	13	1
A page	8	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to [illegible] at the General Post Office, London.

[illegible] will be accepted for any such remittance not so [illegible]

[illegible] should be delivered, addressed to the Manager, [illegible] London, not later than [illegible] Wednesday morning, [illegible] if not paid for at the time, should be [illegible]

[illegible] the rules of the Post Office to receive postage [illegible] *restante* letters addressed [illegible] either in initials or numbers.

THE PRE-OPERATIVE DIAGNOSIS OF APPENDICITIS:

DEMONSTRATION OF A NEW METHOD BY DORSAL EXAMINATION.

GIVEN BEFORE THE SURGICAL SECTION OF THE ANNUAL MEETING, JULY 27TH, 1912.

BY

WILLIAM EWART, M.D.CANTAB., F.R.C.P.,

CONSULTING PHYSICIAN TO ST. GEORGE'S HOSPITAL, AND TO THE BELGRAVE HOSPITAL FOR CHILDREN.

THE principles and the varied aspects of this new method would require more space for their elucidation than can be allotted to them. This fragmentary report is limited to a brief sketch of the procedure, of its uses, and of its results.

The dorsal field of percussion—the region which supplies physical signs in many cases where they are wanting[1]—includes the resonant sacral and iliac surfaces (Fig. 1),

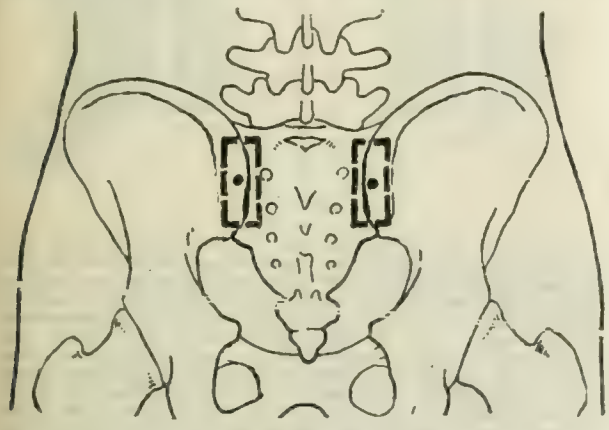


Fig. 1.

and between them two "posterior iliac patches" of sub-resonant dullness. The latter are localized by feeling for the crest of the posterior iliac tuberosity, and they are easily mapped out with a Sansom's pleximeter. The right "patch" is rather duller than the left (Fig. 2), presumably owing to the airlessness and thickness of the appendix. But the *transfixion experiments* indicated by the dots in Fig. 1 warrant a conclusion that the main dullness of the two patches is due to the common iliac blood vessels.

The normal standard (Fig. 2), which has been obtained in a series of tracings from healthy subjects during

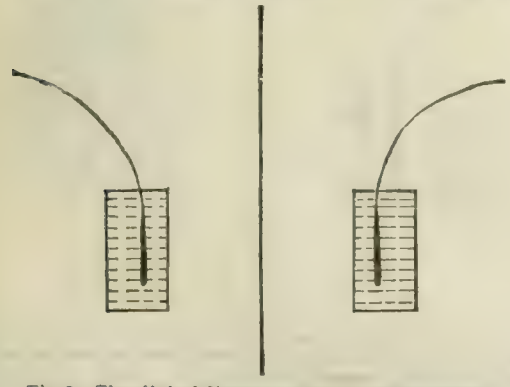


Fig. 2.—The clinical diagram of the normal standard.

the last two and a half years, since I began including this negative test in all overhauling examinations for general soundness, consists of those features, and of an absence of any adventitious dullnesses, whether sacral or iliac. These were almost invariably present in the large number of declared or of suspected cases which, through the liberality of my colleagues, I was able to examine in the wards of St. George's Hospital. An adventitious dullness may encroach more or less upon the right patch; but its site of special frequency is the right iliac surface. Less often it occurs at the right sacral, and sometimes, though rarely, it involves the left sacral surface also.

The normal post-operative standard (Figs. 3 and 4) is characterized by a general resonance, due to a remarkable disappearance of the "normal patch" dullness, as well as of any adventitious dullnesses. A "clean" result implies that there are no *remnants* of dullness (such as those in Figs. 12, 13, 14). Fig. 4 shows the less usual "type B" of this standard, where the patch can still be outlined as a specially tympanitic resonance. These changes are permanent.

A.—*Is it Worth While?*

The method presents no difficulty, entails little disturbance and no pain for the patient, and claims only five minutes all told, including taking a permanent record on tracing paper. The satisfaction of ascertaining the presence of the normal standard in the healthy, and of the post-operative standard in the operated, may be optional. But in the "suspected" cases where there are no signs, and in acute cases without any *localizing physical signs*, is it not worth while looking at the other side, and obtaining the dorsal evidence, such as it is? On that point my observations and the tracings afford direct evidence

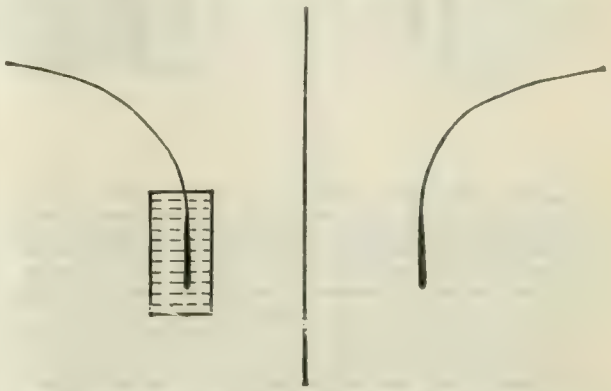


Fig. 3.—The Normal Post-operative Standard, type A: *No patch.*

relating (1) to *fatal cases* of abscess overlooked for want of a dorsal examination, (2) to *test cases* where the pre-operative tracings were confirmed at the operation, and (3) to *suspected cases* which were kept under observation and dismissed not operated on "for want of evidence" at the time when the dorsal method supplied independently its definite indications. The value of registrable evidence is also worth mentioning. So long as views are divided as to the clinical range of our surgical interference, and as to the justification this may receive from the conditions displayed

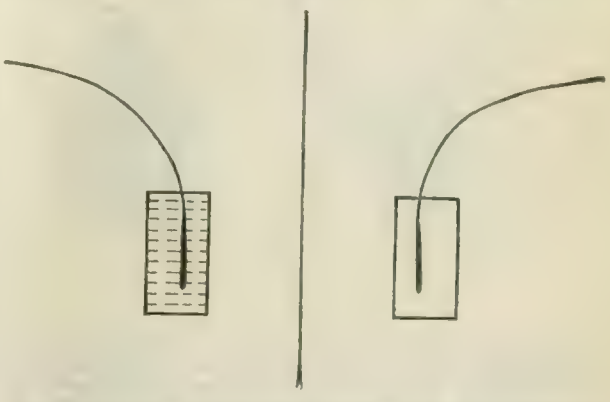


Fig. 4.—The Normal Post-operative Standard, type B: *Tympanitic patch.*

by some appendices after removal, it is as well not to forget the contentious aspect, in spite of the favour in which operations are held in this generation, and to secure any documentary evidence, pre-operative and post-operative, such as is offered by this method.

I. *The first of the fatal cases of overlooked abscess*, which originated the short history of the method, was illustrated in my papers on dorsal percussion of 1899 and 1910.[2] The iliac dullness had been correctly interpreted as due to an abscess, though not suspected of an appendicular origin. The abscess was

approached but not reached by a laparotomy, and was only opened a few days later at the *post-mortem* examination behind thick adhesions. In that instance the only correct report obtained during life was that supplied by the dorsal examination. In my *second* patient, ten years later, the abscess (likewise opened at the autopsy) had not been diagnosed because the dorsal pelvic examination had not been made. I had broken my invariable rule, and examined for appendicitis (in conjunction with Dr. Gould May) carefully, but in vain, only from the front, because the patient was at the time in the last stage of exhaustion from granular kidney. The *third* fatality, much more deplorable because it might have been prevented, occurred some years ago, before that rule or the method had been framed. The dorsal examination and the diagnosis were made eventually, but not at the first consultation, when the laparotomy, which was undertaken later and soon followed by death, might have proved

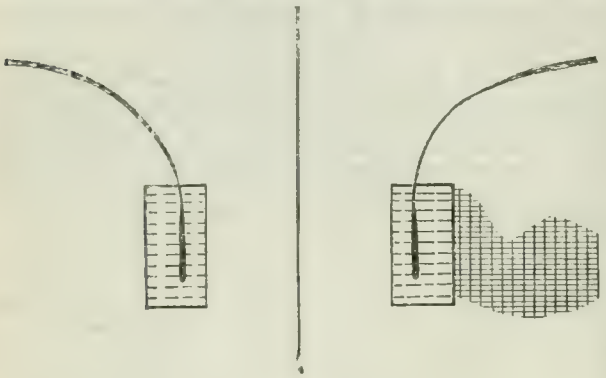


Fig. 5.

successful. The patient was a gentleman in the later fifties and of sound constitution, suffering from suspicious abdominal and marked bronchopneumonic symptoms. He was thoroughly examined by the anterior method for the physical signs of appendicitis, with negative results, and the obvious signs of right basic pulmonary congestion misled my diagnosis instead of guiding it. At the second consultation the diagnosis was made at the first touch of the loin, which revealed the presence of surgical emphysema and its pelvic origin. A foul abscess was opened the same day, but the patient died two days later. Incidentally, this case brings strong light to bear upon the dangers of operative delay after an abscess has been diagnosed.

As these and other cases show, an abscess may escape detection by abdominal examination, if deep seated and particularly if retrocaecal. The latter are precisely the cases in which a dorsal pelvic examination can hardly fail to detect it. To illustrate that fact one of the tracings (Fig. 5) may be brought forward at once from Series xviii. It was taken a few hours before the operation from a young man with acute and pyrexial symptoms. A large iliac dullness extended in the tracing a

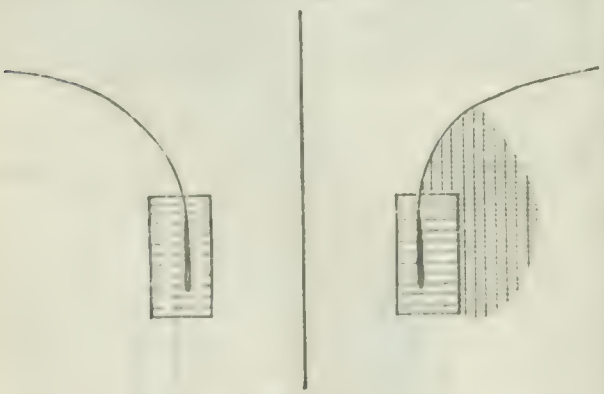


Fig. 6.

little further outwards than in this figure. The pre-operative examination, at which I was not present, revealed abdominal pain and local tenderness but not any localizing signs, although [illegible] that I had percussed the abdomen also and taken [illegible] but not here reproduced) of a dullness [illegible] the outer half of the groin. The condition [illegible] appendicitis. The appendix, which [illegible] acutely inflamed and was removed. [illegible] was not accompanied by any fluid or inflammatory [illegible] was closed. The pyrexia continued. [illegible] a few days the wound began to ooze, and was reopened, [illegible] of pus, and a drainage tube was introduced. [illegible] tracing was taken fourteen days later after a rapid [illegible]. It showed, instead of the "clean" result (Figs. 3 and 4, which is customary after a primary evacuation of a retrocaecal abscess, a considerable remainder of dullness, presumably due to residual inflammatory material or to adhesions. Had the evidence of my dorsal examination been reported at the time of the operation it is possible that pus might have been further searched for and discovered. Happily in this case the pus found its own way forwards.

II.—*The Test Cases (unselected), as Evidence of the Reliability of the Method.*

CASE I.

Case I was that of a doctor friend and patient with urgent symptoms, but no palpable abdominal tumour. The tracing, which I had the misfortune to lose, showed a considerable dullness, which spread from the patch high on to the dorsum ilii. The operation, performed by Mr. Crisp English, gave relief to a retrocaecal abscess and removed successfully a gangrenous appendix, which extended straight upwards.

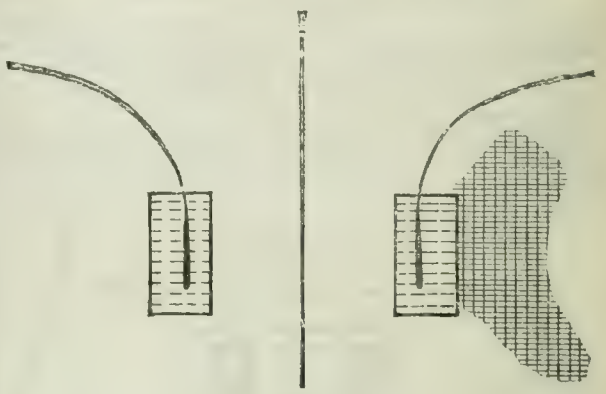


Fig. 7.

CASE II.

In Case II (Fig. 6) the absence of abdominal evidence was attested at three stages by separate examinations—by the out-patients' physician, who diagnosed that the case was *not* appendicitis, and sent it up for that reason into the medical ward; by the visiting physician, who confirmed the absence of physical signs; and by the surgeon to whose ward it was transferred a week later, and whose decision to operate was based upon the general clinical symptoms, including some slight elevation of temperature. At the operation Mr. G. R. Turner removed the appendix and broke down adhesions. The following is his report of the condition which he found: "Appendix normal in origin, but twisted and coiled up, and mainly retrocaecal in situation, being matted to the caecum by adhesions. The appendix was swollen, but there was no peritoneal exudation or effusion around it. Faeces were found in the canal." The post-operative result was shown in another tracing. The patch was normal, of type B.; but at the dorsum ilii a small remnant of the dullness persisted, at a distance from the patch. The tracing (Fig. 6) had been taken on admission.

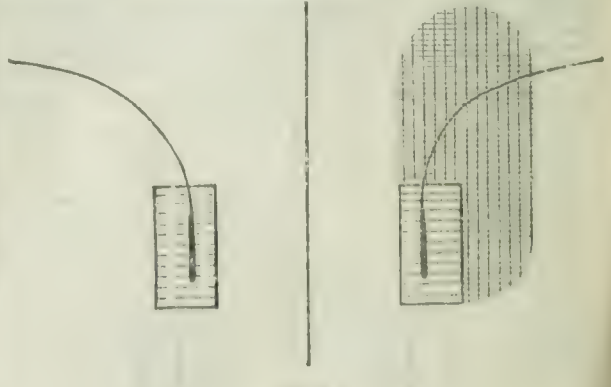


Fig. 8.

CASE III.

Miss E. P., aged 28, was sent up from the country by her doctor for an opinion as to a suspected appendicitis. The general symptoms were ill-defined, and rendered more obscure by the presence of some looseness of the right kidney. Nothing else could be felt by the routine abdominal examination. On the strength of the size and situation of the adventitious dullness (Fig. 7) I called in Sir Wm. Bennett, who agreed to operate. The following is the report with which he has favoured me: "The appendix and its mesentery which was represented by a large pad of fat formed a pear-shaped mass lying between the kidney and the iliac fossa; there were no surrounding adhesions, but the end of the appendix was embedded in the fatty mass and was surrounded by an abscess of about the size of a cherry. The appendix and the fatty mass including the abscess were removed *en bloc* after the base had been ligatured. The pad of fat lay behind the appendix." Post-operative result: Type A.

CASE IV.

Case IV was that of a medical student with subacute symptoms. There was no objective localizing palpatory evidence on abdominal examination. But the dorsal indication, as seen in Fig. 8, was unequivocal. Mr. Crisp English's report was as follows: "Caecum firmly anchored to iliac fossa by adhesions. Appendix: (1) Retrocaecal, running directly upwards, and extending to within a short distance of the liver; (2) adherent to the posterior wall of the caecum and ascending colon, and to the posterior abdominal wall; (3) some thickening around it, owing to adhesions; (4) chronic inflammatory swelling; (5) some faecal material inside." Post-operative result: Type A.

CASE V.

This young lady had had two previous attacks; the present one was ushered in by vomiting, but otherwise subacute. There were no objective localizing signs on abdominal

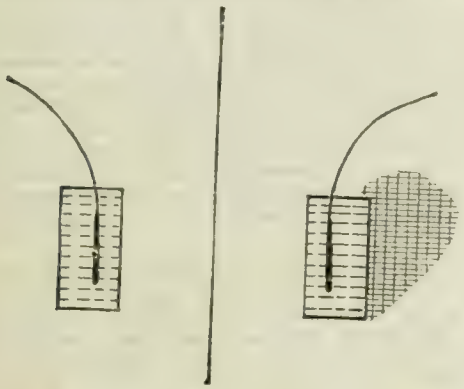


Fig. 9.

palpation. The tracing is shown in Fig. 9. Mr. H. P. Pendlebury's report was confirmatory, to the effect that the appendix was involved in retrocaecal adhesions and slightly thickened by previous inflammation. Post-operative result: Type A.

CASE VI.

Subacute appendicitis in a medical student. There were no localizing objective palpatory signs in the abdomen. The pre-operative tracing (Fig. 10), taken the day before Mr. Fedde Fedden operated, displays an adventitious iliac dullness in the usual situation and a *resonant right iliac patch*. This is his report: "The caecum was somewhat large, free from adhesions, but presented a slight thickening of the peritoneal coat. The appendix was situated at the pelvic brim, not surrounded by any adhesions or peritoneal exudation. It was very slightly swollen, and its mucous membrane was swollen and reddened; there was no stercolith." The convalescence was uninterrupted, and the post-operative tracing yielded a perfectly "clean" result of type A (Fig. 3). A point of special interest, when taken in conjunction with the fact that the caecum was noted to be

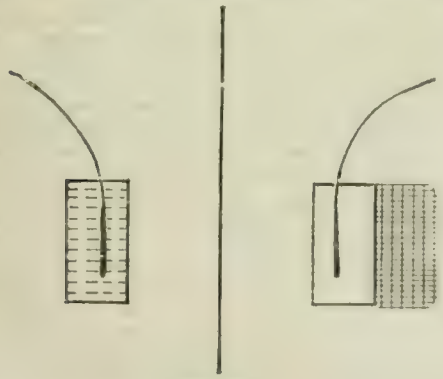


Fig. 10.

large, was the absence of the normal dullness of the right iliac patch before the operation.

To sum up the series: *In all of them the abdominal physical signs were absent, and the dorsal present and correct.*

III.—*The Presence of Dorsal Signs in Cases Watched, but not Operated on, because of an Absence of the Usual Symptoms and Abdominal Signs, in Ignorance of the Dorsal Evidence.*

In Master G. D. there was a large iliac dullness, and a history of three attacks in two and a half years. In another relapsing case, that of a French youth who had struck his right groin against an iron post, the iliac dullness persisted after an unusually searching dose of castor oil. Being much the better for a rest in bed I sent him back to Paris, where he was kept in bed for nearly three weeks, but again not operated on in ignorance of the dorsal finding. In the entire hospital series five cases only were dismissed not operated on. One only was spurious, the symptoms due to gastric dilatation, and the dorsal standard normal. The others were discharged in ignorance of the dorsal evidence, which was confirmed by renewed tracings taken on the day of discharge. Fig. 11 shows an increase, within the patient's short stay in the hospital, in the original dullness, instead of any diminution. A similar increase was also noted in the second tracing taken of another case, J. E., before his discharge.

B.—*The Significance of Abnormal Changes in the Percussion of the Posterior Iliac Dull Patches, and Adjoining Surfaces.*

According to my transfixion experiments the greater dullness of the right patch might be accounted for

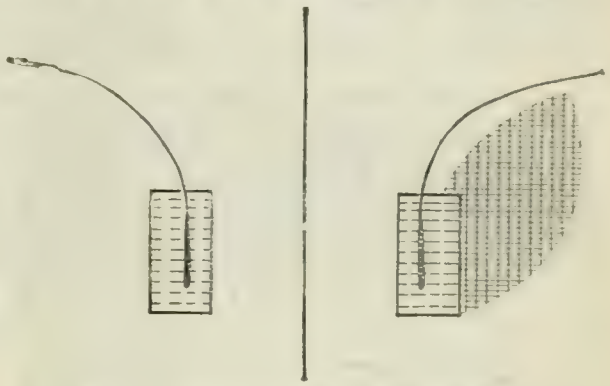


Fig. 11.—From one of the cases on day of discharge.

by the fact that the thick intestinal structures of the ileo-caecal junction, of the valve, and of the root of the appendix were found to be in sagittal line with the centre of the right dull patch. Any pathological thickenings would tend to intensify that dullness, whilst considerable inflations of the caecum or ileum might transform its dull note into a tympanitic one. *The standard of normality* as a negative test is therefore based upon a comparative percussion of the "patches." But the right "patch" also provides the surgeon with a novel and conclusive test for the local result of his operation. *The standard of post-operative normality*—that of a perfectly "clean" result (Figs. 3 and 4)—means a pervading resonance of the entire right dorsal field, of type A or B. It goes without saying that the left patch suffers no change. Exceptionally a transient inflation of the lower bowel

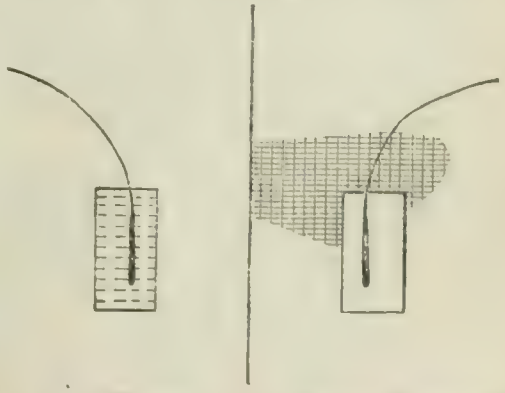


Fig. 12.—Large "remnant" soon after operation for abscess.

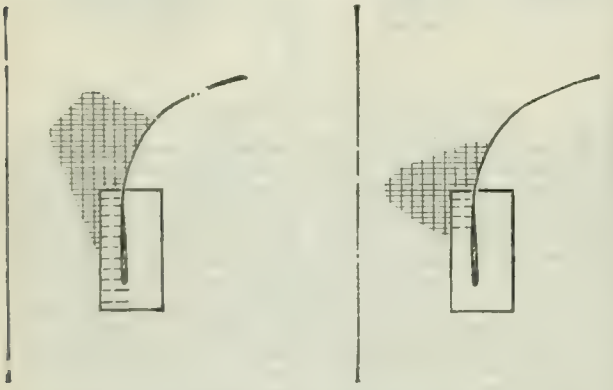
may occasion that there should be for a while no dull patch whatever either right or left of the middle line.

Besides contributing these two characteristic standards the patch often yields valuable indications for a positive diagnosis. (1) *An increased dullness* of the patch is sometimes noted early in association with collateral iliac or sacral dullnesses, whilst in several of the post-operative tracings some of it persists as a "remainder." These dullnesses are sometimes fractional in extent, part of the patch remaining dull, the rest of it resonant. "Magpie" iliac patches of that sort (Figs. 13 and 14) show how faithfully even small dullnesses are transmitted through the thick pelvic bony pleximeter, in proof of the reliability of our dorsal percussion.

2. *Diminished dullness and tympanitic resonance* are the opposite change. We might expect that, either by relative obstruction or by atony, the onset of inflammation would inflate the termination of the small intestine and the caput coli. The later permanent inflations seem to be the result of the operative uprooting of the caecum from its delicate and yielding normal attachments, and of its reimplantation into unyielding adhesions; these would impede its free contraction, and keep its posterior surface spread like that of an unfolded air-bag. A persistence, after the operation, of the normal dullness of the patch, or of any adventitious iliac dullness (Fig. 12) would therefore point to a caecum undisturbed in its retrocaecal bed, or to "remnants" of some deep-seated thickening left uninfluenced by the operation.

3. In some deep-seated, severe, but self-contained appendicites *a tympanitic patch* may assume a major significance as *the only physical sign* obtainable front or back.

The Abnormal Changes in the Percussion of the Sacral Surface.—These dullnesses differ from the iliac in not vanishing immediately as a result of the operation; though they may gradually disappear after the removal of the drainage tube and the healing of the *abscess*, for it is usually to abscess that they seem to owe their origin. The scope of the method is therefore not limited to the retrocaecal group, but includes some of the pelvic cases (if not



Figs. 13 and 14.—Changes and shrinkage of same "remnant" (see Fig. 12) subsequently during convalescence, with encroachment over sacrum and into patch ("magpie" patch).

all of them) which may give no other physical signs. Practically this leaves outside the pale of "direct" dorsal identification by "dullness" two groups of appendicitis only, the *anterior* and the strictly *central* ones. For the latter, which are the most difficult to identify, the dorsal method may be of unique service in furnishing some "indirect" evidence—that of a "tympanitic resonance" of the right patch, from atony and inflation of the caecum or ileum.

The Abnormal Changes in the Percussion of the Iliac Surface.—These are by virtue of the predominance of retrocaecal appendicitis, our most frequent indications, whether as pre-operative dullnesses or as post-operative remnants of dullness. Usually due to adhesions or thickenings, these *post-operative remainders* are much more common here than in the patch itself or at the sacral surface. They are chiefly of interest as a late comment upon the particular *modus operandi* adopted, and as a note which should be attached to the clinical record of the patient for the sake of helping the conclusions of his future clinical examiners.

C.—*The Examination and the Technique.*

(1) When the examination is made in the consulting-room, in normal or in ambulant suspected cases, *the patient* can be seated on a high stool, or sideways in a chair on a firm cushion. If standing—and this is the most convenient—he should be made to lean forwards, resting with both hands on a table or some other support, in as level an attitude as possible. The iliac crests are traced with a dermographic pencil, beginning from below where the crest of the tuberosity is easily felt, and guides our deeper palpation for the upper iliac crest. Percussion is then made (cf. Fig. 2) for the outline of the normal patch on both sides, starting preferably with the left patch, and noticing that it is rather less dull than the right one. (2) In more acute cases the pre-operative examination (and likewise the post-operative when it is undertaken in early convalescence) may have to be conducted in bed—for worst cases in the left lateral decubitus, for others in the sitting attitude. For the latter suitable arrangements should be made by removing the obstruction of the bolster, and if possible by raising the patient from the trough of the bed on a folded sheet or a firm pillow. If well enough he can be moved to the corner of the foot of the bed, where he can sit comfortably with legs overhanging; the back is then much more accessible for careful percussion—an important matter when the signs are not so obvious as those of a large retrocaecal abscess (such as in Fig. 5) which might easily be detected in any position. (3) For a successful percussion the only requirement is the use of a Sansom's pleximeter, which might be well worth learning for this purpose alone, if it had no further clinical employment. The technique is the same in all cases, namely, to keep the flange of the pleximeter from lying across the boundaries which have to be determined, and to resort to an alternate use of the short flange whenever the unknown outlines of any adventitious dullness have to be accurately worked out.

D.—*Summary of Practical Conclusions.*

(1) Hitherto in the larger aggregate, which is made up of the "suspected" cases, the symptoms had been the sole guide. In a small group only, chiefly of acute cases, the pre-operative diagnosis was complete in both directions—conclusive as to symptoms and localizing as regards physical signs. These are the cases of "anterior" appendicitis, and some of the "central" variety when the lesions are palpable. In all others not thus completely diagnosed a rectal examination is essential, as the trouble might chance to be pelvic, and perhaps identifiable. Some cases must remain objectively latent in any situation—namely, those of exclusively "internal appendicitis," without any peritoneal reaction, and also free from any perceptible thickening. More commonly there is sufficient thickening and density for anterior palpation or dorsal percussion if only the appendix is within reach. The fact that exceptionally they may be absent is the weak spot in our method. (2) Leaving these aside, and also the cases of "urgency" which largely gravitate into our hospitals, the great frequency of *an alleged latency* of physical signs is correlated with the predominance of the deep-seated and retrocaecal varieties, which is due to the normal remoteness of the root of the appendix. The lesions, if slight, are beyond abdominal palpation. This also explains why retrocaecal abscesses have sometimes escaped operative recognition. Also why some cases, watched for their abdominal symptoms, have not been operated on although the dorsal examination did afford clear signs of abnormality. It also explains why in a long series of hospital cases, whilst the "abdominal" identifications by actual palpation were in a small minority, hardly any cases failed to give definite "dorsal" signs. (3) For that "latency" there is another reason—the inability of the abdominal method to provide us with any negative test or standard of comparison with the normal physical condition, as it even fails to trace the abnormal conditions by physical evidence.

(4) The fresh possibilities offered by the dorsal method take three directions: (*a*) that of negative evidence, for the diagnosis of soundness; (*b*) that of positive evidence, confirmatory of our suspicion of an appendicitis; and (*c*) that of localizing physical evidence, after the diagnosis has been based upon unmistakable symptoms. (*a*) It furnishes a badly wanted *normal standard*, not by any means absolute, as it is only a dorsal standard, but valuable in conjunction with a searching abdominal examination, as it reports upon the district where the lesions are most likely to be situated. For any private or official assurance of complete soundness a dorsal examination is indispensable, and the only means of framing a first-class certificate. (*b*) As regards the general *clinical diagnosis* of a suspected appendicitis, any examination restricted to the front is inadequate for "objective evidence." In this inquiry the dorsal method has actually proved to be the more successful of the two in providing us with positive signs. (*c*) With regard to the pre operative *localizing diagnosis:* In

the smaller group with severe symptoms the lesions are "latent" only because deep-seated. Even if no gravity should be manifested in the symptoms, the possibility of grave lesions demands for safety a dorsal percussion, as this almost invariably yields at least some minor indications not otherwise to be got. "Central" or "anterior" lesions may not be latent to an abdominal examination when they are extensive. In that event their manifest importance calls for the most complete examination available, in the light of our illustrative cases of an unsuspected backward extension, not otherwise to be diagnosed except by searching exploration on the operating table.

Lastly, the *post-operative examination* furnishes evidence as to the results of surgical interference. In the instance of Fig. 5 a dorsal examination, had it been undertaken two or three days after the operation, might have explained the persistence of the pyrexial symptoms. Similarly at a later date in other cases it has yielded information which might have been of clinical use. Any remnants of an abnormal dullness may therefore be worth noting for practical purposes; and they can only be detected by the dorsal method.

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THEORIES WITH REGARD TO SECONDARY GROWTHS IN CARCINOMA OF THE BREAST.*

By MAY THORNE, F.R.C.S.I.

THE after-history of cases of carcinoma of the breast shows great variety in the length of life accorded to the patient; and the occurrence of secondary nodules in the chest wall, or metastases in distant parts of the body, are still so common that it may be of interest to give a short account of some of the theories that have been held from time to time with regard to the secondary growths of carcinoma of the breast, and to briefly describe some of the operations that have been undertaken for the relief of this condition.

The earliest records speak of the operation as being complete. It consisted apparently in slicing off the entire breast and of freely applying the cautery to the exposed surface of the chest wall. One can imagine that in pre-anaesthetic days this operation was only undertaken in cases that were considerably advanced, and that to avoid the distress of a large, foul, discharging ulcer a patient here and there might be willing to undergo this ordeal, but one cannot think that many cases would be submitted to an operation of so great severity for what was for a considerable time at least a local and not necessarily painful disease. Many patients doubtless died from metastases long before the primary growth was more than a large, hard lump in the breast. The form of operation undertaken in the earlier years of the nineteenth century was a kind of revulsion from the old and complete method, and consisted in merely excising the prominent portion of the breast in which the tumour occurred, together with the skin adherent to it. It was not to be wondered at that the operation was performed in this very inadequate method, for before the days of growing pathological knowledge carcinoma of the breast was believed to be evidence of constitutional disease, and therefore incurable at whatever stage the operation was undertaken and whatever kind of operation was adopted. Hardly any surgeon dared open the axilla to even shell out large and hard glands because suppuration almost invariably followed the opening up of the loose tissues of the part.

In the early Sixties Moore apparently realized that cancer of the breast might be a local disease at its commencement, and Shield, writing in 1898, says:

> Moore correctly estimated the method of the spread of disease, and actually described the complete operation now in vogue, an operation we have so largely adopted from foreign recommendations.

* Read before the Association of Registered Medical Women, November 5th, 1912.

Every one interested in the pathological and operative conditions of carcinoma of the breast—for the two run absolutely side by side—should read Sir Watson Cheyne's Lettsomian lecture delivered in 1896, and learn from him how necessarily restricted the operation for this condition was before Lister's introduction of antiseptic methods in the late Sixties. After the introduction of antiseptics Lister himself dared, not only to amputate the breast, but stripped off the pectoral fascia, and opened the axilla in every case and took away the glands and fat of that region.

The time had now come when the inseparable trio—anaesthetics, antiseptics, and pathology—began to exercise a vast influence on operations of all kinds. Still, surgeons as a whole hung back for some time from extensive operations on the breast, because the pathology that was then currently accepted did not offer a happy prognosis, and patients came often at so late a stage of the disease that operations were not indicated.

The pathology of the spread of carcinoma of the breast at that time was that of the embolic theory—that is, that cancer cells were carried by the blood stream from the primary growth to distant parts, where the cells were deposited and grew and multiplied, and gave rise to a tumour in all respects identical with that of the primary growth. This theory was very reasonable, and was believed to be proved to the hilt over and over again, not only in cases of carcinoma of the breast but in cancer occurring in all parts of the body. Thus a columnar-celled carcinoma of the rectum was found to be exactly reproduced in the liver, and what so reasonable as to suppose that this secondary growth was a direct implantation through the inferior or middle haemorrhoidal veins and the portal circulation to the liver? In cases of metastatic deposit in bone the growth was said so frequently to occupy the position of entry of the nutrient artery of the femur and humerus, the two long bones in which metastases usually occur, that again the embolic theory of infection by way of the blood stream seemed to be proved.

It had been observed by every one that the glands in the axilla were almost invariably enlarged in cases of cancer of the breast, and the local spread of the disease by way of the lymphatics was known to occur. But the cancer cells which gave rise to metastatic growths were believed to be carried by the blood stream. Stephen Paget, in a most interesting paper in the *Lancet* of March 23rd, 1889, enters fully into the occurrence of secondary growths, and raises the question as to what determines their distribution. Paget very clearly points out that if the embolic theory is to be held, then one must think that emboli will be impartially distributed to all the organs and that the lungs ought to be the most frequent seats of secondary growths; but on careful examination of records of *post-mortem* cases he found that this was not so. He found in the records of 735 *post-mortem* examinations on cases of cancer of the breast, that in about 70 cases only were deposits found in the lungs, and of these, he says, it is impossible to be sure whether some of these growths—unlike deposits in distant organs—were not due to direct extension from the primary growth. As regards the liver, he found that out of this same set of cases 241 of the 735 had secondary growths in the liver, while only 17 had secondary deposits in the spleen, an organ which, if the simple theory of embolism carried by the blood stream is to be credited, ought, he says, to show as much involvement as the liver, since the splenic artery is, if anything, larger than the hepatic artery. But Paget found that in cancer of the uterus the liver again showed the same character to become the seat of secondary disease, for in 244 *post-mortem* records of cases of cancer of the uterus the liver was involved in 35 cases, the lungs in 8, and the spleen in 1. Adding these numbers together, he found that secondary growths were found in the liver in 276 cases, in the lungs in 78 cases, while the spleen was only involved in 18 cases. Paget was therefore forced to the conclusion that certain organs have a *predisposition* to become the seats of secondary growths. Speaking of the deposits in bones, Paget not only gives the reports of cases that have been recorded by other observers, but gives some *post-mortem* reports of cases who died of breast cancer, on whom an examination had been held at Middlesex Hospital, and gives his conclusions of the predisposition of certain bones to be the sites of secondary

growths in the following words: "It seems certain that it is not a matter of chance what bone shall be attacked in secondary growths. Who has ever seen the bones of the hands or feet attacked by secondary cancer? Out of 650 necropsies in cases of cancer of the breast which give full details as to the distribution of secondary growths, there is not a single case where the hands or feet were affected, not one of disease of the radius, ulna or fibula, and only one of the tibia. In contrast to this, the femur was affected either by spontaneous fracture or by a distinct deposit of cancer 18 times, the humerus 10, and the cranium 36. The evidence seems to me irresistible that in cancer of the breast the bones suffer in a special way, which cannot be explained by any theory of embolism alone. Some bones suffer more than others; the disease has its seats of election."

The idea suggested by Mr. Paget, namely, that cancer cells carried by the blood stream have a selective power in respect of the part to be attacked, was original, and seemed upheld by the figures he brought forward. Some observers found this theory difficult to accept, but the very difficulty has doubtless been the means of making others investigate the spread of cancer, and to try and find channels for the dissemination of secondary growths which seem more convincing.

Stiles, of Edinburgh, writing in the BRITISH MEDICAL JOURNAL of June 17th, 1899, says that the anatomical facts regarding the breast which were fully recognized by such famous anatomists as Sir Astley Cooper and Henle, namely, that the breast tissue often occupies a much wider area than might be supposed, combined with tapering off of its peripheral processes, make it extremely difficult for a surgeon to be always certain that the whole of the breast has been removed, and brings forward evidence to show that in some so-called recurrent growths there is abundant evidence to show that portions of the breast tissue had been left behind, and that the recurrence was really the continued growth of the disease in parts affected before the first operation was performed. Stiles, by his method of staining with nitric acid, was able to demonstrate the spread of cancer in the tissues in a more graphic way than had been previously accomplished. He also refers to the invasion of veins by cancer cells, and quotes Goldmann's work to show that the chronic inflammatory condition set up by the presence of cancer cells in the blood prevents a more general invasion of the blood stream. He thinks that more rarely the arteries become invaded, and says, "It is possible that the sudden formation and extensive distribution of lenticular disseminations in the skin may in some instances be due to arterial embolism."

Sir Watson Cheyne gives a most interesting table of percentages of recurrent growths in patients who were operated on by various surgeons. These percentages of recurrences vary from 85 per cent. in Billroth's cases down a descending scale of recurrences till we come to Halsted's 22 per cent. and Cheyne's 18 per cent. When the methods of operation of these two surgeons—Halsted and Cheyne—are compared by Sampson Handley, he finds that while Cheyne undermines his skin flaps, Halsted carried his incision "at once and everywhere through the fat." The recurrences in the skin surrounding the site of operation in Halsted's cases was 16 per cent.; in Cheyne's 6.5 per cent.

Sir Watson Cheyne, in reviewing his cases, says that internal metastatic deposits are apparently more frequent now than formerly, due, no doubt, to the fact that [illegible] escape local recurrence and live longer, and that [illegible] internal deposits have time to grow and attract attention.

He also draws attention to the fact that probably many cases of recurrence are due to local infection of the wound at the time of operation by cancer cells which escape from the tumour and lymphatics in the neighbourhood of the tumour, and quotes a case of his own where he had removed an epithelioma of the tongue. The patient came back with enlargement of glands, which were cystic, from the degeneration of rapidly growing cancer cells. Cheyne thought it worth while to remove them, and did an extensive operation. Unfortunately on one side, while the mass was being taken away a cyst burst, and the fluid, containing flakes of epithelium, poured over the wound. He washed it as thoroughly as he could, but although the one side healed perfectly, the other, where the accident occurred, became brawny and thick all over: diffuse epitheliomatous infiltration of the whole wound followed, and he felt, no doubt, that the groups of epithelial cells which had escaped grew in the parts of the wound in which they were deposited. He says also that from a study of the recurrences after the modern operation he has come to the conclusion (1) that cancer in its early stage in a healthy body grows extremely slowly, and that it is only in the later stages, when the resistance of the body is broken down, that the more rapid growth occurs, and (2) that the extensive modern operation (1904) in some way or other exerts an inhibitory growth on cancer cells which are left behind in the vicinity. In some instances, however, it appears as if the cancer cells must have lain dormant for a time after the operation. As a result of extensive operation lymph channels are widely removed, the lymph flow is arrested or slowed through the part, and thus the distribution and nutrition of any cancer cells left behind may be much interfered with.

Mr. Sampson Handley, in his illuminating researches on cancer of the breast, quotes Goldmann's and Schmidt's work to show the degeneration which cancer cells undergo in the blood stream due to the inflammatory reaction set up by their presence, and thinks that the spread of cancer is due to the permeation of lymphatics by cancer cells.

Taking the primary growth as the centre of a circle, he describes infection as being independent of transport by either blood or lymph stream, and thinks that growth along the lymphatics is the method that occurs. When cancer cells invade a lymphatic and multiply they distend the lymphatic in which they are growing and set up a slight inflammatory reaction round it. After a time the lymphatic becomes distended and bursts. The cancer cells are now free and might grow, one would think, but evidence seems to show that the inflammatory process set up by the rupture intensifies the previous perilymphatic inflammatory process that was present, and a fibrous capsule forms which shrinks and strangles the remaining cancer cells. Ultimately the lymphatic itself is replaced by a slight cord of fibrous tissue in which no cancer cells are seen.

The cancer cells in a distended lymphatic are so pressed upon that they become degenerate, and when freed are incapable of growth.

Mr. Sampson Handley points out that, as a curative process, perilymphatic fibrosis is defective. It does not follow permeation quickly enough to overtake the microscopic growing edge where permeation is just beginning, and also the contraction due to the perilymphatic fibrosis tends to force cancer cells into the smaller lymphatics, which, on account of their higher resistance, have hitherto escaped invasion. Passing along these tiny vessels, the cancer cells reach and permeate the lymphatic capillaries from which these vessels rise. The walls of these capillaries consist of endothelium only, and are unfitted to bear pressure from the growing cancer cells. Before an adequate inflammatory reaction can ensue the cancer cells rupture the lymphatic capillaries and invade the surrounding tissues. If, therefore, living cancer cells reach the periphery of the lymphatic system, they are able to originate metastases. These may seem to be discrete and separate masses, since the lymphatics along which they have travelled may have been destroyed by perilymphatic fibrosis, but Mr. Sampson Handley claims to have observed that they have originally started from the primary growth.

Mr. Handley, describing the spread of cancer in the parietes, says it occurs by the permeation of the lymphatic system like the spread of an invisible annular ringworm. "The growing edge extends like a ripple in a wider and wider circle, within whose circumference healing processes take place, so that the area of permeation at any one time is not a disc but a ring. The spread of cancer in the parietal tissues is, in fact, as truly a serpiginous process as the most typical tertiary syphilide. But in the case of cancer the spreading edge is invisible, and, moreover, the advancing microscopic growing edge of a cancer, owing to the failure at isolated points of the defensive process of perilymphatic fibrosis, may leave in its track here and there isolated secondary foci, which give rise to microscopic metastases. Such nodules, in spite of their apparent isolation, arise in continuity with the primary growth, but perilymphatic fibrosis has destroyed the

permeated lymphatics which formed the lines of communication."

The embolic theory of bone infection by the blood stream deemed the entry of the nutrient artery to be the sites of spontaneous fracture or growth.

If the humerus and femur are invaded from the lymphatic plexus of the deep fascia, as Mr. Handley believes, the first attack, he says, should be directed on that point at which the bone lies nearest to the deep fascial lymphatics, and therefore on that point at which the bone comes nearest to the cutaneous surface. Moreover, where the bone is provided with two or more subcutaneous areas, the seat of the first attack, according to the view of centrifugal spread, must be that area which is nearest to the trunk. On this hypothesis the point of invasion should be, and Mr. Handley says is, in the femur, the base of the great trochanter, and the adjoining part of the linea aspera. The point of invasion of the humerus should be, and actually is, relatively much lower down, at the deltoid insertion, since the whole of the upper half of the humerus is well clothed with muscles.

Mr. S. Paget asks, "Who has ever seen the bones of the hands or feet attacked by secondary cancer?" Mr. Handley's answer to this is that no patient lives long enough for centrifugal invasion to reach the distant parts.

Mr. Handley points out that the anatomy of the epigastric region strongly suggests the likelihood of the mode of invasion of the abdominal cavity. According to Stiles, the lower and inner margin of the breast lies over the sixth costal cartilage; that is to say, this part of the mammary circumference is only about an inch from the interspace between the ensiform cartilage and the seventh costal cartilage. Therefore, as soon as parietal permeation has extended little more than an inch beyond the edge of the breast the cancerous lymphatics of the deep fascia are no longer separated from the subserous fat (subperitoneal or subpleural) by a bony cage covered by thick muscles, but simply by a single layer of fibrous tissue traversed by lymphatics. At the tip of the ensiform cartilage the transversalis fascia is hardly recognizable as a distinct layer, and the parietal lymphatic plexus is separated from the subperitoneal fat simply by the linea alba. It is not surprising if through this obviously weak spot cancer frequently reaches the peritoneum before it has succeeded in reaching the pleura, even at points directly subjacent to the primary focus.

Before any operation for the removal of cancer of the breast is undertaken, Mr. Handley advises that a careful examination of the epigastric region should be made to see if there is any tenderness or pain there. The presence of tenderness or pain should raise the suspicion that epigastric invasion had already occurred, and in such cases the liver should be carefully palpated when the patient is under the anaesthetic before the breast is removed, and he goes on to say that it must never be forgotten that the first sign of epigastric invasion may be found not in the epigastric region, but in the pelvis from the gravitation of cancerous particles into it: a vaginal and rectal examination should, he thinks, be made prior to operation.

In operating for removal of breast cancer Mr. Handley strongly advises that the site of the growth be made the centre of a circle from which the deep fascia is to be removed. The skin flaps should be raised till a circle 10 to 12 in. in diameter with the primary growth for its centre is exposed. The exact anatomical limits of this dissection will, of course, vary with the situation of the growth in the breast. An annular incision, marking out the 10 in. circle of deep fascia to be removed, is carried down to the muscles through the deeper subcutaneous fat close to the base of the skin flaps.

In the lower part exposed by this wide raising of the skin flaps the anterior layer of the rectus sheath on both sides of the middle line should be raised up and removed with the deep fascia, for it is specially in this region that infection of the peritoneal cavity may occur. After dividing the pectoral muscles, exposing the costo-coracoid membrane, and clearing the apex of the axilla, the whole mass is turned outwards, and where the digitations of serratus magnus lie in contact with the deep surface of the breast they should be removed together with a superficial layer of the digitations of external oblique.

The theory of infection, even of distal parts, by way of the lymphatics, commends itself strongly, but the question still is whether this is the only source of [illegible]. Sir George Beatson of Glasgow, who has done much and great work on breast cancer, pays a tribute to Sampson Handley for the work he has done in outlining the limits of the lymphatic system and its distribution, but does not agree with him in his permeation theory, and feels there is more than that needed to explain all that is found, and takes the view that pressure dissemination represents more clearly what takes place.

Mr. G. L. Cheatle, in several interesting papers, draws attention to the fact that there seems to be a certain relation between nerve supply and the growth of cancer, and that there seems a greater tendency for the disease to spread along the area of the particular nerve distribution in which it first occurred rather than independently into neighbouring areas. Mr. Cheatle also states that he has been able to demonstrate that inflammatory changes occurred in two *post-mortem* cases in the spinal ganglion, on the cutaneous distribution of which the cancer had begun, whilst the ganglia into whose cutaneous distribution the cancer had spread showed the changes of degeneration which had been noted both by Lugaro and himself, and points out that in the two cases described the cancer began on parts of the skin where nerves become cutaneous. If the lesions in the ganglia were secondary to the lesions of the skin, then Mr. Cheatle thinks that there would also have been secondary inflammatory changes in all the ganglia whose peripheral branches were involved in the lesion, but he found that this was not the case, although these particular branches had been involved for many years. Mr. Cheatle puts three pertinent questions which certainly ought to be borne in mind in investigating cancer, namely:

1. Is the inflammatory change within the posterior spinal root ganglia in any way connected with origin or spread of cancer?

2. If it is, did it exist before the cancer began? and hence had it anything to do with the genesis or point of incident?

3. If it occurred secondarily to the cancer, had its presence anything to do with the spread of that disease?

The theory of the spread of breast cancer brought forward by Mr. Handley offers a much more hopeful prognosis in early cases than has hitherto been possible, but still Sir Watson Cheyne's advice given some years back, namely, that in the first operation lies the patient's only chance, and that it must therefore be done with the greatest thoroughness, however limited the disease may be at the time of operation, is as true now as ever it was.

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FOREIGN BODY IN THE ABDOMINAL CAVITY.

BY

LLEWELLYN B. GREEN, M.R.C.S., L.R.C.P.,

SURGEON TO THE ROSS COTTAGE HOSPITAL.

THE following case appears to me to be of more than ordinary interest:

A married woman, multipara, aged 33, came to me on September 5th, 1912, in great trouble. She told me that on September 2nd, as her period had not come on at the usual time she had endeavoured to bring it on by introducing the end of a bone crochet hook into the uterus, a plan which she had found successful on a previous occasion. The hook slipped from her fingers and disappeared, and she had been unable to find it since, although she had sought for it with a "marrow spoon." There had been some slight haemorrhage, but not so much as with an ordinary period.

When I saw her she complained of some pain in the lower part of the abdomen, which had been increased by the jolting of the spring cart in which she had come four miles to see me. The pulse was 64; temperature 98.4°; bowels open.

On vaginal examination the os was just open enough to admit the tip of the finger, which on withdrawal was slightly blood stained. There was no marked tenderness, nor any sign of the crochet hook.

I sent her home to bed, and next day, after a consultation with Dr. Campbell of Ross, I dilated the os with Hegar's dilators under a general anaesthetic, and explored the uterus, which was empty. Abdominal palpation had revealed only slight tenderness above the pubes, and the patient complained of no uneasiness so long as she kept quiet.

For the next three days nothing occurred, but she still complained of slight tenderness as before. There was no rise in the temperature or pulse-rate.

On the third day she told me she thought she could feel the hook, and pointed to a place midway between the umbilicus and the pubes in the middle line. The abdominal walls were very thin and lax, and I could distinctly feel the end of something hard apparently sticking up inside the abdominal cavity.

On September 12th, in the Ross Cottage Hospital, I opened the abdomen by an incision in the middle line, and could then distinctly feel a foreign body lying between the layers of the mesentery just where they separate to surround the gut, and on carefully removing this it proved to be the missing crochet hook, an ordinary bone one 4½ in. in length. A stitch was put into the small opening in the mesentery to control some slight haemorrhage, and the abdominal wound was then closed in the usual way. The patient made an uninterrupted recovery, and left the hospital three weeks later with the wound completely healed.

Whether the hook was introduced through the uterine wall and afterwards found its way between the layers of the mesentery, or whether it was passed through the posterior fornix behind the peritoneum and was never in the peritoneal cavity, there was no evidence to show: but it is remarkable that no septic trouble was caused by the passage of an unsterilized instrument into the abdominal cavity and its sojourn there for eleven days.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ADRENALIN IN WHOOPING-COUGH.

Whilst not claiming to be able to check the paroxysms of whooping-cough in ten days by adrenalin, I think that my results have been sufficiently gratifying to merit their publication.

It was after successfully treating some cases of asthma by the hypodermic injections of 1 in 1,000 adrenalin solution that I decided to give it a trial in whooping-cough. I did not think it wise to attempt hypodermic medication with children, and so gave it by the mouth. The dose given varied from 1 to 3 minims in water, according to the age of the patient. At first, with infants under 6 months, I gave ½-minim doses, but found that that dose was too small. The largest dose given was 3 minims, to a patient aged 7 years. The frequency of administration varied according to the severity and frequency of the paroxysms, every three hours in the more severe cases and every four in the less acute.

My first case was that of a boy aged 7 years. Treatment was commenced when the paroxysmal stage had existed for two days. He was then having attacks of coughing every half-hour during the day, and every twenty minutes during the night. He was given 3 minims every three hours. The paroxysms quickly diminished in frequency and intensity, and ceased completely fourteen days after the treatment was commenced. There was no relapse.

I communicated the results of about 40 cases to the Liverpool Medical Institution in May last. Unfortunately all the cases did not give such a good result as the one mentioned above, but there was a decided benefit in practically

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adrenalin checks this very
quickly, with the result that there is, in many cases, a marked improvement in the patient's general condition
al. This, I think, considerably
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and the patients were allowed out
permitted.

I cannot explain the action of the remedy, the administration on my part being quite experimental. The number of cases so treated is certainly not large, and perhaps the results from a more extended trial would not be so successful, but I certainly think that adrenalin is worthy of such an extended trial in the treatment of whooping-cough.

Birkenhead. G. V. Fletcher, M.R.C.P., L.R.C.S.Edin.

LOCAL APPLICATION OF SALVARSAN IN ULCER.

The cases of yaws at the St. Augustin Yaws Hospital having been reduced from 250 to 29 by the use of salvarsan, I looked about for other fields to try this remedy in. I find that many ordinary ulcers heal quickly after a single dusting with neo-salvarsan or salvarsan diluted with xeroform in the proportion of 1 to 3. The after treatment is a daily dusting with xeroform* lightly sprinkled on. I do not allow water or lotion to touch the sore. I tried salvarsan mixed with bismuth subnitrate in three cases, and found it satisfactory. The ulcer is protected by a piece of lint, loosely applied, to keep out dust and flies, and latterly I have painted the skin round the ulcer twice with tincture of iodine. The patient is kept in bed for one day. Salvarsan is expensive. In the majority of the cases I used neo-salvarsan. So far my results in ordinary ulcers, all under six months' duration, have been: Rapid healing, 36 per cent.; very satisfactory healing, 60 per cent.: failures, 4 per cent.

I have tried this treatment on two cases of soft chancres: as it is rather painful, I am experimenting with local anaesthetics added to the powder. The results were good in both cases. It is my intention to try it in cases of ulcerating granuloma of the pudenda, for although salvarsan fails to cure these cases when intravenously injected, it is worth while to try the effect of local treatment. Through the kindness of Dr. F. de Verteuil, of the House of Refuge, Port of Spain, this treatment is now being applied to chronic ulcers with satisfactory results at the start. Modifications of the treatment will, no doubt, be required by further experience. Chronic ulcers may require a stronger powder. Meanwhile I put on record the fact that ordinary ulcers are greatly benefited by a single local application of neo-salvarsan or salvarsan.

Henry Alston, M.B., C.M.,
Trinidad Medical Service.

* Tribromophenol bismuth

INGUINAL HERNIA: RUPTURE OF INTESTINE: LAPAROTOMY: RECOVERY.

H. H., aged 50, garden labourer was seen for the first time about 6 p.m. on June 28th, 1912. He stated that he had been perfectly well that day till about 4 p.m., when he was "larking" with some other men, one of whom accidentally gave him a light blow in the right groin. He almost at once felt a sharp pain in the upper part of the abdomen: he tried to micturate but could not do so. In about 20 minutes he vomited, the pain in the epigastric region becoming worse. He was brought home and put to bed. There was a definite history during the last 15 years of dyspepsia, with pain and flatulence after food. There had not been any haematemesis.

The patient was lying in bed in a collapsed condition, with drawn, anxious looking face. The temperature was 97°, the pulse 88, and small. He had vomited three or four times since 4 p.m. The abdomen was hard and tender, but moved slightly on respiration; there were no dull areas. The pain was all referred to the epigastric region. He stated that 14 days previously, after lifting a heavy weight, a swelling appeared in the right groin, which disappeared each night. On examination no hernia was seen. I decided to perform an immediate laparotomy.

Operation. The abdomen was painted with tincture of iodine prepared with 70 per cent. alcohol. He was anaesthetized with open ether, and chloroform and ether. The abdomen was opened through the right rectus, above the umbilicus. A little turbid serum but no gas escaped. The stomach and duodenum were carefully examined for a perforation, but nothing abnormal was found. The appendix was also healthy; whilst examining the latter a small piece of

faeces was found amongst the coils of small intestine. The small intestine was next examined, and on the free border of one of the lower coils a perforation, with everted edges, about ¼ in. in length, was found. The edges were perfectly healthy, with no evidence of ulceration. The perforation was closed with continuous and Lembert sutures, the abdominal cavity mopped out, and about 1½ pints of saline poured in. A rubber drain was introduced into the pelvis, and the abdomen closed in one layer. As soon as the patient became conscious, continuous saline by the rectum was commenced. Except for some superficial suppuration of the wound, it healed well.

At the end of the first week the temperature became irregular, and eventually a right-sided subphrenic abscess developed. This was opened and drained by a resection of portion of the ninth rib. He is now well except for a sinus leading into the abscess cavity.

This case appears interesting, owing to the unusual complication occurring in an inguinal hernia, and also by reason of the slight cause producing it: for the patient had almost forgotten the blow.

NORMAN G. HARRY, M.B., B.C.Cantab.

Evesham, Worcester.

EXCESSIVE INGESTION OF SALT PRODUCING OEDEMA.

I HAVE read with much interest the memoranda of Drs. Bain and Midelton (October 5th, p. 880, and October 19th, p. 1057). I had a similar case about four years ago. My patient was a young married woman suffering from general oedema, for which no cause could be found except the excessive eating of salt. When the ingestion of salt was limited the oedema rapidly disappeared. She informed me that the whole family were very much addicted to salt eating.

Sodium chloride is stated to be present in human blood to the extent of 0.9 per cent. The *Practitioner* (lxxviii, 699) states "that a liberal allowance of salt may intensify ascites. Good effects have been witnessed from a cure by dechlorination in cases of ascites due to tuberculous peritonitis, in pleurisy with effusion, and of phleginasia alba dolens"; and the *Lancet* (1903, ii, 61) states that sodium chloride produces oedema in cases of nephritis, while during a milk diet (without sodium chloride) the oedema disappears.

Sunderland. A. STEVENSON, M.D.

Reports

ON

MEDICAL AND SURGICAL PRACTICE IN THE HOSPITALS AND ASYLUMS OF THE BRITISH EMPIRE.

COTTAGE HOSPITAL, HOLYWELL, NORTH WALES.

COMPLETE SECTION OF MEDIAN AND ULNAR NERVES: REGENERATION.

(By C. E. MORRIS, M.R.C.S., L.R.C.P., Honorary Surgeon to the Hospital.)

W. P. J., aged 16, was on May 10th, 1910, admitted with a transverse lacerated wound of the front of the left forearm about 1½ in. above the annular ligament, caused by a fall against a broken pot.

All the tendons except the flexor longus pollicis and one of the flexor profundus digitorum had been cleanly divided. The median and ulnar nerves had also undergone complete section.

On completely flexing the fingers the distal severed ends of the tendons could be brought well into view. A longitudinal incision gave free access to the upper ends. The tendons were re-attached in their order of depth. The nerves were carefully stitched by means of a round needle. The wrist and fingers were kept fully flexed by aid of a sheet iron, felted (Thomas) splint, moulded, to produce this effect when applied to the dorsum.

Fortunately, the wound healed by first intention: the splint was kept on for months, as we of the Liverpool school have no dread of the phantom of stiffness due to fixation; nor would anybody of any school, I suppose, however much wishing to use passive movements, risk tension on sutured nerves; neither was there here any scope for the energies of the masseur or electrician.

Twenty-nine months later, namely, on October 24th, 1912, the following condition was found:

The injured hand was not as strong as its fellow; nevertheless the hand-grasp was quite strong. The skin had a good colour, was as warm as the skin of the right hand; tactile and thermal sensations over the palmar aspect of the whole hand appeared to be normal; hot and cold test tubes were readily distinguished. Voluntary flexion of each element was present, but weak relatively to the normal; adduction of the ring and little fingers was lost; opposition of thumb and little finger was normal: it was noticed that when the patient was asked to bend his fingers, either the perforating or the perforated tendon took precedence of the other.

The case suggests to my mind the following conclusions:

1. The importance of aseptic healing; nerve axis cylinders could not grow through a scar.

2. The importance of abolishing all "pull" when dealing with tendons which it is desired shall unite, as is so well expressed by Mr. Robert Jones in his publications on tendon transplantation.

3. In view of the interesting facts concerning nerve-muscle training revealed by recent surgery, one realizes that in such a case as this it might not matter if the wrong tendons were united; indeed, any surgeon could hardly justifiably claim anything more than luck, if he managed, among such a cable of loose ends, to succeed in rejoining the very units.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

Monday, December 16th, 1912.

Sir W. WATSON CHEYNE, President, in the Chair.

Intestinal Stasis.

THE adjourned discussion of intestinal stasis was reopened by Mr. PETER DANIEL, who said that he did not believe the bands found, as described by Mr. Lane, were evolutionary or primary. The evil was originally an infection and recurring reinfection of the gastro-intestinal tract, and was in direct proportion to the number and virulence, and also to the varieties of the infecting germs. All the ill effects described by Mr. Lane might occur without stasis. He believed that if the infection were cured the stasis, in most cases, would tend to get well spontaneously, and if appropriately treated the patients entirely recovered. He was totally at variance with Mr. Lane in the line of treatment he adopted, especially in its bearing on arthritis. The case for chronic intestinal stasis was far from proved.

Dr. F. J. SMITH said he could not believe that cancer of the breast was directly or indirectly due to intestinal stasis, or that pyorrhoea alveolaris was one of the outcomes of the latter. Cases of pyorrhoea recovered without colectomy. Adhesions were very common at *post-mortem* examinations, and were much more frequent than were symptoms suggesting the need for operation. He could not accept Dr. Jordan's conclusions without an equal number of radiograms from normal subjects similarly treated. No deductions were possible without stereoscopic methods. He suggested that in those cases with toxaemia, where usual means had been ineffectual, appendicostomy would suffice.

Mr. L. E. BARRINGTON WARD gave his experience in children. Delay in the small intestine was more harmful than delay in the large bowel. In cases of advanced tuberculous arthritis short-circuiting had been followed by excellent results. One case of rheumatoid arthritis had been benefited to a striking degree by the same procedure. It was also useful for severe chronic constipation in children which did not react to dietetic and drug treatment. The operation was practically devoid of risk.

Dr. E. VON OPPENHEIM said that probably the principle of treatment which was the correct one was that based on the well-known antagonism between the different groups

of intestinal organisms. Unfortunately there was insufficient knowledge of these organisms at our command at present, and it was sometimes impossible to acclimatize the beneficial strains of bacteria.

ROYAL SOCIETY OF MEDICINE.

OBSTETRICAL AND GYNAECOLOGICAL SECTION.

AT a meeting on December 5th, Dr. AMAND ROUTH (the President) in the chair, Mrs. WILLEY, M.D., recorded a case of hydrocephalus complicated by eclampsia, fibroids, and a *Contraction ring*. The presentation was a footling, the patient being a primigravida aged 37. The existence of albuminuria was recognized at the seventh month. Eclamptic fits came on about seven hours after commencement of labour at term. Delivery of the after-coming head being obstructed by a *Contraction ring* and hydrocephalus suspected, the child's spinal canal was punctured. Much fluid escaped, and after further traction for twenty minutes delivery was complete. Two further fits occurred, but eventually the mother made a good recovery. Dr. CLIFFORD WHITE, in a paper on the *Contraction ring as a cause of dystocia*, contrasted the clinical picture given by these cases with those where a retraction ring forms as a result of obstructed labour. The chief points were: That with a contraction ring (1) the lower uterine segment is not thinned or over-distended; (2) the ring forms over a depression in the outline of the child or below the presenting part: (3) the general condition of the patient remains quite good; (4) the body of the uterus as a rule remains relaxed and not tender; (5) the presenting part is not forced down into the brim; (6) it may occur before rupture of the membranes. The most important causes of the condition were: (1) Premature rupture of the membranes; (2) intrauterine manipulations; (3) malpresentations. The treatment in severe cases was difficult. The slighter cases were best treated by manual dilatation of the ring with the fingers, but if these means failed it might be necessary to perform Caesarean section, as forceps failed and embryotomy was usually very difficult.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on December 4th, Mr. W. G. LAWS in the chair, Dr. W. HUNTER said that during his thirty years of practice he had not found that the treatment of acute gonorrhoea had changed to any great extent. In the acute stage it consisted in rest as far as was practicable, warmth to the parts, abstinence from alcohol, and flushing out the urinary apparatus by means of barley water, etc. He also gave "mist. alba," and ordered the testicles to be suspended. In early cases he found the disease could be rapidly cured by inserting antrophors, or spring bougies coated with silver nitrate. Four of these usually effected a cure in fourteen days. In the later stages injections of sulphate of alum, zinc and copper (a drachm of each to an ounce of water), were of great value. Chronic gonorrhoea should be a rare disease: the passage of large metal [illegible] two or three times a week was useful in such cases. In married men methylene blue was of use chiefly in preserving the happiness of the home. Mr. A. M. WERNER related a case of a boy aged 4 years suffering from a typical attack of acute gonorrhoea, and Dr. F. H. JACOB said he frequently saw cases of [illegible]rrhoea in quite young girls. Mr. P. E. TRESIDDER [illegible] that in chronic cases after washing out the anterior urethra he injected a solution of 2 per cent. cocaine and then massaged the prostate and thoroughly washed [illegible] the posterior urethra and bladder. It was important [illegible] doctor to carry out this personally. Mr. J. W. H. [illegible] of potassium permanganate. [illegible] th of time gonorrhoea could [illegible] Dr. C. H. CAPELL urged [illegible] especially where [illegible] Mr. R. ALLERSON said he had had a [illegible] jecting a vaccine in a case of acute [illegible] Mr. H. HEWARD thought that gonorrhoeal conjunctivitis often did better when the cornea was left alone: merely wiping it might do damage. Gonorrhoeal iritis was a recurrent disease existing as long as there was trouble in the posterior urethra. Dr. J. WATSON related a case of gonorrhoeal pyosalpinx, in which the pus had been present for five years. Dr. W. T. ROWE described a case where the penis was indurated for the last inch and a half.

OXFORD MEDICAL SOCIETY.

AT a meeting on December 13th, Dr. W. DUIGAN, President, in the chair, Lieutenant-Colonel DIMMOCK, I.M.S., describing his experience of epidemic cerebro-spinal meningitis at the old Central Gaol, Shikarpur, Upper Sind, said the cases could be divided into two distinct classes: (1) Those who were taken out of the sleeping barracks or tents in a state of coma or who fell down unconscious at their tasks—the *foudroyante*, or explosive form of the disease; (2) those who had premonitory symptoms—for example, rigors, vomiting, headache, and pyrexia with nervous symptoms. Those attacked were all adult males, many of them young, strong, and healthy a few hours before the onset. The female prisoners, who were confined in a small, entirely separate part of the gaol, were not affected. It was during the cold season that the disease always broke out. The cases occurred in men who were under entirely different conditions of labour and gaol discipline, and were sleeping far apart in different barracks. A number of cases also appeared in a gang of prisoners working on the Lansdowne Bridge over the River Indus at Sukhur, forty miles away; there was no epidemic amongst the outside population. Dr. H. T. GILLETT, in a paper on *Vaccine therapy in chronic bronchitis*, described 8 consecutive cases treated by autogenous vaccines. The treatment of one was not completed; the other 7 all improved and lost their coughs; 3 relapsed within three or four months, and of these 2 recovered again quickly with an autogenous vaccine: the third was now improving under vaccine treatment. No opsonic control of dosage was attempted: the doses were pushed with the intention of getting reactions, but with care to avoid prolonged negative phase. The vaccines were made from first cultures chiefly, sputum having been collected as far as possible aseptically, washed in sterile saline, and then diluted with the same before inoculating media.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BOMBAY BRANCH.

AT a special meeting held on November 14th, Lieut.-Colonel L. F. CHILDE, I.M.S., in the chair, Dr. HABIB I. JAN MAHOMED read notes of a case of *Tubercle of the ulnar nerve*, and showed specimens of the same. He promised to present the patient at the next meeting. Lieut.-Colonel ASHTON STREET, I.M.S., showed a case in which he had performed *Estlander's operation* and removed four bits of ribs, measuring 10 in. in all. Lieut.-Colonel CHILDE, I.M.S., showed a small box he had improvised to carry articles necessary to take specimens of blood. Dr. R. ROW read further experimental notes on *Indian kala-azar*, and showed several photographs of monkeys on whom he had developed the lesion.

THE Chelsea Hospital for Women has received £105 from Messrs. Rothschild, and £50 from Sir Philip Sassoon, for its rebuilding fund.

THE Southport Medical Society held its annual dinner on December 14th. The president (Dr. Mackay) was in the chair, and twenty-eight members and fifteen guests were present. Among the guests were Sir James Barr, Professors Beattie and Thorburn, Mr. Robert Jones, Drs. Wallace, Clifford, Gemmell, Stallard, and Oram. Dr. Permewan proposed the toast of "The Visitors" in a witty speech, and Mr. Robert Jones, Professor Thorburn, and Dr. Brassey Brierley responded. The toast of "The Society" was ably dealt with by Sir James Barr. Drs. Blumberg and Stanley Gill gave recitations, and a short musical programme concluded a most delightful evening.

Reviews.

MALFORMATIONS OF THE HEART.

To all those interested in abnormal hearts the atlas *Herzmissbildungen*[1] by Professor J. O. MÖNCKEBERG, of Giessen, will be of great service, for in it are displayed in serial sections, easily read by any one accustomed to reconstruction work, examples of some of the well-known malformations of the heart, and others less well known. The author has examined some fifteen congenital heart conditions, and has published in the atlas a selection of sections to illustrate the special features of each case. Amongst the more interesting examples recorded are some malformations associated with the developmental history of the bulbus cordis, a subject which has received attention at the hands of British anatomists, notably A. Keith; defects in the interventricular septum, including the somewhat rare type of foramen in the muscular part of the interventricular septum, the *intertrabecularlücke* of Chiari; transposition of the great vessels with subpulmonary septal defect; stenosis of the bulbus cordis with an interventricular foramen, a condition well known, in which the developmental expansion of the infundibulum has been arrested, and usually classified under the term "congenital pulmonary stenosis"; a heart with an undivided truncus; and a *cor biloculare*. Examination of the plates shows the main features of each case in section, and amongst the special advantages of this method of examination should be mentioned the ease with which the course of the auriculo-ventricular bundle—a matter of considerable interest—can be traced. The work involved in examining the hearts in this way must have been enormous, for in some cases the sections have run into nearly 2,000. The atlas is of great interest, and constitutes a valuable work of reference which is certain to be consulted by all workers in this field. It deserves the attention of all anatomists and pathologists.

PROFESSOR MURRI OF BOLOGNA.

THE Medico-Chirurgical Society of Bologna has dedicated to Professor Murri,[2] in recognition of his valuable services as a teacher and clinician for the last thirty-five years, a volume of essays by colleagues or pupils of his who join in offering this work to him as a mark of the respect in which they hold him. In the subjects chosen no special line has been taken; surgery, medicine, pathology, are each represented. The place of honour is given to a lengthy article on Bier's stasis treatment by Professor Piccinini, who discusses the subject fully; he gives his experience and the results of certain experiments, reviews the history from the time of Celsus, and gives a full bibliography. Silvagni discusses paroxysmal haemoglobinuria; Magni deals with radiology, and cystoscopy in the diagnosis of calculi. In a short paper Finizio relates an interesting case of family anaphylaxis as regards cow's milk, which seemed in one instance to be markedly improved by anaphylactic treatment with milk serum. Another article dealing with milk is a paper by Lussana on the action of milk on the frog's heart. Duodenal ulcer receives attention at the hands of Schiassi, who points out that the pyloric vein, which is a useful guide in operating on these cases, does not rise from the great curvature of the stomach, as is usually described, but descends into it. Two papers deal with the serum and blood reaction proposed by Rivalta, and point out its greater simplicity, greater sensitiveness, and more immediate results as compared with other methods. Calabrese draws attention to the possibility of inducing fatal hepatic abscess by prolonged compression of the hepato-duodenal ligament to avoid haemorrhage. There is an important paper by Facchini dealing with treatment by salvarsan, more especially in relation to diseases of the nervous system; parasyphilitic affections—for example, tabes and general paralysis—do not respond to salvarsan. Bad secondary results after salvarsan were seldom seen, and then chiefly in the vascular system or the liver. Speaking generally, he recommends salvarsan in recent cases, in cases refractory to mercury, and in cases in which antisyphilitic treatment is a matter of urgency. Dagnini draws attention to some interesting points as regards the condition of the frontal muscles in hemiplegia, and illustrates his paper with photographs. Busi contributes a paper on the fundamental facts of medical radiology, which is mainly historical and explanatory. Pazzi writes a long paper on Angelo de Meis and his relations with Murri. These are the more important articles, but there are several shorter papers which will repay perusal. The volume was presented, with all the rites befitting such an occasion, to Professor Murri on March 5th, 1912.

THE INVESTIGATION OF THE BLOOD.

THE first four chapters of Sir ALMROTH WRIGHT'S *Handbook*[3] are devoted to the methods by which glass tubing may be adapted to the various investigations which are described in subsequent chapters. Then follow sections dealing with the methods of obtaining blood, and of preparing blood films for microscopic examination, of the methods of measuring the coagulation time of the blood, its salt contents, its alkalinity, and its antitryptic power, and of ascertaining the salt content of the urine, serum, or any other fluid. A chapter is given to the measurement of the agglutinating, bactericidal, and bacteriolytic power of the blood, another to the measurement of its opsonic power, one to the preparation and administration of vaccines, and another to the application by Wassermann of the Bordet-Gengou deflection of the complement in the diagnosis of syphilis.

From this rehearsal of subjects the reader will gather that the book is a guide to those original procedures for investigation which have been given to us by Sir Almroth Wright and his pupils. The perusal of the more purely technical first six chapters provides the reader with all the instruction necessary for the correct use of the teat and glass tubing; difficulties are thoroughly faced and ingenious contrivances described by which they may be overcome. The illustrations by which the teaching is elucidated are all that can be desired. Any one who has faced the difficulties of preparing a perfect film for opsonic observation will admire the examples given in Plate III, which most realistically portray the stages by which such happy result is obtained.

The pages dealing with the measurement of the opsonic power of the blood will attract the interest of readers for several reasons, the chief being that they contain an attempt to measure mathematically the resisting powers of the body towards infections of all kinds and a study of method intended to serve as a guide to control therapeutic inoculation. We are not prepared to attempt to estimate the value which will ultimately be attached to vaccination carried out with or without reference to opsonic estimation. The book contains a section dealing with the "code of morality which ought to come into application in counting opsonic films." The reader should not pass over this section, for it shows how Sir Almroth Wright faces the difficulties that have been raised.

PHARMACOLOGY.

THERE is no manual of pharmacology which gives in so small a compass and in language so clearly expressed the main facts regarding the physiological action of drugs as the *Manual of Pharmcology* of Professor DIXON.[4] The frequent use of diagrams and tracings, most of them original, greatly assists the reader in following and understanding the text, and emphasizes the author's experience and ability as a teacher of his subject. Without these it would be "hard" reading, as it is necessarily very condensed in order to keep it within the limits requisite in a work primarily intended as a textbook for students. But it can be confidently recommended to the practitioner who wishes a reliable and not too detailed account of the most

[1] *Herzmissbildungen, ein atlas angeborener Herzfehler in Querschnitten mit besondern berücksichtigung des atrio-ventricular-systems.* Von J. O. Mönckeberg, Professor in the University of Giessen. Mit 114 Abbildungen. Jena: Gustav Fischer. 1912. (Sup. roy. 8vo, pp. 7; figs. 5; Tfn. 65. M.30.)

[2] *Scritti Medici in Omaggio a Augusto Murri.* Bologna: Tipografia Gamberini E. Parmeggiani. 1912. (Sup. roy. 8vo, pp. 746.)

[3] *Handbook of the Technique of the Teat and Capillary Glass Tube and its Application in Medicine and Bacteriology.* By Sir A. E. Wright, M.D., F.R.S., Director of the Department for Therapeutic Immunization, St. Mary's Hospital, London. London: Constable and Co., Limited. 1912. (Roy. 8vo, pp. 224; coloured frontispiece, five plates, 70 figs. 10s. 6d. net.)

[4] *A Manual of Pharmacology.* By Walter E. Dixon, M.A., M.D., B.Sc., D.P.H., F.R.S. Third edition. London: Edward Arnold. 1912. (Demy 8vo, pp. 463; figs. 86. 15s. net.)

modern views regarding the actions of drugs. Few important changes have been made in this edition, but the article on ergot has been very largely rewritten, and the recent advances in our knowledge of its chemical constituents are fully noted. Many minor emendations have been made, and the text generally has been carefully brought up to date and revised. Organotherapy, serum treatment, and vaccines are dealt with shortly. Throughout the volume the therapeutical uses of remedies are indicated rather than described in detail.

INSANITY IN INDIA.

Census statistics indicate that lunatics are about six times more numerous in proportion to population in England than in India. To account for this striking disparity would involve a study of heredity and environment—of racial and social conditions for which, as far as India is concerned, reliable data are not available. An exposition of this interesting and important question in sociology is not within the scope of Captain Overbeck-Wright's treatise.[5] His object, as announced in the preface, is "to give the medical practitioner in India a book which may aid him in his dealings with insanity, give him information as to the various legal proceedings in connexion with it, and bring to his notice the latest discoveries as to its causes." The title of the book is somewhat misleading, for it is rather a systematic handbook of psychopathy generally than an account of "mental derangements in India," the references to which are superficial and scrappy. The work makes "no pretence of being anything but a compilation," but as a compilation it is concise, clear, well balanced, and arranged, and gives an exhaustive and useful view of the varieties, symptoms, and management of the various forms of alienation, and a good account of recent researches and doctrines relative to causation and pathology. The old symptomatic classification of insanity is discarded in favour of an etiological, and, following Bruce and others, the toxic origin of many forms is expounded. There can be no doubt regarding the power of poisons and toxins to produce mental disturbances transient and more or less permanent, but in many cases of insanity the existence and influence of bacterial or so-called metabolic toxins is quite hypothetical, depending on inferences from blood counts rather than positive demonstration. We know too little of the physical tracts through which nervous currents co-ordinating conscious, subconscious, and unconscious ideation flow, their arrangements and associations; and until the physical forms and factors in psychology are more clearly demonstrated, the basis of psychopathy must remain obscure and conjectural. Dr. Overbeck-Wright's treatise fulfils ably the objects for which it was compiled, and is well adapted to be a guide and aid in the disposal and treatment of lunatics in India.

NOTES ON BOOKS.

The *Medical Directory for 1913*,[6] the sixty-ninth annual issue, contains 41,587 names, an increase of 534 as compared with 1912. The arrangement of the names in seven sections is continued—London, the Provinces, Wales, Scotland, Ireland, Abroad, and the Naval and Military and Indian Services; there is a separate section for dental practitioners. The increase in the number of names of medical practitioners in the *Directory* is equivalent to 1.3 per cent. The increase is very unevenly distributed, and has been much greater in the section Abroad, where it amounts to 4.7 per cent., than in the others. In the Services the increase is 1.5 per cent., in Ireland 1.2 per cent., in Scotland 1.1 per cent., but in England and Wales only 0.6 per cent. Under the head "Practitioners Resident Abroad" are included the names of all those on the British *Medical Register* who practise outside the United Kingdom—that is to say, it includes the names of all such persons who practise in the dominions and colonies. The useful abstract of the principal laws affecting the medical profession has been revised, but there is only a brief note upon the National Insurance Act, 1911, and it is to be gathered that Mr. Oliver Hodges, barrister, who has revised the abstract, has thought it well not to enter into details at present. Near the end of the volume is a convenient list of houses, hospitals, and private asylums licensed for the reception of lunatics in the United Kingdom.

We have received Part I of the diet charts constructed by Mr. J. C. Taylor for the use of physicians.[7] This part contains charts for use in (1) fevers; (2) convalescence in dyspepsia; (3) the nursing mother; (4) infant feeding; (5) constipation. They are arranged in book form, perforated at the inside edge so that they can be torn out, and are the size of small notepaper. They are clearly printed, and consist of lists under various headings of the articles of food likely to be required, and in some cases lists are given of prohibited articles. It is intended that the user of these diet tables should strike out with a pen those articles of which he disapproves and underline those which he specially recommends. No quantities are given, but there is a space at the bottom of the page in which the prescriber is to state the amount and time of administration, but this only applies to some of the diets; for example, in the case of fever there is only one place given for the quantities, yet the patient might be having not only milk but some kind of farinaceous food, beef-tea, gruel, jelly, wine, or other beverages. The diets contain a great many proprietary articles, some of which are quite unknown to us. There may be good reason for putting in some of these, but the tendency to recommend proprietary foods seems excessive. However, the undesirable or unnecessary articles can be got rid of by a stroke of the pen, but the omission of quite necessary foods is a fault, as it involves writing them in. For example, under No. 2 in the treatment of convalescence in dyspepsia, there is no mention of white bread or of ordinary toast, although some six or seven patent breads are mentioned. Under meats "game" is given without any further qualification: and as this term in common language includes several indigestible meats, it needs expansion. Further, in the same dietary potatoes are allowed, but only "roasted"; figs are allowed, but they are also included in the list of prohibited articles; nor do we understand why "jellies" are forbidden. Similar remarks might be made of the other tables, and we think all of them might be revised with advantage and the question of spaces for marking the quantities taken into consideration.

A somewhat fanciful title has been chosen for *The Gateways of Knowledge*,[8] but the subtitle, "an introduction to the study of the senses," fairly well indicates its contents. These are of a somewhat original order, Mr. J. A. Dell having provided a volume which, used as is intended, might prove an effective means of training young people of school age, and likewise their elders, in the habit of precise observation; simultaneously they would also gain a clear insight into many natural laws and some knowledge of psychological data. The conception of the book is able, and the volume itself worth the attention of those interested in education.

A Catechism of Life,[9] by Alice Mary Buckton, is an excellent little book to help parents and others to initiate children into the mysteries of being, reproduction, birth and death. The problems puzzle young heads, and the book shows, simply yet admirably, how to deal with a child's difficulties.

To the small volume entitled *Herbert Fry's Royal Guide to the London Charities*[10] we have drawn favourable attention on many previous occasions. It is, indeed, one of the oldest of its congeners; the issue for 1913 is the forty-ninth of the series. Like its predecessors, it supplies at a very small cost a comprehensive list of all charities working in or from London, showing when they were founded, their official address, their object, the names of the principal officials, how application should be made by or on behalf of candidates, and the number of persons annually benefited. The arrangement is alphabetic, and there is also an index. As usual there is an introductory chapter, in which Mr. John Lane, the editor of the volume, reviews briefly the philanthropic events of the year.

[5] *Mental Derangements in India: Their Symptoms and Treatment.* By A. W. Overbeck-Wright, M.B., Ch.B., Med. Psych. Cert. D.P.H., Captain, Indian Medical Service. Calcutta and Simla: Thacker, Spink, and Co. 1912. (Cr. 8vo, pp. 386. R. 9.)

[6] London: J. and A. Churchill. (Price 14s.)

[7] *Diet Charts for the Use of Physicians.* By J. Craik Taylor, M.B. Second edition. Part I. London: Suttley and Silverlock, Limited. 1912. (Post 8vo. 1s. net.)

[8] *The Gateways of Knowledge.* By J. A. Dell, M.Sc.(Vict.). Cambridge: The University Press. 1912. (Post 8vo, pp. 185; figs. 51. Price 2s. 6d.)

[9] *A Catechism of Life.* By Alice Mary Buckton. London: Methuen and Co. 1912. (Post 8vo, pp. 60. 1s. net.)

[10] *Herbert Fry's Royal Guide to the London Charities.* Edited by John Lane. London: Chatto and Windus. 1913. (Crown 8vo, pp. 366. Price 1s. 6d.)

MEDICAL AND SURGICAL APPLIANCES.

Spinal Puncture.

DR. GEORGE SCOTT WILLIAMSON (Pathologist, Bristol General Hospital) writes: The difficulties encountered in obtaining a satisfactory sample of cerebro-spinal and other fluids, free from extraneous contamination, are in many cases the result of an unsatisfactory puncture needle. The accompanying sketch illustrates a needle made for me by Messrs. Ferris and Co., Union Street, Bristol. The heavy mount with winged finger guards permits of a ready control of the needle point. The guard in which the stile is mounted obviates bacterial contamination from the hands of the operator. The screw cap and bayonet catch guard allow the instrument to be carried sterilized and ready for immediate use.

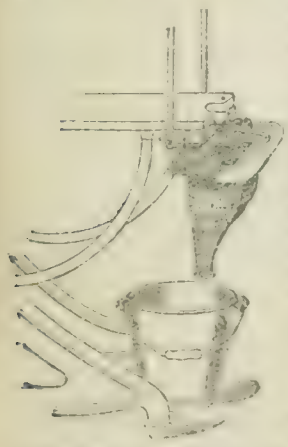


Solution of Iodine in Capsule.

To overcome the difficulty of carrying a solution of iodine in safety for use in accident or emergency operation cases Messrs. Phillip Ferris and Co. of Birmingham, have, at the suggestion of Dr. HENRY W. SPAIGHT (Perthleven, Cornwall), put up a solution of iodine in a glass capsule surrounded by a layer of lint—in the manner nitrite of amyl is carried. When required the glass is crushed between the fingers—if held at the ends the fingers will not be stained—and the iodine-saturated lint brushed over the required part.

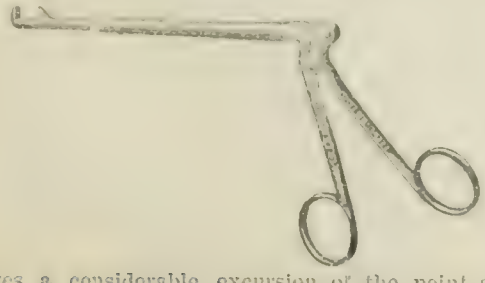
A Receptacle for Use in Vaginal Operations.

D. DOUGAL, M.B., Ch.B. (Resident Surgical Officer, St. Mary's Hospitals, Manchester), writes: The accompanying illustration shows a receptacle designed for use in vaginal operations. It is funnel shaped, the upper opening being large and surrounded by a broad flattened brim. The lower opening, much smaller, is made of sufficient size to prevent its getting blocked by swabs or instruments falling into it. The whole apparatus, which has been supplied to me by Messrs. Mayer and Meltzer, is made of zinc and attached to the operating table in such a way as to allow of its being moved backwards or forwards according to the convenience of the operator. It can be easily removed from the table and, thoroughly sterilized by boiling. During the operation a special sterile sheet is spread over the patient and covers the receptacle below. In it are cut two openings, the upper one giving access to the operation area, the lower lying over the top of the receptacle and allowing any fluids to escape through it. The flattened brim of the receptacle forms a table on which the surgeon can place his instruments, and at the same time the absence of the usual splashing of lotions adds materially to the comfort of all concerned.



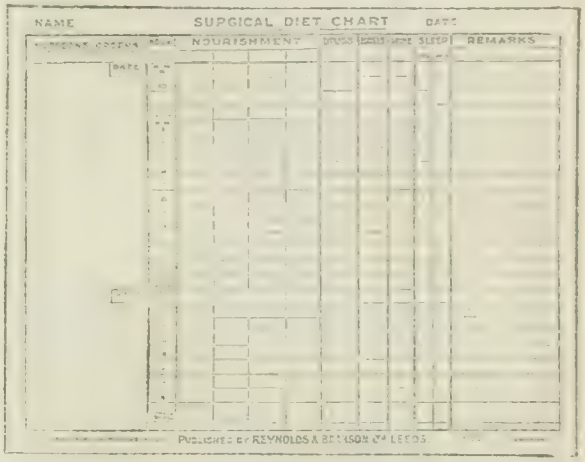
Direct Laryngeal Forceps.

DR. DAN MCKENZIE (London) writes: In the ordinary patterns of laryngeal forceps for the removal of new growths, etc., by the direct method the act of closing involves a considerable excursion of the point and a consequent difficulty in keeping the jaws of the instrument accurately apposed to the tumour. To obviate this movement and so to obtain stability of the point during the act of closing, Messrs. Mayer and Meltzer have devised for my use the forceps with the double elbow-joint shown in the adjoining illustration. Experience has proved the instrument to be very satisfactory.



A Surgical Diet Chart.

The annexed engraving shows in reduced form a chart devised by Mr. HAMILTON WHITEFORD, of Plymouth, for use in conjunction with the combined temperature, pulse, and respiration chart of Mr. Mayo Robson. It is printed on both sides, each recording the events of twenty-four hours, running from 9 a.m. one morning to 9 a.m. the next morning. There are two spaces to the left of the hour column for the insertion of the date, so there can be no doubt as to which of the two nominal days in any period



of twenty-four hours reference is made. The chart provides for hourly records of nourishment administered as well as of drugs given, and the action of the bowels and bladder, and the amount of sleep. Also provided is space for the surgeon's orders and the remarks of the nurse. As bold type is used, and all redundant details have been omitted, the information supplied can easily be discerned in the shaded light of a sick-room. Copies can be obtained from [illegible].

KING EDWARD'S HOSPITAL FUND FOR LONDON.

THE Governors and General Council of King Edward's Hospital Fund for London made their awards for the current year to hospitals, convalescent homes, and consumption sanatoriums at a meeting, over which the Speaker presided, at St. James's Palace on December 18th. For sundry reasons the proceedings were more lengthy than usual.

The HONORARY TREASURER (Lord Rothschild), in presenting his report, said that for the first time it was not of a satisfactory character. The amount received for general purposes amounted, after payment of expenses, to only £117,338 10s. 3d.: this meant a deficit on the year which would have to be met out of the accumulated surpluses of previous years. It was to be hoped that the prosperity of the Fund would not be further impaired by future legislation of a kind which increased the general calls upon the public. Sir HENRY BURDETT also made his annual statement on behalf of the League of Mercy. The year had been one of great anxiety, but the sum which the League would be able to give to the King's Fund would probably equal that of the previous year.

The Distribution Committee.

The report of the Distribution Committee, read by its Chairman, Sir WILLIAM CHURCH, showed that there had again been placed in its hands a sum of £151,000, while the number of hospitals applying for grants was 104 as against 105 last year. Among them was St. George's Hospital, which last year withdrew its application as the result of the decision of the Fund in 1911 regarding the apportionment of laboratory expenses between the hospital and the school. This year the accounts submitted by St. George's Hospital indicated an apportion-

ment on the same system to which objection had previously been raised. No information was offered by the hospital as to why it had not accepted the Fund's decision on that point, but the committee learnt that in regard to the justice of the apportionment evidence deemed satisfactory by the Hospital Sunday Fund had been given to the Lord Mayor. Hence the committee suggested to the hospital that similar evidence should be offered to itself; this evidence was duly tendered, but the statements made required to be checked, and it was impossible to complete this work before the time at which awards to be recommended had to be determined. The committee, therefore, was not in a position to make any recommendation for a grant this year. The report also indicated that any further grants to throat, nose, and ear hospitals had been declined for the time being. The sum set aside towards the amalgamation of the five institutions of this kind would remain at £20,500, pending a satisfactory agreement of a scheme or schemes; one submitted by three of the hospitals was at present under consideration. Except in this case no grants made for special purposes in 1910 remained unapplied. The sum which it was proposed to vote towards the removal of King's College Hospital to South London would raise the total sum contributed by the Fund for this purpose to £48,000.

Awards.

The awards recommended by the Distribution Committee and the Convalescent Homes Committee amounted together to £157,500—namely, ordinary grants to hospitals, £151,000; to consumption sanatoriums, £3,550; to convalescent homes, £2,950. The awards included several grants in aid of schemes for improvement or extension. Both committees prefaced their lists of proposed awards by statements to the effect that the absence of a grant did not necessarily imply dissatisfaction with the institution concerned. The following items cover the principal institutions, large and small, and show the ground on which, when stated, the awards were recommended or withheld.

Alexandra Hospital for Children.—£300.

Beckenham Cottage Hospital.—£25.

Belgrave Hospital. £1,250, of which £500 to reduce building debt.

Blackheath and Charlton Hospital.—£150.

Bolingbroke Hospital.—£1,300.

British Lying-in Hospital.—£500.

Central London Ophthalmic Hospital. £1,500 to rebuilding in accordance with the scheme submitted to the Fund.

Central London Throat and Ear Hospital. Capital grants amounting to £20,500 have been set aside and promised for the purpose of a general amalgamation of the throat, nose, and ear hospitals. See last year's report.

Charing Cross Hospital.—£4,000, of which £1,000 to redemption of mortgage.

Chelsea Hospital for Women. £1,500, of which £1,000 to rebuilding in accordance with the scheme submitted to the Fund.

Cheyne Hospital for Sick and Incurable Children.—£100, in consideration of the fact that some curable cases are admitted.

City of London Hospital for Diseases of the Chest, Victoria Park. £3,500.

City of London Lying-in Hospital.—£1,000, of which £500 to reduce building debt.

Clapham Maternity Hospital.—£200.

Dreadnought Hospital.—£4,500, of which £500 to reduce debt and £500 to renewal of floors.

East End Mothers' Lying-in Home. £200.

East London Hospital for Children. £2,250, of which £500 to reduce debt on recent improvements.

Eltham and Mottingham Cottage Hospital. £100.

Finchley Cottage Hospital. £25.

Florence Nightingale Hospital for Gentlewomen.—£200.

French Hospital. £200.

Friedenheim Hospital. £90.

General Lying-in Hospital. £350.

German Hospital. £200.

Gordon Hospital for Fistula, etc. £25.

Great Northern Central Hospital. £4,000, of which £1,000 to [illegible] debt.

[illegible] *Hospital for Women.* £350.

[illegible] *Hospital.*—£1,500, of which £2,500 to building improvements in accordance with the scheme submitted to the Fund.

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[illegible] *ital.* £50, in [illegible] admitted.

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Hospital for Diseases of the Throat. Capital grants amounting to £20,500 have been set aside and promised for the purpose of a general amalgamation of the throat, nose and ear hospitals. See last year's report.

Hospital for Epilepsy and Paralysis.—£1,500, of which £1,000 to extension in accordance with the scheme submitted to the Fund.

Hospital for Sick Children.—£2,500.

Hospital for Women, Soho Square.—£2,000, of which £1,000 to reduction of mortgage on No. 4, Frith Street.

Hospital of St. John and St. Elizabeth.—£350.

Infants' Hospital.—£25.

Italian Hospital.—£400.

Kensington and Fulham General Hospital.—£25.

Kensington Dispensary and Children's Hospital.—£25.

King Edward Memorial Hospital (Ealing).—£300, of which £275 to extinguish debt on the rebuilding of the hospital.

King's College Hospital.—£7,000, of which £5,000 to removal fund.

Leyton, Walthamstow, and Wanstead Children's and General Hospital.—£300.

London Fever Hospital.—£50.

London Homœopathic Hospital.—£400.

London Hospital.—£12,500, of which £2,500 to reduce debt on recent improvements.

London Lock Hospital.—£4,000, of which £500 to the Harrow Road Hospital and £3,500 to the rebuilding of the Dean Street Hospital in accordance with the scheme submitted to the Fund.

London Temperance Hospital.—£1,500.

London Throat Hospital.—Capital grants amounting to £20,500 have been set aside and promised for the purpose of a general amalgamation of the throat, nose, and ear hospitals. See last year's report.

Maternity Charity and District Nurses' Home, Plaistow.—£1,500.

Medical Mission Hospital, Balaam Street, Plaistow.—£350.

Memorial Hospital, Mildmay Park.—£50.

Metropolitan Hospital.—£3,500.

Middlesex Hospital.—£4,500, of which £500 to recent improvements in accordance with the scheme submitted to the Fund.

Middlesex Hospital Cancer Charity.—£250.

Mildmay Mission Hospital.—£400.

Miller General Hospital for South-East London.—£2,750, of which £2,000 to extension in accordance with the scheme submitted to the Fund.

Mount Vernon Hospital for Consumption (including Sanatorium at Northwood).—£3,000.

National Dental Hospital.—£250.

National Hospital for the Paralysed and Epileptic.—£2,500, of which £500 to reduce debt.

Nelson Hospital (late South Wimbledon, etc.).—£1,000, of which £750 to rebuilding in accordance with the scheme submitted to the Fund.

New Hospital for Women.—£750.

Norwood Cottage Hospital.—£50.

Paddington Green Children's Hospital. £800, of which £200 to the completed reconstruction of out-patient department in accordance with the scheme submitted to the Fund.

Passmore Edwards Acton Cottage Hospital.—£75.

Passmore Edwards East Ham Hospital.—£50.

Passmore Edwards Hospital for Willesden.—£25.

Passmore Edwards Cottage Hospital, Wood Green.—£25.

Poplar Hospital.—£600, of which £200 to improvements in accordance with the scheme submitted to the Fund.

Prince of Wales's General Hospital.—£4,000, of which £1,500 to reduce debt.

Queen Charlotte's Lying-in Hospital.—£1,000, of which £250 to improvements in accordance with the scheme submitted to the Fund.

Queen's Hospital for Children.—£3,250, of which £1,250 to reduce building debt.

Royal Dental Hospital of London. £750, of which £500 to reduce building debt.

Royal Ear Hospital.—Capital grants amounting to £20,500 have been set aside and promised for the purpose of a general amalgamation of the throat, nose, and ear hospitals. See last year's report.

Royal Eye Hospital. £750.

Royal Free Hospital.—£7,000, of which £5,000 to new out-patient department in accordance with the scheme submitted to the Fund.

Royal Hospital for Diseases of the Chest, City Road.—£1,500, of which £250 to reduce debt.

Royal Hospital, Richmond.—£200.

Royal London Ophthalmic Hospital. £2,250.

Royal National Orthopædic Hospital.—£4,000, of which £2,000 to reduce building debt.

Royal Waterloo Hospital for Children and Women. £1,500.

Royal Westminster Ophthalmic Hospital. £100.

St. John's Hospital for Diseases of the Skin. £100.

St. John's Hospital, Lewisham, £350.

St. Luke's House. £50.

St. Mark's Hospital £400.

St. Mary's Hospital. £5,500, of which £1,000 to reconstruction of casualty department in accordance with the scheme submitted to the Fund.

St. Mary's Hospital for Women and Children, Plaistow. £750.

St. Monica's Home Hospital. £75.

St. Peter's Hospital for Stone.—£200.

St. Saviour's Hospital, Osnaburgh Street. £150.

Samaritan Free Hospital. £1,500, of which £500 to new Nurses' Home in accordance with the scheme submitted to the Fund.

Santa Claus Home.—£25.
University College Hospital.—£4,500.
Victoria Hospital for Children.—£1,000.
West End Hospital for Diseases of the Nervous System.—£350.
Western Ophthalmic Hospital.—£350, to reduction of debt on rebuilding of out-patient department.
West Ham and Eastern General Hospital.—£2,500.
West London Hospital.—£4,575, of which £1,075 to reduce debt and £500 to new operating theatre in accordance with the scheme submitted to the Fund.
Westminster Hospital.—£3,000.
Wimbledon Cottage Hospital.—£150, of which £100 to rebuilding in accordance with the scheme submitted to the Fund.

Sanatoriums and Convalescent Homes.

The Convalescent Homes Committee reported that it had again had placed at its disposition £6,500, while applications had been received from 44 convalescent homes as against 43 last year, and from 10 consumption sanatoriums as against 7 last year. In dealing with convalescent homes the committee had adhered to its original policy of giving special consideration to those closely connected with London hospitals. In regard to sanatoriums, the scheme of placing beds in country sanatoriums at the disposal of patients in London hospitals continued to work well. The number of beds offered had increased considerably, but in view of the total sum available and of existing uncertainty as to the effect of the arrangements for sanatorium benefit under the National Insurance Act, the committee did not feel justified in taking up any materially greater number of beds. Last year it had taken 37 beds at 4 sanatoriums; this year the number was 39 at 5 institutions—namely, 2 (for children) at the Maitland Sanatorium, Peppard, Oxon; 7 at Beneuden, 8 at the Kelling Sanatorium, Holt, Norfolk; 10 at the Devon and Cornwall Sanatorium; and 12 at the Northampton Sanatorium. These beds were allocated as follows: 18 to the City of London Hospital for Diseases of the Chest; 9 to the Royal Hospital for Diseases of the Chest, and 6 each to the London and Guy's Hospitals. The awards made to sanatoriums numbered 9, the sums granted ranging from £25 in the case of the Fairlight Sanatorium, Hastings, and £50 in the case of the Children's Sanatorium, Holt, Norfolk, the Daneswood Sanatorium (for Jews), Woburn Sands, and the Eversfield Chest Hospital, St. Leonards, to £700 in the case of the Kelling Sanatorium, Holt, Norfolk, and £1,050 to the Northampton Sanatorium, Creaton, Northants. The awards to convalescent homes numbered 41, but averaged much smaller amounts. They ranged from £25 to £50 in the case of most institutions to £225 in that of the East London Hospital for Children at Bognor, and £400 in the case of the home maintained at Clacton by the Middlesex Hospital.

The Drop in the Receipts.

In moving the adoption of the recommendations as to awards, the CHAIRMAN commented at some length on the diminution in the income of the Fund, but before doing so read a letter from H.M. the King dealing with the same subject. His Majesty expressed his regret at the falling off in the income of the Fund from subscriptions and donations, but was glad that it would nevertheless be found possible to distribute the same amount as in 1911. Every one would regard as a calamity any reduction in the total grants. The present year, continued the speaker, was the first since 1904 that there had been any check in the steady rise in the amount distributed. Its cause lay by no means in any reduction of the needs of the hospitals, but solely in a falling off during the year in the receipts of the Fund. Last year these amounted to £184,000; this year they would be little over £134,000. Only by drawing on the surpluses of past fat years had it been possible to maintain the distribution at £157,000. It was obvious that such a method of making both ends meet could not continue. Legacies had fallen from £48,500 to £11,000, while in donations there was a drop of about £9,000. Annual subscriptions had also declined. If the charitable public realized the demands on the Fund and the influence for good which it exerted amongst the hospitals, annual subscriptions would cease to decline. Apart from a limited number of wealthy subscribers, there must be large classes who could give to hospitals, either directly or through the Fund, but who for some reason or other did not do so. If any one were under the impression that the King's Fund did not need support, that it could go on growing automatically by means of legacies and income from investments, the present year's record would surely dispel the illusion. Income from investments only provided about half the annual distribution, and however skilful the Fund's Finance Committee might be, the investment income could not be maintained if a falling off in other receipts compelled the sale of securities. A steady income from annual subscribers was of urgent importance. The Fund viewed with deepest regret any circumstance which removed from the list of grants, even for a time, any institution which did good work amongst the sick poor and was in need of money for that work. It welcomed, therefore, the fact that St. George's Hospital had been willing to reopen communications with the Fund, and that the latter had had laid before it information as to the hospital's reasons for not accepting the conclusion of the Council on the facts relating to the application of the hospital a year and a half ago. The recommendations of the special committee on the out patient question was the subject of a report from the Executive Committee about to be presented. The principal recommendations of the special committee were based on reforms already in operation to a greater or less extent in many out-patient departments. They involved, therefore, an extension of tried remedies rather than the introduction of new and revolutionary methods. But even such an extension must be a matter of time and of careful adjustment of general principles to particular circumstances. This was especially true at a moment when great changes in connexion with the treatment of a large proportion of the sick poor were imminent. It was a remarkable fact that, despite continual introduction of more expensive drugs and medical treatment and a steady rise in prices, the hospitals had achieved, since the first issue of the Fund's annual statistical report on expenditure, a saving calculated at no less than £37,000 a year.

Out-patient Departments.

The reports of the distribution committees and of the treasurer having been adopted, as also a vote of thanks to His Majesty, Sir WILLIAM COLLINS presented the report of the Executive Committee in regard to the special committee on the out-patient system, and, in moving the adoption of the report, indicated that, despite what had been said by Mr. Lloyd George on the subject and what was contained in circulars issued by the Insurance Commissioners, it was to be feared that the voluntary hospital system would not really remain unaffected by the Act; at all events, it was premature to make any recommendation on the basis of the report of the special committee. Sir William Collins also submitted a report from the Executive Committee regarding its dealings with St. George's Hospital.

Sundry formal motions, including those relating to the constitution of the committees in the year 1913, were then adopted, the proceedings ending in a vote of thanks to the Speaker for presiding.

PROFESSOR GAUCHER, of Paris, has been elected General President of the French Medical Association in the room of Professor Lande.

THE *Journal Officiel* of December 13th announces the foundation of a society for the abolition of compulsory vaccination in France.

A CONGRESS on the protection of infant life will be held at Bordeaux in May next (7th, 8th, and 9th), under the presidency of M. Rousseau Saint-Philippe. Senator Paul Strauss, president of the league for the prevention of infant mortality, will deliver an address on puericulture in France.

A MEDICAL journal in Esperanto, entitled *Kuracisto*, has just come into existence. Among the contributors are medical practitioners of various nationalities—English, German, French, Spanish, Russian, and others. Information will be supplied by Dr. Chybezinski, rue Szopena, 1, Warsaw.

A COMMITTEE has been formed to collect funds for the erection of a monument to the late Professor Lannelongue. It is to be erected in the small town of Castera-Verduzan, an old thermal station of the Gers, near Auch, where the distinguished surgeon had an estate where he passed his holidays. He was very popular and was elected Senator for the Gers department.

THE WORKING OF THE COMPENSATION ACT.

THE volume of statistics of compensation and of proceedings under the Workmen's Act, 1906, and the Employers' Liability Act, 1880, during the year 1911 has just been published. Returns, as usual, have been collected from seven groups of industries—mines, quarries, railways, factories, harbours and docks, constructional works, and shipping.

The number of employers included in these returns was 139,884, and the aggregate number of persons employed was 7 millions, of whom more than 5 millions worked in factories. In the seven industries in 1911 compensation was paid in 4,021 cases of death, and in 419,031 cases of disablement. The average payment in case of death was £154, and in case of disablement £5 16s.

The annual charge for compensation, taking the groups together, averaged 8s. 5d. a person. It was lowest in factories (4s. 6d. a person); in railways it was 7s. 11d.; in quarries, 10s. 9d.; in shipping, 14s. 3d.; in constructional work, 13s. 5d.; in docks, 21s. 9d.; and in mines, 23s. 8d.

In the coal-mining industry the charge arising under the Act is about 1.1d. per ton of coal raised, as compared with 0.9d. in 1909. The total compensation paid under the Act by the seven groups during the year was £3,056,404 as compared with £2,700,325 the previous year. These figures include cases of industrial disease.

Compensation was paid in the seven groups in 33 cases of death from disease and in 5,737 cases of disablement. The bulk of these cases, 87.6 per cent. of the total, occurred in the mining industry and were mainly in respect of nystagmus, "beat" hand,' knee, or elbow; 554 were cases of lead poisoning. The total number of cases under the Workmen's Compensation Act taken into court in England and Wales in 1911 was 8,017; many of these, however, were applications for dealing with compensation already granted; many were settled out of court, so that the total number of original claims finally settled by the courts was only 4,487. In Scotland the figures were 1,825 and 563. In Ireland 1,233 and 717 respectively. Of the 5,767 cases settled judicially in the United Kingdom, the decision was in favour of the applicant in 78.1 per cent. The number of cases under the Employers' Liability Act, 1880, taken into court in the United Kingdom was 604 in 1907; 406 in 1908; 298 in 1909; 217 in 1910, and 223 in 1911, indicating apparently that there is a tendency for the older Act to fall into disuse.

Taking the industries separately, in respect of shipping, compensation was paid in 501 fatal cases to the amount of £79,417, and in 1,109 disablement cases to the amount of £98,861. In 245 fatal cases compensation was paid to persons wholly dependant to the amount of £249 a case, and in 229 cases in which persons were partially dependant of £79 a case. In the disablement cases the compensation paid averaged £12 4s. a case as against £11 6s. in 1910. The average total compensation was 14s. 3d. a head as compared with 12s. 5d. in 1910.

In factories compensation was paid in 999 fatal cases to the amount of £137,479, and in 175,469 disablement cases to the amount of £1,021,999. In disablement cases the compensation paid averaged £5 16s. a case as against £5 18s. in 1910. The average charge during the year was the same as in 1910—namely, £25.

In respect of industrial diseases compensation was paid in 28 fatal cases to the amount of £3,862, and in 671 disablement cases to the amount of £13,889. In disablement cases the compensation averaged £20 a case, as compared with £18 in 1910. Compensation in respect of industrial diseases amounted to £68,041. The charge per head in 1911 was 4s. 6d., as compared with 4s. 3d. in 1910.

In respect of docks, compensation was paid in 196 fatal cases to the amount of £32,955, and in 15,249 disablement cases to the amount of £117,339. In disablement cases the compensation averaged £7 13s. a case, as against £8 in 1910. With regard to mines, compensation was paid in 1,711 fatal cases to the amount of £281,183, and in 178,466 disablement cases to the amount of £905,999. In disablement cases the compensation paid averaged £5 1s. a case as compared with £4 18s. in 1910.

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Accidents.)

In quarries compensation was paid in 83 fatal cases to the amount of £11,177, and in 581 disablement cases to the amount of £38,274. In disablement cases the compensation paid averaged £6 12s. a case as against £6 in 1910. Compensation was paid in respect of industrial disease to the amount of £149. The average charge works out at 10s. 9d. a head as compared with 10s. 3d. in 1910.

In constructional work compensation was paid in 102 fatal cases to the amount of £14,638, and in 6,707 disablement cases to the amount of £52,362. In disablement cases the compensation averaged £7 16s. a head as against £7 17s. in 1910. The charge for compensation works out at 13s. 5d. a head as compared with 12s. 10d. in 1910.

With regard to railways, in respect of the clerical staff, 3 fatal cases and 70 disablement cases, including one case of telegraphist's cramp, were returned. In respect of 72,226 employees a total compensation of £907 was paid. In respect of other railway workers compensation was paid in 393 fatal cases to the amount of £58,045, and in 23,381 disablement cases to the amount of £118,155. The compensation in the disablement cases averaged £5 1s. a case as against £5 4s. in 1910. Compensation was paid in respect of industrial disease to the amount of £1,266. The total compensation paid during the year for railway servants other than clerical staff works out at 9s. 4d. a head, as in 1910, or including the clerical staff 7s. 11d. a head, as compared with 8s. in 1910. With regard to industrial diseases compensation was paid in 35 fatal cases to the amount of £4,703, and in 5,737 disablement cases to the amount of £82,959.

The bulk of the disablement cases occurred in the mining industry, and were due to nystagmus, beat hand and beat knee. The figures for nystagmus and beat knee show large increases. There were 554 cases of lead poisoning, of which 148 were continued from the previous year; 182 new cases and 49 old cases were in the engineering and metal group; 7,101 new cases and 5,601 old cases were in the china and earthenware industry; 130 certificates for disablement from lead poisoning were given by certifying surgeons to workmen in the house-painting industry.

There were no cases of phosphorous poisoning, poisoning by carbide bisulphide, nickel carbonyl, or African boxwood in the seven groups of industries.

The decision in 3,673 arbitration cases was in favour of the employer. The proportion of cases in which the applicant was successful was 82 per cent., as compared with 82 per cent. in 1910, 79 per cent. in 1909, and 82 per cent. in 1908. In the cases under the Act of 1906, in which a weekly payment was awarded, the average compensation for cases of total incapacity was 11s. 11d., and for cases of partial incapacity 9s. 11d.

In cases under the Employers' Liability Act, of the 63 cases in which judgement was given for the plaintiff, 1 only was a fatal case, the award being £40. In the 27 cases of total incapacity the average award was £65, and in 55 cases of partial incapacity the average award was £57. The number of cases carried to the Court of Appeal in England was 141 as compared with 136 in 1910, being about 2.6 per cent. of the cases decided in the county courts. Of the appeals by workmen 13, and of those by employers 31 were successful. There were 12 applicants from the Court of Appeal to the House of Lords, as compared with 9 in 1910, the workman being the appellant in 7 cases.

Under Schedule II (15) there were 387 references to medical referees, as against 343 in 1910. Under Schedule I (15) there were 521 references, as against 496 in 1910. Under Schedule I (18) there were 9 references, as against 4 in 1910. On 976 occasions the medical referee was employed as an assessor under Schedule II (5), as against 659 for 1910.

In the matter of appeals under Section 8 against the decision of the certifying surgeon there were 312 references, as against 152 in 1910, the workman being the appellant 44 times and the employer 267 times, as against 37 and 115 respectively in 1910. The decision was confirmed in 225 cases and upset in 87 cases, as compared with 96 and 55 respectively in 1910. The courts which appear to have had the largest number of arbitrations during the year are Bolton with 386, Liverpool 348, and Bow with 324.

Nova et Vetera.

MEDIAEVAL MEDICINE.

THERE is a type of mind, very common in these days of general "education," which dismisses all the knowledge and achievements of the past as "back numbers." Such people do not stop to think that but for these back numbers we should not now be where we are. They are like the child mounted on its father's shoulders which cries out, triumphantly, "How much taller I am than papa!" Macaulay was certainly no bigoted admirer of old times, but his sketch of the despiser of the past deserves to be quoted: "He may boast of an indisputable superiority to all the greatest men of all past ages. He can read and write: Homer probably did not know a letter. He has been taught that the earth goes round the sun: Archimedes held that the sun went round the earth. He is aware that there is a place called New Holland; Columbus and Gama went to their graves in ignorance of the fact. He has heard of the Georgium Sidus; Newton was ignorant of the existence of such a planet. He is acquainted with the use of gunpowder; Hannibal and Cæsar won their victories with sword and spear. We submit, however, that this is not the way in which men are to be estimated. We submit that a wooden spoon of our day would not be justified in calling Galileo and Napier blockheads because they had never heard of the differential calculus. We submit that Caxton's press in Westminster Abbey, rude as it is, ought to be looked at with quite as much respect as the best constructed machinery that ever, in our time, impressed the clearest type on the finest paper. Sydenham first discovered that the cool regimen succeeded best in cases of small-pox. By this discovery he saved the lives of hundreds of thousands; and we venerate his memory for it, though he never thought of inoculation. Lady Mary Montagu brought inoculation into use: and we respect her for it, though she had never heard of vaccination. Jenner introduced vaccination; we admire him for it, and we shall continue to admire him for it, although some safer and more agreeable preservative should be discovered. It is thus that we ought to judge of the events and the men of other times. They were behind us. It could not be otherwise. But the question with respect to them is not where they were, but which way they were going. Were their faces set in the right or the wrong direction? Were they in the front or in the rear of their generation? Did they exert themselves to help on the great movement of the human race, or to stop it? This is not charity, but simple justice and common sense."

Professor Walsh is one of those broad-minded men who survey the past in a sympathetic spirit, and instead of dismissing our forerunners of the so-called dark ages as unworthy of serious attention, sees how much honest work went to the making of medicine. This is well shown in a work* which deals with the thousand years extending from the fifth century till the dawn of modern medicine, ushered in by the discoveries of Vesalius, Eustachius, and other pioneers. The darkness which hung like a pall over the human mind was due, he contends, not so much to the indifference to worldly things engendered by Christianity as to the ruin of intellectual life caused by the fall of the Roman Empire. The barbarians who destroyed the Empire cared nothing for literature or science, and the Greek tradition would have been lost had not the records been preserved in monasteries. The foundation of hospitals, though not purely Christian in origin, became common in Christian communities.

The medical writers, Aetius, Alexander of Tralles, and Paulus Aegineta were Christians. Dr. Walsh accounts for the comparatively slow development of medicine among Latin Christian nations by the fact that the Christians in Italy got their inspiration at second hand through the Romans, while the Arabs in the early Middle Ages were in direct contact with Greek thought. Some of the great Arabian physicians were Christians. The Prophet's own physician was a Christian. Among others of note may be mentioned Janus Damascenus, whose son became physician to Harun-al-Raschid, and Serapion the elder, who flourished about the middle of the ninth century. During the same century also lived Johannitius (Honein ben Ischak), who translated most of the old Greek medical writers and wrote a compendium of Galen, the famous *Isagoge*, which was the textbook of medicine in the West for many centuries. The Arabs did not discover anything, but they came into contact with Greek culture, and carried on the knowledge that had been gained. Damascus, Bagdad, and other places became centres of education. Large sums were paid for Greek manuscripts and for translations. The writings of the old Greeks which treated of medicine were, according to Freind, saved when the libraries of Alexandria were burnt.

Jewish physicians, as is well known, played a large part in mediaeval medicine. They took a leading part in the foundation of the famous school of Bagdad. At Salerno they enjoyed full liberty of studying and teaching from the earliest days. At Montpellier they had a large share in the foundation of the school, and for centuries helped most effectively in maintaining its fame. The Jews were not persecuted by the Popes, many of whom placed their lives in the care of Hebrew physicians. Some local decrees were issued against them in France, but these enactments were called forth by local circumstances. The reputation gained by Jews at Montpellier led to a number of other Jews taking up the practice of medicine without any qualification but their race. Accordingly at the beginning of the fourteenth century the Paris Faculty, which was always jealous of its rights, forbade Jews from practising on Christian patients within its jurisdiction. The prohibition was rather an attempt to regulate the practice of medicine than a display of intolerance towards Jews. It may also have been a demonstration against its eternal rival Montpellier, which was the favourite school of Jews, whereas Paris had few or none.

Dr. Walsh devotes a particularly interesting chapter to Salerno, the earliest medical school of the Middle Ages. Founded in the ninth century, it reached its highest influence at the end of the twelfth century. There medical education was organized; a preliminary education of three years was insisted on, special study was required for special work, such as surgery, and practical training either under the physician or in a hospital before independent practice. Women's diseases were dealt with by women professors, and some of their textbooks are still extant. But the licence to practise given to women was general, and that the ladies did not restrict themselves to diseases of their own sex is shown by the fact that one of them is credited with the authorship of a book on the nature of the human semen. The Mulieres Salernitanae are frequently quoted by mediaeval writers, though sometimes not altogether respectfully. Here we may be allowed to quote a passage from an article by Dr. Alex Hill entitled, "What is a University?" which appeared in the *Arena* for October. He says: "It is thirty years since I made a pilgrimage to this exquisite spot on the sunny side of the promontory which bounds the Bay of Naples to the south, in the belief that I was visiting not merely the shrine from which all medical knowledge spread through Europe, but the parent of the university movement of the early Middle Ages. I pictured a community of Saracens and Moors, of Jews and Christians united in the cult of knowledge, all barriers of race and of religion broken down. Even the barrier of sex was ignored. Women occupied professorial chairs. That there was a school of Salerno as early as the ninth century is beyond dispute. It is certain that some of its teachers were women: but recent research has proved that it had not in the ninth and tenth centuries the importance attributed to it by its too credulous alumni of the twelfth. Their panegyrics must be relegated to the category of myths. It was not founded by Charlemagne. . . . There must have been a famous university of medicine at Salerno before the close of the eleventh century, and I personally resent the decision of historians who deny it the title of oldest European university on the ground that it was but a school of medicine, whereas Bologna and Paris were respectively schools of law and theology." It is certain that Salerno was considered a university, and so far

* *Old Time Makers of Medicine. The Story of the Students and Teachers of the Sciences Related to Medicine during the Middle Ages.* By James J. Walsh, K.C.St.G., M.D., Ph.D., LL.D., Litt. D., Sc.D. Dean and Professor of Nervous Diseases and of the History of Medicine at Fordham University School of Medicine, etc. New York: Fordham University Press. 1911.

it remains a solitary example of a university wholly concerned with the study of medicine. When years ago it was suggested that the difficulty of medical degrees for the average London student might be got over by the fusion of the two Royal Colleges into a medical university, superior persons scoffed at the idea that there could be a university of one faculty. An acquaintance with the history of university development would have shown them that there had been just such a university in existence for something like eight centuries. It may be recalled that Bologna grew round a single faculty of law, and Paris round one of theology.

It is known as early as 820 there was a hospital at Salerno which was under the control of the Benedictines, and similar institutions came into existence later. Dr. Walsh says it was the presence of these hospitals in a salubrious climate that first attracted the attention of patients and then of physicians. We are inclined to think that it was the other way round, the climate attracting patients and the hospitals being a natural consequence. At any rate, Salerno was famous for its physicians as early as the ninth century, and from the beginning of the tenth doctors were frequently called to foreign courts to attend sovereigns. Patients of the highest rank flocked to the place. Often the wealthy patients were beyond cure and could not go home. This was the opportunity for quacks. Their numbers led to the drawing up of regulations for the education of regular practitioners. In 1140 Roger, King of the two Sicilys, promulgated a law that "whoever from this time forth desires to practise medicine, must present himself before our officials and judges, and be subject to their decision. Any one audacious enough to neglect this shall be punished by imprisonment and confiscation of goods. This decree has for its object the protection of the subjects of our kingdom from the dangers arising from the ignorance of practitioners." A century later Frederick II extended this law, and made it particularly applicable to Salerno. Frederick's law regulates the whole practice of medicine. It is often too lightly said preliminary that the education insisted on by Frederick was of no value. This impression may perhaps be corrected by what Huxley said in his inaugural address at Aberdeen: "I doubt if the curriculum of any modern university shows so clear and generous a comprehension of what is meant by culture as this old trivium and quadrivium does." The reader may be reminded that the trivium and quadrivium embraced logic, rhetoric, grammar, metaphysics, under which was included physics, cosmology, including something of what would now be called biology, psychology and mathematics, astronomy, and music. As for the medical part of the teaching, we have evidence in the writings that have come down to us that the teachers were accurate observers. Surgery was handicapped by the absence of human dissection. This was due to the difficulty of obtaining material. As Longfellow says in the Golden Legend, at Salerno the students had to learn anatomy from—

> Dissections made on the bodies of swine,
> As likest the human form divine.

But that surgery was not neglected is shown by the fact that both sutures and ligatures were used to prevent bleeding. The beginnings of teaching in surgery and in medicine at Salerno were all Greek and not Arab. When Arabian medicine made its influence felt after the twelfth century its effect was unfortunate. The Arabs trusted Nature very little, and were all for active treatment by drugs, like the doctors of a century ago. Before then the Salerno school was noted for its common sense, and its devotion to natural methods. Diet and air and water were freely used, and prevention was regarded as of the greatest [illegible]. With the Arabs came the rule of the apothe[illegible] and diet was thrust into the background. In the [illegible] the glory of Salerno began to wane [illegible] creation of a great university at Naples.

Among the famous surgeons of the Middle Ages were Roger, Roland, and the "Four Masters." Roger probably [illegible] surgery about 1180. According to [illegible] drafted for his lectures on [illegible] It is surprising to find how much [illegible] of the skull and the treatment [illegible] to absolute cleanliness on [illegible] to trephine moves [illegible] exaggeration perhaps, that in the thirteenth century these surgeons had virtually anticipated the nineteenth century principles of aseptic surgery. After them come Hugo di Lucca and his son Theodoric, who used various methods of anaesthesia, using opium and mandragora and later a mixture for inhalation the composition of which is not absolutely known. They laid great stress on union by first intention, and we find them boasting that the scars left after their incisions were often so small as to be scarcely visible. In 1266 Theodoric writes: "For it is not necessary as Roger and Roland have written as many of their disciples teach and as all modern surgeons profess, that pus should be generated in wounds. No error can be greater than this. Such a practice is indeed to hinder nature, to prolong the disease and to prevent the conglutination and consolidation of the wound." He insisted that neither ointment nor poultices nor oil should be used as applications to wounds, and condemned powders as too drying and preventing drainage.

Here we may remark that Dr. Walsh, by selecting the very best of the teachers of surgery in the Middle Ages, and, it may perhaps be added, the best passages in them, probably produces a misleading effect. Granted that Theodoric and a few others treated wounds in a rational manner and used anaesthetics with more or less efficacy, there is little to show that their teaching and practice permeated the profession—if, indeed, it could be called so—as a whole. Brilliant as the teaching of these men was, its effect must have been confined to their immediate pupils and to the very few who in those days could have access to manuscripts. It would be rash, therefore, to conjecture that mediaeval surgery, taken altogether, was on this high level of practice. The invention of printing led to a general diffusion of books, but this alone would still have failed to reach all but the more eager among the students. Things might be done in Italy, which was then the centre of scientific as of other culture, that would hardly be heard of elsewhere. It is true that the modern student may well be put to shame by the eagerness for knowledge displayed by Mondeville, Guy, and many others, who, in days when means of communication were extremely deficient and travel was long and dangerous, visited the reputed shrines of learning to improve themselves, at an enormous waste of time and no doubt also of money. In the thirteenth century we find a surgeon of the Low Countries, Yperman, who was sent by his fellow-townsmen to Paris to study, and afterwards returned, practised at Ypres, and wrote upon his art. There is also John of Arderne, who was educated at Montpellier and practised surgery for a time in France. Still, these were but the few, and the general level of surgery was, until well on in the nineteenth century, very low. As to the hospitals of the Middle Ages, Dr. Walsh quotes the testimony of Mr. Arthur Dillon, a well known New York architect. Writing of the hospital built at Jonnerre in France in 1292, he says: "It was an admirable hospital in every way, and it is doubtful if we could ever surpass it. It was isolated. The ward was separated from the other buildings. It had the advantage we so often lose of being one story high, and more space was given to each patient than we can now afford. The ventilation by the great windows and ventilators in the ceilings was excellent. It was cheerfully lighted, and the arrangement of the gallery shielded the patients from dazzling light and from draughts from the windows, and afforded an easy means of supervision, while the division of the low partitions isolated the sick and obviated the depression that comes from sight of others in pain. It was, moreover, in great contrast to the cheerless white walls of to-day. The vaulted ceiling was very beautiful, the woodwork was richly carved, and the great windows over the altars were filled with coloured glass. Altogether it was one of the best examples of the best period of Gothic architecture."

This hospital was one of many. Virchow pointed out that in the thirteenth and fourteenth centuries every town of 5,000 or more inhabitants had its hospital, founded on the model of the great Santo Spirito in Rome, and all of them did good work. Hospitals were, says Walsh, more numerous in proportion to population than they are in our day, and, as a rule, at least as well organized as ours were until the last few years.

We congratulate Dr. Walsh on the production of a scholarly and most interesting work. If his zeal has sometimes carried him somewhat beyond the record it

must be admitted that he has to a large extent made good his contention that in the Middle Ages surgeons and physicians were neither so foolish nor so superstitious as we in these days of greater light are too apt to consider them.

LITERARY NOTES.

THE famous phrase, *Il est mort guéri*, which has often made the heathen scoff, has been attributed to several distinguished surgeons. The earliest use of it, as far as we have been able to trace, is in an announcement which appeared in some of the Paris papers during the vogue of mesmerism. It was stated that "M. le Comte de Gibelin vient de mourir *guéri par le magnétisme animal*." Gibelin was a man of some note, and was one of the most fervent believers in Mesmer.

The name of Cognac is known throughout the world from its special product. French writers have said that if a native of Oceania knows two words of French, those are "Paris" and "Cognac": if he knows but one, that is "Cognac." Monseigneur Cousseau, a former bishop of Angoulême, used to relate with glee a story which shows the celebrity of the name of the famous brandy. Dining in Rome with certain cardinals, he was asked as to the whereabouts of his diocese. He explained that he was bishop of Angoulême; as this did not much enlighten his hearers, he went on to say that he was bishop of the Charente. This, too, failed to convey any very clear idea to the cardinals. At last he said, "I am bishop of Cognac!" This announcement was received with acclamation, the whole company crying out, "Cognac, Cognac: oh what a superb bishopric!"

The name of Desgenettes, physician in chief to the Grand Armée, is probably known to most readers by the story of his inoculating himself with plague at Jaffa during the Egyptian campaign in order to prevent panic spreading among the soldiers. He was a man of remarkable personality, and his character and career well deserve the study bestowed upon them by M. Gazel in a thesis recently presented to the Paris Faculty of Medicine. Nicolas René Dufriche Desgenettes was born at Alençon in 1762. His father was an advocate in the Paris Parlement, and at the same time King's Procurator at Alençon. After receiving his early education in his native town he proceeded in due course to the College of Sainte Barbe in Paris. On the advice of Buffon he determined to devote himself to science. He studied medicine at the old Faculty and made acquaintance with the leading men of the profession. In 1784 he went to London and visited the hospitals. After working a year at the Charité he spent four years in Italy. He then went to Montpellier, where he took his doctor's degree in 1790. He lived through the Reign of Terror, and in 1793 was appointed medical officer to the French army in Italy. It was at an inn at Fréjus that he first met "the thin haggard-looking gunner with the severe countenance which gave him something of the look of the second Brutus." When Bonaparte became commander of the Army of the Interior, he got Desgenettes appointed his physician-in-chief. The army, however, was soon disbanded, and Desgenettes was appointed professor of medical physics at the Val-de-Grâce military school of medicine. In 1796 Bonaparte made him physician-in-chief to the Army of the East. Desgenettes went to Egypt with the young general, who had gathered around him a brilliant staff and a number of scientific luminaries, among them Monge, Berthollet, and Geoffroy Saint-Hilaire. Desgenettes founded a school of medicine for Egyptians. He was bold enough to refuse to carry out the orders of his imperious chief, who wished him to end the sufferings of the plague-stricken by poisoning them. This was not the only time that Desgenettes showed his independence. After the return of the army to Cairo Bonaparte organized an extraordinary health committee. At the first meeting there arose a discussion on a point of chemistry, and the General, losing his temper, exclaimed, "Chemistry is the kitchen of medicine, and medicine itself the science of assassins!" An awestruck silence followed this outburst, which was broken by Desgenettes asking Bonaparte how he defined the science of conquerors. He proceeded to say that his life, to which he had shown he attributed little importance, could not be further compromised, and he took refuge in the gratitude of the army. Bonaparte was silenced. Nevertheless he seems to have appreciated Desgenettes, who on his return to France was appointed inspector-general of health. After the battle of Wagram Napoleon gave him the title of Baron. Desgenettes followed his chief through the disastrous Russian campaign, and was taken prisoner at Wilna. The Czar, however, set him free. After Leipzig he was again taken prisoner, but remained faithful to Napoleon and was present at the battle of Waterloo. On the return of Louis XVIII he was deprived of his military rank, but retained his position as physician-in-chief to the Val-de-Grâce. In 1832 he was appointed physician to the Invalides. Two years later he had a stroke of apoplexy from which he partially recovered. Between that time and his death, which occurred in 1837, he composed his memoirs, which he did not live to complete. This is to be regretted, as he lived through one of the most eventful periods in human history and saw most of the prominent actors in that great drama at close quarters. He gives a vivid description of his experiences and the men and women whom he met.

Some time ago Professor James J. Walsh contributed to the *New York Medical Journal* an interesting note on the fee book of an Irish physician of the seventeenth century, founded on a paper published nearly fifty years ago in the *Proceedings and Papers of the Kilkenny and South-East of Ireland Archæological Society*. The author of the paper was Maurice Lenihan, author of *A History of Limerick*, and other works dealing with Irish history and archæology. The first entries in the fee book are dated 1619. The physician who made them was Dr. Thomas Arthur, a member of a family which had been prominent in Limerick for nearly five centuries before that time. Owing to the penal laws, Irish Catholics could not study at home; hence many of them at the period in question were educated at Paris, Bordeaux, and Salamanca. Several professors of the universities of Paris and Salamanca during the seventeenth and eighteenth centuries were Irish, and some of them held high offices. In the sixteenth century O'Higgin was one of the physicians to Charles V. A century later we find mention of Quinlan as physician to the Czar. Arthur studied at Bordeaux and afterwards at Paris. He began practice in Ireland when he was about 26 years of age. Although most are commonplace in character, some of the entries in his fee book are interesting. Thus we have the following tale of a late pregnancy:

> Anna Gould in her fiftieth year of age and nineteenth of marriage to a second husband, though sterile, at length conceived and I told her from the evident signs of conception that she was pregnant. Some of my seniors in medicine, however, in whom she had greater faith than in me, treated her with hydragogue drugs and killed her in the eighth month of her pregnancy. At the autopsy which I succeeded in obtaining I took from her uterus a baby girl, dead but perfectly developed and proved my diagnosis. For this I obtained not a little praise.

Another case is quaint. William Greatrikes had suffered for twenty years from hypochondriacal distension of the abdomen by flatus, so that for an hour every day he remained motionless. During the paroxysm he could not speak

> until by the help of Nature diffusing his flatus he uttered innumerable breathings of wind before and behind and at length his abdomen becoming reduced in size he was able to go on with the ordinary duties of life, until another paroxysm on [illegible] at an uncertain hour would come to him. On [illegible] of Donatus O'Bryen, Count of Thomond, I undertook the cure and happily brought it to a successful issue at the end of two years.

This Greatrikes was the grandfather of the famous faith-healer, Valentine Greatrakes, whose supposed divine afflatus may have been a nervous inheritance from his ancestor. At the end of Arthur's first ten months of practice he had received fees to an amount equal in purchasing power to a little over £500 at the present day. His income fluctuated till, in 1627, it was something over £1,000; in 1632 it rose to nearly £2,000. His average for many years was from £1,200 to £1,400 of our money. He was handicapped by his religion, but he had the good fortune to cure "dominus James Ussher, doctor and

pseudoprimate of Armagh," and this largely neutralized the prejudice with which he was regarded by Protestants. As he says:

The grave and obstinate malady which had eluded all the efforts of my distinguished colleagues in England in a man so eminent and conspicuous for his erudition and which now yielded to my efforts made me celebrated and welcome among the English, though before this, because of my Catholicity, I had been thoroughly detested.

The entries in the fee book are in Latin, and Dr. Walsh thinks that the reason of this was to preserve the secrecy of the records. This may have been so, though we think it more likely that Arthur simply used the language in which he had been taught his profession, and which was then the international tongue of learned men. In speaking of professional secrecy, Dr. Walsh says:

It must not be forgotten that a few years ago the highest British court mulcted a distinguished physician in heavy damages amounting to about fifty thousand dollars for a violation of professional secrecy, though only to his wife and with the best of intentions, so as to prevent possible syphilitic contagion during social relations.

We have no wish to reopen the Playfair case, but merely in the interest of historical truth—and Dr. Walsh has written much on history—we would ask him to refer to some contemporary record of the trial. He would find that, apart from the confusion between Lord Playfair and his brother, it would be difficult to compress more inaccuracies into a short sentence than he has done here.

The gluttony of our fathers is doubtless responsible for much of the gout and indigestion from which we suffer at the present day. The aldermen of the City of London were proverbial for their powers of gorging. But all classes who could afford the luxuries of the table systematically ate and drank too much. A picture of the gastronomic state of things in this country in the early days of the past century is given in the *Reminiscences and Recollections of Captain Gronow* (London, MDCCCC). Speaking of dining and cookery in England in his younger days he says:

England can boast of a Spenser, Shakspeare, Milton, and many other illustrious poets, clearly indicating that the national character of Britons is not deficient in imagination; but we have not had one single masculine inventive genius of the kitchen. It is the probable result of our national antipathy to mysterious culinary compounds that none of the bright minds of England have ventured into the region of scientific cookery. Even in the best houses, when I was a young man, the dinners were wonderfully solid, hot, and stimulating. The *menu* of a grand dinner was thus composed: Mulligatawny and turtle soups were the first dishes placed before you; a little lower the eye met with the familiar salmon at one end of the table, and the turbot, surrounded by smelts, at the other. The first course was sure to be followed by a saddle of mutton or a piece of roast beef; and then you could take your oath that fowls, tongue, and ham would as assuredly succeed as darkness after day.

Whilst these never-ending *pièces de résistance* were occupying the table, what were called French dishes were, for custom's sake, added to the solid abundance. The French, or side dishes, consisted of very mild but very abortive attempts at Continental cooking; and I have always observed that they met with the neglect and contempt that they merited. The universally-adored and ever popular boiled potato, produced at the very earliest period of the dinner, was eaten with everything, up to the moment when sweets appeared. Our vegetables, the best in the world, were never honoured by an accompanying sauce, and generally came to the table cold. A prime difficulty to overcome was the placing on your fork, and finally in your mouth, some half-dozen different eatables which occupied your plate at the same time. For example, your plate would contain, say, a slice of turkey, a piece of stuffing, a sausage, pickles, a slice of tongue, cauliflower, and potatoes. According to habit and custom, a judicious and careful selection from this little bazaar of good things was to be made, with an endeavour to place a portion of each in your mouth at the same moment. In fact, it appeared to me that we used to do all our compound cookery between our jaws.

The dessert—generally ordered at Messrs. Grange's, or at Owen's, in Bond Street—if for a dozen people, would cost at least as many pounds. The wines were chiefly port, sherry, and [illegible] Burgundy, being then designated "poor, [illegible]. A perpetual thirst seemed to come over [illegible], as soon as they had tasted their soup; as from that moment everybody was taking wine with everybody else till the close of the dinner; and such wine as produced that class of cordiality which frequently wanders into stupefaction. How all this sort of eating and drinking ended was obvious from the prevalence of gout, and the necessity of every one making the pill-box their constant bedroom companion.

How people lived through such meals is a mystery to us in these degenerate days. Is it surprising that the less heroic digestion of later times has led us into strange paths of dietetic reform?

SCIENCE NOTES.

FREUND AND KAMINER, as well as other investigators, have stated that normal serum has the power of destroying cancer cells, whilst the serum of cancer patients is devoid of this property. In the *Biochemische Zeitschrift* (November 25th, 1912) these two observers, as the result of chemical investigations of normal and cancer serums, claim to have discovered in normal serum a non-nitrogenous fatty acid, soluble in ether, capable of destroying malignant cells, whilst the protective property of cancer serum resides in that portion of the euglobulins (nucleoglobulin) which is soluble in sodium carbonate, and which is distinguished from normal nucleoglobulin by its carbohydrate groups. This substance was also found to give a specific turbidity with saline extract of cancer. They further found that the precipitates given by the addition of carcinoma extract and sarcoma extract to their corresponding serums could be distinguished by the fact that the former were rich in carbohydrates, whilst the latter were rich in substances giving the biuret reaction, the specific precipitates carrying down with them added sugar and peptone respectively. Tumour cells were found to have an analogous selective power, carcinoma cells binding sugar, lecithin, and nuclein, and sarcoma cells binding peptone and nuclein in particular. The conclusions of these observers are very far reaching. The facts that they were arrived at by test tube experiments only, and that very little accidental contamination might easily give the same results will not tend to the unquestioning acceptance of the observations. Further, it is doubtful if normal and cancerous serums do behave differently towards cancer cells. Leitch, in his recent experiments with mouse cancer, found that there was no appreciable difference between normal and cancer serum in the effects produced on tumour material which was subsequently inoculated into two similar series of mice. Cells may easily survive longer in the serum of the animal itself than in the more foreign environment of another animal's serum. Lambert and Haines, in their experiments on the growth of cancer outside the body, found that sarcoma cells grew just as vigorously in plasma from tumour-bearing animals as in normal plasma.

Of the complement deviation reactions that have been tried for the diagnosis of cancer that which seemed to give the most favourable results was the method of v. Dungern,[1] in which he used an alcoholic extract of cancer as antigen. He claimed that there existed a thermolabile antibody in cancer serum. Further experience showed him that the antigens prepared by his original method gradually lost their activity, and, of course, varied according to the tumour substance from which they were produced. He has now obtained a constant antigen by extracting washed human corpuscles with acetone, evaporating the solution at 37° C., and taking up the residue with half the original volume of alcohol. This alcoholic solution is diluted five times before use, and, as before, the serum to be tested is used unheated. A constant volume of fresh guinea-pig serum is used as complement. The results claimed are very good, but it is to be feared that the deviating property of unheated serum, and the errors arising from neglect of standardization of complement are not sufficiently appreciated by v. Dungern.

Izar, a collaborator of Ascoli, who evolved the meiostagmin reaction for the serum diagnosis of cancer,[2] has found that a solution of myristic acid can be used in place of the original alcoholic extract of tumour or of pancreas. It would seem that these antigens, which are all lipoidal in constitution, combine with some protein present in the serum. Hitherto the only evidence of such combination is the diminution of surface tension produced by the union.

[1] BRITISH MEDICAL JOURNAL, May 4th, 1912.
[2] BRITISH MEDICAL JOURNAL, May 11th, 1912.

British Medical Journal.

SATURDAY, DECEMBER 28TH, 1912.

THE DEATH OF NAPOLEON.

IT has always seemed to us that kings and potentates are less fortunate in the circumstances of their death than the majority of their meanest subjects. The last act of life, which most men would desire to be as quiet as possible, has to be played before a public audience. There is something infinitely pathetic in one of the last recorded utterances of the Emperor William I, when his reason was already overclouded by the shadow of death—*Zu viel Menschen!* Too many people! Then there is the multitude of medical counsellors, in which there may be safety for themselves but hardly for the patient. Macaulay says, speaking of the death of Charles II: "The fourteen doctors who deliberated on the King's case contradicted each other and themselves. Some of them thought that his fit was epileptic, and that he should be suffered to have his doze out. The majority pronounced him apoplectic, and tortured him during some hours like an Indian at a stake. Then it was determined to call his complaint a fever, and to administer doses of bark. One physician, however, protested against this course, and assured the Queen that his brethren would kill the King among them."

In the case of other monarchs the dying man has been surrounded by a network of intrigue, and we fear it must be admitted that the end has been precipitated by the jealousies of the doctors. Disputes as to whether an emetic should be administered or a vein should be opened, whether this or that drug should be given, make sorry reading to the student of history. When it was clear to every one about Louis XIV that the end was drawing near, his physician, Fagon, would not listen to Mareschal, doubtless thinking it beneath his dignity to be taught by a mere surgeon. The last echoes of the unseemly squabble that raged around the deathbed of Frederick III have not yet died away. The doctors, of course, are in a difficult position, because, owing to the imperfection of their art, they cannot always control the course of events, and if anything goes wrong they are blamed for the result. Being human each naturally tries to throw the responsibility on his colleagues.

Of all the deaths recorded in history, there is none more tragic in itself and more shameful in its circumstances than that of the first Napoleon. There can be no doubt that for this the blame rests largely, if not wholly, on the British Government of the day. They refused to believe almost to the last moment that he was seriously ill, and the medical attendance they supplied was of the most unsatisfactory kind. It may be admitted that there were special difficulties in the case. In the words of Lord Rosebery,[1] "The policy of Longwood, actively supported by O'Meara, was to declare that there was a deadly liver complaint indigenous to the island, to which Napoleon was a victim, and which could, of course, only be cured by his removal." Napoleon himself sometimes encouraged this belief, but from the fact that he would often put his hand on his stomach and say with a groan, *O mon pylore! mon pylore!* he seems to have known better than either his gaoler or his doctors.

Napoleon, while interested in medicine, had a rooted disbelief in its professors. Even with such men as Corvisart he used to maintain that medical art was futile, and his faith was not likely to be exalted by the doctors whom he had about him at St. Helena. The position of these unhappy men was not altogether enviable, for if not definitely instructed by the British Government to make light of the illustrious sufferer's illness, they knew the official theory, and they knew, too, how any opinion that seemed to contradict it would be received, and the consequences its expression would entail.

A valuable contribution to the subject from the medical point of view has recently been made by Dr. Arnold Chaplin.[2] He points out that, although the doctors—O'Meara, Stockoe, Antommarchi, and Arnott—have left narratives of the periods of the illness during which they were respectively in attendance, no reliance can be placed on these statements, all of which were published after the death of Napoleon. Dr. Chaplin has therefore gone direct to the Lowe Papers in the British Museum. "These volumes," he says, "contain the daily report of the physicians responsible for the treatment of the patient, and in many respects they are completely at variance with the published statements."

There were two conflicting views, inspired purely by political considerations, as to the condition of the Emperor. On the one hand, the British Government declared that he was in good health and was enjoying as far as was compatible with his position the "bracing airs and salubrious climate" of St. Helena. On the other hand, those about Napoleon insisted that the climate was sapping his strength, and that, as a result of residence on the island, he was the prey of chronic hepatitis. It has been urged in defence of the errors of the doctors that at that time the signs and symptoms of gastric cancer—the disease of which he actually died—were little understood. Dr. Chaplin, however, shows from the evidence of well-known textbooks published before 1821 that the main symptoms of the disease were well known in this country, in France, and in Italy. The patient himself had, as we have seen, made a shrewd guess at the nature of his disease. His father had died of cancer, said to be situated in the stomach, at the age of 39, and the Emperor frequently foretold that he would die of the same disease as his father. There was, indeed, a marked history of cancer in his family, as two of his sisters and one of his uncles died of it. Dr. Chaplin says that up to the time of his detention at St. Helena Napoleon had enjoyed the most uniform robust health. This statement is, however, to a certain extent contradicted by the facts which he himself records of attacks of vomiting, followed by a state of lethargy and stupor amounting almost to actual unconsciousness. It was these attacks that gave rise to the frequently repeated statement that he was epileptic.

Then, again, Napoleon had suffered all his life from dysuria, which at the battle of Borodino was so bad that riding caused considerable pain, and he had to

[1] *Napoleon, the Last Phase.* London, 1900, p. 229.

[2] *The Illness and Death of Napoleon Bonaparte* (A Memorandum). By Arnold Chaplin, M.D.Cantab., Fellow of the Royal College of Physicians. With three illustrations. London: Hirschfeld Brothers, Ltd. Glasgow: Alexander Stenhouse. 1913. (Cr. 8vo pp. 112. 2s. 6d.)

be placed under the influence of opium. Further, he was always subject to constipation, a condition which was aggravated by his invincible objection to taking medicine. But there was more than this. We think, indeed, that the decay of his physical powers had a deteriorating effect on his mind. A remarkable change was noticed by those about him on his return from Russia. Already in 1809 he had become stout to a degree that impaired his activity; but in 1812 there was a more notable degeneration. Riding fatigued him, and he who used to tire out several secretaries was subject to fits of drowsiness. When he returned from Elba in March, 1815, it was manifest that he was a very different man from the Napoleon who had left in April, 1814. During his last campaign he could scarcely sit his horse on the battlefield, and more remarkable than his loss of physical activity was the mental apathy which seemed to paralyse the masterful will and clogged the swiftness of his dominating intellect.

Dr. Chaplin divides the records of Napoleon's health at St. Helena into three periods. The first dates from October, 1815, to July, 1818. During that time O'Meara was the doctor. The second extends from July, 1818, to September, 1819. During that time, with the exception of five visits paid by Stockoe, he was not seen by any medical men. The third—from September, 1819, to May 5th, 1821—includes the period of Antommarchi's attendance, during the last thirty-five days of which Arnott was associated with him. As early as October, 1816, O'Meara described Napoleon as being far from well. The Emperor was not an easy patient to treat, for he refused to take medicine and delighted in gibing at physicians, who, he said, killed as many men as generals. O'Meara diagnosed hepatitis, but he is an untrustworthy witness. Probably his strong support of the hepatitis theory brought him into trouble with Lowe; at any rate, he was removed from St. Helena at the end of July, 1818. In January, 1819, Stockoe, a naval surgeon, was called in, and "detected a degree of hardness" in the region of the liver. This, together with his opinion that the patient was really ill, brought him, too, into disgrace with the authorities, and he was ordered to discontinue his attendance. Although Stockoe, like O'Meara, was wrong in his diagnosis of hepatitis, the medical testimony to the fact that the Emperor was seriously ill is incontrovertible. Representations were made to the British Government that a physician chosen by Napoleon's family might be allowed to go to the island. Cardinal Fesch selected a young Corsican, Francesco Antommarchi, an excellent anatomist, with little experience in medicine. He arrived in St. Helena on September 20th, 1819. In his book entitled *The Last Moments of Napoleon*, which was published in 1823, he describes more fully than any other writer the symptoms and progress of the malady. Unfortunately his narrative is unworthy of credit. Napoleon early conceived a dislike for him, and thought him too young and inexperienced. How well founded was this estimate is shown by the fact that Antommarchi insisted on administering an emetic. The unfortunate patient, whose stomach was extensively ulcerated, rolled on the floor in agony. After a moment to give an emetic, Napoleon called [illegible] assassin, and declared that he would [illegible]. So intense was his dislike of the [illegible] physician, that alone of all his [illegible] Antommarchi is not mentioned in the Emperor's will. Towards the end of March things were so serious that Arnott, surgeon of the twentieth [illegible] called in. His contemporary records, [illegible] the Lowe Papers, show that he grossly misunderstood, or at any rate misrepresented the nature of the case. As Dr. Chaplin points out, eight days before Napoleon became moribund Arnott assured the British authorities that the disease was merely hypochondriasis, and that the cure would be tedious owing to the fact that the patient could not be given the thing he most desired—liberty. Arnott's reports can be explained only on the hypothesis that he was incompetent as a doctor, or was blinded by official prejudice, for he appears to have been a thoroughly honest man. A few days after Arnott had said there was no danger the prostration became extreme, the vomiting incessant and coffee-ground in character, and the dejecta tarry in consistence and colour. On May 5th the end came. The *post-mortem* examination was made by Antommarchi on the following day in the presence of the surgeons Shortt, Arnott, Burton, Livingston, Mitchell, Henry, and Rutledge. Three accounts are in existence—the official one drawn up and signed by Shortt, Arnott, Burton, Mitchell, and Livingston; a semi-official one drawn up by Henry in 1823 from notes in his possession, and that of Antommarchi. Dr. Chaplin reprints these reports and gives the chief points from Antommarchi's report. All three agree in assigning the cause of death to gastric cancer affecting the lesser curvature of the stomach, which was ulcerated from the cardiac orifice to within an inch of the pylorus. There was a perforation, which, however, did not communicate with the cavity of the abdomen, as this was prevented by adhesions between the liver and the stomach. The right end of the stomach an inch from the pylorus was surrounded by an annular scirrhous hardening. The orifice itself was perfectly natural. The hepatitis theory receives no support from any of the reports. The only points of disagreement are that Antommarchi states that in the upper lobe of the left lung were scattered tubercles and some small excavations, and that the bronchial and mediastinal glands were in a state of suppuration. The lymphatics of the small omentum were swollen and scirrhous, and some of them suppurating. Finally, there were definite calculi in the bladder, and the coats of that viscus were diseased. There is nothing improbable in these statements. The portraits of the Emperor in his youth suggest that he was the subject of tuberculosis, and it is known that he had bladder trouble nearly all his life.

After a painstaking and critical analysis of all the evidence, Dr. Chaplin comes to the conclusion that the cancer which killed Napoleon was secondary to a chronic ulcer from which he must have suffered for a considerable time. The theory of gastric ulcer preceding the cancer was propounded by Dr. Chaplin in a thesis presented in 1889. Every fair-minded reader must agree with Dr. Chaplin when he says: "The whole history of the illness of Napoleon, together with the manner in which it was regarded and treated, is far from edifying, and brings out in bold relief the passions and prejudices of those days which coloured and obscured the views of the doctors who attended the great patient."

In an appendix Dr. Chaplin makes some remarks on two specimens of small intestine with secondary growths which are exhibited in the museum of the Royal College of Surgeons, and are described in the catalogue, "Incipient fungus in the glands of the intestines, Napoleon: Barry O'Meara to Sir Astley Cooper." These words were taken from the manuscript catalogue which accompanied Cooper's collection. The compilers of the Museum Catalogue express grave doubts as to the genuineness of the

specimens, and point out that O'Meara left St. Helena three years before Napoleon's death, and any unsupported assertion of his carries no weight. Another strong point against the authenticity of the relics is the fact that in the report of the *post-mortem* examination no mention is made of secondary growths anywhere except in the lymphatic glands of the small omentum; and, as Dr. Chaplin points out, secondary deposits in the intestines are extremely rare in cases of cancer of the stomach. The autopsy was carried out under the eye of Sir Thomas Reade, representing Sir Hudson Lowe, and there were strict orders that everything should be replaced before the coffin was closed. The circumstances make it impossible to believe that any part of the remains could have been abstracted.

In conclusion, we feel bound to express our admiration for the thoroughgoing manner in which Dr. Chaplin has worked out the whole case. As his account is from unpublished and absolutely authentic sources, his book is of special value as a contribution to history and also to medical science.

THE DISCOVERY OF ANCIENT MAN IN SUSSEX.

Owing to the exigencies of space in our issue of last week, we were obliged to withhold details relating to the important business of the Geological Society on December 18th, when the fossil human remains recently discovered at Piltdown, Sussex, were described and discussed. So widely do the characters of the skull, and especially of the mandible, depart from those of modern man, that Dr. Smith Woodward, F.R.S., felt it necessary to create a new genus in the family Hominidae to receive the only member so far discovered, which he proposes to name *Eoanthropus dawsonii*, after his—or rather her—discoverer, Mr. Charles Dawson, of Lewes. It is very likely, however, that this find will be spoken of simply as the "Sussex skull"; it will be time enough to create a new genus of mankind when we know more of the other extinct human forms which are certain to be found in coming ages.

The most notable contribution to the meeting was made by Professor Elliot Smith, to whom had been entrusted the examination and description of the brain cast. The mandible, it will be remembered, is essentially of a simian form; the impress left by the digastric muscles, by the mylohyoids, by the muscles of the floor of the mouth, so intimately concerned with articulate speech, are ape-like in form, and presumably the power of speech was absent in the Sussex individual. From the brain cast Professor Elliot Smith was able to recognize that the association areas connected with hearing, and therefore with speech, were very imperfectly developed as compared with modern man. The association areas of the parietal, occipital, and frontal regions were primitive and simple as compared with the corresponding parts in representative modern brains. He regards the brain as the prime mover in every evolutionary departure, and maintains, therefore, that the evolution of any particular area of the brain must precede the bodily adaptation with which it is conected. Cerebral evolution must necessarily be slow; it implies so complex a change. In the hands of the Professor of Anatomy in the University of Manchester the brain casts of fossil skulls are destined to open up quite a new and sure source of information concerning the nature and [illegible] of the more primitive forms of man's ancestors.

As regards the manner in which the reconstruction of the skull had been carried out, there was no adverse criticism; it was agreed that the model made by Mr. Frank Barlow, who worked under the direction of Dr. Smith Woodward, was superior both in accuracy and finish to any of the models of paleolithic man, mostly of Continental workmanship, with which we are now familiar in museums. We hope that at an early date it will be possible to add the model of the Sussex skull to the museum series. The only adverse criticism passed related to the restoration of that part of the mandible which carries the canine and incisor teeth. In the opinions of Sir E. Ray Lankester and of Professor Keith the form and features of the chimpanzee's dentition had been followed too closely.

As was mentioned in our last issue, the chief divergence of opinion related to the antiquity of the Sussex skull. There are two opinions possible: it may belong to the middle of the geological period immediately preceding the present—the Pleistocene, roughly some 200,000 to 400,000 years ago—or to the Pliocene period—giving it an antiquity of more than a million years. The authors of the paper, following a recognized geological precept, chose the more recent date. In or near the stratum which contained the skull were found certain well-worked flints which, from their form and design, are assigned to a period near the middle of the Pleistocene, known as the Chellean age or period, when implements of the type of those now found at Piltdown were made. The Chellean period lies in the interval between the second and third glaciations. The authors of the paper assigned the newly-discovered genus of man to the Chellean age. With this view Professor Boyd Dawkins concurred. On the other hand, Sir E. Ray Lankester regarded the so-called Chellean flints found at Piltdown as not necessarily of the Chellean period, and thought it probable that they were of a much earlier date.

In the same stratum as the skull were found the fossil bones of mammals which became extinct in the Pliocene period—hippopotamus, mastodon, and an early form of elephant—all past inhabitants of Sussex. The skull and these fossil bones were in an equally mineralized condition. Professor Keith regarded the human skull as Pliocene in age—the same age as the fossil mammals. In his opinion the authors had made a much more important discovery than they were conscious of: they had discovered what anthropologists had been looking for in vain these forty years past—namely, Tertiary Man. His reasons for this opinion were: (1) The human mandible found near Heidelberg in 1907 was known for certain to belong to near the beginning of the Pleistocene; it showed distinctly human markings in the region of the chin, whereas the Sussex mandible was as distinctly simian. If the authors were right in assigning the Sussex skull to the middle of the Pleistocene (Chellean age), then it must be supposed that the inhabitants of Germany were comparatively human at the beginning of the Pleistocene; at a much later date those of England were still ape-like. If, on the other hand, the Sussex skull were placed at a Pliocene date, this anomalous position would not exist. (2) The characters shown by the Sussex skull were exactly those which had been postulated for Pliocene man. (3) It was difficult to believe that such a primitive being could fashion the artistically worked Chellean flints; the eoliths found with the skull seemed more likely to represent the extent of

his skill. (4) The primitive form of skull, brain, and mandible were in keeping with the forms of Pliocene mammals with which the Sussex skull was associated. Mr. A. S. Kennard, whose opinion regarding the geology of South England is regarded as authoritative, gave it as his conclusion that the gravel stratum at Piltdown was very probably of Pliocene age. Many interesting and useful additions to the discussion were made by Dr. W. L. H. Duckworth of Cambridge and Professor Waterston of King's College.

THE GREAT DECISION.

The Representative Meeting has given its decision in the sense which, after the result of the voting of the Divisions, could alone have been expected; but the enthusiasm and conviction with which the decision was expressed produced a profound impression on every one present, and this impression will find an echo throughout the country.

The meeting expressed the definite opinion that it is prejudicial to the interests of the profession for practitioners to apply for service under the Insurance Committees and the Regulations now issued. The Association therefore calls upon all practitioners to refrain from placing their names on any panel under Government control or to accept any whole-time office. Local Medical Committees are left free, but it is suggested that they should lay their terms and arrangements before the insured or their representatives and offer to them a list of practitioners willing to attend on terms arranged by the Local Medical Committees with the approval of the Association. These terms must include free choice of doctor by patient and of patient by doctor, a financial arrangement made by the Local Medical Committee on a minimum contract basis of 8s. 6d. a year for each member, inclusive of drugs, or 2s. 6d. a visit, and an income limit arranged locally. These conditions are outside the treatment of tuberculous persons, the arrangements for which, made by the Insurance Commissioners, have been accepted by the Association. Where any local arrangements satisfactory to the majority of the practitioners has been made, it is to be continued if approved by the British Medical Association, the desire being that every practitioner should keep all his old patients who may wish him to attend them. These points are more fully set out in the appeal to the profession issued by the Representative Meeting, and published on the first page of the SUPPLEMENT for this week. That appeal concludes by warning every practitioner not to negotiate terms individually, but only to agree to those approved by the Local Medical Committee. This advice is in accordance with the previous decisions of the Association on the same point. Until now the decision has been in suspense, with the result that many men in the profession have not subscribed to the Guarantee Fund, but now that a unanimous decision has been arrived at, those who have hitherto held back will feel themselves under an obligation to lend their aid to the campaign by providing the sinews of war. Moreover, those who have already given will be encouraged to give more, and so enable the Association to carry on its work.

Before the meeting perhaps the most important matter was that of the relation of the Hospitals to the insurance scheme. In this connexion we are fortunate in having before it the resolutions recently adopted by St. Bartholomew's Hospital with regard to persons presenting themselves there for treatment on and after the day on which medical benefit is to come into force, January 15th, 1913. The resolutions, which were approved by the meeting, are reproduced in the report published in the SUPPLEMENT. All persons applying for treatment at the hospital will be required to state whether they are insured persons or not, and each insured person will be referred to a medical officer of the hospital who will decide whether the ailment for which treatment is asked is urgent or not. Should the ailment be of a nature which can be efficiently treated by a general practitioner of ordinary competence* the applicant will be informed that the requisite treatment must be obtained from a medical practitioner outside the hospital. In this connexion we would call particular attention to the letter from Mr. H. A. Ballance of Norwich, a former chairman of Representative Meetings, who is in hearty agreement with the decision of the meeting to approve the regulations instituted by St. Bartholomew's Hospital. He points out that on and after January 15th it will be incumbent upon any honorary officer of a voluntary hospital to cause inquiries to be made of any person who is within the age limits specified in the Act, and who is under his care at such a hospital, but is not a case of urgent necessity, whether he or she is an insured person, and if such be the case to refuse treatment. He insists that the staffs of voluntary hospitals have now an opportunity of binding the profession together, of influencing public opinion, and of profoundly affecting the present situation in the interests of general practitioners, many of whom have risked so much. The action to be taken by hospital staffs must be definite and immediate, and the resolutions of St. Bartholomew's Hospital give a lead to all the hospitals in the country which can hardly be bettered.

The Council determined to leave to the Divisions and the Representative Meeting the decision for or against working the Act. The decision has now been given in terms so strong and definite that it must command the adhesion of every practitioner.

Though many of the Representatives came up with definite instructions how to vote, others were left to exercise their own judgement after hearing the facts and arguments advanced at the meeting. According to the regulations of the Association, those who were definitely instructed by the Divisions gave their vote in accordance therewith for or against the resolution refusing to give service, but probably most of those who were given a free hand were so influenced by the arguments that their votes went to swell the majority to the overwhelming number of 182 to 21. The Representatives left the meeting full of enthusiasm and determination, and will return to inspire a like enthusiasm and determination in the Divisions they represent. The result cannot fail to be a united effort, which will result in enabling the profession to carry out its true mission of bringing to the discharge of its daily duties throughout the length and breadth of the land the best skill actuated by the highest ideals of service in the cause of suffering and the welfare of the community. The Government must understand that the only way in which the Act can be worked is through a frank recognition of the reasonable demands of the Association, which, it has again been proved, speaks in the name and expresses the wishes of the profession at large.

* See the memorandum by the Chancellor of the Exchequer (SUPPLEMENT, December 7th, p. 622), and the Regulations and proposed provisional agreement (ibid.).

PENALTIES OF SPEED.

IT is strange to us in these days of rapid locomotion to read that when the first railway was opened in Germany the medical faculty of Munich condemned the innovation as follows: "Conveyance by means of carriages propelled by steam ought to be prohibited in the interest of public health. For the rapid motion cannot fail to create a disease of the brain among the passengers which may be classed as a species of *delirium furiosum*. Even if travellers are prepared to run the risk, the onlookers ought by all means to be protected. The mere sight of a passing train suffices to cause the same cerebral disorder. Wherefore the authorities should insist on having a palisading of thick boards at least five feet high placed on each side of the permanent way." It is recorded on the authority of no less a person than Mr. Gladstone that as late as 1864 Pius IX declared that he would never permit railways in the Papal States, as he believed they would injure the health of his subjects. The Pope added that he was "sure the English people were subject to consumption from passing through the air so rapidly in railways." About the same time a medical writer in the *Cornhill Magazine* painted an alarming picture of the hideous fate that overtook persons rash enough to travel frequently between London and Brighton. Even in the early nineties, in a case of which we have personal knowledge, a man who proposed to live at Eastbourne and come up to London daily was threatened by eminent members of the profession with nearly all the nervous diseases then known. It is curious to look back on those quiet times and compare them with the present day, when every street is thronged with motors and cycles. Now it is the drivers and riders, not the onlookers, who are liable to be affected with *delirium furiosum*. And it is not only in the crowded streets of cities that this danger is ever threatening, but on country roads where one cannot take a walk without having to seek refuge in the ditch every few minutes from a passing motor. Motorists are very fond of proclaiming the health-giving properties of their engines, and many of them seem to take little thought for the unfortunate people who have to go on foot, to say nothing of children wandering across the road in happy ignorance of danger; nor do they heed the massacre of dogs and fowls that takes place as the motor whirls along. If aviation develops, a new horror will be added to the life of the ordinary citizen, whose house may be wrecked or himself crushed at any time by the falling of an aëroplane. With the earth covered with motors and the air full of aeroplanes, we shall have to take refuge on the sea, where we shall perhaps come in time to feel like the sailor in Dibdin's song—how much safer the ocean is than the land. But we have to accept the fact that the motor has come to stay—at any rate till something swifter is invented. Such as it is, it is responsible for a large increase in accidents to wayfarers both in streets and in country roads. Discounting a certain proportion of these as due to loss of presence of mind on the part of the victims, there remains a heavy butcher's bill for which the drivers of motors are responsible. The fact is that while on the one hand many drivers have not yet learnt to estimate the precise speed at which they can safely run under varying conditions, on the other middle-aged and elderly people, who might say with Falstaff that they have not in their poor and old motion the expedition of thought, have not been able to adjust themselves to the new conditions of locomotion. The "road hog" is, we think, becoming extinct, though he is still too much with us. Motor maniacs must be dealt with by appropriate legislation. The younger generation will doubtless learn to gauge the speed of a motor as accurately as one used to judge that of a hansom cab or an omnibus. It is simply a case of adaptation to environment. In the meantime, there is room for considerable improvement in the regulation of the traffic in the streets.

PRIZES OF FRENCH ACADEMIES.

THE Académie de Médecine has recently made its annual award of prizes for 1912. The following are the most important: The François-Joseph Audiffred prize (a bond of the value of £960 at 3 per cent.) for the discovery of "a remedy, curative or preventive, recognized by the Academy as sovereign and efficacious against tuberculosis," was not awarded; but sums of £20 each were given by way of encouragement to Drs. J. Castaigne and F. X. Gouraud of Paris; Dr. R. Olivier of Lyons, and Dr. L. Rénon of Paris, and Dr. Revillet of Cannes, for essays on the treatment of tuberculosis. The Prix Herpin (de Genève) of the value of £320, for the best work on epilepsy and nervous diseases, was won by Dr. Guy Laroche, of Paris, for his monograph on the fixation of poisons in the nervous system. The Barbier prize (£80), offered for the discovery of methods of complete cure for disease regarded at present as incurable, such as hydrophobia, cancer, epilepsy, cholera, etc., was divided, £40 being awarded to M. Pécus, of the military veterinary service, for his study of the comparative pathology on gastropathic aërophagy in man and in the horse; £20 to the late Dr. C. Fleig, of Montpellier, for his researches in experimental medicine and therapeutics; and £20 to Drs. Leopold Lévi and Henri de Rothschild, for a monograph on the curative treatment of thyroidic migraine. The Chevillon prize (£60), for the best essay on the treatment of cancer, was awarded to Dr. Bonnet, of Lyons, for his researches on melanosis and melanotic tumours. The Marie Chevalier prize (£240), for the best work published by a French author during the preceding three years on the origin and development of treatment of pulmonary phthisis or other forms of tuberculosis, was awarded to M. Chaussé, veterinary inspector at Versailles, for his work on the etiology of tuberculosis in animals. The Campbell-Dubierris prize (£92), for the best work on anaesthetics or diseases of the urinary passages, was bestowed on Drs. Rafin and Arcelin, of Lyons, for a monograph on renal and ureteral calculi. The Itard prize (£96), for the best book on practical medicine or applied therapeutics published at least two years before, so that it should have stood the test of time, was awarded to Drs. Courtois-Suffit and F. Trémollières, of Paris, for their treatise *La Pratique Thérapeutique*. The Clotilde Liard prize (£144) was awarded to Dr. Louis Martin, of Paris, for his researches on diphtheria. The Meynot prize (£104), for the best work on diseases of the ear, was bestowed on Dr. Louis Girard, of Paris, for his atlas of the surgical anatomy of the labyrinth. The Orfila prize (£80) was awarded to Dr. Alexander Besredka, of Paris, for his researches on the toxicity of blood serums, its causes and the means of remedying it in view of their therapeutic use. The Potain prize (£96), for the best work on clinical medicine during the preceding three years, was bestowed on Dr. H. Vaquez, of Paris, for his work on arrhythmia. The Saintour prize (£176), for the best work, manuscript or printed, on any branch of medicine, was awarded to Professors L. Testut, of Lyons, and O. Jacob, of Val-de-Grâce School, for their treatise on topographical anatomy and its applications to medicine and surgery. The Laborie prize (£200), for the work that most notably contributed to the progress of surgery, was won by Dr. A. Schwartz, of Paris, for his essay on the surgery of the thorax. The Académie des Sciences has divided the Montyon prize in medicine and surgery, £100 each being awarded to Dr. V. Pachon, of Bordeaux, for his researches on the measurement of arterial pressure in man; Dr. C. Nicolle, of Tunis, for his observations on typhus fever; and Dr. O. Josué, of Paris, for his work on arterio-sclerosis. Sums of £60 each were given to M. Carré, of Alfort, for his researches on certain affections of the sheep dependent on the microbe of caseous suppuration; to Drs. C. Mathis and M. Léger, of the colonial military service, for their researches on

human and animal parasitology in Tonquin; and to Dr. E. Ginestous, of Bordeaux, for his monograph on ophthalmo-chromo-diagnosis; ocular phototherapy. The Bréant prize was divided, £100 each being awarded to Dr. Carlos Finlay, of Havana, for his researches on the part played by mosquitos in the spread of yellow fever; and Dr. A. Agramonte, Professor in the Medical Faculty of Havana, for his work on the same subject. The La Caze prize (£400) was awarded to Professor E. Wertheimer, of Lille, for his physiological work in general. The Martin-Damourette prize (£56) was bestowed on Professor Maurice Arthus, of Lausanne, for his researches on antivenomous serums.

THE BISHOP'S LICENCE.

In the Journal of December 21st we published a note on licences to practise medicine granted by bishops. This power was formally granted by the statute of Henry VIII passed in 1511, and entitled, "An Act for the appointing of Physicians and Surgeons." That Act begins by setting forth the chaotic state of medical practice at that time. It is therein stated that: "Forasmuch as the science and cunning of physic and surgery (to the perfect knowledge whereof be requisite both great learning and ripe experience) is daily within this realm exercised by a great multitude of ignorant persons, of whom the greater part have no manner of insight in the same, nor in any other kind of learning; (2) some also can no letters on the book, so far forth, that common artificers as smiths, weavers, and women boldly and accustomably take upon them great cures, and things of great difficulty, in which they partly use sorcery and witchcraft, partly apply such medicines unto the disease as be very noious, and nothing meet therefore, to the high displeasure of God, great infamy to the faculty, and the grievous hurt, damage, and destruction of many of the king's liege people, most especially of them that cannot discern the uncunning from the cunning: (3) be it therefore (to the surety and comfort of all present parliament enacted, That no person within the city of London, nor within seven miles take upon to exercise and occupy as a physician or surgeon, *except he be first examined, approved, and admitted by the bishop of London, or by the dean of St. Paul's* for the time being, calling to him or them four doctors of physic, and for surgery other expert persons in that faculty, and for the first examination such as they shall think convenient, and afterward alway four of them that have been so approved." The penalties for breach of the law are then specified. It is next further enacted "that no person out of the said city, and precinct of seven miles of the same, except he have been (as is aforesaid) approved in the same, take upon him to exercise and occupy as a physician or surgeon, *in any diocese within this realm but if he be first examined and approved by the bishop of the same diocese, or, he being out of the diocese, by his vicar general*: either of them calling to them such expert persons in the said faculties, as their discretion shall think convenient, and giving their letters testimonials under their seal to him that they shall so approve, upon like paid to them that occupy contrary to this act (as is above said) to be levied and employed after the form before expressed." Lastly, it is stated that the Act is subject to the provision that nothing in it shall be "prejudicial to the Universities of Oxford or Cambridge or either of them, or to any privileges granted to them." A memorandum is appended to the effect that surgeons are [illegible] in the Act "like as physicians, for like nuisance of ignorant persons presuming to exercise surgery." The power of the bishops to grant licences to practise medicine doubtless originated in the claim of the Church, [illegible] embodied in the Pope, to control all [illegible] education. The conferment of the [illegible] University of Paris was a solemn ceremony, [illegible] rites, and the words in which it was conveyed by the Chancellor to the candidates are significant. Blessing them as they knelt before him, he said: "Auctoritate Sanctae Sedis qua fungor in hac parte do tibi licentiam legendi, interpretandi et faciendi medicinam hic et ubique terrarum, in nomine Patris et Filii et Spiritus Sancti." The words "everywhere throughout the world" were no mere rhetorical flourish but the assertion of a right to which the Saluberrima Facultas obstinately clung. In France apothecaries who went beyond their function of compounding medicines could be cited before episcopal tribunals. Barbers who treated fractures and wounds had to send reports to the bishop of the diocese. A bishop's licence was even required for the itinerant surgeons who travelled about the country. It should be noted that the Act of 1511 is distinct from that passed twenty years later whereby the Archbishop of Canterbury was empowered to grant degrees as well as in other faculties. The Lambeth M.D. was abolished by the Medical Act of 1858.

A QUACK CIRCULAR.

There is a whole literature of quackery, the quality of which varies from the plausible appeal to the credulity of the so-called educated classes—and there is probably none so gullible—to the very rinsings of the human brain. The advertising quack knows how to adapt the printed matter he scatters about to the class of people whom he wishes to catch. Of course, quacks being after all human, sometimes make mistakes. A medical officer of high rank in the Colonial Service has sent us a particularly choice specimen which was addressed to him, and which he says is being distributed broadcast. It bears the name of "Jared W. Smith," of Los Angeles, Cal., and Sound View Ct. "Jared" is evidently a philanthropist, for he announces to all whom it may concern, "I will not make a cent by this, but will be at a loss, so please give it a chance" (*sic*). Surely altruism could no further go. Strangely enough, however, we are not told what "it" is, but it is evidently a remedy before which *orriëtan* and the most famous nostrums must hide their diminished heads. In these days of scientific pharmacy one would like to know more of a substance that is "a very simple and sure cure" for scrofula, and that "will also eradicate venereal and rheumatism of some kinds, at least, from the system." The author's caution is justified by the fact that his personal knowledge seems to be limited to one case "where four years' use nearly removed things physicians affirmed would be carried to the grave." Notwithstanding this apparent scantiness of clinical observation the mode in which the remedy works must be interesting to the student of experimental therapeutics. The scrofula nodes were "nearly all removed by the simple process of throwing the urine into the bowels"! This, it is said, creates prejudice, "on the ground of uncleanliness." That, however, we are assured is "a mistake," for the remarkable reason that "there is no more connexion between the bowels and the kidney than between the bowels and the lymphatic glands, which secrete milk, and one is just as cleanly as the other." This would seem to mean that urine is just as cleanly a product as milk, and that the latter is secreted by the lymphatic glands. After this we are not surprised to learn that this wonderful remedy will "cure any form of zamotic (*sic*) or bacteria disease that lodges with the human body from the bacteria senile (*sic*), the one that produces old age, to the sleeping (*sic*) disease of Africa." There is, in fact, "no bacterial disease it will not cure or help, as all toxine serum is thrown back to do its work upon the germs that produced it." One can understand that a remedy which works such wonders and in so extraordinary a fashion is "the fountain of youth." Instead of being "at a loss," the discoverer of this panacea deserves the honour Mr. Montague Tigg desiderated for his friend Chevy Slyme, of a tripod on which he could stand and proclaim the virtues of "It" at the public expense.

FRÈRE CÔME.

The name of Frère Jacques is familiar to surgeons in connexion with lithotomy. That of Frère Côme is less known nowadays, but it deserves remembrance. Frère Jacques was a mere empiric, whereas Frère Côme, who doubtless took his name from Saint Cosmas (Côme), patron of surgeons, had received a regular professional training. He was a very successful lithotomist of the eighteenth century. In a recently published book the Abbé Chevrau, who is also a member of the medical profession, gives an account of him. Jeannet Baseilhac, who took the name of Jean de St. Côme when he became a monk, was of surgical stock: he was the son, grandson, nephew, brother, and cousin of surgeons, and his childhood was spent in a medical environment. In 1722, at the age of 19, he left his little native town, Pouyastruc, to pursue his studies at Lyons, where he was received by his cousin Louis, a member of the staff of the Hôtel-Dieu. Two years later he proceeded to Paris, where he worked under Duverney, Petit, La Peyronie, Morand, Mareschal, and Levret, attending also the scientific lectures of Winslow, de Jussieu, and Réaumur. The surgeons at that time were beginning to throw off the yoke of the Faculty of Medicine, but Baseilhac took no part in the struggle. It would seem as if the quarrels between the surgeons and the physicians interfered with his studies, and this is probably the reason why he did not seek to be admitted a Master. He had been brought up in the old traditions of barber-surgery, and when he accepted the position of surgeon to the Bishop of Bayeux, Francois Armand de Lorraine, he did not disdain the care of the prelate's wig while ministering to the infirmities of the episcopal household. How the bishop appreciated his skill is shown by the fact that he founded a hospital of which Baseilhac was placed in full charge. On the death of the bishop he entered the Order of the Feuillants. He acted as infirmarian to the community. At that time stone in the bladder was very common, and Frère Côme, as he was then called, gave special attention to the disease. He studied it experimentally by operations on animals and on dead bodies. He revived the high operation, and invented the *lithotome caché*. To this instrument there were rival claimants in Le Cat of Rouen and Antoine Louis. An epigram of the day in reference to this controversy has not, perhaps, altogether ceased to be applicable to others of a similar kind at the present day:

> Sur la beauté d'un lithotome
> Trois fameux suppôts de Saint-Come,
> Sont aux prises depuis vingt mois!
> Le mien vaut mieux: le mien de même;
> Le mien aussi, dit le troisième!
> D'accord, ils valent *mieux* tous les trois!

Frère Côme had a great vogue as an operator. When in 1753 the Chevalier de Nesmond, Grand Equerry of the King of France, after trying all the so-called "lithontriptics" known at that day, including the famous nostrum of Mrs. Stephens for the revelation of which the House of Commons voted £5,000, made up his mind to submit to cutting, he put aside La Martinière, first surgeon to the King, and other leading men, and chose Frère Côme. There was a great outcry, and even a formal complaint to the Lieutenant-General of Police, but the operation was done so successfully that the Chevalier appeared again at court within a fortnight. Said the King to La Martinière: "You told me that he would not recover," to which the surgeon replied that there was no method so bad but that the result might be favoured by chance a remark, by the way, true enough in itself, though in this particular instance possibly inspired by jealousy. The King retorted: "Well, if I had stone, nobody but Frère Come should cut me." La Martinière had to digest this royal utterance as best he could. After the Chevalier de Nesmond came the Duc de Béthune, the Marquis de Clevans, and many others of rank and fashion. Frère Côme succeeded in sounding Jean Jacques Rousseau, a thing in which even Morand had failed. The monk told the author of *Emile* that there was no stone in his bladder, but that he had an enlarged prostate, and that there was no reason why he should not live to a good old age. The neurotic Rousseau was comforted by this assurance, and, as he says himself, ceased to believe that the end of a bougie broken off in the urethra a long time before had formed the nucleus of a stone, and consequently was much better afterwards than his imaginary fears had allowed him to be. In 1774 Frère Côme operated successfully on Christophe de Beaumont, Archbishop of Paris. The monk never lost the simplicity of his ways or his modesty, and continued his work of healing to the age of 78, when, with a hand as steady as ever, he performed his last operation. A month later he passed away deeply regretted, particularly by the poor, to whom he had always been helpful. "Three times the gate of the monastery was forced by the crowd of people coming to weep over his coffin."

HEALERS WHO DID NOT HEAL.

We take the following edifying story from the *Journal of the American Medical Association* of November 23rd, 1912. Our contemporary quotes from a monthly publication entitled *Medical Freedom*, published by the (American) National League for Medical Freedom. In the October issue of that periodical an article from the New York *Telegraph* is cited, in which there occurs the following passage: "In view of the restoration to health of Miss Mabel Hite, the actress, it seems to be proper to point out to physicians that if they wish to wage successful war on Christian Science healers, they should accomplish what those earnest men and women do. Miss Hite is a popular actress known all over the country, and the theatre-going public was shocked several months ago when it was announced on the authority of physicians that her days were numbered—she is only 26 years old. She was under the care of doctors. They used their knives on her body and dosed her with their drugs. 'Affliction sore long time she bore: physicians were in vain.' They told the public that she would die; and her manager called up the *Morning Telegraph* office and announced that the doctors had given her up. It was published broadcast. Then Miss Hite herself was told that she could not live, and at the suggestion of her mother she turned to Christian Science. Soon she was able to leave her bed; her weight increased; she went out for rides, and last Saturday attended a base-ball game. She is on the road to recovery. Now the doctors were mistaken when they announced that she was dying, and Christian Science cured her. The public will believe with Miss Hite that the healers of Mrs. Eddy's church have made her well. They robbed death of its terrors, got her in a calm frame of mind, set their wills and hers to work, and the young woman began to get well. All this leads us to say that physicians who make mistakes in a matter of life and death should go slow in their criticism and their warfare on healers who really heal." The ink with which this extraordinary statement was printed could scarcely have been dry when the newspapers reported that Miss Mable Hite died of cancer on October 22nd, 1912. The article speaks for itself, and poor Miss Hite will not have died in vain if this tragedy makes Christian Scientists abate their preposterous pretensions. But it is not their way to acknowledge failure, and perhaps it will be said, as we believe fervent disciples assert of Mrs. Eddy, that Miss Hite is not really dead.

LADY MINTO'S INDIAN NURSING ASSOCIATION.

The home branch of this excellent institution for the supply of nurses to attend on Europeans employed in India has issued a report for the year ending September 30th, 1912, in anticipation of the general report published

in India in January, 1913. The association was originally organized in the year 1892, under the name of the Up-Country Nursing Association for Europeans in India. In 1905 its scope was enlarged and support increased by the good offices of Lady Minto, and now homes for trained nurses have been established in seven provinces of India and Burma. The principal function of the home branch is to select nurses and arrange for their dispatch to India. Since the reorganization of the association 52 nurses have been sent out. The selection is made with great care under rules well adapted to secure efficiency. A praiseworthy feature of the present report is the mention of arrangements for a short course of instruction for nurses whose term of engagement has expired pending re-engagement. The income of the branch amounted to £419 5s., the largest on record, but additional funds are wanted to carry on the good work.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

THE thirtieth expedition started for Jamaica on December 16th, under Dr. Harold Seidelin, of the yellow fever bureau of the school. The main object of the expedition is to investigate the disease called vomiting sickness, which is often fatal to children. Opportunity will be taken to investigate other diseases of obscure origin in man, also in cattle and other animals. The expedition has been promised the cordial support of His Majesty's Government, and also of the Government of Jamaica.

THE University of Durham has conferred the honorary degree of D.C.L. upon Sir William Osler, Bart., F.R.S., Regius Professor of Medicine in the University of Oxford.

Medical Notes in Parliament.

Treatment of Uninsured Tuberculous Persons. In reply to Sir J. D. Rees, on December 17th, Mr. Masterman said that no need for resort to the rates would arise unless the sanatorium benefits of the Insurance Act were extended to persons who were not contributors under the Act; and no money need be paid from the rates for the treatment of tuberculosis except by the wishes of the representatives of the ratepayers, and then only if the Treasury paid half the cost of such treatment. Sir J. D. Rees inquired what the ratepayers could do except levy a rate if proper accommodation were not provided by other means. Mr. Masterman said that the ratepayers do nothing with respect of levying rates unless they wanted to levy rates to treat uninsured persons. Tuberculosis treatment for uninsured persons was not provided under the National Insurance Act; but if the ratepayers chose to take over what he believed was their duty, the treatment for tuberculosis of uninsured persons, the Treasury would then pay half the cost.

Open-Air Treatment of Phthisis. Sir Hildred Carlile asked the President of the Local Government Board, on December 18th, whether any statistics were available showing the effect of the open-air treatment for consumption at any public institution intended for that purpose for the last five years, particularly with regard to the present condition of patients who were inmates of such institutions four or five years ago; and, if so, whether he would lay them upon the table of the House. Mr. Burns, in reply, said that numerous records had been published as regards various institutions, and many results were given in the report of the late Dr. Bulstrode, one of the medical inspectors of the Local Government Board, which was issued in 1908 and presented to Parliament (Cd. 3657). The various records had not been kept on a uniform basis, and he did not think that any useful purpose would be served by an attempt to tabulate them. In approving [illegible] Insurance Act, 1911, the [illegible] records should be kept as to [illegible] with the Insurance Commissioners, might require.

Compensation for Tuberculous Cattle.—Mr. Field asked the President of the Local Government Board, on December 17th, whether the proposed payment by the Treasury of compensation to owners of tuberculous stock slaughtered in the interest of the country would also apply to wholesale and retail meat traders who, buying animals in good faith, subsequently discovered after slaughter that they were diseased and voluntarily surrendered them. Mr. Burns replied that the proposed payment would be made only in respect of compensation payable by a local authority in cases in which animals were compulsorily slaughtered in pursuance of an Order to be made by the Board of Agriculture and Fisheries under the Diseases of Animals Acts. On the same day Mr. T. W. Russell informed Mr. Guiney that the Department of Agriculture in Ireland would take the necessary steps to ensure that the legislative provisions now introduced for payment for slaughter of tuberculous cattle in Great Britain would be extended to Ireland. He also stated that the Department understood that as a measure complementary to the Milk and Dairies Bill for England recently introduced in Parliament, the Board of Agriculture and Fisheries proposed to issue an Order under the Diseases of Animals Act, 1894, dealing with tuberculous cows and providing for the payment of compensation in cases of slaughter by the local authority; and that the Treasury were prepared, subject to the assent of Parliament, to sanction the payment from the Exchequer of one-half of the net amount paid by way of compensation for a period of five years. If the local authorities under the Diseases of Animals Act in Ireland—that is, the county and county borough councils—were willing to slaughter tuberculous cows in their respective districts, and to pay compensation to the owners thereof out of the local rates, and if Parliament would agree to recoup one-half the amount so paid, as was the intention in the case of Great Britain, the Department would be ready to make an Order for Ireland under the Diseases of Animals Act, 1894, similar to that proposed to be made by the Board of Agriculture and Fisheries.

Malnutrition.—Mr. Charles Bathurst asked the President of the Board of Education what proportion of the children in the public elementary schools in England and Wales were suffering from malnutrition and maladies traceable to malnutrition; and whether, in the opinion of his expert advisers, this condition was due to insufficient food, ignorance of the nutritive value of foods, or bad housing and sanitation. Mr. Pease said that some indication of the proportion of children in various districts suffering from malnutrition and maladies traceable to it was given in the official reports of the Board's medical officer for the years 1910 and 1911, but no exact return was possible. Where malnutrition occurred the condition was no doubt due to one or more of various factors, including those mentioned in the last part of the question.

Flannelette. Mr. McKenna, in replying to Mr. Joynson Hicks, on December 19th, said that information as to the number of deaths due to the ignition of flannelette clothing in the year 1911 could not now be furnished from the records kept by coroners without a great expenditure of time and labour, and in many cases the information would not be available at all. He would, however, consider whether a return similar to that given in the judicial statistics for the year 1904 could not be obtained in respect of next year.

Spelter Fumes. Mr. Burns, in replying to a question by Mr. John Williams on December 17th, said that he had seen the report of the Medical Officer of Health for the Swansea Rural Council, alleging that one or more horses had been poisoned by the effect of spelter fumes upon the grass they had been grazing in fields adjacent to the Swansea Vale Spelter Works, and had been in communication with the rural district council on the subject in consequence of a previous report. He had reminded that body of their powers under Section 108 of the Public Health Act, 1875, to take action with regard to any nuisance caused by the works in question.

England and Wales.

[FROM OUR SPECIAL CORRESPONDENTS.]

LONDON.

REPORT OF THE ASYLUMS COMMITTEE.

THE annual report for the year 1911–12 of the London County Council's Asylums Committee, just issued,[1] shows that on January 1st, 1912, there were 20,429 "lunatics under reception orders," 7,099 lunatics in the Metropolitan Asylums Board asylums, and 483 lunatics in workhouses or with relatives and friends. This gives a total number of lunatics chargeable to London county and London unions of 28,011, an increase of 530 over the total of January 1st, 1911, which is practically the same as the average increase for the past twenty-two years—namely, 529. The increase in the lunatics under reception orders (that is, London county cases, including those on the "private list" and excluding private patients at Claybury Hall) over those of January 1st, 1911, was 271, the lunatics in Metropolitan Asylums Board institutions increased by 224, and those in workhouses or with friends by 35. Concerning the increase of London county cases the Committee says:

It is some satisfaction to note that for three years in succession the increase has not reached 300, but it would not be safe to predict that the low figures of the immediate past years will be repeated in the future. The average rate of increase over the past twenty-two years in the number of lunatics for whom the county is responsible has further diminished; it is 469, as against 478, the average for 21 years ended January 1st, 1911, and 490, the average for 20 years ended January 1st, 1912. Whilst the figures on January 1st of each year over a period of years are valuable for comparison, and are practically the only means we have of determining as to the increase of lunacy, yet the factors which make for the determination of each year's increase are so many that we should not be justified in coming to a definite conclusion on any particular year's figures.

The ratio of all pauper lunatics chargeable to unions and parishes in the County of London on January 1st, 1912, per 1,000 of population as ascertained by the census on April 1st, 1911, was 6.07. The ratio to estimated population on January 1st, 1911, was 5.71 per 1,000, and 5.61 per 1,000 on January 1st, 1910. Taking individual parishes, Strand, as usual, heads the list (with 13.0 per 1,000), and again Hampstead gives the lowest ratio (3.0 per 1,000).

Accommodation.

On January 1st, 1912, the total accommodation in the London County Asylums, excluding Claybury Hall for private patients, was 20,111 beds, as compared with 20,007 on January 1st, 1911. The number of beds on January 1st, 1912, was thus less by 318 than the number of patients whom the county was liable to accommodate. During 1911, however, the County Council was able to use vacant accommodation provided by the Metropolitan Asylums Board for 159 male and 77 female patients. Plans for the eleventh asylum, to accommodate 2,006 patients, and designed on the villa principle, have been prepared and have received the informal approval of the Lunacy Commissioners.

The asylum will be divided into three sections—a section for recent and acute cases, a hospital section, and a section for chronic and working patients. The buildings are to occupy an area of approximately 40 acres, and the gardens, fields, woodland, recreation ground, and farm will take up about 234 acres. The approximate estimate of the cost of the building and engineering work involved is £459,200, and the cost of the equipment £50,000 in addition. Also the expenditure of £5,250 for working drawings, bills of quantities, etc., has been authorized, and £12,400 in respect of certain works to be carried out (fencing, sewers, etc.) before the erection of the asylum proper.

In May, 1911, the Secretary of State approved the contract for the purchase for £10,000 of a site at Denmark Hill for the proposed mental hospital, and on the completion of the purchase Dr. Henry Maudsley handed to the Council his contribution of £30,000. The Council has decided, with the approval of Dr. Maudsley, that the hospital shall be known as "The Maudsley Hospital," thus permanently associating the good work which will undoubtedly be carried on at this institution with the name of its initiator and most generous donor.

Medical Statistics.

On January 1st, 1911, there were on the asylum registers 20,066 patients (males, 8,591; females, 11,475); and on December 31st, 1911, there were 20,118 (males, 8,649; females, 11,469), giving an increase for the year of the patients in the asylum of 52. The total cases under treatment during the year numbered 23,915, as compared with 23,550 in 1910, and the average number daily resident was 20,018, as compared with 19,997 for 1910.

During the year 5,849 cases (males, 1,842; females, 2,007) were admitted, as compared with 3,727 in 1910.

Admissions.

Of the 1911 admissions 5,407 were direct admissions (that is, were either new cases or relapses from previous recoveries). This number of direct admissions—5 of whom were not insane—was the lowest recorded since the year 1901, and was 77 less than in the previous year. This is, however, to a considerable extent a matter of available accommodation, and is thus not of so favourable import as might at first sight appear. Of the 5,402 direct admissions 2,372 were first-attack cases, 159 were congenital cases, and in 743 previous attacks had occurred, whilst in 128 it was unknown whether the attacks were first or not. In 1,325 the attacks were first attacks within three, and in 499 more within twelve months of admission; in 650 not-first attacks within twelve months, as also in 72 more in whom it was not known whether the attacks were first or not; in 182 the duration of the attack was unknown, and in the remaining 674, including 159 congenital cases, the illness was of more than twelve months' duration on admission.

Concerning this the Asylums Committee says that,

apart from the paucity of information often supplied, it must be difficult, in many cases, to ascertain the precise time at which the border line between sanity and insanity was crossed, but for what the figures are worth it may be quoted from the 1911 tables that while 1,295 of a total of 3,245 (excluding congenital cases) were removed to an asylum within one month of the reported onset of insanity, no less than 515 had been mentally afflicted for more than twelve months before being taken to an asylum (108 of these for more than five years). The number of these long-standing cases brought under institution care during 1911 was less than in the three preceding years, when the figures were 522, 582, and 526 respectively.

Last year we noted as encouraging the fact that the first-attack cases admitted had declined from 2,502 in 1904 to 2,396 in 1910, and it is pleasing to note that in 1911 these cases underwent further decrease to 2,372.

As to civil state, of the total admissions 1,704 were single, 1,642 were married, 486 were widowed, and in 17 the civil state was not known.

Ages.

The Committee includes in this report a valuable table showing for the "first attack" direct admissions the ages at which the attacks commenced. During 1911 these were as follows: Under 30 years of age, 569; 30 to 40 years, 536; 40 to 50 years of age, 488; 50 to 60 years, 386; 60 to 70 years, 262; over 70 years, 89. The average age at commencement of attack was—for males 39.73 years, and for females 40.16 years. These figures show a substantial decrease in cases under 30 years of age, although the general average age was lower than in 1910. Less satisfactory is the fact that the number of aged cases showed an increase over the two previous years.

Forms of Mental Disorder.

The direct admissions were classified as follows: Recent mania, 454; chronic and recurrent, 184; recent melancholia, 733; chronic and recurrent, 180; senile and secondary dementia, 223; delusional insanity, 459; general paralysis, 318; insanity with epilepsy, 195; primary dementia, 103; insanity with grosser brain lesions, 67; confusional insanity, 233; stupor, 34; acute delirium, 19; alternating insanity, 9; volitional insanity, 14; moral insanity, 3; congenital (intellectual) defect, 162, and moral defect 12, whilst 5 were not insane. It will be noted that the general paralytics formed 9.33 per cent. of the direct admissions.

As to the probable etiological factors, and considering only the first attack cases of the direct admissions, the following are the principal assigned: Alcohol in 471, or 23.1 per cent. (excluding 226 in whom no factor could be assigned); acquired syphilis in 271; epilepsy in 155;

[1] London County Council: Annual Report of the Council, 1911. Vol. ii. Asylums (comprising the Report of the Asylums Committee for the year 1911-12, made in pursuance of Section 190 of the Lunacy Act, 1890). Printed for the London County Council by Sotheran, Smith, and Co. Published, either directly or through any bookseller, from P. S. King and Son, 2 and 4, Great Smith Street, Victoria Street, Westminster, S.W. Price 5s. 6d. Postage extra.

cardio-vascular degeneration in 210: puberty and adolescence, the climacteric and senility in 525: privation and starvation in 66; injuries and operations in 68, and mental stress in 571. An insane heredity was ascertained in 535, an alcoholic heredity in 205, an epileptic heredity in 81, and of other neuropathies in 38, giving a total and combined neuropathic heredity in 859.

General Paralysis and Syphilis.

In Table B 9 is shown the number of general paralytics in the direct admissions during 1911 in whom positive evidence of syphilitic infection was found, and also their civil state, age of infection, etc. Collating these returns with those of Long Grove Asylum (omitted from Table B 9), it appears that of the 318 general paralytics, positive evidence of syphilis was obtained in 200, or 62.8 per cent. A significant fact, so sinister that its mere statement is sufficient, is that of the 272 general paralytics included in Table B 9 (Long Grove making no return under this head) 179 were married and 23 widowed.

Readmissions.

The Asylums Committee prints, as usual, a return of the patients discharged as recovered from each of the London asylums who have been readmitted. The returns this year cover the seventeen years and three months ended March 31st, 1912, and show (*a*) the numbers discharged recovered at any time up to December 31st, 1911, and readmitted at any time up to March 31st, 1912; and (*b*) the numbers discharged recovered at any time in the seventeen-year period and readmitted within twelve months of their discharge. These returns are of the gravest importance, and show (*a*) that of the 19,916 patients discharged recovered in the period named, 5,891, or 29.57 per cent., were readmitted; and (*b*) that of the same 19,916 discharged as recovered, 2,402, or 12.06 per cent., were readmitted within twelve months of their discharge as recovered.

Five of the asylums were not in existence seventeen years ago, Bexley dating back to 1898, Manor to 1899, Horton to 1902, Ewell to 1903, and Long Grove to 1907. If the five asylums which actually cover the seventeen-year period be alone considered, then the proportions of the recoveries readmitted works out at 31.78 per cent. Furthermore, in considering these returns as an index to the proneness of mental diseases to recur, it is to be remembered that these returns refer only to cases readmitted to London asylums, and necessarily take no notice of cases which have relapsed and been admitted elsewhere or which have died prematurely from accident or disease. These returns show how considerable is the liability to relapse, and reveal a state of affairs much more serious than is generally recognized.

Discharges, Deaths, etc.

During the year 986 were discharged as recovered, giving a recovery-rate on the direct admissions of 28.94 per cent. (as compared with 32.81 per cent. in 1910), or of 27.94 per cent. in and on the direct admissions (as compared with 31.11 per cent. in 1910). Also, 774 were discharged as relieved and 364 as not improved. Of the recoveries it is interesting to note that in 350 the duration of the attack was less than six months; in 294 of between six and twelve months; in 272 of over one and less than five years; and in 44 of more than five years' duration. The forms of mental disorder in the discharges as recovered were, of course, predominantly recent mania (210) and recent melancholia (328), though recovery occurred in small numbers in the subjects of clinical forms, in which it was hardly to be looked for—for example, general paralysis, senile and secondary dementia, and systematized delusional insanity.

The Committee also furnishes a table showing for the discharges as recovered the incidence of the chief etiological factors in their illness. The percentages [illegible] of the total recoveries, and show, for [illegible] 47 of the recovered had been alcoholic, 35.92 had suffered from mental stress, 2.66 from syphilis, and so on. This table would be very instructive if the percentages were calculated, not upon the total recoveries, but upon the numbers in each class, and thus showed, for example, what proportions of those with an insane heredity recovered, how many of those whose illness had been occasioned by mental stress recovered, etc.

During the year 1,673 died, giving a death-rate upon the average number resident of 8.35 per cent.

The deaths were due in 521 to diseases of the nervous system, including 335, or 20.44 per cent. of the total deaths, from general paralysis: in 158 to heart disease: in 131 to diseases of the blood vessels; in 51 to diseases of the respiratory organs; in 32 to diseases of the digestive system; in 4 to diseases of the ductless glands; in 57 to diseases of the urinary system, mainly chronic Bright's disease; in 3 to diseases of the generative system; in 2 to osteo-malacia; in 99 to senile decay; in 6 to accident or violence, and in 606 to general diseases, including 248, or 14.8 per cent. of the total deaths from tuberculous diseases. Last year the proportion of deaths from tuberculous diseases was 15.81 per cent., so that the downward movement in this respect noted last year is still continued.

As bearing upon the increase of patients in asylums due to accumulation the age of death is of interest:

From a tabular statement given by the Committee we see that those dying over 60 years of age formed 16.80 per cent. of the total deaths in 1907, but formed 17.63 per cent. of the total deaths in 1911. As also bearing on this matter it may be mentioned here that a comparison of the length of present attack of patients remaining on the registers on December 31st in the years 1907 to 1911 shows a diminution in the proportion of those resident with attacks of brief duration and a steady increase in the proportion of those whose illness is of long duration; thus in the years mentioned the proportion of those with a length of illness of less than twelve months has diminished from 10.1 per cent. of those resident to 9.1 per cent. in the case of males, and from 10.7 per cent. to 7.4 per cent. in the case of females; whilst those with a length of illness of over forty years has increased from 2.9 per cent. to 4 per cent. in the case of males, and from 2.7 per cent. to 3.3 per cent. in the case of females. This accumulation occurs, of course, naturally, among the irrecoverable class, and to what great extent the patients resident in an asylum at any time consist of these wrecks of humanity, Table E 2 well shows. Of the 20,118 patients remaining at the end of 1911, 4,929, or 24.50 per cent., were senile and secondary dements; 471, or 2.34 per cent., were general paralytics; 1,940, or 9.64 per cent., were epileptics; 2,520, or 12.53 per cent., were chronic maniacs; 1,859, or 9.24 per cent., were chronic melancholics; 1,551, or 7.71 per cent., were paranoiacs; 2,200, or 10.94 per cent., were suffering from non-systematized delusional insanity, and, in fact, in only 462, or 2.30 per cent., was there a favourable prospect of recovery. The proportion of unfavourable cases, the Committee say, is still increasing and has grown from 90.41 per cent. of the residue of inmates at the end of 1907 to 93.00 per cent. at the end of 1911, leaving out of count the doubtful class, many of whom will eventually fall into the unfavourable class.

Epileptic Colony, Ewell.

Although the statistics of this colony are included in those of the London Asylums in the above digest, they call for separate mention. On January 1st, 1911, there were 330 patients on the colony registers, and on the last day of the year 421. The total cases under treatment numbered 458, and the average number daily resident 349.

During the year 128 were admitted, of whom 30 were admitted directly and 98 as transfers from the asylums. The ages at onset of the epilepsy are given as follows: Between 1 and 5 years, 35; between 6 and 10, 5; between 11 and 15, 22; between 16 and 25, 26; older, 21, and unknown, 7. Parental alcoholism was ascertained in 37 per cent., parental epilepsy in 21 per cent., and a family history of insanity in 26 per cent.

As to treatment, no measure of success attended any particular form of treatment. Withdrawal of salt from the diet, the patients being given sodium bromide as table salt, gave disappointing results. Records of fits failed to show that absence of meat from the diet was beneficial, or that any particular form of meat tended to produce more fits than others, though there was a slight diminution in the total number of fits in the colony when the present reduced meat dietary was introduced for all the asylums in 1909.

During the year 2 were discharged as not insane, 3 were discharged as recovered, 4 as relieved to the care of friends, and 10 died. The general health was good throughout the year; casualties were few, and the work of the colony was carried on as before.

Pathologist's Report.

The report of Dr. F. W. Mott, Pathologist of the London County Asylums, contains his reports on (*a*) pulmonary tuberculosis in the London County Asylums; and (*b*) the report on dysentery and diarrhœa. With regard to tuberculosis, Dr. Mott's report shows that of the 20,157 patients resident in the asylums on March 31st, 1912, 388, or 1.92 per cent., were reported as tuberculous. This

proportion is much the same as it has been during the past seven years. During the year 1,673 deaths occurred, and autopsies were made in 1,477 instances. Of the total who died, in 213 pulmonary tuberculosis had been diagnosed, and in 35 of these no *post-mortem* examination was made. Of the remainder, in 155 the autopsy revealed active tuberculous lesions, and in 22 obsolescent disease or no tuberculous lesion. In addition unsuspected active tuberculous lesions were found in 50 instances. Of the total autopsies made during the year, active pulmonary tuberculous lesions were found in 15.5 per cent.

Turning to dysentery and diarrhœa, the returns show a diminution in the number of cases of dysentery. For the past five years the asylums have been improving in respect of dysentery, and had it not been that the last opened asylum (Long Grove) contributed nearly one-third of the total cases reported, the incidence would have been low. In all—between March 1st, 1911, and February 29th, 1912—there were 222 cases of dysentery among the patients and 2 among the staff, as compared with 250 in the previous twelve months. As to diarrhœa, the returns for the year show a diminution in the number of cases reported, having fallen from 539 (patients) in 1910 to 311 in 1912. In addition to this latter number, however, there were 19 cases among the staff, as compared with 2 during the previous twelve months.

Cost.

The average net weekly cost per head for patients in London asylums during the year ended March 31st, 1912, was 10s. 5.05d.

India.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

THE MALARIA COMMITTEE.

The General Malaria Committee of India held its third conference at Fort St. George, Madras, in November, the proceedings commencing on November 18th and terminating on November 20th. Sir C. P. Lukis, Director-General of the Indian Medical Service, presided, and delegates were present from all the provinces of India, as also from Burma, Assam, and Ceylon. The first day's work consisted in a review by the president of the work done on behalf of the committee during the past year, coupled with a consideration of various points of interest in connexion with malaria in India, and allusions to the steps being taken in various parts thereof. The officers in charge of malaria surveys in the different provinces presented their reports. On the second day a series of short papers, mostly dealing with the utility and utilization of quinine in malarial complaints, were read and discussed; while the third day was chiefly devoted to papers dealing with various *Culicidae* other than *Anophcles*, and the relation of malaria to kala-azar, dengue, blackwater fever, and other febrile disorders in India. A series of resolutions was also passed.

In the course of his opening address Sir C. P. Lukis stated that the Central Scientific Committee of the conference and the Scientific Advisory Board (constituted under the auspices of the Indian Research Fund) were proving successful in bringing about unification of the aims of antimalarial workers in India, and that the system of malarial classes had been modified so as to make them more practical and at the same time alter their composition and numbers: sixty-four students could now be trained each year. The committee was thus assisting both the civil and military authorities, for it was providing trained workers for regimental and cantonment purposes, and preparing young Indian Medical Service officers, while still in military employ, for antimalarial work in their districts should they later on become civil surgeons. This was a point of great importance, since civil surgeons could not without much difficulty leave their districts to attend the classes. It was proposed to substitute for the publication *Paludism* a journal of wider scope, relating to Indian research as a whole, and with special sections on malaria, medical entomology, and protozoology.

The resolutions adopted by the conference reaffirmed the general principles adopted last year, emphasized the value of promoting popular knowledge on the subject of the prevention of malarial fever, and advocated the intentional breeding of such fish and other organisms as constitute the natural foes of mosquitos, including *Anophcles*.

In winding up the proceedings, Sir C. P. Lukis stated that he had been asked to say that Sir Harold Stuart, Home Secretary to the Government of India, who had been present during the meeting, had been very much impressed by the growth of interest and expansion of research work that had taken place since since the first meeting of the Malaria Committee at Simla in 1909. The speaker himself agreed that there had been a steady increase in the quality of the work that came up before the conference. He concluded by moving a vote of thanks to Major Robertson, Captain Justice, and Captain McKendrick, who had been its moving spirits and working officers.

Australia.

INSANITY IN THE COMMONWEALTH.

Victoria.

THE report of the Inspector-General for 1910 comments on the fact that there has been a material increase in the number of admissions to the various institutions of the department, as a result of which there is a total additional increment of 130 patients to be accommodated in the State hospitals for the insane. At the beginning of the year there were 5,200 registered insane persons, together with 41 patients in the receiving house and wards. The number of patients admitted to the public hospitals for the insane during the year—802—is the highest admission-rate recorded. Reference is made to the increasing number of general paralytics admitted to the State hospitals, 68 cases being admitted in 1910. Alcohol is given as an important factor in connexion with the causation of mental disorders; 10.5 per cent. of the admissions are returned as being due to alcohol. The number of discharges during 1910 was much the same as the previous year—522—but the numbers discharged recovered were less—177 as against 238. The deaths numbered 368, giving a percentage of 7.80.

The boarding-out system has been adopted with good results, 142 cases being dealt with in this manner. The average cost of maintenance of patients per week was 13s. 0½d.; deducting from this the amounts received for maintenance of patients, and for sales, etc., a net weekly cost of 11s. 1½d. is shown.

Queensland.

The report for 1910 states that there are three State hospitals for the insane in Queensland—at Goodna, Toowoomba, and Ipswich; with three reception houses at South Brisbane, Rockhampton, and Townsville. Patients are only kept in these reception houses for short periods, rarely exceeding one month.

In the Goodna State Hospital there were 311 admissions during 1910, giving a total of 1,281 resident in the hospital at the end of the year. There were 163 discharges and 114 deaths. The predisposing causes are unsatisfactory, inasmuch as it is impossible to obtain full particulars of family histories from relatives, partly owing to the great distances at which some live, but chiefly owing to the reluctance which relatives have in owning to any family history or taint of insanity. Of the exciting causes, alcoholic excesses head the list, 74 cases being admitted under this heading. The net cost per patient during the year amounted to £21 1s. 7d.

At Toowoomba State Hospital 79 cases were admitted, with a total of 819 patients treated during the year, 35 were discharged, and 37 died—a percentage of 4.94 on the average daily number of patients. The net cost of maintenance per patient per annum in this hospital was £21 4s. 5d.

At Ipswich State Hospital 240 patients were treated during the year; there were no direct admissions, but 15 patients were transferred from Goodna. Only one patient was discharged; there were 13 deaths. The net annual cost per patient in this hospital amounted to £26 8s. 9d.—somewhat in excess of the rate of the other two hospitals.

New South Wales.

The report of the Inspector-General for 1910 states that there are nine hospitals for the insane and three licensed houses for the treatment of the insane in this colony. The number of admissions—1,221—was 150 over that for the previous year, and although the number of discharges and deaths was also greater, the increase in the population of the hospitals at the end of the year was 243 over the number with which the year started. The number of patients under official cognizance at December 31st, 1910, was 6,177—an increase of 243 on the previous year. The number of persons discharged recovered was 468, equal to a rate of 38.33 per cent. on the admissions and readmissions. The deaths numbered 425; calculated on the average number resident, this gives a percentage of 7.27—an increase of 1.62 per cent. on the previous year. Of these, no less than 54 were due to general paralysis, and 67 to general disease of the brain.

The average cost per patient after deducting collections was £26 6s. 6d., an increase of nearly £2 on that of the previous year.

Comparing these three States of Australia we find that the proportion of insane per 1,000 of the population is as follows: In 1909, Victoria 3.91, Queensland 3.89, and New South Wales, 3.64, while the other three States, South Australia 2.53, Western Australia 2.86, and Tasmania 2.70, giving a rate for the whole Commonwealth of 3.56. Comparing these figures with those of England we find the rates much the same, 3.62. Speaking generally of the Commonwealth as a whole it would appear, therefore, that lunacy is as prevalent in Australia as it is in the old country. It is difficult to understand why this should be in a new country, where the conditions of life are more easy than they are in the old one; possibly some explanation may be found in the fact that there may be different methods of dealing with cases of insanity in the various countries. Dr. Jones, the Inspector-General of the Insane for Victoria, considers there are other explanations which are deserving of investigation. Dealing with the geographical position of Australia, he points out that this has been populated most extensively of all by the Anglo-Saxon and Celtic races—that is, people whose normal habitat has been for many centuries between the fiftieth and sixtieth parallels of latitude north of the equator. On the other hand, Australia lies between the twentieth and fortieth parallels south of the equator. The climate of Australia, therefore, is partly tropical and more or less equivalent to the climate which we find in the South of Europe and the North of Africa. It is conceivable, therefore, Dr. Jones believes, that the climate of Australia has had the effect of producing a premature and possibly abnormal development in the young people. Another factor which Dr. Jones refers to is that of immigration. People leaving their old homes and settling in a new country undoubtedly suffer from nostalgia, and this may take a severe and pathological form. Immigrants may contribute an undue proportion of mental disorders to the country of their adoption. Another point referred to, and which is rather hard to understand—namely, the increase of insanity going with the universal prosperity of Australia. It has been found in the old countries that whenever a country is unusually prosperous, or, on the other hand, unusually poverty-stricken, the rates of crime and insanity increase. These may be due to the abuse of luxuries and self-indulgence which prosperity may bring in its train.

THE four-hundredth centenary of the birth of Andreas Vesalius, the pioneer of modern anatomy, will be celebrated with appropriate ceremonies at Brussels in 1913.

THE ninth International Physiological Congress will be held at Groningen next September (2nd to 6th) under the presidency of Professor H. J. Hamburger.

INSPECTOR GENERAL SIR HERBERT MACKAY ELLIS, K.C.B., late Director General of the Medical Department [illegible] estate of the gross value of £14,926.

DR. ALEXANDER C. N. MCHATTIE, chief medical officer to the Bahamas Government, has been appointed a member of the Legislative Council of the Bahamas Islands.

Correspondence.

THE RE-EDUCATION OF THE ATTENTIVE CONTROL.

SIR,—In reply to Dr. Miller's letter, I did not for a moment assume that cases of melancholia were such as Dr. Miller was dealing with in his paper. I merely quoted the story as being of interest, to show what could be done in certain nervous disorders, by arousing new interests, and at the same time to show the advantage of useful interests. I expressly state in the latter part of my letter, that sufficient difficulty will be met with in the pursuit of almost any branch of useful knowledge to develop enough of the faculty of attention for all practical purposes. And I consider that Dr. Miller yields to me the full purport of my letter when he says that he readily admits that to take an intelligent interest in the study of mathematics would be highly profitable to many of the cases he has in mind, but that the difficulty, especially in the early stages, would be as great as any task he has proposed. This is no more than to say that a useful study would be as beneficial for his purposes as a useless one, and hence my point is gained. If the patients that Dr. Miller means are cured before mental strain is reached, why not let them run this risk by aiming at something which will be useful to them after they are cured—that is, after the cure has been wrought by passing through the drudgery and difficulty always to be met with in the early stages of any useful study, study which could be carried on through life with ever-increasing interest and with as little tendency to relapse into the old state as was the case with the melancholic I have described.

After all, the patients such as Dr. Miller means are those who have got into bad habits of thinking and living, many of whom—to borrow an expression from Dr. Middlemiss—"have high mental endowment and considerable critical faculty." That this is the case, I assume to be implied in the word "re-education" which Dr. Miller makes use of in the title of his paper.

For such as these, the best guide of life, in my opinion, is to be found in the oldest definition of virtue, that which certain Pythagoreans strove to live up to, "Ἕξις τοῦ δέοντος"—The Habit of the Right—and using this as a guide apart from its moral sense, I scarcely think that any intelligent patient would care to attempt to form right habits by acquiring facility in useless employment which after the first glamour of novelty has passed off must leave him in the same flabby and hopeless condition as before, with nothing to show for the trouble he has gone to.

It is the utter aimlessness in these cases, the want of definite object, the absence of that "settled context of a good man's life," which counts for so much in feeding the fire of morbid fancies, and this in some measure could be removed by suggesting some occupation that would bring credit for skill acquired, and thus give something to hope for. And as, step by step, progress is made, there would be the wholesome sense of satisfaction in something gained, the joy of a new art learnt. Such moral effect would be of incalculable advantage in some cases, and go far to satisfy that desire of esteem which metaphysicians tell us is an innate principle in our nature, the root of all progress since the world began.

I am convinced that many a lady neuropath would forget her maladies and ultimately become almost enthusiastic in learning to type her own letters. This would test progress by the speed and accuracy acquired. Every wrong letter or dot, every misplaced word would register the wavering thought, the momentary loss of control, with its corresponding stimulus to renewed effort at closer attention in order to acquire perfection.

Any one whose memory is mainly visual would derive immense benefit in the power of attention by the study of geography, testing his progress by filling in the names on blank maps.

The lover of history, by riveting his attention on dates and writing these on separate cards, could, after shuffling, test his powers by recalling the events corresponding with each date as each card came to his hand. And surely this would be an exercise uninteresting enough, difficult enough, and dull enough to satisfy even Dr. Miller. But that

would lay the foundation of an accurate and profitable knowledge of history is beyond question.

For severe concentration of attention, both in learning and facility in practice, nothing could equal shorthand; the loss or misplacing of a single point through wavering attention would be disastrous to the meaning, and hence this is, perhaps, one of the best exercises for the more capable patient.

Then there is music. Many a lady patient, even in middle life or something beyond it, would love to entertain the hope of one day being able to read music, and diffidence would soon disappear could it be said that the doctor had ordered it.

The difficulty of learning a language without a master would be reduced to a minimum by Giles's translations in Cornish's Series, and especially in the classics, which are construed literally and word for word. A patient without any knowledge of the grammar could educate his power of attention by passing from translation to text and thus test his progress. Study of this sort, to certain types of mind, would ultimately become fascinating, but the stage of fascination would not be reached until long after the patient was cured of his want of attentive control. And bad as advice like this may appear to the true scholar, still I am convinced that many reasons could be adduced to prove that it is infinitely better than spending time in learning to read one's own language with the book upside down.

These are but a few of numberless instances which could be mentioned where the attentive control could be re-educated by the acquisition of useful knowledge.—I am, etc.,

Liverpool, Dec. 17th. W. BRAMWELL.

THE ETIOLOGY OF PELLAGRA.

SIR,—My attention has only recently (owing to my absence abroad) been called to Dr. Louis Sambon's paper on pellagra in the JOURNAL of October 26th last. It may be of interest to place on record the occurrence of this disease in the Straits Settlements. Four years ago I published in the BRITISH MEDICAL JOURNAL four illustrative cases, accompanied by photographs. Up to that time I had been unable to find any record of this disease in the Straits, and I hesitated to add one more to the already long list of "ills that flesh is heir to" in that part of the world. My brief notes were entitled "a hitherto undescribed form of superficial dermatitis, probably trophic in origin." Since then I have been able to identify the disorder I described as pellagra, and while in Singapore I had the opportunity of demonstrating several of these cases to my colleagues in the service.

There are two points of special interest about the occurrence of pellagra in the Straits:

1. That the diet of those affected consists almost entirely of rice. Whatever may be the case in other countries where the disease has been noted, in the Straits maize eating quite certainly has nothing to do with its causation. In my notes above referred to I, however, stated that those afflicted were of the very poorest class, and further observation leads me to think that if better histories were obtained it would be found that even rice—the cheapest food—was not always within their reach. Pellagra is essentially a disease of the poverty-stricken; its history bears this out.

2. Dr. Sambon calls attention to the remarkable way in which the disease has been overlooked in various countries. My experience confirms this in the Straits. One of my colleagues who has practised in the East for over twenty years told me that he had not infrequently noticed the erythematous and pigmented patches on the extremities of some patients, but had attributed them to sunburn—a lesion which, in tropical countries, no doubt bears some superficial resemblance to the early erythema of pellagra.

The tendency of the disease to disappear for a time from the community is also, I think, remarkable. Thus, though in the years 1903 to 1907 I was constantly seeing cases in my wards, yet from July, 1911, to October, 1912, I did not meet with a single acute case, the one or two cases observed during this period presenting merely the marks of former disease in the form of thickened and pigmented patches of skin on the dorsal surfaces of the extremities.

Dr. Sambon's views of the causation of this disease are, of course, entitled to great respect. I am not aware, however, of the occurrence of *Simulium* in the Straits, and furthermore, as I have endeavoured to show, the connexion between pellagra and poverty is clearly established.

My experience of the disease hardly leads me to share Dr. Sambon's somewhat gloomy anticipations respecting its spread.—I am, etc.,

W. SIDNEY SHEPPARD, M.B.(Cantab.),
Torquay, Dec. 17th. Senior Medical Officer, Singapore.

"NATURE'S ERRORS IN HEALING."

SIR,—In your leading article, "Nature's Errors in Healing," you quote Sir William Gull as having said (in reference to a particular case of disease), "Nature is trying to kill the man." The most enthusiastic believer is the *vis medicatrix naturae* would not deny that in *some* cases nature is trying to kill; but I should like to point out that Sir William Gull went much farther than that. You no doubt had in mind a passage in Professor Huxley's essay, "The Struggle for Existence in Human Society." Huxley was talking with Sir William Gull on this subject, when, "'Stuff!' said Sir William, 'in nine times out of ten nature does not want to cure the man: she wants to put him in his coffin.'"

Nine times out of ten seems rather a tall order; and I have always been surprised that Huxley accepted the statement without question. Most of us feel rather proud if we think that we have defeated the evident intentions of nature, when those intentions are malignant, in *one* case out of ten.—I am, etc.,

A. F. MILLAR, M.R.C.S., L.R.C.P.
London, S.W., Dec. 15th.

CARDIOLYSIS.

SIR,—It is sincerely to be hoped that further experience will prove surgery to be frequently able to ameliorate the most serious forms of cardiac disease in children. A few recorded cases, such as that given by Sir Robert Simon to illustrate his lecture, published in the BRITISH MEDICAL JOURNAL of December 14th, appear to show that great benefit may follow surgical interference.

Allowing that the question of the occurrence of improvement may be indisputable, the reason for improvement is a matter for difference of opinion. A procedure rests upon a much surer foundation if the grounds for the procedure are evident than if they are uncertain. Sir Robert Simon remarks, "It is probable that the relief to the heart given may be less in the softening of the wall against which it beats than in removal of tight and tough adhesions to find points like the ribs."

The main feature of general adhesion of the pericardium in children is considerable enlargement of the heart. In undertaking an operation for relief of this condition it requires to be considered whether the object is to remove the cause of the enlargement or merely to facilitate the action of the heart. Here it may be mentioned that it appears there is little evidence to show that adhesions between the fibrous pericardium and the wall of the chest have any material effect upon the size of the heart. One of the most remarkable features of the enlargement of the heart associated with general adhesion of the pericardium in children is its extremely rapid development. A child with a previously normal sized heart may be attacked with rheumatic pericarditis and die at the end of a fortnight or three weeks. The heart may then be found to be more than double the average weight of the heart of a child of the same age. This rapid enlargement may be seen clinically. The apex of the heart may sometimes approach the mid-axillary line during the first attack of rheumatic pericarditis. It has been suggested that the rapid enlargement is due to softening of the fibrous pericardium, which yields and allows the heart to dilate. It is, however, a mistake to suppose that under normal circumstances the fibrous pericardium fits the heart sufficiently closely to act in any way as a support. A few injection experiments in the *post-mortem* room will readily prove this to any one interested in the subject. To leave, however, this physiological question, it is evident that softening of the fibrous pericardium is not responsible for dilatation of the heart in pericarditis, from the fact that in suppurative pericarditis—such as occurs in pneumonia or

in osteomyelitis—the heart does not dilate. The curious and rapid enlargement is peculiar to rheumatic pericarditis. As astonishing, perhaps, as the rapidity of the enlargement is the failure of the enlargement to materially diminish when the acute illness has passed off. That the heart is held in its extended position by external adhesions can scarcely be true, because in cases dying early—that is, shortly after the first attack of pericarditis—no such adhesions are present. It is in cases which have been admitted three or four times into a hospital that extensive external adhesions may be present.

The enlargement appears to be due to something much more subtle than the effect of external adhesions, and probably originates in some serious influence of rheumatic toxins upon the metabolism of the growing heart. Yet, although adhesions may play but a secondary part in this serious disease, we may conceive it to be possible that cardiolysis may render the movements of the heart more easy. But the cases likely to benefit are probably limited. Both on clinical and *post-mortem* grounds it may be said that in cases of enlargement of the heart in children, associated with general adhesion of the pericardium, death generally appears to be due to a renewed attack of rheumatism upon the heart. In other words, death occurs from subacute, not from chronic, cardiac failure. Yet, as the case of Sir Robert Simon shows, cases may arise which present all the aspects of chronic cardiac failure. Very beneficial results followed cardiolysis in this case, and, whatever the reason may be for these results, it is reasonable to suppose that similar results may follow the operation in cases of the same nature.—I am, etc.,

December 17th. THEODORE FISHER.

SPHINCTERS OF THE ILEO-CAECAL REGION.

SIR,—Since the publication of my demonstration on the nature of the caecum and appendix in the JOURNAL of December 7th, my attention has been drawn to a well-known work on *Veterinary Physiology*, by Major-General F. Smith, C.B., C.M.G. (fourth edition, 1911).

Your readers will be interested to know that the author has recognized, independently of the observer cited in the abstract of my demonstration: (1) That there is a sphincter at the ileo-caecal junction of the horse; (2) that it regulates the passage of the intestinal contents from the ileum into the caecum, and prevents the regurgitation of caecal contents into the ileum; (3) that there is a narrowing at the junction of the caecum and colon corresponding to what I have named the caeco-colic sphincteric tract; (4) that there is a mechanism by which the contents may pass direct from the ileum to the colon without entering the caecum; (5) that caecal and colic digestion is mainly the result of bacterial action.

It is instructive to find that two men working independently—one at the digestion of the horse, the other at the anatomy of man—should reach conclusions which are so closely in harmony.—I am, etc.,

Royal College of Surgeons of England, London, W.C., Dec. 19th. ARTHUR KEITH.

ANTIVIVISECTION IN GLASGOW.

SIR,—Dr. Walker has forwarded you a letter brimful of inaccuracies.

That he may not have heard all I said in the course of my address in St. Andrew's Hall, Glasgow, is not to be wondered at, as he had two or three hundred students at his back, howling, yelling, and gesticulating like dancing dervishes; but that is no excuse for crediting me with what I did not say.

The newspaper reports, although necessarily condensed, show that I carefully distinguished between Sir Frederick Treves and the other two surgeons I named, quoting the latter as opposed to vivisection altogether, but introducing Sir Frederick Treves's specific statement alone, with a reminder that my opponents, as vivisectionists, would "respect and honour" his name.

As to the literature of my society, if Dr. Walker will look in the publication *Some Medical Views of Vivisection*, which I think is the only one dealing with the matter, he will read as follows on page 39:

> Perhaps no more striking evidence of the futility of vivisection could be afforded than that vouchsafed by Sir Frederick Treves. . . . This evidence is the more striking seeing that the writer is not an antivivisector.

I will now take Dr. Walker's criticism seriatim:

1. Dr. Walker says:

> A great part of his lecture here was devoted to abusing Sir George Beatson, with regard to whom he made many misstatements of fact.

This assertion can be speedily tested by referring to the *Glasgow Herald* of the following morning, which in its report of nearly a column and a half contained an almost verbatim report of my speech. I never indulge in "abuse." I leave that to my opponents. My sole reference to Sir George Beatson, after referring to his correspondence with Miss Kidd, was to challenge him to specify the surgical operations which he had publicly stated he would have been unable to perform had it not been for experiments on animals.

2. Dr. Walker says:

> Another part was devoted to the immorality of drinking alcohol, and the uselessness and danger of vaccination.

This assertion is simply amazing and almost unpardonable; not one word about alcohol drinking or vaccination escaped my lips the whole evening.

3. He enumerates several observations I made which he characterizes as "opinions" and not facts. I have made it a rule throughout my public life never to advance statements which I am not prepared to prove, and for every statement I made in Glasgow I vouchsafed my evidence.

4. Dr. Walker states:

> With some difficulty I got him to admit that the culture medium was what he meant by the environment. I pointed out that this could be got rid of by using a centrifuge. Dr. Hadwen wanted to know what a centifuge was, but there was hardly time for a description of the apparatus.

And so on.

Again, the whole of this is pure imagination. No such discussion as he alleges took place. My words were:

> I should not be such a fool as to allow any culture, so-called, or any so-called specific germ, to be injected beneath my skin, because it could not be injected without at the same time injecting the morbid medium or environment with which it is associated.

Later on in the evening, when he wanted to know why I was prepared to be bitten by a mosquito or a plague flea (as I had agreed in reply to Dr. Cathcart), and yet decline to be inoculated with a germ culture by himself, I replied:

> I have already explained. I do not believe in the flea or the mosquito being capable of transmitting either plague or malaria, but in injecting a germ culture you are not merely introducing bacteria but also the morbid material associated therewith, which is quite capable of producing blood poisoning or anything else. In some cases it has produced sudden death.

If Dr. Walker said anything about a centrifuge it did not reach my ears, and most emphatically I deny that I asked him to explain what it was.

5. Dr. Walker, in spite of all this, actually repeats his absurd "offer," and desires to make you the recipient of his "sealed envelope." It is as unnecessary for me to repeat my refusal as it is for him to repeat his offer, although he proclaims his ability to achieve the astounding feat of subsequently recovering from my body the germs he had previously put in!

6. Dr. Walker says:

> I took it that he would not believe that I could foretell what would follow upon inoculation with a particular culture. He said he did not believe that I could do so. I then offered to give the chairman, etc.

This is absolutely untrue. The conversation, which I copy from the shorthand notes taken at the time, was as follows:

> Dr. Walker: I take it from Dr. Hadwen's views as to the germ theory of disease that he would not believe me if I told him that a tube I hold contains a micro-organism that will produce a specific disease.
>
> Dr. Hadwen: No.
>
> Dr. Walker: I will prophesy on a piece of paper which I will place in a sealed envelope and hand to the chairman, etc.

His reference was to a micro-organism alleged to produce a specific disease. I denied the disease specificity of micro-organisms.

7. Dr. Walker adds:

> Dr. Hadwen tried, with what object I do not know, to make me say that I proposed to inoculate him with anthrax.

Again your correspondent manifests his *penchant* for misrepresenting everything. I "tried" no such thing. He had quoted anthrax in the course of his remarks, and I simply asked: "Did I understand you to say that you wished to inoculate me with anthrax"? He replied: "Oh no, I won't say what it is." And there the whole reference to anthrax ended.—I am, etc.,

WALTER R. HADWEN, M.D., J.P.,
President, British Union for the Abolition of Vivisection.

Gloucester, Dec. 16th.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examinations indicated:

M.D.—*Branch I (Medicine)*: J. D. Benjafield, R. L. Crabb, E. H. A. Pask, R. Phillips, H. F. Renton, A. L. Robinson, H. L. Tasker, F. M. R. Walshe, T. H. Whittington, T. H. Woodfield.

M.D.—*Branch IV (Midwifery and Diseases of Women)*: G. Dunderdale, T. Evans, C. R. Hoskyn, R. Stout.

M.D.—*Branch VI (Tropical Medicine)*: W. Gillitt.

M.S.—*Branch I (Surgery)*: W. Gilliatt, S. L. Graham, E. G. Stanley.

UNIVERSITY COLLEGE.

Lectures on Eugenics.

A course of six lectures will be given in the Francis Galton Laboratory for National Eugenics on Tuesday evenings at 8 p.m., beginning on February 11th. Professor Karl Pearson will give three lectures on heredity, environment, and parental habits in their relation to infant welfare, on piebaldism and albinism in man, and recent studies of heredity in dogs and its bearing on heredity in man; Miss Ethel M. Elderton will give a lecture on the relation of fertility to social value in the parent, Dr. David Heron on heredity in relation to feeble-mindedness, and Mr. W. Palin Elderton, F.I.A., on mortality under sanatorium and tuberculin treatments. Non-transferable tickets can be obtained free on application to Mr. W. W. Seton, Secretary, at the College.

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* With honours.

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THE following candidates have been approved in the subjects indicated:

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MEDICINE.—*†A. M. L. Groaves, *C. W. Jonnor, *O. W. D. Steel.

FORENSIC MEDICINE.—J. W. Harrison, G. R. Lynch, J. G. Ogle, O. W. D. Steel, S. Zarchi.

MIDWIFERY.—J. G. Ogle, A. Pyper.

* Section I. † Section II.

The diploma of the Society has been granted to Messrs. J. G. Ogle and A. Pyper.

The Services.

FIRST CITY OF LONDON FIELD AMBULANCE (TERRITORIAL FORCE).

THE 1st City of London Field Ambulance held a smoking concert and prize distribution on December 14th in the new head quarters at the Duke of York's School, Chelsea. Lieutenant Colonel R. R. Sleman, V.D., M.D., presided, and was supported by a large number of officers representing the different medical units of the 1st London Division.

Colonel Harper, A.D.M.S. to the Division, distributed the prizes and thanked the men for the excellent work they had performed during the past year. He said he hoped that now all the medical units had a common head quarters, each man would look on himself as belonging to the corps rather than to his special unit, and that the clubs of the different units which hitherto had been struggling along separately would be combined into clubs for the R.A.M.C. of the Division. Colonel Hyslop, Secretary of the City of London Territorial Association, said that the City Association would do all in their power to make the head quarters a success.

TERRITORIAL FORCE.

THE King has conferred the Territorial Decoration upon Colonel John Bently Mann, Assistant Director of Medical Service of the East Lancashire Territorial Force; Lieutenant-Colonel Edward Lloyd Williams, of the Sixth London Field Ambulance; Major Caspar Robert Laurie, attached to the Dorsetshire Royal Garrison Artillery; Major James Harris Garcia Whiteford, M.B., attached to the Renfrewshire (Fortress) Engineers, Royal Engineers; Major James Nicholson, attached to the 5th Battalion the Lincolnshire Regiment; Major Alexander Cameron Miller, M.D., attached to the Fourth Battalion, Queen's Own Cameron Highlanders; Major Hugh C. Donald, M.D., attached to the 6th (Renfrewshire) Battalion, Princess Louise's (Argyll and Sutherland Highlanders); Major Arthur D. Ducat, M.B., attached to the 5th (City of London) Battalion, the London Regiment (London Rifle Brigade); Major James Robertson Reid, attached to the West Lancashire Division Transport and Supply Column, Army Service Corps.

Obituary.

DR. ARTHUR TRACY CABOT, the well-known surgeon of Boston, who died recently, at the age of 60, was the son of Samuel Cabot, for many years surgeon to the Massachusetts General Hospital. Born in 1852, after taking an arts degree at Harvard he began the study of medicine, and took his M.D. degree in 1876. He then pursued a course of study abroad, and had the good fortune to hear Lister's inaugural address at King's College. Ever afterwards Cabot was a devoted adherent of the doctrine of surgical cleanliness. After ten years of general practice he gave himself wholly to surgery. From 1885 to 1896 he was instructor in genito-urinary surgery at Harvard, and from 1886 to 1907 he was visiting surgeon to the Massachusetts General Hospital. In 1874–75 he assisted his father in the first two successful abdominal operations done in connexion with that institution. The patients were hospital cases, though the operations were actually done in a neighbouring house. In 1884 Arthur Cabot performed the first successful abdominal operation within the hospital walls; the case was one of large strangulated umbilical hernia. Dr. Cabot attracted the notice of Henry J. Bigelow, whose mantle may be said to have fallen on him. This led to Cabot's becoming a leader in genito-urinary surgery. In conjunction with his brother Samuel, he established the Samuel Cabot Fund for pathological research, in memory of their father. He also took a prominent part in founding the Clinico-Pathological Laboratory. He did an immense amount of work in storing up active interest in the prevention of tuberculosis, and it was largely to his influence that the bill providing for instruction in public schools in hygiene and the means of preventing disease became law. During a period of thirty years he published over one hundred and twenty papers. In 1896 he was chosen one of the seven members of the Corporation of Harvard College, a body which in

relation to the government of the university has been compared to the Senate of the United States. He had a cultivated taste for art, and was an ardent sportsman. Arthur Cabot was a fine example of the best type of medical man.

Public Health AND POOR LAW MEDICAL SERVICES.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Beckenham Urban District.—Calculated on an estimated population in the middle of 1911 of 31,840, the birth-rate was 18.0 per 1,000 and the death-rate from all causes 9.5 per 1,000. The infant mortality-rate was equal to 75 per 1,000 births. The district appears to be well equipped with administrative machinery. Infectious diseases are dealt with at the two hospitals belonging to the Bromley and Beckenham Joint Hospital Board. A public health laboratory affords facilities for obtaining bacteriological examinations. Antitoxin is distributed under the Antitoxin Order. A steam disinfector has been installed, and a six-cell destructor erected at the electricity works. The water of the district is obtained from the supply of the Metropolitan Water Board, and the sewage is discharged from one portion of the district into the metropolitan sewers, and from another portion into the sewers of the West Kent Sewerage Board. The Notification of Births Act has been adopted, and adds very much to the usefulness of the health visitor on the staff of the medical officer of health. A by-law is in force prohibiting the keeping of any rabbit, pigeon, guinea-pig, duck, goose, or fowl within 10 feet of any dwelling-house, and they may not be kept within 100 feet unless the place in which they are housed is in a cleanly and wholesome condition. In the section of the report dealing with scarlet fever the medical officer of health, Dr. J. M. Clements, refers to the popular opinion that the infection dwells in the particles of skin thrown off in the peeling stage of the disease. He considers that if the general public should grasp the view that desquamation is not infectious, they might drop all precautions as soon as the acute stage was over and the patient able to go about.

Medical News.

THE second Hunterian lecture of the society of that name is to be delivered by Professor Arthur Keith, who has chosen as his subject "The History and Nature of certain Specimens alleged to have been obtained from the *post-mortem* examination of Napoleon the Great." The meeting of the society is to take place on January 8th at 9 p.m., at St. Bartholomew's Hospital, and the presence of any medical man will be welcomed.

THE Association of British Postal Medical Officers held its annual dinner on December 13th, Dr. John Matheson of Islington, its President, being in the chair. The gathering took place at the Whitehall Rooms, and, considering how scattered are the members of the association in question, was notably large. Among the guests were many ladies, Sir Philip Magnus, Sir Henry Craik and other members of Parliament, several of the higher lay officials of the Post Office, the Principal Medical Officer to the Local Government Board, and the Director-General of the Army Medical Service. The distinguishing event of the evening was a presentation to Dr. R. Ritchie Giddings of Nottingham, who has served the association for many years in the joint capacity of honorary secretary and honorary treasurer, while the precise occasion of the offering was his recent marriage. The gift, which was presented to him in the name of the association by Dr. Matheson, was a complete tea and coffee service, coupled with a tray, all in silver. The toasts were numerous the "Imperial Forces," the "Houses of Parliament," "His Majesty's Post Office," "Postmaster-General and his Staff," the "Universities," the "Association" itself, the "Ladies" and the "Guests" all in turn receiving encomiums. The speakers included Sir W. Launcelot Gubbins, who expressed his regret that the public did not take greater interest in the health of His Majesty's forces; Mr. A. M. Ogilvie, C.B., who dwelt on the part played by medical officers of the postal service in promoting the efficiency and happiness of its members; Dr. W. A. Malcolm, a vice-president of the association, who acknowledged the toast in its honour; Dr. G. A. Mason, a past-president, who took charge of the toast to the ladies; and Dr. Henry Bott of Brentford.

Letters, Notes, and Answers.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

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☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

H. asks for information about the "Japanese treatment" for haemorrhage.

ANSWERS.

VOMITING IN PREGNANCY.

STAFF SURGEON F. WOORE, R.N., writes, in reply to "Samaritan," to suggest painting with lin. iod. over vagus, behind and a little below angle of lower jaw.

SOMNILOQUISM.

DR. J. E. MIDDLEMISS (Leeds) refers "O. C." to the answer to "Perplexed," headed "Teeth-grinding," which appeared in the JOURNAL of September 21st, 1912. The condition of sleep talking is probably due to the dissociated action of the subcortical centres, which during sleep are deprived of the inhibitory control of the highest cortical regions. Whatever the exact physiological explanation of the condition, it is peculiarly amenable to hypnotic influence, which in one case coming under Dr. Middlemiss's observation produced a marked improvement.

THE TREATMENT OF HAEMOPHILIA.

J. S.—P. Émile-Weil, of Paris, studied a pure case of haemophilia in order to ascertain what this condition depended on. Having been led by a negative course of reasoning to reject a number of theories in regard to the pathology of the condition, he made some careful observations in connexion with the coagulation of the blood of his patient. The rate was delayed, and the clot presented certain peculiarities, the chief being that after the serum has separated a certain number of red corpuscles became freed from the clot, and together with some fibrin settled at the bottom of the test tube. The cells were apparently quite normal. Heat shortened the time of coagulation. At room temperature the blood was completely clotted after seventy-five minutes, while at 54° C. it was clotted after from five to ten minutes. The addition of 5 drops of the serum of the haemophilic patient to 3 c.cm. of healthy blood did not influence the rate of coagulation, but the addition of 3 to 5 drops of healthy serum changed the coagulation time of the haemophilic blood to normal. Ox serum had a similar but weaker action. On the other hand, excessive quantities (for example, 10 drops in 3 c.cm. of blood) delayed the coagulation. He therefore concluded that haemophilia is due to the absence of fibrin ferment or thrombase. He experimented with his patient by injecting intravenously ox, and later human, serum in doses of from 10 to 15 c.cm. The ox serum materially improved the defective coagulability of the patient's blood and diminished the tendency to bleed, while the human serum rendered the former quite normal and overcame the latter. Not only did a prick of the needle not give rise to any abnormal oozing of blood, but a tooth was extracted without any excessive bleeding, although previously the patient had been rendered extremely anaemic by haemorrhage after the extraction of a tooth. He therefore recommends the intravenous injection of normal human serum (which may be readily obtained from an aseptically prepared blister, or better still by the abstraction of blood from a vein under aseptic precautions with a hypodermic syringe) in the treatment of haemophilia.

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THE

British Medical Journal.

THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

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OF

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JULY TO DECEMBER, 1912.

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AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

1. The Teeth of Workers in Lead.

WHILE it has been proved that the direct inhalation of dust containing lead in some form or other in white lead factories forms the most fruitful method of poisoning with that metal, it is certain that other, more indirect means of absorption may play a part in those trades where metallic lead is handled in mass. Viktor Hinze (*Berl. klin. Woch.*, May 27th, 1912), of St. Petersburg, calls attention to one of these means. He has made observations on a large number of lead workers in an accumulator factory. He noticed that the gums and teeth of the men who were suffering from plumbism were in a bad condition. The former were swollen, hyperaemic, and infiltrated. Tartar encrusted the edges of the teeth. It occurred to him that the removal of the tartar and active care of the teeth and gums might lead to a limitation of the poison within the body. He therefore started by scraping the teeth and collecting the tartar, which he subjected to a careful chemical examination. In one case of a man who showed anaemia, atrophy of the extensor muscles of the left hand, etc., 0.329 gram of tartar was removed, which contained 0.48 per cent. of metallic lead. In this case the seventeen teeth which the man still possessed were extracted, and both the tartar and the teeth could be thus examined chemically. The examination of the teeth showed that the crowns contained 0.038 per cent. and the roots 0.033 per cent. of metallic lead. It is therefore evident that a deposit of lead is present, which suffices to keep the symptoms of lead intoxication going. On removing the tartar from the teeth of other workers in the factory, he succeeded in curing the hyperaemia, tendency to bleeding, cyanosis and boggy swelling of the gums, and several obstinate cases of gingivitis soon cleared up. How far the general symptoms of lead poisoning can be avoided by excluding this one source of chronic poisoning is a point that requires more observation, but it is certain that only good can be done by attention to this point in all who are exposed to the dangers of lead poisoning.

2. Exophthalmic Goitre.

MARINE AND LENHART (*Arch. of Int. Med.*, September, 1911) studied the anatomical and physiological relations and treatment in 69 cases of exophthalmic goitre. While the anatomical changes in the several body tissues are varied, the most prominent and constant one is active hyperplasia of the thyroid and lymphoid tissues, and although the exophthalmic goitre syndrome may coexist with a normal thyroid, colloid goitre, hyperplastic or atrophic thyroid, or with a tumour of the thyroid, it is believed that active thyroid and lymphoid hyperplasia has been present in all true cases during the developmental stage. The only defined physiological activity of the thyroid secretion is that determined by its iodine content. Iodine is related to the exophthalmic goitre thyroid in the same way that iodine is related to the thyroid of other clinical associations, varying inversely with the degree of active hyperplasia. The ability of exophthalmic goitre to take up iodine varies with the degree of active hyperplasia, inversely with the amount of iodine present, and iodine induces the same series of anatomical changes in this condition as in the other varieties of thyroid hyperplasias in man and animals. The temperature and pulse reactions, both before and after operation, vary with the degree of thyroid and lymphoid hyperplasia, and their reactions and the thyroid hyperplasia are parallel and resultant phenomena dependent on more general and remote causes. Myxoedema is the end stage of thyroid insufficiency, and, although it occasionally accompanies exophthalmic goitre, it never precedes it. The best index of the severity of the disease is the degree of active lymphoid and thyroid hyperplasia. Treatment must be directed towards the correction of metabolic disturbances, particularly nervous exhaustion, and towards reducing and counteracting the thyroid secretion. Mental and physical rest away from cares, social duties, and work, is of primary importance. Daily baths, active and passive exercise, and electricity, with avoidance of fatigue, are useful, and a cool, dry, pure climate should be selected. Stimulants should be avoided, and the diet must be plain, well cooked, wholesome, and taken at regular intervals, and need not be specially restricted, except where individually indicated. While the value of suggestion is generally recognized, confidence must be instilled, but anything in the way of hypnotic suggestion is to be condemned. Cardio-vascular and sedative drugs are a secondary consideration, their value lying largely in the mental impression produced, and upon the skill with which they are adapted to each particular case. Desiccated thyroid, in doses of from 2 to 5 grains daily, is often beneficial in secondary exophthalmic goitre cases and those developing myxoedema, and iodine in the form of the syrup of ferrous iodide in small initial doses does good. With regard to surgical measures, none of the recognized operations have been uniform in their results, and they should not be undertaken until the thyroid has returned to its colloid or resting state, and when indicated for a relief of pressure, for correcting deformity, for tumours, and for psychic effects. Moebius's antithyroid serum, the milk of thyroidectomized goats, the thyreolytic serum of Beebe and Rogers, and the Roentgen rays do not appear to give rise to any greater improvement than could be otherwise ascribed to rest, hygiene, and time, and no specific actions have been demonstrated.

SURGERY.

3. Diagnosis of Subcutaneous Wounds of the Pancreas.

J. WOHLGEMUTH has shown that the amount of diastase in the blood increases after the resection of a portion of the pancreas in dogs. He suggested that this was either due to the escape of the pancreatic secretion into the peritoneal cavity and its rapid absorption by the blood or to the congestion of secretion behind the sutures, leading to an abnormal amount being taken up by the blood. This result led to the thought that the increase of diastase in the blood might be utilized in the diagnosis of subcutaneous wounds of the pancreas in the human subject. He and Y. Noguchi (*Berl. klin. Woch.*, June 3rd, 1912) have investigated this matter in dogs. They give the details of the method employed for determining the amount of diastase in the blood. The test is carried out by putting up a series of varying quantities of serum, adding to each a given quantity of starch solution, warming for thirty minutes at 40° C., cooling and adding $\frac{1}{10}$ normal iodine solution, drop by drop, and determining which tubes yield the first suggestion of a blue colour. They cut through the pancreas of a dog under ether-morphine anaesthesia, stopped the bleeding, and closed the abdomen. Blood samples were taken before the operation and at each succeeding hour. The diastase value rose from 80 to 200 in four hours, to 332 in six hours, to 800 in twenty-four hours, and to 1,600 in forty-eight hours. The diastase in the urine rose correspondingly. In a second experiment a small stab was made into the pancreas, and the organ was slightly bruised by the fingers. In this case the value rose from 40 to 62.5 in four hours and eventually to 160 in forty-eight hours. They then examined a number of human serums, and determined that the average diastase value under normal conditions was between 8 and 16, and that the highest normal value was 32. It would therefore follow that if, after a stabbing wound of the abdomen, the diastase value of the blood was found to be over 32, the deduction that a pancreas wound was present would be justified. The raised value is maintained for seventy-two hours after the infliction of the wound, or even as long as ninety-six hours. The urine should also be examined, and the diagnosis of injury to the pancreas made when a greater value than 64 is registered. The apparatus for the test is very simple, the skill required is not great, and the test does not occupy much time. The authors consider that it will be found valuable in determining what treatment should be adopted in suspicious cases.

4. Radiological Diagnosis of Intestinal Stenosis.

ERNST V. CZYHLARZ (*Wien. klin. Woch.*, No. 9, 1912) describes two cases of radiological diagnosis of intestinal obstruction, the obstruction in the first case being situated in the small intestine, and in the second in the large. The two cases presented the following points of resemblance: In each case (1) stenosis affected one coil of intestine only; (2) a collection of gas and fluid, the sign of stagnation, was

present in the dilated part of the intestine; (3) two distinct collections of gas could be made out. The cases differed in (1) the form of the gas bladder, which, when it was of small intestine, was smooth and structureless, but when of the colon showed clearly the characteristic markings; (2) the fact that the coil of small intestine showed two collections of fluid, while that of the large intestine showed one only. It was also noticed that in the case of stenosis of the small intestine the height of the two, apparently distinct, collections of fluid varied inversely with one another, and the different levels of fluid and gas tended to alter with respect to one another, facts to be explained by the labile character of the mesenteric suspension of this part of the intestine and by the occurrence of peristalsis. The first of these cases described in the article was one of stenosis due to contraction of a tuberculous scar affecting the ileo-caecal region, the second was of stenosis in the descending colon due to a malignant growth.

5. Recovery of Swallowed Foreign Bodies.

G. Glücksmann gives an account of some recent experiences with oesophagoscopy and bronchoscopy (*Berl. klin. Woch.*, June 3rd, 1912). In one case a plate with teeth attached to it was found close below the constrictor muscle of the pharynx. It was seen, seized, and extracted by means of oesophagoscopy. Another woman who had swallowed a plate with teeth was subjected to oesophagoscopy, but one of the teeth broke off the plate, and it was found that further attempts to deliver the remainder of the foreign body caused bleeding. The plate was therefore cautiously seized and gradually pressed into the stomach, where it was left, the blades of the forceps being opened and moved backwards and forwards until clear of it. It was passed per anum after two days. A lady aged 60 years swallowed a plate with false teeth during an apoplexy. The plate was localized by means of *x* rays. At a later date oesophagoscopy was undertaken, but the *x*-ray examination was not repeated. It was then found that the plate had left the oesophagus. It was seen in the pelvis a few days later, and ultimately passed naturally. A more difficult case was that of a man who swallowed a plate with teeth on August 10th, 1910. This was said to have been seen and felt in the oesophagus. Later, while the *x* rays showed a shadow in the situation indicated, nothing could be seen when the oesophagoscope was passed. The man is still under observation, since Glücksmann fears that this may be one of those rare cases of wandering of a foreign body. Cases are on record in which a foreign body has gained an entrance through a mucous surface aseptically and produced a variety of symptoms through its mechanical presence later on. He further records the successful extraction of the guard of a pencil which had been aspirated into the lung by the combined means of skiagraphy and bronchoscopy.

OBSTETRICS.

6. Care of Patient in Third Stage of Labour and Puerperium.

Ross McPherson (*Bulletin of Lying-in Hospital, New York*, March, 1912) writes that, after the birth of the child and the subsequent cutting of the cord, etc., the physician should himself take the uterus and keep it under his own hand till the conclusion of labour. The most common mistake is "massage" of the fundus; the reason for holding the uterus is merely that we may keep ourselves informed as to the condition of the organ. Occasionally if there is a tendency to soften a little gentle stimulation with the finger-tips is permissible, but violent squeezing produces no valuable results and is extremely uncomfortable for the patient. The placenta and membranes should be removed from the lower uterine segment and the vagina by the method of Credé. This much-criticized method was never intended to separate the placenta, but to expel it after separation has taken place, but if it is to be successful the following rules must be observed. First, to wait until separation has taken place; secondly, to see that the uterus is hard and firm; thirdly, to grasp the uterus between the thumb anteriorly and the fingers posteriorly, while the organ is slightly retroverted by the thumb pressing downwards, and to gently squeeze the uterus. The placenta is received into the other hand and, contrary to custom, is not turned over so as to twist the membranes which makes them more easily torn, but is simply held still, and the hand is removed from the abdominal wall. After a short interval the uterus relaxes a little and the membranes generally slide out of the os of their own accord. On the question of when, in the third stage, the placenta should be delivered, the author protests against a time limit in this as in other obstetrical manipulations; when the uterus remains firmly contracted, when the placenta and membranes are separated and are no longer of any use in keeping closed the uterine sinuses, then and only then is it proper to remove them. The writer advocates a careful examination of the vagina and cervix for tears, believing that, if rubber gloves are worn, infection is most unlikely. Cervical tears are not sutured unless very extensive or causing haemorrhage, but all perineal, vaginal, or vulvar tears, however slight, are carefully brought together. Where bleeding occurs, due to relaxation, 20 minims of ergotol is injected into the thigh muscle, but ergot by mouth is rarely given. After labour the patient is kept on liquid for twenty-four hours, and is then allowed to eat anything she desires. As regards the emptying of the bladder, there should again be no time limit; no patient is ever due to void until the bladder is full, a condition easy to ascertain in a woman recently confined, and when it obtains all known means should be tried before resorting to the abomination known as the catheter. For the bowels it is the writer's custom to give divided dose of calomel during the first twenty-four hours, the last dose being followed in eight hours by a saline. For cleansing the genitals, sterile salt solution or one of the weaker antiseptics is all that is required. Binders, a source of immense comfort to the patient, are used for four days in summer and five days in winter. Patients should be kept in the recumbent position; there is nothing to be said in favour of early rising, excepting that it favours drainage, which can easily be secured by raising the head of the bed or allowing the woman to turn over on her abdomen once or twice daily. The author is emphatically opposed to what he considers the pernicious custom of getting patients up on the second or third day, even if only for the purpose of using the bedpan.

7. Rupture of Vaginal Vault in Labour.

Rouvier (*Ann. de gynéc. et d'obstét.*, April, 1912) adds to a short monograph on the subject four original reports. All the patients were Mussulman women, and they were under treatment in hospitals in Algiers. The first patient was a 5-para, aged 28. The presentation was right occipito-anterior, delivery occurred at term, great haemorrhage set in, and then the patient was sent into a hospital. The pelvis was not contracted. The forceps was applied by the resident medical officer, and a dead fetus nearly 9 lb. in weight extracted with ease. More bleeding followed. A wide rent, admitting the hand into the peritoneal cavity, was found in the right fornix. The patient died within a few hours. Although the laceration seemed such as might have been caused by a blade of a forceps, Rouvier believed, on the strength of clinical evidence, that it was spontaneous. The second patient was a primipara aged 18. The labour had been very lingering, the waters had broken sixty-two hours before admission into hospital, and the presentation was right shoulder dorsi-posterior. Podalic version was practised, as the pelvis was rachitic, and the aftercoming head delivered by means of forceps. The fetus was dead, it was a male weighing 6¾ lb. The patient seemed well until the next day, then symptoms of acute peritonitis set in. A laceration extended through the left vaginal fornix and broad ligament into the peritoneal cavity. The lesion was not clearly defined until Rouvier performed hysterectomy. The pelvic peritoneum contained sanious fluid, and the uterus was infected. The patient died shortly after the operation. The third patient was a 3-para aged 35. In this instance, too, the shoulder presented. The labour was lingering, and the waters had broken two days before admission into hospital, when the right hand projected from the vulva. Podalic version was practised, and a dead female fetus weighing over 6¾ lb. delivered. A few hours later, when the patient seemed fairly well, Rouvier examined her, remembering two similar cases. On examination the left fornix was found lacerated; three fingers could be passed into the wound. The left paramotrium was opened up. A drainage tube was inserted, and all seemed well for a few hours. Then the patient died suddenly. The veins of the pelvic plexuses in the left broad ligament had been opened up, but death seemed due mainly to acute sepsis. The fourth case was an example of spontaneous cure. A woman aged 25, subject to malarial fever, but well formed, suspected that she was pregnant. When admitted it was found that she had given birth to a large male child, still born, a few years previously. The face presented and an arm prolapsed. Yet after appropriate treatment spontaneous delivery occurred. The perineum was torn and free haemorrhages occurred. Then there was fever, yet the patient recovered. Rouvier found that the uterus was

bulky, but not gravid. Much cicatricial tissue occupied the vaginal fornices. There had been a wide laceration, which had healed spontaneously.

GYNAECOLOGY.

8. Transplantation of Ovaries for Artificial Climacteric.

E. ENGEL, in an address delivered before the Berlin Medical Society, raises the question whether the transplantation of human ovaries can be regarded as a successful method of treating the symptoms following the removal of both ovaries (*Berl. klin. Woch.*, 20. 1912). Attempts have been made in America and in France to perform ovary transplantation in women, and Kayser of Cologne reports of successful autotransplantation. Other similar cases have been reported. The author now gives the details of an instructive case. The patient was a young woman of 27 years. She had been a hospital nurse. In 1904 her appendix had to be removed, and at the same time her uterus was fixed, and in 1909 both ovaries were removed and the uterus was sutured to the abdominal wall. She was in hospital for two months after the operation, and during this time suffered from "flushes," sweating, etc. After her discharge the symptoms got worse and she vomited a great deal. The periods were irregular and very profuse, and for this she had to be plugged, and, later, curettage was performed. This treatment did not improve the condition, and in June, 1910, she was sent to Engel. Conservative remedies having failed to bring relief, she was again submitted to operation. The broad scar was removed, numerous adhesions were broken down, and the uterus was amputated supravaginally. The pains and the haemorrhage ceased, but the flushings and the vomiting persisted. These and associated symptoms became so acute that there was some fear of suicide. She was affected with ideas of persecution. She was therefore readmitted into the clinic and an ovary which was removed from another patient on account of a uterine myoma was sewn on to the stump of the uterus. This situation was chosen in order that an exact control might be exercised during the process of healing. At first the symptoms became rather worse than better, but after a week the attacks of sweating and flushing, vomiting, etc., became less frequent and less long. The ovary gradually healed on to the uterine stumps, and after five weeks no discharge appeared. The sweating and other attacks continued to decrease in severity until about seven weeks after the operation, when she spent a whole day without an attack. She is now completely freed from all her symptoms, and is bodily and mentally in good health. Engel ascribed the cure entirely to the operation, and he advises an attempt to transplant an ovary in similar cases, when the ordinary means fail to bring relief.

9. Chorion-Epithelioma of the Fallopian Tube.

JEANNERET (*Rev. Méd. Suisse Rom.*, May 20th, 1912) reports a case of malignant chorion-epithelioma which developed in the Fallopian tube after an extrauterine pregnancy. These tumours, whether arising in the uterus or the tube, are rare, only 10 cases arising in the Fallopian tube having been hitherto reported. The first of these was described by Marchand in 1895; and it is noteworthy that of this small number 4 (including the author's case) have shown malformations of the ovary. In consequence of this frequency some writers consider that the diseased ovary may be responsible for the production of an ovum possessing the potentiality of malformation; and recently Runge and Fraenkel, basing their view on the theory of Born that the corpus luteum is a gland with an internal secretion, have suggested that a cystic degeneration of the corpora lutea may interfere with the normal development of the ovum and lead to the formation of hydatid mole or of chorion-epithelioma. These malignant growths originate in the epithelial elements of the chorion (syncytium and cells of Langhans). Chorionic villi normally consist of a stroma of connective tissue permeated by blood vessels and containing branching cells. This is covered by a single layer of mononuclear polyhedral cells forming the layer of Langhans; and above this, again, is the syncytium, which consists of a protoplasmic mass of variable thickness, showing no outlines of cells, but containing large nuclei very rich in chromatin. According to the proportion of these elements in the tumour, Marchand has divided them into two classes. In his "typical form" the structure of new growth shows an arrangement very similar to that in the chorionic villi. In his "atypical form" the component cells, proliferated from the epithelium of the chorion, have lost their distinctive characteristics, and one only sees large irregular cells with numerous nuclei rich in chromatin, such as are found in the syncytium, with perhaps a few scattered cells resembling the cells of Langhans. In either class the origin of the tumour is wholly fetal, and not maternal. The history of these cases presents three characteristic periods—namely, the period of symptoms due to tubal pregnancy; a quiescent period; a period of rapid growth of the tumour, with pain and cachexia. The diagnosis is so obscure that in all the cases hitherto it has only been made by operation or *post mortem*. Macroscopically the tumours have the following features: They spring from the junction of a Fallopian tube with the uterus, and may be sessile or have a short pedicle; they grow very rapidly; they are spherical in shape, the surface nodulated, and of a dark red colour; the wall is friable, and encloses a cavity filled with blood. They form adhesions with neighbouring organs very early. If excised, they are very apt to recur; and secondary growths are found in the vagina, the liver, the lungs, and the brain. The prognosis, so far as is known, is absolutely fatal.

THERAPEUTICS.

10. Mesothorium and Thorium X in Malignant Disease.

V. CZERNY AND A. CAAN (*Muench. med. Woch.*, 1912, lix., 737) have recently had the opportunity of treating about 120 patients with the emanations and rays given off by mesothorium and thorium X. Mesothorium, recently discovered by O. Hahn, is chemically like radium; it is composed of two parts—mesothorium 1, that emits no radiations, and mesothorium 2, that emits β and γ rays. Mesothorium becomes converted to the extent of one half in five and a half years into the long-known radiothorium; the rays it emits are not the same as those emitted by radium. It breaks up into a number of substances—namely, radiothorium (α, β, and γ rays), thorium X (α and β rays), an emanation (α rays), thorium A (β rays), thorium B (α rays), thorium C (α rays), and thorium D (β and γ rays). It is extracted from Brazilian monazite sand, in which it is associated with radium. The authors quote from the recent literature to show that mesothorium has been used with success in the treatment of lupus; they had from 90 to 250 mg. of mesothorium—mostly in the form of bromide—enclosed in quantities of 10 to 50 mg. in small silver tubes or boxes, at their disposal. They found that the emanations of these mesothorium preparations were at least as strong as those of the radium salts they had previously (*ibid.*, 1911, No. 34) been using, producing cutaneous ulceration rapidly if applied to the skin without a metallic filter or screen. The authors believe radium to be inferior to mesothorium in the treatment of superficial tumours, angiomas, lupus, and keloid scars. Microscopically, they observed that exposure to mesothorium rays caused first a lymphoid infiltration in malignant growths, then a growth of connective tissue with disappearance of the malignant cells; occasionally haemorrhage into the growth took place, and marked necrosis was seen in ulcerated tumours exposed to the direct radiation for some time. Lupus (8 cases) and angiomas (6 cases) rapidly disappeared and healed. Carcinoma (85 cases) and sarcoma (12 cases) were more refractory; cutaneous or subcutaneous metastases the size of a hazel nut lessened and often disappeared; but large superficial cancers, while becoming necrotic and covered with epithelium superficially, often spread deeply while under treatment. As a rule the mesothorium tubes were wrapped in four to eight thicknesses of tinfoil or shielded by lead plates 1 to 3 mm. thick, and applied for several—or twelve to twenty-four—hours. If this was done the skin usually remained intact. The subcutaneous nodules of new growth usually lessened or vanished slowly in two or three months. Ten cases of oesophageal carcinoma were treated with 20 mg. of mesothorium in a silver tube in a sound; exposures up to two hours. Marked improvement took place in 4 of the patients. Eight cases of lymphosarcoma were treated, but without any improvement: in general, the results with sarcomas were not as good as with carcinomas. The authors tried the effect of thorium X (in the form of a radio-active solution in normal saline, containing about $\frac{1}{1000000}$ mg. thorium X per cubic centimetre) on 31 patients with carcinoma and 5 with sarcoma. The solution was injected into the growth or into the veins, or both; the dose appears to have been 1 c.cm. The injections

produced local effects on the growths, also general effects—especially nausea; one patient with inoperable laryngeal cancer had to be tracheotomized. In general thorium X injections did good, but it is too early to estimate the value of the treatment at present. The authors conclude that 40 or 50 per cent. of all their patients derived benefit from treatment with mesothorium or thorium X.

11. Salvarsan in Syphilis.

Renault (*Journ. des prat.*, xxvi, 1912) considers the subject under the following headings: (*a*) What are the conditions necessary in the patient? (1) There should be no visceral disease of any kind. (2) It is advisable to administer a solution of sodium arseniate for two days, and four to five days afterwards start the injection. (*b*) Under what form should it be injected? The author prefers an alkaline solution in oil, because it is easily made and least painful, injected intramuscularly or intravenously. (*c*) What dose should be employed? If injected intravenously, 30 cg. are sufficient; if intramuscularly, 40 cg. at the most can be employed. (*d*) What are the advantages and disadvantages of the two above-mentioned methods? Accidents are most frequent after intravenous injection, and too large doses (60 cg.) may be fatal; a dose of 40 cg. should not be exceeded. (*e*) Is it necessary to repeat the injection? The author considers it is wiser to abstain from a second injection, and recommends treatment by mercury. If a second injection be administered, this should not be done until a long time has elapsed.

12. Diabetes Mellitus.

Sewall (*Amer. Journ. of Med. Sci.*, September, 1911), considering that the pathology of diabetes might possibly consist in lack or insufficiency of some tissue side-chain, receptive body, or enzyme by means of which the healthy tissue cells are alone enabled to appropriate the sugar in the blood, makes use of the skeletal muscles as the principal storehouse of the glycogenic (or glycolytic) tissue enzyme. One pound of lean beef, machine minced and covered in a jar with a pint of cold water, with the addition of thirty drops of dilute hydrochloric acid, either stands in the ice-box all night, or at room temperature for four hours, and is then strained through cheese-cloth. The meat residue should remain nearly dry and colourless. The liquid should be drunk in the course of the day, a half to one tumbler at a time. Four cases treated, which showed marked improvement for a time at any rate, appeared to support the hypothesis that by such means the body could be furnished with a muscle enzyme capable of metabolizing sugar. In another case in which muscle infusions were combined or followed by watery extracts of pancreas, the evidence tended to prove that while neither beef, beef pancreas, nor pancreas given alone was capable of abolishing glycosuria, when given in sequence they might be effective, since an established glycosuria could be abolished by such sequence, and further, the treatment greatly increased the range of tolerance for carbohydrates. After the disease had persisted for some months, however, such good result failed to be obtained, although, especially with the beef infusion, the subjective condition of the patient appeared to improve. The substitution of commercial pancreatic powder for the fresh infusion was disappointing, as no good result attended its use.

13. Complications of Typhoid Fever.

Schuster (*Wien. med. klin.*, No. 2, 1912) discusses some of the less common complications of typhoid fever. Enlargement of the spleen may persist after the fever has subsided, and a relapse is then probable. The occurrence of embolism or thrombosis in the spleen is less common, and usually escapes recognition; the infarcted tissue may become necrotic and an abscess form, with the danger of bursting into the abdominal cavity and giving rise to peritonitis and general sepsis. In a case described the temperature had become normal in the ninth week of illness, after a relapse, but later in the same week the patient had a rigor, accompanied by vomiting and pain in the abdomen with a rise of temperature to 39.2° C. (102.5° F.), the abdomen became tender and the walls tense; the inferior pole of the spleen was at the umbilicus. During the next few days abdominal distension increased. At the beginning of the eleventh week free fluid was present in the abdominal cavity. Death occurred in the thirteenth week with the signs of peritonitis and acute septic endocarditis. At the autopsy it was found that an abscess at the lower pole of the spleen had burst through into the peritoneal cavity. A second complication considered is referable to the larynx. Ulcers may form as a result of involvement of the lymph follicles found at the base of the epiglottis, at the insertion of the vocal cords posteriorly, and on the posterior wall. Small superficial ulcers often heal spontaneously; but deeper ones may give rise to serious results, and oedema of the glottis and stenosis of the larynx may set in suddenly. Although tracheotomy may do away with the immediate danger to life in cases of stenosis, there remains the fear that the process should spread and necrosis of one or more of the cartilages should make repeated operative interference necessary; the subsequent contraction of scar tissue may render necessary the long-continued passage of bougies, or even, as in an illustrative case of which full notes are given in the article, the permanent wearing of a cannula. The third complication dealt with is that of cholecystitis. Six cases of cholecystitis as a result of typhoid fever have occurred under the author's observation during the last five years. The gall bladder might be affected in the first weeks of the illness, or more rarely during convalescence. The formation of ulcers with subsequent perforative peritonitis may occur, but did not do so in any of the author's cases, all of which recovered spontaneously without operative interference.

PATHOLOGY.

14. Graves's Disease.

The question whether the phenomena of Graves's disease can be explained on the theory of hyperthyroidism or disthyroidism, or on the basis of a hyperadrenalinaemia, is still unsettled. As a contribution towards solution, Pley (*Gazz. degli Osped.*, February 20th, 1912) has experimented on dogs by giving (1) intravenous injections of the blood serum of subjects suffering from Graves's disease; (2) by injections of thyroid extract obtained from the same subjects. Of the six serums used in the first series, one proved inactive, three only slightly active, and two active. The chief results obtained by injection of the serum were a more or less marked acceleration of the heart beats, a diminution in the fullness of the cardiac systole, an elevation of the arterial pressure, rapidly succeeded by a marked lowering and a diminished excitability of the moderator nerves of the heart. These facts point, in the author's opinion, not to hyperthyroidism nor to adrenalinaemia, but to disthyroidism. Again, comparative experiments with injections of thyroid extract from Graves's disease and from normal thyroid gland do not show that the effects produced by the former are so much more marked than the latter as to support a theory of hyperthyroidism.

15. Pathological Changes in Animals caused by B. Leprae.

Hans Much (*Mucnch. med. Woch.*, April 16th, 1912) gives an account of his experiments with the leprosy bacillus in animals. He first sets up the thesis that the tubercle bacillus takes a definite position in regard to its capability of producing pathological changes in the series of acid-fast bacilli, but that it is nearly related to a number of the acid-fast bacilli in this respect. Tuberculous and immune persons react not only to tubercle bacilli, but also to a number of other acid-fast bacilli. He assumes that a person who has a considerable amount of tuberculosis antibody in his organism reacts as well to the other acid-fast bacilli, while when only a moderate amount is present, only those acid-fast bacilli which are very closely related to the tubercle bacillus take part in the reaction. The same applies to leprosy bacilli. The leper reacts to the tubercle bacillus as well as to the leprosy bacillus, but when large amounts of antibody are present, he reacts as well to other forms of acid-fast bacilli. In the second place he shows that animals which are pretreated with a tubercle virus which is incapable of living are rendered hypersensitive to the tubercle virus. He claims to have proved that this can be demonstrated with tubercle bacilli treated with organic acids. Intracutaneous introduction of leprosy bacilli into guinea-pigs rendered immune to tubercle bacilli and into goats led to definite changes of a varying character according to the condition of the bacilli. He describes the changes in some detail, which approximate more to the type of tuberculous changes than of leprosy changes. In the case of the control, that is, the animals non-immune to tuberculosis, the leprosy bacilli were absorbed without producing any lesions. He gives a number of arguments against the assumption that the changes seen were tuberculous. His experiments show that a typical tubercle can be produced by leprosy bacilli in animals immunized to tubercle bacilli.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

16. Roentgen Rays and Duodenal Ulcer.

SIEGMUND KREUZFUCHS (*Wien. klin. Woch.*, No. 11, 1912) discusses the Roentgen-ray investigation of duodenal ulcer, and states that by this method a series of facts have been disclosed of interest not only from the theoretical standpoint but also from that of treatment. An increased motor activity of the stomach has been uniformly observed. Hertz considers the most frequent cause of hypertonus of the stomach to be duodenal ulcer. The author has found in his cases a condition of hypertonus of the stomach, deep antrum and fundus peristalsis, and quick evacuation of the stomach. In 3 cases traces of bismuth were present in the duodenum for a considerable time, and the patient, when asked to point out any painful spot, pointed to that spot behind which the bismuth could be seen. In several cases the author was astonished to find some bismuth still in the stomach when he re-examined the patient six hours after the meal, the duodenum being, as a rule, free from bismuth, the small intestine to a great extent filled with masses of it. This condition is in opposition to the increased rate of emptying of the stomach noticed above. Apparently Haudek has been the only author who has previously observed the presence of traces of bismuth in the stomach six hours after the meal, and his explanation was that a condition of diminished motility of the stomach was induced by duodenal ulcer. The present author distinguishes, with regard to the passage of a bismuth meal, between the fasting condition in which both stomach and small intestine are free from food and the emptied stomach in which the small intestine contains food. In the fasting condition a typical picture of the effect of duodenal ulcer may be observed, while with an emptied stomach the picture may be altogether atypical. The points to explain are the increased motor activity of the stomach, the initial rise in rate of emptying of the stomach, together with the presence of traces of bismuth six hours later. Barclay has pointed out that the duodenal jejunal reflex which checks the normal periodicity of opening of the pylorus is to a large extent done away with when duodenal ulcer is present, and that in consequence the pylorus opens more frequently than normal. This view can be supported experimentally. If a duodenal fistula is produced in a dog and the fasting stomach filled with an indifferent fluid the stomach is found to empty itself at regular intervals of from 18 to 20 seconds until all the food is passed on. Hirsch has found that this regular action only occurs if the duodenal fistula is not further than 4 cm. (1½ in.) from the pylorus, and if the gastric contents empty themselves through the fistula. It appears that injury of the duodenal wall, as in ulcer, acts like the fistula in lowering the duodenal reflex, and the real factor is, therefore, not an increase of stomach activity, but a decrease in the check on the emptying of the stomach. But according to an observation of Kelling the jejunal reflex acts more powerfully as the jejunum fills up, and it may thus happen that the duodenal reflex, though absent at first, may be aroused by a summation of irritation, and may exercise a late but energetic action in preventing the rapid disappearance from the stomach of the last traces of the bismuth meal. The author suggests that the so-called hunger pain coincides with the closing of the pylorus. The relief of pain almost immediately after taking food is explicable on the supposition that the setting in motion of the stomach due to taking food overcomes the resistance of the pylorus. The result of the Roentgen-ray investigation of duodenal ulcer is to transfer the emphasis in treatment from treatment of hyperacidity to that tending to diminish motor activity. The "oil treatment" probably acts in the latter of these two ways. The author has seen cases of duodenal ulcer show typical symptoms for as long as twenty or even thirty years, and radiology should prove of benefit, both by enabling an early diagnosis to be made and also by disclosing the exact development of the condition and the danger of a too conservative treatment. He strongly recommends the use of Roentgen rays in suspicious cases.

17. Haematogenous Congenital Jaundice of the Adult.

CHAUFFARD (*Journ. des praticiens*, 1912, xxvi) describes this condition in a youth of 20 years of age. In some cases the disease has existed from birth, and is congenital; in others it is secondary to a non-icteric anaemia. Urobilin is constantly found in the blood, and the stools are not pale but of a greenish colour. The patients become yellow at times, and at other times assume the normal colour. The change of colour seems to be due to mental emotion. Pruritus, bradycardia, and xanthelasma are absent. The spleen is enlarged. The blood shows anisocytosis and diminution in size of the red corpuscles. There are numerous haematin granules, and there is also absence of auto-agglutination and auto-haemolysis.

18. Chronic Typhoid Infection.

STONE (*Amer. Journ. Med. Sci.*, April, 1912) discusses the medical aspect of chronic typhoid infection (typhoid bacillus carriers). About 4 per cent. of all typhoid cases become chronic secondary carriers, and may disseminate the infection for periods of months or even years after apparent recovery. Chronic typhoid carriers may be of two types, namely, contact, or primary, carriers, those who have never had the disease to their knowledge, and secondary carriers, those who have had the disease. Contact, or primary, carriers are not uncommon among nurses and orderlies, who in many instances may excrete typhoid bacilli in the stools and urine for years, their own tolerance to infection being due either to a natural immunity, or to a partial immunity from an earlier unrecognized mild infection. It has been estimated that probably one in every 500 adults, who have never knowingly had typhoid, is a carrier. Many carriers experience but little discomfort, their condition only being discovered through a possible connexion with an outbreak, or from vague symptoms leading to an investigation. After an attack the infection may remain latent in the gall bladder or the urinary tract for years, and all patients presenting signs of gall bladder disease should be considered as possible carriers until proved otherwise, and cultures should be taken in all post-typhoid cases whose urine contains bacteria, as well as from the stools in those showing signs of chronic dysentery or colitis. The colon bacillus in the bladder sets up a cystitis, whereas the typhoid bacillus is eliminated in suspension. During convalescence from an acute attack of typhoid intestinal and urinary antiseptics may be of use because of the natural augmentation of immune bodies at such a time, but in chronic carriers the bactericidal and bacteriolytic properties of the blood are decreased, and such antiseptics are of little use, and treatment by inoculations of a vaccine prepared from the patient's own organisms offers most hope for cure. The most satisfactory method of dosage is to increase from 100 to 1,000 million in accordance with evidence of immunizing response, as shown by a study of the agglutinating, bactericidal, and bacteriolytic power of the blood serum. In addition to such carriers, all individuals in attendance upon typhoid cases should receive immunizing vaccine treatment, in order to secure protection and prevent the possibility of cholecystitis, or other late manifestations in themselves, as well as to avoid the chance of being a danger to others, and such immunizing treatment should be carried out regularly at intervals of two or three years. Chronic carriers in whom vaccine treatment is unsuccessful should be under the control of the local board of health, and given employment which would not necessitate the handling of food products.

19. Infantile Paralysis of Duchesne-Erb Type.

D'ESPINE (*Ann. de méd. et chir. inf.*, xvi, 1912) describes the case of a boy, aged 29 months, suffering from this disease, and he bases his diagnosis on the following facts. (1) Etiology and onset: The child was suddenly seized with paraplegia whilst in perfect health at the age of 26 months, the age of predilection of infantile paralysis. The prodromata were short and accompanied by fever. (2) Progress: A purely motor paralysis with maximum of intensity in the first week of the disease and gradually decreasing. The paralysis disappeared from the lower limbs and was principally localized in the two deltoids, which were markedly atrophied. This localization in the upper limbs is not so frequent as in the lower, but in a sixth of the cases quoted by various authors only the upper limb was paralysed and atrophied. The objections that may be raised to the diagnosis are (1) increase of the

patellar reflexes, but this condition has been noticed before in this disease; (2) normal electrical reactions. Here, again, this is not unique, as cases mentioned by various authors show. The author intends to treat the case with massage and electricity.

SURGERY.

20. Intravital Puncture in the Diagnosis of Diffuse Cerebral Lesions.

O. Foerster (*Berl. klin. Woch.*, May 20th, 1912) has practised puncturing the right frontal lobe of the brain in cases of diffuse cerebral disease for a considerable period of time, and reports on his more recent experience with this diagnostic means. He has carried out the puncture in 16 cases. The skin is shaved over an area of the size of a crown piece and the hair is kept back by adhesive plaster. The skin is then disinfected with tincture of iodine, and the bone is bored after the chloride of ethyl spray has been applied. The dura mater is then punctured with the needle of the syringe, and a piece of the cortex is aspirated into the syringe. In the case of 4 patients the clinical symptoms and signs pointed to the probable existence of general paralysis of the insane. In each case the histological diagnosis confirmed this. The fifth case appeared to be a typical one of presbyophrenia or arterio-sclerotic insanity, but the blood and cerebro-spinal fluid revealed a syphilitic infection. It was therefore impossible to determine whether a spinal syphilis, an arterio-sclerotic or senile atrophy of the brain, was present. The puncture yielded a piece of cortex from which it was seen that the patient was suffering from general paralysis of the insane. In the next three cases the differential diagnosis lay between general paralysis and arterio-sclerotic atrophy or cerebral syphilis. In each the diagnosis of general paralysis could be excluded histologically. The one proved to be a syphilitic affection of the brain, the second probably arterio-sclerotic atrophy, and the third was a syphilitic pseudo-paralysis. The ninth case was also clinically diagnosed as one of general paralysis. The histological examination of the cortex revealed that no paralysis was present, but the masses of polymorphous cells, with rounded nuclei, fine chromatin, and also spindle and horse-shoe elements, rather pointed to the tissue in the neighbourhood of a tumour. This was supported by the distribution of the cells along the vessels, and the increase of the glia cells around the ganglion cells. Later the patient died and the *post-mortem* examination revealed a tumour of the septum pellucidum. The other cases also show the value of the histological examination of the cortex in cases of apparent diffuse cerebral disease.

21. Radiographic Evidence of Gastric Ulcers.

Under certain conditions, according to two French radiologists, the radiograph will furnish evidence of chronic gastric ulcer. Bonniot and Maréchal, in a paper read before the Société de Radiologie Médicale de Paris (*Bull. et. mém.*, May, 1912), state that, on radiographing a stomach in which ulcer was suspected, they noticed in the image a round opaque patch, about the size of a florin, at a position corresponding to the third lumbar vertebra. It was differentiated by its greater opacity from the small masses of bismuth solution in the stomach. When subsequently an operation was performed, the surgeon discovered at the small curvature of the ptosed stomach an induration corresponding in size and position to the feature noted in the radiograph. In another case a similar induration was found at the middle of the small curvature, coinciding with a round, dark marking previously obtained on the radiograph; and in a third instance, when the operation revealed an ulcerated patch encroaching at once on the gastric and duodenal declivity, the radiograph had already shown, among the masses of bismuth in the stomach and duodenum, a rounded image, signifying, [illegible] that at what proved to be the site of the ulcerated [illegible] muth was deposited in a thicker layer. Much the same finding was verified surgically in a fourth case. The authors explain the persistence of bismuth at these [illegible] found that the bismuth adheres more easily [illegible] of a portion of the mucosa which is [illegible] to the rest of the part. The technique [illegible] administering 125 to 150 c.cm. of a solution of [illegible] th, enclosing 20 grams of bismuth carbonate. The [illegible] ation made to lie successively on the back, the right side, and the abdomen for half a minute in each position; then on the left side for two minutes; and, finally, on the back, in which position he is radiographed, care being taken to place his head lower than his feet. The evidence of ulceration can only be obtained clearly in chronic ulcers which have reached a certain extent, and more particularly a certain depth; and, of course, the radiological evidence should not be separated from the clinical. Superficial ulceration of the gastric mucosa does not appear to be demonstrable radiographically.

22. Experimental Reversing of the Circulation.

The idea underlying Wieting-Pachas's operation for arterio-sclerotic gangrene is that of a reversal of the circulation. In this operation an anastomosis between the femoral artery and vein is established. M. Rothmann (*Berl. klin. Woch.*, May 20th, 1912) has experimented on animals to determine how far such a reversal is really possible. He gives the details of the methods which he employed. When using the portal circulation in the frog he found that a reversal is possible. The amount of fluid which can pass through the veins, capillaries, and out of the arteries is from 15 to 50 per cent. of the amount injected into the recipient vein. The organs supplied in this circulation become oedematous, retaining much of the injected fluid. It must be mentioned that the portal vein in the frog possesses no valves. When the experiment was applied to the mesenteric vessels, where the veins are provided with valves, not a drop of fluid passed out of the arteries, even when 140 c.cm. water pressure was applied. A further experiment was carried out: The carotids and jugulars of living rabbits were freed and at first transfused with defibrinated blood diluted with Ringer's solution. The fluid passing through the arteries escaped by the veins. Then the current was reversed, and lastly the fluid was run into one jugular vein only. In no case did a drop escape through the carotid arteries. He therefore concludes that reversal of circulation is only possible where the veins have no valves, and is then only partial.

23. Acute Pancreatitis.

Balch and Smith (*Publications Massachusetts Gen. Hosp.*, October, 1911), from a study of 21 cases of acute pancreatitis, conclude that the haemorrhagic form is an acute condition almost always superimposed upon a chronic disorder of the stomach, duodenum, or biliary tract, characterized by agonizing epigastric pain, without corresponding tenderness, but accompanied by a visible prominence in the epigastrium, feeble slow pulse, normal temperature, and persistent vomiting. These symptoms, together with an abnormal amount of fat in the stools, or the Cammidge reaction in the urine, establish the diagnosis. Operation, in order to afford a free exit for pancreatic secretion and to drain the infected tissues, is indicated unless the patient is suffering too severely from shock. Gangrenous pancreatitis is a later development of the haemorrhagic form. Suppurative pancreatitis may consist of small abscesses throughout the gland, or of a single abscess of the tissue, or of an abscess filling the omental bursa, causing symptoms of epigastric pain with local tenderness, vomiting, and slight temperature. Early operation in this class affords good hope of recovery. Since the object of the operation is to drain the pancreatic secretion and the products of infection, this is best attained by incising the tissue of the gland, and by carrying the drainage through the gastro-hepatic omentum, close above the lesser curvature of the stomach.

OBSTETRICS.

24. Extract of Pituitary Gland in Labour.

F. Jaeger (*Muench. med. Woch.*, February 6th, 1912) states that the choice of drugs for the induction of pains in atony during labour is small, the principal being quinine, ergot, and adrenalin. Frölich and v. Frankl-Hochwart have proved experimentally that extract of pituitary gland causes contractions of the gravid uterus in rabbits. Foges and Hofstädter first used this remedy in the treatment of *post-partum* haemorrhage, and Hofbauer gave it to increase pains during labour. Since then many obstetricians have sung the praises of this drug. Jaeger has used Burroughs Wellcome and Co's infundibular extract of pituitary gland, 1 c.cm. corresponding to 0.2 gram of fresh gland substance. The drug was applied by intramuscular or subcutaneous injection. The injections are not painful. As a rule 1 c.cm. proved sufficient, but on occasions he used as much as 5 c.cm. In no case were any symptoms met with which could be ascribed to a side

action of the drug. The injections were given in each case as soon as the uterine contractions proved too weak to be effective, and the first contraction set in in about three minutes. This lasted from one to three minutes, and was followed by further pains after intervals of from a quarter to half a minute. The intervals later become longer, and the pains gradually become less strong. If a fresh injection is then given the process is repeated over again. Jaeger has given a graphic record of the uterine contractions, the blood-pressure, and the fetal heart-rate in some of the cases. He found that the extract acts best during the first stage of labour when the os uteri is partially dilated—in primiparae when it is about the size of a half-crown, and in multiparae when it admits of two fingers. In these cases one injection suffices as a rule. Contractions must have been present before if the injection is to have a useful result. During the expulsion stage the injections undoubtedly render the application of forceps unnecessary in many cases. He therefore deduces that the indications for its employment are secondary weakness of the contractions, insufficient contractions resulting from hydramnios, twins, or other causes of excessive dilatation of the uterus, or when fever is present. When difficulty is anticipated in the third stage of labour, this can be prevented by an injection shortly after the birth of the child. If the birth of the child takes place about an hour after the injection, the practitioner must be prepared for haemorrhage. He regards pituitary extract as the best medicament for the treatment of atony of the uterus which we possess.

25. Pregnancy Eight Months after Acute Double Salpingitis.

LANCE (*La gynécologie*, April, 1912) reports an instance where a most typical and well-defined attack of pelvic peritonitis involving both Fallopian tubes failed to sterilize the patient, who became pregnant within a year after the attack. Early in January, 1911, a married woman aged 40 was taken very ill with severe hypogastric pains, rigors, nausea, and a high temperature. Lance kept her at rest, applying ice to the abdomen. At the end of ten days there was widespread exudation extending upwards all over the lower part of the abdomen. Hot vaginal and rectal irrigations were administered. At the end of a fortnight two well circumscribed masses were definable in the pelvis, one limited to the right fornix, the other occupying the left and extending into Douglas's pouch. After a month of appropriate treatment the patient was allowed to leave her bed. The summer of 1911 was spent at Biarritz. In September last the uterus was found on examination to be movable and healthy, and the Fallopian tubes could hardly be defined. The catamenia appeared at the beginning of October and did not reappear. At the beginning of February, 1912, the patient was not only quite well, but had reached the fourth month of pregnancy. The uterus was mobile and quite naturally developed.

GYNAECOLOGY.

26. Scarification of Cervix Uteri.

E. ENGEL (*Deut. med. Woch.*, April 4th, 1912) is in favour of a more general use of scarification of the cervix uteri than has been the case in the past. He finds that this treatment alone is often sufficient to relieve or cure conditions which have baffled many other methods, and that it is particularly valuable in cases of dysmenorrhoea and metritis associated with a sense of general discomfort and of excessive heat, congestion in the head, abdominal distension, backache, headache, and attacks of fainting. The treatment should not be adopted till a careful examination of the pelvis has shown the absence of any acute disease; and care should be taken at the outset to prepare the patient for a protracted course of the treatment, lest she should abandon it after a few scarifications have relieved her of the most distressing symptoms, without having effected any permanent result. The treatment probably acts in more than one way. In elderly women suffering from obesity, it gives relief to local congestion, while in young women it favours circulation through the uterus, facilitating its metabolism, and thus reducing a hypertrophied organ to one of normal dimensions. The technique is simple. A speculum is introduced into the vagina, and the cervix, which is thus exposed to view, is freed from any mucus that may be covering it. A sharp two-edged knife or scarificator is then introduced, and three or four incisions, each half a centimetre deep, are rapidly made in the anterior lip of the cervix. The posterior lip may also be incised if necessary, but it is advisable to avoid the lateral aspects of the cervix for fear of wounding blood vessels which, though small, may cause troublesome haemorrhage. When the incisions have been made the coagula which have formed are washed out with cold water, and this procedure is usually sufficient to arrest all further haemorrhage. The operation is completed by the introduction of a tampon, soaked in a 20 per cent. solution of glycerine, which is pressed against the cervix and left *in situ* till the following day, when it is withdrawn by the patient. The operation, properly performed with a sharp instrument, lasts only five minutes, and is quite painless. It may, however, be sometimes necessary to use more drastic measures for the arrest of haemorrhage. On such occasions a pad of cotton-wool is firmly pressed against the cervix, the pad being, if necessary, sprinkled with sesquichloride of iron. On rare occasions it may be advisable to examine the external genitals for effused blood ten minutes after the completion of the operation. The scarification must usually be repeated fifteen to twenty times, and in one of the cases reported in detail by the writer, three courses of the treatment were necessary. The patient in this case was a married nullipara, aged 36, who had long suffered from headache and vomiting immediately before and during every menstruation. The mucous fluid which was vomited was copious and bile-stained, and the patient had been treated for gastric catarrh for many years. There was lateral displacement and enlargement of the uterus. Metritis and dysmenorrhoea were diagnosed, and the vomiting was traced to the irritation of the peritoneum caused by the periodic congestion in the pelvis. The complete recovery effected was all the more satisfactory as the patient's life had previously only been a burden to her. The other patients whose reaction to the treatment is recorded by the writer responded more rapidly to it. Thus a one-para, aged 32, whose metritis gave rise to a sense of excessive heat, abdominal distension, congestion in the head, and attacks of giddiness, was treated with a course of nineteen scarifications over a period of three to four months, after which all her symptoms disappeared, and no relapse occurred during the following four years in which she was under observation. Several other cases, successfully treated, are reported in full, the writer claiming that the return to favour which venesection in general now enjoys, should be extended to this particular branch of blood-letting.

27. Fallopian Tube in Obturator Hernial Sac.

TÜRSCHMID (*Nowy Lekarskie*, Part 7, 1911) found the middle part of the right Fallopian tube in an obturator sac no larger than a hazel nut. About 1½ in. of the tube occupied the sac; the abdominal end closed by adhesions lay with the corresponding ovary in the pelvis outside the sac. The nerve and vessels had been parted, the latter running behind the sac, the nerve outside it.

THERAPEUTICS.

28. Salvarsan.

ZEISSL (*Wien. med. Woch.*, No. 21, 1912) gives his experience of the use of salvarsan in 294 cases of syphilis treated between July, 1910, and April, 1912. In every case it was given by injection into the gluteal muscles in acid solution, and in no single instance did any bad result ensue. In 3 cases facial paralysis occurred, but as this rapidly disappeared under mercurial inunction Zeissl claims that it was not due to Ehrlich's preparations, but to syphilis itself. He remarks that it has been recognized since 1878 that syphilis may cause nervous symptoms even in a very early stage. Of the 294 cases there were 22 who had only a primary sore, but in whom the Wassermann reaction was positive. After treatment with salvarsan not one of these developed any constitutional symptoms, and the Wassermann test, repeated five or six times at long intervals, was always negative. Children affected with congenital syphilis were treated very successfully; and it is to be noted that if a woman be treated during her pregnancy with salvarsan, though the father be syphilitic, the child will be born healthy. As regards the method of administration, for patients who can take a few days' rest in bed Zeissl always injects the acid solution into the muscles; but as this often causes considerable pain for several days, he prefers, in the case of patients who must remain at work, to administer it intravenously. Given in this way it is nearly painless; but the injections have to be repeated several times at intervals during a period of four or five weeks—until, in fact, the Wassermann reaction becomes

negative. With the intramuscular method, which he used exclusively in the 294 cases referred to, Zeissl has been able, especially in early cases, to establish a permanent cure with a single dose of about 0.5 gram. The muscular pains vary considerably. They seem to be much more common in men than in women, who may escape them entirely. If severe, they may best be treated with hot fomentations or morphine. The only other unpleasant symptoms observed by Zeissl were faintness, nausea, and fairly profuse sweating. On the whole, salvarsan is far more certain and rapid in its effects than mercury or iodine, and, with due precautions, Zeissl considers it a perfectly safe remedy. He lays stress on the importance of strict asepsis in the technique of its administration, and of a careful preliminary examination of the heart, kidneys, and lungs. On no account, he says, should it be given to any one suffering with heart disease, or to a patient over 60 years of age.

29. Purgative Action of Magnesium Sulphate.

A RADIOGRAPHIC study of the purgative action of magnesium sulphate, calcined magnesium, aloes, and senna, has been presented to the Société de Radiologie Médicale de Paris by Lebon and Aubourg (*Bull. et mém.*, No. 32, 1912). Unlike olive oil, magnesium sulphate does not suppress all pyloric contraction; indeed, the obstinacy of the pylorus, especially after the administration of large doses, is noteworthy. In one case in which 30 grams of magnesium sulphate was added to the bismuth meal, given at 9.30 a.m., small opaque clusters in the lower part of the ileum were visible on an *x*-ray screen examination at 10.30, and it appeared as though, on arrival in the stomach, the liquid had surprised a partly open pylorus, and that some portion of it had slipped into the duodenum. The pyloric sphincter then immediately contracted, preventing all further passage, and at mid-day the stomach was still full. The subsequent action took place suddenly, for within an hour the patient had an abundant diarrhoeic stool, and two others in the late afternoon. The prolonged contraction of the pylorus was lessened when the dose of magnesium sulphate was diminished. The effect of heavy calcined magnesia is very different. This substance does not retard the stomachal evacuation, which is made normally. The purgative action of calcined magnesia, which according to some is due to osmosis, and according to others to an increase of intestinal glandular secretion, proceeds for a great part of the time by means of the contraction of the muscular fibres of the walls. In the stomach calcined magnesia becomes in part soluble, but the mechanism of the purgative process is complex and little understood. The administration of aloes in powder to the dose of one gram has furnished instructive radiographies. Aloes do not excite the peristaltism of the stomach, but on the other hand they do not interfere with the contractions of the gastric muscular coating, for the stomach was shown to be almost empty an hour and a half after a dose. The action of aloes is not a simple one of hypersecretion. The muscular coating of the small intestine is stimulated without any very marked contractions being provoked, but the action on the muscular coating of the large intestine is considerable, and a rapid evacuation of its contents is brought about. In England, the authors point out, aloes are employed in torpid states of the colon. Senna, at least in the form of tincture and of aqueous extract, acts only slightly on the muscular fibres of the ileum. It does not hasten the stomachal evacuation, and appears even to retard it when given in a dose of 10 grams. On arrival in the caecum and the ascending colon, senna provokes energetic contractions of the large intestine, comparable with those produced by aloes and castor oil.

30. Alcohol as a Peritoneal Disinfectant.

TANSINI (*Rif. Med.*, March 16th, 1912) records two cases of intestinal surgery where the faecal contents escaped into the peritoneal cavity, and in spite of this no peritonitis followed. This good result the author attributes to the fact that the peritoneal surface was freely swabbed with gauze dipped in alcohol at 95°. No evil effects were noticed, and both cases healed well. The first case was [illegible] enterotomosis for intestinal stenosis. The [illegible] of tuberculous disease of the caecum for [illegible] resection was performed, and an ileo-[illegible] In each case faeces unfortunately escaped into the peritoneal cavity. No other antiseptic was used. In addition to these two cases—cases in which, in the ordinary way, one would fear peritonitis would be set up—the author says he has used alcohol successfully as a disinfectant in gastro-enterostomy, especially along the line of suture.

31. Treatment of Psoriasis.

SABATIÉ (*Progrès méd.*, April 13th, 1912) says that oil of cade is one of the best applications and the easiest to apply in the active treatment of psoriasis. When the disease is extensive it should be applied pure, the patient wearing a flannel shirt and drawers, which, if possible, he should keep on night and day. If this is impossible on account of the odour, prolonged daily baths should be used, containing 25 to 100 grams of the oil with a like quantity of black soap. For less extensive patches a thick ointment should be prescribed: Oil of cade 10 grams, zinc oxide 20 grams, vaseline 30 grams. For small isolated patches 10 grams of the oil in 20 grams of collodion is a convenient application. Chrysarobin, chrysophanic acid, and pyrogallic acid have a more rapid action, but they colour the skin; the first two may provoke local irritation and the third is poisonous. They can only be applied to small unbroken surfaces on the trunk and limbs, and then only in adults. Calomel (1 to 3 grams in vaseline 30 grams) cannot be applied to large surfaces, but is the method of choice for the face and hairy parts. Salicylic acid ointment (1 in 50) is the least unsatisfactory treatment for ungual lesions. Internal treatment is necessary only in obstinate cases; it is very deceptive, the best of the many suggested drugs being cacodylate of arsenic in large doses (but only in the chronic form) and thyroid extract. The hygiene and alimentary régime usual for arthritics should be prescribed. Hydromineral "cures" give very uncertain results; the arsenical springs are indicated, especially in recurrent cases, and the sulphurous springs in inveterate cases, particularly if associated with arthropathy.

32. Percutaneous Application of Actinium.

ACTINIUM, which was discovered by Debierne in 1899, is considerably cheaper than radium bromide or mesothorium, and for this reason Albert E. Stein (*Berl. klin. Woch.*, April 22nd, 1912) considered it desirable to investigate its therapeutic properties. It emits α, β, and γ rays. Its emanation has but a short life (3.9 seconds). Stein has applied actinium emanation by using a so-called "radio-firm-compress" (L. Marcus, Berlin), which contains actinium. The outer side of the compress is covered with flannel and the skin side with raw silk. It is applied either direct to the skin or over a thin linen covering. The physical chemical properties of the compresses were tested by the author, who reports that a good photographic action in the dark can be obtained after twenty-four to forty-eight hours. It gives out 250 Maché units. He employed it for rheumatic, gouty, and neuralgic affections, and also for nervous headache, earache, and for bronchial affections. He further advises a combination of percutaneous application and inhalation of emanation. He has obtained very good results by means of his compresses, and while some patients did not answer to the treatment, the majority were much improved by it. He gives a few clinical histories to illustrate the action and results.

PATHOLOGY.

33. Treponema Pallidum in Syphilitic Lesions.

WLADISSAVLJÉVITCH (*Sem. méd.*, 1912, xxxii) describes the various methods by cupping glasses, blisters, friction of the skin, etc., of procuring a large quantity of serum for the examination of the organism, and considers that the simplest method in cases of chancre is to dry the lesion with sterilized gauze, or if the chancre is much ulcerated and covered with detritus, with a tampon of moist ethereal petroleum, then to wait a moment, and then to take for microscopic examination the serum which immediately exudes. A drop of this is placed on a slide and covered with a cover-glass. The serum thus obtained is quite fresh, and contains the living treponemata.

34. Infectious Theory of Acute Articular Rheumatism.

MONNIER, LECLERCQ, AND PIERRET (*Echo méd.*, ix, 1912) quote numerous observations, personal and from literature, to show that acute articular rheumatism is an infectious disease, and support this assumption by reference to the 93 cases seen at the Hôpital de la Charité in Lille during the year 1911, the average number of cases for the four years preceding amounting to only 32 cases. The authors found that the majority of the cases came from one particular quarter of Lille, and discover no reason for this save infectivity.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

35. The Diagnosis of Sciatica.

W. ALEXANDER divides errors of diagnosis of sciatica into two groups—the avoidable and the unavoidable (*Berl. klin. Woch.*, April 29th, 1912). The first group can be again subdivided into the mistaking affections for sciatica which have nothing to do with the disease and those which, although involving the area of the sciatic nerve, are not of the nature of true sciatica. Spondylitis deformans is at times mistaken for sciatica or lumbago. The gradual commencement of the disease, getting steadily worse, the implication of other parts of the spinal column, and the result of the roentgenogram should suffice to prevent this mistake. Care, however, must be exercised in early cases, when the roentgenogram may be negative. Traumatic detachment of the vetebral spinous processes will only be confused with sciatica when the former is not thought of. Tuberculous or other disease of the sacro-iliac symphysis can be distinguished from sciatica by careful physical examination. The differential diagnosis between sciatica and chronic senile hip disease is based on the fact that pain is experienced on passive movement, even when the limb is flexed, and also when the head of the femur is driven on to the acetabulum. Less difficulty presents itself in cases of osteomyelitis, or sarcoma of the shaft of the femur. Intermittent limping has been mistaken for sciatica several times. The pain is always independent of passive movement; circumscribed pressure points are always absent, and the pulsation of the posterior tibial and dorsal foot arteries is absent. Neuralgia of the external femoral (cutaneous) nerve will only be mistaken for sciatica on rare occasions, and after incomplete examination. Neuralgia of the crural nerve may be overlooked, but as a rule the weakness of the extensor muscles and the absence of the patella reflexes should correct the error. Next the author deals with tabes, multiple sclerosis, and paralysis agitans. In all these a careful physical examination should exclude the mistake. Some difficulty may be experienced in rare cases of adipositas dolorosa. The accompanying symptoms of flat-foot may simulate the symptoms of sciatica, and the same applies to those of varicose veins. But in both cases the absence of nerve pressure points, and the localization of the pain will put the practitioner on his guard. He discusses the question of the alleged gouty origin of sciatica, which he states is far more rare than is usually supposed, and then gives the numerous differences between sciatica and neurasthenic and hysterical sciatica. If the patient was neurasthenic before the attack of sciatica, the exaggeration of the symptoms depending on pain, the continuity of the complaints, the painful effect of all passive movements, even with flexed leg, and the denial of improvement, should suggest neurasthenia. Hysterical sciatica practically only occurs in women, and the diagnosis must be made on the usual signs of hysterical symptoms. Passing on to the second subdivision of the avoidable errors, he first speaks of pain in the neighbourhood of the sciatic nerve in diseases of the knee-joint, especially when there is marked swelling of the periarticular tissue. This should put the practitioner right. Affections of the abdomen, pelvis, and vertebral column, such as osteomyelitis, tumours, ureteral tuberculosis, rectal cancer, etc., must be distinguished by physical examination. Retroflexed uterus, when gravid or fixed by parametric bands, may also lead to confusion. Of the unavoidable errors, tumours and cysts of the spinal cord, and especially of the cauda equina, and spinal meningitis, are the chief. In conclusion, he points out that the application of every means of examination should in the great majority of cases not only lead to a correct diagnosis, but give information as to the exact condition of the nerve and the surrounding tissues.

36. Myasthenia Gravis.

MASSALONGO (*Rif. Med.*, March 2nd, 1912), discussing the above disease with special relation to the various pluriglandular theories as to its causation, concludes on the following lines. Myasthenia with its three characteristic features of speedy muscular exhaustibility, asthenia and paresis after exercise or fatigue, is only found in subjects organically and morphologically predisposed to it through an innate weakness or exhaustibility of the grey motor centres of the mesencephalon and spinal medulla. This organic or functional deficiency is unequally distributed throughout the different centres and hence causes a diversity in the various clinical forms of the disease. It is not possible to conceive of a functional anomaly without postulating some corresponding change in the intimate structure of the functioning elements. Not every person predisposed to myasthenia becomes a myasthenic; exciting causes—for example, fatigue, moist cold, traumatisms, emotions, infections, and intoxications—may be necessary to precipitate the development of the disease. The author does not consider that the pluriglandular theory is proved, although it is impossible, since we do not know enough as to the powers of the endocrinic system, to deny this as a possibility. On the evidence of the *post-mortem* table a muscular theory of myasthenia would be more justifiable than a pluriglandular. Neither theory is, in the author's view, as convincing as his own, which relegates the disease to an innate weakness of parts of the nervous system as suggested above.

37. Transitory Pseudo-bulbar Paralysis Originating in the Protuberance.

A. HALIPRÉ (*Rev. neurol.*, February, 1912) describes a case of pseudo-bulbar paralysis in a child of 13, following suddenly an attack of subacute rheumatism complicated with mitral endocarditis. There was a complete left-side labio-glossal and facial paralysis, and on both sides paresis of the limbs. A few weeks later the labio-glossal symptoms cleared up, leaving only a nasal speech. The facial paralysis and likewise the paresis of the limbs remained, accompanied by incontinence of the urine and faeces. A progressive cachexia followed, and at the end of three months from the attack the child died of pneumonia. The autopsy revealed a small area of softening in the pars superior of the *left* side of the protuberance, above the level of the seventh nucleus; the twelfth nucleus was also not affected. Anatomically, the interest of the case was the situation of the lesion on the left side instead of the right. The writer refers to Brown-Séquard's statement that "in about half the number of cases of isolated lesions in the pedunculi, the protuberance, or the bulbus above the decussation, are *direct* and not *crossed*, whether the seat of the lesion is in front, behind, or a lateral one," adding "that the explanation of these paradoxical facts is still wanting." The clinical interest of the case is the existence of a complete labio-glossal paralysis, which afterwards disappeared. The symptoms can only be explained by the assumption that the associations between the bulbar nuclei and cerebral centres were temporarily cut off by congestive lesions.

SURGERY.

38. Surgical Treatment of Hypertrophy of the Thymus.

EUGÈNE OLIVIER (*Arch. gén. de chir.*, February 25th, 1912) is of opinion, as a result of researches conducted during the past three years, that surgical treatment of hypertrophy of the thymus gland is superior to any other. Radio-therapy is highly commended by some observers quoted by the author; it must be applied in repeated doses, in cases not too well pronounced, and the rays must be filtered and directed on the thymus itself. Olivier regards the method as wanting in precision in comparison with the surgical or operative method in which the gland is attacked in full view, and he therefore rejects radio-therapy. Since 1896 three operations have been practised for hypertrophy of the thymus: (1) Exothymopexy, (2) resection of manubrium sterni, (3) thymectomy. (1) Exothymopexy is described by Rehn as follows: Medium longitudinal incision through skin to upper edge of sternum, opening of upper part of mediastinal space, grasping thymus gland and its capsule by forceps, drawing it upwards, and fixing it by some suture points to the suprasternal fascias. Rehn's case did well, but the author points out the risk of compression of the veins of the neck. Most authors use this procedure as an adjunct to partial thymectomy. Olivier rejects absolutely the operation of simple exothymopexy on the grounds that it is not any easier than removal of

the gland, and that the gland should be removed as its integrity is not essential to the welfare of the organism. (2) Resection of manubrium sterni is designed to augment the upper orifice of the thorax and so get rid of the compression effects of the enlarged thymus. This operation has been performed with the object of reaching the thymus to effect its partial removal. The author's objection to this manœuvre is that it is dangerous on account of the proximity of great vessels lying behind the upper end of the sternum, and is in itself a severe operation and accompanied by very profound shock. (3) Thymectomy is, in the opinion of the author, the only treatment of choice. He proceeds to discuss whether it shall be total or partial, subcapsular, or extracapsular. He quotes various authors, and concludes in favour of subtotal thymectomy on the ground mainly that it is congestive attacks which suddenly augment the volume of the thymus and determine the disturbances in the cervical venous circulation. Even a very partial thymectomy suppresses, or at least diminishes considerably, the venous repletion of the neck. Excision of a portion of the thymic tissue, the liberation of constriction of the cervical aponeurosis in the substernal space, brings about modifications in the space of Grawitz sufficient to prevent this accident. On the question as to whether the excision shall be subcapsular or extracapsular the author is in favour of the former operation. He points out that the thymus is a gland essentially mobile during respiration, moving 3 to 5 cm. This mobility has created around it a laxity of tissue. Therefore its subcapsular enucleation is used. In one of his observations the thymus, weighing 21 grams, enucleated itself almost spontaneously with each inspiration. The author then proceeds to discuss the operative technique of subtotal subcapsular thymectomy. The anaesthetic question is of importance. The author is of opinion that chloroform administered with more than the usual care is safest. At the same time he notes that ether preceded by scopolamine has been successfully employed, and also that the operation has been performed even without anaesthetic, but he thinks that it is not rational to refuse the patient the benefits of general anaesthesia. The skin is sterilized with iodine tincture. The body is in the dorsal position with the neck and upper part of the thorax thrown well forward. A median incision is made, 3 to 5 cm. long, beginning a little way above the suprasternal notch and terminating about 2 cm. below the upper edge of the sternum. The incision is carried through the various layers of cervical fascia until a grey mass is exposed which is seen to rise and fall with expiration and inspiration. The grey mass is covered by a distinct fibrous layer whose thickness varies. This is incised lightly, and through the incision the grey mass of the thymus is extruded or enucleates itself. This gland, which, anatomically speaking, is deeply placed, hidden in a retrosternal pouch, is surgically quite accessible. This complete enucleation is usually accomplished while the capsule is held fixed by forceps. The pedicle is ligatured with a thin catgut thread, but the haemorrhage is so slight that even this may not be necessary. After one lobe has been thus removed, preferably the left first, because it is generally higher placed; then attention is turned to the other—the right—and it is dealt with in exactly the same way. Both lobes can be removed with impunity. A cavity is now left, and to close it the subhyoid muscles are brought together with catgut sutures, and then the lower ends of the sterno-mastoids are also approximated. The wound is closed without drainage. The author proceeds to discuss the immediate and remote results of the operation. He points out that it appears to be a very severe operation in a patient frequently only 1 year old whose state of health was already sufficiently precarious, in so far that he had suffered numerous suffocation crises, but the invariable report immediately after the operation was that the child slept till evening, and generally cried for food, and had no vomiting. Surgeons who have removed the thymus have been certainly struck, as the author has been, with the very small amount of shock following the operation. Several reasons may be given for the success: the operation is short, fifteen minutes generally being sufficient time; there is little or no haemorrhage; the anaesthesia is not very profound. The author has investigated 42 published cases of thymectomy, 27 of which were successful, and 15 died. He has investigated the cause of death in the 15 cases, and finds that in 7 of them death was not due in any way to the operation of thymectomy. In 3 cases it was found that tracheotomy had been performed soon after the operation, on account of progressive dyspnoea. It is obvious, therefore, that tracheotomy should never be performed as a preliminary to thymectomy. In some of the fatal cases also drainage had been used, with the result that infection of the cellular tissues took place. As regards the functional results of the operation, it was found that it had a most happy effect on the dyspnoea, and also suppressed completely the suffocation crises. As regards stridor, which accompanied the dyspnoea, it disappeared three times out of four after the operation. The operation of thymectomy, therefore, in the majority of cases causes the disappearance of all the functional symptoms of the affection. The children, generally poorly nourished before the operation, begin to grow rapidly after the operation, and very soon reach the same development as other children of their age.

39. The Radiography of Limbs in Plaster.

In opening a discussion at the Société de Radiologie Médicale de Paris, Bouchacourt put forward the view, as a result of some experimental investigations, that the radiograph of a limb encased in plaster dressings was not appreciably less clear than that of an uncovered limb (*Bull. et mém.*, No. 32, 1912). Indeed, he found that sometimes the details were even more plainly visible when the radiograph was made through the dressings. In the first place, although the presence of a plaster might be expected naturally to mean an increase in opacity, this was compensated for by a better immobilization on the part of the patient. For example, when the plaster was in position there was an absence of those involuntary muscular contractions which were observed frequently in fractured limbs when unprotected. And, further, the plaster itself acted as a filtering medium, absorbing a very small quantity of the hard rays and a large quantity of the soft ones, thereby bringing about greater homogeneity in the radiation transmitted, and consequently greater clearness in the result. He had made special experiments with plaster of Paris in various forms and with other plasters, and although there were differences in relative transparency to the x rays, the obstacle did not appear to be nearly so great as was generally supposed. In a specimen radiograph there was shown to be little difference in the visibility of the osseous structure when fifteen or even thirty thicknesses of tarlatan with plaster surrounded the part. Bouchacourt also denied all serious importance to the quantity of moisture in the encasing medium, providing rays of sufficient penetrability were used. Little support for these opinions was forthcoming in the course of discussion, however, and there was a general feeling that the comparative radiographs of the uncovered parts were over-exposed. Bouchacourt replied that he did not claim the minimum time of exposure to be irrespective of the presence of the plaster. But with rays marked 8—9 on the Benoist scale, which was the degree of hardness he employed throughout, if the exposure in the case of the uncovered limb were taken as 1, that of the plastered part need not be more than $1\frac{1}{3}$, and might be only $1\frac{1}{8}$. Altogether, he thought that the information which the radiographer could furnish in cases of fracture was much less limited than tradition affirmed.

OBSTETRICS.

40. Tabes and Pregnancy.

Frukinsholz and Remy (*Rev. méd. de l'est*, April 1st, 1912), reporting a case of tabes with pregnancy, comment that the association is very rare, but when it occurs it is easily overlooked. The published cases are not sufficiently numerous for conclusions to be drawn as to the effect of pregnancy on tabes, but nearly all authors consider it unfavourable; some even advocate the induction of abortion. On the other hand, Penkert thinks that tabes is uninfluenced by pregnancy, Theiss that its evolution is arrested by it, and Abadie and de Cardenal believe that the pains are ameliorated. In the case under consideration there was no appreciable effect on the evolution of the disease, but the symptoms appear to have been aggravated. Tabes seems to have no influence on pregnancy, such accidents as abortion and death of the fœtus being attributable to the syphilitic taint which is the cause of the tabes. The essential interest of the association lies in the possible confusion between gastric crises and the intractable vomiting of pregnancy. Penkert observes that the possibility of tabes ought to be considered whenever, in the course of pregnancy, there are attacks of vomiting recurring periodically every two or three weeks; the present case had attacks of this type accompanied by haematemesis. The conclusion to be drawn is that whenever intractable

vomiting occurs in the course of pregnancy a careful examination of the nervous system ought to be made. Tabes may have the effect of abolishing the perception of fetal movements, an effect due to alteration in the sensibility of the abdominal wall and of the uterus. For the same reason the confinement of tabetics is sometimes painless. Some authors, on the contrary, consider that labour is rendered more difficult, but the examples cited do not carry conviction, except a case reported by Heitz in which paralysis of a vocal cord rendered expulsive efforts inefficient. The present patient, in spite of frequent uterine contractions, felt no pains and no desire to bear down; she perceived nothing of the passage of the fetus till just before delivery. The utero-vaginal insensibility is easily explained by the degeneration of the posterior nerve roots: that parturition is not painless in all tabetics is accounted for by the complexity of the centripetal fibres which are concerned in the formation of the hypogastric plexus. It is remarkable that in all the published cases the uterine contraction is normal even when the nervous lesions are very extensive. This observation is in accord with accepted views of the motor innervation of the uterus: the uterus conserves its contractility when all its medullary connexions are insulated, and even when certain of its sympathetic connexions are interrupted; the motor innervation of the uterus would probably be efficiently controlled by certain paracervical sympathetic ganglia which would act like the "motor ganglia of the heart and intestine." It is known that the sympathetic system does not necessarily escape in tabes, nevertheless the ganglion cells generally remain intact, and that is sufficient to account for the possibility of uterine action. In conclusion the writers refer to certain cases of "false confinement" in which non-gravid tabetics have attacks of pain resembling the pains of labour, so much so that one patient thought it necessary to seek the services of a midwife.

41. Intrauterine Crying.

ALLARD (*Normandie médicale*) publishes a case of this very rare condition. After an unsuccessful application of forceps the writer was allowing his patient to rest, when he perceived cries, which were very distinct, though muffled, like the crying of a newly-born baby under the bedclothes. A woman who was holding the patient's right leg remarked that evidently the baby was growing weary, for he was crying, and almost at the same instant the mother asked anxiously, "What is that noise?" The husband, who was behind his wife, and the nurse who was looking after the patient's left leg also heard the sounds, which were repeated four or five times successively, and followed by a set of cries which could have been heard all over the room. The child was very vigorous, and violent movements could be felt through an abdominal wall which was relaxed by seven previous pregnancies; during the last three months the mother had suffered much from fetal movements. The child was eventually delivered with forceps, but could not be resuscitated, either because it had inspired liquor amnii or because of the compression of the head during extraction. Tarnier and Chantreuil, in the article on "Modifications of the Fetal Functions produced by Labour" (1888), mention intrauterine cries, but Velpeau used to say, "If I had heard them myself, I should not believe in them." Allard thinks that if Velpeau had been present at his case he would have been convinced, and he affirms that, however rare it may be, intrauterine crying may happen—because he heard it, because he is certain that no source of error was possible, and because he can invoke the evidence of four disinterested persons who were present at the confinement.

GYNAECOLOGY.

42. Treatment of Uterine Myoma by X Rays.

THE value of the treatment of uterine myomata by means of x rays is greatly detracted from by a want of exact indications. Ed. Falk (*Berl. klin. Woch.*, April 29th, 1912) gives the details of some cases in which this form of treatment failed, and after discussing the facts of the cases, deduces certain principles which he thinks will be of use in determining when x rays should be applied. As long as a myoma does not give rise to severe haemorrhage and other symptoms, no matter whether it is small or large, x rays should not be employed. It is, however, necessary to keep a careful watch over the rate of growth. Rapid growth is a contraindication for x-ray treatment. Such myomata should be dealt with by operation, even if heart changes are ascertainable. Submucous myomata are also not suitable for x rays. Myomata which bleed profusely in young women should be subjected to operative treatment. Only under exceptional circumstances should x rays be employed. The object of applying x rays is to produce a premature climacteric by the action on the ovaries, but it is possible to retain the ovaries in operative treatment. X rays may be applied for myomata complicated with inflammatory conditions of the appendages, save when the inflammatory condition is severe. Great care should be exercised in these cases. The application of x rays for interstitial myomata in women of over 50 offers excellent chances of success, provided that no indication for an operation is present.

THERAPEUTICS.

43. Direct Insolation in Primary Tuberculosis of the Conjunctiva.

ROLLIER AND BORD (*Rev. méd. Suisse romande*, April 20th, 1912) record a case of primary tuberculous conjunctivitis cured by exposure to sunlight. This disease was first noticed by Koester in 1873, but it was not until 1884 that Parinaud established the diagnosis by demonstrating the presence of bacilli in the lesions. Primary tuberculosis due to direct inoculation from a tuberculous source is to be distinguished from secondary infection, whether that be due to an extension through the lacrymal ducts from the nasal mucous membrane, or to infection by the blood stream from distant lesions. The characteristic and distinctive symptom is the swelling of the cervical glands. These, according to Lagrange, are invariably affected in primary tuberculosis of the conjunctiva, but very rarely so in the secondary form. Four types of the disease may be noted: (1) Ulcerative with tuberculous granulations; (2) ulcerative with erosion of eyelids; (3) vegetative with polypoid growths; (4) vegetative with papillary growths. Of these, the last (which appears to correspond to the warty form of cutaneous tuberculosis) is the most important, and it is apt to be confused with tracheomatous or follicular conjunctivitis. The eyelids are slightly swollen, and on eversion the inner surface is seen to be covered with flat, sessile vegetations, pink at their edges, but usually grey or yellowish in their centre. There is little or no gummy discharge. The diagnosis will, of course, rest on the history, on the reaction to tuberculin, or on experimental inoculation. The condition is most frequently met with during childhood or adolescence. The actual injury causing the infection may be difficult to trace, an incubation period of several weeks usually preceding the appearance of symptoms. Prognosis, as in other tuberculous affections, is, to say the least, uncertain; the eyeball may become involved, or the disease may become general. Various rather drastic forms of treatment have been recommended, such as curetting the palpebral conjunctiva, cauterizing it with the thermo-cautery or nitrate of silver, freezing with ethyl chloride, or injecting with 0.2 per cent. formalin solution. During the last few years, Lundsgaard has treated 4 cases successfully at the Finsen Institute in Denmark, and, encouraged by this, the authors treated the case they describe by direct exposure to sunlight. The patient was a medical student who, at a *post-mortem* examination on a case of phthisis, had received a spurt of pus in the eye when opening a tuberculous cavity. Five weeks later conjunctivitis set in. This was treated by scraping and cauterization, and by the application of protargol and iodoform ointment, but no improvement resulted. On the patient's arrival at Leysin on January 13th, 1911, the treatment by direct insolation was at once begun. The eyelids were everted, and the swollen and granular tarsal conjunctiva was exposed for a few minutes to the sun's rays. This was done several times a day, and the sittings were gradually lengthened until they reached six exposures daily, each of ten minutes' duration. In three months the cure was almost complete, and the hard and greatly swollen cervical glands were much softer. At the end of nine months' treatment all trace of disease, except the scars of the cauterizations, had disappeared. There was never any photophobia or other ill effects from the exposure to the light. In fact, the authors confirm the observation of Lundsgaard that the mucous membranes in general tolerate the action of light, and respond to its curative effects far better than the skin does; and they maintain that the region of the eye proves, contrary to expectations, to be singularly amenable to treatment by sunlight.

44. Extracts of Pituitary Gland.

WIGGERS (*Amer. Journ. of Med. Sciences*, April, 1911) records his investigations upon the physiology of the pituitary gland and the action of its extracts. Developmentally and histologically composed of an anterior or epithelial portion and a posterior or neuroglial portion, the gland is necessary to life, and any diminution or increase in its function results in metabolic or sexual disturbances, its control over the body being exerted by an internal secretion elaborated by the cells of the anterior lobe. The chemical nature and physiological properties of this internal secretion are unknown, since it has so far resisted extraction by various solvents. The posterior lobe is not of vital importance like the anterior lobe, but it contains or secretes a substance which can be extracted by water, glycerine, or salt solution, and which resists boiling, but there is no evidence that it is identical with the secretion of the anterior lobe or that it represents its vital principle. It is the anterior lobe alone which influences growth, development, and life, but the extracted substance is found only in the posterior lobe, and is not present in the normal circulation, and its injection does not neutralize the symptoms arising from extirpation of the gland, though in large doses it produces symptoms simulating them. These extracts cause a marked rise of arterial blood pressure by constricting the peripheral vessels, probably by direct muscular action, but the renal vessels dilate during its action. It is only in this property of raising the blood pressure that these extracts resemble the action of adrenalin, for their effects upon the heart and blood vessels are entirely different. The secretion of the urine is increased, but the flow of pancreatic juice is inhibited, yet whether these varied reactions are due to separate substances or to a specific affinity of a single substance for different cells, or are secondary to changes in the circulation, has not yet been determined.

45. Action of Phenolphthalein, Scammonium, and other Purgative Substances.

A RADIOLOGICAL study of the action of certain purgative substances on the intestines has been undertaken by Lebon and Aubourg. In a communication to the Société de Radiologie Médicale de Paris (*Bull. et mém.*, No. 31, 1912) they state that phenolphthalein undoubtedly has a direct influence upon the muscular fibres of the large intestine. A rapid and abundant purgative action was noted after the feeble dose of 0.40 cg. in a litre of bismuth water, given as a lavement. The action of phenolphthalein in minute doses was, indeed, precisely like that of scammonium and jalap taken in small quantities. It was concentrated almost entirely upon the intestinal musculature, and although it was possible that with higher doses the glandular secretion might be altered, the authors had not been able to demonstrate it with the doses they had employed. The intestinal picture when phenolphthalein had been given closely resembled that obtained after the ingestion of a cachet enclosing 0.30 gram of scammonium powder. The same contractions of the small intestine were visible, and there was the same dispersion of the intestinal contents. With ½ gram of scammonium powder the contractions became feeble in the initial part of the ileum, and almost non-existent at the terminal part. The intestine appeared also to enclose a larger quantity of fluid than that which had been introduced, and this was again evident when the dose was raised to 1 gram. Such a high dose rarely gave any appreciable contraction of the small intestine. The contractions under such circumstances were much the same as those observed when the intestine was filled with a simple bismuth meal. This decline in the purgative action with the increase of the dose was to be explained by the fact that scammonium only became purgative in the presence of the alkaline fluids of the intestine. Administered in large quantities, it did not find sufficient fluid to enable it to fulfil its function, but in small doses, as the radiological examination proved, the peristaltic contractions were excited without any noteworthy hypersecretion of the pancreas, liver, or intestinal glands. The powder of jalap, to the dose of 1 gram, certainly increased the liquid contents of the intestine, while augmenting the intensity of the peristaltic movements to a much smaller degree than was generally imagined. Radiology, therefore, demonstrated that scammonium and jalap, generally classified as drastic and nervo-muscular, were also hydragogue purgatives. The authors were unable to say whether the hypersecretion of the intestine was simple or catarrhal. The absorption of a bismuth meal (250 c.cm. of pure water and 100 grams of bismuth) in which 30 grams of sodium sulphate had been dissolved, rapidly brought about a disproportionate increase in the fluid without acting on the contractions.

46. Treatment of Haemorrhage in Gastric Ulcer.

LOEPER (*Progrès méd.*, No. 50) writes: Complete rest, a little ice internally, much ice to the abdomen, lavage with hot water twice every twenty-four hours, are very useful remedies, but they must be used in conjunction with drugs. By mouth the three drugs to be given are adrenalin, calcium chloride, and gelatine. The sole disadvantage of adrenalin is that its constrictive action may be followed by dangerous vaso-dilatation; it should be given in fractional doses of ½ mg., combined with syrup of thebaine and lime water, at three-hourly intervals. Thus the action is continuous, and secondary vaso-dilatation is less likely to occur. Adrenalin is superior to ergotin and ergotinin, which stimulate unstriped muscle, and to rhatany and tannin, whose action in abundant haemorrhage is quite hypothetical. Calcium chloride is an excellent drug, acting in the stomach by facilitating clotting and in the organism by increasing coagulability; it may be combined with adrenalin and other drugs, such as rhatany, belladonna, and codeine. The haemostatic properties of gelatine have been urged by Carnot for the last ten years; it is given in doses of from 5 to 15 grams a day in water, and may be combined with calcium chloride. In addition to these drugs by the mouth, it may be necessary to give hypodermically ergotin, ergotinin, adrenalin, or even extract of mistletoe (0.10 to 0.20 cg.), of which the hypotensive and haemostatic properties have recently been demonstrated. The action of these products is rapid, but rarely lasting. Certain serums, such as gelatine serum and fresh horse serum, have a more complete and lasting effect because they act on the coagulability of the blood and not on the vessels. Gelatine serum is prepared by mixing 10 grams of sterilized gelatine with 1 litre of physiological serum. The dose is 50 to 100 c.cm. Horse serum is especially useful in ulcers which bleed for a long time and are accompanied by appreciable blood modifications, such as modification of coagulation and the appearance of haemolysin. Artificial saline serum is indicated in serious and abundant haemorrhage: it acts as a "substitute," relieves thirst, and promotes diuresis.

PATHOLOGY.

47. Crossed Cerebellar Atrophy in the Adult.

ANDRÉ-THOMAS AND KONONOVA (*Revue Neurologique*, March 15th, 1912) describe 4 cases of hemiplegia in persons aged respectively 26, 39, 43, and 77 years, in which a crossed atrophy of the cerebellum was found. The cerebral lesions were considerable; in three cases there were areas of softening in the cortical and subcortical region, which had destroyed a large part of the central and neighbouring convolutions, with a portion of the adjoining white matter. The nucleus lentiformis was affected, but the thalamus opticus was intact. There was secondary degeneration of the capsula interna, and of the cerebral peduncles, excepting the fibres lying most internally. There was also atrophy of the subst. retic. tegmenti, and including the red nucleus. In the fourth case there was destruction of the white matter under the third convolution, and the ascending frontal and parietal. Degeneration of the capsula interna was very marked in the anterior half of the posterior segment, and of the cerebral peduncles in the region of the second, third, and fifth nuclei. The thalamus was considerably atrophied, and contained a minute cavity. In all the cases there was a crossed atrophy of the cerebellum, limited exclusively to the hemispheres, the vermis remaining intact. All the lobes were atrophied, but the lob. quad. ant. and post. in the highest degree. The pedunculi cerebel. sup. and med. were atrophied through their whole length. The writers draw attention to the fact that the limitation of the crossed atrophy to the hemispheres shows once again that there are two distinct parts in the cerebellum—namely, the hemispheres which stand in relation to the cerebrum and develop with it, and the vermis which stands in relation to the bulbus and cord. The predominance of the atrophy of the cortex in the quadrilateral lobe is not less interesting, inasmuch as this lobe only attains its full development in the higher vertebrates. It is interesting to compare the results of the destruction of the quadrilateral lobe in the apo to the atrophy of the same region in man, following primary lesions of the motor tract. Like the pyramidal tract, with which it has very intimate associations, the quadrilateral lobe develops in proportion as the differentiation of movements becomes more and more accentuated.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

48. Early Diagnosis of Secondary Tuberculosis of the Intestine.

In view of the frequency of secondary tuberculosis of the intestine, and of its intractability when once fully established, Jaquerod (*Rev. méd. Suisse rom.*, May 20th, 1912) urges the importance of its early diagnosis. Usually it is not recognized until the well-known symptoms—diarrhoea, pain, and rapid emaciation—show that the intestinal tract is already extensively affected, and in this late stage it is quite incurable. The author has made trial of every medicament which has been recommended, but without any lasting benefit. Heliotherapy and astringent and antiseptic rectal injections seem to him to be positively harmful, and tuberculin and serumtherapy have produced only a transient improvement. He claims, however, that surgical intervention, if practised in an early stage, may give excellent results. The intestinal lesions usually begin in the neighbourhood of the ileo-caecal valve, and if the affected loop of bowel be resected, or even if it be merely excluded by "short-circuiting," and so kept at rest, immediate relief of the symptoms follows. These early symptoms differ markedly from those of the later stage. The secondary infection may begin at any period of the pulmonary disease, for, although it has come to be regarded as a feature of the closing scenes, the majority of the author's cases were diagnosed by him in Turban's Stage 2, and some even earlier. Among the first symptoms are persistent want of appetite, and flatulence or even vomiting after meals; and if these gastric troubles, which in themselves are fairly common, obstinately resist careful treatment, a suspicion of intestinal tuberculosis should be aroused. The symptoms referable to the intestine are not at first acute. Diarrhoea is rare. The action of the bowels is more often irregular, and usually the motions are remarkably bulky and offensive. Although pain is not common, there is usually considerable tenderness over the affected region, and occasionally a small sausage-like swelling may be felt near the appendix. This slight thickening indicates that the disease is already somewhat advanced, and that the lesions, which consist at first in an infiltration of the mucous follicles, are already more extensive than one would expect. An abdominal tumour of any considerable size is more probably due to peritonitis, and must not be confused with the complaint under consideration. The febrile symptoms are characteristic, the usual daily curve being completely altered. Thus, while in phthisis the temperature is usually quite low in the morning and highest about 5 p.m., when intestinal tuberculosis is present, the curve will be found to rise after meals, and to fall nearly to normal between 4 and 7 p.m., the early morning temperature being persistently higher than is usual in uncomplicated phthisis. The author considers that these gastric, intestinal, and febrile symptoms, taken together, should help to a diagnosis in an early stage of the infection, at which period alone there is any hope of cure; and he urges that no time should be lost in fruitless medication before placing the patient in the hands of the surgeon.

49. Psoriasis.

Gaucher (*Gazz. degli Osped.*, April 14th, 1912), in a clinical lecture on this disease, points out its affinity to asthma, gout, chronic rheumatism, arterio-sclerosis, chronic bronchitis, and emphysema. The explanation may perhaps be found in the relation that all these diseases bear to the digestion of the purin bodies, each disease being in one sense a disorder of nutrition. In psoriasis a process of demineralization seems to go on, and especially as regards sodium chloride; probably sodium chloride helps to render the purin bodies dialyzable, and its absence means a certain degree of accumulation of toxic extractives—cf. the deficiency of calcium salts in tuberculosis. Clinically, tuberculosis and psoriasis are frequently associated, psoriasis taking the place of tubercle in a tuberculous family, and many psoriasis cases ending in tubercle. Certain metastatic phenomena may also be seen in psoriasis—for example, an alternation between psoriasis and asthma, or even gastric ulceration and psoriasis; possibly some forms of rheumatism may be as closely allied. Psoriasis, in the author's view, is incurable; although it may have quiescent periods, it may pass off into pityriasis rubra, or into arterio-sclerosis, interstitial nephritis, and, strangely enough, cancer of the rectum. The author is unable to offer any explanation of the last statement, but has observed cancer of the rectum so often in psoriasis that he is sure there is some association. One sees often borderland cases between schorrhoea and psoriasis, but the two diseases are really separate entities.

50. Magnesium Poisoning.

Boos (*Publications, Massachusetts Gen. Hosp.*, October, 1911), from a study of ten cases of magnesium poisoning, and from the results of experiments, concludes that magnesium sulphate behaves very much in the same way as sodium sulphate after its ingestion, concentrated solutions of magnesium sulphate being absorbed into the circulation from the stomach and intestines, and producing poisoning when a sufficient amount of magnesium becomes present in the blood. A characteristic intoxication follows the injection of these salts into the blood of animals, the pulse becoming slower and slower until the heart stops in diastole shortly after paralysis of the respiration, which latter is affected at the outset. The peripheral motor nerve endings are paralysed, reflex irritability being lost in twenty minutes after the beginning of the injection, and where recovery occurs voluntary movements return long before the restoration of reflex irritability. In dogs 0.3 to 0.5 gram per kilo of body weight given intravenously produces death. Magnesium salts may produce intoxication through cumulation, renal excretion of magnesium sulphate being so slow that cumulative poisoning may result if small doses in concentrated solution are given at short intervals. Of the ten cases reported six were fatal, the symptoms and autopsy findings agreeing with those obtained in animals after intravenous injection of magnesium sulphate. In normal conditions of the bowel the salt, properly diluted, is a well-known and valuable cathartic, but care should be exercised in administering the drug in cases of acute intestinal obstruction when peristalsis is diminished or absent, and in cases of mechanical obstruction, since even in dilute solutions there is danger of poisoning from absorption of the drug. Where such poisoning is suspected, large quantities of normal salt solution should be given intravenously, or dilute solutions of lime salts hypodermically may be of use.

51. Syphilitic Meningo-myelo-radiculitis of Lumbo-Sacral Region.

Claude (*Journ. des praticiens*, 1912, xxvi) describes the following case. A woman, 30 years of age, suffered from paraplegia with marked muscular atrophy of both lower limbs; on the right side the foot was dangling, and the toes flexed on the plantar surface; at times slight fibrillary contractions were noticed. Muscular hypotonicity was well marked. No movement could be executed on the right side save flexion of the toes. On the left side the anterior muscles of the thigh were also atrophied, but those of the posterior were much stronger than those of the leg so that the movements of the foot were nearly normal. The patellar reflex was abolished on the right side; on the left on percussing the tendon there was jerking of the limb, and it seemed at first as if the reflex were absent, but nearer observation found that there were slight contractions of the vastus internus, adductors and the posterior muscles of the thigh. There were marked pains in the limbs and on coughing sharp pain in the whole of the right leg, a symptom frequently noticed in root lesions. Anaesthesia was present on the internal surface of the right leg, thigh, and foot. On the left side sensibility was intact save on the posterior surface of the leg where it was slightly diminished. Reaction of degeneration existed in all the muscles of the right leg, and partially in the extensor communis digitorum of the left leg, and hypoexcitability of the tibialis anticus. The author enters into the differential diagnosis and considers that all the symptoms point to a root lesion of the anterior lumbar nerves and the first sacral branch on the right side, and on the left the lumbar nerves only; there was also slight pressure of the pyramidal tract on the left side due to a localized meningitis. Syphilis was considered to be the cause of the affection, as the patient had had a mis-

carriage, and ulcers of the throat and lymphocytosis was present, and Wassermann's reaction was positive. Marked improvement also resulted from mercurial treatment.

52. Fatal Haemophilia.

Fouchet (*Journ. des praticiens*, xxvi. 1912) relates four cases of fatal haemophilia in boys of 7, 9, 12, and 16 years of age respectively, and from which he draws the following conclusions: (1) Haemophilia is not so rare as is generally supposed; (2) in cases of operation on subjects of haemophilia, general and local treatment are indicated; (3) in cases where the bleeding is internal, high fever may occur up to 39.5° and 40° C., and may be due to an infective agent, or simply to partial absorption of the discharged blood.

SURGERY.

53. Artificial Pneumothorax.

Piéry (*Lyon méd.*, Nos. 9 and 10, 1912) gives detailed results of seventeen operations for artificial pneumothorax performed by him at Lyons during the past eighteen months. Only three cases were entirely successful; but he points out that all the patients selected for operation were in a very serious and apparently hopeless condition, and that even among these the immediate benefit of the operation was very marked—that is to say, the temperature fell, appetite returned, and the patient gained weight. Among the causes which led to a fatal termination, in spite of temporary improvement, the author mentions the following: Fulminating haemoptysis in 2 cases; empyema in 2 cases, in one of which a spontaneous pneumothorax existed before the treatment was begun; tuberculous laryngitis and meningitis in 1 case; increase of previously existing mischief in the opposite lung; recrudescence of acute symptoms on the same side, owing to what the author now considers an ill-judged cessation of treatment; and, lastly, in 7 cases, either on account of extensive pleural adhesions or for other reasons, it was not possible to proceed with the treatment. Among the accidents he met with are: (1) Surgical emphysema. This only occurred when the intrapleural pressure was raised to 25 or 30 cm. of water with the object of breaking down adhesions, or (in one case) when the needle used was larger than usual. (2) Mediastinal emphysema, characterized by pain and dysphagia, which passed off in a few days. (3) Pressure symptoms, such as dyspnoea, pain, and small and rapid pulse. These come on a few hours after the operation, and can be immediately relieved by withdrawing some of the gas from the pleura. (4) Nervous symptoms. These are more serious. In one case (a neurotic young girl) convulsive movements of the arm and leg on the same side as the puncture occurred as soon as the needle entered the pleura, and ceased when it was withdrawn. In the other case, during a second injection, at the moment the gas entered the pleura the patient became unconscious and convulsed, and died in a state of coma thirty-seven hours later. Piéry attributes this fatality neither to gaseous embolism, which his experiments on animals have shown to be extremely difficult, if not impossible, to produce, nor to "pleural reflex," but he suggests that it might possibly be due to a kind of "anaphylactic shock," and he remarks that similar accidents have been recorded after the puncture of a hydatid cyst and in the practice of serumtherapy. As regards technique, the writer follows that of Forlanini in preference to that of Brauer and Spengler. He uses a needle $\frac{1}{10}$ mm. in diameter and 7 cm. long, furnished with a stylet, by means of which it may be cleared, if it should become blocked, without withdrawing it from the pleura. He plunges it directly into the pleural cavity without any preliminary skin incision. The apparatus is so arranged as to record not only the pressure under which the gas is allowed to enter, but also the intrapleural pressure separately from that in the reservoir. He considers that better results would be obtained if the treatment were applied earlier in acute cases, and also if it were used more commonly in cases of a more slowly progressive character. In conclusion, he remarks that although one may not be justified in claiming a cure by this method, yet it certainly brings about the arrest of the disease in cases for which, in the present state of medical knowledge, there is no other remedy.

54. Jejunostomy.

Mayo (*Amer. Journ. Med. Sci.*, April, 1912) advocates jejunostomy as a means of giving rest to the stomach, and of maintaining nutrition in cases of oesophageal and cardiac obstruction, in diseases affecting a considerable portion of the stomach wall, in the treatment of accidental injuries to a cancerous stomach during exploration, and in cases where after excision of a large ulcer the stomach is not in a safe condition to hold food. The operation furnishes an easy and safe method of giving rest to the stomach during the healing process after an operation, and adequate nourishment can be maintained without the danger of leakage. The technique is simple. Through an epigastric incision a loop of the jejunum 12 in. to 16 in. from its origin is picked up and nicked on the convex surface, a No. 9 rubber catheter being pushed through the opening down stream for about 3 in. inside the bowel and fixed *in situ* by a single chromic catgut suture, and the catheter is then infolded by the jejunal wall for an inch or an inch and a half by mattress sutures of linen, after the plan of Witzel. The intestine is then anchored to the peritoneum by two or three linen sutures in the lower angle of the incision, which is closed down to the tube in the usual way, or the end of the catheter can be brought out of a small stab wound at one side of the incision, the intestine being fixed to the peritoneum on the inside by several linen sutures. Liquid feeding can be commenced at any time and continued indefinitely without fear of leakage, and should the tube accidentally slip out it must be replaced within twelve hours or the tract may become obliterated. No ill effects were observed from the jejunum becoming adherent to the peritoneum after the removal of the feeding tube.

55. Phimosis and Hydrocele in Infancy.

J. Peiser says that there is no commoner complaint of mothers than that their male infants have trouble with the passage of urine, which is due to a narrowing of the prepuce, and that the majority of practitioners, agreeing with this view, proceed to operate for phimosis. The difficulty in micturition is real, but the cause is mistaken. (*Berl. klin. Woch.*, June 3rd, 1912.) He gives a number of examples in which he was able to demonstrate to the mothers that a digestive disturbance was the real cause, and that the normal physiological narrowness of the prepuce has nothing whatever to do with the trouble of micturition. He holds that the more carefully the practitioner seeks for disturbances of digestion in infants who are said to have trouble in passing urine the less frequent will be operation for phimosis. The same applies to hydrocele. As a rule the hydrocele of infants is a primary condition, or, as he terms it, an idiopathic one. On one occasion he saw a secondary hydrocele, dependent on a bilateral syphilitic orchitis. The syphilitic treatment sufficed to remove the hydrocele. The primary hydrocele is congenital. He denies that there is any justification to believe that hydrocele is caused by phimosis, since the latter practically does not exist as an infantile pathological condition. It is also his experience that hydrocele does not produce any symptoms of difficult micturition. He supports this view by details of his experience in practice. He considers that hydrocele does not need any surgical treatment, since it disappears spontaneously. The vaginal process is, as is well known, not obliterated as a canal until the sixth week of life, and is frequently patent up to the sixth month. Peritoneal fluid may be pressed into the scrotum by the action of the abdominal muscles. Rest permits the return of the fluid, and he doubts whether the accounts which are frequently given of the increase of size of an infantile hydrocele are accurate. His experience teaches that the variation in size is due to the alternate filling and emptying of the patent vaginal process. Of 73 cases of infantile hydrocele the majority disappeared spontaneously within the first six months of life, while the others disappeared at periods up to the twenty-first month. He emphasizes the harmlessness of infantile hydrocele and the non-existence of a pathogenic phimosis.

OBSTETRICS.

56. "Omnipon," Scopolamine, and Pituitrin in Labour.

L. Richter (*Wien. klin. Woch.*, No. 13, 1912) describes the results obtained at the Vienna University women's clinic from preparations such as "omnipon," and scopolamine, and modiscope, given for the relief of pain in labour, and from pituitrin, given to excite or strengthen uterine contractions. Omnipon was injected subcutaneously in 21 cases, 1 c.cm. of a 2 per cent. solution being administered. The time chosen for injection was when the os admitted three fingers, that is, when the effect might be expected to last to the end of the labour. The

cases chosen were those in which the women complained of severe pain or were restless, and in which no complication likely to retard labour existed. In 16 out of the 21 cases pain was lessened; in a few labour was somewhat prolonged, because the injection appeared to lengthen the interval between the pains, though it did not diminish the force of the abdominal pressure. In a few cases no effect was observed even on a repetition of the injection: all of these were among primiparae. Larger doses of omnipon could not be stated with certainty to be harmless to the child, since in one instance in which a second dose was given the child was born severely asphyxiated. There were no unpleasant by-effects on the side of the mother except dryness of the throat and sense of thirst. From these cases it is seen that reliable results are not obtained from omnipon alone. In 30 cases scopolamine to the amount of 0.0002 to 0.0003 gram was added to the omnipon solution. The results were very similar to those obtained from omnipon alone; the pain was, as a rule, diminished without being abolished, and in some cases there was a lengthening of the duration of labour. In 5 out of 30 cases pain was not relieved. Larger doses appeared to be harmful to the child. Modiscope is still under trial, but the effects in some cases have seemed good. Pituitrin was given in 50 cases for the purpose either of strengthening or exciting labour pains. The dose was 1 c.cm. of Parke, Davis, and Co.'s preparation injected subcutaneously. If necessary, the dose was repeated either once or twice, apparently without injury either to mother or child. In 29 cases (18 of primiparae, 11 of multiparae) the time of injection was during the first stage of labour—twice, in the case of primiparae, at the beginning of labour; 16 times when the os admitted three or four fingers. Repetition of the dose was needed in 4 out of the 18 primiparae. The effect of the injection became evident in from five to ten minutes, the pains becoming strong and regular. In only one instance was there tetanic-like contraction of the uterus; the contraction lasted for ten minutes, and was succeeded by regular pains. The fetal pulse was slowed during the contraction, but soon recovered itself. Labour was completed in most cases in from two to six hours. Of the 4 cases in which forceps were applied, one was of a primipara 43 years of age; here three injections were made, and the child's head was on the perineum, but the state of the fetal pulse made delivery desirable. In each of the other 3 cases the fetal pulse had already been lengthened before the first injection was made. Pituitrin gave very favourable results in the 6 cases in which it was administered to multiparae at the end of the first stage. In 3 of them pituitrin was administered for haemorrhage due to a low implantation of the placenta. In one of them the head came down quickly and stopped the haemorrhage, in the other 2 a metreurynter had been first inserted without bringing on pains, but they set in quickly after the injection of pituitrin. In 2 cases pituitrin was given to multiparae at the beginning of labour to hasten delivery because the patients were suffering from high fever; in the first, in which the patient was not quite at full time, two doses were given with an interval of an hour and a half, and resulted in a labour of only two and a half hours' duration; in the second case three injections were given without effect. One child was born severely asphyxiated, and could not be resuscitated. Death did not seem to have resulted from the injection, since no deterioration in the fetal heart sounds was observed after it. In no case did pituitrin succeed when tried in order to induce abortion. The author concludes that while none of the means tried were successful in causing a painless labour, pituitrin proved to be an admirable means for exciting and strengthening uterine contractions in labour.

GYNAECOLOGY.

57. Innocent(?) Papilloma of Fallopian Tube.

SENCERT (*Bull. de la Soc. d'Obstét. et de Gynec. de Paris*, April, 1912) operated in October on a woman, aged 38, who had been subject for two years to attacks of colicky pains in the hypogastrium and watery discharge at the same time. The menstrual periods continued quite independently of the pains, and were almost normal. The pains ultimately became of daily occurrence, though at first the intervals were as long as a fortnight. The patient had borne two children; the youngest was 8 years old, and there was no history of puerperal or gonococcal infection. A mass as big as an orange occupied the right fornix and Douglas's pouch. Removal proved difficult, as the tumour adhered to the pelvic viscera very firmly. The uterus and left appendages were first removed, then the tumour was dissected away. A drainage tube was passed into the vagina, and the peritoneum of the bladder, rectum, and sigmoid colon united. The serous membrane was rubbed with camphorated oil. Lastly, the abdominal wound was closed. The tumour was a cauliflower mass distending and packing firmly the right Fallopian tube. It was made up of epithelial cells arranged on an axis of vascular connective tissue almost infinitely subdivided by branching. But no invasion of the connective tissue by the cells could be defined. The patient recovered. Watery discharge has already been noted in innocent papilloma (Doléris).

THERAPEUTICS.

58. Salvarsan.

NICOLAS AND MONTOT (*Ann. des mal. vén.*, January, 1912) report the results of a year's experience with arseno-benzol. They performed 352 injections in 162 patients, 12 of whom were not syphilitic. The great majority of the injections were made intravenously with an alkaline solution. Their results are as follows: In primary syphilis chancres generally took from twenty to twenty-five days to heal, and the effect on the satellite glands was slight even after several injections. In secondary syphilis the effect was rapid on the roseola, the miliary syphilide, condylomata, and mucous patches, osteo-periostitis, headache, and especially rapid on ulcerative syphilides, including malignant syphilis. In two cases of malignant syphilis there was no effect, and one died of phthisis a month after injection. The effect was slower on large papular syphilides and on iritis. There was no effect on the pigmentary syphilide. In tertiary syphilis one case of gumma of the leg healed in a month after two injections; in two others there was no improvement, and one of these healed under mercury and iodide. Better results occurred in cases of gummatous infiltration of the nose, pharynx, and tongue. In parasyphilis no effect was obtained in tabes and general paralysis except temporary amelioration of gastric crises in two early cases of tabes; on the other hand, the pains were increased in other cases. In leucoplakia the effect was *nil*, even after several injections. In hereditary syphilis no effect was obtained in a case of osteomyelitis with ulceration of the skin, nor in a case of Panot's nodes in an infant of 18 months which died a month after the injection. The authors remark that, while arseno-benzol acted in some cases with remarkable rapidity and intensity, it is also certain that in the generality of cases the same effects could be produced by mercury and iodide; also, that while some cases which were rebellious to mercury were cured by arseno-benzol, the inverse was the case in two instances. As regards contraindications, they mention advanced age, severe nervous disorders with bulbar symptoms, disease of the circulatory system, ocular lesions, diabetes, nephritis, tuberculosis, and cachexia, but consider them not always absolute. The indications for arseno-benzol are stated to be: (1) Attempts to abort syphilis, which should be by a series of injections of 40 to 60 cg. commenced before glandular enlargement appears; (2) lesions rebellious to mercury, which are rare if the various methods of administration are utilized in high doses, but include persistent recurrent ulceration of the throat and lichenoid syphilides; (3) cases where mercury is not tolerated, especially when it causes albuminuria; (4) malignant syphilis; (5) cases in which rapid action is necessary, either on account of the gravity of the lesion or for reasons of prophylaxis. As regards accidents, the authors had three deaths, none of which were attributed to the drug; one died of pulmonary tuberculosis, another from ulcerated epithelioma, and the third was an infant in whom the injection was found encysted. Of the 318 intravenous injections, 122 were followed by no reaction. In the remaining 196 cases, the effects included headache, rise of temperature, vomiting, diarrhoea, epigastric pain, retention of urine, rigors, cutaneous eruptions, albuminuria, and one case of optic neuritis. In two cases, both young and healthy subjects, the symptoms were alarming. The cutaneous eruptions noted were scarlatiniform, rubeoliform, and vesiculo-bullous erythema, purpura, and hepatic eruptions. In the case of optic neuritis, this was unilateral with complete blindness, and occurred a month after the third injection of 60 cg. in a young subject. Another disadvantage of arseno-benzol mentioned is the deep pigmentation, due to arsenic, left after healing. The non-syphilitic cases included psoriasis, epithelioma, and lupus. The benefit in psoriasis was slight, in epithelioma *nil*, and in lupus doubtful. The authors sum up their conclusions as follows: (1) Intra-

venous injection is the best method. Intramuscular and subcutaneous injections should be avoided, on account of encystment, necrosis, abscess, and pain. (2) The curative value of arseno-benzol is indisputable. It has a rapid, energetic, resolutive, and cicatrizing action, often superior to any other, on all the manifestations of syphilis in evolution. It may possibly have this action in cases other than syphilitic (lupus, mycosis fungoides). (3) The preventive value is very feeble. In early syphilis relapses are frequent, even after three or four injections of 60 centigrams in a month. (4) Arseno-benzol may certainly be dangerous, even when injected with the best technique, and apart from contraindications. Numerous cases of death have already been published. Accidents are common and often severe (nephritis, optic neuritis). (5) The feeble preventive action and the possibility of accidents should limit its use to the real indications mentioned above. (6) The dose should always be moderate: 30-40 centigrams, exceptionally 40-60. In attempts at abortive treatment, a series of doses of 40 or 60 centigrams may be justifiable. In other cases one or two injections of 30 or 40 centigrams are sometimes enough. (7) In no case can we regard the patient as cured. Prolonged mercurial treatment should always be given after arseno-benzol. In the present conditions of technique and dosage, arseno-benzol can neither exclude nor replace mercury in the treatment of syphilis. It should be reserved for special cases, and even then should be associated with mercury.

59. Indications for Heliotherapy in Pulmonary Tuberculosis.

Minelle (*Journ. des praticiens*, xxvi, 1912) states that the first few exposures should be behind a closed window, and after the third or fourth bath the window may remain open. At the beginning the bath should be of only a few minutes' duration, and this may be gradually increased to ten, twenty, and sixty minutes. The immediate symptoms which may occur are a feeling of cold if the solar temperature is too low, of suffocation or palpitation: and the secondary results may be erythemata if the exposures are too long, vertigo, insomnia, nocturnal palpitation, pulmonary congestion, and exceptionally stained sputum. The beneficial action seems to reside in the production of sclerosis of the diseased foci. It is contraindicated in fever, haemoptysis, acute pleurisy, pulmonary congestion, cardiac and cardio-arterial disease, inflammation and sclerosis of the various organs, as liver, kidney, etc. An excitable nervous system, as in neurasthenia, necessitates careful employment of the baths. Heliotherapy exercises a very favourable influence in (1) phthisis with tracheobronchial adenopathy; (2) emphysematous phthisis, where the process of sclerosis is slow; (3) scrofulous phthisis, accompanied by articular, osseous, or cutaneous localizations; and (4) painful arthritic phthisis with multiple neuralgias, intercostal, lumbar, etc.

60. Transformations of Mercury in the Organism.

Desmoulières (*Journ. des praticiens*, November 25th, 1911), discussing this subject, refers to the theory of Merget, who holds that metallic mercury, whatever its mode of administration, is diffused in the blood in a state of vapour, and that of Weal, who holds that mercurials introduced into the organism are transformed into mercury bichloride, this being brought about in the stomach, the intestine, and the blood by the alkaline chlorides. In the latter case the therapeutic action will be the more intense the more rapidly this transformation can occur. The author devotes his attention to the latter of these theories. In order of activity come (1) metallic mercury, (2) the insoluble compounds protoxide, and protochloride, (3) mercury bichloride and the other soluble or insoluble salts. He quotes experimental evidence of an elaborate character to show how the vapour of distilled water, and still more so ordinary water, may be charged with mercury which has been transformed by the alkaline chlorides into the bichloride. Mercury would appear to pass into the economy in the form of chlorides, chloro-bromides, chloriodides, by virtue of the action of the plasma. With regard to elimination, the principal avenues are the kidneys, followed in order by the saliva, the bile, perspiration, and the lacteal secretion. It is more rapid when introduced in the form of soluble compounds. In the case of insoluble compounds elimination is slow and irregular. When the quantity eliminated attains a considerable amount the emunctory organs may show evidence of damage. The author then describes the technique required to demonstrate the presence of mercury in the urine. With regard to the chemical action of sulphurous waters in mercurial treatment, the author points out that sulphurous springs generally contain also sodium chloride, and for that reason they facilitate the solution of mercurial preparations. A simple experiment demonstrates this. If 5 c.cm. of blood serum is taken, and to it is added 2 c.cm. of a 1 per cent. solution of mercury bichloride, an abundant white precipitate of mercury albuminate results. On the addition of a solution of sodium chloride this dissolves readily. Sulphurous waters further have the property of stimulating cutaneous and urinary secretions, and so encourage the elimination of mercury. The administration of sulphurous waters during mercurial treatment plays the part of a redissolvent of the mercury albuminate: they favour, therefore, the circulation of mercury in the economy, and permit of the utilization of mercury immobilized in certain parts of the organism following insoluble injections of the drug.

PATHOLOGY.

61. Mode of Entry of the Tubercle Bacillus into the Organism.

Calmette (*Echo méd.*, April 21st, 1912) discusses this subject. He affirms that the transmission of tubercle bacillus *in utero* is extremely rare. In the exceptional cases in which it occurs it arises from the blood supply passing through a diseased placenta. The heredity dystrophies which an infant born of tuberculous parents suffers from are well known however. They possess, among other things, a feeble resistance to contagion, although there is no indication of specific vulnerability. In the first months of life there is no great risk unless, indeed, the mother or nurse is herself suffering from obvious tuberculosis. The risk of contamination increases rapidly, however, whenever the child begins handling things, and so, in a suitable environment, conveys the bacillus to his mouth. Statistics ascertained by recent methods of diagnosis by reaction prove conclusively the precocity of infection in young children. In such children the cutaneous reaction to tubercle occurred in 9 per cent. of cases up to 1 year, in 22 per cent. up to 2 years, in 53 per cent. from 2 to 5 years, and in 80 per cent. of cases from 5 to 15 years of age. The results of autopsies on children in hospital proportionately bear out these figures. The author affirms definitely that in an immense majority of cases in man the specific infection takes place in infancy and early childhood. Happily in most of these cases the lesion remains localized in the lymphatics without causing the occurrence of any morbid symptoms. In spite, therefore, of the large percentage of people who react to tuberculin, not more than 25 per cent. of these carriers really develop tuberculosis as a consequence. Later on all the conditions of modern social life, family cohabitation, feeding, and collective work multiply the risks. The more frequent channels of invasion are the mucous membranes of the natural cavities of the body, particularly the digestive and pulmonary epithelium, and to these may be added the naso-pharynx. Of these the digestive path is the one most commonly chosen. The author does not agree with Flügge that the number of bacilli necessary to tuberculize an animal by ingestion is greater than that which suffices for infection by inhalation. There is nothing to prove, he says, that a single bacillus absorbed by the chyle ducts and transmitted from these into the circulation may not suffice to create a lesion in the lung or any other organ. In all cases the tuberculous infection, whether it remains localized or propagates itself in the organism, affects primarily the lymphatic system. This state may remain latent indefinitely, being detected only by tuberculin reaction or *post mortem*. Experiment and clinical observation have shown that the subjects of this latent infection present manifest resistance to reinfection. It is thus established that certain individuals are naturally or can be rendered artificially immune to infection by tuberculosis. The author adds, however, that this is not necessarily lasting or absolute. There are a certain number of factors which determine the virulence of tuberculous infection in man: (*a*) When infection occurs from a case of rapidly developing phthisis it is much more virulent than infection from a bovine source. (*b*) It is much less virulent when the bacilli have previously undergone exposure to light, and especially the ultra-violet rays. (*c*) It is more virulent when the bacilli are introduced into the organism in massive doses and at short intervals, than when the doses are smaller and the intervals longer. In the latter case the cellular defences of the body have time to accomplish their work and increase the resistance of the organism. (*d*) The infection is less severe when the patient already has latent tubercle.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

62. Syphilitic Disease of Aorta.

GOLDSCHEIDER (*Wien. med. Klin.*, No. 12. 1912) describes his experience of syphilitic disease of the aorta, an experience which includes since January 1st, 1910, 97 cases seen in private and 39 cases from the university polyclinic, of which the details were supplied by Weinberg. The cases include 42 of aneurysm of the aorta, in 15 of which there was also aortic incompetence, 25 of aortic incompetence, 28 of syphilitic aortitis without aneurysm or incompetence, 37 of general arterio-sclerosis, 4 of affections of the heart muscle without demonstrable disease of the vessels. The author believes that aneurysm of the aorta when of small size is often overlooked because of inadequate percussion. Five of the 42 cases of aneurysm were also suffering from tabes. During the period covered by these observations the author was also in charge of 19 cases of aneurysm of other than syphilitic origin. The diagnosis of syphilitic aortitis without aneurysm is not always easy. Among the subjective symptoms are a sense of oppression, pressure and pain in the cardiac region, passing to the shoulder and made worse by movement, by exposure to cold air or wind, and sometimes by eating; sometimes also there is pain in the back or right half of the chest, palpitation and quick pulse with or without arrhythmia. Objectively the first sound over the aorta is impure, or there is a systolic murmur with a ringing second sound and an increased area of dullness over the aorta; sometimes general arterio-sclerosis is present, frequently increased blood pressure, and sometimes a small increase in the size of the Roentgen-ray shadow. The cardiac changes are not striking, but hypertrophy and very occasionally dilatation of the left ventricle may be present. The fact of syphilis was demonstrated in all the author's cases. The majority of the patients were between 30 and 55 years of age—that is, were at a period of life in which marked arterio-sclerotic changes, other than those of syphilitic origin, are not common. The presence of tabetic symptoms is of special value for the diagnosis of the syphilitic character of aortic and vascular diseases. Tabes was present in 29 out of the 136 cases, though the symptoms were often slight and might easily be overlooked. Long observation and treatment were possible only in a minority of the cases. The author's conclusions are that (1) syphilitic disease of the aorta is relatively frequent and occurs more often in men than in women; (2) the majority of cases of aortic aneurysm and of aortic insufficiency depend on syphilis; (3) syphilis is a frequent cause of diseases usually described as arterio-sclerosis; further observations are, however, needed to determine whether syphilis is the essential or only a contributory cause; (4) antisyphilitic treatment of syphilitic diseases of the aorta should be much more frequently and energetically carried out than has been customary, and early diagnosis and treatment is necessary; (5) iodine treatment alone is generally insufficient. Even when iodine causes subjective improvement treatment with mercury or salvarsan is also indicated. With regard especially to syphilitic aortic aneurysm he finds (1) that specific treatment has undoubtedly a favourable effect on the syphilitic disease of the wall of the aorta; (2) a certain amount of retrogression in small aneurysms, and even occasionally in those of medium size, can be traced, and advance can to some extent be checked; (3) iodine treatment alone has not been found to have any appreciable effect upon syphilitic aneurysm of the aorta; (4) general treatment is needed in combination with antisyphilitic treatment; (5) repetition of the antisyphilitic treatment is indicated undoubtedly on any return of symptoms.

63. Acute Poisoning with Methyl Alcohol.

THE cases of poisoning which followed the drinking of spirit supposed to have been methyl alcohol in Berlin at Christmas-time, 1911, reopened the question whether the symptoms in such cases are due to chemically pure methyl alcohol or to some adulteration of the spirit. The researches performed by Rost in the Imperial Board of Health have shown that methyl alcohol is capable of producing the changes met with. L. Pick and Max Bielschowsky (*Berl. klin. Woch.*, May 6th, 1912) deal with the action on the visual apparatus in the Berlin cases. There were 3 cases which they were able to examine minutely. The first was that of a man aged 37. On the 27th he had drunk "Schnaps" at a bar where methyl alcohol was sold to many persons. He was seized later with a rigor, general feeling of weakness, pains in the chest and stomach, and dyspnoea. On the 28th he was admitted into hospital, but the examination revealed so little in the way of objective signs that doubt was expressed whether it was a poisoning case at all. He slept well in the night and there was no marked dyspnoea. In the course of the morning his pupils became dilated, did not react to light, and he was found to be blind. He became extremely excitable, his consciousness was affected, clonic and tonic spasms occurred, and he died in a fit. The second case was that of a man aged 32. He arrived at the hospital in good spirits, but did not want to stay. He stated that the doctor at the "unemployed home" had sent him in. No objective signs were present. Next day, suddenly, at a quarter to eleven, he awoke, retched and vomited, complained of abdominal pains, and became cyanotic. Sweat broke out on his forehead. The pulse became rapid and small. Blindness set in, and the pupils were dilated and did not react. He died in an hour. The third case was that of a man aged 43, who was admitted into hospital dying. In all these cases the *post-mortem* examination was conducted with minute care. Macroscopically there was congestion of the nervous apparatus of vision in each case. Histologically, both the chromatin substance and the nuclei of the retinal ganglion cells were changed. The large type cells were most affected, and the degree of acute degeneration varied considerably. It was most marked in the 2 first cases, in which the clinical history of amaurosis was present, and less so in the third case. Acute degenerative changes were also present in the nerve fibres of the optic nerve. Both these and those met with in the ganglion cells were primary. Similar changes were found in other parts of the nervous system, but in no situation were they so well marked. In conclusion, the authors state that the *post-mortem* changes coincide with those found in animals subjected to experimental poisoning with methyl alcohol (Birch-Hirschfeld and Wood and Buller).

64. Myasthenic Paralysis.

ERNST TOBIAS ("Ueber myasthenische Paralyse und ihre Beziehungen zu den Drüsen mit innerer Secretion," *Neurol. Centralbl.*, May 1st, 1912) describes a case belonging to the category of myasthenic paralysis—that is, a form of paralysis without anatomical basis. The symptoms were double ptosis, a feeling of tiredness in the arms and legs without any atrophy, weakness in the muscles of the back and neck, incapability of taking in solid food, difficulty in articulation. As a second group of symptoms there was an enlargement of the thyroid combined with exophthalmos, Graefe's phenomenon, and tachycardia. These two groups of symptoms alternated. When one of them was most prominent the other was somewhat in abeyance. Hysterical symptoms showed themselves at times. The patient had also repeated attacks of tetany. Later on the myasthenic symptoms completely disappeared. The writer considers this case as belonging to the form of myasthenic paralysis described by Erb, Oppenheim, and others, in which the glands with internal secretion play a prominent part. It sometimes takes the form of a polyglandular affection, and sometimes only one gland lies at the root of the affection.

65. Zona Symptomatic of a Latent Pulmonary Tuberculosis.

PIERRET AND BOQUILLON (*Echo méd. du Nord*, IX, 1912) quote a personal case and short abstracts from the literature of 9 other cases in which they find that there is a tuberculous zona which is a primary clinical symptom of the bacillary infection. Sometimes the two are associated together; at other times, the most frequent, the signs of phthisis only appear some months, or even years, after the disappearance of the eruption. In 4 of the 10 cases the two diseases were associated; in 2 cases phthisis did not occur; in 4 it followed the disappearance of the zona at variable times, immediately afterwards—three weeks, six months, and three years. Three times the zona was thoracic, twice lumbo-abdominal, twice cervico-clavicular, once femoral trigeminal, and generalized

more especially on the lower limbs. The fever varied between 37° C. and 38° C. The pains lasted as long as eight months after the disappearance of the eruption in one case. The duration of the eruption is usually longer than the normal—about a dozen days. In the majority of cases a more or less active meningitis exists, showing itself by lymphocytosis of the cerebro-spinal fluid, which in 4 cases produced tuberculosis in the guinea-pig. In two-thirds of the cases, when the zona appeared at the commencement of tuberculosis or a few months before the pulmonary lesions progressed rapidly, the localization of the eruption is without action on the rôle played by this affection on the pulmonary disease. The prognosis of the zona on the progress of pulmonary tuberculosis is particularly grave in adults and in the female sex. The meningeal complications are predominant in children 4 to 5 years of age (two-thirds of the cases), especially of the male sex. The treatment of the eruption is the same as in the ordinary affection.

SURGERY.

66. Early Diagnosis of Duodenal Ulcer.

RIZZARDO (*Rif. Med.*, March 9th, 1912) reports a case of duodenal ulcer and discusses the signs and symptoms of this disease. Rigidity of the right rectus muscle is, in his opinion, more often a sign of some complication of duodenal ulcer, for example, perforation, than of uncomplicated ulcer. Occasionally a more or less indefinite swelling can be felt over the duodenum, and usually at times when pain is present. In the author's experience the subjects of duodenal ulcer prefer to lie on the left side. Localized dilatation of the duodenum and a resonant area between the pylorus and the gall bladder may sometimes be detected (Gunzberg's sign), and the patient is sometimes conscious of spasmodic retention and passage of flatus in this area. Auscultation over this area sometimes gives special sounds as of a liquid spurting across a narrow channel; cf. a similar condition in œsophageal stricture. Localized borborygmi are of the same order. The age and sex of the patient—between 25 and 45 and male—may also assist in the diagnosis. Certain reflex phenomena are often observed—for example, cold extremities, cardiac palpitation, dyspnœa. Disturbances of gastric secretions, hyperchlorhydria, hypersecretion, pyloric spasm, vomiting, are also common, but vary much in individual cases. Vomiting is comparatively rare, and usually due to some gastric complication. Radioscopy is of value, especially if the bismuth is delayed in the first part of the duodenum. Ptosis of the duodenum sometimes introduces difficulty in diagnosis, and may possibly be one of the predisposing causes of ulcer. The differential diagnosis is discussed, and the fact that operations undertaken for a supposed appendix perforation often show, instead, a perforated duodenal ulcer, this latter giving rise localizing symptoms over the appendix. The fundamental symptoms of duodenal ulcer are said to be spontaneous and objective pains, haemorrhage, and periods of well-being; the secondary symptoms, rigidity of right rectus, Gunzberg's sign, increase of duodenal murmurs. Associated symptoms are hyperchlorhydria and hypersecretion. Later symptoms—vomiting, gastric stasis, gastric crises, and duodenal stenosis. Diagnosis is not easy.

67. Surgical Treatment of Unilateral Septic Nephritis.

C. RITTER (*Muench. med. Woch.*, May 28th, 1912) deals with the operative treatment of unilateral acute septic infective nephritis on the basis of a remarkable case, and finds that this condition, as well as the pyæmic infections of one kidney, may be successfully treated if the operation is performed early. The patient was a girl aged 7. She had been ill for three weeks. The symptoms were a severe and constant desire to micturate, fever after about seven to ten days, and pain in the back on the right side. Before admission into hospital there had been an attack of bronchitis, bronchitis, a rash extending over the whole body of the type of a measles rash, and later desquamation. Palpation of the right kidney was rendered impossible by an extreme degree of hardening of the muscles. The urine obtained by catheter contained about ⅛ per mille albumen, many pus cells, a few epithelial cells from the bladder, many cocci, and rods. Puncture of the kidney did not produce any pus, and Ritter thereupon decapsulated the kidney. The fat capsule appeared to be normal. The fibrous capsule was tense but not otherwise altered. The kidney was enlarged, hyperæmic, and bled profusely. In no situation were there any infarcts or collections of pus. The kidney was loosely packed with aseptic gauze and the wound closed, save for a small opening for the tamponage. The result of the operation was striking. The patient slept well, the desire to pass urine was greatly diminished, micturition took place only three times, and 200 c.cm. was passed. The temperature fell markedly. During the following days the quantity of urine increased and the albumen and turbidity diminished rapidly. She was discharged ten days after the operation. When seen one month and a half later the wound was healed, the vesical catarrh had disappeared, and the recovery complete. The author discusses the diagnosis and pathology of the condition.

68. Correction of Genu Valgum in Adolescents.

STABILINI (*Archiv. di Ortoped.*, An. 29, No. 1) records four cases (with photographs) of well-marked genu valgum cured by wearing Mikulicz's apparatus, and without any operation. The ages varied from 15 to 18, an age at which it is often said that cure by apparatus alone is insufficient, and that supracondyloid osteotomy is necessary. Mikulicz's apparatus consists in a combination of light iron supports (internal, posterior, and anterior), bandages (leaving the knee exposed), and elastic bands to secure traction. Before commencing treatment it is well to insure that the bones are not still soft, otherwise disappointment is sure to occur. If good results are likely to follow, some improvement can usually be noted by the eighth or tenth day, usually full straightening occurs in an average of forty-four days, and after that a support should, as a safety precaution, be worn for twenty-five to thirty-five days more.

OBSTETRICS.

69. Operative Treatment of Post-partum Haemorrhage.

E. KEHRER, having had experience of an unusually large number of cases of *post-partum* haemorrhage in Berne, calls attention to the fact that in a certain proportion of these cases, all the thermic, mechanical and chemical means which can be adopted prove of no avail in the attempt to make the uterus contract (*Muench. med. Woch.*, April 16th, 1912). He accounts for this in the following way. The completely atonic uterus is incapable of reacting to stimuli. The means which call forth contractions in a uterus with a normal circulation and an untired muscle fail when the uterus is exhausted. Partial atony may permit of a response to powerful stimulation. When the obstetrician meets with one of these desperate cases, two courses alone are open. He may wait until the blood pressure is so low and the heart's action so weak that no more blood is pumped into the uterine vessels. If this takes place the uterus has rest, during which it may recover itself, and if left entirely untouched regular pains may soon set in again. But, as he points out, the insufficiency of the uterine muscle is frequently associated with an insufficiency of the heart. Then the patient dies in spite of all endeavours. The alternative is to extirpate the uterus. As a rule, the extirpation is performed by Porro's method, or by means of total vaginal extirpation. Both these operations, however, are complicated and take much time. Kehrer has therefore worked out a special method for these cases, and has carried it out. Since time is of great value and a proper disinfection of the hands takes much time, he advises sterile gloves both for the operator and the assistant. The pelvis is raised and the abdominal skin disinfected with tincture of iodine. He finds that the operation can be performed without anæsthesia, since it is quickly over and the patient's condition permits of this. A short incision suffices to enable the operator to bring out the uterus by means of Pfäsemann's forceps. A gauze pad is placed in the wound to keep back the omentum and intestines. The assistant then compresses the isthmus of the uterus together with the uterine and the spermatic arteries, and a double ligature is rapidly applied, first on one side and then on the other, to include, from below upwards, the fascia, parietal peritoneum, upper cervical wall, parietal peritoneum and fascia. After ligaturing this, the round ligament, the uterine vessels, the lateral portion of the cervix, and the infundibulo-pelvic ligaments, together with the spermatic vessels, are included in one separate ligature. Three or four transverse sutures at the upper and lower angles of the wound suffice to bring the anterior and posterior wall of the cervix into apposition with the peritoneum and fascia, save for a small space which can be rapidly sutured later

with catgut. The corpus uteri is then amputated either with the actual cautery (if there is suspicion of infection) or with the knife, and then the operation is terminated by the application of Michel's clamps to the skin. From the beginning up to the time when further haemorrhage is prevented—that is, when the lateral ligatures are applied—only occupies three minutes. As soon as this is accomplished, the assistant slowly injects about 1 litre of physiological saline solution to which 0.3 to 0.4 c.cm. of suprareninum synthetieum has been added through the median vein. This must not be begun before the lateral ligatures are applied. Kehrer is enthusiastic in regard to the prospects which this operation gives to desperate cases.

70. Central Rupture of Perineum.

RONGY (*Amer. Journ. Obstet.*, April, 1912) reports an instance of this rare accident under his own observation. The patient was an Austrian Jewess, aged 24, married four years. Labour, apparently her first, came on about term; the pelvis was roomy, and the head presented in the left occipito-anterior position. The pains were strong, and the labour seemed going on favourably, when the attendant nurse noticed an unusual amount of bulging of the anterior wall of the rectum and the perineum, increased with each succeeding pain. Rongy noted that as the head advanced the parts became more thinned out, and it was evident that the parts would not withstand the strain and that the anterior wall of the rectum would be torn away. No mechanical manipulation to make the head extend in order to relieve the tension on the pelvic floor was of any avail. Rupture of the perineum at the junction of the rectum soon took place, the head presenting and the child delivering itself through this artificial opening. The vulval orifice remained intact, a bridge of perineum 1½ in. wide separating it from the newly created opening. The placenta was also delivered through the opening. The bridge of cutaneous and muscular tissue was cut through in order to ascertain the nature of the damage and to expose the field of operation. The rectum proved to be intact. The laceration in the right sulcus was 3¾ in., in the left 2¾ in. in length. All tissues up to the internal sphincter were lacerated, and the entire pelvic floor had the appearance of an irregular, badly torn, and bruised surface. The anatomical element could, however, be differentiated. The pelvic floor was repaired in the usual manner, and the parts united well. Rongy quotes a few other recent cases of central rupture of the perineum (Parochin, 1903; Dealmeida, 1904; Karols Kent, 1910).

GYNAECOLOGY.

71. Specific Treatment of Gonorrhoea in the Female.

F. FROMME (*Berl. klin. Woch.*, May 20th, 1912) gives the results of his experience of the treatment of gonorrhoea in the female in the woman's clinic in the Berlin Charité. He states that a large proportion of the patients can be rendered free from symptoms for a time by means of hot air, hot douches, and packings, and a small proportion of them can even be cured in this way. The excellent results which have been recorded from the vaccine treatment of epididymitis and arthritis in the male suggest that the effect of this form of treatment in the female should be recorded. From a diagnostic point of view three forms of reaction are seen after the subcutaneous or intramuscular injection of killed gonococci. There is the local reaction at the site of injection, consisting of redness, swelling, and tenderness; there is, further, the focal reaction, consisting of pain in the affected part with increased secretion; and, lastly, there is the general reaction, consisting of fever, gastric disturbance, vomiting, and diarrhoea. With Reiter's vaccine fresh cases show a very marked local reaction, but this was also present in older cases, and was even seen in persons who had in all probability never had gonorrhoea. He therefore states that definite deductions cannot be made from the local reaction. In the same way the focal reaction is at times met with in non-gonorrhoeic cases. The general reaction in cases of affections of the appendages was only met with in 6 cases out of 60. Fresh cases of gonorrhoea and normal persons never give a general reaction. As far as arthigon is concerned the old cases of pyosalpinx did not show a rise of temperature, but the majority of the other cases did. When 1 gram is injected and a rise of temperature up to at least 100.4° F. takes place within twenty hours the probability is that a fresh pyosalpingitis gonorrhoeica is present. In his therapeutic application of vaccine he used Reiter's vaccine subcutaneously and arthigon intramuscularly. The first dose given was 0.5 c.cm. After a pause of five or six days the dose was gradually increased by 0.1 c.cm., until 1.3 to 1.5 c.cm. was reached. With Reiter's vaccine, fresh gonorrhoea, gonorrhoea of the uterus (including the cervix), and Bartholinitis were not improved at all. At times he has seen the process ascend during this treatment. In gonorrhoeal salpingitis the pain rapidly diminishes, and is usually gone after the third or fourth injection. Of 45 cases, 10 were cured by this vaccine, 19 were markedly improved, 6 slightly improved, and 10 unaffected. With arthigon he started with a dose of 0.5 c.cm., and increased it by 0.25 c.cm. until 5 or 7 c.cm. were reached. Only the gonorrhoeal salpingitis cases were affected. Of 75 cases, 11 were objectively cured, 29 markedly improved, 20 slightly improved, and 20 uninfluenced. In regard to the permanency of the cure he had been able to control 86 patients, and found that after one year 31.7 per cent. remained subjectively well. The remainder complained of mild symptoms, which, however, did not call for any special treatment. Objectively the results were somewhat less good. He was further able to determine that the vaccination treatment does not protect against a fresh attack of gonorrhoea.

THERAPEUTICS.

72. Venesection and Saline Infusion in Dermatology.

SIMON (*Deut. med. Woch.*, November 30th, 1911) expresses great satisfaction with the combined action of venesection and intravenous injection of a saline solution on various skin diseases of toxic origin. The truth of the old view that many diseases of the skin are due to impurities in the blood is now generally admitted; but the boundary line between the toxic and non-toxic skin diseases had not been clearly drawn, and the nature of the toxins present is quite unknown. The diseases of the skin generally recognized as toxic are: pruritus, prurigo, urticaria, pemphigus, strophulus, and certain forms of constitutional eczema, and in all probability there are many others. The beneficial effects of internal lavage of the system now generally adopted by surgeons and gynaecologists in severe toxaemia, with sepsis, uraemia, or eclampsia have led to its introduction in dermatology. Venesection alone has often been prescribed for certain skin diseases, but its combination with the intravenous injection of saline solution was first practised by Bruck, who recently published 8 cases thus treated with success. The writer has now adopted this treatment in about 100 cases, a large proportion of which reacted most satisfactorily. The technique is simple. From 100 to 200 c.cm. of blood are withdrawn from a vein through a cannula, through which 300 to 700 c.cm. of a 0.09 per cent. saline solution is then injected. No large quantities of blood were withdrawn, nor was each saline injection large, for the writer considers that the action of the treatment is qualitative rather than quantitative, and that it consists mainly of a stimulus to metabolism. The treatment is repeated three to six times, or oftener, according to the needs of each case, at intervals of five or six days. No ill effects on the kidneys or circulatory system were observed, nor was fever ever caused. The treatment was well tolerated by old patients. It was ambulatory in many cases, and therefore not supplemented by ordinary hospital treatment, to which the improvement in the patient's condition might otherwise have been ascribed. The diseases treated were: localized and general pruritus, senile pruritus, various forms of urticaria and oedema fugax, certain forms of eczema, psoriasis, relapsing furunculosis, and pemphigus. The best results were obtained in cases of pruritus. The course of this disease is often erratic and affected by psychic factors; but the improvement which followed the treatment can hardly be traced to suggestion, as the patients were told that the operation was performed for diagnostic purposes only. In every case of pruritus itching was at once lessened or completely banished. After two to four days itching often returned, when it was usually most severe on the flexor aspect of the arms and the adductor aspect of the legs. Such relapses grew less frequent after the treatment had been repeated till they ceased to occur. The results were most striking in the case of a man, aged 22, who had suffered from severe general pruritus since he was 2 years old. He had been

treated for many years in vain with numerous internal and external remedies, including salvarsan and light baths. On three occasions 100 c.cm. of blood were withdrawn and 250 c.cm. of saline solution injected. The night after the first operation the patient's sleep was undisturbed by itching, which had previously been most troublesome. Although he had been completely invalided he regained his general health completely, and the disease has not returned. Localized and senile pruritus require longer treatment. Many cases of urticaria reacted satisfactorily to the treatment, while others were unaffected by it. In one case reported by Professor Bettmann a lady who had suffered for several years from severe urticaria factitia recovered after a course of the treatment, and no relapse had since occurred. The writer never found psoriasis improve under the treatment, but a case of relapsing furunculosis of the neck was benefited by it. Excellent results were obtained in certain forms of constitutional eczema which had been refractory to various other therapeutic agencies, including the *x* rays. The writer offers no explanation for the action of venesection on the skin, but he quotes the observations recorded by Magnus on the changes occurring in the blood after an injection of saline solution. This writer found that an injection of saline solution was followed by increased transudation of fluid from the blood vessels into the tissues, but that this phenomenon was reversed when the increased diuresis effected by the injection began, a large quantity of fluid passing from the tissues into the blood vessels and being excreted by the kidneys. The treatment is therefore appropriately described as lavage of the system.

73. Colloidal Metals.

WACLAV v. BIEHLER (*Wien. klin. Rundsch.*, Nos. 43 and 44, 1911) discusses the methods of obtaining the properties and the uses in medicine of the so-called colloidal metals or inorganic ferments which are able to call forth the same reactions as the organic ferments. A metal passes into the colloid state when it is broken down into minimal parts by means of electric sparks passed through fluid between electrodes of the metal, the particles forming an emulsion in the fluid. Colloidal metals can also be artificially obtained chemically, but Bordet, Netter, and other workers have shown that only the ones obtained by the electric method, and not those by the chemical method, have actions similar to those of organic ferments. According to Robin and Bordet, the action of metal ferments on the human organism is to call forth a general strengthening of the chemical processes identical with that due to organic ferments. They possess also bactericidal properties. Von Chabrin found that colloidal silver prepared by the electric method may have a bactericidal power several million times stronger than that of mercury salts. Different workers have shown the bactericidal efficacy of colloidal silver with respect to pneumococcus, *B. coli*, *Staphylococcus aureus* and *albus*, etc., and have also shown that the same changes which result from an injection of 5 to 10 c.cm. of colloidal silver also follow the injection of 10 to 20 c.cm. of normal horse serum, antidiphtheritic serum, and lacto-serum. On the ground that metal ferments increase the chemical reactions of the organism, Robin has given injections of colloidal metals in diseases such as rheumatism and inflammation of the lungs, with encouraging results. In one case of diphtheria the result of the injection of a solution of colloidal gold was similar to that from antidiphtheritic serum. The author has treated with injections of colloidal metals (either gold or silver) 4 cases of appendicitis, 5 of inflammation of the thyroid, 1 of deep sinus inflammation, 3 of cancer, and 1 of pyaemia. The injections were made under the skin of the abdomen or flank. The preparations employed were obtained from the clinical laboratory in Paris; each ampulla contained 5 c.cm. of an isotonic solution of the colloidal metal. No reaction of the skin was observed, and there was hardly any pain. One case of appendicitis was of special interest. The patient was a child, 5 years of age, who began to show signs of appendicitis a fortnight after recovery from pneumonia. When seen there was a localized peritonitis with fluctuation. The parents [illegible] of colloidal silver was thereupon [illegible]; 15 c.cm. of pus was then [illegible] by puncture, and without [illegible] of metal was injected into the abscess cavity. The child's condition improved visibly, and the temperature fell two hours after the injection from 39.8° C. to 38.1° C. (103.6° F. to 100.5° F.). Two days later 5 c.cm. was injected subcutaneously, and the temperature fell to 37.6° C. (99.7° F.). The temperature became normal after a third injection two days later; the child recovered quickly, and has been perfectly well during the eight months which have since elapsed. Recovery in the other cases of appendicitis was more gradual. In the 5 cases of thyroiditis the pus was emptied with a trocar, the cavity washed out, and 5 c.cm. of the colloidal metal injected twice daily. In all but one case the pus disappeared in three days, the temperature fell to normal, and recovery followed six days from the beginning of treatment. In the fifth case recovery did not occur till the twelfth day. In the case of a sinus in the jaw following influenza, 25 c.cm. in all were injected subcutaneously, with the result that the pain, which had been intense, disappeared and the general condition improved. The results in the cancer cases were insignificant and transitory. In the case of pyaemia following an abortion the customary methods failed, and the condition was very bad when on the tenth day the patient came under the author's care and subcutaneous injections of colloidal silver were begun. The condition improved gradually during four days, in which 40 c.cm. were injected in all; recovery followed. Judging from his own experience and that of other workers, the author believes that the metal ferments will take a great place in treatment in the future.

74. Spengler's "I.K." in Local Tuberculosis.

BENOIT (*Journ. des praticiens*, 1912, xxvi, p. 221) describes his results with this substance. He makes four solutions, marked 1 to 4, No. 1 being the strongest, and each solution one-tenth weaker than the preceding. The solution is as follows: Carbolic acid 0.25 gram, NaCl 0.50 gram, distilled water 100 c.cm. The treatment is begun with Solution 4, and ¼ c.cm. is injected three times a week for five to six weeks, then interrupted, continued again for a week, and then stopped. The doses are increased as follows: Solution 4: ½ c.cm., ½ c.cm., ¾ c.cm., 1 c.cm. Solution 3: ¼ c.cm., ½ c.cm., etc. The author has rarely found it necessary to go beyond Solution 2. The temperature was taken regularly throughout the treatment. There was no noteworthy febrile reaction. The author has had excellent results by this treatment; the weight increased and the local condition was cured.

PATHOLOGY.

75. A New Cerebro-Spinal Reaction.

C. LANGE points out (*Berl. klin. Woch.*, May 6th, 1912) that, in order to ascertain the condition of the central nervous system in early stages of syphilitic and other affections, it is necessary to utilize extremely delicate reactions. Zsigmondy has shown that colloidal gold, like other colloids, is "salted out" by an electrolyte, but that this salting out is prevented by the presence of a protein. Every albuminous substance has its definite "gold number"—that is, the amount which will prevent the action of the electrolyte on colloidal solutions of gold. Much depends on the preparation of the solution of gold and on the technique of the application of this phenomenon for clinical purposes. Lange gives exact instructions with regard to details. He has found that cerebro-spinal fluid diluted with 0.4 per cent. NaCl solution, together with colloidal gold solution, does not alter the red colour of the last named. All forms of precipitation must be regarded as pathological. In syphilitic affections of the central nervous system the reaction is quantitatively parallel to the lymphocytosis; it has proved more delicate than the globulin or Wassermann reactions with cerebro-spinal fluid. The Wassermann reaction need not be expected to be positive until a definite degree of strength of the gold reaction has been registered. Lange regards this fact as of importance for practical purposes. Owing to the differences of the dilution of the fluid at which the "salting out" maximum is found to be placed, a quantitative reaction may be said to exist. In this manner syphilitic affections can be distinguished from other diseases of the central nervous system, such as cerebral tumour, haemorrhages, tuberculous and purulent meningitis. In regard to the application of the reaction he claims that the very small quantity of fluid required, the ease with which it can be carried out, and the rapidity of the same, offer advantages for practice. The smallest pathological changes can be ascertained by its means, while uncomplicated syphilis yields a negative reaction. The importance of being able to diagnose parasyphilitic affections of the central nervous system at an early stage is obvious.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

76. Rare Symptoms in Chorea.

A. WESTPHAL (*Wien. med. Klin.*, No. 15, 1912) describes two cases of chorea minor which presented unusual symptoms, and which were also of interest because the anatomical changes which underlay the clinical symptoms were brought out by microscopical examination. The first case was of acute chorea minor in a child of 12. The striking point was the absence of knee-jerks, which was verified by repeated examinations as the choreic movements diminished in severity; on one occasion the reflex was present, but feeble. A few days after admission the patient developed a loud blowing systolic murmur at the apex and base, and there was irregular remittent fever up to 39.5 C. (103.1 F.); death occurred a fortnight after admission from heart weakness. At the autopsy small nodules were found on the mitral valve, and a few on the aortic valve; from particles of these nodules cultures were made, and colonies of haemolytic streptococcus developed. Guinea-pigs were injected subcutaneously with pure cultures of the streptococcus, but in only one case was there a positive result—shown by the development a few weeks later of swelling of a joint caused by the presence of sterile pus. Microscopic examination of the spinal cord showed acute cell changes in many of the ganglion cells of the anterior horn, though a not inconsiderable number of these cells remained intact. No change was found in the peripheral nerves. The affection of the ganglion cells of the anterior horn must probably be looked upon as the essential cause of the disappearance of the patellar reflex, but since the reflex disappeared in spite of the persistence of many "intact" cells, it seems not impossible that toxic influences affected parts of the grey substance not demonstrably diseased. Marked hypotonus of the muscles was present and might result in loss of the reflex when combined with even a slight lesion in the reflex path. The author inclines to the view that in chorea minor disappearance of the knee-jerk, when it occurs, is a temporary phenomenon depending partly on the effect of toxins on the reflex path. The next case was a severe post-rheumatic chorea with psychical symptoms in a girl 16 years of age. In the last days of life an ophthalmoplegia developed, which appeared to affect all the external eye muscles except the external recti; the sphincter iridis was affected, the pupils were small, and no light reflex could be detected. The anatomical change found *post mortem* was an acute polioencephalitis acuta haemorrhagica on the floor of the third ventricle and the aqueduct of Sylvius. The extent and localization of the haemorrhagic process corresponded to that seen in the alcoholic form of polioencephalitis, a form which is also seen to develop as a result of infectious disease. The primary lesion in this case was probably an affection of the vessel walls due to the action of toxins. The paralysis of the eye muscles could not have been essentially and solely due to the haemorrhages, but the author has already shown that in haemorrhagic encephalitis the clinical symptoms and the anatomical changes do not always exactly correspond. This case of the occurrence of an almost total ophthalmophagia in combination with a polioencephalitis superior haemorrhagica in chorea minor seems to be unique in the literature. The author considers that both these cases support the theory that chorea minor is one of the infectious diseases.

77. Retrobulbar Neuritis.

KENNEDY (*Amer. Journ. of Med. Sci.*, September, 1911), from a study of the various subjective and objective signs in a series of 6 cases of expanding lesion of the frontal lobes, regards retrobulbar neuritis as an exact diagnostic sign in certain tumours and abscesses so situated. In 5 of the cases the diagnosis was confirmed by operation, and in the sixth only a palliative decompression operation was attempted so that the tumour was not actually seen, though there was no doubt as to the condition. The sign presented by each of these cases consists in the occurrence of true retrobulbar neuritis with the formation of a central scotoma and primary optic atrophy on the side of the lesion, together with concomitant papilloedema in the opposite eye. The above symptom-complex is easily discoverable if looked for, and is decisively diagnostic, since it cannot be simulated by any lesion failing to exert pressure on the inferior surface of one or other frontal lobe, so that if a patient, who has a brain tumour, develops a unilateral retrobulbar neuritis it is certain that the tumour is situated in the lower part of the frontal lobe on the same side as that on which the retrobulbar neuritis and primary optic atrophy have occurred. Further, owing to the proximity of the olfactory bulbs to the optic nerves, depression or loss of smell is practically always present on the side of the retrobulbar neuritic atrophy. In the first 3 cases recorded retrobulbar neuritis occurred in the nerve ipsolateral to the tumour before papilloedema had time to develop, since direct pressure was exerted on the nerve trunk from the commencement of the disease. In the next 3 cases no local pressure was exerted on the optic nerves until after the occurrence of bilateral papilloedema, and when such pressure eventually occurred the appearances due to retrobulbar neuritis were substituted for those due to papilloedema.

78 Tuberculosis in Suckling Infants.

MUGGIA (*La Pediatria*, An. 19, No. 12), seeing the extreme rarity of congenital tuberculosis involving the acquired character of most cases of tuberculosis, points out the greater necessity for early diagnosis and particularly in infancy. For even in suckling infants tuberculosis is commoner than is generally believed. Statistics on the subject vary from 8.6 per cent. to 1.3 per cent. Probably in every case these are below the real figures, owing to the difficulty in recognizing tuberculosis in very early life. Even in the *post-mortem* room it may not be recognized macroscopically as the tubercle is often in the prefollicular phase. The tuberculosis of sucklings is characterized by its aërial origin: by caseation of the bronchial glands, and by a possible ultimate diffusion to the great vessels and bronchi. Fever may be absent, and this is more likely to be the case in fairly well-nourished children of apathetic appearance and with predominance of signs of diffuse bronchial catarrh. Dyspeptic symptoms are almost constant, and often associated skin affections of an exudative type. Herpes zoster and purpura have also been noted. Some cases begin as an acute gastro-enteritis, to be followed later by a tuberculous bronchopneumonia or an acute miliary tuberculosis. The tubercle bacillus is not as a rule found in the stools of this type of gastro-enteritis, and in this respect it differs from the gastro-enteritis of the later stages of tubercle. In the acute miliary forms meteorism and diarrhoea are common, rapid loss of strength and weight, bluish pallor, dyspnoea out of proportion to the physical signs, high frequency of the pulse. As regards meningitis, neither the Kernig nor the Babinski signs are reliable in very early infancy. An interesting symptom sometimes seen in the later stages of chronic tubercle with cavities is the presence of oedema of the eyelids which may be so marked as to suggest nephritis.

79 The Sphygmomanometer and Venous Thrombosis in the Arm.

R. MOHR (*Munch. med. Woch.*, 1912, lix, 759) describes the case of a man of 22, seriously ill with tuberculous caseous pneumonia, in whom the application of a von Recklinghausen's sphygmomanometer to the arm produced thrombosis. The blood pressure was measured daily for a fortnight in the right arm. The day after the last measurement was taken the patient complained of pain in the right arm: no swelling was found, but thrombi could be felt in the median cubital, the basilic, and the cephalic veins. There developed no redness along the veins and no oedema; a fortnight later the thrombi could still be felt in the arm, though apparently well organized and partly absorbed. At this time considerable oedema of the left leg appeared, due apparently to venous thrombosis. This was in May; three months later the patient's lung condition had improved and he was up and about again. Mohr thinks that the thrombosis in the arm of this cachectic patient was undoubtedly due to the repeated application of the armlet of the sphygmomanometer.

80. The Elimination of Thiocol.

DE SANDYS (*Rif. Med.*, February 3rd, 1912) as the result of certain observations on the elimination of thiocol (potassium sulphoguaiocolate) comes to the conclusion that the measure of its elimination in the urine may be useful as a test for hepatic insufficiency, for he found that the greater the hepatic insufficiency the less the elimination

of thiocol in the urine. Moreover, some experiments convinced him that the lessened elimination in these cases was due not to masking of the reaction by urobilin but probably to insufficient action on the part of the liver, the assumption being that the substance into which the thiocol is split up and which gives the green reaction with perchloride of iron is manufactured by the liver. The reaction in question is produced as follows: A drop of iron perchloride solution is put into a test tube, and the urine slowly and carefully added, stopping before the greyish-white precipitate of iron phosphate occurs; if thiocol (or the substance into which it is split) is present a green colour is seen, varying from a pale green up to a bright emerald. The reaction occurs most readily after the drug has been taken for two or three days. And the author found that it failed where the liver was affected, and in proportion to that so he suggests it may be used as a test of hepatic insufficiency.

SURGERY.

81. General Anaesthesia by Intramuscular Injections of Ether.

Descarpentries (*Bull. de la Soc. de Chir. de Paris*, April 17th, 1912), in studying Burkhardt's mode of intravenous ether administration, thinks that intramuscular injections of pure ether are feasible. Controlled by strong aponeurotic and muscular structures the evaporation of ether can proceed only slowly. He employs a "Record" syringe, with a needle 7 cm. long, of calibre $\frac{6}{10}$ mm. The needle is inserted deeply into the mass of the gluteal muscles at a point which will avoid vessels and nerves, and withdrawn little by little as a quantity of ether is deposited. A black band is tied over the patient's eyes, because, the author naïvely explains, in the obscurity he will go to sleep more readily. It is advisable to give multiple injections of 10 c.cm., and six of these may be administered. The quantity of ether is estimated by the weight of the patient. As a rule, the number of cubic centimetres of ether is rather in excess of the number of kilograms of patient's weight—for example, a patient weighing 55 kilos will require 60 c.cm. of ether. Some transient but not severe pain is felt at the seat of injection. This is followed by pain down the leg, with numbness. Then the patient evinces a desire to talk and his breath smells of ether. In ten minutes he is sleeping, and in fifteen to twenty minutes anaesthesia is complete. The face is pale, pupils are contracted, respiration is quiet, slow, and regular; there is no cyanosis, no bronchial secretion, heart's action is regular, muscular relaxation is often perfect, conjunctival reflex is not abolished. The awaking is gentle: at the end of half an hour sensibility reappears. The patient may talk quite rationally though he may have no sensibility to pain in the limbs. This is quite in accord with the researches of Nicloux, who found that the proportions of ether "fixed" by the brain and by the bulb are equal, while in chloroform anaesthesia the case is different, the bulb fixing five times more chloroform than the brain. Descarpentries has met with no accidents, the only untoward result has been occasional haemoglobinuria which never lasted for more than twenty-four hours. The initial pain is quite tolerable as he knows from personal experience. If anaesthesia is not sufficiently prolonged a few whiffs of chloroform or ethyl chloride will lengthen the period, and also if induction is not sufficiently rapid ethyl chloride may be employed in the beginning. The author has under this method of anaesthesia performed such operations as hysterectomy, staphylorrhaphy, perineorrhaphy, repair of vesico-vaginal fistula. One patient was as young as 5 years. In the discussion which followed one speaker announced that he had tried the method once, but the pain was so atrocious that he had to give an anaesthetic by the usual mode. M. Faure reports a case in which the success of the method was pronounced. Anaesthesia at the beginning of the operation was not profound enough, and a few whiffs of chloroform were required. The operation was removal of ascending ramus of [illegible] jaw and lasted thirty-five minutes. The patient [illegible] seriously incommoded by pain of the injection and made no complaint.

82. Retropharyngeal Sloughing Caused by Foreign Bodies.

[illegible] (*Münch. med. Woch.*, May 27th, 1912) points out that [illegible] bodies of large size and hard consistence are frequently swallowed without doing any harm, small, pointed objects, such as needles, may give rise to fatal wounds, either in the form of punctures of important vessels or of sloughing infective infiltrations. When the fact of the accidental swallowing is recognized at once, Roentgen's method and the oesophagoscope enable the surgeon in practically every case to localize the offender and to extract it. Greater danger is experienced when the patient is unaware of having swallowed anything. He recounts the case of a man who aspirated a small metallic hook. No signs of the foreign body could be obtained by sounds, *x* rays, or digital examination, and oesophagoscopy revealed a small bleeding wound to the right of the oesophagus. The patient was unable to swallow. On awaiting events, the fever which set in in the evening passed off within twenty-four hours, and after three days all the signs disappeared. Five days later, the patient passed the hook. Karewski points out that care must be exercised when the examination yields a negative result. In another case a man thought that he swallowed a chicken bone with his chicken. He attempted to regain the bone by retching, vomiting, and, failing this, he ate potatoes to rid himself of the pain. A medical man was consulted, after these manipulations failed to have the desired result. A laryngoscopical examination proved negative, and a shadow was seen in the neighbourhood of the aortic arch by means of *x* rays. An attempt to feel the foreign body with a sound failed, and the oesophagoscopy was postponed until the following day. As the patient felt better and soon was able to take up his occupation again, he did not turn up for the oesophagoscopy. Three weeks after the accident the pains in the throat and the difficulty in swallowing reappeared. In spite of the remedies for an inflamed throat failing to relieve the symptoms, and the onset of pain on movement of the head, the patient continued on his commercial journey for three further days. On returning to Berlin he could not even swallow fluids. He was dyspnoeic and was constantly retching. On examination it was found that the neck was considerably swollen. A swelling of the posterior wall of the oesophagus about the level of the larynx was palpable. The lower end of the swelling could not be reached with the finger. Since the diagnosis of retropharyngeal sloughing was certain, an operation was undertaken. The oesophagus was exposed from the left side. Some difficulty was experienced on account of the hyperaemia and swelling of the thyroid. After freeing the oesophagus from the spine for the whole extent of the cervical vertebrae a stinking abscess was met with. In this a thin, 2 cm. long, bent piece of wire was found. This was found at the level of the first dorsal vertebra. The abscess was drained by turning in the sterno-cleido-mastoid muscle close to the sternum and passing a drainage tube, while the rest of the wound was packed with gauze. The wound healed after a thin layer of necrotic tissue had been cast off. The patient made a good recovery. He deduces from this case that under all circumstances every foreign body which is retained in the oesophagus should be sought at once and removed. He cites a case of an elderly lady who, one morning on awakening, missed a plate with four false teeth. The skiagram showed the shadow of the plate opposite the second dorsal vertebra. An experienced oesophagoscopist only found an ulcer some 20 cm. from the level of the teeth. A fortnight later she was brought to Karewski to determine whether she might be considered safe. Nothing was felt by the sound, but the *x* rays still showed the foreign body in the old situation. He was able to extract the plate with a coin-catcher. It is, therefore, necessary to utilize every means to ascertain whether the foreign body is still retained or not. If the foreign body cannot be removed, after it has been localized by ordinary means, oesophagotomy must be resorted to.

83. Treatment of Gonorrhoeal Conjunctivitis.

Oliveres (*Journ. des prat.*, xxvi, 1912) considers that in the first stage of this disease, when the eyelids are red and swollen and the conjunctiva infiltrated, silver nitrate will only aggravate the condition, and instillations of argyrol 20 per cent. should be used instead. Fomentations of hot water should be applied constantly to the eyelids, and every two hours, night and day, two drops of the following collyrium instilled: Distilled water 10 grams, argyrol 2.50 grains. The secretion should be removed from time to time by pads of cotton-wool soaked in the following solution: Boiling water 500 grams, mercury cyanide 0.25 grain. When the secretion becomes purulent, silver nitrate in solutions of 1, 2, 3, etc., per cent. should be applied twice a day to the conjunctiva. When the purulent discharge begins to decrease markedly, protargol (25 per cent.) should be used once a day. As preventive treatment, the author prefers 20 per cent. of argyrol into the eye of the newly-born child.

OBSTETRICS.

84. The Perchloride Test in Hyperemesis Gravidarum.

LE LORIER (*Bull. de la Soc. d'Obstét. et de Gynéc. de Paris*, etc., April, 1912), noting the relation of acetonuria and fasting, made experiments to ascertain the presence of acetone and its compounds in the urine of women subject to uncontrollable vomiting in pregnancy. Contrary to what he expected, he found that the presence and proportion of acetone was not constant; but in the course of his researches he noted that perchloride of iron caused the deep coloration which Gerhardt observed in the urine of diabetic subjects when coma was imminent. This port-wine coloration seems, according to chemists, to be due to acetyl-acetic acid. It came out clearly in all the four cases of uncontrollable vomiting under Le Lorier's observation in the course of the three years when he made the experiments for ascertaining the presence of acetone. Fieux and Dantin at the same time reported cases showing that acetones in the urine of pregnant women suffering from vomiting are of high significance. Le Lorier carefully compared his experiments with Fieux and Dantin's experiences. He concluded, in a memoir read before a medical society, that the perchloride reaction in the urine of a patient with hyperemesis represents a grave condition, independently of the frequency of the vomiting. The intensity of the reaction corresponds very closely with the gravity of the patient's condition. Hence Le Lorier considers that the test in question is as sure as it is easy. He has tried it in normal pregnancy and in gestation complicated by different pathological conditions other than hyperemesis, and also in labour and childbed. Yet he only detected it in one case (labour), and in that instance it was ill-marked. Fasting does not seem sufficient to produce it, as Le Lorier found it absent in the urine of a hospital patient with appendicitis three weeks under hydric diet. He concludes that since the perchloride test shows that acidosis is intense in hyperemesis, alkaline intravenous injections are indicated as an important therapeutic agent in treatment. Water holding 8 per cent. of sodium carbonate ought to produce good results.

GYNAECOLOGY.

85. Corpus Luteum and Pineal Body.

OTT AND SCOTT (*New York Med. Journ.*, June 8th, 1912) report some experiments demonstrating the effects of corpus luteum and pineal extract on the organism. The experiments are described in full in the *American Monthly Cyclopaedia and Medical Bulletin*, April, 1912. Intravenous injection of corpus luteum extract caused an initial depression of the blood pressure, followed, for a short time, by a rise above normal; the pulse-rate was practically unchanged. There was no effect on the renal secretion, except that in tests performed on rabbits 0.5 per cent. of glucose was found in the urine. Applied to a uterine strip of the rabbit *in situ*, corpus luteum increased the contractions both in pregnant and slightly in non-gravid animals. The contractions of an excised piece of rabbit's intestine were greatly increased in height. With pineal body extract the circulatory effects were much the same as with corpus luteum tissue. The urinary secretion was augmented, an increase in the volume of the kidney owing to vaso-dilatation occurring at the same time. On the non-gravid uterus there was no action, but in the pregnant uterus the contractile power was increased. The contractions of the intestinal strip were slightly increased. In rabbits with the superior cervical ganglion excised, local applications of the pineal extract to the eye caused slight pupillary dilatation. Frank (*Studies from Department of Pathology, College of Physicians of Columbia University*, vol. xii, 1912) reports researches throwing light on the pharmacological effects of intravenous injection of corpus luteum extract, the alleged benefit of corpus luteum injections administered to replace the secretion of ovaries that have been removed, and thirdly, the effect of corpus luteum injections on the hypophysis of castrated animals. The third series of experiments rendered the most positive results. It was found that lutein is a very active substance, as corpus luteum extract injected intravenously in sufficient concentration proves rapidly fatal in consequence of intravascular thrombosis. The extract, when obtained from a heterologous species and given subcutaneously by the mouth or also into the veins, does not replace the normal action of the internal secretion of this gland. The injections do not suffice to "sensitize" the uterus and enable it to produce Loeb's deciduomata, and do not bring about such epithelial changes as are noted after follicular rupture. Corpus luteum extract injections call forth no recognizable reaction in the hypophysis. Frank lays much stress on control experiments. Thus in castration of rabbits, in order to observe the atrophy of the uterus, he made sure first whether the ovaries contained large or small or no corpora lutea. In woman the effects of removal of both ovaries are very difficult to ascertain with precision. The vasomotor disturbances or menopause symptoms may disappear in response to appropriate or even inappropriate treatment, and are therefore no reliable index for judging the potency of special drugs—in other words, the true value of ovotherapy.

THERAPEUTICS.

86. Hot Baths and Pneumonia.

LEMOINE (*Nord Médical*, No. 409) describes the procedure and the results obtained by the above method. The body is completely immersed in water at 40° or 42°, and to prevent cranial congestion a napkin soaked in cold water is applied to the head. Two baths of ten minutes' duration are given daily. After the bath the patient is quickly dried, wrapped in a coverlet, and returned to bed, where he rests for from half to one hour, after which a flannel shirt is put on till the next bath. The baths produce a sensation of intense heat, with accentuated pulse, and respiration accelerated even to the point of marked dyspnoea. After leaving the bath the sensation of heat lasts for at least an hour, the patient sweats profusely, and generally finds this period even more disagreeable than the bath itself. Thus the method is painful, but the results are excellent. The general condition improves rapidly, particularly in adynamic cases. Delirious patients are rendered quiet, and the sleepless obtain sleep soon after the bath. The urinary flow is increased, the tongue becomes moist, and the temperature comes down after from three to five baths. At the same time the pulmonary condition improves; dyspnoea is lessened, expectoration is easy, bronchial breathing quickly diminishes and disappears, and redux crepitations appear sooner than in cases treated by other methods. The method is unsuitable for children because of the pain caused by baths at so high a temperature and the risk of bringing on convulsions. Lemoine therefore treats children by his former method of baths at 38° given every three hours. Such baths are indicated in all congestive bronchial disorders, whether bronchitis, bronchopneumonia or pneumonia, and the earlier they are given the better are the chances of quickly cutting short the disease. In ordinary bronchitis and in mild cases of bronchopneumonia and capillary bronchitis it is not necessary to give baths as often as every three hours, but in the serious cases six baths in the twenty-four hours must be given at the onset, and in very serious cases this must be immediately raised to eight, of which two should be mustard baths. This number of baths has sometimes to be continued for four or five days, but, if it has the disadvantage of involving considerable trouble, it carries with it almost a certainty of cure. These observations are founded on 63 cases all treated by hot baths, and all without exception cured.

87. Toxicity of Menthol in Childhood.

COMMENTING on the popularity of menthol and its numerous derivatives in the treatment of coryza, W. Lublinski (*Berl. klin. Woch.*, February 5th, 1912) points out that these drugs are liable to cause alarming symptoms when applied to the internal nares of young children. No doubt menthol, when applied early in coryza, reduces the profuse and embarrassing secretion, as well as the nasal obstruction, and the sense of dryness in the throat. It also banishes headache, and it may prevent the extension of the nasal catarrh to the throat and bronchi in patients who otherwise invariably experience this complication of coryza. But even in adults there are drawbacks to the use of this drug, which may cause eczema and extensive erythema, involving the greater part of the face. The action of the drug may also extend to the eyes, ears, and throat, after its application to the internal nares: for conjunctivitis, earache, and pain in the throat have been experienced by patients who had not previously suffered from these complications as a sequel to coryza. These complications may, however, be largely mitigated by avoiding the liquid preparations of menthol, the strength and composition of which are unknown, and by substituting menthol given as

an ointment. The writer uses a derivative of menthol registered as "koryfin," 10 to 12 drops of a 25 per cent. solution in paraffin being introduced into the nostrils. Below the age of 10 koryfin should only be given as a 2 per cent. ointment, and even this weak preparation is contraindicated in infants under 2 years who suffer from laryngeal spasm. The writer applied a portion of a 2 per cent. ointment of koryfin, the size of a lentil, to the right nostril of a healthy baby, 11 months old, which took the breast with difficulty on account of a cold. The ointment was distributed by gentle massage over the nose, and the glass rod on which it had been introduced was being cleaned preparatory to using it for the other side when an attack of laryngeal spasm occurred. Apnoea, cyanosis of the face, rotation of the eye balls, and disappearance of the pulse lasted less than a quarter of an hour, during which the writer's anxiety was extreme. The treatment consisted of artificial respiration, the application of hot compresses to the throat, and the repeated removal of large quantities of mucus from the throat by a handkerchief wrapped round one finger. A similar result from the application of koryfin to the nose of a 3-weeks-old infant has been reported by Koch, who painted the internal nares with a tampon soaked in koryfin. An attack of suffocation was also induced by Killian, who applied only one drop of oil of menthol to the nose of a young infant. Among many similar cases reported in the French literature there is one which terminated fatally. The infant, which was 1 month old and apparently quite healthy, was treated with a 2 per cent. menthol ointment, a particle the size of a lentil being introduced into the nose. The infant, which was suffering from an attack of coryza, was at once seized with violent dyspnoea, and in ten minutes it was suffocated. Discussing the cause of these accidents, the writer discredits the view that they are due to direct irritation of the larynx by the drug, for it is highly improbable that the few drops instilled into the obstructed nares could reach the larynx in the short time which intervenes between the administration of the drug and the appearance of toxic symptoms. It is more likely that the laryngeal spasm is produced by the irritation of the nasal branches of the trigeminal nerve which reflexly conduct the stimulus to the larynx. Whatever the mechanism by which these toxic symptoms are produced, their treatment is plain, and consists of artificial respiration, the application of fomentations to the throat, the removal of secretion from the throat, traction on the tongue, hot baths, mustard baths, and cutaneous friction.

88. Injections of Uric Acid and Gouty Attacks.

DR. FALKENSTEIN (*Wien. med. Klin.*, No. 45, 1911) has found that the injection of distilled water containing uric acid in the form of a fine powder into the abdominal cavity of a guinea-pig will give rise to a fixation of complement such as the serum gives in the Wassermann reaction. Since it is known that recovery after an attack of gout takes place by the absorption of urates by phagocytosis, the author's experiments suggest that in the production also of gouty areas artificially, antibodies are formed in the serum, which increase the activity of phagocytosis. He has therefore attempted to treat gout by subcutaneous injections of uric acid near to the diseased area, with a view to increasing phagocytosis locally. He finds that a 1 per cent. suspension in distilled water gives rise to no necrosis but only to a slight inflammatory reaction, which disappears in about eight days. Nineteen cases illustrative of the method and its results are given in the article. The injection is made up of a 1 per cent. suspension of powdered uric acid in 2 c.cm. of water, to which is added 1 c.cm. of eucenin, representing 0.0075 gram of cocaine hydrochlorate and 0.00005 of adrenalin. This can be obtained, made up and sterilized, from the Hugo Rosenberg chemical laboratory at Berlin. The intensity of the later reaction depends to some extent upon the smallness of the particles of uric acid. The injection itself is painless, and pain from the reaction does not begin until five or six hours after it. In a few sensitive persons the reaction was very marked, lasted for more than eight days, and left a nodular infiltration of the tissues for some time longer, although finally all trace of it disappeared. In none of the cases did an abscess form. The gouty pain usually disappeared as the pain of the reaction set in. The number of the injections varied in the individual cases. For women the author does not recommend more than two injections at a sitting for fear of the after-effects of the local anaesthetic. In the case of strong men he gives, as a rule, four injections, and often six, without any untoward result. If the pain goes to a new joint, the injection can be repeated, after an interval of five hours, in the neigubourhood of the newly-affected joint. After several injections the patient, as a rule, has a sense of restored health and strength, but, in spite of this, the injections should be continued as long as fresh pains appear. The effect in the author's cases was very marked. Attacks were often cut short and lasted only for as many days as they would otherwise have done weeks. Another striking fact was that often three or four joints were attacked simultaneously, instead of one after the other, as if the organism was applied by the injection with protective material sufficient to deal with several joints instead of having only sufficient for one joint at a time, as is usually the case. It is noteworthy also that in this method even the most painful joints hardly swelled. The length of time needed for a cure depended on the amount of the deposit of urates to be dealt with. In acute attacks, if the pain yielded after the first injection, an interval of eight to ten days was allowed for the local reaction to disappear, then a further injection made over some other joint which had previously been attacked, and the process was continued until at least twenty-two injections had been given. In chronic gout a one to two months' interval was left between the injections. The injections were also extremely helpful wherever a gouty condition of the blood was suspected as being the cause of disease, as, for example, in chronic inflammation of joints, in the presence of rheumatic symptoms, sciatica, migraine, iritis, etc. The position of affairs was particularly satisfactory when, by His's method of blood examination, the gouty origin of the symptoms could be made absolutely clear.

89. Optic Neuritis after Salvarsan.

THE claim made on behalf of salvarsan that it is free from the danger of optic neuritis appears to be subverted by a case reported by Gaucher (*Presse médicale*, May 15th, 1912). A man, aged 27, with syphilis of one year's duration, received two intravenous injections of salvarsan—0.6 gram—in May, 1911, followed by several intramuscular injections during June and July. In August he suffered from vertigo, tinnitus, and difficulty in speech. In September double papillitis was found. In October another intravenous injection of 0.1 gram of salvarsan was given to cure the so-called "neuro-recurrence." This was immediately followed by delirium, tachycardia and anuria. Injections of calomel were then given with no result. In March, 1912, there was double neuro-retinitis, with complete blindness. The Wassermann reaction was negative. Gaucher has also observed several cases of unilateral deafness and tinnitus after salvarsan, which persisted in spite of treatment. He attributes all such cases of alleged "neuro-recurrence" to the effect of arsenical poisoning. He remarks that salvarsan has caused more deaths than would have occurred if the cases had been left without treatment.

PATHOLOGY.

90. A Quick Macroscopic Agglutination Test.

In the *Archives of Pediatrics* for March, 1912, are two articles (by Drs. Ruhrah and Menville) describing the Bass-Watkins typhoid agglutination test. In addition to detailing the method of procedure in making the test, Menville in his article records notes of 2 cases illustrating its value as a simple rapid bedside aid in diagnosis. After diluting a drop of blood with four times its volume of water, one or two drops of this diluted blood are placed on a microscopic slide with an equal quantity of the test fluid, which consists of a suspension of dead typhoid bacilli in the strength of 10,000 million bacilli per cubic centimetre in 1.7 per cent. sodium chloride solution. The slide is then tilted from side to side and from end to end, so as to keep the mixture flowing backwards and forwards over the area over which it was originally spread. A positive reaction consists in the appearance within one minute of agglutinating bacilli as a greyish mealy sediment, which tends to collect round the edges. In a blood giving a weak reaction this appearance is not so rapid in onset as in a stronger reacting blood, but if the reaction has not occurred in two minutes, it will not do so, and the result is negative, the mixture remaining as clear and unchanged as when placed on the slide. In all cases of typhoid the reaction was positive, while it was negative in other diseases, and its simplicity and rapidity make it valuable as a method of bedside diagnosis.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

91. Sokodu or Rat-bite Fever.

CESARE FRUGONI claims to have published the first case of rat-bite fever occurring in Europe which was diagnosed clinically and carefully observed during the course of the disease (*Berl. klin. Woch.*, February 5th, 1912. Rat-bite fever, or sokódu or sokósio, is an infective disease which occurs in Japan and China, and which is believed to be protozoal in nature. From the published accounts of the disease it appears that it is caused by the bite of an infected rat. The wound usually heals up like any other wound: but after the lapse of an incubation period of from one to three weeks local and general symptoms manifest themselves. The general symptoms include rigors, fever, headache, nausea, and vomiting. The local signs are an inflammatory swelling of the scarred wound, formation of vesicles, and later on ulceration, swelling of the regional lymphatic glands, and the appearance of a dark red or dark violet rash (erythema exsudativum). The fever and general symptoms may disappear for a time and reappear, and in this way the illness may last for a long period, even extending over some years. Death is said to take place in 10 per cent. of the cases. Frugoni's case affected a peasant who had never been out of Tuscany. Ogata states that he has succeeded in finding a special parasite in the blood, ulcers, rash, and glands of two patients affected with this disease. He associates this protozoon with the *Neosporidia*, but his observations have not been confirmed by others. The history of the Italian case is that a man of 54 years was bitten by a rat in the thumb. The wound healed, but fifteen days later the site became red and painful and swollen. A small ulcer also formed. A rigor, heralded the onset of fever, which was accompanied by vomiting and headache. The fever was of a remitting-intermitting type. This lasted for about fifteen days, during which time G. Carlesi was able to watch the case closely. The axillary and the inguinal glands were swollen. Finally a rash appeared, and after about twenty days this reappeared. The bite took place in May, 1908. The course remained intermittent throughout the year and 1909 and 1910. In October, 1910, a fresh symptom developed in the form of well-marked right-sided exophthalmos. The conjunctiva became injected and oedematous. A blood count at this period showed a distinct eosinophilia (8 per cent.). No parasites could be found. The chief points of interest in this case are, first, the occurrence of the eosinophilia, which suggests strongly the parasitic nature of the disease; secondly, the occurrence of the exophthalmos, which has not been observed before; and, thirdly, the possibility and, according to the author, probability that the disease is not so uncommon in Europe after all. Hitherto Horder has published details of three cases, but it is quite possible that others occur without being recognized.

92. Latent Endocarditis.

CAESAR AMSLER (*Corr.-Bl. f. schweizer Aerzte*, April 10th, 1912) states that mild cases of endocarditis, especially if localized on the mitral valve, frequently heal without leading to valvular disease. But it is less generally recognized that cases of chronic or relapsing endocarditis, with vegetations on the mitral and aortic valves, may run their course without functional disturbance. Von Jacksch and others have claimed that recovery may occur from valvular disease. The writer records 16 cases, in all of which a bacterial origin of the valvular disease was probable, and the changes due to old age and arterio-sclerosis could be excluded. All the patients died of an intercurrent disease, and the condition of the heart was undiscovered until a necropsy was performed. In no case had there been the slightest suspicion that the heart was affected. Even an extremely diseased aortic valve may retain its function. The condition of the myocardium plays an important part in such cases. In a few of the cases the right ventricle entered into the formation of the apex and the cavities were slightly dilated, and the weight of the heart was above normal. But these changes in every instance were explicable by other pathological conditions found, such as emphysema and granular kidneys. During the past four years chronic and relapsing verrucous endocarditis has been found 76 times among the necropsies held in the Basle Pathological Institute. In no fewer than 16, or 21 per cent., had recovery occurred so far that perfect functional results were obtained. These facts have an important bearing on the prognosis of endocarditis.

93. Dorso-lumbar Ecchymoses in Tuberculosis.

SABOURIN (*Journ. des praticiens*, xxvi, 1912) has noticed in seven cases of tuberculosis, and in no other disease, small rounded spots of a rose colour, depressed, smooth, which fairly quickly increase in length horizontally, and end in pointed extremities. They increase in length to about 12 or 15 cm., and ½ cm. in breadth. The lines are always parallel and perpendicular to the spinal axis. The sensibility of the skin is lessened, but that around retains its normal sensation. They were exclusively seen in the dorso-lumbar region at first, on a line connecting the iliac crests, and later extending as far as the sixth dorsal vertebra. Four of the cases were in youths, and one case a man of 45 years of age. There was nothing in the cases to account for their production, and they had no prognostic value.

94. Cerebral Localization from the Point of View of Function and Symptoms.

MORTON PRINCE (*Journ. of Nerv. and Ment. Diseases*, June, 1910) discusses cerebral localization, with special reference to the diaschisis theory of v. Monakow, who has worked out a theoretical mechanism by which the dynamic influences proceeding from a lesion disturb the function as a whole, and produce the symptom-complex usually ascribed to and localized in a single focus of brain area. Only a small portion of the symptoms are a necessary result of the anatomical solution of continuity, and therefore in principle permanent. The remainder can disappear, and are therefore in principle temporary. By diaschisis is meant a functional shock-like inhibition of previously uninjured distant areas produced by the dynamic influences of a lesion anatomically connected with such areas. Through the break in the continuity of the conducting associative paths the eccentrically lying brain foci are robbed of their natural sources of stimulation, and in part isolated. Thus temporary symptoms, in principle, may persist indefinitely from persistence of inhibition. Only the directly injured elements give rise to the permanent symptoms and secondary degenerations: the indirectly injured neurons are the proper carriers of diaschisis. The writer points out that in the domain of cerebral physiology and special pathology v. Monakow's work is of special significance and importance. He has offered a new conception of the relation of the so-called cortical centres to the functions which they are supposed to subserve, and to the special symptoms which are supposed to follow their destruction. In aphasia, asymbolia, apraxia, and cortical paralysis, for example, he has sought to determine the exact element of function localizable in given areas, and therefore the necessary symptom defect following a focal lesion. Finally, he has sought the exact diaschisis effect responsible through associative, commissural, and other paths for the remainder of the symptoms.

95. The Glands of Internal Secretion.

PENDE (*Rif. Osped.*, February 15th, 1912) sums up his views on the internal secretory glands as follows: The function of these glands is not, as was at one time believed, to neutralize certain hypothetical toxic products of tissue change, but rather to supply certain substances called hormones whose property it is to stimulate the anabolic or catabolic processes of tissue change, to improve the tone of the two great divisions of the nervous system, to stimulate growth during the period of active increase in the organism. The endocrinic and the sympathetic systems form an apparatus functionally one—the endo-crino-sympathetic apparatus—the changes in which, whether localized primarily in one or the other system, give rise to special clinical and dystrophic symptoms marked by (1) signs of altered tissue change, (2) altered tissue development, (3) changes in the sympathetic innervation. The internal glands being correlated by chemical and nervous relations and functionally synergic, one ought to find evidence in each of the true cardinal symptoms, of some share by the whole endocrinic system, although in any given case the symptoms associated with one particular gland may predominate. On the other hand, every gland has a strictly specific function which

cannot be replaced by another gland. The hypertrophy of one or more glands, after the lesion of others, may be explained by the functional antagonism existing between certain glands. Possibly one set stimulates the sympathetic, another the autonomous nerves; and even one gland may produce two functionally differing internal secretions.

SURGERY.

93. Radiological Appearances in Pott's Disease.

ALTHOUGH the radiograph is generally useful in tuberculosis of the bone, its value is not so evident in Pott's disease, where, as it happens, owing to the clinical obscurities, any precise extra-clinical method of exploration would be especially welcome. According to a communication by Albert Weill and Roederer to the Société de Radiologie Médicale de Paris (*Bull. et mém.*, June, 1912), the initial lesions in Pott's disease are not discoverable by the radiograph. The first characteristic appearance is the subsidence of one or more of the intervertebral cartilages, and there follows soon an irregularity of the lines representing the superior and inferior surfaces of the vertebrae, but this is very difficult of interpretation. Nevertheless, apart from bone destruction, there is a shadow which is distinctly indicative of Pott's disease. The centre of disease in the dorsal region is the point of departure of a shadow forming an opaque zone to the *x* rays, and frequently ascending above the diseased vertebrae. Its shape outlined against the spinal column has been variously likened to a spindle, a funnel, or an egg, and it is the radiological sign of a cold abscess. It is found often, however, when the clinical examination shows no trace of such an abscess, but this does not affect its significance, for it is stated that deep, hidden abscesses accompany the disease far more frequently than do abscesses which are recognized clinically. This perivertebral shadow may remain for a long time in position without changing its appearance, and in certain small patients it has been observed not to vary for years. The authors assert that the dorsal shadow, even if it exists without vertebral lesions being demonstrable on the radiograph, is unmistakable evidence of Pott's disease. Later on, when osseous destruction is well advanced, the vertebral subsidence may be secured on the *x*-ray plate, but even when the diagnosis can be made independently of the radiograph, the latter does furnish some valuable information with regard to the extent of the osseous destruction and the number of vertebrae affected, which latter is generally found to exceed the clinical estimate. In conclusion, the authors say that it is a mistake not to follow up the evolution of a spondylitis periodically by means of the *x* rays, as is done already in the course of a reduction of congenital luxation of the hip, and they repeat that Pott's disease is characterized radiographically at the cervical and lumbar portion of the spinal column by destruction of the vertebral body, and at the dorsal portion by a perivertebral shadow which may or may not be accompanied by bony subversion.

97. Removal of Spleen for Splenic Anaemia.

THE cure of Banti's disease by extirpation of the spleen is so rare an occurrence that G. Klemperer and R. Mühsam give the full details of a case which they had under treatment during the summer of last year (*Berl. klin. Woch.*, May 27th, 1912). The patient was a man aged 36 years. He was extremely anaemic, incapable of working, and wasted when he came under treatment. Objectively it was found that his spleen was much enlarged. The diagnosis of leukaemia and of aleukaemia were excluded by the examination of the fluid obtained by puncture of the spleen. The blood examination showed that there was a very severe anaemia present. There were some 2½ million red cells in each cubic millimetre of blood, and no alteration of the white cells, which were found to be in relatively normal proportions. The possibility of the case being one either of granulomatosis or lympho-sarcomatosis was considered, but in view of the absence of enlarged glands and of lymphocytosis this was considered improbable. Wassermann's test was doubtful, and there was no history of syphilis. Nevertheless, he was put on potassium iodide for three months and on salvarsan for eight weeks without result. As the patient was getting worse all rapidly the authors determined on the operation. On July 5th Mühsam incised the abdomen from close to the middle line, under the left costal arch almost to the loins. The liver was enlarged, the surface smooth, and the colour dark. The vessels connecting the spleen with the omentum and the colon were extraordinarily large. They were divided after being tied in bundles. Gradually the pedicle of the tumour was more and more freed until Mühsam got to the splenic vessels, which were as thick as a little finger. These were also carefully ligatured and divided. The organ was removed without haemorrhage. The spleen measured 7.4 in. in length, 5.26 in. in breadth, and 2.75 in. in depth. It weighed 2.46 lb. The patient made a smooth recovery. On the afternoon of the operation the number of leucocytes rose to 35,000, but soon sank to normal again. The number of red cells gradually rose, and on September 17th was 5,750,000, with 70 per cent. haemoglobin. The patient put on weight and lost all his symptoms, and when shown on May 1st, 1912, to the Berlin Medical Society, was in excellent health.

98. Necrosis of Jaw after Measles.

IN view of the fact that many lay people still believe measles to be a trivial disease, and from the rarity of the above sequela, Bindi (*Gazz. degli Osped.*, April 25th, 1912) reports the following case. The child, aged 6 years, developed measles on January 15th, followed by rather severe bronchopneumonia, and later on gangrenous condition of the right upper jaw. On February 24th the mucous membrane was completely stripped off the alveolar margin from the second incisor up to the last molar on the right upper jaw, and the intervening teeth had either dropped out or were tottering to a fall. The bare bone was dark grey and partly loose. On February 27th, under light anaesthesia, the loose sequestrum of bone was removed, comprising the alveoli of the second incisor, canine, bicuspids, and first molar; in the upper direction the necrosis extended to half the upper maxilla, stopping at the canine fossa, the palatine area. Cancrum oris is known as a rare complication of measles, but it is very rare to find such extensive damage as is here recorded. The child left the hospital on March 4th, and was in good general health, and the large breach in the jaw gradually filling up.

OBSTETRICS.

99. Simultaneous Uterine and Tubal Pregnancy: Abortion and Rupture of Sac.

ANOMALOUS pregnancies are for many reasons important. They deserve record, and the obstetrician and medical jurist should not overlook them. A lady, aged 37, accustomed to spend holidays at inland watering places and "cures," consulted Potier (*Bull. et mém. de la Soc. Anat. de Paris*, March, 1912) last December, suspecting pregnancy as the catamenia had been absent since November 4th. She had been pregnant, and was delivered at term when 26 years old. The periods had been perfectly regular from then till November, 1911. On January 11th, 1912, abortion occurred after the usual symptoms had developed, a fetus about 1½ in. long was expelled. The patient got up a week later but felt feeble, and walking or standing caused pain. The fundus could be felt above the pubes, but, as is often the case with private patients, bimanual palpation was not permitted for several days. On January 29th abdominal pains set in. Then Dr. Bazy, Surgeon to the Hôpital Beaujon, was consulted, and on examining the patient he defined swelling of the Fallopian tubes, especially the left. Several very characteristic attacks of pain, spasmodic and intermittent, occurred, and sanious discharge came away from the uterus, a symptom which in this case almost always preceded normal menstruation. There was no rise of temperature associated with these attacks. On February 23rd an acute attack occurred just as the patient rose from her bed. The left tube was found to be much larger than when defined a month earlier. On February 29th Dr. Bazy operated. There was a gestation sac developed in the left tube; it had ruptured, and the legs and lower part of the body of a fetus protruded through the laceration. Much clot was found in the peritoneum, and active haemorrhage was going on. The uterus was amputated and removed with both appendages, the right Fallopian tube being diseased. The vermiform appendix adhered to it and was excised. The fetus appeared to have reached the middle of the third month. The patient recovered speedily, as is usual in such cases where inflammatory changes are absent or limited, and where haemorrhage is arrested in time. The possibility of coexistent uterine and tubal pregnancy must not be overlooked, and this case shows how an oversight is specially liable to occur in a private practice

where careful exploration of the genito-urinary tract is sometimes forbidden.

100. Prolapse and Pregnancy.

SOLOMONS (*Journ. of Obstet. and Gyn. of the British Empire*, March, 1912) discusses the best treatment of prolapse complicated by pregnancy. The cut-and-dried methods laid down in the textbooks are far from being satisfactory. Most authors recommend different forms of pessary: if this treatment fails the majority recommend induction of abortion, whilst if the case is infectious hysterectomy is advised. It is difficult to lay down any definite rules, but the following seem to be rational: (1) In an ordinary case pessary treatment. (2) In a case where the pessary does not correct the displacement, having regard to the danger of abortion and septic infection of the prolapsed uterus, either perineorrhaphy or a thorough curative operation for the prolapse. (3) In a case where infection has occurred, after a thorough cleansing of the cervix the uterus should be emptied. If the uterus is septic hysterectomy with drainage should be practised. Much has been written about the dangers of pregnancy subsequent to vaginal suspension of the uterus; therefore the author investigated the history of a number of patients on whom the operation had been performed in the following manner: Anterior colporrhaphy having been performed, the bladder was pushed up and the peritoneal cavity opened; the uterus was then drawn through the opening in the vaginal vault and two silk sutures were introduced, the first through the vaginal flap on one side, through the peritoneum of the same side, through the uterus just below a point midway between the Fallopian tubes, and then through the peritoneal and vaginal flap of the opposite side. The second suture was introduced half an inch below this. The stitches all lie below the bladder. As a result of his investigations the author concludes that vaginal suspension is to be strongly recommended for the cure of mobile uterine displacements, especially for patients who require other vaginal plastic work. The operation has a large percentage of cures, and tends to no untoward symptoms in pregnancy, labour, or the puerperium.

GYNAECOLOGY.

101. Uterine Sclerosis.

SIREDEY (*Journ. de méd. et de chir.*, April 10th, 1912) says that this condition, which is admittedly common in the aged, is also not rare in young women, but is often confused with metritis or fibroids. Richelot has proved that many affections looked upon as metritis were simply sclerotic degeneration, often accompanied by hypertrophy. But the size of the uterus is very variable; generally it is above normal, sometimes it is normal and sometimes smaller than normal. As a rule it is the size of the closed fist, and of peg-top shape. Sometimes the shape is unaltered: but whatever the size or shape, the surface is of almost cartilaginous hardness. The cervix is rigid, and often patulous. On opening the organ it creaks under the knife, and the cavity is found enlarged, with very thick walls. The cavity has become pale yellow, and in the incision fibrous tracts are plainly visible. Even in a uterus of normal appearance the muscle on section is always pale and yellow. Rudimentary myomata are sometimes met with, varying in size from a pin's head to a cherry stone. Secondary parenchymatous metritis is often present owing to the enlargement of the cavity and patulousness of the cervix, but, as a rule, metritis is limited to the mucous membrane. There are marked arterial lesions, especially periarteritis which causes twisting of the tunica interna, with a tendency to obliteration. Sclerosis starts with uterine congestion, sometimes showing itself at puberty. From the first, menstruation is very profuse, with a tendency to increase as age advances. The subjects come of neuro-arthritic families. There is no trace of infection: they have had neither vulvitis nor leucorrhoea. There is, as a rule, no pain, but if present it indicates sclerous distrophy of the ovaries. In married women there are attacks of pain and loss of blood quite apart from any infection, and these attacks are brought on by errors of diet, fatigue, or change of climate. Clinically, there are two forms—the dry and the haemorrhagic: some women suffer from frequent losses, whilst others complain only of prolonged malaise, as though they were about to menstruate; in all cases there is a feeling of abdominal fullness and weight. Examination shows excessive tenderness of all the organs; sometimes, also, considerable enlargement of the uterus. When menstruation supervenes there is relief of the symptoms and reduction of the size of the uterus. The treatment of the haemorrhage consists in giving copious hot douches, repeated six times a day: ergotin may also be given, and hamamelis, hydrastis, and viburnum are very useful if given to the extent of 100 drops of the extract daily. If this treatment fails, it is necessary to have recourse to radiotherapy, which practically always effects a cure, and has superseded hysterectomy. The cure is complete, and one need not fear sterilization of the ovaries, since it is always at the menopause that the haemorrhage of sclerosis becomes dangerous: only the diagnosis must be certain, and in cases of doubt preliminary curetting should be performed. The general treatment consists in rigid dieting and a quiet life: red meats, stimulants, iron tonics, and long residence at the seaside are absolutely contra-indicated in these cases. Evidence of polyglandular insufficiency should always be carefully sought for, since all the symptoms often improve on small doses of thyroid extract.

102. Fractures and Ankylosis of the Coccyx in Women.

BRINDEAU (*Ann. de gyn. et d'obstét.*, April, 1912) recently reported two cases of labour rendered difficult through lesions of the coccyx which led to much discussion at a medical society. One patient suffered from pure ankylosis, the other from faulty repair of an old fracture. In both cases the forceps was found necessary in order to conclude labour, owing to absence of rotation of the head. The resistance of the coccyx to the head during the pains could clearly be felt. The puerperium was in both instances normal, nor was there any local pain. Chevallier reported a similar case, and dwelt on coccygodynia following injuries to the bone in question. Picqué maintained that there were several varieties of coccygodynia which it was important to distinguish. The so-called simple type, difficult to treat, and the form which distinctly followed fracture, or sacro-coccygeal dislocation, more readily remediable by surgical treatment, were both well known. Bar, continuing the discussion, distinguished lesions of the coccyx from without and lesions from within. The former were due to falls and kicks, and caused intense pain. Lesions from within, almost always obstetrical, were rarer and, it appeared, much less painful. Bar suggested that nervous filaments on the posterior surface of the coccyx were torn in injuries from without, but not in damage from within.

THERAPEUTICS.

103. Combined Massage and High Frequency in Neurasthenia.

HORACE MANDERS (*Archives of Roentgen Ray*, March, 1912), while regarding high frequency and massage applied separately as useful in the treatment of neurasthenia in women, thinks that it is only in a combination of the two that their full powers are exhibited. He regards hand massage in conjunction with the direct biphase current of high frequency as a most desirable combination. In cerebro-spinal cases the patient is made to lie in the prone position and to hold the conducting handles, in which terminate the two branches of one of the rheophores from the solenoid. The current is taken from the primary solenoid and not from the resonator. The other rheophore is attached by a good contact to a band of woven metal buckled to the arm of the operator. Then, first upon the patient's neck and afterwards upon the back, the method of massage known as effleurage is performed, and this is followed by the method known as pétrissage. Special attention is paid to the lumbar region, to which a rolling pétrissage is applied. The author, who describes these movements in great detail, states that neither percussion nor hacking, which are valuable methods in simple massage of the back, are wanted. Their work is being done by the oscillatory current of electricity. The duration of the séance of high-tension massage should not exceed twenty minutes—five minutes for effleurage and five for pétrissage to the neck, four to the back, and the rest of the time to the loins, the treatment being administered every day at first. He holds this method of high-tension massage to be the treatment of predilection in neurasthenia.

104. Thermo-therapy in Chronic Rheumatism.

MIRAMOND DE LAROQUETTE states (*Arch. d'électr. méd.*, March 25th, 1912) that in chronic rheumatism the first effect that follows almost regularly from thermal treatment

is the relief of pain. This is fairly constant in all the clinical varieties. There is too great a tendency, he thinks, to explain solely by hyperaemia the effects of the thermo-therapeutic method. No one can question the great part played by hyperaemia, and the author himself has measured the quantitative value of the hyperaemia produced after a thermo-luminous irradiation, and has found the blood-flow in a particular venous territory and for a certain length of time to be trebled. But there are other elements which have to be considered when heat is directed therapeutically, notably the direct excitation which heat produces on the tissues and on the protoplasm itself; and, again, the sweating must have its influence, especially when one remembers that abundant perspiration frequently precedes convalescence or a lull in the symptoms. Some general effects are also produced by the heat, such as the lowering of arterial tension and the qualitative augmentation of urinary secretion. On the thermo-therapeutic methods, the author is of opinion that luminous heat and diathermy, or thermo-penetration, have in the majority of cases, especially for local treatments, a real superiority by reason of the greater depth to which the heat enters the tissues. But hot-water and hot-air baths also have their uses, and, indeed, all methods of bringing heat to the body have an analogous mode of action. He points out that the exposures to heat, especially at the beginning of the treatment, should be of short duration and moderate intensity, and that the usual period of three or four weeks which is devoted to a thermal cure is insufficient in the majority of cases of chronic rheumatism.

105. The Abortive Treatment of Syphilis.

VOSS of Halle (*Muench. med. Woch.*, March 5th, 1912) gives his views and experience of the effect of salvarsan and mercury given energetically in the earliest stages of syphilis. Before embarking on his subject proper, the author indulges in a very severe attack on the general practitioner, who, he maintains, often fails to recognize a primary sore at a sufficiently early stage, and who thus allows the best time for successful treatment to go by. He is of opinion that every practitioner should be capable of diagnosing syphilis with certainty from a microscopical specimen stained with either Giemsa's or Burri's stain. He considers it unpardonable to wait for secondary symptoms to develop before starting the treatment. As soon as a suspicious sore or ulcer appears, he examines for spirochaetes, and if they are present, proceeds to give an intravenous injection of salvarsan, while the Wassermann reaction is still negative. The dose he injects is 0.4 gram. After from ten to fourteen days he gives his first injection (intramuscular) of the mercury salicylate (dose 1 gram divided among ten to fifteen injections). After a further pause of about fourteen days he gives the second salvarsan injection of from 0.4 to 0.6 gram. He further considers it wise to have the patient under active treatment at the time when the secondary eruption might be expected—that is, about the seventh to the tenth week. Besides, he pleads for either the excision of the chancre or its destruction by cautery or hot-air cautery. His results have been highly satisfactory. While he has treated a largish number of patients in this way, he only gives details of a comparatively small number, since the others did not remain under observation. In some he was able to carry out the full treatment as described above; in others, the removal or local treatment of the sore was omitted, either because the patient refused or for some other reason; and lastly, in others he did not use mercury. Even these cases did well from the first, no secondary eruption appearing, and the Wassermann remaining permanently negative. He is, however, not inclined to advise this, since we do not know yet whether salvarsan alone can cure, whereas we do know that mercury can cure, and the cure with salvarsan and mercury combined is really abortive.

106. Action of Salvarsan on the Cardio-vascular System.

BUZZI (*Rif. Med.*, March 16th, 1912) divides the effects of salvarsan on the heart and vessels into two groups—namely, the subjective and the objective. Of the subjective symptoms (palpitation, pain, various cardiac paraesthesiae) none can be with certainty attributed to salvarsan, which at most in these cases acts as one amongst many other possible causes. As regards the objective signs and symptoms, the case is different, for some of these certainly seemed directly due to the salvarsan. Perhaps the most definite and most important result observed was bradycardia. This may possibly be due to the stirring up of some latent specific lesion in the heart conductive apparatus. Another more or less constant effect of salvarsan was the production of a state of hypotension, not due to the pain of the injections, as it was seen after the painless endovenous type of administration. In a very few cases (19 per cent.) a slightly increased tension was observed, but, as said before, the majority (66 per cent.) showed clear evidence of lowered tension.

PATHOLOGY.

107. Haemorrhagic Diseases of the Newborn.

GRAHAM (*Journ. of Experimental Med.*, April 1st, 1912) studied the pathogenesis of the haemorrhagic diseases of the newborn in order to discover whether, by the experimental use of a single agent, namely, chloroform, they are separate entities, or merely different expressions of the same general process. By chloroforming pregnant animals he found that the offspring showed changes characteristic of the pathological and clinical pictures of the various haemorrhagic diseases, and that primarily all are manifestations of an insufficient supply of available oxygen to the tissues. Since there appeared to exist a causal relationship between chloroform used at labour and the occurrence of haemorrhagic diseases in the offspring, experiments were conducted which showed that, when administered in large doses at intervals of a day or two, intrauterine death of the fetuses occurred, with visceral fatty changes, and slight icterus. When given in amounts comparable with that frequently administered to women in labour, intrauterine death and abortion followed, with definite fatty changes in the livers of the offspring. Under very light anaesthesia the young have apparently been born healthy, and have remained so for a few days, but have generally succumbed during the first week with clinical pictures resembling one or other of the haemorrhagic conditions. The general changes, and those in the different viscera, are indistinguishable from those which may be experimentally produced by protracted asphyxia—namely, cyanosis, haemorrhages, acute parenchymatous degeneration with marked fatty infiltration of the liver, or acute parenchymatous degeneration—and some fatty infiltration in the other viscera, oedema, and icterus. Essentially the some changes were produced by direct asphyxia of the fetus, so that it would appear that, underlying all these symptoms and pathological complexes there is a deficiency of oxidation—general, local, or selective—which brings this group of diseases into the general category of acute yellow atrophy, eclampsia, pernicious and cyclic vomiting, phosphorus poisoning, etc.

108. Pancreatic Lymphangitis.

DEAVER AND PFEIFFER (*Amer. Journ. of Med. Sci.*, April, 1912) point out that pancreatitis is for all practical purposes a consequence of infection, basing their conclusions upon cultural examinations, its frequent association with infective processes in neighbouring viscera, and upon the microscopic evidence in the gland itself. Of the four possible portals of entry for infection, namely, the blood, contiguity of adjacent viscera, ascending infection of the duct from the biliary tract or duodenum, and the lymphatics, infection by way of the latter has received less attention than it deserves. In view of the frequency of bacteriaemia and pyaemia and the rarity of involvement of the pancreas therein, infection by way of the circulating blood may be classed as a rare exception, and infection by direct contiguity with, and extension from, a neighbouring organ is relatively uncommon and does not account for the great number of cases of pancreatitis now being met with. Ascending infection by way of the ducts of the gland appears to offer a simple explanation on the assumption that the same infection may at one time cause cholangitis and at another inflamation of the duct of Wirsung, but the fact that cholelithiasis preponderates in females, while pancreatitis preponderates in males, points to too great stress having been laid upon the similarity of origin. Further inquiry shows that an additional factor is infection by way of the lymphatics from primary infectious processes so situated with reference to lymphatic vessels that the infection can easily reach the pancreas through these channels. Supporting this view is the fact that the earlier forms of pancreatitis found at operation in connexion with gall bladder or duct disease involve only the head or a portion thereof, the distribution of inflammation corresponding to the lymphatic distribution and not to the duct distribution, and, though it is possible that infection may arise from other organs, anatomical, clinical, and pathological evidence points to the biliary tract and duodenum as being the most probable primary sources of such lymphatic infection.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

109. Typhoid Fever in Children.

Zarchi (*Wien. klin. Rund.*, Nos. 18, 19, 1912) calls attention to some points relative to typhoid fever during childhood. He notices first that the idea which prevailed a generation ago, that it was a rare disease among children, is now shown to be erroneous. He quotes numerous authorities, whose figures grouped together show that of 2,051 cases of all ages, 1,089 (or 53.1 per cent.) occurred below the age of 15. That this comparative frequency has only of late been recognized is explained by the difficulty of diagnosing the disease in children, and the great help given in modern times by the Widal reaction. Indeed, it is probable that even now the notified cases fall far short of the actual number infected, the disease being often mistaken for entero-colitis; while the number of ambulatory and abortive cases which escape recognition must be considerable. The course of the disease is milder in children than in adults; and, as dangerous complications are not so common, the mortality, according to the majority of authors, is lower. The clinical picture does not differ on the whole very markedly from that in adults; but the early symptoms are particularly obscure. Lassitude, sleeplessness, anorexia, and pain in the head and abdomen are usual. Abdominal pain is met with more constantly than in adults, and is apt to be very severe in the third and fourth week. As an initial symptom bronchitis is almost invariably present, affecting chiefly the larger bronchi. Sore throat accompanies only the more severe cases, and is not an early symptom. Vomiting is very commonly met with much more so than in adults; and, while constipation is the rule during the first week, diarrhœa usually sets in during the second. The rash is probably always present; but, as it appears about the eighth day and may very soon fade, it is sometimes invisible by the time the case comes under observation. The fever curve is usually of the same type as in adults. In very young children the temperature does not rise above 102° or 103° F., and occasionally the attack may run an entirely afebrile course, but in the majority of cases the temperature reaches 105° F. Enlargement of the spleen is said by most authors to be invariably present, but according to Vogel its softness and mobility in children may sometimes make its detection, even by percussion, difficult. In general the important diagnostic symptoms which occur in adults are often absent in children; and therefore the Widal reaction (which was positive in all of Zarchi's cases) rises relatively in importance. Of almost equal value is the blood count. Kühn, in agreement with many other observers, found leucopenia in 90 per cent. of his cases; but complications, such as pneumonia, parotitis, or abscess, according to most authorities, tend to increase the number of leucocytes. Nervous symptoms are common in children, but not severe. Apathy, aphasia, deafness, and slight delirium are met with, but the so-called "typhoid state" is rare. The author relates a case in which, during the first three weeks of convalescence, an 8-year-old child was aphasic, and only gradually learnt to talk again after several weeks. As regards treatment, the most important point is to combat the fever; and to this end Zarchi recommends baths, cold packs, and quinine and sodium salicylate. Antipyretics must be used cautiously on account of their depressing effects, and the author relies almost entirely on baths of 90° to 95° F., accompanied by cold douchings.

110. An Unusual Form of Muscular Cramp.

Oppenheim (*Neurol. Centralbl.*, No. 19, 1911) observed a series of cases of a peculiar form of muscular cramp occurring in young people of both sexes, aged from 8 to 14 years. The patients all belonged to the Jewish race. He calls the disease "dysbasia lordotica progressiva" or "dystonia musculorum deformans." The muscles affected are chiefly those of the thigh, the pelvis and spinal column used for standing erect and walking forwards. The characteristic symptoms are a marked "lordosis" or "lordo-scoliosis" of the lower thoracic and lumbar spinal column, with a definite declination of the pelvis. The legs show a tendency to an abnormal position, and the patient finds it difficult to stand. An attempt to walk increases the symptoms considerably, and the patient is sometimes obliged to rest his hands on his knees, or support himself with a stick. He soon becomes exhausted by walking, and perspires profusely, his pulse increasing in frequency. The symptoms are chiefly connected with locomotion, and when the patient is in a horizontal position either disappear completely or are markedly diminished. On close examination some of the muscles showed a tendency to tonic contraction, while others were distinctly hypotonic. No paralysis was present, no electrical changes were found. Sensation and speech were normal. In certain points the affection resembled chronic chorea, and still more athetosis. The author remains uncertain as to the nature of the disease, but its progressive character leads him to think that minute changes in the central nervous system are at the root of it, and that these affect certain regions governing or influencing the muscle tonus.

111. Amyotonia Congenita.

Griffith and Spiller (*Amer. Journ. of Med. Sciences*, August, 1911), from published reports of cases of amyotonia congenita, analyse the clinical data and discuss the pathology of the disease in the light of the findings in cases under their own observation. The disease consists of a congenital flaccid paralysis, chiefly affecting the extremities, especially the lower, and varying in degree up to an almost complete paralysis of the whole body. Sensation is not disturbed and there is no actual atrophy, but the tendon reflexes are diminished or abolished, as also the electrical contractility. The hypotonia is so great that there is unusual passive mobility at the joints, which in bad cases render the child unable to sit up, the head falling loosely in any direction. The disease begins at an early age, dating from birth in the majority. In one case which came to autopsy, aged 25 months, the brain was as large as that of an adult, but otherwise it appeared normal. The nerve cells in the anterior horns in the cervical and lumbar regions were scarce and atrophied, and the anterior roots throughout the cord were much smaller than normal. An examination of a peripheral nerve showed considerable degeneration. There was very marked alteration in the muscles, which showed greatly atrophied muscle fibres in the midst of others well preserved, overgrowth of sarcolemma and connective tissue nuclei, excess of fibrous and fatty connective tissues, increase in size of some muscle fibres, and fatty change within others. The intramuscular nerve fibres showed degeneration, but the muscle spindles appeared to be normal. In the less marked cases the alteration may be confined to the muscles, thus leading to the inference that the disease is primarily muscular, but since, in the more serious cases, the nervous system is very markedly affected, such an inference is not fully warranted in the present state of our knowledge of the disease.

112. Dry Interlobitis and Pleuritis in Phthisis.

Sabourin (*Arch. gén. de méd.*, xci, 1912) considers that interlobitis is the simplest name for inflammation of the interlobular tissue. He describes the various fissures of the lungs and various points of the chest, painful on pressure and associated with fever. The diagnosis is to be made from inflammation at these points, pleuropneumonic tuberculosis and serous effusions into the interlobular tissue. (1) These points may be found on the pulmonary surface, but are not exclusively confined to the fissures of the lungs. Auscultation gives the impression of a small focus of pleuropneumonia and not of pleuritis, as there are no friction sounds. (2) Pleuritis of the retro-axillary fissure chiefly gives rise to confusion, and is to be differentiated by the slight souffle, slight cracklings, and other signs of pleuro-pneumonia. (3) Two or three days will clear up the diagnosis, as after that time, if the case is one of dry pleurisy, the suspected signs in the interlobular tissue will be found to have remained stationary.

113. Aortitis and Tachycardia in General Paralysis.

G. Laroche and Ch. Richet (*Revue Neurologique*, April 15th, 1912) give the results of the examination of a series of cases of tabetics and general paralytics which they studied in order to determine the frequency of aortic lesions in such affections. Their results are as follows:

50 per cent. chronic aortitis in tabetics; 14 per cent. chronic aortitis in general paralytics who were not tabetics; 54 per cent. chronic aortitis in tabetic general paralytics. Another series of researches were directed towards determining the frequency of tachycardia in these cases; and it was found that it did not exist in the non-tabetic general paralytics, but amounted to 98 per cent. in tabetics. The authors draw the conclusion from these results that if aortitis is diagnosed in a case of general paralysis a latent tabes dorsalis is to be suspected.

SURGERY.

115. The Value of Arterio-venous Anastomosis in Gangrene of the Lower Limb.

MORRISTON DAVIES (*Ann. of Surg.*, June, 1912) says that it is necessary to have a clear knowledge of the etiological factors which can produce gangrene (which is essentially a symptom only), so as to be able to recognize in what cases a renewal of the circulation, if successfully effected, might arrest or even cure the gangrene. It is only in a limited number of cases of gangrene that the procedure is applicable, and that under special conditions. The possibilities of success are naturally much greater if the vessel walls do not show marked pathological changes. Thus, when gangrene has followed ligature for aneurysm or a partial resection of the artery, the chances are much better than in gangrene following endarteritis obliterans, senile or syphilitic endarteritis, calcification of the artery. Some effort might be made in Raynaud's disease and in erythromelalgia, instead of amputating for the relief of pain or for gangrene, to relieve the symptoms and save the limb by doing an arterio-venous anastomosis, because in these conditions the arteries are generally pliable, uninflamed, and not calcified. The technical difficulties of the operation are great. Clotting at the junction of the vessels is the common cause of failure. Arterial blood undoubtedly finds its way into the veins and to the periphery of the limb, but permanent success is not easily assured, owing to the subsequent obliteration of the new channel by thrombosis in the vessels or the narrowing of the arterio-venous junction. The author's study of the cases shows that the operation is not the unqualified success it was hoped it might be. But he points out that not only have patients with actual gangrene recovered and enjoyed a period of relief from pain and of restoration of function for some months, but in other cases it has been possible, by doing a local amputation in addition, to obtain immunity from return of symptoms for much longer periods. There are 36 recorded cases; in 5 of these the disease was completely arrested for some months, and in 2 others perfectly satisfactory results followed a strictly local amputation in addition to the anastomosis. A complete list of the cases operated on is included in the text. San Martin y Sabrustegui laid down the indications for the operation as follows: (1) All other forms of conservative treatment must have been attempted first; (2) nutrition of patient must be good; (3) infection, if present, must not be extensive; (4) venous circulation must be sound, as shown by subsidence of oedema on raising foot; (5) the most favourable cases are those in which gangrene is only threatening; (6) pulsation must be present in the femoral artery and the femoral vein must be free from thrombosis. The author appends a complete history of his own case, which is one of the five above mentioned. The anastomosis was made end to end and was established at the apex of Scarpa's triangle. One toe had been amputated for gangrene, and there were several patches of [illegible] on the dorsum, great toe, and little toe. On the day following the operation the foot was warm and painless and the discoloured areas less obvious; there was no oedema. The patient began to walk four weeks after the operation, and he had neither pain nor oedema. Six months after operation the foot was warm, normal in colour, and painless; pulsation was not perceptible below the femoral artery in Scarpa's triangle.

116. Thymectomy in an Infant of Two Months.

[illegible] *de Chir. de Paris*, April 24th, [illegible] in an infant 2 months old. Since [illegible] had always been unsatisfactory. [illegible] occasions there had been suffocative [illegible] was frequently muffled, [illegible] latterly the parents had observed [illegible] disturbance. The author first saw the child in the middle of one of the suffocative crises, and feared that intervention of any kind might simply precipitate death, which seemed imminent. Operation was performed without anaesthetic. Incision began above the upper end of the sternum; the subhyoid muscles were separated, and, as no mass showed itself in expiration (as had been seen bulging at suprasternal notch some hours previously), the upper edge of the sternum was punched out a little till the capsule of the thymus appeared. This was incised, and the thymus herniated itself, and was easily enucleated; the right lobe first, then the left, and both completely. The mass weighed 24 grams. The patient's condition seemed at first to improve, but after five hours respiration became more rapid and more superficial, and death took place by progressive asphyxia. In reflecting on the case the author remarks on the comparatively easy and rapid operation. Thymectomy was subtotal and subcapsular following the technique of Olivier.

116. Lymphatic Glands in Stomach Cancer.

W. C. MACCARTY AND J. M. BLACKFORD (*Ann. of Surg.*, June, 1912) point out that the progress of gastric surgery is to a very great extent dependent on our knowledge of the course of the lymphatic channels and the disposition of lymphatic glands. The present investigation is a continuation of a previous study, and has for its objects the relation of the primary lesion—carcinoma—to the amount of lymphatic involvement, and the relation of these to the clinical histories. The findings of the investigation have both positive and negative value. They are of greatest value in supplying the macroscopic and gross microscopic findings in a large series of specimens examined under fresh conditions at operation, and confirmed by fixation of the tissues. The negative conclusions are to be summarized as follows: (1) The size of regional lymphatic glands bears no apparent relation to the size of the primary lesion of the stomach. (2) The size of a lymphatic gland is no criterion of the presence or absence of carcinoma. (3) Gross diagnosis of lymphatic glands is of no value except in advanced carcinoma of the glands. (4) The duration of symptoms bears no apparent relation to the size and extent of involvement in the lymphatic glands. (5) The average age at operation and sex bear no direct relation to the glandular involvement. The positive conclusions may be summarized as follows: (1) The average loss of weight increases with the increase in extent of glandular involvement. (2) The immediate hospital post-operative mortality is in direct proportion to the amount of glandular involvement. (3) The subsequent mortality is in direct proportion to the amount of glandular involvement. (4) Carcinomatous glandular involvement is very often microscopic only. (5) The surgeon who desires to treat early carcinoma must depend upon the microscope in the hands of an experienced pathologist for discovery of early carcinomatous lymphatic involvement. (6) The diagnosis of early carcinomatous involvement requires extensive experience in the study of the so-called precarcinomatous reaction of lymphatic glands. The paper is very fully illustrated with photomicrographs, charts, and diagrams for reference.

117. Lupus of the Face in a Suckling.

BAUMET (*Journ. des praticiens*, xxvi, 1912) describes a case of a child of 11 months suffering from what was first considered to be eczema. Removal of the crusts by warm fomentations revealed deep ulceration with a purulent discharge. The submaxillary glands were much enlarged. The treatment consisted of daily applications of iodoform ointment (2 in 30), injections of mercurial ointment every two days to the glands, and syrup of Vacheron (0.15 gram of carbonate of guaiacol in 20 grams of syrup), a teaspoonful morning and evening. The local condition gradually healed, but before the healing was complete the child died of convulsions.

OBSTETRICS.

118. Syphilis and Pregnancy.

MANGIAGALLI (*Rif. Med.*, February 17th, 1912) raises some interesting questions in relation to the above subject. Clinically there are four possibilities: (1) Both parents may be syphilitic at the time of conception; (2) the mother alone may be affected; (3) the father alone; (4) the mother may become syphilitic after conception, both parents being previously healthy. The Wassermann test has shown that certain babies born healthy, but of a syphilitic mother, are really syphilitic, although they show no symptoms of that disease. Undoubtedly many children escape, if infection of the mother occurs after the seventh month of pregnancy, but this is not due to any barrier-like

action on the part of the placenta, but rather owing to the so-called period of second incubation—that is, the period between the primary and secondary manifestations. As in the case of the children, so in the case of the mothers, the Wassermann test has given positive results in asymptomatic cases of syphilis, which, but for this test, would be reckoned non-syphilitic, or at most latent, syphilities. Possibly this explains some of the cases where an apparently non-syphilitic mother is immune when suckling her syphilitic child. Probably in rare instances the father may transmit syphilis directly to the fetus. Where both parents are syphilitic transmission occurs in about 68 per cent.; if the mother only is affected the percentage is 60 per cent.: if the father alone, the figures sink to from 12 to 28 per cent. Length of time after the primary infection no doubt lessens the power of transmission, but this alone will not explain the difference between father and mother in the capacity to transmit the disease to their offspring. Possibly the much longer period seen in women may be explained by the periodic discharge and prolonged retention of affected ova. A living child may be interpolated in a long series of abortions, and, with this exception, the production of dead fetuses may still go on. Some special obstetric difficulties may arise if there is a syphilitic sclerosis of the cervix, and puerperal infection more readily occurs in syphilitic mothers. Obviously also the obstetrician runs special risks in delivery, both from the mother and from the child. When may a syphilitic marry? Certainly not when there are any active primary or secondary symptoms. Tertiary cases are as a rule not infectious, but this is not absolute, and especially in the case of women one should hesitate, as infection persists much longer in their case. Where the mother is apparently healthy but the father syphilitic, the author recommends antisyphilitic treatment for the mother as well. He further advises an apparently non-syphilitic mother to nurse her syphilitic child, for as a rule she is immune. The author strongly favours direct antisyphilitic treatment of the child and not trusting to treatment via the mother's milk, and the best form of treatment as a rule is by inunction. Only in cases where mercurial treatment fails would he advise salvarsan.

119. Prognosis of Puerperal Fever.

E. ROSENTHAL (*Berl. klin. Woch.*, June 3rd, 1912) states that up to the present we do not possess any means of forming an exact prognosis in infections during the puerperium. Bacteriological determinations of the form of infective material have only a relative value. Haematological methods have failed to give any precise knowledge, and clinical methods also fail to indicate what the further course of the infection will be. Katzenbogen has recently published an article from the Fehling Institute, in which he claims that the antitrypsin reaction is capable of yielding a reliable prognosis in these cases. Rosenthal carried out the antitrypsin reaction in a large number of cases some time ago, and came to the conclusion that it may be used, with certain precautions, for the diagnosis of pregnancy. He now examined its prognostic value in puerperal infections. He examined Katzenbogen's cases carefully, and found that since there is a distinct relation between the disintegration of albumen and the inhibition of the ferment action on the part of the serum, there must be a parallelism between the temperature and the antitrypsin curve. The temperature curve gives no indication of the prognosis. He was able to pick out certain cases in which the index, which is supposed to indicate a bad prognosis, was present, and yet recovery followed. Other cases showed the unreliability of the test in the other direction. He therefore is forced to the conclusion that the antitrypsin reaction does not yield any prognostic information of puerperal infections. He is of opinion that a reliable prognosis is only to be obtained from a method which takes into account both the characters of the infecting micro-organism and the capability of reaction on the part of the organism infected. So far we do not possess such a method.

GYNAECOLOGY.

120. Dangerous Haemorrhage from Ruptured Ovarian Cyst.

E. TSCHUDI (*Corr-Bl. f. Schweizer Aerzte*, March 1st, 1912) has previously published 2 cases in which sudden haemorrhage in a small ovarian cyst ("ovarian apoplexy") simulated the symptoms of acute appendicitis. The following is a third example. A sterile married woman, aged 32, was at 9 a.m. on September 23rd, suddenly attacked with violent abdominal pain. Towards noon this abated, but at 2 p.m. it recurred, and forced the patient to keep in bed. At 4 p.m. a practitioner found diffuse tenderness of the lower part of the abdomen, without vomiting or pyrexia. At 8 p.m. the pain became localized above the pubes, where there was extreme tenderness. Acute appendicitis was suspected. She was a strongly built, but adipose woman. The lips and face were pallid, and the eyes were sunken. The abdomen was distended and hard. The entire region between the pubes and umbilicus was extremely tender, and this involved especially the right iliac fossa. There was dullness in the flanks. The tongue was moist. The temperature was 99°; the pulse was 64 and well sustained. Ruptured tubal pregnancy was suspected, but on consideration appeared improbable. Menstruation had occurred regularly, the last period being a fortnight before admission. She was said to have always been pale and anaemic. And, further the infrequent pulse was against this diagnosis. It was finally decided that the most probable condition was acute appendicitis. Laparotomy was at once performed. On incision of the peritoneum, a quantity of liquid and coagulated blood escaped. The source was found to be a tumour, of the size of a small apple, in the true pelvis. It was connected with the left uterine appendages. The haemorrhage was at once arrested by the application of forceps. The Fallopian tube was normal. The tumour proved to be a cyst of the left ovary, which was distended with blood, and had ruptured. The cyst was removed and the abdomen cleared of coagula. The appendix was normal. The patient was discharged cured on October 13th, 1911. The cyst was multilocular, and contained colloid material, except in the case of one cyst, of the size of a bean, which was the source of the haemorrhage. A few of the vessels of the ovary had undergone hyaline degeneration. The ruptured cyst was a degenerated Graafian follicle. No large ruptured artery was found. Probably several small ones had given way. There was no trace of ovarian pregnancy. It is scarcely possible to distinguish with certainty tubal pregnancy and rupture of a vessel of the ovary before operating. A bimanual examination was not made, otherwise internal haemorrhage would have been recognized. It is remarkable that, in spite of the great effusion of blood (about 1½ litres) the pulse remained at about 60. This, though rare, has previously been noted, chiefly in cases of ruptured tubal pregnancy. If the other symptoms are characteristic, an infrequent pulse does not, therefore, exclude internal haemorrhage.

THERAPEUTICS.

121. Injections of Electrocuprol in Febrile Tuberculosis.

GAUSSEL (*Progrès méd.*, December 2nd, 1911) states that he has treated a certain number of cases of febrile tuberculosis with injections of electrocuprol (colloidal copper) with encouraging results. Electrocuprol is put up in ampoules containing 5 c.cm., and one ampoule is injected every other day. After ten injections the treatment is stopped for ten days, and is then resumed if the fever has not completely disappeared. The injections are made in the buttock with the usual precautions; they are well tolerated, and are scarcely at all painful. The treatment must be used with caution in cases of haemoptysis, but this condition is not a contraindication. In one case a haemoptysis followed the first injection, but the electrocuprol was continued, and the haemoptysis was treated with trinitrin and amyl nitrite: the haemorrhage quickly stopped and did not return. Of 11 cases treated, 4 results were unsatisfactory, 2 were fairly good, 4 were good, and 1 was very good. Of the 4 bad results, three of the patients had acute and rapidly progressing pulmonary tuberculosis, and the fourth had haemoptysis. Of the 2 fairly good results, one was a case of febrile pulmonary tuberculosis of the diffuse bronchitic type, with intense dyspnoea and cyanosis: the symptoms were distinctly relieved by the treatment, but the patient's stay in the sanatorium was too short to judge of the ultimate result. The second case was that of an adolescent with tubercle limited to the apex, with a temperature which did not yield to hygienic and dietetic treatment. In the 4 good results all the patients were chronic cases suffering from a subacute exacerbation; in one of these the fever had lasted two months. The one very good result occurred in the case of a youth of 17 sent to the sanatorium in a state of general exhaustion, with pulmonary lesions suggestive of acute tuberculosis. The

temperature, which was very high and persistent, was influenced by pyramidon, but rose again as soon as the drug was stopped. The effect of electrocuprol was remarkable; the temperature came down after the first injections, and in nine days it was almost normal; at the same time the weight and strength increased in a wonderful way; at the end of the first series of injections the acute symptoms disappeared, and the case has since assumed the aspect of a chronic tuberculosis. The effect of electrocuprol on the temperature is very distinct in favourable cases; it follows rapidly on the application of the treatment, and lasts after the drug has been stopped. Its action on the weight of the patients is also notable: in all the cases there was a considerable gain, and one patient put on 4 kilograms in a month. One also finds a return of strength and appetite and suppression of the night sweats. Although electrocuprol acts well and rapidly on the general condition, it does not appear to have much influence on the local condition. As a result of his observations Gaussel considers that the drug is a useful adjuvant in cases of acute febrile attacks occurring in the course of a chronic tuberculosis, and that it may be usefully employed in cases of acute pulmonary tuberculosis, which are sometimes the prelude to a chronic tuberculosis.

122. Treatment of Folliculitis and Sycosis by Radio-therapy.

THE *x* rays are useful both in coccogenous sycosis and sycosis parasitica, the latter including favus of the beard, but they should be carefully combined with other physical and medicinal agents. Such is the conclusion formed by Belot and Hadengue in a communication to the Société de Radiologie Médicale de Paris (*Bull. et mém.*, February, 1912). The *x* rays bring about a more or less perfect epilation, but although this epilating action is a capital factor in the treatment, the authors think that account must also be taken of the general *x*-ray reaction itself. This appears to have a favourable influence upon the affection, apart from the actual fall of the hair and expulsion of the parasite, although they are unable to explain exactly its effect upon the lesions. The subjective symptoms, such as pruritus and painful tension, are also relieved by the rays. In some well-limited cases radiotherapy is enough in itself to bring about the cessation of the morbid phenomena, but generally its action should be seconded by medicaments and antiseptics. In cases of simple folliculitis, humid dressings may sufficiently soften the surface and prepare the way for *x*-ray action. A special emphasis is laid upon the necessity of making a careful examination of the nasal mucosa when a sycosis is situated on the upper lip. If this is not made, there may be a relapse in spite of an immediately successful issue of the *x*-ray treatment. The authors employ fairly heavy doses (4 or 5 Holzknecht units), and when the region to be treated is placed 15 cm. from the anticathode, they obtain the epilatory dose in ten minutes. No part of the surface, however small, is submitted to two successive irradiations, owing to the fear of radio-dermatitis or the setting up of a permanent alopecia. Humid dressings and antiseptics should be carefully applied after the irradiation and before the fall of the hair; but, owing to the great sensitiveness of the irradiated surface, these applications should only be made under the supervision of the medical man. Medicinal applications should be suspended on the first appearance of the ordinary *x*-ray reaction, and of course, what is even more important, on the first sign of radio-dermatitis. Relapses are not very frequent. Among twenty-six observations tabulated by these authors there were only four instances of relapse. One of these was due to negligence on the part of the patient, and the other three were cases of sycosis of the moustache, in which possibly the nasal mucosa played an important though a disregarded part.

123. Santyl.

W. MEIXNER (*Zentralbl. für die gesamte Therapie*, August, 1911) has during the last three years used Knoll's preparation, santyl, in the treatment of diseases of the bladder and urethra, because of the unpleasant side-effects which were constantly complained of when the ordinary balsamic remedies were administered. Santyl is a clear yellow oil of a weak balsamic flavour, and contains a neutral salicyl ester of santal oil. The preparation combines the actions of santal oil and of salicylic acid. It can be obtained either as the oil or in gelatine capsules or in tablets, but the author has discontinued the use of the tablets, which he finds to be dearer than the oil and not so well borne. Altogether he has given santyl to about 250 patients suffering from different bladder and urethral complaints. The great value of santyl, in the author's experience, depends upon its being absolutely non-irritant. In no single case was there any sign of irritation of the digestive tract or of the kidneys. Its effect upon the diseases treated was in most cases excellent, and the failures were very few. Occasionally there was failure with hysterical patients. In cystitis, where dietetic rules were observed, santyl was invariably effectual, and even where such rules were disregarded there was often quick improvement and recovery. After vaginal operations in which separation of the bladder had been necessary santyl was useful in combating bladder symptoms and restoring the power of spontaneous urination. In some cases of chronic purulent cystitis, and in two cases of carcinoma which affected the bladder, santyl, combined with washing out the bladder, caused an improvement in the urine which urotropine given for a long time had failed to effect. The usual dose was twenty-five drops three times a day, or to better-class patients two gelatine capsules three to four times a day.

PATHOLOGY.

124. Pancreatic Changes in Diabetes.

D. VON HANSEMANN essays to establish a sound anatomical pathology in diabetes (*Berl. klin. Woch.*, May 13th, 1912). Some time ago he stated that anatomical changes could be found in the pancreas in 70 per cent. of all cases of true diabetes. Since then the sharper differentiation between diabetes mellitus and other forms of glycosuria have enabled him to set up the thesis that every case of true diabetes is associated with ascertainable changes in the pancreas. In order to detect these changes, it is absolutely necessary to obtain the organ quite fresh. In a pancreas which has undergone autodigestion the changes are not recognizable. This means that if the patient has been dead for twenty-four hours before the *post-mortem* examination is performed, some of the finer changes will be missed. Von Hansemann calls especial attention to the normal structure of the pancreas. The question of the significance of the islands of Langerhans is entered into minutely. They are distinct in the fetus. The human pancreas is divided into largish lobes by broad bands of connective tissue, and these lobes are again divided into small acini by fine connective tissue bands. The acini are smaller than the islands of Langerhans. The best division by connective tissue is seen in rodents, the pancreas of which, on account of the large quantity of connective tissue-like pathological human organs. Rodents show islands of Langerhans very well, while the best definition is seen in the *Haltomys aegyptiacus*. On turning to the changes found in the pancreas, he states that two groups may be described. The first need not lead to diabetes, but are usually found in moderately advanced cases. These include polysarcia, interstitial inflammation, destruction of the parenchyma by stone formation, etc. He emphasizes the possibility of a calcular inflammation of the pancreas, an arterio-sclerotic fibrosis, a fibrosis complicating cirrhosis of the liver and the like existing without any diabetes. He further points out that in acute pancreatitis and other rapid processes affecting this organ, the occurrence of death precedes the appearance of glycosuria. The first group also includes cancer of the pancreas. It is easily understood that even when a primary carcinoma has replaced the whole of the organ, the cancer cells, which originate from the pancreatic cells, will keep up sufficient internal secretion to prevent the onset of glycosuria. In the second group of changes, he recognizes something which is essentially diabetic. The greater part of the organ need not be destroyed to produce diabetes. Macroscopically the organ is frequently atrophic, and microscopically it will be found in quite fresh specimens that the acini are more sharply divided from one another than is normal. The atrophy is granular in character. The cells are smaller than normal, they are granular, and appear to be plumper, and rapidly become indistinctly differentiated. Later there may be a fatty metamorphosis, and still later a complete dissolution of the cells. The secondary changes are increase of the interstitial connective tissue and destruction of the parenchyma. Von Hansemann then confesses that he has been forced to change his opinion as to the significance of the islands of Langerhans. He now regards them as varieties of the parenchyma of the organ and not as separate structures. He gives his reasons for this. In diabetes the changes in the islands correspond exactly to those in the rest of the organ.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

125. X-ray Examination of the Alimentary Canal.

THE value of radiology in the study of the alimentary canal is in some danger of being vitiated by the great number of different methods of procedure which have lately come in for advocacy. There are those who urge that bismuth should be displaced for zirconium or barium, or some other metal of high atomic weight; while as excipients water, milk, chocolate, flour-paste, and mashed potatoes have their partisans. Some claim that radioscopy alone is necessary; others that the radiograph should on no account be neglected, and stereoscopy and cinemaradiography are insisted on in some quarters. With a view to unifying the methods of radiologists so that results may be usefully compared, Belot and Aubourg have prepared a long report for presentation to the 1912 Congrès de l'Association Française pour l'Avancement des Sciences (*Arch. d'électr. méd.*, July 25th, 1912). In order to obtain intestinal images sufficiently luminous an intensity of about 2 milliampères, and rays of 6 to 7 degrees on the Benoist radiochronometer are necessary. Examination should be made as a routine practice in both upright and horizontal positions. Radioscopy is, of course, essential, but for recording a single appearance the authors prefer the orthodiagraph to the rapid radiograph, on the ground of its simplicity and exactitude. Stereoscopy necessitates specially powerful installations, and cinemaradiography is not generally practicable, but what are known as polygrams, which consist of a series of instantaneous images made upon the same plate, are at least interesting. Two, three, or four rapid exposures are made, spaced out by intervals of minutes, neither plate nor patient being displaced in the meantime, and the superimposed images thus obtained correspond to the form of the organ. Among opaque substances the authors consider that bismuth carbonate still holds its own. The choice of a vehicle for the bismuth depends upon the portion of the tract under observation. In the case of the œsophagus the authors commence with a cachet containing 1 or 2 grams of the bismuth softened by a spoonful of water. If this passes without difficulty it may be taken that the calibre of the organ is unaltered. When the presence of an obstacle is revealed, its position and dimension are studied by means of a solution of 50 grams of bismuth carbonate, with 80 grams of boiled water, and 20 grams of gum or syrup of sugar. For the more precise study of œsophageal stricture, a paste made of bismuth carbonate and syrup of sugar is utilized. In the case of the stomach 100 grams of pure bismuth carbonate and 250 c.cm. of water made slightly gummy are administered. From the point of view of gastric pathology the evacuation is of first importance. In a normal adult the evacuation of such a meal is complete after from one and a half to three and a half hours. The ingestion of alimentary substances, such as milk, chocolate or rice, prolongs this period. The examination of the duodenum is made with the same quantity of bismuth and the same vehicle as in the case of the stomach. The study of the large intestine may be undertaken either with the bismuth meal by the mouth or a bismuth enema. The former should be utilized when it is required to discover the position of the intestine, its ptosis, atony, and function—in a word, its physiology. The latter method gives more rapid, and sometimes clearer, information as to variations in the calibre of the organ, and the form, size, mobility, and relations of each segment. The enema consists of 100 grams of bismuth carbonate in a litre of gummy water or oil.

126. Valvular Intestinal Obstruction in Early Childhood.

F. GÖPPERT (*Berl. klin. Woch.*, March 25th, 1912) adds another case of valvular intestinal obstruction in infancy to the short list of such cases already reported within the last few years. This condition, which is solely due to kinking of the large intestine, and which is at once relieved by the passage of a rectal tube, has hitherto been confused with Hirschsprung's disease (megacolon congenitum). The differential diagnosis is of vital importance, as the treatment is essentially different in the two conditions. The cases of valvular obstruction hitherto reported have only included children a few weeks old, but the writer's patient was a boy who had been quite healthy till he was 2½ years old, when he began to suffer from moderate abdominal distension. At first it disappeared of itself; but when the child was 3½ years old the abdomen became in a short time, although not suddenly, hard and distended. Aperients were given with success, the motions being loose. Two months later the child was weak and emaciated, the abdomen was distended as by a severe form of ascites, and the overlying skin was tense and shiny. A feature characteristic of this condition was the increased distance between the sternum and the umbilicus. Although there was no abdominal dullness, there was an intermittent swelling, of the circumference of an arm, underlying the tense abdominal wall in the epigastric region. A large amount of gas was evacuated by the passage of a tube 20 cm. up the rectum, and a considerable quantity of loose stools were passed when pressure was exerted on the abdomen. The circumference of the abdomen fell by this treatment in the course of two days from 70.8 to 54 cm. The writer now ascertained the exact level at which the intestinal kink existed by noting the length of tubing required to relieve the distension. He found this point to be between 20 and 27 cm. above the anus, and when he passed the tube more than 30 cm. up the rectum he was able to distend the abdomen by pumping in air, which was retained after the tube had been rapidly withdrawn. The distension thus caused was relieved only when the tube was reinserted to a certain depth. The large intestine was washed out once a day through a tube, which was left in place till it was automatically expelled. After a fortnight of this treatment in hospital the child was discharged, the parents being instructed to pass a tube once a day a distance of at least 30 cm. up the rectum. After two months the child had gained 5 lb., its muscles were no longer flabby, the abdomen seemed normal, and the general condition was satisfactory. The mother was therefore instructed to discontinue the use of the tube gradually.

127. Juvenile Tabes Dorsalis.

OTTO MAAS (*Neurol. Centralbl.*, March, 1912) describes a case of tabes dorsalis beginning at the age of 13. The symptoms were quite typical. At 13 the patient had bladder trouble, at 16 eye symptoms and slight uncertainty in walking, also absence of knee-jerks; at 18 complete blindness, at 27 needle pains in the legs, at 28 diminished sexual potency; at 38 increase of locomotor trouble, ending in complete inability to walk. The patient died at the age of 41. The autopsy revealed a normal condition of the brain, the cornu anterior, and the anterior roots, whereas in the posterior roots and posterior bundles there was marked degeneration throughout the whole length of the cord. The clinical interest of the case is its early onset and long duration. Cases of juvenile tabes dorsalis are very rare. The father of the patient was syphilitic, and also suffered from tabes dorsalis.

SURGERY.

128. Coley's Mixed Toxins in Recurrent Carcinoma.

COLEY presented to the New York Surgical Society on March 13th, 1912, a woman, aged 39, who appeared to have recovered from inoperable recurrent carcinoma of the breast by treatment with injections of mixed toxins. The case was one in which several operations had been performed, and the diagnosis was indisputable. In February, 1909, there was a hard carcinomatous mass occupying the entire left pectoral region, with typical carcinomatous involvement of the supraclavicular and cervical glands reaching nearly to the mastoid. The patient proved very susceptible to the toxins: the initial dose was half a minim, this was gradually increased to three minims. Within a few weeks improvement began to manifest itself, and when Coley himself again saw the patient on February 24th, 1910, he could find no trace of tumour in either the pectoral or cervical region. The patient herself stated that she had never felt better in her life: there was no œdema of the arm and no enlargement of axillary glands. Her acute susceptibility to the toxins persisted, indeed rather increased, so that latterly she could tolerate not more than

a minim and a half. In two years' treatment 160 injections, all of them systemic, had been given. In connexion with the case he referred to two cases of breast carcinoma reported by Legeu, in which similar results were obtained with the toxins, one patient remaining well five years, and the other two and three-quarter years. Coley said these three were the only cases in which an inoperable, recurrent carcinoma with glandular metastases and with the clinical and microscopical diagnosis unquestioned had ever disappeared under any mode of treatment, and in which the patient had remained well for a period of three years.

129. Tonsillectomy in Acute Nephritis.

EPPINGER (*Wien. klin. Woch.*, No. 24, 1912) remarks how frequently acute nephritis follows an apparently simple sore throat, and though this usually passes off in a short time it may frequently become chronic. The progress of the nephritis in such cases is insidious. The principal symptoms are albuminuria and haematuria, and an early rise of blood pressure; but they are not marked, and the case may easily drift on unnoticed to the condition known as secondary contracted kidney. The author describes 3 recent cases of acute nephritis after tonsillitis, which had all been treated for several months without any improvement. In every case the tonsils were enlarged and fissured, but externally they appeared otherwise healthy. On excising them, however, small collections of evil-smelling pus containing streptococci were found in their deeper layers. Immediately after the extirpation of the tonsils the acute nephritis, which had withstood treatment for so many months, began to improve, and within a few weeks the urine was free from blood and albumen. The author recommends that in all cases of nephritis with enlarged and fissured tonsils the effect of tonsillectomy should be tried. He points out that other illnesses, such as rheumatism and endocarditis, may be relieved by the excision of suspected tonsils, and that it is well recognized that tonsillar abscesses may lead to nephritis. But he thinks that the fact that the removal of infected tonsils may cure a nephritis when once established is not yet sufficiently recognized.

130. Treatment of Ankylosis of the Elbow.

FRANCISCI (*Archiv. di Ortoped.*, Anno 29, F. 1) discusses the above question, and says that for the prevention of ankylosis after accident the best treatment is direct treatment of the intra-articular fractures, followed by careful radiographic control and free application of immediate synthesis of the bones. In ankylosis secondary to joint disease, provided that disease is ended and sufficient time has elapsed, orthopaedic resection, especially in tuberculous synovitis, gives good results. In labouring classes, one should remember that an elbow firmly united at or near a right angle is more useful than a movable joint but not very firm. A great improvement in the technique of the operation is gained by the interposition between the resected bones of tissue taken from the neighbourhood of the joint, possessing a pedunculated fragment. By this method relapse is less likely to occur, adaptation is better secured, and the pain of early movement is lessened. After operation the elbow should be put up for a short time in the extended position, and passive movement, massage, and baths subsequently carried out, but very, very gradually.

OBSTETRICS.

131. Combined Pregnancy.

LUCY (*Journ. of Obstet. and Gynaec.*, March, 1912) says it is highly important that the general practitioner should be aware of the possibility of the occurrence of extra-uterine and intrauterine pregnancy in the same subject. Strictly speaking the term "combined pregnancy" should be limited to that condition in which fetuses of the same age co-exist, and should not include instances of intra-uterine [illegible] carrying the remains of an old extrauterine fetation. The usual termination is that the Fallopian tube first ruptures, and, if not immediately [illegible] the uterus to empty [illegible] for internal haemorrhage [illegible] immediately by abortion, but the latter may come on in a few days' time; and Mond has recorded a case where rupture of the tube was promptly treated and intrauterine pregnancy went to term and ended normally. Other cases are on record where the combined pregnancy went on simultaneously to term. In the majority of instances termination of one or both pregnancies takes place between the third and fourth month. The portion of the tube in which implantation has taken place is a determining factor in the course of the combined pregnancy; rupture in the inner third would almost invariably cause simultaneous uterine contractions; rupture in the middle third might take place into the layers of the broad ligament, and, forming a haematocele there, might or might not cause contractions; if in the outer third a tubal abortion would follow, and if promptly dealt with would seem the least likely variety to cause uterine contractions. The mortality appears to be in direct proportion to (1) recognition of the pelvic catastrophe, and (2) the seat of the tubal gestation. The most favourable condition is the combination of a tubal mole and intrauterine pregnancy, while the most fatal is the combination of an isthmic tubal gestation, rupturing after six to ten weeks' amenorrhoea, and intrauterine pregnancy. The patient should be operated on where she is stricken down: it robs a woman of her last slender chance of life to move her any distance into what may be to the operator more convenient surroundings. Between the years 1876 and 1898 only 32 cases were on record, but in 1905 Weibel brought the number up to 119, since when many cases have been recorded. Perhaps the most remarkable is Miller's case, in which, after the birth of the first child, a second and living child was removed by abdominal section from an extrauterine sac on the right side. Another case of special interest is Bichat and Marchel's, where a tubal gestation of about two months was removed by abdominal section, and the uterine pregnancy went to term, the patient being delivered of male twins six and a half months later.

132. Cornual Pregnancy: Delivery Through Vagina.

SCHUMANN (*Amer. Journ. Obstet.*, April, 1912), writing on pregnancy in the bicornute uterus, where the gravid cornu opens into the common cervical cavity, or is only separated from the cervical canal by a thin septum, lays down an obstetrical law. Cornual pregnancy, he maintains, should be regarded from the standpoint of diagnosis and prognosis as a variety of extrauterine gestation, but from the surgical side it should be treated, not as an ectopic, but as an intrauterine pregnancy requiring Caesarean section for its relief. Vaginal delivery, however, is practicable in some cases—indeed, spontaneous normal labour has been reported. Schumann relates his experience of a case where he found a septum which was not imperforate. The patient was 34 years of age, the wife of a physician, and her illness had been closely observed. She had miscarried twice and borne two healthy children: the first labour was instrumental, but the second spontaneous. The fifth pregnancy showed suspicious irregularities, steady dull pain in the right iliac fossa, with occasionally acute exacerbations, and once or twice bloody discharge. The uterus was enlarged and softened, and a big smooth mass projected from its right side. In the fourth month the cervical canal was dilated. The mass on the right of the uterus bulged into the uterine cavity. A distinct septum of thick, soft, but resistant tissue separated the mass from the general uterine cavity. This septum presented a small central opening, which was readily dilatable with the finger. A normal fetus with membranes and placenta intact lay in a sac formed out of the dilated right cornu and, Schumann believed, the uterine extremity of the Fallopian tube. The muscular coat was extremely thin. The fetus and placenta were removed without difficulty by means of placental forceps. The placenta bore a long digital prolongation representing, in Schumann's opinion, the portion which occupied the tubal canal. There was great development of decidual tissue over the whole uterine cavity, for which the curette was employed. There seems to have been no subsequent haemorrhages, and the patient recovered quickly.

GYNAECOLOGY.

133. Parametric Abscess Pointing Through Both Sacro-sciatic Foramina.

C. FRANKE (*Berl. klin. Woch.*, March 4th, 1912) reports the following case in which a streptococcic parametric abscess tracked through both sacro-sciatic foramina, over which incisions were made and pus was evacuated. The patient, who was 31 years old, and who had undergone six confinements, was seized with a rigor an hour after the completion of labour. Fever was detected next day, but the patient, whose mental condition was alarming, would not allow a

thorough examination of the abdomen, which was rigid and painful. The vaginal secretion contained a haemolytic streptococcus. After a month, during which the patient was kept in a continuous bath, the left buttock was found to be swollen, the skin being reddened over an area near the natal cleft. Considerable infiltration and deep fluctuation were detected just below this point. Slight infiltration was also observed at a corresponding level on the opposite side. The patient's restlessness and abdominal rigidity prevented any satisfactory rectal or vaginal examination, and little could therefore be learnt as to the state of the uterus and its appendages. The fluctuating area on the left side was incised, and much pus was evacuated, the track of the abscess being easily followed by a finger passed into the great sacro-sciatic foramen. The temperature, however, did not fall completely to normal, but fluctuated between 98.6° in the morning and and 100.4° in the evening. A fortnight after the incision of the left buttock the inflammation in the right buttock had much increased. It was accordingly incised, a large amount of pus being removed, and the track of the abscess being again followed to the corresponding sacro-sciatic foramen. The temperature became normal, and the patient ultimately recovered. The author, who has failed to find any record of a similar case occurring within the last fifteen years, considers that the infection began in the parametrium during the puerperium, and that the track pursued by the abscess was adopted, or at any rate facilitated, by the patient's treatment in the constant bath, where less pressure was exerted on the buttocks than in bed. Under ordinary conditions the diagnosis of such an abscess should be easy, and it probably could have been averted had the patient's condition permitted an early and thorough examination.

134. Gonorrhoea in Young Females.

LOUISE MORROW AND OLGA BRIDGMAN (*Jour. Amer. Med. Assoc.*, May 25th, 1912) report the treatment of 300 cases of gonorrhoea in girls in the State Training School at Geneva, Illinois. The average number of "commitments" per year is 200, out of which approximately 55 per cent. are infected with gonorrhoea at the time of their entrance. They are treated systematically, and results are carefully registered. Douching was found to be worse than useless; it did not destroy the source of infection, even if continued for months, and at the end of prolonged treatment by douches the condition was worse than before. Instillation of argyrol, and of 1 per cent. silver nitrate by means of long medicine droppers, proved not much better than douching. One "innocent infection" case in a child aged 6 was treated with argyrol for sixteen months, and with silver nitrate for fourteen months. Then after five months' use of gonococcus vaccine the germs and discharge disappeared entirely. The authors admit, however, that though for six months no germs could be found at any time, a second recurrence took place, and the patient was again under treatment when the report was published. Gonococcus vaccine, the authors admit, did not prove entirely satisfactory, there being a general tendency to recurrence when it was discontinued. A statistical table of results is added to the authors' reports, and they conclude that: (1) For cases in which the speculum can be used, semi-weekly treatment, and with 25 per cent. silver nitrate to the cervix and 10 per cent. to the vagina, followed by an application of petrolatum, and once by a 25 per cent. paste of iodoform in glycerine, have given the best results. This treatment is not improved by the use of gonococcus vaccine. (2) For children and adult virgins with an innocent infection, local cleanliness and the use of gonococcus vaccine give the best results, but the vaccine is not entirely satisfactory, because of the tendency to recurrence of the infection. The authors add that vaccine was used in all of the reporters' cases where joint complications existed, with the most excellent results.

135. Appendiculo-uterine Fistula.

PERAIRE (*Paris chir.*, 1911, No. 8) observed an instance of a fistula of this type in a patient where the curette was used shortly after the puerperium. She was 29 years old, and the labour was her first. The forceps was applied, and there was high temperature, which, however, rose after the curette was applied. Severe pains in the left flank set in, and suppurative salpingitis was suspected. An ill-defined mass could be felt in the left fornix, yet the uterus was movable. At the end of three weeks abdominal section was performed. A number of coils of intestine adhered to the fundus towards the left, where a distinct wound was detected traversing the uterine walls. On liberating the coils it was seen that the caecum was intimately connected with the uterine wound by the vermiform appendix. The caecal end of the appendix was resected, and its stump cauterized and turned into the bowel by a purse-string suture. The distal part of the appendix proved difficult to remove. It contained pus, and adhered strongly to bowel as well as to the uterine wall. As the adherent intestine was torn, the appendix was pushed into the laceration, which was closed by suture. Lastly, the uterine wound was sutured. The ovaries and Fallopian tubes were normal. A drainage tube was inserted into the abdominal wound. On the second day the patient vomited a big lumbricus. Convalescence was uninterrupted.

THERAPEUTICS.

136. Chlorethylmorphine and Isopropylmorphine.

MAYOR (*Bull. de l'Acad. de Méd.*, lxvii, 1912) finds that in animals morphine and its derivatives slow the respiration and lower the blood pressure: then a second period sets in, when the respiration is quickened, the pressure rises, and convulsions occur. In man, after hypotension and slow respiration, there is no second period. Hence, to appreciate the degrees of toxicity of any alkaloid of morphine for man it is only necessary to determine in what proportions the derivative lowers the blood pressure in animals and slows the respiration. Every derivative which in animals depresses the bulbar respiratory centre more markedly than morphine will be more toxic for man, such as heroin: and every derivative that slows the respiratory rhythm less powerfully than morphine will be inferior to it in toxicity, as codeine and dionine. The author examined the effect of chlorethylmorphine and isopropylmorphine, and found in animals that they acted on the respiratory centre and the blood pressure in the same way as the other alkaloids of morphine, but the slowing of respiration is very slight (hence their toxic effect on that of man should be slight), and their action on the blood pressure is not serious. On man, the author noted that in a daily dose of 50 centigrams of isopropylmorphine produces no unpleasant effects. Experimentation also showed that both these medicaments are very slightly soporific, and their analgesic properties are much less than morphine and codeia.

137. Phenyl-dimethyl-pyrazolon-amido-methane Sodium Sulphate.

IN a very long paper, Loening (*Muench. med. Woch.*, Nos. 9, 10, and 11, 1912) describes as phenyl-dimethyl-pyrazolon-amido-methane sodium sulphonate a new antipyretic and specific for rheumatism. It will be remembered that antipyrin is phenyl-dimethyl-pyrazolon. Some persons are said to possess a distinct idiosyncrasy against antipyrin, and attempts have been made from time to time to combine or substitute certain groups of this drug in order to obtain a compound which exercises the same therapeutic action, but which has none of the disadvantages of the original antipyrin. Salipyrin, tolypyrin, and many others are the result. The new drug is a compound which may be regarded chemically as antipyrine, with the one H atom of the pyrazolon group substituted for amido-methane sodium sulphonate. It is soluble in water (equal parts by weight), in methyl alcohol (1 in 10), and is insoluble in all the other usual solvents. It is prepared by Meister, Lucius, and Brüning of Höchst-a-M. According to Professor Straub and Professor Biberfeld, it is non-poisonous to animals. Loening has given it in a large number of cases, and deals with the results under separate headings. These include: (1) As an antipyretic in typhoid, tuberculosis, tonsillitis, erysipelas, etc.; (2) as an anti-rheumatic in acute rheumatism; (3) for chronic rheumatism; (4) for myositis, neuralgia, cephalgia, etc.; and (5) for sciatica. In each part he gives extracts of the clinical history of cases in which it was given, with dosage and other particulars. He finds that the single dose of from 0.5 to 1 gram, and even of 2 grams, given up to four times a day does not produce any ill effects. He regards it as wise to be careful before large doses are given to weak patients. He regards its action like that of the salicylates as specific for rheumatism. The heart was not affected by the drug in any of his cases, and he could not detect even an increase of the pulse-rate, when it was being exhibited. It can be given with safety in endocarditis cases. It acted well in his chronic rheumatic cases, and also as a powerful antipyretic. Finally, he believes that relapses in acute rheumatism are less frequent after the new drug than after salicylates.

138. Tulisan in Asthma and Tuberculosis.

THE value of atropin and cocaine in the treatment of asthma has long been recognized. Goldschmidt, in attempting to introduce a remedy, at first used eumydrin and alypin, instead of the two alkaloids. Later he introduced a combination of medicaments under the name of "tulisan," which consists of balsam of Peru 73.59 per cent., nitrate of alypin 0.94 per cent., eumydrin 0.47 per cent., the active substance of suprarenal gland (1 per cent.) 5 per cent., and glycerine 20 per cent. The fluid is sprayed by means of a special apparatus. The spray is extremely finely divided, and the apparatus is said to work very accurately. Tulisan is prepared by L. Oestreicher of Berlin. R. Weissmann (*Berl. klin. Woch.*, April 15th, 1912) records his experience of this remedy. The application is simple. The rubber bellows of the apparatus is squeezed to expel the air, then the nasal piece is inserted into one nostril, and while the patient takes a deep breath the ball is again squeezed five or six times rapidly. The expiration must be done through the mouth. The same procedure is repeated in the other nostril, and the whole is repeated three times. Weissmann gives a number of histories of asthma and tuberculosis cases treated with tulisan, and has come to the conclusion that it acts exceedingly well for the former. In each case the attacks were rendered less severe, and in the majority they were stopped altogether. Continuous use of the remedy did not produce any deleterious effect. He is of opinion that continuous use tends to lengthen the intervals between the attacks and to lessen the severity and duration of the attacks when they occur. In tuberculosis he found tulisan of value in checking the irritating cough. He was only able to try it in three such cases, but the results obtained have induced him to continue the treatment and to investigate the matter thoroughly.

139. Treatment of Insomnia in Dyspepsia.

PRON (*Journ. des praticiens*, xxvi, 1912) recommends the following treatment in insomnia due to dyspepsia: The chief treatment should be dietetic. The evening meal should be without meat or wine; bread should be taken in small quantities. The meal should consist of clear or thick soup, two eggs boiled, fish without sauce, and fruits. Rest should be taken immediately after food. A short walk should be taken an hour after food. Insomnia of dyspeptics can be divided into two forms: (1) Those whose sleep is interrupted by nervous excitement and nightmares; and (2) those who go to sleep easily, but who wake each night at the same hour (generally between 11 p.m. and 2 a.m.) with violent pain, followed sometimes with vomiting. In these latter alkaline earths, a tablespoonful of a mixture of chalk, calcium phosphate, and magnesium carbonate after the evening meal, to be renewed on waking in the night, or cachets of codeina (1 to 2 cg.), sodium bicarbonate (0.10 cg.), prepared chalk (1 gram). Often some mouthfuls of milk or warm water bring about sleep. Compresses of warm water or a small mustard plaster applied to the stomach on lying down are excellent remedies. In the first class of patients a lukewarm douche to the head and neck and careful drying without rubbing at bedtime, and sodium bromide, sodium sulphate, and sodium phosphate (āā 1.50 grams), distilled water (150 grams) immediately after the meal, may be given with advantage. Sulphonal, trional, veronal, and, above all, chloral should be avoided.

140. Action of Cardio-kinetics on the Fatty Heart.

SCALENTI (*Rif. Med.*, April 6th, 1912) gives an account of certain experiments he has carried out on dogs. He produced in them by means of phosphorus injections a certain amount of fatty degeneration of the heart, and then tried the effect of endovenous injections of various cardio-kinetics — for example, digalen, digitalin, digitoxin, and strophanthin. He found that the effects produced by these drugs were in no [illegible] less strict relation to the amount of fatty degeneration present: when this was not very marked the effect was pretty much the same as in a normal heart, [illegible] here the heart was much degenerated the effect, especially in the digitalis group, was only very temporary, and was soon followed by a period of depression. The heart muscle seems in this respect to behave like voluntary muscles similarly [illegible] caused after any un[illegible] the various drugs used, digalen showed the rhythm and strengthened the force of the systole. Tr. digitalis had a fairly intense action, but very temporary, and quickly followed by rapid exhaustion of the muscle. Digitoxin proved markedly toxic if there was much fatty degeneration. Strophanthin gave rather better results.

PATHOLOGY.

141. Toxicity of Urine.

HERMANN PFEIFFER AND O. ALBRECHT (*Wien. klin. Woch.*, No. 15, 1912) have tested, by experiments on guinea-pigs, the toxicity of human urine: the number of cases was 69. They found that: (1) The toxicity of urine, as shown by its power of causing temperature reaction in guinea-pigs, is largely independent of its specific gravity and of its contents in salts, albumen, and free acids; (2) the increased toxicity of urine in disease can be compared by means of the increased temperature reaction with that of normal urine; (3) in opposition to the condition found in the urine of guinea-pigs, human urine, even of high toxicity, as tested by temperature results, never gave rise to necrosis. Thus with an increase of toxicity only one of two poisonous constituents of the urine is increased. The toxicity of the urine in the different diseases, from cases of which the specimens were taken, is next considered more in detail. In cases of genuine and of Jacksonian epilepsy the authors found: (1) That the toxicity of the urine of epileptic patients on days free from and not too closely before an attack is considerably above normal; (2) the toxicity falls before an attack, and may become almost *nil*; (3) the toxicity, both as measured per cubic centimetre and also per total daily amount of urine passed, usually rises to far above normal within a few hours after an attack, and remains high during several days. In cases of dementia præcox: (*a*) the toxicity is increased to many times above normal; (*b*) while the condition remains unchanged the toxicity remains raised; (*c*) in 5 cases in which there was considerable symptomatic improvement the toxicity sank to normal or almost normal, and in one of them remained permanently at normal; (*d*) in one case which grew worse in hospital the toxicity, which had been at first only moderately increased, rose rapidly. In a case of chorea minor the toxicity of the urine was enormously increased, and, as in dementia præcox, varied with the condition of the disease. Hypertoxicity, though not so marked in degree, was also seen in cases of multiple sclerosis, in one case of Korsikoff's psychosis with polyneuritis, in one of progressive muscular dystrophy at the time of a loss in body weight. On the other hand, the toxicity was normal in some cases of paranoia chronica, of periodic mania, of tabes, and of intracranial haematoma.

142. Cutaneous Reaction in Syphilis.

NOGUCHI (*Journ. Amer. Med. Assoc.*, March, 1912) has used a pure culture of the *Spirochæta pallida* to obtain a cutaneous reaction based on allergy in syphilis. Other observers have tried extracts from syphilitic tissues, but these have the objection of not being pure cultures. Noguchi first tried his extract of pure culture, which he terms "luetin," in rabbits. Repeated intravenous injections of pure culture of *S. pallida* were given for several months, and after a month's interval the animals were tested with intradermic inoculations of luetin. All the animals reacted with marked inflammation, sometimes with pustulation. Normal rabbits did not react. He then tried luetin in human subjects, including cases of syphilis, parasyphilis, non-syphilitic diseases, and normal persons. The luetin was prepared from six different strains, thus securing a polyvalent antigen. The results show that the reaction is specific for syphilis. The reaction was positive in all cases of tertiary and hereditary syphilis, but negative in primary cases and in untreated secondary syphilis. It was negative in all the skin diseases tested, and in pulmonary tuberculosis. Noguchi distinguishes three forms of reaction in syphilis: (1) A papular form, consisting in a large, red, indurated papule, from 5 to 10 mm. in diameter, surrounded by a diffuse red areola: this appears in twenty-four to forty-eight hours, and usually disappears in a week. (2) A pustular form, which begins like the first, but afterwards becomes pustular. (3) A torpid form, in which the injection punctures fade in three or four days, but may sometimes form pustules a few days later. This form is rare, but has been seen in cases of primary, secondary, and hereditary syphilis under mercurial treatment. In normal persons (negative reaction) a small red area appears around the point of injection in twenty-four hours, and disappears usually within forty-eight hours without leaving induration; but in some cases a small papule may form, which disappears in three days. Noguchi concludes that in this reaction we have a specific test for syphilis, especially in the later stages. It may be useful in determining a cure, but in some cases the disease persists in spite of treatment, and the patients do not give a positive luetin reaction. Such cases are of unfavourable prognosis.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

143. Gastric Ulcer.

DISCUSSING the etiology of the round gastric ulcer, Czyhlarz (*Wien. med. Woch.*, Nos. 22 to 25, 1912) reviews various early experiments and theories. He says that Hunter's idea that the stomach wall resisted the action of the gastric juice by virtue of its being living tissue was disproved by certain experiments of C. Bernard. The contention of Katzenstein, who was led by experiments to the conclusion that only those tissues which were constantly bathed in gastric juice were able to resist its corrosive action, was contradicted by the experiments of Hotz, who pointed out also that several surgeons had successfully patched a perforated ulcer with omentum or gall bladder, and that adhesions to surrounding parts could prevent the stomach's contents from escaping into the peritoneal cavity. To the theory that excess of HCl favours the corrosive action of gastric juice it is objected that hyperacidity is by no means constantly present in these cases, and that it is probably a result rather than a cause of ulceration; while the contention of Kaufmann and others that ulceration may be due to a diminution in the amount of mucus, and the consequent loss of its protective influence against the gastric juice, is not considered by the author a satisfactory explanation of such small isolated lesions. His opinion is that all ulcers (except those due to tuberculosis or syphilis) are caused by a combination of trauma and sepsis. The trauma may be, in rare cases, some external injury; or it may be caused by irritating food; or it may be the infarction of an arteriole; while the septic factor is always present in the stomach's contents. He thinks that the infectious nature of the round ulcer will account for the fact that such lesions are frequently found symmetrically opposite to each other on the anterior and posterior gastric walls, and will also explain the annular shape of those near the pylorus. As to diagnosis, among the several well-known symptoms he mentions pain, and points out how very misleading the patient's sensations may be with reference to the localization of an abdominal lesion; but, as a diagnostic sign of some value, he mentions a tender spot near the spinal column at the stomach level (seventh to twelfth dorsal vertebra). In his opinion, the most useful sign in early diagnosis is the presence of small quantities of blood in the faeces. To estimate this a non-flesh diet must be given for two days and the faeces then examined for blood by the benzidin reaction. He claims that blood is present regularly in carcinoma, but appears more intermittently in cases of ulceration. As a means of estimating the situation of the ulcer he mentions Einhorn's "stomach buckets." If one of these, about the size of a bean, be attached to a long silk thread, swallowed, and washed into the duodenum by a mouthful of water, and then after ten or twelve hours gently withdrawn, a blood stain on the silk will show where the thread has been in contact with a bleeding surface. By measuring the distance of this from the incisor teeth the position of the lesion can be approximately found. As to the value of *x* rays, the author says that the situation and extent of a deep perforating ulcer may be demonstrated by their aid, but they give no satisfactory help in localizing a simple ulcer. They may, however, show the existence of an area of spasm in the gastric wall which does not participate in the general peristaltic action. This area surrounds an ulcer, and its state of spasm is attributed to the irritation of independent nerve centres in the wall of the stomach (Stierlin). Gastroscopy is, in the author's opinion, destined to be the most valuable diagnostic means in the future. He recommends, as the safest form of instrument, that lately introduced by Elsner, which is specially adapted to pass through the sharp curve at the lower end of the œsophagus. But even with this he considers that there must be considerable risk of perforation.

144. Choleraic Diarrhœa.

EUSTACE SMITH (*Pediatrics*, May, 1912) discusses the symptoms, course, and treatment of choleraic diarrhœa (infantile cholera). Sudden or gradual in onset, the obstinate vomiting, uncontrollable diarrhœa, with copious serous stools, intense thirst, rapid shrinking of tissues, and early collapse, with fever and rapid pulse, form a characteristic symptom-complex of the disease. The urine is scanty, almost to suppression, if the diarrhœa is very profuse. All food must be withheld as long as vomiting is severe, the child being only allowed hot water to drink, but washing out the stomach will often arrest a vomiting which has resisted all other means. Weak mustard poultices to the epigastrium help to control the retching, and as soon as there is such diminution in the vomiting as to warrant the hope that food will be retained, a teaspoonful of iced white wine whey may be given, and repeated every half-hour, all milk being forbidden. Steps must be taken early to restore the lost elasticity to the skin, and for this a brandy pack is invaluable, and on the first signs of exhaustion the child should be put into a warm mustard bath, and 10 to 30 drops of brandy in hot water given at short intervals until the extremities become warm. The best cardiac stimulant is strychnine, and a child of 6 months may be given $\frac{1}{4}$ minim of the strychnine solution (*B.P.*), and this may be repeated, if necessary, every three-quarters of an hour. If the vomiting still persists, $\frac{1}{12}$-grain doses of calomel may be given every half-hour, and these may be alternated with $\frac{1}{4}$ minim of creosote and $\frac{1}{2}$ minim of tincture of iodine in a teaspoonful of camphor water. Bismuth carbonate in 10-grain doses, with 1 grain of sodium salicylate, may be given in a mixture every four hours to a child of 6 months, and potassium bromide, in 7 or 8 grain doses every two or three hours, will often improve the number and frequency of the stools. When water by the mouth is vomited the tissues may be supplied therewith by enemata of 5 to 10 oz. of normal saline solution, or by 2 oz. hypodermically into the loose skin of the back. If the case is seen early, before exhaustion is threatened, $\frac{1}{60}$ grain of morphine sulphate combined with 5 drops of ether may be given hypodermically to a child a year old, and repeated in an hour if needed, and the use of morphine hypodermically in attacks in older children is equally valuable.

SURGERY.

145. Bloodless Surgery in Fractured Patella.

FÖDERL (*Wien. med. Woch.*, No. 24, 1912) advocates the treatment of fractured patella by means of pressure with sponges and bandages. He considers that although the risk of sepsis with modern operative methods need hardly be considered, yet the results of wiring the patella have not always been satisfactory. He points out that the chief cause of the separation of the fragments is effusion, and that operation increases this. Also, unless the apposition of the fragments is very exact, a slight unevenness of surface, interfering with the free movement of the joint, may result; while the adhesions and muscular atrophy which are apt to follow prolonged immobilization in splints still further limit the usefulness of the joint. For these reasons some surgeons have been led to abandon all attempts at bony union, and to treat the fracture with passive movements and massage from the first. The author has obtained excellent results in recent fractures by compression with sponges. This treatment effectively promotes absorption of the effusion by squeezing the fluid out of the torn capsule into the surrounding connective tissue, and the steady elastic pressure of the sponges keeps the bony fragments in their natural position. His method is to apply wet bandages as soon as possible after the accident. These are covered with thin waterproof material; a well-padded splint is placed behind the joint, and above and below the fragments of the patella well-dried sponges are held in place by a few turns of bandage. Then, beginning at the foot, a flannel bandage is applied with firm pressure round the splint and sponges, and carried half-way up the thigh. The bandages are changed every day and the sponges renewed; the muscles above and below the joint are gently massaged at each dressing. In forty-eight hours the effusion usually subsides sufficiently to allow the fragments to meet. For the first week the patient is kept in bed. During the second week he is allowed up with crutches. In the third week passive movements are combined with the daily massage. In the fourth and fifth weeks progressive active movements are cautiously practised; and in the sixth week the patient is allowed to move about with a crutch and without either splints or bandages. The author has also

used this method with success in other cases, such as fracture of the olecranon and of the external malleolus; and he recommends it to the general practitioner as a simple and efficient treatment. Should the fragments not be in good position at the end of the first week there will then, he thinks, be time to consider the question of operation.

146. Treatment of Fractures of Forearm.

Ashhurst and John (*Amer. Journ. of Med. Sci.*, June, 1912) discuss the treatment of fractures of the forearm, and give notes of the end-results of fifty-two cases treated without operation, which show that a large number of cases of fracture of the forearm, involving both bones in some part of their shafts, may be satisfactorily so treated. They point out, incidentally, that no series of cases have hitherto been published demonstrating either the inadequacy of conservative measures, or the superiority and equal safety of operative methods, in the treatment of long bones. Accurate reduction is of importance in the neighbourhood of joints, but in the middle of the shaft the aim should be to secure firm bony union, no appreciable shortening, and the preservation of the normal axis, and for this purpose the fragments must be in contact "end-on," any lateral displacement not exceeding two-thirds of the diameter of the bone. Anaesthesia will rarely be found necessary, and the forearm should be put up in full supination between two straight splints specially adapted to the individual case. The splints should be slightly wider than the forearm, the palmar splint extending from the bend of the elbow to the tips of the fingers, while the dorsal splint extends from the olecranon to the wrist. The forearm, supported throughout its whole length by a "triangular" sling, must be always carried in full supination. In cases where it is difficult to maintain satisfactory reduction during the first ten days, and the question of operation arises, it will usually be found that a little better position can be secured at each dressing, until during the second week the deformity becomes less, and a satisfactory result ensues. It is claimed that such conservative means will produce in a shorter time results as good as, and in many cases better than, those following operation. Massage is unnecessary, since even the most careful splinting allows for as much movement as is desirable, but as soon as there is no chance of displacement recurring, passive movements in the neighbouring joints may be commenced, provided they do not cause any pain. The end-results of these fifty-two cases show that there were no cases of gangrene, necrosis, ischaemic contracture, nerve lesion, ununited fracture, conspicuous deformity, or disability.

147. Hemiplegia following Operation on the Pleura.

Remarking that operations on the pleura are known to cause severe nervous symptoms, which may be classified as syncopal, convulsive, or hemiplegic, Cottin (*Rev. méd. Suisse Romande*, June 20th, 1912) relates a case of hemiplegia which followed an operation for empyema. The patient, a robust man of 36, had made a good recovery from the operation, by which, on January 14th, about three pints of pus containing pneumococci had been withdrawn from his left pleura. The cavity was frequently washed out with 2 per cent. solution of collargol, and insufflated with oxygen. On February 15th, when he was practically convalescent, an attempt was made to measure the capacity of the pleural cavity by Bard's method (*Sem. méd.*, 1901, p. 337). The small drainage tube was replaced by a larger tube, which was in connexion with a manometer. As soon as a negative pressure was produced in the pleural cavity the patient fell back on the bed. He was found to have paralysis of the left arm and leg, and conjugate deviation of the eyes and head to the left. The pupils were dilated and did not react to light. Babinski's sign was noted. Sensation was everywhere diminished, and there was no perception of light. He complained of pain in his head, and the temperature gradually rose from subnormal to over 102° F. On February 18th a lumbar puncture was made, and clear fluid containing albumen, urea, and polynuclear cells, but no micro-organisms, escaped at considerable pressure. The patient's symptoms were somewhat relieved, and after two more lumbar punctures (on February 20th and 25th) he left the hospital cured on February 28th, and has since been in constant work. In discussing the diagnosis the author notes that [illegible] Babinski's sign and the general symptoms showed the hemiplegia to be of organic and not of functional origin. The suggestion of embolism is rendered improbable both by the rapid recovery and by the absence of any cardiac lesion; moreover, embolism would not account for the amaurosis or for the haemolytic reactions shown by the cerebro-spinal fluid. The possibility of uraemia, which might cause very similar symptoms, could hardly be entertained, as the patient's kidneys were quite healthy. The author attributes the condition to simple meningitis. It is urged that the disturbance of the pleura was the pretext for an outburst of latent meningitis, to which prolonged suppuration and the slow convalescence of the patient had predisposed him. This theory is in harmony with the observations of several authors who are unanimous in recognizing that the purulent nature of an effusion, a neurotic condition, prolonged sepsis, and disturbed renal functions predispose to these reflex nervous occurrences, of which the determining cause is some operative interference with the pleura.

OBSTETRICS.

148. Saline Injections in Toxic Skin Diseases of Pregnancy.

Rissmann (*Deut. med. Woch.*, June 13th, 1912) was led in September, 1911, to using Ringer's saline solution instead of serum, which was not obtainable at that time, in a severe case of pruritus in a pregnant woman. The marked improvement which followed an intramuscular injection of 165 c.cm. of this solution induced him to repeat the experiment in several other cases, the results being strikingly beneficial. In the case of a woman aged 34, who suffered from severe general pruritus towards the close of her first pregnancy, the skin over the abdomen was reddened, thickened, and oedematous. Treatment with ointments was unavailing and sleep was disturbed. The intramuscular injection of 160 c.cm. of Ringer's solution was followed in a few hours by marked improvement and a peaceful night was passed. The pruritus improved daily, and it had disappeared four days later when labour began. The recovery was maintained throughout the puerperium. In another case pruritus involving the arms appeared in a woman, aged 23, whose first confinement was terminated a day earlier. The pruritus spread in the course of a day to the lower limbs. The forearms and lower limbs were covered with small wheals and sleep was much disturbed. The itching ceased and sleep returned after an injection of 190 c.cm. of Ringer's solution. Another pregnant woman had been treated in vain during the latter months of her first pregnancy for intolerable itching, which had evidently at first been mistaken for scabies. Abrasions due to scratching covered the whole body. An injection of 175 c.cm. of Ringer's solution was followed by the first peaceful night which the patient had spent for several weeks. On the following day the itching had almost ceased, but as it still caused some discomfort four days later, a second injection was given, after which an uneventful recovery was made. The injections were supplemented by no other form of treatment, and as no ill effects ensued, even when outpatients were thus treated, Rissmann advocates their adoption in general practice. In severe cases it is necessary to repeat the injections, and care should be taken to exclude such cases as are the results of parasites of the skin. The operation is simple, and only requires a funnel, tubing, and a hollow needle. It is, therefore, much simpler than the procedure devised by Bruck, who has obtained strikingly good results in cases of universal and senile pruritus, urticaria pupulosa, and erythema exudativum multiforme by venesection, followed by the intravenous injection of saline solution. The author attributes the beneficial results obtained by his method to the dilution of toxins circulating in the blood, and to the increased diuresis which follows the injections. The nature of toxins causing cutaneous eruptions in pregnancy is still obscure, and it is uncertain whether they are due to products of faulty metabolism or to microbes flourishing in the tissues. The author suggests that the injections may also affect the composition of the blood by stimulating the blood-forming organs. He is sceptical as to the prevalent notion that the vomiting of pregnancy is a toxic phenomenon, but he admits that injections of Ringer's solutions might stave off severe organic disease in the vomiting of pregnancy which is associated with a dull headache and slight renal disease.

149. Pregnancy and Melanotic Sarcoma.

Vallois and Delmas (*Bull. de la Soc. d'Obstét. et de Gynéc. de Paris*, February, 1912) report an instance of this grave complication important to remember, as it [illegible] sarcoma, known to be so highly malignant, diffuses itself even more rapidly than might be expected. The patient was a woman, aged 41; she had borne three children to term. The youngest was

6 years old. Two years before she came under observation Tédenat of Montpellier operated on her for femoral hernia, and at the same time excised a suppurating cutaneous tumour from the epigastric region of the size of a pigeon's egg. It was found to be a melanotic sarcoma. Two months later the patient noticed that several hard, movable, and perfectly painless subcutaneous tumours were developing in the left breast, left axilla, and, finally, in the right axilla. They gave her no trouble. It is significant that they grew very slowly until seventeen months after the operation. Then the catamenia ceased, and almost immediately the new growth began to diffuse itself with great rapidity. Not only cutaneous but also deep tumours appeared in the loins, thighs, and sacral region. The cutaneous growths were black; in some areas where they were small and abundant they looked like small shot. Both upper and lower extremities became oedematous, then headaches, dyspepsia, and haematemesis set in. The cicatrix in the epigastrium remained perfectly healthy. Cachexia was marked, yet gestation advanced normally. The patient's health growing rapidly weaker, labour was induced at the beginning of the ninth month by a single hot injection. Within fourteen hours the patient was delivered of a child (breech presentation) weighing 4½ lb. It died of gastro-enteritis on the eleventh day. The mother sank twenty-one days after delivery, showing extreme cachexia. The child does not seem to have been infected; its urine was free from melanogen. The cause of death was certainly inflammation of the alimentary canal, but the child had suffered from its parent's general cachexia.

150. Renal Tumour and Pregnancy.

ROSENSTEIN (*Zentralbl. f. Gynäk.*, No. 17, 1912) recently reported before the Gynaecological Society of Breslau the case of a 2-para, aged 26, who had been subject for six years to an abdominal tumour. She was examined when in the fifth month of pregnancy. The abdominal walls were extremely distended, and the tumour reached far down into the pelvic cavity and extended over the front of the gravid uterus, so that when the abdomen was opened that organ was almost hidden from view. The new growth was partly cystic; it was tapped, about 10 pints of fluid coming away. Then enucleation was effected. The peritoneum was sutured over the incision made for the removal of the tumour and the abdominal wound closed. The new growth was a pure fibroma. The patient did not abort after the operation.

GYNAECOLOGY.

151. Treatment of Uterine Prolapse and Cystocele.

THE results obtained by Westermark's operations for uterine prolapse and cystocele are reviewed by Albeck (*Hospitalstidende*, May 22nd, 1912), who also gives a brief description of their technique. Since 1892 Westermark has treated complete prolapse of the uterus by substituting scar tissue for the ruptured or loosened cardinal ligaments, and he supplements Hegar's operation for prolapse by a lateral colporrhaphy. The vaginal portion of the cervix is first amputated and its stump is then forcibly drawn to the right, by which manœuvre the left cardinal ligament is disclosed as a band lying under the inverted vaginal wall. At this point a triangular portion of the vaginal wall is excised; its base, which is 2 to 3 cm. wide, adjoins the lateral aspect of the cervix at the level of the amputation, while its apex is a few centimetres from the introitus vaginae. The removal of this triangle is followed by the introduction of the index finger into the loose underlying connective tissue. After this probing, which favours the subsequent formation of scar tissue, has been completed, a row of deep catgut sutures is inserted, but not at first tied. The stump of the cervix is now drawn over to the left, and the same process is carried out on the right side. The uterus is replaced and the sutures are tied, the operation being completed by a colpoperineorrhaphy. The extensive injury to the tissues which this operation causes is followed by the formation of much scar tissue, the contraction of which draws out the vagina transversely. The upper portion of the vagina is consequently securely suspended as under normal conditions. Westermark has employed this operation in the years 1897 to 1909 in 186 cases of severe prolapse. Subsequently 124 of these were examined, when only 10 were found to have relapsed. The statistics in the whole of Sweden for this operation show 22 relapses out of 250 cases; in other words, permanent cure in 91.1 per cent., and relapses in 8.9 per cent. Westermark's operation for cystocele partly resembles Wertheim's, but there are some important differences, for Westermark sutures the bladder to the back of the uterus, near the cervix, and he completely covers the anterior surface of the uterus with vaginal flaps. This aspect of the uterus is therefore not left exposed in the anterior vaginal wall. The steps of the operation are as follows: A transverse incision is made in the anterior fornix, the bladder is freed, and the peritoneum is opened in the vesico-uterine fossa. A longitudinal incision is made in the anterior wall of the vagina, extending from the transverse incision to the urethra. The two triangular portions of the vagina thus formed are detached from the bladder. The fundus of the uterus is drawn forward through the opening in the vesico-uterine fossa. The bladder is carried over the back of the uterus, where, together with the margins of the divided peritoneum, it is secured with catgut sutures. The fundus of the uterus is secured in the lower, undermined portion of the longitudinal incision, and the vaginal flaps are united over its anterior surface by transverse sutures, which also penetrate the substance of the uterus. Finally, the transverse incision in the anterior fornix of the vagina is sutured. This operation has been performed by Westermark in 22 cases of cystocele, and no relapse had occurred among the 17 patients who were subsequently examined. The statistics for the whole of Sweden show that this operation was performed on 51 patients, and that of the 21 patients who were subsequently examined only 2 had relapsed.

152. A Question of Sex.

HIRSCHFELD AND BURCHARD (*Deut. med. Woch.*, December 28th, 1911) publish the case of a young woman, aged 20, who, on account of her masculine tastes and character, sought advice as to her true sex. She was the offspring of cousins, the father being 55 and the mother 35 at the time of her birth. According to her mother, at the age of 3 she had comforted herself as a little boy, preferring tin soldiers to dolls; as she grew older her masculine tastes increased, and she went in for all kinds of sports, hated needlework, and amused herself by mending electric bells, watches, etc. After the age of 12, according to her own story, her interests were entirely with persons of the feminine sex, and at the age of 19 she fell violently in love with a girl. Intercourse took place, she, as far as physical disabilities would allow her, playing the masculine rôle. She affirmed that on these occasions the orgasm was always accompanied by an ejaculation of muco-lactescent fluid from the urethra. She had never menstruated, nor had there ever been any periodic disturbance capable of being interpreted as menstrual molimina. On the other hand, at the age of 14 the voice broke, and shortly afterwards down appeared upon the lips and chin, compelling her to shave. Examination showed moderate but firm muscular development with little subcutaneous fat. The lines of the body were for the most part feminine, the hair was thick and glossy, the pomum Adami slightly prominent and the voice deep. The breasts were well developed and the secondary sexual characters were chiefly of the feminine type. The external genital organs were those of a normally developed woman and the hymen was intact. The body of the uterus was anteflexed and the size of a plum, with a much diminished vaginal portion. The presence of ovaries or of corresponding glands could not be made out with certainty. To the right of the womb a small firm body could be felt, but it was impossible to determine whether it was attached to the uterus. Rectal examination revealed certain "resistances," perhaps corresponding to a prostate or vesiculae seminales. Expression, speech, movements, and gait were definitely masculine. The determining point being the ejaculation of muco-lactescent fluid, Hirschfeld and Burchard proceeded to the investigation of it in the presence of colleagues and in circumstances which precluded the possibility of fraud. They found that the statement was true and that the fluid contained living spermatozoa and corresponded in chemical composition to semen. The subject was therefore not a homosexual female but a man with active male glands and male proclivities, though with the external genitals and physical habitus of a woman.

153. Echinococcus in Uterine Cavity.

CUZZI (*Monats. f. Geb. u. Gyn.*, May, 1912) observed this condition in a woman who had reached her climacteric. The abdomen had recently become much distended, and the patient was admitted into hospital with high temperature and free vaginal discharge. At first the breaking down of a necrotic interstitial fibromyoma was suspected. An anaesthetic was given, and then it was found that a

perfectly clear, odourless fluid escaped from the uterine cavity. The cervix was dilated, and the characteristic cysts were discovered. Free injections of lysoform were given. Curetting was considered dangerous, as it would open up blood vessels and entail the risk of diffusion of the disease, and panhysterectomy was not performed. In two months the patient was discharged free from any local evidence of hydatid disease.

THERAPEUTICS.

154. Antityphoid Vaccination.

H. VINCENT, in a paper read before the Paris Academy of Medicine, and published in the *Bulletin* of December 5th, 1911, gave the results of antityphoid vaccinations made by him at the instance of the Minister of War amongst the troops stationed on the Algerio-Moroccan frontier. In all 283 soldiers were treated, 129 with Wright's vaccine prepared after the most recent method of Leishman, and 154 with the polyvalent vaccines of Vincent. The injections were generally made under the skin in the region of the left deltoid, but a few were made under the skin of the abdomen. As a rule there ensued a local redness, limited or diffuse, but sometimes a more marked erythema covering at most a space as large as the palm of the hand. Pain was generally negligible and passed off in a few hours; a few cases only had any rise of temperature, and a few had a slight axillary adenitis. All the symptoms were transient and left no ill effects; in fact the reaction was never more marked than that occurring in antivariola vaccination. Inoculations were made at intervals of seven or eight days, the men vaccinated with Wright's vaccine receiving four inoculations, those vaccinated with polyvalent vaccines receiving four or five inoculations. Only those who received their full number of inoculations were counted as vaccinated, but nearly all the cases underwent the full course. Vincent quoted several cases to prove that the inoculations are absolutely harmless in cases which are already infected; in these, inoculated during the incubation period, and before it was known that they had the disease, the attacks were all mild and no ill effects were observed. Vincent has never observed the so-called "negative phase" either in Morocco or elsewhere. Among the men vaccinated none who had previously suffered from typhoid fever, or even from febrile gastric attacks, was included; and Arabs, owing to their comparative immunity to typhoid, were also excluded. Except in this sense, the cases were in no way selected, and both before and after inoculation the vaccinated and unvaccinated mixed freely together and were submitted to the same conditions of diet, work, fatigue, and risks of infection. Not counting 150 men who had previously had typhoid, the number of European troops in camp on August 1st, 1911, when the inoculations were begun, was 2,915; of these, 283 underwent vaccination—that is, rather more than 1 in 10. During the period from August 1st to November 1st, 1911, there were among the 2,632 unvaccinated men 171 cases of typhoid fever, with 22 deaths. Among the vaccinated, of the 129 men inoculated with Wright's vaccine, 1 had a very mild attack of typhoid, occurring after three inoculations; of those inoculated with polyvalent vaccines, not one suffered from typhoid. Tabulated, the results are as follows:

	Cases.	Deaths.
	Per 1,000.	Per 1,000.
Unvaccinated	64.75	8.35
Vaccinated:		
Wright's vaccine	7.75	0
Polyvalent vaccines ...	8	0

These figures leave no room for doubt of the efficacy of the treatment, especially when it is remembered that the inoculations were made at a time when typhoid fever was rampant among the troops, when the men were worn out and exhausted after a campaign conducted in terrible heat, and in circumstances eminently favourable to a spread of the disease. Probably never, except in the Boer war, has antityphoid vaccination been put to so severe a test. The good effect of vaccination was so apparent to the men themselves that after the departure of Vincent many of them came spontaneously and asked to be inoculated.

155. Urotropin in Typhoid Fever.

MALAN (*Gazz. degli Osped.*, March 12th, 1912), in view of the claims made on behalf of some authors as to the value of urotropin in typhoid, gives his experience in 32 cases of enteric. The cases were distributed as follows: 3 in May and June, 6 in July, 10 in August, 9 in September, and 4 in October. Ten cases were treated without urotropin, and of these 3 were cured without relapse, 2 cured after relapse, and 5 died. Twenty-two cases were treated with urotropin (apparently other drugs were also given—for example, salol); 17 of these were cured in the first attack, 3 after relapses, and 2 died. However, on analysing the figures, it is seen that of the 10 August cases 6 had no urotropin, and of the 4 which had urotropin 2 died, and of the 6 cases without urotropin 5 died. The September and October cases all recovered, although some had urotropin and some had not. These things suggest that the type of epidemic and time of incidence have more to do with the results than the particular drug given.

156. Salvarsan.

QUEYRAT (*Bull. de la Soc. de Derm. et de Syph.*, January, 1912) reports on the results of 1,003 injections in 511 patients—625 intravenous and 368 intramuscular. The latter were given in 80 parts castor oil with 20 parts absolute alcohol; for intravenous injection the salvarsan was dissolved in blood serum. He recommends three weekly intravenous injections, followed by a final intramuscular. The initial dose was 60 cg., gradually increased by 30, 40, and 50 eg. The temperature of the injected fluid when it reaches the vein should be 30° C. Contraindications are advanced age, cachexia, severe diabetes, advanced tabes and general paralysis, old hemiplegia, lesions of the heart, liver, and kidneys. His conclusions are: (1) In tertiary syphilis, ulcerations and gummata heal in ten to thirty days, but not quicker than under mercury and iodide; (2) in secondary syphilis the lesions are improved, but the disease is rarely cured; mucous patches heal rapidly, but papular syphilides are resistant; in this stage salvarsan is locally curative, but mercury should be the fundamental treatment; (3) in primary syphilis, out of 78 patients treated within a month after the first appearance of the chancre, 51 had no secondaries one to six months afterwards. Good results were obtained in syphilitic iritis and neuro-retinitis, but not in alopecia, ozaena, and leucoplakia. No case of optic neuritis occurred, but one patient died six hours after an injection of 60 cg., the autopsy showing acute nephritis and small quantities of arsenic in the liver and spleen.

PATHOLOGY.

157. Toxic Qualities for Serum Mixed with Organ Extracts.

M. ASCOLI AND G. IZAR have found that when either homologous or heterogeneous organ extracts are mixed with the blood serum of a certain species the mixture becomes toxic to an animal of the same species, although neither the organ extract nor the serum alone are toxic in the doses employed. They worked with rabbits, pigeons, and sparrows, and the organs selected were liver, kidney, and lungs (*Muench med. Woch.*, May 14th, 1912). The experiments were conducted as follows: An organ gained by bleeding the animal to death was ground up in a mortar in 0.85 per cent. saline fluid, passed through gauze, and centrifugalized. The toxic dose of the extract was next determined. A series of test tubes were then prepared with a constant quantity of serum and varying dilutions of organ extract, the dose of which was always kept below the toxic dose. For example, it was found that 3 c.cm. of the extract of a rabbit's liver produced mild convulsions, and 4 c.cm. produced death; 2 c.cm. diluted with equal parts of saline fluid mixed with 3 c.cm. of rabbit's serum only produced mild symptoms in a rabbit; 2 c.cm. diluted as 1 : 3 with the same dose of serum killed, while when the extract mixture was diluted as 1 : 5 death took place late, and when the dilution was still greater, only mild convulsions were produced, although the animal was found dead on the following day. The symptomatology and *post-mortem* changes in the animals were indistinguishable from those met with when the poisoning was due to large doses of organ extract. Heating or passage of the serum through a Berkefeld filter prevents the increased toxicity from appearing; but the extract can be heated without interfering with the phenomenon. They regard it probable that the process is due to the presence of an enzyme in the serum, for which they suggest the term "parhepsin" (from πέψω = I cook or digest). They call the poisonous mixture "parhepsotoxin."

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

158. The Chemical Examination of Sputum.

KLEISSEL (*Wien. med. Woch.*, Nos. 21–22, 1912) calls attention to the value of the chemical examination of sputum in the diagnosis of pulmonary and bronchial disease. He points out that as long ago as 1855 Biermer noticed that the more acute the inflammatory process is, the greater is the amount of albumen in the sputum. Later Bamberger found that in catarrhal conditions, such as phthisis and chronic bronchitis, the sputum contained more salts of potash than of soda, while in exudative processes, such as pneumonia, the reverse was the case. Kossel showed that the specific gravity of the sputum varied with the amount of pus it contained: and that a serous sputum, being an exudation from the blood rather than a secretion, has the highest specific gravity of any. He found a peptone in all purulent sputum, attributing its formation chiefly to the action of a ferment therein contained. This opinion was confirmed by Filehne, who isolated from the sputum in a case of gangrene of the lung a ferment which digested elastic tissue and dissolved albumen with the formation of a peptone. The author's method is to mix the specimen of sputum with an equal part of water, and after acidulating with acetic acid he beats it up well with a glass rod. The mucus becomes ropy, and is filtered off. The filtrate is boiled repeatedly, a small quantity of concentrated salt solution being added to ensure the precipitation of the albumen. The remaining clear solution is then tested for peptone by the biuret reaction. The author examined the sputum of about 60 patients in a military hospital in this way. Of 25 cases diagnosed as bronchitis, all but 4 gave a negative result with the test, and in those 4 the constitutional symptoms justified a suspicion of phthisis, although no bacilli were found. In 22 cases of apical catarrh, in which von Pirquet's test was positive but no bacilli were found, the biuret reaction showed the presence of peptone in all but two. In 6 other cases of undoubted phthisis the test was positive in all, though in one of them peptone was not present in the sputum until an improvement had taken place in the condition of the patient. In explanation of this, Kleissel points out that so long as expectoration is profuse the albuminous products of cell destruction are carried away freely, and are therefore not absorbed into the blood as peptones to reappear as such in the sputum (Jaksch). On the other hand, in pneumonia, of which the author mentions 2 cases, the biuret reaction is positive at the height of the attack; but after the crisis the peptone rapidly disappears from the sputum. The explanation of this is that so long as the patient lies in a condition of more or less stupor, with comparatively little expectoration, the lung contains a quantity of degenerated epithelial cells from which peptones may readily be formed and absorbed into the blood. With commencing convalescence the lung becomes better drained, the dead cells are coughed up, and the material from which peptones are formed is removed. Of the author's other cases, 4 were cases of pleurisy, which showed no biuret reaction, except in one where there were signs of tuberculous disease in the lung. The author specially deprecates the inference that the biuret reaction is indicative of phthisis; but he claims that it will give valuable help in the diagnosis of those cases in which the physical signs differ but slightly from normal, while the subjective symptoms suggest some latent pulmonary disease.

159. Hypertrophic Cerebral Pachymeningitis.

TISSOT (*Le progrès méd.*, 1911, xxxvi) gives a full description of hypertrophic cerebral pachymeningitis. The causes are.—*Predisposing:* (1) Age. It occurs after the age of 50 as a general rule. Eichhorst considers it exceptional in children, Legendre and others believe it to be most frequent at the two ends of life. It is commoner in men than in women. (2) Mental disease. It is particularly frequent in imbeciles and general paralytics. *Occasional:* (1) Insolation; (2) traumatism; (3) mental emotions—as anger, drunkenness. *Exciting:* (1) Alcoholism; (2) syphilis; (3) infectious diseases; (4) cachectic conditions giving rise to phlebitis and thrombosis of the sinuses of the dura mater and the meningeal veins. *Symptoms:* It is common to divide these into two periods, the first corresponding to the formation of the new membrane, and the second, or serous stage, characterized by the production of haemorrhage. First stage: (*a*) Headache is the earliest and most constant sign: (*b*) somnolence more or less deep, with periods of excitement; (*c*) vertigo and dizziness; (*d*) difficulty in walking: (*e*) contraction of the pupil, later replaced by dilatation—the more contracted pupil is usually on this side of the lesion: (*f*) oedema of the papilla, conjugate deviation of the head and eyes, and nystagmus; (*g*) general weakness of the mental faculties. Second stage: If the haemorrhage is abundant and sudden, the symptoms are those of apoplexy, coma, hemiplegia; the face is rarely affected. Convulsions are rare, but may occur. Kernig's sign is rarely wanting. If the haemorrhage comes on slowly, the symptoms are very diverse, and are those of congestion of the brain. The general phenomena are as follows: Fever is variable. The pulse is regular, and accelerated as a rule. Sometimes there is vomiting. The cerebro-spinal fluid shows marked lymphocytosis if there is meningitis or meningo-encephalitis present. The author goes very fully into the diagnosis and differential diagnosis from cerebral syphilis, tuberculous meningitis, cerebral tumour, epilepsy, etc., which would occupy too much space to describe. The prognosis is always serious: the chief danger lies in the haemorrhage, which may be sufficiently large to carry off the patient: or, if small and repeated, lead to gradual signs of cerebral compression and mental decay. *Treatment:* Surgical intervention in the form of trephining seems to give the best chance of success. Gelatine 12 to 15 gr. a day by the mouth, dissolved in water in the proportion of 1 to 5, has its advocates: others recommend subcutaneous injections of 150 gr. of physiological serum gelatinized to 1 per cent. The author suggests the possibility of electro-ionization of fibrolytics.

160. Toxic Pathogenesis of Bronchial Asthma.

EUSTIS (*Amer. Journ. of Med. Sci.*, June, 1912) produces further evidence to that already published by him in support of the rôle played by intestinal toxins in producing various pathological conditions, and he has collected histories of 121 cases of spasmodic bronchial asthma associated with an intestinal toxaemia, and which were relieved by getting rid of this latter condition. Acting on the assumption that a definite toxin, causing bronchial spasm, similar in action to muscarin, originates in the intestinal canal, he investigated the amins formed by intestinal putrefaction of the several amido acids of normal pancreatic digestion of proteins. Barger and Dale have worked out the physiological action of the several amins, and their results explain many of the symptoms observed in cases of intestinal toxaemia. Of these several amins, betaimidazolylethylamin, while having a slight action on blood pressure, has a specific action upon unstriped muscle tissue, causing contraction of the uterus and bronchioles, resulting in great dyspnoea and death in the rabbit and guinea-pig from the complete occlusion of air by the toxic spasm of the bronchioles. By injecting $\frac{1}{2}$ mg. of this base intravenously, or into the trachea, death results rapidly with violent inspiratory efforts, whereas the same dose injected subcutaneously, or into the peritoneum, has much less toxic effects, pointing to the fact that its action is entirely local on the unstriped muscle fibre, and that the subcutaneous tissues have a detoxicating effect. Although the base has not yet been isolated from the blood of asthmatics owing to many precipitations and filtrations, experiments giving every hope of success are in progress. From experimental evidence it appears that the normal human being, and the cat, and the dog, possess the power of detoxicating betaimidazolylethylamin and the other toxic amins formed by intestinal putrefaction, while the asthmatic has apparently lost this power. In a previous paper the author stated that in every case of asthma examined during the past four years evidence of auto-intoxication existed which led him to believe that during an attack there is a toxin in the blood acting similarly to muscarin, and he hopes shortly to prove the truth of his original contention by the isolation of the specific amin from the blood of asthmatics.

161. Death from Haemophilia.

PAUCOT (*L'Echo méd.* 1912, lx) describes the case of a man, 25 years of age, who had suffered from various attacks of haemorrhage since the age of 18 months, on the

slightest provocation, particularly of the knee-joint. On the last occasion the patient stumbled and fell, and immediately the knee and leg began to swell and distend with fluid. The lower right limb became twice its normal size, and of a violet colour. Various haemostatics were tried in vain, and the patient died three days afterwards.

SURGERY.

162. Infections following Tonsillotomy.

KOPLIK (*Amer. Journ. of Med. Sci.*, July, 1912) calls attention to three distinct forms of sepsis which may follow surgical removal of the tonsils, whether by tonsillotomy or enucleation, with or without removal of adenoid growths in the nasopharynx. In the first form of infection the patients may appear to be doing well until the second or third day after operation, when they begin to run a temperature of varying severity, lasting a week or more and ending in recovery, and unaccompanied by any obvious lesion—aural, cardiac, or otherwise. In the second form the patients run a moderately high temperature for weeks with cardiac involvement, and in some rare instances the development of a malignant and fatal form of septic endocarditis. The third form resembles more a haematogenous-borne infection resulting in extensive haemorrhages throughout the body. Notes of such a case are given in which a female child, aged 5, without any haemophilic tendency, commenced running a temperature of 104° to 105° the day following operation, and a week later developed a cough with mucoid expectoration and areas of bronchopneumonia. Ten days later she began to bleed from the lips and rectum, which was filled with clots, and several large ecchymotic areas appeared on the back, buttocks, and thighs, with petechiae over the upper and lower extremities and in the conjunctivae. The cavities where the tonsils formerly were located were raw surfaced and blue, and the post-cervical and submaxillary glands were palpable. A systolic murmur developed at the apex and over the whole precordium, and the anaemia increased until the haemoglobin diminished to 20 per cent., although no haemorrhages had occurred after the injection of 75 c.cm. of human blood serum. After a direct blood transfusion from the father the haemoglobin rose to 65 per cent., and the patient made an uninterrupted convalescence. This was an instance of true haematogenous sepsis following tonsillotomy and adenectomy performed under excellent conditions, and the case is unique, inasmuch as the transfusion was performed for a progressive anaemia, which continued after the cutaneous and intestinal haemorrhages had ceased, and which recovered, in spite of an evident sepsis at the time of transfusion, performed as a last resort to save life.

163. Lumbar Puncture for "Choked Disc."

SIEGRIST (*Corresp. Blatt.*, No. 15, 1912) emphasizes the importance of special treatment for choked disc. This condition, he says, to whatever lesion it be due, when once firmly established, must lead eventually to atrophy of the optic nerve, but by timely intervention that catastrophe may be avoided. He asserts that the cause is an increase of cerebro-spinal fluid and the consequent rise of intracranial pressure, and he claims that this pressure may be relieved either by trephining or by lumbar puncture. Von Hippel has collected a record of 221 cases of trephining for choked disc caused by various cerebral lesions. Of this number only 18 were entirely successful, and he puts forward several objections to the treatment. The most important of these are infection and shock. Siegrist considers that the risk of infection is small if the skin wound be carefully closed, and that the danger of shock may be minimized by the precautions recommended by Kocher and Horsley. Among these are: (1) The use of chloroform in preference to ether. (2) The performance of the operation in two stages, so that the [illegible] not opened for a day or two after the trephining. (3) The treatment of the dura with cocaine to avoid reflex disturbance of the respiratory centre; the protection of the surface of the brain from antiseptic lotions, and the avoidance, as far as possible, of all [illegible] either the brain or the cranium. He considers, however, that, in spite of all precautions, trephining must remain a more dangerous proceeding than lumbar puncture, which, he points out, is a comparatively easy operation, and he cites three cases of choked disc with [illegible] where that treatment gave good results. In two of these (of which one was diagnosed as meningitis due to a *Bacillus coli*), the sight was completely restored; in the third case (a lad of 16) the general symptoms were relieved, so that he was able to earn his living, but the very marked swelling of the optic disc gave place to atrophy of the nerve. The intervention was too late. Other cases are reported in the literature, and there is a difference of opinion among authors as to the dangers and limitations of lumbar puncture in cerebral lesions. The author's own conclusions are that so long as the choked disc is not accompanied by impaired vision it will suffice to treat the primary disease—for example, syphilis or tuberculosis—but immediately the sight is affected an attempt should be made to relieve the intracranial pressure by repeated lumbar puncture without waiting for the exact diagnosis of the cause. If, however, localizing symptoms should point to the existence of a cerebral tumour, no time should be wasted on lumbar puncture, but the patient should be trephined without delay. Trephining is also indicated in any case where lumbar puncture fails to relieve the symptoms, and the author claims that in skilled hands the operation is not so dangerous as statistics would seem to show.

164. Paracentesis of the Pericardium.

FIESSINGER (*Journ. des praticiens*, 1912, xxvi, p. 457) classes the varieties of dullness met with in pericardial effusion into (*a*) left globular dullness, (*b*) posterior and right sternal dullness, (*c*) epigastric dullness. In (*a*) the puncture should be made in the fifth or sixth intercostal space, a little above and outside the apex of the heart. In (*b*) puncture at the fourth or fifth interspace on the right side at the level of the sternum obliquely towards the left. In (*c*) the puncture should be made in the epigastric angle at the right or left xiphoid cartilage. The needle should be directed above and to the left. The author prefers to puncture with a lumbar puncture needle mounted on a syringe of 20 c.cm., or on a Potain's aspirator by a special joint.

OBSTETRICS.

165. Toxic Origin of Hyperemesis Gravidarum.

L. SEITZ (*Deut. med. Woch.*, April 11th, 1912) considers that the main cause of hyperemesis gravidarum is a toxic condition similar to that which produces eclampsia and acute yellow atrophy of the liver, and that the part played by psychic conditions and a host of local abnormalities—such as retroflexion, adhesions, erosions, and endometritis—has been much overrated. The teaching of the psychic origin of hyperemesis, which the Ahlfeld-Kaltenbach school defended, was based on the observation that treatment by suggestion effected improvement and even recovery in many cases. But this teaching, which labels the vomiting of pregnancy as a mere expression of hysteria, fails to explain its frequency in mentally robust women without a taint of hysteria or other allied condition. Besides, this complication occurs in every other pregnancy, and sometimes ends in death, which is an unknown sequel to hysteria alone. The psychic teaching was seriously challenged in 1892, when Lindemann demonstrated the gross anatomical lesions present in cases which terminated fatally. Subsequently, English and American workers have recorded similar observations, and more recently Seitz attended a case which ended fatally in spite of the induction of abortion two days earlier. The necropsy showed that the organ most seriously involved was the liver, in which parenchymatous and fatty degeneration, and infiltration with necrosis of the hepatic cells, were observed. The kidneys also showed necrosis and changes characteristic of acute parenchymatous nephritis. Such changes, which must clearly be independent of purely nervous factors, resemble in many respects those which poisoning with phosphorus or chloroform causes. They also resemble the changes observed in acute yellow atrophy of the liver and eclampsia. Now, from one-third to a half of the number of patients suffering from the former disease are pregnant, and their livers show marked diminution in volume and fatty degeneration or complete necrosis of the acini. Both in this disease and in hyperemesis gravidarum there are cerebral disturbances, such as excitation and delirium. Cutaneous haemorrhages and jaundice are also common to both, but while the latter is usually slight in hyperemesis gravidarum, it is, as a rule, severe in acute yellow atrophy of the liver. There may also be several other minor differences noticeable, yet the pathological changes are often so much alike in these diseases that they are scarcely distinguishable from each other. The number of cases of hyperemesis gravidarum which are so severe as to resemble cases of acute yellow

atrophy of the liver are far commoner than the scanty observations on this matter would suggest. Hyperemesis gravidarum, again, resembles certain forms of eclampsia, with the severe forms of which slight jaundice is frequently associated. In eclampsia, too, the liver is often tender, the necropsy showing extensive hepatic disease. The association of hyperemesis gravidarum with such conditions as jaundice, haemoglobinaemia, neuritis, ptyalism, purpura, and small multiple haemorrhages into the tissues, is also indicative of a toxic state. Further, it is evident, if the fatal cases of hyperemesis gravidarum show extensive disease of the liver, kidneys, and other organs, that the slighter forms are also accompanied by similar changes which are less marked, and from which the patient accordingly recovers. The writer points to the success achieved by the treatment of hyperemesis gravidarum with intravenous injections of serum drawn from healthy women, and he argues that this is a further proof of the toxic origin of the disease. He admits, however, that psychic influences may play a subsidiary part, and that treatment by suggestion may cure slight cases, for the sensitiveness of the vomiting centre to suggestion can be demonstrated by provoking nausea with the aid of distasteful conversation. But psychic influences alone seldom or never cause hyperemesis in the violent form sometimes seen in pregnancy. As small quantities of apomorphine injected subcutaneously irritate the vomiting centre, so do the unknown chemical bodies formed in the course of pregnancy, and in both cases the sensitiveness of the vomiting centre is sufficiently increased for psychic and other minor factors to precipitate an attack of vomiting.

GYNAECOLOGY.

165. The Cause of Menstruation.

M. IMCHANITZKY-RIES AND J. RIES (*Muench. med. Woch.*, May 14th, 1912) have studied the problem of the cause of menstruation from the physiological-chemical standpoint. Gautier has pointed out that menstrual blood contains 0.28 mg. of arsenic per kilogram. He found that the total quantity of arsenic excreted during one period (on the average 0.15 mg.) corresponded almost to the total quantity present in the thyroid gland. Hertoghe found, further, that in the premenstrual secretion there was frequently more arsenic than in the blood during the period. Hitschmann and Adler first called attention to the changes in the uterine glands during the recurrent periods, and the authors have confirmed this. They state that menstruation is characterized by dilatation of vessels, escape of blood, by partial detachment of the mucous membrane, and by the emptying of the glandular ducts. They conceived the idea that the uterine glands, and not the thyroid gland, stored up arsenic specifically, and proceeded to examine the problem from this standpoint. In the first place, they discovered experimentally that the sperm cells of amphibia as well as of some mammals are not damaged when bathed in solutions containing 0.5 mg. of arsenic per 100 c.cm.; indeed, their vitality appears to be raised by this solution. Even in 1 per cent. solutions no damaging effect could be determined. It has further been shown that human and animal fetuses contain more arsenic than adults. The authors call attention to the analogy of behaviour of arsenic and phosphorus. Arsenic occurs, like phosphorus, in combination with lecithin. They suggest that the arsenic in the uterine glands is used for the preservation of the sperm cells and favours conception, and also may be utilized for the development and growth of the fetus. During puberty, after the utilization of arsenic in development is completed, arsenic begins to be stored up in the uterine glands and accumulates there. A point is then reached when the arsenic acts as a poison. The mucosa of the glands being congested by the poison, the change spreads on to the contiguous mucous membrane, typical arsenic intoxication sets in, the epithelium becomes detached, fatty changes occur, a transudation takes place, the vessels become dilated, and blood escapes. This means that the menstrual period sets in. The poison containing mucus is gradually washed away by the blood, and as soon as no appreciable quantity of arsenic is left, regeneration takes place. In the following days the glands begin to collect fresh arsenic from the food, and the cycle proceeds again. It has been shown that the average Parisian absorbs about 7.66 mg. of arsenic annually. Potatoes contain the greatest amount of arsenic. Lobsters contain an exceedingly high amount. Analyses showed that during menstruation the uterine mucosa contained only small quantities of arsenic; after the period no traces could be detected, while immediately preceding the period the concentration was highest. In the uterine mucosa of an old woman aged 65 years no arsenic could be found. Similar results were obtained in the lower animals. Now they point out that in males, arsenic given therapeutically is partially excreted by the urine, while in females this is not so. During pregnancy the pigmentation of the skin, of the nipples and linea alba suggest arsenic effects, and it may be assumed that the cessation of the periods during pregnancy is, to a certain extent, due to the lower concentration of arsenic in the mucus of the uterine glands, which has increased in amount in correspondence to the hyperplasia of the glands themselves. Further, they found that during lactation the milk contains arsenic. This diminishes gradually, and the uterine glands begin to store up fresh quantities of the metal as the mammary glands become non-active. The authors point out that they do not suggest that the menstruation, etc., is solely and only set going by arsenic storage, but conceive that phosphorus, iodine, and other substances may play a similar rôle. Some phenomena connected with the genital functions cannot be explained on this basis, but they believe that much can find a reasonable solution on this basis.

167. Omentum in Uterus after Perforation by Curette.

ASCHEIM (*Zentralbl. f. Gynäk.*, No. 14, 1912) recently exhibited before a medical society a uterus perforated by the curette, with a piece of omentum 6 in. long, which had found its way into the uterine cavity. The patient was 22 years old. Haemorrhages set in about the fourth month of her first pregnancy. The os externum was not wide enough to admit the finger. After the tampon had been applied and proved ineffectual the uterine cavity was cleared out by the curette and dressing forceps. In using the latter the patient's doctor drew down a piece of omentum, which he apparently recognized, and forthwith sent the patient into a hospital. Ascheim performed an abdominal section and detected a large perforation in the anterior wall of the uterus, into which the omentum passed. The prolapsed omentum was drawn out and resected. As infection seemed highly probable the uterus was removed entire, and the pelvic cavity drained from below. The parts removed were examined. Streptococci were found in the piece of omentum: streptococci, staphylococci, and bacilli in the uterus. The patient recovered. Ascheim considered that it was dangerous to use the curette and forceps beyond the eighth week without previous dilatation of the cervix with the finger.

THERAPEUTICS.

168. Treatment of Eczema.

A. ALEXANDER has undertaken the task of recording the recent advances in the pathology and treatment of eczema (*Berl. Klin. Woch.*, April 8th and 15th, 1912). In the 1910 Dermatological Congress three different views were put forward as to what was to be regarded as eczema. The first was that eczema is a constitutional disease depending on internal processes; the second, that it is a local condition, depending on external noxes; while the third is that it is a general disease partly depending on external causes. Among the external noxes, staphylococci were said to take the principal place. On this basis it follows that difference of opinion exists as to whether such dermatites as chronic lichen of Vidal or the artificial dermatites are to be regarded as eczemata. Passing by these questions, the author touches on the acute dermatites caused by plants, including quince, medlar, scilla, eucalyptus oil, sunflower seeds, satinwood, and so on. The best known of the flower dermatites is the primula dermatitis. The diagnosis is easy when it affects a gardener, but when the patient is not known to handle flowers the cause may be overlooked. The affection may be acquired, and then will affect a person who previously handled these flowers with impunity. It is therefore necessary in all cases of obscure eczemata of the hands and face to make minute inquiry as to the possibility of primulae being the cause. Alexander dwells briefly on the idiosyncrasy of certain persons towards some drugs, such as mercury, iodoform, antipyrin, and the like. In the case of iodoform Bruck has been able to show that a form of anaphylaxis can be produced. The author next deals with eczema seborrhoicum (Unna). The characteristics of this disease are: (1) The regularity of its course; the rash usually starts in the hairy scalp in the form of a desquamating pityriasis

and spreads downwards. (2) It does not extend beyond the lower limits of the trunk. (3) It selects certain predilection places, such as behind the ears, the edges of the hair on the forehead, and so on. (4) Each eruption shows a marked tendency to heal centrally and to spread serpiginously. The so-called early type is characterized by yellowing of the skin, by the formation of fatty scabs (crusta sebacea), and by the fine desquamation. The mature type (*Höhetypen*) are described as red or reddish yellow circumscribed plaques, which desquamate slightly, have a fatty appearance, and occupy an area of up to a crown-piece. Unna regarded acnea rosacea as a form of eczema seborrhoicum. Dermatitis eczematoides infectiosa is a circumscribed desquamating eruption, consisting of asymmetrical areas of vesicles with sharply-defined edges of undermined and cracked epidermis. Fresh plaques appear as a result of autoinoculation. It is caused by *Staphylococcus albus* or *S. aureus*. Eczema marginatum is not a true eczema. It is caused by the *Epidermóphyton inguinale*, and thus is not a true trichophytic affection either. Turning to the advances in treatment, he states that to-day the Roentgen treatment of chronic eczema—acute eczema may not be treated in this way—is the surest, best, and most pleasant. Many obstinate cases also yield to the employment of the quartz lamp which prove intractable to all other therapeutic agents. Good results are at times obtained in the eczema of children with hot air treatment. But, in spite of these advances, the medicamentous treatment of eczema is still required. Lenigallol will be found of great value in all forms of eczema save the quite acute. Even for infants ¼ to 5 per cent. ointments may be used. He warns the practitioner that after a time the skin becomes stained black. When much itching is present, tumenol ammonium will be found of use; it is used in from 5 to 10 per cent. mixtures. The author does not approve of tar baths, but points out that Lassar applied a spirituous solution of tar to the affected areas, and after this had dried the patient was given a hot bath. The tar mixture used is as follows: O. Rusci, ol. fagi, āā 40 grams, O. olivarum, spiritus dilutus, āā 10 grams. During recent times the old coal-tar preparations have again been taken up instead of wood-tar preparations. Crude coal-tar is very little irritating, and yields excellent results in chronic and occupation eczemata, and, indeed, in some cases of acute eczema. Alexander gives the formula of Baissado's "Baume," which, he states, is mild and exceedingly valuable for subacute and obstinate forms of eczema. It is as follows:

Ol. lithentracis	18.0	gram.
Ol. cad.	15.0	,,
Resorcini	2.0	,,
Mentholi	5.0	,,
Guaiacoli	5.0	,,
Camphorae	40.0	,,
Sulphuris	15.0	,,
Boracis	36.0	,,
Glycerini	54.0	,,
Acetoni	80.0	,,
Ol. ricini	40.0	,,
Lanolini	100.0	

The sulphur, which must be precipitated out of turpentine oil, is mixed with the tar oil, the castor oil, and the lanoline at between 125 and 130° C. in a closed vessel. The borax must be dissolved in the glycerine before it is mixed with the other constituents. In turning to the treatment of infantile eczema, he quotes Finkelstein, who gives milk bred from its salts, with additional fats, albumen, and carbohydrates. He recommends what he terms his [illegible] for the wet forms of infantile eczema. Lastly, he advises sulphur, or Unna's *unguentum reducens* for seborrhoeic eczema. The latter consists of chrysarobin, pyrogallol, resorcin, and salicylic acid in equal parts with four times the weigh of ichthyol and thirty-two times the weight of vaseline. It is wise to begin with a 2 per cent. salicylic and 5 per cent. sulphur paste, and later to employ the Unna paste. For the early types, 0.5 gram of perchloride, 4 grams each of beta naphthol, resorcin, and salicylic acid, 3 to 5 grams of castor oil, and up to 300 grams of spirit may be rubbed into the hair with good results.

169. Influence of Sea Air on the Internal Secretions.

Dogiel (*Journ. des praticiens*, xxvi, 1912) finds that sea air [illegible] the thyroid gland more than any other gland [illegible] secretion. It increases the growth of the body, [illegible] the weight at first, and afterwards [illegible]. In nervous subjects exposed to a too long [illegible] at the seaside or to a too excitable climate the weight decreases gradually and permanently. It increases the appetite, the growth of hair and nails, both of which become stronger, the action of the sebaceous glands, and the growth of teeth in backward, rachitic, or scrofulous children. In irritable, nervous subjects, sea air may produce all the symptoms met with in *formes frustes* of Basedow's disease, such as headache, excitability of the nervous system, insomnia, circulatory troubles, quickened respiration, anorexia, vomiting, diarrhoea, polyuria, and the like, what the author calls a "basedowisme marin." The suprarenal capsules may also react to the exciting influence of the seaside, and this explains the reason why the subjects of hypertension of the vascular system and atheroma very often do badly at the seaside. The author suggests that the rapid recovery of patients from the sequelae of typhoid fever and diphtheria, in which the suprarenal glands are frequently affected, at the seaside is due to the stimulation of these glands by the sea breezes. Lastly, the author believes that the sea air favourably affects the reproductive glands, as he has noticed irregular and scanty menstruation become regular and abundant.

170. Luminal.

W. Geissler (*Muench. med. Woch.*, April 23rd, 1912) reports his experience of luminal, a new hypnotic, which he strongly recommends, especially for psychiatric practice. This substance is phenyl-ethyl barbituric acid—that is, it is a substitution product of veronal, one ethyl group being replaced by a phenyl group. It melts at 170° to 172° C., is almost insoluble in cold water, but readily soluble in organic solvents and in soda solution. The sodium salt is freely soluble in water. It withstands boiling for a time, but eventually dissociates, the products of dissociation, however, being quite harmless, only not strongly hypnotic. The drug can be given by mouth or subcutaneously. Geissler points out that the dosage must vary with the strength of the patient and the symptoms which have to be combated. For women, girls, and even males from 0.2 to 0.3 gram suffices to produce sleep in such conditions as hysteria, alcoholism, neurasthenia, arterio-sclerosis. The sleep sets in after from a half to one hour, and lasts for several hours. It is not disturbed by noise; 0.4 gram is required when sleep for five or six hours is regarded as necessary. The mental condition is unaltered on the following morning, and the sleep is dreamless; 0.5 gram produces lethargy and drowsiness on the following day in weakly individuals. It acts excellently in delirium tremens, and leaves no ill effects behind. These doses can be given subcutaneously, but the action sets in about half an hour later in this case. It is in the opinion of the author of the greatest importance to possess a true hypnotic which can be given subcutaneously in mental cases. The use of luminal is excluded when immediate quiet and sleep is essential, such as in some maniacal conditions, but in cases when an hour may elapse before the sleep sets in it is invaluable. He has not known it to fail or to produce any disquieting symptoms. It does not irritate the stomach or kidneys, and, lastly, it is practically tasteless.

PATHOLOGY.

171. Inclusion Bodies in the Blood of Scarlet Fever.

Nicoll and Williams (*Arch. of Ped.*, May, 1912) studied blood smears from 51 cases of scarlet fever, together with 25 control cases, and found that 45 of the cases of scarlet fever showed the inclusion bodies previously described by Döhle in the polymorphonuclear leucocytes, while in 6 cases they were absent. The great majority of the positive cases had been ill for less than a week, while the negative cases had been ill for periods varying from eight to thirty days. Two or three blood smears were made from each case, one being stained with Manson's stain (borax methyl blue), and another with Giemsa's stain. The inclusions were found mainly in the polymorphonuclear leucocytes, and they varied in size and shape from small coccus forms to large irregular masses one-fifth the size of a red blood cell, bacillary forms being also noted. With Manson's stain the nuclei become deep blue, the cytoplasm very faint blue, and the inclusions a flat between the two, and they stand out more clearly as the cell granules stain but feebly. With Giemsa's stain the inclusions take on a delicate blue identical with that of the plastin, the nuclei being magenta. In fresh cases of scarlet fever these bodies are present in nearly every polymorphonuclear leucocyte. They were found as late as the twenty-eighth day, but in general they are found best during the first week of the disease, and a blood examination during that time will serve to differentiate scarlet fever from measles, German measles, and probably toxic eruptions.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

172. Haemorrhagic Nephritis in Congenital Syphilis.

WHILE admitting that congenital syphilis causes a great variety of renal diseases, such as parenchymatous nephritis, R. Hahn (*Deut. med. Woch.*, April 18th, 1912) considers that the frequency of haemorrhagic nephritis as a sequel to congenital syphilis is overrated, for the possibility of other factors, such as concomitant infections and metallic poisons, has not been satisfactorily excluded in many cases. In the literature on this subject he has found only two cases in which no other cause of the nephritis was demonstrable. He has, however, observed three cases in which haemorrhagic nephritis could only have been due to syphilis. In the first case, the child, who was 10 days old and breast fed, suffered from frequent green stools, emaciation, and a papular eruption involving the eyelids, eyebrows, nose, and naso-labial folds. The skin was of the colour of *café au lait*, the palms and soles were much reddened and covered with numerous red papules. There was infiltration of the lips, and the right leg was oedematous. The spleen was enlarged, and both kidneys were palpable. The urine contained a variable quantity of albumen, and a polymorphous sediment, consisting of casts, red and white blood cells, renal epithelial cells, and crystals of oxalic acid. The child, whose reaction to Wassermann's test was positive, and whose pulse was 280, grew rapidly worse, death occurring at the age of 18 days. The necropsy showed enlargement of the spleen, liver, and kidneys. On section the renal cortex was found to be diminished, and its surface blurred. The glomeruli were distended with blood or densely infiltrated with round cells. In the region adjoining the medulla they were also much atrophied. The uriniferous tubules were choked with blood, and their epithelial lining showed blurring and partial disappearance of nuclei. In the second case, the child, who was 7 days old on admission, and who died twelve days later, presented a clinical picture closely resembling that of the first case. The necropsy showed enlargement of the kidneys, the surfaces of which on section were seen to be yellowish-green, and marked with numerous punctate haemorrhages. There was nephritis, both glomerular and interstitial, and the uriniferous tubules were choked with blood, bile-stained casts, and detritus. In the third case, the child, who was 3 days old on admission, and who died two months later, was given an intramuscular injection of 0.002 gram of sublimate of mercury a day before the nephritis was observed. The author thinks, however, that the haemorrhagic nephritis was due to the congenital syphilis alone, for experience has shown that such a small quantity of mercury as that referred to above is always well tolerated. Besides, when this injection was given, oedema of the legs had already appeared, and may have been due to undetected nephritis. The necropsy, too, showed no signs of mercurial poisoning. The author comments on the early age at which haemorrhagic nephritis due to congenital syphilis appears, and he shows how this bears out the familiar observation that the severest forms of congenital syphilis appear either towards the end of fetal life or early in extrauterine life, while they subsequently become more and more rare.

173. The Blood Pressure in Early Phthisis.

SPENGEL (*Wien. klin. Rund.*, Nos. 20, 21, 22, 1912) gives the results of his studies on blood pressure in the early stages of phthisis. He recommends Gärtner's tonometer in preference to any other instrument; and he takes as the normal average blood pressure in a healthy person a column of mercury 90 to 105 mm. in height. He agrees with Igersheimer in condemning Turban's classification in phthisis, considering that it is not on the extent of lung involved, but on the intensity of the infection that the lowering of blood pressure and also the prognosis depend. A prolonged examination of fifty patients, all in an early stage of phthisis, convinced him that even at the commencement of the disease the blood pressure is constantly lowered. The mean of many observations showed an average pressure of from 57 to 87 mm., subject to daily variations of 10 to 35 mm. from disturbances due to meals, emotion, fatigue, etc. These daily variations are greater than they would be in health, and different in character. Thus, whereas in a healthy person the effect of a meal is to raise the blood pressure, the writer found that in his phthisical patients the pressure was thereby lowered. The normal effect of exercise, according to numerous observers, is to lower the blood pressure, although great fatigue is found to raise it; but in phthisis the author found the reverse to be the case—that is, both exercise and emotional excitement produced a rise in pressure, unless they induced fatigue, in which case a fall was noticed. Coughing produces a very marked temporary rise in pressure. Concomitantly with the lowering of the arterial pressure there is an acceleration of the pulse-rate, and these two phenomena become more marked as the disease advances. A rise of pressure in the course of the disease may therefore be regarded as of good omen in prognosis. The author found a higher average pressure in women than in men, and in young patients than in old. As to the cause of this lowering of pressure, the author refers to the fact that the heart is often abnormally small in phthisis, and is sometimes affected by "brown atrophy," but he does not attribute the disturbance in the circulation to this. He agrees rather with Burkhardt, who considers the tuberculous virus to be responsible both for the acceleration of the pulse and for the degeneration of the heart muscle; and with Geisböck, who found in a series of cases that, after an injection of old tuberculin, the pressure fell sometimes as much as 40 mm. of mercury, whether the temperature was raised by the injection or not.

174. Atypical Basedow's Disease.

T. W. LANGELAAN (*Neurol. Centralbl.*, May 1st, 1912) observed a number of atypical cases of morbus basedowii, such as the "formes frustes" described by Stern and Charcot. The thyroid gland was only slightly enlarged, exophthalmos was very slight and sometimes absent, but the cardio-vascular symptoms very pronounced. The patients show signs of depression, and are easily tired, and show loss of flesh. The affection is found chiefly in females from 15 to 25 years, or again from 35 to 45 years, and in this second period the patients are more often married women with domestic troubles. The writer does not agree with Stern in placing this affection in a class separate from the typical cases of morbus basedowii. He thinks they both belong to the same order, and are the outcome of some disturbance in the secretion of the thyroid gland or hypophysis. He considers the "forme fruste" or atypical form most amenable to treatment.

SURGERY.

175. "Electrolytic Detersion" in Chronic Urethritis.

FOR the treatment of chronic urethritis Roncayrol (*Wien. med. Woch.*, No. 21, 1912) recommends the combination of electrical treatment with dilatation and massage of the urethra. The instrument he uses is a hollow staff about 9¼ in. long, slightly curved near the end. The curve is intended to facilitate its passage through the membranous portion of the urethra, and also to enable pressure to be made more easily on the urethral wall. A deep groove with rounded edges run round it in a close spiral. The groove serves as a channel for the return flow when the bladder is washed out, while its projecting margins facilitate the process of massaging the urethra. At the distal end are four small openings, through which fluid may pass into the bladder; while the proximal end is fitted with a nozzle for an irrigating tube, and with a lateral connexion for an electric wire. The technique is simple. First, the bladder is filled with an antiseptic fluid, preferably a solution of protargol or some other silver salt which is not liable to decomposition into poisonous substances by electrolysis. A zinc plate connected with the positive pole is placed on the patient's thigh, and the negative pole is connected with the handle of the instrument which has previously been introduced into the urethra. The current is then passed; its strength, depending on the calibre of the instrument, should vary between 7 and 20 milliampères. The staff is next gently moved in and out with the right hand, while the left makes gentle pressure first on the roof, then on the floor and

sides of the urethra. After the anterior portion has been massaged in this way for three minutes, the posterior portion is similarly treated for two minutes longer. The bladder is then well washed out, the galvanic current and the massage of the urethra being continued the whole time. Finally, the instrument is withdrawn, and the patient empties his bladder himself. Examination with the urethroscope before the treatment shows that the mucous membrane of the urethra varies in colour according to the nature and distribution of the lesions, and the mouths of the urethral glands, being blocked with secretion, are invisible. Immediately after the treatment the mucous membrane becomes of a uniform red colour, and the mouths of the glands and lacunae appear as small punctiform openings, the secretion they contained having been squeezed out by the finger massage and by the projections on the surface of the instrument as it moved to and fro. It is claimed that the antiseptic lotion returning by the spiral groove brings a transverse stream to bear on the infected lacunae, thus reaching even those close to a stricture. The galvanic current not only removes the previous tenderness, but renders the whole operation almost painless. The writer states that even after the first application of the treatment all the symptoms are usually much relieved. The duration of the whole treatment must depend on the site and depth of the lesions, on the nature of the infection, and on the general condition of the patient. It is not to be regarded as a substitute for dilatation, but is to be used in conjunction with it, the best plan being to use the two methods alternately. The author claims that by his treatment the tenderness of the urethra is quickly removed and the urethral glands cleansed, the infiltrated mucous membrane is rendered soft, and difficult strictures are made passable. The duration of the whole treatment of chronic urethritis is thus considerably shortened.

176. Pneumococcal Peritonitis in Children.

SEYMOUR BARLING (*Pediatrics*, May, 1912), from a study of 28 cases of pneumococcal peritonitis in children, and from the notes of 216 cases reported by other observers, found that the incidence of the condition was greater in the female than in the male, being 73 per cent. to 27 per cent. respectively. The condition is from the outset widespread and diffuse, there being an almost simultaneous infection of the whole peritoneal cavity, so that it must be regarded as a septicaemic manifestation rather than an invasion through any particular route, such as the Fallopian tubes or the gastro-intestinal tract. In many, but not all, cases the lungs are first attacked, thus providing a focus from which the septicaemia and peritoneal invasion results. From experimental inoculation of animals with the pneumococcus the lesion produced is found to depend upon the natural resistance of the animal, the more immune developing an acute local reaction at the site of inoculation, while the more susceptible develop a general septicaemia. Three clinical types may be recognized, namely: (1) Very acute cases with marked abdominal features from the outset, but with no other pneumococcal lesion either in the lungs or elsewhere; (2) cases which, simultaneously with the peritonitis, develop a pneumonia; and (3) cases in which the septicaemia is more chronic in type, in which some time previously a pneumonia has been present followed by general ill health and empyema, and finally peritoneal infection. These latter cases are most suitable for vaccine treatment. Severe general abdominal pain, [illegible], and diarrhoea are the three most constant [illegible], accompanied by fever, and a tender rigid abdomen becoming most marked in the lower part, and often in the right iliac fossa. Since in pneumococcal peritonitis the condition is septicaemic from the first, incision and drainage will in many cases fail to relieve, and the mortality will always be high. Incisions should be made in both flanks and in the middle line above the pubes, and tubes placed in the pelvis and loins. No wiping [illegible] should be done, and the patient should be put back to bed in the Fowler position as soon as possible. [illegible] should be given continuously per rectum, [illegible]ly, and nothing by the mouth except [illegible]. Autogenous vaccines should be the routine [illegible]ment in all very chronic cases with residual [illegible] pleura, peritoneum, or elsewhere, as their [illegible] cases has been attended with considerable success.

177. Oxyuris and Trichocephalus Appendicitis.

CECIL AND BUCKLEY (*Amer. Journ. of Med. Sciences*, June, 1912) endeavour to identify parasitic appendicitis as a [illegible] having its own etiology, pathology, and symptomatology. *Oxyuris vermicularis* and *Trichocephalus trichiura* only are considered in this connexion, since they are the two parasites most frequently associated therewith, and the lesions and symptoms they produce are, in a general way, similar. Of 148 unselected appendices in children, aged between 2 and 15 years, 129 were clinical, and 19 autopsy cases; 15 per cent. of the 129 clinical cases contained either oxyuris or trichocephalus; 89 of the series were gangrenous or suppurative in type, parasites being only found four times, or in a fraction over 4 per cent., while in the remaining non-suppurative cases parasites were found fifteen times, or in about 38 per cent. In the 19 autopsy cases worms occurred in 15 per cent. Females preponderated in the proportion two to one. Pathologically a catarrhal type of inflammation is present with punctures and ulceration of the mucosa by the parasites, which can by their own action, irrespective of bacterial invasion, set up the specific lesions in the appendix. Of the non-suppurative cases it is possible in a certain number prior to operation to make a positive diagnosis of appendicitis due to worms, the character of the pain being sometimes distinctive as a gnawing, scratching, itching sensation in the right lower quadrant of the abdomen. Frequently the pain is out of all proportion to the objective symptoms, the attacks being characterized by an exaggeration of subjective symptoms with comparative absence of physical signs. Both superficial and deep tenderness are acute, while true rigidity is so often absent as to constitute an important sign of differentiation from non-parasitic appendicitis. In some instances the parasites or their ova may be demonstrated in the faeces. The ideal treatment is appendectomy, whereby the patient is relieved of an ever-present menace to health, since, although there appears from a study of cases to be a considerable margin of safety in medical treatment, it is impossible to be certain that a worm has initiated the disease even after finding the parasite in the stools.

OBSTETRICS.

178. Criminal Abortion and Tubal Pregnancy.

Ectopic gestation is known to be a by no means rare complication following conception, whilst criminal abortion is unfortunately a common offence in civilized countries. Neugebauer, and more recently Knoop of Duisburg (*Zentralbl. f. Gynäk.*, No. 14, 1912), have endeavoured to collect literary records of attempted abortion, and of suspicious poisoning, associated with ectopic gestation. For professional reasons the question is manifestly important, but additional interest has been taken of late by German doctors owing to some prosecutions in criminal courts for the offence of using unlawful means for an unlawful object. Last year a girl was sentenced to seven weeks' imprisonment for taking a drug with the object of producing abortion, the man who sold it getting one month's imprisonment. The girl went under operation, Knoop removing a left tubal sac. The patient talked about her case, letting out the fact that she had read in a newspaper an advertisement about medicine to cure "stoppages," and purchased a drug in consequence. She took it, and a show of blood followed, but it was accompanied with severe pain, and so she was obliged to seek hospital relief. Knoop found the tubal sac had reached the fourth week of development, and there was an extensive haematocele. The mixture which the patient had taken was found to contain all sorts of vegetable compounds, but especially scillin in large proportions. The mixture itself was a fluid bottled and sold under the name of "Mixal." The patient's indiscreet talk led to judicial proceedings, with the result already chronicled above. Gnerdyikoff's case was reported by Neugebauer. Mainzer published in 1908 a case of the same class but of a different variety, equally important. A knitting-needle was thrust into the broad ligament, the patient no doubt believing herself to be normally pregnant. Abdominal section was performed and a remarkable complication detected. The pregnancy was tubal, yet the sac had not been perforated, for the needle had been thrust into the broad ligament on the opposite side, with the result that a haematocele had developed. This type of the complication in question is easily understood; indeed, it is remarkable that more tubal sacs have not been ruptured in unlawful operations. The first case here noted is more subtle. Can a drug readily cause the rupture of a gestation sac developed in the Fallopian tube? The frequency of tubal gestation is associated with the same subject. Is it true that tubal gestation only seems commoner than it was once because it is better understood? May it not be really commoner than it was in the last generation?

If the latter be the case, is the increased frequency to be ascribed to the increased use of checks on impregnation? Or does it not rather represent some degenerative change, some reversion to an original type where, as in the lower mammals, the uterus proper extends nearer to the ostium abdominale? The mucosa of the Fallopian tube undergoes decidual reaction as well as the endometrium, so that an impregnated ovum or zoösperm becomes arrested and embedded in the tubal wall.

179. Paralysis Agitans and Parturition.

BONNET-LABORDERIE (*Bull. de la Soc. l'Obstét. et de Gyn. de Paris*, May, 1912) notes that as Parkinson's disease, or paralysis agitans, is a disorder of elderly subjects, and represents impaired vitality and grave constitutional lesions, it is rarely associated with conception and pregnancy. He reports, however, a typical case under observation in the Maternity Hospital, Lille, a patient of Delassus. She was a single woman, aged 41, subject for over four years to Parkinson's disease, which had assumed an aggravated form. Gestation proceeded naturally, with but little nausea and vomiting; yet it was the first pregnancy, and there was no history of pelvic disease. On the other hand, the nervous disorder was grave. The patient was reduced to impotence; she had to be dressed and fed, she could only walk a few steps, and her speech was hardly intelligible, yet the mental condition was almost normal; her replies to questions, when they could be understood, were found to be sensible and precise. The nerve disorder grew perceptibly worse. Delivery occurred at term. After a few painless contractions the membranes ruptured spontaneously. Then they grew less and less. The pelvis was capacious, the vertex presented in the right occipito-anterior position. No less than five days after the rupture of the membranes the pains came on again, and they grew strong and frequent, and the patient, aroused from her habitual torpor, bore down vigorously. She even had to be warned against straining too much. After the pains had continued for eleven hours and a half, a living male fetus was expelled, over 7¾ lb. in weight, and 19¾ in. in length. The placenta followed spontaneously twenty minutes later: it weighed 460 grams, or just over 1 lb. The puerperium was uncomplicated, but hardly a drop of milk was secreted by the mammae. The child left the maternity hospital in good health. Bonnet-Laborderie observes that although this senile primipara was subject to a formidable nervous disease already advanced, and though the waters came away early, this first delivery was quite unlike what might have been expected. It resembled the labour of a vigorous, physically brave young woman. She contracted her abdominal muscles actively during the final pains. Thus in paralysis agitans there is no true paralysis or paresis of the muscles. Voluntary movements can be effected whenever the patient chooses to make a sufficient effort.

GYNAECOLOGY.

180. Treatment of the Climacterium

IN addition to a general survey of the treatment of the climacterium, Jung (*Deut. med. Woch.*, April 11th, 1912) reviews special features which require detailed scrutiny. He combats the view that the discomforts of the climacterium are merely the outcome of a psycho-neurotic temperament, although neurasthenics undoubtedly suffer more than others at this time. He also deprecates the passive attitude of those physicians whose treatment consists of consoling their patients with the reflection that unpleasant symptoms will pass with time. Treatment must be directed to symptoms only, for the removal of their cause is obviously impossible. For such common symptoms as irritability, depression, and insomnia, the wet pack applied for two hours in the evening is often useful, as are also spongings in the morning, followed by one or two hours in bed. Attempts have been made to substitute hormones from sheep's ovaries for the corresponding bodies, the diminution in which has presumably caused climacteric symptoms in women. These substitutes—sold as "oophorin," "ovarin," "ovaradentiferrin," etc.—were hailed with enthusiasm by many, but the author is sceptical, and he discontinues the use of oophorin if 100 tablets have produced no effect. During the climacterium senile colpitis may be troublesome, owing to the passage of the vaginal flora through the atrophied squamous epithelium to the underlying connective tissue. This process markedly affects the vaginal crypts, which on the passage of a speculum appear as disseminated red spots. The vagina discharges watery mucus so copiously that the external genitals are soaked, and violent itching and even pruritus vulvae are provoked. After diabetes has been excluded as a possible cause of this condition, local treatment should be prescribed. The most scrupulous cleanliness is essential. Frequent, but not too hot, hip baths should be followed by careful drying of the genitals, which may be dusted with rice powder. The vagina requires treatment with astringents such as pure acetic acid, half an ounce of which in a litre of lukewarm water should be used by the patient once or twice a day as a vaginal douche. A circular speculum may also be passed into the vagina and filled with pure acetic acid. The speculum is now slowly withdrawn, the acetic acid meanwhile coming in contact with the distended vaginal walls. Care must be taken to remove all excess of acid lest the external genitals be cauterized. Under this treatment the most troublesome symptoms of colpitis usually disappear quickly, but complete recovery takes considerable time, and relapses are frequent. While in a large proportion of women the menses diminish gradually in quantity and frequency, they become more profuse and frequent in some cases, and there may even be an interval of only eight days between each haemorrhage. This condition may cause severe anaemia ending in death, which seldom occurs under modern treatment. The uterus in such cases is either enlarged and firm, or it is small and flabby. To distinguish between this condition and that which arises from cancer, the only satisfactory test is a microscopic examination of the scrapings, taken with a curette, from the interior of the uterus; for the bimanual examination of the uterus is totally inadequate. Exploratory curettage is all the more valuable, as it frequently cures the haemorrhage of the climacterium, or reduces it appreciably. The presence of cancer being excluded, a host of remedies are available, none of which is certain to cure every case. The fluid extract of hydrastis canadensis in doses of 20 to 30 minims, or 0.05 gram of stypticin may be given thrice daily. When these and allied drugs have failed, tampons have been tried, but they are only of temporary assistance. After the failure of all other remedies, extirpation of the uterus may be necessary, particularly among the working classes, where invalidity means starvation. The mortality of this operation is only 1 to 2 per cent. Latterly the climacterium has been hastened by exposures to the *x* rays. This procedure is, in the writer's experience, very effective between the ages of 40 and 50, and is calculated largely to displace the extirpation of the uterus except when an immediate arrest of haemorrhage and restoration to health are imperative. Cystitis often arises during the climacterium, but its connexion with this condition is obscure. In spite of careful treatment it may become chronic.

THERAPEUTICS.

181. Spinal Anaesthesia with Novocain.

G. ANDREI (*Rivista Ospedaliera*, Rome, 1912. II, 385) discusses the influence of spinal anaesthesia on the functions of the kidneys. He quotes authors who have recommended spinal in preference to general (ether, chloroform) anaesthesia, mainly because the injection of stovaine into the arachnoid space does not in any way affect the kidneys. In 100 hernia patients operated on in spinal anaesthesia (stovaine) Pandolfini observed no case of albuminuria; Angeletti found it 4 times in 360 patients; Sagghini 2 in 143; Bazzocchi 2 in 150; but Schwarz in Berlin found evidence of renal mischief in 47 out of 60 patients, albumen or casts or both appearing in the urine from four hours to two or three days after the spinal anaesthetization. These urinary changes lasting four or five days, in one case three weeks. Schwarz believed a slight nephritis to have been caused in 28 patients (20 with casts, 8 with casts and albuminuria), a more marked nephritis in 15, a grave nephritis in 4. In 350 cases of disease of the urinary passages Di Favento, using 8 cg. of stovaine in long cases, 4 cg. in brief, did not find evidence of a nephritis caused by the spinal anaesthesia in a single instance. Nasetti in 67 patients failed to produce spinal anaesthesia in 4: these were then given chloroform, and 2 of them developed albuminuria and passed casts; of the other 63, 3 exhibited a slight degree of albuminuria within twenty-four hours. The author has had experience of 50 cases of spinal anaesthesia in patients aged 18 to 77, using 12 to 15 cg. of

novocain C in 5 per cent. solution with suprarenin (of Meister, Lucius, and Brüning). The anaesthesia appeared in seven to ten minutes, lasted for about two hours, and failed once only. Micturition within ten hours followed in 40 cases, the catheter was used for one day in 8, for three and four days in 2. The operations were mostly for hernia. Albuminuria up to 1 part in 1.000 occurred in 18 patients, usually lasting three days; in an arterio-sclerotic woman of 77 it lasted eight days. In 10 cases granular and hyaline casts were seen, in 2 renal epithelial cells, in 4 a number of red blood corpuscles. The author thinks that such phenomena are not really signs of danger, and may be neglected. His anaesthetizing solution was put up in ordinary glass bottles, autoclaved at 120° C., and retained its anaesthetizing properties unaltered for twenty days. His patients showed few disturbing symptoms after the injection—transient attempts at vomiting in 3 per cent., slight frontal headache in 5 per cent.; a moderate degree of meteorism forty-eight hours later was common.

182. Accidents after Salvarsan and Neo-Salvarsan.

Gaucher (*Ann. des mal. ven.*, July, 1912) reports further toxic effects, some of them fatal, not only after salvarsan, but also after neo-salvarsan. The cases are as follows: (1) Vertigo, headache, and unilateral deafness three months after three injections of salvarsan; after four injections of calomel the vertigo disappeared, but the deafness and headache remained. (2) Another case of unilateral deafness three months after three injections of salvarsan. (3) A case of death six days after the third intravenous injection of salvarsan. The patient was a young man aged 21 in robust health, and the symptoms were retention of urine and coma. (4) Retention of urine, albuminuria, icterus, and uraemic symptoms, which only yielded to blood-letting, in a healthy young man of 20, who had a chancre three months previously. With regard to neo-salvarsan, Gaucher reports two cases: (1) A fatal case in a young woman, five months pregnant, who died after convulsions and coma two days after the second injection of neo-salvarsan (0.6 gram). (2) A case of paraplegia, occurring four days after an injection of neo-salvarsan in a young girl with ocular lesions due to heredo-syphilis. Gaucher considers the paraplegia due to the toxic effect of arsenic. He also reports several cases of severe recurrences after salvarsan, including the case of a man who had chancriform ulcerations in the same place as the original chancre, followed by recurrent roseola, adenopathy, mucous patches and alopecia, five months after injections of salvarsan, and six months after the first chancre.

183. Absorption of Iodine from the Skin.

E. Herzfeld and J. B. Elin (*Wien. med. Klin.*, No. 9, 1912) have carried out a series of investigations as to the extent to which iodine is absorbed from the skin when free iodine, iodine in inorganic preparations, and iodine in organic preparations, respectively, are employed. In 7 cases in which 10 per cent. tincture of iodine was used iodine could be demonstrated as present in the urine, but in qualitative amounts only. Tincture of iodine mixed with glycerine gave negative results, and 7 out of 8 cases in which tincture of iodine with either lard or vaseline was used were negative. In the eighth case, in which the result was positive, 50 grams of 10 per cent. tincture of iodine with vaseline had been applied, and large vesicles, which finally went on to ulceration, had been formed. In the experiments with potassium iodide the vehicle used in making up the ointment had an apparently decisive effect upon the result. In 40 cases in which vaseline or vasogen were used the results were positive, while in nearly every case in which lanoline or lard was used the results were negative. With potassium iodide, as also with iodoform and with iothion, vaseline proved to be the best base. From 10 per cent. iodoform [illegible] vaseline, 2.58 per cent. of iodine in one case and 2.65 per cent. [illegible] in another was absorbed, while from 10 per cent. [illegible] lanoline, 10 per cent. iodoform vasogen, and 10 per cent. iodoform lard, as much as 1-per cent. of the iodine was no. in any case absorbed. Iodoform alcohol caused much skin irritation, but iodine was not absorbed from it. Iothion was tested as an organic compound of iodine. From 10 per [illegible] cent. iothion vaseline, proportions of iodine varying from 20.48 per cent. to 49.95 per cent. were absorbed in the different cases. The conclusions at which the authors arrived were that the amount of absorption of iodine from the skin is dependent upon several different factors: (1) The form in which it is applied, the best results in the author's cases being obtained from the organic compound iothion. (2) On the quantity of iodine applied. (3) Especially on the base used in making up the application, vaseline proving the best base for the purpose. (4) On the site of the application the scrotal skin appeared to be especially suited to the absorption of iodine. No regularity could be traced in the length of time in the different cases during which iodine continued to be excreted.

PATHOLOGY.

184. The Wassermann Reaction.

S. Bergel points out that, under certain circumstances, lipoid substances are capable of inducing the formation of antibodies invested with the properties of dissociating fats. These antibodies are chiefly manufactured by the mononuclear non-granulated basophile leucocytes in the lymphatic glands, spleen, etc. (*Muench. med. Woch.*, May 14th, 1912). Neuberg and Reicher have found that specific lipases only act on specific lipoids. If lecithin be injected into the pleural or peritoneal cavity in oily solution, an exudation is gained which contains numerous mononuclear cells, and which is endowed with the power of precipitating lecithin. The lipase action is especially well marked in the spleen, glands, liver, and serum. The syphilitic virus contains lipoids. In syphilis the lymphatic glands swell, a lymphocytosis occurs, the serum gains the power of splitting up fats and of precipitating lecithin. As is well known, the serum also contains an antibody directed towards the syphilitic antigen, which is the basis of Wassermann's reaction. The cerebro-spinal fluid in metasyphilitic affections also shows a marked increase of lymphocytes, is capable of splitting up fats, and gives a positive Wassermann reaction. The lipoid of the *Spirochaeta pallida* is very similar to lecithin. Within certain limits lecithin may be substituted in the reaction for the antigen. Bergel gives the details of a series of experiments which he has performed with guinea-pigs. The animals were pretreated with oily solutions or lecithin three times. An extract was made from syphilitic fetal liver with alcohol. The serum, peritoneal exudate, pleural exudate, lymphatic glandular fluid, splenic fluid, and liver were tested in the usual manner for complement deviation. A long series of tests showed that the spleen, the glands, and the liver gave the Wassermann reaction almost constantly, that the exudates also gave it frequently, and that the serum of guinea-pigs previously injected with lecithin intraperitoneally or intrapleurally also gave it, while the serum of rabbits only gave it occasionally. After discussing the details of these experiments, Bergel finds that the similarity of the lecithin action and the action of the syphilitic antigen in the Wassermann reaction is so striking that it is not unreasonable to attribute a causal relation to lecithin or lipoid in the reaction. He explains the fact that the detection of spirochaetes in the primary sore is more valuable than the Wassermann reaction at this stage, since the latter is often negative, and yet during the later stages the Wassermann reaction is more likely to lead to a correct diagnosis than the search for spirochaetes. The spirochaetes contain fats, but as long as the tissue fluids and blood do not possess fat-splitting properties, that is, as long as no specific antibody is formed the reaction must remain negative. Later, as the result of the increased production of lymphocytes and the raised activity of the lymphatic glands, the lipase content of the serum and other juices becomes increased and the reaction becomes positive. At the same time it becomes increasingly difficult to find intact spirochaetes. The Wassermann reaction would, in these circumstances, only indicate that the serum contains an antibody which is active to that form of lipoid contained in the spirochaetes or to another lipoid possessing similar qualities. In support of this view the author mentions that alcohol, ether, and chloroform deviate complement; that the serum of persons who have just been anaesthetized with ether gains this power, which was not present before; and that alcoholics who are not syphilitic often give a positive Wassermann reaction. These substances are fat solvents. Again, it has been shown that leprosy often gives a positive Wassermann reaction, and it is known that the virus of this disease contains a fatty substance, and produces a lymphocytosis. A number of other accepted facts are cited in support of his argument.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

185. Hemiathetosis.

U. Sorrentino (*Giorn. Internaz. d. Sci. Med.*, Napoli, 1912, xxxiv, 49) notes that hemiathetosis was first described in 1871 by Hammond. Sorrentino's first case, a woman of 33, had had ten children, of whom only three reached the age of 2 and only one was then living; she had had no miscarriage. In 1910 she had a weakness in the right side of the body of sudden onset, and appears to have had a hemiplegic attack with hemianaesthesia, the face not being involved. In three months she recovered fairly well, taking potassium iodide. Then one day she fell down and bruised the right wrist severely; and a month later slow athetotic movements were found in the fingers of the right hand. The reflexes of the right arm and leg were increased, sensation was everywhere normal. There was no athetosis in the right leg. The author believes that she had a cerebral haemorrhage. The second case, a girl of 9, had measles at 5 months, and at 5 years bronchopneumonia. After being three weeks in bed she had lost all pulmonary symptoms, and was got up; a right hemiplegia and aphasia suddenly came on without loss of consciousness. Some power of speech returned soon; mercurial inunctions did little good; two years later a course of injections (nature unknown) improved the child's condition much; speech was normal, and the contractions on the right side lessened. When seen by Sorrentino two years after this the child showed stiffness and weakness of the right arm and leg, with contractures and spastic paralysis that prevented thorough examination of the reflexes. Whenever movements of the right arm were attempted, slow athetotic movements of the fingers and wrist appeared in complex order; and if the patient were in bed, athetotic movements went on at the same time in the right foot and toes. Athetotic movements appeared in the right foot and toes when the patient walked. Sensation was normal; the remains of an old right facial paralysis were seen when facial movements were made. In this case an embolism, probably subcortical, was the cause of the subsequent hemiathetosis. The third patient, a healthy well-grown man of 37, had had athetosis of the right arm and leg since he was 2; the onset was said to have been sudden and causeless. The whole arm and leg were involved in very slow and exaggerated movements, very numerous and complex, with abolition of voluntary movements. These movements all lessened during sleep, but did not disappear entirely; the reflexes were increased on the right side, the muscles were a little atrophic; sensation, the sphincters, and the mental faculties were normal. Some of the athetotic movements were painful, being so exaggerated; the patient's walking was so much obstructed by forced flexion of the toes that he wished them to be amputated. In addition, he had athetosis of the right testis, a phenomenon hitherto unrecorded; the scrotum showed no corresponding contractions and relaxations. The author discusses the pathology of hemiathetosis, remarking on the slowness of the forced movements, their excessive amplitude, and the inability of the patient to control them in any way. He dismisses the view that they are irritative in origin, and connects them in some way with the nuclei of ill-known function at the base of the brain.

186. Urinary Neurasthenia.

Marsan (*Journ. des praticiens*, 1912, xxvi) finds that urinary symptoms in sufferers from urinary neurasthenia may be divided into motor and sensory. (1) Motor. (*a*) Neuropathic dysuria. The commencement of micturition is difficult. During the course of micturition the flow of urine suddenly stops and then proceeds. They cannot urinate in a public place. (*b*) Psychopathic pollakiuria. Micturition is frequent, sometimes every half-hour. (*c*) Retention. Complete retention is rare. Owing to spasm of the sphincter the bladder is badly emptied, and incomplete retention is frequent. (*d*) Incontinence. This is very rare. (2) Sensory. (*a*) Idiopathic cystalgia. Severe pains are felt in the hypogastric region, which come in crises; during the interval an uncomfortable feeling persists along the urethra. (*b*) Neuralgia of the internal pudic nerve. Pains start from the perineum, and extend the length of the urethra, giving rise to the desire to urinate, which is easy but painful. Long remissions between these crises are characteristic of this condition. Diagnosis: Exploration by a catheter or bougie reveals nothing. The symptoms usually disappear at night and occur intermittently. Treatment: When the diagnosis is made instrumentation should be avoided in cases of dysuria and pollakiuria. In the latter case the patient should be told to urinate at regular times and at gradually increasing intervals. If retention exist, the water must be drawn off with rigorous asepsis. Opium given with caution in suppositories should be employed against the neuralgia, and warm fomentations. The general health requires attention.

187. The Acidity of the Gastric Contents.

J. Grossmann finds that in analysing the function of the stomach by means of a test meal, apart from the acidity, the determination of the quantity left in the organ is of especial importance in deducing the condition of the motility. Part of what remains of the test meal can be directly regained, but part cannot be reproduced, and can only be indirectly measured (*Muench. med. Woch.*, June 4th, 1912). The disadvantages of Mathieu-Rémond's method is that the gastric contents cannot be mixed into a homogeneous suspension, and therefore the values obtained may be wrong. He has tested this in artificial mixtures, both of a clear homogeneous fluid and of a thick emulsion, and found that by the above-named method the error varied between −14 per cent. and +38 per cent. He therefore sought for a substance which would guarantee a physical intermixing of the constituents. This he found in sodium hydrate. The calculation of the remains of the test meal is made by means of the formula: $R = \frac{100v_1 + ar.v_2}{A - ar}$ when R = the remains of the meal, v = the quantity of the sodium hydrate used (expressed as $n/10$ NaOH), A = the acidity of the undiluted gastric contents, v_2 = the volume of the sodium hydrate solution and of the water washing this into the stomach, and ar = the acidity of the final mixture. The error proved in this case to vary between − 4 per cent. and + 5 per cent. He used 50 c.cm. of a $n/100$ NaOH, and washed this in with 50 c.cm. of water, so that $v_2 = 5$ c.cm. The method, he thinks, yields satisfactory results for practice.

188. Symptoms of Cerebellar Affections.

Babinski (*Journ. des praticiens*, 1912, xxvi) divides cerebellar symptoms into four groups: (1) Excessive movements. (2) Asynergia or anasynergia. (3) Adiadococinesis. Diadococinesis is the faculty of producing instantaneous arrest of a movement and executing another rapidly; the absence of this power is called adiadococinesis. This latter may be bilateral or unilateral, and if the latter, is situated on the same side as the lesion. (4) Catalepsy. The patient for an indefinite time presents certain attitudes difficult for other subjects to maintain.

189. Banti's Disease in Women.

Pernet (*Zentralbl. f. Gynäk.*, No. 26, 1912) recently reported before the Obstetrical Society of Berlin an instance of splenic tumour which simulated a fibroid or an ovarian new growth. The patient was slenderly built and anaemic; she was 23 years old, and had borne one child two years before she came under Pernet's observation. During the first week of the puerperium a tumour was detected lying between the left ribs and the groin. In the course of two years it gradually increased in size and sank down until it came to lie on the left of the uterus, pressing down into the anterior vaginal fornix. On careful study of the history of the patient enlarged spleen was correctly diagnosed, for it was found that there had been progressive emaciation, pallor, and debility during the last months before the operation. The spleen was removed and the patient made a speedy recovery. At the operation it was found that the liver was enlarged and the peritoneal cavity contained nearly two pints of serum. After the operation the patient gained flesh rapidly, the hepatic swelling diminished, the proportion of haemoglobin in the blood increased, and the patient grew stronger. Sections of the spleen showed hyperplasia of the connective tissue and sclerosis of the vessels without any trace of a new growth. Hence Pernet considered that the splenic enlargement

represented Banti's disease, where cirrhosis of the liver, splenic anaemia, and ascites are combined. In discussion this diagnosis was doubted. The haemoglobin was not so low in proportion nor the blood count so scanty as is the case in Banti's disease.

SURGERY.

190. Conservative Treatment of Giant-cell Sarcoma.

BLOODGOOD (*Annals of Surgery*, August, 1912) says that the ultimate results of the cases of periosteal and medullary giant-cell sarcoma, which he has observed personally, and similar records which he has been able to collect from the literature, confirm the conclusion reached many years ago—that conservative treatment is justifiable for this disease. But many surgeons still hesitate to treat it by any method except amputation, while others prefer a wide resection to curetting. He has made a thorough study of 26 cases of giant-cells sarcomas, of which 3 were periosteal and the remainder medullary, and has arrived at some quite definite conclusions which go to prove that this disease is only locally malignant and can be treated successfully by local measures. He believes in the direct relationship of trauma and bone sarcoma. Contusions of bones and joints should be looked at with a more critical eye and *x*-ray examination should be made if symptoms resulting from injury do not disappear rapidly. This is the only means of recognizing the more malignant types of bone sarcoma at an early period. All his 26 cases of giant-cell sarcoma of bone, and all the cases collected from literature, are still living. Up to the present time there is no proof that metastasis of pure giant-cell sarcoma ever takes place. Curetting should in some localizations of the tumour be the operation of choice, but in these situations where resection in continuity does not interfere with function, resection becomes the operation of choice—for example, lower end of ulna, upper end of fibula. Curetting is always justifiable in the first attempt in any situation. Among 26 cases subjected to curetting, there were 9 in which no recurrence took place and 5 recurrences; 1 has remained well after second curetting, 3 after resection, and 1 after amputation; 22 cases were operated on by primary resection, 1 recurred and was cured by amputation. After curetting a resection the wound should be disinfected with pure carbolic acid followed by alcohol or zinc chloride solution. Bone transplantation may be called for, but it is not necessary unless a single bone-like humerus be divided in its continuity. Transplantation of bone may be done directly into cavity left after curetting. The bone may be obtained by splitting the bone which has been resected or by removing pieces from the tibia. Diagnosis is difficult as between sarcoma and bone cyst. The positive diagnosis can be made only by exploratory incision; the giant-cell sarcoma is recognized by its red vascular granulation tissue-like appearance. The giant-cell tumour may have white areas of ostitis fibrosa and the latter may have red giant-cell areas. Bone aneurysm is very rare and giant cells are not found in its wall. The term "sarcoma" as applied to the giant cell variety of tumour should be dropped. There may be some relationship between benign bone cysts, ostitis fibrosa, and this giant-cell tumour. The two former are regarded as inflammatory in origin; the last may be a further stage in the same pathological process. The paper is fully illustrated with *x*-ray photographs.

191. Surgical Treatment of Basedow's Disease.

A. BELAWSKI (*Wien. klin. Woch.*, No. 25, 1912) has been led to try surgical treatment of Basedow's disease from observation of the poor results which followed internal treatment. He describes 3 cases treated surgically—2 from his own clinic, 1 from that of Dr. W. Szteyner. The first case was one of five years' duration in a woman 34 years of age. On admission the case was recognized as being of the severe relapsing form in the stage of highest development; the whole series of characteristic symptoms was present, and there was the added complication of mitral regurgitation. Treatment on ordinary lines was carried out for two months without effect. Drug treatment was particularly difficult because the patient suffered from uncontrollable vomiting. The patient lost weight rapidly. At the end of about a month the patellar reflex disappeared and the muscles ceased to react to the faradic current, apparently as the result of a neuritis; the patient could no longer stand. Operation was finally decided upon when laryngeal symptoms developed and the larynx was found to be compressed by the growth. The four thyroid arteries were tied, and a considerable part of the gland resected on both sides under local anaesthesia. The wound healed by first intention. When the patient returned to the medical clinic ten days after the operation the general condition was better and the psychical condition much better than before; the temperature, which had been previously almost constantly raised, was now afebrile, the pulse 108 or less, the exophthalmos was greatly diminished, and von Graefe's sign less marked. Under treatment the patient began to put on weight and the neuritis to improve. The size of the thyroid tended to increase during the last weeks of her stay in hospital. She was seen again nine months later; she had then gone up to 170 lb. in weight; she felt well and was able to walk about in her house for hours. Of the symptoms there remained exophthalmos of slight grade, Stellwag's symptom, a pulse-rate which varied from 84 to 108, occasional attacks of sweating and diarrhoea, a gait which though improved was not absolutely normal, and very weak patellar reflexes. The thyroid had increased in size since the operation. The next case was in a patient 39 years of age, was of three years' duration, and of such severity that for some months the patient had been incapacitated from work. Operation was decided upon at the patient's own wish after she had been treated on ordinary lines for six weeks. Chloroform was administered and a large part of the thyroid removed. Fifteen months after the operation the patient presented herself for inspection. Her condition throughout the whole period had been good, except that three weeks previously she had sickened, according to her own account, with diphtheria. The remains of the thyroid gland had not increased in size. The pulse was 90. Exophthalmos was somewhat more marked than shortly after the operation and von Graefe's and Stellwag's symptoms were present. The body weight had gone down 5½ lb. In this case there had been no relapse, though there was a deterioration in the general condition, perhaps as a result of the recent illness. In the third case reported the patient felt well a year after the operation, the pulse frequency varied between 76 and 90, and only the exophthalmos showed the nature of the previous illness. The author has had three other cases treated surgically, but, though the results appear to be favourable, they are still too recent to be of conclusive value. The cases described illustrate both the good and bad points in surgical treatment. On the one hand operation removes the worst symptoms in the minimum times and proves useful in the most inveterate cases when all other treatment has failed. On the other hand, traces of the illness are left behind and point to the possibility of the relapse, while the parts of the thyroid gland left after the operation may regenerate and functionate abnormally. Kocher, who emphasizes the possibility of the occurrence of relapse, holds that a second operation is indicated if the thyroid gland increases again after the first operation, and he has usually found the second operation to lead to permanent recovery. The author suggests that the advisability of operation ought undoubtedly to be considered if a first attack does not begin to yield to internal treatment, say, after a period of three weeks, or if a second attack occurs. The author adds a note on a report by Arthur W. Meyer on 8 cases treated surgically, which appeared after his own article was ready for publication. The results in these 8 cases were favourable, rapid, and permanent. Less favourable results are, as a rule, the effect of removal of too small a portion of the gland, and a second operation will often improve the result.

192. The Use of Gelatine to Check Suppuration.

WHILE giving gelatine for its haemostatic effect on flabby granulations in patients debilitated by severe chronic suppuration, Michl (*Wien. med. Woch.*, No. 26, 1912) noticed that it had certain other effects hitherto unpublished. He found that a few days after a dose of gelatine had been given the general condition of the patient rapidly improved, the temperature fell, the secretion grew less, and the granulations became firmer. During the past three years he has given gelatine with evident good results in various suppurative processes, such as pyaemia and thrombo-phlebitis. He has also used it successfully for pyaemic symptoms in paratyphoid fever, for intestinal haemorrhage in typhoid fever, and in a case of puerperal endometritis. As a prophylactic measure he recommends its administration before operations in any case in which a tendency to haemorrhage is to be feared (as in haemophilia or in tonsillectomy) or in which wound infection is probable (that is, in compound fractures). The method is

simple: He has a jelly made of about ½ oz. of gelatine (Merck's), flavoured with sugar and lemon, and given to the patient in the course of the day. Usually he adds collargol in the proportion of 1 part to 10 of gelatine. He thinks that a trial of this simple remedy, particularly in puerperal septicaemia, will bring conviction of its value.

OBSTETRICS.

193. Conservative Treatment of Eclampsia.

COMPARING the statistics of expectant treatment with those of operative interference in eclampsia, Steiger (*Correspondenz Blatt.*, No. 17, 1912) notes that in the latter the mortality ranges from 5 to 30 per cent. The lower figure refers only to cases treated under the most favourable conditions, such as early delivery with hospital facilities; whereas by the conservative method in a series of 700 cases in all stages Stroganoff had a mortality of only 7 per cent., and Tweedy in 66 cases a mortality of 9 per cent. The main features of the conservative treatment are: (1) Delivery as soon as the os is sufficiently dilated. But mechanical dilatation, high forceps, or Caesarean section are not recommended. (2) Avoidance of increased metabolism by means of a starvation diet, washing out the stomach, and the administration of morphine. (3) Promotion of excretion. The lower bowel should be well washed out, and an infusion with a solution of sodium carbonate (in preference to the chloride) given to promote diuresis. Bleeding and excessive sweating should be avoided on account of their depressing effect on the circulation. (4) Symptomatic treatment. Chloroform and chloral hydrate have a good influence both on the attack and also on metabolism by checking muscular cramps and hindering cerebral exhaustion, but, owing to their depressing effect on the heart, Steiger prefers to use full doses of morphine combined with atropine. When the stomach and lower bowel have been well washed out with warm water (of which a pint or so should be left in the stomach together with a dose of castor oil), and when morphine has been given and fomentations (not too hot, as the skin in eclampsia is easily blistered) have been applied over the loins, there remains nothing much to be done but to wait. The patient should lie in a dark, quiet room, and, if she remain unconscious, an infusion of solution of sodium carbonate should be given subcutaneously and repeated if necessary in twelve hours. Artificial respiration may be necessary, and measures should always be taken to prevent the saliva from collecting in the back of the throat and trickling down the trachea. After the birth of the child the spasms usually subside, but in every case the patient should be strictly dieted until the urine has been free from albumen for at least a week. This method is recommended to the general practitioner for its simplicity and satisfactory results. No apparatus is necessary except a stomach tube, which can also be used, if necessary, for the bowel; an infusion apparatus, midwifery forceps, and morphine and a hypodermic syringe.

GYNAECOLOGY.

193. Cancer of Cervix in Girl aged 18: Hysterectomy.

DE ROUVILLE (*Bull. de la Soc. d'Obstét. et de Gynéc. de Paris*, April, 1912) was consulted at the end of March, 1911, by a girl, aged 18, who was subject to free fetid leucorrhoeal discharge and irregular haemorrhages for about six months. Hypogastric pains had been present for about eight weeks. The patient appeared already very cachectic. There was no characteristic family history. The periods began at the age of 14, and were quite regular. Emaciation had proceeded rapidly, and the fetor had been noticed by others. The patient had undergone much constitutional treatment, ferruginous tonics, cacodylate, hydrotherapy, etc. No tumour could be defined on abdominal palpation. The hymen was narrow. The upper part of the vagina was occupied by a cauliflower mass, which completely surrounded the os externum; it bled freely as usual. The body of the uterus was a little enlarged, but movable; the appendages could not be felt. There was high temperature. On March 24th, 1911, under lumbar anaesthesia, the fungous mass was removed by the curette. The vaginal portion of the cervix was thereby almost destroyed, and the thermo-cautery was applied to the bleeding uterus at the upper part of the vagina. The temperature continued high for several months, and De Rouville did not think it justifiable to operate under such circumstances. At last, however, the feverishness disappeared and there was no evidence of advance of the disease. On June 17th De Rouville operated, after antisepticizing the vagina with tincture of iodine. He removed with the uterus 1 in. of the upper part of the vagina, dissecting away much of the parametrium. The operation lasted one hour. When last seen, April 17th, 1912, the patient showed no sign of recurrence. She was in perfect health and had gained flesh. She slept and ate well. This case occurred at Montpellier. Gayraud, in a thesis written there in 1911, could collect only three reported cases of cancer of the cervix before the 20th year. Two patients were 19 years old (Tchopp, Eckardt) and one was a child only 8 years of age (Ganghofer, *Zeitschr. f. Heilkunde*, vol. ix, 1888, p. 337).

THERAPEUTICS.

195. Treatment of Gall Stones.

LUDWIG V. ALDOR (*Wien. klin. Woch.*, No. 18, 1912) deals with the treatment of cholelithiasis in the light of the recent investigations as to the cause of the condition. The experimental and pathological investigations of Aschoff and Backmeister have awakened widespread interest. These workers, while they agree with Naunyn in the view that infection of the gall passages is a necessary factor in the production of symptoms of gall stones, differ from him in that they hold that in the majority of cases a non-inflammatory stone formation precedes the inflammatory process. They find also that gall stones may be formed in different ways according to their different composition, and that while the pigmented stones of salts of lime are the result of an infectious inflammatory process, the radiating cholesterin stone which always appears as a solitary stone, is the result exclusively of stagnation of bile without any bacterial infection. They show conclusively that cholesterin may crystallize out of stagnant bile in the absence of bacteria, and that the chief mass of the cholesterin which goes to make up the stone is formed from the bile itself and not from the epithelium of the gall bladder. While prophylactic treatment appears to be more of a hopeful possibility on Aschoff and Backmeister's theory than on Naunyn's, the fact remains that at present we have no successful prophylactic treatment. The present author does not believe that the well-known causative factors in the production of gall stones act in virtue of their tendency to cause stagnation of bile. In all his large experience he does not know of a case in which he could determine that a sedentary way of life had given rise to stagnation of bile, and he has met with gall stone disease in a strikingly large number of men and women most active in sports. Moreover, he has repeatedly seen cases in which an attack of acute cholecystitis has followed immediately upon active bodily movements. The two main causes which appear to predispose to a first attack are pregnancy and acute infectious diseases, especially gastric and intestinal catarrh. Pregnancy has been usually considered to lead to stagnation of bile from the pressure of the growing uterus, but the author points out that in more than half of his cases the attacks during pregnancy occurred during the first three or four months when pressure on the abdominal organs was insignificant, while conditions such as high-grade ascites and compression of the gall bladder by tumours do not as a rule give rise to gall stone formation, and therefore mechanical pressure of the growing uterus as a cause of stagnation of bile and the formation of gall stones cannot be accepted. Aschoff and Backmeister's view appears to be the most plausible—namely, that during pregnancy the increased fat metabolism leads to an increased formation and output of cholesterin; and, further, it is probable that during pregnancy the resistance of the gall bladder to infections is diminished. The author has for many years been accustomed to forbid conception in women suffering from cholelithiasis until they have been free from symptoms for at least two years. The question of interruption of frequency can only arise in obstinate repeated attacks, when accompanying persistent vomiting prevents not only treatment but feeding. The different forms of acute and chronic gastric and intestinal catarrh play a specially important part in the causation of gall stone disease and of the chronic relapsing course often run by the cases; apart from obvious cases of such catarrh, systematic examination, as by Schmidt's method, shows that objective signs of catarrh are present in more than

half the cases, and systematic tests should never be omitted in order that prophylactic treatment directed towards the catarrh may be always undertaken if required. In treatment of the developed disease, the principle to be observed is to aim, not at the removal of the stones, but at bringing about retrogression of the inflammatory processes and latency of the disease. In the treatment of an acute attack, the author gives morphine as early as possible in doses of 0.02 to 0.03 gram combined with 0.001 gram of atropine. The atropine helps to allay the pain and to remove the side-effects of the morphine. For milder attacks suppositories of 0.02 gram pantopon and 0.02 of ext. belladonna are the most convenient remedy. With the removal of the acute symptoms treatment of the underlying inflammatory processes becomes imperative, and neglect of this is, in the author's opinion, the most usual cause of chronicity of the disease. The author has no faith in the action of the so-called cholagogues, and points out that recent knowledge tends to support the view that increased secretion of bile may cause increased stagnation of bile in the gall bladder. Winogradow's investigations show that Carlsbad waters lead to a diminished secretion of bile, and the necessity for complete rest so long as manifest cholelithiasis is present is now a recognized principle at Carlsbad, where its adoption has been followed by diminution in the number of attacks of colic occurring there. A second principle of treatment at Carlsbad is the administration of large amounts of warm fluid, which, whether or not it causes increased secretion, must lead to dilution of bile and practically almost to a washing through of the bile passages. The author also employs with excellent results injections into the intestine of large quantities of Carlsbad water at a temperature of 45° to 55° C. (113° to 131° F.). If after the injection the patient remains lying down and has warm applications to the abdomen, the injection can be retained without difficulty for as long as from one and a half to two hours, and much is absorbed. The advantages of this treatment are that per rectum a larger quantity of water can be administered than per os, more especially where the gastric condition is unsatisfactory; the tolerance of the intestinal mucous membrane to heat makes it possible to administer the water at a higher temperature per rectum, and a direct attack is made upon the intestinal catarrh. Of drugs, the author considers sodium salicylate the most useful, and also suggests borovertin (hexamethylene tetramine triborate) and ovogal. With regard to diet, the author's opinion is that of Kolisch, that it should be one which "spares" stomach, intestine, and liver. Treatment of cholelithiasis on such lines has proved very successful. The author's opinion as to surgical treatment is that the detailed enumeration of groups of indications for operation are completely illusory, and that the clinical picture in each case is the proper guide. Obstinate pain, resistance of all treatment, jaundice, fever with rigors are, in his opinion, more conclusive as to the need for operation than the special localization in the individual case.

196. Application of Neo-Salvarsan.

E. Schreiber of Magdeburg gives forcible reasons for the employment of smaller doses of neo-salvarsan than are usual and for extending the interval between the doses (*Mucnch. med. Woch.*, August 20th, 1912). Exanthemata at times appear after its application, and when this occurs it is noticed between the seventh and the twelfth day. He therefore recommends starting with 0.3 to 0.5 gram for women and 0.4 to 0.6 gram for men. If these doses are well tolerated he would gradually increase the dose, leaving an interval of fourteen days between each two injections. When the central nervous system is implicated he begins with 0.15 or, at most, 0.2 gram. In the intervals mercury can be given by one of the many methods, of which he gives the preference to inunction. The injection itself is less painful than that of old salvarsan, but in extremely sensitive patients 5 c.cm. of a ½ per cent. solution of novocain can be injected in the site of the neo-salvarsan injection, which will render it absolutely painless.

197. Treatment of Tuberculosis in Arthritics.

Rolin (*Journ. des praticiens*, xxvi, 1912) considers this subject under the following headings: (1) Connexion of tuberculosis with arthritism. The author does not believe there is any antagonism between these two conditions as far as infection is concerned, as some consider, but that tuberculosis engrafted on an arthritic constitution will proceed slowly and be relatively benign: in other words, there is an antagonism of evolution. (2) Evolution of tuberculosis in arthritics. The acute forms are less rapid. Galloping consumption takes a slower course, and the patients for some time preserve a fairly healthy appearance. The chronic forms have a greater tendency to the formation of fibrous tissue. The fibro-caseous forms are also characterized by the want of accord between the general state and the local conditions; congestive attacks are frequent; congestive attacks some distance from the tuberculous foci; the paradoxical congestion of Sabourin; a tendency to haemoptysis following errors in diet; stomach troubles; and often enlargement of the left lobe of the liver, which is slightly painful on percussion, characterizes this form. (3) Treatment: (*a*) Rest should not be absolute save in cases of fever. The periods of exercise should be followed by rest, and the former should not cause elevation of temperature or fatigue. (*b*) No raw meat or too much meat of any kind. When a tuberculous arthritic is fat, dyspnoeic, or suffers from haemoptysis, a loss of a few pounds is sometimes beneficial. Fats and sugars should be given in small amounts; alcohol is contraindicated. The best food is vegetable three parts and one part meat. (*c*) Acidum arsenicum, 2 mg. per diem, at intervals, is the best drug. Arsenic should only be given in combination where there is a depression of the general vitality. Tuberculin should be used with great caution. Marmorek's serum is only adapted to febrile cases, or in non-febrile depressed patients. Mont Dore is the best station for a cure. When the signs of arthritism have disappeared, the case should be treated as an ordinary tuberculous one.

PATHOLOGY.

198. Hermann and Perutz's Syphilis Reaction.

V. Jensen and J. Feilberg (*Berl. klin. Woch.*, June 3rd, 1912) are of opinion that certain disadvantages connected with the Wassermann reaction for syphilis render its application of limited practical value. Apart from the fact that the ingredients of the test are spoken of as "mystic," it is not always easy to obtain the serum of normal guinea-pigs, the blood cells of a sheep, the serum of a rabbit which has been pretreated with sheep blood cells and an alcoholic extract of a human syphilitic heart. Even when these ingredients are at hand, the application of the test can only be placed in the hands of an experienced laboratory worker, and the general practitioner will find it difficult to obtain results on which reliance can be placed. They are therefore inclined to advocate another method which might give good results, and for this purpose have investigated a reaction described by Hermann and Perutz, which, according to Gammeltoft, yields satisfactory results. They did not obtain any information from the serum of syphilitic rabbits, as the test proved negative in all cases, but they point out that Wassermann's test was also indefinite. They next applied it to the serum of 135 patients, 153 samples having been taken. The test consists of inactivizing the serum to be tested at 55° C. for half an hour, and to 0.4 c.cm. of this adding 0.2 c.cm. of solutions No. I and No. II. Solution No. I is 2 grams of glycocholate of sodium, 0.4 gram of cholesterin, dissolved in 100 grams of 95 per cent. alcohol. This has to be diluted with 20 parts of water before use. Solution No. II is a 2 per cent. watery solution of the glycocholate of sodium. The mixtures are then well shaken and left standing at ordinary room temperature. A characteristic separation of a flocculent precipitate indicates a positive reaction. According to the amount of this, the reaction is regarded as moderate, strong, or very strong. Of the 153 samples, 63 were taken from persons who, as far as could be ascertained, had never had syphilis. In all the reaction was negative, and in all in which a Wassermann test was applied, this was also negative. Of the 90 syphilitic samples, 30 were in a latent stage and gave a negative Wassermann reaction; they also yielded a negative Hermann-Perutz reaction. Of the remaining 60 samples, 55 gave a positive Wassermann reaction, and in the case of 5 this test was not applied; 43 of them gave a positive Hermann-Perutz test. Of the 17 which yielded a negative reaction, some gave a very weak Wassermann reaction, while in 2 the samples were taken from cases of late hereditary syphilis, which often gives a doubtful Wassermann reaction. Three patients had undergone inunction treatment. Since the Hermann-Perutz reaction when positive always corresponded to a positive Wassermann test, the authors consider that for clinical purposes this test can be carried out first, and if it be positive, the diagnosis of syphilis may be accepted in every case. If negative, it may be advisable to employ the Wassermann test, which is somewhat more delicate.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

199. Myocarditis and Paralysis of Accommodation after Wound Diphtheria.

Commenting on the rarity with which diphtheritic infection of a wound occurs in this antiseptic age, C. Saggau (*Hospitalstidende*, June 12th, 1912) reports a case in which the rarer complications of wound diphtheria—that is, myocarditis and paralysis of the accommodation—were observed. The patient, a girl of 12, was wounded by a splinter of wood being driven into her left foot. The splinter was quickly withdrawn, and the wound was covered with a plaster. On its removal a fortnight later, the wound appeared so alarming that a doctor was sent for. An ulcer had formed, its base being covered by a firmly adherent yellow membrane. The margins of the ulcer were shelving, but not swollen. Over a large area around the ulcer the epidermis was partially detached, and was undermined by thin, yellow, stinking pus. Under antiseptic treatment the ulcer slowly healed, and had almost disappeared two months after the accident. But at this stage it was noticed that the child could neither read nor write, and that large letters could be identified only when held at arm's length. Apart from the paralysis of accommodation, the eyes were normal. The functions of the soft palate were also undisturbed, but the heart was dilated, and the pulse was 132 and irregular. The ocular symptoms disappeared in three weeks without treatment, and after the systematic administration of strophanthus, the pulse-rate fell to 90, and the cardiac dilatation grew less. The microscopic examination of the ulcer was not made till the paralysis of the accommodation and the myocarditis were observed, and at this stage only a few staphylococci were found. Yet the diphtheritic nature of the ulcer is practically established, for both the complications ran a course typical of these post-diphtheritic affections, and none of the other causes of these complications existed in this case. Diphtheria of the fauces is also excluded, for the patient suffered neither from a sore throat nor from dysphagia. In 1865 two similar cases were observed by Völcker. One patient was a boy of 7, whose granulating wound of the tibia became diphtheritic. The ulceration ceased spontaneously in a month, but three weeks later paralysis of the accommodation occurred. It disappeared three weeks later under internal treatment with iron. The other patient, a girl of 7, developed diphtheria in a wound of the forehead. The paralysis of the accommodation which followed some weeks later ceased under treatment with iron and physostigmin. The paucity of similar cases in medical records may depend on the fact that till Graefe and Donders recognized this form of paralysis in 1850 it was confused with other conditions, such as amblyopia.

200. Effect of Sleep and Rest on Blood Pressure.

Brooks and Carroll (*Arch. of Intern. Med.*, August 15th, 1912), from a clinical study of the effects of sleep and rest upon blood pressure, found that in each case a more or less constant variation in blood pressure occurs, depending more on the time of observation than on other factors. In most cases observations upon individuals or groups were verified by repetition under similar conditions, the series of cases being divided into three classes: (*a*) Those having a normal systolic pressure from 110 to 170 mm. Hg; (*b*) those with a subnormal pressure below 110 mm.; and (*c*) those whose pressure was over 170 mm. The pressure was taken in each series between 4 and 5 p.m. Of sixty-eight patients with medium pressures the average basic afternoon pressure was 142.5 mm., and readings taken one or two hours after the night sleep showed an average drop of 24 mm. Three hours after the morning waking the average depression was 12 mm., from which time onwards the pressure gradually rose until the mean afternoon pressure was reached between 4 and 5 o'clock. In thirty instances of low pressure the average was 100 mm., the pressure one or two hours after primary sleep showing an average drop of 16.5 mm. The morning reading showed an average depression of 6.66 mm., with a gradual return to the general evening average. In 39 cases of high pressure averaging 204.5 mm., the average drop after primary sleep was 44.8 mm., and the morning pressure 22.8 mm. The least drop in pressure occurred in the low pressure cases, and the greatest in the high pressure cases, the preliminary drop after sleep being very rapid, and the following rise commencing during sleep and gradually ascending during the remainder of sleep and through the day up to the maximum afternoon pressure. The drop appears to be directly connected with the phenomena of sleep, since in patients prevented from sleeping the pronounced fall does not occur, although a slight fall results from the posture or rest. Attempts to procure a lower twenty-four hour pressure by prolonging or deepening the sleep were unavailing, and this sleep drop cannot as yet be used therapeutically to lower blood pressure, in spite of the fact that its effect in high blood pressure cases is more marked than that of any drug used in medicinal doses.

201. Thrombosis of Veins in Infancy.

Owing to the rarity of this condition in early life, Mensi (*Rif. Med.*, July 27th, 1912) reports the following cases: (1) A child aged 22 months, admitted March 4th, 1911, suffering from bronchopneumonia, right otorrhoea, and convulsions. Died on March 20th, 1911. *Post mortem*, there was definite thrombosis of the veins of the pia mater on the left side, and of transverse sinus more marked on the right side. No caries of the petrous bone. Thrombosis of the veins of the white matter with softening of the white matter of the antrum ovale. In the vertebral sheath there was a small quantity of blood serum and some hyperaemia of the meninges. Fibrinous coagula in the auricles, the heart otherwise normal. (2) A male child 3 days old, admitted June 22nd with jaundice and oedema of the legs; died June 30th. *Post mortem*, blood-stained fluid in the peritoneal cavity; near the end of the ileum were two reddish masses in the paravertebral region, which proved to be enlarged kidneys containing infarcts and thrombi passing into the renal veins. (3) A male child, 1 day old, admitted with jaundice and subsequent bronchopneumonia; died a fortnight later. *Post mortem*, quite recent thrombosis of both pulmonary veins. Probably the first and third cases were infective thrombosis, and by exclusion the second case was possibly due to marasmus.

202. Tuberculosis and the Solar Syndrome.

Sergent (*Journ. des praticiens*, 1912, xxvi) describes the symptoms as follows: (1) Painful points which may exist in the liver, gall bladder, spleen, epigastrium, umbilicus, lumbar region, or spine. (2) Paroxysmal crises; these may be gastric or intestinal. The former resemble lead colic or tabetic crises, and are accompanied by loss of appetite, dyspepsia, and vomiting. The latter manifest themselves with diarrhoea, biliary or serous, and sometimes the expulsion of mucus. (3) Symptoms due to affection of the sympathetic, such as mydriasis, headache, vasomotor symptoms, and sometimes melanoderma. The syndrome is very frequent in tuberculosis—40 per cent.—which is readily explained by the frequency of affection of the suprarenals in tuberculous disease.

SURGERY.

203. Unilateral Congenital Dislocation of Hip.

Savariaud (*Bull. de la Soc. de Chir. de Paris*, January 9th, 1912), in discussing the diagnosis of unilateral congenital dislocation of the hip in the young infant, thinks that, although radiography is of prime importance, the clinical signs should be put on a quite firm footing. There is no difficulty in establishing a diagnosis in the child, but there is difficulty in the case of the very young infant who has reached the age when attempts to walk should be made. In the latter three signs are prominent: shortening, atrophy of the thigh, external rotation of the foot. These should be observed along with attempts to find the femoral head; this may be impossible on account of the fatness of the hip and the indisposition of the child for examination. Shortening has not had attached to it the importance it deserves. It has been usually designated by measurement, but Savariaud attaches more importance to apparent or visible shortening, which he regards as sufficient to permit one to make the diagnosis of unilateral dislocation. The only two affections which might present the symptom are

unilateral rachitic coxa vara, which is very rare, and coxalgia appearing with usage of the joint, which can be differentiated by other symptoms. The sign, then, to which this author attaches most importance, because it does not exist except in dislocation, is the exaggeration of shortening produced in flexion of the thigh, the knee being kept straight; the patient, therefore, is in position of the body being at right angles to the legs, which are straight out and in contact with the table. Shortening is visible when the whole body is extended, but the author's point is that it is exaggerated in flexion. The explanation of the phenomenon is that if the femoral head is not well fixed by the acetabular rim, the tension of the hip and hamstring muscles which results naturally from the position adopted causes marked retraction of the limb so that the shortening is exaggerated. The sign may not manifest itself under two circumstances: (1) if the head is fixed by an obstacle bony or capsular; (2) if the gluteal and hamstring muscles have not sufficient tonicity. It may be regarded as a corollary of Dupuytren's sign that gentle traction on the limb obliterates the shortening, though the author acknowledges that according to Bouvier and Kirmisson this cannot occur, as what really happens when traction is employed is that the pelvis is pulled down on that side, that therefore no downward displacement of the head within the capsule is possible.

204. Congenital Diverticula of the Bladder.

C. MATTHEY (*Rev. méd. de la Suisse rom.*, July 20th, 1912) states that diverticula of the urinary bladder may be regarded as of congenital origin if all the layers of the vesical wall enter into their composition and the communication between the diverticulum and the bladder is of moderate size. There are two chief varieties. In the rarer form one of the ureters opens into the diverticulum; in this case it is more correct to speak of a double bladder than of a diverticulum. More often the diverticulum contains no ureteral orifice, but is in close relationship with the ureter, which may run between the diverticulum and the main sac of the bladder, or even in the substance of the wall of the former. The exact relationship is of great clinical importance, as the closer is the connexion between the diverticulum and the ureter the greater is the liability to renal complications (hydronephrosis or pyonephrosis) and the greater the danger of surgical intervention. The seat of election is the uretero-vesical angle, most frequently on the left side. These structures are usually solitary. In the extremely rare event of duality the second is usually in connexion with the opposite ureter, but may be at the vertex or base. Whichever of the two diverticula approaches most nearly to the seat of election will be the most fully developed. No satisfactory explanation has been given of the constancy of the site and the preponderance of solitary diverticula. A healthy bladder gives rise to no, or at most, trivial symptoms, such as retardation or sudden interruption of micturition. The patients may be otherwise normal and without prostatic enlargement, so that surgical advice is seldom sought. But if any part of the urinary tract becomes affected, as in nephritis, lithiasis, cystitis, or gonorrhoea, the diverticulum reveals itself by several unusual signs. A certain diagnosis is possible by cystoscopy, by which is seen a black, round, or oval area of darkness on the illuminated cystoscopic field. One symptom is pathognomonic. After irrigation of the bladder, the liquid returns at first clear, but suddenly spurts out turbid or even fetid. The second portion is from a diverticulum. Other signs are the presence of a paravesical swelling of variable size and shape, abnormal position of the distended bladder, sudden deviation of the instrument during catheterism, and abnormal shadow on the x-ray screen after filling the bladder with collargol. The prognosis is usually good, and, given a healthy urinary tract, the malformation may never be suspected. But if the diverticulum is partly or wholly situated within the true pelvis there is a tendency to stagnation of its contents with risk of infection. This is especially the case if the diverticulum is large (occasionally it may exceed that of the bladder proper). As to the presence of a diverticulum aggravates any lesion of the urinary apparatus. Thus a urethral stricture may produce retention of urine and cystitis. The diverticulum becomes infected, and, owing to the narrow orifice of communication with the bladder, the diverticulitis rapidly becomes chronic. Under the condition it is very prone to spread beyond the wall of the diverticulum, and the danger of perforation and extravasation of urine is great. Even without perforation of the diverticulum may abscess. Its walls may then become encrusted, and a large calculus may result. This is, however, so rare that it need scarcely be considered as a factor in prognosis. As to the treatment, Wagner advocates excision of every diverticulum as soon as recognized. Practically all surgeons advise excision of an infected diverticulum. As this malformation seldom comes under observation until infection has occurred, Wagner's proposal of prophylactic excision loses its force. Matthey is impressed with the bad results obtained by operation. It is a difficult procedure, often necessitating the sacrifice of one ureter with part of the bladder. The difficulties increase the deeper is the situation of the diverticulum in the pelvis. Nevertheless, an operation, however technically difficult, is justifiable in the presence of threatened rupture or ascending infection. In all other cases he urges an attempt to cure the diverticulitis by the methods used in ordinary cystitis. A soft catheter can usually be easily introduced into the cavity of the diverticulum. It should then be tied in and the cavity irrigated with an antiseptic lotion three or four times daily. As soon as the character and quantity of the residual urine have been favourably modified, the catheter is withdrawn, and the irrigations are continued once or twice daily. A case is reported of diverticulitis in a man aged 53 which was cured by these measures.

205. Rupture of the Kidney.

LEGUEU (*Journ. des praticiens*, 1912, xxvi) describes the case of a youth of 17 who fell from a scaffolding, and in whom, on operation, the kidney was found ruptured in six places. Nephrectomy was performed, and was successful. The chief diagnostic signs of this condition are: (1) Haematuria; (2) localized muscular contraction; (3) the presence of a haematoma. Treatment: Ruptures of the kidney frequently are cured without operation, but persistent haematuria, the presence of an increasing haematoma, an elevated temperature gradually rising, require operative interference.

OBSTETRICS.

206. Spontaneous Detachment of Vagina in Labour.

PAQUET (*Bull. de la Soc. d'Obstét. et de Gynéc. de Paris, Lille, etc.*, May, 1912) reports an instance of this complication where the labour was otherwise simple. Detachment of the vagina is usually associated with two unfavourable conditions—first, extreme anteflexion of the uterus or complete anteversion, which, when the abdominal parietes are greatly relaxed, involves undue pressure on the posterior part of the attachment of the vagina to the cervix; and, secondly, violent strain on the same part of the vagina when the pelvic inlet is contracted and the head presses on the completely dilated cervix till it begins to pass beyond the os and is arrested at the brim. But Paquet's patient was a primipara, aged 22, with powerful parietal muscles, and the integuments of the abdomen were not pendulous. The pelvis was quite normal. The patient was under observation in Oui's clinic at Lille. There was no history of any unfavourable condition. Labour pains set in in the middle of the eighth month. The patient had been in labour for eleven hours when admitted, and the presentation was diagnosed as left anterior. Dilatation of the os proceeded slowly. Nearly eight hours after admission the membranes, which presented prominently, were ruptured by the resident medical officer. About one hour later delivery occurred; the occiput, it was found, lay posterior as the head passed the vagina. Half an hour later the placenta was extracted. The child weighed over 5 lb.; the placenta over 1 lb. There had been but little haemorrhage. An incomplete rupture of the perineum and a laceration of the posterior vaginal wall not involving the muscular coat deeply was detected immediately after labour. Then a large flap of mucosa was seen hanging from the vulva. On thorough exploration of the upper part of the genital canal it was found that there was another vertical laceration of the mucosa, and that the vagina itself was torn off completely from its attachment to the cervix. The peritoneum was not involved, but there was bilateral laceration of the cervix. Very little bleeding followed the labour, and the bladder was uninjured. The cervical laceration was repaired with catgut, and the flaps of vaginal mucosa sutured together. Then the vagina was united by interrupted sutures to the cervix. The parts healed satisfactorily. The complication, in Paquet's opinion, was due to rigidity of the cervix. The inferior uterine segment, over-distended, drew up the vagina and dragged on it till it gave way along its attachments. The cervix itself became lacerated later on, when the head had completely dilated the os externum.

207. Induction of Labour by Champetier de Ribes's Bag.

BRODHEAD (*Amer. Journ. Obstet.*, May, 1912) publishes a series of observations based on a study of 139 cases of induction of labour with the modified Champetier de Ribes's bag—75 in private practice, and 64 in New York maternity hospitals and institutions; 48 patients were primiparae, 75 were treated at or beyond term, in the remainder the bags were applied before term and in 3 cases as early as the sixth month. The conditions for which labour was induced were: Contracted pelvis, 41 cases; toxaemia, including albuminuria, nephritis, and eclampsia, 27; large child, normal pelvis, 19; pelvis normal, term overdue, 15; "pelvis normal, patient at term anxious to get through," 13; previous history of uterine inertia with instrumental delivery, 11; long delay following rupture of membranes, in labours at term, 4; "hydramnion, insomnia, and discomfort," 3; danger of death of fetus in utero, 3; placenta praevia, 1; chronic endocarditis, general debility, 1; dead fetus, general debility, 1. A long and minute analysis of all factors of importance, with tables, is given. The mortality of the mothers was 3 in the 75 private patients, all from eclampsia; and 1 in the 64 hospital cases, from nephritis and toxaemia and pregnancy. Thus, none of the 4 fatal cases died as the result of the introduction of the bags. In private practice 10 of the children were lost; in 6 of these the death clearly could not have been due to the operation, and in 1 more there was prolapse of the cord. In hospital practice 22 children were lost, including 3 with prolapse of cord, 2 difficult breech presentations, and 10 where death had occurred before labour, or else was clearly due to eclampsia, malformation, etc. In some of the remainder death was probably due to the induction of labour. The morbidity in private practice was practically *nil*, and in hospital work very slight. Sizes 2 and 3 were found most useful. Accidental rupture of the membranes occurred in only 3 per cent. of the cases. The value of the bag was shown by the fact that in 90 per cent. of all cases labour was induced by the use of not more than two bags, whilst one was sufficient in nearly 70 per cent. In only 6 per cent. did the bags fail to induce labour. Anaesthesia proved usually unnecessary; in only 14 per cent. of the private cases was it used. Labour began at the time of introduction of the first bag in 70 per cent. of all cases. The average length of time between the insertion of the bag and the onset of labour was: In primiparae, 8 hours 22 minutes; in multiparae, 10 hours 20 minutes; and in all cases, 9 hours 20 minutes. In all primiparae the average duration of the induced labour was 22 hours 9 minutes; in all multiparae 15 hours 52 minutes; and the average in all cases was 18 hours 2 minutes; 49 per cent. of the induced labours terminated normally, and 70 terminated normally or with aid of the short forceps. In 5 per cent. of all cases the presentation was changed, but in only one was the outcome affected because of the accident. Prolapse of the cord occurred in 4.3 per cent. of all cases, but in many of this subclass there was hydramnion, contracted pelvis, etc., favouring that complication.

GYNAECOLOGY.

208. Tuberculosis of the Female Organs.

PATEL (*Ann. de gyn. et d'obstét.*, June and July, 1912) reports and analyses 116 cases of tubercle of the appendages collected by Ollivier of Lyons, and also reviews the researches of others. The external parts, vagina and uterus, are much less often attacked than the appendages. The ulcerative type of tuberculosis of the vulva requires curetting and cauterization if primary, but, as a rule, it represents extensive tuberculosis of other organs, and then cauterization with lactic acid and iodoform dressings are alone advisable. In the vegetating type, when pedunculated, excision is indicated. When the elephantiasis form is treated surgically recurrence is not rare, or rather we should say that the disease is rarely extirpated even by the boldest operator. Primary tuberculous disease of the vagina is very rare and often associated with fistulous tracts communicating with the urethra or rectum. About 87 cases of tuberculosis of the cervix have been reported. Radical operations are not always prudent, as the disease may extend far beyond the cervix. High amputation of the cervix, or even the curette or cautery, appear sufficient when the disease is localized. Tuberculosis of the uterus is usually symptomatic of primary disease of the appendages. Hysterectomy is only allowable when the disease is limited; thus an adenomyomatous tumour of the uterus is liable to tuberculous degeneration, and a common fibroid, or even a carcinoma, may become similarly complicated, and then the uterus must be removed. But when the tuberculous disease is more of the inflammatory than the neoplastic type constitutional and specific treatment is necessary, surgery being dangerous. Lastly, tuberculosis of the appendages is the commonest and, owing to the spread of abdominal surgery, the best known form of tuberculous disease of the female organs. When diffused over the peritoneum, tuberculosis of the tube and ovary should never be treated by operation, but simple opening of the peritoneal cavity, where further steps have had to be abandoned, has given unexpectedly good results. When the disease of the appendages has not extended to the peritoneum an operation is indicated. The uterus should be removed entire with the Fallopian tubes and ovaries, "subtotal" hysterectomy being highly unsurgical.

THERAPEUTICS.

209. Medical Treatment of Tuberculous Peritonitis.

PHILIPERT'S (*Progrès méd.*, xl, 1912) treatment is as follows: *Hygienic and dietetic:* Absolute rest in bed is usually essential, as the temperature is usually elevated; when it becomes normal rest in a long chair in the open air may be allowed. The bedroom should face the south, be provided with large windows and well lighted, and ventilated with plenty of fresh air. Residence in the country is advisable. The food should receive careful attention; milk is often badly digested; raw meat juice should be given in moderate quantities. All roast meats, fish, and eggs may be given with advantage, and vegetables, especially rice and potatoes, should be taken freely. If a passing gastric intolerance arises, the ordinary food may be replaced by liquids, such as barley water, oatmeal water, etc., boiled for a long time in salt water. Red wine, beer, or extract of malt are the best drinks. The food should be in abundance but not excessive. *Causal:* Blisters, castor oil, collodion, tincture of iodine, painting with guaiacol oil, 1 in 20, had been used at various times, but produce no permanently favourable results, and radiotherapy has not had an extended use. Tuberculin should only be used with great caution after other methods have been found wanting. Marmorek's serum and autoserotherapy have not produced sufficiently favourable results to warrant their general use. *Drugs:* Cod-liver oil is an excellent remedy, but should be withheld if diarrhoea or stomach troubles are present, and syrup of tannate of iodine employed instead. Durante recommends the hypodermic use of iodine as follows: Metallic iodine 0.25 gram, potassium iodide 2.50 grams, guaiacol 1.25 grams, pure and neutral glycerine 25 grams; inject ½, then ½, and then 1 c.cm. daily. Calcium phosphate is useful in night sweats and decreases the diarrhoea. The different preparations of arsenic, as the cacodylates, are useful in the torpid and apyretic forms. *Symptomatic:* When the pain is acute, ice wrapped in flannel should be employed in preference to warm applications. Opiates are rarely required for the pain. Constipation is best treated with enemata of oil or glycerine or suppositories. If it continues to exist, small doses of castor oil, sodium sulphate, or magnesium sulphate may be given per os. Diarrhoea chiefly requires dietetic treatment, but tannin, rhatany, and bismuth have their uses; calcium phosphate is best combined with tannin, and these two are the most useful drugs. Vomiting rarely requires any treatment, but is best held in check by ice to the epigastrium and a liquid diet. Ascites, if abundant, is best treated by puncture.

210. Mesothorium Treatment of Cancer.

A. PINCUSS has tested the therapeutic value of mesothorium in cancer in 14 cases (*Berl. klin. Woch.*, May 13th, 1912). He employed capsules for local treatment, radiothor and thorium X for local injection in the neighbourhood of the tumours, and also solutions for internal medication and intravenous injection. The solutions were either mesothorium in water, or thorium X in barium sulphate suspended in physiological saline fluid, or thorium X in cerium carbonate. These preparations taken by the mouth in doses of from 2,000 to 100,000 Maché units and over did not yield any positive results. When given in doses of 600,000 Maché units, vomiting and diarrhoea occurred, and he therefore gave up this method of application. The effect of the intravenous injections and of the injections into the neighbourhood of the tumours were also negative. In a few cases he gave as much as 2,000,000

to 2,750,000 Maché units intravenously. He therefore concludes that there is no reason to anticipate a curative action from the internal, local, or intravenous application of mesothorium. Better results were obtained with the application of the substance in capsules. He used capsules containing 10 and 19 mg. of active mesothorium. This was allowed to exert its effect for six to eight weeks, so that the dosage of active rays was very much higher than that derived from the intravenous injections. The action was similar to that of radium, save that, the soft β rays being more abundant than in radium, the superficial effect of mesothorium is somewhat more energetic than that of radium. In the case of a 56 years old woman, who had undergone the operation of amputation of the breast, a recurrence associated with ulceration and rapidly spreading fresh nodules at the periphery of the growth were seen. The treatment was continued for some months. The ulcerated portions gradually healed, so that at the time of demonstrating the patient to the members of the Berlin Medical Society, more than half was replaced by healthy scar tissue. The nodules ceased to increase in size and no new nodules have appeared. The patient, who was in a very bad condition at the beginning of the treatment, had improved very markedly at this period. A second patient, aged 39 years, was operated on vaginally for a uterine carcinoma in January, 1911. In September of the same year a recurrence was noticed in the fornix and the anterior wall of the vagina. Mesothorium succeeded in arresting the growth of the recurrence up to the present—that is, March 20th, 1912. In a third case, which also responded in a similar manner, he noticed that whenever the dosage of the rays exceeded a definite measure, an acute erysipelas appeared over some lymphatic glands which were being treated—inguinal and crural. The erythema disappeared after a few days. He regards this method of application of mesothorium as a valuable adjuvant to surgical treatment. It is at least equal to the action of radium, and in some respects better than that of x rays.

211. Serumtherapy of Enteric Fever.

H. LUDKE (*Muench. med. Woch.*, April 23rd, 1912) claims to have obtained curative results with his antitoxic and bactericidal serum for enteric fever. He challenges the view that *Bacillus typhosus* does not produce a true toxin, and deals with the whole question of endotoxins according to his views, which have been published already. In the first place, he regards it of importance to work with a virulent strain of bacillus, and this he has done by culturing the bacilli from the blood of a patient. One-twentieth of a loopful represents its virulence. He used goats for the production of his serum. In the account he speaks of a large number of methods which will yield good results, but the reader has some difficulty in discovering which he actually did use. In order to obtain a useful toxin he advises digestion with hydrochloric acid and pepsin and subsequent filtration. He gives details of the toxicity of this product. The goats were immunized with this toxin, and a serum was obtained which protected rabbits against the effects of the toxin. While 0.5 toxin kills, 1 c.cm. of serum and 3 c.cm. of toxin were given without a fatal result. He then describes the method of producing bacteriolytic qualities in the serum. Cultures killed by heat were injected intravenously. After nine injections the agglutination value was 1 in 1,000,000, and the bactericidal titre 1 in 1,000. The author proceeds to record his experimental evidence of the antitoxic and bactericidal action of the goat's serum. He considers that for therapeutic purposes the serum must be injected early during the attack in large quantities, and the injections must be made intravenously. He gives some brief details of typhoid fever patients treated with this serum, together with temperature curves. In all he has treated 29 patients in this way. None of them died, and he states that the temperature fell in the majority of the cases, some by lysis and others by crisis. The effect was marked when the serum was given early, and the pulse improved *pari passu* with the temperature. Recurrences took place at times. He claims that his results show that the serum is curative.

212. Hyperol.

MAX ZWEYTHURM (*Wien. med. Klin.*, No. 13, 1912) describes a new preparation, "hyperol," which can be obtained either in the form of powder or of tablets, and which contains 34 per cent. by weight of hydrogen peroxide. [illegible] of hyperol dissolved in 100 c.cm. of water give a 3 per cent. solution. The powder is easily, the [illegible], soluble in water. The author's observations have extended over several months, and during that time he has not found that hyperol loses in strength of H_2O_2 if kept in a closed bottle. He made use of hyperol in 10 cases of ulcer of the leg. The cases were neglected ones, and the ulcers were covered with necrotic tissue. The method of use was to cover the ulcer with hyperol powder and put on a bandage; the dressing was changed twice a day. In all but two cases the ulcers cleaned up in a few days and became covered with healthy granulations. One of the two cases in which the treatment failed was that of an old man with a very chronic ulcer and with much scar tissue extending round the leg so as to enormously impede the circulation. The other was of a necrotic ulcer whose base reached deeply into the tissues and showed numerous small sinuses; here recovery did not occur until the powder had been introduced with the help of a probe into each sinus. The author cannot state with certainty that the effect in any of these cases was greater than might have been obtained from other preparations containing H_2O_2, but he thinks that probably this was the case, since if the powder is spread in a sufficiently thick layer a continuous giving off of oxygen is produced. The author has also had good results from an ointment made up with 5 per cent. hyperol in vaseline. He has also employed a solution of hyperol, as a rule of the strength of three tablets to a glass of water, as a gargle and mouth-wash, with results similar to those obtained from ordinary solutions of H_2O_2 in water. The advantage of being able easily to obtain a solution of H_2O_2 at any moment by the use of the tablets is an obvious one.

PATHOLOGY.

213. Reaction of Animal Sarcoma Cells towards Animal and Human Serum.

R. KRAUSS, V. GRAFF, AND RANZI found that the cells of mouse carcinoma reacted to human serum like the cells of human carcinoma—that is, they were dissolved by normal human serum, but not by the serum of carcinomatous patients. R. Krauss and K. Ishiwara (*Wien. klin. Woch.*, No. 17, 1912) investigated the reaction of animal sarcoma cells. Portions of sarcomata of rats were rubbed up, emulsified, washed, and floated in 0.6 per cent. salt solution, and the cells counted before the experiment in the manner recommended by Freund and Kaminer. The cell emulsion was only used if no marked decrease in the number of cells took place in twenty-four hours at 37° C. In a preliminary experiment the authors tested the reaction of liver cells of sound rats towards the serums of sound and of sarcomatous rats. They found that normal rat serum caused respectively a diminution of 0, 8, 14, 16, 18, 19, 20, and once of 34 per cent. in the number of cells and serum of a sarcomatous rat, a diminution of 18 per cent. Thus, normal and sarcomatous serum both caused a small diminution in the number of liver cells, and the small power of normal serums to dissolve homologous organic cells is a fact to be kept in mind. Experiment has, however, shown that normal serum has a much greater power of dissolving embryonic and carcinomatous cells, the diminution being 50 per cent. and even more. Also in the experiments described in the present article the serum of sound rats dissolved sarcoma cells up to 50 per cent., and over, and acted much more markedly upon sarcoma cells than upon cells of normal organs. The serums of sarcomatous rats, on the other hand, were often found to lack the power of dissolving any large percentage of sarcoma cells, and therefore the position was analogous to that found for normal and carcinomatous serums. Thus in two instances normal rat serum caused a diminution of 54 per cent. and 50 per cent. respectively in sarcoma cells, while serum from a sarcomatous rat led to no diminution in the number of cells in one experiment and to a diminution of about 14 per cent. only in a second. In another experiment the percentage reduction of sarcoma cells for normal and sarcomatous rat serum respectively were 49 per cent. and 20 per cent., and in a third were 38 per cent. and 0 per cent. The results were similar when sarcomata of mice instead of rats were used for the cell emulsions. While results such as these were the most frequent they were not uniform, and the lack of uniformity makes it probable that this cell reaction, like the Freund-Kaminer carcinoma cell reaction, will not be a reliable method for the diagnosis of sarcoma. The authors also tested the action of normal human serum and of serum from carcinomatous patients on sarcoma cells from rats and mice, and found that these had approximately the same power of solution of sarcoma cells. These results confirm those of Freund and Kaminer, who found that the serum of sarcomatous patients acted like normal serum upon carcinoma cells.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

214. The Polymorphism of Syphilis.

Pied (*Ann. de derm. et syph.*, August–September, 1912) relates the case of a girl, aged 4 years, who came under his care in February, 1909. Her health had been failing for two years, and no definite diagnosis of the cause had been made, although several doctors had treated the case, in view of the wasting and progressive marasmus, as one of tuberculosis of the intestines. When first seen by Pied she was much emaciated, the motions irregular and very offensive, with complete loss of appetite, and there was continual hair loss and suppurative onychitis. The intelligence was defective, and whereas at 18 months she had begun to talk, she was, when seen, unable to articulate a single word. There were erosions and cupping of the teeth, and a peculiar white elastic oedema of the face and lower limbs, without albuminuria. Pied was at first inclined to treat the case as one of congenital syphilis, but the defective intelligence, the oedema, and the character of the voice determined him to try first the effects of thyroid gland extract, regarding the case as an example of cretinism. At first the results of daily doses of 6 grams of fresh sheep's thyroid were brilliant; all the symptoms were vastly mitigated, and the rectal temperature rose progressively from 95.5 to 99° F., but the appetite did not improve nor the weight increase. He thereupon supplemented the thyroid treatment with daily administrations of 80 drops of Van Swieten's liquor (hyd. perchlor. 1, alcohol 100, water 900). On the third day after this addition to the therapy the motions became more natural in colour and the child began to enjoy its food. On the tenth day, however, diarrhoea set in, and the liver was found to be enlarged and ascites present. From that day onward there was a remarkable alternation of the fields of activity of the virus, for in turn the liver and peritoneum, kidneys—as shown by nocturnal frequency and albuminuria—and suprarenals, as suggested by the onset of tachycardia and subcutaneous haemorrhages, became the points of attack. The hepatic symptoms were controlled, and the ascites did not recur after twice tapping under fractional doses of calomel, and the albuminuria and cardiovascular symptoms cleared up under daily inunctions of mercurial ointment. A few weeks later hydrocephaly and the pseudo-paralysis of Parrot (separation of epiphyses) suddenly set in. These yielded to injections of soluble mercurial salts, the circumference of the head was reduced by 20 mm., and the child was again able to take to its feet. About this time (June, 1910) symptoms of the utmost gravity set in with delirium and intense tachycardia. The sternum appeared to be displaced upwards and to the right, there was an increase of the aortic dullness in the same direction, and on auscultation a rough diastolic bruit was plainly heard over this area. Without attempting to explain this syndrome, the author states that there was marked amelioration after two injections of the mercurial salt, and that it ultimately disappeared altogether under its administration. By April, 1911, the child was to all appearances thriving, when, in consequence of eating of unripe fruit, it was suddenly seized with choleriform diarrhoea and died in three days. No *post-mortem* examination was made. Pied draws attention to the following points: (1) The immunity from all specific symptoms whilst breast-fed. (2) The effect which thyroid gland extract may have in alleviating specific symptoms and altering their course, an action which has also been ascribed to kidney and liver extracts and to that of the hypophysis cerebri. (3) That antispecific treatment conducted hand-in-hand with organotherapy may succeed where either alone may fail. (4) The value of "polymorphism" as a diagnostic aid. The remarkable immunity of the lungs, the comparative immunity of the liver and kidneys, and the susceptibility of the osseous and blood vascular systems to the virus of syphilis should always be borne in mind where the nature of the disease is obscure.

215. Test for Hyperchlorhydria.

Cipollina (*Rif. Med.*, July 20th, 1912) reports further experience with his test for excess of HCl in the stomach. When an aqueous solution of anilin is mixed with a solution containing HCl and a few drops of a solution of sodium hypochlorite added one of three possibilities may occur according to the amount of HCl present. If the HCl is more than 2 per cent. a clear amethyst (violet) colour is seen and remains; if the HCl is below 2 per cent. but above $\frac{1}{4}$ per cent. there first appears a reddish-violet colour, which quickly changes to yellow; if the HCl is below $\frac{1}{4}$ per cent. a dark-violet colour appears and remains unchanged. These reactions are quick in appearing, so that it is possible to estimate the HCl in two or three minutes. The test meal used was 200 grams of potato and 200 c.cm. of white wine diluted with water (1 to 2). The reaction is a very sensitive one, since a difference of $\frac{1}{10}$ mg. of HCl suffices to change the colour from violet to yellow. A yellow reaction necessarily excludes the presence of hyperchlorhydria. Lactic acid would give similar reactions, but this could only occur in a 10 per cent. solution, a percentage never likely to be met with in the stomach. The author prefers calcium hyperchlorite to the sodium salt, and makes a 10 per cent. solution, which he dilutes five or six times when required for use. There is some discussion as to the effect of protein bodies and acid albumins on the reaction in question, and also as regards acid phosphates of soda.

216. Ocular Lesions in Polymorphous Erythema.

Terson (*Journ. des praticiens*, 1912, xxvi) draws attention to the following conditions: (1) In the course of papulous erythema there is frequently noticeable in the "white of the eye" large red papules, movable with the conjunctiva, which disappear in a few days without leaving any trace behind. (2) In both papulous and maculous erythema the cornea is rarely affected, opacities or keratitis being very uncommon. (3) In erythema nodosum the nodosities often occupy the eyebrows, but may be seen on the globe. They disappear very slowly and relapses are frequent. (4) Hydroa has frequently been noticed on the bulbar conjunctiva, and herpes of the iris has been known to be accompanied by false membrane. The prognosis of these conditions is in most cases favourable.

217. Recurring Acute Oedema of the Eyelids.

Brunetière (*Gaz. hebd. des Sci. Méd. de Bordeaux*, 1912, xxxiii) describes three forms: (*a*) Arthritic oedema. This form was first described by Trousseau as occurring in patients affected with rheumatism, the attacks of rheumatism alternating with oedema of the eyelids. (*b*) Hysterical oedema. This form is denied by some authors and attributed by them to (*c*) toxic oedema. The intoxication may be an autointoxication or an heterointoxication. (1) Autointoxication. Excluding kidney disease, the commonest causes are digestive troubles due to hepatic or intestinal disease. Disappearance of the latter causes disappearance of the oedema. The author describes three cases of this form. In all the cases published there has been an antecedent history of arthritism or a neuropathy. (2) Heterointoxication. These cases are due to the injection of certain articles of diet, as game, shellfish, drugs (as KI, KBr, or antipyrin), and are allied to urticaria.

SURGERY.

218. Radioscopic Extraction of Foreign Bodies.

Wullyamoz (*Arch. d. élect. méd.*, September 10th, 1912) enters minutely into the question of apparatus necessary for the radioscopic extraction of foreign bodies. The success of the operation depends mainly upon three pieces of apparatus: A well-equipped operating table, a light fluoroscope attached to the eyes by means of a head-band, and the surgical instruments themselves—namely, the forceps-pincette and retractor, and for more complicated cases the needle and knife. In order to eliminate the perplexity caused by the conflicting shadows of the instrument when within the tissues, he follows the principle of bending them all at a right angle. The forceps, for example, is bent in such a matter that its extremities form a right angle with the plane of the finger-holders. From the point upwards the two branches are curved slightly away from each other, so that the two

distinct images appear on the fluoroscopic screen and enable the operator to know exactly where the extremity is to be found. If the extremity of the forceps be directed too far to the right, he immediately perceives the shadow of the right branch to the right. The converse is true with regard to the left. If he directs it not sufficiently low, the clear space between the two branches forms an acute angle; if, on the other hand, it be too low, the shadow formed by the meeting of the two branches is lengthened at the base while the clear space is diminished. The retractor is constructed in much the same way as the forceps, with the difference that the branches are thicker, while the bent portion is 2 cm. shorter. The cocaine needle and the knife are also bent at right angles. In a simple operation, when the forceps is introduced directly, the foreign body lying at a depth of only 2 cm. or 3 cm., the instrument is first placed horizontally on the operative field in such a manner that its extremity corresponds with the shadow of the object. It is then raised on its point, describing a quarter of a circle, so that the shadow of the foreign body appears a little above and between the ends of the instrument. The instrument is driven in, giving continually an image on the fluoroscope, and the surgeon perceives that he has arrived at the required depth when the instrument is directed in a right line upon the foreign body. For tissues in which conditions are not so favourable to a simple operation, of course a more complicated technique is necessary, but with the bent instruments combined with the efficiency of the larger apparatus extraction is a simple matter. The author claims that the method permits of extracting very easily in less than a minute the bullet of a revolver 10 cm. deep in the tissues.

219. Division of the Sensory Nerve Roots in Disseminated Sclerosis.

TSCHUDI (*Corresp. Blatt.*, No. 15, 1912) describes a case of multiple sclerosis in which he divided the posterior nerve roots with some benefit. The patient, aged 44, traced her illness to her last pregnancy in 1895, but the symptoms were not marked until eight years ago, when her left arm and leg became paralysed. Since then diplopia, nystagmus, scanning speech, and other characteristic symptoms had developed, and gradually increasing muscular spasms in both legs and the left arm had rendered her completely helpless. Förster, in 1908, practised division of the posterior roots in spastic paraplegia, basing his procedure on the theory that the symptoms of that disease were due to spastic reflex muscular responses to peripheral sensory stimulus—the sensory impressions being no longer counteracted, as in health, by the influence of the inhibitory bundles of the pyramidal tract. Tschudi decided to attempt to relieve the spastic condition in this case by similar means. Accordingly, on March 13th, 1911, the arches of the lumbar vertebrae were divided, the dura mater was opened up, the sensory roots were separated from the motor, and about 3 cm. of the second, third, and fifth lumbar, and first sacral posterior roots were removed. A quantity of cerebro-spinal fluid escaped, although the pelvis was well raised. The spasms of the legs were immediately relieved, and extensive passive movements could be made easily. On March 22nd there was a sudden rise of temperature and loss of sensation in the legs. On the 26th the left arm became partly paralysed, and the legs entirely so. In the course of the next fortnight, however, these symptoms subsided, and under the influence of massage and faradization the muscular tone improved and sensation gradually returned. In April the patient was able to sit out in an armchair, and on May 18th she left the hospital. She then could move both arms fairly well, passive movements of both legs were well tolerated, and she could stand if supported by the arms, but she complained of severe neuralgic pain in the legs at night. A year later, the massage and faradization having been continued, her general condition was improved. She had lost all pain, slept well, could walk with assistance, and sit in a chair with her knees bent. She had, however, tremors on voluntary movement—a symptom which had been absent at the time of operation. The author considers that the recurrence of paralytic symptoms during the first fortnight militated against the recovery of power in the legs, but he claims that considering the [illegible] of the patient the result of the operation was highly satisfactory. As regards technique, he lays stress on the fact that the fifth lumbar process corresponds exactly to the exit of the first sacral nerve root, and its position with relation to the muscles should therefore be carefully noted as a guide before dividing the vertebral arches. Not more than two, or at the most three, contiguous nerve roots should be divided, and the total number should not exceed five. It is interesting to note that, thanks to the plexiform arrangement of the nerves, such an extensive resection results in so little loss of sensation.

220. Latent Conceptional Syphilis.

BARQUES (*Gaz. heb. des sci. méd.*) discusses the possibility of conceptional syphilis manifesting itself only by tertiary lesions without any previous symptoms of the disease. He is of opinion that latent conceptional syphilis occurs, its presence being demonstrable only by immunity according to Colles's law and to inoculation, and by the Wassermann reaction, and that it may show itself at any given moment by late symptoms. Many cases have been published bearing out this view, but they are open to the objection that secondary symptoms may have passed unnoticed, either because they were very slight, as is often the case with women, or because they have been promptly treated at the onset. Generally, the statements of the patients are the only data; and the rarity of irrefutable observations is due to the impossibility of following cases over a sufficient length of time, and to the fact that the syphilis is not recognized. Barthélemy, however, has published a case to which these criticisms do not apply, for he was able to follow it from the confinement for a period of seven years, and Barques himself here publishes a case which confirms his opinion. He attended a woman for an abortion (at five months), and found that her husband had had syphilis, though at the time he had no specific lesion; neither clinical examination nor interrogation revealed anything allowing him to suppose the woman was infected. Thereafter, he examined her regularly four times a year, and although she was never in good health, and steadily lost flesh, she showed no specific signs of syphilis. Nine years after the abortion she developed signs of tabes; at this time a Wassermann test and performed, and gave a positive result. The husband had contracted syphilis five years before marriage. He had undergone four years of classic treatment, was married during the fifth year, and impregnated his wife at the beginning of the eighth year. Neither he nor his wife underwent any preconceptional treatment. The conclusions to be drawn from the published cases are that women who have conceived a syphilitic fetus, but who show no objective sign of the disease themselves, may after a variable period develop secondary, but more often tertiary and parasyphilitic, symptoms; also, that a woman suffering from latent conceptional syphilis may bear a syphilitic child to a healthy progenitor. The practical deduction is that imperceptible syphilis ought to be treated as active syphilis. Prophylaxis is all-powerful; preconceptional treatment allows the syphilitic to have healthy children, and to avoid conceptional infection of the wife. As it is impossible at the present time to speak of the cure of syphilis, it is important that all syphilitics, no matter what initial treatment has been followed, or how long since they were infected, should be informed that they ought to prepare themselves for fecund coitus by preconceptional treatment.

OBSTETRICS.

221. Complete Rupture of Pregnant Uterus.

ALLEN ROBERTSON (*Australian Medical Journal*, March 9th and April 27th, 1912) points out that this complication is less frequent in Australia than in countries where rickets and osteomalacia occur; no cases have been recorded at the Women's Hospital, Melbourne, during the last eight years, and only seven since 1888, all of which ended fatally. Robertson reports two cases, both successfully treated by operation. The first case is that of a patient, aged 34, who had gone through seven previous pregnancies without trouble. When admitted, she had been in labour for two and a half hours; pregnancy was at full term; the breech was presenting through a partially dilated os; membranes intact. When the membranes ruptured, patient complained of sharp epigastric pain, which soon passed off, but returned shortly afterwards with difficulty of breathing, pallor, and almost imperceptible pulse. She was restored by remedies, and improvement continued for two and a half hours, and then suddenly dropped back; the pain returned, there was dullness in the flanks, and two distinct tumours were to be made out on palpation. Laparotomy was performed, and after removing some blood clot, the back of the child and the placenta were seen to have escaped through a rent on the left side of the uterus extending from the cervix through the vaginal vault and the left broad ligament. The right half of the uterus was firmly contracted around the child's head.

After delivering the fetus and placenta, the uterus was removed; the abdominal cavity was cleansed, the vagina was packed with iodoform gauze from within, and the peritoneum and parietes were hurriedly sutured. The patient's condition was very bad, and was treated with pituitrin and a continuous rectal saline. Abdominal distension was treated with hourly doses of calomel and a hypodermic injection of eserine and strychnine; subsequently the same injection was repeated, and mag. sulph. 1 drachm was given four-hourly. Vomiting supervened forty hours after operation, and for this she was given sodii bicarb. 1 drachm in a pint of tepid water, with good effect. The patient subsequently did well, but ran an evening temperature of 101°; this was found to be due to the fact that the urine was loaded with *B. coli communis*. This condition was cured in eleven days by means of a vaccine and a mixture of potassium citrate and atropine, and the patient was quite well in less than five weeks after the operation. Robertson considers that rupture occurred at the moment the patient complained of the first sudden pain, and that the second attack corresponded to the escape of the contents of the uterus, for it was there that two distinct tumours could be palpated. Emphysematous crackling over the seat of the rupture was well demonstrated in this case, and there was practically no external haemorrhage. The reasons for removal of the uterus were: That the tear was so extensive that it would have taken too long to repair it; that there was every probability, owing to frequent examinations by many persons, that the uterus would have been infected; that, in the absence of deformity, disproportion, previous difficult labour, or trauma the probable cause of rupture was degenerated uterine muscle. The last assumption was proved correct by pathological examination. The second case was a 2-para, aged 26 years, between eight and nine months pregnant. Whilst standing on a chair she slipped, and struck her abdomen across the back of it; she was seized with severe abdominal pain, and became collapsed. On admission there was no external haemorrhage, the abdomen was tender, and the uterus tense; no impairment of resonance in the flanks. Later her condition became worse, and on palpating the abdomen the fetal parts felt abnormally near to the palpating hand over the upper left portion of the uterus, and emphysematous crackling was obtained. Laparotomy was performed, and the peritoneal cavity was found to contain a large quantity of blood and liquor amnii; there was a tear of about 4 in. long in the upper left portion of the anterior wall of the uterus, and the legs of the fetus were seen pushing into but not protruding through it. The fetus and placenta, which had separated, were easily extracted through the tear, and the rest of the operation was conducted as in the previous case. The patient did well up to the sixth day, when the temperature rose to 100° and the pulse-rate to 120; this was again found to be due to *B. coli* in the urine, a condition which cleared up in a week under potassium citrate and atropine. She left the hospital on the twenty-sixth day feeling quite well. Most cases of traumatic rupture are due either to forcible extraction of the fetus through a partially dilated cervix or to attempts at version. The tears usually involve the cervix and lower uterine segment. The site of rupture in cases due to direct violence is generally at the fundal end of the uterus. The author is of opinion that all complete tears of the uterus that cannot be wholly seen by means of a vaginal speculum and effectively attended to must have the abdomen opened, and he condemns the so-called conservative treatment of packing the tear with gauze in such circumstances, since, though it lessens the shock, it does not deal efficiently with the haemorrhage, and still less so with the risk of sepsis. Abdominal section enables one to deal effectively with the haemorrhage and with the damaged uterus, but one has to be most expeditious in performing it. Figures are quoted from many sources, and they show a large balance of recoveries in favour of laparotomy. The author concludes that in all cases of complete rupture of the uterus, laparotomy, with removal of the uterus, is indicated.

GYNAECOLOGY.

222. Non-tuberculous Pyosalpinx in a Virgin.

LUDWIG FRAENKEL (*Zentralbl. f. Gynäk.*, No. 17, 1912) reports a very definite case of double pyosalpinx in a virgin. Not only was there no evidence of tubercle, but the patient had undergone removal of the vermiform appendix five years previously, so that the source of infection seemed clear. Axial rotation occurred, and Fraenkel operated. The diseased tubes did not look the least like what they usually appear to be in pyosalpinx of puerperal or gonorrhoeal origin. They resembled dermoid cysts, were very light in weight, and had perfectly smooth surfaces. The right tube was rotated one turn and a half, or 540 degrees, and lay in front of the uterus in the vesico-uterine pouch. Fraenkel lays stress on the fact that the ovaries and the peritoneum were quite healthy and there were no adhesions, not even around the twisted part of the right tube. The uterine end of each tube was healthy for some distance, on which account that part of the left tube was saved. Stomatoplasty was performed; it proved difficult. The peritoneum and the mucosa of the tube were united by suture. Plastic operations on the tube seemed justifiable and likely to succeed in a case like this, where there was no active inflammatory mischief, and where there seemed every reason to believe that the procedure would save the patient from sterility.

223. Leucorrhoea.

GRATIA BLANC (*Journ. de méd. et chir. pratique*, Art. 23,771) looks upon leucorrhoea as being often connected with a general intoxication of the organism, and as repesenting a means of elimination of broken-down white corpuscles and toxins. This notion is based on observations of the improvement or aggravation of symptoms corresponding with the appearance or suppression of the white discharge. The author reports cases of leucorrhoea alternating with psoriasis, with eczema, with muco-membranous enteritis, etc., and she concludes that the symptoms should be regarded as defensive, and should be encouraged instead of being suppressed. The intoxication must be attacked at its source. General treatment and physical exercise may increase the discharges, but these will cease when there are no more waste products in the organism.

THERAPEUTICS.

224. "Para-606."

MILIAN (*Bull. Soc. de l'Internat. des Hôp. de Paris*, February, 1912) explains the deaths from coma following epileptiform convulsions a few days after injection of salvarsan, to which he gives the name of "serous apoplexy," to the production of intermediate products, which he designates collectively as "para-606," caused by insufficient alkalization of the solution. He compares the symptoms of "serous apoplexy" to the congestion produced by inhalation of a strong dose of amyl nitrite, and considers that the same cause produces congestion of the face in the one case and congestion of the brain in the other. He goes on to state that the dichlorhydrate of dioxydiamidoarsenobenzol is transformed by soda into a disodium salt, and that insufficient alkalization causes the formation of a monochlorhydrate in which one only, OH, is saturated by the soda. This product is toxic. There are no doubt other products caused by these complex reactions, which are all included under the name of "para-606." According to Milian the blood is neutral and all efforts of the organism tend to maintain it so—for instance, after injection of an acid solution. Hence when "para-606" is injected, if the organism is sufficiently rich in basic substances equilibrium is established, but as there are great differences in the basicity of the blood in different individuals, some of these are unable to establish equilibrium and suffer from "serous apoplexy." Hence the latter is due to two factors—(1) insufficient alkalinity of the solution; (2) insufficient basicity of the blood of certain patients. Therefore, to avoid these accidents Milian recommends, on the one hand, the injection only of strongly alkaline solutions, and, on the other hand, treatment of the patient with a view to render his blood neutral. To attain the latter object he prescribes an appropriate diet in which all acid substances are prohibited, meat reduced, but milk and starchy foods given in abundance. Further, as "serous apoplexy" nearly always occurs on the third day after injection, the patient should be kept under observation till this time, and if untoward symptoms occur he should be injected with sufficient soda to neutralize the "para-606." If epileptiform convulsions occur Milian recommends lumbar puncture.

225. Treatment of Diarrhoea.

E. FULD (*Semaine Méd.*, August 28th, 1912) has observed that many patients declare that diarrhoea supervenes immediately after taking any sort of food, and by careful questioning he has discovered that this is

also the case with patients who have not observed it themselves. The rapidity of the evacuation makes it impossible that it is the food itself that is eliminated, and Fuld considers that it is the filling of the stomach which causes contractions of the lower part of the large intestine, this being merely an exaggeration of the normal irritability seen in the usual evacuation following shortly after breakfast. One may suppose that there is a reflex from the gastric mucous membrane to the colon or to the sphincters; it is therefore rational to treat diarrhoea by means of the drug which, by its inhibitory action on the nerve endings, is generally effective in gastric hyperexcitability—namely, cocaine. For adults the writer gives ten drops of a 3 per cent. solution of cocaine hydrochlorate with an equal quantity of phosphate of codeine in peppermint water ten minutes before each of the three principal meals: for children he uses a 1 per cent. solution, and gives one drop for every year of the age. The object of the codeine is to reduce the irritability of the central nervous system. The results which he has obtained from this treatment, although it was not accompanied by any modification of the diet, have been very striking. He finds that diarrhoea, whether chronic or recent, ceases after the first dose, but it is well to continue treatment for a week. The method appears to be equally efficacious for children and for adults; it has not yet been tried for nurslings. No subsequent constipation results, and the diarrhoea does not return on cessation of the treatment.

226. Treatment of Pernicious Anaemia.

FIESSINGER (*Journ. des praticiens*, 1912, xxvi) considers the treatment of this disease as follows: (1) *Causal:* (*a*) The haemorrhages should be checked by appropriate remedies. (*b*) If intestinal parasites are present, thymol is indicated. (*c*) If the cause is an infection by a streptococcus, bacillus of Koch, or treponema these should be treated respectively. (*d*) If the anaemia is of gastric origin, purgatives, tincture of condurango, 10 to 20 drops, HCl, pepsine, with maltine or pancreatin, and milk diet are to be recommended. (*e*) In cases complicating nephritis, milk diet, leeches, and renal revulsids are indicated. (*f*) Plumbism suggests its own remedy. (*g*) Pregnancy may require artificial abortion. (2) *General:* (*a*) Diet. This should be chiefly vegetarian, with condiments and fruit. Animal food should be avoided, milk should be given in small quantities, eggs should be given sparingly. Rest in bed is indicated. (*b*) Arsenic. This drug is best given by the rectum. Every day 5 c.cm. of the following solution should be injected: Fowler's solution 6 grams, distilled water 94 grams. Chaufford recommends 6 to 20 drops per diem, with intervals of eight days, every two or three weeks, injected subcutaneously, of potassium arsenite 1.20 grams, NaCl 0.27 grams, distilled water 20 grams. (3) *Derivatives and Eliminatives:* Diuretics and bleeding are often valuable. (4) *Serotherapy:* These are of two kinds—specific and indifferent serums. The former are haemolytic and haemopoietic; the latter, or non-specific, are best represented by antidiphtheritic serum injected intravenously, and has given good results. The dose should not exceed 10 to 20 c.cm. (5) *Opotherapy:* Red marrow 40 to 100 grams in twenty-four hours; glycerine extracts of marrow and powdered bone marrow (0.50 to 2 grams in twenty-four hours) had given remarkable results in some cases. (6) *Radium:* Treatment by this means is inconstant; in some cases no effect has resulted.

227. Noviform.

In order to improve on xeroform, and more especially to produce a preparation which does not possess the odour of the latter nor its irritating qualities, a new substitute for iodoform has been introduced under the name of noviform. It is also a bismuth compound, having the chemical constitution of tetra bromide benz catechin of bismuth. The bismuth acts as an astringent and drying agent, while four bromine groups, combined with the catechin, gives it [illegible] and deodorizing action. H. Million (*Muench. [illegible]*) [illegible] has used this preparation [illegible]. It was tested in the children's clinic in the University of Munich in powder, suppository, gauze, emulsion, and bandage form. The conditions for [illegible] included infected wounds, pustules, [illegible] of various origin, suppurating lymphomata, burns, [illegible] and the like. In all these [illegible] suppurating surfaces cleaned up with rapidity under its use, and the results were most satisfactory. [illegible] with the effect in tuberculous [illegible]. No undesired irritation or [illegible] or other effect was noted in any case.

228. Adalin.

ADALIN, like a number of other sedatives and hypnotics, has been introduced with a view of obtaining the same good physiological action as veronal or bromural without the disadvantages of these medicaments. It is a combination of the two, and chemically may be described as bromdiethyl acetyl. carbamid. It is a white, almost tasteless powder, which is freely soluble in hot water, oil, and fatty substances, but little soluble in cold water. H. Gudden, who has used it in the Royal Psychiatric Poliklinik in Munich, speaks highly of its action (*Muench. med. Woch.*, January 9th, 1912). He points out that during the eighteen months during which he has employed it, it has given him equable results, and provided that it is not regarded primarily as a hypnotic, but as a sedative with hypnotic qualities, it should find favour everywhere. The chief indications for its use are chronic sleeplessness dependent on neurasthenia (including the sexual variety), hysteria, angina pectoris, mania, etc., pure nervous agrypnia and dementia praecox. In all, he has used it in over 100 cases. The doses which he recommends are 0.25 to 0.5 gram three or four times a day for soothing the symptoms of fear or excitement (mild); while from 1 to 1.5 gram is required for the production of sleep. He has not experienced any ill effects of the drug. Even 9 grams have been swallowed without harm ensuing. E. Glombitza (*Muench. med. Woch.*, February 6th, 1912) has also used adalin in psychiatric practice, and, while he found it useful in many cases, he states that there are certain disadvantages associated with its use. He gave the drug on bread. In one series he gave ½ gram twice a day for mild cases of hysterical, maniacal, and other excitement. The hypnotic action was good in these cases. In the second series he gave the same dose four times a day. The patients were those of the class of dementia praecox. On the whole the effect was good, and he states that the department was quieter than it had ever been before. On the other hand, this dose did not suffice to allay great excitement. Better results were obtained by combining with it paraldehyde or permanent baths. Lastly, he gave a series of patients 4 grams a day. In 3 cases he noticed distinct signs of intoxication. These included diarrhoea, with marked general illness, weakness, and delirium. He finds that the advantages are its practical tastelessness, its rapid elimination, and the fact that no habit is acquired, while the disadvantages are a certain degree of irregularity in the action, the possibility of the appearance of intoxication, and its high price. While veronal (diacthyl-barbituric acid) only costs 0.08 mark pro gram, and bromural 0.15 mark, adalin costs 0.20 mark pro gram, which necessitates a daily expenditure of some 40 pfennings per day for adalin alone.

PATHOLOGY.

229 A Test for Cancer.

MAZZITELLI (*Rif. Med.*, July 27th, 1912) gives an account of his experiments with the test for cancer recently described by Solomon and Saul, and consisting in the estimation of neutral sulphur in the urine. The process is somewhat complicated, and depends ultimately on the oxidation of a body of the neutral sulphur group by means of perhydrol, or, as the author suggests, sodium nitrite. The original authors of the test say that it is independent of the diet taken. Up to now the test has been applied in 223 cases (41 cancer, 182 non-cancerous), and it gave positive results (a brownish precipitate) in 30 cases of cancer, faintly positive in 4, doubtful in 1, and negative in 6; whilst in the non-cancerous cases the result was negative in 172, positive in 6, doubtful in 1, and faintly positive in 3. The author has made trial of the test in 50 cases. Of these 18 were cancer, and the results were positive in 14, doubtful in 1, and negative in 3. On the assumption that the reaction might be due to cachexia and not specially to cancer, the results were as follows: Positive in 16 (cancer 11, tuberculosis 5), doubtful 1, negative in 9 (2? gastric cancer). In 10 cases of tuberculosis the reaction was positive in 8 and negative in 2. As far as the author's small numbers go they do not support the theory that the reaction is due merely to cachexia, for in 6 cases of cancer without cachexia the reaction was positive in 3 and doubtful in 1. A curious thing was noted after operation in cases of cancer—namely, the disappearance of the reaction. Whilst the test cannot be said to be conclusive or even pathognomic, since it has been found present in nearly 70 per cent. of cases of cancer, it may be used in conjunction with other signs and symptoms as corroborative evidence of cancer.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

230. Irreducible Obesity.

Labbé (*Journ. des praticiens*, September 23rd, 1912) relates the history of a cabdriver, who, at the age of 20, weighed 100 kilos, and who for many years followed his occupation, apparently in vigorous health. He had had some slight attacks of bronchitis and there was some emphysema, but that was all. At the age of 52 he was suddenly seized with a grave attack of asystole. His face had a cyanosed and subicteric tint: the urine became scanty and contained albumen and urobilin. His respirations were 48 per minute, and the lungs showed signs of generalized bronchitis. The heart developed a fetal rhythm, and there was anasarca. Under treatment consisting of rest, digitalin, and wet cupping, the symptoms abated and the physical signs greatly improved. His weight meantime fell from 126 kilos to 110 kilos. The treatment of his obesity was then carefully undertaken, but with very little result. A year afterwards he was brought back to hospital suffering from a repetition of the cardiac crisis, and, in addition to the signs previously detailed, his liver was now considerably enlarged and his extremities cold and cyanosed. The treatment was repeated, but with less satisfactory results, and, the dyspnoea becoming progressively worse, he died three months later. The author goes on to say that the history of this case is comparatively common. Autopsy in these cases generally reveals the fact that the heart is large, fatty, and fibrous, and the kidneys usually show evidence of interstitial nephritis. It is impossible to proceed with reducing treatment in these cases because of the condition of the myocardium. The patient is unable to have the exercise necessary to burn up the fat. Neither the pulmonary nor the renal insufficiency is an insuperable difficulty in these cases, but the state of the heart is an obstacle which cannot be overcome. The experience of the author proves that the treatment of obesity ought to be undertaken before it is too late, and in spite of every appearance of vigour and good health. The treatment consists of rest, a lacto-vegetarian dietary, and some cardiac tonic, such as sparteine, strophanthus, or digitalin. Blood-letting is of service in these cases to reduce the existing arterial hypertension.

231. Gastric Vertigo.

Delfino (*Revista de Med. y. Chir. Pract.*, September 28th, 1912) summarizes our present knowledge of the above malady. With Lellier of Burdeos, he considers the term "gastric" inapplicable, as it may be caused by any derangement of the digestive functions. It is the most common form of vertigo; according to Albert Robin, forming 80 per cent. of all cases. It has been and is a fertile source of diagnostic errors, having been mistaken for an indication of cerebral disease. Regarding the pathogeny of the malady, there are the usual two theories—the toxic, which ascribes it to the absorption of toxins from the alimentary canal, and the nervous or reflex. On the whole, the author inclines to take the latter view. The vertigo is usually preceded by very variable sensory phenomena, such as a dazzling appearance before the eyes, with spots or rays of light, or simply dimness of vision; in other cases there is an access of mental dullness, with a feeling of emptiness in the head. The vertigo may be of any degree, and is accompanied by the usual sensations of the surrounding objects moving or circling around. It is to be noted, however, that there is never loss of consciousness, even when the giddiness is intense enough to cause the sufferer to fall to the ground; also, he is always fully aware of the illusory nature of any sensory disturbances he may experience. The symptom usually yields readily to treatment of the dyspeptic trouble, which is its apparent cause, and to general hygiene. As a palliative, when the fits are frequent, a mixture containing potassium bromide, with a little ether and valerian, is recommended by Robin.

232. Spasmus Nutans.

The first case of infantile spasmus nutans recorded in Italy is published by A. Gismondi (*La Pediatria*, Napoli, 1912, xx). The child, a girl of 17 months, was breast-fed for a year, and walked at 15 months; about the same time nodding movements, nystagmus, and squint appeared, and were increased by excitement. On examination, the anterior fontanelle was found to be closed, and no trace of rickets could be found; the child was well nourished, not anaemic, had twelve teeth, and appeared in every way normal but for the head-nodding and eye signs. There was an internal squint of the right eye and a spontaneous small horizontal nystagmus in both eyes. The head was kept turned to the left—though there was no muscular spasm—and nodded 80 to 100 times a minute obliquely from right to left and from above downwards; these movements increased in amplitude when the child was made to look at any object. Electrical examination with the galvanic current showed that anodal closure contraction could be obtained in several muscles of the arms with currents—1.2 to 2.4 milliampères—that failed to give any cathodal closure contractions; in other words, the reaction of degeneration was partially simulated, as it commonly is in spasmophilic infants. Gismondi discusses the literature of spasmus nutans, and finds that almost all the authors lay especial stress on the influence of living in badly-lighted rooms on its production. In his own case the child lived in a small ill-lighted kitchen on the first floor in a narrow street of a densely populated quarter, and was much improved six weeks later after treatment by exposure to open air and light. The mother then stated that the movements were more marked on dull days than on fine. Gismondi believes that a spasmophilic element was present in his case, though Trousseau's and Chvostek's signs could not be obtained, and he lays much stress on the complete absence of signs of rickets.

233. Purulent Pneumococcal Pleurisy in the Child.

Kirmisson (*Journ. des praticiens*, 1912, xxvi) finds that purulent pleurisy is much more frequent in children than in adults. Netter found of 642 cases of purulent pleurisy 62 per cent. of the cases occurred before the age of 5, 6 per cent. between 5 and 10, and 4 per cent. between 10 and 15 years of age. The pleurisy is much less often tuberculous in the child than in the adult, and much more often pneumococcic in the infant, and streptococcic in the adult. Most cases of pneumococcic purulent pleurisy are secondary in nature, following on a pneumonia. The pus is yellow and thick, and contains the organism; frequently arthritis, osteomyelitis, etc., are present at the same time. The prognosis is favourable (Netter, 16 cures out of 17 cases) if the pus be removed by puncture.

SURGERY.

234. Distortion of the Shoulder-joint.

F. Lange states that the subject of distortion of the shoulder-joint has received little notice by surgeons and orthopaedic surgeons (*Muench. med. Woch.*, June 4th, 1912). The author first discusses the symptoms of distortion. In the case of the knee-joint, which is the most accessible joint for palpation and inspection, the first symptom met with is pain, which may be general or may be limited to that part of the capsule which is distended. The next symptom is swelling. After severe trauma a serous or haemorrhagic exudation into the joint is produced, which is recognized by the usual signs of hydrops or haemarthros with dancing of the patella. In the next place, in every severe case of distortion, there is a pathognomic bending to from 160 to 150 degrees. There appears to be some difference of opinion as to the cause of this flexion. Bonnet suggests that the position is purely mechanical, in that the joint is capable of containing the greatest amount of fluid in this position. Lange, however, does not agree with this view, since the same flexion is seen when there is no fluid in the joint. Lange finds that the posterior part of the capsule, which is the shortest, becomes painful before the longer or anterior part when inflammation of the joint appears, and the pain is increased when this part of the capsule is held taut. To diminish the pain as much as possible, the patient bends the joint. In regard to distortion of the shoulder-joint, the situation of the pain is not characteristic. Forced abduction causes an irritation of the inner part of the capsule; raising the arm forwards strains the posterior part and hyperextension backwards the anterior part. But it is difficult

to obtain clear results in this manner, since the pressure of the head of the humerus against the acromion masks the localization of the capsule pain. Apart from this, the implication of the bursae renders the diagnostic value of localized pain small. In the same way the detection of swelling cannot be relied on as a diagnostic sign, since in the shoulder-joint the presence of the deltoid muscle and the fat and glands in the axilla mask swelling of the capsule and even collections of fluid in the joint. The only reliable diagnostic sign is therefore the pathognomic position of the limb. Lange has conducted some experiments, as Bonnet has done before him, on the dead body to examine the condition of the joint when fluid is introduced. He finds that the presence of a moderate amount of fluid or a mild swelling of the capsule results in an abduction and raising of the limb forwards to an angle of between 30 and 40 degrees. This point, however, is greatly due to a turning of the scapula and not a movement of the humerus. If the surgeon replaces the scapula by abducting and raising the arm until both scapulae are symmetrically placed, it will be found that the limb is in a position of inward rotation. This in the dead subject. In cases of distortion the arm hangs in a position of internal rotation, and outward rotation is only possible to a small extent, corresponding to the severity of the affection. When the scapula is replaced, there is an abduction and flexion forwards, both to the extent of about 30 degrees. In conclusion, Lange briefly discusses the differential diagnosis and the mechanical treatment, which he illustrated by means of clear pictures of patients.

235. Suction Drainage in Empyema.

In a description of the surgical treatment of empyema Saakianz (*Wien. klin. Rund.*, Nos. 25 to 28, 1912) lays stress on the importance of suction drainage. He recommends Härtel's modification of the method introduced by Perthes. The apparatus for this consists of a rubber disc about 4 in. in diameter, in which a central hole is punched to fit the drainage tube. The skin around the wound is smeared with dermatol ointment, and the rubber disc, held closely to it by strapping and pads, forms an airtight covering. The tube, which projects through the bandages, is connected to a flat flask from which the air is partly exhausted through another tube by an air pump. Between the flask and the pump is a rubber ball which serves to keep up the negative pressure, both flask and ball being carried in a hanging pocket. The dressing is changed every two or three days. It is claimed that by this method the physiological condition of the pleura is restored, a steady negative pressure equal to 50 or 100 mm. of mercury being maintained, and at the same time thorough drainage is secured. Moreover, the hyperaemia induced by the negative pressure converts the purulent secretion into a serous discharge. The author recommends that this suction drainage should be used after simple resection of a rib, and also before the radical plastic operation of Schede for chronic empyema with fistula. In this operation a large skin flap is dissected up, and a section of the chest wall removed by sawing through the ribs. The laceration of the intercostal arteries by the teeth of the saw tends to check haemorrhage, but there is often considerable shock, and it is therefore desirable to improve the general health of the patient beforehand by employing suction drainage to remove the septic discharge. This procedure will also reduce the size of the empyema cavity, and has even induced it to heal without any further operation.

236. X-ray Diagnosis of Mastoid Disease.

Howard Pirie (*Arch. Roent. Ray*, September, 1912) states that for the radiography of mastoid cases the patient should lie prone on a couch, with the head (and the plate beneath it) on an inclined plane at 25 degrees with the couch. The head of the patient is rotated 90 degrees, so that he looks directly to his side. The source of rays is above the head, and the perpendicular ray is made to fall at a point 2 in. above the highest point of the pinna of the ear. The glass of the tube should be 9 in. away from the hair. The exposure required will turn a Sabouraud pastille [illegible] the glass to one third of the B tint. [illegible] should be made, under [illegible] as to hardness and quality of the tube. The radiograph of the normal mastoid shows [illegible] lower jaw; the posterior border of [illegible] canal behind (separated by [illegible] ulation, the air cells forming [illegible] from the articulation backwards. The petrous bone surrounding the auditory canal; a [illegible] of the outline of the lateral sinus running through the posterior half of the cells; the foramen magnum as an elliptical opening with part of the first vertebra crossing it; and the outline of the pinna of the ear. Acute mastoiditis shows air cells obscured, though still faintly seen; outline of lateral sinus, perhaps a little more definite than normal; greater intensity of the petrous bone and of the whole mastoid region. Chronic mastoiditis shows complete absence of the air cells; the standing out of the petrous bone as a very dense, roughly triangular area, its posterior border forming part of the sharp, crescent-shaped line, corresponding with the upper and anterior border of the lateral sinus; and, frequently, the lateral sinus in very good definition.

237. Auto-operation for Inguinal Hernia.

Regnault (*Journ. des praticiens*, 1912, xxvi) operated upon himself for this condition, and for that reason the case is worth mentioning. He injected a demi-centigram of morphine into the left thigh and a solution of cocaine hydrochlorate, 1 in 200, made with physiological serum and sterilized in an autoclave to 120°, into the inguinal region, and followed the latter with two other injections into the same spot. The author describes the steps of the operation, during which he felt no pain. He finds that 9 c.cm. of the above solution of cocaine are sufficient for operative purposes.

OBSTETRICS.

238. Treatment of the Vomiting of Pregnancy.

Although some authorities regard the slighter degrees of vomiting in pregnancy as normal, Wallich (*Journ. des praticiens*, October 5th, 1912) draws no such distinction between these and the graver forms of vomiting. In his view both are equally pathological. The author first deals with the various theories of the causation of this condition. Hysteria has been invoked as one of the causes in some cases, and he quotes a case which was cured by suggestion when matters had reached a serious state. The theory of autointoxication, too, has numerous adherents, Pinard in particular asserting his belief in a state of hepatic toxaemia. In other cases thyroid insufficiency, suprarenal and ovarian insufficiency, have all been suggested as causes of the condition. Frequently enough the vomiting is brought about by a violation of some of the simple laws of hygiene. In such cases an abundant supply of fresh air and the correction of any existing constipation is important. The dietary should exclude all meat soups; milk, especially if taken at the same time as other nourishment; fish, unless absolutely fresh; eggs, *entremets*; pastry and sauces. Breakfast should consist of weak tea, or cocoa made with water, and bread-and-butter. Dinner may include any grilled or roast meat, associated with some farinaceous food like potatoes, rice, or macaroni, and the meal may be completed by one green vegetable and a compôte of fruits. The evening meal ought to be very light—for example, some farinaceous soup, fresh vegetables, and a compôte of fruits. The constipation is also to be appropriately treated. In the more serious cases the treatment may be classified as (*a*) disintoxicating: food by the mouth must be interdicted and lavements of serum given, or water may be given at frequent intervals, the addition of milk being made very gradually. In the case of those who dislike milk the addition of a little coffee, chocolate, or cognac renders it more tolerable. (*b*) Sedative. In some cases the author is impressed by the value of complete isolation of the patient. Suggestion plays an important part in this type of case, and he quotes a case which was apparently cured by having the epigastrium painted over with collodion coloured by methylene blue! The galvanic current has been used with success by Gautier, the positive pole being placed under the clavicle and the negative pole on the epigastrium. A weak current of about 7 milliampères is used for about fifteen minutes. Medicinally, the author has found chloral given per rectum in an emulsion of milk and yolk of egg very successful. These injections are painful at first, but if persevered with for a time the results are excellent. (*c*) Opotherapy. This form of treatment has so far produced no very reliable result. (*d*) Serotherapy. The author states that Fieux and Le Lorier have obtained some success in the administration of the normal serum of a healthy pregnant woman. For obvious reasons, however, such a method of treatment is inconvenient and difficult in practice, and, further, might convey certain risks. (*e*) Interruption of the pregnancy. This has been recommended by Pinard in all cases in which the pulse remains permanently at 100 per

minute and the patient is obviously becoming enfeebled. In some cases the introduction of a laminaria tent into the os uteri is sufficient to cause immediate cessation of the vomiting.

239. Spontaneous Haemorrhage of the Newborn.

MYERS (*Arch. of Pediatrics*, March, 1912) reports a case of spontaneous haemorrhage in the newborn treated by subcutaneous injection of small quantities of untreated human blood, a method previously suggested and carried out by Schloss and Commiskey. A female child, the first of young and healthy parents and apparently normal at birth, thirty-two hours later passed a large stool of tarry blood clots, which was repeated six times during the next eight hours, three of the later ones being accompanied by vomiting of considerable quantities of clotted blood. After sleeping quietly for about eight hours the child passed another stool of blood and vomited blood, and a few hours later passed three more similar stools without vomiting. When first seen (twenty-four hours after the commencement of symptoms) the condition appeared hopeless, the weight having fallen from 5 lb. 12 oz. at birth to 4 lb. 8 oz. The cord was normal, and there were no haemorrhages into the skin or into the visible mucous membranes. Three c.cm. of blood were drawn from a vein of the mother's arm and rapidly injected subcutaneously into the baby's buttock before there was time for coagulation in the syringe. Two and a half hours later a stool was passed containing old-looking clots and a small quantity of fresh blood, and two hours later a second injection of 5 c.cm. of maternal blood was administered. From this time there was no more bleeding or vomiting and the child took the breast well, the stools presenting the typical meconium character and changing to normal in a few days. Subsequent history was uneventful, the child gaining weight well. The injected blood was rapidly absorbed, so that a few hours after injection only the needle puncture was visible. Although an attempt was made to inject 10 c.cm. of fresh blood, the promptness of coagulation prevented more than 5 c.cm. being used, which, however, sufficed in this case. The suggestion that the condition is due to a form of chloroform poisoning seems hardly capable of proof, seeing the frequency with which chloroform is used in obstetrics without producing the condition, and in this particular instance chloroform was only administered for a few minutes, less than half a drachm being used.

GYNAECOLOGY.

240. Vaccine Treatment of Gonorrhoea in Woman.

THE indications for and the limitations of vaccine treatment of gonorrhoea in woman is discussed by F. Fromme (*Berl. klin. Woch.*, May 20th, 1912), who is an advocate of but not an enthusiast for this treatment. While the vaccine treatment of gonorrhoeal epididymitis and arthritis in man has been strikingly successful, the percentage of recoveries in the former being as high as 80, the results have been less satisfactory in gonorrhoeal diseases in woman. Heinsius, it is true, has obtained good results with Reiter's gonococcal vaccine in 10 cases of pyosalpinx, and Schmitt has reported favourably on the vaccine treatment of vulvo-vaginitis in young girls, and in cases of gonorrhoea of the cervix. The drawbacks to this treatment in woman are enhanced by the difficulties of diagnosis, and by the physician's inability in most cases to isolate the gonococcus from the genitals, and thus obtain an autogenous vaccine. The diagnosis of gonorrhoea in woman by injections of vaccine is unsatisfactory, for Fromme found that some cases of recent gonorrhoea failed to react, while a violent reaction was given by a *virgo intacta* suffering from myoma of the uterus. Diagnostic doses of 0.5 c.cm. of Reiter's vaccine were injected into the subcutaneous tissues on the outer aspect of the thigh in 8 cases of recent gonorrhoea, in 60 cases of gonorrhoea of the uterine appendages, in 2 cases of uterine gonorrhoea, and in 10 healthy persons. Of the 60 patients, 7 reacted violently, and 37 failed to react at all; in only 6 was a rise of temperature over 99.5° observed. Diagnostic intramuscular injections of the vaccine "arthigon" were given in doses of 0.5 to 1 c.cm. in 75 cases of pyosalpinx. In every case a more or less violent local reaction appeared in the form of redness, swelling, and pain at the site of injection. A focal reaction, referred to the site of the disease by such symptoms as abdominal tenderness, pain in the back, or by increased vaginal discharge, was observed in 59 cases. While the local and focal reactions with this vaccine are of little diagnostic value, a rise of temperature of more than 1° C. is usually indicative of the gonorrhoeal nature of a pyosalpinx. Turning to the therapeutic action of gonococcal vaccines, the author found that recent cases of Bartholinitis, of gonorrhoea of the external genitals, and of the cervix, were unaffected by Reiter's vaccine. The inflammation even spread in some cases during the treatment, and unilateral or bilateral pyosalpinx developed with fever and pain. But after the formation of a gonorrhoeal pyosalpinx Reiter's vaccine often was strikingly beneficial, pain growing less or completely disappearing after the third or fourth injection. The result of this treatment in 45 cases of gonorrhoeal pyosalpinx was as follows: Recovery in 10, marked improvement in 19, slight improvement in 6, and no improvement in 10. Intramuscular injections of "arthigon" were given in doses rising from 0.5 to 5 or 7 c.cm., each dose being increased by 0.25 c.cm. It was again observed that this vaccine failed to benefit recent gonorrhoea of the urethra, vagina, or uterus. But in 75 cases of gonorrhoeal pyosalpinx the results were: Recovery in 11, marked improvement in 29, slight improvement in 20, and no improvment in 15. The author attributes the improvements in his results, as compared with his earlier publications, to greater caution in raising the dosage of the vaccine. He holds that success in this field depends on careful dosage and cautious choice of patients. A small dose—that is, 0.5 c.cm.—should be given at first. If the temperature rises, its fall should be awaited before another injection of the same amount is given, and there should be an interval of at least four days. If no rise of temperature is observed, the dose is increased each time by 0.1 to 0.25 c.cm., any rise of temperature being responded to by a reduction of the dose, and by increased intervals between each injection. The cases which react most satisfactorily to the treatment are those of pyosalpinx in which the acute febrile stage is terminated, but which have not become chronic. In such cases the results are most striking, and combined with other conservative measures, such as warm air and hot douches, the treatment with vaccines should often replace operative interference.

THERAPEUTICS.

241. A New Antipyretic.

M. KRABBEL (*Wien. med. Klin.*, No. 16, 1912) has made use of the antipyrin derivative prepared by the Höchster Farbwerken, and designated No. 844. The preparation is obtained by the action of formaldehyde bisulphide solution on amido-antipyrin. It has been tested on animals at the pharmacological institutes at Freiburg and Breslau by Straub and Biberfeld, who obtained similar results. It was found that the preparation had an antipyretic effect more marked than that of antipyrin in all conditions of fever artificially induced. No side-effects referable to either the respiratory system or the circulation were observed. The present author has made use of No. 844 in a series of rheumatic and other diseases with satisfactory results. The preparation is obtained either as a powder or in tablets. It is soluble in water, is tasteless, and is readily taken. In cases of acute joint rheumatism the author found the effect equal to that of salicylates: the fall in temperature was speedy, and was not accompanied by profuse sweating. The swelling, and especially the painfulness, of the joints disappeared in a short time. The dose varied with the individual case: in one case in which 8 grams (124 grains) were given in the day an antipyrin rash developed on the sixth day, but had disappeared two days later. A very good result was seen in a case of obstinate relapsing rheumatic polyarthritis in a young man. In this case in an earlier attack fever had persisted for several weeks in spite of treatment by salicylates and later of intravenous injections of collargol; a second attack occurred suddenly after a few weeks of good health, and in this attack 4 grams (62 grains) per day of No. 844 caused the disappearance of both fever and pain in two days. The preparation was given in doses of 4 grams (62 grains) a day in combination with physical treatment by baths, etc., in a whole series of chronic and subacute muscular rheumatism, and the author's impression was that the length of treatment was thereby shortened. In cases of rheumatoid and catarrhal forms of influenza the preparation gave uniformly good results in leading to a fall in temperature and in the inflammatory symptoms, and, above all, in speedy disappearance of pain. The preparation led to a temporary fall in temperature and increased comfort on the part of the patient in 2 cases of advanced pulmonary phthisis and in 1 of croupous pneumonia. The author considers the prepara-

tion to be of great value as a specific in joint rheumatism and as an antineuralgic agency.

242. Psychotherapy of Arterio-sclerosis.

MAX HERZ (*Wien. klin. Woch.*, No. 17, 1911) deals with the psychical etiology and therapeutics of arterio-sclerosis. Heavy bodily and mental work and psychical causes are as a rule placed in the front rank as being answerable for artero-sclerosis. The author would class these causes together under the one cause of dissatisfaction ("Unlust"). Men work to-day under high pressure, and often under anxiety. The fear of arterio-sclerosis is especially common among doctors, and the causes they usually suggest are psychical causes; their lives are obviously lives of special anxiety and strain. With regard to prophylaxis, Herz suggests that the present system of training of children is at fault, in that too great stress is laid upon duty without a corresponding stress upon the importance of enjoyment of life. When arterio-sclerosis is present, a great factor in the treatment is the removal of hypochondriac feelings. Any persistent trouble or care is harmful to the heart and kindeys. The term "calcification of arteries" should not be used. The prognosis given should be the most hopeful possible. Men who have worked too hard must be encouraged to the conception of a life in which work and recreation alternate. With regard to diet, cases are known to every one in which much injury has resulted from a complete alteration in the habits of the patient having been made on theoretical grounds. For example, an elderly man suddenly put on to a vegetable diet is unhappy and dissatisfied, and loses ground. The author is of opinion that, broadly speaking, what is unpleasant to an arterio-sclerotic patient is not useful to him. The new régime instituted, in spite of unavoidable limitations, must be on lines which admit of satisfaction in life. Smoking or the drinking of a glass of wine or beer to those who are accustomed to it should not be forbidden, because of the misery such a sudden change involves. Altogether arbitrary restrictions are often made; thus coffee will be forbidden to a patient who has depended on it, while at the same time caffeine, in much greater quantities and less diluted than would have been present in the coffee, is prescribed. The author believes that to embitter the patient's life by the removal of means of enjoyment is more harmful than the means of enjoyment themselves. A similar standpoint is taken with regard to physical methods of treatment.

243. Iodine Neol.

OTTO MÜLLER (*Wien. med. Klin.*, No. 10, 1912) has made use of iodine neol "Böer" in his practice, and reports on the results obtained. Iodine neol is an ointment, dark brown in colour, which, according to Vorgthen's analysis, contains in 100 parts 9.9 parts of neutral fats, 7.2 medicinal soaps, 46.29 lanoline, 1.5 sodium iodide, 1.3 free iodine, 4.9 iodine in organic combination, 26.6 of water. The author finds that a 6 per cent. preparation of iodine neol has a stronger iodine action and is more fully absorbed than a 10 per cent. iodine vasogen, the incorporated iodine being almost completely used up in the case of iodine neol. Müller has used the preparation in a large number of different conditions with extraordinarily favourable results. The cases treated fall into groups. For acute scrofulous cervical glands not showing signs of breaking down 6 per cent. iodine neol was used in the case of children, and 10 per cent. in the case of adults; the ointment was applied to the glands and the surrounding skin once or twice a day, with the result that, in the author's experience, the glands were almost always reduced after a few days. In dry pleurisy the pain was found to cease after a few days of the application, breathing became freer, and the objective symptoms soon disappeared. In cases of epididymitis hot poultices or ice, in accordance with the sensibility of the patient, were made use of, as well as the iodine, and a speedy result was obtained. For rheumatic joint swellings, especially when these were gonorrhœal in nature, iodine neol proved a sovereign remedy, under which cases which had been resistant to the internal administration of the salicylates and iodine quickly improved. The results in tuberculous disease of joints were less striking. In cases of prostatitis and prostatic hypertrophy 6 per cent. suppositories of iodine neol proved more effectual than ordinary iodine treatment. In cases of tendo-vaginitis iodine neol was used very cautiously in the acute stages, but could be rubbed in in the later stages; improvement always became quickly noticeable. In only one of the author's cases has there been any unpleasant side-effect necessitating the discontinuance of the remedy. In this case, though iodine tincture was well borne, the skin was an especially delicate one, and under iodine neol an extensive dermatitis developed. The same method of application was employed in all cases. The skin was first cleansed with benzine or alcohol, iodine neol rubbed in with more or less vigorous massage, and the skin covered with flannel. Before any fresh application the old ointment was removed with the help of oil. As soon as the skin began to be painful the use of the ointment was discontinued for a day or two, and simple vaseline was substituted. The author believes that hardly any other preparation of iodine equals iodine neol as a local application.

244. Treatment of Cough in Pulmonary Tuberculosis.

ROBIN (*Journ. des praticiens*, 1912, xxvi) gives the following indications for the treatment of cough in phthisis:—(1) Nervous cough resulting from laryngeal irritation: If this is not relieved by suggestion, as in sanatorium treatment, painting the throat with 30 per cent. potassium bromide or 1 gram of the drug in water are of value. (2) Pharyngeal cough: Use the following gargle: β naphthol, 0.20 gram; sodium biborate, 15 grams; distilled peppermint water, 200 grams; boiling water, q.s.p. 1 litre. If the pharynx is inflamed use the following mouth-wash to the pharynx: Cocaine, 0.15 gram; resorcin, 1 gram; glycerine, 30 grams. (3) Laryngeal cough: The application of orthoform, with a solution of balsam of Peru, and the following prescription are of value: Tinctura bryoniae, 10 minims; tinctura aconiti, 20 minims; tinctura belladonnae, 10 minims; syrup. papav., 30 grams; water, 120 grams; a tablespoonful every two hours. (4) Tracheal cough is best relieved by expectorants, as terpine, 0.15 gram; Dover's powder, 0.15 gram; two or three in twenty-four hours. (5) Gastric cough: Ten minutes before meals two drops of Sydenham's laudanum (Codex 88) or a centigram of codeine. During meals, if necessary, a few inhalations of oxygen. (6) Bronchitic cough: Extract. thebaiae, 0.01 gram; extract. daturae, 0.005 gram; three pills before going to bed, two during the night, three to five in the day. (7) Pleural cough: Revulsives, as iodine, the cautery, or blisters, are indicated.

PATHOLOGY.

245. Experimental Amyloid Disease.

O. FINZI (*Lo Sperimentale*, Firenze, 1912, lxv, 483) recalls the history of this disease, described as lardaceous by Rokitansky (1842), waxy by Christensen (1844), amyloid by Virchow (1854), who also named amyloid substance itself "animal cellulose." Kekulé (1858) showed by analysis that it was nitrogenous, Kühne and Rudneff (1865) found sulphur in it, Morachowitz (1877) and others showed that it contained phosphorus. It is now believed to be a compound of chondroitin sulphuric acid with nucleoprotein, and it is commonly held to be the result of a process of infiltration rather than of degeneration. Lardaceous disease may be produced experimentally in animals by the injection of very many varieties of bacteria or their toxins, of turpentine or of arsenic. It is most readily produced in white rats, and by the injection of *Staphylococcus pyogenes aureus*. Finzi employed white rats and this staphylococcus in his experiments, and succeeded in producing characteristic lardaceous disease; thus in the spleen he produced it in the three forms met with in man, and denoted by the terms "bacon," "sago,' and "diffuse lardaceous change." His method was to examine all the tissues and the blood of his experimental animals and to try to trace the development of the change. He found nothing to support the view of Czerny (1893) that the amyloid substance was produced in the leucocytes or pus corpuscles, and by them carried to and deposited in the different organs of the body; and disputes various points in favour of this view put forward by later writers. He does not agree with the idea that lardaceous substance is produced by a degenerative process in the red blood corpuscles and set free by their haemolysis; he thinks that the anaemia commonly seen in patients with amyloid disease does not require such a haemolysis for its explanation. He doubts whether it is possible to argue that the presence of iodophile or eosinophile granules, or granules with abnormal (metachromatic) staining reactions, in the white or red cells of the blood justifies the view that such granules are precursors of amyloid substance. He finds that experimental amyloid disease is not necessarily preceded by hyaline degeneration, nor is it followed of necessity by grave anaemia or wasting. In none of his animals did he find phagocytic giant cells in the amyloid organs such cells have been described as evidence of processes of repair. The literature is extensively quoted.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

246. Varieties of Angina Pectoris.

FIESSINGER (*Bull. de l'Acad. de Méd.*, October, 1912) states that, in his opinion, too grave a view is often taken of the outlook in this malady. Fatal accidents are not much more common than in many cardiac conditions. He thinks Huchard has laid too much stress upon diseases of the coronary arteries in the etiology of angina pectoris, and from a total of 80 patients enumerates the following classification of the disease: (1) Coronarteritis. (2 and 3) Disease of the aorta and of the myocardium. (4) The angina of interstitial nephritis. (5 and 6) The angina of aërophagy and of obesity. All of these suffered from the typical lancinating angina pain after any exertion. When the pain begins, more particularly after walking or any violent muscular contraction, it indicates the existence of myocarditis. Many cases of myocarditis, however, do not suffer from angina, and in those which do there is undoubtedly a nervous element also present. It is in all probability a neuralgia of the periaortic nerve fibres. This is borne out by physiology, which has revealed the insensibility of the cardiac muscle itself. The general treatment resolves itself into the use of nitrites in the form of amyl nitrite, or trinitrin, and morphine given at suitable intervals of time and according to the severity of the attack. Prolonged rest in bed is essential in most cases. A system of small meals of one course only, repeated every two hours—making seven such meals during the day—is of much benefit. Roast poultry, fish, or ham may be given once daily when the excretory action of the kidneys is satisfactory, and after each meal, if solid in character, a claret-glassful of hot water should be taken. Special treatment: (1) Angina arising from disease of the coronary arteries. This is in general of syphilitic origin more especially in the young. The Wassermann reaction will generally prove whether this or aërophagy—another not uncommon cause of angina pectoris in the young—is responsible for the condition. Specific treatment, with the use of theobromine and trinitrin, is generally very efficacious. (2) The angina of aortic insufficiency. In these cases syphilis is also frequently the cause and disease of the coronary arteries is usually superadded. Moderate doses of potassium iodide, and even quite small doses if the kidneys are affected, will be found to give much relief. Large doses of the iodide usually cause intolerance. These are the most obstinate cases, and very often rest in bed for a period of time up to two months is desirable. (3) The anginas of myocarditis. In these cases digitaline in small doses $\frac{1}{10}$ mg. in conjunction with theobromine is of service. Rest in bed for at least a month is the best means of relieving pain in these patients, in whom, even if the myocardial condition is slight, the nervous system is singularly vulnerable to any form of excitement. (4) The angina of interstitial nephritis. In these cases patients possess a means of spontaneous cure as the result of dilatation of the auricle following sudden effort. The author relates two cases in which, after unusual exertion, a murmur of mitral insufficiency followed suddenly where none had previously existed. An orthodiagraph made in one of these cases showed considerable dilatation of the auricle. The resulting diminution of intraventricular pressure, for the time at least, brought about a cessation of the anginal attacks. In other cases a lacto-vegetarian dietary on the system of frequent small meals may be given, while frequent laxatives are desirable. Theobromine and digitaline assure some amelioration of the symptoms. (5 and 6) In cases of obesity and aërophagy a cure is the rule. Here the system of dietary already referred to is of the utmost advantage. The loss of weight and flesh in these cases has marvellous results. The use of theobromine twice daily for a month assists the cure. These patients, however, ought to be warned against undergoing any fatigue. In the cases of aërophagy the painful crises are generally evoked by walking. Dyspeptic states are usually the starting-point, and a cachet of soda bicarbonate along with some absorbent powder after each meal is of benefit. Trinitrin and theobromine are useless and even harmful. The most usual type of gastric trouble in these cases is a state of gastric hyperaesthesia with hyperchlorhydria, pyloric spasm, and secondary fermentation.

247. Hepatic Oidiomycosis with Icterus Gravis.

C. ZENONI (*Lo Sperimentale*, Firenze, 1912, lxvi, 33) describes the case of a schoolboy of 7 who for three months had symptoms of gastro-enteritis with irregular fever and occasional rigors. After a time pain and swelling under the right costal margin were found, followed three weeks later by jaundice. On admission to the hospital the child showed marked jaundice, with bile pigment in the urine; there was a general enlargement of the lymphatic glands in the neck, axillae, groins, and abdominal cavity; the liver was much enlarged, its left lobe was tender; exploratory puncture was performed without result. The spleen could not be felt. Fever was present, up to 100° to 102° F., but no sweats or rigors were observed. After five weeks, during which the patient lost ground, thrush appeared in the mouth, and the child died comatose a fortnight later. *Post mortem*, enlarged glands compressing the common duct were found in the portal fissure; the mesenteric and retroperitoneal glands were enlarged, some softened and even puriform. The spleen was enlarged and red. The liver was much enlarged, brownish-green or green in colour, with a puitaceous abscess the size of a pigeon's egg in the right lobe, and many smaller abscesses scattered throughout its substance and under Glisson's capsule. The intestine showed diffuse catarrhal enterocolitis, with an erosion corresponding to a Peyer's patch at the end of the ileum. The pancreas was oedematous and hyperaemic. Zenoni found that mycelium, hyphae, and conidia could be seen in and about the smaller hepatic blood vessels and the bile ducts, and grew an *Oidium roseum non liquefaciens*, with bacteria like *B. coli*, from the liver and the lymphatic glands. Microscopically the liver presented the picture of a suppurative hepatitis, with central necroses, small polymorphonuclear, round-celled infiltration, epithelial desquamation in the bile ducts; in certain places were agglomerations of large mononuclear lymphocytes and mycelium, and Zenoni believes that these cells were formed by local proliferation rather than by immigration. A few masses of plasma cells were also seen. The lymph glands showed necrotic areas, and, in addition, aggregations of large mononuclear cells and plasma cells similar to those seen in the liver; fibrous lymphadenitis was also found. In all those organs it was possible to stain the Gram-negative oidial filaments by the methods of Buchholtz and of Busse; and the oidium was pathogenic to rabbits, guinea-pigs, and white rats. Zenoni argues that the case began with a gastro-enteritis, upon which the oidial infection was rapidly grafted; this took place, he believes, long before the thrush appeared in the mouth. Tubercle bacilli and giant cells were not found anywhere. The literature is freely quoted.

248. Physical Signs and X-ray Pictures in Early Phthisis.

SEWALL AND CHILDS (*Archives of Intern. Med.*, July 15th, 1912), from a comparison of physical signs and *x*-ray pictures of the chest in early stages of tuberculosis, found that auscultation of the voice and whisper affords a most delicate index of the pathological changes in the lungs. In the present state of our knowledge the clinical history of a case combined with physical signs may lead to strong suspicion of tuberculous infection long before the *x*-ray negative shows any signs of actual tissue changes other than those involving the bronchial glands. Vocal resonance is produced by vibrations both of the thoracic viscera and of the chest wall, and the latter may be damped down or obliterated from consideration by pressure with the stethoscope. The whisper does not set up resonance of the parietes, but merely indicates visceral conditions, and it is rendered plainer by such stethoscopic pressure. For purposes of physical examination the lungs may be divided into an upper and lower half, the dividing line being the third intercostal space in front and the level just below the spines of the scapulae behind. The upper portion receives directly the transverse vibrations emanating from the trachea and larger bronchi, while the lower is removed from their influence. In conjunction with other clinical methods, frequently repeated skiagrams of the chest are essential to a thorough understanding of the condition. Extreme pathological changes in the bronchial glands in the hilus region are easily recognized by such means, but

alterations of moderate grade require careful interpretation. In the negative of the normal chest the opaque arborizations of the "bronchial tree" are almost entirely due to shadows cast by blood vessels, which in non-infected subjects present a typical symmetry and regularity of distribution suggestive of the shadow of a leafless tree cast by the sun on an asphalt pavement. In practically all the cases of suspected tuberculosis the negatives showed areas of pulmonary congestion, as evidenced by thicker branches and denser arborizations, recognized clinically by a ringing quality of the bronchophony, which persists under stethoscopic pressure. The recognition of such abnormal congestion is of great importance in early diagnosis. The earliest pathognomonic skiagraphic sign of tuberculosis is the representation of comparatively isolated areas of vascular congestion, which increase independently of their connexions with the central root, and such peripheral focalization of the congestive process and its severance from the main system of vascular radiations tend to become more prominent as the disease progresses and shadow-creating deposits are formed.

SURGERY.

249. Abscess Treated with Antiferments.

COCCO (*Gazz. degli Osped. du Clin.*, October 13th, 1912) gives a brief account of his experience in the treatment of abscesses by ferment injections. The broad distinction between the cold tuberculous abscess and the common abscess due to pyogenic organisms depends on the fact that the pus in the first case is chiefly made up of lymphocytes, whilst in the second case it is made up of polynuclear leucocytes which contain a proteolytic ferment. The different properties of the two types of pus in possessing or not possessing a proteolytic ferment is made use of as a test, for if a few drops of the pus in question are placed on solidified serum, if the pus contains leucocytes after a few hours, a cavity will be found in the jelly, whereas if the pus is made up of lymphocytes no such change will occur. These facts—namely, that in cold abscesses the proteolytic enzyme is absent—help to explain why the pus is not absorbed in these cases, whilst, on the contrary, in common abscesses absorption may take place from the solvent action of the leucocytes. Therapeutically, therefore, cold abscesses should be injected with some substance containing or likely to induce the production of a proteolytic ferment, and for this purpose the author used hydrocele fluid. The abscess was aspirated and through the same needle a small quantity of hydrocele fluid injected. The results were satisfactory. About four to five injections in the non-tuberculous abscesses were necessary, and cure usually occurred in eight or nine days. This method of treatment with antiferments avoids scarring, and in so far has aesthetic value. As regards the biological test for pus, the more recent the collection the more prompt the action of the pus on the gelatine. Small quantities of blood do not interfere with the reaction. Some proteolytic ferment is present in cold abscesses where no living bacteria exist. In the common pyogenic abscess a proteolytic ferment can be found also in the serum which is separated after sedimentation.

250. Tower Skull and Optic Atrophy.

TOWER skull (*Thurmschädel*) or oxycephaly—for the two deformities are similar if not identical—may give rise to optic neuritis. Nearly 90 cases have been recorded. The subject is reviewed by Bray of Philadelphia, who contributes 2 new cases to the *Annals of Ophthalmology* for January, 1912. He comes to the following conclusions: There is a special form of deformity of the skull which gives rise to optic neuritis which goes on to atrophy with partial or total blindness. The cause of the deformity is a premature synostosis of the coronal sutures with a compensatory hypertrophy in the sagittal sutures and in the region of the anterior fontanelle. This deformity may be brought about by a meningitis following some of the exanthemata, especially syphilis, measles, and rickets. The cause [illegible] in the production of the cranial deformity is also the responsible factor for the optic nerve disease. That the optic atrophy is not caused by increased intracranial pressure. That in the light of our present knowledge trephining to relieve such increase of pressure is not warranted. That in a large number of cases useful vision is maintained. That whatever vision is present after the atrophy has run its course is usually preserved throughout life. That of all the cranial deformities the oxycephalic is most frequently associated with optic atrophy. That nothing can, as far as we know, be done to prevent the onset and development of optic atrophy.

251. Perithelial Haemangiosarcoma of Kidney.

F. CASAGLI (*Arch. per le sci. med.*, Torino, 1912, xxxvi, 247) describes a renal tumour successfully removed, together with the right kidney, from a man of 49, and discusses the nature and origin of renal tumours and hypernephromas generally. The tumour was the size of an orange, and replaced the upper part of the kidney—nothing is said about the condition of the suprarenal capsule—invading the renal tissue directly in places, bulging into the pelvis, but limited externally by the fibrous capsule of the kidney. In colour it was yellowish; on section, it was seen to be richly supplied with blood, haemorrhage in places; it gave a faint glycogen reaction and appeared to contain adrenalin (Croftan's reaction). Microscopically, it was freely divided up into compartments by bands of vascular connective tissue, running in all directions and continuous with the capsule. The compartments contained a larger or smaller number of capillaries or small blood vessels of embryonic structure, with very little collagen reticulum round them; and in close relation to these vessels the characteristic tumour cells seemed to be developed. These cells were cubic, ovoid, or cylindrical, with granular or homogeneous protoplasm, well-marked nucleus and chromatin reticulum. Further away from the vessels the cells were larger, polygonal, glassy-looking, with nuclei that stained less well; in places necrobiosis had taken place, leaving cavities occupied by granular detritus. Pseudo-papillomatous outgrowths of slender capillaries, covered with a single layer of tumour cells, resulted from the breaking down of the walls between such cavities, in areas where the degeneration had gone far. The tissue of the kidney near the growth showed Albarran's "perinoplasmic nephritis," signs of compression and inflammation. Casagli doubts whether a positive Croftan's reaction is proof of the presence of adrenalin, and believes that the tumour probably contained no adrenalin. It had the appearance of a sarcoma, or of what many authors would call a hypernephroma derived from malignant growth in a suprarenal rest in the kidney. Schmorl found aberrant suprarenals in 92 per cent. of normal kidneys. Certain writers consider these tumours to be hypernephromas because they reproduce more or less the aspect and structure of the suprarenal cortex; others connect them with malignant growth of the endothelium of the blood vessels or lymphatic spaces; others, again, describe them as adenomas, though they contain no tubular or cystic formations properly speaking. It is now certain that glycogen occurs in other tumours besides those derived from the suprarenal gland; probably it is only evidence of active cellular metabolism. In the same way it appears that the presence of lecithin or of chromaffin substance in a tumour is not necessarily evidence of its suprarenal origin. Casagli discusses the terms perivascular sarcoma, lymphangiosarcoma, haemangiosarcoma, endothelioma, and perithelioma, and their applications by various authors. The haemangiosarcoma may be of either endothelial or perithelial origin, he argues. If staining by Bielschowsky's method reveals a network of collagen fibres round the tumour cells, as it did in his case, he feels justified in concluding that an angiosarcoma is of perithelial rather than endothelial origin. This view he confirmed by finding a definite and normal endothelium lining the small blood vessels surrounded by tumour cells at the edges and best preserved parts of the growth in his case. He lays particular stress on the polymorphism of the sarcoma cells, and the presence among them of glassy cells with hyaline degeneration, and the intimate contact between sarcoma cells and intima of the blood vessels in the diagnosis between perithelial angiosarcoma and hypernephroma.

OBSTETRICS.

252. Abdominal Pregnancy: Appendicitis Simulated.

RENÉ BLOCH (*Bull. de la Soc. d'Obst. et de Gyn.*, June, 1912) reports an instance of what appeared to be normal pregnancy complicated by an acute attack of inflamed appendix. The patient, aged 30, was admitted into hospital on February 4th last for acute abdominal pains. She had been married several years, but had never become pregnant until the end of August, 1911. The periods then ceased, the abdomen grew larger, and the patient was troubled with vomiting, headaches, and constipation. She

quickened about the middle of January. All seemed to go on well, and there was no local pain until a sudden acute attack occurred in the last week of January. It was most intense in the right iliac region, and prevented all voluntary movement, and there was feverishness without vomiting. After remaining for ten days in bed the patient was admitted into hospital. There was slight metrorrhagia. The abdomen was distended and very tender to touch, especially a little above McBurney's spot. The os externum was patulous, and blood oozed from it. Palpation could not be satisfactorily employed on account of the tenderness of the parietes. The fundus, as the upper part of the tumour seemed to be, lay as high as the umbilicus. The fetal heart could not be heard, and the patient said that all movements had ceased. She was kept in bed for a week, ice being applied to the abdomen. The metrorrhagia ceased, and the temperature remained a little above normal. On February 13th removal of the appendix was proposed. McBurney's incision was made, but a cylindrical body in the neighbourhood of the appendix proved to be the leg of a fetus. Bloch had carefully divided the layers in the abdominal wall, using a grooved director; yet he feared that he must have perforated the uterus, although no liquor amnii escaped. He decided on performing Caesarean section. A median incision was made below the umbilicus. Then, instead of a gravid uterus, a fetus was discovered lying free in the peritoneum. There was no amniotic fluid and no haemorrhage, nor trace of past haemorrhages. The fetus lay on the right; the back and lower extremities alone were visible; the head lay covered by the maternal liver. The umbilical cord crossed the peritoneal cavity like a scarf, running from the fetus on the right to the placenta in the left iliac region, which was as big as a Tangerine orange. This placenta was inserted on the infundibulum of the left Fallopian tube, but was completely extratubal. The fetus was dead; its head was greatly flattened between the liver and the right kidney. It required some force to draw it out. Bloch removed the fetus with the left tube and placenta. As the uterus and right appendages were normal they were not removed. The catamenia appeared six weeks after the operation.

GYNAECOLOGY.

253. Infection of the Female Urinary Tract from Coitus.

ATTENTION is drawn by A. Sippel (*Deut. med. Woch.*, June 13th, 1912) to the infection of the urinary tract in women, shortly after marriage, not by the gonococcus but by the colon bacillus. Although the condition is serious, as it may be the beginning of a subsequent pyelitis during pregnancy, it is commonly ignored, and regarded as a more or less inevitable sequel to marriage. The symptoms are usually those of cystitis, and the lining of the bladder shows those slight changes commonly caused by the colon bacillus. This germ, together with leucocytes and epithelial cells of the bladder, is found in the urine, which is acid and more or less cloudy. On standing in a warm room it acquires a penetrating odour characteristic of the colon bacillus. Left to itself, the condition may subside without disturbing the patient's general health; but it may also be progressive, and the infection may spread by the ureters to the pelvis of the kidneys, the right kidney being most frequently involved. Complete recovery may be effected if the original infection is recognized and treated early, the best procedure being the administration of such urinary antiseptics as urotropin. Lavage of the bladder with a 3 per cent. solution of boracic acid is also beneficial. But it is often impossible to sterilize the urine completely when treatment has been deferred till the ureters and kidneys are involved. The danger of a latent infection of the urinary tract by the colon bacillus is illustrated by the following case. Shortly after her marriage a patient became infected with the colon bacillus. She underwent four confinements, during all of which she suffered from violent pyelitis on the right side. The urine remained infected during the following twelve years, at the end of which bodily exertion caused acute kinking of the right ureter. Severe pain and high fever led to an operation at which kinking of the ureter, displacement of the kidney, and stagnation of the urine in the pelvis were observed. On removal the kidney was found to contain a number of infiltrated areas on the point of suppuration. Thus the neglect of an early infection may lead to serious pyelitis during pregnancy, and the author has latterly seen two other cases of infection of the urinary tract in newly married women. Both neglected treatment because the symptoms had disappeared; both subsequently developed pyelitis during pregnancy. Probably the pyelitis which appears during pregnancy is not of recent origin, but is an exacerbation of an earlier infection which may not have caused any symptoms nor have spread beyond the bladder. Such a latent infection may be roused to activity and may spread beyond the bladder when pregnancy causes stagnation in the ureters. Under this provocation the colon bacillus ceases to be a purely saprophytic germ occupying the superficial epithelial lining of the urinary tract. It passes into the deeper tissues, causing symptoms of toxaemia, such as fever and perspiration. There are two explanations to account for the mode of infection. Wildbolz (EPITOME, March 2nd, 1912) holds that infection occurs at the time of defloration, and that lesions of the hymen form the sites of infection. He also considers that slight abrasions of the vagina in other than newly married women may be sufficient to admit pathogenic organisms; and in support of this view he reports the case of an elderly married woman who suffered from kraurosis vulvae, and whose contracted vagina rendered coitus difficult. The attacks of cystitis and pyelitis from which she frequently suffered were invariably preceded by coitus twenty-four hours earlier. He also quoted three cases reported by Rovsing in which rupture of the hymen started a pyelitis due to the colon bacillus. The author agrees with Wildbolz in attributing the infection to coitus, but he thinks abrasions of the vagina are not an essential part of the infection, for the colon bacillus may be simply rubbed into the female urethra during coitus. This explanation accounts for the frequent relapses which occur even after lesions of the hymen have healed. The author concludes that the condition is far more common and serious than is generally supposed, but that it also is readily amenable to early and rational treatment.

THERAPEUTICS.

254. Potassium Iodide and Tincture of Iodine in the Treatment of Adenoids.

AFTER discussing the surgical treatment of adenoids on which most authorities rely, to the exclusion of all medicinal treatment, E. Roos (*Finska Laekaresaellskapet's Handlingar*, February, 1912) gives a report of his son, aged 13 years, who at the age of 7 years suffered from deafness and mouth breathing. An examination of the naso-pharynx revealed a quantity of soft and irregular vegetations filling this region. An operation was objected to, and in its place doses of potassium iodide, amounting to 0.25 gram, were given by the mouth twice a day. No toxic effects of the drug appeared, and in a few weeks there was marked improvement. After three months the vegetations had disappeared completely, and the patient's hearing was normal. No other treatment had been prescribed. During the next few years slight recurrences of the adenoids were successfully treated by a few weeks' course of potassium iodide. The child was not syphilitic, and the rapid disappearance of the adenoids cannot, therefore, be attributed to the familiar action of potassium iodide on syphilitic granulations. Lapeyre has published, in 1902, an account of adenoids successfully treated by the internal administration of tincture of iodine, which had not been prepared for more than eight days. Given in large doses (60 to 70 minims a day for children 3 to 7 years old), this drug alone effected the complete disappearance of adenoids in 26 out of 28 patients thus treated. The two failures were attributed to the dose of the iodine not having exceeded 20 minims a day. All the cases thus treated appear to have been of a serious nature. Lucas-Championnière endorses this treatment, though he considers the dosage somewhat heroic. He also prefers potassium iodide, given in small doses over a considerable period—that is, two to three months—the dose for children of 10 years and over being 0.25 gram once a day, and only 0.12 gram for children under this age. He records the case of a 12-year-old girl who had suffered from adenoids for four years, and for whom an operation seemed inevitable, till treatment with potassium iodide banished all trace of the adenoids. He admits, however, that this treatment is not invariably successful by itself, though it is a useful preparation for an operation, which is thereby facilitated.

255. The Action of Luminous Heat.

THE following figures are given by Miramond de Laroquette (*Arch. d'électr. méd.*, July 25th, 1912) to show approxi-

mately the amounts of the various radiations in artificial heat baths:

	Infra-red Rays.	Luminous Rays.	Ultra-violet Rays.
	Per Cent.	Per Cent.	Per Cent.
ncandescent lamp (carbon)	93	6	1
Arc lamp	85	10	5
Mercury lamp	42	30	28

In the author's opinion the chemical effects of the ultra-violet rays have been exaggerated. Even with the lamps which are richest in chemical rays the larger part of the radiation is infra-red. The measurement of the photo-chemical effects of the luminous lamps shows that the part of the ultra-violet in the total chemical action is relatively feeble, and this is the case even more markedly with solar light. Many observations go to show that animal vitality is not dependent on the solar ultra-violet, but chiefly on the calorific and luminous radiation. In detailing the stimulating effects of luminous heat, the author states that he has found an intense and prolonged irradiation directly excite the intestinal peristaltism. The general increase of vitality under luminous radiation is not accorded a sufficiently important place, he thinks, in hygiene and therapeutics. The absorption of radiation in the tissues and its conversion at first into molecular heat, and afterwards into vital energy, is sufficient to explain the general effect of helio-therapy and of artificial light baths. After dealing with such effects of heat as hyperaemia, pigmentation, and sweating, the author expresses a conservative opinion as to the bactericidal action of light, at least under the conditions which obtain in the case of light baths. The bactericidal action of light is not altogether specific to any particular category of radiations, but it appears to be more energetic in the region of the ultra-violet than elsewhere. Nevertheless, he insists that it plays no particular part in baths of solar or artificial light. In order to be efficacious the bactericidal action can only be attempted under conditions not fulfilled in the light baths. It requires very high intensities of heat, and a very close and localized application. The fragility of bacteria for luminous rays, and particularly for solar rays, is much less than is generally appreciated. In nutritive media, and when maintained in a humid condition, they can resist the radiant energy to an extraordinary degree. The chief value of luminous baths, where the irradiation is large, diffuse, and in intensity relatively moderate, lies, not in any direct bactericidal action, but, rather, in the excitation of the protoplasm and of the vital functions, and the recharging—to use an electrical figure—of the organic accumulators. Between marine helio-therapy, the helio-therapy of altitude, and the various systems of baths by artificial light, he finds no great difference from any physiological or therapeutic point of view. Whatever the nature of the luminous source, and whatever the proportions of the various radiations in the spectrum, the therapeutic principle is the same—namely, the stimulation and the dynamic charging of the tissues by a moderate absorption of radiant energy. The varieties of technique and of application, although very important, are really secondary.

256. Chrysarobin and Chrysophanic Acid.

Lemaire (*Gaz. hebd.*, April 28th, 1912) calls attention to the confusion that is apt to arise from the indiscriminate use of these terms. The two drugs are chemically quite distinguishable. The former results from the fusification of Goa powder by benzine, while chrysophanic acid is obtained by the oxidation of chrysarobin. It is hardly possible to obtain true chrysophanic acid commercially. Owing to the inexactness of the strength of these preparations the author recommends their application to only a small portion of the skin until the degree of tolerance in [illegible] is ascertained. Otherwise erythematous [illegible], and even scarring may result. It has been asserted that chrysarobin acts by virtue of its transformation into chrysophanic acid, owing to a process of [illegible] in contact with the skin. Nearly all preparations used differ in strength and activity. They do not correspond to the theoretical denomination of the chemist.

257. Nauheim Baths in Nephritis.

Newton (*Amer. Journ. of Med. Sciences*, April, 1912) reports upon the value of Nauheim baths in nephritis with high blood pressure. From observations before, during, and after the baths, cases of high blood pressure (170 mm. Hg and over) resulting from kidney complications were found to derive more benefit from the warm saline baths than from the cooler ones containing carbonic acid gas. The temperature should be at, or near, 95° F., and all the cases so treated with such mild, warm saline baths were, without exception, relieved, the blood pressure being reduced and the kidney condition improved, the albumen and casts in some cases entirely disappearing. The benefit derived was found to be permanent in those cases which came under observation a year later. The baths cause a relaxation of all the muscular tissues and of the peripheral circulation, and this effect probably extends to all the tissues, and by further producing marked elimination through the skin and kidneys, so that patients with previously dry skins perspire easily, they are no inconsiderable factor in lessening albuminuria and lowering blood pressure.

258. Treatment of Aortic Aneurysm.

Pieriet and Duhot (*Echo méd. du Nord*, 1912, lx, recommend in aneurysm of the aorta with a positive Wassermann reaction daily injections intravenously of 0.01 cg. of mercury cyanide or intramuscular injections of 0.02 cg. of the biniodide, together with 2 to 3 grams of potassium iodide. Where this treatment fails salvarsan should be given in doses of 0.20, 0.30 cg. in 100 grams of physiological serum. Three injections should be given consecutively and then an interval for eight days. Neo-salvarsan in doses of 0.30 to 0.50 cg. in solution of cold, distilled water might be employed instead.

PATHOLOGY.

259. Chemiotropic Attraction of Neoplastic Tissue.

R. von den Velden (*Berl. klin. Woch.*, April 29th, 1912) gives a brief account of some experiments which he has conducted to determine the affinity of certain drugs to malignant cells. Modern researches have shown that certain chemical bodies possess a definite affinity for certain tissues. The study of the distribution of these substances in the organism includes the attempt to find combinations of the chemical substance which possesses the affinity and other compounds which could exert a pharmacological action on the tissue. The former has been called the "steerer," the "lines," and other names, because it directs the active drug to the place where the action is desired. The combination must be sufficiently stable to withstand the effects of the tissue fluids in the stomach, tissue, or blood without being split off from the directing substance, and sufficiently loose so that it may be split off when deposited in the organ or tissue where the action is to take place. A simple example is that of the alkaline iodides. These substances never find their way into fatty tissues or the central nervous system, which contains lipoids. But if, as Loeb has done, iodine is combined with a lipoid solvent, the iodine finds its way into the central nervous system. Von den Velden calls this an example of exogenous alteration of the distribution or direction of a drug. Pathological conditions form the essentials for an endogenous alteration of direction. He injected 30 c.cm. of a 10 per cent. solution of sodium iodide under the skin of the breast of a dying cancer patient five and a half hours before death. The patient weighed 61 kilos, so that he received about 1 gram of sodium iodide per 20 kilos body weight. In this instance the patient died almost exactly when the distribution of the iodide would reach its optimum. Nine hours after death the *post mortem* examination was conducted, and it was found that while the normal parts of the pancreas and liver did not contain any iodine at all, the secondary carcinomatous growths in the head of the pancreas contained from 0.026 to 0.025 mg. per gram of tissue, and that of the liver 0.02 mg. per gram of tissue. Every precaution was taken to ensure that the chemical analysis was reliably carried out. Takemura has found that mouse carcinoma and rat sarcoma store up iodine in the same manner. A similar condition was ascertained to exist for arsenic in experiments carried out by Blumenthal with atoxyl injected into dogs and rats with sarcoma. Without drawing any further conclusions as to the possible utilization of this in practice, von den Velden records these details as proof of the existence of a medicamentous affinity toward tumour tissues.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

260. Roentgen Rays and Non-surgical Diseases of the Stomach.

FRANZ M. GROEDEL AND ED. SCHENCK (*Wien. med. Klin.*, No. 28, 1912) deal with the Roentgen-ray appearances of non-surgical diseases of the stomach—ptoses, ectasia, and dilatation. Hitherto Roentgen-ray examination of the conditions present in these conditions has been prevented from being decisive because of the lack of agreement as to the normal shape of the stomach. The hook or siphon shape is accepted by the authors as normal. A table is given showing the Roentgen picture at intervals after the bismuth meal, with the patient first in the upright and then in the horizontal position, for conditions of hypersecretion, achylia, mechanical ectasia, pyloroptosis, mechanical ectasia combined with pyloroptosis, atonic ectasia, atonic ectasia with pyloroptosis, insufficiency of the second degree, and insufficiency of the third degree. The secretory conditions of the stomach are only to a slight extent cleared up by Roentgen rays. Hyposecretion can seldom be recognized, and then only by the slow initial passage of the food into the stomach. Hypersecretion can more often be diagnosed; the food passes at first with abnormal quickness into the stomach, and in the upright position there is an intermediate zone between the bismuth shadow and the upper end of the stomach. Cases clinically described as gastroptosis fall into different groups on Roentgen examination. The vertical stomach in the asthenic constitution is to be considered as completely physiological. If at the same time the small intestine is displaced downwards the filled stomach is stretched in the lengthways direction. This mechanical ectasia does not always give rise to symptoms, and it is often difficult to decide whether pathological conditions are present or not. The purely mechanical ectasia is recognized by the specially long and pointed wedge shape taken by the first portion of the meal to enter the stomach, and by the fact that at the end of the meal the shadow fills the stomach in every part. As a rule, mechanical ectasia is combined with an increased motility of the pylorus and, when the stomach is full, with pyloroptosis. The Roentgen picture in this condition corresponds for the most part with the clinical picture in gastroptosis. While in mechanical ectasia with pyloroptosis the muscle tone is normal, in atonic ectasia there is always a pathological gastric condition, and here the Roentgen picture is extraordinarily typical. The first portion of the bismuth to enter the stomach does not form a wedge-shaped shadow, but drops in a broken shadow to the floor of the stomach and quickly forms a crescentic-shaped horizontally lying mass over the caudal pole of the stomach. Succeeding portions of food pass quickly to the deeper lying part of the stomach, and even after the full test meal has been taken the stomach is not completely filled. There is an enormous extension in breadth of the stomach, and at the same time the upper parts appear to be greatly distended with gas. The authors lay special emphasis upon the fact that the motility of the stomach stands in no direct relation to its form. In moderate insufficiency of the stomach the picture may not be abnormal, and as a rule insufficiency even of the second degree shows itself only by the increased peristaltic movements of the full stomach. The permanent widening of the stomach, even in the fasting condition, which is found especially in insufficiency of the third degree, constitutes dilatation of the organ.

261. Mushroom Poisoning.

FOUVIELLE AND CHARNEL (*Journ. des praticiens*, September 28th, 1912) draw attention to the high mortality that obtains in cases of muscarin poisoning, and express dissatisfaction with the small results of treatment. They have recently made a thorough study of the question, and quote a number of cases to show that practically in every case there is an identical symptom-complex to deal with. These are: (1) A state of muscular exhaustion, general asthenia, and prostration almost amounting to torpidity. (2) A progressive acceleration of the rate of the cardiac impulses with a coincident enfeeblement and instability of the pulse. (3) Marked oliguria: this amounted to a state of anuria in one of the patients who died. To deal with this triad of symptoms the authors administered (*a*) adrenalin, 1 in 1,000 dilution—one drop given every hour for the first day, every two hours during the second day, and six drops during the third day; (*b*) crystallized digitalin, 10 per cent. solution—five drops night and morning; (*c*) a cachet of theobromine night and morning for five days. The improvement in the case of all patients in whom this treatment was tried was immediate. The authors maintain that, although the method of treatment is a therapeutic experiment, it was justified by the signal success which attended its adoption.

262. Radiology of Pericardial Effusions.

MARAGLIANO (*Rif. Med.*, October 19th, 1912) points out some of the difficulties in detecting small pericardial effusions (below 150 c.cm.), and then gives a brief account of the help derived from radiology, with special reference to some observations of his own. The general outcome of radiology in pericardial effusion is to show a disappearance of the normal shape of the cardiac shadow, an enlargement of the shadow, especially in the lower portion, and tendency to assume a triangular figure, and a marked diminution of the cardiac pulsations. Whereas this diminution in the pulsation shadow has been chiefly noted at the right or left margin of the heart, the point the author lays stress on is the fact that the inferior border is more worthy of observation, and he affirms that in small effusions of the pericardia the pulsation shadow of this inferior border, where it touches the clear area due to the gas in the stomach, almost or entirely disappears. Tested clinically in about eight cases, these assertions were borne out, and in cases where the pericardium was tapped the pulsations could be seen to return after the pericardial sac was emptied.

263. Craniotabes and Heredo-syphilis.

LEROUX AND LABBÉ (*Ann. de méd. et chir. infantile*, August 15th, 1912) have investigated 32 cases of craniotabes with regard to its etiology. They found heredo-syphilis alone or associated in 17, heredo-tuberculosis in 5, heredo-alcoholism in 2, other hereditary influences in 3, and unknown antecedents in 5. The authors conclude that craniotabes is an osseous dystrophy due to several causes, among which heredo-syphilis plays a prominent part, but they remark that its etiology is practically the same as that of rickets. It occurs chiefly in prematurely born or debilitated infants affected by dystrophic heredity, whose nutrition has suffered during pregnancy. The predominance of syphilis in the antecedent history, therefore, seems due to this infection predisposing to rickets.

SURGERY.

264. Pre-hernial Lipomata giving Rise to Strangulation Symptoms.

HARDOÜIN (*Arch. gén. de chir.*, May 25th, 1912) draws attention to symptoms of strangulation which may be caused by pre-hernial lipomata in the inguinal or crural region. These lipomata have been recognized at all times by surgeons in operating for hernia as occupying the crural canal or inguinal canal, and their rôle has been known also to be preparers of the way for hernia by making traction on the peritoneum, and so making a funnel into which bowel may find its way. But they have not hitherto been associated with acute conditions. The author narrates two observations of his own, and details also eight cases from other writers. The features of all these cases were similar: the patient had been for longer or shorter period aware of a small "lump" in the groin; this was often slightly painful, was accompanied by colicky pains, nausea, vomiting, constipation, absence of flatus, distension of abdomen. These symptoms often occurred after comparatively sudden exertion. Absolute intestinal obstruction was not usually present. In short, the symptoms all pointed to strangulated hernia, and that diagnosis was generally made and acted upon. In the author's cases he found in the first, after passing through an abundant layer of subcutaneous fat, that he came upon the tumour, which was palpated through the skin; it was reddish in colour, some-

what hard, and easily isolated from the surrounding structures. It dwindled into a fine pedicle, which lost itself under the crural arch. It was thought that this mass was an epiploon inside the sac which had been inadvertently opened. But in separating this pedicle by repeated cuts, because it seemed firmly bound to the crural arch, the peritoneal cavity proper was opened, and the true sac was found lying longitudinally within the mass. The fatty subperitoneal tissue had become herniated little by little through the femoral ring. The treatment adopted was similar to that in ordinary femoral hernia. In the second case the operator found, after cutting through skin and subcutaneous tissues, that he came upon a dense, fatty mass, firm in consistence, and yellowish-red in colour. This was composed of two distinct portions, each about the size of a nut, each pedunculated, the pedicles being thin, and resembling ligaments leading up to the femoral ring, where each appeared to be strangulated. The constriction was relieved, and it was then seen that there were some ecchymotic patches on the pedicles at the point of constriction. The peritoneum formed a small diverticulum, plainly seen when slight traction was made on the fatty tumour. In a case of Wendel's quoted, the fatty mass was twisted on itself, and by this torsion the hernial sac proper was completely closed. The occurrence of strangulation symptoms is regarded by some (the author thinks unwarrantably) to be due to simultaneous inclusion in the true sac of a small edge of bowel, or an appendix epiploica which, at the moment of operation, was reduced into the peritoneal cavity, leaving only a small sac and a prehernial lipoma: or due to inflammatory lesions in the neighbourhood, or even to undiagnosed internal hernia. But these explanations do not meet the author's cases, which were operated on by local anaesthesia, and very closely observed; nor Wendel's, where torsion of the pedicle was found; nor an unpublished case, where recent and old haemorrhages were found within the fatty mass. The pathogenesis of the strangulation is to be explained by sudden increase in size of a lipoma. The pathogenesis of the strangulation is to be explained by sudden increase in the size of a lipoma already present in the canal, by intra-abdominal pressure forcing it outwards. The pain is due to the violent traction on the subjacent peritoneum more or less invaginated into the femoral canal, and to the congestion of the fatty mass. The symptoms are hardly distinguishable from those of strangulated hernia, and it follows that treatment is removal of lipoma and extirpation of the peritoneal sac, with closure of the ring. The author remarks on the vivid peritoneal reactions produced at a distance by dragging upon or pinching a small portion of the serosa, approaching in some cases almost to more or less complete paralysis.

265. Neuralgia in a Stump twenty five years after Amputation.

WHILE pain in a stump soon after amputation is quite common and is traceable to a variety of causes, late neuralgia is apparently rare, though, according to Riedel (*Deut. med. Woch.*, July 4th, 1912), it may be commoner than is generally supposed. The patient in whom he first observed this form of neuralgia was a man aged 57, whose leg had been amputated twenty-five years earlier, just above the knee, for a compound fracture of the lower end of the femur. The pain, which had lasted for about a year, usually occurred at night, when the stump occupied a horizontal position. It passed downwards over the back of the thigh, but was difficult to localize with accuracy. It also affected the anterior aspect of the thigh; it disappeared on walking, and it was but slight on sitting. Examination of the stump showed that the wound had healed by granulation, that the skin over the end of the bone was freely movable, but that the amputation scar at the back of the stump was adherent to the bone. Passing upwards from the scar a distance of 15 cm. was a swelling, which consisted apparently of the tendons of the semi-tendinosus and semi-membranosus muscles. It was neither painful nor tender. At first the [illegible] of the pain was obscure. There was no definite [illegible] pain could be evoked by pressure, but during [illegible] the patient experienced several attacks of [illegible] than half a minute each time, which he [illegible] pressing firmly on the stump with his hands. [illegible] of neuromata, nor are these common [illegible] on at the thigh. The clue to the [illegible] found in a history of glycosuria of three [illegible] In common with most elderly diabetics, the [illegible] suffered from marked arterio-sclerosis, which involved the arteries of the stump where no pulsating [illegible] could be detected. Clearly, therefore, the pain was traceable to anaemia of the nerves, which was most severe when the stump was horizontal. This view also explains the reason why walking relieved the pain and why the attacks were less frequent in the sitting than in the horizontal positions. It is not clear what treatment is most suitable for this case. Should the pain grow worse, Riedel proposes excising the scar and the sciatic nerve as high up as the gluteal fold, but he is uncertain as to the results. Though medical literature does not contain the report of a similar case, one recently recorded by Deutsch, under the heading "A Case of Acute Exacerbating Endarteritis with Intermittent Limping," may be analogous. The patient was a medical man who had suffered for some years from discomfort in his right foot, the arteries of which had ceased to pulsate. He suddenly developed severe and continuous pain in the limb, the muscles of which contracted at frequent intervals. The pain was relieved when the limb was held in a dependent position, but this further increased pre-existing oedema of the leg. Numerous ulcers formed, which ultimately became gangrenous. The patient died of pneumonia. Probably the aches and pains which elderly persons suffering from arterio-sclerosis complain of in their amputation stumps, and which are vaguely attributed to changes in the weather, are really due to neuralgia, ultimately traceable to the amputation, however many years ago the operation may have been performed.

OBSTETRICS.

266. Vaccines in Puerperal Fever.

ROBERT J. ROWLETTE (*Jour. of Obstet. and Gynec. of the British Empire*, June, 1912) passes in review the cases of puerperal infection recorded in the literature as having been treated since 1908 by vaccines, and then deals with the experience of vaccines at the Rotunda Hospital. The earlier cases in the literature were for the most part, but not exclusively, American ones. Hale White and Eyre describe 3 cases, 2 of which ended in recovery. One of these was a case of general septicaemia and septic pneumonia, in which the patient appeared to be dying when treatment was begun, but immediate and remarkable improvement, ending in recovery, followed the administration of pneumococcal vaccine. Walters and Eaton treated 50 cases, with 41 recoveries; of the 9 fatal cases, 7 were moribund at the time of treatment. Polak has published an impressive series of cases. He obtained his most striking results in the treatment of thrombo-phlebitis. Within the last few months Western has given, from the Inoculation Department of the London Hospital, details of 100 cases of puerperal sepsis, 56 treated by vaccines. Of the cases so treated 18, or 32 per cent., died; of the 44 cases untreated, 24, or 55 per cent., died. The number of patients treated by vaccines at the Rotunda Hospital has been 54, but the only ones described in detail are 39 in which a bacterial diagnosis was made. The method of making a diagnosis was that devised by Döderlein. In this a bent sterile glass tube is introduced into the uterus with the aid of a speculum; suction is applied by a syringe, the tube is withdrawn, sealed, and sent to the laboratory, where an examination by smears is first made, and if the result is positive treatment is instituted; cultures are also made in order to confirm or supplement the diagnosis. In a large number of cases only diplococci were found in the smears, and this proved a hindrance to a rapid diagnosis, since either streptococci or staphylococci can disguise themselves as diplococci. No case occurred of infection by organism other than streptococci or staphylococci which needed vaccine treatment. With the exception of a few of the earliest cases, all the vaccines employed were either autogenous to the particular case or had been obtained from other puerperal infections in the hospital. A dose of vaccine was always administered as soon as a bacteriological diagnosis had been made, and was often given on chance while waiting for a diagnosis. In judging of the effects of the inoculation, special attention was given to the temperature and pulse. In many cases the temperature fell 2° to 3° within twelve to twenty-four hours after the inoculation; the pulse-rate fell at the same time, and any other symptoms of sepsis tended to diminish. Such a result would be taken as a sign that the vaccine was effective, and its use would be continued, but if no such result occurred a special vaccine was made if possible. The doses were given, as a rule, at intervals of forty-eight hours, until one dose had been given subsequent to the temperature and pulse becoming normal, but the time of giving the dose and the size of the dose were

always considered with regard to the special case. The discovery of a suitable dose was at first a matter of experiment; in streptococcal cases a dose of 2,500,000 cocci was given at first, but in several instances the effect only became perceptible when the dose was increased, and later 5,000,000 became the usual initial dose. In staphylococcal doses the initial dose was higher, usually 20 to 25 million cocci, and in a few cases 50 million were given at once. The local reaction was of the slightest, and any rise of temperature or feeling of malaise after the injection was taken as showing that the initial dose given had been excessive; 31 cases of streptococcal infection were treated, the average number of inoculations being 3.3; 3 deaths occurred. One death was from septic peritonitis the result of gangrenous appendicitis. This patient only received one inoculation when she was already moribund. A second patient had advanced phthisis; she was treated with the streptococcal vaccine only, but she had a double infection of streptococcus and *Staphylococcus aureus*. The third patient had a double infection complicated by influenza. She was apparently dying when the first dose of an autogenous vaccine was given, but she improved and lived for a fortnight; the autogenous vaccine then ran out, and the patient quickly sank and died before another could be prepared. At the autopsy an abscess of the lung was found. In the first case of the series in which the vaccine was given the favourable effect was almost dramatic. The patient had had an irregular and fluctuating temperature from the fourth day. Streptococci were found in the lochia on the seventeenth day. A dose of 5 million of a stock vaccine was given, and temperature and pulse thereafter became and remained normal. An interesting comparison is given of two cases delivered on the same day and attended by the same nurse. On the third day each had a rigor and a rise of temperature of several degrees. In one case streptococci were found in the lochia and a vaccine given. This patient quickly recovered. In the other case repeated examinations of the lochia were negative. It was, however, treated, but unsuccessfully, with a streptococcal vaccine. The patient died on the fourth day of illness. On the day of her death cultures were made from the blood, and the infection was found to be due to the *Staphylococcus aureus*, and not to a streptococcus. The staphylococcal cases of the series were 8 in number. One patient died of pyaemia the result of thrombosis of the ovarian veins. From a review of the whole series the author arrives at the following conclusions: (1) Vaccines given in small doses do no harm in puerperal sepsis. (2) In the great majority of cases they do good. (3) In many cases they produce immediate and remarkable improvement. (4) Autogenous are more trustworthy than stock vaccines, and sometimes succeed rapidly where the latter fail. (5) Antistreptococcus serum given simultaneously increases the effect of streptococcal vaccine. (6) To get the best results, accurate bacteriological diagnosis is necessary.

GYNAECOLOGY.

267. Menorrhagia of Puberty.

E. WEIL (*Bulletin Méd.*, No. 53) makes some observations on this subject, based on a study of nine cases. He considers that the condition is due to general dyscrasic causes rather than to local causes, such as ovaritis or virginal metritis. The menorrhagia is often accompanied by other haemorrhages, especially epistaxis and cutaneous ecchymosis, and in all the cases a haemorrhagic tendency was noted in childhood before the age of menstruation. This tendency appears to be hereditary, for in seven of the cases there was a propensity to haemorrhages in the maternal line. In no case was any such propensity found in the paternal line; therefore the suggestion that the condition is due to haemophilia can be ruled out. Menorrhagia of this type is constantly accompanied by blood lesions, consisting in anomalies of coagulation and an increase in the time of experimental bleeding. Using Duke's method, Weil found an increase in all his cases; in one case the time of bleeding was ninety minutes, the normal time being two and a half to three minutes. These experiments suggest that the blood lesions constitute the substratum and the physio-pathological mechanism upon which the haemorrhages depend. Further, these patients exhibit signs suggesting a complex polyglandular syndrome involving the ovary, the thyroid, the pituitary body, etc. The treatment indicated by these observations is, in the first place, to overcome the disorders of coagulation and the tendency to haemorrhages. In this respect the administration of fresh blood serum has always given excellent results, though in varying degrees. Sometimes a single injection is enough to put an end to excessive losses; usually an injection of 20 c.cm. every other month cures the haemorrhagic condition. In the next place, it is necessary in each case to elucidate the functional disorders of the glands and to correct them by appropriate opotherapy. Weil does not consider that the administration of glandular extracts is in itself sufficient to arrest the haemorrhages and to modify the blood dyscrasia; but in his cases they appeared to be useful (particularly thyroid extract in small doses) in improving the general condition, accelerating growth, and diminishing obesity.

THERAPEUTICS.

268. Two Years' Experience of Salvarsan.

G. L. DREYFUS (*Muench. med. Woch.*, August 13th and 20th, 1912) says that no other medicament can exercise the same intensity and rapidity of action as salvarsan. If properly applied, and when the cases are carefully selected, this drug has proved to be relatively harmless. He proceeds to analyse the various points connected with the exhibition of salvarsan. In the first place, he deals with the necessity of using freshly prepared distilled water and strict asepsis. By attending to these two points he had only observed but few and mild reactions in persons who were afebrile, and who felt well before the injections, among his last 143 salvarsan and 340 neo-salvarsan injections in the municipal hospital in Frankfurt. In regard to dosage, he states that while one or two injections may suffice to prevent a generalization of the spirochaetes in incipient syphilis as long as the process is local and the Wassermann reaction negative, provided that other conditions are favourable, it is obvious that two or three injections cannot destroy all the parasites in a case of generalized infection. In order to form an opinion as to the optimum dose, interval between the individual injections, total amount which may be injected into one patient, etc., Dreyfus found it advisable to investigate the cases of latent syphilis, of cerebral syphilis, of locomotor ataxy, and of general paralysis. Over 700 injections have been performed for such cases. It is indisputable now that insufficient quantities of salvarsan are at times responsible for irreparable damage. But since large total doses of salvarsan and its combination with mercury have been employed, neuro-recurrences have become much rarer. He finds that repairable symptoms of disturbances of the nervous system clear up more rapidly under salvarsan than the changes in the cerebro-spinal fluid. When the changes are irreparable naturally no improvement can actually take place, but the fluid may clear up if the disease process is arrested. When syphilitic processes involving the central nervous system are cured, the cerebro-spinal fluid becomes and remains normal. This has been observed in cases even when a single injection was given, and the freedom from recurrence has been watched for a year and a half. Changes are noted in the liquor in about 80 per cent. of primary and secondary syphilis, and the author has satisfied himself that this indicates some involvement of the central nervous system, even when no symptoms are present. He is further of opinion that patients whose cerebro-spinal fluid remains pathological are likely to suffer from syphilitic or meta syphilitic affections of the central nervous system at a later date, but in no single case has it been observed that changes in the fluid arise under the influence of salvarsan when the fluid was initially free from pathological changes. It appears to be advisable in cases of primary or secondary syphilis with implication of the central nervous system to combine the salvarsan treatment with mercury, and at times with iodides. In recent cases it is wise to start with 2 to 4 calomel injections, and to be careful in giving the first salvarsan injection, using 0.1 to 0.2 gram at first, and leaving a pause of one day between the injections. Later the dose may be increased to 0.3, 0.4, and 0.5 gram, when the interval must be lengthened to two or three days. The total dose should be 5 grams. The author gives the details of some typical cases as examples. In the case of neuro-recurrences he advises commencing with calomel (0.05 gram per injection) and watching the temperature curve carefully. If this rises great care is required, and the dose of calomel should at times be diminished. Then three doses of 0.1 to 0.2 gram of salvarsan are given with one day's interval. If this is well tolerated, the dose is increased each third or fourth day to 0.3, 0.4, and 0.5 gram, and at the same time as much mercury is given as possible. In cases of cerebro-spinal syphilis it is not necessary to be so cautious, and the initial dose of salvarsan may be 0.3 for

women and 0.4 gram for men. If the first injection is well tolerated, two injections representing 0.9 gram should be given each week. Some of the patients were given 3.5 grams of salvarsan, and 4.65 grams of neo-salvarsan (corresponding to 6.6 grams of salvarsan in all) within three months without any untoward symptoms. More recently the author has given patients as much as 8 to 9 grams of neo-salvarsan with good results. The dosage in tabes is a very important matter. While the observations are not yet closed, the author feels justified in stating that an insufficient total amount, for example, 1.5 gram of salvarsan, may fail to do any good, and may even do harm. He is also of opinion that an intense and combined treatment does no harm in general paralysis. In conclusion he states that the results obtained with full doses of salvarsan combined with mercury and extended over six to eight weeks have been very marked.

269. X-ray Treatment in Myeloid Leukaemia.

In a communication to the Société de Radiologie Médicale de Paris (*Bull. et mém.*, May, 1912), Henry Béclère describes the variation in number of the red blood corpuscles in myeloid leukaemia under the action of the *x* rays. He states that on occasion the red blood corpuscles, which may number 1,500,000 per c.cm. before treatment, not only rise to the normal figure of 4,500,000 or 5,000,000, but even go beyond it, and have been known to reach 7,000,000. This condition of hyperglobulia, however, only appears in a few instances, recurring in the same individuals, and signifies an increase in the arterial pressure. A short period of *x*-ray treatment, averaging two or three months, is sufficient in most cases strikingly to change the blood picture in myeloid leukaemia. The transformation is the more constant if the treatment is directed upon all the portions of the spleen accessible to the *x* rays. Suitable aluminium filters are used, and the splenic region is divided into segments in such a manner that each portion receives an equal radiation. Each of these delimited portions is irradiated successively, the others being covered with protective material. The diminution of the spleen in size corresponds to the progressive return to health. In the blood itself the most constant feature of the treatment is the decrease in the number of white corpuscles. At the first sittings the red corpuscles appear to undergo a smaller alteration than the leucocytes, but subsequently they also are modified considerably, both in the number and in the quality of the elements. One of the first phenomena is the rapid disappearance of nucleated corpuscles. The megaloblasts and young cells disappear early, the normoblasts being a little more tenacious. The number of red blood corpuscles increases, gradually returning to about normal. But although from this point of view the result may seem to be satisfactory, the presence of solitary myelocytes serves to correct any hasty notion that the disease has been vanquished. Nevertheless the author claims that by means of radiotherapy the life of patients has been prolonged; that they have been enabled to return to their occupations; and that, although there are relapses, these also are frequently ameliorated by the same agent. Moreover, he is aware of cases treated by this method five or six years ago which are still well.

270. Treatment with Thyroidin and other Animal Extracts.

Siegmund (*Wien. med. Woch.*, No. 24, 1912) points out that the secretions of the thyroid and other ductless glands are not simple but complex chemical mixtures. Taking thyroidin as typical of the therapeutic animal extracts, he remarks that although it contains many of the constituent elements of the thyroid gland (as is shown by its effect on a variety of diseases dependent on increased or diminished thyroid function), yet it cannot contain them all; for not only does it probably lose something in the process of desiccation, but, being taken from an animal which has been bled to death, all the active substance which is not stored up in the gland is lost with the blood. Moreover, according to Fliess, the thyroid secretion is not the same in both sexes, and the author has found it advantageous to use a thyroid extract prepared from animals of the same sex as the patient. It is probably because it is a mixture that thyroidin gives satisfactory results in so many different diseases, but for the same reason it is apt to produce symptoms due to the influence of some of its constituents which are already present in sufficient quantity in the patient's circulation. The author has found that if, from this cause, some of the symptoms of Graves's disease arise during a course of thyroid treatment, they will subside if the treatment be interrupted for a week; or they may be avoided by the daily administration of some of the antithyroid serum of Moebius. This preparation, which is simply the serum of goats deprived of their thyroid glands, has also a complex function, neutralizing not only the injurious ingredients in the thyroid secretion, but also those which are essential to health. In such a case, however, it appears that the thyroid is usually stimulated to an increased production of those substances which are neutralized. Various ductless glands seem to be grouped together under the control of the sympathetic nerves, certain glands reinforcing or antagonizing the influence of others. Notably the internal secretion of the ovary, as Latzko has pointed out, apparently acts in opposition to that of the thyroid in Graves's disease. The author calls attention to the frequent association of nasal reflex neuroses (such as neuralgia and ovarian pain) with deficient thyroid secretion, and recommends not only treatment of the nose in cases of myxoedema, but conversely a course of thyroid extract in nasal neuroses. In conclusion, he considers that further chemical research into the constitution of the secretion of the ductless glands will extend and render more exact their therapeutic use.

PATHOLOGY.

271. Blood Platelets in Toxaemias and Haemorrhagic Disease.

Duke (*Bulletin Johns Hopkins Hospital*, May, 1912) reviews briefly the results of his studies in 31 cases of haemorrhagic disease, with special reference to the relation between haemorrhage and the platelet count, together with clinical and experimental results which may throw light on some of the causes of pathological fluctuations in the platelet count. Of the 31 cases studied 17 had practically normal counts (200,000 to 400,000), while 14 had very low counts (below 65,000). Of these latter the severer cases were purpura haemorrhagica, the milder presenting little or no purpura or haemorrhage from normal mucous membranes. The bleeding time was greatly prolonged, being from twenty minutes to two hours, and the platelet counts were found to be enormously reduced in all cases showing a bleeding time of ten minutes or more. In the milder cases it was below 65,000, while in the severer ones it went below 10,000, and frequently below 1,000. Low counts are not confined to purpura haemorrhagica, but are present also in cases of haemorrhage due in part to local causes. In 3 cases direct transfusion of blood was carried out, and followed by immediate and complete relief of the haemorrhagic diathesis, which relief lasted three days, the bleeding time being reduced in one case from ninety to three minutes, and in another from thirty to three minutes. On the fourth day haemorrhage commenced again, and the bleeding times were again prolonged. The only striking change in the blood explanatory of this period of relief was the rise in the platelet count as the direct result of transfusion. When observations were frequently made, it was noted that the haemorrhagic diathesis appeared simultaneously with the disappearance of the platelets, persisted while the count remained very low, and disappeared as soon as the count rose. The purpuric condition has been observed complicating a variety of diseases, and it has been produced experimentally, reduction in the platelet count being the one common feature. After injury to a vessel wall platelets are the first element to adhere to the injured intima, being deposited in enormous numbers before fibrin is laid down in demonstrable quantity; and it would seem, therefore, that an absence of platelets, by causing an abnormality in the formation of thrombus, would be a cause of prolonged bleeding, irrespective of the fibrin-forming factors. Experimental evidence goes to show that a clinical pathological variation in the platelet count is in many diseases the effect of a toxin on the platelet-forming elements.

272. Cultivation of Spirochaeta Pallida.

Levaditi and Danielesco (*Comptes rendus de la Soc. de Biol.*, July 27th, 1912) have repeated Noguchi's experiments with a view to obtain a pure culture of the *S. pallida*, but without confirmation. They conclude that the spirochaete cultivated by Noguchi differs morphologically and biologically from the *S. pallida*; that it is not pathogenic for the rabbit, guinea-pig, mouse, and ape; that it does not protect the rabbit against infection with the syphilitic virus; that this spirochaete is a saprophyte living in symbiosis with the *S. pallida*; and that inoculation of the rabbit produces lesions containing the same spirochaete, but differs from true syphilomas.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

273. Vasomotor Hemiplegia.

ALFRED SOUCEK (*Wien. klin. Woch.*, No. 27, 1912) describes an unusual case of hemiplegia which occurred in a boy 10 years of age, persisted for three days, and finally recovered completely. The history was that four days earlier the boy was taken ill suddenly after doing gymnastics in the playground, and at once went home. Here he would have fallen down if his mother had not caught hold of him and put him to bed. It was then noticed that free movement of the right half of the body was impossible, and he also complained that the right cheek was without feeling, as if paralysed. At the same time there was a most severe pain in the left temporal region, and it was not until this pain ceased, three days after the attack, that the power of movement on the right side returned. The boy with his mother came to the out-patient department of the hospital on the fourth day after the attack. The boy's father and brother suffered from migraine attacks; the boy himself had not had headaches before, but he had been subject to cold hands and feet, and was somewhat excitable. Examination showed a gait which was still somewhat suggestive of a unilateral paralytic, the right leg was slightly trailed, the right arm a little bent at the elbow-joint; the face was pale, the pupils reacted sluggishly, the right pupil being perhaps somewhat wider than the left; the right facial nerve was slightly paretic, the corneal reflex lowered; the patella reflex present. There was tremor of the eyelids and hands; the vessel tone of the palpable arteries—temporal, mental, radial—was very strongly increased. Slight headache in the temporal region was still present two days later. The boy was then taken into hospital, and remained for two days, by which time the hemiplegic symptoms had almost completely disappeared. The vessels of the neck and the abdominal aorta showed marked pulsation, the vessel tone of the temporal and radial arteries was markedly increased; the heart was apparently of normal size, but an indistinct systolic murmur was heard over the mitral valve; the pulse was 88 with the patient lying down, 104 standing up, and varied with respiration. The urine was clear, with a trace of albumen, and the amount of albumen was much increased after the patient had been kneeling in the lordotic position. The patient was clearly one with an unstable vasomotor system. Such patients often suffer from local hyperaemia or ischaemia, conditions which may be induced more or less easily by any bodily or mental excitement. In this case the presence of an anatomical lesion of the left hemisphere can hardly be accepted, and the symptoms were probably due to brain ischaemia induced by vascular cramp. The diagnosis of hysteria can be excluded, since hysterical paralyses are not usually of this form, and the boy could hardly have imitated a hemiplegia so completely. Two cases are reported in the literature of temporary hemiplegia occurring in patients suffering from migraine. In view of these cases, of the family history of migraine in the present case, as well as of the vasomotor symptoms and of the severe unilateral headache, it seems probable that this case was one of a migraine attack which caused a local brain ischaemia and thus led to hemiplegia.

274. Diagnostic Reactions with Tuberculin.

FIESSINGER (*Journ. des praticiens*, 1912, xxvii) considers that the subcutaneous test and the ophthalmic reaction should not be employed, the former owing to the danger of aggravating the condition and producing haemoptysis, and the latter from the ocular complications that may arise. He considers the only two tests that should be employed are the von Pirquet test and the intradermo-reaction of Mantoux. As regards the former, he states that the reaction may be positive in the adult when there is no clinical manifestation of the disease, and is then an indication of *tuberculoses tarrées*. In children this condition is much more rare, and a positive reaction is therefore an important diagnostic. A strong reaction indicates a more favourable evolution than when the reaction is feeble. The intradermo-reaction of Mantoux is performed by injecting with a Pravaz syringe $\frac{1}{20}$ c.cm. of the solution underneath and parallel to the skin. If the reaction is positive a swelling surrounded by a red area similar to erysipelas is found after twenty-four to forty-eight hours. The reaction is negative if the congestion is feeble and disappears in a few hours. This reaction is a little less sensitive than von Pirquet's test, and is to be preferred for adults, and the latter for children.

275. Chronic Colitis in a Child.

BELL AND LE WALD (*Archives of Pediatrics*, September, 1912) record a case of chronic colitis with deformity of the sigmoid occurring in a boy 3 years of age. During the first five months of life he had never had a normal action of the bowels, the motions being green and curdy, and he was apathetic and at times almost in stupor. Upon a modified milk diet with fat percentage under 2½, and not exceeding 18 grams per day, he improved, but had attacks of diarrhoea with large quantities of mucus in the stools. In spite of very careful dieting there were numerous relapses accompanied by pain in the region of the bladder, and vesical irritability, which was relieved by a free evacuation of the bowels with large quantities of mucus. *X*-ray examination under a bismuth meal and injection revealed a remarkable lengthening and looping of the sigmoid flexure reaching to the level of the umbilicus, and so far to the right as to overlap the caecum. Summarizing the symptoms, they consisted of large amounts of mucus, free and mixed with faeces, at first occurring at intervals, and gradually becoming more continuous; large, copious stools out of all proportion to the food taken, and constipation alternating with diarrhoea, the exacerbations becoming more and more frequent. Localized pain or discomfort, with vesical irritability, and the development of precocity along neurasthenic lines were marked features in this case. The bismuth test meal and enema with *x*-ray examination was so eminently successful in diagnosis that the procedure should always be adopted in chronic digestive disturbances in children. In treatment dietary and medicines failed, and irrigation gave temporary relief, but had to be continued daily, which so impressed the child that he talked of little else, and tended to become a confirmed juvenile neurasthenic. Such abnormal redundancy of the sigmoid constitutes a serious pathological condition, and although in some individuals it may give rise to few symptoms, in others it may cause considerable trouble, and even lead to a fatal issue in the adult. The question of surgical relief must be considered when the condition is met with in early life giving rise to symptoms.

SURGERY.

276. Ulceration of Arteries of Large Calibre.

WEISSENBACH AND BERTIER (*Arch. gén. de chir.*, July 25th, 1912) were led to the study of ulceration of arteries, particularly large trunks in contact with drainage tubes, by an unfortunate accident in a case of acute appendicitis. The patient was a man, aged 30, who was operated on about twelve hours after the onset of the attack. The wound, after removal of the appendix, was drained by a tube the thickness of the index finger placed behind the caecum; the drain was fixed by a suture. The wound was dressed daily, but the drain was not removed. The patient's condition improved rapidly. On the sixth day the drain and sutures were removed without anything unusual being remarked. Two hours later there was a most copious haemorrhage from the wound. The wound was packed with gauze as the patient's extreme feebleness precluded attempts at ligature. There was no further haemorrhage, but the patient died. At the autopsy the external iliac showed on its anterior surface an ulceration which appeared to be precisely where the pressure of the drainage tube was exercised. The ulcer was oval, 10 mm. by 5 mm.; the loss of substance was at the expense of the peritoneum, the subperitoneal tissue and the wall of the vessel itself. In the centre of the depression was a small puncture about as big as a pin-head. Experiments were forthwith begun on dogs, and were conducted with two main objects in view: (1) To determine the effect of the contact of a sterile drainage tube with a healthy vessel; (2) to determine the effect of the contact of an infected tube with a healthy vessel in the first place, and in the second with a vessel denuded of

peritoneum and already infected. The drainage tube was placed sometimes behind, sometimes in front of the artery, and was fixed in position by two threads. The culture employed was an attenuated one, so as to avoid very acute phlegmonous conditions. The results of the experiments were: (1) That simple contact, no matter how prolonged, of a sterile drainage tube with a healthy artery did not cause ulceration; (2) that if traumatic ulceration by actual necrosis from contact of an aseptic foreign body was possible, it was only under exceptional conditions, as in one experiment where the thread fixing the tube wore its way through the vessel wall; (3) that the rôle of infection in so-called traumatic ulceration was of great importance; (4) that the drain played the part of localizer of the infection in relation to the artery, the rupture being the mechanical consequence of the acute localized arteritis; (5) that it was necessary for the contact of the artery and the drain to be quite close; (6) that it was never advisable in an infected area to leave a drainage tube in contact with an artery for more than two, or at most, three days.

277. Optic Neuritis following Measles.

THE first case of optic neuritis following an attack of measles was published by von Graefe in 1865. Since then a small number of similar cases have been recorded from time to time. Griscom of Philadelphia has recently seen a case, and in the *Annals of Ophthalmology* for January, 1912, he gives a full account of it, and enters fully into the nature of the complication and the literature which has accumulated during the past forty years. The cases fall into three classes: those showing evidence of primary cerebral involvement with consecutive optic neuritis; those in which meningitis is the most prominent symptom with secondary changes in the nerve head; and, finally, those showing optic neuritis alone without any other local or general symptom. In some cases there is marked optic neuritis from the beginning; in others there may be blindness with, at any rate at first, no ophthalmoscopic changes. When the papillitis is due to a local meningitis other nerves may be affected as well as the second pair, the sixth nerve being especially liable to participation in the neuritis. The meningitis may in some cases be secondary to middle-ear disease or to inflammation of the nasal accessory sinuses. In the third group, however, none of these complications are present. The optic nerve change is the primary disease, and is present without signs of meningitis. There may be a local inflammation of the meninges in the neighbourhood of the optic nerves, or the condition may be due to a selective action of the toxins of measles. In the absence of any pathological reports a complete examination is at present impossible, because our only data are derived from clinical observations. Although the complication is rare—so far only 23 cases having been recorded—it is well to keep it in mind when faced with failing sight in a child who has just recovered from measles. Naturally a careful examination must be made, for small foci of tuberculous choroiditis may be detected after an attack of measles or any other debilitating disease. Some of the cases of optic atrophy after measles make a perfect recovery, in others partial or complete optic atrophy remains behind with partial or complete blindness.

278. Bronchoscopy.

DIEGO GUIGON Y COSTA (*Revista de Medicina y Cirugia Practicas*, September 28th, 1912) publishes the first case of bronchoscopy, applied to the detection and removal of a foreign body in a bronchus, to be recorded in Spanish medical literature. The patient was a child of 8 years of age, and was admitted to the hospital with a history of about a month's illness, which had followed an assumed injury to the throat, caused by swallowing a "black-headed pin," measuring 5 cm. in length. The symptoms on admission, about a month after the accident, were frequent cough, neither rough nor dry, and followed by profuse muco-purulent expectoration. A mouthful of muco-pus occasionally welled up without any cough. There was severe dyspnœa, but no stertorous breathing or laryngeal [illegible] temperature 40.2° C. in the rectum. [illegible] presented signs somewhat unusual in [illegible] bronchi. The right lung seemed [illegible] In the left lung there was a limited [illegible] at the apex. The whole of the rest of the [illegible] dull on percussion, with [illegible] of Traube in front. In fact, the [illegible] to what would be found in a [illegible] effusion. There was, however, no displacement [illegible] to the right. On auscultation on the [illegible] heard [illegible] On the left side similar sounds were heard more faintly, and over a rather more limited area. Nowhere was the silence absolute. Evidently the airway was not totally blocked. Radioscopy showed the presence in the first division of the left bronchus of a foreign body, which was evidently the "black-headed pin" referred to above. It was concluded that this had given origin to an abscess, which was partially occluding the main bronchi. It was determined to attempt the removal of the pin by means of the bronchoscope. The only instruments at hand were: Two Killian's tubes of 10 and 12 cm., some ureteral forceps, a frontal mirror, and instruments for tracheotomy. An attempt to introduce one of the tubes through the larynx having failed, tracheotomy was performed as low down as possible, and the tube—10 cm. long and 7 mm. diameter—again slowly and cautiously insinuated as far as the division of the trachea. On attempting to divert the end of the tube towards the left bronchus, violent coughing ensued, and a large quantity of non-fetid pus escaped in successive rushes. The abscess had ruptured. It was evident that nothing further could be done at that time. On the following day, the temperature having dropped nearly to normal and the expectoration much reduced in quantity, the introduction of a somewhat larger tube—12 cm. × 8 mm.—was tried, this time without anæsthesia, the tube being very slowly and carefully advanced up to the entrance to the left bronchus, when there came into view at one side of the mouth of the tube a minute line, "almost a black point, like the antenna of an insect emerging from a hole." This was the head of the pin. It was seized with a pair of long ureteral forceps, and tube and forceps and pin were slowly and cautiously withdrawn together. The patient recovered rapidly without any further bad symptoms, and a fortnight later the dullness on percussion of the left chest was fast disappearing.

279. Enucleation of the Tonsil.

E. BORCHERS (*Muench. med. Woch.*, October 8th, 1912) advises the total enucleation of the tonsil in the place of tonsillectomy. He discusses the *pros* and *cons* of both procedures, and comes to the conclusion that everything speaks in favour of the former. He carries this out as follows: The anæsthesia is induced by ethyl chloride. When the patient is nearly deeply "under," and the reflexes are just obtainable, the anterior faucial pillar is detached from the tonsil by inserting a bent elevator suddenly through the pillar close to the upper pole of the tonsil, and with one sweep he passes it over the face of the tonsil. If there are strong adhesions it may be necessary to use forceps and a pair of Cooper's scissors, but, as a rule, the elevator suffices to separate the faucial pillar from the tonsil. The next stage is to insert the tip of the index finger behind the faucial pillar, and to free the tonsil by upward and downward movements, until it is merely attached by a narrow band to the base of the tongue. This can be easily torn through in children, but is best cut with scissors in adults. There is practically no bleeding from the operation. He washes the patient's mouth out with a solution of hydrogen peroxide, and a fresh dose of ethyl chloride enables him to enucleate the opposite tonsil directly afterwards. He is very satisfied with the operation.

OBSTETRICS.

280. Rupture of Recto-Vaginal Septum and Prolapse of Arm in Spontaneous Labour.

GRABOWIECKI (*Zentralbl. f. Gyn.*, No. 21, 1912) was called in consultation last year about a woman, aged 24, who was in labour, because the fetal hand presented through the rectum. The patient was robust, and had never been ill. She had been married for a year and a half, and had not suffered from constipation, discharge, or dyspareunia. The pregnancy (her first) proceeded without any complication. At term labour set in; it had been ten hours in progress when Grabowiecki arrived. The midwife had been present almost from the beginning; she found the head presenting in the first position, and well engaged in the pelvis. The pains were strong and regular. No enema was given. After two hours the membranes ruptured. The midwife found the cervix fully dilated; the head now lay with its long diameter antero-posterior, the lesser fontanelle under the symphysis. The pains lessened, till at the end of half an hour they again grew strong and extremely painful. The perineum bulged more and more, but the head did not present at the vulva. The anus was distinctly dilated, and it gradually obtained the diameter of a florin. Then the mucous membrane pro-

truded, and, to the alarm of the midwife, it suddenly ruptured, the fetal hand protruding. The pains at once diminished, and the patient felt relief. Grabowiecki arrived about an hour and a half after the prolapse of the hand. The patient had become exhausted, the pains feeble. The protrusion of the fetal hand through the anus was, to his mind, less remarkable than the extreme distension and displacement forwards of the perineum. The posterior limits of the vulva lay 7 in. anterior to the anus, whilst the soft structures bounding the vulval aperture were flaccid. The integuments of the perineum were livid but not oedematous. The fetal head lay entirely in the vagina, and the distended perineum was not unusually thick. Grabowiecki split the perineum for about 4 in. Then the child was delivered; it was asphyxiated, but it revived under appropriate treatment. It weighed 6½ lb., and measured 19¾ in. in length. The mother's pelvis was of normal dimensions. After the expulsion of the placenta, the pelvis was explored, and a rent as big as a shilling discovered in the recto-vaginal septum not far above the entrance to the vagina. No immediate operation was undertaken, owing to the patient's condition. The parts were kept clean with antiseptic solutions; within three weeks faeces and flatus passed by the natural channel. Two months after delivery Grabowiecki examined the parts with a view to a plastic operation, but he found the recto-vaginal fistula completely healed. He attributed the complication in this case to rigidity of the perineum. The violent pains could not dilate it, and the head was pushed against the posterior vaginal wall till the anus was dilated and the septum ruptured. What share the prolapse of the colon played in this complication remained uncertain.

281. Pituitary Extract in Childbirth.

J. HOFBAUER (*Muench. med. Woch.*, May 28th, 1912) speaks of personal experience of pituitrin (Parke, Davis, and Co.) and of pituglandol (Hoffmann-La Roche), while he has only theoretical experience of vaporole (Burroughs, Wellcome, and Co.) in childbirth. There does not appear to be much difference in the activity of any of these preparations. He finds that subcutaneous injection is the best method of application for practice, although he has obtained satisfactory results after intravenous injections. The action sets in rapidly and stormily after this method, and passes off more rapidly. The dose has to be somewhat smaller, and the appearance of a temporary cyanosis, sweating, and uncomfortable feeling is not unusual. For subcutaneous injection, 1 gram is the ordinary dose. It is very rare to find a patient who does not respond to the injections. In a few cases of elderly primiparae, and in some women of infantile type, no effect was produced. Pituitrin was found to act almost if not quite as well when the patient was lightly anaesthetized. The question of the indications is also dealt with. This drug can be applied whenever a primary or secondary weakness of uterine contractions is met with. In placenta praevia, in face presentations, in contracted pelvic cases, and as a prophylactic before Caesarean section, it acts well. Hofbauer states that the advantages lie in the shortening of the duration of the parturition, in the diminution of the dangers of infection, exhaustion and of asphyxia of the child, and also in the avoidance of operative interference. In Vogt's last 600 cases he has not used forceps once, and Hamm has only applied them twice in 300 births, which represents about one-twelfth of the former frequency. A few instances of undesired symptoms following the use of this preparation do not appear to be either serious enough or frequent enough to outweigh the great advantages which accrue from a judicious use of the extract.

GYNAECOLOGY.

282. Polyglandular Syndrome and Genital Affections in Women.

DALCHÉ (*Journ. des praticiens*, 1912, xxvi) describes the following diseases connected with genital affections: (*a*) Tetany: Woman aged 55. First showed signs of tetany four years previously. Menstruation ceased eighteen months since: 0.20 cg. of ovarian powder twice a day cured the condition. (*b*) Acro-paraesthesia: Woman aged 24. First showed signs of this condition after a severe shock. There were no signs of hysteria. Treatment by ovarian opotherapy, the faradic current, and immersion of the hands in warm water twice daily effected a cure, the menses returning after an absence of five months. (*c*) Paralysis agitans: Woman aged 48. The menses ceased eighteen months since, and signs of this disease then became manifest. In addition there were signs of hypothyroidism, and an infantile uterus was present. Great improvement resulted from the use of powdered ovary for six months. (*d*) Raynaud's disease: In men thyroid gland or testicular extract, in women thyroid or ovarian gland often ameliorate the condition. (*e*) Obesity: This may be due to castration, the menopause, puberty, lactation, and the like, and opotherapy is indicated. (*f*) Gout, rheumatism: The author considers some cases of these diseases in old women are of genital origin, and where there is a tendency to amenorrhoea and hyperovarism ovarian extract and thyroid are indicated. (*g*) Diabetes: Woman aged 57. Marked glycosuria coinciding with metrorrhagia and other symptoms indicative of suprarenal and hypophyseal origin. Opotherapy was indicated and brought about an amelioration.

283. Hypodermic Needle in Female Bladder.

SACHS (*Monats. f. Geb. u. Gyn.*, September, 1912) recently reported at a meeting of the North-East German Gynaecological Society an instance where a needle was extracted from the bladder. Seven years previously a resistant mass developed in the pelvis in the puerperium, evidently parametritic. An exploratory puncture was made by means of a Pravaz syringe, but the hypodermic needle snapped off and could not be drawn out. The exudation completely disappeared, and the patient remained free from discomfort for several years. Then pelvic pain set in and another swelling developed, but subsided very suddenly. At the same time dysuria set in and the urine grew purulent. Yet the patient got well again and felt easy for a short time. At length chronic cystitis developed and proved obstinate. The cystoscope at length revealed the foreign body, which was removed with polypus forceps. The patient recovered permanently in a few days.

THERAPEUTICS.

284. Electrargol and Fulmargin.

E. BRAENDLE (*Wien. med. Klin.*, No. 11, 1912) reports on 73 cases of epididymitis and gonorrhoeal arthritis treated in the Breslau Hospital with the electrically-prepared colloid metals—"electrargol" and "fulmargin." These are both preparations of silver and both fulfil the conditions necessary for colloid metals to be of use clinically—that is, they are both isotonic. "Electrargol" is prepared by the firm of Clin in Paris and "fulmargin" by the Rosenberg chemical laboratory in Charlottenburg. Of the cases treated by the author, 56 were of epididymitis and 17 of gonorrhoeal arthritis. At first the solutions were injected partly subcutaneously, partly intramuscularly, and partly locally. Intramuscular injections appear to be the most satisfactory; the subcutaneous method was quickly abandoned because it was found to be more painful, and in one case led to necrosis at the site of injection. The best results were seen in the acute forms of gonorrhoeal rheumatism. In these cases 10 c.cm. of the solution was injected into the gluteal muscles and the injection repeated as required, in the more obstinate cases as often as every second or third day; the injections were painless, were well borne, and no harmful side-effects were observed, even in one case in which altogether 105 c.cm. of electrargol was given. As a rule, there was a definite fall in temperature after the injection, and very frequently a striking diminution in the joint swelling and the pain. In several of the cases injections of the polyvalent gonococcus vaccine, arthigon, were made in addition to the electrargol treatment. In several cases arthigon undoubtedly had a favourable effect, but in others it had apparently none. The benefit was the more marked when the general and local reaction was marked. In high grades of fever the use of arthigon is contraindicated, and in such cases electrargol with its temperature-reducing action was very useful; moreover, the combination of arthigon and the colloidal metals gave more uniformly favourably results than of arthigon alone. In some of the severe chronic forms of arthritis the electrargol treatment failed. In the acute cases of arthritis the author believes that local treatment of the accompanying urethritis is directly contraindicated, and gives gonosan and sandal oil internally. A general description of the accompanying local treatment of the arthritis is given in the article. In the cases of acute epididymitis with fever the initial dose of electrargol or fulmargin was 5 c.cm. in the early cases, but in those in which treatment had not been begun early was 10 c.cm. As a rule the temperature fell after the injection, and the majority of the patients found within a few hours that the sense of painful tension in the scrotum was diminished. In cases resistant to treatment 1 c.cm. of electrargol was injected locally into the substance of the epididymis after

a preliminary treatment of the skin of the scrotum with iodine tincture. The solution was injected slowly, and a local anaesthetic was not found to be necessary. According to Asche, the pain due to the injection, which is of moderate severity only, lasts as a rule for two or three hours, and except for this there is definite and speedy improvement with regard to pain. But the author only found the results of the local injection favourable in the acute cases with marked inflammatory symptoms; in these the injection was followed by a more speedy absorption of the infiltrate than could have been looked for after other methods of treatment. The author warmly recommends the treatment by colloid metals.

285. Coal Tar in Dermatology.

MÜLLER AND RYGIER (*Archiv. f. Dermat. u. Syph.*, October, 1912) state that the chemical composition of coal tar appears to vary with its source. Two French authors, Brisson and Chajes, agree that it contains 55 per cent. of pitch, 0.2 per cent. of carbolic acid, 0.3 per cent. of cresol, 24 per cent. of heavy oils, and benzol, toluen, naphthalin, and anthracin in percentages under 1. The authors do not believe that its healing value can be ascribed to any one constituent, as in their experience purified extracts are not nearly so efficacious. In their view, the antipruritic, astringent, and exsiccating properties of coal tar are due to the collective action and protective value of the many constituent carbon compounds in combination. They publish the results of treatment of 100 cases: of these 64 were cases of chronic eczema, 3 of dermatitis lichenoides pruriens, lichen simplex (Vidal), 2 cases of prurigo (Hebra), 13 of acute eczema, 9 of psoriasis, 4 of eczema mycoticum, 1 each of pityriasis rosea, pemphigus, and dermatitis herpetiformis (Dühring), and 2 of lichen planus. By far the best results were obtained with the first three diseases. In chronic eczema they maintain that coal tar is quicker and more permanent in its results than any known combination of pastes or ointments, and they were able to use it with success in irritable cases where the use of a wood tar would most certainly have aggravated the condition. In the common condition known as lichen simplex (Vidal)—a prurient thickening with a pigmented mosaic-like marking of the skin, the result of rubbing or scratching—the remedy was invariably curative, whilst in prurigo (Hebra), or any condition the clinical course of which is marked by itching, and the appearance of chronic diffuse or circumscribed patches of infiltrated rough skin, they strongly recommend its trial. In acute eczema they warn against its use until the bright red inflammatory manifestations have been controlled by lotions or pastes, and they do not agree with French clinicians who are in the habit of prescribing it, not only in acute cases, but even where the staphylococcus is obviously the etiological factor. It is of small value in psoriasis and the other conditions enumerated. It is important to note their method. In doubtfully reacting cases, for instance, subacute eczema of a large area, they apply it with a brush over a small area first, and note its effects; otherwise the procedure is as follows: In ward cases, after painting on a thin layer, dusting powder is applied, and the tar left to dry on, which it does in from two to three hours. In out-patients it is protected with gauze bandages, which accelerate the setting, and prevent soiling of the clothes. If the patient does not complain of discomfort during the first twenty-four hours, a second application over the first is the usual procedure. After forty-eight hours the tar has lost its efficacy, and must be removed with ichthyol zinc paste, olive oil, or lead vaseline. It is then renewed and left undistributed for another forty-eight hours, and so on, until cure is complete. The only toxic symptoms ever observed by the authors and these are very rare were those of carbolic acid, namely, headache, nausea, vomiting, and carboluria. The last named precedes the others, and should be watched for.

286. Arterio-venous Transfusion of Blood.

As the result of a number of experimental observations by Carrel, Crile, Enderlen, Holz, and Ehrereken, it has been established that extremely severe anaemic conditions which threaten life immediately can at times be dealt with successfully by transfusion of blood, and, further, that the alarming symptoms which used to follow this procedure are practically or absolutely avoidable by modern methods. Payr (*Munich. med. Woch.*, April 9th, '12) deals with the technique of the procedure. The essentials are that the blood must flow directly from the vessels of the one to those of the other person without interruption, in order that clotting may be prevented. Payr considers that there are disadvantages in the employment of magnesium protheses or sutures, and has now devised a method which he states gives him good results. He uses a piece of artery from the calf, hardened in formalin and saturated in paraffin. The technique is as follows: The upper arm of the person supplying blood is compressed by means of Treibmann's compressor, but not firmly at first. This compressor is of great value, inasmuch as the screw arrangement enables the operator to apply exactly the amount of pressure on the vessels as is necessary. The surgeon then dissects out the radial artery of the supplier, and the median vein of the patient under local anaesthesia. Each vessel is ligatured peripherally. On tightening the compressor, the artery is divided and secured by three vaselined silk ligatures, passing through all the coats. The lumen is dilated and the calf artery (somewhat obliquely cut) is inserted and fastened by means of fine ligatures into the radial artery. The calf artery is sufficiently resistant to stand the pressure of the securing ligature, in spite of the fact that it is elastic. The compressor is opened for a minute or less till the calf artery is full of blood, and the other end of the latter is then introduced into the patient's vein, in a manner similar to that of introducing the artery into the radial artery. One disadvantage is that it is impossible to determine how much blood has passed. The advantages are: (1) The small incision; (2) the operation is easy and can be rapidly performed; and (3) no pressure clamps are needed, so that the vessels are not damaged. He regards the method so simple as to justify a considerable extension of its application.

PATHOLOGY.

287. The Cultivation of Tubercle Bacilli.

R. TURRO AND J. ALOMAR point out that every one who has worked with tubercle bacilli agrees with the view that potato forms an excellent nutrient material (*Berl. klin. Woch.*, August 26th, 1912). The authors, however, point out that there are numerous variations in the different kinds of potatoes, and quote the Dutch strains as yielding good results. In order to obviate the difficulties arising from any difficulty of obtaining a good sort of potato for the purpose, the authors have suggested the following method: Having discovered a good strain of Dutch potato, they prepare a broth with 100 parts of a 5 per cent. solution of glycerine and 50 parts of Dutch potatoes cut into pieces. This mixture is heated for ten minutes in steam at 125° C., then filtered through cotton-wool, and poured into flasks. The resultant is an amber coloured decoction of syrupy consistence and a slightly acid reaction. This broth is inoculated on the surface by placing a very thin cork disc impregnated with tubercle culture on the surface. They state that very even satisfactory cultures were obtained in this way. The time occupied in the growth varied according to the strain used. Apart from the broth, they have prepared a solid medium by adding to the broth 2 parts per cent. of gelatine. The broth has a great advantage in preparing tuberculin, namely, that no peptone is contained. Owing to this, the temperature reaction becomes far less marked, and the patients put on weight while being treated with it.

288. Microscopic Diagnosis of Hard Chancre.

TRIBONDEAU (*Gaz. hebd. des sci. med.*, 1912, xxxiii) considers the following is the best method as recommended by Gaston and Giraud for discovering the treponema. Dry the chancre with absorbent cotton-wool, make parallel scarifications with a lancet at both sides of the borders of the chancre and between them, sufficiently deep for raw blood. The sero-bloody liquid is expressed by scraping with the edge of a slide and spread out by means of this latter on a cover glass. Dry by shaking in the air. Fix by the solution of Rugo renewed many times for about a minute; the solution consists of distilled water 100 grams, formalin (40 per cent.) 2 grams, pure acetic acid 1 gram. Add drop by drop absolute alcohol and heat. Then add some drops of a solution of tannic acid 5 grams, distilled water 100 grams and heat until steam arises, then wait for thirty seconds and wash under the tap for thirty seconds. Remove the excess of water, and add some drops of Fontana's solution of silver nitrate 1 gram, distilled water 20 grams, and ammonia. Heat for thirty seconds and then wait for the same length of time. The ammonia should be added drop by drop to Fontana's solution until a sepia colour is produced and then completely disappears. To this solution add some of the ordinary silver nitrate solution until the liquid is slightly dark. Wash in distilled water and dry. The preparation obtained is of a clear yellow-violet colour.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

289. Epilepsy.

DE FLEURY (*Journ. des praticiens*, October 26th, 1912) expresses his belief that, in all cases of epilepsy, a meningo-encephalitis is already in existence. In some cases the lesion is both the predisposing and the immediate exciting cause of the attacks; these are the bad cases, in which treatment is unavailing. In the majority, however, the lesion only causes a predisposition to the paroxysm—the patient is a potential epileptic only. The author quotes some interesting experiments of Claude and Lejonne, in which a subdural injection of zinc chloride set up a condition of meningo-encephalitis affecting the motor area. After some months' respite and apparent cure, the animals were given small doses of strychnine in their food. This was followed by epileptoid crises. Control animals which had had no previous meningeal irritation were in no way affected. The author goes on to say that the results of these experiments are in every way comparable to the pathology of the condition in the human being. Meningo-encephalitis may develop in intrauterine life, followed by convulsive attacks in infancy. These disappear, leaving no apparent trace behind, but toward the eighth to the twelfth years—very often as the result of peripheral irritation, such as digestive troubles—true epileptic troubles begin. Most authorities have noted in the preconvulsive period furred tongue, fetid breath, and constipation alternating with offensive stools, and certain monographs have described a gastro-intestinal epilepsy—this being, according to the author, an improper title. After reviewing the various exciting causes suggested by different authorities, the author states his belief that Herter's view of excessive intestinal putrefaction, as betrayed by indicanuria, appears the most reasonable exciting cause. He refers to a number of cases, some of them very obstinate, in which a vegetarian dietary combined with one of the lactic acid preparations gave very striking results. The regimen recommended is strictly vegetable, suppressing all food of animal origin. Milk and eggs are particularly undesirable. If the patient has passed some months without an attack he is allowed a little red meat well cooked and carefully masticated at the midday meal. Beverages of a diuretic character especially may be given freely between meals, a litre being sufficient during the day. Any larger quantity might prove harmful by raising the blood pressure. Preparations of lactic acid are given in the form of bouillon, the most acid preparations being the most active. In the author's view the great majority of cases, excluding those of Jacksonian origin, have as a determining cause of the convulsions an organic poison of intestinal origin. The results of this treatment have proved this. He does not agree with those who think that the convulsive poison is an auto-cytotoxin.

290. Fatal Nicotine Poisoning.

E. EHRNROOTH (*Finska Laekaresaellskapets Handlingar*, July, 1912) reports a fatal case of nicotine poisoning which is, he thinks, the first to be recorded in Finland. This is all the more strange as nicotine is easily extracted both from the green and the dried tobacco leaf. On the advice of a midwife in Helsingfors, the mother of a 6-year-old girl gave her daughter an enema prepared from tobacco in order to expel worms. An infusion was made from 4 to 5 grams of green tobacco leaf in about one litre of water. Half of this was injected. The child soon became very restless, a cold sweat broke out, and death occurred within half an hour of the injection. The necropsy showed that there was no status lymphaticus to account for the sudden death. The bronchial glands were enlarged and caseous, and the kidneys showed signs of slight inflammatory changes. There was extravasation of blood into the mucous membrane lining the pelvis of the kidneys. There were also extravasations of blood into the mucous lining of the stomach, which was grey and swollen. The lining of the intestine, particularly in the lower portion of the small and the upper portion of the large intestine, was swollen and hyperaemic. A yellowish-grey mucous fluid was found in the intestine, suspended in which were numerous particles which consisted of tobacco leaf. Analysis of the contents of the large intestine showed the presence of nicotine. Given by the rectum nicotine appears to be rapidly absorbed, for death has been known to follow in two to five minutes. How much nicotine was given in the author's case is not clear, but as the enema did not contain the bulk of the leaves, it is probable that only a fraction of the nicotine they originally contained was absorbed by the child. Nicotine is, however, so toxic, that 0.003 gram is sufficient to cause serious poisoning, while 0.006 gram may be fatal. One cigar alone may contain enough nicotine to cause death, and it is surprising that such a toxic drug figures so rarely in the history of suicide and murder, yet there are some interesting records of the use, both of pure nicotine and of tobacco, for these purposes. The most famous trial in which nicotine played a prominent part was that of Count Bocarmé, who was convicted in 1850 of poisoning his brother-in-law, Gustaf Fougnies. The trial is of historic interest, as it was the first in which a medico-legal analysis of a dead body revealed the presence of a vegetable poison. The *post-mortem* changes in cases of nicotine appear to vary considerably, and while some observers have detected a smell of tobacco on opening the body, others, including the author, have noticed no such phenomenon. The paths by which nicotine enters the body are numerous, and of these the skin is one of the most common. Smugglers have suffered from severe nicotine poisoning by secreting tobacco under their clothes next to their skin, and the application of wet tobacco compresses to cutaneous eruptions has also ended in disaster. Most curious of all is the case of a convict who had the ingenuity to smuggle tobacco into his cell by secreting it in his rectum, for which device he was punished by serious symptoms of nicotine poisoning.

291. Circulatory Disturbances Provoked in Tuberculous Subjects.

TEDESCHI (*Rif. Med.*, July 13th, 1912) gives an account of some experiments he has carried out in 26 cases of phthisis (not advanced cases) in relation to changes of blood pressure after exertion. The work was light—lifting a 2 kg. weight, flexion of the leg, or simple pressure on the forearm—and control experiments were made with normal healthy individuals. Observations were made before signs of exhaustion appeared and after the exercise was ended. In the tuberculous subjects arrhythmia was exceptional after the light exercises, but appeared occasionally after more marked muscular exertion. Some tuberculotics reacted very much like healthy normal people, but the majority displayed certain peculiarities. In the first place, their blood pressure and their pulse-rate rose after much smaller stimuli than would be the case in a normal individual. This increase of pulse-rate with coincident increase of blood pressure is not the normal physiological state of things. Again, in tuberculotics this phase of increased pressure is soon followed by a rapid fall (50 to 60 mm.), which may last for more than an hour, and means, in the author's opinion, functional insufficiency of the cardiac muscle. Transitory and fleeting changes are also noticeable in the vasal tone, probably due to abnormal stimulation of the vasomotor system. The author concludes that light muscular work by its effects may serve to put in evidence in many tuberculous subjects latent conditions of the circulatory apparatus, in a wide sense, especially as regards the speedy exhaustibility of the myocardium, and in some cases an abnormal behaviour of vascular tonus.

SURGERY.

292. Artificial Pneumothorax in Pulmonary Tuberculosis.

JAQUEROD (*Rev. méd. de la Suisse rom.*, September 20th and October 20th, 1912) has attempted to produce pneumothorax in 23 cases of pulmonary tuberculosis. In 15 the pneumothorax was adequate effectually to compress the affected lung. In 8 cases the production of pneumothorax proved impossible; in all but one owing to complete pleural adhesions. In one the difficulty was due to chronic caseating pneumonia, in which the lung was incapable

of compression. The only certain means of detecting extensive pleural adhesions is the manometer. Normally, with a free pleural cavity, the initial negative pressure is about 5 cm. of water. Oscillations with respiration are immediately apparent, and with deep inspiration the negative pressure may fall to 10 cm. or more. But in proportion to the extent of adhesions the negative pressure becomes less, and with a pressure of only −1 cm. or −2 cm., and correspondingly small oscillations, the production of a satisfactory pneumothorax is not to be expected. A small quantity of nitrogen may be introduced with the production of a high positive pressure, but the gas under pressure is invariably rapidly absorbed. The writer is convinced that artificial pneumothorax is the most important advance yet made in the treatment of pulmonary tuberculosis, and that the method will not be abandoned unless a specific remedy applicable to all cases is discovered. As regards the technique, an incision of the thoracic wall down to the pleura, as proposed by Brauer, is unnecessary. With some practice it is quite easy to arrest the needle exactly between the two layers of the pleura. The needle should be of moderate length and absolute rigidity. The pleural cavity is entered with a sensation of suddenly overcome resistance, and the registration by the manometer of negative pressure. A number of measurements have shown that the point of the needle almost always enters the pleural cavity exactly 2 cm. from the surface of the skin, whether the subject be fat or thin. Probably the small play allowed by the bevelled point of the hollow needle, amounting to ½ cm., accounts for this. If at the first trial the manometer remains stationary, a stilette should be passed down the needle, which frequently becomes obstructed by a particle of tissue. If this fails, the needle must be withdrawn, and inserted in another position. Only as a last resort should the needle be withdrawn a few millimetres and again advanced. There is risk of wounding the lungs, and the method is seldom necessary. Whenever possible, the needle should be inserted below the scapula in the posterior axillary line. It is better to inject pure nitrogen than air, which is rapidly absorbed. The author employs Forlanini's apparatus, and finds it entirely satisfactory. Certain complications may accompany the injection of nitrogen. There may be convulsive movements of the face or limbs, paraplegia, hemiplegia, amaurosis, or aphasia, which may after a few seconds disappear without trace. The patient may suddenly die without warning, or after complaining of headache or congestion of the limbs may become comatose. German authorities explain these serious complications as due to air embolism, but in certain cases of convulsions the symptoms may be due to reflex irritation from the pleura. In this connexion it is significant that the symptoms are only observed after repeated injection of nitrogen—never on the first occasion—and at the time the needle is actually within the pleural cavity. Thus, on repeating the process, the needle should never be inserted exactly at the spot selected on the first occasion. Possibly the breaking down of pleural adhesions by gas under pressure may have the same effect. Another sequela of the treatment is empyema; it is most likely to occur in advanced cases of tuberculosis, in which pleural adhesions become broken down. The treatment requires careful selection of cases. Although the number of cases already treated is considerable, it is too early to state with certainty whether the results are permanent. In certain cases a relapse soon occurs. In the author's view the treatment should not be proposed in early cases, in which there is good prospect of cure by other methods, or in chronic cases with cavities but without fever, in which fair health is maintained and the process appears stationary. The treatment should rather be reserved for its immediate effect in urgent cases. Thus, one of the most definite indications is pyrexia which has resisted all treatment, including prolonged rest. The effect of the procedure is remarkable, and the temperature becomes normal almost immediately. Another indication is rapid extension of the disease with progressive destruction of pulmonary tissue and copious expectoration. The treatment has a remarkable effect in suppressing excretion. A third indication is severe or frequently recurring haemoptysis. In serious cases the physician should not hesitate to employ artificial pneumothorax even during an attack. Apart from the contraindications already mentioned, pneumothorax should be avoided in the presence of such extrapulmonary complications as miliary tuberculosis, [illegible] ulceration, and amyloid degeneration. [illegible] cases give the best results, bilateral [illegible] of the lungs is not necessarily a contraindication. The author has on several occasions successfully produced a partial pneumothorax on the most affected side, and later similarly treated the other.

293. The Sensibility of the Peritoneum.

In a trial lecture at the surgical clinic at Heidelberg for the "Licence to lecture," Carl Franke spoke in some detail of the sensibility of the peritoneum (*Berl. klin. Woch.*, October 14th, 1912). The autonomic system of the abdominal organs is derived from the central nervous system in the mid-brain, the medulla, the dorsal cord, and the upper part of the lumbar cord. The lecturer divided the system into four parts: (1) The mid-brain autonome, represented by the third cranial nerve; (2) the bulbar autonome, the seventh, ninth, and tenth cranial nerves; (3) the sympathetic, and (4) the sacral autonomes. He proceeded to describe the direction of the fibres issuing from these groups. Each fibre is provided between the spinal cord and its peripheral end with one ganglion cell. They only possess a centrifugal conduction power, and when the organs supplied contain sensory nerves the latter are derived from the cerebro-spinal system and have no connexion with the autonomic system. The abdominal organs are innervated by the vagus, the sacral autonome and the sympathetic. Under ordinary conditions the abdominal organs do not reveal the least sensation, but under certain circumstances they may be the seat of severe pain, which, according to Fröhlich and Meyer, is due to the stimulation of ordinary spinal nerves issuing from the posterior spinal roots. The vagus, the splanchnics, and the hypogastric nerves are free from any sensory fibres. Approaching the subject from the experimental side, he finds that some difficulty is experienced when utilizing animals for the purpose. Local anaesthetics have to be avoided, as they induce a general insensitiveness, and it is obvious that cold air produces a loss of sensibility in regard to the abdominal organs. He, however, came to the conclusion from the reliable evidence available, that mechanical stimuli to the intestines produce pain in the lower animals, but not when applied to the liver, spleen, or pancreas. Dogs are more susceptible than cats or rabbits. It appears, further, that the stomach of these animals is insensitive, but tying of vessels in connexion with the organs is associated with pain. Turning to the human subject, the experience of local anaesthetics permits of a number of deductions. The parietal peritoneum is extremely sensitive, and has the power of localization to some extent. The liver is absolutely insensitive to mechanical stimuli, which explains the painlessness of hepatic affections until the process involves the surface, and thus the peritoneal covering. He could not find any records with regard to the sensibility of the human spleen or pancreas. The oesophagus possesses sensation for pain, warmth, cold, and for pressure. This sensibility decreases downwards. Further, he had no hesitation in stating that pain is felt in the mesentery, right up to the intestine. He discusses at some length the question whether the intestine is sensitive or not, and comes finally to the conclusion that normally the gastro-intestinal canal is insensitive, in contrast to the case of animals. He shows that the pain of supposed hyperacidity of the stomach is in reality due to a gastric ulcer. He follows this up with an analytical discussion of the pain of colic, etc., and referred this pain to pulling on the mesentery, giving a detailed account of the mode of production. Various theories were discussed. He states that the gall bladder is wholly insensitive to mechanical stimuli, but that the pain associated with biliary colic, etc., is due to the pulling on the nerves in the neck of the bladder; this is supported by the fact that ligature of the cystic artery and the neck of the gall bladder are painful procedures. The same is true of the kidneys. The urinary bladder is sensitive, especially in the trigone, and the floor is certainly sensitive to heat. He further speaks of the sensibility of the urethra, rectum, etc.

OBSTETRICS.

294. Pregnancy after Ectopic Gestation.

At a meeting of the Obstetrical and Gynaecological Society in Vienna in the middle of February, opinions varied greatly as to the best course to pursue when ectopic gestation led to an operation. Duffek maintained that 25 per cent. of all women operated on for ectopic gestation again became pregnant, and that about one fifth of these women again developed ectopic gestation to their imminent risk. For this reason Latzko urged that the operative treatment of ectopic gestation should include the removal of the tube on the side opposite to that in which the gestation existed. He was, however, prepared to leave this tube intact when,

for example, the woman was childless and wanted children. Wertheim, on the other hand, favoured the more conservative school, and argued that the danger of a second ectopic gestation was not very great. He also admitted the need for more statistical information on the subject. R. Hofstaetter (*Wien. med. Woch.*, May 4th, 1912) has therefore investigated the records on this subject in Professor Peham's hospital for the period 1903 to 1912. There were 52 cases of ectopic gestation, 39 of which were operated on. Of these 39, 15 were sterilized. The subsequent history of the remaining 24 was obtained in all but 4 cases. Two other patients were also excluded from the statistics as they had been recently operated on. There remained, therefore, 18 women, 10 of whom again became pregnant, the total number of confinements at full term being 10. In addition there were 3 abortions and 1 second ectopic gestation. Consequently the ratio of ectopic to intrauterine gestations in this class of patient is 1 to 13. The case of repeated ectopic gestation was that of a woman, aged 34, who was operated on in 1906 for ectopic gestation on the right side. A year and a half later laparotomy was again performed for haematocele and rupture of the tube on the left side. The author concludes that his statistics prove the advisability of leaving that tube in place which is not affected by ectopic gestation, provided it is healthy, and he cites the following case in support of his conservative attitude: A woman, aged 32, was operated on for ectopic gestation on the right side. The right ovary and tube were removed. The left ovary, which was cystic and larger than a fist, was removed with the exception of a fragment no larger than a lentil. The left tube was left *in situ*. The patient became pregnant eight months later.

295. Salvarsan and Chorea Gravidarum.

HAERTEL (*Monats. f. Geb. u. Gyn.*, May, 1912) recently reported before the Gynaecological Society of Breslau an instance of chorea in a pregnant woman cured, in his opinion, by the administration of salvarsan. She was a multipara, and the complication developed in the sixth month. For a fortnight she was treated in private without benefit, and on that account she was sent into a hospital. Then she was placed under the usual treatment – rest, packing, and narcotics—but at the end of five days she was in a worse condition than when admitted. Salvarsan was injected into the veins. Five days later the patient's condition had greatly improved, and on the twelfth day after treatment she was discharged cured. In discussing this case, it was objected that spontaneous disappearance of chorea gravidarum and success of old methods of treatment, which had at first proved useless, were not unknown. It was important to distinguish a grave type where aggravation of the chorea, and death, followed a natural ending of the pregnancy. On the other hand, severe chorea certainly disappeared in some patients after induction of labour. The actual part played by salvarsan in any one case that recovered must always remain uncertain.

GYNAECOLOGY.

298. Ventrifixation.

FERGUSSON (*Journ. of Obstet. and Gynaec.*, September, 1912) publishes a thesis on this subject stating that the term ought to be reserved for those methods which firmly fix the fundus to the anterior abdominal wall, but operations intended to be suspensory only often result in absolute fixation of the uterus with dangerous results. He gives a general account of the operations which have been devised for the permanent cure of retropositions and prolapse, and describes the difficulties which may arise during pregnancy and labour as the result of such operations. These difficulties are: Excessive pain during the second half of labour; hyperemesis; tendency to premature labour; placenta praevia—or at least very low attachment of the placenta; tedious labour owing to thinning of the posterior wall; obstruction caused by the anterior wall taking no part in the growth of the uterus, and either acting like a tumour or preventing the fetus from entering the lower segment; delay in the proper opening of the cervix; abnormal positions of the fetus; extreme difficulty in version of transverse presentations; risk of rupture during manipulations. For those difficulties which arise during pregnancy Montgomery has on several occasions opened the abdomen and freed the uterus by cutting adhesions, but short of this the treatment must be on ordinary medical lines. For dystocia due to ventral fixation the choice of treatment lies between induction of premature labour and Caesarean section, the latter being favoured by the writer. He thinks that Caesarean section should be advised (1) when there is a history of severe dystocia in one or more labours, more particularly when labour has resulted in a dead child or great exhaustion of the mother; (2) when we meet with a case only after labour has commenced, in which the cervix is so far up that vaginal manipulations are rendered exceedingly difficult, and are likely to prove abortive. As to the proper treatment to adopt for these displacements, for which ventrifixation and similar operations have been devised, an examination of the records shows that there are practically no cases on record where trouble has followed Kelly's technique; so one must admit that the operation is effective and simple to perform, and at least less dangerous in its after-effects than the methods where the rectal fascia or the rectus muscle itself are included in the suspensory sutures. The author is of opinion that the operation of hysteropexy is very often used when it is not absolutely necessary, and he thinks that before advising the operation all other methods should be given a trial upon the following lines: (1) Reduction of the displacement under chloroform and fitting with a large Hodge pessary, followed by reduction in the size of the pessary, if the uterus is keeping in good position, and later by intervals of omission gradually increased till the pessary can be dispensed with altogether. (2) When the vaginal outlet is very lax, resection of the outlet. But there are cases where the displacement is of long standing, and the uterus is bound down by adhesions, and in these one must do a suspensory operation right away. The choice then lies between Kelly's operation, the various methods of intra-abdominal shortening of the round ligaments, and ventrifixation with sterillzation. The last should be reserved for women almost at the menopause; the second is quite safe from the point of view of future pregnancies, but Kelly's operation is easier to perform, and the author sums up in favour of it.

THERAPEUTICS.

297. Codeonal.

THE idea of employing a combination of drugs of similar pharmacological action in order to increase the effect has long been put into practice. Bürgi has tried to explain this increased action by supposing that when two medicaments find separate receptors in the cell for each the physiological effect of an equal dose of both will be greater than a double dose of either. Numerous experiments have been conducted in this direction with the view of obtaining a useful narcotic. Von Noorden has recently recommended, as a result of this form of investigation, the combination of diethyl-barbituric acid (veronal), phenacetin, and codein phosphate. It has, however, been shown that diethyl-barbituric acid and codein enter into chemical combination to form a crystalline codein diethyl-barbiturate, which contains 63 per cent. of codein and 37 per cent. of diethyl-barbituric acid. This substance melts at 85° C., and is soluble in alcohol, chloroform, ether, and water, but insoluble in benzol, xylol, and toluol. C. Bachem (*Berl. klin. Woch.*, February 5th, 1912) has carried out some experiments with the constituent parts of this combination and with other mixtures. In the first place, he found that codein produces reflex irritability in rabbits, which, in doses of 0.1 gram pro kilo body weight, takes the form of convulsions. Sodium diethyl-barbiturate acts as a powerful hypnotic in rabbits, 0.14 to 0.17 gram producing sleep for several hours, while 0.43 induced a complete narcosis from which the animal died in six hours. He then tested the action of the diethyl-barbiturate of codein on rabbits; 0.09 produced some reflex irritability but no sleep; 0.145 gram pro kilo body weight killed the animal in twenty minutes after convulsions had appeared. It thus appears that this compound cannot be used as a hypnotic, since it contains too much of the one constituent and too little of the other. He therefore tried a mixture of 1 part of diethyl-barbiturate of codein and 5 parts of sodium diethyl-barbiturate; 0.5 gram pro kilo body weight produced deep sleep with twitching and death after ten hours; 0.43 gram, sleep with twitching and subsequent recovery; and 0.2 gram, after twenty-five minutes, sleep lasting nine hours. He also varied the proportions in other experiments. Knoll and Co., of Ludwigshafen-on-the-Rhine, have introduced a mixture of 11.76 per cent. diethyl-barbiturate of codein and 88.24 per cent. of diethyl-barbiturate of sodium under the name of *codeonal*. The combination is sold in powder form

and also as tablets, each tablet containing 0.02 gram of the codein salt and 0.15 gram of the sodium salt. The tablets are lightly covered with sugar and flavoured with oil of peppermint. Bachem experimented with this mixture and found that the undesirable effects of the codein salt are avoided in the mixture, and especially that the lowering of temperature is far less with codeonal than with diethyl-barbiturate of sodium. He has tried the former on himself and others, and found that cough is prevented by one tablet and nervous sleeplessness cured. On theoretical grounds he regards codeonal as a drug the narcotic action of the components of which are fully utilized. O. Gaupp (*Berl. klin. Woch.*, February 12th, 1912) has also used codeonal. He has given it to sixty patients, and was satisfied with the results. The chief conditions for which it was employed were pulmonary and laryngeal tuberculosis, nervous diseases (such as tabes and paralysis agitans), heart disease, headache, polyarthritis, and nervous sleeplessness. In 4 cases it failed to act. Undesired side actions were met with in 3 cases. These took the form of vomiting and mild pain, but affected persons already suffering from gastric affections. As a rule the action appeared within half an hour and the sleep lasted for from six to seven hours. The usual dose required was two tablets.

298. X-Ray Treatment of the Suprarenal Gland.

THE first results of experiments with the *x* rays directed upon the suprarenal glands in animals revealed an almost complete indifference to *x*-ray action. The story, however, is different, according to Zimmern and Cottenot (*Arch. d'élect. méd.*, June 7th, 1912), in the case of patients presenting symptoms of excessive suprarenal function. The authors affirm that excessive function and hyperplasia of the suprarenal glands occupy a predominant place in vascular pathology, and that as arterial hypertension may be the consequence of this functional over-activity, it is legitimate to think that the *x* rays, with their remarkable elective power on cellular elements in the process of reproduction, may be able to stay the hyperplastic processes of the suprarenals, just as they diminish the pathological over-activity of the thyroid body or of the pituitary gland. A series of experiments has been carried out on patients suffering from hypertension, and in almost all cases a reduction has been brought about after the irradiation of the suprarenal region. The sphygmo-oscillometer of Pachon was used, with every circumstance of precaution to get comparative readings of value. Out of sixteen patients, five showed a maximum or systolic pressure of 20 to 21 cm. Hg before treatment; seven, 23 to 25 cm., and four, 26 to 31. Of these only one retained his former pressure after treatment. In all the others there was a reduction varying from 2 to 8 cm. Hg. Seven out of the sixteen showed a return to the normal pressure of 16 to 17 cm. In some cases there was a lowering of from 3 to 4 cm. within forty-eight hours of the sitting. In several patients the results were maintained for months without the necessity of new irradiation. The subjective troubles were modified sometimes even before the pressure was notably lowered. The technique is simple, the capsule being one of the organs most definitely fixed in the economy. If the twelfth rib at its proximity to the vertebral column be made the centre of irridation, one is certain to reach the suprarenal. Hard rays are used, marked 9 or 10 on the radiochromometer, and filtered through 1 mm. of aluminium. The neighbouring regions are protected with lead or otherwise. The two suprarenals are irradiated, the one after the other, the tube being placed 15 to 20 cm. from the skin. The kidney itself necessarily receives some part of the irradiation, but this does not appear to be injurious. The authors have analysed the urine, and have found no trace of albuminuria consecutive to treatment. In one patient with slight albuminuria before treatment, the action of the *x* rays directed upon the suprarenals was not such as to modify the quantity of albumen.

299. Clinical Application of Tuberculin.

J[illegible] (*Journ. des praticiens*, xxvi, 1912) considers the use of tuberculin under diagnosis, treatment, and prognosis of tuberculosis. He believes that von Pirquet's test is much to be preferred to the use of tuberculin for diagnostic purposes, as the dangers inherent from the uncertainty of the dose of the latter are much greater than in the former. The author condemns its use altogether as a remedial measure, as he considers the dose to be employed is impossible to determine and the importance of the pulmonary lesions and the resistance of the organism cannot be discerned. The author considers that the tuberculin cuti-reaction is the best criterion which we possess of the severity of a tuberculosis. In a young subject a negative result is of very bad augury, indicating a rapidly fatal issue. If the reaction is very marked, the outlook is good. A slightly positive reaction is of no prognostic signification. In the adult the stronger the reaction the better the prognosis.

PATHOLOGY.

300. Action of Normal Human Serum and of Serum of Carcinomatous Patients on Embryonic Cells.

FREUND AND KAMINER have shown that carcinomatous cells are not dissolved by fetal blood serum nor by the serum of carcinomatous patients, but are dissolved by the maternal serum. Later Kraus, Ishiwara, and Wintern-itz showed that human embryonic cells react like carcinomatous cells, in that they are not dissolved by fetal serum but are dissolved by the maternal serum. Kraus and Ishiwara (*Wien. klin. Woch.*, No. 16, 1912) have investigated the degree to which embryonic cells and carcinomatous cells have a like reaction by testing the effect of both normal serum and the serum of carcinomatous patients upon embryonic and carcinoma cells. The first set of experiments described in the article shows that normal human serum will dissolve to almost the same extent carcinoma and embryonic cells. In the next set of five experiments the relative effects of the serum of carcinomatous patients on embryonic and carcinoma cells is tested. In four out of these five experiments the embryonic cells were dissolved to a greater extent than the carcinoma cells: in one case the carcinoma cells were diminished by almost 50 per cent., but in this case the embryonic cells were diminished by about 90 per cent., and in the other three cases the carcinoma cells were hardly, if at all, diminished in number, while the embryonic cells were diminished by 76 per cent., 53 per cent., and 42 per cent. in the different cases. Two other series of tests showed that embryonic cells are dissolved by carcinomatous serum at least as strongly as by normal serum. The authors finally arrived at the conclusion that human embryonic cells showed biologically a difference from adult (liver) cells in that they were more markedly dissolved by human serum, and in this embryonic cells resemble carcinoma cells. They also resemble carcinoma cells in not being dissolved by fetal serum. But they differ from carcinoma cells in that they are dissolved by the serum of carcinomatous patients as strongly as by normal serum.

301. Spirochaeta Pallida and the Wassermann Reaction.

NOGUCHI (*Journ. Amer. Med. Assoc.*, April 20th, 1912) reports the result of the use of his pure culture of the *S. pallida* as antigen in the Wassermann reaction. His conclusions are briefly as follows: (1) The Wassermann reaction is caused by lipotropic substances but not by antibodies, which combine specifically with the *S. pallida* antigen. (2) The fixation produced by this antigen with certain syphilitic serums is caused by the specific antibodies contained in the latter, and may constitute a specific diagnostic method for syphilis. (3) The fixation caused by antigen from syphilitic orchitis of rabbits behaves like the *S. pallida* antigen in most cases, but when the serum contains much lipotropic substances it may give a Wassermann reaction as well, which is not the case with the pure culture. (4) In the serum of rabbits with active syphilitic orchitis there is no indication of the presence of a sufficient amount of antibodies for the pure culture antigen, although it gives a strong Wassermann reaction. Noguchi says it is remarkable that the amount of antibodies detected by the pure culture antigen was so small, and he thinks it possible that most patients who come for treatment have less resistance to the *S. pallida*, and are incapable of producing sufficient antibodies, while others who form greater quantities of antibodies may reduce the spirochaetes to harmless latency, or even destroy them. This class of patient does not frequent our clinics. If this is the case, it is important to check the patient in the early stage of infection by the complement fixation test with pure culture antigen, to determine his power of resistance. Noguchi concludes that the Wassermann reaction is a fair measure of the activity of the infecting agent, while the reaction obtained by pure culture of the *S. pallida* may measure the defensive power of the patient.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

302. Symptoms Caused by Cervical Ribs.

ALTHOUGH cervical ribs may cause no symptom, and may be accidentally discovered by palpation above the clavicle or by the *x* rays, yet they frequently give rise to a host of conditions, including pain, paresis, atrophy, and gangrene. K. H. Krabbe (*Ugeskrift for Laeger*, November 7th, 1912) draws attention to the frequency of this anomaly, many hundred cases of which have been recorded. But owing to ignorance of the condition, and the multiplicity of the symptoms it may produce, it is often not recognized. This multiplicity of symptoms is illustrated by the writer's cases, and the familial nature of the condition is shown by the investigation of a family of twelve children. One member of the family noticed at the age of 10 that both little fingers were becoming deformed and flexed. At the age of 17 she developed attacks of pain, which began in the left elbow and radiated thence to the fingers and shoulder. The pain, which was burning and pricking, was independent of movements and the position of the spine; and it was aggravated by exhaustion and warmth. During the following five years it grew worse, and the limb became weak. Examined at the age of 22, the patient showed no disease of the cranial nerves or spine. There was free movement of all the joints except those of the little finger. The left interosseous muscles and those of the thenar and hypothenar eminences were atrophied, as were also those of the upper arm and forearm. The tendon reflexes of both arms were active, and there was no tremor, ataxia, or tenderness in the course of a nerve. Over a sharply defined area on the ulnar side of the arm the senses of touch, pain, temperature, and vibration were reduced. There was no history of trauma, and Wassermann's reaction was negative. The first *x*-ray examination was also negative. After a month's observation, it was still uncertain whether the disease was tumour of the cord, syringomyelia, or neuritis—with or without functional disease. Electrical treatment increased the pain, which was unaffected by such drugs as aspirin. Treatment with *x* rays was also futile. Six months later, when the pain had become unbearable, the original skiagram of the neck was again examined, when two accessory ribs, triangular in shape and 3 cm. long, were detected, being attached to the transverse processes of the seventh cervical vertebra. The left first rib was exposed, though an incision over the clavicle, and two nerve trunks were found tautly stretched over the accessory rib. This was excised, together with part of the transverse process to which it was attached. The patient slowly improved till all pain had vanished. This case shows how serious symptoms may be caused by an accessory rib too small to be palpated or detected in a skiagram without careful search. The examination of the skiagram in the first instance was concentrated on the bodies of the vertebrae in search for a tumour. Another member of the same family, a girl aged 16, had suffered for two months from dryness and wrinkling of the skin of the hands. At night there was tingling and a sense of heat in the fingers, which occasionally became swollen and purple. There was hyperalgesia over the right scapula, but no sign of cerebral disease or spinal deformity. The symptoms disappeared after a short course of electrical treatment. When her sister was found to have accessory cervical ribs the patient was skiagraphed; the transverse processes of the seventh cervical vertebra were found to be abnormally large, and a 3 to 4 cm. long triangular accessory rib was seen extending on the left side down to the first rib, to which it appeared to be attached. Altogether eight members of the family were examined. One sister, aged 21, had a 3 cm. long accessory rib on the left side, and an abnormally large transverse process to the right of the seventh cervical vertebra. Except for slight contraction of the little fingers, she presented no deformity. Three brothers, aged 7, 8, and 13 respectively, showed prominences which might be due either to accessory ribs or large transverse processes. Finally, there were two sisters, aged 11 and 14 respectively, whose seventh cervical vertebrae presented slightly enlarged transverse processes.

303. Fever and So-called "Intestinal Infections."

U. ARCHANGELI, of Rome, writes (*Rivista Ospedaliera*, Rome, 1912, II, 809) deploring the frequency with which practitioners and even men of science are content to diagnose "intestinal infection" or "intestinal autointoxication" in patients who are suffering from fever of unknown causation. Such a diagnosis, he says, lacks any anatomical basis, and is in common use as a convenient cloak for ignorance about the cause of any more or less acute attack of fever in which the etiology is not apparent. Years ago, he adds, before much was known about malaria, such cases used to be diagnosed as malarial. In certain well-recognized diseases the diagnosis "intestinal infection" is justifiable; in enteric fever, paratyphoid, Malta fever, the gastric fever of the Germans (which is due to food poisoning), for example, but the case is quite different when that term is used to conceal ignorance and is applied to cases of other diseases. As a consulting physician he sees a great many patients in whom "intestinal infection" has been diagnosed as the cause of an obscure feverish attack; the true diagnosis should have been malaria, endocarditis, septicaemia, liver abscess, cholecystitis, posterior urethritis, syphilis, in some of them, but in 80 per cent. it should have been tuberculosis. In some instances the tuberculous lesion was obvious on making a proper physical examination of the patient; in others it was obscure, without any apparent localization, and these are the cases described by Landouzy under the title "typhobacillosis" to indicate their resemblance to typhoid fever and their dependence on the tubercle bacillus of Koch. "Typhobacillosis" is an obscurantist name, as Archangeli points out, and he thinks "cryptotuberculosis" or "latent tuberculosis" a better title; the tuberculous focus may be concealed at the root of the lungs, or in a mediastinal, peritracheal, or abdominal lymphatic gland. Or there may be a tuberculous bacteriaemia in these patients, as there appears to be in some cases of orthostatic albuminuria. Archangeli states that "intestinal infection" occurs at any age, but chiefly in children and young adults, at any time of year; the patients are usually thin and pale, and give a history of exposure to infection with tuberculosis. The onset is usually insidious and lasts for a few days or weeks or months, and may show relapses. The pulse is rapid—an important sign; the patient has a coated tongue, and complains of little beyond weakness, loss of appetite, diarrhoea in the more severe cases; occasionally albuminuria occurs, but Archangeli has never found the splenic enlargement said by Landouzy to be constantly present. If the patient eats solid food, and particularly meat, his temperature is likely to rise. The true diagnosis of such cases can generally be made if all the circumstances of the case are considered and if a thorough physical examination be made; use of the *x* rays and the diagnostic employment of tuberculin should not be omitted. The prognosis and treatment follow on the usual general lines when once the diagnosis has been made; in only a few of the patients is prolonged observation necessary before the etiology of the fever can be made out. In conclusion, Archangeli points out once more how important it is that the medical practitioner should not rest content with the diagnosis of "fever due to intestinal infection."

304. Interlobar Pleurisy.

WIDAL (*Journ. des praticiens*, November 9th, 1912) relates the case of a man who was found to be suffering from this complaint. The patient was aged 37, and had a history of previous good health. After suffering from a chill he continued to work. Cough became severe and expectoration abundant, as well as very fetid. Haemoptysis also occurred. The character of the expectoration was very like that which occurs in gangrene of the lung. The patient's general condition remained good and there was no apparent loss of flesh—this fact rendering gangrene unlikely. The fetid character of the expectoration, however, suggested a septic focus somewhere. No evidence of bronchiectasis was present. The short duration of the complaint negatived this, added to which there had been no history of whooping-cough, or of repeated attacks of bronchitis. On percussion, dullness was found at the base of the right lung, most marked as the vertebral column was approached. There were scattered crepitant and subcrepitant râles both on inspiration and expiration. A radioscopic examination showed a dark band following the line of the interlobar septum, the image being seen best in the antero-posterior direction. The diagnosis was

that this represented an encysted loculus of limited size. The difficulty of diagnosis in such cases is enhanced by the liability of such a lesion to bring about secondary attacks of pulmonary congestion in conjunction with it. The patient in such a case is not immediately and gravely menaced as to life, but the risk of bronchopneumonia is considerable. The treatment available is very limited and consists chiefly in hygienic measures, with inhalations of eucalyptus and tincture of benzoin to lessen the fetid character of the expectoration.

SURGERY.

305. Closure of Abdomen after Simple Cholecystectomy.

THE majority of patients suffering from gall stones who are subject to operation can be cured by means of simple cholecystectomy. The common duct need not be opened, and a number of surgeons have consistently closed the abdomen after this procedure, with obvious advantage to the patient. A. Goldmann now records a modification of this, which was introduced some four years ago by Rotter (*Berl. klin. Woch.*, August 26th, 1912). Rotter found that in removing an inflamed appendix, even if this structure was perforated, and even if diffuse suppuration was present, the abdomen could be closed at once without risk. The conditions governing this are: (1) That after the cavity is cleaned every defective point of the peritoneum must be covered; (2) no trace of a gangrenous or infiltrated change may be left behind, and (3) the haemorrhage must be accurately arrested. Having thus prevented any exudation from collecting in the peritoneal cavity, Rotter has proceeded by closing the wound, without the use of plug or drain, and has obtained as good, if not better, results than other surgeons obtain with the use of the drainage tube or tampon. In applying this principle to the surgery of the gall bladder, Rotter has added two further conditions. These are that the position of the bladder must be so arranged that no secretion can possibly find its way from it into the free peritoneal cavity, and further, that the cystic duct must be closed in such a manner that an escape of bile into the peritoneal cavity is excluded. In order to fulfil these conditions a subserous freeing of the gall bladder is absolutely necessary. The old method of detaching the bladder from its bed in the liver must lead to parenchymatous haemorrhage and to the escape of bile. When the gall bladder is dissected out subserously the bile ducts are not damaged, since the surgeon works between layers of connective tissue, and the only haemorrhage which occurs is derived from visible vessels, which can be ligatured. The second condition is carried out by opening the peritoneal covering of the cystic duct right up to the juncture with the common duct. Ligatures are then applied to the proximal and distal ends. Next the cystic duct is folded back on itself, in order that both ligatures may again be tied together. The peritoneal covering is then replaced and accurately closed. When the common duct has to be opened and the cystic duct removed tamponage must be resorted to. Preservation of the cystic duct and closure of the abdomen is performed for hydrops of the gall bladder, for recurrent cholecystitis, and for gall stones which have not found their way into the common duct. In non-infected cases the whole wound is closed; when an infection of the peritoneum has taken place at the operation the peritoneum is closed, the muscular layers are closed save for a few spaces which serve to receive a few strips of iodoform gauze, and the adipose layer is thoroughly plugged. This treatment is found advisable to prevent infiltration and to reduce the chances of hernia to a minimum. In about one-third of the cases of simple cholecystectomy, tamponage had to be resorted to. These included cases in which it was not possible to separate the gall bladder subserously, in those in which the serous covering is so altered by oedema and so easily torn that an exact suture became impossible, in those cases in which an exact closure of the cystic duct failed, and in those cases in which either some bleeding still continued after all the vessels had been ligatured or some infiltrated or necrotic tissue had to be left. An aseptic operation was performed 79 times, while in 16 cases there was either an infection of the peritoneal cavity at the time of the operation or an infection took place during the same by the escape of pus from the gall bladder. In all these cases the peritoneal wound was completely closed. In 70 healing took place by first intention within about eight days. The rest healed after a comparatively short period. In 2 cases recurrence of stones in the common bile duct necessitated a second operation. The author emphasizes the fact that the healing is far easier and quicker when the cavity is closed at once than after the old method. In the same journal Rotter criticizes Kehr's objections to this method of dealing with cholecystectomy cases.

306. Radiography of Intestinal Calculus.

CERTAIN instances of how intestinal calculus has been mistaken for renal calculus on radiographic examination are described by Rochet, Gayet, and Arcellin (*Arch. d'électr. méd.*, October 25th, 1912). Calculus of the kidney when radiographed has no special character, either in the form or the position of the shadow, which lends itself to certain diagnosis. In one case of a calculus which was found in the appendix the stone resembled a renal calculus and had a similar opacity. The distinction in this case was made more difficult by the position of the appendix upon the tract of the ureter. In another case a calculus proved to be in the ascending colon. Here the radiograph demonstrated a shadow at the right kidney. Nephrotomy was done, but nothing was found in kidney or ureter. A further x-ray examination, in which the screen was used after liquids had been given, made it evident that the calculus was intestinal. Six months later it was found to have increased considerably in size, and was removed by operation. Morphologically the stone resembled a urinary calculus with a mammillated surface. It was of clear yellow ochre colour and of very hard consistency. Its constituents were calcium phosphate and organic matter. The section showed a series of concentric zones with an orange pip at the centre. Here, therefore, was an example of an intestinal calculus developing around an alimentary product, thus explaining the transparency of the nucleus. The case goes to show that in radiology no more reliance should be placed on a single sign at one examination than in the clinic. The authors add that fruit stones, such as those of the peach and plum, cast scarcely any x-ray shadow, their transparency being of much the same degree as that of uric acid. The apricot stone is rather darker. In the intestine certain stones and pips may become coated with mineral substances more opaque to the x rays than themselves, and therefore in exceptional cases these bodies may give a shadow approximating to that of urinary calculus, which is radiographically visible.

307. Intestinal Sepsis and Ocular Affections.

RISELY (*Ophthalmology*, January, 1912) first discusses the insanitary conditions under which many hospital patients live, the filth of their houses, and their personal uncleanliness. The skin and fauces of these patients are often in a highly septic condition and are unfitted for immediate operation. They must first receive local treatment of skin, mouth, and pharynx. The alimentary tract, too, should be cleansed with calomel and soda, followed up by magnesium sulphate. The author then goes on to consider the etiology of so-called "*senile*" cataract. There must be a cause apart from advancing years, for the disease is of exceptional occurrence even in old people. He would eliminate the term "*senile*," and regard all lenticular opacities as essentially pathological. Risely finds that many of his cases of cataract have suffered from asthenopia and eyestrain, which have left their characteristic scars upon the fundus. In incipient cataract there are generally signs of incipient arterio-sclerosis and chronic choroiditis. Intestinal sepsis plays a large part in the production of these changes, and is associated with central scotomata and concentric contraction of the fields of vision. Absorption "splotches" are common in the fundus, and vitreous opacities are frequent. Such eyes tolerate operation badly; post-operative cyclitis is a frequent complication, which may cause the procedure to be a total failure. Operation should be deferred till the blood pressure, which is often as high as 200 mm. of mercury, has become normal, until indican and albumen have disappeared from the urine, and until excessive acidity is no longer present; 5-grain doses of calcium chloride are very useful. The gist of the whole paper is that cataract is a sign of degenerative processes in the eye, that in a large proportion of cases it is secondary to arterio-sclerosis, and that in a certain number of patients it is associated with a chronic cyclitis and choroiditis. These associated conditions must not be overlooked by the ophthalmic surgeon, and must be adequately treated before extraction is performed. Careful attention to these points will reduce the percentage of failures, a percentage which is still sufficiently high to make the most experienced operators always regard extraction as a capital operation which merits the greatest respect.

OBSTETRICS.

308. Pituitary Gland Extracts and the Cervix in Labour.

HEIL of Darmstadt (*Zentralbl. f. Gynäk.*, No. 42, 1912) contributes to obstetrical literature an instance of a closely observed twin labour, where he found that pituitrin, although it excited uterine contractions, had a prejudicial effect on the cervix. The patient was 31 years old, and her only previous confinement had occurred when she was 20. Heil was called in because, after spontaneous birth of a fetus, pains ceased entirely, yet there remained another child undelivered. It presented in the left occipito-anterior position, but the head was high up. The cervix admitted one finger. Thirty-six hours after the delivery of the first twin 0.5 c.cm. of Parke Davis's pituitrin was injected into the right thigh (an intermuscular, not hypodermic, injection). Five minutes later a pain occurred, and continued at very short intervals for nearly five hours. Yet the delivery made no progress, the head still lay high, and the cervix remained undilated. Heil fancied that more than once he could feel it contract during the pains. The patient's temperature rose, the pains almost ceased, and fifty-two hours after the expulsion of the first twin Heil turned and delivered after dilatation with the bag. He had no trouble in delivering the child as far as the head, but though the patient was under an anaesthetic the extraction of the head proved difficult as there was resistance at the level of the os internum. The child died shortly after birth. The uterus contracted well, and Heil delivered the two placentas by expression. The placenta of the first twin was pale; the two were unconnected, thus the twins were from separate ova; both were males. The first child had been put to the breast in the interval between its birth and that of the second, and suckling excited slight pains. This infant developed symptoms of gonorrhoeal infection, proved microscopically, and the mother died on the thirteenth day of the puerperium from pyaemia. Though there were complications in this twin labour, it was clear, Heil insists, that strong and frequent contractions of the uterine body with simultaneous resistance of the cervix and dilatation followed a dose of pituitrin. He refers to an instance of dilatation of the cervix by bags for the induction of premature labour, related by Mackenrodt. Though completely dilated when the bag was expelled, the cervix contracted completely in spite of, or rather on account of, full doses of pituitrin (6 c.cm. in twelve hours). It is possible that the resistance of the cervix in Heil's case was tetanic, as the patient told him that the pain did not pass off between the uterine contractions. The author holds that it is important to find out whether this undesirable influence of pituitrin on the cervix will occur when a dose is given at the beginning of a labour, or in a slow labour where the cervix remains undilated. In Heil's and in Mackenrodt's patients the cervix was already dilated. Obstetricians must be careful about extracts made from the hypophysis, such as "pituitrin," "pituglandol," etc.; the more so, as the author concludes, because our experience remains so limited and incomprehensible.

GYNAECOLOGY.

309. Treatment of Uterine Myomata by Roentgen Rays.

ERNST RUNGE (*Wien. med. Klin.*, No. 27, 1912) has had experience of the treatment of uterine myomata by Roentgen rays in 93 cases, the principle of the treatment being to bring about atrophy of the ovaries with a consequent shrinking of the myoma, and, above all, with cessation of haemorrhage, as after Hegar's castration; a direct influence of the rays upon the myoma also appears to be possible. He holds the treatment to be contra-indicated under the following conditions: (1) When any suspicion exists of the presence of sarcomatous degeneration of the myoma or of the presence of uterine carcinoma; (2) when the diagnosis is uncertain; (3) in suppurating or necrotic myomata; (4) in myomata, especially of large size, occurring in young women; (5) in submucous myomata; (6) when there are severe pressure symptoms which call for quick relief; (7) when severe side-effects from the *x* rays appear (here the cessation of treatment is sometimes only temporary); (8) in coexistent disease of the adnexa, in which case the result of the treatment becomes doubtful, and each case needs to be judged on its merits; (9) when the loss of blood has already been extreme; (10) when the social standing of the patient demands a quick cure. The advantages of the *x*-ray treatment are that it is absolutely free from danger in skilful hands, that nervous patients escape an operation which they dread, and that it can be employed when there is coexistent disease which contraindicates operation. The success of the treatment is influenced by several different factors. The older the patient the more readily is atrophy of the ovaries induced, and the better is the result. The size of the tumour and the distance of the ovaries from the surface are also of importance. Thus with strong abdominal walls and full intestines the effect of the rays on the ovaries will be diminished. As a rule, especially in younger women, the haemorrhage at the first and sometimes the second menstrual period after the beginning of the treatment is increased, but it should then diminish at each following period. If amenorrhoea or marked diminution in menstrual flow is not present after the sixth application, the hope of success from further treatment is small. The lessening of pain usually keeps pace with the lessening of the haemorrhages. The general condition improves gradually. Pressure symptoms are naturally affected only as the tumour becomes smaller. The menopause symptoms are not more marked than at the physiological menopause. Of the 93 cases treated, 9 broke off the treatment, and the result is not known. Of the remaining 84 cases, a condition of amenorrhoea was arrived at in 39, or 46.4 per cent.; the loss at the period became very small in 13, and normal in 18. Thus the effect upon the haemorrhage was favourable in 70 cases altogether, or 83.5 per cent. In 4 cases the haemorrhage increased in severity, but only one or two applications were made in each of these cases, and probably the effect here would also have been good if further treatment had been carried out. In 10 cases (11.4 per cent.) the treatment has had no effect up to the present time; it is still being carried out in 5 of them, but in the remainder operation was recommended. In the one case operated upon the ovaries were found to be completely atrophied, and the failure of the *x*-ray treatment appeared to be due to the presence of a mucous membrane polypus and of a necrotic myomatous nodule situated close to the mucous membrane. Diminution in the size of the tumour could be made out with certainty in 19 of the 84 cases—that is, in 22.6 per cent. Each application of the rays is carried out on three consecutive days, and an interval of three weeks is allowed before a second application; the interval may, however, in future be shortened to a fortnight. The applications are made without reference to the occurrence of the monthly period, which is often irregular. Improvement usually became manifest after four to six applications. The technique of the treatment is described.

THERAPEUTICS.

310. Diet in Heart and Vessel Disease.

H. STRAUSS (*Wien. med. Klin.*, No. 18, 1912) deals with the question of dietetic treatment in cases of heart disease, or disease of the vessels in the stage in which compensation is either maintained or has only just begun to fail. In cases of heart disease it is often found that a diet which spares the heart results in the strengthening of the cardiac muscle, and it may be a matter of great importance to check a tendency to obesity, or fight against obesity already established. Oertel's standard of 150 to 170 grams of proteins (5.25 oz. to 5.95 oz.) in heart disease is considered by the author to be too high, and 100 grams (3.5 oz.), or, as a rule, 70 to 80 grams (2.4 oz. to 2.5 oz.) to be adequate. Too small quantities of protein, as in Karell's cure, should only be given for a limited time. Stimulants, as a rule, tend to burden the heart and vessels. Strauss does not invariably recommend total abstinence from alcohol, especially for patients accustomed to taking small quantities of light wines, but, as a rule, he aims at cutting down the alcohol to the farthest limit possible, especially in cases of arterio-sclerosis and chronic nephritis. The irritant action of coffee is avoided by the use of caffeine-free coffee, in which the amount of caffeine is much diminished. Tea the author considers to be less irritant than coffee. Strauss believes that under the influence of "Oertel" the action of fluids in burdening the heart has been overestimated of late. He is satisfied from physico-chemical investigation on the effect upon the chyle of the ingestion per os of large quantities of fluid that a highly complicated intestinal mechanism exists for the prevention of sudden flooding of the organism with foodstuffs. Examination of 6 cases of diabetes insipidus have shown that great quantities of fluid can be taken for years together without giving rise

to the slightest change in the heart muscle or blood pressure. Should a definite rise in blood pressure follow the intake of fluid it is usually the result of side causes, particularly psychical ones. The author would therefore allow a moderate amount of fluid in cases of compensated heart disease, and he considers an average or slightly increased amount of fluid to be specially indicated where the underlying disease is a chronic interstitial nephritis, in order to wash away any accumulation of nitrogenous products of metabolism in the blood serum. A condition of dropsy, if it should show itself, is more easily combated than one of uraemia. In some cases, however, of early failure of metabolism reduction of fluids is indicated. Thus full-blooded fat patients with arterio-sclerosis and chronic nephritis often improve with the reduction of fluids, if it is combined with a reduction on the total quantity of food taken. Karell's milk cure owes its value to a simultaneous reduction in amount of fluid and in total calorie value together with its non-irritant nature and its poverty in salts. A modified Karell's cure is often useful at the beginning of the treatment of dropsy, but in any case the nutritional value of Karell's cure is so low that the patient should rest in bed while taking it. Temporary limitation of food may also be of value in the treatment of aneurysm or of aortic pain. Limitation of salt is a great aid to limitation of fluid because it diminishes thirst, and it is also undoubtedly true that long-continued withdrawal of salt will lead to impoverishing the tissues in salt, and therefore of passing over of fluid from the tissues to the blood. Regulation of the diet is especially indicated in cases of arterio-sclerosis and contracted kidney. Huchard has laid down definite rules of diet for different stages of arterio-sclerosis. Thus for the pre-sclerosis stages he recommends a mixed, non-toxic, nuclein-free preponderatingly lacto-vegetable régime. For the cardio-arterial stage an exclusive milk cure, 3 to 3½ litres of milk a day; and for the cardio-ectatic stage he recommends a reduction in the amount of fluid. The author, who believes that cases of rise of blood pressure above 170 mm. are almost always cases of kidney sclerosis, does not, for most of them, recommend a purely milk diet, but rather a diet containing a large quatity of milk and little meat, with periodical intervals of no meat, and in a series of such cases he has seen the pressure drop by 20 to 30 mm.; he seldom, in giving milk, goes beyond 1 to 1½ litres per day, and frequently adds saline to increase its nutritional value. In kidney patients with cardiac symptoms he would limit the proteins to 70 to 80 grams per day (2.4 to 2.5 oz.), and would specially limit the extractives of meat and notorious kidney irritants. Not infrequently patients are seen with a tendency to a sense of oppression, which comes on especially after eating or when walking on a full stomach. The harmful effect of a continued high position of the diaphragm, as in high-grade meteorism, on a weakened heart is clinically well known. Meals should therefore be small in amount and more frequent, while foods and drinks likely to cause meteorism should be withheld. Any gastric or intestinal disturbance likely to cause meteorism should receive appropriate dietetic treatment.

311. Hormonal.

W. KAUSCH states that when first Zuelzer introduced hormonal for the treatment of acute inertia of the intestine he tried the injections in numerous cases, giving 10 to 15 c.cm. as a dose, but did not obtain satisfactory results with it (*Berl. klin. Woch.*, May 6th, 1912). Long after he had given up using it he had a case of a second attack of appendicitis, which required an immediate operation. He found a turbid exudate in the peritoneal cavity and a stinking abscess in the pelvis. The appendix was removed, the adhesions broken down, and the cavity washed out with 15 litres of saline solution. During the following twenty-four hours vomiting of bile-stained material occurred repeatedly; the abdomen was hard and distended, and neither flatus nor faeces were passed. The patient was going rapidly downhill next day, and complete obstruction of the bowels persisted with faecal vomiting, in spite of the usual remedies. He therefore determined to try hormonal again. This time he gave 20 c.cm. intravenously (the patient was only 13 years of age). Fifteen minutes later there was a rigor, and the temperature registered 104° F. The vomiting continued at first, but within two hours flatus was passed freely, and on the following day stool was passed. This was followed by a sudden attack of very profuse diarrhoea which lasted fourteen days in spite of opium and other forms of treatment. The boy made a good recovery. He thus was converted to a good opinion of the power of hormonal to induce powerful peristalsis in cases of paralysis of the intestines due to peritonitis. In regard to the dose, he is inclined to believe that the ordinary dose of up to 20 c.cm. for an adult is insufficient, and he suggests 30 or even 40 c.cm. injected intravenously. The diarrhoea which a large dose induces does no harm, but care should be exercised in cases of weakness of the cardiac muscle.

312. Salvarsan per Rectum.

TROSSARELLO (*Gaz. degli Osped.*, November 10th, 1912) gives his experience of the rectal administration of salvarsan in 8 cases of syphilis with well marked cutaneous manifestations. In 7 of the cases the drug was given in aqueous saline solution rendered slightly alkaline, and in the eighth case in the form of suppositories. The day before the injection the patient was put on very light diet with a minimum amount of liquid; the next morning a simple enema was given, and two hours after 150 c.cm. of the solution, containing 1 per cent. of salvarsan, was injected into the rectum. The maximum dose of salvarsan given was 0.60 gram in 300 c.cm. of solution. One patient was given 1.4 grams of salvarsan in five doses in the space of twenty-five days; another, 0.7 gram in three doses in fifteen days; a third, 0.4 gram in five days, etc. No unpleasant effects were observed locally, and none of the injections was returned. Only very slight traces of arsenic could be detected in the urine after the injections. The eighth patient had 1.3 grams of salvarsan, given in daily suppositories for eleven days. In none of the patients was there the slightest effect as far as the syphilis was concerned when the salvarsan was given per rectum, but in the case treated by suppositories a gluteal injection of 0.3 gram neo-salvarsan speedily cleared off the syphilitic manifestations. Other workers appear to have got good results from the rectal administration of salvarsan, but in the author's experience the results were absolutely *nil*.

PATHOLOGY.

313. Pathology of Diabetes.

IN reviewing some of the results of various dietetic cures for diabetes Brosch (*Wien. med. Woch.*, No. 27, 1912) endeavours to explain certain apparent idiosyncrasies by reference to anatomical changes in the kidneys and intestines. As regards the kidneys, he says that the fact that they are so commonly found to be hypertrophied in diabetes shows that their reserve power is already used up; and it would therefore be expected that diabetic patients with any form of renal disease might exhibit symptoms from which those with healthy kidneys are free. That this is actually the case is illustrated by the sudden oedema which sometimes follows the administration of sodium bicarbonate to patients who are being dieted on oats. According to Thies, the functional activity of the kidneys depends on a definite relationship between the ions of sodium, potassium, and calcium in the renal epithelial cells; and this is apt to be disturbed by an undue preponderance of sodium ions as a result of an infusion with solution of sodium chloride. Even with healthy kidneys, renal insufficiency may follow a saline infusion; and when the kidneys are diseased the effect is the greater, as the renal cells are then already overloaded with sodium ions, and are therefore more or less on the verge of insufficiency. The administration of foods (such as oatmeal or rice) which contain little sodium chloride, but are rich in other alkaline metals, may counterbalance this preponderance of sodium, and promote diuresis with good effect; but if at the same time sodium bicarbonate be given as a medicine the increased diuresis will be hindered by an overloading of the renal epithelium with sodium, and in diabetic patients with renal disease it may give place to renal insufficiency and consequent dropsy. He next points out that diabetes is frequently associated with intestinal stasis, on which it may even be dependent. This stasis leads not only to increased absorption of toxic products, owing to the slow onward movement of the contents of the bowel, but also to flatulent distension of the duodenum, and consequent interference with the hepatic and pancreatic functions. A milk diet, which is comparatively free from the toxic by-products of metabolism, is therefore likely to promote a cure in those cases of intestinal origin, while it completely fails in those due to other causes. As regards treatment, he particularly recommends washing out the intestine with suitable solutions. Thies has shown that this procedure not only has a good effect on the bowel itself, and a favourable influence on the blood pressure and the heart's action, but it may also be used to adjust the proper balance of ions in the renal cells.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

314. Spontaneous Cure of Renal Tuberculosis.

EKEHORN has recorded the case of a girl in whom the spontaneous cure of a one-sided renal tuberculosis was proved to have taken place. Another instance of this rare occurrence is reported by M. Waldschmidt (*Berl. klin. Woch.*, September 23rd, 1912). The patient was a woman aged 46 years. Some 15 years ago she suffered from slight urinary symptoms. Six years later Kümmell found by means of the cystoscope and the ureteral sound that she was suffering from one-sided renal tuberculosis with tuberculous ulceration of the bladder. She refused to be operated on. The treatment was conservative, and she took several courses at Wildungen. The frequent micturition ceased, the pains disappeared, and the turbidity of the urine cleared off. About 1½ years ago she was troubled with difficulty in micturition. On admission into hospital she was found to be a woman in a good state of nutrition, with a healthy appearance. The renal region was not tender, and nothing was made out by palpation. There was a urethral stricture. Cystoscopically the vesical mucosa was quite healthy-looking. The left ureteral orifice was retracted and reactionless. A sound only passed 2 cm. up the ureter. No function of the left kidney could be ascertained. The author has studied the *post-mortem* records of the cases of renal tuberculosis in the Eppendorfer Krankenhaus, Hamburg, and has compared the results with the clinical accounts of 100 cases of renal tuberculosis. There were 119 *post-mortem* records. Of these, 68 per cent. affected males. The age at death rose from 2.5 per cent. in the first decennium of life to 27.7 per cent. in the third and 25 per cent. in the fourth, to diminish gradually to 0.8 per cent. over 70 years. In 70.6 per cent. both kidneys were affected; in 11.7 per cent. only the right and in 17.6 per cent. only the left kidney was attacked. Tuberculosis of the lungs was found in 89 per cent. of the cases, while tuberculosis of other organs was less frequent. Among the clinical cases, 52 per cent. were males and 48 per cent. females. The third decennium of life claimed the greatest number of cases, as in the cases which had died. There was a tuberculosis of both kidneys in 6 per cent., and when one alone was affected the right side proved more frequent. Active tuberculosis of other organs was discovered in 28 per cent. of the cases. The majority were treated surgically; 20 of the 100 patients died in hospital. Of these 20, 6 were diagnosed as both-sided. This was confirmed in all five which were subjected to *post-mortem* examination. In the same way, in 9 of the 14 single cases in which a one-sided tuberculosis of the kidney was diagnosed, a *post-mortem* examination was conducted and the correctness of the diagnosis was confirmed. In 14 cases a cystoscopical examination did not reveal any certain sign of the disease, and a probable diagnosis only was possible. In 43 the tuberculous affection of one ureter and of one half of the bladder was detected in this manner, and in 35 the process in the bladder was so advanced that it was no longer possible from the cystoscopical examination to determine which side was affected. The author does not attach any importance to the difference in frequency in the two sexes. The most striking difference found in the *post-mortem* cases as compared with the clinical records is the frequency of double-sided disease. He attributes this to the fact that renal tuberculosis almost always commences as a one-sided affection. He gives the details of *post-mortem* finds in which the one kidney was in a state of very advanced disease and the other was only slightly affected. In not a single case in the *post-mortem* room was the assumption of an ascending infection of the second kidney tenable. A number of suggested modes of infection have been brought forward, and the author discusses some of these without arriving at any definite conclusion. He finds that closure of the ureter was met with four times after death. In one case the left kidney was completely destroyed, but no tubercle bacilli or macroscopical tuberculous lesions could be detected. The right kidney was affected. This shows that a spontaneous healing or cure is exceedingly rare, and that, while the few cases show that this can take place, the chances are too meagre to justify the surgeon in postponing the operation. He calls attention to the fact that Wildungen appears to be peculiarly suitable for these cases, and advises a course when the operation cannot be carried out.

315. Illuminating Gas Poisoning.

MCCOMBS (*Amer. Journ. of Med. Sciences*, October, 1912) records his experience of the clinical manifestations of illuminating gas poisoning from observations of 1,000 cases. Carbon monoxide is the poisonous principle (the other constituents used to increase candle power being non-toxic), its affinity for haemoglobin being three hundred times greater than oxygen which it excludes, although the resulting compound is unstable and becomes decomposed in the presence of very great excess of oxygen, oxyhaemoglobin being formed. In fatal cases 60 per cent. to 80 per cent. of the haemoglobin will be in combination with the CO, and the symptoms of poisoning are principally due to the diminished supply of O to the tissues, in addition to a direct toxic action of stimulation, followed by paralysis, of the central nervous system. The symptoms may be divided into three stages, the first continuing up to the loss of consciousness. Commencing with cerebral excitement and dilatation of the cutaneous vessels, dizziness, headache, pains in the extremities, muscular twitchings, dilated pupils, and slow pulse with rise in blood pressure, the patient complains of a feeling of constriction of the chest, nausea and vomiting, followed by a sense of general weakness and faintness with occasionally delirium. The second stage begins with syncope and ends with apnoea. The respirations are rapid and stertorous, with increased pulse-rate and fall in blood pressure. The temperature rises sometimes to hyperpyrexia, and there may be general tetaniform convulsions, though some cases show merely a profound coma. Towards the end of this stage there is general muscular rigidity and a weak and rapid pulse, and peculiar cherry-red markings on the skin of the neck, trunk, and thighs may appear, and spectroscopically CO is present in the blood. In the third stage the respirations have ceased, and a very rapid, weak, intermittent heart action is all that indicates life. All the symptoms of asphyxiation are present with the exception of cyanosis, which is absent unless the poisoning has been very sudden. If they have not appeared before, cherry-red markings will appear within an hour or two after death, the toes becoming fully extended and the hands assuming the tetany position. A person suffering even slightly from the effects of CO should be closely watched, as the second and third stage may supervene without premonitory symptoms. Treatment consists in the inhalation of O, if possible, under pressure, accompanied by artificial respiration in the second stage, and the hypodermic administration of stimulants, and the muscles should be massaged after aërating the lungs. The "pulmotor" automatically adjusts itself to the individual capacity of the lungs, and maintains a mixture of air and O (60 per cent.) under a constant pressure of five atmospheres. Failing these methods, transfusion or venesection with the introduction of normal salt solution should be tried; and even in severe poisoning all cases should recover under treatment with O under pressure in combination with venesection or transfusion.

316. Pupillary Symptoms in Tuberculosis.

SERGENT (*Journ. des praticiens*, 1912, xxvi) considers in this connexion the pupil reflex and inequality of the pupils: the latter is the more important. The light to the two eyes should be equal. Inequality of the pupils should be divided into two forms depending on the presence or absence of alteration of the reflexes. It may be due to congenital causes, without or with an error of refraction. It exists in about 30 per cent. of pleuro-pulmonary affections, and has been found in pneumonia, pleurisy, tuberculosis, especially the fibrous form, and in emphysema. In apical tuberculosis it is especially frequent, and may be associated with myosis on the side affected, diminution of the palpebral fissure, and retraction of the globe of the eye. Three theories have been advanced to explain inequality of the pupils. (1) Anatomical: the pleuro-pulmonary lesion comes in contact with the ganglions of the cervical sympathetic. (2) Reflex, due to peripheral sensory excitation, which, according to the law of Schiff, always provokes dilatation of the pupil. (3) Toxi-infectious. The author believes that it is probable each of these theories has some truth in it and each plays a part on different occasions.

SURGERY.

317. X-ray Examination of the Large Intestine.

HAENISCH, of Hamburg (*Arch. Roent. Ray*, November, 1912), regards the bismuth enema, carefully watched under the fluorescent screen, as imperative in the Roentgen examination of the large intestine. A skiagram may be taken when the bismuth column has reached the affected spot. By such means anomalies in position may be diagnosed, as well as adhesions of the intestinal coils, and dilatation or narrowing of the lumen. In the author's opinion the great advantage of the bismuth enema lies in the fact that it is possible by this means to obtain a much earlier diagnosis of the presence of a tumour. In order to justify such diagnosis, a sharp and complete defect in the bismuth column, or a finger-like process projecting from a column of normal width must be looked for. A narrowing of the shadow for a considerable length, together with a gradual contraction of the lumen, indicates rather a general narrowing by adhesions or bands, especially if the segmentation of the column occurs after the lapse of some time. If the contraction gradually disappears, the case may be regarded as one of spasm. The clinical symptoms, of course, should be carefully considered at the same time, and no diagnosis should be given without at least two screen examinations.

318. Antistreptococcic Serum in Military Surgery.

FEDERICO GIL ACEBEDO (*Revista de Med. y. Cir. Pract.*, October 14th, 1912) describes six cases of severe wounds, including a compound fracture of the tibia and two cases of penetrating wounds of the lung, with pneumothorax, emphysema, etc., in which antistreptococcic serum was administered as a prophylactic. In those cases where the temperature was normal and infection was as yet doubtful, 20 c.cm. was given on two consecutive days. In the sixth case a projectile from an old-fashioned rifle penetrated the precordial region on the left side, and emerged on the side of the right chest. There was great anaemia the result of profuse haemorrhage, intense dyspnoea; pulse threadlike and uncountable. There was a right pneumothorax and emphysema extending over the neck, chest and abdomen; temperature 39° C. On the first day 30 c.cm. of serum was given, and on the second (the temperature being already normal) 20 c.cm., and on the third day 10 c.cm. On the eighth day all the severer symptoms were gone and the patient was convalescent. In the other cases described the wounds appeared to heal with unusual rapidity and freedom from complications. The author concludes that antistreptococcic serum is an excellent prophylactic in all cases of wounds in which an inflammatory infectious process is to be feared, and that it should be included in the medicine chests of military surgeons. In the six cases described the urine remained normal in quantity and constituents, hence there seems to have been no prejudicial effect on the kidneys.

319. Omnopon-Scopolamine Anaesthesia.

J. FLEISCHNER (*Münch. med. Woch.*, June 4th, 1912) has employed injections of omnopon and scopolamine for operative procedures in otological and rhinological practice and is highly satisfied with the results gained. He has now employed this method for over a year in about 60 operations. He uses a 1 per cent. solution of Merck's scopolamine hydrobromate and a 2 per cent. solution of Sahli's omnopon, the solutions being freshly prepared. One and a quarter to one and a half hours before the anaesthesia is required the patient is given 0.0003 or 0.0004 gram of scopolamine and 0.02 gram of omnopon subcutaneously. For women he uses a somewhat smaller dosage half an hour before the operation; a second injection is given, the same doses being used. If the anaesthesia is already satisfactory, the second injection may be omitted or a smaller dose may be administered. A very few drops of A.C.E. mixture suffices to complete the surgical anaesthesia. The average duration of the operations performed under this anaesthesia was fifty-one minutes, the shortest being fifteen minutes and the longest a hundred minutes. Patients were then brought to the operation table, and rapidly fell fast asleep when the A.C.E. mixture was dropped on to the mask. The respiration and pulse remained regular and somewhat slowed. A certain degree of hypersemia was noted, but this did not offer any special difficulties at the operation. The patient could be awakened soon after the operation was ended, but afterwards fell into a sleep of some three to six hours' duration. Cyanosis or other undesired symptoms were not met with. A complete amnesia of the operation was usually noted. The author recommends this method of anaesthesia, but considers from his experience that care should be exercised in the dosage in alcoholics, or patients with meningeal changes.

OBSTETRICS.

320. Triplet Labour.

VOROX (*Bull. de la Soc. d'Obstét. et de Gynéc. de Paris, Lyon, etc.*, June, 1912) relates a triplet labour under close observation in a maternity hospital. The patient was 33 years old, and there had been several twin pregnancies among her blood relations. She herself had been pregnant once before, three years earlier, and was delivered spontaneously at term. Conception occurred in July, 1911. The uterus grew very large, and twins were diagnosed. Pains set in on March 19th, 1912. The breech of a fetus presented, and, after a few hours, a female child, weighing 4¼ lb. was delivered. The proximal side of the cord as well as the distal was ligatured. The second fetus presented transversely. A tense bag of membranes could be felt and was ruptured; then an arm prolapsed. Version was practised, and evolution proved somewhat difficult owing to extreme shortness of the cord, but at length, and without difficulty, a second female child, weighing under 4½ lb., was delivered. The uterus remained large; the presence of a third fetus was overlooked, but on palpation of the uterus an hour later it was detected. Its head presented, but there was almost complete uterine inertia, so the child was delivered by version. It was a male, weighing only a little over 3 lb., yet well nourished. Owing to the inertia the placenta had to be extracted within thirty minutes, and much blood had already filled the cavity of the flaccid uterus. The mother suckled the boy only; at the end of three months he weighed 5½ lb., yet seemed healthy; the female children at the same date weighed one over 8 lb. and the other 7⅝ lb. The placenta weighed about 1 lb. 3 oz., and measured 11¾ in. in diameter. All three cords were distinct, and inserted marginally; one insertion was velamentous. There was a bag of membranes for each fetus and a septum between the adjacent membranes, which seemed to be formed out of two perfect amniotic cavities and one chorion. The septa coalesced at the centre of the placenta. The umbilical arteries were injected with coloured soot; then it was found that no vascular communication existed between the placentas. Blue, ochre, and carmine were used, and the coloured areas were distinct and sharply limited. Thus, added to the fact that there was a male as well as two females, this evidence gained by injection indicated that the pregnancy was not univitelline nor bivitelline coexisting with a univitelline ovum, but trivitelline with subsequent fusion of the adjacent parts of the three placentae.

321. Management of Occipito-Posterior Positions.

RICE (*Amer. Journ. Obstet.*, August, 1912) analyses 400 cases of occipito-posterior presentation at the Manhattan Maternity Hospital: 162 out of this series failed to rotate, but spontaneous delivery following manual rotation with flexion occurred in 85, whilst the forceps had to be applied in 71, and version was performed in 6. There was one maternal death, a mortality of 0.25 per cent. Only 10 children were lost, a mortality of 2.5 per cent. Out of the 10 labours fatal to the child the forceps was used in 6; in 3 the pelvis was flat, and in 1 generally contracted. In 4 the dead infant was delivered spontaneously, and in 3 in this group the mother had been in labour under the charge of midwives before admission into the maternity. Delivery occurred in these cases within a very few minutes after the head had been flexed and rotated manually. There was one death from congenital syphilis. According to Rice's analysis of the entire 400 labours the prolonged labour in occipito-posterior presentations is due to early rupture of the membranes and malidirection of force. Prolonged labour is more common in primiparae. Early rupture of the membranes in primiparae with vertex presentation is a very suggestive sign of occipito-posterior positions. In cases of occipito-posterior presentation with poor flexion spontaneous delivery can only occur after a long labour with strong pains. In multiparae relaxed pelvic floor is often a frequent cause of delayed rotation. In primiparae early rupture of membranes is the principal cause of prolonged labour. Double application of forceps offers the best method of delivery while the head is high in the pelvis. With floating head, if not contraindicated, version offers the best solution in a flat pelvis; whilst when the head is low in the pelvis, partial rotation by the blades is the best method.

GYNAECOLOGY.

322. Cancer of Ovary in a Child.

LAHEY AND HAYTHORN (*Amer. Journ. of Med. Sciences*, February, 1912) report that a schoolgirl, aged 11, underwent an operation for inflamed appendix. The diseased structure was removed, and several small cysts in both ovaries were punctured. The operation wound healed, but the patient's strength began to fail. Synovial effusion into the right knee occurred and subsided after appropriate treatment. Then signs of abdominal disease, in most respects simulating tuberculous peritonitis, supervened: distension of the abdomen with fluid and constant vomiting were the most marked symptoms, but a hard, irregular tumour could be defined in the epigastrium. The appendix had not been examined when it was removed. An abdominal section was performed four months after the removal of the appendix. Much cloudy fluid came away, and large nodular masses were found in every region of the abdomen. The caecum was examined for the stump of the appendix, but it had been inverted. Both ovaries were about equally enlarged, being two or three times their normal size. The right ovary was removed, but nothing more could be done. The patient died on the twenty-eighth day, the operation wound healing well, as before. Lahey operated, and Haythorn, of the Pathological Department of Harvard Medical School, performed the necropsy, and reported primary adeno-carcinoma of the ovaries, with metastatic deposits of lymphatic distribution in the ovaries, uterus, peritoneum, stomach, small intestine, colon, oesophagus, pancreas, gall bladder, suprarenal bodies, urinary bladder, diaphragm, muscles of abdominal walls, pleura, skin, mammary glands, and lymphatic glands of the retroperitoneal part of abdominal cavity, of the groin, of the neck, of the peribronchial and axillary regions. The heart, lungs, spleen, liver, and kidney were free from growths, but there was effusion into the pleural and pericardial cavities. The caecum was firmly imbedded in a secondary deposit rising from the pelvis; the stump of the vermiform appendix could not be found. Altogether the evidence pointed to the ovaries as the primary seat of the malignant new growths. The accurate diagnosis of malignant tumours of the ovary in female children is rarely possible, and fluid in the abdomen in young patients without general anasarca should always be investigated by an abdominal incision, provided cirrhosis of the liver and one or two other readily diagnosable conditions can be ruled out.

323. Abscess of Vulvo-vaginal Gland.

BENDER (*Bull. de la Soc. d'Obstét. et de Gynéc. de Paris*, April, 1912) attended a woman who had suffered twice already from suppuration of the left vulvo-vaginal or Bartholin's gland. It had now suppurated for a third time, and was as big as a pigeon's egg. Bender arranged to open it under anaesthesia, but before the operation could be performed the patient had a violent attack of pain followed by great haemorrhage. He was sent for and arrived half an hour after the acute symptoms had set in. He found her very pale, with a small, rapid pulse. A thrombus, still as big as a fist, had formed in the abscess cavity, and the integuments had yielded under the pressure of effused blood. Bender, after freeing the pouch from its attachments to a certain extent, removed the clots in the abscess cavity and packed it with iodoform gauze. The patient's condition was very grave; ether and caffeine were administered, and 1,000 grams of serum injected. For a week there was great debility, but the patient ultimately recovered.

THERAPEUTICS.

324. X-Ray Treatment of Thymic Hypertrophy.

SOMMI preliminary investigations upon the application of radio-therapy to hypertrophy of the thymus have been carried out by Regaud and Crémieu (*Arch. d'électr. méd.*, June 10th, 1912). The thymus is one of the lymphoid organs, being differentiated from the others only by the epithelial nature of its reticulum or stroma. Histological considerations, therefore, point to an extreme susceptibility on the part of the thymus to *x*-ray action—a susceptibility which it shares with all lymphoid formations. Experimentally it has been found that this susceptibility is intense, being manifested by the hypertrophy of the organ, followed, if the process has not been carried too far, by regeneration. A progressive reduction of the thymus after a moderate amount of irradiation on the thymic region has been proved in the case of kittens, the structural modification reaching its maximum by the end of the second week, when the thymus had lost perhaps 90 per cent. of its original weight. One month after irradiation the thymus, generally somewhat reduced, has been reconstituted. The primary factor in the reduction is the necrobiosis of the thymic leucocytes. Two days suffice for most of these elements to disappear from the stroma. The regeneration begins to be manifested about the fifteenth day. Larger and successive irradiations reduce the thymus to such insignificant rudiments that no sign of regeneration has been forthcoming after two months, nor has there been any appreciable point of departure for such reconstitution. From these experiments it would appear that radio-therapy is applicable to the familiar thymic hypertrophy of infants, a condition characterized by the phenomena of suffocation and cyanosis. Surgical treatment—thymoectomy—has generally justified itself by results, but, apart from the dangers of anaesthesia in infants, there is always a possibility of post-operative infection, and, moreover, there have been errors in diagnosis by which a tracheo-bronchial adenopathy has been mistaken for thymic hypertrophy, with consequent disaster. The *x* rays, on the other hand, rapidly reduce the hyperplastic organ, and in the event of a diagnostic error, there is at least no serious result from their application. The size of the organ is notably diminished after the second day. The rays are localized precisely on the thymus by means of lead or tin, an aperture being made to isolate the projecting surface of the thymus on the anterior thoracic wall. An aluminium filter 3–4 mm. in thickness is used in order to preserve the integrity of the infant's skin, and with this a dose corresponding to tint III on the Bordier radiochromometer may be administered without fear of producing tegumentary lesions. The glass of the tube is placed some 20 cm. from the skin, and a more than ordinarily powerful *x*-ray installation is required if exposure under such conditions is not to be unduly prolonged. Generally it will be found that the regenerated thymus is not above normal dimensions, but a very slight precautionary dose is counselled at about the twentieth day. In certain of the acute cases, where immediate decompression is of importance, surgical intervention may be a necessity. It is not desirable to produce the permanent annihilation of the thymus, in view of the physiological function, albeit little understood, which this gland fulfils.

325. Morphine in Children.

BRUN (*Gazz. degli Osped.*, April 16th, 1912), after an experience of over 300 cases in children from a few months up to 15 years, says that the dangers are exaggerated, and that, as a matter of fact, children bear morphine quite as well as, if not better than, adults when compared weight for weight. From the toxicological standpoint, he says, the tolerance of children, weight for weight, is superior to that of adults. Morphine, as a more stable substance, is to be preferred to the various opium preparations. The initial dose is $\frac{1}{10}$ mg. per kilo of weight, given hypodermically. In children from 8 to 12 years he gave $\frac{1}{4}$ to 1 cg. of morphine hydrochlorate combined with atropin. He has used it in association with anaesthetics—chloroform, etc.—both before and after anaesthesia, and as a substitute for a general anaesthetic in nursing infants. In the last case he found it quite satisfactory, especially, for example, in plastic operations about the head or mouth. Thirty-four cases in all in children under 2 years were operated upon without any other anaesthetic than the injection of morphine. The author does not hesitate to give morphine after operation, especially if much pain is likely to follow—as, for example, in orthopaedic surgery. Out of the 300 cases no bad results were ever observed.

326. Salvarsan in Rat-bite Fever.

S. HATA reports that as far as he has been able to ascertain, salvarsan has been employed in the treatment of rat-bite fever in 8 cases (*Muench. med. Woch.*, April 16th, 1912). In describing these cases from the notes of the physicians who treated them, he prefaces his remarks by a short account of the disease. He gives the incubation period at from one to five weeks, but admits that at times it is lengthened to a couple of months. The bite usually heals normally. The initial symptoms are rigors, feeling of weakness, loss of appetite, headache, and fever. The bite wound then begins to be inflamed and an oedematous swelling appears around the same. Vesicles form and there may even be necrosis. A lymphangitis usually appears

and the regional lymphatic glands become enlarged and tender. The fever continues for two or three days, and then falls during profuse sweating. After a short interval the symptoms begin over again. A peculiar erythematous rash appears in any site of the body. At first the tendon reflexes are usually increased and later diminished or lost. Severe cases are at times complicated with generalized oedema, sensory or motor disturbances, delirium, somnolence, coma, and the like. Death is said to take place in about 10 per cent. of the cases. The histories of the cases treated with salvarsan, including their fever curves, show distinctly the beneficial effect of the treatment. The remedy was given at various stages of the disease. In some cases it was given quite late, after five, eight, or ten attacks of fever. In 5 of the cases one injection proved sufficient to clear up the symptoms. In one case the result was not very marked. Recurrences took place in two cases, but the illness was again readily combated by a fresh injection. Hata states that in spite of the very favourable reports he does not feel justified in claiming that salvarsan is a specific for rat-bite fever or that all cases will be cured by it. Further observations are required before one can say exactly what the value of the treatment is.

327. Local and Regional Anaesthesia in Oto-Rhino-Laryngological Operations.

MARTIN (*Echo méd. du Nord.*, 1912, xvi, p. 261) gives a short summary of the history, and describes the various methods employed to produce: (1) Anaesthesia in operations of the larynx. (*a*) Cocainization of the superior laryngeal nerve by Frey's method. Plunge the needle containing physiological serum in which is dissolved 1 cg. of cocaine hydrochlorate and 1 decimg. of adrenalin hydrochlorate per c.cm. in the middle of a line connecting the large cornu of the hyoid bone to the posterior superior angle of the thyroid cartilage; 2 c.cm. are injected on each side. (*b*) Cocainization of the superior laryngeal and recurrent nerves. The anaesthetic is injected 2 cm. from the median line and 1 to 2 mm. from the margin of the superior edge of the thyroid cartilage. Burkner recommends instead of injections, painting the larynx with alypin 5 to 10 grams, NaCl 5 to 10 grams, distilled water 100 c.cm. Others employ anaesthesine, and others again chloretone 1 gram, camphor 2.50 grams, menthol 2.50 grams, essence of cinnamon 0.50 gram. (2) Local anaesthesia in otology. (*a*) This may be performed by contact: 8 or 10 drops of carbolic acid, cocaine hydrochlorate, and menthol, āā 1 gram, are instilled into the auditory canal, or cocaine hydrochlorate 1 gram, oil of aniline, alcohol 90 per cent., āā 10 grams. (*b*) By injection. A solution of cocaine 1 in 100, plus 4 drops of adrenalin 1 in 1,000, is injected at a point uniting the superior and posterior part of the auditory canal at the cartilaginous and osseous junction about 1½ cm. inside the concha. (3) Local anaesthesia in rhinology, by painting or injection. The solutions employed are the following: Cocaine hydrochlorate 1 in 20, with adrenalin 1 in 10,000; alypin 1 in 20, either alone or with adrenalin 1 in 2,000; quinine hydrochlorate and urea 10 per cent.; phenol 2 grams, menthol 2 grams, quinine hydrochlorate 1.50 grams, pure adrenalin 5 mg.

328. X-Ray Treatment of Infantile Splenomegalia.

PETRONE AND LORE (*La Pediatria*, January, 1912) record 8 cases of splenomegaly in children treated with *x* rays. No benefit followed in one case (Leishman's anaemia), nor in another case of pseudo-leukaemic splenic anaemia. In both these cases the size of the spleen diminished and also the number of white corpuscles (from 13,300 to 4,300 and from 24,300 to 7,800 respectively) but the general state got rapidly worse and death interrupted further treatment. In another case of enormously enlarged spleen (malarial) rapid improvement occurred when the *x* rays were used. In addition to quinine and arsenic, whilst previously under arsenic and quinine alone progress had been slow. Treatment by *x* rays was in this case continued for three months and the spleen came down to nearly its normal size, but the leucopenia and the general blood changes did not change until some months later. In 4 cases of pseudo-leukaemic splenic anaemia the *x* rays seemed to do good in reducing the size of the spleen, improving the general condition and reducing the number of leucocytes. No ill-effects were noted.

PATHOLOGY.

329. Transposed Viscera.

CAMUS, [illegible] (*Bull. et mém.*, No. 37) publishes an example of transposition of the viscera. The patient is a man, aged [illegible], even developed, enjoying perfect health, with the exception that, on close questioning, he admits to a little oppression on exertion. An examination of his brother, sisters, parents, and maternal grandparents shows that he is the only member of the family in whom the condition obtains. The transposition of the heart is easily made out. The apex beat is 6 cm. below the right nipple, and 1½ cm. from the median line; there is no pulmonary or pleural lesion which could account for cardiac displacement. The heart beats 64 per minute, and the arterial pressure on both sides is 17 cm. maximum, and 12 cm. minimum. Percussion shows a generally globular shape of the heart: the long axis equals 23 cm., the vertical axis 17½ cm., in the median line of the body, all the dimensions being much above the normal; the total surface reaches 283 sq. cm., corresponding by the method of comparative weights to almost triple what is usual in a man of the patient's age, weight, and chest measurement. The centres of auscultation are placed as follows: The aortic orifice in the left hemithorax, 4 cm. from the median line, and at the level of the third centimetre of the vertical axis; the pulmonary orifice in the right hemithorax, 6 c.m. from the median line, and at the level of the first centimetre of the vertical axis; the mitral orifice in the right hemithorax, 14 cm. from the median line, at the level of the fourteenth centimetre of the vertical axis, at the geographical summit of the cardiac cone; the tricuspid orifice in the right hemithorax, 2½ cm. from the median line, at the level of the fourteenth centimetre of the vertical axis—that is to say, very slightly deviated to the right. The liver is situated almost entirely in the left hypochondrium. The liver and heart overlap to a maximum height of 2½ cm. and a length of 13 cm., or much less than is usual in normal conditions, since the author has shown that the area of intersection often corresponds to 22 per cent. of the total surface of normal hearts. The liver is normal in dimensions. The spleen is situated in the right hypochondrium, its principal axis being parallel to the costo-umbilical line. The stomach is also contained in the right hypochondrium, so that the abdomino-thoracic inversion would appear to be complete. Reservation must, however, be made for the testicles, since the left hangs lower than the right; and for the brain, since the patient was born right-handed. All the points made out by percussion have been confirmed by radiography.

330. Leucocyte Count in Leishman's Anaemia.

CRISTINA (*La Pediatria*, September 30th, 1912) has examined the blood in six cases of Leishman's anaemia and also watched the effect of injections of phagocytin. As regards the effect of phagocytin in Leishman's disease, leucocytosis may or may not appear, and this depends on whether the leucocytes are present in normal numbers or diminished. In cases where the leucocyte reaction was well marked it did not differ from that seen in healthy subjects after similar stimulation. As a deduction from this observation it appears that the Leishman bodies do not set up leucopenia through the production of negative leucotropic bodies. The progressive reduction of leucocytes reacting to severe degrees of leucopenia which is seen in later stages of the disease or in very rapid cases indicates serious lesions of the blood-forming organs and is the expression of their exhaustion—in fact, the greater part of the medullary cells of the bone medulla become invaded by the Leishman parasites. From a diagnostic point of view, leucopenia has no value as it is generally absent in early or mild cases.

331. Much's Method of Staining Tubercle Bacilli.

[illegible] (*Münch. med. Woch.*, October 15th, 1912) gives an account of the history of this method, and then describes some experiments of his own in regard to sputa and tissues containing tubercle bacilli—muscle, liver, nervous tissue. As regards the sputa, the Much method was only of relative value, for in expectoration, in addition to the Gram resisting granulations, there are several other germs more or less pathogenic which take the Gram form. The best method of examining sputa is a combination of the Ziehl and Much methods. As to the nature of the tuberculous granulations revealed by Much's method, the author believes they represent an attenuated form of the tubercle bacillus, which under suitable conditions may reacquire virulency. Where the tuberculous process is very active, these granulations are scarce, while the acid resisting bacilli are plentiful. Probably the granulations escape out of the bacilli through dissolution of the sheath which surrounds the bacillus. In the examination of the tissues the Much method is indispensable.

AN EPITOME OF CURRENT MEDICAL LITERATURE.

MEDICINE.

332. A Focal Cerebral Lesion simulated by Gastro-Intestinal Disease.

O. MAYER (*Deut. med. Woch.*, August 15th, 1912) points out that gastro-intestinal disease in young children often causes general symptoms and sensory disturbances which lead the unwary to diagnose cerebral or meningeal disease. The following case is, however, rare, for the symptoms were indicative of a localized cerebral lesion. The patient was a 3¼ year old girl who vomited once, and was then seized with cramps, fever, and loss of consciousness. The administration of castor oil by the parents was followed by very offensive diarrhoea. The cramps were bilateral, but most marked on the left side. After five hours they abated, but the left arm continued to exhibit almost uninterrupted, irregular contractions resembling those of athetosis. The left leg, too, was from time to time spasmodically flexed and extended. Sometimes all the limbs were spasmodically contracted, and at other times they were completely relaxed. The patellar reflexes were lost. Babinski's sign was negative, and the pupils were widely dilated and incapable of reaction. The eyes were turned to the right and slightly upwards to an equal degree. The pulse was 180 and regular, the respiration was 30 and irregular, and the temperature was 101.2°. The abdomen was distended, and slight peristalsis was visible. It was learnt that the child had suffered from nausea and abdominal pain on the previous evening and night, and that stale sweets and pickled cabbage had been eaten. The smell of the latter could be detected in the patient's breath twenty-four hours after it was eaten. In spite of the partially unilateral cramps and the conjugate deviation of the eyes, gastro-intestinal disease was diagnosed, and lavage of the intestine was prescribed. Clotted blood and offensive stools were evacuated. The cramps ceased, the temperature fell to 100°, but the child remained unconscious. Carlsbad salts and much fluid were given, and the enemata were continued. On the second day there was general improvement, the consciousness partially returning, and the eyes moving slowly about, and tending to adopt a position of left conjugate deviation when at rest. The left hand was firmly clenched, and both the left arm and leg showed slight spastic contractions. The respiration was irregular, sometimes ceasing momentarily and at other times being of a Cheyne-Stokes character. On the third day the child was still drowsy; the pupils were dilated and their reactions were slow. The stools were less offensive and the abdomen was flaccid and empty. On the fourth day a subcutaneous injection of 300 grams of physiological saline solution was given to hasten the elimination of toxins. On the ninth day the child was perfectly well. It is doubtful whether the cabbage merely caused mechanical obstruction, and thus favoured stagnation in the intestine, or whether it contained directly toxic bodies. Symptoms like those described have not hitherto been traced to cabbage poisoning, although such a decomposition product of cabbage as lactic acid may cause haematemesis, intestinal catarrh, collapse, and drowsiness. It is more probable that the cabbage acted mechanically by forming a plug above which albuminous bodies were decomposed and ptomaines were formed. The passage of clotted blood with the faeces and the storminess of the symptoms may be traced to necrosis of the intestinal epithelium and the consequent exposure of an ulcerated surface to toxic bodies. An analysis of the stale sweets revealed nothing of interest. In the treatment of such cases, early and systematic lavage of the stomach and intestine is most important. A cursory enema or two is totally insufficient, for the first injections of water may yield no result, yet if they be continued, they may expel large quantities of undigested food. Subsequent enemata may be returned unaltered, and yet persistence in their administration may again produce a quantity of undigested food. This treatment is insufficient if the toxic state has lasted for some time, and it should then be supplemented by injections of saline solutions, which, though they may cause a temporary rise of temperature, are effective in washing out toxins from the blood. As the patient's fate depends largely on the treatment adopted, the differential diagnosis between gastro-intestinal intoxication and cerebral disease is all important. Days may pass before the most experienced physician can be sure of his diagnosis, and while an expectant attitude is adopted, suitable treatment is suspended till it is too late. It is undeniable that many a child has died of "brain fever" whose life would have been saved by early recognition of the abdominal nature of the disease.

333. Broncho-pulmonary Cancer.

RÉNON (*Journ. des praticiens*, October 23rd, 1912) points out that modern therapeutic and surgical methods have modified the outlook in the case of many neoplasms which at one time may have seemed incurable; and although in broncho-pulmonary cancer a definite cure may be the exception, provided an early diagnosis of the malady is made life may be prolonged and rendered tolerable. Until quite recently the ordinary clinical procedures of percussion and auscultation yielded discordant results. Radiography, however, facilitated diagnosis in some of these cases, but not in all, as it is often difficult to determine the exact nature of the affection from the shadow, pulmonary syphilis and tuberculosis both being possible complications. Bronchoscopy gives more precise results, and in this connexion the author formulates four stages in diagnosis—the clinical stage, the radioscopic stage, the bronchoscopic, and the bioscopic. He relates the case of a patient, aged 51, who was first attacked by a feeling of oppression in the chest. This was attributed to arterio-sclerosis, but, in spite of treatment directed to securing hypotension, the condition persisted. There was severe cough, but auscultation revealed only some bronchial râles. Soon after there was complete aphonia, and a laryngoscopic examination showed complete paralysis of the left vocal cord. Aneurysm was suggested, but negatived; and although radioscopy showed enlarged mediastinal glands there was no tuberculo-reaction. The Wassermann reaction was also negative. Bronchoscopy was then carried out, and revealed a state of intense tracheitis, while on the left bronchus was seen a reddish growth, which bled readily. The growth was flattened and spread out. Microscopic examination of a portion of the growth showed it was epitheliomatous. Removal was impossible, as it was not pediculated and had evidently infiltrated. Sulphate of radium was given by injection, and under its influence the bronchitis diminished, and the blood-stained expectoration became less, as did the dyspnoea. This treatment was continued for a time, but fresh symptoms of compression appeared, accompanied by rapidity and irregularity of pulse. Selenium was now tried on account of its liquefying action on new growths, being injected twice a week intramuscularly. The symptoms became more and more urgent, however, and the patient succumbed. In the author's view the therapeutic benefits of selenium have still to be determined. Leinhartz, the author states, has practised partial pneumectomy in some of these cases. The new growth is generally primary.

334. Diphtheritic Hemiplegia.

ARTURO CUBELLO (*Revista de med. y Cir. Pract.*, October 28th, 1912) reports an unusual case of diphtheritic paralysis preceded by convulsions. The patient was a girl of 4 years of age, and very early in the illness ordinary throat diphtheria was diagnosed, clinically. The case was a mild one; three injections of 20 c.cm. of antidiphtheritic serum sufficed to remove all symptoms in a very few days. Six days after the patient was allowed up, apparently quite recovered, she was suddenly seized with an attack of convulsions. Clonic spasms affected the whole of the left side of the face and limbs, with complete loss of consciousness. Three hours later, when seen by Cubello, there was still a slight twitching of the facial muscles; otherwise the patient seemed quite well. Next day, however, there was complete left hemiplegia with signs of paralysis of the soft palate. Specific treatment was again instituted, and in a fortnight the little patient was well on her way to recovery. In this case the early onset of the paralysis and the preliminary convulsions are alike unusual. The ordinary textbooks of medicine and pathology referred to by Cubello made no mention of such cases. He refers, however, to an article in the *Paris Médical* by Drs. Bitot and Petges (August, 1911) in which they insist on the occasional

existence of a "pseudo-tetanic" condition following diphtheria. In the cases seen by them the condition was always observed after diphtheria, without false membrane, and not diagnosed clinically. That this is not necessarily always the case is shown by Cubello's case.

335. The Venous Pulse in Fatigue.

FERRARINI AND SCALIA (*Rif. Med.*, November 2nd, 1912), after examining various tracings in men fatigued after marching, came to the following conclusions. They found considerable individual variety—individuals tire after their own special method just as they become ill in their own proper way. In general one can say that no serious disorder of the cardiac function as a whole occurs nor of the myocardium in particular. The frequency of the pulse is usually increased, it may be as much as half again, very rarely it remains unchanged, it is never lessened. The rhythm of the pulse is unaltered. The respiratory oscillations seen in the tracings of repose are more marked or exaggerated after fatigue. The general amplitude of the phlebogram may be greater after fatigue, but this is too variable to lay down any general conclusion. The secondary wave of stasis seen in repose in the atrial wave disappears after fatigue. The duration of the inter-systolic interval as a rule remains unchanged by fatigue, but may be slightly lessened, or in rarer cases a little increased. The ventricular wave is made somewhat stronger after fatigue. The presphygmic phase is usually diminished.

SURGERY.

336. Surgical Treatment of Phthisis.

JOSEF SORGE (*Wien. klin. Woch.*, No. 34, 1912) finds that the only two methods of surgical treatment of phthisis which are of present day interest and of lasting value are the artificial production of pneumothorax and plastic operations on the thorax, both of them forms of treatment which have for their object the production of collapse and of cessation of movement in the diseased lung. He dismisses Freund's operation of chondrotomy of the first rib cartilage as one whose value has not been proved by the cases reported, and which theoretically is of at best doubtful value, since it aims at giving increased freedom of movement to the part affected. A considerable body of proof is now available to show that the prevention of movement in the diseased lung is favourable to recovery, and may be successful even in severe cases. Thus *post-mortem* examinations show a great development, in lungs which have been long collapsed, of connective tissue often surrounding old tuberculous areas and replacing old cavities. Clinical experience teaches us how great, in individual cases, may be the favourable effect of compression of the lung by a large pleuritic exudate, or even, in spite of its danger, by a spontaneous pneumothorax. The experiments of Shingu and Bruns have shown that in the lung collapsed as the result of pneumothorax the lymph circulation is abolished, and the blood contents are diminished both absolutely and relatively; support is thus given to the view formerly held that the extension of the tuberculous process and the flooding of the organism with toxins by way of the blood and lymph streams is checked. Clinical observation of the effects of the collapse treatment is equally favourable. With complete collapse of the lung cough and spit soon almost disappear, the sputum may gradually become free from bacilli, rales are no longer audible, and a febrile condition of perhaps months' duration may very quickly disappear. The technique of the operation for the production of pneumothorax is discussed in the article. In order to avoid the most dangerous of the complications—the occurrence of a gas embolism—the most precaution to be rigidly observed is that of never beginning to inject nitrogen until the manometer shows the presence of the negative respiratory oscillations which prove that the end of the cannula is in the pleural cavity. When the presence of pleural adhesions makes the production of pneumothorax impossible, collapse of the lung can be brought about by means of a plastic operation. The [illegible] operation, in which there is a partial removal of the ribs of the affected side, has been carried out in 9 cases by Friedrich. All these cases were judged to be hopeless before operation, but 14 of them four years after operation were still alive and considerably better. These results show at any rate that the principle of the production of collapse of the lung is a correct one, though the risks of the operation, both immediate and remote, would more and more cause it to be replaced by partial thoracoplastic operations. Further clinical observation is required as to the most sparing and most effectual method of partial operation. Sauerbruch exposes the upper ribs through a paravertebral opening. Wilms has adopted the paravertebral incision of Sauerbruch, and resects also anteriorly through a parasternal incision; he resects from the sternal and vertebral ends of the ribs pieces of from 3 to 4 cm. in width. Wilms's method appears to be a distinct advance on earlier methods. The present tendency is to limit the resection to the ribs over the diseased part of the lung, though Friedrich's observations in this connexion are worthy of attention. Friedrich believes that with the localized method only a small compression of the lung results, and that in the case of the upper lobes of the lungs there is a danger that cavities may not be satisfactorily emptied as a result of increased difficulty in expectoration, and aspiration of their contents may occur. All authors are agreed that a thoracoplastic operation is indicated when there is marked shrinking of the lung with retraction of the thorax, if improvement is not obtained from prolonged climatic and dietetic treatment, and cough, much spit, and a tendency to haemorrhages are present. Tuberculous metastases in other organs form an absolute contraindication, at any rate to Friedrich's complete operation. With regard to artificial pneumothorax, the author concludes that the treatment is indicated in all cases of severe one-sided phthisis. It is probable that the pneumothorax exerts an unfavourable rather than a favourable influence on the other lung. In the majority of the cases also it leads to a loss of weight, the cause of which is not known, but which must increase the tendency to propagation of the tuberculous process in the other lung. The treatment should therefore be confined to cases in which the disease in the other lung is limited to the apex, is of slight grade, and of benign tendency. For an accurate recognition of these conditions a fairly long period of observation in a sanatorium is desirable. The result of treatment is finally dependent on the condition in the other lung.

337. Operation for Extensive Recto-sigmoid Resections.

QUINTO VIGNOLO (*Archiv. gén. de chir.*, June 25th, 1912) has investigated the question of re-establishing the intestinal continuity in extensive resections of the recto-sigmoid loop. He sets out to accomplish this on a new principle, consisting of a kind of enteroplastic operation, whereby a portion of ileum where its mesentery is largest is used to fill the gap made by the removal of the rectum and sigmoid. The results of experiments on dogs and on the human cadaver are sufficiently encouraging for the study of their application to the living subject, and the author has arrived at the conclusion that, suitably modified, the procedure may be so applied. Anatomical considerations show that the ileum has the longest mesentery, about 40 cm. from the ileo-caecal valve, and that this loop of bowel lies lowest in the pelvis. The disposition of the arteries in the mesentery is found to be in the form of arches, which arise from 12 to 18 branches of the superior mesenteric, and it is found also that the widest arches and vessels of smallest calibre are those of the ileum. The greatest length or height of the mesentery corresponds approximately to the interval between the termination of the mesenteric and the first left lateral branch. The operative technique is divided into four parts: (1) Choice and preparation of the segment of ileum destined for the plastic operation; it is necessary to choose the portion of intestine which by the greater length of mesentery and by its position is most suitable for the new position it must occupy—that is, downwards and to the right. About 40 cm., on an average, from the end of the ileum the mesentery attains its greatest length nearly in the same line of direction as the superior mesenteric artery. It is in the portion which stretches from this point of the ileum towards the left that the loop of choice is to be found. Then liberating incisions are made in the mesentery radial and tangential, the latter 4 or 5 cm. from the mesenteric edge of the bowel, and 7 or 8 cm. long. (2) The continuity of the small intestine is re-established by a circular enterorrhaphy. (3) The colic and rectal stumps are prepared—that is to say, the former is freed from the anterior abdominal wall, and the latter from cicatricial tissue which is sure to have formed after resection of the sigmoid and rectum with the tumour. (4) The ileo-colo-recto-plasty is now performed. The lower end of the piece of ileum prepared for the plastic operation is invaginated into the perineal wound or anus, and the upper end is sutured circularly to the cut end of the descending colon. The author narrates in detail the history of a case in which this operation was

practised. The immediate result was very good; continuity of the canal from the descending colon to the anus was re-established, but it was never possible to close the artificial anus formed in the right iliac fossa; and, besides, it was soon evident that secondary hepatic infection had occurred. The author suggests that the following procedure should be followed in a suitable case: (1) Formation of artificial anus at the transverse colon; (2) removal of the recto-sigmoid segment by the combined perineal and abdominal route; (3) ileo-colo-recto-plasty; (4) complete closure of the artificial anus. There ought not to be a great space of time between the extirpation of the tumour and the enteroplasty. If the healing proceeds satisfactorily, three weeks should suffice. And in about fifteen days later the artificial anus may be closed. The paper is illustrated by explanatory diagrams.

OBSTETRICS.

338. Fetal Overgrowth.

Kosmak (*Bulletin Lying-in Hosp.*, New York, June, 1912) discusses the significance in labour of fetal overgrowth when the period of gestation is prolonged beyond the normal limits. Since the growth of the child *in utero* after viability is very rapid it presents a possible obstruction to safe and satisfactory delivery, and, if the date of expected confinement, as estimated from the menstrual history, is confirmed by the growth of the fundus, labour should be induced within a reasonable time if it does not come on spontaneously at the proper time. The fundus at eight and a half months is at the level of the ensiform cartilage, after which it sinks down to the level it occupied at eight months. If labour does not come on when it has reached this point it begins to rise again as before, and consequently, if labour does not come on within two or three weeks after the fundus has begun to descend, it may be safely assumed that the physiological time of gestation has been exceeded. Since large fetuses are almost invariably due to an extension of the time of pregnancy beyond the normal limit, and afford an added risk to both mother and child, the author has adopted the following procedure with good results. On or about the evening of the expected date of labour one or two ounces of castor oil are given, and, if this fails to start pains, the dose is repeated on the following evening. If after the lapse of two or three days there are still no signs of commencing labour, dilatation of the cervix by hydrostatic bags or gauze packings should be undertaken, and in most instances the pains will come on during the next twenty-four hours. In a limited class of cases where pregnancy has proceeded beyond the normal limit, and where the fetal head and shoulders are too large, the above procedure may only involve a loss of valuable time, and in such cases it will be unwise to hesitate too long before advising an abdominal Caesarean section as the best solution of the difficulty.

339. Gestation in Stump of a Tubal Gestation Sac.

Benzel (*Beitr. z. Geburtsh. u. Gynäk.*, vol. xvii, Part 2, 1912) operated in May, 1906, on a patient, aged 30, who in October, 1905, had undergone the removal of a gestation sac in the right Fallopian tube. Convalescence was speedy on that occasion. Before the second operation symptoms of ectopic gestation on the right side, and anterior haematocele developed. This diagnosis proved correct. The left tube and ovary were healthy, but a blood tumour lay seated on the right cornu of the uterus. The tumour and the adjacent tissues of the cornu were dissected and the left tube was amputated in order to sterilize the patient. The tumour proved to be a tubal sac. The uterine portion of the tubal canal bore normal epithelium, but towards the ovule or its relics this epithelium was replaced by an area of effused blood, in the midst of which chorionic villi were detected. Benzel believes that the tubal canal in the ligatured stump regained its permeability. He quotes two instances of gestation in the stump of an amputated tube, but in both cases the tube had been excised for suppurative disease, not ectopic pregnancy. Fraenkel has shown that neither simple nor even double ligature of the tube can ensure permanent occlusion of its canal.

GYNAECOLOGY.

340. Pituglandol in Amenorrhoea.

Fromme (*Zentralbl. f. Gynäk.*, No. 41, 1912) disbelieves in local applications as a remedy for amenorrhoea when it appears, and lasts for months or longer, independent of pregnancy, or distinct pelvic disease, or phthisis. He employed the thermic uterine sound, but found it useless in these types of arrested menstruation. Seitz himself, the advocate of the thermic sound, admitted that it was useless when the fault lay with the ovaries. But it is now recognized that ductless glands carry on vicarious functions for each other. The pituitary body is known to undergo hypoplasia when the catamenia are arrested by pregnancy. Fromme therefore tried injections of pituglandol (Hoffmann-La Roche), after taking the greatest pains to eliminate all cases where incipient phthisis was suspected. One cubic centimetre was injected subcutaneously until the desired effect was obtained or until it was clear that the treatment was doing no good. The injection was given daily as a rule. In five out of twelve test cases the catamenial flow came on promptly; in two it appeared, but the merit of the pituglandol treatment was less evident; and lastly, in five Fromme admits that the period did not reappear, nor was there any evidence that the treatment had any effect, although some of the patients felt, or fancied that they felt, something like a molimen. Thirty cubic centimetres given daily for several weeks seemed to act harmlessly even when no menstrual flow appeared. Fromme believes that pituglandol is likely to answer in cases where young women become corpulent as the amenorrhoea develops, the fatty change being related in some way to disturbances in a ductless gland.

341. Repair of Urethro-vesico-vaginal Fistula.

De Rouville (*Bulletin de la Soc. d'Obstét. et de Gynéc. de Paris*, June, 1912) recognizes the difficulty which the surgeon experiences in repairing a vesico-vaginal fistula which encroaches on the urethra. He describes how he endeavoured to close two such fistulae, each of which had developed in a young woman a few days after prolonged labour. The breach was of about the circumference of a sixpence, and the mucous membrane of the floor of the urethra, much hypertrophied, bulged over the anterior half of the fistula. The relations were thus rendered hard to define accurately, the mucosa forming a bar over the edge of the fistula anteriorly. De Rouville succeeded in dissecting the vagina and bladder apart over the posterior or upper part of the fistula, but, as is always the case, the dissection could not be managed anteriorly. He therefore passed a sound into the bladder and made raw a large surface of the vaginal mucosa corresponding to the floor of the urethra. Then he endeavoured to close the vesical border of the fistula with catgut. He succeeded in doing so, at least partially, in the first, but not in the second case. Then, in both, he proceeded to the next stage: the vaginal and vesical walls around the posterior limits of the fistula were dissected still farther apart. The vaginal flap was next drawn down and sutured in such a manner that its raw surface was placed in apposition with the vivified vaginal mucosa anteriorly. The first case healed after the first sitting, the second required three vivifications of the edge of an obstinate little fistula which developed at the most anterior part of the sutured flap.

THERAPEUTICS.

342. X-ray Treatment of Hypertrichosis.

The *x*-ray treatment of hypertrichosis seems to be emerging out of the discredit into which it has fallen during recent years. In a paper describing the epilatory method employed at the institute of Professor Bergonié, his assistant, Spéder, points out (*Arch. d'élect. méd.*, July 10th, 1912) that there need be no discredit at all if a careful technique is followed and if it is recognized that the radio-sensibility of different kinds of hair varies considerably. The large, vigorous hairs of the masculine beard have great radio-sensibility, while the light down which, by reason of its abundance and pigmentation, is often aesthetically most undesirable, has scarcely any radio-sensibility at all. It is useless to apply the *x* rays against fine down, for the growth reappears even after a radio-dermatitis. With hairs proper, on the other hand, a definite alopecia may be obtained by the employment of hard, filtered rays. An irradiation which does not appear to modify the skin may bring about a temporary fall of the hair, owing to the fact that the radio-sensibility of the papillae of the true hairs is greater than that of the cells of the epidermis. These papillae are situated below the Malpighian layer, and thus the more the ray bundle is filtered in order to rid it of the soft rays the more effective will be the result, while the risk to the skin will be diminished. Hard rays of 7.5 to 8 degrees on the Benoist

radiochromometer (measured in front of the filter) are therefore employed, and are filtered through 1 mm. of aluminium. The rule as to quantity of radiation is to apply at once the maximum dose which the skin will support. From the aesthetic point of view this procedure is better than the giving of small repeated doses. The maximum dose is that which will provoke a reaction inferior, or at most equal, to a true erythema. The erythema begins from twelve to fifteen days after irradiation, and persists for eight or ten days. The colour of the skin is at first reddish and then brown, the normal tint returning by degrees. In the case of ordinary hair, when the skin is fairly thick the maximum dose is that which corresponds to the changing of the Bordier pastille to tint I or II feeble (4 to 4.5 Bordier units H). When the skin is more sensitive and has been irritated by chemical bodies or by iron, the dose given corresponds to tint I full (3.6 units H), or approximately the Sabouraud tint "B." About the twelfth or the fifteenth day the great hairs begin to fall, epilation being complete about the twentieth or twenty-fifth day. From seven to nine weeks after the first irradiation a new growth of hair begins to be manifested. A second application of the same dose to the same territory is followed by a similar reaction, and the regrowth is then extremely slow, and consists only of a few greyish hairs. Two or three months after the second sitting a third application of the rays a little inferior to the first (tint 0 to I; 2.7 to 3 units H) is made, and the fall of the hair is then complete, and in the great majority of cases definite. Rarely is it necessary to make a fourth (and still lighter) application. Sometimes a few white hairs are observed, but these fall out spontaneously. If the hypertrichosis consists in an undue development of downy hair, the author suggests that by shaving or by means of depilatory pastes an attempt should be made to transform the down into true adult hair. When this is accomplished the *x*-ray treatment may be undertaken with much greater chance of success.

343. Treatment of Genital Infections by Lactic Cultures.

JEANNIN (*Presse Médical*, No. 23) gives the technique and applications of the treatment of genital infections by lactic cultures. He recommends the use of the Bulgarian bacillus in liquid cultures. The cultures on the market have the disadvantage of being slightly toxic in large quantities owing to the peptoses which they contain; it is therefore better to employ cultures in milky serum. These cultures, which reach their maximum intensity in forty-eight hours, should be used within eight days. The culture is decanted, only the lower part, which is much richer in microbes, being used. This is poured into a sterilized dish and sterilized lactose in powder is added, the mixture being thoroughly stirred. The best method of application is to soak the broth up with a wick of sterilized gauze which is applied to whatever situation it is desired to treat. The dressing is changed three times, then twice, a day; no antiseptics must be used, but if necessary the genitals may be douched with physiological serum. Lactic broths act on infected patches by the lactic acid which is produced by the fermentation of the lactose, by the antagonism of lactic bacilli to pathogenic microbes, and by the production of a local leucocytosis. The method is especially indicated in the treatment of septic vulvo-vaginal sores, such as often follow difficult labour with forceps. These lesions, which are very rebellious to antiseptics, improve very rapidly under the treatment and the results obtained are described as truly marvellous; the author has seen large recto-vaginal fistulas disinfected and quickly healed. To obtain good results it is necessary to lay bare all the raw surfaces and to separate the opposed points about the perineum so that the lactic broth may be applied to the slightest abrasion. In cases of endometritis and puerperal peritonitis the results have been very irregular, but injection of lactic broth into abscesses of the breast after incision has been used with success.

344. Calcium Salts and the Coagulability of the Blood.

N. VOORHOEVE (*Berl. klin. Woch.*, September 2nd, 1912) expresses his dissent from the doctrine that an increase of calcium salt in the blood necessarily raises its coagulability. It has been shown that calcium salts are necessary for coagulation of the blood and that blood coagulates more rapidly *in vitro* when additional calcium is added. The deduction from this was that when a patient suffered from bleeding, which was due to a diminished coagulability of the blood, calcium given internally would put matters right. A number of experimenters have come to the conclusion that calcium medication shortens the interval before coagulation, while others failed to note any difference. This difference was due to the differences of the methods used to determine the rapidity of coagulation. The author now points out that by giving large doses of calcium salts by the mouth it is actually possible to raise the calcium content of the blood, but in dealing with this question it is necessary to take into consideration the kind of diet and its calcium content. In the next place he argues that a diminished calcium content of the blood is by no means always the cause of an existing tendency to haemorrhage. He states most positively that we know nothing for certain of the influence of the ingested calcium on the components of blood coagulation, save that a larger calcium content of blood does tend to raise the coagulability. But this last-mentioned fact—namely, an increased calcium content of blood—does not necessarily increase the coagulability.

345. Vertigo Due to the Stomach.

ROBIN (*Journ. des praticiens*, 1912, xxvii) recommends the following treatment: No liquid should be drunk in the morning fasting. During meals a glass of Pougues water, and after meals a coffee-cup of infusion of warm camomiles. Butter, fats, sauces, and acid fruits should be forbidden. The food should chiefly consist of grilled meats or roast, vegetables, and cooked fruits. Coffee, tea, and tobacco should be avoided. On waking in the morning half a glass of 1.50 gram of bitter quassia macerated should be taken; ten minutes before luncheon and dinner 10 drops of tincture of nux vomica; and an hour after meals a cachet of sodium bicarbonate, magnesium hydrate, āā 5 grams, lactose, carbonate of precipitated chalk, āā 16 grams, divided into 24 cachets. These to be taken for eight days, then discontinued for four days, and resumed for four days. At the time that the vertigo begins take serpentaria 4 grams, camphor and asafoetida āā 0.50 gram, extract of thebaine 0.05 gram, confection of elder q.s. Divide into 24 boluses; 2 to 5 to be taken in the twenty-four hours. Constipation should be combated by aloes and other purgatives.

PATHOLOGY.

346. The Bacilli of Influenza and of Pertussis.

WRITING from Pfeiffer's hygienic institute in Breslau, Scheller brings forward arguments to meet the criticism which has been levelled at Pfeiffer's claim that his influenza bacillus is the cause of the disease (*Deut. med. Woch.*, September 26th, 1912). This bacillus has been found in some conditions other than clinical influenza, and a number of cases of what looks like influenza have been shown to be dependent on other organisms. Scheller points out that neither of these arguments disprove Pfeiffer's contention. He recalls to the reader that no one now questions the correctness of the view that Asiatic cholera is due to the vibrio of Koch. On the other hand, cholera nostras, which has considerable clinical similarity to it, is not caused by this organism. He finds by inquiry that the bacillus of influenza is present in an overwhelmingly large proportion of cases of clinical influenza during a well-marked epidemic. As the epidemic passes off, the number of cases in which no such bacillus can be found increases. Later, when the epidemic may be said to have ceased, sporadic cases of so-called influenza are still present, but these cases are not due to the influenza bacillus. He quotes the frequency of these occurrences under conditions which he has studied. He also calls attention to the frequent association of *Bacillus influenzae* and tuberculosis. This, however, only holds good during an epidemic. In regard to the presence of the influenza bacillus in conditions other than clinical influenza, he ascribes these finds to the phenomenon of bacillus carriers. The life of the bacillus, apart from the disease, is not long, and consequently bacillus carriers are only found within a comparatively short period after the cessation of an epidemic. He further analyses the evidence in favour of a differentiation of Bordet and Gengou's whooping cough bacillus, and comes to the conclusion that the latter is distinct from the influenza bacillus, and that it probably plays an etiological part in the production of the symptom complex known as pertussis. On the other hand, he is not inclined to express an opinion whether whooping cough is a single entity, or whether, like influenza, cholera, and other diseases, it may not be several conditions having similar clinical attributes. His opinion is formed after consideration of the morphology, culture characteristics, and specific agglutination properties of the bacillus.

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SUPPLEMENT

CONTAINING

PROCEEDINGS OF COUNCIL

REPORTS OF STANDING COMMITTEES

MEETINGS OF BRANCHES AND DIVISIONS

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs. BY ORDER.

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NATIONAL INSURANCE ACT.

REPORT OF COUNCIL

to Annual Representative Meeting, 1912, concerning the position of the medical profession in relation to the National Insurance Act.

PRELIMINARY.

The Special Representative Meeting in February last formulated certain demands in respect of the National Insurance Act to be placed before the Government, and also laid down a line of policy as regards the organisation of the profession. The instructions of the Meeting made it perfectly clear that the demands formulated were minimum demands, from which no variation could be made without reference to the Divisions and Representative Body. Much of the action taken has necessarily had to be taken by the State Sickness Insurance Committee without previous reference to the Council. The action described in this Report is therefore that of the Committee; the opinions expressed are those of the Council except where otherwise expressed.

APPOINTMENT OF AND REFERENCE TO STATE SICKNESS INSURANCE COMMITTEE.

(1) The State Sickness Insurance Committee was appointed with the following reference by the Special Representative Meeting, February, 1912:—

Minute 36.—Resolved: (1) That a State Sickness Insurance Committee be appointed to consider and report to the Council on all matters connected with the National Insurance Act, or a Public Medical Service.

(2) That the State Sickness Insurance Committee consist of (a) twenty-four members (the majority of whom shall be general practitioners) elected by the Representative Body, (b) the *ex-officio* members, (c) two women medical practitioners to be co-opted by the Committee, one of whom shall be nominated by the Northern Association of Medical Women, the other by the Association of Registered Medical Women; and that the Committee be empowered to add to its numbers, for special purposes, not more than four additional members.

(3) That the 24 members be elected by the Representatives, grouped in the same way as for the election of 12 Members of Council under By-law 43 (c), and that each such group elect two members.

(4) That in the event of the Committee dealing with the question of the establishment of a Public Medical Service the Chairmen of the Medico-Political and Public Health Committees be invited to attend the meetings of the Committee.

Minute C79. The Chairman of Committee announced the result of the Election of Twenty-four members of the State Sickness Insurance Committee, as follows:—

ENGLAND AND WALES.

North of England Branch	(c) Mr. D. F. Todd
North Lancashire and South Westmorland Branch	Dr. R. E. Howell
Yorkshire Branch	
Lancashire and Cheshire Branch ...	Dr. S. Hodgson Dr. John Brown
East York and North Lincoln Branch	
[illegible] Branch	Dr. W. L. M. Day
[illegible] Huntingdon Branch	Dr. D. G. Thomson
[illegible] Branch	
[illegible] Branch ...	
[illegible]	
[illegible]	
[illegible]	
Shropshire and Mid Wales Branch ...	Dr. E. O. Price
South Wales and Monmouthshire Branch	(c) Mr. D. J. Williams
Metropolitan Counties: North and East Metropolitan Group: City, Stratford, South-West Essex, North Middlesex, St. Pancras and Islington, and Hampstead Divisions ...	Dr. R. M. Beaton (c) Dr. Lauriston E. Shaw
Central Metropolitan Group: Marylebone and Westminster Divisions	
West Metropolitan Group: Richmond, Ealing, Chelsea, Kensington, and Watford and Harrow Divisions	Mr. E. B. Turner Dr. A. H. Williams
South Metropolitan Group: Lambeth, Norwood, and Wandsworth Divisions	
Bath and Bristol Branch	Dr. T. M. Carter Dr. W. Johnson Smyth
Gloucestershire Branch	
West Somerset Branch	
Worcestershire and Herefordshire Branch	
Dorset and West Hants Branch ...	
South-Western Branch	
Oxford and Reading Branch ...	Dr. R. A. Lyster Mr. E. H. Willock
Southern Branch	
South-Eastern Branch	

SCOTLAND.

Aberdeen, Northern Counties, Dundee and Perth Branches	Dr. J. Munro Moir Dr. R. McKenzie Johnston
Edinburgh and Fife Branch ...	
Glasgow and West of Scotland Branch (4 City Divisions)	Dr. Bruce Goff Dr. John Adams
Glasgow and West of Scotland Branch (4 County Divisions)	
Border Counties and Stirling Branches	

IRELAND.

Connaught and South-Eastern of Ireland Branches	Dr. F. W. Kidd (c) Dr. R. B. Mahon.
Leinster Branch	(c) Mr. R. J. Johnstone
Munster Branch	(c) Dr. J. S. Darling
Ulster Branch	

The following Officers are, under By-law 65, Members *ex-officio*, namely:—

(c) Saundby, Professor Robert, M.D., LL.D., *President*;
(c) Dr. Ewen J. MacLean, *Chairman of Representative Meetings*;
(c) Dr. J. A. Macdonald, LL.D, *Chairman of Council*;
(c) Dr. Edwin Ransom, *Treasurer*.

(c) Member of Council, 1911-12.

I.—Action Taken by the State Sickness Insurance Committee.

APPOINTMENT OF CHAIRMAN.

2. Mr. T. Jenner Verrall, Bath, was appointed Chairman of the Committee.

CO-OPTION OF MEMBERS OF COMMITTEE.

3. The Committee, in exercise of the powers conferred upon it, co-opted the following Members of the Committee:—

Mr. T. Jenner Verrall, Bath.
Dr. James Pearse, Trowbridge.
Mr. James Neal, Birmingham.
Dr. H. F. Oldham, Morecambe.

REPRESENTATIVES OF REGISTERED MEDICAL WOMEN.

4. The Committee received the nominations of Dr. Constance Long (London) from the Association of Registered Medical Women, and Miss Mary E. Ivens, M.S. (Liverpool), from the Northern Association of Registered Medical Women as suitable for co-option to the Committee in accordance with the terms of appointment of the Committee. These ladies were appointed.

CHANGES IN PERSONNEL OF THE COMMITTEE.

5. The following changes have occurred in the *personnel* of the Committee since its formation. Dr. Leigh Day, of Colchester,

Mr. R. J. Johnstone, of Belfast, and Dr. F. W. Kidd, of Dublin, resigned their membership of the Committee, and Dr. F. M. Pope, of Leicester, Dr. Mark E. Cahill, of Belfast, and Dr. Dampier Bennett, of Kingstown, were elected in their stead. No provision had been made for the filling of vacancies upon the Committee, but the Members having been elected in the Representative Meeting by the method used for the election of Members of Council by Grouped Representatives, the Chairman of Representative Meetings was requested to follow the procedure adopted in the case of vacancies occurring among Members of Council elected in this way. This procedure was accordingly adopted in each case.

ATTENDANCES OF MEMBERS OF COMMITTEE.

6. There had up to June 27th inclusive been 15 meetings of the full Committee and 15 meetings of Sub-Committees. The following is a list of the attendance of Members:—

Name.	Full Committee.		Sub-Committee.	
	Total possible.	Attended.	Total possible.	Attended
Mr T. Jenner Verrall, *Chairman*	14	14	9	8
Prof. R. Saundby, *President*	15	1	—	—
Dr. E. J. Maclean, *Chairman of Representative Meetings*	15	11	1	1
Dr. J. A. Macdonald, *Chairman of Council*	15	13	5	2
Dr Edwin Rayner, *Treasurer*	15	7	—	—
Dr. John Adams	15	15	4	4
Dr. R. M. Beaton	15	15	13	12
Dr. John Brown	15	15	3	3
Dr. T. M Carter	15	14	—	—
Dr. J. S. Darling	15	10	—	—
Dr. Bruce Goff	15	14	—	—
Dr. S. Hodgson	15	13	4	4
Dr. R. E. Howell	15	7	3	1
Miss Frances Ivens	14	13	—	—
Dr. R. McKenzie Johnston	15	11	—	—
Mr. R. J. Johnstone (resigned April 11th)	—	1	—	—
Dr. Mark E. Cahill	8	8	—	—
Dr F.W. Kidd (resigned May 16th)	—	2	—	—
Dr. A. G Dampier-Bennett	4	0	—	—
Dr. Constance Long	15	14	3	2
Dr. R. A. Lyster	15	10	3	1
Dr. R. B Mahon	15	2	—	—
Dr. J. Munro Moir	15	11	—	—
Mr. J. Neal	11	11	3	3
Dr. H. F. Oldham	9	8	1	1
Dr F. M. Pope	13	5	3	1
Dr. James Pearse	14	13	4	4
Dr. R. O. Price	15	14	3	3
Dr. Lauriston E. Shaw	15	14	8	8
Dr. W. Johnson Smyth	15	12	—	—
Dr. D G. Thomson	15	11	—	—
Mr. D F. Todd	15	14	4	3
Mr. E R. Turner	15	15	9	9
Dr. A. H. Williams	15	15	—	—
Mr. D. J. Williams	15	12	—	—
Mr E. H. Willock	15	15	4	3
Mr. E J Domville (as Chairman of Public Health Committee)	11	7	2	2

Intimation to Insurance Commissioners of the Minimum Demands of the Association.

7. In accordance with the instruction contained in Minute 40 of the Special Representative Meeting, February, 1912 (for Minutes of Special Representative Meeting *see* Appendix A, page 23) the Committee forwarded the following letter to the Commissioners which, as will be seen, includes the decisions contained in Minutes 46, 47, 48, 49, and 51 of the Special Representative Meeting, 1912:

Offices of the British Medical Association,
429, Strand,
London, W.C.
February 29th, 1912.

Sir,

I am instructed to inform you that at the Special Representative Meeting of the British Medical Association, held at the Guildhall, February 20th-22nd, the following resolution was unanimously passed:—

That this Representative Meeting direct the Council to inform, in plain and unmistakable language, the Commissioners appointed under the Insurance Act, 1911, that unless the minimum demands of the Association be embodied in the Regulations to be issued by the Commissioners, in such a manner as shall be effectual and permanent with a view to having the same embodied in an amending Act, it is the intention of the British Medical Association to call upon all its members and upon all other medical practitioners to decline to form panels or undertake any other medical duties which may be assigned to them under the Act, in conformity with the Undertaking which has already been signed by over 26,000 medical practitioners.

I am to point out to you that the minimum demands of the Association mentioned in the above resolution comprise:—

1. An income limit of £2 a week for those entitled to medical benefit.

2. Free choice of doctor by patient, subject to consent of doctor to act.

3. Medical and maternity benefits to be administered by Insurance Committees and not by friendly societies. In connection with the question of the method of administration of medical benefit, the Representative Meeting resolved that all questions of professional discipline should be decided exclusively by a body or bodies of medical practitioners, and that the power of considering all complaints against medical practitioners should be vested in the local Medical Committee, with a right of appeal to a central Medical Board to be appointed for that purpose.

4. The method of remuneration of medical practitioners adopted by each Insurance Committee to be according to the preference of the majority of the medical profession of the district of that Committee.

5. Medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service.

After careful consideration the Representative Meeting resolved that the policy of the Association be to claim 8s. 6d. as a minimum capitation fee, not including extras and medicine, for members of approved societies, and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee, with recognition of a £2 maximum income limit.

6. Adequate medical representation among the Insurance Commissioners, in the Central Advisory Committee, and in the Insurance Committees, and statutory recognition of a local Medical Committee representative of the profession in the district of each Insurance Committee.

On behalf of the British Medical Association, I am instructed to lay these important points before you and to inform you that they constitute the irreducible minimum demanded by the Association.

Another subject which received the special attention of the Representative Meeting was the question of dispensing. The Association is of opinion that dispensing, as hitherto, should be done or arranged for by the medical practitioner for his own patients, should he so desire, payment to be made according to the scale of prices fixed by the Insurance Committee in accordance with the terms of the Act.—I am, etc.,

ALFRED COX,
Acting Medical Secretary.

The Secretary,
National Health Insurance Joint Committee,
Buckingham Gate, S.W.

8. Beyond a formal acknowledgment no notice was taken of this communication. The Committee did not expect an immediate answer, but after waiting for six weeks thought the time was come when the Commissioners should be reminded that the Association expected a reply. The following correspondence then ensued:—

429, Strand,
London, W.C.
April 12th, 1912.

Sir,

On February 29th last, the State Sickness Insurance Committee of the British Medical Association forwarded a communication to the National Health Insurance Joint Committee, in which the minimum demands of the medical profession in relation to the National Insurance Act were stated. A formal acknowledgment only was received.

The Committee would now be glad to know when it may expect to receive a detailed reply to its letter.

I am, Sir, yours faithfully,
ALFRED COX,
Acting Medical Secretary.

The Secretary,
National Health Insurance Joint Committee,
Buckingham Gate, S.W.

National Health Insurance Joint Committee,
Buckingham Gate,
London, S.W.
April 15th, 1912.

Sir,

I am directed by the National Health Insurance Joint Committee to acknowledge the receipt of your letter of the 12th instant, and to state that all such representations as those of the British Medical Association conveyed in your letter of the 29th February, will be carefully considered in connection with the preparation of the Regulations for the administration of Medical Benefit. The preparation of these Regulations is at present under the consideration of the Joint Committee, and it is hoped that it may be practicable at an early date to obtain, in that preparation, the advice and assistance of the Advisory Committee recently formed, to which, as you are aware, representatives of your Association have been appointed.

I am, Sir, your obedient servant,
(Signed) W. J. Braithwaite.

The Acting Medical Secretary,
British Medical Association,
Strand, W.C.

9. The Committee, while fully aware of the services which the representatives of the Association on the Advisory Committee were able to render in bringing to the notice of the Commissioners the demands of the profession, felt that it must maintain the position of responsibility entrusted to it by the Special Representative Meeting. The following letter was accordingly sent to the Joint Committee on April 26th, 1912:—

Offices of the British Medical Association,
429, Strand,
London, W.C.,
26th April, 1912.

Sir,

In further reference to your letter of 15th instant, my Committee instructs me to say that it entirely endorses the view that the members of the Advisory Committee, whom the State Sickness Insurance Committee nominated for election at the request of the Insurance Commissioners, will be able to give advice and assistance in the preparation of the Regulations.

I am, however, to point out that the full Committee, elected by the Meeting of Representatives of the British Medical Association, is the only body with authority from the Association to convey to the Commissioners and to press on their acceptance the terms desired by the medical profession. Though these have been submitted by letter, circumstances may make it the duty of this Committee to seek a direct Conference with the Commissioners in the hope that such arrangements may be made as will be satisfactory and fair to those who will be asked to undertake medical attendance and treatment under the Act.

I am, Sir, yours faithfully,
(Signed) Alfred Cox,
Acting Medical Secretary.

The Secretary,
National Health Insurance Joint Committee,
Buckingham Gate, S.W.

To this the following reply was received:—

National Health Insurance Joint Committee,
Buckingham Gate, London, S.W.,
May 1st, 1912.

Sir,

I am directed by the National Health Insurance Joint Committee to acknowledge receipt of your letter of the 26th ultimo, and to say that they have noted your statement as to the position and authority of the full Committee elected by the Meeting of Representatives of the British Medical Association.

I am to state that the Commissioners will be pleased to arrange a conference with the Committee, should circumstances arise which make it desirable for such a Conference to be held.

I am, Sir, your obedient Servant,
(Signed) W. J. Braithwaite.

The [illegible]
British Medical Association.

10. In view of [illegible] the Annual Representative Meeting, and of the [illegible] as the Committee could see there was no reason why a definite answer should not be given to its letter of February 29th, the Committee on May 30th came to the conclusion that the Commissioners should be pressed for an early and definite answer to the demands of the profession, and accordingly the following communication was addressed to the Commissioners:—

British Medical Association,
429, Strand, London, W.C.
May 31st, 1912.

Sir,

I am instructed to forward to you the following resolution passed by the State Sickness Insurance Committee at its meeting yesterday:

That the State Sickness Insurance Committee has, after serious consideration, come to the conclusion that the time has now arrived when the Insurance Commissioners should be asked to state (i.) whether they can, or whether they cannot, formulate regulations to satisfy the demands of the profession forwarded to them by this Committee on February 29th, 1912; (ii.) whether, if they can, they are willing to formulate such regulations; or, if they cannot, what steps they propose to take in the matter.

In transmitting this resolution I am desired to state that my Committee would be glad to place itself at the disposal of the Commissioners for the purposes of a Conference on the subject, if it is thought that such a Conference would assist the Commissioners in dealing with the matter.

In view of the possibility of such a Conference, the Committee postpones making any reply to the letter of the Commissioners of May 30th, relative to the proposed enquiry on the subject of medical remuneration under the Act.

I am, Sir, your obedient Servant,
Alfred Cox,
Medical Secretary.

The Secretary,
National Health Insurance Joint Committee,
Buckingham Gate, S.W.

Deputations to the Chancellor of the Exchequer and Commissioners.

11. To this a reply was received to the effect that the Commissioners would receive a deputation from the Association on June 7th. The whole of the Members of the Committee attended on that date at the Offices of the Treasury where they met the Chancellor of the Exchequer, accompanied by Mr. Masterman, M.P., Sir Robert Morant, and certain members of the English, Scottish and Welsh Commissions. A long discussion took place during which the members of the Deputation elaborated the various demands of the profession.

12. Other than the detailed discussion of the cardinal principles of the Association the chief point which arose out of this particular meeting was a request that the Committee would forward to the Insurance Commissioners before June 12th (when the Conference was to be resumed) such information as was in the possession of the Association, supporting the demand for a monetary allowance of 8s. 6d. per annum for medical attendance and treatment exclusive of medicines and extras.

13. The Committee decided to forward to the Chancellor such facts and figures as in the opinion of the Committee justified the Association's claim as regards remuneration. Accordingly the appended Memorandum was forwarded. (See Appendix B, page 29.)

14. The Committee on June 12th again attended in deputation upon the Chancellor of the Exchequer and the Commissioners and a long debate took place upon the subject of the Memorandum previously forwarded. The effect of the Memorandum and of the arguments of the Committee will best be observed by perusal of the letter received from the Commissioners dated June 26th (page 17).

Enquiry by Commissioners into Medical Remuneration.

15. The Committee, upon consideration of a report of the proceedings of the meeting of the Joint Advisory Committee, held May 10th, 1912, to the effect that the Commissioners had formed a Special Sub Committee to collect information as to the amount of remuneration received in the past by practitioners for medical services rendered to patients of the class likely to be insured under the Act, gave instructions for the following letter to be sent to the Insurance Commissioners:—

British Medical Association,
429, Strand, London, W.C.,
May 16th, 1912.

Sir,

I am desired to inform you that the State Sickness Insurance Committee, noting the decision of the Commissioners to form a Sub-Committee to collect information as to the amount of remuneration received in the past by the profession for medical services rendered to patients of the class likely to be insured under the Act and entitled to receive medical benefit of the normal type, desires at once to draw attention to a fallacy which would arise if such information were regarded as a guide to the remuneration which would be acceptable to the profession in connection with the Act.

Present rates of remuneration from such classes are largely determined by the financial position of the patient, and the feeling on the one hand of compassion for the patient, and on the other of fear of having to undertake entirely unpaid work, which are present to the mind of the doctor. The altered financial position of the patient by introduction of compulsory assisted insurance removes or lessens both these factors.

I am, Sir, your obedient Servant,
ALFRED COX,
Medical Secretary.

The Secretary,
National Health Insurance Joint Committee,
Buckingham Gate, S.W.,

to which the following reply was received:—

National Health Insurance Joint Committee,
Buckingham Gate,
London, S.W.,
May 21st, 1912.

Sir,

In reply to your letter of the 16th inst., I am directed to state that the Sub-Committee of the Insurance Commissioners on the subject of medical remuneration will not be confined to inquiring into the amount of remuneration received in the past by the profession for medical services rendered to a class of patients likely to be insured under the Act, and entitled to receive medical benefit of the normal type. It will be their duty to collect evidence of any kind that will assist in the decision as to what would be proper remuneration for the services to be rendered under the Act.

The words used by the Chancellor of the Exchequer in announcing this inquiry were as follows:—

> A Sub-Committee has therefore been appointed by the Commissioners to go specially into this question and to collect evidence bearing upon it. They will welcome any assistance which the medical profession can give them in collecting these facts, and also which can be given by friendly societies and others who have any data bearing upon it. The Sub-Committee will communicate to the members of the Advisory Committee, and also to any organisations whose assistance they require, particulars of the procedure which it is proposed to adopt, and the ways in which assistance can best be given, and, of course, they will consider any suggestions as to the form of inquiry which any of these bodies may think well to put before them. The one object is to conduct an inquiry which all concerned will be satisfied is both equitable and thorough.
>
> One word more before leaving this part of the subject. It must be clearly understood that this inquiry will be simply a collection of facts, and will be without prejudice to any arguments which the medical profession or others may desire to base upon the facts when the time comes for considering what the nature of the financial provision in this respect ought to be.

Before commencing the inquiry, the Commissioners hope to have the benefit of a conference with representatives whom they trust the British Medical Association will appoint to confer with them on the nature and procedure of the inquiry, when all such points as are raised in your letter may be fully discussed and considered.

I am, Sir, your obedient servant,
(Signed) W. J. BRAITHWAITE.

16. The Chairman (Sir Robert Morant), and the Deputy-Chairman (Mr. J. Smith Whitaker), of the National Health Insurance Commission (England) having requested an interview with the State Sickness Insurance Committee, which took place on May 23rd, 1912, the following further statement was made as to the intentions of the Commissioners in instituting an enquiry into remuneration.

17. The Committee was informed that with a view to obtaining satisfactory information upon the question of remuneration of medical practitioners, the Commissioners desired to take two or three selected towns and have the books and records of the whole of the practitioners of those towns examined confidentially by accountants. In this way it was hoped to obtain information as to the total amount of work done and the total amount of remuneration at present received by the practitioners as regards those who would be insured persons. In this enquiry the Commissioners hoped to have the co-operation of the Association.

18. At its Meeting on May 30th the Committee received the following letter, further detailing the reasons for holding the suggested enquiry and the methods by which it was proposed to carry it out:—

National Health Insurance Joint Committee,
Buckingham Gate,
London, S.W.
30th May, 1912.

Sir,

I am directed by the National Health Insurance Joint Committee to refer to the inquiry now being conducted by the Sub-Committee of the Insurance Commissioners, which has been appointed to investigate generally the facts bearing on the question of medical remuneration under the Act. It is the desire of the Government that the inquiry shall be conducted on such lines as will command the confidence of all concerned, and I am to state that the Commissioners will be glad to consider any suggestions that the Association may desire to make as to the procedure which, in their judgment, will best elicit the facts.

In connection with this inquiry the Commissioners propose to obtain information of a kind which can only be given by practitioners engaged in private practice among those sections of the community from which the insured will chiefly be drawn.

It is clear from the correspondence in the medical journals and elsewhere on the question of the effect of the Act upon the incomes of such practitioners that much difficulty is experienced in estimating what relation the income of a practitioner receiving any given rate per head under the Insurance Act will bear to the portion of his present income which is derived from private practice among the classes in question.

It appears to the Sub-Committee that this difficulty arises chiefly from the fact that in private practice the practitioner only knows the number of those who have actually come to him for treatment in a given period, and has no means of calculating the number of persons not treated by him in the same period, including both those who did not require any medical attendance, and those who, while needing it, could not afford to employ him. The most effective way of elucidating this matter would appear to be to obtain particulars of the total amount of medical attendance given by practitioners to, and medical income received by them from, a definite number of persons in a period of, say, two years. This information could be obtained if all the practitioners in, say, three or four towns would throw their books open for examination by experienced Accountants appointed and paid by the Commissioners. It would, of course, be understood that the detailed results of such examination would be confidential. I am to enquire whether the British Medical Association concurs as to the desirability of such an inquiry being made, and, if so, whether the Commissioners may rely on receiving their co-operation in the matter.

A considerable amount of information has already been collected, and is being put in a convenient form. Copies of the documents will be forwarded for the information of the Association as soon as ready.

In the meantime, the Sub-Committee will be glad to receive from the Association at as early a date as practicable any evidence which the Association may desire to submit in documentary form. At the same time, I am to add that if the Association were prepared to nominate any of their members to give oral evidence on the matter, the Sub-Committee would be prepared to hear them on

Thursday, the 6th proximo, or at such later date as may be arranged.

I am, Sir,
Your obedient Servant,
(Signed) W. J. Braithwaite.

The Medical Secretary,
British Medical Association.
429, Strand, W.C.

19. Immediately after the deputation to the Chancellor and the Commissioners on June 12th, the following letter and Memorandum on this subject were received from the Chairman of the National Health Insurance Commission (England):—

National Health Insurance Commission (England),
Buckingham Gate, London, S.W.,
12th June, 1912.

Sir,

I am directed by the Chancellor of the Exchequer to advert to the Memorandum forwarded by your Association on Monday last regarding the question of medical remuneration under the Insurance Act. In that Memorandum your Association put forward arguments in support of the Association's demand for a general capitation fee of 8s. 6d., to which (as is shown) is to be added remuneration for certain extra services and the cost of provision of drugs and appliances. You will remember that, in reply to the Chancellor's request at the conference this afternoon for the facts on which the Association based its views as to the figures in your Memorandum, it was admitted that the facts were not, as yet, available (except for certain small sections of the subject) as a basis for those estimates. The Chancellor accordingly indicated that in his view an investigation was clearly necessary in order that ascertained facts might be made available as regards existing conditions in respect of medical attendance and remuneration, without which facts it is not possible for the Government or Parliament to form a considered judgment as to those demands.

I am now directed to forward you a Memorandum, prepared in accordance with the request made by your Committee this afternoon, indicating the nature of the facts required.

I am to add that the statement of facts arrived at by the Investigator in the case of each of the towns will be placed at the disposal of your Association at the same time that they will be given to the Chancellor, and that it will, of course, be open to your Association to use the facts in whatever way may seem to you best for your purposes.

It will, of course, be understood that no names will be given in the Investigator's reports, and that every step will be taken to secure that all information as regards individuals shall be kept strictly confidential by the Investigator and his assistants. As requested by your Committee, each practitioner will be given an opportunity of considering and making observations on the Investigator's Abstract of the facts relating to his own practice before the Investigator submits to the Government any report based on those facts.

The expenses incurred by the Investigator will be borne by the Government.

The Chancellor will also be glad if your Association would place at his disposal, in further illustration of your last Memorandum, any facts already in the possession of your Association that would throw light upon existing conditions of medical practice and remuneration, whether as to types of practice or particular practices. And he considers it would be useful if, by circularising the members of your Association or otherwise, you would let him know the actual facts at the present time in regard to the question on which various views were expressed this afternoon, namely, the number of Assistants now employed in professional practice.

The Chancellor suggests that, in order to save time, you will let him know at once should you find any reason for proposing to substitute some other town for any one [illegible] selected by him. I am also to ask that you [illegible] him with the name of an Accountant [illegible] and as suitable for the [illegible] which the Chancellor [illegible].

You will observe that, in view of the difficulties pointed out [illegible] Association as likely to cause [illegible] wish those who are in future likely to be insured from the rest of the population, it is recognised to be necessary that no section of the population be excluded from the scope of the inquiry in the towns named, and the instructions to the Investigator have been drafted accordingly.

I am,
Your obedient servant,
Robert L. Morant.

Memorandum.

Proposed instructions to the Investigator to be appointed by the Chancellor to inquire into existing conditions of medical work and remuneration.

20. (i.) The object of the inquiry is to ascertain certain facts as to the total medical attendance given under existing conditions by all the medical practitioners of certain specified towns to the total population of those towns, and the total income received by the total practitioners of those towns in respect of such medical attendance.

(ii.) The towns to which the inquiry is to relate are to be six in number. The selection will be determined by the Commission after consultation with the Committee of the Association.

(iii.) The particulars required are to be ascertained from the books of the medical practitioners of those towns and from certain other sources specified herein in respect of the years 1910 and 1911.

(iv.) The particulars both of work and remuneration relating to persons residing outside the towns named, who employ as their ordinary medical attendants practitioners resident in those towns, must be stated separately from particulars relating to attendance given to, and money received, from residents of the towns.

(v.) Particulars, if any, of services rendered to patients attended under contract in respect of a capitation fee, and in respect of any part time public or other medical appointment, and of remuneration received in respect of such services, must be kept separate from work done and remuneration received in the course of ordinary private practice.

(vi.) The particulars as to work are to show separately:
- (*a*) Visits paid at the patient's house.
- (*b*) Attendance on the patient at the doctor's surgery.
- (*c*) Medicines supplied.
- (*d*) Operations and other services in respect of which special fees are charged.
- (*e*) Certificates and reports for the furnishing of which a charge is made.
- (*f*) Fees for attendance at coroners' inquests; work such as giving evidence at law courts which are not part of medical treatment, and in respect of which fees are received. And
- (*g*) Any other properly separable items of medical services.

(vii.) The particulars of remuneration received should show—
- (*a*) The gross income of the practice from all sources.
- (*b*) The ordinary fees charged to patients.
- (*c*) So far as ascertainable the amount of bad debts.
- (*d*) Deductions that should be made from gross income, to arrive at net income, in respect of—
  - (i) Cost of drugs and other materials supplied to the patients.
  - (ii) Salaries of assistants (if any) [each assistant to be stated separately and whether indoor or outdoor.]
  - (iii) Cost of collection of accounts.

(viii.) Particulars of patients attended in hospitals and other charitable institutions, and in Poor Law infirmaries to be obtained by the Investigator from the authorities of the institutions.

Decision of Committee as Regards Enquiry.

The Committee after careful consideration of the whole question caused the following reply to be forwarded:—

Offices of the British Medical Association,
Medical Department,
429, Strand, London, W.C.,
June 14th, 1912.

Sir,

The State Sickness Insurance Committee of the British Medical Association considered, on Wednesday last, your letter sent by the direction of the Chancellor of the Exchequer relating to the proposed inquiry into existing

conditions in respect of medical attendance and remuneration, and I was instructed to inform you that the Committee, while it has no power to make practitioners throw open their books for investigation in the manner suggested, is prepared to give all possible assistance in the collection of the information desired, and will advise practitioners in the selected towns to co-operate in the enquiry.

With regard to the request that the Association should furnish the Chancellor with the name of an accountant who would be regarded by the Association as suitable for the purpose of pursuing the investigation, or three names of which the Chancellor might select one, the Committee suggests that the President of the Incorporated Society of Chartered Accountants be requested to nominate an accountant for the purpose.

I am, Sir, your obedient servant,
(Signed) ALFRED COX,
Medical Secretary.

Sir Robert L. Morant,
Chairman,
National Health Insurance Commission (England),
Buckingham Gate, S.W.

21. The Committee realised that in some quarters strong objection would probably be taken to any assistance being given by the Association in carrying out such an enquiry. It was felt that a section of the Association would probably take the view that the minimum demands of the Association as regards remuneration being fixed, such an enquiry would be useless. After the most serious consideration, however, the Committee came to the conclusion that it was its duty not to stand in the way of this enquiry. It was felt that anything which looked like obstruction would be regarded by the public as a confession that the case of the Association could not bear investigation. In addition to this, it was obvious at the interview with the Chancellor that while he was prepared to ask Parliament for more money for the purposes of medical benefit he was very anxious to have figures which would justify him in his demand. Feeling sure that the results of any impartial investigation could only be favourable to the claims of the profession, the Committee decided to lend its assistance to the enquiry, while taking great pains to make the position of the profession perfectly clear. The Deputation in its conversation with the Chancellor informed him that in its opinion the enquiry was belated and should have been held before the National Insurance Bill was introduced; that the time which it was proposed to spend over it was insufficient; that the results would probably be misleading and would certainly be inadequate; that practitioners might decline to have their books examined in the way suggested, and that in this case the inquiry could not be complete; that it must be distinctly understood that the enquiry was not of the Association's seeking and that the Association could take no responsibility for it; and finally that we should hold ourselves at liberty to criticise the results in any way which seemed best to the Association. The position was also made quite clear in the letter to the Divisions in general, and especially in the letter to the Secretaries of the Divisions in which the enquiry took place (see Documents D 55 and 57 appended—Appendix (C), page 31.)

ARRANGEMENTS AS TO ENQUIRY.

22. The towns in which it was proposed by the Commissioners that the enquiry should be made were:—

Darwen,
Luton,
St. Albans.
Llanelly.
Kilmarnock.
Norwich.

23. The Committee caused the following suggestions to be made to the Commissioners, namely:—

(*a*) That either Oldham or Salford be substituted for Darwen,

(*b*) that Darlington be substituted for Luton, against the choice of which the Committee emphatically protested, on the ground that it is not typical of private medical practice,

(*c*) that either Cardiff or Wrexham be substituted for Llanelly,

(*d*) that either Hawick or Stirling be substituted for Kilmarnock.

24. An interview took place between the Chairman of the Committee and Medical Secretary and the Chairman and Vice-Chairman of the English Commission and Mr. Shackleton, when, after considerable discussion, the following selection of towns was arrived at:—

Cardiff.
Darlington.
Darwen.
Dundee.
Norwich.
St. Albans.

25. The Council desires to place on record its regret that the Commissioners did not accept the whole of the recommendations of the Committee as to the towns to be selected.

Selection of Investigator.

26. At this interview the Commissioners at once agreed with the suggestion of the Association as to the nomination of an Investigator, and Sir William Plender, of the firm of Deloitte, Plender, Griffiths and Co., who had recently vacated the Chair of the Incorporated Society of Chartered Accountants, himself undertook the investigation.

27. The Secretaries of all Divisions and Branches were at once informed of the action of the Committee (*see* Appendix (C), page 31) and a special letter was sent to the Secretaries of the Divisions within whose areas lay the towns selected for the enquiry (*see* Appendix (C), page 31).

NUMBER OF ASSISTANTS TO GENERAL PRACTITIONERS.

28. During the interview with the Chancellor of the Exchequer on June 12th, the question was raised as to the number of assistants employed in general practice. It was evident that the Chancellor of the Exchequer, influenced, no doubt by his knowledge of Welsh colliery practice, had a very exaggerated idea of the total number of assistants in the Kingdom, and he was so informed. As no accurate information on the point was forthcoming the deputation undertook to make enquiries from the Divisions. Up to the present only some 70 Divisions have replied.

ORGANISATION OF THE PROFESSION.

PROVISIONAL MEDICAL COMMITTEES.

29. In accordance with the terms of the following Minutes 54 and 63 of the Special Representative Meeting, February, 1912:—

> *Minute* 54.—Resolved: That the Council be instructed to take steps to organise the profession so as to secure that, failing the provision of adequate remuneration of medical practitioners and the fixing of a definite wage limit under the National Insurance Act, no medical practitioner shall give medical and surgical treatment to persons insured under the Act under a contract practice appointment held at lower rates than those which may be agreed upon as adequate by the Representative Body, after reference to the Divisions, for attendance upon insured persons, and that no contract practice be introduced into any district against the wishes of the majority of the members in that district. Further, after obtaining the adequate rate, the Representative Body shall insist that before any member of the profession can agree to accept work under a contract appointment, free choice of doctor by patient and of patient by doctor must be granted.
>
> *Minute* 63.—Resolved: That the Council be instructed to make all necessary arrangements for assisting the Divisions and Branches in the appointment of provisional Medical Committees in every insurance area to safeguard the interests of the profession, without prejudice to the question of whether these Committees shall later accept recognition as statutory local Medical Committees,

the Committee sent various memorandums on the subject of local organisation (D 46 and D 47, *see* Appendix (D), page 32) to the Secretary of every Division and Branch in England, Scotland and Wales. They were not sent to Ireland because Ireland is excluded from medical benefit, and it was known that the Irish Committee of the British Medical Association and the Irish Medical Association were jointly making arrangements to suit their own circumstances. As a result of these circulars and of repeated appeals to backward districts, 211 Provisional Medical Committees have been formed and much good work has been effected. The Council desires to record its great appreciation of the excellent work which has been done by the

honorary officers of the Association and by those responsible for the formation and working of the Provisional Medical Committees. The demands made upon the time and energies of these gentlemen have been very great and the profession owes a deep debt of gratitude to them. The progress made in the organisation of the profession in London deserves special mention, as it is well recognised that the problems of organisation in that area present exceptional difficulties. There is no doubt that at the present time the profession in London is much better organised than it has ever been before, and the special metropolitan difficulties are being gradually overcome.

30. Foreseeing considerable difficulties and delays if an attempt were made from the beginning to make the areas of the Provisional Medical Committees co-terminous with those of the Insurance areas, it was recommended that the areas of the Divisions should be used temporarily for the purpose of organising Provisional Medical Committees. This method of organisation has no doubt certain difficulties of its own, but it seemed to be the method which promised the quickest results. The Council, however, quite realises that before long the areas of Provisional Medical Committees must be made to coincide with the Insurance areas, and it is hoped that shortly the transition from the present temporary arrangements to the more permanent may be brought about.

Supplementary Pledge of the Association.

31. Arising out of consideration of the above Minutes 54 (Organisation of Profession) and 63 (Formation of Provisional Medical Committees), and having regard also to the terms of Minutes 57 and 58, and various other motions contained in Minute 76 of the Special Representative Meeting, February, 1912 (*see* Appendix A), the Committee prepared the following Supplementary Pledge for signature by the members of the profession, and transmitted it to the Divisions on April 29th, 1912, together with an explanatory letter D 49 (*see* Appendix E, page 34) :—

NATIONAL INSURANCE ACT.

Pledge Complementary to the Undertaking of the British Medical Association.

In view of the possibility of Medical Benefit under the National Insurance Act being suspended or of an attempt being made to administer it through the approved Societies or in other way contrary to the wishes of the profession, I make the following declaration :—

I, the undersigned, hereby place in the hands of the Secretary of the Provisional Medical Committee of the area in which I practise, my resignation of all club, Friendly Society, Dispensary and other forms of contributory contract practice appointments which I hold, in so far as they extend to insured persons, and I authorise him to send these resignations to the bodies concerned, if and when he is called upon by the State Sickness Insurance Committee of the British Medical Association to do so.

I undertake not to accept any such appointment so resigned; and that I will only accept appointments dealing with insured persons with the consent of the State Sickness Insurance Committee, given through the Provisional Medical Committee, and on conditions which shall allow of free choice of doctor by patient and of patient by doctor.

"After that portion of the National Insurance Act referring to medical benefit comes into operation, and until the terms and conditions of administering medical benefit under the National Insurance Act have been approved by the profession, (1) I will not, except in cases of urgent necessity, render professional service to an insured person through the service of any voluntary medical charity, (2) I will not co-operate with any member of the profession who is under contract to render service to insured persons upon terms which are not approved by the profession.

" *This paragraph does not refer to the administration of Sanatorium Benefit.*

Name .....
Address †

(Please write distinctly.)

[illegible] will be made by Provisional Medical Committees of these Resignations until the State Sickness Insurance Committee is of opinion that the time is ripe for use to be made of all these Pledges throughout the whole or certain parts of the Kingdom.

† *If you have more than one address please add others overleaf.*

32. The following considerations governed the drafting of this Pledge :—

(a) No attempt was made to cover the ground of the Undertaking. (For terms of the Undertaking of the Association, *see* below.) It was assumed that that document is binding on the honour of every practitioner who has signed it.

(b) The Pledge was intended to be *complementary* to the Undertaking, and specially deals with the dangers to be anticipated if medical benefit is suspended and attempts are made to work the medical benefits of the Act through the Friendly Societies and similar organisations.

Copy of Undertaking of Association.

"National Insurance Bill.

Undertaking

by

Members of the Medical Profession.

I, the undersigned, hereby undertake that in the event of the National Insurance Bill becoming law, I will not enter into any agreement for giving medical attendance and treatment to persons insured under the Bill, excepting such as shall be satisfactory to the medical profession and in accordance with the declared policy of the British Medical Association; and that I will enter into such agreement only through a local Medical Committee, representative of the medical profession in the district in which I practise, and will not enter into any individual or separate agreement with any approved Society or other body for the treatment of such persons.

Name .....

Address .....

.....

If you are a Member of the British Medical Association please state which Division you are in .....

(If holding any Friendly Society Appointments, please give particulars below and overleaf if necessary),

Name of Society or Order.
(*e.g.*, "Oddfellows, Manchester Unity."

Name of Branch, Lodge, Court, &c.
"Unity Lodge, No. 542"). "]

Criticisms of Pledge.

33. Criticism has been directed from various quarters against the form of this pledge. The chief difficulties arose from two classes of practitioners, namely, holders of colliery and works appointments, and members of hospital staffs.

(a) *From Holders of Colliery and Works Appointments.*

34. Objection has been taken by these on the ground that in certain districts it would be impossible for the medical profession to obtain remuneration except through some form of contract; that it was hoped that when the Act came into force these appointments would be allowed to continue under the terms of the Havensworth amendment as being on the whole satisfactory for certain districts and certain classes, and that it was dangerous to disturb the present relations. There are still some districts in which this class of practitioners has not co-operated as a body in this part of the Association's plan of campaign. Many of the objections were removed, however, when the holders of these appointments were informed that it was quite recognised that some form of contract was necessary in connection with certain kinds of practice, and that if their present contracts were terminated the Association would have to be prepared to assist them in making new forms of contract on proper lines to take effect immediately after such termination. There is reason to hope, judging by the way in which some colliery areas have now fallen into line, that there will be little difficulty ultimately in securing practical unanimity among colliery and works practitioners.

(b) *From Holders of Hospital Appointments.*

35. A large number of holders of hospital appointments were seriously alarmed by the demand which was made on them by the third clause of the pledge, and many

protests were received. The chief objection raised was that under the terms of the pledge they might be called upon to refuse professional service to insured persons who might in their opinion be proper subjects for hospital treatment, simply because these happened to be insured persons. This they felt might conflict seriously with their duty to their hospitals. The Committee took the opportunity of pointing out to various members of hospital staffs who made representations to this effect, that much depended upon the definition of the term "urgent necessity" used in the third clause of the pledge; that close definition of this term had been avoided; that it was essential that hospital men should fall into line with the rest of the profession, even if such a course entailed some sacrifice; that what was depended upon was a loyal adherence to the general interests of the profession; and that the essence of the pledge was to prevent the Out-Patient departments being used to undermine the position of the profession by their employment for the treatment of ordinary ailments of insured persons, in the event of the profession not being able to make arrangements under the Act for the provision of medical attendance and treatment.

36. The whole question has been discussed at meetings of hospital staffs throughout the country, and in particular at a large meeting held in London, and the Council is glad to report that there seems no doubt that the great majority of the members of hospital staffs are in sympathy with the objects of the Pledge and will act accordingly. The staffs of many important hospitals have all signed the Pledge.

Results of Canvass for Pledges and Forms of Resignation.

37. It was hoped that the canvass, in regard to the Pledge and Forms of Resignation, would be completed all over the country in time for a decision to be arrived at before June 30th as to the sending in of resignations of contract appointments, and for a comprehensive statement to be made in this Report. The Council finds that the great difficulties inherent in the task prolonged the time necessary to complete the canvass, and that it is impossible at this date to make a full report, but such a report up to date will be made at the Annual Representative Meeting.

Position of Locumtenents, Assistants, and Hospital Residents and the Pledge.

38. The Committee had brought to its attention the desirability of enlisting the co-operation of medical agents in the matter of obtaining signatures to the pledge from those practitioners who are employed through them as locumtenents. The agents were approached and the Council has pleasure in reporting that the response has been most gratifying, and it is recommended that every practitioner wishing to engage a locumtenent or assistant will insist that he shall have signed the Undertaking of the Association and also the Pledge. The Council would also suggest that members of hospital staffs who are concerned in the selection of candidates for resident appointments should do what they can to ensure that those appointed have signified their adhesion to the policy of the Association.

The Council recommends:—

Recommendation.

A. That practitioners in engaging locumtenents or assistants should insist that, previous to engagement, they shall have signed both the Undertaking and the Pledge of the Association; also that members of hospital staffs having influence in the selection of practitioners to fill resident appointments should do what they can to secure that those appointed shall have signed both these documents.

Advisory Committees.

(a) *Invitation from National Health Insurance Joint Committee to Association to nominate Members of Advisory Committee.*

39. An invitation was received from the National Health Insurance Joint Commitee to the Association to nominate, with a view to their appointment as Members of Advisory Committee, practitioners who have had experience of different kinds of medical practice (especially among the section of the community from which persons insured under the Act will chiefly be drawn) in various parts of England, Scotland, and Wales. In accordance with the instructions of the Special Representative Meeting, February, 1912, contained in the following Minutes 60 and 61:—

> *Minute* 60.—Resolved: That the Association take steps to secure the most suitable representatives of the medical profession upon the Advisory Committee, and for this purpose nominations shall be made by the Divisions and the final selection of names by the Council, and that the Council be instructed to make the necessary arrangements to carry this resolution into effect.
>
> *Minutes* 61.—Resolved: That while the British Medical Association is willing that members of the medical profession shall provisionally join the Advisory Committees, nevertheless it will use its best endeavours to ensure their resignation unless the six cardinal principles have been granted by amendment of the Insurance Act, by Regulation, Order or otherwise, and that it be an instruction to the Council to provide that all practitioners who are supported by the Association for membership of the Advisory Committees shall have pledged themselves previously to vacate their seats, if elected, should the British Medical Association determine to cease negotiations with reference to the National Insurance Act.

the Divisions of England, Scotland, and Wales were each asked to nominate one candidate. Special attention was drawn to the fact that it was competent for the Divisions to nominate practitioners who were members of the State Sickness Insurance Committee. A list of the Committee was given in the letter dealing with this matter (see Appendix (F) page 35) with an indication as to which of them were eligible by reason of having had experience of general practice.

41. There were received 47 nominations by English Divisions, 10 by Scottish Divisions, and 5 by Welsh Divisions. Intimation having been received that not more than 12 practitioners would be likely to be chosen, the Committee decided only to submit this number of names, of whom nine should be selected from England, two from Scotland, and one from Wales.

42. A ballot taken in the State Sickness Insurance Committee resulted in the selection of the following practitioners, whose names were accordingly submitted to the Commissioners:—

Dr. John Adams, Glasgow.
Dr. Robert Milne Beaton, London.
Dr. Thomas Moravian Carter, Westbury-on-Trym, Bristol.
Dr. Stanley Hodgson, Salford.
Dr. James Alex. Macdonald, LL.D., Taunton.
Dr. John Munro Moir, Inverness.
Mr. James Neal, Birmingham.
Dr. Emyr Owen Price, Bangor.
Mr. David Fee Todd, Sunderland.
Mr. Edward Beadon Turner, London.
Mr. Thomas Jenner Verrall, Bath.
Dr. Alfred Henry Williams, Harrow.

43. It will be noted that with one exception the whole of those selected were members of the State Sickness Insurance Committee. Some criticism has been evoked by this selection of nominees, but the members of the Committee were guided by the feeling that it would be of advantage from every point of view to have as many of the members of the Advisory Committee as possible on the State Sickness Insurance Committee. This could only be achieved by selecting the nominees from the Committee in the first instance, as the number who could be co-opted to the Committee was limited. Experience gained at the meetings of the Advisory Committee has, in the opinion of the Council, fully justified the method of selection.

(b) *Representation of Irish Profession on Joint Advisory Committee.*

44. The invitation of the Commissioners not containing any reference to the representation of the Irish medical profession upon the Joint Advisory Committee, the Commissioners were requested to appoint additional medical practitioners representative of the Irish medical profession. To this suggestion the Commissioners agreed, and asked the Association to submit names with a view to the appointment of one or more. A communication was therefore addressed to the Irish Divisions

names were selected by the Committee and forwarded to the Commissioners, together with those for England, Scotland, and Wales:—

Dr. John Singleton Darling, Lurgan.
Dr. Archibald Pollock Bailey Moore, Belfast.

The whole of the nominees of the Association for England, Scotland, and Wales were appointed, and Dr. Darling was appointed from Ireland.

45. All those nominated by the Association have had experience of general practice, and all have signified their intention of resigning their position on the Advisory Committee if called upon by the Association to do so.

(c) *Registered Medical Women on Advisory Committee.*

46. The committee was informed by the representatives of registered medical women upon the Committee that those Associations of Registered Medical Women which had been asked to make nominations for the Advisory Committee were desirous of associating themselves with the British Medical Association. Their nominations were accordingly placed before the State Sickness Insurance Committee, and forwarded with the approval of that body, and it was ascertained that the three nominees would vacate their seats on the Advisory Committee if called upon to do so by the British Medical Association. These nominees, namely, the President of the Association of Registered Medical Women (Dr. Constance Long), the ex-President of the Northern Association of Medical Women (Miss Mary Ivens, M.S.), and Dr. Mercer Watson, President of the Scottish Association of Registered Medical Women, have been appointed to the Advisory Committee

(d) *Other Medical Members of Joint Advisory Committees.*

47. In addition to the thirteen medical members of the Joint Advisory Committee nominated by the Association, and the three women practitioners, the Commissioners have themselves appointed the following medical members:—

Dr. Christopher Addison, M.P., London.
Sir T. Clifford Allbutt, K.C.B., Cambridge.
Mr. C. J. Bond, Leicester.
Sir John Collie, M.D., London.
Sir Frederic S. Eve, London.
Dr. Adam Fulton, Nottingham.
Dr. R. McKenzie Johnston, Edinburgh.
Mr. Herbert Jones, Hereford.
Dr. E. J. Maclean, Cardiff.
Dr. H. H. Mills, London.
Dr. G. Reid, Stafford.
Dr. J. Robertson, Birmingham.
Dr. Lauriston E. Shaw, London.
Prof. Ralph Stockman, Glasgow.
Dr. W. E. Thomas, Ystrad-Rhondda.
Dr. Norman Walker, Edinburgh.
Prof. G. Sims Woodhead, Cambridge.

Dr. D. J. Mackintosh, M.V.O., Glasgow, has been appointed as one of the representatives of hospital authorities.

Dr. R. C. Buist, of Dundee, has also been placed on the Joint Advisory Committee from the Scottish Advisory Committee.

(e) *Medical Members of English Advisory Committee.*

48. In addition to the above-mentioned members of the Joint Advisory Committee who reside in England, the following medical practitioners are members of the English Advisory Committee:—

Dr. G. C. Belcher, Birmingham.
Dr. A. Helen A. Boyle, Brighton.
Mr. A. Crook, Norwich.
Dr. A. Hamilton, Luton.
Mr. M. St. L. Hatford, London.
Dr. A. Latham, London.
Dr. R. A. Lyster, Winchester.
Miss M. C. Murdoch, Hull.
Sir Shirley F. Murphy, London.

(f) *Medical Members of Scottish Advisory Committee.*

49. In addition to those medical members of the Joint Advisory Committee who reside in Scotland, the following practitioners are members of the Scottish Advisory Committee:

Dr. D. Elliott Dickson, Lochgelly.
Dr. G. B. Livingston, [illegible]
Dr. J. E. Moorhouse, Stir[illegible]

(g) *Medical Members of Welsh Advisory Committee.*

50. In addition to Drs. E. J. Maclean and W. E. Thomas, who are members of the Joint Advisory Committee, the following practitioners are members of the Welsh Advisory Committee:—

Dr. J. E. P. Davies, Llanelly.
Dr. Hugh Jones, Dolgelly.
Dr. H. A. Latimer, Swansea.
Mr. J. D. Lloyd, Chirk.
Dr. W. C. Mulligan, Abersychan.
Dr. D. Naunton Morgan, Gilfach Goch.
Dr. J. D. Jenkins, Pentre.

(h) *Medical Members of Irish Advisory Committee.*

51. The following medical practitioners are medical members of the Irish Advisory Committee:—

Nominated by the Conjoint Committee of the British Medical Association and the Irish Medical Association:—

Dr. J. S. Darling, Lurgan.
Dr. T. Donelly, Dublin.
Dr. T. B. Costello, Tuam.
Dr. J. Power, Cahir, Tipperary.

Nominated by the Commissioners:—

The Rt. Hon. M. F. Cox, M.D., Dublin.
Dr. P. T. O'Sullivan, Cork.

Meetings of Advisory Committee.

52. The medical members of the Advisory Committees have met on four occasions, May 10th, May 17th, May 31st, and June 11th.

The first two occasions were meetings of the whole Joint Advisory Committee, medical and otherwise. On the other occasions the medical members only, of all the Advisory Committees, were called together to discuss purely medical matters, and it is understood that the suggestions made at these meetings will be placed before the lay members of the Advisory Committee for their consideration, subsequent to which a meeting or meetings of the full Advisory Committee will be held.

Conferences between the Medical Members of the Advisory Committee appointed by the British Medical Association and the other Medical Members of the Advisory Committees.

53. Previous to each meeting of the Advisory Committee, a joint Conference of all the medical members has been held on the invitation of the Association, when the Agenda for the forthcoming Advisory Committee Meeting was discussed.

Work of the Advisory Committee.

54. The work of the Advisory Committee up to now has consisted in the discussion of the general principles underlying the administration of medical benefit under the Act, preparatory to the drafting of Regulations thereon. Opportunity has been taken to place before the Commissioners the views of the Association on the various points at issue, and details as to the various Regulations which the State Sickness Insurance Committee decided must be framed if the demands of the profession were to be secured, have been placed in the hands of the Commissioners. (See Appendix (G), page 36.) At the last meeting of the medical members of the Advisory Committees it was proposed that a small medical Sub-committee consisting of ten members—half to be appointed from the medical members of the Advisory Committee selected by the Commissioners and half from the members of that Committee appointed by the Association—should be appointed to assist the Commissioners in the actual drafting of Regulations. Accordingly, the following members have been suggested by the Association for appointment upon any Sub-committee which shall be set up for this purpose:—

Mr. T. Jenner Verrall.
Dr. R. M. Beaton.
Mr. James Neal.
Mr. D. E. Todd.
Mr. E. B. Turner.

Public Medical Service.

55. In connection with the consideration of Minute 54 (Organisation of Profession), careful consideration has been given to the following Minute 59 of the Special Representative Meeting, February, 1912:—

Minute 59.—Resolved: That the Council be instructed to direct the attention of Divisions to the desirability of preparing a scheme for a Public Medical Service to be administered by the medical profession in each insurance area;

and also to the Rules of various Public Medical Services established throughout the country. Suggestions as to Schemes were received from various parts of the country and were considered.

55. Much difficulty was experienced in drafting schemes, partly owing to the great pressure of other work upon the Committee, and partly owing to difficulties of a legal description which were encountered.

57. Two Schemes (one based upon a capitation basis of payment and the other based upon a payment per attendance system) were, after careful revision by the Solicitor of the Association and Counsel, finally published in the Supplement to the "Journal" of June 8th, 1912. The attention of Divisional and Provisional Medical Committees was drawn to the Schemes, and Divisions were informed that the Schemes were issued for their consideration, and that expressions of opinion with respect to them would be considered, preparatory to a Report thereon being placed before the Annual Representative Meeting.

58. Many criticisms, some of them of a detailed description, have been received, and the Council is of opinion that, there being insufficient time for a complete report dealing with these, the whole matter should be discussed at the forthcoming Representative Meeting. A digest of the criticisms received will be placed before the meeting.

Insurance Defence Fund.

59. Since the Special Representative Meeting in February every opportunity has been taken to bring home to the profession the claims of this Fund upon them. The Council, while glad to report that in many districts an active canvass has resulted in considerable additions to the Fund, is of opinion that up to the present time the profession as a whole has not realised that in order to meet all possible future emergencies a very large guarantee is necessary *now*. A full report of the present condition of the Fund will be presented to the Representative Body.

60. Certain criticisms have been made as to the constitution of the Fund, the most common being that it should have been divided into two parts, one for administrative and campaign purposes, the other for the purposes of compensation. The question has been carefully considered, and the Council came deliberately to the conclusion that such a division would not be wise, because it might encourage subscribers simply to put their names down for a remote contingency, and to refrain from subscribing to the administration fund, the needs of which are, of course, at present the most urgent. The Council must impress upon members of the profession that the work of organising the profession is an expensive business, and one which cannot be undertaken within the limits of the present very moderate subscription to the Association, and that the expenses of such organisation, in the face of a danger which threatens the whole profession, should be shared by all. Provisional Medical Committees which up to the present have not pressed this fund on the attention of the local profession are urged at once to do so. A copy of the form of guarantee to the fund is appended (See Appendix III, page 42).

61. Among other factors which have been responsible for the slow growth of the Defence Fund is to be specially noticed a circular issued to all members of the profession by the Medical Federation, Limited. This contained statements which the Council considered to be open to the interpretation that it had no power to administer the Central Insurance Defence Fund. In order to clear up the legal aspects of the case, Counsel's opinion was taken and was printed in the Supplement to the "British Medical Journal" of March 9, page 570. (Also see Appendix D, page 43). This opinion makes it clear that the Council of the Association is quite at liberty to administer such a fund on behalf of the profession. It must be clearly understood that the fund is quite separate from the ordinary funds of the Association, and is administered in trust by the Council of the Association. A statement as to the expenditure already incurred on the special work of organisation of the profession in relation to the National Insurance Act will be found in the Annual Report of Council, page 451 of the Supplement to the Journal of May 11th, 1912.

Administration of the National Insurance Act.—Provisional Insurance Committees.

62. At the interview between the State Sickness Insurance Committee and the Chairman and Deputy Chairman of the National Health Insurance Committee, England, alluded to on page 5, it was mentioned that the Commissioners proposed to set up Provisional Insurance Committees in July for the purpose of dealing with such work connected with the National Insurance Act as required to be dealt with by such Committees, and could not wait until later, and it was suggested that the Association should assist in the formation of these Committees by forwarding names of suitable medical practitioners who would serve upon the Committees.

63. Subsequently the following communication was received from the Commissioners, and considered by the Committee at its meeting on May 30th, namely:—

National Health Insurance Commission (England),
Buckingham Gate,
London, S.W.,
May 24th, 1912.

Sir,

I am directed by the National Health Insurance Commission (England) to state that they have had under consideration the question of constituting Insurance Committees for counties and county boroughs in England, and they would be glad to have the assistance of the British Medical Association in regard to the appointment of Medical Members of these Committees.

Section 59 of the Act provides that an Insurance Committee shall be constituted for every county or county borough to be composed as follows:—

(a) Three-fifths to represent insured persons resident in the county or county borough who are members of approved societies and who are deposit contributors, in proportion to their respective members.

(b) One-fifth to be appointed by the council of the county or county borough.

(c) Two members to be elected in manner provided by regulations made by the Insurance Commissioners, either by any association of duly qualified medical practitioners resident in the county or county borough which may have been formed for that purpose under such regulations, or if no such association has been formed, by such practitioners.

(d) One, two, or three (according to the size of the Committee) medical practitioners to be appointed by the council of the county or county borough.

(e) The remaining members to be appointed by the Insurance Commissioners.

The final constitution of Insurance Committees cannot be determined until the number of insured persons resident in the county or county borough and the respective number of members of approved societies and deposit contributors has been ascertained. Inasmuch as no person can enter into insurance before July 15th, it is evident that special arrangements must be made if Insurance Committees are to be established by that date.

The Commissioners accordingly propose to exercise the powers conferred on them by Section 78 of the Act, which enables them to do anything which appears to them necessary or expedient for the establishment of Insurance Committees, and in pursuance of these powers to make arrangements for the setting up of Provisional Committees which will hold office until Committees can be regularly constituted in accordance with the provisions of the Act.

The Commissioners feel assured that the British Medical Association will share their view that for many reasons it is important that the medical members of each Provisional Insurance Committee should be included in its membership from the outset, when many matters of great importance from the medical point of view and that of the Public Health will necessarily arise for consideration, *e.g.*, the making of arrangements for sanatorium benefit.

As the short amount of time available between now and July 15th will not permit of the selection of medical members of the Committees in precisely the manner prescribed by Section 59 (2) (c), the Commissioners have come to the conclusion that the most convenient arrangement in the circumstances would be for the British Medical Association, if they are willing to do so, to assist the Commissioners by obtaining from the various district or Provisional Committees of the Association the names of two representatives for each Insurance Committee.

The Commissioners would be glad to receive the complete list of the names and addresses of the gentlemen thus selected not later than June 14th, and the Commissioners would thereupon appoint them upon the Committee.

A list of the Administrative Counties and County Boroughs for which Insurance Committees are to be set up is enclosed for your information.

I am to add that the Commission are adopting this arrangement of obtaining from a central representative body suitable names for inclusion on each Insurance Committee throughout England, in regard to the other main elements of each Insurance Committee, *e.g.*, the large Friendly Societies, the Trade Unions, and the Industrial Assurance Companies that are likely to be approved societies under the Act, and it is hoped in this manner to secure a list of thoroughly suitable names for the composition of these first and strictly provisional Insurance Committees, so that the meetings of the Committees may commence at the beginning of July.

I am, Sir,
Your obedient Servant,
(Signed) Robert L. Morant.

The Secretary,
British Medical Association,
429, Strand, W.C.

64. The Committee felt the decision on this matter to be of grave importance. On the one hand, it was evident that the Act was about to come into force, and that those responsible for its administration would at once proceed to deal with the subject of Sanatorium Benefit in which the profession naturally takes the greatest interest; on the other hand, it seemed obvious that, even if no medical practitioners appointed as members of such Committees actually commenced their work until after the Representative Meeting had approved their appointment, and even if the scope of their work were limited to administration of Sanatorium benefit, acquiescence in the course suggested might possibly be mistaken by the public as a sign that the profession had consented to take its part in working the Act. In any case, the Committee felt that its course was decided by the terms of the following Minute 78 of the Special Representative meeting of February last:—

> *Minute* 78.—Resolved: That it be an instruction to the Council to take all possible steps to ensure that no member shall take any office or work under the National Insurance Act, other than that of the Advisory Committee, until such time as the minimum demands of the profession are conceded in the Regulations or an amending Act.

65. This decision of the Committee was conveyed to the Commissioners in the following communication:—

Offices of the British Medical Association,
Medical Department,
429, Strand,
London, W.C.
May 31st, 1912.

Sir,

I am directed by the State Sickness Insurance Committee of the British Medical Association to inform you that they had before them yesterday your letter of the 24th inst., asking for the assistance of the British Medical Association in regard to the appointment of medical members of the proposed Provisional Insurance Committees.

The Committee instructs me to say that, acting under decisions of the Special Representative Meeting, February, 1912, it is impossible for the Association to assist [illegible] in the manner indicated, namely, by [illegible] Provisional Medical Committees [illegible] names of representatives for the suggested Provisional Insurance Committees, until such time as the Association is satisfied that the minimum demands of the medical profession in regard to the Act are, or will be conceded.

I am, Sir,
Your obedient Servant,
(Signed) Alfred Cox,
Medical Secretary.

Sir Robert L. Morant,
Chairman,
National Health Insurance Commission (England),
Buckingham Gate, S.W.

66. In consequence of the opinion expressed by the Committee and brought to the notice of the profession through the Divisions and Provincial Medical Committees, and through the "Journal," it was resolved that in most cases medical practitioners as such [illegible] nominations upon the Provisional Insurance Committees.

Position of Practitioners who are Members of County and County Borough Councils.

67. The attention of the Committee was, however, drawn to the exceptional position of medical practitioners who are members of County or County Borough Councils, and who wished, as public representatives and not as medical practitioners, to take their share in the working of these Provisional Insurance Committees. Anxious consideration was given to this aspect of the case, with the result that the following resolution was carried:—

> *Minute* 504.—Resolved: That the Honorary Secretary of the ..... Provisional Medical Committee be informed that, so far as invitations from the Commissioners are concerned, the decision of the Committee was conveyed to the Commissioners in a letter of May 31st, published in the "British Medical Journal" of June 8th, but that, so far as practitioners are concerned who are members of County or County Borough Councils, and who are appointed by their Councils *qua* members to fill positions which could equally well be filled by laymen, and not *qua* medical practitioners to fill positions which could only be filled by medical practitioners, the Committee raises no objection to the acceptance of such appointment.

68. This decision was also brought to the notice of Honorary Secretaries of Divisions and Branches and Provisional Medical Committees.

Position of Medical Officers of Health as Members of Provisional Insurance Committees.

69. The specific question having been raised from several quarters as to whether there was any objection to a Medical Officer of Health becoming, at the request of his Council, a member of a Provisional Insurance Committee, the Committee passed the following resolution:—

> Resolved (one dissentient): That the Member in question be informed that the Committee considers his circumstances are not such as to justify his becoming a member of a Provisional Insurance Committee, but that, as provided for in Minute 80 of the Special Representative Meeting, February, 1912, a Medical Officer of Health is not precluded "from giving advice to an Insurance Committee in his official capacity."

Action as Regards Various Minutes of the Special Representative Meeting, February, 1912.

Manifesto as to the Position of the Profession in Relation to the National Insurance Act.

70. In accordance with the instruction contained in Minutes 68 and 74 of the Special Representative Meeting the Committee has on several occasions had before it the question of a Manifesto to the public, but has found itself unable to decide upon the lines which such a document should take. The chief difficulty in regard to this matter is to decide when such a document could most effectively be placed before the public. If it had been issued during the past two or three months the effect would have disappeared before definite action could be taken by the profession as regards working the Act. If the profession is driven to a fight, it appears to the Council that the proper time to issue the Manifesto will be when negotiations have been definitely broken off with the Commissioners. The Council is of opinion that the Representative Body should renew its instructions as regards the Manifesto, and leave to the Council the decision as to the nature of the document and the correct time for its issue.

Question of Medical Insurance Committee for England.

71. Minutes 70, 73 and Motions 33 (*a*), 34, and 35 contained in Minute 76 of the Special Representative Meeting, February, 1912, with respect to the formation of a Medical Insurance Committee for England, have received full consideration.

72. Having received a report that a Joint Meeting was being held on March 21st, 1912, of representatives of the English Royal Colleges of Physicians and Surgeons, the Apothecaries Society and the Universities, for the purpose of considering the question of the relation of the Insurance Act to the medical profession, the Committee expressed the

opinion that it would welcome the co-operation of the Joint Committee of the Licensing Bodies of England in the carrying out of the campaign of the profession as regards the Insurance Act, and that the best form such co-operation could take would be the holding of a conference or conferences for discussing any matter as and when occasion arose. This opinion was conveyed to the Joint Meeting.

73. The Council is of opinion that the present understanding between the two Bodies is satisfactory and is probably more effective than a more formal co-operation would be.

REMAINDER OF THE RESOLUTIONS OF THE SPECIAL REPRESENTATIVE MEETING.

74. The resolutions of the Special Representative Meeting of February last, with the exception of those specifically dealt with in the earlier part of this Report, had reference mainly to matters which it was intended should become the subject of Regulations. Each of the points has been carefully considered by the Committee, and on most of them resolutions were put before the Commissioners through the Advisory Committee. The Council appends the document which has been handed to the Commissioners, and which contains the resolutions of the Committee bearing upon these and other points which it is hoped to see embodied in the Regulations points. (See Appendix (G), page 36).

POSITION OF MEMBERS OF THE MEDICAL PROFESSION SO FAR AS CONCERNS CLUB AND FRIENDLY SOCIETY APPOINTMENTS.

75. Requests having been received from time to time from members of the Association for advice as regards various questions concerning the position of members of the profession who hold club appointments, in view of these clubs becoming Approved Societies, the opinion of the Solicitor of the Association was obtained upon several specific queries. On this opinion (see Appendix (K) page 43) advice has been given to many inquirers.

Sanatorium Benefit.

76. The Council is still awaiting definite information from the Commissioners as to the working of Sanatorium Benefit, but in the meantime steps of the greatest significance have been taken by various authorities, which the Representative Body must take into careful consideration, and on some of which the Council makes definite recommendations.

INTERIM REPORT OF TUBERCULOSIS COMMITTEE.

77. On March 8th, 1912, the Acting Medical Secretary received the following letter:—

Local Government Board,
Whitehall,
March 7th, 1912.

Sir,

The Chancellor of the Exchequer has appointed a Committee to report at an early date upon the consideration of general policy in respect of the problem of tuberculosis in the United Kingdom, in its preventive, curative, and other aspects, which should guide the Government and local bodies in making or aiding provision for the treatment of tuberculosis in sanatoria or other institutions, or otherwise.

Mr. Astor, the Chairman of the Committee, directs me to enquire whether you have any views which you would wish to submit to the Committee in regard to the subject of the enquiry, and, if so, to request that you would be so good as to submit them in the form of a brief Memorandum. Unless any questions should arise on your memorandum which the Committee wish to discuss with you, Mr. Astor would not propose to trouble you to come before the Committee.

Mr. Astor would be glad if any Memorandum which you may propose to submit could reach the Committee within the next fortnight.

I am, Sir, your obedient servant,
(Signed) F. J. WILLIS,
Secretary to the Committee.

A. Cox, Esq., M.B.

78. The Acting Medical Secretary assumed that the letter, though addressed to him by name, was sent to him in his official capacity, and was in effect a request for a statement of the opinion of the Association. A memorandum was accordingly drafted and was amended by the Committee. In the meantime, information was received to the effect that the Tuberculosis Committee was not attempting to take the opinion of organised bodies of the profession, but had simply asked for statements from persons who were likely to have special knowledge. Instructions were given to the Acting Medical Secretary to send in the Memorandum together with an expression of regret that in constituting the Tuberculosis Committee the Chancellor of the Exchequer had not seen fit to appoint on it some representative general practitioners, and to state that the Memorandum had been placed before a Committee of the Association and expressed the opinion of that Committee. The Memorandum will be found in Appendix (L), page 44, and the following is a copy of the letter which accompanied it:—

March 30, 1912.

Sir,

I assumed that the invitation which I had the honour to receive from the Chairman of the Tuberculosis Committee on March 7th was addressed to me in virtue of my official position as Acting Medical Secretary of the British Medical Association.

Taking this to be the case, I placed a Memorandum before a Committee of the Association, which, after some modifications, was adopted, and thus may be taken to represent the views of the Association, and not merely my own.

The Committee, in considering the Memorandum, instructed me to express their regret that in constituting the Tuberculosis Committee the Chancellor of the Exchequer had not seen fit to appoint on it some representative general practitioners.

Holding the views which it does as to the place of the general practitioner in any scheme professing to deal in a comprehensive fashion with the problem of prevention and treatment of tuberculosis, the Association is of opinion that no Committee whose duty it is to consider such a subject could be said to be complete without such representatives.

I am, Sir, yours faithfully,
(Signed) ALFRED COX.
Acting Medical Secretary.

The Secretary,
Tuberculosis Committee,
Local Government Board, S.W.

79. The Secretary of the Committee replied, stating that the letter and Memorandum would be placed before the Committee, and it is obvious from the digest of the Interim Report of the Departmental Committee on Tuberculosis which was published in the "British Medical Journal" of May 4th, that the Memorandum received the attention of the Committee.

QUESTION OF POSTPONEMENT OF SANATORIUM BENEFIT.

80. The Committee being greatly concerned with the facts (i.) that, having regard to the Minute 78 of the Special Representative Meeting, February, 1912, practitioners could not accept appointment upon the Provisional Insurance Committees which would have to deal with the formation of schemes for the administration of Sanatorium Benefit: and (ii.) that it had been definitely stated that Sanatorium Benefit would come into force on July 15th next, addressed the following inquiry to the Commissioners:—

Offices of the British Medical Association,
Medical Department,
429, Strand, W.C.,
June 18th, 1912.

Sir,

Sanatorium Benefit.

I am directed to inquire whether there is any likelihood of the Association learning at an early date of the arrangements that are proposed to be made by the Commissioners with respect to Sanatorium Benefit. The only document in our possession which seems to give any indication of the lines on which Sanatorium Benefit will be administered is the Interim Report of the Tuberculosis Committee, but my Committee will be glad to have some more definite information as to the intentions of the Commissioners.

I am instructed also to ask whether there is any possibility of the date on which Sanatorium Benefit will come into force being postponed in order that the arrangements proposed may be considered by the Representative Meeting of the Association on July 19th and following days. I should be glad of an answer at your earliest convenience.

I am, Sir, your obedient servant,
(Sgd.) ALFRED COX.
Medical Secretary.

The Secretary,
National Health Insurance Joint Committee,
Buckingham Gate, S.W.

81. To this the following reply has been received:—

National Health Insurance Commission (England),
Buckingham Gate,
London, S.W.,
27th June, 1912.

Sir,

In reply to your letter of the 18th instant regarding Sanatorium Benefit, I am directed by the National Health Insurance Commission (England) to draw your attention to the reply given by Mr. Masterman in the House of Commons on the 17th of April last and to state that the provisions of the National Insurance Act regarding Sanatorium Benefit will come into operation as from the 15th July, the date of the commencement of the Act.

The arrangements to be made for the administration of Sanatorium Benefit are at present under consideration, and as the Chairman of the Commission intimated at the meeting of the Medical Members of the Advisory Committee on the 11th inst., the Commissioners will endeavour to arrange a meeting of the Medical Members of the Advisory Committee to consider those arrangements in the course of a few days. In the meantime I am to state that, while the Commissioners concur generally in the suggestions made by the Departmental Committee on Tuberculosis in their recently issued interim Report, some time must necessarily elapse before schemes on the lines suggested can generally be brought into operation, and the arrangements to be made for the administration of the benefit during the months immediately following the commencement of the Act must necessarily, therefore, be in most cases of a provisional and temporary character only.

I am, Sir,
Your obedient Servant,
(Signed) JOHN ANDERSON.

The Medical Secretary,
British Medical Association,
49, Strand, W.C.

MEDICAL APPOINTMENTS FOR ADMINISTRATION OF SANATORIUM BENEFIT.

82. It was brought to the notice of the Committee that many County and County Borough Councils were preparing schemes for the administration of Sanatorium Benefit, some of which will involve the employment of whole-time practitioners, while others will necessitate the employment of general practitioners. In regard to this question the Committee felt that the terms of Minute 78 of the Special Representative Meeting of February last were imperative, and that until the Association was satisfied that its demands as regards the Act as a whole had been accepted, or until a further Representative Meeting had rescinded or modified that Resolution, no loyal member of the Association was at liberty to accept any appointment which would facilitate the working of the Act. The Committee accordingly passed the following resolution:—

> That, in view of Minute 78 of the Special Representative Meeting, February, 1912, no medical appointments be accepted for the administration of Sanatorium Benefit until such time as the minimum demands of the profession are conceded.

The above decision was forwarded to the Honorary Secretaries of Divisions and Branches and Provisional Medical Committees in England, Scotland, and Wales.

83. The Committee also caused the following communication to be sent to all Medical Officers of Health of County and County Borough Councils in England, Scotland, and Wales:—

British Medical Association,
Medical Department,
429, Strand,
London, W.C.,
June 25th, 1912.

State Sickness Insurance Committee.

Dear Sir,

You are doubtless aware that in February last, under instruction from the Special Representative Meeting of the British Medical Association, the Association forwarded to the National Health Insurance Commissioners a statement as to the minimum demands of the profession in connection with the medical benefits of the National Insurance Act. Up to the present no detailed reply has been received from the Commissioners. At the Special Representative Meeting in February last, the following resolutions were carried:—

> "That it be an instruction to the Council to take all possible steps to ensure that no member shall take any office or work under the National Insurance Act, other than that of the Advisory Committee, until such time as the minimum demands of the profession are conceded in the Regulations or an amending Act."
>
> "That the foregoing resolution (Minute 78) shall not preclude a Medical Officer of Health from giving advice to an Insurance Committee in his official capacity."

From the terms of these resolutions you will realise that, with the exception of the proviso made on behalf of Medical Officers of Health, Members of the Association are debarred for the present from accepting any office or work under the National Insurance Act. It is hoped that before the commencement of the Annual Representative Meeting on July 19th next, a definite answer will have been received from the Commissioners which will satisfy the Association and enable it to offer its cordial co-operation in working the medical benefits of the Act. In the meantime, however, it is felt to be most essential that medical men should refrain from in any way assisting in the working of the Act.

The State Sickness Insurance Committee of the Association has recently had under consideration the question of the filling of medical appointments for the administration of sanatorium benefit. As you are fully aware, Medical Officers of Health are at the present time engaged in formulating schemes and advising their Councils as to the administration of this benefit.

In view of the fact that within a very short time some decision must be arrived at which will definitely settle the relation of the profession to the Insurance Act, it is hoped that Medical Officers of Health will use their influence with their Councils to postpone for the present steps being taken to fill any medical appointment for the administration of sanatorium benefit. The filling of such appointments at the present time is bound to be unsatisfactory, as a large number of the best men will feel in honour bound not to apply, and in addition to that it must be apparent that a delay of a few weeks cannot make any serious difference in the position. The Committee quite understands your limitations in this matter as a public servant, but trusts that you will use all the influence you can in the direction above mentioned, not only in the interests of your profession, but in the interests of the public.

I am, yours faithfully,
ALFRED COX,
Medical Secretary.

To Medical Officers of Health
Of Counties and County Boroughs in England,
Scotland, and Wales.

The responses to this inquiry, though not up to the present time numerous, have been exceedingly encouraging.

GENERAL PRINCIPLES OF ADMINISTRATION OF SANATORIUM BENEFIT.

84. The Council has considered the Interim Report of the Departmental Committee on Tuberculosis, and, in view of the frequent references which are made in that Report to the necessity for early action in the way of setting up dispensaries and appointing officers, is of opinion that the Association should adopt recommendations on this subject at the earliest opportunity.

Danger of Misuse of Medical Charities.

85. Several indications are given in the Interim Report of an intention to make use of voluntary hospitals and other charities in connection with Tuberculosis Schemes, and it is evident that the Association will have to exercise considerable pressure in order to prevent the imposition on the medical staffs of voluntary hospitals and other charities of gratuitous medical work done on behalf of State-aided patients, such a step being, of course, in direct opposition to the policy of the Association.

86. The Council suggests that efforts be made to prevent the use of medical charities for the provision of medical attendance on persons in receipt of Sanatorium benefit, except on terms which would allow of the payment of the practitioners who give the treatment. Where voluntary institutions of this kind are used for the purpose of treating insured persons or their dependants in receipt of sanatorium

benefit, the accounts of that institution, so far as concerns such treatment, should be kept entirely separate from the ordinary accounts of the institution.

87. The Council is not quite clear as to the extent to which it is intended that free treatment should be given under the various kinds of schemes to patients irrespective of their means, for in several portions of the Interim Report references are made to the fact that these Tuberculosis schemes are to provide for the "whole community." The Council would urge that all possible steps should be taken, in dealing with any schemes for the treatment of tuberculosis, to ensure that well-to-do people shall not obtain treatment on terms which are primarily intended for insured persons or persons of that class. There is also a danger that if a scale of fees be fixed for attendance upon those "recognised" for sanatorium benefit, attempts may be made to apply the same scale of fees for treatment of persons who are in a much superior financial position, under the pretext of including all the community in a scheme or schemes for the extermination of Tuberculosis.

Position of the General Practitioner.

88. The Council would point out that, though in one or two parts of the Interim Report of the Departmental Committee references are made to the necessity for the employment of the general practitioner, a reading of the Report as a whole leaves considerable doubt as to how the services of the general practitioner are to be utilised, the general tendency seeming to be in the direction of the employment of whole-time officers in various capacities. On page 14 of the Interim Report, fourth line from top, the following sentence may well be read as meaning that it is the intention in rural districts to carry out treatment by means of whole-time officers:—

> "In other rural neighbourhoods no accommodation will be found necessary, as the Tuberculosis officer will himself call upon patients in their homes."

89. The Council makes various recommendations upon this point which, in its opinion, will, if adopted, tend to make quite clear the opinion of the Association on the proper relation of the general practitioner to these schemes.

Employment of Nurses.

90. In several places in the Interim Report the employment of nurses is laid down as an integral and important part of the Tuberculosis Scheme. To this, of course, no exception can be taken if a nurse is kept in her proper position, but in Section 38 of the Report, last two lines, page 22, the following sentence leads the Council to suggest that this aspect of the question requires great watchfulness:—

> ". . . Particular attention should be paid to the training of county and district nurses in the treatment of tuberculosis and in securing the co-operation of the existing nursing associations."

As will be seen in the recommendations, the Council is of opinion that the model rules already adopted by the Association for the control of nurses should, so far as possible, be applied to nurses employed in connection with Tuberculosis Schemes.

Representation of Profession on various bodies connected with the Scheme.

91. There are two bodies which occupy a position of considerable importance in the Interim Report in relation to the administration of the Schemes, (a) the Consultative Committees, consisting of members of the Insurance Committees and of the County Council, and (b) Care Committees.

(a) Consultative Committees.

92. The Interim Report suggests that the County Councils should agree to be guided in matters appertaining to the staffing and internal management of the dispensaries by Consultative Committees, on which, in addition to the members appointed by Insurance Committees and County Councils, representatives of voluntary bodies specially interested in tuberculosis might, it is suggested, be given representation. The Council is of opinion that it is most important that representatives of the profession, elected by the Local Medical Committees, should also have seats upon those Consultative Committees.

(b) Care Committees.

93. On page 14 of the Interim Report it is suggested that: "the effectiveness of the work of the dispensary can be greatly increased by the organisation of voluntary care committees formed of representatives from the Local Authorities, Boards of Guardians, Insurance Committees, and from all charitable and social work organisations in the district."

It is also suggested that in connection with dispensary work in rural districts

> "it may be found of assistance, where the patients are willing, to have a system of voluntary correspondents who report from time to time with regard to patients in the several districts served by the dispensary."

It is obvious that there are here possibilities of irresponsible interference with medical treatment, and the Council would suggest that it is important that the composition and duties of these Care Committees should be carefully watched, and that the profession should have representation upon them.

Suggested formation of Tuberculosis Dispensaries by the local profession.

94. On page 17, section 25, of the Interim Report it is stated that, so far as possible, existing voluntary institutions should be utilised, provided that they fulfil the following conditions:—

> (1) That they be approved as suitable by the Local Government Board;
> (2) That they fall into the general scheme for the prevention and treatment of tuberculosis;
> (3) That they be subject to inspection by the Local Government Board whenever considered necessary.

95. It has been suggested to the Council that there is here the possibility of an extension of the Public Medical Service Scheme of the Association, inasmuch as the local medical practitioners might form a tuberculosis dispensary staffed by themselves, which might be recognised by the Local Government Board. There would probably be difficulties in the way of securing recognition for dispensaries staffed and managed by the local profession, but the Council places the suggestion before the Representative Body for its consideration.

Treatment of Tubercular School Children.

96. The general bearing of the question of the treatment of tubercular school children upon the policy of the Association with respect to the medical treatment of school children found, upon medical inspection, to be defective, needs careful consideration. It is most important that the suggestion made in paragraph 30 of the Interim Report, namely, that use should be made of the accommodation in voluntary and other institutions already existing for cases of tuberculosis in children should be watched.

97. It appears to the Council that there is no reason why the treatment of tubercular children should not be dealt with through school centres staffed by the local practitioners on the principles already laid down by the Association. A recommendation on this point is made at the end of this Report. At any rate, there is no excuse for the gratuitous treatment of school children or others in receipt of sanatorium benefit.

Question of Tubercular Patients who are not recognised for the Purposes of Sanatorium Benefits.

98. It appears to the Council that, owing to the want of sufficient funds, there will be many cases which, though diagnosed as suffering from tuberculosis, will be unable to obtain sanatorium benefit, and there is a danger that the profession may be expected to attend insured persons so suffering under the arrangements for ordinary medical attendance and treatment. This would, of course, be in absolute contradiction of the promises which have been made to the profession, and the Council submits that as soon as a case has been diagnosed by a practitioner and the diagnosis confirmed by the tuberculosis officer, it should not be liable to be treated in connection with ordinary medical benefit. If sanatorium benefit is not available the case should be dealt with as an extra under medical benefit.

Position of Local Insurance Committees.

99. Finally, it appears to the Committee that in connection with these tuberculosis schemes there is bound to be considerable rivalry between the public health section of the

profession and the general body of practitioners. Such rivalry may be unfortunate, but appears to the Council to be inevitable in view of the general tendency of the Interim Report and of the fact that the administration of tuberculosis schemes is to be largely in the hands of the sanitary authorities, whose leanings towards the employment of whole-time officers under their own control are well known. In view of this probability the Council would urge that if the answer to the demands of the Association by the Commissioners is considered by the Representative Body to be favourable, steps should at once be taken to place suitable medical men on the Provincial Insurance Committees, and to obtain the sympathies of these committees for the fullest use of the local practitioner in connection with all tuberculosis schemes.

Recommendations.

The Council recommends:—

Tuberculosis Dispensary Staff.

(**B**) That the Chief Tuberculosis Officer should be a whole-time officer and confine himself to diagnosis and consultative work. The rest of the staff of the Dispensary should, if possible, be formed of local medical practitioners serving on a rota.

Qualification for receipt of attention at Tuberculosis Dispensaries.

(**C**) That those requiring attention at the Dispensary should be introduced only on the recommendation of a medical practitioner actually in attendance upon the patient.

Free Choice of Doctor in Domiciliary Attendance

(**D**) That there should be free choice of doctor by patient and of patient by doctor in all cases where domiciliary attendance is given.

Separation of Dispensary Service from that of Medical Charity

(**E**) That no Tuberculosis Dispensary should be opened or beds be provided for treatment of those in receipt of Sanatorium Benefit at a Voluntary Hospital or Infirmary, except on the condition that the organisation is entirely independent of that of the Voluntary Hospital or Infirmary, the accounts of the departments being kept separate; and that the services of all medical practitioners are paid for.

Provision for Treatment of Children.

(**F**) That the provision to be made in any district for the treatment of children found to be suffering from tuberculosis should be in accordance with that scheme of the Association for the treatment of school children found defective on medical inspection which has been approved by the local medical profession.

Conditions of Employment of Nurses

(**G**) That nurses engaged in giving domiciliary attendance should be subject to the conditions of service approved by the Association for the conduct of nurses engaged by nursing associations in so far as these are applicable. (*See* Sub-Appendix, page 42.)

Whole-time Tuberculosis Officer to act only as Consultant in Domiciliary Attendance.

(**H**) That domiciliary attendance should be given by the tuberculosis officer, or by any whole-time assistant, only as a consultant to the practitioner in attendance.

Representation of Profession on Committees.

(**I**) That the local medical practitioners should have adequate representation, by means of practitioners elected by the local Medical Committee, on Consultative Committees having control of Dispensaries, and on Voluntary Care Committees.

Reports from Lay Persons.

(**J**) That the reports to be obtained from Voluntary Care Committees and nurses should be confined to such subjects as are not included amongst the duties of the medical attendant.

Treatment of Tubercular Patients who are not recognised for the Purpose of Sanatorium Benefit.

(**K**) That a case of tuberculosis diagnosed as such by a practitioner and confirmed by a tuberculosis officer should not be liable to be treated in connection with ordinary medical benefit. If sanatorium benefit is not available the case should be treated as an extra under medical benefit.

Salaries of Whole-time Medical Officers.

(**L**) That the commencing salaries for whole-time Medical Officers engaged in the Tuberculosis Service should be for Junior or Assistant Whole-time Medical Officers not less than £300 per annum and for Senior Whole-time Officers not less than £500 per annum. These salaries in all cases must be exclusive of travelling and other official expenses.

Tenure of Office

(**M**) A Medical Officer engaged in the Tuberculosis Service who by the terms of his appointment is restricted from engaging in private practice as a medical practitioner, shall not hold office nor be appointed for a limited period only, and shall be removable by the recognised central authority, and not otherwise.

Remuneration of Part-time Officers.

(**N**) That the payment to be received by medical practitioners appointed on a rota, or otherwise, to give medical attendance at the Tuberculosis Dispensary should be at a rate of not less than £65 per annum for an attendance of two hours per week.

Remuneration for Domiciliary Attendance.

(**O**) That the payment to be made to medical practitioners for domiciliary attendance on patients certified to be suffering from tuberculosis shall be on a scale of fees and not by capitation.

The effect of the Insurance Act upon the teaching of Clinical Midwifery.

109. The Council has had brought before it by the Section of Obstetrics and Gynæcology of the Royal Society of Medicine the detrimental effect which the Insurance Act may have upon the teaching of clinical midwifery. Clause 18 (1) of the National Insurance Act provides that a mother shall decide whether she shall be attended by a duly qualified medical practitioner or by a duly certified midwife, and shall have free choice in the selection of such practitioner or midwife. In connection with this must be taken the following Rules 13 (4) and (5) and 17 (1) of the Model Rules (B) recently issued by the Insurance Commissioners:—

Rule (13) 4.—A member (of an Approved Society) shall not be entitled to this benefit in respect of his wife, if she is an inmate of any of the institutions mentioned in the rule relating to hospitals.

Rule (13) 5.—The wife (or widow) of an insured member, in respect of whom this Maternity Benefit is payable must be attended in her confinement either by a duly qualified medical practitioner, or by a duly certified midwife, and shall herself select any person with either qualification for the purpose.

Rule 17 (1).—If an insured member is an inmate of any workhouse, hospital, asylum, convalescent home, or infirmary supported by any public authority or out of any public funds, or by a charity or voluntary subscriptions, or institution approved for the purposes of sanatorium benefit, his sickness or disablement benefit shall not be paid to himself, but if he has dependents the whole or part of it may be applied by the committee after consultation, when possible, with the member, in the relief or mainten-

amount of his dependents, and the balance or part thereof may be expended on surgical appliances or otherwise for his benefit;

101. Considerable difficulty has been experienced in reconciling the interests of the general practitioner in connection with the attendance upon parturient women in receipt of maternity benefit under the Act, with the necessity that medical students and pupil midwives shall obtain sufficient tuition in clinical midwifery. The Council is of opinion that women in receipt of maternity benefit cannot be regarded as fitting objects of charity, and that the only circumstances which would justify the treatment of such women by maternity hospitals would be those of difficulty or danger; recommendations on the subject are submitted for the approval of the Representative Body.

Recommendations.

(P.) That the number of women in receipt of maternity benefit under the National Insurance Act who shall be attended for teaching purposes by any recognised institution possessing a properly-equipped maternity department be no more than is necessary to furnish the actual numbers required in order that the medical students and pupil midwives connected with that institution may obtain certificates.

(Q.) That, as regards the extern departments, the institutions referred to in above Recommendation P should select and recognise local medical practitioners for the practical training of medical students and pupil midwives.

Part II.—Present Position of the Association with regard to the working of the National Insurance Act.

102. The most important practical point to be decided by the Annual Representative Meeting is, what action should be taken by the Association in view of the position created by the answer received from the Commissioners in reply to the demands of the Association as placed before the Commissioners in the letter of February 29th last.

103. The Council, in the time at its disposal, was unable to give full consideration to the letter of the Commissioners, but submits it to the Representative Body, together with the observations thereon made by the State Sickness Insurance Committee:

Commissioners' Letter.

National Health Insurance Joint Committee,
Buckingham Gate,
London, S.W.,
June 26th, 1912.

Sir,

(i.) I am directed to advert to the letter from the British Medical Association, dated May 31st, 1912, in which the Association inquired whether the Commissioners were able, and, in so far as they were able, were willing, to concede, in the Regulations to be framed for the administration of medical benefits under the Insurance Act, the points stated by the British Medical Association in its previous letter of February 29th last. In view of the important questions of policy raised by these letters, the Joint Committee have submitted the correspondence for the consideration of the Chancellor of the Exchequer, and he has directed that the following reply be sent.

(ii.) The reply of the Joint Committee to the letter of February 29th, has necessarily been postponed until the advice of the Advisory Committee on various points to be dealt with in Regulations could be obtained. Further, the Chancellor of the Exchequer has been materially assisted in his consideration of the subject by the explanations given by the State Sickness Insurance Committee of the British Medical Association, at their interviews with him on June 7th and 12th, respecting the interpretation to be placed upon certain of the demands stated in the letter of February 29th.

(iii.) Among other matters these explanations especially made clear that the demands quoted in the last-mentioned letter were in several instances originally adopted by a Meeting of the Association on June 1st, 1911; that these demands had reference to the National Insurance Bill in the form in which it was originally introduced into the House of Commons; and that this was the explanation of the fact that in several instances the Association, in its demands put forward on February 29th, 1912, appeared to be asking for concessions which had already been made by amendments adopted by the House of Commons and embodied in the Act.

Observations by Committee

104.

(Paragraph ii.) In the opinion of the Committee most, if not all, of the decisions conveyed in the present letter could have been laid before the Association at a much earlier date. After a careful perusal of the letter, it appears to the Committee that practically all the information which was necessary for the purposes of the present letter was in the hands of the Commissioners last February, and any information which has been gleaned by the Commissioners from the Advisory Committee or from the interviews with the State Sickness Insurance Committee, could quite easily have been elicited by an interview last March.

(Paragraph iii). The Committee desires to correct the impression that the re-iteration of the demands of the profession has been merely formal. The amendments incorporated in the Act have not been entirely satisfactory, hence the repetition of these demands.

Commissioners' Letter.

(iv.) Taking the several points put forward in the Association's letter in the order in which they are therein presented, the first is the following :—

1.—*Income Limit.*

An income limit of £2 a week for those entitled to medical benefit.

(v.) From the explanations given by the State Sickness Insurance Committee it appears that the Association does not ask that persons whose income exceeds the limit fixed should be excluded from Medical Benefit, but that they should be required, in lieu of receiving Medical Benefit under the arrangements made by the Insurance Committee in accordance with Sub-section (2) of Section 15 of the Act, to make their own arrangements for obtaining medical attendance and treatment, the Committee contributing to the cost of such medical attendance and treatment in the manner provided in Sub-section (3) of the same Section. The Act already meets this demand, inasmuch as the Insurance Commissioners must, through the Regulations, authorise every Insurance Committee to require persons whose income exceeds a limit to be fixed by the Committee to make their own arrangements as stated. But the Regulations could not legally be framed in such a way as to deprive the Insurance Committees of the discretion thus conferred upon them, and to compel them to fix everywhere a uniform limit of £2 a week. Moreover, apart from the question of legality, the Chancellor considers that, while in certain districts and in respect of certain sections an income limit may suitably be fixed at a point appropriate to local conditions, it would be impracticable and undesirable to fix a rigid and uniform limit throughout the country. The matter was fully debated by the House of Commons on August 2nd, 1911, when a proposal for a uniform limit was definitely rejected.

(vi.) In the interview on June 7th a separate question was raised by representatives of the Association concerning the case of persons possessing an income from all sources exceeding £160 per annum who might be insured as voluntary contributors if they had already been insured for a period of five years. It was understood to be contended that such persons ought not to be allowed to obtain free medical attendance and treatment from medical practitioners on the panel. The Government recognise that this is a special case for consideration, and will be glad to consider any suggestions which the Association may make in reference thereto.

2.—*Free Choice of Doctor.*

Free choice of doctor by patient, subject to consent of doctor to act.

(vii.) This appears to be one of the instances in which the Association has quoted a demand first formulated in June, 1911, and accepted by the Government while the Bill was before the House. The principle enunciated is, indeed, the underlying and expressed principle of the provisions of the Act as regards the medical service of the insured.

(viii.) It appears, however, from the explanations given by the State Sickness Insurance Committee that some fear exists in the profession as to whether the application of this principle may be imperilled through the operation of Sub-section (4) of Section 15 of the Act, relating to the approval of existing systems and institutions as agencies through which insured persons may obtain medical attendance and treatment as, or as part of, their medical benefit.

Observations by Committee.

Income Limit.

105.

(Paragraphs v. and vi.) It is obvious that the proposals of the Commissioners with regard to the income limit do not meet the requirements of the Association, which were clearly stated to the Chancellor. Though no opportunity occurred for placing before the Chancellor the exact terms of the following definition, it is one which has been adopted by the State Sickness Insurance Committee and is here submitted to the Representative Meeting :—

> The claim is that whenever an Insurance Committee shall make arrangements with medical practitioners to provide insured persons with ordinary medical attendance at a specified capitation grant per annum, or at a fixed rate per visit, notice shall be given to each insured person that his right to participate in the arrangements made on his his behalf by the Insurance Committee is liable, at any time, after due notice, to be withdrawn, should he, if called upon to do so, fail to make a declaration carrying penalties under the Act which satisfies the Committee that his average income from all sources does not exceed £104 per annum or such lower sum as may be agreed upon between the Insurance Committee and the local Medical Committee, and that if such right be withdrawn the insured person will, in lieu thereof, receive from the Committee to assist him in making private arrangements for his medical attendance a sum of money equal to that which would have been expended to secure his medical attendance in the ordinary way.
>
> The Insurance Committee shall call upon any insured person to make declaration that his income is below the agreed limit when requested to do so by the Medical Committee or by any person to whom the right of challenge is given.

106.

It is to be noted that in spite of the explanation of the Association, the Commissioners still apparently believe that the Association is asking for a "rigid and uniform limit throughout the country." This, of course is not the case. The Association has asked for a uniform *maximum* limit, mitigated by the right of challenge, which the profession has never intended to exercise in the borderland cases or in the hard cases which would undoubtedly arise.

107.

As regards the suggestion in paragraph vi., the Committee recommends that if the Representative Body decides to continue negotiations with the Commissioners, it should ask that a Regulation should be framed which would secure that the voluntary contributors (mentioned in Clause 1 (3) of the National Insurance Act, which entitles voluntary contributors whose income exceeds £160 per year to be insured under the Act, and therefore to claim the ordinary privileges of medical benefit) should be definitely excluded from participation in the ordinary arrangements made for medical benefit, and should be compelled to make their own arrangements for receiving medical attendance and treatment.

Free Choice of Doctor.

108.

(Paragraphs vii. to ix.) It appears to the Committee that paragraphs 7 and 9 of the Commissioners' letter leave matters as regards the Harmsworth amendment exactly where they were at the date of the last Special Representative Meeting, with the exception that there is a distinct promise that Regulations will be made, as desired by the Association, that the statutory right of every insured person to select his own doctor shall be brought under his notice in the clearest possible manner.

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(ix.) The Commissioners will make Regulations securing that the statutory right of every insured person to "select, if he so elects, the medical practitioner by whom he wishes to be attended and treated," shall be brought under his notice in the clearest possible manner, and the Commissioners will give most careful consideration to suggestions which may be made by the medical members of the Advisory Committee, including those nominated by the British Medical Association, as to the framing of the Regulations necessary to secure this point.

3.—*Administration of Medical Benefit.*

Medical and maternity benefits to be administered by Insurance Committees, and not by Friendly Societies. In connection with the question of the method of administration of medical benefit the Representative Meeting resolved that all question of professional discipline should be decided exclusively by a body or bodies of medical practitioners, and that the poewr of considering all complaints against medical practitioners should be vested in the local Medical Committee, with a right of appeal to a central Medical Board to be appointed for that purpose.

(x.) This paragraph is understood to include in the first sentence one of the original demands of the Association formulated in June, 1911, while the second sentence, dealing with the question of complaints, is a subsequent addition. Further, it is noted that the paragraph mentions both medical and maternity benefit: but the Committee of the Association explained to the Chancellor on June 7th that the demand as regards maternity benefit was dropped by the Representative Meeting of the Association in July last.

(xi.) As regards Medical Benefit the demand was met by the decision of the House of Commons in August, 1911, that that benefit should be administered by the Insurance Committees, and not by approved societies as originally proposed. This is now one of the provisions of the Act

(xii.) Concerning the questions of disciplinary procedure, referred to in the concluding part of the paragraph, it will be the endeavour of the Commissioners to frame the regulations in such a way as not to infringe the undertaking given by the Chancellor of the Exchequer on June 1st, 1911, that questions purely of professional discipline should be referred to a medical tribunal. As regards complaints affecting doctors on the panel, involving questions that are not merely professional but affect the interests of the service or of the insured, in every case in which such complaints turn upon technical medical considerations, full opportunity will be given to the local medical committee (if formed) in each area to consider and report before any decision is arrived at. Provision will also be made for reference of such cases for investigation and report by a central tribunal largely, if not exclusively, medical in composition, before determination by the Commissioners of any case of proposed removal of a practitioner from a panel. Regulations dealing with these points will be promulgated before Insurance Committees begin making arrangements with practitioners for purposes of medical benefit.

4.—*Method of Remuneration.*

The method of remuneration of medical practitioners adopted by each Insurance Committee to be according to the preference of the majority of the medical profession of the district of that Committee.

(xiii.) The Government have given an undertaking that the method of remuneration in each district shall be locally determined. They have no doubt that the indication of a clear preference for a particular method of remuneration by the majority of the medical profession of the district will carry weight with the local Insurance Committee, and also with the Insurance Commissioners when considering whether to approve arrangements made by a Committee. The Government cannot undertake, however, for obvious reasons, that the matter shall be finally

Observations by Committee.

ADMINISTRATION OF MEDICAL BENEFIT.

109.

(Paragraph xi.) This statement is, of course, literally true, but no notice has been taken of the contention of the Association that since the decision of the House of Commons in August, 1911, the constitution of the Insurance Committees has been materially altered to the disadvantage of the profession. The position of the approved societies, which are to all intents and purposes the Friendly Societies from whose control the profession desired to be free, has been strengthened, while the position of the medical practitioners on the Committee is relatively weaker.

DISCIPLINARY PROCEDURE.

110.

(Paragraph xii.) The Committee would point out that there is much to be said for the proposal in this paragraph, namely to discriminate between complaints involving questions not merely professional, and complaints which turn upon technical medical considerations. In discussions in the State Sickness Insurance Committee and in the Advisory Committee, it has been brought home to those present that there is a class of complaint that may be brought against doctors which would involve questions of fact, and which it is very unlikely that the public would be willing to leave entirely to the decision of a medical jury. This paragraph appears to the Committee to show a disposition to meet the demand of the Association so far as concerns matters which may be deemed purely professional. It must be noted, however, that the central tribunal which is to deal with cases of proposed removal of a practitioner from a panel is apparently not to be exclusively medical in composition, as desired by the Association

METHOD OF REMUNERATION.

111.

(Paragraph xiii.) This paragraph is a refusal of the demand of the Association that the method of remuneration shall be settled by the majority of the medical profession of a district, and suggests that the method of remuneration will be settled by the influence which the medical profession of the district will be able to bring to bear upon the Local Insurance Committee and upon the Insurance Commissioners.

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decided as regards any district by a simple majority of the local medical profession, without the Insurance Committee or Insurance Commissioners having any voice in the decision.

5.—*Amount of Remuneration*

Medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service.

After careful consideration the Representative Meeting resolved that the policy of the Association be to claim 8s. 6d. as a minimum capitation fee, not including extras and medicines, for members of approved societies, and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee, with a recognition of a £2 maximum income limit.

(xiv.) Although the Government are not yet in a position to arrive at a decision on the subject of this demand, nevertheless, having regard to the desire of the State Sickness Insurance Committee of your Association for the fullest reply which can at present be given for the information of the Association, in view of the approaching Representative Meeting, the Chancellor is prepared to authorise the following statement:—

(xv.) First, that the Government have always recognised that the average medical remuneration per head of the insured population on account of medical benefit under the Act should not only not be less than that received per head under existing conditions, but should equitably be greater, in view of the greater demands that are likely to be made upon the work of the profession under the Act than have hitherto been usual.

(xvi.) Secondly, in reference to a point understood to be the subject of special anxiety among many members of the medical profession, the Government recognise that the aggregate amount devoted to medical benefit must be such as to enable suitable payments to be made for certain extras, including night visits, mileage—especially in country districts—and possibly other matters, a list of which may be settled by negotiation between the Association and the Commissioners, if a general arrangement on all other matters can be arrived at.

(xvii.) Thirdly, on full consideration of all the information already in their possession, the Government would be willing, assuming the cordial co-operation of the profession in the working of the Act to be assured, to advise Parliament to make extra provision for meeting the cost of medical benefit beyond that originally assumed in the actuaries' calculations; but the Government, after giving due regard to the facts and arguments submitted by the British Medical Association in their memorandum a fortnight ago, can hold out no hope of such provision being made as would yield for medical remuneration the amount now demanded by the Association, viz., 8s. 6d. per insured person per annum for ordinary medical attendance only, to which is to be added payment to the doctor for extra services, and to which again must be added the cost of pro- of drugs and appliances.

Assuming as an estimate of the cost of the extra ... by the Association, the ... 8s. 6d. per insured person, ... dum of the Association, the average receipts of a practitioner, in respect of medical benefit alone, would be 11s. per insured person, to which must be added, in estimating his income derived

Observations by Committee.

Amount of Remuneration.

112.

(Paragraph xv.) In this paragraph the Committee notes the admission that greater demands are likely to be made upon the profession under the Act than have hitherto been usual. In addition, this paragraph admits that the remuneration per head of the insured population on account of medical benefit under the Act should be greater than that received under existing conditions. The Commissioners apparently propose to ascertain the present basis of remuneration by means of the inquiry which is now being prosecuted, and regarding which the Committee has already expressed its opinion. Even if the inquiry produced reliable information as to the actual present receipts, allowance will have to be made for the fact well known to the profession that the remuneration for the class under consideration, even in the case of private patients, has been more or less insufficient. Practitioners have always been compelled to make allowances for the circumstances of the patients attended by them, a procedure which so far as is known is not adopted in any transaction of a commercial nature.

113.

(Paragraph xvi). In this paragraph the Commissioners take up an attitude which it appears to the Committee cannot be defended. They apparently desire that the question of extras should be postponed until after the fixation of the fee for ordinary medical benefits. In the opinion of the Committee the two things must be considered together.

114.

(Paragraph xvii.) The Committee would point out that the cordial co-operation of the profession which the Government demands as a necessary precedent to a larger grant for medical remuneration, cannot possibly be given until the amount of the remuneration to be offered is satisfactory settled, and the Chancellor holds out no hope that the amount of 8s. 6d. per insured person, exclusive of extras and medicines, which the State Sickness Insurance Committee was instructed to represent to the Chancellor as a minimum demand, will be granted. It should also be noted that although it is stated in this paragraph that due regard has been given to the facts and arguments submitted by the Association in its Memorandum (see Appendix (B), no attempt is made to reply to the main arguments in that Memorandum. At the Deputation on June 12th, though various points were discussed no attempt was made to upset the fundamental contention of the Deputation that in spite of any efforts which might be made by the profession, many people would still be attended on a charitable or semi-charitable basis.

115.

(Paragraphs xviii., xix. and xx.) It is necessary to examine the figures given in these paragraphs, along with the figures given in the Memorandum of the Association. It is to be noted that the estimate of £1,500,000 for extras is purely hypothetical. To suggest that the fixed grant of 8s. 6d. is an excessive demand because of the hypothetical addition of a sum

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from services to the insured, receipts in respect of sanatorium benefit, receipts from midwifery, and receipts for various kinds of work incidental to medical attendance which are not paid for out of the benefits, including, for example, furnishing certificates and reports for purposes other than those of the Act, and giving evidence in Courts of Law.

(xix.) Assuming the insured in Great Britain to be twelve millions, and the number of practitioners taking part in this work to be 22,000, this would yield an average annual income of £300 per annum for each doctor for attendance upon the insured only, the number of insured persons whom he would attend in respect of this remuneration being, on the overage, 550.

(xx.) Assuming the average clientèle of each medical practitioner to be 1,800, these would consist, in a typical case, of approximately 550 insured persons, 1,100 'dependents of insured persons and other persons of the same economic position, and 150 persons of the middle and upper classes. In respect of the insured portion, constituting five-sixteenths of the whole, the Association demands that the practitioner shall receive £300 per annum in consideration of the services included in medical benefit alone. Adding amounts derived from other services, and assuming that the rest of the population are treated at not a lower average rate, the ordinary assured income of a practitioner in average practice (not of one specially successful) would be, on this basis, not less than £1,100 per annum. Out of this sum the practitioner would not have to meet any expenditure for drugs.

(xxi.) The average income thus yielded would be so greatly in excess of what are ordinarily believed to be the present average earnings of the profession that the Chancellor cannot accept the conclusion that the sums available for remuneration under the Act must be raised to the point necessary to produce such a result.

(xxii.) I am to add that, in order to provide such a sum, it would be necessary for the Government to apply to Parliament for an additional grant of approximately four million pounds per annum, to be derived, of course, from general taxation—an amount equivalent to nearly 1½d. in the pound in the Income Tax. While, no doubt, Parliament would be willing to provide even so great an amount if the necessity of this were incontestably proved as the only means of obtaining efficient medical treatment for the insured, the Government do not feel, in view of the figures above stated, that the proposition can be regarded as capable of being justified to the House of Commons and the taxpayers of this country.

(xxiii.) Having thus stated the Chancellor's views as at present advised, I am directed to add that before a definite decision can be arrived at on the subject two conditions must be satisfied; the first being that fuller information, including in particular that which is being obtained from the profession by Sir William Plender, shall be available; and the second

Observations by Committee.

of 2s. 6d. for extras, is to throw upon the profession any risk which attaches to the amount allowed for extras not being reached. Even on this calculation of £300 per annum, which, according to the Chancellor's figures would be earned by each practitioner in consideration of the services given to insured persons included in medical benefit alone, only £233 is based on a certainty, the other £67 being based on a hypothetical figure. Further the Committee must again emphatically protest against the assumption in paragraph xx. that the rest of the population will be treated at a not lower average rate than that received for insured persons. Reference to the Memorandum of the Association on remuneration, the main statements in which no attempt has been made to controvert, will shew, as is of course obvious to every practitioner, that a large proportion of the rest of the population will not pay for their medical attendance at the rate of 11s. per head. Some would be treated at lower rates; some would be objects of charity. It thus appears that the consideration which the profession has always shewn to its poorer patients is to be used as a means of reducing the amount of remuneration to be given for medical attendance on persons subsidised by the State and by their employers.

116.

The Chancellor allows for each practitioner taking part in the work of attending insured persons an average clientele of 1,800, which he divides as follows:—550 insured persons, 1,100 dependants of insured persons, and other persons of the same economic position, and 150 persons of the middle and upper classes. In respect of the 550 insured persons no objection need be raised, but as to the 1,100 dependants, etc., no allowance is made for bad debts nor for the fact that a considerable number of these persons will either pay a less amount than that paid by the insured persons, or would produce no income whatever, their attendance and treatment being provided, as in the past, by some form of medical charity. Next taking the 150 persons of the middle and upper classes it is to be noted that, assuming the population of Great Britain to be 41 millions, the deduction of 36 millions insured persons and their dependants, etc., leaves 5 millions for the middle and upper classes. Now, if we allow 150 of these to each practitioner working the Act we account for 3,300,000, only leaving 1,700,000 to be attended by consultants and practitioners who do not attend on the classes concerned with the Act. This number, it is submitted, is much too small.

117.

The Committee would therefore submit that even taking the Chancellor's own figures and making the deductions which the State Sickness Insurance Committee put forward in its Memorandum, but which the Chancellor entirely ignores, it will be found that the estimate formed by the Committee will prove to be much nearer the truth than that arrived at by the Chancellor.

118.

(Paragraph xxiii.) With regard to the inquiry now being conducted by Sir William Plender the Committee thinks it sufficient to draw the attention of the Association to the critical attitude adopted by the Committee when the inquiry was first proposed.

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being that representatives of the Association should be appointed with whom the Government can negotiate in the manner indicated in the concluding paragraph of this letter.

6. *Adequate Representation.*

Adequate medical representation among the Insurance Commissioners, in the Central Advisory Committee, and in the Insurance Committees, and Statutory recognition of a local Medical Committee representative of the profession in the district of each Insurance Committee.

(xxiv.) This demand is again one formulated by the Association with respect to the Bill as originally introduced, and which was to a great extent, if not entirely, conceded in the Act.

(xxv.) On the subject of dispensing by medical practitioners referred to in the concluding paragraphs of the Association's letter of February 29th, the Commissioners have power under the Act to permit Insurance Committees in exceptional cases to arrange with medical practitioners for supplying medicines and drugs. This power, however, could not be exercised in such a way as to convert what Parliament intended to be the exception to the rule.

(xxvi.) In conclusion, I am directed again to call attention to the impossibility of arriving at any satisfactory arrangement with the British Medical Association so long as those appointed to represent the views of the Association are given no power to negotiate in the ordinary sense. If, therefore, the Association, after due consideration of this reply, should desire to proceed further with the discussion of these matters with the Commissioners, representatives should be appointed with authority to arrive at a provisional agreement, subject (if desired by the Association) to the submission of such provisional agreement to the members generally, through their local branches and representative body for final ratification. In the opinion of the Government that is the only method by which a satisfactory settlement can be arrived at.

I am,

Your obedient servant,

(Signed) W. J. BRAITHWAITE,

Secretary to the Joint Committee.

Observations by Committee.

ADEQUATE REPRESENTATION.

119.

(Paragraph xxiv.) No notice is taken of the suggestion of the Association made just previous to the passing of the Act, and repeated at the Advisory Committee, that the representation of the profession on the Insurance Committees should be equal to one-tenth of the whole number. It has been pointed out that even now this request could be complied with by the exercise by the Commissioners of the powers given to them under clause 59 (2) (e).

DISPENSING.

120.

(Paragraph xxv.) No concession has been made upon this point. Dispensing by practitioners is apparently only to be allowed in exceptional circumstances. The Commissioners entirely fail to appreciate the inherent difficulties of the proposed abolition of dispensing by medical practitioners.

121. Taking the document as a whole, the Council is of opinion that no material concession has been made by the Chancellor since February last to the demands put forward by the Association.

Part III. Future Action of the Association.

122. It must be plain to every member of the profession who reads the letter from the Commissioners given above that there are only two courses now open to the Association. One is to accept the suggestion made in several parts of that letter and particularly in paragraph xxvi., namely, to appoint representatives with authority to arrive at a provisional agreement subject to the submission of such agreement to the members generally through the Divisions and Representative Body for final ratification; the other is to break off negotiations entirely, and further to strengthen the organisation of the profession with a view to a refusal to take any part in the administration of the medical benefits of the Act.

123. The Council fully recognises that the decision now to be taken is a momentous one, and cannot be arrived at without the most serious consideration. The most obvious course is to say that, as the demands, which the Association declared in February last were minimum demands, have not been met, the Association is bound to break off negotiations. This may be the course which the Representative Body, instructed by the Divisions, will adopt. Under the constitution of the Association such a responsibility can only be taken by the Representative Body.

124. The Council deems it to be its duty to place clearly before the Representative Body the nature of the situation which would then arise. The profession has declared that it is unwilling to attend insured persons except on conditions which give free choice of doctor and at a remuneration which will provide at least 8s. 6d. per annum exclusive of extras and payment

for medicine. It would, therefore, be illogical to continue any form of contract for attendance on insured persons which did not provide this condition and this remuneration. This would entail the resignation of nearly every contributory contract practice appointment in the kingdom, and the profession must be prepared to set up a Public Medical Service in order to deal with those insured persons who, in the opinion of the profession, would be unlikely to provide and pay for their medical attendance except through some form of contract. If the profession remained united the result would ultimately be a great improvement, financial and otherwise, on present conditions, but in the transition stage some practitioners would undoubtedly lose. A large guarantee fund would be necessary to compensate for these losses, and in the first place to induce some practitioners to run the necessary risks. An absolute break-off of negotiations would necessarily mean that the profession would decline to take any appointments, either whole or part time, or to undertake any class of medical work under the Act, not only in connection with medical benefit but also in connection with sanatorium benefit. There is a probability of a large number of whole-time tuberculosis appointments being offered, and if the Association felt it to be its duty to prohibit these appointments being taken, they may fall into the hands of those who are disloyal to the policy of the Association. A refusal to work Sanatorium Benefit, unless practitioners could be relied upon not to apply for whole-time appointments, would inevitably tend to enlarge the scope of whole-time work in connection with the public health service, and further restrict the field of the general practitioners.

125. There are many other difficulties which would be encountered in any struggle between the Government and the profession, none of which, however, would be insuperable to a united profession. The Council simply places the facts of the situation before the Divisions and Representative Body, so that before the fight is entered upon the full costs and risks may be carefully weighed.

126. In instructing their Representatives the Divisions must, of course, be guided to a great extent by the information presented in this Report, but there are items of information which cannot be fully discussed in a document of this kind. Some of the information which the Council considers should be carefully weighed before coming to a final decision is not yet in possession of the Council, but will be placed before the Representative Body. The Council refers to the latest detailed information as regards the organisation of the various districts of the Kingdom. The Council would accordingly urge that this fact should be kept in mind by Divisions when instructing their Representatives.

127. It must be remembered also that the Association is not yet in possession of the final decision of the Chancellor as to the amount of remuneration which he is prepared to offer. It is conceded in paragraph xvii. of the Commissioners' letter that even on the information already in their hands the Government are prepared "to advise Parliament to make extra provision for meeting the cost of medical benefit beyond that originally announced in the actuaries' calculations." But it is definitely stated that this amount cannot reach the 8s. 6d. plus extras demanded by the Association. If the Chancellor should announce, however, before the date of the Representative Meeting, how far he would go in the direction of the sum claimed by the Association, such information would at once be communicated to the Divisions.

128. In addition to this the Regulations of the Commissioners are not yet framed, and it is impossible to say how far they, taken as a whole, will meet the demands of the profession for honourable recognition of its position as an indispensable factor in working the benefits of the Act.

129. Finally, with the exception of the Sanatorium Benefit, it must be pointed out that no medical practitioners will be required to undertake work under the Act until January, 1913. It might therefore be considered wiser to defer a definite decision until later in the year, when a Special Representative Meeting could be held which would have before it the Regulations drafted by the Commissioners in addition to other information which would no doubt be forthcoming. In the meantime the active organisation of the profession in order to prepare for what, if it comes, must be a severe struggle, must continue.

Recommendations.

130. The Council, in accordance with the plan above outlined, now submits to the Divisions and Representative Body alternative sets of Recommendations:—

X.—Breaking off negotiations.

Y.—Continuing negotiations.

X.—Breaking Off Negotiations.

I. That the Government be informed that the Association adheres to its minimum demands as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer.

II. That the Association calls upon all Members of the Association who are members of Advisory Committees in connection with the National Insurance Act, and also on other medical members of those Committees who are in sympathy with the policy of the Association, to withdraw from these Bodies.

III.—That the British Medical Association calls on all those practitioners who have signed the Undertaking, and on all other practitioners who desire the unity of the profession, to refrain from applying for, or accepting, any post or office of any kind in connection with the National Insurance Act until such time as the Government has satisfied the Association that its demands will be met.

Y.—Continuing Negotiations.

That a State Sickness Insurance Committee be appointed with power to negotiate with the Commissioners and to ascertain to what extent the demands of the Association are likely to be met; to consider and report on the Regulations of the Commissioners as soon as available; and to report on the whole situation as soon as possible to a Special Representative Meeting; and that meanwhile all steps be taken to perfect the organisation of the profession, and to increase the Central Insurance Defence Fund.

THANKS OF COUNCIL TO STATE SICKNESS INSURANCE COMMITTEE.

The Council desires to express its sense of the debt which the Association owes to the members of the State Sickness Insurance Committee for the self-sacrifice with which they have performed so great an amount of work under circumstances of unusual difficulty.

APPENDIX (A).

RESOLUTIONS OF SPECIAL REPRESENTATIVE MEETING, FEBRUARY 21ST AND 22ND, 1912, WITH REFERENCE TO THE NATIONAL INSURANCE ACT, REFERRED BY THE COUNCIL FOR THE CONSIDERATION OF THE STATE SICKNESS INSURANCE COMMITTEE.

State Sickness Insurance Committee.

Minute 36.—Resolved:

(1) That a State Sickness Insurance Committee be appointed to consider and report to the Council on all matters connected with the National Insurance Act or a Public Medical Service.

(2) That the State Sickness Insurance Committee consist of (*a*) twenty-four members (the majority of whom shall be general practitioners) elected by the Representative Body, (*b*) the *ex-officio* members, (*c*) two women medical practitioners to be co-opted by the Committee, one of whom shall be nominated by the Northern Association of Medical Women, the other by the Association of Registered Medical Women: and that the Committee be empowered to add to its numbers, for special purposes, not more than four additional members.

(3) That the 24 members be elected by the Representatives, grouped in the same way as for the election of 12 members of Council under By-law 43 (*c*), and that each such group elect two members.

(4) That in the event of the Committee dealing with the question of the establishment of a Public Medical Service, the Chairmen of the Medico-Political and Public Health Committees be invited to attend the meetings of the Committee.

Representations to Insurance Commissioners.

Minute 42.—Resolved: That this Representative Meeting direct the Council to inform, in plain and unmistakable

language, the Commissioners appointed under the Insurance Act, 1911, that unless the minimum demands of the Association be embodied in the Regulations to be issued by the Commissioners, in such a manner as shall be effectual and permanent with a view to having the same embodied in an amending Act, it is the intention of the British Medical Association to call upon all its members and upon all other medical practitioners to decline to form panels or undertake any other medical duties which may be assigned to them under the Act, in conformity with the undertaking which has already been signed by over 26,000 medical practitioners.

Professional Discipline.

Minute 47.—Resolved: That all questions of professional discipline shall be decided exclusively by a body or bodies of medical practitioners.

Minute 48.—Resolved: That the power of considering all complaints against medical men be vested in the Local Medical Committee with the right of appeal to a Central Medical Board to be appointed for that purpose.

Dispensing.

Minute 49.—Resolved: That dispensing, as hitherto, should be done or arranged for by the medical practitioner for his own patients, should he so desire, and be paid for at the scale or tariff rate agreed upon for pharmacists by the Pharmaceutical Society.

Remuneration: Income Limit.

Minute 51 *a*.—Resolved: That the policy of the Association be to claim 8s. 6d. as a minimum capitation fee, not including extras and medicine, for members of approved Societies, and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee, with recognition of a £2 maximum income limit.

Administration of Medical Benefit.

Minute 52.—Resolved: That this Meeting urge the Council to take every step to secure that medical benefit shall not be under Friendly Society or Insurance Committee control, but be administered for insured persons by the Insurance Commissioners.

Question of Extras.

Minute 53.—Resolved: That for the guidance of the State Sickness Insurance Committee the following list of extras be suggested by the Representative Body:—

Extras: Miscarriages.
Vaccinations.
Fractures.
Dislocations.
Consultations.
(*a*) Ordinary.
(*b*) Consultant.
Anæsthetics.
(*a*) Local.
(*b*) General.

Night calls (between 8 p.m. and 8 a.m. in response to calls received during these hours),

Special visits (*i. e.*, visits made in response to and on the same day as calls received after 10 a.m. or made on Sundays by subscriber's desire).

Certificates and reports.

Illness the result of personal misconduct.

Illness arising from confinement or miscarriage within one month.

Operations requiring local or general anæsthetics.

Operative dentistry.

Special examinations, *e.g.*, X-rays, bacteriological, etc.

Lunacy [illegible]

Examinations, Court attendances, etc., under Common Law, Workmen's Compensation and Employers' Liability Statutes.

Mileage.

Drugs, cod liver oil, linseed meal, leeches, serum, oxygen etc.

Bottles, jars, dressing or bandages (except for first dressings).

Organisation of Profession.

Minute 54.—Resolved: That the Council be instructed to take steps to organise the profession so as to secure that, failing the provision of adequate remuneration of medical practitioners and the fixing of a definite wage limit under the National Insurance Act, no medical practitioner shall give medical or surgical treatment to persons insured under the Act under a contract practice appointment held at lower rates than those which may be agreed upon as adequate by the Representative Body, after reference to the Divisions, for attendance upon insured persons and that no contract practice be introduced into any district against the wishes of the majority of the members in that district. Further, after obtaining the adequate rate, the Representative Body shall insist that before any member of the profession can agree to accept work under a contract appointment, free choice of doctor by patient and of patient by doctor must be granted.

Question of Institutional Treatment.

Minute 55.—Resolved: That the following motion and all motions before the Meeting as to Institutional treatment be referred to the Council for consideration and reference to Divisions:—

That the following words be added to the foregoing resolution (Minute 54):—

And that it be referred to the Council for their consideration whether any such person shall be able to secure such medical attendance gratis in hospitals, dispensaries or other institutions.

Other Motions referred to:—

(1) By Dr. Milner Moore (Coventry, Nuneaton and Tamworth):—

That the British Medical Association organise the staff of Hospitals to make sure that insured persons, attended on conditions not in agreement with the six points, shall not receive treatment at the Hospitals unless they be emergency cases.

(2) By Bury and Rochdale:—

That inasmuch as the State through the National Insurance Act has undertaken to provide efficient medical aid for all insured persons, these persons are not now eligible for free charitable treatment at any Hospital staffed by an Honorary Medical Staff—all such hospitals be now called on to make rules to the effect that no insured person can be treated there unless all fees are fully guaranteed, or unless the patient produce an exemption certificate signed by two members of the local Division of the British Medical Association—and where any hospital declines to make such rules, the honorary staff be asked to resign. The above rules not to apply to first aid.

(3) By North Middlesex:—

That, failing the provision of adequate remuneration of medical practitioners under the National Insurance Act, the Council be instructed to take steps to secure that all physicians and surgeons to hospitals throughout the country shall be required to refuse gratuitious attendance on any insured person.

(4) By Bury and Rochdale:—

That the Council be directed to approach the consultants of the country and the honorary and paid medical staffs of the various hospitals and ask them to sign an undertaking not to consult with any general practitioner who is acting in opposition to the interests of those who support the policy of the B.M.A., and that a list of those consultants, etc., who agree be prepared and circulated amongst all medical men in the country.

(5) By Watford and Harrow:—

That the Council take steps to get the signatures of consulting physicians and surgeons, including those of the profession holding the membership or fellowship of the Colleges of Physicians or the fellowship of the Colleges of Surgeons, to a special "undertaking" in terms such as the following:—

"That in the event of the British Medical Association requiring that no medical practitioner shall undertake

medical service under the National Insurance Act owing to the failure on the part of the Commissioners to embody in their regulations the six cardinal principles of the Association, I, the under-signed, undertake to refuse to meet in consultation any whole-time medical officer or any practitioner serving under the Act contrary to the wishes of the B.M.A."

(6) By Manchester (North):—

That the following addition be made to the Watford and Harrow resolution:—

"I also pledge myself to decline to meet any medical man acting contrary to the wishes of the British Medical Association in connection with the Insurance Act or Contract Practice."

(7) By Dr. Bushnell (Brighton):—

That it be an instruction to the Council to prepare and issue to the Members of the Staffs of the Voluntary Hospitals a form of undertaking, by signing which, they would individually pledge themselves to the following:—

(1) "That in the event of the suspension of Medical Benefits, or of medical service under the Act of any kind being instituted in opposition to the declared wishes of the local Medical Committee, or a majority of the local medical profession, they will send in a notice declining to give medical treatment and attendance except in cases of emergency to insured persons as such.

(2) "That, in the event of a Voluntary Hospital receiving under the Act payment from the State, Local Insurance Committees, Approved Societies, Insured Persons, or other Bodies, they will decline, after reasonable notice, to give medical treatment and attendance, if they do not receive payment for services rendered."

Funds.

Minute 56.—Resolved: That the Council be instructed to report to the Divisions as to the best means of acquiring the powers necessary for raising funds, and using them for the purpose of indemnifying members against financial loss owing to the action of the Association.

Proposed New Undertakings by Members of Profession.

Minute 57.—Resolved: That the following motions be referred to the State Sickness Insurance Committee for consideration and such action, if any, as may be deemed advisable.

(*a*) by North Middlesex:—

New Form of Undertaking.

That the Council be instructed to issue the following pledge for signature:

I, the undersigned, hereby undertake that in the event of the National Insurance Bill becoming law, I will not enter into any individual or separate arrangements with any approved Society, local Health Committee, or other body appointed under the Bill, to give medical attendance and treatment to persons insured under the Bill, but will enter into such arrangements only through a local Medical Committee elected by the registered medical practitioners in the district in which I practice to represent them in respect of such arrangements, and that I will enter into such arrangements only as shall be satisfactory to the medical profession, and in accordance with the declared policy of the British Medical Association.

I undertake to resign, if required to do so by the British Medical Association or this Division thereof, any present appointment which I hold with a Club which becomes an Approved Society under the Bill, or whose terms as to fees and conditions of membership are less favourable than those approved by the British Medical Association, and I will not accept any appointment so resigned by another medical practitioner.

I guarantee the sum of money mentioned below against my name for the purpose of indemnifying those medical practitioners who shall have suffered pecuniary loss through having resigned their Clubs at the request of the Division; and if called upon by the Division will pay the same to the Executive thereof.

(*b*) by Cardiff:—

Undertaking in connection with Hospitals.

That the Council take steps to get the signatures of consulting physicians and surgeons and all those who are holding honorary hospital appointments to a special "undertaking" in terms such as the following:

"That in the event of the B.M.A. requiring that no medical practitioner shall undertake medical service under the National Insurance Act, owing to the failure on the part of the Commissioners to embody in their resolutions the six cardinal principles of the Association, I undertake to notify the committee of management of any voluntary hospital, of the staff of which I may be a member, that on and after the date on which the medical benefits under the Act come into operation I cannot attend any insured person sent up for treatment by any whole-time medical officer or any practitioner serving under the Act contrary to the wishes of the British Medical Association: also that, should the necessity arise I pledge myself to resign my appointment on the staff of any hospital supported by voluntary contributions, and will not apply for or accept any post thus rendered vacant."

Present Contract Appointments: Instruction to Council.

Minute 58.—Resolved: That the Council be asked to ascertain whether those practitioners holding contract appointments will place their resignations in the hands of the Council to be used as and when necessary, the result to be considered confidential for the present. That it be an instruction to the Council to intimate at the same time that the British Medical Association is prepared to support any practitioner resigning appointments under these circumstances to the best of its ability, both pecuniary and otherwise.

Public Medical Services.

Minute 59.—Resolved: That the Council be instructed to direct the attention of Divisions to the desirability of preparing a scheme for a Public Medical Service to be administered by the medical profession in each insurance area.

Advisory Committees.

Minute 60.—Resolved: That the Association take steps to secure the most suitable representatives of the medical profession upon the Advisory Committee, and for this purpose nominations shall be made by the Divisions and the final selection of names by the Council, and that the Council be instructed to make the necessary arrangements to carry this resolution into effect.

Minute 61.—Resolved: That while the British Medical Association is willing that members of the medical profession shall provisionally join the Advisory Committees, nevertheless it will use its best endeavours to ensure their resignation unless the six cardinal principles have been granted by amendment of the Insurance Act, by Regulation, Order or otherwise, and that it be an instruction to the Council to provide that all practitioners who are supported by the Association for membership of the Advisory Committees shall have pledged themselves previously to vacate their seats if elected, should the British Medical Association determine to cease negotiations with reference to the National Insurance Act.

Minimum Rate for Club Practice.

Minute 62.—Resolved: That the following motion by Greenwich be referred to the Council for consideration:—

That, in the event of the Suspension Clause coming into effect, no new members be accepted by club doctors below a rate to be fixed by the State Sickness Insurance Committee.

Provisional Medical Committees.

Minute 63.—Resolved: That the Council be instructed to make all necessary arrangements for assisting the Divisions and Branches in the appointment of provisional Medical Committees in every insurance area to safeguard the interests of the profession, without prejudice to the question of whether these Committees shall later accept recognition as statutory local Medical Committees.

Requirements of Profession.

Minute 64.—Resolved: That the Council be instructed to notify the Insurance Commissioners that no negotiations will be entered into with any Insurance Committee until the Representative Body after reference to the Divisions, is satisfied that the requirements of the profession are conceded.

Forthcoming Regulations under the Act.

Minute 65.—Resolved: That the Council be instructed, as soon as possible after the issue of the draft Regulations, or Regulations by the Insurance Commissioners, to submit a report thereon to the Divisions and the Representative Body.

Minute 67.—Resolved: That in any Regulations approved by the Representative Body, the principles contained in the following should be included:—

That as in the Act it is assumed that not all insured persons are entitled to medical benefit, the onus of proving that he is entitled to medical benefit should be placed upon the insured person claiming it: that the local Insurance Committee should require a signed statement showing his weekly wage countersigned by his employer, and his income from other sources; and that a right of challenging the title of any insured person should be reserved to the local Medical Committee.

Question of a Manifesto to Press, etc.

Minute 68.—Resolved: That the following motion be referred to the Council for consideration:—

That a Manifesto on the lines of that drawn up by a Committee of the South Western Branch stating the objections of the profession to the Act, but carefully elaborated and verified, be prepared for presentation to the Press, Members of Parliament, Deans of Medical Schools, University Tutors, and Headmasters of Public Schools.

Action of Royal Colleges.

Minute 69.—Resolved: That the Representative Meeting express its high appreciation of the action of the Royal College of Physicians of London, the Royal College of Surgeons of England, and the Royal Colleges of Scotland, in defence of the interests of the public and of their members.

Question of Joint Action.

Minute 70.—Resolved: That the Council be instructed, if it is considered desirable, to promote united action with the Medical Corporations and other representatives of professional interests in order to secure, by means of an amending Act or otherwise, conditions satisfactory to the medical profession.

Action of Royal Colleges.

Minute 72.—Resolved: That the Representative Meeting place on record its strong condemnation of the expressions used by Mr. Lloyd George with respect to the Royal College of Physicians and the Royal College of Surgeons.

Question of a Medical Insurance Committee for England.

Minute 73.—Resolved: That the following Motion by Gloucestershire be referred to the Council for consideration:

That it is desirable that the British Medical Association fall into line with the Councils of the Royal College of Physicians, Royal College of Surgeons, Society of Apothecaries, and the Universities of England, and to unify the attitude of the entire medical profession with regard to the Insurance Act. In order to effect this purpose it is desirable that the various bodies named should form a central committee of representatives as has been done in Scotland.

Proposed Publication in Lay Press of Statement of Position of Profession.

Minute 74. Resolved: That the Council be instructed to consider the advisability of preparing a reasoned statement of the position of the medical profession as regards the Insurance Act for publication in the lay papers.

Approval of Remainder of Report of Council.

Minute 75.—Resolved: That the remainder of the Report of Council be approved.

Matters referred to Council.

Minute 76.—Resolved: That the following motions on the Agenda, relating to matters not dealt with by the Meeting, be referred to the Council for consideration and such action, if any, as may be deemed advisable:—

(A)—As to Representations to Insurance Commissioners.

(1) By South-West Essex:—

That the representatives of the Association be not empowered to decide any matter with the Insurance Commissioners, but to report to the Council, and that the Council refer the report to the Divisions and to a Representative Meeting, if necessary, specially convened for the purpose.

(B)—As to Requirements of the Profession.

(I.)—*Income Limit.*

(2) By Liverpool:—

That the onus of proving the income of insured persons should in the first instance be placed on the Insurance Committee and not on the medical practitioner.

(3) By Kensington:—

That no insured person shall be entitled to medical treatment under the Act until he has satisfied the local Insurance Committee by annual statutory declaration that his income does not exceed £104 per annum, or such lower limit as is found to be applicable to any particular district.

(II)—*Free Choice of Doctor.*

(4) By North Staffordshire:—

That under Section 15, Sub-section (4) no system or institution shall be approved by the Insurance Commissioners which does not in the opinion of the local Medical Committee secure free choice of doctor and freedom from Friendly Society control and influence, or which in the arrangements for medical treatment and attendance differs in any way from those made with respect to other insured persons.

(5) By Brighton:—

That the possibility of an insured person exercising his right to a free choice of doctor, subject to consent of doctor to act, shall be safeguarded from any interference or advocacy on the part of any approved society, institution or system existing at the time of the passing of the Act.

(6) By Exeter:—

That the Commissioners be informed that their conditions can only be insured by a regulation providing that no combination shall employ a whole-time medical officer.

(III.) *Definitions.*

(7) By Kensington:—

That any definition of (1) "confinement," and (2) "medical treatment or attendance in respect of confinement" shall not necessitate medical attendance on abortion being as a consequence considered as included in the medical attendance to be given under "medical benefits."

(IV.) *Administration of Medical Benefit.*

(8) By Brighton:—

That medical benefit shall be administered by the Commissioners and not by the Insurance Committees or other bodies; and after negotiations between the Commissioners and the local Medical Committees.

(V.)—*Remuneration.*

(9) By Exeter:—

That this Meeting disapproves of attending deposit contributors on any terms except per attendance.

That the Commissioners be informed that to meet this condition their regulations must provide for the payment of a minimum fee of 2s. 6d. per attendance for all deposit contributors, and for all others a minimum capitation fee of 8s. 6d. or a minimum fee of 2s. 6d. per attendance (neither of these to include medicine, consultations with other practitioners, dressings, appliances, night visits, or special visits, operation, anæsthetics or mileage when necessary), with the provision for the payment of higher fees where these appear to be inadequate and that all payments be guaranteed by the Commissioners.

(10) By Reigate:—

(*a*) That in considering the question of adequate remuneration a distinction be made between selected lives and ordinary lives.

(*b*) That on a capitation basis the minimum remuneration for selected lives be 8s. 6d.; for unselected lives 12s. 6d.; and, if no distinction be made, 10s. 6d. per head; with in all cases extra for mileage, night work, etc.

(*c*) That on the basis of payment for work done the remuneration be 2s. 6d. per visit, with 1s. per mile for mileage beyond two miles from the practitioner's house, and extra for night visits, etc.

(11) By Manchester (North):—

That remuneration under the Act be on the minimum financial basis of—

(*a*) 2s. 6d. per visit and 2s. consultation or,

(*b*) capitation fee of 10s. for males in approved societies and 15s. for deposit contributors and women and children, according to choice of each district, and both exclusive of medicine and with allowance for extras.

(12) By North-East Edinburgh:—

That the minimum capitation grant to the Commissioners available for ordinary domiciliary attendance on insured persons and unemployed married women, regardless of what form of payment is adopted for approved lives, *i.e.*, those approved after examination by a medical man, be 10s.; for those not so approved, and those who are apportioned among medical men, payment to be 2s. 6d., exclusive of medicines, institutional treatment, and also those items given as extras in the public medical service of this Association. (See Supplement, May 7th, 1910). That the fees for the extras excluded by the above be determined after negotiation between the Association and the Commissioners.

(13) By Birmingham Central:—

That in order to ascertain the method and amount of remuneration that should be required by the Association, the Council be instructed to take in the quickest way possible a referendum of the Members as to their preference for payment per attendance or *per capita*, on the suggested basis of 2s. 6d. per visit, and 1s. 6d. per consultation, exclusive of medicines and appliances, with double this rate for visits and consultations needed between the hours of 8 p.m. and 8 a.m., and a mileage fee at the rate of 1s. per mile over one mile in one direction; or on the suggested basis of 10s. *per capita* for males in approved societies, and 15s. *per capita* for Post Office contributors and women, exclusive of medicines and appliances, and a mileage fee at the rate of 1s. a mile over one mile in one direction.

In both cases a scale of fees for special visits and consultations out of usual hours, special consultations, operations, etc., to be drawn up in accordance with the scale usual for this class of patients.

(14) By Bury and Rochdale:—

That the Council be instructed to ask the Branch Councils to ascertain from the Divisions what would be adequate remuneration for an efficient medical service—also which method of remuneration meets the wishes of the Divisions.

Fees for Examination of Candidates for Approved Societies.

(15) By Kensington:—

That the fee to be asked for the medical examination of an insured person desirous to become a member of an approved society shall be not less than 2s. 6d. That, if a detailed examination of an insured person is required, the fee shall be not less than 10s. 6d.

Fees Payable to Practitioners called in on advice of Midwives.

(16) By Kensington:—

That the fees payable to a medical practitioner called in on the advice of a midwife as provided for in Section 18 (1) shall be those approved by the Representative Meeting at the Caxton Hall in 1906.

SCALE OF FEES REFERRED TO.

	£	s.	d.
Visit (including any necessary prescription):			
Day (7 a.m. to 7 p.m.)	0	3	6
Night (7 p.m. to 7 a.m.)	0	7	6
Attendance at cases of operative interference	2	0	0
Administration of an anæsthetic	1	1	0

The above are minimum fees.

Fees for Accident Compensation Cases.

(17) By Kensington and South Edinburgh:—

That a registered medical practitioner attending an insured person who, in consequence of Section 11 of the Act, is deprived of all additional financial benefit in the way of compensation for injury or disease resulting from an accident, should have a legal claim for remuneration for services rendered on the approved society or Insurance Committee which obtains the compensation payment.

Salary of whole-time Medical Inspectors or Examiners.

(18) By Kensington:—

That should an approved society or other body require the services of a medical practitioner as whole-time medical inspector or medical examiner under the Act, the Association cannot approve of a less salary than £750 being offered.

VI.—*Medical Representation.*

(19) By Connaught:—

This Meeting is of opinion that the Local Medical Committee should have the appointment of the two medical members of the local Insurance Committee, and that the Insurance Commissioners should accept their recommendation.

(20) By North Staffordshire:—

That in the case of the medical men to be appointed by the Council of the County or County Borough to the Insurance Committee they shall be selected from a number whose names shall be submitted to the Council of the County or County Borough by the local Medical Committee.

(21) By South-West Essex:—

That all matters relating to medical attendance on patients be arranged through the statutory local Medical Committees and that the Insurance Committees should not deal directly with individual medical practitioners but only through these Medical Committees.

(22) By Exeter:—

That it must be guaranteed that no regulation which affects the work of the profession shall be adopted by an Insurance Committee unless it has previously received the sanction of the local Medical Committee.

(VII.)—*Professional Discipline.*

(23) By Reigate:—

That no member accepting work under the Act be removed from the panel without the sanction of the General Medical Council.

(24) By Liverpool:—

That in the exercise of disciplinary powers for the removal of a medical practitioner from the panel, an appeal should be allowed to a Medical Court of Appeal to be constituted *ad hoc*, and this Meeting direct the Council carefully to watch the directions of the Insurance Commissioners as to the prescription of disciplinary measures, and not to proceed with arrangements for working the Act until the medical profession are fully safeguarded against injustice.

(25) By Kensington:—

That the Insurance Commissioners shall not exercise the power conferred upon them by Sub-section (2) *(b)* of

Section 15 of the principal Act of removing the name of any medical practitioner from any such list as mentioned in such Sub-section without the concurrence of the General Council of Medical Education and Registration of the United Kingdom.

(VIII.)—*Compensation in certain Cases.*

(26) By Birmingham Central:—

That compensation should be paid for loss of goodwill due to the Act in cases of death or compulsory sale of practices in the next three years following the passing of the Act.

(27) By Manchester (North):—

That compensation be paid by the State for the loss of goodwill due to the Act in cases of death or sale of practice in the next three years.

(IX.)—*Superannuation of Medical Officers.*

(28) By Manchester (North):—

That provision be made for the superannuation of medical officers on the lines of the Poor Law Medical Service.

(X.)—*Pharmacists.*

(29) By Southampton:—

That the Council press for an amending Act, especially in reference to Clause 15, prohibiting under penalty pharmacists from

(*a*) Medically advising, prescribing for or treating patient.
(*b*) Treating wounds beyond rendering first aid in emergencies.
(*c*) Performing any surgical operation whatever.
(*d*) Repeating any prescription unless re-endorsed by the prescribing medical man.
(*e*) Compounding any prescription for any person except the one for whom it has been prescribed.
(*f*) Compounding or supplying any drugs for medical purposes unless on the prescription of a medical practitioner.

(XI.)—*Insistence on Requirements.*

(30) By East York:—

That the Council should urge strongly on every Division that under no circumstances whatever should any Division commence any negotiations or bargaining with any Insurance Committee until the requirements of the Council have been obtained from the Insurance Commissioners.

(31) By East York:—

That if it be found impossible to incorporate the six cardinal points in the regulations, then the foregoing resolution shall hold good until an amending Act is passed.

Organisation of Profession.

(I.) *Notification to Signatories of Undertaking.*

(32) By Ashton-under-Lyne:—

That it be an instruction to the Council that they notify all those who have signed the pledge of the Association that they must not go on any panel or undertake any of the duties which the Act proposes to assign to them, and that this instruction remain in force until such time as the six cardinal points are unreservedly conceded by Act of Parliament.

(II.) *Co-operation with Medical Corporations.*

(33) By English Division, Border Counties Branch:—

That in order to secure unanimity throughout the profession in dealing with the situation created by the passing of the National Insurance Act, the Council be instructed to invite the co-operation of the Universities, the Royal Colleges of Physicians and Surgeons, the Society of Apothecaries, and such other medical corporations or societies as may be thought desirable in promoting the formation of an English Medical Insurance Council to consist of representatives of the above bodies, and of the British Medical Association, and also of direct representatives from the insurance areas, these representatives to be selected by the votes of the medical practitioners residing in the areas, whether Members of the British Medical Association or not.

That the functions of the English Medical Insurance Council be generally defined as follows:—

I. To consider the position of the profession with regard to the National Insurance Act.
II. To ascertain the real wishes of the profession by referendum or otherwise.
III. To act on behalf of the profession in bringing about, by the promotion of a supplementary Act or otherwise, such modifications of the National Insurance Act as will satisfy the just and reasonable demands of the profession and protect and maintain the independence of its members.

(34) By Gloucestershire:—

That it is desirable that the British Medical Association fall into line with the Councils of the Royal College of Physicians, Royal College of Surgeons, Society of Apothecaries, and the Universities of England and to unify the attitude of the entire medical profession with regard to the Insurance Act. In order to effect this purpose it is desirable that the various bodies named should form a central committee of representatives as has been done in Scotland.

(35) By Salford:—

That the Council be instructed to take such steps as it may consider best calculated to secure the establishment of a Central Insurance Council for England for dealing with the Insurance Act upon similar lines to that already established in Scotland, and that with the view of obtaining proportional representation of the whole profession throughout England, all the Universities and Royal Corporations throughout the United Kingdom be asked to co-operate.

(III.)—*Organisation as regards Contract Practice Appointment.*

(36) By Manchester (North):—

That (eighth and ninth lines) between the words "rates" and "than" (Minute 54) there be inserted the words "or other terms"; and that after the word "persons" (eleventh line) there be added the words "the signature of a legal penalty bond being a necessary part of such organisation."

Minute 54.

54. Resolved: That the Council be instructed to take steps to organise the profession so as to secure that, failing the provision of adequate remuneration of medical practitioners and the fixing of a definite wage limit under the National Insurance Act, no medical practitioner shall give medical or surgical treatment to persons insured under the Act under a contract practice appointment held at lower rates than those which may be agreed upon as adequate by the Representative Body, after reference to the Divisions, for attendance upon insured persons, and that no contract practice be introduced into any district against the wishes of the majority of the members in that district. Further, after obtaining the adequate rate, the Representative Body shall insist that before any member of the profession can agree to accept work under a contract appointment, free choice of doctor by patient and of patient by doctor must be granted.

(37) By Salford:—

That the Representative Meeting urge on the Council the necessity of securing the unanimity of the profession by means of a bond, and that it be an instruction to Divisions to urge the acceptance of the bond upon all practitioners in their respective areas.

(38) By City:—

That the following words be added to Minute 54:—

"That steps be taken to secure that any arrangements that may be agreed upon shall stand good for a period of five years unless altered with the consent of the Local Medical Committee."

(39) By Barnsley :—

That the following be added to Minute 51:—

"And considering that many medical practitioners at present attend large family clubs in different districts (especially in colliery and manufacturing districts) and that the effect of the present Act is to upset the balance of the payments received by the medical men, by reducing the amount paid by the single men, who now help to pay for the married men's families, and so makes the Act unworkable, the profession should be so organised as to prevent the pernicious system of underselling in the new arrangements which will have to be made."

(40) By St. Pancras and Islington :—

That a Central Committee be forthwith appointed, with instructions to consider what steps, if any, should be taken to secure the cessation of bargaining between Friendly Societies and individual medical men, and to report to the Council at the earliest possible date: and in the meantime, to give advice to such Divisions as may apply for it as to the relations between members of the Divisions and their contract patients.

(41) By Scottish Division (Border Counties Branch) :—

That members of the medical profession holding friendly society or club appointments resign such appointments on June 30th, notice of resignation being given not later than June 1st, and that those members of the medical profession who do not hold such appointments honourably pledge themselves not to take up such appointments.

And that such undertakings be in the form of a legal document duly signed and witnessed that shall carry with it a penalty of One hundred pounds for each year of further holding such appointment.

(42) By North Lincoln :—

That the Council call upon all present holders of club appointments to give notice to terminate the same at Christmas, 1912.

(43) By Leeds :—

That the Council issue a circular letter to all members of the medical profession requesting them to sign a pledge refusing to undertake contract work from the time the National Insurance Act comes into force, without first obtaining the permission of the local Medical Committee representative of the medical profession of the district to which they belong, and that they also refuse to meet any man in consultation who has undertaken such contract work without the permission of the aforesaid Committee.

(IV.) *Paid Organisers.*

(44) By Kensington :—

That it be an instruction to the Council to consider and report on the best means for providing efficient district paid organisation for Scotland and Wales and certain districts of the United Kingdom, with a view to assisting the Branches and Divisions in those respective areas.

(D.)—As to Act as Affecting Ireland.

(45) By Connaught :—

This Meeting protests against section (9) clause 81 of the Insurance Act, which may deprive Irish practitioners of all the safeguards in the Act.

(46) By Connaught :—

This Meeting thoroughly approves of the formation of an Irish Conjoint Committee to include representatives of the Universities and Colleges.

(E.)—As to Non-Political Nature of Attitude of Profession.

(47) By Tyneside and South Shields :—

That this Meeting desires most emphatically to protest against the allegations of the Chancellor of the Exchequer and other members of the Government that our opposition to the Insurance Act has been actuated by or influenced by political motives, either from within the profession or outside influence.

(F.)—As to Amendment of Medical Acts.

(48) By Birmingham Central :—

That the Council be instructed to take steps to obtain an amendment of the Medical Acts upon the lines laid down by the General Medical Council for the suppression of unqualified practice.

(G.)—As to Appointment of Medical Secretary.

(49) By North-West Edinburgh :

That the appointment of Medical Secretary be not made for six months.

(50) By Tyneside and South Shields :—

That the appointment of Medical Secretary be made by the new Council.

(H.)—As to National Medical Union.

(51) By Exeter :—

That this Representative Meeting hereby records its emphatic protest against the matter of a communication dated 6th February, 1912, sent out by the National Medical Union, and signed by T. Weller Hart as Secretary thereof.

Requirements of Profession.

Minute 78.—Resolved: That it be an instruction to the Council to take all possible steps to ensure that no member shall take any office or work under the National Insurance Act other than that of the Advisory Committee until such time as the minimum demands of the profession are conceded in the Regulations or an amending Act.

Minute 79.—That the foregoing resolution shall not apply to Ireland.

Minute 80.—Resolved: That the foregoing resolution (Minute 78) shall not preclude a Medical Officer of Health from giving advice to an Insurance Committee in his official capacity.

APPENDIX (B).

AMOUNT OF REMUNERATION OF MEDICAL PRACTITIONERS UNDER THE NATIONAL INSURANCE ACT.

1. The Association proposes to deal with this question (1) by analysing the figures put forward by the Chancellor of the Exchequer at the Deputation on Friday, June 7th, 1912; (2) by stating the evidence based on the figures taken from present medical contract work; (3) by stating the evidence based on present conditions of private practice; (4) by stating the evidence based on present State or municipal medical services.

(1) Analysis of Chancellor's Figures.

2. The Chancellor estimated that the number of insured persons and their dependents in England, Scotland, and Wales was 36,000,000, of whom 12,000,000 would be insured persons.

3. There are in England, Scotland, and Wales 29,567 registered practitioners. Of these the Association considers some 5,000 are either consultants, whole-time medical officers of various kinds, or general practitioners who do not attend on the classes concerned with the Act. There are probably about 2,000 practitioners who are retired, or who, though on the register, have never practised. This leaves us with 22,567 practitioners who are engaged in attending insured persons and those dependent on them—roughly speaking, 22,500.

4. For 12,000,000 insured persons at 10s. a head (8s. 6d., plus 1s. 6d. for medicines and appliances) a sum of £6,000,000 would be required.

5. To this the Chancellor added £2,000,000 for extras. This is admittedly a guess. No one is in a position to gauge what these extras will amount to. The Association is of opinion that £1,000,000 would be nearer the mark, but for the purposes of argument £1,500,000 may be allowed.

6. That is, there would be a total of £7,500,000 available for medical remuneration for attendance on 12,000,000 persons—that is, a total payment of 12s. 6d. per head inclusive of extras, giving an average of £333 per doctor per annum.

7. If the same remuneration were obtained for the other 24,000,000 the average income per practitioner would be £999 per annum, this including all drugs and extras (operations, night visits, mileage, anæsthetics, etc.), but exclusive of any income derived from obstetric practice.

8. The 24,000,000 people remaining may be divided into two parts—half of them will be ordinary private patients from whom it may be assumed that the full amount of 12s. 6d. a head will be obtained. This would produce a total income of £7,500,000, from which a deduction of at least 10 per cent. should be made for bad debts, leaving £6,750,000.

9. The remaining half consists of (1) those who are and will remain objects of charity, (2) those who rarely or never pay doctors' bills, (3) those who are mainly attended through some form of contract practice. The chief "raison d'etre" of the medical benefits of the National Insurance Act is the existence of this class, which admittedly at present does not get proper and sufficient medical attendance. It is a generous estimate to say that, if left to their own resources, these 12,000,000 will pay an average amount of 4s. per head (the present average contract fee), it being remembered that there is no question of payment for extras as regards this class. This half will produce a total income of £2,400,000.

10. We have thus:—

12,000,000 at 12s. 6d.	£7,500,000
12,000,000 at 12s. 6d., less 10 per cent. for bad debts	£6,750,000
12,000,000 at 4s.	£2,400,000
Total	£16,650,000

11. If this is divided between the 22,500 doctors, we have an average income of £740, but from this must be taken one-sixth for drugs, leaving a gross income of £617.

12. These figures are *gross* income. The cost of conducting the practice—*e.g.*, travelling expenses, cost of occasional locums, instruments, books of reference, etc., must be deducted before the really effective income is arrived at.

13. Even allowing for an addition for obstetric practice and from sanatorium benefit, the Association would submit that the Chancellor's own figures, when analysed, show that at the estimate of 8s. 6d. per head the income earned by a practitioner for the medical care of 1,600 people would still be a modest one, not at all out of proportion to the expense and time needed to become qualified and to the demands made upon the practitioner by the community. The income is certainly not more than would be required to attract those practitioners who have in the past held aloof from contract work. Their co-operation must be secured if the Insurance Service is to be satisfactory to the insured persons and acceptable to practitioners, who are determined not to accept this work except on conditions, pecuniary and otherwise, which will allow them to do their best.

14. A claim that such an income is greater, even considerably greater, than the present average income does not affect the case. The Association is of opinion that the pronounced tendency during the past few years to a decrease in the number of entrants into the profession is evidence that the average professional income of the past has been insufficient.

(2) Evidence Based on Present Contract Practice Work.

15. The Association collected certain figures which were published in its Contract Practice Report of 1904. Recently more figures have been collected from practitioners engaged in contract medical practice and from various contract medical institutions.

16. The following figures are based on returns which the Association believes may be taken as trustworthy:—

A. From contract practice appointments in the hands of general practitioners:—

Attendances (*i.e.* visits at home and attendances at surgery)	373,490	Average attendances 3·75
No. of Members	94,534	

B. Provident Institutions:—

Attendances ...	1,150,411	Average attendances 6·2
No. of Members	184,060	

C. Friendly Institutions:

Attendances ...	[illegible]	Average attendances 5·69
No. of Members ...	57,108	

Grand average 5·12*

* [illegible] of the conferences of the Association, of which [illegible] informed by the Deputation on June 12th, 1912.

17. Independent corroborative evidence of these figures is contained in the careful analysis of a practice in London given in a paper by James F. Sowerby, A.C.A., in the Supplement to the *British Medical Journal* of May 25th, 1912 (copy forwarded herewith).

18. Thus, taking all the figures as regards contract practice which the Association has been able to collect (after discarding many which were obviously based on mere guesswork), it transpires that the average number of attendances per head per annum on contract practice patients is a little over 5.

19. The Association is of opinion that this number will be exceeded under the conditions which will prevail under the National Insurance Act. Free choice of doctor always leads to a demand for more attendance. It is well known that under present conditions, in which the club doctor is chosen by the majority of the club, a certain proportion prefer to go to the doctor of their choice and pay his private fees. Estimates of the numbers who do not take advantage of the services of the Club doctor vary greatly, but a very moderate estimate would be 20 per cent. The paper of Mr. Sowerby, already referred to, furnishes interesting evidence upon this point.

20. It is believed, therefore, that in estimating the number of attendances per patient under the panel system of the National Insurance Act at 5, an under-estimate rather than an over-estimate is being made.

21. 8s. 6d. divided by 5 would give the modest payment of 1s. 8d. per attendance, without medicine, and if the attendances were increased, as they probably would be by at least 20 per cent., the fee would work out at 1s. 5d.

(3) Evidence Based on Present Private Practice Conditions.

22. The recognised standard fee for ordinary domiciliary attendance on the artisan classes may be taken to be 2s. 6d. per attendance, inclusive of medicine. Allowing one-sixth off for drugs, the net fee is 2s. 1d. If we allow 10 per cent. for bad debts, which is, according to the experience of general practitioners, a fair deduction in the case of established practices in which the doctor has eliminated those who will not pay, the net return per attendance is 1s. 10½d.

23. It is at once admitted that lower fees than 2s. 6d. are frequently charged, and that the customs in various parts of the country vary greatly, as, for example, lower charges for consultations at the surgery than for visits to the home, lower charges for attendances and extra charges for medicines, but the standard inclusive fee for medical attendance with medicine on fairly paid artisans is undoubtedly 2s. 6d.

24. In the opinion of the Association allowances which have been made to the poorer of the industrial classes, and which have led to less terms being accepted than this standard figure, can no longer be allowed to prevail in the case of persons who will, by the help of their employer and the State, be enabled to pay a reasonable remunerative fee.

25. A capitation allowance of 8s. 6d., if divided by 5, which is, as previously stated, believed to be an under-estimate of the attendances which will be required under Insurance Service conditions, will only realise 1s. 8d. per attendance, as against the 1s. 10½d. which is now obtained from people in a position to pay the regulation fee for the artisan.

(4) Evidence Based on Present State or Municipal Services.

26. This evidence is, of course, well known to the Government and to the Commissioners, and the Association would be quite willing to base its case for the 8s. 6d. upon this alone.

27. For many years 8s. 6d. has been paid by the Post Office for medical attendance on Postal Servants.

28. The conditions of the Insurance Medical Service will be in many respects similar to those prevailing in the Post Office.

29. For example, both Services demand ordinary domiciliary attendances, and both services include men and women.

30. The remuneration for the Postal Service includes
(a) The provision of medicine, which is not included in Insurance Service;

(b) Certain special examinations and certificates, which will not be required in Insurance Service.

31. The Postal Service has an income limit of £160 per annum, while the Association asks for a £104 limit as regards the Insurance Service.

32. But

(a) The Postal Service includes only strictly selected lives, while the whole tendency of the approved societies is to abolish entrance medical examination.

(b) Those who become chronic invalids are excluded from the Postal Service, and there is an age limit, which excludes the beneficiaries at a time when the incidence of sickness becomes greatest.

33. The insured person must be attended to the day of his death.

34. The Postal Service does not give free choice of doctor, and it is well known that many postal servants call in and pay privately the doctor of their own choice, thus reducing the amount of attendance the Post Office doctor is called upon to give.

35. The amount of attendance required under the Insurance Service is thus so certain to be greater than that required under the Postal Service that the Association has no hesitation in stating that if 8s. 6d. *with* medicine is fair remuneration for the Postal Medical Service (and no one has ever suggested that the Post Office doctor is *over* paid), then 8s. 6d. *without* medicine cannot be said to be an over-payment for the Insurance Service. Either the Government has been paying too much for its Postal Medical Service, or in accepting less than 8s. 6d. for the Insurance Service the profession would be accepting too little—always assuming that equally efficient medical attendance is required in the latter case.

36. The case of the police and firemen may also be adduced as instances of payment of at least 8s. 6d. in connection with exceptionally healthy lives.

37. The Association submits that taking the four kinds of evidence available it is proved that the claim for 8s. 6d. a head exclusive of medicine is a reasonable one. It is admitted that in support of this claim no mass of statistical evidence is put forward. In the nature of the case such evidence does not exist and cannot exist until the new conditions of practice have been tried for at least two or three years. Whether the case of present contract practice conditions is taken, or the standard prevailing in remunerative artisan practice, or the conditions prevailing in present Government or municipal services, the Association believes that its claim for a minimum payment of 8s. 6d. per head exclusive of medicine is moderate, and therefore justifiable.

APPENDIX (C).

(D 55)

British Medical Association,
Medical Department,
429, Strand, London, W.C.,
June 15th, 1912.

Dear Sir,

Government Inquiry into Medical Remuneration.

As you will observe from page 1,385 in the "British Medical Journal" of June 15th, 1912, the State Sickness Insurance Committee recently applied once again to the Insurance Commissioners for a definite statement as to their ability and willingness to satisfy the profession with regard to its minimum demands. In doing so, the Committee added that, if it would be of any assistance to the Commissioners for the purpose named to have an immediate conference with the Committee, the Committee was quite prepared to place itself at the disposal of the Commissioners. Having received an affirmative reply, the Committee resolved to accept the invitation, and the whole of the Committee met the Chancellor of the Exchequer and the Commissioners on June 7th, and again on June 12th. The Chancellor expressed his desire of obtaining from medical practitioners, in selected typical areas, evidence as to the remuneration now obtained from those who will be insured persons. The Committee, though stating that it was confident that the demand of the profession as regards remuneration is perfectly sound and could not be affected by the results of any such inquiry, promised to give the Chancellor every possible assistance in the collection of the information desired, and to advise practitioners in the selected towns to co-operate for this purpose.

Number of Assistants to General Practitioners.

The above inquiry is only to be made in certain selected areas to be agreed on between the Commissioners and the Association, but there is one item of information which the Chancellor desires and which the Association would be glad to have from every area, namely, the number of assistants who are engaged in general practice. I shall be glad if you will at once make inquiry in your Division area and inform me—

(1) How many practitioners have one assistant;

(2) How many practitioners have more than one assistant, giving the numbers in each case.

The names of the practitioners or assistants are *not* required.

I am, yours faithfully,

ALFRED COX,
Medical Secretary.

To the Honorary Secretaries of Divisions and Branches in England, Scotland, and Wales.

(D 57)

British Medical Association,
Medical Department,
429, Strand, London, W.C.
June 19th, 1912.

Dear Sir,

Government Inquiry into Medical Remuneration.

1. You have already been informed through the columns of the JOURNAL of June 15th (pages 1384 to 1386) that the State Sickness Insurance Committee has promised to give the Chancellor of the Exchequer every possible assistance in the collection of certain information as regards medical remuneration in selected areas to be agreed upon between the Commissioners and the Association. I am to inform you that .... has been agreed upon as one of the towns from which information is to be sought.

2. The following is the letter from the Chairman of the English Insurance Commission referring to the subject, together with the Memorandum containing the instructions to the Investigator:—

(For letter and Memorandum, *see* pages 9 and 10.)

3. The Chancellor informed the deputation from the State Sickness Insurance Committee on Wednesday, June 12th, that he hoped to give a definite answer to the Association's demands as regards remuneration under the Act in time for report to the Annual Representative Meeting which begins on July 19th. He indicated that it would be of the greatest assistance to him in making up his mind and, if necessary, in placing before Parliament a case for greater expenditure on Medical Benefit,

to have the results of this investigation in his hands at an early date. The State Sickness Insurance Committee hopes, therefore, that the practitioners in ——— will give all the assistance they can to the Investigator, as the time for pursuing the investigation is extremely short.

4. The Association decided to ask the President of the Institute of Chartered Accountants to nominate an Investigator, and Sir William Plender, Past-President of the Institute, of the firm of Deloitte, Plender and Griffiths, of 5, London Wall Buildings, London, E.C., has undertaken the investigation.

5. Lists of the practitioners in the selected towns are being furnished to the Investigator, and it is his intention to begin work not later than Monday, June 24th, so that each of the practitioners concerned may expect to hear from him within the next few days.

6. It is hoped that you will *at once* call a Meeting of the practitioners in ——— to consider the matter. I forward you a sufficient number of copies of this letter to send to every practitioner in the town, and in summoning the meeting I trust you will ask each practitioner to carefully consider the memorandum of information forwarded by the Commissioners, so that he may be in a position to assist the Investigator by having as much as possible of the information required previously extracted from his books.

7. Practitioners will also note from the letter of the Chairman of the English Commission with what care and respect for confidential information the inquiry will be conducted.

8. It is most important that the practitioners concerned should understand the exact relation of the Association to this inquiry. The State Sickness Insurance Committee has informed the Chancellor that the inquiry is not of its seeking, that the information obtained as the result of the inquiry will probably be inadequate and may be misleading, and that the demand of the profession as regards remuneration cannot in any way be affected by the results of the inquiry. Seeing that the Chancellor desires to obtain figures which could be used in comparison with those already placed before him by the Association, and that the Committee has absolute confidence in the justice of its case, it was felt that no obstacles could be placed in the way of such an investigation, particularly in view of the promise given that the facts arrived at will be placed at our disposal at the same time that they will be given to the Chancellor, that they will be open to the Association to use in whatever way may seem best for our purpose, and that the expenses incurred by the Investigator will be borne by the Government.

9. I am instructed, therefore, to urge you to bring this matter at once before the practitioners in the town of ———, and to ask them to do all in their power to further the proposed investigation so that the results may be arrived at as quickly as possible.

I am, yours faithfully,
Alfred Cox,
Medical Secretary.

The Honorary Secretary.

APPENDIX (D).

(D 47).

British Medical Association,
Medical Department,
429, Strand,
London, W.C.
March 18th, 1912.

Dear Sir,

National Insurance Act.—Formation of Provisional Medical Committees.

I forward with this letter a Memorandum, issued under instructions of the State Sickness Insurance Committee, for the information of the Divisions and Branches of the Association relative to the setting up of Provisional Medical Committees.

I am instructed to say that there is no desire to secure uniformity at the expense of efficiency or convenience. Every Division or Branch, therefore, which has already made its arrangements for dealing with this question, is requested to use the advice contained in the accompanying Memorandum, so far as it deals with the constitution of these Committees, to the extent which is thought desirable. On the other hand, it is hoped that however they are constituted and whatever areas they cover, the Committees will at once set about the organisation of the profession in the ways indicated in the Memorandum, and will report progress from time to time to this Office.

The Secretary of each Provisional Medical Committee is requested to forward to this Office, notice of the establishment of such Committee, and of the area which it covers, at the earliest possible date, and also to state whether the Committee has agreed to recognise the Council of the Branch as the local co-ordinating authority as mentioned in paragraph 14 of the Memorandum. Further copies of the Memorandum can be had on request.

I am,
Yours faithfully,
Alfred Cox,
Acting Medical Secretary.

To Honorary Secretaries of Divisions and Branches in England, Scotland and Wales.

MEMORANDUM (D 46).

FOR THE ASSISTANCE OF DIVISIONS IN THE MATTER OF THE FORMATION OF PROVISIONAL LOCAL MEDICAL COMMITTEES.

1. The Special Representative Meeting, February, 1912, passed the following resolution :—

> *Minute* 63.—Resolved :—That the Council be instructed to make all necessary arrangements for assisting the Divisions and Branches in the appointment of Provisional Medical Committees in every insurance area, to safeguard the interests of the profession, without prejudice to the question of whether these Committees shall later accept recognition as statutory local Medical Committees.

2. The State Sickness Insurance Committee, acting on behalf of the Council, has carefully considered this resolution, and now urges every Division to take steps to carry it out by appointing forthwith for the area of the Division, a Provisional Medical Committee to safeguard the interests of the profession.

3. It appears to the Committee to be of the utmost importance that in the formation and guidance of any Provisional Committee set up, the Association should take a predominant part, and, therefore, that the machinery of the Divisions should be made use of. To attempt at present to set up Provisional Committees in all the proposed insurance areas, while still using the machinery of the Divisions, might be productive of great confusion and delay, because the respective areas are in many cases not co-terminous. It has, therefore, been decided to ask every Division to proceed at once to form a Provisional Medical Committee in its own area, without any present reference to the Insurance areas. In this way the country will be covered by Committees set up with the sole purpose of organising the profession in regard to the Insurance Act; the machinery of the Association can easily be brought to bear on the situation, and the problem of electing statutory local Medical Committees, if the Association decides later to take part in working the Act, can be dealt with subsequently.

Mode of Election of Provisional Medical Committees.

4. It is not desired to lay down hard and fast rules to govern the mode of election of these Committees, because local circumstances differ so widely. Where the Division is a fairly compact one the Committee may well be elected at a meeting of the profession. In this case, of course, all members of the profession should be invited, and special efforts should be made to induce non-members of the Association to attend. If it is thought desirable the election may be conducted by a postal vote. But if the latter method is adopted a meeting should be called previous to the election, in order that such questions as the size of the Committee, the proportion of Members of the Association to non-members on the Committee, and the general duties of the Committee may be discussed. It may be convenient, and would help to secure the predominant position of the Association on the Committee, if the Executive of the Division were taken as the nucleus of the Committee to which representatives of non-members were subsequently added.

5. It is most desirable that every class of practice in the district should be represented on the Committee, as the question of the organisation of the profession against the dangers which threaten it is one for the whole of the profession. It is particularly important to have representation of consultants and members of hospital staffs, as their co-operation will be essential if the Act is to be fought. If the area is a scattered one, provision should be made that the various districts shall be represented on the Committee, the local representatives being regarded as specially watching the interests of the profession in their districts. It is not desirable that the Committees should be too large, but the size will depend on the nature of the district. In a scattered district where various localities need representation the number would need to be larger than in a compact Division. A definite proportion of the Committee should be allotted to non-members of the Association. It is suggested that the total number of the Committee should bear a stated proportion to the number of the profession in the area, and might range from 10 per cent. in a Division of one hundred or over, to 20 per cent. in a smaller Division.

6. If the area of the Division should lie in two or more Insurance areas, it would be an advantage to elect on the Provisional Committee a number, in proportion to the medical population, from each separate area, and the members from eachseparate area might, if thought proper, be elected by the practitioners in that area alone, and might form Sub-Committees for the respective areas.

MEETINGS OF THE COMMITTEE AND OF THE PROFESSION.

7. The Meetings of the Committee should be held at regular intervals to report progress. At intervals the whole of the local profession should be called together, because the Committee must be assured, from time to time, that it continues to represent the views and has the loyal support of the whole local profession.

WORK OF THE COMMITTEE.

(A) *General.*

1. The work which lies before each Provisional Medical Committee is to so organise the profession that whatever happens it may be ready. It is the safest plan to prepare for the worst, and the worst will probably be an attempt by the Commissioners or Insurance Committees, having failed to meet the demands of the profession, to hand the money provided for medical benefit over to the Approved Societies and allow them to make the medical arrangements. In such a case the temptation offered to the doctors who at present hold Friendly Society appointments would be great, and one of the first and most important duties of the Provisional Committee will be to ascertain the views of the club doctors in the locality and to make sure of their loyalty. There certainly will be a temptation to accept an increase of work, and possibly of remuneration, which so far as the latter is concerned might probably only be temporary. If any considerable number of the profession gave way to this temptation the chance of greatly modifying, if not ending, the control of the profession by the Friendly Societies, would be lost, probably for ever. The terms of the Undertaking already signed by the overwhelming majority of the profession are such that those who have signed are in honour bound to refuse to make any arrangements whatever as regards medical attendance on insured persons, except through their local Medical Committee. The first business of the Committee will be to satisfy itself and the Association that they can depend upon all the local doctors, and particularly the club doctors, taking this line. It will follow that the club doctors must in their turn be assured of the loyal support of the rest of the local profession.

(B) *New Members of Association.*

9. Strong efforts should be made to obtain additional members of the Association. The Association is bearing the responsibility of this campaign, and it is only fair that the profession generally should be made to realise that they can and ought to support it with all their might, and that non-members can do so most effectively by coming into its ranks.

(C) *Local List of Contract Practice Doctors.*

10. A complete list should be obtained, in each district, of those engaged in contract practice. This it has been found impossible to do centrally, the returns given in the signed Undertakings being very incomplete. It can only be done properly by a personal canvas in each area. The information is practically essential to proper organisation and should be obtained without delay. The list should include every club held by every member of the profession in the area of the Committee.

(D) *Individual Canvass of Local Profession in regard to Local Campaign.*

11. Each Provisional Medical Committee should set itself to obtain :—

(i.) from practitioners at present engaged in contract practice, an undertaking that they will decline to receive insured persons into their clubs on terms other than those acceptable to the Committee, and also to pledge themselves to place their resignations of such clubs in the hands of the Committee for use as and when required. A form of bond for this purpose is being prepared.

(ii.) from all practitioners, an undertaking to refrain from applying for or accepting any post vacant in consequence of the resignation (when proffered at the request of the Committee) of the present medical officer; also to decline to accept on their list of insurance patients, for the first six months after medical benefit is in force (if this is administered on terms approved by the Association) any persons previously members of a club, if the present medical officer signifies his wish to retain them.

(iii.) from all practitioners a guarantee of as much as they can afford to the Insurance Denfence Fund, either Central or Local. If no local fund has up to the present been formed, it is strongly advised that no such fund be formed and that the guarantee be made to the Central Fund, as this is a much more simple procedure from the point of view of book-keeping, and the money can be directed from such a fund to the district where it is most needed. In view of statements which have been made, the Provisional Committees would do well to inform practitioners that the Association has been assured on high legal authority that there is no difficulty in the way of the Council of the Association administering such a voluntary fund or devoting it to the compensation of practitioners who need such compensation. The possession of a large fund would do more to reassure those practitioners who fear that a fight with the Friendly Societies would seriously injure them, than any other thing which it is within the power of the profession to do. The profession could raise, with the greatest ease, a guaranteed fund of £250,000, and a great deal more if required, and would then, undoubtedly, be in a position to support practitioners who were proved to have suffered loss by loyalty to the policy of the Association. There are few members of the Association who would not guarantee £5, knowing that the payment of this sum will be spread probably over three or four years, that it will be called up in small sums proportionate to the amount of the guarantee, and that probably most of it may not in fact be required. It must be remembered that no money can be required, except for administrative purposes, until the Act has been in force for some time and actual loss shewn to have been incurred. The great majority of practitioners could easily afford to guarantee more than £5, and will do so if once they realise that this is a great crisis in the history of the profession which demands self-sacrifice and determination.

12. There are many other points in the plan of compaign which the Provisional Committees will have to deal with, but these may be left for a further circular. It is most important that the Committees should be formed without delay and in such a way as will make them thoroughly representative of the local profession, and that they should at once set about (*a*) finding out how many local practitioners are engaged in contract practice work, and to what extent, (*b*) ascertaining their attitude and making sure of their loyalty to the policy of the Association, (*c*) raising funds, (*d*) getting every possible member of the profession into the Association.

EXPENSES OF COMMITTEE.

13. It has been decided that the expenses of the Committee shall be defrayed out of the Central Defence Fund, or, if a local Defence Fund exists, out of the latter fund. A special account should be kept, separate from the ordinary Division account, and where a Local Fund does not exist a statement should be sent up from time to time to the Head Office, when the expenses will be defrayed. It must be clearly understood that unless local exceptional conditions can be shown to exist,

expenses will only be defrayed from the Central Fund when the practitioners of the district have shown their willingness to support that fund.

Co-ordination of the Work of Provisional Medical Committees.

14. It is suggested that in order to co-ordinate the work of the Provisional Medical Committees, and in order still further to keep them in touch with the Association, all the Committees in the area of any Branch shall agree to recognise the Council of that Branch as the co-ordinating body for that area. Reports of progress should be made from time to time to the Branch Council, and it should be agreed by resolution that the Provisional Medical Committees shall enter into no dealings with any authorities under the Insurance Act until they have received the sanction of the Branch Council for so doing.

15. The Branch Councils will, in their turn, be responsible to the Council of the Association, and should agree by resolution that the Branch Council shall not accord its sanction for any Provisional Committee to enter into negotiations with any Insurance Authority, until it has received the sanction of the Council of the Association for so doing.

16. In this way it will be easy for the Association to carry out the policy adopted by the Special Representative Meeting in November, 1911, namely, "that no arrangements for attendance on insured persons be completed anywhere until the "Association is assured, by reports from the local Medical "Committees, that terms in conformity with the policy of the "Association in detail have been agreed upon everywhere."

Assistance from Head Quarters.

17. In carrying out the instructions given above, the Divisions can rely upon the utmost assistance being given by the Council of the Association, the State Sickness Insurance Committee, and the Head Office. It may be found necessary in order to arouse the enthusiasm and determination of the profession in certain districts to hold mass Meetings, and every effort will be made to supply such Meetings with speakers if desired. If offering this assistance, the State Sickness Insurance Committee confidently calls upon the Divisions to show by active organisation that the profession will not content itself with protestations but is prepared for work and, if necessary, for sacrifice.

APPENDIX (E).

(D. 49.)

NATIONAL INSURANCE ACT—
SUPPLEMENTARY PLEDGE FOR SIGNATURE BY MEMBERS OF THE PROFESSION.

British Medical Association,
Medical Department,
429, Strand, London, W.C.,
April 29th, 1912.

Dear Sir,

1. On behalf of the State Sickness Insurance Committee, I beg to bring to your notice the following Pledge, complementary to the Undertaking of the British Medical Association, to which it is desired to obtain the signature of every practitioner who has signed the Undertaking:—

Form of Pledge.

"In view of the possibility of the Medical Benefit under the National Insurance Act being suspended, or of an attempt being made to administer it through the approved Societies, or in any other way contrary to the wishes of the profession, I make the following declaration:—

I, the undersigned, hereby place in the hands of the Secretary of the Provisional Medical Committee of the area in which I practise, my resignation of all club, Friendly Society, Dispensary and other forms of contributory contract practice appointments which I hold, in so far as they extend to insured persons, and I authorise him to send these resignations to the bodies concerned, if and when he is called upon by the State Sickness Insurance Committee of the British Medical Association to do so.

I undertake not to accept any such appointment so resigned; and that I will only accept appointments dealing with insured persons with the consent of the State Sickness Insurance Committee given through the Provisional Medical Committee, and on conditions which shall allow of free choice of doctor by patient and of patient by doctor.

After that portion of the National Insurance Act, referring to medical benefit, comes into operation, and until the terms and conditions of administering Medical Benefit under the Insurance Act have been approved by the profession, (1) I will not, except in cases of urgent necessity, render professional service to an insured person through any voluntary medical charity, and (2) I will not co-operate with any member of the profession who is under contract to render service to insured persons upon terms which are not approved by the profession.

Signed.....
.....
.....

NOTE.—No use will be made by Provisional Medical Committees of these resignations until the State Sickness Insurance Committee is of opinion that the time is ripe for use to be made of all these pledges throughout the whole or certain parts of the Kingdom.

2. The following is the form of resignation, one of which it is proposed should be handed in to you for each contributory contract practice appointment (that is, an appointment consisting of persons who contribute to the cost of their medical attendance) which contains persons who will become insured on July 15th, 1912:—

Form of Resignation.

Address.....
.....
Date.....

Sir,

In support of the policy of the British Medical Association I hereby tender my resignation as medical officer of your Society (or Club), the same to take effect on the 15th January, 1913, as I am unable to continue after that date the present agreement for giving medical attendance and treatment to persons who will be insured under the National Insurance Act, and can enter into any new agreement having reference to insured persons, only through the Provisional Local Medical Committee for my district.

Yours faithfully,

.....

To the Secretary,
.....Society (or Club).

Objects of Pledge.

3. It will be noted that this Pledge in no way takes the place of the Undertaking. The latter document is, of course, still binding upon the honour of every practitioner who has signed it. But in view of the declaration of the Chancellor of the Exchequer at the Opera House, and of a statement by Mr. Masterman, M.P., in the House of Commons on March 20th, 1912, it is evident that what the profession will probably have to face is the suspension of medical benefit. It is in order that this move may be met and frustrated that the present Pledge has been drafted.

4. Its first object is to get into the hands of the Honorary Secretaries of all the Provisional Medical Committees forms of resignation of the large majority of all contributory contract practice appointments, so that these may be used simultaneously all over the Kingdom. It is not intended that the resignations should be sent in to take effect before medical benefit comes into operation on January 15th, 1913. It will probably be found desirable to send them all in on June 30th, 1912, thus giving six months' notice, which will be ample in by far the larger number of appointments of this kind. The effect of all resignations being tendered on the same date will, of course, be much more striking, from the point of view of impressing the Friendly Societies and the Government, than resignations at different times. The Provisional Medical Committees may, however, be assured that the State Sickness Insurance Committees will not take the step of ordering the resignations to be sent in until it is assured by reports from all over the country that such a step would be safe and effective.

5. The second object of the Pledge is to reassure those who at present hold appointments that if they resign them they will not be taken by other local practitioners. The fact that the resignations will be handed in simultaneously over the whole,

or over large areas of the Kingdom, will be a sufficient guarantee that the risk of practitioners being brought in from outside will be reduced to a minimum.

6. The third object of the Pledge is to insure that Insurance Committees and Friendly Societies will not be able to defeat the wishes of the profession by obtaining attendance through the hospitals or other charities, or to obtain the services of consultants. The third clause of the Pledge will also ensure that practitioners who may be induced to throw in their lot with those who may seek to defeat the profession will get no assistance from consultants and hospital physicians and surgeons.

Importance of Insurance Defence Fund in connection with Pledge.

7. Among the duties which the Provisional Medical Committees are expected to carry out is that of the collection of subscriptions and guarantees to the Central Insurance Defence Fund, which is administered on trust by the Council of the Association. Upon the response to the appeals made by the Provisional Medical Committees in each local area depends the power of the Council to carry out any adequate system of compensation to practitioners for any loss of income which may be proved to have arisen from their resignation of appointments out of loyalty to the profession.

Method of Securing Signatures.

8. Two methods of securing signatures to the Pledge and forms of resignations are open to the profession, namely: (1) That they should be obtained by postal circularising from the Central Office of the Association, and (2) that they should be obtained by local effort. The Committee has carefully considered both methods, and has unhesitatingly adopted the latter, firstly, because it is undoubtedly more efficient; secondly, because any system of central circularising would, however successful, leave in every area a residuum who would not reply to any postal communication, so that local effort would have to be resorted to sooner or later, and lastly, and not less important, because it is much more economical. It cannot be too strongly impressed on the profession at the present juncture, that a central canvass is a costly proceeding, and would produce a financial strain which the funds placed at the disposal of the Association are at present quite unable to bear. The local method has the further advantage of depending for its success on the energy and enthusiasm of the individual members of the profession on which the Committee confidently relies.

9. The procedure suggested is as follows:—

(a) Each Provisional Medical Committee will be supplied, on request, with a list of the practitioners in its area together with a copy of the Pledge for each practitioner. Sufficient copies of the present circular will be provided, on request, to supply each member of the Committee.

(b) As many copies of the Form of Resignation will be supplied, on request, as the Secretary thinks he will require. It may be a little difficult to estimate how many Forms of Resignation will be required until the information as to the number of appointments held in the area has been collected, but a rough estimate should at once be made by Secretaries, and a supply sent for.

(c) The Provisional Medical Committees are at present collecting information as to the contract appointments held by each practitioner in their area. This should be carefully listed, together with a statement as to the amount of notice required for each appointment, if known. If the appointment is held at the pleasure of the Lodge or Club, no notice is really required, but in order to have uniform action it is proposed that six months' notice shall be given. The same applies to those appointments in which three months' notice only is required—no complaint can be raised if six months' notice is given. If there is no agreement as to notice, reasonable notice is required by law to be given and the six months proposed would be ample. The only cases requiring special attention are those in which a twelve months' notice is specified *in a written agreement*. These cases should be carefully investigated and advice will be given respecting them on application to the Central Office.

(d) Meetings should be called as soon as the preparatory work has been carried out, and practitioners attending these meetings should be got to sign the Pledge and fill up the proper number of forms of resignation. As much should be done at meetings as possible (1) because in this way much time and trouble will be saved, and (2) because it is easier to get up the necessary enthusiasm and to bring pressure to bear on the waverers at a meeting than in a private interview. Meetings should be held in different parts of the Division when the area is at all wide.

(e) Having done as much as possible by means of meetings, those practitioners who have not signed the Pledge should be divided out amongst the members of the Committee, and each of them should be visited, if necessary, by more than one member, in order that his signature may be obtained. The work should be distributed amongst as many members of the Committee, or others willing to canvass, as possible, in order to get it done quickly and effectively.

(f) The Central Office will be willing to assist in any way possible in these efforts, either by providing someone to speak at meetings, or to assist large Divisions in their organisation, or, if need be, to visit those who have proved refractory to local persuasion and may be thought to be amenable to outside pressure.

(g) The Pledges should be forwarded to the Central Office, and lists will be kept here showing the progress of the work in each area. It is desired that a report, with the Pledges obtained, should be sent in once a week for the first four weeks.

(h) The forms of resignation should be kept by the Honorary Secretary of the Provisional Medical Committee and must only be made use of on direct instructions from the State Sickness Insurance Committee.

(i) As the determination with which the Association can persist in its demands on the Government and on the Commissioners depends entirely on the success of the present campaign, Provisional Medical Committees (or Divisions where such have not been instituted) which intend at once to institute the procedure outlined in the above paragraphs are requested to inform me to that effect not later than May 15th next.

10. In conclusion, I am instructed to inform Honorary Secretaries that nothing will be spared on the part of the State Sickness Insurance Committee to fulfil the duties laid upon it in February last by the Representative Body, acting for the profession. The Committee in turn looks to the Provisional Medical Committees to show by their action during the next few weeks that the individual members of the profession are no less determined to vindicate the independence and solidarity of the profession.

Public Medical Service.

The Special Representative Meeting instructed the State Sickness Insurance Committee to direct its attention to the desirability of preparing a scheme for a Public Medical Service to be administered by the Medical Profession in each insurance area. The Committee has given a good deal of attention to this question, but has been met with certain difficulties which have made delay unavoidable. Schemes of Services based upon both payment for attendance and capitation systems are now in active preparation, and it is expected that they will be ready for issue in about a fortnight.

I am, yours faithfully,
(Signed) ALFRED COX,
Acting Medical Secretary.

To Honorary Secretaries of (i.) Divisions, (ii.) Branches, and (iii.) Provisional Medical Committees in England, Scotland and Wales.

APPENDIX (F.)

(D. 40).

British Medical Association,
Medical Department,
429, Strand,
London, W.C.
[illegible] February, 1912.

Dear Sir,

NATIONAL INSURANCE ACT—NOMINATION OF MEMBERS OF ADVISORY COMMITTEE

The State Sickness Insurance Committee, appointed by the Special Representative Meeting held February 20th—22nd, met yesterday and considered the following letter from the National Insurance Joint Committee:—

National Health Insurance Joint Committee,
Buckingham Gate, London, S.W.
25th February, 1912.

Sir,

I am directed to state that the Joint Committee of Insurance Commissioners are engaged in constituting the Advisory Committee to be appointed under Section 58 of the Act, for the purpose of advising and assisting the Commissioners in the framing of Regulations.

The Act provides that in the Advisory Committee shall be included duly qualified practitioners who have personal experience of general practice.

It is proposed to appoint, as members of the Advisory Committee, not fewer than twelve medical men possessed of such experience, and the Joint Committee think it desirable that among these should be included medical men who have had personal experience of different kinds of medical practice (especially among the section of the community from which persons insured under the Act will chiefly be drawn) in various parts of England, Scotland and Wales.

In fulfilment of a promise given by the Chancellor of the Exchequer to the British Medical Association on June 1st last, the Joint Committee will be prepared to give careful consideration to any suggestions which the British Medical Association may desire to put forward of names of medical practitioners, including some from England, some from Scotland, and some from Wales, who are, in the opinion of the Association, qualified to represent in the Advisory Committee the points of view which it is necessary should be taken into consideration in the framing of Regulations. If the Association wishes to suggest names, the Joint Committee will be glad to receive these, to the number of not more than 24, at the earliest convenient date.

I am, Sir,
Your obedient servant,
(Signed) W. J. Braithwaite,
Secretary to the Joint Committee.

Alfred Cox, Esq., M.B., B.S.,
The Acting Medical Secretary,
British Medical Association,
Strand, W.C.

In accordance with the following Minutes of the Special Representative Meeting (February, 1912), it now becomes the duty of the Association to nominate suitable representatives of the profession for membership of the Advisory Committee:

Minute 60.—Resolved: That the Association take steps to secure the most suitable representatives of the medical profession upon the Advisory Committee, and for this purpose nominations shall be made by the Divisions and the final selection of names by the Council, and that the Council be instructed to make the necessary arrangements to carry this resolution into effect.

Minute 61.—Resolved: That while the British Medical Association is willing that members of the medical profession shall provisionally join the Advisory Committees, nevertheless it will use its best endeavours to ensure their resignation unless the six cardinal principles have been granted by amendment of the Insurance Act, by Regulation, Order or otherwise, and that it be an instruction to the Council to provide that all practitioners who are supported by the Association for membership of the Advisory Committees shall have pledged themselves previously to vacate their seats, if elected, should the British Medical Association determine to cease negotiations with reference to the National Insurance Act.

I am instructed to ask you to take such steps as are deemed necessary to bring this matter before your Division, so that the Division may, if it so desires, make a nomination for the Advisory Committee.

In bringing this matter before the Division kindly note the following information:—

1. No Division can nominate more than one person. He or she must be a member of the Association, but need not necessarily be resident in the area of the Division.

2. Nominations must be received not later than the first post on Saturday, March 9th

3. The fact that a practitioner is nominated by a Division will be taken by the State Sickness Insurance Committee to indicate that the nominee has consented to act if appointed, and will withdraw from the Advisory Committee in accordance with the latter part of Minute 61 (quoted above) if called upon by the Council to do so.

4. It is competent for the Divisions to nominate for service on the Advisory Committee any member of the State Sickness Insurance Committee, which was specially elected by the Representative Body to consider all matters connected with the National Insurance Act. The following is a list of the Committee (other than the Irish Members). Those starred are legible for nomination to the Advisory Committee as having personal experience in general practice, and would be willing, if appointed, to act.

(*Here was quoted list of Committee.*)

5. The Vice-Chairman of the National Health Insurance Joint Committee, in answer to questions, has stated that the Advisory Committee is likely to commence its sittings in two or three weeks' time; that it is impossible to state how often it is likely to meet, but probably not very frequently; that the travelling expenses of members will be paid by the Government, together with an allowance for out-of-pocket expenses, the amount of which has not yet been settled, but will be on the lines laid down in connection with Departmental Committees.

I am,
Yours faithfully,
Alfred Cox,
Acting Medical Secretary.

To Honorary Secretaries of Divisions
in England, Scotland and Wales.

APPENDIX (G).

STATEMENT OF DECISIONS OF COMMITTEE AS TO MATTERS TO BE INCLUDED IN REGULATIONS UNDER THE ACT.

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RESOLUTIONS RESPECTING REGULATIONS UNDER THE NATIONAL INSURANCE ACT.

Medical Benefit.

1. That a definition of the term "medical benefit" be included in the Regulations; that, in the opinion of the Committee, the term "medical benefit" should be held to mean "ordinary medical treatment and attendance" exclusive of extras, and that a list of extras be drawn up which should be subject to revision from time to time. (Minute 283, State Sickness Insurance Committee, May 9th, 1912.)

Misconduct.

2. That a Regulation must be framed by the Commissioners defining what is meant by the word "misconduct" occurring in the following Sub-section 14 (4):—

> 14. (4) Where, under any such rule as aforesaid, payment of sickness or disablement benefit is suspended on the ground that the disease or disablement has been caused by the misconduct of the person claiming the benefit, such person shall not thereby become disentitled to medical benefit,

probably accompanied by a schedule defining the diseases coming thereunder, consideration be postponed, for the time being, of the desirability or otherwise of any of the diseases mentioned in such schedule being held to be an extra. (Minute 224, State Sickness Insurance Committee, April 18th, 1912.)

Dressings.

2. (a) That provision be made in the Regulations whereby, for the purpose of the Act, the words "drugs, medicines, and appliances" occurring in Sub-section 15 (5) be understood to include "dressings." (Minute 235, State Sickness Insurance Committee, April 18th, 1912.)

INCOME LIMIT.

(*a*) *General Procedure.*

3. That provision should be made in the Regulations for the following:—

(a) That all or any of the following—namely, the medical practitioner, the insured person, the local In-

surance Committee, or the local Medical Committee, shall have the right of challenging the title of any insured person to obtain medical benefit, in the form of medical attendance under any scheme administered by the Insurance Committee, on the ground that his income exceeds a limit fixed by the Insurance Committee.

(b) That the onus of proof that an insured person is entitled to medical benefit, in the form of medical attendance, should rest on the insured person.

(c) That in such cases the Insurance Committee shall require a signed statement from an insured person showing his weekly wage, countersigned by his employer, and also showing his income from other sources, if any. (Minute 178, State Sickness Insurance Committee, April 11th, 1912.)

(b) Suggested Occupation Basis.

4. That the Committee, while not prepared to advise, for general acceptance throughout the kingdom, definite Regulations providing for an occupation basis for the application of the Income Limit, see no reason why an individual locality in dealing with the question of Income Limit should not take into consideration the question of classification by occupation with the Association Income Limit as a basis. (Minute 177, State Sickness Insurance Committee, April 11th, 1912.)

Extras.

Fund to be Responsible for Payment of Extras.

5. That the Insurance Commissioners should be responsible for the payment of medical practitioners for extras, and not the individual insured persons. (Minute 184, State Sickness Insurance Committee, April 11th, 1912.)

Vaccination.

6. That vaccination be an extra. (Minute 186, State Sickness Insurance Committee, April 11th, 1912.)

Fractures and Dislocations.

7. That fractures and dislocations be extras, but that consideration of the details of classification be postponed for the time being. (Minute 187, State Sickness Insurance Committee, April 11th, 1912.)

Consultations.

8. That a consultation with another practitioner be an extra so far as the ordinary medical attendant is concerned; and that no action be taken as regards the fee of the consultant. (Minute 188, State Sickness Insurance Committee, April 11th, 1912.)

General Anæsthetics.

9. (A) That the administration of a local anæsthetic be not considered an extra; and (B) that the administration of a general anæsthetic be an extra, and that the fee for such be 10s. 6d. to one guinea, according to the nature of the case. (Minute 197, State Sickness Insurance Committee, April 11th, 1912.)

Night Visits.

10. That night visits (from 8 p.m. to 8 a.m., in response to calls received between those hours) be an extra; and that the fee for such visits be an additional 4s. (Minute 198, State Sickness Insurance Committee, April 11th, 1912.)

Special and Sunday Visits.

11. That special visits (*i.e.*, visits made in response to, and on the same day as, calls received after 10 a.m., or made on Sundays at the desire of the insured person) be extras, and that the extra fee for such be 1s. (Minute 222, S.S.I.C., April 18th, 1912.)

Certificates and Reports.

12. That any report or certificate required for the purposes of the National Insurance Act otherwise than as may be necessary for placing an insured person on, or removing him from, sickness or disablement benefit, be an extra. (Minute 223, S.S.I.C., April 18th, 1912.)

Operations.

13. That operations requiring local or general anæsthetics be extras, but that further consideration of the question be postponed pending preparation of a detailed schedule. (Minute 226, S.S.I.C., April 18th, 1912.)

Tooth Extractions.

14. That dental extraction at the surgery be an extra, and that the payment for each extraction be 1s. 6d. (Minute 227, State Sickness Insurance Committee, April 18th, 1912.)

Special Examinations.

15. That Special Examinations—*e.g.*, X-Rays, bacteriological, etc., be extras. (Minute 228, State Sickness Insurance Committee, April 18th, 1912.)

Lunacy Certificates.

16. That Lunacy Certificates be extras, and that the payment therefor be that at present in vogue in each district. (Minute 229, State Sickness Insurance Committee, April 18th, 1912.)

Court Attendances and Examinations.

17. That examinations, court attendances, etc., under Common Law, Workmen's Compensation and Employers' Liability Statutes, be extras, and be paid for at the present scheduled fees. (Minute 230, State Sickness Insurance Committee, April 18th, 1912.)

Mileage.

18. That mileage beyond a two mile radius from the doctor's house be an extra, and be dealt with in one or other of the following ways:—

(a) That a definite fee in proportion to the distance be charged.

(b) That by bargaining between the local Medical Committee and the Insurance Committee an increase in the minimum capitation fee, or the fee per attendance, as the case may be, should be arranged which would be applicable throughout the district, and which would take the place of any extra fee being charged for mileage. (Minute 234, State Sickness Insurance Committee, April 18th, 1912.)

Workmen's Compensation.

19. That all injuries or diseases covered by Section 11 of the Act be extras. (Minute 236, State Sickness Insurance Committee, April 18th, 1912.)

Miscarriages and Confinements.

20. That Medical Benefit should not include any right to medical treatment or attendance in respect of miscarriage or confinements, or any conditions arising therefrom. (Minute 237, State Sickness Insurance Committee, April 18th, 1912.)

Abortions.

21. That as it might be inferred from Sub-section 8 (1) (a) and (e) of the Act and from Rule 13 (9) of the Model Rules for an Approved Society with Male Members only, that an abortion occurring prior to the twenty-eighth week of pregnancy would come under "ordinary medical treatment," provision be made in the Regulations whereby such an event would be included in the list of extras. (Minute 283, State Sickness Insurance Committee, May 9th, 1912.)

Duties of Local Medical Committee.

Arrangements with Medical Profession.

22. That with reference to Sub-section 15 (1) of the Act provision should be made in the Regulations whereby all arrangements with duly qualified medical practitioners for medical attendance upon insured persons should be made by the Insurance Committees through the local Medical

Committees, and not with individual medical practitioner direct. (Minute 287, State Sickness Insurance Committee, May 9th, 1912.)

Complaints—Malingering—Laxity in Certifying.

23. That provision be made in the Regulations whereby it is made the duty of the Local Medical Committee to inquire into, among other things, the following :—

(a) Complaints from registered medical practitioners and insured persons;

(b) Cases of alleged encouragement by medical practitioners of malingering;

(c) Cases of alleged undue laxity in certifying insured persons for receipt of sickness or disablement benefit. (Minute 307, State Sickness Insurance Committee, May 9th, 1912.)

Complaints—Professional Discipline—Right of Appeal to Medical Court.

24. That provision be made in the Regulations whereby—

(a) All questions of professional discipline shall be decided exclusively by a body or bodies of medical practitioners.

(b) The power of considering all complaints against medical men shall be vested in the local Medical Committee with the right of appeal to a Central Medical Board to be appointed for that purpose. (Minute 309, State Sickness Insurance Committee, May 9th, 1912.)

Panel—Exclusion from.

25. That provision be made in the Regulations prohibiting the Insurance Commissioners from exercising the right conferred upon them by Sub-section 15 (2) (b), or removing the name of any medical practitioner from any such list as mentioned in such sub-section without inquiry in the first case by the local Medical Committee and a right of appeal to a Medical Court of Appeal. (Minute 310, State Sickness Insurance Committee, May 9th, 1912).

Local Medical Committee—Rules for Formation of.

26. That with a view to securing approval by the Insurance Commissioners of local Medical Committees formed under Section 62 of the Act, it be suggested to the Commissioners that they should frame some general rules as to the formation of these Committees. (Minute 337, State Sickness Insurance Committee, May 9th, 1912.)

REMUNERATION

Deposit Contributors.

27. (a) That payment of medical practitioners for attendance upon deposit contributories should be upon a payment per attendance basis; and that the following scale of fees be adopted :—

For ordinary domiciliary medical attendance on ordinary lines, bearing in mind the £2 income limit :—

Ordinary consultation	1s. 6d.
Ordinary visit	2s. 0d.

(b) That the Committee fully recognises that, in areas where a capitation system of payment is preferred by the medical profession, a higher capitation payment will be required for attendance upon deposit contributories than the 8s. 6d. fixed by the Representative Body for attendance upon insured persons, members of approved societies, but the Committee has no data on which to frame a definite suggestion. (Minute 241, State Sickness Insurance Committee, April 18th, 1912.)

Members of Approved Societies Admitted Without Examination.

28. That the question be noted, for future discussion with the Insurance Commissioners, of the present procedure of Friendly Societies in admitting new members without proper medical examination, and how it will affect the arrangements to be made with medical practitioners for attendance.

That in the opinion of the Committee the fee for a medical examination of an insured person desirous of joining an Approved Society be not less than 2s. (Minute 242, State Sickness Insurance Committee, April 18th, 1912.)

General Question of Remuneration.

29. That the question of Model Rule (B) 9 (5) be kept in view in dealing with the Commissioners inasmuch as while sickness benefit ceases at the age of 70 years medical benefit does not. (Minute 324, State Sickness Insurance Committee, May 9th, 1912.)

30. That the hardships under which medical practitioners might be placed by the neglect on the part of individuals or local authorities (mentioned in Section (3) in the matter of attendance upon excessive illness be kept in mind in negotiating with the Commissioners. (Minute 338, State Sickness Insurance Committee, May 9th, 1912.)

Payment per Attendance.

31. That in pursuance of the instruction contained in the following Minute 51A of the Special Representative Meeting, February, 1912.

Minute 51A.—Resolved: That the policy of the Association be to claim 8s. 6d. as a minimum capitation fee, not including extras and medicine, for members of approved societies, and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee, with recognition of a £2 maximum income limit,

the Committee is of opinion that in any system of payment per attendance of medical practitioners under the National Insurance Act, the following scale should be adopted as being equivalent to an 8s. 6d. capitation payment with a £2 income limit :—

For ordinary domiciliary medical attendance on ordinary lives not less than

Ordinary Consultation	1/6
Ordinary Visit	2/0

(Minute, State Sickness Insurance Committee, April 11th, 1912.)

Remuneration Under Addison and Harmsworth Clauses.

32. That provision be made in the Regulations against those insured persons who are allowed to make their own "arrangements" under Sub-section 15 (3) and (4) of the Act, for the provision of medical attendance and treatment, being allowed to do so at lower rates of payment to the medical practitioner than those paid by the Insurance Committee to medical practitioners on the panel. (Minute 285, State Sickness Insurance Committee, May 9th, 1912.)

ARRANGEMENTS FOR MEDICAL ATTENDANCE.

Term of Agreement for.

33. That provision be made in the Regulations whereby the original arrangements agreed upon between the Insurance Committees and local Medical Committee for medical attendance upon insured persons shall continue in operation for a period of two years from the date on which the administration of medical benefit comes into operation in any part of the country. (Minute 288-292 State Sickness Insurance Committee, May 9th, 1912.)

Arrangements—Termination of.

34. That in the opinion of the Committee all future arrangements between Insurance Committees and local Medical Committees with respect to medical attendance upon insured persons should terminate at the same time. (Minute 293, State Sickness Insurance Committee, May 9th, 1912.)

Appeal.

35. That, if it is not clear from the terms of Sub-section 15 (2) of the Act that a local Medical Committee has a right of appeal when unable to agree with the Insurance Committee in any cases upon which it is consulted by the Insurance Committee, provision be made in the Regulations whereby such right of appeal by the local Medical Committee is guaranteed. (Minute 308, State Sickness Insurance Committee, May 9th, 1912.)

FREE CHOICE OF DOCTOR.

(a) Publication of Right to.

36. That provision be made in the Regulations whereby in order to bring to the knowledge of all insured persons their

right to free choice of doctor a notice to this effect shall be hung in conspicuous places in factories, offices, and club-rooms of every Approved Society and of any organisation availing itself of Sub-section 15 (4) of the Act. (Minute 295, State Sickness Insurance Committee, May 9th, 1912.)

(b) Time of Exercise of Choice.

37. That provision be made in the Regulations whereby, in areas where a capitation system of payment of medical practitioners is adopted, free choice of patient by doctor and free choice of doctor by patient may be exercised twice a year, namely, in the months of June and December. (Minute 298, State Sickness Insurance Committee, May 9th, 1912.)

(c) Right to Refuse to Accept Person on List.

38. That the Regulations contain a provision enabling a registered medical practitioner to refuse attendance upon any insured person. (Minute 299, State Sickness Insurance Committee, May 9th, 1912.)

Restrictions on Pharmacists.

39. That provision be made in the Regulations prohibiting pharmacists, under penalty, from :—

(a) Medically advising or treating patients.

(b) Surgical treatment beyond rendering first aid in emergency.

(c) Performing any surgical operation.

(d) Repeating any prescription unless so endorsed by the prescribing medical practitioner.

(Minute 300, State Sickness Insurance Committee, May 9th, 1912.)

Dispensing—Right of—Method of Payment for.

40. That with reference to Sub-section 15 (5) proviso (ii.), provision should be made in the Regulations whereby a medical practitioner may supply drugs and medicines to insured persons who are his own patients, should he so desire, and receive payment therefor at the scale of prices agreed upon for pharmacists. (Minute 301, State Sickness Insurance Committee, May 9th, 1912.)

Panel—Exclusion from—Appeal.

41. That provision be made in the Regulations whereby all questions concerning the exclusion of a medical practitioner from the panel should be considered in the first instance by the local Medical Committee. (Minute 304, State Sickness Insurance Committee, May 9th, 1912.)

That provision be made in the Regulations for a right of appeal by any medical practitioner so excluded from the panel to a medical Court of Appeal, such as might be composed of all the Medical Commissioners and the Directly Elected Representatives on the General Medical Council. (Minute 305, State Sickness Insurance Committee, May 9th, 1912.)

INSURANCE COMMITTEES.

Representation of Profession on.

42. (a) That provision be made in the Regulations whereby the Insurance Commissioners shall accept nominations from local Medical Committees of the medical practitioners to be appointed, under Sub-section 59 (2) (e) proviso (ii.) of the Act, to serve on Insurance Committees. (Minute 313, State Sickness Insurance Committee, May 9th, 1912.)

(b) That provision be made in the Regulations whereby the Insurance Commissioners shall appoint sufficient medical practitioners to Insurance Committees, in the exercise of the powers conferred by Sub-section 59 (2) (e) of the Act, as will ensure that the total number of medical practitioners upon Insurance Committees shall be one-tenth of the total membership of such Committees. (Minute 314, State Sickness Insurance Committee, May 9th, 1912.)

Deputies for Medical Representatives on Insurance Committees.

43. That provision be made in the Regulations for the appointment by the directly elected medical practitioners on Insurance Committees of deputies. (Minute 311, State Sickness Insurance Committee, May 9th, 1912.)

District Insurance Committees—Representation of Profession on.

44. That provision be made in the Regulations whereby the medical profession shall have the same proportional representation on district Insurance Committees as may be granted to the profession in respect to Insurance Committees. (Minute 318, State Sickness Insurance Committee, May 9th, 1912.)

MEDICAL INSPECTION.

Qualification for Inspectors.

45. That in the event of medical inspectors being appointed in connection with general medical attendance upon insured persons, provisions be made in the Regulations whereby such medical inspectors shall have had not less than five years' experience of domiciliary general medical practice. (Minute 316, State Sickness Insurance Committee, May 9th, 1912.)

Inspectors to be Whole-time Officers—Right of Medical Attendant to be Present at Inspection.

46. That provision be made in the Regulations whereby any medical inspection which may be required by the Insurance Commissioners, Insurance Committees, or Approved Societies, shall be carried out by whole-time Inspectors, and that the right of the regular medical attendant to be present at the examination shall be recognised. (Minute 317, State Sickness Insurance Committee, May 9th, 1912.)

SANATORIUM BENEFIT.

(a) Local Medical Committee to be Consulted.

47. That provision be made in the Regulations whereby the local Medical Committee shall be consulted by the Insurance Commissioners, the Insurance Committee, or District Committee, as the case may be, on all general questions affecting the administration of sanatorium benefit, including the arrangements made with medical practitioners, and with local authorities having the management of sanatoria or other institutions or who otherwise undertake such treatment. (Minute 319, State Sickness Insurance Committee, May 9th, 1912.)

(b) General Guidance as to Powers of Insurance Committee.

48. That inasmuch as Sub-section 16 (3) of the Act leaves it in the hands of Insurance Committees to decide when an insured person is entitled to sanatorium benefit, and Sub-section 17 (1) gives discretion to Insurance Committees in the matter of extending sanatorium benefit to the dependents of insured persons, the attention of the Insurance Commissioners be drawn to the question as to whether it is or is not desirable that some general guidance be given to Insurance Committees as to the exercise of their powers under Sub-section 17 (1) of the Act. (Minute 335, State Sickness Insurance Committee, May 9th, 1912.)

NURSES.

(a) Provision for Payment not to come out of Medical Benefit Fund.

49. That care be taken to prevent payments made in respect of any of the purposes specified under the following Section 21 of the Act being made out of moneys available for medical benefit :—

> *Section 21.*—It shall be lawful for an Approved Society or Insurance Committee to grant such subscriptions or donations as it may think fit to hospitals, dispensaries, and other charitable institutions, or for the purpose of visiting and nursing insured persons, and any sums so expended shall be treated as expenditure on such benefits under this part of this Act as may be prescribed.

3 (g) Payments made in connection with the following Rule 26. (1), Model Rules (B) :—

> *Rule 26 (1), Model Rules (B).*—The Committee of Management may appoint nurses for the purpose of visiting and nursing insured persons, and may pay such nurses out of the moneys available for benefits, and moneys so expended shall be treated as expenditure on such benefits as may be prescribed by regulations of the Commission.

(Minute 328, State Sickness Insurance Committee, May 9th, 1912).

(b) Regulation of Work of Nurses.

50. That inasmuch as Section 21 of the Act provides "inter alia" for the appointment by Insurance Committees of nurses for the purpose of visiting and nursing insured persons the attention of the Insurance Commissioners be drawn to the desirability of some general guidance being given to Insurance Committees as to the exercise of their powers under this Section; and that the Model Rules formulated by the Association for the regulation of the work of nurses be suggested to the Commissioners for incorporation in any suggestions to Insurance Committees. (See Sub-Appendix, page 42.) (Minute 336 State Sickness Insurance Committee, May 9th, 1912.)

MATERNITY BENEFIT.

51. That it be noted as a matter for inquiry of the Commissioners whether under Rule 13 (4) of the Model Rules (B) (which is based upon Section 12 (1) of the Act) it is intended that a member shall lose the maternity benefit in respect of his wife in cases where arrangements had originally been made whereby she should receive domiciliary attendance during her confinement, but where, subsequently, it became urgently necessary that she should be removed into an institution. (Minute 327, State Sickness Insurance Committee, May 9th, 1912.)

ARREARS.

Notice to be Given to Medical Attendant.

52. That, with reference to Subsection 10 (1) of the Act, where an insured person, by falling into arrears, becomes disentitled to medical benefit, a notice to this effect should be at once given to the medical practitioner upon whose list he is. (Minute 331, State Sickness Insurance Committee, May 9th, 1912.)

CERTIFICATES.

Common Form for.

53. That as in Subsection 14 (2) of the Act proof of disease or disablement is to be determined by a Rule of an approved society, and as such Rule must depend upon a medical certificate, it is desirable that any such Rule, and the form of certificate required under the Rule, should be common to all Societies. (Minute 332, State Sickness Insurance Committee, May 9th, 1912.)

PATIENTS—DISTRIBUTION OF.

54. That, inasmuch as the Regulations must (Subsection 15 (2) (d) of the Act) provide for the distribution of those insured persons whom no practitioner desired to take on his list, it be suggested to the Commissioners that this difficulty might be met by a suspension of medical benefit so far as those insured persons are concerned. (Minute 333, State Sickness Insurance Committee, May 9th, 1912.)

SAFEGUARDS FOR ADDITION AND HARMSWORTH CLAUSES.

55. That all the safeguards which the Committee has decided shall be included in the Regulations in connection with the administration of medical and sanatorium benefit by Insurance Committees should be made applicable to all institutions coming under Section 15 (4) of the Act. (Minute 334, State Sickness Insurance Committee, May 9th, 1912.)

COMPENSATION FOR INJURY TO PRACTICE.

56. (a) That the principle of compensation in cases where it is possible to prove loss of goodwill, etc., be approved; and (b) that the subject be brought to the notice of the Insurance Commissioners. (Minute 243, State Sickness Insurance Committee, May 9th, 1912.)

ILLNESS AWAY FROM HOME.

57. That the question be noted for discussion with the Insurance Commissioners, at the proper time, as to their plan for dealing with cases of illness of insured persons away from home or outside the range of their regular medical attendance. (Minute 320, State Sickness Insurance Committee, May 9th, 1912).

MARINE BRANCH.

58. That the attention of the Insurance Commissioners be drawn to the fact that the provisions contained in Section 48 of the Act give no guarantee that the medical profession shall have an opportunity of considering and approving the scheme to be prepared by the Board of Trade (Subsection 48 (4)) for the medical attendance upon seamen, fishermen, etc., as in the case of other insured persons. (Minute 322, State Sickness Insurance Committee, May 9th, 1912).

PROFESSIONAL SECRECY.

59. That in connection with the definition to be made by the Commissioners of the term "misconduct" occurring in Section 14 (4) of the Act, it be noted as a matter for discussion with the Commissioners whether it is essential that a certificate given by a medical man should state the actual nature of the disease. (Minute 326, State Sickness Insurance Committee, May 9th, 1912.)

CERTIFICATES.

Not to be paid for out of Medical Benefit Fund.

60. That, as the certificates to be given under following Rules 11 (a) 2 and 4 of Model Rules (C) are for the purpose of deciding whether a patient is or is not entitled to sickness benefit as distinguished from maternity benefit they should be paid for, but not out of any moneys available for medical benefit.

Rules 11 (*a*) (2) *and* (4) *Model Rules C.*—(2) A special voluntary contributor shall be entitled to sickness and disablement benefits as specified in line 5 of Table V., but shall not be entitled to those benefits during the two weeks before or the four weeks after a confinement, except in respect of a disease or disablement neither directly nor indirectly connected with childbirth.

(4) If an insured member, being unmarried, is entitled directly or indirectly with her confinement.

(Minute 329, State Sickness Insurance Committee, May 9th, 1912.)

DENTAL TREATMENT.

61. Considered: Communication received from the British Dental Association in reply to letter forwarded pursuant to the instructions contained in Minute 46 of the meeting of March 7th last, suggesting that the Committee should explain to the Insurance Commissioners that the dental treatment for which extra payment is to be asked by the medical profession is only "occasional" in character, and does not attempt to supply the needs of dental or oral treatment; and should take an opportunity of expressing the opinion that full dental treatment should be provided under the Act.

After discussion,

Resolved: That the question of the Association taking any such action as suggested by the British Dental Association be deferred for the time being. (Minute 223, State Sickness Insurance Committee, March 21st, 1912.)

CONSTITUTION OF INSURANCE COMMITTEE IN SCILLY ISLES.

62. That consideration be postponed for the time being of the question of medical representation being obtained on the Insurance Committee to be formed for the Scilly Isles by the Insurance Commissioners under Section 79 of the Act. (Minute 52, Regulations Sub-Committee, April 18th, 1912.)

FEES PAYABLE TO PRACTITIONERS CALLED IN ON ADVICE OF MIDWIVES.

63. That provision be made in the Regulations whereby the fees payable to medical practitioners called in on the advice of a midwife as provided for in Sub-section 18 (1) of the Act, shall be as follows:—

A.—In the case of a woman in labour:—

(1) In all presentations other than the uncomplicated vertex or breech:

In all cases of breech presentation in primiparæ;

In all cases of flooding and convulsions;

Also whenever there appears to be insufficient room for the child to pass, or when a tumour is felt in any part of the mother's passages.

FEE.—Two pounds, which should include five subsequent visits.

(2) If the midwife when the cervix is dilated is unable to make out the presentation;	FEE.—One guinea, to include five subsequent visits.
(3) If there is loss of blood in excess of what is natural, at whatever time of the labour it may occur;	FEE.—One guinea, to include five subsequent visits.
(4) If an hour after the birth of the child the placenta has not been expelled and cannot be expressed (that is, pressed out), even if no bleeding has occurred;	FEE.—One guinea, to include five subsequent visits.
(5) In cases of rupture of the perineum or other serious injuries of the soft parts;	FEE.—One guinea, to include five subsequent visits.

B.—In the case of lying-in women and in the case of newly-born children. Whenever after delivery the progress of the woman or child is not satisfactory, but in all events upon the occurrence of the subjoined conditions in :—

I.—THE MOTHER: (1) Abdominal swelling and signs of insufficient contraction of the uterus; (2) Foul-smelling discharges; (3) Secondary post-partum hæmorrhage; (4) Rigor; (5) Rise of temperature above 100°4F., with quickening of the pulse for more than 24 hours; (6) Unusual swelling of the breasts, with local tenderness or pain;	FEE.—5s. for first visit, and 2s. 6d. for subsequent ones; but if the case be one of puerperal septicæmia, the fee for the first visit should be 10s. 6d.
II.—THE CHILD: (1) Injuries received during birth; (2) Obvious malformations or deformities, not inconsistent with continued existence; (3) Concealed malformations, incapacity to suck or to take nourishment; (4) Inflammation to even the slightest degree of the eyes, eyelids, and ears; (5) Syphilitic appearance of the skin in certain parts; (6) Illness or feebleness arising from prematurity; (7) Malignant jaundice (icterus neonatorum); (8) Inflammation about the umbilicus (septic infection of the cord);	
C.—In all cases of the death of a woman during pregnancy, labour, or lying-in;	FEE.—5s., or 10s. 6d. if the case be one of puerperal septicæmia.

(Minute 462, State Sickness Insurance Committee, May 30th, 1912.)

64. That, in order to provide that medical practitioners may be assured of adequate payment for attendance when called in on the advice of a midwife, the Insurance Commissioners be urged to provide by special order (as contemplated in the following Section 20 of the Act) for the establishment of a maternity fund by the Commissioners for the re-insurance with them of the liabilities of all approved societies in respect of maternity benefit:—

Section 20.—For the purpose of the administration of maternity benefit, the Insurance Commissioners may, if they think fit, by special order provide for the re-insurance with them of the liabilities of all approved societies in respect of maternity benefit, and the order may provide for the method of calculating the premiums to be charged against the several societies in respect of such re-insurances and may contain such other incidental, consequential, and supplemental provisions as may appear necessary for the purpose.

(Minute 463, State Sickness Insurance Committee, May 30th, 1912.)

SUB-APPENDIX.

MODEL RULES FOR INCLUSION IN RULES OF NURSING ASSOCIATION.

(*Approved by Annual Representative Meeting*, 1910.)

1. The nurse shall in every case carry out the directions of the Registered Medical Practitioner in attendance.

2. The nurse, when requested in an emergency, may visit and render first aid to any person without awaiting instructions from a medical practitioner.

3. If, in the nurse's opinion, the attendance of a medical practitioner is necessary, she must insist that he be sent for; and if for any reason his services are not immediately available, she must, if the case be still one of urgency, remain with the patient and do her best until he arrive, or until the emergency is over.

Should the advice to call in a medical practitioner be not acted upon, the nurse must at once leave and report the case to her Secretary, and must not attend again except in case of fresh emergency.

4. Should any further attendance be requested by the patient after the emergency is over, the nurse must explain that the medical practitioner will decide whether or not this is necessary.

5. No attendance after a first visit shall be given by a nurse unless she has informed a medical practitioner and received his instructions with regard to the case, if any.

6. Apart from her duties as a certified midwife, a nurse must on no account prescribe or administer on her own responsibility such drugs for her patients as should only be prescribed by a medical practitioner.

7. A nurse shall in no case attempt to influence a patient in the choice of a medical practitioner or of an institution.

NOTE.—It is desirable to obtain the co-operation of all the medical practitioners in the district, and to secure, if possible, their assistance on the Committees of the Nursing Associations. (Attention is drawn to the fact that the machinery of the local Divisions of the British Medical Association is available for this purpose.)

APPENDIX (H).

FORM OF GUARANTEE TO CENTRAL INSURANCE DEFENCE FUND.

Dear Sir,

I, the undersigned, hereby guarantee the sum of £..... as a contribution to the (Central) Insurance Defence Fund of the British Medical Association, to be applied at the discretion of the Council of the British Medical Association for the objects and under the conditions stated at foot. *I enclose herewith the sum of £1 as the first instalment of the amount guaranteed, and agree to pay the remainder of the sum guaranteed in such proportions and at such dates as the said Council may determine.

I desire that the sum of £..... of the above guarantee shall be earmarked for use in the area of my Division.

Name .....

Address .....

.....

Date .....

If you are a member of the Association, state name of Division.

.....

To the Medical Secretary,
British Medical Association,
429, Strand, London, W.C.

Objects—

The objects for which the fund is established are :—

1. To assist in defraying the heavy administrative expenses necessarily incurred in organising such com-

* In the opinion of the Council a wide response to the call for the first instalment will obviate further calls for *administrative* purposes. Calls for *compensation* purposes will, if required, probably be made at intervals of not less than three months, to the amount of 20 per cent. of the original guarantee on each occasion.

bined action of the members of the profession as will enable them either (a) to enforce their demands upon the National Health Insurance Commissioners, (b) to establish a Public Medical Service entirely under the control of the profession, or (c) to take such other action as may be found necessary.

2. To provide when and where necessary compensation or pecuniary assistance for practitioners who incur loss or require support because of their loyalty to the policy recommended by the British Medical Association.

Conditions—

(a) The Fund shall be held in trust by the Council of the B.M.A., and applied solely to the objects recited in the preceding paragraphs.

(b) The entire administration and control of the Fund shall be vested in the Council of the B.M.A., and the making of grants to individuals or Divisions shall be at the absolute discretion of that Council.

(c) Grants may be made from the Central Fund to local Defence Funds established for the same purposes, under conditions approved by the Council of the B.M.A..

(d) No claim upon the Fund shall be considered on behalf of any member of the profession who, having been applied to to sign the form of Undertaking (issued to the profession on June 21, 1911), shall fail to do so.

(e) When in the opinion of the Council the objects for which it has been established have been accomplished the Fund shall be closed and the guarantees discharged.

APPENDIX (J).

THE MEDICAL FEDERATION LIMITED, AND THE INSURANCE DEFENCE FUND OF THE BRITISH MEDICAL ASSOCIATION.

Report by Solicitor of Association as to Statement of Case submitted by him to Counsel.

The circular headed "Insurance Defence Fund" issued by the British Medical Association on July 17th, 1911, and the circular marked "Private" issued by the Medical Federation Limited in February, 1912, were both submitted to Mr. Dill, and his attention was particularly directed to the following paragraph appearing in the last-mentioned circular:

It [the British Medical Association] can give no guarantee of protection to its members other than one conditional upon the support obtained by a voluntary subscription list, and a perusal of its memorandum will show that no power is reserved to use this fund to indemnify or compensate its members.

The following points with reference to the British Medical Association Insurance Defence Fund were also brought under Counsel's notice, namely:

(*a*) That the contributions to the fund were voluntarily made.

(*b*) That such fund was contributed to by members of the profession entirely independent of the fact of their being or not being members of the Association.

(*c*) That the fund was kept separate and distinct from the moneys of the Association.

(*d*) That all the expenses of working the fund were defrayed out of the moneys thus contributed.

(*e*) That the relationship of the Association to the fund was akin to that of a trusteeship.

Counsel was asked to advise whether the Association was under any legal disability in raising and administering the Insurance Defence Fund or was laying itself open to any peril or risk at the hands of the Board of Trade or otherwise, it being explained that the Medical Federation Limited had suggested that an injunction would lie against, or other restraining influence might be placed upon, the Association by way of legal inhibition in its proposed administration of the fund.

Opinion of Counsel.

The following is a copy of Mr. Colquhoun Dill's opinion:

I have considered the circular as to this fund issued on the 17th July, 1911, and the circular issued in February, 1912, by the "Medical Federation Limited."

The purposes for which the fund was formed (as indicated in the circular of July, 1911) are in my opinion purposes directed to "the maintenance of the interests of the medical profession," which is one of the primary objects of the British Medical Association. Therefore, subject to the exception next referred to, the purposes indicated by the circular are within the powers of the Association, as stated in its Memorandum, and the Association is entitled to carry them into effect.

The exception is that so far as the purposes in question involve the payment of compensation to individuals the Association is precluded from applying its funds for those purposes.

But there is, in my opinion, no objection to the Association acting as administrator or trustee of a fund raised in the manner and for the purposes mentioned in the circular; for that fund is raised by voluntary subscriptions from members of the medical profession generally, and forms no part of the funds of the Association, and it bears its own expenses of administration.

In so acting, the Association is committing no breach of the conditions of the license of the Board of Trade, and, in my opinion, neither that Board nor any member of the Association could restrain the Association from so acting.

If the circular of the Medical Federation Limited is intended to suggest that the fund so raised cannot lawfully be used for indemnity or compensation, it is in my opinion incorrect and misleading.

I have treated the matter on the footing that the Association itself is administering the fund in question. I should, however, point out, that it is arguable that the trustees or administrators are the members of the Council, and that the Association as a corporate body is not acting in the matter at all, although the fund is raised under its auspices.

T. R. COLQUHOUN DILL.

Lincoln's Inn, 6th March, 1912.

APPENDIX (K).

NATIONAL INSURANCE ACT, 1911.

OPINION OF SOLICITOR OF ASSOCIATION RELATIVE TO THE POSITION OF MEMBERS OF THE MEDICAL PROFESSION SO FAR AS CONCERNS CLUB AND FRIENDLY SOCIETY APPOINTMENTS.

QUESTIONS SUBMITTED BY DR. COX.

In letter of 4th March, 1912.

If a Club to which I am Surgeon becomes an approved Society without giving me notice of the fact or to terminate my appointment, am I at liberty on July 15th to decline further service and following that (or without that) claim a quarter's salary in lieu of notice.

OPINION OF MR. W. E. HEMPSON THEREUPON.

The fact that a Society becomes "approved" does not, in my opinion, entitle it to contend that contracts of service previously entered into become determinable without notice, where, but for the approval, notice would have to be given. In the case of Societies approved before the 1st January, 1913, notice of such approval might possibly be construed as amounting to notice of determination as from the 1st January. Whether, if so construed, it would even then amount to sufficient notice would, of course, depend upon the date.

In the case of a Society approved after the 1st January, 1913, or within a period before that date shorter than that expressed or implied for notice of determination of the contract the medical officer would, in my view, be entitled to claim damages for the determination of his contract without notice or without sufficient notice as the case may be.

It is by its voluntary act that the Society becomes "approved" and, upon general principles, it seems to me,

that in so becoming it must respect its contractual obligations with third parties or compensate them for the breach thereof.

I am of opinion that the medical officer cannot decline further service as from the 15th July as contemplated in the question submitted.

In letter of 11th March, 1912.

When the Act is declared to be in force, that is to say, when the insured persons begin to pay their contributions, are all present Club appointments *ipso facto* abrogated?

I am of opinion that such would not be the case for the reasons more fully elaborated in my answer already given to the question submitted in the letter of the 4th March, 1912.

What is the position of the Club Doctor who acts between the date upon which the Act comes into force and the date upon which medical benefits commence (six months afterwards). Can he be said to be working the Act contrary to his pledge not to take any part in so doing without the consent of the Association?

Regard being had to the postponed period at which benefits commence he would not, in my opinion, be violating during such period the spirit or letter of his pledge.

What is the position of the doctor who examines patients for admission to Clubs which intend to become approved Societies under the Act?

The doctor's position in this connection would be determined by the terms of his contract with the Club, and if it were one of his duties to so examine patients he would have to fulfil it.

Notice to terminate Agreement with Club.

(a) Is any notice necessary and if so what notice in the absence of any written contract of service?

(a) If the appointment be not made for a definite period and no notice is provided for in termination thereof then unless such appointment be held subject to the pleasure of the Court or Lodge or Society "reasonable notice" to determine the same would be necessary. What is "reasonable" in point of notice would vary according to the periods at which the emoluments were paid and other incidental circumstances entering into each particular case.

(b) In the case of Clubs held by yearly or half-yearly appointment, what notice is necessary and legal?

Would three months' notice be legal or does the period of payment, *e.g.*, six months, establish the length of notice necessary?

(b) If as I infer from this question the period for which the appointment is made is definitely fixed (*i.e.*, for 6 months or 12 months as the case may be) then it would terminate automatically at the expiration of such period without any notice whatever.

(c) Must the notice be given at any particular date as *e.g.* at time of payment?

(c) In my opinion any notice necessary to be given may be given at any time unless the Contract regulating the terms of service provides otherwise.

(Signed) W. E. HEMPSON.

33, Henrietta Street,
Strand, W.C.
18th March, 1912.

APPENDIX (L).

COPY OF LETTER AND MEMORANDUM FORWARDED TO THE SECRETARY OF THE DEPARTMENTAL COMMITTEE ON TUBERCULOSIS, ON MARCH 30TH, 1912.

March 30th, 1912.

Sir,

I assumed that the invitation which I had the honour to receive from the Chairman of the Tuberculosis Committee, on March 7th, was addressed to me in virtue of my official position as Acting Medical Secretary of the British Medical Association.

Taking this to be the case, I placed a Memorandum before a Committee of the Association which, after some modifications, was adopted, and thus may be taken to represent the views of the Association, and not merely my own.

The Committee, in considering the Memorandum, instructed me to express their regret that in constituting the Tuberculosis Committee the Chancellor of the Exchequer had not seen fit to appoint on it some representative general practitioners.

Holding the views which it does as to the place of the general practitioner in any scheme professing to deal in a comprehensive fashion with the problem of prevention and treatment of tuberculosis, the Association is of opinion that no Committee whose duty it is to consider such a subject could be said to be complete without such representatives.

I am, Sir, yours faithfully,
(Signed) Alfred Cox,
Acting Medical Secretary.

The Secretary,
Tuberculosis Committee,
Local Government Board,
S.W.

Memorandum on the Position of the General Practitioner in Relation to any Scheme of Prevention and Treatment of Tuberculosis.

The British Medical Association, in laying its views before the Committee appointed by the Chancellor of the Exchequer to consider questions of general policy in respect of the problem of tuberculosis in its preventative, curative, and other aspects, confines its observations to the part which the Association is of opinion the general medical practitioner should play in any provisions made by the Government or local authorities.

It is assumed that the Committee is already in possession of, or has access to, expert information as to the special, medical and administrative points which arise for consideration.

The Association also assumes that the Committee is considering the subject of its reference in its widest aspects and not with a view merely to the provisions of the National Insurance Act, or of any existing administrative methods of dealing with tuberculosis.

1. The Association would lay down as a fundamental proposition that no system of dealing with the problem of tuberculosis can be efficient which does not make the fullest use of the general clinical experience and the opportunities for intimate personal contact with affected persons, which the general practitioner possesses. The general practitioner has the best opportunities for making that early diagnosis on which successful treatment depends, and for knowing when other advice should be sought: his intimate personal contact and influence with the family should, if properly utilised, be invaluable in any system of prevention.

The Association would endorse the words used in an authoritative recent work:

> "If we aim at mastering tuberculosis, no matter by what means, it must in the future become and remain the domain of the general practitioner: it is he who must advise and select, and then insist on treatment." (Bandelier and Roepke: *Tuberculosis in Diagnosis and Treatment, 1909.*)

2. The relation of the general practitioner to the administrative problem may be dealt with under the following heads:

(a) Diagnosis by practitioner in attendance either alone or with expert assistance—clinical, microscopical, or otherwise.

(b) Treatment: (1) domiciliary; (2) dispensary—tuberculin or otherwise.

Diagnosis.

3. It is fully realised that there are many cases in which the opinion of an expert would be invaluable and it is submitted that such opinion should be placed freely at the service of the

attending practitioner who should be encouraged to arrange for a personal consultation. If such an arrangement is to be successful, there must be no risk of the practitioner in attendance being superseded—except of course, in the ordinary way, namely, by the desire of the patient himself. No case should be seen by the expert except at the request of the practitioner. The practitioner should be encouraged not only to send his patient to the expert but to take him for the purpose of a personal consultation. Provision for bacteriological examination of sputum, etc., should be placed freely at the disposal of every practitioner.

Treatment: Domiciliary.

4. Domiciliary treatment should be carried out as far as possible by the practitioner in attendance, when necessary, with the help of, and under the supervision of expert consultants.

The Association fully recognises the necessity and value of expert assistance. It is not suggested for a moment that every general practitioner is cognisant of the details of the most modern treatment of tuberculosis, but it is believed that if encouragement were given by the private practitioner to make full use of expert advice given by men who were not and could not be in competition with him for private practice, there would be great advantage both from the public and the professional point of view.

The patient and the attending practitioner would have expert opinion placed at their disposal, while the services of the private practitioner would be enlisted in carrying out the treatment decided on in consultation with the expert. There is no real difference between the domiciliary treatment of tuberculosis and that of other cases as to which expert advice in consultation is taken every day. The expert and the attending practitioner settle the line of treatment in consultation and the attending practitioner carries it out, if it can be carried out at home.

5. In order that private practitioners may be able to co-operate effectively with the local authorities and with the experts appointed by these authorities, it is suggested that practitioners should not only be encouraged to take their patients personally to the institutions where expert diagnosis and treatment is provided, but should be invited to look upon their institutions as places of post-graduate instruction in which they may learn the technique of tuberculin or other special treatment, and carry it out in cases reserved for domiciliary treatment. Treatment by tuberculin injections is mentioned because it is the method of treatment at present most in vogue. It may quite possibly be superseded in a few years, but in any case it presents no difficulties which could not be overcome in a short time by properly-trained and qualified practitioners.

Dispensary Treatment.

6. If the above-suggested methods were adopted, dispensary treatment would only be needed for (a) cases sent by outside practitioners for early treatment afterwards to be continued at the patient's home under the combined supervison of private practitioner and consultant, and (b) cases where the treatment was continued at the dispensary by agreement between private practitioner and expert.

7. The work at the dispensary might, with great advantage to the public and the local profession, be carried on by a staff of part-time practitioners under the supervision of the whole-time expert. If the local practitioners were appointed on a rota so that all practitioners who cared, and were in other respects suitable, might in their turn take a share in the work, the educational effect on the profession would be great and the ultimate benefit to the public marked.

8. It is hoped that the Committee will not overlook the question of provision for cases of surgical tuberculosis. Here again the combined services of the consultant and the attending practitioner will often allow of these cases being treated at home, but proper hospital accommodation should be provided for the cases which need such provision.

Position of Experts.

9. It is submitted that there will be little danger of friction between the authority directing the administration of tuberculosis prevention and treatment and the general body of private practitioners if the relation between the expert employed and the local profession is definitely defined to be that of the consultant to the attending practitioner. There would be no hesitation on the part of the attending practitioner to call in the services of the expert if he knew that these were freely at his disposal, and he was assured that there was no danger of supersession or unnecessary interference. That is to say the consultant must be a well-paid whole-time officer of undoubted special experience.

10. The Association submits that the principles here laid down are the only ones applicable to all parts of the country, urban and rural. Whereas in a town it is conceivable, though in the opinion of the Association highly inadvisable, from every point of view except perhaps that of mere administrative convenience, that the tubercular patients needing special treatment might be attended entirely by whole-time officers, it would be extravagant and almost impossible to deal in this way with patients scattered over rural areas. The services of the general practitioner must therefore be utilised in some parts of the country and the Association strongly holds that it will be better that in the initiation of a national tuberculosis system the general practitioner should be gladly and freely recognised as an essential factor everywhere, and arrangements made accordingly.

11. It is realised that for administrative purposes the employment of whole-time officers offers certain obvious advantages.

But these advantages would be dearly bought if, as the Association believes, the extension of this principle would lower the status and general standard of attainment of the general practitioner and diminish his sense of responsibility, his field of experience, and his general public utility. The possibility of thus lowering the standard of the class of practitioner on whom the general public must for the most part rely, is one which the Association regards with dismay.

SUPPLEMENTARY REPORT OF COUNCIL, 1911-12.

NOTE. The sections numbered (A) (B) (C), etc., of the Supplementary Report of Council, are the continuations, respectively, of the similarly numbered sections of the Annual Report of Council, published in the Supplement of May 11th, 1912.

(Recommendations by the Council will be found on pages 45, 46, 49, 50, 51 of this Report.)

(A) Preliminary.

PLACE OF ANNUAL MEETING, 1913.

1. On behalf of the Association, the Council has received an invitation from the Brighton Division to hold the Annual Meeting of the Association in Brighton in 1913.

Recommendations.

The Council recommends:—

(a) That the Annual Representative Meeting, 1913, be held at Brighton, and commence on Friday, July 18th, 1913.

(b) That William Ainslie Hollis, M.A., M.D., F.R.C.P., be elected President-Elect of the Association for the year 1912-13.

(B) Finance.

Question of Payment of Out of Pocket Expenses of Representatives.

2. The Finance Committee has considered under the standing orders the following motion of which notice has been given by the East Norfolk Division for the Annual Representative Meeting at Liverpool:—

Motion by East Norfolk.

That in the opinion of this Meeting the time has now come when the Council should take into consideration the payment of the necessary out of pocket expenses of Representatives at Representative Meetings.

The Finance Committee reports that having regard to the existing state of affairs of the finances of the Association, the time is inopportune for acceding to the proposal that the out of pocket expenses of Representatives at Representative Meetings, other than their travelling expenses as at present, should be paid out of the funds of the Association.

(C.) Organisation.

Annual Conference of Secretaries.

(Continuation of Paragraph 50 of Annual Report of Council.)

3. In making arrangements for the holding of the Conference of Secretaries at Liverpool, the Council has not found it possible to assign for the Conference a time for which no other function in connection with the Annual Meeting has been fixed.

Recommendation.

The Council recommends:—

That in view of the growing importance of the Conference of Secretaries, arrangements be made whereby in future years the Conference shall be held at a time at which no other function takes place.

Election of Members of Council by Branches.

(a) Casual Vacancy in Council for 1912-13.

4. The Council has considered a question arising in connection with the election of members of Council by voting papers for the year 1912-13. The last date for nomination was May 18th, 1912. No nomination was received up to that date in respect of the election of a member by the grouped Connaught and South Eastern of Ireland Branches. A nomination was subsequently received from the South Eastern of Ireland Branch, which was not, however, on the prescribed form. The nomination was therefore not included in the official list of nominations for the 1912-13 Council, published in the Journal of May 25th. Thus no election has been made by this group of Branches of a member of the new Council, which comes into office at the close of the Annual Representative Meeting, July, 1912. On a previous occasion, when certain Branches failed to nominate within the time specified, it was ruled by the legal advisers of the Association that no casual vacancy in the new Council could arise until that Council actually came into office, and that moreover a casual vacancy could not be filled until that Council determined the procedure to be adopted for the purpose. The matter is therefore being reported to and will doubtless be considered by the Council for 1912-13 at Liverpool.

(b) Question of Validity of a Nomination.

[illegible]tion, raised by a member, as to the validity of the nomination of a member elected to the 1912-13 Council has been referred to the solicitor of the Association for his opinion.

(c) Grouping of Branches outside United Kingdom for 1913-14.

(Continuation of paragraph 49 page 455 of Annual Report of Council.)

[illegible] Council, the Council in communication [illegible] the Dominions with regard to [illegible] 1913-14 for election to Council.

Recommendation.

The Council recommends:

That it be an instruction to the Council to settle the grouping of Branches outside the United Kingdom for election of Members of Council for the year 1913-14 on consideration of the views of the Branches concerned.

Proposed Formation of a Welsh Committee of the Association.

7. The Council has considered, and approved in principle, a proposal made by the existing Welsh Medical Committee, formed for the protection of the interests of the local profession in connection with the National Insurance Act, for the formation of a Welsh Committee of the Association, upon the lines of the existing Scottish and Irish Committees, to deal with matters specially affecting Wales and Monmouthshire. As a preliminary to alteration of the By-laws and other steps necessary for the recognition of such a Committee, steps are being taken with a view to the adjustment of the boundaries of the Welsh Branches so as to make their combined area correspond with that administered by the Welsh Commissioners under the Insurance Act.

Documents to be supplied to every Member.

(Continuation of Paragraph 55, page 455, of Annual Report of Council.)

8. The question has been considered of the means available for bringing the Warning Notice Regulations to the attention of every new member of the Association, and the Council has decided that a statement to the following effect shall be supplied to every new member on election, such statement to be printed on the cover of the Memorandum of Association, Articles and By-laws:—

British Medical Association.

Warning Notices.

A Warning Notice in the following form is under certain conditions inserted in the British Medical Journal among the advertisements near the back of the paper:—

British Medical Association:

Appointments.

Warning Notices.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division, or Branch, of the Association, named in the second column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C.:—

Town or District.	*Hon. Sec. of Division or Branch.*

It is to be noted that the Warning Notice is not a request that practitioners should not apply for the appointment in question, but that they should not apply for it without first applying for information to one of the persons specified in the Notice.

A Warning Notice is only inserted on the request of a Division, Branch, Divisional Executive Committee, Branch Council, Divisional or Branch Secretary, or some one authorised to act on his behalf, and it will be inserted for one week only on his sole authority. Continued insertion can only be secured on the authority of a resolution of the Divisional Executive Committee (or Branch Council, as the case may be) or of the Division or Branch itself. All applications for the insertion of Warning Notices are submitted to the Chairman of the Central Ethical Committee, who, previously to sanctioning publication, will require, under the Regulations governing the matter, to be supplied with the following information: (a) Particulars of the dispute, (b) Evidence that the local profession has been consulted and will try to make the Warning Notice, if inserted, effective, that is, that the Division or Branch applying will

use every means in its power to dissuade any practitioner from taking the appointment, and will punish, as far as it can, anyone who takes it. (c) Evidence that the Division or Branch applying possesses the power to take the above steps, namely, that it is provided with proper Rules.

Election of Representatives.

List of Constituencies within the United Kingdom for 1912-13.

(Continuation of paragraph 45, page 454, of Annual Report of Council.)

9. The Council has considered the question of representation in Representative Meetings for the year 1912-13, of Divisions constituted since April 30th, 1912, and has accorded to the following Divisions independent representation:—

East Herts;
West Herts;
Willesden;
Hendon and Finchley;
Harrow;
South Middlesex.

The Dartford and Woolwich Divisions have been grouped to form one constituency, and the Wandsworth and Wimbledon Divisions have been similarly grouped. The Bedford and Herts, and the Watford and Harrow constituencies cease to exist.

The Council appends the list of constituencies within the United Kingdom for 1912-13 in accordance with By-law 30 (5) (Appendix XVII., page 51.)

Local Autonomy for Australian (Australasian) Branches.

10. Pursuant to the By-laws the Council referred to the Organisation Committee the question of the following notice of motion for the Annual Representative Meeting, Liverpool, by the South Australian Branch:—

Notice of Motion.

That the constitution of the British Medical Association be amended—

(A) So as to provide:

(1) For the creation of an Australian (Australasian) Council consisting of Members elected by the Branches in Australia (Australasia) and having such powers and duties as will enable it to administer the affairs of the Association in Australia (Australasia) in so far as such affairs are of local concern and do not affect the Association outside Australia (Australasia).

(2) For the holding of General Meetings of the Members of the Association residing in Australia (Australasia).

(3) For the creation of a Representative Body in Australia (Australasia), analogous to the Representative Body of the Association; or

(B) So as to provide in some other manner than that hereinbefore proposed for the federation of the Australian (Australasian) Branches with autonomy in regard to matters of Australian (Australasian) concern not affecting the Association outside Australia (Australasia).

In considering the matter the Organisation Committee had the advantage of conferring with Professor Allen, who is acting as Representative of the Victorian Branch at the Annual Representative Meeting, and Dr. G. D. Morier, Representative of the Victorian and South and West Australian Branches on the Council, both of whom attended at the meeting of the Committee at which the matter was discussed. As a result of such conference, Professor Allen is prepared to move at the Representative Meeting an amendment to the resolution of the South Australian Branch, so as to provide that the precedent of the existing South African Committee shall be considered before further action is taken.

Grants to Branches.

(Continuation of Paragraph 56, page 455, of Annual Report of Council).

11. Grants for 1912 have been made by the Council to further Branches from which satisfactory Reports for 1911 have been received. The Council regrets to report that up to the present (July 3rd, 1912) no Reports for 1911 have been received from the following Branches:—

Bath and Bristol, Connaught, Leinster, North Lancashire and South Westmorland.

The Council desires to emphasise the fact of the unnecessary delay and difficulty caused in connection with the accounts of the Association by non-receipt or delayed receipt of Annual Reports from Branches or Divisions. Under By-law 24 the Reports of all Branches should be in the hands of the Council by, at latest, March 15th in each year.

New Company.

(Continuation of paragraph 34, page 452, of Annual Report of Council.)

12. The Council has had under consideration the proposed Memorandum of the New Company as amended by the Board of Trade, and representatives of the Organisation Committee have interviewed the Comptroller of the Companies Department of the Board of Trade thereon. The Council is not yet in a position to report finally on the matter, as certain information from the legal advisers of the Association is being awaited.

Regulations as to Change of Address of Members.

(Continuation of paragraph 38, page 453, of Annual Report of Council.)

13. The legal advisers of the Association have been consulted by the Council with reference to the proposed alterations of the Regulations of the Association as to change of address of members and their amenability to the Rules of Divisions in which they practise, but of which they are not members. The Council is not yet in a position to report finally on the matter.

Proposed Resident Paid Secretary for Ireland.

14. The Council has considered the following Recommendation of the Irish Committee:—

Resolved: That the Council be requested to take into consideration the appointment of a resident paid Secretary for Ireland.

The Council has postponed further consideration of the matter pending consideration by the Conference of Honorary Secretaries, to be held in Liverpool, of the subject of how best to lighten the ever-increasing work of Honorary Secretaries of Divisions and Branches, and of a report from the Finance and Organisation Committees.

Secretaries' Handbook.

(Continuation of paragraph 62, page 456, of Annual Report of Council.)

15. A first draft of the Secretaries' Handbook has been prepared, but in view of the expense which would be entailed in setting it up in type the matter is only progressing slowly towards completion.

Division and Branch Boundaries.

(Continuation of paragraph 41, page 545, of Annual Report of Council.)

16. The Council reports that further changes of boundaries of Divisions and Branches have been carried out as follows:—

Oxford and Reading Branch.

Transfer of Newbury, Hungerford, Kintbury, Enborne, Speen, and Donnington from the Oxford Division to the Reading Division.

South-Eastern and Metropolitan Counties Branches.

Adjustment of the common boundary of the South-Eastern and Metropolitan Counties Branches, from Tooting Station north-eastwards to the Thames, so as to coincide with the boundary of the Administrative County of London.

Woolwich Division.

Formation of a new (Woolwich) Division of the Association, of an area coterminous with the Metropolitan Borough of Woolwich.

Bromley, Croydon, and Dartford Divisions.

Adjustment of boundaries of Bromley, Croydon, and Dartford Divisions in accordance with above.

East and West Hertfordshire Divisions.

Formation of East and West Hertfordshire Divisions, consisting of the portions of the County of Hertford respectively east and west of a line drawn direct from South Mimms to Luton, the new Divisions to form part of the area of the Metropolitan Counties Branch.

Metropolitan Counties and Oxford and Reading Branches.

Transfer of that portion of the County of Middlesex contained within the area of the Oxford and Reading Branch, to the area of the Metropolitan Counties Branch.

Modification of Areas of Existing Divisions in Middlesex: Formation of New Divisions.

Division of County of Middlesex into 6 Divisions, as follows:—

(i.) *Ealing*: To consist of the Borough of Ealing, and the urban districts of Hayes, Greenford, Southall, Norwood, Hanwell, Acton, Chiswick and Brentford;

(ii.) *Harrow*: To consist of the urban districts of Harrow, Ruislip, Northwood, Uxbridge, Yiewsley, Wealdstone, Wembley, and Kingsbury, and the rural districts of Hendon, and Uxbridge;

(iii.) *Hendon and Finchley*: To consist of the Hendon and Finchley urban districts;

(iv.) *North Middlesex*: To consist of the present North Middlesex Division, comprising the borough of Hornsey, the Urban districts of Tottenham, Edmonton, Wood Green, Southgate, Friern Barnet, and Enfield, and the rural district of South Mimms;

(v.) *South Middlesex*: To consist of the urban districts of Feltham, Hampton, Hampton Wick, Heston and Isleworth, Staines, Sunbury-on-Thames, Teddington, and Twickenham, and the rural district of Staines;

(vi.) *Willesden*: To consist of the Willesden urban district;

these Divisions to form part of the area of the Metropolitan Counties Branch, and the existing Divisional areas to be modified accordingly.

Mid-Staffordshire and South Staffordshire Divisions.

Transfer of Brewood from Mid-Staffordshire to South Staffordshire Division.

Transfer of Brownhills from South Staffordshire to Mid Staffordshire Division.

(F) Medical Ethics.

Cases Before General Medical Council.

(Continuation of Paragraph 79, page 158, of Annual Report of Council.)

17. At the June, 1912, Sessions of the General Medical Council that Council finally considered the case, judgment on which had been postponed at its November 1911 Sessions, of a medical practitioner who had associated himself with the "Sandow Institute." The Association again acted as complainant in the matter. The General Medical Council adjudged the practitioner in question to have been guilty of infamous conduct in a professional respect, and directed the erasure of his name from the Medical Register.

At the same Sessions the Association also acted as prosecutor in respect of the conduct of a practitioner resident in the area of the Fife Branch, alleged to have employed an unqualified assistant to attend and treat patients. The General Medical Council found these allegations against the practitioner in question to have been proved to its satisfaction, but postponed judgment until its November, 1912, Sessions, in order to give the offending practitioner the opportunity of then submitting evidence as to his practice and conduct in the interval.

Under Consideration.

Warning Notices Regulations.

(G) Medico-Political.

Local Dispensaries of the Central Fund for the Promotion of the Dispensary System for the Prevention of Consumption in London.

18. On the initiative of the Metropolitan Counties Branch Council, the Council has given preliminary consideration to the question of the establishment of local dispensaries by the "Central Fund for the Promotion of the Dispensary System for the Prevention of Consumption in London," including proposed rules formulated by the Branch Council with reference to the local dispensaries in question. For the information of the Divisions and Representative Body, the Council appends the Report which the Council had before it upon this subject. Subsequently to the formulation by the Metropolitan Counties Branch Council of the proposed rules referred to, there has been issued an Interim Report by the Departmental Committee on Tuberculosis. The Council has drawn the attention of the Branch Council to that Interim Report, with a view to further report by the Branch Council to the Council on the whole matter. Meantime, the Council has sanctioned the publication in the Journal of advertisements for whole-time medical officers for the dispensaries of the Fund in question, in cases where the Division concerned has intimated that it raises no objection.

(*Note.*—For the appended Report referred to above, *see* Appendix XVIII., page 53).

Medical Inspection and Treatment of School Children.

(A) Automatic Increase of Salaries of Whole Time Medical Inspectors.

19. In connection with Minutes 89 and 87, respectively, of the Annual Representative Meeting, 1911, namely:—

89. Resolved: That as regards remuneration of whole-time Medical Officers engaged in the treatment of school children, the scale already approved by the Association for school medical officers engaged in inspection should be applied namely, that for Junior or Assistant Officers the salary should not be less than £250 per annum, and that for more experienced officers the salary should not be less than £500 per annum. These sums to be understood as exclusive of travelling expenses, clerical assistance, postage, etc. Also that in any appointments of this kind provision should be made that the salaries of both officers should rise automatically.

87. Resolved: That paragraph 3 (i.) of the Report on Medical Inspection of School Children and Treatment of those found defective, approved by the Annual Representative Meeting, 1909, be amended to read as follows:—

On the subject of salaries the Association has already approved the suggestions of the Medico-Political Committee, namely, that for whole-time Junior or Assistant School Medical Officers the commencing salary should not be less than £250 per annum, and that for more experienced whole-time School Medical Officers the commencing salary should not be less than £500 per annum. These sums are to be understood as exclusive of travelling expenses, clerical assistance, cost of stationery, postage, etc.;

the attention of the Council has been drawn to the fact that Minute 89 referred to, which deals with the question of the salaries of whole-time Medical Officers who treat school children, makes provision for automatic increase of their salaries, while Minute 87, which deals with the salaries of whole-time Medical Officers engaged in the work of inspection of the children, makes no such provision.

Recommendation.

The Council recommends:—

That paragraph 3 (i.) of the Report on Medical Inspection and Treatment of School Children, as approved by the Annual Representative Meeting, 1909, and amended by the Annual Representative Meeting, 1911 (Minute 87), be further amended by the addition of the following words:—

"Also that in any appointments of this kind, provision should be made that the salaries of both officers should rise automatically":

the paragraph, as amended, to read as follows:—

"On the subject of salaries the Association has already approved the suggestions of the Medico-Political Committee, namely, that for whole-time Junior or Assistant School Medical Officers the commencing salary should not be less than £250 per annum, and that for more experienced whole-time School Medical Officers, the commencing salary should not be less than £500 per annum. These sums are to be understood as exclusive of travelling expenses, clerical assistance, cost of stationery, postage, etc. Also that in any appointments of this kind provision should be made that the salaries of both officers should rise automatically."

(B) QUESTION WHETHER PROVISION FOR AUTOMATIC INCREASE OF SALARIES OF WHOLE-TIME SCHOOL MEDICAL OFFICERS ENGAGED IN (1) INSPECTION, AND (2) TREATMENT OF SCHOOL CHILDREN, SHALL BE A NECESSARY CONDITION OF APPOINTMENT OF SUCH OFFICERS.

20. The Council has considered the question of the advisability of advertisements for appointments of School Medical Officers being refused insertion in the BRITISH MEDICAL JOURNAL unless they contain, *inter alia*, a statement that the salary of the Officer proposed to be appointed shall rise automatically.

Recommendation.

The Council recommends:—

That, in view of the absence of security of tenure for Medical Officers of Health and School Medical Officers, it is not at present opportune to press for an automatic increase of salary being a necessary condition of appointment of School Medical Officers.

(C) POLICY OF ASSOCIATION WITH RESPECT TO INSPECTION AND TREATMENT.

(Continuation of Paragraph 87, page 459, of Annual Report of Council.)

21. As already reported by the Council (paragraph 87 of Annual Report) considerable difficulty has been experienced in securing recognition of the policy of the Association laid down in the following Minute 97 of the Annual Representative Meeting, 1911:—

That the duties of School Medical Officers and their Assistants should be confined to necessary inspection and report, and that the treatment of those children found defective should not be undertaken by them.

In accordance with the intention already reported by the Council, a Conference of the Medico-Political and Public Health Committees of the Association, the School Children Committee of the Metropolitan Counties Branch and representatives of the Society of Medical Officers of Health upon the subject, was held on May 8th, 1912, when the whole question raised by Minute 97 of the Birmingham Representative Meeting was discussed. The Society of Medical Officers of Health was furnished with a report of the proceedings of that Conference and undertook to forward to the Association any suggestions which the Society desired to make with regard to possible modification of the present policy of the Association upon the matter. These suggestions were received too late for consideration by the Council and report at this time.

(D) MEDICAL INSPECTION AND TREATMENT OF SCHOOL CHILDREN IN LONDON.

(Continuation of Paragraph 88, page 459, of Annual Report of Council.)

22. The Council has received a report of the deputation which on behalf of the Association waited upon the President of the Board of Education on May 16th, 1912, on the question of the medical inspection and treatment of school children in London. A report of the proceedings at that deputation was published in the Supplement to the BRITISH MEDICAL JOURNAL of May 25th, 1912 (page 545).

SHIP SURGEONS.

(Continuation of Paragraphs 95-7, page 461 of Annual Report of Council).

23. In connection with the question of the disabilities as regards terms and conditions of employment experienced by practitioners who act in the capacity of ship surgeons, the Council has had under consideration the question of the advisability of the establishment of a minimum salary in connection with such appointments. The Council is of opinion that the laying down by the Association of a reasonable minimum salary for these appointments would materially help to raise the status and improve the general conditions of employment of ship surgeons.

Recommendation.

The Council recommends:—

That the Representative Body express the opinion that the remuneration of Ship Surgeons engaged regularly as such should not be less than £10 per month.

In the event of the foregoing Recommendation being adopted by the Representative Body, the Council proposes that all advertisements for ship surgeons, to be engaged regularly as such, at a salary of less than £10 per month, be refused publication in the JOURNAL, and that Warning Notices as to such appointments be inserted among the Warning Notices in the JOURNAL at the discretion of the Chairmen of the Ship Surgeons' Sub-Committee and Central Ethical Committee.

DESIRABILITY OF MEDICAL PRACTITIONERS BECOMING CANDIDATES AT COUNTY AND COUNTY BOROUGH COUNCIL AND OTHER LOCAL ELECTIONS.

24. In view of the increasing extent to which these bodies are dealing with matters closely affecting the medical profession, the Council has given instructions that a communication be addressed to the Divisions drawing their attention to the desirability of medical practitioners becoming, when and as opportunity offers, candidates for County, County Borough, Municipal Borough and District Council, and Boards of Guardians.

AMENDMENT OF LUNACY ACTS AND CARE AND CONTROL OF THE FEEBLE-MINDED: GOVERNMENT'S MENTAL DEFICIENCY BILL.

(Continuation of Paragraph 83, page 459, of Annual Report of Council.)

25. The Council has already reported to the Representative Body (paragraph 83 of Annual Report) that, pursuant to the instructions of the Representative Body, it has forwarded to the Home Secretary a Memorandum showing the prolonged and continued interest which the Association has taken in the matter of amendment of the Lunacy Laws and Care and Control of the Feeble-Minded. A reply has been received from the Home Secretary thanking the Association for the expression of its views, and referring to the intention of the Government to introduce a Bill (since introduced) to provide for the care and control of the feeble minded.

The Mental Deficiency Bill introduced by the Government on May 16th, 1912, has been carefully considered by the Council. It is found that the Bill is in conformity with the declared policy of the Association, except in so far as it proposes to set

up a new central authority, additional to the Lunacy Commissioners, whereas the policy of the Association in this respect is that there should be only one authority dealing with the whole subject. The Home Secretary has accordingly been informed that the Association approves of the provisions of the Bill, except that, with regard to the proposal to set up a new central authority, the Association is of opinion that one central authority would tend to secure greater efficiency and economy.

Patent and Proprietary Medicines: Appointment of Select Committee.

(Continuation of Paragraph 92, page 460, of Annual Report of Council.)

26. The Council has already reported to the Representative Body (Paragraph 92 of Annual Report) the terms of reference of the Select Committee on Patent and Proprietary Medicines appointed by the Government. An application was subsequently received from that Committee asking the Association to submit evidence. A memorandum of evidence was accordingly prepared and forwarded to the Select Committee, together with an intimation as to the witnesses who would give evidence on behalf of the Association. This memorandum will be published at a later date. The witnesses of the the Association are at present (July 3rd, 1912) under examination.

(*Note.*—For the list of witnesses see Appendix XIX, p. 54.)

Under Consideration.

Fees for lectures on hygiene and home nursing.

Question concerning the treatment of defective school children not suitable for treatment at school centres.

Question concerning intended appointment of Departmental Committee to consider desirability of amendment of the Workmen's Compensation Act.

Question concerning salaries of male and female whole-time medical officers attached to the Post Office.

Question of form of Census paper.

(H.) State Sickness Insurance.

The Council submits (see separate document) a Special Report on the Present Position of the Profession in relation to the National Insurance Act.

(I.) Public Health and Poor Law.

Question of a Minimum Salary for Whole-time Principal Medical Officers of Health.

27. The Association having already definitely fixed a minimum salary for whole-time Assistant Medical Officers of Health, representations have been made to the Council that the Association should similarly fix a minimum salary for whole-time Principal Medical Officers, and the question has accordingly been carefully considered by the Council. In this connection it may be noted that although the Local Government Board has by Memorandum and Circular strongly recommended that the salary of whole-time Principal Medical Officers of Health should in no case be less than £500, it has nevertheless approved of appointments where a less salary has been offered. [illegible] Council that in some small areas, [illegible] is unacceptable for the present, the minimum laid down by the Local Government Board is at present unattainable, it is not, in the opinion of the Council, to the interests of the profession to acquiesce in continued appointments of whole-time Medical Officers of Health at an inadequate salary.

Recommendation.

The Council recommends:

That the Association support, wherever possible, the [illegible] at the Local Government Board that the [illegible] Medical Officers of Health, debarred from private practice, be not less than £500 per annum; and that in no case where a less salary than £250 is offered for a whole-time Medical Officer of Health, whether principal or assistant, should an advertisement be accepted for publication in the JOURNAL.

Labour Exchanges and Warning Notices.

(Continuation of paragraph 112, page 463, of Annual Report of Council).

27. In connection with the question of advertisement through the Labour Exchanges of appointments which are the subject of Warning Notices, already reported on by the Council (paragraph 112 of Annual Report), the Council is glad to report receipt of an intimation from the General Manager of the Goverment Labour Exchanges to the effect that he will be pleased to give instructions that any medical appointment proposed to be offered through the Exchanges shall be reported to the Central Office of the Association in order that, when notifying such vacancy to any applicant, the Labour Exchange shall be in a position to give such applicant the fullest information concerning the appointment, including any objection taken by the Association of which the Exchange shall have been informed.

The Council is in communication with the General Manager of the Exchanges respecting the machinery by which the objections of the Association to any particular appointment shall be made known to the Exchanges.

Public Health and Poor Law Appointments with respect to which action has been taken.

(Continuation of paragraph 114, page 463, of Annual Report of Council.)

29. Action has been taken by or on behalf of the Council with respect to the following Public Health and Poor Law appointments:—

Isle of Wight (County Medical Officer of Health), Brighton (Workhouse Infirmary Consulting and Operating Surgeon), Hackney Union (District Medical Officer), County of Ayr (Assistant Medical Officer of Health), and Winchester (District Medical Officer).

(J.) Hospitals.

Maternity and Voluntary Hospitals and other Charitable Institutions Charging Fees for Midwifery Cases.

(Continuation of Paragraph 119, page 464, of Annual Report of Council).

30. A Division of the Association has raised the question of the practice of a local voluntary hospital charging fees for attendance upon midwifery cases. The Council has accordingly considered the whole question of attendance on confinements by maternity and voluntary hospitals and other charitable institutions, especially with reference to the National Insurance Act. The practice of the specific hospital with regard to which the question has been raised is known by the Council to be followed by similar institutions in other parts of the country. The Council therefore thinks it well to submit for the information of the Divisions and Representative Body the following report forwarded by the Division which has raised the subject:—

1. More than one third of the births occurring in Brighton, Hove, and Preston are attended by this Institution.

2. The Hospital is a charitable Institution and appeals to the general public for subscriptions.

3. The out-door midwifery patients are attended by pupil midwives under the supervision of certified midwives.

4. The House Surgeon visits the patients on the second day, and is sent for in cases of difficulty.

5. 151 cases of difficulty occurred in the year 1910.

6. The Honorary Staff are liable to be sent for in cases of special difficulty.

7. A registration fee of 1s. for multiparæ and 6s. for primiparæ used to be charged, and this has been raised to 6s. 6d. and 10s. respectively since the passage of the Midwives Act. It is stated that this fee is to cover the increased cost of nursing rendered necessary by the Act.

8. These fees are stated to form a substantial proportion (about 10 per cent.) of the total income of the charity.

9. When the question was raised by the Staff some years ago, a circular letter was addressed by the Committee of Management to similar Institutions in various parts of the country.

10. It is stated that of 24 replies received 18 Institutions stated that "registration fees" similar to those charged in Brighton were in force.

Recommendation.

The Council recommends:—

That the Representative Body approve the following principles:—

(i.) That inability to pay for adequate treatment shall be the consideration for the participation of parturient women in the benefits of maternity and voluntary hospitals and other charitable institutions.

(ii.) That women in receipt of Maternity Benefit under the National Insurance Act should not be regarded as eligible for charitable treatment except in cases of difficulty and danger and on the recommendation of a medical practitioner.

UNDER CONSIDERATION.

Minute 221 of Annual Representative Meeting, 1910, as to question of payment of hospital staffs.

J. A. MACDONALD,
Chairman of Council.

APPENDIX XVII.

LIST OF CONSTITUENCIES (UNITED KINGDOM) FOR ELECTION OF REPRESENTATIVE BODY FOR YEAR 1912-13.

(Divisions bracketed together form one Constituency.)

ABERDEEN—

{ Aberdeen
{ Orkney
{ Shetland

BATH AND BRISTOL—

Bath
Trowbridge
Bristol

BIRMINGHAM—

{ Bromsgrove
{ Dudley
{ Central
{ Walsall
{ Coventry
{ Nuneaton and Tamworth
Warwick and Leamington
West Bromwich

BORDER COUNTIES—

English
Scottish

CAMBRIDGE AND HUNTINGDON

CONNAUGHT—

{ Mid Connaught
{ North Connaught
{ South Connaught

DORSET AND WEST HANTS—

Bournemouth
West Dorset

DUNDEE—

Dundee
Forfarshire

EAST ANGLIAN—

North-East Essex
Mid Norfolk
{ Mid Essex
{ South Essex
Norwich
West Norfolk
{ East Norfolk
{ North Suffolk
South Suffolk
West Suffolk

EAST YORK AND NORTH LINCOLN—

East York
North Lincoln

EDINBURGH—

Edinburgh and Leith
South-Eastern Counties
The Lothians

FIFE

GLASGOW AND WEST OF SCOTLAND—

Ayrshire
Dumbartonshire and Argyllshire
Glasgow, Central
Glasgow, Eastern
Glasgow, North-Western
Glasgow, Southern
Lanarkshire
Renfrewshire

GLOUCESTERSHIRE

LANCASHIRE AND CHESHIRE—

Altrincham
{ Ashton-under-Lyne
{ Glossop
Birkenhead
Blackburn
{ Blackpool
{ Isle of Man
Bolton
Burnley
Bury
Chester and Crewe
{ Leigh
{ Wigan
Liverpool
Manchester (Central)
Manchester (North)
Manchester (Salford)
Manchester (South)
Manchester (West)
Oldham
Preston
Rochdale
{ St. Helen's
{ Warrington
Southport
Stockport, Macclesfield, and East Cheshire

LEINSTER—

Dublin
East Leinster
{ Mid Leinster
{ North Leinster
{ North-West Leinster
{ South-East Leinster

METROPOLITAN COUNTIES—
- Chelsea
- City
- Ealing
- East Hertfordshire
- Greenwich
- Hampstead
- Harrow
- Hendon and Finchley
- Kensington
- Lambeth
- Marylebone
- North Middlesex
- Norwood
- Richmond
- South Middlesex
- South-West Essex
- St. Pancras and Islington
- Stratford
- Wandsworth
- Wimbledon
- Westminster
- West Hertfordshire
- Willesden

MIDLAND—
- Boston and Spalding
- Lincoln
- Derby
- Leicester and Rutland
- Nottingham

MUNSTER—
- North Munster
- South Munster
- West Munster

NORTHERN COUNTIES OF SCOTLAND—
- Banff, Elgin and Nairn
- Caithness and Sutherland
- Inverness
- Ross and Cromarty

NORTH LANCASHIRE AND SOUTH WESTMORLAND—
- Furness
- Kendal
- Lancaster

NORTH OF ENGLAND—
- Bishop Auckland
- Durham
- Blyth
- Morpeth
- North Northumberland
- Cleveland
- Consett
- Gateshead
- Darlington
- Hartlepools
- Stockton
- Hexham
- Newcastle on Tyne
- South Shields
- Tyneside
- Sunderland

NORTH WALES—
- Denbigh and Flint
- North Carnarvon and Anglesea
- South Carnarvon and Merioneth

OXFORD AND READING—
- Maidenhead
- Oxford
- Reading

PERTH

SHROPSHIRE AND MID WALES

SOUTH EASTERN
- Ashford
- Dover
- Folkestone
- Brighton

SOUTH-EASTERN—*continued*,
- Bromley
- Sevenoaks
- Canterbury and Faversham
- Isle of Thanet
- Chichester and Worthing
- Horsham
- Croydon
- Dartford
- Woolwich
- Eastbourne
- Guildford
- Hastings
- Maidstone
- Rochester and Chatham
- Reigate
- Tunbridge Wells

SOUTH-EASTERN OF IRELAND—
- Carlow
- Kilkenny
- Waterford

SOUTHERN—
- Guernsey and Alderney
- Jersey
- Isle of Wight
- Portsmouth
- Salisbury
- Southampton
- Winchester

SOUTH MIDLAND—
- Bedford
- Buckinghamshire
- Northamptonshire

SOUTH WALES AND MONMOUTHSHIRE—
- Cardiff
- Monmouthshire
- North Glamorgan and Brecknock
- South-West Wales
- Swansea

SOUTH-WESTERN—
- Barnstaple
- East Cornwall
- Exeter
- Plymouth
- Torquay
- West Cornwall

STAFFORDSHIRE—
- Mid-Staffordshire
- North Staffordshire
- South Staffordshire

STIRLING

ULSTER—
- Ballymoney, North Antrim, and South Derry
- Derry
- Belfast
- Enniskillen
- Omagh
- Monaghan and Cavan
- Portadown and West Down

WEST SOMERSET

WORCESTERSHIRE AND HEREFORDSHIRE—
- Hereford
- Worcester

YORKSHIRE—
- Barnsley
- Bradford
- Halifax
- Harrogate
- Huddersfield
- Leeds
- Scarborough
- York
- Sheffield
- Wakefield, Pontefract, and Castleford

APPENDIX XVIII.

QUESTION AS TO THE ESTABLISHMENT OF TUBERCULOSIS DISPENSARIES IN THE LONDON AREA BY THE "CENTRAL FUND FOR THE PROMOTION OF THE DISPENSARY SYSTEM FOR THE PREVENTION OF CONSUMPTION IN LONDON."

MEMORANDUM.

1. The attention of the Association was drawn to the question of the Tuberculosis Dispensaries now being established by the Central Fund for the Promotion of the Dispensary System for the Prevention of Consumption in London, in January, 1912, when an advertisement was tendered to the JOURNAL for a whole-time officer for the Shoreditch and Finsbury Tuberculosis Dispensary of that Fund. Shortly afterwards a similar advertisement was received from the Honorary Secretary of the Stepney Dispensary for the Prevention of Consumption. The Dispensaries in question not being known to be already established Dispensaries, the Divisions concerned, namely, the City and Stratford Divisions respectively, were communicated with and their attention was drawn to the special resolutions of the Annual Representative Meeting, 1909, bearing on the subject, namely:—

> *Minute* 150. That, in the opinion of the Representative Meeting, no fresh public medical institution should be opened without previous consultation with the local medical profession, through some organised body such as the local Division of the British Medical Association.
>
> *Minute* 157.—That, in the opinion of the Representative Meeting, the association of officially recognised representatives of the local medical profession in the promotion and general management of hospitals and other medical charities is desirable in the interests of those institutions, as well as of the profession, and that for the appointment of such representatives use should be made of the machinery afforded by a Division of the British Medical Association.

By request of the two Divisions the advertisements were held over both by the JOURNAL and by the LANCET, pending investigation, and the matter was brought before the Metropolitan Counties Branch Council by the Honorary Secretary of the City Division on January 18th, 1912. That Council referred the subject for report to its Medical Charities Committee.

3. The Report of the Medical Charities Committee on the subject was adopted by the Branch Council on February 15th, 1912, in the following amended form:—

> (*a*) That the Branch Council does not necessarily object to the establishment of Anti-Tuberculosis Dispensaries provided that the following conditions are observed:—
>
> (i.) That the Rules for the management of these institutions are in conformity with the rules, where applicable, approved by the British Medical Association for the Management of Hospitals and Provident Dispensaries.
>
> (ii.) That there is local medical representation on the Committee of Management, satisfactory to the local Division of the British Medical Association.
>
> (iii.) That no person who is under the care of a medical practitioner shall receive benefits from the Dispensary except with the concurrence of such practitioner.
>
> (iv.) That no new Dispensary be started without the approval of the local Division of the British Medical Association.
>
> (v.) That these Dispensaries should be worked by a medical staff elected from local practitioners. That no treatment, therapeutic or preventive, be carried out by the Dispensary except in co-operation with an attending general practitioner and that in every case payment be made for services received.
>
> (*b*) That a copy of (*a*) be sent to the Secretary of the Anti-Tuberculosis Society with a request that it shall be brought before the Committee of Management, and that until these Resolutions are incorporated in the Rules of Management, the movement cannot obtain the support of the medical profession.

The above Resolutions of the Branch Council were duly forwarded to the Central Fund. A formal acknowledgement, merely, of the receipt of the Branch Council's communication, dated February 22nd, was received. Up to April 18th, however, no intimation had been received from the Fund as to whether the Fund either agreed or disagreed with the proposed Rules formulated by the Branch Council, and on April 18th the Branch Council passed the following resolution:—

> That the Rules adopted by the Metropolitan Counties Branch Council for the guidance of the Metropolitan Divisions in respect of the establishment of Tuberculosis Dispensaries be submitted to the Central Council. (For the Rules in question, *see* above, items (i.)—(v.))

The Chairman of Council has referred the matter to the Medico-Political Committee for consideration and report to the Council.

4. Just before the reference of the matter by the Branch Council to the Council of the Association, the Stratford Division intimated (April 15th) that the Division withdrew its objection to the publication of the advertisement of the Stepney Dispensaries. The Stepney (local) Secretary of the Central Fund had just previously tendered to the JOURNAL advertisements for whole-time Medical Officers for *two* new Stepney Dispensaries instead of the previous *one*. The Stratford Division was at once asked by the Acting Medical Secretary for a full statement of the reasons which led the Division to withdraw its objections, and the Honorary Secretary replied that the rules of the Stepney Dispensaries complied with all the principles laid down by the Branch Council, except that the institutions were to be staffed by a whole-time officer. The Division had discussed the matter, and preferred the whole-time officer to staffing by local practitioners. In view of this reply by the Division it was decided by the Chairman of Council that the Stepney advertisements should be accepted, and they were published on May 4th.

5. As regards the Shoreditch and Finsbury Tuberculosis Dispensary, however, the City Division, and notably the members residing in the Finsbury district, which is mainly concerned, have taken up a strong attitude of objection to the establishment of the Dispensary in the manner proposed. They are of opinion that such a scheme should be carried out only in co-operation with the local profession, and are also emphatic in demanding that part-time local medical practitioners should be employed to do the work and not a whole-time Medical Officer. They base this opinion upon the fact that constant encroachment is taking place on general medical practice, and they consider that the local medical practitioners should have a preference in new schemes for the prevention or treatment of disease. The advertisement tendered for that Dispensary has therefore not been published.

6. The attention of the Association has also been drawn recently to the Battersea Dispensary (promoted by the same Central Fund) which was apparently established in 1911. The Medical Officer of this Dispensary submitted to the Central Ethical Committee a question affecting professional confidence as to which he was at variance with the lay Committee. The Central Ethical Committee advised upon the subject, and as a result the lay Committee made concessions which met the conditions laid down by the Central Ethical Committee. The Medical Officer in question, however, is leaving the Dispensary, and a medical member of the Committee of the Dispensary, who is also a Member of the Association applied to know whether an advertisement for a whole-time medical officer for that Dispensary would, if offered, be accepted for publication in the JOURNAL. Upon inquiry, the Honorary Secretary of the Local Division concerned, namely, the Wandsworth Division, intimated that the local profession had no objection. No advertisement has, however, been tendered up to the present from the Battersea Dispensary.

7. Up to the present also (June 8th) no reply other than the mere acknowledgment referred to above, has been received by the Metropolitan Counties Branch Council from the Central Fund, nor is it known whether that Fund intends to consider the proposals of the Branch Council. It was understood from a letter dated January 23rd, 1912, received by the Honorary Secretary of the City Division from the Editor of the *Lancet* (who is a member of the Central Council of the Fund), with whom he had been in communication as to the Shoredith and Finsbury Dispensary, that it was probable that the Fund would approach the Council of the Association respecting questions of the relationship of the various Dispensaries to the medical profession. Up to the present, however, no communication has been received from the Fund.

APPENDIX XIX.

LIST OF WITNESSES NOMINATED ON BEHALF OF THE ASSOCIATION TO GIVE EVIDENCE BEFORE SELECT COMMITTEE ON PATENT AND PROPRIETARY MEDICINES.

Prof. Walter Ernest Dixon, "Babraham," Cambridge, F.R.S., M.D., B.Sc.Lond., Professor of Materia Medica and Pharmacology, King's College; Univ. Lect. Pharmacology, Univ. Camb.

Professor Dixon will speak on the composition and effects of some of the advertised Secret Remedies.

Mr. Henry Sewill, The Old Rosery, Redhill, M.R.C.S.Eng., L.D.S., retired from practice, formerly dental surgeon, West London Hospital; one of the proprietors of the Medical Press and Circular, author of many articles on the subject of quackery, and of a pamphlet on Quackery and Medical Law Reform, already forwarded to the Select Committee.

Mr. Sewill will speak specially on the relation of the Press to the traffic in Secret Remedies.

Mr. E. F. Harrison, 55, Chancery Lane, E.C., B.Sc., F.I.C., Analyst. Performed all the analyses in connection with the Association's book, "Secret Remedies."

Mr. Harrison will deal specially with the Association's volume, "Secret Remedies." The second volume of this book is in the press, and proof sheets will be forwarded as soon as they are available. Mr. Harrison is responsible for the analyses in this volume also.

Mr. Percival Macleod Yearsley, 59, Queen Anne Street, Cavendish Square, W., F.R.C.S.(Eng.), Senior Surgeon, Royal Ear Hospital; Medical Inspector, Deaf Schools (Education) L.C.C.; Author of a Text-book of Diseases of the Ear.

Mr. Yearsley will speak specially on Secret Remedies and Proprietary Appliances in their relation to deafness and diseases of the ear. A separate Memorandum by Mr. Yearsley is enclosed with the Memorandum of the Association.

Miss Mary Darby Sturge, 45, Hagley Road, Edgbaston, M.D.Lond.; Honorary Physician, Birmingham and Midland Hospital for Women; Joint Author (with Sir Victor Horsley) of "Alcohol and the Human Body."

Dr. Sturge will speak specially on medicated wines, which are referred to in Section A of the Appendix.

Mr. Reginald Edward Crosse, 68, Nightingale Lane, M.R.C.S., L.R.C.P.Lond., Medical Referee under the Workmen's Compensation Act.

Mr. Crosse has been specially engaged by the British Medical Association in compiling certain of the evidence which will be put in by the Association. Mr. Crosse will speak specially upon those advertisements and remedies dealing with sexual matters.

Mr. Alfred Cox, 429, Strand, W.C., M.B., B.S.Durh., Medical Secretary of the British Medical Association; in general practice for 20 years.

Dr. Cox will present the Memorandum of the Association and offer himself for examination generally on that document.

Sir Malcolm Morris, 8, Harley Street, W., K.C.V.O., F.R.C.S., Consulting Surgeon, Skin Department, St. Mary's Hospital.

Sir Malcolm Morris will offer evidence on proprietary medicines in relation to diseases of the skin.

Dr. Arthur Whitfield, 135, Harley Street, W., F.R.C.P., Physician, Skin Departments, Great Northern Central Hospital and King's College Hospital, Professor in Dermatology, King's College Hospital.

Dr. Whitfield will offer evidence on proprietary medicines in relation to diseases of the skin.

The Committee has had the names of several medical [illegible] who were interested in this subject forwarded to [illegible] and has submitted to the Select Committee the names of the two following gentlemen who would be willing, if called upon by the Committee, to give evidence, namely,

Mr. Charles Spencer Palmer, Brooke Lodge, Station Road, Redhill, M.R.C.S., L.R.C.P.Lond., Senior Medical Officer, Reigate and Redhill Hospital and Redhill Dispensary.

Dr. John Johnston, Sunnybrae, Lostock Lane, Bolton, M.D.Edin.; Medical Officer, Bolton Casual Wards; late Honorary Surgeon, Bolton Infirmary.

Owing to exceptional pressure on space a number of reports of Branches and Divisions, with other matter, are unavoidably held over this week.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

LANCASHIRE AND CHESHIRE BRANCH:

Southport Division.

A special meeting of the Division, to which all registered practitioners resident in the Division had been invited, was held at the Temperance Institute on June 24th. Dr. Mewburn Brown was in the chair, and there were present: Drs. Anderson, Ashworth, Baildon, Bardsley, Bentall, Blakeman, Corkhill, R. Cairns, Dall, de Courcy, Woolmer Davies, Edmiston, Fenn, Harker, Hare, Harris, Littler, Limont, Lowe, Murison, Mulholland, Penrose, Pridie, Russel, Scott, Storrs, Swete-Evans, Sykes, Speirs, Thomson, and Woodroffe. Apologies were received from Drs. Gill and Walker.

Nomination to Proposed Provisional Insurance Committees.—The correspondence between the National Health Insurance Commission and the State Sickness Insurance Committee respecting the suggested nomination by the Association of medical practitioners to serve upon the proposed Provisional Insurance Committees was read, with the refusal of the Committee to assist; also a letter from the Committee addressed to Secretaries of Divisions, pointing out that there was no objection to medical practitioners who are members of borough councils serving on Provisional Insurance Committees *qua* members of council and not *qua* medical practitioners, but urging the objection to medical practitioners as such serving on such committees. In connexion with this the Secretary explained recent occurrences at the General Purposes Committee of the Southport Town Council. Drs. Limont and Pridie, as town councillors, had been nominated members of the Provisional Insurance Committee and had accepted the positions, and Dr. Councillor Mulholland had been nominated as the medical practitioner to be appointed by the town council on the Committee, and had accepted the position only on the distinct understanding that he should not take his seat on the Committee unless and until the minimum demands of the medical profession presented to the Insurance Commission are conceded. Drs. Pridie and Mulholland explained their actions, and resolutions were passed unanimously approving of the action of the National Insurance Committee, and also of that of the three medical councillors. Dr. Swete Evans mentioned that the action of the medical councillors was misunderstood and was being misrepresented in the town as a capitulation on the part of the profession. The Chairman and Secretary were instructed to write letters to the local newspapers explaining the matter.

Number of Assistants to General Practitioners.—Another letter from the Medical Secretary respecting the Government inquiry into medical remuneration and the number of assistants to general practitioners was read. The Secretary stated that he had replied that he had reason to believe that no assistant was employed in the Division at the present time. This belief was affirmed by all the members present.

Public Medical Service. The Public Medical Service schemes were submitted. It was not thought desirable to discuss them at the meeting, but they were referred to the Executive Committee for consideration and report at such time as might seem desirable to the Executive Committee.

Instruction to Representative.—The instruction of Representative respecting election of member of Council at the Representative Meeting was considered, and it was decided to leave the matter to the discretion of the Representative.

Canvass by Provisional Medical Committee. The Secretary reported on the results of the canvass of the

Division by the Provisional Medical Committee with the following result:

Retired practitioners ...	22	of whom	11	had signed	pledge.
Whole-time practitioners	3	,,	2	,,	,,
Home addresses	11	,,	4	,,	,,
Not in practice but resident in area	8	,,	3	,,	,,
Hospital residents ...	2	,,	2	,,	,,
Hospital honorary staff...	6	,,	6	,,	,,
Contract practice holders	35	,,	33	,,	,,
Others	61	,,	53	,,	,,
	149		114		

He explained that of the retired, invalid, and not practising members of the profession many might have signed the pledge who did not think it necessary to do so, some having signed the undertaking or local pledge, that of the 35 contract practice holders 33 had placed resignations of 64 appointments in his hands, that of the 3 who had not so done and had not signed the pledge, 2 were bound more or less by having signed the undertaking or local pledge, and that among the remaining practitioners who had not signed the pledge there was no fear of any of them in his opinion taking up contract work. The pecuniary result of the canvass was a guarantee of £359 11s. with instalments paid £36 11s. In addition a local fund of £90 had been guaranteed previously, and £50 of this amount sent to the Central Fund.

Vote of Thanks to Honorary Secretary.—A hearty vote of thanks was passed to the Honorary Secretary for his services.

METROPOLITAN BRANCH:

MARYLEBONE DIVISION.

A GENERAL meeting of the Division was held at 5 p.m. on Tuesday, June 25th, at 11, Chandos Street, W., Mr. ATWOOD THORNE in the chair. Nineteen members were present.

Communication from State Sickness Insurance Committee.—Reports of the State Sickness Committee concerning their refusal to appoint members of the Provisional Insurance Committees, and recommending members of the profession not to join these committees were communicated.

Instructions to Representatives.—The Representatives were instructed to support:

(*a*) The extension of time necessary for resignation of members.

(*b*) Referendum and Postal voting.

(*c*) The rules relating to practitioners examining cases under the care of other practitioners.

(*d*) The proposed rule relating to death certificates.

(*e*) Payments for certificates under the Workmen's Compensation Acts, with the proviso that the fees should not be lower than those mentioned.

The Representatives were instructed to oppose the resolution of the Westminster Division. Dr ROXBURGH drew attention to the possibility of the friendly societies deceiving their members by demanding answers to questions which required expert medical knowledge to answer, and of their making the correctness of those answers the basis of contract between the society and its members. This danger was important, as the societies were now accepting members without medical examination. He proposed:

That this matter be left to the Executive Committee to take action on.

Sir VICTOR HORSLEY seconded, and the motion was carried.

National Insurance Act.—The Representatives were left a free hand on matters relating to this Act which might be brought forward at the Annual Representative Meeting.

Public Medical Service.—Dr. MONTGOMERY SMITH proposed:

That this Division approve the form of the schemes of Public Medical Service, A and B, as published in the SUPPLEMENT of June 8th, and that the Provisional Medical Committee be asked to prepare these schemes for active operation.

This was seconded by Sir VICTOR HORSLEY, and carried.

Supplementary Pledge.—Sir VICTOR HORSLEY moved:

Inasmuch as it is absolutely necessary that every member of the profession should sign the supplementary pledge of the British Medical Association, the voluntary co-operation of members of the Division be invited by the Executive Committee, in order that a canvass of the borough area to secure signatures may be made.

Mr. DREW seconded, and the motion was carried.

Deputy Representatives.—The appointment of Deputy Representatives, if required, was left in the hands of the Chairman.

The proceedings then terminated.

WIMBLEDON DIVISION.

A MEETING of this newly-formed Division was held at Johnston's Rooms, The Broadway, Wimbledon, on June 21st, Dr. POWELL EVANS in the chair. All the practitioners in the Division were invited to the meeting.

Public Medical Service.—Schemes A and B were considered, many of those present taking part in the discussion. The decisions arrived at will be reported to the State Sickness Insurance Committee. It was the feeling of the meeting that the working and administration of any public medical service scheme should be in the hands of the profession.

NORTHERN COUNTIES OF SCOTLAND BRANCH.

THE annual meeting of this Branch was held at Craigellachie on June 15th, Dr. SELLAR, the President, in the chair.

Election of Office-Bearers.

The following office-bearers were elected:

Branch.—President, Dr. Sellar (Aberlour); *President-elect*, Dr. Simpson (Golspie); *Vice-Presidents*, Dr. Cruickshank (Nairn), Dr. Pender-Smith (Dingwall); *Members of Council*, Drs. John MacDonald (Inverness), Thos. MacDonald (Beauly), MacLachlan (Dornoch), Asher (Thurso), Ross (Tain), Knox (Gairloch), Ironside (Fochabers), and Hutchison (Grantown-on-Spey); *Representatives in Representative Meetings*, Drs. Dugnid (Buckie) and Murray (Inverness); *Representative on Central Council*, Dr. John Gordon (Aberdeen); *Honorary Secretary and Treasurer*, Dr. J. Munro Moir (Inverness).

Inverness-shire Division. — *Chairman*, Dr. Duncan MacFadyen, sen. (Inverness); *Vice-Chairman*, Dr. Miller (Fort William); *Hon. Secretary and Treasurer*, Dr. J. W. Mackenzie (Inverness); *Representative in Representative Meetings*, Dr. Murray (Inverness); *Representatives on Branch Council*, Drs. John MacDonald (Inverness) and Thos. MacDonald (Beauly); *Executive Committee*, Drs. Balfour (Aviemore), Gillies (Inverness), Johnston (Fort Augustus), Lindsay (Ardersier), F. M. Mackenzie (Inverness), T. C. Mackenzie (Inverness).

Banff, Elgin, and Nairn Division. — *Chairman*, Dr. Dugnid (Buckie); *Vice-Chairman*, Dr. Mackie (Elgin); *Honorary Secretary and Treasurer*, Dr. Stephen (Elgin); *Representative in Representative Meetings*, Dr. Dugnid (Buckie); *Representatives in Branch Council*, Dr. Ironside (Fochabers), Dr. Hutchison (Grantown-on-Spey); *Executive Committee*, Drs. Adam, (Forres), Alexander (Elgin), Campbell (Elgin), Fergusson (Banff), Taylor (Keith), Wilson (Nairn).

Ross and Cromarty Division.—*Chairman*, Dr. MacLean (Seaforth Sanatorium); *Vice-Chairman*, Dr. Kaye (Strathpeffer); *Honorary Secretary and Treasurer*, Dr. Duncan (Strathpeffer); *Representative at Representative Meetings*, Dr. Murray (Inverness); *Representatives on Branch Council*, Drs. Ross (Tain), Knox (Gairloch); *Executive Committee*, Drs. Brodie (Munlochy), Mackay (Loch Carron), Middleton (Dingwall), Macrae (Alness), Pender-Smith (Dingwall), and Somerville (Invergordon).

Sutherland and Caithness Division.—*Chairman*, Dr. Simpson (Golspie); *Vice-Chairman*, Dr. Asher (Thurso); *Secretary and Honorary Treasurer*, Dr. Brenner (Golspie); *Representative at Representative Meetings*, Dr. Murray (Inverness); *Representatives on Branch Council*, Dr. Asher (Thurso), Dr. MacLachlan (Dornoch); *Members of Executive Committee*, Drs. MacLachlan (Dornoch), Jollie (Helmsdale), Johnstone (Brora), Dick (Wick), Rae (Wick), and Durran (Thurso).

Annual Meeting.—It was agreed to hold the next annual meeting at Strathpeffer.

National Health Insurance.—Dr. J. MUNRO MOIR gave a full statement of the principal matters of interest in connexion with the National Insurance Act which had been discussed at the meetings of the State Insurance Committee, and he also referred to the discussions which had taken place at the Joint Advisory Committee meetings.

SOUTH-EASTERN BRANCH.

Brighton Division.

The annual meeting of this Division was held in the Lecture Hall, New Road, on June 18th, and adjourned to June 25th. Dr. Ryding Marsh was in the chair. Forty-eight members were present at the meeting, thirty-four at the adjourned meeting.

Correspondence.—The Secretary read the correspondence, including Memoranda D 54, 55, and 56 from the State Sickness Insurance Committee, which were referred to the Provisional Medical Committee.

Resignation of Dr. Ryle.—A letter was read from Dr. Ryle, Chairman of the Division, dated May 22nd, 1912, resigning his membership of the Association. It was proposed by the Secretary, seconded by the Vice-Chairman, and carried unanimously:

> That this meeting of the Brighton Division receives with regret Dr. Ryle's letter of May 22nd, 1912, and earnestly urges him to reconsider his decision, and to withdraw his resignation until such time as the matter under consideration has been concluded.

Election of Officers.—The following officers were elected *Chairman-elect*, Dr. Henry Gervis; *Vice-Chairman*, Dr Turton; *Honorary Secretary and Treasurer*, Dr. Benham *Honorary Assistant Secretary*, Dr. Burchell; *Representatives to Representative Meetings*, Dr. Benham and Dr. Eves; *Deputy Representative*, Dr. Fothergill. The Executive Committee and the Standing Committees of the Division were also elected at the meeting.

Alterations in Rules.—The rules were altered in such a manner as to make the election of the Representatives take place at the annual meeting instead of at the first meeting in the year, and also to provide for the election of a new committee to be called the Organization Committee.

Annual Report.—Dr. Gervis (Chairman of the Executive Committee) presented the annual report, which showed that the membership of the Division has increased from 146 to 208, that twenty meetings of the Division have been held with an average attendance of forty-three. Fifty-two committee meetings have been held during the year. The finances of the Division show a considerable increase of expenditure, and it is estimated that the total annual expenditure will be nearly £70. The Brighton Division Medical Practitioners' Defence Fund now stands at a total of £2.800 guaranteed, of which the sum of over £100 has already been received in cash. A contribution of £25 has been sent to the Central Defence Fund, and a grant of £25 has been made to the Provisional Medical Committee. The Division has had under consideration during the year the Insurance Act, the surgical treatment of Poor Law patients, the treatment of maternity cases for fees by West Street Hospital, and the treatment of school children found by medical inspection to be defective. The Brighton Division has invited the Association to hold its Annual Meeting at Brighton in 1913, and has nominated Dr. Ainslie Hollis for the office of President-elect.

Annual Meeting of Association, 1913.—The Chairman of the Executive Committee moved the following resolution, which was carried unanimously:

> That the Executive Committee of the Division and Dr. Hollis be authorized to act as a provisional committee for making arrangements for the Annual Meeting of the Association in Brighton in July, 1913.

Provisional Medical Committee.—The report of the Provisional Medical Committee was presented by Dr. Turton, and showed that the canvass of the Division has resulted in the signature of the new pledge by all except fifteen of the medical men in actual practice, and of these some are away on holiday, and only three have definitely refused. Of the eighty men holding club appointments seventy-nine have already sent in provisional resignations to their clubs, and pressure is being brought to bear on the remaining one, which may yet be successful.

[illegible] committee. The report of the Schools Committee was presented by the Secretary, Dr. Walker.

Ethical Committee.—The report of the Ethical Committee was presented by Dr. Gomme Dill.

Special Meeting.

A special meeting of the Brighton Division was held before the adjourned meeting on June 25th, in accordance with By-law 30.

Instructions to Representatives.—The Representatives were instructed on several matters contained in the Provisional Agenda of the Annual Representative Meeting. On Motion 16 the Representatives were instructed to propose the following amendment:

> To add at the end, "That no Warning Notice shall be inserted by a Division in the British Medical Journal unless the Chairman and Secretary of the Division are of opinion that a three-fourths majority of the Division is likely to be obtained in favour of that course, and that no such notice shall be continued in the Journal unless a three-fourths majority in favour of it be obtained at the next Division meeting.

SOUTH MIDLAND BRANCH.

The fifty-seventh annual meeting of this Branch was held at the Royal Bucks Hospital, Aylesbury, on Thursday, June 6th, 1912, at 2.30 p.m., under the presidency of Dr. J. C. Baker, Aylesbury. There were thirty-six members present.

Luncheon.—Previous to the meeting the President had entertained the members to a most excellent luncheon at the George Hotel.

Presidential Address.—Dr. Baker's address included an appeal to all members to stand firm and united in the matter of the Insurance Act, so as to obtain the best possible terms for the profession. He also urged members to subscribe more generally to the British Medical Benevolent Fund.

Tumours of Bone.—Mr. James Berry read a paper on "Tumours of Bone, and their Diagnosis, with Specimens and Skiagrams." He referred chiefly to sarcoma, and pointed out the importance of early differential diagnosis between periosteal and endosteal growths, which was nowadays easier by the help of *x* rays. This was very important, as the periosteal growths were so malignant that little hope could be held out unless removed at a very early stage. He advocated removal of the whole bone by amputation, except in cases of sarcoma of lower end of femur, in which he said it was advisable to save the hip-joint. The diagnosis often had to be made from periostitis, quiet necrosis, and in cases near joints from disease of the joint.

SOUTH-WESTERN BRANCH:

Torquay Division.

Provisional Medical Committee.

A meeting of the Provisional Local Medical Committee was held at the Torbay Hospital on June 18th. There were present: Drs. Gough, Palmer, Sankey, Vickers, Edmond, Gibson, Wiggin, McKenzie, Eales, Nisbet, King, Goodwyn, and Paul.

Supplementary Pledge and Resignations.—The Secretary reported that all holders of club and contract appointments had sent in their resignations except in the case of two members of the profession resident in Brixham. These men, however, had expressed their firm adherence to the policy of the Association. Out of 103 men in active practice 88 had signed the pledge. Out of the remaining 15, two men were away from home, eight men had declined to sign, but were otherwise upholders of the Association's policy, one man had lately died, and it was doubtful whether the remaining four had not retired. The following resolution was then passed, Proposed by Dr. McKenzie and seconded by Dr. Eales:

> That the resignation should not become operative until at least approximately 80 per cent. of medical men holding contract appointments in each Division have sent in their resignations.

Female Members and Clubs.—A discussion ensued on the question of admitting female members to the existing clubs opened by Dr. Sankey (Ashburton). It was decided that the female members be admitted as they would in any case not be attended by the profession unless the existing Act was amended to suit the demands of the Association.

General Meeting.

This meeting was followed by the general meeting, at which thirty-five members of the profession were present.

Public Medical Service.—A discussion was opened on the scheme of medical service. It was decided to accept

Scheme A by the whole meeting. The scheme was then discussed paragraph by paragraph.

STAFFORDSHIRE BRANCH:

MID-STAFFORDSHIRE DIVISION.

THE tenth annual general meeting of this Division was held at Stafford on June 14th. There were twenty-nine members present.

Special Representative Meeting.—Dr. CH. REID gave a brief account of the Special Representative Meeting in February, and pointed out that he had duly voted in accordance with instructions given him at the general meeting held on February 13th, and that he had voted against the censure of the Council proposed by a section of the meeting.

Annual Report.—The HONORARY SECRETARY'S annual report, as printed and circulated to the members, was received, and arising out of it, the Executive Committee for the year was instructed to consider the preparation of Division rules and report before the next annual general meeting.

Provisional Medical Committees.—The reports of the Honorary Secretary of the Provisional Medical Committees for the Division area outside Burton-on-Trent as circulated to members was received, and the Committee congratulated on the excellent results of its labours. The following is an abstract of the report:

In the area named there are 77 practitioners; of these 3 have retired from practice and 3 have a home address only in the area; 4 are Royal Army Medical Corps officers; of these 3 are members of the British Medical Association, 1 is up for election, and 3 have signed the pledge; 1 is a dentist, a non-member of the Association, but has signed the pledge. The remainder are made up of infirmary residents (2), both members who have signed the pledge; asylum officers (5), of whom 1 is up for election, and the remainder members; education officers (2), whole time, both members and both contributors to the Defence Fund, and signed the pledge; county medical officer of health, a member and a prison medical officer, a non-member. Of the 52 in general practice, all but one are either members of the British Medical Association or have applied to join, all have signed the pledge, all but one have contributed to the Defence Fund—£490 in all—and all have signed resignation forms for the contract practice where they have any.

The HONORARY SECRETARY of the Provisional Medical Committee for Burton-on-Trent then gave his report, which was received. The following is an abstract: All practitioners in the county borough except the Amalgamated Friendly Societies' doctor have signed the pledge and resignations of their contract practice appointments; most of the practitioners have guaranteed to the Central Defence Fund. Four doctors in the borough have refused to join the Association, but three of these will support any action of the Association.

Election of Officers.—The following officers were elected for the ensuing twelve months: *Chairman*, Dr. Cookson (Stafford); *Vice-Chairman*, Dr. Rowland (Lichfield); *Honorary Secretary*, Dr. Hodder (Stafford); *Representatives on Branch Council*, Drs. Blumer, W. G. Lowe, and G. Reid; *Representative for Representative Meetings*, Dr. Charles Reid (Stafford); *Executive Committee*, the Chairman and Honorary Secretary *ex officio*, and Messrs. Stack (Burton-on-Trent), Rowland (Lichfield), J. K. Butter (Cannock), McVittie (Rugeley), and T. Dixon (Eccleshall). The Executive Committee was appointed an Ethical Committee for the Division for the year 1912-13.

Instructions to Representative.—In regard to matters coming before the Annual Representative Meeting, the Representative was instructed as follows: To support the recommendations of Council in regard to model ethical rules, certificates and reports on cases and State sickness insurance, and to press for further information in the case of the Public Health and Poor Law recommendation, paragraph 37, page 507, as the definition of official duties was considered dangerously vague and ambiguous. On the question of the diversion of maternity benefit to institutions which had an extern midwifery department, through which lying-in women were attended by unqualified students, the Representative was instructed to oppose such subsidizing of unqualified practice as detrimental to the interests of the general practitioner.

Public Medical Service.—Consideration of the Public Medical Service schemes was adjourned to a special meeting fixed for June 21st at the Trent Valley Hotel, Lichfield. This concluded the meeting.

YORKSHIRE BRANCH:

HUDDERSFIELD DIVISION.

THE annual meeting of this Division was held at the Huddersfield Royal Infirmary on Friday, June 21st, at 8.30 p.m. Dr. IRVING, Chairman of the Division, presided.

Annual Report.—The annual report was read by the HONORARY SECRETARY and adopted. It stated that eight largely attended meetings were held during the year; that there are now 66 members, an increase of 15 over the previous year; that Dr. James A. Hall, who had twice been Chairman of the Division, had died during the year; that the complementary pledge had been signed by 80 practitioners in the area out of a possible 84 or 85; that 17 members holding contract appointments had signed forms of resignation; and that 44 members had up to the present made contributions to the Central Defence Fund.

Election of Officers.—It was decided to re-elect the officers whose year of office had elapsed, substituting the name of Dr. C. B. Braithwaite for that of Dr. Norman Porritt, who has left the district. *Chairman*, Dr. J. Irving; *Vice-Chairmen*, Dr. W. L. Marshall and Dr. Robert Trotter; *Honorary Secretary and Treasurer*, Dr. A. L. McCully; *Representative at Representative Meetings*, Dr. J. W. Draper; *Representative on Branch Council*, Dr. F. Knaggs. *Executive Committee*, Drs. Braithwaite, Cairns, Chambers, Crosland, Pye-Smith, Rowell, E. Walker, Williams, and D. Wilson, jun.

Schemes for Public Medical Service.—These schemes as outlined in the SUPPLEMENT to the JOURNAL of June 8th were then discussed, and it was finally moved, seconded, and carried *nemine contradicente*:

> That it be an instruction to the State Sickness Committee no to proceed with any scheme of contract practice.

Uniform Fee for Medical Examination of Candidates for Admission to Approved Societies.—After discussion it was decided to recommend that 2s. 6d. be the minimum fee charged for this service, and that a circular to this effect be sent to every practitioner in the Divisional area.

The meeting then terminated.

LEEDS DIVISION.

THE annual meeting of the Division was held on June 11th.

Election of Officers.—The following were elected: *Chairman*, Dr. J. Gordon Sharp (Leeds); *Vice-Chairman*, Mr. S. T. Steele (Morley); *Honorary Secretary*, Dr. J. Allan (Beckett Street, Leeds); *Representatives on Branch Council*, Drs. J. Allan, J. Nightingale, J. Roper, J. Gordon Sharp; *Executive Committee*, Drs. T. Churton, J. P. Clarke, J. J. Crawford, Joseph Dobson, James Ewing, A. S. Grünbaum, A. Hawkyard, L. C. Johnson, L. A. Rowden, A. L. Whitehead. *Representatives at Representative Meetings*, Drs. James Allan (Beckett Street, Leeds) and H. Hawkyard (Rowland Road, Leeds).

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

Association Notices.

ANNUAL GENERAL MEETING.

Notice is hereby given that the 1912 Annual General Meeting of the British Medical Association will be held in the Small Concert Hall, St. George's Hall, Liverpool on Tuesday, July 23rd, 1912, at Two o'clock in the Afternoon.

BY ORDER OF THE COUNCIL,

GUY ELLISTON,
Financial Secretary and Business Manager.

June 26th, 1912.

ELECTION OF MEMBERS OF COUNCIL BY GROUPED REPRESENTATIVES.

Notice is hereby given that Nominations for candidates for election of Members of Council by grouped Representatives for the year 1912–13 will be received by the Medical Secretary up to the end of the first hour of the proceedings of the Annual Representative Meeting, on Monday, July 22nd, 1912. Each Nomination must be on the prescribed form, copies of which will be forwarded by the Medical Secretary on application.

Separate forms have been prepared: (I) for Nomination by a Division (through its Representative), and (II) for Nomination by a Representative of a Constituency included in the Group, and those applying are requested to state for which purpose the form is desired.

The voting papers will be issued at the Representative Meeting to each Representative or Deputy Representative of a Constituency in the United Kingdom in attendance at the Meeting.

By order of the Council.

ALFRED COX,
Medical Secretary.

June 24th, 1912.

NOTICE OF FORMATION OF A NEW DIVISION OF THE ASSOCIATION.

The following change has been made in accordance with the Regulations of the Association, and takes effect from the date of publication of this notice:

Tower Hamlets Division.

That the members of the Association resident within the area of the Boroughs of Poplar and Stepney, which district at present forms part of the area of the Stratford Division, be constituted a separate Division, to be known as the Tower Hamlets Division, the new Division to form part of the Metropolitan Counties Branch, and that the area of the Stratford Division be modified accordingly.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Metropolitan Counties Branch: City Division.—A general meeting will be held at the Abercorn Rooms, Bishopsgate Street, E.C., on Wednesday, July 10th, at 4 p.m., (*a*) to consider the Supplementary Report of the Council, which is published in the present issue (July 6th) of the Supplement, which members are desired to bring with them; and (*b*) instruct Representatives thereon. (*c*) Other business.—A. G. Southcombe, Honorary Secretary.

Metropolitan Counties Branch: East Hertfordshire Division.—The meeting of this Division, adjourned at Hertford on June 19th, will be resumed on Wednesday, July 10th, at the North Herts and South Beds Hospital, Hitchin, at 3.30 p.m. Agenda: (1) Receive report of Honorary Secretary of the Division on the present position in the area as regards the pledge, etc. (2) Consider matters referred to Divisions and instruct Representative thereon: (*a*) Public Medical Service [illegible] Supplement, June 8th), [illegible] British Medical Journal, [illegible] Annual Representative Meeting, Liverpool, July 19th, 1912 (British Medical Journal, Supplement, May 18th). (*c*) Supplementary Report of Council, and special report [illegible] position of Medical Profession in relation to National Insurance Act (British Medical Journal Supplement, July 6th). Members are requested to bring these numbers of the Supplement to the meeting. (3) Fix time and place of next meeting. (4) Any other business. As the question of a Public Medical Service is to be discussed, all practitioners resident in the area of the Division (whether members of the British Medical Association or not) are invited to attend.—H. D. Ledward, Honorary Secretary, Letchworth, Herts.

Metropolitan Counties Branch: Hampstead Division.—A meeting of the Hampstead Division will be held on Thursday, July 11th, at the Central Library, at 8.30 p.m. Agenda: The Supplementhry Report of Council.—E. Arthur Dorrell, Honorary Secretary, 7, Cannon Hill, W. Hampstead.

Metropolitan Counties Branch: Kensington Division.—A meeting of the Division will be held at Kensington Town Hall, on Wednesday, July 10th, at 4 p.m. Agenda: (1) Minutes; (2) To receive the reply of the Chancellor of the Exchequer and the Insurance Commissioners to the demands of the profession, and to instruct the Representatives as to the attitude they shall adopt at the Representative Meeting; (3) Dr. Buttar will move the following resolution: "That inasmuch as the new Council of the Association is being elected on the issues connected with the Insurance Act, the State Sickness Insurance Committee need no longer be a special body, duplicating the Executive of the Association, but should become a Committee of the Council, with additional members co-opted if necessary, for the complete representation of the profession."—Walter E. Fry, P. C. Raiment, Honorary Secretaries.

Metropolitan Counties Branch: South-West Essex Division.—A meeting of the Division, to which all practitioners residing within its area are invited, will be held on Friday, July 12th, at 4 p.m., in the Wesleyan Church Schoolroom, High Road, Leyton (nearest station, Leyton, M.R.) Agenda: (1) Minutes; (2) Correspondence; (3) To consider special report of State Sickness Insurance Committee on the position of profession with regard to National Insurance Insurance Act (see Supplement to British Medical Journal of this week; (4) Supplementary Report of Council (see Supplement to British Medical Journal of this week); (5) Any other business.—A. Pottinger Eldred, Honorary Secretary.

Metropolitan Counties Branch: Westminster Division.—The next meeting of this Division will be held on Tuesday, July 9th, at 4.30 p.m., at St. James's Vestry Hall, Piccadilly, W. Agenda: (1) Minutes. (2) Correspondence. (3) Questions. (4) Instructions to the Representatives to the Annual Representative Meeting. All members are particularly requested to attend and to bring with them the Supplements to the British Medical Journal, May 11th and May 18th.—J. Howell Evans, W. A. Milligan, Honorary Secretaries.

Midland Branch: Lincoln Division.—A special meeting of the Division will be held at Lincoln on Friday, July 12th, at 3.30 p.m. J. S. Chater, Honorary Secretary.

North of England Branch: Newcastle-on-Tyne Division.—A meeting of the Newcastle-on-Tyne Division of the British Medical Association will be held at the Royal Victoria Infirmary, Newcastle-on-Tyne, on Tuesday, July 9th, at 8.30 p.m. Agenda: (1) Minutes. (2) Discussion on Report of Council (see Supplement to British Medical Journal, July 6th, 1912), and instruction of Representative to the Annual Representative Meeting; (3) Any other competent business. R. J. Willan, Honorary Secretary.

Oxford and Reading and Maidenhead Branch.—The annual meeting of the Branch will be held on Saturday, July 13th, in the Library of the Berks County Hospital, Reading, at 4.15 p.m. Agenda: (1) Minutes of last meeting. (2) Installation of President for 1912–13. (3) Election of President-elect and other officers. (4) Financial statement by the Honorary Treasurer. (5) Report of Branch Council. (6) Reports of Local Provisional Medical Committees. Clinical: (1) Sir William Osler, Bart., will open a discussion on the Causation of the Increase of Appendix Disease. (2) Dr. Freeman will show a case of Cerebral Diplegia. (3) Dr. Armstrong will give a demonstration of the Subjective Method of Estimating Blood Pressure. (4) Dr. Turrell will give notes of a case of Loss of Memory. If time permits other cases will be shown. After the meeting dinner will be held at the Caversham Bridge Hotel at 6.30 p.m.—W. Duggan, Honorary Secretary.

West Somerset Branch.—A special general meeting will be held at the Taunton and Somerset Hospital, on Tuesday, July 9th, at 3.15 p.m. The President (Dr. Balfour Stewart) will take the chair. Agenda: The minutes of the last meeting. To discuss the report of the State Sickness Insurance Committee (see Supplement to British Medical Journal of this week), and give instructions to Dr. J. A. Macdonald, in view of the meeting of Representatives to be held on July 19th, at Liverpool.—Chas. Farrant, Honorary Secretary, Taunton.

National Insurance.

RESIGNATION OF CONTRIBUTORY CONTRACT APPOINTMENTS.

LEICESTERSHIRE AND RUTLANDSHIRE.

THE holders of about 800 contract practice appointments in the area of the Leicestershire and Rutlandshire Division of the British Medical Association have given six months' notice of their resignation of the various clubs, friendly societies, dispensaries, etc. Out of 265 medical men in the area involved, 252 have promised to support the service, and 181 out of 184 who have held contract practice appointments have sent in their resignation of all forms of contract work whether for insured or uninsured persons. A few who have held private clubs are still retaining them, but are enrolling no new members, raising the rates to that of the Public Medical Service and using the service cards, so that these private clubs will, in time, die out.

This action has been taken in accordance with the policy of the profession in the locality as from time to time explained in the BRITISH MEDICAL JOURNAL. This policy includes the organization of a public medical service. This service is an association of medical practitioners constituted to organize the provision of medical attendance and medicine for persons within the area unable to pay the ordinary medical charges in the usual manner. The Leicestershire and Rutland Division of the British Medical Association is the body by which the Service may be affiliated with similar organizations, and any registered medical practitioner practising within the area, whose professional conduct is in conformity with the rules of the Association, may become an acting or honorary member: an acting member undertakes medical attendance on subscribers upon the terms laid down, an honorary member is one who has signed the undertaking to abide by these rules but does not undertake to give ordinary attendance in connexion with the service. The affairs of the service are managed by a chairman, vice-chairman, honorary treasurer, honorary secretary, and a central committee consisting of three representatives of the borough of Leicester subdivision of the service, one representative from each county subdivision in Leicestershire and one from Rutlandshire, two representatives of the Executive Committee of the Leicestershire and Rutland Division of the British Medical Association, together with the Chairman and Secretary of that committee, two representatives of the staff of the Leicestershire Infirmary, and one from the staff of the Loughborough Hospital. The local areas into which the Division has, for the purpose of the service, been divided, correspond to one or more areas of the Poor Law divisions, and the medical men practising in each of these areas form a district committee for the regulation of contract practice, fixing a wage limit, methods and scale of payment, and all conditions of service. Each division is financially autonomous, and makes a small annual contribution, proportionate to the number of subscribers, to the Central Committee to meet incidental expenses.

The District Committee in each area determines the wage limit, which in no case must exceed £2 a week, and any question of eligibility for the medical benefits of the service is determined by that Committee. Payment for workers over 16 years of age is not less than 2d. a week, for young people and non-workers over 16 years of age 1½d. a week, and for children 1d. a week; but a District Committee may, if it thinks fit, make special arrangements to meet the needs of large families under the age of 18 years. After the first year there will be an entrance fee of 1s. Subscribers are admitted without medical examinationon signing a statement that they are in good health and come below the income limit agreed upon for the district; should they be actually ill, a special entrance fee is fixed, to be paid to the doctor upon whose list they enrol themselves. A subscriber has free choice of doctor, and is entitled to receive from his own medical attendant as long as his subscriptions are not in arrears:

(1) Ordinary medical treatment at the surgery of his medical attendant, or at the dispensary of the service within the hours mentioned on his card.

(2) When his condition requires medical and surgical treatment at his place of dwelling, other than night calls and extras as defined in the rules.

(3) All needful medicines and first dressings for wounds and other injuries.

The services not included in ordinary medical attendance are confinements and miscarriages, vaccinations, fractures and dislocations, consultations, anaesthetics, night calls, special visits, certificates, dentistry, and the services of an oculist and aurist. A subscriber is not entitled to medical service in respect of illness the consequence of personal misconduct, nor to cod-liver oil, linseed meal, leeches, serum, oxygen, bottles, dressings, or bandages, except the first dressings. The arrangement for the supply of medicines and medical appliances will be controlled by the District Committee. A friendly society or combination of lay persons for the provision of medical treatment which does not conform to the rules will not be countenanced.

A notice is published elsewhere asking medical practitioners, should they be approached with regard to appointments in areas of Leicestershire and Rutland, to communicate with Dr. Wallace Henry, 6, Market Street, Leicester, before accepting any such appointment.

WEST RIDING OF YORKSHIRE.

The medical practitioners in the Bradford Division of the British Medical Association holding contributory contract appointments under friendly societies and sick clubs tendered their resignations simultaneously on June 29th. The area of the Division includes the towns of Skipton, Keighley, Ilkley, Shipley, Bingley, as well as many other smaller places, and part of the Spen valley. It is stated that there are 289 practitioners in the area, of whom 132 hold contract club appointments. At the beginning of the movement five holders of such appointments declined to sign the protest against the Insurance Act; the remainder have sent in their resignations.

The reason given for taking the step at this moment is that in the case of most of the appointments notices of three months or six months must be given, and the medical men in the district desire to be free from any association with the clubs before the day when the Act provides that the medical benefits under it shall come into operation.

LANCASHIRE.

The medical men in the Blackburn Division of the British Medical Association have resigned all contributory contract appointments as from July 1st. Notice was given on January 1st last to this effect, and all contracts have now expired. The district includes Blackburn, Darwen, Accrington, Rishton, Great Harwood, Church, and Oswaldtwistle and Clayton-le-Dale. The number of medical men in the Division is 138.

PROVISIONAL INSURANCE COMMITTEES.

LEICESTER.

THE Leicester Town Council, at its meeting on June 25th, considered the election of a provisional insurance committee. Alderman Sir William W. Vincent stated that since the meeting of the Finance Committee, at which Dr. Clifton was recommended for appointment as a medical man, a letter had been received from him stating that he was not prepared to serve upon the committee until such time as the minimum demands of the profession were conceded in the regulations, or in an amending Act. Sir William Vincent said he had asked Dr. Lakin and Dr. Crossley if they would accept nomination but they had both declined. The council therefore resolved to notify the Commissioners that it was not prepared at present to recommend a medical man to serve on the committee.

MEETINGS OF THE PROFESSION.

WEST CORNWALL.

A MEETING of medical men holding mine club appointments in West Cornwall area was held at the Miner's Hospital, Redruth, on Sunday, June 23rd. Dr. PERMEWAN

was in the chair, and there were present: Drs. Richmond, Chown, Taylor, Gardiner, Whitworth, W. Hichens, Tonking, Blackwood, Cooper, Mayne, Stocker, Birchall, Thomas, F. Hitchens, and Phillips (convener and Honorary Secretary). Mr. Fred. Thomas (Manager of Dolcoath Mine) kindly attended the meeting. A general discussion on the subject of the medical attendance on the wives and families of miners, after the Insurance Act comes into force, took place. Hitherto all men have paid 1s. per four weeks to cover all attendance on themselves and families.

A resolution was proposed:

That all contract forms of practice for miners' families be done away with.

An amendment was proposed and carried:

That miners' families be attended under contract, provided satisfactory terms were arranged.

It was then proposed and carried:

That the term miner's family should include the wife, and children under 16, and immediate dependants living in the same house, but that boys under 16 in employment at mines be excluded.

It was then proposed:

That the rate to be accepted should be 1s. 4d. per four weeks per family.

An amendment reducing the amount to 1s. was lost, and the original resolution carried.

It was then arranged that a subcommittee — Drs. Permewan, W. Hichens, and Thomas—meet the mine managers at the next tin ticketting and inform them of the above resolutions.

Dr. Taylor, Honorary Secretary of the local Division, was asked to notify all men practising in the Division of these resolutions.

It was then proposed and carried:

That no juvenile clubs be taken, and that resignations to them be sent in forthwith.

Dr. W. Hichens moved and Dr. Mayne seconded:

That practitioners resident in Redruth, Pool, and Camborne, after January 15th, 1912, take no contract work, private or otherwise, except as regards miners' families (just agreed on), and work under the Insurance Act.

An amendment that private clubs be allowed at 1s. 4d. per family per lunar month was lost. The original motion was then carried.

The resolution passed at a previous meeting *re* midwifery fees was talked over, and it was decided that notices be exhibited in the surgeries of all men practising in the mining Division, to the following effect:

That on and after January 15th next, the minimum fee for confinements should be one guinea.

It was decided that all the resolutions passed at the meeting be binding upon the men practising in Pool, Camborne, and Redruth, and that the Honorary Secretary of the local Division be asked to bring all these resolutions before the next meeting of the Division, with a view to their adoption by the Division.

PROVISIONAL MEDICAL COMMITTEES.

Chelsea.

A meeting was held at the Fulham Town Hall on June 18th. Dr. J. Young was in the chair.

Government Inquiry into Medical Remuneration.—Dr. Spaull and others expressed the opinion that the proposed inquiry was only a ruse on the part of the Chancellor, in order to gain time, and they doubted if the State Sickness Insurance Committee was well advised in consenting to it.

Resignations.—Three members of the profession in the district explained their reasons for delaying to sign their resignations of contributory contract appointments. All three gentlemen signed and handed in their resignations. The Secretaries reported that there were still about thirty practitioners who had not yet signed the supplementary pledge. They were allotted to members of the Committee in order that an effort might be made to obtain their signatures.

Public Medical Service.—It was decided to recommend the adoption of either scheme (A or B) to be decided later by the local profession, subject to certain verbal alterations and additions.

Kent County.

A meeting of the Kent County (Provisional) Medical Committee was held at Ashford, on June 26th. Dr. W. J. Tyson was in the chair.

Provisional Insurance Committee.—The Secretary read a letter from the Clerk of the County Council requesting the names of three medical practitioners to be forwarded to him for the Kent County Council to select two to act as members of the Kent County Provisional Insurance Committee. The Secretary stated that he had written to the Clerk of the Kent County Council stating that until the Commissioners had conceded the demands of the medical profession he could not comply with the request of the Kent County Council. The meeting unanimously approved the Secretary's action.

Dr. Heggs proposed and Dr. Randell seconded:

That this Provisional Committee deprecates the acceptance by any medical councillor of a post of member of any committee under the Insurance Act at present.

This was carried unanimously.

Sanatorium Benefits.—Dr. Stilwell proposed and Dr. Randell seconded:

That this Committee disapproves of members of the profession accepting appointments or assisting the Insurance Commissioners in any way under the sanatorium benefits until the whole question of medical service has been agreed upon with the Commissioners.

This was carried unanimously and the Secretary was instructed to forward copies of these resolutions to the Secretary of each Division in the county.

Public Medical Service.—Schemes A and B of the British Medical Association for a Public Medical Service were placed before the Committee for discussion. Dr. Heggs submitted an alternative scheme, largely based on the lines of Scheme B and the Epsom scheme, but making the service compulsory. Dr. Walker suggested that a clause be added whereby the patients might pay 25 per cent. of the fees. After much discussion, it was resolved:

That Dr. Heggs's scheme, together with Dr. Walker's suggestions as an appendix, be printed and circulated to the members of the Committee.

The Chairman (Dr. Tyson) was congratulated upon his election as Representative for the South-Eastern Branch on the Central Council. Dr. Stilwell was elected Deputy Chairman of the Committee.

The next meeting to be held at Maidstone on July 10th, 1912.

Salford.

At a meeting of the Salford Provisional Committee on June 24th Dr. Garrard was in the chair. The Secretary reported that the condition as regards pledges was as follows:

Number of practitioners in area	131
Number of pledges signed...	119

Of the 12 who had not signed, 1 was a retired practitioner, 6 were whole-time officers, 5 were general practitioners, and of the 5 general practitioners 2 were medical officers to "medical associations." One of these gentlemen had assured the Committee of his intention to fall into line with the rest of the profession, and had given an undertaking not to accept any fresh clubs. Of the 3 practitioners in ordinary general practice, 2 had no clubs, and had stated that they would not accept any clubs resigned by other practitioners. They had not yet signed for reasons unconnected with the objects of the pledge.

Sunderland.

We have received the following returns for publication from the Honorary Secretary, Dr. R. H. Dix:

Doctors resident in area	81
Doctors who have signed pledge	81

		Signed Pledge.
Doctors not in active practice	7 ...	7
Doctors resident in hospitals	9 ...	9
Hospital honoraries	25 ...	25
Doctors who hold contract appointments	36 ...	36
Other than the above	10 ...	10

Of the 36 holding contract appointments, 36 have returned resignations.

Number of doctors who reside outside the area but who practise within the area	7
Number who have signed the pledge	7
Number who hold clubs	4
Number who have resigned such clubs	4

CORRESPONDENCE.

REMUNERATION AND EFFICIENCY.

DR. CHARLES E. S. FLEMMING (Bradford-on-Avon) writes: It will, I think, be admitted by most people that the prevention of disease is as much the task of the general medical practitioner as of the medical officer of health, but, as Professor Howard Marsh wrote in the *Times* a few weeks ago, "All Mr. Lloyd George appears to want . . . is cheap doctors who will supply all comers with a bottle of medicine or a liniment, very much as goods are supplied across the counter at a co-operative store. This is not the medicine of the present time."

It must be admitted that working class practice, either contract or ordinary, is at the present time unsatisfactory to the public and the profession; the amount of the payment for each attendance is so extremely small that a practitioner who is wholly or mainly dependent on this sort of work has to see such a large number of patients every day that the result of his work is disheartening and disappointing.

Now the Chancellor's intention is, I presume, not only to give the people more attendance, but more efficient attendance, not merely to provide that every sick person shall be seen by a doctor, but that he shall have the fullest possible benefit of all that the best science and art of medicine is capable of giving. To accomplish this it is necessary that the payment be such as will enable the medical man to live and to carry on his practice, will allow of some research, and will attract the best men. Enough to live in the way that a professional man should, with some degree of comfort; enough to educate his family, and to make some provision for old age. Enough to be able to practise in such a way that he can give sufficient time to his work to do it properly. It is not the amount of the fee received, but the amount of work that has to be done in the day that affects the quality of a professional man's work. Indirectly it is the fee, because if a man is receiving only small fees he has to give so many attendances to make a living that he cannot afford to give to each attendance the time he could if he received larger fees. Whether the fee be sixpence or a guinea, it is the continued hurry and want of time entailed by having to see too many patients that makes work tiring and monotonous and so uninteresting and inefficient. I doubt whether the public realizes the difference in cost to themselves between careful and efficient treatment on the one hand, and on the other hand indifferent and inefficient treatment; the former means shorter illness and a less number of attendances. The doctor requires time not only to see his patients carefully, but to think about them, to read about them, to do probably some laboratory work, to carry out scientifically and efficiently that clinical research which, for the sake of all concerned, should constitute an important part of his daily practice. It is the general idea that the disasters of medical practice occur on the operating table, but they occur, though in a less dramatic manner, in every branch of practice, and when they do occur they are nearly always due to want of time either for complete and careful examination and consideration, or for research in the laboratory or the library. No doubt medicine ill paid can be made to be profitable, so can the selling of gold watches that are made of brass, but the profession does not want this, neither would the public if it understood. In many Japanese temples there is a god Binzuri, resorted to by the sick, who invoke a cure by rubbing themselves against that part of the god which is affected in themselves, the rite being accompanied by a votive offering. A similar idea was carried out in an automatic machine with a diagram of the human body and slots in the various organs; on putting a penny into the organ you thought diseased you could draw out the appropriate remedy. Unconsciously, involuntarily, unavoidably, many an overworked medical man has been put into the place of these empiries, the only difference being in the votive offering. Even the Chancellor in explaining to the House of Commons the reason for the difference between his proposed fee and the larger fee paid to the Post Office medical officer, said that it was the difference between wholesale and retail, apparently thinking that if a medical man saw a large number of patients he could turn on a machine and do the work cheaper.

The payment offered should be such as will attract the best men to the profession. Men of ability or ambition will not join if they see no prospect of being able to practise their profession as an art and a science, no hope of distinguishing themselves by hard and painstaking work, and no chance of making any provision for old age or family, or of rest or recreation. Medicine rightly demands a fair return for the cost of its production; that cost is the expenditure of considerable capital, many years of hard preparation (more than are required by any other profession), and the exercise of much thought and skill. The toil and trouble and irksomeness of that labour will not be submitted to by the men wanted unless a moderate reward may be anticipated.

It is difficult to estimate the actual money value of any professional work, but it may fairly be claimed that the intrinsic value of a medical attendance to-day is much greater than it was, say, fifty years ago, still more so than when the present rates of payment for contract practice were instituted. By intrinsic value I mean the amount of benefit a patient receives.

Now the public expects, and rightly expects, more knowledge, more skill, and more benefit, and so much greater is the doctor's responsibility.

THE PUBLIC MEDICAL SERVICE.

DR. S. W. SWINDELLS (Grimsby) writes: It is some time now since the introduction of the Insurance Bill, and longer since the publication of the Contract Practice Report, when the Contract Practice Committee was empowered to draw up a scheme for a Public Medical Service. There is thus no excuse for the publication now of so feeble and inefficient a scheme as that which surprised one in the SUPPLEMENT of June 15th. If our new scheme is not really intended as a cold douche for our hot heads (as showing how bare is our cupboard), and is intended as a scheme alternative to the Act, I should like to regard it from that point of view. In the first place, it is *not* an alternative, and is not independent of the Act at all, but is merely putting into force 15 (3) which provides for the suspension of medical benefit for all or any in an area, and the substitution for them of a money grant equal to the estimated cost of medical benefits. And whilst it relies on one portion of the Act, it gives up other portions under which the general practitioner would have gained. Under the Act there is a special fund for payment of extras. We are to forfeit our claims to this, and to look to our patients for payments for extras, which will be principally for special and operative work; that is, we are to continue our present arrangements with club patients, and may expect the same result—they will use the hospitals or our charity and we general practitioners lose our fees. The pledges we have signed would have to be amended so as to be as useless as that of Dundee, otherwise, excepting emergencies, an insured who could not pay or whose doctor did not operate would simply have to do without.

What does our scheme offer us for attendance on Post Office contributors—the medically unfit for whom a special rate is intended under the Act? Again we are to look to them for our special rates. What does it offer us in the case of a man "in arrears"? Under the Act we should continue to draw our fees all the time a man was getting into arrears to the extent of half his possible contributions—that is, whilst a man was falling four years in arrears out of eight years' possible contributions we should be drawing our fees (for these are a charge on the Treasury, not on the insured). Considering that the only way a man can, under the Act, get into arrears at all, is through unemployment, what does our scheme offer that man in place of such security—or ourselves either? What chance have we of continuing, under those conditions, to receive our 3d. a week? Would not the man either apply to the parish doctor or get into our debt, just as now?

That we are, under our scheme, hoping to apply 15 (3) is shown by the different rates proposed for those insured under the Act and those left out. Why else do we ask 3d. weekly for the one and 2d. for the other? And what becomes of our protests that the Act leaves out those most needing assistance? Are we to tempt them (who really are they?) by raising to 12s. or 13s. the present rates of voluntary insurance which they refuse? Is this how we expect to inculcate thrifty habits? What is to make a success now of the voluntary methods which have failed in the past? What can be done without

powers of compulsion? Continuation simply of the present conditions under which the nation generally sponges on the medical profession for the treatment of her weak or thriftless, for, after all, they are treated by us in some way—usually when too late for any economic return for our labour, or for what is spent by way of Poor Law treatment.

Whilst we forfeit something by giving up the Act in the good parts, what are we really to gain? A wage limit of £2 and remuneration of 13s. *per capita*. Are we? What methods are we to adopt by which we shall really get independently of the Act what we cannot get under the Act? Let us see. Suppose (as our scheme does) that negotiations with the local Insurance Committees have broken down—presumably on wage limit and remuneration. These are to be settled locally, and so this means that the local Insurance Committee has refused the wage limit and the 8s. 6d. we are asking—that is, it has either not been able to, or not chosen to, avail itself of the special methods provided in the Act for raising our payments above the 6s. originally provided (Treasury grants in aid, municipal or county rates: the 10 per cent. margin free after providing minimum sick benefits, or the power of raising by the necessary amount the insured's contributions). Now, has it not been said that the local Insurance Committees are friendly societies under another name ("still under friendly society control," etc.)? Then are we not assuming that these people, after refusing our terms when acting as an Insurance Committee, will, when dissolved and thrown entirely on their own resources, raise the money by adopting the last method, entirely out of their own pockets? And agree to a wage limit they have just refused? And this for a service in the councils of which they are not to have a single representative, and which requires them to pay for all extras themselves. Truly one can detect here the workings of the master mind which thought of *leeches* as a source of special fees. A few might be attracted—but for a "national" service! The whole scheme is futile and gets worse the more one thinks it out.

The only good point one has noticed is under the rule (12) forbidding other "club appointments." But why is this only to apply if our scheme is adopted? Why not, if we can arrange to work the Act frankly? Why do our pledges to resign clubs specially apply only to the insured members of the clubs? Why should it now be so degrading and offensive to the quickened professional conscience and so harmful to the public, to have one single Georgian attended without every one of our six points—and all right to continue or commence to attend all those members of the clubs not brought under the Act (most women, all children, and non-manual workers entirely excluded from the Act itself as earning over £160) at the old rates and not a single one of the points? *For this is where our pledges leave us.*

The Epsom Scheme.

Dr. H. D. Ledward (Letchworth, Hertfordshire) writes: Dr. Daniel, in his letter in this week's Supplement, asks for criticism of the Epsom scheme. The weak point in the original proposals appears to me to be the absence of a definite check to prevent abuse of the fund by patient or doctor. The surplus at the end of the year does not revert to the insured person himself or to his society, but is to be used, after creating a reserve fund, for one or more of the following purposes: (1) Reduce contributions. (2) Admit women and children (not already insured). (3) Charge operations in whole or part to the fund. (4) Otherwise.

The first three are no doubt all desirable from the point of view of the insured, but I doubt if they will bring home to him his personal interest in the fund sufficiently strongly to act as an efficient check on undue calls on the fund. If the surplus is prevented by reducing the contributions (No. 1), there will be nothing to return, and the insured's personal interest in the fund disappears. To use the surplus on No. 2 would appeal strongly to the family man, but not to the single. Also I very much doubt the efficiency of No. 3 in preventing undue use of the funds, as the percentage of the insured requiring operative treatment must of necessity be small.

Dr. Courtenay Lord, in his letter in the Supplement of June 22nd, also advocates a "pooling" system without any check apparently on patient or doctor. Might I point out that his fear that the "bank might break" would disappear if the insured were given a direct interest in the fund.

As regards abuse by the doctor: If the insured person feels that he is really spending some of his own money when he sends for the doctor, no further check is necessary to prevent over-attendance on the part of the doctor, and the machinery suggested for looking over, and if necessary investigating, large accounts will not be required. The doctor who calls too often will be as unpopular as in ordinary private practice. In fact, in such a scheme as I outlined (p. 715), the old relations between doctor and patient will be restored, and the only difference will be that the doctor is sure of payment.

As regards the deposit contributors: Why should they have to fall back on the Poor Law as Dr. Daniel suggests? We should not object to attending them on the same terms as other patients when we are paid for work done. Is it not reasonable to suppose that the County Council would be willing to assist the fund belonging to this class, and so enable them to obtain medical benefit through the Act, as in that case half the extra amount required would be paid by the Treasury. If they were left out altogether, the rates would bear the whole cost of their attendance through the Poor Law. Of course, their fund would need to be kept separate, as, indeed, I suggest should be the case for each of the large friendly societies.

The Flat Rate.

Mr. Penrose Williams, F.R.C.S.Edin. (Bridgwater), writes: The letter from Dr. George H. Wilson to Dr. J. R. Hamilton, which you published in the Supplement of June 29th, p. 717, contains an excellent suggestion for a basis on which to determine the proper remuneration for medical attendance, namely, the "expectation of illness" of the insured.

The Government have already prepared tables, apparently, dividing industrial workers into various classes, according to age, occupation, etc., and showing the expectation of sickness in number of days for each class. All that it is necessary for the profession to do is to find a sum which shall represent the average profit per day per patient. This sum might be called the unit of profit; the proper capitation fee for any insured person would then be this unit multiplied by the number of days of expectation of sickness for the class to which the particular individual belonged.

An example may make this clearer. Suppose a practitioner has, on an average, thirty names on his current list of patients, and that his income averages £3 a day. Then the average daily profit per patient is 2s., and the capitation fee for the class with an expectation of five days' sickness per annum, would be 10s. This method takes no account of the number of visits, consultations, etc., and there is no need to consider them.

The terms of a contract should not recognize charity, and for this reason the Association's Medical Service scheme is, in my view, faulty, in that it offers cheaper terms to some on the ground that, being unassisted by the Government, they cannot afford the proper fee.

For those who are inclined to exercise that greatest of virtues there will always be plenty of scope, but to recognize charity in the terms of a business contract is a mistake, and has already caused trouble enough in the past with the clubs. If 3d. a week is a fair charge, then 2d. is not enough; if 2d. is enough, then 3d. is extortion. Those who cannot afford what may be decided on as just and equitable should be provided for by the State under an amended Poor Law system.

This scheme would provide a method easily applicable to every class of insured and to every district; the "unit of profit" could be easily ascertained, and would not necessarily be the same all over the country, but should be found for each district, and thus all details of mileage, late hours, special visits, etc., need not be reckoned with, and the rate of pay would be proportionate to the rate of sickness.

Attendance on Domestic Servants.

Dr. F. Churchill (London) writes: I write on behalf of the large constituency of doctors who have been in the habit of prescribing for and treating their domestic servants in case of illness "free gratis and for nothing."

Such medical attention has been most gratefully received by the great majority of domestic servants. Under this

Act servants will be at liberty to call in by "free choice" any doctor that they may wish to come and attend them at the doctor's house.

The servant cannot be dismissed or even sent to a hospital in many cases for such ailments as pneumonia, a broken limb, etc. Humanity and the desire to reward faithful service would oblige the doctor to keep his servant under his roof until she could be safely removed to her own home for further treatment in prolonged disability for domestic service. Assuming that the servant would generally wish to be under the care of her employer, what remuneration, if any, would he receive from the State medical service if he was not on the panel? These are questions of vital importance to the medical profession.

Naval and Military Appointments.

INDIAN MEDICAL SERVICE.

Major G. Y. C. Hunter, on leave, is appointed substantively to the Gaol Department in Bengal, with effect from June 20th, 1911, vice Major J. M. Woolley, appointed Senior Medical Officer, Port Blair.

Captain Cameron Buckley is temporarily posted to the United Provinces.

Captain D. C. Hepper, Civil Surgeon, Bahraich, is granted privilege leave for one month.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Third Home Counties Field Ambulance.—Lieutenant-Colonel John J. W. Marshall is retired under the conditions of Paragraph 16 of the Territorial Force Regulations, and is granted permission to retain his rank and to wear the prescribed uniform, dated June 5th, 1912. Major George A. Edsell to be Lieutenant-Colonel, dated June 5th, 1912.

First West Lancashire Field Ambulance.—Major John Joseph O'Hagan, M.B., F.R.C.S.I., from the 2nd West Lancashire Field Ambulance, to be Lieutenant-Colonel, dated June 5th, 1912.

Third West Lancashire Field Ambulance.—Captain Elisha H. Monks to be Major, dated May 14th, 1912.

First Northumbrian Field Ambulance.—The following to be Captains: Lieutenant William T. Harkness, dated February 21st, 1912; Lieutenant Arthur G. Dunn, M.B., dated April 21st, 1912.

Third West Riding Field Ambulance.—Benjamin Branford Morgan, M.B., to be Lieutenant, dated April 1st, 1912; John Fitzgerald Gwynne, M.B., to be Lieutenant, dated June 5th, 1912.

Fourth London Field Ambulance.—The following officers to be Captains: Lieutenant Percy W. Thompson, dated April 24th, 1912; Lieutenant John R. Holmes, M.B., dated April 28th, 1912.

Second Welsh Field Ambulance.—Lieutenant Henry J. Dunbar, M.B., to be Captain, dated April 22nd, 1912.

Home Southern General Hospital.—Captain Horsley Drummond, M.B., resigns his commission, dated June 8th, 1912.

North Scottish General Hospital.—Officers whose services will be available on mobilization: Captain Robert Buchanan Carslow, M.B., from the Lowland Mounted Brigade Field Ambulance, to be Captain, dated May 7th, 1912.

For Attachment to Units other than Medical Units.—Lieutenant Percy Cecil Parker Ingram, from the 2nd London (City of London) Field Ambulance, to be Lieutenant, dated June 8th, 1912. William Norman Wyse-Watson, M.D., to be Lieutenant, dated April 18th, 1912. Captain John A. Kendall, M.D., to be Major, dated April 30th, 1912. Lieutenant William J. Best resigns his commission, dated June 5th, 1912.

Attached to other than Medical Units.—Lieutenant William S. Patterson, M.B., to be Captain, dated May 2nd, 1912. Captain Thomas Kay, M.B., to be Major, dated May 3rd, 1912. Lieutenant-Colonel and Honorary Surgeon-Colonel John M. Harper resigns his commission and is granted permission to retain his rank and to wear the prescribed uniform, dated June 8th, 1912. Captain Charles H. Sedgwick resigns his commission, dated June 8th, 1912.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BANBURY: HORTON INFIRMARY. House-Surgeon. Salary, £80 per annum.

BANGOR: CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

BIRMINGHAM INFIRMARY. Two Assistant Medical Officers. Salary from £104 to £120 per annum.

BRENTFORD UNION. Medical Officer for the No. 8 (Hounslow) District. Salary, £175 per annum.

BRISTOL GENERAL HOSPITAL. House-Physician. Salary, £80 per annum.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Second House-Surgeon. Salary, £80 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Salary at the rate of £70 per annum.

CARDIFF: KING EDWARD VII'S HOSPITAL.—House-Surgeon (Male). Honorarium, £30 for six months.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E. (1) Physician to Out-patients. Honorarium 40 guineas per annum. (2) Clinical Assistant to the Out-patient Department.

COLCHESTER: ESSEX COUNTY HOSPITAL. House-Surgeon (Male). Salary, £80 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL. (1) House-Physician. (2) Junior House-Surgeon. Salary in each case, £90 per annum, rising to £100 after six months.

CROYDON GENERAL HOSPITAL. Anæsthetist and Casualty Surgeon. Salary, £750 per

DERBY: CHILDREN'S HOSPITAL.—Resident Medical Officer (Female). Salary, £60 per an

DERBY: DERBYSHIRE ROYAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £60 per annum.

DORCHESTER: COUNTY ASYLUM.—Third Assistant Medical Officer. Salary, £160 per annum, rising to £200.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

FLINTSHIRE EDUCATION COMMITTEE.—Assistant Medical Officer. Salary, £250 per annum.

FULHAM PARISH INFIRMARY, St. Dunstan's Road, W.—Junior Assistant Medical Officer. Salary at the rate of £100 per annum.

GORDON HOSPITAL FOR RECTAL DISEASES, Vauxhall Bridge Road, S.W.—Resident House-Surgeon.

GREAT YARMOUTH HOSPITAL.—House-Surgeon (Male). Salary, £100 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

HAMPSTEAD BOROUGH. Medical Officer of Health. Salary, £600 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—(1) Assistant Resident Medical Officer. Salary, £100 per annum. (2) House-Physician. Honorarium, 30 guineas for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon. (2) House-Physician. Salary in each case, £30 for six months and £2 10s. washing allowance.

HULL ROYAL INFIRMARY. Assistant House-Surgeon. Salary at the rate of £60 per annum for six months, or £80 per annum for twelve.

KING'S COLLEGE HOSPITAL.—(1) Sambrooke Medical Registrar. (2) Assistant Surgeon.

LEAMINGTON SPA; WARNEFORD GENERAL HOSPITAL.—House-Physician. Salary, £85 per annum.

LINCOLN: LINCOLN MENTAL HOSPITAL.—Assistant Medical Officer. Salary, £150 per annum.

LIVERPOOL: WEST DERBY UNION.—Assistant Resident Medical Officer to the Mill Road Infirmary. Salary, £125 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant House-Surgeon (non-resident). Honorarium at the rate of £105 per annum.

MACCLESFIELD GENERAL INFIRMARY.—(1) Senior House-Surgeon. (2) Junior House-Surgeon. Salary, £100 and £80 per annum respectively.

MANCHESTER CORPORATION.—Medical Officer under the Midwives Act. Salary, £250 per annum.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer and Pathologist. Salary, £60 per annum.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES. House-Surgeon. Salary, £75 per annum.

MANCHESTER UNIVERSITY.—Junior Demonstrator in Physiology. Salary, £100 per annum, rising to £150.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) Assistant House Physician; (2) Assistant House-Surgeon. Salary at the rate of £40 per annum each.

NATIONAL HOSPITAL FOR THE RELIEF AND CURE OF THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Two Assistant Physicians for Out-patients.

NEWCASTLE-UPON-TYNE TUBERCULOSIS DISPENSARY.—Medical Officer (Male). Salary, £350 per annum (outdoor).

NOTTINGHAM GENERAL DISPENSARY (Branch).—Assistant Resident Surgeon (Male). Salary, £160 per annum.

OLDHAM ROYAL INFIRMARY. Third House-Surgeon. Salary at the rate of £80 per annum.

OXFORD: RADCLIFFE INFIRMARY AND COUNTY HOSPITAL. Casualty House-Surgeon. Salary at the rate of £80 per annum.

ROYAL EAR HOSPITAL, Soho.—House-Surgeon (non-resident). Honorarium, £40 per annum.

ST. MARY'S HOSPITAL, Paddington, W.—Junior Casualty House-Surgeon. Salary, £100 per annum.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Resident House-Surgeon. Salary, £80 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY. Senior House-Surgeon. Salary, £100 per annum.

SEAMEN'S HOSPITAL SOCIETY.—Assistant Surgeon at the Dreadnought Hospital, Greenwich.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—Senior and Assistant House-Surgeon. Salary, £80 and £60 per annum respectively.

SHEFFIELD ROYAL HOSPITAL. Sixth Resident. Salary, £60 per annum.

SHEFFIELD: ROYAL INFIRMARY. Junior Resident Medical Officer. Salary, £70 per annum.

SOUTHAMPTON FREE EYE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon (Male). Salary commencing at the rate of £70 per annum.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY. House-Physician. Salary, £100 per annum. House-Surgeon. Salary, £120 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Physician (Male). Salary, £100 per annum.

WALSALL AND DISTRICT HOSPITAL.—House-Physician and Casualty Officer. Salary, £90 per annum.

WANDSWORTH UNION INFIRMARY.—Junior Assistant Medical Officer. Salary at the rate of £120 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—Surgeon.

WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer. Salary, £120 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House-Surgeon. Salary, £120 per annum.

WORCESTER: COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary, £150 per annum, rising to £170.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointment: Jedburgh (Roxburgh).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

BALDWIN, Aslett, F.R.C.S.Eng., Surgeon to St. Mark's Hospital.

FENWICK, W. Stephen, M.S.Lond., F.R.C.S., Assistant Surgeon to Charing Cross Hospital.

GLYNN, E. E., M.A., M.D., M.R.C.P., George Holt Professor of Pathology in the University of Liverpool, vice Sir Rubert Boyce, deceased.

LOCKYER, Cuthbert, M.D., B.S., M.R.C.S.Lond., F.R.C.S.Eng., Assistant Obstetric Physician, Charing Cross Hospital.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

HOLLICK.—On June 26th, at Sturminster Newton, Dorset, the wife of Bernard S. Hollick, M.R.C.S., L.R.C.P., of a son.

SKERRETT.—On July 1st, at 23, Windsor Road, Forest Gate, E., the wife of Frank B. Skerrett, M.B., B.Sc., D.P.H., of a daughter.

DEATHS.

AYLWARD.—June 26th, at Belmont Nursing Home, Leeds, aged 30, E. B. Aylward, M.R.C.S., L.R.C.P., of Harewood, Leeds, eldest son of G. L. Aylward, Allington Manor, Eastleigh, Hampshire.

PORTEOUS.—At Yonkers, New York, on May 26th, 1912, Louise C. Porteous, daughter of the late John M. Mason, Attorney, and wife of J. Lindsay Porteous, M.D., F.R.C.S.Edin.

DIARY FOR THE WEEK.

THURSDAY.

OPHTHALMOLOGICAL SOCIETY, 11, Chandos Street, W., 5 p.m., Special Meeting. 8 p.m., Ordinary Meeting. Card Specimens: Mr. Jessop: Professor Gullstrand's Demonstrating Ophthalmoscope. Mr. Treacher Collins: Case in which an Intradural Tumour of the Optic Nerve was Removed with Retention of the Eyeball five and a half years ago. Papers: Messrs. Brooksbank James and Stroud Hosford: The Operative Treatment of Glaucoma. Annual general meeting to follow.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Wednesday, 4 p.m.: Pulmonary Fibrosis in Children.

LONDON HOSPITAL MEDICAL COLLEGE, E.—Monday, 4.15 p.m.: Diagnostic Value of Sensory Changes in Diseases of the Nervous System.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15 p.m.: Some Points on the Value of X Rays in Diagnosis.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m.: Retroversion and Ovarian Prolapse. Friday, 4.30 p.m.: Treatment of Meningitis of Otitic Origin.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, Hysteria and its Relation to Mental Diseases. Tuesday, Aphasia. Wednesday, Some Points in the Surgical Anatomy of the Temporal Bone (lantern demonstration). Thursday, Spastic Paraplegia and its Treatment. Friday, Examination of Blood.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m.: Epilepsy.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics: 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Nose, Throat, and Ear; 3 p.m., Demonstration on Clinical and General Pathology. Tuesday, 2.30 p.m., Operations. Clinics: Surgical, Gynæcological: 3.30 p.m., Medical In-patient. Wednesday, 2 p.m., Throat Operations; 2.30 p.m., Medical Out-patient; Skin and Eye Clinics; X Rays; 3 p.m., Pathological Demonstration; 5.30 p.m., Eye Operations. Thursday, 2.30 p.m., Gynæcological Operations. Clinics: Medical and Surgical Out-patient; 3 p.m., Medical In-patient. Friday, 2.30 p.m., Operations. Clinics: Medical Out-patient, Surgical, Eye; 3 p.m., Medical In-patient; Pathological Demonstration.

WEST-LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynæcology, 10 a.m.: Pathological Demonstration, 12 noon: Eye, 2 p.m. Tuesday, Gynæcological Operations, 10 a.m.: Demonstration of Minor Operations, 11 a.m.: Throat, Nose, and Ear, 2 p.m.: Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.: Eye, 2 p.m.: Gynæcology, 2 p.m. Thursday: Gynæcological Demonstration, 10 a.m.: Lecture, Practical Medicine, 12.15 p.m.: Eye, 2 p.m.: Orthopædics, 2 p.m. Friday: Gynæcological Operations, 10 a.m.: Lecture, Clinical Pathology, 12.15 p.m.: Throat, Nose, and Ear, 2 p.m.: Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.: Throat, Nose, and Ear Operations, 10 a.m.: Eye, 10 a.m. Special Lectures at 5 p.m. daily.

DIARY OF THE ASSOCIATION.

NATIONAL INSURANCE ACT.

It will be necessary, before the date of the Representative Meeting in Liverpool (July 19th), to hold meetings of all Divisions in Great Britain and Ireland to consider the reply of the Chancellor of the Exchequer and the Joint Committee of Insurance Commissioners. The date and place of meeting will be notified locally by the Honorary Secretaries of each Division.

Date.	Meetings to be Held.
	JULY.
9 Tue.	West Somerset Branch, Taunton and Somerset Hospital, Taunton, 3.15 p.m.
	Westminster Division, St. James's Vestry Hall, Piccadilly, W., 4.30 p.m.
	Newcastle-on-Tyne Division, Newcastle-on-Tyne, 8.30 p.m.
10 Wed.	City Division, Abercorn Rooms, Bishopsgate Street, E.C., 4 p.m.
	Kensington Division, Kensington Town Hall, 4 p.m.
11 Thur.	East Hertfordshire Division, Hitchin, 3.30 p.m.
	Hampstead Division, Central Library, 8.30 p.m.
12 Fri.	Lincoln Division, Lincoln, 3.30 p.m.
	South-West Essex Division, Wesleyan Church Schoolroom, High Road, Leyton, 4 p.m.
13 Sat.	Oxford and Reading and Maidenhead Branch, Reading, Annual Meeting, 4.15 p.m.; Dinner, 6.30 p.m.

Date.	Meetings to be Held.
	JULY (*continued*).
	Annual Meeting, Liverpool.
19 Fri.	Annual Representative Meeting, 10 a.m.
20 Sat.	Annual Representative Meeting, 9.30 a.m.
22 Mon.	Council Meeting, 9.30 a.m.
	Annual Representative Meeting, 10 a.m.
	Secretaries' Conference and Dinner, 7 p.m.
23 Tues.	Annual Representative Meeting, 9.30 a.m.
	Annual General Meeting, 2 p.m., President's Address, 8.30 p.m.
24 Wed.	Council Meeting, 9 a.m.
	Sectional Meetings, 10 a.m. to 1 p.m.
	Address in Medicine, 12.30 p.m.
	Religious Services, 9 a.m. and 3 p.m.
25 Thur.	Sectional Meetings, 10 a.m. to 1 p.m.
	Address in Surgery, 12.30 p.m.
	Section of Surgery, 2.30 p.m.
	Annual Dinner, 7.30 p.m.
26 Fri.	Council Meeting, 9 a.m.
	Sectional Meetings, 10 a.m. to 1 p.m.
27 Sat.	Excursions.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 13TH, 1912.

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PROCEEDINGS OF COUNCIL.

A MEETING of the Council was held at 429, Strand, London, W.C., on Wednesday, July 3rd, 1912, at 2 o'clock in the afternoon.

Present.

Dr. J. A. MACDONALD, LL.D., Taunton, Chairman of Council, in the Chair.

Professor ROBERT SAUNDBY, M.D., LL.D., Birmingham, President.

Sir JAMES BARR, M.D., LL.D., Liverpool, President-elect.

Dr. EWEN J. MACLEAN, Cardiff, Chairman of Representative Meetings.

Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. J. GRANT ANDREW, Glasgow

Surgeon-General J. P. GREANY, I.M.S., Ealing (Indian Medical Service)

Surgeon-General P. H. BENSON, I.M.S., Walmer (Indian Branches)

Dr. T. D. GREENLEES, London (Cape of Good Hope, Eastern, Western, and Border Branches)

Dr. R. C. BUIST, Dundee

Dr. W. A. CARLINE, Lincoln

Mr. ANDREW CLARK, D.Sc., Uxbridge

Dr. MAJOR GREENWOOD, London

Professor HENRY CORBY, M.D., Cork

Dr. J. R. HAMILTON, Hawick, N.B.

Dr. J. S. DARLING, Lurgan

Lieutenant-Colonel F. W. H. DAVIE HARRIS, R.A.M.C., Teignmouth (Army Medical Service)

Dr. MICHAEL DEWAR, Edinburgh

Sir VICTOR HORSLEY, F.R.S., London

Mr. E. J. DOMVILLE, Exeter

Mr. R. J. JOHNSTONE, Belfast

Mr. J. HENRY EWART, Eastbourne

Dr. J. H. KEAY, London

Mr. C. E. S. FLEMMING, Bradford-on-Avon

Mr. F. C. LARKIN, Liverpool

Mr. T. W. H. GARSTANG, Altrincham

Dr. G. R. LIVINGSTON, Dumfries

Dr. E. W. GOODALL, London

Mr. ALBERT LUCAS, Birmingham

Dr. JOHN GORDON, Aberdeen

Dr. JOHN MACDONALD, South Shields

Dr. W. GOSSE, Dorking

Dr. D. J. MACKINTOSH, M.V.O., LL.D., Glasgow

Dr. LAURISTON E. SHAW, London

Dr. C. G. D. MORIER, London (Victoria, South and West Australian Branches)

Dr. J. H. TAYLOR, Salford

Dr. D. F. TODD, Sunderland

Mr. T. JENNER VERRALL, Bath

Dr. A. J. RICE-OXLEY, London

Mr. D. J. WILLIAMS, Llanelly

On the motion of the CHAIRMAN, the Council expressed its sympathy with the relatives of the late Dr. Waters, President of the Association when it held its annual meeting in Liverpool in 1883, and placed on record its deep appreciation of the value of the work he did for the British Medical Association.

FINANCE COMMITTEE.

The report of the Committee was presented by the TREASURER.

Appointment of Deputy Medical Secretary.

The Committee, as instructed, submitted three names for the appointment of Deputy Medical Secretary, and Mr. James Neal was elected, and will commence his duties at an early date.

Expenses of Representatives.

The Council decided to report to the Representative Body that, having regard to the existing state of the finances of the Association, the time is inopportune to accede to the proposition to pay the out-of-pocket expenses of Representatives at Representative Meetings.

Libel Actions.

The Treasurer was authorized to pay the cost and damages incurred in the Bell case, and the Committee recommended the Council to take into consideration the question of procedure with a view to safeguarding the risks of any future libel actions against the Association.

Expenses of Committees.

The Treasurer reported that the expenditure of Committees for printing and railway fares amounted to £1,317, an increase of £578, mainly due to the printing and travelling expenses of the State Sickness Insurance Committee.

Quarterly Accounts.

The auditors' report for the quarter ending June 8th was received. The accounts amounted to £13,505, and the Treasurer was authorized to pay those remaining outstanding.

Insurance Defence Fund.

The Council instructed the Finance Committee to prepare a report showing to date receipts and expenditure incurred in connexion with the Insurance Defence Fund, and approved the payment out of that fund of £6,445 to meet the special expenses incurred by the Association in connexion with the National Insurance Act during 1911. The Council further authorized the transfer of the sum of £3,054 towards the special expenses incurred by the Association in connexion with the current year.

Report as to the Increased Expenditure of the Association.

In compliance with a resolution adopted at the last meeting of Council instructing the Finance Committee to investigate the financial position of the Association as revealed by the Financial Statement for the year 1911, the following report was presented:

Report.

The total expenditure of 1911 was, in round figures, £10,400 more than in the year 1910.

Of this abnormal expenditure, the following items may be directly attributed to the introduction and passing into law of the National Insurance Act:—

	£
Additional cost of producing Journal (304 extra pages of Supplement)	1,150
Reporting Representative, Council and Committee Meetings	200
Council Railway Fares	300
State Sickness Committee Railway Fares	440
Irish Committee expenses	35
Extra Representative Meeting	500
Legal Charges	50
Travelling, Medical Secretary	200
Salaries and Wages	900
Copying, Addressing and Hire of Typewriters	600
General Printings	2,500
Postages	980
Stationery, Envelopes, &c.	125
Parliamentary Papers	50
Sundries	35
Estimated Total	£8,065

It will thus be seen that £8,000 of the £10,000 increase is accounted for. The remaining increase of £2,000 is largely accounted for by the increased circulation. It is pointed out in the Annual Report of Council that the increased out-turn of copies of the Journal in 1911 represented the equivalent of four additional weekly issues.

As a normal issue represents something like £600 odd, this would more than account for the remainder of the increase.

During the year 1911 the demands on the revenue of the Association were very heavy, but the fact must not be overlooked that since the reconstitution of the Association there has been a steady progressive annual increase of expenditure, and it is a matter for consideration whether the activities of the Association can continue to be extended at the same rate of progress on the existing subscription.

	1902.	1911.	Percentage increase, 1911 over 1902.
Membership	18,758	25,301	34·9
Revenue	£45,000	*£61,484	36·6
Expenditure	£40,500	£67,722	67·2

If the deductions for Abnormal Insurance Expenditure in 1911 be shewn the table is as follows:—

	1902.	1911.	Percentage increase, 1911 over 1902.
Membership ...	18,758	25,301	34·9
Revenue ...	£45,000	*£61,484	36·6
Expenditure less Insurance		£59,657	47·3
Total Expenditure ...	£40,500	£67,722	67·2

* This amount does not include £6,445 contributed from the Insurance Defence Fund.

For purposes of comparison the revenue from subscriptions in 1902 and 1911 may be taken in round figures as £20,700 and £30,200 respectively, or an increase of nearly £10,000. Of this sum, approximately £5,000 represents the difference between the 21s. and 25s. subscription. In 1911 £2,600 was paid over to Branches to meet Branch and Divisional expenses, while in 1902 monies contributed to Branch funds went direct, and were not included in the general accounts of the Association. For a true estimate of the money derived from the increased subscription there must be deducted both from Revenue and Expenditure the £2,600 distributed to Branches. Thus, in 1911, to meet the increased central Expenditure of £24,300, there was available a real net increase in round figures of £6,900 from the subscription of members. Deducting from the expenditure for 1911 the abnormal expenditure in respect of the Insurance Act (£8,065) the expenditure was £59,650, showing an increase of £19,150 over 1902 towards which the real net increase from subscriptions provided £6,900, leaving £12,250 to be provided from other sources. Of this amount £6,450 was provided by the Central Insurance Defence Fund. This leaves £5,900 which has been found by the Association from its ordinary resources, including about £5,000 taken from the receipts from the advertisements and sales of the Journal and sundry sales, and about £800 the net proceeds of rents and investments less bank charges for loans.

The demands have been elastic, but the sources of revenue cannot be expected to show an equal elasticity. It should be noted for instance that it cannot safely be assumed that the income from advertisements will continue to increase, inasmuch as the area from which they can be drawn tends to be restricted.

STATE SICKNESS INSURANCE COMMITTEE.

Report of the Committee.

The report of the State Sickness Insurance Committee was submitted. Several members of the Council complained of the very short time which they had had for the consideration of so important a report. Mr. Verrall, Chairman of the Committee, said that the first part of the report was in the main a narrative, and that the second part consisted of the letter from the Commissioners embodying the views of the Chancellor of the Exchequer, together with the Committee's criticisms thereon, which could only be prepared at the last moment, since the Commissioners, though they had been asked on more than one occasion to give an early reply to the letter written to them by direction of the Committee on February 29th, did not in fact reply until June 26th. The Committee had taken into consideration the letter on that day, but had not been able to complete such consideration until its meeting on Monday, July 1st. The third part of the report being contingent upon the nature of the reply contained in the letter of the Commissioners, could not be prepared until after that letter had been considered. The Council directed the publication of the report with its appendices, and ordered that when the report was published in the Supplement (July 6th) it should be indicated that the observations on the letter from the Commissioners were those of the Committee, and had not been considered by the Council.

Vote of Thanks.

The following resolution of thanks was unanimously adopted:

That the Council desires to express its sense of the debt which the Association owes to the members of the State Sickness Insurance Committee for the self-sacrifice with which they have performed so great an amount of work, under circumstances of unusual difficulty.

ORGANIZATION COMMITTEE.

The quarterly report of the Organization Committee was presented by the Chairman (Mr. Larkin).

Conference of Secretaries.

The Committee had had under consideration the arrangements for the conference of secretaries in Liverpool on Monday, July 22nd, and the Council adopted the recommendation of the Committee that in view of the growing importance of the conference of secretaries, arrangements be made whereby in future years the conference of secretaries shall be held at a time at which no other function takes place.

Proposed Welsh National Committee.

The Committee reported that a communication had been received from Dr. Jones Roberts, the Honorary Secretary of the Provisional Welsh National Medical Committee, and the technical difficulties in the way of the immediate establishment of such a committee of the Association were pointed out. The Council accepted the following recommendation of the Organization Committee:

That preliminary to suggesting alteration of the by-laws and other steps necessary for the recognition of a Welsh National Committee, the Council is of opinion that adjustments must be made in the boundaries of the Welsh Branches, so as to make their combined area correspond with that administered by the Welsh Commissioners under the National Insurance Act, and that the Provisional Welsh Medical Committee be asked to submit a scheme of adjustment for approval of the Council and of the Welsh Divisions and Branches.

That, pending the appointment of a Standing Committee recognized by the by-laws, the Provisional Welsh Committee must be responsible to the Divisions and Branches appointing it, and its expenditure (within the objects of the Association) will become *pro rata* the legitimate expenditure of these Divisions and Branches, and will be recognized as such by the Council.

Notices to New Members.

A further recommendation from the Committee, that a copy of the statement showing the regulations governing the warning notices, published in the advertisement pages of the BRITISH MEDICAL JOURNAL, should be supplied to every new member at the time of his election, was accepted.

With regard to the grouping of Branches outside the United Kingdom, the Committee reported that it had issued an inquiry to the Overseas Branches, but that the number of replies was as yet insufficient to enable it to make definite recommendations. It was therefore resolved to recommend to the Representative Body to instruct the Council to settle the grouping of Branches outside the United Kingdom for the election of members of Council for the year 1913–14 on consideration of the views of the Branches concerned when received.

Representation in Representative Meetings.

The following Divisions are accorded independent representation in Representative Meetings for the year 1912-13: West Herts, East Herts, Willesden, Hendon and Finchley, Harrow, and South Middlesex. The Dartford and Woolwich Divisions are grouped to form one constituency, as also are the Wandsworth and Wimbledon Divisions.

Local Autonomy of Australasian Branches.

With reference to the local autonomy of Australia or Australasian Branches, the Committee reported that it had considered the notice of motion given by the South Australian Branch for the Annual Representative Meeting at Liverpool, and had met Professor Allen, the Representative of the Victorian Branch, and Dr. G. Morier, Chairman of the Colonial Committee, and as the result Professor Allen had expressed his intention to move an amendment at the Representative Meeting to the resolution of the South Australian Branch so as to provide that the precedent of the South African Committee be thoroughly considered, and the Council resolved to inform the Representative Body that it saw no objection to this proposed amendment.

Secretaries' Handbook.

The Committee reported that the handbook had been drafted, but that printing was delayed on account of the expense involved.

Grants to Branches.

The following grants were made: To the Border Counties Branch, the Glasgow and West of Scotland Branch, and the North of England Branch each, 4s. per member. The Southern Branch 3s. per member, and the South Wales and Monmouthshire Branch 2s. per member. No grant was made for the current year to the Munster Branch as it had in its possession at the close of 1911 a balance equivalent to over 5s. per head of its membership.

South African Committee.

The Council considered and approved certain amendments to the regulations proposed by the South African Committee.

New Company.

The Committee reported that with regard to the proposed memorandum of the new company as amended by the Board of Trade it had had conferences with the Comptroller of the Companies Department of the Board of Trade, and was awaiting information from the legal adviser of the Association before making the final report.

Proposed Secretary for Ireland.

The Committee also reported that it had under consideration a resolution from the Irish Committee of April 22nd, requesting the Council to take into consideration the appointment of a resident paid secretary for Ireland, but had postponed a decision pending the consideration of the proposal by the conference of secretaries to be held in Liverpool. Dr. JOHNSTONE (Belfast) and Dr. DARLING (Lurgan) having pointed out that the matter was one of some urgency, it was resolved that it should be brought again before the Council at one of its sessions in Liverpool.

JOURNAL COMMITTEE.

The quarterly report of the Journal Committee was presented by the CHAIRMAN (Dr. R. C. Buist).

Occasional Printings and the "Supplement."

On the recommendation of the Committee the Council resolved to take into consideration at a future time the relation of the occasional printings of the Association to the principle that the SUPPLEMENT was intended to be the main means of communication within the Association.

"More Secret Remedies."

The CHAIRMAN presented an early copy of the second series of *Secret Remedies*, entitled, *More Secret Remedies: What they Cost and What they Contain*, and announced that it had been placed on sale at the price of 1s.

Editorial Responsibility.

The Committee reported that it had considered a memorandum submitted according to instructions by the Editor relating to editorial responsibility, and had drawn up the following report, which was adopted by the Council:

The Editor's responsibility is uniform for all unsigned matter, whether it take the form of an Editorial, Leaderette, or Review. The routine practice for correcting mistakes is that any error of fact when recognized to be such is corrected by an Editorial note, usually in the same part of the JOURNAL as that in which the Article containing the error was published.

In cases where error is alleged, but not admitted, the letter containing the complaint is as a rule published with a simultaneous or subsequent Editorial note of explanation or justification, with or without a reply from the contributor of the matter complained of. The authority of such an explanation or note depends upon the matter itself, and the reasons which justify anonymity in the original contribution are equally valid with regard to such note or explanation.

Even with regard to matters of fact, differences of interpretation are possible, and no correspondent can claim the right to enforce his interpretation upon the Editor. No grievance can be recognized as existing so long as the complainant is allowed to present his statement of the case over his own signature.

Censorship of Advertisements.

The CHAIRMAN submitted a list of advertisements excluded from the JOURNAL, and stated that the question of the admission of certain other advertisements was still under consideration.

Diary of Association.

The Chairman also reported that in consequence of a recommendation from the Organization Committee the calendar of the Association formerly published had been modified and replaced by a diary.

CENTRAL ETHICAL COMMITTEE.

The quarterly report of the Central Ethical Committee was presented by the CHAIRMAN (Dr. Lauriston E. Shaw).

Cases submitted to General Medical Council.

The report referred to the cases submitted to the General Medical Council, namely, those of Dr. J. R. Wallace, a medical officer of the Sandow Institute, and Dr. D. F. Sanjana, resident within the area of the Fife Branch. These cases were heard before the General Medical Council during last session, and were reported in the SUPPLEMENT to the JOURNAL of June 15th, pp. 666 and 668 respectively.

MEDICO-POLITICAL COMMITTEE.

Owing to the pressure of work in connexion with the State Sickness Insurance Committee, Mr. Jenner Verrall felt compelled to resign the chairmanship of the Medico-Political Committee, and the report was presented by Dr. J. H. TAYLOR, who at the last meeting had replaced him as Chairman for the remainder of the session.

Tuberculosis Dispensaries in London.

The Committee reported that it had given careful consideration to the question, referred to it by the Chairman of Council, of the establishment of tuberculosis dispensaries by the central fund for the promotion of the dispensary system for the prevention of consumption in London, and proposed rules formulated by the Metropolitan Counties Branch with reference thereto.

The Committee reported that, inasmuch as the Rules adopted by the Metropolitan Counties Branch Council with a view to the guidance of the Metropolitan Divisions in respect of the establishment of tuberculosis dispensaries by the body in question were formulated in February last, and that since that date the Interim Report of the Departmental Committee on Tuberculosis has been issued, it is not expedient to proceed with the consideration of the proposed Rules formulated by the Branch Council until that body has had an opportunity of reconsidering them in the light of the Interim Report.

School Medical Officers.

On the advice of the Committee, the Council resolved to recommend the Representative Body that, as school medical officers have not at present security of tenure, it is not opportune to press for an automatic increase of salary being a necessary condition of appointment.

Inspection and Treatment of School Children.

A conference had been held on May 8th with the Public Health Committee, the School Children's Committee of the Metropolitan Counties Branch, and the representatives of the Society of Medical Officers of Health, when the policy of the Association in respect of the inspection and treatment of school children was discussed. The Society of Medical Officers of Health had been furnished with a report of the conference, and undertook to forward to the Association any suggestions that it desires to make with regard to the alteration of the present position of the Association upon the subject. The suggestions came too late for consideration prior to this report of Council.

Ship Surgeons.

The Council also adopted the principle that the remuneration of ship surgeons, regularly engaged as such, should be not less than £10 a month.

Medical Men as Members of Public Authorities.

The Council resolved to draw the attention of the Divisions to the desirability of medical practitioners becoming candidates for county, borough, and district councils, and boards of guardians, in view of the increasing extent to which these bodies are dealing with matters closely affecting the medical profession.

Mental Deficiency Bill.

The Committee reported that it had forwarded a memorandum to the Home Secretary on the policy of the Association with regard to the amendment of the lunacy laws, and the care and control of the feeble-minded. It had considered the Mental Deficiency Bill introduced by the Government, and found that it was in conformity with the expressed policy of the Association except in so far as it proposed to set up a new central authority. The Committee had informed the Home Secretary that the Association heartily approved the provisions of the bill with the exception of this proposal, the Association being of opinion that one central authority would tend to greater efficiency and economy.

Select Committee on Proprietary Medicines.

The Committee reported that it had forwarded to the Select Committee on Patent and Proprietary Medicines a memorandum of evidence (BRITISH MEDICAL JOURNAL, June 29th, p. 1491), and that it had arranged with Professor W. E. Dixon, F.R.S. (Cambridge), Mr. Henry Sewill, Mr. E. F. Harrison, B.Sc., F.I.C., Mr. Macleod Yearsley, Dr. Mary Sturge, Dr. R. E. Crosse, and the Medical Secretary to give evidence before the Committee. Dr. Cox, Mr. E. F. Harrison, and Dr. Mary Sturge have already given evidence (BRITISH MEDICAL JOURNAL, June 22nd, p. 1433; June 29th, p. 1492; July 6th, p. 17; July 13th, p. 75). The Committee had also sent in the names to the Select Committee of Mr. C. S. Palmer (Redhill), Dr. John Johnstone (Bolton) as persons ready to give evidence if called upon, and also, in consequence of a communication from the Dermatological Section of the Royal Society of Medicine, had forwarded the names of Sir Malcolm Morris and Dr. A. H. Whitfield as witnesses prepared to give evidence as to proprietary medicines and appliances in relation to diseases of the skin.

PUBLIC HEALTH COMMITTEE.

The report of the Public Health Committee was presented by the CHAIRMAN (Mr. Domville).

Salary of Whole-time Medical Officers of Health.

On the advice of the Committee, the Council resolved to report to the Representative Body as follows:

That although the Local Government Board has by Memorandum and Circular strongly recommended that the salary of whole-time Principal Medical Officers of Health should in no case be less than £500, it has nevertheless approved of appointments where a less salary has been offered; that while it is recognized by the Council that in some small areas, where a combination of districts is unacceptable for the present, the minimum laid down by the Local Government Board is at present unattainable, it is not to the interest of the profession to acquiesce in continued appointments of whole-time Medical Officers of Health at an inadequate salary; and that the Council recommends that the Association support, wherever possible, the recommendation of the Local Government Board that the salary of Medical Officers of Health debarred from private practice be not less than £500 per annum; and that in no case where a less salary than £250 is offered for a whole-time Medical Officer of Health, whether principal or assistant, should an advertisement be accepted for publication in the JOURNAL.

Labour Exchanges and the Warning Notices.

The Committee reported that its attention had been called to the possibility of medical appointments referred to in the Warning Notice being advertised through the Labour Exchanges. The Committee had communicated with the general manager of the Government Labour Exchanges and had received an intimation from him that he will give instructions that any medical appointment proposed to be offered through the Exchanges shall be reported to the Central Office of the Association, in order that when notifying such vacancies to any applicant the Labour Exchange should be in a position to give such applicant the fullest information concerning the appointment, including any objection taken by the Association of which the Exchange had been informed.

Medical Officers of Health Superannuation Bill.

It was also reported that Dr. Addison, M.P., had promised to introduce into Parliament, at the earliest possible date, the Medical Officers of Health Superannuation Bill promoted by the Association.

HOSPITALS COMMITTEE.

The quarterly report of the Hospitals Committee was presented by the CHAIRMAN (Mr. R. J. Johnstone).

Fees at Hospitals for Midwifery Cases.

The report stated that the Committee had considered the question of charging at maternity and voluntary hospitals and other charitable institutions of fees for attendance upon midwifery cases, and on the advice of the Committee the Council resolved to recommend the Representative Body to adopt the following principles:

(1) That inability to pay for adequate treatment shall be the consideration for the participation of parturient women in

the benefits of maternity and voluntary hospitals and other charitable institutions.

(ii) That women in receipt of maternity benefit under the National Insurance Act should not be regarded as eligible for charitable treatment except in cases of difficulty and danger and on the recommendation of a medical practitioner.

Insurance Act and the Teaching of Midwifery.

The Committee also reported that it had considered the difficulties likely to be experienced as the result of the operation of the National Insurance Act with respect of the teaching of midwifery, and had made a report which, with modifications, had been adopted by the State Sickness Insurance Committee, and was being brought before the Council by that body.

SCOTTISH COMMITTEE.

The quarterly report of the Committee, presented by the CHAIRMAN (Dr. Dewar), stated that out of the grant made to it by the Council from the Central Insurance Fund it had placed £200 to the credit of the Scottish Medical Insurance Council, and that it had been arranged that the expenses of ordinary meetings of the Committee held purely in connexion with the National Insurance Act should also be debited against the grant from the Central Insurance Defence Fund.

FRACTURES COMMITTEE.

Dr. GRANT ANDREW stated that the report of the Committee would be complete on or about July 6th, and would be presented to the Section of Surgery of the Annual Meeting, Liverpool, and that the Section would hold a special session for this purpose on Thursday, July 25th, at 2.30 p.m.

ELECTION OF MEMBERS.

The following five candidates were elected members of the British Medical Association: Arthur A. E. Baptist, L.S.A.Lond., D.M.C.Calcutta, Civil Surgeon, Dumka, Southal Parganahs, Behar, India; James Campbell Bringan, M.B., Ch.B.Glas., Staff Surgeon, R.N.; William Graham Cobb, M.B., Ch.B., c.o. Chief Secretary, Zungeru, Northern Nigeria; William Lewis Cowardin, M.R.C.S.Eng., L.R.C.P.Lond. Surgeon R.N.; Denis Fitzgerald Murphy, M.B., B.Ch., B.A.O., R.U.I., Lieutenant I.M.S.

British Medical Association.

EIGHTIETH ANNUAL MEETING, LIVERPOOL, JULY, 1912.

President: Professor ROBERT SAUNDBY, M.D., LL.D., F.R.C.P., Professor of Medicine, University of Birmingham.

President-elect: Sir JAMES BARR, M.D., LL.D., F.R.S.E., Consulting Physician, Royal Infirmary, Liverpool.

The Eightieth Annual Meeting of the British Medical Association will be held in Liverpool in July, 1912. The President's Address will be delivered on Tuesday, July 23rd, and the Sections will meet on the three following days. The Annual Representative Meeting will begin on Friday, July 19th, 1912.

PROGRAMME.

FRIDAY, JULY 19TH, 1912.
10 a.m.—Annual Representative Meeting.

SATURDAY, JULY 20TH.
9.30 a.m.—Representative Meeting.

MONDAY, JULY 22ND.
9.30 a.m.—Council Meeting.
10 a.m.—Representative Meeting.
7 p.m.—Secretaries' Conference and Dinner.

TUESDAY, JULY 23RD.
9.30 a.m.—Representative Meeting.
2 p.m.—Annual General Meeting.
8.30 p.m.—*Adjourned General Meeting, President's Address.

WEDNESDAY, JULY 24TH.
9 a.m.—*Roman Catholic service at the Pro-Cathedral, Copperas Hill.
9 a.m.—Council Meeting.
10 a.m. to 1 p.m.—Sectional Meetings.
12.30 p.m.—Address in Medicine, by Dr. G. A. Gibson, Edinburgh.
2.30 p.m.—*Service at St. Luke's Church.
8.30 p.m.—**Soirée*, Walker Art Gallery.

THURSDAY, JULY 25TH.
8 a.m.—National Temperance League Breakfast.
10 a.m. to 1 p.m.—Sectional Meetings.
12.30 p.m.—Address in Surgery, by Mr. F. T. Paul, Liverpool.
2.30 p.m.—Surgery Section, Fractures Committee Report.
7.30 p.m.—Annual Dinner.

FRIDAY, JULY 26TH.
9 a.m.—Council Meeting.
10 a.m. to 1 p.m.—Sectional Meetings.
2.30 p.m.—*Degree Convocation.
9 p.m.—Ball at Philharmonic Hall.

SATURDAY, JULY 27TH.
Excursions.

*Members are invited to wear academic costume at the following functions: The President's Address on Tuesday evening, July 23rd; the Roman Catholic Service at the Pro-Cathedral on Wednesday morning, July 24th; the Church Service at St. Luke's in the afternoon; and the *soirée* at the Walker Art Gallery the same evening. Also at the Philharmonic Hall, for the Degree Convocation, at 2.30 p.m. on Friday.

RECEPTION ROOM.

The Reception Room will be opened at St. George's Hall on Monday morning, July 22nd.

HOTELS AND LODGINGS.

Members who propose to attend the meeting are strongly advised to secure accommodation at once. A list of hotels and lodgings will be found in the advertisement pages of this issue.

We are asked to state that the Adelphi, North-Western, Exchange, Shaftesbury, and St. George Hotels are all full up. At the Compton Hotel, Hunt's Hotel, and at the Laurence and Union Hotels there are a few beds left.

RELIGIOUS SERVICES.

Anglican Service.—There will be a service at St. Luke's Church, on Wednesday afternoon, July 24th, at 2.30, when the Bishop of Liverpool (Dr. Chavasse) will preach the sermon.

Roman Catholic Service.—Mass will be celebrated at the Pro-Cathedral, at 9 a.m. on Wednesday, July 24th. Celebrant, Archbishop Whiteside. The Rev. Herbert Lucas, S.J., M.A., will deliver a short address. Further information can be obtained from Dr. J. E. O'Sullivan, 37, Shaw Street, Liverpool.

At each service a collection will be made on behalf of medical charities.

SECTIONS.

All the Sections will meet in the University.

The following additional abstracts of introductions to discussions in the Sections indicated have been received since our last issue, p. 23:

SECTION OF BACTERIOLOGY.

Wednesday, July 24th.—Discussion on *B. Coli and its Varieties and Significance in Water Supplies.* The following is a synopsis of Dr. SAVAGE'S opening paper:

Conditions of a bacterial indicator: (1) It should be abundant in the substances for which its presence serves as an indicator. (2) It should be absent or relatively absent from all other sources. (3) It should be easily isolated and numerically estimated. (4) Its characters should be definite and not liable to variation. Since *B. coli* is used by the bacteriologist as a test of purity or impurity, its nature must be studied. Culturally this may be done in two ways: (*a*) By the use of fundamental tests (indol production, etc.); (*b*) by the use of an extended series of sugar and other reactions. The latter method, though of great value for some purposes, does not at present greatly help in water analysis, in that it does not differentiate the sources of the strain. The former method demonstrates that excremental strains react with great uniformity to the fundamental tests; on the other hand, strains from water, soil, etc., show a large proportion which

fail to give all the fundamental tests. This may be due to (1) variations in typical strains due to altered surroundings, or (2) to the altered conditions favouring the increase of the relatively small proportion of atypical organisms present in the intestinal tract. The effect of these two factors has not yet been satisfactorily worked out. The more nearly the organism isolated resembles an excretal *B. coli* the greater is its significance as an indicator of pollution. Regard must always be paid to the numbers of *B. coli* present. This organism is a *measure* of excretal pollution. A further point is that its presence is of much greater significance than its absence. The one drawback to bacteriological examination of water supplies is that they only indicate existing conditions; they do not show liability to contamination which is not actually taking place.

Thursday, July 25th.—Papers:

HENRY, H.: Meningitis due to Haemophylic Organisms.
BEATTIE, J. M., and YATES, A. G.: Variations in the Morphological Characters of Bacteria and their Reactions with Sugars under Different Conditions.
CRUICKSHANK, J.: On the Direct Cultivation of Tubercle Bacilli from Tuberculous Tissues.
DEAN, Professor: A paper.
HORT and PENFOLD: A Study of the Pyrogenetic Properties of *B. typhosus*.
ROBERTS, E. Emrys, and WALSH, S. B.: Observations on Brownian Movement, with Special Reference to the Anthrax Spore.
FRASER, John: The Strains of Tubercle Bacilli occurring in Bone and Joint Diseases in Children.
WHITMORE, A., Captain, I.M.S.: The Bacteriology of an Infective Disease occurring in Rangoon.

SECTION OF GYNAECOLOGY AND OBSTETRICS.

Discussion on *Eclampsia*. The following is an abstract of the remarks by which Sir WILLIAM SMYLY will open the therapeutic part of this discussion:

Treatment.—Considered analytically it divides itself into methods resulting from the practical application of theories and those which are suggested by special symptoms. The practical application of theories. (*a*) The toxaemic theory. In applying this theory measures are taken to (i) prevent the formation of toxins; (ii) to neutralize or destroy them when present; (iii) to eliminate them from the system. 1. Toxins are supposed to originate either in the ovum or in the mother. In the former either in the fetus, the liquor amnii, or in the placenta. In the mother in the intestines or liver, in the ductless glands, or in the breasts. The ovular theory has led to rapid or early delivery by accouchement forcé, craniotomy Caesarean section; and in *post-partum* convulsions, curetting. The intestinal theory has resulted in restriction of diet to milk or total abstinence from food, the employment of vegetable acids or their salts, and to the use of purgatives and washing out the stomach and lower bowel. The mammary theory has resulted, in practice, in injections of potassium iodide, massage, Bier's method, and excision. 2. To destroy or neutralize the poison, efforts have been made by infusion of the serum of pregnant women, of horses, or antivenin. 3. To eliminate the poison. The methods employed are to promote the action of the skin, the bowels, and the kidneys, and by abstraction of blood. Phlebotomy has suddenly come back to favour; it removes some of the poison, lowers blood pressure, and increases the action of the kidneys. According to Dienst, the benefits attributed to operations are really due to loss of blood. Cases in which convulsions ceased after Caesarean section had lost more blood than the others. The action of the kidneys is further aided by saline infusion into the rectum, under the skin, or into a vein. Owing to supposed dangers from common salt, sodium bicarbonate or sugar are to be preferred. To prevent thrombosis: a diet free from common salt: vegetable acid drinks. Infusion of hirudin: its uses and disadvantages. The spasmodic theory. Narcotics: chloroform, chloral hydrate, morphine. Trephining the skull and opening the dura mater. Lumbar puncture. Symptomatic treatment: to prevent injury, biting tongue, inhalation of mucus, asphyxia, heart failure. Postural treatment: oxygen, high arterial tension, phlebotomy, veratrum viride. Subject considered synthetically. (1) Accouchement forcé, especially by version and extraction or high forceps, is attended by a high maternal and fetal mortality. (2) Caesarean section has given better results, but statistics have failed to prove the advantages claimed for it. (3) Treating the symptoms and assisting but not forcing delivery has yielded the best results, as practised by Stroganoff and Tweedy.

SECTION OF LARYNGOLOGY AND RHINOLOGY.

Discussion on *The Education of the Specialist in Laryngology and Otology*. The following is an abstract of the opening paper by Dr. WATSON-WILLIAMS:

A review of the existing special clinics for diseases of the ear, nose, and throat shows (1) that otology and laryngology are now and will be regarded as special departments, separable from general medicine and surgery in the same sense as ophthalmology and gynaecology. (2) The disparity in the position still accorded to otology and laryngology in various centres of medical work. Although the position to-day is a great advance on the condition that obtained not many years ago, there yet remains much to be desired (*a*) in the more generous equipment of the special departments; (*b*) in the due recognition of the proper sphere of otology and laryngology in the student's curriculum; (*c*) in the systematic training of practitioners who desire to specialize. It is essential for the continued development of our own special branches that they should be superstructures, not of pure surgery, but broad based on the whole range of general medicine. No member of the medical profession should be allowed to assume a title which is intended to convey to his medical colleagues and to the public at large that he has acquired special knowledge, unless he has had the experience which fairly entitles him to pose as a specialist. Physicians and surgeons cannot guard their titles as implying special experience in their own spheres, but they do safeguard their respective degrees and diplomas, which not only their colleagues but the general public apprise. It is a question for consideration whether otologists and laryngologists should follow their example. No worker in any special branch of medicine makes a sound practitioner without a thorough general training in medicine and surgery. A hospital clinic affords peculiar opportunities for scientific investigation and advancement of knowledge; those who hold office should regard their posts as trusts, and as far as possible render themselves competent to make such opportunities fruitful. Those who specialize in otology and laryngology should have the advantage of a thorough acquaintance with the acquired anatomical facts, and with recent physiology and pathology of the ear, nose, and throat, with the history and development of operative and other therapeutical measures, as well as of a sound practical experience in the methods of clinical investigation of diseases of these regions. This will involve post-graduate work for a considerable period, and those who intend to become specialists should be encouraged to devote some time to post-graduate experience in general medical and surgical work, while at least one year should be spent in attending recognized special clinics.

SECTION OF MEDICAL SOCIOLOGY.

Discussion on *The Reform of Hospital Out-patient Departments*. The following is a synopsis of Dr. DEWAR'S opening remarks:

(1) Does abuse or misuse of hospital administration, especially in the out-patient department, exist? Denied by some hospital authorities. Fallacy of the "Patet omnibus" motto. Hospital competition. (2) Evidence of existence to a very large extent. (3) Question of the necessity of clinical material admitted. (4) Overcrowding of the out-patient department, especially the special departments, with trifling cases. (5) Unnecessary burden on the staff. (6) Possible and probable effect of Insurance Act on out-patient departments. (7) Question of misuse of hospitals by school boards. School clinics. (8) Proposals for hospital reform formulated six years ago and modified to suit new conditions under the Act.

SECTION OF NEUROLOGY AND PSYCHOLOGY.

Discussion on *The Neuroses and Psychoses of the Climacteric*. The following is a synopsis of Dr. C. J. MACALISTER'S opening remarks on the general medicine aspects of this discussion:

Consideration of cyclical functions. The menopastic climacteric seldom symptomless. The psychoses and neuroses mainly depend upon morbid conditions connected with changing metabolism involving faulty bodily chemistry. Analogies between diseases due to physical

inco-ordination and those resulting from secretive inco-ordination. Lessons derived from the study of the climacteric of puberty. Anatomical and physiological facts supporting the chemical nature of climacteric conditions. Normal sexual characteristics depend upon co-operative glandular secretion. Climacteric disorders may result from their inco-ordination. Clinical cases and *post-mortem* appearances sometimes suggest the confirmation of this view. The male climacteric. Principles of treatment. Conclusion.

Additional Paper.

SCHOFIELD, A. T., and MURRAY, Leslie, Drs.: Psychasthenia and its Differentiation from Neurasthenia.

SECTION OF OPHTHALMOLOGY.

Thursday, July 25th.—Papers discussing Tuberculin and Serum-therapy by Dr. Hill Griffith (Tuberculin), Mr. George Mackay (Tuberculin) and Mr. Peel Ritchie. Other papers on serum-therapy can still be accepted.

SECTION OF OTOLOGY.

Additional Papers.

MILLIGAN, Dr. W.: The Value of Decompressive Operations in Intracranial Complications of Otitic Origin, with special reference to the Treatment of Otitic Meningitis. (To be read on July 24th.)

LOVE, Dr. Kerr: The Prevention of Deafness in Non-suppurative Cases. (To be read on July 26th.)

JENKINS, Mr. G. J.: The Indications for Schwartze's Operation.

SECTION OF PHARMACOLOGY.

Discussion on *The Treatment of Heart-muscle Affections*. The following is a synopsis of Professor CUSHNY's opening remarks:

Treatment with the members of the digitalis series, particularly with digitalis itself, strophanthus, and squills. These three are practically identical in their action on the heart, and differ very little in any respect as regards their clinical effects. The response to digitalis differs according to the condition of the heart, the most striking change being observed in auricular fibrillation with rapid pulse. The effects are not due to any change in the fibrillating chamber, however, but to an improvement in the condition of the ventricle, which may be of the same nature as that seen in cases of normal rhythm treated with digitalis. The essential feature is not the auricular fibrillation, but the underlying ventricular inefficiency. The method of administering digitalis, and the special advantages of the intravenous injection of strophanthin, will be discussed, and mention will be made of other drugs indicated in special conditions.

Additional Paper.

PRICE, Frederick W., M.D.: The Action of Digitalis on the Blood Pressure in Man.

SECTION OF STATE MEDICINE.

Additional Papers.

WALTERS, Dr. Rufenacht: The Choice of Institutions for Cases of Pulmonary Tuberculosis.

YOUNG, Dr. Erskine: Children and Dental Disease.

PATHOLOGICAL MUSEUM.

All communications and specimens for the Pathological Museum should be addressed to Dr. Ernest Glynn, Honorary Secretary, Thompson Yates Laboratory, University of Liverpool.

Honorary Local Treasurer—
THOMAS H. BICKERTON, M.R.C.S.,
88, Rodney Street, Liverpool.

Honorary Local Secretaries—
FRANK H. BARENDT, M.D., F.R.C.S.Eng.,
KARL A. GROSSMANN, M.D., F.R.C.S.Edin.,
W. THELWALL THOMAS, Ch.M., F.R.C.S.,
Liverpool Medical Institution, 114, Mount Pleasant, Liverpool.

EXCURSIONS AND ENTERTAINMENTS.

THE Excursions Committee in Liverpool is making arrangements for visits to a number of interesting places on Friday and Saturday, July 26th and 27th. These include the following:

Friday.

Blackpool.—The party, limited to 150, will be entertained at luncheon by the Mayor and Corporation, and visits will be paid to various places of interest both in the morning and in the afternoon.

Penmaenmawr and Pendyffryn Hall.—A party, limited to 20, has been invited to visit Penmaenmawr, and will be entertained at luncheon and tea at Pendyffryn Hall by Dr. Dobson.

Saturday.

Chester and Eaton Hall.—During the morning this party, limited to 200, will visit the cathedral and many places of historic interest in the city of Chester. They will be entertained at lunch at the Town Hall by the Chester Medical Society, after which the party will proceed by steam-launch to Eaton Hall, where they will be entertained at tea by the Duke of Westminster.

Buxton.—The party (limited to 200) going to Buxton will, after a visit to the pump room, baths, and Devonshire Hospital, be entertained at luncheon by the Buxton Medical Society.

Southport.—This party, which is limited to 100, will drive through the town in two sections, and will visit the Infirmary and the Convalescent Hospital; at each institution the members will be received by the Medical Staff. They will afterwards be entertained at a luncheon given by the Southport Medical Society and the Southport Division of the British Medical Association jointly. In the afternoon there will be a garden party at Hesketh Park, by invitation of the Mayor and Mayoress.

Llandudno.—Arrangements have been made for a party of 200 to proceed to Llandudno by steamer. They will be received by the Urban District Council and entertained at luncheon.

Isle of Man.—A party, limited to 100, has been invited to visit the Isle of Man, where they will be received by the Mayor and Corporation, and entertained at dinner in the evening on board the ss. *Empress Queen*. During the earlier part of the day motor tours have been arranged.

Members desirous of taking part in any of these excursions are requested to make application for tickets to Dr. Francis W. Bailey, 51A, Rodney Street, Liverpool, on or before July 17th.

Tickets will be allotted in priority of application, and it is advisable to mention a second choice of excursion in case all the tickets for the first choice have been taken before application. In many cases the excursions can be prolonged for the week-end.

GOLF.

Members will be allowed to play on the following links: Royal Liverpool (Hoylake), Formby, Wallasey, Birkdale, Wooolton, West Lancashire, Ormskirk, and West Derby. Members must provide themselves with the necessary vouchers or green fees will be charged. Applications should be made at the Reception Room for these vouchers, which the Local Executive has generously undertaken to provide. Hospitality is also offered by the following clubs in Blackpool and neighbourhood: North Shore Golf Club (Blackpool), Blackpool Golf Club, St. Anne's and Lytham Golf Clubs, Old Links Golf Club (St. Anne's), Fairhaven Golf Club (Fairhaven).

The competition for the Ulster Cup will take place on Thursday, July 25th, on the Hoylake links. Any member wishing to compete should send in his name, club, and lowest handicap, certified by the club secretary, to Dr. A. Nimmo Walker, 45, Rodney Street, Liverpool.

On Friday, July 26th, there will be a golf match between members of the Association residing in Lancashire and Cheshire and the rest of the Association, which will be played at Formby Links. Names should be sent to Dr. Walker as above.

A match for ladies will be arranged between the wives, daughters, and sisters of members belonging to the golf clubs in Lancashire and Cheshire, and to all other golf clubs respectively. Ladies wishing to play are requested to send their names, clubs, and handicaps, certified by the club secretary, to Miss Walker, 45, Rodney Street, Liverpool.

ENTERTAINMENTS.

The Local Entertainments Committee has made arrangements for members to visit various places of interest in the city of Liverpool:

The works of the new Cathedral may be visited on the mornings of Tuesday or Wednesday. On Wednesday afternoon, between 3 p.m. and 5 p.m., parties of 10 at a time will be shown over the offices of the *Liverpool Daily Post and Mercury* and the *Liverpool Courier*. On the same afternoon the White Star Company will receive visitors on board the ss. *Cedric*, and the Allan Line on board the ss. *Corsican*. On the same afternoon the President of the Medical Institution and Mrs. Robert Jones will give a garden party at Druid's Cross, Wavertree. In the evening there will be a *soirée* at the Walker Art Gallery, lent by the Corporation of Liverpool.

On Thursday afternoon a garden party will be given by Dr. C. T. Street at Haydock Lodge Private Asylum, and by Mr. and Mrs. Frank Paul at "The Anchorage," Hoylake. Later in the afternoon the Lord Mayor and Lady Mayoress (Lord and Lady Derby) will give a garden party in the Botanic Gardens. On the same afternoon Mr. Robert Jones and Dr. C. J. Macalister will take a party of 200 visitors to the Liverpool Country Hospital for Children at Heswall. On Thursday the Booth Steamship Company will entertain visitors to tea on board the ss. *Hilary*, which will be arranged to show the mosquito-proof appliances; Messrs. Cammell, Laird and Co. will show visitors over their shipbuilding and ship-repairing yards, where the new Dreadnought *Audacious* and some Argentine destroyers are being built. A visit will be paid by invitation to the estate of the

Liverpool Garden Suburbs Tenants Company, and the Mersey Docks and Harbour Board will show a party of visitors over the warehouses and docks. In the evening the annual dinner of the Association takes place, and there will be a performance for ladies of "Mrs. Gorringe's Necklace" at the Royal Court Theatre.

On Friday Lord Derby, the Chancellor of the University of Liverpool, will entertain a number of visitors at luncheon by special invitation at the Town Hall before the ceremony of conferring honorary degrees, which is to take place at 2.30 p.m. at the Philharmonic Hall. Sir William Lever will entertain a party of invited guests to luncheon at Hulme Hall, Port Sunlight, and will entertain a large party to tea in the afternoon and show them over Port Sunlight. Sir James and Lady Barr will give a garden party at Calderstones Park, and the Cunard Steamship Company will provide a tender to take the visitors to the *Lusitania* in the river, where they will be entertained at tea. In the evening there will be a dance at the Philharmonic Hall, and members desiring to be present should notify Dr. D. Douglas-Crawford, 75, Rodney Street, Liverpool.

Arrangements have been made for a trip on the river Mersey on Wednesday afternoon, at the invitation of the Birkenhead Corporation; on Thursday afternoon one of the Wallasey ferry boats will make a similar trip, and visitors will be entertained at tea by Dr. Oldershaw, Mayor of Wallasey.

Meetings of Branches and Divisions.

BATH AND BRISTOL BRANCH:

BATH DIVISION.

THE annual general meeting of the Division was held at Bath on June 28th.

Election of Officers.—The following officers were elected for the ensuing year: *Chairman*, Forbes Fraser, F.R.C.S.; *Vice-Chairman*, R. J. H. Scott, F.R.C.S.; *Honorary Secretary and Treasurer*, F. G. Thomson, M.D.; *Representative*, C. J. Whitby, M.D.; *Members of Branch Council*, G. E. Bloxam, G. A. Bannatyne, M.D., H. P. Costobadie, F. Lace, F.R.C.S., T. Martin, T. J. Verrall, R. Waterhouse, M.D., J. Wigmore, M.D., and C. J. Whitby, M.D.; *Members of Executive Committee*, G. E. Bowker, M.D., and W. G. Mumford, M.B., F.R.C.S.

National Insurance Act.—The following resolution was passed:

That this Division strongly opposes the acceptance by medical men of any appointment whatever in connexion with the Act, either as county or borough councillors or as medical men.

BRISTOL DIVISION.

Public Medical Service.—The Bristol Division, after discussing the Public Medical Service schemes, forwarded their criticisms to the Medical Secretary and passed the following resolutions:

The Bristol Division desires to record its decision that, in the event of the medical benefits under the National Insurance Act being suspended by the Government the Public Medical Services put forward by the British Medical Association will fail to safeguard the profession against cheap contract practice, the temptation to undertake which will be greatly increased.

In the opinion of the Division no scheme of Public Medical Service can succeed unless—

1. It is based upon "private practice."
2. It includes provision for "bad lives" and the uninsured poor.
3. It proves a satisfactory solution of the problem of the abuse of hospital out-patient departments.
4. It has the support of and is administered by a powerful central organization possessing power to administer its funds.

It was further resolved that:

It is the opinion of the Division that the only existing organization capable of administering such a service is the Medical Federation, Limited.

BIRMINGHAM BRANCH:

CENTRAL DIVISION.

A GENERAL meeting of this Division was held at the Medical Institute on Friday, June 21st, at 4 p.m. Mr. LUCAS was in the chair, and fifty other members were present.

Public Medical Service.—Schemes A and B were considered, and decisions were arrived at for the consideration of the State Sickness Insurance Committee.

Instructions to Representatives.—Provisional Agenda Motion 13. The Representatives were instructed, upon the motion of Mr. MARSH, to move that the words "as soon as possible" be inserted after "report" at the end of the Council's Recommendation upon the Referendum Question. Provisional Agenda Motion 19. It was agreed that the Representatives be asked to support the motion for the registration of the Association as a trade union. Provisional Agenda Motion No. 23. The Representatives were instructed to oppose the proposed substitution of the word "stated" for "agreed upon" and to support the original recommendation.

Dr. NEAL proposed and Mr. MARSH seconded:

That the Division hereby empowers the Executive Committee to instruct the Representatives upon the remaining points of the Agenda, and upon any matters referred to Divisions between this date and that of the Annual Representative Meeting.

This was carried.

The CHAIRMAN pledged himself to summon a meeting of the Division before the Annual Representative Meeting should any matters of urgency arise—for example, in connexion with the National Insurance Act.

Filling Up of Possible Vacancy among Representatives.—Mr. LUCAS proposed and Mr. MARSH seconded:

That, in the event of a vacancy occurring amongst the Representatives, the Executive Committee have power to fill the vacancy.

This was carried.

Examination of Candidates for State Section of Approved Societies.—Dr. OSBORNE proposed and Dr. NEAL seconded:

That, in the opinion of this Division, the fee for the examination of candidates for admission to the State section of approved societies under the National Insurance Act shall be a minimum fee of 2s. per head, to be paid either by the society or by the applicant, and that a copy of this resolution be sent to all practitioners in the Division.

This was carried unanimously.

This concluded the business of the meeting.

Further Instructions to Representatives.—We are informed by telegraph that at a meeting of the Division on July 10th, the Representatives of the Division were instructed to support a resolution breaking off negotiations.

Provisional Medical Committee.

FOUR meetings have been held on April 24th, May 1st, May 20th, June 14th; Mr. FRANK MARSH in the chair.

Results of Canvass.—A systematic canvass has been under undertaken to obtain (1) new members of the Association, (2) contributions to the local and general defence fund, and (3) supplementary pledges and club resignations. The Division was divided into ten districts, corresponding to the ten wards of the Birmingham General Practitioners' Union. The results to date have been very satisfactory. The present position of canvass for pledges and resignations is:

Retired	32	of whom	24	have signed pledge	
Whole-timers ...	50	,,	45	,,	,,
Home addresses*...	11	,,	6	,,	,,
Not in practice ...	14	,,	14	,,	,,
Total unaffected	107	,,	89	,,	,,

(* 3 are travelling; away.)

Resident hospital appointments	36	of whom	36	have signed	pledge
Honorary staffs ...	61	,,	58	,,	,,
Contract practice...	186	,,	184	,,	,,
Practice without contracts ...	117	,,	115	,,	,,
Total affected ...	400	,,	393	,,	,,

183 have sent in resignations for all clubs.
22 have left Division; addresses not known.
12 practitioners in other Divisions have signed in this Division.

COVENTRY DIVISION.

A MEETING of this Division was held on June 24th, seventeen members being present.

Public Medical Service.—The Provisional Medical Committee recommended certain alterations in the proposed rules for the formation of the Public Medical Service, Scheme A, outlined in the SUPPLEMENT of June 8th, was considered acceptable with certain alterations, the details of which have been sent to the Medical Secretary.

DORSET AND WEST HANTS BRANCH.

THE summer meeting was held at the Asylum, Herrison, Dorchester, on Wednesday, July 3rd, at 3.30 p.m., the PRESIDENT (Mr. F. Winson Ramsay) in the chair. Fifty-one other members and nine visitors were present.

Representation of Branch on Central Council.—The PRESIDENT read a letter from the Honorary Secretary of the South-Western Branch, intimating that his Branch would support a candidate from the Dorset and West Hants Branch for two years on the expiration of Mr. Domville's term on the Council of the Association. The President explained that this Branch was grouped with the South-Western Branch for the election of a Representative on the Council, and that the latter, being a much larger Branch, could always elect their own candidate, so that the concession they made was graceful and generous. It was proposed by Dr. LE FLEMING, seconded by Dr. JOHNSON SMYTH, and carried unanimously:

That the thanks of the Branch be conveyed to the South-Western Branch.

New Members.—The PRESIDENT announced that the following gentlemen had been elected members of the Association: Mr. B. M. Collard, Dr. E. Curtin, Dr. J. R. Perdrau, Dr. A. W. Port, and Dr. W. P. Richardson.

Autumn Meeting.—It was resolved that the autumn meeting should be held at Wimborne on October 16th.

Vote of Thanks.—A vote of thanks was accorded to Dr. P. W. Macdonald for the excellent arrangements he had made to secure the success of the meeting.

Visit to Asylum.—Many members took advantage of the facilities given for seeing over the institution, and a large number of interesting microscopical slides and cultures were shown by the medical staff. The Right Hon. Lord Digby entertained the members of the Branch to luncheon before the meeting. After proposing the toast of "The King," his lordship expressed his satisfaction at seeing so many medical men in the asylum, in which he took so great an interest. The PRESIDENT thanked Lord Digby for his generous hospitality, and for the trouble he had taken in coming down from London especially to receive them.

WEST DORSET DIVISION.

A MEETING of this Division was held at Herrison, Dorchester, on Wednesday, July 3rd, at 12.45 p.m. Dr. W. C. SPOONER was in the chair, and twenty-one members and six non-members were present.

Provisional Medical Committee.—The report of the Provisional Medical Committee on the result of the canvass was received: Of 95 in general practice 94 had signed the pledge; of 9 whole-timers 7 had signed the pledge (the two school medical officers did not sign); of 64 in contract practice 56 had sent in resignations and others are coming in; 396 resignations of clubs are so far to hand.

Weymouth Medical Service Scheme.—The "Weymouth" sliding scale medical service scheme was discussed. The following resolution was proposed and carried:

That the "Weymouth" sliding scale scheme be approved by this Division, who strongly recommend its adoption by the Association.

Honorary Secretaries and Branch Council.—The following recommendation to the Branch was proposed and carried:

That the Honorary Secretaries of Divisions be *ex officio* members of the Branch Council.

EAST ANGLIAN BRANCH.

Meeting of Council.

THE meeting of the Council was held at the Essex County Asylum, Brentwood, on Wednesday, June 19th, at 12 o'clock. There were present Dr. John Turner, Dr. Curl, Major Freeman, Dr. Gutch, Dr. Potts, and Dr. Nicholson. The PRESIDENT-ELECT (Dr. John Turner) was voted to the chair in the absence of the President (Dr. Burton-Fanning).

New Members.—It was proposed by Dr. CURL and seconded by Dr. GUTCH that the following gentlemen be elected members of the Association: G. C. Bell, M.R.C.S., L.R.C.P. (Frinton-on-Sea); W. C. Cooper, M.R.C.S., L.R.C.P. (East Harling); D. J. Duhig, M.R.C.S., L.R.C.P. (Hornchurch); G. C. Keeling, M.D. (Attleboro); H. Mallins, M.B., B.Ch. (Wotton); A. R. Rackham, M.R.C.S., L.R.C.P. (North Elmham); J. Miller, M.R.C.S., L.R.C.P. (Ipswich); A. Quennell, M.R.C.S., L.R.C.P. (Brentwood), F. Richmond, M.B., B.Ch. (Dereham); A. W. Walker, M.R.C.S., L.R.C.P. (Cromer).

Report of Council.

The report of the Council was read by the SECRETARY. It stated that the Branch was in a prosperous condition. Ninety new members had been elected during the year. The annual meeting was held at Norwich under the presidency of Dr. Burton-Fanning. The meeting was one of the largest that has ever been held by the East Anglian Branch, there being about 120 present. Luncheon was kindly given by the President. Mr. J. SMITH WHITAKER read a paper on the Prospects of the Medical Profession under the National Insurance Bill. The Council expressed their warm thanks to Dr. and Mrs. Burton-Fanning for their unbounded hospitality to every one present on the occasion of the annual meeting. The annual meeting was held at Braintree in September. Two special meetings of the Council were held at Ipswich. The reports of the Divisions were considered, and capitation grants were fixed. All the Divisions had been energetically at work in connexion with the National Insurance Act. The spring meeting was held at East Dereham in April. Sir Alan Reeve Manby opened a discussion on The Fees to be Accepted by Medical Practitioners from the Local Authorities for the Treatment of the Minor Ailments revealed by the Medical Inspection of Elementary School Children. Mr. A. J. Blacksland, M.S., F.R.C.S., read a paper on Acute Pancreatitis. The Council expressed its thanks to Dr. and Mrs. Belding, Dr. and Mrs. Howlett, and Dr. and Mrs. Duigan for their kind hospitality on that occasion. The Council regretted the death of their past Vice-President (Dr. Pembroke Minns). The members who were at the annual meeting at Thetford would long remember his kind reception to every one who was present.

It was proposed by Dr. POTTS and seconded by Dr. GUTCH that the report be adopted. This was agreed to.

Proposed Division of Branch.—The report regarding the Division of the Branch was deferred till a future meeting.

Autumn Meeting.—It was proposed by Dr. GUTCH, seconded by Dr. NICHOLSON, and agreed, that the autumn meeting should be held at Bury St. Edmunds.

General Meeting.

The general meeting was held at the Essex County Asylum, Brentwood, on Wednesday, June 19th, at 12.30 o'clock. In the absence of the President, Dr. JOHN TURNER took the chair.

Report of Council.—The report of the Council was read by the SECRETARY, and, on the proposition of Dr. CURL, seconded by Major FREEMAN, it was adopted and agreed to.

Election of Officers.—The following gentlemen were nominated for the year 1912–13: *President-elect*, Dr. Herbert H. Brown (Ipswich); *President*, Dr. John Turner; *Vice-Presidents*, Dr. Slimon (Clacton-on-Sea), (it was proposed by Major FREEMAN, and seconded by Dr. NICHOLSON and agreed to, that Dr. D. G. Thomson be elected a Vice-President for one year, owing to the lamented death of Dr. Pembroke Minns), Dr. Burton Fanning; *Secretary for Essex and General Secretary of the Branch*, Dr. B. H. Nicholson; *Secretary for Norfolk*, Mr. Hamilton A. Ballance; *Secretary for Suffolk*, Dr. J. Gutch.

Financial Report.—The following financial report was presented:

Dr.	£	s.	d.
Balance in hand, December 31st, 1910 ...	42	16	6
Capitation grant from the head office, 1911 ...	45	8	0
Deficit at December 31st, 1911	41	3	5
	£129	7	11

Cr.	£	s.	d.
Grants to Divisions:			
North-East Essex at 5s. per head	16	15	0
South Essex at 2s.	6	12	0
Mid Essex at 2s.	3	18	0
Norwich at 8s.	25	12	0
Mid Norfolk at 3s.	8	2	0
East Norfolk at 4s....	7	0	0
West Norfolk at 2s.	3	12	0
South Suffolk at 2s. 6d.	10	12	0
North Suffolk at 2s. 6d.	5	5	0
West Suffolk at 5s....	10	10	0
Medical Directory	0	11	6
Dr. Pembroke Minns (1910)	1	5	0
Secretaries' expenses	18	13	2
Shorthand notes	2	2	0
Dr. Nicholson's expenses	4	19	10
Mr. Ballance's expenses	2	18	11
Sundries	0	4	5
Hire of rooms	0	15	0
	£129	7	11

The financial report was adopted.

Luncheon.—Luncheon, by the kind invitation of the President-elect, Dr. John Turner, was partaken of in the County Asylum at 1.30 o'clock. After luncheon Dr. D. G. Thomson, in the absence of the President, gave the toast of "His Majesty the King," and also proposed the health and happiness of "Dr. John Turner," the President of the Branch for 1912–13. Dr. Turner thereupon took the chair.

Vote of Thanks to Retiring President.—A hearty vote of thanks was proposed by Major Freeman and seconded by Dr. D. G. Thomson to Dr. Burton Fanning for the assiduous way in which he had performed his duties as President of the Branch, and for his great kindness and hospitality during his year of office, and it was unanimously agreed that he become a Vice-President for the term of three years.

President's Address.—Dr. Turner thereupon gave his presidential address, which is printed in this issue (p. 60). At its conclusion the address was discussed by Dr. D. G. Thomson, Dr. Curl, and Dr. Brown, and a hearty vote of thanks was accorded Dr. Turner.

Paper.—Dr. W. Aldren Turner read a paper on the curability of epilepsy. The paper was discussed by Dr. D. G. Thomson, Dr. Curl, and Dr. Coombe, and Dr. Aldren Turner replied.

Tea.—Afternoon tea, to which ladies were invited, was given by Dr. and Mrs. Turner in the asylum cricket field, where a cricket match was played between the asylum team and a team captained by Mr. H. D. Swan of Colchester.

Exhibit.—Instruments were shown by Messrs. Down Brothers and Messrs. Allen and Hanburys.

Mid-Norfolk Division.

The annual meeting of this Division was held on June 22nd, in the Medical Library, Guildhall Hill, Norwich, Dr. R. G. Horn in the chair. Fifteen other members were present.

Election of Officers.—The following were elected office-bearers: *Chairman*, Dr. Harrison (North Walsham) (Dr. Horn here vacated the chair, which was taken by Dr. Harrison, who thanked the members for the honour); *Vice-Chairman*, Dr. Colvin Smith; *Secretary and Treasurer*, Dr. D. G. Thomson; *Executive Committee*, the officers and Drs. Davidson, Gillett, Howard, and Howlett.

Proposed Division of East Anglian Branch.—The question of dividing the East Anglian Branch into two or more Branches was discussed, and it was resolved unanimously:

> That this meeting of the Mid-Norfolk Division considers that it is desirable to divide up the East Anglian Branch into two or more Branches.

Public Medical Service.—The formation of a public medical service was discussed, and it was resolved

> That ... be generally approved, and that discussion ... if medical ... or not.

... The annual report of the ... and the various points arising in that report. With regard to death certificates it was resolved:

> That the Mid-Norfolk Division of the British Medical Association, acting on the decision of the Annual Representative Meeting, 1911 (Birmingham), calls upon all members of the profession practising in its area to refrain in future from filling in particulars of the duration of disease in any statutory certificates signed by them.

Regarding the motion by the East Norfolk Division:

> That in the opinion of this meeting the time has now come when the Central Council should take into consideration the payment of the necessary out-of-pocket expenses of Representatives at Representative Meetings.

Appendix 2 of the report of Council was read, and after discussion it was carried unanimously:

> That all elected honorary workers of the Assocation, attending Representative, Council, Committee, and Subcommittee meetings at headquarters, should be refunded travelling, hotel, and locumtenent expenses.

The Representative was instructed to vote in accordance with this motion at the Representative Meeting at Liverpool. Dr. Thomson, the present Representative, wished it to be recorded that personally he had no wish to benefit by this motion, but that he agreed that from an impersonal point of view such relief from the expenditure of money and time at present incurred by the attendance at meetings might be to the advantage of the Association.

Provisional Local Medical Committee.—A report on the work of the Provisional Local Medical Committee in their canvass for (1) membership of the British Medical Association, (2) signing of the pledge, (3) the resignation of friendly societies' appointments, and (4) guarantees for the defence fund was read by the Honorary Secretary of the Committee. It showed that:

(1) Eight new members of the Division had been elected.
(2) 85 out of the 87 practitioners in the Division had signed the pledge.
(3) That all the 50 doctors holding friendly society appointments had placed their resignations of such appointments in the hands of the Honorary Secretary of the Provisional Local Medical Committee.
(4) About £320 had now been guaranteed by practitioners, members and non-members, resident in the Division.

This report was considered a very satisfactory state o affairs, especially as the same satisfactory progress in the campaign was reported from the other Divisions in the county.

Vote of Thanks.—The proceedings then terminated with a cordial vote of thanks to the retiring chairman, Dr. Horn, for his most excellent services during the past three years

Edinburgh Branch.

The annual meeting of this Branch was held on June 27th in the Royal College of Physicians Hall, Edinburgh. Upwards of 100 members, representative of the whole area comprising Edinburgh, Leith, the Lothians, Roxburghshire, Selkirkshire, Peebles-shire, and Berwickshire, were present.

National Insurance Act.—It was unanimously resolved,

1. That the meeting express its extreme disapprobation of the action of Dr. Matheson Cullen in accepting one of the paid medical officerships for Scotland under the National Insurance Act.
2. That the meeting express its strong disapproval of the action of Sir James Russell in agreeing to act on the Provisional Local Insurance Committee, as Medical Representative of the Town Council of Edinburgh.

The acceptance of both these appointments is in direct antagonism to the declared and deliberate policy of the British Medical Association and the Scottish Medical Insurance Council. The Branch thinks it right that the public should be informed that on account of the unfortunate methods the Government has adopted in its treatment of the medical profession, the best men in the profession absolutely decline to serve under the National Insurance Act until their reasonable demands are conceded. It shows a strange lack of business aptitude on the part of the authors of the Act that, although the terms of the medical profession have been clearly stated from the first, no settlement has been arrived at or is in prospect. This policy means that, as the Commissioners are limited in their choice of medical officers, the public are ill-served. The foregoing resolutions are founded on Minute 78 of the Representative Meeting held in London in February last:

That it be an instruction to the Council to take all possible steps to ensure that no member shall take any office or work under the National Insurance Act, other than that of the Advisory Committee, until such time as the minimum demands of the profession are conceded in the regulations or an amending Act.

The meeting further unanimously resolved to express its strong disapproval of Dr. Norman Walker's refusal to place his resignation as a member of the Scottish Advisory Committee in the hands of the Scottish Medical Insurance Council, to be used when found to be wise and expedient, and to call upon him to explain to the profession the reason for such decision on his part. It may be stated in explanation of this resolution that Dr. Norman Walker is the Direct Representative of the medical practitioners in Scotland on the General Medical Council in London. The practitioners in this area, being a section of his constituents, are of opinion that his action in this matter is not only diametrically opposed to the wishes of the profession, but is also harmful to its ideals, and to the interests of the public. Further, of the eleven medical members of the Scottish Advisory Committee, Dr. Norman Walker is the only one who has refused to give an undertaking that he will resign his position on the Advisory Committee, if called upon to do so by the Scottish Medical Insurance Council.

EDINBURGH AND LEITH DIVISION.

THE annual meeting of the Division was held on Friday, June 14th, at 8.15 p.m., in the Gartshore Hall. Dr. JAMES RITCHIE, Chairman of the Division, presided. Forty-eight members attended.

Report of Executive.—The report of the Executive for the period from November 16th, the date of union of the three Edinburgh Divisions, to December 31st, was read and received.

Deputy Representatives. — Powers to obtain Deputy Representatives, if required, to the Representative Meeting were given to the Chairman and the two Secretaries, and instruction given to Representatives.

Annual Report of Central Council.—The CHAIRMAN drew attention to different parts of the Annual Report of the Council, the increase in membership, the state of the funds, and the payment of the expenses of the Representatives and members of the Council.

Supplementary Pledge.—The complementary pledge was then considered, and the SECRETARY read a letter from the Executive of the Scottish Medical Insurance Council recommending the practitioners in Scotland to sign it. The Secretary was instructed to issue the pledge without delay through the Provisional Local Medical Committees of Edinburgh and Leith.

Medical Men on Provisional Local Insurance Committee.—The following was passed unanimously:

That this meeting instruct the Executive of the Division to consider recent appointments of medical men upon the Provisional Local Insurance Committee.

Public Medical Service.—The Public Medical Service schemes issued by the State Sickness Insurance Committee were brought before the meeting, when it was decided that they be remitted to the Executive to consider and to report to the State Sickness Insurance Committee.

Representative Meeting.—The Representatives to the Representative Meeting indicated their willingness to support the resolutions passed by the meeting on the provisional agenda.

Election of Officers.—The following were elected office-bearers for the ensuing year: *Chairman*, Dr. James Ritchie; *Vice-Chairmen*, Dr. R. A. Lundie, Dr. R. Robertson; *Senior Secretary and Treasurer*, Dr. G. Keppie Paterson; *Junior Secretary*, Dr. J. D. Comrie; *Representatives to the Representative Meeting*, Dr. M. Dewar, Dr. R. Robertson, Dr. R. McKenzie Johnston, Dr. F. K. Kerr; *Representatives on the Branch Council*, Drs. J. M. Bowie, R. A. Lundie, G. Keppie Paterson, Jas. Smith, J. Stevens; *Executive Committee*, Drs. E. F. Armour, P. G. Borrowman, G. Dickson, J. L. Lackie, H. G. Langwill, R. S. Mowat, J. Orr, J. Playfair, F. Porter, W. Stewart, A. Logan Turner, R. Thin.

LOTHIANS DIVISION.

THE annual meeting of this Division was held in the Royal College of Physicians, Edinburgh, on June 20th. Between twenty and thirty were present. A full meeting of the Provisional Local Medical Committee was held immediately before. Dr. W. R. MARTINE, Vice-Chairman, presided, as Dr. Keay had to leave the meeting early.

Report of Provisional Medical Committee.—Dr. W. R. MARTINE, Secretary of the Provisional Local Medical Committee, read his report to date, which showed that the whole of the practitioners of East Lothian, with one exception, had signed the undertaking, the supplementary pledge, and all the necessary resignation forms of all contract practice appointments, including colliery and public works appointments. These resignations he now had in his possession. With regard to Midlothian, there were four or five who had not up to date signed the supplementary pledge, and one or two in West Lothian, and the resignation forms of both of the last two counties were now largely signed and sent in.

Thanks to Dr. Martine.—The meeting thanked Dr. Martine for the enormous amount of work he had done, which had shown such satisfactory results.

Correspondence.—All correspondence received from the head office since date of last meeting was read and considered.

Dr. Norman Walker.—The following resolution was passed unanimously:

That the Lothians Division of the Edinburgh Branch has learnt with regret and disappointment that Dr. Norman Walker, the Representative of the general practitioners of Scotland on the General Medical Council, has not seen fit to support the profession at this critical time in its history, by refusing to sign the undertaking and pledges demanded of the profession, and unanimously resolves that Dr. Walker be asked to resign forthwith, and the secretary be instructed to forward this intimation to him, to the BRITISH MEDICAL JOURNAL, and to the Secretary of the Edinburgh Branch of the British Medical Association.

Local Medical Committees in the Lothians.—It was unanimously resolved that each Lothian should form itself into a local Medical Committee, consisting of all the practitioners in each Lothian, but that the present Provisional Local Medical Committee for the three Lothians be retained for the present in order that the three areas might continue for the present to work and co-operate together. East Lothian had already formed itself into a separate committee, with Dr. James Gordon (Prestonkirk) Chairman, and Dr. W. R. Martine Secretary. The Midlothian men present recommended Dr. A. D. R. Thomson for Chairman and Dr. A. M. Easterbrook for Secretary. The West Lothian men recommended Dr. J. Keay for Chairman and Dr. James Hunter for Secretary.

Supplementary Pledge.—It was unanimously resolved that all practitioners in the Lothians should only employ locumtenents or assistants who had duly signed the undertaking and all the necessary pledges demanded of the profession by the British Medical Association.

Election of Officers.—The following were duly elected office-bearers for the year 1912–13: *Chairman*, Dr. J. Keay; *Vice-Chairman*, Dr. W. R. Martine; *Honorary Secretary*, Dr. A. M. Easterbrook; *Representative for Representative Meeting*, Dr. A. M. Easterbrook; *Representatives on Branch Council*, Drs. A. M. Easterbrook and W. R. Martine; *Executive Committee*, H. S. Ballantyne (Esbank), James Cameron (Loanhead), G. A. Dickson (South Queensferry), S. C. Fowler (Juniper Green), Robert Kirk (Bathgate), W. C. McEwan (Prestonpans), Alex. Scott (Broxburn), and A. D. R. Thomson (Musselburgh).

GLASGOW AND WEST OF SCOTLAND BRANCH:

GLASGOW NORTH-WESTERN DIVISION.

A MEETING of this Division was held in the Burgh Hall, Hillhead, on June 19th, at 8.30 p.m., Dr. A. T. CAMPBELL presiding; seventeen other members were present.

Practitioners and Provisional Insurance Committees.—The SECRETARY intimated the receipt of circulars from the Medical Secretary and the Secretary of the Scottish Medical Insurance Council regarding the nomination of medical practitioners to serve upon proposed Provisional Insurance Committees, and instructing such to decline the position until the minimum demands of the profession are conceded. A circular in answer to the resolution carried at a meeting of the joint committees was also read.

Public Medical Service.—The CHAIRMAN then requested the members to consider the schemes for Public Medical Service contained in the JOURNAL of June 8th. After discussion decisions were arrived at which will be reported to the State Sickness Insurance Committee.

Instructions to Representative.

The Provisional Agenda for the Representative Meeting was then submitted for consideration. With regard to certificates and reports under the Workmen's Compensation Act, the Representative was instructed to endeavour to obtain the postponement of the decision. As to the question of the payment of personal expenses of Representatives, the Representative is allowed to exercise his own judgement.

It was resolved (Dr. Buchanan dissenting) to approve the alteration of By-law No. 13, with regard to resignation of membership of Association when dispute or inquiry is pending, from one month to three months, as recommended by the Council.

The memorandum on the filling-up of death certificates was also approved.

On the motion of Dr. J. TODD, the Representative was instructed to use his own judgement regarding the remaining memoranda and recommendations.

LANCASHIRE AND CHESHIRE BRANCH:

LIVERPOOL DIVISION.

A GENERAL meeting of this Division was held on June 11th.

Annual Report of Council.—The annual Report of Council, 1911–12, was considered. It was agreed that this Division should recommend in item No. 50 that the words "two-thirds majority" should be substituted for "a majority."

Remuneration of Practitioners under Sanatorium Benefit.—It was also resolved that the following should be placed on the agenda paper of the Representative Meeting:

That the Council be instructed to determine what they consider appropriate salary to be paid to medical practitioners who may be appointed under the "sanatorium and tuberculosis benefit" of the National Insurance Act.

Medical Treatment of School Children Subcommittee.—It was also agreed at this meeting to form "A Medical Treatment of School Children Subcommittee," to inquire into the present position of the treatment of school children in Liverpool and frame recommendations.

Practitioners and Provisional Insurance Committees.—The Executive Committee at their meeting on June 14th passed the following resolution:

That this Committee recommends those members of the medical profession who are members of the city and borough councils not to accept nomination on the Provisional Insurance Committees until the requirements, administrative and otherwise, as embodied in the seven cardinal points of the British Medical Association, are agreed to by the Insurance Commissioners in full.

MANCHESTER (NORTH) DIVISION.

A MEETING of this Division was held on June 18th, at which twenty members were present.

Guarantee Fund.—A letter was read from a member offering to promote a public entertainment for the purpose of raising money for the Guarantee Fund. It was decided to be impossible to accept the offer at present.

State Sickness Insurance Committee.—A letter from Drs. Brown and Hodgson, of the State Sickness Insurance Committee, was read. Dr. LARKAM proposed, Dr. TAYLOR seconded, and it was resolved:

That, in the opinion of this Division, the State Sickness Insurance Committee should now cease all negotiations and request the medical members of the Advisory Committee to withdraw.

Amalgamation of Local Divisions.—The question of the amalgamation of local Divisions was again brought forward and was adjourned.

Public Medical Service.—Schemes A and B were considered and adjourned to the next meeting.

Instructions to Representative.—Instructions to the Representative of the Division were given as follows:

1. Motion No. 48 resolution *re* death certificates was adopted and instructions given to move in addition:

2. That Motion No. 48 be supported:

That medical men be empowered to grant official copies of death certificates for insurance and other purposes.

3. That in Motion No. 32 the fee of 10s. 6d. be altered to £1 1s.

MANCHESTER (WEST) DIVISION.

A MEETING of this Division was held in the Technical Institute, Old Trafford, on Tuesday, June 25th, at 4 p.m. Dr. EDGE occupied the chair, and twenty-five members were present.

Death of Dr. Knight.—The CHAIRMAN, in a brief but eloquent speech, gave expression to the general feeling of profound grief and loss sustained by this Division in consequence of the sudden and tragic death of its late Secretary, Dr. C. G. Knight, whose high gifts of intellect and character, combined with his genial and kindly disposition, had endeared him to all his colleagues. On the motion of Dr. PROWSE, seconded by Dr. H. B. WOODCOCK, it was unanimously decided that a letter of condolence and a floral tribute should be sent to Mrs. Knight, and that a deputation from the Division should attend the funeral.

Provisional Medical Committee.—The minutes of the first and second meetings of the Provisional Medical Committee were read and confirmed.

Dr. BRASSEY BRIERLEY moved, and Dr. HART seconded:

That a return should be made of those members of the profession in this Division who have *not* signed the pledges.

This was carried.

Public Medical Service Schemes.—Dr. O. H. WOODCOCK proposed, and Dr. WESTWOOD seconded, the following resolution:

That Scheme A be not approved.

This was carried unanimously. The following resolution was proposed by Dr. BRASSEY BRIERLEY and seconded by Dr. WESTWOOD, and carried unanimously:

That this Division accepts the *principle* of Scheme B—that is, payment for work done.

The Association and State Sickness Insurance.—The following resolution, proposed by Dr. STENHOUSE, and seconded by Dr. WESTWOOD, was carried *nemine contradicente*:

That this Division entirely disapproves of any scheme of State Sickness Insurance being worked by the British Medical Association.

Proposed Inspection of Medical Books by Government.—Dr. HART moved, and Dr. BRIERLEY seconded, the following resolution:

That this Division records its emphatic protest against the compliance of the State Sickness Insurance Committee with the extraordinary request of the Chancellor of the Exchequer that certain medical men should submit their books for inspection by the Government; and resolves that the State Sickness Insurance Committee be requested to notify the Chancellor of the Exchequer that they will advise all members of the profession to refuse any such request.

This was carried unanimously.

Election to Central Council.—Dr. PROWSE proposed and Dr. HART seconded:

That this Division instructs its Representative to propose Dr. O'Sullivan as candidate for election to the Central Council of Lancashire and Cheshire.

This was carried by a large majority.

Medical Members of Advisory Committee.—The following resolution, proposed by Dr. STENHOUSE and seconded by Dr. PROWSE, was carried unanimously:

That the State Sickness Insurance Committee request the medical members of the Advisory Committee to resign from that body, as any further service on that body can only be detrimental to the dignity of the profession.

ROCHDALE DIVISION.

A MEETING of this Division was held in the Wellington Hotel, Rochdale, on Tuesday, June 25th, at 8.30 p.m. Dr. LOKE was in the chair, and seventeen other members were present.

Expenditure of Association.—Dr. GEDDES moved, Dr. BRENTNALL seconded, and it was carried unanimously:

The Rochdale Division feels that the time has arrived when the strictest supervision of every item of expenditure in

essential, and strongly urges the Council to ask the chief officials of the three departments to meet the Financial Committee with a view to see how far expenses can be cut down with due regard to efficiency, and suggests that considerable reductions appear possible under (1) legal expenses, (2) contributions and reporting, (3) printing, (4) railway fares.

Death Certificates.—Dr. GRANT moved, Dr. CHADWICK seconded, and it was carried unanimously:

That in the opinion of this meeting it is inexpedient to state the duration of illness on death certificates.

Public Health Committee.—Dr. BRENTNALL moved, Dr. GEDDES seconded, and it was carried unanimously:

That the Public Health Committee in addition to the member *ex officio* should consist of two nominated by the Council and six by the Representative Body.

Payment of Representatives.—Dr. BATEMAN moved, Dr. JEFFREY seconded, and it was carried unanimously:

That in the opinion of this meeting the time has now come when the Council should take into consideration the payment of the necessary out-of-pocket expenses of Representatives at Representative Meetings.

Postal Referendum.—Dr. CHADWICK moved, Dr. WALKER seconded, and it was carried unanimously:

That this meeting considers it advisable that a full consideration should be given by the Association to the question of the Referendum by postal vote, and the arrangements generally for securing that the decision of the Representative Meeting shall, as far as possible, represent accurately the opinion of the Association.

Proposed Registration of Association as Trade Union.—Dr. MATHER moved, Dr. BRENTNALL seconded, and it was carried unanimously:

That it be an instruction to the Council of the Association to seek to obtain the opinion of the Divisions as to the desirability of the Association becoming a registered trade union.

Chelsea Resolution.—On being put to the vote 9 disagreed and 2 agreed with the resolution.

Public Medical Service.—The question of the Public Medical Service scheme was left to the discretion of the Representative.

State Sickness Insurance Committee.—Dr. BATEMAN moved, Dr. WALKER seconded, and it was carried unanimously:

That we disapprove of the action of the State Sickness Insurance Committee in recommending the members of the medical profession to agree to the Chancellor of the Exchequer's request for inquiry into doctors' remuneration in six selected towns.

METROPOLITAN COUNTIES BRANCH.

THE sixtieth annual meeting of the Branch was held on Friday, June 28th, at 4.30 p.m., in the Council Chamber, 429, Strand, W.C. Fifty members were present; Mr. H. BETHAM ROBINSON, President, was in the chair.

Election of Officers.—The following is the list of new officers elected for the year 1912–13: *President-elect*, Dr. Reginald Langdon Langdon-Down, 47, Welbeck Street, W.; *Past-President*, H. Betham Robinson, M.S., 1, Upper Wimpole Street, W.; *Vice-Presidents*, Dr. H. W. Chambers, 101, Goldhawk Road, Shepherd's Bush, W., Dr. E. W. Goodall, Eastern Hospital, Homerton, N.E., Dr. C. O. Hawthorne, 63, Harley Street, W., Dr. Harvey Hilliard, 30, Wilton Place, S.W.; *Honorary Treasurer*, Dr. Lauriston E. Shaw, 64, Harley Street, W.; *Honorary Secretaries*, Dr. Wm. Griffith, 1, Harley Street, W., Dr. R. E. Crosse, 68, Nightingale Lane, Wandsworth Common, S.W.

Annual Report.—The annual report of the Branch Council and financial statement were received and considered clause by clause. On the motion of Dr. MAJOR GREENWOOD it was agreed to amend the clause, "National Insurance Act," by substituting the words, "accepted by all the Provisional Local Medical Committees, with the exception of Wandsworth and Hampstead," for the words, "accepted by a large majority of the Provisional Local Medical Committees." The report, as amended, was agreed to.

Annual Report of Representatives of the Branch on the Central Council.—The annual report of Representatives of the Branch on the Central Council was adopted.

Alteration of Branch Rules.—On behalf of the Council the CHAIRMAN moved, and Mr. ATWOOD THORNE seconded:

That the Branch Rules 11 and 12 be altered to form one rule—Rule 11—to read as follows: "11. The management of the affairs of the Branch shall be vested in the Branch Council, which shall consist of the officers of the Branch, together with the Representatives of the Branch on the Central Council of the Association, and Representatives of Divisions, as follows: (*a*) *Ex officio*—All the Representatives of the Divisions on the Representative Body. (*b*) *Ex officio*—The Honorary Secretaries of the Divisions. (*c*) One member appointed by each Division, and such other members as the Division may be entitled to appoint on the basis of one Representative for every 100 members after the first 50." Branch Rules 11 and 12 are at present as follows: "11. The management of the affairs of the Branch shall be vested in the Branch Council, which shall consist of the officers of the Branch, together with the Representatives on the Central Council of the Association elected by the Branch, and representatives of the Divisions. 12. The Representatives of the Divisions on the Branch Council shall be not less than three for each Division, of whom one shall be the Honorary Secretary of the Division, and a second the Representative of the Division at the Representative Meeting; for every additional 100 members of a Division beyond 50 there shall be an additional Representative" (see By-law 16 of the Association).

Whereupon the following rider was moved by Dr. GOODALL, seconded by Dr. DORRELL:

That to the end of new Rule 11 the following words be added: Provided that if the offices of Honorary Secretary and Representative in Representative Meetings of a Division be combined in one person, the Division shall be entitled to elect one other representative on the Branch Council.

The alteration of the rule, together with Dr. Goodall's rider, was declared to be carried.

Installation of New President.—The PRESIDENT said he had much pleasure in asking Dr. G. E. Haslip to take the chair, as President of the Branch. Dr. HASLIP thereupon took the chair, and delivered the address published in this issue (p. 53).

Votes of Thanks.—A hearty vote of thanks was accorded to Dr. Haslip for his address, as well as to the retiring officers of the Branch. On the motion of Mr. BETHAM ROBINSON, seconded by Dr. MAJOR GREENWOOD, a very cordial vote of thanks was accorded Dr. E. W. Goodall upon his retiring from the office of Senior Honorary Secretary of the Branch.

CITY DIVISION.

Provisional Medical Committee.

AN adjourned meeting of this Committee was held at the Great Eastern Hotel on Tuesday, June 18th, at 9.30 p.m. Dr. EVAN JONES was in the chair, and the meeting was largely attended.

Medical Officers, G.P.O.—A letter was read from the medical officers to the General Post Office, expressing approval of the efforts of the British Medical Association on behalf of the medical profession, but stating that, as civil servants, it was impossible for them to sign the pledge as desired.

Medical Practitioners and Provisional Insurance Committees.—A letter was read from Dr. Cox explaining that the State Sickness Insurance Committee had decided to permit medical men chosen by public bodies to represent them on the Provisional Insurance Committees throughout the country to serve in that capacity, provided they were appointed simply as members of those bodies, and not as medical practitioners. Whereupon a resolution was proposed and unanimously carried:

That this Committee desires to express its regret that any practitioners were permitted to serve on these Committees, pending the granting of the minimum demands of the profession by the Insurance Commissioners.

Practitioners and Sanatorium Benefits.—Another letter was read from Dr. Cox, pointing out that in the opinion of the State Sickness Insurance Committee no practitioner should in the meanwhile accept any appointment with regard to the sanatorium benefits.

Public Medical Service.—Dr. GARRETT raised the question of a fee for the examination of subscribers admitted to the Public Medical Service, and pointed out that there was no arrangement for this in the scheme before them. This was discussed, but it was finally decided that there should be no fee for this. The examination was chiefly for the interest of the medical officers, and there were not the

same reasons for making a charge as existed under the present club system. Dr. MAJOR GREENWOOD drew attention to the fact that the resolution passed at their last meeting, forbidding all club doctors to examine any club candidates they were not bound to under their existing contracts, would have little practical effect, as certain clubs were asking their surgeons to examine these candidates as private patients. The meeting then proceeded to discuss the draft of the proposed Public Medical Service. Schemes A and B were considered, and the decision arrived at will be reported to the State Sickness Insurance Committee.

SOUTH-WEST ESSEX DIVISION.

A SPECIAL meeting of this Division, to which all practitioners residing within its area were invited, was held in the Wesleyan Church Schoolroom, High Road, Leyton, at 4 p.m. on Friday, June 21st.

Public Medical Service.—The meeting was called for the purpose of considering the scheme for a Public Medical Service printed in the BRITISH MEDICAL JOURNAL SUPPLEMENT for June 8th. Twenty-nine practitioners attended. Dr. C. H. PANTING presided. Schemes A and B were discussed and decisions arrived at which will be reported to the State Sickness Insurance Committee.

WESTMINSTER DIVISION.

A MEETING of this Division was held at 5 p.m., on Tuesday, June 18th, at the Council Chamber, 429, Strand, W.C. MR. HARVEY HILLIARD was in the chair, and there were twenty-four members present.

Report of Executive Committee.—The report of the Executive Committee for the past year was received and adopted. It stated that the consideration of the Insurance Bill and the relation of the profession thereto had involved an enormous amount of correspondence and clerical work, and the Committee felt that the thanks of the Division were due to the honorary secretaries for this work on behalf of the profession they undertook with so much public spirit. The Committee had met on fourteen occasions, and there had been seven meetings of the Division. The average attendance at the Executive meetings had been 12, and at the Divisional meetings 34, whereas the number of members in the Division was 292, and the number of practitioners resident within the area of the Division was over 500. It will thus be seen that only from 60 to 70 per cent. of the profession in the area are members of the Association. At three meetings of the Division all the practitioners in the area were invited, but only an average of 33 attended. Of the seven meetings three were held in the afternoon, with an average attendance of 28, and four were held in the evening, when the members dined together, the average attendance being 37. There were two scientific meetings and five political. With the exception of one meeting, when there was a cinematograph demonstration of photo-micrographs of living micro-organisms, the attendance had been no better at the scientific than at the political meetings. In accordance with the policy of the Association a meeting of all the registered practitioners resident within the Divisional area was called for the formation of a Provisional Medical Committee. That Committee had learnt that many practitioners holding club appointments had already sent notices to their clubs that they could not, after June 1st, 1913, continue to act unless the remuneration is increased to 8s. 6d. per member. All members of the British Medical Association in the Division were urged to sign the form of resignation and forward it to the Honorary Secretary of the Division, on the understanding that it would be made use of only on the order of the Central Council. Under the new By-laws of the Association the Division would in future send 3 [illegible] the Representative Meetings and 3 to the [illegible] Council.

[illegible]—The following officers were elected [illegible] of the Division to serve during the year 1912 13: [illegible] Dr. [illegible]cher; *Vice-Chairmen*, Mr. Howell E[illegible] *at Representative Meetings*, [illegible] and Mr. Howell Evans; *Honorary Secretary*, W. A. Milligan, M.D.; *Honorary Treasurer*, Dr. Archer, Dr. Dauber, Dr. [illegible] Dr. [illegible] Howell Evans, and Dr. Milligan. *Executive Committee:* The following former members of the executive, having served five years, are ineligible for re-election: Drs. Harvey Hilliard, F. G. Allan, Donald Barnes, Durham, and William Ewart. The Executive Committee for the ensuing year consists of the following members: Dr. Archer, Dr. Milligan, Dr. Kennard, Dr. Whitehouse, Mr. Howell Evans, Dr. O'Connor, Dr. Cautley, Dr. Longinotto, Dr. Haslip, Dr. Humphris, Dr. Roche, Dr. Mullings, Dr. Dauber, Dr. Barlet, Dr. Pennington, and Miss Daisy Stepney.

Finance.—The expenditure for the financial year ending December, 1911, was £40, as compared with £26 in 1910.

Central Council Election.—The last meeting of the Division decided to support the candidature of Dr. L. Archer for the Central Council, and all members of the Division were therefore earnestly requested to vote for him when they received the ballot papers.

The Profession and the Insurance Act.—D 55, from the State Sickness Insurance Committee, was considered and the following resolution was passed:

> That the Westminster Division of the British Medical Association, bearing in mind that the medical profession was never consulted before the introduction of the National Insurance Bill and was never afforded any opportunity of expressing any collective opinion upon it, is of opinion that, now the profession is being invited to do certain work under the Act, it reserves for itself the right to state the figure at which it is willing to do such work; at the same time the Westminster Division wishes to state that its members deplore that the Medical Advisory Committee should have shown any willingness to assist the Chancellor of the Exchequer in making examination of the books of medical men. The amount now received by practitioners has no relation whatever to work to be done under the National Insurance Act, and the profession is entitled to ask its own terms for such work. Further, with regard to "Number of assistants to general practitioners," the Westminster Division begs to state that it is too late to enter into discussion on these points.

Public Medical Service Schemes.—The Public Medical Service schemes were considered and recommendations were made which will be reported to the State Sickness Insurance Committee.

WILLESDEN DIVISION.

A MEETING of this Division was held at St. Gabriel's Hall, Anson Road, on Friday, June 28th, at 4 p.m. Dr. CORAM JAMES was in the chair, and twenty other members were present.

Election of Representative.—Dr. Macevoy was then unanimously elected Representative for the Division to the Representative Body, and in the event of his election not conforming with the by-laws of the Association, he was also elected Deputy Representative in the place of Dr. Percy Evans, who has gone abroad, and the Secretary was instructed to wire the election to the head office and follow by a letter. Dr. MACEVOY proposed and Dr. CRUDEN seconded:

> That a special meeting be called to instruct the Representative as to what position he is to take up in regard to matters to be considered at the Annual Representative Meeting, the arrangements for the special meeting being left to the Chairman and Honorary Secretary.

This was carried unanimously.

Treatment of Defective School Children.—A letter from the Harrow Division *re* the treatment of defective school children was read and discussed. Dr. MACEVOY proposed and Dr. ARMITAGE seconded:

> That the Honorary Secretary be instructed to write to the Harrow Division that this Division will consider their proposals when the question of the treatment of defective school children comes under discussion.

This was carried unanimously.

State Sickness Insurance Committee.—A letter from the State Sickness Insurance Committee (SUPPLEMENT, June 8th, p. 599) was read. Dr. TRAYLEN proposed and Dr. ARMITAGE seconded:

> That in the opinion of this meeting the action adopted by the State Sickness Insurance Committee of the British Medical Association in a letter dated May 31st, 1912, to the National Health Insurance Commission (England) is approved of.

This was carried unanimously. The Honorary Secretary was instructed to forward a copy of the resolution to the State Sickness Insurance Committee.

Public Medical Service.—The question of the Public Medical Service was then discussed. Dr. MACEVOY proposed and Dr. CRUDEN seconded:

That the matter be referred to the Provisional Medical Committee for Willesden, and that they report to the Division.

This was carried unanimously.

Appointment to Health or Insurance Committees.—Dr. MACEVOY proposed and Dr. SMURTHWAITE seconded:

That any member receiving a letter *re* appointment to an Insurance or Health Committee be instructed to forward it to the Honorary Secretary.

WOOLWICH DIVISION.

THE first annual meeting of this Division was held in the Old Town Hall on June 21st. The executive meeting was at 3.30 p.m., while the full meeting took place at 4 p.m. In the absence of Dr. COWIE, President, for a time, Dr. THOMSON (Eltham) took the chair. Material was prepared for the full meeting. As Dr. Holmes wished to resign his position as Vice-Chairman, another candidate had to be nominated. Dr. Sanford Smith (Eltham) was proposed by Dr. HIRSCH and seconded by Dr. THOMSON. This was carried. At the full meeting there were fourteen members present.

Election of Officers.—Dr. Sanford Smith was elected Vice-Chairman, and, on the Committee, Dr. Bernard Lacey. It was proposed by Dr. HIRSCH and seconded by Dr. WISE:

That the Executive Committee be elected as amended.

Letters.—Letters from the Medical Secretary and Dr. Chisholm Will (Dartford Division) were read.

Election of Representative.—Some comment took place *re* this Division not having a Representative of its own. It was resolved to appoint Dr. Chisholm Will as its Representative at the Representative Meeting for this year.

Public Medical Service.—The Schemes A and B *re* Public Medical Service medical benefits were discussed. It was proposed by Dr. GRAY DUNCANSON:

That the Woolwich Division, while desirous of discussing the two schemes, consider that the necessity for contract practice on such a scale is most regrettable.

This was carried.

Guarantee Fund.—The Guarantee Fund was mentioned, but it was left to the Honorary Secretary to send a circular letter to all the members resident in the Divisional area.

This was all the business.

MIDLAND BRANCH:

BOSTON AND SPALDING DIVISION.

A SPECIAL meeting of this Division was held at the White Hart Hotel, Boston, on Friday, June 21st, at 3.30 p.m. Dr. WHITE was in the chair, and twenty-six other members and three non-members were present.

Apologies for Non-attendance.—Regrets for non-attendance were received from many members and non-members.

Fees for Examination of Candidates for Friendly Societies.—The SECRETARY reported that Dr. Cox had stated that it would not be lawful to charge a fee for examination of candidates for admission into friendly societies until the expiration of notice to terminate present agreement.

Provisional Insurance Committees.—The SECRETARY read a letter from the State Sickness Insurance Committee in which mention was made of the duty of each doctor who had signed the undertaking to refuse service of a professional kind. In regard to the appointment of Dr. A. W. Tuxford, one of the county medical officers of health, on the Provisional Insurance Committee for the Holland Division, Dr. GILLESPIE-SMITH proposed and Dr. JACOBSEN seconded:

That he be asked to note Minute 78 of the Representative Meeting of February, 1912—that he have the support of the whole Division in withdrawing from that position.

The Secretary was requested to notify him of this resolution. This was carried *nemine contradicente*.

Public Medical Service.—After some discussion, it was unanimously resolved to adopt Scheme A—payment per capita with extras. The Public Medical Service was then carefully considered, and suggestions were made which will be reported to the State Sickness Insurance Committee.

Fourteen gentlemen had tea in the hotel after the meeting.

LEICESTERSHIRE AND RUTLAND DIVISION.

THE annual country meeting of the Division was held in the Council Chamber, Coalville, on Wednesday, June 19th, at 4 o'clock. In the absence of the Chairman, Dr. W. F. Gibbons, owing to an accident, Dr. TIBBLES took the chair. Twenty-six members were present.

Election to Branch Council.—Dr. Sevestre was elected to the vacancy on the Branch Council.

New By-Law.—It was resolved, on the motion of Dr. WALLACE HENRY, seconded by Dr. HEWLINGS,

That the ex-Chairman be an *ex officio* member of the Executive Committee.

The State and Medical Practice.—A discussion was opened on the State and Medical Practice by Dr. TIBBLES, in which Drs. HEWLINGS, WARNER, HENRY, STANLEY, BURKITT, SPRIGGS, PIKE, LOGAN, and BLAKESLEY took part. Dr. TIBBLES replied.

Vote of Thanks.—A vote of thanks to the Urban District Council for the use of the room was unanimously passed.

NORTH OF ENGLAND BRANCH:

GATESHEAD AND CONSETT DIVISIONS.

THE annual meeting of the combined Divisions was held in the Dispensary, Gateshead, on June 22nd. Dr. S. V. ROBINSON was in the chair, and eighteen other members were present.

Correspondence.—The SECRETARY read communications from the State Sickness Insurance Committee, also a letter from the Chelsea Division.

Report of Provisional Medical Committee.—The SECRETARY reported the final result of the canvass of the Division, which is as follows:

Total number practitioners	74
Members of British Medical Association ...	63
Now applying for membership...	3
Non-members	8
Signed pledge	70
Not signed pledge	4*
Resigned club appointments	37
Refused to resign	1
Signed pledge, no clubs	33
Not signed pledge, no clubs	3
Retired from general practice	1
Resident in area, not in practice	2
Whole-time appointments	7
Subscribed to Defence Fund	62

* Two are members of the British Medical Association and two non-members.

On the motion of Dr. ROBINSON, seconded by Dr. DAVIS the report was accepted.

Proposed Alteration of Branch Areas.—On the question of alteration of Branch areas, as proposed by the Newcastle-on-Tyne Division, the Executive recommended that the present time was inopportune to make any change, pending the probable redistribution of Divisional areas under the Insurance Act. On the motion of Dr. GREEN, seconded by Dr. KIMPSTER, the recommendation of the Executive was accepted.

Congratulation to Dr. Cox.—Dr. ROBINSON moved and Dr. GREEN seconded:

That a letter of congratulation be sent to Dr. Cox on his appointment as Medical Secretary of the British Medical Association.

This was carried *nemine contradicente*.

Election of Officers.—The following officers were elected: *Chairman*, Dr. C. R. Stewart; *Secretary*, Dr. James Patton; *Assistant Secretary*, Dr. Stanley Robson; *Representative at Representative Meeting*, Dr. W. J. Durant; *Deputy Representative*, Dr. A. Green; *Representatives on Branch Council*, Drs. Stewart, Durant, Patton, Mearns, and Farquharson; *Executive Council*, Drs. Stewart, Durant, Patton, Mearns, Farquharson, Robinson, and Kimpster.

Rules.—A copy of the rules of the Division having been sent to each member, were put on the agenda for consideration, amendment if required, and adoption. Dr. DURANT, having read the Standing Orders, proposed:

That the rules be adopted *en bloc*, and that the Standing Orders be incorporated in the Divisional Rules.

Dr. Green seconded the proposition, which was carried unanimously.

Suspension of Standing Orders.—Under the head of urgency, Dr. Farquharson proposed and Dr. Durant seconded that the Standing Orders be suspended. This was carried *nemine contradicente*.

Colliery and Works Surgeons.—The meeting now resolved itself into a Committee, when Dr. Farquharson proposed, and Dr. Charles seconded, the following resolution:

> That this Division presses on the Council of the North of England Branch the necessity of taking immediate steps to consider the position of colliery and works surgeons as affected by the Minimum Wages Act, and to promptly devise adequate means for their protection.

Dr. Farquharson explained to the Committee that colliery surgeons were being asked to adjudicate on miners with physical defects as to their ability to earn the minimum wage, and contended that this was no part of the colliery surgeon's duty. He cited an acute case in the Division. The Committee having discussed the resolution, and passed it unanimously, reported to the meeting, which resolved that the Gateshead Division requests the Council of the North of England Branch to take immediate steps to consider the position of colliery and works surgeons as affected by the Minimum Wages Act, and to promptly devise adequate means for their protection.

Newcastle-on-Tyne Division.

The ninth annual meeting of this Division was held at the Royal Victoria Infirmary, Newcastle-on-Tyne, on Thursday, June 20th, at 8.30 p.m., Dr. James Don in the chair.

Annual Report.—The annual report stated that the local organization of the profession to resist the Insurance Act had entailed a large amount of hard work for all the officials of the Division, but one result had been a substantial increase in the number of members. The present membership of the Division was 180, as compared with 165 in the previous year, and 25 new members awaited election. Out of 246 medical men in the Division eligible to sign the undertaking, only 4 had declined, and of these 2 were regarded as being perfectly loyal to their professional brethren. A subcommittee had interviewed the local members of Parliament to enlist their sympathy with the demands of the profession. The draft rules governing procedure in ethical matters had been carefully considered and recommendations made. The Division sustained a very severe loss on August 1st when its capable, energetic, and conscientious honorary secretary, Mr. T. G. Ouston, succumbed to an attack of pneumonia. The committee gratefully acknowledged the great part he took in the organization of the resistance to the National Insurance Act, and the amount of time he gave for the welfare of his professional brethren. Mr. R. J. Willan was appointed his successor. During the year five monthly winter scientific meetings, with an average attendance of 80, nine medico-political meetings with an average attendance of 40, and one motor-car meeting at Barrasford Sanatorium with an attendance of 24, had been held; in addition there had been twelve meetings of the Executive Committee. The report was unanimously adopted.

Finance. The annual accounts were presented, but their consideration was deferred until the amount of the grant from the central funds had been ascertained.

Election of Officers.—The following officers were elected: *Chairman*, Dr. Andrew Smith; *Vice-Chairman*, Dr. A. Campbell; *Honorary Secretary*, Mr. R. J. Willan; *Representatives in Representative Meeting*, Dr. J. W. Smith, sen., and Dr. R. A. Bolam were elected Representatives, with Dr. Andrew Smith and Dr. Don as deputies respectively.

Vote of Thanks.—A cordial vote of thanks to Dr. J. W. Smith, sen., for his services as Representative during the previous twelve months was adopted.

Powers to Representatives.—On the motion of Dr. Andrew Smith, sen., seconded by Dr. A. Campbell, the following resolution was adopted:

> That at Representative Meetings, excepting in special cases when they receive instructions from the Division as to how to vote, the Representatives be empowered to use their own judgement.

Representatives on Branch Council.—The following were elected: Drs. W. C. Beatley, R. A. Bolam, A. Campbell, R. Dagger, James Don, J. R. Morison, W. G. Richardson, W. L. Ruxton, A. Smith (Wicklow), J. W. Smith, sen., R. J. Williams (*ex officio*).

Ordinary Members of Executive Committee.—The following were elected: Drs. H. R. Angus, A. C. Burnell, J. J. Campbell, J. T. Dunlop, G. Foggin, W. S. Fraser, J. Hudson, T. C. Hunter, J. S. McCracken, and H. L. Rutter.

Retiring Chairman.—A vote of thanks was accorded to Dr. Don, the retiring Chairman, for the admirable way in which he had conducted the business of the Division during the period of anxiety.

New Rules.—The new rules for the Division, as recommended by the Executive Committee, were adopted with an addition regulating the length of notice to be given for the nomination of officers.

Ethical Rules.—Rule Z was adopted, and it was resolved that the model ethical rules adopted by the Division should come into force after their confirmation by the Representative Meeting.

Northern Counties of Scotland Branch

Banff, Elgin, and Nairn Division.

A meeting of this Division was held in Gray's Hospital, Elgin, on Wednesday, June 19th, at 3 p.m. Dr. Mackie, Vice-Chairman of the Division, presided, and there were also present: Drs. Sellar, Cruickshank, Brander, Finlay, Rennie, Alexander, Ironside, Taylor (Elgin), Taylor (Keith), and Stephen (Elgin).

Election of Representative in Representative Meeting.—The Chairman moved, and Dr. Cruickshank seconded, that Dr. Duguid, sen. (Buckie), be elected, and this was unanimously agreed to. The Chairman moved, and Dr. Taylor (Elgin) seconded, that Dr. J. A. Stephen be elected Substitute Representative, and this also was unanimously agreed to.

Instructions to Representative.—The annual Report of the Council and the provisional agenda for the Liverpool meeting were then gone over, and the Representative instructed in regard thereto. With regard to Motion 48, the feeling of the meeting was that necessary out-of-pocket expenses of Representatives ought to be paid, but that, owing to the heavy financial strain incurred by the Association at present, the matter might be left over for this year. The Representative was instructed to support Motions 11, 32, 33, and 50, and otherwise to use his discretion.

Public Medical Service.—After the meeting an informal discussion took place on the schemes for Public Medical Service issued by the State Sickness Insurance Committee.

North Lancashire and South Westmorland Branch.

The annual meeting of this Branch was held in Lancaster on Wednesday, June 19th, Dr. Cockill (Kendal), the President, being in the chair. There were thirty-seven members present.

Installation of New President.—After the usual formal business, the accounts, announcement of election of officers, etc., the new President, Dr. Blair (Lancaster) took the chair.

Vote of Thanks to Retiring President.—The President moved that a cordial vote of thanks be given to Dr. Cockill for his valuable services during the past year. This was carried by acclamation. Dr. Cockill suitably responded.

Insurance Act.—Dr. Oldham then gave a most interesting account of the present state of affairs regarding the Insurance Act.

Provisional Medical Committee.—Drs. Sturridge (Kendal), Livingston (Barrow), and Mannit (Lancaster), the Secretaries of the different Provisional Medical Committees, gave an account of the state of affairs in their several districts. The reports showed a most gratifying unity amongst the profession and were very satisfactory.

Public Medical Service.—After tea Dr. Mannit opened an informal discussion on the proposed Public Medical Service scheme, in which many members took part.

NORTH WALES BRANCH:

DENBIGH AND FLINT DIVISION.

A MEETING of the medical practitioners residing within the area of this Division was held at the Queen Hotel, Chester, on June 21st. Dr. J. OWEN JONES (Holywell) presided, and there were nineteen members present.

Votes of Condolence.—A vote of condolence was passed with the family of the late Dr. J. T. Jones (Llansilin), and with the family of the late Dr. D. C. Burlingham (Hawarden).

Provisional Local Medical Committee.—The reports of the conveners of the Provisional Local Medical Committee in their respective areas were read and accepted, and it was thereupon resolved:

> That this Division agrees to recommend that a capitation fee of 8s. 6d. be asked for, with 1s. per mile beyond the first mile from the doctor's residence.

Dr. J. D. LLOYD proposed and Dr. E. Moss seconded:

> That, in the event of the negotiations between the Advisory Committee and the Insurance Commissioners failing, a meeting of the Division be urgently summoned immediately after the final meeting of these bodies to consider the Public Medical Service scheme of the British Medical Association.

Dr. F. S. ROWLAND proposed an amendment, which Dr. J. E. H. DAVIES seconded:

> That the Public Medical Service Scheme be now considered by this meeting.

The amendment was lost and the original proposal carried by a large majority.

Matters Referred to Divisions.—The meeting proceeded to discuss the matters referred to Divisions published in the BRITISH MEDICAL JOURNAL SUPPLEMENT of May 11th. The meeting considered the following items in the annual report of Council, and expressed its approval of the reports under the following headings:

1. Resignation of membership when disputes or inquiry is impending.
2. Referendum or postal vote.
3. Machinery of Association in connexion with disputes.
4. Report on Medical Federation, Limited.
5. Division meetings to be held after Representative Meeting.
6. Maps of Division and Branch areas.
7. Report on position of practitioners examining patients under care of other practitioners.
8. Co-operation of Divisions in ethical cases.
9. Model ethical rules.
10. Death certification.
11. Employment of medical students by practitioners.

With regard to "certificates and reports on cases under the Workmen's Compensation Act, under the Employers' Liability Act, and at common law," the meeting instructed the Representative to use his own discretion as to voting when the matter comes up for consideration at the Annual Representative Meeting.

Payment of Expenses of Representatives.—The meeting disapproved of the notice of motion by the East Norfolk Division on the question of payment of personal expenses of Representatives at meetings of Representative Body.

SOUTH-EASTERN BRANCH.

THE sixty-eighth annual meeting of this Branch was held at the Town Hall, Bromley, on Wednesday, June 19th, and was attended by sixty-nine members.

The late Dr. Allfrey.—The PRESIDENT, Dr. George Wilks, before the commencement of business, referred to the loss sustained by the Branch through the death of his predecessor, Dr. Allfrey, and moved that an expression of condolence be sent to Mrs. Allfrey in her bereavement, informing her of the feelings of esteem, respect, and gratitude which were entertained for him. This was carried by all present standing.

Sympathy with Dr. Hoar.—A letter was directed to be sent to Dr. Hoar expressing sympathy and wishes for speedy restoration from the effects of his accident.

Election of Officers.—The election of officers was reported as follows for 1912–13: *President*, Dr. John Scott (Bromley); *President-elect*, Dr. Arthur Martin Mitchell (Guildford); *Vice-Presidents*, Dr. George Wilks (Ashford), Dr. G. R. Stilwell (Bromley); *Honorary Secretary and Treasurer*, Dr. E. A. Starling (Tunbridge Wells). Dr. Wilks then vacated the chair, which was taken by Dr. JOHN SCOTT.

Votes of Thanks.—Votes of thanks were unanimously passed to the officers of the past year and the auditors, and the latter were re-elected—Drs. Davies and C. Elliott of Tunbridge Wells.

Annual Report.—The annual report was taken as read, and on the proposal of Dr. WILKS, seconded by Dr. OWEN FOWLER, was, after some discussion, unanimously received and adopted.

Financial Statement.—The financial statement was taken as read, and on the proposal of Dr. OWEN FOWLER, seconded by Dr. STILWELL, received and adopted.

Revised Branch Rules.—The revised Branch rules were presented, and on the motion of the HONORARY SECRETARY, seconded by Dr. WILLOCK, were unanimously adopted.

State Sickness Insurance Committee.—Dr. WILLOCK of Croydon, member of the State Sickness Insurance Committee, then gave an account of the work of the Committee, and answered questions put by many members. Dr. T. BARRETT HEGGS proposed and Dr. ILLOTT seconded the following resolution, which was carried with acclamation:

> That this meeting of the South-Eastern Branch wishes to express its appreciation of the work carried out by Dr. Willock on the State Sickness Insurance Committee on behalf of the profession.

Government Inquiry as to Medical Remuneration.—Following this there was a long and animated discussion by a large number of members on the actuarial examination of doctors' books on behalf of the Chancellor of the Exchequer, to which objection was made by some; and on the early sending of notices for terminating contributory contract appointments.

Central and Local Defence Funds.—Dr. A. TENNYSON SMITH proposed and Dr. STILWELL seconded the following resolution, which was carried *nemine contradicente*:

> That this meeting recommends Divisions to impress upon members the urgent necessity of guaranteeing both to the Central and Local Defence Funds, especially to the Central Fund of the Association.

The PRESIDENT then delivered a valuable address on "The Profession, the Public, and the Politician." At the conclusion Dr. OWEN FOWLER proposed and Dr. ILLOTT seconded a very hearty vote of thanks to him.

Dinner.—Thirty members and guests afterwards dined together at the Royal Bell Hotel.

REIGATE DIVISION.

THE annual meeting of this Division was held at Laker's Hotel, Redhill, on Thursday, June 27th, at 4.30 p.m. Nineteen members were present.

Election of Officers.—The officers for the ensuing year were elected as follows: *Chairman*, Dr. A. R. Walters; *Vice-Chairman and Representative at Annual Meeting*, Dr. C. S. Palmer; *Representative on Branch Council*, Dr. C. Caldecott: *Honorary Secretary and Treasurer*, Dr. J. G. Ogle; *Executive Committee*, Drs. Blackler, S. A. Clarke, Hewetson, Gayner, Mackenzie, Porter, Price, Prince, F. W. Robertson, and Thornton.

Provisional Medical Committee.—The HONORARY SECRETARY read a report on the work of the Provisional Medical Committee, which showed that the canvass had been very successful, every medical man in practice in the Division having signed the pledge and resignations of clubs or had promised to do so.

Instructions to Representatives.—The annual report of Council and the agenda of the Annual Representative Meeting at Liverpool were considered, and Dr. Palmer was instructed to vote in favour of the payment of personal expenses of Representatives: to support the Council in opposing the proposals of the Medical Federation; to approve the recommendations of the Council to abstain from filling in the duration of disease in death certificates, and to support those relating to certificates and reports on cases under the Workmen's Compensation Act.

Public Medical Service.—The schemes for a Public Medical Service proposed by the State Sickness Insurance Committee were discussed and the following resolution was carried:

> That this meeting instruct Dr. Palmer to support either the Capitation Scheme A or the Epsom per attendance scheme, preferably the latter.

The meeting further authorized the Provisional Medical Committee at its meeting on July 16th to instruct Dr.

Palmer how to vote at the Representative Meeting if any fresh points arose on these schemes.

Patent and Proprietary Medicines.—Mr. Sewill made a statement concerning the evidence he was collecting to bring before the Select Committee on Patent and Proprietary Medicines, and appealed to members for suitable cases.

SOUTHERN BRANCH:

Southampton Division.

A special general meeting of this Division, duly called, was held at the Royal South Hants and Southampton Hospital, Fanshawe Street, on Friday, June 21st, at 3 p.m. There were present: Drs. Aldridge, Scallon, J. B. Scott, J. R. Gillespie, A. McKaig, W. A. Simpson, Le Quesne, Atkey, Lauder, Barham, Nelson, Rea, Burnett, Hughes, Tickle, Harman, Hardie, J. W. Fox, Kennedy, A. S. Pern, E. H. B. Fox, Farquharson, Welch, McDougall, A. Harris, May, and MacKeith. In the absence of the Chairman of the Division, Dr. May was chosen to preside.

Public Medical Service.—Schemes A and B were considered by the meeting, and decisions were arrived at which will be reported to the State Sickness Insurance Committee.

Tuberculosis Dispensaries.—A letter was read from Dr. A. Harris, postponed from the last meeting, *re* tuberculosis dispensaries. It was proposed and seconded:

> That no appointment be advertised in the British Medical Journal which is not in agreement with the interim report of the Tuberculosis Commission.

This was carried unanimously.

Assistants.—As regards the query by the Medical Secretary respecting assistants in this area, the Secretary was instructed to inform the Medical Secretary that those present know of no assistant employed in the area of the Division.

Provisional Medical Committee.—Dr. May, Honorary Secretary of the Provisional Medical Committee of the Division, made a statement as to the general position, and stated that Dr. Bathe, who had been appointed by the county borough council as the medical member of the Local Provisional Insurance Committee, had sent in his resignation.

SOUTH MIDLAND BRANCH:

Bedford and Herts Division.

The annual general meeting of this Division was held at the Castle Street Hall, Castle Street, Luton, on June 20th, at 3.15 p.m. Dr. Butters was in the chair, and nineteen other members and two non-members were present.

Election of Officers.—The following were elected officers for the ensuring year: Drs. Verdon, O'Meara, Stanbury Phillips, S. J. Ross, W. G. Nash, and W. A. Sharpin; *Branch Council*, Drs. Dixon, Lloyd, and Butters; *Chairman*, Dr. Holmes (Woburn Sands); *Vice-Chairman*, Dr. F. Seymour Lloyd (Luton); *Representative*, Dr. Bone; *Secretary*, G. H. Goldsmith.

Chelsea Resolution.—The Secretary read the following resolution from the Chelsea Division:

> That the Representative Body instruct the Council or the State Sickness Insurance Committee to approach the General Medical Council in order to ascertain if that body will be prepared to accept a charge of infamous conduct (such charge to be formulated by the British Medical Association) against any medical man who is guilty of accepting: (*a*) Any appointment which another practitioner has resigned when called upon by the British Medical Association to do so; (*b*) any further contract work which includes insured persons on terms which are not acceptable to the Local Provisional Medical Committee of his area.

Dr. Bone gave his opinion against the resolution. Drs. O'Meara and Durran also opposed. Mr. W. G. Nash proposed that Dr. Bone be instructed to oppose it. Dr. Dixon seconded. This was carried.

Provisional Medical Committee.—Dr. Stanbury Phillips then read a report on his work as Secretary of the North Bedfordshire Provisional Medical Committee, and Dr. F. S. Lloyd followed with his as Secretary of the South Bedfordshire Provisional Committee, both reports showing admirable loyalty on the part of members of the profession, whether members of the British Medical Association or not.

Public Medical Service.—The Public Medical Service schemes submitted by the State Sickness Insurance Committee were commented on by Dr. Bone, and a general discussion on the clauses in detail took place. It was agreed to submit the comments and suggestions of the members to the Medical Secretary. On a vote being taken as to which scheme the Division preferred, a majority voted in favour of Scheme B (based upon a payment-for-attendance system).

Votes of Thanks.—The meeting terminated with a hearty vote of thanks, proposed by Dr. Stanbury Phillips and seconded by Dr. Sworder, to Dr. Coombs for his services as Representative of the Division.

Northamptonshire Division.

A meeting of the Division was held in the Board Room of the Northampton General Hospital on June 21st, at 2.30. Dr. Baxter was in the chair, and forty-one members and visitors were present.

Public Medical Service.—The Chairman then made a speech about the Public Medical Service scheme, and Scheme A, based on a capitation fee, was selected for discussion. The scheme was discussed generally by Drs. Baxter, Hichens, Cooke, Tolputt, Roughton, and Buszard. Dr. Oldacres proposed and Dr. Cecil Powell seconded:

> That the fee for insured persons should be 8s. 6d. annually, and 1s. 6d. for medicine, provided that the cost of collection should be borne by the friendly societies.

This was carried unanimously. Dr. Greenfield detailed a provisional scheme that had been drawn up by the East Northants Provisional Committee. Dr. More wished to ascertain the feelings of the meeting about the £2 income limit, but the Chairman said it was one of the cardinal points of the Association, and had better not be discussed. Dr. Tolputt proposed and Dr. Cooke seconded:

> That the scale for non-insured persons should be left for the Local Provisional Committee.

Dr. Greenfield, seconded by Dr. Darby, proposed as an amendment:

> That this should be left to the County Provisional Committee.

The amendment was lost, and the original proposition carried. The meeting then adjourned.

SOUTH-WESTERN BRANCH.

The seventy-third annual meeting of the South-Western Branch was held at Newquay on June 26th, when forty-seven members were present

Annual Report.—The report of the Branch Council for the year 1911–12 was read and adopted. The report stated that the membership of the Branch on April 30th was 564, an increase of 93 on the year. In addition to the annual meeting at Exeter, over which Mr. A. C. Roper had presided, an intermediate meeting had been held at Plymouth on October 24th, 1911, when Dr. Alfred Cox delivered an address on the National Insurance Bill. In place of the ordinary winter intermediate meeting, a special meeting was held at Exeter in January to consider the aspect of the situation created by the National Insurance Act, and to discuss the policy of the profession in the immediate future. The chief matters considered by the Branch Council during the year were the draft Branch and Division ethical rules, which it was hoped would be passed in their final form at the Annual Representative Meeting; the arrangements for the local working of the Insurance Defence Fund, and the formation of provisional local medical committees for the purposes of safeguarding the interests of the profession within the area of the Branch. The Council recommended that the annual meeting in 1913 should be held at Torquay, and nominated Mr. G. Young Eales President-elect. The meeting accepted this nomination, and Mr. Russell Coombe was re-elected Honorary Secretary and Treasurer.

Representation on Central Council.—The Branch Council reported that it approved of an arrangement whereby a candidate from the Dorset and West Hants Branch should receive the support of the South-Western Branch for the Central Council for a certain time on the expiration of Mr. Domville's term of office.

New President.—Mr. ROPER then resigned the chair to Dr. HARDWICK, who expressed his thanks for the compliment paid to him in his election as President, and proposed a hearty vote of thanks to Mr. Roper, and that he be elected a Vice-President. This motion was carried unanimously, and Dr. HARDWICK then delivered his inaugural address.

President's Address.—Dr. HARDWICK said they had met at a critical period in the history of the medical profession. Never before had medical men been confronted with a situation so full of possibilities for good or evil, affecting the future status of their profession as a body and their means of livelihood as individuals. Never had the British Medical Association so great an opportunity of justifying its existence as the representative body of the general practitioner. They had been called upon by Parliament to undertake the administration of an insurance scheme which in many of its features was repugnant to the best traditions of the medical profession. Members of the medical profession were not definitely consulted about the measure, and all the regulations as to the conduct of medical practice were introduced into the scheme without the consent of those who were intimately affected by them, and who would ultimately be responsible for carrying them out. The financial provisions of the Act had admittedly been based on grossly inadequate fees—he used the Chancellor's expression—which, officials had advised him, had been gladly accepted by the medical officers of friendly societies in the past. No account had been taken of the fact that those inadequate fees were instituted some sixty or seventy years ago for the benefit of the poorer class of working men. Then wages were lower, the cost of medical education was fully one-third less than at the present day, and the standard of education lower, and the duration of the curriculum half that now in force. No account had been taken of the vast increase in medical and surgical knowledge, of improvements in treatment, or the general increased cost in drugs, dressings, and appliances. The medical profession had formulated its minimum demands. The Chancellor had said they were financially impossible. The Chancellor had the whole of the financial resources of the kingdom behind him; the general practitioner had only his brains and hands and such powers as the unity of the profession could afford him. The "inquisition" which was now asked for was not only uncalled for, but at the present stage could have no value in deciding the ultimate issues of the conflict. Before inviting medical men to lay before it the private details of their medical practices let the Government explain, if it could, why 15 million persons, a very large proportion of whom were admittedly unhealthy lives, should be attended medically at rates considerably less than those now paid for selected healthy lives in the postal, coastguard, and police services. When the final terms of settlement were placed before them they should not allow financial considerations alone to influence their decision, but resolutely refuse to serve on any panel unless the regulations and conditions were so framed as to secure absolute freedom from lay control, and the right of appeal to the General Medical Council on all matters affecting their status and reputation. He believed it would be far better for the public, the insured, and the medical profession that the administration of medical benefits under the Government scheme should be suspended. They were threatened with divers "pains and penalties" should they refuse to "come to heel." It was an open secret that the creation of a State medical service had been under consideration, that the present arrangements of the large friendly societies might be perpetuated, whilst a high official of one of the leading societies had even hinted that their charters and privileges might be taken away. They could afford to look upon those proposals with equanimity. Alternative schemes for a public medical service had been placed before the members of every Division, which were adaptable, with modifications, to meet the requirements of every district. Those provided not only for attendance on the insured, but, what was equally important, for their wives and families as well. If they remained united there would be nothing to prevent this service coming into operation next year if the Government refused to concede their reasonable requirements under the Act. Referring to the Act as a measure of sanitary reform, the President said that one was disappointed to find how little of practical value was to be found in its provisions, but the provision of sanatoriums for the treatment of the victims of tuberculosis amongst the working classes would be an immense factor in the fight now being waged against the disease. He went on to deal with other matters, including the appointment of medical officers of health to public bodies, and said that what was required was not the multiplication of sanitary authorities, but the reform and remodelling of the existing system.

At the conclusion of the address, after a hearty vote of thanks had been passed, a short discussion took place, in which Drs. W. R. WILSON, A. P. TRINDER, ROBERT SIMPSON, and R. T. CANN took part.

Winkleigh Dispute.—Three telegrams addressed by Mr. J. H. Clements, locumtenent, Winkleigh, to the members, were read, and without discussion it was unanimously resolved that they be allowed to lie on the table.

Luncheon and Dinner.—Dr. Hardwick entertained the members at luncheon before the meeting, and in the evening the annual dinner of the Branch was held at the Headland Hotel.

STIRLING BRANCH.

THE annual meeting of this Branch was held in the Station Hotel, Stirling, on June 18th. Dr. Joss presided over an attendance of thirty-five members.

Report of Branch Council.—During 1911 the membership increased from 66 to 90. Seven meetings were held, with an average attendance of 28. The expenses were £26, and the balance on December 31st was £11 1s. 6d.

Officers and Branch Council.—The following were elected for the ensuing year: *President*, Dr. Stewart (Falkirk); *Vice-President*, Dr. Joss (Denny); *Secretary*, Dr. Moorhouse (Stirling); *Representative to Representative Meeting*, Dr. John Young (Bonnybridge); *Council*, Drs. Buist (Dunblane), Dyer (Alloa), Hunter (Falkirk), McFarlan (Stirling), and Wilson (Alloa).

Provisional Insurance Committee.—It was unanimously resolved that no member should accept office on a Provisional Insurance Committee.

Supplementary Pledge.—The SECRETARIES of the Provisional Local Medical Committee in the Branch area reported satisfactory progress with the canvass of the profession. (Since the date of the meeting the supplementary pledge has been signed by every practitioner in practice in the area, and all medical officers to contract practice appointments have signed the resignation forms.)

Local Defence Fund.—The Local Defence Fund amounted to £1,491, and the number of guarantors was 85.

National Insurance Act.—The Representative was instructed to adhere to the resolutions regarding the £2 wage limit and 8s. 6d. capitation fee, and to use his discretion in voting on other matters.

Payment of Personal Expenses of Representatives.—The Representative was instructed to vote for the payment of these expenses.

Model Ethical Rules.—The draft scheme of rules for a Branch of one Division was approved.

Death Certification.—It was decided that the duration of illness should not be entered in statutory death certificates. It was resolved that the fees to be charged for death certificates requiring a statement of the duration of illness for insurance purposes should be:

5s. for a policy of less than £50.
10s. 6d. for a policy of £50 and less than £100.
£1 1s. for a policy of £100 or over.

WEST SOMERSET BRANCH.

THE seventieth annual meeting was held at the Railway Hotel, Highbridge, on Tuesday, June 25th, at 12.15 p.m. Mr. W. B. WINCKWORTH was in the chair, and fourteen members were present.

Annual Report and Balance Sheet.—The report stated that the members now numbered 96, an increase of 4. Owing to the passing of the National Insurance Act the year had been one of strenuous work, as the annual and autumn meetings had to be given up to medico-political discussions, and three special meetings had to be called in addition. At the spring meeting the cases shown were of

good number and considerable clinical interest. The attendance of members had been very good, reaching the high average of 35 per meeting. Fifteen visitors also attended during the year. There was no grant this year from the central office, but the balance of £32 15s. 6½d. remained in hand. The members wished to put on record their appreciation of the great and ungrudging services rendered by Dr. J. A. Macdonald to the medical profession, and this Branch in particular. Mr. W. B. Winckworth proposed, and Dr. W. C. G. Collins seconded, a resolution to this effect which was duly carried.

Installation of New President.—The new President (Dr. C. Balfour Stewart) took the chair, and subsequently delivered an interesting address on Mendelism.

Election of Officers.—The following officers were elected: *President-elect*, Dr. Bal'o ir of Chard; *Honorary Secretary and Treasurer*, Mr. Chas. Farrant; *Council*, Dr. W. C. G. Collins in place of Dr. Burns, time expired, and Dr. Vereker in place of Dr. Wilson, retired through ill health; *Representative*, Dr. J. A. Macdonald; *Deputy Representative*, Dr. Verrall of Bath.

Ethical Committee of Branch.—The Honorary Secretary proposed and Dr. Bird seconded:

> That the Council be appointed the Ethical Committee of the Branch.

Public Medical Service.—The President invited Dr. J. A. Macdonald to explain the Public Medical Service scheme as published in the Supplement of June 8th, 1912. After some discussion certain amendments were carried which will be reported to the State Sickness Insurance Committee, and Dr. Macdonald was instructed to vote accordingly at the meeting of Representatives.

Luncheon.—After the meeting the members had luncheon, and then adjourned to Greenwood, Huntspill, where they were hospitably entertained by the President, and a most enjoyable afternoon was spent.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH.

The annual meeting was held at Burghill, Hereford, on Saturday, June 29th, at 3.30 p.m. Mr. S. Colen Legge, President, occupied the chair, and there was a large attendance of members.

Election of Office-bearers.—The following were elected office bearers: *President-elect*, Mr. J. Lionel Stretton (1913–14); *Honorary Secretary and Treasurer*, Mr. S. Colen Legge.

Report of Branch Council.—The Honorary Secretary submitted a report, in which it was stated that there had been a very commendable increase in the membership for the year ending December 31st, 1911. The year commenced with a membership of 127, and closed with 170. This increase was due to the self-sacrificing labours of the respective Divisional Secretaries. Hereford showed a membership of 75½ per cent. to the total of profession in the area, and Worcester 73½ per cent., but the increase had been most marked in the Worcester Division, which had some leeway to make up, and it was to Dr. Neville Crowe that this improved state of affairs was due. The effort of the Branch had been entirely directed towards consolidating the interest of the profession in both Divisions and adjacent areas, and the Council had to acknowledge the loyal and cordial support received from Gloucestershire in this effort. Branch ethical rules had been adopted and sent to the Central Ethical Committee for approval, but the Council still awaited their return. The papers read during the year at the several Branch meetings had all been of exceptionally high merit and of a helpful character. The Council desired to express the indebtedness to the gentlemen who had taken the trouble to help forward the scientific and medical work of the Branch. At the end of 1910 the Treasurer's account showed a deficit of 11s. in the finances of the Branch, and the year 1911 closed with an increased deficit of £4 19s. 10d., the net amount received in 1911 from the Central Council being £28. The Council hoped that during the current year no deficit would be shown, although the balance in hand might be only trifling. Acknowledgement was made of the courtesy and tact with which Mr. Colen Legge, the President, had conducted the affairs of the Branch during his year of office, and the trouble he had taken in securing the reading of excellent papers at Branch meetings. The Council decided also to place on record their very warm appreciation of the services rendered by the Honorary Secretary (Mr. Morrison) during his five years of office, in which the Branch had increased in numbers very considerably and had held many successful meetings. The report was unanimously adopted.

Installation of New President.—Mr. C. S. Morrison then took the chair as President. After expressing his thanks for the honour conferred upon him and acknowledging the leniency and kindly consideration that had always been extended to him during the years he had acted as Branch Secretary, he said he felt sure that the acceptance of the office which he had just vacated by Mr. S. Colen Legge would be a distinct gain. He concluded by moving a hearty vote of thanks to Mr. Legge, the retiring President, which was carried by acclamation.

Vote of Thanks.—Mr. Edgar Morris moved, and it was carried by acclamation:

> That a hearty vote of thanks be recorded in the minutes to Mr. C. S. Morrison for his valuable services to the Branch as Honorary Secretary.

Garden Party.—This concluded the business of the meeting, and members adjourned to enjoy a garden party to which they had been invited by Mr. Morrison as President of the old-established Herefordshire Medical Society.

YORKSHIRE BRANCH.

The annual meeting of the Yorkshire Branch was held on Wednesday, June 26th, at the Hotel Majestic, Harrogate.

Election of Officers.—Dr. Gibson (Harrogate) was elected President, and Dr. Bronner was re-elected Secretary and Treasurer. Dr. Metcalfe (Bradford) was elected the representative on the Central Council.

President's Address.—Dr. Gibson gave a most interesting address—a plea for English spas—in which he described the various waters and methods of treatment at Harrogate.

Cases.—Dr. Ainsley Walker (Harrogate) showed a case of eczema of hands and feet with an affection of the nails, and Dr. Gibson a case of onychomycosis; Dr. Arthur Hall read notes on two cases of delayed chloroform poisoning.

After the meeting the members inspected the new mechano-therapy department of the baths.

Dr. Gibson entertained a large number of members to lunch, and thirty of the members dined together after the meeting.

Halifax Division.

A meeting of the Division was held at the Imperial Café, Halifax, on Monday, June 24th, at 8.30 p.m. Dr. J. Crossley Wright was in the chair, and twenty other members were present.

Halifax Health Week.—A letter was read from the Honorary Secretary of the Halifax Health Week. It was decided (on the proposition of the Chairman, seconded by Dr. Hunt) to accept the apology contained in the resolution submitted by the Health Week Committee, although it was not strictly in accordance with the terms of the resolution of the Division. The Honorary Secretary of the Division was ordered to send a letter to that effect, and to express the hope that in any future "health weeks" greater care would be taken in supervising the production of the "Official Handbook."

Payment for Examination of Candidates for Admission to Clubs or Approved Societies.—A letter was read from the Halifax and District Friendly Societies' Council expressing its regret at the action of the Division in raising the fee for the candidates who wish to join approved societies from 1s. to 2s. 6d. This action was considered unjust, and the Division was asked to reconsider the matter. It was said that in a great many cases the payment of 2s. 6d. was a great hardship, and that thus candidates were driven to join societies which admitted members without medical examination. The letter had previously been considered by the Divisional Executive, and the Honorary Secretary had been directed to point out to the Friendly Societies' Council that a medical examination for which a fee of 1s. was paid was either a farce or a charity on the part of the doctor examining, and that it was not unreasonable that a suitable fee should be paid for the examination, either by the candidate or the society

concerned. On the proposition of Dr. MARSHALL, seconded by Dr. ADAMS, the letter was approved.

Provisional Insurance Committees.—The two circular letters from the State Sickness Insurance Committee dealing with this subject were explained by Dr. PRIESTLEY LEECH. Very strong disapproval of the latest resolution of the Committee, *re* the election of medical men as laymen on the local Insurance Committees, was expressed. It was thought to be a very unwise thing to do, as it might lead the public to think that a split had occurred in the ranks of the profession. It was also thought that the State Sickness Insurance Committee had exceeded its duties in sending out such a resolution. A resolution to that effect was proposed by Dr. PRIESTLEY LEECH, seconded by Dr. MARSHALL, and carried unanimously.

Public Medical Service.

Both these schemes had previously occupied the attention of the Executive Committee, which elected a subcommittee to go further into the matter and to prepare a report on the schemes for submission to the meeting.

Scheme A.—The following resolution was proposed by Dr. MARSHALL, seconded by Dr. MORTON (Halifax), and passed with only one dissentient:

> That the Halifax Division of the British Medical Association, being aware of the Majority and Minority Reports of the Poor Law Commission and of the reports in the *Lancet* and the BRITISH MEDICAL JOURNAL on the evils of contract practice refuses to stultify the profession by even considering the Public Medical Service, Scheme A, based upon a capitation system of payment, which would simply perpetuate club practice with all its attendant evils.

The resolution was ordered to be placed upon the Agenda for the Representative Meeting.

Scheme B.—This scheme was gone through in detail, and the scale of fees submitted under Section 23 were understood to represent the minimum in case the doctors were allowed to dispense. A proposition to the effect was put by Dr. HUNT, seconded by Dr. PRIESTLEY LEECH, and carried unanimously.

On the proposition of Dr. DRURY, seconded by Dr. MARSHALL, the comments and finding of the subcommittee were approved, and the committee thanked for their excellent report. The Secretary was ordered to send the comments and report to the State Sickness Insurance Committee. The final resolution was ordered to be placed upon the Agenda for the Representative Meeting:

> The Halifax Division of the British Medical Association is of opinion that any scheme of Public Medical Service to be of any use should be worked through the Local Insurance Committee on the principle of payment for work done. If this is impossible, the Association should have nothing to do with the scheme, and refuse to work the Act.

Letter from Chelsea Division.—A discussion followed the reading of this letter, and it was finally decided on the proposition of Dr. PRIESTLEY LEECH, seconded by Dr. MARSHALL:

> That our Representative use his own discretion when the matter comes before the Representative Meeting.

Halifax District Nursing Association.—A letter was read from the Chairman of the Executive Committee, pointing out that sometimes the services of the nurses were obtained by members of the Division, and that no adequate return was made for such services. They were asked to protect the Nursing Association's interests from any abuse by indicating that some contribution was looked for in all cases where the patient could afford it. The meeting expressed sympathy with the objects of the appeal, and those present promised to do what they could to minimize any abuse. It was also thought most improper to make use of the association's nurses in any case where the patient was able to afford a fee of 10s. 6d. for the nurse's services, in which case a nurse ought to be obtained from the private nursing home.

Medical Examination of Territorial Recruits.—Dr. ADAMS brought to the notice of the members the low fees allowed by the War Office for this most complete examination.

Libel Action.—A resolution of sympathy with, and in support of the action of, the JOURNAL in the recent libel case was carried unanimously, on the proposition of Dr. PRIESTLEY LEECH, seconded by Dr. MARSHALL.

SHEFFIELD DIVISION.

THE annual meeting of this Division was held on May 31st in the Medical Library of the University. Dr. GORDON and, later, Dr. KERR were in the chair, and sixty-one members were present.

Honorary Secretary's Report.—The HONORARY SECRETARY reported that the number of members had increased from 199 to 239, and since the end of the year 30 more men had joined as new members. As there were 345 medical men on the register in the area of the Division, the percentage of members was high, but they ought to look forward to a time when every medical man in the Division would belong to the Association. The balance in hand at the end of 1910 was £34 18s., and the grant received in the year £20, making total receipts £54 18s.; the total expenditure was £40 2s., leaving a balance in hand of £14 16s. The expenditure was mainly connected with the National Insurance Act, and in future expense under that heading will have to be made out of local defence funds. During the year there had been seven Divisional meetings, with an average attendance of 62, and on two occasions the numbers present had exceeded 100. There had been nine executive meetings, with an average attendance of 17. The only matter of interest before the Division during the year had been the National Insurance Act, and this had been solely responsible for the increased membership of the Division and the increased attendance at the meetings. The undertaking was signed by 98 per cent. of the men in active practice in Sheffield, and the sum of £200 was guaranteed towards the expenses incurred locally in supporting the policy of the Association towards the Insurance Act.

Election of Officers.—The following officers were elected: *President*, Dr. W. S. Kerr; *Vice-President*, Dr. A. W. Cuff; *Honorary Secretary*, Mr. A. Garrick Wilson; *Representatives on Branch Council*, Drs. Cheesewright, Cuff, Forbes, and White; *Representatives at Representative Meetings*, Drs. Gordon and Sorley; *Executive*, Drs. S. Barber, Beeley, Birks, Branson, Carter, Dawes, Forrest, France, Hall, Hadley, Hardy, Hudson, Husband, Kemp, Kilham, Mart, S. Matthews, Moore, Nutt, Riddell, Sheahan, Sime, Simpson, Stokes, Thomson, Wilks, Wiseman, and Witts.

METROPOLITAN COUNTIES BRANCH.

KENSINGTON DIVISION.

A MEETING of the Kensington Division was held at Kensington Hall on July 10th to instruct the Representatives at the Representative Meeting at Liverpool. Mr. E. B. TURNER was in the chair.

National Insurance Act.

In opening a discussion with reference to the Insurance Act and the attitude to be adopted by Representatives with regard to it, the CHAIRMAN said that the State Sickness Insurance Committee had resolutely taken the line that it had no power to negotiate, but simply, if the minimum demands of the profession were not granted, to report to the Representative Meeting. He did not regard the report of the Committee as sufficiently strong with regard to the reference in the Chancellor's letter to the income limit, or with regard to the appointment by county councils of medical men, not as laymen, but to fill the places of the doctors on Insurance Committees. With the rest of the report he was in hearty agreement.

Dr. P. C. RAIMENT read the result of the canvass of the profession for the pledge and guarantee fund. He gave the following figures:

Retired practitioners ...	... 53	of whom	32	have signed.
Whole-time practitioners	... 17	,,	8	,,
Hospital residents ...	... 28	,,	24	,,
Honorary staff	... 60	,,	51	,,
Contract practice holders	... 73	,,	68	,,
Others	...420	,,	384	,,
	651	,,	567	,,

The apparent deficit was not a true index of effective men who were standing out. Of retired men who had not signed many were abroad. There were 43 who were non-effective, 9 were medical officers, prison officers, hospital residents, etc.; the effectives who had not signed could be reduced to 41 out of 650. The majority of these were resident in the southern area of Kensington, a district not likely to be greatly affected by the Insurance Act, and he had no doubt that none of these would take any work under the Act, or obstruct their brethren. There were only five of the contract practice holders who had definitely refused either to sign the pledge or resign their appointments. The total

number of definite refusals was nine; two of these held Government appointments and declined because they thought it politic. There were thus seven medical men who might possibly work the Act if asked.

Mr. Townsend moved that the Division endorse the recommendation that the Association should cease negotiations with the Government. He declared himself strongly in favour of that policy. The Council stated that no material concession had been made by the Chancellor since February last, and his letter in that morning's papers was simply a device for gaining time.

Dr. Burnhill seconded, observing that if the profession was going to offer an alternative scheme to the people it was time to put it in operation. The figures just read out showed that the profession in that Division was in an impregnable position.

Dr. W. A. Davidson hoped that this course would not be taken. The profession had stated its lowest demands, and these had not been refused. Until they have been, the extreme course should not be taken.

Dr. Beckett-Overy said that last week's Supplement to the Journal could only be read with disappointment and regret. The State Sickness Insurance Committee had worked hard, and yet no material concession had been obtained. He did not defend the Chancellor in any way, but the position was that the State Sickness Insurance Committee had undertaken certain responsibilities with regard to obtaining statistics of remuneration, and it would be a false move to break off negotiations until the data furnished had been considered. He imagined the Representative Meeting would never consent to appoint a committee with plenary powers as the Chancellor suggested. He was afraid the Public Medical Service did not touch the problem; it only catered for the thrifty. It would be difficult to persuade the public to support the service if it cost from 50 to 100 per cent. more than it was paying at present. The right policy for the profession would be to go on with its Provisional Medical Committees and the Guarantee Fund, which was not so large as it should be. There was no need to be precipitate: the Government was anxious to come to terms with the profession because it would suffer very greatly in the event of medical benefit being suspended. But the profession would also suffer, and until it knew the position all over the country it should hold its hand.

Dr. Culver James said there was nothing in the letter to give the slightest hope of the Chancellor giving way on the income limit, or the rate of remuneration, and it was waste of time to proceed with negotiations. He thought the profession would make a mistake if it put forward an alternative scheme; it was not its business to do that; the onus rested with the Government.

Dr. Crawford Thomson said that until Mr. Lloyd George was made to realize that the profession would not accept the Insurance Act nothing would be done. Negotiations had been of no use, but it was still open to the Chancellor to send a message to the Representative Meeting that he accepted the terms of the profession. As to the Guarantee Fund, he felt sure that whatever the position of the fund might be it would only be necessary for a notice to appear in the Journal for ample funds to be forthcoming when they were actually required.

Dr. Buttar hoped the Representative Meeting would break off negotiations. He thought that if they had been broken off before the profession would be in a better position at this moment.

Dr. Tanner said that delay could only bring about the disintegration of the profession, and that was what Mr. Lloyd George was playing for. He was in favour of an immediate ultimatum.

Dr. E. Wright, Dr. Rice-Oxley, and Dr. Kisch expressed a similar view.

Dr. Mills thought it would be a great pity not to wait until the actuary had reported, although it was quite likely that the result would be the same in the end.

The Chairman, before putting the resolution to the vote, mentioned the reasons that actuated the State Sickness Insurance Committee in agreeing to the appointment of an actuary. The Committee thought the demand an impertinence and that the results would be useless. Nevertheless, the Committee realized that if the request was refused it would be said that the doctors' case must be bad, since they refused to allow the figures to be inquired into. There was no hope of getting the 8s. 6d., or any of the cardinal points, but the number of pledges that had come in ensured a victory for the profession.

On being put to the vote, the resolution was carried, with one dissentient, amid loud applause.

The Division decided to appoint deputies to the official Representatives at the Liverpool meeting, and also to pass a resolution expressing regret that Dr. McCleary, of Hampstead, had seen fit to accept the post under the Insurance Commissioners.

The following resolution, moved by Dr. Buttar, was carried:

That, inasmuch as the new Council of the Association is being elected on the issues connected with the Insurance Act, the State Sickness Insurance Committee need no longer be a special body, duplicating the Executive of the Association, but should become a Committee of the Council, with additional members co-opted if necessary, for the complete representation of the profession.

Association Notices.

ANNUAL GENERAL MEETING.

Notice is hereby given that the 1912 Annual General Meeting of the British Medical Association will be held in the Small Concert Hall, St. George's Hall, Liverpool, on Tuesday, July 23rd, 1912, at Two o'clock in the Afternoon.

BY ORDER OF THE COUNCIL,

GUY ELLISTON,
Financial Secretary and Business Manager.

June 26th, 1912.

ELECTION OF MEMBERS OF COUNCIL BY GROUPED REPRESENTATIVES.

Notice is hereby given that Nominations for candidates for election of Members of Council by grouped Representatives for the year 1912-13 will be received by the Medical Secretary up to the end of the first hour of the proceedings of the Annual Representative Meeting, on Monday, July 22nd, 1912. Each Nomination must be on the prescribed form, copies of which will be forwarded by the Medical Secretary on application.

Separate forms have been prepared: (I) for Nomination by a Division (through its Representative), and (II) for Nomination by a Representative of a Constituency included in the Group, and those applying are requested to state for which purpose the form is desired.

The voting papers will be issued at the Representative Meeting to each Representative or Deputy Representative of a Constituency in the United Kingdom in attendance at the Meeting.

By order of the Council,

Alfred Cox,
Medical Secretary.

June 24th, 1912.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Edinburgh Branch: Lothians Division.—A meeting of the Division will be held in the Royal College of Physicians, 9, Queen Street, Edinburgh, on Monday, July 15th, at 3 p.m. Business: (1) Minutes. (2) National Insurance Act: Consideration of Report of Council upon the present position, and instruction of Representative at Representative Meeting at Liverpool thereon. (3) Any other competent business. Every practitioner in the Lothians is invited to the meeting.—Alex. M. Easterbrook, Honorary Secretary.

Oxford and Reading and Maidenhead Branch.—The annual meeting of the Branch will be held on Saturday, July 13th, in the Library of the Berks County Hospital, Reading, at 4.15 p.m. Agenda: (1) Minutes of last meeting. (2) Installation of President for 1912-13. (3) Election of President-elect and other officers. (4) Financial statement by the Honorary Treasurer. (5) Report of Branch Council. (6) Reports of Local Provisional Medical Committees. Clinical: (1) Sir William Osler, Bart., will open a discussion on the Causation of the Increase of Appendix Disease. (2) Dr. Freeman will show a case of Cerebral Diplegia. (3) Dr. Armstrong will give a demonstration of the Subjective Method of Estimating Blood Pressure. (4) Dr. Turrell will give notes of a case of Loss of Memory. If time permits other cases will be shown. After the meeting dinner will be held at the Caversham Bridge Hotel at 6.30 p.m. W. Duigan, Honorary Secretary.

National Insurance.

LETTER FROM THE CHANCELLOR OF THE EXCHEQUER.

WE have received from the National Health Insurance Commissioners (England) a copy of the following letter which the Chancellor of the Exchequer has addressed to "a medical correspondent":

11, Downing Street,
London, S.W.,
July 9th, 1912.

DEAR SIR,—

In reply to your letter, I fully appreciate the anxiety which you and many other members of the profession feel as to the present position with respect to the Insurance Act. Such anxiety is only natural when those engaged in any calling are faced with such a great change in the conditions of work with which they are familiar, as the Insurance Act must inevitably produce in the case of the medical profession. At the same time, a great deal of the uneasiness at present felt by some members of your profession rests, I am sure, on misunderstanding of the position, and I shall be glad if, by this letter, I can do something to clear matters up.

In the first place, I am surprised to learn that there is an impression in some quarters that the Government are not desirous of coming to terms with the doctors. This is entirely wrong. We have never wavered in our belief that the cordial co-operation of the medical profession is necessary in order that the best results may be obtained from the Insurance Act, and we are prepared to do all in our power to secure that co-operation. The only practical question is whether that co-operation can be secured by anything that it is in our power to do. Although public opinion will be most desirous that we should come to terms, it certainly would not countenance acceptance of every demand that might be made, and the same is true of Parliament.

Looking through the points originally put forward by the British Medical Association twelve months ago, it seems to me that substantially only two remain outstanding. The others have, I think, been in the main conceded, although in some cases adjustment may be desired in the framing of regulations, on which there should be little difficulty in coming to an agreement.

The two chief points that seem to me to be outstanding are the question of remuneration and the question of the income limit. As regards the subject of remuneration I have said—and I repeat—that the Government are prepared, as part of a general settlement, to recommend Parliament to increase the amount available for remuneration of those doctors who take part in the formation of panels. It is true that I have had to make clear that I did not expect to be able to meet the demands put forward by the British Medical Association for 8s. 6d. per head exclusive of drugs and of a long list of extras. I feel sure, however, that this demand was put forward without fully realizing what it meant. In private practice, doctors know the amount they receive from those they actually attend, and they find it difficult to realize what would be the effect on their income if they were paid a fixed sum per head per annum in respect of a large section of the population, whether they actually attended them or not. I hope that the inquiry which Sir William Plender is now carrying out will serve to remove this cause of misunderstanding once and for all.

As to the income limit, everything depends on what the demand of the profession on this point really means. The Government, supported by Parliament, held that this question must be settled locally, in order that due regard may be had to local conditions, and the Act is so framed accordingly. But, even if it were legal, the Government could not agree to the proposal that any powers conferred on the Insurance Commissioners should be exercised to coerce the Insurance Committees in the exercise of the discretion secured to them by the Act in this respect. So far as I can ascertain, no responsible political leader on either side has been prepared to support such a proposal.

I hope that, as I have suggested to the British Medical Association, the forthcoming Representative Meeting will appoint a committee with authority to negotiate with me in a practical spirit. I am convinced that it will be a misfortune, both for the country and, if you will allow me to say so, not less for members of your profession, if we are unable to come to terms. I still believe that the most satisfactory way of working the medical service under existing conditions will be by the system of free choice of doctor by patients, with the various safeguards for the profession which were inserted in the Act at the request of the British Medical Association. If, unfortunately, this is found impracticable, I do not doubt that the insured will be able to obtain medical attendance, either under other arrangements made by Insurance Committees, or by arrangements which they themselves will make by means of the money supplied from the insurance funds. But I am convinced that if we were driven to this way of doing things it would not be so satisfactory from the public point of view, and it would certainly be less remunerative, and in every respect less advantageous, to the profession than the arrangements that we can make if we come to terms.

I am, etc.,
(Signed) D. LLOYD GEORGE.

TREATMENT OF TUBERCULOSIS.

PROVISIONAL AND PERMANENT ARRANGEMENTS.

Finance Act, 1911, and National Insurance Act, 1911.

THE Local Government Board in England has issued, under the title transcribed above, a further circular letter, dated July 6th, to councils of counties and county boroughs, supplementing that issued on May 14th (BRITISH MEDICAL JOURNAL, May 18th, p. 1151). The circular letter is accompanied by a memorandum on the administration of sanatorium benefit by the National Insurance Commission (England).

THE LOCAL GOVERNMENT BOARD.

The circular letter of the Local Government Board points out that Insurance Committees must make some immediate arrangements for the treatment of insured persons recommended for sanatorium benefit, and that where fairly complete schemes are not yet in operation the arrangements must be of a provisional character. The Local Government Board points out that the Insurance Commissioners have advised the Insurance Committees—[so termed here, though in reality they are provisional committees—to endeavour to obtain the assistance and advice of the medical officer of health of the county or county borough in making such arrangements as are immediately practicable. The Local Government Board asks the council of the county or county borough to comply with this request, and, where the council is in a position to offer the use of a dispensary organization or sanatorium or other institution, to open negotiations with the Insurance Committee for the treatment of insured persons therein.

The Board goes on to urge the council of the county or county borough to prepare at the same time a complete scheme for the treatment of tuberculosis within its area, such scheme to relate to the whole population, and not only to insured persons. The county council is recommended to discuss the matter with all the sanitary authorities throughout the country and with the Insurance Committee. All applications for the approval of an institution or scheme should be made by the council of a county or county borough or a joint committee, or through one of these bodies.

As regards domiciliary treatment of cases of tuberculosis under the National Insurance Act, "the Board and the Insurance Commissioners concur in thinking it desirable that this should be carried out, as far as practicable, by general practitioners acting in consultation with the tuberculosis officers of the area, or other approved adviser, due regard being had to the importance of the hygienic condition of the home in all cases."

The Insurance Commissioners.

The memorandum of the Insurance Commission states that treatment for the purposes of sanatorium benefit may be given (*a*) in sanatoriums, hospitals, or other residential institutions, or (*b*) at tuberculosis dispensaries, or other non-residential institutions, or in the patients' homes. It is pointed out that Insurance Committees are not themselves empowered to provide institutions, their duty being to make arrangements with local authorities or suitable persons to the satisfaction of the Commissioners. Where treatment is required otherwise than in institutions, the Insurance Committees must make arrangements with persons or local authorities, other than Poor Law authorities, undertaking such treatment in a manner approved by the Local Government Board. The matters requiring the attention of an Insurance Committee are summarized as follows:

(*a*) To make arrangements for the medical examination of insured persons applying for sanatorium benefit, and for obtaining expert advice in order that the Committee may be satisfied that such persons are in fact suffering from tuberculosis, and, if so, may decide as to the kind of treatment most suitable in each case.
(*b*) To decide which, if any, of such persons should not be recommended for sanatorium benefit.
(*c*) To make suitable arrangements with a view to proper treatment being provided in each case in appropriate institutions or in the patients' homes.
(*d*) To submit the arrangements proposed to be made to the Insurance Commissioners for their approval.

The next part of the memorandum points out that, of the sum of £1,500,000 provided by the Finance Act, 1911, for the United Kingdom, the amount available for England is £1,116,000.

Reference is then made to the recommendations contained in the interim report of the Departmental Committee on Tuberculosis, and it is pointed out that in most districts it will be necessary for arrangements of a purely temporary and provisional kind to be made in order that such treatment as can be given through existing agencies may be made available for the benefit of insured persons at the earliest practicable date after July 15th.

The recommendations made by the Departmental Committee as to the main features of a permanent scheme are then summarized, and the memorandum concludes with the following recommendations as to the temporary and provisional arrangements to be at once made:

"Arrangements to be Made at the Commencement of the Act.

"33. For the reasons already stated[1] it is evident that in most districts the system of dispensaries, sanatoria, etc., above described, will not be available for some time after the commencement of the Act. Where and so far as it is not available it will be necessary for the Insurance Committee to make temporary arrangements at the outset.

"34. Moreover, the amount available for purposes of sanatorium benefit during the six months, July 15th, 1912, to January 12th, 1913, will be less than the amount which would be available in a similar period after the Act is in full operation, and for several reasons special financial arrangements will be made for this period. Under these arrangements each Committee will as from the commencement of the Act be credited with a sum equivalent to about £4 5s. per 1,000 of the total population of its area. The expenditure necessary to provide such treatment as can be given in this period will not be so great per head as when approved schemes are developed by the local authorities, because the accommodation in sanatoria, in which institutions the expense of treatment is greatest, will for some time be limited. It may be possible for the Committee to obtain treatment for a small number of cases in sanatoria and hospitals, but the majority of cases must be treated in dispensaries or at home, and it is further to be noted that, except in certain towns where the local authorities have already made considerable provision, dispensaries cannot be expected to be in working order for some time to come.

[1] Because time would be required for consultation between Insurance Committees, county and county borough councils, and other local authorities and bodies, and for the organization of institutes, and of a county scheme, and because there must inevitably be some delay before a sufficient number of medical practitioners possessing the requisite qualifications for the permanent post of tuberculosis officer can be available.

Provisional Scheme of Selection and Treatment.

"35. In making the necessary arrangements for administration at the commencement of the Act, the Insurance Committee should, at an early date, place themselves in communication with the county or county borough council with a view to the medical officer of health attending a meeting of the committee, as provided in Section 60 (2) of the Act, and advising them on the necessary arrangements.

"The matters which the Insurance Committee must in the first place consider, after taking the advice of the medical officer of health, are the following:

(*a*) The method by which persons applying for sanatorium benefit shall be medically examined and reported on, and recommended for the various kinds of treatment available;
(*b*) The institutions and means of treatment available for patients, and the arrangements which it is desirable should be made with the local authorities or managing bodies for their use.

"When a provisional scheme of arrangements has been arrived at, the Insurance Committee should submit their proposals to the Commissioners for approval.

"36. As regards the first of the above matters, viz., the method of medical examination and report, the Commissioners have consulted the Local Government Board, and are of opinion, the Local Government Board concurring, that the following procedure will enable the committee to deal with the administration of the benefit, so far as it can be dealt with at the outset, in those districts where a tuberculosis officer has not been appointed and the agencies available are very limited. It is suggested, briefly, that in these areas the medical officer of health of the county or county borough might properly, if on the Committee's application the council agree to such arrangement, be appointed to act temporarily as the expert adviser of the Committee in dealing with individual applications for sanatorium benefit. Where such an arrangement is made an insured person who believes himself to be suffering from tuberculosis and wishes to obtain sanatorium benefit would apply to the clerk (or acting clerk) of the Insurance Committee. The clerk will furnish him with a blank form of medical report, which the patient will be advised to take to his ordinary medical attendant or any other medical practitioner he may prefer. The practitioner should be asked by the patient to make the necessary examination and fill up the particulars indicated in the form. A fee should be paid by the Insurance Committee for the examination and report, and the Commissioners are advised that a fee of 5s. will be regarded as suitable for this purpose. Reports should be forwarded to the medical officer of health or other medical adviser appointed to assist the Committee in this matter. On his advice the Committee will select the cases that stand most in need of sanatorium benefit and decide what kind of treatment should be provided in each case.

"37. Even where it is decided that a patient should, if possible, be admitted to a sanatorium or hospital, an interval may elapse before admission can be obtained, and it may be necessary to make arrangements for the care of the patient in this interval. Where a dispensary is available a patient may be referred to it for some form of special treatment; in other cases arrangements should be made for the home treatment of the patient by a private practitioner. The general scheme of home treatment will be subject to the approval of the Local Government Board. The arrangements for treatment by private practitioners may be made in various ways: for instance, where this course is found more convenient, the patient may be authorized to obtain from his own medical attendant such treatment as may have been sanctioned in his case by the Insurance Committee to be provided at the cost of the funds of the Committee.

"38. The Commission fully realize that the duty entrusted under the Act to the Insurance Committees of securing treatment for tuberculous persons necessarily involves the consideration of many important problems, both technical and administrative. They are, however, confident that local authorities and their officers will at all times lend the Insurance Committees such assistance as they are able. The Commission will themselves be ready to advise and assist in any questions of difficulty that may be submitted to them, and they will be glad to learn

at an early date of the arrangements contemplated in the area of each committee."

A County Scheme.

The County Council of Kent has formally approved two reports submitted to it by its medical officer, Dr. W. J. Howarth, in accordance with the request of the Local Government Board as set out in its letter of May 14th. This scheme will serve to illustrate the kind of organization which will probably be proposed in other counties. The first report describes in detail the present position of the tuberculosis problem in Kent, including the prevalence of the disease in ratio to population in different localities, and the public bodies concerned in dealing with it; a scheme for the eventual full application of the sanatorium clauses is detailed; it is proposed to divide Kent into seven dispensary areas, each in charge of a medical officer, assisted by two nurses and a dispensing clerk. In each area would be a main and one or more auxiliary dispensaries elsewhere in the district. Though each dispensary officer would have head quarters and a certain number of beds at his disposition occupied by patients under his own immediate care, he would be an ambulant officer, visiting the patients in their own houses, and securing as far as possible the co-operation of local medical men, who, if willing, might remain in direct charge of the tuberculous patients on their lists. In such case the dispensary officer would merely act as consultant. With regard to sanatorium accommodation, it is proposed that the total accommodation shall be 205 beds, 105 in the various dispensary areas (15 in each), and 100 at a central sanatorium. The second report also puts forward plans for the administration of the sanatorium benefit during the next twelve months. The general conception is the same as that set forth in the larger report, but it is proposed to make little or no capital expenditure, and that whatever arrangements are made shall definitely be for twelve months only. In brief, the two reports may be written down as covering a triple object: (1) To establish an ideal; (2) to make arrangements which will secure some immediate benefit from the sanatorium clauses, and (3) from the working of these arrangements and from consultations concerning them between the County Council and the Insurance Committee, to determine what difficulties lie in the way of a realization of the ideal, and how far some approximation to it can quickly be secured. The total expenditure for the twelve months mentioned is put down at £6,226, this sum including £2,000 for four senior medical officers and £900 for three junior medical officers.

St. Pancras and Islington.

Proposed Tuberculosis Dispensary.

A meeting called by the four medico-ethical societies of Islington was held on July 3rd at Northampton House, Highbury, to consider the proposed formation of a tuberculosis dispensary for the district. Dr. Basil G. Morison presided.

The following resolutions were adopted by the meeting:

That any scheme for an antituberculosis dispensary that does not make provision for staffing by local general practitioners (except as regards the provision of a medical officer, bacteriologist, pathologist, or similar official) elected by the local medical practitioners will meet with the uncompromising opposition of the profession in Islington.

That this meeting considers the formation in Islington of a dispensary or dispensaries for the treatment of tuberculosis, controlled and staffed by the general practitioners of the district, to be urgently necessary.

That the executive committees of the four medico-ethical societies of Islington be empowered to appoint a subcommittee to deal with the question and to submit for the approval of the four societies a detailed scheme, so that all arrangements recommended by the subcommittee shall be in accordance with the rules laid down by the British Medical Association.

Dr. Wilson, in moving the first resolution, explained that the executive of the local Division of the British Medical Association had received a deputation from the Islington Health League to discuss the question. The policy adopted by the executive was to combat a tendency which seemed to be manifested to ignore the legitimate claims of the medical profession and to assume that work of this kind was outside the scope of general practitioners, whereas they were fully able to deal with tuberculosis by up-to-date and scientific methods. An assurance was received from the league that it was desirous of working in strict co-operation with the medical profession.

Dr. Fouracre urged the desirability of the medical profession adopting a constructive policy in view of the sanatorium benefits that would soon be provided under the Insurance Act, and establishing dispensaries controlled by the profession.

Dr. R. M. Beaton, the President of the St. Pancras and Islington Division, expressed some doubt as to whether a policy directed principally to the prevention of tuberculosis by active public measures was not likely to have the greatest effect. He criticized the Astor report as having been made chiefly by men who did not understand the point of view of the medical practitioner, who held himself to be perfectly competent to diagnose and treat the disease. The staffing of the dispensary should be on the lines that if there was a resident medical officer he should be in the position of a consultant whose advice the medical man in the neighbourhood could obtain in doubtful cases while treating the cases himself. The dispensary would act as a clearing house for relegating patients to domiciliary or sanatorium treatment.

ATTENDANCE ON OUT-PATIENTS.

The following resolution, submitted by the honorary medical staff of the Leicester Royal Infirmary, was adopted at a meeting of the governors, and will come into force on January 15th next:

> The honorary medical staff are of opinion that after January 15th, 1913, insured persons should not be attended as out-patients except upon introduction by their doctor, and that the service rendered should be in the nature of a consultation, and be confined to those unable to pay. They are also of opinion that all suitable cases, whether insured or not, should be eligible for treatment as in-patients as before.

INVESTIGATION OF THE WORK AND REMUNERATION OF THE MEDICAL PROFESSION IN CERTAIN TOWNS.

REPORT OF THE ACTUARY, SIR WILLIAM PLENDER.

The State Sickness Insurance Committee of the British Medical Association received the following report on the afternoon of July 11th, during its meeting on that day. It has therefore had no opportunity of considering the report, which is here printed without comment for the information of members.

REPORT.

5, London Wall Buildings,
London, E.C.,
12th July, 1912.

The Right Hon. the Chancellor of the Exchequer,
11, Downing Street, S.W.

Sir,

In conformity with instructions embodied in the Memorandum of the 12th June, 1912, I have, with the concurrence of the British Medical Association, examined the books for the two years ended 31st December, 1910, and 31st December, 1911, of Medical Practitioners in Cardiff, Darlington, Darwen, Dundee, Norwich and St. Albans, and I have obtained information from the Superintendents in charge of Hospitals, Infirmaries, and Dispensaries serving those towns as to the patients who have received treatment in the like period.

The number of Medical Practitioners in the six selected areas is 265. Of this number 51 refused access to their records, of whom 40 reside in Cardiff. The large proportion of refusals in Cardiff out of a total of 96 Practitioners in that City renders it impossible for me to submit the information obtained as in any way indicative of the medical experience in that City. The results shown in the subjoined tables are therefore confined to Darlington, Darwen, Dundee, Norwich, and St. Albans. In the 11

remaining instances where all information was refused, I have made estimates of the Income and Visits based upon the experience of other practitioners with due regard to the character and extent of the several practices.

The figures of population have been supplied by the local Registrars of Births and Deaths and the Town Clerks, and have been adjusted to correspond with districts adjoining or contiguous to municipal areas which are regarded by the doctors as being within their acknowledged sphere of service.

Gross Remuneration from Residents INSIDE the Towns.

	1910. Population, 404,184. No. of Practitioners, 167.		1911. Population, 418,580 No. of Practitioners, 171.	
	No. of Visits and Attendances.	Amount.	No. of Visits and Attendances.	Amount.
		£		£
(A) Visits at Patients' Houses and Attendances at Doctors' Surgeries; including Medicines supplied except in the case of Dundee	539,616	80,766	537,185	82,432
(B) Operations and other Services (including Maternity) for which Special Fees are charged		17,395		17,746
		98,161		100,178
Less—Bad Debts		6,972		6,824
		91,189		93,354
(C) Certificates and Reports		2,831		2,892
(D) Public and other Medical Appointments (Medical Officer of Health, District Medical Officers, part-time Hospital Appointments, etc.)		8,154		8,259
(E) Fees for Attending Coroners' Inquests, etc.		375		491
(F) Other Items of Medical Service		197		418
		102,746		105,417
(G) Patients Attended under Contract in respect of a Capitation Fee		8,154		8,491
	1910.	1911.		
No. of Persons (including juveniles)	41,576	43,763		
Rate per Capita	3s. 11d.	3s. 11d.		
Gross Income from Residents *Inside* the Towns		£110,900*		£113,908†

Per head of total population, 5s. 6d.
† Per head of total population, 5s. 7d.

The average Annual Gross Income derived from (A) Visits at patients' houses and attendances at surgeries, less a proportionate deduction for Bad Debts, is 4s. 2d. per head of the population after deducting therefrom the amounts attended under Contract. Adding to such balance the amount (G) derived from patients attended under Contract the average is 4s. 1¾d. per head of the total population. It will be seen that the practitioners' income in Dundee [illegible] hereinafter referred to, should be borne in mind in considering these averages.

Gross Remuneration from Residents OUTSIDE the Towns.

	1910. No. of Visits and Attendances.	1910. Amount.	1911. No. of Visits and Attendances.	1911. Amount.
(A) Visits at Patients' Houses and Attendances at Doctors' Surgeries, including Medicines supplied except in the case of Dundee	26,749	£11,830	25,278	£11,853
(B) Operations and other Services (including Maternity) for which Special Fees are charged		8,087		9,573
		19,917		21,426
Less—Bad Debts		350		304
		19,567		21,122
(C) Certificates and Reports		534		441
(D) Public and other Medical Appointments		405		431
(E) Fees for Attending Coroners' Inquests, etc.		40		41
(F) Other Items of Medical Service		1		1
		20,547		22,036
(G) Patients Attended under Contract in respect of a Capitation Fee		243		257
	1910.	1911.		
No. of Persons (including juveniles)	1,371	1,448		
Rate per Capita	3s. 6½d.	3s. 6½d.		
Gross Income from Residents *Outside* the Towns		£20,790		£22,293

Summary of Gross Income and Deductions Therefrom to Arrive at Net Income.

	1910.	1911.
Gross income from residents inside the towns	£110,900	£113,908
" " " " outside the towns	20,790	22,293
	£131,690	£136,201
Deduct:	1910.	1911.
Cost of drugs and other materials supplied to patients	£6,989	£7,263
	Number. 1910.	1911.
Salaries of Assistants—Qualified	10	13	1,734	1,846		
Dispensers, Nurses etc.	32	31	1,813	1,719		
Cost of collection of accounts			1,443	1,458	11,979	12,286
Net Income before charging rent, rates and taxes and expenses of carriage or motor					£119,711	£123,915

[illegible] fees received by non-resident doctors for attending patients inside the selected areas.

The Income of the Dundee Practitioners is exclusive of medicines, as in that town it is not the custom for the doctors to dispense their own prescriptions. The population of Dundee is 164,937, as compared with the aggregate population of the five Towns of 406,382, or 40.58 per cent. thereof.

Included in the figures relating to "Operations and other Services for which Special Fees are charged" inside and outside the towns, are amounts of £5,436 in 1910, and £5,345 in 1911 in respect of Midwifery Fees, representing 4,301 and 4,262 confinements respectively.

Owing to the want of detailed information in many of the practitioners' records, and to the custom obtaining in most of the towns to charge an inclusive fee, it has been impossible to separate charges for medicine supplied from income derived from visits to patients' houses and attendances at the surgeries, or to arrive at the number of Patients treated.

The following tables summarize the information obtained in regard to Hospitals and other charitable Institutions and Poor Law Infirmaries serving the five towns mentioned:

	Residents Inside the Town.		Residents Outside the Town.	
	1910.	1911.	1910.	1911.
Number of admissions in-patients ...	15,534	16,204	2,810	2,910
Number of out-patients attended ...	55,463	54,946	3,619	3,550
	70,997	71,150	6,429	6,460

	1910.	1911.
	£	£
Cost of drugs and other materials supplied to patients	6,438	7,004
Salaries paid to medical men—		
Whole time	2,092	2,279
Part time (included in gross income), page 2 ...	2,733	2,775
Salaries paid to dispensers and other assistants ...	1,203	1,225

I have the honour to be, Sir,
Your obedient Servant,
WILLIAM PLENDER.

SCOTLAND.

MEDICAL BENEFITS IN THE HIGHLANDS AND ISLANDS.

A COMMITTEE is to be appointed to report on the steps that may be necessary to provide medical benefit under the Insurance Act in the highlands and islands, and on the extra grant that would be required under Section 80 of the Act, by which it is applied to Scotland. It is stated that Sir James Dewar will be chairman, and that among the members will be Dr. Leslie Mackenzie, medical member of the Local Government Board of Scotland, Dr. J. C. McVail, deputy-chairman of the Insurance Commissioners, Scotland, Mr. Robertson, the Chief Inspector of Schools, and conveners of several of the northern counties, and the Marchioness of Tullibardine. Section 80 contains a provision to the effect that where owing to sparseness of population, difficulties of communications or other special circumstances, an Insurance Committee considers it desirable it shall have power, with the consent of the Scottish Insurance Commissioners, to modify or suspend any benefits, and to increase other benefits or grant one or more additional benefits to an amount equivalent to the value of the modification or suspension. It seems inevitable that the investigations of the Committee should raise the whole question of the relation of the medical profession to the parish councils in the highlands and islands.

BEHAVIOUR DURING DISEASE OR DISABLEMENT.

THE Insurance Commissioners (England) have made Regulations dated June 25th, 1912, requiring that every rule of an approved society with regard to the behaviour during disease or disablement of a member entitled to benefit under the Act shall be in the form set out in the following schedule:

A member in receipt of sickness or disablement benefit:
(*a*) Shall obey the instructions of the doctor attending him;
(*b*) Shall not be absent from home between the hours of (1) and shall not be absent at any time without leaving word where he may be found, provided that the (2) may, if they think fit, exempt the member from the operation of this Rule upon such conditions as they may impose;
(*c*) Shall not leave the (3) where he resides without the consent of (4);
(*d*) Shall not be guilty of conduct which is likely to retard his recovery;
(5)

MEETINGS OF THE PROFESSION.

NATIONAL MEDICAL UNION.

THE Secretary of the National Medical Union informs us that at a general meeting of the Union held on July 4th in Manchester, with Mr. G. A. Wright, President, in the chair, it was unanimously resolved to carry on the militant work of the Union in watching the interests of the profession and strengthening the British Medical Association in its determined opposition to the National Insurance Act as at present framed. Resolutions were adopted calling upon the medical members of the Advisory Committee to resign their positions, condemning the scheme of the Chancellor of the Exchequer for the examination of the books of medical men, expressing the opinion that it was anomalous that medical officers of health should be asked, or consent, to allow themselves to be elected on local Insurance Committees, and affirming to the Government and the public generally the determined opposition of the medical profession to the scheme in its present form.

LIMERICK.

A FULLY attended meeting of the medical practitioners of Limerick was held on June 24th, and the following business was transacted: The delegates who were present at the recent meeting of the profession in Dublin submitted a report on the various resolutions passed. This report was unanimously adopted. The following members were appointed to form a local Medical Committee, under Clause 62 of the National Insurance Act: Drs. M. J. Malone (Chairman), W. A. Fogerty, P. F. Graham, J. Holmes, T. K. Mulcahy, W. J. O'Sullivan, and J. F. Devane (Honorary Secretary). The names of four practitioners willing to serve on the Limerick Insurance Committee were submitted to the Irish Medical Association—namely, Drs. Everina Massy, W. A. Fogerty, P. F. Graham, and T. K. Mulcahy. They signed an undertaking to resign when called on to do so by the Conjoint Committee. The SECRETARY read an account of what had been done by the Medical Committee in connexion with contract practice. All the practitioners in Limerick having signed the "Contract practice undertaking," a circular was recently sent to the various friendly societies informing them that in future the fees for medical attendance on members of friendly societies would be at the British Medical Association rate of 8s. 6d. per member, without medicine or extras; a £2 per week income limit and medical examination before admission to medical benefit were also mentioned in the circular. The friendly societies held a joint meeting to consider the situation, and constituted themselves into a body known as the "Limerick United Friendly Societies." Correspondence has since been passing between them and the Medical Committee, with the result that the medical officers to the various societies have handed in their resignations. The societies so affected are: Ancient Order of Foresters, Ancient Order of Hibernians, Drapers' Assistants' Association, Independent Order of Oddfellows, Irish National Foresters, Limerick Mutual Benefit Society, and Royal Irish Constabulary Pensioners' Society.

PROVISIONAL MEDICAL COMMITTEES.

Leeds.

MEDICAL practitioners in the Leeds area held a meeting on June 27th for the purpose of receiving a report from the Provisional Local Medical Committee in respect of the

(1) Insert such hours of the evening and morning as may be desired. Different hours should be inserted for summer and winter.
(2) Insert the desired authority, *e.g.*, Committee of Management.
(3) Insert the place, town, or other desired area.
(4) Insert the desired authority.
(5) Add any further instructions desired by the Society.

inquiries made as to how many medical men would respectively decline or agree to act under the National Insurance Act on the terms at present offered. Dr. T. D. BELL presided, and delivered an address setting forth the main objections to the Act felt by medical men. He said that it vested in the hands of the Commissioners the power of removing any medical man from the panel, and gave him no power of appeal, despite the fact that on the Commission insured persons and friendly societies had a large majority. In all connexions other than criminal matters a doctor was accustomed to be judged by his professional brethren, and no one could call them lenient judges. But under this Act a doctor's livelihood and reputation were at the mercy of men who could not possibly assess his actions or realize the minor difficulties to which he was exposed. In regard to the local attitude towards the Act, Dr. Bell reported that the total number of practitioners in the Leeds area (including Leeds, Horsforth, Crossgates, Otley, Wetherby, Collingham, Boston Spa, Thorp Arch, Tadcaster, Sherburn-in-Elmet, Barwick-in-Elmet, Garforth, Kippax, Ossett, Morley, Batley, and Dewsbury) was 378, and, leaving out of count 44 men whose whole time was occupied in sanitary or educational work, all but 7 had signed an undertaking not to accept service under the Act until the demands put forward on behalf of the medical profession by the British Medical Association were met. One of these 7 was ill and could not be approached at present on the subject, but would certainly sign later on; 1 had no contract work and would not take any, and 1 had signed another pledge debarring him from service. Hence, there were practically only 4 out of the whole 378 practitioners in the locality who were apparently not willing to support the policy of their colleagues.

Bournemouth.

This committee was formed in May. It is made up of the executive of the Bournemouth Division, together with representatives from the various districts included in the Bournemouth Division—namely, Bournemouth, Christchurch, Poole and Parkstone, Ringwood, Wimborne.

The following are the names of the members of the Provisional Medical Committee:

1. *The Division Executive.*—Drs. W. Alexander, E. C. Bond, E. Kaye Le Fleming, W. H. L. Marriner, S. Montgomery, C. H. Watts Parkinson, F. Winson Ramsay, H. Simmons, W. Johnson Smyth, C. F. Spinks, C. R. Willans.
2. *Representing Bournemouth.*—Dr. F. C. Bottomley, W. L. Bradshaw, C. W. Branson, F. C. Forster, E. Hyla Greves, H. P. Jervis, T. Martland, B. W. Nankivell, W. S. Richardson, J. Medley Woods.
3. *Representing Christchurch.*—Drs. R. L. Legate, H. Hunter Woods.
4. *Representing Poole and Parkstone.*—Drs. J. A. Dickie, Vincent Milner, A. Tuthill, J. S. Watson.
5. *Representing Ringwood.*—Drs. C. E. Blackstone, J. Gott.
6. *Representing Wimborne.*—Drs. W. Auld, C. B. Thomson.

The first meeting was held on June 7th at the Medical Society's Rooms, Bournemouth. Dr. E. KAYE LE FLEMING was elected Chairman, Dr. E. Hyla Greves, Vice-Chairman. Drs. E. C. Bond and C. R. Willans were elected Honorary Secretaries.

Supplementary Pledge.—The Honorary Secretaries, with the help of the members of the committee, have carried out a canvass for obtaining signatures to the complementary pledge and resignation form. The following is the result of the canvass up to Saturday, July 6th:

Total number of medical men in the district		...	278
Total number of signed pledges ...	...	...	179
			Signed Pledge.
Number of retired men ...	... 82	...	16
Number not in practice, away, etc.	... 6		
Dentists on the *Medical Register*	... 4	...	0
Medical officers of health ...	... 1	...	0
Hospital residents	... 3	...	3
Hospital honorary staffs ...	... 61	...	51
Holders of contract practice appointments	59	...	57
Holding appointments at sanatoriums, etc.	5	...	5
Total number of men in active private practice	177	...	155

Of those holding contract appointments 49 have signed and handed in their resignations of all such appointments.

There are a large number of retired medical men living in this district, and these have not been actively canvassed up to the present. Of the ten members of the honorary hospital staffs who have not yet signed the pledge, nearly all are senior men, who are not in the least likely to undertake any work connected with the Act. Most of them are at present away, and that is why their signatures have not so far come in.

Colchester and District.

At a meeting of the Committee held on June 28th, 1912, the following resolutions were unanimously passed:

1. That an examination fee of 2s. be charged for all female candidates wishing to join any new club or lodge, and not to be entitled to medical benefits.
2. That after July 15th, 1912, no candidate will be medically examined for admission into any approved society without a fee of 2s. and without prejudice to existing contracts.

Willesden.

A meeting of the Committee was held at Dr. Coram James's on June 28th. It was decided that each member of the Committee should be supplied with a list of practitioners in the district, showing their position with regard to the canvass, and the following resolution was adopted:

That in addition to the list there shall be supplied a printed slip, which says: "A pledge to resign need cause no alarm, as the actual resignation forms will be held by the secretaries of each Provisional Local Medical Committee in every insurance area, and may never be actually used, and in no area will they be put into operation by the local Medical Committee until it is considered absolutely safe to do so in such area.

It was arranged that the next meeting of the Committee be held at Dr. Macevoy's, 19, Mowbray Road, on Thursday, July 11th, at 4 p.m.

Hampstead.

A meeting of the Committee was held on Friday, July 5th, at 8.30 p.m., at 19, College Crescent. Dr. J. FORD ANDERSON was in the chair, and fifteen members were present.

Club Appointments.—After the minutes of the last meeting had been read and confirmed, a letter from the State Sickness Insurance Committee *re* resignations of club appointments, dated July 1st, was read, and arising out of this the Secretary's report of the results to date was taken and the remaining canvass cards distributed. The results to date were given by the SECRETARY as follows:

Retired	14	of whom	4	had signed	pledge
Whole-timers ...	19	,,	4	,,	,,
"Home addresses" ...	23	,,	7	,,	,,
Not in practice ...	19	,,	7	,,	,,
Total unaffected	75	,,	22	,,	,,
Resident hospital appointments ...	4	of whom	3	had signed	pledge
Honorary staffs ...	19	,,	9	,,	,,
Contract practice ...	36*	,,	27	,,	,,
Remainder	102	,,	71	,,	,,
Total affected ...	161	,,	110	,,	,,
Total practitioners ...	236	,,	132	,,	,,

* Twenty-five have sent in their resignation.

Appointment under Insurance Commissioners.—A letter was read from the Wandsworth Provisional Medical Committee with reference to the appointment of Dr. McCleary as Principal Medical Officer to the Insurance Commissioners (England), and the Honorary Secretary was instructed to state what steps had been taken in the matter, in his reply. A letter was read from Dr. McCleary tendering the resignation of his membership of this Committee, whereupon Dr. PICARD moved and Dr. BARNETT seconded, and it was carried by 31 to 2:

That this Provisional Committee does not accept the resignation tendered by Dr. McCleary, but refers it to a meeting of the local profession to be called for the purpose by this Committee.

At their request the names of Dr. Oppenheimer and Dr. MacFadden are recorded as voting against the resolution.

The following rider to the resolution was moved by Mr. PEYTON BALY, seconded by Dr. BARNETT, and carried *nemine contradicente*:

That Dr. McCleary be invited to attend the meeting of the profession and arrange with the Honorary Secretary a convenient date not later than July 16th.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor,* BRITISH MEDICAL JOURNAL, *429, Strand, London, W.C.*]

SANATORIUM BENEFIT.

DR. CLAUDE C. CHIDELL (Sanatorium for Children, Eastcliff House, Broadstairs) writes: The nation has waited thirty years since Koch's discovery for a comprehensive attack on tuberculosis; Parliament has passed a measure providing the means; an interdepartmental committee, largely composed of some of our ablest professional brethren, has issued a report pointing out the directions in which the attack should be made; the various health authorities are already preparing detailed schemes in which the co-operation of all available forces, including those of general practitioners, shall be combined in the campaign.

Shall we, then, the rank and file, refuse to work a service which promises to be properly paid and otherwise well organized, because of a grievance in another branch of medical practice? It will be a deep stain on the patriotism of our profession if we do. Surely, as a matter of policy, it would be well to show that we will co-operate heartily in any department where we are well treated.

THE PUBLIC MEDICAL SERVICE SCHEMES.

The Epsom Scheme.

DR. E. C. DANIEL (Epsom) writes: I think Dr. Ledward's suggestion of a return of part of the surplus to the societies is an important one, and the arguments with which he supports it have much weight.

I should have preferred to see any surplus devoted to the provision of a fund for women and children; but giving the subscribers a personal interest in the fund is an excellent idea, and worth favourable consideration.

Dr. Heggs, of Sittingbourne, has drawn up, for the consideration of the Kent County Provisional Medical Committee, a set of rules embodying the principles of the Epsom scheme, which shows that the scheme is practicable, and carries the proposals I have put forward a stage further towards realization. If his Committee would allow these rules to be published in the JOURNAL it would, I think, be a great help to others who are working on the same lines.

There have been several letters in the JOURNAL lately, excellent no doubt in their way, consisting entirely of destructive criticism, and offering no suggestions for a solution of the problems before us. By all means let us have criticism—I invite criticism of the proposals I have put forward; but let the critic be constructive as well as destructive, and endeavour to propose a remedy for the defects he points out.

DR. H. D. LEDWARD (Letchworth, Herts) has drawn up a scheme to provide medical attendance for insured persons in the event of the Government failing to grant the minimum demands of the British Medical Association. The scheme is the development of the principle embodied in his letter published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of June 29th, p. 715, in which he contended:

If we are asked to accept the insurance risk we must be guaranteed adequate remuneration by the Government; failing this, a system of payment for work done, in which we are under no sort of contract, is the only one we can honourably accept.

His objections to the schemes submitted by the State Sickness Insurance Committee are that both necessitate contributions too high for general acceptance on a voluntary basis, and Scheme B would involve working under contract while at the same time necessitating elaborate booking.

The scheme Dr. Ledward forwards proposes that the Provisional Medical Committee for the county or county borough should ask the county insurance committee to adopt a scheme embodying the following principles:

1. Invite societies wishing to provide medical benefit for their members to join the scheme.

2. On behalf of each society form a fund for the payment of accounts for medical attendance upon insured persons out of—(*a*) sums paid by the Commissioners to the Committee in respect of the members of such societies as come into the scheme (6s. per member per year); (*b*) sums collected by the societies from their members for the purpose of augmenting the above (4s. per member per year).

3. Supply each member with a card stating that he (or she) may consult, when necessary, any registered medical practitioner who is willing to accept a stated rate of remuneration for services rendered, and that the Insurance Committee will be responsible for payment for the same.

4. Supply the secretaries of all societies joining the scheme with medical attendance forms and counterfoils.

5. Pay the accounts received from the local secretaries each month for medical attendance upon their members out of the fund formed as above on behalf of each society.

6. Return at the end of the year two-thirds of any surplus standing in the name of each society to such society, and retain one-third to be credited to the medical fund of such society for the ensuing year.

Dr. Ledward has printed a leaflet in which the rates of payment he proposes are set out and the advantages of the scheme are enumerated.

THE POSITION OF HOSPITAL RESIDENTS.

DR. LEONARD WILLOX (Nottingham) writes: As the enclosed correspondence may prove of interest to some of your readers I forward it for publication. On account of the Insurance Act, it would appear to be necessary in future for many hospital authorities to place a definite value upon those forms of remuneration not specified as salary.

General Hospital, Nottingham,
June 19th, 1912.

National Health Insurance Commission,
London, S.W.

Gentlemen,

Will you please inform me whether resident medical officers in hospitals will become compulsory contributors under the Insurance Act, and, if so, what will be the respective contributions of the employers and the employees?

I would point out that the medical staff in hospitals is composed of qualified and registered medical men, or women, who receive as remuneration, speaking generally, board, lodging, and washing, and salaries ranging from £40 to £100 a year, although in many hospitals no salary at all is given.

They are appointed for a period of from six to twelve months in most cases, after which time they may become engaged elsewhere at rates of remuneration which may, or may not, be above the £160 limit.

It is provided in Section 51 that "where the managers of any institution carried on for *charitable* or reformatory purposes prove that the persons who are *inmates* of and supported by the institution receive maintenance and medical attendance when sick, the Insurance Commissioners may grant a certificate of exemption to those managers, and where such a certificate of exemption is granted, any such inmates who are employed by the managers of the institution shall not, in respect of such employment, be deemed to be employed within the meaning of the Act."

The vast majority of hospitals *are* charitable institutions, and medical men engaged in them, when ill, receive free medical attendance. Could they, therefore, be classified as "inmates" under the foregoing section?

Again, what is the position, as regards insurance, of graduates who, as students, are attending post-graduate courses at colleges and universities for a period of months, and who, while so occupied, are not in receipt of any salary or private income?

I shall feel obliged if you will supply me with definite information on the points stated.

Thanking you in anticipation, I am, gentlemen,
Yours faithfully,
LEONARD WILLOX, M.B., Ch.B.

National Health Insurance Commission (England),
Buckingham Gate, London, S.W.,
June 29th, 1912.

Sir,

In reply to your letter of 19th instant, I am directed by the National Health Insurance Commission (England) to state that the Commissioners are advised that the term "inmate" does not include the staff of your hospital, but only patients. The resident medical officers would therefore appear to be liable to compulsory insurance under Part I of the National Insurance Act where the rate of their remuneration does not exceed £160 a year. In the calculation of remuneration for the purposes of the Act the value of board and lodging, if provided, will be taken into account, but no account is to be taken of private income, although if such private income not dependent on the personal exertions of the recipient amounted to £26 a year, or more, it would enable him, should he so desire, to obtain a certificate exempting him from the liability to become insured. The granting of such a certificate would not, however, relieve his employer from the liability to pay the employer's share of the contribution. The rates of contribution are set out in Part VI of the enclosed memorandum.

Graduates who, as students, are attending post-graduate

courses at colleges and universities are not employed within the meaning of the Act, and are, therefore, outside the compulsory provisions of the Act.

A set of official explanatory leaflets is enclosed.

I am Sir,
Your obedient servant,
(Signed) JOHN ANDERSON.

Leonard Willox, Esq., M.B., Ch.B.,
General Hospital, Nottingham.

MR. LLOYD GEORGE'S LAST LETTER.

Dr. H. G. L. ALLFORD (Hastings) writes: I have just read Mr. Lloyd George's letter of July 9th *re* Insurance Act in the public press. Curiously enough, I received a circular letter from Dr. Ballance, of Norwich, yesterday in the same strain. Comment is needless, but I may say that it shows that members of the profession must be very much on the *qui vive*, and stand firmer than ever, shoulder to shoulder, to fight this creeping thing that is threatening the profession with destruction.

[Owing to the large number of reports of Branches and Divisions which it is necessary to publish, in part held over from last week owing to the great pressure on that issue, it has not been found possible to find space for some letters recently received.]

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In ninety-five of the largest English towns 7,950 births and 3,763 deaths were registered during the week ending Saturday, June 29th. The annual rate of mortality in these towns, which had been 12.4, 11.9, and 11.6 per 1,000 in the three preceding weeks, further fell to 11.1 per 1,000 in the week under notice. In London last week the death-rate was equal to 10.8, against 11.1, 11.7, and 10.6 per 1,000 in the three previous weeks. Among the ninety-four other large towns the death-rates last week ranged from 3.2 in Bournemouth, 4.2 in Hornsey, 4.9 in Gillingham, 6.1 in Swindon, 6.2 in Lincoln, and 6.3 in Ilford, to 16.4 in Darlington, 16.6 in Oxford, 17.4 in Wigan, 17.6 in Bootle, 17.7 in Gateshead, and 19.7 in Rotherham. Measles caused a mortality of 1.6 per 1,000 in Leeds, 1.8 in Gateshead, 2.0 in Cardiff, 2.2 in Liverpool, 2.8 in Ipswich, 3.2 in Merthyr Tydfil, and 4.1 in Rotherham; and whooping-cough of 2.8 in Great Yarmouth. The mortality from the remaining infectious diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 27, or 0.7 per cent. of the total deaths, were not certified either by a registered medical practitioner or by a coroner after inquest, and included 3 in Birmingham, 3 in Liverpool, and 2 each in St. Helens, Bury, Manchester, Preston, and Sunderland. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,291, 1,329, and 1,358 at the end of the three preceding weeks, had further increased to 1,398 on Saturday last; 195 new cases were admitted during the week, against 185, 179, and 188 in the three preceding weeks.

In ninety-five of the largest English towns 8,334 births and 3,648 deaths were registered during the week ending Saturday, July 6th. The annual rate of mortality in these towns, which had been 11.9, 11.6, and 11.1 per 1,000 in the three preceding weeks, further fell to 10.8 per 1,000 in the week under notice. In London last week the death-rate did not exceed 10.3 per 1,000, against 11.7, 10.6, and 10.8 in the three previous weeks. Among the ninety-four other large towns the death-rates last week ranged from 2.9 in Eastbourne, 3.7 in Wimbledon, 4.6 in Northampton, 5.4 in Hornsey, 5.5 in Newport (Mon.), and 5.7 in York, to 15.6 in Blackburn, 16.9 in Stockport and in Bootle, 18.0 in Liverpool, and 20.5 in Rotherham. Measles caused a death-rate of 2.0 in Blackburn, 2.3 in Liverpool, 3.4 in Middlesbrough, and 4.1 in Rotherham, and whooping-cough of 3.4 in Grimsby. The mortality from the remaining infectious diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 39, or 1.1 per cent., of the total deaths we not certified either by a registered medical practitioner or by a coroner after inquest, and included 9 in Birmingham, 7 in Liverpool, 3 in Manchester, and 2 apiece in Blackburn, Sheffield, Hull, South Shields, and Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,329, 1,358, and 1,398 at the end of the three preceding weeks, had further increased to 1,417 on Saturday last; 201 new cases were admitted during the week, against 179, 188, and 195 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

[illegible] 1,163 births and 586 deaths [illegible] Saturday, June 29th. The [illegible] from 14.8 and 14.6 [illegible] 000 in the [illegible] recorded [illegible] Scottish [illegible] in [illegible] Dundee and [illegible] in Glasgow [illegible] and enteritis, [illegible] in [illegible] 1,101 births and 609 deaths [illegible] 14.0 [illegible] five

large English towns. Among the several Scottish towns the death-rates last week ranged from 4.3 in Perth, 5.0 in Motherwell, and 5.3 in Partick, to 22.4 in Dundee, 24.9 in Ayr, and 27.5 in Falkirk. The mortality from the principal infectious diseases averaged 1.4 per 1,000, and was highest in Falkirk and Hamilton. The 214 deaths from all causes recorded in Glasgow included 5 from diphtheria, 3 from whooping-cough, 3 from infantile diarrhoea and enteritis, 2 from scarlet fever, 2 from measles, and 1 from enteric fever. Seven deaths from measles were recorded in Dundee and 2 each in Edinburgh, Coatbridge, and Hamilton; 2 deaths from scarlet fever in Greenock; and 6 from whooping-cough in Edinburgh and 2 in Dundee.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, June 29th, 594 births and 354 deaths were registered in the twenty-two principal urban districts of Ireland, as against 572 births and 348 deaths in the preceding week. The annual death-rate in these districts, which had been 18.8, 17.2, and 15.7 per 1,000 in the three preceding weeks, rose to 16.0 per 1,000 in the week under notice, this figure being 4.9 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 15.9 and 12.1 respectively, those in other districts ranging from 4.6 in Ballymena and 4.7 in Sligo to 30.5 in Newry and 43.3 in Galway, while Cork stood at 27.2, Londonderry at 25.5, Limerick at 20.4, and Waterford at 13.3. The zymotic death-rate in the twenty-two districts averaged 1.3 per 1,000, as against 1.5 in the preceding period.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

FLEET SURGEON V. THORPE, to the *President*, for special hospital course.

Fleet Surgeon P. STAR, to the *Argonaut*, and for group of ships of Third Fleet, June 26th.

Fleet Surgeon A. BELL, to Royal Naval Hospital, Yarmouth (temporary), July 10th.

Fleet Surgeon J. ANDREWS, to Royal Marine Division, Plymouth, vice Corcoran.

Fleet Surgeon O. ANDREWS, to the *Exmouth*, on arrival.

Staff Surgeon W. KUIR, to the *Majestic*, and for groups of ships of Third Fleet, vice Fleet Surgeon Thorpe, June 12th, 1912.

Staff Surgeon W. GARDE, to Portland Hospital (temporary), June 27th, 1912.

Staff Surgeon W. POPE, to the *Cressy*, vice Pickthorn, June 17th.

Staff Surgeon J. VERDON, to the *Ganges* for *Ganges II*, vice Dudding, June 28th, 1912.

Staff Surgeon T. LIDDLE, to the *Challenger*, vice Patterson, June 15th.

Staff Surgeon A. NEWPORT, to the *Argonaut*, and for group of ships of Third Fleet.

Staff Surgeon H. HUNT, to the *Pembroke*, for *Jupiter*, on recommissioning, June 26th.

Staff Surgeon G. WALSH, to the *Queen*, for Second and Third Fleets, June 28th.

Surgeon M. FITZGERALD, to the *Defiance*, vice Worthington.

Surgeon C. WORTHINGTON, to the *King Alfred*, for Second and Third Fleets, Devonport, June 22nd.

Surgeon S. DUDLEY, to the *Pembroke*, for R.N. Barracks, vice Walsh, June 28th.

Surgeon H. HULL, to the *Caesar*, and for group of ships of Third Fleet, June 19th.

Surgeon G. MCCOWEN, to the *Wildfire*, for Royal Naval Barracks and Sheerness Dockyard, vice Murphy, June 30th.

Surgeon G. VICKERY, to the *Impregnable*, vice Barford.

Surgeon J. BARFORD, to the *Prince of Wales*, for Second and Third Fleets, Portsmouth, July 1st.

Surgeon T. COCK, to the *Jason*, for duty with mine-sweeping gunboats, June 12th, 1912.

Surgeon T. PATTERSON, to the *Torch*, vice Liddle, June 15th.

ARMY MEDICAL SERVICE.

LIEUTENANT-COLONEL HARRY S. MCGILL, from the Royal Army Medical Corps, to be Colonel, vice H. G. Hathaway, dated June 8th, 1912.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel A. P. BLENKINSOP has been appointed Assistant Director of Medical Services in India, vice Brevet-Colonel R. S. F. Henderson, K.H.P., dated May 9th, 1912.

INDIAN MEDICAL SERVICE.

COLONEL R. W. S. LYONS has been appointed Principal Medical Officer Sirhind and Jullundur Brigades, with effect from May 19th, 1912.

Colonel P. HEHIR to be Principal Medical Officer, Burma Division, with effect from March 25th, 1912.

Colonel A. O. EVANS to be Principal Medical Officer, Kohat Brigade, with effect from January 22nd, 1912.

Major W. H. OGILVIE, 40th Pathans, is appointed to officiate as Special Sanitary Officer, Delhi.

Major C. BOWLE EVANS is appointed to the substantive medical charge of the 2-8th Gurkha Rifles.

Lieutenant T. L. BOSTOCK is appointed to officiate as Surgeon Naturalist to the Marine Survey of India.

Captain A. M. JUKES is appointed to officiate as Deputy Sanitary Commissioner, Bengal.

The promotion of Major R. ROSS to Major is antedated from January 29th, 1908, to July 29th, 1907.

Lieutenant-Colonel S. HENDERSON succeeds to the vacancy in the list of advanced Lieutenant-Colonels caused by the promotion of Lieutenant-Colonel P. Hehir.

The services of Major G. BIDIE, M.B., F.R.C.S.E., are replaced at the disposal of His Excellency the Commander-in-Chief in India with effect from May 7th, 1912.

Lieutenant-Colonel H. SMITH, V.H.S., Civil Surgeon, 2nd Class, to be Civil Surgeon, officiating 1st Class, from April 4th, 1912, vice [illegible] on the departure on combined leave of Lieutenant-Colonel A. W. [illegible] Lane.

Lieutenant-Colonel B. H. CRAWFORD, M.D., on reversion to be Civil Surgeon, Karachi, vice Major H. Bennett, M.B., C.M., B.Sc., F.R.C.S.I., on deputation.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

AYR DISTRICT ASYLUM. — Junior Assistant Physician (male). Salary, £140 per annum.

BANBURY: HORTON INFIRMARY.—House-Surgeon. Salary, £80 per annum.

BANGOR: CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

BIRMINGHAM GENERAL HOSPITAL. — (1) House-Physician. Salary, £50 per annum. (2) Two House-Surgeons. Salary at the rate of £40 per annum for three months and £50 per annum for six months.

BIRMINGHAM INFIRMARY.—Two Assistant Medical Officers at the Dudley Road Infirmary. Salary, £105 and £120 per annum.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer. Salary at the rate of £50 per annum.

CAMBRIDGE: ADDENBROOKE'S HOSPITAL.—Second House-Surgeon. Salary, £80 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Salary at the rate of £70 per annum.

CARDIFF: KING EDWARD VII'S HOSPITAL.—House-Surgeon (Male). Honorarium, £30 for six months.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

COLCHESTER: ESSEX COUNTY HOSPITAL.—House-Physician. Salary, £80 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum, rising to £100 after six months.

CROYDON GENERAL HOSPITAL.—Anaesthetist and Junior House-Surgeon. Salary, £75 per annum.

DERBY: DERBYSHIRE ROYAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £60 per annum.

DUNDEE DISTRICT ASYLUM.—Junior Resident Medical Officer. Salary, £120 per annum, rising to £150.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

GRAVESEND HOSPITAL. — House-Surgeon. Salary, £100 per annum.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—House-Physician. Salary at the rate of £40 per annum.

GREAT YARMOUTH HOSPITAL.—House-Surgeon (Male). Salary, £100 per annum.

HAMPSTEAD BOROUGH.—Medical Officer of Health. Salary, £600 per annum.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—(1) Surgeon to Out-patients. (2) Resident Casualty Officer. (3) Assistant Casualty Officer. Salary at the rate of £140 and £60 per annum for (2) and (3) respectively.

HEREFORD COUNTY AND CITY ASYLUM. — Two Assistant Medical Officers (Males). Salary, £170 and £130 per annum, rising to £200 and £150 respectively.

HOLBORN UNION INFIRMARY, Archway Road, N.—Second Assistant Medical Officer. Salary, £80 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—(1) Assistant Resident Medical Officer. Salary, £100 per annum. (2) House-Physician. Honorarium, 30 guineas for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—(1) House-Surgeon. (2) House-Physician. Salary in each case, £50 for six months and £2 10s. washing allowance.

HULL ROYAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £60 per annum for six months, or £80 per annum for twelve.

LEAMINGTON SPA: WARNEFORD GENERAL HOSPITAL. — House-Physician. Salary, £85 per annum.

LEEDS HOSPITAL FOR WOMEN AND CHILDREN.—Two House-Surgeons. Salary at the rate of £50 per annum each.

LEICESTER POOR LAW INFIRMARY.—Second Resident Assistant Medical Officer. Salary, £130 per annum.

LEICESTER ROYAL INFIRMARY. — Assistant House-Surgeon. Salary, £80 per annum.

LINCOLN: LINCOLN MENTAL HOSPITAL.—Assistant Medical Officer. Salary, £150 per annum.

LIVERPOOL PARISH.—Resident Assistant Medical Officer of the Workhouse Hospital. Salary, £100 per annum and £20 for examining applicants for outdoor relief.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant House-Surgeon (non-resident). Honorarium at the rate of £105 per annum.

MANCHESTER CORPORATION.—Medical Officer under the Midwives Act. Salary, £250 per annum.

MANCHESTER UNIVERSITY.—Junior Demonstrator in Physiology. Salary, £100 per annum, rising to £150

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) Assistant House-Physician; (2) Assistant House-Surgeon. Salary at the rate of £40 per annum each.

MIDDLESBROUGH: NORTH RIDING INFIRMARY. — Assistant House-Surgeon. Salary, £75 per annum.

NATIONAL HOSPITAL FOR THE RELIEF AND CURE OF THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—(1) Registrar. Salary, £150 per annum. (2) Two Assistant Physicians for House-patients.

NOTTINGHAM GENERAL DISPENSARY (Branch). Assistant Resident Surgeon (Male). Salary, £160 per annum.

OLDHAM ROYAL INFIRMARY.—Third House-Surgeon. Salary at the rate of £80 per annum.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum.

PLYMOUTH INCORPORATION OF GUARDIANS. — Resident Assistant Medical Officer for the Workhouse and Infirmary. Salary, £200 per annum.

ROYAL EAR HOSPITAL, Soho.—House-Surgeon (non-resident). Honorarium, £40 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—(1) House-Physician. (2) Medical Officer (non-resident) for Prevention of Consumption Department. Salary at the rate of £60 and £250 per annum respectively.

ST. BARTHOLOMEW'S HOSPITAL, E.C.—Lecturer on Anatomy.

SALFORD ROYAL HOSPITAL.—Casualty House-Surgeon (male). Salary at the rate of £65 per annum.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone Road, N.W.—Resident House-Surgeon. Salary, £80 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary, £80 per annum.

SHEFFIELD ROYAL HOSPITAL.—Sixth Resident. Salary, £60 per annum.

SHEFFIELD: ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary, £70 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon (Male). Salary commencing at the rate of £70 per annum.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY. — (1) House-Physician. Salary, £100 per annum. (2) House-Surgeon. Salary, £120 per annum.

SWANSEA HOSPITAL.—House-Physician. Salary, £75 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Surgeon. Appointment for six months. Salary, £40.

WALSALL AND DISTRICT HOSPITAL.—House-Physician and Casualty Officer. Salary, £90 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Assistant Resident House-Surgeon. Salary, £75 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Surgeon. (2) Two Non-resident Casualty Officers. Salary at the rate of £50 per annum each for (2).

WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer. Salary, £120 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House-Surgeon. Salary, £120 per annum.

WOLVERHAMPTON UNION. — Assistant Medical Officer of the Workhouse and Medical Officer of the Cottage Homes. Salary, £140 per annum.

WORCESTER: COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary, £150 per annum, rising to £170.

CERTIFYING FACTORY SURGEONS. — The Chief Inspector of Factories announces the following vacant appointment: Newnham (Gloucester).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

ABBOTT, T. E., L.S.A., Government Medical Officer at Mount Molloy, Queensland.

BERRY, H. M., M.B., District Medical Officer of the Walsall Union.

CLIPSHAM, W. B., M.B.Syd., Medical Officer at Many Peaks Hospital, Queensland.

COUPER, S. B., M.R.C.S., L.R.C.P., Medical Officer of the Blaby Union Workhouse.

DOW, R., M.B., Assistant Medical Officer of the Edmonton Union Infirmary.

FINIGAN, D. C. O'C., M.R.C.S., L.R.C.P., District and Workhouse Medical Officer of the Fordingbridge Union.

FOULKES, P. G., M.B., B.S.Lond., District Medical Officer of the Orsett Union.

GAITSKELL, C. E., M.R.C.S., L.R.C.P., District Medical Officer of the St. Thomas Union.

HARRISON, A. R. H., L.R.C.P. and S.Edin., District Medical Officer of the Langport Union.

LEVY, A. Goodman, M.D., M.R.C.P., Physician to Out-Patients to the City of London Hospital for Diseases of the Chest, Victoria Park.

LIND, W. A. T., M.D.Melb., Pathologist and Neurologist, Department of Lunacy, Victoria.

LUSK, J. P., M.B., District Medical Officer of the Torrington Union.

MACWHIRTER, Alexander T., M.B., Ch.B.Glas., Outdoor House-Surgeon to the Glasgow Maternity and Women's Hospital.

MARTIN, G. J. M., L.R.C.P. and S.Irel., Resident Assistant Medical Officer, Portsmouth Parish Workhouse and Infirmary.

PATRICK, Adam, M.B., Ch.B.Glasg., Outdoor House-Surgeon to the Glasgow Maternity and Women's Hospital.

PRICE, E. H., L.R.C.P.Irel., L.S.A., Visiting Medical Officer of the Cardiff Union.

SCOTT, W. S., M.B., District and Workhouse Medical Officer of the Ellesmere Union.

STRAIN, Thos., M.D., Medical Officer of Health and School Medical Officer for the Urban District of Heston and Isleworth.

SYKES, Harold W., M.D., B.S.Durh., Assistant District Surgeon, Umvoti Division, Natal, S.A.

THOMSON, J. S., M.B., District Medical Officer of the Middlesbrough Union.

TODESCO, J. M., M.D.Flor., M.R.C.S., L.R.C.P., Junior Assistant Medical Superintendent of the St. Pancras Parish Infirmary.

WATT, J. L., M.B., C.M.Aberd., District and Workhouse Medical Officer of the Tavistock Union.

WHITE, J. A. Henton, M.D., F.R.C.S.E., Honorary District Surgeon to the Birmingham Lying-in Charity and Maternity Hospital.

MANCHESTER ROYAL INFIRMARY.—The following appointments have been made:

Assistant Medical Officers: E. B. Leech, M.D., M.R.C.P.; C. H. Melland, M.D., M.R.C.P.; F. E. Tylecote, M.D., M.R.C.P.

Assistant Director of the Clinical Laboratory: R. Briercliffe, M.B., Ch.B.Vict.

Accident Room House-Surgeon: John Gow, M.B., Ch.B.Vict.

UNIVERSITY COLLEGE HOSPITAL.—The following appointments have been made:

Clinical Assistant in the Throat Department: C. Banting, M.D., B.S., F.R.C.S.

House-Surgeon: A. C. S. Courts, M.B., B.S.

Obstetric Assistant: A. A. Henderson, M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

RAWES.—On Thursday, 4th July, at "The Lodge," Sarisbury Green, Hants, the wife of Leslie Rawes, M.R.C.S.Eng., L.R.C.P.Lond., of a daughter.

REILLY.—On July 8th, at 314, Commercial Road, Stepney, the wife of J. Reilly, M.B., of a son.

MARRIAGES.

RENSHAW—TAYLOR.—On the 4th inst., at St. Paul's Church, Kersal, Manchester, by the Rev. A. du T. Pownall, M.A., J. A. Knowles Renshaw, M.D., 11, St. John Street, Manchester, second son of Dr. and Mrs. Chas. J. Renshaw, Beech Hurst, Ashton-on-Mersey, to Amy, elder daughter of Mr. and Mrs. George Taylor, and niece of George H. Charlesworth, Claramont, Kersal.

RITCHIE—JOHNSTON.—At St. Mark's Episcopal Church, Portobello, on the 6th of July, by the Rev. H. S. Reid, M.A., John Ritchie, M.B., Ch.B., D.P.H., Deputy Medical Officer of Health to the County of Dumfriesshire, to Dorothy Anne, younger daughter of the late Norman W. R. Johnston, H.C.S., Edinburgh, and of Mrs. Johnston, Llandudno. At Home, 8, Albany Lane, Dumfries, 7th and 8th October.

SHEPARD—EVANS.—On July 9th, at Bidston Parish Church, by the Rev. R. Evan-Jones, Vicar of Llanllwchaiarn, Mont., uncle of the bride, assisted by the Rev. Canon Knox, Vicar of St. Ann's, Birkenhead, and the Rev. C. Welland, Rector of Old Alderley, cousin of the bridegroom, and the Rev. T. M. Standring, Vicar of the Parish, Dr. Arthur Harold Shepard, of Chelford, son of the late Henry Shepard, "Oatlands," Wicklow, to Muriel Sandford, only daughter of William P. Evans, "Brentwood," Bidston, Birkenhead.

DEATH.

SPRAWSON.—On the 12th June, 1912, at Dalhousie, Punjab, India, Theodora Mary, wife of Major C. A. Sprawson, I.M.S.

DIARY FOR THE WEEK.

THURSDAY.

ROYAL SOCIETY OF MEDICINE:
DERMATOLOGICAL SECTION, 1, Wimpole Street, W., 5 p.m. —Demonstration of Cases and Specimens.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, Wednesday, 4 p.m., Cases of Arrested Pulmonary Tuberculosis.

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.—Lectures daily (Saturday excepted) at 12 and 4 p.m. Practical Laboratory Work daily (Saturday excepted), 10 to 12 a.m. Medical Clinics, Monday and Thursday at 3 p.m. Operations, Friday at 3 p.m.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15 p.m., Some Medical Cases.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m., Cases Illustrating Diseases of the Eye.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Medical. Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, The Diagnosis and Treatment of Mitral Disease. Tuesday, Perforation of the Stomach and Duodenum with Special Reference to the Early Symptoms. Wednesday, The Ways in which Tubercle Bacilli Enter and Spread in the Body. Thursday, Selection of the Anaesthetic.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics: 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Nose, Throat, and Ear; 3 p.m., Demonstration on Clinical and General Pathology. Tuesday, 2.30 p.m., Operations; Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient. Wednesday, 2 p.m., Throat Operations; 2.30 p.m., Medical Out-patient; Skin and Eye Clinics: X Rays; 3 p.m., Pathological Demonstration; 5.30 p.m., Eye Operations. Thursday, 2.30 p.m., Gynaecological Operations; Clinics: Medical and Surgical Out-patient; 3 p.m., Medical In-patient; Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Surgical, Eye; 3 p.m., Medical In-patient; Pathological Demonstration.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday, Gynaecology, 10 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Demonstration of Minor Operations, 11 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday, Gynaecological Demonstration, 10 a.m.; Lecture, Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday, Gynaecological Operations, 10 a.m.; Lecture, Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. daily.

RECENT PUBLICATIONS.

The Dental Directory. London: John Bale, Sons and Danielsson. 1912. (Double F'cap 32mo, pp. 206. 2s. 6d.)

A well turned out volume of its kind, containing alphabetical and topographical lists of all practitioners of dentistry, both at home and abroad, whose names appear, or are entitled to appear, in the *Register* of the General Medical Council. Ample information is supplied as to the dental curriculum, societies, publications, and other kindred matters.

Arznei- und Diätverordnungen für die gynäkologische Praxis. By Professor Dr. Paul Strassmann. Berlin: August Hirschwald. 1912. (Cr. 8vo, pp. 192, with interleaving for notes. M. 1.60.)

A collection of the printed slips used by Professor Strassmann in his lectures setting out the prescriptions, diets, and modes of treatment employed in his gynaecological clinic. They may be found useful if used with circumspection.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		JULY.
13	Sat.	Oxford and Reading and Maidenhead Branch, Reading, Annual Meeting, 4.15 p.m.; Dinner, 6.30 p.m.
15	Mon.	Lothian Division, Edinburgh, 3 p.m.
		Annual Meeting, Liverpool.
19	Fri.	Annual Representative Meeting, 10 a.m.
20	Sat.	Annual Representative Meeting, 9.30 a.m.
22	Mon.	Council Meeting, 9.30 a.m. Annual Representative Meeting, 10 a.m. Secretaries' Conference and Dinner, 7 p.m.
23	Tues.	Annual Representative Meeting, 9.30 a.m. Annual General Meeting, 2 p.m., President's Address, 8.30 p.m.
24	Wed.	Council Meeting, 9 a.m. Sectional Meetings, 10 a.m. to 1 p.m. Address in Medicine, 12.30 p.m. Religious Services, 9 a.m. and 3 p.m.
25	Thur.	Sectional Meetings, 10 a.m. to 1 p.m. Address in Surgery, 12.30 p.m. Section of Surgery, 2.30 p.m. Annual Dinner, 7.30 p.m.
26	Fri.	Council Meeting, 9 a.m. Sectional Meetings, 10 a.m. to 1 p.m.
27	Sat.	Excursions.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 20TH, 1912.

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OF HIS

INVESTIGATION OF THE WORK AND REMUNERATION OF THE MEDICAL PROFESSION IN CERTAIN TOWNS.

THE report of Sir William Plender, issued at the end of last week, on the results of his investigation of the books of medical practitioners of Darlington, Darwen, Dundee, Norwich, and St. Albans, is an interesting document which will no doubt receive its full share of attention at the Annual Representative Meeting of the British Medical Association at Liverpool, but it is unlikely to be reached before the second day of the session—Saturday, July 20th.

In the meantime, the State Sickness Insurance Committee considers it desirable to draw attention to some of the fallacies which, if not inherent in the report itself, have been founded upon certain passages by some of the supporters of the Government, including Mr. Lloyd George himself.

The following criticisms are the result of a preliminary examination of the report by a Subcommittee of the State Sickness Insurance Committee.

The report states that 4s. 2d. is paid per head of the population in the five towns for ordinary attendances—that is to say, visits at patients' houses and attendances at doctors' surgeries, including medicines (with the exception of the case of Dundee). Much has been made of this figure, which is supposed to prove that the 6s. originally offered by the Chancellor was as a matter of fact satisfactory remuneration. The average rate of 4s. 2d. is arrived at by dividing the total income derived from visits at patients' houses and attendance at doctors' surgeries among the whole population, with the exception of those attended under contract on a capitation fee. The total income is the result of payments in respect of a number of attendances. This number of attendances if divided like the income amongst the whole population works out, when the persons attended under contract and at charitable institutions are deducted, at an average of 1.8 attendances per head of the population. To any one who has given the least study to this question the mention of such a number of attendances is sufficient to show that these attendances have not been evenly distributed throughout the whole population. It is known that the lowest estimate that any one has ventured to give of the number of attendances per annum on contract patients is four, and it may fairly be assumed that the well-to-do population, to whom the cost of medical attendance is no special consideration, get at least as much attendance as this. Therefore, taking the whole of the population of these towns it is evident that a large number of persons are either not attended at all or are very much under-attended.

Some of those who have dealt with the report, including the Chancellor himself, have assumed that the whole population resident inside the towns are private patients with the exception only of those attended in contract practice, whereas many of them are attended upon a charitable or semi-charitable basis. The report itself shows that in round numbers 71,000 persons residing inside the towns were attended at hospitals or other institutions during each of the two years under review. In addition many persons in every town and in every district receive the private charity of doctors, many are attended at a sum which cannot be called remunerative, and a great number who need attendance never get it. This latter fact has been made use of by the Chancellor of the Exchequer on many occasions, and is indeed one of the main arguments for the institution of medical benefits by the Act. But it is one of the few certainties of the situation that under the Act the amount of medical attendance will rise considerably. Many people will receive attendance which they have never had before, and though this will be a good thing, and though it may be said that it will be paid for, it must not be forgotten that universal experience shows that under any form of contract the tendency is to take advantage of the unlimited service provided. In addition

to this the salutary principle of free choice of doctor pressed for by the British Medical Association and adopted by the Government will undoubtedly have the effect of increasing the total amount of attendances.

Another point which has not received much consideration but which is bound to increase the amount of attendance is the fact that sickness benefit only commences on the fourth day of illness, and therefore in order to be sure of being in a position to claim the benefit as soon as it is due, the tendency will be for insured persons to seek the assistance of a doctor at an early stage of any illness. This is a desirable result, but it will certainly lead to medical advice being sought even in many trivial complaints for which at present it is rarely asked. The fact that increased medical attendance will certainly be required under the Act need not be laboured, because it was acknowledged in the most unreserved fashion in the letter from the Commissioners of June 26th, 1912.[1] In that letter the following admission was made: "The Government have always recognized that the average medical remuneration per head of the insured population on account of medical benefit under the Act should not only not be less than that received per head under existing conditions, but should equitably be greater in view of the greater demands that are likely to be made upon the work of the profession under the Act than had hitherto been usual." It might, indeed, be said that, if the Government could guarantee that only an average of 1.8 attendances would be required by an insured person annually, then there might be something to be said for an acceptance by the profession of the 6s. which has been offered as medical remuneration under the Act.

A point which was referred to by the Chancellor of the Exchequer in his speech at Kennington (July 13th) is the fact that in Dundee medicines are not supplied by the doctor, and this was assumed to be a point in the actuary's report which was in favour of the profession. It must, however, be noted that if the medicines were supplied by the doctors in Dundee, the fees charged in that town would certainly be higher. Reference may be made to the untenable argument advanced by the supporters of the Government to the effect that, whereas 4s. 2d. appears to be the correct amount of medical remuneration per head per annum, the profession in asking for 8s. 6d. is demanding to have its income doubled. As has been already shown, this is pure fallacy, but if this kind of argument may be allowed on one side it would be perfectly fair to point out on the other that whereas the amount per attendance obtained by taking the population inside and outside the five towns amounts to 5s. 9d., the Association has only asked for a sum, namely, 8s. 6d., which if divided, as experience teaches us it would probably be necessary to divide it, into payment for five attendances (2 visits and 3 consultations at the surgery) would only produce 1s. 8½d. per attendance.

It is a curious fact that up to now the Chancellor of the Exchequer, the Commissioners, and the supporters of the Government generally have entirely ignored the calculation put forward by the Association in its memorandum placed before the Chancellor on June 12th last.[2] Nothing the Association can say seems to dispel the delusion into which the Chancellor and his advisers appear to have fallen—namely, that any increase in medical remuneration given as regards insured persons will apply to the uninsured. The only effect it could be imagined to have would be in respect of its application to 12 million insured persons, while, as shown in the memorandum above referred to, the uninsured may be divided into two parts; about half would be private patients, from whom it may be assumed that proper fees would be obtained. The rest would consist of (*a*) those who are and will remain objects of charity; (*b*) those uninsured persons who would still be attended through some form of contract practice, and who, not being subsidized by the State and by their employers, might still claim some measure of charitable treatment at the hands of the profession.

We would refer those who are desirous of showing not merely that the Government is actuated by a benevolent desire to increase the income of the medical profession, but of getting at the truth in regard to this matter, to the memorandum above mentioned, which has received very little attention at the hands of the Chancellor, and, so far as this argument is concerned, has never been challenged.

Taking Sir William Plender's report as it stands, it will be seen that the figures have little bearing upon the situation which will arise after January 15th, 1913, and that the inferences to be derived from it do not in any way weaken the claim of the Association for medical remuneration under the Act of 8s. 6d. per head, exclusive of extras. The public and the Government must not be allowed to forget the fact put prominently forward by the Association but conveniently ignored by the Chancellor and the Commissioners, that when the Government supplies medical attendance on its postal and other civil servants it pays for carefully selected lives an annual capitation fee of 8s. 6d., which includes the provision of medicines.

The elaborate and costly inquiry of the Government cannot obscure this very relevant fact, and in no way affects the claim made by the Association—that for lives which are not selected, and for a service in which at least as careful attention will be required, 8s. 6d., without medicines, is not an unreasonable fee to ask.

[1] BRITISH MEDICAL JOURNAL SUPPLEMENT, July 6th, p. 17.

[2] Published in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL on July 6th, page 29.

British Medical Association.

EIGHTIETH ANNUAL MEETING, LIVERPOOL, JULY, 1912.

President: Professor ROBERT SAUNDBY, M.D., LL.D., F.R.C.P., Professor of Medicine, University of Birmingham.

President-elect: Sir JAMES BARR, M.D., LL.D., F.R.S.E., Consulting Physician, Royal Infirmary, Liverpool.

The Eightieth Annual Meeting of the British Medical Association will be held in Liverpool in July, 1912. The President's Address will be delivered on Tuesday, July 23rd, and the Sections will meet on the three following days. The Annual Representative Meeting will begin on Friday, July 19th, 1912.

PROGRAMME.

FRIDAY, JULY 19TH, 1912.
10 a.m.—Annual Representative Meeting.

SATURDAY, JULY 20TH.
9.30 a.m.—Representative Meeting.

MONDAY, JULY 22ND.
9.30 a.m.—Council Meeting.
10 a.m.—Representative Meeting.
7 p.m.—Secretaries' Conference and Dinner.

TUESDAY, JULY 23RD.
9.30 a.m.—Representative Meeting.
2 p.m. Annual General Meeting.
8.30 p.m.—*Adjourned General Meeting, President's Address.

WEDNESDAY, JULY 24TH.
9 a.m.—*Roman Catholic service at the Pro-Cathedral, Copperas Hill.
9 a.m.—Council Meeting.
10 a.m. to 1 p.m.—Sectional Meetings.
12.30 p.m.—Address in Medicine, by Dr. G. A. Gibson, Edinburgh.
2.30 p.m.—*Service at St. Luke's Church.
8.30 p.m.—*Soirée*, Walker Art Gallery.

THURSDAY, JULY 25TH.
8 a.m. National Temperance League Breakfast.
10 a.m. to 1 p.m.—Sectional Meetings.
12.30 p.m.—Address in Surgery, by Mr. F. T. Paul, Liverpool.
2.30 p.m.—Surgery Section, Fractures Committee Report.
7.30 p.m. Annual Dinner.

FRIDAY, JULY 26TH.
9 a.m.—Council Meeting.
10 a.m. to 1 p.m. Sectional Meetings.
2.30 p.m. *Degree Convocation.
9 p.m. Ball at Philharmonic Hall.

SATURDAY, JULY 27TH.
Excursions.

* Academic dress to be worn.

ACADEMIC DRESS.

Members are invited to wear academic costume at the following functions: The President's Address on Tuesday evening, July 23rd; the Roman Catholic Service at the Pro-Cathedral on Wednesday morning, July 24th; the Church Service at St. Luke's in the afternoon; and the *soirée* at the Walker Art Gallery the same evening. Also at the Philharmonic Hall, for the Degree Convocation, at 2.30 p.m. on Friday.

RECEPTION ROOM.

The Reception Room will be opened at St. George's Hall on Monday morning, July 22nd.

RELIGIOUS SERVICES.

Anglican Service.—There will be a service at St. Luke's Church, on Wednesday afternoon, July 24th, at 2.30, when the Bishop of Liverpool (Dr. Chavasse) will preach the sermon. If the day is fine, members will robe in the Philharmonic Hall, but if the day is wet they will robe in the south vestry of the church.

Roman Catholic Service.—Mass will be celebrated at the Pro-Cathedral, at 9 a.m. on Wednesday, July 24th. Celebrant, Archbishop Whiteside. The Rev. Herbert Lucas, S.J., M.A., will deliver a short address. Further information can be obtained from Dr. J. E. O'Sullivan, 37, Shaw Street, Liverpool.

At each service a collection will be made on behalf of medical charities.

SECTIONS.

All the Sections will meet in the University.

The following additional information as to work in the Sections indicated has been received since our last issue:

SECTION OF ANATOMY.

The following papers will be read, some on Thursday, the others on Friday:

ANDERSON, Professor Richard. (1) Varieties of the Stomach in Animals (chiefly Mammals) as compared with Man; (2) Notes on Asymmetry in Animals and in Man.
GEDDES, Professor. (1) An Abnormal Urinary System; (2) A Case of Pseudo-Hermaphroditism; (3) An Egg inside an Egg.
THOMPSON, Professor Peter. The Development of the Diaphragm during the First Month.
SMITH, Professor Elliot. The Supports of the Uterus.
DICKEY, Dr. Stuart. Comparison between Two Hearts, with lantern slides.
PATERSON, Professor. A Note on the Inferior Vena Cava in the Thorax.
THE PRESIDENT. (1) Some Points in the Myology of the Chimpanzee; (2) Some Anomalies in the Vertebral Column; (3) Hydatids of Morgagni.

Demonstrations.

MANSON, Dr. A Case of Transposition of Viscera.
WATERSTON, Professor. The Use of the Diagraph.

SECTION OF DISEASES OF CHILDREN.

Additional Paper.

HAUGHTON, Dr. W. S. A Recent Case of Lorenz's Operation demonstrated by *x* rays; The Development of the Acetabulum.

SECTION OF ELECTRO-THERAPEUTICS.

Additional Papers.

HUMPHRIS, Dr. Howard. Reduction of Weight by Means of Electricity.
SNOW, Dr. (New York). Electrical Treatment of the Prostate.
HEMPSON, Dr. W. Title not fixed.

These papers are to be read on Thursday.

SECTION OF GYNAECOLOGY AND OBSTETRICS.

Wednesday, July 24th.—Discussion on *The Treatment of the Inflammatory Diseases of the Uterine Appendages.*

The following is an abstract of the paper by which Mr. CHRISTOPHER MARTIN will open this discussion from the surgical standpoint:

In forming an estimate of the value of surgical treatment of inflammation of the appendages we must bear in mind: (1) The natural course of the disease untreated; (2) the results of medical treatment; (3) the effects of the operation on the local disease; (4) the effect on the general health of the patient; (5) the mortality of the operation. In past years many needless mutilating operations have been performed. More conservative methods now prevail. A. *Ovarian Inflammation.* Acute ovaritis seldom calls for operation. Abscess of the ovary best treated by vaginal drainage in the acute stage. Chronic ovaritis: Varieties; indications for operation; value of conservative measures; importance of saving even a part of one ovary; evil effects of double oöphorectomy in neurotic women. B. *Tubal Inflammation.* Chief causes, gonorrhoea, sepsis, and tubercle. Varieties: Results of treatment vary (*a*) with the cause and (*b*) the degree of inflammation. Salpingitis, unilateral, hydrosalpinx. Pyosalpinx: Value of vaginal drainage in acute pyosalpinx. Importance of removing the uterus in many cases of pyosalpinx. Mortality of the various operations.

Friday, July 26th.—Papers:

JOHNSTONE, Dr. R. W. Chorio-angioma of Placenta (lantern slides).
SHANNON, Dr. D. Rupture of Uterus in a Case of Concealed Accidental Haemorrhage; some observations and notes.
RUSSELL, Dr. A. W. Fibrosis Uteri.
HEDLEY, Dr. J. P. The Excretion of Creatin in Pregnancy and the Toxaemias of Pregnancy.
BYERS, Sir John. Rashes occurring during the Puerperium.
FOTHERGILL, Dr. W. E. Developmental Errors of Puberty.

SECTION OF LARYNGOLOGY AND RHINOLOGY.

Additional Papers.

BRONNER, Dr. Adolph. Notes on Two Cases of Painful Chronic Ulcers of the Upper Part of the Oesophagus, due to Atrophic Catarrh.
DOWNIE, Mr. Walker. Syphilis as a Cause of Stenosis of the Oesophagus.

Demonstrations.

MOORE, Dr. Irwin. (1) A Pair of Forceps for Removing any kind of Foreign Body from the Oesophagus. (2) Pliers for Cutting up and Removing Toothplates, Pins, etc.
HILL, Dr. William. Lantern Exhibition of Skiagrams Relating to Diseases of the Oesophagus.

SECTION OF OPHTHALMOLOGY.

Thursday, July 25th.—*Discussion on Tuberculin.*

The following is a synopsis of Mr. MACKAY'S opening paper:

It is suggested that the discussion upon the use of tuberculin in diseases of the eye should be conducted upon the following lines:—I. The use of tuberculin in diagnosis of ocular tuberculosis: (1) Which preparation and which method of application is the most reliable? (2) the importance of differential diagnosis between the human, bovine, and avian varieties, and the means of discrimination. II. The use of tuberculin in ocular therapy: (1) The choice of preparation; (2) the scheme of dosage; (3) the duration of its influence. III. Illustrative cases and statements of experience in the use of tuberculin in diagnosis and treatment.

SECTION OF PHARMACOLOGY.

Additional Papers.

CLARKE, Dr. A. J. The Standardization of Cardiac Tonics.
RANSOM, Dr. Ford. The Action of Adrenalin on the Suprarenal Vessels.

Honorary Local Treasurer—
THOMAS H. BICKERTON, M.R.C.S.,
88, Rodney Street, Liverpool.

Honorary Local Secretaries—
FRANK H. BARENDT, M.D., F.R.C.S.Eng.,
KARL A. GROSSMANN, M.D., F.R.C.S.Edin.,
W. THELWALL THOMAS, Ch.M., F.R.C.S.,
Liverpool Medical Institution, 114, Mount Pleasant, Liverpool.

EXCURSIONS AND ENTERTAINMENTS.

THE Excursions Committee in Liverpool is making arrangements for visits to a number of interesting places on Friday and Saturday, July 26th and 27th. These include the following:

Friday.

Blackpool.—The party, limited to 150, will be entertained at luncheon by the Mayor and Corporation, and visits will be paid to various places of interest both in the morning and in the afternoon.

Penmaenmawr and Pendyffryn Hall.—A party, limited to 20, has been invited to visit Penmaenmawr, and will be entertained at luncheon and tea at Pendyffryn Hall by Dr. Dobson.

Saturday.

Chester and Eaton Hall.—During the morning this party, limited to 200, will visit the cathedral and many places of historic interest in the city of Chester. They will be entertained at lunch at the Town Hall by the Chester Medical Society, after which the party will proceed by steam-launch to Eaton Hall, where they will be entertained at tea by the Duke of Westminster.

Buxton.—The party (limited to 200) going to Buxton will, after a visit to the pump-room, baths, and Devonshire Hospital, be entertained at luncheon by the Buxton Medical Society.

Southport.—This party, which is limited to 100, will drive through the town in two sections, and will visit the Infirmary and the Convalescent Hospital; at each institution the members will be received by the Medical Staff. They will afterwards be entertained at a luncheon given by the Southport Medical Society and the Southport Division of the British Medical Association jointly. In the afternoon there will be a garden party at Hesketh Park, by invitation of the Mayor and Mayoress.

Llandudno.—Arrangements have been made for a party of 200 to proceed to Llandudno by steamer. They will be received by the Urban District Council and entertained at luncheon.

Isle of Man.—A party, limited to 100, has been invited to visit the Isle of Man, where they will be received by the Mayor and Corporation, and entertained at dinner in the evening on board the ss. *Empress Queen*. During the earlier part of the day motor tours have been arranged.

Members desirous of taking part in any of the above excursions are requested to make application for tickets to Dr. Francis W. Bailey, 51A, Rodney Street, Liverpool.

Tickets will be allotted in priority of application, and it is advisable to mention a second choice of excursion in case all the tickets for the first choice have been taken before application. In many cases the excursions can be prolonged for the week-end.

GOLF.

Members will be allowed to play on the following links: Royal Liverpool (Hoylake), Formby, Wallasey, Birkdale, Wooltton, West Lancashire, Ormskirk, and West Derby on payment of green fees. The Executive Committee has arranged by means of a system of vouchers to be obtained at the Reception Room that the cost of the green fees in the competitions be defrayed by the Association. Hospitality is also offered by the following clubs in Blackpool and neighbourhood: North Shore Golf Club (Blackpool), Blackpool Golf Club, St. Anne's and Lytham Golf Clubs, Old Links Golf Club (St. Anne's), Fairhaven Golf Club (Fairhaven).

The competition for the Ulster Cup will take place on Thursday, July 25th, on the Hoylake links. Bogey play under handicap not exceeding 18: one round of 18 holes. No previous play by competitors will be allowed on the links on that day. Any member wishing to compete should send in his name, club, and lowest handicap, certified by the club secretary, to Dr. A. Nimmo Walker, 45, Rodney Street, Liverpool, by Tuesday morning, July 23rd.

On Friday, July 26th, there will be a golf match between members of the Association residing in Lancashire and Cheshire and the rest of the Association, which will be played at Formby Links. Names should be sent to Dr. Walker as above.

A competition open to wives, daughters, and sisters of members of the Association by medal play for a prize will be held on the links of the West Lancashire Ladies Golf Club, Hall Road, on July 24th. A match for similar entrants has also been arranged on the same links for Thursday, July 24th. Ladies wishing to play are requested to send in their names, clubs, and handicaps, certified by the club secretary, to Miss Walker, 45, Rodney Street, Liverpool, by Tuesday morning, July 23rd.

ENTERTAINMENTS.

The Local Entertainments Committee has made arrangements for members to visit various places of interest in the city of Liverpool:

The works of the new Cathedral may be visited on the mornings of Tuesday or Wednesday. On Wednesday afternoon, between 3 p.m. and 5 p.m., parties of 10 at a time will be shown over the offices of the *Liverpool Daily Post and Mercury* and the *Liverpool Courier*. On the same afternoon the White Star Company will receive visitors on board the ss. *Cedric*, and the Allan Line on board the ss. *Corsican*. On the same afternoon the President of the Medical Institution and Mrs. Robert Jones will give a garden party at Druid's Cross, Wavertree. In the evening there will be a *soirée* at the Walker Art Gallery, lent by the Corporation of Liverpool.

On Thursday afternoon a garden party will be given by Dr. C. T. Street at Haydock Lodge Private Asylum, and by Mr. and Mrs. Frank Paul at "The Anchorage," Hoylake. Later in the afternoon the Lord Mayor and Lady Mayoress (Lord and Lady Derby) will give a garden party in the Botanic Gardens. On the same afternoon Mr. Robert Jones and Dr. C. J. Macalister will take a party of 200 visitors to the Liverpool Country Hospital for Children at Heswall. On Thursday the Booth Steamship Company will entertain visitors to tea on board the ss. *Hilary*, which will be arranged to show the mosquito-proof appliances; Messrs. Cammell, Laird and Co. will show visitors over their shipbuilding and ship repairing yards, where the new Dreadnought *Audacious* and some Argentine destroyers are being built. A visit will be paid by invitation to the estate of the Liverpool Garden Suburbs Tenants Company, and the Mersey Docks and Harbour Board will show a party of visitors over the warehouses and docks. In the evening the annual dinner of the Association takes place, and there will be a performance for ladies of "Mrs. Gorringe's Necklace" at the Royal Court Theatre.

On Friday Lord Derby, the Chancellor of the University of Liverpool, will entertain a number of visitors at luncheon by special invitation at the Town Hall before the ceremony of conferring honorary degrees, which is to take place at 2.30 p.m. at the Philharmonic Hall. Sir William Lever will entertain a party of invited guests to luncheon at Hulme Hall, Port Sunlight, and will entertain a large party to tea in the afternoon and show them over Port Sunlight. Sir James and Lady Barr will give a garden party at Calderstones Park, and the Cunard Steamship Company will provide a tender to take the visitors to the *Lusitania* in the river, where they will be entertained at tea. In the evening there will be a dance at the Philharmonic Hall, and members desiring to be present should notify Dr. D. Douglas-Crawford, 75, Rodney Street, Liverpool.

Arrangements have been made for a trip on the river Mersey on Wednesday afternoon, at the invitation of the Birkenhead Corporation; on Thursday afternoon one of the Wallasey ferry boats will make a similar trip, and visitors will be entertained at tea by Dr. Oldershaw, Mayor of Wallasey.

Notice as to Issue of Cards and Tickets.

No tickets for entertainments will be issued on Monday, July 22nd.

On Tuesday only tickets of admission for the President's Address at the Royal Court Theatre will be issued.

All tickets for entertainments arranged for 500 and over will be issued on Wednesday in priority of application, with the exception of applications for tickets for the ball on Friday night, which will be received at the Reception Room up to 5 p.m. on Wednesday. The tickets will be issued on Thursday. Should the applications exceed the tickets available the ballot will be resorted to.

Tickets for entertainments on Friday limited to less than 500 will not be issued until Thursday morning, but applications will be received from the opening of the meeting. Where applications exceed the number of cards available the ballot will be resorted to.

Entertainments Honorary Secretaries—
FRANK A. G. JEANS, F.R.C.S.Eng.,
30, Rodney Street, Liverpool.
WILLIAM E. LIVESEY, M.D.,
10, Rodney Street, Liverpool.

Excursions Honorary Secretary—
FRANCIS W. BAILEY, M.R.C.S.,
51A, Rodney Street, Liverpool.

Association Notices.

ANNUAL GENERAL MEETING.

Notice is hereby given that the 1912 Annual General Meeting of the British Medical Association will be held in the Small Concert Hall, St. George's Hall, Liverpool, on Tuesday, July 23rd, 1912, at Two o'clock in the Afternoon.

BY ORDER OF THE COUNCIL,

GUY ELLISTON,
Financial Secretary and Business Manager.

June 26th, 1912.

ELECTION OF MEMBERS OF COUNCIL BY GROUPED REPRESENTATIVES.

NOTICE is hereby given that Nominations for candidates for election of Members of Council by grouped Representatives for the year 1912–13 will be received by the Medical Secretary up to the end of the first hour of the proceedings of the Annual Representative Meeting, on Monday, July 22nd, 1912. Each Nomination must be on the prescribed form, copies of which will be forwarded by the Medical Secretary on application.

Separate forms have been prepared: (I) for Nomination by a Division (through its Representative), and (II) for Nomination by a Representative of a Constituency included in the Group, and those applying are requested to state for which purpose the form is desired.

The voting papers will be issued at the Representative Meeting to each Representative or Deputy Representative of a Constituency in the United Kingdom in attendance at the Meeting.

By order of the Council,
ALFRED COX,
Medical Secretary.

June 24th, 1912.

Meetings of Branches and Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

ABERDEEN BRANCH.

ABERDEEN DIVISION.

A MEETING of this Division was held in the Medico-Chirurgical Society's Hall, 29, King Street, Aberdeen, on Monday, July 1st. Dr. JOHN GORDON presided over a full meeting, about forty members being present.

Medical Appointments by Scottish Insurance Commissioners.—The recent appointments of medical men by the Scottish Insurance Commissioners were under consideration. Several motions on the subject were carried unanimously. The first motion was as follows:

> (*a*) That this meeting of the Aberdeen Division of the British Medical Association condemns the action of Drs. Currie and Cullen in having, contrary to the express wish of the medical profession in Scotland, accepted appointments as medical officers under the National Health Insurance Act; (*b*) that so long as they remain in office, the medical profession ought not, in any circumstances, to work under the Act.

The opinion of the meeting was that those members, by their action at the present juncture, while negotiations between the Commissioners and the profession were proceeding, had rendered themselves unsuitable for and unworthy of securing the co-operation of medical men throughout the country in the working of the Act. The second motion put to the meeting was as follows:

> That this meeting hereby expresses its want of confidence in Dr. Norman Walker, as the Direct Representative of the Scottish medical profession on the General Medical Council, and that it calls upon him forthwith to test the feeling of his constituents by resigning his seat and submitting himself to the electorate.

In the last motion carried, the meeting confirmed the finding of the State Sickness Insurance Committee of the Association, to the effect that acceptance of a medical appointment on a Provisional Insurance Committee, or on a committee for the administration of sanatorium benefit, constituted an act of disloyalty to the medical profession. It may be mentioned in this connexion that Dr. Maver (Bucksburn) and Dr. Trail (Fraserburgh) have intimated their intention to resign the posts of medical advisers on the County Council Committee, to which they were appointed. So far, none of the medical men in the town or county who have been approached directly by the Insurance Commissioners, with a view to persuading them to accept such posts, have done so.

Supplementary Pledge.—The meeting was strongly of opinion that the supplementary pledge should be signed by members of honorary staffs of hospitals without modification, as otherwise it was impossible to obtain satisfactory unanimity. It was reported that all the members of the honorary staffs of Aberdeen hospitals had signed the pledge.

BIRMINGHAM BRANCH.

CENTRAL DIVISION.

A GENERAL meeting of this Division was held in the Medical Institute on July 10th. Mr. LUCAS took the chair, and eighty-six members were present.

Instructions to Representatives.—The Report of the Council (BRITISH MEDICAL JOURNAL SUPPLEMENT, July 6th) was considered, and Representatives instructed to support Recommendations A, B, C . . . to P, and were given discretion upon Recommendation Q. It was then proposed by the CHAIRMAN as a recommendation of the Executive Committee of this Division:

> That this Division instruct its Representatives to strongly support Recommendation X (i, ii, iii), breaking off negotiations with the Government, and to oppose Recommendation Y.

This was carried with two dissentients. An amendment:

> That Representatives be given discretion as to whether they support X or Y,

being first put, was lost by a large majority. The following took part in the discussion upon this question: The CHAIRMAN, Dr. SAUNDBY, Mr. MORRISON, Mr. MARSH, Dr. CARSON ABBOTT, Dr. OAKES, Mr. GEO. HEATON, Dr. OSBORNE, Dr. SPROAT, Dr. BULL, Dr. LYDALL, Dr. HARRIS, and Dr. J. F. ALLEN.

Supplementary Report of Council.—The Supplementary Report of the Council (SUPPLEMENT to the BRITISH MEDICAL JOURNAL, July 6th) was next considered, and the Representatives were instructed to support all the Recommendations from page 45 to page 51 inclusive.

Alteration of Boundaries.—The following resolution was carried unanimously:

> That this Division gives its sanction and approval to the proposed alteration of its boundaries so as to include within its area that portion of Handsworth and King's Norton and Northfield which are now part of Greater Birmingham, and which are at the present time in the West Bromwich and Bromsgrove Divisions respectively.

A petition signed by all the members of the West Bromwich Division resident in Handsworth, petitioning to be included in the Central Division, was presented.

Communication from another Division.—A circular letter from the Secretary of the Stockport, Macclesfield, and East Cheshire Division was read, but time would not permit of discussion upon it, so it was laid upon the table.

Other Instructions to Representatives.—Dr. WILKINSON proposed, Dr. ORMOND seconded, and it was carried unanimously, that the Representatives be instructed to move the following resolution:

> That all members of clubs who do not come under the National Insurance Act as members of approved societies shall not be attended by the medical profession for a capitation fee of less than 8s. 6d. per annum, exclusive of medicine and extras.

Dr. CARSON ABBOTT proposed, Dr. WILKINSON seconded, and it was carried unanimously, that the Representatives be instructed to move the following resolution:

> That, in view of the fact that by Schedule I, Part II (*b*), of the National Insurance Act certain local and public authorities, etc., have claimed and obtained exception from Schedule I, Part I (employments within the meaning of Part I of this Act relating to health insurance), thereby preventing or rendering it difficult for their employees to exercise the right of "free choice of doctor," steps should be taken by the Association to further safeguard the cardinal principle of "free choice of doctor" in this connexion, which under the conditions above alluded to is being seriously imperilled.

Provisional Medical Committee.—Dr. OSBORNE, Honorary Secretary, Provisional Medical Committee, reported that only one general practitioner had not signed the pledge or handed in the resignation of his contract appointments; one general practitioner only, although he had signed the pledge, had not handed in the resignation of his club appointments. Three consultants only had not signed the pledge. Approximate number of medical practitioners in the area of the Provisional Medical Committee, 500.

COVENTRY AND NUNEATON AND TAMWORTH DIVISIONS.

A MEETING of these Divisions was held at the Coventry Hospital on July 12th, twenty-four members being present.

Instructions to Representative.—After the usual business had been transacted, it was proposed, seconded, and carried unanimously:

> That our Representative be instructed to adhere to the seven cardinal points, and in default of these being granted within a reasonable time, to break off negotiations, and that one month from the Representative Meeting be considered a reasonable period.

CAMBRIDGE AND HUNTINGDON BRANCH.

THE annual meeting was held at the Rose and Crown Hotel, Wisbech, on Monday, July 8th. Dr. E. J. CROSS, President, presided at the general business meeting at 12.30 p.m., thirty members being present.

Balance Sheet.—The balance sheet was presented and adopted.

Installation of New President.—Dr. E. J. Cross vacated the chair for Dr. MAX F. TYLOR, the President-elect.

Annual Meeting, 1913.—It was agreed that the annual meeting for 1913 should be held in Cambridge.

Election of Officers.—The following were elected officers for the ensuing year: *President-elect*, Dr. Griffiths; *Honorary Secretary and Treasurer*, Dr. G. S. Haynes; *Repre-*

sentative at *Representative Meetings*, Dr. L. Newton (Alconbury Hill); *Branch Council*, Drs. Fordyce, Apthorpe Webb, Garrood, Williams, Wright, Meacock, and Waters.

Vote of Thanks to Retiring Secretary.—Dr. CROSS proposed a vote of thanks to the retiring secretary (Dr. H. B. Roderick); Dr. WRIGHT seconded, and it was carried with acclamation.

Rule Z.—Dr. GRIFFITHS proposed and Dr. WATERS seconded that Rule Z (the Bradford rules) be adopted by the Branch. This was carried.

Luncheon.—At 1.30 over fifty members and guests were sumptuously entertained to luncheon by the kind invitation of the President (Dr. Tylor). The following toasts were drunk: "The King," "The President," proposed by Dr. CROSS and responded to by Dr. TYLOR; "The Visitors," proposed by the PRESIDENT, and responded to by the VICAR OF WISBECH; "The retiring President," by Dr. TYLOR and responded to by Dr. CROSS.

Papers.—The PRESIDENT read an interesting paper, "Notes on some cases of appendicitis." A discussion followed, in which Mr. WHERRY, Mr. DEIGHTON, Professor BRADBURY, and Mr. HENDLEY took part. Dr. THOMAS J. WALKER demonstrated his method of using Fehling's test for estimating the quantity of sugar in diabetic urine. Mr. GEORGE WHERRY made some remarks on five cases of renal and ureteral calculi, and showed specimens. Mr. SHILLINGTON SCALES very ably demonstrated the skiagrams.

At Home.—After the meeting terminated the President and Mrs. Max Tylor were "at home" to members and their wives and friends in the Church House, kindly lent by the Vicar.

CONNAUGHT BRANCH.

A MEETING of this Branch was held at 2.30 p.m. on Tuesday, June 25th, at the Railway Hotel, Athenry; Dr. D. CROWLEY was in the chair.

Sanatorium Benefits.—Mr. R. B. Mahon, F.R.C.S., wrote about the administration of sanatorium benefit and the necessity of taking action in view of the proposed appointment of roving tuberculosis medical officers, and the granting from the Treasury of a large subsidy to the Women's National Health Association. The matter was referred to the County Medical Committees.

Proposed Friendly Society under Professional Auspices.—Dr. FOLEY proposed that a friendly society under professional auspices should be established. The HONORARY SECRETARY pointed out that the matter was dealt with in Report D 14 on the organization of medical attendance on the provident or insurance principle. It was agreed to refer it to the County Galway Medical Defence Committee and other county committees.

Election of Officers.—The following appointments were unanimously made: *President*, M. J. B. Costello, M.B.; *President-elect*, D. Crowley, M.D.; *Honorary Secretary*, John Mills, M.B.; *Representative on Council and Representative to Representative Meeting*, T. B. Costello, M.D.; *Representatives on Irish Committee*, R. B. Mahon, F.R.C.S., John Mills, M.B.; *Executive Committee*, C. L. Birmingham, J. Carroll, T. B. Costello, D. Crowley, J. A. Hanrahan, R. W. Kelly, R. J. Kinkhead, Joseph MacDonnell (Roscommon), C. H. Foley, R. J. Martyn, John Mills.

Instructions to Representative.—The report of Council was considered, and the Representative directed to support it, especially as to extending the Feeble-minded Bill to Ireland, and as to the proposed diploma in psychiatry. The resolution of p. 461 (SUPPLEMENT, May 11th) was considered *ultra vires* as medical men in Ireland were bound to supply the information required.

Chelsea Resolution.—The Representative was directed to support the Chelsea amendment (Motion 36 in SUPPLEMENT, May 18th). Motion 48 as to expenses was disapproved of. It was decided that the President and the Honorary Secretary should have power to nominate a substitute if the Representative were unable to attend Representative Meeting.

Next Annual Meeting.—Next year's annual meeting to be held in Galway in the forenoon.

DORSET AND WEST HANTS BRANCH:

WEST DORSET DIVISION.

A MEETING of the West Dorset Division was held at Dorchester on July 9th. Dr. W. C. SPOONER was in the chair. There were present twenty-eight in all.

Instructions to Representative.—It was decided that the Representative be instructed to vote for breaking off the negotiations.

Weymouth "Sliding" Scheme of Medical Service.—The Weymouth "sliding" scale scheme for public medical service was referred to a committee for elaboration and for report to the Division at an early date.

Club Appointments.—It was decided to send in the resignations of club appointments to the secretaries of the various clubs; but the consent of the State Sickness Insurance Committee was to be obtained before doing this.

DUNDEE BRANCH:

DUNDEE DIVISION.

A MEETING of the Division was held in University College on July 12th; Dr. C. S. YOUNG was in the chair.

Report of Council.—After discussion of the report of Council the following resolution became the finding of the meeting:

> That if before the Representative Meeting no definite offer is made by the Government the Representative Meeting break off all negotiations, but that if a definite offer be made before the Representative Meeting by the Government the Representative be empowered to vote for the appointment of a Committee to negotiate with the Government.

The resolution regarding examination charges for approved societies was unanimously carried, and thus became a resolution of the Division.

Sir William Plender's Report.—The SECRETARY read a letter from Sir William Plender thanking the medical practitioners for the help they so very kindly, willingly, and generously gave during the recent investigation. The Chairman, Vice-Chairman, and Honorary Secretary were requested to prepare a letter for the press regarding the report of Sir Wm. Plender. In this letter they pointed out especially the position Dundee occupied in the report, and how the low wages and low medical fees made the report with regard to the other towns quite fallacious and misleading.

EDINBURGH BRANCH:

EDINBURGH AND LEITH DIVISION.

A MEETING of this Division was held on Thursday, July 11th, in the Gartshaw Hall. Dr. JAMES RITCHIE, Chairman of the Division, presided; sixty-six members attended.

Protest Against Inspection of Books.—The SENIOR SECRETARY reported that the Executive had protested against the advice of the State Sickness Insurance Committee to the doctors in certain towns to allow an inspection of their books by a Government actuary.

Medical Appointments under Insurance Act.—Letters had been sent to Sir James Russell, Dr. Cullen, and Dr. Robertson (Leith) about appointments on the Provisional Insurance Committees, and the replies of Sir James Russell and Dr. Robertson were brought before the meeting; Dr. Cullen had not replied.

Public Medical Service.—The Executive had considered the Public Medical Service schemes, but disapproved of both A and B; they decided on some general principles, and have the subject still under consideration.

Instructions to Representatives.—The special report of the Council was fully discussed, and it was decided unanimously to instruct the Representatives to the Representative Meeting to support the motion to break off negotiations with the Government. A motion for a postal vote of the members was defeated by a very large majority, only two supporting it. It was decided to send a communication of the proceedings to the local press.

SOUTH-EASTERN COUNTIES DIVISION.

A MEETING was held at Newtown St. Boswells on July 11th. Dr. J. S. MUIR (Selkirk), Chairman, presided, and thirty-one members were present.

Supplementary Pledge.—The SECRETARY read a statement which showed that, although the canvass was not quite completed, 58 out of 66 members had signed the pledge of the Association, by which they bound themselves to act as a united body. Of those who had not signed, one was a retired practitioner, two held public offices, four were practitioners who had delayed sending in their papers, and one had refused to sign. Of the 26 members

holding appointments as medical officers to friendly societies, 25 had placed their signed resignations in the hands of the Secretary. These resignations included all the contract practices within the four counties of the Division with one exception.

Defence Funds.—More than £600 has been guaranteed by members of the Division to the defence funds.

Instruction to Representative.—On the motion of Dr. McROBERT the following resolution was unanimously agreed to:

As the ultimate terms of the British Medical Association have been absolutely clear to the Government, and have not yet been conceded, this Division resolves that further negotiations on the part of Representatives of the Association to the Government are not only unnecessary but unwise, until such time as the Government is prepared to inform the Association that the said ultimate terms are conceded. And, in the event of the ultimate terms of the British Medical Association being conceded by the Government, this Division empowers its Representative to acquiesce in the appointment of representative members of the Association to negotiate with the Government in regard to other questions affecting the interests of the profession.

Medical Appointments under Insurance Act.—It was also unanimously agreed that—

With reference to the appointments under the Insurance Act accepted by Drs. Cullen (Edinburgh) and Dr. Currie, M.O.H. (Fifeshire), this Division desires to express its emphatic disapproval of the same, as detrimental to the unity of the profession at this critical time, and as a hindrance to a settlement of matters now in dispute between the profession and the Government. This Division resolves that any co-operation on the part of its members with the aforementioned officials is to be regarded as impossible, on account of the action they themselves have taken.

Sir William Plender's Report.—With reference to the selection of Dundee by the Government as a typical community affected by the Insurance Act, this Division is emphatically of opinion that the conditions of the population there and the kind of medical practice created by these conditions, are such that no conclusions drawn from them can be of any guidance in determining the adjustment of the relations of the medical profession to the Government in other centres of population.

Appointment on Advisory Committee.—On the motion of Dr. TYRRELL, the Division unanimously resolved that the action of Dr. Norman Walker in refusing to place the resignation of his appointment on the Advisory Committee at the disposal of the Scottish Medical Insurance Council, as had been done by other members, was contrary to the interests of the profession, and expressed its strong disapproval.

FIFE BRANCH.

A MEETING of this Branch, to which every practitioner in the area, member and non-member, was invited, was held at Kirkcaldy on July 11th, when the following resolutions were carried:

Instruction to Representative.

That this meeting instructs its Representative to support Recommendation X of the Central Council's report at the forthcoming Representative Meeting in Liverpool.

Medical Appointments under Insurance Act.—The following resolutions were passed:

That this meeting of the Fife Branch of the British Medical Association, to which every practitioner in the area, member and non-member, has been invited, hereby condemns the action of Dr. Currie and Dr. Cullen, in having, contrary to the expressed wish of the medical profession in Scotland, accepted appointments as medical officers under the National Health Insurance Act; and that this meeting further considers them, through their action at this juncture, as absolutely unfitted to secure the co-operation of the medical men throughout the country.

Copies of this resolution to be sent to Dr. Currie, Dr. Cullen, the Insurance Commissioners, the Secretaries of the Fife County Council, the British Medical Association, the Scottish Medical Insurance Committee, and to the press, lay and medical.

That this meeting of the Fife Branch of the British Medical Association, to which every practitioner in the area, member and non-member, has been invited, hereby expresses its complete want of confidence in Dr. Norman Walker as the Direct Representative of the Scottish medical profession on the General Medical Council, and that it calls upon him forthwith to resign his seat.

It was directed that copies of this resolution should be sent to Dr. Norman Walker, the Secretaries of the British Medical Association, the Scottish Medical Insurance Committee, and the General Medical Council, and to the press, lay and medical.

GLASGOW AND WEST OF SCOTLAND BRANCH:

DUMBARTONSHIRE AND ARGYLLSHIRE DIVISION.

A GENERAL meeting of this Division was held on July 9th in Clydebank. Dr. JAMES WILSON, Dumbarton, presided. Sixteen members were present.

Annual Representative Meeting.—Dr. CRAMB intimated inability to attend as Representative, and Lieutenant-Colonel Ritchie, M.B., R.A.M.C., 6, Glenan Gardens, Helensburgh, was elected unanimously to attend in place of Dr. Cramb.

Reports from Provisional Local Medical Committees.

Argyllshire.—Dr. CURRIE reported:

Total practitioners	58
Signed complementary pledge	43
Promised to sign complementary pledge ...	7
Remainder may yet sign.	
Sent in resignations of contract practice appointments	15

(Comparatively little contract work in Argyllshire.)

Dumbartonshire.—Dr. SUTHERLAND reported:

Total practitioners	29
Signed complementary pledge	22
Refused to sign	1
"Home addresses" (not in practice) ...	6

All holders of contract practice appointments (13) have signed resignation forms.

Dumbarton Burgh.—Dr. McLACHLAN reported that *all* in practice had signed the complementary pledge, and *all* holders of contract practice appointments had promised to resign these when asked.

Clydebank Burgh.—Dr. CRAMB (in Dr. Strang's absence) reported:

Total practitioners	14
Signed complementary pledge	2
Signed resignation of contract practice ...	2

The first three reports were considered very satisfactory, but surprise and regret were expressed at that from Clydebank, particularly as twelve practitioners there signed the original "undertaking." After discussion, it was moved by Dr. R. ALLAN, seconded by Lieutenant Colonel RITCHIE, and unanimously agreed:

That the non-members of the British Medical Association in Clydebank be invited to be present at the meetings of the Division while business relative to the Insurance Act is being discussed.

It was then moved by Dr. GILMOUR, seconded by Dr. MACFIE, and unanimously decided:

That Dr. Strang (Clydebank) be requested to call a meeting immediately of the local Medical Association to discuss the situation in relation to the Insurance Act campaign, and especially the attitude of practitioners in Clydebank to the signing of complementary pledges and forms of resignation of contract practice, and report without delay to the Division Secretary, in view of the urgency of the matter.

Instructions to Representative.—After discussion the Representative was unanimously instructed to support alternative Recommendation Y (continuing negotiations) and all the other Recommendations in the Special and Supplementary Reports of Council (BRITISH MEDICAL JOURNAL SUPPLEMENT, July 6th). Dr. YOUNG then moved, Dr. CRAMB seconded, and it was unanimously agreed:

That in view of past difficulties at Representative Meetings when from various causes the policy of the Association as approved by Divisions has had to be amended, we instruct our Representative under such conditions to use his own discretion in voting.

County Insurance Committee.—Dr. GILMOUR intimated his refusal to act on the County Insurance Committee as a medical practitioner when appointed by the county council; his action was cordially approved.

Dumbarton Cottage Hospital.—The CHAIRMAN stated that as the result of united action by Dumbarton practitioners the remuneration of the visiting staff had been raised to £50 per annum.

LANARKSHIRE DIVISION.

A MEETING of the Lanarkshire Division was held in Glasgow on July 9th. Dr. BRUCE GOFF was in the chair, and twenty-four members were present.

Special and Supplementary Reports of Central Council.

The Special Report of Council published in the BRITISH MEDICAL JOURNAL SUPPLEMENT of July 6th was considered, and the following opinions were recorded with regard to the recommendations contained in it.

Recommendation A.—The meeting unanimously agreed with this recommendation.

Recommendations B to O.—These recommendations evoked considerable discussion, and the following resolution, moved by Dr. BARR, seconded by Dr. J. C. MACKENZIE, was adopted by 18 votes to 3:

That no medical man treat in hospital any insured person suffering from tuberculosis.

Recommendations P and Q.—The meeting agreed with these.

Recommendations regarding the Future Action of the Association, X and Y.—After due consideration of these alternative recommendations by the meeting and considerable discussion, the following resolution, moved by Dr. W. G. MACPHERSON, seconded by Dr. LIVINGSTONE LOUDON, was carried unanimously:

That our Representative at the Representative Meeting vote for continuing negotiations with the Commissioners, but that the negotiations must be conducted by members of the *present* State Insurance Committee.

This was the chief business discussed, and thereafter the meeting very briefly discussed the recommendations contained in the Supplementary Report of Council, 1911-12.

Appointments under the Insurance Act.—A resolution was moved by Dr. W. G. MACPHERSON, seconded by Dr. J. C. MACKENZIE, and carried by a large majority, expressing disapprobation of the conduct of Drs. Currie and Cullen in taking positions under the Insurance Commissioners in opposition to the wishes of the Scottish Medical Insurance Council and the medical profession in the country.

Vote of Thanks.—A vote of thanks to the Chairman for presiding concluded the meeting.

LANCASHIRE AND CHESHIRE BRANCH.

BLACKBURN DIVISION.

A MEETING of this Division was held on July 11th. Dr. CRAN was in the chair.

Instruction to Representative.—It was moved, seconded, and resolved:

That, failing a direct reply from the Chancellor of the Exchequer before the Representative Meeting on July 19th, 1912, granting us our minimum demands unequivocally, our Representative vote for breaking off all negotiations.

It was moved, seconded, and resolved:

That this meeting of the members of the Blackburn Division of the British Medical Association will resist to its utmost any further committee being formed having power to settle with the Chancellor of the Exchequer without matters being referred to the various Divisions.

Blackburn Health Committee and Tuberculosis.—It was moved, seconded, and resolved:

That the Blackburn Division of the British Medical Association enters its protest against the Health Committee of Blackburn taking any further steps in connexion with tuberculosis than they have done for some time until after the Representative Meeting on July 19th, 1912.

Sanatorium Benefits.—It was moved, seconded, and resolved:

That Dr. Craig be instructed to vote that no member have anything to do with sanatorium benefits until our minimum demands be granted.

BLACKPOOL DIVISION.

A WELL-ATTENDED meeting of members of this Division was held on June 26th.

State Sickness Insurance Committee. A letter from Drs. John Brown and Stanley Hodgson, members of the State Sickness Insurance Committee, was read, and the following resolutions passed thereon:

1. That this meeting agrees that the Association's nominees [illegible] Committee be asked to resign.
2. T[illegible]ly disapproves of the suggestion to [illegible] to prohibit the profession from [illegible] sanatorium administration until such time as the minimum demands of the profession are [illegible].

Government Inquiry into Medical Remuneration.—A letter, dated June 15th, 1912, was read from the Medical Secretary regarding the Government inquiry into medical remuneration. It was resolved:

1. That this meeting urges the practitioners of the Division to refuse to allow the scrutiny of books by agents of the Chancellor for the purpose of collecting evidence as to rate of remuneration for attendance on those who will be insured persons.
2. That this meeting strongly condemns the action of the State Sickness Insurance Committee in promising to aid the Chancellor in collecting such evidence.

Practitioners and Provisional Insurance Committees.—A letter, dated June 5th, *re* National Insurance Act, and setting forth the action that had been taken by the State Sickness Insurance Committee when asked by the Commissioners to nominate medical practitioners for service upon Provisional Insurance Committees, was read and agreed to.

Practitioners and Service under Insurance Act.—A letter dated June 15th, 1912, *re* "Question of acceptance of positions in connexion with the National Insurance Act," was read. The question of the position of medical practitioners who are members of county or borough councils, when asked to serve on Provisional Insurance Committees, was discussed, and the following resolution was passed:

That no member of the medical profession practising in this Division accept any post, remunerative or otherwise, under the National Insurance Act until the minimum demands of the British Medical Association are conceded.

Instructions to Representative.—The report of Council issued on May 11th was considered. It was agreed to support the resolution contained in Section 35 *re* question of expenses of Representatives attending Representative Meetings. It was agreed to support resolution contained in Section 93 *re* filling up of death certificates. It was agreed to support recommendation contained in Section 99 *re* certificates and reports in cases under Workmen's Compensation Act and members of hospital staffs.

Blackpool Town Council's Medical Representative on Provisional Insurance Committee.—The question of the Blackpool Town Council's medical representative on the Provisional Insurance Committee was explained. Dr. Pritchard, a member of the Council, was nominated for the post, and, in spite of his refusal to serve, the Commissioners were asked to make the appointment. In an interview with the Secretary of the Provisional Medical Committee, Dr. Pritchard signified his intention of resigning from the Committee. It was resolved:

That Dr. Pritchard be asked to make known the fact of his resignation through the local press; also to notify the same in a letter to be written to the Division Secretary.

LIVERPOOL DIVISION.

A MEETING of this Division was held on Tuesday, July 9th. Dr. N. P. MARSH was in the chair.

Report of Council: Special Instructions to Representative.—The Special Report of Council concerning the position of the medical profession in relation to the Insurance Act, as published in the SUPPLEMENT for July 6th, was considered. The Division by a large majority decided to instruct its Representative to support Recommendation X, which deals with breaking off negotiations. There was considerable discussion on this point, in which Drs. and Messrs. LARKIN, O'SULLIVAN, WILD, GERMAN, R. T. BAILEY, A. G. GULLAN, H. JONES, and SMART took part. It was agreed with regard to Recommendation B, p. 16, that the words "if possible" be deleted. With regard to Recommendation H, p. 16, it was proposed and carried that after the words "only as a consultant," "and at the request of the practitioner in attendance" be added. With regard to Recommendation N, on p. 16, it was proposed and carried that "not less than £65 per annum" should read "not less than £75 per annum. It was further agreed that the Representative be instructed to vote against practitioners taking appointments under the sanatorium benefits of the Insurance Act.

Supplementary Report of Council: Ship Surgeons.—On consideration of the Supplementary Report of Council, it was agreed that the recommendation with relation to the remuneration of ship surgeons, that it be £15 per month instead of £10, and that the words "regularly as such," on p. 49, be omitted.

Public Medical Service.—It was recommended that a subcommittee be formed to consider a Public Medical Service scheme.

Medical Treatment of School Children.—Owing to the late hour the consideration of the report of the Medical Treatment of School Children Subcommittee was postponed.

MANCHESTER (CENTRAL) DIVISION.

A MEETING of this Division was held at the Onward Buildings, Deansgate, on July 10th, at 4.30 p.m. Dr. JUDSON BURY was in the chair, and twenty-five other members were present.

Instructions to Representative.—The Representative was instructed as follows. *Re* report of Council on National Insurance Act (SUPPLEMENT, July 6th):

Recommendation A. To vote for it (unanimously).
Recommendations B to O. That these resolutions should only be agreed to if the Association decide to work the National Insurance Act.
Recommendations P and Q. To vote against.
Recommendation X (i). To vote for this (unanimously).
Recommendation X (ii). To vote for this (one dissentient).
Recommendation X (iii). To vote for this (unanimously).
Recommendation Y. To vote against this (unanimously).

Re Report of Council (SUPPLEMENT, May 18th):

Rider 19, p. 506. To support this.
Rider 36, p. 507 (Chelsea). To vote against this.
Rider 46, p. 508. To support this.
Rider 47. Left to his discretion.
Rider 48. To vote against.
Rider 49. Leave date open—that is, vote against this.
Rider 50, p. 509. To vote for this.
Riders 51, 52, and rest of Report of Council: To use his discretion.

In the event of negotiations being broken off he was instructed to move:

That the Representative Body appoint a special committee to watch over and safeguard the interests of the profession in relation to the National Insurance Act. This committee to have no power to negotiate with the Government, and to report from time to time to the Divisions of the Association.

He was further unanimously instructed to vote against the re-election of the Treasurer of the Association, and against the re-election of the Chairman of Representative Meetings of the Association.

Scheme for Medical Benefit.—A proposal to support Dr. Picton's scheme for medical benefit (SUPPLEMENT, April 27th) at the Representative Meeting was lost—10 against, 8 for.

MANCHESTER (SOUTH) DIVISION.

A GENERAL meeting of this Division was held on July 12th. Dr. EDLIN presided, and thirty-two members were present.

Correspondence.—Letters were read from the Ealing Division, Stockport, Macclesfield, and East Cheshire Division, from Mr. Ballance, from the State Sickness Insurance Committee in relation to the sending in of resignations of clubs, and from the Joint Committee of Manchester and Salford relating to a circular letter on the giving of information to coroners.

Instructions to Representatives.—It was decided that the Representative of the Division (Dr. Stocks) should vote in support of Recommendations A to Q. In considering Recommendations X and Y, Dr. EDLIN suggested that there were three courses open to the meeting in giving instructions to the Representative: (1) To instruct him to vote against further negotiations; (2) to instruct him to vote in favour of further negotiations; (3) to allow him to use his own discretion in voting on hearing the arguments *pro* and *con* at the Annual Representative Meeting. Thereupon Dr. BROWN proposed and Dr. GREGORY seconded:

That this meeting of the Manchester (South) Division directs its Representative to vote for a continuation of the negotiations with the Government.

This was lost. Dr. GOODFELLOW proposed and Dr. HOPKINSON seconded:

That our Representative be instructed to vote for the breaking off of negotiations.

Dr. SENIOR proposed and Dr. SCOTT seconded the amendment to add:

Provided that in his opinion the reports as to the organization of the profession are satisfactory.

The amendment was lost. The original resolution was carried with three dissentients. Dr. COTTERILL proposed and Dr. GRANT DAVIE seconded:

That no information as to the number of assistants in this Division be given.

This was carried. As to the other recommendations and all other subjects discussed the Representative was instructed to use his own discretion in giving his vote.

Sanatorium Benefits.—The Representative was instructed to support the resolution contained in paragraph 82 of the Report of Council to the Annual Representative Meeting, namely:

That in view of Minute 78 of the Special Representative Meeting (February, 1912) no medical appointments be accepted for sanatorium benefit until such time as the minimum demands of the profession are conceded.

Medical Examination of Applicants for Membership of Approved Societies under the National Insurance Act.—It was decided to adopt the recommendation of the North Manchester Provisional Local Medical Committee and make a charge of 2s. 6d. for medical examination or for a health certificate.

Central Insurance Defence Fund.—Dr. COTTERILL proposed and Dr. GREGORY seconded:

That all present at this meeting individually pledge themselves to materially increase their guarantees to the Central Insurance Defence Fund, and that the Provisional Medical Committee actively push forward a canvass with this object.

PRESTON DIVISION.

A GENERAL meeting of this Division was held on Thursday, June 27th, Dr. R. C. BROWN in the chair, and forty members present.

State Sickness Insurance Committee.—After discussion on two resolutions dealing with matters of local interest, the meeting discussed the letter to Divisions from Drs. Brown and Hodgson. The advice contained in that letter with regard to "terminating the *pourparlers*," was assented to, but the opinion was expressed that the meeting did not see how this was to be carried out, as the State Sickness Insurance Committee had agreed to the examination of the books of practitioners in six towns, which would take some considerable time. With regard to the removal of the embargo *re* sanatorium treatment, the meeting expressed its strongest dissent from this removal, until the seven cardinal points had been granted.

Public Medical Service.—The Public Medical Service scheme was discussed, and it was decided to defer for six months further discussion. This did not meet with absolute approval, and after some argument the CHAIRMAN reopened the discussion for the mover and seconder to give more in detail their reasons for postponing discussion, which they did.

Supplementary Pledge.—The SECRETARY read a report on the result of the canvass for pledges:

113 men in Division.
88 members of British Medical Association.
78 signed pledge.
15 whole-timers.
5 signed pledge.
5 members who have not signed pledge.
7 who will not sign but will not work the Act.
2 retired.
2 away from home.
Leaving 9 unaccounted for—1 in the borough of Preston, 8 outside the borough.
17 members holding 57 club appointments (these do not include club appointments held under the minimum rate).
36 resignations had been received, and all the holders of the 57 clubs had signed the pledge.

Vote of Thanks to Chairman.—A vote of thanks was moved, seconded, and carried unanimously to the Chairman.

ROCHDALE DIVISION.

A MEETING of this Division was held on July 9th. Dr. LORD was in the chair, and sixteen members were present.

Communications to Lay Press.—The following resolution was passed unanimously:

That the Rochdale Division of the British Medical Association disapproves of communications on matters of medical and surgical technique by members of the profession to the lay press, such communications being contrary to the best

traditions of the profession, and that copies of this resolution be sent to all medical men practising within the area of the Rochdale Division.

Recommendations of Council.—Dr. HODGSON moved, Dr. JEFFERSON seconded, and Dr. GRANT supported Recommendation X, breaking off negotiations. Dr. WALKER moved, Dr. BATEMAN seconded, and Drs. RADLEY, LORD, and COX supported Recommendation Y, continuing negotiations. On being put to the meeting, 10 voted for the amendment, Y, and 5 voted for the motion, X.

SOUTHPORT DIVISION.

A SPECIAL meeting of this Division was held at the Temperance Institute on July 11th. Dr. MACKAY was in the chair, and twenty-six members were present. Apologies were received, among others, from Drs. Penrose and Henderson, who expressed strong opinions in favour of breaking off negotiations with the Commissioners.

Instructions to Representative.—The report of the Council to the Annual Representative Meeting was considered. Dr. WALKER moved and Dr. COLLIER seconded Recommendation X in favour of breaking off negotiations. Dr. RUSSEL moved and Dr. PRIDIE seconded, as an amendment, Recommendation Y in favour of continuing negotiations. A lively discussion ensued, in which Drs. SPEIRS, HARRIS, LITTLER, VOIGT, ASHWORTH, EDMISTON, IRVING, and LEWIS took part. In the course of the discussion, Drs. RUSSEL and PRIDIE withdrew their amendment, and substituted for it:

> That this Division leaves the question of breaking off or continuing negotiations to the discretion of our Representative.

There were very strong expressions of opinion in favour of breaking off negotiations, and most of those who supported the amendment expressed similar views, but thought that something might be gained by delay and ascertaining through the Representative Meeting the latest attitude of all concerned. Several members had left before the amendment was put to the vote, when it was carried by 10 to 9. On being put to the meeting as a substantive motion, there were 10 votes for and 10 against, and it was carried by the casting vote of the Chairman.

STOCKPORT, MACCLESFIELD, AND EAST CHESHIRE DIVISION.

THE annual meeting of this Division was held at the Macclesfield General Infirmary on Wednesday, June 19th, at 4.15 o'clock. Dr. HYDE MARRIOTT was in the chair, and twenty-two members were present.

Presentation to Dr. T. B. Hughes.—Before proceeding to business the Honorary Secretary and Treasurer (Dr. T. B. Hughes) was presented by the CHAIRMAN, on behalf of the members of the Division, with a most handsome silver rose bowl, for which he thanked the members most gratefully.

Election of Officers.—The following were elected officers: *Chairman*, Dr. Andrew Baxter; *Vice-Chairman*, Dr. E. A. Goulden; *Honorary Secretary and Treasurer*, Dr. T. B. Hughes; *Representative for Annual Representative Meeting*, Dr. L. J. Picton; *Representatives on Branch Council*, Dr. L. J. Picton and Dr. Moriarty; *Executive Committee*, the foregoing, *ex officio*, and Drs. Hyde Marriott and Howie Smith, and Mr. John Somerville and Mr. H. Wilson.

Vote of Thanks to Retiring Chairman.—A hearty vote of thanks was accorded to Dr. HYDE MARRIOTT for his services to the Division during the past year. This was carried with acclamation. Dr. ANDREW BAXTER then took the chair, and thanked the members for the honour they had done him in electing him to the responsible post.

Report of Executive Committee.—The annual report of the Executive Committee was then read and adopted.

Provisional Medical Committee.—The report of the committee was read and adopted, and the Secretary (Dr. L. J. PICTON) was congratulated on the great amount of work that had been done, and he, in turn, thanked his correspondents in the different parts of the Division, who had so assiduously helped him in the canvass, etc.

Instruction to Representative.—The various matters referred to Divisions in SUPPLEMENTS of May 11th and May 18th were considered, and instructions given to the Representative on each one.

Votes of Thanks to Governors of Infirmaries.—Votes of thanks were accorded to the Governors of the Macclesfield and Stockport Infirmaries for the use of their Board Rooms for Divisional meetings.

The meeting was then adjourned till June 26th.

Adjourned Meeting.—The adjourned meeting was held on June 26th at the Stockport Infirmary, at 4 o'clock; Dr. ANDREW BAXTER was in the chair, and nineteen members were present.

Apologies for Non-attendance.—Apologies for non-attendance were received from Drs. Rayner and Fellows.

State Sickness Insurance Committee.—Resolutions in support of the State Sickness Insurance Committee's action in regard to their advice in the matter of practitioners accepting nomination on the Provisional Insurance Committees, and accepting medical appointments for administration of sanatorium benefit, were adopted.

The Insurance Act and the Profession.—The following resolution was adopted by the Division, and the Secretary was requested to send it to the Medical Secretary for inclusion in the Agenda of the Annual Representative Meeting:

> That the Council be instructed to inform the Government:
>
> 1. That in the opinion of the Representative Body of the British Medical Association, the provisions of the National Insurance Act dealing with medical benefit are such as to constitute a great menace to the medical profession and to its usefulness to the community, and that they should be remodelled on the basis of the essential features of private practice.
> 2. That these features should be embodied in a scheme on the following lines:
>
> § (1) Free choice of doctor from the *Medical Register* subject to doctor's consent.
> § (2) Payment for work done on a standard tariff.
> § (3) Patient to be responsible to the Insurance Committee for some portion of the cost of attendance, such liability to be limited to an amount fixed in relation to his wages.
> § (4) The British Medical Association is further of opinion that there should be facilities for consultations and special services, and for this purpose would propose that in each large insurance area a body of consultants, similar to the staff of a general hospital, should be formed, and that their services should be available at the request of a general practitioner.
> § (5) And that, in view of the saving resulting from § (3), and of the economy of extending the services suggested in § (4) to the non-insured members of a household, and of the national importance of medical treatment in the case of young lives and married women, wives and children and other dependants of insured should be included in medical benefits.

METROPOLITAN COUNTIES BRANCH:

CHELSEA DIVISION.

A MEETING of the Division was held at the Fulham Town Hall on June 25th, 1912. Dr. YOUNG was in the chair, and twenty-eight other members were present.

Local Provisional Medical Committee.—In reply to the State Sickness Insurance Committee, a detailed report on the organization of the local profession up to date was forwarded, of which the following is a summary:

Retired practitioners	15	of whom	3	have signed pledge.	
Whole-time practitioners	30	,,	24	,,	,,
Home addresses	3	,,	0	,,	,,
Not in practice in, but resident in area	9	,,	0	,,	,,
Hospital residents	11	,,	8	,,	,,
Honorary staff	7	,,	4	,,	,,
Contract practice appointment holders	42	,,	41	,,	,,
Others	88	,,	77	,,	,,
Total number of practitioners	205	,,	157	,,	,,

Of the 42 holding contributory contract practice appointments 41 have signed and handed in all, or nearly all, their resignations thereof. As far as the Fulham portion of this Division is concerned, the following figures speak for themselves:

Number of men in actual practice	77
Number of same who have signed the pledge	74
Number holding contract appointments	28
Number who have sent in all resignations thereof	28

Of the three who have refused to sign the pledge, one is a personal friend of the Chancellor, one is partly incapacitated, and the third is a hospital resident. As regards the Chelsea portion of the Division, nineteen men in

actual practice have not at present signed the pledge, but of these eleven hold hospital or other institutional appointments, and the Committee trusts that they will all come into line. Of the remaining eight, one only, it is believed, holds any contract appointments. In the opinion of the Committee, this Division is quite "sound." The report was adopted.

Supplementary Pledge.—Dr. PERCIVAL WHITE moved:

> That, subject to the approval of the State Sickness Insurance Committee of the Representative Body, lists of the medical men in Chelsea and Fulham (*a*) who have signed the supplementary pledge; (*b*) who have not signed the said pledge by the date specified by the State Sickness Insurance Committee, together with a description of the branch of practice in which they are engaged, be circularized amongst all the members of the profession in the district.

He had been told by some friends that there were two objections to his proposal, namely: (1) That it was not conciliatory. He could not admit that a conciliatory attitude was the correct one to adopt at the present time. (2) That it savoured of trade unionism. He reminded them that another profession—that of the Bar—furnished them with a conspicuous example of trade unionism. The resolution was seconded by Dr. FLETCHER, and carried unanimously.

Public Medical Service.—The Public Medical Service schemes were considered, and recommendations made which will be reported to the State Sickness Insurance Committee.

A MEETING of the Division was held at the Fulham Town Hall on July 9th. Dr. YOUNG was in the chair and thirty members were present.

Midwifery Fees.—A letter was read from the Fulham Board of Guardians consenting to receive on July 25th a deputation to discuss the question of midwifery fees.

Contract Practice Committee of Branch.—A letter was read from the Honorary Secretaries of the Metropolitan Counties Branch, asking the Division to nominate two members for the Contract Practice Committee of the Branch. Drs. W. S. Lee and P. W. Spaull were appointed.

Examination of Candidates for Sick Club.—A letter from Dr. Butler was read, *re* examination of candidates for the P.S.A. sick club. After some discussion, in which it was pointed out that the medical officers to this society were bound to carry out their contracts, it was decided that no action should be taken in the matter.

Letter from Stockport Division.—A letter was read from the Stockport Division. It was considered inopportune to support the resolution contained therein.

Medical Treatment of School Children in Fulham.—A letter from the School Medical Officer to the London County Council was read. It referred to the proposed centre for the treatment of school children in Fulham. Dr. KEEN moved, and Dr. GALLARD seconded:

> That it be referred to the School Clinic Committee of the Division.

Dr. LEE moved, and Dr. HAMILTON seconded:

> That the letter be acknowledged.

On a show of hands, the amendment was carried by 11 votes to 9. Dr. LEE also moved, and Dr. HAMILTON seconded:

> That no member of this Division shall accept any post on a London County Council school clinic until he has obtained the sanction of the Division.

This was carried.

Negotiations with Insurance Commissioners.—A letter from the State Sickness Insurance Committee was read, in reply to a letter from the Local Provisional Medical Committee of Chelsea, respecting the negotiations with the Insurance Committee.

Consultants and the Supplementary Pledge.—Dr. FLETCHER moved, and Dr. LEE seconded:

> That a member of this Division be cordially thanked for refusing to meet a consultant who had not signed the above pledge.

This was carried unanimously.

Results of Canvass.—A letter was read from the State Sickness Insurance Committee, requesting the Local Provisional Medical Committee of Chelsea to forward by July 8th the final results of its canvass of the local profession *re* work done under the Insurance Act. The Honorary Secretaries informed the meeting that the report was as follows:

There were 177 men in actual practice in the area.
28 held whole-time appointments, of whom 25 had signed the pledge.
11 were hospital residents, of whom 11 had signed the pledge.
9 were members of hospital staffs, of whom 9 had signed the pledge.
43 held contract practice appointments, of whom 42 had signed the pledge.
86 others in general practice, of whom 82 had signed the pledge.
Of the 43 holding contract practice appointments, 42 had sent in all their resignations thereof.

It was resolved that the staffs of all the hospitals, who had members residing in this area, should be thanked for their loyalty to the interests of the whole profession.

Resignation of Contract Practice.—A discussion took place as to when these should be sent in. Dr. BUTLER moved, and it was seconded:

> That the Representative move or support the following resolution, at the Representative Meeting:
>
> That the State Sickness Insurance Committee be instructed to take the necessary steps to have all the resignations of contract practice appointments throughout the United Kingdom sent in forthwith.

This was carried *nemine contradicente.*

Supplementary Report of Council.—It was moved by Dr. GALLARD and seconded by Dr. LEE:

> That the Representative be instructed to vote as he pleased on the various items of this report.

It was felt that he understood generally the opinion of the members thereon. This was carried *nemine contradicente.*

Special Report of Council concerning Position of Medical Profession in Relation to National Insurance Act.—Dr. LEE moved and Dr. BUTLER seconded:

> That the recommendation to break off negotiations be adopted, and that our Representative vote accordingly.

This was supported by Drs. TONKIN, GALLARD, and others. An amendment of Dr. HAMILTON, that the Representative should have a free hand, did not find a seconder. The resolution was carried with acclamation. Dr. FLETCHER moved and Dr. BUTLER seconded the following resolution, which was carried:

(*a*) That the State Sickness Insurance Committee be instructed to prohibit any member of the British Medical Association from serving on a local Insurance Committee (provisional or otherwise), either in a civic or medical capacity, until the demands of the Association have been conceded.
(*b*) That all members of the Chelsea Division do now pledge themselves neither to call into consultation nor to meet in consultation any consultant (whether member of a hospital staff or not) who has not signed the supplementary pledge.
(*c*) That all members of the Chelsea Division do pledge themselves to employ no locumtenent or assistants who have not signed or who refuse to sign the supplementary pledge, and that a copy of this resolution be forwarded forthwith to the London agents who supply locumtenents, etc.
(*d*) That the Medical Secretary be requested to forward to all Divisions, as soon as possible, a complete list of consultants (whether members of hospital staff or not) who have signed the supplementary pledge.

GREENWICH DIVISION.

A MEETING of this Division took place on July 11th, 1912, Dr. J. P. PURVIS being in the chair.

Instructions to Representative.—The instructions for the Representative at the Representative Meeting were considered, and it was decided to break off negotiations with the Government.

Notification of Epidemic Diarrhoea.—The following resolution was unanimously adopted:

> That this Division of the British Medical Association strongly condemns the action of the Deptford Public Health Committee in attempting to obtain gratuitously the notification of epidemic diarrhoea, and sees no reason why a public body should impose on the charity of the medical profession to assist it in performing a public duty.

HAMPSTEAD DIVISION.

A MEETING of this Division was held at the Central Library on July 11th. Mr. E. E. WARE was in the chair, and twenty members were present.

Medical Benefit.—A letter from the Stockport Division, enclosing a resolution as a rider to Motion 6 of Annual Representative Meeting *re* medical benefit, was read.

Ealing Resolution.—A letter from the Ealing Division, enclosing a resolution passed by the Divisional Executive Committee, was read; thereon Dr. OPPENHEIMER moved and Dr. WINSLOW HALL seconded:

That the Representative be directed to vote against the Ealing resolution.

This was defeated by 11 to 3. Thereon Dr. PRITCHARD moved and Dr. PICARD seconded:

That the Representative be instructed to vote in favour of the Ealing resolution.

This was carried by 12 to 3. The Ealing resolution is as follows:

That the Representative Body of the British Medical Association be requested to point out clearly to the profession that the acceptance of posts (either whole or part time), whether in tuberculosis dispensaries or otherwise, for the administration of sanatorium benefit, while the general demands of the profession are unsatisfied, would be contrary to the interests of the profession and would incur general disapproval, for the reason that such acceptances would constitute a bad precedent and destroy the unity of the profession.

Instruction to Representative.—Dr. PRITCHARD moved:

That the Representative be instructed to vote for the breaking off of negotiations (Recommendation X).

This was seconded by Dr. OPPENHEIMER. An amendment was moved by Dr. FORD ANDERSON:

That the Representative be given a free hand, bearing in mind the general attitude of the Division.

This was seconded by Dr. H. F. WINSLOW, and was lost by 4 to 13. The motion was now put and carried by 15 to 4. Dr. OPPENHEIMER moved and it was seconded by Dr. MACFADDEN:

That the Representative be instructed to ask for a definition of the pledge from the Annual Representative Meeting.

This was defeated by 16 to 3.

HARROW DIVISION.

A MEETING of this Division was held on July 11th. Dr. A. H. WILLIAMS was in the chair, and twenty-six members were present.

Resignations of Club Appointments.—Dr. PENNEFATHER stated that the resignations of club appointments in this Division had not so far been sent in to the various club secretaries, and read a letter from the State Sickness Insurance Committee saying, that, as the results of the canvass had not been sent in by all the Divisions, the Committee had not sufficient information in its possession to justify it in ordering the resignations to be sent in at this moment. Dr. WILLIAMS explained that since that letter was written the State Sickness Insurance Committee had received additional information, and reported the latest results of the canvass, and stated that the Representative Body would decide the question whether the resignations should be sent in. The meeting expressed a very strong opinion that these resignations should be tendered as soon as possible, and the Representative was asked to wire to the Honorary Secretary as soon as the Representative Body had decided the question.

Deputy Representative.—Dr. C. M. Pennefather was elected Deputy Representative.

Contract Practice Committee of Branch.—The following members were elected: Dr. H. R. Harley, engaged in contract practice; Dr. F. H. Moxon, not engaged in contract practice; Dr. C. M. Pennefather, Honorary Secretary, *ex officio*.

Resolutions from other Divisions.—Resolutions were read from the Marylebone Division *re* resolution of the Lambeth Provisional Committee, from the Ealing Division, and the Representative instructed thereon.

Examination of Candidates for Admission to Societies to become "Approved Societies."—The advisability of examination was discussed, and it was resolved:

That pending the decision of the Representative Body, medical practitioners may examine candidates for admission to friendly societies at a reasonable fee.

Public Medical Service.—This was considered by the meeting. The decisions have been reported to the State Sickness Insurance Committee.

Report of Council.—This was considered, and the recommendations by the Council discussed and the Representative instructed thereon. The alternate recommendations, as to the future action of the Association, evoked some spirited remarks by many members present, and the Representative was instructed by 26 votes to 1 to support the policy of breaking off all negotiations forthwith.

The Supplementary Report of Council was also considered, and instructions given to the Representative.

LAMBETH DIVISION.

A MEETING was held at Bethlem Hospital on July 9th at 4 p.m. Dr. CAPES was in the chair; fifty-three members were present.

Contract Practice Committee.—Dr. T. H. Parkes Peers and Dr. D. Wallace Smith were elected to serve on the Contract Practice Committee of the Branch.

Report of Council.—Recommendations A to Q were unanimously approved. After considerable discussion, in which Messrs. DENNING, CRIPPS, ROBINSON, RICHMOND, MICHAEL, SALTER, and MACKEITH took part, Recommendation Y, to the effect that negotiations with the Government should be continued, was passed with eleven dissentients. The recommendations contained in the Supplementary Report of Council were then unanimously adopted.

NORTH MIDDLESEX DIVISION.

THE seventh ordinary meeting of this Division was held on July 11th at the Hornsey Council Schools, Finsbury Park, Dr. RICHMOND BRYCE in the chair. Forty-four members were present.

National Insurance Act.—The consideration and discussion of the State Insurance Committee's Report concerning the present position of the profession in relation to the Act was then entered upon with vigour, and the Division's Representatives were instructed to record their votes at the Representative Meeting—in the light of statements made at that meeting as to the increased strength of the Association, and to resist Government pressure, if that strength were sufficient, by breaking off further negotiations.

Antituberculosis Dispensaries in County of Middlesex.—Dr. BRACKENBURY having given an exhaustive report on the draft scheme of the Middlesex County Council *re* antituberculosis dispensaries, it was moved and seconded:

That the secretary be instructed to write to the Middlesex County Council expressing the opinion of the meeting *re* the scheme.

Members of Friern Barnet Urban Area.—At the request of these members, their wish to join the Finchley and Hendon Division was acceded to.

Public Medical Service.—Owing to the lateness of the hour the discussion of these schemes was postponed to the next meeting.

ST. PANCRAS AND ISLINGTON DIVISION.

Dinner to Dr. Walter Smith.

THE members of the St. Pancras and Islington Division of the British Medical Association on June 28th gave a dinner at the Midland Hotel, St. Pancras, to Dr. Walter Smith on his retirement, and presented him with a piece of plate as a token of esteem. Dr. R. M. BEATON, President of the Division, occupied the chair. The loyal toasts having been honoured,

Dr. BASIL G. MORISON proposed the toast of "The Division." He referred to the unusual activities of the year, and said that the Division had upheld its opinions and had considered the Insurance Act in a businesslike and methodical way. No Division had stood to its guns better than St. Pancras and Islington, and although it must be confessed that the net result of a year's work was that the six points were still in the air, in other directions something had been done, the most important being that the profession, and not the Association only, had organized itself. If the profession did not get its six points, the outlook was not unfavourable; a public medical service, organized by the profession, would be inaugurated. If the members of the profession stood fast, instead of being made the plaything of Governments

and friendly societies as threatened at present, the profession would carry and maintain its just demands. Dr. Morison referred to the great assistance he had received during his term of office as President from the late Secretary, Dr. Alex. Brown, and congratulated the Division that a worthy successor to Dr. Brown had been found in Dr. Wilson.

Dr. BROWN, in responding to the toast, said that, as President, Dr. Morison had proved himself to be a man of strong opinions, which had been invaluable in piloting the Division through a stormy period. Dr. JOSEPH WILSON also responded.

The CHAIRMAN submitted the toast of "Our Guest," whose work, he said, members of the Division had known and appreciated for a long time. Dr. Walter Smith, who was born at Bognor some seventy years ago, at the conclusion of his studies started in practice in St. Pancras. The work he had done as a general practitioner was work that not only tried the temper but the best qualities of a man; it put him on his mettle, and required him to be courageous and fearless in doing his duty. Dr. Smith had carried out his medical work not only to the benefit of his patients but with credit to himself. But he had been more than a medical practitioner: for twenty years, notwithstanding his busy professional life, Dr. Smith did great work for St. Pancras on the vestry and the borough council, which in its first year did itself the honour to make Dr. Smith an alderman of St. Pancras. He was also a member of the board of guardians, and although he had now relinquished public work he was still a school manager, in which capacity he would continue to help young people. Medical men were forced by the nature of their work, especially if it was amongst the poor, to become social reformers, and so it was with Dr. Smith. Those who had watched his public work were struck with his open mind, fairness in debate, and willingness to take sides against what might be called his party for what he believed to be right and true. In addition to his work in that direction, Dr. Smith had taken an active interest in the central work of the British Medical Association. For thirty years he had attended the annual meetings, and he took a considerable part in the remodelling of the constitution. Now that he was going back to his native place to retirement, his colleagues sincerely wished him long-continued health and a joyous ending to his life.

Dr. Beaton then presented Dr. Smith with a piece of plate bearing the following inscription:

WALTER SMITH, Esq., M.D.,
From his Colleagues in the St. Pancras and Islington Division of the British Medical Association.
A token of esteem.
June, 1912.

Dr. WALTER SMITH, who was received with musical honours, spoke of the importance of attending the annual meetings and taking a share in the necessary work in connexion with the organization of the profession. His public work had been a labour of love, and he was convinced that every district would benefit if more medical men went on to public bodies. He did not think the Insurance Act a bad measure; in fact he regarded it as rather a good one. It was certainly the best thing that had ever happened to the profession from the point of view of bringing it together. If Mr. Lloyd George had only consulted the medical profession instead of ignoring it, the profession would have been able to do more for the measure than any amount of discussion in the House of Commons. He thanked the members of the Division from the bottom of his heart for all their kindness to him.

Dr. WILSON proposed the toast of "The Visitors," and Mr. LLOYD TAYLOR, L.C.C., replied.

During the evening an excellent programme of music was rendered, the contributors being Miss A. Burden, Miss F. Burden, Dr. Jackson, Mr. Claud Miller, L.D.S., and Mr. Horace Gibbs.

A MEETING of the St. Pancras and Islington Division of the British Medical Association, to instruct the Representatives at the Liverpool meeting, was held on July 12th at the Midland Grand Hotel, St. Pancras, the CHAIRMAN (Dr. R. M. Beaton) presiding. An invitation to be present was extended to all members of the profession in the Division, and there was a large attendance.

Insurance Act Pledges.

The HONORARY SECRETARY (Dr. Joseph Wilson) gave an analysis of the pledges received to date. There were 262 practitioners residing in the Division, of whom 246 had signed the pledge, leaving 16 who had not signed. Of this number only 5 practitioners in the whole of the Division could be considered effective for the purposes of the Act. Of 8 retired practitioners, 2 had signed. Of 9 resident medical officers, 5 had signed; the others were away on holidays. Resident staffs in hospitals numbered 31; of these 23 had signed.

The CHAIRMAN thought the members of the Provisional Committee deserved the thanks of the Division. The result of the canvass was that in the whole of the eight parliamentary constituencies comprised in the Division only 5 men who could be considered effective had declined to come in. That was a most creditable result. North, South, and West Islington had signed to a man; in North and East St. Pancras there was only 1 exception. The other exceptions were in South and West St. Pancras. Practically the Division was solid against the "rare and refreshing fruits."

Insurance Act Negotiations.

Dr. ROCHE moved a resolution that the Representatives of the Division be instructed to vote at Liverpool in favour of Recommendation X of the Report of Council to the effect that further negotiations with the Government be discontinued. Dr. Roche denied a statement in the daily press that the movement in the profession in favour of breaking off negotiations had been engineered by consultants in the West of London, or that it was part of a political movement. In this matter the profession had no politics; it had carefully considered the matter as it affected its means of earning a livelihood, and the great majority of its members had come to the conclusion that Mr. Lloyd George's terms simply would not do. It had also been stated that little importance attached to the resignations because many of those signing the pledge were not affected by the Act. The figures given that evening showed that, as far as St. Pancras and Islington was concerned, at any rate, this was not true. The contract system was a bad one, and one reason why the profession disliked the Act was that a bad system which obtained to a certain extent was to be perpetuated and extended. Mr. Lloyd George said that most of the points demanded by the profession had been conceded. As a matter of fact concessions which were made in words in the Act were violated in spirit. No advantage could result from further negotiation; it would be sufficient, if Mr. Lloyd George had anything further to communicate, for him to come to the profession.

Dr. BASIL G. MORISON, in seconding, remarked with regard to income limit that the Chancellor referred the profession to the Local Insurance Committees. It was obvious that there was little chance of an income limit of £2 a week being fixed by them. If the profession negotiated on the new basis suggested by the Chancellor, merely to continue meant the surrender of their points. Since the State Sickness Insurance Committee stated that no material concession had been made since February last, the obvious course was to break off negotiations, and if the profession remained united the result, after the transition stage had been passed, would be to its advantage. The fact that the Association had in its possession two-thirds of the pledges for the United Kingdom, and also the original declaration of 26,000 members of the profession, cut at the root of the proposal to staff sanatoriums by whole-time officers. It was said that a further six months remained for negotiation, but how was the profession to organize itself if it had not taken a definite decision as to its policy?

Dr. JOSEPH WILSON said that in connexion with the work of the Provisional Committee he had obtained a knowledge of the feeling of the profession generally, and it was undoubtedly strongly in favour of breaking off negotiations. The Chancellor was anxious that the profession should continue negotiations, because it would be placed in an awkward position when the time came, in another few weeks, for sending in resignations of club appointments. The result might be the disorganization of a profession which was now thoroughly organized and unanimous.

The resolution was put to the vote, and the CHAIRMAN'S

announcement that it had been carried unanimously was received with loud applause.

Dr. Alex. Brown expressed his agreement with the instructions of the Division, and promised that they should be faithfully and explicitly carried out.

Sanatorium Benefit.

The Chairman said that it was held by some that sanatorium benefit differed from medical benefits, and that, as there was a considerable amount of money to be spent in this direction, it should find its way to the right sections of the medical profession. It was also felt that, if members of the Association refused to work the Act as regards sanatorium benefit, other men who were not so loyal to the profession would be given an advantage. On the other hand, the point had to be considered that if the profession were at war, compromise was not a wise thing. It was better to be fighting all along the line than to be at war at one point and not at war at another. It seemed highly probable that the pushing forward of sanatorium benefit on July 15th, which was quite unnecessary, was done with the distinct object of breaking up the profession. He believed personally that it was intended to try by salaried appointments to lead men away from their allegiance to the Association, so that when the time came for the profession to refuse to work the medical benefits there would be disunion.

Dr. Glaister moved that the following resolution be brought before the Representative Meeting:

> That this Representative Body calls upon all members of the British Medical Association, and upon all other practitioners who have signed the undertaking or pledge, to refrain from applying for or accepting any office or post of any kind in connexion with sanatorium benefit under the National Insurance Act until the seven cardinal points have been conceded.

Dr. Glaister said this was a question of great difficulty because it was not a clear issue. On July 15th sanatorium benefit came into operation, and it was clear there would be a great difficulty in finding officers for the few institutions that existed. It would be impossible to erect any large number of temporary establishments, nevertheless the profession would at once refer tuberculous contract patients to the Commissioners, they having undertaken to provide this treatment. That in itself was a lever, and the Commissioners would be obliged to come to the profession and ask its help. He did not regard the resolution as precluding the filling up of certificates when requests for these were received from bodies under the Insurance Commissioners. Neither did he think the profession was precluded, when asked by the Commissioners to continue to treat tuberculous patients for the present until sanatorium benefit could be given, from doing so on receiving fees at the usual rates from the Commissioners.

Dr. Bulger seconded.

Dr. Cremin expressed agreement with what Dr. Glaister had said, and Dr. Malcolm also said that the profession should not touch sanatorium benefit.

The Chairman thought it ought not to go abroad that people suffering from phthisis would be left uncared for. That was being said, and it was very unfair. There was no reason why the profession should not continue to treat insured persons suffering from tuberculosis as ordinary patients. It was not necessary for the profession to know where the money came from—whether from the patient's own pocket or from the Insurance Commissioners.

Dr. Glaister mentioned the proposal to form a tuberculosis dispensary staffed and controlled by local practitioners in Islington. The dispensary would provide treatment for persons who could not pay and the private practitioner would offer treatment to those who could pay. The insured would fall into the class of people who could pay.

The resolution was carried unanimously.

Resignation of Membership of Advisory Committees.

Dr. Rattray moved and Dr. Malcolm seconded that the following resolution be brought before the Representative Meeting:

> That this Representative Body calls upon all members of the British Medical Association, and upon all other practitioners who have signed the undertaking or pledge, who are members of the Advisory Committees, to forthwith resign their membership of these bodies.

The resolution was carried.

Acceptance of Work under the Act.

Dr. Fouracre moved and Dr. Sandilands seconded a resolution, to be submitted to the Representative Meeting, expressing regret that members of the Association who had signed the undertaking or pledge had broken the spirit and letter of Minute 78 of the Representative Meeting by accepting office and work under the Insurance Commissioners, and calling upon these members to resign such offices.

This was also carried.

The Public Medical Service.

The Chairman, reviewing the proceedings of the evening, said it was a matter for thankfulness that the Division had come to unanimous conclusions upon the very momentous questions brought before it. The matter of a public medical service would have soon to be considered, for the work of the profession could not be destructive only. In refusing to work under the Act they must offer the public something to take its place. Four or five centres for the medical treatment of school children would shortly be established in St. Pancras, Islington, and elsewhere, and it was hoped by many members of the profession that these centres would be a nucleus round which could be built a public medical service. There was some disappointment when the London County Council decided at the inception of these schemes to refuse responsibility for the buildings, but now it appeared that this decision might be advantageous to the profession. By having the buildings under its control it could deal with children at certain times of the day, and with adult patients making use of the Public Medical Service at other times. These centres might become of great value to the general practitioner; they would bring him into touch with his old work and provide him with the opportunities afforded by a hospital. Referring to Sir William Plender's report, Dr. Beaton said that, so far as the profession was concerned, the document was not worth the paper it was printed on. Their case was that, whatever these towns said, the profession had stated its minimum demands and would take nothing less.

A Public Manifesto.

It was decided, on the proposition of Dr. Basil G. Morison, seconded by Dr. Glaister, to call upon the Representative Meeting to issue a public manifesto drawing attention to the formation of a public medical service.

Vote of Thanks.

A vote of thanks to Dr. Beaton for his work on the Advisory Committee and in other capacities on behalf of the profession, proposed by Dr. Alex. Brown, was carried with acclamation, and the proceedings terminated.

West Hertfordshire Division.

The first annual meeting of this Division was held at the Town Hall, St. Albans, on Tuesday, June 18th, Dr. Leslie Bates in the chair. A large number of members attended.

Election of Officers.—The following appointments were confirmed: *Chairman*, Dr. Leslie Bates; *Vice-Chairman*, Dr. C. Herbert Hall; *Honorary Secretary*, Dr. Sidney Bontor; *Representative in Representative Meetings*, Dr. Sidney Bontor; *Deputy*, Dr. Wells; *Representatives on Branch Council*, Dr. F. Claude Evill, Dr. Sidney Clarke.

Rules.—The proposed Organization Rules were adopted, and it was resolved that the Ethical Rules suggested by the Council should be adopted as the Ethical Rules of the Division.

Canvass.—The Honorary Secretary presented the following report respecting the recent canvass of the Division:

Total number of registered practitioners in the area of the Division	... 136
Not in general practice	... 37
Number who have signed the "pledge" ...	... 130
Number with hospital appointments	... 29, signed 29
Number with contract appointments	... 68, signed 66
Amount guaranteed to Guarantee Fund ...	...£820

The two club holders who had not signed the "pledge" would probably do so, as they had subscribed to the Guarantee Fund. All who had signed the "pledge" had sent in their "resignations."

Instructions to Representative.—The Report of Council and the Agenda of the Annual Meeting were then

considered, and the following instructions given to the Representative:—That he propose, or support, resolutions to the following effect:

1. That it is desirable that the expenses of its honorary workers be defrayed by the Association.
2. That, in view of the serious financial loss each year from the publication of the BRITISH MEDICAL JOURNAL, the opinion of the Divisions be taken as to the desirability of curtailing the expenditure upon it.
3. That the recommendation of the Council respecting the increase of the Public Health Committee be approved.
4. That before the question of the desirability of the Association becoming a trade union is referred to the Divisions the matter be referred to the legal advisers of the Association.

Death Certificates.—The following resolution was unanimously adopted:

That the West Herts Division of the British Medical Association, acting on the decision of the Annual Representative Meeting, 1911 (Birmingham), calls upon all members of the profession practising in its area to refrain from, in future, filling in the particulars of the duration of disease in any statutory death certificate signed by them.

Public Medical Service.—The schemes for a Public medical service were then considered, and decisions were arrived at which will be reported to the State Sickness insurance Committee. The meeting having lasted over three hours, the further consideration was adjourned.

A MEETING was held in St. Albans on July 9th.

Canvass.—A satisfactory report from the East Hertfordshire Division was received.

The Government Inquiry as to Medical Remuneration.—The practitioners of St. Albans reported that they had been requested by the Government to assist in the inquiry into medical remuneration. While individually strongly resenting the request, they considered that a refusal upon their part might be turned against the interests of the profession as a whole; they therefore all gave the investigators all information that could possibly be supplied, and placed their books at the disposal of Sir William Plender's staff, after certain further guarantees had been given.

County Insurance Health Committee.—The Divisional Secretary was requested to find out whether a certain practitioner intended, as he had been nominated, to hold a seat in his professional or lay capacity. The practitioner has since stated that he agreed to act under a misunderstanding, and naturally would resign immediately.

Resignations.—A letter from the State Sickness Insurance Committee about the resignations was read.

Report of the State Sickness Insurance Committee and Council.—A discussion upon this took place, and the Representative was instructed to support the continuation of negotiations. (Voting—18 for, 10 against.)

WESTMINSTER DIVISION.

A MEETING of this Division was held on July 9th at the St. James's Vestry Hall. Dr. ARCHER was in the chair, and there was a very large attendance of members present, the meeting being one of the largest in the annals of the Westminster Division.

Instructions to Representatives.—After the minutes and correspondence had been dealt with, the meeting took up the question of instructions to their Representatives at the forthcoming meeting in Liverpool. Dr. HASLIP proposed that the meeting should at present confine its attention to the point recommended by the Council whether negotiations with the Government with regard to the National Insurance Act should be continued or should be broken off. This was agreed to. Dr. HUNT then proposed that negotiations should be broken off, and spoke in favour of this. Dr. O'CONNOR seconded. Mr. HILLIARD spoke in favour of continuing negotiations, but did not move any amendment to Dr. Hunt's resolution. No amendment to the resolution being brought forward, Dr. Hunt's resolution was put to the meeting and carried *nemine contradicente*. Dr. O'CONNOR spoke with regard to some other points with reference to instructions to Representatives.

WILLESDEN DIVISION.

A MEETING of the Division was held at Harlesden on July 12th, for the purpose of instructing the Representative. Thirty members were present. In the absence of Dr. Coram James Dr. MACAULEY was unanimously elected to the chair.

Letters.—Letters were read from Drs. Joy and Turner in favour of breaking off negotiations with the Commissioners.

Instructions to Representative.—Dr. MACEVOY asked for instruction on the question of the payment of expenses of Representatives. After some discussion he was instructed to support the recommendation of the Finance Committee of the Council (SUPPLEMENT, July 13th, p. 65). On the question of resignation or dismissal of Representative (SUPPLEMENT, May 18th, p. 509) no decision was come to. No notices of motion having been received by the Honorary Secretary on any of the Recommendations of Council except X and Y, all the recommendations except X and Y were put *en bloc*, and it was agreed that he vote for them.

The Question of Negotiations.—Dr. SKENE then proposed:

That this meeting of medical practitioners refuses to work under the Insurance Act, except upon terms which shall be no less than the minimum demands already laid before the Insurance Commissioners.

Dr. Skene reviewed the negotiations which had taken place between the State Sickness Insurance Committee and the Commissioners, and showed that they were still as far as ever from obtaining their minimum demands, and it was time now they should take a definite stand and refuse further negotiations. Dr. SMURTHWAITE seconded. After some discussion the motion was withdrawn, and Dr. SKENE proposed and Dr. SMURTHWAITE seconded a motion:

That the Representative be instructed to support Recommendation X of the Council—namely, that negotiations be broken off.

This was carried unanimously with acclamation.

MUNSTER BRANCH.

THE annual general meeting of this Branch was held on Saturday, June 22nd, Dr. H. R. TOWNSEND in the chair.

New Members.—The following were elected members of the Association: Thomas O'Brien, L.R.C.P.and L.R.C.S.I. (Ardna Griena, Mitchelstown), Daniel Murphy, L.R.C.P.and L.R.C.S.Edin. (Ventry Dispensary, Dingle, co. Kerry).

Vote of Condolence.—It was carried:

That we, the members of the Munster Branch of the British Medical Association, at our meeting this day, desire to express our deep sympathy and condolence with Dr. John Booth and members of his family on the death of his brother the Rev. R. T. Booth, M.D.

Election of Officers.—The following were elected officers: *Representative in Representative Meetings*, Dr. John Reid (Bandon); *Representative on Irish Committee*, Dr. J. Giusani (Cork). Officers and Council for 1912–13: *President*, Dr. J. T. O'Connor (Camden Place, Cork); *Vice-President*, Dr. J. Reid (Bandon, co. Cork); *Retiring President*, Dr. H. R. Townsend. Ballot for twelve members of Council was taken, and the following elected: Professor W. Ashley Cummins, Drs. Lucy Smith, R. P. Crosbie, O. McCarthy, H. Hobart, T. J. O'Meara (Skibbereen), M. Cagney, T. G. Atkins, D. J. O'Connor, T. B. Moriarty, A. S. Nance, J.P. (Bantry), W. Donovan (Queenstown); *Honorary Secretary*, Dr. Philip G. Lee (Patrick's Hill, Cork).

Adoption of Ethical Rules.—It was carried:

That the Council of the Branch be the Ethical Committee of the Branch.

Model Rules for a Branch.—The draft model rules for a Branch of the British Medical Association were adopted with certain modifications. It was decided that these be submitted to the Association for approval, and then be laid before the Council of the Branch.

NORTH OF ENGLAND BRANCH.

A SPECIAL and urgent meeting of the medical men practising in the Hexham area was held on Tuesday, July 9th, at the Abbey Hotel, Hexham. Twenty medical men were present. Dr. KENDAL, of Hexham, occupied the chair. Drs. Lachlan Fraser, Modlin, and Todd were present from the Branch Council.

The Profession and the Insurance Act.—Dr. TODD, Honorary Secretary and Treasurer of the Branch, gave an address on the present position of the profession as affected by the Insurance Act. He carefully went into detail in connexion with the proposed sanatorium treatment. A very keen interest was shown by those present, and many questions were asked and answered. There was a strong feeling expressed with regard to the wage limit as affecting

their area. The following resolutions were carried unanimously—proposed by Dr. Kendal and seconded by Dr. Fraser:

> That, after having heard the address, they, the medical men practising in the Hexham area, approve of the action and adhere to the policy of the British Medical Association.

Proposed by Dr. Miller and seconded by Dr. Buchanan:

> That all those present sign the pledge of the British Medical Association, and immediate steps be taken to get the other medical men in the area to do likewise.

All the men present signed the pledge and four new members joined the Association.

Vote of Thanks to Dr. Todd.—Dr. Buchanan proposed and Dr. Jackson seconded a vote of thanks to Dr. Todd for his address, and to Drs. Lachlan Fraser and Modlin for their attendance at the meeting, and this was carried by acclamation.

Bishop Auckland and Durham Divisions.

A combined meeting of these Divisions was held at the County Hotel, Durham, on Tuesday July 2nd, at 2.30 p.m., Dr. Smith (Durham) in the chair. About twenty members were present.

Election and Instruction of Representative.—Dr. Farquharson (Spennymoor) was unanimously adopted Representative. After discussion, the following resolution, moved by Dr. G. Denholm and seconded by Dr. Gascon, was carried unanimously:

> That Dr. Farquharson be given a free hand at the Representative Meeting at Liverpool, on the understanding that he does not vote for a capitation fee lower than 7s. 6d.

Supplementary Pledge and Resignation Forms.—Arising from a question, Dr. Farquharson stated that, in his opinion, the supplementary pledge and resignation forms did not apply to colliery practice, as the families whom they contracted to attend did not become insured persons under the Act.

NORTHERN COUNTIES OF SCOTLAND BRANCH:

Banff, Elgin, and Nairn Division.

A meeting of this Division, to which non-members had been invited, was held in Gray's Hospital, Elgin, on Tuesday, July 9th. Dr. Mackie, Vice-Chairman, presided until the arrival of Dr. Duguid, sen., Chairman of the Division, who had been unavoidably delayed. There was a very representative attendance.

Provisional Medical Committee.—The Honorary Secretary read a minute of a meeting of the Elgin and Nairn Provisional Medical Committee, held that afternoon (July 9th), in which the following resolution occurred:

> The Committee unanimously resolved not to approve of any medical man in this area accepting a post on the Provisional Insurance Committee of Elgin and Nairn until terms are arranged between the British Medical Association and the Insurance Commissioners.

The Division meeting approved of this resolution. The Honorary Secretary of the Banffshire Provisional Medical Committee intimated that all the medical men in Banffshire who had been approached on the matter had declined to serve on the Banffshire Provisional Insurance Committee.

Instructions to Representative.—The Report of Council to the Annual Representative Meeting was gone over in detail, and the Representative instructed to support Recommendations A to Q. Considerable discussion took place over the alternative Recommendations X and Y, and ultimately it was unanimously agreed to instruct the Representative to support Y, with the addition "if as the result of negotiations the demands of the profession are not granted by October 15th, that negotiations be then broken off," and the Representative was instructed to move this rider at the Representative Meeting.

The Supplementary Report of Council, 1911-12, was also gone over and the Representative instructed to support generally the recommendations of Council, but to oppose the motion of East Norfolk for this year. The Division agreed to adopt the model resolution suggested on the filling up of death certificates.

Public Medical Service Schemes.—This question was left over meantime.

Fee for Examination of Candidates joining Societies under the Insurance Act.—It was agreed to recommend to medical men in the Division that a fee of 2s. 6d. be charged for examining candidates for bona fide membership of an approved society.

Married Men's Associations in Connexion with Clubs.—It was agreed to recommend that all such be given up at December 31st, 1912, and no new ones taken on.

The Honorary Secretary was instructed to send a copy of a detailed minute of this meeting to all medical men in the Division, so that interest may be kept up.

Results of Canvass.—The Honorary Secretary reported that all the general practitioners in the Division had now signed the supplementary pledge except two, and one of these had signed the resignation form for his club. In view of the acceptance of appointments under the Insurance Act by whole-time medical officers, the Honorary Secretary was instructed to invite the whole-time medical officers in Banffshire to sign the pledge, those in Elgin and Nairn having already done so.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH:

Furness Division.

A meeting of this Division was held in Barrow on July 10th. Dr. Sansom occupied the chair, and there were twenty-two members present.

Instructions to Representative.

In introducing this subject, Dr. Sansom said their ultimatum must now be given. It was obvious that their demands were not going to be met, as Mr. Lloyd George could not grant their request regarding the £2 limit. They had six months in which to plan what they were going to do.

Dr. Daniel, the Representative, read extracts from Mr. Lloyd George's letter (see Supplement, July 13th, p. 87). He thought it was all "bluff" on the part of the Chancellor. He hoped the Division would allow him latitude in voting at the Representative Meeting.

The Chairman read the Recommendation of Council (p. 23, Supplement, No. 130).

Dr. Cross said they had to consider their position after negotiations were broken off. Their position might become worse unless they had some scheme like a public medical service ready.

Dr. Kendall thought that while, as professional men, they might be inclined to break off negotiations, it would not be good business to do so. In his opinion Mr. Lloyd George was giving way. The Representative should have a free hand.

Dr. Pooley disagreed with Dr. Kendall's view. By continuing bargaining they would lose their present position. He proposed a resolution, which, with additions, was finally adopted.

Dr. Johnston seconded the resolution, and was strongly of opinion that negotiations should cease.

The following is the resolution:

> That, with the information at present in our hands, the opinion of this meeting is that negotiations should be broken off.

Dr. Rutherford said the Representative should have some latitude regarding the income limit. It would be difficult for them to check those with incomes over £2, but the income tax limit could be checked easily.

The Secretary (Mr. J. Livingston) said they had put forward their cardinal points as "the irreducible minimum." The Chancellor's reply was a polite "No." The Chancellor evidently wished them to continue negotiations, but they would gain by breaking off now. This meeting should instruct the Representative to vote for breaking off the negotiations unless he found that the response to the Guarantee Fund and the signing of the pledge all over the country showed they were too weak to fight.

Dr. Daniel agreed with the last speaker. He thought he should be sent down with a strong mandate to break off negotiations. At the last meeting of Representatives the North was strong and the South weak. This time, he believed, would show strength all over the country. He instanced the splendid reports from Leicester and other places.

Dr. Callaghan said the Representative should be instructed to break off all the negotiations except those

concerning the wage limit, and steps should be taken to form a public medical service.

Dr. ALEXANDER said that in discussing a wage limit they should remember the country members. A wage limit which would be fair in town would be too high in the country.

Dr. COOK said nothing was to be gained by breaking off negotiations. Club resignations should be sent in.

The opinion of most present was that giving 6s. instead of medical attendance was not carrying out this Act and was a breach of contract with insured persons.

The resolution noted above was carried, 19 voted for, none against, and 3 did not vote.

Public Medical Service.

A discussion on this resulted in the following resolution being passed:

That our Representative ask the Representative Body, in the event of the Association Public Medical Service scheme not being ready in time, to instruct the Divisions to form temporary Public Medical Services.

Dr. COOK proposed and Dr. CALLAGHAN seconded:

That the Representative Body be asked to forward the Public Medical Service scheme as soon as possible.

This was carried unanimously.

Expenses of Representatives.—The SECRETARY intimated that he had received £8 15s. from Furness and Kendal members towards defraying Representatives' expenses.

Correspondence.—The SECRETARY read communications from the Ealing, Stockport, and other Divisions. These were all read before the discussions, and a letter from Mr. Ballance was noted.

Local Health Committees.—The only medical councillor in Barrow (Dr. J. Leslie Callaghan) declined to serve. Another practitioner declined owing to the attitude of the Association. The Council then decided to make no medical appointment at present.

NORTH WALES BRANCH:

DENBIGH AND FLINT DIVISION.

Provisional Local Medical Committee.

AT a meeting held at Chester on July 11th, when thirty-three members attended, the following resolutions were placed before the meeting:

That we are of opinion that medical men acting as members of county councils do not violate any undertaking they have signed with regard to paid appointments under the Act.

Twenty-one members voted—14 for, 7 against.

That medical men other than councillors be permitted to act on county committees.

This was carried.

That the recommendations of Council contained in the Report of Council to the Annual Representative Meeting be approved.

This was carried. It was proposed and seconded:

That this meeting approves of Recommendation Y, and that it be an instruction to the Representative of the Division to support the recommendation in favour of continuing negotiations.

An amendment was moved:

That unless the Council of the Association has further information to lay before the Annual Representative Meeting to be held at Liverpool than is contained in the Report of Council which appears in the BRITISH MEDICAL JOURNAL SUPPLEMENT for July 6th, our Representative be instructed to give his vote in favour of "breaking off negotiations" with the Insurance Commissioners and Mr. Lloyd George.

The amendment was lost, 3 members only voting in favour of it, and the original resolution carried by a large majority.

SOUTH CARNARVON AND MERIONETH DIVISION.

THE annual meeting of this Division was held at the Royal Ship Hotel, Dolgelley, on May 30th, Dr. H. R. GRIFFITH (Chairman) presiding. Eighteen other members were present.

Election of Officers.—The following were elected: *Chairman*, Dr. H. R. Griffith (Portmadoc), re-elected: *Vice-Chairman*, Dr. J. O. Williams (Barmouth); *Honorary Secretary*, Dr. H. Gladstone Jones (Criccieth); *Deputy Honorary Secretary*, Dr. L. F. Cox (Llanbedr); *Representative at Representative Meeting*, Dr. H. R. Griffith; *Representatives on Branch Council*, Dr. Hugh Jones (Dolgelly), Dr. Rich. Jones (Festiniog), Dr. J. W. Rowlands (Llthaiarn) re-elected; *Executive Committee*, Dr. J. R. Jones (Penrhyn), Dr. Dingle (Barmouth), Dr. Lewis (Nevin); *Representative on Central Council*, Dr. H. Jones-Roberts (Penygroes).

Report of Executive Committee.—The annual report of the Executive Committee was read and adopted.

Report of Provisional Medical Committee.—The report of the Provisional Medical Committee was read, discussed, and adopted.

OXFORD AND READING BRANCH:

OXFORD DIVISION.

THE annual meeting was held on June 29th at the Randolph Hotel, Oxford, at 2.45 p.m. Thirty-two members were present at luncheon, previous to the meeting, and forty attended the meeting.

Installation of Chairman.—Mr. STYLE, in resigning the chair to Sir WILLIAM OSLER, took the opportunity of congratulating the new Chairman, on behalf of the Division, on the honour of a Baronetcy so lately conferred on him by His Majesty the King.

Chairman's Address.—After the reading and confirmation of the minutes of the last meeting the CHAIRMAN delivered his address. After some humorous allusions to the labours of the Secretary, Sir WILLIAM OSLER dealt shortly with the medical aspects of the Insurance Act, remarking on the unity of the profession and the mistaken medical policy of the Chancellor's advisers. Contract practice he thought to be not always good practice; it was sometimes slipshod and careless, and it was this that the profession must avoid. He looked for an extension of hospital work in two directions—(*a*) a closer connexion between the hospital and the practitioner, who should have access to the wards, as well as to medical society meetings; (*b*) and a system of post-graduate teaching, like that in vogue in Germany. Such a system might be organized by the Association, and take the form of one week per annum, at such an institution as the Radcliffe Infirmary.

Executive Committee's Report.—Attention was drawn to the large amount of work which had been carried out by the Division during the past session. Regret was expressed that owing to the stress of work occasioned by the proposals of the National Insurance Act, it had not been possible to hold the usual clinical and scientific meetings. Five special general meetings of the Division had been held, all well and often largely attended. There had been eleven meetings of the Executive Committee, two of the Provisional Local Medical Committee, and one of a Special Subcommittee to consider the hospital question. In addition to these meetings, there had been three complete canvassings of the whole district—one last winter and two within the last two months. The canvass included non-members, and personal visits had in some cases to be made to practitioners living in remote districts. The results of these canvasses proved that the Division showed a united front by the way in which both members and non-members had signed undertakings, pledges, and forms of resignation. A local Provisional Medical Committee on which the main burden of the canvassing has fallen had been formed. A local guarantee fund had been formed to indemnify practitioners who might suffer loss by adhering to the policy of the Association, amounting up to date to a little over £2,000. The Division numbered 150:

New members	25	
Moved in	6	
Resignations	4	(retired)
Moved out	8	

The following places had been transferred to the Reading Division to facilitate attendance at meetings:

Newbury, Hungerford, Kintbury, Enborne, Speen, Donington.

This had resulted in the transference of nine members from the Oxford Division to the Reading Division.

Report of Provisional Medical Committee.—The report of the Provisional Medical Committee showed the following results:

Pledges signed up to date	168
Resignation of contract appointments	356

	Signed Pledge.
Of 91 contract practice holders	91
Of 9 members of hospital staff	9
Of 12 hospital and asylum residents ... ... (Two non-signers not in this district.)	10
Of 54 others in active practice	46
Of 19 retired practitioners	8
Of 31 not in practice	7
Of 8 home address only	0
Of 5 whole-time men	4

Of the 8 men in active practice who had not signed, only 1 was a member, and he was absent from home. The other 7 non-members were men who had left and belonged to other districts, with the exception of 1, who was officer to a medical aid society.

Medical Officer of Health and County Council Insurance Committee.—The report was adopted *nemine contradicente*. It being understood that the medical officer of health for the county had accepted a post on the County Council Insurance Committee, it was proposed by Dr. COLLIER, seconded by Mr. WHITELOCKE:

That he be asked to resign his post, and that the Secretary should explain to him the reasons for this request.

This was carried *nemine contradicente*. [The post has subsequently been resigned.]

Financial Statement.—The SECRETARY read the balance sheet, which was adopted *nemine contradicente*.

Election of Officers. — The following were elected officers: *Chairman-elect*, Dr. O'Kelly, of Chipping Norton; *Vice-Chairman*, Mr. Style, vice Dr. Caudwell, retiring; *Secretary and Treasurer*, Dr. Duigan; *Assistant Secretary*, Dr. Gillett; *Divisional Representative*, Mr. Drew; *Two Members of Executive Committee*, Dr. Hitchings and Dr. Penrose (vice Dr. Ormerod and Dr. Croly, retiring).

Public Medical Service. — The scheme of a public medical service was deferred for discussion at a later date.

Examination for Admission to Friendly Societies.—A lively discussion took place on the subject of examination without a fee of new members joining friendly societies and clubs. It appeared that there was a great increase of new members joining with a view to coming under the Insurance Act, entailing much work of medical examination on the part of medical officers. Eventually the CHAIRMAN proposed that an expression of opinion to the effect that a fee should be charged should be formulated by himself and the Secretary, and signed by both, and distributed to the secretaries of the various clubs and societies. This was carried *nemine contradicente*.

Members were entertained to tea afterwards by Sir William and Lady Osler.

SOUTH-EASTERN BRANCH:

BRIGHTON DIVISION.

Reply of Insurance Commissioners.—A well attended meeting was held on July 9th at the Lecture Hall, New Road, Brighton, Dr. RYDING MARSH in the chair. The reply of the Insurance Commissioners to the demands of the medical profession was considered, and the Representatives were instructed for the Annual Representative Meeting at Liverpool. The Provisional Medical Committee appointed to consider matters referring to the Act had very carefully considered the question beforehand, and presented two reports which were read by the CHAIRMAN. Report No. 1 contained a statement of the results of the canvass of medical practitioners in the area of the Division, and showed that every one of the holders of club appointments had signed the supplementary pledge, and that all but one had sent in the provisional resignation of all club appointments. Report No. 2 consisted of seventeen recommendations, all of which were carried with a few amendments. The following were some of the more important, and were carried *nemine contradicente*:

That the Government be informed that the Association adheres to its minimum demands as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer.

That the Association calls upon all members of the Advisory Committees in connexion with the National Insurance Act, and also on other medical members of those Committees who are in sympathy with the policy of the Association, to withdraw from those bodies until such time as the cardinal principles of the British Medical Association shall have been granted to the satisfaction of the Representative Body.

That the British Medical Association calls upon all those practitioners who have signed the undertaking, and on all other practitioners who desire the unity of the profession, to refrain from applying for, or accepting, any duty, post, or office of any kind in connexion with the National Insurance Act until such time as the Government has satisfied the Association that its demands will be met.

That the honorary secretaries of all Provisional Medical Committees be instructed to send in the resignations of all contract appointments at a date to be fixed by the State Sickness Insurance Committee, not later than August 3rd, 1912.

That, should the Chancellor of the Exchequer offer to meet the Representative Body, his offer be declined until such time as the seven cardinal principles of the Association be granted to the satisfaction of the Representative Meeting.

That, until the seven cardinal principles of the British Medical Association are granted to the satisfaction of the Representative Meeting, no registered medical practitioner should give any assistance whatever toward bringing sanatorium benefits, or any other benefits, of the National Insurance Act into operation, either by assistance on committees, by means of certificates, medical attendance, examinations, or otherwise.

DARTFORD DIVISION.

A MEETING of this Division was held at Dartford on July 11th. Dr. CHARLES FIRTH, Chairman of the Division, presided.

Correspondence.—Letters were read from the Medical Secretary *re* resignation of club appointments, and from the Ealing Division *re* sanatorium benefits.

Supplementary Report of Council.—The recommendations in this report were carefully considered and agreed to, except Recommendation 23, *re* "Salaries of Ship Surgeons." It was resolved that the following words be added:

Except in those cases in which an *ad valorem* fee is paid for attendance on passengers.

National Insurance Report.—The various recommendations in this report were considered, and in most cases adopted without amendment.

Kent Sanatorium Scheme.—Dr. CROMBIE gave a short account of the proposed scheme, and a short discussion followed.

Recommendations X and Y. — It was unanimously resolved:

That the Representative be instructed to vote for the breaking off of negotiations, unless circumstances occur and reports are received at the Representative Meeting rendering such a course inadvisable.

Kent Medical Scheme. — The HONORARY SECRETARY gave a short explanation of this scheme, which had been approved by the Provisional Medical Committee for Kent. The meeting, while unable to give a definite decision on the scheme, felt that it was worthy of support.

Resignation of Clubs.—It was resolved that the forwarding of the resignation forms to the secretaries of clubs be postponed till the close of the Representative Meeting.

Vote of Thanks.—On the motion of Dr. CRAWFORD, seconded by Dr. SHUTE, a vote of thanks was accorded to Dr. Firth for presiding at the meeting.

HASTINGS DIVISION.

A SPECIAL and urgent meeting of this Division, to which all registered practitioners were invited, was held on July 12th at the Eversfield Hotel. The chair was taken by Dr. WILLS, and forty-five were present.

Provisional Medical Committee.—Dr. WILLS, of Bexhill, and Dr. SKINNER, of Winchelsea, were unanimously elected to serve on the Provisional Medical Committee for the county council area of East Sussex.

Recommendations of Council.—Dr. C. TRAVERS proposed, and Dr. ALLFORD seconded, that the Recommendation X (of the Council's report), breaking off negotiations, be accepted. Dr. MURDOCH proposed, as an amendment, that the Recommendation Y (of the Council's report), continuing negotiations, be adopted. No one seconding this, the original resolution, after many had spoken in support of it, was put to the meeting and carried unanimously. The three special Recommendations, I, II, III, p. 23, SUPPLEMENT, were then put separately. These were all three carried unanimously.

Sir William Plender's Report.—It was proposed by Mr. FARRANT FRY and seconded by Dr. ALLFORD:

> That the State Sick Insurance Committee of the British Medical Association be asked to answer through the public press the statements of Sir William Plender.

This was put to the vote and carried unanimously.

ISLE OF THANET DIVISION.

THE annual meeting of this Division was held at the Queen's Hotel, Margate, on June 28th. Sixteen members and one non-member were present, all practitioners in Thanet having been invited.

Special Representative.—A letter was read from the Medical Secretary informing the Division that they had been granted a Special Representative at Representative Meetings.

Election of Officers.—The following were elected officers: *Representative*, Dr. Halstead; *Honorary Secretary and Treasurer and Member of Council of South-Eastern Branch*, Dr. Raven; *Executive Committee*, Drs. Archibald, Biddle, Bennett-Powell, and Sworder; *Ex-officio Representative, Honorary Secretary, and Honorary Secretary of Provisional Medical Committee*, Dr. Brunton.

Provisional Medical Committee.—Dr. BRUNTON, Honorary Secretary of Provisional Medical Committee, read a report from the Committee to the meeting, and also a report of the delegates on the County of Kent Provisional Medical Committee. Speaking in connexion with this report, Dr. POWELL stated that he was not in a position to sign the Association's pledge as he held a whole-time appointment. Dr. CHIDELL also made a personal statement.

State Sickness Insurance Committee.—The HONORARY SECRETARY read three letters from the State Sickness Insurance Committee: D 54, D 55, and D 56.

Sanatorium in Thanet.—A discussion arose on information given that it was understood that a sanatorium under the Act might be started in Thanet. After considerable discussion the following resolution was carried:

> That the Executive Committee be instructed to call a special meeting of the Division as soon as they have indication that the Kent County Council have chosen a site in Thanet for a sanatorium for pulmonary tuberculosis.

Instructions to Representative.—The Representative was empowered to use his discretion in voting at the meeting. Dr. HALSTEAD asked for instructions as to how to vote on the question of payment of expenses of Representatives, and the meeting gave its opinion that the time was not yet ripe for such expenses to be paid.

Medical Inspection and Treatment of School Children.—A discussion took place on the medical aspects of public education, examination, and treatment of school children, and certificates. It was understood that the Margate Education Authority had applied to the staff of the Cottage Hospital to treat cases of tonsils and adenoids, and that they had refused to undertake such treatment. It was understood that a member of the Division was signing certificates for a fee less than that upon which the Division had decided was adequate. Information was asked as to what was adequate payment for testing children's eyesight.

Schedule of Fees under Insurance Act.—A letter was read from the Honorary Secretary of the County Provisional Medical Committee, asking the Division to approve of a schedule of fees drawn up by them to apply to the National Insurance Act. A resolution was passed agreeing with the schedule in principle, but advising that it would be better to leave the actual details till later, as they would probably require modification. Dr. HEATON suggested that fees for *x*-ray administration should be added.

Public Medical Service.—Two draft schemes for a public medical service, published in the SUPPLEMENT of June 5th, were approved in principle, and the Representative was instructed to use his judgement in considering the details at the meeting of Representatives.

Next Meeting.—It was decided to hold the next meeting at an early date at the discretion of the Executive Committee, and that the Division should consider the adoption of a fresh set of draft rules, published in the SUPPLEMENT of May 11th.

Votes of Thanks.—A vote of thanks was passed to the Chairman for presiding; to the Honorary Secretary for his work during the last year; and a special vote was passed to Dr. Gosse, who had represented the Division for many years past.

A SPECIAL (the fifty-fourth) meeting of this Division was held at Ramsgate on July 9th. Dr. F. E. NICHOL was in the chair, and twenty-three members and three non-members were present, all practitioners in Thanet having been invited.

County of Kent Provisional Medical Committee.

A letter from the County of Kent Provisional Medical Committee was read, asking for support of a resolution passed by them deprecating medical councillors taking part as members of committees under the National Insurance Act. It was resolved to reply that the Division could not support such a resolution, being contrary to the advice of the State Sickness Insurance Committee in a letter labelled D 56 on the subject.

Also for support of a resolution deprecating the support in any way of the sanatorium benefit part of the Act until the demands of the profession had been met. This was supported with one dissentient.

Also asking for nomination of a member of the County Provisional Medical Committee who was not a member of the British Medical Association. Dr. Morgan was so nominated.

Also a letter *re* Dr. Flint acting as member of the Kent County Council on Committees of the National Insurance Act. The opinion of the Division was that he had every ethical right to act on such committees in reference to letter D 56, and that his presence would probably be beneficial to the medical profession.

Club Resignations.—A letter was also read from the Medical Secretary, informing the Division that it had been decided not to send in the club resignations at present, not all the Divisions having answered, and that final results would be presented to the Representative Meeting.

Model Ethical Rules.—The Division next considered the adoption of a set of model ethical rules, published recently in the JOURNAL, in the report of the Central Ethical Committee. They were adopted unanimously without much discussion, the question having already been before the Division, and certain ethical rules relating to contract practice having been adopted early in the year.

Instructions to Representatives.—The Division considered the report of the Council and State Sickness Insurance Committee, published in the SUPPLEMENT of the JOURNAL of July 6th. The HONORARY SECRETARY read a covering letter referring to the manner in which it was suggested that the Division should deal with it, and give their instructions to their Representatives. The Honorary Secretary read a portion of the report, and a general discussion followed, in which practically every member took part. Eventually the following resolution was carried by 20 votes to 2:

> That the Division remains in firm support of the policy of the Association as defined in the six cardinal points, and leaves it to the Council (if the final answer of Mr. Lloyd George is not satisfactory) to break off negotiations when the returns of the pledges of support from the profession and the condition of the Defence Fund justify such an action.

Ramsgate Education Committee and Refraction Cases.—Dr. HALSTEAD introduced a discussion on the question, Is the offer of the Ramsgate Education Committee of 5s. per refraction case to be accepted? He began by saying that when the letter offering such work was issued several practitioners replied applying for the post, and that it was only realized later that the Divisional members had decided only to accept such work through a committee of medical men of the county, and that this committee had decided, among other details, that 7s. 6d. was the minimal fee to be accepted for treating cases of refraction in defective school children. He had asked the Honorary Secretary to circulate a notice to this effect to all members, which had been done, and as far as he knew all members had withdrawn their applications pending the decision of the Division at this meeting. He asked two questions: (*a*) Was the demand for 7s. 6d. to be maintained? (*b*) Was

it best for one man to do all the work, or for practitioners to do it in rotation? He put before the meeting many arguments *pro* and *con*. It was understood that five medical practitioners had withdrawn their applications, that is, Dr. Halstead, Cooper, Beasley, Dancy, and Morgan. A prolonged discussion took place in which most of those present joined, including Dr. Dundas, M.O.H. for Ramsgate. It was understood that about fifty cases would require treatment in a year. It was resolved that the Honorary Secretary write to the Clerk of the Ramsgate Education Committee asking that a fee of 7s. 6d. should be offered. It was also decided that such work would be better done by one medical practitioner.

Vote of Thanks.—A vote of thanks was passed to the Chairman.

SOUTHERN BRANCH:

Salisbury Division.

A meeting of this Division was held at the Infirmary on July 11th. Dr. Monnington was in the chair, and eighteen members and two visitors were present.

Correspondence.—Letters were read from the Medical Secretary relating to the resignation of club appointments, and from Mr. Ledworth of Hertfordshire, Ealing Division, and East Cheshire Division, advocating methods of remuneration.

Branch Council Representation.—A letter was read from the Branch Secretary containing a copy of letter from the Medical Secretary relating to the Branch Council representation. It was decided by the meeting that the question be postponed for the present owing to more pressing business calling for consideration.

Special Report of the State Sickness Insurance Committee:

Recommendation A was agreed to.
Recommendation B was agreed to.
Recommendation C was carried by 11 votes to 5.
Recommendations C to Q were agreed to.
Recommendation X was not agreed to (10 against, 7 for).
Recommendation Y was agreed to unanimously with the addition after "organization of profession" of the words, "including a public medical service.

Instruction to Representative.—The following resolution was carried *nemine contradicente:*

That the Representative shall have discretionary power in voting should circumstances arise which are not at present known to the profession generally.

Supplementary Report of Council.—The recommendations were all agreed to.

Public Medical Service.—The following resolution was submitted to the meeting from the medical staff of the Salisbury Dispensary and carried unanimously:

That the Salisbury Division should forthwith take steps to institute a public medical service applicable to the Division; that such a service should be arranged in subdivisions for the different parts of the Divisional area; and that arrangements be made for the service in the Salisbury Subdivision without delay.

SOUTH MIDLAND BRANCH:

Buckinghamshire Division.

A meeting of the Division took place at the Royal Bucks Hospital on June 25th, mainly to discuss the Public Medical Service scheme. Dr. A. H. Williams, of Harrow, a member of the State Sickness Insurance Committee, had been invited to be present, and very kindly consented to attend. His advice and explanations of the various points were much appreciated, and a hearty vote of thanks was accorded to him at the conclusion. Dr. Durran was elected to the chair in the absence of the Chairman and Vice-Chairman. The attendance numbered twenty-five. Various letters from the Medical Secretary were read relating to the Insurance Act. The resolution of the Chelsea Division was read, and the Representative was directed to vote against it.

Provisional Local Medical Committee.—The Provisional Local Medical Committee reported that in its opinion it would be quite safe to send in the resignations to the clubs in this Division provided that adjoining ones were in as satisfactory a condition with regard to the signatures of pledges.

Public Medical Service.—Dr. Williams addressed the meeting, and then the Public Medical Service scheme was considered, and the result was forwarded to the Medical Secretary. The main result of the discussion and voting was that 3d. a week was too much for rural districts, and 2d. a week was substituted. For persons not insured the sum of 1½d. per week for the wife was agreed to. The Scheme B was not fully discussed, and only agreed to in a general way, many thinking it had no advantage over Scheme A, and some that it was impracticable. The feeling of the meeting was that if the scheme could be worked by the profession in conjunction with the Local Insurance Committee, it would solve the whole difficulty, and do away with the expenses and cost of administration. The High Wycombe medical men are in favour of a sliding scale of contributions such as: Wages up to £1 per week, 1½d. a week; wages up to £2 per week, 2d. a week; wages up to £3 per week, 3d. a week. If a flat rate is necessary, it should be 2d. a week and a £2 wage limit. The opinion was expressed that if medical benefits were suspended and each insured member had a money grant, the clubs and others would enter their members into the Public Medical Service in bulk, and it would be well to offer them a good percentage reduction in such a contingency.

Northamptonshire Division.

A meeting of the Division took place in the Board Room of the Northampton General Hospital on July 9th; Dr. Baxter in the chair, and thirty-five members were present.

Special Report of Council.—The Chairman introduced the special report of the Council, and said that the meeting had better begin by discussing whether negotiations should be continued or broken off. Dr. Tolputt urged that negotiations should be continued until October 1st, and that then, if no definite arrangement had been made, they should definitely cease. This was supported by Dr. Cooke. Dr. Hichens read a letter from Dr. Terry advising the breaking off of all negotiations. Dr. Linnell thought Dr. Tolputt's resolution was in the nature of a compromise, which might be accepted. The following resolution was then carried with only two dissentients:

That a State Sickness Insurance Committee be appointed with power to negotiate with the Commissioners and to ascertain to what extent the demands of the Association are likely to be met. The negotiations should, if necessary, be continued until October 1st, but should then definitely cease if no definite arrangements have been arrived at. They should consider and report on the regulations of the Commissioners as soon as available, and report on the whole situation as soon as possible to a Special Representative Meeting; and meanwhile all steps should be taken to perfect the organization of the profession, and to increase the Central Insurance Defence Fund.

The recommendation about locumtenents was then carried. On the proposition of Dr. Greenfield, seconded by Dr. Pretty, the recommendation debarring medical men from taking posts in connexion with the sanatorium benefit was carried. The recommendations concerning the sanatorium benefit were discussed by Dr. Hichens and Dr. McCrindle, who considered that they were too detailed for the present state of affairs. The Representative was left a free hand to deal with these proposals. The recommendations concerning the maternity benefit were carried. The meeting then adjourned after discussing two questions of only local interest.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

Cardiff Division.

A meeting of this Division was held on July 10th.

Supplementary Pledge.—It was announced that out of 238 members 232 had signed the British Medical Association's pledge.

Insurance Act: Negotiations.—The meeting, by a majority of 4 to 1, decided to sever further connexion with the Government negotiators.

Insurance Act: Sanatorium Appointments.—A similar majority decided that any member of the Division applying for sanatorium or other appointments under the Act should be placed under Rule Z.

North Glamorgan and Brecknock Division.

A special meeting of this Division was held at the New Inn, Pontypridd, on Thursday, June 20th, at 3 p.m. Dr. T.

FINNEY occupied the chair, and there were twenty-five members present.

Government Inquiry as to Medical Remuneration.—The SECRETARY read document D 55, dealing with the Government inquiry into medical remuneration and the number of assistants to general practitioners. It was left to the Secretary to obtain the necessary information.

Public Medical Service.—The meeting then considered the two schemes (that on a capitation basis and that on the basis of remuneration for work done) as set forth in the SUPPLEMENT of June 8th. After considerable discussion, on the motion of Dr. T. J. WEBSTER, it was resolved:

That this Division favours the adoption of a public medical service scheme based upon a capitation system of payment.

The voting was 14 to 11; the meeting then considered in detail Scheme A.

SOUTH-WEST WALES DIVISION.

THE annual meeting of this Division was held at the Infirmary, Carmarthen, on Wednesday, June 19th.

Election of Officers.—The following were elected: *Chairman*, J. E. P. Davies (Llanelly); *Vice-Chairman*, C. A. Brigstocke (Haverfordwest); *Honorary Secretary and Treasurer*, Dr. R. Price (Ammanford); *Representatives on Branch Council*, D. M. Davies (Aberayron), J. E. P. Davies (Llanelly), Y. H. Mills (Haverfordwest); *Representatives on Contract Practice Committee*, Evan Evans (Llanelly), D. J. Williams (Llanelly), Owen Williams (Burry Port); *Representative for Representative Meeting*, D. R. Price (Ammanford); *Executive Committee*, L. M. Bowen-Jones (Carmarthen), C. A. Brigstocke (Haverfordwest), John Davies (Aberayron), Evan Evans (Llanelly), Richard Hopkin (Llangadock), T. J. Jenkins (Henllan), D. G. Lloyd (Newcastle Emlyn), C. D. Mathias (Tenby), Thomas Morgan (Llandovery), David Phillips (Llandilo), R. G. Price (Carmarthen), D. L. Williams (Ferryside), Owen Williams (Burry Port), Samuel Williams (Llanelly).

SOUTH-WESTERN BRANCH:

EXETER DIVISION.

A MEETING of this Division was held on July 11th. Mr. E. J. DOMVILLE was in the chair, and forty members were present.

Minutes.—Arising out of the minutes, which were read, the CHAIRMAN stated that Dr. Vlieland had requested that a copy of his letter be entered in the minutes. The letter was as follows:

Exeter,
June 17th, 1912.

Dear Sir,

I find that the declared policy of the British Medical Association is that no member of the Association shall take any part on any Committee formed to administer the Act until the Insurance Commissioners have arranged terms with the representatives of the medical profession.

The council of the city of Exeter have elected me on the local Insurance Committee in my private capacity as medical practitioner, and I intend therefore to ask them to release me from such appointment.

Yours faithfully,
C. J. VLIELAND.

E. J. Domville, Esq.

Results of Canvass.—The HONORARY SECRETARY presented a report of the canvass of the Division:

		Signed Pledge.
Number of contract practice holders	91*	90
Number of medical practitioners in practice	36	31
Number of retired practitioners	48	22
Number of whole-time medical officers	14	9
Number of honorary staff	16	16
Number of home addresses	3	0
Number of hospital residents	4	1
Number of medical men in Division	212	169

*These have all signed resignation forms.

The partner of the contract practice holder who has not signed the pledge has signed resignation forms for the firm in the name of both gentlemen. Therefore, resignation forms have been received by the Honorary Secretary for every club in the Division—345 in all. Dr. GORDON expressed the opinion that if other Divisions had such a good record to show, the meeting would not be justified in recommending their Representatives to support any half-hearted or compromising resolution at the Liverpool Meeting.

Special Report of Council.—The meeting then discussed the Special Report of the Council. During the discussion as to whether the Association should break off or continue negotiations, Dr. STOKES said the question of extras was a most important point, and should not be compromised. In his opinion, the main object of the extras was to put a check upon the patient sending for the doctor at all and inconvenient hours; that to make this effective the fee should be payable by the patient and not by the Government, and that if this were carried out the estimate of the Chancellor of the Exchequer that the extras would add another 5s. per capita to the 8s. 6d. per capita would be far in excess of what the probable cost would really work out at. Dr. ASH said the mileage extra was all-important to country practitioners. He also pointed out the uselessness of the examination of medical men's books, as the call made upon a practitioner when an artisan was paying fees would be very different when under the Insurance Act. Dr. GORDON proposed. Dr. TONGE seconded, and it was carried with one dissentient:

That this meeting is in favour of breaking off negotiations, but that, in view of the possibility of further information being forthcoming by the time of the Liverpool meeting, it does not bind its Representatives.

Manifesto.—Dr. GORDON proposed, and it was carried unanimously:

That our Representatives be instructed to move that the Representative Body renew its instructions *re* manifesto, leaving it to the committee to issue the same at a time when, in their opinion, it would have most effect.

Sanatorium Benefit.—Dr. DAVY moved and Dr. AYSHFORD seconded:

That our profession undertake no work in connexion with sanatorium benefit until the conditions under the Act are agreed upon.

This was carried unanimously. It was further decided that it was useless, therefore, to discuss the details of the sanatorium benefit contained in Recommendations B to O.

TORQUAY DIVISION.

A GENERAL meeting of this Division was held at the Newton Abbot Hospital on July 10th. Dr. GOODWYN was in the chair, and twenty members were present.

Instructions to Representative.—The CHAIRMAN then pointed out that the object of the meeting was to discuss the present and future position of the profession, and to instruct the Division's Representative in which way to vote at the forthcoming Representative Meeting.

The Question of Negotiations.—The meeting then passed a resolution:

That the matter in the SUPPLEMENT of July 6th be considered as read by the members of this meeting.

A discussion was opened. Various members spoke, a number being in favour of continuing negotiations with the Government. Dr. FITZPATRICK pointed out that the policy of the Government was evidently one calculated to wear down the opposition of the profession. The following resolution, proposed by Dr. GOUGH and seconded by Dr. FITZPATRICK, was eventually passed:

That this Division calls upon the British Medical Association to withdraw from any further negotiations with the Commissioners unless the Government satisfy the Association that the minimum demands of the profession will be granted.

The Division's Representative was requested to vote accordingly.

Club Resignations.—It was then decided by the meeting to send a covering letter with resignations of clubs to club secretaries, pointing out that the British Medical Association was prepared to inaugurate a medical service which would be available for the consideration of club members.

WEST CORNWALL DIVISION.

A SPECIAL meeting of this Division was held at the Royal Cornwall Infirmary, Truro, on July 9th. Dr. CHOWN was in the chair, and thirty-one members were present.

Supplementary Pledges.—The HONORARY SECRETARY reported that since the last meeting the two outstanding pledges had been signed, making the Division unanimous on the point.

Resignations of Contract Appointments.—Resignations of contract appointments have been sent in by every holder.

Instructions to Representative.—The Special Report of the Council in the SUPPLEMENT of July 6th and the Supplementary Report in the same issue were considered and instructions given to the Representative to support the recommendations of Council. Owing to the short time given the Division for consideration and the impossibility of fully discussing the various items, the Representative was instructed to use his own discretion in any matters not covered by his instruction. With regard to Recommendations X and Y, the meeting decided on continuing negotiations with the Commissioners so long as there was no weakening in the position taken by the Association up to date (voting 28 in favour and 3 against). The rider by the North Middlesex Division, Subsection 19, in the SUPPLEMENT of May 18th, was considered, and the Representative instructed to request the Council to obtain legal opinion on the possibility of the Association becoming a registered trade union; also to issue to the Divisions a clear statement of the advantages and disadvantages to be obtain by being so registered.

Local Guarantee Fund.—The Executive Committee was instructed to arrange for and make a call of £1 per head for the Local Guarantee Fund. With regard to the management of the Guarantee Fund, the following resolution was passed:

> That the West Cornwall Division of the British Medical Association hereby entrusts to the Executive Committee of the Division the collection and management of the Insurance Defence Fund within the area of the Division on behalf of the Central Council of the Association, who are acting as trustees for the subscribers to the said fund.

Practitioners in Mining Division.—The resolutions passed at a meeting of medical practitioners in the mining division were considered and action deferred on them at present.

Position of County Medical Officers of Health under Insurance Act.—Dr. BURNET, the county medical officer of health, who was present at the meeting, made a statement as to his position under the Act, and the meeting expressed its complete confidence in him.

Examination of Candidates for Friendly Societies.—The question of men now being admitted to friendly societies was brought up. One member said he had examined over a hundred candidates for one club, most of these being other men's patients. As by his contract he had to attend these men, he would thereby gain a six months' introduction to families previously attended by other medical men. The Honorary Secretary was instructed to write to the Medical Secretary for advice as to how this undoubted hardship to many men could be avoided, and the meeting expressed itself ready to send in all resignations at once if that action would be of service.

STIRLING BRANCH.

A MEETING of this Branch was held in the Station Hotel, Stirling, on July 11th. Dr. JOSS (Vice-President) presided over an attendance of forty-seven members.

National Insurance Act.—After a prolonged discussion, Dr. GARDNER moved and Dr. LOW seconded:

> That the Representative be instructed to support Recommendation Y in the Special Report of the Council, and that he should be given an entirely free hand in all other matters.

Dr. BUIST moved and Dr. STRACHAN seconded an amendment in favour of Recommendation X. On a vote being taken 35 voted for the motion and 10 for the amendment, and the motion was declared carried.

Medical Appointments under Insurance Act. Dr. JOSS moved, Dr. ROBERTSON seconded, and it was resolved:

> That this meeting condemns the action of Dr. Currie and Dr. Cullen in having accepted appointments as medical officers under the National Insurance Act contrary to the expressed wish of the medical profession in Scotland, and considers that their action has absolutely unfitted them to secure the co-operation of the medical practitioners throughout the country.

The Direct Representative for Scotland.—On the motion of Dr. JOSS, seconded by Dr. DYER, the meeting expressed a want of confidence in Dr. Norman Walker as the Direct Representative of the medical profession in Scotland on the General Medical Council, and called on him to test the feeling of his constituents forthwith by resigning his seat and submitting himself to the electorate.

YORKSHIRE BRANCH:

BARNSLEY AND DISTRICT DIVISION.

A MEETING of this Division was held at the Queen's Hotel, Barnsley, on June 19th. Dr. CASTLE was in the chair.

Insurance Act.—A letter was read from the staff of the Montague Hospital, Mexborough, expressing willingness to fall in with the example set by the honorary staffs of other hospitals. A notice was read from the State Sickness Insurance Committee, forbidding the acceptance of posts under the Insurance Act until the demands of the medical profession are granted.

Assistants.—A return was obtained that in the Division there are twelve medical men each employing one assistant.

Public Medical Service.—The meeting then proceeded to the consideration of the schemes for a public medical service. It was unanimously decided that the capitation system was the only suitable method for this district. The Division then discussed the details of Scheme A, and forwarded certain criticisms for the information of the State Sickness Insurance Committee.

BRADFORD DIVISION.

Provisional Local Medical Committee.

THE Provisional Local Medical Committee met on June 28th. After careful consideration it decided to send in club resignations—resignations to take effect on December 31st, 1912.

Resignation of Contributory Contract Appointments.—Practitioners holding contributory contract appointments had been asked to place their resignations—undated—in the hands of the Committee for it to use them at its discretion. There are 132 practitioners in the Division who hold such appointments, and 125 had sent in their resignations as requested, 2 others had themselves resigned their appointments. The remaining 5 have not resigned. There were over 300 of these resignations, and as the Committee decided to post them that night it had a busy time filling in the dates and stamping the envelopes.

Fee for Medical Examination for Admission to Friendly Societies.—The following resolution was passed unanimously:

> That the minimum fee of 2s. 6d. per head be charged for the medical examination of all candidates for entrance to societies without prejudice to existing contracts.

The Secretary was asked to send a copy of this resolution to all practitioners in the Division, and also to remind practitioners of the necessity of declining to engage locumtenents or assistants who had not signed the pledge.

Meeting of Hospital Staffs.—The honorary staffs of the various hospitals, at a meeting held on June 12th, unanimously decided to sign the hospital pledge, subject to a proviso which is in accordance with the explanation given by Dr. Cox. Nearly all these signatures had been obtained, and the Committee expected to have the list completed within a week. Sixty practitioners hold honorary appointments.

HALIFAX DIVISION.

A SPECIAL meeting of the Division was held at the Mikado Café, Halifax, on Tuesday, July 9th, at 8.30 p.m. Dr. J. CROSSLEY WRIGHT was in the chair, and forty-one other members were present.

Special and Supplementary Reports of the Central Council. The Special Report of the Council of the Association concerning the present position of the profession in relation to the National Insurance Act and the Supplementary Report of the Council for the year were considered and the recommendations of the Council dealt with. In place of Recommendation I, in connexion with the policy of breaking off negotiations, the following resolution proposed by Dr. W. SHAW, seconded by Dr. PRIESTLEY LEECH, and carried unanimously, was adopted:

> That the Council of the Association be instructed to break off all negotiations with the Government.

On the proposition of Dr. PRIESTLEY LEECH, seconded by Dr. EDWARD ELLIS, Recommendations II and III were approved. It was thought that if the Association had shown a firmer attitude from the first more men would have subscribed to the defence funds. If these recommendations were passed and the Association showed a more resolute front, then fourteen of the men present at the meeting promised to subscribe, and twenty-four who had already subscribed promised to increase their guarantees.

Resignation of Club Appointments.—Letters were read from the Huddersfield and the York Divisions. It was proposed by Dr. DENNING, J.P., seconded by Dr. MARSHALL, and carried unanimously:

That the Honorary Secretary be instructed to send in at once the resignations of the contract practice appointments held by men in this Division, with one exception, and that the resignations take effect on December 31st, 1912.

Drs. Crossley Wright, Priestley Leech, and Hodgson were, on the proposition of Dr. DRURY, seconded by Dr. MACAULAY, appointed to interview the Committee of the Halifax Friendly Societies and General Medical Aid Association regarding the examination of candidates for admission to approved societies.

Insurance Scheme.—While agreeing with the general complaint against the Act as it now stands, and with certain of the features embodied in the scheme submitted by the Stockport, Macclesfield, and East Cheshire Division, certain clauses were considered objectionable and unworkable in all but a few of the provincial Divisions. On the proposition of Dr. ELLIS, seconded by Dr. DENNING, J.P., the communication was ordered to lie on the table.

WAKEFIELD, PONTEFRACT, AND CASTLEFORD DIVISION.

A SPECIAL meeting of this Division was held at the Clayton Hospital, Wakefield, on July 11th.

Report of Council and Instructions to Representatives.—The meeting was called for the purpose of considering the Special Report of Council on the present position of the profession in relation to the National Insurance Act, and giving final instructions to the Representative thereon, for the forthcoming Representative Meeting at Liverpool. After some discussion, the following resolution was carried:

That this Division, after having carefully considered the Report of Council as published in the BRITISH MEDICAL JOURNAL SUPPLEMENT of July 6th, feels that it is not in possession of sufficient information to warrant it giving definite instructions to its Representative as to which of the alternative recommendations (X or Y) he shall support, but we give him a free hand as to the exercise of his vote after he shall have heard all the arguments of the case.

Payment of Representative.—Dr. W. STEVEN proposed, Dr. OSMOND seconded, the following motion, which was carried:

That a levy of 10s. per member be made on the Division to defray our Representative's out-of-pocket expenses in connexion with his attendance at the Representative Meetings.

Dr. EARDLEY proposed, Dr. WILSON seconded, and it was carried:

That Dr. Steven be the Treasurer for this fund.

LEEDS DIVISION.

A MEETING of this Division was held in the General Infirmary at Leeds on July 12th, to which all members of the medical profession resident within the area of the Division had been invited. Dr. ROPER, Chairman of the Division, presided, and there were also present thirty-nine members and forty-one non-members.

Instructions to Representatives.—The only matter discussed was the alternative recommendations of the Council as to the future action of the Association. It was proposed by Dr. ALLEN WILSON and seconded by Dr. J. DOBSON:

That negotiations be broken off.

To this an amendment was proposed by Dr. HAWKYARD and seconded by Dr. MOORE:

That we stand by our minimum demands, but that the Representatives have discretion as to voting if additional facts are brought forward at the Representative Meeting.

Six voted for this amendment. The vote on the resolution was carried by 36 to 3. A vote of all present was also taken, when, with the exception of four, all present voted for the resolution. Dr. T. B. BELL moved and Dr. MOORE seconded the following resolution as a matter to be considered at the Representative Meeting:

In the event of the Representative Meeting deciding to continue negotiations the Association shall inform the Commissioners in explicit terms that such negotiations will not be continued after the last day of August next.

This was carried by 22 votes to 2.

Provisional Medical Committee.—The SECRETARIES reported the result of a canvass of the Division as follows:

Total number of practitioners in the area of the Division	398
Members of the British Medical Association	210
Signed the pledge	385
Total of men holding	175
Total of men who have sent resignations	171
Number of clubs of which the secretaries hold the resignations	653

Of the 13 men who did not sign the pledge, 2 are retired practitioners, 1 a whole-time man, 6 home addresses only, 4 men in general practice refused to sign.

The Provisional Medical Committee also reported the result of a post-card vote as to negotiations with the Insurance Commissioners; 184 were in favour of breaking off, and 80 for continuing negotiations; of the 184, 105 were members of the British Medical Association, and of the 80, 48 were members. There were 14 spoilt papers. Total voting, 278.

DUNDEE BRANCH:

FORFARSHIRE DIVISION.

THE annual meeting of this Division was held in Arbroath on June 12th. Fourteen members were present. Dr. R. C. BUIST was chosen provisional Chairman.

Model Rules for Division.—The model rules for a Division not itself a Branch and the rules relating to ethical procedure were adopted.

Election of Officers.—Dr. J. D. DEWAR was then appointed Chairman, and thereafter presided. Dr. Stone was appointed Vice-Chairman; Dr. Yule (Arbroath) Secretary and Treasurer. The appointment of Representative in Representative Meetings was remitted to the Executive Committee with powers. Drs. Peterkin, Colman, and Cameron were appointed ordinary members of the Executive Committee and Branch Council.

Meetings of the Division.—It was resolved that as a rule meetings of the Division be held in Arbroath on Thursdays at 3.15 p.m., but the Executive Committee was given power to vary this arrangement.

Representative Meeting.—The meeting considered the agenda of the Representative Meeting. No instructions were adopted.

Special Meeting.

A SPECIAL meeting of the Division was held in Arbroath on July 11th. Eleven members were present.

Instructions to Representative.—The Report of the Council to the Annual Representative Meeting and the Supplementary Report of Council, 1911–1912, were considered, and it was resolved:

That, as all the members present were in favour of "continuing negotiations," the Deputy Representative to Representative Meetings be informed that, while the Division did not desire to give him definite instructions as to voting, it wished him to understand that the majority of its members were in favour of the policy of continuing negotiations.

DORSET AND WEST HANTS BRANCH.

WE are requested to state that the number of members and friends who attended the luncheon given by Lord Digby at the Summer Meeting at "Herrison," Dorchester, was 84, not as stated in the report published in the SUPPLEMENT of July 13th, page 73.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

National Insurance.

THE CHANCELLOR OF THE EXCHEQUER ON MEDICAL REMUNERATION.

THE CHANCELLOR OF THE EXCHEQUER attended a Liberal meeting called to celebrate the coming into operation of the National Insurance Act, at Kennington Theatre, on July 13th. After speaking for an hour on the general and political aspects of the measure, Mr. Lloyd George made the following references to medical and sanatorium benefit and the remuneration of the medical profession:

He wanted to say a word to them quietly and confidentially about the doctors. The critics of the Government said: "You are getting nine and a half million people in. You say you will have thirteen, but you can't deliver the goods." Oh! Can't we? Wait and see. (Laughter and applause.)

He was not going to set up the technical plea that there was no contract between the Government and the people under an Act of Parliament. He maintained that there was not a benefit under the Act which the Government could not deliver. The benefits were 10s. for twenty-six weeks (7s. 6d. for women, because they paid a penny less); 5s. a week during the whole time of a man's breakdown, though it lasted up to the age of 70. After that the Pensions Act applied. It was a kindly scheme, and there were millions of people who realized it. There was a maternity benefit; special benefits were offered to married women if they took advantage of the Act. In introducing the bill he said there would be £1,500,000 to help the local authorities to build sanatoriums for consumptives, and something just under a million to maintain them. With a full knowledge of all the facts, he declared that the Government would redeem every pledge. The money for the sanatoriums had been voted, the Act of Parliament had been passed, and the cash was in the bank waiting. The million set aside for maintaining them was provided, ready whenever it was called for. Was it really supposed that in six months one could set up committees, find out how many sanatoriums were needed, decide where to put them, purchase the site, prepare plans, pass them through, erect the buildings, employ the staff—doctors, nurses, everybody—and have the equipment fully there by July 15th? No man in his senses would ever dream of it. He was the last man in the world to disparage the National Insurance Act—(laughter)—but after all it was not like Aladdin's lamp. One could not by rubbing it call out palaces from the sky with a retinue of servants, doctors and nurses, food and everything ready. The thing had to be done carefully, and first it was necessary to know how many consumptives would require treatment. One would not have hundreds and thousands of persons developing consumption in the first week. The incidence of this tragic disease had become much too frequent, but it had come gradually, and it would have to be provided for as the plague seized the people. As they fell it would be necessary to be ready with a helping hand to save them, and the Government would be ready. It would be ready to provide them with the best available means now existing; more than that, it would go on improving methods until this curse was stamped out of the land.

It was said, "You cannot supply the medical benefits because you cannot find your doctors." The previous day eleven doctors for tuberculosis had to be chosen for the whole of Wales. As usual Wales was rather in advance, and already there had been collected by voluntary subscriptions nearly a quarter of a million for building sanatoriums. The promoters would then get their share—no more—of the £1,500,000. They wanted eleven doctors to pass about the country to superintend tuberculosis treatment under the Act. They got fifty-seven applications [illegible]—and eleven were appointed on the previous day—mostly Englishmen. As long as England sent material of that sort Wales would always welcome it. How did its critics know the Government could not supply medical benefit? The benefits would not begin until January 15th. Did any one know what would happen before then? The Government had promised to set aside 6s. per member to pay the doctors. He believed many people thought it was 6s. per patient; it was 6s. per member whether well or ill, so if there were a thousand people in a society, and a hundred of them required medical attendance in the year, the doctor was paid not 6s. for the hundred but 6s. for the whole thousand, and that gave him an interest in keeping them all well. (Applause, and a voice: "And no bad debts.") All good money, paid in advance if necessary. What did this mean to the medical profession? Mind, he was not going to say a word in disparagement of the profession, and he would not willingly say a word which would appear to be a gibe. The 6s. meant four millions a year for the doctors. Sanatorium benefit meant another million. He was assuming that a third of the maternity benefit went to the doctors. That was half a million—five and a half millions going for the doctoring of the industrial classes of this country, provided by this Act. In addition, extras for great operations would be paid.

It was suggested that the Government should promise to pay the doctors whatever it cost. Could they imagine any man outside a lunatic asylum saying in advance that whatever the doctors charged they should be paid, the country meanwhile finding the money? He would not trust even the legal profession in such circumstances. (Laughter.) If the medical profession refused to come to terms the Government would return the money in cash to the persons to whom it belonged. There was a provision for suspending medical benefit in the Act. The sanatorium benefit would go through at all costs. The four millions for doctoring, if the doctors refused to come to terms, the Government had the power to return to the members themselves, who would probably hand it back to the societies, which would consider what they would do. In order to show what a valuable thing that was—he was not putting it as a suggestion as to what the societies should do, for it was not his suggestion—he asked the Government actuary what could be done with the 6s. if it were paid back and the societies used the money for another purpose that would suit their members. The reply was that for those who joined at 16 years of age the societies could raise the 10s. a week to 16s., for those who joined at 21 to 15s. 6d., for those who joined at 30 to 15s., and even a man joining at 40 would get 14s. sick benefit.

The Government promised to give medical benefit, and though the cost amounted to millions and millions more, it would be bound to see the thing through. The Government promised 6s., but it was prepared to meet the medical profession. He had always said so, and if the profession could make out a case that owing to the special circumstances of the Act it was entitled to larger pay, he had the authority of the Government to say that it would recommend the House of Commons to make that provision. But the profession had to make a case. Despite the jeers of the Tory press he would pursue the efforts he had made to come to a friendly arrangement with the medical profession. He would endeavour to persuade every reasonable man in that profession that if it failed the blame did not rest with the Government. The Government's offer was 6s.; the doctors asked 11s. (Groans, and a voice: "Give them the lot!" and laughter.) The doctors asked 8s. 6d. merely for attendance, 1s. 6d. for drugs, and about 1s., he thought, for extras. That was an additional burden of about 4 millions a year; it would be about 1½d. on the income tax or 3½d. on tea.

He wondered whether many of them had seen Sir William Plender's report. He (Mr. Lloyd George) invited the British Medical Association to allow the accounts of doctors in six towns to be examined, and Sir William Plender was agreed upon to make the examination, and the towns were also agreed upon. In five out of six towns almost all the doctors handed in their accounts. He (Mr. Lloyd George) was not represented and he did not see them. In one of the towns, after Sir William Plender had gone half way through, they would not give him any more. He would not say another word about that. (Laughter.) What was the result? A very remarkable one. It showed that on the whole—and he spoke as a professional man

knowing something about professional incomes—in these five towns the average was fairly high to the doctor, an average of £720 per annum for each doctor, good, bad, and indifferent, in those towns. What did that work out at? He asked them to bear in mind that in one of the towns drugs were supplied by the chemist and not included. That practice obtained in the east of Scotland. In England a man who went to the doctor's house did not feel well unless he came away with a bottle in his pocket, and it must be the right colour. (Laughter.) In Scotland they knew a trick worth two of that. The Scotsman felt on the whole safer if he had a prescription from his doctor, took it to the chemist, and just watched the chemist as he weighed it in. He wanted to see that he was getting his money's worth. (Laughter.) Therefore, in Dundee, which was one of the cities, the drugs were not included in the figures. He wanted to take that into account, because it was in favour of the doctors. What did the figures work out at? For the kind of work the Government was asking the doctors to do under the Insurance Act it worked out at 4s. 2d., including drugs in four of the cities. Supposing Scottish drugs cost as much as English drugs, and adding the people attended at institutions, it came to exactly 5s. per head of the population, man, woman, and child, including drugs and including tuberculosis, which the Government was paying for as an extra. Was the Government so unreasonable, after all, when it offered 6s., when it took the whole cost of tuberculosis on its shoulders and set aside a million for that purpose? Nevertheless the Government said to the medical profession, "If you can prove that even 6s. is not enough, we are willing to meet you—not eleven shillings, but anything within reason." Their answer was, "Under this Act you say you are going to insist on better attention being given to the working classes. That will cost us more." The Government replied, "Very well, we will pay you more, and we are allowing an extra shilling and a million for consumption to do it." But this 4s. and 5s. in the towns he had mentioned included the "swell" practice, the guineas they charged. Everybody knew the way it was done. There was a tariff; in a certain scale there was a charge of perhaps half a crown, in another the charge was five shillings. There was a 7s. 6d. fee, and in another class altogether it ran into guineas. The system had not worked badly; it was a method whereby the well-to-do had contributed towards a great national medical establishment. Could any one say that the Government had treated the profession unreasonably—(cries of "No")—that it had no reason on its side when it offered 6s.? Even now, if the medical profession could demonstrate that, having regard to the fact that they must give more attention to the working classes under this scheme than they had done hitherto, they must receive more than 6s., the Government would meet them. But it was better there should be no misunderstanding; under no conditions could he go to the Government and say he was prepared to recommend the provision of an extra four millions in order to more than double the income of the medical profession of the country. He could not do it. (Applause.) The interests of the taxpayer must be considered.

He was perfectly certain that every fair-minded man in the medical profession would say that the offer he had made was a fair and reasonable one. He had never swerved from it. If he hit back when somebody hit him he was "a truculent savage." If he was conciliatory he was "climbing down." What was he to do? (Laughter and applause.) He would do what he had done from the start—he would take the straight course. Here was this great national insurance scheme, great in its magnitude, touching every household, every industry, every trade, the commerce of the country and all its interests. If there were slips, if there was a little stumble, remember it was the first time the nation had been mobilized. Mobilized for what? Not to wage war upon our fellow men, not to march upon territories of people flesh of our flesh and blood of our blood to ravage and to destroy, but a nation mobilized for the purpose of securing health and plenty, and driving away privation and hunger which had invaded millions of homes. That was the invader whom they were organizing this army of fourteen millions to meet on Monday. It would start on the march then.

PROVISIONAL MEDICAL COMMITTEES.

Kent County.

A MEETING of the Kent County Provisional Medical Committee was held at West Kent General Hospital, Maidstone, on July 10th. Dr. W. J. TYSON was in the chair.

Members of the Committee.—Dr. Chas. Pinching, jun., of Gravesend, was co-opted as representative of the general hospitals in the county in place of Dr. Firth, who, as Chairman, represents the Dartford Division. The Secretary was instructed to write to Dr. Howden asking him if he consented to represent the Dover Division.

Resignation of Appointments.—It was considered advisable to wait instructions from the Central Office before sending in the resignation forms.

Proposed Scheme for a Medical Service for Kent.—Dr. HEGGS having introduced this scheme, Dr. PARR DUDLEY expressed the opinion that Post Office depositors should be provided for in the scheme, and it was resolved that a clause be inserted providing for Post Office depositors on condition that the Insurance Committee wiped off the deficit of this class. The scheme was then considered in detail and amended.

NORWICH PUBLIC MEDICAL SERVICE.

THE tenth annual report of the general committee of the Norwich Public Medical Service states that during the year the acting staff was augmented by 1, making a total of 16 members. The number of new members admitted was 1,969, and the number that left was 983, leaving a net increase of 986. The following is a summary of the financial statement presented by the Honorary Secretary, Dr. R. J. Fox:

	1910. £ s. d.	1911. £ s. d.
Gross receipts for quarter ending March	308 8 4	360 1 0
" " " June...	334 8 11	381 18 2
" " " Sept....	353 10 6	398 4 9
" " " Dec. ...	340 15 8	397 19 8
	£1,337 3 5	£1,538 3 7
Working expenses	14.25 %	13.75 %
Total number of members, December 31st	6,575	7,561
	£ s. d.	£ s. d.
Amount of weekly payments	27 7 11	31 10 1

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor*, BRITISH MEDICAL JOURNAL, *429, Strand, London, W.C.*]

PUBLIC MEDICAL SERVICE.

A Contributory Sliding Scale Scheme.

DR. T. H. SANDERSON-WELLS (Weymouth), at the request of the medical men of Weymouth and district, who have unanimously approved it and strongly recommend its adoption by the Association, has sent for publication the following contributory sliding scale scheme for Public Medical Service based on income, to replace Clause 17 of Part II of Scheme A of the BRITISH MEDICAL JOURNAL SUPPLEMENT, June 8th.

The advantages claimed for the sliding scale are:

1. *Fairness to the Contributor.*—It asks of each according to his means. It gets rid of the dissatisfaction and adverse public criticism of the flat rate, in which, for instance, the agricultural labourer, earning 14s. a week, and the skilled artisan, earning 60s. a week, pay the same.

2. *Fairness to the Doctor.*—Under the flat rate scheme the invalid casual labourer and the low wage earner must during illness soon fail to pay his fee. When this happens we shall be obliged to attend him either gratuitously at the hospital or as a parish patient. On the sliding scale we are able to ask a much smaller fee from the invalid and the really poor, while it is possible to take a fair fee from those who cannot plead want.

3. *Capability of Expansion.*—Should it be necessary to include the wives and families, this can be done as shown. Should it be necessary to raise the limit from £2 to £3,

this can also be done without detriment to the profession and without undermining the independence and freedom of the contributor.

By adopting a flat rate and admitting invalid and weak lives (Dr. Sanderson-Wells writes), we make it possible and almost necessary to adopt the suggestion in Section 17 of the British Medical Journal Supplement of June 8th, that in the case of persons below the average state of health the Committee may prescribe special rates. I think we ought to combat this idea with all our might. It is not right nor reasonable, as these unfortunates are already paying all they can, and it would be impossible for them to pay more, as they will not have it.

For Insured Persons Only.

The object of this scheme, in contradistinction to that of the Government which falls most heavily on the poor and yet leaves them ill provided for, is to assist the casual labourer, the invalid, and the low wage earner, by giving them attendance and medicine at a low rate.

It arranges for incomes of £2 and under, by dividing them into three classes, A, B, and C, but it is capable of extension.

Insured Member's Subscription.	Non-Insured Member's Subscription.
Class A. *(Income 20s. per week and under)*—	2d. per week.
If State contribution 8s. 6d. Contribution only	
If State contribution 6s. Contribution + ½d. per week	
Class B. *(Income 21s. to 30s. inclusive)*—	3d. per week.
If State contribution 8s. 6d. Contribution + 1d. per week	
If State contribution 6s. Contribution + 1½d. per week	
Class C. *(Income 31s. to 40s. inclusive)*—	4d. per week.
If State contribution 8s. 6d. Contribution + 2d. per week	
If State contribution 6s. Contribution + 2½d. per week	

Additional Fee.—Single men over 21 years of age, without dependents, to pay an extra subscription of 1d. per week in all classes.

An Assessment Committee consisting of all the medical men on the panel, together with an equal number of representatives of the contributors, shall deal with all questions of eligibility to the various classes, and shall have the right of imposing a fine of 5s. for wilful misrepresentation of income.

Inclusion of Wife and Family.

An extension of the above scheme would be possible on the following basis:

The wife of any contributor to be eligible on the same basis of income as her husband, and for the same subscription—that is, Class A, 2d. per week; Class B, 3d. per week; Class C, 4d. per week.

Children (under 16) may also be admitted on the same basis of income of their parents.

Class A. *(Parents' income 20s. per week and under)*—	
1 Child	2d. per week.
2 Children	3d. ,,
3 or more children	4d. ,,
Class B. *(Parents' income 21s. to 30s. inclusive)*—	
1 Child	3d. per week.
2 Children	4½d. ,,
3 or more children	6d. ,,
Class C. *(Parents' income 31s. to 40s. inclusive)*—	
1 Child	4d. per week.
2 Children	6d. ,,
3 or more children	8d. ,,

All children in each family *must* be included; individual members cannot be accepted.

All subscriptions must be paid in advance.

The Guarantee Fund.

Dr. A. E. Nourrse (Bath) writes: Nothing, in my opinion, at the present time, will strengthen our position more than to have an ample *guarantee fund*. It will assist our relations with the Government and will strengthen our brethren. The Council asked for a guarantee fund of £150,000, which represents an average of £5 per member. There are many who cannot afford to guarantee anything, but there are also many who can afford to guarantee much more, and those who, like myself, do no contract practice, should uphold the position of others and of the profession in general, for this is not the only time when the profession may have to defend itself. There are, no doubt, fully 500 members who, in such a crisis, can afford to guarantee (and pay, if necessary, though we hope this will not be the case) £100 or more each. Similar groups might guarantee other amounts, from £10 to £50 apiece. Thus a guarantee fund, largely in excess of what the Council requested, would be built up. It is a case in which we must remember that the interests of one affects, or will affect, us all without exception.

I do not see that the incomes of a certain number of practitioners much affects the case. The duty of the Government is adequately to remunerate work done for the community as such, and it has nothing to do with arranging or limiting the earnings of men who work longer hours than any other—seven days a week, with nights thrown in. A capable medical man should be enabled to reimburse himself for the expenses of his education, provide for his family in life and in case of his (quite likely) early decease, and have sufficient for his old age and to put his sons, if desired, in the same calling as his own. How many can?

The choice between X and Y seems to me to be unnecessary. Whatever the Representatives may be instructed to say, it is obviously the object and the duty of the Council to keep in touch with the Government *and not to hurry*. We have refused the Government's offer and they refuse ours. Well, let us wait and listen with courtesy and patience to anything they have to say, with their reasons, if any, and give a courteous and well-considered reply. I am not suggesting any withdrawal from our position, but to "break off" relations with the Government would put them and us in an impossible position, and substitute a guerilla conflict for an organized one.

I suggest that the Secretaries of Divisions should appeal afresh to every one who has not sent in a guarantee.

The Bromley Division, at its meeting on July 12th, adopted unanimously the following resolution:

> That the Bromley Division instruct the Honorary Secretary to write to all members of the profession in the Division who have subscribed to the Guarantee Fund, urging them to allow half the amount of their local guarantee to be deducted from that Fund and placed to the credit of the Central Fund.

Dr. A. Tennyson Smith, Representative and Honorary Secretary of the Division, in a letter transmitting the above resolution, writes:

Bromley Division considers that a sum of £250,000 could and should be easily guaranteed in a month's time, which would represent the guarantee of only £7 13s. 1½d. per head of 32,000 men on the register.

My Division considers it will be to the everlasting shame of the medical profession if, through apathy on the part of some, selfishness on the part of others, the sum named—which, after all, must be considered an investment, the best and safest investment ever made by any medical man—is not guaranteed in the shortest possible time. Since May of last year Divisions have repeatedly sent up their Representatives to the Representative Meetings with bold and startling motions. Branches and Divisions have dismissed good and experienced men from the Council and from the Representative Body because those Members of Council and Representatives did not pursue a strong enough policy. Have those Branches and Divisions backed their policy with a sufficient guarantee or any guarantee at all? My Division thinks not, otherwise the sum would have been guaranteed months ago.

Have members of Council, Representatives, Chair and Secretaries of Divisions who are looked to for a guidance and a lead in their Divisions, otherwise they would not hold those positions of trust, have those men done their duty by the profession, and "hammered in" the urgent necessity of a sufficient guarantee fund? My Division thinks they have certainly not done so.

The time has now come for plain talking, and the following question must be answered at the coming Representative Meeting: "Is the profession in a position to maintain its strong front?" With a guarantee fund of £250,000 at our back, the answer would require no consideration, and would be in the affirmative. There can be little doubt that those difficulties that still confront us would have been swept away months ago if we could have let it be known to Government that we had an adequate war chest. Branches and Divisions must wake up. Men must do

something and stop their talking. Those men who called mass meetings in London, Manchester, Canterbury, and other large centres must call further mass meetings, and justify their previous action by guaranteeing a sum adequate to their incomes, and recommending others to do the same.

There is yet time, and my Division in handing over half its local to the Central Fund, does so hoping that its members are giving a sporting lead to the members of other Divisions. Surely £250,000 can be guaranteed in a month.

P.S.—At a meeting of the Sevenoaks Division, called at short notice, and consequently not a large one, the sum of £250 was guaranteed by the members present.

To Break Off or Continue Negotiations?

Dr. J. T. MACNAMARA (Lewisham, S.E.) writes: May I claim space to call attention to the very difficult position occupied by the members owing to the method by which the various recommendations of the Council were conveyed to them in the SUPPLEMENT of July 6th, page 23.

X embodied three recommendations headed "Breaking Off Negotiations," Y contained one headed "Continuing Negotiations," and at our meeting of the Greenwich Division I tried hard to show that with slight modifications in the wording Y was not antagonistic to X, but on the contrary could be made supplementary to it. The Chairman, however, ruled my amendment out of order, with the result that I am now in the position of having for the time to occupy the place of an old and highly respected and an absolutely trusted Representative in the person of Dr. Keay. The issues are so serious that I am hopeful you will find space for this letter in your next issue so that it might be in the hands of the members on next Friday.

Because in accordance with X (i) we inform the Government that we adhere to our minimum demands; because in accordance with X (ii) we decide to recall our members from the Advisory Committees; because in accordance with X (iii) we call on all practitioners to refrain from applying for or accepting office in connexion with the National Insurance Act, does not necessarily mean that we break off negotiations with the Commissioners as long as we retain our State Sickness Insurance Committee. It simply means that we are tired of the dilatory, and I am afraid I must add, very tricky methods employed, and that therefore we suspend negotiations until the Chancellor of the Exchequer places before us some definite proposals on which we may hope to continue our pourparlers. It simply throws on him the onus of the next move.

Let me cull a simile from the diplomatic world.

Because, let us say, this country gets into an entanglement with, say, France or Germany; because the tangle has reached almost breaking point and because we feel the strain to such an extent that we recall our ambassador, that does not necessarily mean a breaking off of negotiations so long as we place the embassy in control of the "chargé d'affaires." It is only when we call in another Power to look after the interests of our countrymen the estrangement is complete. Now take my view. We withdraw our ambassadors—namely, the medical members of the Advisory Committees—but we retain our "chargé d'affaires"—the State Sickness Insurance Committee—negotiations are not broken off. It simply means the Commissioners must make the next move. This view I would like strongly to impress on the Representative Meeting commencing next Friday. I know in expressing it I am voicing the wishes of the vast majority of the members of the Greenwich Division, and I believe it was only because of some temporary obliquity of vision or incapacity to grasp the hard facts of the situation that my amendment giving expression to these views was not passed by a preponderating majority.

Again, Sir, may I ask for the insertion of this letter in your next issue? We are out to win, but we must give the Chancellor a fair field.

Dr. B. G. MORISON (Highbury, N.) writes: I have before me Dr. Ballance's letter of July 8th, in which he pleads for liberty of action on the part of Representatives at the coming Annual Meeting with regard to the question of a continuance of negotiations with the Government. No one respects the right exercise of liberty more than I do, but I think it should be evident to Dr. Ballance and to all others that we have at last reached a point at which decision is imperative. The State Sickness Insurance Committee has received from the Commissioners, as representing the Chancellor of the Exchequer, a statement which practically refuses the demands of the profession, and none of these more definitely than that which is the root principle of all—the £2 income limit. This position of refusal has been steadily maintained by the Chancellor himself in later communications. Of course, in the inconceivable event of an abandonment of this position at the eleventh hour and the statutory concession of all our conditions, it would not be necessary to adhere to a *non-possumus* attitude. Partial compliance, on the other hand, with further protracted negotiations, and at last the futile close with which we have become so familiar, is out of the question. The great majority of Representatives will, I trust, be found to be in full agreement with their Divisions in the determination to break off negotiations, making no exception in favour of sanatorium benefit. This latter is, after all, merely a specialized form of medical benefit and is inseparable from it, alike in the public and the professional interest.

In dealing with such a measure as the National Insurance Act, no exception should be made in respect of any particular section of medical service. Nor can such exemption be consistent or honourable even in the case of the better paid section. Fears of a whole-time service lose much of their force, even for the calculating and the timorous, in view of a professional unity which is daily knitting us all more closely together. I would invite the attention of such Representatives as may have been allowed to remain uncommitted, to the fact that whatever their freedom from immediate instructions, they are still bound by the original declaration and undertaking issued by the Association, to maintain inviolate the six cardinal points. These constitute for us as a profession the irreducible minima which we will not concede, but which must be conceded to us as the preliminary to any negotiations. This is not the Chancellor's view. In a letter of July 9th he very calmly begs the question by apparently assuming that four of the points referred to have been already conceded. We know the contrary, for we have followed the process of counter amendment. With regard to the income limit his refusal is definite. The question of adequate remuneration is in virtually the same position. He then proceeds to express the hope that a Committee of the Association will be appointed to negotiate with him in a "practical spirit." Not, after all that has gone before, on our basis of negotiation, but on his own, and if we so negotiate as we should certainly have to do, our cardinal points disappear. To be associated open-eyed in such an error, would be complicity and a crowning shame, which I sincerely trust no Representative will condemn himself to wear. The profession has already shown itself most patient in negotiating, its only reserves are those points which it regards as of primary and vital importance. On these it cannot, and will not, give way. It is refused them, and negotiation for it becomes impossible.

Dr. W. WINSLOW HALL, (London, N.W.), writes: Under this heading I wrote, on February 18th, a letter (SUPPLEMENT, February 24th, p. 236) in which I pointed out that "the Act secures for us three and a half of our six points—namely, free choice of doctor, administration by local Insurance Committees, adequate representation on the administrative bodies, with (by the Addison amendment) recognition of the wage-limit principle. Thus there are two and a half points still to be secured—that is, amount of the wage limit, method of remuneration, and amount of remuneration." A seventh point, that of disciplinary procedure, has been added since then.

With regard to these remaining three and a half points, I would submit that the Commissioners' letter of June 26th gives us all that the Government can give and all that is necessary. Point 7 (that of disciplinary procedure) is granted. Point 6 (amount of remuneration) is met by a promise of extra fees and a capitation grant of something between 6s. and 8s. 6d. a year. Point 5 (method of remuneration) is conceded. The remaining half of Point 4 (amount of the wage limit) cannot now be legally granted. But the Commissioners indicate that the medical profession may secure this point for itself; for, say they, "the Commissioners must, through the Regulations, authorize every Insurance Committee to require persons whose income exceeds a limit to be fixed by the Committee to

make their own arrangements for obtaining medical attendance and treatment, the Committee contributing to the cost of such medical attendance and treatment in the manner provided in Subsection (3) of Section 15." The point would be gained, then, if the medical profession could compel every Insurance Committee to fix a maximum wage limit of £2 for contract medical benefit. And this can be done.

For (1) the choice of doctor by patient is to be "subject to consent of doctor to act." Therefore let the medical profession pledge itself to refuse contract treatment under the Act to any member of an approved society who is not willing to sign the "declaration" indicated by the Sickness Insurance Committee in paragraph 105 (Supplement, July 6th, p. 18).

And (2) the medical profession is united on this point, whatever else may be in dispute.

I would suggest, then—

1. That negotiations be continued.

2. That the Commissioners' terms be accepted as in the main (though not precisely) what we asked for.

3. That the definite and reunifying pledge indicated above be substituted at once for the deplorable supplementary pledge.

Let us recognize that the crucial point is now the wage limit; that this cannot be given to us; but that it *can* be taken.

Dr. W. G. Dickinson (Portishead) writes: In Mr. Ballance's circular letter to the profession he claims that the Divisions are not yet aware of the full facts, and instances three points upon which our knowledge is defective: (1) The amount that the Chancellor may ultimately be persuaded to give; (2) the number of medical men who have signed the supplementary pledge; and (3) the amount of the Central Guarantee Fund.

As to (1) we know from the Chancellor that he definitely refuses to accept our minimum, which is all we want to know.

As regards the others, (2) is the only really important one.

If, as is apparent to anyone reading your reports from Divisions, it is shown that an enormous majority of medical men have signed this pledge, then (3) becomes of no consequence at all. No one can lose anything, since no one is willing to supplant him.

Let me therefore urge upon all Representatives not to be deterred from doing their duty whatever may be the report on the Central Guarantee Fund.

Medical and Sanatorium Benefit.

Dr. Major Greenwood (London, N.E.) writes: It is of the utmost importance at the present time that no difference should be made between medical and sanatorium benefit. Mr. Lloyd George recognizes no distinction, for when addressing the meeting at Kennington on July 13th he is reported to have said:

"It is said you cannot apply the medical benefits because you cannot find your doctors. Yesterday we had to chose doctors for consumption in the whole of Wales. Eleven doctors were wanted, and we got fifty-seven applications."

We therefore should agree with him in this particular, and so frame our resolutions that it be clearly understood that in accepting any official posts in connexion with sanatorium benefit a medical practitioner is violating the pledge he has given quite as much as if it were in connexion with medical benefit. Any professional work in connexion with the Insurance Act should only be permitted on a strictly private basis, or in connexion with contract work that is authorized by the Association.

Dr. Bernard O'Connor (Lincoln's Inn, W.C.) writes: The amusing and cleverly-drawn picture of the N. H. "sanatorium" procedure laid down on p. 87, col. 2, of [illegible] for the guidance of one "who *believes* himself to be suffering from tuberculosis" is interesting from several points of view. He is to be furnished by the clerk to the Insurance Committee with a blank medical report form which he may take to any medical practitioner whom he may ask to examine him with a view to the filling up the form—and this, for the "suitable" fee of 5s.! The form is next to be forwarded to the local medical officer of health (whether the patient is, or is not, declared to be tuberculous?), and the medical officer of health is assumed to be competent to advise the Insurance Committee "as to the form of treatment most suitable to the case," etc.; and provision is to be made for the "home treatment" of the patient by his own medical attendant, which treatment shall have been sanctioned by the Committee. As we know now the composition of this Committee we may look out for surprises in the future.

Although I am quite ready and willing to attest the general excellence of the practical sanitary branch of the profession, I cannot bring myself to admit that a medical officer of health, *quâ* medical officer of health—however efficient he may be in his own special sphere of work—is the proper person to give advice as to the "form of treatment most suitable" for a case of tuberculosis; and, writing as one who for a couple of dozen years was physician (and for ten years senior physician) to a large hospital for consumption and diseases of the chest, and bearing in mind what a correct diagnosis in a case of suspected tuberculosis ought to signify, I would urge the doctor who fills up the initial certificate to charge the proper fee (£2 2s.) for a first consultation and not to sign it for any less amount.

Sir William Plender's Report.

Dr. Michael Dewar (Edinburgh) writes: At the outset it may be well to draw attention to the exact relation of the British Medical Association to this inquiry. The State Sickness Insurance Committee of the British Medical Association informed the Chancellor frankly that the inquiry was not of its seeking; that the information obtained as the result of the inquiry would probably be inadequate and might be misleading; and that the demand of the profession could not in any way be affected by the results of the inquiry. The Association, however, agreed not to stand in the way of acceding to the Chancellor's request, as it had absolute confidence in the justice of its case.

In the first place, the towns selected were by no means the choice of the Association, and certainly there is not a practitioner in Scotland who would have chosen Dundee as a town typical of what may be considered as affording a fair average of the conditions of medical practice, and of remuneration to the profession prevailing in Scotland. The two towns in Scotland chosen by the State Sickness Insurance Committee—namely, Hawick and Stirling, were not accepted by the Government, on the ground, I believe, that Hawick was practically an English town, and Stirling was too respectable. It is absurd to assume for one moment that the Dundee figures could by any means be taken as a guide to what should be considered a fair remuneration for medical work in the rest of Scotland. Sir William Plender, in his report, states that the average gross annual income from residents inside towns for visits at patients' homes, and attendance at surgeries, less proportionate deduction for bad debts is 4s. 2d. per head of the population, after deducting the number of patients attended under contract. Adding the contract patients' income, the average is 4s. 1¾d. per head.

1: In coming to such an estimate of 4s. 2d. per head of the population I would like to ask Sir William the question: Did he take into consideration that in Dundee, at any rate, which forms nearly 40 per cent. of the entire population of the five chosen towns—Cardiff being eliminated—many thousands of people, probably 10,000 or more, receive charitable attendance and advice? Can I not fairly assume (for a good deal of the auditor's figures are mere assumption) that if these thousands of the population who receive charitable attendance were deducted from the total number of the population, the remuneration, even in Dundee, would be a great deal more than his estimate of 4s. 2d. per head?

2. It has been pointed out already that 1911 was an exceptionally healthy year, and, as a consequence, the returns per head of the population would be less than the average.

3. Have the Government and its auditor ever considered that 4s. 6d. per head of 14 to 15 million people will never recompense the doctors for the withdrawal of something like 10 millions of people, who have in the past been the backbone and mainstay of the general practitioners' income?

4. Has the Government ever considered that under the Act, the probability—nay, the certainty—is that the insured person will demand twice the number of attendances he would seek under conditions of private practice? This means that every practitioner who goes on to the panel will have to work twice as hard to earn the same income as he does at present. No unbiassed man can say that this would be fair and just to the profession.

5. It cannot be too strongly affirmed that the rates of 3s. and 4s. per head in contract practice in the past have been entirely on a charitable basis, and that it will require at least 8s. 6d. per head, with extras, to raise what is termed adequate medical attendance out of the slough of charity, and place it on a standard of what the profession considers adequate remuneration for the work to be done.

The Edinburgh area has definitely resolved that payment for medical attendance on insured persons must be for work done, and not on a pooled basis, and that the fee be 2s. 6d. per visit. The profession has not asked for this Insurance Act, and, in this city at least, it is determined that it will work the Act only on the condition that the minimum demands, which were formulated in June, 1911, be conceded.

Country Practices.

The books of the practices examined by Sir William Plender did not contain those of any country practices. We are indebted to a country practitioner for an analysis of his own, "a good class general practice in a purely agricultural district." He summarized his results as follows:

Acreage of Poor Law district	21,916 acres.
Population	3,571 persons.
Estimated number of insurable persons ...	1,391
Number of miles payable under mileage for insurable persons beyond two mile radius	2,320
Loss:	
Total loss on private practice from servants and others becoming insured persons	£116
Loss on clubs from insurable persons ceasing to pay surgeons capitation fee	£90
Total	£206
Gain:	
Capitation fees for 1,391 insurable persons at 6s. ...	£417
" " 1,391 " " 8s. 6d.	£591
Gain for mileage at 6d., £58; at 9d., £87; at 1s.,	£116
Net gain at 6s. (besides mileage)	£209
" 8s. 6d. "	£385

It should be noted that the extra work necessitated would probably require an assistant.

REMUNERATION.

Dr. P. R. COOPER (Bowdon, Cheshire) writes: It would have been wiser for us to have taken a firmer stand against capitation from the start.* Undoubtedly it means that we bear the risks of the insurance, that we accept an unlimited amount of work for a strictly limited fee, and that our net earnings are in inverse ratio to the amount of work we have to do. Besides the even more important matters, from a professional standpoint, that under a contract system we are practically foregoing our liberty and independence as practitioners, that our relations with our patients are seriously jeopardized, and that there must be an inevitable tendency to the encouragement of slipshod, scamped, and unscientific work, and so to a general deterioration of the medical profession.

On the other hand, payment for work done, on a satisfactory scale, with every inducement to the best work, and the highest development of the medical man as a detector and curer of disease, cannot fail to be in the best interests of the public and the profession.

When it comes to a question of fees I do not think even the Chancellor himself would dare to offer us less than 2s. 6d. a visit (or, say, 2s. for a consultation at the surgery), and although this is not a rate of pay which is likely to enrich us, we should at least feel that we were getting what we earn, and should be satisfied to do our best for our patients and incidentally for the insurance fund. The 2s. 6d. per visit would, of course, be a minimum fee for an ordinary visit, and the various "extras" would be charged upon an agreed scale. Further, although we should be prepared to attend people up to, say, an income limit of £2 to £3 per week upon this basis, it should be distinctly understood that we do not consider it a full and satisfying fee for the work we do, and we should insist upon higher rates for people with higher incomes.

My impression is that the Chancellor, if forced to decide between a capitation fee of 8s. 6d. (*plus* extras) or a per item fee of 2s. 6d. (*plus* extras), would choose the former. At any rate, our present course seems clear. Most of us would prefer to be paid per item, even if we felt assured that thereby our income would be less, as we prefer our independence and our present status to the slavery and debasement of contract practice. We have, therefore, nothing to lose but everything to gain by unanimously and determinedly holding out for payment according to work done.

THE TRAINING IN MIDWIFERY.

Sir FRANCIS CHAMPNEYS (London) writes: I see in the last number of the JOURNAL (SUPPLEMENT, pages 16 and 17), under the head of "The Effect of the Insurance Act upon the Teaching of Clinical Midwifery," certain opinions of the Council and two recommendations marked P and Q.

I would suggest that the Representative Meeting should think twice before passing any resolution which would, if put into force, hamper the teaching of midwifery. It is only recently that a step forward has been taken by various authorities with the view of remedying what was certainly an unsatisfactory state of things, and it is scarcely necessary to point out the special difficulties under which midwifery labours as a subject of instruction, nor of its special importance to the community.

It would, I think, be universally agreed that it requires the best teaching that can possibly be obtained, and I do not suppose for a moment that any movement in the direction of less thorough and systematized instruction would have a chance of being accepted.

But I am anxious that our profession, which is in so difficult a position at the present time, should not appear to wish to subordinate the interests of the community to its own immediate interests. Such a view would be very shortsighted, for the want of proper training in obstetrics would soon deprive the profession of persons fit to train others, besides alienating the sympathy of the country.

MEDICAL ATTENDANCE BY UNREGISTERED PERSONS.

Dr. H. A. LATIMER (Swansea) writes: I think it is right that I should draw the attention of the members of our profession to a paragraph which appears in Paper No. 12, 11, vi, 12, of the Advisory Committee of the National Insurance Act, 1911.

Under the heading "Memorandum on Regulations to Meet the Requirements of Section 15 (3)" occurs the following item:

B. *Other persons who may be allowed to make their own arrangements.*

7. Any insured person may be allowed by the Insurance Committee to make his own arrangements for receiving medical attendance and treatment (including medicines and appliances) in lieu of availing himself of the arrangements made by the Committee. The Insurance Committee would have a discretion in deciding whether any given insured person should be allowed to make his own arrangements. It is not necessary for compliance with the section that a registered medical practitioner should be employed for the purpose of giving such attendance and treatment. The Committee must, subject to the regulations, contribute towards the cost of the attendance and treatment obtained.

When I drew the attention of the Commissioners and the Medical Advisory Committee which met at Buckingham Gate on June 11th to that portion of the paragraph which allowed insured persons to make arrangements with persons other than registered medical practitioners for attendance under the Act, asking if this did not allow of the employment of quacks, I was answered by a Commissioner, who said that it was no good for me to debate this point, as the House of Commons had deliberately inserted this provision in the bill, so that people who had a predilection for Christian Science, etc., might be able to avail themselves of it.

So it would appear that the State is deliberately sanctioning the payment of untrained and unqualified persons for the treatment of disease!

SCOTTISH MEDICAL INSURANCE COUNCIL.

The following letter, addressed by Dr. W. Russell, Chairman of the Scottish Medical Insurance Council, to a

* I repeatedly pointed out in these columns that any capitation fee offered us would certainly not be an adequate one.

medical correspondent, has been forwarded to us for publication:

The Medical Profession and the Chancellor of the Exchequer.

Edinburgh, July, 1912.

Dear Sir,

In response to your suggestion I shall endeavour to restate shortly what I said at some length when addressing the Edinburgh and Leith Division of the British Medical Association on Thursday, the 11th inst.

The two points which I specially dealt with were (1) the terms formulated by the profession as a condition of their working the National Insurance Act, and (2) the continuance of so-called negotiations with the Chancellor of the Exchequer, who appears to be the main, if not the sole, authority under the Act.

With regard to the terms, it is essential to bear in mind that by the Act it is proposed to take 10 millions of employed persons out of the sphere of existing private practice, and to make the doctors give them medical attendance for the sum of 4s. 6d. per head per annum, while 1s. 6d. is allowed for drugs and appliances. About 4 million persons were estimated to be in friendly societies, or in some other way entitled to medical attendance on a contract basis, before the passing of the Act. These two sets of persons make up the 14 million or more who are to become insured.

The profession is necessarily perturbed when it realizes that the Act proposes the removal of those ten million or more of persons from the sphere of private practice—a number which, with the addition of those in friendly societies before the passing of the Act, means one-third of the total population of the country.

When Ireland is left out, it is estimated that there will be twelve millions of insured employed persons in Great Britain.

At the rate of 4s. 6d. per head per annum, a sum of £120 per annum would be available for each of 22,500 doctors affected by the Act.

There is no allowance for travelling expenses in either town or country. The doctors realize that they will thus have to make the remainder of their gross income out of the other two-thirds of the population, which, it ought to be remembered, includes the wives and children of the poorest classes of insured persons, while from the gross income somewhere about one-third has to be allowed for expenses, at least in rural and semi-rural areas.

In Scotland many areas, of which Edinburgh and Leith are two, will not accept any capitation rate, but where the capitation method of remuneration is acceptable the demand is for 8s. 6d., with, in addition, payment for mileage and for extras. This is also the demand of the profession as voiced in the last Representative Meeting of the British Medical Association. When to this 8s. 6d. is added 1s. 6d. for medicines and appliances, a sum of 10s. per head is reached. The Act provides 6s. only, so that whatever is required above that sum has to be obtained from Parliament. Parliament would thus have to find £2,500,000, or, if Ireland demanded her share in such a contribution, and, as will probably be the case, there are 15 rather than 14 millions of insured persons, Parliament will have to vote £3,000,000 annually for this purpose. I personally believe that the mileage and extras demanded by the profession would require £2,000,000 more annually. Whatever amount these items may come to, it is only fair that the risk should be borne by Parliament and not be thrust upon the profession. Many of my brethren agree with the estimate I have given. The question therefore arises, Will the Chancellor of the Exchequer go to Parliament for the necessary £3,000,000 to £5,000,000? I ventured to predict weeks ago that Mr. Lloyd George would not dare to do so, and when his surplus of £5,000,000 was relegated to its proper place, this view was strengthened. The Chancellor's recent letter to his *medical correspondent* has made the fact generally known that he cannot give even 8s. 6d., much less the 10s., with mileage and extras, demanded by the profession.

His statement in that communication may therefore be accepted as virtually final.

I now come to the second point, namely, the continuance of so-called negotiations. The word is a euphemism, for the profession has stated the terms on which it is prepared to adapt itself to the taking away, by an Act of Parliament, of so many millions of its patients. The terms were minimum terms; the profession in Edinburgh and Leith, as well as elsewhere, evidently abides by them, and there is no doubt their representatives will gladly take instructions to act accordingly, and not to depart from them on any point. We cannot imagine the Representative Meeting doing otherwise; and if it reaffirms the demands made at its last meeting, what is there to negotiate about? The terms cannot be granted by the Chancellor, and that ends the matter.

Of course, there are nervous and timid persons in our profession who dread the result of steadfast action and straight issues, and there may be party politicians amongst us who, while running with the medical hare, hunt with the Government hounds, and who would, if they got their way, accept a dole of a million or a million and a half to settle all the differences between Mr. Lloyd George and the profession. That small section has been yielded to from the outset, down to this hour, in the hope that their eyes might be opened, and that disruption would be avoided.

The hour has, however, now come when we must know the dissentients who may be deserters and traitors to the medical cause next January. It is now and not in the hour of conflict they must be known. It is between now and the end of the year that our forces have to be finally organized to meet the changed circumstances forced upon us and upon 14 millions of our patients. And organization will only be completed when the areas realize the fact that Mr. Lloyd George cannot grant them even the money demands they have made.

For the sake of the public, and the public health to which we endeavour to minister, the next months ought to be devoted to the prevention of the confusion, disorder, and chaos which will inevitably result in January, unless the profession takes this decisive step now, and devotes itself, even more strenuously than hitherto, to the organization of the insurance areas.

I am, etc.,

W. Russell, M.B.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

Staff Surgeon G. Buckeridge to Haulbowline Hospital and Yard, August 16th.

Surgeon H. Braithwaite lent to the *Hampshire* for manœuvres.

Surgeon E. Hearn to the *Victory* for disposal, July 11th.

Surgeon M. Haydon to the *Europa*, temporarily, July 3rd.

INDIAN MEDICAL SERVICE.

Captain A. W. Greig, whose services have been placed at the disposal of the Punjab Government by the Government of India, Home Department, reported his arrival at Bombay on May 1st, and took over charge of the duties of Superintendent, Central Jail, Montgomery, on May 7th, relieving Assistant Surgeon H. V. W. Cox.

Captain R. D. Macgregor has been granted a further extension of leave on medical certificate for six months.

Captain B. Higham, M.B., B.S.Lond., to be Chemical Analyser for Sind and Health Officer for the Port of Karachi.

The promotion of Major Archibald Nicol Fleming, M.B., F.R.C.S.E., to that rank is antedated from July 29th, 1908, as notified in the *London Gazette* of October 26th, 1908, to January 29th, 1908.

Captain S. W. Jones to act as Superintendent of the Central Prison, Ahmedabad, vice Major C. S. Lowson.

Captain F. N. White, M.D., is appointed to hold charge of the current duties of the office of the Director, Bombay Bacteriological Laboratory, in addition to his own special duties, with effect from the date on which he assumes charge of those duties.

Major G. E. Stewart, M.B., F.R.C.S.E., to act as Deputy Sanitary Commissioner, Central Registration District, during the monsoon, in addition to his own duties as Superintendent of Mahabaleshvar.

Major C. C. Murison, F.R.C.S.E., D.P.H., to act as Deputy Sanitary Commissioner, Gujerat Registration District, in addition to his duties as Superintendent of Matheran.

Captain J. Morison, M.B., is deputed on special duty in connexion with the investigation into the causes of diarrhœa at Poona during the rains, with effect from April 17th, 1912.

Captain W. E. Brierly, medical officer, 17th Cavalry, Bareilly, to hold civil medical charge of the district in addition to his military duties.

Volunteer Department.

Agra Volunteer Rifles. Major H. A. Smith, M.B., resigns his commission, dated April 1st, 1912.

TERRITORIAL FORCE.

Army Medical Service.

Colonel George S. Elliston, C.B., is retired under the conditions of paragraph 60 of the Territorial Force Regulations, and is granted permission to retain his rank and to wear the prescribed uniform; dated July 17th, 1912.

Royal Army Medical Corps.

Notts and Derby Mounted Brigade Field Ambulance.—Alexander Moxon Webber, M.D., F.R.C.S., to be Lieutenant, dated April 27th, 1912.

Second Northumbrian Field Amulance.—Captain Henry C. Pearson, M.B., resigns his commission, dated June 26th, 1912.

Fourth Southern General Hospital. Major Henry W. Webber, F.R.C.S.Edin., to be Lieutenant Colonel, dated January 27th, 1912.

First London (City of London) Sanitary Company. Lieutenant Heaver S. Fremlin to be Captain, dated May 24th.

Attached to Units other than Medical Units.—Lieutenant Thomas H. Richmond, M.B., to be Captain, dated February 2nd, 1912; Lieutenant Henry Robinson, M.D., to be Captain, dated April 14th, 1912; Lieutenant Arthur E. Horsfall, M.B., to be Captain, dated January 1st, 1912; Major Reginald George Hann, from the Second Northern General Hospital, to be Major, dated April 1st, 1912; Lieutenant William G. Thompson, M.D., resigns his commission, dated June 22nd, 1912.

Third East Anglian Field Ambulance.—Major JOSIAH OLDFIELD, M.A., D.C.L., has passed the examination and qualified for promotion to the rank of Lieutenant-Colonel.

Third Home Counties Field Ambulance.—Lieutenant STANLEY A. COAD to be Captain, dated February 22nd, 1912.

Second Western General Hospital.—Lieutenant-Colonel GEORGE A. WRIGHT, M.B., F.R.C.S., on completion of his period of service in command, is retired, dated June 22nd, 1912; Lieutenant-Colonel JOHN WILLIAM SMITH, M.D., from the 3rd East Lancashire Field Ambulance, to be Lieutenant-Colonel, dated June 22nd, 1912.

COLONIAL MEDICAL SERVICES.

THE following changes have been notified by the Colonial Office:

WEST AFRICAN MEDICAL STAFF.

New Appointments.—The following gentlemen have been selected for appointment to the Staff: P. W. BLACK, L.R.C.S., L.R.C.P.Irel., Northern Nigeria; W. C. E. BOWER, M.R.C.S.Eng., L.R.C.P.Lond., L.M. and S. Madras, Sierra Leone; W. BROWNE, L.R.C.S., L.R.C.P.Edin., L.F.P.S. Glas., Southern Nigeria; W. G. COBB, M.B., Ch.B.Edin., Northern Nigeria; H. de C. DILLON, M.B., B.Ch., B.A.O.Dub., L.M.Rotunda, Southern Nigeria; L. DOUDNEY, M.R.C.S.Eng., L.R.C.P.Lond., Northern Nigeria; M. GRAVES, L.M.S.S.A.Lond., Gold Coast; W. B. JOHNSON, M.B., B.S.Lond., F.R.C.S.Eng., L.R.C.P.Lond., Northern Nigeria; C. KELSALL, L.R.C.S., L.R.C.P.Irel., L.M.Rotunda, Southern Nigeria; K. MANSON, M.B., B.S.Durh., Southern Nigeria; R. H. NOLAN, M.B., Ch.B.Edin., Northern Nigeria; M. W. RUTHVEN, M.B., Ch.B.Edin., Southern Nigeria; F. C. V. THOMPSON, L.M.S.S.A.Lond., Gambia; F. G. THOMPSON, M.B.Lond., Gold Coast.

Retirement.—B. FLOOD, L.R.C.S., L.R.C.P.Edin., L.F.P.S.Glas., Medical Officer, Northern Nigeria, retires with a gratuity.

OTHER COLONIES AND PROTECTORATES.

B. BUCHANAN, M.D., Ch.B.Aberd., D.P.H.Birm., has been selected for appointment as a Medical Officer with the work of House-Surgeon in the Straits Settlements.

W. H. HART, M.B., B.Ch., B.A.O.Dub., has been selected for appointment as a Medical Officer in the Straits Settlements.

V. W. T. McGUSTY, M.B., Ch.B., B.A.O.Dub., has been selected for appointment as a Medical Officer in Fiji.

C. W. McKENNY, M.D., B.Ch., B.A.O.Dub., L.M.Rotunda, has been selected for appointment as a Medical Officer in Hong Kong.

J. H. PATERSON, M.B., Ch.M.Edin., D.P.H.Cantab., late Medical Officer, Northern Nigeria, has been selected for appointment as Colonial Surgeon in the Falkland Islands.

D. T. SKEEN, M.B., Ch.B.Aberd., has been selected for appointment as a Medical Officer (Grade III) in the Federated Malay States.

V. G. L. VAN SOMEREN, L.R.C.S., L.R.C.P.Edin., L.F.P.S.Glas., L.D.S., has been selected for appointment as a Medical Officer in the East Africa Protectorate.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN ninety-five of the largest English towns 8,238 births and 3,930 deaths were registered during the week ending Saturday, July 13th. The annual rate of mortality in these towns, which had been 11.6, 11.1, and 10.8 per 1,000 in the three preceding weeks, rose to 11.6 per 1,000 in the week under notice. In London last week the death-rate was equal to 11.3 per 1,000, against 10.6, 10.8, and 10.3 in the three preceding weeks. Among the ninety-four other large towns the death-rates last week ranged from 4.3 in Warrington, 4.5 in Bath and in Wallasey, 4.9 in Walthamstow, 5.8 in Dewsbury, 6.3 in Ilford, and 6.7 in Walsall to 15.5 in West Hartlepool, 15.8 in Merthyr Tydfil, 16.5 in Stockport, 16.6 in Salford, 17.1 in Liverpool, and 17.4 in Tynemouth. Measles caused a death-rate of 1.2 in Leeds, 1.4 in Sunderland and in South Shields, 1.9 in Stockport, 2.2 in Liverpool, 2.7 in Gateshead, and 5.7 in Rotherham, the mortality from the remaining infectious diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 39, or 1.0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest, and included 9 in Liverpool, 8 in Birmingham, and 3 in Stoke-on-Trent. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,358, 1,398, and 1,417 at the end of the three preceding weeks, had further increased to 1,477 on Saturday last; 227 new cases were admitted during the week, against 188, 195, and 201 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN eighteen of the largest Scottish towns, 1,133 births and 560 deaths were registered during the week ending Saturday, July 13th. The annual rate of mortality in these towns, which had been 14.0 and 14.6 per 1,000 in the two preceding weeks, declined to 13.4 in the week under notice, but was 1.8 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 6.3 in Govan and in Motherwell, 7.5 in Kilmarnock, and 7.6 in Partick to 17.3 in Perth, 20.2 in Ayr, and 23.8 in Hamilton. The mortality from the principal infectious diseases averaged 1.2 per 1,000, and was highest in Dundee and Hamilton. The 185 deaths from all causes registered in Glasgow included 2 from whooping-cough, 1 from enteric fever, 1 from measles, 1 from scarlet fever, 1 from diphtheria, and 2 from infantile diarrhœa. Five deaths from measles were recorded in Dundee, 4 in Hamilton, and 2 in Partick; and 4 deaths from whooping-cough in Dundee and 2 in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, July 6th, 603 births and 306 deaths were registered in the twenty-two principal urban districts in Ireland, as against 594 births and 354 deaths in the preceding week. The annual death-rate in these districts, which had been 17.2, 15.7, and 16.0 per 1,000 in the three preceding weeks, fell to 13.8 per 1,000 in the week under notice, this figure being 3.0 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 16.0 and 12.1 respectively, those in other districts ranging from 3.9 in Galway and 4.6 in Wexford to 23.8 in Dundalk, and 27.5 in Armagh, while Cork stood at 12.2, Londonderry at 10.2, Limerick at 12.2, and Waterford at 11.4. The zymotic death-rate in the twenty-two districts averaged 1.2 per 1,000, as against 1.3 in the preceding period.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BANGOR: CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

BIRMINGHAM UNIVERSITY.—Lecturer in Physiological Department. Stipend, £200 per annum.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer. Salary at the rate of £50 per annum.

CARDIFF: KING EDWARD VII'S HOSPITAL.—House-Surgeon (Male). Honorarium, £30 for six months.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum.

CROYDON GENERAL HOSPITAL.—Anæsthetist and Junior House-Surgeon. Salary, £75 per annum.

DERBY COUNTY EDUCATION COMMITTEE.—School Medical Officer. Salary, £250 per annum.

DERBY: ROYAL DERBY AND DERBYSHIRE NURSING AND SANITARY ASSOCIATION.—Honorary Obstetric Physician to the Nightingale Nursing Home.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

GALWAY UNIVERSITY COLLEGE.—Assistant to the Professor of Biology.

GRAVESEND HOSPITAL.—House-Surgeon. Salary, £100 per annum.

GREENOCK: SMITHSON POORHOUSE AND ASYLUM.—Medical Officer. Salary, £110 per annum.

HEREFORD COUNTY AND CITY ASYLUM.—Two Assistant Medical Officers (Males). Salary, £170 and £130 per annum rising to £200 and £150 respectively.

HULL ROYAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £60 per annum for six months, or £80 per annum for twelve.

LANCASTER: ROYAL LANCASTER INFIRMARY.—House-Surgeon. Salary, £100 per annum.

LEAMINGTON SPA: WARNEFORD GENERAL HOSPITAL.—House-Physician. Salary, £85 per annum.

LEEDS INFECTIOUS DISEASES HOSPITALS.—Junior Assistant Medical Officer. Salary at the rate of £130 per annum.

LEICESTER ROYAL INFIRMARY.—Assistant House-Surgeon. Salary, £80 per annum.

LIVERPOOL DISPENSARIES.—Head Surgeon. Salary, £170 per annum.

LONDON COUNTY ASYLUM, Colney Hatch, N.—Junior Assistant Medical Officer. Salary, £170 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Clinical Pathologist.

MERTHYR TYDFIL UNION.—Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Fitzroy Square, W.—Anæsthetists.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

NOTTINGHAM GENERAL DISPENSARY (Branch).—Assistant Resident Surgeon (Male). Salary, £160 per annum.

POPLAR HOSPITAL FOR ACCIDENTS, E.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Medical Officer (non-resident) for Prevention of Consumption Department. Salary at the rate of £250 per annum.

RYDE: ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £100 per annum.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum.

SALFORD ROYAL HOSPITAL.—Casualty House-Surgeon (Male). Salary at the rate of £65 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary, £80 per annum.

SHEFFIELD ROYAL HOSPITAL.—Sixth Resident. Salary, £60 per annum.

SHEFFIELD: ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary, £70 per annum.

SOUTHAMPTON FREE EYE HOSPITAL.—House-Surgeon. Salary, £100 a year.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon (Male). Salary commencing at the rate of £70 per annum.

STAFFORD: STAFFORDSHIRE COUNTY HOSPITAL.—Assistant Medical Officer. Salary, £160 per annum rising to £210.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—(1) House-Physician. Salary, £100 per annum. (2) House-Surgeon. Salary, £120 per annum.

STOCKPORT INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum.

STOCKPORT UNION HOSPITAL.—Resident Assistant Medical Officer. Salary, £130 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Physician (Male). Salary, £100 per annum.

VICTORIA HOSPITAL FOR CHILDREN, Tite Street, S.W.—House-Surgeon. Appointment for six months. Salary, £40.

WEST BROMWICH DISTRICT HOSPITAL.—Assistant Resident House-Surgeon. Salary, £75 per annum.

WESTBURY-ON-SEVERN UNION.—Medical Officer for the No. 2 District. Salary, £95 per annum.

WESTMINSTER GENERAL DISPENSARY, Gerrard Street, Soho.—Resident Medical Officer. Salary, £120 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointment: Newtyle (Forfar).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

BALL, W. Girling, F.R.C.S.Eng., Surgical Registrar at St. Bartholomew's Hospital.

BLACK, P., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Kingston District, co. Surrey.

BOURKE, I. McWm., M.R.C.S.Eng., L.R.C.P., D.P.H.Lond., Acting Chief Medical Officer and Chief Health Officer, Territory of Papua.

CARR, G. F., M.R.C.S., L.R.C.P.Lond., Certifying Factory Surgeon for the Leyburn District, co. York.

CLARKE, Cecil, M.B., B.S.Lond., Assistant to the Superintendent of the Laboratories, Hospital for Consumption.

COULDREY, T. R., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Frodingham District, co. Lincoln.

FRY, A. C., M.B., B.C.Cantab., District and Workhouse Medical Officer of the Stone Union.

HARTIGAN, T. J., M.B., B.Ch., R.U.I., Certifying Factory Surgeon for the Croom District, co. Limerick.

JAYNES, V. A., M.R.C.S., L.S.A., Certifying Factory Surgeon for the Bermondsey District, co. London.

MACLEOD, J. F., M.B., District Medical Officer of the Middlesbrough Union.

MCMURTRY, W. D., L.R.C.P.and S.Edin., District Medical Officer of the Wandsworth Union.

MCRAE, D., M.B., C.M.Glas., Assistant Medical Officer of the City of London Union (Bow Institution).

PAKAKH, F. R., M.D., B.S.Vict., L.R.C.P., M.R.C.S., L.M.R.C.P.I., Honorary Obstetrician and Gynaecologist to the Parsi General Hospital and Consulting Gynaecologist to the Bacterio-therapeutic Institute, Bombay.

PEBUS, Frederick Charles, F.R.C.S., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 1, vice T. G. Ouston, deceased.

ROBINSON, W. E., M.D., B.Ch.Oxon., Visiting Anaesthetist to the Royal Victoria Hospital for Children and Women.

SUTHERLAND, A. L., M.D., District Medical Officer of the Skipton Union.

TORNEY, J. H., M.B., B.Ch.Dub., District Medical Officer of the Plymouth Incorporation.

TYMMS, H. G., F.R.C.S., Medical Officer to the West Australian Fire Brigades Board.

WOOLF, A. D., M.D.Brux., L.R.C.P., L.R.C.S.Edin., L.R.F.P. and S. Glas., Assistant Anaesthetist to the Prince of Wales's Hospital, Tottenham.

EDINBURGH ROYAL INFIRMARY.—At the meeting of the managers on July 1st, Dr. William Russell was reappointed Ordinary Physician and Mr. J. W. Hodsdon, F.R.C.S.E., Ordinary Surgeon. Mr. D. P. D. Wilkie, M.D., Ch.M., F.R.C.S.E., was elected Assistant Surgeon, and Mr. J. D. Ingram, M.B., Ch.B., and Mr. W. Montgomery Johnston, L.R.C.P. and S.Edin., were appointed non-resident House-Surgeon and Clinical Assistant in the Ear and Throat Department.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

MILNE.—At 129, Mitcham Lane, Streatham, S.W., on July 15th, 1912, the wife of George Milne, M.D., of a son.

POWELL EVANS.—On July 11th, at Berth Ddu, Wimbledon, the wife of David Robert Powell Evans, M.R.C.S., L.R.C.P., L.S.A., of a son.

REIDY.—On July 8th, at 314, Commercial Road, Stepney, the wife of J. Reidy, M.B., of a son.

TAYLER.—On July 12th, at The Croft, St. Margaret Street, Bradford-on-Avon, the wife of H. C. Tayler, M.R.C.S.Eng., L.R.C.P.Lond., of a son.

MARRIAGES.

CRABB—TANNER.—On July 10th, at Emmanuel Church, Hampstead, by the Rev. Dundas Harford, M.A., assisted by the Rev. F. F. Young, M.A., and the Rev. H. J. Tanner, M.A., Alfred Phillips Crabb, of Regent's Park, N.W., to Florence Isabel Tanner, daughter of John Tanner, M.D., M.A., LL.D., F.L.S., of Claremont House, Hampstead, late of Queen Anne Street, W.

SMITH—HORROCKS.—On the 11th inst., at the Belgrave Independent Chapel, Darwen, by the Rev. A. Bond, of Lower Chapels, William Alex. Smith, M.B., Ch.B., of Wesham, near Kirkham, to Elsie, only daughter of Mr. Benjamin Horrocks, Darwen.

STOPFORD-TAYLOR—KAY.—On July 11th, at St. Mary's Chapel for the Blind, by the Rev. J. W. M. Lund, M.A., George G. Stopford-Taylor, M.D., of 26, Rodney Street, Liverpool, and Standishgate, Hoylake, to Annie, elder daughter of the late W. J. Kay and Mrs. Kay, Halifax. At home, September 17th and 18th, at Standishgate, Stanley Road, Hoylake.

DEATHS.

FORSYTH.—On July 10th, 1912, at 78, Brook Green, W., Alexander Forsyth, M.D., C.M., L.S.A., in his 77th year.

JEFFREY.—At Glenbank, Jedburgh, on 16th inst., William Jeffrey, M.D.

MIDDLEBROOKE.—On the 5th inst., at Rudyard, Staffs, Edwin Middlebrooke, L.S.A.Lond., L.M.S.S.A., L.M.Dub., late of Long Bennington, Grantham.

MOSSE.—On July 4th, at Oberland, Guernsey, Channel Isles, the Hon. Charles Benjamin Mosse, C.B., C.M.G., late Deputy Surgeon-General, A.M.D., and for nearly twenty-five years Superintending Medical Officer, Colonial Medical Department, Jamaica, aged 82

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—Wednesday, 4 p.m.: Demonstration.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m. Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
	JULY.
	Annual Meeting, Liverpool.
19 Fri.	Annual Representative Meeting, 10 a.m.
20 Sat.	Annual Representative Meeting, 9.30 a.m.
22 Mon.	Council Meeting, 9.30 a.m. Annual Representative Meeting, 10 a.m. Secretaries' Conference and Dinner, 7 p.m.
23 Tues.	Annual Representative Meeting, 9.30 a.m. Annual General Meeting, 2 p.m., President's Address, 8.30 p.m.

Date.	Meetings to be Held.
	JULY (*continued*).
24 Wed.	Council Meeting, 9 a.m. Sectional Meetings, 10 a.m. to 1 p.m. Address in Medicine, 12.30 p.m. Religious Services, 9 a.m. and 3 p.m.
25 Thur.	Sectional Meetings, 10 a.m. to 1 p.m. Address in Surgery, 12.30 p.m. Section of Surgery, 2.30 p.m. Annual Dinner, 7.30 p.m.
26 Fri.	Council Meeting, 9 a.m. Sectional Meetings, 10 a.m. to 1 p.m.
27 Sat.	Excursions.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, JULY 27TH, 1912.

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EIGHTIETH ANNUAL MEETING
OF THE
British Medical Association.
LIVERPOOL, 1912.

ANNUAL REPRESENTATIVE MEETING.

Friday, July 19th.

Dr. E. J. Maclean (Chairman of Representative Meetings) in the Chair.

The proceedings of the Annual Representative Meeting began on Friday, July 19th, 1912, at St. George's Hall, Liverpool, at 10 a.m.

Sir James Barr, the President elect, speaking on behalf of the local profession, welcomed the Association to Liverpool, and explained that, owing to the absence of the Lord Mayor and Deputy Mayor, who were attending the Royal garden party at Windsor, the municipal welcome to the Association would be given later.

Return of Representatives Elected.

The return of the election of Representatives of Divisions for the year 1912–13 was received, approved, and entered on the minutes.

Arising out of the return it was agreed that Dr. E. C. Thompson (Omagh), who was not entitled, through informality in election, to be present as a Representative of the Enniskillen, Omagh and Monaghan, and Cavan Divisions, should be allowed to take part in the proceedings, without power of voting.

The meeting also agreed, by 77 votes to 64, that Dr. Oldham, Dr. Constance Long, and Miss Ivens, M.S., co-opted members of the State Sickness Insurance Committee, should be allowed to take part in the debate on the National Insurance Act, without power to vote.

Standing Orders.

The Chairman of Representative Meetings moved:

> That the Standing Orders submitted by the Chairman be the Standing Orders of the meeting, and that there shall be an Agenda Committee of the Representative Body to consider and report to each meeting of the Representative Body on the method of dealing with the agenda of such meeting, and such Committee shall consist of the Chairman of Representative Meetings, the Chairman of Council, and the four Members of Council elected by the Representative Body under By-law 43 (*d*), then in office.

To this an amendment had been received from the Bromley and Sevenoaks and Brighton Divisions to add:

> And four Representatives who shall be elected by the Representative Body annually, and who shall sit on that Committee, provided they are still in office in the ensuing year.

Dr. Stillwell (Bromley) thought the amendment had a good deal to commend it, as the Agenda Committee was a very important one.

Dr. J. E. O'Sullivan (Liverpool) did not consider that the Agenda Committee should be confined to members of Council; additional members should be selected from the members of the Representative Meeting.

Mr. E. B. Turner (Kensington) supported the amendment. He had moved a resolution on the same lines at the last Representative Meeting, and his idea was that the Representative Meeting should be fully represented on the Committee as well as the Council.

Mr. Langis (Council) pointed out that there was great difficulty in fixing upon the members of the Committee before the meeting. The Council felt that members of the Representative Meeting should be on the Committee, and therefore they chose the four members of Council elected by that body, as they would doubtless command its respect.

The Chairman of Council said that whether additional members were members of Council or of the Representative Body, to add to the number of the Committee would make it unwieldy.

The Chairman of Representative Meetings, replying to Dr. Carter (Bristol), said that the Agenda Committee was a purely advisory committee and its suggestions were subject to revision by the Representative Body. In answer to Dr. Douglas, the Chairman said that at present the following constituted the Agenda Committee: The Chairman of Representative Meetings, the Chairman of Council, and four members elected by the Representative Body—namely, Mr. Andrew Clark, Dr. Buist, Dr. Metcalfe, and Mr. Verrall.

Dr. W. Percy Stocks (Manchester South) supported the principle of the amendment.

The amendment was lost. The Standing Orders were then put and agreed to.

Honorary Membership.

On the motion of the Chairman of Representative Meetings, the Right Hon. the Earl of Derby, G.C.V.O., C.B., Lord Mayor of Liverpool, and Chancellor of the University of Liverpool, was elected an Honorary Member of the British Medical Association by acclamation.

Order of Business.

On the suggestion of the Chairman of Representative Meetings business relating to the Insurance Scheme was deferred, and it was arranged that it should be taken on the following day.

ANNUAL AND SUPPLEMENTARY REPORTS OF COUNCIL.

The Annual Report of the Council for the year 1911–12, and the estimate of income and expenditure for the year 1912, as also the Supplementary Report of the Council for the year 1911–12 were received.

The paragraphs 1 to 10 of the Annual Report of Council ("Preliminary") were approved (British Medical Journal Supplement, May 11th, p. 442).

Dr. Edwin Smith (Wandsworth) moved an amendment that the second clause of paragraph 6 be deleted. This read:

> The Council is of opinion that by united action the profession can secure that the Regulations shall be so framed (and if necessary embodied in an amending Act) that the remuneration and conditions of service shall be such that medical men can cordially co-operate in administering the Act. Without such co-operation the Act must prove a failure.

Dr. Smith thought it was unnecessary for the Council to express these opinions since it would have nothing to do with framing an amending Act.

Mr. Kennish (Wandsworth and Wimbledon) seconded.

The amendment was lost by 59 to 55, and the original motion was then carried.

The Financial Statement.

The Treasurer (Dr. Rayner) moved:

> That the Financial Statement and Balance Sheet for the year 1911 (pars. 11–27) be approved (British Medical Journal Supplement, May 11th, pp. 442–51).

Dr. Durant (Consett and Gateshead) criticized the expenditure for printing, a large portion of which he considered unnecessary, and might be curtailed. He thought too many documents were issued.

The Chairman of Council suggested that if the documents sent out by the Central Office were more carefully read they would not be found to be superfluous.

Dr. G. E. Haslip (Westminster) inquired why the salary of the present Deputy Medical Secretary commenced at £600 a year as compared with £500 a year in the case of the previous holder of the appointment.

Dr. Courtenay Lord (Rochester and Chatham) thought more use should be made of the Journal for disseminating information to members of the Association, and that secretaries should keep and bind their own Supplements instead of being presented with a bound volume at the end of each six months.

Dr. J. S. Darling (Portadown), on the contrary, considered the bound half yearly records were most valuable to secretaries.

Dr. Brown (Rochdale) commented on the expenditure on the editorial staff, and expressed the opinion that the amount paid for contributions to the Journal and reporting was excessive.

Dr. Major Greenwood (City, Metropolitan) drew attention to the railway fares of the State Sickness Insurance Committee during the last six months.

Dr. McKenzie Johnston (Edinburgh and Leith) referred to the overdraft at the bank of £46,000. He thought the

Association should be placed in a safer position, having regard to the serious situation which might arise in a time of financial panic.

Dr. BUIST (Council, Chairman of the Journal Committee) warmly repudiated the suggestion that too much was paid to the editorial staff, and said that if the JOURNAL were conducted on the principles suggested it would not be worth a snap of the fingers.

Dr. J. W. BONE (Bedford) suggested that the State Sickness Insurance Defence Fund was being frittered away in defraying the expenses of the Association.

The CHAIRMAN OF COUNCIL contradicted this, and pointed out that the Association had spent large sums drawn from its own ordinary resources in dealing with the National Insurance Act.

Replies to Criticisms.

The TREASURER, in reply, assured Dr. McKenzie Johnston that the Finance Committee would be glad, if it could, to reduce the overdraft at the bank. This would have been done had it not been for the National Insurance Act, which had cost the Association some thousands of pounds. The overdraft would be reduced as much as possible. When he accepted the office of Treasurer for a second term he did so in the hope that he would be able to put the finances of the Association upon a more stable and sure foundation. There had been inevitable delay in forming a new company. When that was done, money could be raised on debentures; until then it would be possible only to reduce the loan from the bank. The Association had been extremely well treated by the bank, at which it had been banking for forty years, and he was sure it would continue to be so treated. The overdraft was really a loan arranged by the bank for the building of the new premises, and it would have been greatly reduced had it not been for the extra expenditure he had indicated. With regard to the cost of the editorial work, reporting was necessarily an expensive item. The JOURNAL was a large paper with a small permanent staff, and it had to employ reporters all over the empire to provide reports which were interesting and beneficial to the profession. As to the contributors, they were not paid any too well, and he only wished they could be paid better. But their interest in the profession was such that they gave the best of their information for a very small return, and the Association could not expect honourably to pay its contributors less. With regard to the printing, some secretaries said that enough was not printed, while others said too much. If Representatives would specify what documents they could do without, he, as Treasurer, would be only too glad to have the information. With regard to the payment of £600 to the Deputy Medical Secretary, the Council was of opinion that at the present juncture the Association ought to have as good a man as it could possibly get, and that, considering the ability and industry which was demanded of a man occupying this position, he would not be overpaid at a salary of £600. (Hear, hear.) With regard to some of the documents that had been issued separately by post, and afterwards inserted in the JOURNAL, he at once admitted that was a matter that ought to be looked into. It had not happened very often, and every effort would be made to prevent its happening again. As to expenditure in connexion with the State Sickness Insurance Committee, he knew only too well that it had been very large indeed. Every meeting of the Committee costs the Association £80 in railway expenses, but, although it might be said that it had not succeeded as well as had been hoped, yet the valuable work that had been done was well worth what had been expended. The Association could not have done without the Committee, and he was of opinion that the thanks of the whole Association ought to be accorded to it.

In reply to Dr. BROWN (Rochdale), the TREASURER said 4 per cent. was being paid on the overdraft at the bank. That was a very reasonable rate of interest.

The Financial Statement and Balance Sheet were then approved.

PROPOSED INCREASE OF SUBSCRIPTION.

Dr. T. B. HEGGS (Canterbury and Faversham) moved as a rider to a formal resolution (SUPPLEMENT, May 11th, 1912, p. 451):

> That the Council be instructed to frame an amendment of By-law No. 11 of the Association, relating to the amount of the subscription, which will carry out the principle contained in the following Motion, and submit such to the next Special Representative Meeting in order that it may, if possible, become operative on January 1st, 1913:
>
> That the temporary increase in the administrative expenditure of the Association, due to the National Insurance Act, be met by a temporary augmentation of the annual subscription, and not by further calls on the Central Defence Fund.

He said the expenditure in 1911 was £10,400 more than in 1910; of this, £8,065 was due to the Insurance Act. There was an actual expenditure of £6,238 more than the revenue, so that but for the expenditure entailed by the Insurance Act there would have been £1,827 in hand. These figures showed that the present difficulties were due chiefly, if not solely, to the National Insurance Act; it was a temporary difficulty which could be met by a temporary remedy. As the National Insurance Act affected every member, the incidence of the expenditure entailed by it should not be thrown on the few. His Division suggested that the subscription should be increased by 5s., which would raise a sum of £6,000. If the rider he brought forward were passed, it would be competent for the next Representative Meeting to consider an increase in the subscription.

In reply to Dr. METCALFE, the CHAIRMAN OF REPRESENTATIVE MEETINGS said that the proposal was quite in order.

Dr. DAUBER (Westminster) asked the meeting to consider the effect of the proposal upon new members; and Dr. BROWN (Rochdale) feared that if the subscription were raised many members would drop away from the Association.

Dr. DUNCAN supported the rider. He said it would provide an opportunity of measuring their strength. The Association would soon be in the throes of a great struggle, and it wanted to know whether it had the profession at its back. By adopting this proposal it would know how far the new members were time servers or were acting in the interests of the profession generally.

Dr. TAYLOR (Salford) thought the meeting ought to be under no misapprehension as to the power of the Association in applying any money raised by subscription. There seemed to be some doubt as to their power to use the money for what might be called trade union purposes.

The CHAIRMAN OF REPRESENTATIVE MEETINGS said that the actual terms were "only in respect of administrative expenditure."

Dr. J. W. BONE supported the rider. He thought some method should be found of spreading the increased call on the funds over the whole of the members, and that it should not fall only on those who had contributed to the National Insurance Defence Fund. Some of the members of his Division had said that they would not subscribe to a defence fund which was to be wasted in printing.

Dr. W. F. LAW (British Guiana) said that the members of his Division had no immediate concern with the Insurance Act, but, though he had no mandate from his Division, he knew that the members of the profession for whom he spoke would be quite prepared to pay any increase in the subscription that would be necessary to support their brethren at home. (Applause.) He endorsed the statement that such an increase would probably test who were loyal to the profession. They were in the middle of a heavy fight, and must do their best to win, but they would not do so without money.

The CHAIRMAN OF COUNCIL said that the idea that the Association drew on the State Sickness Insurance Fund for money was erroneous. The contrary was the case—the State Sickness Insurance Fund drew on the Association. He was quite in favour of the rider before the meeting if the increase were to be a permanent one. The mistake made when the Association was reorganized long ago was to put the subscription on so low a level. For a profession such as the medical a subscription of 25s. was not sufficient to carry on the work properly. In his opinion 2 guineas would be a very small call to make on members.

Dr. F. A. POCKLEY (New South Wales) said that he could not accept the view that Colonial members had not a lively interest in the insurance scheme. Already there was in New South Wales talk about the nationalization of medicine, which practically meant that every doctor would be a paid civil servant. He could not give any pledge, but he was quite sure every member in the State he represented would be pleased to increase his subscriptions if necessary.

Dr. Major Greenwood (Council) supported the rider if it was clearly understood that the increase was for purposes connected with the National Insurance Act. He demurred to the suggestion of the Chairman of Council that a subscription of 25s. was a very small amount. To a large number of medical practitioners it was a considerable amount, and it would tend to keep many members from joining the Association. (Cries of "No.") That was his experience in large towns.

Dr. W. E. Thomas (North Glamorgan) hoped the meeting would not accept the rider. It was desirable to induce newly qualified men to become members. Their incomes in most cases were very limited, and any increase in the subscription would keep them out.

Mr. C. Lankester (Guildford) thought the consideration of the matter should be postponed until a definite report had been received as to the condition of the Insurance Defence Fund. In his Division, numbering just over seventy, they had a local Defence Fund, to which fifty men had guaranteed on a single application over £1,700. (Applause.) A call of 5s. for administration expenses had been paid, also a further call of 15s. for a contribution to the Central Defence Fund—without even sending a circular round half the contributions had come in. The Defence Funds would be far more widely supported if they were in the hands of local committees.

Dr. Johnson Smyth (Bournemouth) would support the rider if it were brought forward next year. The present was a critical juncture in the history of the British Medical Association.

Dr. T. R. Waltenberg (Manchester, Salford) supported the rider, thinking that, if the expenses were greater than the income available, it was the bounden duty of members to meet them. He did not think an increase of 5s. would be enough.

Dr. J. P. Lowson (North Middlesex) said that if at present 25,000 members paid 25s., and if as the result of the increased subscription 5,000 members were lost, the income would be the same with a subscription of 30s.

Dr. Fothergill (Brighton) moved that the last words of the rider be "before making further calls on the Central Defence Fund," instead of "and not by further calls on the Central Defence Fund." He urged that the rider as it stood tied the hands of the Council by debarring it from calling on the Central Defence Fund before a particular date.

Mr. W. J. Greer (Monmouthshire) understood the object of the rider to be to provide money as soon as possible, but, having regard to the fact that the matter would have to be submitted to the Divisions, there would be a delay of from six to twelve months.

The Chairman of Representative Meetings agreed that the matter would have to be referred to the Divisions and considered at another meeting, but he understood that with considerable pushing it could be brought into operation as and from January 1st next.

Dr. T. B. Heggs (Canterbury and Faversham) was willing to accept the amendment, but the opinion of his Division was that a voluntary contribution by a small proportion of members was not the proper way to raise money for the defence of the whole of the Association.

The Chairman of Representative Meetings, in reply to Dr. Douglas, said that extra money, derived from an increase in the subscription, must be used for administrative purposes. It could not be used, for instance, in respect of compensation to any individual.

The Solicitor (Mr. Hempson), who was called upon by the Chairman, said that the suggestion, as the rider stood, was that the By-law (No. 11) be amended, so that the subscription should be increased by January 1st, if possible. In his opinion the Association had the power to apply subscriptions for the purpose of paying administrative expenses. He found nothing in the Articles, By-laws, or even, directly, Memorandum of Association, to prohibit this. No portion of the funds directly raised by subscription could under any circumstances be applied for compensation purposes. In his opinion the rider was competent, and if adopted, could be acted upon for the purposes suggested. Answering a question by the Chairman of Council as to whether a temporary subscription could be earmarked to the purposes of surplus expenditure, the Solicitor said that he did not think under any circumstances the Association could enforce an additional subscription upon members of the Association as a membership subscription, and earmark it to a particular matter.

Mr. Russell Coombe (Exeter) thought that the rider, if adopted, would have a deleterious effect upon the membership. Partners, for instance, would have an additional reason for not wishing to pay two subscriptions. He regarded voluntary subscriptions towards the expenses as a privilege for those who had succeeded, and were able to contribute in proportion to their means to help their younger brethren. Great enthusiasm had been shown in supporting the Defence Fund.

Dr. A. M. Easterbrook (Lothians) said the question before the meeting divided itself into two parts: First, the necessity of raising money for administering the affairs of the Association in relation to the National Insurance Act; and secondly, the raising of the subscription of the profession. He considered it most desirable that the annual subscription of the Association should be permanently raised, but considered that the matter of increase should be well aired for some time before the profession, and especially before new members. He thought by so doing, and by letting the idea sink well into the minds of members, it probably would be possible to raise the subscription to 2 guineas a year, which would be more satisfactory than 30s., and he thought it desirable to deal separately with the question of raising money to meet administrative expenses relating to the National Insurance Act.

Dr. Metcalfe (Bradford) thought it would be mistaken policy at the present juncture to raise the subscription; the subscription as it stood presented a difficulty to some of the poorer members of the profession. He thought the best method of dealing with the matter was to raise large local funds; he mentioned as an illustration the amount raised during the last few weeks in Bradford.

Dr. Evan Jones thought that in the future the Association could not be expected to pay its way on a subscription of 25s. a year, but there were several members of the profession who could not afford to pay even that. If the subscription could be paid in two moieties that would meet the objection of a great many. Any increase should be small and not more than necessary; if 30s. was enough it should not be raised beyond that. He hoped the rider would be rejected.

Dr. Lauriston Shaw said that the rider proposed merely to ask the Council to put before the next Representative Meeting a proposal for raising the subscription. That proposal would necessarily have to be discussed in every Division. He agreed that there were members of the profession who found it difficult sometimes to pay 25s., but he maintained that there was nothing more likely to lessen the number of those members than their having a more effective and powerful Association capable of making itself effective because it was properly financed. There was no more likely time to get the subscription raised adequately than the present.

The Treasurer said he had listened to the discussion with very great interest, because nobody felt the necessity for an increased flow of money into the Association more than he did. He hoped every one would exert himself in order to relieve the Association of the burden under which it was suffering at the present time.

Mr. Larkin on a point of order wished to know if it was possible to make an alteration of a temporary character in a by-law.

The Chairman of Representative Meetings said that would be impossible. The only way in which the proposed change could be made temporary would be to put it to the Divisions that after a certain time, subject to certain conditions, the by-law should be again amended in order to terminate the increase of subscriptions.

Mr. Verrall asked the Chairman to inform the meeting exactly what the effect of passing or rejecting the rider would be on the question of temporary or permanent increase.

The Chairman ruled that if the rider were defeated the question of permanent increase would be open for discussion; if adopted it became a substantive motion, to which any amendment could be moved.

Dr. Fothergill asked the Solicitor if it were possible to put in the by-laws that the subscription for 1913-14 should be 30s., and afterwards 25s.

The SOLICITOR thought it possible but did not think it expedient.

Dr. FLEMMING (Council) inquired whether, if the rider were defeated, it would prevent the Council from using the Central Defence Fund until the by-laws were amended as proposed.

The CHAIRMAN OF REPRESENTATIVE MEETINGS: Not at all.

Mr. DEARDEN thought the Council should be instructed to report on the question whether the increase should be permanent or temporary.

The CHAIRMAN OF REPRESENTATIVE MEETINGS observed that the Council would be guided in what it did by the instructions of the Representative Meeting. If it were not instructed to consider the question of a permanent increase, it would not do so. In the event of the rider being rejected, it would be competent to move a proposal for a permanent increase as an amendment.

Dr. R. A. LYSTER (Winchester) moved:

That the Council be instructed to prepare a report for consideration by the Divisions upon the desirability of increasing the subscription temporarily or otherwise.

Dr. J. A. GIBSON (Isle of Wight) seconded, and this was agreed to without further debate.

The rider brought forward by the Canterbury and Faversham Division was withdrawn.

Estimates for 1912.

The TREASURER moved the approval of the estimate of the expenditure and receipts for 1912.

Dr. BROWN moved, on behalf of the Rochdale Division:

That the time has arrived when the strictest supervision of every item of expenditure is essential, and strongly urges the Council to ask the chief officials of the three departments to meet the Financial Committee with a view to seeing how far expenses can be cut down with due regard to efficiency, and suggests that considerable reductions appear possible under (1) legal expenses, (2) contributions and reporting, (3) printing, (4) railway fares.

The CHAIRMAN OF COUNCIL said the proposal merely recommended what was being done every day, and Dr. BROWN withdrew the amendment.

The estimate of expenditure and receipts for 1912 was then approved. A statement of expenditure in connexion with the National Insurance Act during 1911 was also approved.

PAYMENT OF EXPENSES OF REPRESENTATIVES.

The TREASURER moved the approval of the recommendation of the Finance Committee that, having regard to the state of the Association's finances, the present time is inopportune for the payment of out-of-pocket expenses of Representatives attending Representative Meetings (SUPPLEMENT to the BRITISH MEDICAL JOURNAL, July 6th, p. 46). The matter arose on a motion of the East Norfolk Division that these expenses should be paid.

Dr. T. C. ASKIN, on behalf of South Suffolk, supported the proposal.

Dr. MUIR EVANS (East Norfolk and North Suffolk) said that, although it was undoubtedly an inopportune moment to raise the point, it could not but be seen that at present the number of those who could afford to attend the Representative Meeting time after time as Representatives was necessarily very limited. The expense of attending the meeting might be estimated at 10 guineas at least, having regard to various out-of-pocket expenses and the payment of a locumtenent. If, as seemed likely, there was a third Representative Meeting this year, it would mean that each Representative would be at least £30 out of pocket in the twelve months. This fact necessarily limited the number of men who could take part in the work.

Mr. VERRALL (Birmingham) was in entire agreement with the Treasurer that the present was an inopportune moment for bringing the matter forward. At the same time he agreed that the expense was a perfectly right and valid one for the Association to undertake, and when it had the money he hoped it would. Men who gave their time and brains to the work of the Association should not be put to considerable personal expense. He thought the Birmingham Central Division was quite right in suggesting:

That the question of the payment of the personal expenses of the Representatives at meetings of the Representative Body be postponed for twelve months on account of the heavy expenditure caused by the National Insurance Act.

The following amendment by Dr. DOUGLAS (Maidstone, etc.) was ruled out of order:

That a Division be empowered to pay the out-of-pocket expenses of the Representative, exclusive of railway fares, if so desired.

On the motion of Dr. BENHAM, seconded by Dr. FOTHERGILL, it was resolved:

That in the meanwhile the Council point out to each Division the possibility of opening a special fund, which can be started by the practitioners resident within the area, and out of which such expenses of the Representative as the Division may determine could be paid.

The report was then approved, and the meeting adjourned for the luncheon interval.

ORGANIZATION COMMITTEE.

Notice of Termination of Membership.

On the resumption the paragraphs of the Council's report referring to the Organization Committee were taken: a by-law providing for three months' instead of one month's notice of resignation by members of their connexion with the Association was adopted.

Maps of Divisions and Branches.

It was also decided that owing to the changes taking place in the Branches and Divisions the present time was inopportune for the preparation of a complete set of official maps.

Referendum and Postal Vote.

Mr. LARKIN moved the following recommendation of Council:

That in view of counsel's opinion on the question of giving effect, in the regulations of the Association, to the report on the Referendum and Postal Vote, approved by the Annual Representative Meeting, 1911, Minute 330 of the Annual Representative Meeting, 1910, be referred to the Council for further consideration and report.

He said that unforeseen and insuperable difficulties had arisen making it impossible to carry out the original recommendation, and therefore the Representative Meeting was asked to hold the matter over for a further period.

The motion was agreed to with the addition of the words "as soon as possible" suggested by the Birmingham Division. A rider by North-East Essex to the effect that a further report should have been included in the report of Council was withdrawn.

Dr. EDWIN SMITH (Wandsworth) moved as a rider:

That the Council be instructed to consider such steps as may be necessary, by alteration of by-laws or otherwise, to ensure that a postal referendum on any matter may be demanded by twenty of the Divisions of the Association, and shall be carried out with the least possible delay.

He said that two years ago the Representative Meeting decided to have machinery for a referendum. Nine months later the Council made a report, and sent questions down to the Divisions, asking whether the Divisions thought that a fifth of the constituencies should have a right to institute a referendum; and whether there should be some restrictions, in a postal vote, on the votes of those members who did not go to meetings, and presumably, therefore, did not take much interest in the meetings, and, accordingly, ought not to have the advantage of a referendum. At the annual meeting last July the Report of Council was approved, and the Council was asked to go on with the business. Ten months after that, in May of the present year, the Council stated the difficulties which had arisen, and advised that the matter should be referred back. Dr. Smith took the view that, according to counsel's opinion, there were no legal difficulties, because Mr. Colquhoun Dill said, in his opinion, "Of course the above observations are merely for the consideration of the Council. If it is still desired to see in print regulations for carrying out the proposals of the report they can of course be drafted." It seemed curious that counsel had not been asked to draft regulations, so that they could have been considered by the meeting. He suggested there were no legal difficulties and no real difficulties, and it was a pity that the regulations had not been drawn up.

Mr. LARKIN said that though counsel said the regulations could be drawn up under the present conditions, he thought it should not be done. The Council desired to give further consideration to the matter; the matter would not be hung up indefinitely.

Dr. BIGGS (Council) thought that counsel had not considered the question of a postal referendum, which he maintained could easily be taken.

Mr. LARKIN pointed out that in a postal referendum the Colonies would be entitled to vote, and that would involve a delay of at last six months.

Dr. E. SMITH, in reply, thought the difficulty with regard to the Colonies could be got over by omitting them in matters which only dealt with the British Isles. He deprecated the delay which had occurred in this matter.

The rider, being put to the meeting, was carried, and the motion as amended was then agreed to.

Grouping of Branches and Divisions.

Mr. LARKIN (Chairman of the Organization Committee) moved:

> That the grouping of Branches and Divisions in the United Kingdom for the election of members of Council for the year 1913-14 be the same as for the years 1911-12 and 1912-13.

On the following rider by the Southampton Division,

> That this meeting is of opinion that the time has arrived when every Branch should have a Representative on the Council of the Association, and the Council is hereby instructed to prepare the necessary alteration in the By-laws to effect this change,

the CHAIRMAN OF REPRESENTATIVE MEETINGS pointed out that in its present form the rider was not in order because it involved an alteration in the regulations for which three months' notice should have been given. But it was open to the meeting to discuss its principle and to give instructions to the Council, if it thought proper, to issue a report on the matter to the Divisions, and then it could be considered at the succeeding Representative Meeting. The meeting decided by 33 votes to 60 not to discuss the proposal.

Qualification of Candidates for the Council.

Dr. E. A. STARLING (Tunbridge Wells) moved the following rider:

> That it be an instruction to the Council, in issuing the list of candidates nominated for election to the Council, to state what work candidates have done in the Association, and also by whom they are nominated.

He said the reason the rider was put forward was because at the last election of members of Council a list of several candidates who had been nominated for the various vacancies was sent out without any information given either as to the work they had done for the Association, or as to whom they were nominated by. Unless members were personally conversant with the career of the different candidates or had been informed in some way, they were entirely at sea as to whom they should vote for.

Dr. BIGGS (Council) supported the rider for similar reason.

Mr. DEARDEN (Manchester, West) suggested that, as the candidates generally addressed meetings of the Divisions, existing facilities were sufficient.

Dr. E. A. STARLING observed there were many members who did not attend Divisional meetings, and added that the issue of circulars was undesirable.

The rider was lost by 65 votes to 56.

Demand for Resignation of Members of Council and Representatives.

Dr. MAJOR GREENWOOD moved that the Council be instructed to consider and report to the Divisions on the following proposal by the City Division:

> That it be made lawful for a general meeting of a Branch specially convened for that purpose to call for the resignation of its Representative or Representatives on the Central Council, when by a two-thirds majority of those present it [illegible] that he or they do not represent the views of [illegible] tituents.

He said that when at the Special Representative Meeting in Feb[illegible] the question arose as to what the position of the Association would be in the event of the resignation of the C[illegible] the answer of the Solicitor showed that a state of chaos would be brought about; that was a very unsafe position for the executive of the Association to be in.

Mr. WILLCOX (Croydon) inquired if a member of Council were called upon to resign what interval would elapse before a new member could be elected to take his place, and also, in the event of a member refusing to resign, what his *locus standi* would be.

The CHAIRMAN OF REPRESENTATIVE MEETINGS replied that it would take three months to replace him.

Dr. JOHNSON SMYTH (Bournemouth) asked if any provision was to be made whereby a member of the Council would be allowed to defend his position at a special meeting of the Branch.

Mr. W. F. DEARDEN (Manchester) said his Division was of the opinion that the matter was such a serious one that instead of leaving it to a meeting it would be much better if a postal vote of the Divisions were taken. He moved an amendment to that effect.

Dr. O'SULLIVAN (Liverpool) seconded the amendment.

Dr. MAJOR GREENWOOD (Council) was quite willing to accept the proposal of the amendment as an alternative clause; but he could not agree that a Division should be bound to take a postal vote, because some Branches might prefer to decide by a two-thirds majority at a meeting.

Dr. HASLIP (Westminster) appealed to Dr. Greenwood to accept the amendment, because the members of the Council were elected originally by a postal vote, and, that being so, it was not fair to give to a meeting of a Branch power to nullify that election.

Dr. O'SULLIVAN did not think that such a question should be decided at a Branch meeting. A postal vote would be much fairer.

Dr. MAJOR GREENWOOD accepted the suggestion.

Dr. J. R. FULLER (North Middlesex) opposed the amendment. No man would accept the position of member of Council if he were liable to be dismissed by a vote carried at a meeting of the kind suggested.

Dr. TODD (Sunderland) also opposed. It would be unconstitutional to carry out such a resolution. A Branch might every month turn out its member of Council, and the whole work of the Council would be absolutely upset. No one would undertake the duty of member of Council if he thought he was going to be turned out at the call of one or two members who happened to be dissatisfied with him. Another thing to be considered was that the members of Council were not delegates. They were put on the Council to use their best judgement on the work that came up before them. It would be most unwise when they were trying to get the forces of the Association to pull together to meet the common foe to bring dissension into the ranks.

Dr. NAPIER JONES (Reading) thought the meeting ought not to pass a motion such as this, which was absolutely undigested. There was not a word suggested which would protect a member of the Council from attack, and he might never be informed of the attack that was made upon him.

Dr. BRUCE (Forfarshire) pointed out that a resolution of this kind in its present form would expose the central machinery of the Association to paralysis. It might happen that, by a series of requests for resignation, the whole working of the Association would be left for three months in the hands of the officers.

The amendment to substitute a postal vote for a decision of those present at the Branch meeting was lost.

Dr. MCKENZIE JOHNSTON (Edinburgh) moved a further amendment:

> That the Council be requested to consider how a member of Council or of the Representative Meeting may be dismissed, should that be deemed necessary by his constituents.

There was a general feeling that there should be some system by which, if a member of the Council or a member of the Representative Meeting was out of line with the views of the people he was supposed to represent, he could be changed.

The CHAIRMAN OF REPRESENTATIVE MEETINGS pointed out that in its present form Dr. McKenzie Johnston's amendment was out of order. The Council itself could not decide how it might do this. If it was a question of the Council taking the whole matter into consideration and reporting to the Divisions, then there was no need for the amendment.

Dr. MCKENZIE JOHNSTON (Edinburgh) withdrew the proposal.

Dr. MAJOR GREENWOOD (Council) denied that members of the Council were in any sense delegates. A Representative might be a delegate, but unless he were ordered by his Division to register a certain vote he was in the

same position as a member of Council at a Council meeting. It did a great deal of harm to make it appear that the position of a member of Council was different from that of a Representative, and that he might disregard entirely the views of those who placed him on the Council.

Dr. TODD (Sunderland) explained that he had not suggested that the members of that meeting were delegates.

The CHAIRMAN OF REPRESENTATIVE MEETINGS said the motion before the meeting was:

That the Council be instructed to consider and report to the Divisions on the rider by the City Division to the effect: "That it be made lawful for a general meeting of a Branch specially convened for that purpose to call for the resignation of its Representative or Representatives on the Central Council, when by a two-thirds majority of those present it is resolved that they do not represent the views of their constituents."

The motion was lost.

Machinery of Association in Connexion with Disputes.

Mr. LARKIN (Chairman of the Organization Committee) moved that the following recommendation of Council be adopted:

That (with rare exceptions) warning notices should never be inserted for those Divisions which have not adopted Rule Z. Where the case seems to demand action in spite of this deficiency—as, for example, where some appointment is offered in flagrant opposition to the declared policy of the Association—a Warning Notice should only be issued on the instruction of the Chairman of the Central Ethical Committee after the Medical Secretary or one of his staff has visited the place and assured himself, after an interview with the Division Executive, that the dispute will be conducted vigorously, and that the Division thoroughly understands its responsibilities.

Dr. PICTON (Stockport, etc.) moved an amendment requiring that a Warning Notice should only be issued after the Chairman of the Central Ethical Committee (and not the Medical Secretary or one of his staff) had visited the place. His Division thought that the motion as it stood put too much power or responsibility upon permanent officials.

Dr. FOTHERGILL (Brighton) seconded the amendment.

Mr. LARKIN, on behalf of the Council, accepted the amendment, as also another to delete the word "flagrant."

The motion as amended was carried as follows:

That (with rare exceptions) Warning Notices should never be inserted for those Divisions which have not adopted Rule Z. Where the case seems to demand action in spite of this deficiency—as, for example, where some appointment is offered in opposition to the declared policy of the Association—a Warning Notice should only be issued on the instruction of the Chairman of the Central Ethical Committee after he has assured himself that the dispute will be conducted vigorously, and that the Division thoroughly understands its responsibilities.

Mr. LARKIN moved:

That Divisions should be given clearly to understand that the insertion of a Warning Notice pledges them to take active disciplinary measures against offenders.

Dr. BENHAM (Brighton) moved the following rider:

That no Warning Notice shall be inserted by a Division in the BRITISH MEDICAL JOURNAL unless the Chairman and Secretary of the Division are of opinion that a three-fourths majority of the Division is likely to be obtained in favour of that course, and that no such Notice shall be continued in the JOURNAL unless a three-fourths majority in favour of it be obtained at the next Division meeting.

He said that at present any Division, by a bare majority at any meeting of a Division, could pass a resolution to put a certain appointment on the Warning Notices List, but for every step to be taken afterwards a three-fourths majority was required. It seemed to him that to make the first step the easiest was wrong. Were the first step made as difficult as subsequent steps the position would be rendered much more secure. He quite admitted that it must be in the power of the Chairman and Secretary of a Division to send a Warning Notice to head quarters in an emergency—that, he thought, was admitted in the rider—but the attention of the Division must be called to the fact that a three-fourths majority ought to be obtained in favour of that course at the earliest possible moment.

Dr. LAURISTON SHAW (Chairman of the Ethical Committee) hoped the rider would not be accepted. The means of bringing people to discipline depended not upon the insertion of the warning notice but upon the determination of the profession that it would regard as unprofessional the action of any one who accepted a certain specified appointment. If the insertion of a Warning Notice as to an appointment were to be treated as practically equivalent to a declaration by the Division of a course of professional policy the opportunity of using the Warning Notice to the best effect would often be lost.

Dr. MAJOR GREENWOOD supported the view expressed by Dr. Lauriston Shaw.

The rider was put to the meeting and lost.

Dr. FOTHERGILL (Brighton) moved the following rider, which was seconded by Dr. BENHAM:

That it be an instruction to the Council to reconsider the form and also the rules governing the Warning Notice, in order to prevent as far as possible such notices being used to assist would-be candidates to obtain information as to posts for which they intend to apply.

Dr. FOTHERGILL had had recent practical experience that the notices might be abused by candidates. In the Warning Notice it would be quite sufficient to mention the town. The central office should disseminate the information as to what was wrong, and not leave it to the Secretary to write to the would-be candidate.

Dr. BUIST (Forfarshire) considered that every Warning Notice must be also an advertisement, and it was impossible to have a Warning Notice which would not give information to blacklegs. The rider was lost.

Dr. SCOTT WILLIAMSON moved as a rider:

That the Council be requested to consider the possibility of having all advertisements dealing with salaried appointments in any locality sent to the Secretary of the Division previous to insertion in the JOURNAL.

Dr. J. W. DRAPER (Huddersfield) seconded.

The CHAIRMAN OF REPRESENTATIVE MEETINGS pointed out that any advertisement of any appointment of which there might be reasonable doubt was referred as suggested. To make the matter one of absolute routine would be to interfere with the legitimate business of the JOURNAL in respect of advertising quite unexceptionable appointments.

Mr. LARKIN said the meaning of the rider was that the advertisement of every salaried appointment must be sent down to the Division before being inserted in the JOURNAL. The result would be that the JOURNAL would not get any advertisements, which would go to other journals. The delay involved by the course suggested was too great.

The rider was withdrawn.

Mr. LARKIN moved the following recommendation of the Council:

That it should be a rule that a Division which has not been proved by experience to be able to conduct a dispute satisfactorily, even if in possession of proper Rules, should not be allowed to enter on a case necessitating the use of a Warning Notice until there has been an interview between a representative of the Central Office and the Executive of the Division concerned.

He thought this an important restriction. It was necessary to be quite sure that a Division before entering into a dispute quite appreciated what it was going to do.

Dr. W. P. STOCKS (South Manchester) moved to substitute the words "been proved to be unable" for the words "not been proved by experience to be able."

Mr. LARKIN said the duty of the Central Office would be to assure itself that the Division was going to conduct the dispute properly. It was for the Central Executive to assure itself as far as possible that a Division was able to conduct a dispute.

Dr. G. HALSTEAD (Isle of Thanet) inquired what would happen in the case of a Division that had never had a dispute.

Mr. LARKIN replied that it would be right to assume that it was inexperienced, and it would then be the duty of the Central Office to bring home to that Division its responsibility.

Dr. O'SULLIVAN did not think it was right to assume a Division was incapable of conducting an inquiry merely because it was inexperienced.

Mr. LARKIN said that the matter arose because the profession had failed in disputes; the Council, therefore, wished to devise means to prevent such failure in the future.

Dr. O'SULLIVAN could not see why a Division should be penalized because it had not had opportunities of investigating disputes.

The amendment was then put and lost.

Dr. Lauriston Shaw appealed to the Chairman of the Organization Committee to withdraw the motion. He had had repeatedly in the last few years to consider the question of the issue of Warning Notices in consultation with the Medical Secretary. It was a difficult question, and he did not think the motion would assist any future chairman of the Ethical Committee. The discussion, however, would undoubtedly help, because it would draw serious attention to the great danger there was in a Division starting on a dispute of this sort without experience.

Dr. Eustace moved, on behalf of the Chichester, Worthing, and Horsham Divisions, an amendment to provide that the assistance of a Warning Notice should not be allowed until this course had been sanctioned by the Central Office. The resolution involved either that their executive should travel to London, or that the Central Executive should travel to a local Division; and nothing was said as to the nature of the interview. Further, the Central Executive might still be dissatisfied after the interview, and then the Warning Notice must be inserted. If his amendment were accepted, it did away with those difficulties; the assistance of a Warning Notice should not be allowed until it had been sanctioned by the Central Office.

Mr. Larkin accepted the amendment, which was put as a substantive motion and agreed to.

The motion became a resolution of the meeting in the following form:

> That it should be a rule that a Division which has not been proved by experience to be able to conduct a dispute satisfactorily, even if in possession of proper rules, should not be allowed the assistance of a Warning Notice until such has been sanctioned by the Central Office.

Dr. Young moved the following rider:

> That, unless in cases which only concern a Division, no Warning Notice shall be inserted, except in accordance with a decision of the Association under Article 31.

Failure to comply with the Warning Notice meant the risk of expulsion from the Association, and, therefore, he held that a member was entitled to reasonable security that the matter was important enough to have received the careful consideration which was involved in making it a decision of the Association.

Dr. Fothergill thought the rider would rather limit the autonomy of a Division.

On the suggestion of the Chairman of Representative Meetings, the rider was adopted in the form of a recommendation for the consideration of the Council.

Meetings of Divisions after Representative Meetings.

On the motion to approve the remainder of the Annual Report of Council under the heading "Organization," Dr. Eustace (Chichester) brought forward an amendment requiring a meeting of each Division to be held six weeks after the Representative Meeting for the purpose of hearing a report by the Representatives.

Dr. Dewar (Edinburgh), Dr. Buist (Forfarshire), and Dr. Drury (Halifax) pointed out the difficulties of this course, having regard to the fact that the Annual Representative Meeting is held in the summer, and the amendment was withdrawn.

Proposed Trade Union.

Dr. J. R. Fuller (North Middlesex) moved:

> That it be an instruction to the Council of the Association to seek to obtain the opinion of the Divisions as to the desirability of the Association becoming a registered trade union.

He said that this was the first time a Division had instructed its Representative to bring this matter before the Representative Meeting, and it was for him to make the words "trade union" sound sweet in the ears of the Representatives. They should not be afraid of the term, because theirs was one of the strongest trade unions in the kingdom. They had won nearly every battle in which they had engaged, and they were going to win in the future. It was not necessary for the medical profession to use all the weapons employed by trade unions at the present day. Comparing the advantages and disadvantages of a trade union, he said that there was a business side to medicine and a scientific side. On the scientific side he agreed that they should be at one with the public, but the business side of medicine was for themselves and not the public, except that the public would make the bargain with them on their terms. One of the advantages of transforming the association into a trade union would be that the funds could be used as was wished. There were men who deprecated the idea as lowering the dignity of the profession, but he was not asking very much—merely to refer the matter to the Divisions for their opinion. On the question of finance, a trade union could not be run on 25s. a year. He did not believe that men earning, say, £400 a year, would refuse to pay more on the ground that they could not afford it. It was the best insurance they could possibly have. (Cheers.)

Dr. Wallace Henry (Leicester and Rutland) supported the motion. The question had been discussed in Leicester for the last two or three months with the greatest care. The profession felt that it must protect itself against blacklegs. In Leicester they were advised by their solicitors locally and by the State Sickness Insurance Committee that for various reasons the enforcement of a bond was quite impossible; it was impossible to provide against the objection that there was no consideration on the face of it, that it could not be enforced as being in restraint of trade, and that it was against public policy. They were advised that the High Court would say that the bond had been created in order to defeat an Act of Parliament, and was therefore unenforceable. Their only means was by the registration of the Association as a trade union. A trade union, according to the wording of the Act, was a combination of either masters and masters or workmen and workmen, or a combination to regulate various methods of conducting a business or trade. The courts had decided that the word "business" covered profession as well as trade. It had said that the word had the widest possible range, that it meant anything a man did in order to provide maintenance for himself; consequently they, the medical profession, were covered in that respect. It was quite probable that in the future they would have to contend with blacklegs, and it would be of the greatest importance to protect themselves against libel actions. Trade unions were very largely protected by law in carrying on trade disputes. Their disputes in the future would be trade and business disputes, and it would be permissible for them to circularize members of the profession and to let the public know that certain people were blacklegs, and in that they would be protected by the Act, which would prevent libel actions being taken against them. They might not be able to picket, because "trade dispute" was a very much narrower term than "trade union," but there were many other advantages to be gained for fighting purposes if the Association were registered as a trade union. He strongly urged that sentiment should be put aside. The profession was in for a big fight and was bound to do all it could to win it; it was entitled to make use of every weapon it could honestly use in order to secure its ends. (Applause.)

Dr. Buist (Forfarshire) hoped the meeting would adopt the motion. Its adoption would mark a recognition by a large section of the meeting of the exact character of the work that the Association had been developing during the last ten years.

Dr. Fletcher (Chelsea), on the instructions of his Division, supported the motion, and he was extremely pleased to see that it had the support of a member of the Council. The failure of the Association up to the present day had been due to the want of trade union methods. They had signed the pledge, they had all agreed to abide by certain rules, but they must back up their declaration by raising the necessary funds. Many of them had guaranteed to supply a certain amount of money, but as the liabilities of the profession increased members should be prepared to double or even quadruple their guarantees if necessary. In a trade union everything was compulsory. Instead of sending a begging letter for funds, the executive would authorize a levy, and the members would be bound to pay. Having regard to the confidence that a trade union would give its members, he did not think there would be a single man who would not pay cheerfully. Those who at the present time stood aside said they would not join the Association because the Association could not enforce its demands. Unfortunately

that was pretty true. In his district, for instance, a tuberculosis dispensary had been forced upon them at the instigation of the Medical Officer of Health for Chelsea, backed up by other medical officers of health. The place was now being abused. The local profession tried to control it by certain rules under the guidance of the Branch, and so on, but it was a waste of breath. If they had a trade union and had the support of every member of the trade union, they would be able to control it. As it was, Association men had taken up appointments, and they had had to bring them up as Association men and reprimand them. The reprimand was not effective. If the Association was made into a trade union, it would soon have a great guarantee fund. If every man felt he would be effectively backed up, he would cheerfully pay £10, £20, or even £30. (Applause.)

Mr. TURNER (Kensington) said that as a somewhat old-fashioned member of the medical profession the phrase "trade union" to a certain extent "stuck in his gizzard"; but it had gone right through; it had been pulverized and absorbed. He thoroughly agreed with Dr. Fuller. In the coming fight the profession would have to deal to a large extent with trade unionists; they would have much more sympathy from them in dealing with blacklegs if they were themselves trade unionists. That would go a long way towards helping them to support, amplify, and carry out the Public Medical Service. In every way they would find themselves better equipped and armed, and better able to help those members who had to bear the brunt of the fight. One advantage stood out above all others—that as soon as they became trade unionists they would have the entire and whole hearted support of the Government. (Laughter.) Laws would be brought in to ensure a minimum wage and a minimum capitation fee, and the Association's fight would be over. (Renewed laughter.) He made the confession that he was a whole-hearted trade unionist, and meant to act as such.

The CHAIRMAN OF COUNCIL said that during his whole experience of Representative Meetings nothing had given him such a shock as the speech he had just heard from Mr. Turner. If there was one man in that meeting who he thought was going to stand by the old traditions of the profession it was Mr. Turner. He (Dr. Macdonald) defied any man there to say he was behind any one in fighting for the interests of the profession; and he went further—there was not a man at that meeting who had made more sacrifices than he had. But he was not going to the extent of having the Association registered as a trade union. He admired one word used by Dr. Wallace Henry, who said he was going to use all powers "honestly" for fighting this point. It was impossible to use powers honestly as a trade union. (Cries of "Why?") Honesty was not in it. ("Oh, oh!") The powers of union could be used, but if the Association became a trade union it would mean that it meant to go beyond the law, and its members would cease to be law-abiding citizens of the country. ("No, no.") If the meeting decided in favour of becoming a registered trade union, it was running a much greater risk of splitting the Association from end to end than ever before. When that day came he for one would be out of it.

Dr. MAJOR GREENWOOD said he had raised the point at the last meeting of the Council, and had understood from the Chairman of Council that legal opinion would be taken as to whether it was possible for the Association to take advantage of the Trades Disputes Act and as to the possibility of the Association registering in the way suggested by the rider. Had that legal opinion been taken?

Dr. MACLEAN replied in the negative.

Dr. HASLIP (Westminster) sincerely hoped the meeting would think seriously before passing the motion. The Chairman of Council had said that directly the Association became a registered trade union there would be the biggest disruption that had ever taken place in the Association. ("No, no.") It was a matter of opinion, and the risk must not be run at the present time. He had received a great shock on hearing the speech of Mr. Turner. He agreed with the Chairman of the Council that at present trade unions were not composed of law-abiding citizens.

Dr. STANLEY (Birmingham) considered the step the Association was asked to take a very serious one, but the position had been forced upon it. No one desired that the British Medical Association should become a trade union for the mere sake of being a trade union, but they desired it for their own sakes, and for the sake of the stability and the future welfare of the profession. With regard to the question of splitting the Association, information had come in from all parts of the country from men who had been gravely and seriously discussing the matter for the last twelve months, and he maintained that the Association had to thank the present Government, and Mr. Lloyd George in particular, for one thing, at any rate, and that was that he had driven, or was driving, the British Medical Association to erect a barrier between medical men and the treatment they had received during the last year. To his mind the formation of a trade union would provide a wall over which even the ingenuity of the Chancellor of the Exchequer could not find a way. As to the question of honesty, was it to be implied that by becoming a trade union they were doing a dishonest thing? He maintained nothing dishonest was being done, but an honest and courageous thing. It was necessary to move with the times. Whilst regret might be felt at the outset, there was a stronger feeling that medical men must adopt every possible means of putting themselves in an impregnable position to resist the inroads made upon them by unscrupulous politicians.

Dr. MOFFATT HOLMES (Leicester and Rutland) said that at a recent meeting of the representatives of the Leicester and Rutland Division, when 145 members were present, the vote was unanimous in favour of the Association becoming a trade union.

Dr. WALTENBERG (Salford), referring to the speech of the Chairman of Council, said he did not think that a professional man could be looked upon as coming down to the level of a working man if the Association were to become a trade union.

The CHAIRMAN OF COUNCIL denied that he had made any such statement. He had not compared professional men with working men.

Dr. WALTENBERG agreed that that was so, but the Chairman of Council had said something stronger, that medical men could not be trade unionists and be honest.

The CHAIRMAN OF COUNCIL protested that he had made no such statement. He said there was no honesty in trade unionism.

Dr. WALTENBERG considered that was very much the same thing. What was the difference between medical men and trade unionist working men? In both cases they worked, whether by hand or brain. He wanted to emphasize the fact that there was nothing to be ashamed of in being a trade unionist. The Association was not bound to imitate the evils of existing trade unions, but would be able to set an example.

Dr. LAW (British Guiana) agreed entirely with the remarks of the Chairman of Council, and thought medical men would be lowering their standard if the Association became a trade union. Medical men were members of an honourable profession, and they would not be improving their position or making the world think any better of them by sinking to the level of trade unionists.

After an adjournment for tea,

Mr. LARKIN (Chairman of the Organization Committee) moved an amendment that the motion be altered to read as follows:

> That it be an instruction to the Council of the Association to report to the Divisions and obtain their opinion as to the desirability of the Association becoming a registered trade union.

He was extremely pleased to hear the cheers with which the speech proposing the motion was received. All his life he had been a whole-hearted trade unionist. A year ago he would have voted for the motion as it stood without any demur whatever, but during the last twelve months the matter had been fully considered and he understood the position to-day very differently indeed from what he did before. For the Divisions to be asked to express an opinion as to the desirability of the change without having a very full report of what the change would mean would be a very foolish thing to do. That was why he moved his amendment. There were several facts which it was important the Divisions should have before them before they came to an opinion. The first was that he believed it was an absolute impossibility for the Association to become a trade union. He said that advisedly. No doubt

the Association could be wound up and all its property transferred to a trade union; but the property, as far as he understood, was absolutely earmarked for certain purposes, and if at the winding-up there should not be any body with similar and not wider powers than the Association to which to turn over the money, he was given to understand it would be applied by a judge of the High Court to charitable purposes. Then with regard to the Journal, he believed that it would be found that it could not be run by a trade union. It would have to be put in the hands of trustees. It would also be necessary to deal with a great many other matters—extremely thorny questions on which they would have to obtain the very highest legal advice upon a hundred and one different points before they could come to a conclusion. With regard to levies, he doubted very much if they would be found easier on a trade union basis. Finally, they would have to consider very seriously whether it was worth while to run the risk of splitting the Association, because no doubt it would be split, in order to become in name what they already were in fact.

Dr. Dryland (Northamptonshire) seconded.

Dr. Meade (Scarborough and York) supported the amendment. He did not think it mattered what the Association was called; there was nothing in a name. They belonged to a noble profession, which had a good name, and they would retain it; but they would be able to fight with better weapons and a better organization if the proposed change was adopted.

Dr. Halstead (Isle of Thanet) did not consider the change to a trade union would necessarily split the Association. There would be a difference of opinion, he admitted. There had been differences at the meeting that afternoon, but nothing that had occurred had split the meeting. He doubted very much if it would have that effect.

Dr. J. W. Crerar (English Division, Border Counties Branch) thought the effect upon public opinion of the decision to be arrived at in this matter should be seriously considered. At present the medical profession had the force of public opinion with it, but within a very short period attempts would be made to raise that opinion against the medical profession, not on the question of trade unionism, but on certain other questions which would have to be discussed later. Therefore they should be careful not to hand over to those who desired to attack them an additional weapon. If the mover had been able to suggest that some immediate benefit which they had not got at present was to accrue from passing the motion then the advantages might outweigh the disadvantages. If passed as at present framed it gave them no advantage whatever. Throughout this fight the doctors throughout the country had said they were fighting the Insurance Act as much almost in the interests of the community as in their own interests; but once let it go forth at this particular juncture that they were taking steps to form themselves into a trade union for their own personal protection, then at once they would lose the force of public opinion.

The Solicitor said it was not for him to enter into the political aspects of the question, but he wished to point out one or two matters having an important legal bearing. This was not the first time the matter had come under their consideration. The question of enlarging the powers of the Association had received the anxious consideration of various committees during the last few years, and it had been his privilege to be present at those deliberations. Something like two years ago the very question they had now under consideration was before them. Opinions had been taken of the most eminent counsel at the Bar in connexion with another scheme which was recently before the Association. One of the counsel to whom he referred (Sir Francis Beaufort Palmer) on this occasion said that he experienced the greatest possible difficulty in coming to a conclusion that it would be permitted to wind up the Association and transfer its assets to a company which had a greater width of action than that which the Association as a registered company possessed. They would have first and foremost to wind up the Association (which was a company, although the word "limited" was not used). It was on the Register of Companies, and it had to become defunct before or at the time that something else came into existence. It therefore had to be what was legally and technically known as wound up. This was a very solemn process, and he would warn them against entering on that course unless they were pretty sure to carry it, because it would have to be decided by a majority of three-fourths of the general meeting. Some of the members seemed to be under the impression that the Association as it existed could be taken bodily off the register of Joint Stock Companies and placed on the register of trade unions. He knew of no method by which that could be done. They would have first of all to wind up the Association and get rid of it, and then they would have to be registered on a totally different basis under the Trade Union Acts. Also on the question of the property he wished to utter a word of caution, because he felt, and he was supported in that feeling by the opinion of Sir Francis Beaufort Palmer and Mr. Colquhoun Dill, that the dangers to which he was going to refer were real and pressing dangers. Under their Memorandum of Association they were registered as a scientific association, and they existed for certain purposes limited by that memorandum. As he was advised and believed, they were impressed with a trust for those objects, and could not properly be utilized for trade union objects at all. They would, therefore, have to be prepared for the possibility of their property not following them and not being able to use it for trade union purposes. This observation applied to their property in the Strand and such other property as they held. Then with regard to the Journal, he knew of no authority (and the textbooks and decisions were against it) for a trade union to run a journal on the lines of those upon which the British Medical Journal was run. Therefore it appeared to him that that would have to be put into a separate trust. It sounded a very easy matter to say, "Let us become a trade union," but those who said so did not realize the entire dislocation which the winding up of the old company and the reconstitution of the Association upon the new basis would cause. If it were done within a short time it would come before them at a time when they had very big matters to look to and to fight. It would be for them to consider and decide whether such time was an opportune one.

Dr. G. Newton Pitt (Marylebone) said the question was brought before them more particularly by their friends in the North who were in daily contact with trade unions, and who thought it would be a good thing if the Association could acquire all the advantages of trade unionism. It had been pointed out that one of the advantages would be that they could libel each other without the slightest compunction. Surely they ought to be ashamed to take such a matter into consideration. Surely they did not wish to call out their members who were doing good and excellent work simply to force the hands of the Government. They had to consider it from the point of view of the patients, the profession, and the public. Assuming that it was a practical plan to carry out—which he could not admit—there was a very large body of thinking men throughout the country who did not approve of trade union methods. He was quite certain, if once they began to compel a man to do things against his conscience, and to fail to see a patient because they thought it a convenient lever to bring into force, a large number of the members of the Association whom they could least afford to lose would immediately leave it. As to those who were already inclined to retire from the Association, it would certainly not tend to retain them if they had a trade union by which they could be ostracized and called them blacklegs. They should hold together for the advantage of one and all, and it would only be by backing up one another that they would strengthen the profession. At the present time the public was with the profession, and not only the public but even the members of the Government. The press and the public were an enormous asset which they should be very loth to throw away.

Dr. J. P. Lowson (North Middlesex) said that the difficulties set before the meeting by the Solicitor were proof that it was desirable to have the question threshed out. The rider suggested that the opinion of the Divisions should be obtained; it was not a resolution to become a trade union straight away. The strongest argument used on the other side by Dr. Macdonald and others was that it would split the profession. Now this was the very thing that had to be found out. If it was going to split the profession to such an extent they would not go on with it. The Solicitor

ad told them that they would require a three-fourths ...jority to carry the matter through, and this was the ...y argument against the proposal which carried any ... The last speaker had said that it was a shocking ... for them to libel their brethren. They wanted to ...t the public know who the blacklegs were, and they ould not do this now because an action for damages could ...e brought. If they became a trade union they would be ... to publish the names of these people, and he did not ...ink there was anything very degrading in that. It was ...uite true that becoming a trade union would be of no ...alue so far as the present struggle was concerned; by ...he time the change had been effected the present ...truggle would be over. But they had to remember ...hat the Insurance Act was only the beginning of ...hings, and that in the future the medical profession ...as not going to be let alone; it was going to be ...anaged, and the question was who was going to manage ...t. Was the Government going to manage it, or was ...t to manage itself? The reason they wanted to become ... trade union was that they might be as powerful as ...ossible, and able to manage themselves, not only in their ...wn interests, but in the interests of the public. They ...ere the only people who knew what general practice was ...nd how it could best be conducted.

Dr. J. E. WEBB (East Cornwall) said that after hearing ...he debate he was absolutely disinclined to have anything ...o do with trade unionism. By adopting trade unionism ...hey would be approaching a lower level instead of a ...igher level. He disagreed altogether with the suggestion ...hat they had adopted trade union methods in their fight...ng procedure. They had merely followed the logical ...equence of events. It had been said that registration ...s a trade union would relieve them from liability for ...ibel; but surely they did not want to libel anybody. It ...as said also that it would give power to expel a member; ...ut at the present time there was power, under Rule Z, to ...xpel a member who did anything unprofessional. He ...elieved that the original conception of trade unionism ...as good, but of late it had been prostituted, and he would ...ot like to see the Association sullied. If they adopted ...rade unionism they must be prepared to take the whole ...liquy attached to it. If they stiffened their backs and ...ought there would never be any reason for trade ...nionism. If misfortune came they must choose their ...eapons when it came, but in his opinion the time was ...ot yet ripe. He appealed to the mover to withdraw his ...notion. If the matter was sent down to the Divisions, ...ome would go in one direction and others in another, ...nd the Association would be a riven, whereas it was now ... united, body.

Dr. WILLIAMSON (Bristol) supported what had been said ...y the Solicitor of the Association. He did so because ...he information upon which the Solicitor based his ...emarks was received through the medium of the Bristol ...ivision.

The SOLICITOR, having received permission to intervene, ...aid that he had been an admitted solicitor for thirty ...ears, and would not admit for a moment that Bristol ...ould teach him law.

Dr. WILLIAMSON said that Bristol did not presume to ...ach the Solicitor law, but the opinion of Sir Beaufort ...almer, which the Solicitor quoted, was the opinion given ...o Bristol. The Bristol Division had brought the question ...p a year ago, and wanted then to give the Association ...he powers of a trade union the Association needed. For ...n years it had been working to secure greater powers. ...he matter had been very carefully weighed in Bristol, ...nd it had been proved that there was an alternative to ...he British Medical Association becoming a trade union. ...e would point out one or two facts about trade unionism. ...irst of all, levies were not enforceable in trade unions. ... a man did not want to pay his levy he cleared out. ...uring times of struggle a man went into a trade union ...o get support; but, when times were quiet, he left it. ...nother thing was that the Trades Dispute Act had been ...terpreted by the courts of law very narrowly, and, if the ...rofession adopted trade unionism, it would be running ...to legal difficulties almost every day. It seemed to him ...at it was necessary, not to shelve the question by ...owing out the rider, but to ask the Council to look for ...me alternative.

Dr. FARQUHARSON (Durham) asked whether the process of winding up a company destroyed the individual right of ownership in the assets of the company.

The SOLICITOR, replying, said the question seemed to resolve itself into this—namely, "Can we wind up and divide the property amongst us?" His answer was "No." They could not make a profit out of the accrued assets of the Association; it had to be carried on upon the lines of the trust that was created under the memorandum. There would always have to be some scheme put forward on similar lines to that which existed at present for the administration of the property now held by the Association, and that scheme would have to be settled by the court. In that he would beg to point out that they ran the risk of the Charity Commissioners coming in. Dr. Williamson had suggested that a way had been opened by Bristol which would solve all doubts and difficulties. All he could say was that he had never seen it; he had only seen one scheme put forward by Bristol, and that was pronounced unworkable by the opinion of Sir Beaufort Palmer, confirmed by Mr. Colquhoun Dill. In conclusion, he would ask the meeting to consider seriously whether, in throwing over what they had got and in grasping something else, they were not making the greatest mistake they could make.

Mr. J. HOWELL EVANS (Westminster) said that, not having received instructions from the Divisions, if they voted, Representatives would be voting as individual members and not as representing their Divisions.

The CHAIRMAN replied that that was a matter for their own discretion.

Mr. J. HOWELL EVANS protested that they were now being asked to vote on a most serious question in their individual capacity. It was not their duty to do so.

Dr. E. SMITH (Wandsworth and Wimbledon) asked, supposing the Association decided to wind itself up without any scheme for doing anything in the future, what would happen to the property?

The SOLICITOR, in reply, said he could not imagine such a condition of things.

The amendment was carried as follows:

> That it be an instruction to the Council of the Association to report to the Divisions on and obtain their opinion as to the desirability of the Association becoming a registered trade union.

Postponement for a Year.

When the amendment came up as a substantive motion, Dr. J. T. MACNAMARA moved:

> That the discussion of the question be postponed to the next Annual Meeting.

He said it would be lamentable if after the exposition of the position given by the Solicitor the meeting should think of forcing the resolution through at the moment. He sympathized with the trade union movement, and if he could see his way to support a motion which would convert the Association into a trade union and give it the basis of a trade union without dishonouring or degrading the profession he would be delighted to do so; but after listening to the discussion he was not sure that it would benefit the profession at all. They wanted power to post blacklegs in a public place, but it would not put the Association in a very good position if they penalized a man for attending to a poor and distressing case. If the motion were passed there would not be a happier man in England than Mr. Lloyd George. They were faced with four possibilities—a State service, of being contract doctors under a State department, of being trade unionists, and of being free men. Which would they have? He urged them to carry on their profession as in the past—without any other control than that due to the honour of the profession. To pass the motion was to send a bomb of discord into every Branch and Division at the very moment when united strength was wanted.

Mr. CECIL P. LANKESTER (Guildford) seconding the motion, said his opinions had been very much changed during the last two hours; he thought there could be no greater lack of wisdom than to approve the motion to send down the whole subject to the Divisions for discussion without also sending the Solicitor of the British Medical Association to every Division. If the British Medical Association were to be transmogrified into a trade union, the process would take at least two years, and they had infinitely more important work to do in the immediate future. A fight

had to be fought such as medical men had never had to fight before.

Dr. W. CRAIG (Fife) asked what would occur to the property of the Association in the event of a split occurring. An analogous case had arisen in Scotland when there was a division in the Free Church, and the smaller section secured the whole of the funds.

The CHAIRMAN considered that the question had already been answered.

Major R. HEARD (Punjab) asked whether, in the event of the Association becoming a trade union, officers in His Majesty's service could retain their membership. He thought they could not under the King's Regulations.

The SOLICITOR concurred in that view.

Dr. CARTER (Bristol) considered that, whilst before the adjournment there had been a very strong expression of opinion throughout the meeting of the need of powers of trade unionism and registration as a trade union, yet it was obvious, after the opinion of the Solicitor, that the idea of trade unionism would lead the profession into a fool's paradise. To carry out such a proposition would be wasting the time and efforts of the Association at a very critical stage. Whilst supporting the motion that the matter be suspended for twelve months, he thought that the extremely strong feeling which existed in the meeting that such powers were needed must not be forgotten.

The motion to postpone the question for a year was then put and carried.

COMMUNICATIONS TO THE PRESS.

In reply to Dr. NAPIER JONES (Reading), the CHAIRMAN OF REPRESENTATIVE MEETINGS said that the usual routine, subject to the approval of the meeting, would be followed as to the communication of the day's proceedings to the press—namely, that the nature of the communication would be left to the discretion of the Chairman of Representative Meetings in conjunction with the Editor.

The meeting agreed to this.

DOCUMENTS SENT TO MEMBERS.

With regard to the proposals of the Council (SUPPLEMENT to the BRITISH MEDICAL JOURNAL, May 11th, p. 455, para. 55) as to documents to be sent to new members,

Dr. R. C. MONNINGTON (Salisbury) withdrew a rider that the papers mentioned, with the model ethical rules, be forwarded to existing members as well as new members.

THE MEDICAL FEDERATION, LIMITED.

Dr. FLETCHER (Chelsea) moved:

> That the Council of the British Medical Association be instructed to reopen negotiations with the Medical Federation, Limited, with a view to devising means of adapting the powers contained in the memorandum of that company to the urgent needs of the profession.

His Division wanted the Association in some way to acquire increased power in order more effectively to fight the Insurance Act.

Mr. H. F. DEVIS (Bristol), who seconded, remarked that there was a demand for solidarity. This had been proved in the past by the attempt to obtain the Charter and to form the new company. They did not know to-day whether the new company would be formed or, if it was, whether it would be formed in time to achieve what they desired. They had no guidance from the Council on this matter, and all they asked was that the powers which the Medical Federation possessed should be brought again under the notice of the executive body, and that the Council should try and find some other means of adapting them to the needs of the profession.

Dr. WALKER (Mid Essex, etc.) supported the motion. In South Essex—and he was sure in other parts of the country—there was a very strong feeling that further power was needed. The Medical Federation showed the way by which this power could be obtained, and he trusted the meeting would pass the resolution.

Dr. JOHN BROWN (Rochdale) supported. He was of opinion that the very points they had been fighting for were within the Memorandum of the Federation.

Dr. POPE thought the motion was too imperative. It was not long since the Council reopened negotiations with the Medical Federation. The Solicitor's opinion was obtained upon it, and it was thoroughly considered by the State Sickness Insurance Committee and by the Council.

Mr. LARKIN hoped the meeting would not ask the Council to waste its time in threshing straw. This matter had been carefully gone into by two committees of the Association, and not a tittle of evidence had been brought forward to upset the conclusions already reached.

Dr. T. M. CARTER (Bristol) said they had heard they could not get—at any rate in time—either a new company or the powers of a trade union. For the Association to use the powers of compensating members would not entail winding up the Association. It was true that the Council had taken opinions as to the means of co-operating, in the sense of amalgamating, but there were other means, and he hoped the Association would not throw away this weapon, so urgently needed to meet the attacks on the profession.

Dr. W. DOUGLAS (Maidstone) asked why it was suggested that it was objectionable to adopt the Federation scheme.

Mr. LARKIN (Council) said he would answer that question by referring the members to the opinion of Mr. Colquhoun Dill, dated April 10th, 1911 (SUPPLEMENT to BRITISH MEDICAL JOURNAL, May 11th, p. 480). He did not know why the Association should go over to the Federation. The Federation claimed to have invented something which no other man or mind had ever conceived. But this had been thought of years ago, and the Association had been prepared, if it could, to widen its powers through the Memorandum, or by means of a new company, but not to trouble itself about many things that the Federation had sought, and which were spoken of by Mr. Dill in terms of absolute condemnation.

The resolution proposing to reopen negotiations with the Medical Federation was then put to the meeting and lost.

ANNUAL CONFERENCE OF SECRETARIES.

The following recommendation of the Organization Committee was agreed to:

> That in view of the growing importance of the Conference of Secretaries, arrangements should be made whereby in future years the Conference shall be held at a time at which no other function takes place.

GROUPING OF BRANCHES NOT IN THE UNITED KINGDOM.

Mr. LARKIN (Chairman of the Organization Committee) moved:

> That it be an instruction to the Council to settle the grouping of Branches outside the United Kingdom for election of members of Council for the year 1913-14 on consideration of the views of the Branches concerned.

Dr. J. H. SANDERS (Hong Kong) moved as a rider:

> That the new arrangement of grouping of Branches not in the United Kingdom, whereby the Hong Kong and China Branch is grouped with the various Branches in India, Burma, Ceylon, and Malaya for the purpose of electing one member of the Council of the Association, does not give that Branch adequate representation, and seriously curtails the rights and privileges of the members of the Branch; that therefore one member of Council should be allotted to the Hong Kong and China Branch, together with the Malaya Branch, and another member of Council allotted to the Branches in India, Burma, and Ceylon, which Branches have interests more or less in common; and that in the event of this proposal being approved by the Representative Body the member of Council representing the Hong Kong and China and Malaya Branches should be elected from members of each of the two Branches alternately.

The whole continent of Asia had only one Representative on the Council, who came from India, and could not know anything about questions at Hong Kong.

Mr. LARKIN said he approached this subject with every sympathy for members abroad, but every Branch at home and abroad was apt to think that it was not adequately represented on the Council. The by-laws only allowed seven members for Colonial Branches. To provide another member for them would involve an alteration of the by-laws, unless a member was to be taken from one of the other Branches. If the Hong Kong or any other Branch were to present any reasonable scheme it could be considered by the Council. In reply to a suggestion that the matter should be referred to the Council, Mr. LARKIN said it had been before the Council in one form or another periodically; but it was, he thought, impossible to apportion

the representation on the Council in a fairer way than at present.

The CHAIRMAN OF COUNCIL said when the constitution of the Council was altered the representation of the Dominions beyond the seas was considered very carefully. The original proposal was that they should have ten Representatives, but on discussion it was thought to be too many. The number seven was suggested, and the Colonial Representatives themselves agreed that that was sufficient; personally, he was inclined to think that it was not, because the members were scattered over such a great extent of country. If the Representatives of the Dominions beyond the seas were to propose an alteration of the by-laws to allow for an additional member that would be the simplest, in fact the only way, of meeting the point.

Dr. FOTHERGILL (Brighton) moved that the question be referred to the Council with a view to its bringing up a report with such amendment of the by-laws as was thought advisable.

Dr. PRICE (North Carnarvon) seconded the amendment, which was accepted by Dr. SANDERS (Hong Hong) and agreed to, and subsequently carried as a substantive motion.

INSURANCE COMMISSIONERSHIPS AND MEMBERSHIP OF THE ASSOCIATION.

Dr. HASLIP (Westminster) pressed for an answer to the question put earlier in the afternoon whether Mr. Smith Whitaker was still a member of the British Medical Association.

The CHAIRMAN replied that the information he had from the Financial Secretary was that Mr. Smith Whitaker was no longer a member.

Dr. COURTENAY MILWARD (Cardiff) inquired whether any medical Insurance Commissioner was at present a member of the Association.

The CHAIRMAN said the information would be given after the matter had been inquired into.

PUBLICATION OF LIST OF REPRESENTATIVES.

On the motion to approve the remainder of the Supplementary Report of Council under heading "Organization," the CHAIRMAN OF COUNCIL moved as a rider:

> That the Council take into consideration the question of fixing a date for the publication of the list of Representatives, after which alterations of the constituencies shall not be effective as regards the election of members for that year's Representative Meeting.

The object was to put things on a correct basis, so that the constituencies might elect their Representatives at the proper time. The motion, with the rider, was carried.

The meeting adjourned at 7 p.m.

Saturday, July 20th.

The proceedings were resumed on Saturday, July 20th, at 9.30 a.m., Dr. E. J. MACLEAN (Chairman of Representative Meetings) in the chair. The minutes of the previous day's proceedings were corrected and confirmed.

VOTING AND PROCEDURE.

The meeting agreed to proceed forthwith with the debate on the National Insurance Act, and sit till 10 p.m. if necessary.

Dr. COURTENAY LORD (Rochester and Chatham) inquired whether there were any circumstances under which a Representative might vote twice on a single division.

Mr. RUSSELL COOMBE (Exeter) also asked the effect upon the vote when a Representative represented two Divisions.

The CHAIRMAN OF REPRESENTATIVE MEETINGS replied that where a member represented two constituencies it was obvious he could only vote one way and for one Division.

Dr. T. W. HICKS (Hendon and Finchley) inquired, in the event of a card vote being taken, how the votes in a constituency would be apportioned where it was represented by more than one member, and also the effect upon the number of votes if one of the Representatives of a constituency were absent from the meeting.

The CHAIRMAN replied that if, for instance, a constituency was represented at the meeting by four members, and all four were present, each of such representatives would have a fourth of the number of votes allotted to the constituency. If, however, two of the four Representatives were absent, the number of votes for the constituency remained the same, and the two Representatives present would each have half of the votes of the constituency.

ADMISSION OF THE PRESS.

The CHAIRMAN announced that he had received communications, directly and indirectly, from the press, urging that, having regard to the public importance of the matter to be debated with regard to the National Insurance Act, there should be the freest and fullest access to members of the press, both in respect of the Committee stage and the Report stage. He had replied to these communications by saying that it was a matter entirely for the meeting to decide. His own recommendation to the meeting was that, at all events as to the Committee stage, the press should not be admitted, for reasons which he pointed out.

The meeting agreed that, as regards the Committee stage, the press be not admitted. The question of the admission of the press to the Report stage was left over for future consideration.

The issue of a *précis* of the proceedings, on the motion of Dr. FOTHERGILL, seconded by Dr. JOHNSON SMYTH, was left to the Agenda Committee, in conjunction with the Editor and the Medical Secretary.

With regard to the proceedings of the Committee stage, it was resolved, on a motion from the Chair, that the fullest possible report should be published in the JOURNAL, under the supervision of the Agenda Committee and the Editor.

OFFICIAL WELCOME BY THE DEPUTY LORD MAYOR.

At this stage the CHAIRMAN OF REPRESENTATIVE MEETINGS said he had the privilege of presenting to the meeting Sir Charles Petrie, the Deputy Lord Mayor.

The DEPUTY LORD MAYOR said he attended on behalf of the Lord Mayor, the Earl of Derby, who was unfortunately not able to be present, to welcome the Representatives of the British Medical Association to Liverpool. He extended a very hearty welcome from the civic authorities of Liverpool, who were very pleased to see such an important body as the British Medical Association assembled in the city. They all knew what they owed to medical science, and he was certain the deliberations at these annual conferences contributed very greatly to the advance of that science, at once interesting and useful, to which the public owed so much. He offered them, on behalf of the Lord Mayor, a very hearty welcome, and hoped that their sojourn in the city would be everything that they wished, and that their conference would be as successful as in other places. (Loud applause.)

The CHAIRMAN OF REPRESENTATIVE MEETINGS, in reply, heartily thanked Sir Charles Petrie for his very cordial and hearty welcome to Liverpool. (Loud applause.)

IN COMMITTEE ON THE NATIONAL INSURANCE ACT.

The meeting then went into Committee for the consideration of the report of the State Sickness Insurance Committee, when the chair was taken by Dr. BUIST, Deputy Chairman.

REPORT
OF THE
STATE SICKNESS INSURANCE COMMITTEE.

Mr. T. JENNER VERRALL (Chairman of the State Sickness Insurance Committee), who was received with applause, said he hoped and believed that the applause meant that the meeting, and, he hoped, the whole Association and profession, were grateful, not to him alone, but to the Committee, over which for the last four months he had had the honour of presiding. There was not a single member of that Committee who could possibly be doubtful as to the strenous labour and the amount of time he had given to that work. It was not possible, in things human, to please every one, but it was a matter of very great satisfaction to the State Sickness Insurance Committee that taking it on the whole the criticisms it had received

were not more severe than it had reason to expect. No member could have the least doubt as to the extreme importance of the occasion upon which they were met together. During the last four months they had been trying as far as they could to retrieve a position which had been unsatisfactory from the first, inasmuch as the profession was not sufficiently consulted at an earlier stage. The State Sickness Insurance Committee very shortly would cease to exist, and the meeting would ask what the Committee had achieved. He wished that it could claim to have done a good deal, but the remark at the end of Part II of the report: "The Council is of opinion that no material concession has been made by the Chancellor since February last," summed up the position. He was bound to confess that was the position, but if they were going to place an epitaph over an expired body he would suggest that they should write: "They extracted an answer from the Commissioners." (Laughter and applause.) It had taken the Committee all its time to get any answer at all from the Commissioners. The report that he had to present was in three parts. The first part was historical and related all that was done from the time the Committee was told to send a plain and unmistakable demand, to the time when they received an answer. In Part II was set out the Commissioners' letter, which had been most carefully considered, first of all by a Subcommittee, and then by the whole Committee, and the result of that consideration was set out on pages 17 to 22 inclusive of the report (Supplement to the British Medical Journal, July 6th). That letter followed certain interviews with the Chancellor and with the Commissioners together, and at those interviews the Committee was asked to give some documentary support of the demands of the profession and of the position the profession had taken up. In his opinion in making the demands and in particular the monetary demand the profession had not asked a single thing more than it had a right to ask. (Loud applause.) In the report an allusion was made to the steps the Committee took to give documentary support to their demands. The Committee prepared a memorandum (set out in Appendix B) which was sent to the Commissioners for the information of the Chancellor. At the first of the two meetings which the Committee had with the Chancellor he put forward conclusions, based on certain considerations and assumptions, which proved that his anticipation of the income medical men would receive on the monetary basis claimed by them would run into four figures. Although the Government through the Commissioners had said that it had given due consideration to the memorandum presented on behalf of the Association, yet at the second interview with the Chancellor every member of the Committee was astounded to find how very little valid criticism the document had received. He personally would not have been surprised if the Chancellor had torn the memorandum to pieces, but he did not; he hardly touched one corner. The Chancellor alluded to a possible error in the estimates arising out of the question of the number of assistants; to certain extra receipts which the Committee had not been able to calculate; finally he launched what was a perfectly valid criticism, that the memorandum was based to a very large extent on assumed figures. That was perfectly true, but the figures submitted to the Committee by the Chancellor himself a week before were subject to the same criticism—they were based on guesses. To meet that the Chancellor then desired to have an investigation of the work and remuneration of the profession in certain towns. The Committee wished to know, first, exactly what it was he was going to inquire into, the exact questions which were going to be put, and the towns in which the inquiry was going to be made; and, what was more important than anything, reserved to the Association and to every member of the profession the right to criticize the results to the fullest extent when they were obtained. Without going into the question of what was to be deduced from Sir William Plender's report, he considered that the report it itself was a perfectly valid document; the data had in almost every case been certified and initialled by the doctor whose books had been examined. The importance of the report was what was to be deduced from it. As a document it was perfectly honest and valid, but the result had been what the Committee foresaw might happen—arguments had been based upon it which did not hold water. In passing he would like, as Chairman, to express his personal thanks to the members of the Committee who with himself took their courage into their hands and consented that the inquiry should be made at all, and to thank those gentlemen who so readily and completely consented to the inquiry being made. It said a great deal for the medical profession that no stumbling-block was placed in the way of the inquiry being made, and the Government could not say that the medical profession would not help it to the best of its ability.

Mr. Verrall drew attention to the statement that no material concession had been made by the Chancellor since February, and said that the Council, although it found it impossible to go through the report of the State Sickness Insurance Committee paragraph by paragraph, took the line that there was enough evidence in the document as a whole and in the history of the matter to justify the Council in stating that it shared the responsibility of the opinion the Committee had expressed, that no material concession had been made.

As to the alternative recommendations which summed up the parting of the ways—Recommendation X, as to breaking off negotiations, and Recommendation Y, as to continuing negotiations—Mr. Verrall said it was quite possible that a third, or middle course, ought to have been added. An amendment by the Oldham Division to Recommendation X, "That the Association defer any decision until later, leaving the Government and the Commissioners to make the next move," was really an amendment not only to Recommendation X but to Y. Inasmuch as it said, "That the Association defer any decision until later," it was a strong amendment to X; but inasmuch as it said, "leaving the Government and the Commissioners to make the next move," it was a strong amendment to Y. It had appeared to the Agenda Committee that, as a matter of procedure, the best thing would be for the Representative Meeting to proceed to consider Recommendations X and Y, bearing in mind that the amendment by Oldham applied to both. Without necessarily departing from the position taken as to the demands which it was thought the Association were justified in making, the logical position would thus be adopted of not shutting the door absolutely in the face of any and every possible variation. Assuming, for the sake of argument, that the Government was content to do something which differed so little from the Association's demands—that it conceded 8s. 5¾d. instead of 8s. 6d. for instance, that would be so slight a difference from the full demands that it would be impossible for the profession to refuse. That was a logical position which need not necessarily mean any appreciable departure worth considering from the demands which, as he had already said, he personally considered were perfectly fair and just. Whether it was decided to break off negotiations, or not to break them off, he wished to be sure that every one thoroughly grasped the position, so that there should be no scintilla of justification for saying later that more ought to have been won, or that the failure ought to have been less. It must not be said that any single member of the profession failed to grasp what was really necessary to be done, and, having failed to grasp it, left it undone. (Applause.)

The Delay in the Commissioners' Reply.

Dr. Haslip (Westminster) asked if there was any valid reason why the Association had been made to wait four months to receive the reply from the Commissioners.

Mr. Verrall said there was no reason whatever why the reply should not have been given before. The point was dealt with in a paragraph of the report.

Dr. Haslip remarked that he merely asked the question in case some members had not read the whole of the report.

The various reports bearing upon the question of State Sickness Insurance were then received, and after a somewhat desultory discussion it was decided to proceed at once to the discussion of Recommendations X and Y, as to breaking off or continuing negotiations respectively.

Dr. W. Craig (Fife) asked, having regard to the fact that a great number of Representatives had been instructed by their Divisions to vote exactly one way or the other as to X or Y, if the Oldham amendment were put to the

meeting and were carried, would it preclude the Representatives from carrying out the instructions they had received?

The CHAIRMAN said it was for the meeting to settle the issues which came before it, subject to such amendments as the meeting chose to adopt. If a Representative was instructed by his Division to vote for one or other issue, it would be his duty to resist all amendments and to confine the issue to its original form. If the issue came up in that form then his duty was clear. If the issue had been subjected to any amendment it was equally his duty to act, with regard to the support or rejection of that amendment, according as to whether to the best of his judgement it did or did not carry out the instructions of his Division.

ADHERENCE TO THE MINIMUM DEMANDS.

Discussion then took place with regard to the first clause of Recommendation X:

> That the Government be informed that the Association adheres to its minimum demands, as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer.

Dr. EVAN JONES (City of London) said that the position taken up by the Association fifteen months ago had been reiterated, and it was impossible to imagine that the position could be receded from. He sincerely hoped there would be no going back, otherwise the medical profession would be a laughing stock.

Dr. C. G. MEADE (Scarborough) considered the most important part of the meeting's work was to have a thorough discussion of Recommendations X and Y. The Chancellor of the Exchequer had been told in plain and unmistakable language that he must concede the six cardinal points. It was plain that the profession must stick to the six cardinal points, and make no concession with regard to them. If they said to Mr. Lloyd George, "If you offer 7s. 6d. we will think about it," Mr. George would say they were wobbling. The Chancellor seemed to regard the medical profession as a man learning to ride a bicycle, wobbling all over the place. The Chancellor said, "Give him time and he will fall off." They must show the Chancellor he was mistaken.

Dr. W. J. DURANT (Consett and Gateshead) raised the question whether the Association should adhere to the £2 limit. His opinion and that in the North was that by binding themselves to that limit they were crippling their cause. How, in the face of Sir William Plender's figures, which included operations and all the extras they demanded, they could press for it, and at the same time adhere to the 8s. 6d. with medicine and extras, he did not know. In the face of those figures and with the knowledge they had of the Government view and of public opinion, to attempt to adhere to the £2 limit was futile.

Dr. LORD (Rochester) considered the meeting had a straight issue before it, and many of them had been sent with cast-iron instructions how to vote. Were they going to have this straight issue jumbled up and obscured by a number of amendments from different parts of the country, the passing of any one of which might absolutely nullify the result of the deliberations of the meeting? During the past twelve months the position had been most abominable, and one in which they should never have been placed. Both as an Association and as individuals they had been put unnecessarily to enormous expense. He had been grievously disappointed with the result of the successive Representative Meetings and the way in which they had dealt with this matter, but believed that the course adopted was due to a desire to get public opinion on their side, so that it might not be said they had been too precipitate. If they could go back to their constituents and say they had at last adopted a strong line, nobody could accuse them of precipitancy, their defence fund would go up by leaps and bounds, and men who up to now had been outside the Association would come in, and they would have a magnificent fighting strength in the Association. On the other hand, if they had to go back and tell the Divisions that negotiations were still to go on they would lose these men. The only possible excuse for any change of opinion was that the central office was in possession of information which was not before the meeting.

Dr. NAPIER JONES (Reading) said his instructions were that the profession should not recede one inch from the position it had already taken up. He considered the time had come for a courteous refusal. The principle underlying the income limit was that it was inequitable to use State funds to give any man that which he could afford out of his own pocket. If the Government accepted that principle, it did not seem to him to be beyond the power of the Association to negotiate as to the means by which it could be enforced.

Dr. H. H. WHAITE (Birmingham Central and Walsall) said that if the first clause of the recommendation were carried it would lead inevitably to a breakdown of the negotiations. Recent explicit utterances, both by Mr. Masterman and Mr. Lloyd George, seemed to prove that the minimum demands would not be conceded. The Chancellor of the Exchequer had deliberately attempted to alienate public sympathy from the medical profession. Therefore, he would like to have seen some counter-manifesto issued throughout the country. The Association must say very definitely and earnestly that it would not abate one jot or tittle of the minimum demands of the profession. His constituency, consisting of some 400 members, was agreed almost to a man that this was the only course to pursue. If the matter were deferred till next January, when the medical benefits were about to come into force, they would at once have the public in opposition to them, because of the suddenness with which the demand was made, whereas, if it were done now, the public would have plenty of time to think about it, and they on their part would have time to organize themselves, their guarantee fund would be complete, the organization more perfect, and they would be more united and able to stand up for the just and equitable results they ought to achieve.

Dr. J. H. KEAY (Council) was exceedingly glad to find that Dr. Durant had had the courage to deal plainly with the matter, because they were concerned with plain facts, and high-sounding phrases would not carry them far. He could not agree with the clause to the effect that the Association adhered to its minimum demands, for the very plain and practical reason that he did not think it did. At first no particular sum was mentioned; it was to be "adequate"; but at the meeting last year the sum of 8s. 6d. was fixed. If the motion had contained the words "adheres to its principles" instead of "minimum demands," he could have accepted it.

Dr. LIONEL PICTON (Stockport, Macclesfield, East Cheshire) said he had been instructed to support the recommendation. The time had come to strike a blow and strike hard, but to be effective the blow must be well directed. The Government in the matter of medical benefits were seeking to confirm and extend the worst system of which the profession had any experience. They should tell the public that what the Government were offering was nothing more nor less than club practice. Mere criticism was not enough; they must go further and hold up in opposition to the Government's paltry scheme their own ideal. Few would be found to dissent from the proposition that private practice in its essentials should form the foundation of any considered health insurance scheme. The essentials of private practice he took to be, first, free choice of doctor, not from a panel but from the *Medical Register*, subject to the doctor's consent; secondly, that the doctor should be paid for what he did; and, thirdly, that the patient should pay. Under any scheme of medical benefit there must be one addition and one subtraction. The addition was a standard tariff, and the subtraction was in the matter of payment. Clearly the patient must receive some considerable benefit there. Accepting those principles, they ought to say to the Government: "If you will consider the whole matter afresh on the true lines of medical practice, then the matter might in the future be open to negotiation;" but for the present the course was clear—namely, to base themselves on their minimum demands under the six cardinal points.

The meeting adjourned for luncheon. On resuming,

Dr. C. E. FLEMMING (Council) expressed the opinion that a capitation fee of 8s. 6d. was by no means too large. But the question was what were they to do for 8s. 6d.; unless they continued their negotiations with the Government they could not tell. If the Government merely wanted the

doctor to go and look at a man then 8s. 6d. was very good, but if it wanted a list of fifteen or twenty questions answered and a detailed report of the case, then, in his opinion, 8s. 6d. was not sufficient.

In reply to Dr. F. E. Wynne (Leigh, Wigan), the Chairman said that the inclusion or exclusion of sanatorium benefit did not arise at the moment.

Dr. Wynne supported the motion on the ground that it did not mean an absolute closure of the door to any further negotiations. It meant that whilst the Association ceased to go cap in hand to the Government, if the Government came to the Association, granting terms which reasonably approximated to the Association's demands, the Association's Representatives were ready to receive them and report to the Representative Meeting. At the Representative Meeting in London he had moved a resolution which would have meant breaking off negotiations; but it was not carried, and ever since the valuable time of the best members of the Association and thousands of pounds had been wasted. Whilst he had much admiration, like every one else, for the work done for the profession by the Council and the State Sickness Insurance Committee, yet those bodies now came to the Representative Meeting and said they had accomplished nothing. It was time that this expenditure of work and money ceased and the profession ceased to allow its dignity to be lowered; it should take the stand that, whilst medical men were ready to administer a proper scheme, they would have nothing to do with it until the Government came to them.

Mr. Turner (Kensington) recalled the resolution passed at the last Representative Meeting, which instructed the State Sickness Insurance Committee to inform the Government in plain and unmistakable language that unless they acceded by regulations, or an amending Act, to the demands of the Association, measures would be taken to call on all those practitioners who had signed the undertaking to have nothing to do with the Act. Mr. Verrall had mentioned the difficulties of what might be called "cork-screwing" out of the Commissioners an answer to the State Sickness Insurance Committee's letter. He for one was not a little bit astonished at that, because, two days after the resolution was passed, a gentleman extremely prominent in the circles of the Government organizers, discussing the matter of the resolution, besides stigmatizing some of those who were instrumental in carrying it as "very pestilent fellows," said, "We have undone all their work; we have got them nicely split." The whole of the Government's tactics from then to now had been to delay and split the medical profession by keeping it in suspense. If ever there was an instance in the world of the protagonists of democracy acting on the old dictum of imperial Rome, *divide et impera*, this was one. The idea of Mr. Lloyd George in endeavouring to force the Act on medical men now was to split them up and grind them down. He believed that the right thing and wisest thing to do now was to act—as a matter of tactics—on the "plain and unmistakable language resolution" passed at the last Representative Meeting. If anything more were to be got from the Government, the only way to do it was by squeezing the Government. One thing had to be considered very carefully—it was now or never. Whatever was fixed by the Government now, either in negotiation or without negotiation, would be fixed and final; for whatever remuneration was fixed now medical men would have to serve. Work would increase, and extra work would be thrown upon the profession in the shape of certificates and so on. No more remuneration would be obtained, and, if an attempt were made to organize and strike against the conditions, the profession would never again be so well organized as it was at the moment. The consultants, and many practitioners whom the Act did not affect, and the rank and file were all, with a few exceptions, united. Further, medical men were utterly tired of the suspense; they were sick of the straining at the leash; they wanted to get to action. As soon as they got to action the guarantee fund would go up by leaps and bounds. They had to remember that the gentleman who, for want of a better term, he would describe as Mr. Lloyd George's whipping-boy in the House, Mr. Masterman, had been put up to say the medical profession had no hope of anything. That was an absolute ultimatum. He asked any member who thought negotiations desirable to ponder well. What was the good of going into negotiation when they knew one side would not budge an inch? That was the position of the Government. If the profession receded from its points and from what had been done, it would be the laughing stock of the world. What would be thought of men who went out and said, "We will take nothing else," and then said, "We will come down if you negotiate"? What trust could those who would undertake the negotiations on behalf of the Association have in the driving power behind them when at the first sign of alarm the Association climbed down? He thought the recommendation should be carried as it stood, and at the same time a strong committee appointed to be called an organizing and watching committee. There were six months before the medical benefits came into force, and the Association had to go on organizing. There should be a committee either of the Council or a committee *ad hoc* appointed by the Representative Meeting, and, if any belated communication should come from the Government or from the Commissioners, let that communication be submitted to that committee, so that it might be passed on to the members of the Association through the Divisions. If negotiations were broken off, what could Mr. Lloyd George and the Government do? If the plan he suggested were followed out, what was going to happen? The Government might attempt to work with medical men on panels or with whole-time men, but he would not agree that a profession they had been proud to belong to for years contained a sufficient number of men so dishonourable and base that they would go back on their honourable undertakings. (Applause.) He had been about the country seeing practitioners and speaking on the Act, and he was thankful to say he had not come across one such man, and hoped he never would. There would not be enough recalcitrant men to work the Act. Notwithstanding the boast made about sanatorium benefit and appointments in Wales, resignations of the posts by medical men who had accepted them under misunderstanding had come in. There was a third course which the Chancellor of the Exchequer might adopt, and probably would—namely, to suspend the medical benefit, or rather hand over the money for the medical benefit to insured persons or their societies. Was there anything in that for the profession to be afraid of? For himself, he considered it solved the question so far as they were concerned. So far as colliery surgeons were concerned, it left them where they had been, making their own arrangements with their own patients at 9d. a fortnight, or on the poundage. The only people affected in such a case would be the colliers, who would have the extra money with which to pay, and that also did away with the trouble of income limits. If resignations came in properly, medical men could collectively bargain and collectively fight the friendly societies and clubs, either offering them attendance at a certain sum through a Public Medical Service, or by arrangements which had been made in some districts already, and the profession would be better off than it was now even if only the 6s. were given. Under those circumstances the clubs could be forced up to a higher figure. Therefore he did not see what there was to be afraid of if the Chancellor did suspend medical benefit; it would leave medical men as members of a free and individual profession instead of being an underpaid, unpensioned branch of the Civil Service. He spoke with a certain amount of responsibility. He had done hard work on the State Sickness Insurance Committee, had thought deeply and carefully on the matter, and he had come to the conclusion that that was the best course to be taken. The Representatives should vote on the motion with a great sense of responsibility, because upon their vote depended the future of the Association, the future of themselves, and the future of those who followed them. He could understand that medical men in practice among the industrial classes and who had club practice were between the devil and the deep sea (if he might compare the Chancellor of the Exchequer to the former and their own profession to the latter), because they had to go into the hands of one or the other. If he were a medical practitioner among the industrial classes he would infinitely sooner fall into the hands of his own profession than into the hands of the Chancellor of the Exchequer. (Applause.) In the coming fight they must be unanimous. He did not know how the voting would go, but, whichever side attained the majority, he called on those who were in

the minority to fall into line and to close up their ranks. He called upon whichever side might be in the majority to build every golden bridge they could for the others to come in so that they might, as they did at the last Representative Meeting, present an absolutely solid and united front, standing together for the honour of the profession. If that were done they were bound to win. A doctor could not be made in a week. He did not believe the guarantee fund would be much called upon. People would still be ill and they could be attended for ready money down or on fresh arrangements. He did not believe many men would lose much, but, even if any one suffered any temporary loss, he hoped sufficient money would be subscribed to compensate him. He urged them not to let the chains of an underpaid contract practice—chains forged in Germany—be riveted on the profession for all time. (Loud applause.)

Dr. FOTHERGILL urged that if the recommendation was carried the profession would be faced with the question whether it was prepared to carry on a medical service itself.

Dr. J. PEARSE (Trowbridge) said that, as a member of the State Sickness Insurance Committee, he agreed with Dr. Turner that the alternative before the meeting was the question of agreeing to the suggestion of the Chancellor that they should appoint a negotiating committee, or accepting the alternative of the suspension of medical benefit. As regards the latter, it would in no way affect the consultant, nor the colliery surgeon, nor the ordinary general practitioner deriving his income from ordinary private practice, but it would affect those members of the profession who were dependent partially or, in many cases, wholly on friendly society practice; and it was these men that they had to send forward at once into the fighting line if they adopted this policy. That was a very grave matter for the meeting to consider. As Secretary of his Division, which was within a large contract practice area, he held in his hands the friendly society resignation of practically every man, but it would be to him a matter of extreme regret if he was compelled to post those resignations. There were two alternatives to put before these men. First, the question of a Public Medical Service organized by the profession; but he maintained that this could not be organized in six months. Moreover, the Public Medical Service asked from each insured person approximately 13s. a year, which, in an agricultural county like Wiltshire, was equivalent to asking a man for a whole week's earnings for medical benefits for himself alone, not including his family, which was a sheer impossibility. (Hear, hear.) Further, did they think that the friendly societies were going calmly to acquiesce in a medical service run solely by the profession? If they adopted the policy of breaking off negotiations, they were face to face with a fight with the friendly societies the magnitude of which was perhaps not realized. The Insurance Commission was packed with friendly societies, and he believed the Commissioners would welcome a resolution to break off negotiations. He asked the meeting carefully to realize the position, and if it accepted this policy to do it with its eyes open and "let not him that girdeth on his harness boast himself as he that putteth it off." It had been said, What was the good of going into negotiations if one party would not budge an inch? (Hear, hear.) There were two parties to the question, and the same remark could be applied to themselves, and therefore he asked: Was the entire profession prepared not to budge one inch from its demands, even on the question of extras? He wished them to understand that in this matter he was speaking solely for himself. As to the friendly society aspect of the question, he could only say, although regretfully, that many men were working for 4s., but if the profession expected it could hold out indefinitely against friendly society inducements until from that 4s. it reached 10s. or 12s., or obtained their demands, he could only say they were leaning upon a broken reed.

Dr. WALLACE HENRY (Leicester) said, while he and his colleagues were amongst the few Representatives who were sent to the meeting with an absolutely free hand with regard to their vote, he was instructed to adhere to the policy laid down at previous meetings—namely, to insist definitely on securing the six cardinal points, and particularly to insist upon the point that Dr. Durant had rather weakened upon—namely, the income limit. If the Government refused to give the profession its just demands, the onus of breaking off the negotiations would be on the Government. He did not think that was the right time to enter into the details of the Leicester scheme, but, while they were very reluctant to send in their resignations, up and down the country in Leicestershire and Rutlandshire the medical men had expressed the great relief they felt that the negotiations had been brought to a head, and that in future they would be free from all control. (Applause.)

Dr. RAIMENT (Kensington) said he had been unanimously instructed by his Division to vote for the breaking off of negotiations. One of the speakers had rather weakened on the question of the wage limit, but at the same time advanced no cogent reasons for doing so. The fact that the Government had declared that they were not prepared to grant a capitation fee of 8s. 6d. was no reason that they should drop that demand. They should reiterate their demands, and inform the Government that it was impossible to negotiate on any other basis.

Dr. MACLEAN said that while listening to the speeches he was impressed with the thought what a magnificent force the Association had at its disposal. The question was how should that force be transmuted in the right direction. Should it be in the direction of sheer pugnacity, or should they make such arrangements as would develop the best possible result in the direction of tenacity? It was a serious question of policy for those who were now formulating the future of the profession. He was certain that all shades of opinion in the meeting were anxious that all the prospects, possible and probable, should be gone into before the decision, which would be very crucial, was arrived at. In his view breaking off negotiations would mean a loss of a certain amount of money, which in one form or another would have to be faced. As the proposed remuneration under the Act a level would be found somewhere between the offered 6s. and the 8s. 6d. demanded, on which the Government would make an offer. A complete breaking off of negotiations would mean that that level, for good or for ill, would be found so much the lower. It was a magnificent tribute to that meeting and the profession generally that, whilst they had been threatened by one political party and wooed by the other political party, they had on the whole stuck to their business, and said that, politics apart, they had to consider ways and means to an efficient medical service under the Act. Had it not been brought home to every one who intelligently read the daily press that, as a matter of opposition to the present Government, strenuous and organized opposition to the Insurance Act was to cease? The fact would remain that the outstanding factor to be met and to be considered was the attitude of the medical profession. An abrupt and complete breaking off of negotiations would mean what the Opposition would term "a stinging facer for the Government." How would that affect the attitude of the Government in respect of their minimum demand? He would merely suggest that it would not favourably affect the Government in their direction. The way in which Dr. Turner had dealt with the alternative of the medical benefits being handed over to the administration of the approved societies was a magnificent feat of optimistic prognosis. If the administration of the medical benefits, as a result of the breaking off the negotiations, were handed over to the approved societies they would have a free and full hand to set up vested interests in the form of institutes and the like, and no Government would dare to take it out of their hands again. In any form of medical benefits which the approved societies might set up the profession would have no claim to recognition upon the Medical Committee, which was one of the very things they had fought for. They would be again reduced to the old condition of a collective body on one side and an individual on the other. When once the medical benefits came into operation could they ask the members of the profession as a whole to stand out from receiving any remuneration, direct or indirect, under the Act? It would give an opportunity for the commencement in patches of a whole-time State Medical Service, and they had not proved themselves able to hold up men from trying to secure salaried appointments with the prospects of a pension. In some areas their organization was able to stand the strain, but that was not sufficient; they must take a

national view. He did not wish to deter men from strong action where it was justified. The argument in favour of postponing a critical decision on the point was, to his mind, overwhelming. Let them beware lest breaking off negotiations meant breaking their ranks.

A motion by Dr. F. K. Kerr (Edinburgh and Leith), seconded by Dr. M. Dewar (Edinburgh and Leith), to limit speeches to three minutes was carried at this point.

Dr. Brook Fox (Blyth, Morpeth, etc.) made the point that the rate of 8s. 6d. would cost the insured person only three farthings. He thought the Act was a gigantic scheme for sweating the profession for all time, and in his opinion would send a creeping paralysis over the whole of medical science.

Dr. H. H. Sturge (Kensington) was in favour of breaking off negotiations, and hoped the vote of the meeting would be unanimous. From his experience of dealing with the Chancellor, he believed that they were dealing with a person who had no respect for the profession. At the Opera House he stated that if the doctors did not accept the Government's proposals dispensaries would swarm all over the kingdom. As a matter of fact, the Chancellor had already received a resolution from the London Provident Dispensaries' Council that it could not work under the Act unless a £2 limit was fixed.

The Chairman of Council (Dr. Macdonald) pointed out that apart from the heading, the three paragraphs of Recommendation X did not contain a word about breaking off negotiations. They could not vote on the heading. The position was not the same as it was at the last meeting. A great deal had been said about continuing negotiations. No negotiations had been carried on by the State Sickness Insurance Committee; a suggestion had been received from the Chancellor that they should appoint a committee with power to negotiate. He, and he believed every one present, was dead against that proposition. (Loud applause.) What was the meaning of breaking off negotiations? If a communication were sent by the Government, was it not to be received? If it was to be received, who was going to receive it—the Council, a committee of the Council, or a committee of the Representative Meeting? He did not take such a pessimistic view as Dr. Maclean, nor did he take such a rosy view as Mr. Turner. He did not think Mr. Turner was acquainted with the difficulties of club practice. The men in club practice were the men in the firing line, and if the profession was prepared to back those men up, then he would say go on; but the profession must be prepared to put its hands deeper in its pockets. Only one half of the Council and the Representative Meeting had subscribed so far. ("Shame.") What did they expect from the ordinary man throughout the country? If they were well organized and equipped, then he thought they would win, but they must make greater efforts than had yet been made.

Mr. Turner explained that he had considerable knowledge of club practice, and had taken particular care to find out everything he could about the system ever since he had had anything to do with the British Medical Association.

Continuance of Negotiations pending Issue of Regulations.

Dr. Dryland (Northamptonshire) moved the following amendment:

> That negotiations continue until the regulations of the Commissioners are presented, which a committee should consider and report upon to the Divisions prior to a Special Representative Meeting.

Dr. Dryland said that his Division thought that to break off negotiations just now would be unfortunate. A letter had been received that morning from the Commissioners stating that the regulations would reach the Association early in August. To break off negotiations now would give the Chancellor of the Exchequer the opportunity to go to the House of Commons and say, "I was going to give the Association nearly everything they asked for, and they won't even wait for it." (Oh! oh!) Why had not the regulations arrived sooner? If they could arrive early in August, they could have arrived before that meeting. It was nothing but a trap they were going to walk into by breaking off the negotiations at once. If they did not, they would be just as strong in three months' time as at present. They had waited so long and put up with so many snubs that they might wait another fortnight or three weeks.

Dr. Eustace (Chichester, etc.), in seconding the amendment, said if negotiations were broken off the person responsible would be Mr. Lloyd George himself: he must either do that or accede to the demands of the profession. The amendment would place Mr. Lloyd George in a position which he did not want to occupy.

Dr. Pope (Council) thought too much had been made of the term "breaking off" the negotiations. It obviously meant that they were not going to take the next step, and he did not possibly see how the meeting could avoid coming to that conclusion. (Applause.) What did they expect to get? They did not propose to give the negotiators any power. (No, no.) Then why profess that they were going on with the negotiations? All it meant was that as far as they were concerned they washed their hands of it until the other side came to them with something very much more acceptable than anything they had produced up to now.

Mr. Verrall explained that the State Sickness Insurance Committee constructed Recommendation X with the distinct intention of giving the meeting an opportunity of refusing to have any further negotiations with the Government at all. Recommendation Y was constructed in order to give the meeting an opportunity of deciding to meet the Chancellor in the totally new position which he had never taken up before, namely, of inviting the formation of a committee which had power to negotiate. As a Representative he was instructed to support Recommendation X and would do so, but his personal opinion was that it would be wiser to adopt something which would indicate, not that they would go back at all from their original demands, but they were prepared to say, "If you have an offer, send it to us and we will consider it."

The amendment was lost. The result was loudly applauded.

Proposal to Defer a Decision.

Dr. J. B. Wilkinson (Oldham) moved that for Recommendation X be substituted:

> That the Association defer any decision till later, leaving the Government and Commissioners to make the next move.

The Oldham Division put this amendment forward because it did not feel that it had sufficient information before it at the time to decide whether the negotiations should be broken off or not. They wanted to know, before starting the actual fight by breaking off negotiations at the commencement of hostilities, whether they were going to win.

Dr. Metcalfe (Bradford) said his Division was strongly opposed to deferring the question. Now was the psychological moment, and they did not care whether the Government got a stinging facer or not so long as they carried out their policy.

The amendment was lost.

Proposal to Refuse to Reopen Negotiations.

Dr. Metcalfe (Bradford) moved the following amendment:

> That all negotiations be broken off at once, and that further we do not desire to reopen them.

He did not think that there would be much difference of opinion on the first part of the motion. In his opinion, if they had broken off negotiations long ago they would not have been in their present plight. His Division felt that it was high time to show a bold front. What had they to lose if they ceased negotiations?

Dr. A. Dreay (Halifax) said that if Dr. Metcalfe would agree to divide his amendment he would strongly support the first part. When the matter was under discussion at his Division he put it to the meeting whether, if the resolution to break off negotiations were passed, they would be prepared to subscribe to the Defence Fund. Everybody was ready to subscribe or, if they had contributed, to double their subscriptions if necessary.

Dr. Metcalfe was willing to delete the second clause of his amendment, but the Chairman ruled that this could not be done.

The amendment was lost.

Course of Business.

Dr. W. BICKERTON EDWARDS (Swansea) protested that he had not yet had an opportunity of voting in accordance with the instructions of his Division; and several Representatives intimated that they were in a similar position.

Mr. VERRALL, as Chairman of the State Sickness Insurance Committee, suggested that the meeting should view Recommendation X as a preliminary to the establishment of the position that the Association should break off negotiations and cease, for the time being, dealings with the Government. On that basis he suggested the meeting should have placed before it, in succession, Recommendation X in its parts i, ii, and iii. Then, assuming the recommendation in its entirety received the approval of the meeting, it could proceed to say in the shortest possible way that negotiations should cease. Those who wished that the door should not be banged and barred could move a rider that if the Government was prepared with a definite offer it could be sent, for what it was worth, to the Association, to be received by the Representative Meeting, the authority established for the purpose. (Applause.)

The first clause of Recommendation X was then put to the meeting. A vote by roll-call was demanded, and the result was: Ayes, 181; Noes, 21; not voting, 1.

Mr. VERRALL pointed out that Recommendation X did not specifically mention the question of sanatorium benefit. He thought the meeting had better consider whether any exception should be made in that respect. Failing any decision to the contrary, the passing of the third clause of Recommendation X included taking no share in tuberculosis treatment.

METHOD OF RECEIVING ANY OFFER FROM THE GOVERNMENT.

Dr. FULLER (North Middlesex) moved a rider to the first clause of Recommendation X:

> That it be an instruction to the Council to be prepared to consider an offer, if received from the Government, and to report to the Representative Body for its decision.

He thought that before the door was quite closed a loophole should be left for the Government to make an offer. The demands of the profession did not relate only to money: there were other things on which the Government might give way, such as representation, etc. The profession might alter its opinion if the Government came within a little of its demand, and would then be very glad it had not entirely broken off negotiations and stultified itself in the eyes of the country.

Dr. JOHNSON SMYTH (Bournemouth) seconded the rider, because his Division had asked him, as far as possible, to keep the door open. He had voted for the Recommendation fully believing that, as the result of clear thinking, the meeting would arrive at a conclusion such as was embodied in the rider.

Dr. O'SULLIVAN (Liverpool) thought the meeting would stultify itself if it accepted the rider in its present form, and he moved an amendment limiting the consideration of an offer from the Government "provided it be based on the granting of the minimum demands of the Association."

Dr. DEARDEN (Manchester, West) seconded.

Dr. DARLING (Portadown and West Down) begged the meeting to pause before it accepted Dr. O'Sullivan's amendment, which would only have the effect of tying the hands of the Council, and putting them in an almost impossible position. Dr. Fuller's resolution was purely an instruction to the Council relating to the internal administration of the Association.

Dr. FOTHERGILL (Brighton) hoped that the rider would be withdrawn. The Council would naturally consider the matter, and it was not necessary to instruct it to do so. Further, to pass a resolution that they would stick to their minimum demands, and then let it get into the press that if the Government came to them with this or that suggestion they would accept it, would be simply laying themselves open to be sneered at.

Dr. O'Sullivan's amendment was lost, and

Dr. FULLER said he could see the feeling of the meeting was against him, and therefore withdrew his rider.

RESIGNATIONS FROM ADVISORY COMMITTEES.

Mr. E. B. TURNER (Kensington) moved the second clause of Recommendation X:

> That the Association calls upon all members of the Association who are members of the Advisory Committees in connexion with the National Insurance Act, and also on other medical members of those Committees who are in sympathy with the policy of the Association, to withdraw from these bodies.

He said that the meetings of the Advisory Committee which had been held were a mere farce and waste of time. They had done hours upon hours of strenuous work simply upon the hypothesis that the Government was going to give them what they wanted. If they had previously come to terms with the Government it would have been of some use, because then they could have elaborated almost every possible contingency in the regulations. The whole thing was vitiated from the very beginning by the fact that they knew they were not going to get any concession from the Government whatever. Mr. Verrall had done his part with the Commissioners and Mr. Lloyd George in a most admirable manner, but the time had come when they should call on all those members who had been appointed to the Advisory Committees to send in their resignations forthwith.

Dr. J. E. WEBB (East Cornwall) supported.

The CHAIRMAN OF COUNCIL (Dr. Macdonald) agreed with Mr. Turner that the Advisory Committee was not only a solemn farce, but it was actually a scheme for throwing on to the shoulders of the profession the burden of regulations which would not fit in any way. If the regulations that were issued for medical benefit were not such as met their wishes, they were to be calmly told that the Government had consulted the Advisory Committee. He did not think any harm would result from members of the Advisory Committee withdrawing.

Dr. E. C. THOMPSON (Enniskillen, etc.) asked whether the recommendation would apply to Ireland.

The CHAIRMAN replied that it would apply to Ireland unless otherwise decided. The pledge of the British Medical Association was not circulated in Ireland.

Dr. MAJOR GREENWOOD (City of London) pointed out that the State Sickness Insurance Committee had sanctioned service being taken on the Provisional Insurance Committees by medical practitioners who were elected in their capacity of citizens, and not as medical men. He trusted that any request for resignation would apply to those gentlemen as well as to the other members.

The CHAIRMAN said the motion applied only to the Advisory Committees.

Dr. MCKENZIE JOHNSTON gave an account of how at one of the meetings of the Advisory Committee at which no medical business was done, but which he had nevertheless attended, the representatives of the friendly societies had pressed for a certain alteration in the regulations; the alterations, it was objected, could not be made because the point had already been discussed and decided by the House of Commons. Nevertheless, when the regulations were issued, it was seen that the alteration had been made. Because the friendly societies acted together, the Government was forced into doing something it said was impossible. This would be a very useful lesson to the profession in regard to what had been said about the impossibility of altering the wage limit.

Dr. J. S. DARLING (Portadown and West Down) said that in accordance with the resolution passed he would hand in his resignation to the Joint Advisory Committee, but at the same time he was a member of the Irish Advisory Committee. Up to the present there was no question of medical benefits obtaining in Ireland, and therefore he suggested that Ireland should be excepted.

Dr. R. M. BEATON (St. Pancras and Islington) said that he was in the same position as Dr. Darling. He was a member of the Joint Advisory Committee and a member of the English Advisory Committee, and he did not see any reason why Ireland should be excluded. At the meetings of the Advisory Committee when the members of the Committee asked questions the Commissioners refused to answer them. The proper course would have been for the Commissioners to draft regulations and let the Committee criticize them. No regulation with regard to medical benefit had yet been drafted.

Dr. Edward Thompson thought it would be a mistake if the motion did not apply to Ireland.

The motion was carried.

Provisional Insurance Committees.

Dr. Major Greenwood (City of London) moved the following rider:

> That all medical practitioners who have accepted office on any of the Provisional Insurance Committees throughout the country be also called upon to resign their position.

Dr. A. Manknell (Bradford) supported the rider, and considered that the call to resign should also apply to all members of county and county borough and city councils, who sat as councillors in their capacity as citizens.

Dr. J. E. Garner (Preston) said such a principle had been adopted in Preston, where a medical practitioner was asked to become a member of a county council, but declined to accept the position lest he should do anything to further the Insurance Act.

Mr. Turner (Kensington) supported the proposal. The subject was one of the two upon which he disagreed with the State Sickness Insurance Committee. He was unable to agree that medical members of county councils and borough councils should allow themselves to be appointed on Provisional Insurance Committees, even to offices which might be filled by laymen. If the Act was to be fought, the Association must be unfettered, and it was most important to get quit and clear of all the Provisional Committees. The Association was in for a fight with the Government, and if it were true that committees could not be legally constituted under the Act unless there were medical men on them elected by the profession, so much the better. Personally he did not think there was anything in the point, because, like the amendment which was specifically introduced into the Act to meet the Government interests in the Yeovil election, and which was afterwards removed by the Commissioners, so it would be just as competent for the Commissioners to do away with the stipulation in the Act in exactly the same way as they might do away with anything else in the Act or grant the income limit, or anything else.

Mr. Sansome (West Bromwich) hoped the proposal would not be pressed, because the Association was treading on very dangerous ground. Many members, besides owing allegiance to the Association, owed allegiance to the people of a town or place, who had elected them to county or borough councils, and if they were acting not as medical men but as chairman of some committee, or even, perhaps, as mayor of the town, it was not fair to ask a man in that position, not using his medical position at all, to resign. He himself was in that position, as he had been put on the Insurance Committee as chairman of a sanitary committee. He had asked his Division whether he should go on or not, and they had said, "Go on, we can trust you. You will be behind the scenes and will know what is going on." Let them have men who could be trusted behind the scenes. Furthermore, if they ever came to agree with the committees, they would have the advantage of another medical man on the Insurance Committee, which would give another representative they would not have under the Act otherwise.

Dr. W. E. Thomas (North Glamorgan and Brecknock) moved:

> That in the best interests of the profession the ban on medical men taking positions on Insurance Committees should be removed.

Mr. Davis (Bristol), as one who owed allegiance to two bodies, the county council and his constituents in Bristol, had not had very much difficulty when it was suggested to him as a councillor that he should go on the committee. He held it was a dangerous precedent to allow any medical man on that committee. He had declined to go on the Provisional Committee, and there was not a man in Bristol who had gone on now. Further, a loyal medical man must feel in an extremely invidious position when on such a committee.

Dr. Brownbridge (Liverpool) urged the Representative Meeting to instruct the various Divisions to request all State or county council medical members to withdraw from Provisional Committees. In Liverpool medical members had been perfectly loyal, and when the Division asked them to retire they had done so.

Dr. Wilkinson (Oldham) inquired whether, if a medical man were elected on a county council and were appointed to act on a certain committee, he could refuse to do so.

The Chairman replied that that was a legal question which he could not answer.

Dr. Wilkinson pointed out that whilst, when the Insurance Committees were established it would be necessary that medical men should be elected by certain bodies as members of those committees, and those committees would not be statutory committees without them, yet, so far as the Provisional Committees at present were concerned, they could be constituted just as the Commissioners chose to constitute them. If exception were going to be made in the case of medical men sitting as citizens, a body of opinion would be raised against the position the profession was taking up. Were they going to say to medical men who were county councillors and borough councillors that, simply because they had a medical qualification they were to suffer from the disability of not serving on the committees on which they at present sat? Such men were returned as the elected representatives of their wards, and of different constituencies, and if they could not sit on committees simply because they were medical men, they were of no use to their constituency. In Lancashire, the Chairman of the Health Committee and the Chairman of the Midwives Committee were both medical men, and had been nominated by the County Council as members of the Provisional Insurance Committee; it would be extremely hard on them, and, as he considered, a very impolitic proceeding, to call upon them to resign. Provisional Insurance Committees were doing no medical work, but simply organizing maternity benefit, sanatorium benefit and sick benefit in connexion with the Insurance Act. Until January there would be no Insurance Committees, and that would be time enough to call upon such men to resign. He urged the meeting to allow them to continue the good work they were doing and not to penalize them.

The rider, moved by Dr. Thomas, to remove the ban upon medical men taking positions on Insurance Committees, was lost.

Dr. Major Greenwood accepted a suggestion that his rider should include the word "registered" before "medical practitioner."

The rider was approved by a large majority.

Dr. Darling (Portadown) moved a rider that the second clause of Recommendation X do not apply to Ireland, but that the subject be referred to a joint committee of the British Medical Association and the Irish Medical Association. The position was that a committee had been formed in Ireland, with the full consent of the Association, which was composed of the Irish Committee and a number of members of the Irish Medical Association and others. That committee nominated four members of the profession in Ireland to serve on the Irish Advisory Committee. The members of the profession in Ireland had sent to the joint committee he had mentioned a pledge that they would resign at once on being called upon to do so, and therefore he thought that this matter should be referred to that joint committee.

Professor A. H. White (Dublin) seconded.

Dr. Todd (Sunderland) asked what would be the position of the Representative Meeting if the question was referred to the joint committee in Ireland and it did not carry out what the Representative Meeting suggested. In his opinion its position would be very invidious.

Dr. Thomson (Mid Norfolk) thought it would be an extraordinary course for the meeting to take—to pass resolutions and not require the medical men of Ireland to accept them equally with the rest of the country.

The rider, on being put to the meeting was lost, and the recommendation, as amended, was approved.

Refusal to Work the Act.

On the third clause of Recommendation X, moved by Dr. Evan Jones (City of London), calling upon all practitioners who had signed the undertaking to refrain from applying for, or accepting, any post or office of any kind under the Act, the Chairman said there was an amendment by the Brighton Division to insert the word "duty," so as to make the motion read "refrain from applying for, or accepting any *duty*, post, or

office." It made it a little wider if it was thought advisable and necessary.

Mr. DEARDEN (Manchester, West) pointed out that to insert the word "duty" would bring in medical officers of health.

Dr. BENHAM (Brighton) said that that was what was intended. Certain medical officers of health were treating at the municipal sanatoriums cases of phthisis which were paid for by the municipality. The Act being now in force the councils were being approached by the Provisional Insurance Committees with a request that they would arrange that the medical officer of health should continue his present duties, and that the municipality should receive a sum of money from the Insurance Committees; although the profession might be willing that medical officers of health should continue their present public duties, that was very different from allowing them to accept fresh ones.

Dr. MACLEAN said that he noticed with some regret the extent to which the Representative Meeting was piling up responsibilities and difficulties. They had quite enough to do in what had already been decided upon. If they overloaded the ship it would sink. If the motion was passed in the sense which Dr. Benham attached to it they would have within all too short a time the resignation from the Association of the medical officers of health of the country as a class. He had already been warned by several members of that section of their profession that their loyalty had been strained sufficiently already.

Dr. W. F. BROWN (Ayrshire) asked how he was to distinguish between the insured and the non-insured. He had been carrying on sanatorium work for the last six years, and felt that he could not give up the sanatorium work.

Dr. WYNNE (Leigh) said this was one of the most vital questions the meeting had to discuss. There was a marked difference of opinion. One side said that it was the duty of medical officers of health to give their services to any measure for securing the health of the community. The other party said that they must refuse to co-operate in any way in working any part of the Act, because it was essentially a bad Act both for the public and for themselves. His own personal views were known, but he had to carry out the instructions of his Division, which were to express its absolute opposition to the profession taking up the sanatorium benefits. At present, as Dr. Maclean had said, it was putting a very serious strain on the loyalty of the full-time medical officers of health.

Dr. J. T. MACNAMARA (Greenwich) endorsed what had been said by Dr. Maclean. They must remember that the profession had a duty to the public as well as to itself. The Chancellor of the Exchequer had said recently that half the pauperism of Great Britain was due to sickness. As the pauperism of the country cost sixteen millions, it followed, according to Mr. Lloyd George's argument, that he would save eight millions, and surely the medical profession would be entitled to share in that saving. Sir William Plender's statement showed an average of 4s. 2d. per head of the population. Accepting this figure as their present remuneration for eight hours' work, if under Mr. Lloyd George's scheme they were to work many more hours a day every day of their lives, they were entitled to something for overtime. He hoped that the Brighton motion would be rejected.

The amendment to insert the word "duty" was lost.

Dr. HASLIP (Westminster) moved an amendment calling upon practitioners not to retain posts under the Act they already held. The meeting had already asked those who might suffer by the Insurance Act to act loyally, but it had made no request to those who had already gained under the Act to relinquish their positions.

Dr. H. H. WHAITE (Birmingham Central and Walsall) seconded the amendment. Many men were drawing high salaries under the Act, and no call was made upon them in any way. He would like to put on record, at any rate, that the matter had been brought before the Representative Meeting and had been discussed.

Dr. J. A. MACDONALD thought it an extraordinary request to ask men who had accepted positions, before any ban had been put upon those positions to surrender them. They were fighting the Government, and it was in order to assist in the fighting that they asked men not to accept positions, but very different considerations arose with regard to those who had already accepted them. If it did ultimately happen that medical benefit was cut out of the Act, a question might arise as to retaining those men who were already in their positions. He thought the acceptance of the amendment would be very unjust.

Dr. HASLIP withdrew the amendment.

The meeting adjourned at 8 p.m.

Monday, July 22nd.

The Representative Meeting continued its proceedings on Monday, July 22nd, at 10 a.m. Dr. E. J. MACLEAN (the Chairman of Representative Meetings) presided, and the minutes of Saturday's proceedings were confirmed.

REPORTS IN THE LAY PRESS.

Dr. F. E. WYNNE (Leigh, Wigan), on a point of privilege, mentioned the reports of the proceedings which had appeared in the lay press, instancing one case in which the remarks of the Chairman of the State Sickness Insurance Committee could only have been taken from a shorthand note.

Mr. C. P. LANKESTER (Guildford) thought that sufficient steps had not been taken to impress the occupants of the gallery with the necessity for secrecy and silence; and the CHAIRMAN said, in reply to Dr. DOUGLAS STANLEY (Birmingham Central and Walsall), that a motion to clear the gallery would be in order.

The CHAIRMAN said that, looking at the matter broadly, no one could doubt that the meeting's proceedings were of public interest. It was a matter of good faith on the part of those present that no communication should be made to the press. That reports had appeared in the newspapers containing to a large extent the actual words used by the Chairman of the State Sickness Insurance Committee in introducing that Committee's report, was perfectly correct; and to that extent such reports were authentic and coincided with the authorized report given to the press, through the Agenda Committee, which was also acting as the Press Committee. It would be uncalled-for to pass a resolution that no Representative should make a communication to the press, because that must be taken to be understood. As to clearing the gallery, to his mind that would be very regrettable, and the setting up of a system of espionage would be impossible. However, he would put it to the meeting:

That the gallery be cleared.

This was negatived by acclamation.

Dr. JOHNSON SMYTH (Bournemouth) moved:

That any one observed taking notes in the gallery be requested to leave.

Dr. MEADE (Scarborough, York) seconded.

The motion was carried.

ORDER OF BUSINESS.

The question was raised whether the dinner and conference of secretaries on Monday evening could be postponed in order to obviate the necessity for an early rising of the Representative Meeting.

The CHAIRMAN OF REPRESENTATIVE MEETINGS said there were at least fifty Divisional Secretaries, other than those present at the meeting, who had made arrangements to be present at the conference, and to arrange the sessions of the Representative Meeting so as in any way to interfere with the conference, might seem an act of discourtesy to them.

Ultimately, on the suggestion of one of the secretaries, a compromise was effected, and the meeting decided to rise at eight o'clock.

CHAIRMAN AND DEPUTY-CHAIRMAN OF REPRESENTATIVE MEETINGS.

The CHAIRMAN OF REPRESENTATIVE MEETINGS announced that Mr. T. Jenner Verrall had been elected to be the Chairman of Representative Meetings, and Mr. E. B. Turner to be the Deputy Chairman.

Mr. T. JENNER VERRALL thanked the meeting very sincerely for the great compliment that had been paid him

in electing him to that important post. In the same measure as the gratitude of the meeting was great to those accomplished chairmen who had preceded him, so necessarily must be his own sense of the responsibility the meeting placed upon him. It had set a high standard which he would do his utmost to attain.

Mr. E. B. TURNER (who was also received with loud applause) most heartily thanked the meeting for having paid him one of the greatest honours he had ever had in his life. He would do his very best to live up to the standard that had been set by his predecessors, and would do all he could for the good of the Association and the profession, and more especially for the meeting which had honoured him by entrusting him with such a very important post.

NATIONAL INSURANCE.

The meeting went into Committee and resumed the consideration (Dr. BUIST being in the chair) of Clause 3 of Recommendation X of the Report of Council in favour of breaking off negotiations.

The minutes of the proceedings in Committee on Saturday were confirmed.

SANATORIUM BENEFIT.

Dr. T. B. HEGGS moved, on behalf of the Canterbury and Faversham Division, to add to Clause 3 of Recommendation X the words:

> Except in regard to sanatorium benefit, provided it is carried on in accordance with the wishes of the Association.

Dr. Heggs said that, in moving the amendment, he was not only expressing his personal opinion, but was acting on the unanimous instructions of his Division. The amendment was brought forward in the interests of the general practitioners throughout the country. The profession had formulated its demands with regard to medical benefits, and had been refused with ignominy and contempt, but it had not yet formulated its demands with regard to sanatorium benefits, and therefore the two questions were not on the same basis. His Division considered that the profession should welcome the treatment of tuberculosis and sanatorium benefit. It would be paid not by capitation, but by a scale, and the officers under the scheme would get adequate payment and general practitioners would retain domiciliary treatment. With regard to medical benefits, in the opinion of his Division it was impossible for a whole-time medical service to be established, because freedom of choice of doctor was an imperative necessity for any scheme which dealt with 15 million people. The public was not willing to give up freedom of choice of doctor, so that alone would kill any whole-time service for medical benefits. With regard to sanatorium benefits, they only had to cater for 300,000 individuals. It would be quite a simple matter to form a whole-time tuberculosis service for sanatorium benefits. Unless his amendment was carried, the profession would be faced with a whole-time tuberculosis service within a few months, which would be the thin end of the wedge for a whole-time medical service for all medical treatment under the Act. They had to consider the position from the enemy's standpoint. What would be the effect upon public opinion and upon the Chancellor of the Exchequer if they refused? No cause could be successful that was not backed up by public opinion. The public was not ready for a dissatisfied and insufficiently remunerated medical service. The provisions of the Act would not be considered satisfactory until the medical profession was whole-heartedly willing to carry out the work. If medical men lost the support of public opinion, the Government could do what it liked with them. If they refused to entertain the question of sanatorium benefits, what an opening it would give to that clever, eloquent speaker—Mr. Lloyd George—in the House of Commons! He would raise the cry, "Where is the vaunted zeal of the medical profession for the public welfare?" It was stated that they were on the horns of a dilemma; that on the one hand, if they worked sanatorium benefits they would be weakening their position, and on the other hand, if they refused to do so, they would alienate public opinion. His contention was that they would not weaken their position by working sanatorium benefits. The two questions were totally distinct. With regard to medical benefits, they had demanded certain conditions of working, and with regard to sanatorium benefits they ought to do the work if they were allowed to do it under their own conditions. They had not yet formulated their demands, and there was every chance that when they did so they would be conceded. He asked them to consider the matter very seriously.

Dr. D. LAWSON (Aberdeen, Orkney, and Shetland) said that for medical purposes the Act might be considered a composite Act. It consisted of two parts, which differed alike in principle and in detail. The first part was of a strictly insurance nature and sought to avail itself of the services of medical men on terms of sweated labour. The attitude of the profession to that part of the Act, until this was ended or satisfactorily mended, must continue to be one of uncompromising, inveterate, and implacable hostility. The second part, which dealt with sanatorium benefits, was entirely different. Under it medical men, in the terms of the report of the Astor Commission, were to be provided with a minimum salary of £500 and a house. There was no question there of sweated labour. With that part the profession had no quarrel; it was being dealt with fairly and honourably, and ought to assist in working it. With the object of assisting the profession to obtain satisfactory terms under what he had called the first part, it was urged that the Association should use its influence with its members to induce them not to assist in the working of what was called the second part. If they insisted on placing a ban upon these appointments, he did not think it would operate in that manner. On the contrary, he maintained that such action would weaken their hands in dealing with the second part by alienating the great mass of moderate public opinion from the British Medical Association and its aims, and adding to the mass of opposition which must be overcome if they were to succeed in the larger issue covered in the other part. The sanatorium benefit portion of the Act was now in existence, and the posts under the Act must and would be filled, no matter what the meeting decided. In his opinion, in refusing to have anything to do with sanatorium benefit the meeting would be doing wrong. In so acting it would be doing an injustice to members of the Association and would be putting itself in an untenable, false, and therefore weak position.

Dr. H. T. BARTON (Blackpool and Isle of Man) said that in Blackpool, to which many phthisical patients were sent to stay and not a few to reside, the profession recognized that there was a difficulty in standing out with regard to sanatorium benefit, but they were willing to stand out and not touch the work until their terms were granted. He thought the profession stood to gain in the future if it stood firm.

Dr. T. D. ACLAND (Marylebone) begged the Representatives not to act as politicians, but as physicians. The profession was responsible for the existence of sanatorium benefit. It had been instructing the public for many years in the way in which the great question of tuberculosis ought to be dealt with, and, now that the means of combating the disease which the profession had been urging for years past upon the Government had been brought into existence, there ought to be no going back. If the question of sanatorium benefit were not excluded, something worse than a crime would be committed—a blunder. The Association stood to gain nothing and to lose everything. The sympathy of the public would be lost, and the profession would be dishonoured.

Dr. G. W. EUSTACE (Chichester, etc.) thought that if sanatorium benefit were not excluded it would be laying down the cricket-bat and taking up the brick-bat. It meant, in the words of their chief opponent, "not business, but blackmail"; it would be similar to the suggestion of the transport workers in London when they thought of cutting off the supplies to hospitals. The Association was not a registered trade union, and he urged the Representatives not to descend to methods which trade unionists themselves had refused to adopt.

Dr. R. M. BEATON (St. Pancras and Islington) said it had been said that it would never do to go against public opinion, and if it were thought public opinion was against them the proper course was to instruct public opinion. The whole point of the amendment was that sanatorium benefit was to be provided in accordance with the wishes of the British Medical Association. What were those

wishes? Generally they were that the medical practitioner should be fairly dealt with, and he thought that was the wish of the public. Any one who had read the Astor report must feel convinced that the position of the medical practitioner was a very unfortunate one; he was under the control of the man at the dispensary; he had to work into the hands of the man in the sanatorium. The man at the dispensary had a right to go to the medical practitioner's patients at their homes and deal with them without his consent. The wishes of the Association could not be carried out if the wishes of the man who drew up the Astor report were to be fulfilled. If medical practitioners said they were willing to bring sanatoriums into existence and themselves carry out dispensaries for the treatment of consumption, they would have the support of public opinion. Such a thing was not impossible, for already in London there was a dispensary for the treatment of consumptives run by local medical practitioners, staffed by local men, and under their control.

Dr. M. DEWAR (Edinburgh and Leith) said he had an instruction to vote for Recommendation X in its entirety, but he would feel less difficulty in doing so if sanatorium benefit were exempted. The reason was that since coming to Liverpool new facts and new information had altered his opinion to a certain extent as regarded sanatorium benefits. If the meeting rejected the proposition now before it, sanatorium benefit would be administered by medical officers of health who would be compelled by the County Councils to take up the work or resign. It would be a very serious step for the Association to take to come to a decision which would drive medical officers of health into choosing between resignation of their appointments or of membership of the Association. If sanatorium benefit were declined by the medical profession Mr. Lloyd George would say, "Where is the vaunted nobility and humanity of the profession whose members refuse to attend these poor tuberculosis patients and stamp out the white plague?" It would also give the Chancellor of the Exchequer an opportunity of putting the burden, the stigma and the weight of the failure on the shoulders of the profession and take it off his own. That was what he had been aiming at for the last six months. Furthermore, in the cardinal points there was no mention of sanatorium benefit. He hoped it would be exempted.

Dr. BECKETT-OVERY (Kensington) had been asked by Dr. Lyster, who was not able to be present, to put one or two points before the meeting. Dr. Lyster, as a medical officer of health, was engaged in carrying out a scheme under the Act by the order of the local authority for conferring sanatorium benefits which comprised domiciliary and other forms of treatment. If sanatorium benefit were not excepted from the penal clause, medical officers of health would be forced to resign their positions or resign from the Association. Sanatorium benefit according to the Act and the regulations must be given by every local authority, and it did not concern the medical profession to inquire whether there was enough money or not at the present moment. Logically, if proper conditions, including a proper fee, were fixed and local authorities were willing to pay it, it would be the height of absurdity for the profession to refuse to take its share in sanatorium benefit because it was allied to the National Insurance Act.

Dr. EVAN JONES (City of London) was instructed by his Division to vote against taking the question of sanatorium benefit out of the operation of Recommendation X. They felt that sanatorium benefit should follow medical benefit. A short time ago the practitioners in the City Division had successfully launched a dispensary of their own for giving these benefits, for they knew perfectly well that if the sanatorium did come in the work would drop out of their hands altogether. No money had been provided under sanatorium benefit for the general practitioner, as any one would find who had gone into the matter. What grounds were there for the assumption that sanatorium benefit as provided by the Government would be in any way different from medical benefit, or to assume that the Government was going to Parliament to ask for another million or two in order to provide the additional money, without which there would not be a penny left for the general practitioner?

Dr. TODD (Sunderland) supported the proposal to make an exception as to sanatorium benefits on economic grounds, on the ground of humane thought, and on the ground of tactics. With regard to the profession organizing its own dispensaries, they had been told that with the greatest efforts it was not possible to organize a scheme for a medical service before January next, and, therefore, how was it possible now to organize dispensaries, as had been suggested? If they took the step of not excluding sanatorium benefits, it would be the greatest blunder the profession ever made. They had more than enough work at the present time, and, therefore, why load the ship, or, as had been said, cut the bottom out of it, and so have another *Titanic* disaster?

Dr. C. G. MEADE (Scarborough, York) said that in this matter the enemy was not the Government, but tuberculosis, the enemy of the British race. Anything the profession could do to stamp out that disease it should do, even if it had to make great sacrifices.

Dr. H. J. MACEVOY (Willesden) said that as the wishes of the Association with regard to carrying out sanatorium benefits were not known, if this amendment were approved the meeting would be simply passing a form of words which it could not explain. The logical course would be to make up their minds as to the policy of the profession with regard to the administration of sanatorium benefits.

Dr. H. H. WHAITE (Birmingham Central) asked whether there was any assurance that the sanatorium benefits were to be carried out in accordance with the wishes of the Association? Without that safeguard he was opposed to the benefit being excluded from the resolution. Before the Association could express its approval or otherwise of the methods of carrying out sanatorium benefits some time must elapse. Meanwhile there would be applications from all over the country for whole-time appointments. The question of the treatment of consumption was being brought forward in a way that suggested that the disease had just been discovered, whereas the profession had been treating it and would go on doing so—if not under a Government scheme, then under its own scheme. He admitted that they might be placing a weapon in the hands of Mr. Lloyd George, but on the other hand, if they did undertake sanatorium benefits they were not giving him a weapon, they were yielding a citadel. There was nothing to prevent the profession offering to the public an alternative to the Government scheme.

Dr. W. E. THOMAS (North Glamorgan and Brecknock) supported the amendment on behalf of his Division. The question had been taken up in Wales some years before it was dealt with to any large extent in England. What had taken place in Wales showed that there at least they were united. The rights of the general practitioner were maintained. The Tuberculosis Commissioner was appointed as a consultant to carry on the treatment in consultation with the general practitioner. There was no part of the kingdom where the organization of the profession was stronger than in the South Wales and Monmouthshire Branch. In loyalty to the Association the medical practitioners in Wales had carefully abstained from applying for posts.

Dr. J. E. O'SULLIVAN (Liverpool) said that the all-important point was that the profession should be united. If it were to attempt to differentiate between medical benefit and sanatorium benefit it would be courting defeat. They had heard many platitudes about public opinion, but he did not think the profession should be exploited on that ground.

Mr. E. A. DORRELL (Hampstead) suggested that the amendment could not be reconciled with the decision of the meeting to break off negotiations. Unless negotiations were continued with the Government their wishes as to sanatorium benefit, whatever it implied, would not be obtained. It was not known yet, however, what those wishes were. It was suggested, as a matter of tactics, that the public would be alienated if the profession did not undertake to administer sanatorium benefits. On the other hand, it was said that the general public did not know the difference between medical benefit and sanatorium benefit, and would not understand why the profession should object to the one and accept the other. Mr. Lloyd George had made the point that in Wales the profession was weakening in their opposition to the Act, because of the acceptance of positions in connexion with sanatorium benefit. The profession must fight actively and not sit on the fence.

Dr. MACLEAN agreed with Dr. O'Sullivan that the essential thing was to preserve the unity of the profession, but if the ban upon sanatorium benefit as applied to Wales was not removed, the profession in the Principality would be divided. He was well aware of the undesirability of referring to the Crown in matters of this kind, but he would just mention that the patron of the Welsh Memorial, His Majesty the King, was peculiarly interested in the working of sanatorium benefit as applied to Wales. If they decided not to remove the ban upon sanatorium benefit would the decision be effective? In his opinion it would not. What they were deciding at the moment was not whether sanatorium benefit should be operative, but who should work it. Was it going to be done by whole-time officers, or was the general practitioner to have his share?

Dr. T. R. WALTENBERG (Manchester, Salford) said that the Representative Meeting had already undertaken not to work under the Act unless the minimum demands were granted, and he strongly opposed working any part of the Act, including sanatorium benefit, until those demands were met.

Dr. T. B. HEGGS (Canterbury and Faversham), replying as the mover of the amendment, said that sanatorium benefit was a weak rock for the profession to stand upon, because this part of the Act could be worked without them. The scheme had nothing to do with medical officers of health; it was to be worked by sanatorium experts, and nothing the Association could do would alter that. The existing organization would allow of existing practitioners carrying out domiciliary treatment and being paid for it by the Government. Their demands were formulated in the Report of Council (BRITISH MEDICAL JOURNAL SUPPLEMENT, July 6th, p. 16). It was intended that sanatorium benefit as far as possible should be carried out by the general practitioner, that domiciliary treatment should be done by the general practitioner, that the work should be properly paid for, and that payment should be per attendance and not per capita. There was nothing in the Memorandum of the Local Government Board and the Regulations which would prevent those points being granted. The demands of the profession should be formulated and sent to the Government with a statement that it was determined to abide by those conditions, and provided they were granted would work sanatorium benefit.

A roll call was taken on the amendment, with the following result:

Ayes	137
Noes	54
Not voting	16

Dr. W. BICKERTON EDWARDS (Swansea) mentioned that his Division was in a very difficult position with regard to appointments in Wales. He asked whether, in the event of the ban on sanatorium treatment being removed, medical men who had applied for and been appointed to posts were to continue to occupy them while loyal members of the Association remained outside.

The CHAIRMAN said that was an important question, but it could not be answered at that stage.

On Clause 3 of Recommendation X, as amended, an amendment by Dr. T. M. CARTER (Bristol), seconded by Dr. SCOTT WILLIAMSON (Bristol), to substitute for the last clause the words—

> Until such time as the Association is satisfied that its demands will be met by the Government regarding medical benefit and sanatorium benefit respectively,

was ruled out of order.

An amendment by Dr. T. D. ACLAND (Marylebone), seconded by Dr. H. BECKETT-OVERY (Kensington), to add at the end of the motion the words—

> But that no action be taken with regard to sanatorium benefit until after the next Representative Meeting,

was withdrawn.

Dr. A. H. WILLIAMS (Harrow) moved an amendment to add the following words:

> And that the appointments already made in defiance of the wishes of the Association be cancelled.

He observed that the appointments so far made were in defiance of the wishes of the Association, and loyal members had suffered by their loyalty, in that they did not apply for them. In removing the ban from the working of the sanatorium benefits, it was their duty to see that loyal members did not suffer, and it should be made one of the conditions of the removal of the ban that the appointments be again thrown open, so that members of the profession should all have an equal chance.

Mr. J. HOWELL EVANS (Westminster) seconded.

The meeting here adjourned for lunch. On resuming,

The CHAIRMAN said he had been asked by Dr. M. G. BIGGS (Council) whether a motion to allow sanatorium benefits to be administered would not be in direct contradiction to Minute 78 of the last Representative Meeting, and whether a resolution of a previous meeting could be rescinded without notice. He ruled that a decision of the Association on a matter of policy put everything in contradiction to it out of order. The motion referred to was not a decision of the Association; it was a tactical motion and was subject to such amendment of tactics as might be decided by a subsequent meeting. The motion, therefore, was not out of order.

Dr. WILLIAMS (Harrow) on a suggestion by Dr. FOTHERGILL that it should take the form of a rider, withdrew the amendment.

Dr. NAPIER JONES (Reading) moved and Dr. F. W. GOODBODY seconded some verbal adjustments of the third clause of Recommendation X, as amended, and it was then carried in the following form:

> That the British Medical Association calls upon all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit, provided that be carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

A rider by the Brighton Division was agreed to as follows:

> That the foregoing resolution shall not preclude any medical officer of health from giving advice to public bodies in his official capacity.

ORGANIZATION OF THE PROFESSION.

The following rider by the Bath Division was agreed to:

> That meanwhile all steps be taken to perfect the organization of the profession and to increase the Central Insurance Defence Fund.

ADMINISTRATION OF SANATORIUM BENEFIT.

Tuberculosis Dispensary Staff.

Mr. T. JENNER VERRALL brought forward the recommendations of the State Sickness Insurance Committee dealing with the establishment of proper conditions for the administration and carrying out of sanatorium benefit. He moved:

> That the chief tuberculosis officer should be a whole-time officer and confine himself to diagnosis and consultative work. The rest of the staff of the dispensary should, if possible, be formed of local medical practitioners serving on a rota.

Dr. T. M. CARTER (Bristol) moved an amendment:

> That the diagnostic and consultative work be done by local consulting physicians and surgeons acting on a rota, and the routine treatment and inspection by local medical practitioners serving on a rota. The clerical and internal administrative work to be under the direction of the staff of the medical officer of health.

Dr. Carter said that the question involved in this amendment had had the very careful consideration of the Division he represented. The enormous amount of work which the State Sickness Insurance Committee had had to do on the question of medical benefits had caused them to put aside for a long period the considerations on the question of sanatorium benefit, and it was only at a very late date that its great importance and imminence had been realized. The chief criticism on the recommendations of the Astor report was as to the position of the general practitioner in the matter; the position of the consultant was left entirely out of consideration. It was doubtful whether much of the work would ever come to the general practitioner under the proposals of the Astor report. It was urged that much of the domiciliary work could be done by the general practitioner, and also—by

acting on a rota—much of the dispensary work. This still left it open for the consultant to do the more difficult diagnostic work. The recommendations of the Committee appeared to be that not only the interests of the general practitioner but also the interests of the public were best served by tuberculosis work being done by the general practitioners. If the general practitioner was in need of help of a consultative nature on any difficult problem of tuberculosis prognosis, to whom would he rightly turn? He thought the answer would be, To those men who had been engaged for years in general consultative work. If the position that the whole-time tuberculosis officer was to do the consultative work were accepted, there would be established all over the country in a generation or two men run when young into a mould, with a limited idea as to a particular method of dealing with the disease, and they would exclude those men who had been looking at the problem from a much wider standpoint.

Mr. C. E. S. FLEMMING (Council) supported the amendment. He said that in the Astor report there was too great a tendency to specialism in the treatment of consumption. The specialists referred to in that report were really specialists in sanatorium treatment or specialists in tuberculosis treatment. Neither was wanted particularly as a tuberculosis officer. One of the duties of the tuberculosis officer would be to say which cases were best suited for treatment in the sanatorium. He was not likely to be able to say that as the resident officer of the sanatorium. The best specialist for the treatment of consumption was the general practitioner who had been, by force of circumstances, during the whole of his practice devoting his attention almost every day to the treatment of consumption.

Dr. R. E. HOWELL (Cleveland) said he was in full sympathy with what Dr. Carter had said. The recommendation of the Committee defined the work to be done by the tuberculosis officer as consultative; he had nothing to do with treatment. It was left to the medical practitioner in a district to choose his own consultant.

Dr. G. PARKER (Bath and Bristol, etc.) agreed with Mr. Flemming. It was proposed to take away the work of the consultant—the man who had made a lifelong study of these matters—and to hand it over to a body of 300 young men who were to be specialists in this one matter and nothing else. Under the Memorandum tuberculosis meant not only phthisis, but also surgical tuberculosis. How was that to be carried out unless they had the services of the best surgical experts of the day who were to be found on the consulting staffs of the hospitals? He was strongly of opinion that the proposal was neither for the benefit of consultants nor of the public.

Dr. MACLEAN, although appreciating the objections of Dr. Carter and Dr. Parker, was not in favour of the amendment. The meeting had come to a decision that sanatorium benefit should be excepted, the dominant reason being the protection of the general practitioner. The proposed amendment connoted a scheme which was impracticable and extremely expensive; it was impracticable because in very few areas were there the necessary consulting physicians and surgeons. It would be extremely expensive because they were asked to arrange a rota of consulting physicians and surgeons, and the question arose what they would get those men to work for, and how much would be left to the general practitioner?

Dr. DOUGLAS STANLEY (Birmingham Central and Walsall) supported the amendment. Unless it were passed there would be a series of young men put into very responsible positions, hall-marked, if he might use the expression, by the Insurance Act, Sanatorium Benefit Department. Some little time ago he was present at the selection of a gentleman who occupied such a position, the chief requirement and the only question asked was what was his administrative experience? It was advisable to make it not only possible but easy for those who had given a number of years' study to the work to be appointed.

Mr. E. B. TURNER (Kensington), in speaking against the amendment, said that the recommendations were drawn up by the subcommittee which had carefully studied the Astor report, and which had before it all the information it could get. Speaking from his experience of the meetings of the Advisory Committees and of the State Sickness Insurance Committee, he was sure the Government intended that the chief tuberculosis officer should be a whole-time man, and the best they could hope to do was to ensure that he should simply confine himself to diagnosis and consultation. He was quite sure that if the proposal of the amendment was made an essential condition of working sanatorium benefit it would mean that the profession would never get a chance of doing the work.

Dr. LAWSON (Aberdeen, Orkney and Shetland) thought that the objections that had been raised were based on unsound facts. It was presumed that the posts would be filled by whole-time officers who would be young and inexperienced men. There was no ground for that assumption. In his opinion, those posts could be best filled by men in general practice, and he thought that such men would be glad to apply for the positions.

Dr. E. G. C. DANIEL (Croydon) thought the amendment bristled with difficulties. What was to happen in the case of small towns, where there were no consultants and where all the medical men were general practitioners, and on occasion were consultants among themselves? Was a man to be a consultant one month and a general practitioner the next?

Dr. BUTTAR (Council) was in agreement with Dr. Maclean and Mr. Turner. He thought the Association recognized that whole-time officers would be appointed to tuberculosis dispensaries, and that those officers must be "caged" in their dispensaries, because all the rest of the work ought to be left in the hands of the men most capable of doing it—the general practitioners.

Dr. EDWARDS (Swansea) inquired if the tuberculosis officer would have the right to override the diagnosis of the general practitioner.

The CHAIRMAN replied that obviously the nature of the question under consideration would determine to a certain extent which was the better opinion. Sometimes the question would have to be decided from a medical point of view, and sometimes from the administrative point of view. With that explanation he thought the Representatives must answer the question for themselves.

Mr. H. F. DEVIS (Bristol) said he had voted for the amendment of the third clause of Recommendation X with the reservation that if the safeguards of private practice under the tuberculosis scheme were not, in his opinion, sufficient he should vote against it on the Report stage. He did not think the Committee's report adequately safeguarded the general practitioners, for the reason that the Government intended that the chief men at the tuberculosis centres should be whole-time officers, who would probably be young men with very little experience of general disease or tuberculosis. His experience of administrative work taught him that if there was a whole-time officer, taking the official point of view, he would drive the thin end of the wedge in deeper and deeper until he had destroyed private practice so far as that particular work was concerned. With regard to efficiency, would any one call in a young man fresh from hospital as a tuberculosis consultant? He would call in a consultant, or, in an isolated district, he would call in a fellow practitioner whom he could trust.

Mr. DEARDEN (Manchester West), whilst thinking that consultants ought to have every consideration, agreed with Dr. Maclean in pointing out that there were districts where there were no consultants. He also recognized that there must be whole-time appointments.

Dr. T. M. CARTER (Bristol), dealing with the point as to whether a general practitioner could not consult whatever consultant he chose, even although there were whole-time tuberculosis officers doing the work, expressed the opinion that the general practitioner could do so, but, he asked, who would pay that consultant? With regard to the areas without consultants, what did people in such areas now do? If the matter were so urgent and important for the public health, surely consultants could be found who would go to all parts of the country when serious difficulties arose in connexion with treatment or diagnosis in tuberculous disease. Dr. Maclean had asked who was to choose them. Obviously the body that chose the consultant was the body who paid, whatever that body might be.

Dr. MACLEAN explained that he had not asked who was to choose the consultant, but who was to say that a man was a consultant within the meaning of the amendment.

Dr. CARTER, continuing, thought that the persons who paid the consultants would also choose the consultant from

however in the particular area might be considered to have the status which gave him the right to act as a consultant.

The amendment was lost.

Dr. H. Harvey (Liverpool) moved to omit the words "if possible," so that the last part of the resolution would read:

> The rest of the staff of the dispensary should be formed of local medical practitioners serving on a rota.

His Division was extremely anxious that the interests of the general practitioner should be safeguarded.

Dr. Maclean said he understood that by the word "rota" it was meant to leave domiciliary treatment entirely in the hands of the general practitioner. If that was so it removed all misunderstanding. He suggested that "where possible" should be substituted for "if possible."

Dr. Todd (Sunderland) remarked that one of the chief reasons for putting in the words "if possible" was that there might be areas where the general practitioner would not undertake these duties.

The Chairman pointed out that what was proposed applied only to the staff of the dispensary, at the head of which there should be a chief tuberculosis officer who should not be engaged in treatment. The motion as it stood did not in any way apply to domiciliary treatment.

The amendment was lost, but it was agreed that the phrase "if possible" should be "where possible."

Mr. T. Jenner Verrall (Chairman of the State Sickness Insurance Committee) said that the terms of the resolutions submitted by the Committee had been very carefully considered, and he could not give his consent on behalf of the Committee to the amendment proposed.

Dr. Heggs (Canterbury and Faversham) objected to general practitioners serving on a rota, as it meant treatment at a dépôt, which was impossible in a country district, as each medical man on the rota would be attending the patients of other practitioners. His Division thought that the words "or otherwise" at the end would safeguard the general practitioners against having all their patients forced into the dispensary.

Mr. Verrall said that if the motion was passed it would be left to the general practitioner in attendance to decide whether he should recommend his patient to obtain dispensary treatment or whether he would be best treated by domiciliary treatment.

Dr. Macdonald (Chairman of Council) thought there was considerable confusion between the words "where possible" and "or otherwise"; if any words could be found to meet that difficulty it would be advisable to have them introduced.

Dr. Heggs (Canterbury and Faversham) did not think that the explanation which had been given met the point with which he was concerned. The motion, as at present framed, opened up the possibility of one practitioner attending another's patients, which would be objectionable if it was left open; but, by inserting the words "or otherwise," it might be possible for the Committee to think out some arrangement whereby the general practitioner could be utilized. He thought the better plan would be to insert the word "either," so that it should read "either on a rota or otherwise."

This was agreed to, and the motion then read:

> That the chief tuberculosis officer should be a whole-time officer, and confine himself to diagnosis work. The rest of the staff of the dispensary should, where possible, be formed of local medical practitioners serving either on a rota or otherwise.

Dr. Pope (Council) thought that a medical officer of health who all his life had been accustomed to doing for the most part routine and statistical work was not the right man to decide what treatment should be applied to a person suffering from phthisis. If they expected a really good consultant to give up his practice to take up the work of diagnosis and consultative work in numberless cases he was afraid they would be disappointed, and they would be introducing a new system of whole-time officers to do work for which they were fitted neither by training nor experience.

Dr. Fothergill (Brighton) moved as an amendment to substitute the words:

> The treatment at a dispensary should be conducted by local general practitioners.

Dr. J. F. Walker (Mid-Essex) did not know whether the meeting quite realized that in the future the dispensary treatment would be by far the greater part of the treatment for tuberculosis. Therefore, it was their duty to see that the general medical practitioner had as much to do with it as possible.

Dr. Macdonald (Chairman of Council) said he entirely disagreed with the remarks of the last speaker. It was a very great question whether the tuberculin treatment would be the treatment of the future. He took it that any general medical practitioner who had done any work at all was quite capable of carrying out the tuberculin treatment. There was a great advantage in seeing the patient in his own home in case any reaction took place. Also the danger was avoided of having to send a patient home from a dispensary with a high temperature. He supported the view that the position of the whole-time officers should be purely diagnostician and consultant. Even if he had to have five or six assistants they would be whole-time officers, and they would simply confirm diagnosis or otherwise, and decide as to whether a case was suitable for sanatorium treatment. The principle was to see that there was as little treatment as possible at so-called dispensaries, and that the treatment of tuberculous patients should be carried on at their own homes.

Dr. Fothergill's amendment was then put to the vote and lost, and the motion, in the words given above, was approved.

Recommendation by the Patient's Medical Attendant.

Mr. T. Jenner Verrall (Chairman of the State Sickness Insurance Committee) moved:

> That those requiring attention at the dispensary should be introduced only on the recommendation of a medical practitioner actually in attendance upon the patient.

Dr. T. D. Acland (Marylebone) asked if it was meant to exclude anybody who had no doctor. There were many cases of tuberculosis in which no doctor had been consulted; the patients did not even know they were ill.

Mr. Verrall replied that, whatever difficulties it might create, the Committee did intend that to encourage those members of the community who suspected themselves of being ill to go to a general medical practitioner instead of rushing to the dispensary.

Free Choice of Doctor in Domiciliary Attendance.

The following recommendation of the Council was agreed to:

> That there should be free choice of doctor by patient and of patient by doctor in all cases where domiciliary attendance is given.

Separation of Dispensary Service from that of Medical Charity.

The following recommendation of the Council was agreed to:

> That no tuberculosis dispensary should be opened or beds be provided for treatment of those in receipt of sanatorium benefit at a voluntary hospital or infirmary, except on the condition that the organization is entirely independent of the voluntary hospital or infirmary, the accounts of the departments being kept separate; and that the services of all medical practitioners are paid for.

Mr. H. Chisholm Will (Dartford) withdrew an amendment to insert the words "suffering from pulmonary tuberculosis."

Provision for Treatment of Children.

Mr. Verrall moved:

> That the provision to be made in any district for the treatment of children found to be suffering from tuberculosis should be in accordance with that scheme of the Association for the treatment of school children found defective on medical inspection which has been approved by the local medical profession.

Dr. Heggs (Canterbury and Faversham) moved an amendment to make the resolution open with the words:

> That the provision to be made in any district for the treatment of all insured persons suffering from tuberculosis should be in accordance, etc.

His Division deprecated two authorities having the control of tuberculosis. Clause 17 of the Act allowed dependants,

including children, to become eligible for sanatorium benefit, and it was expected that every Insurance Committee would adopt that system. Therefore he thought the Government should make itself responsible for the treatment of tuberculosis, quite independently of the local education authority.

Dr. MACDONALD (Chairman of Council) opposed the amendment on the ground of expense. The Government would prefer to transfer part of the cost of treatment to the Education Department than to ask for further money.

The amendment was withdrawn and the motion was agreed to.

Conditions of Employment of Nurses.

Mr. VERRALL moved:

That nurses engaged in giving domiciliary attendance should be subject to the conditions of service approved by the Association for the conduct of nurses engaged by nursing associations in so far as these are applicable.

Dr. BENHAM (Brighton) moved, and Dr. FOTHERGILL (Brighton) seconded the following amendment:

That all words after "nursing associations" be deleted.

The amendment was lost and the motion was carried.

Domiciliary Attendance.

Mr. VERRALL moved:

That domiciliary attendance should be given by the tuberculosis officer, or by any whole-time assistant, only as a consultant to the practitioner in attendance.

Dr. G. PARKER (Council) asked how a tuberculosis officer was to act as a consultant in both medical and surgical cases.

Mr. VERRALL accepted a suggestion by the CHAIRMAN that the motion should read:

That no whole-time tuberculosis officer or whole-time assistant shall give domiciliary attendance except as a consultant to the practitioner in attendance.

Mr. Verrall agreed with Dr. Parker that it would be practically impossible for an officer to act satisfactorily both as medical and surgical consultant, but if he were not a satisfactory consultant his help would not be sought. If his help were sought for domiciliary attendance, whether consulted as a surgeon or physician, the Committee said that it should be only as a consultant.

Dr. HASLIP (Westminster) was not clear as to the term "whole-time assistant." They had been told that a whole-time officer should be a specialist, and he asked, What was an assistant specialist?

Mr. VERRALL, in reply, referred to the resolution already passed with regard to the staff of the tuberculosis dispensary, and said that when discussing that motion it had been pointed out that it was quite possible that in exceptional cases there would have to be assistant whole-time officers connected with dispensaries, and that the latter part of the recommendation of Council to which he referred would not be applicable or workable. The Committee wished to make regulations with regard to head tuberculosis officers which should be applicable to any assistant officers who might also exist, so that those officers would be confined to consultative work.

Dr. T. BUSHBY (Liverpool) moved an amendment to make the motion read:

That no whole-time tuberculosis officer or whole-time assistant should give domiciliary attendance except as a consultant to the practitioner in attendance and at his request.

Mr. VERRALL accepted this, and the resolution was agreed to in that form.

Representation of Profession on Committees.

Mr. VERRALL moved:

That the local medical practitioners should have adequate representation, by means of practitioners elected by the local Medical Committee, on Consultative Committees having control of dispensaries, and on Voluntary Care Committees.

Dr. LOWSON (North Middlesex) thought that as negotiations with the Government had been broken off, there were no local Medical Committees, and suggested that it would be better to read "Provisional Medical Committee."

Mr. VERRALL thought there must be a local Medical Committee of some sort, not necessarily under the Act, but a Provisional Medical Committee or a substitute for that.

The matter was not pressed.

Dr. NAPIER JONES (Reading) moved that the representation should be stated as "one-sixth." He thought that the stage had now been reached when they might say what they wanted in plain and unmistakable language.

Dr. MUNRO (Maidstone) seconded.

The amendment was lost, and the motion was agreed to.

Reports from Lay Persons.

On the motion of Mr. VERRALL, the following motion was agreed to:

That the reports to be obtained from Voluntary Care Committees and nurses should be confined to such subjects as are not included amongst the duties of the medical attendant.

Patients not Recognized for Sanatorium Benefit.

Mr. VERRALL moved:

That a case of tuberculosis diagnosed as such by a practitioner and confirmed by a tuberculosis officer should not be liable to be treated in connexion with ordinary medical benefit. If sanatorium benefit is not available, the case should be treated as an extra under medical benefit.

Major E. C. FREEMAN (North-East Essex) moved to insert the words "at a consultation" after the word "officer."

Dr. FOTHERGILL (Brighton) suggested that this would rather tend to weaken than strengthen the position of the practitioner.

The amendment was lost, and the resolution was agreed to.

Salaries of Whole-time Medical Officers.

Mr. VERRALL moved:

That the commencing salaries for whole-time medical officers engaged in tuberculosis service should be, for junior or assistant whole-time medical officers, not less than £300 per annum, and for senior whole-time officers not less than £500 per annum. These salaries in all cases must be exclusive of travelling and other official expenses.

Dr. C. G. MEADE (Scarborough, York) moved an amendment that "£750" be substituted for "£500."

This was put to the meeting and lost.

Dr. R. E. HOWELL (Cleveland), as an illustration of the importance of this motion, said that in a certain town in the north a tuberculosis dispensary and also a sanatorium were being started. The Astor report recommended that there should be a medical officer for every 150,000 inhabitants. The town he referred to was not quite so large as that, but it was proposed to start a dispensary, and the town council was busy now trying to find a whole-time medical officer. The salary they offered him, in spite of the Astor report, was £350. For the sanatorium appointment they offered about £200. Therefore he hoped the motion would be passed with a very strong backing, because members ought to know that they should not take appointments at less than those figures.

Dr. MAJOR GREENWOOD (City of London) proposed to substitute "£250" for "£300." Mr. E. H. WILLOCK (Croydon) seconded, but the amendment was rejected.

Dr. SAMUEL HUGHES (Southampton) moved to add the words, "there should be an automatic increase in these salaries," but this was not accepted.

Dr. BENHAM (Brighton) moved to add the words, "and these officers should be entitled to a superannuation allowance," but this also was lost.

The motion was then agreed to.

Tenure of Office.

On the motion of Mr. VERRALL, it was agreed:

That a medical officer engaged in the tuberculosis service who by the terms of his appointment is restricted from engaging in private practice as a medical practitioner shall not hold office nor be appointed for a limited period only, and shall be removable by the recognized central authority, and not otherwise.

Remuneration of Part-time Officers.

Mr. VERRALL moved:

That the payment to be received by medical practitioners appointed on a rota, or otherwise, to give medical attendance at the tuberculosis dispensary should be at a rate of not less than £65 per annum for an attendance of two hours per week.

In reply to a question, Mr. Verrall said the Committee had taken as a basis the amount demanded in connexion with school clinics for children, which was £50; £15 was added because school children had holidays and tuberculosis patients had not. (Laughter.)

Dr. Heggs (Canterbury and Faversham) withdrew an amendment to substitute "£50" for "£65," and an amendment by Dr. H. Harvey (Liverpool), that "£75 be substituted for £65" was lost.

Mr. Verrall, in reply to a question, said that if the doctor did not give 104 hours' service a year, the intention was that he should divide the money as he divided the time with somebody else.

The motion was then agreed to.

Remuneration for Domiciliary Attendance.

Mr. Verrall moved:

That the payment to be made to medical practitioners for domiciliary attendance on patients certified to be suffering from tuberculosis shall be on a scale of fees and not by capitation.

Mr. Chisholm Will (Dartford and Woolwich) said it was the custom in his district to pay £1 a month to the medical practitioner in attendance on the patient after the patient left the sanatorium, the sum being based on 2s. 6d. a visit. Was that to be covered by the motion?

Mr. Verrall replied that the point was one that had not been considered, but at first sight he thought it would be covered.

Dr. Fothergill (Brighton) moved and Dr. Benham (Brighton) seconded the following rider:

That the minimum payments to be made be the following: (*a*) for report, 5s; (*b*) for consultation at surgery, with or without tuberculin injection, 3s. 6d.; (*c*) for visit at home of patient, with or without tuberculin injection, 5s.

Dr. Fothergill said the question of fees was so urgent that it was necessary to formulate them forthwith. He understood that for the report which had been asked for a fee of 5s. had been named, which seemed unreasonable. With regard to treatment at a surgery, medical men must be prepared to give an injection. It had been suggested that if an injection were not given, a lower fee might be paid. With regard to the amount at the surgery, he believed that was the fee suggested in some districts. He hoped the meeting would make the fees mentioned a fundamental part of the principle.

Dr. J. W. Johnson (Bury) thought it a matter to be settled by each Division for itself.

Dr. Todd (Sunderland) hoped the meeting would not accept the suggestion of Dr. Fothergill. It was a detail impossible for the meeting to deal with.

Dr. S. H. Long (Norwich) did not accept the view that the question was one of detail which need not be settled at once. Neither 5s. nor 3s. 6d. would be out of the way.

Dr. G. E. Halstead (Isle of Thanet) thought if the meeting were to insist upon laying down fees, those suggested by Dr. Fothergill were too large.

Dr. Meade (Scarborough, York) suggested that the question was affected by the nature of the country.

Mr. Verrall said that as Chairman of the State Sickness Insurance Committee he must leave the matter in the hands of the meeting, as it had not been previously considered. He had no theoretical objection to the fixing of the figures, but fixation was dangerous unless made with knowledge.

Dr. Lawson (Aberdeen, etc.) said that that portion of the Act was in operation at the present moment. Work was being done and paid for with Government funds, and the matter ought to be dealt with on the basis of collective bargaining. The medical profession would be at a great disadvantage if the Government were left to negotiate in each set of districts, and he hoped the rate of remuneration would be fixed.

Dr. Wynne (Leigh, Wigan) said that it was not only Government funds that were being dealt with. The Departmental Committee's report made it clear that any scheme for the administration of tuberculosis benefits must be for the whole of the community. He had asked the Commissioners and had received a direct reply from them. (Ironical cheers.) It was only a verbal one. (Laughter.) Their reply was that the whole of the cost of administration for uninsured persons must come out of local rates. In many parts of the country the rates were so high that they could not be raised any further. If medical men were to be tied down to hard and fast fees great difficulties would arise.

Dr. Fothergill replied.

A vote was taken by show of hands, and the rider was carried by 77 votes to 55.

Dr. Wynne (Leigh, Wigan) moved a rider:

That any provisional arrangements for the administration of sanatorium benefits be such as are satisfactory to the local Divisions of the British Medical Association.

He felt that in the temporary arrangements that were about to be made it would be impossible to embody all the resolutions that had been carried, but he knew that medical officers of health were anxious to secure the co-operation of general practitioners and to do nothing detrimental to their interests. He thought medical officers of health ought to be allowed to go to the Divisions, place their schemes before them, and ask if they were approved, and if not to make any alteration that was desired, and then go back with the arranged scheme to the Insurance Committee.

Dr. F. J. Baildon (Southport) seconded.

In reply to a question from the Chair, Dr. Wynne (Leigh, Wigan) said his proposal only referred to temporary arrangements that would be made for the next few months while the permanent arrangements were being prepared.

Dr. Todd (Sunderland) on a point of order asked if any resolution was passed by the Representative Meeting which had not been submitted to and discussed by the Divisions, were the Divisions bound to abide by it?

The Chairman replied that all resolutions adopted by the Representative Body might be divided into two categories—formal and effective resolutions of the Representative Body, and those which were resolutions only of the Representative Body. In order to be a decision of the Association the motion must have been sent to the Divisions for a certain time and carried by a certain majority, otherwise it was a simple resolution of the Representative Body; but it would require a very important reason to justify its being disregarded.

Dr. Hoyle Whaite (Birmingham Central and Walsall) hoped the motion would not be passed, as it would only lead to trouble and difficulty in the Divisions.

Dr. Wynne (Leigh, Wigan), in reply, could not see that any grievance could come in, because naturally the local Divisions would be guided by the resolutions. They could see that their own interests were protected.

Dr. Easterbrook (Lothians) moved to add the following words: "Subject to the approval of the Council of the British Medical Association." It would be a safeguard to members that nothing would be done in a haphazard fashion by the Divisions, without some supervision by the Central body.

Dr. Maclean said they were faced on the one hand with a position which might have no safeguard at all—that was to say, no reference to the Divisions of any sort or kind; but on the other hand they might so tie things up that nothing could be done unless and until it was approved by the Council of the Association, and in all probability there would be difficulty in holding any meeting of the Council until early in October.

Dr. Martin (Cardiff) pointed out that unless there was some precaution such as suggested by the amendment it would be possible for the Division to fix a low rate, and once it was fixed it would be difficult to raise it.

Dr. Benham (Brighton) thought the resolutions should go down to the Divisions without any directions at all.

Dr. Easterbrook's amendment to the rider was put to the meeting and lost, and Dr. Wynne's rider was carried by 72 votes to 54.

Appointment of State Sickness Insurance Committee.

The meeting next dealt with a number of riders to the third clause of Recommendation X relating to the State Sickness Insurance Committee.

Dr. R. L. Langdon-Down (Richmond and South Middlesex) moved:

That a State Sickness Insurance Committee be appointed to consider any statements that may be made by the Government or the Insurance Commissioners in relation to medical or sanatorium benefit under the Act, as also the regulations to be drafted by the Commissioners, and to report on the

whole situation as soon as possible to the Divisions and to a Representative Meeting.

He said the motion aimed at providing machinery for continuity of action. It was absolutely necessary that a State Sickness Insurance Committee should be appointed. The functions it would have to carry out were to deal with statements as made in Parliament or in the press, or by the Government or other authorities. It might be objected that in regard to calling a Special Representative Meeting the motion would lead to expense, but he understood that in any circumstances another Special Representative Meeting would be necessary before the end of the year.

Dr. MAJOR GREENWOOD (City of London) opposed the motion. He said the State Sickness Insurance Committee had been appointed for a special purpose and that purpose had failed, and if another committee were appointed it should be appointed on the constitutional lines of the Association, half by the Representative Body and half by the Council.

Dr. A. MANKNELL (Bradford) opposed the motion as likely to be regarded as an indirect way of carrying Recommendation Y, providing for the continuance of negotiations.

The SOLICITOR, in answer to Dr. Durant, expressed the view that the validity of the pledges promising to hand in resignations to the State Sickness Insurance Committee would not be affected as long as the name "The State Sickness Insurance Committee" were retained.

Mr. TURNER (Kensington) moved the following amendment:

That the Council be directed to appoint a committee constituted from its own body called the State Sickness Insurance Committee, with additional members co-opted to represent the profession completely, which shall watch the situation and receive any communications which may be made with regard to the National Insurance Act.

Dr. LANGDON-DOWN (Richmond and South Middlesex) accepted the amendment, but suggested that Mr. Turner should add the words about reporting to Divisions and to a Special Representative Meeting.

The CHAIRMAN, in answer to Dr. Hughes (Southampton), said that the Committee proposed to be formed by Mr. Turner would have no power to discuss or negotiate. This would not apply, however, to sanatorium benefit.

Mr. TURNER (Kensington), in reply to Dr. Macdonald, said he thought it would be necessary to have representatives on the proposed committee from different districts in the United Kingdom. The idea was that the Council should themselves co-opt gentlemen whom they knew.

Dr. MACLEAN regretted that into the amendment the question of the constitution of the State Sickness Insurance Committee had been imported, because it was evident that its content was extremely wide. He thought it of the utmost importance that the Representative Meeting should keep in its hands the appointment of a majority as a State Sickness Insurance Committee. The status of the present State Sickness Insurance Committee, which was so eminently favourable, was in his opinion due to the fact that the Representative Meeting had appointed that Committee.

The CHAIRMAN, to simplify the procedure, put the questions: Was the meeting agreed that a State Sickness Insurance Committee be appointed? (Cries of "Agreed.") Was it agreed that the State Sickness Insurance Committee be appointed by the Council? (Cries of "No.") Was it agreed in the alternative that it be appointed by the Representative Meeting? (Cries of "Yes."

The CHAIRMAN then put it to the meeting:

That the Committee be appointed exclusively by the Representative Meeting.

On a show of hands this was carried.

At the suggestion of the CHAIRMAN OF COUNCIL, the CHAIRMAN asked the opinion of the meeting as to a joint Committee jointly appointed by the Representative Meeting and the Council. This was negatived.

On the question of the size of the Committee, Mr. VERRALL said that the last State Sickness Insurance Committee had 34 members, consisting of 24 originally elected, 4 co-opted, 4 *ex officio* members, and 2 women practitioners. Every member of the Committee had contributed very distinctly to its work, and, as its Chairman, he had not found the Committee too large to manage, although *a priori* he would not have started with a Committee of that size. The fact had to be considered also that the larger the Committee the greater the expense.

Dr. THOMAS BENNETT (Harrogate) said that although the Committee to be appointed was only, so to speak, a watching committee, it was none the less important on that account because the situation was still acute. The Branches must not be disregarded, and the Committee must be appointed so as to have the entire confidence of the Branches. They had had no Committee of the Association that had done so much to mollify and gain the confidence of the whole Association as the last State Sickness Insurance Committee.

Dr. MAJOR GREENWOOD (City of London) protested against the proposal to re-elect the whole Committee. In the metropolitan area there had been meetings of representatives of the groups when changes in representation had been agreed upon which would be prevented if the late Committee was re-elected *en masse*.

Dr. HOYLE WHAITE (Birmingham Central) moved that one member from each group, instead of two, be elected with power to co-opt. The expense of the Committee had been a very great drain on the Association, and there was not so much work for it to do in the immediate future.

The CHAIRMAN OF REPRESENTATIVE MEETINGS seconded. The meeting would understand from his last speech that he had been very far from intending to cast any reflection upon the present Committee. He would like to elaborate the motion so that the Committee should consist of twelve elected by grouped Representatives, four *ex officio* members who would come on in any case, that being a rule of the Association, six co-opted members instead of four, and two women practitioners.

Dr. H. H. WHAITE (Birmingham Central) accepted the alteration.

The CHAIRMAN put the motion:

That the State Sickness Insurance Committee be constituted as follows: twelve elected by the grouped Representatives, four *ex officio* members, two women medical practitioners; and that the Committee be empowered to add not more than six additional members.

This was agreed to, it being understood that the lady members would be co-opted on nominations by the associations of women practitioners.

Dr. R. L. LANGDON-DOWN proposed to empower the Committee:

To consider any statement that may be made by the Government or the Insurance Commissioners in relation to the medical or sanatorium benefits under the Act, and also the regulations to be drafted by the Commissioners, and to report on the whole situation as soon as possible to the Divisions, and to a Special Representative Meeting.

Dr. FOTHERGILL wished to know if it was to be understood that the new Committee would have power to negotiate.

Dr. MACLEAN did not wish the meeting to be afraid of the word "negotiate," but suggested the substitution of other words, such as "to watch our interests."

Mr. C. P. LANKESTER (Guildford) agreed. He suggested that the "watching" might be left more or less in the background, so that the public knew that it was a fighting committee, and one that would make it almost its first business to organize the Defence Fund.

Dr. LANGDON-DOWN accepted the following wording:

That it be an instruction to this Committee to watch the interests of the profession in relation to the Insurance Act, and also to report on the whole situation as soon as possible to the Divisions and to a Special Representative Meeting, and meanwhile take all necessary steps to perfect the organization of the profession, and to increase the Central Defence Fund.

The motion in this form was agreed to.

A PUBLIC MANIFESTO.

Dr. FOTHERGILL moved:

That it be an instruction to the Council to issue a letter to the public press explaining the position of the medical profession with regard to the National Insurance Act, and also to prepare a letter to be inserted in every local newspaper over the signature of the Chairman and Secretary of each Division.

He said that the profession was face to face with pernicious statements from the Government downwards, to the effect that it was out for its own interests entirely, ignoring those of the poor. They wanted to let it be known up and down the country, and the press was the only means of doing so, that what they intended was not to defeat the interests of the poor but to protect them, and they thought the Act in this respect was ineffective. They agreed that as originally suggested in principle it was good, but so long as it was not amended they would have nothing to do with it.

Dr. F. G. SWAYNE (Norwood) seconded.

It was decided to bring the matter up again on the Report stage.

Dr. J. FLETCHER (Chelsea) moved:

> That the State Sickness Insurance Committee be instructed to take whatever steps may be necessary to have all the resignations of contract appointments throughout the United Kingdom sent in forthwith.

He urged that it would be a good tactical move, and would enable the Government to see that they were in earnest, if their resignations were forthwith sent in.

The CHAIRMAN suggested that the following amendment by York be withdrawn:

> That the resignations of clubs be sent in forthwith, unless some unforeseen circumstances should necessitate its postponement.

Dr. C. G. MEADE (Scarborough, York) said it would certainly not be withdrawn. They wanted to know what their strength was, and if they were in a position to send in their resignations; if so, let them send them all in at once.

Dr. W. J. DURANT (Consett and Gateshead) said if the resignations were to be sent in, as he presumed they would be, it was desirable, on behalf of those who were going to fight this big battle, that some time should be given for their further organization. Reports from the Divisions all over the country were still being gathered in, and in many Divisions the work of organization was exceedingly poor. If they sent in the resignations now, they would be cutting their own throats. So long as they sent in the notices within the legal limits that was all that was required.

The amendment was lost.

Mr. VERRALL (Chairman of the State Sickness Insurance Committee), in reply to the point raised by Dr. Douglas that in some clubs six months' notice was required, said he had been informed that there were much fewer clubs in existence than was generally thought where a definite amount of time was fixed for the resignation of the contract, and in those cases it would fall back upon a "reasonable time," which was a matter of law or custom.

Dr. FOTHERGILL (Brighton) moved the following rider:

> That the honorary secretaries of all Provisional Medical Committees be instructed to send in the resignations of all contributory contract practice appointments at a date to be fixed by the State Sickness Insurance Committee, but not later than August 3rd, 1912.

He said the sending in of resignations was the best incentive for organization, and the sooner they were sent in the better.

Dr. L. J. PICTON (Stockport, etc.) said that in his district friendly societies and clubs had begun giving the doctors notice. If such a dramatic procedure as sending in of a large number of resignations was to be followed, it should take place immediately.

Mr. VERRALL (Chairman of the State Sickness Insurance Committee) pointed out that by the note at the bottom of the pledge the time for sending in resignations was left in the hands of the State Sickness Insurance Committee.

Dr. HASLIP (Westminster) referred to an instance in his district where a club doctor having three large clubs had already sent in his resignation, with the result that two of them had begged him to take the clubs on again, and had doubled his remuneration. (Applause.)

The CHAIRMAN suggested the following as consistent with the legal position and the desires of the Representative Meeting:

> That the resignation of contract practice appointments throughout the United Kingdom should be sent in at the earliest possible date consistent with the conditions of the pledge.

This was agreed to, the CHAIRMAN ruling out of order the following rider by the Norfolk Division:

> That the date on which the resignation of club appointments takes effect should be altered from January 15th to January 1st, 1913.

The meeting adjourned at 7.30 p.m.

Tuesday, July 23rd.

The Representative Meeting resumed its session in Committee on Tuesday, July 23rd, at 9 a.m. The minutes of the previous day's proceedings were amended and confirmed.

SANATORIUM BENEFIT.

Arising out of the following resolution passed the previous day:

> That the British Medical Association calls on all practitioners to refrain from applying for, or accepting, any post or office of any kind in connexion with the National Insurance Act, except in regard to sanatorium benefit, provided it is carried on in accordance with the wishes of the Association, until such time as the Government has satisfied the Association that its demands will be met,

Dr. BIGGS (Council) asked whether he was right in supposing that, under the terms of the resolution, every member of the British Medical Association was forbidden to undertake or retain any work under the sanatorium or tuberculosis scheme of the Act until the demands of the Association were granted.

The CHAIRMAN replied that the first part of the resolution applied to the acceptance of any post or office, and there was nothing to extend it beyond that to individual acts, which were governed by other resolutions. With regard to sanatorium benefit, "post or office" were accepted by the proviso stating certain conditions.

CUMTENENTS, HOSPITAL RESIDENTS, ETC., AND THE PLEDGE.

Mr. VERRALL moved:

> That practitioners in engaging locumtenents or assistants should insist that, previous to engagement, they shall have signed both the undertaking and the pledge of the Association; also that members of hospital staffs having influence in the selection of practitioners to fill resident appointments should do what they can to secure that those appointed shall have signed both these documents.

Dr. HUGHES (Southampton) moved to include "honorary visiting staffs" in the scope of the resolution. He wished to secure that in making any appointment to a hospital staff or otherwise the honorary and visiting staff should use their best endeavours to secure the appointment of men who had signed the undertaking and pledge.

Mr. VERRALL accepted the amendment on behalf of the State Sickness Insurance Committee, and the motion in the altered form was carried.

A rider by Mr. G. JACKSON (Plymouth):

> That the British Medical Association take steps to ensure that all newly qualified practitioners before leaving the hospitals should be requested to sign the undertaking and pledge, and to join the Association,

was agreed to.

On the motion of Dr. ROTHERHAM (North Lincoln), seconded by Mr. TREDINNICK (Shropshire and Mid-Wales), it was resolved:

> That it be an instruction to the Council to communicate with the Deans of the Medical Schools requesting them to point out to newly qualified men the advantage of becoming members of the British Medical Association, and thereby bringing before their notice the present position of the profession and its pledges.

RESIGNATION OF OUT-PATIENT DEPARTMENT APPOINTMENTS.

Dr. NAPIER JONES (Reading) moved:

> That this Committee is of opinion that the resignation of hospital appointments involving attendance upon out-patients is necessary, not only as a preliminary step towards the prevention of abuse of hospitals by insured persons, but also to protect the practitioners who depend wholly or in part for their livelihood on attendance upon the poorer class.

It seemed to him unfair that men should resign their appointments which were part of their livelihood when

other men in the same town did not resign appointments that brought them in nothing.

Dr. WALLACE HENRY (Leicester and Rutland) suggested that the matter be referred to the Council or State Sickness Insurance Committee for their consideration. This was seconded by Dr. HASLIP (Westminster), but after some further discussion both the rider and the amendment were withdrawn.

APPOINTMENTS IN CONNEXION WITH SANATORIUM BENEFIT.

Dr. W. E. THOMAS (North Glamorgan and Brecknock) moved a rider:

> That it be an instruction to the Council to take all such steps as are possible in order to again throw open for competition those whole-time appointments which had been filled under conditions contrary to the policy of the Association.

It was essential that everything should be done to assist the men who had been loyal to the Association.

Dr. A. H. WILLIAMS (Harrow) seconded, and the rider was agreed to.

The CHAIRMAN said there was a constitutional difficulty with regard to the following rider; he did not see what steps could be taken so long as the condition that they should make no communication to the Government was maintained:

> That no further appointments for the administration of sanatorium benefit be made until the regulations of the Commissioners as regards sanatorium benefits shall have received the approval of the Council of the British Medical Association.

Dr. J. T. MACNAMARA (Greenwich), in moving the rider, said that if the Chancellor did not accept the proposal, it would show that he did not mean to act loyally by the profession; it was open to the profession to withdraw the concessions it had already made with regard to sanatorium benefit.

Dr. EVAN JONES (City), who seconded, said that if the Divisions had to be told that the Representative Meeting was willing that practitioners should apply for appointments under sanatorium benefit, and at the same time to ask members of the Divisions to resign their appointments, there would be a great number of defections. The object of the rider was to avoid this.

Dr. J. A. MACDONALD (Chairman of Council) wished to ask the proposer and seconder exactly what they meant by the word "appointments." Did it refer only to paid appointments or to men who took up the work of administration?

Dr. J. T. MACNAMARA (Greenwich) said his intention was that it should apply to all appointments.

Dr. H. H. WHAITE (Birmingham Central) asked if this rider were not reopening the whole discussion.

Dr. MACLEAN agreed with Dr. Whaite. After a full discussion on the previous day it had been decided to except sanatorium benefit, and now the meeting was building up what might be for the executive body an extremely difficult position. To say that these appointments should not be proceeded with was practically to lose the chance of giving loyal members an opportunity of being appointed to these posts and to debar men on local sanitary and health committees from using the powerful influence they legitimately possessed on these committees.

The rider was lost.

On the motion of Dr. FOTHERGILL (Brighton), seconded by Dr. BENHAM (Brighton), it was resolved:

> That it be an instruction to the Council to urge on Divisions, as also on Provisional Local Medical Committees, the desirability of referring to the head office for advice and instruction any offer or communication received from Provisional Insurance or District Insurance Committees having reference to schemes for bringing medical (or sanatorium) benefits into operation.

MATERNITY BENEFIT.

Mr. VERRALL moved:

> That the number of women in receipt of maternity benefit under the National Insurance Act who shall be attended for teaching purposes by any recognized institution possessing a properly equipped maternity department be no more than is necessary to furnish the actual numbers required in order that the medical students and pupil midwives connected with that institution may obtain certificates.

He explained that, whatever was the outcome of the movement which the teaching bodies had made to check what they considered to be an undue limitation of their power of obtaining cases for teaching, it was necessary in the interests of the general practitioner that there should be no heaping up in the maternity department of cases largely in excess of what was required by the student for learning his work.

The motion was agreed to.

Mr. VERRALL moved:

> That, as regards the extern departments, the institutions referred to in the above recommendation should select and recognize local medical practitioners for the practical training of medical students and pupil midwives.

He said that the State Sickness Insurance Committee had taken the line that it was not impossible that this method of teaching should provide proper and sufficient teaching for students of medicine and pupil midwives, and at the same time leave as large a portion of the work as was possible in the hands of general practitioners.

Dr. MACDONALD (Chairman of Council) mentioned that he had recently received from a representative of one of the universities the extraordinary information that that university was permitting its students to go out under the fostering care of trained midwives.

Dr. DAVID BLAIR (Lancaster) asked if there was anything to prevent a student taking his cases under an ordinary general practitioner.

Mr. VERRALL doubted whether the schools would accept such a certificate.

The motion was put to the meeting and carried.

PUBLIC MEDICAL SERVICE SCHEMES.

The report of the State Sickness Insurance Committee on the replies of Divisions on the Public Medical Service schemes was formally received.

Mr. VERRALL suggested that it was not possible at this stage usefully to discuss public medical services in any detail. He therefore moved:

> That the report be approved and referred to the Council for further consideration of all information relating to public medical services, with instructions to report to the Divisions as to the various forms available.

Dr. WALLACE HENRY (Leicester) asked whether it was meant that the Council would have power to approve schemes which had been sent up, and to let the Divisions know they could proceed with them.

The CHAIRMAN replied that all information and all varieties of schemes sent up would be included; a digested report would be drawn up and sent to the Divisions, so that after considering the choice at their disposal they could take action.

In reply to Dr. EDWARDS (Swansea), Dr. MACLEAN said that he thought it would be wise to give the Council discretion to recognize various schemes in various parts of the country. Taking the country as a whole, the prospect was that it would be a long time before all areas were covered by a Public Medical Service. To hold up Divisions which had already given attention to the subject and organized their areas would be an injustice.

Dr. E. G. C. DANIEL (Croydon) suggested that schemes which carried out the cardinal principles of the British Medical Association should be allowed to proceed. In Epsom the friendly societies were prepared to accept a scheme promulgated by the profession. The scheme was based on payment for work done, and he desired that the principle that the insurance risk should be borne by subscribers and not by the medical profession should be embodied in any scheme. The subscribers would pay into a fund from which the doctors would be paid on a definite scale of fees. The Croydon Division had sent up a proposal that, where the local profession desired it, the collecting should be done through the agency of the societies, that there should be no contract of service between the doctor and the subscribers, and that there should be free choice of doctor. It was recognized that this would be impossible under contract service, but also that the present was not a time to force the views of those who were in favour of payment for work done on those who favoured contract practice. No attempt was being made to do that. It was simply asked that in those districts which preferred it the principles he had stated should govern any scheme of public medical service. The

profession in Epsom was in a position to get the scheme into working order at once. If other districts met the friendly societies in a friendly spirit, and not in the spirit of opposition which had unfortunately arisen under the contract system, all difficulties would shortly disappear.

The Chairman said that to give effect to the point raised by Dr. Edwards and Dr. Daniel the addition of the following words was suggested:

> further, that the Council be given power to approve schemes which are in agreement with the principles approved by the Association.

The desire was to refer the matter to the Council, with the widest possible discretion.

Dr. Heggs (Canterbury and Faversham) thought there was a danger in leaving it within the discretion of the Council to approve local schemes; it was undesirable to have a series of public medical services differently administered, with different minimum payments throughout the country. What was wanted was one central administration, although the medical services might be carried on in every local insurance area, according to the requirements of the medical men in that area. He spoke not merely on behalf of his Division, but of the county of Kent. There should be one scheme capable of embracing payment for attendance and per capita, and no local scheme of fees should be worked except with the approval of head quarters.

Dr. Fothergill moved the following amendment:

> That it be an instruction to the Council to redraft Scheme B (payment per attendance) in such a way that the risks of insurance are met by the beneficiaries under the scheme, and not by the medical practitioners in attendance, which is the case at present;

and the following rider:

> That, as in many of the 617 Insurance and District Insurance Committee areas the local medical profession may be unwilling or unable to undertake the organization of a Public Medical Service for the 36 millions of the industrial classes, who are either insured under the Act, or are dependent on those insured, it be an instruction to the Council to elaborate a scheme for a Public Medical Service based on such principles as would meet with the approval of the profession without throwing the entire onus of organization upon them.

Dealing with the amendment, Dr. Fothergill said the Council was instructed to draft two schemes for a medical service: One, a system of capitation payment, where the doctor was ready to take the insurance risks; the other, on a system of payment per attendance, where the doctor declined to take the insurance risks. The latter—Scheme B—was a juggling with capitation. The amendment proposed by Brighton was that the scheme should go back to the Council in order to be redrafted on the lines that the beneficiaries, or those supporting, should take the risk, and the doctor should simply receive fees and not turn himself into an insurance company. As to the rider, it meant that medical men must realize that however skilled they were in medicine, a large body of them had no skill in business, and should not undertake administration of the kind proposed. There were large areas where a Public Medical Service could not be tried, but to take up the extreme position that they would not co-operate with friendly societies or other bodies was unreasonable. There was no reason why the profession should not so long as it got its six cardinal points.

Dr. Douglas (Maidstone) contended that what would suit one part of the country would not suit another, and that therefore there should be alternatives, though these, he hoped, would not be put in action without the profession generally having an opportunity of expressing its opinion upon them.

Dr. D. S. Roxburgh (Marylebone) did not think that, if worked locally, Public Medical Service schemes would be a success because medical men were not as a rule good business men.

Lieutenant-Colonel Cumbe (West Dorset) mentioned a scheme which the profession in West Dorset was ready to work. It was only prevented from doing so at once by loyalty to the profession and the Association.

Dr. L. J. Picton (Stockport, etc.) asked that the Council, in dealing with this matter, should consider a scheme which would regard the working man's family as the unit, and not the working man himself. If a number of schemes were proposed for different areas, some central authority should co-ordinate the whole.

The amendment and the rider were agreed to.

Remainder of Report on National Insurance Act.

Mr. Verrall moved:

> That the remainder of the Report of Council with reference to the National Insurance Act be approved.

This was carried.

Central Insurance Fund.

Dr. Stilwell (Sevenoaks) moved:

> That members of the profession be again urged, both from the Central office and from the offices of the Divisions, to subscribe sums of not less than £20 to the Central Fund, so that £250,000 can be guaranteed by the end of December, 1912.

He said the central organization had been asking for two years for funds, and these had not come in sufficient quantity. A resolution from the Representative Meeting would carry extra weight, because if it was passed unanimously, every Division would be responsible through its members for the passing of it.

Dr. Webb said that the East Cornwall Division suggested that an estimate should be sent down proportioned to the Divisions; if that were done his Division would guarantee that the money would be found.

The motion was carried by 77 votes to 44.

Visit of the President.

During the morning the meeting was visited by Professor Saundby, the President of the Association, who was introduced by the Chairman of Representative Meetings.

The President (Professor Saundby), who was received with loud applause, said it was very kind of them to receive him in this way just before he retired. Only a few hours more and his short reign would be over. It had been a very pleasant time, and he thanked them all very sincerely for their very hearty reception. (Loud applause.)

Guarantee Fund.

The Treasurer (Dr. Rayner) intervened to correct a statement he had made on a previous occasion with regard to the number of members of Council and the Representative Meeting who had subscribed to the Guarantee Fund. He had said that there were 99 members who had not subscribed. He now found that was a mistake, because many of that number had subscribed to local funds, a fact of which the local secretaries had not informed the Central office.

Disciplinary Tribunal.

Dr. C. H. Benham (Brighton) moved a rider:

> That on any tribunal which may be appointed to deal with cases which may lead to the removal of a practitioner from the panel the medical profession shall have a substantial majority over all other members of such tribunal.

He said the profession had undertaken to accept service under the Act if the cardinal points were granted, and it was felt by some that the position of the profession would be strengthened if it took up the attitude of making no concession whatever on any of the six original cardinal points, but made some slight modification on the seventh on the lines suggested by the Chancellor of the Exchequer. Dr. Benham intimated that he did not wish to press the rider, and it was withdrawn.

Dr. C. S. Young (Dundee) moved:

> That the Council be instructed to direct the attention of Divisions to the desirability of preparing a scheme for a Public Medical Service to be administered by the medical profession in each insurance area.

He recalled the custom in Scotland for the general practitioner not to dispense medicines. In this respect they claimed with pardonable pride to be a step ahead of England. The few practitioners in Scotland who did dispense medicines had an earnest desire to escape from that part of the work. The profession was endeavouring to stop the pernicious habit of counter prescribing, and if it resented the encroachments of the chemist on professional territory, why should medical men from day to day invade the chemist's territory?

Dr. J. S. Muir (South-Eastern Counties) supported the rider, remarking that in his Division there were very few men who dispensed their own medicines. If the chemist was to be debarred from prescribing, medical men must

debar themselves from selling physic, except in districts where there were no chemists.

The CHAIRMAN pointed out that the resolution passed by an earlier Representative Meeting was that the doctor should do his own dispensing, "should he so desire," so that there was no compulsion on the Scottish practitioner.

The rider was withdrawn.

THE GENERAL MEDICAL COUNCIL.

Dr. FLETCHER (Chelsea) moved the following rider:

That the State Sickness Insurance Committee be instructed to approach the General Medical Council, to ascertain if that body will be prepared to accept a charge of infamous conduct (such charge to be formulated by the British Medical Association) against any medical practitioner who may be guilty of accepting any appointment which another practitioner has resigned when called upon by the British Medical Association to do so, or any further contract work which includes insured persons on terms which are not acceptable to the Local Provisional Medical Committee for his area.

Mr. E. A. DORRELL (Hampstead) opposed the rider on the ground that it would be *ultra vires*.

The CHAIRMAN remarked that questions had been referred from time to time to the General Medical Council, which invariably dealt with them in one way; the Council had never given an answer in general terms, but had always said "Produce your case."

Dr. DURANT (Consett and Gateshead) thought that by passing the rider the Association would be courting a snub.

The rider was withdrawn.

MEMBERS OF HOSPITAL STAFFS.

On the following motion—

That the names of those members of the honorary staff of voluntary hospitals who had not signed the supplementary pledge be circulated to Secretaries of Divisions,

the CHAIRMAN suggested that the meeting should be extremely careful in adopting this, and suggested that the opinion of the Solicitor of the Association should be asked as to whether the action proposed would be covered by privilege.

The rider was not pressed.

CONTRACT PRACTICE.

The following rider, moved by Dr. F. H. ROTHERHAM (North Lincoln)—

That the Council shall endeavour to secure that no contract practice (other than Poor Law and Government services), whether the patients be insured persons or not, be undertaken except on terms approved by the British Medical Association,

was ruled out, as already covered by resolutions passed.

FREE CHOICE OF DOCTOR.

Dr. HOWELL (Cleveland) moved the following rider:

The Council is hereby instructed to take such steps as will ensure absolute free choice of doctor among those members of the systems or institutions mentioned in Clause 15 (4) of the Act, and that until such provision is made no member of the British Medical Association shall accept office under the Medical Insurance Act.

Dr. DURANT (Consett and Gateshead) pointed out that the rider really meant continuing negotiations, a point on which the meeting had already decided.

The rider was withdrawn.

PUBLIC AUTHORITIES SCHEME.

The following rider, proposed by Dr. WHAITE (Birmingham Central), was referred to the Council:

That in view of the fact that by Schedule 1, Part II (*b*) of the National Insurance Act, certain local and public authorities, etc., have claimed and obtained exception from Schedule 1, Part I (employments within the meaning of Part I of this Act relating to health insurance), thereby preventing or rendering it difficult for their employees to exercise the right of "free choice of doctor," steps should be taken by the Association to further safeguard the cardinal principle of "free choice of doctor" in this connexion, which under the conditions above alluded to is being seriously imperilled.

RESUMPTION OF CONSIDERATION OF COUNCIL'S REPORT.

The Committee stage was suspended to allow the minutes to be prepared.

The CHAIRMAN OF REPRESENTATIVE MEETINGS expressed the indebtedness of Representatives to Dr. Buist for his labours as Chairman of the proceedings in Committee and for the way in which he had executed his duties. The consideration of the reports of the Council was resumed.

JOURNAL COMMITTEE.

Dr. R. C. BUIST (Chairman of the Journal Committee), presenting the Committee's report, said it contained no recommendations, but he felt sure the Representative Meeting would wish him to refer to a matter which had been seriously occupying the consideration of the Journal Committee during the past year—namely, the question of legal expenses. The increase was due to the increased work and the increased outlay that had been involved in libel actions. He formally moved:

That the paragraph of the report of Council dealing with the Journal Committee be approved.

This was agreed to.

SCIENCE COMMITTEE.

On the motion of Dr. F. M. POPE (Chairman of the Science Committee), the portion of the report of Council referring to the Science Committee was received and approved.

SCHOLARSHIPS.

Ernest Hart Scholarship.

Dr. POPE (Chairman of Science Committee) announced that the Committee recommended that Alexander Philip Mitchell, M.B., of Edinburgh, be appointed Ernest Hart Memorial Scholar for a period of one year. The value of the scholarship was £200.

Ordinary Research Scholarships.

The Committee recommended that the following be appointed Research Scholars for a period of one year:

Ralph Terence St. John Brooks, M.B., of London.
Alfred Joseph Clark, M.B., of Cambridge.
Frank Cook, M.B., of London.

Dr. POPE mentioned that the Committee had had a large number of applications, all from men having a very high standard of scientific work. The Committee had given £145 in grants for work already carried on and £145 in grants for new work.

Dr. FOTHERGILL (Brighton) asked whether these investigations were conducted under anybody's guidance or were carried out entirely by the candidate himself. He also would like to know whether medical practitioners who obtained these grants proceeded to any higher post, or did they simply pass away to consulting or general practice.

Dr. POPE said he was glad the question had been asked, because it was exactly what the Science Committee had the greatest difficulty in deciding. The investigations were conducted under guidance. The candidates had to say in what place or laboratory they would carry on their investigations, and the grants were determined by the evidence they gave of their abilities in carrying out those researches. Each was visited once or twice a year either by a member of the Science Committee or by some one nominated by the Science Committee. With regard to the higher scholarships, other things being equal, the Committee as a rule had given rather a preference to those whom they thought would be likely to carry on scientific work for a considerable number of years. He could give an instance of a man only relinquishing the scholarship this year, having had it for three years, and now proceeding to a very good position as Professor of Pathology. That was an instance where a scholarship was the means of giving a very good scientific man to the world who otherwise would have gone in for general practice.

Dr. FOTHERGILL (Brighton) hoped the information would be widely published, because there was a feeling among many members of the Association that the scholarships were a waste of funds.

MEDICAL ETHICS.

Examination of Patients under the Care of Other Practitioners.

Dr. LAURISTON SHAW (Chairman of the Ethical Committee) introduced this section of the report of Council. He said that the possibility of friction being introduced

into professional work on account of the complexity of interests which sometimes surrounded a sick patient was realized. At the last Representative Meeting certain rules were adopted for the guidance of those who were seeing patients, not with the object of curing them, but with the object of safeguarding some financial interest in connexion with the illness. Those regulations had been sent to the Divisions, and one or two protests had been raised by those who had conducted investigations which had been submitted to the Council for its consideration. Having considered the matter, the Council made the following recommendations:

That the report on the position of practitioners examining on behalf of interested persons should not be held to affect the work of certifying factory surgeons, inasmuch as:

(i) They are acting on behalf of the State, which has no monetary interest in the cases.

(ii) The duties are to report on the circumstances relating to accidents and the prevention of similar accidents.

(iii) Such duties do not involve any detailed examination of the injuries or any reference to their treatment.

That in Rule (3) "If the medical attendant fails to appear at the time agreed upon the medical inspector may proceed with his examination forthwith": the word "stated" be substituted for the words "agreed upon."

He explained that the change proposed in the last paragraph was only a question of whether there should be an actual agreement as to the hour at which the inspecting practitioner should see the patient. It was thought that if the word "stated" instead of "agreed upon" was used, it would save a great deal of unnecessary trouble and expense.

The motion was carried.

Co-operation of Divisions in Ethical Cases.

Dr. LAURISTON SHAW moved the following recommendation of Council:

That the Representative Body is of opinion that the time is not opportune for providing that resolutions passed by Divisions and Branches under Rule Z shall be automatically operative throughout the Association, but that the adoption of Rule Z by all Branches would to a great extent have the desired effect.

The Council was instructed to consider the question of introducing a uniform code of rules of ethical procedure, but while sympathizing deeply with the wish of the Representative Meeting in this matter, had felt that the time was not quite ripe for it. It urged the meeting to accept instead the recommendation that all the Branches and Divisions should adopt Rule Z, the adoption of which would meet the point in a more satisfactory manner. He accepted a suggestion by Dr. Fothergill that the secretaries of Branches and Divisions should be provided with a list of those which had adopted Rule Z, so that they might have this information when dealing with practitioners who had come into their district to take a post contrary to the decision of the Division.

The motion was then agreed to.

Model Ethical Rules.

Dr. LAURISTON SHAW wished to draw attention to the fact that although for the sake of shortness these had been called ethical rules, they were in no sense a code of ethics. They were really rules of procedure in ethical cases. He trusted there would some day be established in the Association a code of ethics. The Committee was desirous that any failure to fall in with the general code of ethics accepted by the whole profession should be satisfactorily dealt with. These model ethical rules had been submitted to every Division in the country, and a large number had sent in suggestions for their modification which had been carefully considered by a subcommittee. He moved:

That the model ethical rules of a Division not itself a Branch be approved.

A number of amendments by the Brighton Division were proposed by Dr. FOTHERGILL. The first one was:

That a notice must be sent to the Secretary with the names of the proposer and seconder of any amendments to the proposed resolution not later than ten days before the date of the proposed meeting. The Secretary shall forward to every member of the Division notice of any such amendment at least three days before the date of the general meeting.

Dr. LAURISTON SHAW said this suggestion had been before the Subcommittee and the full Committee, and both were unanimously against it. It was not too much to ask the Divisions to call another meeting later on in cases where a regulation could not be passed without an amendment.

The amendment was lost.

The CHAIRMAN OF REPRESENTATIVE MEETINGS said there followed a long series of further amendments. He thought it would be convenient if he asked the Chairman of the Ethical Committee to make some general comments about the scope and effect of those amendments.

Dr. LAURISTON SHAW said he had had the advantage of conferring with Dr. Langdon-Down, the Chairman of the Rules Committee, on these amendments. There was nothing more difficult than framing rules of this sort safely and without any danger of obscurity. He would be quite willing to accept the suggestion that these rules should be referred to the Ethical Committee to reconsider them before they were sent to the Divisions.

Dr. FOTHERGILL (Brighton) agreed, except with regard to the following:

That in view of the complexity of the scheme elaborated in Rule 15 for dealing with a complaint against a practitioner; the possible lengthy nature of the proceedings; and the ill feeling that in consequence can be developed in the Division, it be an instruction to the Council to elaborate a rule or rules which will allow of a Division deciding that the procedure for the conduct of such a case shall be as follows:

(*a*) The Ethical Committee shall take evidence; have power to call witnesses; and shall give the verdict.

(*b*) This verdict shall be read to the complainant and defendant, but shall not be communicated to the Division or Branch concerned, if the Committee considers it unnecessary.

(*c*) Either the complainant or the defendant shall have power to appeal against the verdict within fourteen days either to the Branch Council or to the Central Ethical Committee of the Association.

The Brighton Division, he said, regarded the present procedure under the ethical rules as likely in many cases to turn a private quarrel between two doctors into a quarrel among the whole of the profession in the locality. The Ethical Committee should be allowed to go into the facts of the case, come to a decision on those facts, report its decision to the Division, and then, if the defendant or the complainant did not agree to abide by that decision, he had an absolute right to appeal direct to the Branch Council, and subsequently through the Branch Council to the Ethical Committee. In that way the whole of the profession in the district would not be brought into the quarrel and the risk to the unity of the Division would be avoided.

Dr. LAURISTON SHAW said this was one of the very frequent occasions in which the local Committee, having got into some difficulty, thought that some way round—not the straight way—would perhaps be easier. Although the first part of the amendment commenced by saying, "In view of the complexity of the scheme," these amendments would really involve complication. The Committee admitted that the regulations might be complex, but it entirely denied that the procedure was complex. The proposal that the verdict come to should be given practically *in camera* was a most unwise one. It would almost certainly lead to an appeal or to further quarrels.

Mr. DORRELL (Hampstead) moved the following amendment:

That the model Ethical Rules be referred back to the Ethical Committee with instructions to amend the same by excluding from their operation non-members of the Association.

Dr. LAURISTON SHAW, in reply to Dr. BAILDON (Southport), said that the Ethical Committee had realized certain dangers which might arise in dealing with non-members, and had drawn attention to the point, but that did not prevent the Ethical Committee from dealing with non-members. It was necessary to be careful, and if all the recommendations that guided Rule Z were carried out, it was, in the opinion of the Ethical Committee and the Solicitor, perfectly safe.

The amendment was lost.

Unification of Ethical Rules.

The motion was put as a substantive motion and agreed to.

The following recommendations were approved:

That the Model Ethical Rules of a Branch composed of several Divisions be approved.

That the Model Ethical Rules of a Branch composed of one Division be approved.

That all Divisions and Branches in the United Kingdom be urged to adopt the Model Ethical Rules, as approved by the Representative Body, without modification and in substitution for all such rules now in use by the Divisions and Branches respectively.

In regard to the last recommendation, Dr. LAURISTON SHAW said the Ethical Committee felt that, especially at this critical time when many difficult points were likely to be raised and Divisions possibly would be inclined to undertake action which was not in conformity with the wishes of the profession generally, the possession of these rules would be the best possible means of preventing such occurrence.

Dr. J. F. WALKER (Mid-Essex) suggested that any Division which had not adopted the rules should be considered to be not a properly constituted Division.

The CHAIRMAN OF REPRESENTATIVE MEETINGS thought that would be going too far.

Dr. DURANT (Consett and Gateshead) suggested that each Representative should take upon himself the responsibility of getting his Division to adopt these Ethical Rules.

The CHAIRMAN OF REPRESENTATIVE MEETINGS had no doubt the Representatives would take note of the suggestion.

The remainder of the report under the heading "Medical Ethics" and the Supplementary Report under that head were approved.

MEDICO-POLITICAL.

Question of Diploma in Psychiatry.

Dr. TAYLOR explained that he had recently acted as the Chairman of the Medico-Political Committee because Mr. Verrall found his time fully occupied by the State Sickness Insurance Committee. Dr. Taylor moved:

That the Representative Body approve the recommendation of the Section of Psychological Medicine and Neurology (Annual Meeting, 1910), concerning the desirability of the institution of a post-graduate course and diploma in psychiatry.

Dr. DOUGLAS STANLEY (Birmingham Central) moved to omit the words "and diploma."

Dr. D. G. THOMSON (Mid-Norfolk) pointed out that the matter was discussed very fully at the last Annual Representative Meeting, and referred back to the Council, which referred it to the Medico-Political Committee. That Committee had considered it very fully, and the Council had unanimously come to the conclusion that the circumstances with regard to psychology were special.

Dr. TAYLOR reminded the meeting of the way in which the matter had arisen. The Section of Psychology had recommended the diploma, and the Council was at first against this proposal and referred it to the last Annual Representative Meeting, which was apparently in favour of a diploma, and on its being sent back to the Council there was an alteration of opinion, and the Council now recommended a diploma. Whilst that had been going on diplomas had been established, so that any action the Representative Meeting took would be simply the expression of a pious opinion.

The amendment was lost by 72 votes to 51.

Dr. MAJOR GREENWOOD (Council) proposed the substitution of "certificate" for "diploma." He thought the objection was to the word "diploma."

Mr. DEARDEN (Manchester, West) seconded.

The amendment was lost and the motion, as a substantive resolution, was carried.

Employment of Medical Students by Medical Practitioners.

Dr. J. H. TAYLOR moved:

That, as there is no advantage to the medical student, so far as his curriculum is concerned, in being employed by a medical practitioner, and as there is undoubted risk to the practitioner of a charge of "covering," the advice of the Association, when asked for in this connexion, should be to discourage the practice of the employment of medical students by medical practitioners.

He said the recommendation was not that the taking of pupils should be forbidden by the Association, but simply that if the Council was asked for advice it should discourage it. The responsibility of advising a medical man to do anything which might by the least possible carelessness subject him to a charge of "covering" would be too great for the Council to accept.

Dr. WHAITE (Birmingham Central) moved to refer the matter back to the Council for further consideration. Whilst he was in sympathy with the recommendation, there was a strong feeling in his Division that the first part of the recommendation was not true in that it said there was no advantage to medical students as far as the curriculum was concerned. It was an advantage to the student to get an insight into the work he would have to do later. With regard to the risk of "covering," it was the duty of the practitioner to safeguard himself against those risks. As to the use of the word "discourage," if the system was as bad as was made out, it ought to be banned altogether.

At the suggestion of the CHAIRMAN OF COUNCIL, Dr. WHAITE moved to omit the first clause of the recommendation, as follows:

That as there is no advantage to the medical student, so far as his curriculum is concerned, in being employed by a medical practitioner, and.

Dr. BROWN (Rochdale) seconded.

Dr. METCALFE (Bradford) strongly opposed any change in the recommendation.

Dr. TAYLOR thought the insertion or deletion of the words made no difference, because the first two lines were simply an argument for the important part of the resolution.

The amendment was lost.

Dr. FOTHERGILL (Brighton) moved the addition of the words,

Otherwise than for training in clinical midwifery.

He said the meeting had already suggested that the training of students by practitioners in midwifery might well be done by general practitioners.

In reply to the CHAIRMAN OF REPRESENTATIVE MEETINGS, Dr. FOTHERGILL agreed to withdraw the amendment as long as it was understood that the recommendation dealt only with the question of employment of medical students by medical practitioners.

Dr. JOHNSON (Bury) moved as a rider:

That the recommendation should not be taken to apply to unpaid assistants who have passed the third professional examination.

Mr. L. A. TAYLOR (Bromsgrove, Dudley) thought that no reason had been given for making a special exception of these cases. The rider was lost.

Workmen's Compensation Act.

Dr. TAYLOR moved that the Representative Body adopt the following principles:

(i) That the furnishing of certificates in cases of injury to workmen is no part of the duty of members of the honorary or paid medical staffs of voluntary hospitals.

(ii) That a certificate of attendance of a workman at hospital, containing no information as to the nature of the case, should not be regarded as a medical certificate.

(iii) That any medical certificate expressing an opinion as to the fitness or unfitness of a patient to follow his employment, or any report on such cases, under the Workmen's Compensation Act, given by any member of the staff of a voluntary hospital, whether honorary or paid, should be paid for, and the fee should be received by the medical practitioner who signs the certificate.

(iv) That in the case of all medical certificates and reports under the Workmen's Compensation Act given by the members of the staffs of voluntary hospitals, whether honorary or paid, the fee should not be less than £1 1s.

(v) That in the case of all initial examinations with certificate or report under the Workmen's Compensation Act given by a practitioner not as a member of the staff of any voluntary hospital, the fee should be not less than 10s. 6d.

Dr. HOYLE WHAITE (Birmingham Central) moved:

That this recommendation be referred back to the Council for further consideration.

He said this was a very important proposal indeed. He spoke with authority on the subject, as it was part of his daily work. There were many hospitals in the country which gave explicit instructions to their house-surgeons to furnish certain kinds of certificates, and if this proposal were adopted the hospitals would have to alter their regulations. The certificates were in the nature of statements

whether a man was fit or unfit to work, and to charge a guinea for such a statement was impossible. They were merely club notes intended for the club; a large number of them were shown to the employer, who took them as a guarantee as to the man's fitness or otherwise to do his work. The certificates did not state what the man's condition was due to. There were a number of men engaged upon work in relation to the Compensation Acts which was of a rather special nature. They were paid by actual fee from an insurance company, and in some cases by large works. The statement given was merely that a man was not fit for work for the next week; but if it were a case of sufficient importance to give to the insurance company, then a proper certificate was given for which a proper payment was made.

Mr. GREER (Monmouthshire) hoped the meeting would not refer back the recommendations of the Committee. It was perfectly clear that only certificates stating the medical man was in attendance should be given to the workman. A report saying he was fit to do his work should be paid for. It was no hardship on the workman, as he was not obliged to supply a certificate; it was the duty of his employer to get one and pay for it.

Mr. LARKIN (Council) thought the amendment was based on a very common misapprehension. The point was that there must be declaring-on and declaring-off certificates, and for that the employer should pay. He contended that everything within the resolution was valuable, and should not be interfered with.

Mr. DOMVILLE (Council) agreed. If a certificate was given as to a man's inability to do his work it should be paid for, because if a man made that statement he was liable to be cross-examined in a court of law upon it.

The amendment was lost.

Dr. J. H. TAYLOR accepted an amendment by Dr. DRYLAND to omit the word "certificate" so that only "medical reports" were referred to.

Dr. DRYLAND moved:

That in sub-paragraph (V) "£1 1s." be substituted for "10s. 6d."

Dr. J. H. TAYLOR pointed out that the reason for making the fee only 10s. 6d. was to encourage the patients, where possible, not constantly to resort to hospitals for certificates. The giving of certificates ought to be in the hands of the general practitioner, and not in the hands of the hospital staff.

The amendment was lost.

Dr. J. W. JOHNSON (Bury) moved as an amendment:

That the minimum fee for a certificate be 2s. 6d., and for a report 10s. 6d.

He said it was impossible to expect 10s. 6d. for a simple certificate. If the fee were 2s. 6d. it would in all probability be paid. He asked permission to withdraw the words "and for a report 10s. 6d."

This was agreed to and the amendment was carried.

Dr. R. ROBERTSON (Edinburgh) moved:

That the fees mentioned in Clauses iv and v be the statutory fees.

In Scotland medical men were afraid that unless the word "statutory" was inserted they would have to put up with a lower fee because the fees in Scotland were fixed by the Court definitely at a guinea and two guineas. There was no reason for the profession fixing a lower sum than it would get after the account was taxed by the Court of Session.

Dr. TAYLOR thought the point would be a very good one to refer to the Parliamentary Committee or the Medico-Political Committee. It simply meant a request for legislation.

Dr. ROBERTSON was willing that it should be referred to the Council for consideration, and to this the meeting agreed.

The CHAIRMAN OF REPRESENTATIVE MEETINGS announced a number of amendments sent up by the Birmingham Central Division in respect of the recommendation which he summed up in the following form:

That certificates to the effect that So-and-so is unfitted for work should be included in the group of certificates in respect of which no payment is made.

The amendment was lost, and the recommendation was then put as a substantive motion and agreed to. The following rider was also agreed to:

That a simple form of request by an employer to a doctor be drafted at head office and sent to Divisional Secretaries.

Dr. J. H. TAYLOR moved:

That in the case of certificates and reports by medical practitioners, given under the Employers' Liability Act, 1880, or at common law, in respect of any injury or disease, the same principles shall apply as in the case of certificates and reports under the Workmen's Compensation Act.

The motion was agreed to.

The remainder of the Annual Report of Council under heading "Medico-Political" was approved.

Dr. J. S. DICK (Manchester, North) moved a rider:

That this meeting considers it desirable that medical men should be empowered to grant official copies of death certificates for insurance and other purposes.

Medical men were obliged to give a certificate for nothing, and it was not fair that an official who merely made a copy should be paid for it. In future legislation the influence of the Association should be used in the direction indicated by the rider.

Dr. TAYLOR said that the Committee would take the matter into consideration, and the rider was not pressed to a division.

In presenting the supplementary paragraphs, Dr. TAYLOR moved that paragraph 3 (i) of the report on this subject approved by the Annual Representative Meeting, 1909, be amended to read as follows:

On the subject of salaries the Association has already approved the suggestions of the Medico-Political Committee—namely, that for whole-time junior or assistant school medical officers the commencing salary should not be less than £250 per annum, and that for more experienced whole-time school medical officers the commencing salary should not be less than £500 per annum. These sums are to be understood as exclusive of travelling expenses, clerical assistance, cost of stationery, postage, etc. Also that in any appointments of this kind provision should be made that the salaries of both officers should rise automatically.

He explained that it had been agreed that there should be an automatic increase in the salaries of medical officers engaged in the treatment of school children, but the provision was accidentally omitted with regard to medical inspectors.

Dr. MEADE (Scarborough, Yorks) moved as an amendment:

That £350 be substituted for £250, and that £750 be substituted for £500.

The amendment was lost.

Dr. MAJOR GREENWOOD (City of London) moved as an amendment:

That for £250, £300 be substituted.

The amendment was lost.

Dr. J. H. TAYLOR moved:

That in view of the absence of security of tenure for medical officers of health and school medical officers, it is not a present opportune to press for an automatic increase of salary being a necessary condition of appointment of school medical officers.

He observed that if there were automatic increases of salary without security of tenure the Association might easily be defeated by the Education Committee appointing a man for one year only, and then appointing him for another year after that, and when the time came for an automatic increase, dismissing him in favour of another man.

The recommendation was agreed to.

The following rider, moved by Dr. HEGGS (Canterbury and Faversham) was agreed to:

That the Council shall consider the advisability of co-opting to the Medical Inspection and Treatment of School Children Subcommittee of the Medico Political Committee practitioners who are actually engaged in this class of work under public education authorities.

Ship Surgeons.

Dr. J. H. TAYLOR moved:

That the remuneration of ship surgeons engaged regularly as such should not be less than £10 per month.

Dr. BUSHBY (Liverpool) moved an amendment:

That the words "engaged regularly as such" be deleted, and that "£15" be substituted for "£10."

The object of the amendment was to prevent men who undertook trips for holiday purposes, taking no payment, from interfering with regular ship surgeons.

Dr. J. H. TAYLOR said that the special Subcommittee had considered the matter carefully, and had been informed that competition, by way of what might be called casual ship surgeons, did not really exist. With regard to the remuneration, the Subcommittee had ascertained the opinion of ship surgeons, especially from the South of England, and some, too, from Liverpool, and the sum mentioned seemed to have their general approval.

The amendment was carried without the clause as to monthly remuneration, and the recommendation was then agreed to, as was the following:

That in the opinion of this meeting, the general principle of payment of fees by first and second class passengers for medical attendance by the surgeon should be recognized by all shipping companies.

Life Assurance Fees.

Dr. TAYLOR moved:

That the remainder of the Supplementary Report of Council under heading "Medico-Political" be approved.

Dr. J. REID (Munster) moved a rider:

That a fee be fixed for life insurance examination.

He said that if it were possible for a fee of 10s. 6d. to be fixed for examination for a proposal for £100 and a fee of a guinea for life insurance for any amount over £100, and this was enforced by each Division, it would be a great benefit both to the general practitioner and the specialist. The insurance companies were members of a ring, and were cutting down the fee given to a doctor for a medical examination.

Dr. TAYLOR said if it was meant by the rider that the matter be referred to the Council he could accept it; and this suggestion was accepted by Dr. J. REID.

Dr. LAWSON (Aberdeen, etc.) stated that he had interviewed, on behalf of the Association, during the past two years the principal insurance companies of the country, and he thought it would be undesirable for the meeting to take sides in a matter which the parties at present had under consideration. They were opening up a very wide issue—so wide that a large number of companies at present were carefully considering the figures of the Sun Life Insurance Company, and a great many were endeavouring, acting on those figures, to do away with the payment of medical fees altogether.

It was agreed to refer the matter to the Council for consideration.

MEDICAL ETHICS.

Dr. LAURISTON SHAW (Chairman of the Ethical Committee) said that when the rules of ethical procedure were adopted he had forgotten a promise to accept a proposed amendment. Mr. Russell Coombe had drawn his attention to the fact that in the rules, whilst making arrangements as to an offence against the rules of the Division or against the accepted principles of medical ethics, no arrangements were made for offences against decisions of the Association. In conference with Dr. Langdon-Down (the Chairman of the Rules Committee) he had agreed that the most satisfactory way would be to introduce the words "decisions of the Association" in all parts of the rules after the words "rules or resolutions of the Divisions." This was agreed to.

NATIONAL INSURANCE ACT.

REPORT STAGE.

The meeting then went out of Committee for the report stage on the National Insurance Act. The question of admitting representatives of the lay press was raised, and it was decided not to do so.

Adherence to the Minimum Demands.

Dr. BUIST, as Chairman during the Committee stage, moved:

That the Government be informed that the Association adheres to its minimum demands as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer.

Dr. NAPIER JONES (Reading) moved as an amendment the introduction of the following as a preamble:

That the British Medical Association regrets that His Majesty's Government have not acceded to the terms upon which alone the cordial co-operation of the medical profession in supplying medical treatment under the National Insurance Act can be obtained, and passes the following resolutions.

When the matter was first gone into the Association accepted the principle that it was desirable that the working classes should be insured against sickness and that the State should assist, and it was desirable, now that the end of the first stage of the fight had been reached, to sum up the situation by an expression of the wishes of the Association that the principle should be accorded.

The proposed preamble was agreed to, and the motion, on being put to the meeting as amended, was carried amid loud applause.

Withdrawal from Advisory Committees.

The following resolution—

That the Association calls upon all members of the Association who are members of Advisory Committees in connexion with the National Insurance Act, and also on other medical members of those committees who are in sympathy with the policy of the Association, to withdraw from these bodies—

was agreed to.

Professor WHITE (Dublin) moved the rider:

That the foregoing resolution do not apply to Ireland.

He proposed this, not because the Irish profession was out of sympathy with the profession in England, but because there was a different fight in Ireland, there being no medical benefits. At the last Representative Meeting a similar resolution was passed to exempt Ireland, and since then much work had been done in conjunction with the Irish Medical Association. Only one-third of the Irish practitioners were members of the British Medical Association, and only half that number were members of the Irish Medical Association, the remainder of the profession not belonging to either Association. A special report explanatory of the position in Ireland and a special undertaking had been issued to the whole profession. A meeting had recently been held in Dublin of over 200 delegates from different parts of the country, and the profession was now being consolidated. Under the resolution now proposed members of the British Medical Association in Ireland would be asked to resign from the Advisory Committees for Ireland. These resignations could do no good and might do a great deal of harm.

Mr. R. J. JOHNSTONE (Council), who seconded, said that the profession in Ireland had been acting through a Conjoint Committee, to which every one had given his pledge to withdraw. He did not think the Representative Meeting should ask the medical men in Ireland to withdraw except through the Conjoint Committee.

The CHAIRMAN OF COUNCIL (Dr. Macdonald) supported the request of the Irish members on the ground that the position of affairs in Ireland was so utterly different from England as regards medical practice. Many influences were at work there which Englishmen could not understand.

Dr. E. THOMPSON (Omagh) thought it strange that the Representative Meeting should change the opinion expressed a few days earlier. He could not see any reason for the statements made by Professor White or Dr. Johnston, except, perhaps, that they had a more thorough knowledge of the country than he had. He did not see any reason why the resolution should interfere with the working of the conjoint scheme. If medical benefits did not apply directly to Ireland, they did indirectly, and societies were urging people to pay 1d. or 2d. a week and saying they would give the benefits promised under the National Insurance Act. Was it not the fact that maternity benefits and sanatorium benefits applied to Ireland?

Dr. TODD (Sunderland) said the British Medical Association was the parent body, and had financed the Conjoint Committee in Ireland to a great extent. They were simply asking the Irishmen to give them their support in the fight.

Dr. J. S. DARLING (Portadown) said the position as it affected Ireland had not been adequately discussed by the meeting.

Mr. E. B. TURNER (Kensington) cordially supported Dr. Todd. It would be a lamentable thing if the profession appeared to weaken on this subject. It was not a question of whether the members of the Advisory Committees in England or Ireland had been of any use to the Commissioners. It was true that the Committees had been absolutely useless. They were withdrawing from these Com-

mittees as a mark of their intention to have nothing more to do with the medical benefits under the Act.

Dr. McKenzie Johnston (Edinburgh) thought it advisable that all should retire, and by doing so indicate the unanimity of the profession. If the Irish members were loyally to take the same course as he believed all the English members would, the profession in Ireland would not suffer in any way, or be prevented from working its own organization.

Dr. M. B. Costello (Mid, North, and South Connaught) appealed to the meeting to accede to the request of Ireland in this matter. There was no use in passing resolutions unless there were means of enforcing them. The position of the British Medical Association as regards the Conjoint Committee to which the Irishmen were responsible was not that of a parent committee, and the effect of the resolution would be that those who were members of the British Medical Association would have to resign those positions and leave on the members of the Irish Medical Association. In his own constituency there were sixty-five members of the British Medical Association, and about 230 practitioners. It was a question of tactics. If the resolution was sent as a recommendation to the Conjoint Committee, he was quite sure that body would pass it, and it had the means of enforcing it, which the British Medical Association had not.

On being put the rider was lost.

Resignation from Insurance Committees.

The Chairman of Council moved the confirmation of the following resolution:

That all medical practitioners who have accepted office on any of the Provisional Insurance Committees throughout the country be called upon to resign their positions.

Dr. W. T. Brook Fox (Blyth, etc.) objected. It was possible that in time the Government might come to the profession with a proposal on which the Act might be worked. All over the country medical men had already been elected to these posts, and if they were called upon to resign now the probability was that they would not be re-elected.

Dr. F. M. Pope (Council) moved that the question be now put, on the ground that the matter had been discussed over and over again.

The motion was then put and carried.

Dr. J. S. Darling (Portadown and West Down) moved that the above should not apply to Ireland. If it applied to Ireland, it would simply mean handing over sanatorium benefit in Ireland to a party altogether outside the British Medical Association.

Dr. Goodboy (Marylebone) supported the proposal, and pointed out that in Ireland there was an association for the treatment of tuberculosis which was being run quite outside the medical profession. If the Representative Meeting did not exclude Ireland from the operation of the resolution it would be handing over the control of sanatorium benefit to a body of people who were anxious to keep the medical profession out of its rightful place.

Dr. Rayner (Treasurer) also supported the motion. The conditions of the Irish medical man were very different from those in England. The number of members of the Association in Ireland was far less in proportion than in England, and everything possible should be done to increase the number of their members in Ireland, and if, because of any resolution of the Representative Meeting, members of the Association in Ireland resigned their positions, those positions would be filled by people antagonistic to the British Medical Association, and the members of the Association would be shut out. He appealed to the meeting to reconsider the resolution to except Ireland.

Dr. Major Greenwood (City of London) said that as medical benefits did not obtain in Ireland, there should be as much local option as possible.

Dr. Toon said that he had ascertained that there were 2,802 medical men on the *Register* in Ireland, of whom 1,060 were members of the British Medical Association. There were thus 1,742 members of the profession in Ireland who were not members of the Association.

The motion was carried by 90 votes to 50.

Sanatorium Benefit.

Dr. Buist moved:

That the British Medical Association calls on all practitioners to refrain from applying for, or accepting, any post or office of any kind in connexion with the National Insurance Act, except in regard to sanatorium benefit, provided it is carried on in accordance with the wishes of the Association, until such time as the Government has satisfied the Association that its demands will be met.

Dr. Willock (Croydon) moved:

That the question involved in the words "except in regard to sanatorium benefit, provided it is carried on in accordance with the wishes of the Association," be referred to the Divisions for consideration.

The matter had not been adequately discussed in every Division. It was a very momentous decision, and one which should be well understood by members of the Association. It was irrational to forsake the position taken up which was to fight the Act. It had been urged as a matter of tactics that the profession had made a good move in acquiescing in the working of sanatorium benefit, but he regarded it as a retreat.

Dr. Major Greenwood (City, Metropolitan) seconded. He regarded the conclusion arrived at in Committee as unfortunate. It was important to be consistent in their policy. If they were going to war they must have war. If any embarrassment were caused to the Welsh National Memorial scheme, that injury had been brought about by Mr. Lloyd George himself in his speech at Kennington, where he had boasted that the union of the profession had been broken because men had taken the Welsh appointments.

Dr. Heggs (Canterbury and Faversham) said in this respect a whole-time service for carrying out medical benefit was absolutely impossible. Public opinion at the present time would not forego freedom of choice of doctor. On the other hand, with regard to sanatorium benefit, instead of 15 million people to consider, there were only 300,000. The organization necessary for carrying out sanatorium benefit in its entirety was at hand, and the whole sanatorium benefit could be taken out of the hands of the general practitioner. Public opinion was in favour of treatment of consumption by specialists, and it would be simply playing into the hands of Mr. Lloyd George to oppose the exclusion of sanatorium benefit when the Association could not maintain its position.

Dr. Johnson Smyth (Bournemouth) was opposed to the principle of postponing sanatorium benefit. The Chancellor of the Exchequer would pose as the Good Samaritan with his hands tied behind his back by the doctors whom he would characterize as the Levites. He would point to stricken persons and say, 'Here is a profession with a reputation for humanity extending over thousands of years and now they refuse to help suffering humanity." It was necessary to hold public opinion as far as it could be held, and by carrying out the work of sanatorium benefit the profession had a chance of bringing public opinion to its side.

Dr. Buist continued the argument for a revision of the decision in Committee.

Dr. H. J. Robinson (Burnley) felt that if the resolution were passed without amendment those who had been disloyal to the Association would be given an advantage, and a penalty would be put upon those who had been its chief supporters.

Dr. Gordon (Aberdeen) thought that to exempt sanatorium benefit would be to make a gap in the wall the profession had built round itself. The Chancellor of the Exchequer could grant the wishes of the Association if he chose to do so, and the profession would carry out the Act. It was entirely in the Chancellor's hands, and he could not blame the profession.

Dr. D. Lawson (Aberdeen, etc.) said that for the Association to oppose the appointment of men to posts under the sanatorium section of the Act would be to strengthen the hands of those who wished to defeat the profession under that portion of the Act which sought to put upon the practitioners a system of sweated labour. With regard to the pernicious portion of the Act, the profession had gone to the Government and to the country and asked for fair conditions of work and fair remuneration, and to be removed from under the heel of the friendly societies. Those points had not been granted, but he maintained that under the portion which dealt with the sanatorium benefits there was no grievance of that kind. Let them be honest and strong and go to the country and say: "We have examined one portion of your Act, and we are not satisfied with it; we are hostile

to it, and we will do all we can to defeat it." But as honest men let them face the nation and say: "We have examined the second portion of your Act, and it concedes us what we want; it is fair and just, and we will work that part to the best of our ability." In that way they would put themselves right with the great mass of sensible, moderate opinion in the land, upon whose sympathy the success of all public movements must ultimately depend.

Dr. BUTTAR (Council) thought the speech made by the Representative for Canterbury and Faversham was due to misapprehension. That Representative desired to protect the general practitioner, but what evidence was there to show that exemption of the sanatorium benefit from the resolution would protect the general practitioner? To think that retention of sanatorium benefits in the hands of the general practitioner and the ordinary consultant was possible was absolutely negatived by what had happened with regard to tuberculosis dispensaries. At present the supporters of dispensaries were out to win a service to deal with tuberculosis, and intended that, as far as possible, every man employed in that service should be a whole-time officer. The result would be that the whole of the work would disappear from the hands of the ordinary general practitioner. Medical men who had supported the Association by throwing up appointments already accepted under a misapprehension would be ruined, and once more the Association would give up people who had stood out on its behalf. Was it wise to induce in the rank and file the idea that the Association had weakened its position? Without going back to the Divisions it was impossible to form an opinion at all. Therefore he considered the matter should be referred to the Divisions, and until that was done it was essential to do their best to keep every man from dealing with sanatorium benefits.

Dr. C. C. LORD (Rochester and Chatham) said he had received cast-iron instructions to vote for Recommendation X, but he now found attached to X something which neither he nor his constituents ever expected. It would be making no great mistake to appeal once more to the Divisions.

Dr. R. M. BEATON (St. Pancras and Islington) reminded the meeting of resolutions passed in February to the effect that medical men would touch no work until they got what they believed to be their just and reasonable demands. With regard to sanatorium benefits, many of the Representatives had had no opportunity to consult their constituents, and then were met by the eloquence of Dr. Heggs, and doubts were cast on their minds and they saw that they would not like to go against public opinion. If the matter went back to the Divisions the Representatives would come up at the next Representative Meeting and vote quite differently to the way in which they had voted the day before. Dr. Beaton's concluding remark was that the general practitioners had been working on tuberculosis all their lives, and it was not fair to say they knew nothing about it.

Dr. LAURISTON SHAW (Council) asked the meeting to recognize that any delay would be a most dangerous thing. If the decision were delayed there would be an excellent opportunity for the development in other parts of the country of that extraordinarily uncomfortable position which had arisen in Wales. Sanatorium benefits were in operation, and the meeting had to make up its mind whether it would remove the ban or not. It should make up its mind at once. The danger that some members of the profession would leave the united army because they considered that the Association was not sufficiently regarding the interests of the community was very great. It was true also, no doubt, that there would always be a certain number of men who would leave the united army for motives of self-interest.

Dr. G. E. HALSTEAD (Isle of Thanet) said he liked neither the amendment nor the resolution itself, because they both left the question still in a state of doubt. If they could not settle the matter one way or the other, they were unfit to represent their Divisions. It had been said that they had not yet formulated their sanatorium demands. That, no doubt, was so; but, when they had formulated them, how long would it be before they got an answer? Before the profession got an answer to its demands, what were members to do? Were they to apply for posts in connexion with sanatorium benefit, and then resign them, or were they to forbear applying for them, and let their less loyal fellow practitioners get the appointments and keep them?

Mr. E. B. TURNER (Kensington) said that a reference to the Divisions would practically cause no delay at all, because the profession would not be able to undertake to work sanatorium benefit until it knew that it would be conducted in accordance with the wishes of the Association. It had been said that the medical officers of health were their particular enemies, but he doubted very much whether they could find time to work sanatorium benefit.

Dr. D. F. TODD (Sunderland) appealed to the meeting to be consistent and confirm the vote passed in the Committee stage. The position in the Committee stage had leaked out by some means and had got into the press, and if the meeting attempted to go back upon it now it would be looked upon as a weak-kneed body. It had been said that sanatorium benefit could be worked by the Association. Where were the dispensaries to work it? How were they going to organize them and administer them? Where were the funds or the men to do it?

Dr. J. PEARSE (Trowbridge) felt it was essential to consent to work sanatorium benefit. To refuse would mean inflicting upon the public a direct and deliberate injury in order to produce an indirect benefit to themselves. The meeting had discussed for a long time the question of resolving the Association into a trade union and they had decided to postpone the matter. This was more than a matter of trade unionism; it was a weapon of syndicalism.

Dr. O'SULLIVAN (Liverpool) asked what mandate the meeting had for altering Minute 78, passed at the last Representative Meeting. Recommendations X and Y had been sent down to the Divisions, and the Representatives had been instructed by their Divisions to vote on them; but a totally different complexion had been put upon X by the twisting it had received at the hands of the Canterbury Division.

The CHAIRMAN OF COUNCIL reminded the meeting that when Minute 78 was passed the consideration of sanatorium benefit was not in the mind of the Association at all. Minute 78 dealt entirely with medical benefit.

Dr. WILLCOCK (Croydon), replying upon the discussion, asked the meeting two questions: "How did it come together?" and "How would it go away?" They came together a united body, and if the amendment were not accepted they would go away with a feeling of disruption amongst them. ("No" and "Yes.")

A roll-call was demanded, with the following result:

For the amendment	75
Against	105
Not voting	5

The result was received with loud applause, and the meeting adjourned at 7.15 p.m.

ELECTION OF MEMBERS OF COUNCIL.

During the course of proceedings on this day the CHAIRMAN OF REPRESENTATIVE MEETINGS announced the result of the election of members of the Council by Representatives voting in Grouped Branches as follows:

Dr. R. M. BEATON	Metropolitan Counties Branch. North and East Metropolitan Group: City, Stratford, South-West Essex, North Middlesex, St. Pancras, and Hampstead Divisions. Central Metropolitan Group: Marylebone and Westminster Divisions.
Mr. E. B. TURNER	West Metropolitan Group: Richmond, Ealing, Chelsea, Kensington, and Watford Divisions. South Metropolitan Group: Lambeth, Norwood, and Wandsworth Divisions.
Dr. GRANT ANDREW	Glasgow and West of Scotland Branch (four City Divisions). Glasgow and West of Scotland Branch (four County Divisions). Border Counties and Stirling Branches.
Professor A. H. WHITE ...	Connaught and South-Eastern of Ireland Branches. Leinster Branch.
Dr. J. S. DARLING	Munster Branch Ulster Branch.

Dr. A. C. FARQUHARSON ...	North of England Branch. North Lancashire and South Westmorland Branch. Yorkshire Branch.
Mr. T. W. H. GARSTANG ...	Lancashire and Cheshire Branch.
Dr. C. H. MILBURN	East York and North Lincoln Branch. Midland Branch. Cambridge and Huntingdon Branch. East Anglian Branch. South Midland Branch.
Dr. H. C. MACTIER	Birmingham Branch. Staffordshire Branch. North Wales Branch. Shropshire and Mid-Wales Branch. South Wales and Monmouthshire Branch.
Mr. C. E. S. FLEMMING ...	Bath and Bristol Branch. Gloucestershire Branch. West Somerset Branch. Worcestershire and Herefordshire Branch. Dorset and West Hants Branch. South-Western Branch.
Dr. COURTENAY LORD ...	Oxford and Reading Branch. Southern Branch. South-Eastern Branch.
Dr. M. DEWAR	Aberdeen, Northern Counties, Dundee, and Perth Branches. Edinburgh and Fife Branches.

Wednesday, July 24th.

STANDING COMMITTEES.

The proceedings were resumed at 10 o'clock on Wednesday, July 24th, 1912, when the CHAIRMAN OF REPRESENTATIVE MEETINGS announced the result of the voting for Standing Committees:

RESULT OF VOTING FOR STANDING COMMITTEES.

Finance Committee.—Dr. J. H. Ewart (Eastbourne), Dr. D. Lawson (Banchory), Dr. R. L. Langdon-Down (Richmond), Dr. Milner Moore (Coventry).

Organization Committee.—Mr. Russell Coombe (Exeter), Mr. T. W. H. Garstang (Altrincham), Dr. A. H. Williams (Harrow).

Journal Committee.—Dr. R. C. Buist (Dundee), Dr. D. C. M. Munro (Maidenhead), Dr. C. J. Whitby (Bath).

Central Ethical Committee.—Dr. A. G. Bateman (London), Dr. Bruce Goff (Bothwell), Dr. J. H. Keay (London), Dr. R. L. Langdon-Down (Richmond), Dr. Philip G. Lee (Cork), Dr. Lauriston E. Shaw (London).

Medico-Political Committee.—Dr. M. Dewar (Edinburgh), Mr. W. J. Greer (Newport, Mon.), Dr. R. W. Wallace-Henry (Leicester), Dr. A. H. Williams (Harrow), Dr. T. B. Heggs (Canterbury and Faversham), Dr. D. F. Todd (Sunderland).

Public Health Committee.—Dr. R. A. Lyster (Winchester), Dr. T. B. Heggs (Canterbury and Faversham), Dr. F. E. Wynne (Leigh).

Hospitals Committee.—Dr. T. Bushby (Liverpool), Dr. R. E. Howell (Middlesbrough), Dr. J. H. Keay (London), Dr. C. P. Lankester (Guildford), Dr. H. C. Mactier (Wolverhampton), Dr. F. G. Swayne (Norwood).

Naval and Military Committee.—Colonel H. J. Waller Barrow (Ealing), Dr. S. F. Raglan Thomas (Exeter).

Colonial Committee.—Dr. T. D. Greenlees (London), Surgeon-General J. P. Greany, I.M.S.

MINUTES.

The minutes of the previous day's proceedings were read and confirmed.

REPORT STAGE ON THE NATIONAL INSURANCE ACT.

EFFECT OF RESOLUTIONS OF THE REPRESENTATIVE MEETING.

The CHAIRMAN said that when the meeting adjourned on the previous day Mr. Willock had asked the question whether it was necessary for a two-thirds majority to be obtained in order that a resolution should become the approved policy of the Association. He had had a conference with the Solicitor, who, with the permission of the meeting, would reply.

The SOLICITOR (Mr. Hempson) said this was a matter which was entirely governed by the regulations, to which they must look for guiding light. If they turned to Article 31, which was the controlling Article in regard to the matter, they would find that this Representative Body had vested in it by their regulations a very great power, and that they had submitted themselves to two controlling forces in the exercise of that power. One was in regard to voting on certain subjects with which they were immediately connected in deciding this question; the other was the subject of referendum at the hands of the Council, to which he did not wish to refer beyond merely mentioning it. One had to consider the subject-matter of the resolution in order to decide whether Article 31 applied to it, and also the circumstances under which that resolution was being dealt with. Resolutions passed in Committee were exempt from the operation of a two-thirds majority, because they came up on Report stage for final adoption or otherwise, and it was at this stage that the question here arose. He ought perhaps to refer to the resolution known as No. 78 for the purpose of contrasting it with the resolution that was now before them. Contrasting the one with the other, Motion 78 was an instruction to the Council to do something; whereas Motion C.41 was, what he would call, a mandatory resolution emanating from the Representative Meeting, and would, if passed, become the declared policy of the Association. Accepting that as the right interpretation of the position, they then had to consider the extent to which it was governed by the provisions of Article 31. That was a subjective Article in the nature of a proviso to something that had gone before, and in clear and unmistakable terms it made it incumbent upon this meeting to carry a resolution of a mandatory character, such as the one before them, by a two-thirds majority. Omitting words which were unnecessary, Article 31 was:

> That any resolution which affects or relates to the policy of the Association in manner affecting the interests of the medical profession has to be carried by a majority of not less than two-thirds of the votes given thereon.

Therefore the majority required was this. If there were 100 voting for a resolution and there were 50 against, they had the majority necessary. If there were 99 voting for and 50 against, they were below. It appeared to him that the effect of that was clearly that it did not become an effective resolution unless that requisite majority was obtained. Therefore, applying those relative figures 99 to 50, if they were secured this resolution would not become an effective resolution of this Representative Body—in other words, it would be lost. There were provisions contained in the same article applying to other resolutions which could be carried by a simple majority. The resolution had bound up in it two matters which formed one concrete resolution. Applying the figures which were given on this sanatorium question, 137 and 54 respectively, when voting upon it in Committee that would carry the resolution; but applying the figures 105 and 75 respectively, which were given when voting upon the suggested reference back of the sanatorium questions to the Divisions, it would not carry it. They could not, as the resolution stood at the present moment being bound up as it was as one whole, vote on any part of it without either establishing or defeating the whole resolution. If there were any subsidiary questions which any member wished to put to him he would be glad to answer them. (Hear, hear.)

SANATORIUM BENEFIT.

Dr. METCALFE (Bradford) moved:

> That the British Medical Association calls on all practitioners to refrain from applying for, or accepting, any post or office of any kind in connexion with the National Insurance Act, except in regard to those poor persons requiring sanatorium benefits who are not eligible for ordinary medical benefits.

It had been said that sanatorium benefit and medical benefit had no relation one to the other. Mr. Lloyd George, in his speech at the Kennington Theatre, said, in regard to medical benefits, that though it had been said that he could not obtain doctors, a large number of applicants had been obtained for appointments to work sanatorium benefits in Wales, and that if medical men could be obtained for sanatorium benefits, it would be easy to

obtain them for medical benefits. That was a serious assertion, of which the meeting should take note. If persons suffering from tuberculosis were excluded from the benefit of sanatorium treatment, the sympathies of the country would be alienated.

Dr. A. MANKNELL (Bradford), in seconding, said that the position was difficult, because if the profession worked sanatorium benefits it would be accused of vacillating, but if it declined it might be accused of being oppressive to the sick and suffering. Many speakers had said that they came up with no distinct mandate from their constituencies, but in this case he and his colleagues spoke with the full force behind them of a large Division which had expressed the firm decision that sanatorium benefits should not be worked. With regard to the connexion between sanatorium benefits and medical benefits, his Division felt that Parliament had once more succeeded in placing the profession in a false position, because it had made it appear that the profession was placing its own interests before the lives of their fellow creatures. The Bradford Division desired to pursue the lines of a straight, firm policy.

Dr. MACDONALD (Chairman of Council) appealed to the meeting to come to some common ground on which they could be agreed. The votes which had been taken the previous day clearly showed that there were two opinions in that meeting. What was wanted at the present time was unity. Surely there was some ground on which they could meet each other and come to a decision. He did not think the amendment then before the meeting would bring about that end.

Dr. FOTHERGILL (Brighton) said that under the Act there was no such thing as a poor person.

Dr. MEADE (Scarborough, York) regretted that every speaker threatened that if they did not agree with him in what he thought the Association would be broken up, and in the next breath they talked about the unity of the profession. They could not all expect to get what they wanted. If they all thought alike they would all marry the same woman (laughter). He would appeal to them to be united and act like men, and not go about saying if one man did not think as he did the outsiders would come in and cut their throats. The outsiders would come in anyhow. The right thing was to unite against them.

The CHAIRMAN then put the Bradford amendment, and it was rejected.

The CHAIRMAN said that many amendments of all shades and grades had been suggested, and he proposed to take the feeling of the meeting on one which was put in a very concrete form, namely:

> That the words having reference to the exemption of sanatorium benefit be deleted.

Dr. L. FRASER (South Shields and Tyneside) moved the amendment. The motion as it stood proposed to give permission to men to take the posts in question before the requirements of the profession had been granted by the Government on the assumption that those requirements would be conceded. After fifteen months' very hard work, not a single concession with regard to their minimum demands had been obtained. It was illogical to suppose that the Government would grant requests that had not yet been laid before it, and that they should not allow the posts to be taken up at present. If the demands were not granted, how could the resignation of men who had previously taken the posts, having had permission to do so, be secured?

Dr. J. FLETCHER (Chelsea) in seconding the amendment read a telegram from his constituents condemning the action of the Representative Meeting in respect of sanatorium benefits. If the men already working sanatorium benefits were called out, the Association would be under an obligation to guarantee their salaries, and he desired to know what financial liability the Association would incur.

Dr. BURST (Deputy Chairman Representative Meetings) appealed to the meeting to find a middle course.

Dr. O'SULLIVAN (Liverpool) emphatically supported the amendment. What mandate had the meeting to repeal Minute 78 of the last Representative Meeting? He quite understood the humanitarian motives of some of the speakers, but were there not diseases coming under medical benefit of importance equal to tuberculosis?

The CHAIRMAN, in answer to a question by Mr. DORRELL (Hampstead), said that the question of working sanatorium benefit in the sense then being discussed had nothing to do with the acceptance of office on local Insurance Committees.

Mr. DRAPER (Huddersfield) supported Recommendation X in its entirety. If the profession were beaten piecemeal it would result in its being beaten eventually on everything.

The CHAIRMAN OF COUNCIL desired to put the position clearly before the meeting. Once the reference to sanatorium benefit was deleted from the recommendation, then the other part would be put, which, unless amended in some form, would become the substantive motion to be voted on, and then, if the sanatorium benefit were to be dealt with anywhere, it would have to be dealt with independently. There would then be two definite issues. There would be the issue on the motion before the meeting with the sanatorium benefit reference cut out altogether, and next there would be the question how the sanatorium benefit questions would be dealt with, which could be dealt with as an independent question in the form of a rider.

Dr. MAJOR GREENWOOD (City of London) supported the amendment. While quite willing to accept a compromise agreeable to his constituents, the difficulty was that many people would not distinguish medical benefit from sanatorium benefit; the objection he felt was that the matter had not been put before the Divisions.

The CHAIRMAN said his interpretation of the position was that unless there were some reservation in the form of a rider the motion, as it stood, did not allow any man to go on a Provisional Insurance Committee in respect of sanatorium benefit.

Dr. J. T. MACNAMARA (Greenwich) said that if he voted against the amendment it was not because he disbelieved in the objects, but because he believed it was not the proper way of securing unanimity.

It was moved and seconded that the question be now put, and the amendment was put and lost.

Dr. J. T. MACNAMARA (Greenwich) moved as an amendment:

> That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act until such time as the Government has satisfied the Association that its demands will be met, except in regard to sanatorium benefit, provided no further paid appointments be made until the regulations of the Commissioners have been submitted and approved by the Council of the British Medical Association.

It would be wise in dealing with a matter of this kind to have a proviso which would enable withdrawal from an untenable position. If they accepted work under the sanatorium parts of the Act, practitioners claimed the right to have a voice in saying whether the conditions were proper, and that, if Mr. Lloyd George were sincere in his desire to propitiate the profession, he should not continue to make appointments until the Association had an opportunity of deciding whether the conditions were acceptable to the profession or not.

Dr. EVAN JONES said that if the words "post" and "office" meant anything at all they meant paid posts and offices. Under the part of the Act dealing with medical benefits the profession had stood out for six cardinal points. Was it going to make a minimum demand in respect of the sanatorium benefits? If the Association was consistent it would take a firm stand and see that its conditions were accepted by the Government before a single appointment was made.

Dr. HASLIP (Westminster) could see no objection to men applying for these appointments, whether they were highly or poorly paid. Let the candidate submit the conditions to the Council, in which case he could be told whether he could accept the appointment or not. Whatever had happened with regard to tuberculosis, medical men had only themselves to thank. They had caused it to be made by the Government a notifiable disease, and having done that, the State was bound to take charge of it. This was the first time any Government had given a sum of money for medical research; having placed at the disposal of the medical profession a sum of £90,000 a year for that purpose, could the Association debar any of the members from applying for research scholarships? It would be madness to do so.

Dr. D. LAWSON (Aberdeen, etc.) thought the practical

difficulties in the way of carrying the amendment into operation were insuperable.

The original motion was then put and carried by 117 votes to 22, as follows:

That the British Medical Association calls on all practitioners to refrain from applying for, or accepting, any post or office of any kind in connexion with the National Insurance Act, except in regard to sanatorium benefit, provided it is carried on in accordance with the wishes of the Association, until such time as the Government has satisfied the Association that its demands will be met.

The CHAIRMAN OF REPRESENTATIVE MEETINGS remarked that all those who were in a minority had really kept themseves in hand for the sake of unity (hear, hear), and it was certainly a great demonstration of the common sense of the meeting, and of the underlying condition that the profession could not get on unless it kept together.

On the motion of Dr. HASLIP (Westminster), seconded by Dr. A. H. WILLIAMS (Harrow), it was agreed:

That before any practitioner undertakes any work in connexion with sanatorium benefits of the Act, the conditions and duties of such appointment shall be submitted to the Council for its approval.

Medical Officers of Health.

It was resolved:

That the foregoing resolution shall not preclude any medical officer of health from giving advice to public bodies in his official capacity.

CENTRAL INSURANCE FUND.

It was resolved:

That meanwhile all steps be taken to perfect the organization of the profession, and to increase the Central Insurance Defence Fund.

SANATORIUM BENEFIT.

Tuberculosis Dispensary Staff.

It was resolved:

That the chief tuberculosis officer should be a whole-time officer and confine himself to diagnosis and consultative work. The rest of the staff of the dispensary should, where possible, be formed of local medical practitioners serving on a rota, or otherwise;

and

That the question of the special demarcation of certain of these resolutions be left to the Council.

Dr. CARTER (Bristol) moved as a rider:

That arrangements be made for payment to be available out of sanatorium benefit funds for consultations between the attending practitioner and consultant practitioners other than the tuberculosis officer.

In Manchester such arrangements had already been made between the consultants of the hospitals and the Joint Committee of the Insurance Committee and the county council. Without such a provision, consultations to be made with the attending practitioner and the consultant would have to be done entirely outside the scope of sanatorium benefit.

Mr. DRAPER (Huddersfield) seconded, but on Dr. BURST pointing out that there was nothing in the resolution that had been adopted to prevent the carrying out of Dr. Carter's proposal, the rider was put to the meeting and lost.

The following resolutions were then adopted:

ADMINISTRATION OF SANATORIUM BENEFIT.

Treatment at Tuberculosis Dispensaries.

That those requiring attention at the dispensary should be introduced only on the recommendation of a medical practitioner actually in attendance upon the patient.

Free Choice of Doctor in Domiciliary Attendance.

That there should be free choice of doctor by patient and of patient by doctor in all cases where domiciliary attendance [illegible]

Separation of Dispensary Service from that of Medical Charity.

That no tuberculosis dispensary should be opened or beds be provided for treatment of those in receipt of sanatorium benefit at a voluntary hospital or infirmary, except on the condition that the organization is entirely independent of that of the [illegible] hospital or infirmary, the accounts of the dispensary [illegible] separate; and that the services of all medical practitioners are paid for.

Provision for Treatment of Children.

That the provision to be made in any district for the treatment of children found to be suffering from tuberculosis should be in accordance with that scheme of the Association for the treatment of school children found defective on medical inspection which has been approved by the local medical profession.

That nurses engaged in giving domiciliary attendance should be subject to the conditions of service approved by the Association for the conduct of nurses engaged by nursing associations in so far as these are applicable.

Whole-Time Tuberculosis Officer as Consultant.

That no whole-time tuberculosis officer, or whole-time assistant, shall give domiciliary attendance, except as a consultant to the practitioner in attendance, and at his request.

Representation of Profession on Committees.

That the local medical practitioners should have adequate representation, by means of practitioners elected by the local Medical Committee, on Consultative Committees having control of dispensaries, and on Voluntary Care Committees.

Reports from Lay Persons.

That the reports to be obtained from Voluntary Care Committees and nurses should be confined to such subjects as are not included amongst the duties of the medical attendant.

Treatment of Tuberculous Patients not Recognized for the Purpose of Sanatorium Benefit.

That a case of tuberculosis diagnosed as such by a practitioner and confirmed by a tuberculosis officer should not be liable to be treated except in connexion with sanatorium benefit. If sanatorium benefit is not available the case should be treated as an extra under medical benefit.

Salaries of Whole-time Medical Officers.

That the commencing salaries for whole-time medical officers engaged in the tuberculosis service should be, for junior or assistant whole-time medical officers not less than £300 per annum, and for senior whole-time officers not less than £500 per annum. These salaries in all cases must be exclusive of travelling and other official expenses.

Tenure of Office.

A medical officer engaged in the tuberculosis service who by the terms of his appointment is restricted from engaging in private practice as a medical practitioner shall not hold office nor be appointed for a limited period only, and shall be removable by the recognized central authority, and not otherwise.

Remuneration of Part-time Officers.

That the payment to be received by medical practitioners appointed on a rota, or otherwise, to give medical attendance at the tuberculosis dispensary should be at a rate of not less than £65 per annum for an attendance of two hours per week.

Remuneration for Domiciliary Attendance.

That the payment to be made to medical practitioners for domiciliary attendance on patients certified to be suffering from tuberculosis shall be on a scale of fees and not by capitation.

Provisional Arrangements.

That any provisional arrangements for the administration of sanatorium benefits be such as are satisfactory to the local Division of the British Medical Association subject to the approval of the Council of the Association.

FEES FOR DOMICILIARY TREATMENT.

The resolution in Committee with respect to the payments to be made for domiciliary attendance was adopted and referred to the Council for consideration.

STATE SICKNESS INSURANCE COMMITTEE.

The following resolution passed in Committee was adopted without amendment:

That a State Sickness Insurance Committee be appointed by the Representative Body to watch the interests of the profession in relation to the National Insurance Act, and also to report on the whole situation to the Council; that the Council be instructed to report thereon, as soon as possible, to the Divisions and a Special Representative Meeting; and that the Committee consist of ten twelve members elected by grouped Representatives in the same manner as

members of Council under By-law 43 (*c*); (*b*) the *ex officio* members; (*c*) two women medical practitioners to be nominated, one by the Northern Association of Medical Women and one by the Association of Registered Medical Women; and that the Committee be empowered to add to its number not more than six additional members.

The CHAIRMAN OF REPRESENTATIVE MEETINGS announced the result of the election of the State Sickness Insurance Committee to be as follows: Dr. Todd (Sunderland), Dr. Hodgson (Salford), Dr. D. G. Thomson (Mid-Norfolk), Dr. E. O. Price (North Carnarvon and Anglesey), Dr. Major Greenwood (City of London), Mr. E. B. Turner (Kensington), Dr. T. M. Carter (Bristol), Dr. McKenzie Johnston (Edinburgh and Leith), Dr. John Adams (Glasgow, Central), Professor White (Dublin), and Dr. J. S. Darling (Portadown and West Down). Also the following four members of Council: Dr. Buist, Mr. Larkin, Dr. Maclean, and Dr. Lauriston Shaw.

CONFIRMATION OF RESOLUTIONS PASSED IN COMMITTEE.

The following resolutions passed in Committee were adopted:

Statement to Lay Press.

That a statement explaining the position of the medical profession in relation to the National Insurance Act be issued to the lay press.

Contract Practice Resignations.

That the resignations of contract practice appointments throughout the United Kingdom should be sent in at the earliest possible date consistent with the conditions of the pledge.

Newly-qualified Practitioners.

That the Council take steps to ensure that all newly-qualified practitioners before leaving the hospital should be requested to sign the undertaking and pledge, and to join the Association.

That it be an instruction to the Council to communicate with the deans of the medical schools requesting them to point out to newly-qualified men the advantages of becoming members of the British Medical Association, and thereby bring before their notice the present position of the profession and its pledges.

Appointments under Insurance Act.

That it be an instruction to the Council to take all such steps as are possible in order to again throw open for competition those whole-time tuberculosis appointments which have been filled under conditions contrary to the policy of the Association.

Schemes for Medical or Sanatorium Benefit.

That it be an instruction to the Council to urge on Divisions, as also on Provisional Local Medical Committees, the desirability of referring to the Central Office for advice and instruction, any offer or communication received from Provisional Insurance or Local Insurance Committees having reference to schemes for bringing medical or sanatorium benefits into operation.

Maternity Benefit.

That the number of women in receipt of maternity benefit under the National Insurance Act who shall be attended for teaching purposes by any recognized institution possessing a properly equipped maternity department be no more than is necessary to furnish the actual numbers required in order that the medical students and pupil midwives connected with that institution may obtain certificates.

Public Medical Service Schemes.

That, as regards the extern departments, the institutions referred to in the above recommendation should select and recognize local medical practitioners for the practical training of medical students and pupil midwives.

That the Report of the State Sickness Insurance Committee on the replies of Divisions on the Public Medical Service schemes be received.

That the report be approved and referred to Council for further consideration of all the information relating to Public Medical Services, and report as to the forms which are available for the Divisions. Further, that the Council be given power to approve of schemes which are in agreement with the principles approved by the Association.

National Insurance Act Report.

That the remainder of the Report of Council with reference to the National Insurance Act be approved.

Central Defence Fund.

That members of the profession be again urged, both from the Central Office and by the officers of Divisions, to guarantee sums of not less than £20 to the Central Fund, so that £250,000 may be guaranteed by the end of September, 1912.

That the remainder of the report of the Committee stage be approved.

Welsh National Memorial Association.

Dr. W. MARTIN (Cardiff) moved:

That it be an instruction to the Council to take some action to recognize the loyalty of those medical practitioners who at the request of the British Medical Association have resigned their appointments under the Welsh National Memorial Association.

It would, he said, be most unfair to leave those men in the lurch. They had lost their appointments, and the probability was that the appointments would never be offered to them again.

Mr. W. J. GREER (Monmouth) moved as a rider to add the words:

And to include in this recognition those medical practitioners who have withdrawn or abstained from applying for these appointments.

Dr. BUIST suggested the following alteration:

That the meeting expresses its appreciation of the action of those members of the profession who have withdrawn their applications or refrained from making them for these prohibited appointments.

Mr. GREER assenting to the alteration, the rider was put to the meeting and agreed.

PUBLIC HEALTH COMMITTEE.

Definition of "Official Duties" of Medical Officers of Health.

Mr. DOMVILLE (Chairman of Public Health Committee) moved:

That the following Recommendation of Council be adopted:

That the term "official duties" occurring in Minutes 141-3 of the Annual Representative Meeting, 1911, be understood to include such duties as are comprehended under the terms of any definite official appointment which does not offer any opportunity for competition with any private medical practitioner.

Dr. MAJOR GREENWOOD (City of London) suggested the following amendment:

That the definition of official duties in Motion 110 be referred back to the Public Health Committee.

He moved the amendment, not only because he was instructed by his Division to do so, but on behalf of, he believed, the majority of part-time medical officers. The definition as given resembled somewhat the classical definition of an archdeacon—it was really no definition at all. He asked the meeting, What was the definition of "private medical practitioner" to be? Was it to be said that a part-time medical officer of health who had a small public health appointment and a practice as a general practitioner did not come within the clause? Was it to be said that a public vaccinator or a police surgeon did not come within it?

Mr. DOMVILLE hoped the meeting would not refer the matter back. The Representative Meeting on two separate occasions had expressed itself in favour of the suggestion made. The Society of Medical Officers of Health was satisfied with the definition.

The amendment was put to the meeting and lost, and the motion was agreed to as a substantive motion.

The following resolutions were then adopted seriatim.

Membership of Public Health Committee.

That the Representative Body instruct the Council to take the necessary steps to amend the schedule to the by-laws so as to provide that the number of elected members of the Public Health Committee be eight instead of six—namely, four appointed by the Representative Body, and four by the Council.

Remainder of Annual Report.

That the remainder of the Annual Report of Council under heading "Public Health and Poor Law" (Document "A.R.M. 1," pages 462-3, paragraphs 106-14), be approved.

Minimum Salary for Whole-time Principal Medical Officers of Health.

That the Association support, wherever possible, the recommendation of the Local Government Board that the salary of medical officers of health, debarred from private practice, be not less than £500 per annum; and that in no case where a less salary than £250 is offered for a whole-time medical officer of health, whether principal or assistant, should an advertisement be accepted for publication in the JOURNAL.

Remainder of Supplementary Report.

That the remainder of the Supplementary Report of Council under heading "Public Health" be approved.

HOSPITALS COMMITTEE.

The following resolutions, formally moved by Mr. R. J. JOHNSTONE (Chairman of the Hospitals Committee), were agreed to:

That the Annual Report of Council under heading "Hospitals" be approved.

Maternity and Voluntary Hospitals Charging Fees for Midwifery Cases.

(i) That inability to pay for adequate treatment or the recommendation of a medical practitioner shall be the consideration for the participation of parturient women in the benefits of maternity and voluntary hospitals and other charitable institutions.

(ii) That women in receipt of maternity benefit under the National Insurance Act should not be regarded as eligible for charitable treatment except in cases of difficulty and danger and on the recommendation of a medical practitioner.

A rider moved by Dr. BENHAM (Brighton) was referred to the Council as follows:

That no maternity or voluntary hospital, or other charitable institution, shall receive fees from any woman who is entitled to maternity benefit, either directly or indirectly.

On the motion of Dr. NAPIER JONES (Reading), seconded by Dr. WALLACE HENRY (Leicester and Rutland), it was agreed:

That it be an instruction to the Council to take such steps as are necessary in order to obtain the approval of the staffs of hospitals for the principle that no person be received into the casualty or out-patient department of a hospital except on emergency or on the introduction of a practitioner.

NAVY AND MILITARY COMMITTEE.

The report was received and adopted.

SCOTLAND.

The Annual Report of Council under the head "Scotland" was approved.

IRELAND.

The Report of Council under the heading "Ireland" was approved.

GENERAL APPROVAL OF ANNUAL AND SUPPLEMENTARY REPORTS OF COUNCIL.

Dr. MACDONALD moved and it was agreed:

That, subject to the amendments and other resolutions adopted by the meeting with reference thereto, the Annual and Supplementary Reports of Council be approved as a whole.

AUSTRALASIAN BRANCHES.

Professor H. B. ALLEN (Victoria) moved:

That the following Subsection (3) be added to present By-law 5 of the Association:

(3) Where a candidate for election has been recently domiciled within the territory of an oversea Branch, election of such candidate by a Branch in the United Kingdom or another oversea Branch shall be provisional until the Council of the Branch in the previous place of domicile has been communicated with.

He said this motion was very urgent, because men who were decidedly objectionable in Australasia and could not get election to the Branches out there from time to time came to the United Kingdom and during a short visit were elected to Branches the Councils of which did not know much about them, and then they went back to Australia, and by the territorial arrangement had to be received into the Branches. This had led to a great deal of discontent. The first remedy proposed was that there should be a series of clearances, but the Organization Committee had strongly objected to it.

Dr. E. A. STARLING (Tunbridge Wells) pointed out that there was a certain amount of difficulty in the matter. Last year in his own Division they had 300 candidates coming forward, and it was impossible to find out the previous domicile of every one of them. He submitted that it was possible for an objectionable man to slip in even under the conditions laid down by the mover.

The CHAIRMAN OF REPRESENTATIVE MEETINGS said the matter had received considerable attention, and he thought it was a pity to tie themselves to actual wording. Would the mover be content with a statement that the meeting was in favour of the principle of his suggestions and a reference to the Council?

Professor ALLEN (Victoria) said he should be quite content with that.

Professor ALLEN moved:

That the following words be added at the end of the statement of duties, powers, etc., of the Central Ethical Committee in the schedule to the present by-laws:

Where an ethical complaint has been dealt with by the Council of a Branch outside of the United Kingdom, an appeal to the Council of the Association shall not be allowed except by permission of the Council of the Branch.

It was impossible for the Central Council or the Ethical Committee to understand fully the local conditions that they had to deal with or to know the personality of the persons concerned, and therefore it was thought it would be very much better that questions like this should be left entirely to the local Council.

The resolution was agreed to.

Professor H. B. ALLEN moved:

That the above motion be amended to read as follows:

That in the opinion of this meeting provision should be made for the federation of the Australian (Australasian) Branches with autonomy in regard to matters of Australian (Australasian) concern not affecting the Association outside Australia (Australasia); and that the Australian (Australasian) Branches be invited to report whether satisfactory provision can be made under the present constitution of the Association by the formation of a Federal Committee more or less on the lines of the South African Committee or by extension of the powers of the Australian (Australasian) Federal Committee already proposed.

If a Federal Committee for Australalia, somewhat on the lines of the South African Committee, were established, that would do all that Australia needed. There was a question whether there would be a Federal Committee for Australia and another for New Zealand, or whether there should be one for the whole of Australasia.

Dr. F. A. POCKLEY (New South Wales) said that the principle had already been recognized with regard to South Africa; surely they would not deny it to Australasia.

The motion was carried.

TIME OF HOLDING REPRESENTATIVE MEETINGS.

The following motion by the Chelsea Division was withdrawn:

That the Annual Representative Meeting shall commence on the third Tuesday in July.

REPRESENTATIVES AND DEPUTY REPRESENTATIVES.

Dr. HASLIP (Westminster) moved:

That the Council be instructed to frame alterations in the regulations of the Association carrying out the principles contained in the following motion, and submit them to the next Representative Meeting, Special or Annual:

That it should be possible for a Representative to resign his position, and for the post to be filled up at any time; that it should be possible for a Division to dismiss a Representative by a majority of those present at a special meeting of the Division called for the purpose; that in the event of a Representative being able only to attend part of a Representative Meeting it should be possible for a Division to appoint a deputy to act during such time as the Representative is unable to attend.

He said it might not be generally known, but it was absolutely impossible for a Representative to resign his position. A Representative was *ex officio* a member of the Branch Council, and if he resigned the Division was practically disfranchised. With regard to the second part of the motion, he suggested that it should be so worded as to give the right to the Division to either re-elect its Representative or elect somebody else in his place.

The CHAIRMAN OF COUNCIL (Dr. Macdonald) thought the resolution hardly amounted to what Dr. Haslip had stated, but if it were meant that the Council should consider the

matter he had nothing further to say. It was a very intricate subject. He suggested that it should be sent to the Council for its consideration. This was accepted by Dr. Haslip, and the motion was referred to the Council.

CONFIRMATION OF MINUTES.

The minutes were read and confirmed.

VOTE OF THANKS TO MR. VERRALL.

It was proposed by Mr. T. SANSOME (West Bromwich) and seconded by Dr. JOHNSON SMYTH (Bournemouth):

That a vote of thanks be given to the Chairman of the State Sickness Insurance Committee for the services he had rendered the Association.

VOTE OF THANKS TO DR. MACLEAN.

It was proposed by Dr. SHADWELL (South-West Essex) and seconded by Mr. VERRALL:

That a vote of thanks be given to the Chairman of Representative Meetings for his conduct in the chair.

The CHAIRMAN OF REPRESENTATIVE MEETINGS, who was received with loud and continued applause, said that in the past there had been hours of brightness and sunshine, but, on the other hand, hours of anxious thought and care, but he would willingly live every hour again for the Association. The present was full of great anxiety, but, having regard to the decisions come to, they were all of one determination that, whether they sank or swam, they would hold together.

The CHAIRMAN OF COUNCIL said the meeting was much indebted to the clerical staff for their willing services, and Dr. MACLEAN, in moving a resolution to that effect, which was carried by acclamation, made reference also to the services of the Medical Secretary and Editor.

The proceedings then terminated.

ANNUAL GENERAL MEETING.

First Session.

THE eightieth Annual General Meeting of the British Medical Association was opened at St. George's Hall, Liverpool, on the afternoon of Tuesday, July 23rd, 1912. The chair was taken by the President, Professor ROBERT SAUNDBY, M.D., LL.D., F.R.C.P.

The minutes of the last Annual General Meeting were confirmed.

Professor SAUNDBY, who on rising was received with loud applause, addressing Sir James Barr, said that by the decision of the medical profession of Liverpool and district, ratified by the votes of the last Annual General Meeting, he had been elected President of the British Medical Association. It was therefore his pleasant duty, as retiring President, to hand over to Sir James Barr his badge of office and to congratulate him on his election, which he did with full confidence that Sir James Barr would wear the badge of office worthily, always bearing in mind the high traditions of the Association and the high office which he occupied. (Cheers.)

Professor Saundby then vacated the chair, which was taken by the new President, Sir JAMES BARR.

The PRESIDENT, who was received with loud and continued applause, said that on assuming office as President of their great Association after his probationary period of twelve months as President-elect, his first duty was to thank the members present, and, through them, the whole of the British Medical Association, for the exceedingly high honour conferred on him. It was the highest medical distinction in the country to which any man could aspire, and it was an honour of which he felt justly proud. To be the titular head of an Association of 25,000 members of his own profession was not only a position of honour, but one of responsibility, and it would be his earnest endeavour to maintain the high tradition which had always marked the office of President. He hoped to pass on his badge of office at the end of twelve months with undiminished lustre to his successor. A few weeks ago the profession in Liverpool had had to mourn the loss of his friend and colleague, Dr. Waters, who occupied the chair in 1883. He was a man who attained to an eminent position in the profession, and was beloved by all who knew him. During the past year the good ship of the Association had been passing through troubled waters, but, although she had suffered a good deal of buffeting from waves which at one time threatened to overwhelm her he hoped she was now nearing a safe harbour of refuge. That spoke highly for Dr. Maclean and Dr. Macdonald, who had been at the helm—(Hear, hear)—and who through good and evil report had stuck manfully to the ship. The Association was now in a peaceful and hospitable port, and he hoped the results of the present labours would mark a new epoch in its history. He desired to express his personal gratification at the firm attitude which had been taken by the Representative Body regarding the Insurance Act. (Cheers.) He had expressed his opinion of the Act as a private individual in fairly forcible language—(Laughter)—but in his official capacity he had not in any way tried to influence his brethren in the matter. He felt that he was not going to have anything to do with the Act directly or indirectly, except to pay his contributions—(Renewed laughter)—and therefore he would leave to those who would have to work the medical benefits the free right to express their own views on the subject. He was very pleased to think that after twelve months' discussion the general trend of opinion was veering round to his views about the Act. He had been throughout opposed on public grounds to the bill which was now an Act, because he considered it the most gigantic fraud which had been perpetrated on a confiding public since the days of the South Sea Bubble. (Loud and continued applause.) Both frauds were largely engineered by members of Parliament. The earlier one was soon pricked, but there were so many vested interests being created that it would be difficult to get rid of the present fraud. Think what any intelligent being could do for the health of the nation with £30,000,000 a year! The only individuals likely to benefit by the Act were a lot of officials who might be as well employed trying to earn an honest livelihood. (Laughter and cheers.) At present the Association had to look after the immediate requirements of the profession, which had been attacked by that monstrosity, the Insurance Act: when those were settled, as he (the President) hoped they soon would be, to the satisfaction of the Association, it would have to look after the future of the profession. The British Medical Association had long been advocating a new Medical Act and a State examination. Those things were much needed, even more in the interests of the public than of the profession. The Association had been continually thwarted by the powerful vested interests of the medical corporations, which had never done anything, except for the favoured few. Those selfish and non-progressive individuals must be brushed aside, and not allowed to interfere with the public weal. (Hear, hear.) They must "cease to do evil and learn to do well." (Applause.)

The President, in the name of his colleagues and himself, bade the members present heartily welcome, and hoped, when the meeting was over, that they would return to their homes well satisfied with their work and the hospitality of Liverpool. If he might offer them his advice, he would like to do so in the language of Norman Macleod:

> Trust no party, sect, or faction,
> Trust no leaders in the fight,
> But in every word and action
> Trust in God and do the right.

(Loud and continued applause.)

VOTES OF THANKS.

Dr. MACLEAN (Chairman of Representative Meetings) said it was his very special pleasure to move a cordial and sincere vote of thanks to the retiring President. Professor Saundby had thoroughly borne out the undertaking he gave at the commencement of his year of office to do all he could to guard the well-being of the Association. It was a matter of regret that Professor Saundby had been stricken down with serious illness early in his year of office, but they were glad to congratulate him on his restoration to health. Without further remark he would move:

That the members accord to Professor Saundby their most hearty thanks for the way in which he has performed his duties during his year of office.

(Applause.)

Dr. BRUCE GOFF (Lanarkshire), in seconding the resolution, said that they were all glad to see Professor Saundby among them again. It had been his privilege for many

years past to be associated with Professor Saundby on many committees connected with the Association, for the retiring President had in his time filled almost every responsible position in the Association, and it would be agreed that he had done so in a most admirable manner.

The resolution was carried by acclamation.

Professor Saundby thanked the meeting for the very kind way in which the vote of thanks had been proposed, seconded, and carried. It had been the proudest honour of his life to occupy the position of President of the British Medical Association. It was true that for many years he had been an active member of the Association, and had taken part in innumerable committees and other work for something like twenty years, but when he came to fill the office of President he found that there were so many other people who could fulfil all the various offices that he had had a comparatively easy time. In Sir James Barr the Association had a President who could not be improved upon, and it was certain that the prosperity of the Association would grow under his fostering guidance.

Introduction of the President-Elect.

Dr. J. A. Macdonald (Chairman of Council) had great pleasure in introducing Dr. W. Ainslie Hollis, the President-elect. The Association had received an invitation to go to Brighton next year, which had been accepted with pleasure. They would have, he felt sure, a very pleasant time there, and the people at Brighton would have something to do to emulate the reception the Association had received at Liverpool.

Dr. Hollis thanked the members for the great honour that had been paid to him. He did not look upon it so much as a personal honour as an honour to the members of the profession who resided in the same Divisional area as he did. It was now twenty-six years since the British Medical Association met at Brighton. Brighton had grown both in numbers and in appreciation, he thought, since that time, and began to think it was high time that the meeting should once again partake of its hospitality. Personally he should try to make the meeting a success in every way, and he knew he would be well supported by his professional brethren.

The President said he was about to call on Dr. Barrett, of Melbourne, who was going to invite them all out to New Zealand. He had told that gentleman that it was a most dangerous thing to do, because they might not only go out there, but many of them might stay there.

Dr. Barrett (Melbourne) was glad to have the opportunity of addressing the members. The tenth session of the Australasian Congress would be held at Auckland, New Zealand, in February, 1914, and it was the desire of the President-elect of that Congress to induce as many members of the British Medical Association as possible to meet their brother Australian practitioners. He hoped that many would meet them for two purposes: In the first place, that they might have an opportunity of interchange of professional views and of reciprocating some of the kind hospitality they all experienced when they came to Great Britain. In the second place, the visit would have the effect of helping some of their brother practitioners to a more extended knowledge of the empire.

Dr. F. A. Pockley (New South Wales) cordially supported the invitation. The sessions of the Australasian Congress were held in either one or other of the Australian States or in the Dominion of New Zealand. He could assure the members that if they honoured them with their presence they would receive a very cordial welcome and have a very good time.

Dr. Todd (Adelaide) supported the invitation. If any members visited Adelaide the profession would be delighted to do all it could to make the visit a profitable and pleasurable one.

The President said that any one who thought of accepting the kind invitation now extended to them should notify the fact to the head office.

Dr. J. A. Macdonald (Chairman of Council) then took the chair, and the business of the meeting was proceeded with.

Appointment of Auditors.

The Treasurer (Dr. Rayner) moved:

That Messrs. Price, Waterhouse, and Co. be, and they are hereby appointed, auditors of the British Medical Association until the next Annual General Meeting, at a remuneration of 150 guineas.

Dr. Brassey Brierley (Manchester) proposed as an amendment:

That the salary of the Auditors be reduced from 150 to 145 guineas.

He expressed his gratification at the very plain manner in which the Treasurer and the Financial Secretary had put the financial position of the Association before the Representative Meeting. In reviewing the financial position, he pointed out that the value of the Association's property, according to the report, was £86,000, and that it had £10,000 invested—roughly, £100,000. Ten years ago the Association's building was absolutely freehold; now the deeds were lodged with the Bank for a loan of £46,000. Over and above that, the Association had to meet £2,000, costs in the Bell case. It had received £67,000 and had spent it, and had no cash in hand at present to pay current expenses. That was very unsatisfactory. Dr. Brierley dealt in detail with various items of expenditure in which retrenchment might be made. The Association was now passing through a critical time in connexion with the National Insurance Act, and, having determined to fight one part of the Act, must supply itself with funds for the purpose. He suggested raising the subscription from the present "miserable" sum. (Loud applause.) Was it a business-like thing for an Association with an income of £67,000 a year to have, as soon as the necessity arose in consequence of the Insurance Act, to go round with the hat and beg for donations?

Dr. John Haddon (Hawick), in seconding the amendment, said that the appearance of the Association had changed since he remembered it. Instead of men of science adorning the platform there were now officials set up to perform the functions of those great leaders of medicine. He remembered the time when a medical man went to the meetings full of a desire to communicate with his fellows on scientific subjects for his own advancement and for the good of his patients, but now it was trade union business that attracted what he had called in London the scum of the Association. (Uproar.) He expected, however, men full of trade unionism to be good financiers, but what about the financial position of the Association? The Association was badly in debt, and might be made bankrupt to-morrow, and yet notwithstanding that state of bad finance the auditors were to be given a rise in salary.

The Chairman of Council then put the amendment, which was lost, and the motion was carried.

The meeting adjourned until 8.30 p.m.

ADJOURNED ANNUAL GENERAL MEETING.

The adjourned General Meeting was held at the Royal Court Theatre in the evening on Tuesday, July 23rd. Among those present on the platform were Sir James Barr, Lady Barr, Dr. Maclean (Chairman of Representative Meetings), Dr. Macdonald (Chairman of Council), Professor Saundby, Dr. Rayner (Treasurer), Mr. Bickerton, Mr. Robert Jones, Mr. Jenner Verrall, Mr. Larkin, Sir John Byers, and Mr. Thelwall Thomas (Secretary of Local Executive).

Presentation to the President.

Mr. Thelwall Thomas, Local Honorary Secretary, said it was his privilege, on behalf of the local subscribers and executive, to present to the President a replica of the badge worn by the President of the British Medical Association during his year of office. It was offered to Sir James Barr as a token of regard for him in the first instance, and as a token of appreciation of the remarkable energy he had displayed as President-elect. The members of the British Medical Association realized that there were troublous times in front, but it was felt that in Sir James Barr they had a particularly strong man in the present crisis. (Hear, hear.) Whilst he (Mr. Thelwall Thomas) had great pleasure, on behalf of the members of his executive, in presenting Sir James Barr with the replica, and hoped that he might live long to wear it, for the moment he was going to hand it to Lady Barr, and would ask her, who had helped so very materially, to wear it as a jewel during Sir James Barr's year of office. (Loud applause.)

Sir JAMES BARR thought his wife ought to reply, but, as she objected, he begged to thank the Local Executive and the members present for the great kindness he had experienced at their hands—not merely in presenting the replica of the badge of office, but for very many acts of kindness during the past year.

FOREIGN GUESTS AND VISITORS.

It was announced that the following foreign guests and visitors were attending the meeting:

Dr. Abrams (San Francisco), Dr. W. Lincoln Ballinger (Chicago), Professor Blanchard (Paris), Dr. Carlos Chagas (Brazil), Dr. de Beurmann (Paris), Dr. Louis Dor (Lyons), Dr. Ehrenfried (Boston, U.S.A.), Professor C. Gabbi (Tripoli), Dr. Fedor Haenisch (Hamburg), Dr. M. Hajek (Vienna), Dr. Igisheimer (Halle), Dr. Kahler (Vienna), Professor F. Kleine (German East Africa), Dr. Lenhartz (New York); Professor John McDill (Manila), Dr. Motais (Angers), Professor Mygind Copenhagen), Dr. Richert (Paris), Professor Rutherford, F.R.S. Manchester), Dr. Harold Seidelin (Yucatan, Mexico), Dr. Snellen Utrecht), Professor Strauss (Amsterdam), Dr. Taute (German East Africa), Dr. Weinberg (Paris), and Dr. C. A. Wood (Chicago).

DELEGATES AND MEMBERS OF THE OVERSEAS BRANCHES.

It was also announced that the following delegates and members of the Overseas Branches were attending the meeting:

Bombay Branch.—Major S. C. Evans, I.M.S.
Border Branch, South Africa.—Dr. Bush Alexander.
Brisbane and Queensland Branch.—Dr. Andrew Stewart, M.B., M.S.
British Guiana Branch.—Dr. F. Law.
Burma Branch.—Captain Knapp, I.M.S., Captain Whitmore, I.M.S., Captain Williams, I.M.S.
Cape of Good Hope Branches.—Dr. Charles Anderson, Dr. Jasper Anderson, Dr. T. D. Greenlees, Dr. F. Hazell, Dr. M. Hewat.
Ceylon Branch.—Dr. Aldo. Castellani and Dr. A. J. Chalmers.
Griqualand West Branch.—Dr. H. Symonds.
Hong Kong and China Branch.—Dr. J. H. Sanders, Dr. F. O. Stedman, Dr. J. M. Atkinson, and Dr. Keyt.
South Indian and Madras Branch.—Surgeon-General Benson, M.B., I.M.S., and Major W. C. Long.
Jamaica Branch.—Dr. E. E. Bronstorph.
Malaga Branch.—Dr. James Kirk and Dr. W. R. Middleton.
Montreal Branch.—Professor H. S. Birkett.
New Zealand Branch.—Dr. J. S. Elliott, Dr. David Ewart, Dr. A. E. A. Palmer.
New South Wales Branch.—Dr. William Chisholm and Dr. F. Antill Pockley.
Queensland Branch of Dalby, Queensland.—Dr. A. Stewart.
South Australian Branch.—Dr. R. H. Marten and Dr. C. E. Todd.
Tasmanian Branch.—Dr. Leslie Latham and Dr. Gregory Sprott.
Toronto Branch.—Professor Irvine Cameron (Toronto).
Transvaal Branch.—Dr. Beaumann, Dr. Hunter, Dr. Temple Mursell, Dr. Napier.
Trinidad Branch.—Mr. C. F. Lassalle, M.D.
Victorian Branch.—Professor H. B. Allen, M.D., LL.D., Dr. C. D. G. Morier.
Western Australian Branch.—Dr. H. T. Kelsall and Dr. C. G. Thorp.
Gibraltar Branch.—Dr. Dowding and Dr. Parsons.

The presentation of a certificate of honorary membership of the British Medical Association to the Right Hon. the Earl of Derby, P.C., G.C.V.O., C.B., Lord Mayor of Liverpool and Chancellor of the University of Liverpool, was postponed, owing to the unavoidable absence of His Grace.

The CHAIRMAN OF COUNCIL (Dr. J. A. Macdonald) requested Sir James Barr to deliver his Presidential Address, which is printed at p. 157.

The CHAIRMAN OF COUNCIL called upon Dr. Abrams, San Francisco.

Dr. ABRAMS (San Francisco) said he regarded it as a great privilege to have listened to the interesting and instructive address of the Association's distinguished President, Sir James Barr. As an authority on the subjects of eugenics or race culture it was not surprising that he should have devoted the greater part of his address to that momentous national problem, a problem the solution of which signified the annihilation of crime, disease, and degeneracy. The reference of the President to the struggle of the physician to solve the degradation of man, the ruin of woman by starvation and the dwarfing of children by physical and spiritual night, to employ the words of Victor Hugo, was, he believed, one of the greatest tributes ever paid to the medical profession. Sociology and medicine were so interwoven that differentiation between the two was a practical impossibility. Ruskin was sponsor for the truism that there was no wealth but life, and the physician was constantly endeavouring to purify and better the racial qualities of future generations. Heredity was the foundation of the science of eugenics, and people must not content themselves with Lamarck's theory of inheritance or Darwinism or neo Darwinism. He was very much impressed with the observations of Sir James Barr regarding the success of medical men in adapting the environment to the individual, thus giving the weakling an equal chance of survival with the strong. He was delighted to observe that Sir James Barr had emphasized the importance of making science of immediate value to mankind, for it was no longer customary to regard with approval the utterances of the scientist who thanked God that his discovery could be of no practical value to mankind. Americans had always regarded conservatism as one of the characteristics of the Englishman, but he ventured to say that the address of Sir James Barr would dissipate that illusion. As a cosmopolitan in medicine Sir James counselled them to break away from the thraldom of tradition if it were desired to abet medical practice. It was easier in medicine to establish a fact than to have it accepted. The credulous in medicine believed too much, but the sceptic believed too little. It was unfortunate that those in authority regarded innovation from the point of view—point of heresy—and that mental attitude recalled the saying of a witty compatriot of Talleyrand who, in commenting on the conservatism of the latter, said, "If Talleyrand had been present at the time of the Creation, he would have exclaimed, 'Good gracious! chaos will be destroyed.'" Dr. Abrams trusted that the broad views suggested by Sir James Barr in his address as an incentive to medical discovery would serve as a paradigm to others, and thus negative the oft-merited rebuke of Molière, "Candidates of medicine must take an oath never to refer to the practice of physic." He asked permission once more to express his keen appreciation to Sir James Barr for his address, which he regarded as a great tribute to the work physicians did on behalf of the public weal. He moved:

> That the best thanks of the British Medical Association be accorded to Sir James Barr for his valuable and interesting presidential address delivered by him on the occasion of the eightieth Annual Meeting at Liverpool.

(Applause.)

Dr. G. A. GIBSON (Edinburgh), in seconding the motion, said that Sir James Barr came from that north-eastern province of that beautiful isle of the west to which they owed so many brave men and fair women. In recent times it had been the birthplace of that great scientist, Lord Kelvin, and of that great soldier, Sir George White, and they all knew that in that indomitable corner of the western isle there still remained, and always would remain, men of the type of Sir James Barr, in whom there was absolute fearlessness marked with perfect respect even for those with whom they differed. With regard to the subject matter of the address, to which they had listened with the greatest pleasure, he might say he was absolutely in harmony from beginning to end, and he admitted the pluck with which Sir James had stated many home-truths, which every one belonging to the medical profession—nay, every one who belonged to society in general—must ere long lay earnestly to heart. Sir James had in the last two or three years helped enormously in the study of eugenics by most helpful papers. The greatest care was taken as to the pedigree of a greyhound or racehorse, but nobody cared about the pedigree of the man and woman who were going to populate the world in the future. That state of things must be modified, and if they had fearless expressions of opinion, such as they had listened to that night, it would be modified before long. He also entirely agreed with Sir James that the circulatory diseases spoken of in the address were far better prevented than cured, and he thought that in the near future they would see that every one who was concerned in those affections would take the greatest pains to obviate, rather than to wait until it was necessary to use those scientific instruments to which the President had referred. In conclusion, he would like, in the name of the Association, to wish Sir James a very happy and a very successful year of office at the head of that great Association. Sir James had come to be the head of the Association during

troublous times, but by standing together and by mutually assisting each other they would see light shining out of the dark which at present surrounded them. He had very great pleasure indeed in associating himself with their friend from the Far West in seconding the motion.

The motion was carried by acclamation.

Dr. J. A. Macdonald, addressing the President, said he had great pleasure in presenting to him the best thanks of the Association for his address, and asked permission, as Chairman of Council of the British Medical Association, to welcome him to the chair he would occupy during the next year.

The President, returning thanks, said the great attention with which his address had been received was very gratifying to him, and he thanked the meeting most heartily, in the name of his wife and himself, for the very hearty vote of thanks which had been accorded. (Loud applause.)

Address in Medicine.

Dr. George Alexander Gibson, M.D., D.Sc., LL.D., F.R.C.P.Edin., Honorary Physician, Edinburgh Royal Infirmary, delivered the Address in Medicine at the Arts Theatre, the University, Liverpool, on July 24th. The address is published at page 163.

At the conclusion of the address, Professor T. R. Glynn M.D., moved:

> That the best thanks of the Association be accorded to Dr. George Alexander Gibson for his valuable Address in Medicine.

Professor Glynn said they had heard what Dr. Gibson described in his opening remarks as a most intricate subject treated in a most learned and eloquent way. They had followed Dr. Gibson's arguments with the greatest interest, and more especially his description of their practical application. They were all most deeply indebted to him, and he would recognize that the motion proposed was something more than a mere form.

Professor Robert Saundby, M.D. (ex-President of the British Medical Association), had great pleasure in seconding the motion that a vote of thanks be accorded to his old friend, Dr. Gibson, whose career he had watched for many years with admiration. Dr. Gibson had always been going higher and higher, and now he was to be congratulated upon receiving what was to be regarded as the highest distinction which could be paid to a physician, namely, being asked to deliver the Address in Medicine at the Annual General Meeting of the British Medical Association. The address was worthy of the occasion, it was worthy of the City of Liverpool, it was worthy of the British Medical Association, and it was worthy of Dr. Gibson himself.

The President (Sir James Barr) put the motion to the meeting, and it was carried by acclamation.

Dr. Gibson briefly returned thanks.

PATHOLOGICAL MUSEUM.

In the past few years there has been a tendency towards an overgrowth of the medical museum, and though we have previously expressed our admiration at the wonderful collections arrayed for the Annual Meeting, we have had to lament the fact that time would not permit of their receiving the proper attention they deserved, even without the numerous counter-attractions of the social aspect of the meeting.

The specimens gathered together by the Liverpool Committee, under the energetic secretaryship of Professor Ernest Glynn, show that an attempt has been made to bring the museum back to normal proportions.

The original desire of the committee to demonstrate spinal lesions has been somewhat frustrated by the lack of response on the part of the metropolitan hospitals. But nevertheless, in the Harrison-Hughes Engineering Laboratory, in the University buildings, a small but interesting collection of specimens has been collected and arranged under fifteen sections, each under the charge of a subcurator.

The section on Tropical Medicine is the first to meet the eye, and illustrates the work of the Liverpool School of Tropical Medicine. Here are the familiar cases containing the collection shown at the Hygiene Exhibition at Dresden, and a fund of material dealing with tropical hygiene. Other sections are Otology, Ophthalmology, Dermatology—in which may be noted the familiar but ever-welcome models of Stopford Taylor and MacKenna—Gynaecology, and Obstetrics, with a special collection of sarcomata of the uterus; alimentary section, dealing specially with diseases of the oesophagus; cardio-vascular system, with an almost unique collection of gummata of the heart; genito-urinary section, with some striking demonstrations of the etiology of hydronephrosis and the method of obtaining the urine from each kidney by the use of the Luys's separateur; liver, pancreas, spleen, and lymphatic glands in eclampsia; Laryngology, with a special collection illustrating sudden death from obstruction; Neurology; Radiography and respiratory, including specimens illustrating the pathology and treatment of leprosy. Aspecial section deals with modern apparatus for the administration of anaesthetics.

Such is our first impression of the museum, which at the time of writing is not quite complete. A detailed description of the specimens will be given later, when we have satisfied our desire to examine them more fully. We have only one fault to find with the work of the curators, who have produced a carefully drawn up catalogue of all the exhibits, but have purposely refrained from giving the clinical data and history, without which we consider a museum specimen is of little use to the practical physician; though the necessary data can be obtained by the courtesy of the curator, their omission will diminish the value of the catalogue as a book of reference.

The museum we have always regarded as a very important part of the meeting, and this year we are sure it will not disappoint those members who can find time to wander through it. The curators are, as usual, always ready to assist and elucidate the various exhibits.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[First Notice.]

We commence in this issue our usual notice of the collection of modern surgical instruments, drugs, foods, books, and other accessories to practice which yearly takes place under the heading of the Annual Exhibition. It was held this year in a building within a couple of yards of the University, and was fully on a par with the rest of its many excellent predecessors. The number of exhibitors was over a hundred, and there was plenty of space for the display of apparatus as well as plenty of room for the circulation of visitors. In the way of new departures this year a number of the stalls stood out as circular islets, a rather effective arrangement from the point of view of visitors, though it possibly introduced complications for exhibitors. In a broad gallery there were good arrangements for luncheon and tea purposes and for exhibitors to transact any business they might have to get through in the way of writing. The practice of declaring the exhibition officially open, instituted last year, was again repeated. The various exhibitors were very hard at work all day Monday, and by soon after nine o'clock on Tuesday most of them had their stalls arranged according to their wishes. But it was not until half-past eleven that the exhibition was officially open. At that hour the President of the Association, Sir James Barr, made a tour of the stalls and then delivered a short address wishing the exhibition success. As for the accounts of the different stalls which now follow, it should be observed that no

intentional selection has been exercised in the matter of those which shall be noticed first; the accounts appear simply in the order in which they happen to have been completed.

Messrs. HAWKSLEY AND SON (357, Oxford Street, London, W.). The exhibit of this firm of scientific instrument makers practically fell into four classes—polygraphs, haemoglobin measuring devices, aids for the deaf, and a few miscellaneous instruments. The polygraphs included the three-trace instrument of Gibson and the clinical and ink polygraphs of Mackenzie. The latter, as made by Messrs. Hawksley, has in addition to a time marker a counterbalance designed by Dr. Hawthorne, to prevent any possibility of the pulse recorder shifting its position owing to the weight of the tambour and pen. The clinical variety has also been improved in minor directions since it came into Messrs. Hawksley's hands. Among the sphygmomanometers we noted the Non-Spill Sphygmomanometer, a further development by Dr. Martin of the Riva-Rocci device; it appears to represent a great improvement, since the manometer tube may be held upside down without any possibility of the mercury escaping. Hence the trouble and annoyance likely to be caused by losing a cap and spilling mercury is avoided. We understand that the non-spill tube which characterizes this particular form can be attached to existing instruments. An improvement was noted also in the new pattern of Dr. Oliver's portable mercurial manometer; the scale is now placed at an angle, and is thus easier to read. The auditory tambour, introduced by Dr. Oliver to render determination of the systolic blood pressure more accurate, was also among the exhibits, as well as Dr. Rogers's modification of the Tycos manometer. It is the smallest and most portable of its genus, and is used with an armlet of extreme simplicity. In the same class we noticed also the appliance devised by Colbeck and Williamson for measuring the arterial pulse, which may be regarded as at least as successful as any of its rivals; and Dr. Singer's sphygmomanometer for recording both systolic and diastolic pressures. The haemoglobinometers included those of Haldane, Dare, Sahli, Hall, and Talquist, while the miscellaneous instruments, apart from Kellet-Smith's pelvic level and Bowles's stethoscopes, afforded an opportunity of examining the two instruments devised by Dr. Blair Bell for determining the amount of calcium present in the blood and urine respectively. The aids for the deaf included several patterns of telephonic appliances of this order and many simple collectors. The latter are a class of aural aid which, as made by Messrs. Hawksley and especially as vended by them—namely, on the trial-at-home principle—seems destined to hold its own for many years to come.

SIEMENS BROTHERS AND CO., LIMITED (Caxton House, Westminster). This year the exhibits of this firm fell into four distinct categories—*x*-ray work, radium therapy, ionic medication, and appliances made in tantalum. The latter were mainly intended for dental work, but included some hypodermic needles, vaccinating lancets, and ordinary surgical forceps. In the radium therapeutic section we noticed some complete sets of the applicators now used by Wickham and his colleagues, and also the ultra-penetration applicator employed by Dominici. Also shown were the radio-active and radiferous muds to which we drew attention a year or two ago, and a water for internal administration. The latter was a true radium water depending on the presence of radiferous salts, and not merely a water rendered temporarily radio-active by contact with salts of radium. In association with the appliances for ionic medication a number of faradic coils and batteries brought out to meet the growing demand for these appliances were shown. The *x*-ray section included the Oscillothermex, which we described at some length last year, stating that it represented perhaps the first really successful establishment of using electrical oscillations for the generation of *x* rays. Besides this it combines arrangements for diathermic, high-frequency, and auto-conduction treatment, and thus may be regarded as a development of the "universal" machines, at the production of which many firms have been aiming for several years past with varying success. In the same connexion may be mentioned a rotating high-tension rectifier which, though not novel in itself, was shown this year with a new commutator. The latter the firm has thought worth patenting, since it believes that it renders any outfit to which the rectifier is attached so flexible as to be equally applicable for either *x*-ray therapy or *x*-ray photography. Another appliance which attracted attention was an improved screening stand intended to be used either solely as such or in conjunction with a couch for radiography both from above and below. There also appeared on the list of exhibits some samples of the outfits now being provided for German workers, who during the last year or two have paid rather more attention than others to the possibilities of Roentgen therapy in connexion with gynaecology. They included a special examination couch designed by Albers-Schonberg. It was stated to be provided with head and foot rests, means of suitably adjusting the position of the body, an effective arrangement for using the tube and its protective box either from above or below the patient under treatment or examination; but we had not an opportunity of investigating its merits on the occasion of our visit.

A. AND M. ZIMMERMANN (3, Lloyd's Avenue, London, E.C.). This firm is agent for some well-known foreign pharmaceutical manufacturers, and usually has something to show of special interest. This year the lot fell perhaps, on the preparations named Tebean, Novatophan, Pellidol, and Azodolen. The two former came from Messrs. Schering, the original producers of drugs now so well known as urotropine and piperazin. Tebean is put forward as a specific remedy against tuberculosis, and appears to be regarded as something not far removed from this by such men as E. Levy and Franz Blumenthal. It is understood to be prepared by transferring cultures of the human type of tubercle bacilli to a galactose medium, the result being that the bacilli die, while the antigen contained in them is untouched. It is intended for administration subcutaneously, and is put up in solution in ampoule form and also as a dry powder for prolonged storage purposes. As for Novatophan, this is a new form of atophan, a chinolin carbonic acid derivative, to which we directed attention last year as a gout remedy. It appears that many patients found its taste so disagreeable that they were unable to take it, and consequently Messrs. Schering set to work to endeavour to find a means of producing the same drug in a tasteless form. The result is Novatophan, which is stated to be an ethyl ester of the parent drug. The other two preparations mentioned both come from Messrs. Kalle and Co., who are best known, perhaps, in connexion with Biebrich scarlet red. The latter has been considerably used abroad as a means of promoting the growth of epithelium on extensive wound surfaces, but has the disadvantage of staining everything with which it comes into contact. In view of this fact, Messrs. Kalle have endeavoured to produce a stainless scarlet red, and have given to the result the name of Pellidol. This is an orange-coloured powder, which, though freely soluble in many organic bodies—such as ether, and especially vaseline—is absolutely insoluble in water. Hence, though it may temporarily colour, it cannot stain linen, and while thus free from the disadvantage of scarlet red, is believed to exercise an equally stimulating property on epithelial cells. But neither scarlet red nor pellidol have any antiseptic action, so to meet the call for a wound dressing which is both an epithelial stimulant and an antiseptic, the firm has combined Pellidol with iodolen (a combination of iodol and albumen), and brought the result out under the title of Azodolen.

JOHN WRIGHT AND SONS (Bristol). The name of this west country firm of book publishers was at one time perhaps chiefly associated in the minds of medical men with the *Medical Annual* and various publications for the easy recording of details of cases, and for facilitating the business side of a medical existence. But of late years it has become almost equally well known as the publishers of medical and surgical works which both deserve and acquire popularity. An instance in point is the *Index of Treatment*, edited by Robert Hutchison and Stansfield Collier, which has reached a sixth edition in little over four years. A kind of companion volume, which has just made its appearance, is the *Index of Differential Diagnosis of Main Symptoms*, edited by Dr. Herbert French, in

conjunction with a large number of contributors. In a measure it falls into two parts, both being in the nature of indices. In the larger of these each phenomenon commonly regarded as a symptom of disease is considered at length and in relation to the diseases in which it is liable to appear. The other is an ordinary index in its form, but contains upwards of 45,000 entries, the idea being that when a reader is in doubt as to a diagnosis he shall read up not only the articles on any notable symptoms observed, but shall turn up in the ordinary index references to any disease which such symptoms may suggest to him. Also shown was the latest volume of the *Medical Annual*, a publication whose success has been practically unchecked from the beginning of its existence some thirty years ago. Other volumes shown were Dr. Dickie's translation of Lejars's *Urgent Surgery*, which has been reprinted since last year, and contains nearly a thousand illustrations, as well as many plates; the *Introduction to Surgery*, by Mr. Rutherford Morison of Newcastle, a book equally attractive for its illustrations and the skilful fashion in which are set forth the great fundamental principles underlying the routine of surgery, major and minor; and a second edition of the *Prescribing of Spectacles*, by A. S. Percival, another Newcastle author, which is conspicuous for the clearness of the description supplied as to mathematical considerations underlying spectacle prescribing. Some of the admirable papier maché casts prepared under the direction of Mr. W. C. Cathcart for the teaching of anatomy were also on view, as well as many excellent specimens of first aid, midwifery, and other diagrams.

INGRAM AND ROYLE (East Paul's Wharf, Upper Thames Street, E.C.) This firm, which has branches in Liverpool and Bristol, are importers of practically all known natural mineral waters, and are the official agents of a very large number of Continental and other spas. Naturally it could not show samples of all of them, but its selection included many that are well known, and one or two comparatively newcomers. Among the former we place Hunyadi Janos, Carlsbad, Contrexéville, Evian, and Vichy, and among the latter water from the Deux Reines spring at Aix-les-Bains and Insalus. The former has been described by Professor Roux of Lyons as microbiologically one of the purest of medicinal waters, and Insalus, while not unsuitable for use as a table water, appears to have gained a considerable repute abroad in the treatment of uric acid troubles. Another water shown was Geisshübler, which enjoys immense popularity as a table water in the more Eastern parts of Europe. Such flavour as it has is quite pleasant, and its effervescence is natural. It deserves, in short, to be much better known in this country than it is. A certain proportion of the natural mineral waters were shown concentrated in a form adaptable for transport, so that those who have become habituated to their use, or who have been advised to take them, may carry them about with them while travelling. In this connexion, possibly, the most important instance is the Natural Carlsbad Sprudel Salt, which is prepared at the spring itself. The use of this qualification "natural" is worth noting, because the salt has been widely imitated, and in many cases, when Carlsbad Sprudel Salt alone is prescribed, the patient receives an artificial preparation, which is not what his physician intended him to have. This firm has now brought out an enlarged edition of the catalogue of natural waters which it first prepared some years ago. It is entitled, "Natural Minerals: Their Properties and Uses." Copies can be obtained on application, and may be found useful by many practitioners, since the booklet contains complete analyses of most well-known waters, and information as to the chemical constitution of practically all those on the market, together with information as to the locality in which each spring arises, and a statement of the purposes for which use of the water has been advocated.

THE HOLBORN SURGICAL INSTRUMENT COMPANY (36, Thavies Inn, Holborn Circus, W.C.). The stall of this firm commonly proves attractive to nearly all visitors, since in its work it keeps in view the instrumental needs not only of hospital surgeons, but of private specialists and general practitioners. The exhibit, therefore, covered a wide field, in which appliances for subcutaneous medication were prominent. This was also the case last year, when in view of the recent introduction of salvarsan treatment it showed quite a number of devices for the purpose. Some of these were again shown, the leading one among them being, perhaps, the *Military 606 Apparatus*, this being a new model made for use at Rochester Row, according to the instructions of Major Gibbard. This year the newcomer is Hedonal, and the Holborn Apparatus for its intravenous administration, made as suggested by Mr. C. M. Page, was among the exhibits. Of two other infusion apparatus we noted, one was called the *Universal Saline Infusion Apparatus*. It is designed to fulfil the data mentioned by Mr. Stuart Carruthers in his paper on the Insufficiency of Present Methods of Saline Infusion (BRITISH MEDICAL JOURNAL, September 30th, p. 725), and was fitted also with an appliance to adapt it for rectal infusion. The special objects at which it aims are to secure that the normal saline used shall as it enters the patient's tissues never be hotter than 105° F. or less hot than 95° F., and that the administrator shall be able to observe the rate of flow and know exactly how much has been given at any moment. We also noted some sphygmomanometers, among them being Mr. Lockhart Mummery's modification of the original Riva-Rocci appliance. In appliances for Bier's hyperaemic treatment the firm began to specialize several years ago, and its exhibit included all the variously shaped glasses devised with a view to securing hyperaemia by *minus* air pressure, and also apparatus for its production by locally applied hot air. The chambers intended for the latter purpose, the Holborn Hot Air Chambers, vary somewhat in shapes and sizes, according to the part which they are designed to treat, and vary correspondingly in price; but none of them can be called expensive, and they are very well made. Inexpensiveness, indeed, is one of the noteworthy features of the appliances of this firm, some of whose outfits—such as its £25 set of surgical instruments, its *post-mortem* outfit, and the Rotunda set of midwifery instruments—have long been favourably known.

RONUK, LIMITED, Sanitary Polish Manufacturers (Portslade, Brighton). The firm which trades under the name of Ronuk has undertaken the original preparation and continued maintenance of the floors of so large a number of modern hospitals and reception rooms in public establishments that practically every one must be familiar with its work even though unaware of the fact. The principal feature of its exhibition at Liverpool was a number of sections of wood block flooring, prepared and polished with Ronuk, to illustrate the sanitary character of this method of treating floors of various kinds. It also showed the patent Ronuk floor-polishing brushes, which are used for keeping the prepared floors bright and in good order; they are of different sizes and weights, according to the exact needs of the institution in question. In short, everything for treating floors was shown, including the steel shavings used for removing stains from old floors, the Ronuk special stopping for hard woods, and a special pumice powder, by means of which the surface of the floor is given the required smoothness before Ronuk is applied. The firm also manufactures a sanitary polish for application to linoleum, which keeps it bright without slipperiness, and tends to prolong its life. Ill-kept floors are certainly likely to harbour germs, and we know no preparation which is of more assistance than Ronuk to hospital sisters and others who take a pride in the appearance of their floors. So far as private houses are concerned, the initial application of Ronuk requires care and adequate preparation of the boarding, but this trouble is well repaid by the appearance resulting and by the ease with which it is maintained.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

METROPOLITAN COUNTIES BRANCH: KENSINGTON DIVISION.—A meeting of this Division will take place on Friday, August 2nd, at 4 p.m., at Kensington Town Hall, to receive the report of the Representative at the Annual Representative Meeting.

Meetings of Branches and Divisions.

BIRMINGHAM BRANCH:

BROMSGROVE DIVISION.

A MEETING of this Division was held at the Smallwood Hospital, Redditch, on July 13th, Mr. COAKER in the chair.

Election of Officers.—The following were elected officers: *Chairman*, F. W. J. Coaker, F.R.C.S., J.P., Bromsgrove; *Vice-Chairman*, C. C. Smith, M.B., Redditch; *Honorary Secretary*, C. L. Hawkins, M.B., Inglewood, Bromsgrove; *Representatives for Representative Meeting*, L. A. Taylor, Brierley Hill; *Representatives on Branch Council*, J. H. Beilby, M.B., and C. L. Hawkins, M.B.

Instructions to Representative.—The Recommendations contained in the SUPPLEMENT of July 6th were discussed, and instructions decided upon for the Representative of the Division. On Recommendation X, the following resolution was carried unanimously:

> That the Representative be instructed that this Division, on information at present supplied, favours strongly the breaking off of negotiations at once, unless further information be forthcoming at the Representative Meeting rendering such a course inadvisable, and that he be instructed to vote accordingly.

Resignation of Club Appointments.—The letter from the State Sickness Insurance Committee, dated July 1st, *re* resignation of club appointments, was read. After some discussion, the meeting unanimously decided—at the express wish of *all* the holders of club appointments within the Division—that the resignations should be posted on July 14th, thus ensuring a full six months' notice.

N.B.—This decision does not affect those members of the Division who live within the boundary of the City of Birmingham, and who are acting in this matter with the Birmingham Provisional Medical Committee.

CAMBRIDGE AND HUNTINGDON BRANCH:

CAMBRIDGE AND HUNTINGDON DIVISION.

THE first meeting of this recently formed Division was held in the Medical Schools, Cambridge, on July 15th, forty-three members being present. Mr. L. NEWTON took the chair.

Election of Officers.—The following officers were elected for the ensuing year: *Chairman*, Dr. B. E. Fordyce; *Honorary Secretary*, Dr. G. S. Haynes; *Executive Committee*, Mr. Ellis, Dr. Garrood, Dr. Griffiths, Dr. Kirkwood, Dr. Roderick, Mr. Apthorpe Webb, Mr. Williams, Dr. Wright.

Installation of Chairman.—The chair was then taken by Dr. FORDYCE.

Instructions to Representative.—After a free discussion, in which many members took part, it was resolved, by a majority of 14, that the Representative be instructed to support Recommendation X (breaking off negotiations), but in case of further information being produced at the Representative Meeting, he might use his discretion as to voting.

Supplementary Pledges.—The SECRETARIES of the Provisional Medical Committees reported as to the signing of pledges as follows:

For the Borough of Cambridge, Mr. Searle: All except two whole-time medical officers signed.
For the County of Cambridgeshire, Mr. Ennion: All except two signed.
For the Soke of Peterborough, Dr. Kirkwood: All signed.
For the County of Huntingdon, Mr. Newton (in the absence of Mr. Whitehead): All signed.

The Representative, Mr. Newton, was asked to address a meeting on his return from Liverpool, and he kindly consented.

EAST ANGLIAN BRANCH:

WEST SUFFOLK DIVISION.

THIS Division met at Bury St. Edmunds on Saturday, July 13th, when there was a large attendance.

Treatment of Defective School Children.—The SECRETARY (Dr. W. J. Caie) was appointed to confer with the Borough Education Committee regarding the treatment of defective school children.

Instruction to Representative.—It was resolved that the Representative to the Annual Meeting, Mr. R. H. Lucas, be instructed that the unanimous vote of the Division is in favour of breaking off negotiations with the Government unless the Council was in possession of information of a definite character which the Division was unaware of and which contraindicated such an attitude.

Sanatorium Benefit.—It was also resolved that the members of the profession resident in West Suffolk, considering their pledge, should refuse to have anything to do with the administration of sanatorium benefits under the Act.

Club Resignations.—The Divisional Representative was instructed to state at the Annual Meeting that the Division considered that the time has now arrived for sending in all club resignation forms.

Medical Examination of Candidates for Benefit Societies.—It was also resolved that after July 20th, where there was no contract to the contrary, a fee of not less than 2s. per head be charged for the medical examination of candidates for admission to any benefit society.

METROPOLITAN COUNTIES BRANCH:

MARYLEBONE DIVISION.

A GENERAL meeting was held at 11, Chandos Street on July 17th. Mr. BISHOP HARMAN took the chair in the unavoidable absence of the Chairman. Fifty-six members were present.

Letters.—A letter from the City Division was read.

National Insurance Act.—The first matter considered was whether the Representatives of the Division should have a free hand or be instructed how to vote on the recommendations of the Council dealing with the question of breaking off or continuing negotiations with the Commissioners. After considerable discussion, it was moved from the chair and carried that definite instructions be given to the Representatives. It was then moved from the chair and carried that the Representatives be instructed to support the first of the alternative sets of recommendations of the Council.

State Sickness Committee.—The CHAIRMAN proposed a very hearty vote of thanks to the committee for all the time and trouble they had taken in striving to reach a satisfactory agreement. Carried unanimously.

WOOLWICH DIVISION.

A MEETING of the Division was held on July 17th.

The late Dr. Shaw Williamson.—In most feeling terms the PRESIDENT referred to the death of the late Secretary, Dr. J. Shaw Williamson, all the members present respectfully standing. It was proposed by Dr. THOMSON and seconded by Dr. J. CLARKE that a sympathetic letter be sent to Mrs Williamson, and that a wreath be sent in the name of the Division.

Public Medical Service.—The minutes of the previous meeting were read and confirmed with this addition, that the resolution therein appearing as proposed by Dr. J. GRAY DUNCANSON and seconded by Dr. THOMSON should read as follows:

> That the Woolwich Division, while desirous of discussing the two schemes, considers that to undertake contract practice on such a large scale is most regrettable.

The amendment of Dr. WISE was:

> That the Woolwich Division, while desirous of discussing the two schemes, considers the necessity for contract practice on such a scale is most regrettable.

This amendment was carried, but the original motion on being put to the meeting was lost. The PRESIDENT announced that the names of Drs. J. Clarke and Mair had been sent up to the Metropolitan Counties Branch to decide on contract practice. The matter was pressing, and the request that two members should be delegated, one a holder of clubs, and the other not; this action of the President was confirmed.

Deputy Representative of Dartford Division.—Dr. J. CLARKE announced that the Dartford Division had done him the honour of appointing him as Deputy Representative to the Liverpool Conference.

Instructions to Representative.—Dr. J. CLARKE proposed and Dr. THOMSON seconded:

That the negotiations regarding the Insurance Bill be broken off, and that instructions be sent to Dr. Will to that effect, but that should circumstances alter between now and the meeting at Liverpool he is at liberty to exercise his own judgement.

This was carried unanimously, and the Acting Secretary was instructed to write to Dr. Will in accordance with this resolution.

Examination of Club Candidates.—Dr. HIRSCH introduced the question of payment for examination of candidates joining clubs for the purposes under the National Insurance scheme. A lengthy discussion followed, the CHAIRMAN giving as his opinion that this subject should be discussed, though not on the agenda, on the grounds of urgency. Dr. LINDOW proposed and Dr. MAIR seconded:

That a minimum fee of 2s. be charged for the examination of any candidate desirous of joining an approved society for the purpose of the Insurance Act.

Dr. THOMSON proposed as an amendment, which was seconded by Dr. GREENWAY:

That this Division approves of a minimum fee of 2s. being charged for the examination of each candidate for admission to an approved society for purposes of the Act, providing no contract already exists for doing so free of charge.

The amendment was carried by 11 votes and 3 voted against it.

Temporary Secretary.—Some discussion occurred as to a temporary secretary, and Dr. Hirsch agreed to act as such for the time being.

MIDLAND BRANCH:

BOSTON AND SPALDING DIVISION.

A SPECIAL meeting was held on July 9th. Dr. WHITE was in the chair, and twenty-three other members were present.

Report of Council.—The CHAIRMAN read Part III, and a discussion followed. Dr. TAYLOR proposed and Dr. JACOBSEN seconded:

That X—breaking off negotiations—be adopted.

Dr. FRANK WALKER and the SECRETARY spoke in support of this policy. Dr. GILPIN proposed and Dr. HUSBAND seconded an amendment:

That Y be adopted,

the former making an urgent appeal for not closing the door to further negotiations. The amendment was lost by 17 to 4—2 not voting.

Provisional Medical Committee.—(*a*) Resignations to be sent in: The SECRETARY reported that the Committee strongly recommended the sending in before July 15th. He reported that nearly all the resignations had been sent in to him. Three medical men had independently sent them in to their respective club secretaries. Dr. SOUTH, in proposing they be sent in, laid emphasis on the importance of six months' notice being given before January 15th, 1913. Dr. TATE seconded. This was carried *nemine contradicente*. (*b*) Central Defence Fund: Fifty-three men out of seventy-nine had subscribed. Dr. SOUTH proposed and Dr. GILPIN seconded:

That, in the event of negotiations being broken off, each man in the Division be asked to increase his guarantee to £10 at least.

This was carried with one dissentient.

Provisional Insurance Committees and Medical Men.—Dr. FRANK WALKER called attention to the way in which, in the local papers, the appointment of medical men to the Provisional Insurance Committees was given full publicity. He thought the medical men mentioned should be asked to publish their refusal to act. Dr. PERRY explained that Dr. A. W. Tuxford, although appointed, had not attended. The Secretary was requested to write Dr. Tuxford again.

The Deputy Chairman of the Insurance Commission.—Dr. FRANK WALKER proposed, and Dr. GILLESPIE SMITH seconded:

That, in the event of negotiations being broken off, Mr. Smith Whitaker be called upon by the Association to resign his appointment as Insurance Commissioner.

This was carried.

SOUTH EASTERN BRANCH:

BROMLEY DIVISION.

A MEETING of this Division was held at Bromley on July 12th, Dr. STILWELL, Chairman, in the chair.

Provisional Medical Committee.—Dr. LEWIS reported that 82 pledges had been sent in, 37 had sent in resignation of clubs, out of 39 holding contract appointments.

Deputy Representative.—Dr. STILWELL (Chairman) was elected unanimously.

Expenses of Representative.—It was proposed by Dr. CLEMENTS, seconded by Dr. ILOTT, and carried unanimously:

That the hotel expenses of the Representative or Deputy Representative be defrayed by the members of the Division.

Work of Representative in his Absence.—The following resolution was also passed:

That the members of Divisions be requested to undertake the work of their Representatives on the occasion of the latter attending Representative Meetings.

The Honorary Secretary was instructed to forward the resolution to the Central Office for insertion in the Supplementary Agenda R.M.

Instructions to Representative.—The Agenda of Representative Meeting was considered, and the Deputy Representative was instructed, on several motions on the Agenda paper.

Sanatorium Benefit.—The following rider was passed, for insertion in Agenda of R.M.

That medical men who have signed the pledge, and who wish to apply for whole-time appointments, be permitted to do so, provided that their duties consist in acting purely as consultants.

Recommendations X and Y.—A protracted discussion followed on the introduction of these recommendations, when it was unanimously resolved:

That the Division instruct the Deputy Representative to vote for the seven minimum demands, but empower him in the last resort to use his own discretion when voting on the point of "breaking off negotiations."

Defence Guarantee Fund.—Dr. TENNYSON SMITH reported that the Defence Guarantee Fund of the Division amounted to £1,061 7s. (of which £285 2s. was Central), and stated that he hoped that still further sums would be guaranteed in the Division. He proposed the following rider to the motion of Council:

That members of the profession be again urged, both from the Central Office and by officers of Divisions, to subscribe sums of not less than £20 to the Central Fund, so that £250,000 may be guaranteed by the end of September, 1912.

This was carried unanimously. The CHAIRMAN thereupon proposed a further motion from the chair:

That the Honorary Secretary be instructed to write to all members of the profession in the Division who have subscribed to the Guarantee Fund urging them to allow half the amount of their local guarantee to be deducted from that fund and placed to the credit of the Central Fund.

He stated that he considered that his motion, which was unanimously supported by the Executive Committee, was a logical corollary to the previous resolution, and the result would be that, if the motion were accepted, a further sum of £388 would be placed to the credit of the Central Fund. It would show other Divisions that Bromley Division was prepared to do its duty, and would give a sporting lead to others, which he sincerely trusted they would follow. The motion was carried unanimously.

SOUTHERN BRANCH.

THE thirty-ninth annual meeting of this Branch was held on July 14th at the Abbey House, Winchester, kindly lent by the Mayor of the city. There were fifty-two members present, and the meeting was, in the first instance, presided over by Mr. C. P. CHILDE.

Election of Officers.—The scrutineers' report on the election of officers for the ensuing year was read, the gentlemen nominated by the Council for the various offices being unanimously approved.

Report of Council. The Council report was read and adopted without any dissent. It showed an increase of forty-one new members during the year. Only nine resignations had been sent in, which was deemed satisfactory considering the crises through which the Association had been passing. Two general meetings (one clinical) and five Council meetings had been held. Two meetings of the Ethical Committee had also been held, one dealing with the adoption of uniform ethical rules and the other with the advisability of homœopathy. The Nursing Subcomittee had also met twice, and had collected a large

amount of material which will enable the Council to deal with this question, and it is hoped to bring it to a satisfactory conclusion. The resignation of Mr. Straton and the election of Dr. Turrell of Oxford to his position on the Council of the Association was reported, and attention was drawn to the unsatisfactory grouping of the Branches for this election. The Council's action in conjunction with that of the Isle of Wight Division in respect of the medical officer of health to the Isle of Wight County Council was explained to the meeting. The result of the subscription to the costs of the defendant in the case of Flux *v.* Clayton, including the liberal grant of £50 from the Central Emergency Fund, was also announced. The distribution of the votes obtained by the subscription at the last annual meeting (£12 10s. 6d.) was explained. The 84 votes for pensioners were divided between Mrs. Stickland (the widow of a former member of the Portsmouth and Isle of Wight Divisions) and Mrs. Gray; the latter was elected. The 98 votes for foundation scholars were all given to Clarke-Bayles, the only candidate.

Balance Sheet.—The balance sheet was adopted, on the motion of Mr. BRISCOE (Alton), seconded by Dr. HARMAN (Winchester).

Vote of Thanks to Mr. Straton.—Mr. CHILDE then proposed from the chair a hearty vote of thanks to Mr. Straton for his valuable services to the Branch, especially in his capacity as member of the Council of the Association. This was carried by acclamation.

The Divisions and the Insurance Act.—Mr. CHILDE then gave a report of the Divisions as to their organization in connexion with the Insurance Act. This showed that, out of 607 members and non-members 564 had signed the pledge of the Association (practically all who were effective for the purposes of the Act), and that in four out of the five Divisions affected by the Act every holder of club appointments had sent in his resignation of such clubs to the Association, and in the remaining Division 98 per cent. had done the same.

Cup for Golf Competition.—Mr. CHILDE then intimated his intention to present a cup for a golf competition between members of the various Divisions, to be played for annually.

Installation of New President.—Mr. Childe then vacated the chair in favour of Dr. F. W. JOLLYE, of Alresford, the President for the coming year.

Vote of Thanks to the Retiring President.—Dr. JOLLYE proposed a vote of thanks to Mr. Childe for his able and tactful management of the business of the Branch. This was seconded by Dr. FULLER ENGLAND (Winchester), and carried with great enthusiasm. Mr. CHILDE suitably replied, disclaiming the credit of the successful working of the Branch, which he generously attributed to his council and officials.

President's Address.—Dr. JOLLYE then gave an inspiring address on Reflections after Twenty-one Years of General Practice. This was keenly appreciated by his audience, and at its conclusion Mr. LUCKHAM moved, and Dr. MAJOR seconded, a vote of thanks to him.

Luncheon.—The PRESIDENT then invited the members to luncheon in the banqueting hall of the Guildhall, also lent by the Mayor. During luncheon a collection was made for Epsom College, which realized £6 11s. 6d.

Visits to College and Cathedral.—After luncheon the company divided into four parties—one went to play a golf match against the Winchester Golf Club, a second visited the college by the kind permission of the head master, a third was conducted over the cathedral by Canon Vaughan, and a fourth went to St. Cross, where the Master, Canon Causton, kindly explained the many interesting features of that beautiful church and charity. The members afterwards foregathered once more at the Abbey House, where tea was provided by the President, and this brought a most enjoyable day to a close.

SOUTHAMPTON DIVISION.

A SPECIAL general meeting of this Division, to which all non-members were invited, was held at the Royal South Hants and Southampton Hospital on July 12th. Dr. COWEN was in the chair, and twenty-nine other members and thirteen non-members were present.

Resignation of Club Appointments.—The circular letter from the Medical Secretary *re* resignation of club appointments was read.

Instructions to Representative.—The Supplementary Report of the Council was submitted, and the Representative instructed to vote according to the Council's recommendation.

Special Report of Council on Insurance Act.—The Recommendations A to Q of the Council were accepted *nemine contradicente*, subject to: (1) The insertion after the word "appointment" on the sixth line of Recommendation A of the words, "and honorary and visiting staff"; and (2) the addition to Recommendation L of the words, "there should be an automatic increase in these salaries." After discussion by Drs. WEEKES, HUGHES, HIBBERD, FOX, POWER, ROGERS, ALDERSON, and the SECRETARY, Recommendation X was finally carried *nemine contradicente*.

Public Medical Services.—A resolution was carried that the British Medical Association should co-ordinate and supervise the work of the public medical services, charging for such advice and help a percentage of the total collection of the public medical services, and that a rule to this effect should be incorporated in the model rules of the Public Medical Service.

Representation of Branches on Central Council.—Instructions were given to the Representative of the Division to propose at the Annual Representative Meeting a resolution calling upon the Council to make such changes in the by-laws as shall allow every Branch to have a Representative on the Council of the Association.

SOUTH MIDLAND BRANCH:

BEDFORD DIVISION.

AN extraordinary meeting of the Division was held at the Bedford County Hospital on Thursday, July 11th, at 3.15 p.m. Dr. BONE was voted to the chair. Dr. BONE then gave a summary of the present position as to the Insurance Act.

Instructions to Representative.—It was proposed by Dr. ROSS and seconded by Dr. WAUGH:

> That in the opinion of this meeting the time has not arrived to break off all negotiations with the Commissioners; but that the Representative may use his discretion if special circumstances arise.

Drs. HARTLEY, SWORDER, BONE, BIRKS, SHARPIN, and ROSS discussed the resolution, pointing out that the second part of the resolution was necessary if the Representative was to have a free hand. The resolution was put to the meeting and carried unanimously.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held on June 20th at Caxton House, Westminster, with Sir FRANCIS H. CHAMPNEYS in the chair.

Emergency Calls from Midwives.

A letter was read from the Honorary Secretary of the Chelsea Division of the British Medical Association forwarding a copy of a resolution passed at a meeting of the Division on May 7th, with regard to attendance when summoned in an emergency on the advice of a midwife.

The Secretary was directed to acknowledge the receipt of the letter.

Penal Procedure.

A letter was read from the Honorary Secretary of the Association of Inspectors of Midwives, forwarding copies of three resolutions passed at a meeting of the Association held on April 25th, 1912, with regard to the penal procedure of the Board.

The Board directed that the Association of Inspectors of Midwives be informed:

(*a*) That a copy of a midwife's defence is sent to the Local Supervising Authority wherever practicable, in accordance with Rule D. 2.

(*b*) That notice is given to the Local Supervising Authority where a midwife has notified her intention of being present or of being represented at the hearing, and that the Board always desires to see representatives of the Local Supervising Authority present as witnesses at the hearing.

(*c*) That there is no objection to a representative of the Local Supervising Authority suggesting a question to the Board's solicitor at the hearing of a case for the purpose of eliciting information from any of the witnesses, and that it would be an assistance to the solicitor if a representative of the Local Supervising Authority would confer with him on the day previous to the hearing of the case or on the day of the hearing.

National Insurance.

THE PLENDER REPORT.

AN EXPLANATION BY ITS AUTHOR.

Sir William Plender has written to the press explaining the exact bearing of his report, which has been seriously misunderstood and misrepresented in various quarters. He writes:

Sir,

Misapprehension seems to exist in the medical profession and with the public in reference to the scope and purpose of my report to the Chancellor of the Exchequer of the 11th inst. It may be well, therefore, for me to say that my report is limited to an endeavour to answer a series of questions of fact embodied in a memorandum prepared by the Insurance Commissioners, and concurred in by the British Medical Association, as far as the information available in the selected towns enabled them to be answered.

It does not purport to be and is not in fact a statement of what the doctors may be reasonably entitled to per capita of the insurable population. What this sum should be is a matter of argument in which not only the data set out in my report, but other factors must obviously be taken into consideration.

I am, yours faithfully,

William Plender.

5, London Wall Buildings, E.C., July 18th.

MEETINGS OF THE PROFESSION.

Clonmel.

In accordance with the decision to set up a system of treatment under the control of the local Medical Committee, the practitioners of South Tipperary met in Clonmel on July 11th. There were present: Drs. O'Brien, Wynne, O'Ryan, Ryan, Morressy, Kelly, O'Connell, Cusack, Jellett, Quirke, Hennessey, Power. Drs. Murphy and Stephenson sent apologies. It was announced that every medical man, except one absent on holidays, had signed the pledge binding himself to accept no appointment or to give service to insured persons except on terms approved by the local Medical Committee, and it was resolved that no arrangement for medical treatment could be entertained till it was decided by the Conjoint Committee of the British Medical Association and Irish Medical Association to open negotiations with insured persons.

The decision of the delegates' meeting held in Dublin on June 11th—

> That we refuse to act for any society which does not allow by its rules for "free choice of doctor"—

subject to the consent of the doctor to act, was approved.

The capitation method of remuneration was favoured and minimum limits fixed for treatment; and, in the event of such being undertaken, of (1) insured persons, (2) insured persons and their uninsured dependents.

As the arrangements with friendly societies are unsatisfactory, and the system stimulated by the Insurance Act tends towards extension, and, as no individual arrangement between any medical man and the society or committee of insured persons will be permitted in future, all medical men holding such appointments were directed to serve notice terminating existing contracts on January 1st, 1913, and to intimate to the societies that each of their members was to exercise the right of selecting the doctor of his choice from a panel to be obtained from the Secretary of the Executive Committee—Dr. Stephenson, Carrick-on-Suir—on the terms fixed by the local Medical Committee.

Resolutions.

The following resolutions were passed:

1. As the fee for examination for entrance to society is to be paid for by the society we are prepared to accept 2s. 6d. per certificate.
2. That the minimum charge for medical attendance for insured persons be 8s. 6d. per capita, and 12s. 6d. for each insured person and his dependents (who are uninsured), subject to the conditions determined by the delegates at their meeting, June 11th, 1912, relative to extra remuneration and excluded services, midwifery, dressings, medicine, and appliances, etc.
3. That this meeting is of opinion that lay inspection under the Insurance Act of medical registers is highly objectionable, and that the attention of the Conjoint Committee be drawn to the fact. Such lay inspection would reveal professional secrets affecting patients, which have been formerly kept strictly private.

PROVISIONAL MEDICAL COMMITTEES.

Wandsworth.

Dr. J. Kennish, Honorary Secretary, informs us that the following resolution, proposed at a meeting of this Committee, was unanimously agreed to:

> That this Provisional Medical Committee for the Wandsworth area, representing the medical practitioners of Balham, Battersea, Clapham, Putney, Tooting, and Wandsworth, accepts as final the reply of the National Insurance Commissioners that the most vital of the demands of the profession cannot be conceded, and urges the British Medical Association not to reopen negotiations.

Willesden.

A meeting, to which all the practitioners of the district were invited, was held at the Wesleyan Hall, Tavistock Road, Harlesden, on July 12th. More than forty were present. In the absence of Dr. Coram James, Dr. Macevoy took the chair.

Letters were read from Drs. Joy and Turner in favour of breaking off negotiations with the Commissioners.

Results of Canvass.—The Honorary Secretary then read the report of the canvass:

> Number in general practice, 87—
> Of whom 77 have signed the complementary pledge.
> Of these 27 have no contract practice, and 50 have contract practice.
> Of the 50 with contract practice—
> 44 have also signed resignations.
> 4 will send resignations in themselves.
> 2 have not signed resignations.
> Of the 10 who have not signed the pledge—
> 4 have contract work.
> 2 have no contract work.
> These 6 have written letters which may be considered as satisfactorily covering the terms of the pledge.
> Of the remaining 4—
> 2 I have not sufficient information, but I believe are satisfactory.
> 1 has contract work at less than the British Medical Association rates, and will not agree to resign, but will not take other clubs.
> 1 has refused in any way to co-operate with us.
> Also, one man accepted appointment on the County Council Insurance Committee. Representations were made to him by the Provisional Medical Committee. He has since written to say that he has resigned his appointment.
> Of 29 not in general practice 5 have signed the pledge.

The Pledges.

The Chairman having explained that the committee had previously decided that the pledges should be signed provisionally and not sent to the head office until so decided by a general meeting of the profession, Dr. Armitage moved and Dr. Clayton seconded:

> That the pledges be sent to the head office of the Association.

Dr. Snowman moved and Dr. Anderson Smith seconded an amendment:

> That a statistical report only be sent in.

On the amendment being put to the vote, it was lost by a large majority. The original motion was then put and was carried *nemine contradicente*.

Dr. F. C. Evans proposed and Dr. Smurthwaite seconded:

> That the Honorary Secretary be instructed to request the British Medical Association to take such steps as will ensure that all men and women, upon receiving medical qualification in any part of the country, shall be approached with a request to sign the British Medical Association pledge either by the examining bodies or by the Division of the British Medical Association in whose area the qualification is obtained.

This was carried *nemine contradicente*.

DR. NORMAN WALKER AND THE SCOTTISH ADVISORY COMMITTEE.

THE following correspondence, relative to a resolution of disapproval passed at the Edinburgh Branch meeting held on June 27th, 1912, has been sent to us for publication:

7, Manor Place, Edinburgh.
July 2nd, 1912.

Dear Mr. Scott Carmichael,

I duly received your letter of the 27th ult., containing a copy of a resolution passed by the Edinburgh Branch of the British Medical Association, asking for my reasons for declining "to place my resignation as a member of the Scottish Advisory Committee in the hands of the Scottish Medical Insurance Council to be used when desired."

These you will find in my reply to the letter which I received from the Scottish Medical Insurance Council. I enclose copies of both.

Yours truly,
(Signed) NORMAN WALKER.

P.S.—I have, of course, no objection to your sending this communication to the medical journals.

E. Scott Carmichael, Esq., F.R.C.S.,
Honorary Secretary Edinburgh Branch,
British Medical Association.

COPY OF CORRESPONDENCE REFERRED TO.

Scottish Medical Insurance Council.

54, George Square, Edinburgh,
May 10th, 1912.

Dear Sir,

The Scottish Medical Insurance Council has unanimously decided that the medical members to the Scottish Advisory Committee be requested to give a pledge that they will resign their seats on that Committee if the regulations issued by the Commission do not concede the *seven cardinal principles* to the satisfaction of this Council.

I have been instructed to ask you if you will give this undertaking.

Yours faithfully,
(Signed) D. L. EADIE,
Acting Secretary.

Norman Walker, Esq., M.D., F.R.C.P.E.

7, Manor Place, Edinburgh.
May 14th, 1912.

My dear Russell,

In reply to a letter from Mr. Eadie sent at your direction, I accepted a seat on the Advisory Committee after full consideration and without conditions. I shall act on it with a full sense of my responsibility, and to this end I must retain my freedom.

It would therefore be inexpedient that I should place the keeping of my conscience in the hands of any external authority, however respectable.

At the same time, it is my belief that the regulations approved by the Advisory Committee will be found reasonable by all reasonable men.

Yours truly,
(Signed) NORMAN WALKER.

3, Walker Street, Edinburgh,
May 14th, 1912.

My dear Walker,

I have your letter with regard to Mr. Eadie's letter to you regarding your seat on the Scottish Advisory Committee. I would beg you to note that the letter was not sent at my "direction," but as an instruction from the Scottish Medical Insurance Council, a corresponding one having been sent to all the medical members of the Advisory Committee.

Your answer, whatever it may be, is an answer to the Council, and not to me. I should be pleased to know if I am to consider your letter to me as your reply to the Council.

I am,
Yours truly,
(Signed) WILLIAM RUSSELL.

Norman Walker, Esq., M.D.

*** Dr. Walker wrote that his letter of May 14th was his reply to the Council.

Naval and Military Appointments.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Army Medical Service have been officially reported to have taken place during May:

		FROM	TO
Colonel	R. I. D. Hackett, M.D.	[illegible]	[illegible]
	H. O. Trevor	[illegible]	[illegible]
Lieut.-Colonel	H. S. McGill	[illegible]	Aldershot.
,,	J. Donaldson	Campbellpore	Kuldana.
,,	H. I. Pocock	Sialkot	Murree.
Major	C. W. Reilly	Cork	Cahir.
,,	I. Way	Bareilly	Chakrata.
,,	A. E. Smithson, M.B.	Pietermaritzburg	Dublin District.
,,	F. J. W. Porter, D.S.O.	Bareilly	Secunderabad.
,,	C. B. Martin, M.B.	Netley	Cahir.
,,	C. B. Lawson, M.B.	..	Shorncliffe.
,,	A. E. C. Keble	Gibraltar	Scotland.
,,	A. J. MacDougall, M.B.	Belfast	Ballykinler.
,,	J. McD. McCarthy, M.B.	Rawal Pindi	Ferozepore.
,,	H. G. F. Stallard	Nowshera	Cherat.
,,	H. G. Martin	Lebong	Dublin District
,,	W. P. Gwynn	Karachi	Rangoon.
,,	P. H. Collingwood	Crownhill	Devonport.
,,	H. M. Nicholls, M.B.	Deolali	Poona.
,,	F. Harvey	Okehampton	N. Command.
,,	A. A. Seeds, M.D.	Hounslow	Kasauli.
,,	E. P. Connolly	Rawal Pindi	Ghurial.
,,	J. W. West, M.B.	..	Murree.
Captain	W. S. Crosthwait	Clonmel	Fermoy.
,,	R. V. Cowey	Tidworth	Perham Down Camp.
,,	J. McKenzie, M.B.	Windsor	Pirbright.
,,	H. J. Crossley	Richmond, York	Whitley Bay Camp.
,,	D. S. Skelton	Streusall	Zanzibar.
,,	T. S. Dudding	Colchester	Ipswich.
,,	A. A. Meaden	Ballincollig	Fermoy.
,,	H. C. Sidgwick, M.B.	Woolwich	Kingston-on-Thames.
,,	C. W. O'Brien	Dublin	Kilbride.
,,	G. G. Tabuteau	Jhansi	Dublin.
,,	G. H. Rees, M.B.	Alexandria	Belfast.
,,	T. Scatchard	Ranikhet	Ad Fines Camp.
,,	E. G. Anthonisz	Cannanore	Belfast.
,,	W. J. Weston	Gibraltar	Cork District.
,,	A. E. F. Hastings	Calcutta	Chatham.
,,	M. J. Cromie	Dublin	Glen Imaal.
,,	J. S. Dunne, F.R.C.S.I.	Agra	Woolwich.
,,	A. D. O'Carroll, M.B.	Aden	Chern Camp.
,,	A. S. Williams	Nowshera	Khanspur.
,,	P. Sampson	Attock	Murree.
,,	D. De C. O'Grady	Rawal Pindi	Barian.
,,	W. Mitchell, M.B.	Ambala	Sabathu.
,,	J. A. B. Sim, M.B.	Edinburgh	Buddon.
,,	W. J. E. Bell, M.B.	Cosham	Gosport.
,,	R. D. O'Connor	Kasauli	Cliffden.
,,	M. O. Wilson, M.B.	Jullundur	Dagshai.
,,	L. A. A. Andrews	Mauritius	Belfast.
,,	A. C. Elliott, M.B.	Sialkot	Campbellpore.
,,	T. S. Eves, M.B.	Benares	Lucknow.
,,	H. Gall	Ambala	Gharial.
,,	H. H. Leeson	Cairo	Alexandria.
Lieutenant	W. H. O'Riordan	Rawal Pindi	Barian.
,,	K. Conyn	Shorncliffe	Eastbourne.
,,	P. C. Field	Bordon	Cairo.
,,	J. D. Bowie, M.B.	Aldershot	Ewshott.
,,	W. A. Frost, M.B.	Alderney	Devonport.
,,	C. D. K. Leaver	Kinsale	Cork.
,,	J. S. Lovack, M.B.	York	Bradford.
,,	W. T. Graham, M.B.	Tidworth	Rollestone Camp.
,,	W. Bisset, M.B.	Guildford	Woolwich.
,,	P. M. J. Brett, M.B.	Cosham	Winchester.
,,	T. C. R. Archer	Hounslow	Shorncliffe
,,	F. S. Tamplin	Netley	Larkhill Camp.
,,	W. Stewart, M.B.	Bedford	Colchester.
,,	A. S. Heale	Hilsea	Cosham.

Lieutenant B. Biggar, M.B., appointed on probation January 27th, 1911, is stationed in the London District.

Lieutenant-Colonel W. B. Th[illegible] retired pay, has assumed the medical charge of troops at Nor[illegible]

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In ninety-five of the largest English towns 8,156 births and 3,905 deaths were registered during the week ending Saturday, July 20th. The annual rate of mortality in these towns, which had been 11.1, 10.8, and 11.6 per 1,000 in the three preceding weeks, fell to 11.5 per 1,000 in the week under notice. In London the death-rate was equal to 12.2 per 1,000, against 10.8, 10.3, and 11.3 in the three preceding weeks. Among the ninety-four other large towns, the death-rates ranged from 5.3 in Reading, 5.4 in Hornsey, 6.1 in Swindon, and 6.2 in Lincoln to 16.4 in Swansea, 16.8 in Wigan, 17.6 in Bury, and 18.5 in Dewsbury. Measles caused a death-rate of 2.0 in Liverpool and in Wakefield, 3.5 in Gateshead, 4.4 in Merthyr Tydfil, and 6.4 in Middlesbrough, and diphtheria of 2.8 in Cambridge. The mortality from whooping-cough, scarlet fever, and enteric fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 21, or 0.5 per cent., of the deaths were not certified either by a registered medical practitioner or by a coroner after inquest, and included 6 in Birmingham, 3 in Liverpool, and 3 in Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylum Hospitals and the London Fever Hospital, which had been 1,398, 1,417, and 1,477 at the end of the three preceding weeks, had further risen to 1,482 on Saturday last; 190 new cases were admitted during the week, against 195, 201, and 227 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In eighteen of the largest Scottish towns 1,155 births and 567 deaths were registered during the week ending Saturday, July 20th. The annual rate of mortality in these towns, which had been 14.0, 14.6, and 13.4 in the three preceding weeks, rose slightly to 13.6 per 1,000 in the week under notice, and was 2.5 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates ranged from 3.9 in Clydebank and 8.8 in Motherwell to 17.7 in Coatbridge, 20.8 in Dundee, and 21.7 in Perth. The mortality from the principal epidemic diseases averaged 1.3 per 1,000, and was highest in Coatbridge and Ayr. The 213 deaths from all causes registered in Glasgow included 12 from infantile diarrhoea, 6 from whooping-cough, 3 from diphtheria, and 1 each from measles and from scarlet fever. Four deaths from whooping-cough were registered in Edinburgh, 3 in Aberdeen, and 2 in Dundee; 3 from infantile diarrhoea in Dundee and 2 in Govan; and 2 from measles in Dundee.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, July 13th, 538 births and 349 deaths were registered in the twenty-two principal urban districts of Ireland, as against 603 births and 306 deaths in the preceding week. The annual death-rate in these districts, which had been 15.7, 16.0, and 13.8 per 1,000 in the three preceding weeks, rose to 15.7 per 1,000 in the week under notice, this figure being 4.1 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 16.0 and 15.9 respectively, those in other districts ranging from 4.4 in Portadown and 5.3 in Tralee, to 30.0 in Lisburn and 34.7 in Kilkenny, while Cork stood at 14.3, Londonderry at 12.7, Limerick at 19.0, and Waterford at 26.6. The zymotic death-rate in the twenty-two districts averaged 1.2 per 1,000, or the same as in the preceding period.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

BIRMINGHAM UNIVERSITY.—Lecturer in Physiological Department. Stipend, £200 per annum.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer. Salary at the rate of £50 per annum.

BRIXTON DISPENSARY, Water Lane, S.W.—Resident Medical Officer. Salary, £175 per annum.

BUCKINGHAM: BUCKS COUNTY EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £250 per annum.

CARDIFF EDUCATION COMMITTEE.—Medical Assistant to School Medical Officer and Medical Officer of Health. Salary, £250 per annum.

CARDIFF: KING EDWARD VII'S HOSPITAL.—House-Surgeon (Male). Honorarium, £30 for six months.

CHARING CROSS HOSPITAL, W.C.—Assistant Surgeon for Diseases of the Throat, Ear, and Nose.

CROOKSTON: GOVAN DISTRICT ASYLUM.—Second Assistant Medical Officer (Male). Salary, £150 per annum.

CROYDON GENERAL HOSPITAL.—Anæsthetist and Junior House-Surgeon. Salary, £75 per annum.

DOWNPATRICK: DOWN DISTRICT LUNATIC ASYLUM.—Junior Male Assistant Medical Officer. Salary, £130 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

GLOUCESTER: GLOUCESTERSHIRE ROYAL INFIRMARY AND EYE INSTITUTION. Assistant House-Surgeoncy. Remuneration at the rate of £80 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon (Male). Salary at the rate of £60 per annum.

HULL ROYAL INFIRMARY. Assistant House-Surgeon. Salary at the rate of £60 per annum for six months, or £80 per annum for twelve.

LEEDS GENERAL INFIRMARY.—(1) Obstetric Officer; salary, £50 per annum. (2) Medical Officer; salary, £60 per annum. (3) House-Physician.

LEEDS HOSPITAL FOR WOMEN AND CHILDREN.—Two House-Surgeons. Salary at the rate of £60 per annum.

LEEDS UNIVERSITY: FACULTY OF MEDICINE. Research Assistant for Department of Pathology. Salary, £125 per annum.

LEICESTER ROYAL INFIRMARY.—Assistant House-Surgeon. Salary, £80 per annum.

LIVERPOOL: CITY INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer. Salary, £120 per annum.

LURGAN UNION WORKHOUSE AND FEVER HOSPITAL. Female Resident Medical Officer. Salary, £80 per annum.

MACCLESFIELD GENERAL INFIRMARY. Senior House-Surgeon. Salary, £100 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Clinical Pathologist.

MANCHESTER ROYAL EYE HOSPITAL. Junior House-Surgeon. Salary, £80 per annum.

MERTHYR TYDFIL UNION.—Assistant Medical Officer for the Workhouse. Salary, £150 per annum.

NEWCASTLE-ON-TYNE: ROYAL VICTORIA INFIRMARY.—Resident Medical Officer. Salary, £200 per annum, rising to £250.

NOTTINGHAM GENERAL DISPENSARY (Branch).—Assistant [illegible] per annum.

POLESWORTH BOROUGH ASYLUM. Assistant Medical Officer. Salary, £150 per annum, rising to £200.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Physician to Out-patients.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—(1) House-Physician; salary at the rate of £60 per annum. (2) Medical Officer for Prevention of Consumption Department; salary, £250 per annum.

RYDE: ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £100 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary, £80 per annum.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon; salary, £65 per annum. (2) Assistant House-Physician; salary, £60 per annum. (3) Sixth Resident; salary, £60 per annum.

SHEFFIELD: ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary, £70 per annum.

SHEFFIELD UNIVERSITY.—Professor of Pathology.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon (Male). Salary commencing at the rate of £70 per annum.

STAFFORD: STAFFORDSHIRE COUNTY HOSPITAL.—Assistant Medical Officer. Salary, £160 per annum, rising to £210.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—(1) House-Surgeon; salary, £120 per annum. (2) House-Physician; salary, £100 per annum.

STOCKPORT INFIRMARY.—Two Junior House-Surgeons. Salary, £80 per annum.

STOCKPORT UNION HOSPITAL.—Resident Assistant Medical Officer. Salary, £130 per annum.

WEST BROMWICH DISTRICT HOSPITAL.—Assistant Resident House-Surgeon. Salary, £75 per annum.

WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House-Surgeon. Salary, £120 per annum.

WINWICK: LANCASHIRE COUNTY ASYLUM.—Pathologist. Salary, £200 per annum, rising to £250.

WORCESTER: COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary, £150 per annum, rising to £170.

YORK COUNTY HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Garforth (Yorks), Sheerness (Kent).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

COPE, R., M.R.C.S., L.R.C.P., District Medical Officer of the Bingham Union.

EWING, A. W., M.R.C.S., L.R.C.P., District Medical Officer of the Ware Union.

FERGUSON, R. S., M.B., C.M. Edin., District and Workhouse Medical Officer of the Calne Union.

HAVER, M., M.B., B.S. Durh., District Medical Officer of the Sleaford Union.

KINGDON, E. O., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Holsworthy District, co. Devon.

MACINTYRE, Æneas D. M., M.B., C.M. Edin., Medical Officer of the Whinney House Hospital of the Gateshead Union.

THYNE, W., M.D. Edin., Certifying Factory Surgeon for the Medbourne District, co. Leicester.

WARD, Herbert Gibbons, M.D., Ch.B., D.P.H. Viet., Medical Officer of Health and School Medical Officer for the Borough of Royal Leamington Spa.

WOODSEND, R. N., M.B., B.S. Lond., District Medical Officer of the Richmond (Yorks) Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

HARVEY.—On July 21st, at "Strowan," Great Shelford, near Cambridge, to Dr. and Mrs. W. Henwood Harvey, a son.

POWELL.—On July 20th, at Lewisland, Bath Road, Cheltenham, the wife of Dr. Hugh Powell, a daughter.

DEATHS.

CARRUTHERS.—At Halton House, Runcorn, on July 22nd, very suddenly, William Hodgson Carruthers, M.D., F.R.M.S.

KIRKWOOD.—Suddenly, at Newcastle-on-Tyne, Thomas Kirkwood, M.B., C.M., of 218, Westmorland Road, aged 52 years. Friends accept this intimation.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynæcology, 10 a.m.; Eye, 2 p.m. Tuesday: Gynæcological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynæcology, 2 p.m. Thursday: Eye, 2 p.m.; Orthopædics, 2 p.m. Friday: Gynæcological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 3RD, 1912.

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STATE SICKNESS INSURANCE COMMITTEE.

APPOINTMENTS IN CONNEXION WITH THE INSURANCE ACT.

THE State Sickness Insurance Committee calls the attention of all members of the medical profession to the following resolution adopted by the Annual Representative Meeting, 1912:

> That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

SANATORIUM BENEFIT.

The State Sickness Insurance Committee also directs attention to the following resolution adopted by the Annual Representative Meeting, 1912:

> That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such appointment* shall be submitted to the Council for its approval.
>
> * "Appointment" means any professional work.

The State Sickness Insurance Committee notifies that no advertisement in respect of appointments in connexion with sanatorium benefit will be accepted for publication in the BRITISH MEDICAL JOURNAL which is inconsistent with the conditions laid down by the Association, and in all cases in which an advertisement is accepted a full list of the conditions laid down by the Association will be sent to the advertiser.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

LIVERPOOL, 1912.

ADJOURNED GENERAL MEETING.

ADDRESS IN SURGERY.

MR. FRANK THOMAS PAUL, F.R.C.S., Ch.M., Consulting Surgeon, Liverpool Royal Infirmary, delivered the annual Address in Surgery at the Arts Theatre, the University, Liverpool, on Thursday, July 25th. Sir JAMES BARR, President of the British Medical Association, was in the chair.

Mr. PAUL then delivered the Address in Surgery which was published last week, p. 172 et seq.

At the conclusion of the Address, Sir VICTOR HORSLEY, F.R.S., moved:

> That the best thanks of the British Medical Association be accorded to Mr. Frank Thomas Paul for his instructive Address in Surgery delivered in Liverpool on the occasion of the eightieth annual meeting of the British Medical Association.

Sir Victor presumed that the motion had been put into his hands because, as probably many present knew, he had to thank Mr. Paul for nearly thirty years of kindness and friendship. They had to thank him because he had given another illustration of what was owing to the Liverpool school on the subject of the surgery of cancer. Men's memories were so short that it had almost been forgotten to thank the late Sir William Banks for what he had done in that particular field of curative treatment. Mr. Paul's audience had had a most interesting address, in which surgical procedure was properly based on scientific research, and Sir Victor, for his part, was only too sorry that another was not present to move the vote of thanks; he referred to the late Sir Henry Butlin. However, they could, at any rate, offer their best thanks to Mr. Paul. (Applause.)

Dr. G. E. ARMSTRONG (Montreal), seconding the motion, desired, on behalf of Canada, the oversea dominions, and (he thought he might say) America, to supplement what had been said by pointing to the appreciation with which Mr. Paul's work was regarded in those countries. His work and his teachings were almost as well known there as in England, and they had had a very material and helpful influence in the development of a most important work. (Applause.)

The PRESIDENT having put the motion, it was carried by acclamation. Mr. PAUL, in reply, expressed his thanks for the way in which his address had been received.

ANNUAL DINNER.

THE Annual Dinner of the British Medical Association was held at the Philharmonic Hall, Liverpool, on Thursday, July 25th.

The PRESIDENT (Sir James Barr), was supported by the Earl of Derby (Lord Mayor of Liverpool), the Bishop of Liverpool, Professor Saundby (ex-President), Dr. J. A. Macdonald (Chairman of Council), Dr. E. J. Maclean (Chairman of Representative Meetings), Sir Charles Petrie (Deputy Mayor), Mr. Helenus Robertson (Chairman of the Dock Board), Professor A. Abrams (San Francisco), Mr. T. J. Verrall (Chairman of the State Sickness Insurance Committee), Professor Sinclair White, Sir John Byers, Mr. F. T. Paul, F.R.C.S., Professor Armstrong, Sir Edward Russell, Mr. John Rankin, Dr. E. Rayner (Treasurer), Archdeacon Madden, Judge Thomas, Judge Taylor, and the Mayors of Bootle, Birkenhead, Wallasey, and Southport.

The toasts of "The King," and "The Queen, Queen Alexandra, the Prince of Wales, and other members of

the Royal Family," were proposed by the President, Sir James Barr.

"The City and University of Liverpool."

Dr. J. A. Macdonald (Chairman of Council), in proposing the toast of "The City and University of Liverpool," said that it was now twenty-nine years since the British Medical Association had met in Liverpool, and any one who was present then could not at the present day fail to be struck with the great progress made during those years. It was impossible for any one to see the great traffic in the city, or to go down to the docks and see the constant succession of mighty ships going up and down the river, without remembering the size of the vessels of these days compared with such leviathans as the *Lusitania* and the *Mauritania*, and being conscious of the enormous progress made in twenty-nine years. Within that period Liverpool, he understood, had brought into her embrace many smaller communities, and had added to her population 200,000 souls. At the same time that the increase of population had taken place there had been an equal increase in the care taken of those people by the inhabitants of Liverpool. Whilst Liverpool had made progress in material matters, she had not neglected the other side of life. She had advanced with equal rapidity in the matter of arts and science. Looking at those two great buildings, St. George's Hall and the Walker Art Gallery, the visitor realized that the inhabitants of Liverpool were conscious of their privilege, and recognized that art was a very important circumstance in the life of the inhabitants. With regard to science, Liverpool had made great strides. At one time she was content that her position should be that of a constituent college of a university, but the natural pride of Liverpool had induced her to establish a university of her own. The progress made in that university had amply justified that action. Liverpool had rapidly taken her natural place as one of the centres of education of the world, and had made strides well worthy of her reputation. She had taken a foremost place in one branch of education which was absolutely necessary for her subsistence, and that was the study of tropical medicine. It was particularly fitting that at the present time the head of the City of Liverpool—the Lord Mayor and the Chancellor of the University of Liverpool—should be in one united person, and he the head of the great house of Stanley—a house that had been always famous in English history and a house to which Liverpool had been indebted for assistance in many ways. Lord Derby was one of the most energetic Lord Mayors Liverpool had ever had, and let nothing interfere with his duties in that respect. Long might the city continue to add by its material support to the advancement of the University, and long might the University continue by the education of her sons to add to the lustre of Liverpool. He gave them the toast of "The City of Liverpool and the University of Liverpool," coupled with the name of the Earl of Derby.

The Earl of Derby, in responding to the toast, said that Dr. Macdonald had been kind enough to say that he did not allow his pleasure to come before his duty; but he found as a general rule that he could combine the two, and he sincerely hoped to do so the next day, when he intended shortly after 2 o'clock to present the degrees of the honorary graduates, and at a not very appreciable time afterwards to see the race for the Liverpool Cup. He could not help being proud that, for that year at all events, he could, as the head of both the Corporation and the University, answer for the one toast. He was proud of it not, for his own sake, but for the fact that the people of Liverpool had been good enough to place the same confidence in him that they had placed in his forefathers. Liverpool could claim, both through her University and through her Corporation, to merit appreciation at the hands of the medical profession. The Tropical School of Medicine associated with the University of Liverpool had been initiated by a great Liverpool citizen, the late Sir Alfred Jones, who by the institution of that school had given his name an undying memory and had brought credit to the city of his birth. With regard to the Corporation, he would recall the simile used on the occasion of the presentation of prizes and diplomas to medical students at the London Hospital, of which he was treasurer. The simile was that doctors were leaders of a forlorn hope. No forlorn hope had ever been led against an entrenched position without there being first an attempt to break down the fortifications by means of artillery. He ventured to think that it was to Liverpool as a Corporation that the medical profession of the city could look to for supplying the guns in that attack, because of all cities in the kingdom he claimed for Liverpool that she had realized and, having realized it, had done her best for the better housing of the poorer classes. Without the breaking down of the fortifications of unhealthy surroundings there would be no possible chance for the medical leaders of a forlorn hope. In Liverpool much had been done in that direction. Dr. Macdonald had referred to Liverpool's fine buildings. He (Lord Derby), as a citizen of Liverpool, took pride in them, but he took infinitely more pride in, and would ask every one to look with an even more critical eye at, other work in the city. He urged his auditors to go and see the areas that had been cleared of insanitary houses and to see the buildings that had been erected in their place, and how the light of the sun had been let in on what had been dark, squalid places. The light of the sun broke down the fortifications and provided a breach for the storming party of the doctors' forlorn hope. He was glad to think that at all events during his tenure of office as Lord Mayor for one year there had been no politics. He wished that there were more work outside the political area. He wished that there were more people in the country who would not be content simply with voting at election times, but who would try and take a living part in the management of the city, of the municipality, or even of their own immediate locality. There were diseases in the life that went on around, seated far too deep to be cured by any party politics. He hoped that the time would come when all conditions of men would sink their politics and do in acts what at the present moment they only did in profession—that was, without fear of what the consequences might be from a speech here or a vote there, to do all they possibly could to secure the help of, and with that help the happiness and the prosperity of those who lived about them. They had been honoured in Liverpool by the presence during the past week of the Association. He thanked them for the honour done to the city.

"The British Medical Association."

The Bishop of Liverpool (Dr. Chavasse) proposed the toast of "The British Medical Association." He wished that someone better qualified than he had been selected to propose the important toast of the British Medical Association, such as a distinguished medical man who could recount the deeds of the past, or outline the development of the future; or some statesman like Lord Derby, or a redoubtable member of Parliament who could lay before the guests some system of politics which would help in the difficult times upon which they had fallen. But, if he possessed none of those qualities, he thought he could claim hereditary sympathy with the medical profession. For two hundred years past in a direct line his ancestors had been members of the medical profession. He himself had lived for sixty years and more in close intimacy with three generations of medical men, and might also claim hereditary sympathy with the British Medical Association. He had had placed in his hands that week the first volume of the *Transactions of the Provincial Medical and Surgical Association*, published in 1833, which gave a list of the first members of the Association, and an account of the first meeting at Worcester under the presidency of the then Dr. Charles Hastings. He had found among the names of the first three hundred members the name of his own father. He had also found that the President had been a friend of his father, and he had found among the fifty members of Council names of others which were household words in the days of his childhood. That volume also interested him exceedingly as a citizen of Liverpool, for he found that the medical men of Liverpool played a distinct part in the history of the Association under its old name. He had noticed that four Liverpool doctors were members of the first Council—Dr. Lawson (Surgeon to the Liverpool Infirmary), Dr. Jeffrys, Dr. Rutter, and Professor Traile, who had then just left Liverpool for Edinburgh. He had found that out of the sixteen articles in the first volume, four were written by Liverpool doctors. One on the diseases of the heart, by Dr. Jeffrys; a second on spina bifida, by Mr. Lawson; a

third on melanosis, by Dr. Williams, Physician to the North Dispensary; and the fourth an article on sleep, by Dr. Roger Wakefield, Physician to the Liverpool South Infirmary, which he had read with great interest. That article had struck him greatly for the excellence of its literary style, for the acquaintance of its author with the English literature and the classics, and also for what the writers of an earler day would have called its very "pretty wit." The author described the approach of sleep in an individual in a sitting posture. Now he himself had observed, from the vantage coign of the pulpit, sleep coming over individuals, and he had read the following description with very much interest: "The eyelids are first closed; but frequently opened for a moment till sleep has actually taken place. The fingers cease to grasp what once they may have held; the lower jaw falls towards the breast, but is frequently raised unconsciously, till a deeper inclination than ordinary arouses the half-torpid faculties and awakens him in surprise, till after various attempts the chin remains stationary and the sleeper enjoys the luxury of oblivion." He was quite sure not a few medical lecturers had witnessed the same phenomenon. He felt almost sure also that some of the speakers of the British Medical Association had noticed it also, except, perhaps, when discussing the Insurance Act. Thus the great British Medical Association was launched, and Liverpool, he was thankful to say, had greatly to do with its launching. Turning to the address of the President, afterwards Sir Charles Hastings, he gathered that the objects of the great British Medical Association were, and are, mainly three: First, what he might call illumination—to make known to one another and to the world the recent discoveries in medical science, and to discuss difficult points. The second object was consolidation—that doctors might present an organized front in times of difficulty, such as the present, when (he thought he might say) by their determined attitude members of the Cabinet would be made to think seriously of how the needs of the medical profession could be met. He was not going to touch on political matters, but he thought he expressed the feeling of the vast majority of Englishmen outside the medical profession when he said that he was sure the British public were as anxious as the Association that, just as the colliers had a living wage, so medical practitioners should have a living wage. (Applause.) The thought of a noble and beneficent profession, which had done so much to heal disease, to alleviate suffering, and to prolong life, being on half-pay and carrying on its work under straitened circumstances, was abhorrent to the mind of every Englishman and every Britisher. (Hear, hear.) Lastly, he gathered that the British Medical Association was formed for the sake of social intercourse, and, as the words ran in the original, to maintain the honour and respectability of the profession by promoting friendly intercourse among members and by establishing harmony and good feeling. He would judge that the last object had been most efficiently carried out in Liverpool. The Association had tested the liberality and hospitality of Liverpool, and Liverpool had given that welcome and that hospitality for which she was rightly and properly famed. In conclusion, he had much pleasure in proposing the toast of "The British Medical Association," and he would finish by re-echoing the words with which Dr. Hastings closed his first Presidential address: That this Association "must have a direct tendency to extend the empire of knowledge and to increase our power over disease." (Loud applause.)

Dr. EWEN J. MACLEAN (The Chairman of Representative Meetings), who was received with loud applause, responding on behalf of the British Medical Association, said that during his term of office he had often had to respond to the toast of the British Medical Association, but he could never recall an occasion when he had endeavoured to address himself to that task with a greater sense of responsibilty. It was a very fortunate circumstance that on that occasion the proposal of the toast had been in the hands of one who by heredity and by deed had proved himself to be a friend of their great profession. Reference had been made by previous speakers to the relation of the Association with Liverpool. When the Association last met in Liverpool the membership roll was not larger than 10,000. Twenty-nine years later, when it met again in Liverpool, the membership roll was well over 25,000. He wished to express their deep sense of indebtedness as members of the Association to their friends and colleagues in Liverpool for the thoughtful and in every way excellent arrangements that had been made for their reception. From his experience of annual meetings of the British Medical Association, he was well aware by observation of the great amount of time, trouble, and anxiety which the Annual Meeting imposed upon the Executive Committee of the place at which it met. When he referred a short time ago to the strength of the Association he had omitted to mention that during the last year at least 4,000 members had been added to the roll. (Loud cheers.) That was one indication of its strength, and it was an obvious result of the great crisis with which the medical profession at the moment were faced. He asked, What did their strength consist in? Might he mention one or two things in which it did not consist? The Association's strength did not consist in the terminology of its resolutions; it did not consist in what was said from time to time in the various Sections of the Annual Meeting; it did not even consist (and in this he was sure he would have the President's cordial approval) in the forcible rhetoric of their President for the time being. (Laughter.) He feared their constitution was as much misunderstood by the public as the profession sometimes misunderstood the public's constitution. (Laughter.) Let him say once and for all that the dominating body of the British Medical Association, and the body whose resolutions formed its policy and carried that policy into effect, was, and was only, the Representative Meeting of the Association. If that were well understood a good deal of trouble would be saved. In what, then, did their strength consist? Properly enough it consisted in the first place in their numbers, and the fact that the Association had a preponderating portion of the profession within its bounds. It consisted in the appeal which the justice and the reasonableness of the profession's demands made to the average member of the Association. It also consisted—which was even more important still—in the appeal which those demands made to the public generally. Further, the Association's strength consisted in that magnificent tradition for public and charitable services which through the years that had gone had been, and was still, the greatest possession of all. (Hear, hear.) Let people be well assured that the Association was not losing sight of the interests of the public. He would go so far as to say that if it could be proved that the demands of the Association and its policy were absolutely unjust and unfair to the interests of the public, there was not a man of them who would not set to work to modify them. But that point was far from being proved, and it was well that the public should be assured that in that great crisis and that great fight the interests of the public were near to the hearts of the profession. Let the public consider what an enormous effort of accommodation the Insurance Act called upon the profession to perform. There never had been in the history of social evolution a call so great at such short notice to a whole profession to accommodate itself to an entirely new condition of things. The Association must be judged in the light of that great and dominating fact. Did the public realize what was involved and what was implied in producing a registered medical practitioner? Did the public realize that an average medical curriculum extended over seven years; that the prospective medical man, or someone on his behalf, had to expend a sum of at least £1,500; that medical students had to face a mortality from the nature of their studies, or diseases arising from their studies, of at least 5 per cent.? When the student became a registered medical man, did he then remain merely a dispenser of various facts and the carrier out of various orders? By no means. The mobility of science to-day was such that the medical man must receive their quota from the sister sciences with which he had to charge his heart and his brain; he had to transmute those contributions for the purpose of the medical service and the surgical service, and with them he had to go to the public. The public received them at his hands. It was well that the public should see to it that at all events the conditions of his service would be such as to preserve that spark of inspiration which would enable the medical man to see light at the face workings of the social problem. Much had been said about breaking off negotiations. Much had been said which showed that the position of the

medical profession was not understood. There were certain things which were certainly not meant by breaking off negotiations. The Association did not mean that for all time the Insurance Act would be boycotted. That was a reflection upon the profession's power of common observation. Could it be for a moment thought that the profession could overlook the fact that the industrial population of the country was now by that great measure recast in a different form? The point was that such conditions should be granted to medical men as would enable them to serve and to work the basis benefit of that great Act not only in the medical interest, but in what was the dominating consideration, the interests of the country at large. (Applause.) What, then, was meant by breaking off the negotiations? It meant that something must be done soon to dispel the distressing atmosphere of uncertainty. Medical men wanted to know what they were going to be called upon to do. That was not yet known. There had been no definition of it. It was a psychological impossibility that the Representative Meeting could have said either "Yes" or "No" in respect of the working of the Insurance Act, having regard to the uncertainty, to the many undetermined factors; and to say either one or other would be to gamble with the interests of a great profession. So much for what was meant by breaking off of what had been termed "negotiations." He was prepared to say—and he said it with a full sense of responsibility—that in his view and opinion the content of the letter received from the Chancellor of the Exchequer through the Commissioners was well and sincerely meant; but, rightly or wrongly—he thought rightly—the Association had decided that it was calculated to prolong the period of uncertainty. In the present state of that great question it was time that the Government should at the earliest possible moment, in the form of clear-cut and plain-meaning regulations, and otherwise, define the duties the medical profession were expected to discharge, both as regarded the normal medical benefit and also the points that were to be regarded as extras. Furthermore, at the earliest opportunity there should be a statement made as to what amount of money the Government were prepared to recommend Parliament to devote for that purpose. (Hear, hear.) That statement must of necessity and as a matter of routine be considered and discussed upon its merits. The matter was really urgent. Let it be remembered that in the next few months the conditions of medical practices would have to be recast and prepared for altered circumstances, and meanwhile the capital value of practices was most seriously depressed. (Hear, hear.) That was a matter of extreme urgency, and in that sense he felt sure they were all unanimous as to the desirability of a statement of that kind. Finally, he appealed to the press. He wanted the press on the one side not unnecessarily to embitter the relations between the Association and the Government, and on the other side he thought it was not worthy of the traditions of the press in a matter of the kind to place the profession in the eyes of the public in an antisocial position. Medical men realized that the attitude of the public to them was going to be a very great factor in the outcome of that great question. At the present stage it was not so much the question of their pockets they were concerned with as their proper pride. It was not so much their reputation as scientists but as citizens that gave them concern. (Loud and continued applause.)

"The Guests."

Mr. Robert Jones, Ch.M., proposing the toast of "The Guests," said the toast was always a popular one, but perhaps never more so than at the moment. One of the great charms of a congress such as the present was that people were brought into close contact with distinguished visitors from all parts of the world, men whom they were delighted to honour. Such guests were the springs from which were derived many inspirations, and they were proud to feel that they did not belong to no one nation, but were the common property of all. With so many guests it was impossible to enumerate or dwell upon them in detail—there was the Lord Mayor, of whom Liverpool was so justly proud; the Lord Bishop, with his great, big heart, whom every one dearly loved; there were distinguished members of the Church, distinguished judges, distinguished members of the medical profession, distinguished scientists, and distinguished scholars—it was impossible to allude to them all, but they were all heartily welcome. Whilst it was impossible to associate the toast with every name, he must mention the name of Professor Abrams, one of the most distinguished men of California, whose name was a household world everywhere. Mr. Helenus Robertson, Chairman of the Dock Board, must also be mentioned. On behalf of the Association he thanked the Dock Board for the beautiful souvenir they had given of the Port of Liverpool. He asked them to drink with acclamation the toast of "The Guests." (Applause.)

Mr. Helenus Robertson, responding, thanked Mr. Jones for the kindly way in which he had proposed the toast, and for the more than cordial way in which it had been received. He also thanked the President of the Local Committee of the British Medical Association for the honour bestowed in asking the guests to be present and for the splendid hospitality shown them. Like the Lord Bishop, he had personal ties which bound him to the medical profession. His father had been a member of it, and he himself had decided to follow in his footsteps, and had already commenced his studies; but his energies were turned into a mercantile direction. He was old enough to remember the introduction of chloroform. His father had been an intimate friend of Sir James Simpson, and was one of the first to make use of the then new anaesthetic, but before administering it to his patients, he carefully experimented upon his family, himself (the speaker) among them. So that he could lay a humble claim to have been associated with the progress of anaesthetics. Things had changed since then, but it was worth while to look back to the days before anaesthetics were known, and before Lord Lister made his discovery of antiseptics—the two greatest blessings conferred upon humanity, which had saved thousands of lives, and which had made operations, impossible two generations ago, the ordinary operations of to-day. He had been asking himself that afternoon where medical science was leading. He had seen in the papers that at one of the meetings of the Association the previous day it had been stated that if some wonderful extract were administered a boy could be made to grow 7 in. in six months, and his entrance to Woolwich could be guaranteed. He had also read in another paper a most wonderful and interesting discovery of "Weed Killers." (Laughter.) He had read it very carefully, and, in the cause of science, had determined to try it upon himself, but as the operation was not finished he could hardly give the result to the public. He thought the good deeds of the profession were not sufficiently appreciated. The public was apt to lose sight of, or not to realize sufficiently, the debt owing to medical men for their self-sacrifice, their skill, their kindness and sympathy in hours of suffering, their work among the poor, and their noble generosity in giving their discoveries freely to the world at large, instead of working them for the benefit of the individual. If there were any gratitude in the world it was deserving to no one more than to the members of the noble medical profession. They were the men who brought to the people "rare and refreshing fruit" and not Dead Sea fruit. He thanked them very much for the honour they had done the guests and for the extremely pleasant evening they had had. (Applause.)

Professor Albert Abrams (San Francisco) said that he felt himself in a somewhat equivocal position, because while Dr. Macdonald had been cautioned to be brief, he himself had been enjoined by some one else to be long-winded. Was there one rule for Americans and another for Englishmen? He thought not, because that would be a veritable contradiction. It reminded him very much of the American cocktail. A Frenchman coming to America said that the American cocktail was a contradiction. He said, "You put a little whisky in to make it strong; you put a little water in to make it weak; you put a little lemon in to make it sour; you put a little sugar in to make it sweet, and then you say, 'Here's to you,' and you drink it yourself." (Laughter.) Mr. Robertson had referred to the optimism of the surgeon. In America optimism was defined as a condition in which a man makes a sweet lemonade out of all the acid lemons that are handed to him throughout life. The last speaker had also spoken of the various marvellous remedies that were proposed in the treatment of disease. In America they had

to contend with a very formidable body, the Christian Scientists; and, as their friend Mr. Dooley said, "If the average Christian Scientist had a little more science and the average physician a little more Christianity it would not make a bit of difference to the patient as long as he had a good nurse." (Loud laughter.) When the momentous and at the same time honourable task of responding to the toast had been assigned to him by the Secretary, the latter was rather indefinite. He did not say what was to be said, or how much was to be said, or anything of the kind. The average physician was very delicate in the matter of instructions, and it recalled to his (the speaker's) mind the story of the physician who went to visit a sick woman. After the examination of the case he approached the son-in-law. The son-in-law was very solicitous concerning his mother-in-law's condition, and he said, "Doctor, what is the matter?" The doctor said, "Your mother-in-law is in a very serious condition, and I would suggest a warmer climate." The son-in-law disappeared, and after an interval of time returned with an axe, and handing it to the physician said, "Here, doc., I haven't the heart to do it." (Loud laughter.) Continuing, Professor Abrams thought his name beginning with "A" rather made him a prey for selection at public functions. He was reminded of a man named Zander who joined a circus, where they used to pay in alphabetical rotation as long as the money lasted. Every time they came to the name "Zander" the funds were exhausted. This was not very remunerative to Zander, who left the circus, but returned in the course of a year. When he approached the pay-desk they said to him, "What is your name?" He said, "My name is Abrams." (Laughter.) In speaking for the guests, Professor Abrams wished he had the faculty of speech to express the profundity of his thanks for all the good, for all the kindness, and for all the courtesy shown during the meeting of the British Medical Association. Before leaving America a friend had said to him, "You will find Liverpool a very dull place; in fact, I spent six months there one afternoon." (Loud laughter.) Would they permit him to say that that mendacity of his friend was appalling? There was no difference in time between New York and Liverpool provided one attended a meeting of the British Medical Association. When he returned to America he would ask his friend to pronounce L-i-v-e-r-p-o-o-l, and whatever the answer might be, he would say, "You are absolutely wrong; I pronounce Liverpool one of the greatest cities on the face of the earth." He would not expatiate on all he had seen and all he had learnt in that great city, because that had been so ably done by Dr. Macdonald. Every one had been so kind to the guests and to him that it was impossible to forget that most pleasant episode in their lives. Liverpool's institutions of learning, he need scarcely say, compared favourably with similar institutions throughout the civilized world. He marvelled at the extraordinary work done in their laboratories and at the work about to be done. He had visited practically all the British colonies throughout the civilized world, and he had always been impressed with the noble traditions reflected from the Mother Country, and he must say, without exaggeration, not as a dilettante but as one of the cognoscenti, that England enjoyed the supremacy of the world for the very reason that in the administration of her justice, and in the advance of civilization, she was in the forefront. It was to be hoped that England might retain that supremacy, if for no other reason than to teach the world how nations should be made. Dr. Blair Bell (one of the Secretaries of the Dinner Committee) had said to him that morning, among other things, "We want your criticism as well as your points of view." If he were to criticize the medical profession he would meet with great difficulty. He could not criticize except in a very moderate way. Criticism was dangerous. A *nouveau riche* in Yonkers, a place in the State of New York, had acquired a large number of paintings. He invited a connoisseur from New York to determine on the character of the paintings. After that gentleman had been taken through the spacious art galleries, the proud owner said to him, "My dear sir, before you give me your opinion of this art gallery let me tell you one thing. I brought a connoisseur from New York and he said my gallery was not worth a tinker's cuss. I caught him by the pants and threw him downstairs. Now, sir, what do *you* think of my art gallery?" (Loud laughter). Professor Abrams thought if he were to try to criticize the British Medical Association, all he could do would be to characterize them as spendthrifts. They had been so lavish with their hospitality that the meeting could never be forgotten by any of the guests.

"The President."

The toast of "The President" was proposed by Sir John Byers, who said that Sir James Barr had enjoyed the greatest and highest honour of his life in being made President of the largest association of medical men in the world. That was something which any man might be proud of. For his part, he was sure that never at a meeting of the Association had there been such hospitality displayed. It was many years since he had first met Sir James Barr as a fellow-member of the Council. The same qualities he had shown at the present time he had shown then. They were the levelheadedness which he probably owed to the country whence he came, his ability in saying in the straightest possible way what he meant, his power of leadership, and his perfect freedom from any restraint. Those were the things which had made him so popular in the city of Liverpool. Sir James Barr had another quality which endeared him to all those who came in contact with him, and that was his genius for friendship. There were many present who differed from Sir James politically and in other ways; but all were there to honour him that night. Professor Abrams had caused him to recollect a story he had had from a witty magistrate in Belfast. Two gentlemen of entirely opposite politics had been found belabouring one another. The charge was corroborated in the case of one, but not in the case of the other. The magistrate told one to stand aside, and said to the other, "I am going to sentence you——," whereupon the other fighter got up and said, "Your worship, I want to say a word or two before you sentence him." "What is that?" said the magistrate. "We were not fighting at all when the police came up," was the reply. "We were just trying to separate one another." (Laughter.) He thought a great deal of Sir James's combativeness was of that type, and not a bit of harm was done even to those whom he belaboured in the strongest terms. They respected his honesty of mind, his firmness of speech, and his desire to do the best for the side he was fighting on. (Hear, hear.) On behalf of the province from which Sir James came, he desired to say with what pleasure they had witnessed Sir James rise to the high position he held, and finally to be placed in the highest position the profession had to offer him. It was very pleasing to think that that position had been gained "off his own bat," and he had gained it because no more popular man could have been selected. In conclusion, he desired to travel a little bit outside the toast and to couple with the name of Sir James Barr that of Lady Barr.

The President, rising to reply, was greeted with loud and continued cheering. He returned thanks for the very warm manner in which his health had been drunk, and especially thanked the proposer of the toast for his very kind reference to Lady Barr. He felt that the toast was not really intended for him entirely, because he was merely there as a figure-head. ("No, no.") He was merely a general in the campaign, and he must refer to the men who had largely done the work and contributed so much to the success of the meeting. In the first place he must refer to his friend the Local Treasurer, Mr. T. H. Bickerton. (Hear, hear.) He regarded it rather as a stroke of genius on his part to have selected Mr. Bickerton, because there could not have been a better man for the post. The only time there had been a quarrel during the meeting was when he (Sir James) had happened to tell the committees that Mr. Bickerton had plenty of money and there was no fear about spending it. Mr. Bickerton had thought he said too much. He would further remind the assembly that Mr. Bickerton had not only been the treasurer, but also the editor and head of the committee which had produced the beautiful guide book. There were two others on the committee, Mr. F. C. Larkin and himself, but he thought they could both honestly say that neither of them did any work on that committee, except to smoke Mr. Bickerton's cigars while he did the work. They did do a little work, however, and that was to

cut down the tender of the printer. The result of Mr. Bickerton's labours had been the beautiful handbook, which he was sure they would carry away and which would be a reminder of the work transacted at Liverpool. He must further refer to the three local secretaries, Mr. Frank H. Barendt, Mr. K. A. Grossmann and Mr. Thelwall Thomas. Whenever he (Sir James) wanted anything rushed, or a position taken by storm, he trusted to Mr. Thelwall Thomas, who was extremely like a man he very much admired, Mr. Joseph Chamberlain. That gentleman did not tell you what he was going to do, but did it; and no one could want a better officer at his hand than Mr. Thelwall Thomas. (Hear, hear.) For good, hard, solid work his old friend, Mr. Barendt, was always on the spot and could always be trusted to do his work well. His friend Mr. Grossmann, too, was too well known to need commendation. Sir James further referred to the work done by Dr. Caton (Chairman of the Dinner and Luncheon Committee), whose absence they all regretted, and the work of the Joint Secretaries, Dr. W. Blair Bell and Dr. J. E. McDougall. So far as the duties connected with the dinner were concerned, they had practically fallen entirely upon Dr. Bell, and it was he whom they had to thank for the magnificent floral decorations adorning the hall. Dr. McDougall was responsible for the arrangements for lunch, and had splendidly carried out his duties. Sir James paid a tribute to the work of the officers of the Hospitality and Club Accommodation Committee (Mr. A. Melville Paterson, Chairman), the Hotels and Lodgings Committee (Dr. A. S. Parkinson, Secretary), the Reception Committee (Dr. R. Kelly, Secretary), the Printing Committee (Dr. J. Hay, Secretary), the Pathological Museum Committee (Mr. Frank T. Paul, Chairman; Dr. Ernest T. Glynn, Secretary), the local Entertainments Committee (Dr. Bradshaw, Chairman), the work of Mrs. Robert Jones and Miss Ivens on the Ladies' General Committee for Entertainments, and Mr. Larkin (Chairman) and Mr. F. W. Bailey (Secretary) on the Excursions Committee. He concluded with his best thanks for the very kind way in which the toast had been proposed and responded to.

ANNUAL REPRESENTATIVE AND GENERAL MEETINGS.

Corrections.

THERE is an unfortunate error in transcription in the report of the speech in which Mr. Larkin moved the amendment which proposed to instruct the Council of the Association to report to the Divisions and obtain their opinion as to the desirability of the Association becoming a registered trade union. The passage in which the error occurred should have read as follows:

There were several facts which it was important the Divisions should have before them before they came to an opinion. The first was that he believed it was an absolute impossibility for the Association to become a trade union. He said that advisedly. No doubt the Association could be wound up, and its members could, if they desired form themselves into a trade union, but the property, as far as he understood, was absolutely earmarked for certain purposes, and if at the winding-up there should not be any body with similar and not wider powers than the Association to which to turn over the money, he was given to understand it would be applied by a judge of the High Court to charitable purposes.

In the speech of Mr. E. B. Turner in the discussion headed "Adherence to the Minimum Demands," page 144, 1st column, line 17, the remarks quoted from a member of the Government should have read: They have undone all our work; we had got them nicely split," and not as printed.

DR. ST. CLAIR B. SHADWELL (Walthamstow) writes: May I be allowed to correct a slight error in the report of the proceedings of the Representative Meeting as reported in the SUPPLEMENT of July 27th? The vote of thanks proposed to the Chairman was for his conduct *of* the chair, and not *in* the chair. The difference is obvious.

DR. JOHN HADDON (Hawick) writes: In the SUPPLEMENT, page 174, I am reported to have said: "Now it was trade union business that attracted what he had called in London the scum of the Association." What I did say in London was that it was "the scum of the Association that was *managing* it," which is very different; and those who are managing it are not *attracted*, but *sent*, and paid for going.

THE PATHOLOGICAL MUSEUM.

LAST week we gave a brief notice of the subjects treated of in the annual collection. It is now necessary to supplement this with an account of our further detailed inspection, and to take the various sections seriatim. Before doing so, however, we have to acknowledge our indebtedness to Professor Ernest Glynn, who so kindly piloted us round the entire museum, and put the services of his staff at our disposal. On him, indeed, had fallen the responsibility of the exhibition, and the greater part of the work entailed. To Messrs. Bickersteth, Willett, Thurstan Holland, and Dr. Stopford Taylor we are also indebted for assistance in reporting their respective sections.

Cardio-Vascular Section.

The striking feature of this section was the collection of specimens of gummata of the heart, showing varying extents of caseation in the wall of the left ventricle, in the interventricular septum, in the muscle of the auricle. A noticeable feature was the absence of any definite aortitis in these cases, though in a specimen from Leeds University there was accompanying slight atheroma and a large aneurysm of the ventricle. In another (Liverpool University) there was also a sacculated aneurysm in the tracts, probably a sequence of syphilitic endoarteritis. A large gumma in the interventricular wall (University of Leeds) came from a soldier, aged 22, who died suddenly in a tram; another came from a man, aged 58, who had produced eleven healthy children. Dr. Teacher (Glasgow) sent from one patient a gumma of the heart and also a gummatous infiltration of the root of the lung.

Neoplasms of the heart were illustrated by secondary sarcomata, including melanotic sarcoma (Leeds and Liverpool), some of which had spread from the mediastinum, whilst others originated in the abdomen and orbit, and a specimen showing a large nodule of malignant disease projecting from a cusp of the aortic valve (Leeds).

Three specimens of chronic pericarditis included tuberculous pericarditis (Manchester), tuberculous (indurative) and mediastinal pericarditis, and a chronic proliferative tuberculous pericarditis (Liverpool).

A rare specimen was one of spontaneous rupture of the heart following chronic interstitial myocarditis with atheroma of the coronary artery (Manchester). Some fine examples of infective endocarditis included two in which the pulmonary valves were affected, one of which followed a septic stomatitis in scarlatina (Newcastle), the other a case of acute suppurative osteitis, and here the aortic valve was also covered with vegetation. An unusual case of aneurysm of the undefended space came from a man aged 47, who died probably from sclerosis of the coronaries (Liverpool). Another specimen of aneurysm of the abdominal aorta in a man aged 41 had caused death by compression of the renal vessels and suppression of urine (Nathan Raw). A large aneurysm was shown in a phthisical cavity (Manchester), and several examples of traumatic dissecting aneurysms, one of which had resulted in death three weeks after fracture of ribs in a man aged 63 (Leeds). A heart from a case of acute lymphatic leukaemia was covered with petechial haemorrhages (Newcastle). A beautiful series of paintings of cases of infective endocarditis had formed the illustrations to Professor T. R. Glynn's Lumleian Lectures. And of real instructive value were the specimens from the Royal Free Hospital, all the affected viscera from each case—for example, infective endocarditis, nephritis, etc.—were mounted in one jar to demonstrate all the lesions.

Section of Diseases of Liver, Spleen, and Lymphatic Glands.

Here were placed Dr. Teacher's series of livers and kidneys to illustrate the necrotic changes, often in great areas, which he has described in eclampsia.

Suppurative inflammation of the liver included cholangitis (Manchester), pylephlebitis secondary to chronic appendicitis, and a case of multiple abscesses evidently due to the *B. typhosus*, from a patient who gave a positive Widal reaction, but no typical typhoid symptoms or lesions, nevertheless typical bacilli were cultivated (Sheffield).

Two fine specimens of actinomycosis showed the typical honeycombed appearance of the masses which reached the size of an orange (Manchester, Liverpool).

An active hydatid cyst in a cirrhosed liver (Manchester) contrasted well with a shrunken hydatid (Liverpool).

Two specimens of cancer were associated with cirrhosis, and another was described as being secondary to cirrhosis (Ernest Glynn). Amongst other neoplasm was a fine example of malignant haemangeioma of liver (Manchester). Close by was a specimen of advanced tertiary syphilis, with great distortion and irregularity of the surface (Liverpool) contrasting well with the adjoining specimen of multilobular cirrhosis, with its less marked irregularity of surface.

Several specimens of acute haemorrhagic pancreatitis were associated with fat necrosis, all well preserved (Leeds—Liverpool).

Lymphadenoma (Hodgkin's disease) was plentifully illustrated, and the lymphomata in the liver and spleen were placed side by side with cases of the rare type of tuberculosis, the marked naked-eye resemblance. Many specimens demonstrated the enlarged glands in this condition (Newcastle—Manchester).

Of thymus changes there was a specimen of sarcoma (Manchester), and an enlarged one from a case of status lymphaticus (Liverpool). An instructive and important exhibit included the glands, spleen, lung and kidneys, from a case of acute lymphadenoma and general miliary tuberculosis (Stewart MacDonald).

Respiratory Section.

Professor Ernest Glynn exhibited some specimens showing primary pulmonary thrombosis, on which subject he has published much of interest. Adjoining were specimens of pulmonary emboli (Liverpool—Manchester), and a case showing multiple embolic aneurysms of the pulmonary artery following thrombosis of veins of leg, death having occurred from haemoptysis (Drs Beattie and A. Hall, Sheffield).

Bronchiectasis was to be seen in the apex of the left lung (Nathan Raw), in the lower lobes of both lungs (Liverpool), and in one case, from a barmaid, it had followed the inhalation of a clove, which no doubt she had taken to mask her breath.

A specimen showed a caseous bronchial gland which, by rupturing into the trachea, caused asphyxia (Liverpool), and another showed tuberculous ulceration of larynx and cavities in the lungs of a child aged 17 months.

Tuberculosis was further illustrated by a specimen of acute pneumonic phthisis, and another of chronic pleurisy, which was so advanced as to resemble the enormous thickening seen in the malignant disease of the pleura (Liverpool), a specimen of which, indeed, was found adjoining, and has been illustrated in Dr. Graham Steele's Bradshaw lecture as an example of endothelioma. Other specimens of note were an osteosarcoma of lung from a boy aged 15, with primary growth in the fibula and no other metastases (Nathan Raw). Lymphosarcoma of mediastinum, in one case producing stenosis of bronchus, bronchiectasis, and septic bronchopneumonia (Manchester), a specimen of advanced anthracosis, and one of syphilitic fibrosis of lungs (Birmingham).

Section of Laryngology.

Dr. Logan Turner contributed the whole of this exhibit, which included a valuable series of specimens illustrating sudden death from laryngeal obstruction, the result of oedema ensuing on such lesions as acute pneumococcal infection of the larynx in a man aged 46, extensive tuberculous ulceration, multiple epithelioma, and malignant papilloma. This series alone was worth a special visit.

Other specimens were of syphilitic infiltration of the larynx, papilloma of the septum nasi, primary laryngeal diphtheria with no faucial affection, and, again, diphtheria of the trachea, which was covered throughout with a membrane, and forming a most instructive picture.

Alimentary Section.

A remarkably comprehensive series of oesophageal lesions were here shown, including a case of acute haemorrhagic oesophagitis (Liverpool), a cast of the oesophagus, about 5 in. long, which had been expelled by coughing, several examples of oesophageal varices from cases of cirrhosis of the liver (Manchester), one of which had ruptured; specimens of congenital stricture, and, again, of "idiopathic" dilatation (Brown Kelly, Glasgow), and several small diverticula of the traction variety. Also numerous foreign bodies (lent by Hamilton Drummond, Newcastle) that had been removed by the oesophagoscope, including coins, teeth, bones, etc.; one coin was found at autopsy on a child who had swallowed it two years previously.

To make this section complete, Dr. William Hill showed some instruments, mostly endoscopic, for dealing with diseases of the oesophagus, including skiagrams, permanent oesophageal intubation apparatus for cancerous stricture, apparatus for applying radium to lesions, and a series of skiagrams showing the effects of radium. Of historical interest was a Morell Mackenzie oesophagoscope for indirect vision, which is now obsolete.

A large series of concretions from the alimentary canal, including sand, gall stones, appendix and intestinal concretions, illustrated Dr. Owen Williams's paper on the parallelism of all these and the factors common to each.

An enormous series of specimens of cancer of the rectum and colon was contributed to by various surgeons from Liverpool and Newcastle, and with them was placed a specimen of multiple papilloma of the rectum of a woman at 50. A series of specimens of appendicitis was lent by Mr. Monsarrat, and specimens of hyperplastic tuberculosis of the caecum and ileo-caecal region by Professor Morison. One case of note was an adenocarcinoma of the stomach, associated with multiple polypoid adenomata (Dr. Stewart, Leeds).

A curious collection was formed of stomachs filled with hair, wool, and blanket pieces, sometimes resulting in a complete cast of the stomach, mostly removed at autopsy, but in one case a bottle full of matting had been vomited during life (Liverpool).

Here must be mentioned a histological preparation of Sampson Handley (London), showing infiltration of cancer cells in the submucosa of the rectum at a point some distance from a cancerous ulcer, and which to the naked eye was apparently normal.

Section of Nervous Diseases.

A small collection only, but containing much of interest. A case of diffuse neurofibromatosis, in a girl aged 17, demonstrating the large tumour on the cranial nerves, spinal cord, and peripheral nerves, formed a striking feature (Professor Beattie).

Several tuberculous tumours were of large size, and occurred in the cerebellum, left cerebral hemisphere (removal by operation); in one specimen multiple tuberculomata were shown.

Other specimens were a gumma of the cerebral meninges and a pituitary tumour from a case of acromegaly, together with the skull from the same case (Liverpool).

Amongst several examples of haemorrhage was one with the frontal lobe in a case of eclampsia (Teacher).

Association Notices.

NOTICE OF ALTERATION OF BOUNDARIES OF DIVISIONS.

West Bromwich, Bromsgrove, and Central Birmingham Divisions.

The following changes have been made in accordance with the Regulations of the Association, and take effect from the date of publication of this notice:

That so much of (*a*) Handsworth as at present lies in the area of the West Bromwich Division and is contained in Greater Birmingham, and (*b*) King's Norton and Northfield, at present lying in the area of the Bromsgrove Division and also contained in Greater Birmingham, be transferred from these Divisional areas respectively to the area of the Central Birmingham Division, and that the areas of these three Divisions of the Birmingham Branch be modified accordingly.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Metropolitan Counties Branch: Kensington Division.—A meeting of this Division will take place on Friday, August 2nd, at 4 p.m., at Kensington Town Hall, to receive the report of the Representative at the Annual Representative Meeting.

British Medical Association.

COUNCIL AND STANDING COMMITTEES FOR 1912-1913.

COUNCIL.

Chairman: J. A. MACDONALD, M.D., LL.D.

Ex Officio:

Sir JAMES BARR, M.D., LL.D. (Liverpool), *President.*

W. AINSLIE HOLLIS, M.D. (Brighton), *President-elect.*

Professor ROBERT SAUNDBY, M.D., LL.D. (Birmingham), *Past-President.*

Mr. T. JENNER VERRALL (Bath), *Chairman of Representative Meetings.*

Dr. E. RAYNER (Stockport), *Treasurer.*

Elected by Branches.

Aberdeen, Northern Counties, Dundee, and Perth Branches.	Dr. JOHN GORDON (Aberdeen).
Bath and Bristol, Gloucestershire, West Somerset, and Worcestershire and Herefordshire Branches.	Dr. G. PARKER (Bristol).
Birmingham and Staffordshire Branches.	Mr. ALBERT LUCAS (Birmingham).
Cambridge and Huntingdon, East Anglian, and South Midland Branches.	Dr. J. G. DURRAN (Leighton Buzzard).
Cape of Good Hope Branches.	Dr. T. D. GREENLEES (Streatham).
East York and North Lincoln and Midland Branches.	Dr. F. M. POPE (Leicester).
Edinburgh and Fife Branches.	Dr. J. R. HAMILTON (Hawick).
Glasgow and West of Scotland Branch (four City Divisions).	Dr. JOHN ADAMS (Glasgow).
Glasgow and West of Scotland (four County Divisions), Border Counties and Stirling Branches.	Dr. J. LIVINGSTONE LOUDON (Hamilton, N.B.).
Indian Branches.	Surgeon-General P. H. BENSON, I.M.S. (Walmer)
Lancashire and Cheshire Branch.	Dr. T. A. HELME (Manchester). Dr. E. S. REYNOLDS (Manchester).
Metropolitan Counties Branch.	Dr. M. G. BIGGS. Dr. CHARLES BUTTAR. Dr. MAJOR GREENWOOD. Dr. F. J. SMITH.
Munster Branch.	Professor HENRY CORBY, M.D. (Cork).
New Zealand Branch.	Dr. D. EWART (Chichester).
North of England and North Lancashire and South Westmorland Branches.	Mr. D. F. TODD (Sunderland).
North Wales, Shropshire and Mid-Wales, and South Wales and Monmouthshire Branches.	Mr. D. J. WILLIAMS (Llanelly).
Oxford and Reading and Southern Branches.	Dr. W. J. TURRELL (Oxford).
South-Eastern Branch.	Dr. W. J. TYSON (Folkestone).
South-Western and Dorset and West Hants Branches.	Mr. E. J. DOMVILLE (Exeter).
Ulster Branch.	Mr. R. J. JOHNSTONE (Belfast).
Victoria, South and West Australian Branches.	Dr. C. G. D. MORIER (London).
Yorkshire Branch.	Dr. JAMES METCALFE (Bradford).

Elected by Grouped Divisions.

Aberdeen, Northern Counties, Dundee and Perth, Edinburgh and Fife Branches.	Dr. M. DEWAR (Edinburgh).
Bath and Bristol, Gloucestershire, West Somerset, Worcestershire and Herefordshire, Dorset and West Hants, and South-Western Branches.	Mr. C. E. S. FLEMMING (Bradford-on-Avon).
Birmingham, Staffordshire, North Wales, Shropshire and Mid-Wales, and South Wales and Monmouthshire Branches.	Dr. H. C. MACTIER (Wolverhampton).
Connaught and South-Eastern of Ireland and Leinster Branches.	Professor A. H. WHITE (Dublin).
East York and North Lincoln, Midland, Cambridge and Huntingdon, East Anglian, and South Midland Branches.	Dr. C. H. MILBURN (Hull).
Glasgow and West of Scotland, Border Counties, and Stirling Branches.	Dr. GRANT ANDREW (Glasgow).
Lancashire and Cheshire Branch.	Mr. T. W. H. GARSTANG (Altrincham).
Metropolitan Counties Branch: North and East, and Central Metropolitan Groups.	Dr. R. M. BEATON (London).
West Metropolitan and South Metropolitan Groups.	Mr. E. B. TURNER (London).
North of England, North Lancashire and South Westmorland, and Yorkshire Branches.	Dr. A. C. FARQUHARSON (Spennymoor).
Oxford and Reading, Southern, and South-Eastern Branches.	Dr. C. COURTENAY LORD (Gillingham).
Munster and Ulster Branches.	Dr. J. S. DARLING (Lurgan).

Elected by Whole Representative Meeting.

Dr. R. C. BUIST (Dundee).
Mr. F. C. LARKIN (Liverpool).
Dr. EWEN J. MACLEAN (Cardiff).
Dr. LAURISTON E. SHAW (London).

Service Members.

Inspector-General ROBERT BENTHAM, R.N., Retd. (Royal Navy Medical Service).
Surgeon-General J. P. GREANY, I.M.S. (Indian Medical Service).
Lieutenant-Colonel F. W. H. DAVIE HARRIS, R.A.M.C. (Royal Army Medical Service).

STANDING COMMITTEES.

The President, the Chairman of Representative Meetings, the Chairman of Council, and the Treasurer are members of all Committees, *ex officio.*

FINANCE COMMITTEE.

By the Representative Meeting.	*By the Council.*
Mr. J. H. Ewart, Eastbourne.	Dr. Charles Buttar, London.
Dr. David Lawson, Banchory, N.B.	Mr. E. J. Domville, Exeter.
Dr. R. Langdon-Down, London.	Mr. Albert Lucas, Birmingham.
Dr. Milner Moore, Coventry.	Mr. D. F. Todd, Sunderland.

Together with the Chairmen of the Organization, Journal, Science, Medico-Political, and Central Ethical Committees.

ORGANIZATION COMMITTEE.

By the Representative Meeting.	*By the Council.*
Mr. Russell Coombe, Exeter.	Mr. R. J. Johnstone, Belfast.
Mr. T. W. H. Garstang, Altrincham.	Mr. F. C. Larkin, Liverpool.
Dr. A. H. Williams, Harrow.	Dr. James Metcalfe, Bradford.

JOURNAL COMMITTEE.

By the Representative Meeting.	*By the Council.*
Dr. R. C. Buist, Dundee.	Dr. R. M. Beaton, London.
Dr. D. G. M. Munro, Maidenhead.	Mr. Albert Lucas, Birmingham.
Dr. C. J. Whitby, Bath.	Dr. C. H. Milburn, Hull.

SCIENCE COMMITTEE.

By the Council.

Professor W. E. Dixon, F.R.S., Cambridge.	Dr. C. J. Martin, F.R.S., London.
Dr. J. S. Haldane, F.R.S., Oxford.	Dr. F. M. Pope, Leicester.
Dr. T. Arthur Helme, Manchester.	Dr. F. J. Smith, London.
	Professor Ralph Stockman, Glasgow.
	Professor A. H. White, Dublin.

CENTRAL ETHICAL COMMITTEE.

By the Representative Meeting.	*By the Council.*
Dr. A. G. Bateman, London.	Dr. M. G. Biggs, London.
Dr. Bruce-Goff, Bothwell, N.B.	Mr. J. H. Ewart, Eastbourne.
Dr. J. H. Keay, London.	Dr. A. C. Farquharson, Spennymoor.
Dr. R. Langdon-Down, London.	Dr. Ewen J. Maclean, Cardiff.
Dr. Philip G. Lee, Cork.	Dr. George Parker, Bristol.
Dr. Lauriston E. Shaw, London.	Mr. D. J. Williams, Llanelly.

PUBLIC HEALTH COMMITTEE.

By the Representative Meeting.	*By the Council.*
Dr. T. B. Heggs, Sittingbourne.	Mr. E. J. Domville, Exeter.
Dr. R. A. Lyster, Winchester.	Dr. A. C. Farquharson, Spennymoor.
Dr. F. E. Wynne, Leigh.	Dr. C. Courtenay Lord, Gillingham.

Medico-Political Committee.

By the Representative Meeting.	*By the Council.*
Dr. Michael Dewar, Edinburgh.	Dr. R. M. Beaton, London.
Mr. W. J. Greer, Newport (Mon.).	Dr. J. G. Durran, Leighton Buzzard.
Dr. T. B. Heggs, Sittingbourne.	Mr. C. E. S. Flemming, Bradford-on-Avon.
Dr. Wallace Henry, Leicester.	Mr. T. W. H. Garstang, Altrincham.
Mr. D. F. Todd, Sunderland.	Dr. Ewen J. Maclean, Cardiff.
Dr. A. H. Williams, Harrow.	Dr. E. S. Reynolds, Manchester.

Hospitals Committee.

By the Representative Meeting.	*By the Council.*
Dr. T. Bushby, Liverpool.	Dr. M. G. Biggs, London.
Dr. R. E. Howell, Middlesbrough.	Dr. David Ewart, Chichester.
Dr. J. H. Keay, London.	Dr. J. R. Hamilton, Hawick, N.B.
Mr. C. P. Lankester, Guildford.	Mr. R. J. Johnstone, Belfast.
Dr. H. C. Mactier, Wolverhampton.	Dr. Lauriston E. Shaw, London.
Dr. F. G. Swayne, London.	Dr. F. J. Smith, London.

Naval and Military Committee.

By the Representative Meeting.	*By the Council.*
Barrow, Colonel H. J. W., London.	Andrew, Dr. J. Grant, Glasgow.
Thomas, Colonel J. E. Raglan, K. H. P., Exeter.	Benson, Surgeon-General P. H., I.M.S., Walmer.

Together with the Representatives on the Council of the Royal Naval Medical Service, the Army Medical Service, and the Indian Medical Service, namely: Inspector-General Robert Bentham, R.N. (ret.), Lieut.-Colonel F. W. H. Davie Harris, R.A.M.C., Surgeon-General J. P. Greany, I.M.S.

Colonial Committee.

By the Representative Meeting.	*By the Council.*
Greenlees, D. T. D., London.	Turrell, Dr. W. J., Oxford.
Greany, Surgeon-General J. P., I.M.S., London.	Tyson, Dr. W. J., Folkestone.

Together with the members of the Council who represent Colonial Branches, namely: Surgeon-General P. H. Benson, I.M.S., Dr. David Ewart, Dr. C. G. D. Morier.

Arrangements Committee.

Six members to be appointed by the Local Executive Committee.

Elected by the Council:

Professor H. Corby, Cork.	Dr. F. M. Pope, Leicester.
Professor W. E. Dixon, F.R.S., Cambridge.	Dr. F. J. Smith, London.
Dr. John Gordon, Aberdeen.	Mr. Thelwall Thomas, Liverpool.

STATE SICKNESS INSURANCE COMMITTEE.

England and Wales.

North of England, North Lancashire and South Westmorland, and Yorkshire Branches.	Mr. D. F. Todd.
Lancashire and Cheshire Branch.	Dr. S. Hodgson.
East York and North Lincoln, Midland, Cambridge and Huntingdon, East Anglian, and South Midland Branches.	Dr. D. G. Thomson.
Birmingham, Staffordshire, North Wales, Shropshire and Mid-Wales, and South Wales and Monmouthshire Branches.	Dr. E. O. Price.
Metropolitan Counties Branch: North and East, and Central Metropolitan Groups.	Dr. Major Greenwood.
West and South Metropolitan Groups.	Mr. E. B. Turner.
Bath and Bristol, Gloucestershire, West Somerset, Worcestershire and Herefordshire, Dorset and West Hants, and South-Western Branches.	Dr. T. M. Carter.
Oxford and Reading, Southern, and South-Eastern Branches.	Mr. E. H. Willock.

Scotland.

Aberdeen, Northern Counties, Dundee and Perth, and Edinburgh and Fife Branches.	Dr. R. McKenzie Johnston.
Glasgow and West of Scotland, and Border Counties and Stirling Branches.	Dr. J. Adams.

Ireland.

Connaught and South-Eastern of Ireland, and Leinster Branches.	Professor A. H. White.
Munster and Ulster Branches.	Dr. J. S. Darling.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

The first meeting of the State Sickness Insurance Committee appointed by the Annual Representative Meeting, 1912, was held on July 31st.

The chair was taken by Mr. T. Jenner Verrall at 10.45 a.m. The members present were: *England and Wales:* Dr. T. M. Carter (Westbury-on-Trym), Dr. Major Greenwood (London), Dr. E. O. Price (Bangor), Dr. D. G. Thomson (Norwich), Mr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Mr. E. H. Willock (Croydon). *Scotland:* Dr. J. Adams (Glasgow), Dr. R. McKenzie Johnston (Edinburgh). *Ireland:* Dr. J. S. Darling (Lurgan), Professor A. H. White (Dublin). *Ex Officio:* Dr. E. Rayner (Treasurer).

Apologies for absence were read from the President, the Chairman of Council, and Dr. Hodgson.

The Chairmanship.

Mr. Todd proposed the election of Mr. Verrall as Chairman of the Committee. There was, he said, no man who could fill the office so well and so entirely to the satisfaction of the Committee and the Association. In addition it was, at so critical a moment, important that there should be continuity between the proceedings of the new State Sickness Insurance Committee and the old. He suggested that the strain upon Mr. Verrall might be relieved by the appointment of a Deputy Chairman.

Mr. Verrall said that while he highly appreciated the compliment implied in the proposal he felt compelled to decline. As Chairman of Representative Meetings he would have to keep in touch with many committees. But a consideration that weighed with him still more was that having been elected by the Representative Meeting to be its Chairman he felt bound to keep himself free to preside. Were he to accept the proposal now made he would have to leave the chair at the Representative Meeting when the report of the Committee was under consideration.

Many members of the Committee urged Mr. Verrall to reconsider his decision, but he adhered to his resolution, consenting, however, to take the chair at this meeting of the Committee.

Central Insurance Fund.

It was intimated to the Committee that several members of the overseas Branches had given it to be understood that members of these Branches might be willing to take their share in raising the Central Insurance Fund to a suitable amount. The Committee recorded its opinion that, though it had not been thought proper to make any application to members of overseas Branches, any assistance that they might be willing to render would be very highly appreciated by their fellow members in the United Kingdom, and that the giving of such help would be a striking proof of the solidarity of the profession and of the justice of the cause of the profession at home.

Local Medical and Insurance Committees.

The question of the propriety of Provisional Local Medical Committees entering into communication with the Provisional Local Insurance Committees was raised by a letter submitted to the Committee by the Medical Secretary.

The Committee expressed the opinion that although the resolution of the Representative Meeting precluded the acceptance of any work under the medical benefit part of the insurance scheme, it did not preclude communications between Provisional Medical Committees and Provisional Local Insurance Committees for the purpose of ascertaining the nature and conditions of any scheme or appointment dealing with the administration of sanatorium benefit.

Welsh National Memorial Association.

Mr. David Davies, M.P. (Chairman), Mr. Evans (Secretary), Dr. Marcus Paterson (Medical Director), and Dr. W. E. Thomas (a member of the Executive Committee), of the Welsh National Memorial Association, attended as a deputation to explain the Welsh scheme and the terms and conditions of the service which members of the medical profession were asked to render, whether as

Tuberculosis Physicians or as general practitioners undertaking domiciliary treatment.

Mr. David Davies, M.P., said that the movement to make the Welsh memorial to King Edward VII a scheme to control tuberculosis, and if possible to stamp it out, had originated before the Insurance Bill was introduced. But for that bill some at least of the appointments would already have been made. The Welsh National Memorial Association fully recognized that close co-operation with general practitioners, and with medical officers of health also, was essential to the success of the movement. So far the campaign of the Welsh National Memorial Association had been purely educational. The larger scheme now to be put into force included treatment in sanatoriums and at dispensaries. Wales had been divided into thirteen districts, and a whole-time Tuberculosis Physician would be appointed to each district.

In reply to a question by the Chairman of the Committee as to domiciliary attendance, Mr. Evans said that there was very little difference between the plan of the Welsh National Memorial Association and the conditions laid down by the Representative Meeting. The first aim of the Welsh National Memorial Association was to keep in close touch with all general practitioners. The Tuberculosis Physician would act in consultation with the general practitioner. The salary offered was £400, with annual increments of not less than £25. The local Tuberculosis Physician would act under the general supervision of the Medical Director of the Welsh National Memorial Association (Dr. Marcus Paterson). It was proposed to establish two sanatoriums, one for South Wales (250 beds), and one for North Wales (150 beds) respectively. When the South Wales sanatorium was ready, probably in about two years, Dr. Paterson would become its medical superintendent, but in the interval his services would be at the disposal of the Welsh National Memorial Association for the general supervision of the scheme in all parts of Wales. The position of the Tuberculosis Physicians in Wales would differ from that of the Chief Tuberculosis Officers as defined in the Astor report, inasmuch as the latter were quite independent, whereas in Wales the Tuberculosis Physicians would be responsible to the Medical Director of the Welsh National Memorial Association.

In reply to further questions, Dr. Marcus Paterson said that the desire and intention was that all domiciliary treatment should be carried out by general practitioners, the Tuberculosis Physician acting as a consultant only. The only exception likely to arise was with regard to treatment by tuberculin injections. Unless there were general practitioners available prepared to undertake the treatment, it would be necessary for the Tuberculosis Physician to carry it out at the dispensary, which would be open to general practitioners who desired to study and observe the method.

After some further conversation, in the course of which Mr. David Davies said that the Welsh National Memorial Association undertook institutional and dispensary treatment only, not domiciliary treatment, Mr. Evans said that the Welsh National Memorial Association was anxious to come to an understanding with the British Medical Association. If the two medical men who had resigned the appointments to which they had recently been elected wished to apply again in the altered circumstances, he could say that they would be reappointed. He added that the Welsh National Memorial Association was about to make several other appointments of Tuberculosis Physicians, and handed to the Chairman the draft of an advertisement it desired inserted in the issue of the Journal for this week.

The deputation then withdrew after Mr. David Davies had thanked the Committee for its courtesy.

The Committee considered the advertisement submitted by the Welsh National Memorial Association, and approved of its insertion in the Journal.

Sanatorium Benefit.

The Committee reviewed seriatim the resolutions adopted by the Representative Meeting with regard to the administration of sanatorium benefit, and resolved:

That in the case of advertisements tendered and accepted in connexion with sanatorium benefit, a list of the conditions of the Association be forwarded to the advertiser and to the honorary secretary of the Division and of the Provisional Medical Committee of the area concerned.

Provisional Insurance Committees.

On consideration of the scope of the resolution passed by the Representative Meeting in connexion with this matter, the Committee was of opinion that it was the deliberate intention of the meeting to ask for the resignation of all members of such committees holding qualifications as medical practitioners, whether they had been appointed in that capacity or in some other capacity.

The Committee further expressed the opinion that if a special committee for the working of sanatorium benefit only be set up by a local authority there was nothing to prevent medical men taking part in it for the purpose of providing that the work should be carried out in accordance with the wishes of the Association.

Statement by the British Medical Association to the Public.

In accordance with the resolution of the Annual Representative Meeting instructing the Committee to issue to the lay press a statement explaining the position of the medical profession in relation to the National Insurance Act, the following statement was approved for immediate issue.

Statement.

The British Medical Association has recently declined to accept the suggestion made by the Chancellor of the Exchequer to appoint a committee for the purpose of bargaining with him as to the terms on which the medical profession will consent to work the medical benefits of the National Insurance Act, and has informed him that the Association adheres to its demands previously placed before him. The present seems, therefore, an appropriate time for placing before the public the reasons which have led the Association to take up this attitude.

The British Medical Association is justified in speaking for the medical profession as a whole because it is able by its constitution to collect and express the opinions of its members in a very direct way; and during the discussion of the National Insurance Act as it affects the medical profession non-members of the Association have regularly been invited to its meetings and have shown in many ways that they agree with the line taken by the Association. On June 1st, 1911, the Representative Meeting of the Association—a body of practitioners with direct instructions from meetings of the profession in various parts of the country—after full discussion of the situation and after having had the opportunity of listening to explanations from the Chancellor of the Exchequer, laid down the conditions under which medical benefit under the Act should be administered if the Act was to receive the cordial co-operation of the medical profession. From these conditions the Association has never wavered.

Previous to the drafting of the bill the medical profession was never consulted by the Government. Between June, 1911, and the passing of the Act in December, 1911, frequent meetings took place between the Association and the Chancellor of the Exchequer, with the result that though the Act as passed was, so far as medical benefits are concerned, an improvement in several respects on the bill as introduced, it was far from satisfying the medical profession. In February, 1912, as a last attempt to arrive at an amicable understanding, the Representative Meeting appointed a committee with instructions to lay once more before the authorities the minimum demands of the profession, in the hope that the regulations of the Commissioners, which, so far as medical benefit is concerned, are almost as important as the Act itself, might concede the points which were left uncertain or unfavourable in the Act. These demands were laid before the Commissioners at the end of February, but it was not until June 7th and 12th, 1912, and then only after a firm request for an answer, that the Chancellor and the Commissioners met a deputation from the Association, when some of the points at issue were discussed. On June 26th a letter, written under the instruction of the Chancellor, was received, the contents of which have been summed up by the Council of the British Medical Association in a sentence which has obtained the practically unanimous approval of the profession, namely, "that no material

concession has been made by the Chancellor since February last to the demands put forward by the Association."

The Association submits to the public that in declining to proceed with the negotiations in the manner suggested by the Chancellor of the Exchequer it has adopted the only attitude which a self-respecting profession could take after the treatment which it has received. Over twelve months of waiting and negotiation have resulted in many fair promises with little material result. Several of the points to which the profession has drawn repeated attention have been ignored, and as regards the income limit and the amount of remuneration, the Association has been plainly told that its demands cannot be granted. Further negotiation, therefore, seems useless. The Association has accordingly expressed to the Government its decision to adhere to its previous demands; has called on all medical members of the Advisory Committees who are in sympathy with its policy and on all medical practitioners who have, in whatever capacity, accepted office on Provisional Insurance Committees to resign as a public protest; and will do its best to prevent medical men accepting any office or position in connexion with the Insurance Act except in regard to sanatorium benefit, and then only if the terms and conditions are in accordance with certain principles which have been laid down.

The public has heard much of the "cardinal points" of the Association, and it is not necessary at this stage to reiterate them. Speaking broadly, the conditions which the profession has declared to be essential to the securing of the co-operation of the profession, and which the Government has shown no disposition to concede, are (1) that the profession shall not be under lay control; (2) that there shall be an income limit of £2 per week so far as medical benefit under the Act is concerned, and (3) that the Government shall provide a sum of 8s. 6d. per head per annum, exclusive of medicines and extras, as remuneration for medical attendance under the Act.

Freedom from Lay Control.

This does not mean that the medical profession wishes to be freed from its responsibities to the public, or to the Insurance Committees if these become its employers. The medical practitioner is responsible, like other citizens, to the law for his actions, and, in addition, to the General Medical Council for his conduct as a professional man. But the profession can never consent to place itself under the control of a lay committee in the way in which it is invited to do in regard to the Insurance Committees. On these committees the profession would always be in a hopeless minority, and past experience does not encourage the hope that professional customs and traditions would receive that recognition and consideration at the hands of such committees which must be forthcoming if a really satisfactory service is to be established. It is true that the Act sets up local Medical Committees elected by the medical profession which must be consulted by the Insurance Committees on all medical matters. The profession regards this "consultation" with suspicion. It may mean much or nothing, and the profession is not willing to trust its whole future interests to the keeping of the local Medical Committee, to find when it is too late that the "consultation" of that body by the Insurance Committee is a mere matter of form. On this aspect of the question the Association has been able to get no satisfactory assurance from the Government or the Commissioners.

Income Limit.

The position of the profession, as regards the income limit, has been much misunderstood. It is not intended that any person entitled to the benefits of the Act should be deprived of them, but simply that, so far as medical attendance is concerned, the insured person earning over £2 per week should be given the amount of money allowed for medical benefit, and permitted to make his own arrangements. It is believed that a very large number of the better paid insured persons would welcome such a step, as experience shows that this class, generally speaking, prefer to employ their doctor privately. The desire on the part of the profession for an income limit has nothing to do with the amount of remuneration which it is hoped to secure. The main reason for insistence on the income limit is that it is believed to be a fair and efficient way of limiting the amount of contract work which will be done under the Act. Contract medical practice in the past has been done under conditions which have rendered it obnoxious to the medical profession as a whole and also to many of the public, and many of the best practitioners have declined to engage in it. The relation of the medical practitioner to his patient is such that undoubtedly the best results are obtained when the contract between them is as individual and as free as possible. This is so obvious to the medical profession that, though willing to make contracts under the Act on proper terms with regard to the poorer classes of insured persons, it is most anxious to restrict the scope of contract practice to those whose means would entitle them to special consideration, and it is believed that insured persons earning over £2 a week, with the help of the money drawn from the medical benefit fund, could easily provide for medical attendance outside the Act, and would, in a large number of cases, prefer to do so.

It is recognized that there are areas, such as colliery districts, where contracts including the workers, their wives and families, have for many years existed to the satisfaction of all parties concerned, and in which no limit of this kind is recognized. There would be no objection on the part of the profession to continuing such arrangements.

Remuneration.

As regards the 8s. 6d. per head per annum, which the Association considers is the minimum amount which the profession should be paid for medical attendance under the Act (exclusive of medicines and extras), the Association feels that the attitude of the Chancellor of the Exchequer and the Commissioners has been disingenuous and evasive. On being asked by the Chancellor to present its case justifying the claim for 8s. 6d., a detailed document was submitted by the Association, the main arguments in which have not been controverted, indeed, no attempt has been made to answer them. The figures supplied by Sir William Plender's Report, far from undermining the Association's case, on the whole support it. Those figures show that the present income of a medical man spread over the population of the towns inquired into is 4s. 2d. per head, but this is for 1.8 attendances per annum—a figure which shows that a large number of the population are not attended at all, or are insufficiently attended. All who are acquainted with contract practice are aware that the number of attendances under any system where the patient can demand unlimited attendance is about 4 per annum, under systems which, generally speaking, do not allow of free choice of doctor. It is certain that when the insured persons come under a contract system which allows unlimited attendance *with* free choice of doctor, the amount of attendances, instead of being 1 8 per annum, will be more like 5. On this calculation the 8s. 6d. demanded compares unfavourably with present remuneration. The Association has always laid great stress upon the fact, persistently ignored by the Chancellor and by the Commissioners, that 8s. 6d. is paid by the Government at present for medical attendance on postal servants, and is also the usual fee for attendance upon policemen and firemen. If 8s. 6d. *to include* the provision of medicines is a fair payment for medical attendance on people in these services, who are carefully picked lives working under excellent sanitary conditions, who are invalided out of the service if they fall into permanent ill health, and who are pensioned at an age when the incidence of sickness becomes greatest, surely 8s. 6d. *without* medicines is not too much to ask for persons who are not selected lives, who cannot be invalided out of the insurance service, and who must be attended at the same rate of payment to the day of their death. The Association feels sure that if these simple facts are once grasped by the public they will agree that in spite of any statistics which may be put forward, and in spite of any amount of juggling with the figures supplied by Sir William Plender's inquiry, the case for the 8s. 6d. demanded by the profession for attendance on insured persons is unassailable.

On these broad grounds the Association believes that it is justified in the attitude it has taken up; and, moreover, that it will continue to receive the support of the public. It would be mere affectation to say that the profession

in this struggle is not actuated to a large extent by a desire to get adequate remuneration; but remuneration is not the only, or, indeed, the chief, object of the profession at this time. It feels that it is fighting for its very existence as an independent profession. It is faced by an entirely new set of circumstances, the full bearing of which nobody can yet estimate. The Government proposes to set up a medical service which will at once include some twelve to fourteen million people, a large number of whom in the past have received perfectly satisfactory medical attendance by means of arrangements made direct with their own doctor. There is every indication that in the future it will be sought to include the dependents of insured persons, and that thus the service will at no distant date include four-fifths of the whole population. It thus becomes a matter not only of professional but of national concern to ensure that the conditions now set up should be such as will give the public the choice of the best men at present in the profession, and will not tend to lower the standard of the men entering the profession. Under the conditions at present offered the most experienced and trusted practitioners would certainly decline to serve under the Act. The Association is also convinced that the ablest men will not be attracted to the ranks of the medical profession if, in the future, more work is to be demanded, as it certainly will be, without corresponding increase of remuneration, if the profession is to be placed to a large extent under Government and lay control, and, finally, is to be subject to conditions which will restrict to a quite unnecessary extent the scope for private practice which, even at a lower remuneration, is preferred by the profession to any form of contract practice and is better for the public. It is with the hope of preventing these calamities that the British Medical Association has organized itself and the medical profession generally to insist upon the demands which it has laid before the Government. It is because of its belief that these demands are in the best interests of the public as well as of the profession, that the Association now asks the public for its moral support in the fight which it is determined to carry on until the administration of medical benefits under the Act is placed on such lines that the profession can hope to take its part cheerfully and without loss of self-respect or efficiency.

PUBLIC MEDICAL SERVICE.

The Committee received from the Council a resolution empowering it to consider and approve any schemes submitted by the Divisions. It was decided to refer the two schemes published in the SUPPLEMENT of June 8th, 1912, and any additional schemes which may be submitted to a special subcommittee, which was constituted as follows: Mr. E. H. Willock (Croydon), convener; Dr. Hodgson (Salford), Dr. Wallace Henry (Leicester), Dr. E. G. Daniel (Epsom), and Dr. Ledward (Letchworth).

CO-OPTION.

The resolution of the Representative Meeting appointing the committee authorized it to co-opt not more than six additional members, and it was resolved at once to co-opt Dr. Ewen J. Maclean (Cardiff) and Dr. R. M. Beaton (London).

RESIGNATIONS FROM ADVISORY COMMITTEES.

It was reported that those medical members of Advisory Committees who had been nominated by the British Medical Association were about to address to the secretaries of the Commissions, letters resigning their seats, and it was resolved to take steps to bring the following resolution of the Representative Meeting to the notice of all medical members of Advisory Committees:

> That the Association calls upon all members of the Association who are members of Advisory Committees in connexion with the National Insurance Act, and also on other medical members of those committees who are in sympathy with the policy of the Association, to withdraw from these bodies.

LETTER TO THE GOVERNMENT.

It was resolved to forward a letter in compliance with the following resolution at the Representative Meeting:

> That the British Medical Association regrets that His Majesty's Government has not acceded to the terms upon which alone the cordial co-operation of the medical profession in supplying medical treatment under the National Insurance Act can be obtained, and passes the following resolution:
>
> That the Government be informed that the Association adheres to its minimum demands as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer

NEXT MEETING.

The meeting adjourned at 5.45 p.m., after arranging to hold its next meeting on Thursday, August 8th, at 10.45 a.m.

Meetings of Branches and Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

CAMBRIDGE AND HUNTINGDON BRANCH:

ISLE OF ELY DIVISION.

A MEETING of the practitioners of the Isle of Ely was held at the Griffin Hotel, March, on Monday, July 15th, 1912, to elect officers for the ensuing year and to adopt rules for the newly-formed Division to be known as the Isle of Ely Division of the Cambridge and Huntingdon Branch.

Election of Officers.—The following officers were unanimously elected: *Chairman*, Dr. H. C. Meacock (Wisbech), *Vice-Chairman*, Dr. T. E. Price (Upwell); *Honorary Secretary and Treasurer*, Dr. A. C. S. Waters (March); *Executive Committee:* It was proposed and seconded that twenty, including the officers and members of the Branch Council, be elected to serve on the Executive Committee, seventeen to be elected at once and three later by the Committee; five to form a quorum. The following were elected at this meeting: Drs. Max F. Tylor (Wisbech), R. H. Barrett (Parson Drove), H. Clapham (Thorney), H. F. Curl (Ely), C. H. Harding (Whittlesea), P. A. Hendley (Littleport), H. C. Meacock (Wisbech), T. E. Price (Upwell), C. E. Stephens (Doddington), C. H. Gunson (Wisbech), J. J. Waddelow (Whittlesea), F. H. Beckett (Ely), H. A. Hutt (Littleport), C. W. Howe (Huddenham), F. A. Evison (March), H. Groom (Wisbech), A. C. S. Waters (March).

Model Rules.—The model rules approved and recommended by the Association relating to organization and ethics were adopted, and it was decided that a short account of the meeting, together with the rules, be sent to every practitioner in the Isle of Ely.

Instructions to Representative.—It was unanimously resolved:

> That this Division requests that the Representative attending the Representative Meeting at Liverpool be instructed to vote for the breaking-off of further negotiations with the Government at once, and, failing our Representative being willing to carry out these instructions, he be requested to resign.

Fee for Certificates for School Children.—A discussion took place in connexion with a letter received by practitioners of the Isle from Dr. Burnett, the medical officer of health, in which he asked, on behalf of the Education Committee, whether the fee of 1s. would be acceptable for certifying as to the fitness of children to attend school after infectious disease. It was resolved that a letter be written to the Isle of Ely Education Committee, stating that the matter had been fully discussed by the Isle of Ely Division, and that in future any certificate required by the Education Committee of the Isle should be charged for at the rate of 2s. 6d.

LANCASHIRE AND CHESHIRE BRANCH:

BOLTON DIVISION.

A MEETING was held at the Bolton Infirmary on July 12th, Dr. FLETCROFT in the chair. There was an attendance of forty-five.

Special Communications.—(1) Resolutions from Stockport, Macclesfield, and East Cheshire Division, and (2) a circular letter from Dr. H. A. Ballance were laid upon the table.

Special and Supplementary Reports of Council.—Part II: Dr. FLITCROFT proposed, and Dr. SWAINSON seconded:

That we agree with the opinion of the Council as expressed in Paragraph 121 as to this document.

Part III: Dr. MALLET moved, and Dr. THORNLEY seconded:

That the meeting adopt Recommendation X.

Dr. YOUNG supported the resolution, which was carried *nemine contradicente*.

The Question of Negotiations.—The following resolution was passed unanimously:

That, since the minimum demands of the profession as formulated by the British Medical Association have not been conceded, we authorize the Council to break off negotiations with the Insurance Commissioners.

A notice of this resolution was sent to the local press.

Sanatorium Benefit Under Insurance Act.—The Secretary was instructed to forward to the Sanitary Committee the following resolutions:

1. That the proposed tuberculosis dispensary should form part of the Public Health Department.
2. That the medical officer of health should be the chief tuberculosis officer and adviser.
3. That domiciliary treatment should be carried out by the general practitioner, acting in consultation with the medical officer of health.
4. That dispensary treatment should be given only on the recommendation of a medical practitioner actually in attendance.
5. That until the minimum demands of the profession, as formulated by the British Medical Association, are conceded by the Government, no assistance will be given by the local profession in the treatment of tuberculosis under the Insurance Act.

MANCHESTER (WEST) DIVISION.

A GENERAL meeting of this Division was held in the Technical Institute, Old Trafford, on Friday, July 12th. Dr. EDGE occupied the chair, and thirteen members were present.

Correspondence.—Letters were read as follows: (1) From Dr. Cox (Medical Secretary, British Medical Association) *re* the supplementary Report of Council and Special Report of Council concerning position of the medical profession in relation to the National Insurance Act. (2) From Dr. Cox *re* resignation of club appointments, urging Provisional Medical Committees to complete the canvass and forward full reports as soon as possible. (3) From Dr. Ballance urging that at the forthcoming Representative Meeting a free hand should be given to the Representatives in regard to their action in deciding the question whether negotiations with the Commissioners should be broken off at once.

Instructions to Representative.—The following instructions to the Representative of this Division (Dr. Dearden) were moved, seconded, and carried unanimously:

1. To support resolutions X, 1, 2, and 3 (BRITISH MEDICAL JOURNAL SUPPLEMENT, July 6th, p. 23). (Negotiations with Insurance Commissioners to be broken off entirely.)
2. To support the North Manchester resolution—or if this is not brought forward—to move that the Representative Meeting request Dr. Addison to resign his position on the Advisory Committee.
3. To vote against the reappointment of the Chairman of Council, Chairman of Representatives, and Chairman of Committees.
   To support and vote for Dr. Major Greenwood, Dr. Fred. Smith, Dr. Tyson (or some others holding similar views) for any of these positions.
4. To vote against the rescinding of resolution 78.
   A subcommittee to meet and advise the Representative in regard to the Agenda of the Representative Meeting was appointed.

Appointment of Secretary.—Dr. SCANLON consented to take up the post of Honorary Secretary again, to fill the vacancy caused by the death of Dr. Knight, Dr. Helme to continue as Assistant Honorary Secretary.

Medical Officers of Health and Local Insurance Committees.—The following resolution was carried unanimously:

That this meeting considers it anomalous that medical officers of health, medical members of corporations, and medical men holding other official appointments, should be asked, or should consent to allow themselves to be elected on local Insurance Committees.

Joint Committee of the Manchester and Salford Divisions.—The following resolution was carried unanimously:

That the West Manchester Division send no Representatives to the Joint Committee until all members of that Committee have signed the complementary pledge.

METROPOLITAN COUNTIES BRANCH:

EAST HERTFORDSHIRE DIVISION.

THE first meeting of this Division, adjourned at Hertford on June 19th, was resumed at the North Hertfordshire and South Bedfordshire Hospital, Hitchin, on Wednesday, July 10th. As the question of a Public Medical Service was to be discussed, all practitioners resident in the area of the Division, whether members of the British Medical Association or not, had been invited to attend. Dr. BOYD took the chair at 3.30, and there were also present thirty-one members and non-members.

Position of Pledge.—The HONORARY SECRETARY presented the following statement of the position in the area of the Division in regard to the supplementary pledge:

Total number of registered practitioners resident in the area of the Division	108
Not in general practice (of these 10 have signed the pledge)	36
Of the 72 in practice, number who have signed the pledge (canvass not complete, only one has actually refused to sign)	59

Public Medical Service Schemes.—Schemes A and B, submitted by the State Sickness Insurance Committee for the consideration of the Divisions, were discussed, and it was resolved that this Division (1) approves the adoption of a public medical service; (2) considers Scheme A impracticable; (3) objects to the collection of accounts being in the hands of the doctors; (4) considers it objectionable for a committee of doctors to scrutinize the accounts of other doctors (as in Scheme B); (5) considers that there should be no contract on the part of the doctors in any scheme where payment is for work done; (6) instructs its Representative to support the principles of the Letchworth scheme instead of Scheme B, these principles being: No contract on the part of the doctor, but payment for work done from funds administered by the County Insurance Committee, these funds to be formed on behalf of the members of each approved society out of (*a*) sums paid by the Commissioners in respect of medical benefit, and (*b*) contributions from the societies—a proportion of the surplus at the end of each year to be returned to each society, so that the insured have a direct interest in the fund that pays for medical attendance.

Future Action of Association.—The alternative recommendations X and Y, contained in the Special Report of Council to Annual Representative Meeting, were discussed, and it was resolved that the Representative be instructed to support the policy of continuing negotiations with the Government so long as there was no compromise over the cardinal points.

Next Meeting.—The time and place of the next meeting were left to be decided by the Chairman and Honorary Secretary.

MIDLAND BRANCH:

CHESTERFIELD DIVISION.

THE third meeting of the Chesterfield Division, to which all practitioners within the area of the Division were invited was held at the Board Room, Chesterfield Hospital, by kind permission of the board, on Friday, July 26th, at 3.30 p.m. Dr. A. GREEN presided, and some twenty-one were present.

Executive Committee.—After confirmation of minutes the following gentlemen were elected as further members of the Executive Committee: Dr. R. G. Chase and Messrs. J. A. Magee and W. H. Lee.

Representative Meeting.—Dr. W. DUNCAN, the Representative to the Representative Meeting, presented his report, in the course of which he emphasized the great strength of the Association as disclosed at the Representative Meeting, the enthusiasm of the members, their devotion to the Association, and the high ideal of medical service which was expressed throughout. In concluding, he said he desired to dissociate himself from the remarks which had been made by the President (Sir James Barr) in characterizing the Act as the greatest swindle since the

South Sea Bubble, and hoped that the meeting would pass a resolution definitely dissociating itself from that attack. Dr. E. H. Houfton, one of the Representatives from the Nottingham Division, also gave an account of the proceedings of the Representative Meeting, and supported Dr. Duncan's observations. Mr. F. Marriott moved that the report be accepted, and that the thanks of the meeting be accorded to Dr. Duncan for his attendance at the Representative Meeting and for his report of its proceedings, and to Dr. Houfton for attending the present meeting and supplementing that report. Mr. H. B. Fletcher seconded, and the resolution was carried.

The Guarantee Fund.—Dr. Duncan, in acknowledging the vote of thanks, brought up the question of the Guarantee Fund, and urged that every practitioner in the Division should agree forthwith to subscribe. Mr. C. A. Thorne referred to the Guarantee Fund which was being raised at Sheffield. Mr. Magee said he had guaranteed £5 to head quarters and was willing to guarantee £20 further. Mr. Thorne said he would also guarantee £20. Dr. A. W. Wilson suggested that the guarantee scheme should be on a sliding scale. Dr. Duncan explained that head quarters had abandoned the idea of a sliding scale. Mr. Magee pointed out that the risk under the Act was just as serious for the private practitioner who held few or no contracts as to the colliery surgeon, and no distinction should be made. The guarantee list was then handed round and was signed to the extent of £500.

The South Sea Bubble.—Mr. Thorne moved that this meeting of the Chesterfield Division of the British Medical Association dissociates itself from the remarks made by Sir James Barr, the President of the Association, at the Representative Meeting, in which he compared the National Insurance Act to the South Sea Bubble as being uncalled for at the present moment and contrary to the expressed feeling of the profession. Dr. Pilcher seconded, and Dr. Duncan, who supported, said the remarks referred to were not the opinion of the Representative Meeting. Mr. Marriott said the resolution had in some measure a "party" aspect. Dr. Duncan said the resolution was not condemning the President, but was dissociating the meeting from the observation the President had made. The resolution was put and carried, there being three dissentients.

NORTHERN COUNTIES OF SCOTLAND BRANCH:

Caithness and Sutherland Division.

A meeting of this Division was held in Wick on Friday, July 12th. Twelve members were present.

The Association and the Insurance Commissioners.—On the motion of Dr. Banks, seconded by Dr. MacLachlan, it was unanimously agreed that negotiations between the Association and the Insurance Commissioners be still continued. It was felt that although no material concessions had been received from the Commissioners, yet it would be a mistaken policy to drop these negotiations.

It was moved by Dr. MacLachlan:

> That the Secretary be instructed to ask Dr. Norman Walker, Scottish Representative on the General Medical Council, why, contrary to the declared policy of the Association, he refused to place his resignation from the Advisory Committee in the hands of the Executive; and that if his explanation be unsatisfactory, he be asked to resign.

This was seconded by Dr. Asher, and carried unanimously.

Provisional Insurance Committee.—Dr. Asher, who had been appointed by the Insurance Commissioners to the Provisional Insurance Committee, gave an explanation of why he accepted the appointment. He was prepared to resign, and thought that the other medical men who had been appointed should do the same. After considerable discussion as to the advisability or otherwise of medical men being on these Provisional Committees, it was agreed that the policy of the Association be supported. It was therefore moved by Dr. MacEwen and seconded by Dr. MacLachlan:

> That medical men who had accepted appointments on Provisional Insurance Committees resign, and that a copy of the minute be sent to head quarters of the Association and to medical men in the area who were not at the meeting.

This was unanimously agreed to.

Next Meeting.—It was arranged that the next meeting be held in Golspie.

OXFORD, READING, AND MAIDENHEAD BRANCH.

The annual meeting of this Branch was held on July 13th at the County Hospital, Reading. Fifty-six members were present.

Installation of President.

Dr. Freeman (Reading) was installed as President, vice Dr. Turrell (Oxford), retiring. The President congratulated Dr. Turrell on his election to the Central Council, and Dr. Turrell returned thanks for the support he had received.

Election of Officers.—The following were elected officers *nemine contradicente: President-elect*, Sir William Osler, Bart.; *Vice-Presidents*, Dr. Turrell and Dr. Dickson; *Secretary*, Dr. Duigan; *Treasurer*, Dr. Freeman. *Other Members of Branch Council*, Dr. Squire, Dr. Munro, Dr. Gillett, Dr. O'Kelly, Dr. Moore, Dr. Price, Dr. Abram, Dr. Joy, Dr. Caudwell, and the Representatives of the three Divisions—namely, Mr. Drew, Dr. Napier-Jones, and the Maidenhead Representative.

Financial Statement.—The Treasurer read the balance sheet: Balance in hand, £6 10s. 1d. The sum of £7 16s. 1d., representing expenses incurred by the Branch in protesting against the charter, would have to be added to the balance, in accordance with the decision of the Organizing Committee, making a nominal balance of £14 6s. 2d. The report was adopted *nemine contradicente.*

Report of Branch Council.—The council, in reporting a year of great activity among the three Divisions, had pleasure in announcing the organization of the Maidenhead Division. The Oxford Division had held 5 special general meetings, 11 Executive Committee meetings, and 2 local Provisional Medical Committees. The Reading Division had held 6 general meetings, 5 of Executive Committee, 7 of Provisional Medical Committee. Returns of Maidenhead Division were not to hand. The reports of the local Provisional Medical Committees had been handed in to the Branch Council, and had been already published in the Journal. Notice was given of the consent of the Branch Council to the alteration of boundaries proposed by the Metropolitan Counties Branch, so that the boundaries of the two Branches should correspond with those between Middlesex and Buckinghamshire. This resulted in the transference of five members of the Maidenhead Division to the Metropolitan Counties Branch and two Ealing members to the Buckinghamshire Division. Notice was also given of the transference of Newbury, Hungerford, Kintby, Enborne, Speen, and Donnington from the Oxford to the Reading Division. It was further proposed to transfer Lambourne and East Ilsley to the Reading Division. Local guarantee funds—Oxford over £2,000, Reading over £1,000. The report was adopted *nemine contradicente.*

Instructions to Representatives.—The President read the recommendations of the Central Council. The Reading and Maidenhead Divisions were holding meetings at once to instruct their Representatives. Dr. Collier expressed an opinion, on behalf of the Oxford Division, that their Representative be given discretionary power, and that so far as possible he should act in accordance with the Reading Representative.

Before the meeting members were entertained to tea in the library by Dr. Freeman, President. After the meeting members dined together at the Caversham Bridge Hotel.

SOUTH-WESTERN BRANCH.

A meeting of the Branch Council was held on July 12th.

Provisional Local Medical Committees.—The Secretary reported certain questions which had been put to the Branch Council as the co-ordinating body for the Provisional Local Medical Committees in the area of the Branch, and was, after some discussion, instructed to send the following resolutions to all secretaries of such committees, in order to promote uniform procedure in the Branch area:

1. *National Deposit Society.*—It is considered that as no appointments are made to this society no resignations can be sent in.

2 and 3. *Coastguard and Post Office Appointments.*—It appears to be the case that coastguard men and Post Office servants are excluded from benefit under the Act, and, therefore, those holding such appointments would not need to send in resignation forms.

4. *Railways and Similar Appointments.*—It was the opinion of

the meeting that resignation forms should be sent in for all club appointments for railway men.

5. *Payment for Examination of Candidates for Approved Societies.*—The following resolution was passed:

That it be recommended that a fee of 2s. 6d. be charged for the examination of all candidates who do not undertake to make regular payments to the medical man through their club (or sick benefit) for the ensuing six months.

6. *Payment for Medical Treatment of Club Members* who become insured persons under the Act during the ensuing six months. The following resolution was passed:

That all members holding club appointments be advised to ask from their club secretaries for a list of those members for whom they will be paid by the club for medical benefits during the ensuing six months, in order that they may know which members are entitled to such attendance if they should call on the medical officer.

STAFFORDSHIRE BRANCH.

THE thirty-ninth annual meeting of this Branch was held at Burton-on-Trent on June 27th. Mr. E. C. STACK, President, took the chair, and seventeen other members were present.

Report of Representative on Central Council.—The annual report of the Representative of the Branch on the Central Council was read, and the Secretary was instructed to thank Mr. Lucas for his services.

Report of Council and Financial Statement.—The report of the Council, as recorded in the minutes of the annual council meeting of May 23rd, 1912, was read and approved. The financial statement, as recorded in the minutes of the meeting of the council of February 29th, 1912, was also approved.

Election of Officers.—The following officers, as nominated by the Council, were duly elected: *President-elect*, W. F. Cholmeley, F.R.C.S. (Wolverhampton); *General Secretary*, Harold Hartley, F.R.C.S. (Stoke-on-Trent); *Treasurer*, Mr. John Clare (Hanley).

Next Annual Meeting.—It was decided to hold the annual meeting, in 1913, at Wolverhampton.

Alteration of Rules.—It was recommended by the Council and passed:

That (*a*) in Rule VII ("(*a*) Section 2, last line" "not less than seven days" be substituted for "not less than one month";

(*b*) and

That Rule XVII be amended to read as follows: "After the annual meeting there shall be an annual dinner, to which guests may be invited."

Address by the President.—After welcoming the members to Burton-on-Trent and thanking the Branch for electing him President, Mr. E. C. STACK, in a short but interesting and eloquent address, called attention to the duties of the medical profession, as citizens, to the public and also to themselves. Often it was the doctor alone who knew the real wants and wishes of the people, and therefore he should take part in public work, and so be of great use to the community. Doctors should also apply the rules of good citizenship to their relations with other members of their own profession. They must help themselves, be loyal to the Association, and be united among themselves, taking part in its meetings, discussions, and social functions as an aid to good-fellowship. Mr. Stack was obliged to confess that many of their present difficulties were due to their own fault, and that it was no wonder the term "club doctor" had become one of contempt in some districts. It was impossible to satisfy everybody, but they must think on a large scale, and no doubt a great advantage of their difficulties was that they were being drawn closer together. They must prove themselves second to none in those duties of citizenship which "tend to strengthen a nation and ennoble its people." On the motion of Mr. SPANTON, seconded by Dr. BLUMER, a cordial vote of thanks was given to Dr. Stack for his address.

Dinner.—The meeting was followed by a dinner, at which twenty-two members and guests were present. A collection in aid of Epsom College realized £1 14s.

ULSTER BRANCH:

PORTADOWN AND WEST DOWN DIVISION.

THE annual meeting was held in Markethill on June 26th. Dr. MARSHALL, J.P., was in the chair, and twenty-one members were present; twenty sent apologies.

Annual Report.—The HONORARY SECRETARY read the report for the year. It stated that six general meetings of the Division had been held—one at Rostrevor, three in Portadown, one in Newry, one in Armagh, with one of the Special Insurance Committee and one of the Executive Committee. The membership had reached eighty-two, an increase of fourteen in the year. During the year the Insurance Act had almost monopolized the attention of the Division, and the officers had taken their full part in the combined efforts of the profession to make the measure workable and to safeguard their interests. Just now they had been working for the formation of Union and County Committees, which they hope to see established in every area in the country. These, co-ordinated with the Conjoint Committee in Dublin, would give the profession an organization and vital unity it had not hitherto possessed, making them able to meet the efforts to put them under the degrading conditions hitherto connected with contract practice, which constituted the most immediately pressing danger. The Insurance Act practically compelled the whole industrial community to join friendly societies, and already efforts were being made by some of these to secure medical attendance at rates and under conditions quite incompatible with the honour or true interests of medical men or of the people themselves. Appeal was made to all members to sink every lesser consideration and stand as one man for the demands as to remuneration and conditions of service, made by the delegates' meeting on the part of the profession throughout the country. One of the quarterly meetings was made interesting by a suggestive and instructive paper from Mr. Kirk, and they hoped that in the year before them business matters would take a secondary place to scientific and clinical papers and discussions, and they counted on the help so liberally given in the past in this matter by their Belfast colleagues. A good many members spoke on the motion that the report be approved, which was unanimously adopted.

Election of Officers.—The following were elected officers for the ensuing year: *Chairman*, W. E. Hadden, M.D. (Portadown); *Vice-Chairmen*, Drs. Brownrigg, J.P., and Deeny, J.P.; *Representatives on Branch Council*, Drs. Agnew, Marshall, and Taylor; *Honorary Secretary and Representative*, Dr. J. Singleton Darling; *Executive Committee*, Drs. Deane, Fergus, Lawless, Johnson, Flood, Smartt, McCartan and Laverty.

Next Meeting.—An invitation from Dr. J. Gower Allen to hold the next meeting at his place near Richhill was accepted.

Luncheon.—Dr. Marshall entertained the members at lunch, and all then visited Gosford Castle, kindly thrown open by Lord Gosford, and spent a most interesting afternoon inspecting the many art treasures and other valuable things it contains.

Hospitals and Asylums.

WIMBLEDON COTTAGE HOSPITAL.

THIS hospital, which was closed in June, 1911, for rebuilding and extension, has issued its forty-second annual report. From it we learn that 100 patients were admitted during the months January to May, while 20 remained in hospital on January 1st, 1911, making a total of 120 patients—43 males and 77 females, of whom 5 died. The average number resident daily was 16. The average duration of residence was 21.7 days. The average weekly cost for each patient was £1 7s. 2d. Five persons received treatment as out-patients, involving 25 attendances. Grateful acknowledgement was made of the financial assistance rendered by King Edward's Hospital Fund, the Hospital Sunday Fund, and the Hospital Saturday Fund. The new building contains 27 beds and 4 cots; it will be known as the Wimbledon Hospital.

ROTUNDA HOSPITAL.

ACCORDING to the report of the governors of the Rotunda Hospital for the year ended March 31st, 1912, published recently, 3,167 cases were admitted to the hospital—2,548 maternity and 619 gynaecological; 2,261 extern maternity cases were attended and 13,909 patients attended the dispensaries. The present bed accommodation is 90 for maternity and 37 for gynaecological cases, and 75 cots for the babies. The cost per patient treated to a termination works out at £2 0s. 7d., and the cost per bed occupied at £68 3s. 2d. On the whole the patients treated show an increase of 50 over the numbers for the previous year. Attention is again drawn in the report to the serious way in which the hospital is liable to be affected by the Insurance Act, and details are given of the steps that are being taken to avert the threatened evil.

National Insurance.

TREATMENT OF TUBERCULOSIS.

DOMICILIARY TREATMENT OF INSURED PERSONS.

THE Local Government Board in England has issued a circular letter to county councils, sanitary authorities, and Insurance Committees of England and Wales describing the manner of domiciliary treatment of insured persons suffering from tuberculosis approved by the Board for the purpose of Section 16 (1) (*b*) of the National Insurance Act, 1911.

The Board contemplates that when the provisions recommended by the Departmental Committee on Tuberculosis are complete a dispensary, with an expert consulting officer, will be available in every area as part of the general public health organization. The Order provides that the consulting officer of a dispensary approved by the Board shall be the consulting officer for the purpose of the regulations, and that until such officer has been appointed, the medical officer of health of the county or county borough shall act in that capacity, outside London, and, in the metropolis, the medical officer of health of the sanitary authority. If necessary the Board may, on the application of an Insurance Committee, approve of some other medical practitioner acting as consulting officer.

The Board regard the regulations as somewhat provisional in character, and reserves power to modify them by Order, should experience show that modifications are desirable.

The Order, which bears date July 26th, is as follows:

GENERAL ORDER:

DOMICILIARY TREATMENT OF TUBERCULOSIS.

To the Council of every County and of every Sanitary District in England and Wales;

To all Insurance Committees in England and Wales appointed in pursuance of the National Insurance Act, 1911;

And to all others whom it may concern.

Whereas by Section 16 of the National Insurance Act, 1911, it is enacted that, for the purpose of administering sanatorium benefit, Insurance Committees shall make arrangements, to the satisfaction of the Insurance Commissioners, with a view to providing treatment otherwise than in sanatoria or other institutions for insured persons suffering from tuberculosis, with persons and local authorities (other than Poor Law authorities) undertaking such treatment in a manner approved by Us, the Local Government Board:

Now Therefore, in the exercise of the powers given to Us by the Statutes in that behalf, and subject to the provisions of any Order which We may hereafter issue, We hereby Approve of treatment otherwise than in sanatoria or other institutions of insured persons suffering from tuberculosis when undertaken in such manner as to comply with the following Regulations, that is to say:

ARTICLE I.—In these Regulations, unless the contrary intention appears:

The expression "Sanitary District" means the City of London, any Metropolitan Borough, Municipal Borough or other Urban District, or any Rural District;

The expression "Sanitary Authority" means any Local Authority entrusted with the execution of the Public Health Act, 1875, or in the case of London the Public Health (London) Act, 1891;

The expression "Medical Practitioner" means a registered Medical Practitioner;

The expression "Consulting Officer" means the Consulting Officer of a Dispensary approved by Us under the National Insurance Act, 1911, for the treatment of tuberculosis in the City of London, any County Borough, or Metropolitan Borough, or any Administrative County (other than the Administrative County of London) or until such Officer has been appointed, the Medical Officer of Health of the City of London, County Borough, or Metropolitan Borough, or Administrative County, or such other Medical Practitioner as We may, on the application of an Insurance Committee, from time to time approve for the purposes of these Regulations.

ARTICLE II.—The treatment shall be carried out under the care and direction of a Medical Practitioner, subject to the following conditions, and to such other conditions as We may in any case from time to time approve; that is to say:

(1) That the Medical Practitioner attend each patient at such intervals as may be necessary in the interest of the patient.

(2) That the Medical Practitioner give the patient such instructions as are required as to his mode of living, diet, rest and work, and as to precautions necessary to protect the patient against reinfection.

(3) That the Medical Practitioner keep on a card or sheet in the form set out in the Schedule hereto, a continuous record of the clinical history of the illness of each patient and particulars of the treatment given to the patient under his direction.

(4) That the Medical Practitioner submit the said card or sheet to the Consulting Officer at such times as may be arranged between them.

(5) That the Medical Practitioner prepare and transmit to the Consulting Officer at such times as may be arranged between them, not being less often than once in three months, a report in regard to each patient, giving particulars as to:

(*a*) The progress of the patient;
(*b*) Whether the conditions under which the patient is living and receiving the treatment are satisfactory;
(*c*) The behaviour of the patient in carrying out instructions given to him; and
(*d*) Whether in the opinion of the Medical Practitioner any form of institutional treatment has become desirable.

(6) That the Medical Practitioner confer with the Consulting Officer at such times and in such circumstances as may be arranged between them in regard to patients under the care of the Medical Practitioner.

(7) That the Medical Practitioner from time to time inform the Medical Officer of Health of the Sanitary District in which the patient resides, of any circumstances known to the Medical Practitioner which may affect adversely the sanitary conditions under which the patient is living, and in respect to which action by the Medical Officer of Health or of the Sanitary Authority would, in the opinion of the Medical Practitioner, be necessary or desirable.

ARTICLE III.—These Regulations shall come into operation on the date hereof and shall apply and have effect throughout England and Wales.

Dated July 26th, 1912.

Appended to the order is a form for the card or sheet referred to in Article II. It is to be printed on two sides. On the obverse is the following form:

SCHEDULE.

Obverse.

NATIONAL INSURANCE ACT, 1911.

DOMICILIARY TREATMENT OF TUBERCULOSIS.

Name . . Age . . Sex . . No.

Address . . Married or Single . .

Date of onset of present illness . .

Date when first seen as insured person . .

Condition on . . (date).

General . .

Working capacity

Weight . . Highest known weight . .

Fever . .

Night sweats

Signs of Wasting

Cough . .

Expectoration . . . . .

Dyspnœa . .

Hæmoptysis

Hoarseness

Appetite

Digestion

Occupation . . How long off work

Previous medical and family history

In other than pulmonary cases, state here the special characteristics of the case in regard to the particular organ or part affected.

Does patient sleep alone—In bed? . . In room? . .

Windows of bedroom open by day? . . By night? . .

Date.	Progress.	Instructions to Patient.	Remarks.

Any further note _____

On the reverse is a temperature chart for thirty-one days in the appended form:

Month.

Date.		1	2	3	4	5	6	7
Doctor's visits (initial under date).								
Temperature.	103							
	102							
	101							
	100							
	99							
	98							
	97							
Pulse								
Weight								
Sputum								
Rest								
Exercise								
Medicinal treatment								
Tuberculin								

ADMINISTRATION OF SANATORIUM BENEFIT.

The Insurance Commissioners for England have issued a circular letter to Insurance Committees (Circular Med. 1.). The first paragraph recommends an Insurance Committee to appoint a subcommittee, and in large areas local subcommittees, to deal with sanatorium benefit and applications from insured persons. The committee is advised, where a tuberculosis officer has been appointed, to ask for his services as medical adviser, and to refer applicants for sanatorium benefit to him for medical examination and report. Should the services of a tuberculosis officer not be available, provisional arrangements must be made and in accordance with the memorandum published in the SUPPLEMENT of July 13th, p. 88, the Commissioners suggest that the medical officer of health for the county or county borough should be appointed temporary medical adviser to the committee. A person applying for sanatorium benefit will be required to fill up a form (Form Med. 1). He must furnish evidence that he is an insured person, and that he is suffering from tuberculosis. The evidence that he is suffering from tuberculosis is to consist (1) of the expression of the applicant's belief that he is so suffering, and (2) a statement from a medical practitioner in some such form as the following:

. . . is in my opinion suffering from tuberculosis of the . . .

The applicant is then to take the form to the clerk to the Insurance Committee, who will instruct the applicant to obtain a detailed report from a medical practitioner in the following form (Form Med. 2):

NATIONAL INSURANCE ACT, 1911.

_____ INSURANCE COMMITTEE.

MEDICAL REPORT ON AN APPLICANT FOR SANATORIUM BENEFIT.

I have to-day examined _____

of [insert address] _____

and am of opinion that he is suffering from Tuberculosis of the [insert name of part affected] _____

I find his condition to be as follows:—

1. *Symptoms (special mention should be made of wasting, discharges, loss of weight, cough, expectoration, haemorrhage, night-sweats).*

2. *Temperature. Hour when taken* _____

3. *Physical signs (in pulmonary cases state whether one or both lungs are affected, and whether there is evidence of cavitation).*

4. *Has any bacteriological examination already been made? If so, with what result?*

5. *Complications, if any (mentioning specially any which would render the patient unfit for treatment in a residential institution).*

6. *Approximate duration of illness and treatment already given so far as known.*

7. *Suggestions, if any, as to mode of treatment.*

Signature and Qualifications _____

Address _____

Date _____

N.B.—A fee of _____s. will be paid by the Insurance Committee for the above Report.

It is requested that the Report, when completed, may be sent to the Medical Officer of Health for the County or County Borough, or other Medical Adviser to the Committee.

A stamped and addressed envelope is enclosed for the purpose.

A suitable fee (the amount suggested is 5s.) is to be paid by the committee for filling up the form. The form, duly filled up, is to be forwarded to the medical officer of health if a tuberculosis officer is not available. If a tuberculosis officer is available the medical testimony in Form Med. 1 will not be required, and the applicant will be referred direct to the tuberculosis officer by the clerk to the Insurance Committee with the following form (Form Med. 3):

FORM OF LETTER TO TUBERCULOSIS OFFICER REFERRING APPLICANTS FOR SANATORIUM BENEFIT TO HIM.

_____ *Insurance Committee.*

Date _____

SIR,

The following have applied to the Insurance Committee for Sanatorium Benefit, and, being, in my opinion, insured persons and qualified to receive the benefit subject to the Committee's decision, are referred to you for medical examination and report.

Name.	Address.

Please make the necessary arrangements to see the above persons, and, after examination, report to the Insurance Committee on Form 4.

I am, Sir,
Your obedient Servant,

Clerk to the Insurance Committee.

To the Tuberculosis Officer.

In either case the tuberculosis officer or the medical officer of health as the case may be will advise the committee, using the following form for the purpose (Form Med. 4):

A. RECOMMENDATIONS OF TUBERCULOSIS OFFICER, MEDICAL OFFICER OF HEALTH OR OTHER MEDICAL ADVISER TO THE COMMITTEE.

1. Name of Applicant in full _____

2. Address and Occupation of Applicant _____

3. Prospect (*a*) of cure, or (*b*) of sufficient improvement to enable the patient either to follow his present occupation or to follow another occupation.

4. Recommendation as to kind and duration of treatment immediately required [Sanatorium, Hospital, Dispensary, Domiciliary].

Kind of treatment.	Duration of treatment.

5. Case to be reconsidered again in_____weeks' time.
6. Observations :—

Signature of Medical Adviser_____

Date_____

B. INFORMATION FOR USE OF COMMITTEE.

Estimated cost of treatment recommended.*

C. DECISION OF INSURANCE COMMITTEE ON THE CASE:—

1. Kind of treatment allowed.
2. Duration of treatment allowed.
3. Cost of treatment allowed.

Signature of Chairman of Committee and Clerk _____

_____

* To be filled up by the Clerk.

The circular points out that any institution (sanatorium, hospital, or dispensary) must be approved by the Local Government Board before the committee sends patients to it, and that the approval of the Board is also required as to the manner in which home treatment is given. Insurance Committees are further advised to bear in mind that the patient's condition and consequently the treatment appropriate in his case may vary from time to time, and that the committee should therefore arrange to receive medical reports of the patient's progress as occasion arises, and to reconsider the case at a reasonably early date.†

PROVISIONAL MEDICAL COMMITTEES.

HASTINGS.

THE Provisional Medical Committee of the Hastings Division had before it at its meeting on July 12th a very important resolution, proposed by Dr. MURDOCH and seconded by Dr. BAGSHAWE. It was to the following effect:

That a conference be arranged between the officials of the different approved societies and the medical profession to discuss the matters at issue between them, and report to the Provisional Medical Committee.

This was carried.

The following rider was proposed by Dr. BATTERHAM and seconded by Dr. HILL JOSEPH:

That the above conference do not take place until a definite scheme for medical attendance, approved by the Provisional Medical Committee of the district, can be laid before the meeting and explained.

This was carried.

The above resolution and rider were to be taken as instructions to hand on to the Provisional Medical Committee by the Honorary Secretary of the Hastings Division.

[We regret that this resolution and rider, which reached us somewhat late, could not be inserted in the JOURNAL of July 27th, owing to the pressure of matter relating to the Liverpool meeting.]

BOSTON AND SPALDING.

A MEETING of this Committee was held on July 9th, Dr. SOUTH in the chair.

Pledges and Resignations.—The SECRETARY reported that several gentlemen had not signed the pledges or resignations. He was directed to write to each, asking for an immediate answer. Other members of the committee proffered their help. Three men had independently sent in their resignations to their respective club secretaries. Dr. GILPIN proposed, and Dr. JACOBSEN seconded:

That the General Meeting be advised to send in the resignations before July 15th.

This was carried *nemine contradicente*.

† The order and circulars can be obtained from Messrs. Wyman and Sons, Fetter Lane, London, E.C., either directly or through a bookseller.

Central Defence Fund.—The SECRETARY reported that fifty-three out of seventy-eight men had subscribed. He was directed to approach the remaining non-subscribers. Dr. BENSON proposed, and Dr. JACOBSEN seconded:

That the General Meeting be advised to raise the guarantee to a minimum of £10.

This was carried *nemine contradicente*.

REIGATE.

A MEETING was held on July 16th at Dr. Thornton's. All the members were present except Dr. Williamson, who wrote expressing his regret that illness prevented him from attending. The next meeting was fixed for August 6th at Dr. Hewetson's. Dr. Palmer and Dr. Matthews were selected to serve on the Surrey County Provisional Medical Committee.

Report of Council.—Recommendations X and Y led to much discussion; eventually the following resolutions (proposed by Dr. MATTHEWS) were adopted:

That we do not go back on the £2 wage limit.
That we do not go back on the 8s. 6d. capitation fee without drugs, etc.
That we do not accept Recommendation Y.

Dr. THORNTON then proposed:

That, while adhering to our pledge, the Committee is not averse to the continuance of negotiations.

This was seconded by Dr. CLARKE, and carried unanimously.

Public Medical Service.—The HONORARY SECRETARY read the minute of the Reigate Division meeting of June 27th, authorizing this Committee to give fresh instructions to Representative if occasion required. Letters also were read from Dr. Daniel *re* the Epsom scheme, and from Dr. Barrett Heggs *re* the Kent scheme. A copy of the latter, as amended by the Kent County Provisional Medical Committee, was read and discussed. The scheme in general was approved, but the discussion of details was reserved for a future meeting. The resolution of the last meeting, approving of Scheme A, was rescinded, on the motion of Dr. MATTHEWS; and Dr. GAYNER proposed:

That at the Annual Representative Meeting Dr. Palmer support the best scheme on the Kent or Epsom lines.

This was carried unanimously.

Sanatorium Benefits.—The acceptance of appointments under the Act was considered and opinions expressed that this constituted a breach of the pledge, but it was felt that as the appointments debarred the holders from private practice, this would eliminate some of the doubtful men.

Sir William Plender's Report.—Some of the fallacious deductions from this report were pointed out.

Expenses of Representative.—The question of the payment of the personal expenses of the Representative was raised, and the opinion was strongly expressed that it was not fair that the expense of representing the Division should fall on Dr. Palmer. In view, however, of the recent heavy calls on the Association funds the payment of expenses of the Association could not be pressed at the present time. The meeting, therefore, approved of a levy on the members of the Division to defray these expenses.

Circularizing of Divisions by Other Divisions.—The HONORARY SECRETARY drew attention to the waste of the Association's funds through Divisions circularizing other Divisions, and the meeting asked Dr. Palmer to support any resolution on the subject.

MEETINGS OF THE PROFESSION.

NEWBURY AND DISTRICT.

AT a meeting of the Newbury and District Medical Society, held on July 26th, the following resolution were unanimously adopted:

1. That having considered Schemes A and B of the British Medical Association for the administration of medical benefits under the Insurance Act, we consider them unsuited to the Newbury and district portion of this Division.
2. That this Society protests against the Association permitting any medical practitioner to accept any office under the Insurance Act, whether sanatorium office or otherwise, until the seven cardinal points are granted to the profession.
3. That, in the opinion of this meeting, the time is now ripe for the British Medical Association to call upon all Poor Law medical officers for their resignations, to be used in the event of the Commissioners through boards of guardians or otherwise—endeavouring to work the Insurance Act in any way by their services.

CORRESPONDENCE.

[It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429, Strand, London, W.C.]

SIR W. PLENDER'S REPORT.

DR. H. F. OLDHAM (Morecambe) has sent us the following comparison of general practice before the National Insurance Act and after, based on the report of Sir William Plender and on the report of Mr. J. F. Sowerby, A.C.A., on contract practice (BRITISH MEDICAL JOURNAL SUPPLEMENT, May 25th, pp. 570–571):

In the following comparison the population in the towns examined by Sir William Plender is taken in round numbers at 400,000, and similarly the contract patients in round numbers at 40,000, the actual figures on the aggregate of the two years being respectively 406,832 and 42,669. The average attendances on the uninsured population (538,400 attendances on 363,713 persons) is taken at 1.5 per head, and the average attendance on contract patients is taken at 5.5 per head.

		THE ACT IN FORCE.	
	BEFORE THE ACT.	Insured Persons at 8s. 6d. per head. B.M.A.	Insured Persons at 4s. 6d. per head, Mr. Lloyd George.
Population:			
Uninsured persons	360,000	280,000	280,000
Insured persons...	40,000	120,000	120,000
Total	400,000		
Attendance or visits on:			
Uninsured...	540,000	420,000	420,000
Insured	220,000	660,000	660,000
Total	760,000	1,080,000	1,080,000
Amount received on account of:			
Uninsured	@ 4s. 2d. £74,988	@ 4s. 2d. £58,324	@ 4s. 2d. £58,324
Insured	@ 3s. 11d. £7,832	@ 8s. 6d. £52,000	@ 4s. 6d. £27,000
Total	£82,820	£110,324	£85,324
Average fee per attendance...	2s. 2d.	2s. 1d.	1s. 6d.
Attendances and visits increased under the Act	—	320,000	320,000
Additional cost	—	£27,504	£2,504
Provides for each added attendance	—	1s. 7d.	one penny.
The number of practioners being 170—			
Gross income of each for work inside the towns	£650	£820	£675
Deduct five-twelfths of gross for expenses ... .. Nett	£385	£180	£395

Here is a plain business proposition. If the 170 practitioners can make the necessary 320,000 additional attendances, they would each under the British Medical Association plan add £100 per annum to their incomes. Under Mr. Lloyd George's plan the extra work would be practically gratuitous.

If the 170 practitioners could not make these additional attendances—and most general practitioners are already working full time—the number of practitioners would be increased and the individual incomes proportionately decreased. That is, even at 8s. 6d. per insured person the Act means increased work or reduced incomes.

It is perhaps worth noticing that the population dealt with (400,000) is approximately 1 per cent. of the total population involved. The above figures, therefore, multiplied by 100 will give those for Great Britain.

DR. M. C. MOXHAM (Boston, Lincs.) writes: It may be interesting to apply the figures obtained by Sir William Plender to the district in which I reside.

The population of the Horncastle parliamentary division is 39,624, and the number of medical men residing in this Division 33. There are no towns with a population of over 6,000, and most of the practices are in widely scattered districts. The working expenses (including the upkeep of a motor car, which is essential) are much greater than in large towns. The average number of persons to each practice is 1,200.

Assuming that the average gross income of each practice amounts to £720, as in the towns selected by Mr. Lloyd George, then the average amount paid by each person would amount to 12s. a year.

Again, assuming that we receive from our patients 4s. 2d. a year per capita, as in those towns, our average gross income would amount to £250, which is less than the average working expenses of our practices.

DR. C. STUART VINES (Newport, Mon.) writes: There seems to be an extraordinary error in Sir W. Plender's report, by which an income of 4s. 2d. per head of population is arrived at from visits and attendances at surgeries "after deducting therefrom the number of persons attended under contract."

It will be seen that the number of paupers attended under contract has not been deducted. Thus, in Table I: A — proportion of bad debts — G, divided by total population = + 4s. 2d. per head.

There is nothing in the report to show the number of paupers, but in Table 4 the number in the Poor Law infirmaries are jumbled up with in-patients and out-patients of voluntary hospitals. But we have another way of arriving at the number of paupers in the five towns by taking the average throughout the country, which is about 1 in 20 (*Daily Mail Year Book*, p. 69). From this we may conclude that there were about 20,000 paupers in the five towns. These persons are paid for by contract, and not per visit and attendance, so that in arriving at 4s. 2d. per head of population there is an error of not deducting 20,000 persons in receipt of poor relief.

THE WORKING OF A PROVIDENT DISPENSARY.

ALDERMAN W. E. STLAWRENCE FINNY, M.D. (Kingston, Surrey), writes: I have taken the following figures from the annual reports of the Kingston Provident Dispensary for the last ten years, and I think they will interest your readers, as giving them a record of work required from doctors when the payments are by contract.

	Number of Provident Members.	Attendances at Surgery.	Visits Paid to Sick.
1902.			
Kingston District	1,638	3,650	5,470
Norbiton	1,211	2,600	2,900
Surbiton	461	3,900	2,300
1903.			
Kingston	1,581	7,000	4,380
Norbiton	1,333	3,000	3,400
Surbiton	456	522*	342*
1904.			
Kingston	1,507	4,695	7,600
Norbiton	1,278	2,900	4,200
Surbiton	450	1,510	1,110
1905.			
Kingston	1,490	6,500	4,200
Norbiton	1,155	3,500	2,650
Surbiton	450	2,028	1,248
1906			
Kingston	1,410	12,000	5,110
Norbiton	1,130	4,000	4,020
Surbiton	408	2,151	1,353
1907.			
Kingston	1,347	9,700	3,600
Norbiton	928	3,400	2,257
Surbiton	391	3,414	1,526
1908.			
Kingston	1,260	9,500	3,500
Norbiton	759	3,000	1,700
Surbiton	399	2,724	1,327
1909.			
Kingston	1,223	10,000	3,100
Norbiton	486	2,500	1,500
Surbiton	390	2,943	1,472
1910.			
Kingston	1,150	10,000	2,800
Norbiton	420	3,000	1,250
Surbiton	363	3,782	1,331
1911.			
Kingston	1,117	8,000	2,600
Norbiton	370	2,000	592
Surbiton	362	2,600	1,290

*September-December (the other records are lost for this year.)

The provident members of the Kingston Provident Dispensary are men, women, and children, each member paying 1d. per week; there is a wage limit of 30s. per week; and each member on joining has to bring a note from the doctor certifying that he or she is "fit" to join the dispensary.

These people are, therefore, selected lives on joining. There are three districts—Kingston, Norbiton, and Surbiton—each having its medical officer. The tables give the number of provident members in each district, and the number of times the sick were visited at their homes, or attended at the doctor's surgery.

Profession, Not Party.

Dr. Mark R. Taylor (Helston, Cornwall) writes: We general practitioners in the country are having trouble enough in maintaining our position with the public, and such attacks on the Government as Sir James Barr thought fit to deliver are making it doubly hard for us. As honorary secretary of a Division, I have had, and shall have still more in the future, to bear more than my share of the blame for any disputes between the profession and the friendly societies. Because of such speeches as our President's, and of his previous effusions in the press, our action is being represented as being solely political. That means that we are gradually being pushed into the position of opponents of the Act as a whole, and not only of opponents of the Act, so far as we are concerned. Because of what I have done on behalf of my Division, I have already been accused in the local press of being a "well-known Tory bigot." Recently, at a meeting of the friendly societies of the district, I attempted to explain some of the difficulties in which friendly societies will find themselves under the Act. I am at once told by a local leader of the Government supporters that I am trying to make political capital out of the Act. My defence is knocked into a cocked hat by a reference to Sir James Barr. In this Division we have men of all shades of opinion, and politics have been entirely left out in our meetings. But some of our members hold strong political opinions, and such letters and speeches as Sir James Barr's can only lead to differences and bitterness in our own ranks.

Dr. W. Bertram Watson (Harrogate) writes: I wish to enter my protest against the language used by Sir James Barr regarding the Insurance Act. While we as a profession are united in our demands for more favourable terms from the Government for our medical services, I think there are not many in our profession who would care to subscribe to the view expressed by Sir James Barr, "that the Insurance Act is the most gigantic fraud ever perpetrated on a confiding public since the days of the South Sea Bubble," etc. I, for one, am of the opinion that, provided arrangements satisfactory to the medical profession can be arrived at, the Act when in full working order will prove one of the most beneficent pieces of constructive legislation ever placed on the Statute Book. Sir James Barr is, of course, perfectly entitled to his own private opinion, but his remarks were made and reported fully in the press in his official capacity as President of the British Medical Association.

Provisional Insurance Committees.

Dr. J. Cromie (Blyth, Northumberland) writes: I hold on reading the Supplement that I am called upon to resign my position as a member of the Provisional Insurance Committee of the county of Northumberland, and as I have not at present the faintest intention of acceding to such request, perhaps you will kindly grant me sufficient space to make my position clear. I quite recognize that as a member of the British Medical Association I am bound by its edicts so far as my professional work and conduct is concerned, but I totally fail to see the ground on which they claim to dictate to me the course I shall pursue in the discharge of my domestic or civic duties.

I have not been elected a member of the Insurance Committee as a medical practitioner but as a County Alderman representing the interests of the County Council, and that position I have made abundantly clear to every member of the Insurance Committee, as well as to my professional brethren. On what grounds could I justify my resignation but on the undignified one that I was told to do so?

I have taken my part in the work of the Association. I am now Chairman of the Contract Practice Committee and President-elect of the North of England Branch, but I will resign everything, including my membership of the Association, rather than bow my neck to such a tyrannical yoke, savouring as it does of "peaceful picketing."

CENTRAL MIDWIVES BOARD.

A special meeting of the Central Midwives Board was held on July 23rd, at Caxton House, Westminster, with Sir Francis H. Champneys in the chair.

Midwives Struck off the Roll.

The Board considered the following charges amongst others against the midwives whose names are given below, and ordered them to be struck off the Roll:

Mary Eliza Boyce, that being in attendance as a midwife at a confinement, she was guilty of malpractice, negligence, and misconduct in the following respects: (*a*) That though she was unable to make out the presentation, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 20 (3); (*b*) that a hand afterwards presenting she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 20 (3); and (*c*) that she pulled on the child's arm until it came out of the socket.

Ellen Dixon, that being in attendance as a midwife at a confinement, the child suffering from inflammation of and discharge from the eyes, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 20 (5).

Elizabeth Donaghue, that she did not possess the appliances or antiseptics required by Rule E 2, and that by reason of age and physical infirmity she was unable to perform her duties as a midwife with safety to her patients.

Elizabeth Ann Jackson, that she was unable to make use of a clinical thermometer, and consequently could not comply with Rule 2 (13), and that she did not keep a register of cases, as required by Rule E 23.

Margaret McQuilling, that she did not take with her to confinements the appliances and antiseptics required by Rule E 2, and that such appliances as she possessed were uncleanly and badly kept.

Julia Mary Ann Markham, that being in attendance as a midwife at a confinement, she neglected to examine the placenta and membrane and to satisfy herself that they were completely removed, as required by Rule E 9; she failed to stay with the patient until the expulsion of the placenta, as required by Rule E 6; and she did not take the patient's temperature.

Ann Oates, that she did not take with her to confinements the appliances and antiseptics required by Rule E 2, and that, though frequently warned, she persistently refused to provide herself with the necessary bag and equipment.

Jane Payne, that being in attendance as a midwife at a confinement, the patient suffering from severe abdominal pain from the time of delivery, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 20 (4).

Mary Ann Penketh, that she was uncleanly in her person, clothing, and appliances; that when attending her patients she did not wear a clean dress of washable material, as required by Rule E 1; and that she was unable to take a pulse or temperature, and consequently could not comply with Rule E 13.

Elizabeth Poundall, that being in attendance as a midwife at a confinement, she did not wear a clean dress of washable material as required by Rule E 1; she did not adopt the antiseptic precautions required by Rules E 3 and 7; the case being one of twins, after the birth of the first child she pulled on the cord until it broke, and medical advice having been sought for the delivery of the placenta, she failed to notify the Local Supervising Authority thereof as required by Rule E 21 (1).

Charlotte Ridden, that being in attendance as a midwife at a confinement, the patient suffering from severe haemorrhage, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up

and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 20 (4); when she washed the patient she used the water in which the baby had already been washed; and she did not take the patient's pulse or temperature at any time.

Jane Roberts, that at the Petty Sessions held at Rhyl on April 8th, 1912, she was convicted of stealing a gold diamond ring, a gold brooch, and a pair of gloves, and was sentenced to one month's hard labour.

Sarah Robinson, that being in attendance as a midwife at a confinement, having advised that medical assistance should be obtained, she failed to notify the fact to the Local Supervising Authority, as required by Rule E 21 (1); that she was uncleanly in her person, clothing, appliances, and house, and that she did not possess the appliances and antiseptics required by Rule E 2.

Sarah Saxe, that being in attendance as a midwife at a confinement, she washed the patient on three occasions only after the confinement, using the water in which the baby had already been washed, and, the lochia being persistently offensive, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 20 (4).

Eleanor Ann Smith, that she did not take with her to a confinement the appliances and antiseptics required by Rule E 2; that she was unable to take a pulse correctly or to make use of a clinical thermometer, and consequently could not comply with Rule E 13, and that she habitually failed to notify the Local Supervising Authority in cases where the rules require her to do so.

Eliza Sayer, that being in attendance as a midwife at a confinement, the child suffering from inflammation of and discharge from the eyes, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 20 (5).

Mary Jane Wilson, that she did not possess the appliances and antiseptics required by Rule E 2; that she was unable to use a clinical thermometer; and that she refused to wear a dress of washable material when in attendance upon her patients.

Susan Wolfenden, that being in attendance as a midwife at a confinement, the patient's perineum being seriously ruptured, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 20 (3); that she washed the patient on three occasions only after the delivery, and that she did not keep her register of cases as required by Rule E 23.

Midwives Censured.

The following midwives were censured after charges against them had been considered: *Elizabeth Brearley*, *Ellen Fisher*, *Lucy Marsden*, and *Alice Swain*.

Midwife Cautioned.

Frances Amelia Preston was cautioned after charges against her had been considered.

Vital Statistics.

THE REGISTRAR-GENERAL'S ANNUAL REPORT.

The seventy-third annual report of the Registrar-General, dealing with the vital statistics of England and Wales for the year 1910, has just been issued. A brief summary of the main statistical facts now reviewed was published shortly after the completion of the period to which the figures relate: it was, however, derived from unrevised returns furnished weekly or quarterly by the local registrars, whereas the present compilation is based on the results of a complete examination and classification of the individual entries in the registers. Changes in the form of future reports, which have been referred to in the two preceding issues, will, it is stated, take effect in the report for the year 1911. The volume now under notice may therefore be regarded as the last of a series dating back to the commencement of civil registration. The principal changes to be effected are (*a*) the presentation of statistics in administrative areas instead of registration areas, (*b*) classification of causes of death on the lines of the International List of Causes of Death, and (*c*) distribution of births and deaths of non-residents in the several areas. Further, it is anticipated that, owing to the introduction of a mechanical system of tabulation by cards, other improvements in the statistics may be embodied in future reports.

Marriage-rate.

The number of marriages registered in England and Wales during 1910 was 267,721, corresponding to a rate of 15.0 persons married per 1,000 of the population at all ages. This rate was 0.6 per 1,000 below the average rate for the previous ten years, and 1.0 per 1,000 below the mean rate for the whole period since 1837, when complete statistics first became available, and since when the annual marriage-rate has ranged from a maximum of 17.9 in 1853 to a minimum of 14.2 in 1886. The marriages of persons described as divorced, which had increased annually up to 1909, showed a decrease in 1910. The mean age at marriage, both for husbands and wives, continues to increase steadily. With regard to the mode of solemnization, it appears that civil marriages, which had been less than 5 per cent. of the total in 1851–5, had risen to over 20 per cent. in 1910; marriages in the Established Church declined from 84.2 per cent. in the earlier period to 61.6 per cent. in 1910; Roman Catholic marriages decreased from 4.8 to 4.2 per cent.; while Nonconformist marriages rose from 6.2 to 13.0 per cent.; and Jewish marriages from 1.7 to 6.8 per cent.

Birth-rate.

The births registered during the year numbered 896,962, and were equal to 25.1 per 1,000 living; this rate is 0.7 per 1,000 less than that recorded in 1909, and is 2.5 per 1,000 below the average of the low rates for the ten years 1900–1909. Compared with the highest recorded birth-rate, 36.3 per 1,000 in 1876, the rate last year shows a decline of no less than 11.2 per 1,000. The births of males numbered 457,266, and of females, 439,696; thus the male births were in the proportion of 1,040 to 1,000 female births, a smaller proportion than that recorded in any European country. The total births registered during 1910 included 36,635 of illegitimate children; the illegitimate birth-rate per 1,000 population has shown a decline of 41 per cent. since 1876–80, and on comparison with other countries it is seen that the rates of such births to the unmarried and widowed population between the ages of 15 and 45 years is lower only in Ireland and the Netherlands.

Death-rate.

During 1910 the deaths of 483,247 persons were registered, equal to a rate of 13.5 per 1,000, or 1.1 per 1,000 less than the rate recorded in 1909, which was the lowest up to that time; the average rate for the ten years 1900–1909 was 15.9 per 1,000. It is observed that in seven of the first ten years of the present century the annual death-rate has been successively the lowest on record, the exceptions being the years 1901, 1904, and 1906. The mortality in 1910 among males was equal to 14.4 per 1,000 living, and among females to 12.7 per 1,000; the excess of male mortality is due mainly to infantile deaths, violence, pneumonia, and phthisis. Deaths at each year of age for males and females separately are published for the first time in this report, and will be repeated in subsequent issues with a view to providing, in conjunction with the similar tables of population to be derived from the 1911 census returns, material which may be of use in the calculation of life tables. The rate of infantile mortality in 1910 was equal to 105 per 1,000 births; this rate is 27 per 1,000 below the average for the ten years 1900–1909, and is 4 per 1,000 below the rate for 1909, which was then the lowest on record.

Causes of Death.

By the aid of a diagram, which shows the principal causes of death as segments of a circle, the proportion in which each of the twenty specified causes contributes to the total mortality can be readily seen. Tuberculosis in all forms caused 106 deaths out of 1,000, phthisis being the assigned cause in 75 of these. To diseases of the heart 101 per 1,000 deaths were attributed, to pneumonia 82, to cancer 72, to bronchitis 71, to diseases of blood vessels 66, and to diseases of the nervous system 62. As stated above, the death-rate from all causes was lower in 1910 than in any previous year, and the same may be

said of the mortality from tuberculosis, enteric fever, scarlet fever, and bronchitis; the mortality from diphtheria and croup, as representing together the true mortality due to diphtheria, was also the lowest on record. On the other hand, cancer and diabetes caused increased death-rates during the year, the mortality from each of these diseases being the highest yet recorded. The decrease in the total death-rate was very largely due to the reduced mortality of children under five years of age; but at every age group and in both sexes the mortality from all causes was lower in 1910 than in 1909.

Of the 483,247 deaths, 45,951 were referred to ill-defined or unspecified causes, and in some of these cases inquiries were sent to medical practitioners asking for further information. The inquiries related chiefly to deaths attributed to peritonitis, tumours of various organs, septicaemia, pyaemia, hydrocephalus, cerebro-spinal meningitis, paralysis, croup, tuberculosis (unqualified), and haematemesis. The number of replies received was 5,549, the principal additions to definite headings resulting therefrom being 1,094 to tuberculous diseases, 651 to cancer, 139 to congenital defects, 138 to venereal diseases, 138 to appendicitis, 127 to laryngitis, 105 to cerebral haemorrhage, 96 to puerperal septic diseases, 95 to gastric ulcer, 88 to cerebro-spinal fever, and 74 to diphtheria.

VITAL STATISTICS OF LONDON DURING THE SECOND QUARTER OF 1912.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

In the accompanying table will be found summarized the vital statistics of the metropolitan boroughs and of the City of London, based upon the Registrar-General's returns for the second quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the several boroughs, and are obtained by distributing the deaths in institutions among the boroughs in which the deceased persons had previously resided. The 27,854 births registered in London were equal to an annual rate of 24.7 per 1,000 of the population, estimated at 4,519,754 persons in the middle of the year; in the corresponding quarters of the three preceding years the rates were 26.6, 26.8, and 25.2 per 1,000 respectively. The lowest birth-rates last quarter were 13.5 in the City of Westminster, 16.1 in Hampstead, 17.5 in Chelsea, 18.4 in Kensington, and 18.9 in Stoke Newington and in Lewisham; among the highest rates were 29.5 in Bermondsey, 29.6 in Bethnal Green, 29.8 in Poplar, 29.9 in Shoreditch, 33.1 in Stepney, and 36.0 in Finsbury.

During last quarter the deaths of 14,015 London residents were registered, equal to an annual rate of 12.4 per 1,000; in the corresponding quarters of the three preceding years the rates were 13.7, 12.5, and 13.2 per 1,000. The death-rates last quarter ranged from 8.6 in Hampstead, 9.3 in Wandsworth and in Lewisham, 10.5 in Stoke Newington, 10.6 in Battersea, and 10.7 in Hackney to 14.1 in Chelsea, 14.3 in St. Pancras, 14.4 in Poplar, 14.7 in Shoreditch, 15.9 in Bermondsey, 17.0 in Southwark, and 17.2 in Finsbury.

The 14,015 deaths from all causes included 27 from enteric fever, 433 from measles, 42 from scarlet fever, 354 from whooping-cough, 99 from diphtheria, and 207 (among children under 2 years of age) from diarrhoea and enteritis. The mortality from each of these diseases, except diarrhoea, was below the average; for diarrhoea among children under 2 the average mortality was not available. Enteric fever was proportionally most fatal last quarter in the City of Westminster, Shoreditch, Holborn, and Deptford; measles in St. Pancras, Holborn, Southwark, Bermondsey, Camberwell, and Woolwich; scarlet fever in Paddington, St. Pancras, Finsbury, Stepney, Bermondsey, Deptford, Lewisham, and Woolwich; whooping-cough in Finsbury, Shoreditch, Stepney, Poplar, Southwark, Bermondsey, and Woolwich; and diphtheria in Fulham, St. Marylebone, Hampstead, Finsbury, Southwark, and Bermondsey. The mortality from diarrhoea and enteritis among children under 2, measured in proportion to the number of births, was greatest in Paddington, Hammersmith, the City of Westminster, Shoreditch, Southwark, Battersea, Wandsworth, and Greenwich.

The deaths from phthisis last quarter among London residents numbered 1,369, and were equal to an annual rate of 1.21 per 1,000, the rates in the second quarters of the three preceding years being 1.28, 1.14, and 1.27 per 1,000 respectively. The death-rates from this disease last quarter ranged from 0.49 in Lewisham, 0.68 in Paddington, 0.74 in Wandsworth, 0.75 in Hampstead, and 0.91 in Kensington to 1.55 in Greenwich, 1.58 in St. Pancras, 1.72 in the City of London, 1.82 in Southwark, 2.00 in Finsbury, and 2.03 in Shoreditch.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 82 per 1,000 last quarter, against 92, 88, and 89 in the corresponding quarters of the three preceding years. Among the lowest rates recorded last quarter were 9 in the City of London, 38 in Hampstead, 50 in Stoke Newington, 56 in Holborn, and 67 in Chelsea; while the highest rates were 92 in Paddington and in the City of Westminster, 101 in Poplar, 107 in Bermondsey, 111 in Shoreditch, and 121 in Southwark.

HEALTH OF ENGLISH TOWNS.

In ninety-five of the largest English towns 8,641 births and 3,807 deaths were registered during the week ending Saturday, July 27th. The annual rate of mortality in these towns, which had been 10.8, 11.6, and 11.5 in the three preceding weeks, fell to 11.3 per 1,000 in the week under notice. In London the death-rate was equal to 11.2 per 1,000, against 10.3, 11.3, and 12.2 in the three preceding weeks. Among the ninety-four other large towns the death-rates ranged from 3.2 in Ealing, 3.8 in Coventry, 5.0 in Devonport, and 5.2 in Acton and in Bath to 19.1 in Bootle, 20.0 in Blackpool, and 20.6 in Middlesbrough. Measles caused a death-rate of 2.1 in Liverpool, 2.5 in Merthyr Tydfil, 3.0 in Wakefield, 3.3 in Rotherham, and 8.3 in Middlesbrough; and diphtheria of 2.8 in Cambridge. The mortality from enteric fever, scarlet fever, and diphtheria showed no marked excess in any town, and no fatal case of small-pox was recorded. The causes of 30, or 0.8 per cent., of the deaths were not certified either by a registered medical practitioner or by a coroner after inquest, and included 6 in Liverpool, 3 in Birmingham, and 3 in St. Helens. The number of scarlet fever patients under treatment in the Metropolitan Asylum Hospitals and the London Fever Hospital, which had been 1,417, 1,477, and 1,482 at the end of the three preceding weeks, further rose to 1,525 on Saturday last; 222 new cases were admitted during the week, against 201, 227, and 190 in the three preceding weeks.

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during the Second Quarter of 1912.

BOROUGHS.	Estimated Population middle of 1912.	Births.	Deaths.	Annual Rate per 1,000 Living. Births.	Deaths.	Deaths from Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping-cough.	Diphtheria.	Diarrhoea and Enteritis (Under 2 Years).	Phthisis.	Deaths of Children Under 1 Year of Age to 1,000 Registered Births.
COUNTY OF LONDON	4,519,754	27,854	14,015	24.7	12.4	27	—	433	42	354	99	207	1,369	82
Paddington	142,362	719	406	20.3	11.4	—	—	5	2	5	1	10	24	92
Kensington	171,746	790	509	18.4	11.9	—	—	5	—	5	3	7	39	90
Hammersmith	122,750	760	381	22.9	12.4	1	—	12	—	3	2	8	35	87
Fulham	155,402	1,062	453	27.4	11.7	—	—	24	1	17	6	10	49	82
Chelsea	65,397	285	230	17.5	14.1	—	—	1	—	6	2	1	22	67
City of Westminster ...	157,248	530	469	13.5	12.0	2	—	17	2	6	2	6	42	92
*St. Marylebone ...	116,155	1,001	366	34.6	12.6	—	—	2	1	7	5	1	34	38
Hampstead	85,966	345	181	16.1	8.6	—	—	1	—	2	4	—	16	38
St. Pancras	216,146	1,242	773	23.0	14.3	1	—	48	3	16	4	5	85	82
Islington	326,398	1,911	1,057	23.5	13.0	1	—	29	1	14	8	17	107	89
Stoke Newington ...	80,581	238	132	18.9	10.5	—	—	1	—	—	—	1	12	50
*Hackney	222,986	1,280	591	24.8	10.7	1	—	3	1	13	3	7	54	74
*Holborn	48,026	305	161	25.5	13.4	1	—	9	—	2	1	1	18	56
*Finsbury	86,150	772	370	36.0	17.2	—	—	5	2	11	6	4	43	84
City of London ...	18,695	117	62	25.1	13.3	—	—	—	—	1	—	—	8	9
Shoreditch	110,430	825	405	29.9	14.7	3	—	—	1	27	2	14	56	111
Bethnal Green ...	127,985	943	425	29.6	13.3	1	—	6	—	11	2	7	48	82
*Stepney	277,315	2,286	900	33.1	13.0	2	—	13	4	38	3	20	101	85
Poplar	161,597	1,202	580	29.8	14.4	—	—	2	—	22	4	8	53	101
Southwark	190,017	1,279	803	27.0	17.0	2	—	78	—	25	6	14	86	121
Bermondsey	125,260	925	496	29.5	15.9	—	—	49	5	16	6	6	46	107
*Lambeth	297,550	2,039	911	27.5	12.3	1	—	52	1	21	6	14	93	69
Battersea	167,589	989	443	23.7	10.6	—	—	2	2	9	2	11	45	77
Wandsworth	321,881	1,660	747	20.7	9.3	3	—	8	4	21	6	18	69	72
Camberwell	261,591	1,558	795	23.9	11.6	2	—	46	3	13	5	7	70	77
Deptford	109,377	678	343	24.9	12.6	2	—	5	3	11	1	—	27	91
Greenwich	95,994	564	301	23.6	12.7	1	—	3	1	6	2	6	37	74
Lewisham	165,249	780	383	18.9	9.3	2	—	5	3	11	4	2	20	74
Woolwich	121,932	733	373	24.1	12.3	1	—	22	2	17	3	2	37	85

* No correction is made for births in lying-in institutions; the boroughs principally affected are marked thus (*).

[illegible] 547 deaths [illegible] The [illegible] and [illegible] under [illegible] five [illegible] from 4.7 in Ayr and 6.9 in Govan to 14.6 in Glasgow, 17.3 in Perth, and 17.7 in Dundee. The mortality from the principal epidemic diseases averaged 1.6 per 1,000, and was highest in Partick and Coatbridge. The 220 deaths from all causes registered in Glasgow included 20 from measles, 2 each from scarlet fever, whooping-cough, and diphtheria, and 1 each from enteric fever and diarrhœa. Four deaths from diarrhœa were registered in Edinburgh and 2 each in Greenock and Coatbridge; 4 from whooping-cough in Dundee and 2 in Aberdeen; and 4 from measles in Partick and 3 in Dundee.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, July 20th, 584 births and 321 deaths were registered in the twenty-two principal urban districts of Ireland, as against 538 births and 349 deaths in the preceding week. The annual death-rate in these districts, which had been 16.0, 13.8, and 15.7 per 1,000 in the three preceding weeks, fell to 14.5 per 1,000 in the week under notice, this figure being 4.0 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 15.4 and 14.5 respectively, those in other districts ranging from 5.7 in Newtownards and 7.9 in Dundalk to 19.7 in Galway and 21.1 in Tralee; while Cork stood at 10.2, Londonderry at 15.3, Limerick at 19.0, and Waterford at 15.2. The zymotic death-rate in the twenty-two districts averaged 1.5 per 1,000, as against 1.2 in the preceding period.

Naval and Military Appointments.

ROYAL ARMY MEDICAL CORPS.

Major M. H. G. Fell, from Cairo, has been appointed to the London District for duty at the War Office.

Captain M. W. Falkner has been appointed a Specialist in Operative Surgery.

Captain D. de C. O'Grady has been appointed a Specialist in Dermatology in the Rawal Pindi Division.

Captain F. A. Stephens has been appointed a Specialist in Ophthalmology in the Rawal Pindi Division.

Lieutenant G. H. Dive has left the London District for duty in North China.

Major J. G. Churton has been appointed a Specialist in Advanced Operative Surgery, 9th (Secunderabad) Division.

Captain Thomas J. Wright has been appointed Assistant Instructor, Royal Army Medical School of Instruction, vice Major G. G. Delap, D.S.O., dated June 15th, 1912.

Captain Francis J. Turner retires, receiving a gratuity, dated July 3rd, 1912.

The following Lieutenants from the seconded list are restored to the Establishment, dated July 1st, 1912: Harry C. Todd, M.B., Harold W. L. Allott.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The date of promotion of Major Herbert E. Dalby is March 28th, 1912, and not as stated in the *Gazette* of June 4th, 1912.

Lieutenant Henry H. Brown, M.B., is confirmed in his rank.

The undermentioned to be Lieutenants on probation: Cadet Thomas S. Nelson, from the Oxford University Contingent, Officers' Training Corps; Cadet George R. Grant, from the Edinburgh University Contingent, Officers' Training Corps; Cadet Lance-Corporal Robert Alexander Hepple, from the Edinburgh University Contingent, Officers' Training Corps; Cadet Joseph Walker, from the Edinburgh University Contingent, Officers' Training Corps; Cadet Corporal Owen Wilson, from the Belfast University Contingent, Officers' Training Corps.

Lieutenant Ludwig S. B. Tasker, M.B., is confirmed in his rank.

The following to be Lieutenants on probation: Cadet Lance-Corporal Joseph Hugh Ward, from the Edinburgh University Contingent, Officers' Training Corps, dated June 10th, 1912; Gerald Ferdinand Victor Leary, M.B., dated June 11th, 1912; Cadet John Campbell, M.B., from the Royal College of Surgeons in Ireland Contingent, dated July 1st, 1912.

INDIAN MEDICAL SERVICE.

Surgeon-General W. B. Bannerman, C.S.I., has been granted four months' combined leave out of India.

Colonel A. O. Evans, I.M.S., Principal Medical Officer, Kohat Brigade, to officiate as Principal Medical Officer, 2nd (Rawal Pindi) Division from August 27th, 1912.

Lieutenant-Colonel J. T. Daly, I.M.S., 1-9th Gurkha Rifles, to officiate as Principal Medical Officer, Kohat Brigade, from August 27th, 1912.

Lieutenant-Colonel A. W. Dawson, I.M.S., 1st Sappers and Miners, to officiate as Principal Medical Officer, Derajat and Bannu Brigade, from September 10th, 1912.

Major E. S. Peck has been granted eighteen months' leave on medical certificate from June, 1912.

Major W. H. Ogilvie has been appointed Special Health Officer at the Delhi extension works, vice Major E. L. Ward proceeding on sick leave.

The promotion of Major Ernest Reinhold Rost to that rank notified in the *London Gazette* of April 10th, 1908, is antedated from January 29th, 1908, to July 29th, 1907.

The services of Captain N. M. Wilson, I.M.S., have been placed temporarily at the disposal of the Government of the Punjab, to fill the vacancy caused by the deputation of Lieutenant-Colonel C. H. James, I.M.S., to act as Civil Surgeon, Simla West.

The services of Captain W. J. Collinson, I.M.S., 63rd (Palamcotta) Light Infantry, have been placed at the disposal of the Government of India, Department of Education, for temporary employment on plague duty in the United Provinces.

Captain [illegible], M.B., has been appointed probationer in the Ch[illegible] Department, and has been attached to the Cal[illegible].

Captain C. L. Dunn, I.M.S., has been confirmed as a Deputy Sanitary Commissioner in the United Provinces in the vacancy resulting from the appointment of Major J. C. Robertson, I.M.S., as Sanitary Commissioner with the Government of India.

Indian Subordinate Medical Department.

Senior Assistant Surgeons, with the Honorary Rank of Lieutenant, to be Senior Assistant Surgeons, with the Honorary Rank of Captain, dated April 19th, 1912.—Hugh Alfred Lavond, Henry William De Blaquire Prescott, Charles Augustus [illegible].

To be Senior Assistant Surgeons, with the Honorary Rank of Lieutenant.—First Class Assistant Surgeon Celestine Raymond, dated April 19th, 1912: First Class Assistant Surgeon William St. Michael Heffernon, dated May 28th, 1912.

TERRITORIAL FORCE.

Royal Army Medical Corps.

Third Home Counties Field Ambulance.—The retirement of Lieutenant-Colonel John de Z. Marshall and the promotion of Lieutenant-Colonel George A. Edsell, which were announced in the *London Gazette* of June 4th, are antedated to October 22nd, 1911. Lieutenant Thomas F. Roche resigns his commission, dated July 17th, 1912.

Third Scottish General Hospital.—Captain Brownlow Riddell, M.D., from the 1st Lowland Field Ambulance, to be Major, dated May 9th, 1912.

North Midland Mounted Brigade Field Ambulance.—Lieutenant Arthur Avent resigns his commission, dated July 17th, 1912.

First South Midland Mounted Brigade Field Ambulance.—Major William H. Stephen, M.B., to be Lieutenant-Colonel, dated June 21st, 1912.

First East Anglian Field Ambulance.—Major Francis A. Brooke to be Lieutenant-Colonel, dated April 1st, 1912. Lieutenant Octavius R. Ennion to be Captain, dated June 30th, 1912.

Second East Anglian Field Ambulance.—Lieutenant Rees Phillips, M.B., to be Captain, dated May 21st, 1912.

Third East Anglian Field Ambulance.—Lieutenant John R. Pooler, M.B., to be Captain, dated June 24th, 1912.

Second West Lancashire Field Ambulance.—William Robertus Pierce, M.D., to be Lieutenant, dated May 22nd, 1912.

Second London (City of London) Field Ambulance.—Lieutenant-Colonel Joseph N. Brown, M.D., resigns his commission, and is granted permission to retain and wear the prescribed uniform, dated July 17th, 1912. Major W. S. Sharpe, M.D., to be Lieutenant-Colonel, dated July 17th, 1912.

Fifth London Field Ambulance.—Lieutenant Alfred J. Naylor is granted the honorary rank of Captain, dated June 15th, 1912.

Fourth London General Hospital.—Lieutenant-Colonel F. de H. Hall resigns his commission, dated July 17th, 1912.

Second Northern General Hospital.—Rawdon Augustus Veale, M.D., to be Captain, whose services will be available on mobilization, dated March 28th, 1912.

Second London Sanitary Corps.—Frederick Goodman Caley to be Lieutenant, dated June 14th, 1912.

Attached to Units other than Medical Units.—Captain Edmund L. Anderson, M.B., seconded under the conditions of paragraph 114 of the Territorial Force Regulations, dated January 6th, 1912; Captain William Haig, M.B., to be Major, dated June 19th, 1912; Captain Edward F. MacL. Neave, M.D., resigns his commission, dated July 10th, 1912; Captain Arthur Price to be Major, dated April 23rd, 1912; Lieutenant Frederick W. B. Young, M.B., to be Captain, dated May 7th, 1912; the appointment of Captain Henry Mellor Fort, M.B., which was announced in the *London Gazette* of June 11th, is antedated to June 8th, 1912. Lieutenant-Colonel and Honorary Surgeon-Colonel Robert de la P. Beresford, M.D., resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform, dated July 17th, 1912. Lieutenant Frank J. Hathaway resigns his commission, dated July 17th, 1912.

For Attachment to Units other than Medical Units.—William Scott, M.B., to be Lieutenant, dated April 15th, 1912. Lee Danby Buxton Cogan (late Second Lieutenant, 1st Volunteer Battalion the Northamptonshire Regiment), to be Lieutenant, dated May 17th, 1912. George Burton Robinson, M.D. (late Surgeon-Captain, 5th Battalion the King's Liverpool Regiment), to be Captain, dated May 23rd, 1912.

RECENT PUBLICATIONS.

How to Become a Nurse. The Nursing Profession: How and Where to Train. Edited by Sir Henry Burdett, K.C.B., K.C.V.O. New and revised edition. London: The Scientific Press, Ltd. 1912. (Cr. 8vo, pp. 360. 2s. net.)

The information supplied appears to have been brought carefully up to date, and the number of institutions whose regulations as to admission of probationers are set forth in detail is now very large. As suggestions are invited with regard to the arrangement of future editions, it may be pointed out that it would be an advantage if a distinction were drawn between institutions imposing at least three years' training and those which certify their pupils after periods varying between a few months and a couple of years.

Complete Guide to Preliminary Examinations for Pharmacy, Medicine, Dentistry, Veterinary Surgery, and Science. By William Dodd. Fourth edition. London: *Chemist and Druggist*. 1912. (Cr. 8vo, pp. 82. 2s. 6d. net.)

Deals mainly with the examinations of the Pharmaceutical Society and the College of Preceptors; each of the compulsory subjects is considered in turn, sample questions being given and notes supplied as to the best ways of dealing with them. In an appendix is a brief account of the subjects which may be presented at matriculation examinations of various universities.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

ASHTON-UNDER-LYNE: DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum, and fees.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BARROW-IN-FURNESS BOROUGH.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary, £250 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

BIRMINGHAM CITY.—Assistant Medical Officer of Health. Salary, £250 per annum.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—Two House-Surgeons. Salary at the rate of £80 per annum, rising to £100.

BRIDGWATER HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

BRIXTON DISPENSARY, Water Lane, S.W.—Resident Medical Officer. Salary, £175 per annum.

BURSLEM: HAYWOOD HOSPITAL.—Resident Medical Officer (Female). Salary, £100 per annum.

CARDIFF EDUCATION COMMITTEE.—Medical Assistant to School Medical Officer and Medical Officer of Health. Salary, £250 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician (Male). Salary at the rate of £75 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum, rising to £100 after six months.

CROYDON GENERAL HOSPITAL.—Anaesthetist and Junior House-Surgeon. Salary, £80 per annum.

DOWNPATRICK: DOWN DISTRICT LUNATIC ASYLUM.—Junior Male Assistant Medical Officer. Salary, £130 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon (Male). Salary at the rate of £60 per annum.

HULL ROYAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £60 per annum for six months, or £80 per annum for twelve.

ISLE OF WIGHT UNION.—Medical Officer and Public Vaccinator for the Godshill District. Salary, £80 per annum, and fees.

LEAMINGTON SPA: WARNEFORD GENERAL HOSPITAL.—House-Physician. Salary, £85 per annum.

LEICESTER PARISH.—Second Resident Assistant Medical Officer to the Poor Law Infirmary. Salary, £130 per annum.

LIVERPOOL: CITY INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer. Salary, £120 per annum.

LURGAN UNION WORKHOUSE AND FEVER HOSPITAL.—Female Resident Medical Officer. Salary, £80 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—(1) Senior House-Surgeon. (2) Junior House-Surgeon. Salary, £120 and £100 per annum respectively.

MILDMAY MISSION HOSPITAL, Bethnal Green, E.—House-Surgeon (Male). Salary at the rate of £80 per annum.

NEWCASTLE-ON-TYNE: ROYAL VICTORIA INFIRMARY.—Resident Medical Officer. Salary, £200 per annum, rising to £250.

NORWICH INCORPORATION.—Male Resident Medical Officer at Workhouse Infirmary. Salary, £200 per annum, rising to £225.

NOTTINGHAM GENERAL DISPENSARY.—(1) Resident Surgeon; (2) Assistant Surgeon. Salary, £180 and £160 respectively.

NOTTINGHAM GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum, rising to £140.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Assistant Resident Medical Officer (unmarried). Salary at the rate of £80 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant Surgeon.

RAMSGATE GENERAL HOSPITAL AND DISPENSARY.—Resident House-Surgeon. Salary, £100 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary, £80 per annum.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon; salary, £65 per annum. (2) Assistant House-Physician; salary, £60 per annum. (3) Two Honorary Assistant Surgeons.

SHEFFIELD: ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary, £70 per annum.

SHEFFIELD UNIVERSITY.—Professor of Pathology.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon (Male). Salary commencing at the rate of £70 per annum.

STAFFORD: STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer. Salary, £160 per annum, rising to £210.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY. House-Physician. Salary, £100 per annum.

STOCKPORT INFIRMARY.—Two Junior House-Surgeons. Salary, £80 per annum.

WALSALL AND DISTRICT HOSPITAL.—House-Physician and Casualty Officer. Salary, £90 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—Non-resident [illegible] Officer. Salary at the rate of £50 per annum.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer [illegible] per annum, rising to £170.

YORK COUNTY HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Caistor (Lincolnshire), Greyabbey (co. Down), Saintfield (co. Down).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

BLUMER, G. A., M.B.Syd., Government Medical Officer at Bowraville, New South Wales.

BOYD, Sidney Arthur, M.S.Lond., F.R.C.S.Eng., Surgeon to Outpatients at the Hampstead General and North-West London Hospital.

CAVE, M. W., M.B., B.S.Melb., Junior Resident Gynaecological Surgeon at the Women's Hospital, Melbourne.

CLIFFORD, W., L.R.C.P. and S.Irel., Certifying Factory Surgeon for the Adare District, co. Limerick.

DRYSDALE, J. H., M.D., F.R.C.P., Non-obstetric Physician to the Queen Charlotte's Lying-in Hospital.

EDMOND, W. S., F.R.C.S., Surgeon to the X-Ray Department of the Salop Infirmary.

EURICH, F. W., M.D.Edin., Medical Referee under the Workmen's Compensation Act for cases of anthrax and aniline poisoning in County Court Circuit No 11, to act also in all cases of lead poisoning arising in the Circuit in which the services of a Medical Referee are required.

GANDHI, N. H. S., B.A.Cantab., M.R.C.S., L.R.C.P.Lond., District Medical Officer and Public Vaccinator to the Union of Stoke-on-Trent, and Medical Officer of Health for the Rural District of Stoke-on-Trent.

GUSH, T., M.B., B.Ch., Certifying Factory Surgeon for the Snodland District, co. Kent.

MATHERS, Robert P., M.D.Edin., D.P.H., Honorary Assistant Aural Surgeon to Dundee Royal Infirmary.

MATHIAS, C. D., M.B., B.C.Camb., Certifying Factory Surgeon for the Tenby District, co. Pembroke.

MILLIGAN, J. K., L.R.C.P.Lond., District Medical Officer of the Guildford Union.

MORGAN, B. B., M.B., Ch.B.Edin., Resident Assistant Medical Officer of the Sheffield Poor Law Hospital.

O'FLYNN, Sara, M.B., Ch.B., Junior Obstetric Assistant to the Royal Free Hospital.

OWEN, J. H., M.B., B.S., Assistant Medical Officer of the Paddington Parish Workhouse and Infirmary.

PAGEN, W. R. M.R.C.S., L.R.C.P., District Medical Officer of the Cockermouth Union.

PARSONS, L. D., M.B., Ch.B.Edin., Medical Superintendent of the Government Asylum, Colombo, Ceylon.

PATTERSON, R. L., L.R.C.P., L.R.C.S.Edin., District Medical Officer of the Newton Abbot Union.

ROBINSON, C. C., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Lutterwith Union.

ROPER, Charles, M.D.Camb., D.P.H., Assistant Medical Officer to Stepney Dispensary for the Prevention of Consumption.

ROSS, W. H., M.B., Ch.B.Vict.Man., District Medical Officer of the Clitheroe Union.

SHAW, A., M.D.Glasg., M.B., C.M., Certifying Factory Surgeon for the St. Austell District, co. Cornwall.

TAYLOR, George, M.D., Medical Referee under the Workmen's Compensation Act for County Court Circuit No. 9, and to be attached more particularly to Chester, Mold, and Flint and Holywell County Courts, vice J. Taylor, deceased.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

BOYCOTT.—On July 28th, at Banstead, to Dr. and Mrs. A. E. Boycott, a son.

LEWIS.—At T'ai Yüan Fu, North China, on June 22nd, the wife of John Lewis, M.B., B.S.Lond., a son.

DEATHS.

BISHOP.—On July 25th, at 189, High Street, Chorlton-on-Medlock, Manchester, Edward Stanmore Bishop, F.R.C.S.Eng., in his 64th year.

CLARKE.—At Shelbear, North Devon, on July 25th, Albert Bleckly Clarke, L.R.C.S., L.S.A., aged 51.

MCILROY.—At Ballycastle, co. Antrim, Ireland, on July 28th, James McIlroy, M.B., J.P.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m. Thursday: Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 10TH, 1912.

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STATE SICKNESS INSURANCE COMMITTEE.

APPOINTMENTS IN CONNEXION WITH THE INSURANCE ACT.

HE State Sickness Insurance Committee calls the ttention of all members of the medical profession the following resolution adopted by the Annual presentative Meeting, 1912:

That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

SANATORIUM BENEFIT.

The State Sickness Insurance Committee also directs attention to the following resolution adopted by the Annual Representative Meeting, 1912:

That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such apointment* shall be submitted to the Council for its approval.

* "Appointment" means any professional work.

The State Sickness Insurance Committee notifies that no advertisement in respect of appointments in connexion with sanatorium benefit will be accepted for publication in the BRITISH MEDICAL JOURNAL which is inconsistent with the conditions laid down by the Association, and in all cases in which an advertisement is accepted a full list of the conditions laid down by the Association will be sent to the advertiser.

British Medical Association

ANNUAL REPRESENTATIVE MEETING, 1912.

SYNOPSIS OF PROCEEDINGS.

[NOTE.—It is particularly requested that members of the Association will preserve this Synopsis for reference.]

Composition and General Proceedings.

HE HUNDRED AND EIGHTY-SEVEN Constituencies entitled to point Representatives made returns, out of a possible o hundred and fourteen. Of the twenty-eight Constituencies making no return twenty-three were Colonial, and e other four were in Ireland. Two hundred and seven-en Representatives were present, an increase of sixty on t year's attendance, due mainly to the increased presentation given to the larger Divisions.

Of sixty-three members of the Council (including this number the 1911–12 Council and members of the 1912–13 Council elected at the time of the meeting) fourteen were present as Representatives, and twenty-nine others took part in the meeting.

The meeting sat on Friday, July 19th, from 10 a.m. to 7 p.m., on Saturday from 9.30 a.m. to 8 p.m., on Monday from 10 a.m. to 7.30 p.m., on Tuesday from 10.30 a.m. to 6.45 p.m., and on Wednesday from 10 a.m. to 2 p.m.

A Representatives dinner, organized by the local Entertainments Committee, was held at the Exchange Hotel on Friday evening, July 19th, under the presidency of the Chairman of Representative Meetings, Dr. E. J. Maclean, and was in every way a great success.

Arrangement of Decisions of Meeting.

Mere expressions of approval of reports are not noted in the following Synopsis, but all the other decisions of the meeting are classified under the various departments of the Association's work into which they naturally fall, as:

(1) Declarations of policy of the Association.
(2) Instructions to the Council to take action.
(3) References to the Council for consideration and Report.

The concluding section of the Synopsis contains the decisions which affected the internal business of the meeting itself.

FINANCE.

Instructions to Council.

Increase of Subscription.

(Minute 28.)

That the Council be instructed to prepare a report for consideration by the Divisions upon the desirability of increasing the subscription temporarily or otherwise.

Payment of Expenses of Representatives.

(Minutes 34 and 35.)

That the question of the payment of the personal expenses of the Representatives at meetings of the Representative Body be postponed for twelve months, on account of the heavy expenditure caused by the National Insurance Act.

That in the meanwhile the Council point out to each Division the possibility of opening a special fund, which can be supported by practitioners resident in the area, and out of which such expenses of the Representative as the Division may determine could be paid.

ORGANIZATION.

Declarations of Policy.

Length of Notice of Resignation of Membership.

(Minute 36.)

That By-law 13 (2) be amended by the substitution of the words "three months" for the words "one month's" in the fifth line.

[*Present By-law* 13 (2).

13 .....

(2) No member shall (except in case of his expulsion, or of his ceasing to be a member under the provisions of Clause (c) of the 10th Article of Association or under the previous provision of this By-law) cease to be a Member without having given one month's previous notice in writing of his intention in that behalf to the Association at the Head Office, and having paid all arrears of subscription (if any) due from him.]

Machinery of Association in Connexion with Disputes.

(Minutes 52, 53, and 61.)

That (with rare exceptions) Warning Notices should never be inserted for those Divisions which have not adopted Rule Z. Where the case seems to demand action in spite of this deficiency—as, for example, where some appointment is offered in opposition to the declared policy of the Association—a Warning Notice should only be issued on the instruction of the Chairman of the Central Ethical Committee after he has assured himself that the dispute will be conducted vigorously, and that the Division thoroughly understands its responsibilities.

That Divisions should be given clearly to understand that the insertion of a Warning Notice pledges them to take active disciplinary measures against offenders.

That it should be a rule that a Division which has not been proved by experience to be able to conduct a dispute satisfactorily, even if in possession of proper rules, should not be allowed the assistance of a Warning Notice until such has been sanctioned by the Central Office.

Annual Conference of Secretaries.

(Minute 72.)

That in view of the growing importance of the Conference of Secretaries, arrangements be made whereby in future years the Conference shall be held at a time at which no other function takes place.

Maps of Division and Branch Areas.

(Minute 37.)

The meeting decided that the present time is inopportune for the preparation of a complete set of official maps.

Instruction to Council.

Grouping of Branches not in United Kingdom for 1913–14.

(Minute 73.)

That it be an instruction to the Council to settle the grouping of Branches outside the United Kingdom for election of members of Council for the year 1913–14 on consideration of the views of the Branches concerned.

Referred to Council for Consideration.

Referendum and Postal Vote.

(Minute 40.)

That in view of counsel's opinion on the question o giving effect, in the Regulations of the Association, to the report on the referendum and postal vote, approved by the Annual Representative Meeting, 1911, Minute 330 of the Annual Representative Meeting, 1910, be referred to the Council for further consideration and report as soon as possible.

[*Minute 330 of Annual Representative Meeting, 1910.*

330. Resolved: That, while recognizing the necessity of proceeding without delay with the formation of a new company the Representative Meeting considers it desirable that a full consideration should be given by the Association to the question of the referendum by postal vote, and the arrangements generally for securing that the decision of the Representative Meeting shall, as far as possible, represent accurately the opinion of the Association, and that it be an instruction to the Council to prepare a report on these subjects for the consideration of the Divisions, and, after receiving and considering the replies of the Divisions, to submit a report with recommendations to the next possible Representative Meeting, whether that takes place under the present company or under the new company which it is proposed to form.]

(Minute 42.)

That it be an instruction to the Council to consider the following motion:

That the Council be requested to take such steps as may be necessary, by alteration of by-laws or otherwise, to ensure that a postal referendum on any matter may be demanded by twenty of the Divisions of the Association and shall be carried out with the least possible delay.

Machinery of Association in Connexion with Disputes.

(Minute 62.)

The following motion was accepted for consideration by the Council:

That unless in cases which concern only a Division, no Warning Notice shall be inserted except in accordance with a decision of the Association under Article 31.

Desirability of Association Becoming a Trade Union.

(Minute 68.)

The consideration of the desirability of the Association becoming a registered trade union was postponed to the next Annual Representative Meeting.

Grouping of Asiatic Branches.

(Minute 74.)

The arrangement whereby the Hong Kong and China Branch is grouped with the various Branches in India, Burma, Ceylon and Malaya, for the purpose of electing one member of the Council of the Association, was referred to the Council for consideration and report.

Alteration of Constituencies.

(Minute 77.)

That the Council take into consideration the question of fixing a date after which alterations of constituencies shall not be effective as regards election of Representatives for that year's Representative Meetings.

SCIENCE.

Procedure as regards Association's Scholarships and Grants.

(Minute 102.)

It was agreed to have prepared a statement of the methods under which researches are carried out in connexion with Scholarships and Grants awarded by the Association.

MEDICAL ETHICS.

Declarations of Policy.

Position of Practitioners Examining Patients under Care of other Practitioners.

(Minutes 105 and 106.)

That the report on the position of practitioners examining on behalf of interested persons should not be held t

affect the work of certifying factory surgeons, inasmuch as:—

(i) They are acting on behalf of the State, which has no monetary interest in the cases.

(ii) The duties are to report on the circumstances relating to accidents, and the prevention of similar accidents.

(iii) Such duties do not involve any detailed examination of the injuries or any reference to their treatment.

That in Rule (3) as follows:—

(3) If the medical attendant fails to appear at the time agreed upon, the medical inspector may proceed with his examination forthwith:

the word "stated" be substituted for the words "agreed upon."

Co-operation of Divisions in Ethical Cases.

(Minute 107.)

That the Representative Body is of opinion that the time is not opportune for providing that resolutions passed by Divisions and Branches under Rule Z shall be automatically operative throughout the Association, but that the adoption of Rule Z by all Branches would to a great extent have the desired effect.

Model Ethical Rules for Divisions and Branches.

(Minutes 115-117 and 121.)

That the Model Ethical Rules of a Division not itself a Branch be approved.

That the Model Ethical Rules of a Branch composed of several Divisions be approved.

That the Model Ethical Rules of a Branch composed of one Division be approved.

That in the rules of ethical procedure previously adopted by this body the words "or decisions of the Association" be inserted after the words "rules or resolutions of a Division" wherever necessary to make clear that failure to conform to such decision should be considered as a possible ethical offence.

NOTE.—Certain amendments to the Model Division Rules were referred to the Council for consideration.

Instruction to Council.

Model Ethical Rules for Divisions and Branches.

(Minute 118.)

That all Divisions and Branches in the United Kingdom be urged to adopt the Model Rules for ethical procedure, as approved by the Representative Body, without modification, and in substitution for all such rules now in use by the Divisions and Branches respectively.

MEDICO-POLITICAL.

Declarations of Policy.

Question of Diploma in Psychiatry.

(Minute 125.)

That the Representative Body approve the recommendation of the Section of Psychological Medicine and Neurology, Annual Meeting, 1910, concerning the desirability of the institution of a post-graduate course and diploma in psychiatry.

Employment of Medical Students by Medical Practitioners.

(Minute 130.)

That, as there is no advantage to the medical student, so far as his curriculum is concerned, in being employed by a medical practitioner, and as there is undoubted risk to the practitioner of a charge of "covering," the advice of the Association, when asked for in this connexion, should be to discourage the practice of the employment of medical students by medical practitioners.

Certificates and Reports on Cases under Workmen's Compensation Act and Members of Hospital Staffs.

(Minute 142.)

(i) That the furnishing of certificates in cases of injury to workmen is no part of the duty of members of the honorary or paid medical staffs of voluntary hospitals.

(ii) That a certificate of attendance of a workman at hospital containing no information as to the nature of the case should not be regarded as a medical certificate.

(iii) That any medical certificate expressing an opinion as to the fitness or unfitness of a patient to follow his employment, or any report on such cases, under the Workmen's Compensation Act, given by any member of the staff of a voluntary hospital, whether honorary or paid, should be paid for, and the fee should be received by the medical practitioner who signs the certificate. The minimum fee for a certificate should be 2s. 6d.

(iv) That in the case of all medical reports under the Workmen's Compensation Act given by the members of the staffs of voluntary hospitals, whether honorary or paid, the fee should not be less than £1 1s.

(v) That in the case of all initial examinations with report under the Workmen's Compensation Act given by a practitioner not as a member of the staff of any voluntary hospital the fee should be not less than 10s. 6d.

Certificates under Employers' Liability Act, 1880, or Common Law, in respect of any Injury or Disease.

(Minute 145.)

That in the case of certificates and reports by medical practitioners, given under the Employers' Liability Act, 1880, or at common law, in respect of any injury or disease, the same principles shall apply as in the case of certificates and reports under the Workmen's Compensation Act.

Medical Inspection and Treatment of School Children—Automatic Increase of Salaries of Whole-time Medical Inspectors.

(Minutes 151 and 152.)

That paragraph 3 (i) of the Report on Medical Inspection and Treatment of School Children, as approved by the Annual Representative Meeting, 1909, and amended by the Annual Representative Meeting, 1911 (Minute 87), be further amended by the addition of the following words:

Also that in any appointments of this kind, provision should be made that the salaries of both officers should rise automatically;

the paragraph, as amended, to read as follows:

"On the subject of salaries the Association has already approved the suggestions of the Medico-Political Committee—namely, that for whole-time Junior or Assistant School Medical Officers the commencing salary should not be less than £250 per annum, and that for more experienced whole-time School Medical Officers the commencing salary should not be less than £500 per annum. These sums are to be understood as exclusive of travelling expenses, clerical assistance, cost of stationery, postage, etc. Also that in any appointments of this kind provision should be made that the salaries of both officers should rise automatically."

In connexion with the above:

That, in view of the absence of security of tenure for Medical Officers of Health and School Medical Officers, it is not at present opportune to press for an automatic increase of salary being a necessary condition of appointment of School Medical Officers.

Remuneration of Ship Surgeons.

(Minute 158.)

That the remuneration of Ship Surgeons should not be less than £10 per month.

Referred to Council for Consideration.

Certificates and Reports on Cases under Workmen's Compensation Act and Members of Hospital Staffs.

(Minute 143.)

In reference to Minute 142, the following resolution was accepted by the Chairman of the Medico-Political Committee for consideration by the Council:

That a simple form of request from employer to doctor be drafted at the Central Office and sent to Divisional Secretaries.

Composition of the Medical Inspection and Treatment of School Children Subcommittee.

(Minute 153.)

That the Council consider the advisability of co-opting to the Medical Inspection and Treatment of School Children Subcommittee of the Medico-Political Committee practitioners who are actually engaged in this class of work under public education authorities.

Examinations for Life Insurance.

(Minute 161.)

That a fee be fixed for life insurance examination.

NATIONAL INSURANCE ACT.

Declarations of Policy.

Future Action of Association as Regards National Insurance Act.

(Minutes 166 and 184–187.)

That the British Medical Association regrets that His Majesty's Government has not acceded to the terms upon which alone the cordial co-operation of the medical profession in supplying medical treatment under the National Insurance Act can be obtained, and passes the following resolution:—

That the Government be informed that the Association adheres to its minimum demands as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer.

That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit, provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such appointment shall be submitted to the Council for its approval.

That the foregoing resolution shall not preclude any medical officer of health from giving advice to public bodies in his official capacity.

That meanwhile all steps be taken to perfect the organization of the profession, and to increase the Central Insurance Defence Fund.

Withdrawal of Medical Members of Advisory Committee.

(Minute 167.)

That the Association calls upon all members of the Association who are members of Advisory Committees in connexion with the National Insurance Act, and also on other medical members of those Committees who are in sympathy with the policy of the Association, to withdraw from these bodies.

Resignation from Provisional Insurance Committees.

(Minutes 169 and 170.)

That all medical practitioners who have accepted office on any of the Provisional Insurance Committees throughout the country be called upon to resign their positions.

Ireland.

It was decided that the above resolution do not apply to Ireland.

SANATORIUM BENEFIT.

Declarations of Policy.

Tuberculosis Dispensary Staff.

(Minute 190.)

That the chief tuberculosis officer should be a whole-time officer and confine himself to diagnosis and consultative work. The rest of the staff of the dispensary should, where possible, be formed of local medical practitioners serving on a rota or otherwise.

Qualification for Receipt of Attention at Tuberculosis Dispensaries.

(Minute 192.)

That those requiring attention at the dispensary should be introduced only on the recommendation of a medical practitioner actually in attendance upon the patient.

Free Choice of Doctor in Domiciliary Attendance.

(Minute 193.)

That there should be free choice of doctor by patient and of patient by doctor in all cases where domiciliary attendance is given.

Separation of Tuberculosis Dispensary Service from that of Medical Charity.

(Minute 194.)

That no tuberculosis dispensary should be opened or beds be provided for treatment of those in receipt of sanatorium benefit at a voluntary hospital or infirmary, except on the condition that the organization is entirely independent of that of the voluntary hospital or infirmary, the accounts of the departments being kept separate, and that the services of all medical practitioners are paid for.

Provision for Treatment of Children.

(Minute 195.)

That the provision to be made in any district for the treatment of children found to be suffering from tuberculosis should be in accordance with that scheme of the Association for the treatment of school children found defective on medical inspection which has been approved by the local medical profession.

Conditions of Employment of Nurses.

(Minute 196.)

That nurses engaged in giving domiciliary attendance should be subject to the conditions of service approved by the Association for the conduct of nurses engaged by nursing associations in so far as these are applicable.

Whole-time Tuberculosis Officer to Act only as Consultant in Domiciliary Attendance.

(Minute 197.)

That no whole-time tuberculosis officer, or whole-time assistant, shall give domiciliary attendance, except as a consultant to the practitioner in attendance and at his request.

Representation of Profession on Committees.

(Minute 198.)

That the local medical practitioners should have adequate representation, by means of practitioners elected by a local Medical Committee, on Consultative Committees having control of dispensaries, and on Voluntary Care Committees.

Reports from Lay Persons.

(Minute 199.)

That the reports to be obtained from Voluntary Care Committees and nurses should be confined to such subjects as are not included amongst the duties of the medical attendant.

Treatment of Tuberculous Patients who are not "Recognized" for the Purpose of Sanatorium Benefit.

(Minute 201.)

That a case of tuberculosis diagnosed as such by a practitioner and confirmed by a tuberculosis officer should not be liable to be treated, except in connexion with sanatorium benefit.

Salaries of Whole-time Medical Officers.

(Minute 202.)

That the commencing salaries for whole-time medical officers engaged in the Tuberculosis Service should be, for junior or assistant whole-time medical officers not less than £300 per annum, and for senior whole-time officers not less than £500 per annum. These salaries in all cases must be exclusive of travelling and other official expenses.

Tenure of Office.

(Minute 203.)

A medical officer engaged in the tuberculosis service, who by the terms of his appointment is restricted from engaging in private practice as a medical practitioner, shall not hold office nor be appointed for a limited period only, and shall be removable by the recognized central authority, and not otherwise.

Remuneration of Part-time Officers.

(Minute 204.)

That the payment to be received by medical practitioners appointed on a rota, or otherwise, to give medical attendance at the tuberculosis dispensary should be at a rate of not less than £65 per annum for an attendance of two hours per week.

Remuneration for Domiciliary Attendance.

(Minutes 205 and 210.)

That the payment to be made to medical practitioners for domiciliary attendance on patients certified to be suffering from tuberculosis shall be on a scale of fees, and not by capitation.

That the whole question of fees for domiciliary attendance be referred to the Council for consideration.

NOTE.—As a result of the above reference the following has been fixed as the minimum scale of fees for domiciliary attendance in connexion with sanatorium benefit: *(a)* Report, 5s.; *(b)* consultation at surgery, 2s. 6d.; *(c)* visit, 2s. 6d.; *(d)* injection of vaccine, 2s. 6d.—vaccines to be at the cost of the administrative authority. The fee for injection of vaccines is independent of the fee for visit or consultation.

Provisional Arrangements.

(Minute 214.)

That any provisional arrangements for the administration of sanatorium benefit be such as are satisfactory to the local Division of the British Medical Association, subject to the approval of the Council.

Cardinal Points as Regards Sanatorium Benefit.

(Minute 232.)

That the question as to which of the resolutions of the Representative Body as to sanatorium benefit should be regarded as cardinal points, and which should not be so regarded, should be left to the Council.

NOTE.—As a result of this instruction it has been decided that the following Minutes be regarded as cardinal points: 190, 192, 193, 196, 197, 199, 202, 205, and the scale of fees for domiciliary attendance quoted above.

Locumtenents, Assistants, and Hospital Staffs, and the Undertaking and Pledge of the Association.

(Minutes 218 to 220.)

That practitioners in engaging locumtenents or assistants should insist that, previous to engagement, they shall have signed both the undertaking and the pledge of the Association; and also that members of hospital staffs having influence in the selection of practitioners to fill resident and honorary visiting staff appointments should do what they can to secure that those appointed shall have signed both these documents.

Maternity Benefit.

(Minutes 223–224.)

That the number of women in receipt of maternity benefit under the National Insurance Act who shall be attended for teaching purposes by any recognized institution possessing a properly equipped maternity department be no more than is necessary to furnish the actual numbers required in order that the medical students and pupil midwives connected with that institution may obtain certificates.

That, as regards the extern departments, the institutions referred to in the above recommendation should select and recognize local medical practitioners for the practical training of medical students and pupil midwives.

Instructions to Council.

Statement to the Lay Press.

(Minute 216.)

That a statement explaining the position of the medical profession in relation to the National Insurance Act be issued to the lay press from the Central Office and through the Divisions.

Contract Practice Resignations.

(Minute 217.)

That the resignations of contract practice appointments throughout the United Kingdom should be sent in at the earliest possible date consistent with the conditions of the pledge.

Newly Qualified Practitioners and Undertaking and Pledge.

(Minute 219.)

That the Council take steps to ensure that all newly qualified practitioners before leaving the hospital should be requested to sign the undertaking and pledge, and to join the Association.

Appointment of State Sickness Insurance Committee.

(Minute 215.)

That a State Sickness Insurance Committee be appointed by the Representative Body to watch the interests of the profession in relation to the National Insurance Act, and also to report on the whole situation to the Council; that the Council be instructed to report thereon, as soon as possible, to the Divisions and a special Representative Meeting; and that the Committee consist of *(a)* twelve members elected by grouped Representatives in the same manner as Members of Council under By-law 43 *(c)*; *(b)* the *ex officio* members; *(c)* two women medical practitioners to be nominated, one by the Northern Association of Medical Women and one by the Association of Registered Medical Women; and that the Committee be empowered to add to its number not more than six additional members.

Central Insurance Defence Fund.

(Minute 228.)

That members of the profession be again urged, both from the Central Office and by the officers of Divisions, to guarantee sums of not less than £20 to the Central Fund, so that £250,000 may be guaranteed by the end of September, 1912.

Membership of Association.

(Minute 220.)

That it be an instruction to the Council to communicate with the Deans of the medical schools requesting them to point out to newly qualified men the advantages of becoming members of the British Medical Association, and thereby bring before their notice the present position of the profession and its pledges.

Tuberculosis Appointments.

(Minutes 221, 230, and 231.)

That it be an instruction to the Council to take all such steps as are possible in order to again throw open for competition those whole-time tuberculosis appointments which have been filled under conditions contrary to the policy of the Association.

That it be an instruction to the Council to take some action to recognize the loyalty of those medical practitioners who, at the request of the British Medical Association, have resigned their appointments under the Welsh National Memorial Association.

In connexion with the above:

That this meeting express its appreciation of the action of those members of the profession who have withdrawn applications, or refrained from making them.

Reference to Central Office for Advice.

(Minute 222.)

That it be an instruction to the Council to urge on Divisions, as also on Provisional Local Medical Committees, the desirability of referring to the Central Office for advice and instruction, any offer or communication received from Provisional Insurance or Insurance Committees having reference to schemes for bringing medical or sanatorium benefits into operation.

Referred to Council for Consideration:

Public Medical Service.

(Minute 226.)

That the Report be approved and referred to Council for further consideration of all the information relating to Public Medical Services, and report as to the forms which are available for the Divisions. Further, that the Council be given power to approve of schemes which are in agreement with the principles approved by the Association.

Exemptions under the Act and "Free Choice of Doctor."

(Minute 229.)

That in view of the fact that by Schedule 1, part II *(b)*, of the National Insurance Act, certain local and public

authorities, etc., have claimed and obtained exemption from Schedule 1, Part I (Employments withing the meaning of Part I of this Act relating to Health Insurance), thereby preventing or rendering it difficult for their employees to exercise the right of "free choice of doctor," steps should be taken by the Association to further safeguard the cardinal principle of "free choice of doctor" in this connexion, which under the conditions above alluded to is being seriously imperilled.

PUBLIC HEALTH AND POOR LAW.

Declarations of Policy.

Question of Definition of "Official Duties" of Medical Officers of Health.

(Minute 236.)

That the term "official duties" occurring in Minutes 141–3 of the Annual Representative Meeting, 1911, be understood to include such duties as are comprehended under the terms of any definite official appointment which does not offer any opportunity for competition with any private medical practitioner.

[Minutes 141-3 of A.R.M., 1911, referred to:
Minutes 141-3—Resolved: That the following amended form of Minute 234 of the Annual Representative Meeting, 1909, be adopted:
That, in the general interests of Public Health and the Medical Profession, it is desirable (i) that Medical Officers of Health should, as a rule (and without prejudice to those at present holding part-time appointments), be required to devote their whole time to official duties; (ii) that all Medical Officers of Health should be adequately paid, districts being grouped where necessary to make this practicable; (iii) that all Medical Officers of Health should be admitted to participation in a Government Superannuation Scheme; and (iv) that all Medical Officers of Health should be protected, in the proper discharge of their duties, against capricious dismissal or reduction of salaries.]

Question of a Minimum Salary for Whole-time Principal Medical Officers of Health.

(Minute 241.)

That the Association support, wherever possible, the recommendation of the Local Government Board that the salary of medical officers of health debarred from private practice be not less than £500 per annum; and that in no case where a less salary than £250 is offered for a whole-time medical officer of health, whether principal or assistant, should an advertisement be accepted for publication in the Journal.

Instruction to Council.

Membership of Public Health Committee.

(Minute 239.)

That the Representative Body instruct the Council to take the necessary steps to amend the schedule to the by-laws so as to provide that the number of elected members of the Public Health Committee be 8, instead of 6—namely, 4 appointed by the Representative Body and 4 by the Council.

HOSPITALS.

Declarations of Policy.

Maternity and Voluntary Hospitals and other Charitable Institutions Charging Fees for Midwifery Cases.

(Minute 246.)

(i) That inability to pay for adequate treatment, or the recommendation of a medical practitioner, shall be the consideration for the participation of parturient women in the benefits of maternity and voluntary hospitals and other charitable institutions.

(ii) That women in receipt of maternity benefit under the National Insurance Act should not be regarded as eligible for charitable treatment except in cases of difficulty and danger and on the recommendation of a medical practitioner.

Instruction to Council.

Eligibility for Out-patient Department.

(Minute 247.)

That it be an instruction to the Council to take such steps as are necessary in order to obtain the approval of staffs of hospitals for the principle that no person be seen in the casualty or out-patient department of a voluntary hospital, except in emergency or on the introduction of a medical practitioner.

Referred to Council for Consideration.

Maternity and Voluntary Hospitals and other Charitable Institutions Charging Fees for Midwifery Cases.

(Minute 238.)

That the following motion, by Brighton, be referred to the Council for consideration:

That no maternity or voluntary hospital or other charitable institution shall receive fees from any woman who is entitled to maternity benefit, either directly or indirectly.

ALTERATION OF BY-LAWS.

Declarations of Policy.

Schedule to By-laws so far as relating to Central Ethical Committee.

(Minute 256.)

That the following words be added at the end of the statement of duties, powers, etc., of the Central Ethical Committee in the Schedule to the present By-laws:

Where an ethical complaint has been dealt with by the Council of a Branch outside of the United Kingdom, an appeal to the Council of the Association shall not be allowed except by permission of the Council of the Branch.

[Extract from present Schedule to By-laws:

Duties, Powers, etc., of Central Ethical Committee.

To advise the Council on questions connected with rules of Divisions and Branches relating to professional conduct, to investigate and report to the Council upon the cases of members whose conduct is to be considered by the Council on the representation of Divisions or Branches pursuant to the Regulations, and generally to advise and, where so directed, act for the Council on all questions of professional conduct; also to adjudicate in matters of dispute as to professional conduct arising between members of the Association or members of the profession, or at the discretion of the Committee to refer any question arising in connexion with such a dispute to any Division or Branch, or to any Divisions or Branches jointly, for investigation or for adjudication subject to an appeal to the Committee; and so that any person directly concerned in such a dispute shall have a right of appeal to the Council from the decision of the Committee, and that the decision of the Committee subject to such appeal, and the decision of the Council upon any such appeal shall be binding upon the parties and upon all members of the Association.]

(B.M.J. Supplement, April 20th, 1912.)

Proposed Federation of Australian (Australasian) Branches.

(Minute 259.)

That in the opinion of this meeting provision should be made for the federation of the Australian (Australasian) Branches with autonomy in regard to matters of Australian (Australasian) concern not affecting the Association outside Australia (Australasia); and that the Australian (Australasian) Branches be invited to report whether satisfactory provision can be made under the present constitution of the Association by the formation of a Federal Committee more or less on the lines of the South African Committee or by extension of the powers of the Australian (Australasian) Federal Committee already proposed.

Referred to Council for Consideration.

Proposed Alteration of By-law—Provisional Election of Members by Branches.

(Minutes 253 and 254.)

The meeting considered the following motion, approved the principle, and referred it to the Council for consideration:

That the following Subsection (3) be added to present By-law 5 of the Association:

(3) Where a candidate for election has been recently domiciled within the territory of an oversea Branch, election of such candidate by a Branch in the United Kingdom or another oversea Branch shall be provisional until the Council of the Branch in the previous place of domicile has been communicated with.

ELECTION BY BRANCHES.

[Existing By-law 5:

5.—(1) In the case of a Branch in the United Kingdom the mode of election of new members shall be as follows: Every candidate who resides within the area of a Branch shall forward his application to the Secretary of such Branch. Notice of the proposed election shall be sent by the Branch Secretary to the Association at the Head Office, and to every member of the Branch Council, and the candidate, if not disqualified by any Regulation of the Association, may be elected a member of the Association, by the Branch Council at any meeting thereof held not less than seven days (or such longer period as the Branch may by its Rules prescribe) after the date of the said notice. A Branch may require that each candidate for election shall furnish a certificate signed by two members (either of the Association, or of the Branch, or of the Divisions in which he resides, as the Rules of the Branch may prescribe) stating that from personal knowledge they consider him a suitable person for election.

(2) In the case of a Branch not in the United Kingdom the mode of election shall be such as may, with the consent of the Council, be prescribed by the Rules of the Branch.]

(BRITISH MEDICAL JOURNAL SUPPLEMENT, April 20th, 1912.)

Time of Holding of Representative Meetings.

(Minute 257.)

The following motion by Chelsea, with the amendment by Birmingham Central, was also referred to the Council:

That the Annual Representative Meeting shall commence on the third Tuesday in July.

Amendment by Birmingham Central: That the Annual Representative Meeting shall commence on the Thursday immediately preceding the Annual Meeting.

Proposed Provision for Dismissal or Resignation of Representatives and Deputy Representatives.

(Minute 258.)

Also the following by Westminster with amendments and riders thereto:

By Westminster: That the Council be instructed to frame alterations in the regulations of the Association, carrying out the principles contained in the following motion, and submit them to the next Representative Meeting, special or annual:

That it should be possible for a Representative to resign his position and for the post to be filled up at any time; that it should be possible for a Division to dismiss a Representative by a majority of those present at a special meeting of the Division called for the purpose; that in the event of a Representative being able only to attend part of a Representative Meeting it should be possible for a Division to appoint a deputy to act during such time as the Representative is unable to attend.

Amendment by Hampstead: That the words "of two-thirds" be inserted after the word "majority" in line 4.

Amendment by Manchester (South): That the words "the Chairman and Secretary" be substituted for the word "Division" in the eighth line.

Amendment by Cardiff: That the words "three-fourths majority of those present and voting" be substituted for the words "majority of those present."

ELECTIONS.

A. *Officers.*

Mr. T. Jenner Verrall, of Bath, was elected Chairman, and Mr. E. B. Turner, of Kensington, was elected Deputy Chairman, of Representative Meetings for the year 1912–13.

B. *Council and Standing Committees.*

A full list of the Central Council, indicating those members elected by the Branches and by the Representative Body respectively, was published in the SUPPLEMENT, August 3rd, p. 192. A full list of the members of the Standing Committees, indicating those elected by the Representative Meeting and by the Council respectively, was published at the same place, together with a classified list of the members of the State Sickness Insurance Committee elected by the Representative Body.

Honorary Membership.

(Minute 12.)

The meeting elected the Right Hon. the Earl of Derby, G.C.V.O., K.C.V.O., C.B. (Lord Mayor of Liverpool and Chancellor of the University of Liverpool), an honorary member of the British Medical Association.

STANDING ORDERS.

Agenda Committee of Representative Body.

(Minute 10.)

The meeting adopted a new standing order, to be inserted in Section III, to follow present Standing Order 19, as follows:

There shall be an Agenda Committee of the Representative Body to consider and report to each meeting of the Representative Body on the method of dealing with the agenda of such meeting, and such committee shall consist of the Chairman of Representative Meetings, the Chairman of Council, and the four Members of Council elected by the Representative Body under By-law 43 (*d*), then in office.

MISCELLANEOUS.

Votes of Thanks.

The thanks of the meeting were voted to the Chairman of Representative Meetings (Dr. E. J. Maclean) for his conduct of the business of the meeting; to Mr. Verrall for his services as Chairman of the State Sickness Insurance Committee; and to the Local Committee for the arrangements made for the comfort and entertainment of the Representative Body.

Place and Time of Next Annual Representative Meeting.

The Annual Representative Meeting, 1913, will be held at Brighton, and will commence on Friday, July 18th, 1913.

Association Intelligence.

PROCEEDINGS OF COUNCIL.

July 22nd, 1912.

A MEETING of the Council was held in the Grand Jury Room, St. George's Hall, Liverpool, on Monday, July 22nd, 1912.

Present.

Dr. J. A. MACDONALD, LL.D., Taunton, Chairman of Council.
Sir JAMES BARR, M.D., LL.D., Liverpool, President-elect.
Dr. EWEN J. MACLEAN, Cardiff, Chairman of Representative Meetings.
Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. J. GRANT ANDREW, Glasgow
Dr. R. C. BUIST, Dundee
Dr. W. A. CARLINE, Lincoln
Dr. J. S. DARLING, Lurgan
Dr. MICHAEL DEWAR, Edinburgh
Mr. E. J. DOMVILLE, Exeter
Mr. C. E. S. FLEMMING, Bradford-on-Avon
Dr. JOHN GORDON, Aberdeen
Mr. T. W. H. GARSTANG, Altrincham
Surgeon-General J. P. GREANY, I.M.S., London (Indian Medical Service)
Dr. T. D. GREENLEES, London (Cape of Good Hope Branches)
Dr. MAJOR GREENWOOD, London
Dr. J. R. HAMILTON, Hawick
Dr. J. H. KEAY, London
Mr. R. J. JOHNSTONE, Belfast
Mr. F. C. LARKIN, Liverpool
Mr. ALBERT LUCAS, Birmingham
Dr. JAMES METCALFE, Bradford
Dr. B. H. NICHOLSON, Colchester
Dr. FRANK M. POPE, Leicester
Dr. LAURISTON E. SHAW, London
Mr. D. F. TODD, Sunderland
Mr. T. JENNER VERRALL, Bath
Mr. D. J. WILLIAMS, Llanelly

Apologies.

Letters of apology for non-attendance were read from Inspector-General Bentham, R.N., Mr. Andrew Clark, Dr. John Macdonald, and Dr. C. G. D. Morier.

Annual Representative Meeting.

Dr. MACLEAN, as Chairman of the Representative Meetings, presented the minutes of the Representative Meeting on Friday, July 19th, which were considered and approved.

Scholarships and Research Grants.

The report of the Science Committee presented by the CHAIRMAN, Dr. Pope, was received and approved. The report dealt mainly with the appointment of research scholars and the allocation of grants as follows:

Ernest Hart Scholarship.—Alexander Philp Mitchell, M.B. (Edinburgh), for a period of one year.

Ordinary Research Scholarships.—Ralph Terence St. John Brooks, M.B. (London), Alfred Joseph Clark, M.B. (Cambridge), and Frank Cook, M.B. (London).

Renewed Grants.—The following renewed grants were made:

Boycott, A. E., B.Sc., M.D.	£25
Chisolm, R. A., M.B.	10
Coplans, Myer, M.D.	10
Flack, Martin, M.B.	20
Halliburton, Professor W. D., M.D., F.R.S. ...	25
Lewis, Thomas, M.D.	20
Orr, David, M.D.	10
Pembrey, M. S., M.D.	15
Ryfell, J. H., B.C.	10
	£145

New Grants.—The following new grants were made:

Abel, Williamina, M.B.	£ 5
Cushny, Arthur R., M.D., F.R.S.	10
Davies, Hugh M., M.D.	15
Groves, E. W. H., F.R.C.S.	20
Kennaway, E. L., M.B.	10
Kneale, J. C., M.B.	10
McCarrison, Captain R., M.D.	25
McIlroy, A. Louise, M.D.	5
Middleton, J. C., M.B.	10
Paterson, Herbert J., F.R.C.S.	5
Moore, Professor Benjamin, F.R.S., D.Sc., M.R.C.S.	20
Symes, W. L., M.R.C.S.	10
	£145

Election of Members.

The following were elected members of the British Medical Association:

Drennan, Henry Denis, M.B., B.A.O. (T.C.D.), Surgeon, R.N.

Macnab, Allan James, F.R.C.S.Eng., Lt.-Colonel, I.M.S.

July 24th, 1912.

A meeting of the Council was held in the Grand Jury Room, St. George's Hall, Liverpool, on Wednesday, July 24th, 1912.

Present.

Dr. J. A. MACDONALD, LL.D., Taunton, Chairman of Council.
Sir JAMES BARR, M.D., LL.D., Liverpool, President.
Dr. EWEN J. MACLEAN, Cardiff, Chairman of Representative Meetings.
Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. JOHN ADAMS, Glasgow
Dr. J. GRANT ANDREW, Glasgow
Dr. R. M. BEATON, London
Surgeon-General P. H. BENSON, I.M.S., Walmer (Indian Branches)
Dr. M. G. BIGGS, London
Dr. CHARLES BUTTAR, London
Dr. W. A. CARLINE, Lincoln
Dr. J. S. DARLING, Lurgan
Dr. MICHAEL DEWAR, Edinburgh
Mr. E. J. DOMVILLE, Exeter
Dr. J. G. DURRAN, Leighton Buzzard
Mr. C. E. S. FLEMMING, Bradford-on-Avon
Dr. JOHN GORDON, Aberdeen
Surgeon-General J. P. GREANY, I.M.S., London (Indian Medical Service)
Dr. T. D. GREENLEES, London (Cape of Good Hope Branches)
Dr. MAJOR GREENWOOD, London
Dr. J. R. HAMILTON, Hawick
Mr. R. J. JOHNSTONE, Belfast
Mr. F. C. LARKIN, Liverpool
Mr. C. COURTENAY LORD, Gillingham
Dr. J. LIVINGSTONE LOUDON, Hamilton
Mr. ALBERT LUCAS, Birmingham
Dr. H. C. MACTIER, Wolverhampton
Dr. JAMES METCALFE, Bradford
Dr. GEORGE PARKER, Bristol
Dr. FRANK M. POPE, Leicester
Dr. E. S. REYNOLDS, Manchester
Dr. FREDERICK J. SMITH, London
Mr. D. F. TODD, Sunderland
Mr. E. B. TURNER, London
Dr. W. J. TURRELL, Oxford
Dr. W. J. TYSON, Folkestone
Mr. T. JENNER VERRALL, Bath
Professor A. H. WHITE, Dublin
Mr. D. J. WILLIAMS, Llanelly

Letters of Apology.

Letters of apology for non-attendance were read from Inspector-General Bentham, R.N., Professor H. Corby, Mr. T. W. H. Garstang, Dr. T. A. Helme, and Dr. C. G. D. Morier.

Standing Orders.

The standing orders of Council were adopted.

New Members.

The election returns were approved and entered on the minutes, and the Chairman welcomed the new members.

South-Eastern of Ireland and Connaught Group of Branches.

The Organization Committee reported that a nomination for the election of a member of Council for the South-Eastern of Ireland and Connaught group of Branches was received from the South-Eastern of Ireland Branch subsequent to May 18th, 1912, the latest date specified for the reception of nominations. The Committee recommended that steps should be taken with a view to the election of a member to fill the casual vacancy thus arising, and it was arranged that an announcement should be made indicating August 24th as the last date for the receipt of nominations, September 14th as the date of issue of voting papers, September 21st as the last date for the receipt of returned voting papers, and October 5th as the date for the announcement of the result in the JOURNAL.

Annual Meeting, 1915.

A letter was read from Dr. B. H. Mumby, Honorary Secretary of the Portsmouth Division of the Southern Branch, announcing that the Division had unanimously resolved to invite the British Medical Association to hold its Annual Meeting in Portsmouth in 1915, or as soon after as may be possible.

It was resolved to thank the Honorary Secretary of the Portsmouth Division for transmitting the invitation, and to inform him that it had been noted for consideration in due course.

Dates of Meetings.

The CHAIRMAN OF COUNCIL suggested, and the Council agreed, that the quarterly meetings of the Council should be held on the following dates during the next twelve months:

Wednesday, October 30th, 1912.
,, January 29th, 1913.
,, *April 23rd, 1913.
,, July 2nd, 1913.

* Easter falls March 23rd.

Salaries of School Medical Inspectors.

Dr. MACLEAN, as Chairman of Representative Meetings, presented the minutes of the Representative Meetings on July 20th, 22nd, and 23rd. Arising out of the minutes adopting the recommendation of the annual report with reference to the salaries of whole-time school medical inspectors, Dr. POPE moved, and Dr. F. J. SMITH seconded *pro forma*, a resolution to take a referendum on the ground that the resolution did not properly represent the wishes of the Association. After discussion, and with the consent of the Council, the motion was withdrawn.

The minutes of the Representative Meeting of July 20th and 22nd were thereupon approved, and those of July 23rd, subject to their subsequent confirmation by the Representative Meeting.

July 26th, 1912.

A meeting of the Council was held in the Grand Jury Room, St. George's Hall, Liverpool, on Friday, July 26th.

Present.

Dr. J. A. MACDONALD, LL.D., Taunton, Chairman of Council.
Sir JAMES BARR, M.D., LL.D., Liverpool, President.
Mr. T. JENNER VERRALL, Bath, Chairman of Representative Meetings.
Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. JOHN ADAMS, Glasgow
Surgeon-General B. H. BENSON, I.M.S., Walmer (Indian Branches)
Dr. M. G. BIGGS, London
Dr. R. C. BUIST, Dundee
Dr. CHARLES BUTTAR, London
Dr. J. S. DARLING, Lurgan
Dr. MICHAEL DEWAR, Edinburgh
Mr. E. J. DOMVILLE, Exeter
Dr. J. G. DURRAN, Leighton Buzzard
Mr. C. E. S. FLEMMING, Bradford-on-Avon
Dr. JOHN GORDON, Aberdeen
Dr. MAJOR GREENWOOD, London
Dr. J. R. HAMILTON, Hawick
Dr. R. J. JOHNSTONE, Belfast
Mr. F. C. LARKIN, Liverpool
Dr. J. LIVINGSTONE LOUDON, Hamilton
Mr. ALBERT LUCAS, Birmingham
Dr. EWEN J. MACLEAN, Cardiff
Dr. H. C. MACTIER, Wolverhampton
Dr. JAMES METCALFE, Bradford
Dr. GEORGE PARKER, Bristol
Dr. FRANK M. POPE, Leicester
Dr. E. S. REYNOLDS, Manchester
Dr. FREDERICK J. SMITH, London
Mr. D. F. TODD, Sunderland
Dr. W. J. TURRELL, Oxford
Dr. W. J. TYSON, Folkestone
Professor A. H. WHITE, Dublin

Letters of Apology.

Letters of apology for non-attendance were read from Dr. R. M. Beaton, Inspector-General Bentham, R.N.,

Professor H. Corby, Mr. T. W. H. Garstang, Surgeon-General Greany, I.M.S., Dr. T. A. Helme, Mr. C. Courtenay Lord, and Dr. C. G. D. Morier.

Election of Committees.

The Chairman of Council, in accordance with the Standing Orders, presented the voting papers for the election of committees, and reported that the only committee as to which it was necessary to take a vote was the Medico-Political Committee, whereupon the candidatures of Dr. Major Greenwood and Mr. E. B. Turner were withdrawn, so that it became unnecessary to take a vote. The list of the committees as finally constituted was given in the Supplement of August 3rd, p. 192.

Officers of Sections.

The question of the selection of Presidents, Vice-Presidents, and Honorary Secretaries of Sections at the annual meeting having been raised, Dr. Buist, after a brief discussion, moved that it be a standing instruction to the Arrangements Committee that not more than half of the officers of Sections should be selected from the locality in which the annual meeting is held.

An amendment to refer the matter to the Arrangements Committee for consideration and report to the next meeting of the Council was moved by Mr. Larkin, and carried.

Proposed Paid Secretary for Ireland.

At its meeting on July 3rd the Council instructed the Finance Committee and the Organization Committee to meet in Liverpool and report on the proposal to appoint a resident paid secretary for Ireland. It was now reported that the committees mentioned had not found it possible to meet in Liverpool, whereupon Mr. Johnstone (Belfast) moved and Dr. Darling (Lurgan) seconded a motion to suspend the Standing Orders in order to consider the subject; this was lost, and on the motion of Dr. Buttar, seconded by Dr. Biggs, it was resolved to refer the question to the Finance Committee for consideration and report.

Mr. Andrew Clark.

The Chairman drew attention to the fact that Mr. Andrew Clark, after many years' service on the Council and central committees of the Association, found it necessary to give up the work at least temporarily, and on his motion, seconded by Dr. Pope, the following resolution was adopted:

"That this Council desires to place on record its deep appreciation of the valuable work which Mr. Andrew Clark has accomplished on behalf of the Association, and regrets that, owing to the uncertainty as to where he will reside during the ensuing year, he has to withdraw in the meantime from the active work of the Association."

Sanatorium Benefit.

Dr. Maclean, as Chairman of Representative Meetings, presented the minutes of the meeting on Wednesday, July 24th, whereupon Mr. Flemming moved that the resolutions having reference to the working of sanatorium benefit be at once remitted to the Divisions, and that the State Sickness Insurance Committee be instructed to give subsequently any explanations deemed necessary. An amendment to refer the whole matter relating to sanatorium benefit to the State Sickness Insurance Committee was moved by Mr. Lucas and carried, with a rider moved by Mr. Todd and seconded by Dr. Metcalfe, instructing that Committee to meet not later than Wednesday, July 31st.

Public Medical Service.

The Representative Meeting at its meeting on Wednesday, July 24th, approved the report of the State Sickness Insurance Committee on the replies of Divisions with regard to the Public Medical Service schemes, and referred it to the Council with instructions to consider all the information relating to Public Medical Services and report to the Divisions as to the forms available. The Council was also authorized to approve of schemes in agreement with the principles laid down by the Association.

On this Dr. Pope, who was seconded by Dr. Buttar, proposed that a committee of four members of the Association with the Executive officers be appointed to deal with this matter and to report to the Divisions as soon as possible.

An amendment, moved by Mr. Domville and seconded by Mr. Lucas, to refer the matter to the State Sickness Insurance Committee, was carried; and on the motion of Dr. Buist, seconded by the Chairman of Representative Meetings, it was resolved that in the interim the State Sickness Insurance Committee be given executive powers to carry out the instructions of the Annual Representative Meeting in this respect.

The Council delegated to the State Sickness Insurance Committee the power of approving Public Medical Service schemes submitted by Divisions for approval by the Council.

Sanatorium Benefit in Wales.

The Chairman stated that a communication had been received, signed by all the Welsh members of the Representative Meeting, in reference to the resolution of the Representative Meeting to the effect that any provisional arrangements for the administration of sanatorium benefit shall be such as are satisfactory to the local Divisions of the British Medical Association, subject to the approval of the Council. The Chairman said that the letter from the Welsh Representatives desired the Council to take into special consideration the question of the tuberculosis appointments under the Welsh National Memorial Association.

Dr. W. E. Thomas, Representative of North Glamorgan and Brecknock Divisions, and Dr. Marcus Paterson, Medical Director of the Welsh National Memorial, attended as a deputation, and a discussion took place concerning the conditions of employment of medical practitioners by the Memorial Association, and generally the whole position of the Memorial Association as regards sanatorium benefit under the Insurance Act.

Dr. Paterson answered various questions put from the Chair and by members of the Council. It was eventually settled that the terms of the appointments to be made by the Welsh National Memorial Association should be submitted to the British Medical Association, and that the British Medical Association would submit to the Executive Committee of the Welsh National Memorial Association the conditions under which the Association could approve of medical men taking part in the administration of sanatorium benefit.

Instructions of Representative Meeting.

The Chairman of Council was empowered, in conference with the Chairman of Representative Meetings, to submit the various resolutions of the Representative Meeting to the appropriate committees.

Votes of Thanks.

The Chairman of Council was authorized to prepare and transmit to all those who had contributed to the success of the Liverpool Meeting, the cordial thanks of the Association for their kind assistance.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

BORDER COUNTIES BRANCH.

The forty-fifth annual general meeting of the Border Counties Branch was held at Carlisle on July 5th. Dr. Huskie, the retiring President of the Branch, occupied the chair, and there was a large attendance. The Branch Council's annual report having been received and adopted, it was decided to hold the autumn meeting at Maryport, and the spring meeting at Lockerbie, and if possible a motor meet at Moffat during the early autumn.

Office-bearers.—The following office-bearers were elected: *President*, Dr. Crerar; *President-elect*, Dr. Easterbrook; *Past-President*, Dr. Huskie; *English Division Representatives*, Drs. Barnes, Fisher, and Edington; *Scottish Division Representatives*, Drs. Maxwell Ross and Scott; *Secretaries of Divisions*, Drs. Anderson (English Division) and Robson

(Scottish Division); *Six Members of Branch Council elected by Annual Meeting*, Drs. Farquharson, Muriel, Martin, Hill, Rodger, and Saunders; *Representative on Central Council*, Dr. Livingstone Loudon; *Associate Member*, Dr. Sime.

Dr. Huskie, in introducing the new President (Dr. Crerar), referred to the enormous number of meetings of the Divisions and profession, and the splendid work done throughout the Branch area in the Insurance Act campaign. He referred to the loss which the Branch and the profession at large had sustained through the deaths of Dr. Highet, Dr. Ogilvie Ramsey, and Dr. John Smith.

Dr. Crerar then gave his presidential address, "Some Random Notes by a Country Doctor."

LANCASHIRE AND CHESHIRE BRANCH:

Manchester (South) Division.

A general meeting of the Division was held on August 1st, at 3.30 p.m. Dr. Edlin presided, and some twenty-five members were present.

The Representative Meeting.—Dr. Stocks, the Representative of the Division, gave a very lucid and exhaustive account of the work done at Liverpool, giving details of several discussions on the more important subjects. He then answered several questions addressed to him by members present.

Vote of Thanks.—The Chairman then proposed a hearty vote of thanks to Dr. Stocks for the time and arduous work he had given in the interests of the Division. Dr. Stocks suitably replied.

Resolutions.—Dr. Sawers Scott proposed and Dr. Cotterill seconded:

> That in order to secure a universal signing of the pledge, the Secretary be instructed to request Dr. Hodgson (representative of Lancashire and Cheshire Branch on the State Sickness Insurance Committee) to bring before the State Sickness Insurance Committee the recommendation to send to all doubtful Divisions well qualified members who may put themselves in touch with local feeling, ascertain the causes of abstention, and without delay take such steps as they may deem wise to secure signatures.

Proposed Joint Committee.—Dr. Cotterill, Secretary of the Provisional Local Medical Committee, urged the formation of a Joint Committee of Manchester and Salford in connexion with the Provisional Medical Committees, and also that each member present should increase his guarantee to £20.

METROPOLITAN COUNTIES BRANCH:

Chelsea Division.

A meeting was held at Fulham Town Hall on July 30th, Dr. Young in the chair, some twenty-seven members being present.

Annual Representative Meeting.—Dr. Fletcher presented a report of the proceedings, and remarked that he had not much to add to what they would find published in the Supplement to the Journal. They would all regret that it seemed impossible, from the discussions that took place, for the Association to be converted into a trade union. With reference to the sanatorium benefit, much difference of opinion was manifest, but he was convinced that their final decision to administer the same, providing the terms were satisfactory, was the correct one. He alluded to a telegram which had been sent to him by his constituents, on the strength of which he was induced to vote on the report stage in a contrary manner to what he had done in committee. Speaking personally, he was glad that on the latter occasion he was in the minority. Dr. Gallard thought that the telegram had placed the Representative in an awkward dilemma, and that they ought to know by whose authority it had been sent. Dr. Lee explained that he had consulted one or two members who felt very strongly that administration of the sanatorium benefit would split the profession, hence the dispatch of the telegram. Dr. Jackson remarked that they wanted to know definitely that it did not purport to represent the views of the Division. The Chairman gave an explanation. Dr. Gallard said that he felt bound to make a protest but refrained from moving a resolution. In his opinion, the strongest argument in favour of working the sanatorium benefit was that in any case there would be plenty of men who had not signed the undertaking, and eager to take the necessary posts, with the result that it would be placing a penalty upon all those who were anxious to be loyal. A hearty and unanimous vote of thanks was accorded Dr. Fletcher.

The Fulham Guardians.—With reference to the deputation which conferred with the Fulham Board of Guardians on the question of midwifery fees, the Chairman said that they were received courteously, but he was afraid that their representations did not evoke much sympathy. The Chairman of the Board confined his remarks almost entirely to the legal aspect of the question. Dr. Millar alluded to the able manner in which their chairman and the other members of the deputation had put their case before the guardians, whose decision had not been altered thereby. He thought that it was now time to dispatch an ultimatum, and moved:

> That the Chelsea Division of the British Medical Association regrets that the Fulham Board of Guardians are unable to see their way to guarantee the fees of medical practitioners attending upon the request of midwives, and hereby informs the guardians that the members of the Chelsea Division of the British Medical Association will not in future attend to any call from midwives asking for assistance under the Midwives Act in the absence of such guarantee.

Dr. Butler seconded. Dr. Bonney said that although the Chairman had correctly described the attitude of the guardians, he strongly deprecated an absolute refusal to attend these cases until the profession got its terms. He felt sure that some, if not all, of them might, for humanity's sake, have on certain occasions qualms of conscience if they declined to attend. By so doing they would not be acting in accordance with the honourable traditions of the Association of which they were members. He thought that the Local Government Board should be approached. Dr. Fletcher remarked that in this matter the guardians were not subject to the control of the Local Government Board. Dr. Gallard thought there were two sides to this question. Five years ago the guardians had clearly defined their position, and promised them payment of their fees in these cases on certain conditions. During the last two years, speaking from memory, 136 fees had been paid and 16 refused. He thought, therefore, that the guardians could not be accused of having put an illiberal interpretation on their promise. Moreover, if they passed this resolution, it would probably represent the decision of a section only of the Division, and some men would still attend these cases. In his opinion it was futile to pass the resolution unless it had powder and shot behind it, and therefore he moved the following amendment:

> That the motion be placed on the agenda of the next ordinary meeting of the Division.

Dr. Tonkin seconded. Dr. Fletcher thought it would be better to circularize all the men practising in Fulham with a view to obtaining their signatures to a pledge not to attend these cases. Drs. Lee, Whiteley, and Ross also took part in the discussion. On a show of hands the amendment was defeated. Dr. Millar said that as there was evidently considerable difference of opinion on this subject he would like to move that a special meeting be held on August 8th to consider the resolution which he had just moved. This was seconded and carried *nemine contradicente*.

School Clinics.—With reference to the proposed centre for treatment of school children in Fulham, Dr. Fletcher moved:

> That as the terms offered by the London County Council are in accordance with the demands of the British Medical Association, and have been accepted by several of the Divisions of the Metropolitan Counties Branch, the Schools Committee of the Division, or a committee specially elected for the purpose, be instructed to reopen negotiations with the London County Council, with a view to the establishment of a centre for the treatment of school children in Fulham.

Dr. Jackson, in seconding, read a letter from Mrs. George Trevelyan, offering the use of rooms on advantageous terms at the recently established centre for dental treatment in Bagley's Lane. He also presented a summary of the terms submitted by the London County Council. Dr. Hamilton said that although this question did not affect his own interests in any way, at the same time he warned the younger practitioners of Fulham that by working this proposed centre they would probably be depriving themselves of a source of revenue. He moved the following amendment:

That the discussion of the proposal to establish a centre for the treatment of school children in Fulham be postponed until the next annual meeting of the Division, notices of which meeting to be accompanied by a detailed statement of the scheme.

This was not seconded, and the resolution was carried. Dr. JACKSON moved and Dr. MILLAR seconded:

(*a*) That the London County Council be informed that the members of the Chelsea and Fulham Division of the British Medical Association are prepared to enter into an agreement with the Council for the establishment of a centre for the treatment of school children in Fulham on the terms set forth in the memorandum accompanying Dr. Hamer's letter of July 5th, 1912.

(*b*) That a committee be forthwith appointed with power to enter into an agreement with the London County Council on the lines suggested, and that such committee shall undertake entire financial responsibility for the scheme.

(*c*) That the committee shall consist of five members of the Division practising in Fulham, and that two members elected from the staff of the centre shall be subsequently co-opted.

This was carried *nemine contradicente*. The following were appointed members of the Committee: Drs. Young, Jackson, Spaull, Wells, and Gallard. Dr. LEE moved, it was seconded and carried:

That a report of the recent conference between a deputation of the Division and the Fulham Board of Guardians *re* midwifery fees be published in the local press.

KENSINGTON DIVISION.

AT a meeting on August 2nd, the Representatives at Representative Meetings—Drs. E. B. TURNER, RAIMENT, BECKETT-OVERY, and STURGE—having given an account of their action at the Representative Meeting, Dr. TOWNSEND proposed and Dr. CRAWFORD THOMPSON seconded:

That this meeting expresses its approval of the action of the Representative Meeting in general and of its Representatives in particular.

This was carried *nemine contradicente*. A hearty vote of thanks to the Representatives was then passed.

Public Medical Service.—The following resolutions were agreed to:

1. That any scheme of Public Medical Service must be on a capitation basis of payment.
2. That this meeting calls upon the Metropolitan Branch Council to promulgate a Public Medical Service at once.
3. That this meeting recommends the Metropolitan Branch Council to co-opt the Honorary Secretaries of the Local Provisional Medical Committees to any committee which may be formed to promulgate a Public Medical Service.

SOUTH-WEST ESSEX DIVISION.

A SPECIAL meeting of this Division, to which all practitioners residing within its area were invited, was held on Friday, July 12th, for the purpose of considering the Supplemental Report of the Central Council and the report of the State Sickness Insurance Committee upon the present position of the profession with regard to the National Insurance Act. The following motions were considered and adopted:

A. That the Representative be instructed to support all the riders suggested by the Stockport, Macclesfield, and East Cheshire Division, with the exception of Section 4, paragraph 2. B. That the Secretary be instructed to inform the Essex County Cottage Nursing Association—

1. That the local profession agreed that the clergyman's recommendation should be dispensed with, on the understanding that the sister in charge inquired into the circumstances of each case, the particulars of which shall come up each month before the committee as at present, and the income limit of 25s. be maintained.

2. That the income limit of 25s. shall still be maintained, for the reason that the institution is of a charitable nature.

3. That in case of insured persons or the wives of insured persons receiving maternity benefit under the Act the present income limit shall be maintained and a fee of not less than 10s. 6d. shall be charged. Other cases shall be attended on their merits at existing rate and conditions.

Instructions to Representative.—The Representative was instructed to support the City Division's resolution and the Ealing Division's resolution relating to the acceptance of posts under the Insurance Act.

Sanatorium Benefit.—It was proposed by Dr. TOMKINS, seconded by Dr. LINDEN, and carried:

That no medical practitioners shall accept any post or undertake any work in connexion with the sanatorium scheme until the Representative Body is satisfied with the action of the Government.

It was also proposed by Dr. W. G. NOBLE and seconded by Dr. F. COLLINS:

That the Representative for this Division be instructed unequivocally to vote for breaking off of all negotiations.

An amendment to leave out the word "unequivocally" was proposed and seconded, but was lost, and the resolution was carried by a large majority. The other recommendations of the Council were agreed to, and the Representative instructed to vote upon them at his own discretion.

The meeting then ended.

WILLESDEN DIVISION.

A MEETING of the Division and of practitioners in the locality was held at Harlesden on Friday, August 2nd, to receive the report of the Representative on his action at the Representative Meeting. Dr. MACAULEY took the chair in the absence of Dr. James.

Representative's Report.—The CHAIRMAN having called on Dr. Macevoy to give his report, Dr. MACEVOY went through the most important decisions which had been reached and shortly explained the arguments which had been used for and against the decisions. On the question of refusing to work the sanatorium benefit he did not vote, not having been instructed on the point.

Votes on Thanks.—The CHAIRMAN moved, and Dr. SMURTHWAITE seconded, a vote of thanks to Dr. Macevoy for his trouble and for the way in which he had carried out the instructions of the Division. This was carried unanimously.

Termination of Appointments.—Dr. SMURTHWAITE then proposed and Dr. CLAYTON seconded:

That all club or contract practice be discontinued on January 15th, 1913, and that all notifications of resignation be immediately sent in to the secretary or secretaries of such clubs.

The discussion showed that the meeting was in favour of concerted action by the Divisions in this matter and of leaving the decision to the head office where better information as to the position of other districts was at hand. Dr. Smurthwaite therefore withdrew his motion.

Representative's Expenses.—On the question of the payment by the Division of the Representative's expenses being brought forward by Dr. CLAYTON, Dr. MACEVOY said that he preferred that the matter should be left this time.

Vote of Thanks.—A vote of thanks to Dr. Macauley for taking the chair concluded the proceedings.

MIDLAND BRANCH:

NOTTINGHAM DIVISION.

A MEETING of the Division, to which all practitioners in the city and county were invited, was held at Nottingham on July 30th. Dr. F. H. JACOB was in the chair, and a large number were present.

The Representative Meeting.—Drs. E. H. HOUFTON and A. FULTON having presented their report as Representatives of the Division at the Representative Meeting, a vote of thanks was passed to them. Dr. T. D. PRYCE said the duty of this meeting was to endorse and confirm the resolutions passed by the Representative Meeting, and moved:

That this meeting endorses the decisions of the Representative Meeting, and calls upon the members of the Division loyally to fulfil the pledges which they had already signed with regard to the National Insurance Act.

Dr. J. WILKIE SCOTT (Honorary Secretary) seconded, and the resolution was carried unanimously.

The Guarantee Fund.—Dr. FULTON referred to the resolution passed by the Representative Meeting that every practitioner undertakes to guarantee at least £20 to the guarantee fund, and urged all present to comply therewith; he added that he was willing to guarantee £60 spread over three years. Dr. E. SNELL said he thought the meeting was agreed that the guarantee fund should be increased materially, and suggested that it be put from the Chair that all who were prepared to guarantee £20 at least, extending it over three years if they thought fit, should now signify that they would do so. The CHAIRMAN thereupon acted on Dr. Snell's suggestion, and guarantees were signed to the amount of £1,556. It was resolved

that the question of getting in guarantees from those practitioners of the city and county who were not present at this meeting be left to the Provisional Medical Committee.

Pledges.—The Organizing Secretary reported upon the progress made as to getting in the supplementary pledges, and stated that all but 25 out of a total of 304 had already signed; of those 3 were whole-time practitioners, 3 dentists, 5 were retired, 2 did not practise in the locality, 3 had refused to sign, and the remainder, although they had not signed, were likely to do so, and hence need not be feared.

Public Medical Service.—Dr. A. C. Reid moved in accordance with notice given:

> That the Committee appointed by the Division on June 8th, 1910, to draw up a scheme for a public medical service for the City of Nottingham, be instructed to proceed forthwith with the details of such scheme in so far as it will affect insured persons under the Act, and to report to a meeting of the Division to be called at an early date.

Dr. H. Francis seconded. Dr. Fulton suggested that the question be referred to the City and County Medical Committees, sitting jointly, so that they might deal with a scheme applicable to city and county. Dr. Reid and his seconder accepted the suggestion, and the resolution as modified was carried with two dissentients.

Friendly Societies. — The consideration of fees for examination of candidates for friendly societies was deferred to the next meeting.

Further Guarantees.—At the conclusion of the meeting Dr. T. D. Pryce handed in a list of further guarantees from some practitioners who were not present at the meeting. These brought the total on the day's request to £1,656.

BOMBAY BRANCH.

The annual meeting of this Branch was held in the University Library on March 28th, when Dr. Sorab Nariman occupied the chair.

Annual Report and Statement of Accounts.—The annual report and the statement of accounts for 1911 were received and adopted. The report stated that the number of members on the list had increased from 183 to 216. Six meetings were held during the period under report, at five of which papers and notes on interesting cases were read, besides a number of clinical cases which were shown. The average attendance at the meetings was 20, which was a very satisfactory item. The Branch Council had passed certain rules for the guidance of ordinary meetings regarding reading of papers and discussion, which will come up before the general body in the near future. Gratification was expressed at the fact that the Branch had so successfully agitated the question of registration of medical men. The part played by the Branch, and the support given to them by the parent Association, had strengthened the hands of Government in the matter, and the Registration Act passed the Bombay Legislative Council. The Council was particularly gratified, as the Act was on the same lines (more or less) as the Council's own draft Act.

Election of Officers. — The following were elected officers: *President*, the Hon. Surgeon-General H. W. Stevenson, I.M.S.; *Vice-Presidents*, Lieutenant-Colonel L. E. Childe, I.M.S., Sorab K. Nariman, M.D.; *Honorary Secretary and Treasurer*, D. R. Bardi, F.R.C.S.I.; *Members of Council*, Lieutenant-Colonel C. H. L. Meyer, I.M.S., R. Row, M.D., Major Gordon Tucker, I.M.S., Sorab Engineer, M.R.C.P., Miss A. M. Benson, M.D., and Assistant Surgeon Eruch S. Bharucha, L.M. and S.; *Representative in Representative Meetings*, Major S. C. Evans, I.M.S.

New Members.—The following new members were elected by the Branch Council: Assistant Surgeon F. Henriques, L.M. and S., Dr. Shanker P. Kumbhakonum of Hubli, and Dr. Homi D. Kanga of Bombay.

Communications.—Major Novis, I.M.S., showed a special splint for fracture of lower end of the femur. He also read notes of a case of ruptured spleen. Dr. Subnis showed a case of pseudo-hypertrophic paralysis, with photographs, for Lieutenant-Colonel L. E. Childe, I.M.S. Dr. Mirajkar showed, for Lieutenant-Colonel Ashton Street, I.M.S. (who was unavoidably absent on account of an indisposition), the following cases: (1) A case of cervical rib in a woman; (2) a case of osteo-sarcoma of the skull; (3) a case in which a popliteal aneurysm was removed where both the artery and the vein communicated with the sac; the specimen was shown; (4 and 5) specimens of resected intestines after strangulated hernia (irreducible). Dr. R. Row, D.Sc.Lond., communicated notes on a special haemoglobinized culture medium for the Leishmania group parasites.

The ordinary meeting of the Branch was held in the University Library on June 20th, when Dr. Sorab Nariman occupied the chair. Twelve members and two visitors were present.

Honour for Branch President.—A resolution was carried congratulating Surgeon-General Stevenson, President of the Branch, on the conferment upon him of the Companionship of the Most Exalted Order of the Star of India.

Communications.—Dr. R. Row showed a monkey on whom he had experimented with the kala-azar virus. Colonel Street, I.M.S., read notes of a series of four cases of parotid tumour operated on by him, and showed photographs. Colonel Street, I.M.S., and Major Novis, I.M.S., also showed interesting surgical cases, and after a discussion on these, in which Drs. Row, Sabawalla, and others took part, the meeting passed a hearty vote of thanks to Dr. Row, Colonel Street, and Major Novis.

New Grouping of Branches.—The Secretary, having informed the meeting of the various points in connexion with the election of a member for the Central Council, and the present rule *re* the enrolment of members on change of Branches or Divisions, the following resolutions were unanimously adopted:

> (*a*) That the Bombay Branch will accept the new grouping, excluding the Malay, Hong Kong, and China Branches, as suggested by the Organization Committee.
>
> (*b*) That the Branch is unwilling to have any changes in the rules regarding the election of member of Central Council, as well as the old period of such membership.
>
> (*c*) That the Branch emphatically disapproves of the unattached list of members, and that the rule regarding *ipso facto* membership has worked very well with them, and they wish to adhere to it. The prestige of the Branch is likely to suffer by allowing members to remain on the unattached list.

HONG KONG AND CHINA BRANCH.

The fourth meeting of the session of this Branch was held at the Military Hospital, Bowen Road, on the invitation of Colonel Irwin and the officers of the R.A.M.C., at 5.30 p.m. on Thursday, April 11th. Dr. C. Forsyth, President, was in the chair, and there were present: Major F. S. Penny, R.A.M.C., Dr. F. O. Stedman, Colonel J. M. Irwin, P.M.O., Major C. M. Fleury, R.A.M.C., Dr. E. L. Martyn Lobb, Captain A. McMunn, R.A.M.C., Dr. G. D. R. Black, Colonel Gordon Hall, R.A.M.C., Fleet Surgeon W. Stalkartt, R.N., Surgeon E. D. Rutherford, R.N., Lieutenant D. Arthur, I.M.S., Dr. William Allan (visitor), Dr. O. Marriott, Honorary Secretary and Treasurer, making a total of thirteen members and one visitor.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Vote of Thanks.—The President announced that this was the last ordinary meeting of the present session, and thanked the members for their support. A vote of thanks to Colonel Irwin and the officers of the R.A.M.C. was passed for their invitation and hospitality. The meeting adjourned.

TRANSVAAL BRANCH:

Pretoria Division.

A Pretoria Division of the British Medical Association has now been formed, and the office-bearers are as follows: *President*, Dr. Boyd; *Vice-President*, Dr. Savage; *Secretary*, Dr. Jefferies; *Treasurer*, Dr. Le Water; *Committee*, Drs. Howell, Davies, Heymans, Dunstan, Moorehead (Rustenberg). The rules have not yet been drawn up.

Association Notices.

ELECTION OF CENTRAL COUNCIL, 1912-1913.

Notice is hereby given that nominations for a candidate for election as a Member of Council by the Connaught and South-Eastern of Ireland grouped Branches for the year 1912-13 must be forwarded to reach the Financial Secretary and Business Manager, at the Office of the Association, not later than Saturday, August 24th, 1912. Each nomination must be on the prescribed form, copies of which will be furnished by the Financial Secretary and Business Manager upon application.

Separate forms have been prepared:

(A) For a nomination by a Division, and

(B) For a nomination by any three Members of a Branch respectively.

Those applying are requested to state for which purpose the form is desired.

An announcement of the Nominations received will be made in the Journal of August 31st, 1912.

Election will be by voting papers if more than one nomination is received. These papers will contain the names of all duly nominated candidates, and will be issued from the Central Office on Saturday, September 14th, and will be returnable not later than Saturday, September 21st.

The result of the election of Members to the Central Council will be published in the Journal of October 5th 1912.

BY ORDER OF THE COUNCIL,

GUY ELLISTON,
Financial Secretary and Business Manager.

August 10th, 1912.

NOTICE OF FORMATION OF A NEW DIVISION OF THE ASSOCIATION.

The following change has been made in accordance with the Regulations of the Association, and takes effect from the date of publication of this notice:

North-West Essex Division.

That the members of the Association resident within the following area of the County of Essex be constituted a separate Division, to be known as the North-West Essex Division, the new Division to form part of the East Anglian Branch, and that the area of the Cambridge and Huntingdon, East Anglian and Metropolitan Counties Branches, and of the Cambridge and Huntingdon, Mid-Essex, and South-West Essex Divisions, be modified accordingly:

1. The Municipal Borough and Rural District of Saffron Walden.
2. The Stansted Rural District.
3. In the Dunmow Rural District: The Civil Parishes of Great and Little Bardfield, Thaxted, Chickney, Broxted, Tilty, Takeley, and Hatfield Broad Oak.
4. In the Epping Rural District: The Civil Parishes of Sheering, Matching, Harlow, Latton, Nettleswell, Great and Little Parndon, Roydon, Magdalen Laver, and Nazeing.

Representation in Representative Meetings.—It is proposed that the North-West Essex Division shall be grouped with the Mid-Essex and South Essex Divisions for the purpose of representation in Representative Meetings. The representation of the depleted areas is not affected.

NOTICE OF CHANGE OF BOUNDARIES OF DIVISIONS.

The following change has been made in accordance with the Regulations of the Association, and takes effect from the date of publication of this notice:

Stockport, Macclesfield, and East Cheshire and Chester and Crewe Divisions.

That Sandbach be transferred from the area of the Stockport, Macclesfield, and East Cheshire Division of the Lancashire and Cheshire Branch to the area of the Chester and Crewe Division of the same Branch, and that the boundaries of these Divisions be respectively adjusted accordingly.

Representation in Representative Meetings.—The representation in Representative Meetings of the depleted area is not affected.

BRANCH AND DIVISION MEETINGS TO BE HELD.

Midland Branch: Lincoln Division.—On Friday, August 9th, at 3.30 p.m., will be held a special meeting of the Lincoln Division at the Lindum Restaurant, Lincoln, to consider the working of sanatorium benefit under the terms of the National Insurance Act. All medical men resident within the area of the Division are invited to be present.—J. S. Chater, Honorary Secretary.

South-Eastern Branch: Isle of Thanet Division.—The next meeting of this Division will be held at the Royal Sea-Bathing Hospital, Margate, on Saturday, August 10th, at 4 p.m., Dr. Nichol in the chair. Tea will be served during the meeting. All medical practitioners are invited to the meeting. Agenda: (1) Correspondence. (2) To consider a letter from the Margate Education Committee on the treatment of defective school children. (3) To receive a report from Dr. Halstead on the recent Meeting of Representatives. (4) Any other business.—Hugh M. Raven, Honorary Divisional Secretary.

ANNUAL MEETING, 1912.

The Pathological Museum.

Section of Tropical Medicine.

It was only to be expected that at Liverpool there would appear a good exhibit in this section, and so it turned out. Two cases of specimens were the same as had been shown at the International Hygiene Exhibition at Dresden in 1911, where they were awarded a Diploma of Honour. They illustrated some of the more important tropical diseases and the mode of their propagation, including yellow fever, sleeping sickness, malaria, African tick fever, plague and myiasis.

Elsewhere were to be found specimens illustrating the pathology of yellow fever, such as a fatty liver and kidneys, black vomits, haemorrhagic gastritis, etc., together with plates of *Paraplasma flavigenum*.

There was also a series of some of the common parasites of man—the various tapeworms in beef, pork, fish, etc., *Bilharzia haematobium*, and various nematodes—for example, the guinea-worm, the *Ankylostomum duodenale in situ* in large numbers in the duodenum, specimens of elephantiasis due to *Filaria bancrofti*, accompanied by numerous photographs.

The intermediate host of the guinea-worm was shown as the cyclops with the young larvae. A specimen of *Taenia saginata* was 22 ft. long, and near by was an ox heart swarming with the cystic phase of this parasite.

A new disease of man occurring in Brazil was shown to be due to a nematode—the *Oesophagostomum thomasi* (Dr. W. Thomas).

An exhaustive collection of insects included all the known species of tsetse flies (*Glossina*), blood-sucking diptera (*Muscidae*), African blood-sucking diptera, anopheline mosquitos and a specimen of Stegomyia—the carrier of yellow fever. Amongst the protozoa were the parasite of Rhodesian sleeping sickness (*T. rhodesiense*); a film of *Herpetomonas pediculi*, which is a flagellate body parasitic in the digestive tract of human body lice, and to be remembered in working at the pathogenic protozoa which it so closely resembles; and also the spores of a microsporidian protozoan which produces the disease of bees in the Isle of Wight (*Nosema apis*). The Royal College of Surgeons had lent a series of specimens of an infective disease occurring in Rangoon, described by

Captain Whitemore, I.M.S., of the nature of a septicaemia, clinically resembling glanders. The inoculated guinea-pig in this condition showed lesions similar to Strauss's reaction in glanders, and was of especial interest.

Of great importance and interest was a collection sent by Dr. Bayon (London) illustrating the bacteriology and pathology of leprosy. This included preparations of the various lesions produced in man and in animals which had been infected with leprosy or leprosy cultures, in one rat transmitted to the second generation, and numerous and striking cultures of the various lepra strains hitherto described. And to complete the investigation there was a large collection of cultures of acid-fast germs which had been obtained from tap water, dung, milk, butter, smegma, etc.

Captain B. Williams, I.M.S., contributed some photographs to show the improvement in a case of leprosy under the influence of nastin. But Dr. Bayon sent also a series of pictures to show improvement in a case which had undergone no treatment.

Under the section of Myiasis a skull of an Indian native was shown with muscid larvae (chiggots) swarming in the nasal cavities, and one case of ulceration of the cheek (photograph) which had produced 300 of such larvae.

Genito-urinary Section.

A special feature of this section was the beautifully preserved and mounted specimens shown by Mr. Bickersteth to illustrate the causes of hydronephrosis and the pathology of calculous pyonephrosis. The specimens had all been saved from the usual exploratory abuse meted out to them in the operating theatre, and injected with preservative to restore their natural shape before incising and mounting, so that they truthfully represented the actual size, shape, and appearance before removal.

One series of such illustrated hydronephrosis caused by a ureter "kinked" over a branch of the renal artery, and to contrast with these was a specimen from the *post-mortem* room of the Royal Free Hospital which showed hydronephrosis caused by a kinking of the ureter over a vein running direct from the lower part of the kidney to the vena cava.

Similarly preserved specimens of calculous pyonephrosis showed the obstructing stone surrounded by a dense mass of inflammatory tissue producing the cicatricial pelvis which Bickersteth supposes to be the important factor in obstruction. One enormous urethral calculus, weighing 4¼ oz., came from a man, aged 22, with a twelve years' history. Another interesting exhibit by the same worker was a series of fourteen specimens of "separated urines" from the right and left kidneys, obtained by using the Luys's separator; these were shown in pairs in the actual test tubes in which they had been collected. In many instances methylene blue had been given to the patient three-quarters of an hour before "the separation," and the blue had come through in the urine of the sound kidney but not in the urine of the diseased kidney, which often contained pus.

Radiograms were also shown by Mr. Bickersteth to demonstrate ureteral catheterization as far as the kidney and the injection of a hydronephrotic kidney with collargol, which was shown to drain away shortly after the experiment.

Professor Stewart McDonald contributed a large and instructive series of inflammations of the kidney, including acute, the subacute, and the chronic and sclerotic varieties, and some specimens of pyelonephritis, one of which was due to a generalized infection with Eppinger's streptothrix, and a kidney from a case of acute lymphatic leukaemia which showed numerous haemorrhages and diffuse lymphocytic infiltration.

Other specimens of note were a lipoma of the kidney (Manchester) and many tumours, including hypernephroma, carcinoma, angioma, papilloma, sarcoma, and endothelioma.

But the tumours of the adrenal gland were specially interesting, and amongst these were two showing the relation of the cortex of this gland to sex characteristics—one from a girl, aged 5, who had a profuse growth of hair on the lip, pubes and back, but had never menstruated (Professor Ernest Glynn), and the other, which weighed 14 lb., from a woman, aged 47, who ceased menstruating at 25 and developed a male voice and commenced shaving regularly (Dr. Hewetson, Birmingham).

Amongst many calculi were a series by Mr. Thelwall Thomas, two rare cystic calculi of a blue color (Liverpool), and a vesical calculus consisting of a deposit of phosphates around a revolver bullet.

Section of Ophthalmology.

In the Ophthalmological Section there were shown specimens illustrative of both the extremely rare and of those dealing with the common diseases that are met with in general practice.

About 40, lent by the Liverpool Eye and Ear Infirmary, illustrated various conditions met with in the eye. A set of 12 showed sarcoma of various kinds; 9 were of the melanotic variety, and what is worth noting is that in several of the cases they were removed for glaucoma, and when pathologically examined the sarcoma was found; this shows the necessity for pathological examination in all eye cases; some 8 specimens showed glioma in the different stages, also pseudo-glioma.

There were a large number of *x*-ray photographs showing how foreign bodies in the eye and orbit had been in most cases localized with great accuracy; in one case the foreign body had passed through the eye and was lodged between the sclera and tendon of the inferior oblique.

Mr. E. Stevenson lent 5 water-colour paintings of a rare disease of the retina which should have been very interesting to ophthalmic surgeons.

Mr. H. E. Jones lent a set of water-colour drawings of retinal disease due to indirect injury, not the classical rupture of the choroid. These showed the changes that sometimes take place within the eye although there has been no direct injury to it; and in one, although the surgeon was very sure from the appearance of the fundus that injury was the cause, no history of it could be obtained.

Mr. Clegg, of the St. Paul's Eye Hospital, lent a series of specimens illustrating the comparative anatomy of the eye; also a number of other specimens of tumours of the eye.

Microscopic preparations of melanotic sarcoma and glioma were shown; also a microscopic section of a cyst of the eye which contained what has been pronounced by eminent pathologists to be an embryonic lens; this was found in a mature eye. Also, for comparison with the former specimen, a lens in the seventh week was shown.

There were some beautiful pen-and-ink drawings by Professor Buchanan (Liverpool) showing tuberculosis of the iris and choroid.

Section of Anaesthetics.

Modern apparatus associated with anaesthetics in the Pathological Museum was well represented by exhibits of interest. They helped to show methods of giving chloroform, ether, nitrous oxide, gas, and ethyl chloride by means of inhalation, infusion, and insufflation.

Dr. H. A. Barton (London) showed a complete apparatus for intravenous infusion anaesthesia and a special vein puncture needle. With the growing interest in this method of producing anaesthesia, this exhibit was much appreciated.

Dr. Thompson Rowling (Leeds) showed an apparatus for administering the vapours of ether and chloroform with oxygen, either separately or in any proportion and in approximately known percentages, for surgical anaesthesia. This seemed a particularly ingenious apparatus. He also showed an anaesthetic screen and drop bottle regulator.

Dr. Bellamy Gardiner (London) showed a set of appliances for the administration of atropine and ether by the open method, put up in a very compact form.

Dr. R. E. Kelly (Liverpool) showed a modified apparatus for intra-tracheal insufflation of ether.

Dr. Gardiner Medwin (Liverpool) showed the Röth-Drager apparatus, which seems to have come to stay.

Dr. Francis W. Bailey (Liverpool) showed an apparatus for use in the continuous administration of nitrous oxide gas—a well-tried and most useful method.

Section of Obstetrics and Gynaecology.

The special subjects chosen for display in this section were—

1. Sarcoma of the uterus.
2. Inflammatory diseases of the uterine appendages.

1. A representative collection of uterine sarcomata comprised 40 specimens. Of these 21 were from the Gynaecological Museums of the University of Liverpool, and included 15 cases of sarcoma primary in the body of the uterus, 5 primary in the cervix, and 1 secondary in the cervix as a recurrence three years after subtotal hysterectomy for sarcoma of the body of the uterus.

Complete after-histories were appended and the type of growth in each instance was illustrated by photomicrographs.

Of the specimens from the museum of University College Hospital, three were primary sarcomata of the body of the uterus, and three had probably arisen in fibromyomata. A series of twelve specimens from the University of Birmingham comprised six instances of primary sarcoma of the body of the uterus, two primary growths of the cervix—one sarcoma botyroides—and four associated with fibromyomata. To this section the Royal Free Hospital contributed a specimen of sarcomatous change in a uterine fibromyoma.

2. Under inflammatory diseases of the uterine appendages Miss Frances Ivens (Liverpool) exhibited a series of eight specimens illustrating primary tuberculous salpingo-oöphoritis, and the Royal Free Hospital six specimens—four of gonococcal and two of tuberculous origin.

Dr. Cuthbert Lockyer (London) contributed a series of eight specimens of internal genitalia, removed for bilateral inflammatory disease of the appendages.

A specimen of bilateral tuberculous salpingitis was exhibited by the University of Manchester.

Among the items of general interest, Dr. R. W. Johnston (Edinburgh) exhibited a specimen and microscopical sections of chorio-angioma of the placenta; Dr. Grimsdale (Liverpool) showed a full-term ovarian pregnancy with an *x*-ray photograph of the fetus; Dr. Stewart (Leeds) showed a uterus the seat of a double tumour, adeno-myoma, and adeno-carcinoma; Dr. Beckwith Whitehouse (Birmingham) showed a specimen and drawings of pregnancy in a rudimentary uterine cornu, and Dr. Thomas Wilson (Birmingham) the uterus containing a vesicular mole from a girl aged 21; the Royal Free Hospital contributed a specimen of endothelioma of the uterus, and Dr. Nathan Raw (Liverpool) dropsy of the Fallopian tubes.

Dermatological Section.

This interesting collection was one of the largest that has been gathered together during recent years. A word of special praise is due to the beautiful cultures on Sabouraud's medium of the *Sporotrichum beurmanni* brought over by Dr. de Beurmann of Paris to illustrate his paper on sporotrichosis. They excited much interest. Dr. Walter Smith of Dublin showed a very pretty specimen of beaded hairs (monilithrix), while Dr. Wallace Beatty was represented by a series of water-colour drawings, the most interesting of which were those of morphoea and dermatitis atrophicans. Dr. David Walsh lent a series of five water-colour drawings, illustrating the association of cardiac lesions with chronic dermatoses. But by far the largest exhibit was that of Dr. Stopford-Taylor and Dr. R. W. MacKenna, which consisted of close on three hundred photographs, sixteen beautiful colour plates taken by the Lumière process, and nearly one hundred wax casts. In previous years we have bestowed high praise on the casts lent by these gentlemen, but this year their exhibit was more comprehensive and better than ever. Amongst the photographs we noticed a very complete series of extra-genital chancres, many cases of lupus before and after treatment, and a large number of photographs illustrating types of seborrhoeic dermatitis, besides photographic examples of many rare affections of the skin. Among the casts the most interesting were a number representing erythema multiforme, one of sclerodactyly, one of pityriasis rubra pilaris, and several of eczema. Dr. Allworthy sent two large photographs to illustrate a case of malignant disease of the face before and after treatment with solid CO_2, and Dr. Oram showed two casts of xanthoma tuberosum.

Radiography in the Museum.

In addition to a very large collection of radiographs, prints, lantern slides, and plates arranged altogether in a large annexe, there was striking evidence of the growing importance of this branch of the profession in the large number of *x* rays illustrating cases and specimens in the general museum. Dr. Hill's series of œsophageal conditions—the radiographs being Dr. Finzi's work—was evidence of the existence and position of the disease and of the results of treatment. In the genito-urinary section the importance of radiography in the diagnosis not only of stone in kidneys and ureters, but also in showing by the injection of collargol the condition of the kidney itself, was manifest.

Turning to the *x*-ray room itself, the outstanding feature was perhaps the number of radiographs demonstrating various conditions of the stomach and intestinal tract. Dr. Haenisch and Mr. Thurstan Holland both showed a large number in which the *x*-ray evidence of malignant disease of the bowel and hour-glass contraction was conclusive and final. Particularly interesting were several lantern slides by Dr. Haenisch of hernia of the stomach into the chest cavity, a condition difficult to diagnose by ordinary clinical observations.

Mr. Robert Jones had a very fine series of malignant disease of bone, and, as evidence of the difficulty, often impossibility, of diagnosis by *x* rays alone, he showed one of sarcoma of the upper end of the tibia which in all its appearances was difficult to differentiate from an example of benign cyst of bone exhibited by Finzi.

Dr. Thurstan Holland's "plastic" *x*-ray prints, made direct from the first negative and transparency on to ordinary bromide paper, exhibited very well the advantages of this method of printing from an artistic point of view; he showed this method as applied to lungs, kidney stones, bismuth food, in addition to ordinary bone condition.

Dr. Gauvain's collection of radiographs of tuberculous disease in children, taken with a Gaiffe apparatus, showed the *x*-ray changes in bones and joints, and demonstrated the advantages in diagnosis to be gained by the injection of bismuth paste into various sinuses.

From an anatomical point of view we would draw special attention to the stereoscopic skull pictures of Dr. Knox, marked out by Dr. Salmond to show all the important *x*-ray points.

Dr. Jordan (Guy's Hospital) contributed radiographs showing peribronchial phthisis in its earliest stages, and accompanying these a series of "giant" sections through thirty-six consecutive "healthy" lungs obtained from the *post-mortem* room, death having resulted from accident or disease unconnected with the chest. All showed calcareous deposits, and many a large excess of fibrous tissue around the larger air tubes.

Section of Miscellaneous Specimens.

Here can only be mentioned a few cases. A series of specimens from a case of diffuse sarcomatosis in a boy aged 9, shown by Professor Beattie, included the testes, diaphragm, liver, skull. Three specimens from a classical case of leontiasis ossea came from the Liverpool Museum—the enormous overgrowth and distortion of the skull could be compared with a cast of the head and photographs of the patient, a man, aged 34.

We must not forget a fascinating series of specimens showing experimental fractures of bones in cats, prepared by Mr. Hey Groves (Bristol).

And, finally, a striking angeioma of the scalp, which was so altered as to resemble the convolutions of the cerebrum (Lorrain Smith).

We fear that in our description, detailed though it is, some exhibitors will have been overlooked, and we can only say that, without exception, the high standard of the exhibits was maintained throughout. In conclusion, we have to thank Dr. MacKenna, Dr. Harcourt, and Dr. Bailey for kind assistance in their special departments.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

[SECOND NOTICE.]

THE exhibit of CLAUDIUS ASH, SONS AND COMPANY, LIMITED (5–12, Broad Street, Golden Square, London, W.), as a whole suggested that members of the dental profession, comparatively limited as their field is, must be even more prolific in ideas than are their fellows in general surgery, or, to put it in another way, are even less content to use instruments which can be found everywhere and anywhere. At all events, the number of those designed for practically the same purposes was curiously great. Conspicuous on the stall were some sets designed by the late Mr. Frank Harrison of Sheffield, together with specimens of the lantern slides which he used for demonstration purposes when lecturing on his subject at the University of Sheffield. Among the former we noted an aseptic gag (in three elevations) whose upper fulcrum was sloped at a greater angle than is common. It would thus be less uncomfortable to many patients than appliances of this order usually are. This set was especially strong in appliances for conservative dentistry; while in another set, designed by Dr. Gibbs of Edinburgh, elevators, gum-cutting scissors, extracting forceps, and the like, were prominent. Another exhibit of interest was the Weller Three-way Stopcock, an application of the Coleman principle for the administration of gas and air in precise proportions. According to the position in which a certain external handle is placed the patient inspires either pure air or air 1 and gas 3, or air 3 and gas 1, or equal parts of gas and air. A further advantage is that as the inspiratory valve is made of aluminium it clicks at each exhalation, and thus affords a sure guide as to the patient's breathing.

Messrs. G. H. ZEAL (82, Turnmill Street, London, E.C.) are manufacturers of thermometers of all kinds, but pay special attention to clinical thermometers. These are of all forms and suited to all needs and tastes, and are all made, the firm guarantees, of normal glass. This is a point of importance, as it obviates the risk of the scales becoming misleading from shrinkage of the glass. Most of the forms shown could be obtained so as to register at three speeds varying from 30 seconds up to 2 minutes. In some the special aim is to secure legibility by a magnifying index and a large lettered scale; in others to avoid breakage by flattening the back, to lessen the risk of a thermometer rolling off a table. One, the *Aseptic Clinical Thermometer*, is designed to secure a double object—namely, prevent the patient knowing what is the temperature observed, and to ensure that the tube shall be aseptic. This is done by putting the scale on an exterior glass case, into which the thermometer fits like a stopper, lying in any antiseptic fluid preferred. Another form is intended to give to patients for family use. In this—the *Family Thermometer*—temperatures above 99° are marked in red, and further indications of the condition of the patient, and of the need for careful watching or of summoning at once the medical attendant, are supplied by the words "feverish" and "high fever" against 101° and 104° respectively. Corresponding indications are supplied against the lower figures. To the *Repello Thermometer* we have drawn attention on several previous occasions, as representing an ingenious and useful idea. At the end opposite to the mercury reservoir it has a flattened bulb of elastic glass, and on pressing this the mercury recedes into the reservoir. It looks fragile, but long experience shows it to be just as strong as ordinary thermometers. This year it had a rival in the shape of a thermometer case (the *Acello*) which will fit any thermometer, and secures the rapid return of the mercury to the reservoir by a simple method of applying centrifugal force.

W. B. SAUNDERS COMPANY (9, Henrietta Street, Covent Garden, W.C.) showed a number of books, including new editions of comparatively recent but already highly esteemed friends. *Differential Diagnosis*, by Cabot, is a case in point; it made its first appearance a couple of years ago, was reprinted four times in rapid succession, and is now in a second edition. Another publication shown, in a measure of the same order, was the *Surgical Clinics* of Dr. John B. Murphy, of Chicago, reviewed on June 8th (p. 1303). Personality also comes out strongly in the *Collected Papers of the Mayo Clinic* at St. Mary's Hospital, Rochester, U.S.A., which we hope shortly to review. The last and two preceding volumes of *Treatment* were also on view. It is a work of the encyclopaedia order, brought out under the editorship of J. H. Musser and A. O. Kelly. We also noted *Operative Obstetrics*, by Professor Davis, of the Jefferson Medical College, its special point being the amount of attention paid to operations which may have to be practised on the newly-born infant. Other works which attracted notice were a further edition of *Dorland's Illustrated Medical Dictionary*, a most useful work, the latest and sixth edition of which contains, it is stated, 7,000 more words than its immediate predecessor, and *Surgical After-Treatment*, by Crandon and Ehrenfried.

Of the many concentrated and other foods manufactured by BOVRIL, LIMITED (152–166, Old Street, E.C.), only two figured on its stall, these being those for which it is perhaps best known. Bovril is, in fact, a meat extract, *plus* albumen and fibrin, the latter two ingredients, we are informed, being prepared separately from fresh meat and then blended with what may be called the "beef-tea" part of the final product. The *Invalid Bovril* is somewhat more concentrated and free from any kind of artificial seasoning.

The exhibit of NEWTON AND WRIGHT, LIMITED (72, Wigmore Street, London, W.)—until lately the electro-medical department of the Fleet Street house of Newton—shows that British-made *x*-ray apparatus of the massive order is still a feature of the undertaking. The mechanism most prominently displayed at the stall was the improved "Instanta" induction coil, notable for its heavy output and low reverse current. This was represented by two models, differing only slightly in capacity, and working in each case with a new break bearing the same expressive if not euphonious name. The "Instanta" break, which is of the turbine type, is so arranged as to interrupt the circuit in two places simultaneously, and can be worked either with coal-gas or with vapour di-electric. In an outfit on exhibition, which embodied one of the models of the coil, the combination of coil and break gave about 70 milliampères across an 8-inch horizontal spark-gap, the primary current being 15 ampères. With the other model of the coil, embodied in a second outfit, the discharge across a similar spark-gap was from 50 to 60 milliampères. This second outfit, in which the coil was mounted on a trolley of new design, was constructed with an eye to economy of space and to the exigencies of work in the wards. A miniature outfit was also on view, with a correspondingly small type of the same coil and break. This installation is sufficiently compact to be carried by one person, and, consuming as it does only 2 or 3 ampères of current, can be worked from any lamp-socket. A couch for working from above or from below was another interesting exhibit, a tube-box of new design permitting not only the centering but also the rapid changing of the tubes. Among exhibits on this stall, we noted Dr. Hampson's ingenious radiometer for the accurate measurement of the epilation dose by the half-time method. This is a neat device for reducing the length of time which those engaged in epilation work with the Sabouraud pastille have to spend at their instrument. In conjunction with some *x*-ray tubes of recent construction, it seems possible that the Hampson radiometer may make the epilation dose obtainable in six or seven minutes.

National Insurance.

THE NATIONAL INSURANCE SCHEME.

LIGHTS ON THE PRESENT POSITION.

THE ASSOCIATION'S STATEMENT TO THE PUBLIC.

THE statement to the public issued by the British Medical Association at the end of last week has been extensively quoted in the daily press, although in some cases the extracts are too short to give an adequate impression of the document, which had already been subjected to careful compression. The *Morning Post*, which describes it as "a striking document both from the strength of the medical case and from the studied moderation and lucidity of its presentation," points out that "the profession is able to show that previous to the drafting of the bill it was never consulted by the Government. It was led to suppose that the Insurance Commissioners were empowered to grant the demands drawn up over a year ago; but, in the words of the Council, 'no material concession has been made by the Chancellor since February last.' The conditions of medical service as interpreted by the Commissioners could be accepted by no self-respecting profession. It is for the Chancellor of the Exchequer and the Commissioners to apportion among themselves the discredit attaching to the hollow pretence of negotiating that has been made for the last five months. In insisting on freedom from lay control, on a £2 income limit, and on a minimum rate of 8s. 6d. a head, the profession has been actuated by the feeling that it is fighting for its existence."

Our contemporary proceeds to observe that "In the Insurance Act the Government had an opportunity of establishing conditions of medical service on a thoroughly sound basis," and that the statement issued by the British Medical Association shows that the Government has singularly failed. "We are confident," the *Morning Post* continues, "that the doctors will receive from the public the moral support for which they are asking. It is to greatly to the interest of the nation as of the profession that this fight should be carried to a successful issue."

THE PRESENT ATTITUDE OF THE CHANCELLOR OF THE EXCHEQUER.

The article by Mr. Lloyd George published in the "Medical Supplement" of the *Nation* for August 3rd must have been written before the statement of the Association was issued, and does not contain much which throws light upon the present attitude of the Government. He points out that the duty of arranging for the provision of medical attendance is cast by the Act not upon the Commissioners, as a rigid and uniform system organized and settled bureaucratically from the centre, but upon the committees appointed to administer this part of the Act in each district. This was done because it was recognized that the conditions vary so widely in the different areas that one uniform system which sought to blend the inconsistent requirements of every district into one cast-iron method of administration would be hopelessly inapplicable to each and all, and would inflict hardship upon the profession and upon its patients, and must necessarily end, where it was now proposed to begin, by recognizing the diverse needs of the different localities. Mr. Lloyd George describes the meetings of the Advisory Committee as of the most useful and amicable character, and adds that the advice tendered to the Commissioners has been invaluable to them in framing the Regulations. These Regulations, now being drafted, will be submitted to the Advisory Committee at an early date, and Mr. Lloyd George anticipates that when they are published "they will be found to contain provisions which will remove some of the most anxious fears of the general practitioner as to the conditions under which practice will be carried on under the Act. For example, . . . it will be discovered that night visits are put in a different category from day attendances, and that, even in respect of day demands, there will be complete protection for him against frivolous and needless calls upon his time and skill."

With regard to disciplinary jurisdiction, Mr. Lloyd George says that no profession in the world could possibly regard with equanimity a proposal that such jurisdiction should be exercised by a body of laymen in matters peculiar to their own profession. He feels certain that when the Regulations are published the profession will ascertain that it is amply safeguarded against any peril of that kind. It has been, he says, his sincere determination to use the machinery of the Act for the purpose, not merely of mitigating the evils of the present method of contract practice, but of putting an end to them, and it would be lamentable, he says, if through the breakdown of the panel system for which the medical profession asked, medical treatment of the industrial population instead of developing along the path of greater dignity and efficiency should be driven back to conditions which may lead to a continuance of some of the abuses which the Government is seeking to remedy. The article concludes as follows:

> It is true there are other alternatives which are being increasingly pressed upon us from very influential quarters for dealing with this momentous question of medical care of the industrial population of this country, and, what is even more important, the promotion of their health. My only reluctance up to the present to consider the immediate practicability of these suggestions has been due to the hardship that would undoubtedly be inflicted by their realization upon a large number of general practitioners. No one will deny that a most potent argument can be advanced in support of some of these proposals. But the object of the Government has been to effect a great improvement in the conditions of medical treatment amongst the industrial population of this country, without inflicting any injury upon those who, at the present moment, are dependent for their livelihood upon their medical practice. The supreme consideration of every Government must, however, be the well-being of the people as a whole.
>
> I have nothing to add to the statement I have repeatedly made with regard to remuneration. It is the desire of the Government to pay the medical profession fairly for the services which they render. The Plender report proves that the financial basis upon which we computed our remuneration was not as wide of the mark as some of our more violent critics have affirmed, but I repeat what I have already stated on behalf of the Government for the last six months, that if a case is made out for a further financial provision, we are prepared to recommend the House of Commons to increase the grant. The Commissioners set up an inquiry into this question some months ago, and Sir William Plender's report will be of great assistance to them in the completion of their task, and they are willing and anxious to receive any information, from private persons or from organizations, which will further assist them in arriving at a just conclusion. When the report of that Committee reaches the Commissioners they will be in a position definitely to advise the Government as to what addition (if any) it will be reasonable to make for the remuneration of the profession.

SCOTLAND.

CONSTITUTION OF INSURANCE COMMITTEES.

A MEMORANDUM has been issued by the Insurance Commissioners for Scotland relating to the constitution of Insurance Committees. Section 59 as applied to Scotland by Section 80 of the Act provides that an Insurance Committee shall be constituted for every county, except that, as is not unusual, Clackmannan and Kinross are regarded as one county, and Elgin and Nairn as another, and for every burgh containing a population of 20,000 or upwards, excepting the burghs of Dumfries and Maxwelltown, which are to be regarded as a single burgh. The Insurance Commissioners are to determine the numbers of every committee, subject to certain limitations—namely, a minimum membership of 25 where the population within the area of the committee is less than 40,000, and of 40 where the population is over that number. The maximum membership is 80. The final constitution of Insurance Committees cannot be determined until the number of insured persons resident in the county or burgh and the respective numbers of members of approved societies and of deposit contributors have been ascertained. In the meantime the Commissioners, with the consent of the

Treasury, have exercised the powers conferred on them by Section 78 of the Act, have provided for the appointment of representatives of insured persons on a provisional basis. The members thus appointed will hold office until committees can be regularly constituted in accordance with the provisions of the Act, or until July 15th, 1913, whichever date is the earlier.

Regarding the appointment of medical practitioners on these committees, the memorandum states that in view of the special circumstances under which the first Insurance Committees were being constituted, it appeared to the Commissioners that, in lieu of the procedure laid down by Section 59 (2) (*c*) of the Act for the election of two medical practitioners as members of each Insurance Committee, it would be expedient to consult the Scottish Medical Insurance Council as to the nomination of two practitioners for appointment to each committee. That body, however, declined to assist the Commissioners in the matter, whereupon an opportunity to make the nominations was afforded to the local Medical Committees that have been formed throughout the country; but this also was declined. The Commissioners have, therefore, framed regulations in accordance with the section of the Act above referred to, and made provision in the order applicable to each Insurance Committee whereby any practitioner elected in terms of these regulations may thereupon become members of the committee. The remaining members of each committee are required to be appointed by the Commissioners. Two at least must be women, and one at least must be a medical practitioner.

The Insurance Committees are entrusted with important duties in connexion with the local administration of Part I of the National Insurance Act. Amongst these duties is the administration of the following benefits: (*a*) Medical and sanatorium benefits on behalf of all insured persons in the area of the committee, whether members of approved societies or deposit contributors; and (*b*) sickness, disablement, and maternity benefit on behalf of deposit contributors. In addition, Insurance Committees are charged with the duty of making reports as to the health of insured persons, of taking action with regard to excessive sickness, of furnishing statistical and other returns, together with any suggestions of their own, to the Scottish Insurance Commissioners, and of providing for the giving of lectures and the publication of information on matters relating to health.

Administration of Sanatorium Benefit.

The Insurance Commissioners of Scotland, after consultation with the Local Government Board for Scotland, have issued a memorandum on the administration of sanatorium benefit. After quoting the different sections relating to sanatorium benefit, the memorandum states that the sums available for defraying the expenses of sanatorium benefit shall be: (*a*) One shilling and threepence in respect of each insured person resident in the county, or burgh of 20,000 inhabitants or upwards, payable out of the funds out of which benefits are payable under this part of the Act; and (*b*) one penny in respect of each such person, payable out of moneys provided by Parliament. An insured person shall not be entitled to sanatorium benefit unless the Insurance Committee recommends the case for such benefit.

Out of the money provided for the United Kingdom under the Finance Act, 1911, the amount available for Scotland will be about £158,000.

In considering the administration of sanatorium benefit, the Commissioners state that the institutions so provided are for behoof of the general community, and not merely of insured persons. These institutions are not to be provided by the Insurance Committees. Their duty will be: To make arrangements to the satisfaction of the Insurance Commissioners with persons or local authorities (other than Poor Law authorities) having the management of sanatoriums or other institutions approved by the Local Government Board; and for treatment otherwise than in sanatorium or other institutions with persons and local authorities (other than Poor Law authorities) undertaking such treatment in a manner approved by the Local Government Board.

Regarding arrangements for treatment, the Insurance Committee will have to decide whether there is any reason for not granting sanatorium benefit, and in granting sanatorium benefit there will be certain courses to consider—for example, (1) to send the patient to a sanatorium, (2) to send him to a hospital, (3) to arrange for his attendance at a dispensary, (4) to have him treated in bed at his own home, (5) to provide a shelter in a garden or field adjoining his house, or (6) to send him to the country to live with friends where again he would be under home treatment.

The foregoing arrangements apply only to pulmonary phthisis. Section 8 (*b*) of the Act refers to tuberculosis in general, and so includes tuberculous disease of various tissues and organs, bones, joints, glands, skin, abdomen, etc. Inasmuch as notification under the Local Government Board's regulations applies only to the pulmonary forms of the disease, information of other forms of the infection will not reach the Insurance Committee in the same way; but the Committee must be in a position to give due consideration to cases brought before it by medical men or patients' relatives or otherwise. Cases of non-pulmonary tuberculosis in insured persons in the first few months will have to be dealt with as the facts concerning each may indicate. Whilst the details of such treatment may often require expert surgical advice, yet it will probably, on the whole, be less difficult than in pulmonary tuberculosis to reach a preliminary decision as between institutional and domiciliary management of the disease. Removal to an institution will, of course, be practicable only in so far as such institutions are reasonably available for cases belonging to the area of any Insurance Committee, and the medical officer of health would commonly be the most convenient agent through whom to obtain the necessary information. The memorandum states that as to payments for sanatorium and hospital treatment, the Insurance Committee will arrange terms with the persons or authorities responsible for the institutions. Where arrangements are entered into with general practitioners for the treatment of patients in their own homes, payment will be made to these practitioners on a basis which should be agreed upon, if practicable, with the medical profession of the district, and to this end it will be convenient that the committee should consult the local Medical Committee, if any such has been recognized by the Commissioners under Section 62 of the Act. The memorandum contains a list of sanatoriums and other institutions approved by the Local Government Board.

ADDITIONAL BENEFITS.

The Insurance Commissioners for England have issued the following table (Table H), applicable to males or females, setting out the additional benefits of value equivalent to a reduction of sickness benefit under Section 9, Subsection (2), which is as follows:

(2) Where, in the case of any insured persons, the rate of sickness benefit or disablement benefit (as the case may be) exceeds two-thirds of the usual rate of wages or other remuneration earned by such persons, the rate of such benefit may be reduced to such an extent as the society or committee administering the benefit, with the consent of the Insurance Commissioners, determines; but, where such reduction is made, provision shall be made by the society or committee, with the like consent, for the grant of one or more additional benefits of a value equivalent to such reduction.

Additional Benefits of Value Equivalent to a Reduction of Sickness Benefits.

Reduction of Sickness Benefit	*Equivalent Additional Benefit to be applied to the whole class of persons to whom the reduction of sickness benefit is made applicable.*
2s. 6d. per week	Repayment of the contributions paid to the extent of one halfpenny per week.
1s. 6d. per week (Men) } 1s. 0d. ,, (Women) }	Payment of sickness benefit at the rate reduced from the first day of sickness instead of from the fourth day.
1s. 0d. per week	Provision for medical treatment and attendance for any persons dependent on the labour of members of the class or for the payment of the cost, or part thereof, of dental treatment for any such member, to such extent as will absorb a total sum of not more than eleven pence per annum for the average of the number of members in the class at the beginning of the year and at the end of the year respectively.
[Or if a greater reduction be made, the sum of 1½d. per member named in the next column may be increased correspondingly.]	

PROVISIONAL MEDICAL COMMITTEES.

South-West Essex.

THE second meeting of the Committee was held on Tuesday, July 9th, at Leyton. Dr. C. H. PANTING presided, and eighteen members were present. The meeting having considered the recommendations which should be submitted to the Division on various points, then received from the Chairman a report on the progress of the canvass. It was as follows:

Retired practitioners ...	6	of whom	0	have signed	pledge
Whole-time appointments	21	,,	11	,,	,,
Home addresses	8	,,	3	,,	,,
Resident in area, but not in practice	13	,,	5	,,	,,
Hospital residents ...	1	,,	1	,,	,,
Contract practice... ...	75	,,	60	,,	,,
Others	56	,,	46	,,	,,
Total practitioners ...	176	,,	132	,,	,,

Dr. CRAWFORD produced a circular issued by the Warehousemen, Travellers, and Clerks' Provident Association, and called the attention of the Committee to the list of medical officers appearing on the first page.

It was proposed by Dr. CRAWFORD, seconded by Dr. NOBLE, and resolved:

> That the Secretary bring the circular to the notice of the Branch Council for this body to deal with the matter.

The Rochester scheme was briefly discussed, and postponed for consideration to the next meeting.

Coventry.

A MEETING of the Provisional Medical Committee was held on August 2nd, Dr. ORTON in the chair.

Friendly Societies.—Dr. ORTON proposed and Dr. PICKUP seconded, and it was duly agreed:

> That the Secretary be instructed to obtain from the practitioners in the district their resignation of friendly societies and clubs in accordance with supplementary pledge already signed, but that these resignations should not be sent in to the various societies until advised by the State Sickness Insurance Committee.

Sanatorium Benefit.—Dr. ORTON proposed and Dr. ANNAND seconded, and it was duly agreed, that the examination and report for tuberculous cases (as per sample Form Med. 2) at a fee of 5s. be adopted, subject to the approval of the Council of the Association. Dr. ORTON proposed and Dr. WORSLEY seconded, and it was duly agreed, that domiciliary treatment be given at a fee of 2s. 6d. per visit or consultation, this fee not to include medicines nor tuberculin. (It was understood that this only applied to lung tuberculosis.) As Mr. Gordon had asked for a nominee as Temporary Medical Adviser in the absence of Dr. Snell, the SECRETARY proposed Dr. Webb Fowler, and, Dr. ANNAND seconding, this was carried.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor*, BRITISH MEDICAL JOURNAL, *429, Strand, London, W.C.*]

A PUBLIC MEDICAL SERVICE BASED ON A SLIDING SCALE OF CAPITATION FEES.

DR. LLEWELLYN MORGAN (Liverpool) sends us the following outline for a scheme of a Public Medical Service, based on a sliding scale of capitation fees, which was placed briefly before the Section of Medical Sociology at the Annual Meeting at Liverpool:

The scheme is designed to meet the situation which may arise should the Chancellor hand the 6s. to the approved societies. It is based on a sliding scale of capitation fees which I have worked out to 40s. a week, but which could, of course, be extended to include incomes up to £160 a year. In this scheme the approved societies do not deal directly with any medical man, but with the Local Medical Committee, who, on their part, invite medical men in their district to form panels.

The Local Medical Committees should invite representatives of the approved societies to a joint conference, at which they should explain why medical men are asking higher capitation fees than in the past, making special points of (1) the fact that the Act is converting 8 millions of our private patients into insurance patients; (2) that with free choice of doctor *all* who choose a medical man from the panel will go to him, whereas in the past 20 per cent. of the members for whom he was paid went to other medical men; (3) that the Government are expecting from the doctors elaborate bookkeeping, which will entail much time and labour; (4) that contract work, whilst not in itself remunerative, has been useful as an introduction to private work amongst the wives and families of the members. Seeing, however, that these will in three or four years be themselves taken into the insurance scheme, it behoves us to ask such a sum as will make the work remunerative in itself.

Suggested Rules.

1. All moneys to be collected by the approved societies, but not paid directly to the medical men but to the Local Medical Committee.
2. The Local Medical Committee to act as a clearing house.
3. Free choice of doctor and of patient.
4. The capitation fees to include drugs and simple dressings. The doctor to have the right to dispense if he elects. If he does not elect then 1s. 6d. to be deducted for the chemist.
5. The capitation fee to be confined to visits within a two mile radius from the doctor's house.
6. The capitation fee to include all ordinary medical and surgical attendances during the day. Night visits to be extra.
7. A scale of fees for special attendances and mileage to be drawn up.
8. All contributors to be divided into the following classes with their subjoined capitation fees (Scheme A):

CLASS A.—Single men, weekly wage under 18s.; married men, weekly wage under 21s. Government grant of 6s. per head per annum = 6s. per annum.
The insured person out of the 6s. pays 2s. 6d. a year, or $\frac{1}{2}$d. a week; or 1s. 8d. less than he would pay now at 1d. a week.

CLASS B.—Single men, weekly wage under 21; married men, weekly wage under 25s. Government grant, 6s. + $\frac{1}{2}$d. a week from insured person = 8s. 2d. per annum.
The insured person out of the 6s. pays $\frac{1}{2}$d., this + $\frac{1}{2}$d. a week = 4s. 6d. a year, or 4d. more than he would pay now at 1d. a week.

CLASS C.—Single men, weekly wage under 25s.; married men, weekly wage under 30s. Government grant, 6s. + 1d. a week from insured person = 10s. 4d. per annum.
The insured person out of the 6s. pays $\frac{1}{2}$d., this + 1d. a week = 6s. 6d. a year, or 2s. 4d. more than he would pay now at 1d. a week = $\frac{1}{2}$d. a week more.

CLASS D.—Single men, weekly wage under 30s.; married men, weekly wage under 40s. Government grant, 6s. + 1$\frac{1}{2}$d. a week from insured person = 12s. 6d. per annum.
The insured person out of the 6s. pays $\frac{1}{2}$d., this + 1$\frac{1}{2}$d. a week = 8s. 6d. a year, or 4s. 4d. more than he would pay now at 1d. a week = 1d. a week more.

CLASS E.—Single men, weekly wage, under 40s. Government grant 6s. + 2d. a week from insured person = 14s. 8d. per annum.
The insured person out of the 6s. pays $\frac{1}{2}$d., this + 2d. a week = 10s. 6d. a year, or 6s. 4d. more than he would pay now at 1d. a week = 1$\frac{1}{2}$d. a week more.

It has been suggested that five classes are too many. If this was thought to be the case, then I should suggest as an alternative (Scheme B):

CLASS A.—Single, earning under 18s.; married, earning under 25s. Government grant 6s. per head per annum.

CLASS B.—Single, earning under 25s.; married, earning under 30s. Government grant 6s. + $\frac{1}{2}$d. a week from insured person.

CLASS C.—Single, earning under 30s.; married, earning under 40s. Government grant 6s. + 1d. a week from insured person.

CLASS D.—Single, earning under 40s. Government grant 6s. + 2d. a week from insured person.

The analysis to read as in Scheme A.

CLUB AND PRIVATE PRACTICE AMONG INDUSTRIAL CLASSES COMPARED.

Dr. G. W. R. SKENE (Willesden, N.W.) writes: Having kept an accurate account during the last six months of all work

done in connexion with a local medical benefit club, by a card index system. I am now in a position to give the *actual* figures for this period.

Membership.

Membership is open, without medical examination, to both sexes of all ages, except the senile. A member once joining may continue till death. Members have free choice of one of the three doctors on the panel. As all join purely for the medical benefits (there being no sick allowance), and as some choice of a doctor is permitted, every member practically consults that doctor in illness. There are no members with an income exceeding £3 a week—indeed, £2 is nearer the limit—the benefits being intended frankly for the poor. A capitation fee of 4s. per member is given to the doctor; this does not include night calls, operations, bandages or dressings, confinements, or disorders due to indiscretions.

Excepting that the choice of doctors is more limited, that certain illnesses are excluded, and that children are eligible, membership is open under practically the same conditions as under the National Insurance Scheme.

In friendly societies, on the other hand, a medical certificate of health and good constitution is required, a definite age limit is fixed, there is no choice of doctor, the medical benefits are additional to sickness benefits, in consequence of which, only 80 per cent. participate in the former, 20 per cent. preferring to call in the family doctor. Night calls are included as club benefits.

Actual Work during First Two Quarters of 1912.

Number of members choosing the writer as their doctor	403
Number of members who consulted that doctor	283
Number of consultations given at the surgery	1,035
Number of visits made at the patients' houses	194
Average attendance upon *members* (not patients only)	3.05
Total cash received for the two quarters	£40 5 4
Average fee for each attendance	under 8d.

Lowest Fees Charged to Private Patients in the Practice.

Consultation with supply of medicine for two days	1s. 6d.
Visit to patient's house, including medicine	2s. 6d.
(Extra fees are charged for special clinical methods.)	
The fee for a consultation with four days' supply of medicine	2s. 6d.

The Club and Private Practice Compared.

In this practice the club patients receive the same attention and the same quality of medicine as do the private patients. The clubbers are indeed better off as they continue attendance for a longer period, there being no bills to frighten them away.

As club patients always receive a supply of medicine for four days (on occasion for six days), each consultation at least represents a fee of 2s. 6d., each visit made by the doctor represents work of the value of 2s. 6d.

Therefore the cash value of the 1,035 consultations given to the club is £129 7s. 6d., and the value of the 194 visits made is £24 15s., making a total of £154 2s. 6d.

To be fair, a sum representing the bad debts must be deducted.

From accurate records kept during the last eleven years of the private practice, I find the probable bad debts (some may be only book debts) are 10.6 per cent. of the gross receipts. The above sum must therefore be reduced to £125 odd.

As the amount received was only £40 odd, these patients obtained the services of the doctor for less than one-third of his lowest fees.

Remuneration from the Club if the Grant were 8s. 6d. without Medicine.

	£ s. d.
Fee for each attendance would be	0 1 5
Cash receipts for the six months would be	85 12 9

Comparing this with private practice, we find that in private practice, allowing for bad debts, the amount received would be £125 odd.

From this figure the cost of medicine must also be deducted. Looking into the actual accounts kept, it is found that during the last three years this works out at 7.5 of the gross receipts, therefore the £125 must be further reduced to £115 10s. odd. That is to say, the doctor, at the capitation grant of 8s. 6d., would render service for 0.74 (or, roughly, three-fourths) of his usual fees.

In other words, for every private patient transferred to the National Scheme on the above basis the doctor would lose one-fourth of his income on the average from that patient. What would the doctors lose on the 6,000,000 so transferred?

That the doctor would receive a little more from those already in friendly societies, an undoubtedly sweated service, cannot justly be credited against that debit.

Actual Medical Attendance upon Members of a Friendly Society during First Two Quarters of 1912, in the Same Practice.

N.B.—All members must pass the doctor before admission.

Total number of members	70
Annual capitation fee	4s.
Number of members consulting the doctor	31
Number of consultations at surgery	108
Number of visits made by the doctor	10
Average attendance upon *members* (not patients only)	1.7
Total cash received for six months	£16 19s. 6d.
Average fee for each attendance	1s. 2¾d.
Average fee for each attendance at capitation grant of 8s. 6d.	2s. 5¼d.
Average fee for each attendance at capitation grant of 4s. 6d.	1s. 3¼d.

Conclusion Regarding National Insurance Medical Benefits.

In actual practice we find that in order to make a fitting income the low fees charged to the industrial classes do not allow of the employment of the newer methods of diagnosis to any extent, nor of sufficient time for complete clinical examinations of patients, as large numbers must be seen; consequently, if the small fees are further reduced, the value of the work done must unavoidably deteriorate also if a sufficient income is to be made.

For the two following reasons, therefore, 8s. 6d., rather than being an exorbitant demand, is too small a sum to ask if a really effective medical service is to be given under the National Insurance Act:

1. From the point of view of income to the doctors.
2. From the point of view of really effective treatment to the insured patients.

Let me add that, as there are no consumptives under me in the club, the question of the separate treatment of these under the new Act does not affect the figures given. The sickness incidence during the last six months was not abnormal.

THE CONTINUANCE OF NEGOTIATIONS.

Dr. A. C. FARQUHARSON (Spennymoor) writes: Dr. Ewen J. Maclean, in his reply to the toast of the British Medical Association at the annual dinner, mentioned certain circumstances—for example, increased numbers, reasonableness of the demands of the profession, and public support—as constituting the chief elements of the "strength" of the Association. May I be permitted to draw attention to one circumstance to which Dr. Maclean made no reference, and which is generally overlooked in any consideration or review of the present power and authority of the Association. I suggest that a not inconsiderable amount of the existing strength of the Association is due to the fact that one of His Majesty's Ministers in the exercise of his executive functions has recognized the Association. In my opinion the effect of this recognition has been to confer a status upon the Association second only to that which would or could be conferred by statute. There is nothing in the National Insurance Act which requires that any member of the Government Executive shall discuss with the executive of the Association the operation of this Act, and when we remember that a Minister of the Crown has by his own initiative, entered into such a discussion I think that acknowledgement of the fact as a possible source of strength should not be entirely overlooked, and I do not regard it as a far-fetched suggestion to make that the exceptional increase of 4,000 members during the past year to which Dr. Maclean alludes is directly traceable to the Government's recognition of the Association. I do not think that at any period in the history of the Association has its Executive Body been brought into so close relations with the Government and Governmental Departments as during the past year or two, and while this is doubtless due in part to the growing power of the

Association as a medico-political machine, yet the collateral and incident effect of Governmental recognition in the direction of accrual of authority to the Association should not be ignored or seriously minimized.

Estimates and classifications of the factors of the Association's strength, however, are of minor importance when regard is taken of the great question, How is this strength to be conserved, maintained, and passed on to succeeding generations of practitioners? I am of opinion that the action of the last Representative Meeting goes a long way in destroying the possibility of this. Assume that the Government regards the Association as having spoken its last and final word, and it falls back upon the procedure indicated in Section 15 of the National Insurance Act. A statutory obligation is placed upon Insurance Committees by this section to make arrangements for the treatment of insured persons. In certain areas it is probable that the members of the profession will have to choose between quite acceptable terms and allegiance to the Association. In the event of choice resting with the former in any great numbers, I fear the near future may show the Association emerge with a greatly attenuated authority. This is a possibility vastly to be deplored; it is a possibility which could be avoided by the continuance of our relations with the Government and, if need be, some temporary sacrifice of our demands. Such a sacrifice would be well made and would be amply repaid by securing for the Association for all time that strength and authority which it has now attained and which could be used with effect to redress any grievance confronting the profession in the future.

Sir William Plender's Report.

Dr. E. M. Brockbank (Manchester) writes: The Chancellor of the Exchequer has asked for reasons why the original 6s. offer to the doctors is insufficient, and has stated more than once that if a case can be made out for a higher amount he will ask the House of Commons for that amount. He has provided us in the Plender report with reasons not in our possession before, and after a very careful study of it I beg to submit a case founded on it for a higher grant. If the facts taken from the report on which I base my case are disputed the onus of proof of their unsoundness must rest with the Government which provides them for us.

The "face value" of the Plender report—namely, 4s. 2d. per head of the population of the towns considered—is by no means its true value from our point of view. There was an average population of 406,382 inside the towns; that of the country is not included in this and is not stated; the average total number of consultations in the towns was 538,400, or barely 1.3 visits per head of the population. The average amount received per head of the population in the towns was 4s. 2d., and per visit 3s. 2d. (A), both free of bad debts. The average amount received per visit of the country practice, including club patients, was 9s., and the weighted average per town and country visit, including clubs, was 3s. 5d. (B). The amount per head of the country people cannot be ascertained.

Let us exclude the influence of club patients from the calculations. There were, on the average, 42,669 club patients in the towns and 1,410 in the country. These patients, not having to pay for each visit, would require more visits than the non-club patients, as I shall show later. If we take what will shortly be seen to be a moderate estimate of 3.5 visits for them, and deduct their proportion from the total visits, we find that the average number of visits in the towns per non-club patient was only 1.1, and the average fee per visit 3s. 10d. (C). In the country, calculating on similar lines, the average fee per visit was 10s. 11d. (that per head, or the number of visits paid per head, cannot be calculated), and for both town and country visits the weighted average fee per visit was just under 4s. 3d. Therefore, including town and country visits, but excluding club patients at 3.5 visits each and club income, the average fee per visit was 4s. 3d. (B), which is our unit fee per visit, excluding club patients and their fees, according to the Plender report. This was for advice and medicine only for paying patients, and no extras for midwifery or operations. In the case of Dundee medicine was not supplied.

The number of visits paid per head of the town population—1.3, or, excluding clubs, 1.1—attracts attention. It must be noted that nearly 80 per cent. of the people had to pay for each visit, and consequently would not consult a doctor any more than they could help. Under the Act all the insured will be club patients and will not hesitate about calling in the doctor. What number of visits may they be expected to require?

I have collected as many figures on this head as I could. It is to be noted that the total number of contract practice patients given below is 494,369—that is, nearly 90,000 more than that of the towns. It includes all ages and sexes, like the towns, and is therefore exactly analogous, except that it will not include many, if any, of the income-tax paying class of patients who come into the Plender returns.

	Members.	Visits.	Average.
Chiozza Money[1]	8,700	31,018	3.5
Provident Dispensary,[2] a period of 28 years	97,000	466,179	4.7
J. C. Sowerby, A. C. A.[3]	1,049	3,988	3.8
British Medical Journal[4]	5,000	18,768	3.0
*British Medical Journal[5]	1,813	1,772	0.9
British Medical Journal[6]	600	3,000	5.0
British Medical Journal,[7]	40,893	148,459	4.1
British Medical Journal[8]	94,534	373,490	3.75
British Medical Journal[8]	184,000	1,150,411	6.2
British Medical Journal[8]	57,108	325,185	5.69
Dr. Exham, Provident Dispensary,[9] period of 5 years	3,672	24,235	6.6
	494,369	2,546,505	5.15

[1] *Insurance v. Poverty*, 1912, p. 28-30.
[2] *The Light of Thirty Years of Provident Dispensary Work on National Insurance.* By a Provident Dispensary Officer. 1912.
[3] British Medical Journal Supplement, March 25th, 1912, p. 570.
[4] Ibid., Contract Practice Report, 1905, p. 46, Report 2818.
[5] Ibid., p. 50, Report 3277.
* I give this item, though there must be some explanation of the very small average number of visits.
[6] Ibid., p. 50, Report 3285.
[7] Ibid., p. 14.
[8] Ibid., July 6th, 1912.
[9] Ibid., December 2nd, 1911.

Mr. Chiozza Money's figures were obtained by him privately from a friendly society. It is his moderate average of 3.5 that I have applied above in estimating the effect of eliminating the influence of the club practice from the Plender figures and in most of my consequent deductions.

Summary.—The average amount received per head in the Plender report in the towns for all people was 4s. 2d. For 1.3 visits this would mean 3s. 2d. per visit (A), or for 1.1 visits, excluding contract visits, 3s. 10d. per visit (C). Three and a half visits, only, at 3s. 2d. per visit, means 11s. 1d. per head.

If we take the weighted average for town and country visits, which we must do to estimate what ought to be paid for visits to the surgery or miles away under the Act, we get:

(*a*) Including club practice, 3s. 5d. per visit (B) for 3.5 visits, equals 11s. 10d.

(*b*) Excluding club practice and visits at 3.5 per head of club patients, each visit would be 4s. 3d., or for 3.5 visits 14s. 10d.

These are the sums the doctors ought to get on the basis of the Plender report and my contract practice figures—for advice and medicine without extras.

As the sums, especially the higher ones, are more than the doctors ever asked for, we must ask where the fallacy is. It is not in my figures or my deductions, and therefore must be in the information given in the report.

Correction for the Poorest Class of Patients.

The report is unsatisfactory as a basis for settling the amount the doctors ought to have under the Insurance Act for extensive contract practice for the following reasons:

(1) It includes the income derived from the income-tax paying patients of the towns and their dependents.
(2) It does not say how much this was, or how many of these patients there were in the population.
(3) It does not give the number of visits paid to the club patients as distinguished from those paid to the ordinary patients.
(4) It does not say how many of the population were actually private patients of the doctors, and how many were Poor

Law or hospital patients. There were 71,000 of the latter from the town population only—that is, about one-sixth actually visiting or in hospitals, charitable institutions, or Poor Law infirmaries. Presumably the total number of visits does not include those paid to patients at home by Poor Law medical officers.

Without the above-mentioned information it is impossible to make accurate allowance for the richer and poorest class of people, and the relative amount paid per visit by the former must be merely guesswork. It is worth while, however, to try and get some approximate idea of what the doctors ought to get after correcting for the missing information. In the first place, we can get some information by allowing for hospital and Poor Law patients. There were 71,000 patients from the towns attending or in hospitals, etc. There would also be some outdoor paupers.

Chiozza Money[1] says that in 1892, of the population of England and Wales, there were 3.8 given outdoor relief. At this rate, 15,428 of the population inside the five towns would be paupers. We have, therefore, 86,400 of the 406,000 population of the towns who would not be private patients of the doctors, leaving 320,000 who might be. If we allow for this diminished number of patients, our 4s. 2d. per head of the town population jumps up to 5s. 3d., including club patients and fees, and for 1.7 visits 3s. a visit. For three and a half visits, 10s. 6d.

If we also leave out the 42,669 town club patients at 3.5 visits and their fees, the amount is 5s. 5d. for 1.4 visits, or 3s. 10d. a visit to the town population only. Three and a half visits would be 13s. 7d.

If we assume that the country population paid their doctors, on an average, 1.3 visits per head like that of the towns, the population would be 20,000 practically. Taking this number and adding it to the town population, we get 426,382 total. Of these, 77,500 were hospital in-patients; 44,079 club patients; and outdoor relief at 3.8 per cent., 16,000 people; total, 137,579 who were not private patients. In this case the 4s. 2d. per head of the report would be 6s. for 1.4 visits, or 4s. 3d. for an average consulting-room or distant visit.

I may point out that the 86,400 people of the towns who are too poor to pay doctors anything is well below the numbers Rowntree and Booth state are living in poverty (40 per cent. of the wage-earning classes of the towns of the United Kingdom). Rowntree's standard of poverty is 21s. 8d. for two adults and three children, this being the minimum amount required to provide for food, clothing, housing, light, and fuel to keep up physical efficiency and with no spare money for anything.[2] The more poor people we allow for in our calculations, the better is the end result for the doctor. If 6s. is what is now paid in town and country practice by people who have to pay for each visit for 1.4 visits, it ought to be much increased for the 3.5 visits expected by moderate computation to be necessary for contract practice under the Act—that is, to about 15s. Allowing for the poorest class, therefore, helps the doctors.

Correction for Income-tax Paying Class of Patients.

In discussing the effect of the fees received from the income-tax paying class a good deal of assumption is required, and the results must be judged accordingly. I will take into account town and country visits, as both must be considered in estimating a fair contract grant:

1. I have already estimated the country population at 20,000, giving a total town and country population of 426,382 people.

2. About one-eighth of the population of the United Kingdom are income-tax payers and their dependents (Chiozza Money, *Riches and Poverty*, 1912). Applying this to our gross population we get about 53,000 of the income-tax paying class. The greater the number of this class of patients in our calculation, the worse is the end result for the doctors.

3. Assuming that 3.8 per cent. of the total population of the towns and country were in receipt of outdoor help from the Poor Law authorities, we get 16,000 who would not be private patients of the doctors. In addition to this we have 77,500 hospital and union infirmary patients for town and country.

If we exclude the 44,079 club patients and their fees from the calculation, we get the population reduced by 137,579 patients, leaving 288,803 paying patients. From this number take, say, 50,000 better class patients, and we have left only about 239,000 ordinary patients.

[1] *Riches and Poverty*, p. 276.
[2] *Poverty*, 1902.

Finally, let us assume—and it is merely assumption—that the income tax-class (income over £160 per annum) pay per head on an average four times what the ordinary patients do. (Say double fees and twice the number of visits.) Taking all the above points into consideration, and without making any correction for extra visits to club patient, the weighted average fee per town and country visit and medicine of the working class population comes to 2s. 6d. This at 3.5 visits comes to 8s. 9d. per head of those under the Act.

The midwifery fees in the Plender report were on an average 25s. for each case, or, allowing four times the fee for the income-tax paying class as compared with that for the ordinary patients, 18s. 6d. per case. Some of the Government grant of 30s. per case will, I hope, be used to provide food for three weeks for the mother.

The fees for "*extras*"—for example, "operations and other services," but excluding midwifery fees—were 23 per cent. of the total fees received for advice and medicine.

Therefore, no matter how I consider the Plender report, it seems to support in no uncertain way the request of the doctors for 8s. 6d. per head for advice without medicine.

In conclusion, I should like to say that I believe in the good intentions of the Act and its possibilities for good to the nation if "worked" willingly by the doctors, and I hope that the Government can offer new and acceptable terms to the medical profession.

Dr. J. Christian Simpson (Cambridge) writes: In your leader on the Plender report (British Medical Journal, July 20th, p. 133) you note the remark of Mr. Lloyd George about the average income being "£720 for each medical man, good, bad, and indifferent." It matters not whether this average is £720 or anything else. The point is that he makes the "average" applicable to "each medical man," which knocks the bottom out of any "average" ever calculated. One has only to slightly alter a few words in his dictum to show what drivelling nonsense it is. "The average railway fare (income of medical men) to five towns is fairly high. It is 16s. 10d. (£720) for each journey (medical man), long, short, or medium (good, bad, or indifferent). Thus it appears that a State railway, when it comes, may charge the average railway fare 16s. 10d. for each journey of 456 miles to Dundee, or for each run of 20 miles to St. Albans! Which is absurd—ditto Mr. Lloyd George's average. The £720 or £808 may be an average of the total incomes of 169 medical men, but it cannot possibly be the income of "each—good, bad, and indifferent."

Dr. T. L. Bunting (Scotswood, Newcastle-on-Tyne) writes: In the discussion on a Public Medical Service £350 per annum seems to have been accepted as a fair estimate of the present average medical income. The Plender report gives us for the first time a definite basis for estimating this average income.

In the five towns there are:

Principals	169	with a "total net income" of	£123,915
Assistants	13	" "	1,846
Total ...	182	Total ...	£125,761

This gives an average "net income" of £680.17.

From it there remain to be deducted an allowance for rent, rates, and taxes of professional premises and cost of carriage and motor car. Considering the number of men who have neither carriage nor car, £130 is a liberal estimate for this deduction. This gives £550 as the absolutely net income of all practitioners, including assistants and medical officers of health, in the five towns. It seems, therefore, that £550, instead of £350, should be taken as a basis in estimating the desirable income under a Public Medical Service, or the satisfactory average salary to be offered for a public appointment such as medical officer of health, school examiner, or tuberculosis officer.

Profession or Party.

Dr. G. F. Whyte (Dundee) writes: In your article under the above heading in last week's British Medical Journal you rightly use the following sentence: "It is essential for us all, in order to command the sympathy of the public and to retain the suffrages of a united profession, to avoid any suspicion of a taint of party politics." What are we to think, therefore, of the manifesto issued

by and in the name of the North Manchester Division of the British Medical Association? This document strongly urges the electors in North-West Manchester to cast their votes and use their influence so as to secure a heavy defeat to the Liberal candidate; in short, it is a Conservative manifesto pure and simple. If this had been issued over the signatures of these doctors no one could have had any objection; but what I and many others *do* object to, is the dragging in of the British Medical Association in this direct, open, barefaced, and, I am sure, unauthorized manner.

Hitherto we have managed fairly successfully to keep our discussions anent the Insurance Act outside the field of party politics, and thus we have retained the sympathy of Liberals as well as Conservatives; but this unfortunate document will, I fear, destroy all this and alienate a great many, unless a prompt and strongly worded disclaimer is published both in the BRITISH MEDICAL JOURNAL and the public press.

PULLING OUT AN EYELASH WITH FIRETONGS.

Dr. G. E. HERMAN (London) writes: May I be allowed to express dissent from what I venture to call Sir James Barr's ill-judged phrase, when he speaks of the Insurance Act as "a gigantic fraud"? The word "fraud" implies intentional dishonesty. I think that the Chancellor of the Exchequer honestly believed that he was conferring a benefit on his fellow countrymen when he pushed this Act through without discussion. He was mistaken, because he knew next to nothing about medical attendance, medical remuneration, medical education, and medical research; and, unaware of his own ignorance, he stifled debate.

The Act was not a fraud, but a folly. The metaphor which Sir James Stephen applied to attempts by legislation to convert vice into crime applies well to the Insurance Act: it is like trying to pull out an eyelash with a pair of tongs—you may spoil the eye, but you will not get out the eyelash.

I think that if the medical profession will stand firm in refusing to work this Act, they will benefit the country by showing up the fatuity of its provisions. It introduces the meddling of officials into matters of private life, which people hitherto have been, and ought to be, left to regulate for themselves; and, as Professor Howard Marsh has pointed out, it cries "Halt!" to medical research, in which this country has till now led the way, because private enterprise has been unfettered.

Violent language and imputation of motive only weaken the cause which they are intended to aid. I hope that, with restrained language, the medical profession will stand firm and refuse to accept payment or fill up forms under this Act, and so reduce to a dead letter the part of it with which they are concerned.

MEMBERSHIP OF PROVISIONAL INSURANCE COMMITTEES.

Dr. THOMAS BELL, President of the Rutland Medical Society, informs us that at a meeting in June of the Rutland County Council Dr. Parsons, of Market Overton, honorary secretary of the society, was appointed to act on the Provisional Insurance Committee then elected by the county council. On receiving official notice of his appointment, Dr. Parsons wrote at once declining the position, adding that no member of the British Medical Association would accept it.

Dr. R. A. BREMNER (Canterbury) writes: I, like Dr. Cromie, write to say that I do not intend to obey the order to resign my seat on the Canterbury Insurance Committee. There is no more whole-hearted opponent of the medical portions of the Act than I. I also represent my Divisions on the Branch Council; but I sit as a member of the City Council, not as a medical man, as I, too, have made abundantly clear. I consider the order to resign most shortsighted and unwise. Surely the presence of medical men on these committees who are known to refuse to serve under the Act must be an advantage to the profession, having it in their power to influence the minds of their colleagues and correct any wrong ideas about the profession's actions, and incidentally being a potent force in preventing, to some extent, the employment of blacklegs. Indeed, the fact of allowing medical officers of health to be at the beck and call of the Sanatorium Committee, and of allowing medical men generally to take appointments under them is, in my opinion, incompatible with the order which, like Dr. Cromie, rather than obey I will resign my membership.

MEDICAL ATTENDANCE BY UNREGISTERED PERSONS.

Dr. BERNARD O'CONNOR (London) writes: With reference to the point raised by Dr. H. A. Latimer (Swansea) it the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of July 20th, p. 125, dealing with (1) the "Memorandum on Regulations to Meet the Requirements of Section 15 (3)," (2) the question put by Dr. Latimer whether "insured persons would be allowed to make arrangements with persons other than registered medical practitioners for attendance under the Act," and (3) the answer given to him by a Commissioner that "the House of Commons had deliberately inserted this provision in the bill, so that people who had a predilection for Christian Science, etc., might be able to avail themselves of it," it is necessary merely to refer to the Act itself in order to see what Section 15 (3) does say in reality. The words are: "The regulations made by the Insurance Commissioners shall authorize the Insurance Committee by which medical benefit is administered to require any persons whose income exceeds a limit to be fixed by the Committee, and to allow any other persons, in lieu of receiving medical benefit under such arrangements as aforesaid, to make their own arrangements for receiving medical attendance and treatment (including medicines and appliances), and in such case the Committee shall, subject to the regulations, contribute from the funds out of which medical benefit is payable towards the cost of medical attendance and treatment (including medicines and appliances) for such persons sums not exceeding in the aggregate the amounts which the Committee would otherwise have expended in providing medical benefit for them."

There is *no* reference in the section to "arrangements with persons other than registered medical practitioners."

Naval and Military Appointments.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Majors are placed on retired pay, dated July 27th, 1912: CHARLES W. REILLY, REGINALD F. E. AUSTIN, NICHOLAS MARDER, FREDERICK G. FAICHNIE, ALEXANDER J. CHAMBERS.

The following Captains to be Majors, dated July 29th: H. A. BRANSBURY, A. J. HULL.

The following Lieutenants to be Captains, dated July 30th: H. S. RANKEN, J. A. MANIFOLD, S. S. DYKES, W. H. O'RIORDAN, C. T. V. BENSON, W. P. MACARTHUR, R. C. PRIEST, P. S. TOMLINSON, F. W. M. CUNNINGHAM, EUSTACE M. PARSONS-SMITH, ALEXANDER D. STIRLING, GEORGE P. TAYLOR, ROBERT C. PARIS, ALFRED W. BEVIS, ERNEST C. LAMBKIN, OSWALD W. MCSHEEHY, MAURICE J. WILLIAMSON, CHARLES L. FRANKLIN, MICHAEL WHITE, JAMES J. D. ROCHE, HERBERT F. JOYNT, ALEXANDER S. M. WINDER, HARRY R. EDWARDS, JAMES R. YOURELL, PHILIP G. M. ELVERY, JOHN J. H. BECKTON, WILLIAM B. RENNIE, RUPERT H. NOLAN, and WILLIAM MATHIESON.

Lieutenant EDWARD B. ALLNUTT, from the seconded list, is restored to the Establishment, July 1st, 1912.

INDIAN MEDICAL SERVICE.

COLONEL J. SMYTH, I.M.S., Principal Medical Officer, Secunderabad Brigade, has been appointed to officiate as Surgeon-General with the Government of Madras.

Lieutenant-Colonel R. ROBERTSON, I.M.S., has been appointed to officiate as Principal Medical Officer, Secunderabad Brigade, vice Colonel J. Smyth, I.M.S.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

London Mounted Brigade Field Ambulance.—Captain JOHN HERBERT DIXON, M.D., from the Welsh Border Mounted Brigade Field Ambulance, to be Captain, dated July 1st, 1912.

Second West Lancashire Field Ambulance.—Major WILLIAM THOMAS BLACKLEDGE, M.B., from the list of officers attached to units other than medical units, to be Major, dated July 27th, 1912.

First North Midland Field Ambulance.—Major WILLIAM J. REID to be Lieutenant-Colonel, dated June 1st, 1912.

First South Midland Field Ambulance.—Captain CYRIL R. LUNN, M.B., resigns his commission, dated July 27th, 1912.

Second Northumbrian Field Ambulance.—Captain GEORGE G. FARQUHAR, M.B., resigns his commission, dated July 27th, 1912.

Second Welsh Field Ambulance.—PERCY WHEELER KENT to be Lieutenant, dated June 11th, 1912.

Third Wessex Field Ambulance.—Captain ALEXANDER MILNE-THOMSON to be Major, dated April 11th, 1912.

Second London (City of London) General Hospital.—Major (Honorary Captain in the Army) ERNEST J. G. BERKLEY resigns his commission, dated July 27th, 1912.

First Northern General Hospital.—Captain THOMAS GOWANS, M.B., from the list of officers whose services will be available on mobilization, to be Captain in the permanent *personnel*, dated April 1st, 1912; Captain THOMAS GOWANS to be Major, dated April 1st, 1912; Captain JAMES W. HISLOP, from the 1st Northumbrian Field Ambulance, to be Captain, whose services will be available on mobilization, dated May 31st, 1912.

Attached to Units other than Medical Units.—Captain ARTHUR C. HARTLEY, M.D., to be Major, dated January 31st, 1912. The undermentioned Captains resign their commissions, dated July 27th, 1912: WALTER FITZPATRICK, FREDERIC W. LONGHURST.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

ASHTON-UNDER-LYNE: DISTRICT INFIRMARY AND CHILDREN'S HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum, and fees.

BANBURY: HORTON INFIRMARY.—House-Surgeon. Salary, £80 per annum.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BARROW-IN-FURNESS BOROUGH.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary, £250 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

BIRMINGHAM CITY.—Assistant Medical Officer of Health. Salary, £250 per annum.

BIRMINGHAM LYING-IN CHARITY.—Honorary District Surgeons for No. 1 and No. 5 Districts.

BLACKBURN UNION.—Resident Assistant Medical Officer for the Workhouse and Union Cottage Homes. Salary, £150 per annum.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—Two House-Surgeons. Salary, £80 per annum, rising to £100.

BRIDGNORTH HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

BURNLEY: VICTORIA HOSPITAL.—Second House-Surgeon. Salary at the rate of £80 per annum.

BURSLEM: HAYWOOD HOSPITAL.—Resident Medical Officer (Female). Salary, £100 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum, rising to £100 after six months.

EXETER: DEVON COUNTY EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £250 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon (Male). Salary at the rate of £70 per annum.

HULL ROYAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £60 per annum for six months, or £80 per annum for twelve.

KENT COUNTY ASYLUM, Maidstone.—Male Fourth Assistant Medical Officer. Salary commencing at £175 per annum.

LEICESTERSHIRE EDUCATION COMMITTEE.—Second Assistant School Medical Officer. Salary, £250 per annum and £75 for travelling allowance.

LIVERPOOL DISPENSARIES.—Assistant Surgeon. Salary, £100 per annum.

LIVERPOOL HOSPITAL FOR CONSUMPTION.—Resident Medical Officer for the Sanatorium at Kingswood. Salary, £400 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—Two Physicians and three House-Surgeons. Salary at the rate of £60 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Senior House-Surgeon. Salary, £100 per annum.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—(1) Resident Medical Officer for the In-patient Department, Bowdon. (2) Assistant Medical Officer for Crossley Sanatorium. Salary, £100 per annum each.

MANCHESTER: NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—(1) Senior House-Surgeon. (2) Junior House-Surgeon. Salary, £120 and £100 respectively.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

NEWCASTLE-UPON-TYNE: HOSPITAL FOR SICK CHILDREN.—(1) Senior Medical Officer. (2) Junior Medical Officer. Salary, £100 and £80 per annum respectively.

NEWCASTLE-ON-TYNE: ROYAL VICTORIA INFIRMARY.—Resident Medical Officer. Salary, £200 for first year, rising to £250 in the third year.

NORWICH INCORPORATION.—Male Resident Medical Officer at Workhouse Infirmary. Salary, £290 per annum, rising to £320.

NOTTINGHAM GENERAL DISPENSARY.—(1) Resident Surgeon; (2) Assistant Surgeon. Salary, £180 and £160 respectively.

NOTTINGHAM GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum, rising to £140.

PERTH DISTRICT ASYLUM, MURTHLY.—Assistant Physician. Salary, £120 per annum, rising to £140.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.

PORTSMOUTH BOROUGH ASYLUM.—Assistant Medical Officer. [illegible] num, rising to £200.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—Medical charge of Electrical Department. Salary, £100 per [illegible]

RAMSGATE GENERAL HOSPITAL AND DISPENSARY. Resident [illegible] lary, £100 per annum.

RYDE: ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £160 per annum.

ST. BARTHOLOMEW'S HOSPITAL, E.C.—(1) Orthopædic Surgeon. [illegible] rge of Electrical Department. (3) Medical [illegible] Ray Department.

SCARBOROUGH HOSPITAL AND DISPENSARY. Junior House- [illegible] per annum.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon; [illegible] nt House-Physician; salary, £80 per annum. (3) Two Honorary Assistant Surgeons.

SHIELFIELD: ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary, £70 per annum.

SHEFFIELD UNIVERSITY.—Professor of Pathology.

SHREWSBURY: SALOP INFIRMARY.—House-Surgeon. Salary, £150 per annum.

SMETHWICK EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £250 per annum.

SOMERSET COUNTY COUNCIL, WESTON-SUPER-MARE.—Tuberculosis Medical Officer. Salary, £500 per annum.

SOUTHPORT INFIRMARY.—Resident Junior House and Visiting Surgeon (Male). Salary commencing at the rate of £70 per annum.

STAFFORD: STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer. Salary, £160 per annum, rising to £210.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—House-Surgeon. Salary, £120 per annum.

STOCKPORT INFIRMARY.—Two Junior House-Surgeons. Salary, £80 per annum.

TIVERTON: THE HOSPITAL.—House-Surgeon and Dispenser. Salary, £80 per annum.

WESTERN AUSTRALIA: CHILDREN'S HOSPITAL, PERTH.—Chief Medical Officer. Salary, £500 per annum.

WINDSOR: KING EDWARD VII HOSPITAL FOR WINDSOR, ETON, AND DISTRICT.—Second House-Surgeon. Salary, £75 per annum.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary commencing at £150 per annum.

YORK COUNTY HOSPITAL.—House-Physician. Salary at the rate of £100 per annum.

YORKSHIRE: WEST RIDING.—Tuberculosis Officer. Salary, £500 per annum.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

BLAKE, V. H., M.B., B.S.Lond., District Medical Officer of the Great Yarmouth Union.

DAW, S. W., M.B., B.S., F.R.C.S., Surgical Tutor to Leeds University and Surgical Registrar to the Leeds General Infirmary.

EVANS, A. E., M.B., B.S.Lond., Assistant Medical Officer Flintshire Education Committee.

HALL, F., M.B., Ch.B.Vict., D.P.H.Manch., Assistant Medical Officer for the Borough of Derby.

HALL, A. J., M.D.Cantab., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuits Nos. 13 and 14, with a view to being employed in all cases of lead poisoning arising in these circuits in which the services of a Medical Referee are required.

MACGREGOR, D., M.D., L.R.C.S.Edin., Certifying Factory Surgeon for the Jedburgh District, co. Roxburgh.

MAXWELL, R. D., M.D., F.R.C.S.Eng., Physician to In-patients at Queen Charlotte's Lying-in Hospital.

MEADEN, C., M.D., District Medical Officer of the Barnstaple Union.

PEACOCK, J., M.B., B.S.Durh., District and Workhouse Medical Officer of the Leyburn Union.

STEWART, Purves, M.D.Edin., F.R.C.P.Lond., Physician to the Westminster Hospital.

YULE, C. Pratt, M.B., C.M.Edin., Medical Officer of Health for Fife, vice J. R. Currie, M.D.Glas.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

DAVIDSON.—On July 30th, at Casa Colon, Huelva, Spain, to Dr. and Mrs. Norman G. W. Davidson (*née* Mackenzie), a son.

WISE.—On August 4th, at 31, George Street, Portman Square, W., to Dr. and Mrs. Howard Wise, a son.

MARRIAGES.

CANE—ENGLISH.—On August 8th, at Holy Trinity Church, Orton Longueville, by the Rev. H. R. Whytehead, Vicar of Warminster, uncle of the bride, assisted by the Rev. A. F. Maskew, Vicar of St. Paul's, Peterborough, and the Rev. Warren Hastings, Rector of the Parish, Leonard Buckell Cane, M.D., of the Minster Precincts, Peterborough, eldest son of the late Leonard Cane, M.D., to Margaret, eldest daughter of Marcus V. English, of Orton Longueville, Peterborough.

GEOGHEGAN—KERR-BROWN.—At Yarmouth, on July 31st, Joseph Geoghegan, M.B., Ch.B.Edin., to Muriel, daughter of Mr. and Mrs. R. Kerr-Brown, 1, Brandon Street, Edinburgh.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynæcology, 10 a.m.; Demonstrations, 10.30 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynæcological Operations, 10 a.m.; Demonstration of Fractures, etc., 10.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 3 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynæcology, 2 p.m. Thursday: Gynæcological Demonstration, 10 a.m.; Lecture, Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Orthopædics, 2 p.m. Friday: Gynæcological Operations, 10 a.m.; Lecture, Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. on Monday, Wednesday, and Friday.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 17TH, 1912.

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STATE SICKNESS INSURANCE COMMITTEE.

APPOINTMENTS IN CONNEXION WITH THE INSURANCE ACT.

THE State Sickness Insurance Committee calls the attention of all members of the medical profession to the following resolution adopted by the Annual Representative Meeting, 1912:

> That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

SANATORIUM BENEFIT.

The State Sickness Insurance Committee also directs attention to the following resolution adopted by the Annual Representative Meeting, 1912:

> That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such apointment* shall be submitted to the Council for its approval.
>
> * "Appointment" means any professional work.

The State Sickness Insurance Committee notifies that no advertisement in respect of appointments in connexion with sanatorium benefit will be accepted for publication in the BRITISH MEDICAL JOURNAL which is inconsistent with the conditions laid down by the Association, and in all cases in which an advertisement is accepted a full list of the conditions laid down by the Association will be sent to the advertiser.

ANNUAL CONFERENCE OF HONORARY SECRETARIES OF DIVISIONS AND BRANCHES.

THE sixth Conference of Secretaries was held in connexion with the annual meeting at Liverpool, and was the most successful on record. The Secretaries dined together at the Exchange Station Hotel, Mr. RUSSELL COOMBE presiding, and afterwards conferred on the items of an agenda prepared by the Organization Committee. There were present:

W. J. GREER, Esq. (Joint Honorary Secretary of the South Wales and Monmouthshire Branch), in the chair.

Dr. J. ALLAN, Leeds Division.
Mr. FRANCIS W. BAILEY, Liverpool Division.
Mr. J. A. PERCIVAL BARNES, North Middlesex Division.
Dr. C. H. BENHAM, Brighton Division.
Mr. J. J. BLAGDEN, Chester and Crewe Division.
Dr. DAVID BLAIR, Lancaster Division.
Dr. ELEANOR C. BOND, Bournemouth Division.
Dr. W. BRYCE, Glasgow Eastern Division.
Dr. R. C. BUIST, Dundee Branch.
Dr. W. A. CASKIE, Glasgow North-Western Division.
Mr. C. P. CHILDE, Portsmouth Division.
Dr. SIDNEY CLARKE, West Herts Division.
Mr. RUSSELL COOMBE, South-Western Branch.
Dr. H. C. COOPER, Altrincham Division.
Mr. E. J. DONBAVAND, Plymouth Division.
Dr. E. ARTHUR DORRELL, Hampstead Division.
Dr. W. EARDLEY, Wakefield, Pontefract and Castleford Division.
Dr. A. M. EASTERBROOK, Lothians Division.
Dr. G. ELLIOTT, Belfast Division.
Mr. J. H. FARDON, Birkenhead Division.
Dr. D. E. FINLAY, Gloucestershire Branch.
Dr. FRANK FOWLER, Dorset and West Hants Branch.
Dr. FRANCIS W. GOODBODY, Marylebone Division.
Dr. H. NORMAN GOODE, York Division.
Mr. E. GRAY, Chester and Crewe Division.
Mr. JAMES GREEN, Southern Branch.
Dr. D. V. HAIG, Darlington Division.
Dr. R. HARRIS, Southport Division.
Dr. C. L. HAWKINS, Bromsgrove Division.
Dr. T. BARRETT HEGGS, Canterbury and Faversham Division.
Dr. R. WALLACE HENRY, Leicester and Rutland Division.
Dr. W. MOFFATT HOLMES, Leicester and Rutland Division.
Dr. E. W. REES JONES, Blackpool Division.
Mr. H. GLADSTONE JONES, South Carnarvon and Merioneth Division.
Dr. H. E. KITCHEN, Manchester (North) Division.
Mr. CECIL P. LANKESTER, Guildford Division.
Mr. F. CHARLES LARKIN, Lancashire and Cheshire Branch.
Dr. H. D. LEDWARD, East Herts Division.
Mr. PHILIP G. LEE, Munster Branch.

Dr. G. R. LIVINGSTON, Border Counties Branch.
Mr. JOHN LIVINGSTON, Furness Division.
Dr. C. COURTENAY LORD, Rochester and Chatham Division.
Dr. J. LIVINGSTONE LOUDON, Lanarkshire Division.
Dr. J. P. LOWSON, North Middlesex Division.
Mr. THOMAS MACCARTHY, West Dorset Division.
Dr. A. A. MACKEITH, Southampton Division.
Dr. H. C. MACTIER, South Staffordshire Division.
Dr. R. G. MCGOWAN, Manchester (North) Division.
Dr. JOHN MILLS, Connaught Branch.
Mr. W. COURTENAY MILWARD, Cardiff Division.
Dr. A. M. MITCHELL, Manchester (South) Division.
Dr. R. CALDECOTT MONNINGTON, Salisbury Division.
Dr. B. H. MUMBY, Portsmouth Division.
Dr. D. G. MACLEOD MUNRO, Maidenhead Division.
Dr. R. C. PEACOCKE, East Leinster Division.
Mr. E. VERNON PEGGE, Swansea Division.
Dr. D. R. PRICE, South-West Wales Division.
Mr. P. C. RAIMENT, Kensington Division.
Mr. T. SANSOME, jun., West Bromwich Division.
Dr. A. W. F. SAYRES, Exeter Division.
Mr. C. G. C. SCUDAMORE, Croydon Division.
Dr. JAMES SHEARER, Blackburn Division.
Dr. G. K. SMILEY, Derby Division.
Dr. A. G. SOUTHCOMBE, City Division.
Dr. E. W. SQUIRE, Reading Division.
Dr. EDWIN A. STARLING, South-Eastern Branch.
Dr. JAMES A. STEPHEN, Banff, Elgin and Nairn Division.
Dr. K. S. STORRS, Mid-Essex Division.
Dr. W. A. TAYLOR, Perth Branch.
Dr. W. E. THOMAS, South Wales and Monmouthshire Branch.
Dr. D. G. THOMSON, Mid-Norfolk Division.
Dr. ARTHUR L. THORNLEY, Cardiff Division.
Dr. A. TROTTER, Perth Division.
Dr. J. C. TURNBULL, Bury Division.
Dr. R. H. URWICK, Shropshire and Mid-Wales Branch.
Dr. J. F. WALKER, South Essex Division.
Mr. H. CHISHOLM WILL, Dartford Division.
Mr. E. H. WILLOCK, Croydon Division.
Mr. A. GARRICK WILSON, Sheffield Division.
Dr. J. WILSON, St. Pancras and Islington Division.
Dr. J. ARTHUR WOOD, Hereford Division.
Dr. F. E. WYNNE, Wigan Division.

Also

Dr. J. A. MACDONALD, LL.D., Chairman of Council.
Dr. JOHN P. DUNCAN, Glasgow and West of Scotland Branch.
Dr. F. H. ROTHERHAM, North Lincoln Division.
Dr. LUTHER SEXTON, Fullane University, U.S.A.

It will be seen that 15 secretaries of Branches and 69 secretaries of Divisions attended; 57 English, 6 Scottish, 4 Welsh, and 2 Irish Divisions were represented. For purposes of comparison it may be mentioned that there are 50 Branches and 210 Divisions of the Association in the British Isles.

Apologies for absence were received from Dr. Muir Smith (Eastbourne) and Mr. R. J. Willan (Newcastle-upon-Tyne). The minutes of last year's conference were read and approved.

CHAIRMANSHIP.

Mr. W. J. Greer was unanimously appointed Chairman of the Conference, and it was decided that in future the Chairman of the Conference of one year should be the Chairman at the dinner held in connexion with the next year's Conference.

A report of action taken with reference to the resolutions of the Conference held at Birmingham last year was submitted to, and approved by, the meeting.

THE ORGANIZATION OF THE INTERNAL WORK OF THE ASSOCIATION.

Dr. J. A. P. BARNES, Honorary Secretary, North Middlesex Division, said:

I would urge that a great many of the honorary secretaries of this Association are overworked, and need help.

Proof of this statement will scarcely be required. But should it be sought it may be found in such occurrences as the many resignations this year of honorary secretaries on the plea of lack of time and of energy for their work; as the appearance on our agenda paper of many suggested modes of help; and as the request of the Irish members for an additional whole-time officer for their country. Unfortunately, there seems little prospect of any lightening of the poor secretary's load. Provisional Medical Committees already existing, Medical Advisory Committees should they come into existence, Public Medical Services to be established, all will claim the attention and time, even much time from this already overworked medical man. When we add that the canvass for bringing all medical practitioners into the Association cannot be considered complete until many more have joined our ranks, and that there is the prospect of organized effort for promoting the candidature of medical men for local and county lay committees, as advocated by the Association, the load becomes obviously unbearable.

In what directions, therefore, may we look for the lightening of the load? May I suggest that we may regard the honorary secretary as the patient moulder of the more or less plastic rank and file of the profession into a body of association, not less strong and gracious than the beautiful human body, and for this purpose, and for this purpose only, has presented to his hand the machinery which we know as Committees and Divisions and Branches of the Association. Then, surely, we may ask whether any changes, or rearrangements either in the rank and file of the profession, or in the machinery of the Association, or, finally, in his own methods of work, can make the claims upon the secretary's time and energy less insistent.

In the first direction, that of changes or rearrangements in the rank and file of the profession one can, I think, expect little relief. The average membership of a Division is eighty-nine. It is true that by a tendency to a multiplication of Divisions, this number is tending to decrease. But one may expect, with the means of political education the Association affords, and an increased political sagacity, the individual member will claim, in correspondence and in other ways, an increasing amount of the honorary secretary's time. The 10 per cent. of active members in a Division may become 20, even 50, per cent. And until all the medical men resident in the area of the Division become members of the Association, we can scarcely be content. Little relief seems likely, therefore, except as the result of a drastic diminution of the size of a Division, not contemplated, and highly undesirable.

Can we expect relief by any alterations in the machinery of the Association? The parts of the machinery are well known to you. Divisions, Branches, Central Council, Representatives' Meetings, general meetings, and, latest of all, the Secretaries' Conference. Certainly, in my opinion, we should get no relief by the creation of any new machinery.

On the other hand, can we claim that all parts of this machinery are in full and equal use? I think not. I should like to emphasize the opinion that, in the first place, our Branches should rise to their full opportunities of service for the profession. Such duties as obtaining and maintaining lists of medical men resident in their areas, as seeking subscriptions, and as raising guarantee funds, should be allocated, in my opinion, to the Branches. Certain resolutions of Divisions might be required to have the sanction of their Branch, before appearing on the agenda paper of the Representatives' Meeting, as suggested by the President of the Metropolitan Counties Branch,[1] so lightening the work of the Representative Meeting. The Central Association will only seem less remote to an overworked provincial secretary when the Branch steps in to care for him. Weak Divisions can be prevented from lapsing only by the discriminate supervision of their Branch. Information can only be collected adequately and with local knowledge, activities only wisely correlated, education conducted only, without presumption, by the Branch. Finally, why should not Branches initiate action in matters solely pertaining to their own areas?

In the second place, I venture to suggest that this comparatively new item of machinery—the secretaries' conference—must yet rise to the fullness of its opportunities of service. Only two difficulties stand in the way. It must be allowed more time in the programme of the Annual Meeting if its exchanges of opinions are to be representative and therefore valuable. And I cannot escape the conclusion that the material for its deliberations must be gathered over a much greater period of time than the few short weeks immediately preceding our gathering, and that many of the suggestions made must be fortified and sustained by carefully formulated facts and figures if its opinion is to carry adequate weight with the Central Council. Can this be done unless the conference has an honorary secretary active during the greater part of the year?

[1] BRITISH MEDICAL JOURNAL, July 13th, p. 53.

The answer to this second question of ours—Whether we can expect relief by any alterations in the machinery of the Association—therefore seems to be that Division Secretaries may expect relief at the expense of the Branch Secretaries, and both at the expense of the secretaries' conference.

Our third question was, Can we expect any relief as the result of readjustments in the work of the honorary secretary? May I here interpolate two related matters, and will you make them food for thought? Our good secretaries must be prized. In general the Divisions do not realize the tremendous amount of work their secretaries are required to do. The better it is done the less is its amount realized. Is it impossible for this conference, as the years pass, to seek in some measure to repair this omission and to show its appreciation of secretarial work exceptionally well done? Then, also, could not this conference become a means of educating its secretaries? The gathering together from distantly related Divisions for comment and comparison of records of work done or practical methods adopted would be a valuable means of provoking inquiry and stimulating to new methods.

But I return to my question: Can we expect any relief as the result of readjustments in the work of the honorary secretary? Let us be clear at the outset that our aim is to give him more time. It is not enough that he gets the work done. He must have spare time to think even to initiate movements in his Division. What is his work? The secretary of the City Division, in his lucid and comprehensive statement on the work of an honorary secretary, distinguished three aspects: the routine work of correspondence, calling and reporting meetings, the attendance at Branch meetings, and service on committees of the Branch: the essential added work of the organization of the Division, with its requirement of visits to individual men and emphasis on the personal element. In prospect, he might have to add such duties as writing to lay papers on local medical matters, and promoting the candidature of medical men for local bodies. How can this work be lightened? It could be lightened in four ways. By the omission of some of the work, by delegating some of the work, by a grant of material help from the Branch or Central Association, and by a grant of money.

It seems to me some unnecessary work might be omitted, were our organization more perfect. Why should not reports of Meetings of Divisions be made according to a brief but elastic scheme, and so ordered that the opinion of all the Divisions of one Branch on any one subject would be brought into relation with one another on a single page of the Supplement, informing the reader at a glance of a body of opinion. It would require the omission, it is true, of votes of thanks, and other strictly redundant matter. But it would lighten secretarial labour, and some limitation of reporting seems inevitable in the future.

Again, might not Divisions give up the expensive and laborious practice of circularizing other Divisions, to secure their adhesion to a special and desired line of action, using their Branch organization, or the pages of the Journal for the purpose?

Is it, too, impossible to hope that secretaries may one day be supplied with gummed and perforated lists of members, to enable them to remit notices and circulars with no chance of error or illegibility in the address. The choice of constant times and places of meeting would save some of the secretary's time. While, were executive committees made representative of all areas of the Division, on an emergency the calling of an executive committee meeting would save the expense of gathering a Division meeting.

The delegation of the secretary's work is another method of lightening his labours. The secretary of the City Division has amplified one method of delegating work. He suggests several secretaries, each specializing on one aspect of the present work of the secretary. Thus a business, an organizing, a recruiting, a financial, and a minute secretary might be recognized, together with a secretary to represent the Division on the Branch Council. It is a possible method. The difficulties, however, are obvious. Who is to determine the order of precedence of the secretaries, who to insist on their harmonious work together? Which of them is to receive literature from the Central Association, and how far is he to acquaint the others with its contents? Finally this method has the danger of all specialization, that it discourages a broad and statesmanlike outlook on the work of the Division—a quality more than ever required to-day. A better method, as it seems to me, is to delegate work by means of a not too elaborate ward system. Such system affords the best method yet devised for finding and educating a successor to the holder of the office of Chairman, or Secretary, or Representative at Representatives' Meeting when it may become vacant. The institution of wards, however, does not greatly lighten the secretary's work.

Much more, in course of time, could be done to help honorary secretaries by the third method—that is, by the grant of such material as maps, lists of members, handbooks, and manuals. This method of help needs no elaboration here. Its aspects are already receiving the consideration of the Council.

A fourth method of affording help is by a grant of money. We are met at once by a difficulty and a question. Any possible sum at disposal would presumably not be large. And is the sum to be raised locally or centrally? These matters being disposed of, one might suggest secretaries paid for whole-time work or secretaries encouraged by honorarium. It seems impossible to suppose sufficient money to pay 210 Division secretaries, or even to pay thirty-eight Branch secretaries. One national whole-time paid resident secretary has been suggested for each or all of the four kingdoms. Apart from the difficulty of correlating his or their work with that of the Central Office, would such an expense be justified? Much more practicable and equally useful, it would seem, would be a paid whole-time organizing secretary, based on the Central Office, but freely travelling to raise the level of organization throughout the kingdom and give particular help where particular help is needed. Less than this, a grant of money might be made to some or all honorary secretaries essentially with the object of saving their time by freeing them from some mechanical work. A grant for clerical assistance is already made. Matters for difference of opinion will obviously be—how much the amount ought to be, and which of the secretaries are to be the recipients.

A review of the methods of helping honorary secretaries, then, brings us to this conclusion—that some of these methods should be useful in every case, but that the urgent need is primarily to raise the level of organization throughout the kingdom, while not omitting to give particular help in particular cases. May I remind you that of 210 Divisions only 4 have a membership of over 300, only 14 have memberships between 200 and 300, 42 between 100 and 200, and that 150 have a membership of under 100 medical practitioners. Surely no one hard-worked secretary should fail to receive personal encouragement and material help.

Dr. Thomson disagreed with the proposal of the appointment of paid travelling secretaries. His experience had been that the best way to relieve the honorary secretary of a Division was to divide the Division into areas and get a member in each area to do secretarial work for such area. He suggested that the present pressure of work was exceptional, and honorary secretaries should strive to carry out the work without professional assistance.

Mr. W. Courtenay Milward considered that the first step should be to ascertain what financial assistance the Council was prepared to give in the proposed relief of honorary secretaries.

Dr. Buist suggested that secretaries might lighten their work by leaving all circularizing to the printers who could be supplied with list of members and non-members of the Association, to be obtained at the head office. He also questioned the wisdom of such full reports of meetings of Divisions as appeared in the Supplement to the Journal.

Dr. Wallace Henry suggested that honorary secretaries should see that a good executive committee was appointed. He expressed the opinion that the choice of members of a committee rested largely with the honorary secretary. He deprecated the proposal to cut down reports of Division meetings in the Supplement. He considered that full reports of Division meetings kept members of Divisions in scattered areas in close touch, and maintained interest which would not be done in any other way.

Drs. A. Trotter, F. W. Bailey, J. F. Walker, and John Mills supported the delegation of duties of honorary secretaries as far as possible.

Dr. Easterbrook considered that at any cost those Divisions which had been reported to the Representative Meeting as "weak" should be assisted, and that, if necessary, two or three travelling secretaries should be engaged for a period of four months.

Dr. Benham expressed doubt as to the possibility of getting suitable men for such a short period.

Dr. Buist proposed and it was resolved:

> That steps be taken by this Conference to afford help to honorary secretaries of Divisions and Branches in their work for the Association; and that a Committee of the Conference be appointed to consider matters referred to it by the Conference, and to report to the Council and to honorary secretaries of Divisions and Branches.

The following were appointed members of the Committee: Mr. Russell Coombe (Exeter), Dr. A. M. Easterbrook (Gorebridge), Dr. G. Elliott (Belfast), Mr. W. J. Greer (Newport), Dr. T. Barrett Heggs (Sittingbourne), Dr. R. W. Wallace Henry (Leicester), Mr. John Livingstone (Barrow-in-Furness), Mr. P. C. Raiment (London), and Dr. D. G. Thomson (Norwich).

Dr. E. W. Squire moved:

> That secretaries of Divisions be given an honorarium of, say, £25 per annum for their services to the Association.

The motion was not seconded, and consequently was not put to the meeting.

The Chairman reported that the Council of the Association had deferred coming to a decision in the matter of the question of a resident paid secretary for Ireland pending consideration of the question of assistance to secretaries by this Conference.

It was resolved that the question of the appointment of organizing secretaries be referred to the Conference of Secretaries Committee.

Dr. H. Barrett Heggs moved:

> That this Conference requests the Council to consider the advisability of grants being provided to honorary secretaries from the central funds of the Association for clerical assistance.

He pointed out that the grants received by Divisions from Branches for clerical aid were inadequate. He deprecated the splitting up of Divisions into areas less than those covered by insurance areas.

Mr. T. Sansome, junior, seconded the motion; on being put to the meeting it was lost.

Mr. Russell Coombe moved:

> That the question be discussed whether the allowance for clerical aid in the shape of shorthand and type-writing is sufficient for the large amount of clerical work now falling upon honorary secretaries.

He urged Divisions to save money by making use of lists of members and non-members, and other information available at head office. In this way more money was available for clerical aid. The time of secretaries was taken up by work which could be done by shorthand typists.

Dr. Dewar opposed the proposal to give further assistance to secretaries. He had held various posts in connexion with the Association, and had carried out the work single-handed. He suggested that secretaries became overburdened through lack of method in dealing with Association matters.

Dr. R. H. Urwick and Dr. D. F. Todd supported Dr. Dewar's statements.

Mr. Coombe's motion was lost.

The following resolution was proposed by Dr. Buist, and carried:

> That the Committee be asked to take into consideration the relation of the Supplement and of centrally issued papers to the work of the honorary secretaries.

Dr. Lankester asked if the head office could undertake circularizing work on behalf of Divisions.

Dr. Cox replied that the head office, with its present staff, could not do so. He suggested that the work of secretaries would be considerably reduced if the Representative Meeting refrained from referring unconsidered motions to the Council as had often happened in the past. He urged secretaries to make more use of their printers in circularizing. As to reports of Divisions and Branches in the Supplement, he felt that there was much repetition and that reports might with advantage be shortened. He did not think that the necessary funds were available at the present time for the appointment of travelling organizing secretaries, and doubted whether such secretaries, if appointed, would be as helpful as some of those present seemed to think. He emphasized the necessity of secretaries training other members of Divisions to undertake some of the work mainly by the appointment of committees and subcommittees for different subjects.

Dr. Benham moved:

> That in Divisions having a membership of over 200 it is desirable that the secretary shall be assisted by a salaried clerk with knowledge of shorthand, typewriting, and duplicating, and that the Medical Secretary be asked to draw up a report on the question showing the estimated expenditure which would be involved and the saving which would be effected in printing and other expenses as a result of this course.

The motion was lost.

Dr. A. A. Mackeith moved and Dr. A. G. Southcombe seconded:

> That this Conference request the Association to open a separate department to co-ordinate and supervise the work of the Public Medical Services which are now being established in the Divisions.

The motion was carried, and referred to the Council.

Attitude towards Non-Members.

Dr. Barrett Heggs opened a discussion on the future attitude of the Association to non-members. His experience was that the help extended to non-members during the past year by the circulation among them of the Association's literature, and by the placing at their disposal of the machinery of the Association, had not had the good results that might have been expected.

Dr. G. Elliott, Dr. Benham, Dr. Thomson, Dr. Easterbrook, and Dr. Macdonald (Chairman of Council) outlined the procedure adopted by their respective Divisions for dealing with non-members.

Dr. Lankester asked whether any attempt had been made by the Association to enrol newly qualified men, and Mr. Larkin detailed the efforts of the Organization Committee in this direction during the last few years.

Dr. Dewar stated that he approached intending graduates in Edinburgh through the Students' Union and the university authorities. He advised that lectures on medico-political and medico-ethical matters should be given by members of the Association to graduates in the various towns.

Votes of Thanks.

Dr. Todd proposed, and Mr. Raiment seconded, the toast of "The Medical Secretary and the Deputy Medical Secretary," which was received with acclamation. Drs. Cox and Neal responded.

The meeting closed with a cordial vote of thanks to the Chairman and the Honorary Secretary (Dr. Barnes).

To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

South Midland Branch: Northamptonshire Division.—A meeting of this Division will be held in the board-room of the Northampton General Hospital at 2.30 on Tuesday, August 27th. The meeting will be preceded by a luncheon at Franklin's Restaurant, Guildhall Road, at 1.30. Those wishing to attend the luncheon should notify the Secretary at least three days beforehand. Business: Minutes of preceding meeting. Report from Dr. Dryland of the Annual Representative Meeting. Any other business.—Peverell S. Hichens, Honorary Secretary, 47, Sheep Street, Northampton.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

The second meeting of the State Sickness Insurance Committee appointed by the Annual Representative Meeting, 1912, was held on August 8th.

The chair was taken by Mr. T. Jenner Verrall. The members present were: *England and Wales:* Dr. R. M. Beaton (London), Dr. T. M. Carter (Westbury-on-Trym), Dr. Major Greenwood (London), Dr. S. Hodgson (Salford), Miss Mary F. Ivens, M.S. (Liverpool), Dr. Ewen J. Maclean (Cardiff), Dr. E. O. Price (Bangor), Mr. D. F. Todd (Sunderland), Mr. E. H. Willock (Croydon). *Scotland:* Dr. R. McKenzie Johnston (Edinburgh). *Ireland:* Professor A. H. White (Dublin). *Ex Officio:* Dr. J. A. Macdonald (Chairman of Council), Dr. E. Rayner (Treasurer).

Apologies for absence were read from the President (Sir James Barr), Mr. E. B. Turner (London), Dr. D. G. Thomson (Thorpe, Norwich), Dr. J. Adams (Glasgow).

The Chairmanship.

On a further appeal to him, Mr. Verrall consented to take the chair at this meeting and to act temporarily as chairman until after the holiday season.

Examination of Contacts (Tuberculosis).

A communication was received from a member of the Council calling attention to the two following minutes of the Annual Representative Meeting:

201. That a case of tuberculosis, diagnosed as such and confirmed by a tuberculosis officer, should not be liable to be treated except in connexion with sanatorium benefit.

192. That those requiring attention at the dispensary should be introduced only on the recommendation of a medical practitioner actually in attendance upon the patient.

The writer pointed out that all contacts would presumably have to be examined—in the first instance, at any rate—by the ordinary medical attendant, and asked by what authority the fee for such examination would be paid in the event of the case proving not to be tuberculous.

The Committee considered the paragraph in the memorandum of the Insurance Commissioners issued by the Local Government Board in England, with its circular letter, on July 6th, as follows. It should be noted that the paragraph has reference to a temporary arrangement under which the medical officer of health for the county or county borough would act as the expert adviser to the local Insurance Committee.

Where such an arrangement is made an insured person who believes himself to be suffering from tuberculosis and wishes to obtain sanatorium benefit would apply to the clerk (or acting clerk) of the Insurance Committee. The clerk will furnish him with a blank form of medical report, which the patient will be advised to take to his ordinary medical attendant or any other medical practitioner he may prefer. The practitioner should be asked by the patient to make the necessary examination and fill up the particulars indicated in the form. A fee should be paid by the Insurance Committee for the examination and report, and the Commissioners are advised that a fee of 5s. will be regarded as suitable for this purpose. Reports should be forwarded to the medical officer of health or other medical adviser appointed to assist the Committee in this matter. On his advice the Committee will select the cases that stand most in need of sanatorium benefit and decide what kind of treatment should be provided in each case.

The Committee also took into consideration the general order of the Local Government Board as to domiciliary treatment of tuberculosis bearing date July 26th. It was resolved to inform the inquirer that, in the opinion of the Committee, the treatment of such cases as those to which he referred would not come under medical benefit, whether or not the case turned out to be tuberculous, and that the paragraph quoted above from the memorandum of the Insurance Commissioners, issued by the Local Government Board on July 6th, would apply to contacts whether they proved tuberculous or not.

The point was noted as one to which Divisions and Divisional Medical Committees should have regard in the earliest negotiations with the Local Insurance Committees, care being taken that such examination should, as far as possible, be made by the general practitioner in charge of the case.

Administration of Sanatorium Benefit in London.

The Committee had before it an advertisement from a metropolitan borough for a medical officer to take charge under the medical officer of health of a borough tuberculosis dispensary about to be established. The advertisement stated that the successful candidate would probably be designated "assistant medical officer of health," that he would be required to devote the whole of his time to the management and working of the dispensary, and to the performance of such other duties as might be considered necessary by the medical officer of health and the borough council, and that the salary would be £300 per annum, rising by annual increments of £25 to £350. The Committee resolved to refuse the insertion of the advertisement in the Journal and to point out to the advertiser that the Committee considered that the appointment of the medical officer of health permanently to take charge of the arrangement and the permanent mixing up of health duties with those under sanatorium benefit was contrary to the spirit in which the treatment of tuberculosis had been undertaken by the Local Government Board.

Administration of Tuberculin.

The attention of the Committee was called by a communication from the Honorary Secretary of the Bath Division to a proposal which had been made by the Bath Insurance Committee to appoint a special medical officer to administer tuberculin. The Bath Division objected to this proposal on the ground that it was unnecessary and injurious to the interests of the patient and the profession. The Committee approved of the action of the Division, and endorsed its objection to the proposal to place the administration of tuberculin in the hands of one practitioner.

In reply to further questions from the same Division, the Committee expressed the opinion that a tuberculous insured person applying to a voluntary hospital should be referred to his medical attendant and not to the clerk to the Local Insurance Committee direct. To the question whether if such patients were eventually referred back by the Insurance Committee to the hospital owing to the lack of facilities for treatment under the Act, what should be the position for the hospital staff to adopt? The Committee replied by expressing the opinion that the point was covered by the terms of the following minute of the Representative Meeting, 1912:

194. That no tuberculosis dispensary should be opened or beds be provided for treatment of those in receipt of sanatorium benefit at a voluntary hospital or infirmary, except on the condition that the organization is entirely independent of that of the voluntary hospital or infirmary, the accounts of the departments being kept separate, and that the services of all medical practitioners are paid for.

Works Clubs: Workmen's Families.

A communication was received from the honorary secretary of a Division, stating that many works' clubs were in existence in the district in which not only the workmen but their wives and families were included; that the desire of the workpeople was to continue this system for the benefit of the wives and children who would not be insured persons under the Act, and that efforts had been made to induce the present holders of medical appointments to such clubs to state the fee at which they would be willing to continue. The honorary secretary asked for advice generally. The Committee resolved to reply that it expected to be in a position before January 15th next to discuss the question, and report in the light of full information and the necessary data which were being obtained.

The Welsh National Memorial Association.

The Committee considered the resolutions of the Representative Meeting expressing its appreciation of those members of the profession who had withdrawn their application for appointment under the Welsh National Memorial Association, or had refrained from making them, in response to the appeal made by the Association, and adopted the following resolution:

That the Committee, on behalf of the Association, express its appreciation of the action of the practitioners in question in resigning their appointments under the Memorial

Association out of loyalty to the Association; and that the Editor be requested to insert a reference to this decision of the Committee in the JOURNAL.

Communication of the Decision of the Representative Meeting to the Chancellor of the Exchequer.

It was reported that, in accordance with the instructions of the Annual Representative Meeting, the following letter had been addressed to the Chancellor of the Exchequer, and that no reply beyond a formal acknowledgement had been received:

British Medical Association, London, W.C.
August 1st, 1912.

Sir,—I am instructed to forward to you the following resolution passed at the Annual Representative Meeting of the British Medical Association held in Liverpoool, July 19th–24th:

Resolved: That the British Medical Association regrets that His Majesty's Government has not acceded to the terms upon which alone the cordial co-operation of the medical profession in supplying medical treatment under the National Insurance Act can be obtained, and passes the following resolution:

That the Government be informed that the Association adheres to its minimum demands as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer.

I am, Sir,
Your obedient servant,
(Signed) ALFRED COX,
Medical Secretary.

Rt. Hon. David Lloyd George, M.P.,
Treasury,
Whitehall, S.W.

Resignation of Medical Members of Advisory Committees.

The MEDICAL SECRETARY reported that the resignation of members of Advisory Committees nominated by the British Medical Association had been intimated to the National Insurance Joint Committee and acknowledged.

Membership of the Committee.

Miss Mary F. Ivens, M.S., who had been elected a member of the Committee as representative of the Northern Association of Medical Women, attended this meeting in that capacity.

Dr. J. Pearse (Trowbridge) was co-opted a member of the Committee, and Dr. A. H. Williams (Harrow) was added to the Public Medical Service Subcommittee.

Next Meeting.

It was resolved that the next meeting of the Committee should be held on Thursday, September 5th, but the acting Chairman was authorized to call a special meeting of the Committee on Wednesday, August 21st, should it appear to him to be necessary to do so.

ADVISORY COMMITTEES.

We have received the following resolution for publication:

That we, the undersigned members of the Advisory Committee appointed under the National Insurance Act, have carefully considered our position, and with a full sense of our responsibility are of opinion that for the present it is our duty to remain members of the Committee:

(Signed) CHRISTOPHER ADDISON.
CLIFFORD ALLBUTT.
CLEMENT BELCHER.
C. J. BOND.
JOHN COLLIE.
ADAM HAMILTON.
M. ST. L. HARFORD.
HERBERT JONES.
ARTHUR LATHAM.
H. H. MILLS.
SHIRLEY F. MURPHY.
GEORGE REID.
JOHN ROBERTSON.
G. SIMS WOODHEAD.

We have received also the following:

14, Briardale Gardens,
Hampstead, N.W.,
August 14th, 1912.

To the Editor of the BRITISH MEDICAL JOURNAL.

Sir,

I enclose herewith a copy of the letter which I have sent this week to the Medical Secretary of the Association in connexion with the request that I should resign my position on the Advisory Committee appointed under the National Insurance Act.

I shall be much obliged if you will kindly find space for it in your columns this week.

As the matter is of general interest, and may expose me to adverse criticism, I am sure you will permit a statement of the reasons which induce me to decline to accede to the request of the Medical Secretary.

I am,
Faithfully yours,
CHRISTOPHER ADDISON.

14, Briardale Gardens,
Hampstead, N.W.,
August 14th, 1912.

To the Medical Secretary of the British Medical Association.

Dear Sir,

I have received your letter and have carefully considered the resolution passed by the Representative Meeting of the British Medical Association at their meeting in July. You quote this resolution, and ask me in consequence to resign my position on the Advisory Committee appointed under the National Insurance Act.

I cannot see my way to comply with your request, and perhaps I may be allowed to state the reasons which prompt me to refuse.

In doing so you will, I am sure, acquit me of any unfriendly intention, for you are well aware that in many ways I have spared no effort to serve the Association.

There are some things that are worth the most extreme measures. I for one would use every legitimate means both in Parliament and out in preventing the administration of the medical benefit of twelve millions of people being entrusted to hundreds of different societies; not simply because the medical profession object thereto but because it would be against the best interest of the public health and would hinder the development of a co-ordinated and properly directed health service for the country.

But what end do we serve by leaving the Advisory Committee? It seems to me that it is our duty, by patient and sensible effort, to strive to use our opportunity to secure that every medical man shall be able to render a willing service under the Insurance Act under honourable conditions and with proper remuneration, and to seek to bring into working harmony the diverse and frequently conflicting and insufficient elements of the medical services of the country.

The interests of our great voluntary hospitals, of medical training and research, are involved, as well as those of the great body of the medical practitioners of the country. In all these things do we not best promote the enduring interests of the profession by making them identical with the public interest?

I should have thought that it was a time in which to seek to secure that the counsels of medical men of sober judgement and of special knowledge should be sought for, not to prevent their being obtained. But you are asking the members of our profession to resign both from the Advisory Committees and from the Provisional Insurance Committees as well. I believe this to be a short-sighted policy, and, as one of those who is a free agent, to obey your behest would in my view be disloyal alike to one's citizenship and to our profession.

The British Medical Association itself required that medical men should be appointed on the Advisory Committee, and the Insurance Act was amended accordingly. Why? Because this Committee has to advise on the regulations which relate to medical benefit and to kindred matters. Several quite friendly meetings have been held, and most of the important points have been discussed before the Commissioners for their guidance in preparing the draft Regulations.

The Regulations are now being drafted, and, I understand, will shortly be submitted to the Advisory Committee for their criticism. You would rightly complain if they turned out to be impracticable or unfair. Yet this is the moment at which you ask us to resign; to leave the work

which, at your request, we have been afforded an opportunity of doing, when it is at its most important and critical stage. It does not appear to me to be either consistent, dignified, or in accordance with common sense. Surely to leave our posts at this juncture would be to be untrue, not faithful to the cause of our brethren in the profession.

The case with regard to membership of the Provisional Insurance Committees and the administration of the sanatorium benefit is even worse.

Those of us who served on the Departmental Committee on Tuberculosis did all that we possibly could to make the service accessible to medical men. We adopted almost *in toto* the suggestions sent in by the British Medical Association as to the conditions under which general practitioners should be invited to co-operate. Our proposals in these respects, as well as with regard to the terms of the employment of the tuberculosis officer, and with reference to the nature of his special qualifications, have been adopted by the Government departments, and have met with no material adverse criticism. Indeed, it is undeniable that they present a marked advance upon existing conditions. Not long ago men were warned by a special notice in the BRITISH MEDICAL JOURNAL against applying for these appointments. Now the advertisements are inserted and the appointments are approved. A few weeks since two men who had been appointed in Wales resigned their posts owing to pressure from you. Now these self-same men are permitted to reapply for the self-same posts.

The Association insisted that medical men should be appointed on the Insurance Committees, and that a local Medical Committee should be set up and recognized, and that it should be consulted on all matters touching the employment of medical men. The Insurance Act was amended so as to provide for these things.

At the present time almost the sole business of the Provisional Insurance Committees is the administration of the sanatorium benefit. But you forbid medical men to serve on them. At the same time you state your willingness that they should work the sanatorium benefit. Medical men, that is, are allowed to do the work, but are not permitted by you to use the opportunity you yourselves have secured for them for moulding the conditions under which it is to be done.

I am quite unable to understand what your "policy" is in these matters, nor how these proceedings are likely to help the profession. To my mind, they are more likely to bring us into contempt.

For the first time in any civilized country, the State is so encouraged by the advance of medical science that it is prepared to spend huge sums of money in an organized attempt to combat that disease which causes more misery and ruin amongst us than any other, yet the British *Medical* Association is devoting its influence to prevent medical men from sharing in the guidance and administration of this great and beneficent enterprise, not because they object to the enterprise or to the method of its conduct, but because they have differences on other matters with the established authorities. What a spectacle it is for our fellow countrymen!

For my part, I am willing to serve on any committee or to work in any capacity in an endeavour to arrive at a fair adjustment of these differences so long as there is any hope of success. If we fail, we shall at least have failed honourably. But I will take no part in a boycott of which I am ashamed.

I am,
Yours faithfully,
CHRISTOPHER ADDISON.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.

BORDER COUNTIES BRANCH:

SCOTTISH DIVISION.

AN adjourned meeting was held on July 17th, Dr. RODGER in the chair. Thirty-five members were present. It was moved by Dr. HUSKIE, seconded by Dr. BELL, that the Chelsea rider be supported. Agreed. It was also agreed to support the motion by East Norfolk (48).

Recommendations X and Y.—The Recommendations X and Y were then considered and discussed. When submitted to a division, 20 voted for the motion X and 7 for the amendment Y. Their Representative was accordingly instructed to support X. Dr. EASTERBROOK moved that, in the event of Y being carried at the Representative Meeting, it be an instruction to their Representative to move or support a motion fixing a time limit.

METROPOLITAN COUNTIES BRANCH:

CHELSEA DIVISION.

A SPECIAL meeting of the Division was held at the Fulham Town Hall on August 8th, Dr. YOUNG in the chair. Drs. Fletcher, Coltart, Spaull, Ross, Orr, Williams, Bedford, Benham, Tonkin, Clark, Reynolds, Satchell, Bonney, Butler, Millar, Lewis, Jackson, Edwards, Meers, Gallard, were present.

Organization of the Profession.—A letter was read from the Medical Secretary emphasizing certain resolutions of the Representative Meeting, together with certain decisions of the State Sickness Insurance Committee relative thereto. After considerable discussion the Honorary Secretaries were instructed to circularize the practitioners in the area with a view to increasing (*a*) the Central Defence Fund, (*b*) the membership of the Association. On the suggestion of Dr. TONKIN, those present guaranteed sums amounting in the aggregate to £335.

Sanatorium Benefit.—A letter was read from Dr. W. S. Lee, resigning his positions as a member of the Executive Committee of the Division and of the Contract Practice Committee of the Branch. The letter was as follows:

Since the last Representative Meeting at Liverpool I have lost all confidence in the firmness and determination of the leaders of the British Medical Association. When one reflects on all that the governing officials of the Association have said they would do, and compares their words with their deeds, the result shows up degradingly weak. The last incident *re* sanatorium benefits imprints the seal of weakness indelibly on their actions.

It is easy to recall the resolution passed at the Representative Meeting of February last, to the effect: That the Commissioners be informed in *plain and unmistakable language* that we would *not* work under the Act, unless and until our minimum demands were granted us, etc. This went forth with a flourish of trumpets, and we—I include every member of our profession—understood, as it was intended we should understand, that that resolution included every form of work; sanatorium as well as other benefits was not to be undertaken by any of us. This resolution, if my memory serves me right, is now known as Minute 78.

Now, in the face of this Minute, look at what has been done at the Liverpool meeting. At that meeting the Council and the Representatives of the Association have eaten their own words, and inform us that Minute 78 was not intended to apply to sanatorium benefits. If such was true, why was this not made clear before and "*in plain and unmistakable language*"? I maintain that sanatorium as well as every other medical benefit *was included* in Minute 78, and I am confident this was and is the general opinion of the great majority of the profession, and it undoubtedly was the opinion of the members present at the Divisional meeting, when we instructed our Representative to vote for the breaking-off of negotiations with the Insurance Commissioners. None of us then had the slightest idea that sanatorium benefits were distinct from the other medical benefits as far as we were concerned, and in proof of this I point out to you the record of several men in Wales who refused to apply for sanatorium posts because *they also believed* that to make such applications would be contrary to the tenets of the Association.

I cannot, therefore, understand how it is consistent with a policy of determined opposition towards the Insurance Act as it affects medical men, or with honest integrity towards the general body of practitioners, for the Association to declare in February, *without any reserve*, that unless and until we were granted our minimum demands we would not work the Act, and yet in July at Liverpool the Association should decide to partly work it.

I have been told the reason for this renegade action is that the Association wishes to placate medical officers of health, and I fail to see why these men should be treated differently to the rest of the profession. We have asked general practitioners to sign pledges and hand in resignations of their club appointments. We ask consultants also to sign pledges and to refuse, unless in cases of emergency, to attend persons insured under the Act, and yet we now, by the Liverpool decree, decide to make medical officers of health a privileged class, and open a side door for them and others whereby they can can walk in and work this Act to the detriment of the practitioners who intend keeping their pledges loyally. Believe me, I am not looking for self-benefit. I do not intend to work under the Act for any capitation fee, nor will I sell my independence. I will

not, unless compelled by absolute necessity, give my own services except at my own price, and I will never let that price be lower than that fixed by the Association last February.

I now ask you officially to accept my resignation of the position of member of committee of the Chelsea Division and as member of the Contract Committee, because I feel that having no longer any confiidence in the doings and *undoings* of the Association I cannot honestly take an active part in the working of that body. I feel the heads of Association are not keeping faith with the rank and file, and, whilst I mean to keep my own honour and loyalty unsullied, I cannot participate in the upholding of what to my mind is not a true nor straight line of action.

Dr. GALLARD remarked that they could ill afford to lose such a fighter and worker, and on the motion of Dr. BUTLER, seconded by Dr. SATCHELL, it was decided that Drs. Fletcher and Gallard should interview Dr. Lee and use their utmost endeavours to persuade him to withdraw his resignation of the posts referred to.

Fulham Board of Guardians and Midwifery Fees.—Dr. A. F. MILLAR moved:

> That the Chelsea Division of the British Medical Association regrets that the Fulham Board of Guardians are unable to see their way to guarantee the fees of medical practitioners attending upon the request of midwives, and hereby informs the guardians that the members of the Chelsea Division of the British Medical Association will not in future attend to any call from midwives asking for assistance under the Midwives Act in the absence of such guarantee.

Dr. Millar said that unless the resolution was passed and acted upon with practical unanimity it would be useless, or worse than useless, to pass it at all. It might, he thought, be taken for granted, that every one present agreed with the object in view—namely, to make it absolutely certain that when called to a confinement case by a midwife he would not have his trouble for nothing. The resolution would probable be opposed on one or two grounds—either that the method suggested would not attain the desired end, or else that if it did it might in doing so be the means of even more poor women losing their lives for want of medical attention. With regard to the first objection, he reminded the meeting of the "limited liability" circular sent out by the guardians to all medical men a few years ago. His own answer to that circular was an immediate refusal in the terms of the resolution, to which he had rigidly adhered ever since. What one could do all could do, and if every medical man in the district were so to act the guardians would either concede the very modest demands or put pressure on some other public body to force the community to recognize the claim—that is, to be freed from this virtually compulsory charity whereby medical men relieved the pockets of the ratepayers at the expense of their own. The chief argument against the motion was that voiced by Dr. Bonney at the last meeting—namely, that whether we lose fees or not, we cannot refuse to go when a poor woman's life might be lost by our refusal. Dr. Bonney used an analogy which was not a fair one—that is, the case of a person drowning. The analogy would only hold if there existed a profession or class of people who made their living by saving lives from drowning. To attempt the rescue of a drowning person was a duty which a doctor shared in common with other citizens; there was an essential difference between such cases and those now under discussion: it was that the means of livelihood of the profession were at stake. He might be laying himself open to the charge of taking a heartless material view of the question, but maintained that that view was forced by economic necessity. He had concluded a letter written last year to the *Fulham Observer*, criticizing a sermon by the same Mr. Propert who led the Fulham Guardians, in which the reverend gentleman had contended that improvement in man's material condition could be best brought about by appealing to his moral nature and improving that with these words:

> In order that the human brain may view impressions, whether moral, spiritual or otherwise, it must first exhibit the phenomenon of consciousness, to produce and maintain which requires a sufficient quantity of certain sordid material substances, as food and air. Without such sufficient quantity there results unconsciousness—a condition which supposing them unhappily to be equally affected by it, would render both Mr. Propert with his moral precepts, and his hearers with their facile receptivity, clinically indistinguishable.

In support of that view he quoted two generally accepted aphorisms: "Charity begins at home," and "Be just before you are generous." The first duty of medical men was to provide for their wives and children, actual or potential. While heartily endorsing Dr. Bonney's chivalrous sentiments, he had to confess that he could not get a living if he acted upon them. The same argument applied with equal force to any case not a confinement, where the patient's life may be in possible danger from non-attendance. If the profession adopted Dr. Bonney's position it could not logically refuse to go in any such case if the fee was not forthcoming; and as it could not be known for certain that a case was serious until it had been seen, a medical man would practically always have to go when sent for without demanding a fee first. The result in his own case would be failure to get a living, or, at any rate, to maintain his present standard of living, and he believed many other medical men would have the same experience. If there were some whose practices were so sound that they could afford to go to every urgent case without regard to remuneration, it might be pointed out to them that they were helping to deprive the rest of fees to which they were justly entitled. Personally he would much prefer to be paid by contract or salary, provided the amount was reasonably adequate; but so long as the system of payment for attendance remained in vogue, he could not make a living unless he insisted as far as possible on being paid for each attendance. If a woman should die of *post-partum* haemorrhage through his refusal to attend in the terms of this resolution he would deeply regret, it but would not hold himself responsible for her death. Hundreds of people died every year through inadequate medical attendance, but no one suggested that the medical profession was to blame. Nevertheless, the generosity of doctors was exploited by the public in every possible way, and if a firm stand was not made, this exploitation would continue and increase. In the particular case of confinement work, midwives and nurses were steadily engaged in undermining medical practices, often in most unscrupulous ways. The effect, he contemplated, from the passing of the motion, was not only that no doctor should in future be compelled to attend a confinement for nothing, but also that no poor woman should ever again lose her life for want of medical attendance—a result quite the reverse of the gloomy one anticipated by Dr. Bonney. Dr. BUTLER, in seconding, maintained that the first duty of the guardians was to guard the poor. When the deputation waited upon the board, he told it that three public bodies were concerned in this matter—namely, the Local Government Board, the guardians, and the county council—all of whom tried to exploit the medical profession. In his opinion the Association, to be of any value to them, must be a fighting organization. Dr. GALLARD moved the following amendment:

> (*a*) That the Division tenders its thanks to the members of the deputation which recently conferred with the Fulham Board of Guardians on the question of midwifery fees for the able manner in which the case for the profession was put by them; that it regrets that the Board has not the power to guarantee a fee in every case, but strongly urges medical men in the district in future to bring to the notice of the Executive Committee of the Division any instances in which the fee is refused, in order that action may be taken through the British Medical Association to obtain further legislation, or otherwise, if considered advisable.
>
> (*b*) That a copy of this resolution be sent to every medical man practising in Fulham.

He asked to be exonerated from any suspicion of bias on account of the position he occupied as one of the deputy medical officers to the Fulham Union. He had, in fact, reason to believe that he would obtain some material advantage if Dr. Millar's motion were carried, but he hoped to be given credit for endeavouring to make the interests and honour of the Division paramount. In his opinion it would not be justifiable for the profession to plunge into a controversy with the guardians, because he was satisfied the guardians had not the power without amendment of the Midwives Act, 1902, and Poor Law Amendment Act, 1848, to give the guarantee referred to in the motion. The report (paragraphs 71 and 77) of the Departmental Committee appointed to consider the working of the Midwives Act, 1902, and the comments thereupon of the Local Government Board in a circular to the boards of guardians, dated February, 1910, is as follows:

The Committee recommend that the Act of 1902 should be amended so as to give any medical practitioner summoned by a midwife in cases or emergency "a secure expectation of payment"; and that the Poor Law authority shall be responsible for the fee, when the medical man cannot otherwise obtain payment, and should be empowered, if they think fit, to charge the fee paid as "relief on loan." Full effect, the Local Government Board stated, could not be given to this recommendation without legislation, but the Board regard it as of immediate importance that medical practitioners should, so far as practicable, feel assured of a reasonable payment for their services in such cases; and they desire to impress upon boards of guardians that they should give effect, if they have not already done so, to the suggestion made in a circular letter of July, 1907, namely, that medical men, etc., practising in the Poor Law Union should be informed that as regards any poor person in whose case the attendance of a medical man is required, the guardians will be prepared to exercise their powers under Sect. 2 of the Poor Law Amendment Act, 1848, and to pay a reasonable remuneration to the medical man called in. The Board think that any medical practitioner who makes a claim on the guardians for a fee in such a case, might properly be asked to state definitely that after making reasonable efforts he had failed to secure payment from the person attended.

Medical opinion might be different to that of the guardians as to what constituted a poor person, but however illiberal their interpretation of the word "poor" might be considered to be, the fact remained that in the five years ending Lady Day last 187 fees of the 213 applied for, or 92 per cent., were paid. He was convinced that in addition to having a bad case from a legal point of view the medical profession would come off second best in the struggle, for the following reasons amongst others: (1) The board was not likely to be frightened by threats of the consequences that might happen if fatal cases occurred through refusal to attend, as it was composed of many members, none of whom would have to bear the blame individually; on the other hand, the poor doctor would always be alarmed at the prospect of "censure by the jury," "callous behaviour of a medical man," and it would require something much more powerful than this motion to deter him from attending to some cases of *post-partum* haemorrhage or eclampsia. (2) As an alternative to the present system, the Fulham Board might follow the practice of other boards in the metropolis, and insist upon a parish order being obtained, when the parish doctor would be compelled to attend. Moreover, some men would not feel bound by the motion if unfortunately it were carried: in fact, at the last meeting one man had the courage to say so. Passing pious resolutions to be launched against public bodies was bad policy unless the meeting had powder and shot behind them. If all medical men in Fulham were asked to pledge themselves in the matter, as had been done with regard to the Insurance Act, and as suggested by Dr. Fletcher at the last meeting, it would be ascertained whether the policy would meet with general support. The motion, if carried, would fetter the action of medical men in all cases in which they were sent for by midwives. For the year ending Lady Day, 1912, out of 183 cases attended by Fulham midwives, in which medical assistance was asked for, in 74 only was application made to the guardians for payment. It seemed carrying things to an extreme to refuse to attend any midwives' cases, because in the past year fees were not secured in 10 cases out of 183. Dr. Gallard said that he had submitted two questions to the Medical Secretary: (1) Whether, in the event of Dr. Millar's resolution being carried, the only alternative for a man who felt he could not carry out its terms was resignation? to which the reply was in the affirmative. (2) Whether the guardians had the power to give the guarantee required by the resolution? to which the reply was in the negative. Dr. Tonkin said that it was futile to attack the board of guardians. The proper method of procedure would be to approach the Medico-Political Committee of the Association. In his opinion the motion, if carried, would be ignored by a great many men now practising in Fulham. He for one would not pledge himself in the matter. Dr. Reynolds repeated what he had stated at a previous meeting, that he could not consent to being fettered in the way proposed by this motion. The Chairman said that by consenting to attend these cases medical men were surrendering their liberty. They were never sure of getting their fees. Dr. Jackson remarked that they were not compelled to attend. He pointed out that probably one or two practitioners on the borders of the Division who would not be affected by this resolution attended as many, if not more, cases than any of the Fulham men. Dr. Satchell moved:

> That the discussion of this matter be adjourned for six months.

This was seconded, and carried by a large majority.

YORKSHIRE BRANCH:

Wakefield, Pontefract, and Castleford Division.

In accordance with the recommendation contained in Paragraph 61 of the Council's Annual Report (British Medical Journal Supplement, May 11th, p. 456) a special meeting of this Division was held on August 8th at the Bartholomew Hospital, Goole, for the purpose of receiving a report from the Representative at the recent Representative Meeting at Liverpool. The meeting was presided over by Dr. Walker (the Divisional Chairman).

Annual Meeting of Branch.—The Secretary (Dr. Eardley) read a letter from the Honorary Secretary of the Yorkshire Branch (Dr. Bronner) stating that the next annual meeting of the Branch (1913) will be held at Wakefield, and requesting the Wakefield Division to nominate the President-elect. Dr. Christy Wilson (Doncaster) proposed the name of the Divisional Chairman, Dr. J. W. Walker (Wakefield), but Dr. Walker declined the honour on the ground that he expected to be away from home when the meeting would be held. Whereupon it was proposed by Dr. Eardley, seconded by Dr. Walker, and carried, that Dr. Wilson be nominated. Dr. Wilson consented to serve.

Expenses of Representative.—Dr. Steven presented his report to date of the fund started at the last meeting for defraying the expenses of the Representative of the Division. Contributions had been received from about one-half of the members of the Division, and the balance, it was hoped, would come in before the next meeting of the Division. The Secretary called attention to the resolution passed at the Liverpool Meeting (see p. 133 of the British Medical Journal Supplement, July 27th) to the effect that each Division could start such a fund, to pay its Representative's out-of-pocket expenses.

Representative's Report.—Dr. G. B. Hillman (Castleford) presented and read his report on the Annual Representative Meeting at Liverpool, and it was briefly discussed. The Chairman proposed a hearty vote of thanks to Dr. Hillman for the services he had rendered to the Division, and this was carried by acclamation.

Secretaries' Conference.—The Honorary Secretary (Dr. Eardley) read a brief report of the Conference of Honorary Secretaries which he attended at Liverpool on Monday, July 22nd, with special reference to the work that now lies before the profession, particularly before the Provisional Medical Committees.

Proposed Public Medical Service Scheme.—Dr. Eardley proposed, Dr. Hillman seconded, and it was carried:

> That a committee of three members be appointed, consisting of the Honorary Secretaries of the District Subcommittees of Wakefield, Pontefract, and Doncaster, to confer and report to the next Divisional meeting on the question of a Medical Service Scheme that might be organized within the Division.

Vote of Thanks.—A vote of thanks to the Bartholomew Hospital for the use of the board-room brought the proceedings to a close.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A list of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

(Continued from p. 224.)

THE brand of condensed milk, which may be regarded as the principal exhibit of the NESTLÉ AND ANGLO-SWISS CONDENSED MILK COMPANY (6 and 8, Eastcheap, London, E.C.), has been on the market for some thirty years, and has established a deserved reputation both at home and abroad, and the unsweetened condensed milk sold under the name of *Ideal Milk*, introduced at a considerably later date, has also won its position. The preparation known as *Milo Food* is intended for the use either of infants or invalids. Several preparations of chocolate, and an assortment of bon bons and chocolate sweetmeats were also included in the exhibit.

The firm of W. GAYMER AND SONS, of Attleborough, Norfolk, has been established for 200 years in the Eastern Counties, but till some five or six years ago it was content with the market to be found in its own area; since then it has become an active competitor with cider making to firms in the Western Counties. Cider is a somewhat variable beverage, since there is a tendency for its constitution to vary greatly, not only from year to year, but between different brews; but Messrs. Gaymer appear to be able to secure year by year ciders of closely corresponding characteristics. They are sold in bottles and barrels, and vary from extra dry to sweet, while their alcoholic contents range according to the brand from a very low percentage up to 7 or 8 per cent. Details of the leading characteristics of each kind can be obtained from the firm's lists.

It is a very difficult matter to provide by a stall display any real idea of the advantages which a spa has to offer, but the authorities of Droitwich were fairly successful in this respect. The topographical position of the spa, the protection which it enjoys from cold winds, the comparatively low rainfall, and other advantages were brought out by charts, while specimens of the salts which its waters contain were on view. Pictures of the bathing establishment were also to be seen. Droitwich, in respect of the strength of its brine, has no equal even abroad, excepting possibly Halle, in Upper Tyrol, which hitherto has scarcely endeavoured to fit itself up as a modern health resort. The constitution of the brine in solids represents between 22,000 and 23,000 grains of sodium chloride to the gallon. The place can now claim recognition as a health resort, and should not be forgotten when dealing with patients suffering from various forms of rheumatism, neurasthenia, anaemia, and other disorders susceptible of successful balneological treatment.

In the bed designed by the DOWSING RADIANT HEAT COMPANY the lamps were formerly carried by side and foot bed rails and, together with the patient, were covered in by a split asbestos sheet. This design has now been superseded. The patient is first comfortably disposed on a trellis wood couch, and each of two metal-covered wooden frames moving on wheels, carries a row of lamps, and when placed in position arches over the bed to meet its neighbour on the opposite side. The electrical current is controlled from the foot, and if it is desired to influence one particular part of the body less powerfully than the rest the lamps in proximity thereto can be separately turned down or extinguished altogether. Whatever the amount of radiant heat employed or the area exposed, the patient's head and face always remains outside the heat cavity, and thus, however freely he may be perspiring, still breathes a cool and vapour-free atmosphere. The company also showed several other forms of radiant heat appliances intended for use when exposure of a limited area is desired, as in the treatment of rheumatoid arthritis, fibrous ankylosis, and other like conditions. The company still continues, we understand, to make sure that its appliances shall never be used except under the supervision of qualified medical men, and maintains several homes to which patients can be sent for treatment by their medical attendant; the principal of these is in Dorset Square.

Among the exhibits of Messrs. MAYER AND MELTZER was an apparatus for using normal saline as a means of administering ether as described by Mr. Felix Rood in an article entitled Infusion Anaesthesia (see BRITISH MEDICAL JOURNAL, vol. ii, p. 1911. p. 974). Another was Holmes's pharyngoscope, a small instrument on the lines of a cystoscope intended to pass through the nostrils for the purpose of examining the orifice of the Eustachian tube. A syringe designed by Mr. Graham Simpson, of Sheffield, aims at providing a durable piston by adapting to syringes and aspirators a principle long employed in motor engines. In these airtightness in the cylinders is secured not by washers but by springing on to a comparatively loosely-fitting piston three split metal rings which fit into corresponding grooves. It should prove especially useful in the tropics, where leather and other plungers tend to get out of order quickly. The various instruments made as suggested by Mr. Adair Dighton, of Liverpool, in his book on the naso-pharynx included a kind of splint intended to keep the patient lying on one side in order to secure free drainage of the inner ear. Among various instruments for extracting foreign bodies from the food and air passages we noted Trevor Moore's shears for cutting up and removing an impacted tooth plate, Tilley's instrument for closing and withdrawing safety pins and an appliance for expanding the food tube above an impacted foreign body and thus facilitating its extraction. Complete sets of the special instruments used by Mr. Charles Heath in the performance of his conservative mastoid operation were also on view, while the guillotines and other devices for dealing with hypertrophied tonsils included those to which reference was made by Whillis and Pybus, of Newcastle-on-Tyne, in their paper last winter on enucleation of the tonsils by the guillotine (see BRITISH MEDICAL JOURNAL, vol. ii, 1911, p. 1402).

The stall of the LIVERPOOL LINT COMPANY of Mark Street Mills, Liverpool, is always popular, dressings, bandages, and the like apparently having an attraction for medical men, even though not at work. A multiplicity of bandages, dressings, and cotton-wool packed by hydraulic pressure were on view. Only those who remember the amount of space which used to be taken up by bandages and the like in a surgery can fully appreciate the advantage of their preparation in condensed form. Among the specialities of the firm is *Impermiette*, to which we have drawn attention on a previous occasion. It is a sort of cross between the old fashioned jaconet and india-rubber sheeting, which keeps well, can be sterilized with soap and hot water, is not affected by chloroform, and resists the action of ordinary disinfecting solution and acid urines. It is made in various thicknesses and widths, is durable, and altogether may be regarded as a most excellent waterproof covering. Another thoroughly practical preparation is *Vulnoplast*, a ready-made dressing, requiring neither pins, bandages, nor pads for the prompt and efficient dressing of wounds. It is economical either for habitual use or to carry for emergency use in a surgical bag. Also a useful speciality of the firm is *Splint Padding*, which can be obtained either in compressed or natural form, and, in either case, when cut to the right shape and laid on a splint, makes a thick, soft pad. It is composed of a mixture of carbolized tow and cotton-wool and other fabrics, and is very easily handled. Apart from its special purpose it makes a good substitute for cotton-wool for the purpose of covering fomentations and the like.

A food material shown by the PASCON COMPANY, of Talbot House, Arundel Street, Strand, W.C., is a fine yellow powder possessed of a slight salty taste, and freely

soluble. It is stated to be derived from beef and to represent its albuminous constituents. Its composition, which we have reason to believe was accurately stated, was said to be as follows: Soluble proteins, 74.0 per cent.; mineral salts, 14.0 per cent. (mainly sodium chloride, with a little calcium phosphate and carbonate); moisture, 12 per cent. The same preparation was also shown combined with meat extractives as Pascon nutrient, and with cereals as Pascon biscuits, and with chocolate and cocoa.

The recent tendency towards simplification in *x*-ray outfits was well illustrated in the exhibition of SCHALL AND SON (71 and 75, New Cavendish Street, London, W.). An installation in which coil, interrupter, switchboard, milliampèremeter, and spark-gap were all mounted on one trolley proved to be no unwieldy mechanism, but an apparatus readily movable and very compact. A simple measure of protection was forthcoming in the shape of a lead-glass shield held in an insulating frame and placed between coil and switchboard. By this means the operator was compelled to be on the further side from the rays, and was secured from shocks. The same recommendations of simplicity and economy of space characterized an apparatus for high frequency in which every necessary element in the production of these currents was assembled in a small box, the usual coil, switchboard, and resonator being absent. Yet the machine, bearing the name of "Invictus," gave an effluve several inches in length, and, supplied with an additional transformer, even lighted up an *x*-ray tube sufficiently for the making of the more obvious negatives, such as those of the bones of the hand. That special kind of high-frequency current which is utilized in diathermy, or thermo-penetration, was represented by an improved apparatus. It is two or three years since the apparatus for this purpose made its first appearance, and, although we do not recall that this production of heat in the deeper tissues was ever particularly disagreeable, the latest model has a device by which all faradic sensation is eliminated. The holding of the electrodes gives only a pleasant feeling of central heat, the heat appearing to go in waves or pulses deeply along the arm. The more miscellaneous articles included a tube-box which was capable of every kind of movement; a universal apparatus supplying the required current for a large number of surgical and medical purposes; a special transformer for giving currents both for cautery and light from either an alternating or a continuous supply, as well as an increased number of accessories for ionic medication, and of cavity lamps for the use of the surgeon.

The APOLLINARIS COMPANY, LIMITED (4, Stratford Place, Oxford Street, London, W.), exhibited four mineral waters, of which one is fortified by the addition of lithium salts, the other three being in their natural state. Apenta Water contains a certain amount of lithia, but depends for its therapeutic value mainly on the contained sulphates of soda and magnesia, the latter predominating. Another water which has attained popularity is Johannis, a sparkling table water drawn from springs near Neiderselters, Rhenish Prussia. It is heavily charged with natural carbonic acid, and has a fresh, pleasant taste, and mixes well with wine and water. While well adapted for drinking purposes, it is believed to be specially suited to those who suffer from dyspepsia and gouty disorders. In order, however, to give it a definite therapeutic value, the proprietors of the spring also bottle it under the name of Johannis Lithia, adding to each bottle a small quantity of lithium carbonate. The fourth water was that from which the firm derived its name, Apollinaris Water. This is a natural mineral water, conspicuous for the large amount of carbonic acid that it contains, and of agreeable taste. The larger glass bottles contain about 40 per cent. more than an ordinary siphon. The stone bottles are especially suited for use when all the water is not expected to be drunk forthwith. Patent stoppers of a rather ingenious character are supplied with them.

A good many new editions were to be seen on the stand of Messrs. H. K. LEWIS (136, Gower Street, W.C.), one being the fifteenth edition of Martindale and Westcott's *Extra Pharmacopœia*, which is in two volumes, the first containing therapeutic details, the second information on bacteriological, analytical, and other technical points. A conspicuous representative of the firm's "Practical Series" was a *Textbook of the Diseases of Women*, now published in the enlarged demy form into which the whole series is being gradually transformed. Carter's *Elements of Practical Medicine* retains its old form, but the use of a slightly thinner paper prevents its sixty additional pages increasing the original bulk. Swanzy and Werner's *Handbook of the Diseases of the Eye* was another new edition appearing in larger size. Other new editions noted were Binnie's *Operative Surgery* (fifth edition), which is very fully illustrated; and Murrell's *What to do in Cases of Poisoning*, which was published only a few months before the author's lamented death; Rawling's *Landmarks and Surface Markings of the Human Body*, in which the arteries are now picked out in red; and Gould's *Pocket Medical Dictionary*, which now contains 34,000 terms, an increase of 4,000 on the last edition: an edition with a thumb index was also shown. The new books included Mr. Stephen Paget's book on *For and Against Experiments on Animals: Anæsthetics in Dental Surgery*, by Coleman and Hilliard; a guide to the Continental medical schools, by Dr. Honan; and some practical hints for doctors who have patients to send to Egypt and the East, by F. W. Saunders. Also on view were catalogues of the Medical and Scientific Circulating Library, controlled by the firm.

It is usual in electro-medical apparatus year after year to find improvement in pattern and enlargement in scope, but comparatively rare to come across any really new thing. The CAVENDISH ELECTRICAL COMPANY, LIMITED (130, Great Portland Street, London, W.), however, had an original invention on exhibition for the first time, by which the static current could be obtained from an induction coil. An uncongenial climate has prevented the static machine from becoming popular in this country, although it is used by some specialists and is a part of the electrical treatment given at some British spas, but with a means of obtaining the static current from any *x*-ray coil, working with its usual interrupter and controlled by its own switch-board, this objection vanishes. The transformation is effected by a somewhat complicated arrangement—complicated at least in description—but the apparatus is a unit, although its floor-stand occupied considerable space. In principle it resembled to some extent an *x*-ray outfit to which a high-frequency transformer had been added. The actual means of conversion is at present a commercial secret. Seated on an insulated platform, one felt the static influence in the form of a breeze, and as a proof that the current was characteristically unidirectional the manufacturers pointed out that it could charge an electroscope, a Leyden jar, and a static machine. They also stated that any static modality furnished by the genuine static machine, including the Morton wave-current and static induced current, could be given in exactly the same manner with this apparatus. Apart from this construction in its special recess, the other exhibits at the stall were also of interest, including as they did a special *x*-ray couch with the tube in a lead-glass box, and, in conjunction with it, a new localizing device and special form of plate-holder. Some elaborate introductions in the form of electrodes and accessories for ionic medication, in which this firm has specialized, were also to be noted.

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American Association of Genito-Urinary Surgeons. Transactions. 1906.
American Climatological Transactions. Vols. 1, 4, 5, 6.
American Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.
American Journal of the Medical Sciences. New series, vols. 4, 5, 1842-3; vols. 14, 15, 1847-8; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-5; vol. 59; or any parts of these vols.
American Journal of Ophthalmology. Vols. 1-9.
American Laryngological Association. Transactions. Vols. 1-6, 8-9.
United States Hygienic Laboratory Bulletins. Nos. 3, 8, 9, 10, 11, 12, 13, 15, 17, 18, 19, 24, 29, 43.
Virchow's Archiv. Vols. 1-150.
Watt. Bibliographia Britannica, 4 vols. 1824.

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CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held on July 25th at Caxton House, Westminster, with Sir FRANCIS H. CHAMPNEYS in the chair.

False Statement.

A letter was considered from a candidate who had failed to pass the Board's examination on two previous occasions, and who, for the purpose of obtaining a post, falsely stated that she had passed the examination, asking permission to enter for the next examination. The Board directed that the candidate be informed that her certificates were void, and that she could not be admitted to the examination until the Board were satisfied by special testimony that she was a trustworthy person.

Limitations on Suspension.

A letter was considered from the Clerk of the Notts County Council suggesting a material modification of the limitations imposed on suspension by Rule F 2. The Board decided that the letter from the Clerk of the Notts County Council should lie on the table.

Failure to Notify.

A letter was considered from the Clerk of the East Sussex County Council enclosing a copy of a report by the County Medical Officer of Health with regard to the failure of a midwife to notify the authority when she had advised medical help. The Board directed that a copy of the correspondence be forwarded to the Privy Council.

Examinations.

A letter was considered from the Honorary Secretary of the Norwich Maternity Charity renewing the application of the Charity for permission to hold written examinations at Norwich. The Board directed that the application be granted.

Pupil Midwives.

A letter was considered from the medical officer of health for Manchester, suggesting that pupil midwives should be obliged to reside with the midwife by whom they were being trained. The Board decided to reply that the Board was not prepared at present to amend the rules in the sense desired.

Notifying the Local Supervising Authority.

A letter from the matron of the Newport Maternity Home as to notifying the Local Supervising Authority, and a letter on the same subject from the Local Supervising Authority, were considered, and the Board directed the Newport Health Committee to be informed that it appeared to have misunderstood the Board's letter, and added an expression of a hope that there would be no further obstacle to the friendly co-operation of the parties in future.

Advertising.

A letter was considered from the county medical officer for Cheshire as to the propriety of advertising by a midwife. The Board directed that the reply be that the Board was unable to express an opinion on matters which might come before it in its judicial capacity.

National Insurance.

LEGAL POSITION AS TO MEDICAL BENEFIT.

[From a Legal Correspondent.]

Mr. Lloyd George, in his speech at Kennington, denies that the Government have ever contracted to find medical attendance for insured persons, and Mr. Masterman has repeatedly stated the same thing in the House of Commons. It is therefore interesting to look at the section of the Act on which they base their attitude. Section 15 deals with the administration of medical benefit, and the proviso following 15 (2) (*c*) is as follows:

Provided that, if the Insurance Commissioners are satisfied after inquiry that the practitioners included in any list are not such as to secure an adequate medical service in any area, they may dispense with the necessity of the adoption of such system as aforesaid as respects that area, and authorize the Committee to make such other arrangements as the Commissioners may approve; or the Commissioners may themselves make such arrangements as they think fit, or may suspend the right to medical benefit in respect of any insured persons in the area for such period as they think fit, and pay to each such person a sum equal to the estimated cost of his medical benefit during that period, and where the Commissioners take any such action themselves, they shall retain and apply for the purpose such part of the sums payable to the Insurance Committee in respect of medical benefit as may be required.

If medical benefit in the ordinary sense is not going to come into operation, what will be the rights of the insured persons? Section 15 never contemplated the total abolition of medical benefit, but only its abolition in respect of certain individuals for definite periods. It will be for a court of law to decide whether the words "make such other arrangements as the Commissioners may approve" can possibly include abolition of medical benefit. One would naturally suppose that that means "make such other arrangements than the panels of practitioners in order to supply medical benefit," not to abolish it. If neither the Insurance Committee nor the Commissioners can make any arrangements for giving medical attendance then the Insurance Commissioners are bound to pay a cash equivalent to the insured persons. Mr. Masterman and Mr. Lloyd George assume that 6s. per annum is a cash equivalent, but the Act does not say so. The Act says: "The estimated cost of his medical benefit during that period." It does not say estimated by whom, but as medical benefit is to be administered by the Insurance Committee one would naturally suppose that it was the cost estimated by the Insurance Committee. It is also to be observed that it is the estimated cost of supplying medical benefit to a certain individual, and therefore his whole circumstances must be taken into account. For instance, it would be a farce to give 6s. per annum to a shepherd living five miles from the nearest doctor, and to say that that is equivalent to the estimated cost of supplying him with medical benefit. No society could give him medical benefit for such a sum, and no doctor would take the risk of giving a person in that position an unlimited call on his services at that rate per annum.

When the Act gets into full operation and insured persons are entitled to demand the benefits this question will require to be decided in a Court of Law, and the proper method of testing it will be for an insured person who gets ill and whom the Insurance Committee do not supply with a doctor to call in an ordinary practitioner and ask that practitioner to render his account for attendance on the ordinary scale which he would charge to a person in that rank of life. In country districts, of course, no doctor could attend a patient who lives at a distance of miles from his house for 2s. 6d.; the fee varies according to distance. The insured person will then sue the Insurance Commissioners for his doctor's account, basing his claim upon the proviso to Section 15. It is to be observed that in the proviso the Insurance Committee have no authority to suspend medical benefit. The Insurance Commissioners must do so, and it is put upon the Insurance Commissioners to pay to the insured person the cash equivalent, and therefore the action would lie not against the Insurance Committee but against the Insurance Commissioners.

The question will then arise whether the Act has taken the matter out of the jurisdiction of the law courts. The Act provides in Section 67 for the decision of disputes between an insured person and his society or the Insurance Committee by the Insurance Commissioners, and the decision of the Insurance Commissioners is to be final and conclusive, but this has no application to a dispute between an insured person and the Insurance Commissioners themselves, and it is inconceivable that Parliament could make the Insurance Commissioners the final authority in their own case. It may, therefore, be assumed that the Courts will hold that they have jurisdiction to entertain such an action.

If the medical benefit were based upon a reasonable actuarial anticipation of what medical attendance and medicines would really cost, and if it were assumed that doctors were going to be paid a fair fee according to the usage of the profession, then the insurance money ought to be able to provide for such of the insured persons as get ill and require medical attendance a sum of money sufficient to pay a doctor's bill, based upon ordinary reasonable charges for a medical practitioner attending the class of person insured, and therefore there should be no difficulty in the Insurance Commissioners paying the account, which it is suggested should be sued for. It is nowhere laid down in the Act that the medical benefit is necessarily to be financed by what may be called the "club rate" system. All that the Act does is to direct the Insurance Committees to make arrangements, and these arrangements may be in the form of a club rate system, but that, of course, depends upon the consent of the medical men to come in on that basis.

There is a great deal of talk about the amount of money which under the finance of the Act is available for medical benefit and remuneration of doctors. It is always assumed that the cash benefits must be kept up at the rates detailed in Schedule 4, but of course this is an entire mistake. The Act contemplates the rate of sickness benefit being altered, raised, lowered, postponed, or antedated, according as experience shows the finance works out. Of course, societies are bound to find these rates of benefit until the first valuation, which must take place before the end of the third year; but, once the valuation has been taken, then by Sections 37 and 38 sickness benefit will be adjusted so as to make the finance actuarially sound. If medical benefit is to be supplied either by a higher club rate than 6s. per annum, or by the Insurance Committees simply paying the doctors' accounts at reasonable rates, and if the latter system is adopted and turns out to cost more than 6s. a head, then it may and probably will turn out that the funds will not supply sickness benefit at 10s. a week. The cost of medical benefit, sanatorium benefit, and administration by the Insurance Committee are a first charge upon the money standing to the credit of the approved societies with the Insurance Commissioners, and as these charges must be met as explained above the finance of the approved society for the purpose of the cash benefits administered by itself will depend upon how much money is spent upon medical benefit and the cost of administration, the cost of sanatorium benefit being fixed. Therefore, ultimately, the cost will fall upon approved societies, and will result either in sickness benefit being reduced in the case of normal or weak societies, or in sickness benefit not being increased in the case of strong societies which would have been able to increase it if medical benefit could be supplied at the 6s. rate estimated by Government actuaries—that is, always assuming that the 6s. turns out to be too low. There is therefore no necessity to go to Parliament at all about the matter, and when Mr. Lloyd George says that he is not prepared to recommend to Parliament a tax of £4,000,000 per annum to double the income of the doctors he is merely perorating. There is no necessity for him to go to Parliament at all. Parliament has already dealt with the scheme, and the Act contains its final conclusions in the meantime.

There is a provision in Section 15 (7) and (8), and also in Section 17 (2) and (3), for the laying of the extra cost of medical and sanatorium benefit upon the rates and upon the taxpayer; but this depends upon the consent of the

local authorities and the Treasury. The latter means Parliament, because the Treasury cannot sanction expenditure unless the vote is confirmed by the House of Commons. It is always open to the Insurance Committees to enter into an arrangement with the doctors upon terms which the doctors will accept, and to estimate what will be the cost of carrying out their contract. If the Insurance Commissioners only allow 6s. a head, and if medical benefit is going to cost more, the Insurance Committees will simply report that they estimate for a deficit. The Insurance Commissioners must then transmit to the Treasury and to the local authorities the estimate, and ask them if they are willing to find the necessary money from the rates or the taxes respectively. It is extremely probable that the local authorities, at any rate, will refuse, and it is also probable that the Treasury will make its consent depend upon the consent of the local authorities, and, if this be the result, the cost must fall ultimately upon the approved society—that is to say, upon the insured persons, as explained already.

If we assume that the result of these provisions will be a deficit in the societies, then they have the alternative of either reducing the sickness benefit or laying an extra levy upon their members; it will be for the societies to decide which they will do, subject to the consent of the Insurance Commissioners, which it may be assumed will not be withheld so long as the scheme proposed is actuarially sound. If we take the last method as the one most probably to be adopted, and if we assume that the Chancellor's estimate of 6s. per annum is the most which the fund can find for medical benefit on its present basis, and that 10s. including medicines is what the doctors would accept, then the deficit would be 4s. a head of insured persons, or practically one penny a week; so it really amounts to this—that the societies, in order to obtain absolutely adequate medical attendance, and to put their members upon a sound business footing with the doctors, in such a position that they can really demand attendance as of right and not as a charity, there would require to be an extra levy of one penny per week.

When we consider that adequate medical attendance is not only absolutely essential to make the scheme any use at all from the point of view of health, but also that honest and adequate medical supervision is absolutely essential if the societies are to have any check upon malingering, and therefore to retain their solvency, the sum of 1d. a week does not seem excessive.

The existing flat rate of contribution falls unfairly from a certain point of view upon certain classes of low paid labour, and it has always been the practice of the medical profession in the past to do a very large amount of charitable work for people in that position; if the comparatively well-to-do artisan class who have no desire to be beggars, and who do wish to pay their way are subjected to a levy which will enable them to pay their doctors a reasonable remuneration, the doctors would in all probability be very glad to attend the really poor people at a lower rate, and therefore it surely will not pass the wit of man to devise a scheme whereby the extra penny levy is only to be put upon men earning a good wage, say 30s. a week, and that all under that wage will be able to get medical benefit at the 6s. rate.

Going back for a moment to the terms of the proviso quoted above, it will be seen that what the Commissioners are bound to give to any person in respect of whom they suspend medical benefit is "the estimated cost" of supplying him with medical benefit in the period for which he is suspended. A simple method, therefore, of testing the question would be for any insured person in any area where medical benefit has not been arranged for as at January 15th, 1913, to sue the Commissioners for a sum which he estimates as the cost. He could sue for 10s., and lead evidence of doctors to show that no doctor will accept the contract at any smaller figure. Such evidence could only be met by the Commissioners proving in fact that they could supply medical benefit for less.

I do not profess to solve the question, not having sufficient knowledge of medical practice. Doctors know how many patients they can undertake to attend in view of average sickness, and this will, of course, vary enormously between town and country practices. From that knowledge they can deduce the club rate which they could accept in each case. I have simply attempted to state the legal position. It may be that in city practices 10s. per head, even including medicine, is excessive. If that is so, then in these districts an extra levy on the well-to-do artisan might be ½d. a week, or it might be graduated according to wages.

Of course all this ought to have been thoroughly discussed and worked out before the Act was ever passed, and, if confusion has now resulted, no one is to blame except the Chancellor of the Exchequer.

ATTITUDE OF THE IRISH MEDICAL PROFESSION.

A meeting of the Conjoint Committee accredited as representatives of the profession by the medical delegates from all Ireland, who met in Dublin last June, was held in the house of the Royal College of Surgeons in Dublin on August 6th. In pursuance of the policy laid down by the meeting of delegates referred to, the Committee passed the following resolutions:

1. That in consonance with the action taken by the British Medical Association, the medical members of the Irish Advisory Committee be called upon to resign.

The Committee then considered the question of the administration of sanatorium benefit, and resolved:

1. That all practitioners be called upon to refrain from accepting any post or office in connexion with the administration of sanatorium benefit, unless and until the lines on which such benefit is administered be such as are approved by the Committee.
2. That an appeal be made to the Local Government Board not to sanction the appointment of any chief tuberculosis officer who has not had such experience and is not of such standing as to command the confidence and enlist the co-operation of the practitioners with whom he will have to work.
3. That, while fully appreciating the great work already accomplished by the Women's National Health Association, the Committee expresses its strong disapproval of the action of that body in attempting to usurp the functions and powers of the statutory local authorities in regard to the establishment of sanatoriums and tuberculosis dispensaries under the the National Health Insurance Act and the Tuberculosis Prevention Act (Ireland); and that they consider such action calculated to divert the sympathy and co-operation of the profession in Ireland in working sanatorium benefit.

The Committee further adopted certain principles as essential to the efficient working of tuberculosis dispensaries. The chief of these were as follows: The chief tuberculosis officer should be a whole-time officer at a salary of not less than £400 per annum, exclusive of travelling expenses, and his duties should be confined to organization and to consultation with the medical practitioners in charge of the patients. The treatment of the patients should be carried out by their usual medical attendant, at a scale of fees per visit to be arranged locally with the administrative authority by the local Medical Committee.

The following reply has been made on behalf of the Women's National Health Association of Ireland:

I am desired by the President of the Women's National Health Association to acknowledge the receipt of your letter of August 10th, enclosing a copy of a resolution passed at a meeting held on August 6th of the Conjoint National Insurance Committee of the British Medical Association and the Irish Medical Association, in which strong disapproval is expressed of the methods adopted by the Women's National Health Association in "attempting to usurp the functions and powers of the statutory local authorities in carrying out the provisions for sanatorium benefit under the National Insurance Act and the Tuberculosis Prevention (Ireland) Act of 1908." The President desires me to point out that the scheme now being carried out by the Women's National Health Association, after being adopted by the Executive Committee, was submitted to a special health conference of representatives of county councils and other local health authorities in Ireland, convened under the authority of the Local Government Board, on May 23rd and 24th. This conference was largely attended, and many members of the medical profession were present. After full discussion of the scheme the following resolution was unanimously passed:

That this conference of representatives of local bodies in Ireland recommends the county councils to accept the offer of the Women's National Health Association to give pro-

visional assurance in the case of tuberculosis patients coming under the Insurance Act.

Moved by Colonel Sir Nugent Everard, seconded by Alderman McClure (Belfast), supported by Dr. Minch (Chairman of the Kildare Council), Dr. Shea (South Dublin Union), Mrs. Noel Guinness (North Dublin Union).

The Women's National Health Association's scheme was then submitted to each county council, with the result that 133 permanent beds have been contracted for by a number of county councils, who will, of course be represented on the committee of management. In addition to these permanent beds 78 beds have been ordered for provisional use by other county councils, and 10 beds have been taken for six months by the Dublin County Council Committee.

The President desires me further to point out that all the proceedings of the Women's National Health Association in connexion with the provision of sanatoria benefit under the National Insurance Act and the Tuberculosis Prevention (Ireland) Act have been taken with the full knowledge and approval of the medical members of their committee of supervision.

NATIONAL INSURANCE ACT.

ORDERS AND REGULATIONS.

The Cost of Sanatorium Benefit.

THE National Health Insurance Commission for England has issued an order prescribing that the expenses of sanatorium benefit until January 12th, 1913, shall be met by deductions from the amount from time to time standing to the credit of persons who are deposit contributors, and from the respective amounts standing to the credit of approved societies; the amount of the deduction is to be determined by the Commissioners, and is not to exceed in the case of a deposit contributor 1d. for every four contributions, and not to exceed in the case of approved societies ¼d. for every contribution. In the case of a person not entitled to sanatorium benefit, that is to say, an insured person whom the Insurance Committee has not power to recommend for sanatorium benefit, no deductions are to be made.

Approved Societies.

A list of societies approved down to July 31st by the National Insurance Joint Committee, and by the National Health Insurance Commissioners for England, Scotland, Ireland, and Wales has been issued.

The Joint Committee of Insurance Commissioners has issued regulations with regard to the time at which persons who have not joined an approved society may do so. The regulations lay down that the time within which a person may join an approved society shall be:

(i) In the case of a person being a person of the age of sixteen and upwards and under the age of sixty-five or being a person to whom Section 49 applies who was employed at the commencement of the Act, any time before the expiration of three months and fourteen days from the commencement of the Act.

(ii) In the case of a person being a person of the age of sixteen and upwards and under the age of sixty-five or being a person to whom Section 49 applies who becomes employed after the commencement of the Act, any time before the expiration of three months and fourteen days from the time of his so becoming employed.

(iii) In the case of an employed person who attains the age of sixteen after the commencement of the Act, any time before the expiration of three months and fourteen days from the date of his attaining that age.

(iv) In the case of a person who if he becomes insured will become a voluntary contributor and who becomes insured after the expiration of three months from the commencement of the Act, any time before the date on which he becomes insured, and in the case of any such person who becomes insured before the expiration of three months from the commencement of the Act, any time before the expiration of that period.

(v) In the case of a person who has been expelled or has resigned from an approved society, any time before the expiration of three months from the date on which he ceases to be a member of the society.

Provisional Insurance Committees.

A paper presented to Parliament states that the Insurance Commissioners for England have issued 119 orders for the constitution in counties and county boroughs of Provisional Insurance Committees. Persons so appointed are to hold office until the day on which it is declared by the Insurance Commissioners that an Insurance Committee has been duly constituted for a county or county borough in accordance with the provisions of Section 59 of the Act, or until July 15th, 1913, whichever date is the earlier.

PROVISIONAL MEDICAL COMMITTEES.

CHELSEA.

A MEETING was held at the Fulham Town Hall on August 8th. Dr. YOUNG was in the chair, and Drs. Spaull, Orr, Coltart, Fletcher, Butler, Jackson, Satchell, Lewis, Millar, Bonney, Benham, Ross, Williams, and Gallard were present.

Expenses of Divisional Representative.—Dr. BUTLER moved, and it was seconded:

That a contribution be made from the funds of this Committee towards the expenses of the Divisional Representative at Liverpool.

Dr. BONNEY asked the ruling of the chair as to the power of the Committee in the matter, and ventured the opinion that it was the duty of the Division to see that the Representative was paid his out-of-pocket expenses. The CHAIRMAN explained that the Division could not, according to the by-laws of the Association, use its funds for the purpose mentioned, but that it would be quite in order for the Committee to do so, on the ground that the National Insurance Act, which was the origin of the formation of the Committee, rendered their Representative's presence at Liverpool imperative. The motion was carried *nemine contradicente*.

Central Defence Fund.—The consideration of the steps to be taken in order to augment the Central Defence Fund was referred to the Divisional meeting to be held later in the day.

Resignation of Contract Practice Appointments.—The Honorary Secretaries received instructions to forward the resignations of contract practice appointments as soon as they were directed to do so by the Council or the State Sickness Insurance Committee.

MONMOUTHSHIRE.

A MEETING of this Committee was held at the Savoy Hotel, Newport, on August 7th. The following members were present: Dr. MARSH (in the chair), Drs. Hamilton, Mulligan, Morrell Thomas, Neville, W. M. James, Greer, J. D. O'Sullivan, Gratte, Cook, Lloyd Davies, De Gruchy, and Cowie. The following resolutions were carried unanimously:

1. That the resolution of the Representative Meeting with regard to resignation of positions on Provisional Insurance Committees be approved.
2. That a letter be sent to the practitioners who have accepted seats on the Newport Borough Insurance Committee asking them to resign their positions.
3. That a memorandum be circulated to the practitioners residing in the area of the Division pointing out that 155 out of 177 practitioners in the Division have signed the supplementary pledge of the Association, and requesting those who have signed this pledge to send signed resignations of their contract practice appointments to the Honorary Secretary if they have not already done so.
4. That each member of the Division be requested to increase the minimum amount of his guarantee to £20, and that this resolution be referred to the Executive Committee for immediate action.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor*, BRITISH MEDICAL JOURNAL, *429, Strand, London, W.C.*]

THE CONTINUATION OF NEGOTIATIONS.

DR. J. S. MANSON (Warrington) writes: Whether Dr. A. C. Farquharson be right or not about the continuance of negotiations with the Government, there can be no doubt that the strength of the Association will be on its trial during the next six months. He asks, "How is this strength to be conserved, maintained, and passed on to succeeding generations of practitioners?" Any member who attended the debate on sanatorium benefit at the Annual Representative Meeting would have been struck by the two schools of thought present—compromise and no compromise. If the latter school prevail with regard to medical benefits, and maintain a rigid uncompromising attitude towards any attempt made by the Government to meet the minimum demands, then I do not think it rash to

predict many secessions from the Association. Already prominent members are rebelling against the ruling of the Representative Meeting, and are refusing to resign from the Provisional Insurance Committees.

If the Association is to survive with its present prestige, it must adapt itself to its environment, especially when the control of that environment is to a large extent outside its powers. At present the Association is trying to achieve a mutation in the social evolution of medicine, but as far as we know, mutations are rather the exception than the rule in organic evolution, therefore the old method of transitional gradations is still the safest by which to achieve success. The only successful mutation likely to arise from an uncompromising attitude is a State medical service, and that the great bulk of the Association does not want. For the sake of its future and the future of medicine, I do not see why the Association should not reach some basis of settlement without prejudicing its future to influence and promote the interests of the profession. It should have a continuity of policy which would see beyond the minimum demands. To an outside view these seem the acme of our satisfaction, which they are not. If we cannot secure the starting place under the Insurance Act that we would like, then let us get the best possible start and press forward. It has been admitted that the four or five millions necessary to meet our demands for remuneration cannot be granted by the Chancellor of the Exchequer at present, but there is no reason why these demands and more should not be granted later when surplus funds have accumulated under the Act, as they are expected to do by its authors.

It seems to me feasible that a basis of settlement might be reached if the Government would advance beyond their present estimate and give an undertaking to meet our demands as surplus funds accumulated. As far as I can read the Act there is nothing to prevent this being done, and it is a policy that would conserve and maintain the strength of the Association. It would also give the profession a very intimate and direct interest in working the Act in the interests of efficiency and economy, and would be a shorter, simpler, and more practicable method of gaining our ends than any of the complex public medical service schemes now before us.

Dr. Farquharson makes another point worth consideration—namely, the recognition of the Association by the Government as the representative organization of the profession, and I would like to ask older members than I whether the Association received the same recognition and consideration from the last Government when the agitation arose over the Midwives Act—the blunders of which are being corrected by the Insurance Act.

It is also well to remember that if there are many secessions from the Association because of its rigid policy, these secessionists will be compelled to organize themselves into a body which may grow in power and influence and rival the older organization.

Lastly, those who are opposed to the Insurance Act root and branch like our President, I would advise to read the review of Dr. Grotjahn's *Social Pathology*, in the issue of the JOURNAL for August 10th (p. 311). From that review the book seems to be a vindication of the German Insurance Act from the point of view of medical sociology.

Dr. ÆNEAS HENDERSON (Southport) writes: In the SUPPLEMENT to the JOURNAL of August 10th Dr. A. C. Farquharson enumerated what he considers the chief elements which by their fusion have determined the present strength of the British Medical Association. He referred to the Association's "breaking off negotiations" policy, and hinted that many members may yet have cause to break away from the Association on account of that action.

While I admit the probability of such an occurrence, I think it possible only with those medical men to whom Dr. Farquharson referred in his letter of March 16th last who profess to be "as full of genuine disinterested effort to dignify, improve, and unify their profession" as either Dr. Helme or Dr. O'Sullivan, but who are not. I think it possible these may do as Dr. Farquharson indicates—in order to secure terms quite acceptable for themselves under monopoly.

Some of Dr. Farquharson's statements are fair samples of the arguments used by too many members of our Central Council during the last twelve months. The majority of the members of the Central Council have been "steeped" in monopoly, and that undoubtedly is the principal cause of our Association's weakness as a fighting force to-day. A medical man may be quite happy in the thought of having been the cause of reducing the demand of the Association from 10s. to 8s. 6d. *per capita*, but I deem he would have had a better cause for his happiness, and fewer qualms of conscience, if he had done his level best to burst up those monopolies that abound particularly around colliery shafts and hospital gates. For any medical man who employs an assistant at £180 a year (outdoor) to do most of the medical work of his colliery practice may, owing to his monopoly, have good cause to consider 13s. per family per year adequate remuneration. Yet I reckon that in the near future—thanks to the National Insurance Act and the free choice of doctor allowed thereby—every doctor will doubtless realize that even 13s. per insured person per annum is a reasonable demand for service under the Act. As a medical man who pleads guilty to monopolizing about £60 of club work annually I hail the near prospect of casting that portion of my work into the lap of an unmonopolied profession, and I plead with every one of my professional brothers to do likewise.

The British Medical Association has signally failed in its duty to the majority of its members in the matter of monopolies in the past, and it might have been better for the profession had the Association been defunct previous to the present struggle with the Chancellor. For doubtless the spirit of justice inherent in the breasts of British medical men would have asserted itself, and a "union" would have been initiated with a suitable constitution, and with an executive that would not have dared to sit on the fence and defy the majority of its members; that would have waited for a mandate from its members before it agreed to work even sanatorium benefits; that would have called upon all its members to relinquish not only contributory appointments, but non-contributory appointments also.

The recognition of the Association by the Chancellor, to which Dr. Farquharson refers, as results have shown, produced an idea of importance in the minds of some members of the Council. The Chancellor's ideas as to the importance of our Association need not concern us; but those of us who know only a very little about business tactics do not appreciate the idea of opposing lawyers or agents discussing the financial value to them of their respective clients in a case *sub judice*. Again, "Have we not good reasons for believing that some of those who entered into sweet communion with the Chancellor were dealing in futures?" I think I have good reason for concluding that the exceptional increase in the membership of the Association during the past year was due in great measure to a desire on the part of many of those 4,000 members to counteract the scheming tactics of the Chancellor, not only to captivate the easy prey, Dr. Smith Whitaker, but to capture the citadel at 429, Strand. The Chancellor has signally failed to do so, and provided all the members of the profession have spoken their last word in defence of monopolies, and refuse to engage in monopolied medical work, and insist on our cardinal points, I am justified in assuring Dr. A. C. Farquharson that neither Section 15 of the National Insurance Act, or any other section of that Act, or any other Act, will seriously affect us.

It tones me down to pity to read the last fourteen lines of Dr. A. C. Farquharson's letter. I hope the percentage of men of his type on our Central Council is very small indeed. Such men would spoil the finest fighting force—whether political, martial, or medical—in Europe.

He mentions sacrifice! Is sacrifice required to atone for the sin of demanding a living wage? And charity is neither asked nor indicated in any section of the Act. The duty of every member of the medical profession to-day is to refuse to worship at, or sacrifice on, the altar of Buckingham Gate.

Let our war cry be "No surrender," emphatically "No surrender." Our demands are "our cardinal points" or "nothing" under the National Insurance Act.

Dr. HORACE ROSE (Aylesbury) writes: When one reads speeches like Sir James Barr's, and manifestoes like that of the North Manchester Division of the British Medical Association, and notes the language used towards Mr. Lloyd George and the present Government, one is bound

to feel that the British Medical Association has been captured by a political party and that a Liberal and his opinion are of no account. This, sir, is an extremely serious position for the British Medical Association, and if carried to excess it must lead to secession from the ranks. Although I have resigned from the Bucks Insurance Committee (on which I was placed quite as much because I was a county councillor as because I was a medical practitioner), I feel very strongly that the Representative Meeting took up a most unfortunate position, and has removed from the Insurance Committees the only persons who were prepared to do their best for the doctors.

At the end of your leader "In Statu Quo" last week, you stated that "we should be certain of a very large measure of public support from the most thoughtful section of those engaged in manual labour." From this I entirely dissent; the opinion of nearly everybody I meet in a large country practice is, that we have taken up a syndicalist position, more extreme than the miners in the early part of the year, and I must admit that there is a very considerable justification for this opinion. Further, if the Association establishes its Public Medical Service it must be remembered that we shall have no powers of compulsion, and therefore large numbers of the indolent and thriftless who now pay nobody will continue doing so, and we should have to employ and pay our own officials instead of utilizing those provided by the State. We are undoubtedly able to justify an increase of remuneration, and I feel sure that 8s. 6d., including medicines, per head per annum, accompanied by a local settlement of the wage limit, would be all that is desired by most practitioners, and I should suggest that a better way of gaining the true opinion of members rather than by having meetings which may not be attended, would be a postcard vote as to whether they would agree to the appointment of a small committee to confer with the Chancellor, and with power to agree on the above lines.

Dispensing.

Dr. HERBERT SLANE (Burnley) writes: We should insist upon retaining dispensing as an integral part of our duties under the Act, at the same time as we insist upon adequate remuneration for our services. Dispensing means to us at least half of our livings, and we cannot allow it to be filched from us. We are better equipped to discharge the work than dispensing chemists; it was part of the training we paid for, and when we paid our registration fees we paid for the inalienable right to practise it. Another reason why many of us object to give up dispensing is that we believe that to see and handle his drugs not only gives a medical man a greater and living interest in his work, but also enables him to prescribe more intelligently; and to take this work from him will inevitably be, we believe, at the expense of his efficiency. Mr. Lloyd George has, to my mind, succeeded in throwing mud in our eyes by offering the chemists a miserable fee for this service—that is, by making it valueless to us he has succeeded in silencing our objections to being deprived of it. But the submissiveness of the chemists is sufficient evidence to convince me that they have been made aware that when the doctors have been silenced their demands will be considered, and that they will be given far better terms than now offered them. But whether they get less or more, it makes no difference to the point that the loss of dispensing means to us, so far as about 15,000,000 people are concerned, the loss of at least half of our incomes.

The Provision of the Cost of Medical Benefit.

Dr. ARTHUR E. LARKING (Buckingham) writes: In all the schemes that are being brought forward to meet the deadlock caused by our refusal to work under the Act the broad outlines may be clear enough, but the details are defective—the theory may be correct, but the practical part is unworkable.

For instance, it is inferred that the insured members will be quite willing to pay the excess over and above the amount provided by the Government for medical benefits. This is by no means the case. If this class of person had been willing in the past to pay the small amounts asked by clubs (private and others) for medical attendance (in some cases as little as one halfpenny a week) there would have been no necessity for an Insurance Act. But it was because the majority of the working classes refuse to provide against sickness or anything else that the only way to get anything out of them was by deducting the premium from their wages. They were told that for their weekly deductions of 4d. and 3d. they would receive five varieties of benefits, and they won't be satisfied unless they get them. It is all very well to talk about giving them their 6s. back to pay for their medical attendance—what will a working man say to this as an insurance scheme? It will not suffice to pay in some cases for one visit, and is no insurance at all. The idea is ridiculous.

Suppose the 6s. is paid to the societies, have they any power to retain it, and will there not be large numbers who will demand to have this money given to them to spend? These have never provided for a doctor, and never will, unless compelled, and as for asking them to pay ½d. or 1d. or 1½d. a week over and above their 4d. or 3d. deductions—well, I should not like to be the person to ask them!

They will say that they pay for medical benefits, and they will have them; they want a doctor, and a doctor they will have.

A Public Medical Service that asks for any amount out of the pocket of the insured members over and above deductions from wages will be a failure, because, as in the past, only a certain number will pay. The very class the Insurance Act was passed to bring in compulsorily will not benefit so far as medical attendance is concerned.

But the Act provides a way out of the difficulty that has been much overlooked. It provides that if there is any deficiency in the amount provided by Government the deficit must be paid by the Treasury and the county or borough council. This is the solution of the difficulty.

It is hopeless to persuade the public generally, especially friendly society members, that such a capitation fee as 10s. or 12s. for each insured member is required. By accepting in the past such small sums as 2s. 6d., 3s., or 4s. a year we have ruined our case, consequently we must drop the capitation system altogether and demand payment on a tariff of fees drawn up to suit each locality.

The Government is compelled to adopt a capitation system in its payments towards the cost, and will pay so much a head to the local Insurance Committees. These committees pay the accounts sent in by the medical profession, and any deficit is made up, as specified in the Act, by the Treasury and county or borough council.

In the course of a year or two the actual cost will be known and fresh arrangements may be made, but at present, when nobody knows what it will cost, the only fair way is to throw the burden on the people generally and not on the medical profession.

In conclusion, I would suggest that the tariff of fees should vary with the wage limit—a low tariff with a low wage limit, and vice versa.

Sanatorium Benefit.

Dr. ERNEST TREDINNICK (Craven Arms, Shropshire) writes: The National Medical Union is now trying to upset the finding of the Representative Meeting at Liverpool as to the sanatorium treatment by bringing up the subject before the Branches. I was one of the losers, but I think that the minority should loyally abide by the decision of the majority. We came to the conclusion after many hours of debate, and if we stick together we shall gain our points, but to bring the question all over again before the Branches means another meeting of the Representatives—a costly proceeding; many thousands have been spent up to the present, and I think that the feeling generally is that we did well and that the reasons for excepting sanatorium benefits were well put before the meeting.

Medical Benefits and Venereal Diseases.

Dr. R. R. RENTOUL (Liverpool) writes: Section 14 (4) is:

> Where, under any such rule as aforesaid, payment of sickness or disablement benefit is suspended on the ground of misconduct of the person claiming the benefit, such person shall not thereby become disentitled to medical benefit.

This enactment is further emphasized by the "Model Rules" issued by the Commissioners for approved men and women societies, where it is provided:

> Notwithstanding anything in these rules, an insured person shall be entitled to medical benefit during a disease or disablement caused by his (or her) own misconduct.

It has been pointed out that in Leipzig alone, in one year

men and women insured had 24,619 days' unfitness for work owing to venereal disease. But what of the number of days' treatment. It is generally conceded that a syphilitic patient requires about four years' treatment, a bad stricture case at least six months, while it is not unusual for gonorrhoea to last for twenty years, or be even incurable. This is a point worthy of very serious attention for those drawing up a scale of fees for the Public Medical Service scheme.

Domestic Servants.

Dr. ALFRED FREER, J.P. (Stourbridge), writes: Permit me to illustrate the working of the servants' solatium of 7s. 6d. under the National Insurance Act in case of sickness. Last year one of my maids required a serious operation, which obliged her to go into a hospital, she having only a poor home, where an aged father dwells. After two months she returned to my service convalescent. After two days she fell down and broke a leg. Another two months in the hospital was necessary. The two tickets required cost me four guineas, and during the four months I paid her half wages for that time. If all this affliction had happened after the Act had come into force, the patient would have had to put up with the wretched 7s. 6d. a week.

Hospitals and Asylums.

THE ROYAL EASTERN COUNTIES INSTITUTION, COLCHESTER.

THE annual report of this institution for idiots, imbeciles, and the feeble-minded, states that during the year 1911 21 patients were admitted, 15 died, and only 2 were discharged, leaving on January 1st, 1912, 367 inmates (243 males and 124 females). It is estimated that of those admitted only about one-third were capable of substantial improvement, and the necessity of an adequate separate building for custodial cases is emphasized, certain additions to the existing annexe being suggested. Only two patients were discharged, one of whom had to be removed to a lunatic asylum on account of insanity, so that practically the institution is assuming in greater degree the character of a permanent home. Dr. Douglas Turner, the Medical Officer, states that the number of deaths was higher than in any year since 1905, the aggregate number for the six subsequent years having been 52, while if the average of the previous years had been maintained the figure would have been 172. The death-rate for 1911 amounted to 4.13 per cent. on the average number of patients resident, as compared with 2.62 per cent. for the six years above named. The average age at death was just 30 years, and with an increasing number of life cases, the tendency will be to an increase of the average age at death. Though 5 of the 15 deaths were attributed to some form of tuberculosis, it is gratifying to note that the tuberculous death-rate has diminished by 38 per 1,000 from that which prevailed in the institution previous to 1905. A considerable number of tuberculous patients are under treatment in the institution, and we learn from the report of the Lunacy Commissioners that it is intended to make special provision for such cases in a new building for 60 additional patients which is in contemplation. Amongst other specified causes of death are noted 1 from malignant endocarditis, 1 from syncope (suddenly at a theatre), 1 from nephritis, 1 from epilepsy, 1 from intestinal obstruction, and 1 from dysentery. Of dysentery there have been 22 cases, several of a severe type. Scarlet fever has again been a source of trouble both at the Colchester institution and at its seaside branch at Clacton-on-Sea; altogether 18 cases seem to have occurred in 1911, though careful precautions were adopted to prevent spread of the disease. Dr. Turner is of opinion that in the case of imbeciles the period of incubation may extend beyond the ten days generally recognized as the limit with normal children, and instances three cases in which he considers the period was 11 days, and six in which it was from 12 to 17.

The report of the Superintendent, Mr. John J. C. Turner, gives interesting particulars as to the arrangements for training, employment, and recreation, and the economy with which the institution is managed is apparent from the fact that the weekly cost, including paying as well as non-paying patients, was only 10s. 1d. a head, with 1s. 7d. a head for administrative charges. The total income for 1911 amounted to £14,780.

HEREFORD COUNTY AND CITY ASYLUM, BURGHILL.

THE Medical Superintendent of this asylum, Dr. C. S. Morrison, in his report for the year 1910 shows that the total cases under care during the year numbered 585, the average number daily resident being 504. The 82 new admissions included 79 direct admissions, but in these the illness was of more than twelve months' duration in 37 cases. In 17 the illness was congenital. The height of this figure leads Dr. Morrison to quote figures showing that the ratio of defective to total admissions in asylums in urban districts is 5.0 per cent., in mining districts 6.0 per cent., and in rural districts (including Herefordshire) 7.2 per cent., but that Hereford County and City by itself has, as stated, a ratio of 25.6 per cent. These defectives, Dr. Morrison considers, may be accepted as local products of the fiscal jungle agriculture has been converted into, and which is in urgent need of drastic treatment, and the ground so improved replanted with industrial concerns employing and supporting a younger and mentally sturdier manhood. It is distressing to reflect that in the Garden Shires of England men decay. The projected establishment of sugar factories within the county, and the development by the local authority of small holdings in this sense would be really the application of a remedy prescribed by preventive State medicine.

During the year 27 were discharged as recovered, giving a recovery-rate on the direct admissions of 34.2 per cent., or of recoveries in and on the direct admissions of 37.3 per cent.; also 11 were discharged as relieved and 4 as not improved. During the year also 33 died, giving a death-rate on the average number resident of 6.5 per cent. The deaths were due in all cases with one exception (exhaustion after fracture) to natural causes, the only outstanding feature being that 7, or 21 per cent., died from pulmonary consumption. The instructive table at the end of the medical statistics shows that of the 510 patients remaining at the end of the year no less than 176 were idiots or imbeciles, 229 were senile and secondary dements, whilst the epileptic insane, the general paralytics, the insane with grosser brain lesions and the chronic maniacs and chronic melancholiacs furnished 46 more. Omitting any mention of those with delusional insanity, many of whom would doubtless be irrecoverable (25 cases of systematized delusional insanity) there were thus 451 of the 510 remaining at the end of the year who belonged to the hopeless class. Dr. Morrison had to record again the continuance of epidemic disease at this asylum, there being 29 cases of diarrhoea among the patients during the year, and 11 of dysentery. The higher incidence of tuberculosis is also occasioning Dr. Morrison concern, and although, he says, incipient trouble has been detected in some cases on admission, in many others the disease had undoubtedly developed during their detention in the asylum.

ROYAL HOSPITAL FOR INCURABLES, DUBLIN.

THE 168th annual report of the Royal Hospital for Incurables, which was read at the recent annual meeting, stated that on April 1st, 1911, there were 209 patients in the hospital; during the year 158 candidates applied for admission, but though all were suitable cases only 47 could be admitted. The chairman drew attention to the fact that as only incurable patients were taken in without fees, the hospital could not benefit under the Insurance Act, and it was therefore most important that the public should not reduce the subscriptions on which the hospital depended. The institution was economically managed, the cost of maintaining a bed during the year, including all charges, being £35 5s. 1½d.

Vital Statistics.

ENGLISH URBAN MORTALITY IN THE SECOND QUARTER OF 1912.

[SPECIALLY REPORTED FOR THE BRITISH MEDICAL JOURNAL.]

IN the accompanying table will be found summarized the vital statistics of ninety-five of the largest English towns based upon the Registrar-General's weekly returns for the second quarter of the year. The 109,963 births registered in these towns during the quarter under notice corresponded to an annual rate of 25.0 per 1,000 of the population, estimated at 17,639,816 persons in the middle of the year. In London the birth-rate last quarter was 24.7 per 1,000, while among the other towns it ranged from 14.6 in Bournemouth, 15.0 in Southport, 15.3 in Blackpool, 15.5 in Hastings, 16.0 in Bath, and 16.5 in Ilford and in Eastbourne to 30.4 in St. Helens, 30.7 in Rhondda, 30.9 in Stoke-on-Trent, 31.0 in Barnsley, 32.3 in South Shields, 32.7 in Sunderland, and 33.9 in Middlesbrough.

The 57,465 deaths registered in these towns were equal to an annual rate of 13.1 per 1,000; in London the death-rate was 12.4 per 1,000, while among the other ninety-four towns the lowest rates were 7.1 in Ilford, 7.9 in Wimbledon and in Southend, 8.4 in Edmonton and in Enfield, 8.6 in Ealing, and 8.9 in East Ham, and the highest rates were 15.8 in Middlesbrough, 15.9 in Ipswich and in Dewsbury, 16.0 in Manchester, 17.0 in Oldham, 17.9 in Liverpool, and 18.4 in Salford and in Rotherham.

The 57,465 deaths from all causes included 3 from small-pox, 200 from enteric fever, 2,089 from measles, 258 from scarlet fever, 1,593 from whooping-cough, 478 from diphtheria, and 769 (among children under 2 years of age) from diarrhoea and enteritis. Of the 3 fatal cases of small-pox, 2 belonged to Bristol and 1 to Manchester. The 200 deaths from enteric fever were equal to an annual rate of 0.05 per 1,000; in London the death-rate from this disease was only 0.02 per 1,000, while among the other towns the rates ranged upwards to 0.12 in Salford, 0.14 in Enfield, 0.15 in Rhondda, 0.19 in Barrow-in-Furness and in Newport (Mon.), and 0.40 in Bradford. The 2,089 fatal cases of measles corresponded to a rate of 0.48 per 1,000; in London the rate was 0.38, while among the other towns the highest rates were 1.15 in Nottingham, 1.16 in Manchester, 1.29 in Gateshead, 1.37 in Warrington, 1.40 in Liverpool, 1.45 in Newport (Mon.), 2.02 in Salford, 2.52 in Ipswich, 2.82 in Merthyr Tydfil, 3.65 in Cardiff, and 4.04 in Rotherham. The 258 deaths from scarlet fever were equal to a rate of 0.06 per 1,000; in London this disease caused a death-rate of 0.04 per 1,000, the rates in the other towns ranging upwards to 0.17 in Swansea, 0.18 in Coventry, 0.23 in Barnsley and in Newport (Mon.), 0.28 in Darlington, 0.30 in Dewsbury, and 0.48 in Preston. The 1,593 fatal cases of whooping cough were equal to an annual rate of 0.36 per 1,000; in London the death-rate from whooping cough was 0.31 per 1,000, while it was as high

Analysis of the Vital Statistics of Ninety-five of the Largest English Towns during the Second Quarter of 1912.

Towns.	Estimated Population middle of 1912.	Births.	Deaths.	Annual rate per 1,000 Living.		Deaths from						Diarrhœa and Enteritis (under two years of age).	Deaths of Children under one year of age to 1,000 Births.	Rate per cent. of Uncertified Deaths.
				Births.	Deaths.	Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping-cough.	Diphtheria.			
95 Towns	17,639,816	109,963	57,465	25.0	13.1	200	3	2,089	285	1,593	478	769	93	0.8
London	4,519,754	27,854	14,015	24.7	12.4	27	—	433	42	354	99	207	[illegible]	0.1
Croydon	174,257	962	427	22.1	9.8	1	—	15	—	6	3	6	60	—
Wimbledon	56,729	273	112	19.3	7.9	—	—	—	1	2	—	2	55	—
Ealing	64,955	338	139	20.9	8.6	—	—	1	1	4	—	1	65	0.7
Acton	60,113	350	151	23.3	10.1	—	—	—	1	6	1	2	69	0.7
Willesden	159,432	1,014	358	25.5	9.0	—	—	2	—	11	1	4	78	0.6
Hornsey	86,252	386	199	18.0	9.3	2	—	1	1	—	—	8	101	—
Tottenham	142,015	929	373	26.2	10.5	2	—	4	—	15	3	5	67	—
Edmonton	67,167	473	140	28.2	8.4	—	—	—	1	[illegible]	4	8	82	—
Enfield	58,139	347	122	23.9	8.4	2	—	—	1	4	1	3	75	—
West Ham	291,900	2,077	888	28.5	12.2	1	—	5	3	53	9	9	87	—
East Ham	138,507	830	306	24.0	8.9	—	—	5	1	18	1	3	54	—
Leyton	128,155	725	346	22.7	10.8	1	—	2	2	18	4	4	83	—
Walthamstow	128,480	724	300	22.6	9.4	—	—	3	—	20	2	7	81	—
Ilford	83,080	341	148	16.5	7.1	—	—	13	—	8	3	2	59	—
Gillingham	53,511	313	129	23.5	9.7	—	—	—	2	2	3	—	64	5.4
Hastings	60,565	234	198	15.5	13.1	1	—	—	—	—	—	—	77	—
Eastbourne	53,697	221	127	16.5	9.5	—	—	—	1	1	3	—	63	—
Brighton	132,265	665	430	20.2	13.0	1	—	17	1	—	5	1	83	—
Portsmouth	236,731	1,464	757	24.8	12 8	6	—	46	7	13	35	11	82	1.2
Bournemouth	81,178	296	182	14.6	9.0	—	—	—	—	1	—	3	64	—
Southampton	120,891	667	410	22.1	13 6	1	—	8	1	13	3	9	97	—
Reading	88,603	485	239	22.0	10.8	—	—	3	—	1	2	1	68	2.1
Oxford	53,540	248	150	18.6	11.2	—	—	5	—	4	—	—	77	—
Northampton	90,467	506	256	22.4	11.3	1	—	2	—	5	6	1	71	—
Cambridge	56,522	312	156	22.1	11.1	—	—	1	2	3	10	—	58	—
Southend-on-Sea	67,196	287	133	17.1	7.9	—	—	—	1	—	3	—	56	8.3
Ipswich	74,899	425	297	22.8	15.9	—	—	47	1	16	7	1	113	—
Great Yarmouth	56,513	301	175	21.4	12.4	—	—	—	—	3	2	—	80	0.6
Norwich	122,479	620	341	20.3	11.2	2	—	3	3	1	2	4	77	0.6
Swindon	51,512	316	115	24.6	9.0	—	—	1	1	—	2	2	47	—
Plymouth	112,610	608	383	21.7	13.6	1	—	1	—	13	7	2	87	0.3
Devonport	83,172	462	205	22.3	9.9	2	—	—	1	5	3	6	76	—
Bath	69,598	277	195	16.0	11.2	—	—	—	—	1	—	3	69	0.5
Bristol	359,400	1,866	1,190	20.8	13.3	1	2	83	4	25	10	9	98	—
Gloucester	50,301	290	157	23.1	12.5	—	—	—	—	9	1	1	90	—
Stoke-on-Trent	237,153	1,826	856	30.9	14.5	3	—	17	5	10	12	16	105	1.5
Wolverhampton	95,478	622	296	26.1	12.4	—	—	3	1	6	2	3	74	—
Walsall	92,868	674	268	29.1	11.6	—	—	2	—	8	—	3	96	—
West Bromwich	68,749	478	225	27.9	13.1	—	—	—	—	12	—	3	84	5.5
Dudley	51,390	377	156	29.4	12.2	1	—	—	—	3	—	1	88	1.9
Birmingham	850,947	5,547	2,676	26.1	12.6	9	—	27	28	106	11	38	93	3.2
Smethwick	72,805	436	212	24.0	11.7	—	—	5	—	11	1	2	112	—
Coventry	111,166	742	292	26.8	10.5	—	—	1	5	6	4	3	59	2.1
Leicester	229,291	1,309	665	22.9	11.6	1	—	8	1	11	6	6	91	0.5
Lincoln	58,409	376	164	25.8	11.3	1	—	—	—	—	—	3	93	—
Grimsby	76,182	554	220	29.2	11.6	2	—	—	2	9	1	3	85	2.7
Nottingham	262,563	1,599	957	24.4	14.6	5	—	75	4	26	6	16	117	0.3
Derby	124,545	772	305	24.9	9.8	—	—	—	2	1	3	3	63	—
Stockport	110,781	622	413	22.5	15.0	2	—	17	—	25	4	2	96	—
Birkenhead	133,434	980	444	29.5	13.3	3	—	1	4	18	7	11	77	—
Wallasey	81,805	439	236	21.5	11.6	1	—	2	3	5	3	1	64	0.4
Liverpool	752,055	5,543	3,361	29.6	17.9	4	—	262	24	97	25	83	121	1.5
Bootle	71,150	502	263	28.3	14.8	—	—	3	—	3	1	6	114	3.0
St. Helens	98,163	743	326	30.4	13.3	—	—	1	2	2	5	6	101	3.7
Southport	70,444	263	228	15.0	13.0	1	—	1	—	16	2	2	76	3.5
Wigan	90,048	658	351	29.3	15.6	1	—	1	—	—	1	9	126	—
Warrington	73,205	535	263	29.3	14.4	1	—	25	2	15	4	7	90	1.9
Bolton	182,533	999	600	22.0	13.2	2	—	13	3	6	1	2	100	0.7
Bury	59,106	303	197	20.6	13.4	—	—	2	1	130	—	1	102	3.6
Manchester	723,550	4,660	2,879	25.8	16.0	11	1	210	8	73	20	40	121	0.2
Salford	232,726	1,597	1,069	27.5	18.4	7	—	117	2	27	10	15	140	0.4
Oldham	148,840	850	631	22.9	17.0	—	—	18	2	11	2	11	127	—
Rochdale	92,530	473	317	20.5	13.7	1	—	5	1	12	1	9	116	1.3
Burnley	108,015	675	406	25.1	15.1	2	—	3	—	8	—	4	120	1.2
Blackburn	133,560	684	488	20.5	14.7	1	—	28	2	11	2	6	126	1.4
Preston	117,630	722	447	24.6	15.2	2	—	—	14	1	6	7	105	2.2
Blackpool	59,834	228	174	15.3	11.7	1	—	1	—	7	1	—	75	3.4
Barrow-in-Furness	64,588	428	210	26.6	13.0	3	—	—	1	15	3	—	91	3.8
Huddersfield	109,511	521	382	19.1	14.0	—	—	1	4	—	1	2	107	—
Halifax	101,104	469	373	18.6	14.8	—	—	8	—	5	1	2	70	0.5
Bradford	289,618	1,443	1,020	20.0	14.1	29	—	22	3	—	9	8	96	—
Leeds	447,724	2,687	1,576	24.1	14.1	1	—	71	9	8	16	22	97	0.1
Dewsbury	53,630	293	212	21.9	15.9	—	—	9	4	4	2	—	113	—
Wakefield	51,944	297	197	22.9	15.2	1	—	10	—	8	3	2	114	—
Barnsley	51,876	401	198	31.0	15.3	14	—	2	3	8	—	1	117	1.0
Sheffield	466,408	3,173	1,552	27.3	13.3	2	—	2	8	60	5	21	100	0.8
Rotherham	63,557	438	292	27.6	18.4	1	—	64	1	2	2	3	135	2.1
York	82,863	448	268	21.7	13.0	6	—	3	1	—	2	1	276	—
Hull	282,987	1,915	924	27.1	13.1	—	—	5	1	9	4	6	99	0.1
Middlesbrough	106,554	900	421	33.9	15.8	—	—	5	1	1	—	3	111	1.7
Darlington	57,104	341	183	24.0	12.9	—	—	8	4	8	2	—	97	4.4
Stockton-on-Tees	52,244	360	179	27.6	13.7	—	—	—	—	1	5	—	67	0.6
West Hartlepool	64,096	455	188	28.5	11.8	1	—	—	1	3	6	—	81	—
Sunderland	151,824	1,238	576	32.7	15.2	2	—	13	1	11	4	5	107	2.1
South Shields	109,676	882	372	32.3	13.6	—	—	1	—	25	1	1	78	4.6
Gateshead	117,837	869	452	29.6	15.4	—	—	38	2	17	7	3	92	6.0
Newcastle-on-Tyne	269,193	1,938	836	28.9	12.5	5	—	—	5	7	9	4	68	0.2
Tynemouth	59,809	430	195	28.8	13.1	2	—	—	1	2	—	5	49	2.6
Newport (Mon.)	85,863	556	269	26.0	12.6	4	—	31	5	2	4	4	104	1.1
Cardiff	184,636	1,189	683	25.8	14.8	3	—	168	1	15	6	8	110	—
Rhondda	157,951	1,209	434	30.7	11.0	6	—	18	1	23	2	13	108	0.2
Merthyr Tydfil	82,554	599	304	29.1	14.8	—	—	58	—	16	1	2	124	0.3
Aberdare	51,811	378	163	29.3	12.6	—	—	4	1	7	3	1	130	—
Swansea	117,314	832	372	28.4	12.7	—	—	16	5	5	6	5	95	1.1

as 0.72 in Gloucester and in Manchester 0.73, in West Ham and in Oldham, 0.78 in Merthyr Tydfil, 0.86 in Ipswich, 0.91 in Stockport and in South Shields, and 1.26 in Salford. The 478 deaths from diphtheria corresponded to an annual rate of 0.11 per 1,000; in London the rate was 0.09 per 1,000, while among the other towns it ranged upwards to 0.24 in Edmonton and in Gateshead, 0.25 in Plymouth, 0.27 in Northampton, 0.37 in Ipswich, 0.38 in Stockton-on-Tees and in West Hartlepool, 0.59 in Portsmouth, and 0.71 in Cambridge. The fatal cases of diarrhoea and enteritis among children under 2 years of age numbered 769, and were in the proportion of 6 99 per 1,000 to the births registered during the quarter; in London the proportion was 7.43 per 1,000, while in the other towns it ranged upwards to 12.9 in Oldham, 13.0 in Devonport, 13.1 in Warrington, 13.4 in Southampton, 13.7 in Wigan, 15.0 in Liverpool, 16.9 in Edmonton, 19.0 in Rochdale, and 20.7 in Hornsey.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births was equal to 93 per 1,000; in London the rate was 82 per 1,000, while it ranged from 47 in Swindon, 49 in Tynemouth, 54 in East Ham, 55 in Wimbledon, 56 in Southend, 58 in Cambridge, 59 in Ilford and in Coventry, 60 in Croydon, and 63 in Eastbourne and in Derby, to 121 in Liverpool and in Manchester, 124 in Merthyr Tydfil, 126 in Wigan and in Blackburn, 127 in Oldham, 130 in Aberdare, 135 in Rotherham, and 140 in Salford.

The causes of 437, or 0.8 per cent., of the deaths registered in the ninety-five towns last quarter were not certified, either by a registered medical practitioner or by a coroner. In forty-one of the towns the causes of all the deaths were duly certified; among the other towns the highest proportions per cent. of uncertified deaths were 3.2 in Birmingham, 3.4 in Blackpool, 3.5 in Southport, 3.6 in Bury, 3.7 in St. Helens, 3.8 in Barrow-in-Furness, 4.4 in Darlington, 4.6 in South Shields, 5.3 in West Bromwich, 5.4 in Gillingham, 6.0 in Gateshead, and 8.3 in Southend.

HEALTH OF ENGLISH TOWNS.

IN ninety-five of the largest English towns 8,704 births and 3,733 deaths were registered during the week ending Saturday, August 3rd. The annual rate of mortality in these towns, which had been 11.6, 11.5, and 11.3 per 1,000 in the three preceding weeks, further declined to 11.0 per 1,000 in the week under notice. In London the death-rate was equal to 11.2, against 11.3, 12.2, and 11.2 per 1,000 in the three previous weeks. Among the ninety-four other large towns the death-rates ranged from 3.7 in Southport, 3.9 in Gillingham, 4.9 in Oxford, 5.1 in Bournemouth, 5.2 in Acton, and 5.5 in Cambridge to 15.0 in Bury, 15.1 in Wakefield and in Sunderland, 15.2 in Rochdale, 16.6 in Liverpool, and 18.1 in Middlesbrough. Measles caused a death-rate of 1.3 in Hull and in Gateshead, 1.7 in Liverpool, 4.4 in Merthyr Tydfil, and 6.9 in Middlesbrough, and whooping-cough of 3.4 in Grimsby. The mortality from diphtheria, scarlet fever, and enteric fever showed no marked excess in any of the large towns. A fatal case of small-pox was registered in Bristol, but none in any of the other ninety-five towns. The deaths of children under 2 years of age from diarrhoea and enteritis numbered 187, against 99 and 153 in the two preceding weeks; of this number 59 were registered in London, 22 in Liverpool, 13 in Manchester, 7 in Leeds, and 6 in Birmingham. The causes of 80, or 0.8 per cent., of the deaths were not certified either by a registered medical practitioner or by a coroner after inquest, and, included 5 in Birmingham, 4 in South Shields, 3 in Liverpool, and 3 in Preston. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,477, 1,482, and 1,525 at the end of the three preceding weeks, had slightly fallen to 1,509 at the end of the week under review; 175 new cases were admitted during the week, against 227, 190, and 222 in the three preceding weeks.

In ninety-five of the largest English towns 7,724 births and 3,890 deaths were registered during the week ending Saturday, August 10th. The annual rate of mortality in these towns, which had been 11.5, 11.3, and 11.0 per 1,000 in the three preceding weeks, rose to 11.5 per 1,000 in the week under notice. In London last week the death-rate was equal to 11.2 per 1,000, against 12.2, 11.2, and 11.2 in the three preceding weeks. Among the ninety-four other large towns, the death-rates ranged from 0.6 in Ilford, 3.9 in Oxford, 4.0 in Ealing, 4.4 in Southport, 4.8 in Grimsby, and 4.9 in Newport (Mon.) to 16.8 in Preston and in Hull, 18.0 in Walsall, 18.1 in Liverpool, 18.9 in Rotherham, 20.9 in Tynemouth, and 22.0 in Middlesbrough. Measles caused a death-rate of 2.5 in Rotherham, 3.0 in Barnsley, and 5.9 in Middlesbrough. The mortality from enteric fever, scarlet fever, whooping-cough, and diphtheria showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children under two years of age from diarrhoea and enteritis, which had been 99, 153, and 187 in the three preceding weeks, further rose to 239 last week, and included 80 in London, 17 in Liverpool, 12 in Birmingham, 11 in Leeds, 10 in Croydon, and 9 in Manchester. The causes of 25, or 0.6 per cent., of the deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 7 were registered in Birmingham, 3 in Warrington, 2 in Sunderland, and 2 in Tynemouth. The number of scarlet fever patients under treatment in the Metropolitan Asylum Hospitals and the London Fever Hospital, which had been 1,482, 1,525, and 1,509 at the end of the three preceding weeks, had risen to 1,559 on Saturday last; 207 new cases were admitted during the week, against 190, 222, and 175 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN eighteen of the largest Scottish towns, 1,068 births and 560 deaths were registered during the week ending Saturday, August 3rd. The annual rate of mortality in those towns, which had been 13.6 and 13.1 per 1,000 in the two preceding weeks, rose to 13.4 in the week under notice, and was 2.4 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates ranged from 2.5 in Motherwell, 2.6 in Clydebank, and 6.0 in Kilmarnock to 18.3 in Dundee, 18.8 in Perth, and 19.2 in Greenock. The mortality from the principal epidemic diseases averaged 1.5 per 1,000, and was [illegible] in Falkirk and Coatbridge. The 255 deaths from all causes registered in Glasgow included 21 from infantile diarrhoea, 3 from whooping-cough, 2 from diphtheria, and 1 from measles. Five deaths from measles and 5 from whooping-cough were registered in Dundee and 2 from diphtheria in Edinburgh.

In eighteen of the largest Scottish towns 1,056 births and 560 deaths were registered during the week ending Saturday, August 10th. The annual rate of mortality in these towns, which had been 13.4 and 13.4 per 1,000 in the two preceding weeks, was again 13.4 per 1,000 in the week under notice, and was 1.9 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 3.8 in Motherwell, 3.9 in Kirkcaldy, and 6.5 in Clydebank to 15.1 in Glasgow, 15.5 in Leith, and [illegible] in Greenock. The mortality from the principal infectious diseases averaged 1.5 per 1,000, and was highest in Falkirk and Coatbridge. The 228 deaths from all causes registered in Glasgow included 22 from infantile diarrhoeal diseases, 4 from whooping-cough, and 3 from measles. Three deaths from measles were recorded in Dundee and 3 in Coatbridge; and 3 deaths of infants from diarrhoeal diseases in Govan.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, July 27th, 586 births and 337 deaths were registered in the twenty-two principal urban districts of Ireland, as against 584 births and 321 deaths in the preceding week. The annual death-rate in these districts, which had been 13.8, 15.7, and 14.5 per 1,000 in the three preceding weeks, rose to 15.2 per 1,000 in the week under notice, this figure being 3.9 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures for Dublin and Belfast were 14.5 and 15.6 respectively, those in other districts ranging from 6.6 in Queenstown and 7.9 in Dundalk to 32.7 in Sligo and 34.9 in Newry, while Cork stood at 13.6, Londonderry at 8 9, Limerick at 16.3, and Waterford at 17.1. The zymotic death-rate in the twenty-two districts averaged 1.5 per 1,000, or the same as in the preceding period.

During the week ending Saturday, August 3rd, 649 births and 364 deaths were registered in the twenty-two principal urban districts of Ireland, as against 586 births and 337 deaths in the preceding week. The annual death-rate in these districts, which had been 15.7, 14.5, and 15.2 per 1,000 in the three preceding weeks, rose to 16.4 per 1,000 in the week under notice, this figure being 5.4 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 18.1 and 13.2 respectively, those in other districts ranging from 5.0 in Kilkenny and 6.6 in Queenstown to 28.0 in Sligo and 32.1 in Ballymena, while Cork stood at 19.7, Londonderry at 16.6, Limerick at 19.0, and Waterford at 9.5. The zymotic death-rate in the twenty-two districts averaged 2.2 per 1,000, as against 1.5 in the preceding period.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Order in Council, April 1st, 1881, Deputy Inspector-General JOHN LESLIE BARRINGTON has been placed on the retired list with permission to retain the rank of Inspector-General, dated July 22nd, 1912.

Fleet Surgeon A. BELL to the *Cornwallis* on recommissioning (August 13th).

Staff Surgeon A. FORRESTER reappointed to the *President*, additional for recruiting headquarters and other special duties (July 1st).

Staff Surgeon C. O'CONNELL to the *Cornwallis* on recommissioning (August 13th).

Surgeon J. BARRETT to the Royal Marine Division, Plymouth.

Surgeon C. SYMONS to the *Duncan*.

INDIAN MEDICAL SERVICE.

MAJOR C. R. PEARCE, I.M.S., 10th Gurkhas, has been deputed to undergo a course of training in the theory and practice of serum and vaccine therapy at the Central Research Institute, Kasauli, and thereafter in the Bombay Bacteriological Laboratory for a period of four months.

Captain W. E. R. WILLIAMS, I.M.S., has been appointed to the substantive medical charge of the 13th Rajputs.

Major H. M. EARLE, I.M.S., has been permitted to retire from the service from July 27th, 1912, on a pension of £400 per annum.

Major D. R. GREEN has applied to retire from the service with effect from August 1st, 1912, on completion of twenty years' service.

Major W. H. KENRICK has been granted an extension of leave for four months, with effect from February 18th, 1913.

SPECIAL RESERVE OF OFFICERS.

THE undermentioned to be Lieutenants on probation: Cadet EDMUND T. H. LEA, from the University of London Contingent, Officers' Training Corps, dated July 3rd, 1912; Cadet Sergeant ROWLAND BURNALL CAMPION, from University of London Contingent, Officers' Training Corps, dated July 5th, 1912.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

THE King has conferred the Territorial decoration upon Colonel DAMER HARRISSON, K.H.S., F.R.C.S.Edin., and Colonel CHARLES PYE OLIVER, M.D., Assistant Director of Medical Services, Home Counties Territorial Division.

ROYAL ARMY MEDICAL CORPS.

The King has conferred the Territorial decoration upon Lieutenant-Colonel ROBERT JACKSON, M.B., commanding the 3rd West Lancashire Field Ambulance, and Lieutenant-Colonel ALEXANDER STEVENSON GREENWAY, M.D., commanding the 4th London Field Ambulance.

Second South-Western Mounted Brigade Field Ambulance.—Lieutenant-Colonel AUGUSTUS W. DALBY, on completion of his period of service in command, is retired, and is granted permission to retain his rank and to wear the prescribed uniform, dated August 7th. Major ARTHUR CARY to be Lieutenant-Colonel, dated August 7th.

First East Anglian Field Ambulance.—Lieutenant A. C. YOUNG to be Captain, dated July 23rd.

Second East Anglian Field Ambulance. Lieutenant DUDLEY W. BOSWELL, M.D., to be Captain, dated July 2nd.

Third East Anglian Field Ambulance. Lieutenant JAMES TURTLE to be Captain, dated July 27th.

Second South Midland Field Ambulance.—Lieutenant-Colonel CHARLES T. GRIFFITHS resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform, dated February 15th, 1911.

Second Welsh Field Ambulance. Major EDWARD TENISON COLLINS, from the list of officers attached to units other than medical units, to be Major, August 3rd, 1912. PERCY WHEELER KENT to be Lieutenant, dated June 11th, 1912.

Attached to Units other than Medical Units. Captain HUGH N. A. TAYLOR, M.D., to be Major, dated May 6th, 1912; Lieutenant THOMAS H. C. DERHAM, to be Captain, dated July 1st, 1912; Lieutenant EDWARD N. THRELFALL, M.D., to be Captain, dated July 1st, 1912; Captain JOSHUA L. KERR, M.D., resigns his commission, dated August 3rd, 1912; Captain ARTHUR C. HARTLEY, M.D., to be Major, dated January 31st, 1912; Captain WALTER FITZPATRICK and Captain F. W. LONGHURST have resigned their commissions.

For Attachment to Units other than Medical Units.—ISAAC B. BERNSTEIN, to be Lieutenant, dated May 17th, 1912; JAMES ARTHUR, M.D., to be Lieutenant, dated May 17th, 1912; Major E. J. R. EVATT, M.B., from the 2nd Welsh Field Ambulance, to be Major, dated August 3rd, 1912.

London Mounted Brigade Field Ambulance.—Captain JOHN H. DIXON, M.D., from the Welsh Border Mounted Brigade Field Ambulance, to be Captain, dated July 1st, 1912.

Second West Lancashire Field Ambulance.—Major WILLIAM THOMAS BLACKLEDGE, M.B., from the list of officers attached to units other than medical units, to be Major, July 27th, 1912.

First North Midland Field Ambulance.—Major WILLIAM J. REID to be Lieutenant-Colonel, dated July 1st, 1912.

First South Midland Field Ambulance.—Captain CYRIL R. LUNN, M.B., resigns his commission, dated July 27th, 1912.

Second Northumbrian Field Ambulance.—Captain GEORGE G. FARQUHAR, M.B., resigns his commission, dated July 27th, 1912.

Third Wessex Field Ambulance.—Captain ALEXANDER MILNE-THOMSON to be Major, dated April 11th, 1912.

Second London (City of London) General Hospital.—Major (Honorary Captain in the Army) ERNEST J. G. BERKELEY resigns his commission, dated July 27th, 1912.

First Northern General Hospital.—Captain THOMAS GOWANS, M.B., from the list of officers whose services will be available on mobilization, to be Captain in the permanent personnel, dated April 1st, 1912. Captain JAMES W. HESLOP, from the 1st Northumbrian Field Ambulance, to be Captain, whose services will be available on mobilization, dated May 31st, 1912.

Fourth London Field Ambulance.—Captain JOHN HARDIE, M.B., resigns his commission, dated August 14th, 1912.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Army Medical Service have been officially reported to have taken place during June:

	FROM	TO
Colonel S. Westcott, C.M.G.	Edinburgh	Portsmouth.
,, R. Kirkpatrick, C.M.G., M.D.	Cairo	Bloemfontein.
Lieut.-Colonel R. S. F. Henderson, M.B., K.P.H.	Simla	Quetta
,, H. T. Knaggs, M.B.	Alexandria	Cairo.
,, F. S. Le Quesne, V.C.	Woolwich	Gravesend.
,, C. H. Hale, D.S.O.	Kamptee	Maymyo.
,, J. W. Bullen, M.D.	Maymyo	Meerut.
,, T. B. Beach	Cairo	Alexandria.
Major I. A. O. MacCarthy	London	Hounslow.
,, T. H. J. C. Goodwin, D.S.O.	Devonport	Tidworth Park
,, A. E. C. Keble	Gibraltar	Perth.
,, A. C. Fox	Curragh	Maryboro'Hth.
,, G. St. C. Thom, M.B.	Rawal Pindi	Murree.
,, St. J. B. Killery	Leeds	York.
,, M. P. Corkery	Mount Abu	Nasirabad.
,, W. H. S. Nickerson, V.C., M.B.	Rawal Pindi	Murree.
,, J. Cowan, M.B.	,,	Lahore.
,, E. P. Hewitt	Poonamallee	Nowgong.
,, M. H. G. Fell	Cairo	London.
,, W. B. Winkfield	Chakrata	Ambala.
,, H. M. Nicholls, M.B.	Poona	Deolali.
,, F. Harvey	Okehampton	Leeds.
,, E. W. Siberry	Pretoria	Potchefstroom
,, C. H. Furnivall	Secunderabad	Quetta.
,, J. G. Foster, M.B.	Bangalore	Ahmednagar.
,, F. S. Walker, F.R.C.S.I.	Queenstown	Cork.
,, L. L. G. Thorpe	Cosham	Beaulieu Camp.
Captain H. F. Shea, M.B.	Ambala	Dagshai.
,, D. L. Harding, F.R.C.S.I.	Belfast	Finner Camp.
,, E. G. Ffrench, M.D., F.R.C.S.Edin.	Ahmednagar	Poonamallee.
,, M. C. Beatty, M.B.	Tregantle	Okehampton.
,, H. V. Bagshawe	Sheffield	Totley Camp.
,, R. J. Franklin	Queenstown	Bere Island.
,, F. W. W. Dawson, M.B.	Ambala	Kasauli.
,, F. C. Lambert	Liverpool	Brackenbir Moor.
,, B. H. V. Dunbar, M.D.	Belfast	Mosney.
,, G. W. G. Hughes	Bradford	Strensall.
,, T. S. Dudding	Ipswich	Colchester.
,, S. L. Pallant	Netley	Wedgnock Park Camp.
,, T. J. Wright	Bordon	Aldershot.
,, H. C. Sidgwick, M.B.	Kingston-on-Thames	Woolwich.
,, C. R. Millar	London Dist.	West Africa.
,, R. G. Meredith, M.B.	Lichfield	Castle Ring Camp.
,, H. O. M. Beadnell	Chester	Trawsfynydd.
,, G. G. Tabuteau	Dublin	Ticknock.
,, G. Ormrod, M.B.	Holywood	Londonderry.
,, J. A. Anderson, M.B.	Bloemfontein	Stobs Camp.
,, G. W. W. Ware, M.B.	Dorchester	Cosham.
,, C. J. Wyatt, M.B.	Chatham	Languard Fort.
,, M. Keane	Colchester	Mill Hill.
,, T. S. Blackwell	Belfast	Athlone.
,, R. S. Smyth, M.D.	Ambala	Dalhousie.
,, H. E. Priestley	Gibraltar	Box Camp.
,, H. Stewart, M.B.	Ferozepore	Solon.
,, J. H. Spencer, M.B.	Ambala	Upper Topa.
,, R. W. D. Leslie	Malta	Gosport.
,, W. J. E. Bell, M.B.	Gosport	Cosham.
,, E. C. Phelan, M.B.	Calcutta	Darjeeling.
,, E. J. Kavanagh, M.B.	Bareilly	Multan.
,, A. D. Fraser, M.B.	Londonderry	Magilligan Camp.
,, O. R. McEwan	Simla	Multan.
,, J. du P. Langrishe, M.B.	Colaba	Kirkee.
,, E. M. Middleton	Rawal Pindi	Kyra Gali.
,, A. Hendry, M.B.	Mhow	Colaba.
,, J. F. Grant, M.B.	Bhamo	Maymyo.
,, W. J. Dunn, M.B.	Colaba	Mhow.
,, A. L. Foster	Rawal Pindi	Kalabagh.
,, A. G. Wells	Multan	Kasauli.
,, J. S. McCombe, M.B.	Malappuram	Secunderabad.
,, W. J. Tobin	Secunderabad	Bellary.
,, T. J. Mitchell, M.B.	Lahore	Dalhousie.
,, D. H. C. MacArthur, M.D.	Amballa	Dalhousie.
Captain C. G. Sherlock, M.D.	Lahore	Dalhousie
Lieutenant J. R. Yourell, M.B.	Rangoon	Mandalay.
,, G. H. Dive	London	N. China.
,, A. P. O'Connor, M.B.	Shorncliffe	Egypt.
,, R. F. Bridges, M.B.	,,	Dover.
,, J. D. Bowie	Ewshott	Aldershot.
,, C. H. Stringer	Nettley	Largo Camp.
,, J. D. Kidd, M.B.	Curragh	Kildare.
,, W. S. R. Steven, M.B.	Hounslow	Woolwich.
,, W. A. Frost, M.B.	Devonport	Willsworthy Camp.
,, C. D. K. Seaver	Cork	Queenstown.
,, J. S. Levack, M.B.	Bradford	York.
,, T. C. R. Archer	Shorncliffe	Lydd.
,, W. L. Webster, M.B.	Cork	Tipperary.
,, H. J. G. Wells, M.B.	,,	Kinsale.
,, E. C. Deane	Chester	Ross Camp.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BANBURY: HORTON INFIRMARY.—House-Surgeon. Salary, £80 per annum.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BARNSTAPLE: NORTH DEVON INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BEDFORD COUNTY HOSPITAL.—Male Assistant House-Surgeon. Salary, £80 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House-Surgeon. Salary, £90 per annum.

BRADFORD ROYAL INFIRMARY.—Male House-Surgeon. Salary, £100 per annum.

BRECON AND RADNOR ASYLUM, Talgarth.—Assistant Medical Officer (Male). Salary, £170 per annum.

BURNLEY: VICTORIA HOSPITAL.—Second House-Surgeon. Salary at the rate of £80 per annum.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary at the rate of £100 per annum.

CARDIFF: KING EDWARD VII'S HOSPITAL.—House Surgeon. Honorarium, £30 for six months.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—House-Surgeon. Salary at the rate of £50 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum, rising to £100 after six months.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—House-Surgeon. Salary at the rate of £75 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

HEREFORDSHIRE GENERAL HOSPITAL.—Honorary Anaesthetist.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Resident Medical Officer. Remuneration at the rate of £75 per annum.

KENT COUNTY ASYLUM, Maidstone.—Male Fourth Assistant Medical Officer. Salary commencing at £175 per annum.

LEAMINGTON SPA: WARNEFORD GENERAL HOSPITAL.—House-Physician. Salary, £85 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Two Physicians and (2) three House-Surgeons; salary at the rate of £60 per annum. (3) Surgical Registrar and Tutor; salary of Registrar, £20 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum.

MONTREAL: CHILDREN'S HOSPITAL.—Medical Superintendent. Salary, $500 per annum.

NEWCASTLE-UPON-TYNE: HOSPITAL FOR SICK CHILDREN.—(1) Senior Medical Officer. (2) Junior Medical Officer. Salary, £100 and £80 per annum respectively.

NEWCASTLE-ON-TYNE: ROYAL VICTORIA INFIRMARY.—Resident Medical Officer. Salary, £200 for first year, rising to £250 in the third year.

NORWICH: NORFOLK EDUCATION COMMITTEE.—Assistant Medical Officer. Salary, £250 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum, rising to £140.

PLAISTOW: ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum.

PORTSMOUTH BOROUGH ASYLUM.—Assistant Medical Officer. Salary, £150 per annum, rising to £200.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum, rising to £60 per annum if appointed Senior Resident Medical Officer.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—Medical Officer in charge of Electrical Department. Salary, £100 per annum.

RYDE: ROYAL ISLE OF WIGHT COUNTY HOSPITAL.—Resident House-Surgeon. Salary, £100 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary at the rate of £80 per annum.

SHEFFIELD ROYAL HOSPITAL.—(1) Assistant House-Surgeon; salary, £65 per annum. (2) Assistant House-Physician; salary, £60 per annum. (3) Two Honorary Assistant Surgeons.

SHEFFIELD: ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary, £70 per annum.

SHEFFIELD UNIVERSITY.—Professor of Pathology.

SHREWSBURY: SALOP INFIRMARY.—House-Surgeon. Salary, £150 per annum.

SMETHWICK EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £250 per annum.

SOMERSET COUNTY COUNCIL, Weston-super-Mare.—Tuberculosis Medical Officer. Salary, £500 per annum.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House-Surgeon. Salary at the rate of £60 per annum.

STOCKPORT INFIRMARY.—Two Junior House-Surgeons. Salary, £80 per annum.

TIVERTON: THE HOSPITAL.—House-Surgeon and Dispenser. Salary, £80 per annum.

WALSALL AND DISTRICT HOSPITAL.—House-Physician and Casualty Officer. Salary, £90 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary at the rate of £100 per annum.

WEST BERKS UNITED DISTRICTS.—Medical Officer of Health. Salary, £330 per annum and £330 for expenses. Eligible for appointment as M.O.H. of Faringdon Rural District; salary, £100 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Two House-Physicians. (2) Three House-Surgeons.

WILTS COUNTY COUNCIL, Trowbridge.—Tuberculosis Officer. Salary, £500 per annum.

WINDSOR: KING EDWARD VII HOSPITAL FOR WINDSOR, ETON, AND DISTRICT.—Second House-Surgeon. Salary, £75 per annum.

YORK COUNTY HOSPITAL.—House-Physician. Salary at the rate of £100 per annum.

YORKSHIRE: WEST RIDING.—Tuberculosis Officer. Salary, £500 per annum.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

ATKINSON, J. A., M.B., B.S.Lond., Certifying Factory Surgeon for the Newnham District, co. Gloucester.

BANHAM, W. W., L.R.C.P., M.R.C.S., District Medical Officer of the Ecclesall Bierlow Union.

CLARKE, J. Kilian, M.B., B.Ch.R.U.I., Assistant Medical Officer to the Essex and Colchester Asylum.

DONALDSON, Robert, M.A., M.B., Ch.B.Edin., F.R.C.S.Edin., D.T.M., D.P.H., Pathologist and Bacteriologist to the Royal Berkshire Hospital.

DOW, T., L.R.C.P.and S.Edin., L.F.P.S.Glas., District Medical Officer of the Hexham Union.

GASH, T., M.B., B.Ch.R.U.I., Certifying Factory Surgeon for the Snodland District, co. Kent.

GOOD, A. S., M.R.C.S., L.R.C.P., District Medical Officer of the Barnstaple Union.

JAMISON, E. F., L.R.C.P., L.R.C.S.Edin., District Medical Officer of the Linton Union.

JOHNSTON, H., M.B., Ch.B.Aberd., Certifying Factory Surgeon for the Newtyle District, co. Forfar.

MACDONALD, D. M., M.D., M.R.C.P.E., Medical Officer to Kinnoway Parish Council, Fife.

MACGREGOR, D., M.D.Edin., Certifying Factory Surgeon for the Jedburgh District, co. Roxburgh.

OLIVER, C. Pye, M.D.Lond., Certifying Factory Surgeon for the Maidstone District, co. Kent.

PINDER, W. P., L.M.S.S.A., District Medical Officer of the Wharfedale Union.

PRETSELL, T., M.B., C.M.Edin., Certifying Factory Surgeon for the Scalloway District, co. Shetland.

ROSS, D. B., L.R.C.P.and S.Edin., L.F.P.S.Glas., District Medical Officer of the Tadcaster Union.

SHAW, A., M.D.Glasg., Certifying Factory Surgeon for the St. Austell District, co. Cornwall.

TREGER, B., M.B., B.S.N.U.I., Junior Assistant Medical Officer, Shoreditch Parish Infirmary.

WILLIAMS, Idwal J., M.B., B.S.Liverp., Assistant Resident Medical Officer of the Mill Road Union Infirmary of the West Derby Union.

DUBLIN POST OFFICE.—The following have been appointed medical officers, vice Dr. Henry Fitzgibbon:—Central District—Dr. W. I. de C. Wheeler. Rathmines and Pembroke—Dr. Warren. James's Street—Dr. Magennis. Clontarf Dr. O'C. Redmond. Phibsborough—Dr. Ryan.

MANCHESTER ROYAL INFIRMARY.—The following officers have been reappointed:

Anæsthetists: Edward Moir, L.S.A.Lond.; E. Falkner Hill, M.B., Ch.B.Vict.

Medical Officer to the Central Branch: A. E. Woodall, M.D.

Assistant Surgical Officers: J. P. Buckley, F.R.C.S.Eng.; W. R. Douglas, F.R.C.S.Eng.

Assistant Surgical Officer, Aural Department: F. H. Westmacott, F.R.C.S.Eng.

ST THOMAS'S HOSPITAL.—The following house appointments have been made:

Casualty Officers and Resident Anæsthetists: S. H. Ronquotte, B.A.Cantab., M.R.C.S., L.R.C.P.; H. J. B. Fry, B.A., M.B., B.Ch., B.Sc Oxon, M.R.C.S., L.R.C.P.; W. M. Oakden, B.A.Cantab., M.R.C.S., L.R.C.P.; W. D. Ross, B.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.; G. N. Brandon, M.R.C.S., L.R.C.P.; W. G. Marsden, B.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.; A. R. Chavasse, M.A., B.M., B.Ch.Oxon, M.R.C.S., L.R.C.P.; J. B. A. Wigmore, B.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.

Casualty Assistants: N. T. Whitehead, M.R.C.S., L.R.C.P.; C. H. G. Philp, B.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.

Resident House-Physicians: F. J. Humphrys, M.B., B.S.Lond., M.R.C.S., L.R.C.P.; W. A. Russell, B.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.; C. H. L. Rixon, M.R.C.S., L.R.C.P.; J. R. A. D. Todhunter, B.A.Cantab., M.R.C.S., L.R.C.P.

Resident House-Surgeons: P. H. Mitchiner, M.B., B.S.Lond., M.R.C.S., L.R.C.P.; W. W. Wagstaffe, M.A., B.M., B.Ch.Oxon., M.R.C.S., L.R.C.P.; N. F. Lock, M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P.; E. Rayner, B.A.Cantab., M.R.C.S., L.R.C.P.

House-Surgeon to Block 8: C. V. Anderson, M.R.C.S., L.R.C.P.

Obstetric House-Physicians; C. W. Treherne, M.R.C.S., L.R.C.P.; G. E. Downs, M.B., B.Ch.Oxon.

Ophthalmic House-Surgeons: D. S. Bryan-Brown, B.A.Cantab., M.R.C.S., L.R.C.P.; P. Verdon, B.A., M.R.C.S., L.R.C.P.

Clinical Assistants: Throat and Skin—E. G. Saunders, M.R.C.S., L.R.C.P. Children's Medical—C. H. Budd, M.A., B.M., B.Ch. Oxon., M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

MARSDEN.—On August 14th, at 24, Hawarden Avenue, Liverpool, the wife of Prosper H. Marsden, of a daughter.

MARRIAGE.

SUTHERLAND—CAMERON.—At Trangie, N.S.W., on July 9th, 1912, John Wilson Sutherland, M.B., Ch.B. (late of 3, Queen Margaret Place, Glasgow), of Narromine, N.S.W., to Kate Cameron, of "Buddah Lake," Trangie.

DEATHS.

APPEL.—On July 22nd, at Madanapalle, Madras Presidency, India, from sprue, Dr. Louise Appel, M.B.Lond.

ARMBRECHT.—On August 7th, at Duke Street, Grosvenor Square, Ernst Lewis Armbrecht, aged 77.

HOUSEMAN.—At the Manor House, Houghton-le-Spring, on Saturday, August 10th, 1912, James Gilpin Houseman, M.D., in his 54th year.

SHEPHERD.—On August 12th, at 50, Kedleston Road, Derby, after a short illness, H. D. Shepherd, M.B., F.R.C.S.Edin.

PUBLISHERS' ANNOUNCEMENTS.

MR. H. K. LEWIS announces for early publication new editions of *Mind and Its Disorders*, by Dr. W. H. B. Stoddart, of the Bethlem Royal Hospital; *Clinical Bacteriology and Haematology for Practitioners*, by Dr. W. d'Este Emery, and *Materia Medica and Pharmacy for Medical Students*, by Mr. R. R. Bennett, Pharmacist to University College Hospital. Dr. Stoddart has added two chapters dealing with the study of the subconscious by psycho-analytic methods, and has revised the work throughout as required by the amount of skilled research in the field of psychiatry which has been done since the publication of the first edition little more than three years ago. Dr. Emery's book is the fourth edition, and has been carefully revised throughout; Mr. Bennett's manual has also been thoroughly revised for its second edition. The same firm has in hand a new edition (the sixth) of Dr. Lewis Jones's *Medical Electricity*. This will contain several new illustrations, and will be brought thoroughly up to date. A new book on ionization is in preparation by the same author, and will be issued at an early date.

RECENT PUBLICATIONS.

Taschenbuch der Therapie. Herausgegeben von Dr. M. T. Schnirer. Achte vermehrte u. verbesserte Ausgabe. Würzburg: Curt Kabitzsch. (A. Stuber's Verlag.) 1912. (Imp. 32mo, pp. 465. M.2.)

A new edition of a book reviewed last year. Of convenient pocket size, it contains memoranda on all subjects connected with the modern medical treatment of disease, including lists of health resorts, private hospitals, weights, measures, and doses, the composition of many of the newer remedies, and the uses of serums. Notes on the diagnostic points of the principal diseases, together with the prescriptions commonly used in their treatment by various Austrian and German authorities, are added.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Clinical Clinics, X Rays and Operations, 2 p.m. daily. Monday: Gynæcology, 10 a.m.; Demonstration of Minor Operations, 10.30 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynæcological Operations, 10 a.m.; Demonstration of Fractures, etc., 10.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynæcology, 2 p.m. Thursday: Gynæcological Demonstration, 10 a.m.; Lecture on Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Orthopædics, 2 p.m. Friday: Gynæcological Operations, 10 a.m.; Lecture on Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. on Tuesday and Wednesday.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, AUGUST 24TH, 1912.

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STATE SICKNESS INSURANCE COMMITTEE.

APPOINTMENTS IN CONNEXION WITH THE INSURANCE ACT.

THE State Sickness Insurance Committee calls the attention of all members of the medical profession to the following resolution adopted by the Annual Representative Meeting, 1912:

> That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

SANATORIUM BENEFIT.

The State Sickness Insurance Committee also directs attention to the following resolution adopted by the Annual Representative Meeting, 1912:

> That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such apointment* shall be submitted to the Council for its approval.
>
> * "Appointment" means any professional work.

The State Sickness Insurance Committee notifies that no advertisement in respect of appointments in connexion with sanatorium benefit will be accepted for publication in the BRITISH MEDICAL JOURNAL which is inconsistent with the conditions laid down by the Association, and in all cases in which an advertisement is accepted a full list of the conditions laid down by the Association will be sent to the advertiser.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

MIDLAND BRANCH:

CHESTERFIELD DIVISION.

A MEETING of the Division was held on August 9th at the Board Room, Chesterfield Hospital (by kind permission of the Board). Dr. A. GREEN was in the chair, and the following were present: Drs. A. Court, A. M. Pilcher, James Adam, J. H. Blight, A. W. Wilson, T. Corkery, J. G. Shea, R. G. Chase, and W. Duncan (Honorary Secretary); and Messrs. J. A. Magee, W. B. Croskery, F. J. Waldmeier, M. L. Ford, F. Marriott, W. H. Lee, B. Badcock, W. M. Cummins, James Brierley, Ray Edridge, H. B. Fletcher, Charles A. Thorne, and A. Chawner.

Rates for Midwives.—The HONORARY SECRETARY reported four letters received from midwives relative to the new rules passed by the Chesterfield Division of the British Medical Association; from one of these it appeared that there was some difficulty as to the working, owing to the rules being at present restricted in their application to the area of the Borough of Chesterfield, and to the fact that unless the rules applied equally to uncertificated midwives certificated midwives would be injured. After some discussion, it was resolved to refer the matter to the subcommittee already appointed to deal with the question of midwives, with instructions to report (1) as to the area within which the rules shall apply; (2) as to whether the rules shall apply equally to uncertificated midwives.

Supplementary Pledge, Resignations, etc.—The matter was discussed at length, and the CHAIRMAN urged those present to make every effort to get practitioners who had not already signed resignation forms to do so without delay, as it was important that the returns should be made up (if possible) by end of August. This was agreed to. Dr. COURT reported fully the position with regard to the supplementary pledges, resignations of contract appointments, and guarantee fund, from which it appeared that the Division was in a very satisfactory position; and it was unanimously resolved:

> That this meeting tender its thanks to Dr. Court for his untiring attention to the matter, and for the very complete manner in which the report had been prepared and presented.

Sanatorium Benefit.—It was reported that, in reply to an invitation by Dr. Green to him to attend at Chesterfield and address the members on the proposed working of the sanatorium benefit, Dr. Barwise had stated that he would be pleased to attend. Owing to the vacation, it was resolved to suggest September 20th as a suitable date, and that the same meeting would afford an appropriate date for completing the amalgamation of the Midland Medical Union with the Chesterfield Division of the British Medical Association.

NORTH OF ENGLAND BRANCH:
NEWCASTLE-ON-TYNE DIVISION.

A SPECIAL meeting of the Division was held on August 9th, all practitioners in the locality being invited to attend. Dr. A. SMITH (sen.) was in the chair, and thirty-seven medical men were present.

Executive Committee.—Mr. WILLAN proposed, Dr. J. W. SMITH (sen.), seconded, and it was resolved, that Drs. E. B. Kitching and R. W. Simpson be elected members of the Executive Committee.

Representative Meeting.—Drs. J. W. SMITH (sen.) and BOLAM presented their report on the Annual Representative Meeting, and were duly thanked.

Guarantee Fund.—Dr. BOLAM proposed and Dr. A. CAMPBELL seconded:

> That the question of raising a local guarantee fund be referred to the Executive Committee.

On being put to the vote the motion was lost by 12 votes to 10. Dr. J. W. SMITH (sen.) then proposed and Dr. HOBBS seconded:

> That it be referred to the Executive Committee to consider what means should be taken to increase the National Insurance Defence Fund to an average of £20 per member.

This was carried without opposition.

OXFORD, READING AND MAIDENHEAD BRANCH.

A MEETING of the Council of the Branch was held in the Library of the Royal Berkshire Hospital on August 15th, Dr. W. T. FREEMAN, President of the Branch, in the chair, when the medical officers of health for Berkshire, Oxfordshire, and the Borough of Oxford were present by invitation. A draft of proposed regulations for the administration of sanatorium benefit, drawn up by the Chairman of the Provisional County Insurance Committee for Berkshire, was considered, and certain amendments and additions proposed. It was clearly understood that should the amended regulations be acceptable to the Insurance Committee they would still require to be discussed by the Divisions and then be sanctioned by the State Sickness Insurance Committee. The points chiefly discussed were: (1) Terms for night visits, emergency calls, and mileage, and (2) the question of the terms on which hospitals would give treatment. The County Insurance Committee proposed to give the medical officer of health £25 for his work as adviser for six months or less, that is, until a tuberculosis officer should be appointed.

PROPOSED MASHONALAND DIVISION.

A MEETING of the medical practitioners in Mashonaland was held in the Club, Salisbury, on July 15th, at 8 p.m. It was attended by Dr. Mackenzie (Hartley), Dr. Percy Peall (Arcturus), Dr. Guy Peall (Sinoia), and Drs. Appleyard, Cheadle, Ellis, Harpur, Huggins, Lillie, and McNaughtan (Salisbury). The meeting was convened for the purpose of discussing the advisability of joining in the movement inaugurated at Buluwayo last May, at which a Rhodesian Branch of the British Medical Association was formed, with a Division in Matabeleland. It was reported that circulars had been sent to all the medical men practising in Mashonaland inviting their opinions and asking them to attend the meeting. Replies had been received from almost all those at present in the district, and all were in favour of the movement. Letters were read from Drs. Cashel (Inyanga), Coke (Gatooma), Jackson (Shamva), McLaren (Marandellas), O'Keefe (Mazoe), Moore (Umtali), McDonnell (Kimberley Reefs), Lawrence (Melsetter), and Vernon (Enkeldoorn). A letter was also read from Dr. Fleming, C.M.G., regretting that he could not be present owing to his absence from Salisbury on duty. A general discussion of the subject ensued, and it was unanimously agreed that a Mashonaland Division of the Branch should be formed.

It was further agreed that the meetings of the Division be held quarterly in Salisbury on the first day of the High Court Sessions.

The following Divisional officers were appointed: Dr. Appleyard (Chairman), Dr. Lillie (Secretary and Treasurer), Dr. Huggins (Town Committeeman), and Drs. Moore, Percy Peall, and Mackenzie (Country Committeemen).

Meetings are to be held quarterly and as often besides as the Chairman may decide. The country members will be informed of the business to be transacted, so that they may have the opportunity of expressing their opinions thereon.

The subscription of £1 7s. 6d. per annum, proposed by the Matabeleland Division, was agreed to.

It was further unanimously agreed that the Division should be represented on the Branch by Dr. Fleming, the Divisional Chairman, and by one other committeeman if required.

The proceedings terminated with the usual vote of thanks to the Chairman, Dr. Appleyard.

Association Notices.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

BRANCH AND DIVISION MEETINGS TO BE HELD.

BORDER COUNTIES BRANCH: SCOTTISH DIVISION.—A meeting of the above Division will be held in the County Buildings, Buccleuch Street, Dumfries, on Tuesday, August 27th, at 2.30 p.m. Business: (1) Minutes of last meeting. (2) Consideration of—(*a*) Ethical Rules; (*b*) increase of subscription to BRITISH MEDICAL JOURNAL; (*c*) increase of Guarantee Fund; (*d*) Public Medical Service. The Draft Ethical Rules are published in the BRITISH MEDICAL JOURNAL SUPPLEMENT, May 11th, which members are requested to bring with them. Non-members are invited to attend, in order that the meeting be fully representative, and that items (*c*) and (*d*), which affect them as non-members, receive conjoint consideration.—J. DEWAR ROBSON, Secretary, 1, Hope Place, Maxwelltown, Dumfries.

SOUTH MIDLAND BRANCH: NORTHAMPTONSHIRE DIVISION.—A meeting of this Division will be held in the board room of the Northampton General Hospital at 2.30 on Tuesday, August 27th. The meeting will be preceded by a luncheon at Franklin's Restaurant, Guildhall Road, at 1.30. Those wishing to attend the luncheon should notify the Secretary at least three days beforehand. Business: Minutes of preceding meeting. Report from Dr. Dryland of the Annual Representative Meeting. Any other business.—PEVERELL S. HICHENS, Honorary Secretary, 47, Sheep Street, Northampton.

SOUTH-WESTERN BRANCH.—A meeting of the Branch Council will be held at the Royal Devon and Exeter Hospital on Friday, August 23rd, at 3.15. Agenda: (1) Minutes of the last meeting. (2) Election of members. (3) Consider and advise Provisional Medical Committees with regard to resolutions of the Representative Body on the following matters: (*a*) Central Defence Fund; (*b*) sanatorium benefits; (*c*) resignations of members of Provisional Insurance Committees; (*d*) acceptance of posts under the Act; (*e*) contract practice resignations; (*f*) statement to lay press. (4) Receive any communications from the Branch Provisional Medical Committees and take any necessary action thereon. (5) Consider question of Public Medical Services in the Branch area. (6) Any other business. RUSSELL COOMBE, Honorary Secretary, 5, Barnfield Crescent, Exeter.

ANNUAL CONFERENCE OF HONORARY SECRETARIES OF DIVISIONS AND BRANCHES.

IN the list of Secretaries attending the Annual Conference of Honorary Secretaries of Divisions and Branches, published in the SUPPLEMENT of last week, the names of the following were accidentally omitted:

Dr. J. S. CHATER, Lincoln Division.
Dr. H. NEVILLE CROWE, Worcester Division.
Mr. ERNEST C. HADLEY, Birmingham Central Division.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

(Continued from p. 243.)

The books shown by the combined firms of Henry Frowde and Hodder and Stoughton (20, Warwick Square, London, E.C.) included several entirely new works and some fresh editions of some already popular works. Among the latter was the first volume of a fifth edition of Cunningham's *Manual of Practical Anatomy*. In a brief preface its editor, Professor Arthur Thomson, indicates as its special point the description and illustration of several new dissections devised to bring the study of anatomy in the schools more into relation with modern procedures in the operating theatre. The Basle anatomical nomenclature is used throughout, old terms being inserted in bracket. Another was a second edition of Dr. G. F. Still's excellent treatise on the *Common Disorders and Diseases of Childhood*. Among the newcomers was a timely volume on *Tuberculin Treatment*, by Dr. Clive Riviere, of the City of London Hospital for Diseases of the Chest, and Dr. Egbert Morland, of Arosa in the Engadine. Principles and technique are both clearly explained, and common sense and sound judgement pervade the whole volume. Still new were *Kidney Diseases*, by Dr. W. P. Herringham, of St. Bartholomew's Hospital, and *Surgery of the Rectum for Practitioners*, by the late Sir Frederick Wallis, whose special knowledge of this subject was well recognized. Other comparatively new volumes shown were a *Textbook for Nurses*, by Groves and Brickdale, and the excellently illustrated *Textbook of Massage*, by Miss Despard, to which we drew attention a short time ago. There were also on view some specimen pages of a new medical dictionary by Dr. T. L. Stedman, editor of the *Medical Record*, which includes many words used in the allied sciences and professions, and of *The Practitioner's Encyclopaedia of Medicine and Surgery*, which is to be brought under the editorship of Mr. Keogh Murphy in a single volume of 1,200 pages.

In the crush of modern drugs there is some tendency to overlook old and well-tried therapeutic friends. Among these must certainly be placed the mineral water shown by C. Oppel and Co. (10 and 12, Milton Street, London, E.C.), the representatives in this country of the Friedrichshall Springs at Saxe-Meiningen in Germany. It is an aperient water whose special claim was well described many years ago by the late Sir Henry Thompson in the following words: "One of the characteristics of this water is that the longer it is taken the smaller is the quantity necessary to effect the purpose. It leaves the patient less constipated after discontinuing it than he was before, and it may be taken habitually without lowering the system. As an occasional aperient and corrector of digestion I know of nothing at all equal to Friedrichshall." The composition of the water, which is stated to be very constant, is in parts per 1,000 as follows: Magnesium sulphate 6.2, sodium sulphate 5.2, sodium chloride 7.9, magnesium chloride 4.9. There are also present small quantities of lime and potash salts and of magnesium bromide. Its taste is much on a par with that of practically all natural waters which have any claim to the possession of medicinal properties of the same general character. Some persons who dislike its flavour very much find it comparatively easy to take when milk is added.

Foods for diabetics and the obese figured on the stall of Messrs. G. van Abbott and Sons (Baden Place, Crosby Row, London, S.E.), who are among the very few manufacturers in the United Kingdom of gluten and almond flour, products which play so large a part in the two connexions indicated. The forms in which they were shown included gluten bread, almond biscuits and flour, and a number of preparations such as soups, jellies, and glycerine jujubes, all approximately free from either starch or sugar. The bread of the firm is soft, and hence, like bread intended for ordinary consumption, will only keep good for three or four days; but the biscuits retain their quality and different flavours for any length of time if kept in a moderately dry place. Two or three varieties of the latter are worth special mention; for instance, Medolia biscuits, which in addition to their starch and sugar free composition are unusually cheap and thus well suited for use in hospitals at which diabetic patients are under treatment. Another biscuit termed "Kalos" is intended less for the benefit of diabetics than of those who are struggling with obesity. A third variety was one of quite a different order, namely, a hypophosphite of lime biscuit put forward as of utility in dealing with delicate children or of adults suffering from nervous depression. Many of the preparations of this firm are relatively palatable, and all enjoy a good reputation among dietetic specialists.

The general practitioner whose less highly specialized wants in the way of *x*-ray apparatus are apt to be somewhat overlooked, found himself catered for at the stall of Harry W. Cox and Co., Ltd. (47, Gray's Inn Road, London, W.C.). It is no small matter to have in one compact and simply controlled apparatus every necessary element in *x*-ray work with the exception of the tube, for the many separate parts of the first *x*-ray outfits were sometimes as bewildering to the man who was not an electrical engineer as are the many articles of a lady's luggage to the masculine traveller on holiday bent. One recommendation of this outfit lay in the fact that it does away with all necessity for special wiring, at least for ordinary non-instantaneous and not too heavy work. The degree of efficiency obtainable with the interrupter enabled this set to be used for all ordinary work from any lamp-holder. Interrupters seemed to be the speciality of this stall, and some very interesting patterns were exhibited. One mercury interrupter on view embodied a device by which it could be used on alternating current in the same manner as ordinary interrupters are used on direct current. For cases in which no gas supply is available provision was made for a special vaporizer of gasoline, which, it was said, would last for three weeks or so, and would prove a useful di-electric. A small item on this stall was worth noting for its mechanical ingenuity if for nothing else. It was called the electric automasseur. A minute induction coil and cell were enclosed in a contrivance scarcely larger than a bar of soap, and this applied to the palm or elsewhere, gave some degree of faradic sensation combined with vibratory massage.

The preparation shown by Virol Limited (152–166, Old Street, London, E.C.) was that from which this firm derives its name. It had the good fortune to gain approval among medical men very soon after its first introduction, and as time goes on the favour with which it is regarded shows no evidence of diminishing. From testimonials which we have seen it would seem to be used with satisfaction in a large number of hospitals and sanatoriums. Presumably, therefore, it must be relatively cheap. Direct scientific testimony to its value is to be found in Hutchison's book on *Food and Dietetics*, wherein it is described as "an agreeable preparation of very considerable nutritive value." From a chemical point of view its main constituents are: Various sugars, 59 parts per cent.; fat, 12.3 per cent.; and protein, 2.8 per cent.; and, according, to the firm, it is a compound of bone marrow, malt extract, eggs, and lime juice. In appearance and consistence it closely resembles honey, and in flavour may be compared not inaccurately with toffee. To infants it can be given in milk, but if employed as a temporary substitute for all other food—as, for instance, in summer diarrhoea—it is best diluted with water. Older children and adults can take it spread on toast or bread. All available evidence goes to suggest that it is a compound of distinct value in a variety of conditions in which adequate nutrition by ordinary foods is not easy to secure.

The appliances shown by RADIUM LIMITED (4, Albert Square, Manchester), represented what may be regarded as the two schools of thought in Germany and Austria concerning the application of radium to medical as distinct from surgical purposes. The one regards the introduction of radium products by the intestine as the most effective way of rendering the body fluids temporarily radio-active, while the other considers the lungs the best route. For the benefit of the former were shown several apparatus intended to render drinking water radio-active in definite proportion, some of them being suitable for hydropathic and other institutions where large numbers of patients are daily under treatment and others for private use. The other apparatus shown was a kind of mask which supplies both emanation-charged air and oxygen. It is apparently intended to meet the views of Professor Lazarus, who belongs to neither school, but condemns the administration of emanation by enclosing patients in emanatoriums as unhygienic. He considers that an ordinary gas inhalation bottle is everything that is necessary, but suggested some time ago that if economy were in question this might be secured by adopting the principle of the appliances used in mine-rescue work.

The exhibit of the DENVER CHEMICAL COMPANY (St. Anne's Road, Bow, E.) was Antiphlogistine, a substance which has been freely imitated but not successfully. In appearance it is a thin grey paste, free from odour and capable of being spread out into adherent layers of any thickness. It is composed, the firm states, of levigated clay and glycerine, with the addition of iodide salts, minute quantities of boric and salicylic acid, and peppermint, gaultheria, and eucalyptus oils. With this composition it is easy to understand that it does not dry up, and that when spread about half an inch thick and covered with a layer of cotton-wool it keeps hot and moist for from twelve to thirty-six hours and then peels off readily. At the present time, when inflammatory conditions are being treated on new principles but by what are in essence old methods—namely, those which aim at facilitating phagocytosis by bringing to the affected part an increased amount of blood serum—there are obvious advantages in the use of antiphlogistine, since it is an easily used and very enduring kind of poultice. The latter is a strong point, since the patient is not, as in the case of linseed poultices and hot fomentations, perpetually worried by the need for fresh applications. We do not know any better way of applying moist heat in a cleanly and comfortable fashion.

It was probably the adoption of the ventilation system of OZONAIR, LIMITED (90, Victoria Street, London, S.W.), by the Central London Railway, that first made the public favourably acquainted with its name, but the company has devised means of adapting its invention to a great variety of purposes. Practically all of them, however, have the production and distribution of ozonized air for their immediate object. The central feature of all of them is that the ozone is produced by electricity and then passed into a chamber, where it mixes in definite proportion with a current of filtered air driven by a fan; it is then distributed into the general atmosphere. The apparatus is remarkably compact, since a portable appliance, suitable for rooms of a capacity up to 3,000 cubic feet, measures less than a foot square, and costs from £10 10s. upwards. A new development was exhibited for the first time at Liverpool. This was an apparatus for adding ozone not to ordinary air, but to oxygen, and in much higher proportion than in the ventilation appliances. This is intended for the treatment of septic wounds, chronic ulcers, pyorrhœa alveolaris, and suitable nozzles are supplied. Testimony to the effectiveness of the ordinary apparatus is forthcoming from Dr. Leonard Hill. Booklets relating to the application of this invention to various purposes, including water purification and laboratory work, can be obtained on request.

The wholesale firm of CLAY AND ABRAHAMS (87, Bold Street, Liverpool) had upon view a large number of pharmaceutical specialities in addition to some radio-active preparations and vaccines. Among the former was a Mistura calcii lactatis prepared to meet the view of Dr. Blair Bell that the soluble salts of calcium are the most effective. A decoction of comfrey root or *Symphytum officinale* was also shown; the value of this herb as a cell proliferant was set forth by Dr. C. J. Macalister in our columns last year. He traced it to the existence of allantoin, an ointment of which was also on view. Other specialities shown were Pulvis magnes. borocitratis, a preparation said to have been a favourite with the late Mr. Reginald Harrison for the treatment of gout and kindred complaints, and Concentrated syrup of senna. The firm states that the latter has been well known for some forty years, and that it is much more effective than so-called syrup of figs and less liable to cause griping. Also shown were ampoules of tuberculin in various convenient dilutions.

Messrs. J. NESBIT, EVANS AND CO. (Floodgate Street, Birmingham), devote themselves to the manufacture of hospital furniture, and a great many beds specially designed for hospital and asylum work, together with general ward accessories, were on view. A bedstead of special interest, perhaps, at the present moment was that named the Balcony. Its back feet have small wheels, its front feet india-rubber padded blocks, supplemented by a single central wheel. Turning a small lever at once raises the lower end of the bed a few inches and brings the wheel in question to the ground. The bed is then as freely movable as a stretcher-trolley. The same idea was applied to a child's cot, which, in addition, was provided with means of preventing its occupant throwing down the movable side rails. Of somewhat allied kind was a special bed for asylum use, this also having an easy wheeling arrangement. There were several forms of parturition bed, one being made according to the specifications of Dr. Jellett, Master of the Rotunda Hospital. Well-designed white enamelled bedside tables and lockers were also shown, but in this department we were most attracted by a device for raising the foot or head of a bed at will. Doing this by means of wooden blocks is always troublesome and a little risky. The firm's device is called the bed-inclining stand. It consists of a triangular frame, with projecting hooks on which the bed frame can be placed without any chance of a slip. There are several alternative heights, ranging from a few inches to about a foot and a half. All the appliances of this firm are well worth examination by those charged either with the first equipment of a hospital or with the bringing up to date of the furniture of old institutions. The beds are all fitted with a wire mattress, guaranteed against sagging for twenty years.

Almost the whole of the apparatus exhibited by W. WATSON AND SONS, LTD. (313, High Holborn, London, W.C.) was intended to demonstrate in a limited space something of the organization of an *x*-ray department. It consisted, in its first section, of a handsome upright cabinet enclosing an intensified induction coil and a mercury interrupter. To the spindle of the latter on the secondary circuit was attached a point-and-plate rectifier, and this on rotation formed a desirable substitute for the valve-tube, resulting in increased steadiness on the lighting up of the *x*-ray tube itself. Mounted on the marble surface of the cabinet were the usual measuring instruments, including a milliampèremeter and an oscilloscope, together with, of course, the electrodes bringing up the current. Next to this was a model in three-ply wood of the Ironside Bruce couch, a familiar design in *x*-ray couches, which has been modified and improved in various directions. The arrangement for the tube-box, admitting of the rapid centering of any size of tube by an automatic device, was extremely neat. The box below the couch was constructed to pull clear out, so that the changing of tubes would not necessitate any disturbance of the patient, and a registering device made it possible to ascertain at once the position of the tube-box from the top of the couch. By the side of the couch, but capable of being moved to any part of the room, was a desk-form switchboard controlling from this useful distance the cabinet already mentioned in which coil and interrupter were enclosed. Although the bulk of the exhibits thus formed a unit, there were some interesting sundries, including an apparatus for supplying rhythmic currents; and also some dental holders for taking the films used in radiographing the teeth—really one of the most difficult of radiographic operations.

National Insurance.

ATTITUDE OF THE IRISH MEDICAL PROFESSION.

THE resolutions adopted by the Conjoint Committee representing the medical profession in Ireland at its meeting on August 6th were published last week (SUPPLEMENT, p. 248), together with a statement in reply issued by the Women's National Health Association. To this statement the following reply has been made by Professor White, on behalf of the Conjoint Committee:

The Sanatorium Subcommittee of the Conjoint Committee do not question that the "scheme" of the Women's National Health Association was adopted by their Executive Committee and submitted to the Special Health Conference, May 23rd and 24th, composed, it is true, of representatives of county councils and other local authorities. The subcommittee are not aware that the "scheme" adopted by the Women's National Health Association was submitted to county councils for consideration before the conference, so that their "representatives" might be instructed as to how they should voice the views of the councils they "represented." Thus it appears to the subcommittee that the recommendations of the conference were simply recommendations of a number of individuals uninstructed by the councils they were supposed to represent, and who, in fact, had no authority to commit their council to any particular policy. The subcommittee would be glad to know who the "medical members of the committee of supervision," Women's National Health Association, are, and by what authority they represent the views of the profession, as is implied in the statement authorized by the President, Women's National Health Association. The recommendations of the Health Conference refer to "provisional assistants," and the President, Women's National Health Association, spoke at the conference of the temporary character of their works, and that they were to be of such a type that they could be taken over permanently by the local authorities. But it was not explained that the local authorities had, without being consulted in the matter, been deprived of £25,000 out of funds set aside by Parliament for their use, that this sum had been handed over to the Women's National Health Association, and that these temporary works were to be provided out of this sum. Many present at the Health Conference thought the "temporary provision" recommended to the local authorities would be provided by the Women's National Health Association from their own funds, would be hired to the local authorities, or arranged for in some other way. Further, in some instances the works undertaken by the Women's National Health Association seem to be rather of a permanent than a temporary character, while the county councils have not in all cases been consulted as to whether the sites and buildings were such as they would approve of as permanent undertakings. The result of the "scheme" of the Women's National Health Association has been to give them a sort of vested interest (acquired by money which rightfully belonged to the local authorities, and was taken from them without their consent) in the management of public institutions and the appointment of their officers, all of which Parliament intended should be under the control of the statutory local authorities. The subcommittee consider that this condition of affairs is not in the interests of either the public or the profession. With regard to the qualifications of medical officers appointed to the several institutions for the treatment of tuberculosis the Government (Astor Report) suggests that—(1) The medical officer should not be less than 25 years of age and of suitable qualifications and experience; (2) have held "house appointments" for at least six months in a general hospital in addition to a similar period of attendance at a special institution for the treatment of tuberculosis; (3) should also be competent to supervise such laboratory work as may be necessary. The Irish Local Government Board, in their order of July 19th, prescribe the qualifications as follows:

(*a*) Have acted as superintendent or assistant superintendent of a sanatorium or tuberculosis dispensary for not less than six months; or
(*b*) Have obtained a certificate of proficiency in the diagnosis and treatment of tuberculosis after attending a six months' course of instruction at any institution that may be recognized by them as an efficient school for giving such instruction; or
(*c*) Otherwise satisfy them that he possesses special knowledge of the diagnosis and treatment of tuberculosis.

This is amplified by a Local Government Board letter of July 24th, as follows:

The medical officer should have experience in laboratory work, and if he has not acted as a medical superintendent or assistant superintendent in a tuberculosis dispensary or sanatorium, then he should at least have taken a responsible part in the management of a general hospital. He should have gained practical experience either through the tenure of a responsible position involving the treatment of tuberculous disease or through a six months' course of instruction at a recognized institution.

The Women's National Health Association intimated to at least some county councils that they conducted a post-graduate course of a fortnight in connexion with their tuberculosis establishments in Dublin, and that "certificates" were issued to those who had attended this course. The subcommittee consider the effect of this will be to influence the local authorities in the appointments they make, and that herein the Women's National Health Association have overstepped the limits of prudence, and acted in a way antagonistic to the interests of the public and the profession. The Subcommittee are of opinion that if the men appointed to the special tuberculosis institutions have not such qualifications, and are not of such standing and experience as to command the confidence and of co-operation of the general practitioners the entire movement will be wrecked. The Subcommittee are able to state that the efforts to stamp out tuberculosis have the entire sympathy of the profession, the members of which are most anxious to assist; their co-operation, however, can only be secured by leaving the administration of all the institutions in the hands of the local statutory authorities.

PROVISIONAL MEDICAL COMMITTEES.

STOCKPORT, MACCLESFIELD, AND EAST CHESHIRE.

WE have received from Dr. Lionel Picton, Honorary Secretary of the Committee, a copy of the following letter which, by instruction of the Committee, has been addressed to the different local authorities concerned in the tuberculosis scheme for the area. Dr. Picton desires to direct attention to the resolution embodied in the letter:

Holmes Chapel, Cheshire.
August 17th, 1912.

To the Clerk to the Cheshire County Council.

Sir,

I am directed to convey to you the following resolution, which was passed unanimously by my Committee on Tuesday last, August 13th, 1912:

RESOLVED: That the appointment of the medical officer of health as the expert adviser on sanatorium treatment to the Insurance Committee is inadvisable, and that the Provisional Medical Committee further suggests that if expert opinion be necessary it should be obtained by the appointment of a consultant with special experience in tuberculosis as consulting medical officer to the Insurance Committee.

My Committee understands that your Council intends to combine with those of Birkenhead, Chester, Stockport, Stoke-on-Trent, and Wallasey in a joint scheme for dealing with tuberculosis, and I am instructed to request you to bring the above resolution to the notice of your Council and of the authority of the joint scheme.

I am, Sir,
Your obedient servant,
LIONEL JAMES PICTON,
Honorary Secretary.

KENT COUNTY.

A MEETING of this Committee was held at Ashford on August 15th. Dr. W. J. TYSON was in the chair, and there were present Drs. Parr-Dudley, Travers, Barrett, Walker, Watson, Wood, Maude, Heggs, Young, Hulke, Randell, Will, Waite, Stillwell, Heaton, Potts, and Howarth.

Sanatorium Benefit.—Dr. HOWARTH explained the Kent County Council sanatorium benefit scheme, and stated that the tuberculosis officer would be a whole-time officer, and would do no domiciliary treatment, but might treat non-insured persons at the dispensary with the consent of the patient's doctor. The British Medical Association scale of fees (Minute 207) was agreed to, but Dr. PARR-DUDLEY took exception to 2s. 6d. per visit for country cases, including mileage and night visits. Dr. HOWARTH suggested that there should be two representatives of the committee on the county consultative committee for sanatorium benefit, and also that medical practitioners should act as assistants to tuberculosis officers conditionally. The scheme was thoroughly discussed, and the CHAIRMAN moved a hearty vote of thanks to Dr. Howarth for his kindness in attending; Dr. HOWARTH replied. The committee then considered several points in the scheme, and it was resolved:

That, as regards dispensary staffs, the tuberculosis officer shall be consulting and advising officer solely. That his clinical experience shall be obtained at the hospital beds.

That his assistants for treatment shall be local medical practitioners paid by salary, which shall be agreed upon. The British Medical Association scale is not insisted upon for this.

A subcommittee was then appointed to confer with representatives of the insured, consisting of Drs. Travers, Brunton, Stilwell, Heggs, Lord, and Walker. Dr. Walker, Heggs, and Parr-Dudley were nominated to represent the committee upon the Consultative Committee of the Kent County Council for Sanatorium Benefit.

Membership of Committee.—Dr. Morgan (Ramsgate), nominated by the Thanet Division, was co-opted a member of this Committee to represent the non-members of the Association in the county.

Cardiff.

The result of the elections for this Committee for 1912–13 is as follows:

Elected for Cardiff.—Drs. Brierley, Cook, Cyril Lewis, Maclean, Wm. Martin, Courtenay Milward, Wm. Sheen, R. J. Smith, Mitchell Stevens, Russell Thomas, C. T. Vachell, Wayne-Morgan.

Elected for Outlying Areas.—Drs. J. H. Rees, Torney, John Powell and Gillon Irving. Simons and D. E. Richards, Bell Thomas, T. W. Thomas (Caerphilly) and Mackenzie, R. T. E. Davies (New Tredegar) and C. Reidy.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor,* British Medical Journal, *429, Strand, London, W.C.*]

Dr. George Parker (Clifton, Bristol) writes: Dr. Addison is consistent, even if we cannot expect further help from him. Six months ago he raised a song of joy that the Insurance Act would enable us to secure a good service in accordance with the six points. I replied to his arguments then, and 24,000 medical men have twice since considered the point seriously, and have twice decided that it does not. He still insists on working at his beloved Act, though even the Government, to save votes, dare not claim that it meets our modest demands or that any regulations can make it do so,

The great reason why we cannot touch the Act is often obscured by the stress laid on the money question, which is spoken of as though it were the sole matter in dispute, whereas it is only one of the six points, and, in my opinion, not the most important. If the money question were settled, the Act would still be impossible, harmful to the health of the country, and ruinous to the profession. The really serious thing is the way in which the Chancellor has failed to meet us on the other matters while apparently granting them. Every one of them is left to be fought out year by year in each district between what is practically an all-powerful committee of friendly societies and a powerless Medical Committee. It was open to the Chancellor (1) to have devised an impartial tribunal to settle these matters; or (2) to have put us, as sellers of our services, on a footing of absolute equality with the buyers. He has done neither, but offers us the charming position of having about 3 votes out of 70 in a committee which, according to the Act, is to decide not only the pay, but also the income limit, the mode of payment, the details of our services, and to try us for misbehaviour under penalties involving financial and social ruin, subject, no doubt, to some oversight by the Commissioners. Dr. Addison calls this the invaluable right of collective bargaining. Since one party to the bargain is powerless, I call it *Vox et praeterea nihil.* That is, as he says, "a spectacle for our countrymen," and it is that a statesman should be afraid or unable to arrange fair terms of service, and should leave them to be settled by sectional fights and strikes in every town. Dr. Addison says that he would do anything to prevent the administration of medical benefits being entrusted to hundreds of different societies. Yet his Act definitely gives to clubs and approved societies the majority on every committee which is to administer it.

The methods of Poor Law guardians are not ideal, but they are better than this, for the Insurance plan is just as if committees of paupers were set up under the Local Government Board to fix the pay of their doctors (keeping for their own "extra benefits" anything they could squeeze out of the pay), to form rules for the doctors' work, and to try them for misbehaviour, the doctors being allowed to make protests, and nothing else.

Finally, while one sympathizes with Dr. Addison in the rejection of his ideal by the mass of his professional brethren, I would point out that many of us have had to give up our most cherished ideals, but have gone on, and will go on, fighting and working on the lines which our commonwealth determines.

Advisory Committees.

Dr. J. Dewar Robson (Maxwelltown, Dumfries), writes: I am certain that every medical man, after reading Dr. Addison's letter in your issue of August 11th, will give him the credit of his convictions; but for him to stigmatize the action of the profession at large as being "neither consistent, dignified, nor in accordance with common sense," in connexion with a state of affairs forced upon the profession and country, without adequate consultation with the former, and evidently (if we judge of recent events) without the approval of the latter, is scarcely within his province. Moreover, had Dr. Addison or the Government informed the British Medical Association at any period within the last eighteen months (and they had plenty of time), that "regulations are now being drafted, and I understand will shortly be submitted to the Advisory Committee for their criticism," the decision of the Representative Meeting might have been different. Might I ask Dr. Addison: Is it since that decision that "regulations are now being drafted," regulations which, had the Chancellor verified by deeds any anxiety that the profession should have them in time for its careful consideration, would ere now been forthcoming with the same hustle of obsession which characterized the passage of the Act itself through Parliament?

Dr. W. N. Soden (Brondesbury) writes: As a friend of, and an old fellow student with, Dr. Addison, whose career I follow with interest, and also as a Liberal, I should like to make some observations on his letter.

If he had read carefully the reports in the Supplement of the meetings of the Divisions and Provisional Medical Committees, and gathered from them the opinions of practitioners, which were crystallized in the decisions arrived at at the meeting of the Representative Body at Liverpool, and realized that the Representatives are those who either themselves will work under the Act, or who directly represent those who will do so, and that the policy of the Association is directed by these men, he would not talk of acceding to our request to resign as disloyalty to the profession, though it might be disloyal to his "citizenship," as he calls it—I should call it "political party"—for the onlooker cannot fail to see that since Dr. Addison gave up the profession of medicine for the profession of politics, we are unable to accept his opinions as being untainted with political bias, though I am willing to give him credit for not realizing the fact.

The profession—I refer particularly to general practitioners—have definitely made up their minds as to the conditions under which they will work, and they are not going to modify these conditions to suit a political party. We have wasted months of time and work, and have succeeded in extracting from the Chancellor the statement that the Government can hold out no hope of acceding to these conditions. Surely this is definite enough for Dr. Addison. Does he expect that we shall agree to the Government terms, or does he still expect, by leading the forlorn hope, to obtain recognition of our terms from the Government?

Well, we at any rate are going to waste our energies no more, but shall use them in establishing a method of our own for attending the medical necessities of the poor.

Let Dr. Addison go on drafting regulations; he will find that his time and energy will be wasted as ours has been.

The general tenor of his letter fails to produce in me the conviction that he is working for the interests of the profession, and reads as an excuse for rather than as an explanation of the position he is taking up, and I hope that he will realize that he and those who are acting with him—a very small minority (if any) of whom, I note, are general practitioners—are no longer accepted as representative of the profession.

Dr. Michael Dewar (Edinburgh) writes: Like many more of my medical brethren, I learnt with extreme regret that Dr. Addison and thirteen others had, against the wishes of the Association, thought it to be their duty to remain members of the Advisory Committee. This resolution, it is said, was come to after careful consideration on their part, and with a full sense of their responsibility to the profession. Far be it from me to captiously criticize their action or to decry their honesty of purpose. Every man is entitled to have his own point of view, to exercise his own judgement, and to express himself accordingly; and I am sure that every reasonable individual will respect these opinions, however much they may be opposed to his own. Dr. Addison, in a very clear and able letter which he sent to the Medical Secretary of the Association on August 14th, gave his reasons for the important decision which he had come to. Before traversing these reasons it may be pertinent and appropriate to state here that while the profession is much indebted to Dr. Addison for the time and the assistance which he gave ungrudgingly during the passage of the bill, it is impossible to blink the fact that from the very outset, as far back as the Special Representative Meetings on May 31st and June 1st, 1911, there was an uneasy feeling in the minds of a large mass of the rank and file of the profession that Dr. Addison was more concerned in the passage of the bill from the Government's point of view than from that of the medical man's. This feeling was based upon a study of his speeches and voting during the course of the past year, and is now strengthened by his attitude regarding the Advisory Committee. While we are indebted to him for the inclusion in the Act of the clause known as the "Addison amendment" (whatever it may be worth when taken along with the succeeding clause, the Harmsworth amendment), it appears to most medical men that his whole aim and object was to ensure the passing of the bill, in the interests of the profession where possible, but in any case and whatever form it took, to pass the bill. It reminds one of the advice given to the young man starting on his business career—make money, honestly if you can, but make money.

Now as regards the Advisory Committee, every one will agree with him when he says that

> He would use every legitimate means in Parliament and out in preventing the administration of medical benefits being entrusted to hundreds of different societies, because it would be against the best interests of the public health, etc.

Again:

> That it is our duty, by patient and sensible effort, to strive to use our opportunity to secure that every medical man shall be able to render a willing service under the Insurance Act under honourable conditions and with proper remuneration, etc.

Also:

> That the interests of our great voluntary hospitals, of medical training and research, are involved, as well as those of the great body of the medical practitioners in the country.

For these reasons he believes that the action of the Association in calling out the members of the Advisory Committee is a short-sighted policy, and obedience to which would, in his view, be disloyal alike to one's citizenship and to the profession. In answer to these statements it may be asked what has the Advisory Committee accomplished since it was formed? Dr. Addison who, without a doubt, being in the inner circle, may have more information than other members of the Committee, but what do these others say? Many of them complained that at the first meetings a blank sheet of paper was placed before them. Was it reasonable to ask busy men to leave their practices to go to London at considerable expense to themselves, and practically to do nothing? Business (*sic*) of a like nature was carried on at the immediately succeeding meetings. The Commission had been in existence for some months before the first meetings—why did the Commissioners, as business men, not have some kind of skeleton draft regulations prepared for the Committee to tackle?

We have on the authority of Mr. Verrall, member of the Advisory Committee, statements such as:

> During the last four months they had been trying, as far as they could, to retrieve a position which had been unsatisfactory from the first, inasmuch as the profession was not sufficiently consulted at an earlier stage. The Council at the end of July is of opinion that no material concession had been made by the Chancellor since February last. They extracted an answer from the Commissioners, but it had taken the State Sickness Committee all its time to get an answer at all from the Commissioners.
>
> Although the Government through the Commissioners had said, "that it had given due consideration to the memorandum presented on behalf of the Association," yet at the second interview with the Chancellor every member of the Committee was astounded to find how very little valid criticism the document had received. He personally would not have been surprised if the Chancellor had torn the memorandum to pieces, but he did not; he barely touched one corner.

Mr. Turner (Kensington), member of Advisory Committee, said that two days after "the plain and unmistakable language resolution" was passed a gentleman extremely prominent in the circles of the Government organizers, said, after passing some invidious remarks on the profession: "We have undone all their work; we have got them nicely split." Again: "That the whole of the Government's tactics from then to now have been to delay and split the medical profession by keeping it in suspense. That the meetings of the Advisory Committee which had been held were a mere farce and waste of time."

The Chairman of Council (Dr. Macdonald), member of Advisory Committee, maintained "that the Advisory Committee was not only a solemn farce, but it was actually a scheme for throwing on to the shoulders of the profession the burden of regulations which would not fit in any way."

Dr. McKenzie Johnston, member of Advisory Committee, gave an account of how at one of the meetings of the Advisory Committee at which no medical business was done the representatives of the friendly societies had pressed for a certain alteration in the regulations; the alteration, it was objected, could not be made, because the point had already been discussed and decided by the House of Commons. Nevertheless, when the regulation was placed ultimately before the Committee, it was seen that the alteration had been made. Because the friendly societies acted together, the Government was forced into doing something it said was impossible. Dr. Beaton, member of Advisory Committee, said that

> at the meetings of the Advisory Committee when the members of the Committee asked questions the Commissioners refused to answer them. The proper course would have been for the Commissioners to draft regulations and let the Committees criticize them. No regulations with regard to medical benefits had yet been drafted (July 20th).

We have been repeatedly told that the regulations would be issued in a few weeks without any result. A letter was received from the Commissioners on the morning of July 20th, stating that the regulations would reach the Association early in August, and yet we have the statement of Dr. Beaton, one of the Advisory Committee, that no regulations with regard to medical benefits had yet been drafted, and now it is approaching the end of August.

Again, Mr. Lloyd George has distinctly stated "that he cannot meet the demands of the profession as regards remuneration," and Mr. Masterman has declared "that the medical profession had no hope of anything." That was an absolute ultimatum. In the face of all these statements, which may be taken as facts, how can Dr. Addison, or any other person, maintain that any good can come out of any futher meetings of the Advisory Committee with the Commissioners, and say that the Association has adopted a short-sighted policy? The profession sees perfectly well that it is a case of bluff all through, and that the Government and Commissioners are simply carrying out the policy of delay with the object of wearying and splitting up the profession until the medical benefits come into force next January, and thereby catching the profession unprepared. Such tactics may be parliamentary, but they are not what the medical profession is accustomed to.

Finally, can Dr. Addison or any one of his colleagues give the profession a straightforward and unbiassed assurance that the regulations regarding medical benefits are in any way near completion, so as to justify the statements which have been made from time to time that they would be issued shortly; or that, in view of the Chancellor's and Mr. Masterman's repeated statements that the demands of the profession could not be met, there is the slightest scintilla of a hope that the Commissioners, even with the assistance of the Advisory Committee, can or will be able or intend to satisfy the reasonable demands of the profession?

The following letter, addressed to the Medical Secretary of the British Medical Association by Mr. C. J. Bond, has been forwarded to us for publication:

Leicester,
August 3rd, 1912.

Dear Sir,

I beg to acknowledge the receipt of your letter of to-day conveying the wish of the British Medical Association that I should resign my seat on the Advisory Committee in connexion with the National Insurance Act.

In answer I should like to point out that I was appointed by the Commissioners to advise in regard to matters affecting the interests of county hospitals without medical schools. In view of the important relationships between these interests and those of the medical profession, and the public, and bearing in mind that in all probability agreements requiring the approval of the Insurance Commissioners will be entered into between Insurance Committees and the boards of general hospitals, especially in regard to the treatment of non-pulmonary cases of tuberculosis, I have, after very careful consideration, and with a full sense of responsibility, formed the opinion that it is my duty to remain at present a member of the Advisory Committee.

May I add that I am in full accord with the desire on the part of the profession to obtain adequate remuneration and fair conditions of service, and it is because I believe that these objects can be best obtained, and the interests to which I have alluded can be best safeguarded by further efforts at negotiation with the Commissioners, that I have decided to take this course of action?

Yours faithfully,
C. J. Bond.

The Continuation of Negotiations.

Dr. A. G. Welsford (Rome) writes: Before we allow ourselves to be influenced by Dr. Addison's letter, we should bear in mind that he is a politician in sympathy with Mr. Lloyd George, who is astute enough to make use of the Journal through his medical friends to detach waverers from the policy of the Association, which is at last definite and firm. In every movement affecting a large number of individuals there are always some who will not work with the majority, and the refusal of a minority of fourteen to resign from the Advisory Committee should not perturb us.

Dr. Rose, in a letter, expresses his fear that the Association has been captured by a political party, but his fear is groundless. The determined stand made by doctors throughout the kingdom against the Insurance Act has nothing whatever to do with politics. It has been brought about by the fact that the practical men of our profession know that the Insurance Act means ruin or heavy loss to a large number of medical practitioners, and that while it degrades the medical profession it will not benefit the public. Mr. Lloyd George, who began by ignoring the medical profession, later sought to overcome our opposition by cajoling and threatening us by turns, and he has himself created the feeling against him which undoubtedly exists amongst doctors. So far from the opposition to the Insurance Act being in any way political, it is notorious that there was at first every desire on the part of the Association to assist Mr. Lloyd George, and many members think that the Council went too far in that direction.

Dr. Henry Thos. Barton (Blackpool) writes: Dr. J. S. Manson (Supplement, p. 249) says, "If there are many secessions from the Association because of its rigid policy, these secessionists will be compelled to organize themselves into a body which may grow in power and influence and rival the older organization," but we must not forget the dangers there are in following the line he suggests. It is fresh in our memory how during the closing days of last year we were threatened with a serious split, the result of dissatisfaction felt by many with the action of our executive. It was then that the National Medical Union, and the London Reform Committee were formed, and these societies were the cause of many misgivings to the older association. At the present time there are two schools of thought in the profession, and it has taxed the wit of Representatives to fashion a middle course, on which the two factions can meet for joint action. At Liverpool we passed the resolution to break off negotiations, but we also undertook to work the sanatorium benefit on reasonable terms; surely that is a momentous concession to those in favour of compromise. If Dr. Manson will scrutinize the voting under the first resolution of X he will find in the majority the names of many men who are known to hold moderate opinions, so I do not think he can justly accuse the Representative Meeting of recklessness when it moves in such company. I do not like his suggestion that we should wait until surplus funds accumulate under the Act for the realization of our demands; rather let us work for the best possible terms we can get at the start. The question arises, Have we anything to gain towards attaining this end by continuing to negotiate at the present time? The members of the State Sickness Insurance Committee, who have directly represented us in interviews with the Chancellor and the Commissioners, say that we have not, and they are likely to know. I am not unduly flattered by the "recognition" we have so far received. Just so long as we show ourselves to be a well organized fighting force will the present, or any other Government, treat us with respect. We cannot afford the luxury of a fool's paradise here.

Central versus Local "Recognition."

Dr. A. C. Farquharson (Representative Bishop Auckland and Durham Divisions) writes: The State Sickness Insurance Committee appears to be voluntarily sharing with the Representative Body responsibility for preventing all possibility of continued recognition by the Government of any central body presumably authorized to speak and act in the name of the Association.

Those of us who in Representative Meeting aimed at the reappointment of this Committee hoped that at least in the matter of the administration of sanatorium benefit the Committee would approach the Government and discuss and finally settle all the points arising under this. I admit, further, that some of us were not without hope that we would thereby maintain continuity of recognition of the central authority, and incidentally a certain measure of continuity of negotiation.

The Committee evidently intends not to do this, and yet, so far as I can remember, no specific instruction arising out of a resolution of the Representative Meeting was given to it whereby its actions were fettered or its powers rigidly defined in this matter. Its present attitude is therefore to be assumed as of its own choosing. In the report of its meeting on the 8th inst., published in the Supplement of August 17th, p. 237, I observe the Committee decided, in regard to a question of "Examination of Contacts (Tuberculosis)," that it was one "to which Divisions and Divisional Medical Committees should have regard in the earliest negotiations with the local Insurance Committees."

This is clearly an indication that even in regard to treatment, under the National Insurance Act, of tuberculosis, we can hope for no direct settlement with the Government by any central body executively recognized and with power to negotiate in practically the name of the whole profession of medicine.

The disappearance, therefore, from our considerations of central negotiation and eventual settlement with the Government naturally leads to the question which I suggest may be put forward at the present moment—namely, How far does the failure of the Representative Body to carry through a constructive policy affect the issues around the matter of local recognition? We have the principle of local recognition established not only by the incidence of circumstances but also by force of statute, and the point of primary importance which I have in mind is one concerning the constitutional position which, in relation to the Association, may arise when those issues come to be locally tested and settled.

Perhaps I may be allowed to put this point, which I regard as of primary importance, in the form of a question:

Will those medical practitioners who consent to take service under an agreement with a local Insurance Committee, and to which no objection is offered by their local Divisions, be acting unconstitutionally if the terms of the agreement do not coincide with the so-called "cardinal points" enumerated by the Representative Body?

I daresay if I were to put this question to the Representative Body assembled in meeting I would have for answer a very decided cry of "Yes," but I do not think that the answer would be correct. Those "cardinal points"

obtain their strictly constitutional value or importance from the fact that they are embodied in formal resolutions of the Representative Body, but what is the full legal and operative effect of a resolution of this body? It is at its best a "decision of the Association," Article 31 (2). It may be, in pursuance of a central and constructive policy of the Association, of value in determining the powers properly and constitutionally delegated to the executive entrusted with the carrying through of a declared policy, but the constitutional value of a resolution stops there. It has no bilateral effect, and it is therefore powerless to influence, except by voluntary acquiescence, any Division or Branch which asserts its constitutional right to govern itself as it thinks fit in accordance with Article of the Association No. 17.

Providentially, an Article of the Association is something which cannot be altered by a chorus of "Ayes" or "Noes," and not only would it be unconstitutional but illegal to read into a "decision of the Association" an implied or inferred abrogation of any one or more of the existing Articles. The injustice of such an interpretation becomes even more apparent when it is remembered that a "decision of the Association" may have been arrived at upon some point or issue remote from the principle of an assailed Article. I suggest, therefore, that any Division or Branch has full and free constitutional right to avail itself of Article 17, and to attach, in its negotiation or agreement with a local Insurance Committee, just as much or as little importance as it pleases to the resolutions of the Representative Body. The fundamental principle which, in my opinion, is the bedrock of the Association, rests in the words of Article 17, and this principle must not be placed in peril. The Representative Body requires to be reminded that power to destroy is neither the logical nor constitutional attribute or sequence of failure to construct.

Dr. J. H. Keay writes: Until now it has been usual for committees of the Association, before recommending the refusal of advertisements in the Journal, to consider how far support is likely to be got from the Divisions. If advertisements are refused and warning notices inserted, and nevertheless appointments are taken, it certainly tends to weaken the power of the Association. Has the position been fully considered by the State Sickness Insurance Committee when, without authorization from the Representative Body or consulting the Divisions moving in this matter, they have issued a fiat that no assistant medical officer of health can be at the same time a tuberculosis officer? In the prevention and treatment of tuberculosis it is not only the insured but, in much greater numbers, the uninsured that have to be considered. It seems quite reasonable that insured persons suffering from tuberculosis should be treated by general practitioners and tuberculosis officers appointed by Insurance Committees. But what of the uninsured, for whom municipal bodies are now framing regulations? Are there to be two different systems? Are Insurance Committees and sanitary authorities to appoint different tuberculosis officers? The problem is a difficult one, and it will not be solved by the rough and ready method of the State Sickness Committee refusing advertisements when we are face to face with the fact that, through unfortunate dissensions, the Association does not now have the power it once had, and men will accept appointments whether advertised in the Journal or not.

It is certainly in the interest, not only of the Association but of every medical man, that the State Sickness Committee should be strong and make no blunders. Time was when this Committee did good work. It gained freedom of choice, the recognition of Medical Committees, and the insertion of a clause in the Act which left districts free to fix their own income limit. The constitution of Insurance Committees is not all that could be desired, but the Association got what it asked for when in the Act they were substituted for friendly societies. While all this was granted, the only concession made to the Government or friendly societies was an agreement to attend those members of societies who, through old age or illness, could not be insured. The question of remuneration remained, and had things been allowed to take their course, I have no doubt it could have been settled on terms quite favourable to the profession. A new era began. The Council and Insurance Committee were denounced as traitors, members of the Committee, some of them quite voluntarily, retired. Their places were taken by a new order of men, and the most brilliant results were anticipated. What has been the actual result? The last Committee reported to the Representative Meeting that they had done nothing, and judging from their beginnings, it seems doubtful if the present Committee is to do much to strengthen the hands of the Association.

The principle for which I have always contended, and still contend, is, that there should be less centralization, and that many things were better left to Divisions or Branches—for example, whether a panel should be formed or private practice should be continued, as provided for by the Addison clause of the Act.

*** In connexion with the opening sentences of the above letter it may be convenient to print here the following minute of the Annual Representative Meeting, 1912 (Minute 190), by which the State Sickness Insurance Committee was probably guided:

> That the chief tuberculosis officer should be a whole-time officer and confine himself to diagnosis and consultative work. The rest of the staff of the dispensary should, where possible, be formed of local medical practitioners serving on a rota or otherwise.

The Hospital Question.

Dr. C. A. Hughes (Liverpool) writes: Of the writing of letters on the present crisis there seems to be no end, and yet the profession, like poor Tom-all-alone in *Bleak House*, who only could or might be reclaimed according to somebody's theory and nobody's practice, seems liable to go to metaphorical perdition in its old determined spirit.

When we have finished killing Lloyd George with our mouths, let us keep in mind that the real evil at the root of all our difficulties is the modern abuse of the hospital system, a financial octopus strangling our incomes directly or indirectly.

Refuse to work the medical benefits of the Act in its present form (as we rightly should, even if only out of loyalty to the British Medical Association), but let us remember that there is little cause for rejoicing as the more important hospital question remains untouched to flourish. Let all kinds of hospital treatment (except in emergency cases) be undertaken only on the presentation of a recommendation signed by a general practitioner.

Sir William Plender's Report.

Dr. Harry Roberts (London) writes: In your issue of August 10th was published a carefully-reasoned letter by Dr. Brockbank, in the course of which he deduced certain conclusions from the Plender Report. As the general line of argument embodied in this letter is, I believe, a thoroughly sound one, it is important that the facts and their interpretation, on which Dr. Brockbank's conclusions are based, shall be above criticism. Only by keeping our facts and assumptions unassailable shall we be able to concentrate attention on the really vital matters of the discussion. Now, in two respects Dr. Brockbank's premisses seem to me to require correction. He has assumed that the figures of attendance stated in the report under the head A—namely, 539,616 in the towns for 1910 and 537,185 in the towns for 1911—include attendances given to contract patients. It seems clear from the way in which the figures are set out in the report, and from the wording of the footnote in which the remuneration per head of the population is calculated, that this is an erroneous assumption. If this correction is made, it will be found that the average amount received per attendance is 2s. 10d. instead of 3s. 2d. Three and a half visits, therefore, at this rate, would be equivalent to an annual capitation fee of 9s. 11d. instead of 11s. 1d., as deduced by Dr. Brockbank.

In the second place, it seems to me that no arguments can safely be based on the attendance given to persons residing outside the towns, because in this case we are not dealing with the total population, but with that selected portion who, living in the country, were sufficiently near to the town or sufficiently well-to-do to pay the fees necessary to induce town doctors to attend them.

What can absolutely safely be deduced from the facts given in the Plender Report is that if medical men are to receive an amount per attendance not smaller than that

which they receive at present, an annual capitation fee of 9s. 11d. including drugs, must be paid, that is, assuming that under a national scheme doctors are not to be paid on the principle of semi-charitable attendance on the insured, leaving them to bring their incomes up to a living standard by getting as much as they can out of their unfortunate private patients.

The Income Limit.

Dr. E. M. Brockbank (Manchester) writes: In your issue of August 10th you kindly allowed me to show what effect the Plender Report had on one of the "cardinal points"—namely, 8s. 6d. for medical advice. May I now offer some observations on the £2 weekly wage income limit?

The weekly wage of an individual is not a fair indication of ability to pay doctors' bills in the ordinary way.

Total Earnings and the Number of Members of a Family.

These must be taken into account in deciding on the ability to pay ordinary medical fees without deprivation of some necessary article of food or clothing. The kind of information necessary has already been obtained, to a limited degree, by Rowntree, and is recorded in his well-known work, *Poverty* (1901). He carried out a house to house visitation of 11,000 working-class families in York, recording the number in each family and the workers in it, and the total earnings of the family. He looks upon York as a typical provincial manufacturing town, with its large railway world, its many factories, and its share of the poor. His results agree closely with similar investigations which Charles Booth had previously carried out for London (*Life and Labour of the People of London*, 1892–97). Clerks and domestic servants were not included in Rowntree's inquiry. His conclusions were that 15 per cent. of the wage-earning classes of York are living in "primary poverty"—that is, the total family income is insufficient to obtain the minimum necessaries for the maintenance of merely physical efficiency; and that 28 per cent. more are living in "secondary poverty"—that is, the income would be sufficient were it not that some of it is absorbed by other expenditure, either useful or wasteful. He writes (*Poverty*, p. 134):

> It cannot be too clearly understood, nor too emphatically repeated, that whenever a worker having three children dependent on him, and receiving not more than 21s. 8d. per week (and families of other sizes proportionately), indulges in *any* expenditure beyond that required for the barest physical needs, he can do so only at the cost of his own physical efficiency, or of that of some members of his family.

The accompanying table is from *Poverty*, p. 110:

Table Showing Minimum Necessary Weekly Expenditure to Maintain Bare Physical Efficiency for Families of Various Sizes.

Family.	Food.	Rent.	Household Sundries and Clothes.	Total.
	s. d.	s. d.	s. d.	s. d.
1 Man	3 0	1 6	2 6	7 0
1 Woman	3 0		2 6	7 0
1 Man and 1 woman	6 0	2 6	3 2	11 8
1 Man, 1 woman, 1 child ...	8 3		3 9	14 6
1 Man, 1 woman, 2 children ...	10 6	4 0	4 4	18 10
1 Man, 1 woman, 3 children ...	12 9		4 11	21 8
1 Man, 1 woman, 4 children ...	15 0		5 6	26 0
1 Man, 1 woman, 5 children ...	17 3		6 1	28 10
1 Man, 1 woman, 6 children ...	19 6	5 6	6 8	31 8
1 Man, 1 woman, 7 children ...	21 9		7 3	34 6
1 Man, 1 woman, 8 children ...	24 0		7 10	37 4

The average number of members in each of these 11,000 working class families was 4.0, and of workers in each family 1.5.

The actual average weekly income of the 11,000 families was as follows:

4.2 per cent. below 18s. average 11s. 7d.
9.6 per cent. between 18s. and 21s. average 19s. 9d.
33.6 per cent. between 21s. and 30s. average 27s. 6d.
52.6 per cent. over 30s. average 41s. 9d.

These incomes were actually earned, and therefore allow for overtime and unemployment.

If Rowntree's conclusions be applied to the 12,000,000 insured under the Act, their average family incomes would be:

500,000	11s. 7d.
1,150,000	19s. 9d.
4,000,000	26s. 7d.
6,312,000	41s. 9d.

There would be, therefore, 4,800,000 (that is 40 per cent.) in a state of primary or secondary poverty on the basis of 21s. 8d. per five people.

About 77 per cent. of the population of England and Wales is urban. Probably the rural population would not be so well off, but I have taken all the insured into the above calculations.

The Individual Wage.

This may be dealt with very shortly by a quotation from Chiozza Money's work on *Insurance versus Poverty* (1912, p. 21):

> It is doubtful whether, in all our 45,000,000 of people, which include some 13,000,000 of adult men, there are as many as 1,000,000 who earn 35s. a week and upwards.

I presume this refers to wage-earners only and not income tax-payers. From information given in his other work (*Riches and Poverty*, 1912), I estimate that not 500,000, and possibly not 250,000, of the insured 12,000,000 will earn an average weekly wage throughout the year of £2 or over—that is, £2 7s. a week or over, allowing for an annual average of eight weeks of unemployment for manual labourers (Op. cit.).

All things considered, then, I cannot see that it is in the interest of the patient, nation, or doctor, to base any income limit, whether it be a rigid 40s. or a wage fluctuating in different localities, on any individual weekly earning without taking into account also the number of people for whom it has to find the bare necessaries to maintain physical efficiency. The practical difficulty of applying any income limit, individual or family, based on an average of fifty-two weeks, is another matter, but it is inconceivable to me that payments to doctors could only be made annually.

The Tuberculosis Grant.

The amount of sickness from consumption, in the experience of the Manchester Unity of Oddfellows over a period of five years and 700,000 members, was one-seventh of the total experience of sickness from all causes (Chiozza Money, *A Nation Insured*, 1912, p. 53). The Act was founded on the experiences of this society. The sum of £1,000,000 a year is promised for the treatment of tuberculosis generally amongst the insured. A capital grant of £1,500,000 is to be allowed for constructing or acquiring sanatoriums, on the basis of cost of £90 to £150 a bed. There will therefore be a minimum of 10,000 beds, for each of which 25s. to 30s. a week is allowed for upkeep; this is to come out of the £1,000,000, as I understand it. This means, in all, £650,000 to £780,000 for upkeep alone. Then there is the cost of the tuberculosis dispensaries, with their whole-time medical and other officers, to be paid for out of the £350,000 or £220,000. One great feature of the tuberculosis scheme is that patients are to be treated at home by men in general practice as much as possible, and therefore I cannot see either that doctors will be saved much work by tuberculosis being taken out of their hands, or that adequate remuneration for the work they will have to do can come out of the £1,000,000. If the dependants of the insured are to receive tuberculosis benefits—and unless they do the whole scheme is practically useless as a means of stamping out tuberculosis—the ordinary doctor will certainly get some fees from the poorest class of patient that he does not receive now, but my point as to the fees received from the insured suffering from tuberculosis is unaffected by this.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In ninety-five of the largest English towns 8,794 births and 3,942 deaths were registered during the week ending Saturday, August 17th. The annual rate of mortality in these towns, which had been 11.3, 11.0, and 11.5 per 1,000 in the three preceding weeks, rose to 11.7 per 1,000 in the week under notice. In London last week the death-rate was equal to 11.8, against 11.2 per 1,000 in each of the three previous weeks. Among the ninety-four other large towns the death-rates last week ranged from 6.1 in Swindon, 6.3 in Ilford and in Northampton, 6.4 in Wallasey, 6.6 in Rotherham, 6.7 in Derby, and 6.8 in Gillingham, to 16.6 in Tynemouth, 16.8 in Bury, 17.2 in Oldham, 17.3 in Liverpool, 17.6 in Plymouth, and 19.1 in Wigan. Measles caused a death-rate of 1.3 in Gateshead, 1.5 in Bootle, 2.0 in Wakefield and in Hull, 2.5 in Merthyr Tydfil, and 3.4 in Middlesbrough. The mortality from enteric fever, scarlet fever, whooping-cough, and diphtheria showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children (under 2 years of age) from diarrhœa and enteritis, which had been 153, 187, and 239 in the three preceding weeks, declined to 199 last week, and included 66 in London, 12 in Manchester, 11 in West Ham, 10 in Birmingham and in Liverpool, and 9 in Leeds. The causes of 43, or 1.1 per cent., of the deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number, 9 were registered in Liverpool, 6 in Birmingham, 3 in Stoke-on-Trent, 3 in Blackburn, and 3 in Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylum Hospitals and the London Fever Hospital, which had been 1,525, 1,509, and 1,559 at the end of the three preceding weeks, were again 1,559 on Saturday last; 182 new cases were admitted during the week, against 222, 175, and 207 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In eighteen of the largest Scottish towns 1,052 births and 546 deaths were registered during the week ending Saturday, August 17th. The annual rate of mortality in these towns, which had been 13.4 per 1,000 in each of the two preceding weeks, declined to 13.1 in the week under notice, but was 1.4 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 2.5 in Motherwell, 3.0 in Kilmarnock, and 6.5 in Kirkcaldy, to 17.7 in Coatbridge, 20.2 in Ayr, and 23.1 in Perth. The mortality from the principal epidemic diseases averaged 1.5 per 1,000, and was highest in Falkirk and Coatbridge. The 222 deaths from all causes registered in Glasgow included 13 from infantile diarrhœal diseases, 9 from whooping-cough, 3 from diphtheria, 3 from scarlet fever, 2 from measles, and 1 from enteric fever. Three deaths from measles and 3 from infantile diarrhœal diseases were registered in Coatbridge, and 3 from whooping-cough in Aberdeen.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, August 10th, 609 births and 310 deaths were registered in the twenty-two principal urban districts of Ireland, as against 649 births and 364 deaths in the preceding week. The annual death-rate in these districts which had been 14.5, 15.2, and 16.4 per 1,000 in the three preceding weeks, fell to 14.0 per 1,000 in the week under notice, this figure being 2.5 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 15.8 and 12.3 respectively, those in other districts ranging from 4.2 in Drogheda and 6.9 in Armagh to 23.6 in Galway and 25.4 in Clonmel, while Cork stood at 12.2, Londonderry at 10.2, Limerick at 16.3, and Waterford at 19. The zymotic death-rate in the twenty-two districts averaged 1.8 per 1,000, as against 1.5 in the preceding period.

During the week ending Saturday, August 17th, 594 births and 291 deaths were registered in the twenty-two principal urban districts of Ireland, as against 609 births and 310 deaths in the preceding week. The annual death-rate in these districts, which had been 15.2, 16.4, and 14.0 per 1,000 in the three preceding weeks, fell to 13.1 per 1,000 in the week under notice, this figure being 1.5 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 15.3 and 11.1 respectively, those in other districts ranging from 2.5 in Londonderry and 4.4 in Portadown to 22.9 in Newtownards and 36.7 in Ballymena, while Cork stood at 16.3, Limerick at 14.9, and Waterford at 9.5. The zymotic death-rate in the twenty-two districts averaged 1.4 per 1,000, as against 1.8 in the preceding period.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

Staff Surgeon J. Miln to Chatham Hospital, temporarily.

Staff Surgeon A. Woollcombe to Chatham Hospital, temporarily.

Staff Surgeon A. Wernet to the *Pembroke*, for Royal Naval Barracks.

Staff Surgeon E. Cox to the *Pomone*, additional, Royal Naval College, Dartmouth, temporarily.

Staff Surgeon G. Bateman to Sick Quarters, Queensferry, vice Wernet, August 13th.

Surgeon R. Biddulph to the *Ariadne*, August 7th.

Fleet Surgeon R. Ross to the *Russell* on recommission, August 13th.

Staff Surgeon H. Suewell to the *Venerable*, vice Fleet Surgeon Ross, August 13th.

Surgeon G. Cockrem to the *Russell* on recommission, August 13th.

Surgeon H. Nicholls to the *Victory*, for disposal, August 20th.

Surgeon F. Goble to the *Pembroke*, additional.

Staff Surgeon W. Walker to the *Talbot*, for voyage out and home, August 27th.

Surgeon H. White to the *Talbot*, for voyage out and home, and to the *Cadmus* on recommission, undated.

Surgeon J. Orwin to the *Clio* on recommission, undated.

Surgeon G. Fergusson to the *Blenheim*, August 27th.

Surgeon H. Scargill to the *Royal Arthur* and for group of ships of Third Fleet, vice Wright.

Surgeon S. Vickery to the *Hebe*, vice Bateman.

Surgeons S. Holl, C. Petch, J. Wright, G. Hamilton, G. Adshead, S. Dudley, C. Baker, and H. Langdale to the *President*, additional, for five months' course of instruction.

Surgeon H. Nicholls to Royal Marine Division, Portsmouth, vice Langdale, August 31st.

Surgeon K. Hole to the *Pomone*, additional, for Royal Naval College, Dartmouth.

Surgeon J. Hadwen to Haslar Hospital, vice Adshead, undated.

ARMY MEDICAL SERVICE.

Royal Army Medical Corps.

Lieutenant-Colonel William L. Reade retires on retired pay, dated August 14th, 1912.

The undermentioned Lieutenants, from the seconded list, are restored to the establishments: Maurice Burnett, dated July 17th, 1912; William B. Laird, dated July 28th, 1912; Frederick W. B. Serimshire, dated July 28th, 1912; Gilbert A. Blake, M.B., dated, August 1st, 1912.

The undermentioned to be Lieutenants on probation, dated July 26th, 1912: Robert B. Price, M.B.; James B. A. Wigmore; Eric C. Lang, M.B.; Lieutenant John Hare, M.B., from the 1st Northumbrian Field Ambulance, Royal Army Medical Corps (Territorial Force); Edmund U. Russell; Lieutenant William V. Corbett, from the Royal Army Medical Corps (Territorial Force); Robert A. Flood, M.B.; Pierce M. J. Power; James L. Huggin, M.B.; Frank C. Cowtan; Lieutenant Charles C. Jones, M.B., from the Royal Army Medical Corps Special Reserve; Edward V. Whitby, M.B.; George F. Allison; Reginald E. Porter, M.B.; Thomas H. Balfour, M.B.; Richard B. Phillips; Lieutenant Robert G. Shaw, M.B., from the Royal Army Medical Corps Special Reserve; John E. Hepper; Hugh J. S. Shields; Alexander L. Urquhart, M.B.; Noel T. Whitehead; Henry F. Panton, M.B.; Avenell F. C. Martyn; Norman W. Stevens, M.B.; Robert C. Carlyle, M.B.; Lieutenant Leopold T. Poole, M.B., from the Royal Army Medical Corps Special Reserve; Arthur A. M. Davies; Leslie Dunbar, M.B.; James C. Sproule.

Captain J. S. Pascoe, from the Royal Army Medical College, has been appointed to the charge of the Military Families' Hospital, Woolwich.

INDIAN MEDICAL SERVICE.

The Director-General, Indian Medical Service, has been appointed *ex officio* member of the Board of Scientific Advice in India.

Major G. P. T. Groube, I.M.S., to be appointed to the substantive medical charge of the 113th Infantry.

Captain E. C. Hodgson has been deputed to carry out a malarial survey of the site of the Imperial City near Delhi.

The following changes of designation have been approved by Government:—Principal Medical Officers of Divisions, when the incumbents are Surgeon-Generals: "Deputy Director of Medical Services." Other Principal Medical Officers of Divisions and Brigades: "Assistant Director of Medical Services." Sanitary Officers of Divisions: "Deputy Assistant Director of Medical Services (Sanitary)." Staff Officers for Medical Mobilization Stores: "Deputy Assistant Director of Medical Services (Mobilization)."

Lieutenant-Colonel W. R. Edwards, C.M.G., has been permitted to apply to the Secretary of State for India for an extension of leave for three months with effect from October 9th, 1912.

TERRITORIAL FORCE.

Second London (City of London) Field Ambulance.—R. E. Barnsley (late Cadet, Cambridge University Contingent, Senior Division, Officers' Training Corps) to be Lieutenant, July 22nd, 1912.

Third South Midland Field Ambulance.—Lieutenant C. C. Lavington to be Captain, July 15th, 1912.

Third West Lancashire Field Ambulance.—Captain N. S. Jeffrey, M.B., resigns his commission, August 17th, 1912.

Yorkshire Mounted Brigade Field Ambulance.—Lieutenant J. Hepple to be Captain, July 1st, 1912.

Second Northern General Hospital.—The following officers, from the List of Officers whose service will be available on mobilization, to be Captains in the permanent personnel, May 1st, 1912: Captain J. F. Dobson, M.B., F.R.C.S., and Captain J. A. Coupland, M.B., F.R.C.S. The following Captains to be Majors, May 1st, 1912: J. F. Dobson, M.B., F.R.C.S., and J. A. Coupland, M.B., F.R.C.S.

Third Scottish General Hospital.—Major A. G. Hay, M.D., to be Lieutenant-Colonel, April 19th, 1912.

Attached to Units other than Medical Units.—Captain J. F. F. Parr to be Major, May 28th, 1912; Captain A. Fowler, M.D., to be Major, June 22nd, 1912; Lieutenant R. Thornton, M.B., to be Captain; Lieutenant L. B. Cane, M.B., to be Captain, May 22nd, 1912; G. K. Maurice to be Lieutenant, June 23rd, 1912; J. A. Morris, M.B., to be Lieutenant, July 11th, 1912; W. T. Briscoe to be Lieutenant, July 8th, 1912.

For Attachment to Units other than Medical Units.—J. F. Edmiston, M.B., to be Lieutenant, June 3rd, 1912; R. G. Wells to be Lieutenant, July 27th, 1912.

TERRITORIAL FORCE RESERVE.

Royal Army Medical Corps.

Captain John Orton, M.D., from the list of officers attached to units other than medical units, to be Captain, dated August 3rd, 1912.

COLONIAL MEDICAL SERVICES.

The following changes have been notified by the Colonial Office:

West African Medical Staff.

Appointments.—A. E. Horn, M.D., B.Sc.Lond., M.R.C.S.Eng., L.R.C.P.Lond., D.T.M. and H.Cantab., has been appointed Personal Assistant to the Principal Medical Officer of Southern Nigeria; T. F. G. Meyer, M.R.C.S.Eng., L.R.C.P.Lond., has been selected for temporary special service at the Colonial Office; D. J. F. O'Donoghue, L.R.C.S., L.R.C.P., D.P.H.Irel., D.T.M.Conjoint, has been selected for appointment as a Medical Officer, Gold Coast.

Resignation.—A. J. Smith, M.B., Ch.B.Birm., Medical Officer, Gold Coast.

Retirement.—W. M. Woods, L.R.C.S., L.R.C.P., L.M.Irel., D.T.M. Lpool, Medical Officer, Southern Nigeria.

Other Colonies and Protectorates.

W. B. Cunningham, M.B., B.S.Glasg., has been selected for appointment as a Supernumerary Medical Officer for the Leeward Islands E. E. Field, M.D., Ch.B.Edin., D.P.H.Cantab., has been selected for appointment as an Assistant Medical Officer in British Guiana. R. D. Fitzgerald, M.B., B.Ch., B.A.O.Dubl., has been selected for appointment as a Medical Officer in the Straits Settlements. A. L. George, M.R.C.S.Eng., L.R.C.P.Lond., L.D.S.Eng., has been appointed a supernumerary Medical Officer in Trinidad.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BANBURY: HORTON INFIRMARY.—House-Surgeon. Salary, £80 per annum.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BEDFORD COUNTY HOSPITAL.—Male Assistant House-Surgeon. Salary, £80 per annum.

BIRKENHEAD: BOROUGH HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House-Surgeon. Salary, £90 per annum.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer, and Resident Surgical Officer. Salary, £80 each per annum.

BRADFORD ROYAL INFIRMARY.—Male House-Surgeon. Salary, £100 per annum.

BRECON AND RADNOR ASYLUM, Talgarth.—Assistant Medical Officer (Male). Salary, £170 per annum.

BROMLEY (KENT) EDUCATION COMMITTEE.—Medical Practitioners for School Clinic.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary at the rate of £100 per annum.

CARDIFF: KING EDWARD VII'S HOSPITAL.—House-Surgeon. Honorarium, £30 for six months.

CARLISLE: CUMBERLAND INFIRMARY.—Resident Medical Officer. Salary at the rate of £80 per annum.

CENTRAL LONDON OPHTHALMIC HOSPITAL, Gray's Inn Road, W.C.—House-Surgeon. Salary at the rate of £50 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £80 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum, rising to £100 after six months.

DENBIGH COUNTY COUNCIL.—County Medical Officer of Health. Salary, £500 per annum.

DUDLEY: THE GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, 100 guineas per annum.

DUNDEE ROYAL INFIRMARY.—Non-Resident Obstetric Assistant.

DURHAM COUNTY COUNCIL.—Tuberculosis Medical Officer. Salary, £500 per annum.

EDINBURGH: THE HOSPICE.—Medical Woman as Resident. Honorarium, £25 per annum.

EDINBURGH HOSPITAL FOR WOMEN AND CHILDREN.—Two Medical Women, as Senior and Junior Residents. Honoraria, £25 and £18 per annum respectively.

GLASGOW MATERNITY AND WOMEN'S HOSPITAL.—(1) Two Indoor House-Surgeons. (2) Two Outdoor House-Surgeons. (3) Outdoor House-Surgeon for West End Branch.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

KENSINGTON AND FULHAM GENERAL HOSPITAL, Earl's Court, S.W.—Resident Medical Officer. Remuneration at the rate of £75 per annum.

LEAMINGTON SPA: WARNEFORD GENERAL HOSPITAL.—House-Physician. Salary, £35 per annum.

LEICESTER CORPORATION.—Resident Medical Officer at the Isolation Hospital, and Assistant Medical Officer of Health. Salary, £150 per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Two Physicians, and (2) three House-Surgeons: salary at the rate of £60 per annum. (3) Surgical Registrar and Tutor; salary of Registrar, £20 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum.

MANCHESTER: ANCOATS HOSPITAL. Assistant House-Surgeon. Salary, £70 per annum.

MANCHESTER CHILDREN'S HOSPITAL. Male Resident Medical Officer. Salary at the rate of £100 per annum.

MANCHESTER CORPORATION FEVER HOSPITAL.—Third Medical Assistant. Salary, £100 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN. Assistant Medical Officer. Honorarium, £25 per annum.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

METROPOLITAN ASYLUMS BOARD.—Assistant Medical Officers (three) for the Queen Mary's Hospital for Children, Carshalton, and Park Hospital for Children, Hither Green, S.E. Salary, £150 per annum.

MIDDLESEX HOSPITAL, W.—Assistant Physician to the Department for Diseases of the Skin.

NEWPORT AND MONMOUTHSHIRE HOSPITAL. Resident Medical Officer. Salary at the rate of £80 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, [illegible] Medical Officer. Salary at the rate of £[illegible] per annum if appointed Senior [illegible]

ROYAL [illegible] INFIRMARY.—Junior House-Surgeon (Male). Salary, £[illegible]

[illegible] COUNTY ASYLUM. Junior Assistant [illegible] £160 per annum, rising to £180.

SHEFFIELD [illegible] HOSPITAL. Assistant House-Surgeon; [illegible] Physician; salary, [illegible] Surgeons.

SHEFFIELD [illegible] INFIRMARY.—Junior Resident Medical Officer. Salary, £70 per a[illegible]

SHEFFIELD UNIVERSITY.—Professor of Pathology.

SHREWSBURY: SALOP INFIRMARY.—House-Surgeon. Salary, £150 per annum.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—Junior House-Surgeon. Salary at the rate of £60 per annum.

STAFFORD: COTON HILL LUNATIC ASYLUM.—Assistant Medical Officer (Male). Salary, £150 per annum, rising to £180.

STOCKPORT INFIRMARY.—Two Junior House-Surgeons. Salary, £80 per annum.

SUNDERLAND CHILDREN'S HOSPITAL.—Resident Medical Officer. Salary, £80 per annum.

SURREY EDUCATION COMMITTEE.—Assistant Medical Officer. Salary, £250 per annum.

THROAT HOSPITAL, Golden Square, W.—Resident House-Surgeon. Salary, £75 per annum.

WALSALL AND DISTRICT HOSPITAL.—House-Physician and Casualty Officer. Salary, £90 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Junior House-Surgeon. Salary at the rate of £100 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Two House-Physicians. (2) Three House-Surgeons.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Corwen (Merioneth); Lisbellaw (co. Fermanagh).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

BEATTIE, F. A., L.S.A., Medical Officer of the Workhouse of the Penistone Union.

DAVIS, Edward D., F.R.C.S.Eng., Assistant Surgeon to the Nose, Throat, and Ear Department of Charing Cross Hospital.

JOHNSON, H. E., M.B., District Medical Officer of the Liskeard Union.

MESSITER, Cyril C., L.M.S.S.A., Junior House-Surgeon and Anaesthetist to the Croydon General Hospital, vice J. P. Grainger, L.R.C.P. and S.I., resigned.

PASK, E. H. A., M.B., B.S Lond., Junior Assistant Medical Superintendent of the St. Pancras North Infirmary.

PORTER, A., M.B., Junior Assistant Medical Officer of the Withington Workhouse, South Manchester.

ROBINSON, W. E., M.D., B.Ch.Oxon, Visiting Anaesthetist to the Royal Waterloo Hospital for Women and Children.

VINING, C. Wilfred, M.D., B.S.Lond., M.R.C.P., D.P.H., Assistant Physician at the Leeds General Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

TRIST.—On August 7th, at St. Columb, Cornwall, the wife of J. R. R. Trist, M.R.C.S., of a son.

MARRIAGES.

ASHE—BRENTNALL.—On August 22nd, at the Parish Church, Abergele, by the Rev. John Ashe, Vicar of Stockingford (brother of the bridegroom), assisted by the Rev. Canon Jones, Vicar of Abergele, Charles S. Ashe, M.B., of Sale, to Winifred Hebden, eldest daughter of Mr. and Mrs. H. B. Brentnall, Min-y-Coed, Abergele.

THOMASON—STUART.—On August 15th, at St. Chrysostom's Church, Hockley, by the Rev. J. E. Moon, Vicar, Henry Philip, elder son of Mr. and Mrs. H. Thomason, Shaldon, Shifnal, to Flora Emma, only daughter of the late Mr. George Stuart, of Liverpool, and Mrs. Stuart, Vesta House, Lodge Road, Birmingham. At home, Foremark, Fillongley, September 10th, 11th, and 12th.

DEATHS.

HICKS.—On August 18th, at his residence, Snow Hill, Shelton, Stoke-on-Trent, Edward J. W. Hicks, M.D., C.M., M.R.C.S.Eng., L.S.A., in his 63rd year.

PATERSON.—At 7, Walpole Road, Brighton, on August 13th, the wife of Surgeon-Major-General H. F. Paterson, Army Medical Staff (R.). Indian and Chinese papers please copy.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Demonstration of Minor Operations, 10.30 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Demonstration of Fractures, etc., 10.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Gynaecological Demonstration, 10 a.m.; Lecture, Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Lecture, Practical Medicine, 10.30 a.m.; Lecture, Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. on Monday, Wednesday, and Friday.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

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STATE SICKNESS INSURANCE COMMITTEE.

APPOINTMENTS IN CONNEXION WITH THE INSURANCE ACT.

THE State Sickness Insurance Committee calls the attention of all members of the medical profession to the following resolution adopted by the Annual Representative Meeting, 1912:

> That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

SANATORIUM BENEFIT.

The State Sickness Insurance Committee also directs attention to the following resolution adopted by the Annual Representative Meeting, 1912:

> That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such apointment* shall be submitted to the Council for its approval.
>
> * "Appointment" means any professional work.

The State Sickness Insurance Committee notifies that no advertisement in respect of appointments in connexion with sanatorium benefit will be accepted for publication in the BRITISH MEDICAL JOURNAL which is inconsistent with the conditions laid down by the Association, and in all cases in which an advertisement is accepted a full list of the conditions laid down by the Association will be sent to the advertiser.

National Insurance.

THE PROFESSION AND SANATORIUM BENEFIT.

GENERAL PRINCIPLES.

UNITY of the profession was the dominant note, clearly and strongly sounded, by the Representative Meeting at Liverpool. This desire for unity was nowhere more clearly seen than when the Representative Body adopted the following resolution *nemine contradicente*:

> That before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such appointment shall be submitted to the Council for its approval.

The meeting laid down the "conditions and duties" which it considered to be essential for carrying out sanatorium benefit, and the tuberculosis scheme of which it forms a part, in a manner satisfactory to the patient and the doctor. Having expressed its wishes in clear and unmistakable language, it appointed a State Sickness Insurance Committee to watch the interests of the profession in relation to the National Insurance Act and to report through the Council on the whole situation.

At its first meeting the State Sickness Insurance Committee laid down the following main conditions as necessary to be fulfilled before any appointments should be accepted under sanatorium benefit:

1. That the work of the whole-time tuberculosis officer, both at the patient's home and at the dispensary, shall be diagnostic and consultative.
2. That the general staff of the dispensary shall be formed, as far as possible, of medical practitioners serving on a rota.
3. That the patient shall have free choice of doctor.
4. That the recommendation of the medical attendant be given before a patient is attended at the dispensary.
5. That the work of domiciliary attendance shall be carried out by general practitioners, and that remuneration for such work shall be adequate.
6. That the profession shall have adequate representation on consultative and voluntary care committees.

We feel that at this crisis no apology is necessary for summarizing these sanatorium "cardinal points" in this way, and for asking from all members of the profession a loyal adhesion to them, because here the unity of the profession is being tested, and the result will be taken by the public and by the Government as an index of what we shall do when medical benefit under the Insurance Act comes into force. To many it seems that this was one of the reasons why the provisions of the Act as to sanatorium

benefit were pushed forward with such haste and in such a state of unreadiness that, as a badgered defender admitted, the only sanatorium benefit which could be definitely promised was cod-liver oil!

If the Local Government Board adheres to the policy it has outlined, and in an ungrudging spirit recognizes that the official tuberculosis campaign cannot be successful unless the general practitioners are enlisted to form the first line of the fighting force, it will find that the medical profession will loyally carry out the marching orders of the Liverpool meeting, and with cordial goodwill do its part in fighting the scourge of tuberculosis in all its phases. We should feel more assured as to the action of the Local Government Board were it not for the activity with which the county councils in some parts of the country are pushing on schemes in which the general practitioner has little part. The medical officers of health are as loyal to the profession as their colleagues engaged in other departments of medicine, but they are in a difficult position, and as servants of their councils may easily be led into doing things which are outside the limited province assigned to them by the Insurance Act. It is true that the tuberculosis scheme goes beyond the insurance scheme, but this does not justify the attempt which is being made in some quarters to get the medical officer of health appointed as chief and his assistant as tuberculosis officer provisionally if the underlying determination be that the provisional shall become permanent.

We are glad to notice indications that the Local Government Board is at present showing itself opposed to such a permanent combination of duties, but we do not know how long this wise attitude would be maintained in face of pressure from the periphery. It therefore seems proper to point out that to urge such a combination of duties would be to act in opposition to the declared opinion of the profession, expressed after full consideration of all the interests involved, and, in spite of the specious reasons adduced in its support, contrary to the spirit of the tuberculosis scheme and of the conditions for the administration of sanatorium benefit under the Insurance Act accepted by the profession. We can therefore with confidence ask medical officers of health to exert their influence with their committees and councils to prevent a condition of things which must lead to many troubles and difficulties. It is all the more needful, if war is to be avoided, that medical officers of health and their colleagues in the Divisions should act in harmony in organizing and carrying out the arrangements for sanatorium benefit, because since the Annual Representative Meeting the negotiations have ceased to be central and have become local. This may be unfortunate, but the difficulty exists and has to be faced, and the profession must take care that it is not defeated in detail.

The Representative Body, seeing this and many other difficulties, appointed the State Sickness Insurance Committee "to watch the interest of the profession," and there is no doubt that this Committee, backed as it is by a loyal and united profession, will do everything possible to help Divisions, and to act as a co-ordinating central agency.

A scheme on the following lines, consisting of three units, would appear to fulfil the demands of the Representative Body. The first unit would be the medical practitioner doing the domiciliary work, caring for and helping his patients in a hundred ways, looking out for and instructing contacts, and getting assistance in consultation from the tuberculosis officer.

As a second unit the dispensary with its whole-time officer organizing, diagnosing, bacteriologically and otherwise, consulting and advising in difficult cases, and arranging where necessary for sanatorium treatment. The third unit in the scheme would be the sanatorium treatment with its open air, good food, rest, and graduated labour all superintended by men of special experience. Such a scheme, with, in the words of Sir William Osler, the Local Government Board acting "as an effective working machine dealing with public health," would be carried out with enthusiasm by the doctors, and with inestimable advantage to the sufferers. If, however, the Local Government Board misses its chance, and the medical profession refuses to work the tuberculosis scheme because its reasonable terms as to sanatorium benefit are not agreed to, then what is the Association to do? There is but one thing it can do—organize a Public Medical Service which will include the domiciliary and dispensary treatment of tuberculosis, with all the most recent and approved scientific methods. This will be no easy task, but what has been done in Edinburgh, London, Manchester, and other places by members of the profession, can surely be accomplished by the united effort of the British Medical Association.

If the State Sickness Insurance Committee could see its way with all possible speed to formulate a complete medical service scheme which shall include the treatment of tuberculosis, it would give the profession throughout the country the kind of lead which, judging from our correspondence, it needs, and is anxiously waiting for. The State Sickness Insurance Committee, occupying as it does a central position, and having before it the conditions of the profession in various districts, is far better able to devise a workable and satisfactory scheme than any other body.

Already schemes are being promulgated by the profession and Public Medical Services formed in many parts of the country; while this shows the enthusiasm and determination of the profession, yet there is a danger in unauthorized programmes. Here, if anywhere, there is need for unification, and if the State Sickness Insurance Committee will formulate a scheme it would, we believe, be generally welcomed, its main principles incorporated, as a basis in any local scheme, and its non-essentials altered and arranged to suit the particular locality. Such a scheme should take into account what are called in London centres for treatment of school children; some are already "in being," and have been recognized by the Board of Education. Such a centre will provide the nucleus for a Public Medical Service, round which could be built the Association's scheme. These centres will increase, as is evidenced by the fact that an addition of six other centres to those already existing in London has been agreed to and will be opened for work early in October.

It should also be known that the general practitioners in Finsbury some two months ago started a tuberculin dispensary, and that its working has already been attended by good results to all concerned; this successful action has encouraged the practitioners in a neighbouring Division to do likewise. A house has been taken and is being fitted up; in a few weeks this new dispensary in North London will be at work.

These two institutions will be watched with considerable interest and the omens are favourable. One thing is following—as a result of working together in a common cause, the medical men are getting to know each other better, and, trusting each other more, are becoming more united. It is also evident that the statement that the general practitioner is unable to treat tuberculosis is untrue and a slur upon the profession.

SIR WILLIAM OSLER'S SUGGESTIONS.

A letter Sir William Osler addressed recently to the *Times* on the Tuberculosis Campaign is of interest, owing not only to the authority, but to the special experience of the writer. He dealt with three points:

1. After observing that in any campaign organization is the first essential, and that in the Local Government Board there is an effective working machine dealing with public health, he expressed the hope that a comprehensive scheme would be laid down to co-ordinate the various agencies:

(*a*) At the head departments of the Local Government Board, with, if it is possible, lay and professional representation. (*b*) Central institutes, in each of the three capitals, dealing with the educational, social service, and scientific aspects of the work. For research purposes it is to be desired that the energies should be concentrated in one large laboratory. (*c*) Dispensaries officered by trained men, whose work would be supervised directly from the central bodies. (*d*) Sanatoriums and hospitals. (*e*) The general practitioners, medical officers of health, and nurses, who constitute the fighting units of the army.

Co-ordination in the work of these factors is, he says, essential. One of the duties which he would assign to what he calls the general staff would be to arrange suitable courses at the dispensaries and special hospitals, instancing what might be done in London by utilizing the Brompton Hospital and, we may add, the Hospital for Diseases of the Chest, City Road (see JOURNAL, August 24th, p. 464), the existing tuberculosis dispensaries, and the Lister Institute.

2. The second point with which he dealt was the necessity for linking the tuberculosis work with existing

hospitals and dispensaries. "Why," he asked, "dissociate this work from our general hospitals? Why ask them to cut off one-tenth of their patients? It will be an easy matter to arrange for the payment of insured persons, and it should not be difficult to attach the tuberculosis officer to the staff of the hospital."

He then instanced the Henry Phipps Dispensary for Tuberculosis in connexion with the Johns Hopkins Hospital, Baltimore. We may here interpolate the fact that this dispensary, established through the generosity of Mr. Henry Phipps, was formally opened on February 21st, 1905, and the first patients were received on March 1st of the same year. In the first year 649 patients were registered, and the staff consisted of two physicians and one nurse. In the second year 835 patients were recorded, and the staff had grown to ten physicians and three nurses. Unfortunately we have not been able to obtain information as to the subsequent development of this Dispensary, but Sir William Osler makes the following statements with regard to it:

It now forms an important part of a great medical school, through which every student as a matter of routine passes as a clinical clerk. If for no other purpose than this, every general hospital with a medical school should have its tuberculosis department. The tuberculosis work of the Oxfordshire Branch of the National Association has centred about the Radcliffe Infirmary, the treasurer, committee, and staff of which, with commendable liberality, have not only given the dispensary accommodation, but have for the past two years set aside from twelve to twenty beds on the balconies for tuberculosis. Doctors, nurses, and patients are all the better for this association.

3. The third point in Sir William Osler's letter is to advise that before any great outlay is made upon sanatoriums we should have the dispensaries in full working order, as through them alone can the cases in each district needing home and shelter, sanatorium and hospital treatment be ascertained. He ends his letter as follows:

Let me conclude with an appeal for organization, for a general staff, which will control the Government funds, direct the campaign, plan the education of doctors, nurses, and the public, organize research, and act as co-ordinating centres for the manifold activities engaged in the work.

County Schemes.

Cornwall.

At its meeting on August 22nd the Sanitary Committee of the Cornwall County Council approved provisionally of a tuberculosis scheme for the county which had been prepared by Dr. Burnet, County Medical Officer of Health, and directed it to be forwarded to the Local Government Board for its sanction.

The Chairman of the County Insurance Committee reported that Dr. Burnet had accepted the position of temporary medical officer to the Committee, and that the County Council would have to appoint a tuberculosis officer.

Dr. Burnet said he thought the Local Government Board would not sanction the appointment of any one as tuberculosis officer at a salary of less than £500. He had hoped to have become that officer, feeling that as he was to be the principal tuberculosis officer he might as well also be the same official for which the £500 was required, and thus prevent the enormous expenditure of £500 for another official. But the Local Government Board informed him that he could not do the work. It would be necessary for the County Council to have a permanent scheme, but in the meantime two things could happen. The Insurance Committee must act at once, and have its own provisional scheme, or the County Council could also have a provisional scheme which it could adopt until the permanent one was ready. At first it was thought the permanent scheme would be very expensive, but the Government was going to subsidize to the extent of three-fourths for sanatoriums and four-fifths for dispensaries.

Provisional Arrangements.

For the immediate working of the sanatorium benefit, the county medical officer is acting as adviser to the Insurance Committee, and carrying out the duties *pro tem.* of the tuberculosis officer. Arrangements have been made by this Committee, subject to the approval of the Insurance Commissioners, to take six beds at the Didworthy Sanatorium for six months, or until the County Council has made arrangements as to sanatoriums and dispensaries. Dr. Burnet advised that, should the urgency of the situation demand it, it would be feasible to ask certain of the medical officers of health who are most accessible to the seven dispensary centres to act in each instance in the capacity of dispensary medical officer under the direction of the county medical officer, and at a salary at the rate of £75 per annum, until such time as a tuberculosis officer shall have commenced his duties; medicines and equipment, including house and cottage rental, etc., would be provided by the County Council, in accordance with the Local Government Board Order of July 26th. As far as possible a provisional scheme for immediate treatment should follow the lines of, if not actually become with necessary modifications, the permanent one.

Permanent Scheme.

The scheme put before the County Council by Dr. Burnet provided for the appointment of a tuberculosis medical officer, as a whole-time official at a salary of £500 per annum, to work under the administrative control of the county medical officer of health. Office and travelling expenses should be provided. He would have charge of the tuberculosis dispensaries, and the arrangements generally for the provision of tuberculosis treatment in the county outside any county sanatorium which might in the future be provided, but including the supervision of such hospital patients as were housed in places other than a county sanatorium, and he would undertake all such domiciliary work as might be necessary to co-operate with the medical practitioners acting under the Insurance Act with regard to patients in their charge selected for sanatorium benefit.

The county has been divided into seven dispensary districts, and it was proposed that the main tuberculosis dispensaries should be established at Bodmin, Redruth, Falmouth, Truro, Launceston, and Liskeard. One tuberculosis nurse would be appointed for each dispensary district, whose duty would be to attend at the dispensary with the tuberculosis officer on certain days arranged for that purpose. She would also be required to visit domiciliary cases under the direction of the tuberculosis medical officer, her salary as whole-time official to be fixed by the Committee. It would be advisable for the county to combine if possible with Devonshire, and perhaps with some of its county boroughs, for the provision of a permanent county sanatorium as suggested by the Local Government Board, with sixty beds for Cornwall. This sanatorium would receive such patients as would be calculated to benefit most by this special treatment. These patients would have passed in the ordinary course through the tuberculosis dispensaries, with perhaps certain clearing hospitals as represented by beds allocated for this purpose at voluntary institutions, hospitals, etc., or even fever hospitals (certain beds available), or perhaps cottages, etc., equipped for the purpose by the County Council, the expenses being arranged according to circumstances.

Other County Schemes.

Schemes have also been proposed by the medical officers of many other counties. Many of them are still under consideration, and in most, if not all, cases Provisional Medical Committees have been asked for their views, and meetings are being held to discuss the matter.

In the West Riding of Yorkshire the County Council has adopted a scheme drawn up by the medical officer, Dr. J. R. Kaye, providing for the establishment of ten dispensary districts; at each rooms are to be provided for the temporary reception of two to four cases, and to each dispensary two nurses are to be appointed; the assistance of voluntary nursing associations will be utilized as far as possible. In addition, branch dispensaries are to be established as necessary. Dr. Kaye estimates that 300 beds will be required, but it is proposed to proceed at once to the establishment of one sanatorium only with 150 beds.

The Durham County Council is about to appoint a chief tuberculosis officer, and the Essex County Council will appoint, it is reported, three tuberculosis officers for the county, and proposes to take over the open-air shelters of the King Edward County Memorial Committee.

Correspondence.

Dr. T. Barrett Heggs (Sittingbourne) writes: Those Divisions that strongly advocated the policy adopted by the recent Representative Meeting to assist in the working of sanatorium benefit provided it were carried on in accordance with the wishes of the Association, did so with one chief motive—namely, to retain the support of public opinion for the fight that is in front of the profession. It is now, however, evident that the dilatory tactics of the State Sickness Insurance Committee are defeating the object for which that policy was declared. For those who may doubt this, I extract the following from an editorial in the chief paper of North-East Kent:

The British Medical Association decided not to oppose the working of the consumption treatment scheme, but to assist it, yet it seems as if it allows its concern for the proper carrying out of the scheme to stop at well paid appointments.

The Government now practically insists upon a complete and comprehensive tuberculosis scheme in every local insurance area, embracing the non-insured as well as the insured. It is, therefore, our duty to see that the universal basis for these comprehensive schemes is in accordance with the wish of the Association.

Where, however, is the lead of the Association in this matter? With the exception of publishing the cardinal

resolutions of the Representative Meeting as to insured persons, the State Sickness Insurance Committee has given no lead whatever to the profession in the way of a comprehensive homogeneous scheme or policy. Every one knows the cardinal resolutions do not by any means cover the ground.

Are our leaders content to look on while each local insurance area fights its own battle and finds its own individual solution to the difficulties which are present in every scheme for every insurance area alike?

Provisional Medical Committees are negotiating without knowing their own requirements. A definite comprehensive Association scheme for the treatment of tuberculosis is an urgent necessity. Will the State Sickness Insurance Committee rise to the occasion? Are our leaders capable of leading?

Dr. H. J. GODWIN (Honorary Secretary, Winchester Division) writes: I fear the decision of the Representative Meeting to work the sanatorium benefit was not the best course to adopt in the interest of the general practitioner.

The following are some of my reasons for thinking so:

1. That if there was going to be any question of the sanatorium benefit being separate from any other form of medical benefit under the Act it ought to have been referred separately to the Divisions.

2. That at the Representative Meeting in February, 1912, a resolution was passed which stated: "That the Commissioners be informed in plain and unmistakable language that we would *not work under the Act unless and until our minimum demands were granted us*." Surely we all understood the sanatorium benefit was included in this resolution. If it was not, the Divisions should have been informed that it was not.

3. The Representative Meeting having passed a resolution calling on all its members to resign their position as members of the Advisory Committees leaves these committees in the hands of medical officers of health, so that the general practitioner will get no say in the tuberculosis question.

This, I believe, will be the great danger to the general practitioner, and is already beginning to show itself. For at a meeting of the Hampshire County Council this month the following recommendations were submitted:

> That the Council do permit the county medical officer of health to act as the medical adviser of the County Insurance Committee, subject to such conditions as to payment by the Insurance Committee as shall be approved by the Finance Committee. That the County Insurance Committee be informed that the County Council are willing to enter into the following arrangement:
>
> 1. The number of assistant county medical officers to be increased by the County Council from three to six.
>
> 2. That half the time of such officers to be devoted to the medical inspection of school children and half to work in connexion with tuberculosis, the county for both purposes being divided into six sections.
>
> 3. The salaries (£250) and travelling expenses of each of the six officers to be borne by the County Council and the County Insurance Committee in equal shares.

It will be noticed by all who have read the resolutions of the Representative Meeting that this is not in accordance with the requirements of the Association.

To give another report of a County Insurance Committee: At a meeting of the Cornwall Insurance Committee the Medical Officer of Health (Dr. Burnet) said:

> He thought the Local Government Board would not sanction the appointment of any one as a tuberculosis officer at a salary less than £500. He had hoped to have become that officer, feeling that, as he was to be the principal tuberculosis officer, he might as well also be the same official for which the £500 was required, and thus prevent the enormous expenditure of £500 for another official, but the Local Government Board could not allow him to do the work.

I should like to ask Dr. Burnet if he was going to do the work for nothing. If so, his duties as medical officer of health must be very light and remunerative.

In conclusion, I must say that the medical officers of health suddenly developing into "tuberculosis specialists" is one of the most extraordinary developments in the modern history of medicine, and the Representative Meeting, by allowing the sanatorium benefit to be worked, have made medical officers of health a privileged class to the detriment of medical practitioners and those medical men who have made tuberculosis a special study.

I wish to add that I have myself no intention of ever working under the Act.

Dr. G. BAYNTON FORGE (West Malling, Kent) writes: The Welsh National Memorial Association proposes to build at once two large sanatoriums and a number of dispensaries, but the question arises, Is this the best form of treatment for tuberculosis, and will the doctors send their cases for treatment? In my experience the patients treated at home in shelters, etc., do far better than those sent away to sanatoriums. The statistics for Woodburn Sanatorium after ten years' working show a mortality of over 70 per cent., in spite of the fact that only favourable cases are admitted. I have found that the case that goes to the sanatorium dies sooner than the case left at home. After fifteen years' practice I have not one case living that has been sent to a sanatorium. In the present state of medical knowledge the wholesale use of tuberculin, with or without the index, is not to be lightly undertaken. Even quite small doses used for diagnostic purposes may light up a latent focus in precisely the same way as the ignorant bonesetter's manipulation of a tuberculous joint. The old tuberculin did more harm than good, and with new tuberculin in small graduated doses the evidence of permanent cures in a large number of cases is wanting; men are ever ready to publish their successes, but the failures are buried in oblivion. All the cases treated with tuberculin have the open-air treatment in addition, and the good due to the latter is attributed to the tuberculin.

No doubt the poor results of sanatorium treatment are due partly to the great contrast between the home life and that led at a sanatorium, but partly also to the reinfection of the mild case by those of a more virulent and rapid type. It has always seemed to me to be most unwise to herd all cases of pulmonary phthisis together. For if their nurses and doctors in good health sometimes contract the disease, then the mild case of phthisis is not being placed under the best possible conditions in a sanatorium. Better results can be obtained at home or in encampments, each individual case being strictly separated. Besides, what is to happen to the cases too bad for sanatoriums and those discharged as incurable? Are they to be left in little crowded rooms, a source of infection for months or years?

Sir William Osler stated that an important part of the dispensary treatment was the shelter at home in the back garden. I have obtained permission from local landowners to erect tents or shelters on their property near to the patient's own home.

To sum up in favour of home treatment by shelters, etc.:

(*a*) Cases recovering in native air are more likely to keep well than those sent away.
(*b*) Efficient isolation from the rest of the family.
(*c*) Relapses could be treated at once.
(*d*) Far cheaper than sanatoriums and more efficient.
(*e*) No need for the tuberculosis officer.

The most important matter that requires immediate attention is the housing of the poor. Typhus has been stamped out by improved air supply; why not tuberculosis by allowing to each person double or treble the amount of air that will prevent typhus? By the building of sanatoriums we are beginning at the wrong end. Prevention is better than cure.

PROVISIONAL MEDICAL COMMITTEES.

BIRMINGHAM.

THE sixth meeting was held in the Medical Institute on August 23rd, when twenty-four members attended, and Mr. FRANK MARSH was in the chair.

New Members.—Drs. J. F. Atkins and E. W. Parsey were co-opted as members to represent the areas of Handsworth, and King's Norton and Northfield, now annexed to the Central Division.

Insurance Act Advisory Committee.—The following resolution was unanimously passed:

> That Drs. J. Robertson and C. Belcher be informed that in the opinion of the Provisional Medical Committee they are, by not withdrawing from the Advisory Committee, acting disloyally to the British Medical Association and not in the best interests of the medical profession.

Sanatorium Benefit.—This subject was discussed, and the scale of fees arranged between the Birmingham City

Council and the local Insurance Committee criticized. It was resolved to send a copy of Minutes 184 and 185 of the Annual Representative Meeting, and the scale of fees suggested, to the Secretary of the Birmingham Insurance Committee and to all practitioners doing sanatorium and tuberculin treatment under the local Health Committee of the City Council.

Eastbourne.

A meeting was held at the Technical Institute, Eastbourne, on Tuesday, August 20th, at 4.30 p.m. There were present Dr. A. P. Sherwood (Chairman) and sixteen members.

Sanatorium Benefit.—A letter was read from the local Sanatorium Subcommittee asking for the views of the Committee regarding the proposal to pay 5s. for medical examination and report on tuberculous persons applying for sanatorium benefit. The following resolutions were unanimously adopted:

1. That this meeting abides by the terms of the resolution laid down in Minute 207 of the Representative Meeting, and adheres to the instructions of the State Insurance Committee in giving effect to the terms therein contained.
2. That a reply be framed, informing the Sanatorium Subcommittee that this meeting is unable to express any opinion on the question submitted apart from a consideration of the other points contained in Minute 207.
3. That a statement of the foregoing decisions be sent to all the medical practitioners in the area appealing for their support, and inviting their loyal co-operation, in order to ensure uniform and concerted action of the profession in this matter.

Resignation Forms.—The Honorary Secretary reported that he held the signed resignation forms of every medical practitioner engaged in club practice in the area. Twenty-nine so engaged sent in a total of 178 forms.

Guarantees to Central Defence Fund.—The Honorary Secretary was instructed to enclose an amended form of appeal along with the circular statement.

Furness.

A meeting was held on August 23rd in the Masonic Hall, Barrow.

Sanatorium Benefit.—Under the administration of sanatorium benefits the question of mileage was discussed, and it was ultimately agreed:

That over one mile 1s. a mile be charged, including 1s. for the first mile; additional mileage to be charged for visiting additional patients off the route traversed in seeing the first. This scale to be regarded as the minimum. The mileage to be measured from the medical attendant's place of residence.

The following members were elected as a committee to arrange with the local authority in carrying out sanatorium benefit: Drs. Carmichael, Sinclair, Sansom, Thompson, and Livingston. It was decided that each area in the Division should elect a small committee to deal with its own local authority, all working under the Provisional Medical Committee, and subject to the Council of the British Medical Association. The Secretary was instructed to reply to a letter received from Dr. Orr, Medical Officer of Health, asking the terms on which sanatorium benefit could be carried out in Barrow and district.

Guarantee Fund.—The Chairman (Dr. Carmichael) and the Representative (Dr. Daniel) drew attention to the urgent necessity for a good fighting fund. All present concurred, and most of those raised their guarantee at once to £20. A committee, consisting of Drs. Daniel, Alexander, Harper, and Wilson, was elected to canvass those who had not guaranteed and get increased guarantees.

Resignation of Club Appointments.—The Secretary raised the question of meeting the friendly society officials before sending in club resignations, and the feeling of the meeting was in favour of this course.

Inverness-shire.

A meeting of the Committee was held at the Northern Infirmary, Inverness, on August 9th. Dr. MacFadyen was in the chair, and those present were Drs. Luke, Gillies, Kelly, John Mackenzie, John Macdonald (Inverness), MacDonald (Beauly), Macdonald (Glen Urquhart), Mitchell, Hunter, MacFadyen, jun., Maclachlan (Beauly), Leach (Beauly), Murray, H. S. MacDonald, and Moir (Honorary Secretary).

Apologies were received from Drs. Wilson Black, de Sylva (Glenelg), Hastings (Skye), MacLeod (Skye), Fullarton (Mallaig), Miller (Fort William), D. J. MacDonald (Skye), MacDonald (Laggan), de Watteville (Kingussie).

Treatment of Tuberculosis.—The meeting was specially convened to consider letters from the interim clerks of the Burgh and County Insurance Committees asking whether the medical practitioners in town and county were prepared to undertake the domiciliary treatment of insured persons suffering from tuberculosis, and, if so, on what conditions. After discussion it was unanimously resolved that the terms on which the medical practitioners were prepared to treat those cases would be in accordance with Minute 207 of the Representative Meeting held in Liverpool, namely: (*a*) Report, 5s. (*b*) Consultation at surgery, 2s. 6d. (*c*) Visit, 2s. 6d. (*d*) Injection of vaccine, 2s. 6d.; vaccines to be at the cost of the administrative authority (the fee for the injection of vaccine to be additional to the fee for visit or consultation). These fees to apply to cases within a radius of one mile from the doctor's residence. For every mile beyond this the charge to be 2s. 6d.—that is, the charge for visiting a case two miles distant would be 5s. *plus* the charge of 2s. 6d. for the injection of tuberculin; four miles would be 10s., and so on. These terms to be transmitted to the interim clerks of the Burgh and County Insurance Committees. In connexion with the treatment of insured persons suffering from tuberculosis at the Forbes Dispensary, Inverness, a small committee was appointed to confer with the managers of that institution with reference to the position of the medical officer of the dispensary, and the treatment of insured persons suffering from tuberculosis.

Carmarthenshire.

A meeting of this Committee was held at the Cawdor Arms Hotel, Llandilo, on August 20th. Dr. Evan Evans was in the chair, and there were present: Drs. D. R. Price, Edgar Davies, John Phillips, Timothy, R. G. Price, T. Morgan, Owen Williams, Richard Hopkins, D. J. Williams, D. Phillips, H. B. Elton, and S. Williams.

Central Defence Fund.—It was resolved that each member in the area be requested to increase the minimum amount of his guarantee to £20.

Resignation of Contract Practice Appointments.—The Honorary Secretary received instructions to send in the resignations of contributory contract practice appointments on September 29th.

Membership of Provisional Insurance Committees.—It was resolved that a letter be sent to the practitioners who have accepted seats on the Carmarthenshire Insurance Committees, asking them to resign their positions.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor* British Medical Journal, *429, Strand, London, W.C.*]

The Continuation of Negotiations.

Dr. J. S. Manson (Warrington) writes: Dr. Barton has rather misunderstood the meaning of the sentence which he quotes from my letter in the Supplement of August 17th. I did not suggest the formation of a rival organization, but simply indicated the course of events which would likely arise by force of circumstances if many seceded from the Association because of its rigid uncompromising attitude. It may be taken that these secessionists would not long remain isolated units, but would soon organize themselves into a body, with a definite policy framed to meet the necessities of the time. I do not think the rise of such a body would be at all analogous to the rise of the National Medical Union or the London Reform Committee.

Most of us deplore the formation of factions; the promotion of harmony and unity should be our aim. It was with that object in view that I made the suggestion with regard to the surplus funds under the Insurance Act which Dr. Barton dislikes. The suggestion is at least fresh, and it might form a middle course on which both parties could concentrate with the view of developing the

policy of the Association as the working of the Act progressed.

Further, as it would fit into the economy of the scheme, it might commend itself to the Insurance Commissioners, who are all-powerful. Under Section 54 of the Act the Commissioners are directed to invest the surplus funds where such capital is required for the making of advances for the purposes of Housing of the Working Classes Acts, 1890 to 1909. Perhaps it might not be difficult to convince them that as good an investment for the health of the nation could be made by using a portion of these funds for enlisting the cordial co-operation of the medical profession, as in buying out slum property owners.

Again, as prescribing and dispensing are separated under the Act, this plan would give the doctors an interest in prescribing economically as well as efficiently. If the doctors have no such interest, then the drug bill may be enormous and large sums may be dissipated in profits to wholesale drug companies. Dr. Harry Roberts, in the *Nation* of August 24th, points out that the rate for drugs under the German Act varies from 3s. to 5s. per head, and thinks that if the dispensing were continued by the doctors it could be quite as efficiently done at the rate of 1s. 6d. per head. While not accepting his figures, I agree with his opinion that there is a great probability of large sums being needlessly wasted on drugs if the doctors have no direct interest in their control.

One of the great objections to free choice of doctor has been the difficulty of ensuring efficient control of malingering. Now that free choice of doctor has been attained, I do not think it would be difficult to show that some such plan as is indicated in my suggestion would harmonize the duty and interest of the doctors in checking all forms of malingering.

An agreement of this nature might be arranged between the profession and the Commissioners and a start be made at 6s. per head, exclusive of drugs, with the further provision that half the surplus funds after the first audit be applied to increasing the capitation rate. If these funds amounted to £2,000,000, then half of this would increase the capitation rate to about 7s. 6d. At the next audit, if experience justified it, then the capitation fee could be again raised. If not justifiable, then the medical portion of the surplus could be devoted to the payment of hospital staffs and to the making of provision for medical research or to any other means of increasing medical efficiency. If there were no surplus funds at the end of the first audit, then the finance of the Act would have to be revised, and the doctors, having done their best, would have a very distinct claim on the Treasury, and would be backed up by the public. If Dr. Barton will consider the suggestion again, perhaps his dislike may become modified. I agree with him that we ought to exercise our wits to find some middle course, for our Public Medical Service schemes are only ghosts of alternatives. The real immediate alternative is the old friendly society system reinforced by such concerns as the large industrial insurance companies.

Whatever defects be urged against the old friendly societies with their grotesque names, they at least could lay claim to a large amount of benevolence and altruistic endeavour, but nothing of the kind can be urged on behalf of the industrial insurance companies with their palatial offices and large dividends.

Far better to accept service under an imperfect State scheme, which our Association can modify and improve if its powers are not impaired by factious rivalry, than that large numbers of the profession should be tempted to become the medical myrmidons of the Prudential, Refuge, and like concerns.

Mr. G. Lenthal Cheatle, F.R.C.S. (London), writes: If rumour can be regarded seriously—and in this case my belief is that it can—then it would appear to me the British Medical Association, the Royal Colleges of Physicians and Surgeons should reconsider at once their decisions to withdraw from any dealings with the Chancellor of the Exchequer. The rumour to which I refer is that the Chancellor of the Exchequer is prepared to increase adequately the capitation fee—exclusive of extras.

I would suggest to the three bodies before mentioned that they should unite and elect a body capable of settling the points at issue with the Chancellor of the Exchequer.

Should the Chancellor of the Exchequer without this preliminary consultation explain what he is prepared to do, I feel sure the supply of good general practitioners will be more than sufficient to work the Act. In this way the thing will settle itself. It would be settled more satisfactorily to the public, to the profession, and to the Government if my suggestion were carried out before it is too late.

I often wonder whether my professional brethren realize how immense will be the power the medical members of the Insurance Committees can wield under this Act.

Central and Local Recognition.

Dr. J. Fletcher (Representative Chelsea Division) writes: Fortunately Dr. A. C. Farquharson's letter on this subject comes at a time when there is plenty of opportunity left for correcting this false interpretation of Article 17, and of forestalling the ruin to the Association which the adoption of such an interpretation would mean. The latter part of Article 17 reads:

> Such rules shall be submitted for approval to the Council, and shall not come into operation unless and until they are approved by the Council.

The Council, again, receives its instructions from the Representative Body, which is the mouthpiece of the whole Association through its Divisions and Branches. The individual bargaining which is manifestly craved for in Dr. Farquharson's letter is "providentially" utterly incompatible with loyalty to the policy of the Association, and is in opposition to our collective interests—that is, our status and our livelihood.

The policy of the Government is to exhaust our patience, undermine our resolution, and create dissension in our ranks; and the first sign of this dissolution of our solidarity is shown in this letter. A crop of letters like this will show the Government that it has attained its end, and we shall be the slaves of the friendly societies, with slaves' wages—that is, minimum wages—under irksome conditions of service.

If Dr. Farquharson's reading of Article 17 be correct, our money and time have been wasted during the last two years, and, worse still, we have been ignorantly and unconstitutionally attempting to coerce the Divisions into a line of conduct which they can repudiate at any time. It amounts to a reflection on the intelligence of the members of the Representative Meetings, for, according to the reasoning of this letter, the only constitutional method of securing our terms is by individual bargaining—the very evil which the Association is doing its utmost to prevent. The whole aim of the Association is collective bargaining—bargaining as one indivisible whole.

However, in our Journal we have the opportunity of expressing our views on all pertinent questions, and I trust that this startling interpretation of Article 17 will be threshed out, and, if erroneous, promptly quashed. This will give our opponents who read our Journal an opportunity of learning that there is still no appreciable division of opinion in the British Medical Association and no disunion in our ranks.

Dr. Æneas Henderson (Southport) writes: I ask the liberty to carry your readers back as far as March 4th, 1911, when the following paragraph appeared in the columns of the Supplement:

> The Committee (appointed by the Central Council of the British Medical Association) desires therefore to make clear that the advocacy of the system of throwing the work (medical work) open to all reputable practitioners is only intended to apply to new appointments, and such advocacy does not contemplate interference with present holders of appointments without their consent.

The primary principles in these statements have really been "cardinal points" of the Association in my knowledge during the last twenty years. Besides, the protection of monopolied interests by warning notices, etc., has been a main plank in the platform of the Association. Doubtless the destinies of thousands of medical men have been influenced by monopoly in the past, and, presumably, many more thousands would have eked out handicapped existences from that same cause but for the advent of the National Insurance Act. The "Master Legislator" has now caused the pillars of medical monopoly to "double

up," and the protective "covering" of 429, Strand, is wellnigh gone for ever.

As an hereditary Tory, I appreciate the Chancellor's master stroke to free the profession from the baneful effects of that canker. But it must be admitted that so very great an advance in legislation—in things medical—was not brought about without the whole-hearted co-operation of very many monopolied medical men. Yet we find, as in other spheres, that some medical men are not in sympathy with the new order. Little wonder, then, that some members are now fighting for something quite different from our new cardinal points, and less wonder that they are not anxious to see the solidarity in our ranks necessary to secure them.

Dr. A. C. Farquharson has followed up his letter in your issue of August 10th by asking the question, "Will those medical practitioners who consent to take service under an agreement with a local Insurance Committee, and to which no objection is offered by their local Divisions, be acting unconstitutionally if the terms of the agreement do not coincide with the so-called 'cardinal points' enumerated by the Representative Body?" He answers "No!" and he raises a quibble as to the cardinal points being only a "decision of the Association" as distinct from an "Article of Association." The former, he affirms, is alterable by the Divisions or Branches at will, whereas the latter cannot be altered by a chorus of "Ayes" or "Noes." He tells us that any local Division can attach just as much or as little importance to our cardinal points as it pleases, and that any Division can negotiate or enter into an agreement directly with any local Insurance Committee. These statements, like miniature weathercocks, indicate the direction in which the wind is blowing in the area of Spennymuir. But they do not point out to your readers that neither our central fund nor our pledges are subject to any Article of Association.

Most of your readers must know that these have been given in response to "decisions of the Association." While freely admitting that an "Article of Association" is quite a different document, in a legal sense, from a "decision of an association," yet who amongst us would dare to consider our cardinal points, our pledges, or our guarantees less binding on us—jointly and individually—than any Article of our Association? It is evident that those medical men who are not in sympathy with the new order are anxious to restrict the field of conflict, so far as they are concerned individually, to their own area of practice. It appears as if they will not play "the waiting game" against the Chancellor, and after his own method. They prefer a frontal attack, or a series of local skirmishes, in order that they may find some justification for their acceptance of terms from the local Insurance Committees in their areas, presumably under monopoly.

As a profession we have been far too dilatory in copying the business methods of the Chancellor. He has simply played with us the wearying game of "solitaire," wherein the final position on the board of one "man" is only considered. This week's Supplement brings fresh hopes by some members that the profession will again enter into sweet communion with the Chancellor.

Can we conceive any shrewd business man, the owner of landed property scheduled under a scheme for railway extension, pestering the promoters day by day to come to terms with him for the purchase of his property?

I foresee troublous times for the profession if each and every Division or Branch is to take upon itself the duty of fixing terms with the local Insurance Committees, and that without the approval of 429, Strand. Yet the trouble looms on the horizon, as shown by the concluding lines of Dr. A. C. Farquharson's letter. He states: "The Representative Body requires to be reminded that power to destroy is neither the logical nor constitutional attribute or sequence of failure to construct." He refers to "power to destroy." Destroy what? His monopoly of medical work? He also refers to "failure to reconstruct." Reconstruct what? A medical service on terms quite acceptable to him, and that under monopoly?

I consider it the duty of every medical man to support those in authority at 429, Strand. Let us simply "stand aside," "sit tight," and "wait and see" the ramparts of the enemy bending before the chill blasts of December, 1912. For they must needs fall flat before the gaze of a humane, dignified, and unified profession.

Dr. T. Cuming Askin (Woodbridge) writes to object to the suggestion of a legal correspondent in the Supplement of August 17th, in connexion with attendance on the really poor. Dr. Askin says:

In many cases the majority of our patients are poor, and we have been attending these people semi-gratuitously for years for one reason, and one reason only—because the money has had to come out of their own pockets. There will be plenty of scope, in the immediate future at least, for charity on our part in looking after the non-insured poor (the wives and children of the really poor insured workers), and many others. With regard to the insured, however, we must insist upon a fair capitation fee (8s. 6d., and not a penny less, with extras such as night visits, mileage, etc.) or payment for work done. The latter mode of payment is undoubtedly the better one for the patient, but I know many doctors prefer the capitation system. The great danger is that, weary of this prolonged waiting, we may be tempted to accept too small a capitation payment. If we do we shall regret it for the rest of our lives, and we shall be blamed—and rightly blamed—by our children for our weakness and timidity.

In a postscript he says: It is a matter I feel very strongly about, as nearly all my patients are very poor, many of them being agricultural labourers. It is true that I have looked after them for years for less than 6s., but it is quite understood by my patients why I have done this, and I have been a perfectly free agent; I can refuse to attend any one as a club patient if I wish, and if a patient were too exacting this would be necessary in self-defence. With regard to the certain great increase of work, a patient said to me a few days ago: "Of course, doctor, if I had been in your club I should have consulted you far more frequently." Of course—it is only human nature; and yet there are some doctors who say club patients do not require more attention than private ones. Not perhaps when seriously ill, but on every other occasion. Another instance: A few days ago I saw two patients in one house, both private patients. One had been ill three months; the other had a troublesome rash (eczema) which had been present about a month. Had these patients been insured I should have been called in, no doubt, at once. I admit this ought to have been done, and it will be a grand thing when it can be done; but it means money, and must not be done at our expense.

The Provision of the Cost of Medical Benefit.

Dr. E. C. Daniel (Epsom) writes: There is a point in Dr. Larking's letter (Supplement, August 17th, p. 251) which needs correction. He says that the Treasury or county or borough council must pay any deficit. If he will look again at the Act he will find that they "may if they think fit"; it is a very fragile reed to lean upon.

He recognizes that insured persons will have to pay more to obtain medical benefit than the sum allowed in the Act, "but he would not like to be the person to ask them." As he advocates payment for work done, he need not do so—that is the business of the societies, and I hope to show that they will probably do it.

I want now to plead once more for the adoption of this principle—"payment for work done."

To clear the ground, I will state at once that, in my opinion, for "uninsured women and children" contributory contract practice at charitable rates seems unavoidable at present, but, with regard to these people, a more uniform and better rate can and should be obtained than has been the case up to now.

I have contended from the beginning of this controversy, and see no reason to alter my opinion, that the profession has, in the past, out of sympathy with the poor, in undertaking club work for those who by forethought and thrift were trying to help themselves, taken a risk; but now that the State has recognized its duty to the poorer members of the community, this risk should be removed from the shoulders of the doctor, and he should be paid a fair remuneration for work done.

I have recently had the privilege of working on a sub-committee, which has given me a greater insight into the *pros* and *cons* of contract work and payment for work done than I have had before; and I am more convinced than ever that the right course for the profession to take is the gradual abandonment of contract practice. Now is the time to make the start. When we come to look into this question, we find that not only do the rates under capitation payment vary, but we find a very wide divergence of opinion as to what the rates ought to be; and for this reason, that so long as you have this element of risk

present (and it cannot be eliminated from contract work) so long will it be impossible to satisfy both sides. If you reach a compromise, neither side will be satisfied.

Now turn to the position under payment for work done: we find an almost universal agreement, both among medical men and among working men, that 2s. 6d. a visit (with surgery and other fees in proportion) is fair and reasonable remuneration for medical work among the classes under consideration. The working man, however, when he is overtaken by illness, has not the means to pay the doctor, but by adopting the insurance principle he can make provision for doing so.

Then arises the question of the rate of premium, and here again, of course, there is as much room for difference of opinion as there is on the question of the rate for contract work, but, for the sake of argument, I will take it at 3d. per week (13s. a year). I find it much easier to say to the working man, "You pay 13s. a year into a fund, from which the doctor will be paid on a fixed scale for work done," than it is to say, "You give me 13s. a year to attend you if you are ill." In the latter case he may say, "You are asking too much." All I can say is, "That may be, but I am taking a risk, and I cannot do it for less." In the former case he may also say, "It is too much," but I can then say, "That may be, and if you like to pay in less do so, but if the fund is insufficient to pay the accounts next year's premium must be higher; but if you pay in the full amount and it is not required, the money will be in the fund at the bank, and you can consider how it can be used for other medical purposes" (suggestions are made in my letter of June 29th, British Medical Journal Supplement, p. 714). In the one case his 13s. is gone for good, in the other he still has an interest in it. In the one he will want to get as much out of the doctor as he can. In the other, having an interest in the fund, he will not make unreasonable calls on the doctor: at the same time, knowing that the doctor will be paid, he will not be deterred from sending for him when required.

Some writers lately have said that a public medical service must fail because we have no power to make the people join. It is true that we have no legal power of compulsion, but the conclusion that the people would not join is, I think, not a certain one. It is true that, in any capitation scheme which might be sufficiently free from risk to be acceptable to the profession, the subscription would be such that the people would not join. But in an insurance for payment for work done scheme I suggest they would join, because, even though the subscription might be as high as in the other, their interest in it is not gone, and I believe the subscription need not be so high.

The above statements are not mere expressions of opinion: the points have been discussed with working men, and are practically statements of fact.

I cannot complete the case for payment for work done without a reference to the Chancellor of the Exchequer. He, I believe, said that he had considered "payment by fee," but would not adopt it because the doctors would run up excessive bills. Now, under the scheme proposed the amount of the fee is fixed, so that the only way of running up a big bill is by excessive visiting. This can be met by the rules of the service and by giving the subscriber a collective or individual interest in the fund, as suggested by Dr. Ledward in the British Medical Journal Supplement of June 29th, page 715.

Personally, I consider that this objection has had far more weight attached to it than is justifiable. I ask: "Is a profession whose accounts have been accepted (without details), and generally paid without question, going suddenly to start overcharging?"

The question of overvisiting, it has often been pointed out, is one of idiosyncrasy, but I contend it can be controlled at the start by the rules of the service, but still more so by the good understanding and good fellowship between members of the profession, which has arisen from the formation of medical societies in connexion with the present crisis. Later it will control itself, because by classification of the accounts by the trustees of the fund we can obtain a standard, or average of visiting, and it will not be an impossible task for every man to regulate his visiting, to a reasonable extent, by that standard—for example, as in private practice, in an acute illness an extra visit may be paid but not booked, at the discretion of the doctor.

For many years the system of private practice has worked, with a few negligible exceptions, to the satisfaction of both patient and doctor. Club practice has never been wholly satisfactory; and now, under the Insurance Act, the medical profession is in danger not only of being tied down to it for all time, but of the system being extended to cover classes for whom it was never intended.

Let us, then, make a beginning to end it, and now is the time; every insured person, or his society for him, will be getting 6s. from the State for medical attendance; let him pay that and a little more into the fund I suggest.

The last question is, Will the people, will the societies (and remember the bulk of the people will be in the societies) do this? I think they must; without medical attendance they have no control over their sick members, and without control over their sick members, their sickness fund is likely to be soon depleted. Therefore they must have doctors.

We offer our services at a fixed scale of fees, provided they guarantee a fund to pay our accounts. Our scale of fees is recognized as fair and reasonable. The conclusion is that the societies cannot do better than adopt this scheme.

Later on, when we have more accurate financial data, it should be possible to bring in the women and children too.

To meet the case of the very poor a sliding scale of subscription can be adopted, for in this scheme, as in private practice, those who are better off can help to pay for those who are not so well off, but this is a matter for the societies to decide for themselves.

Sir William Plender's Report.

Dr. W. Owen Williams (London) writes: Wide differences of opinion prevail as to what deductions may be made from the figures in this report. Dr. H. Roberts (p. 265) lays stress on the correct interpretation of facts, and warns us against making false deductions, but with serene equanimity he himself is guilty of this very error. With his correction of Dr. Brockbank's estimate of the average fee per attendance under head A, I agree. After making a proportionate allowance for bad debts, the figure works out at nearly 2s. 10d. But when Dr. Roberts proceeds to state that "what can absolutely be safely deduced from the facts given in the Plender Report is, that if medical men are to receive an amount per attendance not smaller than that which they receive at present, an annual capitation fee of 9s. 11d., including drugs, must be paid," I must demur, with all due respect to him as a prolific writer on the Insurance Act in the lay press, who exhibits Jekyll and Hyde characteristics. I submit that we can deduce nothing of the sort. The figure 2s. 10d. represents an *average* fee derived from the three strata of society—the comparatively poor, the middle class, and the rich. It is perfectly obvious that the fees derived from the first class, and a portion of the second (who now come under the Act) are much less than those derived from the rest of the community. Therefore, a very substantial correction must be made for this inequality. Dr. Brockbank, at the end of his letter, very fairly points this out, but Dr. Roberts entirely ignores it.

Dr. Brockbank assumes the average fee for town and country visit and medicine derived from the working-class population to be 2s. 6d. Clearly, for town attendance alone it would be considerably under 2s. Assuming it to be 2s., which is an over- rather than an under-estimate, then this multiplied by 3.5 attendances comes to 7s. In endeavouring to arrive at an approximate capitation fee one must eliminate country attendance, as mileage will be charged as extra under the Act.

Allowing for contingencies, such as increased attendance, I do not think, on any facts in our possession, that we are entitled to claim a higher fee than 7s. to 8s., including medicine. In some districts the average fee is very considerably below 2s. For instance, Dr. H. Roberts could furnish the readers of the Journal with interesting figures of East End practices. When one is acquainted with the fees charged at present to private patients in such districts, it requires a fairly elastic conscience to demand 2s. 10d. per attendance from the State.

Dr. Roberts would confer a favour if he would put the divergent views he has held from day to day on the Insurance Act into the melting-pot. We might then have some sort of a connected idea of his attitude. Criticism of the Act in the *Nineteenth Century* and the Conservative press, with praise of the same Act in the Liberal press, does seem a trifle inconsistent.

Dr. B. HALL (West Mersea, Colchester) writes: The only possible way of release from the deadlock in which the Government and the Association now find themselves—neither willing to budge—seems to me clearly indicated by the report of Sir William Plender. The logical conclusion of that report is that the Government or the societies could safely pay doctors their ordinary fees for attendance on the insured; that they could not only safely undertake to pay our bills drawn up on the scale of charges agreed to in the scheme for a National Medical Service, but that in doing so they would make an actual profit.

Sir William finds that the practitioner in certain industrial towns receives 4s. 2d. per head from his private clients, exclusive of midwifery fees. The Government offers to pay us directly, or through the societies, 6s. per head on these people when insured. Sir William also finds that the practitioner in these towns attends 1.8 times per head on his private clients, so that at this rate of attendance and at 6s. per capita the doctor would receive 3⅓ shillings per attendance.

Doctors, however, find that club members require 5.0 attendances, and if they were paid for their service on insured persons by the per capita method at 6s., the remuneration would, at that attendance-rate, work out at only 1s. 2½d. per visit.

If the insured persons were to require only the 1.8 attendances now given to private clients, it would obviously be to the advantage of the Government or the societies to pay doctors their bills, since Sir William found that at this rate of attendance, and on the scale of fees existing in those towns, only 4s. 2d. per head of the insured would need to be provided. At this rate of attendance, by paying our bills the profit made on each head of insured by the societies or the Government would be 10d.

It is usually assumed that the person who when attended privately is content with 1.8 attendances per annum will, on becoming insured, instantly begin demanding attendance at the club rate, 5.0 per annum; and it is also supposed that the club person who now receives 5.0 attendances will, when converted to the status of insured person, continue his extravagant demand for medical service. If the societies had to pay bills for 5.0 attendances per head, it is clear that they could not do so out of the pool made by the 6s. grant. But is there sufficient ground for expecting that medical attendance on the insured will conform in rate of frequency to that now existing in club practice?

The question whether the societies can profitably undertake to pay doctors' bills for medical attendance entirely rests upon the answer to this inquiry. Brother Marlow, parliamentary agent of the High Court of Foresters, is, I understand, recommending that Foresters' societies should in fact agree to this procedure. If he believed that the answer to the query should be in the affirmative his suggestion would savour of Bedlam, for its adoption would mean ruin to the societies. He can only have made this suggestion because he has recognized the true inwardness, the real significance of club attendance. He must be aware that the difference between 1.8 in private practice and 5.0 in club practice is due to causes—whatever they may be—not likely or even possible to continue in force in insured practice. Unless it were a fact—which it is not—that the club member suffered under a higher rate of mortality than the private person of his class, it should follow that the excess of 5.0 over 1.8 is due to factitious causes. The chief of these causes—the most potent—I consider to consist in the relation of the doctor to the club. The club appointment is a desirable monopoly very much sought after because it gives to the doctor holding it the advantages of a secure salary for his services to the club members, and a position of preference in regard to the other members of the family.

The strongest recommendation for a doctor desiring to obtain and retain these advantages is a reputation for zealousness in visiting, and wherever there is competition for club appointments the possession of this virtuous quality is all-essential. In places where there is no competition for these appointments it will be acknowledged that the attendance-rate on club members approximates very closely to that ruling in private practice. Under the Act there will be no club appointments; the doctor can only lose his clients one by one and not by clubs at a time. Wherever competition is most rampant, wherever club premiums are lowest, there will we find the attendance-rate highest. Under the Act the only—or the chief—point of difference between the private and the insured client in their relation to the doctor will lie in the tendency of the insured to malinger for the purpose of drawing sick pay during fits of idleness or periods of unemployment. Working under the club a doctor is wellnigh impotent to deal with this tendency, but under the Act he will be dominant both to arrest and prevent it; and similarly with the nuisance of frivolous calls.

There appears, then, insufficient ground for expecting that the insured person will require as much attendance as the club person does, and there seems good reason to anticipate that the insured person will, like the private person, only call the doctor when he needs him.

On a rate of attendance varying from 1.8 to 2.2 it will be safe for the societies or the Government to meet the doctors' demands by paying their bills just as if insured people were for all the world like private individuals.

The risk of this undertaking falls upon the societies. Any rise above 2.2 would mean a loss. The risk in the capitation method would fall upon the doctors, and by a large majority they have declined to take it.

Inasmuch as every doctor would be on his honour to attend no more than the requirements of the case demanded—as he is with private patients—it would lie with the doctor whose average attendance per head on those insured persons on his list habitually exceeded in frequency the average found to prevail in private practice, to justify his methods. In view of the constantly falling birth, death, and sickness rates, we must expect that the visiting rate will fall rather than rise as the years roll on.

Practically the only risk that the societies would run by paying our bills would be in the event of a catastrophe—a pestilence, an earthquake, a civil war, or an invasion.

Dr. BROCKBANK (Manchester) writes: I had carefully considered the point raised by Dr. Harry Roberts in his comments on my examination of the Plender Report, and came to the conclusion that, as it would probably be impossible to separate club from ordinary visits in the average doctor's returns, the total number of visits would include those paid to club patients. I can see nothing in the report to suggest the contrary, and would rather wait for some authoritative correction before accepting Dr. Roberts's reading of it. The information afforded by the "country" practice returns showed, in my opinion, the increased fees which town doctors received for visits some distance away from the surgery.

THE INCOME LIMIT.

Dr. A. M. WATTS (Willesborough, Ashford) writes: I should like to ask a question on a matter connected with the Insurance Act which is to my mind one of great importance, and which has not received the attention it deserves. It is this: What will happen to those members of the friendly societies who are not insured persons and whose incomes are above the wage limit? Will the profession continue to attend them at the present rate of 4s. or 5s., or will they only be attended as private patients? It seems to me that medical men do not realize that they now have an opportunity which they have wanted for years—namely, the chance of enforcing a wage limit. Personally, I think the profession would be quite as well off with a wage limit for *all* club patients of £160—insured persons and others—as with a wage limit of £104 for insured persons and no wage limit for the uninsured. At present there is nothing to prevent every adult male in the country joining a friendly society, no matter what his income may be, except inability to pass a medical examination.

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

(Continued from p. 260.)

ONLY one exhibit figured on the stall of Messrs. JOHN GRIFFIN AND SONS (Kemble Street, Kingsway, W.C.). This was the latest pattern of the Harcourt chloroform inhaler. The main claims made for it are that it keeps the administrator informed, both as to the strength of the vapour being inhaled and the frequency and strength of the patient's respiration, that it reduces the risk of overdosage to a minimum, lessens vomiting, effects material saving in the amount of chloroform used, and enables chloroform to be administered more easily and precisely than any other appliance. A technical account of the construction of the apparatus and of its clinical use will be found in the final Report of the Special Chloroform Committee of the British Medical Association (price 1s. net; post free from 429, Strand, W.C., 1s. 4d.).

The Swiss firm known as Manuel Frères showed a variety of foods all bearing the general title of Antiputrefactive, which were stated to have been prepared to meet the views expressed by Professor Adolphe Combe, of the University of Lausanne, in his book on intestinal auto-intoxication. The central idea of their manufacture would appear to be that since putrefaction of the contents of the lower intestine is due to the proteolytic action of various anaërobic bacteria, auto-intoxication from this cause may be prevented by confining the patient's diet to farinaceous materials prepared for consumption in such fashion as to ensure free production of succinic and lactic acids. The English agents of the firm, from whom further information may be obtained, are Messrs. Callard and Company, 74, Regent Street, W.

Only two preparations were shown by the CHARLES H. PHILLIPS COMPANY (14, Henrietta Street, Covent Garden, W.C.). In the preparation of phospho-muriate of quinine compound, phosphates instead of hypophosphites are stated to be used. It is also definitely acid, a fact which reduces to a negligible quantity the risk of the contained strychnine being thrown down. In our experience it is a pleasant bitter tonic not productive of headache. The other preparation was Milk of magnesia, this being the registered title of an odourless, palatable fluid with the physical appearance of milk, seen under the microscope to be perfectly homogeneous in character. This fact, so far as it goes, supports the firm's statement that the magnesia is maintained in solution without the addition of suspensory matter. The firm believes that it is four times stronger than any other fluid magnesia on the market, and states that it is a true hydrated oxide entirely free from carbonate. It should thus be capable of neutralizing free hydrochloric acid without giving rise to discomforting evolutions of carbonic gas. It certainly combines readily with tinctures as well as iodides and other solutions of salts, and in view of its persistent alkalinity is a useful preparation as a mouth-wash. It is useful also in the treatment of diarrhœa in children and in gastric irritability. We have found it an excellent form in which to administer magnesia when indicated in such cases.

Of the principal exhibit of the ANGIER CHEMICAL COMPANY (32, Snow Hill, London, E.C.) we have given an account on several previous occasions. This is Angier's Emulsion, a thick, creamy liquid, the odour of which could not, we think, be found objectionable by even a sensitive person, whilst its taste is by no means unpleasant. The firm states that in its preparation it uses a specially purified petroleum, to which it adds the hypophosphites of lime and soda and chemically purified glycerine. Some years ago the preparation was analysed by us and the results confirmed the manufacturers' statements. From a pharmaceutical standpoint it is undoubtedly a very successful preparation, for, examined under the microscope, the globules are seen to be in a fine state of subdivision, while it mixes readily with milk and other liquids. This is a strong point in its favour, since many persons might prefer to take it diluted. As for its therapeutic value, it seems clear that in its passage along the intestine it exerts a sedative effect, while the clinical reports in the firm's possession indicate that many medical men esteem it useful in the treatment of pulmonary and bronchial affections. The other exhibit was Angier's Throat Pastilles. These consist, we were informed, of purified petroleum in combination with elm bark and other common ingredients of throat lozenges, but no narcotic of any sort. The firm believes them to be specially useful to those who have much speaking to get through, and in the general treatment of irritable throats. They are certainly pleasant lozenges to take.

A special preparation of iron carbonate was shown by the JELLOID COMPANY (76, Finsbury Pavement, London, E.C.). Its claims to consideration are that the active ingredient is present in that condition in which it is considered to be most easily assimilated, and that it is offered in a pleasant form. We found that both these claims were well justified when we examined the preparation some months after its first issue. Despite the time that had passed since the particular specimens examined had left the pharmacy, the iron salt was still unchanged and in the "proto" state. A further advantage is that these tablets are sufficiently small to be swallowed whole as a kind of pill, while those whose command over their pharyngeal muscles is insufficient to allow them to deal with "pills" can allow them to dissolve in the mouth without experiencing an unpleasant taste. They are therefore an excellent form in which to administer what is frequently termed "Blaud's pill."

A very large number of orthopaedic appliances were shown by the SCHOLL MANUFACTURING COMPANY (Giltspur Street, London, E.C.); practically all of them, however, seemed to be devices for aiming at the relief or cure of various conditions of the feet and ankles. The large series of arch supports well illustrated both the difficulty in dealing with flat-foot and the skill of instrument makers in devising instruments to meet different views as to the most desirable spot at which to exercise upward pressure and the extent thereof. One such appliance—the "foot-caser," very resilient and light—was intended for those whose flat-footedness is chiefly evidenced by some pain after prolonged standing. The "tri-spring," on the other hand, was intended for marked cases in heavy persons; while Dr. Hall's foot-rest, which has a heel cushion of spongy rubber, is mainly for the benefit of persons who suffer from aching heels. A further appliance, called the "re-form arch support," was so devised as to be capable of adjustment as the natural arch regains its strength. All these supports were nickel silver in appearance, and were moderately priced. The exhibit also included several appliances for getting the great toe slowly back into its right position in cases of bunion, and also various ankle supports.

Only three products figured on the stall of HORLICK'S MALTED MILK COMPANY (Slough, Bucks). That from which the firm derives its name is a dry powder, which represents, we understand, malted wheat and milk treated *in vacuo*. According to an analysis by Holt, it contains 8.7 per cent. fat, 16.3 per cent. protein, 3.8 per cent. inorganic salts, and some 68 per cent. soluble carbohydrates in the form of dextrine, lactose, and maltose. It is put up in bottles, and if kept closely corked remains good, in our experience, for an indefinite period. Its preparation for use entails very little trouble; the desired quantity is rubbed into a paste with a little milk or water, and is then ready for use on the addition of whatever quantity of hot or cold water may be preferred. In view of the ease and rapidity of its preparation, the nature of its contents, and the variety of ways in which it can be taken, it is certainly entitled to be

regarded as a very convenient food preparation for invalids. It is also well suited for use by adults who are not invalids, since it can be taken as a warm "nightcap" by the sleepless at bedtime, or as a cool, long drink during hot weather, by shaking it up with soda water, by those who have either no time or no appetite for an ordinary meal. It is in such connexions that our acquaintance with it is most extensive, but it appears to be also much esteemed by many medical men as a food for infants. For its use in this way the firm has prepared a special bottle, which has some good points as a feeder, being easily kept clean, and furnished with a special valve to allow of the admission of an even supply of air. Horlick's Malted Milk is also put up in tablets, some having the natural malty flavour of the product itself, and others being flavoured with chocolate.

ERRATUM.

THE editor of the fifth edition of Cunningham's *Manual of Practical Anatomy*, which was described in our notice last week of the exhibit of Messrs. Henry Frowde and Hodder and Stoughton, is Professor Arthur Robinson of Edinburgh, and not Professor Arthur Thomson of Oxford.

Association Notices.

ELECTION OF CENTRAL COUNCIL, 1912-13.

Connaught and South-Eastern of Ireland Branches.

ONLY one nomination having been received for the above constituency, namely:

R. B. MAHON, M.D., Ballinrobe, co. Mayo,

Dr. R. B. Mahon is declared duly elected a member of the Central Council for the year 1912–13.

BY ORDER OF THE COUNCIL,

GUY ELLISTON,
Financial Secretary and Business Manager.

August 26th, 1912.

ANNUAL CONFERENCE OF HONORARY SECRETARIES OF DIVISIONS AND BRANCHES.

THE following further names should be added to the list of Secretaries attending the Annual Conference of Honorary Secretaries of Divisions and Branches, published in the SUPPLEMENT of August 17th:

Dr. MICHAEL DEWAR, Edinburgh Branch.
Mr. L. A. TAYLOR, Dudley Division.
Dr. D. F. TODD, Sunderland Division.

BRANCH AND DIVISION MEETINGS TO BE HELD.

NORTH WALES BRANCH.—The annual meeting of the Branch will be held at Barmouth on Tuesday, September 10th.—H. JONES ROBERTS, Honorary Secretary, Llywenarth, Penygroes, S.O.

Meetings of Branches and Divisions.

CAMBRIDGE AND HUNTINGDON BRANCH:

CAMBRIDGE AND HUNTINGDON DIVISION.

A MEETING of the Division was held on August 21st at the Medical Schools, Cambridge. In the unavoidable absence of the Chairman (Dr. Fordyce) Mr. APTHORPE WEBB was voted to the chair. There were thirty members present.

Sanatorium Benefit.—The fees suggested by the Council for the examination and treatment of insured tuberculous persons were adopted, with the addition of fees for mileage, special and night visits.

Medical Officers of Health.—It was resolved that medical officers of health in the area of the Division who are serving on provisional local Insurance Committees be asked to resign from such committees. Professor SIMS WOODHEAD addressed the Division in defence of his attitude in continuing to serve on the Advisory Committee to the Insurance Commissioners.

Central Defence Fund.—The local provisional medical secretaries were asked to induce members to increase their guarantees in accordance with the resolution passed by the Representative Meeting.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN ninety-five of the largest English towns 8,346 births and 3,873 deaths were registered during the week ending Saturday, August 24th. The annual rate of mortality in these towns, which had been 11.0, 11.5, and 11.6 per 1,000 in the preceding three weeks, fell to 11.4 per 1,000 in the week under notice. In London the death-rate was equal to 11.7, against 11.2, 11.2, and 11.7 per 1,000 in the three previous weeks. Among the ninety-four other large towns the death-rates last week ranged from 2.4 in Hornsey, 2.9 in Oxford, 4.5 in Lincoln, 4.9 in Eastbourne, 5.1 in Tottenham, and 5.4 in Southend-on-Sea, to 15.4 in Liverpool, 15.5 in Gateshead, 15.6 in Stoke-on-Trent and in Wigan, 16.0 in Preston and in Stockton-on-Tees, 20.5 in Bootle, and 21.5 in Middlesbrough. Measles caused a death-rate of 1.4 in Coventry, 1.5 in Hull, 1.6 in Rotherham, 2.2 in Bootle and in Gateshead, 2.5 in Merthyr Tydfil, and 3.9 in Middlesbrough, and whooping-cough of 1.4 in South Shields and 1.8 in Enfield. The mortality from enteric fever, scarlet fever, and diphtheria showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children (under 2 years of age) from diarrhœa and enteritis, which had been 187, 239, and 199 in the preceding three weeks, fell to 183 last week, and included 61 in London, 16 in Liverpool, 10 in Birmingham, 8 in Manchester, and 6 in West Ham. The causes of 21, or 0.5 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number, 3 were registered in South Shields, 2 in Birmingham, 2 in Liverpool, and 2 in Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,559 at the end of each of the two preceding weeks, had fallen to 1,512 on Saturday last; 167 new cases were admitted during the week, against 175, 207, and 182 in the preceding three weeks.

HEALTH OF SCOTTISH TOWNS.

IN eighteen of the largest Scottish towns 994 births and 493 deaths were registered during the week ending Saturday, August 24th. The annual rate of mortality in these towns, which had been 13.4 and 13.1 per 1,000 in the two preceding weeks, further fell to 11.8 in the week under notice, but was 0.4 per 1,000 above that recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 6.0 in Kilmarnock, 6.5 in Clydebank, and 7.2 in Perth, to 15.3 in Falkirk, 16.8 in Kirkcaldy, and 18.9 in Dundee. The mortality from the principal infectious diseases averaged 0.9 per 1,000, and was highest in Coatbridge and Kirkcaldy. The 187 deaths from all causes registered in Glasgow included 8 from infantile diarrhœal diseases, 3 from diphtheria, 2 from measles, and 1 from whooping-cough. Two deaths from measles were recorded in Dundee; 2 from whooping-cough in Edinburgh, and 2 in Leith; and 3 from infantile diarrhœal diseases in Dundee.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

STAFF SURGEON E. COX to the *Victory*, additional for disposal, August 19th.

ARMY MEDICAL SERVICE.

SURGEON-GENERAL L. E. ANDERSON, P.M.O., of the Bareilly Brigade, has been appointed Deputy Director of Medical Services, 8th (Lucknow) Division, in succession to the late Surgeon-General M. W. Kerin.

Major M. H. G. FELL, R.A.M.C., to be a Deputy Assistant Director-General at the War Office, vice Major E. T. F. Birrell, M.B., August 18th, 1912.

INDIAN MEDICAL SERVICE.

CAPTAIN A. S. LESLIE has been transferred from the Gaol Department of Burma to civil employment in the Madras Presidency.

The following Captains have been promoted to be Majors subject to His Majesty's approval: CHARLES WILLIAM FRANCIS MELVILLE, M.B., F.R.C.S.E., ROBERT MCCARRISON, M.D., JAMES MASSON, M.B., F.R.C.S.E., WILLIAM MAURICE ANDERSON, M.D., WILLIAM HUGH LEONARD, ANDREW WATSON COOK YOUNG, M.B., JAMES GRAHAM GOODENOUGH SWAN, M.B., ROBERT BASIL BOOTHBY FOSTER, M.B.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

COLONEL J. W. BLANDFORD, K.H.P., on the expiration of the tenure of his appointment as an Assistant Director of Medical Services, is retired, and is granted permission to retain his rank and to wear the prescribed uniform, August 28th, 1912.

ROYAL ARMY MEDICAL CORPS.

Second London (City of London) Field Ambulance.—Lieutenant F. MORRES resigns his commission, August 28th, 1912.

Third London (City of London) Field Ambulance.—F. H. ROBBINS to be Lieutenant, July 10th, 1912.

Attached to Units other than Medical Units.—Captain H. RICHARDSON, M.D., resigns his commission, August 28th, 1912.

For Attachment to Units other than Medical Units.—Captain W. A. GIBB, M.D., from the First East Anglian Field Ambulance, to be Captain, July 16th, 1912. A. N. CRAWFORD, F.R.C.S.I., to be Lieutenant, July 12th, 1912.

Supernumerary for Service with the Officers' Training Corps.—G. A. WILLIAMSON, M.D., to be Lieutenant, July 13th, 1912.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BARNSTAPLE: NORTH DEVON INFIRMARY.—House-Surgeon. Salary, £100 per annum.

BEDFORD COUNTY HOSPITAL.—Male Assistant House-Surgeon. Salary, £80 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Senior House-Surgeon. Salary, £90 per annum.

BOLTON COUNTY BOROUGH.—Public Analyst and Bacteriologist. Commencing salary, £300 per annum.

BRIDGNORTH AND SOUTH SHROPSHIRE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CAPETOWN: SOMERSET HOSPITAL.—Two Assistant Medical Officers. Salary, £200 each per annum.

CARDIFF: CITY MENTAL HOSPITAL.—Second Assistant Medical Officer. Salary, £180 per annum.

CARLISLE: CUMBERLAND INFIRMARY.—Resident Medical Officer. Salary at the rate of £80 per annum.

CHELTENHAM EDUCATION COMMITTEE.—Assistant Medical Officer of Health and School Medical Officer. Salary, £250 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £80 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum, rising to £100 after six months.

DUDLEY: THE GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, 100 guineas per annum.

DURHAM COUNTY COUNCIL.—Tuberculosis Medical Officer. Salary, £500 per annum.

ECCLESALL: BIERLOW UNION WORKHOUSE.—Resident Assistant Medical Officer. Salary, £150 per annum.

EDINBURGH: THE HOSPICE.—Medical Woman as Resident. Honorarium, £25 per annum.

EDINBURGH HOSPITAL FOR WOMEN AND CHILDREN.—Two Medical Women, as Senior and Junior Residents. Honoraria, £25 and £18 per annum respectively.

FAREHAM: HANTS COUNTY ASYLUM.—Third Assistant Medical Officer (Male). Salary, £168 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

JARROW-ON-TYNE: PALMER MEMORIAL HOSPITAL (FOR ACCIDENTS).—House-Surgeon. Commencing salary, £170 per annum.

KING'S LYNN: WEST NORFOLK AND LYNN HOSPITAL.—Resident House-Surgeon (Male). Salary, £120 per annum.

LEAMINGTON SPA: WARNEFORD GENERAL HOSPITAL.—House-Physician. Salary, £85 per annum.

LEICESTER CORPORATION.—Resident Medical Officer at the Isolation Hospital, and Assistant Medical Officer of Health. Salary, £150 per annum.

LEICESTER POOR LAW INFIRMARY.—Second Resident Assistant Medical Officer. Salary, £130 per annum.

LEICESTER ROYAL INFIRMARY.—House-Physician. Salary at the rate of £100 per annum.

LEWES: VICTORIA HOSPITAL AND DISPENSARY.—Resident Medical Officer. Salary, £120 per annum.

LIVERPOOL INFIRMARY FOR CHILDREN.—Resident House-Surgeon and Resident House-Physician. Salary at the rate of £60 each per annum.

LIVERPOOL: ROYAL SOUTHERN HOSPITAL.—(1) Two Physicians, and (2) three House-Surgeons: salary at the rate of £60 per annum. (3) Surgical Registrar and Tutor; salary of Registrar, £20 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum.

MANCHESTER CHILDREN'S HOSPITAL.—(1) Male Resident Medical Officer; salary at the rate of £100 for the first six months and £120 per annum for the second six months. (2) Visiting Physician; honorarium, £100 per annum.

MANCHESTER CORPORATION FEVER HOSPITAL.—Third Medical Assistant. Salary, £100 per annum.

NEWPORT AND MONMOUTHSHIRE HOSPITAL.—Resident Medical Officer. Salary at the rate of £100 per annum.

NORTHAMPTON GENERAL HOSPITAL.—Senior Resident Medical Officer. Salary, £120 per annum.

POWICK: WORCESTER COUNTY AND CITY ASYLUM.—Junior Assistant Medical Officer. Commencing salary, £160 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, N.E.—House-Physician and House-Surgeon. Salary, £80 each per annum.

ROCHESTER: ST. BARTHOLOMEW'S HOSPITAL.—Resident House-Physician. Salary at the rate of £110 per annum.

ROCHDALE INFIRMARY.—Junior House-Surgeon (Male). Salary, £80 per annum.

ST. GEORGE'S HOSPITAL, S.W.—Assistant Curator of the Museum and Demonstrator of Pathology. Salary, £100 per annum.

ST. GILES GUARDIANS, Camberwell, S.E.—Second Assistant Medical Officer for Infectious and Workhouse, and Third Assistant Medical Officer for Infectious. Salary, £150 and £140 respectively.

ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer. Salary at the rate of £80 per annum.

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary, £80 per annum.

SHEFFIELD: ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary, £70 per annum.

SHREWSBURY: SALOP INFIRMARY.—House-Physician. Salary at the rate of £[illegible] per annum.

SOUTH SHIELDS: DURHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE [illegible] INFIRMARY.—Senior House-Surgeon (Male). Salary £[illegible] per annum.

STAFFORD: COUNTY HILL LUNATIC ASYLUM.—Assistant Medical Officer (Male). Salary, £150 per annum, rising to £180.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—House-Surgeon. Salary £[illegible] per annum.

SUNDERLAND: [illegible] HOSPITAL.—Resident Medical Officer. Salary £[illegible] per annum.

SURREY EDUCATION COMMITTEE.—Assistant Medical Officer. Salary, £250 per annum.

TALGARTH: BRECON AND RADNOR ASYLUM.—Assistant Medical Officer (Male). Salary, £170 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) Two House-Physicians. (2) Three House-Surgeons.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

ADAMS, A., M.B., B.Ch., M.D., D.P.H., Resident Medical Officer of the Liverpool Sanatorium, Kingswood.

BLEASE, A. T., M.B., Ch.B., District Medical Officer of the Bucklow Union.

CLARKE, T. C., M.B., Resident Assistant Medical Officer of the Crumpsall Workhouse, Manchester.

TAYLOR, J. M., M.B., Ch.B.Glasg., District Medical Officer of the Thorne Union.

WEST, H. O., M.B., B.S.Lond., Tuberculosis Officer for the County of Kent.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

STORMONT.—On August 25th, at Tanworth-in-Arden, Warwickshire, to Mr. and Mrs. J. Henry Stormont, a daughter.

SYKES.—On August 24th, at Crossley Terrace, Hebden Bridge, the wife of John Sykes, L.R.C.P., L.R.C.S., of a son.

MARRIAGE.

BRIMBLECOMBE—GILL.—At the Parish Church, Wellington, Somerset, on August 21st, 1912, by the Vicar, the Rev. W. W. Pulman, assisted by the Rev. H. C. Launder, Vicar of Nynehead, and the Rev. F. B. Marsland, Rector of Wyberton, Lincs., Stanley Leemore Brimblecombe, M.R.C.S.Eng., L.R.C.P.Lond., eldest son of Mr. W. Brimblecombe, of Eastbrook House, Burlescombe, Devon, to Mary Noel, youngest daughter of the late Mr. W. T. Gill, of Crowndale, Tavistock, Devon.

DEATH.

EADON.—At Hambrook Court, Hambrook, near Bristol, William Frederick Bailey Eadon, M.R.C.S., L.R.C.P., aged 63.

PUBLISHERS' ANNOUNCEMENTS.

IN November the Tropical Diseases Bureau, which replaced the Sleeping Sickness Bureau on July 1st, will commence the publication of the *Tropical Diseases Bulletin*. The tropical and sub-tropical diseases of man will be grouped under the charge of the following sectional editors: Fleet Surgeon P. W. Bassett-Smith, C.B., Lieutenant-Colonel C. Birt, R.A.M.C., Dr. W. Carnegie Brown, Professor George Dean, Dr. H. B. Fantham, Dr. Edward Hindle, Dr. R. T. Leiper, Dr. David Thomson, Dr. C. M. Wenyon. Groups will be taken also by the Director and Assistant Director. The *Bulletin* will be under the general editorship of the Director. A number will be issued, as a rule, twice a month, and will consist of about fifty pages containing classified summaries of the current literature of the tropical diseases. The annual subscription will be £1 1s., post free; single numbers, 1s. 6d. Orders and subscriptions should not be sent to the bureau, but to the agents, Messrs. Baillière, Tindall, and Cox, 8, Henrietta Street, Covent Garden, W.C. The tropical diseases of animals will be treated in a separate publication, the *Tropical Veterinary Bulletin*. This will appear quarterly, from October, and will be in charge of Mr. A. Leslie Sheather, B.Sc., M.R.C.V.S., of the Royal Veterinary College, London. For this the annual subscription price will be 10s.; single copies, 3s. Orders and subscriptions to be sent to Messrs. Baillière, Tindall, and Cox, as above.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

EDINBURGH POST-GRADUATE COURSES.—Monday: Commencement of Work in Surgery, General Medicine, Laryngology, and Otology. Wednesday: Special Lecture, by Dr. Byrom Bramwell, on The Treatment of Aneurism, in Anatomy Theatre, Edinburgh University. Friday: Special Lecture, by Dr. W. Russell, on Angio-spasm, in Anatomy Theatre, Edinburgh University.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m., daily. Monday: Gynæcology, 10 a.m.; Medical Demonstration, 10.30 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynæcological Operations, 10 a.m.; Demonstration of Fractures, etc., 10.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynæcology, 2 p.m. Thursday: Gynæcological Demonstration, 10 a.m.; Lecture, Practical Medicine, 12.15 p.m.; Eye, 2 p.m.; Orthopædics, 2 p.m. Friday: Gynæcological Operations, 10 a.m.; Lecture, Practical Medicine, 10.30 a.m.; Lecture, Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures, at 5 p.m., on Tuesday, Wednesday, and Thursday.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 7TH, 1912.

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STATE SICKNESS INSURANCE COMMITTEE.

APPOINTMENTS IN CONNEXION WITH THE INSURANCE ACT.

THE State Sickness Insurance Committee calls the attention of all members of the medical profession to the following resolution adopted by the Annual Representative Meeting, 1912:

> That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

SANATORIUM BENEFIT.

The State Sickness Insurance Committee also directs attention to the following resolution adopted by the Annual Representative Meeting, 1912:

> That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such apointment* shall be submitted to the Council for its approval.
>
> * "Appointment" means any professional work.

The State Sickness Insurance Committee notifies that no advertisement in respect of appointments in connexion with sanatorium benefit will be accepted for publication in the BRITISH MEDICAL JOURNAL which is inconsistent with the conditions laid down by the Association, and in all cases in which an advertisement is accepted a full list of the conditions laid down by the Association will be sent to the advertiser.

Meetings of Branches and Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.]

EAST ANGLIAN BRANCH:
NORTH SUFFOLK DIVISION.

A MEETING was held at the Lowestoft Hospital on August 28th, at 3.30 p.m. Dr. EVANS presided, and eleven members were present.

Fee for Written Opinion as to Cause of Death.—A letter from the coroner was read pointing out that he had no legal authority to pay a fee for a written opinion as to the cause of a sudden death. It was agreed that the members of the Division should adhere to the resolution passed at the previous meeting, namely:

> That these reports be no longer given till a fee is forthcoming.

Public Medical Service.—The CHAIRMAN indicated the urgency and importance of the formation of a Public Medical Service for the Division, and the necessity of having details of the scheme ready by the time that the resignations of the various club appointments shall be tendered. Dr. COSENS, of Oakham, gave a very valuable summary of the details of the scheme for such a service, drawn up by the Leicestershire and Rutland Division, and a hearty vote of thanks was accorded to him for his kindness in attending the meeting, and for his very practical suggestions. It was proposed by Dr. HELSHAM and seconded by Dr. BERRY:

> That a Public Medical Service be formed for the North Suffolk Division.

This resolution was carried *nemine contradicente*.

Provisional Local Medical Committee.—It was also agreed that the Provisional Local Medical Committee be asked to meet forthwith, and draw up rules for such a service, and submit the same to a meeting of the Division.

Guarantee Fund.—The question of increasing the amount of guarantees to the Guarantee Fund was next discussed, and it was agreed that, instead of asking members to make a uniform guarantee of £20, it would be more equitable to ask members to give a total

guarantee of 3 per cent. of their gross annual income. This proposition was carried unanimously, and guarantee forms were signed to this effect by all the members present.

METROPOLITAN COUNTIES BRANCH:

CITY DIVISION.

A GENERAL meeting of this Division was held at the Town Hall, Hackney, on Thursday, August 22nd, at 4 p.m. In the absence of the Chairman (Dr. David Ross, who was on holiday in Russia) Dr. HOBBS CRAMPTON, Vice-Chairman of the Division, presided. Twenty-six members were present.

Letters.—A letter was received from Dr. Cuthbert Dixon announcing the death of Mr. John Scott Sequeira within a few days of his 84th birthday. Dr. MAJOR GREENWOOD, in moving that a letter of condolence be sent to the relatives, referred to the great interest taken in the work of the Division and Association by Dr. Sequeira, who was formerly a member of the Executive Committee and a regular attendant at the meetings, and said that Dr. Harry Sequeira, to whom the Division has been annually indebted for the demonstration and reception at the opening of the session, had maintained the interest and connexion shown by his father. The motion was seconded by Dr. CUTHBERT DIXON and passed in silent approval, all the members present standing. The receipt of letters respecting the resolution sent by the Division as to the action of Dr. McCleary, of Hampstead, in accepting office under the Insurance Act was acknowledged from the Hampstead, Ealing, South Middlesex, West Hertfordshire, and Marylebone Divisions.

Report by Representatives in Representative Meetings.—The REPRESENTATIVES (Drs. Major Greenwood and Evan Jones) then gave a full narration of the Representative Meeting and their action, especially regarding the question of administering sanatorium benefit. Dr. PERCIVAL ALLEN moved and Dr. PORTER seconded a cordial vote of thanks to the Representatives for the energy and persistence shown in carrying out the wishes of the Division. The vote was carried by acclamation. Dr. RUSHBROOKE, in supporting the vote, expressed his approval of the ultimate decision of the Representative Meeting not to exclude working the sanatorium benefit.

Letter from Medical Secretary. — The HONORARY SECRETARY read paraphrases of most of the paragraphs of a letter from the Medical Secretary dated August 8th, and more fully (*a*) question of increasing the guarantee to £20, (*b*) resignation of contract appointments.

Resignations of Club Appointments.—Dr. EVAN JONES read a letter sent to the Honorary Secretary of the Provisional Medical Committee from the State Sickness Insurance Committee, giving statistics as to resignations of clubs sent in, and stating that the Division was considered weak. Out of 107 practitioners holding contract practice appointments 96 had sent in resignations. Dr. MAJOR GREENWOOD explained the position regarding this point at the State Sickness Insurance Committee, the long discussion which had taken place at the meeting on the 8th not having been reported in the SUPPLEMENT, and proposed the publication of the list of guarantors to the Guarantee Fund and amounts. This was seconded by Dr. KEMPSTER and supported by the CHAIRMAN. Dr. HORACE ABEL deprecated the letter sent to the public press by some medical men, and regarded all the cardinal points as demanding equal insistence. Dr. GARRETT expressed disappointment with the results of the meeting of Representatives, and deplored the procedure adopted regarding sanatorium benefit. Drs. RUSHBROOKE, KEENAN, and E. JONES and others continued the discussion, and after full expression of views the resolution was put and carried *nemine contradicente*. It was agreed to leave publication of the list and the canvass *re* increasing the guarantee to the Provisional Medical Committee. Dr. EVAN JONES distributed forms, and at the close of the meeting announced that a further £100 had been promised.

The meeting terminated at 5.40 p.m.

MIDLAND BRANCH:

NOTTINGHAM DIVISION.

A MEETING of the Nottingham Division (to which all practitioners in the city and county were invited) was held at 64, St. James's Street, Nottingham, on August 27th. In the absence of Dr. Jacob, the chair was taken by Dr. A. FULTON, and there were present: Drs. A. C. Reid, A. D. Crawford, George Sturrock, J. H. Thompson, H. E. Belcher, J. M. Bennett, F. R. Mutch, K. Black, P. Kinmont, Edward Hynes, G. O. Gauld, A. Charlton, A. H. Cran, Thomson Henderson, C. M. Simpson, W. B. Blandy, Percy Hardy, C. H. Bromhall, R. M. Rendall, F. Broadbent, Hanway R. Beale, R. J. Tristan, W. G. Stewart, W. J. H. Hepworth, R. Cope, F. J. Brown, J. C. Teasdale, A. T. Mulhall, John Lockhart, B. Jackson-Taylor, W. Hunter, G. A. Coulby, W. R. Smith, Frank Rothera, P. E. Tresidder, G. T. Tate, C. J. Palmer, R. A. Eastmond, F. D. Martyn, J. Watson, J. H. Cox, Stanley Tresidder, J. W. Scott, A. Fulton, E. H. Houfton, and R. Nesbitt.

Resignations and Guarantees.—The HONORARY SECRETARY (Dr. J. W. Scott) read a report as to the position with regard to the resignations and guarantees, and stated that only 25 practitioners in the city and county had not signed the supplementary pledge, and that of these only 5 need be regarded as of any importance. The CHAIRMAN asked the meeting to consider the question as to whether the resignations be sent in at the end of September. Discussion ensued in which Drs. KINMONT, TATE, HYNES, and MUTCH took part. Dr. J. H. THOMPSON moved that the Central Committee be informed that the local organization was sufficiently complete to justify the immediate sending in of notices of resignation. Dr. KENNETH BLACK seconded. Dr. HYNES suggested that it might be better to wait until the Regulations were issued. Dr. C. J. PALMER said a Government official had stated that the Regulations would not be issued before the third week in September. Dr. FULTON said that if action were taken before January 15th next they should first of all ascertain how far the consultants would support the action of the Committee. The proposal was agreed to.

Examination of Candidates for Friendly Societies.—Dr. MARTYN, of Sutton-in-Ashfield, referred to the item on the agenda that the question of fees for examination of candidates for admission to friendly societies be reopened, and moved that the matter be deemed closed and be not further discussed. Dr. J. MOORE BENNETT seconded, and it was carried unanimously.

Guarantee Fund.—It was resolved to vest the Local Guarantee Fund in five trustees, three medical men and two lay. The Provisional Medical Committee was instructed to prepare rules for the administration of the Local Guarantee Fund and submit names of the proposed trustees to the next Divisional meeting.

Sanatorium Benefit.—Dr. A. CHRISTIE REID read a memorandum prepared by the Subcommittee appointed from the Provisional Medical Committee to deal with the question of the administration of sanatorium benefit. The memorandum was intended to be submitted to the local Insurance Committee for the city. On the motion of Dr. MUTCH, seconded by Dr. THOMPSON, the fees suggested in the recommendation were approved.

OXFORD AND READING BRANCH.

A MEETING of this Branch was held in the Library of the Royal Berkshire Hospital, Reading, on Thursday, August 29th, at 3.30 p.m. Dr. FREEMAN, President, took the chair, and twenty-three other members were present.

Sanatorium Benefit.—The object of the meeting was to discuss a draft of arrangements which had been drawn up by a subcommittee of the County Insurance Committee for the administration of sanatorium benefit in the county area of Berkshire. This draft had in the main been approved by the Branch Council fourteen days before. The draft was carefully considered clause by clause, and suggestions for its amendment were made, careful regard being had to the decisions of the State Sickness Insurance Committee. The following points not decided upon by that Committee were suggested, and are as follows:

1. That all periodical reports upon a case of tuberculosis other than the monthly report of the Local Government Board Domiciliary Treatment Order shall be paid for at the rate of 5s. for each report at the cost of the County Insurance Committee.

2. All medicines, except such expensive medicines as may be hereinafter agreed and scheduled as between the Insurance Committee and the British Medical Association, shall be provided by the medical practitioner in attendance.

3. Arrangement of special fees for domiciliary surgical attendance.

4. To agree to pay medical practitioners in attendance upon its patients a double fee of 5s. for night calls received between the hours of 9 p.m. and 10 a.m., and entailing a visit to the patient's house, and for emergency calls, that is, calls received after 10 a.m. and entailing a visit at the patient's residence on the same day which would not otherwise have been made. And that the Committee agree to pay an extra fee of 1s. per mile each way beyond a radius of two miles for night calls and for emergency calls.

5. That there be provided a stamped addressed envelope in all cases where a reply is required from medical practitioners, or where returns or reports, periodical or otherwise, have to be made to the committee by the medical practitioner.

6. That the Insurance Committee, after due inquiry, shall refer confidentially any complaint it may have to make against a medical practitioner to the Local Committee of the British Medical Association, having previously notified the medical practitioner of the course proposed to be taken.

It was arranged that these matters should be brought before the County Insurance Committee, whose findings will be submitted for approval to the Branch Council, and in turn to the State Sickness Insurance Committee.

SOUTH MIDLAND BRANCH:

NORTHAMPTONSHIRE DIVISION.

A MEETING of this Division was held at the Northampton General Hospital on August 27th. Dr. BAXTER was in the chair, and twenty-eight members were present.

Representative Meeting.—Dr. ROUGHTON made some observations on the Representative Meeting from Dr. Dryland's notes.

Guarantee Fund.—A discussion took place on the Local Guarantee Fund, which Dr. COOKE said amounted to £1,700. It was pointed out that £20 per head was wanted, and the matter was left to the Secretaries of the Local Provisional Committees.

Medical Men on Insurance Committees.—Dr. HICHENS, on the initiation of the County Provisional Committee, proposed:

> That medical men who are town, county, urban, or rural district councillors shall be permitted to sit on Insurance Committees in that capacity and not as medical men.

This motion was seconded by Dr. ROUGHTON, and, after discussion, carried without opposition. Dr. HICHENS proposed:

> That the resolution passed by the Division refusing to work the sanatorium benefit part of the Act shall be rescinded in accordance with the action taken by the Representative Meeting.

This was seconded by Dr. COOKE, and carried.

Public Medical Service.—A general discussion then took place on the Divisional scheme for a Public Medical Service, some suggesting consultation with the friendly societies when the draft has been approved; others, on the other hand, thinking this would be most unwise.

Votes of Thanks and Condolence.—Dr. LINNELL proposed, and Dr. COOKE seconded, a vote of thanks to Dr. Baxter for presiding, and of condolence with Dr. Dryland in his bereavement. These were carried, and the meeting adjourned.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

(Continued from p. 279.)

PERHAPS the best known of the many dietetic specialities shown by Messrs. BRAND AND CO., LTD. (11, Stanhope Street, Mayfair, W.), was Brand's Essence, a term which now covers not merely a beef essence, but similar preparations made from veal, chicken, and mutton. Of the same general character, and especially intended for hospital use, is the firm's beef broth; it is really a jelly, and, like the chicken jelly of this firm, can be eaten with a spoon or turned into a fluid to be drunk. Also shown was Brand's meat juice, which is stated to be nothing but the juice of English-grown beef obtained by pressure. In our experience a teaspoonful of this liquid in a wineglassful of cold water makes a very stimulating beverage, and if the bottle is corked with a scorched pledget of cotton-wool it keeps good for many days. A variety of invalid soups intended as a change from a chronic diet of beef-tea were on view, as also an albuminous essence of beef, this being a beef extract *plus* some of the albuminous and hydrocarbon elements of meat. One or two preparations of a different order were also included in the exhibit, one being termed Fever Food. It consists, we understand, of yolk of egg, cream, and beef essence, and is prepared chiefly for use in the tropics. Another was Glaxo, a milk food for infants and children, to which attention has been drawn on several previous occasions.

The newest of the three exhibits of the SACCHARIN CORPORATION (10, Arthur Street West, London, E.C.) was Trivalin, which was stated to be a molecular combination of the valerianates of morphine, caffeine, and cocaine originally effected by Professor Overlach of Berlin. The claims made for it are that it secures the best effects of the three drugs mentioned, and is suitable for use not as a soporific but as an anodyne in pain from various causes, and as a calmative in delirium and other forms of mental disturbance. Pergonal, a compound of hydrogen peroxide and boric acid, brought out some two years ago, was also shown. It is a white, freely soluble powder containing, we were informed, 12 per cent. and 22 per cent. respectively of the constituents mentioned. It provides a means of storing hydrogen peroxide ready for the rapid preparation of a solution of any desired strength whenever required. It was also shown in pastilles for mouth disinfection and as a dentifrice. The other exhibit was Novocain, a compound whose claims to be regarded as the best drug for spinal anaesthesia have been strongly advocated. The choice of a drug for this purpose is a point on which every employer of spinal anaesthesia has his own opinion. From a pharmacological standpoint the claims of the principal competitors were reviewed in a report to the Therapeutic Committee of the British Medical Association by Dr. C. N. le Brocq in our issue for March 27th, 1909. This investigator concluded that novocain was the most satisfactory of the seven drugs with which he experimented, its anaesthetic action being equal to that of cocaine, while its toxicity and irritating effect on the tissues were much smaller. He also showed that it dissolved very readily, forming a neutral solution which could be boiled without alteration of its effects. It is also compatible with suprarenalin and with strychnine, points of some importance in spinal anaesthesia.

Among the numerous appliances for facilitating various modern treatments on the stall of REYNOLDS AND BRANSON (13, Briggate, Leeds) was the "Indicator," a name implying

that its use indicates both the temperature of any saline fluid which may be in use and whether it is flowing properly. It was devised by Dr. N. L. M. Reader, and is intended to be inserted at any desired spot in the course of an irrigation pipe. A cork carries a thermometer which projects into the fluid, and a bead, which is little heavier than hot normal saline, rises against a cross-bar when the current is flowing, and sinks when it is still. The "Rystos Hedonal apparatus" gets over the difficulty of keeping the solution at the desired temperature by placing under the floor of the container a chamber kept warm by a cylindrical electric lamp. The temperature can be regulated by allowing more or less of this lamp to project into the chamber, and it was stated that any temperature up to 130° F. can be steadily maintained. With this apparatus were shown a complete set of special instruments for exposing and opening the vein to be used. The other exhibits included an ionic medication outfit, and a model of a couch for *x*-ray examination presenting a multiplicity of easily attained positions. Among the pharmaceutical preparations we noted Zincol, a powder stated to be composed of zinc oleate with boric acid, and to enjoy much favour among the Territorials of Leeds, though originally intended solely for medical use as a dusting powder for irritated surfaces and ulcers; also a non-greasy ointment named Cremor Bismuth Subgall. Co., which was stated to be readily absorbed and to possess antiseptic astringent and healing properties and to be specially useful in pruritus; Ergothe, and some very fragrant lavender water and salts.

The exhibit of Messrs. CADBURY BROS. (Bournville, Birmingham) afforded an opportunity of inspecting most of the preparations with which this firm's name is associated. The oldest of them is Cocoa Essence, which has long been accepted as one of the best preparations on the market. Cocoa is undoubtedly of high value as a liquid food, and, apart from the intrinsic value of any well prepared cocoa, in these respects, that of Messrs. Cadbury is rendered acceptable to many persons who, as a rule, are not fond of cocoa by its freedom from added sugar and the absence of grittiness on solution. A corresponding preparation is Bournville Cocoa Essence, which is rather sweeter than the original preparation and preferred by some people. Chocolate also figured largely, both as chocolate biscuits and dessert sweets, and in the small, familiar red or blue squares. The table sweets in point of flavour are comparable to the most expensive foreign brands, and the Dairy Milk Chocolate tablets and their Bournville congeners are likewise admirable specimens of chocolate production. Of the hygienic conditions in which the manufactures of this firm are produced it is unnecessary to speak, since members of the Association last year had a good opportunity of examining them for themselves.

The exhibits of Messrs. WYLEY, LTD. (Coventry), included what are known as Wylettes, these being neat little glass capsules packed in boxes of half a dozen. Each contains 1 c.cm. of a sterilized liquid intended for hypodermic use, and represents a suitable dose of some active drug, such as mercury, succinamide with cocaine, salicylarsenate of mercury, soluble arsenate of iron, and adrenalin and cocaine. Other specialities of a corresponding kind were Tropels and Bitropels; the first being capsules, containing pastes or liquors, and the others powders, kept apart by an internal division. A number of reagents for photographic work, put up in suitable quantities in a somewhat similar style, under the name of the Photopel Brand, were also on view. A series of ointments for use in ophthalmic practice were in tubes closed by wooden caps, conveniently shaped for the direct application of the ointment to the eye by drawing down the eyelid and squeezing the tube. The various tinctures shown included a series the existence of which should not be overlooked, since it is often of [illegible] to avoid the use of alcohol, even in medicine. Glycerine, it was stated, was alone employed in their preparation. The series did not cover the whole of the drugs from which tinctures are commonly prepared, as not all drugs yield up their full virtue on glycerine treatment. Conspicuous on this stall was a photograph of the garden party given by the head of the firm to members of the Association during the annual meeting last year.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EAST ANGLIAN BRANCH.—The autumn meeting of the Branch will be held at Bury St. Edmunds, on Thursday, September 26th. Members wishing to read papers or show cases or specimens should communicate at once with Dr. Gutch, Ipswich.—B. H. NICHOLSON, Honorary Secretary, East Lodge, Colchester.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—A meeting of the Division will be held in the Waverley Hotel, Duns, at 2 o'clock in the afternoon, on Wednesday, September 11th. Members having motor cars are requested to be so good as to arrange to assist neighbours desirous of attending. Agenda: (1) To instruct the Secretary to send in resignations of contract appointments in conformity with the policy of the British Medical Association not later than September 29th. (2) To consider the question of the Guarantee Funds and to issue a recommendation to members of the Division. (3) Sanatorium Benefit: to consider a minimum scale of charges to be made for (*a*) domiciliary attendance, (*b*) consultations, (*c*) reports, (*d*) mileage. (4) To discuss a Public Medical Service Scheme for the Divisional area, and to appoint a special committee to draft a suitable scheme or otherwise to advise the Division as to action to be taken. The Executive Committee suggests the names of Drs. A. J. Campbell, C. J. W. Dixon, J. W. Somerville, and P. C. MacRobert. (5) Any other business. Practitioners who do not belong to the Association are invited to attend and to take part in the proceedings.—M. J. OLIVER, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: EAST HERTFORDSHIRE DIVISION.—The next meeting of this Division will be held on Wednesday, September 11th, at the Shire Hall, Hertford, at 3.15 p.m. Agenda: (1) Confirm minutes. (2) Correspondence. (3) Confirm nomination of two members to serve on Contract Practice Committee of Branch. (4) Nominate two members to serve on National Insurance Committee of Branch. (5) Receive report of Representative on Annual Representative Meeting, held at Liverpool, July 19th to 24th. (A synopsis of proceedings is contained in the BRITISH MEDICAL JOURNAL SUPPLEMENT, August 10th, which members are requested to bring to the meeting.) (6) Read circular letter from the Medical Secretary of the Association in reference to certain resolutions of Annual Representative Meeting, 1912; and in connexion therewith (7) receive report from Executive of Provisional Medical Committee. Motion: "That the recommendations of the Executive be adopted." (8) Fix time and place of next meeting. (9) Any other business. All practitioners resident within the area are invited, so that this meeting will constitute a general meeting of the Provisional Medical Committee for the area.—H. D. LEDWARD, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: GREENWICH DIVISION.—The next meeting of the Division will take place on Thursday, September 12th, at 4 p.m., at St. Mark's Presbyterian Church Room, South Street, Greenwich. Non-members are invited to attend, but they will be unable to vote on Divisional matters. Business: (1) To nominate two Representatives to serve on the new National Insurance Committee of the Metropolitan Counties Branch. (2) To consider the question of the increase of the guarantee to the Central Fund. (3) To present the testimonial to the late Honorary Secretary, L. F. Hemmans, M.B., B.S., F.R.C.S. (4) Any other competent business.—W. H. PAYNE, Honorary Secretary.

NORTH WALES BRANCH. The sixty-third annual meeting of the Branch will be held at the Masonic Hall, Barmouth, on Tuesday, September 10th, at 2 p.m. Agenda: (1) To read the minutes of the last regular meeting and of the special meeting. (2) To read correspondence. (3) To introduce the President-elect. (4) To receive the report of the Branch Council. (5) To elect President for 1913-14. (6) To elect Honorary Secretary. (7) To report election of members on the Branch Council. (8) To select places for the meetings in 1913. (9) To elect two members on the Board of Governors of the King Edward VII Welsh National Memorial Association. (10) To elect a Representative on the Court of Governors of the University College of North Wales to fill the vacancy caused by the death of Dr. R. Arthur Prichard. (11) To consider the question of raising the Guarantee Fund and other matters relating to the Insurance Act. The President will deliver his address. The following papers will be read:—Dr. Emyr O. Price: Case of Ligature of the External Iliac Artery. Dr. H. Jones Roberts: (*a*) Case of Compound Comminuted Fracture of the Lower Jaw; (*b*) Reduction of a Dislocation of the Hip-Joint by the Open Method. Dr. J. Lloyd Roberts (Liverpool): An Insufficiently Recognized Cause of Orchitis. Luncheon at the Corsygedol Hotel, at 1 p.m. Tickets 3s. The Branch Council will meet at the Corsygedol Hotel at 12.45 p.m.—H. JONES ROBERTS, Honorary Secretary, Llywenarth, Penygroes, S.O.

National Insurance.

STATE SICKNESS INSURANCE COMMITTEE.

THE State Sickness Insurance Committee held a meeting on Thursday, September 5th. The proceedings had not terminated at the time the JOURNAL had to be sent to press; a full report will, however, be published in the issue of September 14th.

PROVISIONAL MEDICAL COMMITTEES.

BIRKENHEAD.

A MEETING of the Provisional Medical Committee was held on August 28th. Dr. J. RATCLIFF GAYLARD was in the chair, and there were also present: Drs. A. W. Riddell, E. G. Bark, H. L. Pearson, A. Cassells Brown, A. C. E. Harris, R. J. Dobson, and J. H. Fardon.

Sanatorium Benefit.—A letter was read from the Sanatorium Benefit Subcommittee asking the Committee to nominate practitioners to examine and report on tuberculosis cases. The following reply was unanimously adopted:

1. The Committee is of opinion that examination and reports of, and upon, applicants (being insured persons) for sanatorium benefit under the National Insurance Act, 1911, should be made by the applicant's ordinary medical attendant, and not by particular practitioners nominated for such purposes.
2. That where the applicant has no ordinary medical attendant he should be directed to apply to the practitioner living nearest to his place of abode.
3. That domiciliary treatment should be carried out by the applicant's ordinary medical attendant, or, where the applicant has no such attendant, by the nearest medical practitioner to his place of abode.
4. That the minimum fees for the above services should be on the scale laid down in "Circular A, National Insurance Act, Sanatorium Benefit," of the British Medical Association, page 2, Minute 207.

State Sickness Insurance Committee.—The following resolution was unanimously passed, and the Secretary directed to forward the same to the State Sickness Insurance Committee, with a request that an early reply be sent to the first part of the resolution and that the Committee give the second portion their very earnest consideration:

(A) That the State Sickness Insurance Committee be asked for a statement as to the line of action which should be taken by practitioners who are being approached with reference to contract medical practice on non-insurable persons (including women and children).

(B) That this Committee expresses the opinion that, in the interests of the continued solidarity of the profession, it is desirable that the State Sickness Insurance Committee should, without delay, report upon the present position of the profession as regards its attitude towards future medical attendance upon insurable persons, and the best means for preventing the breaking away of pledged practitioners.

(Note, as regards (A), the Committee is of opinion that *all* persons, including women and children, should be required to pay at the rate of 8s. 6d. per head per annum.)

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor*, BRITISH MEDICAL JOURNAL, *429, Strand, London, W.C.*]

SIR WILLIAM PLENDER'S REPORT.

DR. R. C. T. EVANS (Herne Bay) writes: The result of the Government's investigation of the books of certain medical men is being largely quoted to show that the sum per head per annum as offered by the Government is more than those medical men receive per annum per patient in their practices. It seems to me very important to point out that the Government inquiry includes wives and children, in fact all in the practices, thereby bringing down the average per head (children are untouched, and wives except for confinements, are also practically untouched by the Insurance Act).

Now, most general practitioners will corroborate me when I state that except for long illnesses the ordinary working man, if not in a club, has been a much better payer than the wife and children hitherto. If he is indisposed he goes to a medical man and pays at once, and 2s. 6d. is not much to him for the consultation. If, however, his wife or children are ill (and they are much more often ill than he is) the fee has to be found (or often not found) out of the weekly money he gives his wife for housekeeping and rent.

Most of the loss to medical men is due to the practical impossibility of poor families paying anything like ordinary fees. The above unremunerative patients are, I understand, all included in the Government's inquiry, but are practically not touched by the Insurance Act.

If the medical men's books were properly analysed, and the pay per head found for the men (and for servants, who also as a class pay well), a very different figure per head for these patients, namely, those included in the Insurance Act, would be disclosed.

DR. HARRY ROBERTS (London, E.) writes: To my letter in your issue of August 24th Dr. Williams, who is a professional neighbour of mine, and an ardent supporter of the present Government, replies with a personal attack based on the fact that I am not a party politician, and therefore have written extensively on the Insurance Act in all kinds of papers professing all shades of politics. Dr. Williams is quite incorrect, however, in suggesting inconsistency in my attitude of "criticism of the Act in the *Nineteenth Century* and the Conservative press with praise of the same Act in the Liberal press." From the point of view of the national welfare and the independence of the poor I have systematically denounced certain features of the Insurance Act whenever I have had the opportunity. It is true that the Liberal press has not been so generous as the Conservative press in affording me this opportunity. Equally systematically I have taken every opportunity of pointing out the desirable effects on the character of medical practice, and thereby ultimately on the public health, which may result from the Act if such terms are offered to the profession as will induce its willing co-operation. These possible effects of the Act I have also expounded wherever I have had the opportunity, "in the *Nineteenth Century* and the Conservative press," as well as in the Liberal press. Dr. Williams, so far as the arguments in my letter and the conclusions which I drew from the figures in the Plender report are concerned, has failed to show any flaw. I made no statement as to the equity of the present average fee for medical attendance. I merely accepted the figure of the Plender report, namely, 2s. 10d., and accepting, as is generally accepted, the assumption that at least three and a half attendances will on an average be required annually for each insured person, I drew the obvious inference that, if medical men are to receive an amount per attendance not smaller than that which on an average they receive at present, an annual capitation fee of 9s. 11d., including drugs, must be paid—that is, assuming that under a national scheme doctors are not to be paid on the principle of semi-charitable attendance on the insured, leaving them to bring their incomes up to a living standard by getting as much as they can out of their unfortunate private patients.

Throughout this controversy I have not expressed any opinion as to what constitutes proper pay for general practitioners. In the ideal State of my dreams I am not at all sure that they would even be tolerated. But so long as we decide to continue the present system of doctoring we shall be wise to pay our doctors generously. In very poor districts, such as East London, where the average private fees are necessarily very small—in my own case about 11d.—doctors would undoubtedly gain financially by accepting even a much smaller capitation fee than that demanded by the Association. The East End of London, however, forms but a very small part of England, and the Association quite rightly has to consider the interests of the whole profession, and not those of the

worst paid section only. Moreover, if this Act is to do anything for the public health, it must provide means of attracting to districts like that in which Dr. Williams and myself practise more men, and men of a very different degree of efficiency from that possessed by many of those who now gravitate to these districts. With fees as they are at present, only exceptionally capable and energetic men can possibly make a decent income in neighbourhoods like this.

POLITICS AND THE PROFESSION.

Dr. R. BOYD ROBSON (Seven Kings, Essex) writes: In the SUPPLEMENT of August 24th correspondents have made a lot out of Dr. Addison's politics. The extraordinary speech delivered by the President of the British Medical Association at Liverpool shows, on the other hand, that there are keen politicians on the other side. The abusive nature of Sir James Barr's remarks and the cordial manner in which they were received by the audience all tend to strengthen the suspicions of the laity that it is not so much the question of inadequate remuneration as the existence of political prejudices which is the cause of the hostility of the profession to the National Insurance Act. If, under the circumstances, I were to ask leave to cancel my pledge and withdraw my guarantee to the Insurance Defence Fund, I would only be following the advice which Sir James Barr gave us at the conclusion of his political tirade:

> Trust no party, set, or faction,
> Trust no leader in the fight.

Not even Sir James Barr!

Naval and Military Appointments.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL J. W. BULLEN, R.A.M.C., officiates in command of the Station Hospital, Agra, vice Major Woodside, vacated.

Lieutenant-Colonel E. H. L. LYNDEN-BELL, Senior Medical Officer at Meerut, has been selected to succeed Colonel W. G. A. Bedford, C.M.G., as Deputy Director-General of Medical Services, London District.

Major W. G. BETTS, R.A.M.C., to hold Civil medical charge of Roorkee in addition to his military duties, vice Lieutenant-Colonel A. W. Dawson, I.M.S.

Major W. J. TAYLOR, who recently arrived from West Africa on leave, has been posted to the Eastern Command for duty pending embarkation in January.

Captain A. N. FRASER, from the Royal Army Medical College, has joined the London District.

Captain J. E. H. GATT, R.A.M.C., has been granted four months' leave on medical certificate.

INDIAN MEDICAL SERVICE.

CAPTAIN W. S. MCGILLIVRAY, I.M.S., is appointed a Specialist in Otology, Laryngology, and Rhinology with effect from July 27th, 1912.

Captain JAMES C. S. OXLEY, F.R.C.S.E., has been promoted to Major.

Lieutenant C. H. SMITH, I.M.S., is appointed a Specialist in Advanced Operative Surgery with effect from July 1st, 1912.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Army Medical Service have been officially reported to have taken place during July:

	FROM	TO
Lieut.-Col. A. E. Tate	Rawal Pindi	Cherat.
,, M. O'D. Braddell, M.B.	,,	Cawnpore.
,, M. O'Halloran, M.D.	Canterbury	Edinburgh.
,, J. Donaldson	Kuldana	Rawal Pindi.
Major C. W. H. Whitestone, M.B.	Peshawar	Cherat.
,, R. J. Blackham	,,	,,
,, F. E. Gunter, M.B.	Lucknow	Meerut.
,, W. E. Hudleston	Portsmouth	Tidworth.
,, E. P. Hewitt	Nowgong	Kamptee.
,, H. K. Palmer	Colaba	Belgaum.
,, G. G. Delap, D.S.O.	Aldershot	S. Africa.
,, J. W. Langstaff	Aldershot	London.
,, E. P. Connolly	Ghurial	Kuldana.
,, L. L. G. Thorpe	Beaulieu Camp	Cosham.
,, W. S. Crosthwait	Fermoy	Mal Bay Camp.
Captain F. A. Stephens	Rawal Pindi	Ghurial.
,, R. V. Cowey	Perham Down Camp	Tidworth.
,, W. Davis	Meerut	Naini Tal.
,, C. G. Thomson	R.A.M. Coll.	Glasgow.
,, A. B. Smallman, M.B.	,,	London.
,, W. F. Ellis	,,	Aldershot.
,, H. J. Crossley	Whitley Bay Camp	Richmond, Yorks.
,, J. W. S. Seccombe	R.A.M. Coll.	Crown Hill.
,, H. V. Bagshawe	Totley Camp	Aberystwyth Camp.
,, R. J. Franklin	Bere Island	Queenstown.
,, J. G. Bell, M.B.	Seaforth	Kendal Camp.
,, G. H. J. Brown, M.B.	R.A.M. Coll.	Edinburgh.
,, D. G. Carmichael, M.B.	,,	,,
,, T. E. Harty	,,	Dublin.
,, D. P. Watson, M.B.	,,	London.
,, G. A. Rumpthorne	,,	Plymouth.
,, N. E. Dunkerton	,,	Sheffield.
,, H. G. Hildreth, F.R.C.S.Edin.	,,	Fermoy.
,, R. T. Collins	,,	Inverness.
,, A. C. Osburn	,,	Hilsea.
Captain L. Bousfield, M.D.	R.A.M. Coll.	London.
,, J. H. Douglass, M.D.	,,	Belfast.
,, R. R. Lewis	,,	Aldershot.
,, A. L. Otway, M.B.	,,	Belfast.
,, C. H. Turner	,,	Dublin.
,, W. F. H. Vaughan	,,	Cork.
,, G. E. Cathcart	,,	Aldershot.
,, J. A. Turnbull	,,	Tidworth.
,, D. P. Johnstone	,,	Chester.
,, E. H. M. Moore	,,	Chatham.
,, F. J. Garland, M.B.	,,	Colchester.
,, R. J. Cahill, M.B.	,,	Belfast.
,, S. C. Bowle	,,	Dublin.
,, A. S. Arthur, M.B.	,,	Chester.
,, P. Dwyer, M.B.	,,	Dublin.
,, H. T. Wilson	,,	Chatham
,, R. C. Hallowes, M.B.	,,	Belfast.
,, J. H. Campbell, M.B.	Newport	Rhayader Camp
,, G. A. D. Harvey	R.A.M. Coll.	London.
,, M. Sinclair, M.B.	,,	,,
,, A. N. Fraser, M.B.	,,	,,
,, R. H. L. Cordner	Bulford	Upavon
,, H. St. M. Carter, M.D.	R.A.M. Coll.	Netley.
,, K. A. C. Doig	,,	Dover.
,, P. A. Lloyd Jones, M.B.	,,	Aldershot.
,, J. St. A. Maughan	,,	Netley.
,, L. V. Thurston	,,	Aldershot.
,, A. W. Gater	,,	Portsmouth.
,, J. P. Lynch	,,	Shorncliffe.
,, R. J. B. Buchanan	Netley	Tidworth.
,, R. G. Meredith, M.B.	Castle Ring Camp	Lichfield.
,, R. K. White	R.A.M. Coll.	Weedon.
,, E. B. Booth, M.D.	,,	Belfast.
,, E. G. R. Litbgow	,,	Cosham.
,, J. S. Pascoe	,,	Woolwich.
,, G. H. Richard	,,	Colchester.
,, G. G. Tabuteau	Ticknock	Dublin.
,, G. Ormrod, M.B.	Londonderry	Holywood.
,, G. E. Ferguson	Winchester	Wool Camp.
,, E. G. Anthonisz	Belfast	Baltray Camp.
,, W. J. Weston	—	Queenstown.
,, P. Farrant	Exeter	Tidworth.
,, E. T. Potts, M.D.	Dublin	Dollystown.
,, G. W. W. Ware, M.B.	Cosham	Tidworth.
,, W. McConaghy, M.B.	R.A.M. Coll.	Woolwich.
,, M. Keane	Mill Hill	Weedon.
,, F. C. Sampson, M.B.	Glasgow	Barry Camp.
,, T. S. Blackwell	Athlone	Mullingar.
,, H. E. Priestley	Box Camp	Tidworth.
,, A. D. O'Carroll, M.B.	Churn Camp	,,
,, A. A. Sutcliff, M.B.	R.A.M. Coll.	Newport, Mon.
,, T. C. C. Leslie	Cork	Youghal.
,, E. J. Elliot, M.B.	R.A.M. Coll.	Kendal.
,, J. A. Bennett, M.B.	Bombay	Poona.
,, A. D. Fraser, M.B.	Magilligan Camp	Londonderry.
,, J. H. Gurley	R.A.M. Coll.	Chatham.
,, G. F. Dawson, M.B.	Meerut	Agra.
,, H. W. Carson, M.B.	Peshawar	Cherat.
,, F. H. Bradley, M.B.	Calcutta	Lucknow
,, W. H. S. Burney	Curragh	Douard.
,, C. H. O'Rorke, M.B.	Bareilly	Rurki.
Lieutenant A. S. M. Winder, M.B.	Lucknow	Allahabad.
,, K. Comyn	Eastbourne	Brighton.
,, W. W. Treves, M.B., F.R.C.S.	Chatham	Egypt.
,, J. D. Kidd, M.B.	Kildare	Curragh.
,, F. A. Robinson, M.B.	Curragh	Oranmore Camp.
,, C. D. K. Seaver	Queenstown	Curragh
,, J. S. Levack, M.B.	York	Moor Laws Camp.
,, J. M. Elliott, M.B.	Cosham	Tidworth.

Vital Statistics.

EPIDEMIC MORTALITY IN LONDON.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

THE accompanying diagram shows the prevalence of the principal epidemic diseases during the second quarter of the year. The fluctuations of each disease and its relative fatality, compared with the average in the corresponding periods of recent years, can thus be readily seen, except in the case of diarrhœa and enteritis among children under 2 years of age, for which the average mortality is not available.

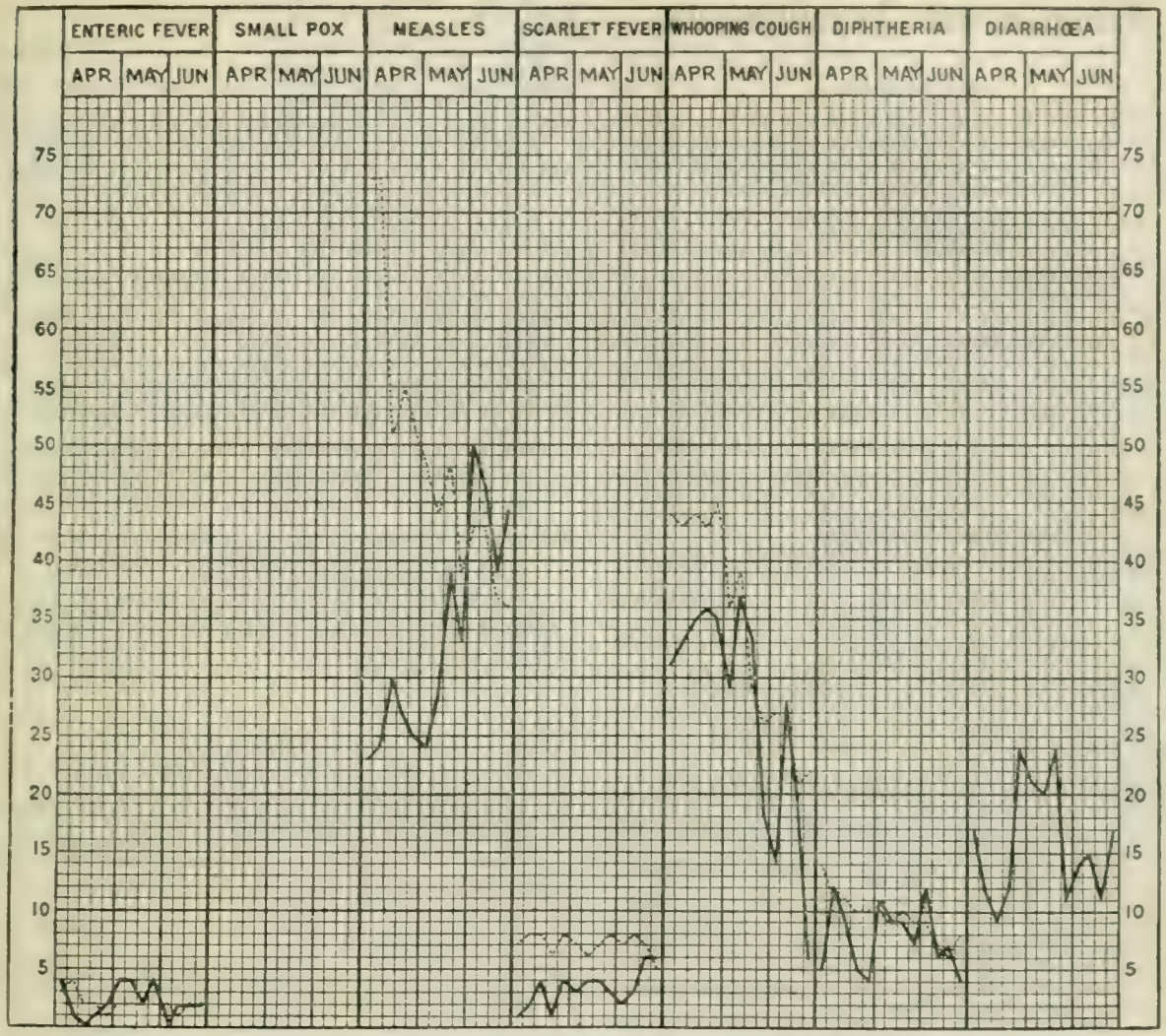
Enteric Fever.—The fatal cases of enteric fever, which had been 43, 57, and 31 in the three preceding quarters, further declined last quarter to 27, but were slightly in excess of the corrected average number. The greatest proportional mortality from this disease was recorded in the City of Westminster, Shoreditch, Holborn, Deptford, and Lewisham. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 155, 76, and 52 at the end of the three preceding quarters, had further declined to 32 at the end of last quarter; 95 new cases were admitted during the quarter, against 257, 171, and 110 in the three preceding quarters.

Small-pox.—No death from small-pox was registered last quarter, and no case of this disease was admitted to the Metropolitan Asylums Hospitals during that period.

Measles.—The deaths from measles, which had been 159, 140, and 202 in the three preceding quarters, further rose last quarter to 433, but were 208 below the corrected average number. This disease was proportionally most fatal in St. Pancras, Holborn, Southwark, Bermondsey, Camberwell, and Woolwich.

Scarlet Fever.—The fatal cases of scarlet fever, which had been 41, 45, and 23 in the three preceding quarters, rose again last quarter to 42, but were 50 below the corrected average number. Among the several boroughs this disease showed the greatest proportional mortality in Paddington, St. Pancras, Finsbury, Stepney, Bermondsey, Deptford, Lewisham, and Woolwich. The Metropolitan Asylums Hospitals contained 1,280 scarlet fever patients at the end of last

DEATHS FROM EPIDEMIC DISEASES IN LONDON DURING THE SECOND QUARTER OF 1912.



NOTE.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding weeks of the five preceding years, 1907-11. Under the heading "Diarrhœa" are given the deaths from diarrhœa and enteritis among children under 2 years of age; the corrected average number of these deaths is not available.

quarter, against 1,656, 1,879, and 1,296 at the end of the three preceding quarters; 2,039 new cases were admitted during the quarter, against 1,956, 2,638, and 2,051 in the three preceding quarters.

Whooping-cough.—The deaths from whooping-cough, which had been 165, 89, and 283 in the three preceding quarters, further rose last quarter to 354, but were 92 below the corrected average number. This disease was proportionally most fatal last quarter in Finsbury, Shoreditch, Stepney, Poplar, Southwark, Bermondsey, and Woolwich.

Diphtheria.—The fatal cases of diphtheria, which had been 129, 190, and 133 in the three preceding quarters, further declined last quarter to 99, and were 25 below the corrected average number. The greatest proportional mortality from this disease last quarter was recorded in Fulham, St. Marylebone, Hampstead, Finsbury, Southwark, and Bermondsey. There were 877 diphtheria patients under treatment in the Metropolitan Asylums Hospitals at the end of last quarter, against 892, 1,294, and 1,045 at the end of the three preceding quarters; 1,440 new cases were admitted during the quarter, against 1,456, 2,142, and 1,706 in the three preceding quarters.

Diarrhœa.—The 207 deaths under this reading are those attributed to diarrhœa and enteritis among children under two years of age; measured in proportion to the births registered during the quarter, the mortality from this cause was greatest in Paddington, Hammersmith, the City of Westminster, Shoreditch, Southwark, Battersea, Wandsworth, and Greenwich.

In conclusion, it may be stated that the aggregate mortality last quarter from these epidemic diseases, excluding diarrhœa, was 28 per cent. below the average.

HEALTH OF ENGLISH TOWNS.

IN ninety-five of the largest English towns 8,603 births and 3,785 deaths were registered during the week ending Saturday, August 31st. The annual rate of mortality in these towns, which had been 11.5, 11.6, and 11.4 per 1,000 in the three preceding weeks, declined to 11.2 per 1,000 in the week under notice. In London last week the death-rate was equal to 11.5 per 1,000, against 11.2, 11.7, and 11.7 in the three previous weeks. Among the ninety-four other large towns the death-rates last week ranged from 4.3 in Acton, 4.5 in Bournemouth, 5.6 in Ilford, 6.0 in Wakefield, 6.1 in Swindon, and 6.2 in Rochdale, to 15.7 in Tynemouth, 16.4 in Gateshead, 17.2 in Hastings, 18.1 in Barnsley, 18.9 in Rotherham, and 19.1 in Middlesbrough. Measles caused a death-rate of 1.8 in Gateshead, 2.2 in Bootle, 2.5 in Rotherham and in Merthyr Tydfil, and 5.4 in Middlesbrough, and whooping-cough of 1.4 in Burnley. The mortality from enteric fever, scarlet fever, and diphtheria showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children (under 2 years of age) from diarrhœa and enteritis, which had been 239, 199, and 183 in the preceding three weeks, increased to 203 last week, and included 75 in London, 22 in Liverpool, 10 in Manchester, 6 in Birmingham, and 6 in Burnley. The causes of 44, or 1.2 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 6 were registered in Liverpool, 5 in Birmingham, 4 in London, 3 in Blackburn, 3 in Preston, and 3 in Blackpool. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,559, 1,559, and 1,512 at the end of the preceding three weeks, had risen to 1,525 on Saturday last; 213 new cases were admitted during the week, against 207, 182, and 167 in the preceding three weeks.

HEALTH OF SCOTTISH TOWNS.

IN eighteen of the largest Scottish towns 1,037 births and 548 deaths were registered during the week ending Saturday, August 31st. The annual rate of mortality in these towns, which had been 13.4, 13.1, and 11.8 per 1,000 in the three preceding weeks, rose to 13.1 in the week under notice, and was 1.9 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 4.6 in Falkirk, 6.0 in Kilmarnock, and 7.5 in Motherwell to 14.6 in Glasgow, 15.1 in Greenock, and 17.7 in Dundee. The mortality from the principal infectious diseases averaged 1.4 per 1,000, and was highest in Hamilton and Dundee. The 220 deaths from all causes registered in Glasgow included 24 from infantile diarrhœal diseases, 5 from diphtheria, 2 from scarlet fever, 1 from measles, and 1 from enteric fever. Two deaths from measles, 2 from scarlet fever, and 4 from whooping-cough were recorded in Dundee, and 2 deaths from whooping-cough in Edinburgh, and 2 in Paisley.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, August 24th, 531 births and 327 deaths were registered in the twenty-two principal urban districts of Ireland, as against 594 births and 291 deaths in the preceding week. The annual death-rate in these districts, which had been 16.4, 14.0, and 13.1 per 1,000 in the three preceding weeks, rose to 14.8 per 1,000 in the week under notice, this figure being 3.4 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 18.5 and 12.6 respectively, those in other districts ranging from 4.2 both in Drogheda and Lisburn and 4.4 in Portadown to 27.5 in Ballymena and 34.7 in Kilkenny, while Cork stood at 17.0, Londonderry at 8.9, Limerick at 14.9, and Waterford at 11.4. The zymotic death-rate in the twenty-two districts averaged 1.9 per 1,000, as against 1.4 in the preceding period.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BEDFORD COUNTY HOSPITAL.—Male Assistant House-Surgeon. Salary, £80 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—(1) Senior House-Surgeon. Salary, £90 per annum. (2) Third House-Surgeon. Salary, £75 per annum.

BOLTON COUNTY BOROUGH.—Public Analyst and Bacteriologist. Commencing salary, £300 per annum.

BRIDGNORTH AND SOUTH SHROPSHIRE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BRISTOL UNIVERSITY.—Head Laboratory Attendant for Physiological Laboratories.

CAPE COLONY: PROVINCIAL HOSPITAL.—House-Surgeon. Salary, £200 to £250 per annum.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £80 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum, rising to £100 after six months.

DUDLEY: THE GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, 100 guineas per annum.

DUNDEE DISTRICT ASYLUM.—Junior Resident Medical Officer. Commencing salary, £120 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, E.—Clinical Assistant.

ECCLESHALL: BIERLOW UNION WORKHOUSE.—Resident Assistant Medical Officer. Salary, £150 per annum.

EDINBURGH: THE HOSPICE.—Medical Woman as Resident. Honorarium, £25 per annum.

EDINBURGH HOSPITAL FOR WOMEN AND CHILDREN.—Two Medical Women, as Senior and Junior Residents. Honoraria, £25 and £18 per annum respectively.

FAREHAM: HANTS COUNTY ASYLUM.—Third Assistant Medical Officer (Male). Salary, £168 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

HULL ROYAL INFIRMARY.—Senior House-Surgeon and House-Physician. Salary, £150 and £100 respectively.

JARROW-ON-TYNE: PALMER MEMORIAL HOSPITAL (FOR ACCIDENTS).—House-Surgeon. Commencing salary, £170 per annum.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

KING'S LYNN: WEST NORFOLK AND LYNN HOSPITAL.—Resident House-Surgeon (Male). Salary, £120 per annum.

KINGSTON: VICTORIA HOSPITAL.—Honorary Radiographer.

LARBERT: STIRLING DISTRICT ASYLUM.—Junior Assistant Medical Officer. Salary, £140 per annum.

LEAMINGTON SPA: WARNEFORD GENERAL HOSPITAL.—House-Physician. Salary, £85 per annum.

LEICESTER ROYAL INFIRMARY.—House-Physician. Salary at the rate of £100 per annum.

LINCOLN COUNTY HOSPITAL.—Junior House-Surgeon. Salary at the rate of £100 per annum.

MANCHESTER CHILDREN'S HOSPITAL.—(1) Male Resident Medical Officer. Salary at the rate of £100 for the first six months and £120 per annum for the second six months. (2) Visiting Physician. Honorarium, £100 per annum.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Senior House-Surgeon. Salary, £100 per annum.

MILLER GENERAL HOSPITAL, Greenwich, S.E.—Senior House-Surgeon and Junior House-Surgeon. Salary at the rate of £100 and £85 respectively.

NEW HOSPITAL FOR WOMEN, Euston Road, N.W.—(1) Senior Assistant for Out-patient Department. (2) Clinical Assistant.

NEW ORLEANS: TULANE UNIVERSITY.—First Assistantship in Physiology. Salary, £300 per annum.

NORTHAMPTON GENERAL HOSPITAL.—Senior Resident Medical Officer. Salary, £120 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Physician. Salary, £75 per annum.

POWICK: WORCESTER COUNTY AND CITY ASYLUM.—Junior Medical Officer. Commencing salary, £160 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, N.E.—[illegible] and House-Surgeon. Salary, £80 each per

RICHMOND: ROYAL HOSPITAL.—Assistant House-Surgeon. [illegible]0 per annum.

[illegible] INFIRMARY.—Junior House-Surgeon (Male). Com[illegible], £80 per annum.

[illegible] OPHTHALMIC HOSPITAL, City Road, E.C.—[illegible] Surgeon. Salary at the rate of £100 per annum

[illegible] ORTHOPAEDIC HOSPITAL, W.—Resident House-Surgeon. Salary [illegible] per annum.

ST. [illegible] COUNTY ASYLUM.—Junior Assistant M[illegible] Commencing salary, £170 per annum.

ST. [illegible] GENERAL DISPENSARY, Welbeck Street, [illegible] Salary, £50 per annum in respect of each half-[illegible]

SCARBOROUGH HOSPITAL AND DISPENSARY.—Junior House-Surgeon. Salary, £80 per annum.

SEDGEFIELD: DURHAM COUNTY ASYLUM.—Medical Superintendent. Salary, £800 per annum.

SHEFFIELD: ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary, £70 per annum.

SHREWSBURY: SALOP INFIRMARY.—House-Physician. Salary at the rate of £90 per annum.

SOUTH SHIELDS: INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Senior House-Surgeon (Male). Salary, £100 per annum.

STAFFORD: COTON HILL LUNATIC ASYLUM.—Assistant Medical Officer (Male). Salary, £150 per annum, rising to £180.

STAFFORD: STAFFORDSHIRE GENERAL INFIRMARY.—House-Surgeon. Salary, £120 per annum.

SUNDERLAND CHILDREN'S HOSPITAL.—Resident Medical Officer. Salary, £80 per annum.

WARRINGTON INFIRMARY AND DISPENSARY.—Senior House-Surgeon. Salary at the rate of £120 per annum.

WEST-END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, PARALYSIS, AND EPILEPSY, Welbeck Street, W.—Honorary Registrar and Pathologist.

WEST HAM AND EASTERN GENERAL HOSPITAL, E.—Junior House-Physician. Salary at the rate of £75 per annum.

WEST SUFFOLK COUNTY COUNCIL.—County Medical Officer of Health and County School Medical Officer. Salary, £500 per annum.

WHITCHURCH: CARDIFF CITY MENTAL HOSPITAL.—Second Assistant Medical Officer. Commencing salary, £180 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces the following vacant appointment: Long Sutton (Lincs.).

MEDICAL REFEREE.—The Home Secretary announces vacancies as Medical Referee under the Workmen's Compensation Act, 1906, for the Dunfermline-with-Kinross District and County Court Circuit, No. 16 (Ophthalmic Specialist).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

BEATTIE, F. A., L.S.A., Medical Officer of the Penistone Union Workhouse.

BLEASE, A. T., M.B., Ch.B.Vict., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Bucklow Union.

CLARKE, T. C., M.B., Ch.B.Liverpool, Resident Assistant Medical Officer of the Crumpsall Workhouse of the Manchester Township.

COGHILL, W. D., M.B., Ch.B.Edin., Assistant Medical Officer of the Coventry Union Workhouse.

HOGG, F. S., L.R.C.P., L.R.C.S.Edin., L.S.A., District Medical Officer of the Lewisham Union.

JEFFREY, John, F.R.C.S., Medical Referee under the Workmen's Compensation Act for the Sheriffdom of Berwick, Roxburgh, and Selkirk, and to be attached more particularly to the County of Roxburgh, vice Dr. W. Jeffrey, deceased.

MAURICE, G. K., M.R.C.S., L.R.C.P.Lond., District and Workhouse Medical Officer of the Marlborough Union.

STEPHENS, F. G. N., M.B.Sydney, M.S., Resident Assistant Medical Officer of the Brentford Union Infirmary.

PIMBLETT, C., M.B., Ch.B.Vict., Medical Officer of the Preston Union Girls' Home.

RICHARDS, R. W., M.D.Lond., M.R.C.S., L.R.C.P.Lond., District Medical Officer of the Conway Union.

WILLIAMS, J. R., M.B., C.M.Edin., District Medical Officer of the Conway Union.

MANCHESTER ROYAL INFIRMARY.—The following appointments have been made:

Senior House-Surgeons: G. E. Sawdon, M.B., Ch.B.Vict.; J. C. Jefferson, M.B., Ch.B.Vict.

Junior House-Surgeons: C. F. White, M.B., Ch.B.Vict.; P. H. Midgley, M.B., Ch.B.Vict.

House-Physicians: A. G. Bryce, M.B., Ch.B.Vict.; A. H. Macklin, M.B., Ch.B.Vict.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

ALLOTT.—On August 29th, at The Cynon Surgery, Penrhiwceiber, South Wales, to Dr. and Mrs. H. Cyril W. Allott, a son.

HARRISSON.—On September 1st, at The Priory, St. Neots, the wife of Ernest H. Harrisson, M.A., M.D.Cantab., of a daughter.

MILBURN.—On September 3rd, at Ivel View, Biggleswade, Beds, the wife of Oscar Le Fèvre Milburn, M.R.C.S., L.R.C.P., of a daughter.

ROSE-HUTCHINSON.—On August 30th, at Malabar Hill, Bombay, the wife of L. T. Rose-Hutchinson, M.D., Major, Indian Medical Service, of a daughter.

MARRIAGE.

LANGLEY-MORLEY.—On August 29th, at St. Bartholomew the Great, Smithfield, E.C., Dr. J. A. L. Longley, of 2, Portland Square, Bristol, eldest son of the Rev. J. Longley, M.A., Rector of Tydd St. Mary, Lincs., and Mabel Lyddon, eldest daughter of the late Colonel G. Lyddon Morley, A.S.C., late 79th Highlanders.

Printed and Published by the British Medical Association at their Offices, No. 429, Strand, in the Parish of St. Mary-le-strand-cum-Precincts, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 14TH, 1912.

SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs. BY ORDER.

STATE SICKNESS INSURANCE COMMITTEE.

APPOINTMENTS IN CONNEXION WITH THE INSURANCE ACT.

THE State Sickness Insurance Committee calls the attention of all members of the medical profession to the following resolution adopted by the Annual Representative Meeting, 1912:

That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

SANATORIUM BENEFIT.

The State Sickness Insurance Committee also directs attention to the following resolution adopted by the Annual Representative Meeting, 1912:

That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such appointment* shall be submitted to the Council for its approval.

* "Appointment" means any professional work.

The State Sickness Insurance Committee notifies that no advertisement in respect of appointments in connexion with sanatorium benefit will be accepted for publication in the BRITISH MEDICAL JOURNAL which is inconsistent with the conditions laid down by the Association, and in all cases in which an advertisement is accepted a full list of the conditions laid down by the Association will be sent to the advertiser.

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MATTERS REFERRED TO DIVISIONS.

NOTE.—The following revised Schemes for Public Medical Services are now submitted by the State Sickness Insurance Committee for the consideration of the Divisions. Members are requested to preserve this "Supplement" until the subject has been considered by their Divisions.

A

REVISED MODEL PUBLIC MEDICAL SERVICE SCHEME (BASED UPON A CAPITATION SYSTEM OF PAYMENT) FOR THE PROVISION OF MEDICAL ATTENDANCE AND TREATMENT FOR PERSONS INSURED UNDER THE NATIONAL INSURANCE ACT, AND PERSONS NOT SO INSURED.

Object and Constitution.

1. *Object.*—The Public Medical Service of..... (hereinafter called the Service) is an Association of Medical Practitioners, constituted to organise the provision of medical attendance and medicine for persons unable to pay the ordinary medical charges, otherwise than under some co-operative system.

2. *Area.*—The area of the Service is*.....

3. *Members.*—Any duly registered medical practitioner practising or residing within the area may become a member of the Service upon signing an undertaking to conform to these rules. Members may be either Acting or Honorary. An "Acting" member is one who undertakes medical attendance on the subscribers to the Service upon the terms laid down in these rules. An "Honorary" member is a member who has signed the undertaking to abide by these rules, but who does not undertake ordinary medical attendance in connection with the Service.

4. *Officers and Committee.*—The officers of the Service shall be a Chairman, Treasurer, and Secretary,† all of whom must be members of the Service. The Committee shall consist of the above officers, and.....members, of whom.....members shall be elected by the local Division or Branch of the British Medical Association and.....members by the Service. All the officers and members of the Committee shall retire at the Annual General Meeting, but shall be eligible for re-election.

Meetings and Government.

5. *Annual General Meeting.*—An ordinary general meeting of the members, called "The Annual Meeting" shall be held before March 1st of each year."‡ At this meeting the officers and members of the Committee shall be elected, with the exception of those to be elected by the local Division or Branch of the British Medical Association, and the Annual Report of the Committee, and Statement of Accounts of the Service for the preceding year shall be presented.

6. *Casual Vacancies.*—In the event of any officer or member of Committee, resigning, dying, becoming incapacitated through any cause, or being removed from office, the vacancy shall be filled by election at a Committee Meeting to be held as soon as possible after such vacancy has occurred.

7. *Special Meeting.*—A special general meeting of the members may be convened at any time by the Committee, and shall be convened by the Secretary at the earliest practicable day and in any event within twenty-one days of receiving the requisition of.....members.

8. *Quorum.*—At a general meeting (ordinary or special).....members shall be a quorum.

9. *Notice.*—Subject to the provision hereinafter contained, for fourteen days' notice in the case of a proposed alteration of Rules, at least seven days' notice of every general meeting and of the business thereof shall be given by the Secretary to all members, but the accidental omission to give notice to any member shall not invalidate the proceedings of a meeting. The notice of a general meeting (and also a Members' requisition for a general meeting) shall state the agenda thereat, and no decision shall be arrived at on any matter not arising out of the agenda.

10. *Powers of Committee.*—The Committee may make standing orders for its meetings, and fix a quorum, and settle and determine any question which may arise as to the interpretation of any of the Rules of the Service for the time being in force. Subject to such regulations not inconsistent with these Rules as may from time to time be prescribed by the members in general meeting, the Committee shall deal with all such matters as the appointment of dispensers, clerks, collectors and auditors, the making of arrangements with chemists, and the leasing of premises (if any) and shall manage all the other affairs of the Service not required to be dealt with at a general meeting.

11. *Members not to accept Lower Rates.*—No member shall take, or continue to treat, any contributory contract patient at a lower rate than the subscriptions prescribed in these Rules.

12. *Canvassing and Advertising.*—No canvassing or advertising shall be permitted by, or on behalf of, any member of the Service.

No member shall himself receive, or employ a Collector to collect subscriptions from contributory contract patients.

13. *Members not to hold Club appointments.*—No member shall hold any appointment as Medical Officer to a club, friendly society, dispensary, or other form of contributory contract practice so far

*As far as possible the area of a Public Medical Service should correspond with one or more of the areas defined under the provisions of the National Insurance Act, but in this case no set rule would meet all cases. Divisions must therefore draft a rule to suit their local conditions. In the case of a large area, such as a County, Sub Divisions might be formed each with its own Committee, income limit, officers and officials.

† Rule 10 provides for paid assistance, such as dispensers, clerks and collectors.

‡ The date March 1st is mentioned because, if these Services are set up generally throughout the country, and especially if they become co-ordinated in a centralised scheme, as will probably be desired, it will be necessary that reports as to their progress should be made to the Council of the Association, by the end of March, in order that a general report should be presented to the Annual Representative Meeting.

as regards insured persons, or conduct any club of uninsured persons except with the consent of the Committee.

14. *Expulsion of Members.*—(a) *By Vote of Members.*—If any member shall wilfully commit any breach of the Rules of the Service or shall be guilty of conduct tending to increase unduly his claim to a share in the distribution of the moneys collected he shall have his attention called to such breach of the Rules or such conduct by the Committee, and after having been given an opportunity to offer an explanation to the Committee, he may be expelled from membership by the vote of two-thirds of the members present and voting at a general meeting, subject to a right of appeal to the Council of the British Medical Association, or such other body as may be agreed upon at the time the Rules are adopted. Notice of the charge and of the alleged breach of the Rules on which it is based shall be given to the member implicated at his last known address at least seven days before the date of the meeting called to consider such alleged breach, and the fact that such notice has been sent by registered post shall be sufficient evidence of service.

(b) *By action of a Division of the British Medical Association.*—If, at a meeting of any Division of the British Medical Association within the area of the Service, a member of the Service shall by a two-thirds majority of those present and voting be found guilty of violation of a rule or resolution of the Division with reference to professional conduct, or of other conduct detrimental to the honour and interests of the profession or calculated to bring the profession into disrepute, he shall, subject to a right of appeal as provided for in the Regulations of the Association cease to be a member of the Service.

15. *Alteration of Rules.*—These Rules shall not be altered except with the consent of two-thirds of the members present and voting at a General Meeting, provided also that 14 days' notice of the terms of any proposed alteration of the Rules shall have been given in the notice convening the meeting.

Subscribers.

16. *Admission.*—An intending subscriber must apply in the first instance to the acting member of the medical staff* by whom he wishes to be attended. On the recommendation on the prescribed form of that Medical Officer, the Committee will decide the eligibility of the applicant. The decision of the Committee shall in all cases be final. If any subscriber shall, in the opinion of the Committee, cease to be eligible, his name shall be removed from the list of subscribers.

17. *Income Limit.*—The Income Limit for admission as a subscriber to the Service shall be determined by the members of the Service in general meeting assembled, but in no case shall the income exceed £2 per week from all sources.

Subscriptions.

18. (a) *For insured persons.*—The subscription to the Service for a person insured under the National (Health) Insurance Act, 1911, shall not be less than 2½d. per week inclusive of drugs and cost of administration, on a flat rate, or according to the sliding scale in sub-paragraph (b), provided that in the case of persons engaged in hazardous or unhealthy occupations or who may appear on the medical examination to be below the ordinary standard of health of subscribers, the Committee may prescribe special rates of subscription.

(b) *For uninsured persons.*—In the case of persons not insured under the National Insurance Act, arrangements may be made for their inclusion in any Public Medical Service, provided that the terms and conditions agreed upon are not in contravention of the following regulations and such others as may from time to time be made by the British Medical Association, viz.:—

For the wife of an insured person, not herself an insured person, the payment on a flat rate should not be less than 2d. per week; and for children the same rate should prevail, or according to the following sliding scale:—

Sliding Scale.

	Amount.	Amount to be contributed by an insured person in addition to the contribution which he will receive from the State.	
		If State contribution, 8s. 6d.	If State contribution 6s.
Class A. (Income 20s. per week and under	2d. per week.	*Nil.*	½d. per week.
Class B. Income over 20s. to 30s. inclusive	3d. per week.	1d. per week.	1½d. per week.
Class C. Income over 30s. to 40s. inclusive	4d. per week.	2d. per week	2½d. per week.

(c) It is recognised that in some districts the above payments may not be possible as regards uninsured persons until a subsidy is received in respect of the dependants from the Insurance Fund, and the local profession may, in the meantime, decide to give their services at a lower rate. Provision may be made for families by payment of a weekly sum per family, irrespective of the size of the family, as is done in colliery districts, but the payment should be in some proportion to the individual subscriptions above mentioned.

Inclusion of Wife and Family.

An extension of the above scheme would be possible on the following basis:—

The wife of any subscriber to be eligible on the same basis of income as her husband, and for the following subscription—that is, Class A, 1½d. per week; Class B, 2d. per week; Class C, 3d. per week.

Children (under 16) may also be admitted on the same basis of income of their parents for the following subscriptions:—

* Lists of the Acting Medical Staff and forms of application will be available at the Central Offices of the Service.

CLASS A. (Parents' income 20s. a week and under)

1 Child	1½d. per week
2 Children	2d. „
3 or more Children...	3d. „

CLASS B. (Parents' income over 20s. to 30s. inclusive)

1 Child	2d. per week
2 Children	3d. „
3 or more Children...	4d. „

CLASS C. (Parents' income over 30s. to 40s. inclusive)

1 Child	2d. „
2 Children	3d. „
3 or more Children...	4d. „

All children in each family *must* be included; individual members cannot be accepted.

All subscriptions must be paid in advance.

Alternative Form of Sliding Scale.

Description of Subscriber.	Class A. Income 20s. per week and under	Class B. Income over 20s. and under 30s. per week.	Class C. Income over 30s. and under 40s. per week.
Insured Person	2d. per week = 8/8 per annum	3d. per week = 13/- per annum	4d. per week = 17/4 per annum
Wife, if not herself an insured person	1½d. per week = 6/6 per annum	2d. per week = 8/8 per annum	3d. per week = 13/- per annum
A single child (under 16 years)	1½d. per week = 6/6 per annum	2d. per week = 8/8 per annum	2d. per week = 8/8 per annum
2 children under 16 years	2d. per week = 8/8 per annum	3d. per week = 13/- per annum	3d. per week = 13/- per annum
3 or more children (under 16 years)	3d. per week = 13/- per annum	4d. per week = 17/4 per annum	4d. per week = 17/4 per annum
Total for husband, wife and unlimited number of children under 16	6½d. per week = 28/2 per annum	9d. per week = 39/- per annum	11d. per week = 47/8 per annum

NOTE.—It must be remembered that the amount paid by an insured person will be helped by whatever amount is allowed by the Commissioners for Medical Benefit, and that of this part is contributed by the Employer and part by the State.

If the wife is also an insured person she will pay the appropriate amount for an insured person of her class.

The "Income" for this table is to be the income from all sources, and is to include the earnings of all children under 16, and also an assessment for such things as free housing, food, garden, land, and all allowances such as firing, lighting, vegetables, etc. All children under 16 in each family must be included. Individual members cannot be accepted alone.

19. *Arrears.*—A Subscriber whose subscriptions are .....weeks or more in arrear, at least one week's notice in writing having been given him, shall be struck off the list of subscribers, and shall not be re-admitted except on payment of all arrears, or such part thereof as may be approved by the Committee.

20. *Choice of Medical Attendant.*—(a) A Subscriber shall, on admission, and at such other times as the Committee may decide, choose his medical attendant from the Members of the Service who are willing to attend him, and shall for the time being be entitled to the services of such Member only.

(b) The contract of the Subscriber shall be with his medical attendant only, and not with the Service or the other Members of the Service.

(c) Except by the consent of both Members concerned, the Subscriber shall not change his medical attendant more than once in three calendar months, giving at least a month's notice, terminating on a financial quarter day.

(d) The member in charge of a case may, on the ground of wilful disobedience or misconduct on the part of the Subscriber, refuse further attendance, and shall in any such case forthwith notify the Committee.

21. *Subscribers' Cards.*—Every subscriber shall on admission be supplied with a card, which shall refer to these Rules, and on which shall be printed such of these Rules as the Committee may think necessary, and on which also shall be set forth such information, including the name and hours of the Subscriber's medical attendant, as may be approved by the Committee. Failing production of the card, attendance may be refused.

22. *Privileges of Subscribers.*—A Subscriber, in accordance with these Rules, shall be entitled to receive from his medical attendant so long as his subscriptions are not in arrear:—

(i.) Ordinary medical and surgical treatment at the (surgery of his medical attendant) *or* (dispensary of the Service) within the hours mentioned on his card.

(ii.) When his condition requires it, ordinary medical and surgical treatment at his place of dwelling (when that is within two miles of his medical attendant's house), other than night calls and special visits as hereinafter defined.

(iii.) All needful medicines and first dressings for wounds and other injuries.*

23. *Limitation of Benefits.*—Subscribers shall not be entitled, in consideration of their ordinary subscriptions:—

(i.) To medical service in respect of any of the following matters, except upon payment by the patient of the fees specified in the following minimum Table:—

	£ s. d.
(a) Confinements	1 1 0
(b) Miscarriages	10 6
(c) Vaccinations	2 6
(d) Fractures	10 6 and upwards.
(e) Dislocations (at discretion of attendant)	
(f) Consultations: Ordinary attendant	5 0
Consultant (at discretion of consultant)	

* In any Service not providing medicines this provision will be deleted.

(g) Administration of a general anæsthetic ...	10 6
(h) Night visits, *i.e.*, visits made between 8 p.m. and 8 a.m., in response to calls received between those hours	2 6
(i) Special visits, *i.e.*, visits made in response to, and on the same day as, calls received after 10.0 a.m. or made on Sundays, at the desire of the Subscriber	1 0
(j) †Certificates	1 0
(k) Reports	2 6

(ii.) To medical service in respect of illness the consequence of personal misconduct.

(iii.) To medical attendance in respect of—

(a) Illness arising from confinement or miscarriage within one month.

(b) Operations requiring local or general anæsthetics.

(c) Operative dentistry—

the fees for which shall be specially arranged.

*(iv.) To cod liver oil, linseed meal, leeches, serum, vaccines, oxygen.

(v.) To bottles,* jars,* dressings or bandages (except for first dressings).

(vi.) To special examinations, *e.g.*, Refractions X-ray, bacteriological, &c.

(vii.) To examinations, court attendances, &c., under Common Law, and Workmen's Compensation, Employers' Liability and other Statutes.‡

(viii.) Attendance beyond a two mile radius from the house of the medical attendant.§

(ix.) To medical attendance in respect of tubercular disease when actually in receipt of sanatorium benefit under the National Insurance Act.

FINANCE.

Miscellaneous.

24. *Payments.*—All payments made by a Subscriber shall be the exclusive property of the Member who is his Medical Attendant at the time when such payment becomes due, subject only to a rateable deduction for the expenses of collection and the general expenses of the Service.

25. *Money Collected.*—All moneys collected shall be paid into a bank, to the credit of the Service. Cheques shall only be drawn on the signatures of two authorised persons.

† Other than as may be necessary for placing an insured person on, or removing him from, sickness or disablement benefit.

* In Services not providing medicines these items would be deleted.

‡ See Appendix for decisions of Annual Representative Meeting, 1912, hereon.

§ It is suggested that mileage may be dealt with in one or other of the following ways :—

(a) by charging a definite fee to the Subscriber in proportion to the distance.

(b) by an increase of the capitation fee which would take the place of any extra fee being charged for mileage.

26. *Distribution of Subscriptions.*—The Treasurer shall, with the sanction of the Committee, on the usual quarter days, after provision for all current expenses, distribute the balance of the moneys collected among the Members of the Service entitled thereto.

27. *Sale of Member's Interest.*—A Member may sell to any person qualified for Membership his interest in the Service. The purchaser of a Member's interest shall become entitled thereto upon becoming a Member of the Service.

28. *Former Members.*—The subscriptions collected for any former Member of the Service, and not already paid to him before the date of termination of his membership, shall be paid to him as soon as conveniently may be, after the deduction of his share of the common expenses, and the Subscribers whose medical attendant he was, shall have the right to choose as medical attendant any other member who is willing to attend.

29. *Collectors.*—Collectors shall be paid by salary and not by commission.

30. *Member's List of Subscribers.*—The Committee shall supply each Member of the Service on becoming a Member with a List of Subscribers contracting with him and entitled to his services, and monthly with a list of additions and corrections.

31. *Interpretation.*—In these Rules, where the context does not forbid, words importing the masculine gender shall include the feminine, and words in the singular shall include the plural, and *vice versa*.

APPENDIX.

RESOLUTIONS OF ANNUAL REPRESENTATIVE MEETING, 1912.

Certificates and Reports on Cases under Workmen's Compensation Act and Members of Hospital Staffs.

Minute 142.—Resolved: That the Representative Body adopt the following principles:—

(i.) That the furnishing of certificates in cases of injury to workmen is no part of the duty of members of the honorary or paid medical staffs of voluntary hospitals.

(ii.) That a certificate of attendance of a workman at hospital, containing no information as to the nature of the case, should not be regarded as a medical certificate.

(iii.) That any medical certificate expressing an opinion as to the fitness or unfitness of a patient to follow his employment, or any report on such cases, under the Workmen's Compensation Act, given by any member of the staff of a voluntary hospital, whether honorary or paid, should be paid for, and the fee should be received by the medical practitioner who signs the certificate. The minimum fee for a certificate should be 2s. 6d.

(iv.) That in the case of all medical reports under the Workmen's Compensation Act, given by the members of the staffs of voluntary hospitals, whether honorary or paid, the fee should not be less than £1 1s.

(v.) That in the case of all initial examinations with report under the Workmen's Compensation Act given by a practitioner not as the member of the staff of any voluntary hospital, the fee should not be less than 10s. 6d.

Certificates under Employers' Liability Act, 1880, or Common Law, in respect of any Injury or Disease.

Minute 145.—Resolved: That in the case of certificates and reports by medical practitioners, given under the Employers Liability Act, 1880, or at common law, in respect of any injury or disease, the same principles shall apply as in the case of certificates and reports under the Workmen's Compensation Act.

B

REVISED MODEL PUBLIC MEDICAL SERVICE SCHEME (BASED UPON A PAYMENT PER ATTENDANCE SYSTEM) FOR THE PROVISION OF MEDICAL ATTENDANCE AND TREATMENT FOR INSURED PERSONS.

Object and Constitution.

1. *Object.*—The Public Medical Service of . . . . . (hereinafter called the Service) is an Association of Medical Practitioners, constituted to organise the provision of medical attendance and medicine for insured persons unable to pay the ordinary medical charges otherwise than under some co-operative system.

2. *Area.*—The area of the Service is . . . .*

3. *Members.*—Any duly registered medical practitioner practising within the area may become a member of the Service upon signing an undertaking to conform to these rules. Members may be either Honorary or Acting. An Honorary Member is a member who has signed the undertaking to abide by these rules but who does not engage to give medical attendance in connection with the Service. An Acting Member may be either Schedule or Non-Schedule. A "Schedule Member" is one who agrees to attend subscribers at the rate per visit or consultation hereinafter laid down. A "Non-Schedule" member, while binding himself by all other rules of the Service, adopts a higher minimum than that hereinafter laid down, and attends subscribers on the understanding that the difference between his fee and the fee allowed by the Service is paid by the subscriber.

4. *Officers, and Committee.*—The Officers of the Service shall be a Chairman, Treasurer, and Secretary,* all of whom must be members of the Service. The Committee shall consist of the above Officers, and.....members, of whom..... members shall be elected by the local Division or Branch of the British Medical Association and .....members by the Service. All the Officers and members of the Committee shall retire at the Annual General Meeting, but shall be eligible for re-election.

Meetings and Government.

5. *Annual General Meeting.*—An ordinary general meeting of the members, called "The Annual Meeting," shall be held before March 1st of each year.† At this meeting the Officers and members of the Committee shall be elected, with the exception of those to be elected by the local Division or Branch of the British Medical Association, and the Annual Report of the Committee and Statement of Accounts of the Service for the preceding year shall be presented.

6.—*Casual Vacancies.*—In the event of any officer or member of Committee, resigning, dying, becoming incapacitated through any cause, or being removed from office, the vacancy shall be filled by election at a Committee Meeting to be held as soon as possible after such vacancy has occurred.

7. *Special Meeting.*—A special general meeting of the members may be convened at any time by the Committee, and shall be convened by the Secretary at the earliest practicable day, and in any event within twenty-one days of receiving the requisition of ..... members.

8. *Quorum.*—At a general meeting (ordinary or special).....members shall be a quorum.

9. *Notice.*—Subject to the provision hereinafter contained for fourteen days' notice in the case of a proposed alteration of Rules, at least seven days' notice of every general meeting and of the business thereof shall be given by the Secretary to all members, but the accidental omission to give notice to any member shall not invalidate the proceedings of a meeting. The notice of a general meeting (and also a members' requisition for a general meeting) shall state the agenda thereat, and no decision shall be arrived at on any matter not arising out of the Agenda.

10. *Powers of Committee.*—The Committee may make Standing Orders for its meetings, and fix a quorum, and settle and determine any question which may arise as to the interpretation of any of the Rules of the Service for the time being in force. Subject to such regulations not inconsistent with these Rules as may from time to time be prescribed by the members in general meeting, the Committee shall deal with all such matters as the appointment of dispensers, clerks, collectors and auditors, the making of arrangements with chemists, and the leasing of premises (if any) and shall manage all the other affairs of the Service not required to be dealt with at a general meeting.

11. *Members not to hold Contributory Contract Appointments.*—No member shall hold any appointment as Medical Officer to a club, friendly society, dispensary or other form of contributory contract practice so far as regards insured persons, or conduct any club of uninsured persons except with the consent of the Committee.

12. *Members not to Accept Lower Fees.*—No member shall take, or continue to treat, any insured person at lower fees than those prescribed in the Schedule for payment for attendance.

13. *Canvassing and Advertising.*—No canvassing, or advertising shall be permitted by, or on behalf of, any member of the Service.

No member shall himself receive, or employ a collector to collect subscriptions from contributory contract patients.

*As far as possible the area of a Public Medical Service should correspond with one or more of the areas defined under the provisions of the National Insurance Act, but no set rule would meet all cases. Divisions must therefore draft a Rule to suit their local conditions. In the case of a large area, such as a County, Sub-Divisions might be formed, each with its own Committee, income limit, officers and officials.

* Rule 10 provides for paid assistance, such as dispensers, clerks, and collectors.

† The date March 1st is mentioned because if these Services are set up generally throughout the country and especially if they become co-ordinated in a centralised scheme, as will probably be desired, it will be necessary that reports as to their progress should be made to the Council of the Association by the end of March, in order that a general report should be presented to the Annual Representative Meeting.

14. *Expulsion of Members:* (a) *By Vote of Members.*—If any member shall wilfully commit any breach of the Rules of the Service, or shall be guilty of conduct tending to increase unduly his claim to a share in the distribution of the moneys collected, he shall have his attention called to such breach of the Rules or such conduct by the Committee, and after having been given an opportunity to offer an explanation to the Committee, he may be expelled from membership by the vote of two-thirds of the members present and voting at a general meeting, subject to a right of appeal to the Council of the British Medical Association, or such other body as may be agreed upon at the time the Rules are adopted. Notice of the charge, and of the alleged breach of the Rules on which it is based shall be given to the member implicated at his last known address at least seven days before the date of the meeting called to consider such alleged breach, and the fact that such notice has been sent by registered post shall be sufficient evidence of service.

(b) *By action of a Division of the British Medical Association.*—If, at a meeting of any Division of the British Medical Association within the area of the Service, a member of the Service shall by a two-thirds majority of those present and voting be found guilty of violation of a Rule or Resolution of the Division with reference to professional conduct, or of other conduct detrimental to the honour and interests of the profession, or calculated to bring the profession into disrepute, he shall, subject to a right of appeal as provided for in the Regulations of the Association cease to be a member of the Service.

15. *Alteration of Rules.*—These Rules shall not be altered except with the consent of two-thirds of the members present and voting at a general meeting, provided also that fourteen days' notice of the terms of any proposed alteration of the Rules shall have been given in the notice convening the meeting.

Subscri[illegible]

16. *Admission.*—It shall be competent for the Committee to grant admission in particular cases, only on a satisfactory report, after medical examination by an acting member. Should cases arise in which there may be doubt as to the eligibility of the applicants, they shall be referred to the Committee for its consideration, and the decision of the Committee on the question of eligibility shall be final. If any subscriber shall in the opinion of the Committee cease to be eligible, his name shall be removed from the list of subscribers.

17. *Income Limit.*—The Income Limit for admission as a subscriber to the Service shall be determined by the members of the Service in general meeting assembled, but in no case shall the income exceed £2 per week from all sources, where the subscriber seeks attendance at the schedule fees.

NOTE.—Arrangements may be made by the Committee, if they think fit, whereby persons whose income from all sources exceeds two pounds per week but does not exceed £160 per annum may be admitted to the benefits of the service, but only on the understanding that the fees chargeable for attendance may be higher than the schedule rate, and that in such cases the difference between those higher charges and the schedule rate must be paid by the person receiving attendance.

18. *Subscriptions* (a)—The subscription to the Service for a person insured under the National (Health) Insurance Act, 1911, shall not be less than 2½d. per week inclusive of drugs and cost of administration, on a flat rate, or according to the following sliding scale:—

Sliding Scale.

	Amount.	Amount to be contributed by an insured person in addition to the contribution which he will receive from the State.	
		If State contribution 8s. 6d.	If State contribution 6s.
Class A. (Income 20s. per week and under)	2d. per week	*Nil.*	½d. per week
Class B. (Income over 20s. to 30s. inclusive)	3d. per week	1d. per week	1½d. per week
Class C. (Income over 30s. to 40s. inclusive)	4d. per week	2d. per week	2½d. per week

Alternative Form of Sliding Scale.

Description of Subscriber.	Class A. Income 20s. per week and under.	Class B. Income over 20s. and under 30s. per week.	Class C. Income over 30s. and under 40s. per week.
Insured Person ..	2d. per week = 8/8 per annum	3d. per week = 13/- per annum	4d. per week = 17/4 per annum

NOTE.—It must be remembered that the amount paid by an insured person will be helped by whatever amount is allowed by the Commissioners for Medical Benefit, and that of this part is contributed by the Employer and part by the State.

19. *Arrears.*—A subscriber whose subscriptions are..... .....weeks or more in arrear, at least one week's notice in writing having been given him, shall be struck off the list of subscribers, and shall not be readmitted except on payment of all arrears or such part thereof as may be approved by the Committee.

20. *Subscribers' Cards.*—Every subscriber shall on admission be supplied with a card which shall refer to these rules and on which shall be printed such of these rules as the Committee may think necessary, and on which also shall be set forth such information, as may be approved by the Committee. Failing production of the card, attendance may be refused.

21. *Choice of Medical Attendant.*—(a) A subscriber shall be entitled to the attendance of any acting member of the Service, subject only to the consent of such member to attend, and also to the usual ethical custom of the profession governing change of a medical attendant during an illness.

(b) As in ordinary private practice the contract of the subscriber shall be with his medical attendant only, and not with the Service or other members of the service.

(c) The member in charge of a case may, on the ground of wilful disobedience or misconduct on the part of the subscriber, refuse further attendance, and shall in any such case forthwith notify the Committee.

22. *Privileges of Subscribers.*—A subscriber in accordance with these rules, shall be entitled to receive from an acting Member of the Service, so long as his subscriptions are not in arrear:—

(i.) Ordinary medical and surgical treatment at the surgery of his medical attendant, during surgery hours.

(ii.) When his condition requires it, ordinary medical and surgical treatment at his place of dwelling (when that is within two miles of his medical attendant's house), other than night calls and special visits as hereinafter defined.

(iii.) All needful medicines and first dressings for wounds and other injuries.*

NOTE.—The fund of the Service will only be liable for the scheduled fees.

23. *Limitation of Benefits.*—Subscribers shall not be entitled in consideration of their ordinary subscriptions:—

(i.) To medical service in respect of any of the following matters, except upon payment by the patient of the fees specified in the following minimum Table:—

	£ s. d.
(a) Confinements	1 1 0
(b) Miscarriages	10 6
(c) Vaccinations	2 6
(d) Fractures	10 6 and upwards.
(e) Dislocations (at discretion of attendant).	
(f) Consultations: Ordinary attendant	2 6 in addition to ordinary fee.
Consultant (at discretion of consultant).	
(g) Administration of a general anæsthetic ...	10 6
(h) Night visits, *i.e.*, visits made between 8.0 p.m. to 8.0 a.m. in response to calls received between those hours	2 6 in addition to ordinary fee.
(i) Special visits., *i.e.*, visits made in response to, and on the same day as, calls received after 10.0 a.m. or made on Sundays, at the desire of the subscriber	1 0 in addition to ordinary fee.
(j) Certificates	1 0
(k) Reports...	2 6

(ii.) To medical service in respect of illness the consequence of personal misconduct.

(iii.) To medical attendance in respect of

(a) Illness arising from confinement or miscarriage within one month.

(b) Operations requiring local or general anæsthetics.

(c) Operative dentistry;

the fees for which shall be specially arranged.

(iv.) To cod liver oil, linseed meal, leeches, serum, vaccines, oxygen.*

(v.) To bottles,* jars,* dressings or bandages (except for first dressings).

(vi.) To special examinations, *e.g.*, Refractions, X-ray, bacteriological, &c.

(vii.) To examinations, court attendances, &c. under Common Law and Workmen's Compensation, Employers' Liability, and other Statutes.

(viii.) Attendance beyond a two mile radius from the house of the medical attendant.†

(ix.) To medical attendance in respect of tubercular disease, when actually in receipt of sanatorium benefit under the National Insurance Act.

Finance.

24. *Fees.*—The following fees shall be those paid to Schedule members:—

Visit	2s.
Visit and medicine ...	2s. 6d.
Consultation in surgery ...	1s. 6d.
Do., with medicine ...	2s.
Repetition of medicine (without consultation) sufficient for not less than two days... ...	1s.

25. *Money collected.*—All moneys collected shall be paid into a bank, and placed to the credit of the Service. Cheques shall only be drawn on the signatures of two authorised persons.

26. *Distribution of Subscriptions.*—(a) Every member shall be provided with a slip, whether in

* In any Service not providing medicines this provision will be deleted.

* In Services not providing medicines these items would be deleted.

† It is suggested that mileage be dealt with by charging a definite fee to the subscriber in proportion to the distance.

the form of a card or otherwise, with a counterfoil, in the general form set out in the Appendix hereto.

(b) Each member shall duly enter on such slip the particulars of each visit paid or consultation made, and shall return monthly to the office of the Service any slip on which entries have been made. Should the illness for which he is attending a subscriber continue over the date on which the slip should be returned, the slip should nevertheless be sent in and further entries made on a second (or third) slip which should be clearly marked as a continuation slip.

(c) It shall be the duty of the Secretary of the Service to classify such slips, and as soon as possible after each quarter day lay before the Committee a statement of the amount due for professional services to each member of the Service, and on the direction of the Committee such sum shall be paid to the member forthwith out of the moneys collected, always providing that it shall be competent for the Committee to suspend payment of any member's account pending an enquiry into such account when the Committee consider such enquiry is desirable.

(d) Any surplus shall be carried to reserve fund. In case of a deficit the accounts shall be paid 'pro rata' as far as possible, and the subscription for the next year shall be increased.

27. *Investigation of Claims.*—It shall be the duty of the Committee, or a sub-committee appointed by the Committee for this purpose, to examine not less often than every three months the slips sent in by members with a view to the detection of any conduct tending to increase unduly the claims of members to share in the distribution of the moneys collected, and it shall be competent for the Committee, either originally, or on the report of any such sub-committee, to summon before it any member whom the Committee may consider to have been guilty of any such conduct and to caution or admonish him or, in the case of a repetition of such conduct after such caution or admonition, to refer the question of his expulsion to the members under the provisions of the rule relating to expulsion.

28. *Sale of Member's Interest.*—A member may sell to any person qualified for membership his interest in the Service. The purchaser of a member's interest shall become entitled thereto upon becoming a member of the Service.

29. *Collectors.*—Collectors shall be paid by salary and not by commission.

30. *List of Members.*—The Committee shall draw up, and from time to time revise, a list of all acting members, and shall classify them under the headings Schedule and Non-schedule members, and shall cause a copy of the said list to be handed to each subscriber on admission. The said list shall also contain a clear intimation that Schedule members agree to attend subscribers at the rates set forth herein, and that Non-schedule members attend only at higher rates than these, to be agreed in every case privately between the subscriber and the member, and that in the case of Non-schedule members the subscription covers only so much of the fee as is equal to a fee at the rates charged by Schedule members set forth above, and that the balance of the fee is payable by the subscriber as an addition to his subscription.

31. *Interpretation.*—In these rules, where the context does not forbid, words importing the masculine gender shall include the feminine, and words in the singular shall include the plural, and *vice versa.*

NOTE.—In view of the experimental nature of this Scheme it is thought desirable that, for the present, it should only apply to insured persons.

APPENDIX.

FORM OF MEDICAL PRACTITIONER'S SLIP.

ATTENDANCE SHEET.

This portion to be given to Subscriber at first attendance.

..... Medical Service.

Dr.....

Name and Address of Subscriber

.....

.....

Date.	Fee.	Initials of Doctor.

To be sent in by Subscriber at end of attendance, or in case of long illness at least once a month.

This portion to be retained by Doctor.

..... Medical Service.

Dr.....

Name and Address of Subscriber

.....

.....

Date.	Fee.	Diagnosis and Notes of Progress.	Initials of Doctor.

To be sent in by Doctor at end of attendance, or in case of long illness at least once a month.

SUGGESTED APPLICATION FORMS FOR INTENDING SUBSCRIBERS TO PUBLIC MEDICAL SERVICE.

The.....Public Medical Service.

(A) *Application Form for Unmarried Subscriber.*

This portion to be filled in and signed by the intending Subscriber.

Name..... Age.....
Address.....
Occupation .....
State name of doctor desired .....
State average wages earned each week.....
State other sources of income including allowances (if any) ...
.....
I am desirous of being accepted as a Subscriber to the ... . Public Medical Service and I declare that the above answers are correct, and that I will comply with all the rules of the Service that may from time to time be in force.

(Signed).....

This portion to be filled in and signed by the medical attendant.

I am willing to attend..... and I recommend that he (or she) be accepted as a subscriber at {*ordinary / special} rate.

(Signed).....

Date.....

* Strike out whichever term does not apply.

The..... ...Public Medical Service.

(B) *Application Form for Married Subscriber.*

This portion to be filled in and signed by Head of Family.

Name..... Age.....
Address .....
Occupation.....
Is the Wife (or Husband) an Insured Person ? .....
How many children (if any) under 16 years of age? .....
State name of Doctor desired .....
State average wages earned each week—
(a) By self .....
(b) By Wife.....
(c) By children under 16 .....
State other sources of income, including allowances, if any.....
.....
I am desirous of being accepted as a Subscriber to the .....Public Medical Service and I declare that the above answers are correct, and that I will comply with all the Rules of the Service that may from time to time be in force.

(Signed).....

This portion to be filled in and signed by the medical attendant.

I am willing to attend .....
.....
.....
.....
.....
and I recommend that they be accepted as Subscribers at {*(ordinary) / (special) rates.

(Signed) .....

Date.....

* Strike out whichever term does not apply.

Meetings of Branches and Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

BORDER COUNTIES BRANCH:

SCOTTISH DIVISION.

A MEETING of this Division was held in the County Buildings, Dumfries, on August 27th. Dr. T. R. RODGER, President, was in the chair, and twenty-two members were present.

Ethical Rules.—It was moved by the CHAIRMAN, and seconded by Dr. BELL, that the ethical rules be adopted *en bloc*. This was agreed to.

Death Certificates.—Dr. CLARKE at this point, with the CHAIRMAN'S permission, raised the question of granting a death certificate to the registrar in the case of a person who was not seen during life. After considerable discussion and relation of personal experiences by Drs. ROBERTSON, REID, and COWAN, it was unanimously agreed that no medical certificate of death be granted unless through the Procurator-Fiscal.

Increase of Subscription to "British Medical Journal."—It was agreed that the following recommendation be the finding of the meeting:

> That the increase of subscription be to £1 10s. in the meantime, and that newly qualified men be admitted at the previous terms—namely, £1 5s.—for one year following qualification.

Guarantee Fund.—Dr. MURDOCH started the discussion by stating that in his opinion the flat rate of £20 as a guarantee was too large, especially for men with slender incomes, and that a more proportionate figure be adopted in such cases. Dr. SAUNDERS moved and Dr. SELBY seconded:

> That the increase be to £20 as a minimum.

An amendment moved by Dr. ROBERTSON, and seconded by Dr. REID, that the minimum be £10 was lost by 6 to 12, and thereafter it was the unanimous finding of the meeting that the increase be to £20. The Secretary was requested to obtain from head quarters a list of those who had subscribed to the Defence Fund and also guaranteed; and the Secretaries of the Local Medical Committees were instructed to urge upon non-subscribers the necessity for their becoming subscribers and guarantors. The position of the subscribers to the Local Defence Fund and to the Central Defence Fund was discussed by Drs. EASTERBROOK and LIVINGSTON, and it was then moved by Dr. HUSKIE and seconded by Dr. EASTERBROOK:

> That the Division subscribe entirely to the Central Fund, and that subscriptions to the Local Fund be transferred to the Central Fund.

This was agreed to.

Public Medical Service.—The CHAIRMAN pointed out *a priori* the advisability of the Division reconsidering its decision at a previous meeting—namely, to adopt remuneration per capitation—seeing that in the light of present knowledge and in the past expectancy (not realized) that the demands of the profession would have been granted to such a degree as would have ensured its hearty co-operation. The discussion was continued by Drs. HUSKIE, LIVINGSTON, EASTERBROOK, and SHAW, when it was moved by Dr. SAUNDERS, seconded by Dr. MACMYN, that the subject should be referred to a committee for further consideration. Dr. MCMORLAND moved, and Dr. BELL seconded, that the meeting should decide there and then the question of remuneration by capitation or per attendance. Dr. SELBY, seconded by Dr. MURDOCH, moved the following amendment:

> That a referendum of practitioners in the district be taken as to their choice of remuneration.

Both motion and amendment were, however, altered by consent. A vote was taken to test the feeling of the meeting regarding its attitude to the two methods, the finding being in favour of payment per attendance; and it was agreed that a memorandum be drafted by the Chairman and Secretary, relative to the circumstances and exigencies at present existing which might possibly alter

to a considerable extent the views of members in the Division, and that every practitioner in the Division receive a copy of same, along with a voting card, to enable him to express his opinion as to the method of remuneration he prefers. This was all the business.

LANCASHIRE AND CHESHIRE BRANCH:

MANCHESTER (WEST) DIVISION.

A GENERAL meeting was held in the Technical Institute, Old Trafford, on August 12th. Dr. EDGE occupied the chair.

Annual Representative Meeting.—Dr. DEARDEN gave a concise account of the proceedings, and explained in detail the arguments which were brought forward in favour of working the "sanatoriums benefit" portion of the National Insurance Act. A hearty vote of thanks to Dr. Dearden was proposed by the CHAIRMAN, seconded by Dr. BRIERLEY, and carried unanimously.

The Representative Body and Sanatorium Benefit.—The following resolution was carried unanimously:

> That this meeting strongly protests against the action of the Representative Body in deciding on a serious line of policy in regard to the sanatorium benefit of the National Insurance Act before the members of the Association had been given an opportunity of coming to a decision on the matter, and urges upon the Council the necessity in future of referring all vital questions (such as the one referred to in this resolution) to the Divisions in order that the Representatives may be fully instructed.

Report (D 1).—The report (D 1) on certain resolutions of the Annual Representative Meeting was discussed.

Conjoined Local Medical Committees of Manchester and Salford.—A circular letter was read from the Conjoined Provisional Local Medical Committee of Manchester and Salford, comprising a report of the meeting held on August 7th, in which a resolution was passed *re* the formation of an Executive Committee. After discussion it was proposed, seconded, and carried unanimously that Dr. Edge and Dr. Scanlon be appointed to represent this Division on the Executive Committee.

Sanatorium Benefits in Manchester.—After some discussion on the general situation, Dr. HART proposed and Dr. SCANLON seconded the following resolution, which was carried unanimously:

> That the West Manchester Division fully endorses the action of the Joint Committee in opposing the adoption of the Early Notification of Births Act in Manchester, and approves the rescinding of the circular of last year if necessary.

METROPOLITAN COUNTIES BRANCH:

LAMBETH DIVISION.

School Clinics Committee for the Area of the Lambeth Division.—At a meeting of the committee held on August 6th, at 145, Denmark Hill, the terms of the following draft agreement were approved:

(i) The committee of medical practitioners shall provide a medical treatment centre in a central position in premises to be approved by the Council, for the maintenance of which the committee of medical practitioners shall be responsible. Administrative control of the arrangements for supplying the centre with patients, "following up" and generally the supervision of the work of the centre shall be vested in the Council. The centre shall be available without extra payment by the Council for use in connexion with the Council's system of medical inspection of school children and for the further examination of children.

(ii) The classes of cases to be dealt with at the centre shall, unless otherwise arranged, include eye cases for errors of refraction, ear, nose, and throat cases requiring operation, ringworm cases for *x*-ray treatment, and minor ailments, including discharging ears, external eye diseases, for example, blepharitis and conjunctivitis, skin diseases such as impetigo and sores, and such other conditions as require the daily services of a nurse, and also home visits after operations for adenoids, tonsils, etc.

(iii) No cases shall be received for treatment by the committee of medical practitioners except such as are found on inquiry to be from their circumstances and the nature of their disease suitable for treatment at the centre. The committee of the centre reserve to themselves the right to refuse treatment in any particular case.

(iv) The hours of attendance shall be made to suit the convenience of the children and of the committee.

(v) The medical staff appointed for this work shall be selected by the Council from nominations received from the local medical practitioners. The doctors shall devote the whole of the time for which their services are paid for by the Council to the work of dealing with children referred to the centre by the Council. Each doctor shall be required to deal with an average of ten new eye (refraction) cases or ten new ear, nose, and throat cases each half-day of two and a half hours (that is, a total of 440 cases a year), in addition to such old cases as he may have instructed to attend for further treatment. An anaesthetist shall be allowed in the ear, nose, and throat department on one half-day a week for each 880, or part thereof, children agreed to be treated at the centre. Doctors appointed to deal with ringworm cases shall treat two new cases a half-day (that is, 88 cases a year) except where any inclusive capitation payment is made. Doctors appointed to deal with minor ailments shall see 25 new cases a session (1,100 a year).

(vi) A payment by the Council of £50 a year for each medical practitioner or anaesthetist working one half-day a week, and a capitation payment of 2s. for eye (refraction), ear, nose, and throat cases, of 7s. for *x*-ray treatment of ringworm cases, shall be accepted by the committee in full discharge of any expense incurred by them. For the treatment of minor ailments the capitation payment shall be 4d., which shall be accepted by the committee of medical practitioners as covering the full cost of dealing with these cases, including the provision of the necessary medicine and drugs necessary for the treatment at the centre. The capitation payment, with the exception of that for minor ailments, shall be made upon the number of cases arranged to be treated, whether or not that number actually attends the centre. This payment shall be made quarterly in advance about the middle of the quarter. In the first year a payment will be made by the Council for equipment (excluding structural alterations) on condition that it shall be purchased through the Council's store, shall be maintained in satisfactory condition by the committee of medical practitioners, and shall remain the property of the Council. This payment shall not exceed £100 in respect of the treatment of eye, ear, nose, and throat cases, and a further sum of £75 where *x*-ray apparatus is provided.

(vii) The Council shall, for the purpose of assisting the doctors in the treatment of refraction cases and ear, nose, and throat cases requiring operation, and ringworm cases, provide a nurse employed in the public health department of the Council to attend the centre while treatment is being given. In connexion with the treatment of these cases the Council will also provide an officer who will attend the centre to regulate the attendance of children and to supply information to enable the Council to ensure that every child attends the centre till discharged, and that any home treatment or spectacles ordered by the doctor are satisfactorily provided.

(viii) For the nursing treatment of minor ailments the Council shall make arrangements for the daily attendance at the centre of a nurse from a local nursing association or elsewhere to carry out the instructions of the doctor, and shall pay the local nursing or other association a sum of £100 for the equivalent of the services of a full-time nurse and her equipment, drugs, lotions, etc., necessary for the treatment in the homes, and travelling expenses.

(ix) The Council's representative shall from time to time visit the premises while treatment is being given. Any lay officer who may be required to visit the centre shall not in any way interfere in respect of the treatment prescribed or given.

(x) The agreement shall be for one year, and shall be subject to annual revision and to termination at the end of each year by four months' notice on either side.

(xi) The voucher for the capitation payment shall be a card, issued by the Council, directing the child named thereon to attend the medical treatment centre on a specified date, which shall be handed to the medical centre authorities by the person presenting the child.

(xii) Each patient shall be taken to the medical treatment centre by the parent or guardian or other responsible person, and the prescription, in each case, shall be given to the child or its parent. Medicines or drugs required for the immediate treatment of the defects (other than minor ailments, which are provided for in Clause VI) for which children are referred to the treatment centre, will be supplied by the committee free of charge. In cases where spectacles are prescribed and children are referred to a particular optician, the prescription card shall contain a statement of the prices charged for the spectacles

(xiii) The committee shall, if required by the Council, certify as to whether a child patient is fit to attend school during the treatment.

SOUTH-EASTERN OF IRELAND BRANCH.

A MEETING of this Branch was held in Waterford on September 4th, at 3.30 p.m. A meeting of the Branch Council was held on the same day. Dr. JOSEPH MORRISSEY, President, was in the chair, and eighteen practitioners were present.

Organization of Local Profession.—It was decided to organize the profession in the City and County of Waterford. Dr. MORRIS proposed and Dr. WALSH seconded the following resolution:

> That Dr. P. Stephenson, Carrick-on-Suir, call a meeting of the medical practitioners in the City and County of Waterford, the meeting to be held in Dungarvan on a suitable date.

SANATORIUM BENEFITS.

The following resolutions, adopted by the Conjoint Committee, were next considered:

Chief Tuberculosis Officer.—It was proposed by Dr. MORRIS, seconded by Dr. WALSH, and carried:

That the chief tuberculosis officer should be a whole-time officer and confine himself to diagnosis and consultative work. The rest of the staff of the dispensary should, where possible, be formed of local medical practitioners serving on a rota, or otherwise subject to approval of the local Medical Committee.

Qualification for Receipt of Attention at Tuberculosis Dispensaries.—It was proposed by Dr. POWER, seconded by Dr. JELLETT, and carried:

That those requiring attention at the dispensary should be introduced only on the recommendation of a medical practitioner actually in attendance upon the patient.

Free Choice of Doctor in Domiciliary Attendance.—It was proposed by Dr. QUIRKE, seconded by Dr. RYAN, and carried:

That there should be free choice of doctor by patient and of patient by doctor in all cases where domiciliary attendance is given.

Conditions of Employment of Nurses.—It was proposed by Dr. COGHLAN and seconded by Dr. HOGAN, and carried:

That nurses engaged in giving domiciliary attendance should be subject to the conditions of service approved by the Association for the conduct of nurses engaged by nursing associations in so far as these are applicable.

Whole-time Tuberculosis Officer to Act only as a Consultant in Domiciliary Attendance.—It was proposed by Dr. WYNNE, seconded by Dr. JAMES, and carried:

That no whole-time tuberculosis officer, or whole-time assistant, shall give domiciliary attendance, except as a consultant to the practitioner in attendance, and at his request.

Reports from Lay Persons.—It was proposed by Dr. JELLETT, and seconded by Dr. STEPHENSON, and carried:

That the reports to be obtained from Voluntary Care Committees and nurses should be confined to such subjects as are not included amongst the duties of the medical attendant.

Salaries of Whole-time Medical Officers.—It was proposed by Dr. COGHLAN, seconded by Dr. HOGAN, and carried:

That the commencing salaries for whole-time medical officers engaged in the Tuberculosis Service should be for senior whole-time officers not less than £400 per annum. These salaries in all cases must be exclusive of travelling and other official expenses.

Remuneration. — The question of remuneration for domiciliary attendance was left to the local Medical Committee, subject to minima:

Report, 5s.; visit, 2s. 6d., with mileage.

The following was proposed by Dr. RYAN, seconded by Dr. COGHLAN:

That the local Medical Committee be recommended that the fee for a report be 1 guinea; for a visit, 5s., with mileage.

SOUTH-WESTERN BRANCH:

EAST CORNWALL DIVISION.

A MEETING of this Division was held at Webb's Hotel, Liskeard, on Wednesday, August 28th. Dr. WEBB was in the chair, and sixteen members were present.

Report of Representative.—Dr. WEBB read his report of the last Representative Meeting in Liverpool. He pointed out that the decision to work the sanatorium portion of the Act showed to those who disapproved of the position that the profession had adopted towards the Act that they still upheld those views of humanitarianism which was so prominent a character in the traditions of the profession, and that the position was purely one to protect their own livelihood—every man's right.

Central Guarantee Fund.—This question led to much discussion, and the HONORARY SECRETARY put before the Division a scheme adopted by the South-Western Branch based on the principle of calling up a sum proportionate to each individual guarantee when required. It was pointed out that if such a system were adopted it would facilitate the working throughout the Branch. Eventually, on the proposal of Dr. HINGSTON, seconded by Dr. NETTLE, it was unanimously decided:

That this Division recommends and urges all its members to give an *inclusive* guarantee of *20 guineas* to the Insurance Defence Fund, but that not more than *4 guineas* were to be called up within each of the ensuing five years.

It was pointed out that with such a guarantee at its back the State Sickness Insurance Fund could adequately carry on the fight with perfect confidence, and so in all probability only a proportion of the sum assured would be required. *Every member present in the room guaranteed the 20 guineas in accordance with the resolution.*

Club Resignations.—On the motion of Dr. BOWHAY, seconded by Dr. TRINDER, it was decided:

That any outstanding resignations of *any* contract appointments (other than those held under the Government) should be in the hands of the Secretary *before September 23rd next.*

Public Medical Service Scheme.—Dr. CARTER proposed, and Dr. TRINDER seconded:

That the Honorary Secretary be requested to communicate with the West Cornwall Division with a view to preparing a scheme of a Public Medical Service for the whole county.

Dr. BOWHAY proposed, and Dr. VINTER seconded:

That a committee, consisting of the Chairman, Vice-Chairman, and Secretary of each Division in the county prepare a draft scheme to be submitted to each Local Provisional Committee, and, if necessary, to a mass meeting of practitioners within the county.

This was carried unanimously. It was also unanimously agreed:

That when the resignations of contract appointments were sent in they were to be accompanied by a notification that the members of the profession were drafting an alternative scheme for medical attendance and treatment, such a letter to be formulated at a meeting of the Division previous to the sending in of the resignations.

Scale of Fees under the Sanatorium Scheme.—The meeting approved of the scale of fees adopted by the State Sickness Insurance Committee in accordance with Minute 207 of the Representative Meeting, but expressed surprise that no mention of mileage was made, and the Secretary was requested to inquire from head quarters if there be any proposed scale of fees for mileage.

Vote of Thanks to Representative.—The meeting closed with a vote of thanks and confidence in Dr. Webb for his ardous and successful efforts at the Representative Meeting. Dr. WADE, in proposing the vote, remarked on the marvellous powers of economy their Representative possessed. This was seconded by Dr. PELLOW, and carried with acclamation.

To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD.

EAST ANGLIAN BRANCH.—The autumn meeting of the Branch will be held at Bury St. Edmunds, on Thursday, September 26th. Members wishing to read papers or show cases or specimens should communicate at once with Dr. Gutch, Ipswich.—B. H. NICHOLSON, Honorary Secretary, East Lodge, Colchester.

LANCASHIRE AND CHESHIRE BRANCH: LIVERPOOL DIVISION.—A meeting of the Division will be held at the Medical Institution, towards the end of September; the date of meeting will be announced later. The business of the meeting will be to: (1) Receive the report of the Representative at the meeting in July. (2) To fill a vacancy on the Branch Council.—FRANCIS W. BAILEY, Honorary Secretary.

SOUTH MIDLAND BRANCH. The autumnal meeting will be held at Northampton General Hospital on Thursday, October 10th, at 2.30 p.m., under the presidency of Dr. Baker (Aylesbury). Members are requested to send titles of papers, or notes of cases, to the Honorary Secretary as soon as possible.—E. HARRIES JONES, Honorary Secretary, Northampton.

MEMBERS ELECTED TO THE BRITISH MEDICAL ASSOCIATION

(MAY 2ND TO AUGUST 15TH, 1912).

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National Insurance.

PROVISIONAL MEDICAL COMMITTEES.

CITY.

A MEETING of the Provisional Committee for the area of the City Division was held at the Liverpool Street Hotel on Wednesday, September 4th, at 4 p.m. In the absence of Dr. Evan Jones, Dr. MAJOR GREENWOOD was voted into the chair. The following members of the Committee were present: Drs. A. P. Gibbons, C. F. Hadfield, David Ross, J. J. Jaffé, H. G. Dixon, William Whitelaw, H. G. Nicholson, J. Hora, W. J. Galt, Major Greenwood, I. Dorran, J. H. Porter, Elizabeth Wilks, and the Honorary Secretary, Dr. W. Francis Roe.

The minutes of the last meeting were taken as read, and signed by the Chairman. Letters regretting absence were read from Dr. Crampton and Dr. Withers Green.

Club Resignations. — The CHAIRMAN said that the meeting had been specially called to consider a letter from the Medical Secretary, to which an answer was required by the next day for the meeting of the State Sickness Insurance Committee. Dr. ROE (Honorary Secretary) read a letter from Dr. Cox pointing out that it had been decided by the State Sickness Insurance Committee to send in the club resignations at the end of September in the case of all areas that had been classified as safe. The area of the City Division had been considered by his Committee as "weak," and club resignations would not in the ordinary way be sent in in the case of that area. But as Dr. Evan Jones had written to him objecting to the before mentioned classification, and contending that the area of the City Division should be considered "safe," the State Sickness Insurance Committee were willing to include that area among the "safe," if in the opinion of the Provisional Medical Committee it was thought desirable. The CHAIRMAN reported that the matter had been before a meeting of the City Division a short time before, and the general opinion had been that these resignations should be sent in. He had also attended a meeting of the Provisional Medical Committee of the area of the St. Pancras Division that had been put in the same category and classified as "weak" by the State Sickness Insurance Committee. A similar letter had been sent to that Provisional Medical Committee, and it was unanimously decided at their meeting that the State Sickness Insurance Committee should be asked to reckon their area among the "safe," and send in the club resignations. As far as he could judge, the state of the St. Pancras Division was similar to that of the City. The number of club doctors was about the same, and there were eleven defaulters with regard to resignations received. The apparent weakness of the City Division with regard to signatories of the pledge was due to the number of medical men connected with shipping in the neighbourhood of the docks and to the number of juniors holding resident posts at public institutions. It was difficult to get at some of these. Several members disputed the accuracy of the returns, and pointed out that some of the apparent defaulters had signed the pledge and sent in resignations since the return had been made. It was found that the present number was considerably less than eleven of men refusing to resign their clubs. In Bethnal Green every club doctor had sent in resignations of all clubs, and the same could be said of Shoreditch (with one exception) and Finsbury. After some discussion, Dr. DIXON proposed and Dr. NICHOLSON seconded a resolution:

> That the Honorary Secretary be instructed to write to the Medical Secretary, requesting the State Sickness Insurance Committee to include the City Division among the "safe" areas.

This was unanimously carried. There was a short discussion as to whether certain contributory medical appointments should or should not be reckoned among clubs, but it was postponed to a future meeting.

Guarantee Fund.—The HONORARY SECRETARY then read a letter from the Medical Secretary with regard to the Guarantee Fund. It pointed out the inadequate amount of that fund, and strongly urged that efforts should be made to increase it. The CHAIRMAN said that at the last meeting of the Division this subject had been brought up, and a number of those present had increased their guarantees. He hoped that some of those present who had been absent from that meeting would do likewise. It was agreed that the representatives of the different areas of the Division should take the matter in hand and do their best to get further guarantees. Several of those present also increased their guarantees.

LISKEARD.

A MEETING of the Committee was held after the meeting of the Division. Dr. WEBB was in the chair, and eight members were present.

Guarantee Fund.—The REPRESENTATIVES OF AREAS reported satisfactory conditions in their respective areas, and it was resolved:

> That further efforts be made to strengthen our position and to bring before the various practitioners the necessity of a substantial guarantee to the Insurance Defence Fund.

Non-Members.—A list of non-members was read, and it was resolved to try further persuasion to get them to "enter the fold."

State Sickness Insurance Committee.—The decision that the State Sickness Insurance Committee considered the Division "safe" gave great satisfaction.

Approval of Resolutions.—The resolutions passed at the previous meeting were approved.

Vote of Thanks.—A vote of thanks to the Chairman concluded the meeting.

BELFAST.

A MEETING of this Committee was held in the Medical Institute on Tuesday, September 3rd, at 8.30 p.m., Professor Sir JOHN BYERS in the chair.

The subcommittee in charge of the proposed letter to the friendly societies reported it as being ready for issue. After some discussion it was resolved that the names of all the signatories to the "undertaking" be added, and that the letter, as follows, be issued at once:

> The Medical Institute,
> College Square North,
> Belfast, September, 1912.
>
> BELFAST LOCAL MEDICAL COMMITTEE.
>
> *To the Secretary,*
>
> .....
>
> .....
>
> Dear Sir,
>
> Owing to the introduction of the National Insurance Act, the relations between the medical profession and the employed classes must in the future be greatly changed.
>
> It will be to the advantage of all insured persons to become members of approved societies; and as the provision of medical benefits outside of the Act will not only greatly facilitate economy in administration, but will be an inducement for new members to join, the present bounds of contract practice will undoubtedly be widely extended.
>
> Hitherto the great objections to contract medical practice have been (*a*) from the point of view of the members of societies, absence of free choice of doctor, and (*b*) as relating to the medical profession, inadequate remuneration for proper attendance.
>
> At a large meeting of the medical profession, representative of the whole of Ireland, recently held in Dublin, these points were very fully considered, and the following conditions were approved as the proper basis of contract medical practice, which it was believed would be satisfactory alike to doctor and patient:
>
> 1. Free choice of doctor, subject to the doctor's consent to act.
> 2. An income limit of £2 per week for those eligible for medical benefits.
> 3. A minimum rate of remuneration of 8s. 6d. per head per annum, exclusive of medicine and appliances.
>
> These conditions have been carefully considered and accepted by the Local Medical Committee, a body elected by and representative of the entire medical profession in Belfast. We therefore are authorized to give you notice that all arrangements for contract practice must in future be made in accordance with these conditions, *and through the Local Medical Committee only.* Existing arrangements with established societies will remain in force until December 31st, 1912, but will not be renewed after that date.
>
> It is earnestly desired that the good relationship which has existed hitherto between the medical practitioners and the officers and members of the different societies should continue, and the Local Medical Committee will be pleased to give

assistance in making any new arrangements that may be found necessary.

We are,
Yours truly,
(Signed by the Belfast Local Medical Committee),
Marion Andrews, Elizabeth Bell, Robert Boyd, J. S. Bryars, W. M. Burnside, John Byers (Sir), Mark F. Cahill, John Campbell, Robert Campbell, T. C. D. Cathcart, Stanley B. Coates, H. H. B. Cunningham, Thomas A. Davidson, John R. Davison, Alex. Dempsey (Sir), Geo. Elliott, John Ewing, Alfred A. Ferguson, Andrew Fullerton, W. Gibson, Henry Hanna, Moses Henry, Thomas S. Hogg, George A. Hogg, Robert Hall, H. R. Irvine, R. J. Johnstone, W. Marcus Killen, Charles Kevin, R. W. Leslie, W. A. Magill, Joseph Martin, A. B. Mitchell, William Monypeny, A. P. B. Moore, C. Macauley, R. C. McCullagh, John Macdonald, John McIlroy (York Street), John McIntosh, D. J. McKinney, H. L. McKisack, Peter O'Connell (Sir), John O'Doherty, P. E. O'Flaherty, Henry O'Neill, W. Patton, J. C. Rankin, H. J. Ritchie, J. W. Ritchie, A. Gardner Robb, John Rusk, John Simpson, John Stewart, James Taylor, Robert Thomson, Andrew Trimble, W. A. Wadsworth, Robert Watson, Robert Watt, Robert Wilson.

We, the undersigned registered medical practitioners practising in the county borough of Belfast, have this day fully approved of the terms of the letter drafted by our Local Medical Committee, and in accordance with the appended pledge we hereby instruct our Local Medical Committee to issue this letter to all friendly societies and others concerned.

I, the undersigned, hereby promise that I will not individually enter into any arrangements with an Insurance Committee or an approved society, or other person or persons, under the National Insurance Act, or under any system or society worked independently of the Act, that I will only act through the Local Medical Committee of the district in which I live and practise, and then only if the conditions are satisfactory to and in accordance with the declared policy of the Irish Medical Association and British Medical Association.

S. E. A. Acheson, Thos. Adair, J. C. Adams, M. H. Aickin, C. J. Alexander, Saml. W. Allworthy, J. M. Anderson, Marion Andrews, Thos. Arnold, J. J. Austin, H. N. Barnett, John Barron, Walter Beck, Elizabeth G. Bell, Harold Black, J. A. Black, S. H. G. Blakely, J. B. Blewitt, J. St. Clair Boyd, Robert Boyd, A. V. Browne, J. Walton Browne, John S. Bryars, Alex. Burns, William Burns, W. Massey Burnside, John Byers (Sir), Mark F. Cahill, Edward Cairns, R. B. Calwell, Wm. Calwell, W. Calwell, W. K. Calwell, John Campbell, Robert Campbell, R. G. Campbell, W. H. Carlisle, J. Cathcart, T. C. D. Cathcart, George Clarke, Peter A. Clearkin, R. G. M. Clements, Foster Coates, Stanley B. Coates, James Colville, E. Coyle, J. A. Craig, R. T. Crymble, H. H. B. Cunningham, Isaac A. Davidson, Thomas A. Davidson, John R. Davison, Alex. Dempsey (Sir), Alex. J. Dempsey, J. S. Dickey, W. Dickey, W. A. Dunn, George Elliott, F. Barnes Elwood, R. J. Erskine, John Ewing, Alfred A. Ferguson, James C. Ferguson, W. H. Ferran, Victor G. L. Fielden, R. M. Fraser, Andrew Fullerton, James Fulton, Joseph Fulton, P. J. Gaffikin, William Gibson, G. S. Glass, W. Godfrey, Jas. Graham, John Graham, W. Graham, David Gray, H. Gray, Robert Hall, Henry Hanna, W. R. Hayden, W. S. Haydock, W. E. Heal, Moses Henry, G. A. Hicks, James G. Hill, Rowland Hill, George A. Hogg, Thos. S. Hogg, Thos. Houston, J. A. Hutchison, H. R. Irvine, S. T. Irwin, Alex. Jamison, John Jamison, R. J. Johnstone, John Kennedy, Charles Kevin, R. G. Kevin, W. Marcus Killen, J. King-Kerr, T. S. Kirk, Robert R. Leathem, A. Ledlie, John Lennon, R. W. Leslie, J. A. Lindsay, Mary Logan, C. G. Lowry, G. G. Lyttle, Constantius Macauley, John Macdonald, John Macintosh, John M. MacCormac, John G. M'Caughey, Jas. M'Caull, John M'Caw, J. M. M'Cloy, Nath. O. M'Connell, W. M'Cready, Richard C. M'Cullagh, James M'Cullough, L. G. M'Cune, Robert M'Dowell, John M'Elroy, John M'Ilroy, J. E. M'Ilwaine, A. G. M'Kenna, W. G. M'Kenzie, W. R. M'Kenzie, David M'Kinney, H. L. M'Kisack, John M'Leish, William M'Lorinan, A. H. H. M'Murtry, Daniel M'Sparran, J. Magill, W. A. Magill, Joseph Martin, Charles Mateer, W. J. Matthews, W. J. Meharry, W. M. Millar, Charles J. Milligan, T. H. Milroy, J. A. Milroy, W. Minford, A. B. Mitchell, Hiram Monypeny, William Monypeny, Alex. Montgomery, A. P. B. Moore, J. B. Moore, James Moore, Robert J. Morgan, James Morrison, E. Morrison, John S. Morrow, P. J. H. Mulholland, R. J. Munn, H. B. Murray, Peter O'Connell (Sir), John O'Doherty, P. E. O'Flaherty, M. R. O'Malley, Charles O'Neill, Henry O'Neill, H. D. Osborne, John Patrick, James Patton, William Patton, E. B. Purdon, Richard Purdon, J. C. Rankin, Hugh J. Ritchie, James W. Ritchie, A. Gardner Robb, John Rusk, Cecil Shaw, James Shaw, Colonel Silcock, John Simpson, Thos. Sinclair, D. O. Smiley, W. P. H. Smiley, Brice Smyth, F. C. Smyth, Malcolm Brice Smyth, C. M. Speers, Howard Stevenson, John Stewart, J. Hamilton Stewart, W. L. Storey, W. J. Taggart, James Taylor, J. W. Taylor, John Thompson, J. Knox Thompson, Robert Thomson, Andrew Trimble, W. J. Trimble, Sam. J. Turkington, D. H. Tweedie, George Vance, William A. Wadsworth, A. E. Wales, Annie Watson, Robert Watson, Robert Watt, H. W. Webb, T. K. Wheeler, William Whitla (Sir), J. Ernest Whyte, S. Hugh Whyte, J. D. Williamson, Robert Wilson, W. J. Wilson, William Wilson.

The convener was instructed to send copies of the above to the local press for publication.

GREENWICH TUBERCULOSIS DISPENSARY.

For some time past the Greenwich Borough Council has been endeavouring to formulate a system for the prevention and treatment of tuberculosis. In order to discuss the subject a meeting of the practitioners resident in the borough was held in the Town Hall on September 5th. There were twenty present, and apologies were sent from several who were absent on holiday.

The aim of the Council is to search out and visit all contacts in cases of tuberculosis and persuade those requiring treatment to obtain the same either from their own medical attendant, if they have one, or at a dispensary. In order to carry this out, two schemes were proposed: (1) To appoint a whole-time assistant medical officer of health to carry out the above duties at a salary of £350 per annum, and one nurse. (2) That six local medical practitioners be periodically appointed, each to give three hours' attendance one day a week at a salary of £60 per annum, and two nurses to search out contacts.

There was a long and animated discussion, but though the second scheme met with most favour, the following considerations were raised:

(1) That this scheme was not in accordance with that decided on at the Representative Meeting. To this the reply was given that it was the treatment of the insured under the Insurance Act and not the uninsured that was more particularly discussed at the Representative Meeting; that a universal system of dealing with this question was not practicable, but that regard must be had to the different requirements of rural, urban, and suburban districts. (2) To the consideration that a dispensary might not be so well managed by medical men giving only part time to the work, it was answered that several were already *au fait* with the subject, and that a knowledge of the method and effect of tuberculin by general practitioners would be an advantage to the community in general. (3) To the further consideration that no definite provision was made for payment for domiciliary attendance, it was agreed that the terms be those laid down by the Representative Meeting, and that the Council be informed that if it is effectually to deal with tuberculosis it must be prepared, as one speaker suggested, for the expenditure of at least an additional penny on the rates.

It was unanimously agreed that the Borough Council be asked to approve of the second scheme, and a committee was appointed to watch the progress of events.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor* British Medical Journal, *429, Strand, London, W.C.*]

Central versus Local Recognition.

Dr. A. C. Farquharson (Representative, Bishop Auckland and Durham Divisions) writes: In all constitutions, whether written or unwritten, cognizance is taken of the commission of wrongful acts and offences against the constitution. Constitutional methods are provided for determining the quality of offences and penalties, or, technically speaking, sanctions, are indicated for the purpose of enforcing obedience to the laws of the constitution. The judicial determination of the offence and the imposition of the consequential penalty are essentially the functions of supreme authority.

May I be allowed to apply this short general statement of constitutional usage and fact specifically as a test of the suggestion which I made that a Division or Branch which agreed upon terms with a local Insurance Committee would neither be acting extra-constitutionally nor committing any offence against the constitution? The constitution of the Association contemplates the commission of an offence, but the determination of the offence and the

imposition of the attendant penalty rest entirely with Division or Branch, and these are the attributes of authority. Article of the Association 10 (*d*) indicates both the offence and the constitutional sanction—namely, expulsion. The words of this subarticle are of some importance to my argument, and I venture to quote them *in extenso*:

> By expulsion (after the inquiry and in the manner prescribed in the next succeeding Article) on the ground that the conduct of the Member is detrimental to the honour and interests of the Medical Profession or Association, or calculated to bring the Profession into disrepute, or on the ground that the Member has wilfully and persistently refused to comply with the Regulations of the Association or the Rules of any Division or Branch of which he may be a member.

I would observe here that there is no reference in this to resolutions of the Representative Body. Clearly all that is contemplated is disobedience to the regulations, that is to say, to the Articles of the Association or to the Rules of Division or Branch. But an act of agreement on the part of a Division with a local Insurance Committee is not a rule. It is a matter of conduct, an act of intrinsic government, and therefore the proviso at the end of subarticle 17 (*b*) which requires Divisional rules to be referred for approval to the Council (*not* to the Representative Body) does not apply. Let me argue that agreement with a local Insurance Committee may be regarded as detrimental conduct and likely to bring the profession into disrepute. But who decides the issue, and having decided, decrees the penalty? The answer to both queries is, Division or Branch. Certainly not the Representative Body.

Subarticle 10 (*d*) is constitutionally dependent upon Article 11, and Subarticle 11 (*a*) provides that the Council (again, not the Representative Body) shall have power—

> *On the representation of any Division or Branch* . . . finally to expel from membership . . . whose conduct shall be held by the Council to be such as renders him liable to expulsion.

In my view the combined effect of Articles 10, 11, and 17, is to confer upon each Division power to govern itself; to decide upon the quality of its own acts or conduct, and, furthermore, when it and it alone decides, to decree penalty.

I suggest these are the qualities of complete autonomy—an autonomy which disregards the Representative Body and relegates even the Council to the humble but useful position of executioner.

I should be glad to think that the points I have raised have merely a verbal existence, but they may assume in the near future a very serious and practical importance. I raised them chiefly to show that by the combined attitudes of the Representative Body and the existing State Sickness Insurance Committee we are increasing the possibility of disunion. I made the suggestion that the strength of combination lay in the pursuance of a central policy rather than in one which thrusts negotiatory functions upon local Divisions, who will naturally ask in the first place, What is our constitutional position?

I would remind my critics that personal allusions and suggestions of disloyalty on my part are not quite relevant to an argument upon a strictly constitutional question. Strong language is not an uncommon accompaniment of muddle-headedness, so my critics must forgive me when I say that I am not equal to the task of replying to their picturesque side-issues. It, however, may comfort my critic who announces his heroic purpose to surrender £60 per annum derived from clubs, to learn that the resolution brought forth in the expiring moments of the late State Sickness Insurance Committee brings medical practitioners in Durham and Northumberland face to face with a possible annual loss of ten, twenty, thirty, and in some cases forty, times that amount.

What is Reasonable Remuneration?

Dr. Lewis More-O'Ferrall (Bristol) writes: As I have for the past five years held a large club appointment and have kept a careful and accurate account of all my attendances, etc., for the same, it has occurred to me that perhaps the figures which I can supply may be of some service in helping to elucidate the question of what our medical remuneration should be under the Insurance Act. Hence this letter to you.

The club for which I am acting has an average of 2,300 members. The average yearly attendances on these members during the five years from the end of the year 1906 to the end of the year 1911 have been 14,039. This figure includes visits, which have averaged yearly 1,612, so that of the total attendances in each year about *one in every nine* has been a visit. If in round numbers we take the average total of yearly attendances as 14,000 of this number, 1,600 would be visits, leaving 12,400 as the number of surgery attendances, with a club membership of 2,300.

From these figures it is clear that each individual member has required on an average *six* attendances a year, and on this basis, if we allow remuneration at the rate of 1s. 6d. for each "*attendance*" (the word "*attendance*" here includes medicines, etc., and even a visit when needed), then the capitation fee would work out at 9s. a head.

Now 1s. 6d. is quite a usual charge at present in poorer general practices for simply a consultation at the surgery and medicine. It does not, as a rule, include any visit.

Again, looking at the above figures (which are reasonably accurate and typical, and represent a period of five consecutive years) from a different standpoint, let us consider the 14,000 "attendances" simply as work done apart from the number of attendances per individual each year, and let the word "attendance," as before, signify *any* medical attention given, no special notice being taken of the 1,600 visits paid yearly, and often at considerable distance from the surgery, and let us, moreover, suppose that 1s. is paid for each "attendance." On this assumption we should find in this case, with 2,300 members, it would mean a capitation fee of a little over 6s. a head. But this amount would be manifestly too little for the work done, as I have purposely—to illustrate the point—supposed a minimum fee per "attendance" of 1s., and have counted nothing extra, where such "attendance" included a visit, or where it should rank as an extra, either as a night call or because it included some small operation, etc.

Again, taking the above figures, if we were to allow 1s. 6d. for each consultation and medicine at the surgery and 2s. 6d. for each visit, we should find that for the 12,400 surgery attendances, together with 1,600 visits, the capitation fee would work out at 9s. 9d. a head, including medicines. We may perhaps allow that 9s. 9d. is a little too high if *extras* are to be paid for, as many surgery consultations would be trivial, such as initialling a club paper or writing "*Rep. Mist.*" Therefore I hold that the figure 8s. 6d. as capitation fee would be about right *with certain extras*. I have included medicines in my estimate, as I consider that 8s. 6d., *including medicine*, would certainly be fair, *with extras paid for*, and would cause no loss to practitioners in most instances under the Act. Such is the definite conclusion at which I have arrived from my personal experiences and from careful inquiries. Though, of course, if we can get more as compensation for upsetting the conditions of our practices, so much the better!

In conclusion, I should like to point out that many club members at present earn more than £2 a week, and it would be, I think, unfair to exclude such individuals from participation in the medical benefits of the Act. Many of these members, if not all, have joined their clubs in "poorer days," and have slowly struggled up, paying for themselves and family to some club to insure medical attention for all. They would, even if insured themselves, still have to pay for their wives and young children in case of illness, as these do not come under the Act, and a man earning £2 a week can but ill afford to pay much in the way of doctors' bills without hardship.

If some honourable compromise could be effected by the British Medical Association with the Chancellor on the lines, say, of 8s. 6d. capitation fee *with certain extras*, and the giving way by the British Medical Association on the point of £2 a week income limit, such compromise ought to be effected. It would be a happy solution of a difficult problem. Is not some such solution possible? It would be deplorable to find that a certain number of tempting billets were offered by the Government and accepted by a proportion of the doctors against the wishes of their professional brethren. Such a state of affairs would lead to unseemly strife and endless trouble within our ranks and to great difficulties, and even possibly hardships to thousands of the general public.

While personally most anxious to back up the British Medical Association policy in every reasonable way, I

cannot help feeling that to insist upon a £2 a week income limit a mistake. Comparatively few of the insured will come between the £104 and £160 income limits, and so it would seem hardly worth our while to lay such stress on the £104 income limit if by doing so we may lose far more than we can gain. It is easy to ascertain the income-tax limit, and the machinery is all there for the purpose; but it would be difficult to find out exactly those with £104 income limit, and the public are against us on this point, as not every one with £2 a week and a family to support can afford much for doctors' bills.

Therefore, if any reasonable compromise with the Government can be effected whereby we can get proper remuneration, even at the loss of our point in regard to the £2 a week income limit, I for one should most strongly advocate such, and many of my professional brethren—at any rate, in private conversation—are most certainly of my way of thinking in regard to this matter at the present juncture.

"The Other Five Points."

Dr. H. F. Devis (Bristol) writes: Such outstanding prominence has been given to the financial side of our struggle that the man in the street, be he medical or lay, may be pardoned for thinking that our opposition to this Act will cease with an arrangement as to payment, and that the other five points are only trimmings. This is the only view understood by the public, and even amongst our profession there are not wanting men who say, "Give us 8s. 6d., and the rest can go to ——." There is, indeed, a very great danger that a definite offer of, say, 8s. 6d., or something like this sum, would cause a fatal split in our fighting ranks.

It is worth while to consider once more what will be the actual conditions of service under the Act when we have accepted the 8s. 6d.

In a large city, out of a local Insurance Committee of eighty, we shall have two representatives, whose opinions, voicing those of the profession, will be completely swamped by the opinions of the four medical men elected by the local authority and the Commissioners, and voicing the opinions of those bodies. We shall have a statutory medical committee, whose opinion on purely medical points must be asked by the local Insurance Committee, but there is no provision for making our advice effective. It will, in fact, amount to a pious opinion and nothing more. The power added to the present Provisional Medical Committees by the word "statutory" seems somewhat elusive. The committee under whose control we shall be is to be composed of friendly society and trade union officials with representatives of the local authority, employers, and insured persons—by no means an improvement on the old friendly society control. And the control itself? In a few years, when the dependents have all come in under the Act, the great bulk of our practice will be insurance work. Under Section 15 "chronics" and malingerers will be foisted on us against our will, and on the petulant or vicious complaint of one of these a storm of petty tyrannies will burst on the head of the doctor, ending probably in a request from the committee to the Commissioners to remove the doctor from the panel. The Commissioners cannot be reasonably expected to look at such questions from a sympathetic or even a judicial point of view, and they will use this power they possess quite freely, and in accordance with their prejudices. It is a power of life and death. And from the Commissioners, a prejudiced body, there is no appeal! The control is complete. The disciplinary powers of the Insurance Committee and the Commissioners are also complete. There will be no free choice of doctor—the Harmsworth amendment finished that. The words added at the suggestion of the British Medical Association, and the promise of the Commissioners that there will be clearly-printed instructions issued to the same effect, are worthless. Any friendly society official will know how to drive his coach and four through such safeguards. If we are such fools as to sign certificates for bedridden debtors, a lawyer is at liberty to put his pen through our certificates, and thereby expose us to the risk of prosecution and imprisonment for three months with hard labour—and from the lawyer's dictum on a medical point there is no appeal! Under these conditions we are condemned to work for a flat rate payment of 8s. 6d., for there is no possibility of any payment per attendance worthy of the name. The risk is too great for the State, and must be borne by the profession.

Sir, these conditions are those of *slavery*, and would be too dear at any price.

Two remedies for the present danger present themselves: one, that men should recognize and remember these conditions. If your readers will examine the Act and the various statements of the Commissioners, they will find that I have not overdrawn the picture, and they will refuse the 8s. 6d. unless it is accompanied by an amending Act making the five points practicable. The other remedy is that men should be encouraged to remain steadfast and loyal by being given the knowledge that they will not lose by loyalty. I would beg the State Sickness Insurance Committee to make the authoritative announcement at once that, as soon as the Central Defence Fund reaches £250,000, *every loyal member of the profession will be guaranteed against loss due to his loyalty.* Such a statement would not only give us all heart, but would also greatly help the fund itself, about which men are asking if it will be used up in administration.

Above all, the question "How much?" is of slight importance compared with the question "Under what conditions?"

The Works Surgeon's Position.

Dr. Ernest Brice (Swansea) writes: As a "works surgeon" with a large contract practice, the present time seems to be an opportune one for voicing the feeling which must be very general in corresponding practices, in regard to the present position anent the medical aspect of the Insurance Act.

The British Medical Association has peremptorily broken off negotiations with the Government, and we have been asked, and have acted. It is a *fait accompli.* We have handed in our resignations to the Secretary of the British Medical Association, to be used at the discretion of the powers that be.

I am afraid the bulk of the profession fails to realize what terrible risks we, through loyalty to our brethren, are running. We are not men who are risking a couple of hundreds a year—our contract work is not an accessory—it is our veritable bread-and-cheese. The majority of medical men in a Division can afford to lose their small contracts and can outvote the few whose whole interests are at stake, and whose risks exceed all of the others put together. What is our position? It is this: If the resignations are sent in, our appointments, in some cases acquired by years of labour, in others by heavy purchase, will be gone.

We are told that we should not be the losers, that the Public Medical Service will remunerate us infinitely better, or that we shall have them all as private patients, which will be better still. I am prepared to say, as one with a long and intimate knowledge of the class of practice with which I am dealing, that this promise is a will-o'-the-wisp.

I have seen large appointments broken up, with this result: that some of the thrifty who always like the doctor in the house have joined other forms of contract arrangement, the healthy families and the single men have joined nothing, and the thriftless have become private patients who never pay their bills—and nobody has benefited. This is what will happen to our practices.

I am convinced that only few will join the Public Medical Service with its poundage systems. It will cost them more than they have been in the habit of paying; and so the number of non-contributors will be more than under the conditions I have just indicated.

Another result which looms in the future is the establishment of sixpenny surgeries. A works doctor has already intimated to me that he has that under consideration. This is not, perhaps, a very dignified method of practice, but the man earning a pound a week with a large family has to be catered for.

Now I come to the point of my letter. It is this: that it would pay us as works doctors infinitely better to continue further negotiations with the Government and to accept a compromise—a compromise which there are indications that the Government is prepared for.

If we agreed to meet half-way we should have improved our position immensely, for we should get extra payments for the family.

It would be the thin end of the wedge for further development, for the public has had its eyes open, and something would be gained. We cannot expect too much at once. Rome was not built in a day, and progress and change must be gradual.

THE CONTINUANCE OF NEGOTIATIONS.

Dr. HENRY THOS. BARTON (Blackpool) writes: I thank Dr. Manson for answering my letter, and for explaining more fully his suggestions for a working scheme under the Act. If I do not quite see eye to eye with him, it is because it does not appear to me fair to ask us to speculate on the chance of there being a surplus on certain portions of the funds, for of course any surpluses mentioned under Section 37 of the Act would not be negotiable in our interests. Mr. Lloyd George would, I think, oppose any arrangement that offered an inducement to cut down expenses in connexion with the drug bill. It was in order to remove such a temptation from our path that he took the dispensing out of the hands of the doctors; this much I gather from his speeches made during the early passage of the bill through Parliament. I hope Mr. Cheatle is correct in his surmise, and that "the Chancellor is prepared to increase adequately the capitation fee exclusive of extras"; in this case the recent policy of the Association will have been vindicated. Should the conditions be acceptable, it would not signify whether they were offered to the profession as a whole or to the Association, as the latter would remove the embargo against taking service under the Act, and having gained its point would emerge stronger than ever.

THE PROFESSION AND THE ACT.

Dr. G. C. CRICHTON (Kensington) writes: Friday afternoons for an apparently endless series are devoted to a bewildered and strenuous endeavour to find out the real position as regards the Act and its working and my own conduct ere January comes round. The correspondence in the JOURNAL and elsewhere shows now, I think, glimmerings of light and reason.

A most interesting letter was that of Dr. Skene, of Willesden. He has 473 members of two clubs, from whom he received in the past half-year £57 4s. 10d.—that is, £114 10s. (nearly) per annum. Under the Act as understood he will receive £142 (nearly), provided these members enroll themselves under him, and there is no likelihood of their doing otherwise. This increase, perhaps nearly sufficient to pay the rates, is declared by the Representative Meeting not to be worth looking at. And it is true that it works out at only 1s. 1d. per attendance. This is better than some and worse than many others.

Two proposals have been advocated to provide funds to ensure the 8s. 6d. regulation fee. The one, to take two millions or more from the taxpayer, no Chancellor of the Exchequer would dare to propose. The other invites or insists on the workers themselves contributing sufficient—namely, by the Public Medical Service, in either of the forms elaborated by the late Council. This latter scheme should be at once adopted by every Branch, and according to the result achieved before the end of the year, our triumph will be complete.

The alternative is plain and unmistakable. On the first Monday in January all club practice will cease, and patients will pay cash down. The State Sickness Insurance Committee has omitted to say whether the worker's fee is to be 1s. 6d. or 2s. 6d., or if the modest shilling will be permitted. This should be seen to. Likewise, the hospital staffs must be brought into line, and subscribers to hospitals approached.

There is, indeed, a third scheme which I had almost overlooked. It is suggested rather than detailed by Dr. Manson (August 31st). Myself, being a moderate man, think it sensible and also workable, and therefore advantageous to the profession. By "the profession" I mean in this connexion those who, with every attention to business, make but a small income and are obliged to take this class of work. If a high rate of pay were granted—comparatively high—conditions might be imposed which would prove irksome and interfere with one's freedom considerably.

My interests are concerned more with provident dispensaries than with clubs. What is to be done about them?

ADVISORY COMMITTEES.

Dr. CLEMENT BELCHER (Birmingham) sends the following notes, which he states in a covering letter afford an explanation of the position he has taken up with regard to the Advisory Committee, of which he continues a member, and stating also that his allegiance to the Association is in no way affected by his action.

The negative position taken up by a section of the Advisory Committee appointed under the National Health Insurance Act, by not complying for the present with the behest of the British Medical Association to withdraw themselves from that body, was neither unexpected nor dramatic. Their procedure has positively demonstrated that there are two lines of thought exhibited with the policy of taking such a step. Though it must not be assumed that there is any weakening of the force in furthering the efforts of the Association to obtain the demands enunciated in February by such decision, neither can it be interpreted by the Government that such is the case. If this section consider they can best serve their professional brethren by remaining at their post they are justly entitled to that opinion. All the medical men upon the Advisory Committee were appointed by reason of the specific experience they possessed in their various branches of the profession, and it would be discourteous to the invitation of the Commissioners, to say the least, if they were to resign that position without some justifiable cause; and the mere expression of a certain body of the profession unacquainted with the procedure of their office asking them to resign their posts was certainly insufficient reason to procure this end, and the lack of unanimity among the members of the Committee shows conclusively that it was a mistake at the Liverpool meeting to have placed them in such an embarrassing position, for it must be taken for granted that all were actuated by the highest motives in the interest of those whom they represented. Again, one cannot help but feel that some of the resolutions passed at the Liverpool meeting did not commend themselves to the judgement of all thinking men, as was confirmed by the very evident powerful opposition they met with, and that referring to the treatment of tuberculosis it was the most anomalous procedure ever presented to the profession. Still, notwithstanding this, it is the duty of the members to submit to the voice of the majority of the members of the Association. Yet this must not be carried outside their province, as was the case when delivering commands to the members of the Advisory Committee, and when that resolution was passed it should have been borne in mind that their places could, and will, be filled by other nominees of the Commissioners, and these may be less zealous in the cause, and this to happen would surely be a calamity, considering the great stake at issue.

There, of course, will always be differences of opinion, yet it is most important that every question, however insignificant it may be, should be tempered by sound judgement. There comes a time when every one must decide for himself, and he cannot be swayed by the opinion of any section passing judgement on his position; and when walking in what he considers to be the path of rectitude, fully conscious that he is following the dictates of his own mind, and his convictions are actuated by the highest motives, realizing that his object is honourable and just, then, I say, such a man is entitled to our respect. Then the question may be well asked, Do we always get a true expression of feeling at meetings such as are held by the Association—in fact, at any meeting of a like character?

Are we not dominated by the personality of the chairman, or it may be of an eloquent speech, sometimes which we do not altogether agree with; but because our neighbour, or the crowd, goes such a way, we, animal like, must go with him, and often vote in a manner that in our quiet moments we should have done otherwise?

I do consider in all important issues, let the cost be what it may, a postal method should be adopted. One then can measure the true feeling of the members.

The wave of unanimity among the members of the Advisory Committee undoubtedly reflects somewhat adversely upon the declaration of the policy which was exhibited at the Annual Meeting of the British Medical Association at Liverpool in July. One could not expect coercion to be tolerated, when *all* members connected with the Insurance Act were requested to withdraw and vacate any position they held. This followed immediately upon the resolution carried for breaking off all negotiations with the Government. The wisdom of this procedure is considered by many men qualified to judge fundamentally wrong, and this is corroborated in many medical circles and in con-

temporaneous journals, yet withal in most respectful language, as all consider the deliberations were conducted in a most decorous, dignified, and businesslike manner. Therefore, though the resolution referring to the members of the Advisory Committee was specifically wrong, it was intended to be logically right. These members were appointed by the Commissioners of the National Health Insurance Act, out of which only a small proportion are medical men, to assist them in drafting regulations to properly carry out the functions of the Act; and these medical appointments were at the request of the British Medical Association. Now the question is asked, How will it be possible for the Commissioners, deprived of their specific assistance, to be able to bring to fruition in anything like an effective form a measure that will satisfy the profession as a whole? And considering the gravity of the issue at the present moment and the probability of impending difficulties ahead, one can quite understand that the decision of the members remaining on the Advisory Committee was the proper thing to do. In fact, it was manifestly the only course to adopt, for it seems perfectly unreasonable to expect that anything of a beneficent nature to the profession could be obtained if they were absent; and surely, whatever may be the outcome of the present existing controversy, the medical force upon that Committee must have an influence of beneficial character, and the repute of most of the men forming it is of such a character that we may feel quite certain that the highest interests of their brethren would be religiously guarded, and political motives, and such other irrelevant gossip that has been spoken about, would be the very last thing that would have influenced their deliberations. And we must not forget that still the medical voice upon the Committee will have an influence for good, for it is hoped that the British Medical Association section will be reappointed and will not be interpreted by any one conversant with the circumstances as indicating any weakening of the force to bring about the very best conditions for the security of the interest and welfare of the general practitioner. And, while awaiting the offers contained in the regulations shortly to be issued by the Commissioners, together with a report upon the remuneration of the profession which is being drawn up by a special committee sitting upon this question, it is very necessary and requisite that there should be some well-informed section able to discuss with them the result of their findings. Whether the information contained in such will be of a nature that will meet the expectation of the profession and so satisfy them is problematical; on the other hand, it is most desirable that some responsible body should be in existence to negotiate, favourably or otherwise, with the points at issue.

Unfortunately for the profession, there is a disposition on the part of some of the friendly societies to make capital out of the present deadlock between the Chancellor and the doctors, and they anticipate that the difficulties now existing will be removed by the Chancellor handing back to them the moneys set apart for medical treatment—a procedure which they would gladly accept, for it would retain to them that power now at present exercised over their medical officers, and they consider this a favourable time to assert their views and use their influence to this end, as they interpreted this is what Mr. Lloyd George meant when he made a statement to the effect that he could, as a means of getting out of the difficulty, hand back the amount prescribed for medical benefit to the approved societies; for it is considered quite implicitly by the friendly societies they could properly administer such benefits at the amount spared by the Government actuaries, and make a profit out of it, inasmuch still holding the opinion that there has never existed any abuse or sweating in contract or club practice, accepting the quiet and silent acquiescence of their medical officers to mean that they were perfectly satisfied, and that they would be willing to continue on the scale as of old; and the activities displayed by representatives of the various medical aid institutions prove that some are desirous of obtaining the dominance of medical practice wherever possible, as is the case in some towns at the present time. This, perhaps, would be the greatest calamity that could occur for the approved societies to obtain the power of administering in any form the medical benefits. We must remember their power, too, is very great; look, for example, at the Prudential, with nearly 4 millions. Not only would the present abuses and dissatisfaction of club practice be perpetuated, with all its attendant evils, but would absolutely annihilate any pretence at public health benefit. I take it from first to last that the National Insurance Act is a health reform measure, and for this abuse to continue, better had it never been put on the Statute Book. But this course will not be adopted until every plan has failed. It suits neither the doctors nor the Chancellor. The Government are equally well aware of this principle. And the medical portion of the bill to be administered in this way would be tantamount to failure. It is most desirable, for this Act to be effective, that it shall have the co-operation of the medical profession. Shall this be given? and, if given, at what a price? Whatever it is, whether a capitation grant of 8s. 6d. without drugs, or 8s. 6d. with drugs, such sum it must be at which we can effectively and efficiently carry out our contract of medical treatment. On the other hand, should we not accept any offer made to us by the Chancellor, it is problematical whether any service organized by the profession themselves will thwart or eradicate the present evils of club practice. Many schemes were broached at the Liverpool meeting to provide the insured persons with medical attendance in the event of the possibility of failure to accept the proposals of the Government, inasmuch as they are not compatible with the original demands and fulfilling the cardinal points as enunciated by the British Medical Association in February last; but whatever scheme is introduced for this purpose, whether the Public Medical Service of the British Medical Association or one modelled upon any other lines, it is most important for its success that the extra moneys required for the purpose must not directly be obtained from the pockets of the working classes. The suggestion that the amount now offered by the Government—namely, 6s.—should be supplemented, as to any extra required, by the insured person, is unsound, and would be doomed to failure; those of us who practise among the working classes know only too well the resentment already exhibited by the legal deductions from their wages under the Act. To attempt to put an extra burden upon them for doctoring would be the last straw—they would rebel, and rebel forcibly. Of course, one would be met with the retort: If they cannot get medical treatment by any other means, they must accept. I am afraid this kind of coercion would not be very satisfactory for either side, and I doubt very much if it would be possible to make such a scheme workable. Is the sum demanded by the doctors too high a figure? After a long experience in contract practice I am fully assured, under the new order of things, that it would be impossible to accept a capitation grant of less than 8s. 6d. per annum to efficiently provide adequate medical treatment. Unfortunately, we have in the past accepted less than half this amount as our contract fee to give medical benefits, and in the past we have never raised our voice with any degree of vehemence to call attention to the fact that such sum was altogether inadequate to give efficient attendance upon club patients even under those particularly facile conditions; this silent assent was interpreted to mean satisfaction, for I am persuaded that the leaders of some of the great friendly societies do honestly think that efficient medical administration can be organized for this small amount. The friendly feeling which has existed between themselves and their medical officers one must assume has confirmed this, and they consider as the chief *raison d'être* of our refusing to accept the present offer is not that it is unreasonable, but how much we can get; in other words, the controversy and furore conveys to their minds that we are "out for fees," and it is impossible to get them to think otherwise. It is our duty, not to placate them, but to convict them in a business-like manner that under the new order of medical administration the conditions will be so different that it will be impossible to give proper medical treatment at a less rate than the sum named.

Now, the Chancellor and his staff, when he made the offer of a capitation grant of 6s. per annum, was advised by this section, and the actuarial calculation was based upon these statistics in a like manner. I feel absolutely certain that he considered, by offering us 2s. more than the average present rate of 4s., he was doing us a good turn, under the impression that club practice was a paying game, or could be made one, forgetting that England differs much from Wales, where many assistants are kept; in England very few medical men keep even one assistant. It is therefore now our business to disillusionize him, as well as that section of the friendly societies who agree with him.

Mr. Lloyd George has admitted in an article in the *Nation* that the original basis for medical remuneration was erroneous, and previously he said that the Government may be willing to increase the amount provided that the profession co-operate with the working of the Act.

We must assume that whatever increase it is intended to add to the present amount will not be made until

the result of the Special Committee now sitting upon this matter has been issued in the shape of a report, together with the information and knowledge gained by the recent investigations undertaken by Sir William Plender with regard to medical remuneration generally. These reports will, it is understood, form a basis from which it will enable the Chancellor to make, it is right to assume, what he thinks a fair and reasonable offer to us for contract work. It is for us to dogmatize upon this point when we receive the amount.

We have had definite promises from the Government to the effect that they were equally desirous with ourselves to put an end to club practice in its present malignant form, with its attendant scandals and inefficiency, especially from a public point of view. It is very desirable that we should give every assistance in this direction. From the first to the last line this Act should be read as a health bill; and if it is to be of any real benefit to the nation this must be the plank first in the front. This will in the end benefit the profession, and if the ideal is reached when sickness is so much reduced the duties under the Act may be so much less that it may in such a case be possible to reconcile ourselves on the present requested capitation fee. But to look to things as they are, suppose the Chancellor's proffered amount does not meet the approbation of the profession, and thus fails to remove this malignant form of club practice, which would still be the case if left in the hands of approved societies, then the British Medical Association is prepared to establish a method of medical organization by which all the working classes can receive efficient treatment when ill or otherwise incapacitated from work, though I would say emphatically that every other means should be tried before this is put into effect. I can speak from bitter experience how difficult it is to place any scheme upon the working man which he does not like, and I feel certain he will not take kindly to this. The statement has been made that the scheme of Public Medical Service would have the co-operation and support of the working man who is a union man himself. I am of the strong opinion that this would not be the case. Many to whom I have spoken, trying to win their allegiance, are against it—in fact, deadly opposed to it. It has no compulsory power; hence they would fall back upon the old order of things, and make confusion worse confounded. They argue, from the reasons above given, that we have taken up a syndicalist position; again, the prestige given to a State governed scheme, with its recognized officials, sets a seal upon it, and would be much more likely to be successful than one of our own with no official power or penalizing measures to compel recalcitrants to join or secedents to pay their fines, and from a public health view this would be inimical to the scheme, and the thoughtful working man is looking at the measure from this aspect (public health) as much as anything else, and it is him whom we have to consider.

The question, then, is asked: How can the controversy be finally settled? Supposing the Government cannot see their way to meet the amount required by the profession; as above mentioned, this is a health measure, as such benefiting the insured and uninsured alike. Therefore, the discretory powers of the Commissioners of the National Health Insurance Act must be exercised to obtain the extra amount required—namely, the county councils, the Treasury—and a further addition may be very properly obtained from the approved societies, that is, from their administrative funds; it must not be met by a levy upon the pocket of the insured person directly, if it is to be successful. But will the Government refuse to accede to the modest requests of the profession? I feel sure if satisfactory evidence can be adduced that the amount named is an equitable and just sum it will not, in the interests of the health of the nation, let such a prospect go by default. There is no doubt whatever that the Plender report is misleading. No one challenges the accuracy of the figures as far as the information was obtained, and that it is a masterly statement from a statistical point of view, but it can be of no use as a basis for calculation for the purpose intended; 4s. 2d. is the amount per head stated to be the amount of money at present for medical treatment. Well, if we look at it purely from the standpoint of results, one may say it is dear at that. For if we consider the physical degeneration which certainly exists, as proved by school inspection and the returns from recruiting officers, where we find in some places as much as 85 per cent. are rejected for some physical defect, and the increase of our asylum inmates, which is the aftermath of a neurotic generation, the product of physical and mental deterioration; if we are to have a better physique we must pay for it. Karl Pearson says the greatness of a nation is not in wealth, in its gold, its navy or its army, but in the class of men and women it turns out.

The Poor Law Commission definitely proved that a large percentage of destitution was caused by and the result of sickness and ill health, and consequently a degenerate population. To deliver us from this it will be wise for the Government to placate the only profession that can eradicate the rot.

But to return to the Plender report. It reveals that 1.8 attendances were given to communities under survey. Now an average for the ordinary club patient attendances is 4.9; how are we to reconcile this? One reason is stated that a club doctor gives more visits than is necessary in order to keep his *clientèle* together. The competition of club practice is of such a degree that unless he gave them a good deal of attention they would change their doctor. Again, the dominating factor may be the club patient himself, who is always (having no bill to pay) calling in the doctor when there is very little reason, knowing he cannot refuse or else a complaint may be raised against him: and for these reasons the doctor, ever with the spectre of dismissal hanging in front of him, gives attendance even in excess of what the private patient gets, for here he must not visit too frequently for fear of being accused of running up a bill. In other cases, it is said, to have the appearance of being a busy man and popular, he gives more visits than are necessary. All such talk is pure nonsense and surmise. I have had a long experience of club work, and neither myself nor my staff put in a visit more than is really requisite, and we tell our patients quietly but forcibly when we consider they are sufficiently well to no longer need the doctor's services—in their own interests and also for the financial welfare of the societies. Yet withal our returns show 4.3 attendances (3.5 at surgery 0.8 at home) per head per annum of the whole number contracted for; this correlated, and taking Sir William Plender's report as a basis of remuneration, would be 4s. 2d. × 4.3, alongside which the figures requested by the Association is most modest; and when the Chancellor has evidence that the amount demanded by the profession is not exorbitant—and above is some evidence it is not so—logically it should be granted, and the additional sum will be provided from some source should other national demands less urgent be postponed for a time. By allotting such a vast sum for tuberculosis shows the Government is not blind to the fact that the health of the people is the chief consideration, and anything in the shape of a degenerate character would be a national peril; in the past medical men have exhibited sufficient *esprit de corps*, often at their own cost, to win the approbation of the nation; they also show they are willing to co-operate to obtain the ideal standard of health for the nation so long as it does affect their commercial vitality: then surely the Government, witnesses of this spirit of true magnanimity, will not callously see them financially suffer for their support.

From my standpoint the present measure will not stop here; of so great an import will it become with the present exhibition of progress for public health legislation that eventually will be evolved a State Board of Health with a Minister of Health of Cabinet rank in some ways on the lines of a scheme Professor B. Moore advocates. We are already in the throes of the greatest changes in the history of our profession, which is intimately connected with the general welfare of the country, and a powerful central authority is required to bring order out of the present chaos of medical affairs, condition of contract practice, abuse of hospitals, the increase of quackery and sale of patent medicines, the deadlock of the Insurance Act, the overlapping of many of the present medical services, is to mention only a few which urgently call for co-ordination and effective organization to equip and build up an effective national administrative body to mitigate and stamp out those malignant ravages of disease which are eating out the vitals of our population. In this way can the existing anomalies of health administration be properly dealt with.

SIR WILLIAM PLENDER'S REPORT.

Dr. E. M. BROCKBANK (Manchester) writes: Dr. W. Owen Williams, I am sure unintentionally, misrepresents me in saying that I *assume* the average fee for town and country visit and medicine derived from the working-class population to be 2s. 6d. Knowing the variations in fees received either from private contract practice (13s. a year for a whole family in some towns, 19s. 6d. in some districts, 52s. or 104s. a year in others) or in ordinary practice (1s. to 3s. 6d. a visit), I was particularly careful to refrain from assuming any weighted average fee for all working-class

patients. I considered that the Plender report, as offered to us by the Government as a basis of settlement of the fee question, gave us information which we could use in calculating such an average fee. The fact is that I calculated the 2s. 6d. as the result of certain assumptions, which I was careful to point out were nothing but assumptions—namely, the number of income-tax paying or best-class patients (one-eighth of the population) and the relative amount (four times) paid per head of them as compared with that paid per head by the working class, or average patient; the country population of the report; and the number of poorest patients who pay nothing at all. If he thinks the 2s. 6d. too high a fee, it would be helpful if he will say which of these assumptions is or are unsatisfactory. As Dr. Williams says that mileage is to be paid for separately, we can make a calculation from the facts of the report of fee per visit for the towns only, and with less chance of error from assumption. Thus, let us take the total population of the towns (406,000) and include all the Poor Law and hospital patients to affect the average fee per head as much against the doctor as possible; assume that one-eighth of the population pay on an average four times per head what the rest do, and also assume that the 42,000 club members receive only the same number of visits as the ordinary class patient. We shall then get 556,000 patient units (356,000 ordinary patients + 50,000 × 4) for whom would be received £84,000, that is, 3s. per head of the working class and poorest population, and 12s. per head of the others. For this sum 1.3 visits would be paid, that is, nearly 2s. 4d. per visit in the towns only. For 3.5 visits this would amount to 8s., and if we allow for the fact that no medicine was allowed in Dundee, we about reach the 8s. 6d. of the Post Office for advice and medicine. Of course, the weak point in my calculation is the assumption that the average amount paid per head of the income-tax paying class of patients is four times that of the working classes for advice and medicine only, not for midwifery, operations, special treatment, or consultations, be it noted. It may be more or it may be less, but accurate information on the point is, as far as I know, entirely lacking. If any one can provide me with it I should be glad.

Dr. W. Owen Williams writes: I have no desire to occupy your space with what might have the semblance of recrimination, but bare justice requires that I shall be allowed to reply to some statements made by Dr. H. Roberts in your issue of September 7th.

He asserts that I am an ardent supporter of the present Government. I do not take an active part in politics, as he is well aware. Dr. Roberts, in the rôle of a non-party man, will cause amusement amongst his colleagues. I do not propose to follow him into the mass of verbiage contained in the press articles alluded to; suffice it to say that both the advocates and opponents of the Act have claimed him as a supporter. I have no doubt at all that he has "systematically" pointed out various things in the Act.

Regarding the Plender report, with which we are directly concerned, I showed that Dr. Roberts's arguments and conclusions were utterly fallacious. His reply is a reiteration of his previous untenable statement. I leave it to your readers to decide whether the 2s. 10d. represents the *average* fee derived from *all* classes of society, or that obtained from the working class alone. It is the fee derived from the latter class that must be estimated in any comparisons between present private practice and the conditions obtaining under the Act.

The poverty of East London is much exaggerated. The mass of workers earn a living wage, and a fair percentage exceed this. The doctors are badly paid, because some of them choose to accept ridiculously low fees from patients who are able to pay at a much higher rate. The evil of medical practice here lies in unfair competition, a section undercutting their fellows by charging an almost uniform low fee, irrespective of the patient's income, whether he be a casual labourer or a comparatively well-to-do tradesman or artisan; whilst another section endeavours to secure something approaching adequate remuneration commensurate with the patient's means. I welcome the Insurance Act because it will appreciably level the conditions, and help to curb the ultra-cheap doctor with his "large" practice. This type of practice is a travesty of scientific medicine. Had the Association endeavoured to suppress it, I would have more sympathy with the demand for a high *minimum* capitation fee.

Dr. Roberts will no doubt recollect that some time ago an article entitled "The Sixpenny Doctor" appeared in a morning paper, describing an East End practice of this character. The writer abused doctors as a class, and stated that he saw daily 100 patients at his surgery, 50 at their own homes, and attended 500 cases of midwifery a year. He accomplished this feat without a "hired brougham," and incidentally remarked that his income "ran comfortably into four figures." I think Dr. Roberts, and medical readers generally, will admit that however "energetic" such a practitioner might be, his methods could scarcely be described as "capable." It is devoutly to be hoped that the Insurance Act will not add to this sorry specimen of practitioner, but will attract men who have a greater respect for the dignity of their profession without losing any sympathy for the poor.

The Sanatorium Benefit.

Dr. Charles Buttar (Kensington) writes: I am sorry for Dr. Heggs, for it was his persuasive eloquence which largely helped to induce a majority of the Representatives to pass a special resolution in connexion with sanatorium benefit, Dr. Heggs allowing his enthusiasm as medical officer of health to deprive him of all ordinary business acumen; and now he demands that the State Sickness Insurance Committee shall clear up the mess by concocting further schemes for the benefit of unappreciative laymen, and he appeals to this Committee as "our leaders."

Had there been no inner meaning in Dr. Heggs's resolution it would have been harmless though unnecessary, for there is not really any difference whatever between sanatorium and medical benefits so far as the medical profession is concerned. To say that we approve of sanatorium benefits provided our terms are granted is to say exactly what we have always maintained about medical benefits. But inasmuch as the argument for the resolution was not only to enable us to retain the support of public opinion, but also to enable certain members of the medical profession to retain lucrative posts, we have only ourselves to thank if this display of weakness renders our position difficult, makes even our main principles doubtfully obtainable, and encourages certain medical officers of health to attempt to gain control of the treatment of tuberculosis.

When Dr. Heggs appeals to the members of the State Sickness Insurance Committee as "our leaders" I only wish that we might so regard them; but I am strongly of opinion that if they attempted to lead they would meet the fate of the old Council. The Representative Body is far too nervous and jealous to allow any leaders to exist. Dr. Heggs wishes this Committee to give a lead in the matter of sanatorium benefit. But why should the Association be occupied continually in elaborating schemes for people who do not ask for its assistance? It will be quite time enough to do this when the laymen who run philanthropic schemes condescend to ask the Association's advice.

Let it not be thought that I wish a deaf ear turned to every suggestion, or that I am against negotiations with authorized bodies when there is anything negotiable in view. But, until essential points are settled, it should be left to the other side to make suggestions; any such suggestions should be referred to the State Sickness Insurance Committee for discussion; advice should be given only when asked for; and in the meantime the energies of the profession should be devoted simply to rendering the position impregnable by organizing locally in support of the principles already laid down. So long as individual members of the profession worry their heads about making the Insurance Act work, so long will the attainment of our desires be doubtful. Philanthropy and business make a doubtful pair; and I venture to suggest that at the present time we should do well to be businesslike first and philanthropic later on.

Dr. J. Cuthbertson Walker (Rochdale) writes: For several weeks past a resolution of the last Annual Representative Meeting has appeared on the front page of the Supplement as follows:

That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such appointment* shall be submitted to the Council for its approval.

* "Appointment" means any professional work.

The note which lays down the definition of "appointment" does not appear in the original resolution as reported on page 170 of the SUPPLEMENT of July 27th, 1912, and seems to have been added by direction of the State Sickness Insurance Committee. I entirely dissent from their definition. It would have been more in keeping with the general tenor of the resolution if "any work" had been defined as work in connexion with any recognized sanatorium appointment. One has a lively recollection of the attempt of the last State Insurance Committee to make Resolution 78 of the February Representative Meeting apply to the working of sanatorium benefit, though it is abundantly clear that at the time that resolution was passed sanatorium benefit was not being considered at all. From this procedure general stultification of the Association resulted. This interpretation of Resolution 78 of February, 1912, was by implication repudiated by the Representative Body itself, for that resolution was never rescinded, though working sanatorium benefit is now allowed, under conditions.

No doubt the State Sickness Insurance Committee has acted from the best motives. I believe that in the struggle which lies ahead we shall only stand together if we believe in one another's honesty of purpose, though we differ in opinions and conclusions. Though I have been a Conservative for many years, I see no reason to doubt Dr. Addison's sincere desire to do his duty towards the profession. Indeed, no one seems to have seriously attempted to answer his arguments. Above all, let us cease to attribute to one another political motives.

Let us stand together for the recognition of our status and for adequate remuneration. But as regards the method of payment, why should uniformity, even in the area of a Division, be insisted on? Personally, I much prefer an adequate capitation fee. But I have no desire to coerce the man who prefers payment per attendance, and I expect the like consideration from him. There is no insuperable barrier to both methods being operative in every insurance area.

PROPOSED PUBLIC DENTAL SERVICE.

Dr. R. R. RENTOUL (Liverpool) writes: When, as far back as 1889 I proposed the formation of a public medical service, I suggested that it should contain a dental department. This failed to be done. I now propose that dentists establish a dental service. One was formed at Brighton in 1907. A society to which five of us act as medical officers has a dentist (with graduated scale of fees) attached. Part 2 of Schedule 4 of the Insurance Act provides for dental treatment as an "additional benefit." Already a fair number of local educational authorities have appointed a dentist to a dental clinic, and it is probable that if the dentists fail to establish and control a dental service of their own, every educational authority will have its dental clinics.

NATIONAL INSURANCE ACT.

APPROVED SOCIETIES.

A LIST of the societies approved during August, 1912, by the National Health Insurance Joint Committee and by the Commissioners for England, Scotland, Ireland, and Wales respectively has been issued.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

EIGHTIETH ANNUAL MEETING

OF THE

British Medical Association.

Held in Liverpool on July 19th, 20th, 22nd, 23rd, 24th, 25th, and 26th.

EXHIBITION

OF

FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

(Continued from p. 284).

AMONGST the synthetic drugs shown by the BAYER COMPANY (19, St. Dunstan's Hill, London, E.C.) was Adalin, a derivative of urea combined with bromine. It was brought out a year or two ago as a safe and efficient sedative and hypnotic, and we were informed that its use has grown rapidly. Another was Sophol, an organic silver compound, claimed to be an efficient bactericide and yet entirely unirritating to delicate mucous surfaces. It was dealt with in a paper which was published last year by an ophthalmologist, who had had considerable experience of its use and found it to be of the character stated. A third and newer remedy was Cycloform, which we understand to be a benzoic acid derivative. It was stated to relieve the pain of ulcers, burns, and other allied conditions, and to assist materially in the healing. Since it is almost insoluble its action would be purely local. It was also said to have been found useful in haemorrhoids and eczema. A drug of a somewhat different order was a combination of Iron with Sajodin, an organic salt of iodine, to which we drew attention some years ago. It bore the title of Ferro-Sajodin, and is specially intended for the treatment of rickets in children and allied conditions. A further synthetic compound was Hydrastinine Hydrochloride, which was stated to be of the same utility in gynaecology as the natural alkaloid. Many of the older compounds of the firm, such as Spironal, Jothion, Protargol, and Veronal-Sodium, were also on view.

Well-made glass ware of all kinds for hospital and laboratory work was a prominent feature on the stall of R. B. TURNER AND CO. (11 and 12, Foster Lane, Cheapside, E.C.). Among it were some ampoules for holding serum and the like, made of a special glass. This was named Fiolax, and was claimed to be absolutely free from alkali. Another exhibit which attracted attention was a simple and inexpensive apparatus stated to have been designed by Dr. Alexander Fleming of St. Mary's Hospital for the injection of salvarsan.

The glandular and other allied preparations shown by Messrs. ARMOUR AND CO. (Atlantic House, Holborn Viaduct, E.C.), included Medullary Glyceride or glycerine extract of red bone marrow, which was stated to be prepared from the bones of young animals and chemically pure glycerine. It was added that it combines readily with arsenic, nux vomica, Easton syrup, and drugs. A lecithin preparation, named Glyco-lecithin, was stated to be an emulsion of freshly isolated lecithin, and was put forward as a nerve stimulant capable of promoting nutrition in the various neuroses, and also in tuberculous and anaemic patients. The other preparations belonging to the organo-therapeutic class included mammary, orchitic, ovarian, pituitary, and prostatic substances. Pepsin figured largely in scales, granules, and powder, and was also presented as a glycerole and essence. In combination with other digestive ferments, it was shown as Elixir of Enzymes, which might possibly be found useful as a substitute for after-dinner coffee by those who live well but not too wisely. Vigoral, a semi-solid beef extract, was again on view, this year being shown also in the form of cubes. These can be eaten as they are when travelling, or used for the preparation of a hot and cold bouillon in various circumstances. Also worth noting was the firm's junket powder. It is dry, and will keep sweet, we were informed, almost indefinitely.

A large number of pharmaceutical specialities of a kind useful to general practitioners who do their own dispensing, and others which are prescribed and used in surgical and medical work, were shown by W. A. WHARRAM, LIMITED (115 and 117, Vicar Lane, Leeds). Among them was Unguentum Epithelium, which was stated to contain 8 per cent. of Biebriech's scarlet red, and a compound hypophosphite syrup stated to be prepared without the use of any acid, and hence to be entirely neutral. It gave a flocculent precipitate which dissolved readily on shaking, and it appeared to be inexpensive. The considerable number of useful surgical instruments on view included some well-turned-out syringes for the administration of serum.

The exhibit of QUIBELL BROS., LTD. (Newark), was a disinfectant named Kerol, which is stated to have a carbolic coefficient varying between 10 and 35, according to the germ used as a test, and to be non-irritant and non-corrosive. It is a somewhat highly-coloured oily fluid, apparently belonging to the coal-tar series, and forms a milky solution on being added to water. It was shown in various forms, including surgical and domestic soaps, an ointment, a household disinfectant powder, and in capsules for internal administration.

The exhibit of E. T. PEARSON AND CO. (49, Watling Street, London, E.C.) included Lactagol, which was stated to be an extract of cotton seed and to be a galactogogue of proved efficiency. This view obtains considerable support from a number of papers published in French and German medical papers at various dates, and more particularly from one by Dr. Paul Barlerin, which was presented on his behalf to the Academy of Medicine in Paris by Professor Gilbert, and records his experiences. Details of the analysis of the milk of each nursing mother before and after the administration of Lactogal are given. Also on view were a series of semi-liquids and ointments shown under the name of Vasogen preparations. Vasogen was explained to be the trade name of a partly oxidized mineral oil, consisting mainly of hydrocarbons. It is claimed to have proved itself an ideal vehicle for drugs, since it is rapidly absorbed by the skin and causes no irritation. The series included preparations of iodine, creosote, menthol, guaiacol, sulphur, iodoform, and mercury in various percentages.

The stall of CEREBOS, LTD. (Greatham, County Durham), provided a good idea of the various processes which eventually lead to the appearance on the dining table of the salt familiar under this name. Its primary source is brine lying in the interstices of large rock salt deposits near the coast of Durham, specimens of which, as well as of the brine, were on view. The brine is then submitted to evaporation processes, and the resulting crystals are ground to a fine powder; some 3½ per cent. of phosphates are then added, the whole process from beginning to end being performed by machinery. The object of the addition of the phosphates is double: they help to keep the finished product in a dry condition, and they are regarded by the firm as dietetically useful, inasmuch as they replace the phosphates which are initially present in cereals and many other food constituents, but are destroyed in the course of their preparation for consumption. The company, we were informed, is now extending its operations, and its plans include the provision of something on the lines of the modern villages for workmen which other great manufacturing firms have created.

The exhibit of EVANS, SONS, LESCHER AND WEBB (56, Hanover Street, Liverpool) included many pharmaceutical specialities and a number of bacterial vaccines and serums. Among the former were some preparations all bearing the general title of Membroids. Their intention is to facilitate the use of various drugs, such as ipecacuanha, aspirin, and guaiacol, which are valuable in themselves, but liable to produce undesirable effects if set free in the stomach. Hence, in this series they were enclosed in a thin membranous covering, which was claimed to be resistant to acids but soluble in alkali, and thus to pass through the stomach unchanged, but dissolve in the duodenum. From a statement made in a recent Hunterian Lecture, it would appear that this claim is not ill-founded. Another preparation was Algiron, this being a salt of alginic acid and iron. It is a tasteless powder, which does not blacken the teeth, and was stated to be laxative rather than astringent, to pass through the stomach unchanged and therefore not disturb digestion, and to bring about an increase of the haemoglobin contents of the blood with considerable rapidity. These claims, too, have received clinical support in a paper published in one of our contemporaries. The bacterial products were stated to be prepared under the direct supervision of Dr. H. E. Annett, formerly Professor of Comparative Pathology at the University of Liverpool.

Of the exhibits of the amalgamated firms of KEEN, ROBINSON, AND CO., and J. J. COLMAN, LTD. (Denmark Street, St. George's in the East), Robinson's Patent Barley, and the same firm's patent groats, are both decidedly useful, the one for the preparation of barley water; the other for that of gruel, a nutriment which in dealing with children after weaning and with convalescents might well be used with greater frequency than has been the case of late years. Colman's Mustard was shown in three guises—as ordinary mustard powder, as Colman's Sinapisms, and as Medical Mustard Bran. They are all excellent preparations, constant in strength, and easy to use. The progress of science has abundantly proved the underlying wisdom of a good many ancient ways of meeting attacks of disease, and among these must certainly be placed the use of mustard plasters as a counter-irritant and reflex alterative of the circulation in deep-seated organs. There is much, too, to be said in favour of that old-fashioned way of dealing with a chill, which consisted in immersing the feet in a tub of hot water and mustard, swallowing some pleasant-favoured hot posset, and jumping into a well-warmed bed. The special object of the medical mustard bran is for application in lumbago, or any condition in which warmth and prolonged but very mild counter-irritation is required. It fulfils these ends very well, taking up large quantities of water, and being both cleanly and comfortable.

The series of pharmaceutical preparations exhibited by SYMES AND CO., LTD. (Pilgrim Street, Liverpool), included a granular effervescent salt called Lithosalus, which was stated to be a combination of lithia and aceto-salicylic acid. A preparation of the elegant class, entitled "hydrobromic syrup of hypophosphites," was stated to represent hypophosphites of iron, lime, potassium, and sodium in combination. Another preparation shown was lac bismuthi, this being the trade name of a mixture containing bismuth hydrate. It was shown also in combination with cerium hydrate for use in the treatment of vomiting in pregnancy. The exhibit also included some sprays, an ointment for the amelioration of catarrh, and a number of fine liquors.

The exhibit of the authorities of BUXTON served a triple object. One was to accentuate the fact that Buxton water, which is practically free from chlorides, can now be obtained in bottle form for use as a meal-time beverage by persons of gouty habit; another was to supply visitors with some idea of the natural advantages which this inland elevated health resort presents; while a third was to prove that those interested in the prosperity of the place have made every endeavour to fit it with good hotels and all the latest balneological devices. A detailed account of the latest developments at this spa was given at page 256 of our issue for August 3rd, 1912.

The products of chief interest shown by LIEBIG'S EXTRACT OF MEAT COMPANY (Lloyd's Avenue, London, E.C.) were lemco and oxo. The former is, under another name, the preparation on which the firm originally founded its repute, the word "lemco" being made up of the initials of the company's name. It is entirely free from fat, and, as is well known, readily dissolves in water. Oxo, though a somewhat younger claimant to popularity, is now almost equally familiar. It is a compound of meat extract and meat fibre with the addition of flavouring matters. On the addition of hot water a stimulating and pleasant drink, with a full beef-broth flavour, results. It is also put up in a form specially intended for the sick-room, called nursing oxo; in this all flavouring agents are omitted, in order that they may be added in the sick-room according to the varying tastes of invalids. Also of some interest in medicinal connexions are the penny tablets of

beef extract known as "Bifti." They are intended for use either in the sick-room or for ordinary domestic purposes. They render possible the immediate preparation of a very good soup, and, being both portable and cheap, should be useful to those engaged in district nursing and allied work.

The many cleverly-devised and well-made orthopaedic appliances shown by Messrs. C. O. HOEFFTCKE (21, Woodstock Street, Oxford Street), included the firm's splint for the immediate treatment of fractures without rest in bed. bed. When the lower limb is in question the weight of the body is transmitted straight from the tuber ischii to the ground, and restoration of the limb to normal length secured by counter-extension likewise having the tuber ischii as a starting point. Alongside this splint were photographs and diagrams of patients under the care of well known surgeons. They showed specimens of this splint in use and that the fractured ends of the respective bones were being maintained in good position despite the fact that the patients were practically using the injured limbs. The same principle was also shown to be used in instruments for the treatment of joint tuberculosis, especially hip disease, without detention in bed. It also played a part in the firm's artificial leg for use after amputation high in the thigh. The other orthopaedic appliances included a splint for correcting that displacement of the tibia backwards which is so frequent a consequence of tuberculosis of the knee-joints, and one for gradually straightening the knee when the leg has become flexed on the thigh. In both these steel bar traction was used for gradually bringing about a correct position. Samples of the firm's corsets for the treatment of lateral curvature, and its special beds and other devices for the benefit of cases of spinal caries, were also upon view.

Two disinfectants were shown by Messrs. NEWTON, CHAMBERS, AND Co. (Thorncliffe, near Sheffield, Yorks). One was Izal, which in the refined form for medical and surgical use is a slatey white emulsion, containing some 45 per cent. of izal oil. The latter, otherwise known as coke oven oil, is distilled by the firm at its own extensive ovens at Thorncliffe. The variety of forms in which it was shown included, in addition to medical Izal, a fluid for ordinary disinfection purposes, Izal perles for internal administration, Izal gauze and cotton-wool, a soap for use with hard water, and a lubricant for surgical, obstetric, and ordinary domestic use. According to laboratory tests the carbolic coefficient of medical izal is as high as 7.7, while to its practical value in surgical work, as a drug for internal use, and in public health connexions ample testimony has been forthcoming in various clinical papers in the medical journals. The other disinfectant was Kymol, a brown fluid which is stated to have a comparable bactericidal power, and has presumably been brought out because a perfectly clear solution can be prepared from it.

Among the various surgical appliances shown by ALEXANDER AND FOWLER (Pembroke Place, Liverpool), who hold appointment to many of the Liverpool hospitals, were several well-turned-out specimens of ward furniture in opacline. One was a table which folded into a very small space, but opened out to full bedside size. Another was a table with a top adjustable to various heights, so designed as to enable it to stand over a bed or operation table and hold the instruments in use. Appliances for the ocular examination of the bladder, ear, larynx, and nose also figured largely, among them being some specimens of the Wolfe cystoscope fitted with a Zeiss eyepiece, and the urethroscope of Oberlander. The naso-pharyngoscope of Holmes was also shown. The catheters included the self-retaining catheter devised by Fiolle, while some opaque tubes for *x*-ray work within the oesophagus were also shown. Some splints and other appliances on view were especially light, and had the general appearance of nickel-plated instruments. They were stated to be manufactured from a new alloy of aluminium which is quite unaffected by solutions of mercury, little affected by either salt or fresh water, and remaining bright without rubbing longer than electro-plate or silver.

Diabetic foods of all kinds were shown by Messrs. CALLARD AND BOWSER (74, Regent Street, London, W.). These included biscuits stated to be practically free from both starch and sugar, preserves and beverages almost, if not absolutely, sugarless, and certainly very palatable, and two starchless breads. One of these was a brown bread named Cellulon. When cut into thin slices and buttered it is an excellent bread for use with fish and the like, and those eating would, we think, be unlikely to detect that it was not ordinary brown bread. Nevertheless, the contained carbohydrates, according to the analyses supplied, are considerably less than 2 per cent., while the hydrocarbons and albuminoids are as high as 18 per cent. and 19 per cent. respectively. The Prolacto Bread, on the other hand, is white, and in texture, appearance, and taste has a greater resemblance to ordinary bread than the vast majority of its congeners. Nevertheless, despite its close resemblance to ordinary bread in other ways, the carbohydrates are stated to be well under 1 per cent., the albuminoids being nearly 34 per cent., and the fat a little over 17 per cent.

The newest product shown by Messrs. FAIRCHILD BROTHERS AND FOSTER (Bath House, Holborn Viaduct) seemed to be Liabose, which is put forward as useful to those who wish to avail themselves of a milk and cereal food in concentrated form. It is stated to be composed of whole wheat converted into a soluble form and then mixed with unskimmed milk and dried *in vacuo*. In the finished state it is a granular and decidedly palatable powder, which can be eaten as such or mixed with water. Among the digestive products for which the firm has long had a high reputation was hormonadin, which is stated to be a glycolytic extract of all the soluble contents of the pancreas other than trypsin, amylopsin, and lipase. Holadin, on the other hand, represents all the constituents of the pancreas, and is stated to be especially strong in amylolytic and lipolytic enzymes. This last preparation also figured as holadin bile salts, the latter being represented by sodium taurocholate and glycocholate. They are put up in capsules, of which one is taken three or four hours after meals. The two preparations together seemed to provide converse methods of dealing with disorders of metabolism attributed to faulty pancreas action. Among the older preparations shown were pepsencia, zymine, diazyme, peptogenic milk powder, and lecithin, both as a glycerole and as an elixir. The name "pepsencia" is self-explanatory, while zymine and diazyme are both pancreatic extracts, the former being a powder, the latter a fluid. Other preparations noted were enzymol, an external application intended for the treatment of sloughs and exuberant granulations by digestive action, and enemose, a ready-made rectal nutrient.

Appliances for the rectification of various physical defects formed the staple of the exhibit of Messrs. SALT AND SON (5 and 6, Cherry Street, Birmingham), but several devices for facilitating medical and surgical work were also on view. Among the former was the firm's Patent Varus boot, which aims at securing due eversion of the front of the foot in a very simple fashion. Practically it is a boot in three parts—a back "upper," which is laced round the ankle and heel, and a front upper, which embraces the rest of the tarsus and metatarsus, and is drawn with the contained foot into a line with the sole. It is then kept in place—that is, slightly over-everted, by two straps, one connected with the outer side of the ankle, and the other with the front of the sole. When applied the boot is by no means unsightly, and but little over the weight of an ordinary boot. The firm's two appliances for dealing with dropped kidney, the one suitable for male patients, and the other for women, were also on view. Among the general devices were the Saltair Cautery Resistance, which is intended to enable a medical man to use for electro-cautery purposes the accumulator from his automobile, and the new form of abscess knife described by Dr. Cameron Kidd in our columns last June. It aims at diminishing the pain caused by the opening of an abscess by avoiding contact with the sensory nerve endings until their deeper connexions are divided. In principle it is a development of the old Syme's knife, but has a much sharper curve and a much narrower blade.

The instruments shown by Messrs. REINER AND KEELER (9, Vere Street, W.) covered nearly all appliances used in ophthalmic work other than that of an operative kind. The colour perception instruments were those devised by Dr. Edridge-Green, and included his lantern and the bead test. The latter is one of a very simple kind for daylight work and in a measure is self-recording. Two scotometers by Bardsley were on view, one being a self-registering appliance which is made solely by the firm exhibiting it; the other, as now made, has a stiffened disc and guide bar. The need for precise determination of the distance between the centres of rotation in cases of squint and other allied conditions was met by a very ingeniously constructed base-line gauge recently shown at the Royal Society. Of two projection lamps one was made for hand use in operations, and the other had a stand for refraction and other work. For use in connexion with it when required were two appliances for focussing the light for transillumination of the frontal, ethmoidal and antral cavities. We also noted some specimens of the stereoscopic pictures devised by Cunningham for the training of the fusion sense in children, an ophthalmoscope by Thörner which is not suitable for refraction work but supplies a wide view of the fundus with an undilated pupil, and a very delicately constructed instrument for testing the accurate centering of lenses. The work which the firm does in the way of making up prescriptions for glasses was also well illustrated by a series of different pattern frames, bifocal lenses, some telescopic lenses for specially high myopia, and others equally tinted throughout the whole field.

The exhibits of the THEINHARDT COMPANY (Catherine Court, Trinity Square, London) were Hygiama and Infantina. The former is, we were informed, prepared from dextrinized cereals, with the addition of dried cow's milk, lactose, and ordinary sugar, the whole being flavoured with chocolate. Pleasant beverages can be prepared from it with little trouble, and it can be turned into a variety of dishes. It is also made up into tablets, and in the latter form seems to have been considerably used by explorers. Its composition is stated to be protein 21 per cent., fats 10 per cent., soluble carbohydrates 49 per cent., insoluble carbohydrates 11 per cent. The salts represent over 1 per cent. phosphoric acid. Each double tablet is stated of supply twenty-four heat calories. Infantina is a corresponding preparation containing less protein and more soluble carbohydrates.

The bactericide familiar under the name of Cyllin was shown by Messrs. JEYES' SANITARY COMPOUNDS COMPANY (Cannon Street, E.C.). Its manufacture is stated to have originated in a suggestion as to the relation between chemical structure and physiological action thrown out by Sir Lauder Brunton in his Croonian lectures a good many years ago. The special claim made for it is that, despite its high bactericidal power, it is relatively non-toxic; it is stated to be at least ten times less toxic than carbolic acid. The forms in which it was shown fell, roughly, into four classes – surgical, medical, toilet, and household. The first included a refined cyllin stated to have a Rideal-Walker coefficient of 20; cyllin dusting powder, stated to be a reliable substitute for iodoform; liquid cyllin soap, for use before operations; and an ordinary surgical soap, which, like the former, is stated by the firm to be equal in power to 50 per cent. pure carbolic acid. The lint, wool, and gauzes for use in the dressing of wounds also fell into this class; they are impregnated with 5 per cent. cyllin. Into the medical class came cyllin inhalant, devised as a means of treating bronchial catarrh of a septic order; cyllin perles, for use when it is desired to attempt to produce a relatively aseptic condition of the intestinal tract; and cyllin syrup, for the treatment of diarrhœa in infants. The toilet class included a tooth powder, cyllin combined with lanolin, and some ordinary sanitary towels, named "cyllinettes." The household class was formed of a bar soap and a cyllin sanitary powder.

Most of the exhibits of the ANGLO-AMERICAN PHARMACEUTICAL COMPANY (Galen Works, Dingwall Road, Croydon) were those familiar under the name of the Huxley Pharmaceutical Products, but in addition was shown nephritin as prepared in the laboratories of Messrs. Reed and Carnrick, of Jersey City, U.S.A. It was stated to be an organic preparation based on the researches of Renaut, and believed to represent the more important cells of the cortical substance of the kidney. It was described as of proved utility in several forms of renal disorder, but as of only secondary value in amyloid degeneration and renal tuberculosis. Peptenzyme, another product of the same laboratories, was stated to represent the nucleo-enzymes derivable from the salivary glands as well as from other parts of the intestinal tract. Comparatively new among the Huxley products was a protein food, which is stated to contain 51 per cent. of milk proteins and also certain organic phosphorus-containing compounds. The large series of glycero-phosphates included a nascent glycero-phosphate triturate, devised in order to keep each element separate until the tablets are swallowed, and thus secure that freshness of the compound salt on which some authorities lay much stress. A fragrant, very fine dusting powder shown was stated to contain zinc oleate, boric acid, and a percentage of salol, and to have been found of utility as a dry dressing in erythematous conditions. Also shown, under the name of "colchi-sal" were some small gelatine perles containing oil of winter-green. Each was stated to contain $\frac{1}{250}$ grain of colchicine, the winter-green factor being equal to sodium salicylate gr. v.

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BOOKS NEEDED TO COMPLETE SERIES.

THE Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Association of Genito-Urinary Surgeons. Transactions. 1906.
American Climatological Transactions. Vols. 1, 4, 5, 6,
American Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.
American Journal of the Medical Sciences. New series, vols. 4, 5, 1842-3; vols. 14, 15, 1847-8; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-5; vol. 59; or any parts of these vols.
American Journal of Ophthalmology. Vols. 1-9.
American Laryngological Association. Transactions. Vols. 1-6, 8-9.
American Medical Association. Transactions, 2, 4, 6, 7, 11, 12, 14, 15, 16, 19, 20, 22, 31, after vol. 33, and the *Journal*, up to 1903 inclusive.
American Medico-Psychological Association. Transactions. Vol. 13, 1906.
American Otological Society. Transactions. Vol. 3, part 2, 1883.
American Public Health Association. Transactions. Any vols.
Analyst. Vols. 1-24.
Annals of Surgery. Vols. 13, 14, 26.
Archiv für Dermatologie und Syphilis. Bd. 24 and 25 (1892 and 1893).
Archives générales de médecine. Third new series 7-8 (1839-40); 4th series, 10-17, 20-25, 1852-55, 1858-64, 1872-1897; 1846-55 inclusive; 1857-64 inclusive; 1871.
Archives of Ophthalmology. Vols. 1-3, 6, 7, 14, 15, 16 and 20.
Archives of Otology. Vols. 1-7, and 20-22.
Archives de Parasitologie. Vols. 1-8.
Archives of Pediatrics. Vols. 1-16.
Asylum Journal of Mental Science. Vol. 1, 1854.
Biochemical Journal. Vols. 1-4.
British Dental Journal. Vols. 1-29.
Biometrika. Vols. 2-6.
British Journal of Dermatology. Vol. 2, part 3.
British Laryngological and Rhinological Association. Transactions 1896-7-8-9.
Caledonian Medical Journal. Vol. 1 prior to 1894.
Canada Medical Journal. Vols. 1-4, 6, and after 8.
Carmichael Essays. Rivington, 1879.
Centralblatt für Augenheilkunde. Hirschberg. All prior to 1891; Index to 1891.
Centralblatt für Bakteriologie. Bound volumes prior to 1899.
Centralblatt für medicinische Wissenschaften. Vols. 1-19.
Centralblatt für Nervenheilkunde. 1878, 1879, 1886, 1889, 1890, 1892, and since 1895.
Congrès Français de Chirurgie. Transactions 1, 2, 3, 6, and 10, and all since 11th.
Congrès Internat. d'Obstétrique et de Gynécologie. 3. Amsterdam, 1899.
Congress für innere Medicin: Verhandlungen. 1-12, and 14, and since 18.
Dermatological Congress. Vienna, 1892.
Dermatologischer Jahresbericht, 1906 1908.
Dermatologische Zeitschrift. Vols. 1-16.
Dublin Quarterly Journal of the Medical Sciences. Vols. 1, 10, 17, 20, 28, and 35-40.
Edinburgh Obstetrical Transactions. Vol. 5.

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THE following books were added to the Library between January and March, 1912:

Presented by the Authors.

Denslow: The Surgical Treatment of Locomotor Ataxia. 1912
Fenwick, E. H.: The Value of Radiography in the Diagnosis and Treatment of Urinary Stone. 1908
Gilford, H.: Disorders of Post-Natal Growth. 1911
Handley, W. Sampson: Cancer of the Breast. 1906
Registrar-General of Births, Deaths, and Marriages: Manual of the International List of Causes of Death, as Adapted for Use in England and Wales. 1912
West, C. E., and S. R. Scott: The Operations of Aural Surgery. 1909

Presented by William Hammond, Esq., L.R.C.P., Liskeard.

Atlas of Illustrations in Pathology: New Sydenham Society, Parts 1 and 12.
Casper, J. L.: Forensic Medicine, 4 vols., New Sydenham Society. 1861–65
Creighton, C.: History of Epidemics in Britain, 2 vols. 1891–94
Flügge, C.: Micro-organisms, New Sydenham Society. 1890
Hirsch: Geographical and Historical Pathology, New Sydenham Society, 3 vols. 1883–86
Humphry, G. M.: The Collective Investigation Record, vol. i. 1883
Marchiafava and Bignami: Parasites of Malarial Fever, New Sydenham Society. 1894
Microparasites in Disease, New Sydenham Society. 1886
New Sydenham Society's Atlas of Skin Diseases, in parts.
Smellie: Anatomical Plates. 1754
Trousseau: Clinical Medicine, 5 vols., New Sydenham Society, 1868–72
Willan, R.: Cutaneous Diseases and other vols. duplicates. 1808

Presented by R. T. Leiper, M.B.

Nos. 16, 22, 35 of the Hygienic Laboratory Bulletins, out-of-print copies to complete series.

Presented by the Medical Library of the McGill University, Montreal.

Twelve volumes Montreal Medical Journal, to complete series.
Three volumes Canada Medical Journal, to complete series.

Presented by Dr. A. L. Martin, Salcombe, Devon.

Wiseman, R.: Several Chirurgical Treatises. 1686

Presented by the Medical Officer, Local Government Board.

Report by Dr. Carnwath on Enteric Fever at Oakenshaw. 1912
Report by Dr. Rees on the Sanitary Administration of Blaenavon. 1912
Reports to the Board on Public Health and Medical Matters, No. 61. 1912

Presented by Charles Louis Taylor, Esq.

Report on Leprosy by the Royal College of Physicians, London. 1867
Bayle, P.: Oeuvres diverses de, Tomes i, ii, iii. 1727

Added to the Library through the BRITISH MEDICAL JOURNAL.

Abderhalden: Handbuch der biochemischen Arbeits-Methoden, 4, 5 Bd. 1910–1911
Allen, R. W.: Vaccine Therapy, third edition. 1910
Berry, R. J. A.: Clinical Atlas of Sectional and Topographical Anatomy. 1911
Bing, R.: Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord. 1909
Bing, R.: Die Bedeutung der spino-cerebellaren Systeme. 1907
Blair, T. S.; Public Hygiene, 2 vols. 1911
Bregman, L. E.: Diagnostik der Nervenkrankheiten. 1911
Brockbank, E. M.: Heart Sounds and Murmurs. 1911
Chalybans, H.: Die staatliche Lymphanstalt und die Gewinnung tierischer Schutzpockenlymphe in Dresden. 1911
Claude et Chauvet: Semeiologie réele des sections totales nerfs mixtes périphériques. 1911
Dauglich, R. C.: The Anopheline Mosquito. 1911
Dörner, K.: Beitrag zur Pathogenese der Tuberkulose. 1911
Edinger, L.: Der Anteil der Funktion an der Entstehung von Nervenkrankheiten. 1908
Ehrlich und Hata: Die experimentelle Chemotherapie der Spirillosen. 1910
Ehrlich and others: Encyklopaedie der Mikroskopische Technik, Bd. ii. 1910
Fernie: Health to Date. 1911
Frost and McCampbell: Textbook of General Bacteriology. 1910
Gaucher: Diseases of the Skin, transl. C. F. Marshall. 1910
Grant, C. G.: Practical Forensic Medicine, second edition. 1911
Griffiths, F. G.: Studies in Pulmonary Tuberculosis. 1911
Grouse in Health and Disease, being the Final Report of the Committee of Enquiry on Grouse Disease, 2 vols., London.
Hallion, L.: La Pratique de l'opothérapie, 1911. 1911
Hecht, A. F.: Die Faeces der Sauglings und des Kindes. 1910
Hirtz-Rist, etc.: Thérapeutique des maladies réspiratoires. 1911
Hiss and Zinsser: Textbook of Bacteriology. 1910
Hitzig: Der Schwindel. 1911
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James, A.: Pleurisy including Empyema. 1911
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Richet, Ch.: l'Anaphylaxie. 1911
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American Ophthalmological Society, Trandsactions, vol. xii. 1911
American Surgical Association, Transactions, vol. xxix. 1911
American Rhinological and Otological Society, Transactions, vol. xvii. 1911
Belfast, Queen's College Calendar. 1912
Board of Education Report. 1910–11
Deutschen Schutzgebiete (Med. Berichte über die). 1909–10
Edinburgh Medico-Chirurgical Society, Transactions, vol. xxv to xxx. 1906–11
Egyptian Government School of Medicine Records, vol. iv. 1911
Guy's Hospital Reports, vol. lxv. 1911
General Medical Council Minutes, vol. xlviii. 1911
Liverpool University Calendar. 1912
Malta Public Health Reports. 1909–10
Massachusetts State Board of Health Reports. 1911
Metropolitan Water Board: Water Analysis Reports. 1911
Medico-Legal Society Transactions, vol. viii. 1911
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Royal College of Physicians, List of Licentiates, Members, and Fellows. 1912
University College Hospital, London, collected papers from Research Department, vol. i. 1911
West Kent Medico-Chirurgical Society Transactions. 1910–11
Westminster Hospital Reports, vol. xvii. 1911

Vital Statistics.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

THE quarterly return of the Registrar-General relating to the births and deaths in the second quarter of the year, and to the marriages during the three months ending March last, has just been issued. The marriages during that period corresponded to an annual rate of 9.8 persons married per 1,000 of the population; this is the lowest marriage-rate recorded in any quarter since civil registration was established, and is 1.5 per 1,000 below the average for the first quarter in the ten years 1902–11.

The 218,096 births registered in the quarter were equal to an annual rate of 23.9 per 1,000; this rate is 3.7 per 1,000 less than the average rate for the ten preceding second quarters, and is the lowest rate recorded in the corresponding period of any year. The birth-rates in the several counties ranged from 17.8 in Sussex, 19.0 in Somersetshire, 19.1 in Buckinghamshire, 19.5 in Oxfordshire, and 19.8 in Devonshire, to 27.5 in Staffordshire and in the North Riding of Yorkshire, 28.0 in Northumberland, 28.6 in Monmouthshire, 29.2 in Glamorganshire, and 31.1 in Durham. In ninety-five of the largest towns the birth-rate averaged 25.0 per 1,000: in London the rate was 24.7 per 1,000, while it ranged from 14.6 in Bournemouth, 15.0 in Southport, 15.3 in Blackpool and 15.5 in Hastings, to 30.9 in Stoke-on-Trent, 31.0 in Barnsley, 32.3 in South Shields, 32.7 in Sunderland, and 33.9 in Middlesbrough. In 146 smaller towns the mean birth-rate was 23.7 per 1,000.

The excess of births over deaths during the quarter was 102,302, against 111,987, 119,154, and 105,812 in the corresponding quarters of the three preceding years. From a return issued by the Board of Trade it appears that the passenger movement between the United Kingdom and places outside Europe resulted in a net balance outwards of 78,184 British passengers and of 4,933 aliens; between the United Kingdom and the continent of Europe there was a net balance inward of 20,166 British passengers and of 26,420 aliens; thus the balance of the total passenger movement was 36,531 outward.

The deaths registered in England and Wales during the quarter numbered 115,794 and were equal to an annual rate of 12.7 per 1,000, against an average rate of 14.4 in the ten preceding second quarters; the death-rate last quarter was lower than that recorded in the corresponding period of any year since civil registration was established. The death-rates in the several counties ranged from 8.9 in Middlesex, 10.1 in Hertfordshire and in Essex, 10.4 in Surrey, and 10.5 in Buckinghamshire, to 14.3 in Cornwall, 14.9 in the North Riding of Yorkshire, 15.1 in Carnarvonshire, and 15.3 in Lancashire. In ninety-five of the largest towns the rate was 13.1 per 1,000; in London the rate was 12.4 per 1,000, while among the other towns it ranged from 7.1 in Ilford, 7.9 in Wimbledon and in Southend-on-Sea, and 8.4 in Edmonton and in Enfield, to 16.0 in Manchester, 17.0 in Oldham, 17.9 in Liverpool, and 18.4 in Salford and in Rotherham.

The 115,794 deaths from all causes included 383 that were attributed to enteric fever, 6 to small-pox, 3,217 to measles, 402 to scarlet fever, 2,775 to whooping-cough, 863 to diphtheria, and 1,238 to diarrhoea and enteritis among children under 2 years of age; the average mortality from diarrhoea and enteritis among children under 2 years of age is not available for comparison, but the mortality from each of the other specified diseases was below the decennial average.

The rate of infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 89 per 1,000, or 14 per 1,000 less than the average rate in the ten preceding second quarters, and is the lowest rate recorded for that period of any year. Among the several counties the rates of infant mortality last quarter ranged from 54 in Hertfordshire and in Oxfordshire, 61 in Dorsetshire, 62 in Wiltshire and in Berkshire, and 65 in Surrey, to 101 in Monmouthshire and in Carnarvonshire, 103 in the North Riding of Yorkshire, 108 in Glamorganshire, and 113 in Lancashire. In ninety-five of the largest towns the rate averaged 93 per 1,000, and ranged from 47 in Swindon, 49 in Tynemouth, 54 in East Ham, and 55 in Wimbledon, to 127 in Oldham, 130 in Aberdare, 135 in Rotherham, and 140 in Salford.

The deaths among persons aged 1–65 years were at the rate of 7.2 per 1,000 of the population estimated to be living at this group of ages; in the ninety-five large towns the rate averaged 7.8 per 1,000, the lowest rates being 4.0 in Hornsey, 4.3 in Wimbledon and in Ilford, 4.4 in Edmonton and in Enfield, and 4.5 in Bournemouth and in Southend-on-Sea, and the highest rates 10.6 in Oldham, 11.2 in Rotherham, 11.3 in Liverpool, and 11.8 in Salford.

Among persons aged 65 years and upwards the death-rate was 84.0 per 1,000; in the ninety-five large towns the death-rate at this age-group averaged 92.2 per 1,000, and ranged from 47.6 in Edmonton, 47.8 in Ealing, 60.0 in Ilford, and 61.3 in Devonport, to 122.0 in Oldham, 124.8 in Halifax, 139.0 in Rotherham, and 139.7 in Burnley.

The mean temperature of the air last quarter was above the average in all districts; the rainfall during the quarter was less than the normal in the eastern and south-eastern counties, but above the average in other districts; while the duration of bright sunshine varied from 88 per cent. of the average in the north-eastern counties and 91 per cent. in the south-western counties and in South Wales to 108 per cent. in the eastern and south-eastern counties and 118 per cent. in London.

HEALTH OF ENGLISH TOWNS.

IN ninety-five of the largest English towns 8,443 births and 3,895 deaths were registered during the week ending Saturday, September 7th. The annual rate of mortality in these towns, which had been 11.6, 11.4, and 11.2 per 1,000 in the three preceding weeks, rose to 11.5 per 1,000 in the week under notice. In London last week the death-rate was equal to 11.7 per 1,000, against 11.7, 11.7, and 11.5 per 1,000 in the three previous weeks. Among the ninety-four other large towns the death-rates ranged from 5.0 in Devonport, 5.4 in Hornsey and in Southend-on-Sea, 5.6 in East Ham, 5.9 in Southport, 6.1 in Acton, and 6.2 in Tottenham to 16.3 in Rochdale, 16.6 in Tynemouth, 16.8 in Liverpool, 17.5 in Halifax, 18.1 in Middlesbrough, and 18.8 in Burnley. Enteric fever caused a death-rate of 1.5 in Halifax; measles of 1.7 in Rochdale, in Tynemouth, and in Rhondda, 2.0 in Middlesbrough, and 2.2 in Bootle; and whooping-cough of 1.4 in Grimsby and in Burnley. The mortality from scarlet fever and diphtheria showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children (under 2 years of age) from diarrhoea and enteritis, which had been 199, 183, and 203 in the three preceding weeks, fell to 185 last week, and included 62 in London, 19 in Liverpool, 9 in Sheffield, 8 in Birmingham, 6 in Hull, and 5 in Manchester. The causes of 56, or 0.9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 7 were registered in Liverpool, 3 in Dudley and in Birmingham, and 2 in Blackburn and in South Shields. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,559, 1,512, and 1,525 at the end of the preceding three weeks, had risen to 1,564 on Saturday last; 228 new cases were admitted during the week, against 182, 167, and 213 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN eighteen of the largest Scottish towns, 1,022 births and 530 deaths were registered during the week ending Saturday, September 7th. The annual rate of mortality in these towns, which had been 13.1, 12.0, and 13.1 per 1,000 in the three preceding weeks, fell to 12.7 per 1,000 in the week under review, but was 1.2 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns, the death-rates last week ranged from 5.2 in Clydebank, 6.2 in Ayr, and 7.5 in Motherwell to 15.8 in Dundee, 16.5 in Greenock, and 16.8 in Falkirk. The mortality from the principal infectious diseases averaged 1.2 per 1,000, and was highest in Dundee and Hamilton. The 191 deaths from all causes registered in Glasgow included 13 from infantile diarrhoea and enteritis, 6 from diphtheria, and 4 from whooping-cough. Two deaths from whooping-cough were recorded in Hamilton, and 6 from infantile diarrhoeal diseases in Dundee.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, August 31st, 608 births and 330 deaths were registered in the twenty-two principal urban districts of Ireland, as against 551 births and 327 deaths in the preceding week. The annual death-rate in these districts, which had been 14.0, 13.1, and 14.8 per 1,000 in the three preceding weeks, rose to 14.9 per 1,000 in the week under notice, this figure being 3.7 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 15.2 and 12.4 respectively, those in other districts ranging from 4.2 in Drogheda and 4.4 in Newry to 31.8 in Queenstown and 35.4 in Galway, while Cork stood at 17.0, Londonderry at 21.7, Limerick at 29.8, and Waterford at 17.1. The zymotic death-rate in the twenty-two districts averaged 1.6 per 1,000 as against 1.9 in the preceding period.

During the week ending Saturday, September 7th, 616 births and 288 deaths were registered in the twenty-two principal urban districts of Ireland, as against 608 births and 330 deaths in the preceding week. The annual death-rate in these districts, which had been 13.1, 14.8, and 14.9 per 1,000 in the three preceding weeks, fell to 13.0 per 1,000 in the week under notice, this figure being 1.5 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 15.0 and 10.9 respectively, those in other districts ranging from 4.4 in Newry and 4.7 in Sligo, to 20.3 in Limerick and 22.8 in Waterford, while Cork stood at 12.9 and Londonderry at 11.5. The zymotic death-rate in the twenty-two districts averaged 1.4 per 1,000 as against 1.6 in the preceding period.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

FLEET SURGEON E. CORCORAN to the *King Alfred* (August 24th).

Fleet Surgeon E. T. MEAGHER to the *Cumberland* (September 14th).

Surgeon W. C. CARSON to the *Victory*, additional, for disposal (undated).

Staff Surgeon R. H. ATKINS, to the *Victory*, additional, for disposal.

Staff Surgeon A. J. LAURIE, to the *Prince of Wales*, additional, for Second and Third Fleets.

Staff Surgeon H. R. H. DENNY, to the *Prince of Wales*, additional, for Second and Third Fleets.

Staff Surgeon J. K. RAYMOND, to the *Queen*, additional, for Second and Third Fleets.

Staff Surgeon G. D. WALSH, to the *Pembroke*, additional, for disposal.

Staff Surgeon F. F. LOBB, to the *King Alfred*, additional, for Second and Third Fleets.

Staff Surgeon W. G. WESTCOTT, to the *Glasgow*, on recommissioning.

Surgeon J. L. BARFORD, to the *Victory*, additional, for disposal.

Surgeon C. R. WORTHINGTON, to the *Vivid*, additional, for disposal.

Surgeon W. C. CARSON, to the *Excellent*, for *Revenge*.

ARMY MEDICAL SERVICE.

SURGEON-GENERAL L. E. ANDERSON, A.M.S., has been appointed Deputy Director, Medical Services, 8th (Lucknow) Division.

Colonel JOHN R. DODD, M.B., on completion of four years' service in his rank, is placed on the half-pay list, dated September 9th, 1912.

Colonel CHARLES R. TYRRELL retires on retired pay, dated September 11th, 1912.

Lieutenant-Colonel CHARLES R. TYRRELL, from the Royal Army Medical Corps, to be Colonel, vice J. R. Dodd, dated September 9th, 1912.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel R. J. S. SIMPSON, C.M.G., from the Royal Herbert Hospital, Woolwich, has proceeded to India.

Lieutenant-Colonel ROBERT J. COPELAND, M.B., from the half-pay list, is restored to the establishment, vice Lieutenant-Colonel C. R. Tyrrell, with precedence next below A. W. Bowley, dated September 10th, 1911.

Major E. BRODRIBB, in charge of the Military Hospital, Hythe, has been ordered to India.

Major J. P. SILVER has been transferred for duty at Cork.

Captain R. C. WILMOT, from Colchester, has been appointed to Hythe as a specialist in Ophthalmology, in succession to Major E. Brobribb.

Captain C. G. THOMSON, from the Royal Army Medical College, has joined the Scottish Command for duty at Glasgow.

Captain G. A. D. HARVEY, from the Royal Army Medical College, has joined the London District.

Captain F. M. M. OMMANNEY, from the Royal Army Medical College, has been posted to the Eastern Command.

Captain M. SINCLAIR, from the Royal Army Medical College, has joined the London District.

Captain A. B. SMALLMAN and Captain D. P. WATSON, from the Royal Army Medical College, have joined the Queen Alexandra Military Hospital, and have been taken on the strength of the London District.

Captain J. FAIRBAIRN is posted for duty to the Dublin District, pending re-embarkation for West Africa in January.

Captain G. H. J. BROWN has taken up duty in Edinburgh.

The following Captains to be Majors, dated August 14th, 1912: J. F. WHELAN, M.B., W. M. POWER, and R. B. BLACK, M.B.

Lieutenant R. F. BRIDGES has been ordered to India.

Lieutenant THEODORE W. SPALLYBRASS, M.B., is seconded for service with the Egyptian Army, dated August 15th, 1912.

The following Lieutenants (on probation) are confirmed in their rank: S. J. BARRY, C. J. BLAIKIE, W. F. CHRISTIE, M.B., J. M. H. FROBISHER, M.B., S. J. HIGGINS, A. HOOD, M.B., C. M. INGOLDBY, D. T. M. LARGE, M.B., H. R. L'ESTRANGE, R. K. MALLAM, M.B., W. MACNAUGHTAN, M.B., D. T. RICHARDSON, M.B., J. L. RITCHIE, M.B., W. STEVENSON, M.B., E. A. STRACHAN, M.B., T. A. WESTON, M.B., P. A. WITH, M.B., O. W. J. WYNNE.

INDIAN MEDICAL SERVICE.

LIEUTENANT-COLONEL J. CRIMMIN, M.D., C.M Edin., to act as Health Officer of the Port of Bombay, and Major E. F. GORDON TUCKER to act as Presidency Surgeon, Third District, and in medical charge of His Majesty's Common Prison, House of Correction, and Byculla Schools, during the absence on leave of Lieutenant-Colonel W. E. Jennings, M.D., C.M.Edin., or pending further orders.

The services of Lieutenant-Colonel B. B. GRAYFOOT, M.D., I.M.S., were temporarily placed at the disposal of the Government of India, with effect from January 22nd.

The services of Lieutenant-Colonel J. C. WHITE, Sanitary Commissioner, United Provinces, on leave, are replaced at the disposal of the Government of India, Department of Education.

Lieutenant-Colonel C. F. FEARNSIDE has been permitted to retire.

Brevet Colonel ACTON and Major LIGHTFOOT have retired from the service.

Major V. B. BENNETT, M.B., B.S.Lond., F.R.C.S., I.M.S., to act as a Civil Surgeon of the First Class, vice Lieutenant-Colonel B. B. Crayfoot, M.D.Dur., I.M.S.

Major H. BENNETT, M.B., C.M., B.Sc.Edin., F.R.C.S.E., I.M.S., to continue to act as a Civil Surgeon of the First Class during the absence on leave of Lieutenant-Colonel C. T. Hudson, M.R.C.S., L.R.C.P., I.M.S.

Major MADDOX, I.M.S., has been appointed Civil Surgeon, First Class.

Major P. C. GRABBETT has been permitted to retire.

The following Captains to be Majors: J. GOOD, M.B., G. J. GRAFTON YOUNG, M.B., W. G. HAMILTON, W. LAPSLEY, M.B., and A. SPITTELER, M.B., June 28th, 1912.

Captain R. M. CARTER, F.R.C.S., to act as Resident Surgeon, St. George's Hospital, Bombay, and Professor of Materia Medica and Pharmacy, Grant Medical College, Bombay vice Captain R. F. Steel, granted leave.

Captain W. J. COLLINSON, I.M.S., has been placed on plague duty in the Meerut District.

Captain F. O'D. FAWCETT, I.M.S., is appointed to the substantive medical charge of the 2nd Battalion 1st Gurkha Rifles.

Captain J. S. O'NEILL, I.M.S., on plague duty at Ghazipur, has been appointed plague officer at Azamgarh, in addition to his other duties.

Captain A. T. PRIDHAM, I.M.S., 1st Battalion 8th Gurkhas, has been transferred to the Civil Department for temporary employment in the Jail Department of Burmah.

Captain T. C. RUTHERFOORD, I.M.S., has been appointed Civil Surgeon, Bilaspur.

Captain W. D. WRIGHT, I.M.S., on plague duty at Ghazipur, has been transferred to Lucknow.

The following Lieutenant to be Captain: H. H. KING, M.B., January 30th, 1912.

The following Lieutenants to be Captains: A. C. ANDERSON, D. ARTHUR, T. L. BOMFORD, M.B., T. BURKE, M.B., D. G. COOPER, M.B., A. MACD. DICK, M.B., F.R.C.S., J. MCD. ECKSTEIN, T. J. EVANS, F.R.C.S., W. L. FORSYTH, M.B., H. R. B. GIBSON, M.B., E. H. V. HODGE, M.B., M. J. HOLGATE, M.B., W. A. M. JUSK, M.B., G. R. LYNN, M.B., L. H. L. MACKENZIE, M.B., M. A. NICHOLSON, M.B., M. A. RAHMAN, C. H. SMITH, M.D., F.R.C.S., K. S. THUKUR, July 31st, 1912.

The King has approved of the confirmation of the commissions of the following Lieutenants on probation of the Indian Medical Service, with effect from January 27th, 1912: R. H. CANDY, M.B., P. J. VEALE, M.B., JAMASJI CURSETJI BHARUCHA, H. HINGSTON, M.B., HERRAJEE JEHANGIR MANOCKJEE CURSETJEE, M.B., F. J. ANDERSON, P. F. GOW, M.B., J. S. S. MARTIN, M.B., R. V. MORRISON, M.B., JOGESH CHANDRA DEY, M.B., J. W. JONES, M.B., and J. H. HISLOP, M.B.

The King has approved of the admission of the following gentlemen to the Indian Medical Service as Lieutenants on probation: J. D. WILSON, M.B., L. A. P. ANDERSON, W. C. PATON, M.B., J. B. HANCE, M.B., S. GORDON, G. Y. THOMSON, M.B., H. K. ROWNTREE, M.B., B. F. EMINSON, M.B., A. KENNEDY, M.B., J. C. JOHN, M.B., SORAB DHUNJIBHOY RATNAGAR, and C. MCIVER, July 27th, 1912.

INDIAN SUBORDINATE MEDICAL DEPARTMENT.

Senior Assistant Surgeon and Honorary Major A. H. NOLAN has been permitted to retire.

TERRITORIAL FORCE.

ARMY MEDICAL SERVICE.

COLONEL SIR GEORGE T. BEATSON, K.C.B., M.D., on vacating the appointment of Assistant Director of Medical Services of a Territorial Division, resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform, dated September 11th, 1912.

ROYAL ARMY MEDICAL CORPS.

Third East Anglian Field Ambulance.—Supernumerary Lieutenant WM. R. S. ROBERTS, M.B., is absorbed into the establishment, dated April 27th, 1912.

First Highland Field Ambulance.—Lieutenant ARTHUR KELLAS, M.B., to be Captain, dated August 2nd, 1912.

First North Midland Field Ambulance.—Lieutenant ARTHUR G. KEWLEY to be Captain, dated May 24th, 1912.

Attached to Units other than Medical.—Captain HENRY D'A. BLUMBERG to be Major, dated July 29th, 1912. Lieutenant-Colonel (Honorary Major in the Army) EDWARD J. LAWLESS resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform, dated September 11th, 1912.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

ABERDEEN ROYAL INFIRMARY.—(1) Anaesthetist. (2) Assistant Physician. (3) Assistant Anaesthetist may also be elected.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BETHLEM ROYAL HOSPITAL, Lambeth Road, S.E.—(1) Pathologist and Registrar. Salary, £150 per annum. (2) Honorary Consulting Surgeon. (3) Honorary Consulting Aurist and Laryngologist. (4) Honorary Ophthalmologist. (5) Honorary Anaesthetist. (6) Honorary Gynaecologist.

BIRKENHEAD: BOROUGH HOSPITAL. — Senior House-Surgeon (Male). Salary, £100 per annum.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—(1) Senior House-Surgeon. Salary, £90 per annum. (2) Third House-Surgeon. Salary, £75 per annum.

BIRMINGHAM UNION.—Three Assistant Medical Officers at the Dudley Road Infirmary. Salary, £120 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Senior Assistant House-Surgeon. Salary, £100 per annum.

BRIGHTON AND HOVE HOSPITAL FOR WOMEN. — House-Surgeon. Salary at the rate of £80 per annum.

BRIGHTON: ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN.—House-Surgeon. Salary at the rate of £80 per annum.

BRISTOL GUARDIANS. — Assistant Workhouse Medical Officer. Salary, £150 per annum.

BRITISH LYING-IN HOSPITAL, Endell Street, W.C.—Resident Medical Officer. Salary at the rate of £50 per annum.

CAPE COLONY: PROVINCIAL HOSPITAL. — House-Surgeon. Salary, £200 to £250 per annum.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CHESTERFIELD AND NOTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £80 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum, rising to £100 after six months.

DUBLIN: ROYAL VICTORIA EYE AND EAR HOSPIEAL.—Two House-Surgeons. Salary, £40 per annum each.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

EDINBURGH HOSPITAL FOR WOMEN AND CHILDREN.—Two Medical Women as Senior Resident and Junior Resident. Honorarium £18 per annum.

EDINBURGH: THE HOSPICE.—Medical Women as Resident. Honorarium, £25 per annum.

EDMONTON UNION.—Second Assistant Medical Officer at the Infirmary (Male). Commencing salary, £120 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Ten Qualified Clinical Assistants in the Out-patient Departments.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—(1) House-Physician. (2) House-Surgeon. Salary at the rate of £70 per annum.

HAMPSTEAD: PARISH OF ST. JOHN.—Outdoor Medical Officer for the No. 2 District. Salary, £80 per annum and extra fees.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

HONG KONG UNIVERSITY.—Professor of Physiology. Salary, £600 per annum.

HULL ROYAL INFIRMARY.—Senior House-Surgeon and House-Physician. Salary, £150 and £100 respectively.

KETTERING AND DISTRICT GENERAL HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

KING EDWARD VII SANATORIUM, Midhurst. Junior Assistant Medical Officer. Salary, £150 per annum, increasing to £200.

LARBERT: STIRLING DISTRICT ASYLUM. — Junior Assistant Medical Officer. Salary, £140 per annum.

LEAMINGTON SPA: WARNEFORD, LEAMINGTON, AND SOUTH WARWICKSHIRE HOSPITAL. — House-Physician. Salary, £85 per annum.

LEEDS: CITY OF LEEDS INFECTIOUS DISEASES HOSPITALS.—Junior Assistant Medical Officer. Salary at the rate of £150 per annum.

LINCOLN COUNTY HOSPITAL.—Junior Male House-Surgeon. Salary at the rate of £100 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Visiting Physician. Honorarium, £100 per annum.

MANCHESTER: ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN. House-Surgeon. Salary, £50 per annum.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Senior House-Surgeon.—Salary, £100 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Resident Medical Officer. Salary, £100 per annum.

NEWCASTLE-UPON-TYNE UNION. — Second Assistant Resident Medical Officer (Female) at the Workhouse. Salary, £100 per annum, rising to £130.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £100 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Physician. Salary, £75 per annum.

PORTSMOUTH: ROYAL PORTSMOUTH HOSPITAL. — House-Physician (Male). Salary, £75 per annum.

RICHMOND, SURREY: ROYAL HOSPITAL. — Assistant House-Surgeon. Salary, £70 per annum.

ROCHDALE INFIRMARY.—Junior House-Surgeon (Male). Salary, £80 per annum, rising to £90.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Senior House-Surgeon. Salary at the rate of £100 per annum.

SEAMEN'S HOSPITAL SOCIETY.—(1) Two House-Physicians and two House-Surgeons at Dreadnought Hospital; salary at the rate of £50 per annum each. (2) Senior House-Surgeon and House-Surgeon at the Albert Dock Hospital; salary at the rate of £100 and £50 per annum respectively.

SEDGEFIELD: DURHAM COUNTY ASYLUM.—Medical Superintendent. Salary, £800 per annum.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—House-Surgeon. Salary, £80 per annum.

SHEFFIELD: ROYAL INFIRMARY.—Junior Resident Medical Officer. Salary, £70 per annum.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House-Physician. Salary, £100 per annum.

SOUTHWARK UNION.—Third Assistant Medical Officer (Male) at the Infirmary, East Dulwich Grove, S.E. Salary, £120 per annum.

STAFFORD: COTON HILL LUNATIC ASYLUM.—Assistant Medical Officer. Salary, £150 per annum, rising to £180.

THROAT HOSPITAL, Golden Square, W.—Resident House-Surgeon. Salary, £75 per annum.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Senior Resident Medical Officer. Salary, £250 per annum.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary commencing at £160 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Abbeyfeale, co. Limerick; Bellanagh, co. Cavan; Castlegregory, co. Kerry; Corris, Merioneth; Dingle, co. Kerry; Ongar, Essex; Rathvilly, co. Carlow.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

ALDRIDGE, G., L.M.S.S.A.Lond., District Medical Officer of the Sheppey Union.

BROWN, W. G. S., M.R.C.S., L.R.C.P., Resident Assistant Medical Officer of the Prescot Union Workhouse.

COLLINS, E. A., M.R.C.S., L.R.C.P., District Medical Officer of the Blything Union.

COURT, C., M.B., C.M.Glasg., Medical Officer of Health for the Kirkham Urban District.

CRYMBLE, W., L.R.C.P.I.and L.M., L.R.C.S.I.and L.M., Second Assistant Medical Officer of the Leeds Union Infirmary.

DOWLEY, T. P., B.A., M.B., B.Ch., B.A.O.Durh., Certifying Factory Surgeon for the Lisbellan District, co. Fermanagh.

FERGUSON, John Bell, M.B., Ch.B.Edin., D.P.H.Manch., Tuberculosis Officer to the City and County of York.

FRASER, A., M.B.Edin., M.B., C.M., Certifying Factory Surgeon for the Caistor District, co. Lincoln.

HEGGS, T. B., M.D.Aberd., M.B., Ch.B., D.P.H., Certifying Factory Surgeon for the Sheerness District, co. Kent.

HODGSON, W. H., M.B., M.R.C.S., L.R.C.P., District Medical Officer of the Hyde Union.

HUSTON, W. A., L.R.C.P.I., L.R.C.S.I.and L.M., Certifying Factory Surgeon for the Grey Abbey District, co. Down.

KEIR, I. C., M.D.Edin., M.B., Ch.B., D.P.H., Medical Officer of the Trowbridge and Melksham Union Workhouse.

MACDONALD, D., M.D.Glas., M.B., C.M., Medical Referee under the Workmen's Compensation Act for the Sheriffdom of Argyll, and to be attached more particularly to the Oban District, vice Dr. James Maxwell, deceased.

RADCLIFFE, A. H., M.B., Ch.B.Vict., D.P.H., Certifying Factory Surgeon for the Gasforth District, co. York.

SALMOND, R. W. A., Ch.M., M.D., D.P.H., Medical Officer in Charge of Electrical Department, Queen's Hospital for Children, Bethnal Green, E.

SHARP, Miss A. C., M.B., Ch.B.Edin., Assistant Medical Officer of the Plymouth Union Workhouse.

STELLE-PERKINS, D. S., L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., Medical Officer of Health for the Honiton Rural District.

STEWART, T. L. G., M.B., Ch.B.Glasg., Assistant Medical Officer of the Liverpool Union Brownlow Hill Workhouse.

TAYLOR, J. M., M.B., District Medical Officer of the Thorne Union.

THOMPSON, S. W., L.S.A., M.R.C.S., District Medical Officer of the Greenwich Union.

VINCENT, W. H., L.M.S.S.A., House-Surgeon to the Evelina Hospital for Children, Southwark, S.E.

WILLIAMS, I. J., M.B., Ch.B.Liverpool, Assistant Medical Officer of the West Derby Union Infirmary.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 2s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

BALME.—On September 8th, at Newton House, Carlisle, the wife of Harold Balme, F.R.C.S., of Shanai, North China, of a son.

DEATH.

BENNET.—On August 29th, at 70, New Road, Lower Edmonton, N., David George Bennet, M.B., C.M.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

EDINBURGH POST-GRADUATE COURSES.—The Special Lectures for the week are:—Monday: Shock and Anæsthesia (Part II). Wednesday: Modern Treatment of Fractures. Friday: The Early and Definite Diagnosis of General Paralysis of the Insane.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—The following are the arrangements for next week:—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

RECENT PUBLICATIONS.

Paton's List of Schools and Tutors. Fifteenth annual edition (1912–1913). London: J. and J. Paton (educational agents). 1912. (Cr. 8vo, pp. 1287. Price 2s.)

An uncritical, incomplete, but useful list of schools for boys and girls, giving an account (usually illustrated) of the school, with particulars as to terms and of any special features or objects.

The Passing of Babel; or, Esperanto and its Place in Modern Life. By Bernard Long, B.A. London: The British Esperanto Association. 1912. (Cr. 8vo, pp. 70. Price 6d. net.)

An enthusiastic account of the origin, spread, and uses of Esperanto, with, in an appendix, a brief outline of the system on which this artificial language is constructed.

The Dawn of the Health Age. By Benjamin Moore, M.D., D.Sc., etc. London: J. and A. Churchill; Liverpool: the Liverpool Booksellers' Company. (Cr. 8vo. pp. 210. Price 1s.)

A cheap paper-covered reprint, issued last June, of the volume reviewed in the BRITISH MEDICAL JOURNAL on July 29th, 1911.

PUBLISHERS' ANNOUNCEMENTS.

MR. HENRY FROWDE will shortly publish the second volume (the first ready) of *Studies in Cancer*, conducted under the George Crocker Special Research Fund at Columbia University. The volume deals with pathology.

Messrs. J. and A. Churchill announce the following new works and new editions: *Mother and Baby: Outlines for a Young Mother on the Care of Herself and Her Baby*, by Selina F. Fox, M.D., B.S., Senior Physician of the Bermondsey Medical Mission for Women and Children; *A Treatise on Tumours*, by Arthur E. Hertzler, M.D., Ph.D., Associate Professor of Surgery in the University of Kansas; *Meat Hygiene, with Special Consideration of Ante-Mortem and Post-Mortem Inspection of Food-Producing Animals* (second edition), by Richard Edelmann, Ph.D., Professor at the Royal Veterinary High School in Dresden, translated by John R. Mohler, A.M., V.M.D., Chief of Pathological Division, United States Bureau of Animal Industry, and Adolph Eichhorn, D.V.S., Senior Bacteriologist, Pathological Division, United States Bureau of Animal Industry; a translation by Dr. G. Blacker of Professor Birnbaum's book on *Malformations and Congenital Diseases of the Fetus*; a work on *Digestion and Metabolism: The Physiological and Pathological Chemistry of Nutrition*, by Professor Alonzo E. Taylor, of the University of Pennsylvania.

Messrs. Partridge and Co., Ltd., London, announce a new manual, entitled *First Steps to Nursing*, intended as a handbook for the would-be probationer, by the Matron of the Westminster Hospital. It deals with the preparation of the candidate, habits to be acquired, and lessons to be learnt, before she enters upon her new duties; and incidentally it treats of the necessary clothing to be provided and the various appointments which are open to certificated nurses.

Messrs. P. S. King and Son announce the publication of a practical textbook for the use of health visitors, school nurses, members of guilds of help and other charitable associations, and all interested in the rules of hygiene which must be observed to keep the home and family healthy. The author, Dr. C. W. Hutt, is Senior School Doctor to the Brighton Education Committee, and late Assistant Medical Officer of Health to the County Borough of Warrington.

Messrs. James Clarke and Co. are about to publish a work entitled *Concerning Conscience: Studies in Practical Ethics*, by H. Jeffs. Among the subjects treated are the conscience of the business man, the politician, the lawyer, doctor, journalist and literary man, the clerical and ministerial conscience, national conscience, and there is a searching analysis of "The Feminine Conscience." "The Culture of Conscience," from infancy to middle age, is treated in an original and practical way.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 21ST, 1912.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs. BY ORDER.

STATE SICKNESS INSURANCE COMMITTEE.

APPOINTMENTS IN CONNEXION WITH THE INSURANCE ACT.

THE State Sickness Insurance Committee calls the attention of all members of the medical profession to the following resolution adopted by the Annual Representative Meeting, 1912:

That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

SANATORIUM BENEFIT.

The State Sickness Insurance Committee also directs attention to the following resolution adopted by the Annual Representative Meeting, 1912:

That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such appointment shall be submitted to the Council for its approval.

* "Appointment" means any professional work.

The State Sickness Insurance Committee notifies that no advertisement in respect of appointments in connexion with sanatorium benefit will be accepted for publication in the BRITISH MEDICAL JOURNAL which is inconsistent with the conditions laid down by the Association, and in all cases in which an advertisement is accepted a full list of the conditions laid down by the Association will be sent to the advertiser.

MATTERS REFERRED TO DIVISIONS.

CENTRAL ETHICAL COMMITTEE.

THE following Model Ethical Rules, as amended and approved by the Annual Representative Meeting at Liverpool, 1912, are submitted to Divisions and Branches with a view to their adoption.

Attention is drawn to the following resolution of the Annual Representative Meeting:

Minute 118.

That all Divisions and Branches in the United Kingdom be urged to adopt the Model Rules for Ethical procedure, as approved by the Representative Body, without modification and in substitution for all such Rules now in use by the Divisions and Branches respectively.

(A) RULES GOVERNING PROCEDURE IN ETHICAL MATTERS OF A DIVISION NOT ITSELF A BRANCH.

[*As approved by the Representative Body, July*, 1912.]

RULE 1.

For the better attainment, within the area of the Division, of the objects of the Association in regard to the maintenance of the honour and interests of the medical profession, it shall be deemed to be part of the business of the Division to consider questions of professional conduct, and to pass in accordance with its Rules, Resolutions upon such questions, which shall be binding upon the Members.

RESOLUTIONS AS TO GENERAL PROFESSIONAL CONDUCT.

RULE 2.

The following shall be the procedure for the adoption of a Resolution of the Division regulating the general professional conduct of its Members:—

(A) *In the case of a Resolution to apply throughout the area of the Division.*

(i) Fourteen days' notice of the terms of the proposed Resolution shall be given to every Member of the Division prior to the Meeting of the Division at which such Resolution is to be considered.

(ii) At the Meeting the Resolution shall be deemed to be carried if approved without amendment by a three-fourths majority of those present and voting, and not otherwise.

(iii) If fewer than one-third of the Members of the Division are present when the Resolution is put to the vote, and if within seven days from the circulation of a notice of the adoption of such a resolution by a Meeting of the Division as hereinafter provided, not less than five per cent. of the Members of the Division shall request by notice in writing to the Honorary Secretary that a poll of the Members of the Division be taken by post, a poll shall be so taken forthwith, and in such cases the Resolution shall be deemed to be carried if approved by two-thirds of those voting at such poll, and not otherwise.

(iv) Notice of the adoption of such a Resolution by the Division shall forthwith be sent to all Members with a statement of the number of the Members present and voting for and against the Resolution.

(B) *In the case of a Resolution to apply within part only of the area of the Division.*

(i) Upon receipt of a requisition signed by not less than five-sixths of the Members of the Division residing and practising within any part, defined in such requisition, of the area of the Division, expressing the desire of the signatories for the adoption by the Division of a Resolution to be binding upon all Members practising within the said area, the Honorary Secretary shall give seven days' notice to the Members of the Division, prior to a Meeting of the Division, of the consideration of such proposed Resolution at such Meeting.

(ii) It shall be competent for the Division in such Meeting to adopt the proposed Resolution by a simple majority of those present and voting thereon, and the Resolution, if so adopted without amendment, shall thereupon become binding upon all Members of the Division practising within the area specified.

RULE 3

(*a*) It shall be the duty of the Executive Committee to notify every Member of the Division of all resolutions affecting professional conduct duly adopted by the Division in accordance with its Rules; and, subject to such instructions as may be received from the Division in general meeting, it shall rest in the discretion of the Executive Committee to bring any such resolution or resolutions to the notice of any member of the profession practising within the area of the Division who is not a member of the Association.

(*b*) It shall be the duty of the Honorary Secretary of the Division to notify every Member coming to reside within the area of the Division of every resolution regulating the professional conduct of Members of the Division which has been duly adopted, and further it shall rest in the discretion of the Division to bring any such resolution or resolutions to the notice of any Member of the profession who comes to reside within the area of the Division who is not a Member of the Association.

RULE 4

Subject to instructions of a Meeting of the Division, the Executive Committee may: (i) bring to the notice of any other Division or of any Branch of the Association a resolution of the Division affecting general professional conduct, and may request support from such Division or Branch with a view to making the operation of such resolution more effective; (ii) bring to the notice of every Member of the Division, or of every Member of the profession within the area of the Division, any resolution affecting general professional conduct, adopted by any other Division or Branch, of which the Division shall have received official notice. This Rule shall not apply to resolutions affecting the professional conduct of individuals as such.

RULE 5.

If a resolution of the Division affecting general professional conduct shall have reference to the terms upon which Members may hold appointments of any kind, it shall be the duty of the Honorary Secretary, when notifying Members of the adoption of such Resolution, to request those Members who already hold appointments of the kind in question, upon terms inconsistent with the resolution, to take the necessary steps to terminate such appointments, or to secure such modifications of the terms of such appointments as shall be necessary for compliance with the resolution, and no further action shall be taken upon the resolution under the Rules of the Division with respect to such Members for a period of one month, or such longer period, not exceeding three months, as the Division may think fit, from the date of such notification.

If any Member shall within such period satisfy the Honorary Secretary that he has given such notice as is required under the terms of his appointment to terminate the appointment, either absolutely, or unless the terms thereof are so modified as to bring them into accordance with the resolution of the Division, no further action shall be taken under the Rules with respect to such Member, until the expiration of such notice.

PROCEDURE OF ENQUIRY INTO PROFESSIONAL CONDUCT AFFECTING INDIVIDUALS.

RULE 6.

For the assistance of the Division in investigating questions affecting the professional conduct of individual members of the profession, a Committee called the Ethical Committee may be appointed annually by the Division in General Meeting, consisting of the Chairman and Honorary Secretary for the time being, *ex officio*, with not less than five other Members. If such Committee be not appointed, the Executive Committee shall be deemed to be and shall act as the Ethical Committee of the Division. In either event such Committee shall appoint its own Chairman and Honorary Secretary, who may be the Chairman and Honorary Secretary of the Division.

RULE 7.

Questions referred to the Division affecting the professional conduct of individual Members of the profession within the area of the Division to which they belong shall be addressed to the Honorary Secretary of the Division, and shall, in the first instance, be investigated by the Ethical Committee of the Division. Where a person against whom complaint is made is not a member of the Division where the complaint is lodged it shall be the duty of the Honorary Secretary to refer the complaint for investigation by the Division to which the person complained of belongs. Cases affecting non-members shall be dealt with by the Division in the area of which the non-member complained of resides.

RULE 8.

In any case in which the complainant or the practitioner against whom complaint is made is not a member of the Association, the matter shall forthwith be referred to the Central Ethical Committee for advice and instruction, and it shall be the duty of the Ethical Committee of the Division to conduct any subsequent investigation in all respects in accordance with such advice and instruction as may thus be obtained, any provision contained in these Rules notwithstanding.

RULE 9.

In a case submitted by a Member of the Association, who considers that he has been affected as an individual by what he alleges to be the unprofessional conduct of another Member, it shall be the duty of the Chairman and Secretary of the Ethical Committee to ascertain forthwith whether the applicant has either personally, or by letter, or through some suitable intermediary, afforded the Member against whom he makes complaint a reasonable opportunity of explanation, and if this has not been done to call upon him to do so. If the applicant fails to take this step within a week, the

propriety of his action in having made the complaint may itself be made a matter for consideration by the Committee

RULE 10.

A meeting of the Ethical Committee may be convened at any time by the Chairman or Honorary Secretary of the Committee, and a meeting shall be convened by the Honorary Secretary for the consideration of any question affecting the conduct of a practitioner residing within the area of the Division, submitted by any member of the Association, or referred by any Division or Branch of the Association, or by the Central Ethical Committee, upon the expiration of three weeks from the receipt of such reference by the Honorary Secretary of the Division, or upon the completion of the preliminary enquiries required by these Rules, whichever shall first occur.

RULE 11.

In any case in which the applicant is not affected as an individual by the conduct of which complaint is made, or in which the matter is brought to the notice of the Division by a Division or Branch of the Association, or by the Central Ethical Committee, the Chairman of the Ethical Committee shall forthwith instruct the Honorary Secretary to forward to the person of whose conduct complaint is made, *provided that he be a Member of the Association*, a statement of the subject matter of the complaint, and afford him a reasonable opportunity to put forward such explanation as he may desire to put before the Committee.

RULE 12.

In any case in which the Ethical Committee is of opinion that it would be undesirable, in the interests of the profession, that the complaint should be investigated locally, the Committee shall be empowered to refer the investigation to the Branch Council and all documents bearing on the case shall be sent to the Honorary Secretary of the Branch.

RULE 13.

If any Member of the Ethical Committee be personally involved in a case as complainant or otherwise, or be partner or assistant or principal of any person so involved, or have otherwise such personal interest in the case as, in the opinion of the Committee, renders it undesirable that he should take part in any investigation of that case, he shall retire from the Committee for the purpose of the investigation of the case, and the Committee may appoint some other Member of the Division, who is not so interested, to act in his stead. If the Member of the Committee affected by this Rule be the Chairman or Secretary, the Committee shall appoint a Chairman or Secretary to act in his stead for the purpose of the case.

RULE 14.

The Committee shall investigate the facts of the case, and shall take such evidence, whether written or oral, as shall be deemed necessary for this purpose. Copies of documents furnished by any party to a case for the consideration of the Committee shall be furnished by the Secretry to the other parties concerned *provided they be Members of the Association.* It shall be the duty of the Committee, whenever practicable, to bring the parties into personal conference in its presence. It shall be competent for the Committee to apply to the Medical Secretary for advice as to procedure and for information as to precedents which may bear upon the case.

RULE 15.

If the case appears to be one affecting the parties as individuals only, the Ethical Committee of the Division shall have power, with the written consent of all parties to accept such decision as final, to decide such case.

In all other cases the Committee shall, after due investigation, present to a special Meeting of the Division, or to the next ordinary Meeting, at its discretion :—

(1) A Report of the facts as established in the opinion of the Committee by the evidence placed before it.

(2) A Recommendation to the Division in one of the following forms : —

(i) That the Division express the opinion that no offence has been committed against the rules (or Resolutions) of the Division or decisions of the Association, or the generally accepted principles of professional conduct, and that no action be taken.

(ii) That the Division express the opinion that the complaint is frivolous, and that the case be dismissed.

(iii) That the Division express no opinion upon the case, and refer the whole of the facts for the consideration of the Branch Council.

(iv) That the Division express the opinion that.....
.....has violated

(*a*) the Rules (or Resolutions) of the Division or decisions of the Association, *and*

(*b*) the ordinarily accepted principles of professional conduct,

but that in consideration of faults on the part of others concerned, the case be dismissed.

(v) That the Division express the opinion that .....
.....has violated

(*a*) the Rules (or Resolutions) of the Division or decisions of the Association, *and*

(*b*) the ordinarily accepted principles of professional conduct

and resolves that he be, and hereby is, censured.

(vi) That the Division express the opinion that the conduct of.....has been

(*a*) in contravention of the Rules of the Division or decisions of the Association, *and*

(*b*) detrimental to the honour and interests of the Association, *and*

(*c*) detrimental to the honour and interests of the profession, *and* (*if a Member*)

(*d*) resolve that he be informed of this finding of the Division and allowed until.....
to reconsider his position ; that the Committee be instructed to report in due course to the Division upon his reply, and that if upon such further report the Division shall consider his reply unsatisfactory the matter shall forthwith be reported to (*a*) the Branch Council, *or* (*b*) the Council of the Association, in order that the propriety of his remaining a member may be considered.

(vii) That the Division express the opinion that the conduct of.....has been

(*a*) in contravention of the Rules (or Resolutions) of the Division or decisions of the Association, *and*

(*b*) detrimental to the honour and interests of the Association *and*

(*c*) detrimental to the honour and interests of the profession, *and* (*if a Member*)

(*d*) resolve that the Report of the Committee and the findings of the Division be reported forthwith to (*a*) the Branch Council, *or* (*b*) the Council of the Association, in order that the propriety of his remaining a member may be considered.

RULE 16.

The Report and the Recommendation of the Ethical Committee of the Division shall be circulated to all Members of the Division, and to each party concerned, not less than seven days before a general meeting at which it is to be considered, and shall be issued in sealed envelopes marked "Private and Confidential, for the use of the Members of the Division exclusively."

RULE 17.

Members who have taken part as members of the Ethical Committee of the Division in the investigation of a case shall be entitled to take part in the consideration by the General Meeting of the Division of the Report of the Com-

mittee on such case, and to speak and vote thereon as individual members of the Division.

RULE 18

On the reception of the Report and Recommendation of the Committee by the Meeting of the Division there shall be no discussion on the Report of the facts as established in the opinion of the Committee by the evidence placed before it, and no other than the following motions shall be in order on the Report or the Recommendation :—

(*a*) That the Report of the Committee be approved and the Recommendation adopted.

(*b*) That the Report of the Committee be approved, but that the Recommendation be amended as follows :—
That the Division express the opinion that
(One of the alternative forms of recommendation which it would have been permissible for the Committee to make may be inserted and no other.)

(*c*) That the Report and the Recommendation be referred back to the Committee of the Division for further consideration.

RULE 19.

A copy of the resolution of the Division shall be sent by the Honorary Secretary of the Division to each of the parties concerned, *provided they be Members of the Association.*

RULE 20.

If a practitioner shall make amends or express regret to the satisfaction of the Division, it shall be competent for the Division, after due notice, to rescind the resolution of censure passed under Rule 15 (v).

RULE 21.

The finding of the Meeting of the Division upon a case shall be final so far as the Division is concerned, unless new facts shall subsequently be brought forward which, in the opinion of the Ethical Committee of the Division, justify re-opening the case.

RULE 22.

Any medical practitioner feeling himself aggrieved by a decision of the Division shall have a right of appeal to the Branch Council, and from the Branch Council to the Central Ethical Committee, and from the Central Ethical Committee to the Council of the Association, which shall be exercised within fourteen days of receipt of intimation of the finding of the Division, the Branch Council, or the Central Ethical Committee, as the case may be. Notice of such appeal shall be sent to the Honorary Secretary of the Body against whose decision the appeal is lodged in the case of the Division or Branch, and, in the case of an appeal to the Central Ethical Committee or to the Council of the Association, also to the Medical Secretary. In the event of an appeal being lodged, no action shall be taken to give effect to the finding appealed against, pending the decision of such appeal.

RULE 23.

After a case has been referred to the Ethical Committee of the Division for investigation, no person concerned shall appeal to any other professional authority until such case has been disposed of by the Division, or in a case of appeal in accordance with the Rules of the Division or Branch, or By-laws of the Association, until it has been disposed of by the Branch Council Central Ethical Committee, or the Council of the Association, as the case may be.

RULE 24.

It shall be the duty of every member of the Division to afford all reasonable assistance to the Committee of any Division of the Association, to the Council of any Branch, to the Central Ethical Committee, and to the Council of the Association, in the investigation of questions affecting the professional conduct of individual members of the profession, and any party to a case shall be required to furnish for such purposes such number of copies (not exceeding ten) as may reasonably be required of any documents submitted by him for the consideration of any such Committee or Council.

RULE 25.

Any member of the Division who is a member also of the Ethical Committee or of the Council of the Branch, or of any other body whose duty it might be to consider on behalf of the Association a case in respect of which an appeal is made from the finding of the Division, shall be debarred from taking part in the consideration of such case upon appeal, if he has already taken part in the consideration thereof by the Committee or Meeting of the Division, but he shall not be debarred from giving evidence as to facts, if called upon.

A member of the Ethical Committee of the Division holding such other office, may give notice to the Secretary of the Division that, in order to retain his freedom to consider a case in the event of an appeal, he will not take part in the consideration of the case by the Committee of the Division, and the Committee, upon receipt of such notice, shall have power to appoint another member to act in his stead.

RULE 26.

Subject to the provisions herein contained, no Member of the Division shall meet in consultation or accord any professional recognition to a Medical Practitioner who shall have been declared by Resolution of the Division to have acted in contravention of any Rule or Resolution of the Division affecting general professional conduct of which such practitioner shall be proved to have had notice in accordance with the Rules, or who shall have been declared by Resolution to have acted in contravention of any decision of the Association or to be deemed guilty of conduct detrimental to the honour and interests of the profession,

Provided that,

(*a*) this Rule shall not apply to any communication of a Public Medical Officer with a medical practitioner in discharge of the official duty of such officer ;

(*b*) in circumstances of great urgency, affecting the life of a patient, a Member may accord such professional recognition to a practitioner, whom he otherwise could not meet, as the necessities of the case may require, but it shall be his duty forthwith to report the facts to the Honorary Secretary of the Division, who shall transmit them to the Ethical Committee, and it shall rest with the Ethical Committee to consider and report to the Division if in its opinion the circumstances were not such as to justify such action ;

(*c*) any member of the profession concerning whom a Resolution shall have been carried as stated in the first part of this Rule shall have a right of appeal to the Branch Council, and from the Branch Council to the Central Ethical Committee, and from the Central Ethical Committee to the Council, which shall be exercised within fourteen days of receipt of intimation of the finding of the Division, Branch Council or Central Ethical Committee, as the case may be, and pending the decision of such appeal (if any), the operation of this Rule in the case shall be suspended ;

(*d*) If the Division shall at any time after the adoption of a resolution of the kind defined in the first part of this Rule declare, by a resolution adopted by the majority required by the Rules for the passing of the original resolution, that in the opinion of the Division the conduct of the practitioner referred to in such resolution is no longer deserving of censure, or that professional recognition should no longer be withheld from him, this Rule shall cease to apply to such practitioner, and the decision of the Division shall be reported forthwith to any other authority of the Association which has already considered the case, and shall be circulated in the same manner as the original resolution of censure.

RULE 27 (RULE "Z.")

(*a*) In every case in which the Division shall, after due inquiry in accordance with the Rules thereof, have passed a resolution declaring that in the opinion of the Division the conduct of any medical practitioner or practitioners, whether

by contravention of the Rules or Resolutions of the Division, or decisions of the Association, or otherwise, is detrimental to the honour and interests of the medical profession, it shall be the duty of the Executive Committee of the Division to submit a report of the whole facts of each particular case to the Central Ethical Committee, and, subject to the approval of the said Committee, to cause such resolution to be brought directly to the knowledge of every Member of the Division, by means of a Notice in the form appended hereto, which Notice it shall be the duty of the Honorary Secretary of the Division to authenticate by his signature.

(*b*) In any case in which the Division shall, at the time of, or subsequently to, the adoption of a resolution of the nature contemplated by Paragraph (*a*) of this Rule, have also resolved that, in the opinion of the Division, it is desirable that such resolution shall be brought officially to the notice of any specified Division or Branch of the Association, it shall be the duty of the Executive Committee of the Division to submit to the Central Ethical Committee a statement of this fact and of the reasons for which such notification is desired, and, subject to the approval of the said Central Ethical Committee, to cause a copy of the said resolution to be transmitted by the Honorary Secretary of the Division to the Honorary Secretary of the Division or Branch so specified.

(FORM OF NOTICE REFERRED TO IN PARAGRAPH (*a*)):—

BRITISH MEDICAL ASSOCIATION.

_____ *Division.*

(PRIVATE AND CONFIDENTIAL.)

NOTICE.

In pursuance of Rule ..... of the Division, Notice is hereby given by the Executive Committee of the said Division that at a general meeting of the Division, held at on the day of a Resolution in the following terms was duly passed :—

"*That in the opinion of this Division the conduct of of is detrimental to the honour and interests of the Medical Profession.*"

Signed by order of the Executive Committee of the Division of the British Medical Association.

.....
Honorary Secretary.

NOTE.—The Central Ethical Committee desires to draw the attention of Divisions to the necessity of Notices such as the above being circulated in *sealed envelopes*, and marked "Private and Confidential" for the use of Members of the Division exclusively.

INTERPRETATION.

In these Rules (where not repugnant to the context) the word "Meeting" means any Meeting of the Division, whether Special, General, or Annual, to which every Member of the Division is summoned in accordance with the Rules. Notice shall be deemed to have been sent to every Member of a Division if reasonable care has been used in posting such Notices to all the names and addresses appearing in the list of Members in ordinary use at the time.

(B) RULES GOVERNING PROCEDURE IN ETHICAL MATTERS OF A BRANCH COMPOSED OF SEVERAL DIVISIONS.

[*As approved by the Representative Body, July, 1912.*]

RULE 1.

For the better attainment, within the area of the Branch, of the objects of the Association in regard to the maintenance of the honour and interests of the medical profession, it shall be the duty of the Branch to consider questions of professional conduct, and to pass in accordance with its Rules, Resolutions upon such questions, which shall be binding upon the Members.

RULE 2.

The term "Branch" in these Rules shall be deemed to mean "Branch Council" unless the context shall indicate otherwise. Every question of professional conduct referred to the Branch shall be deemed to be referred to the Branch Council, and shall, in the first instance, be addressed to the Honorary Secretary of the Branch.

No question of general professional conduct shall be considered in a general meeting of the Branch except upon reference from the Branch Council, and no question of the conduct of an individual member of the profession shall in any circumstances be considered by such meeting of the Branch.

RESOLUTIONS AS TO GENERAL PROFESSIONAL CONDUCT.

RULE 3.

The following shall be the procedure for the adoption of a Resolution of the Branch regulating the general professional conduct of its Members :

(*a*) On the recommendation of any Division of the Branch the Branch Council shall consider the advisability of the adoption of a Resolution regulating the conduct of Members of the Branch in respect of the matters referred to in such Recommendation, and shall, if it think advisable, draft a Resolution or Resolutions in suitable form.

(*b*) Such Resolution shall be submitted for the consideration of all the Divisions of the Branch in general meetings, and shall not further be proceeded with unless approved by a majority of the Divisions and also by a majority of the total number of Members voting at such Division meetings.

(*c*) If the replies of the Divisions be favourable the Branch Council shall take the opinion of the Members of the Branch by voting papers circulated to every Member and, subject to appeal to the Council of the Association, the Resolution shall be confirmed as a Resolution of the Branch if approved by two-thirds of the Members voting thereon.

(*d*) It shall be competent for any Division of the Branch to appeal to the Council of the Association within one month in respect of the adoption by the Branch of a Resolution, notice of such appeal being given simultaneously to the Medical Secretary and to the Honorary Secretary of the Branch. In the event of such appeal, the Resolution shall not be confirmed as binding on the Members of the Division appealing unless it be approved by the Council of the Association.

RULE 4.

(*a*) It shall be the duty of the Branch Council to notify every Member of the Branch, and the Honorary Secretary of every Division of the Branch, of every Resolution regulating the general professional conduct of Members of the Branch which has been duly adopted in accordance with the Rules, and it shall rest in the discretion of the Branch Council to bring any such Resolution or Resolutions to the notice of any member of the profession practising within the area of the Branch who is not a Member of the Association.

(*b*) It shall be the duty of the Honorary Secretary of the Branch to notify every Member coming to reside within the area of the Branch of every Resolution regulating the professional conduct of Members of the Branch which has been duly adopted, and further, it shall rest in the discretion of the Branch Council to bring any such Resolution or Resolutions to the notice of any Member of the profession who comes to reside within the area of the Branch who is not a Member of the Association.

RULE 5.

The Branch Council may—

(i) bring to the notice of any Division or Branch of the Association any Resolution of the Branch regulating the general professional conduct of its members, and may request support from such Division or Branch, with a view to making the operation of such Resolution more effective ;

(ii) bring to the notice of every Member of the Branch and every member of the profession within the area of the Branch any Resolution affecting general professional conduct adopted by any other Branch, or any Division, of which the Branch shall have received official notice. This Rule shall not apply to Resolutions affecting the professional conduct of individuals, as such.

Rule 6.

If a resolution of the Branch affecting general professional conduct shall have reference to the terms upon which Members may hold appointments of any kind, it shall be the duty of the Honorary Secretary of the Branch, when notifying Members of the adoption of such Resolution, to request those Members who already hold appointments of the kind in question, upon terms inconsistent with the resolution, to take the necessary steps to terminate such appointments, or to secure such modifications of the terms of such appointments as shall be necessary for compliance with the resolution, and no further action shall be taken upon the resolution under the Rules of the Branch with respect to such Members for a period of one month, or such longer period, not exceeding three months, as the Branch Council may think fit, from the date of such notification.

If any Member shall within such period satisfy the Honorary Secretary that he has given such notice as is required under the terms of his appointment to terminate the appointment, either absolutely, or unless the terms thereof are so modified as to bring them into accordance with the resolution of the Branch, no further action shall be taken under the Rules with respect to such Member until the expiration of such notice.

PROCEDURE OF ENQUIRY INTO INDIVIDUAL PROFESSIONAL CONDUCT.

Rule 7.

For the assistance of the Branch in investigating questions of the professional conduct of individual members of the profession, a Committee called the Ethical Committee shall be appointed by the Branch Council at its first meeting after the Annual General Meeting of the Branch, consisting of the President and Honorary Secretary for the time being, *ex officio*, with not less than five other Members. The Ethical Committee of the Branch of each year shall remain in office until the new Committee is appointed. The Ethical Committee shall appoint a Chairman and Honorary Secretary of the Committee, who may be the President and Honorary Secretary of the Branch.

Rule 8.

Questions referred to the Branch affecting the professional conduct of individual members of the profession within the area of the Branch shall, in the first instance, be investigated by the Ethical Committee of the Branch. Such questions shall be considered by the Ethical Committee or the Branch Council in the following circumstances only, namely :—

(*a*) Upon a reference from a Division of the Branch or the Ethical Committee of any such Division ;

(*b*) Upon an appeal by a member of the profession from a decision of such a Division ;

(*c*) Upon a complaint by a member of the Association that a matter brought by him to the notice of the Division has, through the inactivity of the Division or other cause, received no consideration ;

(*d*) Upon a reference from the Central Ethical Committee or Council of the Association.

Rule 9.

A Meeting of the Ethical Committee may be convened at any time by the Chairman or Honorary Secretary of the Committee, and a meeting shall be convened by the Honorary Secretary for the consideration of any question affecting the conduct of a practitioner residing within the area of the Branch, referred by the Ethical Committee of any Division of the Branch, or by the Central Ethical Committee or Council of the Association, upon the expiration of three weeks from the receipt of such reference by the Honorary Secretary of the Branch, or Honorary Secretary of the Committee, or upon the completion of the preliminary enquiries required by these Rules, whichever shall first occur.

Rule 10.

In any case in which the complainant or the practitioner against whom complaint is made is not a member of the Association, the matter shall forthwith be referred to the Central Ethical Committee for advice and instruction, and it shall be the duty of the Ethical Committee of the Branch to conduct any subsequent investigation in all respects in accordance with such advice and instruction as may thus be obtained, any provision contained in these Rules notwithstanding.

Rule 11.

If any Member of the Ethical Committee of the Branch be personally involved in a case as complainant or otherwise, or be partner or assistant or principal of any person so involved, or have otherwise such personal interest in the case as, in the opinion of the Committee, renders it undesirable that he should take part in any investigation of that case, he shall retire from the Committee for the purpose of the investigation of the case, and the Committee may appoint some other Member of the Branch Council, who is not so interested, to act in his stead. If the retiring Member of the Committee be the Chairman or Secretary, the Committee shall appoint a Chairman or Secretary to act in his stead for the purpose of the case.

Rule 12.

The Committee shall investigate the facts of the case, and shall take such evidence, whether written or oral, as shall be deemed necessary for this purpose. Copies of such documents, furnished by any party to a case for the consideration of the Committee, shall be furnished by the Secretary to the other parties concerned, *provided they be Members of the Association.* It shall be the duty of the Committee, whenever practicable, to bring the parties into personal conference in their presence. It shall be competent for the Committee to apply to the Medical Secretary for advice as to procedure and for information as to precedents which may bear upon the case.

Rule 13.

If the case appears to be one affecting the parties as individuals only, the Ethical Committee of the Branch shall have power, with the written consent of all parties, to accept such decision as final, to decide such case.

In all other cases the Committee shall, after due investigation, present to a Special Meeting of the Branch Council, or to the next Ordinary Meeting, at its discretion :—

(1) A Report of the facts as established in the opinion of the Committee by the evidence placed before it.

(2) A Recommendation to the Branch Council in one of the following forms :—

(i) That the Branch Council express the opinion that no offence has been committed against the Rules (or Resolutions) of the Branch or Division or decisions of the Association or the generally accepted principles of professional conduct and that no action be taken.

(ii) That the Branch Council express the opinion that the complaint is frivolous, and that the case be dismissed.

(iii) That the Branch Council express no opinion upon the case and refer the whole of the facts for the consideration of the Central Ethical Committee.

(iv) That the Branch Council express the opinion that .....has violated
(*a*) the Rules (or Resolutions) of the Branch or Division or decisions of the Association, *and*
(*b*) the ordinarily accepted principles of professional conduct,
but that in consideration of faults on the part of others concerned the case be dismissed.

(v) That the Branch Council express the opinion that .....has violated
(*a*) the Rules (or Resolutions) of the Branch or Division or decisions of the Association, *and*
(*b*) the ordinarily accepted principles of professional conduct ;
and resolves that he be, and hereby is, censured.

(vi) That the Branch Council express the opinion that the conduct of.....has been
(*a*) in contravention of the Rules or Resolutions) of the Branch or Division or decisions of the Association, *and*
(*b*) detrimental to the honour and interests of the Association, *and*
(*c*) detrimental to the honour and interests of the profession, *and* (*if a Member*),

(*d*) resolve that he be informed of this finding of the Branch Council and allowed until..... .....to reconsider his position, that the Ethical Committee of the Branch be instructed to report in due course to the Branch Council upon his reply, and that if upon such further report the Branch Council shall consider his reply unsatisfactory the matter shall forthwith be reported to the Council of the Association in order that the propriety of his remaining a Member may be considered.

(vii) That the Branch Council express the opinion that the conduct of.....has been
(*a*) in contravention of the Rules (or Resolutions) of the Branch or Division or decisions of the Association, *and*
(*b*) detrimental to the honour and interests of the Association, *and*
(*c*) detrimental to the honour and interests of the profession, *and* (*if a Member*),
(*d*) resolve that the Report of the Ethical Committee and the findings of the Branch Council be reported forthwith to the Council of the Association in order that the propriety of his remaining a Member may be considered.

RULE 14.

The Report and the Recommendation of the Ethical Committee of the Branch shall be circulated to all Members of the Branch Council, and to each party concerned, not less than seven days before a general meeting at which it is to be considered, and shall be issued in sealed envelopes marked "Private and Confidential, for the use of the Members of the Branch Council exclusively."

RULE 15.

Members who have taken part as members of the Ethical Committee of the Branch in the investigation of a case shall be entitled to take part in the consideration by the Meeting of the Branch Council of the Report of the Committee on such case, and to speak and vote thereon as individual members of the Branch Council.

RULE 16.

On the reception of the Report and Recommendation of the Committee by the Branch Council there shall be no discussion on the Report of the facts as established in the opinion of the Committee by the evidence placed before it, and no other than the following motions shall be in order on the Report or the Recommendation :—

(*a*) That the Report of the Committee be approved and the Recommendation adopted.
(*b*) That the Report of the Committee be approved, but that the Recommendation be amended as follows :— That the Branch Council express the opinion that (One of the alternative forms of recommendation which it would have been permissible for the Committee to make may be inserted and no other.)
(*c*) That the Report and the Recommendation be referred back to the Ethical Committee for further consideration.

RULE 17.

A copy of the Resolution of the Branch Council shall be sent by the Honorary Secretary of the Branch to each of the parties concerned, *provided they be Members of the Association.*

RULE 18.

If a practitioner shall make amends or express regret to the satisfaction of the Branch Council it shall be competent for the Branch Council, after due notice, to rescind the Resolution of censure passed under Rule 13 (*v*).

RULE 19.

The finding of the Branch Council upon a case shall be final so far as the Branch is concerned, unless new facts shall subsequently be brought forward which, in the opinion of the Ethical Committee of the Branch, justify re-opening the case.

RULE 20.

Any medical practitioner feeling himself aggrieved by a decision of the Branch Council shall have a right of appeal to the Central Ethical Committee, and from the Central Ethical Committee to the Council of the Association, which shall be exercised within fourteen days of receipt of intimation of the finding of the Branch Council or of the Central Ethical Committee, as the case may be. Notice of such appeal shall be sent to the Honorary Secretary of the Branch and to the Medical Secretary. In the event of an appeal being lodged no action shall be taken to give effect to the finding appealed against, pending the decision of such appeal.

RULE 21.

After a case has been referred to the Ethical Committee of the Branch for investigation, no party concerned shall appeal to any other professional authority until such case has been disposed of by the Branch Council, or in a case of appeal in accordance with the Rules of the Branch, or By-laws of the Association, until it has been disposed of by the Central Ethical Committee, or by the Council of the Association, as the case may be.

RULE 22.

It shall be the duty of every Member of the Branch to afford all reasonable assistance in his power to the Committee of any Division of the Association, to the Council of any Branch, to the Central Ethical Committee, and to the Council of the Association, in the investigation of questions affecting the professional conduct of individual members of the profession, and any party to a case shall be required to furnish for such purposes such number of copies (not exceeding ten) as may reasonably be required of any documents submitted by him for the consideration of any such Committee or Council.

RULE 23.

Any Member of the Ethical Committee or Council of the Branch who shall have taken part as a Member of a Division in the previous consideration of any case referred to the Branch, shall be debarred from taking part in the consideration of such case in the Ethical Committee of the Branch or in the Branch Council, and if any Member of the Ethical Committee or Council of the Branch be a Member of any higher authority of the Association whose duty it may be to consider the case upon appeal, he shall be debarred from taking part in the hearing of such appeal if he shall have considered the case as a Member of the Ethical Committee or Branch Council, but he shall not be debarred from giving evidence as to facts, if called upon. A Member of the Ethical Committee of the Branch may give notice to the Honorary Secretary of the Committee that in order to retain his freedom to consider the case, if necessary, upon appeal, he does not intend to take part in the consideration of the case by the Committee of the Branch, and the Committee, upon receipt of such notice, shall have power to appoint some other Member to act in his stead.

RULE 24.

Subject to the provisions herein contained, no Member of the Branch shall meet in consultation, or accord any professional recognition to, a medical practitioner who shall have been declared by Resolution of the Branch Council to have acted in contravention of any Rule or Resolution of the Branch, or of the Division in the area of which he resides, affecting general professional conduct, of which Rule or Resolution such practitioner shall be proved to have had notice in accordance with the Rules of that Branch or Division, or who shall have been declared by Resolution of the Branch Council to have acted in contravention of any decision of the Association or to be deemed guilty of conduct detrimental to the honour or interests of the profession.

Provided that,

(*a*) this rule shall not apply to any communication of a Public Medical Officer with a medical practitioner in discharge of the official duty of such officer ;

(*b*) in circumstances of great urgency, affecting the life of a patient, a Member may accord such professional recognition to a practitioner, whom he otherwise could not meet, as the necessities of the case may require but it shall be his duty forthwith to report the facts to the Honorary Secretary of the Division of which he

is a Member, and it shall rest with the Division to consider and report to the Branch Council if in its opinion the circumstances were not such as to justify such action;

(*c*) any Member of the profession concerning whom a Resolution shall have been carried as stated in the first part of this Rule shall have a right of appeal to the Central Ethical Committee, and from the Central Ethical Committee to the Council, which shall be exercised within fourteen days of receipt of intimation of the finding of the Branch Council or the Central Ethical Committee, as the case may be, and pending the decision of such appeal (if any), the operation of this Rule in the case shall be suspended;

(*d*) If the Branch Council shall at any time after the adoption of a Resolution of the kind defined in the first part of this Rule declare, that in the opinion of the Branch Council the conduct of the practitioner referred to in such Resolution is no longer deserving of censure, or that professional recognition should no longer be withheld from him, this Rule shall cease to apply to such practitioner, and the decision of the Branch Council shall be reported forthwith to any other authority of the Association which has already considered the case, and shall be circulated in the same manner as the original resolution of censure.

RULE 25 (Rule "Z").

(*a*) In every case in which the Branch Council shall, after due inquiry in accordance with the rules thereof, have passed a Resolution declaring that in the opinion of the Branch Council the conduct of any medical practitioner, or practitioners, whether by contravention of the Rules or Resolutions of the Branch or decisions of the Association or otherwise, is detrimental to the honour and interests of the medical profession, it shall be the duty of the Ethical Committee of the Branch to submit a report of the whole facts of each particular case to the Central Ethical Committee, and, subject to the approval of the said Committee, to cause such Resolution to be brought directly to the knowledge of every Member of the Branch by means of a Notice in the form appended hereto, which Notice it shall be the duty of the Honorary Secretary of the Branch to authenticate by his signature.

(*b*) In any case in which the Branch Council shall, at the time of, or subsequently to, the adoption of a Resolution of the nature contemplated by Paragraph (*a*) of this Rule, have also resolved that, in the opinion of the Branch Council it is desirable that such Resolution shall be brought officially to the notice of any specified Division or Branch of the Association, it shall be the duty of the Ethical Committee of the Branch to submit to the Central Ethical Committee a statement of this fact and of the reasons for which such notification is desired, and, subject to the approval of the said Central Ethical Committee, to cause a copy of the said Resolution to be transmitted by the Honorary Secretary of the Branch to the Honorary Secretary of the Division or Branch so specified.

(FORM OF NOTICE REFERRED TO IN PARAGRAPH (*a*)):—

BRITISH MEDICAL ASSOCIATION.

_____ *Branch.*

(PRIVATE AND CONFIDENTIAL.)

NOTICE.

In pursuance of Rule of the Branch, Notice is hereby given by the Ethical Committee of the said Branch, that at a meeting of the Branch Council held at on the day of , a resolution in the following terms was duly passed:—

"*That in the opinion of this Branch Council the conduct of of is detrimental to the honour and interests of the Medical Profession.*"

Signed by order of the Ethical Committee of the Branch of the British Medical Association,

Honorary Secretary.

(NOTE.—The Central Ethical Committee desires to draw the attention of Branches to the necessity of Notices such as the above being circulated *in sealed envelopes*, and marked "Private and Confidential," for the use of Members of the Branch Council exclusively.)

(C) RULES GOVERNING PROCEDURE IN ETHICAL MATTERS OF A BRANCH COMPOSED OF ONE DIVISION.

[*As approved by the Representative Body, July, 1912.*]

RULE 1.

For the better attainment, within the area of the Branch, of the objects of the Association in regard to the maintenance of the honour and interests of the medical profession, it shall be deemed to be part of the business of the Branch to consider questions of professional conduct and to pass in accordance with its Rules, Resolutions upon such questions, which shall be binding upon the Members.

RESOLUTIONS AS TO GENERAL PROFESSIONAL CONDUCT.

RULE 2.

The following shall be the procedure for the adoption of a Resolution of the Branch regulating the general professional conduct of its Members:—

(A) *In the case of a Resolution to apply throughout the area of the Branch.*

(i) Fourteen days' notice of the terms of the proposed Resolution shall be given to every Member of the Branch prior to the Meeting of the Branch at which such Resolution is to be considered.

(ii) At the Meeting the Resolution shall be deemed to be carried if approved without amendment by a three-fourths majority of those present and voting, and not otherwise.

(iii) If fewer than one-third of the Members of the Branch are present when the Resolution is put to the vote, and if within seven days from the circulation of a notice of the adoption of such a resolution by a Meeting of the Branch as hereinafter provided, not less than five per cent. of the members of the Branch shall request by notice in writing to the Honorary Secretary that a poll of the Members of the Branch be taken by post, a poll shall be so taken forthwith, and in such cases the Resolution shall be deemed to be carried if approved by two-thirds of those voting at such poll, and not otherwise.

(iv) Notice of the adoption of such a Resolution by the Branch shall forthwith be sent to all Members with a statement of the number of the Members present and voting for and against the Resolution.

(B) *In the case of a Resolution to apply within part only of the area of the Branch.*

(i) Upon receipt of a requisition signed by not less than five-sixths of the Members of the Branch residing and practising within any part, defined in such requisition, of the area of the Branch, expressing the desire of the signatories for the adoption by the Branch of a Resolution to be binding upon all Members practising within the said area, the Honorary Secretary shall give seven days' notice to the Members of the Branch prior to a Meeting of the Branch, of the consideration of such proposed Resolution at such Meeting.

(ii) It shall be competent for the Branch in such Meeting to adopt the proposed Resolution by a simple majority of those present and voting thereon, and the Resolution, if so adopted without amendment, shall thereupon become binding upon all Members of the Branch practising within the area specified.

RULE 3.

(*a*) It shall be the duty of the Branch Council to notify every Member of the Branch of all resolutions affecting professional conduct duly adopted by the Branch in accordance with its Rules; and, subject to such instructions as may be received from the Branch in general meeting, it shall rest in the discretion of the Branch Council, to bring any such

resolution or resolutions to the notice of any member of the profession practising within the area of the Branch who is not a member of the Association.

(*b*) It shall be the duty of the Honorary Secretary of the Branch to notify every Member coming to reside within the area of the Branch of every resolution regulating the professional conduct of Members of the Branch which has been duly adopted, and further it shall rest in the discretion of the Branch to bring any such resolution or resolutions to the notice of any Member of the profession who comes to reside within the area of the Branch who is not a Member of the Association.

RULE 4.

The Branch Council may: (i) bring to the notice of any other Division or of any Branch of the Association a resolution of the Branch affecting general professional conduct, and may request support from such Division or Branch with a view to making the operation of such resolution more effective; (ii) bring to the notice of every Member of the Branch, or of every Member of the profession within the area of the Branch, any resolution affecting general professional conduct, adopted by any other Division or Branch, of which the Branch shall have received official notice. This Rule shall not apply to resolutions affecting the professional conduct of individuals as such.

RULE 5.

If a resolution of the Branch affecting general professional conduct shall have reference to the terms upon which Members may hold appointments of any kind, it shall be the duty of the Honorary Secretary, when notifying Members of the adoption of such Resolution, to request those Members who already hold appointments of the kind in question, upon terms inconsistent with the resolution, to take the necessary steps to terminate such appointment, or to secure such modifications of the terms of such appointments as shall be necessary for compliance with the resolution, and no further action shall be taken upon the resolution under the Rules of the Branch with respect to such Members for a period of one month, or such longer period, not exceeding three months, as the Branch may think fit, from the date of such notification.

If any Member shall within such period satisfy the Honorary Secretary that he has given such notice as is required under the terms of his appointment to terminate the appointment, either absolutely, or unless the terms thereof are so modified as to bring them into accordance with the resolution of the Branch, no further action shall be taken under the Rules with respect to such Member until the expiration of such notice.

PROCEDURE OF ENQUIRY INTO PROFESSIONAL CONDUCT AFFECTING INDIVIDUALS.

RULE 6.

For the assistance of the Branch in investigating questions of the professional conduct of individual members of the profession, a Committee called the Ethical Committee shall be appointed by the Branch Council at the first meeting after the Annual General Meeting of the Branch, consisting of the President and Honorary Secretary for the time being, *ex-officio*, with not less than five other Members. The Ethical Committee of the Branch of each year shall remain in office until the new Committee is appointed. The Ethical Committee shall appoint a Chairman and Honorary Secretary of the Committee.

RULE 7.

Questions referred to the Branch affecting the professional conduct of individual Members of the profession within the area of the Branch shall, be addressed to the Honorary Secretary of the Branch, and shall, in the first instance, be investigated by the Ethical Committee of the Branch. Where a person against whom complaint is made is not a Member of the Branch where the complaint is lodged it shall be the duty of the Honorary Secretary of the Branch to refer the complaint for investigation by the Division to which the person complained of belongs. Cases affecting non-members shall be dealt with by the Branch in the area of which the non-member complained of resides.

RULE 8.

In any case in which the complainant or the practitioner against whom complaint is made is not a member of the Association, the matter shall forthwith be referred to the Central Ethical Committee for advice and instruction, and it shall be the duty of the Ethical Committee of the Branch to conduct any subsequent investigation in all respects in accordance with such advice and instruction as may thus be obtained, any provision contained in these Rules notwithstanding.

RULE 9.

In a case submitted by a Member of the Association, who considers that he has been affected as an individual by what he alleges to be the unprofessional conduct of another Member, it shall be the duty of the Chairman and Secretary of the Ethical Committee to ascertain forthwith whether the applicant has either personally, or by letter, or through some suitable intermediary, afforded the Member against whom he makes complaint a reasonable opportunity of explanation, and if this has not been done to call upon him to do so. If the applicant fails to take this step within a week, the propriety of his action in having made the complaint may itself be made a matter for consideration by the Committee.

RULE 10.

A meeting of the Ethical Committee may be convened at any time by the Chairman or Honorary Secretary of the Committee, and a meeting shall be convened by the Honorary Secretary for the consideration of any question affecting the conduct of a practitioner residing within the area of the Branch, submitted by any Member of the Association, or referred by any Division or Branch of the Association, or by the Central Ethical Committee, upon the expiration of three weeks from the receipt of such reference by the Honorary Secretary of the Branch, or upon the completion of the preliminary enquiries required by these Rules, whichever shall first occur.

RULE 11.

In any case in which the applicant is not affected as an individual by the conduct of which complaint is made, or in which the matter is brought to the notice of the Branch by a Division or Branch of the Association, or by the Central Ethical Committee, the Chairman of the Ethical Committee shall forthwith instruct the Honorary Secretary to forward to the person of whose conduct complaint is made, *provided that he be a Member of the Association*, a statement of the subject matter of the complaint, and afford him a reasonable opportunity to put forward such explanation as he may desire to put before the Committee.

RULE 12.

In any case in which the Ethical Committee is of opinion that it would be undesirable, in the interests of the profession, that the complaint should be investigated locally, the Committee shall be empowered to refer the investigation to the Central Ethical Committee, and all documents bearing on the case shall be sent to the Medical Secretary.

RULE 13.

If any Member of the Ethical Committee be personally involved in a case as complainant or otherwise, or be partner or assistant or principal of any person so involved, or have otherwise such personal interest in the case as, in the opinion of the Committee, renders it undesirable that he should take part in any investigation of that case, he shall retire from the Committee for the purpose of the investigation of the case, and the Committee may appoint some other Member of the Branch Council, who is not so interested, to act in his stead. If the Member of the Committee affected by this Rule be the Chairman or Secretary, the Committee shall appoint a Chairman or Secretary to act in his stead for the purpose of the case.

RULE 14.

The Committee shall investigate the facts of the case, and shall take such evidence, whether written or oral, as shall be deemed necessary for this purpose. Copies of documents furnished by any party to a case for the consideration of the Committee shall be furnished by the Secretary to the other

parties concerned *provided they be Members of the Association.* It shall be the duty of the Committee, whenever practicable, to bring the parties into personal conference in its presence. It shall be competent for the Committee to apply to the Medical Secretary for advice as to procedure and for information as to precedents which may bear upon the case.

RULE 15.

If the case appears to be one affecting the parties as individuals only, the Ethical Committee of the Branch shall have power, with the written consent of all parties to accept such decision as final, to decide such case.

In all other cases the Committee shall, after due investigation, present to a special Meeting of the Branch Council, or to the next ordinary Meeting, at its discretion :—

(1) A Report of the facts as established in the opinion of the Committee by the evidence placed before it.

(2) A Recommendation to the Branch Council in one of the following forms :—

(i) That the Branch Council express the opinion that no offence has been committed against the rules (or Resolutions) of the Branch or decisions of the Association, or the generally accepted principles of professional conduct, and that no action be taken.

(ii) That the Branch Council express the opinion that the complaint is frivolous, and that the case be dismissed.

(iii) That the Branch Council express no opinion upon the case, and refer the whole of the facts for the consideration of the Central Ethical Committee.

(iv) That the Branch Council express the opinion that .....has violated

(*a*) the Rules (or Resolutions) of the Branch or decisions of the Association, *and*

(*b*) the ordinarily accepted principles of professional conduct.

but that in consideration of faults on the part of others concerned, the case be dismissed.

(v) That the Branch Council express the opinion that .....has violated

(*a*) the Rules (or Resolutions) of the Branch or decisions of the Association, *and*

(*b*) the ordinarily accepted principles of professional conduct,

and resolves that he be, and hereby is, censured.

(vi) That the Branch Council express the opinion that the conduct of.....has been

(*a*) in contravention of the Rules of the Branch or decisions of the Association, *and*

(*b*) detrimental to the honour and interests of the Association, *and*

(*c*) detrimental to the honour and interests of the profession ; *and (if a Member)*

(*d*) resolved that he be informed of this finding of the Branch Council and allowed until..... .....to reconsider his position ; that the Committee be instructed to report in due course to the Branch Council upon his reply, and that if upon such further report the Branch Council shall consider his reply unsatisfactory the matter shall forthwith be reported to the Council of the Association, in order that the propriety of his remaining a member may be considered.

(vii) That the Branch Council express the opinion that the conduct of.....has been

(*a*) in contravention of the Rules (or Resolutions) of the Branch or divisions of the Association, *and*

(*b*) detrimental to the honour and interests of the Association, *and*

(*c*) detrimental to the honour and interests of the profession ; *and (if a Member)*

(*d*) resolve that the Report of the Committee and the findings of the Branch be reported forthwith to the Council of the Association, in order that the propriety of his remaining a member may be considered.

RULE 16.

The Report and the Recommendation of the Ethical Committee of the Branch shall be circulated to all Members of the Branch Council, and to each party concerned, not less than seven days before a general meeting at which it is to be considered, and shall be issued in sealed envelopes marked "Private and Confidential, for the use of the Members of the Branch Council exclusively."

RULE 17.

Members who have taken part as members of the Ethical Committee of the Branch in the investigation of a case shall be entitled to take part in the consideration by the meeting of the Branch Council of the Report of the Committee on such case, and to speak and vote thereon as individual members of the Branch Council.

RULE 18.

On the reception of the Report and Recommendation of the Committee by the Meeting of the Branch Council there shall be no discussion on the Report of the facts as established in the opinion of the Committee by the evidence placed before it, and no other than the following motions shall be in order on the Report or the Recommendation :—

(*a*) That the Report of the Committee be approved and the Recommendation adopted.

(*b*) That the Report of the Committee be approved, but that the Recommendation be amended as follows :—

That the Branch Council express the opinion that

(One of the alternative forms of recommendation which it would have been permissible for the Committee to make may be inserted and no other.)

(*c*) That the Report and the Recommendation be referred back to the Ethical Committee of the Branch for further consideration.

RULE 19.

A copy of the resolution of the Branch Council shall be sent by the Honorary Secretary of the Branch to each of the parties concerned, *provided they be Members of the Association.*

RULE 20.

If a practitioner shall make amends or express regret to the satisfaction of the Branch Council, it shall be competent for the Branch Council, after due notice, to rescind the resolution of censure passed under Rule 15 (v).

RULE 21.

The finding of the Meeting of the Branch Council upon a case shall be final so far as the Branch is concerned, unless new facts shall subsequently be brought forward which, in the opinion of the Ethical Committee of the Branch, justify re-opening the case.

RULE 22.

Any medical practitioner feeling himself aggrieved by a decision of the Branch Council shall have a right of appeal to the Central Ethical Committee, and from the Central Ethical Committee to the Council of the Association, which shall be exercised within fourteen days of receipt of intimation of the finding of the Branch Council or of the Central Ethical Committee, as the case may be. Notice of such appeal shall be sent to the Honorary Secretary of the Branch and to the Medical Secretary. In the event of an appeal being lodged no action shall be taken to give effect to the finding appealed against, pending the decision of such appeal.

RULE 23.

After a case has been referred to the Ethical Committee of the Branch for investigation, no person concerned shall appeal to any other professional authority until such case has been disposed of by the Branch Council, or in case of appeal in accordance with the Rules of the Branch, or By-laws of the Association, until it has been disposed of by the Central Ethical Committee, or the Council of the Association, as the case may be.

RULE 24.

It shall be the duty of every member of the Branch to afford all reasonable assistance to the Committee of any Division of the Association, to the Council of any Branch to the Central Ethical Committee, and to the Council of the Association, in the investigation of questions affecting the professional conduct of individual members of the profession, and any party to a case shall be required to furnish for such purposes such number of copies (not exceeding ten) as may reasonably be required of any documents submitted by him for the consideration of any such Committee or Council.

RULE 25.

Any member of the Branch Council who is a member also of the Ethical Committee of the Branch, or of any other body whose duty it might be to consider on behalf of the Association a case in respect of which an appeal is made from the finding of the Branch Council, shall be debarred from taking part in the consideration of such case upon appeal if he has already taken part in the consideration thereof by the Ethical Committee of the Branch or Meeting of the Branch Council, but he shall not be debarred from giving evidence as to facts, if called upon.

A member of the Ethical Committee of the Branch holding such other office may give notice to the Secretary of the Branch that, in order to retain his freedom to consider a case in the event of an appeal, he will not take part in the consideration of the case by the Ethical Committee of the Branch, and the Committee, upon receipt of such notice, shall have power to appoint another member to act in his stead.

RULE 26.

Subject to the provisions herein contained, no member of the Branch shall meet in consultation or accord any professional recognition to a Medical Practitioner, who shall have been declared by Resolution of the Branch Council to have acted in contravention of any Rule or Resolution of the Branch affecting general professional conduct of which such practitioner shall be proved to have had notice in accordance with the Rules, or who shall have been declared by Resolution to have acted in contravention of any decision of the Association or to be deemed guilty of conduct detrimental to the honour and interests of the profession,

Provided that,

(*a*) this Rule shall not apply to any communication of a Public Medical Officer with a Medical Practitioner in discharge of the official duty of such officer ;

(*b*) in circumstances of great urgency, affecting the life of a patient, a Member may accord such professional recognition to a practitioner, whom he otherwise could not meet, as the necessities of the case may require, but it shall be his duty forthwith to report the facts to the Honorary Secretary of the Branch, who shall transmit them to the Ethical Committee of the Branch, and it shall rest with the Ethical Committee to consider and report to the Branch if in its opinion the circumstances were not such as to justify such action ;

(*c*) any member of the profession concerning whom a Resolution shall have been carried as stated in the first part of this Rule shall have a right of appeal to the Central Ethical Committee, and from the Central Ethical Committee to the Council, which shall be exercised within fourteen days of receipt of intimation of the finding of the Branch Council or the Central Ethical Committee, as the case may be, and pending the decision of such appeal (if any), the operation of this Rule in the case shall be suspended ;

(*d*) if the Branch Council shall at any time after the adoption of a resolution of the kind defined in the first part of this Rule declare, by a resolution adopted by the majority required by the Rules for the passing of the original resolution, that in the opinion of the Branch Council the conduct of the practitioner referred to in such resolution is no longer deserving of censure, or that professional recognition should no longer be withheld from him, this Rule shall cease to apply to such practitioner, and the decision of the Branch Council shall be reported forthwith to any other authority of the Association which has already considered the case, and shall be circulated in the same manner as the original resolution of censure.

RULE 27 (RULE "Z"),

(*a*) In every case in which the Branch Council shall, after due inquiry in accordance with the Rules thereof, have passed a resolution declaring that in the opinion of the Branch Council the conduct of any medical practitioner, or practitioners, whether by contravention of the Rules or Resolutions of the Branch or decision of the Association or otherwise, is detrimental to the honour and interests of the medical profession, it shall be the duty of the Ethical Committee of the Branch to submit a report of the whole facts of each particular case to the Central Ethical Committee, and, subject to the approval of the said Committee, to cause such Resolution to be brought directly to the knowledge of every Member of the Branch by means of a Notice in the form appended hereto, which Notice it shall be the duty of the Honorary Secretary of the Branch to authenticate by his signature.

(*b*) In any case in which the Branch Council shall, at the time of, or subsequently to, the adoption of a Resolution of the nature contemplated by Paragraph (*a*) of this Rule, have also resolved that, in the opinion of the Branch Council it is desirable that such Resolution shall be brought officially to the notice of any specified Division or Branch of the Association, it shall be the duty of the Ethical Committee of the Branch to submit to the Central Ethical Committee a statement of this fact and of the reasons for which such notification is desired, and, subject to the approval of the said Central Ethical Committee, to cause a copy of the said resolution to be transmitted by the Honorary Secretary of the Branch to the Honorary Secretary of the Division or Branch so specified.

(FORM OF NOTICE REFERRED TO IN PARAGRAPH (*a*)) :—

BRITISH MEDICAL ASSOCIATION.

_____ *Branch.*

(PRIVATE AND CONFIDENTIAL.)

NOTICE.

In pursuance of Rule of the Branch, Notice is hereby given by the Ethical Committee of the said Branch that at a meeting of the Branch Council held at on the day of , a resolution in the following terms was duly passed :—

"*That in the opinion of this Branch Council the conduct of of is detrimental to the honour and interests of the Medical Profession.*"

Signed by order of the Ethical Committee of the Branch of the British Medical Association,

Honorary Secretary.

(NOTE.—The Central Ethical Committee desires to draw the attention of Branches to the necessity of Notices such as the above being circulated in *sealed envelopes*, and marked "Private and Confidential," for the use of members of the Branch Council exclusively.)

To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.

Association Notices.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

BRANCH AND DIVISION MEETINGS TO BE HELD.

EAST ANGLIAN BRANCH.—The autumn meeting of the Branch will be held at Bury St. Edmunds, on Thursday, September 26th. Members wishing to read papers or show cases or specimens should communicate at once with Dr. Gutch, Ipswich.—B. H. NICHOLSON, Honorary Secretary, East Lodge, Colchester.

LANCASHIRE AND CHESHIRE BRANCH: LIVERPOOL DIVISION.—A meeting of the Division will be held at the Medical Institution on Tuesday, October 8th, at 4 p.m. The business of the meeting will be to: (1) Receive the report of the Representative at the meeting in July. (2) To fill a vacancy on the Branch Council.—FRANCIS W. BAILEY, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: EAST HERTFORDSHIRE DIVISION.—The next meeting of this Division will be held on Thursday, September 26th, 1912, at the Shire Hall, Hertford, at 3 p.m. Agenda: (1) Confirm minutes. (2) Correspondence. (3) Read circular letter from the Medical Secretary of the Association in reference to the resignations of contributory contract practice appointments. (4) Read circular letter from the Medical Secretary of the Association in reference to Public Medical Service schemes, and in connexion therewith: (5) Consider the Model Schemes A and B (revised) (see BRITISH MEDICAL JOURNAL SUPPLEMENT, September 14th, which members are requested to bring with them to the meeting) submitted by the State Sickness Insurance Committee for adoption by the Divisions. (6) Fix time and place of next meeting. (7) Any other business.—H. D. LEDWARD, Honorary Secretary.

SOUTH-EASTERN BRANCH: BRIGHTON DIVISION.—An ordinary meeting of this Division will be held at the Lecture Hall, New Road, on October 15th, at 4 p.m.—C. H. BENHAM, Honorary Secretary.

SOUTH MIDLAND BRANCH.—The autumnal meeting will be held at Northampton General Hospital on Thursday, October 10th, at 2.30 p.m., under the presidency of Dr. Baker (Aylesbury). Members are requested to send titles of papers, or notes of cases, to the Honorary Secretary as soon as possible.—E. HARRIES JONES, Honorary Secretary, Northampton.

BRITISH MEDICAL ASSOCIATION LIBRARY.

BOOKS NEEDED TO COMPLETE SERIES.

THE Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Association of Genito-Urinary Surgeons. Transactions. 1906.
American Climatological Transactions. Vols. 1, 4, 5, 6.
American Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.
American Journal of the Medical Sciences. New series, vols. 4, 5, 1842-3; vols. 14, 15, 1847-8; vols. 18–30, 1850; vol. 33, 1857; vol. 46, 1864-5; vol. 59; or any parts of these vols.
American Journal of Ophthalmology. Vols. 1–9.
American Laryngological Association. Transactions. Vols. 1–6, 8–9.
American Medical Association. Transactions, 2, 4, 6, 7, 11, 12, 14, 15, 16, 19, 20, 22, 31, after vol. 33, and the *Journal*, up to 1905 inclusive.
American Medico-Psychological Association. Transactions. Vol. 13, 1906.
American Otological Society. Transactions. Vol. 3, part 2, 1883.
American Public Health Association. Transactions. Any vols.
Analyst. Vols. 1–24.
Annals of Surgery. Vols. 13, 14, 26.
Archiv für Dermatologie und Syphilis. Bd. 24 and 25 (1892 and 1893).
Archives générales de médecine. Third new series 7–8 (1839–40); 4th series, 10–17, 20–25, 1852–55, 1858–64, 1872–1897; 1846–55 inclusive; 1857–64 inclusive; 1871.
Archives of Ophthalmology. Vols. 1–3, 6, 7, 14, 15, 16 and 20.
Archives of Otology. Vols. 1–7, and 20–22.
Archives de Parasitologie. Vols. 1–8.
Archives of Pediatrics. Vols. 1–16.
Asylum Journal of Mental Science. Vol. 1, 1854.
Biochemical Journal. Vols. 1–4.
British Dental Journal. Vols. 1–29.
Biometrika. Vols. 2–6.
British Journal of Dermatology. Vol. 2, part 3.
British Laryngological and Rhinological Association. Transactions 1896–7–8–9.
Caledonian Medical Journal. Vol. 1 prior to 1894.
Canada Medical Journal. Vols. 1–4, 6, and after 8.
Carmichael Essays. Rivington, 1879.
Centralblatt für Augenheilkunde. Hirschberg. All prior to 1891; Index to 1891.
Centralblatt für Bakteriologie. Bound volumes prior to 1899.
Centralblatt für medicinische Wissenschaften. Vols. 1–19.
Centralblatt für Nervenheilkunde. 1878, 1879, 1885, 1889, 1890, 1892, and since 1893.
Congrès Français de Chirurgie. Transactions 1, 2, 3, 6, and 10, and all since 11th.
Congrès Internat. d'Obstétrique et de Gynécologie. 3. Amsterdam, 1899.
Congress für innere Medicin: Verhandlungen. 1–12, and 14, and since 18.
Dermatological Congress. Vienna, 1892.
Dermatologischer Jahresbericht, 1906–1908.
Dermatologische Zeitschrift. Vols. 1–16.
Dublin Quarterly Journal of the Medical Sciences. Vols. 1, 10, 17, 20, 28, and 35–40.
Edinburgh Obstetrical Transactions. Vol. 5.
Glasgow Medical Journal. 1833 and 1853–1868.
Glasgow Pathological Society. Transactions 1 and 2.
Guy's Hospital Gazette. Nos. 1 and 5. 1872.
Indian Medical Gazette. 1868–1884.
Intercolonial Medical Journal, Australasia. Vols. 1–13.
International Congress on Alcohol. Proceedings of First to Eleventh.
International Congress of Genetics. Transactions. (1) London 1899, (2) New York 1902, (3) London 1906.
International Congress of School Hygiene. Transactions of First Congress, Nuremberg.
International Congress of Hygiene. Transactions of Congresses 1–6 and 10–12.
International Medical Congress. Budapest, 1909. Section 4, Part 2; Section 7B, Part 1; Section 15, Part 2.
International Ophthalmological Congress. Transactions of Fifth; New York, 1876.
Jahrbuch für Kinderheilkunde. Bd. 1–9.
Jahresbericht Neurologie und Psychiatrie, 6 and 11–14.
Janus. All vols., 8–15.
Journal of Association of Military Surgeons. Vol. 19, 1906.
Journal of Laryngology. Vols. 1–9.
Journal of Medical Research. Vols. 1–20.
Lakeside Hospital Clinical and Pathological Papers, Series 2.
Lancet, January 2nd, 1858.
Laryngoscope. Vols. 1–20.
Liverpool Medico-Chirurgical Journal. Nos. 15, 16, 28, 29, 35, and 37–54.
London Hospital Gazette. Vols. 1–6.
Medical Officer. Vols 1 and 2.
Montreal Medical Journal. Vols. 1–16.
New York Pathological Society. Proceedings prior to 1888, 1890, 1892–1898, 1901–1904.
New York State Journal of Medicine, 1906.
Ophthalmic Review. January, 1882.
Ophthalmoscope. Vols. 1–8.
Pediatrics, prior to 1902.
Provincial Medical and Surgical Journal. March to September, 1841.
Ramazzini, Diseases of Tradesmen. Translated by James.
Recueil d'ophtalmologie. Prior to 1893.
Revue de gynécologie. 1–16, Pozzi.
Revue générale d'ophtalmologie. Prior to 1893.
Revue neurologique. Prior to 1893 and since that date.
St. Bartholomew's Hospital Gazette. Vols. 1–6.
St. George's Hospital Gazette. Vols. 1–7.
St. Mary's Hospital Gazette. Vol. 4.
Sanitary Commissioner with the Government of India Reports, 1–24.
Sei-i-kwai Medical Journal. Vols. 1–11.
Semaine Médicale. Prior to 1884. Titles for 1884 and 1895.
South African Medical Journal. February and April, 1895. Titles, Vols. 3 and 4.
Watt. Bibliographia Britannica, 4 vols. 1824.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

THE fourth meeting of the State Sickness Insurance Committee appointed by the Annual Representative Meeting, 1912, was held on September 12th. The meeting began at 10 a.m. and ended at 7.20 p.m. The members present were: Dr. J. A. Macdonald (Chairman). *England and Wales:* Dr. R. M. Beaton (London), Dr. T. M. Carter (Westbury-on-Trym), Dr. Major Greenwood (London), Miss Frances Ivens (Liverpool), Dr. Constance Long (London), Dr. E. J. Maclean (Cardiff), Dr. D. G. Thomson (Norwich), Mr. D. F. Todd (Sunderland), Mr. E. H. Willock (Croydon). *Scotland:* Dr. John Adams (Glasgow), Dr. R. McKenzie Johnston (Edinburgh). *Ireland:* Professor A. H. White (Dublin). *Ex-officio:* Sir James Barr (President of the Association), Dr. Edwin Rayner (Treasurer).

QUESTION OF CO-OPTION TO THE COMMITTEE.

A communication was received from Mr. Herbert Jones, in reply to a communication inviting him to become a member of the Committee, expressing his inability to accept the position, and suggesting that the Society of Medical Officers of Health should be asked to nominate one of its members in view of the evident desire of the Committee to have some representative medical officer of health among its members. It was resolved to ask the Society of Medical Officers of Health to nominate one of its members for appointment upon the Committee.

RESIGNATION OF MEMBERSHIP OF ADVISORY COMMITTEES.

The Medical Secretary was instructed to write to those members of the Advisory Committees who have not yet definitely stated whether they intend to resign their membership of such Committees, asking for their decisions in the matter.

ADVERTISEMENTS FOR TUBERCULOSIS OFFICERS.

Several questions relating to advertisements for tuberculosis officers were considered by the Committee. An advertisement from the County Council of Londonderry for a tuberculosis officer for the county at a salary of £350 per annum, with an allowance for travelling expenses not exceeding £50 per annum, was refused, on the ground that the salary was below the minimum approved by the Association. The insertion of another advertisement was suspended pending information from the local Division.

PUBLIC MEDICAL SERVICE SCHEMES.

The Committee resumed consideration of the minutes of the Public Medical Service Subcommittee. The subcommittee submitted, in addition to the Scheme B published in the SUPPLEMENT of September 14th, a third scheme of payment per attendance, together with a variation by Dr. Ledward, a member of the subcommittee, for the provision of medical attendance for persons insured under the Insurance Act and persons not so insured, to be worked by the members of the local profession in co-operation with the subscribers, either individual or in societies. Before discussing the scheme in detail, the question was considered of the desirability of the Association giving its *imprimatur* to any scheme which depended for its success upon the co-operation of the approved societies, or in which some part of the responsibility of the management should be left to the subscribers. With one dissentient the Committee resolved that such schemes could not be submitted by the Association for adoption by Divisions because they contravened the cardinal principle of the Association relating to freedom from friendly society control. In the scheme submitted by the subcommittee it was proposed that trustees should be appointed by the subscribers, but the Committee was of opinion that it would be impossible to expect subscribers to take the responsibility of appointing trustees without demanding some further part in the management. Dr. Ledward's variation of the scheme frankly adopted the principle of co-operation with the approved societies. The question was raised as to whether it would be *ultra vires* for the profession in any area to proceed with the formation of a scheme based upon the lines just described. The CHAIRMAN ruled that the question could not properly arise until such a scheme was submitted for approval, as it was possible that after consideration no such scheme might be submitted, and in any case there was a difference between a Division adopting such a scheme on its own responsibility after careful consideration of the schemes of the Association, and the sending out, with the *imprimatur* of the Association, of a scheme which more or less conflicted with one of the cardinal principles of the Association.

The Medical Secretary was instructed, in sending the schemes to the secretaries of Divisions, to draw special attention to the note on page 297 of the SUPPLEMENT of September 14th, which is as follows:

> *Note.*—In view of the experimental nature of this scheme (that is, Scheme B), it is thought desirable that for the present it should only apply to insured persons.

The Committee was of opinion that while schemes based upon the capitation system have been long in force, so that their advantages and difficulties are well known, any scheme based upon payment per attendance must be for some time of an experimental nature, and therefore could not be recommended with the same confidence as the capitation scheme. It was thought, therefore, that for the present it might be safer for Divisions which prefer the plan of payment per attendance to apply it only to insured persons who, by reason of the subsidies they will receive from their employers and from the State, will be in a better position to pay the fees required to enable any scheme of the kind to be a financial success.

RESIGNATIONS OF CONTRIBUTORY PRACTICE APPOINTMENTS.

The Committee proceeded to consider a detailed report based upon information supplied by Provisional Medical Committees as to (1) the number of pledges signed, (2) the number of signed forms of resignation, and (3) special circumstances applying to certain areas. The advisability was discussed of ordering the sending in of resignations in every area in Great Britain, or of excluding from such order certain areas the organization of which was not considered to come up to the standard of the Committee. Careful attention was given to each of these areas, and finally the Committee unanimously passed the following resolution:

> That the State Sickness Insurance Committee, acting under the authority conferred by Minute 217 of the Annual Representative Meeting, 1912, decides that the resignations of contributory contract practice appointments, in so far as they extend to insured persons, shall be sent in on or before September 29th, 1912; that Provisional Local Medical Committees shall have power to delay the sending in of individual resignations in cases in which special difficulty may arise by the sending in of resignations on September 29th, and in which a shorter notice may suffice; and that in these cases notice must be given at such a date as will bring about the termination of the appointments by January 15th, 1913.

The Medical Secretary was instructed to forward a letter of instructions to the Secretaries of the Provisional Medical Committees dealing with various points of difficulty which had been raised.

ACTION OF HOSPITAL STAFFS IN CONNEXION WITH THE PLEDGE OF THE ASSOCIATION.

Instructions were included in the letter to be sent to the Honorary Secretaries of the Provisional Medical Committees as to the manner in which the members of the staffs of voluntary medical hospitals are to be called on to fulfil their part of the pledge. Members of such staffs are urged to make united representation to their boards of management, quoting the third clause in the pledge, and indicating their willingness to meet their boards in order further to explain their position.

SANATORIUM BENEFIT SCHEMES.

The Committee considered various provisional schemes for the provision of sanatorium benefit brought before it by Provisional Medical Committees, and decided certain principles which arose in connexion with many of them.

Night Visits.

It was agreed that double fees should be charged for night visits—namely, visits made between 8 p.m. and 8 a.m. in response to calls made between those hours.

Fee for Report and Visit within Two Miles.

The Committee resolved that the minimum fee for a report such as is required in Form Med. 2 should be 5s., and should include a consultation at the surgery or a visit if within two miles of the practitioner's surgery; and that beyond such distance a mileage fee of 1s. a mile should be charged.

Fee for Quarterly Reports.

The Committee considered the question of the quarterly reports which will be required, under the administration of sanatorium benefit, from practitioners giving domiciliary attendance, and decided that a fee of 5s. should be charged for these reports.

Specimen Sanatorium Benefit Scheme.

The following scheme, which was submitted by the North of England Branch as suitable for adoption within the area of that Branch, is here given as a specimen of a scheme which has been worked out in consultation between the profession in a given area and the county medical officers of health, and has been approved by the Committee:

1. A chief tuberculosis officer, whose appointment shall be a whole-time one, shall not receive less than £500 per annum. An assistant tuberculosis officer, whose appointment shall be a whole-time one, shall receive not less than £300 per annum.
2. The tuberculosis dispensary work by the above officers to be purely consultative and advisory.
3. No person to be seen at the tuberculosis dispensary by above officers except on a note (M. 1) given by the person's own doctor, such note to be included in the doctor's charge, if any, to the patient.
4. The tuberculosis officer having issued form M. 2, the form is then filled in by the patient's own doctor and forwarded to the tuberculosis officer. For such certificate the fee of 5s. is to be paid by the tuberculosis authority to the doctor sending in such certificate. This payment is subject to mileage.
5. The form of treatment—sanatorium or domiciliary—is to be defined by the tuberculosis officer or his assistant after consultation with the patient's own doctor.
6. The treatment to be carried out by the patient's own doctor under supervision of a whole-time tuberculosis officer in all cases except those in sanatorium and those in which the medical attendant of the patient has consented.
7. The fees to be paid by the tuberculosis authority to patient's doctor shall be:
   Consultation at surgery, 2s. 6d.
   Visit to home, within two miles, 2s. 6d., and 1s. per mile beyond the two miles.
   Night visits—that is, visits made between 8 p.m. and 8 a.m. in response to calls received between those hours—double usual fees.
   Injection of tuberculin in addition to above charges, 2s. 6d. (Vaccine to be supplied by public authority.)
8. Whenever the tuberculosis authority controls tuberculosis in uninsured persons, the same arrangements as hereinbefore defined for insured persons shall prevail.

Relation of Medical Officers of Health to Position of Chief Tuberculosis Officer.

The question of the relation of the medical officer of health to the post of chief tuberculosis officer was raised in several communications to the Committee. The Committee has had to recognize, as reported in the SUPPLEMENT of last week, that there are areas which are not sufficiently large, and in which the work would not be sufficient, to justify the appointment of a whole-time chief tuberculosis officer at £500 per annum. In these circumstances the Committee has been compelled to recognize that for the present the medical officer of health might have to be appointed as chief tuberculosis officer. Such an appointment, it was strongly felt, was not in accordance with the terms of the Astor report, or of the circular on the subject of sanatorium benefit issued by the Commissioners. These documents foreshadowed the appointment of a whole-time officer with special experience who should be regarded as a consultant and adviser by the local profession on matters relating to the diagnosis and treatment of tuberculosis, and the Committee fully recognized that few medical officers of health have the necessary clinical and special experience which would justify their appointment to such a post. In addition it appeared to the Committee absurd to suppose that a medical officer of health, with his heavy administrative duties, could possibly devote the necessary time and attention to the clinical and consultative duties of chief tuberculosis officer. The only solution seemed to be the amalgamation of some of the smaller areas so as to provide a chief tuberculosis officer in the sense indicated by the Astor report. The Committee felt obliged, therefore, to approve with reluctance the provisional appointment of medical officers of health in certain areas as chief tuberculosis officers, but has pointed out in each of these cases the disadvantages under which the medical officer of health will labour, and has urged that he should only be responsible for the administrative duties, and that in such cases a local consultant should be appointed for the consultative clinical duties. The importance of this subject was felt to be so great that a letter was directed to be sent to the Local Government Board, asking (*a*) whether there was any ground for the fears which had been expressed that the appointment of medical officers of health as chief tuberculosis officers would be regarded as more than a temporary expedient, and (*b*) suggesting that in the cases where it was found necessary to appoint medical officers of health to these posts their duties should be administrative, and that they should be called "Administrative Tuberculosis Officer," or "Chief Administrative Tuberculosis Officer."

Approval of Sanatorium Benefit Schemes.

In order to save time the Chairman was authorized by the Committee to consider any sanatorium benefit schemes submitted for approval, and to approve on behalf of the Committee such parts thereof as were in conformity with the principles already laid down by the Committee, reserving for consideration by the Committee any points which have not yet been decided.

Treatment at Tuberculosis Dispensaries.

It was brought to the notice of the Committee that it was evidently the intention of some local authorities to carry on treatment at tuberculosis dispensaries by means of whole-time officers and with no reference to the local practitioners. This tendency, the Committee felt, should be most strenuously resisted by the profession, as it did not appear that, save in exceptional cases, any treatment could be carried out at dispensaries which could not equally well be carried out at home or in the surgeries of practitioners. The Committee felt that it was of the greatest importance that the nature and extent of the work to be done at the dispensaries should be defined. After discussion the matter was postponed for further information.

CENTRAL INSURANCE DEFENCE FUND.

A member of the Committee raised the question of the desirability of the publication in the JOURNAL of a weekly list of guarantors and the amount of their guarantee to the Central Insurance Defence Fund. The Committee decided that for various reasons the publication of these lists, if desired, should be undertaken locally. Inquiry was also made as to how it was intended that the guarantees should be called in, to which the Committee replied that guarantors would only be called upon as and when compensation claims demanded such action, and that every attempt would be made to render the calls as reasonable as possible and to make them at as long intervals as possible. It was not thought likely that the amount needed for administrative expenses would reach more than 5 per cent. of the amount guaranteed, but the Committee deprecated the suggestion which had been made in various quarters that the administrative expenses were of any less importance or urgency than any other claims which could be made on the fund.

Meetings of Branches and Divisions.

EDINBURGH BRANCH:

SOUTH-EASTERN COUNTIES DIVISION.

A MEETING of this Division was held in the Waverley Hotel, Duns, on Wednesday, September 11th. Dr. J. S. MUIR, Chairman, presided, and seventeen members were present.

Club Resignations.—The Secretary was instructed to send in the resignations of contract practice appointments under the direction of the State Sickness Insurance Committee.

Defence Funds.—The SECRETARY stated that the amount guaranteed to the Defence Funds now reached an average of £13 per head, and that he had been supplied with forms

from the central offices for the purpose of asking members to increase their guarantees, but that these had not been issued, as the Branch Council had recently issued a whip to members, the replies to which were not yet to hand. The Division resolved that a recommendation be made to the Branch Council that, in order to avoid confusion, all circulars should in future be issued through the Divisional Secretary. It was remitted to the Executive Committee to take the matter of the Defence Funds in hand and to take such action as might appear necessary in order to place the funds on a satisfactory footing.

Sanatorium Benefit.—The SECRETARY read a letter from the Secretary to the Roxburghshire Insurance Committee asking the terms on which members would give service under sanatorium benefit. It was resolved that the Secretary should submit to the Council for approval the following rate of charges:

	s.	d.
A report on Forms 2 or 4	7	6
Visit or consultation	2	6
Injection of tuberculin (tuberculin to be supplied)	2	6

Extras:—

Messages received after 10 a.m. to be attended to that day: Fee and a half.

Night visits, 8 p.m. to 8 a.m.: Double fee.

Sunday visits: Fee and a half.

Mileage: For persons resident beyond 1 mile from the doctor's house, a central point agreed upon, or beyond a municipal boundary, 1s. per return mile (in addition to the proper fee) to be charged for each visit, whether one or more patients are seen on the same round. Where access by carriage is not available, 2s. 6d. per mile.

Public Medical Service Scheme.—Drs. MacRobert, Campbell, Dixon, and Tyrrell were appointed a committee to draft and submit a Public Medical Service scheme suitable to the Divisional area.

GLASGOW AND WEST OF SCOTLAND BRANCH:

GLASGOW EASTERN DIVISION.

A MEETING of this Division was held in Bellgrove Hall on September 11th. Dr. H. A. MCLEAN, Chairman, presided, and twenty-five members were present.

Resignation from Provisional Insurance Committee.—The SECRETARY intimated that in response to the request of the Division Dr. Charles R. McLean had resigned from the Glasgow Burgh Provisional Insurance Committee.

Annual Representative Meeting.—The report of the Annual Representative Meeting was submitted by Dr. JOHN P. GRANGER. Some discussion followed, which was taken part in by Drs. JOHN PATRICK, W. L. MUIR, THOMAS RUSSELL, and MILLER SEMPLE, and on the motion of the CHAIRMAN it was unanimously agreed to record in the minutes the thanks of the Division to Dr. Granger for his very able and instructive report and his arduous labours in connexion with the Annual Representative Meeting.

Medical Defence Fund.—The SECRETARY read communications from Dr. Alfred Cox in connexion with the National Insurance Act and the Medical Defence Fund. He drew attention to the resolution of the Annual Representative Meeting with regard to the latter, urging the increase of guarantees to the Central Fund. He intimated that he had procured copies of the new guarantee form, which were distributed to those present, and met with a gratifying response.

Local Provisional Medical Committee.

The local Provisional Medical Committee met at the close of the Division meeting. In the absence of the Chairman, Dr. ROBERT DAVIDSON was called upon to preside, and ten members were present.

The Pledge and Club Resignations.—The SECRETARY intimated that the number of pledges signed in the Division was now 151, and he submitted a list of those who had not yet signed and arrangements were made to have these called upon. The number of practitioners holding contract appointments was stated to be 62, and all these had sent in resignations with the exception of 6. It was resolved to make efforts to induce these to fall into line.

Defence Fund.—The Defence Fund was also reported upon; 83 members and 4 non-members had guaranteed or subscribed the sum of £392 7s., which had been increased at the meeting of the Division just held to £569.

METROPOLITAN COUNTIES BRANCH:

EAST HERTFORDSHIRE DIVISION.

THE second meeting of this Division, to which all practitioners resident within the area of the Division were invited, was held at the Shire Hall, Hertford, on Wednesday, September 11th, at 3.15 p.m. Dr. A. J. BOYD was in the chair, and eighteen members and four non-members were present.

Branch Contract Practice Committee.—The nomination of Mr. R. Odell (Hertford) and Dr. C. P. Charles (Hitchin) to serve on this committee was confirmed.

Branch National Insurance Committee.—Dr. W. F. Clark (Cheshunt) was nominated to serve on this committee.

Representative Meeting.—Dr. H. D. LEDWARD, the Representative, presented his report of the Annual Representative Meeting, for which he was thanked by the members.

Provisional Medical Committee.—The circular letter from the Medical Secretary was read, and in connexion therewith the report of the executive of the Provisional Medical Committee for the area in reference to action taken in connexion with the National Insurance Act was received.

The recommendations of the executive were considered, and after slight amendment were adopted as follows:

1. That the following fees offered by the Provisional Insurance Committee in connexion with sanatorium benefit be accepted:
   (*a*) Five shillings for a medical examination and report (not including bacteriological examination).
   (*b*) Two shillings and sixpence for consultation at surgery.
2. That the fee of 2s. 6d. for each visit be accepted, subject to an appropriate allowance for mileage, night visits, and special visits; that the allowance for mileage be 1s. per mile (outward) after one mile; that the fee for a night visit be 5s., and that the fee for a special visit be 3s. 6d., such fees being subject to the approval of the Council of the Association.
3. That where vaccine treatment is necessary, 2s. 6d. be the fee for injection of vaccine in addition to the fee for visit or consultation, the vaccine to be supplied at the cost of the administrative authority.
4. That the invitation of the Sanatorium Subcommittee to join in a deputation with representatives of West Hertfordshire be accepted.
5. That the following be appointed to represent East Hertfordshire on this deputation: Drs. Shelly, Boyd, Gilbertson, Dockray, and the Honorary Secretary.
6. That all practitioners resident within the area of the Division who have not already guaranteed £10 be urged to do so forthwith. That a circular letter be sent first, to be followed by a personal canvass where necessary.
7. That the resignation forms for this area be not sent in before the formal instruction of the State Sickness Insurance Committee is received.
8. That immediately before the resignations are sent in representatives of the local friendly societies be invited to meet the local medical profession in each ward area in order that the attitude of the profession towards the National Insurance Act may be explained.

Provisional Insurance Committee.—The following resolution was also passed unanimously:

That this meeting regrets that Dr. Burnett Smith's action in accepting a seat on the Sanatorium Subcommittee of the Provisional Insurance Committee (subject to the proviso as to resignation in the event of sanatorium benefit not being carried out in accordance with the wishes of the British Medical Association) should have been subjected to adverse criticism, particularly as Dr. Burnett Smith's action was taken by him in accordance with the sanction specially accorded by the British Medical Association in relation to sanatorium benefit only.

NORTH OF ENGLAND BRANCH:

BISHOP AUCKLAND DIVISION.

A MEETING of this Division was held at the Wear Valley Hotel, Bishop Auckland, on September 6th, when seventeen members were present. In the absence of the Chairman, Dr. WARDLE, Bishop Auckland, occupied the chair.

The Complementary Pledge.—It was reported that practically every member of the Division had either signed or was prepared to sign the pledge and to resign all friendly society appointments.

Insurance Committees.—It was unanimously agreed that, in the event of failure of negotiations by a central body, the Division decline to meet the Insurance Committees, and that no offer will be considered without reference in the first place to head quarters.

Sanatorium Benefit.—The Honorary Secretary reported the terms provisionally offered by the Durham County Council for the treatment of tuberculosis, and those were regarded as satisfactory.

Strike Arrears.—It was resolved that no further steps be taken, as in nearly every case these had been paid.

SOUTH-EASTERN BRANCH:

Brighton Division.

An ordinary meeting of this Division was held on September 17th. Dr. Ryding Marsh was in the chair, and forty-six members were present.

Annual Representative Meeting.—Dr. Benham presented the report of the Representatives on the Annual Representative Meeting, which was approved.

Provisional Local Medical Committee.—The report of the Provisional Local Medical Committee was received, approved, and entered on the minutes. The Provisional Committee reported that a public meeting is to be held in the Royal Pavilion on Wednesday, October 16th, at 8 p.m., to which will be invited members of local Insurance Committees, corporations and education committees, the officials of friendly societies, and the principal clergy and ministers. Mr. T. Jenner Verrall has kindly consented to give an address on the position of the medical profession in relation to the Insurance Act. The Committee is also considering the matter of the appointment of the medical officer of health for Brighton as chief tuberculosis officer, and has sent a letter to the President of the Local Government Board pointing out the principal objections to the appointment.

Schools Committee.—The report of the Schools Committee was presented by the Chairman (Dr. Wood). It stated that unofficial information had been received that a practitioner residing in the district has been offered the post of junior school doctor under the Brighton Education Authority, and recommended that the matter should be referred to the Ethical Committee of the Division for their consideration and report. It was also recommended that Drs. Taylor, Hobhouse, and Ionides be invited to attend the next meeting of the Schools Committee, with a view to considering the resolution of the Division with reference to an extended pledge from the members of the staffs of the local hospitals regarding the treatment of school children. Dr. Wood explained that it was proposed to hold a meeting to which all members of hospital staffs should be invited, and that the terms of the additional pledge would be open for discussion at that meeting. The recommendations of the School Committee were adopted.

Annual Meeting Hospitality Fund.—The Secretary announced that the amount received for the Hospitality Fund for the Annual Meeting, 1913, amounted to £86 19s.

Next Meeting.—The date of the next ordinary meeting of the Division will be October 15th.

Guildford Division.

The annual meeting of this Division was held at the Royal Surrey County Hospital on June 20th. Dr. Kingsford, Chairman, presided, and there were twenty-five present.

Election of Officers.—Dr. Kingsford was unanimously requested to continue in his office of Chairman for another year. The following other officers were elected: *Vice-Chairman*, Mr. H. Branson Butler; *Secretary and Treasurer*, Mr. Cecil P. Lankester; *Representative at Representative Meetings*, Mr. Cecil P. Lankester; *Representative on Branch Council*, Dr. Gerald F. Bird; *Executive Committee*, Drs. N. F. Kendall, A. Lyndon, A. M. Mitchell, B. H. Pain, H. F. Parker, F. E. Pearse, E. W. Sheaf, S. G. Sloman, E. J. Smyth, A. Hope Walker, F. K. Weaver, R. W. Winstanley.

Adjourned Meeting.

The meeting was then adjourned, and resumed on Friday, July 12th.

Honorary Secretary's Report.—The Secretary submitted the report for the past year. There had been five meetings of the Division, in addition to two mass meetings organized by the Division. The Bradford rules and Rule "Z" had been adopted for use in ethical cases. A local defence fund had been established, and was well supported; a Provisional Medical Committee had been appointed. Mainly owing to the action of the Division a school clinic for the treatment of school children had been established. The statement of accounts showed a balance in hand of £1 17s.

Expenses of Representatives.—A resolution was carried in favour of the payment of out-of-pocket expenses of the Representative, and in the event of this not being agreed to by the Representative Meeting, such expenses should be paid by a voluntary contribution of the members.

Instructions to Representatives.—Instructions were then given to the Representative at the coming Representative Meeting, including those to support recommendations of Council to break off negotiations, and also declining to give any assistance towards bringing sanatorium or other benefit into operation until the seven cardinal principles were granted.

Provisional Medical Committee.—It was finally resolved that a meeting of the Provisional Medical Committee should be held after the Representative Meeting, and should have full power to act in regard to the sending of resignations and other matters.

YORKSHIRE BRANCH:

Halifax Division.

A meeting of this Division was held at the Imperial Café on Friday, September 6th, at 8.30 p.m. In the absence of Dr. Crossley Wright, the chair was taken by Dr. Drury. Thirty-two members were present, and apologies for non-attendance were received from Drs. J. Oakley, Branson, and Crossley Wright.

Sanatorium Benefit.

The Secretary described the temporary and permanent schemes for the administration of sanatorium benefit in the borough of Halifax, which had been described to him by the medical officer of health for the borough. In both schemes the medical officer of health was to be the chief tuberculosis officer, and the permanent scheme included a local sanatorium and an assistant tuberculosis officer, who should live there and do the work of the tuberculosis dispensary. At the invitation of the Sanatorium Subcommittee of the Halifax Provisional Insurance Committee a deputation from the Executive Committee of this Division waited on the Sanatorium Subcommittee and criticized the above schemes.

Dr. Priestley Leech, who had acted as spokesman to the deputation, then recapitulated the criticisms of the schemes which he had laid before the Sanatorium Subcommittee. The chief points criticized were the local sanatorium, the climate being considered unsuitable for such an institution, and the appointment of the medical officer of health as chief tuberculosis officer. It was not considered that the medical officer of health could possibly find time to discharge the important duties of chief tuberculosis officer in addition to his present work. As a result of certain remarks made by the deputation, the medical officer of health had resigned his membership of the British Medical Association. Dr. Priestley Leech considered that nothing which he had said could be taken as a personal attack on the medical officer of health.

After considerable discussion, the following resolution was proposed by Dr. Shaw, seconded by Dr. Marshall, and carried unanimously:

> That this meeting approves the action of the local Executive Committee and the deputation appointed by them regarding the schemes for sanatorium benefit under the Insurance Act.

Dr. Priestley Leech described an alternative scheme proposed by the Executive Committee. A resolution approving of this scheme was proposed by Dr. Hughes, seconded by Dr. Adams and supported by Dr. Hunt, and was carried unanimously.

It had been decided by the Town Clerk that the Insurance Committee had power to ask the medical profession to elect representatives on the Sanatorium Subcommittee, and in case this was done, on the motion of Dr. West Symes, seconded by Dr. Macaulay, Drs. Priestley Leech and Drury were elected as representatives.

It had been proposed by the medical officer of health that as a temporary measure the tuberculosis dispensary should be officered by the school medical officer. On the motion of Dr. Marshall, seconded by Dr. Macaulay, it was agreed that the dispensary ought to be officered by general practitioners.

It was decided that no communication as to the proceedings be made to the press at present.

EIGHTIETH ANNUAL MEETING
OF THE
British Medical Association.

EXHIBITION
OF
FOODS, DRUGS, INSTRUMENTS, BOOKS, AND SANITARY APPLIANCES.

(Concluding Notice.)

The newest of the appliances for facilitating the nursing of bedridden patients, shown by Mr. Arthur Skeffington (49, Ulundi Road, Blackheath, S.E.), was the Mobile Sacrum Lifter. This consists of two uprights carrying a broad band which is passed under the patient's hips. The latter are then raised to the desired height by tautening the band by the handled ratchet wheel attached to one of the uprights. The appliance can be wheeled from bed to bed, is easy to use, and should undoubtedly prove of much assistance in wards where the nurses have to deal with many helpless cases. Two other appliances of corresponding purpose were the Skeffington Dysentery Mattress and the Lifting Cushion. The former is a mattress one section of which is collapsible, and when collapsed allows plenty of room for the placing of a bedpan. The Lifting Cushion is a kind of india-rubber pillow which is passed beneath the small of the patient's back and then expanded to the desired extent by a powerful foot pump. A further exhibit was the Bed Inclinator, this being a simple arrangement by which the head or foot of a patient's bed can be elevated as much as 3 ft. without straining or tilting the bed-frame. To the merits of the Skeffington Recumbent Lifter we have previously drawn attention. Through the movement of a special sheet passing between a roller and ratchet at each end of the bed a patient can be raised into a comfortable sitting position or lifted entirely off the bed. When in a sitting position his back is thoroughly supported, and by giving the sheet different inclinations and elevations all the operations necessary for keeping him clean and tidy can be performed with a minimum of labour.

Among the many standarized products shown by Messrs. Parke, Davis, and Co (50, Beak Street, Regent Street, W.) were Thyroprotein Tablets, in which the thyroid extract component is stated to be standardized to a definite iodine content. Of two preparations respectively named Proposote Globules and Stearosan Globules, the former were stated to contain a chemical compound of creosote, capable of passing through the stomach unchanged, the creosote being liberated in the intestine. Stearosan was an allied preparation of sandalwood oil, devised with a like purpose. Among the solutions supplied in hermetically sealed "glaseptic" ampoules was one of quinine and urea hydrochloride. It was stated to provide an excellent means of administering quinine hypodermically in malaria, but to be prepared now chiefly as a local anaesthetic, as which it seems to be used largely in America. It is stated to be equal in power to cocaine, and more persistent in its effect, though less rapid. Taka-Diastase was also shown, and its activity as an amylolytic demonstrated throughout the week. Some well-made bougies containing nucleinate of silver were shown under the name of Nargol bougies; and a means of diagnosing and treating hay fever, devised in the therapeutic inoculation department of St. Mary's Hospital, included a hay fever reaction outfit. By its means it was stated to be possible to tell not only whether a person is suffering from true hay fever, but if he is liable to the disorder; and also, if suffering, what dose of pollacein he will require. The latter is a vaccine prepared from the pollen which is believed to be the exciting cause of hay fever.

The British representatives of the authorities of Vittel (12, Mark Lane, London, E.C.) had an exhibit which in some measure served to bring out the natural attractions of this health resort in the Vosges and the fashion in which it has equipped itself for dealing with invalids suffering from gouty disorders, kidney troubles, neurasthenia, and arterial sclerosis. There were also samples of the water furnished by the Grand Source Spring. This is the water drunk by the majority of visitors, and it is also bottled for export as a table beverage for those unable to visit Vittel itself. It contains a good deal of carbonic acid and small quantities of earthy salts and sulphates, and is quite a pleasant water to drink. Copies were also obtainable of a pamphlet setting forth, succinctly and in more temperate terms than are usual in such publications, the general claims of this spa and the lines on which treatment thereat is conducted.

The exhibit of Messrs. C. J. Hewlett and Son, Ltd. (35–42, Charlotte Street, E.C.), included a certain number of surgical instruments for various special purposes and a good many pharmaceutical specialities. Among the latter, Lecithin, alone and in combination with glycerophosphates, was shown in tablet form and also as an elixir. In the firm's series of compressed tablets we noted some additions, one named Enzymogen being stated to be a combination of pancreatin, pepsine, and diastase. Many of the older preparations of the firm were also shown, some of them, such as Liquor Santal Flav. c. Buchu and Mist. Pepsinae Co. c. Bismutho, being very well known. The latter was first brought out some thirty years ago, and, being a distinctly elegant combination of admittedly useful drugs, has remained in constant favour. There were two additions to the series of sprays produced by the firm, one being named the "Super-Nebulique." It is intended for use with heavy oils, and will work with a very small quantity of liquid in almost any position. The other was the "Angulique," which has a long, narrow nozzle, designed to enable medicated spray to be thrown exactly on the point desired in the pharynx. Among the other appliances were the Compactum, a well-devised urine testing case; a perineal crutch devised by Mr. Herbert Tanner, which has the advantage of simplicity of construction and of being readily portable; a cervix cupper designed by Dr. Alexander Duke; the Bulbique Female Catheter suggested by Dr. E. Campbell Stark; and a number of sterilizers and other like appliances.

The most novel, perhaps, among the exhibits of Messrs. Oppenheimer, Ltd. (179, Queen Victoria Street, London), were two somewhat brownish opalescent fluids named Collosols. They contain mercury and silver respectively, the metals being present in colloid form in the manner described in the British Medical Journal of February 12th, 1912, p. 252. In this condition they are claimed to possess a powerful bactericidal action and yet to be entirely non-irritant and non-toxic to the human organism. They may be administered hypodermically or by the mouth or applied locally. The bi-palatinoids of the firm, and its pulverettes, were also on view. The latter term represents small spheres of dry powder in a sugar coating so thin that when pressed between the finger and thumb it cracks like an eggshell. This being the case, it is obvious that the coating can take only a few minutes to dissolve when the spheres are swallowed, the contained drugs being then at once ready for absorption. Devule Developers were also shown, these being gelatine envelopes containing a photographic developer and alkali in separate divisions. On tearing them open and stirring their contents in water a fresh solution of developer is at once to hand; they should be useful to medical men who occasionally dabble in photography. The instruments shown included the "Ideal" hypodermic syringe, which presented some points of novelty and seemed worth a trial, and the Optimus Nebulizer. This in a measure resembles some other effective nebulizers which the firm has brought out, but was specially designed for the local application of Collosols and works with a very small volume of fluid.

The many ophthalmic appliances shown by Messrs. Curry and Paxton (195, Great Portland Street, W.) included two ophthalmoscopes both so devised as to render their user independent of bracket or other lamps. One was named the Couper or Student's Magazine Ophthalmoscope, and, in addition to a self-illuminating arrangement, included an unusually large number of lenses and both concave oblique and plane retinoscopy mirrors. The Morton ophthalmoscope also carried an electric light and made equally ample provision for various methods of examining the retina and determining the refraction. Among several different forms of lamps on view was the Perfection Operating Lamp. In this the light is supplied by a Nernst burner and magnified by a projection lens to a brilliant disc of light which can be made to measure

either 10 in. diameter at a distance of about 4 ft., or 15 in. if desired. In either case the light is equally distributed and can be kept focussed exactly in the direction required. The series of test types shown was large, the letters and clocks being mounted in various fashions, some suitable for work in school clinics and others in the consulting-room.

The synthetic and other drugs shown on behalf of Messrs. Zimmer and Co., of Frankfort-on-Main, by Messrs. WIDENMANN, BROICHER, AND CO. (1, Fenchurch Avenue, London), included a new hypnotic named Aponal. It was stated to be amylen-hydrate-carbamide. Validol as a liquid, and in gelatine perles and in tablets, was also on view. It is stated to be a compound of valerianic acid and menthol, and was originally brought out as a nerve sedative suitable for use in cases in which valerian is commonly employed; but it soon began to obtain a certain repute as a preventive of train and sea sickness, and there is a good deal of evidence that this is well founded. Another preparation shown was Allosan, an allophanic acid of ester of santolol; the justification of its existence lies in the fact that it is an odourless solid, which, when made up in tablets, can be carried about in the pocket and taken whenever necessary without attracting attention. Euquinine, an ethyl-carbonate of quinine, which is practically tasteless; Eustenin, a name which represents the double salt theobromine sodio-iodine sodium; and Dymal, a derivative of salicin introduced a few years ago as a substitute for iodoform, were also on view.

Both instruments and pharmaceutical specialities were shown by Messrs. R. SUMNER and Co. (50A, Lord Street, Liverpool), among the former being an appliance entitled, "Sir James Barr's apparatus" for the treatment of serous effusion. It provides for the injection of suprarenalin into the cavity left when fluid has been siphoned off without removing the trocar, and also for pumping sterile air into the pleural cavity. An apparatus for the intravenous administration of salvarsan, devised by Mr. A. J. Evans, provided for keeping the solution warm by placing the container inside a vacuum flask. It was stated that warm fluid placed within the container would lose only 3° F. in half an hour, so that in the time ordinarily occupied by an injection only one degree would be lost. Also shown was a combined instrument and dressing cabinet of a size suitable for a surgery or consulting-room. It seemed well devised and constructed and inexpensive. There was also a combined sterilizer and instrument case, known as the Service Pattern Seamless Case Sterilizer. It was stated to have been designed by Captain H. T. Wilson, R.A.M.C., and seemed well suited for all minor operation work. Among the pharmaceutical preparations we noted some pencils for applying chrysarobin in cleanly fashion, some iodoform "pencils," apparently intended for insertion in the os uteri after operative interference, and some "briquettes," devised for formalin disinfection without the use of fire. On the briquettes being dropped into formaldehyde solution a rapid and voluminous output of gas and vapour occurs. The briquettes contain potassium permanganate.

Among the exhibits of SAVORY AND MOORE, LIMITED (143, New Bond Street, W.), was included a dental preparation named Aphrodont. It is a paste put up in collapsible tubes, and during use foams freely. It was stated to contain no sugar or other carbohydrate, to be slightly alkaline in reaction, and to be actively bactericidal; it therefore seems to have been carefully devised. It is certainly an agreeable preparation to use, and its cleansing powers are satisfactory. Fructolax was also shown, this being a pleasantly flavoured jelly representing, we understand, a petroleum derivative. It was put forward as a mechanical laxative specially suited for children and delicate persons. A third preparation was Magnesia Compound, a preparation of the carminative order. It was stated to be entirely free from both calcined magnesia and from sugar, and should therefore be found a desirable preparation to use whenever a pure magnesium hydroxide is indicated. Many of the firm's older preparations were also on view, among them being Savory and Moore's Food, which though originally brought out for infants, appears to be much used as a nutriment for invalids and aged people. Various peptonized milk preparations, including peptonized milk chocolate and coffee, were also shown.

The numerous disinfectants shown by the SANITAS COMPANY (Locksley Street, Limehouse) included Bactox and Sanitas Okol, both of which figured excellently in a report published some years ago by a contemporary on the results of an investigation of the properties of disinfectants as a class. Bactox, indeed, took the first place when the claims of different disinfectants were compared on a basis of efficiency combined with cost, while Sanitas Okol took the first place among emulsified preparations. Since the latter mixes well with salt water and retains its powers therein, it would seem especially worth consideration as a board-ship disinfectant. A third was Sanitas Sypol, which is intended for use in surgical work. The principal claims made in respect of it are that it possesses at least four times the germicidal efficiency of pure phenol; that when diluted with soft or distilled water it gives a perfectly bright and transparent solution; that it renders neither hands nor instruments slippery, and that it has no corrosive action on metals or the hands of the operator. In respect of the fragrant liquid from which the firm derives its name, it was stated that when diluted with an equal quantity of water and dabbed over exposed parts, it is a preventive of insect and mosquito bites, and that its refreshing effect when sprayed about a room is in some degree due to the release of oxygen from the hydrogen peroxide present in sanitas.

The principal exhibit of Messrs. A. WULFING AND CO. (12, Chenies Street, London, W.) was Albulactin. The name represents a soluble lactalbumin, which is intended to be added to diluted cow's milk in order to render this more strictly comparable to human milk. From a laboratory standpoint, it is well calculated to produce this effect, because the proportion of lactalbumin to casein is in cow's milk small, and in human milk relatively large. Naturally, therefore, the greater the dilution of cow's milk, the greater is the difference between the resulting product and human milk in respect of lactalbumin contents. In theory, therefore, the use of lactalbumin would seem to be perfectly sound, since, provided it is known to what extent lactalbumin is lacking in the diluted cow's milk on which it is proposed to feed a child, it should be easy to replace it by albulactin. Whether the failure of the diluted cow's milk to nourish some children adequately, and to produce vomiting, colic, and diarrhœa in other children, is mainly due to deficiency in lactalbumin, is quite another question. But in any case there is now, apart from clinical evidence from abroad, a considerable amount of testimony to the value of albulactin in actual practice. Moreover, it comes from men who have ample opportunities for comparative tests of the properties of a preparation of this order. In addition to its use in ordinary feeding, Dr. F. S. Toogood, Superintendent of Lewisham Infirmary, has advocated the substitution of a mixture of albulactin and water for egg albumen water in nourishing children suffering from zymotic enteritis.

A means of keeping the surface of an operating table at an even temperature was shown by Messrs. CHARLES HEARSON AND CO., LTD. (68, Willow Walk, Bermondsey). Specimens of it were stated to be in use in several of the London hospitals, and to be giving complete satisfaction. The warmth is supplied by electricity and regulated so as to remain at the pitch desired by the patent capsule of the firm. Among the numerous incubators was one named the Cellular Incubator. It is designed for teaching laboratories, and enables any given specimen or number of specimens to be withdrawn for examination without affecting the temperature of the remainder. Another form was the Combination Incubator, which is intended for practitioners who do their own Wassermann tests, or wish to take the opsonic index of a patient. The Thermostatic Nurse, an incubator for premature infants, is heated by electricity, the light being controlled by the capsule already mentioned; in addition it has a rheostat by which the heat can be daily reduced as the child gains strength, until the interior reaches ordinary room temperature. In one incubator the specimens could be examined under the microscope while kept at temperature of 37°. Many of the centrifuges and shakers of the firm were shown at work. One of them, named the Leuno Centrifuge, can be placed on any bench, and requires no screwing; an ordinary light supply provides the current.

National Insurance.

IRELAND.

The Medical Profession and the Women's National Health Association.

As a result of the correspondence which has been going on recently between the Conjoint Committee of the British and Irish Medical Associations and the Women's National Health Association, a conference between the two bodies took place on August 28th. The Countess of Aberdeen as President, and some representatives of the Women's National Health Association, met the Sanatorium Subcommittee, and after the representatives of the Women's National Health Association had withdrawn, the following resolution was passed:

> That the Sanatorium Subcommittee of the Conjoint Committee desire to thank Her Excellency the Countess of Aberdeen for her kindness in attending its meeting of to-day and explaining the points in discussion between them and the Women's National Health Association, concerning which there had been so much controversy. They recognize with pleasure the evident desire of the President and officials of the Women's National Health Association for hearty co-operation with the profession, and they consider that Her Excellency, in making a suggestion that this Committee should appoint some of its members to advise the Women's National Health Association has shown the way to an arrangement which would ensure satisfactory and efficient working of the scheme of the Women's National Health Association.

Lady Aberdeen has since published a letter explaining her views expressed at the conference, in which she says that the post-graduate courses, to which exception has been taken, were arranged for at the Collier Dispensary because it was the only institution available run on the lines of the Astor report. The course was arranged by the medical staff, with Professor McWeeney as secretary, and was intended for men already qualified, and thus presumably instructed in the treatment of tuberculosis, and it was specially designed to give an insight into the system of managing such dispensaries from a business point of view as well as from a medical standpoint. The suggestion that three members of the Sanatorium Subcommittee should be nominated to consult with the Women's National Health Association has been referred to the Conjoint Committee.

Antrim County Council and Sanatorium Benefit.

At its last meeting the Antrim County Council considered a scheme submitted by the County Insurance Committee for the provision of sanatoriums, etc., under the Insurance Act. The Finance Committee reported unfavourably on the scheme, saying that it was quite impossible to form even an approximate opinion of the income to be derived from contributions, the number of patients to be dealt with, or the expenses of the proposed scheme. It was also suggested that the medical charges which would have to be paid under the Act seemed to be wholly unsuited to Ireland, and had been drafted entirely for the requirements of England and Scotland, as under the present Act consumptives were to be taken away from the dispensary doctors who at present had to attend them; this extra expense was variously estimated at between £500 and £1,000, and in addition to this a tuberculosis officer would have to be appointed. With regard to the power of the Treasury to make a grant provided under the Act, if the county council contributed towards the maintenance of the dependants of the insured persons half the expenditure over and above what was received from the Insurance Committee, owing to the way the Irish county councils were treated by the Treasury in respect of the asylum and education grants, the county council was not prepared to rely on any promise of assistance from the Treasury unless some better undertaking were given.

Appointment of Tuberculosis Officer for Roscommon.

A meeting of the Roscommon County Council was held last week to appoint a medical officer for tuberculosis under the Irish National Insurance Act, to have charge of the dispensary which is about to be erected. A letter was read, signed by several of the medical men in the county, intimating that at a meeting of the medical practitioners of the county Roscommon it was decided that a salary of £500 a year and travelling expenses was the smallest salary that would attract competent candidates who would command the confidence and hearty co-operation of the county practitioners. It was decided that, as a scheme had already been drawn up, no attention should be paid to this letter. There were three applications for the post, and Dr. Robert P. McDonnell was elected.

Attendance of Dispensary Doctors at Insurance Meetings.

At a recent meeting of the Rathdown Board of Guardians the question of payment of a medical officer's substitute while he was attending National Health Insurance Committees was discussed. The matter had been referred to the Local Government Board, which replied that the payment of a substitute in such circumstances was a question entirely for the guardians' own discretion, but expressed the opinion that, for the present at all events, during the early stages of the working of the Insurance Act, it would be desirable that the guardians should agree to pay a substitute for the medical officer so as to enable him to attend the sittings of the committee. A motion was carried, however, that in future medical officers attending Insurance Committee meetings should pay their own substitutes.

SCOTLAND.

Cost of Sanatorium Benefit.

AN order has been made by the National Health Insurance Commission (Scotland) providing that for the purpose of defraying the expenses of sanatorium benefit during the period between July 15th, 1912, and January 12th, 1913, both inclusive, there shall be deducted, at such times and in such manner as the Commissioners may direct from the several amounts from time to time standing to the credit of persons who are deposit contributors, and from the respective amounts standing to the credit of approved societies, such sums as may be determined by the Commissioners to be necessary for the purpose of meeting the expenditure incurred in connexion with the provision of sanatorium benefit during the said period, not exceeding in the case of a deposit contributor 1d. for every four contributions paid in respect of him during the said period, and not exceeding in the case of an approved society ¼d. for every contribution credited to the society in respect of the said period. All sums so deducted shall be transferred to the proper insurance committees. It is further provided that no deductions shall be made under the foregoing provisions from the amounts standing to the credit of any deposit contributor being a person not entitled to sanatorium benefit, and contributions paid by any person not entitled to sanatorium benefit shall not be taken into account in calculating the amount to be deducted from the amount standing to the credit of an approved society. In the application of this paragraph to aliens, three shall be substituted for four, and ¾d. shall be substituted for ¼d.

PROVISIONAL MEDICAL COMMITTEES.

RICHMOND, KINGSTON, AND SOUTH MIDDLESEX.

A MEETING of this Committee was held at Twickenham on September 11th. The chair was taken by Dr. COLEMAN, of Surbiton, and there were twenty-one present. A letter from the Medical Secretary, dated August 14th, was read to the meeting. In that letter the district was described as "weak," and the opinion of the Committee was asked as to the advisability of sending in the club resignations on September 29th. On this point Dr. H. M. COOPER, of Hampton, made a statement as to the results of the canvass. The statement that out of 319 practitioners only 242 had signed the pledge was incorrect. Owing to deaths and removals, he could only make the number of practitioners 275, of whom 244 had now signed the pledge, leaving a balance of 31. Of these, 22 were old or retired; 6 were officials; 1 was away ill; and 2 were in active work. Of those ascertained as holding contract appointments, all had resigned their clubs.

With regard to the Staines area, formerly in the Maidenhead Division, which had not been canvassed by that Division, the results were as follows:

Total, 14.
8 have signed.
5 are old and retired.
1 active has not signed.

In view of these figures, it was moved by Dr. Boulter, of Richmond, and seconded by Dr. Burn, of Richmond:

That the Deputy Medical Secretary be informed that, in the opinion of this Committee, it is perfectly safe to send in the resignations on the 29th inst., and that it is advisable to do so.

It was suggested that the practitioners who had not signed should be approached from the head office with a view to persuading them to come into line.

PAYMENT PER ATTENDANCE.

We have received the following from Mr. George Brown, Honorary Secretary of the "Imperial Medical Reform Union":

On September 13th a deputation from the Imperial Medical Reform Union waited on the Insurance Commissioners and Joint State Insurance Committee at their offices, Wellington House, Buckingham Gate, S.W., and laid before them their views with regard to medical benefits under the Insurance Act. In the absence of Sir Robert Morant, K.C.B., Dr. J. Smith Whitaker, Vice-Chairman, presided. Speaking on behalf of the deputation, Mr. George Brown, General Secretary, said the Council of the Union were not antagonistic to the Insurance Act. They recognized that it was intended by its authors and the Legislature to operate for the good of the community and especially for the working classes in time of illness by providing efficient medical attendance. This the Union represented by the deputation contended could only be achieved by the cordial co-operation of the medical profession as a whole, and in order to obtain this co-operation the terms offered must be such as would be acceptable. Their experience of the capitation system of payment justified them in saying that it was most unsatisfactory both to doctors and patients, and they strongly urged the adoption of the system of payment for actual medical services rendered. The result of a referendum taken by the Union last year showed that more than 95 per cent. of those who replied were in favour of payment for services rendered. With a proper system of checks to prevent malingering and excessive attention in the case of trivial illness the Insurance Committee of the Reform Union were of opinion that the scheme already submitted by them to the Commissioners would give a fair return to the doctors for their services without exceeding the amount annually set apart for "medical benefits." Other members of the deputation, including Drs. Thomas Dutton, J. Pollock Simpson, M. C. Corner, J.P., and A. P. Murtz, also addressed the Commissioners in favour of payment for work done, and before leaving the deputation were assured that the Commissioners and Joint Committee would give careful consideration to the views they had expressed.

CORRESPONDENCE.

Steady in the Ranks.

Dr. Henry George Dixon (London) writes: The urgent need of the moment is not the consideration of the Plender report, not the conditions of working sanatorium benefit, nor even the establishment of the Public Medical Service; it is that every available man and every available minute should be utilized in canvassing hesitating and recalcitrant individuals, whether members of the Association or not, so that the greatest possible number of resignations may go in this month, and the largest possible increase be made to the Indemnity Fund during the same time.

I am afraid I have noticed a slight slackening on our side since the Liverpool meeting; this may be due to the vacation season. Let us, however, make no mistake; our opponents are not resting on their oars; this is evident by the numerous articles in magazines and the letters in the Liberal press. These overt efforts are nothing compared to the underground attempts made to detach men from the ranks of the Association, and get them to go back on their pledges. To counteract these efforts, let every man make it his business to see that his own district is as nearly as possible invulnerable, and even then not be satisfied until he has done all he can for adjoining localities needing help, so that every chink in our armour may be closed by the 29th.

It is a favourite argument of the Liberals that our opposition to the Act is not professional but political. Speaking generally, I believe this is not correct; speaking personally, I know it to be untrue. No one could have voted more consistently Liberal than I have done for the last quarter of a century, yet when the bill was introduced in May, 1911, I did not hesitate to attack its medical provisions at once; in fact, I was its first assailant in the public press (see the *Morning Leader* and the *Morning Post* of May 9th, 1911). I ventured to predict its rejection by the profession, and was the first to start an agitation against it.

The Question of Remuneration.

Dr. J. A. Gray (Edinburgh) writes: In the Supplement of July 6th figures are given referring to 335,702 individuals, showing that the average number of attendances required by contract patients is 5.5 per head per annum. This does not include attendances by other than the club doctor, which the Association estimates would bring the total up to 6.6 at least.

Dr. Brockbank, in the Supplement of August 10th, adds figures referring to 158,667 other contract patients, and the average over the whole 494,369 individuals is 5.15 attendances per head—also not including those paid by other than the club doctor.

This figure is too low, for if Dr. Brockbank had included in his third item the figures given by Mr. Sowerby for 1910 he would have increased it. Dr. Brockbank also thinks his fifth item to be too low.

Dr. Finny, in the Supplement of August 3rd, gives statistics of the work at a provident dispensary over a period of ten years—the average number of attendances per head per annum being 8.05, which figures do not seem to be included in either of the above lists.

Now what puzzles me is why, if the above figures are reliable, so many doctors, writing to the Journal and to the lay press, assume 3.5 or 4 visits per head to be the average, and base their calculations on this assumption. Why does even the British Medical Association stultify itself by timidly inserting phrases like "The lowest estimate any one has made is 4," and proceeding to argue from this basis? If our case is a good one, we are foolishly weak to understate it. Let us avoid overstating it, by all means; but that is a very different thing from deliberately understating it.

If contract practice means an average of 6.6 attendances per head, Mr. Lloyd George, in offering us 4s. 6d. per head (without medicines), is offering us 8.18d. per visit. The question is: Is 8.18d. per visit reasonable remuneration for a medical man? That seems to me to be a perfectly clear issue—a plain question wanting a plain answer. In my opinion, it ought to have been kept constantly before the Chancellor. It ought also to have been kept constantly before the public.

All this rests on the assumption that the figures are reliable. I should like to see the Association publish a detailed and up-to-date statement of all the figures available—those gathered by the Association and those gathered by other authorities (as in Dr. Brockbank's list), those gathered in recent years and those of several years back (for many of us have not got copies of the Journal of seven or eight years ago, and cannot, if we would, go through the laborious work of collecting figures scattered through back numbers). The list should be as complete as possible, including as many individuals and covering as many years as possible, for the larger the number of men and years the more trustworthy the result. Along with this list should be published as much information as possible about the number of days per head per annum for which sick leave is paid by the friendly societies. The comparison would help to check the first figures.

I seem to remember (though I regret that I have lost the reference) a published statement to the effect that the Manchester Unity of Oddfellows, numbering at that time about 900,000 members, gave an average of 16.7 days sick pay per head. This had no reference to (1) members only ill for two days; (2) members who were off work for more than two days but did not claim sick pay; (3) members who consulted the doctor without going off work.

If these figures represent the average among all friendly societies, it seems to me that the calculation of 6.6 attendances per head is more likely to be an under than an over estimate.

In any case, I think the Association ought to publish for the information of its members, as well as for that of the

Chancellor and the general public, all the figures on this head that it can possibly procure; for this seems to me to be the crux of the question—the only vital point about which we are fighting now.

Let the Association make sure of its figures, then let it put the plain question again and again before Mr. Lloyd George: Is 4s. 6d. adequate remuneration for 6.6 (or whatever the figure may be) attendances? If he disputes the figures, the burden of disproof will rest upon him. If and when he disproves them, the medical profession will modify its demands; until and unless he does so our foot must remain firmly down. Let us make sure our case is good. Let us not overstate it, but neither let us understate it.

The Profession and the State.

Major W. E. McKechnie, I.M.S. (Etawah, India), writes: I think it is a matter of congratulation that the Government did not meet the Association and grant its minimum demands. Had this occurred, the profession would very soon have found itself in a miserable condition. The 8s. 6d. the medical man would have earned would scarcely have made him any richer than he is at present, and in return for it he would have bartered his independence. The majority of medical men at present do not know what official interference and control mean. May they never know! They have escaped from the snares of red tape this time, and it rests with the profession and its leaders to keep clear of them in future. Except for a few warning letters in the JOURNAL, the question of freedom and independence has hardly been considered, yet it is of even greater importance than the question of adequate payment; because if we lose our independence, our pay will lie at the mercy of our masters, but if we keep our independence, we can always fight for justice. A man has enough to do and to worry about in ordinary private practice; but if to that were to be added the trouble and worry of making official returns and reports (which would yearly grow in number and complexity with the natural growth of red tape and the desire of administrators to justify their salaries), the correcting of them when returned to him, the inquisition of inspectors, the cutting down of his well-earned fees and extras by auditors and examiners (which would surely occur, with no redress save at the expense of long and protracted correspondence)—if these and such other duties, worries, and irritations had been added to the work the general practitioner now does, his lot would have been the worst of any class in the country. Thank God the profession is so far saved from it! Let it see that it never again goes so near to accepting servitude at any price. What is now to be done is plain. A provident service for the poorer classes must be organized by the profession throughout the country, manned and administered entirely by the profession, and with absolutely no lay control. I have seen it stated by medical men that since the insured pay they are bound to have control in medical benefit. This is not so. We have goods to sell—our acquired skill and experience. Let us sell it in our own way and at our own price; that is our business, our own affair. We should suffer no outside management or dictation. The Insurance Act, by making a large provision for the sickness of the working classes, will benefit them by enabling them to pay, where often before they could not pay for food and medical attendance. All we have to do is to organize on our own lines to give the attendance in return for suitable payment. And since the State has now shouldered the responsibility for sickness, let us cease our wholesale charity and allow the State to pay for those who cannot pay for themselves.

A Trial for Three Years?

Dr. WILLIAM MUIR SMITH, J.P., Honorary Secretary, Eastbourne Division, writes: In the mass of correspondence which has of late appeared in the SUPPLEMENT the main part of the problem still awaiting solution by the profession is in danger of being side-tracked in the process of pushing to the front controversial views on subsidiary points.

Broadly, the problem may be crudely stated thus: How can the profession, faced with an entirely new set of circumstances, best adapt itself to meet the requirements contingent on the proposal of the Government?

On several points the labours of the profession, undertaken through the intermediary of the Association, have met with a qualified measure of success, in so far as its claims have received at the hands of the Government a modicum of recognition now endorsed in the Act. But on one outstanding point—the all-important provision of remuneration—the negotiators have failed to come to any agreement; the profession has definitely come to the parting of the ways. As this is the crux of the deadlock, then the main part of the problem now demanding the concentrated attention of the profession for solution, I take it, is how best to circumvent this vexatious obstacle, the ultimate barrier to the consideration of the remainder of the problem.

Hitherto stereotyped negotiations have failed to bring about agreement. In sum, what happened has been this. The Government offered 6s., while the profession demanded at least 8s. 6d. with extras. Thereupon, the Chancellor of the Exchequer requested the profession to furnish valid proof in support of its claims. For the obvious reason that as no data were extant under circumstances of which the profession had no practical experience, incontrovertible facts and figures could not be adduced. Then Mr. Lloyd George came to the rescue, and suggested the nearest approximate test available. Hence Sir W. Plender's investigation and report. Whereat the Chancellor of the Exchequer, claiming justification for the righteousness of his forecast, refused to concede any advance on the Government's offer; while the profession, convinced of inherent discrepancies in the report, thereby detracting from the value of the figures so ascertained, determined to adhere to its original demands.

In spite of the rebuffs and disappointments suffered by the profession in the course of these protracted negotiations, I feel (and this view is shared by several of my *confrères*) that as a practical profession we ought not at this juncture to abandon the situation indefinitely without making another attempt to clear the way by means of a strategic plan based upon the following considerations:

The Chancellor of the Exchequer, as Comptroller of the National Treasury, cannot be expected to pay more than what is reasonably just and necessary, and it matters not to the profession what the cost to the Government may be so long as its members are satisfactorily remunerated for their services. Now, as the figure fixed by the Chancellor of the Exchequer is evidently calculated on fallacious premisses and the demands of the profession are obviously estimated on a speculative basis, both cannot be right; and probably both are wrong. The balance of probity must exist somewhere, and this can only be discovered by weighing the new factors in the scales of practical experience. Neither the disputants nor any other person can compute the cost with any pretence to accuracy, unless and until the new features have been submitted to the test of time of the work in actual operation; and, I presume, if such terms of remuneration and conditions of service could be framed to the satisfaction of the profession under a provisional scheme, tentatively undertaken, as should commend themselves favourably in the sight of the Government, then surely it would be worth the while of the profession to undertake the experiment for the purpose of "holding the balance just."

Further, it cannot be gainsaid that the profession would prefer to work uniformly under the Act than under segregated forms of a Public Medical Service studded throughout the country. The former desideratum would obviate the contemplation of a conflict with the threatened establishment of a State Medical Service, the ultimate outcome of which no one could view with equanimity. The expediency of the latter alternative apparently invites and claims an open mind in the consideration of many of the members of the profession, and therefore the institution of the foreshadowed Public Medical Service would probably tend to dissipate, rather than consolidate, the cohesion of the members' unity—a misfortune which certainly would be intensified under the counter-attractions of a State Medical Service competing in the field. Moreover, the profession must reckon in its calculations with the hitherto unsympathetic attitude adopted by the friendly societies, now eagerly thirsting for a fresh opportunity to extend and perpetuate their selfishly rapacious system of sweating.

Under the weight of these considerations, I venture, in all humility and with no claim to originality, to suggest that the profession, through the mouthpiece of the

Association, might with advantage to its future welfare and at no sacrifice to its prestige reconsider its decision, with a view to reopening negotiations with the Government for the purpose of giving practical effect to the only certain test for ascertaining the actual average rates of remuneration in question.

For the attainment of this object any such scheme must incorporate in its basis the following fundamentals: (*a*) Remuneration of the profession on a payment per services system under a sliding scale of charges graduated to fixed income limits; (*b*) cost of administration to be defrayed by pooling the 6s., or 4s. 6d., capitation contribution fixed by the Government; (*c*) the Government to indemnify the profession against loss should the aggregate contributions in any one year be insufficient to meet the charges; and (*d*) the working of the experiment to extend over a period of not less than three years.

At the end of this period it would be a simple task to ascertain the annual cost actually incurred, and thereon compute the required average rate of remuneration. In this way only can a permanent settlement of the question be arrived at, and the solution of the remaining points of the problem would be made much easier in the light of experience of the work.

The Continuance of Negotiations.

Dr. John Gruffydd (Bethesda, North Wales) writes: I am convinced that the British Medical Association has adopted a wrong policy in breaking off negotiations with the Government. Mr. Lloyd George has stated that 6s. does not represent an unalterable maximum, and I think, in the face of recent facts which have come to light, the Association is unwise when it states that 8s. 6d., with extras, is an irreducible minimum. Mr. Lloyd George based his figure on guesswork, and so has the British Medical Association, and to my mind both have failed to strike the correct figure. Has the profession sulked in the face of Sir William Plender's report? Otherwise, why decide not to negotiate further with the Government? Dr. John Esmond, M.P., who has been in practice as a medical man for over twenty-five years, and who knows intimately what working-class practice is, suggests that the profession should work the National Insurance Act for the space of three years at an inclusive capitation fee of 8s. 6d., and if at the end of that time the doctors are not satisfied, then it should be reconsidered by the Insurance Commissioners. I can testify, as a medical officer to the Post Office, that this fee is a reasonable one, and I honestly believe that in giving it a trial to the National Insurance Act the medical profession would be adopting a wise course.

To say that 8s. 6d. would be a reasonable fee for "picked lives" but would be unreasonable for the "mixed lives" under the Insurance Act is, to my mind, beside the mark. If 8s. 6d. is a satisfactory fee for a small number of "picked lives," surely it would not be bad business to adopt the same fee for an enormously increased number of National Insurance members who are mixed lives.

The Works Surgeons' Position.

Dr. John D. Davies (Mansel ton, Swansea) writes: Dr. Brice says (p. 308) the works doctors are risking their "bread and cheese" by resigning their appointments. I consider the blow has already been struck, and that the Insurance Act upset all works appointments; this allowed free choice of doctor, and dismissed wives and children from the contract. What we have now to do is to build up a new structure on the ruins. The sending in of resignations is the only possible step to take. If the Insurance Act applied to medical benefits, such a step would have been unnecessary, as the notices would have been given by the employees—in fact, most collieries in South Wales have given their doctors six months' notice.

In the Swansea district a poundage scheme has been decided upon—namely, 3d. in the £ on a man's wages for his attendance and that of his wife and family. Dr. Brice says the man earning £1 a week has to be catered for. Surely this man will have nothing to complain of, as he will be in exactly the same position as at present. He will pay 1s. a month for his attendance and that of his wife and family, and if the Public Medical Service attracts this class alone, it will relieve private practice of a great many who are unable to pay bills. If we are loyal to each other there is no reason why our position should not allow us to do honest work.

The fact that 4s. per member is inadequate can be easily demonstrated. Assume that every one was compulsorily insured, the population to be 40,000,000, and the number of medical men 30,000. The average payment to each would be £266 per annum, and the average number to attend 1,333. Could a man exist on this—pay rent, rates, insurance, conveyance, and educate his children? But the real position would be that some medical men would be earning £500 and others £100 or less.

If we do not take advantage of the present opportunity to place the profession on a sound basis, the opportunity will never arise again, and the resultant rate will apply for a very great number of years.

Sanatorium Benefit.

Dr. T. Barrett Heggs (Sittingbourne), writes: In reply to Dr. Buttar, I would first point out that he is ungenerous as to my bona fides. He will be interested to know that I hold the confidence not only of the medical men of my Division, but of the representatives of the other medical men in Kent upon the Kent County Provisional Medical Committee. This should be a sufficient guarantee. It is unreasonable to suggest that a specialist in public health is necessarily incapacitated from being an honourable member of his profession and a worthy protector of the interests of his medical brethren in general practice. Secondly, he is very incorrect in stating that the argument for facilitating the working of sanatorium benefit was to enable certain members of the medical profession to retain lucrative posts. The main argument, in addition to the retention of the support of public opinion, was the advisability of recognizing our weakness. This weakness lay in the fact that the medical administration of sanatorium benefit, in case of opposition by the British Medical Association, was a much simpler matter than of medical benefit, as the number of whole-time officers required for a complete tuberculosis service was comparatively small and probably obtainable; also that such a whole-time service for treatment would be a dangerous precedent. The argument need not be elaborated here, but the above insinuation of Dr. Buttar is unworthy. Thirdly, as to the main question of the tactics of the State Sickness Insurance Committee in regard to sanatorium benefit since the last Representative Meeting, the letter of Dr. Buttar should convince members of the Association that this Committee is not carrying out the wishes of the majority of the Representative Meeting, who for certain reasons desired that the Association should facilitate the working of sanatorium benefit. Dr. Buttar, as a strong opponent of this decision, is satisfied with and justifies the present attitude of the Committee, which is characterized by inactivity, procrastination amounting almost to obstruction, and refusal to seize this opportunity of showing the country that the goodwill of the Association is an asset to be sought for by any authority wishing success in important matters of medical administration. May I assert again that if through the tactics of the Association the Insurance Committees are forced into schemes for the treatment of tuberculosis by whole-time officers (a not altogether impossible contingency), the fault will not lie with the Representative Body, who decided to facilitate such work under proper conditions, but with the State Sickness Insurance Committee, who refused to state in plain and unmistakable language and in complete detail the scheme by which, in their opinion, this important work of medical administration should be carried out? The question is, Should the head quarters of our Association be merely a central advisory bureau for Divisions, or should they, being elected representatives of Divisions, be leaders in the ordinary sense of the word by initiating as well as advising?

A constructive policy is what we need. Shall we get it? Will it come too late?

Drifting.

Dr. Jas. Brassey Brierley (Old Trafford) writes: On November 3rd, last year, Mr. Smith Whitaker came to Manchester to tell us the Association had done all it could with regard to the National Insurance "Bill"; we must

wait until it became "law," and then fight for ourselves. Since then a desperate effort has been made by the profession to urge the British Medical Association to make terms with the Government, or take independent action and construct some scheme to provide efficient medical service for the industrial classes. We have a few days before the 29th, when, if notices are not sent in by the club men, we shall be bound for all time to the obnoxious practice of club work. The British Medical Association has nothing to offer. The whole pitiable plight is caused by our affairs being still in the hands of the same men who have all along betrayed us—the men who, after being rejected in the elections, were able to elect themselves to the Central Council. What a system! It cannot go on. We must now fight for the profession and ourselves; construct a scale of charges low enough to attract the masses and gain a decent living in an honourable way. We do not want a huge State club, half a charity; the British workman does not want to be made a pauper. Let us away with this stupid procrastination and act locally. We are forced to it or are lost. The flood of letters in the SUPPLEMENT of the last two weeks show how feeble and how rapidly many men are giving way. Why is space found for them?

THE EPSOM SCHEME.

Dr. E. C. DANIEL (Crayhurst, St. Martin's Avenue, Epsom) writes: I should be much obliged if you would allow me through your columns to intimate to my numerous correspondents that the Epsom societies have published in pamphlet form my proposals as submitted to them for consideration.

I shall be pleased to send these to any members who are interested. The societies are charging a penny a copy. May I ask applicants to enclose also a second stamp for postage, as I am finding this item mounting up to a considerable sum?

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN ninety-five of the largest English towns 8,403 births and 3,723 deaths were registered during the week ending Saturday, September 14th. The annual rate of mortality in these towns, which had been 11.4, 11.2, and 11.5 per 1,000 in the preceding three weeks, declined to 11.0 per 1,000 in the week under notice. In London last week the death-rate was equal to 11.4 per 1,000, against 11.7, 11.5, and 11.7 per 1,000 in the preceding three weeks. Among the ninety-four other large towns the death-rates last week ranged from 3.1 in Ilford, 4.9 in Eastbourne, 5.2 in Acton, 5.3 in East Ham, 5.4 in Edmonton, and 5.6 in Willesden, to 15.4 in Stoke-on-Trent, 15.7 in Blackpool, 16.0 in Birkenhead, 16.1 in Barrow-in-Furness, 16.8 in Gateshead, and 19.5 in South Shields. Measles caused a death-rate of 1.8 in Gateshead and in Newport (Mon.), and 2.4 in Middlesbrough. The mortality from enteric fever, scarlet fever, diphtheria, and whooping-cough showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children (under 2 years of age) from diarrhœa and enteritis, which had been 183, 203, and 183 in the three preceding weeks, further fell to 143 last week, and included 43 in London, 14 in Liverpool, 7 in Manchester, 7 in Hull, 6 in Portsmouth, and 5 in Sheffield. The causes of 32, or 0.9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 4 were registered in Liverpool, 4 in South Shields, 3 in Birmingham, and 2 each in Preston, Sheffield, and Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,512, 1,525, and 1,564 at the end of the preceding three weeks, had further risen to 1,662 on Saturday last; 281 new cases were admitted during the week, against 167, 215, and 228 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN eighteen of the largest Scottish towns, 1,133 births and 518 deaths were registered during the week ending Saturday, September 14th. The annual rate of mortality in these towns, which had been 12.0, 13.1, and 12.7 in the preceding three weeks, further fell to 12.4 per 1,000 in the week under notice, but was 1.4 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 6.1 in Falkirk, 7.5 in Motherwell, and 7.7 in Clydebank, to 15.1 in Greenock, 15.5 in Kirkcaldy, and 24.6 in Perth. The mortality from the principal infectious diseases averaged 1.0 per 1,000, and was highest in Partick and Ayr. The 191 deaths from all causes registered in Glasgow included 9 from infantile diarrhœal diseases, 5 from diphtheria, and 2 from whooping-cough. Two deaths from whooping-cough were recorded in Dundee and 2 in Perth; and 3 deaths from infantile diarrhœa in Aberdeen and 3 in Partick.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, September 14th, 579 births and 315 deaths were registered in the twenty-two principal urban districts of Ireland, as against 616 births and 288 deaths in the preceding week. The annual death-rate in these districts, which had been 14.8, 14.9, and 13.0 per 1,000 in the preceding three weeks, rose to 14.2 per 1,000 in the week under notice, this figure being 3.2 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 14.7 and 12.6 respectively, those in other districts ranging from 4.2 in Drogheda and 5.4 in Newtownards to 27.5 both in Galway and Ballymena, and 35.4 in Tralee, while Cork stood at 15.0, Londonderry at 17.9, Limerick at 10.8, and Waterford at 20.9. The zymotic death-rate in the twenty-two districts averaged 1.1 per 1,000, as against 1.4 in the preceding period.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: Fleet Surgeon J. C. G. REED to the *Natal*, on recommissioning, September 17th; Staff Surgeon F. F. LOBB to the *Glasgow*, on recommissioning, September 17th; Staff Surgeon F. BOLSTER, M.B., to the *Suffolk*; Surgeon H. H. BABINGTON to the *Indus*, undated; Surgeon S. H. VICKERY to the *Hebe*, on recommissioning, September 24th; Surgeon Q. H. RICHARDSON to the *Natal*, on recommissioning, September 17th.

ARMY MEDICAL SERVICE.

COLONEL H. O. TREVOR, Assistant Director of Medical Services, Belfast District, has been appointed in a similar capacity to Cork, in succession to Colonel J. R. Dodd, who has been placed on half pay.

Lieutenant-Colonel ROBERT J. S. SIMPSON, C.M.G., M.B., from the Royal Army Medical Corps, to be Colonel, vice A. F. Tyrrell, retired; dated September 11th, 1912.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel J. M. F. SHINE is to take up duty early in October as officer in charge of the Military Hospital, and Senior Medical Officer, North Irish Coast Defences, in succession to Lieutenant-Colonel B. J. Inniss.

Lieutenant-Colonel ANTHONY DODD retires on retired pay, September 18th, 1912.

Major L. HUMPHRY has been appointed to Chatham as specialist in operative surgery.

Major G. A. T. BRAY has been appointed to the Military Hospital, Canterbury.

Major GEORGE S. MCLOUGHLIN, D.S.O., M.B., to be Lieutenant-Colonel, vice R. J. S. Simpson, C.M.G., M.B., dated September 11th, 1912.

Major WILFRED W. O. BEVERIDGE, D.S.O., M.B., to be Lieutenant-Colonel, vice A. Dodd retired, September 18th, 1912.

Captain F. A. STEPHENS has been granted six months' leave on medical certificate.

Lieutenant JOHN T. SIMSON, M.B., is seconded for service with the Egyptian Army, August 23rd.

INDIAN MEDICAL SERVICE.

COLONEL J. SMYTH, I.M.S., to officiate as Surgeon-General with the Government of Madras during the absence on leave of Surgeon-General W. B. Bannerman, C.S.I., I.M.S., or until further orders.

Lieutenant-Colonel P. C. GABBETT has retired from the service with effect from August 26th, 1912.

The services of Lieutenant-Colonel R. ROBERTSON, I.M.S., are placed temporarily at the disposal of the Commander-in-Chief in India.

Lieutenant-Colonel E. R. W. C. CARROLL has proceeded on leave preparatory to retirement.

Major G. Y. C. HUNTER has been transferred from Bengal Jail Department to Behar and Orissa.

Major S. H. BURNETT, M.B., C.M.Aberd., I.M.S., on return from leave to be Presidency-Surgeon Second District and Marine-Surgeon and Superintendent, Lunatic Asylum, Colaba.

Major G. HUTCHESON, I.M.S., Civil Surgeon, Aligarh, has been granted privilege leave for one month.

The services of Major A. W. R. COCHRANE, I.M.S., Superintendent of the Lunatic Asylum, Agra, were, on return from leave, placed at the disposal of the Memorial Fund Committee, with effect from April 17th, 1912, for employment as Superintendent of the King Edward VII Memorial Sanatorium for Consumptives at Bhowali.

The King has approved of the retirement of Major HUBERT MALINS EARLE, dated July 27th, 1912.

Captain J. H. MURRAY on return from leave has been reposted to Port Blair.

Captain T. H. GLOSTER, M.B., I.M.S., is placed on special duty under the orders of the Director-General of the Indian Medical Service.

Captain W. S. MACGILLVRAY, I.M.S., has been appointed a specialist in otology, laryngology, and rhinology, with effect from July 27th, 1912.

Captain R. L. GAMLEN, I.M.S., has been granted an extension of leave of three months on medical certificate.

Captain D. S. A. O'KEENE, I.M.S., is granted privilege leave for six weeks from August 20th, 1912.

Captain A. W. C. YOUNG, I.M.S., 24th Punjabis, is appointed Health Officer of Delhi.

Lieutenant C. H. SMITH, I.M.S., has been appointed a specialist in advanced operative surgery with effect from July 1st.

Lieutenant BERKELEY GALE, M.B., has been promoted to Captain.

TERRITORIAL FORCE RESERVE.

ROYAL ARMY MEDICAL CORPS.

COLONEL J. TURTON, F.R.C.S., late Assistant Director of Medical Services, Home Counties Division, to be Colonel, dated September 11th, 1912.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

Sixth London Field Ambulance.—Lieutenant WILLIAM BAIN, M.B., to be Captain, dated July 30th, 1912.

Second Wessex Field Ambulance.—Captain EDWARD R. CLARKE, M.B., resigns his commission, dated September 14th, 1912.

Fourth Northern General Hospital.—Captain FREDERICK S. GENNEY, M.B., to be Major, dated August 1st, 1912.

Welsh Border Mounted Brigade Field Ambulance.—ROBERT F. GERRARD to be Lieutenant, April 12th, 1912.

Fifth London Field Ambulance.—ERNEST G. ANNIS to be Lieutenant, July 30th, 1912.

Attached to Units other than Medical Units.—JOSEPH B. MCKAY to be Lieutenant, dated July 1st, 1912; Lieutenant EDWARD L. D. DEWDNEY to be Captain, September 17th, 1912.

For Attachment to Units other than Medical Units.—Surgeon-Major JOHN LYNN THOMAS, C.B., F.R.C.S., from the Glamorgan R.G.A., to be Major, September 18th, 1912.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BANBURY: HORTON INFIRMARY.—House-Surgeon. Salary, £80 per annum.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BARROW-IN-FURNESS: NORTH LONSDALE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

BETHLEM ROYAL HOSPITAL, Lambeth Road, S.E.—(1) Pathologist and Registrar; salary, £150 per annum. (2) Honorary Consulting Surgeon. (3) Honorary Consulting Aurist and Laryngologist. (4) Honorary Ophthalmologist. (5) Honorary Anaesthetist. (6) Honorary Gynaecologist.

BIRKENHEAD: BOROUGH HOSPITAL.—Senior House-Surgeon (Male). Salary, £100 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Senior Assistant House-Surgeon. Salary, £100 per annum.

BRISTOL GUARDIANS.—Assistant Workhouse Medical Officer. Salary, £150 per annum.

BRITISH LYING-IN HOSPITAL, Endell Street, W.C.—Resident Medical Officer. Salary at the rate of £50 per annum.

BUENOS AYRES: BRITISH HOSPITAL. — Assistant Resident Medical Officer. Salary, £200 per annum, increasing to £250 in the third year.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £80 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum, rising to £100 after six months.

DEWSBURY AND DISTRICT GENERAL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

DUBLIN: ROYAL VICTORIA EYE AND EAR HOSPITAL.—Two House-Surgeons. Salary, £40 per annum each.

DUDLEY: GUEST HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

EDINBURGH: THE HOSPICE.—Medical Woman as Resident. Honorarium, £25 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

FEDERATED MALAY STATES: MATERNITY HOSPITALS.—Lady Doctors. Salary, £300 per annum, increasing to £600.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—(1) Gynaecologist. (2) Surgeon to Out-patients. (3) Casualty Officer; salary, £140 per annum. (4) Assistant Casualty Officer; salary, £60 per annum.

HAMPSTEAD: PARISH OF ST. JOHN.—Outdoor Medical Officer for the No. 2 District. Salary, £80 per annum and extra fees.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

HEMEL HEMPSTEAD: WEST HERTS HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

JOHANNESBURG HOSPITAL.—Resident X-Ray Medical Officer. Salary, £500 per annum.

KING EDWARD VII SANATORIUM, Midhurst.—Junior Assistant Medical Officer. Salary, £150 per annum, increasing to £200.

LEAMINGTON: WARNEFORD HOSPITAL.—Honorary Pathologist.

LEICESTER ROYAL INFIRMARY.—House Physician. Salary, £100 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Anaesthetist. Honorarium, 20 guineas per annum.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Senior House-Surgeon. Salary, £100 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Resident Medical Officer. Salary, £100 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £100 per annum.

PRESTWICH UNION.—(1) Medical Officer and Visiting Physician to the Infirmary and Workhouse; salary, £160 per annum. (2) Second Assistant Medical Officer of the Infirmary; salary, £100 for first year, rising to £120.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Pathologist and Registrar. Salary, £80 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Senior House-Surgeon. Salary at the rate of £100 per annum.

SEAMEN'S HOSPITAL SOCIETY.—(1) Two House-Physicians and two House-Surgeons at Dreadnought Hospital; salary at the rate of £50 per annum each. (2) Senior House-Surgeon and House-Surgeon at the Albert Dock Hospital; salary at the rate of £100 and £50 per annum respectively.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—House-Surgeon. Salary, £80 per annum.

SIDLAW SANATORIUM.—Resident Medical Officer. Salary, £100 per annum.

SOUTHAMPTON COUNTY BOROUGH.—Assistant Medical Officer of Health. Salary, £200 per annum, rising to £250.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House-Physician. Salary, £100 per annum.

SOUTHWARK UNION.—Third Assistant Medical Officer (Male) at the Infirmary, East Dulwich Grove, S.E. Salary, £120 per annum.

SURREY COUNTY COUNCIL.—Two Tuberculosis Medical Officers. Salary, £600 per annum each.

THROAT HOSPITAL, Golden Square, W.C.—Resident House-Surgeon. Salary, £75 per annum.

WEST END HOSPITAL FOR DISEASES OF THE NERVOUS SYSTEM, Welbeck Street, W.—(1) Honorary Registrar. (2) Resident House-Physician; salary at the rate of £50 per annum.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith Road, W.—Clinical Assistants.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary commencing at £160 per annum.

CERTIFYING FACTORY SURGEON.—The Chief Inspector of Factories announces the following vacant appointment:—Kilmakevoge (co. Kilkenny).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

ANDERSON, George G., M.B., B.S.Melb., Junior Resident Medical Officer at the Alfred Hospital, Melbourne.

ATKINSON, Jackson A., M.B. and B.S.Lond., M.R.C.S. and L.R.C.P. Lond., D.P.H.Lond., Medical Officer and Public Vaccinator for the 2nd District, Westbury-on-Severn Union, and Surgeon to the Great Western Railway Provident Society.

DOYLE, Lawrence, M.B., B.Ch.N.U.I., Medical Officer for the Borris Dispensary District of the Carlow Union, vice Dr. Carey, resigned.

FALWASSER, A. T., M.R.C.S., L.R.C.P., Medical Officer No. 1 District and Public Vaccinator Nos. 1 and 2 Districts of the Maidstone Union.

FERGUSON, J. Bell, M.B., Ch.B.Edin., D.P.H.Manch., Chief Tuberculosis Officer, County and City of York.

HARROLD, R. F., M.B., Ch.B.Adel., Honorary Dermatologist to the Adelaide Hospital.

MORLEY, John, Ch.M.Manch., F.R.C.S.Eng., Honorary Surgeon, Ancoats Hospital, Manchester.

PATRICK, J. King, M.B., Ch.B., B.Sc.Glasg., D.P.H.Dubl., Assistant Medical Officer of Health and Medical Officer in Charge of Tuberculosis Dispensary, County Borough of Leicester, vice Dr. J. Bell Ferguson.

PIRIE, W. R., M.B., M.A., Honorary Physician and Lecturer on Clinical Medicine, Aberdeen Royal Infirmary.

RAMSAY, J., M.B., B.S.Melb., Honorary Consulting Surgeon, Launceston General Hospital, Tasmania, vice C. J. Pike, deceased.

TUCKER, C. F., M.B., B.S.Melb., Clinical Assistant to the Out-patient Physician, Alfred Hospital, Melbourne.

WILSON, J. P., M.B., B.S.Glasg., Government Medical Officer at Mungindi, New South Wales.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

STEVENS.—On September 12th, at Hartlepool, the wife of B. Crossfield Stevens, M.D., M.S., D.P.H., Medical Officer of Health, Barnes Urban District Council, and Medical Superintendent, Isolation Hospital, Mortlake, S.W., of a son.

WROUGHTON.—On September 17th, at 22, St. Luke's Road, Maidstone, the wife of Major Arthur O. B. Wroughton, Royal Army Medical Corps, of a son.

MARRIAGES.

COWELL—MILLER.—On September 3rd, at Holy Trinity Church, New Barnet, E. Marshall Cowell, M.D., F.R.C.S., son of Jasper and Alice Cowell, of Castle View, Steyning, Sussex, to Dorothy Elizabeth, only daughter of Arthur and Christiana Miller, of Lime Hurst, New Barnet.

FERGUSON—MACMILLAN.—At St. Enoch Hotel, Glasgow, on September 11th, 1912, by the Rev. David Graham, St. Gilbert's, Pollokshields, John Bell Ferguson, M.B., Ch.B.Edin., D.P.H. Manch., to Mary Macmillan, M.B., Ch.B.Edin., elder daughter of Nigel Macmillan, Esq., J.P., The Knowe, Kirkconnel, Dumfriesshire.

HILL—WATT.—At St. Michael's Church, Stanwix, on the 11th inst., by the Rev. H. S. Vinning, Chaplain, Eton College, cousin of the bride, assisted by the Rev. Frank Byard, Vicar of St. Andrew's, Penrith, Dr. Francis Robert Hill, youngerson of the late Laurence Hill, C.E., Glasgow, and of Mrs. Hill, 22, Ann Street, Hillhead, Glasgow, and Jean Anderson (Jeanette), third daughter of Mr. and Mrs. Watt, Knowefield. At Home, 62, Warwick Road, October 9th and 10th.

KENTISH WRIGHT—ORPWOOD.—On September 16th, at Slough Parish Church, by the Rev. H. Shepherd, M.A., Oswald Kentish Wright, M.B., of Holt, Norfolk, to Winifred Annie Orpwood, of Slough.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

EDINBURGH POST-GRADUATE COURSE.—The Special Lectures for the week are:—Monday: Methods of Management of Labour in Narrow Pelvis. Wednesday: Cardiac Energy and Arterial Resistance. Friday: Medicine and Surgery in Relation to Obstetrics and Gynaecology.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m. Thursday, Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, SEPTEMBER 28TH, 1912.

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STATE SICKNESS INSURANCE COMMITTEE.

APPOINTMENTS IN CONNEXION WITH THE INSURANCE ACT.

THE State Sickness Insurance Committee calls the attention of all members of the medical profession to the following resolution adopted by the Annual Representative Meeting, 1912:

> That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

SANATORIUM BENEFIT.

The State Sickness Insurance Committee also directs attention to the following resolution adopted by the Annual Representative Meeting, 1912:

> That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such appointment* shall be submitted to the Council for its approval.
>
> * "Appointment" means any professional work.

The State Sickness Insurance Committee notifies that no advertisement in respect of appointments in connexion with sanatorium benefit will be accepted for publication in the BRITISH MEDICAL JOURNAL which is inconsistent with the conditions laid down by the Association, and in all cases in which an advertisement is accepted a full list of the conditions laid down by the Association will be sent to the advertiser.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

THE fifth meeting of the State Sickness Insurance Committee appointed by the Annual Representative Meeting, 1912, was held on September 19th. The meeting began at 10 a.m. and ended at 7 p.m.

Sir JAMES BARR, President of the Association, took the chair in the absence of the Chairman, Dr. J. A. Macdonald. The other members present were: *England and Wales:* Dr. R. M. Beaton (London), Dr. T. M. Carter (Westbury-on-Trym), Dr. Major Greenwood (London), Miss Frances Ivens, M.S. (Liverpool), Dr. Constance Long (London), Dr. Ewen J. Maclean (Cardiff), Dr. James Pearse (Trowbridge), Dr. E. O. Price (Bangor), Dr. Lauriston Shaw (London), Dr. D. G. Thomson (Norwich), Mr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Mr. E. H. Willock (Croydon). *Scotland:* Dr. John Adams (Glasgow), Dr. R. McKenzie Johnston (Edinburgh). *Ireland:* Dr. Darling (Lurgan). *Ex officio:* Mr. T. Jenner Verrall (Bath), Chairman of Representative Meetings; Dr. Edwin Rayner (Treasurer).

Letters of apology for non-attendance were read from the Chairman (Dr. J. A. Macdonald) and Dr. S. Hodgson (Salford).

PUBLIC MEDICAL SERVICE SCHEMES.

On the minutes of the last meeting the question whether it would be *ultra vires* for the profession to proceed on the lines of Dr. Ledward's variation of the draft scheme, in which the principle of co-operation with the approved societies was frankly adopted, was discussed, and the following resolution passed:

> That in no circumstances could the Committee approve of any Public Medical Service scheme which allows for the collection of money by friendly societies.

A number of medical service schemes forwarded for the approval of the Association were received, and in some instances suggestions for their modification were made. It was resolved to authorize the chairman to consider any other Public Medical Service schemes submitted for approval, and to approve on behalf of the Committee such scheme or parts thereof as were in conformity with the principles laid down by the Committee, reserving for its consideration points which have not yet been decided.

MEDICAL MEMBERS OF ADVISORY COMMITTEES.

The question of the attitude to be adopted with respect to those members of advisory committees who had not resigned their appointments in accordance with the resolution of the Annual Representative Meeting, 1912, was discussed and the following resolution was adopted:

> That the State Sickness Insurance Committee welcomes the action of those members of the Advisory Committees not nominated by the British Medical Association who have resigned their membership in sympathy with the request of the Association; that it further expresses its regret that the retention by other such members of their positions on

Advisory Committees has raised a false appearance of disunion in the profession; but it is felt that beyond this expression of disapproval it is inadvisable for the Association to take action.

Recognition of Local Medical Committees in Ireland.

A communication was received from the Honorary Secretary of a local medical committee in Ireland stating that it had applied to the Irish Commissioners for recognition under Clause 62 of the Insurance Act, and that the Commissioners had replied that owing to the fact that medical benefit did not apply to Ireland, the Commissioners were taking legal advice on the point whether Medical Committees were necessary under the Act. The secretary of the local medical committee asked for the advice of the Committee on the matter, having regard to the fact that in Ireland the sanatorium and maternity benefits would be given. The Committee expressed the opinion that the question was evidently a legal one, but that the following paragraph of the circular of the Commissioners on Administration of Sanatorium Benefit, of July 6th, 1912, might throw some light on the intention of the Commissioners:

Par. 27. Where arrangements are entered into with general practitioners for the treatment of patients in their own homes, payment will be made to those practitioners on a basis which should be agreed upon, if practicable with the medical profession of the district, and to this end it will be convenient that the Committee should consult the local Medical Committee if any such has been recognized by the Commissioners under Section 62 of the Act.

Conference of Colliery Surgeons.

It was resolved to call a conference of practitioners holding colliery appointments as soon as possible after the issue of the Regulations for Medical Benefit. It was suggested that the conference should be held at Newcastle-on-Tyne, and that representatives of the holders of colliery practices in England, Scotland, and Wales should be asked to attend.

Sanatorium Benefit.

Application of Cardinal Principles to Sanatorium Benefit.

A communication was read raising a question with regard to the application of the cardinal principles of the Association to sanatorium benefit, with reference in particular to the application of the income limit to persons in receipt of sanatorium benefit. It was resolved, in reply, to state that the Association would take steps to impress upon the medical practitioners sitting upon Insurance Committees or Sanatorium Subcommittees of such bodies, which would have to decide as to the persons who were to receive sanatorium benefit, that they should have due regard to the economic position of such persons, and also to inform them that the fees suggested by the Association for domiciliary attendance in connexion with sanatorium benefit were only minimum fees.

Payment of Staffs of Voluntary Hospitals.

Communications were read raising the question of the remuneration of the honorary medical staffs of voluntary hospitals for the treatment of cases of tuberculosis admitted to such hospitals as coming under sanatorium benefit. It was resolved:

That the question of amount of payment for attendance upon cases of tuberculosis in sanatoriums and voluntary hospitals is largely dependent on local conditions; that the Committee is not in a position to fix a scale of fees for remuneration of medical members of the staffs of voluntary hospitals which would be generally applicable; that the Committee would suggest, however, that for provisional arrangements in individual cases the fees charged should be on the minimum scale already laid down in Minute 207 of the Annual Representative Meeting, 1912; that in cases in which a salary might be preferable the rate per week or per month should be not less than would be equivalent to the amount of £65 per annum for two hours' attendance per week, referred to in Minute 204 of Annual Representative Meeting, 1912.

The following is Minute 207:

That the minimum payments to be made be the following:
(*a*) Inspection, 5s.
(*b*) Consultation at surgery, 2s. 6d.
(*c*) Visit, 2s. 6d.
(*d*) Injection of vaccine, 2s. 6d.; vaccines to be at the cost of the administrative authority.

Treatment at Tuberculosis Dispensaries.

The consideration of this subject, postponed from the meeting of the Committee on September 12th, was resumed, and the following resolution adopted:

That, in the opinion of this Committee, the work of the tuberculosis dispensaries should consist of diagnostic, consultative, bacteriological, and statistical work; that treatment should, in general, be carried out at the homes of the patients or in the surgeries of their medical attendants; but that certain special forms of treatment for those cases which are decided in consultation to need such may, with the consent of the general practitioner concerned, be given at the dispensaries.

Relation of Medical Officer of Health to Position of Chief Tuberculosis Officer.

Several communications were received with further reference to this matter, which had been under the consideration of the Committee at its last meeting (Supplement to the British Medical Journal, September 21st, p. 334). In reply it was pointed out that according to the decision of the Annual Representative Meeting, 1912, a medical officer of health should not undertake treatment of cases of tuberculosis coming under sanatorium benefit, but that this did not preclude him from exercising general supervision of the treatment of cases of tuberculosis in accordance with the sense of the resolutions of that meeting.

Mileage.

In connexion with an inquiry as to mileage fees for domiciliary attendance under sanatorium benefit, the Committee resolved that the ordinary mileage rate should be understood to be not less than 1s. a mile after the first two miles, and that in outlying and sparsely populated districts the rate should be such sum as was suitable to local circumstances, and the custom of the local profession.

Duties of Medical Men in Respect of Sanatorium Treatment.

A communication was received from the honorary secretary of a provisional medical committee stating that a local practitioner had been requested by the local provisional insurance committee to make arrangements for the hiring of a shelter for use by an insured person suffering from tuberculosis and for the provision of any necessary bedding, clothing, etc., and to include in his account the cost of making these provisions and also the cost of milk ordered by the Insurance Committee to be supplied to the patient, the Insurance Committee itself having no power under the Act to pay for such matters direct. The Committee resolved to recommend the local provisional insurance committee that the medical practitioner should refuse to take the responsibilities mentioned, and to suggest that such arrangements should be made by the local tuberculosis officer.

Sanatorium Benefit. Schemes.

It was reported that in pursuance of an instruction given at the last meeting, the Chairman considered the following schemes for the administration of sanatorium benefit, and had on behalf of the Committee signified approval of them as far as they conformed to the decisions of the Committee:

Cambridgeshire.	Worcester (Borough).
North of England Branch.	South Shields.
North Riding of Yorkshire.	Hampshire.
Dundee.	Preston.
Bootle.	Berkshire.
Warrington.	West Sussex.
Great Yarmouth.	Devonshire.
West Hartlepool.	Worcester (County).
Grimsby.	Lincolnshire (Kesteven county).
Hamilton.	

The scheme proposed in Bristol was approved as a temporary scheme, and also the following scale of fees proposed as suitable for the payment of medical practitioners acting on the rota contained in the Worcester county scheme:

Minimum fee for each attendance, not to include more than two patients, if any ...	5s. 0d.
For each patient after the first two ...	2s. 6d.

Schemes for sanatorium benefit in Birmingham, Devonshire, Soke of Peterborough, Essex, Elgin and Nairn, Roxburgh, Stirling, and West Ham, were considered, and communications directed to be addressed to the Provisional Local Medical Committees with regard to certain features in each case.

Medical Officer of Health as Chief Tuberculosis Officer.

The Committee approved of the following communication, which had been forwarded, in pursuance of the instruction of the last meeting, to the President of the Local Government Board, with respect to the attitude of the Board as regards the temporary appointment of medical officers of health as chief tuberculosis officers.

Offices of the British Medical Association,
Medical Department, 429, Strand, London, W.C.
September 16th, 1912.

Sir,

The State Sickness Insurance Committee of the British Medical Association has had many inquiries brought to its notice recently in respect of the position of medical officers of health to the office of Chief Tuberculosis Officer. In many areas the medical officer of health is being appointed as Chief Tuberculosis Officer, and great anxiety is being exhibited by the profession as to whether such appointments, admittedly only provisional, are likely to be made permanent.

Having in view the paragraph at the foot of the second page of the circular of the Local Government Board of July 6th, 1912, and the definition of the expression "consulting officer" in the General Order on Domiciliary Treatment of Tuberculosis of July 26th, 1912, the Committee is of opinion that it is the intention of your Board that any recognition of medical officers of health as Chief Tuberculosis Officers will be strictly temporary, but my Committee would be glad to have some assurance from the Board on this point. Bearing in mind the whole tenor of the Astor Report and of the various documents since issued by the Insurance Commissioners and by your Board, my Committee is of opinion that the appointment of the medical officer of health to a post which demands special skill and clinical experience can only be looked on as a temporary expedient.

The State Sickness Insurance Committee would suggest for the consideration of the Board that in those cases where for various reasons chief tuberculosis officers of the kind defined in the Astor report cannot for the present be appointed, and medical officers of health have to take administrative charge of the duties in connexion with the treatment of tuberculosis, they should be confined as far as possible to administrative duties, and should be styled "administrative tuberculosis officers," or "chief administrative tuberculosis officers."

My Committee ventures to make the above suggestions to the Board because it foresees that any attempt to administer the duties of chief tuberculosis officer except by practitioners with the necessary special clinical experience and skill is fraught with great danger to the success of the attempts being made by the Government to deal with the control of tuberculosis.

I am, Sir,
Your obedient servant,
(Signed) ALFRED COX,
Medical Secretary.

The Right Hon. John Burns, M.P.,
President of the Local Government Board,
Whitehall, S.W.

Sanatorium Subcommittee.

A sanatorium subcommittee was appointed with instructions to prepare and submit to the Committee a model scheme or schemes for the treatment of tuberculosis in connexion with sanatorium benefit under the National Insurance Act. The following were appointed members of the subcommittee, with power to co-opt: The Chairman (Dr. J. A. Macdonald), Dr. R. M. Beaton, Dr. Lauriston E. Shaw, and Mr. E. B. Turner.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

EAST ANGLIAN BRANCH:

NORTH SUFFOLK DIVISION.

A MEETING of this Division was held at the Lowestoft Hospital on September 19th. Dr. H. M. EVANS was in the chair, and eighteen members were present.

Vote of Thanks to Representative.—A hearty vote of thanks to Dr. Evans for his attendance at the Representative Meeting was carried unanimously.

Resignation of Contract Appointments.—It was unanimously agreed that the resignation of all contributory contract appointments shall be sent in before the end of the month.

Public Medical Service for North Suffolk.

Appointment of Officers.—The following were elected: *Chairman*, Dr. H. M. Evans; *Secretary*, Dr. H. P. Helsham; *Treasurer*, Dr. H. C. Barraclough; *Committee*, Drs. Ransome, Bell, Hutchinson, Schilling, Taylor, Acton, Wade, Lay, Aylen, and Tyson, with the Chairman, Secretary, and Treasurer *ex officio* members. Power was given to co-opt two additional members.

Finance.—It was agreed that all charges should be signed by the Chairman and Treasurer, and that an account be opened at Messrs. Barclay's bank. It was agreed that a guarantee fund of £5 per member should be raised, and that £1 of this should be paid forthwith, for the initial expenses of the service.

This service is confined to persons whose average income does not exceed 40s. per week.

A married man may include his wife and children.

No person who is in business or trade for him (or her) self will be accepted as a subscriber, unless with the consent of the Central Committee.

The rates of payment will be:

(*a*) For those earning 30s. a week and under 40s.—
3d. a week for each person insured under the Act.
3d. a week for each uninsured person of and above 16 years of age.
2d. a week for each child under 16 years of age, only four children under 16 in any one family to be paid for; any above that number will be attended free.

(*b*) For those earning under 30s. a week—
2d. a week for each person insured under the Act.
2d. a week for each uninsured person of and above 16 years of age.
1d. a week for each child under 16 years of age, only four children under 16 in any one family to be paid for; any above that number will be attended free.

During the first year that the service is in operation, no entrance fee will be charged, but after the first year there will be an entrance fee of 1s. Each subscriber will be provided with a card, price 2d., first year free.

Subscribers living more than three miles from the chief post office in the town or village in which the doctor resides will pay an extra shilling per mile per family each year, this sum being due on January 1st.

A subscriber shall be allowed free choice of doctor and shall be allowed to change his doctor once a year, and only on January 1st, after giving a month's notice.

A subscriber shall be entitled to receive from his own medical attendant so long as his subscriptions are not in arrears:

1. Ordinary medical and surgical treatment at the surgery of his medical attendant within the hours mentioned on his card.
2. When his condition so requires, ordinary medical and surgical treatment at his place of dwelling, other than night calls and special visits, as hereinafter defined.
3. All needful medicines and dressings for wounds and other injuries.

A subscriber shall not be entitled in consideration of his ordinary subscription:

1. To medical attendance in respect of confinements or miscarriages, the minimum fee for which (including attendance for one week) shall be £1 1s.
2. To medical attendance in respect of night calls—that is, visits made between 8 p.m. and 9 a.m. in response to calls received within those hours, the charge for which shall be 2s. 6d. and 6d. a mile beyond two miles.
3. To medical attendance in respect of special visits—that is, visits made in response to and on the same day as calls received after 10 a.m., or made on Sundays by the subscriber's desire, the charge for which shall be 1s., and 6d. a mile beyond two miles.
4. To medical attendance in respect of tuberculous disease when actually in receipt of sanatorium benefit under the National Insurance Act.
5. To medical attendance in respect of illness the consequence of personal misconduct or intemperance.
6. To medical attendance in respect of illness arising from and within one month after confinement or miscarriage, fractures or dislocations, operations, consultations, administration of general or local anaesthetics, the fees for which must be specially arranged.
7. To cod-liver oil, linseed meal, leeches, serum, oxygen, vaccines, and bacteriological examinations.
8. To bottles, jars, or surgical appliances.
9. To electrical treatment of any kind.
10. To certificates beyond one each week, extra certificates to be charged 1s. each.

Further details will be considered by the committee of the service.

LANCASHIRE AND CHESHIRE BRANCH:

Bury Division.

A general meeting was held on September 17th. Dr. Baird occupied the chair, and twenty-two members were present.

Report of the Provisional Medical Committee.

The report stated that the Committee had met four times since the last Division meeting, with an average attendance of eleven, and reported on the several questions as follows:

Sanatorium Benefit.—On July 13th a letter was received from the Bury Insurance Committee asking for terms for the home treatment of insured persons suffering from tuberculosis. In view of the decision of the Representative Meeting that the Association should work sanatorium benefit, it was agreed to accede to the request. After full consideration of the duties required from the medical attendant as expressed in the Local Government Board Order, etc. (copies of which have appeared in the Supplement), a scale of fees was drawn up, and, after two deputations had met the Subcommittee of the Insurance Committee, the following provisional arrangement was come to. It is provisional in so far as it has to receive the approval, on the one hand, of this Division and the State Sickness Insurance Committee, and, on the other hand, of the full local Insurance Committee and the Commissioners. The terms may be considered as a precedent for those to be arranged in other insurance areas of the Division, and the Committee confidently ask for the approval of the Division. The scale is as follows:

	s.	d.
Report (not including attendances necessary for examination)	5	0
Consultation at surgery	2	6
Ordinary visit	3	6
Evening visit (6 to 10 p.m.)	5	0
Night visit (10 p.m. to 8 a.m.) ... ... (including medicine if required)	7	0
Mileage above two miles from centre of town ...	1	0
Injection of tuberculin ... ... (tuberculin to be supplied)	2	6
Quarterly report	2	6
Consultation with consulting officer	5	0

The procedure would seem to be as follows: If an insured person thinks himself or is told by his medical man that he is suffering from tuberculosis, he applies to the clerk of the Insurance Committee, who gives him a form of report to be filled up by his medical man. The Insurance Committee then becomes liable for his medical attendance and pays for the report, and any attendances necessary for making the report extra. On receiving the report the committee decides (on the advice of its medical adviser) what form of treatment he should have. If this is to be domiciliary the medical attendant receives a card (which he keeps at home), and a duplicate on which to record the progress of the patient. The card is sent in monthly to the consulting officer, and a short report is also sent in quarterly. The Insurance Committee are inclined to think that only pulmonary cases are entitled to benefit, but there is no doubt at all that all cases of tuberculosis should be claimed for. In pulmonary cases, of course, the usual notification fee is paid by the health authority.

Central Defence Fund.—The Committee has had under consideration the resolution of the Representative Meeting that all persons who have signed the undertaking should be asked to guarantee at least £20 so as to bring the Fund up to £250,000. In view of the fact that out of nearly 80 signatories in this Division only 30 had guaranteed a total sum of £132, it was considered imperative to strongly urge upon the Division the paramount necessity of subscribing to the Fund. Each member of the Committee present promised to guarantee £20, and it was decided to ask every man personally to do likewise.

The report was approved unanimously, and before the close of the meeting 16 guarantees or increased guarantees were signed.

Payment for Poor Law Work and Police Emergencies.—The Committee also brought the following resolutions before the Division:

That Poor Law medical [illegible] for statistics of work done for, and [illegible] the various boards of guardians, so that steps may be taken to bring the payment for Poor Law work more to the level of private practice.

That the local authorities be written to pressing upon them the necessity of payment of medical men when called in to emergencies by the police, and suggesting a fee of 5s. for day and 7s. 6d. for night calls.

These were passed unanimously, and the Secretary instructed accordingly.

Annual Representative Meeting.—Dr. Johnson, in an interesting and lucid speech, gave a description of the work of the meeting at Liverpool, and a hearty vote of thanks was accorded to him for his labours in representing the interests of the Division.

NORTH OF ENGLAND BRANCH:

Newcastle-on-Tyne Division.

A meeting of this Division was held at the Royal Victoria Infirmary, Newcastle-on-Tyne, on September 13th.

Local Insurance Committee.—Letters were read from Dr. R. P. Dawson, Dr. Tiplady, and Dr. J. R. Mason, refusing to resign their membership of the local Insurance Committee. It was agreed unanimously that the letters lie on the table.

Branch Council.—Dr. E. B. Kitching (Gosforth) and Dr. J. S. McCracken were elected additional members of the North of England Branch Council.

Executive Committee.—Dr. J. R. Burn and Dr. E. F. Pratt were elected to fill vacancies as ordinary members of the Executive Committee.

Winter Scientific Meetings.—The question of the continuation of the monthly winter scientific meetings, carried on by the Division, was discussed, and it was decided that they be carried on as before.

NORTH WALES BRANCH:

Denbigh and Flint Division.

Provisional Local Medical Committee.—At a meeting of the Provisional Local Medical Committee of this Division it was proposed by Dr. J. C. Davies, seconded by Dr. C. E. Morris, and resolved:

That the sending of contributory contract practice resignations from this Division be postponed until the regulations of the Insurance Commissioners are issued, and that the Council of the British Medical Association be requested to take immediate steps to obtain copies of the regulations.

OXFORD AND READING BRANCH:

Reading Division.

A meeting of this Division, to which non-members in active practice had also been invited, was held in the Library of the Royal Berkshire Hospital on Friday, September 13th, at 3.30 p.m. Dr. Holden took the chair, and some forty practitioners were present.

Public Medical Service.—The Chairman reported that the draft scheme for a Public Medical Service for the Reading Division, copies of which had been sent to all practitioners in the area, had been drawn up by an executive subcommittee, consisting of Drs. G. H. R. Holden, E. W. S. Rowland, W. Hartnett, W. Dickson, P. Napier Jones, W. J. Susmann, and E. W. Squire, Honorary Secretary, which had met on four occasions during August. The scheme was then discussed clause by clause, and after certain amendments, mostly of a verbal nature, had been made, the scheme was approved by the meeting.

A further meeting was held in the Library of the Royal Berkshire Hospital on September 19th. Dr. G. H. R. Holden was in the chair, and forty-six members were present.

Amalgamated Friendly Societies' Medical Institute.—The Secretary explained in full the position of Dr. Bateman with regard to the Amalgamated Friendly Societies' Medical Institute, and said a full statement of the circumstances had been sent to the Central Council. The Secretary quoted from a document recently issued by the Council to the effect that no compensation could be granted from the Guarantee Fund until January, 1913. Dr. G. S. Abram then appealed to the meeting for financial help for Dr. Bateman, who had remained loyal to his pledge. A motion was then passed:

That a subcommittee be formed for the purpose of raising a fund to help Dr. Bateman.

The subcommittee chosen consisted of Drs. Price, Abram, and Holden. The SECRETARY then explained that Dr. Hartnett, the other medical officer of the institute, had been called before his committee and promised a higher salary he would withdraw his resignation. Dr. Hartnett had intimated to them that he stood by his resignation in accordance with the policy of the British Medical Association, and he now sought the advice of the meeting as to whether he should cease working for the institute at an earlier date than January, 1913. He said he was willing to continue the work until January next, although it meant co-operating with a member of the profession who had been engaged to succeed Dr. Bateman. Dr. SQUIRE moved that Dr. Hartnett should carry on the work, on the grounds that (1) another disloyal practitioner would be kept out, and (2) no needless offence would be given to the friendly societies concerned. This course was unanimously recommended by the meeting.

Sanatorium Benefit.—The SECRETARY then read part of a letter from the Central Council, to the effect that it was a mistake not to ask for mileage for ordinary day visits to cases receiving domiciliary treatment in sanatorium benefit under the National Insurance Act. After some discussion, and on the motion of Dr. BOKENHAM, it was agreed:

> That the present arrangements of the Berkshire County Insurance Committee for the administration of sanatorium benefit under the National Insurance Act are considered satisfactory by the Division.

The Secretary was instructed to urge upon the Central Council that further charges than those already agreed upon would, in the opinion of the Division, be unreasonable.

Officers of Public Medical Service.—The meeting then proceeded to elect officers for the Public Medical Service, which had been formally adopted at the last meeting of the Division. There were elected Chairman of the Service, Dr. W. J. Maurice; Honorary Secretary, Dr. E. W. Rowland; Honorary Treasurer, Dr. L. M Guilding, of whom the last two, with the Chairman and Secretary of the Reading Division of the British Medical Association, will belong *ex officio* to the Central Committee of the Service. Dr. Norman H. Joy, nominated by the Bradfield District as their representative, was forthwith elected upon the Central Committee; nominations from the other districts had not yet been received. The question of making known to the public the fact that a public medical service had been arranged was then introduced. It urged that this should be done soon in order to relieve the anxiety of the public mind as to what they were going to do to obtain medical attendance. It was finally resolved, on a motion by the CHAIRMAN, that all statements for the press or the secretaries of friendly societies, with regard to the service, should be made by the Central Committee, and as soon as was convenient to that Committee. The meeting then closed, and tea, kindly provided by Dr. Abram, was served. After tea the members, some twenty in number, of the County Borough of Reading District, met to elect officers. There were elected: Chairman, Dr. G. Stewart Abram; Honorary Treasurer, Dr. G. H. R. Holden; Joint Honorary Secretaries, Dr. E. W. Squire and Dr. H. M. Clarke. It was then agreed that a subcommittee of nine, including the above officers, should be elected to arrange the details of the service for the Reading District. Drs. Guilding, Rowland, Hartnett, Deane, and Hosford were then elected. The following were then nominated to represent the district on the Central Committee: Drs. Howse, Deane, and Hartnett.

SOUTHERN BRANCH:

GUERNSEY AND ALDERNEY DIVISION.

A MEETING of this Division was held on September 19th. Thirteen members were present, and Mr. Hempson, the Solicitor to the British Medical Association, attended as a welcome and honoured visitor.

Annual Representative Meeting.—The REPRESENTATIVE (Dr. J. F. Carruthers) made his report on the Liverpool meeting, and his vote and actions were unanimously approved.

Progress of the Association.—Called upon by the PRESIDENT (Dr. A. C. Wallace), Mr. HEMPSON gave a clear and interesting account of the steady advance made in recent years in political influence by the British Medical Association. He was hopeful of the issue of the stand made by the medical men of the United Kingdom against exploitation of their services, and said that Mr. Lloyd George now realized the mistake he had made in flouting the profession. In answer to questions, he stated the present position of the negotiations with the Board of Trade about the new company; and suggested how the operations of the Medical Defence Union might be extended to the Channel Islands and the Isle of Man.

Vote of Thanks.—Mr. Hempson's remarks were listened to with the greatest interest, and a cordial vote of thanks was given to him for his presence. Mr. HEMPSON, in replying, said that he had never enjoyed a holiday more than his month in Guernsey; and though this was his first visit it certainly would not be his last.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

SOUTH-WEST WALES DIVISION.

A MEETING of this Division was held at Aberystwyth on September 18th. In the absence of the chairman and vice-chairman, Dr. MORGAN (Pontrhydygroes) was elected to take the chair. Thirty members were present.

Annual Representative Meeting.—The REPRESENTATIVE, Dr. D. R. Price (Ammanford), presented a report of the Liverpool meeting, which was approved.

Local Provisional Committees.—The reports of the secretaries of the local provisional committees for the counties of Carmarthen, Cardigan, and Pembroke were read and approved.

Letters were read from two members of the Division who are also members of a county council, giving their reasons for not resigning from the provisional insurance committees. It was resolved that the matter be referred to the Provisional Local Committee for the area concerned.

SOUTH-WESTERN BRANCH:

EAST CORNWALL DIVISION.

A MEETING of this Division was held at Bodmin on September 18th. Dr. WEBB, Chairman, presided, and nineteen members were present.

Mileage under Sanatorium Scheme.—Arising out of the minutes, the Secretary was asked *re* his communication to head quarters as to the suggested mileage under the sanatorium scheme. The SECRETARY replied that the State Sickness Insurance Committee had suggested 1s. per mile beyond two miles from the doctor's house. Dr. BOWHAY proposed and Dr. SECCOMBE seconded:

> That for the area of the East Cornwall Division, British Medical Association, the mileage fee under the sanatorium scheme be 1s. per mile and any portion of a mile over one mile radius from the doctor's house.

It was pointed out that the nature of the country and the scattered population necessitated this fee for mileage. This was carried unanimously.

Club Resignations.—A letter on this subject from the Medical Secretary, British Medical Association, was read, with suggestions—and the following letter was agreed upon to accompany the forms of resignation:

> Dear Sir,
>
> As Honorary Secretary of the East Cornwall Division, British Medical Association Provisional Local Medical Committee, I enclose herewith the resignation of the post of medical officer to your society.
>
> I beg to inform you that I have been authorized by the practitioner concerned to take this action in support of the policy of the British Medical Association in connexion with the National Insurance Act, so far as the medical benefits are concerned. Any further communication on the subject, with the exception of an acknowledgement of the receipt of the resignation of the practitioner concerned, should be addressed to me as Secretary of the above Committee, which is empowered by the local profession to deal with any question that may arise.
>
> N.B.—The medical profession in East Cornwall is prepared to give medical and surgical attendance to insured persons on certain terms and conditions as approved by the British Medical Association. The Public Medical Service will be instituted and come into operation on January 15th, 1913.
>
> I am,
>
> Yours faithfully,
>
> NORMAN G. H. SALMON.

It was pointed out that the forms of resignation were inapplicable to those societies—for example, juveniles—

whose members would not be insured, and also private contract appointments. It was then resolved, on the proposal of Dr. BOWHAY, seconded by Dr. FELTON:

That the Honorary Secretary be instructed to send in all the resignations of contract appointments in respect to insured persons before September 29th inst., and that the Representatives of the Provisional Medical Committee inform practitioners in their area that the East Cornwall Division recommends them to send in their resignations of societies of persons who will not be insured and private contract appointments themselves.

Public Medical Service.—A great deal of discussion ensued, and many opinions were expressed on the two schemes forwarded as "models" to the Division. The schemes were those appearing in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL for September 14th, 1912. Eventually Dr. BOWHAY proposed and Dr. SECCOMBE seconded:

That a scheme of Public Medical Service be drawn up for the East Cornwall Division and submitted to that of West Cornwall, with a view to a county scheme being adopted, and that the Exeter Division be approached at the same time so that the scheme may be submitted to practitioners in the Launceston area.

This was carried unanimously. Dr. TRINDER proposed and Dr. DONALD seconded:

That the minutes of the scheme as formulated be submitted to each practitioner resident in the Division through the medium of his local representative on the Provisional Medical Committee for his comment.

This was agreed to. Eventually, on the proposal of the HONORARY SECRETARY, seconded by Dr. ANDERSON, it was agreed:

That this question of a Public Medical Service be adjourned to a further meeting, which should be held within the next three weeks, and in the meantime each Representative to hold a meeting of all general practitioners within his area, discuss the two schemes in full so that the adjourned meeting can choose definitely the scheme it shall adopt.

It was pointed out at the meeting that the expenses of working Scheme B would probably be greater than Scheme A, and, therefore, the chances of any deficit being greater.

Dr. TRINDER also offered to get details of the Epsom Scheme (see BRITISH MEDICAL JOURNAL, March 2nd, June 15th, June 29th).

BRITISH MEDICAL ASSOCIATION LIBRARY.

BOOKS NEEDED TO COMPLETE SERIES.

THE Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Association of Genito-Urinary Surgeons. Transactions. 1906.
American Climatological Transactions. Vols. 1, 4, 5, 6.
American Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.
American Journal of the Medical Sciences. New series, vols. 4, 5, 1842-3; vols. 14, 15, 1847-8; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-5; vol. 59; or any parts of these vols.
American Journal of Ophthalmology. Vols. 1-9.
American Laryngological Association. Transactions. Vols. 1-6, 8-9.
Ophthalmic Review. January, 1882.
Ophthalmoscope. Vols. 1-8.
Pediatrics, prior to 1902.
Pro[illegible]ledical and Surgical Journal. March to September, 1841.
Ramazzini, Diseases of Tradesmen. Translated by James.
[illegible]logie. Prior to 1893.
[illegible]ic. 1-16, Pozzi.
[illegible]ophthalmologie. Prior to 1893.
[illegible] and since that date.
[illegible], Vols. 1-6.
[illegible]ette. Vols. 1-7.
[illegible]tto. Vol. 4.
[illegible] with the Government of India
[illegible] Journal. Vols. 1-11.
Prior to 1884. Titles for 1884 and 1895.
[illegible]ical Journal. February and April, 1895.
[illegible]ml 4.
[illegible]ulture, Bureau of
[illegible]letins. Nos. 3, 8, [illegible], 24, 29, 45.
[illegible]
[illegible]ca, 4 vols. 1824.

To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.

Association Notices.

MATTERS REFERRED TO DIVISIONS.

RULES GOVERNING PROCEDURE IN ETHICAL MATTERS.

("SUPPLEMENT" OF SEPTEMBER 21ST, 1912.)

Note of Corrections.

INSERT words "(or resolutions)" on page 323, second column, subparagraph (vi) (*a*), and on page 330, first column, subparagraph (vi) (*a*).

Insert words "or Division" after word "Branch" on page 328, first column, Rule 25, line 6.

Substitute "decisions" for "divisions" on page 330, first column, subparagraph (vii) (*a*).

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH.—First meeting of the session on October 10th, at 3.30 p.m., in the Medical Institute. The annual dinner will take place on the evening of the same day at the Grand Hotel at 7.30 p.m.—J. FURNEAUX JORDAN, Honorary Secretary.

BIRMINGHAM BRANCH: CENTRAL DIVISION.—A meeting of the Division will be held at the Medical Institute, Edmund Street, on Wednesday, October 9th, at 3.30 p.m. Agenda: (1) Confirm minutes. (2) Receive the Representatives' Report of Annual Representative Meeting. (3) To consider Executive Committee's Recommendations concerning (*a*) Public Medical Service schemes (BRITISH MEDICAL JOURNAL SUPPLEMENT, September 14th); (*b*) Model Ethical Rules (BRITISH MEDICAL JOURNAL SUPPLEMENT, September 21st). (4) Any other business. —ERNEST C. HADLEY and H. HOYLE WHAITE, Honorary Secretaries.

DORSET AND WEST HANTS BRANCH.—The autumn meeting will be held at Wimborne on Wednesday, October 16th. Members willing to read papers or show cases are requested to give notice to the Honorary Secretary by October 2nd.—FRANK FOWLER, Honorary Secretary, Bournemouth.

LANCASHIRE AND CHESHIRE BRANCH: LIVERPOOL DIVISION.—A meeting of the Division will be held at the Medical Institution on Tuesday, October 8th, at 4 p.m. The business of the meeting will be: (1) To receive the report of the Representatives at the meeting in July. (2) To fill a vacancy on the Branch Council. (3) Statement with regard to appeal for increase of guarantee to the Central Insurance Defence Fund. (4) To adopt Model Ethical Rules for the Division, as amended and approved by the Annual Representative Meeting, 1912 (Minute 118, Annual Representative Meeting) (see SUPPLEMENT, BRITISH MEDICAL JOURNAL, September 21st, 1912).—FRANCIS W. BAILEY, Honorary Secretary.

SOUTH-EASTERN BRANCH: BRIGHTON DIVISION.—An ordinary [illegible] of this Division will be held at the Lecture Hall, [illegible], on October 15th, at 4 p.m.—C. H. BENHAM, Honorary Secretary.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.—An important meeting of this Division will be held at the Victoria Hotel, Hardres Street, Ramsgate, this day (Friday), September 27th, at 8.30 p.m., Dr. F. E. Nichol in the chair. Agenda: To decide the details of a Public Medical Service for Thanet. All medical practitioners are invited to this meeting.—HUGH M. RAVEN, Honorary Divisional Secretary, Broadstairs.

SOUTH MIDLAND BRANCH.—The autumnal meeting will be held at Northampton General Hospital on Thursday, October 10th, at 2.30 p.m., under the presidency of Dr. Baker (Aylesbury). Members are requested to send titles of papers, or notes of cases, to the Honorary Secretary as soon as possible.—E. HARRIES JONES, Honorary Secretary, Northampton.

Hospitals and Asylums.

NATIONAL SANATORIUM ASSOCIATION.

THE annual report for 1911 of this association for the establishment and maintenance of sanatoriums for workers suffering from tuberculosis states that the sanatorium at Benenden, Kent, which has 84 beds, contained 90 patients on January 1st, 1911. During the year 277 patients were under treatment and 86 were in residence on December 31st, 1911. During the year 280 patients were discharged; of these one was non-tuberculous; of the remaining 279 cases the following classification is made:

Arrested	91
Improved	137
Unimproved	49
Died	2

The average stay in the sanatorium was sixteen weeks four days. The weekly expenditure on each patient was, on the average, £1 4s. 2½d., and the average cost of each patient was £15 1s. 1½d. Regarding the treatment, fresh air, good food, rest, and graduated labour were employed. Three grades of work are recognized—namely: *Light*, consisting of light hoeing and digging, wood chopping, weeding, light painting work, cleaning brasses, etc.; *medium*—light carpentering, heavy painting, hedging, mowing; *heavy*, consisting of window cleaning, trenching, digging, wood-sawing, haymaking, burrowing. During the year many cases which did not reach the ordinary sanatorium treatment were treated with tuberculin. At the beginning of the year tuberculin was given orally. This method was found best in the case of hysterical patients who imagined they could not stand a hypodermic injection. In the opinion of the medical superintendent, in a working-class sanatorium where graduated labour is employed, tuberculin is only needed where the usual routine treatment fails. As to the ulterior results of sanatorium treatment, it was found that, out of the patients who left in 1910, 117 are on full work, 11 on partial work, 32 do no work, and 86 are dead; 30 were readmitted, and the remainder were untraced. Out of 135 discharged during the first five months of 1911, 65 are on full work, 5 on partial work, 17 are doing no work, 19 are dead, and the rest untraced.

CITY OF CARDIFF MENTAL HOSPITAL.

THE annual report for 1910 of Dr. Edwin Goodall, Medical Superintendent of this asylum, shows that the total cases under care during the year numbered 881, and the average number daily resident 682. During the year 208 were admitted, of whom 197 were direct and 11 indirect admissions. Of the direct admissions the attacks were first attacks in 120; not-first attacks in 40; in 31 it was unknown whether the attacks were first or not, and 6 were congenital cases. The direct admissions were classified as follows: Recent mania, 34; chronic and recurrent, 26; recent melancholia, 42, chronic and recurrent, 14; secondary dementia, 12; delusional insanity, 14; general paralysis of the insane, 28; insanity with epilepsy, 6; primary dementia, 7; stupor, 2; confusional insanity, 1; not insane, 3; and cases of congenital or infantile defect, 8. It will be noted that the general paralytics amounted to over 14 per cent. of the direct admissions—an unusually high proportion. During the year 92 were discharged as recovered, giving the high recovery-rate on the direct admissions of 46.7 per cent. (40 per cent. for males, 56 per cent. for females), also 18 as relieved, 13 as not improved, and 3 as not insane. During the year 61 died, giving a death-rate on the average number resident of 8.94 per cent. A good deal of valuable research work is now carried on at this asylum. During 1910 Dr. Goodall and Dr. Schölberg, now part-time and advisory pathologist to the Cardiff Mental Hospital, in addition to his other duties, carried out an investigation with the Wassermann reaction in cases of general paralysis and other forms of insanity. Dr. Barton White, Second Assistant Medical Officer, and Dr. Schölberg together inquired into pituitary and suprarenal growths in a case of insanity, and the Senior Assistant Medical Officer, Dr. Harvey Baird, worked upon the pathological histology of the lining membrane of the brain ventricles. Dr. R. V. Stanford, Research Chemist of the institution, was engaged upon an inquiry into the formation of indigo in the human organism, and other lines of research are being pursued. The committee of this asylum are to be congratulated both upon their enlightened policy in encouraging scientific research, and the valuable results that are being obtained by the utilization of the facilities afforded at this asylum.

SALOP AND MONTGOMERY COUNTIES AND WENLOCK BOROUGH ASYLUM.

THE report of Dr. D. F. Rambaut, the Medical Superintendent, for the year 1910 shows that the total cases under care during the year numbered 998, and the average number daily resident was 775. During the year 203 were admitted, of whom 133 were first admissions, 45 readmissions, and 25 transfers from other asylums. In 63 the attacks were first attacks within three, and in 29 more within twelve months of admission; in 47 not-first attacks within twelve months, as also in 6 in whom it was not known whether the attacks were first or not; and in the remainder the attacks were either of more than twelve months' duration on admission (21) or congenital cases (12). There were 177 direct admissions, and these were classified according to the forms of mental disorder into: Recent mania 37, chronic and recurrent 15; recent melancholia 39, and recurrent 1; senile and secondary dementia 33; delusional insanity 13; general paralysis 5; insanity with epilepsy 2; stupor 8; less common forms 11; and congenital defect 12. During the year 78 were discharged as recovered, giving a recovery-rate on the direct admissions of 43.82 per cent., or of recoveries in and on the direct admissions of 42.13 per cent.; also 16 were discharged as relieved, 4 as not improved, and 1 as not insane. The death-rate on the average number resident was 14.53 per cent. The deaths were due in 21 to nervous diseases, with 5 from general paralysis; in 15 to diseases of the heart and blood vessels; in 7 to respiratory diseases; in 6 to abdominal diseases; in 1 to accident; and in the remainder to general diseases. Of the total deaths, 18.3 per cent. were due to tuberculous diseases. Extensive improvements were made to the asylum during the year, and its conditions and management were very favourably commented upon by the Commissionsrs at their visit.

NATIONAL MATERNITY HOSPITAL, DUBLIN.

THE annual meeting of the National Maternity Hospital, Holles Street, Dublin, was held recently, and the eighteenth annual report was read. During last year there was a substantial increase in the number of the patients. It was decided to spend the sum of £1,500 received from Lord Iveagh's gift on the building of new labour wards, bathrooms, and additional sanitary accommodation. In order to reduce the heavy bank deficit, the governors had found it necessary to realize one-half of their available capital, and the permanent income was thereby considerably reduced. The number of cases admitted during the year was 1,007; in the extern maternity 1,260 were attended at the patients' homes by the medical staff and nurses, and over 10,000 visits were made by the nurses subsequent to confinement. More than 4,000 women applied for treatment at the dispensary.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: Fleet Surgeon J. E. COCK to the *Dominion*, undated. Fleet Surgeon R. T. GILMOUR to the *Glasgow*, on recommissioning, September 17th. Fleet Surgeons W. G. AXFORD, H. HOYLAKE, H. W. GORDON-GREEN, C. L. W. BUNTON, H. S. BURNISTON, A. W. B. LIVESAY to the *President*, additional for three months senior medical officers' course. Fleet Surgeon H. W. MACNAMARA to the *Lion*, vice Axford. Fleet Surgeon J. H. PEAD to the *Vivid*, for Royal Naval Barracks, vice Hoylake. Fleet Surgeon G. LEA to the *Duncan*, vice Gordon-Green. Fleet Surgeon H. CLIFT to the *Ariadne*, vice Livesay. Fleet Surgeon J. C. FERGUSON to the *Hindustan*, vice Clift. Fleet Surgeon J. MOWAT, M.B., to the *St. George*, October 1st, 1912. Staff Surgeons G. GIBSON, J. D. S. MILLN, J. MARTIN, C. B. FAIRBANK to the *President*, for three months senior medical officers' course. Staff Surgeon A. C. BEAN to the *Britannia*, vice Burniston. Staff Surgeon L. S. WHITWAM to the *Bellona*, vice Gibson. Staff Surgeon H. J. CHATER to the *Pembroke*, additional for Chatham Hospital, temporary, vice Millin. Staff Surgeon G. E. DUNCAN to the *Pyramus*, on commissioning, undated. Staff Surgeon SAMUEL CONNER, M.B., to the *Maidstone*, on commissioning, undated. Staff Surgeon JAMES H. FERGUSSON to the *Bonaventure*, on recommissioning, undated. Staff Surgeon G. E. MACLEOD to the *Antrim*, October 1st, 1912. Staff Surgeon H. C. WHITESIDE to the *President*, additional for three months senior medical officers' course (to join at Greenwich College), October 1st, 1912. Surgeon J. GLAISTER to the *Vivid*, additional for disposal, September 16th. Surgeon ARTHUR R. FISHER has been appointed to Haslar Hospital, vice Glaister, undated. Surgeon J. P. BERRY, M.B., to the *Wildfire*, additional, for disposal, undated. Surgeon ROBERT H. MCGIFFIN, M.B., to the Bermuda Hospital and Yard, vice Horsfall, October 7th, 1912. Surgeon LEONARD WARREN, M.B., to the *Halcyon*, additional, for the *Leda*, vice McGiffin, October 7th, 1912.

ARMY MEDICAL SERVICE.

COLONEL WALTER G. A. BEDFORD, C.M.G., M.B., on completion of four years' service in his rank, is placed on the half-pay list, September 19th, 1912.

Lieutenant-Colonel E. H. L. LYNDEN-BELL, M.B., from the Royal Army Medical Corps, to be Colonel, vice W. G. A. Bedford, C.M.G., M.B., September 19th, 1912.

ROYAL ARMY MEDICAL CORPS.

Colonel J. W. BULLEN has been granted furlough for one year.

Lieutenant-Colonel M. O'D. BRADDELL has been detailed to proceed to England in medical charge of 11th Transport *Dufferin*, sailing from Karachi on January 23rd, 1913.

Major J. G. CHURTON has been granted six months' leave out of India.

Major F. KIDDLE has been appointed a Specialist in Ophthalmology at Colchester.

Major P. S. LELEAN, from Meerut, has been appointed to Colchester as Sanitary Officer.

Major A. H. SAFFORD to be Deputy Assistant Director of Medical Services (Sanitary), Lighth (Lucknow) Division, with effect from August 6th, 1912.

Major E. B. STEEL has been granted furlough for one year.

Captain C. M. RIGBY is appointed Embarkation Medical Officer, Bombay, from August 29th.

Captain C. P. O'BRIEN-BUTLER has been granted leave for eight months out of India.

Captain J. A. BENNETT has been granted ninety days' leave out of India.

Captain A. H. BOND has been appointed to Cork for duty.

Lieutenant P. R. L'ESTRANGE, from Cork, has been transferred to Dublin for duty.

INDIAN MEDICAL SERVICE.

THE King has approved of the retirement of Lieutenant-Colonel CLARENCE F. FEARNSIDE, M.B., dated September 10th, 1912, and Major DUGALD NAIRNE ANDERSON, dated September 1st, 1912.

The promotion of Major DAVID CLAUDE KEMP, notified in the *London Gazette* of March 17th, 1911, is antedated from January 28th, 1911, to July 28th, 1910.

Captain A. T. PRIDHAM, I.M.S., has been transferred from military employment to Burma for employment in the Gaol Department.

Captain A. O. R. BERKELEY HILL is transferred to civil employment in Madras.

Captain R. M. CARTER has been posted to Bombay for civil employment.

Captain R. A. NEEDHAM has been detailed for duty with the Chinese troops returning from Tibet.

Lieutenants to be Captains, dated July 31st, 1912.—CHARLES HAROLD SMITH, M.D., F.R.C.S.; ALAN MACDONALD DICK, M.B., F.R.C.S.; THOMAS J. C. EVANS, F.R.C.S.; MAURICE J. HOLGATE, M.B.; TREVOR L. BOMFORD, M.B.; GRAHAM R. LYNN, M.B.; LOUIS H. L. MACKENZIE, M.B.; JOHN MCDOUGALL ECKSTEIN; WILLIAM A. M. JACK, M.B.; ALEXANDER C. ANDERSON; DUNCAN G. COOPER, M.B.; DAVID ARTHUR, M.B.; WILLIAM L. FORSYTH, M.B.; KESHAR SAPASHIR THAKUR; [illegible] ABDUR RAHMAN; EDWARD H. V. HODGE, M.B.; GERALD T. [illegible], M.B.; HERBERT R. B. GIBSON, M.B.; MARK A. NICHOLSON, M.B.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT JAMES N. MCLAUGHLIN, M.B., to be Captain, September 1st, 1912.

The undermentioned Lieutenants are confirmed in their rank: Sinclair Miller, David M. Lyon, M.B., Robert P. Cormack, David Gilmour, Tom S. Nelson, George R. Grant, Joseph H. Ward, Robert A. Hepple, Joseph Walker, and Owen Wilson.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

First Scottish General Hospital.—Major PETER MITCHELL, M.D., to be [illegible], August 14th, 1912.

Eastern Mounted Brigade Field Ambulance.—Lieutenant WILLIAM ARCHIBALD, M.D., to be Captain, July 2nd, 1912; Lieutenant-Colonel EDMUND F. BINDLOSS, on completion of his period of service in command, is retired, and is granted permission to retain his rank and to wear the prescribed uniform, September 21st, 1912; Captain EDWARD J. CROSS, M.D., to be Major, September 21st, 1912.

[illegible] Field Ambulance.—Lieutenant GEORGE POTTS, F.R.C.S.Eng., to be Captain, August 11th, 1912.

Attached to Units other than Medical Units.—Lieutenant ARTHUR WALKER to be Captain, May 31st, 1912; Lieutenant JOHN O. HOLLICK, M.B., resigns his commission, September 21st, 1912; Captain JOHN C. R. ROBINSON to be Major, August 7th, 1912; Captain NEISH P. WATT, M.B., F.R.C.S.Ire., resigns his commission, September 25th, 1912.

For Attachment to Units other than Medical Units.—WILLIAM GILCHRIST, M.B., to be Lieutenant, September 14th, 1912.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Army Medical Service have been officially reported to have taken place during August:

		FROM		TO
Surgeon-General	L. E. Anderson	Bareilly	...	Lucknow.
Lieut.-Col.	E. H. L. Lynden-Bell, M.B.	Meerut	...	London.
,,	H. J. Fletcher, M.B.	Sialkot	...	Abbottabad.
,,	J. Donaldson	Rawal Pindi	...	Murree.
,,	J. W. Bullen, M.D.	Meerut	...	Agra.
,,	E. M. Hassard	Lahore	...	Karachi.
,,	[illegible]	Maidstone	...	Canterbury.
Major	G. A. T. Bray	Pembroke Dock	...	Pembrey Camp.
,,	R. C. Lewis	[illegible]	...	E. Command.
,,	W. J. [illegible]tor, M.B.	[illegible]	...	[illegible]
,,	K. [illegible] B., F.R.C.S.I.	Shorncliffe	...	Hythe.
,,	B. W[illegible]	Kirkee	...	Aden.
,,	W. [illegible]	Tidworth	...	Portsmouth.
,,	H. [illegible]	Belgaum	...	Ambala.
,,	H. [illegible] O., M.B.	[illegible]	...	Woolwich.
,,	R. A. Cunningham, M.B.	Allahabad	...	Meerut.
,,	A. O. B. Wroughton	Dover	...	Maidstone.
,,	C. H. Furnivall	Quetta	...	Ziarat.
,,	L. L. G. Thorpe	Cosham	...	Tidworth.
,,	W. S. Crosthwait	Mal Bay Camp	...	Fermoy.
Captain	T. S. Unwin, M.B.	[illegible]	...	London.
,,	A. [illegible] McN. Mitchell	Netley	...	Tidworth.
,,	R. [illegible]	Portsmouth	...	,,
,,	R. L. V. Foster, M.B.	[illegible]uhill	...	Tidworth.
,,	F. [illegible]	Brackenbir Moor	...	Liverpool.
,,	B. H. V. Dunbar, M.D.	Mosney	...	Belfast.
,,	F. M. M. [illegible]nney	R.A.M. College	...	E. Command.
,,	[illegible]	[illegible]	...	Irish Command.
,,	[illegible]	[illegible]orth	...	Netley.
,,	[illegible]	[illegible]ld	...	Aberystwyth Camp.
,,	[illegible]	[illegible]bot	...	[illegible]
,,	[illegible]	[illegible]y Camp	...	[illegible]
,,	[illegible]	[illegible]	...	[illegible]
,,	[illegible]	[illegible]	...	[illegible]
,,	[illegible]	[illegible]	...	[illegible]
,,	G. W. V. Ware, M.B.	[illegible]	...	[illegible]
,,	T. S. Blackwell	Mullingar	...	Athlone.
Captain	R. S. Smyth, M.D.	Dalhousie	...	Ambala.
,,	H. E. Priestley	Tidworth	...	Parkhouse Camp.
,,	A. D. O'Carroll, M.B.	,,	...	Sling Plantation.
,,	A. D. Fraser, M.B.	Londonderry	...	Magilligan Camp.
,,	A. Fortescue, M.B.	Cawnpore	...	Benares.
,,	F. J. Stuart, M.B.	Meerut	...	Chakrata.
,,	T. S. Eves, M.B.	Lucknow	...	Allahabad.
,,	T. B. Nicholls, M.B.	Cairo	...	Khartoum.
,,	A. S. M. Winder, M.B.	Allahabad	...	Lucknow.
,,	J. R. Yourell, M.B.	Mandalay	...	Rangoon.
Lieutenant	K. Comyn	Brighton	...	Shorncliffe.
,,	C. M. Nicol, M.B.	Weedon	...	Cairo.
,,	A. P. O'Connor, M.B.	Shorncliffe	...	,,
,,	W. W. Treves, M.B., F.R.C.S.	Chatham	...	,,
,,	E. L. Fyffe, M.B.	Cork	...	Buttevant.
,,	C. H. Stringer	Fargo Camp	...	Rolleston Camp.
,,	L. F. K. Way	Hilsea	...	Tidworth.
,,	F. A. Robinson, M.B.	Oranmore Camp	...	Curragh.
,,	W. A. Frost, M.B.	Willsworthy Camp	...	Tregantle.
,,	J. S. Levack, M.B.	Moor Laws Camp	...	York.
,,	W. T. Graham, M.B.	Rollestone Camp	...	Durrington.
,,	J. M. Elliott, M.B.	Tidworth	...	Hilsea.
,,	W. L. Webster, M.B.	Tipperary	...	Cork.
,,	H. J. G. Wells, M.B.	Kinsale	...	Cork.

Lieutenant T. A. WESTON, M.B., appointed on probation January 27th, 1911, has been stationed at Aldershot.

The following Lieutenants, appointed on probation, January 26th, 1912, have been stationed as follows: R. E. Mallam, M.B., W. F. Christie, M.B., C. J. Blaikie, W. Stevenson, M.B., at Aldershot; W. McNaughtan, M.B., Netley; D. T. M. Large, M.B., E. A. Strachan, M.B., D. T. Richardson, M.B., Scottish Command; A. Hood, M.B., Lichfield; J. H. M. Frobisher, M.B., J. L. Ritchie, M.B., York; O. W. J. Wynne, London; C. M. Ingoldby, H. R. L'Estrange, Cork; P. A. With, M.B., Curragh; S. J. Barry, Woolwich; and S. J. Higgins, Ireland.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN ninety-five of the largest English towns 8,348 births and 3,931 deaths were registered during the week ending Saturday, September 21st. The annual rate of mortality in these towns, which had been 11.2, 11.5, and 11.0 per 1,000 in the preceding three weeks, rose to 11.6 per 1,000 in the week under notice. In London last week the death-rate was equal to 12.2 per 1,000, against 11.5, 11.7, and 11.4 in the preceding three weeks. Among the ninety-four other large towns the death-rates last week ranged from 1.9 in Gillingham, 5.0 in Hood, 5.4 in Hornsey, 5.8 in Bournemouth, 6.0 in Bath, and 6.1 in Dudley and in Newport (Mon.) to 15.7 in Liverpool, 16.0 in Stockton-on-Tees, 17.5 in Halifax, 17.6 in Middlesbrough, 18.3 in Tynemouth, and 20.1 in Wakefield. Measles caused a death-rate of 2.2 in Bootle, 2.6 in Tynemouth, and 4.4 in Middlesbrough. The mortality from enteric fever, scarlet fever, whooping-cough, and diphtheria showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children under 2 years of age from diarrhœa and enteritis, which had been 205, 185, and 143 in the preceding three weeks, rose to 150 last week, and included 62 in London, 10 in Liverpool, 11 in Birmingham, and 8 in Stoke-on-Trent. The causes of 33, or 0.8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number, 11 were registered in Birmingham, 6 in Liverpool, and 3 in South Shields. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,529, 1,561, and 1,562 at the end of the three preceding weeks, had further risen to 1,775 on Saturday last; 511 new cases were admitted during the week, against 213, 228, and 281 in the preceding three weeks.

HEALTH OF SCOTTISH TOWNS.

IN eighteen of the largest Scottish towns 1,095 births and 576 deaths were registered during the week ending Saturday, September 21st. The annual rate of mortality in these towns, which had been 14.1, 12.7, and 12.4 in the preceding three weeks, increased to 13.8 per 1,000 in the week under notice, and was 2.2 per 1,000 above the rate recorded in the corresponding week in the large English towns. Among the several Scottish towns the death-rates ranged from 5.2 in Clydebank, 8.4 in Govan, and 8.4 in Partick to 16.8 in Falkirk, 17.0 in Dundee, and 17.2 in Greenock. The mortality from the principal infectious diseases averaged 0.8 per 1,000, and was highest in Perth and Falkirk. The 208 deaths from all causes registered in Glasgow included 4 from diphtheria, 3 from whooping-cough, 3 from infantile diarrhœal diseases, and 2 from scarlet fever. Three deaths from infantile diarrhœal diseases were recorded in Dundee, and 2 in Falkirk; 5 deaths from whooping-cough in Dundee; and 3 deaths from small-pox in Kirkcaldy.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, September 21st, 552 births and 324 deaths were registered in the twenty-two principal urban districts of Ireland, as against 579 births and 315 deaths in the preceding week. The annual rate of mortality in these towns, which had been 14.9, 13.0, and [illegible] per 1,000 in the three preceding weeks, rose to 14.7 per 1,000 in the week under notice, and was [illegible] higher than the mean [illegible] the corresponding weeks of the last [illegible] years. The [illegible] rates for the correspondweeks of the last [illegible] years were 16.6 and 12.8 [illegible] in Dublin and [illegible] districts [illegible] 4.2 in Drogheda and [illegible] in Sligo, while Cork stood [illegible], and Waterford at 13.3. [illegible] districts averaged 1.2 per 1,000, as against 1.1 in the preceding period.

National Insurance.

THE REGULATIONS FOR MEDICAL BENEFIT.

As was stated last week, the draft regulations for medical benefit were considered by the medical men who have remained members of the Advisory Committee at meetings held by them on September 18th and 19th, and by a meeting of the Advisory Committee on Friday last, September 20th. Certain alterations were then made, and although they do not, we are given to understand, closely affect matters of principle, they were sufficiently numerous and important to cause delay in putting the regulations into their final form. They will probably be published next week.

The draft regulations were also discussed last week by the Committee of the General Medical Council appointed to consider the possible effects of the National Insurance Act on medical education and examination in relation to the efficient practice of medicine, surgery, and midwifery, and to make representations thereon to the authorities concerned. The Committee, we understand, made representations on various points, but its report is not at present available.

The draft regulations, while authorizing the county committees to pay for medical services on any one of some four different schemes, including payment by capitation, for each attendance, and by a combination of these methods, did not, we understand, specify the amount of remuneration under any of the schemes. The question of the rate of remuneration will not be settled until after the Cabinet meeting, or meetings, which will take place in connexion with the autumn session of Parliament which is to begin on October 8th. As will be seen from the letter which Sir Clifford Allbutt has sent us, after consultation with his remaining medical colleagues on the Advisory Committee, these gentlemen will have an interview with the Chancellor of the Exchequer on the subject on Wednesday next, when it is probable that Sir Clifford Allbutt will act as their spokesman.

THE INSURANCE ACT.

SIR,—It is generally known that on Wednesday the 18th and Thursday the 19th inst., nineteen medical members of the Advisory Committee met together to discuss the draft regulations of the Commissioners under the Act; that on both days they met the Commissioners, and that on Friday the 20th inst. a full meeting of the Advisory Committee with the Commissioners was held. The drafting of these regulations within the lines of this Act is fraught with issues of the greatest importance to the medical profession, for upon them—which the Commissioners are empowered to make, which indeed it was their duty to make, with or without the assistance of the Advisers—the smoothness of the daily working of the Act must depend.

At their informal meetings the Medical Advisers scrutinized very closely the necessarily long list of Regulations, numbering forty-seven Sections, most of them with several subsections, and, with their Schedules, occupying twenty-nine octavo pages. It is due to the Commissioners to say that this perusal impressed the Medical Advisers with a grateful sense of the pains and care and the spirit of fairness which had been given to this heavy and responsible task.

It was to be expected nevertheless that many very important corrections and modifications would suggest themselves to the Medical Advisers, and such was indeed the case. These suggestions were presented in the first instance to the Commissioners, whom they have to thank for the patience and courtesy with which they listened to the alternative proposals; and although it would be improper to assume that these proposals are all or any of them to be accepted, or acceptable, yet it may not be improper to say that practically all of them seemed to meet with acquiescence, and at least will receive a careful and favourable consideration.

Furthermore, these impressions were strengthened at the general meeting of the whole Advisory Committee with the Commissioners, when the suggestions formulated by the medical advisors were received again in a conciliatory spirit, even in the cases in which objections were naturally made. The representatives of the approved societies, if they were not always in a position to leave the medical requests unopposed, yet in all cases set forth their objections in considerate and friendly terms.

Although one or two cardinal questions, such as that of remuneration, questions on which the medical advisers hold unshaken opinions, cannot be tackled until the return of the Chancellor of the Exchequer to London, still they believe that on the multitude of other points substantial progress has been made, and that the meetings of the past week will bear good fruit.

In respect of remuneration, I may say that the medical members of the Advisory Committee, in the hope that they might be of assistance to their medical brethren, sought an opportunity to place their views before the Chancellor of the Exchequer in order to point out the reasons which, in their opinion, made it necessary that material increase in the financial provision for medical benefit should be made. An interview has accordingly been arranged for Wednesday, October 2nd, at 4 p.m.

I may add that this letter is written with the cognizance and approval of my colleagues on the Committee.—I am, etc.,

Cambridge, Sept. 22nd. CLIFFORD ALLBUTT.

In the *Times* and several other daily papers of September 23rd a communication was published "from a correspondent," professing to give particulars with regard to the regulations for medical benefit and the action which the British Medical Association would take thereon.

The article commences with a statement that "the State Sickness Insurance Committee of the British Medical Association has now received a draft of the Regulations relating to medical benefits under the Insurance Act." From the next following sentence it would appear that the draft was the draft submitted to the Advisory Committee on September 20th. The statement that this draft, or any previous or subsequent draft or copy, has been received by the State Sickness Insurance Committee is erroneous. As was stated by the Medical Secretary in the next issue of the *Times*, no copy of the draft regulations has been forwarded to the State Sickness Insurance Committee. The correspondent has attempted to justify his statement in the following sentence:

> It is perfectly true that no official communication of the document has as yet been made to the British Medical Association, and that members of the State Sickness Insurance Committee have only cognisance of the documents unofficially, so that, unofficially too, it may be possible for friendly suggestions to be entertained by the Insurance Commissioners since there are no "official" dealings.

This is, of course, tantamount to an admission that the previous statement was erroneous and misleading. Any member of the State Sickness Insurance Committee who may have received a copy of the draft regulations, must have received it in his private capacity, and the document was not brought, formally or informally, before the State Sickness Insurance Committee, which is the body to which the duty of dealing with the Insurance Act has been delegated by the Representative Meeting and the Council.

The writer of the communication in the *Times* of September 23rd went on to assert that "the Committee has, it is stated on authority, received assurances that at the next Cabinet meeting, the one which will immediately precede the opening of Parliament, Mr. Lloyd George will make a statement on the situation." The State Sickness Insurance

Committee has received no such assurance. The writer continued as follows:

He (Mr. Lloyd George) is expected to point out that the reserve sums under his original proposals which had been set aside to meet unexpected outlays have been swallowed up by acts of generosity adopted by the House of Commons for the benefit of the contributors. These, therefore, could not be applied to meeting the claims of the doctors, claims which to a large extent he had always recognized as being substantially just, claims which he had always admitted would have to be partially met. He will therefore suggest that when Parliament reassembles it should be asked to vote a special percentage out of State funds towards the Insurance Fund. At the present time it is not known what this sum will be, but it may be 2 per cent. It is certainly not likely that Mr. Lloyd George will propose that a specific amount of money should be voted, or that the State will be asked to increase its contribution towards each case of insurance. There is no doubt that the Cabinet will agree to this course.

What exactly is meant by the phrase "it may be 2 per cent." does not appear; it rather reads as though the correspondent were repeating something he had picked up without understanding it. The writer makes the entirely unwarranted statement that

this action will enable the British Medical Association to recommend to its members the acceptance of the Government proposals as put forward through the Insurance Commissioners, to urge that a start must be made with the scheme, and that they would be well advised to give it a trial; that if it did not work satisfactorily, the profession as a whole could easily make better terms with the Treasury.

In his attempted justification, published in the *Times* of September 24th, the writer of the article states that

the facts . . . alike as to the nature of the Regulations, the Government intentions, and the anticipated action of the doctors are strictly accurate, as events will shortly prove. The only possible misunderstanding, unintentional or other, can arise out of conventional distinctions drawn between the uses of "official" and "unofficial" in this very involved controversy.

This last sentence is doubly misleading. The distinction between a document which a committee has seen and discussed, and a document which may have been seen by one or two of its members but not brought before the committee either directly or indirectly, is not a conventional distinction but a distinction in essence.

With regard to the intention of the Government the correspondent may have special sources of information, but the action which the British Medical Association will take should his vaticinations be fulfilled is a matter entirely beyond his knowledge and competence. He is right in saying that should such proposals be put forward by Mr. Lloyd George they will be considered by the State Sickness Insurance Committee, which will through the Council make a report to the Association, and that this will, no doubt, be followed by the summoning of a Special Representative Meeting, but beyond this nobody within or without the British Medical Association has grounds or authority for going. The article goes on to state that there seems to be a general belief that "the return"—a phrase we do not attempt to explain—"will be about 7s. 6d. a head on the average spread all over the country, not a flat rate, but more in some districts and rather less in others." As to this we have no information, and we very much doubt whether "a correspondent" has anything more to go upon than gossip. There is, however, reason to believe that he is right in the further statement that the regulations mentioned "no figure whatever," but proposed that this shall "be fixed by the local Health Committee after consultation with the local Medical Committees." He adds that this will be done "after analysis of the funds which it [the local Insurance Committee] may expect to receive from the approved societies," but in this, it is probable, he will prove to have gone beyond his text. "If," he continues, "the local doctors are not satisfied, they can bring the matter before the Divisional body of the British Medical Association, which will then undoubtedly boycott the district, and its power will probably be sufficient to force the Health Committee to give way."

The correspondent's note of September 23rd concluded with the following words:

There is no doubt that between now and then (the date of the Special Representative Meeting) a determined effort will be made to secure unanimity of opinion so as not to split the Association, which it is felt will, if it remains compact, be able to exercise very great pressure on the Government if the Regulations in actual working do not satisfy the profession as a whole.

The whole article appears to be another of those kites which have been sent up from time to time by injudicious friends of the Government with the apparent object of attempting to forestall the decision of the profession. All such attempts have hitherto failed, and there can be no doubt that the present effort will meet the same fate. Members of the Association should clearly understand that the reports of the State Sickness Insurance Committee regularly published in the Journal represent accurately the work done by that Committee, and set out its decisions in full on all matters which come before it.

There is one other point in the communication from "a correspondent" to which we have not referred. He says: "The question of remuneration for medical attendance is left to the local Health Committees, who have the option of arranging payment on any of the four following bases:

"1. Capitation only.
"2. A small capitation fee, with some payment for special services.
"3. Payment for special services, with a small capitation fee.
"4. Payment by attendance only.

"The difference between (2) and (3), it is explained," he says, "is that in the former the capitation fee, though small, is the main basis of the proposal; in the other the main basis is the payment for special services." His statements on this division of the subject are, we believe, substantially correct.

IRELAND.

Dublin.

Some surprise was caused recently in Dublin by a statement in the papers that six medical men in Dublin had been appointed by a society to work the new Insurance Act, and a letter appeared saying that it was impossible for the medical profession to boycott these men. These six men were undoubtedly appointed, but one of them has already resigned and another has promised to do so, and it is confidently expected that their example will be followed by the other four. The question is at present under the consideration of the Local Medical Committee, and, as it is generally understood that its discussions should be considered private, it is unfortunate that, through the carelessness of its members, that any information should have leaked out which might in any way hamper the efforts of the committee in its work.

County Waterford.

A meeting of the medical practitioners of the county of Waterford was recently held at Dungarvan. The President of the South-Eastern Branch of the British Medical Association outlined the methods adopted by members of the profession in other counties to deal with the administration of the Insurance Act. Every medical man present signed the pledge binding himself to accept no appointment or to give service to insured persons except on terms approved by the County Committee. The decisions of the delegates' meeting held in Dublin in June last were approved. All medical men holding appointments with friendly societies have been directed to serve notice terminating existing contracts on January 1st next.

County and County Borough Insurance Committees.

The list of medical practitioners nominated by the Irish Insurance Commissioners is now published in full, and on examination is found to contain twenty-five names which were not amongst those submitted by the Conjoint Committee; from these, however, must be subtracted eight names for counties in which the profession either made no selection or sent in the names too late. Making this allowance, however, these seventeen men out of seventy-eight have been appointed to the committees by the Insurance Commissioners without reference to the expressed wishes of the medical practitioners in the counties.

Sanatorium Benefit.

At a meeting of the medical practitioners of co. Galway, held on August 28th, the following resolutions were unanimously adopted:

That we invite the attention of the authorities concerned with the administration of the Acts providing for the treatment of tuberculosis to the particular matter of surgical tuberculosis and the need of expert surgical treatment.

And that the treatment of cases of pulmonary tuberculosis ineligible for reception into sanatoria ought to be provided for in special wards in general hospitals.

That this meeting requests the Local Government Board not to sanction any appointment under the Tuberculosis Prevention (Ireland) Act, 1908, or under the Insurance Act, 1911, to any office under the Acts, unless the conditions laid down by the Local Government Board, in their order of July 19th, 1912—namely:

(A) Have acted as superintendent or assistant superintendent of a sanatorium or tuberculosis dispensary for not less than six months; or

(B) Have obtained a certificate of proficiency in the diagnosis and treatment of tuberculosis after attending a six months' course of instruction at any institution that may be recognized by them as an efficient school for giving such instruction;

are fulfilled; and we protest against any appointment being sanctioned under paragraph

(C) Or otherwise satisfy the Local Government Board that he possesses special knowledge of the diagnosis and treatment of tuberculosis.

We therefore urge a revision of paragraph (C) on the grounds of its uncertainty and because it leaves a loophole for inexperienced men to get in.

Dr. John Mills, Honorary Secretary of the County Galway Committee of Medical Practitioners, was instructed to forward these resolutions to the Local Government Board, and has received a reply from that Board containing the following intimation:

It is not their intention to deal with appointments for the position of Medical Superintendent of a Sanatorium or Tuberculosis Dispensary under Paragraph C of their Order of July 19th, 1912, save in exceptional circumstances, and that the Board will not be satisfied with qualifications in that paragraph unless they are, in the Board's opinion, of equal value to those specified in Paragraphs A and B of the Order.

MEETINGS OF THE PROFESSION.

LANCASTER.

A MEETING of the medical practitioners resident in the district of the Lancaster Division was held in Lancaster on Friday, September 20th.

Club Resignations.—It was resolved to send in at once, in accordance with the request of the State Sickness Insurance Committee, the resignations of all contract practice appointments.

Consultations.—It was also decided:

To call in consultation only those members of the profession who have signed the pledge to act in concert with the British Medical Association, and who are actively in agreement with its policy.

NEWCASTLE-ON-TYNE.

A largely attended meeting of the whole profession in the Newcastle-on-Tyne area, called by the Provisional Local Medical Committee, was held at the Royal Infirmary, Newcastle-on-Tyne, on September 13th. Dr. H. L. RUTTER was in the chair.

Sanatorium Treatment.—The resolutions *re* sanatorium treatment submitted to the North of England Branch Council by Dr. Durant were gone through seriatim, and were finally approved as follows:

1. A chief tuberculosis officer, whose appointment shall be a whole-time one, shall receive not less than £500 per annum. An assistant tuberculosis officer, whose appointment shall be a whole-time one, shall receive not less than £300 per annum.
2. The tuberculosis dispensary work by the above officers to be purely consultative and advisory.
3. No person to be seen at the tuberculosis dispensary by above officers except on a note (M. 1) given by the person's doctor, such note to be included in the doctor's charges, if any, to the patient.
4. If the diagnosis of tuberculosis by patient's doctor is confirmed by the tuberculosis officer, form M. 2 is then filled in by the patient's own doctor and forwarded to the tuberculosis officer. For such certificate the fee of 5s. to be paid to the doctor sending in such certificate by the tuberculosis authority.
5. The form of treatment—sanatorium or domiciliary—is to be defined by the tuberculosis officer in consultation with the patient's own doctor.
6. The treatment to be carried out by the patient's own doctor under the supervision of a whole-time tuberculosis officer in all cases, except those in sanatorium.
7. The fees to be paid by the tuberculosis authority to patient's doctor shall be:

	s.	d.
Consultation at surgery	2	6
Visit to home within the ... boundary ...	2	6
Injection of tuberculin (supplied free to doctor) in addition to other charges ...	2	6

8. Wherever the tuberculosis authority controls tuberculosis in uninsured persons who apply to a [illegible] practitioner the same arrangements as hereinbefore defined for insured persons shall prevail.

A subcommittee, consisting of Dr. Farquharson, Dr. Foggin, Dr. James Don, Dr. H. L. Rutter, and Mr. R. J. Willan, were appointed to wait on the local Insurance Committee and convey these resolutions.

PROVISIONAL MEDICAL COMMITTEES.

CITY.

A MEETING of the City Division Provisional Committee was held at the Great Eastern Hotel on September 19th, Dr. EVAN JONES in the chair, and sixteen others were present.

Club Resignations.—A letter from Dr. Chetwood was read, in which he requested that the resignations of his clubs which he had handed to the Honorary Secretary should not be sent in, as he was giving up general practice and by September 29th would have ceased to have anything to do with them. He also suggested that his successor in practice should be interviewed by the Committee. Dr. PORTER said that he had seen the doctor in question, and that he had not yet been appointed to the clubs. It was decided that at present nothing could be done in the matter. Dr. MacNaboe wrote asking for advice with reference to a letter he had received from the secretary of one of his clubs inviting him to allow his name to be placed on their list of referees, and explaining that his fees would be paid for work done which would consist of examining suspected malingerers on behalf of the club. After some discussion it was decided to send the letter to the State Sickness Insurance Committee for the purpose of getting a ruling on the question. The HONORARY SECRETARY read Dr. Cox's letter, D 2, and it was proposed by Dr. H. G. DIXON and seconded by Dr. HORA:

That the resignations of clubs be sent in before September 29th.

This was passed unanimously. With reference to paragraph 7 the Secretary was instructed to forward to Dr. Cox the following resolution, which was proposed by Dr. SWAN, seconded by Dr. NICHOLSON, and passed unanimously:

This Committee is of the opinion that after January 15th, 1913, all members of friendly societies, sick clubs, and provident dispensaries, whether insured or uninsured, should only be attended at a rate of payment acceptable to the profession, as decided by the local Medical Provisional Committee.

Hospitals and Insured Persons.—The danger to be apprehended that some of the hospitals in the area of the Division might take up the treatment of insured persons was discussed, and the following resolution was unanimously passed, having been proposed by Dr. MILLER and seconded by Dr. JAFFE:

That the hospital authorities be approached and asked to give undertakings that no insured person will be attended at the out-patient and provident departments for payment.

Defence Fund.—The question of increasing the Defence Fund was discussed, and the HONORARY SECRETARY stated that several men had substantially increased their guarantees. It was decided that a circular letter should be issued, and that the importance of a large fund should be pointed out. The Secretary was also asked to prepare a list of those who had guaranteed, showing the amounts, for circulation in the Division.

HAMPSTEAD.

A meeting of the Committee was held on Monday, September 23rd, at 8.30 p.m., at 41, Belsize Park. Dr. FORD ANDERSON was in the chair, and ten members were present.

Joint Conference with Paddington and St. Pancras Committees.—A letter from the Honorary Secretary of

the Marylebone Provisional Medical Committee asking for the attendance of the Chairman and Honorary Secretary of this Committee at a joint conference with Paddington and St. Pancras on Tuesday, September 24th, was read. It was agreed that the Chairman and Honorary Secretary attend, with power to take action, in conjunction with the other committees, as may be decided upon with regard to the dates upon which resignations of contract practice appointments be sent in.

Pledges and Resignations.—The HONORARY SECRETARY read the report of the results to date of the canvas for pledges and resignations, as follows:

Retired	21,	of whom	17	have signed.
Whole-timers	19,	,,	9	,,
"Home" address	24,	,,	12	,,
Not in practice	11,	,,	6	,,
Total unaffected	75,	,,	44	,,
Hospital residents	4,	,,	3	,,
Honorary staffs	19,	,,	18	,,
*Contract	36,	,,	29	,,
Remainder...	108,	,,	93	,,
Total affected	167,	,,	143	,,
Total	242,	,,	187	,,

* And 26 resignations.

Undertakings, 205. Guaranteed or given donations, 67. Amount, £513 6s. 6d.

Central Defence Fund.—The Committee then considered the communication from the Medical Secretary marked D 1, and the Honorary Secretary reported the action he had taken thereon in the interim. An increase of £181 13s. had been made to the Central Defence Fund.

Sanatorium Benefit.—Resolutions of the Annual Representative Meeting as to sanatorium benefit were considered and agreed to, with the addition of the words "and treated," in Minute 192, to follow after the word "introduced." Correspondence with the medical officer of health upon this matter was read, and considering the urgency of the question in Hampstead, it was decided to ask Mr. Scrase to attend the meeting, and confer with the Committee. Mr. Scrase informed the Committee that the Sanitary Committee of the Borough Council were opening a tuberculosis dispensary for the borough, entirely independent of the Insurance Act, but he had been asked by the Local Insurance Subcommittee to formulate a scheme for insured persons under the Act for domiciliary treatment, to arrange a scale of fees and a list of medical practitioners willing to serve. It was agreed that the fees should be as follows:

Report, 5s.
Consultation at surgery, 2s. 6d.
Visit, 2s. 6d.
Night visit, 5s.
Injection of vaccine, 2s. 6d; vaccines to be at the cost of the administrative authority.
Quarterly report, 7s. 6d.

It was also agreed that there shall be free choice of doctor by the patient and of the patient by the doctor. It was agreed also that the Committee should supply a list of practitioners willing to serve, and the Honorary Secretary was empowered to obtain such list and submit it to the approval of the Committee. With regard to the arrangements for the Dispensary of the Local Sanitary Authority they are practically in accord with the resolutions of the Annual Representative Meeting, except as to the remuneration of a whole-time tuberculosis officer. It was agreed that, owing to the local conditions in Hampstead, the small number of patients would make it impossible to stipulate for a salary of £500 per annum, and that subject to the approval of the State Sickness Insurance Committee, a minimum salary commencing at £400 per annum, exclusive of expenses, should be given.

Vote of Thanks.—A vote of thanks to Mr. F. E. Scrase for his attendance was passed.

BOURNEMOUTH.

Meetings of the men holding contributory contract practice appointments have been held in the various districts controlled by this Committee, namely, Bournemouth, Christchurch, Poole and Parkstone, Ringwood, Wimborne. In each district there was a unanimous vote in favour of sending in the resignations in accordance with the wish of the State Sickness Insurance Committee. Every man in the area of the Bournemouth Division of the British Medical Association holding contract appointments has sent in his resignation forms to the Honorary Secretaries.

Sanatorium Benefit.—At a meeting of the Christchurch men, held on September 6th, the following resolution was passed:

That the medical practitioners of Christchurch are prepared to undertake the domiciliary treatment of insured persons suffering from tuberculosis, on the following terms:
(*a*) Report, 7s. 6d.
(*b*) Consultation at surgery, 2s. 6d.
(*c*) Visit, 2s. 6d., with 1s. per mile extra for cases residing more than 1 mile from the doctor's residence.
(*d*) Injection of vaccine or tuberculin, 2s. 6d. Vaccine or tuberculin to be at the cost of the administering authority, the fee for injection being additional to fee for consultation or visit.

DUNDEE.

This Committee has had a joint meeting with the Sanatorium Subcommittee of the Dundee local Insurance Committee, and laid before it the policy of the Association as to sanatorium benefit. The subcommittee agreed to the terms of remuneration and the principle of free choice of doctor, but declared that the precise range of duties of the chief tuberculosis officer and the management of the tuberculosis dispensary (municipal) were outwith their powers to deal with. After consultation with the State Sickness Insurance Committee, the local Medical Committee has appointed two of their number to act on the Sanatorium Subcommittee.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor*, BRITISH MEDICAL JOURNAL, *429, Strand, London, W.C.*]

PUBLIC MEDICAL SERVICE SCHEMES.

DR. H. D. LEDWARD (Letchworth, Herts) writes: From the account of the proceedings of the meeting of the State Sickness Insurance Committee held on September 12th, which appeared in the SUPPLEMENT of September 21st (p. 333), I note it was ruled that my variation of the third scheme submitted by the Public Medical Service Subcommittee conflicted with one of the cardinal principles of the Association. As I feel that this is a very serious criticism, I should be greatly obliged if you would give me an opportunity in your columns of stating by way of personal explanation that, if I have fallen into error, such was not my intention.

In the scheme I proposed the service is conducted by three committees, a Contributors' Committee, a Medical Committee, and a Joint Committee, the latter consisting of three contributors, three medical officers, with an independent chairman acceptable to both.

The Contributors' Committee collects the contributions and administers the rules appertaining to contributors, subject to the approval of the Joint Committee. The Medical Committee controls all the medical arrangements of the service, and is supreme in all questions referring to the professional conduct of medical officers. The Joint Committee (in addition to its right of veto over the proceedings of the Contributors' Committee) admits contributors and deals with the financial side of the service. It appeared to be necessary to have this amount of joint control, as the insurance risk is to be borne by the contributors, who guarantee the solvency of the scheme.

Now the cardinal principle of the Association relating to freedom from friendly society control states: "Medical and maternity benefits to be administered by local Health Committees, and not by friendly societies." It has been the policy of the Association, right up to the date of the last Representative Meeting, to urge the Government that the medical representation on these committees be increased to one-tenth, so that it is difficult to see in what way the proposals I have outlined conflict with this cardinal principle, as under such a scheme we have equal representation with the insured on the Joint Committee, and the disciplinary control of the medical officers is entirely in medical hands.

Dr. E. C. DANIEL (Epsom) writes: On page 333 of the SUPPLEMENT, September 21st, the State Sickness Insurance Committee, in their "apologia" for non-publication of a third scheme, put forward several more or less unsatisfactory reasons:

1. The Association cannot give its "imprimatur" to any scheme which depends for its success on the co-operation of the approved societies, or in which some part of the management should be left to the subscribers.

I think I shall have the bulk of practical men with me in the opinion that no scheme of payment for work done can be satisfactorily worked without the co-operation of the subscribers.

Scheme B is really a capitation scheme, with a different method of dividing up the money; and, although I advocate payment for work done, I would rather, if there were no other choice, work under Scheme A than Scheme B.

2. The Committee holds that the third scheme contravened the cardinal principle of freedom from friendly society control. The next sentence is: "In the scheme submitted by the subcommittee, it was proposed that trustees should be appointed by the subscribers, but the Committee was of opinion that it would be impossible to expect the subscribers to appoint trustees without demanding some further part in the management."

Now, Sir, this sentence practically admits that the appointment of trustees *per se* does not mean society control; but the Committee was of opinion, not that it would lead to lay control, but that the subscribers might demand it. The subscribers may demand more control under A or B, but the Association will say No; so, too, under the third scheme (let us call it Scheme C), if the subscribers demand more control, the profession will say No.

Is not the Association "straining at a gnat, when almost prepared to swallow a camel"? It is objecting to two lay trustees in a body of four; when it is, or was prepared (for 8s. 6d., *plus* extras) to accept control by Insurance Committees, composed almost entirely of laymen.

3. The next two sentences are important: The Committee contemplates having such schemes sent up for approval, but it will not at present say what will happen to them. I trust, Sir, that this is a bridge by which the Committee may withdraw from its present untenable position, and that when it finds Divisions and Medical Societies and Committees in various parts of the country prepared to accept and welcome the co-operation of the subscribers, it will realize that its fears are unfounded, and will approve the schemes.

But how much better it would be if all these schemes were based on uniform lines. As the Committee does not see its way to publish Scheme C "with the imprimatur of the Association," at least let it be published, as being the best model for those who wish for the co-operation of the subscribers.

If the Committee can not publish it in the JOURNAL, perhaps it will send it to those Secretaries of Divisions or Medical Committees who apply for it.

Dr. T. BARRETT HEGGS (Sittingbourne) writes: I wish to refer to the important decision of the State Sickness Insurance Committee not to put before the Association any public medical service scheme in which "some part of the responsibility of the management is left to the subscribers." In other words, in the opinion of this Committee, those who pay shall have no voice in the management. Can we seriously offer this to our industrial classes of to-day?

I have reason to believe that there is a large section of our profession that considers this impracticable, and that agrees with the principle of the Letchworth scheme of Dr. Ledward, of the Kent scheme, or of some similar scheme providing for joint control. Will Provisional Medical Committees holding these views communicate with Dr. Ledward or myself with a view to conjoint action?

Dr. A. CHRISTIE REID (Nottingham) writes: Before the revised models are submitted to the Divisions individual criticisms will surely not be out of place.

In the first place, let me say that it will be only too easy to split on the question of uniformity. A very large amount of local option will have to be granted, and a very great variety of local schemes sanctioned in order to secure that unity which is our salvation.

Both schemes will have to run the gauntlet of public opinion, and the first comment of the general public will certainly be: "This is a scheme run by the doctors, for the doctors; where do the rights of the insured persons come in?" The scheme will, not without some justice, be labelled "Syndicalist" and condemned. Is there any insuperable objection to a scheme, upon the Kent lines, that will invite the co-operation of the insured persons, and allow them an equal representation on the Committee, with an independent chairman? This co-operation is essential for the success of any scheme; for, if we are acting outside the Act the element of compulsion is lacking, and the very people we want to come into the scheme, the good lives, will remain out. Whether we can set up a scheme within the Act, getting our demands by requiring an additional (voluntary) rate from the higher wage earners, is still, I think, an open question.

It seems to me quite feasible that, with the Government grant payable in the first instance to the local Insurance Committee, and paid over into a Public Medical Service, thus saving cost of collecting, the balance could be got without difficulty, either (*a*) by a direct payment from the insured to the doctor of his choice, or (*b*) from the approved societies, allowing in each case a small rebate for the cost of collecting.

I have calculated that we could thus make the equivalent of 8s. 6d., without medicine, retaining the right at the same time to refuse any doubtful lives, which we could not take on at any contract rate (deposit contributors and others). Thus, we may make three classes among the insured, on a declaration as to wages or income, namely:

1. All under 21s. a week at Government rate, 6s., without medicine.
2. 21s. to under 40s., an additional 1d. a week.
3. 40s. and over, 2d.

These figures are considerably less than those suggested in Scheme A or B, but both these latter schemes allow for a considerable defection of such insured persons as would certainly elect to remain outside, preferring to join friendly society medical institutes, etc.

Now, how does this work out:

1,000 insured persons at 8s. 6d. without medicine...	£425
1,000 insured persons classified as follows:	
1. Under 21s. a week—280 women, 230 men, that is, 510 at 6s....	£153
2. 21s. to under 40s. a week, that is, 420 men at 10s.	£210
3. 40s. and over a week, that is, 70 men at 40s. ...	£49
	£412

(The odd pence in 2 and 3 are allowed for collecting.)

The number of women is based on the official estimates; some of them would come into Class 2.

The old friendly society members uninsured would be eligible at the same rates. This does not take into account the "higher rate" for the 6 per cent. deposit contributors, promised by Mr. Lloyd George on June 1st, nor the extras promised for night visits, etc.

An essential part of a public medical service would be a pledge by the hospital men not to see any insured person gratuitously (save in accidents and emergencies) without a note from his own doctor, thus compelling him to have a doctor.

The wage-limit demand is here modified into a higher capitation rate. Some of us are of opinion that a 40s. absolute limit is frankly impossible. It is a much easier thing to assess a man at 40s. and accept him than to reject him outright.

SANATORIUM BENEFITS.

Dr. CHARLES BUTTAR (Bayswater) writes in answer to Dr. Heggs: I fear that in accusing me of ungenerous and unworthy remarks he is dragging—unconsciously, of course—the proverbial red herring across the scent. My view of Dr. Heggs was that he is full of impossible sentimental idealism, a quality I admire but think unsuitable to our present position. On the other hand, I distinctly heard some of his supporters at Liverpool talk of the folly of throwing away posts of £500 a year "with a house"!

When Dr. Heggs uses as an argument "the advisability of recognizing our weakness," he quite appals me. In the first place this idea of weakness seems to exist nowhere

except in a few medical men, the public being convinced that we are enormously strong; and, secondly, it is unusual to encourage an army that is going out to battle by talking continually about its weakness.

As regards the wishes of the representatives in the matter of sanatorium benefits, I will not lay too much stress on the fact that twenty-six representatives reversed on report stage the vote they had given in committee. The decision remains a decision of the Representative Body, and I accept it as such. But I decline to read into the resolution more than it actually contained—namely, that the profession is prepared to work sanatorium benefits when its terms are granted. This is quite different to Dr. Heggs's view that the profession is pledged to facilitate the benefits by preparing schemes.

Though I deplore giving away what I regarded as a strategical position, I do not think it is to be carried again by assaults in the shape of schemes prepared by the State Sickness Insurance Committee. I suggest that in this matter we must now act on the defensive, and trust our Divisional outposts to keep the head quarters staff in touch with the movements of the enemy. If the latter produces a scheme that is in accordance with the demands of the profession, well and good. Until he does so, I feel that the duty of leaders is to strengthen defensive positions, and quietly to prepare a counter-attack to be made when circumstances are favourable. To me it is extraordinary that medical men should be so blind to the future of their profession as to touch even whole-time appointments until victory is won.

The Continuance of Negotiations.

Dr. D. Fenton (Witton, Blackburn) writes: Dr. Gruffydd, in his letter published in the Supplement for September 21st, says, "If 8s. 6d. is a satisfactory fee for a small number of 'picked' lives, surely it would not be bad business to adopt the same fee for an enormously increased number . . . of mixed lives."

The logic of such a conclusion is difficult of comprehension. If Government paid 8s. 6d. for average lives then I could have understood one agreeing to accept the same for mixed lives, for the probability is that the good lives and the bad lives together would justify us taking them on at average rates. I fail to see why we should be satisfied with 8s. 6d. for "mixed" lives when the Government evidently does not consider that sum too much for "selected" or good lives.

In my opinion the only satisfactory method, if we must ultimately accept a capitation grant, would be for the Government to pay us for actual work done for three years and base the capitation grant on the experience of these three years. Our income-tax returns are based on the three years' average; the value of our practices (formerly, at any rate) was reckoned on the average of three years' income, so I fail to see why the Government should refuse to accept the average of three years' payment for work done as the basis of their payment per head.

The ordinary tradesman is paid for actual work done, or rather for the time he spends on it, even if his employer takes on the work as a contract. The Government are to be our employers; let them pay us for work done. If they find that the contract they have entered into with insured persons does not pay, then they must make other arrangements with the insured persons. A tradesman who lost on a contract would raise his price for the next contract, but he would have to stand by the first, and lose by it.

Because Mr. Lloyd George had not sufficient foresight to endeavour to ascertain in a proper manner the probable cost of working his great scheme beforehand is no reason why the profession should be sweated if the contract he has entered into with insured persons does not pay.

If the Chancellor is so confident that the 4s. 2d. of the Plender report is sufficient to pay us for work done, why is he afraid to prove the faith that is in him, and so save the 4d. per head per annum?

He knows he could not do it. I may say my opposition to the Act is not political.

The Profession and the State.

Dr. S. J. Ross (Bedford) writes: I have read with great interest the various expressions of opinion *re* the Insurance Act which have appeared in the Supplements during the past few months. There are correspondents who condemn the Act root and branch, others who damn it with faint praise, others who devote their time in either cursing or blessing a colleague; but, alas, in the minority are those who express decided opinions as to the practical steps we should take, and bring clearly before us the great dangers which threaten us. In the Supplement of September 21st there are two letters which must appeal to every member of the profession. The first is written by Dr. Henry George Dixon, who for twenty-five years has voted consistently Liberal, and therefore who has no political Tory bias to dim his vision. He advises us to use all our energies to win over hesitating and recalcitrant individuals, that is, to make the profession a united body, and by so doing to assure our victory, and let it not be forgotten we are not fighting this battle for the good of the present generation of medical men only, but also for future generations. The other letter is written by Major W. E. McKechnie, I.M.S., who has had experience of the red-tape methods of State controlled departments, and he points out clearly and irrefutably what our future would be if we decided to work the Act. The time now spent in reading and research would be devoted to filling up innumerable certificates of no value to any one except the army of paid officials now being created by the present Government. What we want is a Public Medical Service, controlled by medical men. We all know the trials of lay interference in general practice. Multiply these a thousandfold and you will appreciate what our position would be under the Insurance Commissioners. Again, suppose for one moment that our arguments with local authorities were satisfactory at first. Is there any safeguard that such agreements would be lasting? After a time some of the lay members of the committee might change their minds and actually pass a resolution embodying different conditions. Then we should have to fight the battle again. Having made up our minds, let us act. A medical service under medical control must be our watchword. It has been suggested by one of your correspondents that we should give the Act a three years' trial and then readjust matters. Fancy setting up the machinery, letting it run for three years, and then starting the battle afresh. Having arrived at a definite decision, let us adhere to it; and let us, with the able assistance of the Association, work out our own salvation.

Steady in the Ranks.

Dr. Wm. S. Lee (Chelsea, S.W.) writes: In the Supplement of the last issue of the Journal I notice the call "Steady in the Ranks," and, whilst I quite agree that steadiness in the ranks is most desirable, I would like to point out that the appeal for steadiness amongst our leaders would be more appropriate and to the point.

Is it any wonder those in the ranks (the principal body of the Association, and mostly composed of general practitioners) show signs of impatience and a disposition to break away when we review the actions of those in command?

Ever since we have entered into this fight in defence of our rights and liberties, our leaders have been strong in words but very weak in actions. The Journal has been stuffed to repletion with recommendations and suggestions from the Council—recommendations and suggestions so verbose that it took the ordinary man days to wade through them, and having done so one was as wise at the end as at the beginning. The Divisions have had to consider these recommendations, etc., and when at last they have worried through them and arrived at a decision, they have, as has been the case in those meetings held before the last Representative Meeting, given definite instructions *re* breaking off or continuing negotiations with the Insurance Commissioners. Is it surprising, then, that members of the Association show signs of impatience and irritation when we find that our Representatives have been induced to make themselves ridiculous, by voting each way—that is, voting to break off negotiations, and at the same time to work that part of the Insurance Act pertaining to sanatorium benefits? I venture to assert that the majority of the Divisions, when instructing their Representatives to vote for breaking off negotiations, understood that the breaking off negotiations meant negotiations *re* sanatorium as well as ordinary medical benefits; and I maintain that unless it was intended that both these benefits were to

have been regarded as one in these negotiations, it was the plain, strict, and honest duty of our leaders to clearly and definitely instruct the various Divisions as to the contrary.

I would like to know what was the true cause of this half-and-half action of the Representatives. I have been told that one of the reasons given for this action was that so few of our medical brethren in Ireland are members of the British Medical Association that this Association had no control over the majority of Irish doctors who were willing to work the Act in Ireland. Now, I ask, who was responsible for the issuing of this statement, and what was the reason for the suppression of the fact that at that time there existed a joint committee of the Irish Medical Association and the British Medical Association, and that although the majority of our Irish colleagues are members of the Irish Medical Association, yet this conjoint committee had decided to abide by the decisions of the Liverpool Representative Meeting? Were not the officials of the British Medical Association aware of this fact, and are they not, to put it mildly, very much at fault not to have put this fact plainly before the Representatives? Another reason given is that it was the wish of the Representatives to placate those medical officers of health who were desirous to work the sanatorium part of the Act, especially as they (the medical officers of health) would by law be compelled to do this work. Again, I have been told that the Representatives have acted as they have done because of the threat that, if the British Medical Association did not agree to work the sanatorium benefits, whole-time men would be appointed.

If the Councillors and Representatives have no stronger reasons to give for their Liverpool decision than such as these, their case is weak in the extreme. Surely the medical officers of health throughout the kingdom are honourable men, and as such would honourably abide by their pledges. Those amongst them who have not signed the pledge we must look upon as our opponents. Can any one tell me if there exists any rule, by-law, or bond that makes it compulsory for a medical officer of health to act as medical officer for a sanatorium? I have sought for information on this point, and I cannot find any one who can show such a rule, by-law, or bond. Why, then, have medical officers of health been selected for these posts as consumption specialists? Have they not, as medical officers of health, comfortable salaries, and why make them a privileged class, to the detriment of the general practitioners? Surely the general practitioner, habituated as he is in the daily use of his stethoscope and microscope, is more fitted to specialize in pulmonary tuberculosis than the medical officer of health, whose work is more in connexion with the test tube and the drain pipe.

Re the other reason—that is, the threat of the Commissioners to appoint whole-time officials. Are we so craven-hearted and so weak in our organization that we must bow down to this last of the many threats hurled against us? Can the Commissioners get the necessary number of medical men who are so poor in spirit and so disloyal to their medical brethren and their profession that they place self before all else? I doubt it; and even if there exists in our profession such a body of men, I say it is the duty of our leaders, knowing that these men or any other such body of monopolists are powerless without the genuine and unstinted assistance of the loyal general practitioner, to organize and lead us fearlessly in opposition.

Let our leaders (Councillors, Representatives, etc.) act on the decisions of the Divisions, and not, as at Liverpool, take it upon themselves to decide on important matters without definite instructions from the Divisions. Let them show neither partisanship nor favouritism. Let them remember it is only by unity we can win, and the way to attain unity is by studying and acting in the interests of the profession at large, not by creating monopolies.

Let the cry, "Steady in the ranks," ring out, but let the cry for steadiness, courage, integrity, and fixity of purpose in our leaders ring out louder still. If our leaders act "fair and square" they will find that, even though the whole profession may not be individually of quite the same opinions, yet the minority will loyally submit to the will of the majority.

The rank and file of the profession are true, steady, and determined. We want true, steady, and determined men to lead us. Come forward, even now, you leaders, and prove yourselves men. Show us a clear and definite policy, without quibbling or wavering. Lead us fearlessly and straight, and we will follow you—a united band and unconquerable army.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BANBURY: HORTON INFIRMARY.—House-Surgeon. Salary, £80 per annum.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham Road, S.W.—(1) Assistant Surgeon. (2) Assistant Physician.

BIRKENHEAD BOROUGH HOSPITAL.—Senior House-Surgeon (Male). Salary, £100 per annum.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—(1) Surgeon. (2) Two House-Surgeons (Male). Salary at the rate of £75 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Two House-Surgeons. (2) House-Physician. (3) Throat, Nose, and Ear House-Surgeon. Salary for (1) and (2), £100 per annum each; for (3), £75 per annum.

CARSHALTON: QUEEN MARY'S HOSPITAL FOR CHILDREN.—Senior Assistant Medical Officer. Salary, £250 per annum.

CHELTENHAM GENERAL HOSPITAL.—House-Physician. Salary, £100 per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—House-Physician. Salary, £80 per annum.

CHORLEY: RAWCLIFFE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CITY OF LONDON LYING-IN HOSPITAL, City Road, E.C.—Resident Medical Officer. Salary at the rate of £50 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum, rising to £100 after six months.

DUBLIN: ROYAL VICTORIA EYE AND EAR HOSPITAL.—Two House-Surgeons. Salary, £40 per annum each.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer: salary, 100 guineas per annum, rising to 120 guineas. (2) Assistant House-Surgeon; salary at the rate of £80 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—House-Surgeon (Male). Salary at the rate of £75 per annum.

ECCLESALL BIERLOW UNION WORKHOUSE.—Male Resident Assistant Medical Officer. Salary, £200 per annum.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

FAREHAM: HANTS COUNTY ASYLUM.—Third Assistant Medical Officer (Male). Salary, £200 per annum.

GARTLOCH MENTAL HOSPITAL, near Glasgow.—Junior Assistant Medical Officer. Salary, £150 per annum.

GLOUCESTERSHIRE COUNTY COUNCIL AND GLOUCESTER CORPORATION JOINT COMMITTEE.—Tuberculosis Medical Officer. Salary, £500 per annum

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon (Third). Salary, £75 per annum.

HACKNEY UNION INFIRMARY.—Senior Assistant Medical Officer. Salary, £175 per annum.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—(1) Gynaecologist. (2) Surgeon to Out-patients. (3) Casualty Officer; salary, £140 per annum. (4) Assistant Casualty Officer; salary, £60 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

HEMEL HEMPSTEAD: WEST HERTS HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

HEREFORD COUNTY AND CITY ASYLUM.—Assistant Medical Officer (Male). Salary, £150 per annum, increasing to £170.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Assistant Casualty Medical Officer. Salary, £30 for six months and £2 10s. washing allowance.

JOHANNESBURG HOSPITAL.—Resident X-Ray Medical Officer. Salary, £500 per annum.

KIDDERMINSTER INFIRMARY AND CHILDREN'S HOSPITAL.—[illegible]

KING EDWARD VII SANATORIUM, [illegible]rst.—Junior Assistant Medical Officer. Salary, [illegible] increasing to £200.

LEICESTER POOR LAW INFIRMARY.—Second Resident Assistant Medical Officer. Salary, £130 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Anaesthetist. Honorarium, 20 guineas per annum.

MAIDSTONE: KENT COUNTY ASYLUM.—Male Fourth Assistant Medical Officer. [illegible]

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £150 per annum, increasing to £350.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Resident Medical Officer. Salary, £100 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Pathologist and Registrar. Salary, £80 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—(1) House-Physician. (2) Second House-Surgeon. Salary at the rate of £80 per annum each.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—(1) Assistant Anaesthetist; salary, £50 per annum. (2) Male and Female House-Physicians and House-Surgeons.

SEAMEN'S HOSPITAL SOCIETY.—(1) Two House-Physicians and two House-Surgeons at Dreadnought Hospital; salary at the rate of £50 per annum each. (2) Senior House-Surgeon and House-Surgeon at the Albert Dock Hospital; salary at the rate of £100 and £50 per annum respectively.

SHREWSBURY: COUNTY ASYLUM.—Second Assistant Medical Officer (Male). Salary, £170 per annum, rising to £190.

SOUTHAMPTON: ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House-Physician. Salary, £100 per annum.

STAFFORD: COTON HILL LUNATIC ASYLUM.—Assistant Medical Officer.

STIRLING DISTRICT ASYLUM, Larbert.—Junior Assistant Medical Officer. Salary, £140 per annum.

SURREY COUNTY COUNCIL.—Two Tuberculosis Medical Officers. Salary, £500 per annum each.

TOXTETH PARK TOWNSHIP.—Assistant Resident Male Medical Officer of the Workhouse and Infirmary. Salary, £100 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—Surgeon.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary commencing at £160 per annum.

WORCESTER GENERAL INFIRMARY.—House-Physician. Salary, £100 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointment: Berris (co. Carlow).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

BURNHAM, Cecil, M.B., Ch.B.Edin., Senior House-Surgeon at the King Edward VII Hospital, Windsor.

CAMPBELL, Thompson, M.D., C.M.Glasg., Tuberculosis Officer for the West Riding of Yorkshire.

COOMBS, Harold Martin McC., M.B., B.C.Camb., L.R.C.P. Lond., M.R.C.S.Eng., House-Physician, Bedford County Hospital, Bedford.

HALLORAN, G. P., M.B., Ch.M.Syd., Assistant Medical Officer at Charters Towers District Hospital, Queensland, vice Vivian Rich, M.B., Ch.M.Syd., resigned.

HIPSLEY, L., M.D.Syd., Surgeon in Charge of Pre-Maternity Department, Royal Hospital for Women, Sydney, N.S.W.

MONDY, S. L. Craigie, M.R.C.S., L.R.C.P., Medical Referee to the Prudential Assurance Co., Ltd., for Tottenham, vice late Dr. C. E. Hutt.

MITCHELL, H. W. F., M.B., Junior Resident Medical Officer at the Perth Public Hospital, West Australia.

NISBET, George, L.A.H.Dub., Medical Officer and Public Vaccinator, No. 2 District, Basford Union.

ROBERTSON, E., F.R.C.S.Edin., Medical Superintendent of Consumptive Sanatorium, Victoria.

RODGER, Douglas, M.B., Ch.B.Vict., F.R.C.S.Edin., Whole-time Ophthalmic Inspector of Schools to the Queensland Government.

STEEL, Macdonald, M.B., Ch.B.Glas., Medical Officer of Health at Booborowie, South Australia.

VICKERY, E., M.B., Ch.M.Syd., Resident Medical Officer at the Newcastle Hospital, N.S.W.

SALFORD ROYAL HOSPITAL.—The following appointments have been made:

Resident Surgical Officer.—R. W. Duncan, L.R.C.P. and S.Edin., L.F.P.S.Glas.

House-Physician.—James A. Tomb, M.B., Ch.B.Edin.

House-Surgeon.—Caleb Davies, M.B., Ch.B.Vict.

Junior House-Surgeon.—Ronald B. Berry, M.B., Ch.B.Vict.

Casualty House-Surgeon.—Thomas H. Houston, M.B., Ch.B., B.A.O.Q.U.I.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

APPLEYARD.—On September 19th, at 2, Marlborough Road, Bradford, the wife of Wm. Appleyard, F.R.C.S., of a daughter.

MACKELLAR.—At Manor Place, Dewsbury, Yorkshire, on the 16th inst., the wife of J. Matheson MacKellar, M.B., Ch.B., of a son.

PHILLIPS.—On September 23rd, 1912, at The Briars, Wrotham, Kent, the wife of Philip Gordon Phillips, L.R.C.P., L.R.C.S., of a son.

THOMAS.—At The Square, Barnstaple, on September 19th, the wife of Frank L. Thomas, M.B., B.S., of a son.

DEATHS.

SEALY.—At Southsea, on September 22nd, Robert Bass Sealy, aged 48, of Disley, Cheshire, son of the late Robert Bass Sealy, of Cork.

THYNE.—At Hailaton, Uppingham, suddenly, on September 22nd, William Thyne, M.D., in his 45th year, formerly of Barnet.

DIARY FOR THE WEEK.

POST-GRADUATE COURSES AND LECTURES.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Tuesday, 3.30 p.m., Forms of Rhinitis; Friday, 3.30 p.m., Deflection of the Septum.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.—Daily arrangements: Out-patient Demonstrations, 10 a.m., Medical and Surgical Clinics. Monday: 12 noon, Throat, Nose, and Ear; 2.15 p.m., Surgery; 3 p.m., Operations; 3.15 p.m., Medicine; 4.15 p.m., Ear and Throat. Tuesday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Surgery; 3.15 p.m., Medicine; 4.15 p.m., Skin Clinique. Wednesday: 11 a.m., Eye; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Eye Clinique; 4.30 p.m., Surgery. Thursday: 12 noon, Throat, Nose, and Ear; 2 p.m., Operations; 3.15 p.m., Medicine. Friday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Surgery. Saturday: 11 a.m., Eye. 10 a.m., Radiography. 11 a.m., Pathological Demonstration.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Eye. Lectures at 5.15 p.m. will be given each day as follows: Tuesday, Some Points in the Diagnosis and Treatment of Gastric and Duodenal Ulcer. Wednesday, The Onset of Rheumatism in Children. Thursday, Tachycardia. Friday, Bacilluria and Pyuria.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		SEPTEMBER.
27	Fri.	Isle of Thanet Division, Ramsgate, 8.30 p.m.
		OCTOBER.
2	Wed.	London: Hospitals Committee, 2.30 p.m.
4	Fri.	London: Central Ethical Committee, 2 p.m.
8	Tues.	Liverpool Division, Liverpool, 4 p.m.
9	Wed.	Central Division, Birmingham, 3.30 p.m.
10	Thur.	South Midland Branch, Northampton, 2.30 p.m.
		Birmingham Branch, Birmingham, 3.30 p.m.; Annual Dinner, 7.30 p.m.

Date.		Meetings to be Held.
		OCTOBER (*continued*).
15	Tues.	Brighton Division, Brighton, 4 p.m.
16	Wed.	Dorset and West Hants Branch, Wimborne.
17	Thur.	Metropolitan Counties Branch Council, 4 p.m.
30	Wed.	Central Council, London, 2 p.m.
		NOVEMBER.
21	Thur.	Metropolitan Counties Branch Council, 4 p.m.
		DECEMBER.
19	Thur.	Metropolitan Counties Branch Council, 4 p.m.

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SUPPLEMENT

TO THE

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REGULATIONS FOR MEDICAL BENEFIT.

Text of the Provisional Regulations,

DATED THE FIRST DAY OF OCTOBER, 1912,

MADE BY THE JOINT COMMITTEE ACTING JOINTLY WITH THE INSURANCE COMMISSIONERS, THE SCOTTISH INSURANCE COMMISSIONERS, AND THE WELSH INSURANCE COMMISSIONERS AS TO THE ADMINISTRATION OF MEDICAL BENEFIT.

ARRANGEMENT OF REGULATIONS.

PART I.

General.

1. Short title.
2. Interpretation.

PART II.

Provision of Medical Attendance.

3. Duty of Committee to make arrangements.
4. Negotiations with Societies.
5. List of deposit contributors.
6. Conditions of service of practitioners.
7. Submission of arrangements.
8. Preparation and submission of rules.
9. Income limit.
10. Approval by Commissioners.
11. Invitation to practitioners.
12. Preparation of medical list.
13. Power to require persons to make their own arrangements for treatment.
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15. Contribution to cost of treatment.
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The Joint Committee of the several bodies of Insurance Commissioners appointed for the purpose of Part I. of the National Insurance Act, 1911, acting jointly with the Insurance Commissioners and the Welsh Insurance Commissioners, hereby certify under Section 2 of the Rules Publication Act, 1893, that on account of urgency the following Regulations should come into operation immediately, and in pursuance of the powers conferred on them by the said Act and by paragraphs 7 and 16 of the National Insurance (Joint Committee) Regulations, 1912, hereby make the following Regulations to come into operation forthwith as provisional Regulations, and the said Joint Committee acting jointly with the Scottish Insurance Commissioners in pursuance of the powers aforesaid hereby make the following Regulations to come into operation forthwith:—

PART I.

General.

Short Title.

1.—These Regulations may be cited as the National Health Insurance (Administration of Medical Benefit) Regulations, 1912.

Interpretation.

2.—(1.) In these Regulations, unless the context otherwise requires:—

"The Act" means the National Insurance Act, 1911.

"The Commissioners" means the Insurance Commissioners or, where by virtue of the National Insurance (Joint Committee) Regulations, 1912, any power is exercisable by the Joint Committee or by the Joint Committee acting jointly with the Commissioners, means the Joint Committee, or the Joint Committee acting jointly with the Commissioners, as the case may require.

"Committee" means the Insurance Committee for any County or County Borough.

"County" includes County Borough.

"Society" means an Approved Society.

"Member" means a member of a Society who is an insured person under the Act entitled to medical benefit.

"Insured Person" means an insured person under the Act entitled to medical benefit.

"Practitioner" means a duly qualified medical practitioner, and, where the Regulations refer to a practitioner attending an insured person, includes a practitioner attending the insured person in lieu of the practitioner in accordance with the terms of his agreement with the Committee.

"Chemist" means any person, firm, or body corporate, entitled to carry on the business of a chemist or druggist under the provisions of the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908.

"Treatment" means medical attendance and treatment of insured persons.

"Drugs" includes medicines.

"Local Medical Committee" means a Local Medical Committee formed for any County and recognized by the Commissioners under Section 62 of the Act, and any references to a Local Medical Committee shall have effect only where a Local Medical Committee has been so formed and recognized.

"Institution" means a system or institution existing on the 16th December, 1911, and providing medical attendance and treatment.

(2.) The Interpretation Act, 1889, applies to the interpretation of these Regulations as it applies to the interpretation of an Act of Parliament.

PART II.

Provision of Medical Attendance and Treatment.

Duty of Committee to make Arrangements.

3.—Every Committee shall as soon as may be make arrangements for securing the treatment of insured persons resident in the County by such practitioners as are willing to undertake the treatment, and shall submit those arrangements for the approval of the Commissioners.

Negotiations with Societies.

4.—(1.) Every Society having members resident in any County shall as soon as may be supply to the Committee a list showing the name of every member so resident, specifying the full postal address of the usual residence of the member.

(2.) The Committee shall cause to be furnished to each Society supplying a list of members, and to every other Society which in the belief of the Committee has members resident in the County, a statement of the amount estimated to be necessary in respect of the cost of the medical benefit of the members of that society and of the administration of that benefit, and the Committee and the Society shall enter into an agreement accordingly, but any agreement so made shall have effect only if and so far as the arrangements made by the Committee in accordance with the Act and these Regulations are approved by the Commissioners.

(3.) Where the Commissioners are satisfied, upon such evidence as they think sufficient, that the Committee and any Society are unable to enter into any agreement as aforesaid, the Commissioners shall determine the amount to be paid by the Society to the Committee in such manner as they think fit, after a consideration of any representations made by either party.

List of Deposit Contributors.

5.—The Committee shall cause to be prepared as soon as may be a list showing in respect of each deposit contributor in the County, his name and the full postal address of his usual residence.

Conditions of Service of Practitioners.

6.—(1.) With a view to making arrangements with practitioners for the purpose of administering medical benefit, the Committee shall, after consulting the Local Medical Committee, determine the conditions of service upon which it is proposed to invite practitioners to undertake treatment, and the method and rate of remuneration for that treatment, including the rate to be paid in respect of mileage, that is to say, in respect of the obligation to attend insured persons outside the radius from the residence of the practitioner prescribed by these Regulations, and shall embody particulars of those matters in draft agreements.

(2.) Every such draft agreement shall include the conditions specified in Part I. of the First Schedule to these Regulations, and one of the methods of remuneration specified in Part II. of that Schedule, provided that the Committee may, if they think fit, subject to the approval of the Commissioners, make any modifications in any of those conditions and methods of remuneration, whether in the case of any one or more practitioners, or combine any of the methods of remuneration.

(3.) The Committee shall determine the form and manner in which notice of the terms and conditions including the method and rate of remuneration offered by the Committee is to be given to practitioners, and the form and manner in which a practitioner may intimate his acceptance of those terms and conditions and his desire to be included in the list of practitioners undertaking treatment, which practitioners are in these Regulations collectively referred to as "the panel."

Submission of Arrangements.

7.—As soon as the Committee have determined the matters specified in the last preceding Regulation, they shall submit for the approval of the Commissioners the arrangements proposed to be made accordingly, and in particular:

(*a*) the draft agreements with practitioners determined by the Committee;

(*b*) the form and manner of notification to, and acceptance by, practitioners of the terms and conditions of service;

(*c*) the agreements proposed to be entered into with Societies, showing separately the amounts proposed to be paid in respect of the cost of medical benefit and the administration thereof;

(*d*) in respect of any Society with which no agreement has been entered into, the amount proposed by the Committee as sufficient, and the amount, if any, offered by the Society;

(*e*) the amount which, in the opinion of the Committee, is properly payable in respect of each deposit contributor for the purposes of the cost of his medical benefit;

(*f*) the method proposed to be adopted by the Committee for the distribution amongst, and assignment to, the practitioners on the panel, of the insured persons who have failed to select a practitioner, or who have been refused by the practitioner whom they have selected;

(*g*) the method proposed to be adopted for administering the medical benefit of insured persons during periods of absence from their usual place of residence, and of insured persons who are temporarily resident in the County;

(*h*) the arrangements proposed to be made by the Committee in respect of persons entitled under Section 15 (2) (*e*) of the Act to the provision of medical attendance and treatment, on the same terms as to remuneration as those arranged with respect to insured persons.

Preparation and Submission of Rules.

8.—The Committee shall, after consultation with the Local Medical Committee, prepare Rules to be submitted for the approval of the Commissioners, with regard to the administration of medical benefit by the Committee in accordance with Section 14 of the Act, and shall submit them for the approval of the Commissioners.

Income Limit.

9.—The Committee shall furnish for the information of the Commissioners a statement of the income limit, if any, proposed to be fixed by the Committee under these Regulations.

Approval by Commissioners.

10.—Before approving any arrangements submitted to them in accordance with these Regulations, the Commissioners shall consider any representations made to them by the Local Medical Committee, and, subject to any alterations made in pursuance of the requirements of the Commissioners, any arrangements so made by the Committee and approved by the Commissioners shall have effect for such period as may be specified in the approval.

Invitation to Practitioners.

11.—The Committee shall, as soon as the Commissioners have notified their approval of the arrangements submitted by the Committee and their decision in respect of any questions arising in relation thereto, give notice, in the form and manner approved in accordance with these Regulations, of the terms and conditions upon which practitioners are invited to undertake treatment, and of the form and manner in which acceptance may be notified, and the notice shall specify a period, not being less than 14 or more than 21 days, within which a practitioner is entitled to make application to be included in the list first to be issued of practitioners on the panel.

Preparation of Medical List.

12.—(1.) After the expiration of the period specified in the notice, the Committee shall prepare a list of the medical practitioners who have signified their desire to undertake treatment.

(2.) Each list so prepared (in these Regulations referred to as "the medical list,") shall contain, in addition to the names of practitioners—

(*a*) the private address, and the address of any surgery, dispensary, or other place, at which any practitioner undertakes to attend for the purpose of treating insured persons;

(*b*) particulars of the days and hours at which he undertakes to be in attendance at each place; and

(*c*) where two or more practitioners practising in partnership have signified their desire to undertake treatment, the name of the firm or partnership;

and may, if the Committee think fit, be so arranged as to show the area in the County in which each practitioner undertakes treatment.

(3.) The medical list shall have effect until the 1st January of the year succeeding that for which it is prepared, and the period during which it has effect is referred to in these Regulations as "the currency of the medical list."

(4.) The Committee shall fix by its rules, and give public notice of, a date, not being earlier than the 1st November or later than the 1st December in any year, for revision of the medical list, which date is in these Regulations referred to as "the date of revision."

Power to Require Persons to Make their Own Arrangements for Treatment.

13.—(1.) The Committee may fix an income limit for the purpose of the administration of medical benefit, and may require any persons whose income exceeds that limit, in lieu of receiving medical benefit under the arrangements to be made by the Committee under these Regulations, to make their own arrangements for receiving treatment (including medicines and appliances), provided that, in fixing that limit, the Committee may exempt from the necessity of making their own arrangements any insured persons or class of insured persons who, by reason of residence in any specified area of the County or owing to other circumstances, ought in the opinion of the Committee to be exempted.

(2.) The Committee before fixing, varying, or abolishing an income limit, shall give public notice of their intention so to do and shall consult the Local Medical Committee, and shall consider representations made to them by any Society, or association of deposit contributors, having members resident in the County.

(3.) An insured person, whose income exceeds the income limit and who is not exempted by the Committee, shall not be entitled to receive medical benefit under the arrangements made by the Committee.

(4.) Any Society or association of deposit contributors, having members resident in the County, or the Local Medical Committee, or, where no Local Medical Committee exists, any practitioner on the panel, or any chemist or other person, firm or body corporate undertaking the supply of drugs or appliances under these Regulations may at any time, by notice in writing to the Committee, dispute the right of any insured person to receive medical benefit under the arrangements made by the Committee, on the ground that the income of that person exceeds the income limit and that he is not entiled to be exempted.

(5.) Upon receipt of any such notice the Committee may, if it appears to them that the income of that person exceeds the income limit, and that he is not entitled to be exempted, give notice in writing to that person that, unless, within a period specified in the notice, he shows that his income does not exceed that limit or that he is entitled to be exempted, the Committee will require him to make his own arrangements for receiving treatment (including medicines and appliances), and if, within the said period, the insured person fails to show that his income does not exceed that limit or that he is entitled to be exempted, the Committee shall require him to make his own arrangements.

(6.) Any decision of the Committee to fix, vary, or abolish an income limit shall only take effect from the commencement of the currency of the medical list.

Power to Allow Persons to Make their Own Arrangements.

14.—The Committee may allow any insured person resident in the County in lieu of receiving medical benefit under the arrangements made by the Committee, to make his own arrangements for receiving treatment (including medicines and appliances).

Contribution to Cost of Treatment.

15.—There shall be paid to every insured person required or allowed to make his own arrangements by way of contribution to the cost of his treatment (including medicines and appliances) -

(*a*) in the case of a person who has contracted to obtain treatment (including medicines and appliances) for the year, a sum equal to the

amount contracted to be paid by him for that treatment, or, where that amount exceeds the sum available in respect of his medical benefit for the year, the amount so available; and

(*b*) in the case of any other such person, a sum bearing the same proportion to the expense, if any, incurred by him in obtaining treatment (including medicines and appliances), calculated in accordance with a scale of fees fixed by the Committee, as the aggregate amount available for the medical benefit for the year of all such other persons bears to the sums expended by them in obtaining treatment (including medicines and appliances) but in no case exceeding the expense so incurred by him.

Provided that, where the Committee are satisfied, upon any representations made to them by a Society, that, in the case of any member of that Society required or allowed to make his own arrangements, an undue burden falls on the funds of the Society by reason that the treatment (including medicines and appliances) of that person is not such as will adequately protect the funds of the Society, the Committee may reduce the amount so contributed or in the case of a person allowed to make his own arrangements may make no contribution.

Approval of Institutions.

16.—(1.) The Board of Management or other governing authority of, or person administering, any institution may apply to the Committee to approve the institution for the purposes of Section 15 (4) of the Act.

(2.) Upon any such application being made the Committee shall send to the Commissioners such particulars of the institution as the Commissioners may require, and shall state whether the Committee propose to approve that institution and the reasons for the course of action proposed to be adopted, and, if the Committee and the Commissioners approve the institution, it shall be approved for the purposes of the Section aforesaid for the period specified in the approval:

Provided that

i. no institution shall be approved unless the Committee are satisfied that—

(*a*) the treatment given by the institution is adequate, and

(*b*) every insured person obtaining treatment thereunder is entitled to determine his arrangement with that institution, upon giving reasonable notice of his intention so to do at the expiration of the currency of the medical list, without thereby incurring any pecuniary loss or other penalty; and

ii. every institution shall as a condition of approval from time to time furnish such accounts and returns as the Commissioners, or the Committee with the consent of the Commissioners, may require.

(3.) The Committee may contribute, towards the expenses of the treatment furnished by any approved institution to an insured person who elects to obtain treatment through it, an amount equal to the whole or a part of the sum which would be payable by the Committee in respect of an insured person who makes his own arrangements for obtaining treatment (including medicines and appliances) under the last preceding Regulation.

Publication of Medical List.

17.—Where the Commissioners have approved the arrangements made by the Committee in pursuance of these Regulations, the Committee shall as soon as may be publish in any one or more newspapers circulating in the County an announcement containing particulars of the arrangements made by the Committee, including a statement of the places where a copy of the medical list and of a list of approved institutions may be seen, and forms of application obtained, by insured persons, a statement as to the income limit, if any, and any other particulars which the Committee think proper, including such particulars as are necessary to bring to the notice of insured persons their right to select a practitioner on the panel and their rights with respect to obtaining treatment in some other manner.

Distribution under Capitation System.

18.—Where a Committee have adopted for the remuneration of practitioners on the panel a system of payment either in whole or in part by capitation, the following provisions shall have effect:

(1.) Every insured person shall, if he desires and is entitled to select a practitioner on the panel, fill up the appropriate form of application, and send or present it to the practitioner by whom he desires to be attended before a date indicated in the announcement referred to in the last preceding Regulation.

(2.) Where an application has been received by a practitioner, that practitioner shall within one week notify to the Committee the acceptance or rejection of that application on the appropriate place on the form of application.

(3.) After the date indicated in the announcement the Committee shall provide for the distribution, amongst practitioners on the panel and so far as practicable under arrangements made by them, of those insured persons for whose treatment no arrangements have been made.

(4.) The Committee shall prepare a list of those persons who have been accepted by, or assigned to, each practitioner on the panel, and shall furnish to each practitioner a copy of the list of persons for whose treatment he is responsible, and each list shall have effect until the 1st January of the year succeeding that for which it is prepared.

(5.) Any insured person who desires to be attended by a practitioner other than the practitioner who attended him in the previous year, shall make application to the Committee, not later than one month before the date of revision, and any insured person not making such an application shall be deemed to have selected the practitioner from whom he was entitled to receive treatment in the previous year.

(6.) A practitioner desiring to discontinue treatment of an insured person shall give to the Committee notice to that effect not later than one month before the date of revision, and any practitioner not giving notice to the Committee before that date shall be deemed to have undertaken treatment of the insured persons attended by him in the previous year other than those who desire to be attended by another practitioner or who adopt some other arrangement for obtaining treatment or who by reason of death, removal or some other cause are no longer included in his list.

(7.) With regard to any person making application to be attended by another practitioner and any person whom a practitioner has refused to continue to treat the Committee shall so far as may be adopt the procedure above-mentioned for his selection of or assignment to a practitioner on the panel.

(8.) As soon as may be after the date of revision the Committee shall issue to each practitioner on the panel a copy of the revised list of the insured persons for whose treatment that practitioner is responsible.

Distribution under System of Payment by Attendance.

19.—Where a Committee have adopted a method of payment by attendance, the following provisions shall have effect:—

(1.) An insured person who is not required or does not desire to make his own arrangements for obtaining treatment, and does not desire to obtain treatment through an approved institution as his medical benefit shall be entitled, on production to a practitioner on the panel of such voucher or other document as the Commissioners may approve for the purpose, to obtain treatment from that practitioner subject to the consent of the practitioner, who shall signify his consent by endorsing the voucher or other document in such manner as the Commissioners shall require.

(2.) Every practitioner shall, if the Committee so require, upon his acceptance of an insured person for treatment give notice to the Committee upon a form to be provided by the Committee for the purpose.

(3.) An insured person who has selected and been accepted by a practitioner in the manner above mentioned shall be deemed to have selected that practitioner, and shall be entitled to treatment from him, during the currency of the medical list, and during that period shall not be entitled while in the area within which that practitioner has agreed to attend him to obtain treatment from

any other practitioner on the panel as part of his medical benefit, except where the circumstances of the case render the attendance of two practitioners necessary.

(4.) Any insured person who has selected a practitioner shall be entitled at any time after the expiration of the currency of the medical list on production of the voucher or other document as aforesaid, to obtain treatment from that practitioner or from any other practitioner on the panel subject to the consent of the practitioner, and shall, upon the endorsement by the practitioner of his voucher or other document be deemed to have selected and been accepted by that practitioner for the currency of the revised medical list.

(5.) Where any insured person gives notice to the Committee that he is unable to obtain treatment from a practitioner on the panel the Committee shall provide for his assignment to a practitioner on the panel so far as practicable under arrangements made by those practitioners.

Choice of Methods of Obtaining Treatment.

20.—(1.) Every insured person shall before the date indicated in the announcement made by the Committee in accordance with the requirements of these Regulations

(*a*) if he is required, or desires, to make his own arrangements for obtaining treatment fill up the appropriate form and send it to the Committee;

(*b*) if he desires, and is entitled, to obtain treatment as or as part of his medical benefit through an approved institution, fill up the appropriate form and send or present it to the institution.

(2.) The Committee shall notify to any insured person applying to be allowed to make his own arrangements their consent or refusal as the case may be.

(3.) Where an application has been received by an approved institution, that institution shall within one week notify the acceptance or rejection of the application to the Committee on the appropriate place on the form of application.

Preparation of Lists.

21.—(1.) The Committee shall prepare a list of those persons who have been accepted by each approved institution and a list of persons required or allowed to make their own arrangements for obtaining treatment, and shall furnish each approved institution with a copy of its appropriate list.

(2.) Any list so prepared shall have effect until the 1st January of the year succeeding that for which it is prepared.

Revision of Lists.

22.—(1.) Any insured person who desires to obtain treatment by any of the methods referred to in these Regulations, other than that which he adopted in the previous year, shall make application to the Committee not later than one month before the date of revision, and any insured person not making such an application shall be deemed to have applied to obtain treatment in the same manner as in the previous year.

(2.) Any practitioner desiring to withdraw from the panel shall give to the Committee notice to that effect not later than one month before the date of revision and his name shall thereupon be removed from the medical list.

(3.) With regard to any person making application to obtain treatment by any method other than that which he adopted in the previous year, the Committee shall so far as may be adopt the procedure provided by these Regulations for enabling an insured person to select his method of treatment.

Insured Person Applying during Currency of Medical List.

23.—(1.) The Committee shall furnish to any insured person coming to reside in the County, and to any person resident in the County who becomes an insured person during the currency of the medical list, upon application being made by him to the Committee, a statement of the income limit, if any, fixed by the Committee, and copies of the necessary lists and forms, and such person shall, subject to the provisions of these Regulations, be entitled to select the method by which he desires to obtain medical benefit or treatment.

(2.) The Committee shall provide for distributing amongst, and as far as practicable under arrangements made by, the practitioners on the panel any insured persons who, having come into residence in the County, and any persons who, having become insured persons, during the currency of the medical list, are unable to obtain treatment by the practitioners chosen by them respectively, or who fail to take the necessary steps to obtain treatment.

Practitioner Applying during Currency of Medical List.

24.—(1.) If a practitioner, other than a practitioner whose name has been removed from the medical list by the Commissioners, makes application to the Committee during the currency of the medical list, the Committee shall include him in the medical list.

(2.) The name of any practitioner who dies during the currency of the medical list or is directed to be removed therefrom by the Commissioners shall thereupon be removed from the medical list, and, in the case of any practitioner who by reason of a change of residence is unable to attend insured persons within the area for which he undertook to give treatment, the necessary alteration shall be made in the medical list.

(3.) A copy of the medical list revised up to date shall be kept available for the inspection of any person at the office of the Committee and at such other places as the Committee may think fit.

Notice of Change of Address.

25.—(1.) Where an insured person changes his usual place of residence he shall give notice of that change, in the case of a member of a Society to that Society, and in the case of a deposit contributor to the Committee of the County in which his usual place of residence has theretofore been situated, and the Society or the Committee, as the case may be, shall immediately after the last day of March, June, September, and December in every year notify the names and full postal addresses of those insured persons who have in the preceding three months changed their usual places of residence, to the Committees of the Counties in which those persons have respectively taken up their residence.

(2.) Every Society having members in the County shall immediately after the dates above-mentioned notify to the Committee the names of those of its members who have during the last preceding three months died or ceased to be insured persons.

Notice of Suspension of Medical Benefit of Insured Person.

26.—Where the medical benefit of a member of a Society is suspended by reason of his contributions being in arrear, the Society shall give notice to the Committee of the County in which he resides, and the Committee shall, in the case of suspension of the medical benefit of an insured person entitled to obtain treatment from a practitioner on the panel or through an approved institution, give notice to that practitioner or institution.

Changes during Currency of Medical List.

27.—During the currency of the medical list an insured person may be transferred from one practitioner on the panel to another, or from an approved institution to a practitioner on the panel, in the following circumstances, and under the following conditions:—

(*a*) an insured person and the practitioner responsible for his treatment may by consent arrange for the transfer of the insured person to any other practitioner on the panel who is willing to accept the insured person;

(*b*) where an insured person by reason of a change of residence is no longer able to obtain medical benefit by the method selected by him he may give notice to the Committee, who shall make arrangements so far as may be similar to those prescribed by these Regulations for his selection of or assignment to a practitioner on the panel;

(*c*) where the Committee after inquiry into a complaint consider it desirable that an insured person should be transferred, the Committee may arrange with another practitioner on the panel to undertake the treatment of that person;

(*d*) where the name of a practitioner has been removed from the medical list or where a practitioner has ceased to practise within the area within which he has undertaken treatment he or his legal personal representative, as the case may be, may notify to the insured persons concerned that he has made arrangements with another practitioner on the panel to undertake the treatment of those persons and subject to their consent may transfer them to that other practitioner, and if any insured person is unwilling to be so transferred he shall give notice to the Committee who shall make arrangements so far as may be similar to those prescribed by these Regulations for his selection of or assignment to another practitioner;

(*e*) Subject as aforesaid the provisions of these Regulations relating to insured persons coming to reside within the County during the currency of the medical list shall apply to insured persons who were attended by a practitioner whose name has been removed from the medical list or who has ceased to practise within the area within which he has undertaken treatment and to insured persons who were obtaining treatment through an approved institution which has ceased to be approved.

Provided that, where an insured person has been transferred by consent, the practitioner to whom he has been transferred shall within seven days of the transfer give notice thereof to the Committee on the form to be provided by the Committee for that purpose, and the notice shall be signed by the insured person and both the practioners concerned or, in the event of the death or total incapacity of a practitioner, by the insured person and the practitioner to whom he is transferred.

Amount Applicable for Payment of Practitioner.

28.—(1.) For the purpose of determining the amount of remuneration payable to each practitioner on the panel, the Committee shall, at the end of each year, determine the total amount to be applied in defraying the cost of the medical benefit of insured persons obtaining treatment from practitioners on the panel, and shall deduct from that amount the amounts payable in respect of

(*a*) the provision of drugs and prescribed appliances,

(*b*) mileage; and

(*c*) the cost of the medical benefit during periods of temporary residence outside the County of insured persons usually resident in the County and entitled to obtain treatment from a practitioner on the panel.

(2.) There shall be paid to each practitioner on the panel out of the sum remaining after making the deductions aforesaid (in these Regulations referred to as the "net fund") an amount calculated in accordance with the method of remuneration adopted by the Committee.

Calculation of Remuneration under Single System.

29. (1.) Where the Committee have adopted a capitation system of payment, they shall credit to each practitioner on the panel, in respect of each of the persons included in his list, an amount (in these Regulations referred to as a "capitation fee") calculated in accordance with the rate contained in the practitioner's agreement with the Committee.

(2.) Where the Committee have adopted a system of payment by attendance, they shall credit to each practitioner on the panel, in respect of each service rendered by him an amount (in these Regulations referred to as an "attendance fee"), calculated in accordance with the rate contained in his agreement with the Committee.

(3.) The Committee shall ascertain the aggregate amounts so credited to the practitioner, and the aggregate amounts so credited to all practitioners on the panel, and shall pay to each practitioner an amount bearing the same proportion to the sum credited to him as the net fund bears to the aggregate amounts so credited to all the practitioners.

Calculation of Remuneration under Combined System.

30.—Where the Committee have adopted a method of remuneration which combines a capitation system with a system of payment by attendance (the capitation fees or the attendance fees, as the case may be, being payable in priority), the Committee shall pay to each practitioner out of the net fund the fees credited to him which are payable in priority, and shall pay to each practitioner, out of the balance of the net fund, in respect of other fees credited to him, an amount bearing the same proportion to those fees as the balance of the net fund bears to the aggregate amounts of such other fees credited to all the practitioners on the panel.

Accounts to be Rendered Quarterly.

31.—(1.) Every practitioner on the panel shall furnish to the Committee immediately after the last days of March, June, September and December respectively in every year an account in a form approved by the Committee, containing such particulars as may be necessary for calculating the amount of remuneration payable to him by the Committee.

(2.) As soon as may be after the receipt of an account the Committee shall pay to the practitioner such sum as may be agreed between the Committee and the practitioners on the panel in advance of the amount due to him, and shall pay the balance of the amount so due as soon as may be after the expiration of the year, but before payment of the balance the Committee shall submit all accounts to a committee appointed by the practitioners on the panel which shall have power to reduce or disallow any item of any account.

PART III.

Provision of Drugs and Appliances.

Prescribed Appliances.

32.—The medical and surgical appliances to be provided as part of medical benefit shall be the appliances mentioned in the Second Schedule to these Regulations.

Prices of Drugs and Appliances.

33.—(1.) With a view to making arrangements for the supply of drugs and appliances the Committee shall—

(*a*) prepare a list of the prices which the Committee are willing to pay for the drugs ordinarily supplied and for the prescribed appliances; and

(*b*) determine the conditions upon which it is proposed to invite chemists and other persons, firms, or bodies corporate (all of whom are in these Regulations included in the expression "chemists or other persons") to undertake the supply of drugs or appliances or both.

(2.) The Committee shall embody particulars of those prices and conditions in draft agreements which shall include the terms and conditions specified in the Third Schedule to these Regulations, with the necessary modifications in the case of a person undertaking to supply drugs or appliances only, or not entitled to dispense medicines, and with such other modifications as the Committee may, subject to the approval of the Commissioners, think fit.

Conditions of Dispensing Medicines.

34.—The Committee shall determine the form and manner in which notice is to be given to chemists and other persons desiring to supply drugs or appliances or both, and the form in which any such chemist or other person may intimate his acceptance of those terms and conditions, but that notice shall state that no person shall be entitled to dispense medicines for insured persons under the arrangements made with chemists and other persons by the Committee other than a chemist who undertakes that all medicines supplied by him to insured persons under the arrangements made by the Committee shall be dispensed either by or under the direct supervision of a registered pharmacist or by a person who, for three years immediately prior to the 16th December, 1911, has acted as a dispenser to a practitioner or a public institution.

Arrangements for Supply by Practitioners of Drugs and Appliances.

35.—(1.) The Committee may make arrangements for the supply by practitioners on the panel of all or any of the following:

(*a*) drugs which are necessarily or ordinarily administered by a practitioner in person; and

(*b*) drugs and appliances required for immediate administration or application, or required for use before a supply can conveniently be obtained otherwise under these Regulations.

(2.) Where the Committee are satisfied that an insured person by reason of distance or inadequacy of means of communication will have difficulty in obtaining any necessary drugs or appliances from a chemist or other person on the list the Committee shall make arrangements for the supply to such person by the practitioner attending him of such drugs or appliances as would otherwise under these Regulations have been supplied by a chemist or other person on the list.

Submission of Arrangements.

36.—(1.) The Committee shall as soon as may be submit for the approval of the Commissioners the arrangements proposed to be made by the Committee for the supply of drugs and appliances and in particular—

(*a*) the draft agreements determined by the Committee;

(*b*) the form and manner of notification to, and acceptance by, chemists and other persons of the terms and conditions upon which persons shall undertake the supply of drugs or appliances or both; and

(*c*) the arrangements made by the Committee for the supply by practitioners on the panel of drugs and appliances.

(2.) Subject to any alterations made in pursuance of the requirements of the Commissioners, any arrangements so made by the Committee and approved by the Commissioners shall have effect for such period as may be specified in the approval.

Notice to Persons Desirous of Undertaking Supply.

37.—The Committee shall, as soon as the Commissioners have notified their approval of the arrangements made by the Committee, give notice, in the form and manner approved in accordance with the last preceding Regulation, of the terms and conditions upon which persons shall undertake the supply of drugs or appliances or both, and of the form and manner in which acceptance may be notified, and that notice shall specify a period, not being less than 14 or more than 21 days, within which a chemist or other person is entitled to make application to be included in the list first to be issued.

List of Persons Undertaking Supply.

38.—(1.) After the expiration of the period specified in the notice the Committee shall prepare a list of the names and addresses of the chemists and other persons who have signified their acceptance, indicating whether they have undertaken to supply drugs or appliances or both, and distinguishing those who are entitled to dispense medicines.

(2.) The list shall have effect until the 1st January of the year succeeding that for which it is prepared.

(3.) A copy of the list shall be sent to every practitioner on the panel, and shall be available for the inspection of insured persons at the office of the Committee and in such other way as the Committee may think fit.

(4.) The Committee shall supply to every chemist or other person included in the list a copy of the medical list and every chemist or other person shall exhibit at his place of business a notice in the form prescribed in the Fourth Schedule to these Regulations indicating that he has undertaken to supply drugs or appliances or both, as the case may be, under the arrangements made by the Committee.

Right of Insured Persons to Obtain Drugs and Appliances.

39.—(1.) Every insured person obtaining medical benefit under the arrangements made by the Committee shall be entitled to obtain as part of his medical benefit such drugs and prescribed appliances as may be ordered for him by the practitioner attending him from any chemist or other person whose name is on the list and who is entitled and has undertaken to supply those drugs or appliances.

(2.) An insured person shall not be entitled to obtain from a chemist or other person on the list any appliance if the Committee have made provision for lending that appliance.

(3.) Where any drug not included in the list of drugs is ordered or supplied by a practitioner the price payable by the Committee shall be such as may be fixed by agreement or in default of agreement determined by the Commissioners.

Revision of List of Drugs and Appliances.

40.—(1.) The Committee shall not later than two months before the date of revision in every year, after consultation with the Local Medical Committee, submit for the approval of the Commissioners a statement of any alterations which the Committee may desire to make in the price of drugs and prescribed appliances, and where the Commissioners have prescribed any further appliances of the prices which the Committee are prepared to pay for those appliances.

(2.) The Commissioners shall, subject to the alterations, if any, which they may require to be made by the Committee, approve the statement.

(3.) The Committee shall as soon as may be after such approval send a copy of the statement to every chemist or other person included in the list and to every practitioner on the panel.

Right to Discontinue Supply.

41.—(1.) Any chemist or other person desiring to have his name removed from the list shall give notice in writing of his desire to the Committee not later than one month after the issue to him of the statement of alterations made by the Committee or where no statement has been issued not later than one month before the date of revision, and thereupon his name shall be removed from the list.

(2.) Any chemist or other person not giving such notice to the Committee shall be deemed to have undertaken to supply drugs or appliances or both upon the same terms as in the previous year, subject to such modifications as are mentioned in the statement of alterations, if any, issued to him by the Committee.

Inclusion in Revised List.

42.—(1.) Any chemist or other person may make application to the Committee in any year not later than one month before the date of revision to be included in the revised list and shall thereupon unless he has previously been excluded from the list by the Commissioners be included in the revised list.

(2.) As soon as may be after the date of revision the Committee shall prepare a revised list.

(3.) A copy of the revised list shall be sent to every practitioner on the panel and shall be available for the inspection of insured persons at the office of the Committee, and in such other way as the Committee may think fit.

Inclusion during Currency of List.

43.—(1.) Where a chemist or other person commences to carry on business in the County during the currency of the list and desires to undertake the supply of drugs or appliances or both under the arrangements made by the Committee he shall upon application to the Committee be entitled forthwith to be included in the list.

(2.) Where upon the death of a chemist included in the list the business is carried on in accordance with the provisions of the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908, by his legal personal representative or the trustee of his estate, that legal personal representative or trustee shall be deemed to be a person included in the list so long as the business is carried on by him in accordance with the provisions of those Acts.

PART IV.

SPECIAL PROVISIONS.

Persons Temporarily Resident Outside the County.

44.—(1.) The Committee shall in every year determine the sum to be expended in defraying the cost of medical benefit during periods of temporary residence outside the

County of insured persons usually resident in the County and entitled to treatment from a practitioner on the panel.

(2.) The Committee shall make arrangements with practitioners on the panel for the County to undertake the treatment of insured persons temporarily resident in that County.

(3.) A copy of a list containing the names and addresses of practitioners with whom arrangements have been made under this Regulation shall be available in such manner as the Committee think fit in order to bring it to the notice of the persons concerned.

(4.) Where an insured person entitled to obtain treatment from a practitioner on the panel is temporarily resident outside the County in which he usually resides, he shall be entitled on production of such evidence as the Committee with the approval of the Commissioners may determine to any practitioner whose name is included in the above-mentioned list to obtain treatment from that practitioner and subject to the provisions of these Regulations to obtain drugs and appliances.

(5.) The practitioner attending insured persons temporarily resident as aforesaid shall at such intervals as the Committee providing medical benefit require notify to that Committee the names and addresses of persons so attended by him, together with the names of their respective Societies and branches and their respective numbers in the books of their Societies, and the Committee shall send an account of the cost thereof, in a form approved for the purpose by the Commissioners, to the Committee of the County in which each of the persons so attended usually resides and such payment therefor shall be made as has been fixed by agreement between the Committees concerned with the approval of the Commissioners or, in default of agreement, has been determined by the Commissioners: Provided that where the person receiving medical benefit is resident in Ireland the Committee providing medical benefit shall send an account of the cost thereof to the Irish Insurance Commissioners.

Temporary Absence from the Area of Practice of Practitioner Selected.

45.—The Committee shall make arrangements with the practitioners on the panel for the treatment of insured persons resident in the County during periods of temporary absence from the area in which the practitioner responsible for their treatment has undertaken to treat them: Provided that no insured person shall be entitled to obtain treatment under the provisions of this Regulation if he has gone outside the area in which a practitioner has undertaken to treat him solely for the purpose of obtaining treatment from some other practitioner.

Mileage.

46.—(1.) The Committee shall make arrangements for an additional payment in respect of mileage to be made, where the circumstances of the area require, to practitioners on the panel in respect of their obligation to attend insured persons resident beyond the prescribed distance from the residence of the practitioner, and the prescribed distance shall be three miles or such lesser distance as the Committee having regard to the special difficulties of access to the residence of the insured person may in any case agree with the practitioner.

(2.) No payment shall be made where the services of a practitioner resident within the prescribed distance from the residence of the insured person are available for that person.

(3.) The distance from the residence of the insured person of the residence of the nearest practitioner whose services are available for that person shall be taken as the basis upon which payment shall be calculated.

(4.) The payment shall be an annual or quarterly payment, calculated on the basis of the number of insured persons whose treatment the practitioner has undertaken and the distance of the residences of those persons calculated in the manner aforesaid, regard being had to the facilities for locomotion and to the proximity of the insured persons to one another or in such other manner not inconsistent with the preceding paragraphs of this Regulation as the Committee with the consent of the Commissioners think fit.

Old and Disabled Members of Friendly Societies.

47.—(1.) Any person who was on the 16th December, 1911, and still is, a member of a friendly society which or a separate section of which is an Approved Society and who is not entitled to medical benefit under the Act by reason either that he was on the 15th July, 1912, of the age of 65 or upwards, or that being subject to permanent disablement at that date he is not qualified to become an insured person, or the secretary or other officer of the Society of which he is a member on his behalf may give notice to the Committee of the desire of that person to obtain medical attendance and treatment on the same terms as to remuneration as those arranged with respect to insured persons, and where the notice is given personally it shall be countersigned by the secretary or other officer of the Society.

(2.) Upon payment to the Committee of such sum as they shall ascertain to be the average cost of the medical attendance and treatment of insured persons, these Regulations shall have effect so far as relates to the medical attendance and treatment of that person as if he were an insured person.

Committee for Dealing with Complaints.

48.—(1.) Every Committee shall, from time to time and for such period as they think fit, constitute a special Sub-Committee (in these Regulations referred to as "the Committee of Complaints") for dealing with any complaint made by an insured person against a practitioner who attends him under the arrangements made by the Committee in respect of the discharge by the practitioner of his professional duties towards the insured person or by a practitioner against an insured person whom he attends under the arrangements made by the Committee in respect of the conduct of the insured person towards the practitioner when engaged in those duties.

(2.) The Committee of Complaints shall be constituted in the following manner:—

(i.) three persons shall be appointed by and from the members of the Committee who represent insured persons;

(ii.) three persons shall be appointed by the Local Medical Committee, or if no Local Medical Committee exists, by the practitioners on the panel;

(iii.) a Chairman shall be selected from those members of the Committee appointed respectively by the Council of the County and by the Commissioners who are neither insured persons nor practitioners, and the selection shall be made by the six persons appointed as above-mentioned, or in default of selection being made by those persons, by the members of the Committee appointed respectively by the Council of the County and by the Commissioners;

provided that if in the opinion of the Chairman any member of the Committee of Complaints is interested or in the case of a practitioner is partner or assistant to a practitioner interested in the dispute, that member shall take no part in the hearing of the complaint, but another member shall be appointed in the manner aforesaid by the persons by whom that member was appointed.

(3.) Every complaint shall be made in writing and addressed to the clerk to the Committee and shall be referred by him to the Committee of Complaints.

(4.) The Committee may also refer to the Committee of Complaints any complaint against an insured person or a practitioner on the panel other than complaints above referred to.

(5.) The proceedings before the Committee of Complaints shall be private, and no person shall be admitted to those proceedings except—

(*a*) the person making complaint and the person against whom complaint is made;

(*b*) the secretary or other officer of the Society, if any, to which the insured person belongs;

(*c*) the secretary or other officer of the Local Medical Committee; and

(*d*) such other person as the Committee of Complaints may upon the application of either party admit by reason of the fact that his attendance is required for the purposes of the proceedings or to assist either party in the presentation of his case;

but neither party shall be represented before the Committee of Complaints by counsel or by solicitor.

(6.) The quorum of the Committee of Complaints and their procedure with regard to the hearing of the complaint, the nature of the evidence admitted and otherwise shall be such as may be fixed by the Committee of the County subject to the approval of the Commissioners.

(7.) The Committee of Complaints shall draw up a report stating such relevant facts as appear to them to be established by the evidence placed before them, together with a recommendation as to the action, if any, which should be taken, and shall present the report to the Committee and the Committee shall accept as conclusive any finding of fact contained in the report.

(8.) Where a complaint made by a practitioner against an insured person is in the opinion of the Committee substantiated, the Committee may, if the practitioner so desires, make arrangements for the transfer of the insured person in accordance with the provisions of these Regulations and may deal with him under the rules of the Committee relating to fines and to suspension of medical benefit.

(9.) Where a complaint made by an insured person against a practitioner is in the opinion of the Committee substantiated, the Committee may, if the insured person so desires, make arrangements for his transfer in accordance with the provisions of these Regulations, and may, if in the opinion of the Committee the continuance of the practitioner on the panel will be prejudicial to the efficiency of the medical service, make representations to that effect to the Commissioners.

Duty of Local Medical Committee to Consider Complaints.

49.—It shall be the duty of the Local Medical Committee to consider any complaint made by a practitioner on the panel against any other practitioner on the panel involving any question of the efficiency of the medical service of insured persons, and the Local Medical Committee may apply to the Commissioners to remove the name of the practitioner against whom complaint is made from the panel or may take such other action as they may deem proper in the circumstances.

Enquiry as to Practitioner.

50.—If any representations are made to the Commissioners by a Committee or a Local Medical Committee that the continuance of a practitioner on the panel will be prejudicial to the efficiency of the medical service of insured persons, the Commissioners shall, and if any similar representations are made by any other body or any person, may, if they think fit, hold an enquiry in the manner hereinafter provided.

Method of Enquiry.

51.—(1.) The Joint Committee of the several bodies of Commissioners shall from time to time and for such period as they think fit constitute a body of sixteen practitioners and shall have power to fill up any vacancies as they may occur.

(2.) In selecting the practitioners to be members of that body the Joint Committee shall consider suggestions, if any, made by any body which appears to them to be representative of the medical profession and shall include so far as practicable practitioners having special knowledge of the several branches of medicine or surgery as well as practitioners in general practice.

(3.) For the purpose of each enquiry the Commissioners shall select from that body two persons, and shall appoint two other persons one of whom shall be a barrister-at-law or solicitor in actual practice who with the two persons above-mentioned shall form a committee (in these Regulations referred to as the Enquiry Committee) for the purpose of that enquiry.

(4.) The Enquiry Committee shall appoint one of its members to be chairman, but the chairman shall not have a casting vote.

(5.) Either party may appear in person, or, with the consent of the Enquiry Committee,—

(*a*) by counsel or by solicitor;

(*b*) by any member of his family;

(*c*) in the case of a company or corporation, by any director or officer of the company or corporation; or

(*d*) by any officer or member of any society or other body of persons of which the person in question is a member or with which he is connected.

(6.) The Enquiry Committee shall take into consideration in addition to oral evidence such written evidence as they may in each case think fit, and may, if they think fit, require any statement to be verified by a statutory declaration, and the procedure of the Enquiry Committee shall be such as they may with the approval of the Commissioners think fit.

(7.) Upon the determination of the hearing, the Enquiry Committee shall as soon as may be draw up a report or reports stating such relevant facts as appear to them to be established by the evidence, and the inferences if any, which in the opinion of the Enquiry Committee may properly be drawn from those facts, but the report or reports shall contain no recommendation as to any course of action.

Enquiry as to Persons Supplying Drugs or Appliances.

52.—If any representations are made to the Commissioners by a Committee or a Local Medical Committee that the inclusion or continuance on the list of a chemist or other person will be prejudicial to the efficiency of the service in the County, the Commissioners shall, and if any similar representations are made by any other body or any person may, if they think fit, hold an enquiry in the manner hereinafter provided.

Method of Enquiry.

53.—(1.) The Joint Committee shall from time to time and for such period as they think fit constitute a body of sixteen persons, and shall have power to fill up any vacancies as they may occur.

(2.) In selecting the said sixteen persons to be members of that body the Joint Committee shall consider the suggestions, if any, made by the Council of the Pharmaceutical Society of Great Britain.

(3.) For the purpose of each enquiry the Commissioners shall select two persons from that body and shall appoint two other persons one of whom shall be a barrister-at-law or solicitor in actual practice who with the two persons above-mentioned shall form a committee for the purpose of that enquiry.

(4.) The procedure, powers and duties of the Committee shall be similar to those of the Enquiry Committee.

Approval of Forms by Commissioners.

54.—All forms required by these Regulations to be provided by a Committee shall be submitted by that Committee for the approval of the Commissioners.

Application to Seamen's National Insurance Society.

55.—These Regulations shall only apply to members of the Seamen's National Insurance Society where that Society has agreed with a Committee for the administration by the Committee of medical benefit to individual members of the Society.

District Committees.

56.—Where, in pursuance of any Regulations made by the Commissioners under Sub-section (4) of Section 59 of the Act, any powers or duties of the Committee under these Regulations are conferred upon District Committee, these Regulations shall have effect so far as those powers and duties are concerned, and subject to any modifications made by those Regulations as if the District Committee were in these Regulations substituted for the Committee.

Application to Scotland.

57.—These Regulations in their application to Scotland shall be subject to the following modifications:—

(1.) "The Commissioners" means the Scottish Insurance Commissioners, or where by virtue of the National Insurance (Joint Committee) Regulations, 1912, any power is exercisable by the Joint Committee or the Joint Committee acting jointly with the Scottish Insurance Commissioners, means the Joint Committee or the Joint Committee acting jointly with the

Scottish Insurance Commissioners, as the case may require.

(2.) "County" means the district for which an Insurance Committee has been constituted under Part I of the Act, and includes Burghs or Police Burghs or a combination of Counties or of Burghs for which an Insurance Committee has been so constituted.

(3.) References to the National Health Insurance (Collection of Contributions) Regulations, 1912, shall be construed as references to the National Health Insurance (Collection of Contributions) Regulations (Scotland), 1912.

(4.) "County Borough" means Burgh or Police Burgh, and in the case of the Burghs of Dumfries and Maxwelltown means the Burghs as combined for the purposes of Part I. of the Act.

(5.) "Barrister-at-Law" means a member of the faculty of Advocates.

(6.) "Solicitor" means an enrolled law agent.

(7.) In any County where owing to sparseness of population, difficulties of communication or other special circumstances the Committee consider it desirable they shall have power with the consent of the Commissioners to adopt such method of remuneration of practitioners undertaking treatment in such County as the Committee may think necessary.

Application to Wales.

58.—These Regulations in their application to Wales shall be subject to the following modifications—

(1.) "The Commissioners" means the Welsh Insurance Commissioners, or where by virtue of the National Insurance (Joint Committee) Regulations, 1912, any power is exercisable by the Joint Committee or by the Joint Committee acting jointly with the Welsh Insurance Commissioners means the Joint Committee or the Joint Committee acting jointly with the Welsh Insurance Commissioners as the case may require.

(2.) References to the National Health Insurance (Collection of Contributions) Regulations, 1912, shall be construed as references to the National Health Insurance (Collection of Contributions) Regulations (Wales), 1912.

Regulations Subject to Powers Reserved to Commissioners.

59.—These Regulations shall have effect subject to the exercise by the Commissioners of the powers reserved to them by the proviso to subsection (2) of Section 15 of the Act.

Given under the seal of office of the aforesaid Joint Committee this day of , in the year one thousand nine hundred and twelve.

Given under the seal of office of the Insurance Commissioners this day of , in the year one thousand nine hundred and twelve.

Given under the seal of office of the Scottish Insurance Commissioners this day of , in the year one thousand nine hundred and twelve.

Given under the seal of office of the Welsh Insurance Commissioners this day of , in the year one thousand nine hundred and twelve.

THE FIRST SCHEDULE.

PART I.

CONDITIONS OF SERVICE FOR PRACTITIONERS.

1. The practitioner shall give to all persons who are for the time being entitled to obtain treatment from him (all or any of whom are hereinafter referred to as the "patients" or "patient" as the case may be) such treatment as is of a kind which can consistently with the best interests of the patient be properly undertaken by a practitioner of ordinary professional competence and skill: Provided that the practitioner shall not be required to give, nor entitled to make any charge for treatment to any person in respect of a confinement nor to any person suffering from tuberculosis or any other disease the treatment of which may hereafter be included in sanatorium benefit, in so far as that person has been recommended for and is entitled to obtain that treatment as part of his sanatorium benefit.

2. Where the condition of the patient is such as to require services beyond the competence of an ordinary practitioner the practitioner shall advise the patient as to the steps which should be taken in order to obtain such treatment as his condition may require.

3. The practitioner shall visit at the place of residence for the time being of the patient, or at any other place within the county within a distance of three miles by road from the residence of the practitioner where the patient may be for the time being, any patient whose condition so requires.

4. The practitioner shall attend and treat at the places specified for the purpose, and on such days and at such hours as are so specified, any patient who attends there for that purpose: Provided that if at any time the practitioner decides to alter the places, days or hours of his attendance, or any of them, he shall give not less than 7 days' notice in writing to the Committee and to each of the insured persons for the time being entitled to obtain treatment from him.

5. The practitioner shall order in the form provided by the Committee for the purpose such drugs and prescribed appliances as are requisite for the treatment of any patient other than those which the practitioner may be under arrangement himself to supply: Provided that if the practitioner orders any drug not included in the list from time to time supplied by the Committee to the practitioner or orders any drug for a person not usually resident in the County, he shall give such orders on special forms for those purposes provided by the Committee.

6. All treatment shall be given by the practitioner personally, except where he is prevented from so doing by urgency of other professional duties, absence from home, or other reasonable cause, and the practitioner will to the best of his ability provide that when he is so precluded from personal attendance some other practitioner will give attendance as his deputy on his behalf: Provided that where treatment is given by a deputy the deputy shall be entitled to treat patients at places other than those specified in the practitioner's agreement with the Committee.

7. It shall be a condition of the service of practitioners that the Act and the Regulations made by the Commissioners and in force for the time being in the County are incorporated with and form part of the other conditions of service and that any agreement entered into by a practitioner shall cease to have effect in the event of the Commissioners exercising any of the powers conferred on them by the proviso to subsection (2) of Section 15 of the Act.

[*Note.*—These particulars will be contained in a Schedule to the agreement.]

PART II.

METHODS OF REMUNERATION OF PRACTITIONERS UNDERTAKING TREATMENT.

A.—*Capitation System.*

The rate of shillings a quarter, that is to say the period of three months preceding the last day of March, June, September, and December, respectively, in respect of each person included in the list of the practitioner, the number of those persons during any quarter to be ascertained by adding the number of persons included at the close of that quarter to the number of persons included at the commencement of the quarter and dividing the total by two.

[*Note.*—An adjustment will be required in the case of a practitioner being placed on the panel after the commencement of any quarter.]

B.—*Capitation System plus Payment for Special Services.*

In priority, the rate of shillings a quarter, that is to say, the period of three months preceding the last day of March, June, September, and December respectively in respect of each person included in the list of the practitioner, the number of those persons during any quarter to be ascertained by adding the number of persons included at the close of that quarter to the number of persons included at the commencement of the quarter and dividing the total by two.

[*Note.*—An adjustment will be required in the case of a practitioner being placed on the panel after the commencement of any quarter.]

Other rates for all or any of the following special services:

	£ s. d.
(1) Special visit, *i.e.*, visit paid by the patient's desire on the same day as a call received after a.m., or on Sunday	
(2) Night visit, *i.e.*, visit paid between the hours of 8 p.m. and 8 a.m. in response to a call received between those hours	
(3) Consultation	
(*a*) for the ordinary attendant	
(*b*) for the consultant (if himself a practitioner on the panel)	
(4) Surgical operation requiring local or general anaesthetic	
(5) Setting of fracture	
(6) Reduction of dislocation	
(7) Administration of general anaesthetic	
(8) Treatment of tuberculosis in so far as the patient is not entitled to obtain such treatment as part of sanatorium benefit.	
(*a*) per visit	
(*b*) per attendance at practitioner's residence, surgery, or dispensary	
(9) Treatment of abortion or miscarriage in so far as not included in maternity benefit	

C.—*Capitation System plus Payment for Services.*

In priority, the rate of shillings a quarter, that is to say, the period of three months preceding the last day of March, June, September, and December, respectively, in respect of each person included in the list of the practitioner, the number of those persons during any quarter to be ascertained by adding the number of persons included at the close of that quarter to the number of persons included at the commencement of the quarter and dividing the total by two.

[*Note.*—An adjustment will be required in the case of a practitioner being placed on the panel after the commencement of any quarter.]

Other rates for the following services:

	£ s. d.
(1) Visit to the patient's residence	
(2) Attendance on the patient at the practitioner's residence, surgery, or dispensary	
(3) Special visit, *i.e.*, visit paid by the patient's desire on the same day as a call received after a.m., or on Sunday	
(4) Night visit, *i.e.*, visit made between the hours of 8 p.m. and 8 a.m. in response to a call received between those hours.	
(5) Consultation	
(*a*) for the ordinary attendant	
(*b*) for the consultant (if himself a practitioner on the panel)	
(6) Surgical operation requiring local or general anaesthetic	
(7) Setting of fracture	
(8) Reduction of dislocation	
(9) Administration of general anaesthetic	
(10) Treatment of tuberculosis in so far as the patient is not entitled to obtain such treatment as part of sanatorium benefit.	
(*a*) per visit	
(*b*) per attendance at practitioner's residence, surgery, or dispensary.	
(11) Treatment of abortion or miscarriage in so far as not included in maternity benefit	

D.—*Payment for Special Services plus Capitation System.*

In priority, rates for all or any of the following special services:

	£ s. d.
(1) Special visit, *i.e.*, visit paid by the patient's desire on the same day as a call received after a.m., or on Sunday	
(2) Night visit, *i.e.*, visit made between the hours of 8 p.m. and 8 a.m. in response to a call received between those hours	
(3) Consultation	
(*a*) for the ordinary attendant	
(*b*) for the consultant (if himself a practitioner on the panel)	
(4) Surgical operation requiring local or general anaesthetic	
(5) Setting of fracture	
(6) Reduction of dislocation	
(7) Administration of general anaesthetic	
(8) Treatment of tuberculosis in so far as the patient is not entitled to receive such treatment as part of sanatorium benefit	
(*a*) per visit	
(*b*) per attendance at the practitioner's residence, surgery or dispensary	
(9) Treatment of abortion or miscarriage in so far as not included in maternity benefit	

A further rate of shillings a quarter, that is to say the period of three months preceding the last day of March, June, September, and December respectively, in respect of each person included in the list of the practitioner, the number of those persons during any quarter to be ascertained by adding the number of persons included at the close of that quarter to the number of persons included at the commencement of the quarter and dividing the total by two.

[*Note.*—An adjustment will be required in the case of a practitioner being placed on the panel after the commencement of any quarter.]

E.—*Payment by Attendance.*

Rates for the following services:

	£ s. d.
(1) Visit to the patient's residence	
(2) Attendance on the patient at the practitioner's residence, surgery, or dispensary	
(3) Special visit, *i.e.*, visit paid by the patient's desire on the same day as a call received after a.m., or on Sunday	
(4) Night visit, *i.e.*, visit made between the hours of 8 p.m. and 8 a.m. in response to a call received between those hours	
(5) Consultation	
(*a*) for the ordinary attendant	
(*b*) for the consultant (if himself a practitioner on the panel)	
(6) Surgical operation requiring local or general anaesthetic	
(7) Setting of fracture	
(8) Reduction of dislocation	
(9) Administration of general anaesthetic	
(10) Treatment of tuberculosis in so far as the patient is not entitled to obtain such treatment as part of sanatorium benefit.	
(*a*) per visit	
(*b*) per attendance at practitioner's residence, surgery, or dispensary	
(11) Treatment of abortion or miscarriage in so far as not included in maternity benefit	

THE SECOND SCHEDULE.

LIST OF APPLIANCES.

Bandages:

Calico, bleached.
Calico, unbleached.
Crepe.
Domette.
Flannel.
India rubber.
Muslin.
Plaster of Paris.

Gauzes:

Unmedicated.
Boric.
Carbolic.
Cyanide.
Sal-alembroth.
Sublimate.

Lints:
Unmedicated.
Boric.
Sal-alembroth.

Wools:
Cotton.
Wood.

Oiled silk.

Gutta percha tissue.

Adhesive plaster.

Ice-bags.

Splints.

Catheters:
Gum-elastic.
Soft rubber.

THE THIRD SCHEDULE.

Conditions of Agreement for Supply of Drugs and Appliances by Chemist.

1. The chemist will be prepared to supply, and so far as practicable will keep in stock, the drugs and medical and surgical appliances specified for the purpose.

2. The chemist will, with reasonable promptness, supply to any person presenting an order for drugs or appliances in a form provided by the Committee for the purpose, and signed by any practitioner on the panel or his deputy, such drugs or appliances as are so ordered.

3. All drugs and appliances shall be of good quality, and shall be supplied at a price covering the cost of retailing and dispensing, and calculated by reference to the prices specified for the purpose, and in the case of substances to which the provisions of Section 5 of the Poisons and Pharmacy Act, 1908, relate, the provision of proper bottles and other vessels, and any drug, the price of which is not so specified, shall be supplied by the chemist at a price to be agreed with the Committee or in default of agreement to be determined by the Commissioners.

[*Note.*—These particulars will be contained in a Schedule to the agreement.]

4. The dispensing of medicines shall be performed either by or under the direct supervision of a registered pharmacist or by a person who for three years immediately prior to the 16th December, 1911, has acted as a dispenser to a practitioner or a public institution.

5. All drugs and appliances shall be supplied free of charge to the person presenting such order.

6. It shall be a condition of undertaking the supply of drugs or appliances or both that the Act and the Regulations made by the Commissioners and in force for the time being in the County are incorporated with and form part of the other conditions, and that any agreement entered into by a chemist shall cease to have effect in the event of the Commissioners exercising any of the powers conferred on them by the proviso (1) to subsection (5) of Section 15 of the Act or suspending medical benefit.

THE FOURTH SCHEDULE.

Form of Notice to be Exhibited by Persons undertaking the Supply of Drugs or Appliances or Both.

National Insurance Act.

(Name of Person or Firm contracting.)

Under contract with the Insurance Committee for the County [*or* County Borough] of .....

To dispense medicines.
To supply drugs.
To supply drugs (except scheduled poisons).
To supply appliances.

[*Note.*—Strike out words not applicable.]

APPENDIX.

MODEL RULES FOR ADMINISTRATION OF MEDICAL BENEFIT.

[CONDUCT OF PERSONS IN RECEIPT OF BENEFIT, AND PROCEDURE WITH REGARD TO COMPLAINTS.)*

1. Conduct of Person in receipt of Medical Benefit.

An insured person in receipt of medical benefit shall comply with the following rules:—

(*a*) He shall obey the instructions of the practitioner attending him:

(*b*) He shall not conduct himself in a manner which is likely to retard his recovery:

(*c*) He shall not make unreasonable demands upon the professional services of the practitioner attending him:

(*d*) He shall, whenever his condition permits, attend at the surgery or place of residence of the practitioner attending him on such days and at such hours as may be appointed by the practitioner:

(*e*) He shall not summon the practitioner to visit him between the hours of p.m. and a.m., except in cases of serious emergency:

(*f*) He shall, when his condition requires a home visit, give notice to the practitioner, if the circumstances of the case permit, before a.m. on the day on which the visit is required.

2. Offences.

(1.) The Committee may in their discretion inflict a fine upon any insured person who is guilty of a breach of any of these rules or of any of the provisions of the Act relating to medical benefit or of the Regulations or of any imposition or attempted imposition in respect of medical benefit, of a sum not exceeding * shillings, or in the case of repeated breaches * shillings, and may, in the case of repeated breaches, suspend his medical benefit for a period not exceeding †: Provided that if any act or omission alleged to constitute a breach of these rules is of such a nature as to amount to a breach of any rule of a Society of which the insured person is a member, the Committee shall refer the matter to the Society, and unless the Society has unreasonably refused to take action or the action taken by the Society appears to the Committee to be inadequate shall not deal with the matter themselves except by way of transferring the insured person, in cases where after inquiry they think fit, to another practitioner on the panel.

(2.) Any question arising between the Committee and a Society under this rule shall be referred to the Commissioners.

3. Infliction of Penalties.

Before inflicting any penalty upon an insured person or transferring him to another practitioner the Committee shall give notice to that person of their intention, and if within seven days from the receipt of the notice he gives notice to the Clerk to the Committee that he desires to be heard in explanation of his conduct, the

* To be made under Section 14 of the Act and paragraph 8 of the Regulations.

* Section 14 (2) (*a*) of the Act provides that "*no fine imposed . . . shall exceed ten shillings, or in the case of repeated breaches of rules twenty shillings.*"

† Section 14 (2) (*b*) provides that "*no . . . rule shall provide for the suspension of any benefit for a period exceeding one year.*"

Section 69 (1) of the Act provides that "*if for the purpose of obtaining any benefit or payment . . . under this Part of this Act any person knowingly makes any false statement or false representation, he shall be liable . . . to imprisonment for a term not exceeding three months.*"

Section 71 of the Act provides "*If it is found at any time that a person has been in receipt of any payment or benefit under this Part of the Act to which he was not lawfully entitled thereto he or in the case of his . . . personal representatives shall be liable to repay to the Insurance Commissioners the amount of such payment or benefit and any such amount may be recovered as a debt due to the Crown . . .*"

Committee shall, except in cases where the facts have already been investigated by the Committee of Complaints, fix a date for the hearing by the Committee, or shall refer the matter to the Committee of Complaints, and when the matter is heard by the Committee not less than seven days' notice shall be given to the insured person of the date fixed for the hearing.

4. Procedure of Committee of Complaints.

Where under the provisions of the Regulations any complaint is referred to the Committee of Complaints the following procedure shall be adopted:—

(*a*) The Clerk to the Committee shall, within three days, send a copy of the complaint to the person against whom the complaint is made and a copy to the Chairman of the Committee of Complaints, and shall upon receipt of any reply or further statement or reply made by either party send a copy thereof to the other party and to the Chairman.

(*b*) The Committee of Complaints shall meet at least once in every weeks, and in case of urgency, the Chairman may summon a special meeting by giving not less than seven days' notice to every member of the Committee of Complaints.

(*c*) Not less than seven days' notice of the meeting at which a complaint is to be heard shall be given to both parties.

(*d*) The Clerk to the Committee shall supply to each member of the Committee of Complaints copies of the complaint and the reply if any thereto, and of any further statements made by either party.

(*e*) Either party shall be entitled at the hearing to make such statement and produce such evidence, whether written or otherwise, as he may think fit.

(*f*) The Chairman together with one representative of insured persons and one of the persons appointed by the Local Medical Committee or by the practitioners on the panel shall form a quorum.

5. Frivolous or Vexatious Complaints.

Any insured person making a complaint to the Committee which, after investigation by the Committee or the Committee of Complaints, appears to the Committee to be frivolous or vexatious, shall be deemed to have committed a breach of the rules.

6. Interpretation.

Words and expressions used in these Rules have the same meaning as in the National Health Insurance (Administration of Medical Benefit) Regulations, 1912, which are in these Rules referred to as "the Regulations."

HOSPITAL RESIDENTS.

Application having been made to the Insurance Commissioners for the determination under Section 66 of the National Insurance Act of the question whether resident medical officers or other qualified resident officials at a hospital are employed by the hospital authorities under a contract of service within the meaning of the National Insurance Act, the Commissioners give notice that a hearing of parties interested will take place on Tuesday, October 22nd, at 2.30 p.m., at the Civil Service Commission, Burlington Gardens, London, W.

Any persons interested who desire to be heard before the decision is given should give not less than three days' notice to the Insurance Commissioners of their intention to attend or be represented at the hearing. Statements in writing made by persons affected will be considered if submitted not later than the day preceding that fixed for the hearing.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

The sixth meeting of the State Sickness Insurance Committee appointed by the Annual Representative Meeting, 1912, was held on September 26th.

Sir James Barr, President of the Association, took the chair in the absence of the Chairman, Dr. J. A. Macdonald. The other members present were: *England and Wales:* Dr. R. M. Beaton (London), Dr. T. M. Carter (Westbury-on-Trym), Dr. Major Greenwood (London), Dr. Constance Long (London), Dr. Ewen J. Maclean (Cardiff), Dr. James Pearse (Trowbridge), Dr. E. O. Price (Bangor), Dr. Lauriston Shaw (London), Dr. D. G. Thomson (Norwich), Mr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Dr. S. Hodgson (Salford). *Scotland:* Dr. John Adams (Glasgow), Dr. R. McKenzie Johnston (Edinburgh). *Ex officio:* Mr. T. Jenner Verrall (Bath), Chairman of Representative Meetings; Dr. Edwin Rayner (Treasurer). Letters of apology for non-attendance were read from the Chairman (Dr. J. A. Macdonald) and Mr. E. H. Willock (Croydon).

Co-option of Representative of M.O.H. Society.

It was reported that the Society of Medical Officers of Health had, in response to the invitation of the Committee, nominated Mr. Herbert Jones for co-option. Mr. Herbert Jones was accordingly co-opted, and attended the meeting of the Committee.

Position of Members of Local Insurance Committees.

The question of the attitude to be adopted with respect to those members of local Provisional Insurance Committees who have not resigned their appointments in accordance with the minute of the Annual Representative Meeting was considered at the meeting on September 19th. It was resolved that the principle expressed in the resolution with regard to medical members of Advisory Committees (see p. 345) applied also to those practitioners who are members of Provisional Insurance Committees and who declined to retire. During the discussion preceding the adoption of this resolution it was urged that the Committee had no right to interfere with the autonomy of the Divisions, and that it was for the Divisions concerned to decide what action should be taken with regard to practitioners who have not resigned their membership of insurance committees. After the resolution was adopted, Mr. Todd gave notice that he would at the next meeting move the suspension of the standing orders in order to move the rescission of the resolution.

Mr. Todd accordingly moved the suspension of standing orders at the meeting on September 26th, when 6 voted for it and 5 against. The Chairman thereupon ruled the motion lost, the necessary three-fourths majority of members present and voting not having been obtained.

Contract Medical Attendance on Uninsured Persons.

In response to inquiries on this subject the Committee expressed the opinion that questions with regard to the contract rates of remuneration that should be required from uninsured persons must be dealt with by the ordinary machinery of the Divisions, but pointed out that such questions would be solved in the case of Divisions which established a public medical service.

Post Office Appointments.

A communication was read from a post office medical officer stating that on his capitation list was a small number of persons who are insured persons, and asking whether his appointment came under the category of appointments the resignation of which the Committee had directed to be sent in. The Committee resolved to inform the inquirer that it did not approve of any interference at present with post office medical appointments.

Public Medical Service Schemes.

The scheme for North Suffolk was approved, and certain other schemes were considered and a final decision postponed in order that further information might be obtained.

Treatment of Tuberculosis.

Model Scheme for the Treatment of Tuberculosis.

The Sanatorium Subcommittee appointed on September 19th presented a model scheme for the treatment of tuberculosis, which, after certain emendations had been made, was approved and directed to be issued to Divisions and Provisional Medical Committees for their assistance in negotiations with the local authorities. The scheme is published on this and the following page.

King Edward VII National Memorial Association, Wales.

A communication was read from the Honorary Secretary to the King Edward VII National Memorial Association for Wales, stating that the question of domiciliary treatment of tuberculosis and the payment of medical practitioners was now under consideration by the Memorial Association, and suggesting that the Divisions of the Association in Wales should nominate representatives to discuss these matters with the Committee of the Memorial Association. The State Sickness Insurance Committee resolved to inform the Divisions in Wales of this request, and to intimate that it approved of the suggestion subject to the provisos that any arrangements made for the carrying out of sanatorium benefit in Wales must be strictly in accord with the principles laid down in the resolutions of the Annual Representative Meeting, and that any scheme must be submitted to the State Sickness Insurance Committee for approval before medical practitioners undertake any work in connexion therewith. It was also resolved that the reply to the Memorial Association should embody the substance of the above decision.

Hampstead.

A communication from the Medical Officer of Health for Hampstead and a letter from the Honorary Secretary of the Hampstead Provisional Medical Committee were read. The latter stated that the Hampstead Provisional Medical Committee had, after conferring with the Medical Officer of Health for Hampstead, come to the conclusion that £400 per annum was a reasonable salary for a whole-time tuberculosis officer in the borough in view of the following facts: (1) That the local conditions are such that it is estimated that only some 200 to 300 patients will present themselves for examination, and that the amount of work will be small compared to other districts, and (2) that a tuberculosis dispensary is being provided in Hampstead by the local sanitary authority independent of the Insurance Act, though the local insurance committee may make arrangements for the use of it. The Committee decided to advise the Hampstead Provisional Medical Committee that it considered that any officer appointed on the above terms should be styled "assistant tuberculosis officer," and to point out the possible advantages of the employment of consultants for the non-administrative duties.

M.O.H. and Treatment of Tuberculosis.

A letter was read from a medical officer of health of a borough, objecting to the restriction proposed to be placed upon medical officers of health to the effect that they should not in their capacity of medical superintendents of fever hospitals attend cases of consumption admitted into such hospitals for isolation purposes in the same way as such officer now attends cases of enteric and scarlet fever or diphtheria. The Committee resolved to inform the inquirer that while it recognized the difficulties of his position, it could not see its way to approve of tuberculosis cases being treated in fever hospitals by medical officers of health, in view of the provision which is now being made by local authorities for the payment of attendance on these cases.

Local Schemes.

The tuberculosis schemes for Bury and Berkshire were approved, and various other schemes were considered, with regard to which it was resolved to make representations to or obtain further information from the local committee.

Advisory Committee.

We are requested to state that Dr. Adam Fulton of Basford has, at the request of the Association, resigned his membership of the Advisory Committee of the National Insurance Act.

British Medical Association.

STATE SICKNESS INSURANCE COMMITTEE.

MODEL SCHEME FOR TREATMENT OF TUBERCULOSIS.

Staff.

1. The chief tuberculosis officer should be a whole-time officer, and should receive not less than £500 per annum.

2. The assistant tuberculosis officers, where such are needed, should be whole-time officers at a salary of not less than £300 per annum.

3. The arrangements for the whole-time staff may need modification temporarily in those administrative areas where the amount of tuberculosis work does not justify the appointment of a chief tuberculosis officer at £500 per annum. In these cases it will not be possible, therefore, to provide the whole-time expert adviser mentioned in the Astor Report until some system of amalgamation of districts is arranged. In the meantime it might be necessary for administrative purposes to appoint the medical officer of health as tuberculosis officer, but he should be appointed for administrative purposes only, with an increase in his salary corresponding to the increase in his duties.

4. Where no chief tuberculosis officer is appointed and the medical officer of health is appointed as administrative tuberculosis officer, one or more consultants might be employed at a proper rate of payment to carry out the non-administrative duties. The need for expert opinion cannot be met by the appointment of an assistant tuberculosis officer, acting under the medical officer of health, as an officer who could be secured at the salary of an assistant would not have the necessary experience to enable him to act as consultant to the district.

Procedure in Providing Treatment.

5. A person applying for treatment must present a statement signed by a medical practitioner as mentioned in form Med. 1 of the Commissioners. For this statement it is suggested that a fee of 1s. should be charged, which should be paid by the patient in the absence of public provision for such payment.

6. When an applicant is given form Med. 2, or its equivalent, he should be referred to his private doctor. If he has no doctor, he should be shown a list of doctors practising in his neighbourhood, and be asked to choose one to whom he should be sent with a letter asking the doctor to examine the applicant and fill up the form. The fee of 5s. for this report will include either a consultation at the doctor's residence or surgery, or, if attendance at the surgery is not possible, a visit to the applicant's home, where such is within two miles of the doctor's residence or surgery.

7. The examination of applicants and filling up of form Med. 2 should not be done by the whole-time tuberculosis staff. The object should be to insist upon every tuberculosis patient having a private doctor who should be encouraged to take a continuous interest in the case.

8. The form of treatment, domiciliary, sanatorium, dispensary or hospital, should then be decided by the chief tuberculosis officer in consultation with the patient's private doctor. Treatment should be carried out where possible by the private doctor, in co-operation with the tuberculosis officer, in all cases except those transferred to sanatoriums or similar institutions, and for all cases so transferred provision should be made whereby on their discharge they are referred to the private doctor with a report of their progress whilst in the institution.

Domiciliary Treatment.

9. The chief tuberculosis officer should arrange to meet the private doctor in consultation at the first visit after the patient has been ordered domiciliary treatment.

At this visit a decision will be arrived at between the two doctors as to the kind of treatment to be carried out and the number of visits likely to be required. At the same time the main details of the "continuous record" (see Schedule to Local Government Board Order, July 26th, 1912) should be filled in. As this consultation will necessarily take up a good deal of time, an extra fee should be paid to the private doctor of not less than 2s. 6d., or a separate fee of not less than 5s. should be paid for the keeping of the "continuous record."

10. According to the Local Government Board Order a report on the condition of the patient will be required not less than every three months. For this report a sum of 5s. should be paid.

11. From time to time the medical practitioner is expected by the Local Government Board Order to inform the medical officer of health of any circumstances known to the medical practitioner which may affect adversely the sanitary conditions under which the patient is living. This seems to be more properly a question of supervision by the sanitary authorities, but if the medical practitioner is to make such reports, as they will probably be of a brief and formal nature, they should be treated as notifications, and paid for at the rate of not less than 1s.

12. Arrangements should be made between the chief tuberculosis officer and the private doctor as to the circumstances in which special or night visits shall be paid, and some method laid down whereby the chief tuberculosis officer will be informed that such visits have been made.

Dispensary Treatment.

13. The work of the tuberculosis dispensary should consist of diagnostic, consultative, bacteriological, and statistical work; treatment should in general be carried out at the homes of the patients or at the surgeries of their private doctors, but certain special forms of treatment for those cases which are decided in consultation to need such, may, with the consent of the general practitioner concerned, be given at the dispensaries.

14. No case should be seen at the dispensary except on the recommendation of a private doctor. This is essential if the ideal is to be realized of securing to every tuberculous patient a private medical attendant, who will thus take a continued and personal interest in the case.

15. All attempts to make tuberculosis dispensaries into institutions merely for the administration of tuberculin should be rigidly discouraged.

16. In large districts where the number of persons requiring special forms of treatment is great, or where the work is heavy, the whole-time staff may need outside help. This help should be given by means of the private practitioners in the area, acting on a rota or otherwise, rather than by additions to the whole-time staff.

Scale of Minimum Fees.

	s.	d.
(*a*) Form Med. (1). . . . (to be paid by the patient unless public provision has been made for it) ...	1	0
(*b*) Form Med. (2). . . . (including consultation at the surgery, or visit if within two miles of the doctor's house; if beyond that distance a mileage fee of not less than 1s. per mile (outwards), or in outlying and sparsely populated districts such sum as is suitable to local circumstances and the local customs of the profession) ...	5	0
(*c*) Extra fee for first visit and consultation with chief tuberculosis officer	2	6
Or,		
Continuous record	5	0
(*d*) Quarterly reports...	5	0
(*e*) Notification of adverse sanitary circumstances ...	1	0
(*f*) Consultation at doctor's residence or surgery ...	2	6
(*g*) Visit at patient's home	2	6
(*h*) Night visit—that is, visit paid between 8 p.m. and 8 a.m., in response to call within these hours ...	5	0
(*i*) Special visit—that is, visit paid in response to call sent after 10 a.m. and before 8 p.m.	3	6
Note.—Mileage in (*b*) will apply to (*g*), (*h*), and (*i*).		
(*j*) Injection of vaccines	2	6
(Vaccines to be provided by local authority.)		

Treatment of Persons not Insured under the National Insurance Act.

The terms and conditions for treatment of uninsured persons, when such is undertaken by the local authority, should be the same, *mutatis mutandis*, as those for treatment of insured persons.

CONFERENCE WITH MR. LLOYD GEORGE.

As announced last week, the medical men who have remained members of the Joint Advisory Committee had a conference with Mr. Lloyd George on October 2nd. The meeting, we understand, lasted several hours, and the following official statement was issued:

The Chancellor of the Exchequer received to-day at the Treasury Sir Clifford Allbutt and the seventeen other medical members of the Advisory Committees appointed under the National Insurance Act, who desired to place before him certain considerations affecting the question of medical remuneration under the Act, and the possibility, which was understood to be receiving the attention of the Government, of the funds available for this purpose under the Act being supplemented by a further parliamentary grant.

The deputation expressed their appreciation of the national importance of the medical service which must be developed in connexion with the Insurance Act, and submitted to the Chancellor several points which appeared to them to justify, in the public interest, additional financial provision being made.

The Chancellor indicated that the considerations brought by the deputation under his notice would receive the most careful attention of the Government, and expressed his sense of the great public service which had been rendered by the medical members of the Advisory Committees in continuing their work upon the subject and advising him upon it at the present juncture. He further stated that he would confer with his colleagues in the Cabinet at the earliest possible date, and hoped to be in a position to make known their decision on the matter in the course of the week beginning October 14th.

The Chancellor is to receive on Friday next, October 4th, those members of the Advisory Committees who represent insured persons, to hear their views on the subject.

NATIONAL CONFERENCE OF FRIENDLY SOCIETIES.

The annual session of the National Conference of Friendly Societies at Newcastle-on-Tyne last week was attended by delegates representing friendly societies with a total membership of 6,291,572. The president, Mr. W. Davies, of Manchester, in his inaugural address, said that the representatives of the friendly societies on the Advisory Committee had no power to enforce their views upon the Commissioners, and many regulations had been issued with which they were at variance. It was evident from a reply made by Sir Robert Morant to a question at the meeting of the Advisory Committee on September 20th that the request made by many societies that the 6s. mentioned in the financial arrangements of the Act as the sum to be assigned for medical benefit should be paid over to the societies if the doctors failed to come to an agreement had not been favourably considered. The reply was to the effect that the duty of making arrangements with the doctors would not be entrusted to the societies, but would in any event remain with the Insurance Committees. Thus the warfare as to price, which had been waging between the doctors and the Commissioners, was to be transferred without any lead to every local Insurance Committee throughout the country for settlement within the next three months. This imposed a very responsible duty on every member of these committees representing insured persons, whether in friendly society or industrial company; they should be asked strenuously to oppose any additional cost for medical benefits coming out of the funds allowed under the Act. With regard to the wage limit of £2, he said that what the House of Commons had refused to put in the Act was now to be a bone of contention in every Insurance Committee, and it would be the duty of every representative of the friendly societies at whatever cost to secure the right of every member compulsorily insured to medical benefits under the Act without any additional conditions imposed by the medical profession. He considered that a combination of approved societies to watch the interest of their members had become a necessity, so that their views might be asserted at the ballot box, which, after all, was what the Government feared. Before the conference concluded the following resolution was unanimously adopted:

Failing agreement with the medical profession to undertake service under the Act at the rate specified by the actuaries

in their report, this conference recommends the societies affiliated thereto to intimate to the Commissioners their willingness to provide and administer the medical benefits to their respective members.

The friendly society leaders who make this offer have not read the signs of the times aright. The profession has long been preparing to end the domination of the friendly societies, and that it is thoroughly in earnest in bringing it to an end now is shown by the notices of resignation to take effect at the end of this year, which have been given during the last few months. In many districts the resignations include all club and friendly societies, and in many others the exceptions are negligible in number and importance.

IRELAND.

DUBLIN.

A MEETING of the members of the medical profession resident within the county borough of Dublin was held in the Royal College of Surgeons on September 24th. The President of the College (Dr. R. D. Purefoy) was in the chair, and there was a large and representative attendance. The report of the Dublin County Borough Local Medical Committee was submitted, and adopted unanimously, together with the following resolutions:

1. That this meeting expresses satisfaction at the number of practitioners in Dublin who have signed the undertaking, and do now take into consideration the position of those members of the profession who have held aloof.
2. That this meeting of the medical practitioners of Dublin expresses the opinion that those gentlemen who accept office from friendly societies at terms which have been condemned as inadequate by over 95 per cent. of the medical practitioners of this city are endeavouring to obtain practice by unworthy means.
3. That all the licensing corporations in Dublin are requested to take official notice of this resolution.

The local Medical Committee reported the resolutions which had been passed in June last at the meeting of delegates held in Dublin, composed of representatives from the whole of Ireland. The resolutions concerning the granting of certificates were as follows:

That 3s. *per caput* be fixed as the *minimum* fee in rural areas for members of societies and their dependants who will be receiving medical attendance; but in the case of urban districts (having a population of over 10,000 persons), 2s. 6d. per certificate.

That 2s. 6d. per certificate be the *minimum* charge in the case of insured persons who are not entitled to medical attendance.

That 2s. 6d. be the *minimum* fee for medical examination for entrance to an approved society.

That this meeting is of opinion that all medical certificates should be issued by the medical attendant.

In order to ensure that union and harmony of action necessary for success, the Committee took steps to persuade every medical man resident in Dublin to sign the following pledge, drawn up by the Conjoint Committee of the Irish Medical Association and the British Medical Association:

Pledge.

I, the undersigned, hereby promise that I will not individually enter into any arrangements with an Insurance Committee or an approved society, or other person or persons, under the National Insurance Act, or under any system or society worked independently of the Act; that I will only act through the local Medical Committee of the district in which I live and practice, and then only if the conditions are satisfactory to and in accordance with the declared policy of the Irish Medical Association and British Medical Association.

The work of the Committee met with gratifying success, as 275 out of the 289 medical men resident in Dublin signed either this pledge or, in a few cases, one differing from it in no essential feature.

On August 21st it was reported to the Committee that a medical officer to a branch of the Irish National Foresters' Union Friendly Society had been summarily dismissed because he insisted, in accordance with the resolution of the delegates' meeting, upon charging 2s. 6d. for the examination of new members to that society. This branch appointed another medical officer, who, on being informed by the Committee of the conditions under which his predecessor was dismissed, at once resigned.

A scheme for the administration of medical benefit, which was drawn up by the Ancient Order of Hibernians, was considered by the local Medical Committee on August 21st. This scheme provided medical benefit for the members at the rate of 6s. for attendance upon the insured and his family (cost of drugs included); 2s. a head for attendance upon members of the ladies' auxiliary (drugs included), and 1s. for all certificates required. The Committee notified the Secretary of the Ancient Order of Hibernians that the suggested scale of fees was below the rate demanded by the profession, and that any medical man accepting office at these terms would be acting contrary to the wishes of the profession. A reply was received, concluding with the suggestion that a conference between the representatives of the friendly societies and medical men might be attended with satisfactory results. The suggestion was willingly accepted by the Committee, but the Secretary of the Ancient Order of Hibernians then wrote, saying that he had no authority to arrange a conference. Quite recently the Ancient Order of Hibernians appointed six medical officers to its friendly society. Two of these had already signed the undertaking, two had not signed the pledge, and the other two were resident outside the city area. As the result of representations from the Committee two of these doctors had resigned their posts, and at the adjourned meeting, held on September 27th, it was announced that the remaining four doctors had also sent in their resignations.

As regards the working of the sanatorium benefit, the Committee reported that the National Insurance Commissioners had refused the suggested scale of fees on the ground that they were higher than the minimum fees as laid down by the British Medical Association, to which the Committee replied, pointing out that local conditions in Dublin differed considerably from those in England, and that medical practitioners in Dublin were not likely to give their services for less than the fees suggested by their committee.

At the adjourned meeting, held on September 27th, all the medical men in Dublin holding friendly society appointments were called upon to give notice at once to their societies of the conditions upon which they would be prepared to continue in office after January 1st, 1913.

The following resolution was passed unanimously:

That the members of the profession who are in doubt as to the wisdom of their action in resigning existing appointments be assured that the medical profession of Dublin will do all in its power to secure their right of succession for any appointment they may resign. That the profession is of opinion that persons entering into competition for vacancies created by such resignation are endeavouring to obtain practice by unworthy means.

A guarantee fund was opened, to be available for the protection of the members of the profession who might suffer loss in carrying out the policy agreed upon.

Friendly Societies.

It is stated that, as a result of a conference held last week, steps will be taken to form a Friendly Societies' Union for Ireland. A meeting is to be held on October 7th for the purpose of establishing the union and of dealing with the situation raised by the doctors' combined action.

Statement by the Commissioners.

In a statement by the Irish Insurance Commissioners dealing with the financial aspect of the measure their attitude is expressed as follows: There is not money in the scheme to pay the fees demanded by the doctors. For instance, the fee of 3s. per insured person for the medical certificates for approved societies would mean in Ireland an expenditure of £150,000 a year. To meet the demands for domiciliary treatment in the case of tuberculous patients the county councils would have to levy a sum of from 3d. to 4d. in the £ on the rates to cover the extra expenditure which would be incurred over and above the income received from the county committees. The demand of the doctors for introducing a patient to a tuberculosis dispensary at 7s. 6d.—that is, 2s. 6d. for a certificate and 5s. for a report—taking the insured tuberculous population and their tuberculous dependants at 60,000, would mean an expenditure of £22,000. In the same manner, they work out the cost of domiciliary treatment at £165,750 a year, leaving out of account the cost of treatment in sanatorium or hospital, and the cost of tuberculosis officers and nurses. But they are careful to add that these figures would mean the treatment

within one year of the entire tuberculous population and their dependants, which, they add, would not be practicable. They apparently also fail to take into account the large numbers who are already members of approved societies, and who therefore would not require a medical certificate. They conclude by saying that with regard to the working of the sanatorium benefit there is sufficient money in the funds at the disposal of the County Committees to treat every insured tuberculous patient without calling on the rates of the counties if the doctors are prepared to accept the fees which the Commissioners have offered, and which they consider are ample for the work done.

SCOTLAND.

At a meeting, held at Kirkcaldy, of the Local Provisional Medical Committee for Fife, which includes the burghs of Dunfermline and Kirkcaldy, it was unanimously resolved to instruct the Secretary to tender the resignation of all friendly society appointments as from Monday, September 30th.

The members of the medical profession in the Border district have, with one exception, sent in their resignations as medical officers of friendly societies. It is understood that they are making provision for medical aid to the poor people of the district.

At a meeting of the Standing Joint Committee of Aberdeenshire on September 20th it was reported that the National Insurance Act Commissioners had granted an exemption to the police from the provisions of the National Insurance Act.

MEETINGS OF THE PROFESSION.

Shoreditch.

A special general meeting of the Shoreditch Medico-Ethical Society took place on September 23rd at the Royal Hospital for Diseases of the Chest in the City Road.

Sanatorium Benefit.

The meeting was called to consider whether a satisfactory working arrangement could be arrived at between the medical practitioners of the borough and the Prevention of Consumption Department of the Chest Hospital.

Dr. Major Greenwood was in the chair, and there were present, as representatives of the hospital, Drs. Murray Leslie, Barty King, and Symes Thompson; Dr. Bryett, the M.O.H. of the Borough; and representing the local profession, Drs. Evan Jones, Roe, Crampton, Porter, Garrett, Dixon, Ambrose, Chetwood, and other practitioners.

The Chairman explained the object of the meeting. That the local profession had been approached by the hospital authorities, who had furnished on the premises at the City Road a tuberculosis dispensary with the most up-to-date appliances for working in the surrounding area the sanatorium benefit. They were desirous of the co-operation of the local profession, and considered that with their assistance much good work might be done. They would undertake to look after their interests in every way possible, and would surrender to them the whole of the domiciliary treatment. It would be necessary to retain in their own hands all the dispensary work, but they thought that that would be chiefly of a consultative or diagnostic character. The dispensary would be always at the service of the local profession, and would afford a good centre for post-graduate instruction in all that appertained to the treatment of tuberculosis. He pointed out that the matter could not be decided at that meeting. The interests of a much larger area than Shoreditch were affected, and the practitioners of the whole area of the City and St. Pancras Provisional Committees would have to be consulted. With regard to what had been laid down by the State Sickness Insurance Committee on behalf of the profession of the country, it must not be forgotten that it had been decided up to the present that the general treatment of patients at tuberculosis dispensaries was to be in the hands of local practitioners. He thought that they would not lose much in Shoreditch by surrendering all dispensary treatment to the dispensary officers, but it might be different in other areas. If the work was nearly all of a diagnostic and consultative character, it would minimize that loss, but for his part he thought that the dispensaries were intended to carry out every kind of treatment that was available for those suffering with tuberculosis.

Dr. Murray Leslie explained that the dispensary was to be kept entirely distinct from the hospital; that one, or possibly two, independent tuberculosis officers would be appointed. The funds of the hospital would be kept quite distinct, and would in no way finance the dispensary, which would have to rely on public money out of the grant for sanatorium benefit. Every effort would be made to protect the interests of the general practitioner.

Dr. Barty King said that they had given much time and attention to arrange for a complete separation of the dispensary from the hospital. They did not propose to accept any patients unless recommended by a medical man. He wanted the work to be as far as possible restricted to diagnostic and consultative work, and to refer patients for general treatment to the surgeries of the practitioners. The present scheme was very dissimilar to their earlier one, which had excited some disapprobation among a portion of the local profession. That was an early experiment, when it was not known what form the sanatorium benefit might take, and even now there was a good deal of obscurity. It must not be forgotten that they desired to make no profit for themselves, and that their interests were not opposed to those of the general practitioner. All the money they sought to draw from the public funds was simply for the expenses of the dispensary.

Dr. Bryett pointed out what was being done by the local authorities. That they were appointing committees to consider how the sanatorium benefit could be best carried out in their areas. His advice would no doubt be asked by his authority, and he should do his best to serve the interests of the local profession.

Dr. Dixon said that there was no practical scheme before them, so that it would be impossible to decide anything that evening.

The Chairman said that was so, but there was the question to be considered as to the giving up by the general practitioner the treatment, whatever it might be, at the dispensary. Dr. Evan Jones might give them his opinion on the subject. This matter specially affected those areas where dispensaries had already been started at the expense of the local practitioners.

Dr. Garrett was in favour of this proposal, and thought it better for the local profession to support a dispensary of this kind than to run one themselves.

Dr. Evan Jones emphasized the fact that it was the policy of the profession that the tuberculosis dispensaries should be worked by the general practitioners of the area. It was to carry out that principle they had started their dispensary in Finsbury. He said that some months ago the men of Finsbury had met the staff of this hospital, and had been faced with proposals very different from the present ones. He read from a report of the hospital on this subject, and said that a copy had only quite recently been sent to the Local Government Board. This report did not agree with what had been put forward by the representatives of the hospital.

Dr. Barty King said that the report referred to by Dr. Evan Jones was their old report, and differed fundamentally from the present one. They were practically all united on the medical benefit question, and it would be a great pity if their force was weakened by division over the sanatorium benefit.

Dr. Crampton said it was a great pity the present proposal had not been brought forward at the time when they first interviewed the staff of the hospital.

The Chairman said that Dr. Evan Jones had only stated the truth as to what was the present policy of the State Sickness Insurance Committee and the British Medical Association, but some modifications might have to be made. It was impossible to settle the matter now, as the hour was getting late. In the name of the local profession he thanked the staff of the Royal Hospital for their hospitality and their courtesy in meeting the local profession.

The meeting terminated at 12 p.m., it being decided that there should be a further conference with the staff of the hospital.

Society of Medical Officers of Health.

At a meeting of the council of the Society of Medical Officers of Health on September 26th, the question of the attitude of the society with regard to the administration of sanatorium benefit came under consideration. The opinion was expressed that the position and responsibility of a medical officer of health of a district should be fully recognized in any tuberculosis scheme; that the medical officer of health should be the administrative officer for dealing with tuberculosis within his area under any county scheme; and that the tuberculosis officer, where appointed, should be on the staff of the medical officer of health and under his administrative control, except as regards clinical work. The feeling of the council appeared to be that it was undesirable totally to debar tuberculosis officers from treating patients at dispensaries.

PROVISIONAL MEDICAL COMMITTEES.

Portsmouth.

A meeting of the members of the medical profession was held at the Medical Library, Portsmouth, on September 25th. Dr. A. Bosworth Wright was in the chair, and thirty-nine were present.

Local Guarantee Fund.—A letter was read from the Medical Secretary stating that if the local defence fund were transferred to the Central Defence Fund the expenses of the local Medical Committee would be defrayed by the Central Office. Early in the meeting the Honorary Secretary reported that the local Defence Guarantee Fund amounted to £1,600, of which £28 has been paid up. It was proposed by Mr. C. P. Childe and seconded by Dr. Sheahan:

> That the Local Defence Guarantee Fund be transferred to the Central Defence Fund.

This was carried unanimously. It was proposed by Dr. Hackman and seconded by Dr. Blackman:

> That another call of 10s. a head be made, making £1 in all.

This was carried unanimously.

Report of Committee.—The Honorary Secretary of the Local Provisional Medical Committee (Dr. Hackman) then read the report of that committee as follows: It stated that three meetings had been held since the last general meeting of the profession. Correspondence had taken place between the Honorary Secretary, the Medical Secretary, and Alderman Dr. Mulvany, with reference to the desired resignation of the Alderman from the Provisional Local Insurance Committee to which he was appointed by the Town Council "as a medical man." The matter was still in hand, a deputation having been appointed from the Committee to interview Dr. Mulvany. Much time and consideration had been given to the question of the administration of sanatorium benefit. The Chairman has held interviews with Dr. Hilda Clark, Chief Officer at the Tuberculin Dispensary, and Dr. Fraser, Medical Officer of Health. The minutes of the Representative Meeting, 1912, relating to sanatorium benefit had been agreed to, but on Minute 190 being discussed it was felt that the *status quo* locally must be accepted, but it was resolved:

> That in the event of the present whole-time officers vacating their posts on the Tuberculin Dispensary Staff an endeavour should be made to prevent the appointment of a second whole-time officer.

A notification having been received from Mr. Groves, T.C., that the Insurance Sanatorium Committee would be pleased to receive a deputation to confer on the matter, such a deputation was appointed by the Committee, and the interview took place at the Town Hall on Thursday, September 12th. The reception was most courteous. Dr. Hilda Clark gave a brief but lucid outline of the methods adopted at the dispensary. The Chairman laid before the Committee, in a clear and explicit manner, the cardinal points of the British Medical Association as regards the administration of sanatorium benefit. Some discussion followed as to the exact meaning of the phrase "Report 5s.", and the interview terminated. A letter was received from Dr. Fraser, M.O.H., dated September 17th, asking if the Committee would enter into tentative arrangements, without prejudice. In accordance with instructions a copy was sent to the State Sickness Insurance Committee. Dr. Fraser's letter, together with the reply of the Medical Secretary, were discussed by the Committee at the meeting yesterday, and it was resolved:

> That this Committee is prepared to recommend that domiciliary treatment be undertaken only when the Local Insurance Committee give an assurance that the conditions as presented by our deputation on the 12th instant be conceded.

A circular letter has been received from the Medical Secretary giving the instructions of the State Sickness Insurance Committee as to the sending of resignations of contributory contract practice appointments throughout the kingdom by September 29th. The matter was fully discussed at a meeting on September 24th; statements were made as to the position in the Southampton and Salisbury Divisions, where all club appointments have been resigned and a public medical scheme was well advanced. The Branch Council strongly recommended the Portsmouth Division to adopt a similar course. Mr. C. P. Childe notified the steps taken unanimously by the staffs of the Royal Portsmouth Hospital to uphold the policy of the British Medical Association, and it was resolved unanimously:

> That all resignations be sent in by the Honorary Secretary before September 29th.

A discussion then took place on a motion by Dr. Gavin Brown, seconded by Dr. Milne-Thomson:

> That it be a recommendation from this committee to the local medical profession that resignations shall apply also to uninsured persons with a view to the establishment of a public medical service.

This was carried unanimously. It was proposed by Mr. C. P. Childe and seconded by Dr. Lysander Maybury:

> That the report be received and adopted, with the exception of that clause relating to uninsured persons.

This was carried. It was proposed by Dr. Blackman and seconded by Dr. Gavin Brown:

> That the last recommendation in the report referring to uninsured persons be referred to a special meeting of the profession to be held at an early date.

This was carried unanimously.

Reigate.

The Reigate Provisional Medical Committee met on September 24th. Dr. Palmer was in the chair, and nine members were present.

Guarantee Canvass.—The Honorary Secretary reported that forty-six practitioners and seven retired medical men had guaranteed £1,020.

Sanatorium Benefits.—Dr. Jones, the medical officer of health for Surrey, wrote giving dates on which he could meet the Committee and explain the Surrey County Council scheme. The Committee chose October 1st at 4.30 p.m. The question of signing sanatorium certificates was considered, and the Honorary Secretary was instructed to inquire of the State Sickness Insurance Committee if the resolution of the Annual Representative Meeting, 1912, precluded men from signing such certificates.

Club Resignations.—A letter from the Medical Secretary was read requesting that they should be sent in on September 29th, and suggesting that the staffs of voluntary hospitals should take combined action to bring to the notice of their boards the steps they propose to take under the third clause of the pledge.

Hospital Staffs.—The committee discussed the action to be taken in connexion with the hospitals at Redhill, Dorking, Horley, and Crawley, and the dispensaries at Reigate and Redhill. Members present undertook to call meetings of the staffs of these charities.

Public Medical Service.—The consideration of the revised schemes was deferred to a meeting to be held before the next meeting of the Division.

The next ordinary meeting was fixed for October 16th, at 8.45 p.m., at Dr. Thornton's.

Kent County.

A meeting of this Committee was held at West Kent Hospital, Maidstone, on September 26th. Dr. W. J. Tyson was in the chair, and eighteen members were present.

Sanatorium Benefit.—It was resolved to apply to the State Sickness Insurance Committee for permission to adopt the Kent County Council's scheme for sanatorium

benefits as amended by Dr. Howarth conditionally that a clause for mileage should be inserted, and that the clause referring to district medical officers of health read "that no district medical officer of health shall be appointed where another general practitioner is available. It was resolved:

That this Committee reiterates its opinion that a Public Medical Service scheme providing for the co-operation with approved societies is desirable in Kent.

Public Medical Service.—The Secretary was instructed to write to the Secretary of the Thanet Division stating that:

This Committee regrets having heard that the Thanet Division has produced a scheme for medical service of their own, whereas this Committee was appointed to consider this matter, and that the Thanet Division has sent representatives to this Committee; and also that the Thanet Division must be aware that this Committee has a scheme for the whole of Kent. It is hoped that the Thanet Division will fall into line and assist this Committee in its undertaking.

WEST HERTS.

A meeting was held at St. Albans on September 23rd. There was a large attendance. Arising out of a point of order, it was agreed that the Committee of the three wards be appointed an Executive Committee, and have power to act in matters arising out of the Insurance Act. Dr. BONTOR (the Honorary Secretary of the local Division of the British Medical Association) asked that a Secretary should be appointed to this Committee in his place, as he was unable to carry out all the work. Dr. Sidney Clarke was appointed.

Resignations of Appointments.—The letter D 2 from the State Sickness Insurance Committee was read, and it was unanimously agreed to send in the notices of resignations. (This has now been done. The number actually sent in is 220, and the number of practitioners affected is 63. So far as is known to the Committee, no contract practice appointment has not been resigned.) It was decided that the members of the staffs of voluntary hospitals should take the steps as recommended. (This is now being done.)

Public Medical Service.—It was decided that each ward should consider the Public Medical Service schemes at once, so that definite steps could be taken at a meeting, to be held about October 14th, to get out the preliminary details. The meeting considered that payment upon a capitation basis was the more satisfactory scheme to adopt in this district.

Sanatorium Benefits.—The County Medical Officer of Health made a statement about sanatorium benefits which received considerable approval.

Notification of Births Act.—A question about the Notification of Births Act was raised, but it was decided to let the matter remain *in statu quo*.

HAMPSTEAD.

We are asked to publish the following addition to the minutes of the Hampstead Provisional Medical Committee of September 23rd (see BRITISH MEDICAL JOURNAL, September 28th, p. 355):

"The Committee expressed their approval of the attitude of Mr. F. E. Scrase, Medical Officer of Health for Hampstead, in declining to serve as a member of the Tuberculosis Subcommittee."

NORWOOD.

The fourth meeting of this Committee was held at 261, Barry Road, on September 24th. Dr. BATTEN was in the chair, and nine members were present.

Work of the Committee.—The HONORARY SECRETARY (Dr. Archer Wood) reported on the further progress of the work of the Committee. In brief, 38 pledges out of 40 had been received, the only two omissions being those of two practitioners who were abroad. There were two further guarantees received from Drs. Martin and D'Esterre. A summary of the various reports received by the Honorary Secretary from the State Sickness Insurance Committee was read, the most important being that it had been decided to send in all resignations on or before September 29th. The statement that this area was considered "safe" gave great satisfaction.

Resignations of Appointments.—A resolution was unanimously passed in favour of the immediate dispatch of the resignations held by the Honorary Secretary. There were 41 of these, affecting 15 practitioners—that is, the total number holding such appointments.

Public Medical Service.—The Public Medical Service scheme, which came next on the agenda paper, was not discussed, the consideration of it being postponed till the next meeting on October 8th, on the ground that various members of the Committee had not had sufficient opportunity to read and digest its details.

Contract Rates for Uninsured Persons.—A discussion followed with respect to the revision of contract rates of practice for uninsured persons throughout the area. A resolution was drafted by the CHAIRMAN, proposed by Dr. MCLEAN, and seconded by Dr. MARTIN, and carried unanimously in the following terms:

That this local Provisional Medical Committee considers that the contract rates of attendance on non-insured persons should not be less than those for persons insured.

FIFESHIRE (COUNTY AND BURGHS).

A meeting of this Committee, of which every practitioner in the county is a member, was held in the Station Hotel, Kirkcaldy, on September 25th, Dr. ORR, President, in the chair.

Guarantee Fund.—The PRESIDENT recommended to the meeting the following resolution:

That we earmark an average sum of £20 per guarantor for the Central Fund.

He called upon Dr. Craig to speak to the resolution. Dr. CRAIG strongly urged the members to support the resolution, pointing out the necessity for having a strong Central Defence Fund in the fight which lay before them. Dr. MCDONALD (Cupar) strongly supported the resolution. Dr. Dow, however, objected very strongly that any part of the Local Defence Fund should be earmarked for the Central Defence Fund, and notwithstanding the exhortations of the PRESIDENT and various other speakers, refused to withdraw his amendment. As no support of the amendment was forthcoming, the PRESIDENT declared the motion carried, Dr. Dow recording his strong dissent. Dr. DICKSON, Convener of the Defence Fund, informed the meeting that he had heard from the Secretary of the British Medical Association that the Central Committee was willing to meet all future local expenses in the meantime.

Circular to Colliers.—The INTERIM HONORARY SECRETARY (Dr. G. C. Anderson) then informed the meeting of the state of affairs at Cowdenbeath, mentioning the circular which had been distributed to the colliers there setting forth the terms upon which Drs. Sanjano and Primmer were willing to take the men into their private clubs. He also stated that Dr. Primmer had publicly repudiated any knowledge of the circular, and intimated that Dr. Primmer had asked for an opportunity at the next meeting of the Provisional Medical Committee to make a statement. The PRESIDENT then called upon Dr. Primmer, who denied that he had any knowledge of the circular, and read the correspondence which had passed between himself and the Secretary of the British Medical Association with regard to the matter. The statement was met with loud applause.

Resignations of Appointments.—The first resolution on the agenda was next put to the meeting, namely:

To consider the recommendation of the State Sickness Insurance Committee that the resignations of contributory contract appointments shall be sent in on or before September 29th, 1912.

This was carried unanimously. The INTERIM HONORARY SECRETARY informed the meeting that the Branch Council recommended that no colliery appointments be resigned in the meantime. The Secretary then informed the meeting that the Branch Council had considered Resolution 2, namely:

To consider the action of members of staffs of voluntary hospitals in accordance with the terms of the pledge, and had to recommend that Dr. Douglas, along with the President and Secretary, be instructed to draw up a letter which would be submitted to the staffs of the hospitals with a view to acquainting the boards with their attitude in the matter.

This was agreed to.

Public Medical Service.—The meeting then considered Resolution No. 3 with regard to the discussion of the

model schemes for public medical service, and, after various expressions of opinion, it was decided to remit this to the various local areas for their consideration.

Adoption of Ethical Rules.—The SECRETARY informed the meeting that he had been unable to include in the agenda for this meeting the adoption of the Model Ethical Rules appearing in the SUPPLEMENT of September, 1912. The PRESIDENT asked the meeting if they would have any objection to consider the matter at this meeting, and, as there was no dissentient, Dr. TUKE formally moved and Dr. DOUGLAS seconded the adoption of these rules.

Sanatorium Benefits.—Dr. DOUGLAS then read a letter he had received from Dr. Michael Dewar, Edinburgh, with regard to the attitude which the medical officers of health were adopting in connexion with sanatorium benefit, and strongly urged that the tuberculosis officers in connexion with sanatorium benefit under the Act should confine their attention to the administrative part of the work and leave the clinical duties to the care of the practitioners. Considerable discussion arose, and Dr. MACINTOSH of Kirkcaldy and Dr. MACGREGGOR of Dunfermline informed the meeting of the attitude they had adopted in this connexion. It was unanimously decided that the members were to do everything which lay in their power to keep the treatment of tuberculosis entirely in the hands of the practitioners.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor*, BRITISH MEDICAL JOURNAL, *429, Strand, London, W.C.*]

THE GUARANTEE FUND.

DR. C. F. RUDD (Stalham, Norfolk) writes: "Hope deferred maketh the heart sick." The saying embodies Mr. Lloyd George's feeling and action against us. Now, therefore, is the time for us to put forth all our strength, and with no half-heartedness. If Mr. Lloyd George finds us well supplied with the munitions of war we may be assured there will be precious little fighting to do; it is the over-anxious, half-worn-out warrior that he hopes to encounter when the time comes.

No doubt it is we of the rank and file who must find the money, and it is simply suicidal not to do so. All those who can afford it should at once guarantee £20, and those who cannot afford it should guarantee more, for their very existence is in peril, and it is for them especially that the fighting has to be done. We are safer to guarantee £20, and by that guarantee we are less likely to spend £5 than we are likely to spend £7 10s. if we guarantee £10. We must remember all our actions are well watched and known, and a few twenties may make the difference.

In the district in which I live and practise £20 is promised by nearly all, and, curiously, it is only those who can best afford it who show any reluctance to give. Against such lamentable exceptions I think it should be generally known how well some districts are acting, and how loyal they are. Such knowledge will—must—exhort and encourage the rest. Personally I have had no holiday this year, and I shall not have one; I cannot afford it. But I can afford to guarantee £20 for such a purpose; and not only that, I can afford more, and I will do so if it be necessary.

MODE OF RATE AND REMUNERATION.

DR. JAMES HOLMES (Bury) writes: Being of opinion that the chief officials appointed under the Insurance Act are wishful to pay medical men adequately for any work they may do under the Act, but up to now have not devised a scheme that will be just to medical men and at the same time be acceptable to financial experts, may I propound a scheme?

Arrange a scale of charges for attendance on the insured. Let it be full and cover everything, part being for extras such as major operations, expert attendance, etc., and part for ordinary attendance. Let the medical men from time to time, say once a quarter at first, afterwards perhaps yearly, furnish an account of work done and the number of insured persons on their lists. The accounts for work done could be very readily kept with a minimum of trouble by means of the card index system. From the data thus provided fix a capitation fee under two headings—town practice and country practice, because clearly the latter must be higher owing to the heavy charges for mileage. Let the capitation fee be arranged, say, once in three or five years. If it should be found that the rate of sickness, and therefore the work of the medical men, was increasing regularly every period at a greater rate than, perhaps, 5 per cent., then let an allowance be made in the next period to recompense the medical men for the extra work they have already done.

Under this scheme the medical profession, as a whole, would be paid for the work done, though perhaps some individual members would not be fully paid. To equalize this, it might be necessary to form a third class—that is, chronic invalids and aged persons.

The finances of different Insurance Committees would not be subjected to sudden and heavy demands for medical attendance. There would be clear indications long before the periodical change of the capitation fee as to what it was likely to be.

We have already a precedent for this periodical change in the annual rate of payment in the case of coroners. They are not now usually paid by fees as formerly, but by salary periodically fixed according to work done during the past period. The amounts chargeable as extras would always be so chargeable and not included in the capitation fee.

THE FEE FOR NIGHT VISITS.

DR. PERCY ROSE (London, E.) writes: Many members have read with concern an item in your official Association reports referring to the fee for night work in the domiciliary treatment of tuberculosis.

It appears that the inadequate fee of 5s. is suggested or sanctioned for such visits. Precedents for such a fee are not easy to find, nor is there any justification for departing from the figure of 7s. 6d., which is the lowest accepted official fee for such services. The following instances, to which other practitioners can doubtless add, are useful as precedents of an adequate fee:

Poor Law guardians in East London offer to pay 7s. 6d. to any practitioner called in at night to a case of urgent illness where the patient cannot afford the fee.

The West Ham Guardians have authorized their relieving officers, should the services of their district medical officers not be available, to call in any practitioner in case of urgency and pay him, if at night, a fee of 7s. 6d.

The Metropolitan Police pay 7s. 6d. for a night attendance; and at an early Representative Meeting some twenty authorities were instanced as paying a fee of 7s. 6d. to 10s. 6d. for night calls by the police.

Finally, during our many discussions on medical assistance in midwives' cases, the fee for night visits was fixed at 7s. 6d.

All these examples deal with special night calls to sudden and urgent emergencies. The night call to a tuberculosis case will be under precisely the same conditions. It will be a special and not an ordinary call, and it will be made because of a sudden and urgent emergency, where relief is at once required, either for the patient or for his friends' anxieties. In other words, it is exactly comparable to the night visit in response to the guardians', police, or midwife's requisition. If 5s. is accepted for the one service, there is no reason why the public should go on paying more than that for similar services, and the fact that 14,000,000 people may shortly claim our services renders the 5s. night visit fee a dangerous innovation, of which the public would not fail to take advantage.

Representative Meetings have repeatedly recommended or endorsed the figure of 7s. 6d. for night work, and the medical profession must not be asked to give its services in the middle of the night for a fee which a lawyer could refuse for his advice at midday. The matter must be definitely settled at the forthcoming Representative Meeting, and it is hoped that Divisions will have the courage to insist on adequate remuneration and reassert their demand for 7s. 6d. for night calls.

STEADY IN THE RANKS.

DR. EDWARD MCCULLOCH (Devonport) writes: One had hoped at this stage of the fight, when we are almost at close quarters with the enemy, that we had heard the last of such undisciplined grumbling as appears below the name of Dr. Lee. What in Heaven's name is the use of

grousing at Representatives and members of Council? Both are elected by the rank and file of the Association, and if they fail adequately to represent the views of the majority, that is due to the supineness of the majority in taking little or no interest in their respective elections. It seems to me that Dr. Lee and those of our number who are of his way of thinking would do well to lay to heart that gospel of majority rule that they so glibly write and talk about.

Necessarily those in the front rank and on the staff must know a little more of what is going on than others, and after all I suppose that no leaders ever existed whose every action met with the universal approval of their following at the moment. Rather let our attitude be that, having chosen our leaders and representatives, we will loyally back them up in every way we can.

Regarding the decision to work the sanatorium benefit on fair conditions being granted, I take it that what inspired that decision was the feeling that the profession having preached the gospel of improved methods in dealing with tuberculosis, in season and out of season, it would have been a curious attitude to take up, that having sown the seed and assiduously watered and tended it we should refuse to assist in the harvest. Moreover, I fancy that few will deny that our cause will suffer if we allow the desire for private advantage rather than the public welfare to guide our actions, be it never so well disguised in the fine raiment of high-sounding phrases that might have been culled from a modern party politician's rhetorical efforts.

As time goes on and we gain some experience of the working of that part of the Act dealing with tuberculous disease, I think it will be found that the decision of the Representative Meeting has saved for the general practitioner a share in the work that otherwise he might have lost. The concession that has been made in nowise affects our main position, and the chances are that had we refused to have anything to do with sanatorium benefit we should have found that it would prove the weakest spot in our armour. Probably it would not have been altogether impossible to work it without the aid of the general practitioner, who would thereby have lost a material part of his work. As it is, he will have an opportunity of participation in the work with financial profit to himself, and possibly the work done under expert guidance will be a source of mental pleasure. Under the Association's conditions he will be able to work with a consultant who has no financial interest in exalting his own powers to the detriment of his humbler coadjutor.

In conclusion, I would only say that while criticism of their work, so long as it is fair, may be helpful and stimulating to our leaders, yet vague innuendo and hints of breach of trust recoil on the heads of their originators in the form of decreased efficiency of the body concerned.

Meetings of Branches and Divisions.

GLASGOW AND WEST OF SCOTLAND BRANCH:

Dumbartonshire and Argyllshire Division.

A meeting of this Division was held at Clydebank on September 26th, Dr. Wilson (Dumbarton) in the chair. Nineteen members and one non-member were present.

Resignation of Vice-Chairman.—Dr. Little's resignation on leaving for New Zealand was received with regret, and it was agreed to thank him for his services and convey to him the good wishes of the Division. Dr. Gilmour was then unanimously elected Vice-Chairman.

Annual Representative Meeting.—Lieutenant-Colonel Ritchie, R.A.M.C., gave a summary of the course of events at the meeting, explained how he had voted, and answered various questions. Lieutenant-Colonel Ritchie was cordially thanked for his services to the Division and for his report.

Provisional Local Medical Committees.

Dumbarton Burgh.—Dr. McLachlan reported all pledges signed and all resignations of contract practice ready to be sent in; also that for reporting on a case requiring sanatorium benefit the fees approved by the British Medical Association had been demanded and paid.

Dumbarton County (Western Section).—Dr. Sutherland reported all resignations ready to be sent in and pledges signed by all practitioners except one.

Clydebank Burgh.—Dr. Strang reported that all practitioners in this area had signed pledges and also resignations of contract practice, but that they had not yet decided to send in the latter. Considerable discussion then took place. The importance of simultaneous action throughout the country was emphasized by many members. A number of Clydebank practitioners took part in the discussion, and, after explaining the local position, indicated that they thought resignations should now be sent in. It was elicited that various societies were already giving their medical officers notice that after January 15th next the present arrangements with them will not continue. Thereupon Dr. Strang, with the approval of the other Clydebank practitioners present, undertook to call a meeting immediately to consider the course to be taken now by the profession in that area.

Public Medical Service Schemes.—It was decided to delay consideration of these.

Sanatorium Benefit.—The Secretary explained the attitude of the British Medical Association, especially pointing out that the minimum terms and the conditions of service approved by the Association must be demanded and no arrangement made with any insurance committee without the approval of the Council.

Central Defence Fund.—The Secretary explained the importance of this fund and its purpose; various questions on the subject were answered. It was made clear that areas which did not give any guarantees could not reasonably look for much help from the fund. Guarantee forms for new or increased guarantees were given to all present; five new guarantees were immediately given by Clydebank practitioners. It was agreed to make an effort to add still more to the fund.

Fees for Ambulance and Nursing Classes.—Drs. Cramb, McLachlan, and Kerr reported unsuccessful attempts in Clydebank, Dumbarton, and Vale of Leven respectively to induce medical men to undertake this work at less than one guinea per lecture. The Division fully approved of the action of practitioners in these areas in adhering to the Division's resolution and refusing to accept less remuneration than the profession considers reasonable.

"Duration of Disease" in Statutory Death Certificates.—It was explained that the filling in of this detail often enabled insurance agents and others to obtain, free of cost, from the profession, through certificates given for another purpose, information valuable to them (*especially where an insured person had not been medically examined when a candidate for insurance*). On the motion of Dr. Ritchie, seconded by Dr. Cramb, who brought the matter forward, it was unanimously agreed:

> That the Dumbartonshire and Argyllshire Division of the British Medical Association, acting on the decision of the Annual Representative Meeting, 1911, calls upon all members of the profession practising in its area to refrain in future from filling in particulars of the duration of disease in any statutory death certificates signed by them.

The Secretary was instructed to circulate this decision to all members of the profession practising in the area of the Division.

A Personal Explanation.—Dr. Strang explained his position as to the Clydebank Insurance Committee's request that he should act as their "medical adviser" in regard to sanatorium benefit; to this request he had agreed subject to the approval of the Town Council (to which he is medical officer of health). No objection was taken to his appointment, but it was pointed out that the terms and conditions of service were to be submitted to the Council of the British Medical Association for approval.

Model Ethical Rules for a Division.—On the motion of Dr. Ritchie, seconded by Dr. Cramb, these rules as printed in British Medical Journal Supplement, September 21st, 1912, were unanimously adopted for this Division.

OXFORD AND READING BRANCH:

Oxford Division.

A meeting of the Provisional Medical Committee was held on September 27th at the Radcliffe Infirmary, Oxford. Dr. Turrell was elected permanent Chairman, and sixteen other members attended.

Resignations of Appointments.—The Chairman read Memorandum D 2 of the State Sickness Insurance Committee regarding resignation of contract practice appoint-

ments. Dr. COLLIN stated that the staff of the Radcliffe Infirmary had undertaken not to treat insured persons in the out-patient department, and that they would only admit urgent cases. It was proposed by Dr. O'KELLY and seconded by Dr. KENNARD:

That notices of resignation be forthwith sent in.

This was carried *nemine contradicente*.

Treatment of Tuberculosis.—The meeting proceeded to discuss schemes for the prevention and treatment of tuberculosis. The CHAIRMAN read out the cardinal points as decided by the resolution of the last Representative Meeting. The SECRETARY read a letter he had received from Dr. Mallam, writing on behalf of the infirmary staff, in which the Provisional Medical Committee was asked to appoint five members to confer with the staff on a proposal received from the Voluntary Association for the Prevention of Tuberculosis. This was to the effect that

The infirmary should afford facilities in the out-patient department for the formation of a tuberculosis dispensary, where the tuberculosis officer of the association might receive and treat insured patients sent by the County Insurance Committee.

A tentative scheme drawn up by the Medical Officer of Health for the city (at the request of the City Council) was read by Dr. ORMEROD (Medical Officer of Health). After some discussion it was proposed by Mr. DREW, seconded by Dr. SUMMERHAYES:

That this meeting adheres to the cardinal points issued by the State Sickness Insurance Committee.

This was carried *nemine contradicente*. As this resolution negatived further discussion of the proposal of the "Voluntary Association for Prevention of Tuberculosis" in so far as it affected insured persons, it was decided to appoint certain members of the committee to confer with the infirmary staff as to the best method of dealing with tuberculosis among the large class of uninsured persons, and to report to the next Divisional meeting. The following gentlemen were appointed: Dr. Turrell (Chairman of the Provisional Medical Committee), Dr. Duigan (Secretary of the Committee), Mr. Drew (Division Representative), Dr. O'Kelly (Chairman-elect of the Division), Dr. Boissier (Banbury). The Medical Officer of Health for City (Dr. Ormerod) and Medical Officer of Health for County (Dr. Coles) were co-opted.

Date of Meeting.—It was arranged that the meeting be held on October 8th at 8 p.m. It was agreed that Dr. Ormerod's tentative scheme should be typed and sent round to members of the conjoint meeting.

Association Notices.

COUNCIL MEETING.

THE Quarterly Meeting of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 30th, in the Council Room at 429, Strand, London, W.C.

By Order,

GUY ELLISTON,

Financial Secretary and Business Manager.

October 3rd, 1912.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH.—First meeting of the session on October 10th, at 3.30 p.m., in the Medical Institute. The annual dinner will take place on the evening of the same day at the Grand Hotel at 7.30 p.m.—J. FURNEAUX JORDAN, Honorary Secretary.

BIRMINGHAM BRANCH: CENTRAL DIVISION.—A meeting of the Division will be held at the Medical Institute, Edmund Street, on Wednesday, October 9th, at 3.30 p.m. Agenda: (1) Confirm minutes. (2) Receive the Representatives' Report of Annual Representative Meeting. (3) To consider Executive Committee's Recommendations concerning (*a*) Public Medical Service schemes (BRITISH MEDICAL JOURNAL SUPPLEMENT, September 14th); (*b*) Model Ethical Rules (BRITISH MEDICAL JOURNAL SUPPLEMENT, September 21st). (4) Any other business. —ERNEST C. HADLEY and H. HOYLE WHAITE, Honorary Secretaries.

DORSET AND WEST HANTS BRANCH.—A special meeting will be held at the Church House, Wimborne, on Wednesday, October 16th, at 3 p.m., to consider the Model Ethical Rules and other changes in the rules of the Branch. The ordinary autumn meeting will follow: Election of officers for 1913-4; Dr. Bottomley, Vice-President, will open a discussion on "Neuritis, True and False." The Wimborne practitioners have kindly arranged to provide tea for members.—FRANK FOWLER, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH.—A meeting of the Branch Council of this Branch will be held at Manchester on Wednesday, October 9th, at 4.30 p.m.—F. CHARLES LARKIN, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—A special meeting of the Division will be held at Knutsford at 4.30 p.m. on Thursday, October 17th. Further particulars in future notice.—H. G. COOPER, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: LIVERPOOL DIVISION.—A meeting of the Division will be held at the Medical Institution on Tuesday, October 8th, at 4 p.m. The business of the meeting will be: (1) To receive the report of the Representatives at the meeting in July. (2) To fill a vacancy on the Branch Council. (3) Statement with regard to appeal for increase of guarantee to the Central Insurance Defence Fund. (4) To adopt Model Ethical Rules for the Division, as amended and approved by the Annual Representative Meeting, 1912 (Minute 118, Annual Representative Meeting) (see SUPPLEMENT, BRITISH MEDICAL JOURNAL, September 21st, 1912).—FRANCIS W. BAILEY, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—The inaugural meeting of this session will be held at the London Hospital, Whitechapel Road, E., on Friday, October 11th, at 4 p.m., when Dr. J. H. Sequeira, F.R.C.P., will give a Demonstration upon Cases from the Dermatological Department.—A. G. SOUTHCOMBE, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: HAMPSTEAD DIVISION.—A meeting of this Division will be held on Friday, October 11th, at 8.15 p.m., at the Central Library, Finchley Road. Agenda: (1) Minutes. (2) Letters. (3) Questions. (4) Report of Representative to Annual Representative Meeting. (5) Report of the Ethical Committee of the Division. (6) Adoption of the Model Ethical Rules. (Members are requested to bring SUPPLEMENTS of September 21st and 28th).—E. ARTHUR DORRELL, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: LAMBETH DIVISION.—A meeting of this Division will be held on Tuesday, October 8th, at 4 p.m., at the Surrey Masonic Hall. Agenda: (1) To elect two Representatives to serve on the National Insurance Committee of the Metropolitan Counties Branch. (2) To consider the Model Rules of Ethical Procedure as published in the BRITISH MEDICAL JOURNAL SUPPLEMENT of September 21st, 1912, and in view of Minute 118 of the Annual Representative Meeting, 1912: "Resolved that all Divisions and Branches in the United Kingdom be urged to adopt the Model Rules for Ethical Procedure as approved by the Representative Body without modification and in substitution for all such rules now in use," to adopt the rules, if possible, without any modifications. (3) To consider the amended Model Scheme of a Public Medical Service as published in the BRITISH MEDICAL JOURNAL SUPPLEMENT of September 14th, 1912, pp. 290-298. (4) To receive the report of the Representatives at the Annual Representative Meeting.—J. H. CLATWORTHY, Honorary Secretary, 145, Denmark Hill, S.E.

SOUTH-EASTERN BRANCH: BRIGHTON DIVISION.—An ordinary meeting of this Division will be held at the Lecture Hall, New Road, on October 15th, at 4 p.m.—C. H. BENHAM, Honorary Secretary.

SOUTH-EASTERN BRANCH: DARTFORD DIVISION.—An important meeting of this Division will be held in the Bull Hotel, Dartford, on Tuesday, October 8th, at 3.15 p.m. All medical men residing in the Division are cordially invited. Members are particularly requested to bring their copies of the SUPPLEMENTS mentioned in the agenda to the meeting. Agenda: (1) Report of Representative. (2) Ethical Rules for the Division (BRITISH MEDICAL JOURNAL SUPPLEMENT, September 21st). (3) Sanatorium Scheme for Kent. (4) Public Medical Service (BRITISH MEDICAL JOURNAL SUPPLEMENT, September 14th). (5) Central Defence Fund. (6) Any other business.—H. CHISHOLM WILL, Sidcup, Honorary Secretary.

SOUTH MIDLAND BRANCH.—The autumnal meeting will be held at Northampton General Hospital on Thursday, October 10th, at 2.30 p.m., under the presidency of Dr. Baker (Aylesbury). Members are requested to send titles of papers, or notes of cases, to the Honorary Secretary as soon as possible.—E. HARRIES JONES, Honorary Secretary, Northampton.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN ninety-five of the largest English towns 8,267 births and 4,010 deaths were registered during the week ending Saturday, September 28th. The annual rate of mortality in these towns, which had been 11.5, 11.0, and 11.6 per 1,000 in the three preceding weeks, rose again to 11.9 per 1,000 in the week under notice. In London last week the death-rate was equal to 12.2, against 11.7, 11.4, and 12.2 per 1,000 in the three preceding weeks. Among the ninety-four other large towns the death-rates last week ranged from 2.5 in Ilford, 4.7 in Southend-on-Sea, 4.9 in Gillingham, 5.5 in Wimbledon and in Darlington, 6.1 in Newport (Mon.), and 6.3 in Devonport to 15.7 in Walsall, 15.8 in Wolverhampton, 16.2 in Wigan, 16.7 in Ipswich, 17.6 in Middlesbrough, and 18.3 in Tynemouth and in Merthyr Tydfil. Measles caused a death-rate of 1.2 in Birkenhead, 1.7 in Rochdale, 2.0 in Swindon, 2.5 in Merthyr Tydfil, and 2.6 in Tynemouth; and diphtheria of 1.3 in Portsmouth and in Norwich. The mortality from enteric fever, scarlet fever, and whooping-cough showed no marked excess in any of the large towns and no fatal case of small-pox was registered during the week. The deaths of children (under 2 years of age) from diarrhœa and enteritis, which had been 183, 143, and 150 in the preceding three weeks, fell to 134 last week, and included 39 in London, 18 in Liverpool, 5 in Manchester, 5 in Sheffield, and 4 in Walsall, in Middlesbrough, and in Newcastle-on-Tyne. The causes of 27, or 0.7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 8 were registered in Birmingham and 2 each in Lincoln, Liverpool, Rochdale, and Bradford. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,564, 1,662, and 1,775 in the three preceding weeks, had further risen to 1,871 on Saturday last; 305 new cases were admitted during the week, against 228, 281, and 311 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN eighteen of the largest Scottish towns 1,059 births and 544 deaths were registered during the week ending Saturday, September 28th. The annual rate of mortality in these towns, which had been 12.7, 12.4, and 13.8 per 1,000 in the three preceding weeks, declined to 13.0 in the week under notice, but was 1.1 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 5.3 in Hamilton, 6.5 in Clydebank, and 7.5 in Motherwell to 17.0 in Dundee, 17.2 in Greenock, and 17.7 in Coatbridge. The mortality from the principal infectious diseases averaged 0.7 per 1,000, and was highest in Motherwell and Falkirk. The 201 deaths from all causes registered in Glasgow included 7 from infantile diarrhœal diseases, 2 from diphtheria, 1 from enteric fever, and 1 from measles. Three deaths from scarlet fever were recorded in Falkirk and 2 in Motherwell; 2 deaths from diphtheria in Edinburgh; and 2 from whooping-cough in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, September 28th, 506 births and 321 deaths were registered in the twenty-two principal urban districts of Ireland, as against 552 births and 326 deaths in the preceding weeks. The annual death-rate in these districts, which had been 13.0, 14.2, and 14.7 per 1,000 in the three preceding weeks, fell to 14.5 per 1,000 in the week under notice, this figure being 2.6 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 17.2 and 14.0 respectively, those in other districts ranging from 3.8 in Londonderry and 4.7 in Sligo to 21.7 in Limerick and 21.8 in Newtownards, while Cork stood at 12.9 and Waterford at 17.1. The zymotic death-rate in the twenty-two districts averaged 1.2 per 1,000, or the same as in the preceding period.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BANBURY: HORTON INFIRMARY.—House-Surgeon. Salary, £80 per annum.

BATH: ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham Road, S.W.—(1) Assistant Surgeon. (2) Assistant Physician.

BIRKENHEAD COUNTY BOROUGH.—Tuberculosis Medical Officer. Salary, £300 per annum, rising to £500.

BIRMINGHAM EDUCATION COMMITTEE.—(1) Assistant School Medical Officer; salary, £260 per annum, rising to £310. (2) Dental Surgeon; salary, £300 per annum.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—(1) Surgeon. (2) Two House-Surgeons (Male). Salary at the rate of £75 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Senior Assistant House-Surgeon. Salary, £100 per annum

BRADFORD: ROYAL EYE AND EAR HOSPITAL.—House-Surgeon (Non-resident). Salary, £200 per annum.

BRISTOL ROYAL INFIRMARY.—(1) Two House-Surgeons. (2) House-Physician. (3) Throat, Nose, and Ear House-Surgeon. Salary for (1) and (2), £100 per annum each; for (3), £75 per annum.

CARDIFF CITY MENTAL HOSPITAL.—Second Assistant Medical Officer (Male). Salary, £200 per annum, rising to £225.

CHELTENHAM GENERAL HOSPITAL.—House-Physician. Salary, £100 per annum.

CHORLEY: RAWCLIFFE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

COVENTRY: COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House-Surgeon. Salary, £90 per annum, rising to £100 after six months.

DOUGLAS, ISLE OF MAN: ASYLUMS BOARD.—Assistant Medical Officer. Salary, £170 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £120 and £100 per annum respectively.

DUNDEE ROYAL INFIRMARY.—Non-resident Outdoor Obstetric Assistant. Salary, £70 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—(1) House-Surgeon (Male). (2) Second Medical Officer (Male) to the Casualty Department. Salary at the rate of £75 and £40 per annum respectively.

ECCLESALL BIERLOW UNION WORKHOUSE.—Male Resident Assistant Medical Officer. Salary, £200 per annum.

ESSEX EDUCATION COMMITTEE, Chelmsford.—School Medical Inspector. Salary, £250 per annum, rising to £300.

EXETER: ROYAL DEVON AND EXETER HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

FAREHAM: HANTS COUNTY ASYLUM.—Third Assistant Medical Officer (Male). Salary, £200 per annum.

GARTLOCH MENTAL HOSPITAL, near Glasgow.—Junior Assistant Medical Officer. Salary, £150 per annum.

GLOUCESTERSHIRE COUNTY COUNCIL AND GLOUCESTER CORPORATION JOINT COMMITTEE.—Tuberculosis Medical Officer. Salary, £500 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon (Third). Salary, £75 per annum.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—(1) Casualty Officer; salary, £140 per annum. (2) Assistant Casualty Officer; salary, £60 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—House-Physician. Honorarium, 30 guineas for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Assistant Casualty Medical Officer. Salary, £30 for six months and £2 10s. washing allowance.

HULL: ROYAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £60 per annum for six months and £80 per annum for twelve months.

KING'S COLLEGE HOSPITAL, W.C.—Senior Surgical Registrar and Tutor.

LEICESTER ROYAL INFIRMARY.—(1) Second House-Surgeon. (2) Assistant House-Surgeon. (3) Assistant House-Physician. Salary at the rate of £100 per annum for (1), and £80 per annum for (2) and (3).

LEWES: VICTORIA HOSPITAL AND DISPENSARY.—Resident Medical Officer. Salary, £120 per annum.

MAIDSTONE: KENT COUNTY ASYLUM.—Male Fourth Assistant Medical Officer. Salary, £200 per annum.

MARGATE: ROYAL SEA-BATHING HOSPITAL.—Resident Surgeon. Salary at the rate of £100 per annum for first six months, rising to £120 per annum for last six months.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) House-Physician; (2) House-Surgeon; (3) Assistant House-Physician; and (4) Assistant House-Surgeon. Salary for (1) and (2) at the rate of £60 per annum, and £40 per annum for (3) and (4).

NEWCASTLE-UPON-TYNE: ROYAL VICTORIA INFIRMARY.—Resident Medical Officer. Salary, £200 per annum, rising to £250.

NORDRACH-ON-DEE, BANCHORY: OPEN-AIR SANATORIUM FOR PRIVATE PATIENTS.—Clinical Pathologist. Salary at the rate of £100 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—(1) Honorary Surgeon to Out-patients. (2) House-Physician. (3) House-Surgeon. Salary at the rate of £52 10s. a year attached to (2) and (3).

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—(1) House-Physician. (2) Second House-Surgeon. Salary at the rate of £80 per annum each.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—House-Surgeon. Salary, £80 per annum.

SHREWSBURY: COUNTY ASYLUM.—Second Assistant Medical Officer (Male). Salary, £170 per annum, rising to £190.

STIRLING DISTRICT ASYLUM, Larbert.—Junior Assistant Medical Officer. Salary, £140 per annum.

SURREY COUNTY ASYLUM, Netherne, Merstham.—Third Assistant Medical Officer. Salary, £150 per annum, rising to £200.

TRURO: ROYAL CORNWALL INFIRMARY.—House-Surgeon (Male). Salary, £100 per annum.

WARWICK COUNTY ASYLUM.—Second Assistant Medical Officer. Salary, £175 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—Surgeon.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary commencing £160 per annum.

YORK: BOOTHAM PARK HOSPITAL FOR THE INSANE.—Resident Medical Superintendent.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointment: Swanscombe (Kent).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

ANDERSON, D. H., M.D., District Medical Officer of the Maidenhead Union.

CLEMENTS, J. H., L.S.A., District Medical Officer of the Torrington Union.

COLLINGTON, F. A., M.R.C.S., L.R.C.P., District Medical Officer of the Coventry Union.

PARKINSON, W. H., M.B., Ch.B., Assistant Medical Officer of Health to School Medical Officer for Norfolk.

BUSSELL, W. H., M.B., B.S., Medical Officer for Destitute Persons and Aborigines for the District of Warooka, South Australia.

SEAGER, Frank R., L.R.C.P. and S.Ed., Honorary Assistant Surgeon, Warrington Infirmary.

VESSELOVSKY, Victor C., M.R.C.S., L.R.C.P., House-Surgeon to the Hampstead General and North-West London Hospital.

WILLIAMSON, J. B., M.B., B.S.Durh., Medical Officer of the Workhouse of the Tynemouth Union.

WOOLF, A. D., M.D.Brux., L.R.C.P. and S.Ed., L.R.F.P. and S.Glasg., Honorary Anaesthetist to the Leyton, Walthamstow, and Wanstead Children's and General Hospital.

WOOLF, A. E. M., M.B., F.R.C.S., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 58, and to be attached more particularly to Tavistock and Okehampton County Court, vice J. Snowden-Smith, deceased.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

JOHNSTON.—At Glasgow, Adelphi, Jamaica, West Indies, on September 19th, the wife of Henry Grattan Johnston, M.D., F.R.C.S.E. (née Annie Lindsay Deas), a daughter.

MARRIAGE.

BROAD—HAWKES.—September 30th, at St. Luke's Church, by the Ven. Archdeacon of Liverpool, William Henry Broad, M.D., of Rodney Street, Liverpool, eldest son of W. H. and E. E. Broad, to Cynthia, younger daughter of the late Henry Morgan and Rhoda Hawkes, of Adelaide, S. Australia.

DEATH.

WOAKES.—Edward Woakes, M.D., late of Harley Street, at Belvoir, Fareham, Hants, September 30th, aged 75 years.

DIARY FOR THE WEEK.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:
SURGICAL SECTION, 1, Wimpole Street, W., 5.30 p.m.—Papers:—Mr. Albert J. Walton: Injury of the Semilunar Cartilages. Mr. Albert M. Martin (Newcastle): A Personal Experience of 449 Cases of Injuries to the Semilunar Cartilages. Mr. Robert Jones (Liverpool) and Mr. McAdam Eccles will take part in the debate.

WEDNESDAY.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College Grosvenor Road, S.W., 5 p.m.—Subjects: Presidential Address, by Fleet Surgeon Bassett-Smith, C.B., R.N. Disposal of the Sick from a Territorial Force, by Captain Sylvester-Bradley, R.A.M.C.

THURSDAY.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, 4.15 p.m.—Opening Address by Sir J. Rose Bradford. Subject: Science and the Practice of Medicine.

ROYAL SOCIETY OF MEDICINE:
OBSTETRICAL AND GYNAECOLOGICAL SECTION, 1, Wimpole Street, W.—Paper:—Dr. Thomas Wilson (Birmingham): Gelatinous Glandular Cysts and the So-called Pseudo-Myxoma of the Peritoneum. Exhibits:—Dr. Maxwell: (1) Case of Eclampsia Treated by Caesarean Section; (2) Haematocolpos, with Remarks on the Structure of the Vaginal Wall.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
CLINICAL SECTION, 1, Wimpole Street, W., 8.30 p.m.—Cases and Specimens.

POST-GRADUATE COURSES AND LECTURES.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.—Daily arrangements: Out-patient Demonstrations, 10 a.m., Medical and Surgical Clinics. Monday: 12 noon, Throat, Nose, and Ear; 2.15 p.m., Surgery; 3 p.m., Operations; 3.15 p.m., Medicine; 4.15 p.m., Ear and Throat. Tuesday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Surgery; 3.15 p.m., Medicine; 4.15 p.m., Skin Clinic. Wednesday: 11 a.m., Eye; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Eye Clinic; 4.30 p.m., Surgery. Thursday: 12 noon, Throat, Nose, and Ear; 2 p.m., Operations; 3.15 p.m., Medicine. Friday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Surgery. Saturday: 10 a.m., Radiography; 11 a.m., Eye; 11 a.m., Pathological Demonstration.

LONDON SCHOOL OF TROPICAL MEDICINE.—Lectures daily (Saturday excepted), at 12 and 4 p.m. Practical Laboratory Work daily (Saturday excepted), 10 to 12 a.m., and 2 to 3.30 p.m. Medical Clinics, Monday and Thursday, at 3 p.m. Operations, Friday, at 3 p.m.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Bulbar Paralysis. Friday, 3.30 p.m., Cerebral Diplegia.

MANCHESTER: ANCOATS HOSPITAL.—Post-graduate Clinic. Thursday, 4.15 p.m., Heart Disease: Some Recent Developments.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week, at 4 p.m. each day:—Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Medical. Friday, Eye. Lectures, at 5.15 p.m. each day, will be given as follows; Monday, Cerebral Congestion. Tuesday, Peribronchial Tuberculosis. Wednesday, The Treatment of Haemoptysis. Thursday, Mental Defectives and Legislation.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		OCTOBER.
4	Fri.	London: Central Ethical Committee, 2 p.m.
5	Sat.	London: Science Committee, 11 a.m.
7	Mon.	London: Colonial Committee, 2 p.m. London: Naval and Military Committee, 4 p.m.
8	Tues.	Dorset and West Hants Branch, Wimborne, 3 p.m. Dartford Division, Dartford, 3.15 p.m. London: Public Health Committee, 3.30 p.m. Lambeth Division, Surrey Masonic Hall, 4 p.m. Liverpool Division, Liverpool, 4 p.m.
9	Wed.	London: Medico-Political Committee, 2 p.m. Central Division, Birmingham, 3.30 p.m. Lancashire and Cheshire Branch Council, Manchester, 4.30 p.m.
10	Thur.	South Midland Branch, Northampton, 2.30 p.m. Birmingham Branch, Birmingham, 3.30 p.m.; Annual Dinner, 7.30 p.m.

Date.		Meetings to be Held.
		OCTOBER (*continued*).
11	Fri.	London: Journal Committee, 2 p.m. Hampstead Division, Finchley Road, 8.15 p.m.
15	Tues.	London: Organization Committee, 2.30 p.m. Brighton Division, Brighton, 4 p.m.
16	Wed.	Dorset and West Hants Branch, Wimborne.
17	Thur.	Metropolitan Counties Branch Council, 4 p.m. Altrincham Division, Knutsford, 4.30 p.m.
23	Wed.	London: Finance Committee, 2.30 p.m.
30	Wed.	Central Council, London, 2 p.m.
		NOVEMBER.
21	Thur.	Metropolitan Counties Branch Council, 4 p.m.
		DECEMBER.
19	Thur.	Metropolitan Counties Branch Council, 4 p.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 12TH, 1912.

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STATE SICKNESS INSURANCE COMMITTEE.

PUBLIC MEDICAL SERVICE SCHEMES.

THE model public medical service schemes (A) based on a capitation system of payment, and (B) based on payment per attendance system, approved by the State Sickness Insurance Committee, were published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of September 14th, p. 290. At its meeting on October 3rd the State Sickness Insurance Committee, as reported elsewhere (see p. 401), directed that the Public Medical Service scheme (C) of the subcommittee and Dr. Ledward's scheme (D), which is a modification of (C), should be published without comment by the Committee for the information of members of the Association. The Committee is of opinion that the principle underlying these schemes—namely, co-operation between the profession and the approved societies—is one which is new as applied to a Public Medical Service, and may be raised at the Special Representative Meeting for decision.

C.

PUBLIC MEDICAL SERVICE SCHEME

(BASED UPON A PAYMENT PER ATTENDANCE SYSTEM)

FOR THE PROVISION OF MEDICAL ATTENDANCE AND TREATMENT FOR PERSONS INSURED UNDER THE NATIONAL INSURANCE ACT, AND PERSONS NOT SO INSURED, TO BE WORKED BY THE MEMBERS OF THE LOCAL MEDICAL PROFESSION IN CO-OPERATION WITH THE SUBSCRIBERS.

Object and Constitution.

1. *Object.*—The Public Medical Service of . . . . . (hereinafter called the Service) is an Association of Medical Practitioners, constituted to organise the provision of medical attendance and medicine for insured persons and others unable to pay the ordinary medical charges otherwise than under some co-operative system.

2. *Area.*—The area of the Service is . . . .*

3. *Members.*—Any duly registered medical practitioner practising or residing within the area may become a member of the Service upon signing an undertaking to conform to these rules. Members may be either Honorary or Acting. An Honorary Member is a member who has signed the undertaking to abide by these rules but who does not engage to give medical attendance in connection with the Service. An Acting Member may be either Schedule or Non-Schedule. A "Schedule Member" is one who agrees to attend subscribers at the rate per visit or consultation hereinafter laid down.

*As far as possible the area of a Public Medical Service should correspond with one or more of the areas defined under the provisions of the National Insurance Act, but no set rule would meet all cases. Divisions must therefore draft a Rule to suit their local conditions. In the case of a large area, such as a County, Sub-Divisions might be formed, each with its own Committee income limit, officers and officials.

A "Non-Schedule" member, while binding himself by all other rules of the Service, adopts a higher minimum than that hereinafter laid down, and attends subscribers on the understanding that the difference between his fee and the fee allowed by the Service is paid by the subscriber.

4. *Officers, Medical Trustees and Committee.*—The Officers of the Service shall be a Chairman, Honorary Treasurer, and an Honorary Secretary, all of whom must be members of the Service. The Committee shall consist of the above Officers, together with the Medical Trustees (who must be Members of the Service) and.....members, of whom..... members shall be elected by the local Division or Branch of the British Medical Association and..... members by the Service. All the Officers, Medical Trustees and Members of the Committee shall retire at the Annual General Meeting, but shall be eligible for re-election.

Meetings and Government.

5. *Annual General Meeting.*—An ordinary general meeting of the members, called "The Annual Meeting," shall be held before March 1st of each year.* At this meeting the Officers, Medical Trustees, and members of the Committee shall be elected, with the exception of those to be elected by the local Division or Branch of the British Medical Association, and the Annual Report of the Committee and Statement of Accounts of the Service for the preceding year shall be presented.

6. *Trustees of the Service.*—The two Medical Trustees shall be elected by the Annual General Meeting on the nomination of the Committee, who, with two Trustees elected by the Subscribers, shall constitute the Trustees of the Service.

7. *Casual Vacancies.*—In the event of any Medical Trustee, Officer, or Member of Committee resigning, dying, being incapacitated through any cause, or being removed from office, the vacancy shall be filled by election at a Committee Meeting to be held as soon as possible after such vacancy has occurred. In the event of either of the Trustees elected by the Subscribers becoming similarly incapable of service, the vacancy shall be filled in the manner by which the Subscribers' Trustees were appointed in the first instance.

8. *Special Meeting.*—A special general meeting of the members may be convened at any time by the Committee, and shall be convened by the Secretary at the earliest practicable day, and in any event within twenty-one days of receiving the requisition of.....members.

9. *Quorum.*—At a general meeting (ordinary or special).....members shall be a quorum.

10. *Notice.*—Subject to the provision hereinafter contained for fourteen days' notice in the case of a proposed alteration of Rules, at least seven days' notice of every general meeting and of the business thereof shall be given by the Secretary to all members, but the accidental omission to give notice to any member shall not invalidate the proceedings of a meeting. The notice of a general meeting (and also a member's requisition for a general meeting) shall state the agenda thereat, and no decision shall be arrived at on any matter not arising out of the Agenda.

11. *Powers of Committee.*—The Committee may make Standing Orders for its meetings, and fix a quorum, and settle and determine any question which may arise as to the interpretation of any of the Rules of the Service for the time being in force. Subject to such regulations not inconsistent with these Rules as may from time to time be prescribed by the members in general meeting, the Committee shall deal with all such matters as the appointment of dispensers, clerks, collectors and auditors, the making of arrangements with chemists, and the leasing of premises (if any) and shall manage all the other affairs of the Service not required to be dealt with at a general meeting.

12. *Members not to hold Contributory Contract Appointments.*—No member shall hold any appointment as Medical Officer to a club, friendly society, dispensary or other form of contributory contract practice so far as regards insured persons, or conduct any club of his own except with the consent of the Committee.

13. *Members not to Accept Lower Fees.*—No member shall take, or continue to treat, any insured person at lower fees than those prescribed in the Schedule for payment for attendance.

14. *Canvassing and Advertising.*—No canvassing or advertising shall be permitted by, or on behalf of, any member of the Service.

No member shall himself receive, or employ a collector to collect subscriptions from contributory contract patients.

15. *Expulsion of Members.*—(a) *By Vote of Members.*—If any member shall wilfully commit any breach of the Rules of the Service, or shall be guilty of conduct tending to increase unduly his claim to a share in the distribution of the moneys collected, he shall have his attention called to such breach of the Rules or such conduct by the Committee, and after having been given an opportunity to offer an explanation to the Committee, he may be expelled from membership by the vote of two-thirds of the members present and voting at a general meeting, subject to a right of appeal to the State Sickness Insurance Committee of the British Medical Association, or such other body as may be agreed upon at the time the Rules are adopted. Notice of the charge and of the alleged breach of the Rules on which it is based shall be given to the member implicated at his last known address at least seven days before the date of the meeting called to consider such alleged breach, and the fact that such notice has been sent by registered post shall be sufficient evidence of service.

(b) *By action of a Division of the British Medical Association.*—If, at a meeting of any Division of

* The date March 1st is mentioned because if these Services are set up generally throughout the country and especially if they become co-ordinated in a centralised scheme, as will probably be desired, it will be necessary that reports as to their progress should be made to the Council of the Association by the end of March, in order that a general report should be presented to the Annual Representative Meeting.

the British Medical Association within the area of the Service, a member of the Service shall by a two-thirds majority of those present and voting be found guilty of violation of a rule or resolution of the Division with reference to professional conduct, or of other conduct detrimental to the honour and interests of the profession or calculated to bring the profession into disrepute, he shall, subject to a right of appeal as provided for in the Regulations of the Association, cease to be a member of the Service.

16. *Alteration of Rules.*—These Rules shall not be altered except with the consent of two-thirds of the members present and voting at a general meeting, provided also that fourteen days' notice of the terms of any proposed alteration of the Rules shall have been given in the notice convening the meeting.

Subscribers.

17. *Admission.*—The Committee shall determine the Income Limit for admission as a subscriber to the Service; but in no case shall the income exceed £2 per week from all sources, where the subscriber seeks attendance at the schedule fees; and it shall be competent for the Committee, in cases referred to it by the societies or associations of subscribers (hereinafter called "the societies"), to grant admission only on a satisfactory report, after medical examination by an acting member. Should cases arise in which there may be doubt as to the eligibility of the applicants, they shall be referred to the Committee for its consideration, and the decision of the Committee on the question of eligibility shall be final. If any subscriber shall in the opinion of the Committee cease to be eligible, his name shall be removed from the list of subscribers.

NOTE.—Arrangements may be made by the Committee, if they think fit, whereby persons whose income from all sources exceeds two pounds per week but does not exceed £160 per annum may be admitted to the benefits of the service, but only on the understanding that the fees chargeable for attendance may be higher than the schedule rate, and that in such cases the difference between those higher charges and the schedule rate must be paid by the person receiving attendance.

18. *Subscriptions.*—The Societies shall levy on all subscribers to this Service a subscription which shall be sufficient to meet the estimated cost of medical attendance for the ensuing year, and in the event of such subscription being inadequate, the deficit shall be met by an increase of the subscription or by such other means as the Societies may decide.

19. *Subscribers' Cards.*—Every subscriber shall on admission be supplied with a card which shall refer to these rules and on which shall be printed such of these rules and such information as the Committee and the Societies may think necessary. Failing production of the card, attendance may be refused.

20. *Choice of Medical Attendant.*—(a) A subscriber shall be entitled to the attendance of any acting member of the Service, subject only to the consent of such member to attend, and also to the usual ethical custom of the profession governing change of a medical attendant during an illness.

(b) As in ordinary private practice the contract of the subscriber shall be with his medical attendant only, and not with the Service or other members of the Service.

(c) The member in charge of a case may, on the ground of wilful disobedience or misconduct on the part of the subscriber, refuse further attendance, and shall in any such case forthwith notify the Committee and the subscriber's Society.

21. *Privileges of Subscribers.*—A subscriber in accordance with these rules, shall be entitled to receive from an acting Member of the Service, so long as his subscriptions are not in arrear:—

(i.) Ordinary medical and surgical treatment at the surgery of his medical attendant during surgery hours.

(ii.) When his condition requires it, ordinary medical and surgical treatment at his place of dwelling (when that is within two miles of his medical attendant's house), other than night calls and special visits as hereinafter defined.

(iii.) All needful medicines and first dressings for wounds and other injuries.*

NOTE.—The fund of the Service will only be liable for the schedule fees.

22. *Limitation of Benefits.*—Subscribers shall not be entitled in consideration of their ordinary subscriptions:—

(i.) To medical service in respect of any of the following matters, except upon payment by the patient of the fees specified in the following minimum Table:—

	£ s. d.
(a) Confinements ... from	1 1 0
(b) Miscarriages ... from	10 6
(c) Vaccinations ... from	2 6
(d) Fractures	10 6 and upwards.
(e) Dislocations (at discretion of attendant).	
(f) Consultations: Ordinary attendant	2 6 in addition to ordinary fee.
Consultant (at discretion of consultant).	
(g) Administration of a general anæsthetic ...	10 6 and upwards.
(h) Night visits, *i.e.*, visits made between 8.0 p.m. to 8.0 a.m. in response to calls received between those hours	2 6 in addition to ordinary fee.
(i) Special visits, *i.e.*, visits made in response to, and on the same day as, calls received after 10.0 a.m. or made on Sundays, at the desire of the subscriber	1 0 in addition to ordinary fee.
(j) Certificates [and Reports]	1 0
(k) Reports	2 6 and upwards.

* In any Service not providing medicines this provision will be deleted.

(ii.) To medical service in respect of illness the consequence of personal misconduct.

(iii.) To medical attendance in respect of

(a) Illness arising from confinement or miscarriage within one month.

(b) Operations requiring local or general anæsthetics;

(c) Operative dentistry;

the fees for which shall be specially arranged.

(iv.) To cod liver oil, linseed meal, leeches' serum, oxygen.*

(v.) To bottles,* jars,* dressings or bandages (except for first dressings),

(vi.) To special examinations, *e.g.*, Refractions, X-ray, bacteriological, &c.

(vii.) To examinations, court attendances, &c., under Common Law and Workmen's Compensation, Employers' Liability, and other Statutes.

(viii.) Attendance beyond a two mile radius from the house of the medical attendant.†

(ix.) To medical attendance in respect of tubercular disease, when actually in receipt of sanatorium benefit under the National Insurance Act.

Finance.

23. *Fees.*—The following fees shall be those paid to Schedule members:—

Visit	2s.
Visit and medicine ...	2s. 6d.
Consultation in surgery...	1s. 6d.
Do., with medicine ...	2s.
Repetition of medicine (without consultation) sufficient for not less than two days... ...	1s.

24. *Money collected.*—All moneys collected shall be paid into a bank, and placed to the credit of the Trustees of the Service, who shall be four in number, two of whom shall be appointed by the subscribers and two by the members of the Service as provided for in Rule 6.

25. *Payment of Fees.*—(a) Every member shall be provided with a slip, whether in the form of a card or otherwise, with a counterfoil, in the general form set out in the Appendix hereto.

(b) Each member shall duly enter on such slip the particulars of each visit paid or consultation made, and shall return monthly to the office of the Service any slip on which entries have been made. Should the illness for which he is attending a subscriber continue over the date on which the slip should be returned, the slip should nevertheless be sent in and further entries made on a second (or third) slip which should be clearly marked as a continuation slip.

(c) It shall be the duty of the Secretary of the Service to classify such slips, and as soon as possible after each quarter day lay before the Trustees a statement of the amount due for professional services to each member of the Service, and on the direction of the Trustees such sum shall be paid to the member forthwith out of the moneys collected, always providing that it shall be competent for the Committee to suspend payment of any member's account pending an enquiry into such account when the Trustees consider such enquiry is desirable and have referred the matter to the Committee for that purpose.

26. *Investigation of Claims.*—It shall be the duty of the Committee, or a sub-committee appointed by the Committee for this purpose, to examine not less often than every three months the slips sent in by members with a view to the detection of any conduct tending to increase unduly the claims of members to share in the distribution of the moneys collected, and it shall be competent for the Committee, either originally, or on the report of any such sub-committee, to summon before it any member whom the Committee may consider to have been guilty of any such conduct and to caution or admonish him or, in the case of a repetition of such conduct after such caution or admonition, to refer the question of his expulsion to the members under the provisions of the rule relating to expulsion.

27. *Sale of Member's Interest*—A member may sell to any person qualified for membership his interest in the Service. The purchaser of a member's interest shall become entitled thereto upon becoming a member of the Service.

28. *List of Members.*—The Committee shall draw up, and from time to time revise, a list of all acting members, and shall classify them under the headings Schedule and Non-schedule members, and shall cause a copy of the said list to be handed to each subscriber on admission. The said list shall also contain a clear intimation that Schedule members agree to attend subscribers at the rates set forth herein, and that Non-schedule members attend only at higher rates than these, to be agreed in every case privately between the subscriber and the member, and that in the case of Non-schedule members the subscription covers only so much of the fee as is equal to a fee at the rates charged by Schedule members set forth above, and that the balance of the fee is payable by the subscriber as an addition to his subscription.

29. *Interpretation.*—In these rules, where the context does not forbid, words importing the masculine gender shall include the feminine, and words in the singular shall include the plural, and *vice versa*.

* In any Service not providing medicines this provision will be deleted.

† It is suggested that mileage may be dealt with in one or other of the following ways:—

(a) by charging a definite fee to the subscriber in proportion to the distance;

(b) by an increase of his subscription, which would take the place of an extra fee being charged for mileage.

APPENDIX.

FORM OF MEDICAL PRACTITIONER'S SLIP.

ATTENDANCE SHEET.

This portion to be given to Subscriber at first attendance.			This portion to be retained by Doctor.			
..... Medical Service. ..... Society.			..... Medical Service. ..... Society.			
	Name and Address of Subscriber.				Name and Address of Subscriber.	
Dr.....	....		Dr.....		....	
Date.	Fee.	Initials of Doctor.	Date.	Fee.	Diagnosis and Notes of Progress.	Initials of Doctor
To be sent in by Subscriber at end of attendance, or in case of long illness at least once a month.			To be sent in by Doctor at end of attendance, or in case of long illness at least once a month.			

SCHEME D.

BY DR. H. LEDWARD.

As requested by the Public Medical Service Subcommittee, I beg to submit an amplification of Scheme C for the consideration of the State Sickness Insurance Committee; in doing so, perhaps I may be allowed to state briefly the main reasons which caused me to dissent from approval of C as printed.

1. Scheme C, as at present drawn up, appears to me to be incomplete; it contains in detail rules governing the conduct of the medical staff of the service, but there is no provision for the organization and control of the subscribers.

2. If we are to obtain the co-operation of the Societies to the extent of guaranteeing the solvency of the fund (Rule C 17), it would appear to be necessary for them to have a voice in administering and altering rules directly affecting the finance of the scheme, so long as there is no infringement of our cardinal point of freedom from lay control in all questions relating to professional conduct.

3. No mention is made in C of any method of dealing with a surplus. Such a scheme will prove very much more attractive to the societies if in the proposed rules it is clearly brought out that they retain any advantage accruing from a due discipline of their members in using the benefits of the service.

Memorandum to Show the Main Points of Difference Between this Scheme and "C."

NOTE.—It has not been found possible to make the numbering of the rules correspond to those in "C," but the main headings are the same and are placed in the same order for the most part.

1. The term "Service" includes the whole organization and consists of (*a*) the "Contributors" and (*b*) the "Medical Officers," each with their own meetings, committee, and special rules.

2. A joint committee, equally representative of (*a*) and (*b*), with an independent chairman, deals with questions in which both are interested (for example, admission of contributors and financial arrangements); this committee also has the power of veto over the actions of the Contributors' Committee, and thus acts as a co-ordinating authority to ensure harmonious working, but has no power in relation to the Medical Committee.

3. Rules 14–21 apply specially to contributors, and correspond to Rules 16–21 in "C," with additions.

4. Rules 22–26, relating only to the conduct of medical officers, are identical with Rules 11–14, with an additional rule dealing with "medical attendance forms." These rules and their administration are under the control of the medical officers alone.

5. The essential feature of this scheme is in connexion with the financial provisions. A distinction is drawn between the two sources from which the contributions are derived: the "Statutory Fund," consisting of moneys paid by the Commissioners to insured persons in respect of their medical benefit, and the "Supplementary Fund," consisting of a voluntary levy. Whilst the whole of the Statutory Fund is earmarked for medical attendance, the surplus of the Supplementary Fund is returned to the respective societies; in this way an elastic pool is provided, the solvency of which is guaranteed by and (with proper safeguards) under control of the benficiaries.

In framing these rules the intention has been to keep supreme the control of the medical officers over all the medical arrangements of the service. With the help of the other members of the Subcommittee it is believed that this has now been accomplished.

D.

PUBLIC MEDICAL SERVICE SCHEME

(BASED UPON A PAYMENT PER ATTENDANCE SYSTEM IN WHICH THE INSURANCE RISK IS BORNE BY THE BENEFICIARIES)

FOR THE PROVISION OF MEDICAL ATTENDANCE AND TREATMENT FOR PERSONS INSURED UNDER THE NATIONAL INSURANCE ACT AND PERSONS NOT SO INSURED.

OBJECT AND CONSTITUTION.

1. *Object.*—The *first object of the Public Medical Service for the . . . (area) . . . (hereinafter called the service) shall be to provide medical attendance and treatment for insured persons who are members of an approved society.

2. *Area.*—As in C 2.

3. *Contributors.*—Any member of an approved society insured under the National Insurance Act may become a contributor to the service in accordance with the rules appertaining to contributors.

4. *Medical Officers.*—As in C 3, but for "member," read "medical officer"; for "subscriber," read "contributor."

5. *Committees and Officers.*—The service shall be conducted by three committees: (*a*) The Contributors' Committee, (*b*) the Medical Committee, and (*c*) the Joint Committee.

(*a*) The Contributors' Committee shall consist of a chairman and . . . members elected by the contributors.

(*b*) The Medical Committee shall consist of a chairman, honorary treasurer, and an honorary secretary, all of whom must be medical officers of the Service, together with . . . medical officers, of whom . . . shall be elected by the local Division or Branch of the British Medical Association, and . . . by the medical officers of the Service.

(*c*) The Joint Committee shall consist of three members of the Contributors' Committee and three members of the Medical Committee together with a chairman who shall be neither a contributor nor a medical officer, and who

* This suggests that there are other objects; these are: provision of medical attendance for (1) dependants of the insured, (2) other persons not insured, and (3) deposit contributors; but for simplicity these rules deal only with insured members of approved societies.

shall be elected at the first meeting of the Joint Committee.

Meetings and Government.

6. *Annual Contributors' Meeting.*—An ordinary general meeting of contributors to the service, called "The Annual Contributors' Meeting," shall be held before March 1st of each year. At this meeting the annual report of the Joint Committee and statement of accounts of the service for the preceding year shall be presented, and the chairman and members of the Contributors' Committee shall be elected. They shall hold office for one year, but shall be eligible for re-election. The contributors' members of the Joint Committee shall also be elected at this meeting on the nomination of the Contributors' Committee; they shall hold office for . . . . years, but shall be eligible for re-election.

7. *Annual Medical Meeting.* — An ordinary general meeting of the medical officers, called "The Annual Medical Meeting," shall be held before March 1st of each year. At this meeting the annual report of the Joint Committee and statement of accounts of the service for the preceding year shall be presented and the officers and members of the Medical Committee shall be elected. They shall hold office for one year, but shall be eligible for re-election. The medical members of the Joint Committee shall also be elected at this meeting on the nomination of the Medical Committee; they shall hold office for . . . years, but shall be eligible for re-election.

8. *Special General Meeting.*—(*a*) A special general meeting of contributors may be convened at any time by the Contributors' Committee, and shall be convened by the Secretary at the earliest practicable day, and in any event within twenty-one days of the receipt of a requisition signed by . . . contributors.

(*b*) A special general meeting of medical officers may be convened at any time by the Medical Committee, and shall be convened by the Honorary Secretary at the earliest practicable day, and in any event within twenty-one days of the receipt of a requisition signed by . . . medical officers.

9. *Quorum.*—(*a*) At a general meeting of contributors (ordinary or special) . . . members shall be a quorum.

(*b*) At a general meeting of medical officers (ordinary or special) . . . members shall be a quorum.

10. *Notice.*—Subject to the provision hereinafter contained for fourteen days' notice in the case of a proposed alteration of rules, at least seven days' notice of every general meeting (contributors' or medical) and of the business thereof shall be given by the Secretary to all contributors and medical officers respectively, but the accidental omission to give notice to any individual shall not invalidate the proceedings of a meeting. The notice of a general meeting (and also a requisition for a general meeting) shall state the agenda thereat, and no decision shall be arrived at on any matter not arising out of the agenda.

Powers and Duties of Committees.

11. *Joint Committee.*—The Joint Committee may make standing orders for its meetings, and fix a quorum, and settle and determine any question which may arise as to the interpretation of any of the rules of the service for the time being in force, excepting those rules which refer solely to the conduct of medical officers. No new rule (or alteration of existing rule) appertaining to contributors, although it has received the sanction of a general meeting of contributors (as provided for in Rule 35), shall come into force without the approval of the Joint Committee, and the Joint Committee itself may make regulations controlling the conduct of contributors should the necessity arise.

Disputes arising between the Contributors' Committee and a contributor or society shall be referred to the Joint Committee, whose decision in all cases shall be final.

The Joint Committee shall appoint the secretary of the service and fix his salary, and shall deal with all such matters as the appointment of dispensers, clerks, collectors, and auditors, the making of arrangements with chemists, and the leasing of premises (if any), and shall manage all the other affairs of the service which have not been delegated either to the Contributors' or to the Medical Committee.

It shall be the duty of the Joint Committee to admit contributors to the service, and it shall be competent for the committee to grant admission in particular cases, only on a satisfactory report, after medical examination by a medical officer. Should cases arise in which there may be doubt as to the eligibility of the applicants, the decision of the Joint Committee shall in all cases be final.

The Joint Committee shall appoint four of their number to act as trustees of the service, two to be representative of the contributors and two of the medical officers. In the event of any trustee resigning, dying, becoming incapacitated through any cause, or being removed from office, the vacancy shall be filled by the remaining member of the Joint Committee representative of contributors or medical officers respectively.

It shall be the duty of the Joint Committee at the end of each year to determine what shall be the contribution to the service for the succeeding year.

12. *Contributors' Committee.*—The Contributors' Committee may make standing orders for its own meetings and fix a quorum. It shall administer the rules governing the conduct of contributors and deal with any breach of such rules on the part of a contributor, and shall make arrangements for the collection of contributions and pay the same to the account of the trustees of the service at the . . . Bank. The disciplinary control of contributors shall be vested in the Contributors' Committee, any action taken by this Committee shall stand good only if approved by the Joint Committee, to which body it shall be forthwith reported.

13. *Medical Committee.*—The Medical Committee may make standing orders for its own meetings, and fix a quorum, and settle and determine any question which may arise as to the intepretation of any rule referring solely to the conduct of medical officers.

It shall be the duty of the Medical Committee to enrol medical officers of the service, and to prepare lists of schedule and non-schedule medical officers for the use of contributors.

The Medical Committee shall have power to deal with any breach of the rules on the part of a medical officer, as hereinafter provided.

Contributors.

14. *Admission.*—An intending contributor to the service shall make application to the Joint Committee on a prescribed form on which he shall state: (*a*) His average income per annum from all sources; (*b*) that to the best of his knowledge and belief he is in sound health; and (*c*) that he agrees to conform to the rules appertaining to contributors. Where his average income exceeds £104 per annum he shall only be admitted as a contributor to the service on the understanding that a medical officer may charge fees for attendance upon him at a higher rate than that prescribed in the schedule, in which case the excess beyond the schedule fee must be paid by the contributor direct to the medical officer attending him; and should his income at any future date exceed £104 per annum, he shall be deemed to have agreed to the payment, if required, of the excess beyond the schedule fee as hereinbefore stated.

Should the declaration contained in (*b*) be shown at any future date to the satisfaction of the Contributors' Committee to have been false, he shall cease to be a contributor to the service and shall forfeit all contributions paid, subject to a right of appeal to the Joint Committee.

15. *Contributions.*—The contributions to the service of a person insured under the National Health Insurance Act, 1911, shall consist of the sum paid to him by the Insurance Commissioners in respect of his medical benefit, with, in addition, such sums as the Joint Committee may from time to time determine, always provided that the total of his contributions be not less than 3d. per week.

16. *Arrears.*—A contributor whose contributions are . . . weeks or more in arrear, having been given at least one week's notice in writing by the Contributors' Committee, shall be struck off the list of contributors and forfeit all claim to the benefits of the service. Such contributor shall not be readmitted except on payment of all arrears or such part thereof as may be approved by the Contributors' Committee.

17. *Contributors' Cards.*—Every contributor shall on admission be supplied with a card, which shall refer to these rules, and on which shall be printed such of these rules and such information as the Contributors' Committee may think necessary, subject to the approval of the Joint Committee.

18. *Collection of Contributions.*—The contributions shall be collected at such times and in such manner as the Contributors' Committee from time to time decide, and shall be duly acknowledged on the contributor's card.

19. *Benefits.*—(*a*) On presentation of his card a contributor shall be entitled to the attendance of any schedule medical officer, subject only to the consent of such officer to attend, and also to the usual ethical custom of the profession governing change of medical attendant during an illness.

(*b*) Should a contributor elect to consult a non-schedule officer, he shall himself be responsible for payment of the excess of the fee over and above that provided in the schedule.

(*c*) Should the income of a contributor from all sources be over £104 per annum and the medical officer of his choice be unwilling to treat him at the scheduled rate, the contributor can still receive treatment at the hands of such officer on agreeing himself to pay the additional fee.

(*d*) As in ordinary private practice the contract of the subscriber shall be with his medical attendant only and not with the service or other members of the service.

(*e*) The medical officer attending a contributor may, on the ground of wilful disobedience or misconduct on the part of such contributor, refuse further attendance, in which case he shall forthwith report such refusal, with the reasons therefor, to the Medical Committee, and the Medical Committee shall in turn report such refusal to the Contributors' Committee, but it shall be competent for the Medical Committee before making any such report to refer the matter back to the medical officer who has refused attendance for further consideration.

(*f*) Should a contributor be unable to obtain the services of any medical officer, he shall report the matter to the Medical Committee, who shall take what steps appear necessary to place him under the care of some officer of the service.

(*g*) A contributor in accordance with the above rules shall be entitled to receive from a medical officer so long as his contributions are not in arrear: (i), (ii), (iii) C 21.

20. *Limitation of Benefits.*—As in C 22.

21. *Medical Attendance Forms.*—When a contributor seeks the services of a medical officer he shall give notice to the Secretary in writing on a prescribed form within forty-eight hours, and the Secretary shall provide him with a Medical Attendance Form and counterfoil to be handed to the medical officer whom he consults. The counterfoil shall be retained by the contributor after the first attendances have been entered by the medical officer, and shall be again presented to the medical officer at each succeeding attendance, and having been duly filled in for each month, shall be forwarded by the contributor to the Secretary not later than the first week in the succeeding month, otherwise the trustees may not accept liability for payment. Where the illness extends into the succeeding month, the contributor shall apply, in the space provided on the counterfoil, for a continuation attendance form to be dealt with in the same manner as the first attendance form.

Medical Officers.

22. *Medical Officers not to hold Contributory Contract Appointments.*—As in C 12, but for "member" read "medical officer of the service."

23. *Medical Officers not to accept Lower Fees.*—As in C 13, but for "member" read "medical officer of the service."

24. *Canvassing and Advertising.*—As in C 14, but for "member" read "medical officer of the service."

25. *Expulsion of Medical Officers.*—As in C 15, but for "member" read "medical officer of the service."

26. *Medical Attendance Forms.*—The medical officer shall duly enter on the medical attendance form and counterfoil handed to him by the contributor details of his attendance as set down on the prescribed form, and shall forward the attendance form duly filled in for each month to the Secretary not later than the first week of the succeeding month, otherwise the trustees may not accept liability for payment.

Finance.

27. *Fund of the Service.*—All moneys paid into the bank by the Contributors' Committee shall be held by the trustees and form the fund of the service. Such fund shall be used only to defray the cost of medical attendance and treatment upon the contributors and such administrative expenses as are incurred by the Joint and Contributors' Committees. In the case of the Medical Committee the expenses incidental thereto shall be met out of a fund provided by a small yearly subscription from each of the medical officers, administered by the Honorary Treasurer of that Committee.

28. *Fees.*—The following fees shall be those paid to schedule medical officers for ordinary medical and surgical attendance upon contributors and for the supply of the necessary medicine:

	s.	d.
Visit	2	0
Visit and medicine	2	6
Consultation at surgery	1	6
Ditto, with medicine	2	0
Repetition of medicine (without consultation) sufficient for not less than two days	1	0

Where either the contributor or the medical officer prefer it, arrangements may be made with chemists for the supply of medicine to contributors, and the chemists shall be paid direct by the trustees out of the fund of the service according to a specified schedule.

29. *Payment of Medical Accounts.*—(*a*) It shall be the duty of the Secretary of the service each month to check the medical attendance forms and counterfoils received from the medical officers and contributors respectively, and as soon as possible after each quarter-day to lay before the trustees the medical attendance forms and a statement of the amount due to each medical officer.

(*b*) On the direction of the trustees the amount due to each medical officer shall be paid forthwith out of the fund of the service, always providing that it shall be competent for the Medical Committee to suspend payment of any account pending an inquiry into such account, when the trustees consider such inquiry desirable, and have referred the matter to the Medical Committee for that purpose.

(*c*) It shall be the duty of the medical members of the Joint Committee to examine not less often than every three months the attendance forms sent in by the medical officers, with a view to the detection of any conduct tending to increase unduly the claims of medical officers, and it shall be competent for these members of the Joint Committee to summon before them any medical officer whom they consider may have been guilty of any such conduct, and, after giving him an opportunity to offer an explanation of his account, to caution or admonish him, or in the case of the repetition of such conduct, after such caution or admonition, to refer the question of his expulsion to a meeting of medical officers, as provided for in Rule 25.

30. *Statement of Accounts of the Service.*—At the end of each year the trustees shall prepare a statement of accounts of the service. In such statement the fund of the service shall be shown divided into (*a*) the Statutory Fund, consisting of sums paid by contributors up to the amount received by them from the Insurance Commissioners in respect of medical benefit; and (*b*) the Supplementary Fund, consisting of such additional sums paid by contributors as the Joint Committee shall have prescribed.

The Supplementary Fund shall be so divided as to show separately the amounts received on behalf of the members of each approved society.

The accounts of the medical officers for attendance upon the contributors shall appear as paid out of the Statutory Fund so far as that fund permits, and the balance of the accounts in respect of the members of each approved society shall be shown as paid out of the Supplementary Fund standing in the name of each society.

31. *Surplus.*—Any surplus remaining in the Supplementary Fund, after the payment of all medical accounts, shall be dealt with as follows:

One-third shall be credited to the Supplementary Fund of each society for the ensuing year, and the remaining two-thirds paid back to the society in whose name it stands.

Should there be any surplus remaining in the Statutory Fund, after the payment of all medical accounts, such surplus shall not be returned to the societies or to the contributors, but shall be retained for the purpose of

medical benefit as defined in the National Insurance Act and dealt with as the Joint Committee may decide.

32. *Deficit.*—Should the Supplementary Fund standing in the name of any society show a deficit, after payment of all medical accounts, such deficit shall be made up out of the common funds of such society, to be recovered by means of an increased contribution from their members during the ensuing year, or otherwise as the society may decide.

33. *Sale of Medical Officers' Interest.*—As in C 27, but for "member" read "medical officer."

RULES.

34. *Alteration of Rules.*—The rules appertaining to contributors shall not be altered except with the consent of two-thirds of the contributors present and voting at a general meeting, provided also that fourteen days' notice of the terms of any proposed alteration of the rules shall have been given in the notice convening the meeting, but such alteration shall not come into force until it has been approved by the Joint Committee.

The rules appertaining to medical officers shall not be altered except with the consent of two-thirds of the medical officers present and voting at a general meeting, provided also that fourteen days' notice of the terms of any proposed alteration of such rules shall have been given in the notice convening the meeting.

In the case of all other rules the Joint Committee itself shall make such alterations as may from time to time be required, and such alterations shall come into force after due notice has been given, always provided that if any question relating to the professional conduct of medical officers be involved such alteration must first receive the approval of the Medical Committee.

35. *Interpretation.*—In these rules, where the context does not forbid, words importing the masculine gender shall include the feminine, and words in the singular shall include the plural, and vice versa.

SCHEMES FOR THE TREATMENT OF TUBERCULOSIS.

THE Marylebone Provisional Medical Committee met on October 7th to consider the model scheme for the treatment of tuberculosis suggested by the State Sickness Insurance Committee of the British Medical Association.

It was decided unanimously to send the following statement to the local subcommittee for sanatorium benefits through the medical officer of health.

N.B.—As some confusion may arise regarding the annotation of the word "tuberculosis," it should be noted that the scheme presented herewith applies only to notifiable pulmonary tuberculosis.

Memorandum.

The committee approves in the main the suggestions with regard to the staff (Sections 1 to 4 Model Scheme), but considers that in certain districts where the services of specialist consultants can be obtained easily the rigid rule requiring that the chief tuberculosis officer must give the whole of his time to the work might be relaxed. In the district of Marylebone, for instance, it would seem desirable that some of the specialists attached to chest hospitals who reside in the district might be employed in a consultative capacity. It is not quite clear whether such procedure would be permitted under Section 4 of the model scheme.

In the interests of efficiency of the service, of economy, and of the necessities of medical education, some provision should be made for the inclusion in the scheme of the out-patient departments of the voluntary hospitals.

It seems desirable, therefore, that when a hospital is available in a district an attempt should be made to establish in connexion with it the central tuberculosis institute, and thus to make use of the services of its consulting staff.

Certain difficulties may arise in the elaboration of details, but it seems improbable that these will be any that are totally incapable of satisfactory adjustment.

The committee considers that in a model scheme for the treatment of tuberculosis by the State an opportunity should be given to consider the utilization of existing institutions.

The committee considers that the procedure in providing treatment as outlined in Sections 5 to 8 of the model scheme could be simplified and at the same time improved.

In the model scheme the procedure commences with an application for sanatorium benefit on the part of the insured person and this application is to be accompanied by a medical certificate even though the patient has been already notified. The next step consists in the filling up of Form Med. 2 by the private medical attendant, and the third step a consultation with the tuberculosis officer, at which the form of treatment is decided; and, apparently, if the treatment is to be domiciliary, there is to be another consultation when this method of treatment has been approved by the Insurance Committee. The committee considers that this procedure is somewhat cumbrous and does not make full use at the proper time of the special knowledge possessed by the tuberculosis officer and the general practitioner respectively.

The administration of the sanatorium benefits of the Insurance Act can become fully effective only by the cordial co-operation of all concerned and by the due recognition by each group of workers of the special knowledge possessed by the other groups of workers.

The "groups" of workers immediately affected by this problem are:

1. The Insurance Committee and its Sanatorium Subcommittee, who are responsible for financial arrangements and for the general control of the work in the area.
2. The medical officer of health, who is the chief administrative officer.
3. The tuberculosis officer, who supplies special medical knowledge and acts as consultant.
4. The general practitioner.

The work of the general practitioner is perhaps less easy to define, but is at least as important as that of any of the other three groups.

In the first place, he is the private medical attendant of the insured person, and his intervention is necessary to secure that the treatment is adapted to the individual patient rather than directed merely to the disease from which he suffers. The general practitioner is familiar in most instances not only with the present morbid state of the patient, but also with his character, his habits, and his past history; he can understand and give counsel in the peculiar circumstances, and is not likely to be blinded by the veil of pride which so often hides the tale of poverty. On the other hand, he will not be misled by the dishonesty of the grasping; he knows whether aid, financial or otherwise, can be obtained from the patient's relatives or employer, either for himself or those dependent on him. He is acquainted with the conditions under which the patient lives and has contracted the disease, and often can point out the need for sanitary improvements. He sees the other members of the household and is the person most likely to recognize in them the early symptoms of incipient disease.

In all these matters, by virtue of his position, the private medical attendant of the patient is best able to supply information and advice.

However skilled and diligent a tuberculosis officer might be, it would be impossible for him to gather the necessary information with regard to each individual patient throughout a large area without the assistance of the general practitioners. In the absence of such information there would be a grave risk of loss of much energy and money.

It is sometimes urged that many general practitioners do not possess the same knowledge and skill in the recognition and treatment of pulmonary tuberculosis as specialists who devote the whole of their time to the study of this particular disease; this is obviously true, but it is equally obvious that the specialist cannot know so much as the private medical attendant about the circumstances of the individual patient, and may be less well informed about the nature and treatment of co-existent diseases.

Co-ordination of the work of a general practitioner and the specialist provide against the disadvantages which arise frequently when either attempts to work independently of the other.

The committee suggests the following scheme:

Scheme of Procedure in Providing Treatment for Insured Persons Suffering from Pulmonary Tuberculosis.

The case is notified in the usual manner to the medical officer of health. The notification form should

state whether the presence of the disease is certain or only suspected, and if the doctor who notifies is not the general practitioner in charge of the case, the fact should be signified, and a further note should be made if the patient be a person insured under the Act.

A. If the certificate states that the evidence in favour of the diagnosis is conclusive—

(*a*) The medical officer of health receiving the notification will forward it to the medical officer of health of the district in which the patient resides.

(*b*) The medical officer of health of the district will inform the tuberculosis officer of the district. (Form Med. 3 modified.)

(*c*) The medical officer of health will send his inspector, as heretofore, to the patient's house, and if the patient be an insured person, the inspector will provide a form of application for sanatorium benefit. (Form Med. 1.)

N.B.—The medical certificate in this form is unnecessary if the case has been notified, but the name and address of the general practitioner in charge should be given. If the insured patient has no private medical attendant, he will be asked to select one of those living in his neighbourhood.

(*d*) The patient will transmit the application to the clerk of the Insurance Committee, either directly or through his approved society.

(*e*) If the papers are in form the clerk to the Insurance Committee will inform the tuberculosis officer of the district. (Form Med. 3.)

(*f*) The tuberculosis officer will arrange for an examination of the patient in consultation with his medical attendant at the central institute or at the medical attendant's house, or at the patient's house, as occasion may demand. The medical attendant should be asked to visit the patient's home and make the necessary investigations prior to the consultation, and prepare notes for the filling up of Form Med. 2.

(*g*) At this consultation Forms Med. 2 and Med. 4 will be filled up and the line of treatment will be decided.

If the treatment is to be institutional the further arrangements rest with the Insurance Committee.

If the treatment is to be domiciliary the "continuous record" referred to in Local Government Board Standing Orders No. 1038, Art. 2, Sec. 3, will be commenced by the general practitioner assisted by the tuberculosis officer, and the general line of treatment will be discussed.

The tuberculosis officer at the consultation will gain information from the private medical attendant with regard to the home conditions of the patient and of his family, the possibility of "after-care," possible source of infection, sanitary defects in workshops or living house, etc. (see Art. 2, Sec. 7 Local Government Board Statutory Orders No. 1038), and will thereby become able to present a report to the Insurance Committee embodying recommendations for extra nourishment, extra beds, extra rooms, the supervision of contact cases, and the like. The estimate of the cost of domiciliary treatment in Form Med. 4B could be made out after the consultation.

B. If the certificate states that the diagnosis of a case notified is not absolutely certain the procedure will be somewhat different until the evidence of the tuberculous nature of the disease is conclusive.

The medical officer of health receiving the notification will inform the tuberculosis officer.

The tuberculosis officer will communicate with the general practitioner, offering to place at his disposal the diagnostic aids of the central institute.

If the diagnosis be established the consultation with the general practitioner will be held as above and a course of treatment agreed upon.

Procedure with Regard to those Brought into Contact with Sufferers from Pulmonary Tuberculosis.

The Insurance Committee, on learning of the existence of a case of pulmonary tuberculosis, will ask the general practitioner in attendance to pass in review the other members of the household, and to report to the tuberculosis officer at the consultation any suspected cases. Arrangements will then be made as in the last paragraph for the examination of such suspected cases.

Domiciliary Treatment.

The above scheme of procedure involves certain modifications in the suggestions for domiciliary treatment set forth in Sections 9–11 of the model scheme.

Domiciliary treatment will be required for those tuberculosis patients not sent to an institution, and for those who have received institutional treatment.

Some of these patients will require attendance at their own homes, and for short may be termed "resting cases"; many will be able to visit the doctor's surgery or the central institute, and these may be termed "ambulant cases."

Co-ordination between the tuberculosis officer and the general practitioner is most important throughout domiciliary treatment. Periodical reports—that is, copies of the "continuous record," will be submitted by the general practitioner to the tuberculosis officer. The intervals between these reports will vary according to the necessity of the case. When the disease is acute frequent reports will be needed; when chronic, longer intervals may be permitted. Until some long time has elapsed since the apparent arrest of the disease, it would seem wise to obtain reports at least every three months. The frequency of these reports will be determined from time to time in each instance by mutual arrangement between the tuberculosis officer and the general practitioner.

The report should be made after a visit to the patient's home, and should state whether the living conditions continue to be satisfactory.

The domiciliary treatment of resting patients will be in the hands of the private medical attendant, but the services of the tuberculosis officer as a consultant should be always available.

The domiciliary treatment of the "ambulant cases" may be carried out at the doctor's surgery or at the central institute. In many districts it would be possible to arrange so that each general practitioner attends the central institute on a certain day (for example, monthly or quarterly), when the "ambulant patients" under his care also attend; the resources of the institute would be available for the treatment of the patient, the tuberculosis officer aiding the private medical attendant as occasion demanded.

Specific treatment by tuberculin should not be administered except after consultation with the tuberculosis officer.

"Dispensary" Treatment.

With regard to Sections 13 to 16 the committee prefers the term "central tuberculosis institute" to that of "dispensary," which is now used in so many different senses that it is difficult to understand what is meant when it is employed.

The committee agrees in the main with the outline of the work of such an institute as given in Section 13, but thinks that educational uses should have been mentioned. Section 14 enunciates a general principle which permeates the report of the committee. Section 15 is self-evident.

The committee thinks that Section 16 should be so worded that it is secured that the patients attending the institute should be seen there by their private medical attendant in accordance with Section 7. Continuity of treatment could only be maintained if the patients were seen by the same practitioner at each attendance at the institute.

The committee recommends that in the event of a disagreement or dispute regarding purely medical questions between a tuberculosis officer and a general practitioner the matter should be referred to a central medical body.

SCALE OF FEES.

To carry out the suggestions embodied in the above report, the subcommittee suggests the following scale of fees:

	£	s.	d.
(*a*) Fee for notification to medical officer of health	0	2	6
(*b*) Fee for the consultation between the private medical attendant and the tuberculosis officer including:			
(1) Previous visit of investigation to the patient's house with inquiries about "contacts."			
(2) Filling up Form Med. 2 at the time of the consultation with the tuberculosis officer.			
(3) The commencement of the "continuous" record if the treatment is to be domiciliary.			
(4) Verbal provision of information with regard to adverse sanitary conditions.			
(5) Verbal information with regard to any suspected cases in the patient's household.			
(6) Verbal information with regard to the character and habits of the patient, his financial position, the number of those dependent on him, the prospect of his return to his old work after the completion of treatment, etc.	1	1	0
(*c*) Visit of investigation to patient's house, inquiry *re* "contacts," etc., and report, if not followed by consultation	0	5	0
(*d*) Quarterly reports upon the progress of the patient ("continuous record")	0	5	0

	£	s.	d.
(*e*) Consultation with tuberculosis officer on return of patient from institutional treatment and resumption of domiciliary treatment	0	5	0
(*f*) Consultations with the tuberculosis officer at the patient's house (subsequent to the first consultation)	0	5	0
(*g*) Domiciliary visits to "resting" patients at their own homes in ordinary hours (mileage additional)	0	2	6
*(*h*) Special visits, that is, urgent calls out of ordinary hours, but not at night	0	3	6
*(*i*) Night visits, that is, between 10 p.m. and 8 a.m....	0	7	6
(*j*) Supervision of "ambulant" cases at surgery or at central institute per month (the patient to be seen at least twice in the month)	0	5	0
*(*k*) Special treatment (vaccines) by arrangement—for example, if tuberculin be administered twice a week the fee would be £1 1s. for one month's treatment, but the fee for supervision would not be chargeable.			

*Arrangements must be made with the tuberculosis officer with regard to these fees. See Model Scheme, Section 12.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

DORSET AND WEST HANTS BRANCH:

WEST DORSET DIVISION.

A MEETING was held at Dorchester on Tuesday, September 24th, Dr. P. W. MACDONALD in the chair. Thirty members and three non-members were present.

Annual Representative Meeting.—The REPRESENTATIVE (Dr. Decimus Curme) gave his report of the Annual Representative Meeting. For this and his valuable services he was accorded a very hearty vote of thanks.

Guarantee Fund.—It was decided *nemine contradicente* "That this meeting urge on all practitioners in the area of this Division that they should increase their personal guarantee to £20." Many signed the additional guarantee at the meeting, and the feeling was that this would be further increased if necessary, provided no sudden call of a large amount were made.

Hospital Staffs and the Pledge.—It was unanimously decided that the staffs of all the voluntary hospitals should communicate to their boards the position in which they stood under paragraph 3 of the pledge.

Contract Practice.—Although the pledge and resignation of club forms specifically refer to insured persons only, the strong feeling of the meeting was that the same conditions must be made to apply to all contract practice. A communication from the Medical Secretary was read, which showed that three months' notice would suffice for club appointments, save in the few cases where there was a written agreement.

Sliding Scale Scheme.—It was decided (two dissenting) to adopt the sliding scale scheme on a capitation basis (SUPPLEMENT, BRITISH MEDICAL JOURNAL, September 14th) for this Division. (Resignations of all clubs in the area of this Division—400—were posted on September 29th.)

GLASGOW AND WEST OF SCOTLAND BRANCH:

GLASGOW CENTRAL DIVISION.

A MEETING of this Division was held in the Faculty Hall on September 24th, Dr. ROBERT JARDINE, President, in the chair, and fourteen members were present.

Appointment of Temporary Secretary.—Owing to the unfortunate illness of the Secretary, Dr. Syme, it was found necessary to appoint a substitute, who should take over the duties of that office *pro tem.* Dr. John Paterson, nominated by Dr. JARDINE and seconded by Dr. WRIGHT, was unanimously appointed.

Resignations of Contract Practice Appointments.

The Division proceeded to consider the resignations of contract practice appointments. Dr. DREVER, Secretary of the Joint Provisional Medical Committee of the Glasgow insurance area, who was present by invitation, gave a detailed statement of the present position of the profession within the area.

A discussion was raised by Dr. CARSLAW on the position of certain members of the hospital staffs in the city. It was stated that they had found a difficulty in signing the supplementary pledge in view of the terms upon which they were required to renew their services to the institutions with which they were connected. It was decided that as the gentlemen in question were known to be favourable to the contention of the profession, time should be given them to consider their position.

It was also decided that the members of the Divisional Provisional Medical Committee should call on all the practitioners in the Divisional area who were known to be holders of contract appointments, with a view to obtaining their signatures to the resignation forms. The Secretary was instructed to obtain the forms at the earliest possible date, so that an immediate canvass be instituted.

GLASGOW EASTERN DIVISION.

Local Provisional Medical Committee.—The local Provisional Medical Committee met in Bellgrove Hall on September 27th. Dr. ALEXANDER JOHNSTON presided, and twelve members were present. The SECRETARY intimated that Dr. Peter Rankin had been approached regarding his appointment to the Glasgow Burgh Insurance Committee, and that he had promised to decline the same. Reports of canvass were handed in, and when examined the Secretary was able to report that the guarantees to the Medical Defence Fund from this Division now exceeded £1,100. The pledge had been signed by 156 practitioners, and he held the resignations of 156 friendly society's appointments from 56 gentlemen. These, he intimated, would be sent to the various secretaries on the following days.

LANCASHIRE AND CHESHIRE BRANCH:

BLACKPOOL DIVISION.

A MEETING of this Division was held on September 27th. Dr. STEWART, Chairman, presided, and fifteen members were present.

Resignation of Honorary Secretary and Appointment of Successor.—A letter was read from Dr. Rees Jones resigning the position of Honorary Secretary to the Division. The meeting regretted his decision, and it was resolved that Dr. Rees Jones be cordially thanked for his services so ably rendered to the Division for the past three years. Dr. Baird was then appointed Honorary Secretary to the Division.

Public Medical Services Schemes.—These schemes were fully discussed, and were in the main generally approved of. As regards the subscriptions for insured persons, Dr. BARTON discussed the advisability of adopting a flat rate of 12s. per annum as a simple means of receiving payment, to include consultations, night visits, special visits, certificates, reports, illnesses arising from confinements and miscarriages within one month, and dressings, bottles, etc., if not provided by the State, but that confinements, miscarriages, vaccinations, fractures and dislocations, general anaesthetics, illnesses in consequence of personal misconduct, and attendance beyond a two-mile radius be considered as extras, the fees for confinements and miscarriages to be fixed at a guinea. The meeting resolved unanimously that the scale of fees as suggested by Dr. Barton be adopted. Scheme B was then discussed and approved, with the exception of the fees suggested. The flat rate of subscriptions adopted under Scheme A was approved.

LIVERPOOL DIVISION.

A MEETING of this Division was held at the Medical Institution, Liverpool, Dr. N. P. MARSH (Chairman) presiding.

Election to Branch Council.—Dr. Francis W. Bailey, the Divisional Secretary, was elected to the Branch Council to fill a vacancy which had arisen due to the election of Dr. R. J. Richardson as Vice-President of the Lancashire and Cheshire Branch.

Annual Representative Meeting.—A report was received on the Representative Meeting held in July from the Representatives Dr. BUSHBY, Dr. HARVEY, Dr. RICHARDSON, and Dr. O'SULLIVAN. It dealt with the question of raising

the annual subscription, payment of Representatives, the question of forming a trade union, and the breaking off the negotiations, and also sanatorium benefits. The Representatives were thanked for their valuable services.

Central Defence Fund.—The Liverpool Provisional Medical Committee had written a letter calling attention to the appeal for an increase of guarantee to the Central Insurance Defence Fund. Dr. Given, the Chairman of this Committee, and Dr. Llewelyn Morgan, the Secretary, gave details regarding the response to the appeal, which, they pointed out, was disappointing. Sir James Barr considered the amount promised was totally inadequate, and pointed out if the campaign was to go on there must be a large fund to support it. He said it was the duty of the whole Division to throw their heart and soul into the work of increasing the fund. Mr. F. Charles Larkin pointed out that the fund was a trust fund for a definite purpose. Drs. Shaw, Richardson, O'Sullivan, Davies, Heaney, and Rentoul also took part in the discussion, and it was eventually agreed:

That a subcommittee be formed to take steps to increase the guarantee to the Central Insurance Defence Fund, and that they should be empowered to issue circulars and assist the Liverpool Provisional Medical Committee in collecting the fund.

The following were elected on this subcommittee: Drs. Shaw, Barnes, McGibbon, Allen, McFall, W. Macdonald, Heaney, A. W. German, Graham Martin, Glynn Morris, Henry Jones, J. Walker, Pennington, Llewelyn Morgan, Hall, Claxton, R. G. Wills, R. Paterson, Michell.

Model Ethical Rules.—It was agreed to adopt the Model Ethical Rules as amended and approved at the Annual Representative Meeting, July, 1912, and which were published in the Supplement of the Journal, September 21st, 1912.

Manchester (Central) Division.

A meeting was held on October 3rd. Dr. Judson Bury was in the chair during the first part of the meeting and Dr. Ferguson later. Five members were present.

Resignation of Dr. Emrys-Jones.—The Secretary reported the resignation of Dr. Emrys-Jones.

Resolutions.—It was resolved:

That the Joint Committee of Manchester and Salford Divisions, with power to co-opt additional members, should act as a joint provisional local committee with power to act.

That the model rules of ethical procedure as approved by the Representative Body be adopted, and submitted to the Council for approval. That the consideration of the Model Public Medical Service schemes be submitted for the consideration of the Joint Committee of the Manchester and Salford Divisions, providing a workable scheme is arrived at before the Insurance Act comes into operation.

Manchester (South) Division.

A meeting of this Division was held at the Holy Innocents Schools, Fallowfield, on September 27th. Dr. Edlin presided, and twenty-six members were present.

Resignation of Club Appointments.—A letter from the State Sickness Insurance Committee was read in relation to the decision to send in all resignations of club appointments before the end of September, 1912. The Secretary of the Provisional Medical Committee announced that in accordance with the decision of the State Sickness Insurance Committee all resignations of club appointments held in this Division had been sent in to the respective societies and clubs.

Joint Committee of Manchester and Salford Provisional Medical Committees.—Dr. Stocks proposed and Dr. Cotterill seconded:

That this Division approves of the Joint Committee of Manchester and Salford being constituted as the executive of the Provisional Local Medical Committees of Manchester and Salford in relation to the Insurance Act.

This, after a short discussion, was carried *nemine contradicente.*

Public Medical Service Schemes.

Dr. Salter proposed and Dr. Holt seconded:

That Scheme A be not discussed.

This was carried. Dr. Stowell proposed and Dr. Holt seconded:

That Scheme B be not discussed.

Whereupon Dr. Sawers Scott proposed and Dr. Cotterill seconded the following amendment:

That a small committee be appointed to discuss and report upon schemes for a Public Medical Service and also make recommendations to an early meeting of the Division.

The amendment was carried by 12 votes to 6. When put as the substantive motion it was carried with four dissentients. The following six members were then elected as the subcommittee: The Chairman, Secretary, Drs. Cotterill, Howell, Scott, and Stocks.

Model Ethical Rules.—The adoption by the Manchester (South) Division of the model ethical rules, amended and approved by the Annual Representative Meeting at Liverpool, and appearing in the Supplement to the British Medical Journal, September 21st, was proposed by Dr. Stocks, seconded by Dr. Salter, and carried *nemine contradicente.*

Central Defence Fund.—The Secretary of the Provisional Medical Committee intimated that the Division's contribution to the Central Defence Fund was now nearly £1,000. This was accomplished chiefly by the fact that thirty members had agreed to increase their guarantee to £20.

Metropolitan Counties Branch:

City Division.

Provisional Medical Committee.—A meeting was held at the Great Eastern Hotel, on Friday, October 4th, at 9.30 p.m., Dr. Evan Jones in the chair, and sixteen other members were present. A letter was received from Dr. Chetwood resigning his seat on the committee as he was leaving London, and the nomination of his successor was left to the Shoreditch Medical Society. A peculiar position had arisen regarding the course of action that should be taken by the Committee in the following circumstances. A doctor on getting a public appointment had sold his practice, and having placed the resignations of his clubs in the hands of the secretary some weeks ago, asked that they should not be sent in at present as it would prejudice him financially. His successor was doing the club work for him until such clubs appointed a successor. The Committee was of opinion that such a loyal member of the profession should not be financially prejudiced, and decided to withhold such regulations until the successor had been interviewed and asked to come into line with the rest of the profession.

Letters.—A letter which caused much satisfaction was received from Dr. O'Sullivan promising not to take up any work that had been resigned on principle by any member of the profession. It was decided to canvass the resident staff at St. Bartholomew's again in order to get the pledge signed. A letter was read from Dr. Cox, the Medical Secretary, regarding attendance on non-insured persons in clubs, stating that it was a matter for the Divisions to settle.

Sanatorium Benefit.—The letter of Dr. Bates, M.O.H., to the practitioners of Bethnal Green was read and discussed, and the prompt action of the Bethnal Green Medical Union thereon was reported to have been successful in opposing the ridiculously inadequate list of fees mentioned therein for sanatorium benefit, and that they had now been promised that the British Medical Association scale would be recommended to the local subcommittee. The Secretary reported that he had written to all the medical officers of health, pointing out that arrangements of this kind could only be made through this Committee, and favourable replies had been received from most of them.

Uninsurable Club Members.—Several practitioners asked for advice on letters received from clubs regarding their old members who were too old to be insured and young members under 16, for whom they were under contract to supply medical attendance and medicines. It was moved by Dr. Greenwood, seconded by Dr. Durno, and decided:

That all should reply for the present to the effect that the whole matter was under consideration, and the profession hoped to be able to put forward proposals, before the expiry of the resignations, which would meet the exigencies of the situation.

Clubs and Medical Officers.—The question was considered whether it was necessary under the pledge to resign the appointments held under the Linen and Woollen Drapers'

Institution, who now pay satisfactory fees per attendance, but are now an approved society. It was decided that as long as they did not change the mode or reduce the amount of payments they need not be resigned. A letter was read from Mr. Rockliffe, of the New Tabernacle Club, refusing to accept the resignations that had been tendered, or to admit that the appointments could be determined except as prescribed by the agreement between the club and its medical officers, and threatening legal procedings for damages. Several of the medical officers were present and not one of them knew of any written agreement, and pointed out that letters were recently received from this gentleman imploring them to continue to give attendance between the end of the quarter (Christmas) and January 15th, 1913, which they politely consented to do. His action was now generally regarded as "bounce," but the Secretary was instructed to write him for a copy of any written agreement, and the matter was left over for a week.

Domiciliary Treatment of Insured Person.—Dr. Richards wrote asking advice about undertaking domiciliary treatment of an insured person in Hackney, and was advised in accordance with the recent instructions of the State Sickness Insurance Committee.

Dr. King Warry's Circular.—It was decided to send a deputation of Hackney medical men to interview Dr. King Warry on his circular to the profession without delay.

Supply of Tuberculin.—It was decided that it was preferable that tuberculin should be supplied by the local authority than that an extra fee should be paid to the doctor for supplying it.

Tuberculosis Dispensary for Shoreditch.—Dr. Major Greenwood raised the question of a suitable tuberculosis dispensary for the Shoreditch area. He said that the men of Shoreditch would prefer that the dispensary of the City Road Hospital for Diseases of the Chest should be that centre. There was no chance of the men in Shoreditch running a dispensary of their own; so, if this were not accepted, it would mean that a municipal dispensary would be established. He much preferred the former dispensary should be the centre. It offered the same terms as those laid down in the model dispensary of the Association, with the exception of the dispensary work not being done by the local profession. The State Sickness Insurance Committee would not approve of such an arrangement, but it was open to any provisional committee to sanction the trial of such a scheme as that proposed by the City Road Hospital. If the men of Shoreditch wished it, he thought that such a trial should be permitted. He thought that it was exceedingly unlikely that the local profession would be allowed to do any of the work at the municipal dispensaries when established, so that the local profession there would be confronted with the same difficulty. There was some discussion, and considerable opposition to the proposal. Dr. Evan Jones thought the municipal dispensary would be a much better alternative. The representatives of the Hackney district were in favour of the municipal dispensary. As there was no complete scheme of the City Road Dispensary proposal, it was decided to postpone the matter.

Public Medical Service.—The consideration of the Model Scheme of the British Medical Association was deferred to the next meeting on October 11th.

East Hertfordshire Division.

A meeting of this Division, to which all practitioners resident within its area were invited, was held at the Shire Hall, Hertford, on Thursday, September 26th. Dr. A. J. Boyd was in the chair, and twenty-nine members with three non-members were present.

Branch National Insurance Committee.—Dr. H. D. Ledward was nominated to serve on this committee.

Sanatorium Benefit.—In connexion with domiciliary treatment it was resolved:

> That the county authorities be asked to make arrangements with chemists, where practicable, for the supply of the necessary medicine.

The deputation to the Sanatorium Subcommittee were also given power to negotiate on the lines laid down at the last meeting in connexion with the provisional arrangements for the administration of sanatorium benefit.

Resignations of Contract Practice Appointments.—The circular letter from the Medical Secretary of the Association (D 2) was read, and it was resolved that the resignations be sent in for this area on September 29th, in accordance with the decision of the State Sickness Insurance Committee.

Public Medical Service.—The circular letter (D 5) was read, and the Model Schemes (A) and (B) submitted by the State Sickness Insurance Committee were discussed. It was resolved to discuss a capitation scheme on the lines of (A) at meetings to be held in each locality with representatives of the friendly societies, to see to what extent their co-operation could be secured in such a proposal. There was a strong feeling in the meeting that in some way the machinery of the societies should be made use of in collecting the subscriptions. It was also resolved that further consideration of a Public Medical Service be left to the Executive of the Provisional Medical Committee, and that reports from the different districts be sent to this Committee in reference to the results of the various meetings.

North Middlesex Division.

The eighth ordinary meeting of this Division was held on September 27th, at the Hornsey Council Schools, Finsbury Park. Dr. Richmond Bryce was in the chair, and thirty-two members were present.

The late Dr. C. E. Hutt.—A vote of condolence with the family of the late Dr. Hutt, of Tottenham, and a much respected member of the Division, was passed unanimously.

Association Schemes of Public Medical Service.—It was moved by Dr. Fuller, seconded by Dr. Cohen, and agreed:

> That the discussion of the above schemes be referred to the several wards of the Division, there to be discussed at an early date, and report to be made at the next meeting of the Division, to take place within the next four weeks.

Insurance Committee of the Branch Council.—It was proposed by Dr. North, seconded by Dr. Marjoribanks, and passed *nemine contradicente:*

> That Drs. Barnes and Brackenbury be nominated to represen the Division on the National Insurance Committee of the Branch Council.

Uninsurable Patients of the Metropolitan Provident Medical Association.—It was proposed by Dr. Percival Barnes, seconded by Dr. Fuller, and supported by Drs. Lewis Sykes and Burton, and agreed:

> That the Honorary Secretary be instructed to write to the State Sickness Insurance Committee, and ask what should be the relation of medical practitioners to those of their patients in the Metropolitan Provident Medical Association who are uninsurable patients. These practitioners have already sent in their resignations of this medical association, including the attendance on these uninsurable patients. Is it permissible to them to write to the Secretary of the Metropolitan Provident Association and withdraw their resignations in respect to these patients?

St. Pancras and Islington Division.

A meeting was held at the Midland Grand Hotel on October 4th, Dr. R. M. Beaton in the chair.

Annual Representative Meeting.—The Chairman presented a report of the action taken by Dr. Alexander Brown and himself as the Representatives of the Division at Liverpool. They both attended all the meetings, and voted for the discontinuance of negotiations with the Government, and for the inclusion of sanatorium benefit in the rupture. On the latter question they were in a minority, and arrangements were now in progress for the administration of sanatorium benefit in St. Pancras and Islington, as elsewhere; the defeated minority acting loyally in accordance with the wishes of the majority. The Chairman said that he was impressed by the extreme value at critical moments of excitement of the experience and tact of the men on the platform who know the Association in all its moods. Dr. M. J. Bulger proposed a cordial vote of thanks to Dr. Beaton and Dr. Brown, and this was carried with acclamation.

Sanatorium Benefit.—A discussion then took place on sanatorium benefit. Dr. Sykes pointed out that unless the certificate "Med. 2" were completed by the medical attendant and sent up with the application for sanatorium benefit, there was a likelihood of this work being given to the expert employed by the Insurance Committee. Drs. Theobald, Turner, Malcolm, Fouracre, and Glover took

part in the discussion, and eventually a motion that the provisional scheme of the State Sickness Insurance Committee be provisionally accepted was agreed to with one dissentient.

Public Medical Service.—The CHAIRMAN in introducing this subject drew attention to the strong position in which the profession was placed by the very satisfactory result of the call for club resignations. Dr. RATTRAY spoke in favour of payment by capitation. When payment was by visit, a doctor was often prevented from paying an extra visit by the fear of overcharging the patient; on the other hand, an unscrupulous doctor might pay many unnecessary visits, and although this would be in fact a rare occurrence, it would be continually happening that a doctor paying necessary visits would be suspected unjustly of dishonest intentions. Dr. GLAISTER entirely agreed with Dr. Rattray, and drew attention to the financial danger of Scheme B. It would entail an army of collectors and an office full of clerks, with the consequent increase in expenses. Dr. HAYNES expressed the opinion that under payment by capitation only bad lives would come in, and Dr. TURNER thought that a great amount of trivial and unnecessary work was called for under a capitation system. Dr. DOUGLAS WRIGHT also supported a system of payment for each attendance. Dr. MATHESON found payment by capitation, if at a fair rate, satisfactory; and Dr. ALISON GLOVER welcomed the relief from book-keeping that would come with a capitation system. Dr. FOURACRE pointed out that in any case the patient would pay a capitation fee, by whichever method the fees were distributed. Dr. BRUNTON observed that post office and police medical officers, who received a reasonable capitation fee, were never heard to object to payment by capitation, and Dr. MALCOLM corroborated the statement. Dr. WILSON also agreed, and expressed the view that those practitioners having experience of contract work were those who supported payment by capitation, while this method was opposed by those holding no contracts. Dr. BREMNER also spoke in favour of capitation. Dr. B. G. MORISON expressed a very decided preference for payment for work done, and drew attention to the change of opinion in the Division since they almost unanimously voted for this method of payment early in the year; but he regarded the subject as of too great importance to be hurriedly decided, and suggested the adjournment of the discussion to give time for further consideration. Dr. BEATON expressed the opinion that it might be better, despite the fact that time was pressing, to adjourn the discussion. On the motion of Dr. MORISON, seconded by Dr. BULGER, the discussion stood adjourned, and a vote of thanks to the Chairman terminated the proceedings.

The SECRETARY estimated that 100 per cent. of the clubs in the Division had been resigned.

WIMBLEDON DIVISION.

A MEETING of this Division, to which all practitioners in the area were invited, was held at Johnston's Rooms, 6, The Broadway, Wimbledon, on September 20th. Dr. POWELL EVANS occupied the chair.

Annual Representative Meeting.—Dr. EDWIN SMITH, one of the Representatives for Wandsworth and Wimbledon Divisions, gave a short report of the proceedings of the Representative Meeting at Liverpool, which dealt chiefly with the National Health Insurance Act. He detailed the arguments brought forward in favour of working the sanatorium benefit portion of the Act, and subjected the proceedings and findings to considerable criticism. A hearty vote of thanks was awarded Dr. Smith for his services and report.

The Liverpool Meeting and the Sanatorium Benefit.—Dr. PURCELL proposed and Dr. BELILIOS seconded the following resolution, which was passed unanimously:

> That this meeting strongly protests against the action of the Representative Body in deciding on a serious line of policy in regard to the sanatorium benefit of the National Insurance Act before the members of the Association had been given an opportunity of coming to a decision on the matter, and urges upon the Council the necessity in future of referring all vital questions (such as the one referred to in this resolution) to the Divisions, in order that the Representatives may be fully instructed.

Guarantee Defence Fund.—Considerable discussion took place on the question of the Guarantee Defence Fund, and different views were expressed. It was ultimately agreed that a circular letter and guarantee form should be sent to every practitioner, asking him to fill in the amount of his guarantee.

Fees under Sanatorium Benefit Scheme.—The fees under this scheme were considered, and those of the State Sickness Insurance Committee were agreed to.

MIDLAND BRANCH:

CHESTERFIELD DIVISION.

A MEETING of this Division was held at the Chesterfield Hospital (by kindness of the Board) on September 26th. Dr. A. GREEN was in the chair, and twenty-five members were present.

Midwifery Practice.—Dr. CHASE presented the report of the subcommittee appointed on August 9th, which was accepted.

Supplementary Pledges, Resignations, and Guarantees.—The HONORARY SECRETARY (Dr. Duncan) presented the report, which was deemed satisfactory.

Works Surgeons.—The HONORARY SECRETARY reported as to signatures in approval of the temporary arrangements for dependents of insured persons who were members of works clubs, comprised in resolutions passed at Mansfield on September 13th, 1912. The meeting approved the resolutions, 19 voting for and 3 against. Dr. MAGEE said he had complied with all the arrangements of the Association with regard to the National Insurance Act, that this matter was outside the Act, and that as a higher fee had already been agreed upon locally than that specified in the resolutions, he preferred to stand aside and take his own course in the matter. He added that he felt that although the arrangements were specified as temporary only, they would in effect prove to be permanent, and would be difficult to reopen.

Sanatorium Benefits.—The HONORARY SECRETARY reported negotiations with the Provisional Insurance Committee with regard to administration of and remuneration for sanatorium benefits, and with regard to a meeting of the local Medical Committee with that Committee, and the proposals of Dr. Barwise, Medical Officer of Health. It was moved by Dr. SHEA:

> That this meeting authorizes its Representative to approve the fees specified in paragraph 7 of the Specimen Sanatorium Benefit Scheme set out in the BRITISH MEDICAL JOURNAL SUPPLEMENT of the 21st September, 1912, and that such fees be the minimum.

Dr. MAGEE seconded. The CHAIRMAN pointed out that a difficulty might arise if the Representatives were restricted to the terms of paragraph 7 of the scheme in view of the resolution of the meeting of the Joint Provisional Medical Committees at Derby. Dr. SHEA stated that he and Dr. Magee desired to alter the resolution proposed, so that it ran as follows:

> That this meeting authorizes its Representatives to approve the fees specified in paragraph 7 of the Specimen Sanatorium Benefit Scheme set out in the BRITISH MEDICAL JOURNAL SUPPLEMENT of the 21st September, 1912, and that such Representatives have power to negotiate.

Dr. MAGEE seconded. The voting was 15 for, none voting against. The resolution was therefore carried. Dr. DUNCAN moved that the Representatives be Dr. T. F. Wilson and Dr. A. W. Wilson. Dr. FLETCHER moved, and Dr. SHEA seconded, as an amendment that the Representatives chosen in Derby be confirmed—namely, Dr. Green and Dr. Duncan. The amendment was put and carried.

Resignations.—Dr. COURT said he had not yet received notice from head quarters as to whether the resignations were to be sent in. It was resolved that instructions should be obtained by wire.

Attitude of Consultants.—In Dr. Croskery's absence Dr. DUNCAN stated that Dr. Croskery's suggestion was that an intimation from consultants indicating their attitude be obtained forthwith. Dr. COURT moved and Dr. WEST JONES seconded:

> That the matter be deferred for three months.

This was carried.

Public Medical Service.—The CHAIRMAN asked the opinion of the meeting whether they thought it advisable to deal with this matter forthwith. Dr. DUNCAN thought a subcommittee of four should be appointed to deal with it with power to add to their number. It was resolved:

> That the following constitute such committee—namely, Drs. Arthur Court, R. Godwin Chase, A. M. Pitcher, F. Marriott; Drs. Green and Duncan *ex officio*.

Model Ethical Rules.—Dr. Duncan called the attention of the meeting to the Model Ethical Rules set out in the Supplement of the British Medical Journal of September 21st, 1912, and moved that the same be considered at the next meeting. Dr. Arthur Court seconded, and the motion was carried.

NORTH OF ENGLAND BRANCH:

Durham Division.

A meeting of all general practitioners in the Division was held at the County Hotel, Durham, on Tuesday, September 24th, at 3.30 p.m., Dr. Smith in the chair, and thirteen were present.

Annual Representative Meeting.—Dr. Farquharson then informed the meeting how he voted at Liverpool, and gave his reasons for so doing. The meeting entirely approved his attitude, and thanked him for his services.

Friendly Society Appointments.—The British Medical Association Circular D 2 was then considered. After prolonged discussion, the following resolution (moved by Dr. Plummer, seconded by Dr. G. Denholm) was carried unanimously:

> That, owing to the misunderstanding regarding colliery practice being within the scope of the complementary pledge, we do not consider sufficient resignation forms have been received to justify our sending them in.
>
> But that the Secretary be requested to circularize the men in the Division, explaining the position, and urging them to send in their resignations of all friendly society appointments without delay.
>
> That another meeting be called in a fortnight's time to reconsider the position.

It was proposed by Dr. Plummer, seconded by Dr. Vann:

> That the hospital staff carry out the suggestion in par. 9 of Document D 2.

The hospital staff signified their approval of this step.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH:

Furness Division.

A meeting of the Provisional Local Medical Committee was held in Barrow to discuss the British Medical Association scheme of public medical service, the sending in of resignations, and other matters.

Public Medical Service.—Schemes A and B were discussed and not very favourably criticized. The general opinion was that women and children should not be included, and that the whole scheme wanted licking into shape. A resolution proposing the abolition of contract practice was lost, as it was felt that to carry it in the face of the Association's proposed scheme would be disloyal, or would seem to be. One member was very emphatic in his opinion that the acceptance of this scheme meant that for all time men would be "club doctors" and nothing more. This opinion was shared by others. It was ultimately agreed to leave the question of a Public Medical Service in the hands of a combined committee of the Provisional Local Medical Committee Subcommittee and the British Medical Association Committee, with power to call a full meeting at any time either before or after the next Representative Meeting.

Hospital Staffs.—In accordance with D 2, it was resolved that members of hospital staffs be requested to notify their committees of the third clause of the pledge.

SOUTHERN BRANCH:

Portsmouth Division.

A meeting of this Division was held at the Portsmouth Medical Library on September 25th, immediately after the meeting of the medical profession (p. 378). Dr. A. Bosworth Wright was in the chair, and thirty-nine members were present.

Annual Representative Meeting.—The Representative of the Division then gave a report of the meeting at Liverpool on July 19th, 20th, 22nd, 23rd, and 24th. He was present at each meeting, and gave his reasons for voting as he did. Dr. Hackman proposed and Dr. McElhowny seconded:

> That a vote of thanks be given to Dr. Mumby for his services as Representative of this Division.

This was carried.

Public Medical Service.—After some remarks as to establishing a Public Medical Service in Portsmouth, and the statement of the Chairman that the subject was still under the consideration of a subcommittee of the Executive Committee, it was decided to postpone the consideration of this matter until the next meeting.

Town Council Election.—Mr. Childe reported that he had been approached as to the medical profession running a candidate at the approaching Town Council election. Dr. Sheahan proposed and Dr. Blackwood seconded:

> That a small committee be appointed to consider the question.

This was carried unanimously. Drs. Sheahan, Childe, J. H. F. Way, and Milne-Thomson, with the Chairman (Dr. Bosworth Wright) and the Honorary Secretary (Dr. B. H. Mumby), were appointed to form this committee.

SOUTH-WESTERN BRANCH:

Torquay Division.

A meeting of this Division, to which non-members were invited, was held at the Newton Abbot Hospital on October 1st, at 3.30 p.m. In the absence of the chairman, Dr. Young Eales took the chair. Twenty-two members were present.

Guarantee Fund.—The Chairman announced that the Provisional Local Medical Committee had met and discussed the reorganization of the Guarantee Fund; that a subcommittee had been appointed which had drafted a letter to be sent to all members, a set of rules, and had formed the opinion that the Guarantee Fund should be a local fund. The meeting was now asked for a decision as to whether the fund should remain a local fund, or whether the guarantees should be put in the hands of the Central Fund. After some discussion, the following resolution was put to the meeting, and carried unanimously:

> That the Guarantee Fund raised by the Division be handed over to the Central Fund of the Association.

It was then decided that a letter to every practitioner in the Division, asking for a generous guarantee, be drafted by the subcommittee which was reappointed. The subcommittee to consist of Drs. Young Eales, McKenzie, and Pitt Palmer.

Uninsured Club Members.—The Chairman then announced that the main business of the meeting was to discuss a suitable answer to any secretaries of clubs who might inquire of members individually on what terms medical attendance would be given to uninsured members of clubs who were still in the various clubs; that the Association had left the matter to the judgement of each Division; and that it was desirable that the Torquay Division should take uniform action in the matter. A discussion followed, and finally the following resolution, proposed by Dr. Williams and seconded by Dr. Wiggin, was carried unanimously:

> That in the opinion of this Division no member of the profession should undertake any contract work except through and in connexion with the Provisional Local Medical Committee appointed to deal with this matter, and it be an instruction to such committee that no uninsured person whose total income exceeds £2 per week shall be accepted, and that the fees received from uninsured members shall not be less than those for insured persons.

This resolution to be printed and sent to every member of the profession in the Torquay Division as an instruction from the general meeting.

Sanatoriums at Torquay.—Dr. Stabb laid before the meeting certain letters he had received from the Medical Officer of Health for Devon asking on what terms patients would be received into two sanatoriums at Torquay. He outlined his probable reply and asked for the opinion of the meeting. The members present approved of his reply to each letter.

Model Ethical Rules.—The model ethical rules were approved by the meeting.

STAFFORDSHIRE BRANCH:

Mid Staffordshire Division.

An ordinary general meeting of this Division was held at the North-Western Hotel, Stafford, on September 25th.

Dr. F. N. Cookson was in the chair, and thirty members were present.

Public Medical Service.—The schemes contained in the Supplement of September 14th were considered. The Division having at a previous meeting expressed an opinion in favour of payment per capita rather than per attendance, Scheme A was alone dealt with. As a whole, the scheme was approved, but certain suggestions and modifications were made, as follows:

Paragraph 2. The area to be that of the County Insurance Committee, subdivided for the purposes of the scheme in the manner adopted by that Committee.
Paragraph 4. The number of members of the Executive Committee to be a certain proportion of the whole, and not a definite number. The proposition was not decided upon.
Paragraph 7. A special meeting to be convened on the signed requisition of three members.
Paragraph 8. One-third of the members to constitute a quorum.
Paragraph 18 (*b*). Deleted.
Paragraph 18 (*c*). Rate of Class A (children) accepted as a minimum, local committees to increase the rates if they consider circumstances warrant it.
Paragraph 19. No arrears allowed; the onus to be on the subscriber and to be proved by production of card paid up to date as in Paragraph 21.
Paragraph 20 (*c*). Subscribers not to change their medical attendant more than once a year.
Paragraph 23 (i) (*b*). Miscarriage, fee 21s.; (*c*) vaccination, fee 3s. 6d. (viii) Mileage when charged to be at the rate of 1s. per mile one way. The "free radius" to be decided on by Local Committees.

The remainder of the scheme was approved.

Advisory Committee.—The meeting then passed the following resolution, which the Secretary was instructed to forward to the County Medical Officer and to the other Divisions in the county with a view to securing a combined protest:

That this Division regrets that the county medical officer, Dr. George Reid, has chosen to retain his seat on the Central Advisory Committee in opposition to the wishes of the British Medical Association as expressed in Minute 167 of the Annual Representative Meeting, 1912, thereby creating a false impression of disunion in the profession.

South Staffordshire Division.

A meeting of the Division to which all practitioners in South Staffordshire were invited was held in the Star and Garter Hotel, Wolverhampton, on September 27th. Dr. Craig was in the chair, and thirty-three members and six non-members were present, one member from the Dudley Division and one from the Walsall Division being of the number.

Annual Representative Meeting.—Dr. Mactier presented his report of the Representative Meeting, and, on the motion of Dr. Craig, seconded by Dr. Hartill, was thanked for his services.

Provisional Medical Committee.—Dr. Malet, as Chairman of the Committee, presented his report, which was received and adopted. It was as follows: A meeting of the Committee was held at the General Hospital, Wolverhampton, on September 25th, at 3.30. Dr. Malet was in the chair, and twelve members were present. The fees for treatment under sanatorium benefit, for the provisional scheme, passed at the last meeting, were confirmed, namely:

For the report 7s. 6d., being 5s. for the report and 2s. 6d. for the visit or consultation necessary for making it.
For a visit 3s. 6d., and for a consultation at the surgery 2s. 6d., both inclusive of medicine.

It was proposed by Dr. Craig, seconded by Mr. Cholmeley, and resolved:

That not more than two visits or consultations per week be made under sanatorium treatment, except in cases of emergency, such emergency to be reported to the medical officer of health and sanctioned by him.

It was proposed by Dr. Glendinnen, seconded by Dr. Craig, and resolved:

That the fee for visits between 8 p.m. and 8 a.m. be 5s.

Dr. Mactier was instructed to communicate these fees to the local Insurance Committee. Dr. Mactier was also instructed to send in all the resignations of contributory contract practice before September 29th with the covering letter D 3. It was proposed by Dr. Ridley Bailey, seconded by Dr. Somerset, and resolved:

That Dr. Mactier be instructed to request the members of the staffs of the voluntary hospitals to bring to the notice of their boards the action they propose to take under the terms of the third clause of the pledge.

Dr. Mactier then read a letter he proposed to send to each member of the profession in the area asking for guarantees to be increased to at least £20, and also calling attention to the resolution of the Division *re* death certificates. Dr. Mactier was instructed to send this letter and to include in it a statement that the resignations of all contract appointments had been sent in.

Advisory Committee.—The following motion at the request of the Mid-Staffordshire Division was then put to the meeting and carried with two dissentients, Dr. Ridley Bailey requesting his name to be recorded as one:

That this meeting expresses its regret that Dr. George Reid, County Medical Officer of Health, has decided to retain his seat on the Advisory Committee, contrary to the expressed wish of the Representative Meeting (Minute 167), thereby creating in the mind of the public a false impression of disunion in the profession.

Public Medical Service.—Scheme A was agreed to with the following modifications:

That a flat rate of 2½d. per week was preferable to a sliding scale for insured persons.
That the wife of any subscriber should be accepted at a flat rate of 2d. per week.
That children should be accepted at a flat rate corresponding to the rate suggested for Class A.

The following rider was carried unanimously:

That these rates be applicable only to those families where all are subscribers and where the whole family is on the same doctor's list.
That the rate for uninsured persons who are not dependants of the insured be 2d. per week.

Ethical Rules.—The model ethical rules for a Division not itself a Branch were unanimously adopted.

Stirling Branch.

A meeting of this Branch was held in the Station Hotel, Stirling, on September 23rd. Dr. Joss presided over an attendance of twenty-two members.

Resignation of President.—A letter was read from Dr. Stewart (Falkirk), resigning the office of President. Dr. Joss (Denny) was appointed President, and Dr. Dyer (Alloa) Vice-President.

Annual Representative Meeting.—Dr. Young (Bonnybridge) presented a report of the proceedings of the Annual Representative Meeting, and was awarded the cordial thanks of the members.

Model Ethical Rules.—The model ethical rules for a Branch consisting of one Division were adopted.

Ethical Committee.—The President (Dr. Joss) and Secretary (Dr. Moorhouse) and Drs. Buist, Currie, Griffiths, Park, and Wood were appointed to the Ethical Committee.

Workmen's Compensation Act.—It was resolved to wait for the decision of the Council regarding the draft of a simple form of request from employer to doctor before taking action regarding the fees to be charged for certificates and reports under the Act.

Friendly Society Appointments.—The Provisional Local Medical Committees reported that the resignations of all friendly society appointments within the area of the Branch were being sent in before September 29th.

Hospital Appointments.—Arrangements were made for the staffs of the hospitals at Stirling, Falkirk, Alloa, Denny, and Kilsyth to meet the managers of these hospitals and acquaint them with the terms of the supplementary pledge which had been signed by all the members of the staffs.

Deputation.—A deputation from the Stirling County Provisional Local Medical Committee to the Stirling County Provisional Insurance Committee was appointed, consisting of Drs. Hunter, Joss, Moorhouse, Morrison, Parker, and Young, together with Dr. Adams (Glasgow). The deputation was to confer with the County Insurance Committee concerning the administration of sanatorium benefit.

Public Medical Service.—It was decided to leave the consideration of the Public Medical Service schemes to the Provisional Local Medical Committees within the Branch area.

To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.

Association Notices.

COUNCIL MEETING.

THE Quarterly Meeting of the Council will be held at 2 o'clock in the afternoon of Wednesday, October 30th, in the Council Room at 429, Strand, London, W.C.

By Order,

GUY ELLISTON,

Financial Secretary and Business Manager.

October 3rd, 1912.

NOTICE OF CHANGES OF BOUNDARIES OF DIVISIONS: FORMATION OF NEW DIVISIONS.

THE following changes have been made in accordance with the Regulations of the Association, and take effect from the date of publication of this notice:

1. *Adjustment of existing Greenwich, Lambeth, and Wandsworth Divisions; discontinuance of Norwood Division; formation of new Camberwell and Lewisham Divisions.*

(*a*) That so much of the existing Norwood Division as is contained in the Borough of Wandsworth be attached to the Wandsworth Division.

(*b*) That the area occupied by the existing Greenwich and Lambeth Divisions and the remainder of the area occupied by the existing Norwood Division be constituted into the following Divisions:

(*a*) *Camberwell Division:* Boroughs of Camberwell and Bermondsey.

(*b*) *Greenwich Division:* Boroughs of Greenwich and Deptford.

(*c*) *Lambeth Division:* Boroughs of Lambeth and Southwark.

(*d*) *Lewisham Division:* Borough of Lewisham.

Representation in Representative Body.—Subject to the grouping of the Woolwich Division with another Division of the Metropolitan Counties Branch, instead of as at present with the Dartford Division of the South-Eastern Branch, it is proposed that each of the Divisions constituted by this notice shall be independently represented in the Representative Body.

2. *Adjustment of area of Richmond Division: formation of a new Kingston-upon-Thames Division.*

That the existing Richmond Divisional area be constituted into two Divisions, as follows:

(*a*) *Kingston-upon-Thames Division:* Borough of Kingston, and Urban Districts of the Maldens and Coombe, Surbiton, Esher and the Dittons, East and West Molesey.

(*b*) *Richmond Division:* Borough of Richmond, Urban Districts of Ham and Barnes.

Representation in Representative Body.—It is proposed that the Kingston and Richmond Divisions shall each be independently represented.

3. *Torquay and Exeter Divisions.*

That Chagford, at present lying within the area of the Torquay Division, be transferred to the area of the Exeter Division.

Representation in Representative Body.—Unaffected.

BRANCH AND DIVISION MEETINGS TO BE HELD.

DORSET AND WEST HANTS BRANCH.—A special meeting will be held at the Church House, Wimborne, on Wednesday, October 16th, at 3 p.m., to consider the Model Ethical Rules and other changes in the rules of the Branch. The ordinary autumn meeting will follow: Election of officers for 1913-4; Dr. Bottomley, Vice-President, will open a discussion on "Neuritis, True and False." The Wimborne practitioners have kindly arranged to provide tea for members.—FRANK FOWLER, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: ALTRINCHAM DIVISION.—A special meeting of the Division will be held at Knutsford at 4.30 p.m. on Thursday, October 17th.—H. G. COOPER, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—The inaugural meeting of this session will be held at the London Hospital, Whitechapel Road, E., on Friday, October 11th, at 4 p.m., when Dr. J. H. Sequeira, F.R.C.P., will give a Demonstration upon Cases from the Dermatological Department. A general meeting of the Division will be held in the Council Chamber of the Shoreditch Town Hall, Old Street, E.C., on Wednesday, October 16th, at 4 p.m., to discuss the formation of the proposed Public Medical Service. Members are desired to bring with them and preserve the SUPPLEMENTS of September 14th and October 5th.—A. G. SOUTHCOMBE, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: HAMPSTEAD DIVISION.—A meeting of this Division will be held on Friday, October 11th, at 8.15 p.m., at the Central Library, Finchley Road. Agenda: (1) Minutes. (2) Letters. (3) Questions. (4) Report of Representative to Annual Representative Meeting. (5) Report of the Ethical Committee of the Division. (6) Adoption of the Model Ethical Rules. (Members are requested to bring SUPPLEMENTS of September 21st and 28th).—E. ARTHUR DORRELL, Honorary Secretary.

SOUTH-EASTERN BRANCH: BRIGHTON DIVISION.—An ordinary meeting of this Division will be held at the Lecture Hall, New Road, on October 15th, at 4 p.m.—C. H. BENHAM, Honorary Secretary.

SOUTH MIDLAND BRANCH: BUCKINGHAMSHIRE DIVISION.—A meeting of the Division will be held on Tuesday, October 22nd, at the Red Lion Hotel, High Wycombe, at 2.30 p.m., preceded by a lunch at 1.30 (charge 2s. 6d.). Agenda: (1) Minutes of last meeting. (2) Correspondence. (3) Ethical Rules (SUPPLEMENT, September 21st). (4) Receive report of Dr. Durran (Deputy Representative) of the Annual Meeting at Liverpool. (5) Consider model scheme for treatment of tuberculosis (SUPPLEMENT, October 5th) under National Insurance Act. (6) Consider Public Medical Service scheme (SUPPLEMENT, September 14th). (7) Consider Regulations issued by the Insurance Commissioners. (8) Report of Provisional Local Medical Committee. Members are requested to bring the SUPPLEMENTS with them.—ARTHUR E. LARKING, Honorary Secretary, Buckingham.

BRITISH MEDICAL ASSOCIATION LIBRARY.

BOOKS NEEDED TO COMPLETE SERIES.

THE Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Association of Genito-Urinary Surgeons. Transactions. 1906.
American Climatological Transactions. Vols. 1, 4, 5, 6.
British Journal of Dermatology. Vol. 2, part 3.
British Laryngological and Rhinological Association. Transactions 1896-7-8-9.
Caledonian Medical Journal. Vol. 1 prior to 1894.
Canada Medical Journal. Vols. 1-4, 6, and after 8.
Carmichael Essays. Rivington, 1879.
Centralblatt für Augenheilkunde. Hirschberg. All prior to 1891; Index to 1891.
Centralblatt für Bakteriologie. Bound volumes prior to 1899.
Centralblatt für medicinische Wissenschaften. Vols. 1-19.
Centralblatt für Nervenheilkunde. 1878, 1879, 1886, 1889, 1890, 1892, and since 1893.
Congrès Francais de Chirurgie. Transactions 1, 2, 3, 6, and 10, and all since 11th.
Congrès Internat. d'Obstétrique et de Gynécologie. 3. Amsterdam, 1899.
Congress für innere Medicin: Verhandlungen. 1-12, and 14, and since 18.
Dermatological Congress. Vienna, 1892.
Sanitary Commissioner with the Government of India Reports, 1-24.
Sei-i-kwai Medical Journal. Vols. 1-11.
Semaine Medicale. Prior to 1884. Titles for 1884 and 1895.
South African Medical Journal. February and April, 1895. Titles, Vols. 3 and 4.
St. Mary's Hospital Gazette. Vol. 4.
United States Department of Agriculture, Bureau of Animal Industry. Reports 1-7, 10-14.
United States Hygienic Laboratory Bulletins. Nos. 3, 8, 9, 10, 11, 12, 13, 15, 17, 18, 19, 24, 29, 43.
Virchow's Archiv. Vols. 1-150.
Watt. Bibliographia Britannica. 4 vols. 1824.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

The seventh meeting of the State Sickness Insurance Committee appointed by the Annual Representative Meeting, 1912, was held on October 3rd.

Dr. J. A. Macdonald was in the chair, and the other members present were:—*England and Wales:* Dr. R. M. Beaton (London), Dr. Major Greenwood (London), Dr. S. Hodgson (Salford), Miss Frances Ivens, M.S. (Liverpool), Mr. Herbert Jones (Hereford), Dr. Constance Long (London), Dr. E. J. Maclean (Cardiff), Dr. James Pearse (Trowbridge), Dr. E. O. Price (Bangor), Dr. Lauriston E. Shaw (London), Mr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Mr. E. H. Willock (Croydon). *Scotland:* Dr. John Adams (Glasgow), Dr. R. McKenzie Johnston (Edinburgh). *Ireland:* Dr. J. S. Darling (Lurgan). *Ex officio:* Sir James Barr (Liverpool), President of the Association; Mr. T. Jenner Verrall (Bath), Chairman of Representative Meetings; Dr. Edwin Rayner (Stockport), Treasurer.

Public Medical Service Schemes.

At its meeting on September 11th the Committee had before it the schemes A and B for a public medical service prepared by a subcommittee. These schemes were published in the Supplement of September 14th, p. 290. The Committee also had before it a third scheme (C) for payment by attendance, prepared by the subcommittee, together with a variation by Dr. Ledward, a member of the subcommittee, for the provision of medical attendance for persons insured under the Insurance Act and persons not so insured, to be worked by the members of the local profession in co-operation with the subscribers, either individually or in societies. The Committee adopted the following resolutions:

That the Committee do not approve scheme (C) submitted for the reason that it provides for the appointment of trustees and for the raising of funds by the societies, and thereby contravenes the cardinal principle of the Association relating to freedom from friendly society control.

Mr. Willock dissented.

That in view of the foregoing decision, the Committee do not consider the alternative to the public medical scheme (C) of the subcommittee suggested by Dr. Ledward and forwarded by him at the request of the subcommittee for the information of the Committee.

At its meeting on September 19th, the question whether it would be *ultra vires* for the profession in the locality to proceed on the lines of Dr. Ledward's variation was raised, and the following resolution was passed:

That in no circumstances could the Committee approve of any public service scheme which allows the collection of money by friendly societies.

In accordance with notice given, Dr. Hodgson moved, at the meeting on October 3rd, the suspension of standing orders, which was agreed to, in order to move that the above resolutions should be rescinded. The motion was carried, and the Committee again considered the draft public medical scheme (C) prepared by the subcommittee, together with the alternative to (C) suggested by Dr. Ledward. A motion was made and discussed to reaffirm the resolutions set out above, but to publish the public medical service scheme (C) of the subcommittee and Dr. Ledward's scheme (D) without comment in the Journal for the information of members of the Association. This was carried by nine votes to six. Scheme (C), with Dr. Ledward's variant, are published at p. 385 et seq.

A communication was received from the Kent County Provisional Medical Committee to the effect that the Kent Committee had reiterated its opinion that a public medical service scheme providing for co-operation with members of societies was desirable in Kent.

A communication was also read from the Honorary Secretary of the Metropolitan Counties Branch stating that the National Insurance Committee of the Branch had adopted the following resolutions after considering various recommendations from the Branch Council with respect to the formation of a public medical service:

1. That it is desirable that the Divisions should proceed forthwith with the formation of public medical services.
2. That the Divisions should be asked to base their schemes upon Schemes A and B issued by the State Sickness Insurance Committee, subject to such modifications as shall permit of the representation of subscribers upon the managing body, thus preserving the same essential principles throughout the metropolitan area.
3. That it is desirable that the members of every public medical service shall have the right to pay their collector in any manner that they think fit.
4. That the Committee desires to express a preference for a scheme providing for payment by capitation.

A communication was read from the Honorary Secretary of the South-Eastern Branch expressing his regret at the decision of the Committee to the effect that the presence in any public medical service scheme of trustees appointed by approved societies meant "friendly society control."

A communication received from the Chairman and Secretary of the Epsom Medical Society was read, stating that a public medical service scheme which allowed the collection of subscriptions by friendly societies was already in operation in Epsom.

The Medical Secretary was instructed to reply to these communications by calling attention to the decisions of the Committee noted above, reaffirming its opinion, but deciding to print schemes (C) and (D) without comment.

It was reported that the scheme of the Reading Provisional Medical Committee for a public medical service was in accordance with model schemes of the Association, with the exception of one rule which allowed for arrangements being entered into with approved societies for the collecting of subscriptions from insured persons, and if expedient for the dependents of insured persons. It was resolved to approve the scheme with the exception of the above-mentioned rule, and at the same time to call the attention of the Division to the decision of the Committee just mentioned.

The Chairman reported that since the last meeting he had approved the rules of the public medical service submitted by the Salisbury subdivision, and the Chairman's action was approved.

Correspondence with regard to the Horsham and North-West Sussex public medical service scheme was read, and it was resolved to make further inquiries before coming to a decision.

Resignation of Contributory Contract Practice Appointments.

It was reported that the following information had been received at the central office as to the sending in of resignations of contributory contract practice appointments:

(*a*) That 144 areas out of 230 had sent in 22,729 resignations of appointments held by 6,042 practitioners.
(*b*) That in the above areas another 281 practitioners holding appointments requiring short notice were prepared to send in their resignations later.
(*c*) That in the above areas 243 practitioners are reported as not having resigned their appointments.

It was resolved to publish the above figures in the Journal and to supply them to the lay press.

Provisional Regulations for Medical Benefit.

The Medical Secretary was instructed to prepare and circulate to the members of the Committee as early as possible a statement comparing the provisional regulations about to be issued by the Insurance Commissioners with the decisions of the Committee as to matters which should be included in the regulations under the Act, with a view to full discussion at the next meeting of the Committee on October 10th.

Date of Special Representative Meeting.

The Chairman stated that in pursuance of the instructions of the Annual Representative Meeting, 1912, it would be the duty of the Committee to submit to the Council a report on the whole situation, and that it would be the duty of the Council to submit a report to the Divisions and to a Special Representative Meeting. After considering the possible dates for meetings of the Committee and the Council and for the Special Representative Meeting, it was resolved that the date of the Special Representative Meeting should be provisionally fixed for Tuesday and Wednesday, November 19th and 20th, 1912, and that the meeting be held in London. It was further

resolved to inform the Divisions at once of the date provisionally fixed for the holding of the Special Representative Meeting, and stating that, in all probability, it would be necessary to make arrangements for the holding of meetings of Divisions during the two weeks immediately preceding that date.

ATTENDANCE UPON MEMBERS OF PROVIDENT SOCIETIES.

In reply to an inquiry, the Committee decided that it could not approve of any arrangements being entered into by medical men for attendance upon insured persons until the whole question of the position of the profession in connexion with the Insurance Act was settled, or until a local public medical service scheme was instituted.

In reply to an inquiry as to a provident dispensary, the Committee recorded its decision that, whatever arrangements were made for uninsured persons, the staff of a provident dispensary should insist upon payment for insured persons, who were members of the dispensary, not being below the rate accepted for other insured persons in the area.

TREATMENT OF TUBERCULOSIS.

Model Scheme for the Treatment of Tuberculosis.

It was resolved to send a copy of the model scheme for treatment of tuberculosis (SUPPLEMENT, BRITISH MEDICAL JOURNAL, October 5th, 1912, p. 374) to the clerks and medical officers of health of counties and county borough councils.

Woolwich Tuberculosis Dispensary.

In reply to a communication from the chairman of the Woolwich Tuberculosis Dispensary, the Committee resolved to advise that the salary of the practitioner to be appointed medical officer to the Woolwich Dispensary should be £500 per annum in view of the fact that it was probable that he would eventually become chief tuberculosis officer in connexion with the sanatorium benefit of the Insurance Act. A copy of the model scheme for treatment of tuberculosis was directed to be forwarded to the chairman.

Hampstead Tuberculosis Medical Officer.

Correspondence with the Hampstead Provisional Medical Committee was reported, including a letter from the Hampstead Committee submitting considerations in favour of the appointment of a whole-time tuberculosis officer for Hampstead at £400 per annum, on the ground mainly that the number of cases in the borough would be small, and submitting also a proposed sanatorium benefit scheme for the approval of the Committee. It was resolved to approve the proposed sanatorium benefit scheme, and not to decline an advertisement for a tuberculosis officer for Hampstead on the ground that the salary was only £400 per annum.

Essex.

Correspondence with regard to the provisional scheme of the Essex County Council for sanatorium benefit was considered, and it was resolved to obtain further information, and, if necessary, to communicate with the President of the Local Government Board.

Kent.

Correspondence with regard to the Kent County Council scheme as amended was read, and it was resolved to obtain further information before coming to a decision.

Approval of Schemes.

The CHAIRMAN reported that he had approved schemes for the administration of sanatorium benefit in West Ham, Rotherham, and Eastbourne, and his action was approved.

Fees of Medical Officer of Health as Temporary Adviser for Hospital Attendance.

Correspondence with a medical officer of health was reported, including a request for advice as to what would be a satisfactory fee for his appointment as temporary adviser to a county and burgh, and for a medical practitioner in charge of a hospital containing twelve beds for advanced cases of phthisis, where insured persons would be admitted. It was resolved to reply that a fee of 10s. 6d. to £1 1s. per case, according to distance, would be suitable remuneration for the work anticipated as adviser in connexion with tuberculosis cases; that his remuneration for attendance at committee meetings should be 10s. 6d. a meeting; and that a salary of £100 per annum should be paid for the daily attendance of a medical practitioner at the hospital for cases of phthisis.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN ninety-five of the largest English towns 7,938 births and 4,153 deaths were registered during the week ending Saturday, October 5th. The annual rate of mortality in these towns, which had been 11.0, 11.6, and 11.9 per 1,000 in the three preceding weeks, further rose to 12.3 per 1,000 in the week under notice. In London last week the death-rate was equal to 13.3 per 1,000, against 11.3, 12.2, and 12.2 in the three preceding weeks. Among the ninety-four other large towns the death-rates last week ranged from 4.9 in Gillingham, 5.3 in Walthamstow, 5.4 in Enfield, 5.7 in Smethwick, and 5.8 in Bournemouth to 16.6 in Oxford, 16.7 in Stoke-on-Trent, 17.1 in Middlesbrough, 17.7 in Preston, and 18.5 in Grimsby. Measles caused a death-rate of 1.3 in Devonport and in Swansea, 1.5 in Birkenhead, 1.9 in Merthyr Tydfil, and 2.7 in Grimsby. The mortality from enteric fever, scarlet fever, whooping-cough, and diphtheria showed no marked excess in any of the towns, and no fatal case of small-pox was recorded during the week. The deaths of children under 2 years of age from diarrhœa and enteritis, which had been 143, 150, and 134 in the preceding three weeks, rose to 153 last week, and included 38 in London, 18 in Liverpool, 8 in Sheffield, 6 in Hull, and 4 each in Stoke-on-Trent, Birkenhead, Manchester, and Preston. The causes of 38, or 0.9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number, 8 were registered in Birmingham, and 3 each in Liverpool, in Preston, and in Hull. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,662, 1,775, and 1,871 in the three preceding weeks, further rose to 1,995 on Saturday last; 317 new cases were admitted during the week, against 281, 311, and 305 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN eighteen of the largest Scottish towns 1,025 births and 509 deaths were registered during the week ending Saturday, October 5th. The annual rate of mortality in these towns, which had been 12.4, 13.8, and 13.0 in the three preceding weeks, fell to 12.2 per 1,000 in the week under notice, and was 0.1 per 1,000 below the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 5.2 in Kirkcaldy and 7.1 in Coatbridge to 15.9 in Perth and 23.3 in Ayr. The mortality from the principal infectious diseases averaged 0.9 per 1,000, and was highest in Motherwell and Hamilton. The 208 deaths from all causes registered in Glasgow included 6 from diphtheria, 4 each from scarlet fever and from infantile diarrhœal diseases, and 1 from whooping-cough. Five deaths from infantile diarrhœal diseases were registered in Dundee and 2 in Edinburgh, and 2 from diphtheria in Edinburgh.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, October 5th, 677 births and 342 deaths were registered in the twenty-two principal urban districts of Ireland, as against 506 births and 321 deaths in the preceding week. The annual death-rate in these districts, which had been 14.2, 14.7, and 14.5 per 1,000 in the three preceding weeks, rose to 15.5 per 1,000 in the week under notice, this figure being 3.2 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 16.4 and 14.9 respectively, those in other districts ranging from 4.4 both in Newry and Portadown, and 4.6 in Ballymena, to 33.8 in Limerick and 35.4 in Galway, while Cork stood at 17.7, Londonderry at 10.2, and Waterford at 19.0. The zymotic death-rate in the twenty-two districts averaged 1.5 per 1,000 as against 1.2 in the preceding period.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments have been made at the Admiralty: Fleet Surgeon WALTER J. BEARBLOCK to the *President*, additional, for three months' Senior Medical Officers' course (to join Royal Naval College, Greenwich); Fleet Surgeon JOHN W. CRAIG, M.B., to the *Agamemnon*, vice Bearblock; Fleet Surgeon CHARLES J. E. COOK to the *Dominion*, on recommissioning, dated October 15th, 1911. Fleet Surgeon A. H. JEREMY, M.B., to the *Implacable*, vice Waterfield, October 4th, 1912; Staff Surgeon WARREN G. WESTCOTT to the *Liverpool*, vice Craig; Staff Surgeon JOHN K. RAYMOND, M.B., to the *Pactolus*, on commissioning; Staff Surgeon ALGERNON C. BEAN to the *Britannia* on recommissioning, dated October 15th, 1912; Staff Surgeon CHARLES K. BUSHE to the *Britannia*, on recommissioning, dated October 15th, 1912; Staff Surgeon ARTHUR J. SHELDON to the *King Alfred*, additional for Second and Third Fleets, dated October 15th, 1912; Staff Surgeon JOHN BOYON to the *Impregnable*, additional for the *Powerful*; Surgeon EDWARD M. W. HEARN to the *Ganges*, for Shotley Barracks and for physical training duties, vice Bushe, dated October 15th, 1912; Surgeon MAURICE W. HAYDON to the *Dominion*, on recommissioning, dated October 15th, 1912; Surgeon WALTER E. LLOYD to the *Pembroke*, additional for disposal, dated October 15th, 1912; Surgeon CHARLES F. BAINBRIDGE, M.B., to the *Impregnable*, additional for the *Powerful*, temporarily; Surgeon JOHN H. MCDOWALL, M.B., has been promoted to the rank of Staff Surgeon, dated May 23rd, 1912.

Staff Surgeon GEORGE ROSS, M.B., has been allowed to retire from the service with a gratuity, dated October 1st, 1912.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon WILLIAM ALLEN has been promoted to the rank of Staff Surgeon.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

No. 18 Field Ambulance. Captain WILLIAM FRASER MUNRO, M.B., 2nd East Lancashire Field Ambulance R.A.M.C., Territorial Force, to be Captain, dated October 2nd, 1912.

National Insurance.

THE PROVISIONAL MEDICAL REGULATIONS UNDER THE INSURANCE ACT.

VARIOUS OPINIONS.

In the hope of getting as much light as possible on the situation, a number of members of the Association who, from different points of view, have given much time and care to the study of the Insurance Scheme, were invited by the Editor to express briefly in this issue of the Journal the impression they derived from a preliminary study of the Regulations issued at the end of last week and published in the Supplement of October 5th. An endeavour was made to address the request to members who were likely to look at the matter from different points of view; not all have been able to reply, but the following preliminary opinions will, we believe, be read with much interest:

Dr. James Pearse (Representative of Trowbridge Division and member of the State Sickness Insurance Committee):

In discussing the Regulations of the Insurance Commissioners it is necessary to bear one or two considerations in mind.

In the first place it is necessary to endeavour to approach the question with an unprejudiced mind, an attitude which it is not easy to assume after living in the heated atmosphere of the last few months. In the second place it is necessary to consider the Regulations in relation to the Act, and not to any amended Act which the profession might wish to see placed on the Statute Book. The Regulations are framed on the Act, and by the Act they must be judged. Further, it is necessary to postulate the existence of a medical service in order that the effect of the Regulations on such service may be considered.

Bearing such considerations in mind let it be said at once that the Regulations appear to be a fair and straightforward endeavour to make the conditions of service satisfactory to the practitioners concerned. The panel system is evidently regarded as the normal method of service, and here the Regulations confirm the vital principle of free choice of doctor, on which the profession has so rightly insisted. The functions allotted to the local Medical Committee are considerable: (*a*) They shall be consulted by the local Insurance Committee before fixing the amount required for medical benefit; (*b*) they shall be consulted by the local Insurance Committee before framing rules; (*c*) they may make representations to the Commissioners before approval is given to local arrangements; (*d*) they shall be consulted by the local Insurance Committee on questions of wage limit; (*e*) they may dispute the right of any insured person to partake of ordinary medical benefit; (*f*) they contribute three members to the seven of the local Committee of Complaints; (*g*) they shall consider all complaints made by one practitioner on the panel against another. These are valuable functions which will give the local profession considerable influence on all questions of medical benefit. But, further, the exercise of such powers and the recognition of such Committee will be of great service to the profession itself in increasing its *esprit de corps* and developing the spirit of co-operation and union which has been so valuable a by-product of the Insurance Act.

The procedure for dealing with complaints has been worked out with care, and appears to be such as would obviate any likelihood of frivolous and vexatious interference with liberty.

The points in the Act, as it stands, to which the profession probably takes the most exception are the Harmsworth amendment and the absence of a wage limit. It is obvious, as regards the wage limit, that the profession will have to depend upon the strength of its local or central organization to obtain this from the local Insurance Committee. The Regulations carry out the spirit of the Addison amendment, but one would wish to see a stronger desire evinced to see it clothed in substance. The Regulations laid down as regards institutions are probably such as to ensure that the conditions of overwork and underpay which have rendered such notorious can no longer prevail, and the local Medical Committee will have power to make representations to the Commissioners regarding any institution to which it takes exception. As under the Act institutions exist, one may be grateful for this check on their activities; but the term needs more definition than it has yet received, and one foresees that considerable difficulties may arise over this lack of definition.

It is impossible to deal fully with the question of finance until the final statement of the Chancellor of the Exchequer has been made. The Regulation (28) on the "Amount applicable for payment of practitioner" will come in for considerable criticism. Practitioners will not be content that the necessary demands required for mileage and drugs should be met, but that their payments shall only come from the amount that then remains. Under a capitation system, for instance, they will rightly wish to insist that a definite amount shall be allotted to themselves. So far as this system will tend to diminish indiscriminate drugging it will be an advantage, but it carries obvious disadvantages. A practitioner faced with the necessity of ordering an expensive drug, or vaccine treatment, will be faced with the fact that the carrying out of his treatment will diminish the amount available for his and others' remuneration.

A further point arising out of the question of finance is that of special services. The only point which touches these is Item 2 in the First Schedule, where the practitioner is to advise his patient what steps he shall take to obtain special services. They may also possibly be dealt with under Regulation 6 (2), whereby the Committee may, subject to the approval of the Commissioners, "make any modifications in any of these conditions and methods of remuneration in case of one or more practitioners": a proviso which is obviously open to wide and doubtful interpretation, but may cover the remuneration of specialists. But is such payment for special services also to be a first charge on the money allotted, or how are such services to be met? The question of special services is one to which sufficient attention has not been given in the financial and general discussions on the Act: it is in the lack of provision of various forms of special treatment and diagnosis that the poorer sections of the community are handicapped, at any rate in districts isolated from hospitals; and any effective medical service must sufficiently provide that this need can be met.

It is impossible in the space of a brief article to cover all the points which may arise for discussion, but the above is an outline of the main items which appeal to one after a careful study of the Regulations. One's general impression is that, granted an adequate money payment, the Regulations are such as to form a satisfactory framework on which to build up a medical service. That they will so appeal to all is not to be expected. Those practitioners who derive an adequate private practice from the insured class will rightly say that they desire no Regulations, good or bad, but simply wish to be left alone. Those who are accustomed to conditions of friendly society practice will probably realize that the Regulations foreshadow conditions of service which are a very considerable improvement on those that now prevail. That there are points on which the Regulations are not what all would desire, especially with regard to financial provisions, is only to be expected. Other points there are which are of doubtful import and need further interpretation; certain points of importance are not covered. The British Medical Association has precluded itself at present from taking any part in amendment or elucidation of Regulations which are provisional; no doubt its opponents will take advantage of such a position. Further, at present no action can be taken to form local Medical Committees under the Act. Such an attitude is necessary until the Representative Meeting has an opportunity of reviewing

the situation after the Chancellor's statement, for it is obvious that if there is still to be no recognition of the Act there need be no local Medical Committees.

But the local Medical Committee is an instrument which is not lightly to be laid aside. Local Insurance Committees will doubtless endeavour to frame schemes of medical benefit, and endeavour either to reconcile the profession or meet its hostility. Of such schemes we shall have no direct knowledge and no power of criticism. The whole purport of the Act, *qua* medical benefit, and of the Regulations is to decentralize control and to consider local conditions. The difficult question in medical politics will be to decide whether it is possible or advisable to allow any measure of local option to localities, or to insist on a rigid centralization of government.

Dr. G. E. Haslip (President of the Metropolitan Counties Branch):

I will not enter into any detailed criticisms of the Regulations—they practically give nothing to meet our demands. The Government passed the responsibility to the Commissioners, and now they state it shall be the duty of every County Insurance Committee to make arrangements. However, I do most earnestly trust the profession will not be tricked by being placed at so great a disadvantage as that to which it is proposed to submit them by the suggestion of par. 3 of the Regulations. We should remain firmly resolved that all our vital points must be settled by collective bargaining; to have isolated members at the mercy of the Local Committees, of whom the majority are members of the friendly societies, and upon which we have such inadequate representation, would be disastrous. I know there are circumstances in which local option must be considered—circumstances in one district differ from those in another; but that does not prevent a minimum in accord with our cardinal principles being definitely settled by the central authorities, and I sincerely hope the Representative Meeting will again endorse this policy before any arrangements are allowed to be made locally.

It will also be interesting to know whether Regulation 16, "Approval of Institutions," in any way applies to charitable hospitals, for upon this very important question of institutional treatment of the insured persons the Regulations appear "beautifully silent," and yet in the First Schedule, Part I (2), it is stated:

> Where the condition of the patient is such as to require services beyond the competence of an ordinary practitioner, the practitioner shall advise the patient as to the steps which should be taken in order to obtain such treatment as his condition may require.

This brings into prominence the great weakness of the Act. The practitioner may advise, but there is nothing to show how the patient can and shall obtain the necessary treatment; he must rely upon the goodwill of our charitable institutions and the gratuitous services of the members of the medical staff. This, I contend, shows the absurdity of calling the Act a national insurance for medical treatment; and I quote Sir Victor Horsley—that State medical work should not be muddled up with charity, that the medical profession should receive adequate and proper remuneration for their services to the State. Consequently, if it is intended that hospitals are to receive grants from the Insurance Commissioners, then members of the hospital staff should also receive remuneration for their services, and it follows that we must have State insurance hospitals, or a large number of beds reserved in our hospitals for insured persons.

Altogether, the Regulations show that the Commissioners have made no attempt to raise the standard of medical practice, but they have issued a number of Regulations by which cheap contract practice may receive the approval of the Government.

Dr. R. M. Beaton, Representative of St. Pancras and Islington Division and member of the State Sickness Insurance Committee:

It is now nearly ten months since the National Insurance Act became law, and at last the Commissioners have issued the text of the Provisional Regulations for Medical Benefit. The profession has waited patiently for these Regulations, hoping against hope that something would be done through the great power given to the Commissioners by Section 78 of the Act to lessen the tension which has existed in the medical profession for nearly two years. This hope has not been realized. The Commissioners have done nothing beyond what is contained within the four corners of the Act, and the Regulations leave the cardinal points for which the doctors are fighting untouched. Outside these cardinal points there are many Regulations that are good and useful, and generally when this is the case they have been copied from the Regulations framed by the State Sickness Insurance Committee, or suggested by them.

On the other hand, there are some of the Regulations which are not easy to understand, such as the method of dealing with mileage, and others, when understood, which cannot be characterized as good. These, however, do not touch the great central propositions for which we contend, for on the great question of the cardinal points the Regulations are either silent or, where they touch, make matters worse than they were as left by the Act. The income limit according to the Regulations is to be arranged for by the Insurance Committees and the local Medical Committees, and there is even a suggestion in Clause 13 that special classes may be exempted from an income limit altogether. The question of the free choice of doctor is complicated by the mileage question, as well as by the Harmsworth amendment, which is allowed to remain in full force. Adequate remuneration is not dealt with, so far as naming any sum is concerned, and adequate representation on the Insurance Committees is never mentioned.

But perhaps the most important question raised by the Regulations is the handing of the whole arrangements over to the County Insurance Committees. This means that all these debatable and important matters for which the profession is striving would have to be negotiated and fought for in detail. Now, if one may judge from the variety of schemes for sanatorium benefit which are being promulgated and accepted in various Divisions, the outlook for the realization of the hopes of the profession, as far as medical benefit is concerned, is anything but good if we have to fight for them in detail. It may be that the profession, after consideration of the Regulations supplemented by the Chancellor's statement on remuneration, may decide not to work the Act, but if it should, for reasons which are not obvious at present, take the other view, then the only hope of victory would be for the Council, acting through the State Sickness Insurance Committee, to treat with some body on the other side who would be able to speak for the whole country.

Dr. E. C. Daniel, Representative of the Croydon Division:

The first impression that the Provisional Regulations for the Administration of Medical Benefit make on one's mind is that they repeat and, owing to their greater detail, emphasize the objectionable features, so far as the medical profession is concerned, of the Act itself.

First, "lay control" is "writ large" throughout the Regulations. The Insurance Committee (with its medical quota of three-fortieths or five-eightieths) is, subject to the approval of the Commissioners, all-powerful. In this connexion, look at Regulation 48: "Committee of Complaints," for dealing with "any complaint against . . . or against a practitioner . . . in respect of the discharge by the practitioner of his *professional* duties." And this committee will be at least three-sevenths, and probably four-sevenths, laymen.

Again, look at 48 (4), under which *any* complaint other than the "complaints above referred to" against a practitioner may be referred to this subcommittee. Any recommendation which this subcommittee makes goes back to the Insurance Committee, on which the medical man has a representation of three-fortieths or five-eightieths.

Pass on to Regulations 50 and 51. Here we find the Commissioners established as the final court of appeal. We, or those of us who form panels, are no longer to be judged by our peers—the General Medical Council—but practically by a body of laymen; because, although we are given a nominal representation on the committee, how many of us, busy general practitioners, have or can afford to give the time to unpaid committee and inquiry work, for it must be noted that there is no remuneration provided for the complaint or inquiry committees.

Here, then, is "lay control," with all the power and weight of the State behind it.

Next, let us review the Regulations as to income limit. These appear, on the face of them, to be satisfactory. But note, the committee *may* fix—and remember the constitution of the committee—three-fifths representing the approved societies.

The most useful Regulations appear to be 14 and 15, whereby the committee may allow any insured person to make his own arrangements for receiving treatment and contribute to the cost. This renders possible the schemes prepared by the British Medical Association, and also other medical service schemes, under which the entire control of the doctors is in the hands of the doctors.

Regulation 16 does not appear to secure free choice of doctor for those who belong to institutions.

Regulation 18 (Section 3). Note how practitioners, if they join the panel, will have patients allotted to them without the chance of refusing, and under Section (5) note that choice of doctor comes only once a year; it is true that this is modified by Regulation 27, but it hardly gives that freedom of choice which should be secured both to patient and doctor.

We may now consider Regulations 28 and 29.

Under 28 the most important point is, that drugs and appliances (see Second Schedule) are the first charge on the amount allotted to medical benefit, then the cost of mileage and cost of treatment in other committees' areas, and from the amount that is left the practitioners will be paid.

It must be pointed out here that this Regulation nullifies the object for which dispensing was taken out of the doctor's hands. In his first reading speech (I have not the exact words) Mr. Lloyd George gave as his reason that the doctor, when prescribing, should not have to think of his pocket. Under this Regulation he will have to think not only of his own pocket but also of the pockets of his colleagues on the panel (if any).

Under 29, note that though practitioners may have agreements with the committee for a certain capitation fee, it is only to be used for purposes of calculation; the practitioner may possibly only receive a proportionate payment. The same applies also to "payment by fee," but under this system the payment will bear some relationship to the amount of work done, and will not depend on the doctor's luck, or want of luck, in securing healthy, or unhealthy, lives on his list. *In either case, the doctors still bear the insurance risk.*

Regulation 46. Mileage: Three miles is excessive; for a capitation fee of 8s. 6d., or a visiting fee of 2s. 6d., the radius should be reduced to two miles by road.

Turning to the First Schedule (Part I, Section 1) the ninth line ". . . . nor entitled to make any charge for treatment of any person in respect of confinement," needs some qualifying explanation, or should be deleted.

Second Schedule. As the money available is limited, the more expensive bandages, crêpe, domette, flannel, and india-rubber should be excluded. Oiled silk should be replaced by a less expensive substitute. Ice-bags, also, are not a fair charge on the funds.

The question of attendance on domestic servants in their employer's house is not dealt with, but it must be borne in mind that the British Medical Association itself has not dealt with this problem.

Another important omission is the question of attendance on cases of illness due to personal misconduct; the doctor, under capitation payment, should not undertake these cases.

Reviewing the Regulations as a whole, it would seem that, by working under the Act, the medical profession would be sacrificing its freedom and independence.

We have to remember that the decision we come to now is not for ourselves only, but also for those who are yet to come. Should we be doing right, even if the offer were a tempting one, to give up for all time our present position of freedom and independence, even to the extent contemplated under the Insurance Act?

It is not as though there were no alternative. The profession can maintain its independence and still give efficient and sufficient service to the insured under one or other of the schemes published, or yet to be published, by the British Medical Association.

As the result of a careful perusal of the Regulations, I am strengthened in the conviction that we ought not to form panels; we ought not to submit ourselves to the Regulations nor to work under the machinery of the Act, but to proceed with our own schemes and leave it to the Insurance Committees to act in accordance with Regulations Nos. 14 and 15.

Dr. H. D. LEDWARD (Representative of East Herts Division):

The Provisional Regulations for Medical Benefit emphasize in plain and unmistakable language the serious objections which have been raised in many quarters to the provision of medical attendance under contract on the large scale contemplated in the National Insurance Act.

If we agree to work under contract, some machinery must be provided for checking our work, and the Committee for Dealing with Complaints (par. 48) and Method of Enquiry (par. 51) prescribed in the Regulations will appear equitable arrangements to the majority of laymen. Yet how irksome will medical practice become under such conditions. A mistake in diagnosis, inevitable in the early stages of many serious diseases, may be a cause for complaint which cannot be considered either frivolous or vexatious. The Committee of Complaints may decide that no blame attaches to the practitioner, yet he will be put to considerable annoyance and trouble in defending himself, and will not derive much satisfaction from the report sent up by this committee; although the report exonerates him, at the same time it advertises the fact to the whole Insurance Committee that he made a mistake. It makes one feel that if private practice is to be thus supervised by a public authority consisting almost entirely of laymen, then the profession had better give up private practice and become at once a branch of the Civil Service, with the regular salary, pension, and protection from lay interference which such a service would mean.

But why should the conditions of private practice be so disturbed under a system of insurance? Why should we not be paid for work done according to a schedule of fees just as the chemist is to be paid for goods supplied according to a list of prices (paragraph 33, 1*a*)? This alternative to the panel system was outlined in the SUPPLEMENT for July 13th, p. 93, and under it such conditions of private practice would obtain as, in the view of the majority, provide the most satisfactory relationship between doctor and patient. The essential feature of such a proposal is that the insured person, through his society, should have an interest in the fund which pays for his medical attendance, and this is facilitated by the Regulations relating to Negotiations with Societies (paragraph 3). An Insurance Committee might budget in advance of the probable requirements and agree to return any surplus to the societies. In this way an elastic pool is provided the solvency of which is guaranteed by the societies who derive any advantage accruing from a due discipline of their members in relation to medical benefit. In the Regulations the four methods of remuneration which involve payment for actual services rendered (First Schedule, Part II, B, C, D, and E) are not true payment per attendance systems at all, as the pool is strictly limited, and hence the insurance risk is still borne by the practitioners. A precedent for a real system of payment for work done is, however, being created in every insurance area in connexion with domiciliary treatment under sanatorium benefit.

In the event of the increased financial provision being such that the profession decide to accept contract work on the panel system, the ingenious financial provisions (pars. 28, 29, and 30), suggestive of the efforts of a bankrupt to compound with his creditors, will require our very careful consideration. The House of Commons in its wisdom decided that the drugs should be separated from the doctors, so that, in the words of the Chancellor, there shall be "no inducement for an underpaid doctor to take it out in drugs." But here, under the Regulations, should the estimated cost of the drugs and appliances be likely to be exceeded in any year owing to an epidemic or other causes, we have a direct inducement to prescribe less expensive drugs, which is a contravention of the expressed intention of Parliament. If the supply of drugs is removed from our own control, we must surely insist that a fluctuating drug bill does not mean under any circumstances a fluctuating capitation fee in inverse ratio.

Dr. T. BARRETT HEGGS, M.O.H., North-East Kent, Representative of the Canterbury and Faversham Division:

In answer to your request my preliminary general opinion of the Provisional Regulations is that they are inimical to the best interests of our profession:

First, the Government has allocated an entirely inadequate sum of money for the work.

Secondly, the Government has shifted the insurance risk from themselves on to the profession.

Thirdly, insufficient representation is accorded the profession on Insurance Committees, in view of the vital effects of the Act upon medical men.

Fourthly, there is no obligation to consider an income limit and no means given to the profession of enforcing such.

One important insurance company often has greater representation upon the Insurance Committee than the whole of the medical profession in that area.

There is no danger at present of a whole-time National Medical Service.

The Regulations must be met by a *united* profession, as their intention is to deal with the profession piecemeal.

Dr. W. GORDON (Exeter):

The Provisional Regulations just published will scarcely promote a better understanding between us and Mr. George.

1. They contain no proof of concessions as regards adequate payment, reasonable wage limit, or—most important of all—freedom of the medical men from the control of the friendly societies and their friends.

2. They provide a form of jurisdiction over medical men to which the profession would be simply insane to consent.

3. Between the lines we may read the promise of friction, red tape, and wasted time and energy.

However, they serve one useful purpose. Just at the present moment there is danger of the merely monetary side of the question being forced too far into the foreground. For there is another evil, and a far worse, to be feared than underpayment. It is that our highly technical, intellectual, responsible, and nationally vital work should be subordinated, for millions of the community, to the narrow, self-centred, half-educated, and unintelligent control of the very class which has already so amply proved its unfitness to govern professional affairs.

What would be the position of the medical man, however he might be paid, when controlled in his duties by his social and intellectual inferiors, subject to the petty annoyances of their red tape and "complaints," and liable to punishment, perhaps ruin, by a predominantly lay tribunal incompetent to pronounce justly on his professional conduct?

What also would be the position of the country on whose entire medical profession this state of affairs must inevitably react?

The "Provisional Regulations" have done good service by making these positions clearer.

Dr. ALFRED H. WILLIAMS (Harrow), late member of the State Sickness Insurance Committee:

The long expected Regulations for Medical Benefit have at last been issued by the Commissioners. But their perusal leaves me with feelings of disappointment. We have been promised again and again that when we had the Regulations we should find all the uncertainties of the Insurance Act removed, and means provided whereby medical men would be able to accept honourable and well paid work under the Act.

The Commissioners, however, appear to have found that they had been given a task beyond their powers. In plain words, they have shirked their responsibilities. They have left the crucial questions of income limit and amount of remuneration to be settled by the county committees. They have not even helped these committees by giving any clear lead in these matters. The situation has been made more involved than ever, and is bound to lead to struggles all over the country between local committees and the medical men. If it was impossible for the Commissioners to give any indication as to what the amount of remuneration would be until Mr. Lloyd George had made his pronouncement as to what extra amount he could devote to the working of the Act, it would have been better for them to have held back the publication of the Regulations till the Chancellor had made his promised statement.

An examination of the Regulations in detail shows that, though they have been set out in an orderly manner with clear headings so that reference to any of them is easy, there is a good deal of obscurity in the wording and a great deal of uncertainty as to what is the intention of the Commissioners on important questions.

Regulation 6 hands over the power to determine the conditions of service and the rate of remuneration of medical men, and Regulations 9, 10, and 13—the fixing of income limits—to the County or County Borough Insurance Committees. Of course, it is stated that they shall consult the local Medical Committees. But there is no guarantee that any attention will be paid to the advice given by these Medical Committees. It might have allayed some of our suspicions if it had been provided that these duties were to be carried out by the Insurance Committees after *agreement* with the local Medical Committees. What a farce it is to pretend that this consulting with the local Medical Committees gives any security to medical men when the decision lies with the unfettered Insurance Committees, on which a permanent majority representing insured persons has been purposely secured. The present arrangement forces medical men to use the only weapon left—to secure that they shall not be exploited. That is, to stand firmly together throughout the country and to refuse absolutely to take service under the Act.

Regulation 13 provides that certain persons may be required to make their own arrangements for medical attendance. But it also provides that, even when an income limit has been fixed, the committee have power, if they think fit so to do, to exempt any persons from this requirement. This provision must be viewed with the gravest suspicion.

I fail to find in this or any other Regulation any provision for requiring those persons to make their own arrangements who, because they have been insured for five years, remain insured persons even though they may be making an income of any amount over £160 per annum.

Regulation 15 provides for the contribution by the Insurance Committee to the cost of medical attendance on those who are required or allowed to make their own arrangements. The wording is complicated and involved, and does not seem to guard against the payment of fees at a lower rate than that agreed to by the Insurance Committee. This appears to leave a loophole for very undesirable undercutting, which must lead to the provision of unsatisfactory medical attendance.

Regulation 16 provides for the recognition of institutions for giving medical attendance. This is one of the provisions in the Act that has been always viewed with the gravest suspicion by the medical profession. There is nothing in the Regulation to remove this suspicion.

Regulation 18 provides for the distribution of insured persons amongst the medical men on the panel when a capitation system has been adopted. But it does not give much help to the Insurance Committee in dealing with those insured persons for whom no arrangements have been made, particularly those who have been refused by the doctors they have selected for themselves.

Regulation 19 deals with the distribution under a system of payment per attendance. The provisions here are very involved, and include such unnecessary restrictions and complications that the advocates of this system of payment are hardly likely to be pleased with them.

From Regulation 28 it would appear that the payment of the medical men for their services is not to be the first charge on the fund, as we have always been told. The first charge seems to be for drugs and appliances, the next for mileage, and the next for the cost of attendance on those temporarily resident in a county other than their own. After this the medical men may be paid for their services out of what is left. And where is the provision for payment for extras other than mileage?

In the Regulations for the supply of drugs and appliances the plea of the Association that medical men should be allowed to supply drugs to their own patients has been ignored; whilst Regulation 35 providing for such supply in emergencies seems likely to prove quite unworkable.

Regulation 48 provides for a committee to hear

complaints. With the greater part of this Regulation I am in entire agreement. Had the fixation of income limit and the arrangement of the fees to be paid been referred to a committee composed in similar proportions some of my gravest objections to the Regulations would have disappeared. But I must take exception to Paragraph (9) of this Regulation. It is preposterous that a medical man should be tried, if not for his life, at any rate for his livelihood, on the finding of a small committee of seven, on which there is only a minority of medical representatives. The case should at any rate be referred to the local Medical Committee before being sent to the Commissioners.

In the First Schedule, Part I (1), who is to define what is "such treatment as is of a kind which can, consistently with the best interests of the patient, be properly undertaken by a practitioner of ordinary professional competence and skill"? And what does treatment "*in respect of a confinement*" include?

Are all services not included in the list of extras in Part II (B) to be included in the ordinary duties of a practitioner? What is to be done about vaccination, administration of vaccines and serums, estimation of refractions, operative dentistry, stomach washing, serious accidents not involving fractures and dislocations; bacteriological, blood, or *x*-ray examinations, etc.? And what is to be done about certificates, reports, special examinations, court attendances, etc., under Common Law, Workmen's Compensation, Employers' Liability, and other statutes? Finally, I see no distinction suggested between the payment to be made for those insured persons who are accepted by the doctors as sound lives, and that for those unsound lives whom we are told by the Chancellor to expect amongst the Post Office contributors.

Dr. Evan Jones, Representative of the City Division of the Metropolitan Counties Branch:

It would take too much space to criticize in detail such a long list of Regulations, but I would much like to put before the profession their application to the contract practice so ably analysed by Mr. J. F. Sowerby and published in the Supplement of May 25th.

The only figure we have to go on at present is 6s. per head per annum, and the attendances per head per annum were 5.87, or, in round figures, say 6 in a normal year such as 1911. The lowest price I have heard mentioned by the chemist for the supply of medicines is 7d. per 8 oz. bottle. This will mean 3s. 6d. per head. In addition to this there are lotions, gargles, ointments, pills, and many other items, which at the same rate could not possibly be supplied under 7d. per head. To this must be added at least 2d. per head for vaccines and serums, which are being used more extensively every day. Then trusses, abdominal belts, elastic bandages, spinal supports, catheters, colotomy belts, splints, bandages, and dressings could not possibly cost less than 2d. per head. Further, the expenses of printing, the numerous forms and sheets mentioned in the Regulations, and the cost of administration of purely medical benefit would be very considerable—say, 4d. per head, for the sake of argument. This will altogether swallow up 4s. 9d. out of the 6s. leaving 1s. 3d. for the doctor.

According to Clauses 28, 29, and 30, it is clearly laid down that the chemist is to be paid in full, and in an abnormal year, when there is an epidemic of influenza and the attendance required is 20 or 25 per cent. above the usual, it is clear that there will be nothing at all left for the doctor. Further, it is laid down that each quarter the doctor is only to be paid a part of what he has earned, and the account is to be adjusted at the end of the year. This gives the chemist a further undue advantage in securing his fees at the expense of the doctor: and, according to these clauses, everybody is to be paid in full, and the doctors can divide the balance, if any, amongst themselves in proportion to the work done; so that, whether he works on the basis of payment for work done or capitation, he never knows what proportion of what he has earned is going to be paid him—or, indeed, if there will be anything left for him at all, and certainly the harder he works the less he will be paid.

Clause A of Part II of the First Schedule prescribes a method of arriving at the number he has attended during any quarter which in the majority of cases must prejudice him considerably. For example: On October 1st, 1913, Dr. X. has 600 members of approved societies on his list; on October 20th he intimates to a leading member of that society that it is time he should cease drawing sick pay, at which offence is taken, and on December 31st he finds his list numbers only 300—result, 600 added to 300 and divided by two gives 450 as the number he is entitled to be paid for, notwithstanding the fact that the whole 600 have been on his list during every day of the quarter. He is, therefore, penalized to the extent of 25 per cent. of his earnings.

The whole Regulations are impossible, and the best that can be said of them is that they will keep the medical profession together, as not even blacklegs would accept such terms as these. It is difficult to believe that they were put forward with any hope that they would be accepted. I am of opinion that the Chancellor and his advisers have closely studied the trend of events in the British Medical Association and realized that our cumbersome proposed public medical service is too expensive to work and likely to break down in a few months, and that then they will be able to impose on the profession any terms they like.

It is urgently necessary now that some new scheme should be considered by the Divisions at once to meet the new position that has arisen. I believe some such scheme as Dr. Ledward's considerably modified will be found to meet our requirements.

Dr. H. F. Devis, Representative of the Bristol Division:

The provisional Regulations are what we expected—the Act, dressed for show. They concede nothing; they withdraw nothing. They emphasize the Harmsworth clause, and show how impracticable free choice of doctor will be. They give enormous powers to the local Insurance Committees, but none to the local Medical Committees. Their Committees of Complaints and of Inquiry seem fair on their face value, but the power behind them is that travesty of British justice, a single judicial body, without judicial knowledge or training, antagonistic to our profession, from whom there is no appeal. The murderer will have a better chance of justice than the doctor.

The Regulations give us what we already possess—the right to fight, and, if strong enough, to force our demands from the committees, all but the adequate payment. Nothing short of the strike weapon will get us even tolerable conditions, and where, from want of organization, that weapon is not kept constantly in hand, the conditions under these Regulations will be those of slavery.

The Regulations are but fur and feathers to clothe the hook. The Chancellor will tie on the silver tinsel presently, and we shall be strongly advised to swallow the delicate lure. But the hook is there, and a rank barb, and a tight line and wrist of steel behind; and farewell to freedom!

Dr. R. Wallace Henry (Chairman Leicestershire Provisional Local Medical Committee):

It is impossible in a few sentences to give much useful criticism of the Regulations; on the surface they suggest the possibility of the profession obtaining some of its demands, but they also suggest an endless vista of local strife on many matters of detail which are of vital importance.

The wage limit and even the State payment are left to be settled locally. Mileage is for all practical purposes done away with; as in the past, so in the future, the doctor comes in for whatever money may be left over when all else is paid for; and a system of payment—capitation inclusive of all extras—is proposed which is calculated to perpetuate all the worst evils of contract practice when regarded from the patient's point of view. It is, moreover, possible for an Insurance Committee to refuse to give an insured person who is desirous of making his own arrangements for medical attendance any grant in aid, a matter which is of considerable importance at the present juncture.

The committees for considering complaints present some good features, and throwing the onus upon the insured person of proving that he is below the income limit which may be fixed upon in the area, if his right is challenged, meets the views of the profession

Until the amount of remuneration offered is definitely known it is impossible to say whether the profession will consider the Regulations workable even in the provisional state; unless that be satisfactory, there can be no amicable settlement.

Dr. William Russell (Chairman of the Scottish Medical Insurance Council):

As I have been asked to indicate briefly what general and preliminary opinion I have formed on the provisional Regulations for medical benefit under the National Insurance Act issued by the Commissioners I have readily consented to do so.

In the first place it is clear that the Regulations have been drawn up with the amount of clerical skill and experience which we expect such a document to show. It is, however, like a well-devised menu card, suitably decorated, the various courses carefully selected and following each other in becoming order, but when the covers are lifted the dishes are empty and the stately feast becomes a menial's banquet.

The schedules are the most entertaining part of the document, for they have reproduced all the various methods of payment which have been suggested by practitioners; they give impressive lists of the extras recognized as reasonable charges; and apparently concede even mileage, when it is beyond a radius of three miles from the doctor's house.

When we look at all this more closely we find that a three-mile limit, seeing there are four points to the compass and that there is a return journey, means that a doctor may travel twenty-four miles in one day without a mileage allowance. As to the lists of extras, the mode of their payment, so far as my poor intellect can follow it, seems to be that if the local area has any money over (which seems doubtful) it is to be divided amongst the doctors in proportion to the amount of their accounts, and it is not even suggested that they may be paid in full. The doctors are indeed saddled with the risk of there being no money to pay for such extras as night visits, setting fractures, administration of anaesthetics, and so forth.

Not only this: up to the present every doctor has thought that there was a safe 4s. 6d. for medical attendance on each insured person, but this is evidently not the case. It was only a possible 4s. 6d. In Section 29 (1) it is stated, and it is repeated in (2), that the sum payable to the doctor is "calculated in accordance with the rate contained in the practitioner's agreement with the committee."

It seems clear that the local Insurance Committees are expected to make their own terms with the doctors, and as these committees consist of friendly and approved society representatives to the extent of two-thirds, and the friendly societies have recently been indicating their predatory aspirations when other people's labour is wanted by them, the profession seems to be in for a hand-to-hand fight in every insurance area if the working of the Act were even attempted.

If I understand my professional brethren in Scotland at this time, these Regulations mean that they will more strongly than ever set their faces against working medical benefit under the Act.

It is also well that the public should understand that no insured person can make independent arrangements for his medical attendance without the consent of the local Insurance Committee, and that consent can be refused [20 (2)]. A more un-British arrangement it would be difficult to devise.

What impresses me right through these Regulations is that they are the Act, much as one pictured it at the beginning, swept of soft-sawder, and freed from all the sand thrown in the face of the profession for months past. This is the naked Act, and I do not doubt that the profession will realize where its acceptance would land them.

Dr. J. R. Hamilton (Hawick), Chairman of the Rural Districts Subcommittee of the Scottish Medical Insurance Council:

The effect of Section 28 of the medical benefit provisional Regulations appears to be this: Where the Insurance Committee have decided how much of the insurance money collected they are going to apply to medical benefit, they deal with the sum so fixed in the following way:

First, they deduct from it the whole cost of drugs, etc., supplied. Secondly, they deduct mileage. Thirdly, they deduct an amount for temporary residence outside their area, and *what is left*—whatever the amount—is what is available for remunerating the doctors.

I hope it will be clearly understood by every one interested that if their residue is not sufficient to yield 7s. 6d., or any other sum named, there is no source from which it can be supplemented. It is idle, therefore, to talk of guarantees or to listen to empty promises. Clause 28 seems to me to be of all others in these Regulations the most subtle.

Dr. Christopher Addison, M.P.:

All those of us who have been intimately concerned with the progress of the Insurance Act and with the drafting of the Regulations which relate to the administration of medical benefit are fully conscious of the very real and natural apprehensions that are entertained by many members of our profession, and of the points of criticism which may be raised. As one who has heard many of the questions discussed from all points of view, and who is convinced that a serious effort has been made in the Regulations to protect legitimate professional interest, I welcome the opportunity to make some comments on the various objections to and criticisms of the Regulations which have appeared up to the present.

Harmsworth Amendment.—It has been pointed out that in Regulation 16 no definition is provided of a system or institution. This is so; and the reason, I think, will be apparent to any one who tries to formulate one. It is practically impossible to frame a definition of such a vague term as "a system" which will include all that it is intended to include, and exclude all that ought to be excluded.

If the Regulation is studied further it will be seen that whatever the system or institution is, the treatment given by it to insured persons must (1) be adequate, and (2) every insured person is entitled to cease obtaining his treatment thereunder at the expiration of the currency of a medical list without incurring any pecuniary loss or other penalty. These two provisions will exclude a large number of systems or institutions where the medical arrangements are of an unsatisfactory nature, and it will prevent the management from penalizing any member who exercises his free choice as provided in the Act. It will be noticed also that the contribution toward the cost of the treatment given in such an institution, paragraph 16 (3), is governed by the conditions of Regulation 15, and if 15 (*b*) is consulted, it will be seen that the amount which is to be contributed shall not exceed the expenses incurred in obtaining the necessary medical treatment and attendance, and thereby it will exclude the possibility of making a profit out of the medical service of the institution—that is to say, by attempting to "sweat" the doctor.

One may, I think, be fairly confident that not many undesirable systems or institutions will be left when those recognized have to give adequate medical treatment, to give free choice of doctor without penalties to their members, and are not allowed to make a profit out of their medical service.

Remuneration.—Considerable criticism has been directed against Regulation 28, and, in conjunction with the other related paragraphs in the schedules, it is worthy of very close scrutiny. It is pointed out that the provision of drugs and appliances and mileage, and the cost of medical benefit of those temporarily resident in an area, constitute a first charge, and that the "net fund" remaining is that from which the payment of professional services is made. It will be seen by consulting the First Schedule, Part I, in the light of paragraph 28, that the extra services which might be required by a patient "outside the competence of an ordinary practitioner" are not a first charge upon the money available, and therefore do not reduce the amount available to provide the net fund. Apart from this, however, it is clear that the services above mentioned are a first charge. The amount which is necessary to provide reasonable payment for mileage is difficult to determine, but careful estimates seem to indicate that it will not exceed 4 per cent. of the

total money of the fund available. As to the provision of drugs and appliances, it is evident that these will be ordered by the medical man, and that for the purposes of economical and efficient administration, whatever may be the total amount available, it is necessary that the interest of the medical man should be enlisted in preventing unnecessary and extravagant charges. A satisfactory arrangement appears to me to be one which, in consequence of the variations in the types of remuneration which will have to be adopted, could not well be inserted in the Regulations, whereby a minimum obtainable from the net fund might be arranged in the agreement, leaving a sufficient margin in which to exercise economy in the matter of drugs and appliances. I recognize to the full the various points for and against the arrangement suggested in the Regulations, but, on the whole, it seems the best way of obtaining a satisfactory adjustment.

What is really essential is that the money provided after a fair allowance for the cost of mileage, drugs, and for those temporary residents, shall leave a net sum of a sufficient magnitude as to provide proper remuneration for medical services. Some objections have been raised on the ground that the bargaining must be to a great extent local. This is so; and it will be remembered that it was one of the original demands of the British Medical Association. It is difficult to see how it could be otherwise, for it is quite certain that no central committee could devise a scheme of remuneration which would be acceptable to the different parts of the country at one and the same time.

Lay Control.—Many medical men object that the Regulations would place the profession under lay control, but a study of the Regulations will show that in professional matters it certainly cannot be so. In this connexion it is very necessary to be quite clear as to what we mean. If the objection to "lay control" is based on the ground that the determination of the conditions of service and the remuneration of medical men is not in the hands of a body solely composed of medical men, or on which they are in a majority, a clear issue of principle is raised. Apart from the fact that it was not part of the original demands of the British Medical Association, it is difficult to believe that any Government would be willing to allow the management and direction of a service financed by moneys raised on the authority of the State to be vested in a body composed wholly or mainly of those who were working in it. It would be entirely against the traditions of British Government that such an arrangement should be made, and I feel satisfied that it would not be for the ultimate good of our profession if it were made. Some medical men seem to think that the representatives of the insured persons on the Insurance Committee will all be of the same mind, and will be antagonistic to the medical practitioners. Those of us who know how these committees are constituted know perfectly well that the representatives of the insured thereon, apart from those appointed by county councils and the Commissioners, are by no means of the same way of thinking on medical questions, and the recent proceedings of the lay members of the Advisory Committee showed perfectly well that there was an overwhelming majority against placing the control of the medical service in the hands of the societies. The representatives of the "friendly societies," as we have hitherto known them, are in a considerable minority on nearly all insurance committees. Indeed, at present it looks as if the representatives of the industrial insurance societies, with the nominees of the county councils and of the Commissioners, will be in virtual control of most of the Insurance Committees in the country. These committees, like most committees, will be guided by men of reasonable counsels who know what they want, and who state their case with a fair consideration for the different interests involved, and I am quite sure that a mere counting of heads in advance will be no guide as to what the committees will do. The proper way to lead the committees to take a fair view of medical questions is to have capable medical representatives upon them. It always seems to me that their *capability* is a much more important matter than their number. Apart from all this, however, the medical man is not in any sense the servant of the Insurance Committee. It will be seen by the Regulations that he enters into an agreement as an individual to attend individual insured persons to whom he is related as to a private patient on certain terms, and the terms and conditions of his service are previously submitted to the local Medical Committee. A medical man is neither engaged nor dismissed by the Insurance Committee, and he is not responsible to them in any sense similar to what has hitherto been the case in so-called club practice. The Regulations are drafted so that complaints against a medical man by an insured person go direct to the special Committee of Complaints, and are not inquired into by the local Insurance Committee. Some objection has been taken of the power of an Insurance Committee to refer a case to the Insurance Commissioners when the facts as reported on by the Committee of Complaints lead them to believe that the continuance of a medical practitioner on the panel is prejudicial to the efficiency of the service. Some machinery of reference must be set up to provide for the submission from the locality to the special "Enquiry Committee" constituted by the Commissioners under Regulation 51 to deal with such complaints. It is just as much to the interest of medical men as it is to that of the insured that some means should be adopted for freeing the panel from any one who acts in a discreditable manner, and it is inconceivable that an authority should devote large sums of money to a given purpose if it should not be equipped with powers to arrest its misuse when a case is established. It will be noticed, however, that the Regulations are carefully framed to guard against such complaints being discussed by a lay tribunal, and it will be seen by reference to 48 (4) that the proceedings of the Committee of Complaints are private. The higher tribunal set up to advise the Insurance Commissioners under 51 will consist of medical men and barristers-at-law of sufficiently high standing to command general respect. We have in these matters to try to strike the happy medium between purely professional control and the introduction of ill-informed lay interference. It will be noticed also that no *verbal* complaints against a medical man can be entertained at all.

Income Limit.—The regulations dealing with the income limit, as some have remarked, are permissive in character. If we consult the terms of the Act, Section 15 (3), we shall see that it would have been illegal for the Commissioners to "require" an Insurance Committee to establish an income limit. The Regulations are designed to put into a workable shape the powers conferred on committees under the Act. Personally, as is well known, this is one of the six cardinal points with which I could not agree. It would be out of place to argue the question here, but it is fairly certain that not more than about one insured person out of twenty will earn more than £104 a year, and that they belong to that section of the working community which enjoys the best health and the most constant employment, as their earnings indicate. From the purely monetary standpoint, I believe that it would pay medical men better to seek for proper remuneration as applied to the whole of the insured, and not seek to discriminate amongst them on the ground of income. There is one exception, however, to this, with which there must be general agreement—namely, the cases in which under Section 1 (3) (B) of the Insurance Act persons who have been insured for five years, however well to do they may become, may continue insurance on a voluntary basis. These cases cannot occur till July, 1917, at the earliest, and it is manifestly fair that abuses of this provision should be prevented. Although the words of the present Act do not provide any compulsory powers in regard to them, it will be a matter which will doubtless have to be arranged before the time mentioned providing the system of the Act gets into operation.

The drafting of the Regulations was a task of enormous difficulty and complexity, and, in view of the grave issues involved, it is certain that the points for and against the arrangements proposed will receive the most careful and critical consideration before an adverse decision is arrived at.

It was reported to the meeting of the State Sickness Insurance Committee on October 10th that in 204 areas over 30,159 resignations of contract practice appointments have been sent in by 8,072 doctors. In these same areas 445 doctors will give such shorter notice as is required to take effect on January 15th, 1913, and 345 doctors are reported as not having resigned.

CONFERENCE OF REPRESENTATIVES OF FRIENDLY SOCIETIES WITH THE CHANCELLOR OF THE EXCHEQUER.

THE CHANCELLOR OF THE EXCHEQUER, who was accompanied by Mr. Masterman, Chairman of the Joint Committee of Insurance Commissioners, Sir Robert Morant, Chairman of the English Commissioners, and Mr. J. Smith Whitaker, Deputy Chairman, met members of the Advisory Committee other than medical representatives at Caxton Hall on Friday, October 4th. The meeting was private, but the following official statement has been issued:

The Chancellor of the Exchequer presided this morning at the Caxton Hall at a Conference of members of the Advisory Committee (other than the medical representatives) appointed under the Insurance Act, who were asked to attend to give him their advice on the question of the financial provision to be made for medical benefit under the Act, and questions relating thereto.

At the commencement of the proceedings the Chancellor explained that the Government must shortly come to a decision as to whether any increased financial provision should be made for meeting the cost of medical benefit, and, if so, in what way this should be done. He had already, at the request of the medical members of the Advisory Committee, heard their views on the subject on Wednesday last, and he felt that before any decision was arrived at by the Government he ought also to hear the views of the other members of the Advisory Committees. He reminded the meeting that he had already indicated publicly that the Government were prepared to ask Parliament to make some additional provision, but, before deciding on the amount, he would like to hear their opinion on the various considerations involved.

Further, those present would agree with him that, although for the sake of securing the hearty co-operation of the medical profession in the provision of an efficient medical service, it might be in the general interest to provide more money than had hitherto been contemplated for the purpose, there must be a limit to what the country could reasonably be expected to find. It was conceivable that, when the Government had done their best, they might fail to induce the medical profession to work the Act on the lines laid down, and it was obvious that, as prudent men, the Government had had to consider what the alternative must be. He desired the advice of the Advisory Committee on this subject.

A full discussion followed, in which members representing the friendly societies, the trade unions, the industrial insurance companies, and employers of labour all took part.

On the question of increased financial provision, while there were differences of view as to the necessity of any further provision being made, the speakers concurred in the opinion that no further charge in respect of medical benefit, beyond the 6s. originally assumed for the purpose of the actuarial estimates, could possibly be made upon the funds provided under the Act, as it was clear that this could only have the effect of depleting the sums necessary to provide the other benefits. It would therefore be necessary that such increased provision, if any, should be made from the Imperial Exchequer. Representatives of friendly societies pointed out the special difficulty in which they might be placed as regards making the necessary additional provision for those of their members who were unable to become insured under the Act, and asked that this should be taken into consideration in any provision that was made.

On the question of alternative methods of providing medical treatment, in the event of its being found impossible to constitute the panels satisfactorily, two main lines of organization were suggested by various speakers, the first being that the money payable for medical benefit, including any additional grant which the Government might decide to make, should be handed over to the approved societies, to whom the task of providing medical treatment and drugs should be completely entrusted. The second was that the Government should undertake the organization of a national medical service, which some speakers urged should provide for the requirements not only of the insured but also of their dependants.

The almost unanimous feeling of the meeting was in favour of the organization of a national medical service as the preferable alternative in the event of failure to arrive at an agreement with the medical profession on the lines of the formation of panels under the Act.

The Chancellor thanked those present for the valuable advice which they had given in their representative capacity, and indicated that after the Government had come to their decision a further meeting of the Advisory Committee would be convened.

IRELAND.

Fermanagh Doctors Resign.

WITHOUT exception, the medical practitioners of the co. Fermanagh are unanimous with regard to contract medical practice in connexion with approved societies under the Insurance Act. The outcome has been that the secretary of the local branch of the Irish National Foresters, at present the only approved local society, has received a letter from the Fermanagh Local Medical Committee explaining that the existing arrangements will not be continued by the doctors after December 31st next, and that, accordingly, their medical officers would immediately give them notice. The committee enumerated the following principal conditions which they have decided upon:

1. Free choice of doctor on the part of the individual patient, subject to the doctor's consent to accept him.
2. A total income limit of £2 a week for those eligible for medical attendance.
3. A minimum rate of remuneration of 8s. 6d. per head per annum, and 12s. 6d. for a family, exclusive of medicine and appliances, or a medium fee of 2s. 6d. for each visit at the patient's house, and 2s. for each consultation at the doctor's surgery, also exclusive of medicine and appliances.
4. Extra remuneration for special services such as consultations, operations, administration of general anaesthetics, vaccination.
5. A special fee for confinement cases, whether full term or at any earlier stage.
6. Extra remuneration for night work (8 p.m. to 8 a.m.).
7. A mileage charge after the first mile from the doctor's house.
8. All the arrangements for attendance and terms of remuneration to be made by, and through, the local Medical Committee, and not with individual practitioners.

The committee gave notice that the arrangements for contract practice must in future be made through the local Medical Committee, and must be in accordance with these resolutions, and also that the Co. Fermanagh Medical Committee have decided to adopt provisionally for a year the method of remuneration by visit or attendance.

Dublin Friendly Societies' Union.

As a reply to the recent accounts in the daily papers of the resolutions passed by the Dublin Medical Committee the Secretary of the Dublin Friendly Societies' Union has announced in a letter in the *Irish Times* that a meeting would be held which it was hoped would be attended by representatives of every local society that had anything to do with State insurance, medical aid, or sick benefits. This letter stated that the terms and conditions for medical attendance and certificates, published by the Medical Association, were absolutely impossible of acceptance by the societies, except by increased subscription and the forfeiture of existing rights by members, and no society could do this: it is proposed to bring forward several schemes, and the following schemes have been suggested:

(*a*) No society to make any terms with the doctors, except through the Friendly Societies' Union.
(*b*) To dispense with medical certificates *re* sick claims and State claims.
(*c*) To discontinue medical benefits entirely.
(*d*) To form a Medical Union, to which each society would pay to a common fund, according to membership, and appoint whole-time doctors, including medicine.
(*e*) To draft a scheme to pay per attendance and medicine.
(*f*) To appoint a Committee to work any of the above schemes, or adopt any other proposal brought forward by any society.

MEETINGS OF THE PROFESSION.

PORTSMOUTH.

A MEETING of the members of the medical profession was held at the Portsmouth Medical Library, Pemberton Road, on October 4th. Dr. A. BOSWORTH WRIGHT was in the chair, and fifty-two other medical men of Portsmouth and district were present.

The HONORARY SECRETARY (Dr. B. H. Mumby) reported that there had been a very fair response to the further

call of 10s. per guarantor, and that he was still willing to receive the sum called up.

Resignations of Contract Appointments.—It was proposed by Dr. SALMOND and seconded by Dr. KEITH WELSH:

> That no resignations be sent in for the treatment of uninsured persons.

The following amendment was proposed by Dr. GAVIN BROWN and seconded by Dr. L. MAYBURY:

> That the resignation of all contract contributory appointments affecting non-insured as well as insured persons be sent in.

The amendment was carried unanimously, first as an amendment and afterwards as the substantive motion.

Guarantee Fund.—It was proposed by Dr. L. MAYBURY and seconded by Dr. BLACKMAN:

> That a Guarantee Fund be opened to compensate those medical practitioners who, having resigned medical societies, which they now hold, suffer loss of income from such action. The fund is only to be used to compensate medical practitioners for loss of members other than those who come under the Insurance Act.

This was carried.

It was proposed by Dr. ROUTH and seconded by Dr. RIDOUT:

> That the best thanks of this meeting be accorded to those members who have so handsomely withdrawn their opposition so as to fall into line with the other members.

This was carried.

It was proposed by Dr. L. STEPHENS and seconded by Dr. SHEAHAN:

> That three trustees be appointed to administer the above fund by those members who have expressed their willingness to resign the appointments for uninsured persons.

This was carried.

The following sums were then guaranteed:

> £100 each by Drs. L. Stephens, Childe, L. Maybury, Burrows, and Sheahan.
> £50 by Dr. Scott Ridout.
> £25 each by Drs. A. V. Maybury, Blackman, Routh, Bosworth Wright, Birch, Montagu May, Thomas, Birchwood, and Mumby.
> £10 by Dr. Ronald Kirkness.

It was proposed by Dr. DENNY and seconded by Dr. RIDOUT:

> That these resignations be referred to the Provisional Local Medical Committees to carry out forthwith.

Public Medical Service.—The meeting then adjourned till 4 o'clock on October 11th to consider a scheme for a Public Medical Service and other business.

PROVISIONAL MEDICAL COMMITTEES.

THE LOTHIANS.

A MEETING of the Lothians Provisional Medical Committee was held in the Royal College of Physicians, Edinburgh, on September 25th. Dr. EASTERBROOK (Gorebridge) presided, and seventeen members were present. The SECRETARY (Dr. Martine) reported as to his canvass of the profession in the Division as follows:

		Signed Pledge.
No. of medical men residing in area of Lothians Division	125	79
In general practice	79	76
Holding whole-time appointments	7	6*
Resident hospital appointments	4	4
Retired from practice...	15	12
Home address, but not practising in Division...	9	9
Holding contract practice appointments ...	71†	69
Others (assistants, etc.)	20	19
Total resignations of contract practice about	270	
Resignations in Secretary's hands	256	

* The only whole-timer who has not signed is medical superintendent of an asylum.
† Sixty-six have signed resignations.

Of those not signing, one practitioner resided in East Lothian and two in Midlothian; of these, one admits having signed the *Practitioner* referendum.

Contract Practice Resignations.—Regarding contract practice resignations, one practitioner in East Lothian holds a small share of Foresters, and has intimated his willingness to continue on existing terms—namely, 5s. per annum for attendance and medicine. In West Lothian every contract appointment is resigned except those held by one practitioner, who holds a monopoly. Every complementary pledge in West Lothian, however, is signed. As regards Midlothian, one practitioner refuses to sign resignations of two small clubs; and other two, both monopolists, although having signed complementary pledge, absolutely decline to resign their friendly society and other contract practice appointments. The meeting unanimously resolved that all friendly society appointments should be resigned forthwith, and the Secretary was instructed accordingly.

> In East Lothian 16 practitioners have resigned 26 friendly society appointments.
> In West Lothian 17 practitioners have resigned 57 friendly society appointments.
> In Midlothian 28 practitioners have resigned 76 friendly society appointments.

Contract Practice Generally.

East Lothian	... 17 men resigned	44 clubs.	
West Lothian	... 19	,,	97 ,,
Midlothian	... 31	,,	115 ,,

Central Defence Fund.—In the Division so far about £1,000 has been guaranteed to the Central Defence Fund.

DARTFORD.

A meeting of this Committee was held at the Bull Hotel, Dartford, on October 8th. Dr. CHAS. FIRTH presided.

Resignation of Clubs.—The HONORARY SECRETARY announced that the resignation of clubs had been sent in, numbering 315 clubs attended by 52 practitioners. A discussion took place as to the position of appointments to works clubs in which the employers paid the whole amount. It was felt that it was impossible to take any steps at present, as these cases were non-contributory.

Non-insured Persons.—It was resolved:

> That non-insured persons shall not be attended at a less rate than that of the British Medical Association scale.

Next Meeting.—It was resolved to call the next meeting on Thursday, November 7th, to consider the report of Council.

WANDSWORTH.

At a meeting held on October 8th the following resolution was carried unanimously:

> That this Committee repudiates the action of Sir Clifford Allbutt and the other officially nominated medical members who remain upon the Advisory Committee, in having stated that, in advising the National Insurance Commissioners, they represent the general medical profession.

WOOLWICH.

A meeting of the Woolwich Provisional Medical Committee was held at the Old Town Hall on Wednesday, September 25th, Dr. COWIE in the chair. Nine were present.

Contract Practice Resignations.—The meeting discussed the following resolution:

> To consider the instruction from the Central Council, and to confirm these instructions for sending out by September 29th the resignations to contributory contract practice appointments as far as they extend to insured persons.

It was resolved to agree unanimously to recommend this to the meeting of the Woolwich Division of the British Medical Association.

The second resolution—

> To discuss whether these resignations should apply as laid down by the pledge to State assured persons only, or also to include all contract work—

was referred to a meeting of the Woolwich Division to take place the same night.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor*, British Medical Journal, *429, Strand, London, W.C.*]

Proposed Select Committee.

The Editor of the "British Medical Journal."

Sir,

As negotiations are so far broken off between the representatives of the medical men and the Government as to the scale of remuneration for services under the Insurance Act, it seems desirable in the interest of the public that an end should be put to this impasse.

A general desire exists that a way be found to form a correct estimate of the situation, so that a sum may be mutually adopted.

I have therefore put down a question on the paper of the House to the Chancellor as below, which, if granted, will enable Parliament to judge on the facts presented.

Yours truly,

October 8th. Norval W. Helme.

Question

For Thursday, October 10th.

Sir Norval W. Helme to ask the Chancellor of the Exchequer:

> Whether, in view of the general desire throughout the country to secure a settlement of the scale of remuneration for medical services, under the Insurance Act, he will consider, on the request being made, the appointment of a Select Committee to take evidence and report to this House as to what would be adequate remuneration for the doctors.

The Regulations for Medical Benefit.

Dr. J. S. Manson (Warrington) writes: You do well to advise us to read carefully the text of the Regulations rather than rely on the summaries and paraphrases of others. With your usual perspicacity you have focussed attention on Regulations 28, 29, 30. In these we have what is called the "net fund," from which payment for professional services is made. This fund is derived from the gross amount set aside for medical benefit by the subtraction of (1) cost of drugs and appliances; (2) mileage; (3) cost of temporary medical benefit elsewhere than where a patient permanently resides.

The aim, of course, is—as you state in your editorial—to induce the profession to exercise economy in the use of drugs, and to discourage their abuse. In practice, then, the more drugs and appliances we prescribe, and the more mileage we claim—No. 3 may be left out of account—the less there will be in the "net fund" for actual professional services, the idea being to penalize men if they do not exercise due economy.

I believe the profession—if it undertakes to work the Act—should have a direct financial interest in working it, and I suggested in two letters (August 17th and August 31st) that the profession should be rewarded for economy by having a share of the surplus funds as these accumulate. Logically these may seem the obverse aspects of the same idea, but on reflection it will be seen that they are not quite the same. In the elaborate and ingenious official scheme there is no direct interest given to the profession in checking malingering—a very important matter for the insurance funds when there is free choice of doctor. I do not see anything derogatory in the profession as a body having a direct financial interest in striving to make the Act a success. Such collective interest would only ensure efficient professional supervision without exercising undue influence in promoting a narrow and near-sighted economy or inducing an over-suspicious habit of mind towards insured patients in individual practitioners. The committee of the panel of doctors—under Regulation 31—to supervise accounts at the end of the year is an excellent arrangement.

One thing should be made quite clear—especially to the public—and that is the difference between professional services and medical benefit. A fair proportion of the sum set apart for medical benefit will be swallowed up in the cost of drugs and appliances, and this cost will include retailers' profits, which must cover the outlay in rent, rates, etc., of premises. Unless this is made quite clear, the public may be made to think that the whole sum set apart for medical benefit will go to the doctors.

In order to make Regulations 28, 29, 30, more clear, perhaps the Association's arithmetician will provide us with examples based on hypothetical figures under A, B, C, D, E methods of remuneration.

Dr. P. R. Cooper (Bowdon, Cheshire) writes: The Regulations for Medical Benefit are at length before us, and it now behoves us to scrutinize them very carefully in the short time allotted us for arriving at a decision to work or not to work under them.

I have no wish to criticize them in any carping spirit, as I am deeply desirous that a *modus vivendi* should be found. But the seriousness of the present crisis—upon the issue of which the future of the medical profession and the establishing of a really adequate medical service for the assured largely depends—makes it imperative we should weigh critically the conditions laid down before committing ourselves to them.

From a preliminary perusal of the Regulations (as published in the British Medical Journal Supplement, October 5th) I have singled out the following points as needing especially careful consideration by the medical profession.

1. It would appear (Part II, 3–15, and 17–31) that whether the system of payment per capita or per attendance (or both) be adopted, the panel system is to be generally established, and doctor and patient are to be bound together by contract for twelve months. A beneficiary may, however (par. 14), if the committee permits, make his own arrangements for medical attendance. In this event, presumably, he may choose a doctor who is not on the panel, and also, if he desires, a different medical man for each illness, subject to the approval of the committee and eventually of the Commissioners. Now, if a beneficiary decides to do this, and unless he gets his doctor to take him on contract terms (and so take on the insurance risk), he stands to lose the benefit of insurance altogether. For (par. 15, *b*) the sums available for medical benefit of "such other persons"—that is, those not under the panel—are evidently to be kept apart, and only such proportion will be paid towards the expenses of treatment "as the aggregate amount available for the medical benefit for the year of all such other persons bears to the sums expended by them in obtaining treatment (including medicines and appliances), but in no case exceeding the expense so incurred by him." Should, as is not unlikely, the number of "such other persons" who "contract out" be a relatively small one, the amount available for medical benefit may be quite insufficient to meet the expense of medical treatment for a severe and prolonged illness; in other words, the amount to be pooled amongst those outside the panels may be far too limited to afford any real insurance against the cost of illness.

2. Again, although (par. 27) a beneficiary may change his doctor during the currency of the medical list, this can only be done by consent of both—except automatically in case of removal of either from the area—unless a definite complaint is made by either to the committee, who, after an inquiry, may permit the change. This, it seems to me, must have the effect of unduly restricting the "free choice of doctor by patient and vice versa," upon which we have laid such stress. For both doctor and patient would probably put up with considerable dissatisfaction and even hardship before the trouble and risk of formulating a definite complaint and appearing before the Insurance Committee.

Both 1 and 2 would cease to be objections under an open system of payment per attendance, and there is no need whatever for all the red tape and restrictions of any panel system.

3. According to par. 28, the amount available for the payment of practitioners must first be charged with the following deductions: "amounts payable in respect of (*a*) provision of drugs and prescribed appliances; (*b*) mileage; and (*c*) the cost of the medical benefit during periods of temporary residence outside the county. . . ." In other words, the doctor is paid last, and from what remains. This looks to me very like asking us to pay our own "extras," at least for mileage (no mention is here made of other "extras"; are they also to be deducted from the "fund available," or what fund is available for them?).

Again, if the cost of drugs and appliances is to be deducted from the fund for the doctors, what guarantee is there that the latter fund will not be so depleted that there may be hardly anything left for the doctors?

4. Those who told us that under a capitation system there would be no book-keeping required may perhaps be undeceived by reading par. 31.

5. With regard to *mileage*, I think the suggested three-mile limit is preposterous. This means that for a fee of 2s. 6d. one may be required to travel six miles (that is, three out and three home), which with the time taken with the patient means occupying about two hours (unless a conveyance is provided). The cost of conveyance alone would probably be 5s., so that the doctor would be 2s. 6d. out of pocket, and no return for his work and time. The limit should, in my opinion, be a one-mile radius from the surgery (or one mile from the nearest available doctor), and a mileage of not less than 1s. 6d. should be paid.

Whilst on this point I would like to refer to the fee for a night visit. This is not named in the Regulations, but as an attempt is being made to fix 5s. as the fee for a night call in tuberculosis cases, the same fee will probably be suggested in other cases. I fully agree with Dr. Percy Rose (p. 380) that the fee should be not less than 7s. 6d.

Dr. W. Coode Adams (Hampstead) writes: The Provisional Regulations recently issued by the Insurance Commissioners reveal to the profession the real advisers and prompting spirits behind the Chancellor, and we now know for whose benefit the Insurance Act was originally drafted.

These Regulations are so drawn as to force the profession back again into the arms of the friendly societies, and compel it to deal (indirectly instead of directly) with them, and them alone. Thus our vaunted "freedom from friendly society control" is nullified, and we are really, except so far as our own unanimity is concerned, *in statu quo*. The various local Insurance Committees are here granted the widest discretionary powers, and these committees will, and must be, nothing more or less than local committees of the friendly societies.

To these local committees of friendly societies the profession is to be handed over without guide or guarantee as to the amount (or method) of remuneration. The only definite guidance as to payments is given in Sec. 28, regarding the so-called "net fund," that is, the sum left at the disposal of these committees after every conceivable debt has been paid, and from which the local practitioners are to receive—what?—(par. 3, Sec. 28) sums evidently less than "the aggregate amounts credited" to them. In other words, what is left.

Again, Sec. 14 empowers any insured person to elect to make his own arrangements for medical treatment, receiving through his society (if any) a sum (how determined by Sec. 16 is a puzzle) in lieu of medical benefit. This, of course, is intended to enable all members of a friendly society in a locality to evade the medical panel and to proceed to elect their own club doctor on the old vicious system. This is most serious.

The net result of these Provisional Regulations must be to harden our determination to refuse to work the Act and to impel the profession to proceed as quickly as possible to perfect its own scheme of Public Medical Service.

Dr. H. H. Mills (Kensington) writes: Until the Chancellor of the Exchequer has made his statement concerning remuneration it is inevitable that a feeling of anxiety must prevail in the minds of medical practitioners. A certain section of the profession, however, after the most scanty consideration, seems determined to precipitately adopt as an alternative to medical benefit under the Insurance Act a so-called "Public Medical Service." With the public issue of the Regulations the medical members of the Advisory Committees are freed from a tacit understanding that they should not, during the deliberations of the committee, communicate with the press. I therefore venture now to offer a word of caution as to this scheme. We are all anxious, in this crisis, for some workable agreement, but the wisdom of hurriedly adopting this idea of a "Public Medical Service" is seriously open to question.

If this scheme is to replace the medical benefit under the Insurance Act, it must be conducted on a scale which can only be described as colossal, for it will have to supply, by private contract with individuals, adequate medical treatment for many millions of insured persons. But not content with this, it is also actually proposed to include in this scheme the women and children who are wives or dependents of insured persons. Incidentally, as showing how little consideration has been given to the scheme, it may be remarked that it is proposed to charge a less rate for women and children than for the insured men—this in spite of the well-known fact that the ailments of women and children give the doctor far more work. This strikes some of us as a dangerous precedent in view of any future extension of the Insurance Act to the wives and children of the insured.

To build up this scheme of "Public Medical Service" it would be necessary to establish, in every town, offices with a large clerical staff, a whole army of collectors, and, judging by the experience of industrial insurance companies, canvassers paid on commission would be indispensable. For, in the absence of compulsion, what reason is there for supposing that many millions of workers who have hitherto made no provision of a co-operative nature against illness should suddenly be anxious to subscribe a weekly sum to this new service in addition to their insurance premiums?

Those who put forward this scheme may not, perhaps, have considered that the average cost of the collection of the weekly premiums of the Industrial Insurance Companies is about 50 per cent. of the amount received. The average cost of the collection of premiums of the various friendly societies is very little less, and this after years of experience and the employment of highly trained agents. During the first few years of existence the expenses in some cases are very much higher. But this "Public Medical Service" proposes to make itself responsible for the health of millions of persons, though it is apparently to start with no capital, no organization—only a sanguine hope that these people will be eager to pay a higher sum than that which the State already compulsorily demands under the Act. It is difficult for an unprejudiced person to believe that this is possible. But even if subscribers are secured, the difficulty of collecting the weekly pence, dealing with arrears of payments and lapses, present a problem of great magnitude. With no financial reserves, a period of industrial depression, particularly in towns devoted to staple industries, would inevitably bankrupt the scheme. A prolonged strike would have the same effect, and one can imagine that if in this past summer such a medical service had been established in the East End of London, where for many months strike after strike occurred, the medical officers of the service would have been financially ruined owing to the impossibility of exacting regular payments from homes already stripped of all but the barest necessities of life. It is well known that the effect of the poverty resulting from these strikes has been severely felt by the doctors practising in that part of London.

It is important to point out that one or more doctors refusing to work under the discipline of the scheme could completely undermine it by treating patients at a less cost than the schedule terms. Medical institutes would spring up on every hand, cheap clubs would abound, and the very evils that the profession have for years been fighting would be perpetuated. How can such a scheme compete with the National Insurance Act, under which all the difficulties of organization and the responsibilities of payments are undertaken for the doctors by the local Insurance Committees?

Dr. Chas. Buttar (Kensington) writes: May I urge every member of the medical profession to ask himself two questions, and to resolve to answer them, once and for all, by "Yes" or "No"?

The questions are:

1. Do the seven cardinal points of the Association still remain the *minimum* demands of the profession?
2. Is the profession still determined that these *minimum* terms must be granted *centrally* by the responsible authorities, and not left to be argued out with local Insurance Committees?

If the answer to these two questions is in the affirmative, then the publication of Regulations by the Commissioners settles the whole insurance question so far as the medical profession is concerned, and no further

interest need be taken in the Commissioners and all their works.

Dr. C. M. Stevenson (Cambridge) writes: It seems that after all we are not "to have the first slice of the Insurance fund," as we were once promised. This, I suppose, is a punishment for our obstinacy in the past, and the chemist and instrument maker now take our place, and we may scramble for the remainder—if any. These prior charges are likely to amount to more than the amount budgeted for (in Germany it averages 3s. 6d.), and if the sickness rate is high, and our work correspondingly heavy we shall get very little at all. Then every extra fee which one doctor gets will come out of his neighbour's pocket—two truly Machiavellian proposals to get us to prescribe Epsom salts and coloured water and fight among ourselves. And how will this arrangement protect us against unnecessary calls, as the fees for these will only lessen another doctor's income, and will not affect the insured or the Insurance Committees one atom. Truly, we shall live not only by stealing each others' patients, but also each others' fees.

Dr. Henry Geo. Dixon (City Road, E.C.), in the course of a letter on the method of calculating payment in the Regulations, writes:

It seems to me that the mode of payment contemplated by the Commissioners is similar to that adopted in the case of a bankrupt estate: you send in your account, but you have to accept whatever sum in the £ the estate will pay.

If I am correct in this interpretation of Regulation 29 (3), it is about as impudent a proposal as ever was placed before a body of men. Whether the agreed capitation fee were 2s. 6d. or 8s. 6d., there is no guarantee that we would get it.

Steady in the Ranks.

Dr. William S. Lee (Chelsea) writes: I was in hopes that my letter, published in the Journal Supplement of September 28th, would have produced some beneficial discussion and statements as to the why and wherefore of the peculiar decision of the Representative Meeting at Liverpool. The only result, however, is Dr. McCulloch's letter about "grousing" (whatever he means by that), which does not in any way meet the points brought forward.

I do not wish to make use of the Journal as a medium for personal controversy, but I would like to point out to Dr. McCulloch that—

1. The majority of the Representatives at Liverpool gave away an important concession in favour of a selected minority and against the majority of the profession, and Dr. McCulloch's letter gives no adequate reason for such a retrograde step.

2. Even though we are at close grips with our opponents one cannot criticize our Representatives' action until that action is an accomplished fact.

I know not and care not whether Dr. McCulloch is one of the Representatives, a medical officer of health, a consulting surgeon or physician, or an ordinary general practitioner, like myself. Yet I would ask him to remember that an ordinary general practitioner has as much a right to his views as any other man, and, in my opinion, the decision of the Liverpool meeting *re* sanatorium benefits is detrimental to the interests of general practitioners. I am not alone in this opinion, as the letters I have received from various quarters show; and these letters show, moreover, that the general practitioners as a body are not in future going to take such prejudicial decisions lying down.

Representation on Insurance Committees.

Mr. J. Webster Watts, Secretary, National Medical Union, writes: Sir Victor Horsley, in his speech at Appleby on September 26th, refers to the difficulty between the Chancellor of the Exchequer and the medical profession as being "merely a question of remuneration for work done."

Undoubtedly the question of remuneration is a very important one, but it is by no means so all-engrossing to the medical profession as has been represented. There are many other points in the medical clauses of the Insurance Act to which objection is taken, the chief opposition of the profession to the Act being on account of its inefficiency as a measure for improving the public health.

One of the principal demands of the profession is for adequate representation on the local Insurance Committees. A perusal of the lists which have been published giving the *personnel* of these committees amply demonstrates the necessity for this demand. It will be of interest to medical men, and possibly also to the general public, to study the composition of these committees to which it is proposed to give so much power. Copies of the lists may be obtained from Messrs. Wyman, Fetter Lane, E.C., at the price of 1d. each.

It is imperative that the public should realize that adequate remuneration is not the only principle for which the profession is fighting. It should also be understood clearly that in this fight the interests of the doctors and of the public are identical, a good and efficient medical service being a necessity to the nation; but this efficiency cannot be attained under ignoble conditions.

Dispensing by Chemists.

Dr. S. Constable (West Green) writes: Permit me to point out the following intolerable difficulties in chemists dispensing under the new Act:

1. Working men, coming home tired in the evening, may often have to wait more than half an hour before they can be seen by the doctor. They then go off to the chemist, probably to wait another half-hour or more there!

2. In the case of sufferers from incipient pneumonia, diphtheria, and other grave and infectious diseases, this waiting and going about will add to the gravity of the complaint, and may infect others.

3. After a time, when patients find that they have this trouble in getting their medicine, they naturally will request the doctor to visit them for the most trifling complaint, and thus save a double journey to themselves.

The Continuance of Negotiations.

Dr. John Gruffydd (Bethesda, North Wales) writes: In the Supplement of September 28th (p. 358) Dr. Fenton says he fails to understand a statement of mine which appeared in the Journal. Perhaps I could make my meaning clearer by assuming that I was asked to choose one of the following offers:

(*a*) To attend a *small* number—say, ten—postal employees, who are "*average*" lives, at a yearly fee of 8s. 6d. each, including medicines,

or

(*b*) To attend a *large* number—say, thirty—"*mixed*" lives under the Insurance Act for the same fee.

I would choose the latter. It is also fair that we should be paid for *certain extras*—such as, night calls, Sunday work, and operations.

Country and Town Practices.

Dr. Arthur D. Parr-Dudley (East Malling) writes: From the correspondence which I have had with the central offices of the Association, I conclude that the State Sickness Insurance Committee has decided to ignore the essential differences between urban and rural practices.

The studied neglect of the different condition of work has been markedly evinced in tuberculosis schemes, the suggested public medical services, and the demand for a common capitation fee for both kinds of practice.

Country practices are smaller, patients are fewer in number, distances are greater, the time occupied is considerably more, etc., therefore the country practitioner must of necessity have larger fees than the urban doctor.

In towns mileage is frequently unnecessary, and to offer the country practitioner mileage outside a two-mile radius is an exceedingly guileless proceeding.

Government considers seven to eight hours' work per day adequate for their clerks. The State Sickness Insurance Committee, however, suggest that the doctor should work twelve hours a day (8 to 8), and the country practitioner should turn out his man, horse, and trap at 7 or 8 o'clock in the evening to take him a journey involving several miles for the same fee that the town doctor receives for walking two or three hundred yards.

The State Sickness Insurance Committee should, I think, make it clearly understood what their views are in this matter, for if they declare that the exigencies of country practices are not to be taken into serious consideration,

then it may just as well say to the rural doctors—*sauve qui peut.*

*** Our correspondent has probably overlooked the decision of the State Sickness Insurance Committee at its meeting on September 19th with regard to mileage. It was reported in the Supplement of September 28th, page 346, as follows:

In connexion with an inquiry as to mileage fees for domiciliary attendance under sanatorium benefit, the Committee resolved that the ordinary mileage rate should be understood to be not less than 1s. a mile after the first two miles, and that in outlying and sparsely-populated districts the rate should be such sum as was suitable to local circumstances and the custom of the local profession.

The Kent Public Medical Service Scheme.

Dr. T. Barrett Heggs (Sittingbourne) writes: I am receiving numerous inquiries in reference to the Kent Public Medical Service scheme, and should be obliged if you would allow me to state that Dr. Potts, Marsham Street, Maidstone, the Honorary Secretary of the Kent Committee, will gladly forward copies on receipt of sixpence to cover cost of printing. The Kent scheme contains the following points:

1. Payment for work done.
2. Insurance risk taken by subscribers.
3. Joint management by Insurance Committee and Medical Committee.
4. Disciplinary control of subscribers with Insurance Committee.
5. Disciplinary control of doctors with Medical Committee.
6. The British Medical Association sliding scales can be adapted to scheme.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BATH EYE INFIRMARY.—Honorary Surgeon.

BATH: ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—(1) Senior House-Surgeon (Male). (2) Junior House-Surgeon (Male). Salary, £100 and £80 per annum respectively.

BOLINGBROKE HOSPITAL, Wandsworth Common, S.W.—Two House-Surgeons (Male). Salary at the rate of £75 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Third House-Surgeon. Salary, £90 per annum.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House-Surgeon. Salary at the rate of £80 per annum, rising to £100.

BRADFORD CHILDREN'S HOSPITAL.—House-Surgeon (Male). Salary, £100 per annum.

BRADFORD: ROYAL EYE AND EAR HOSPITAL.—House-Surgeon (Non-resident). Salary, £200 per annum.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Medical Officer. Salary, £80 per annum.

BURTON-ON-TRENT INFIRMARY.—House-Surgeon. Salary, £120 per annum.

CARDIFF CITY MENTAL HOSPITAL.—Second Assistant Medical Officer (Male). Salary, £200 per annum, rising to £225.

CARDIFF UNION WORKHOUSE.—Assistant Medical Officer. Salary, £150 per annum.

CHORLEY: RAWCLIFFE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

COLCHESTER: ESSEX COUNTY HOSPITAL.—House-Surgeon (Male). Salary, £80 per annum.

DENBIGH: DENBIGHSHIRE INFIRMARY.—House-Surgeon. Salary, £100 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—(1) Assistant House-Surgeon, salary at the rate of £75 per annum; (2) House-Surgeon, salary, £50 for the first six months, £75 for the second six months, increasing to £150 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £120 and £100 per annum respectively.

ESSEX EDUCATION COMMITTEE, Chelmsford.—School Medical Inspector. Salary, £250 per annum, rising to £300.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Resident Medical Officer. Salary, £120 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon (Third). Salary, £75 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

HEREFORD COUNTY AND CITY ASYLUM.—Assistant Medical Officer (Male). Salary, £150 per annum, rising to £170.

HONG KONG UNIVERSITY.—Professor of Physiology. Salary not less than £600 per annum. £100 granted for passage and outfit.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton, S.W.—House-Physician. Honorarium, 30 guineas for six months.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Assistant Casualty Medical Officer. Salary, £30 for six months and £2 10s. washing allowance.

HULL: ROYAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £60 per annum for six months and £80 per annum for twelve months.

LEEDS GENERAL INFIRMARY.—(1) Resident Medical Officer at the Ida and Robert Arthington Hospitals; salary, £60 per annum. (2) Resident Obstetric Officer; salary at the rate of £50 per annum. (3) Three House-Surgeons. (4) Assistant Clinical Pathologist; salary, £150 per annum.

LEICESTER ROYAL INFIRMARY.—(1) Second House-Surgeon. (2) Assistant House-Surgeon. (3) Assistant House-Physician. Salary at the rate of £120 per annum for (1) and £80 per annum for (2) and (3).

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum.

MAIDSTONE: KENT COUNTY ASYLUM.—Male Fourth Assistant Medical Officer. Salary, £200 per annum.

MANCHESTER CORPORATION.—Third Medical Assistant at the Monsall Fever Hospital. Salary, £100 per annum.

MANCHESTER: COUNTY ASYLUM, Prestwich.—Assistant Medical Officer. Salary, £150 per annum, increasing to £350.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

MANCHESTER: ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—Two House-Surgeons. Honorarium at the rate of £50 per annum.

MANSFIELD AND MANSFIELD WOODHOUSE DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £120 per annum.

MARGATE: ROYAL SEA-BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary at the rate of £100 per annum for the first six months and £120 per annum for the last six months.

METROPOLITAN HOSPITAL, Kingsland Road, N.E.—(1) House-Physician; (2) House-Surgeon; (3) Assistant House-Physician; and (4) Assistant House-Surgeon. Salary for (1) and (2) at the rate of £60 per annum, and £40 per annum for (3) and (4).

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

NEWCASTLE-UPON-TYNE: ROYAL VICTORIA INFIRMARY.—Resident Medical Officer. Salary, £200 per annum, rising to £250.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—(1) House-Surgeon. (2) Casualty Officer. Salary at the rate of £80 and £60 per annum respectively.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

OLDHAM ROYAL INFIRMARY.—Third House-Surgeon. Salary at the rate of £80 per annum.

PADDINGTON GREEN CHILDREN'S HOSPITAL, W.—(1) Honorary Surgeon to Out-patients. (2) House-Physician. (3) House-Surgeon. Salary at the rate of £52 10s. a year attached to (2) and (3).

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Surgeon. Salary, £100 per annum.

POPLAR HOSPITAL FOR ACCIDENTS, E.—Assistant House-Surgeon. Salary at the rate of £80 per annum.

PRESTWICH UNION.—Second Assistant Medical Officer at the Infirmary. Salary, £100 for the first year, rising to £120 for the second year.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham.—(1) Senior House-Physician. (2) Senior House-Surgeon. (3) Junior House-Physician. (4) Junior House-Surgeon. Salary at the rate of £75 per annum for (1) and (2) and £50 per annum for (3) and (4).

SOUTHEND-ON-SEA BOROUGH.—Assistant Medical Officer of Health and Assistant School Medical Officer. Salary, £250 per annum, increasing to £300.

STAFFORD: COTON HILL LUNATIC HOSPITAL.—Assistant Medical Officer. Salary, £160 per annum, rising to £190.

STAMFORD HILL AND STOKE NEWINGTON DISPENSARY.—Assistant Resident Medical Officer. Salary, £100 per annum.

STOKE-ON-TRENT EDUCATION COMMITTEE.—Lady School Medical Inspector. Salary, £250 per annum.

SURREY COUNTY ASYLUM, Netherne.—Third Assistant Medical Officer. Salary, £150 per annum, increasing to £200.

TOXTETH PARK WORKHOUSE AND INFIRMARY.—Assistant Resident Medical Officer (Male). Salary, £125 per annum.

TRURO: ROYAL CORNWALL INFIRMARY.—House-Surgeon (Male). Salary, £100 per annum.

VENTNOR: ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer. Salary, £100 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—Surgeon.

WINSLEY SANATORIUM FOR CONSUMPTIVES, near Bath.—Resident Medical Officer. Salary, £300 per annum.

WOLVERHAMPTON: SOUTH STAFFORDSHIRE JOINT SMALL-POX HOSPITAL BOARD.—Resident Medical Officer. Salary at the rate of £200 per annum.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary commencing £160 per annum.

YORK: BOOTHAM PARK HOSPITAL FOR THE INSANE.—Resident Medical Superintendent.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

Benthall, Albert, M.R.C.S., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 37, and to be attached more particularly to Brentford County Court.

Eatock, E. R., M.B., Ch.B.Vict., Manch., Assistant Medical Officer of the Stopping Hill Hospital of the Stockport Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

CAMPBELL.—At The Copse, Larbert, Stirlingshire, on the 8th inst., the wife of Robert B. Campbell, M.D., M.R.C.P., of a son.

RAYSON.—At Knightsmead, Bayville, C.P., South Africa, on September 11th, the wife of H. Knights Rayson, M.D., M.R.C.S., L.R.C.P., of a daughter.

MARRIAGES.

DUNKERTON—HEDLEY.—On October 2nd, at Longbenton, Northumberland, Norman Edwin Dunkerton, Captain R.A.M.C., to Louise Sarah, younger daughter of the late Mr. and Mrs. Hedley, of Spennymoor.

ROOKE—MOORE.—On October 8th, at the Parish Church, Chipping Barnet, by the Rector, the Rev. William Manning, M.A., Alfred Basil Rooke, F.R.C.S., of Bournemouth, youngest son of the late Alfred Bradley Rooke and of Mrs. Rooke, of North Finchley, to Stella, youngest daughter of Mr. and Mrs. Edgar Richardson Moore, of Chipping Barnet.

TURNER—ELGOOD.—On October 9th, at St. Paul's Church, Avenue Road, N.W., by the Rev. Albert Spencer, M.A., and the Rev. H. F. Elgood, M.A., Alfred Charles Turner, of St. Philips Place, Birmingham, to Olive Muriel Elgood, M.B., M.S.Lond., of Moseley, Birmingham.

WATKINS—COMBER.—On October 3rd, at Shrewsbury, Bernard Vincent Watkins, M.B., etc., of Whitchurch, Salop, youngest son of the late John Webb Watkins, M.D., of Newton-le-Willows, to Maud Eleanor, elder daughter of Edward Comber, of Whitchurch.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W.—8 p.m., General Meeting. 8.30 p.m. (1) Presidential address by Sir W. Watson Cheyne, F.R.S.; (2) Paper by Drs. F. J. Poynton and H. C. G. Pedler: A Case of Anaemia of the Pernicious Type with Alcoholic Jaundice.

TUESDAY.

CHELSEA CLINICAL SOCIETY, St. George's Hospital, W.—8.30 p.m.: Opening address by the President (Dr. Campbell Boyd) on Ionic Medication.

ROYAL SOCIETY OF MEDICINE:

PATHOLOGICAL SECTION, 1, Wimpole Street, W.—8.30 p.m.: Papers: Mr. Rupert Farrant, Thyroid Action and Reaction; Dr. A. E. Boycott (title not received).

THERAPEUTICAL AND PHARMACOLOGICAL SECTION, 1, Wimpole Street, W.—4.30 p.m.: Introductory address by the President, Professor W. E. Dixon, F.R.S.

THURSDAY.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—5 p.m.: Address by Professor Dr. Nietner (Berlin): The Modern Combat against Pulmonary Tuberculosis.

ROYAL SOCIETY OF MEDICINE:

DERMATOLOGICAL SECTION, 1, Wimpole Street, W.—5 p.m.: Cases and specimens.

FRIDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W.—4 p.m.: Harveian Oration by Sir James F. Goodhart, Bart., M.D.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C.—5 p.m.: Professor Arthur Keith: Demonstration—Specimens of Defective Growth.

ROYAL SOCIETY OF MEDICINE:

OTOLOGICAL SECTION, 1, Wimpole Street, W.—5 p.m.: (1) Introductory remarks by the President, Dr. Dundas Grant; (2) Cases and specimens.

ELECTRO-THERAPEUTICAL SECTION, 1, Wimpole Street, W.—8.30 p.m.: Introductory address by the President, Dr. R. Morton.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, Cavendish Square, W.—8.30 p.m.: Paper, Sir William Leishman, F.R.S.: The Etiology of Blackwater Fever.

POST-GRADUATE COURSES AND LECTURES.

BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Wednesday, 4.30 p.m.: Demonstration of cases.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m., Medical and Surgical Clinics. Monday: 12 noon, Throat, Nose, and Ear; 2.15 p.m., Surgery; 3 p.m., Operations; 3.15 p.m., Medicine: 4.15 p.m., Ear and Throat. Tuesday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Surgery; 3.15 p.m., Medicine; 4.15 p.m., Skin Clinic. Wednesday: 11 a.m., Eye; 2 p.m., Operations: 2.15 p.m., Medicine; 3.15 p.m., Eye Clinic; 4.30 p.m., Surgery. Thursday: 12 noon, Throat, Nose, and Ear; 2 p.m., Operations, Pathological Demonstration; 3.15 p.m., Medicine. Friday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Surgery. Saturday: 10 a.m., Radiography; 11 a.m., Eye.

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.—Lectures daily (Saturday excepted) at 12 and 4 p.m. Practical laboratory work daily (Saturday excepted), 10 to 12 a.m. Practical Protozoology, 2 to 3.30 daily. Advanced Protozoology, 10.30 to 1 p.m. daily. Medical Clinics, Monday and Thursday at 3 p.m. Operations, Friday at 3 p.m.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15 p.m.: Perforating Ulcers of the Stomach and Duodenum.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m.: Myasthenia Gravis with Demonstration of a Case. Friday, 4.30 p.m.: Demonstration of Surgical Cases.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, Epilepsy in Relation to Insanity. Tuesday, The Pathogeny of Involuntary Movements. Wednesday, Remarks on the Treatment of Aural Vertigo. Thursday, On the Treatment of the various Conditions which give rise to Oedema.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m.: Diagnosis and Treatment of Acute Poliomyelitis. Friday, 3.30 p.m.: Epilepsy.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, N.E.—Monday, 4 p.m., Demonstration of Cases.

SALFORD ROYAL HOSPITAL.—Tuesday, 4.30 p.m.: Some Cases of Pleural Effusion, Thickened Pleura, and Unresolved Pneumonia.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Demonstration of Minor Operations, 11 a.m.; Pathological, 12 noon: Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Demonstration of Fractures, etc., 10.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday, Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: College closed for the day. Friday: Gynaecological Operations, 10 a.m.; Lecture, Practical Medicine, 10.30 a.m.; Lecture, Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. on Monday, Tuesday, Wednesday, and Friday.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
	OCTOBER.
11 Frl.	London: Journal Committee, 2 p.m.
	City Division, London Hospital, 4 p.m.
	Hampstead Division, Finchley Road, 8.15 p.m.
15 Tues.	London: Organization Committee, 2.30 p.m.
	Brighton Division, Brighton, 4 p.m.
16 Wed.	City Division, Shoreditch Town Hall, 4 p.m.
	Dorset and West Hants Branch, Wimborne.
17 Thur.	Metropolitan Counties Branch Council, 4 p.m.
	Altrincham Division, Knutsford, 4.30 p.m.
22 Tues.	Buckinghamshire Division, High Wycombe, 2.30 p.m. Lunch, 1.30 p.m.
23 Wed.	London: Finance Committee, 2.30 p.m.
30 Wed.	Central Council, London, 2 p.m.
	NOVEMBER.
21 Thur.	Metropolitan Counties Branch Council, 4 p.m.
	DECEMBER.
19 Thur.	Metropolitan Counties Branch Council, 4 p.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 19TH, 1912.

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STATE SICKNESS INSURANCE COMMITTEE.

APPOINTMENTS IN CONNEXION WITH THE INSURANCE ACT.

HE State Sickness Insurance Committee calls the tention of all members of the medical profession the following resolution adopted by the Annual epresentative Meeting, 1912:

That the British Medical Association calls on all practitioners to refrain from applying for or accepting any ost or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met.

SANATORIUM BENEFIT.

The State Sickness Insurance Committee also directs attention to the following resolution adopted by the Annual Representative Meeting, 1912:

That, with reference to the foregoing resolution, before any practitioner undertakes any work in connexion with the sanatorium benefits of the Act, the conditions and duties of such appointment* shall be submitted to the Council for its approval.

*"Appointment" means any professional work.

The State Sickness Insurance Committee notifies that no advertisement in respect of appointments in connexion with sanatorium benefit will be accepted for publication in the BRITISH MEDICAL JOURNAL which is inconsistent with the conditions laid down by the Association, and in all cases in which an advertisement is accepted a full list of the conditions laid down by the Association will be sent to the advertiser.

THE INSURANCE SCHEME.

TATE SICKNESS INSURANCE COMMITTEE.

HE eighth meeting of the State Sickness Insurance ommittee appointed by the Annual Representative eeting, 1912, was held on October 10th.

Dr. J. A. MACDONALD was in the chair, and the other embers present were:—*England and Wales:* Dr. R. M. aton (London), Dr. Major Greenwood (London), Miss ances Ivens, M.S. (Liverpool), Mr. Herbert Jones ereford), Dr. Constance E. Long (London), Dr. E. J. elean (Cardiff), Dr. E. O. Price (Bangor), Dr. Lauriston aw (London), Dr. D. G. Thomson (Thorpe, Norwich), . D. F. Todd (Sunderland), Mr. E. B. Turner (London), . E. H. Willock (Croydon). *Scotland:* Dr. John Adams lasgow). *Ex officio:* Mr. T. Jenner Verrall (Bath), airman of Representative Meetings; Dr. Edwin Rayner ockport), Treasurer.

Apologies for absence were read from the President, James Barr (Liverpool), Dr. T. M. Carter (Westbury-Trym), Dr. J. S. Darling (Lurgan), Dr. S. Hodgson lford), Dr. McKenzie Johnston (Edinburgh), and Dr. mes Pearse (Trowbridge).

TREATMENT OF TUBERCULOSIS.

Schemes Approved.

The CHAIRMAN reported that since the last meeting of Committee, he had considered and approved the schemes for the administration of sanatorium benefit at Sunderland, Reading, and Southwark. His action was approved. The scheme for Hertfordshire was also approved.

Relation of Medical Officer of Health to Position of Chief Tuberculosis Officer.

The Kent County Scheme was again considered, and the MEDICAL SECRETARY reported that apparently the only point at issue between the Kent County Council and the Kent Provisional Medical Committee was that the latter objected to the suggestion of the Kent County Council that medical officers of health for districts should be eligible for appointment upon the staff of tuberculosis dispensaries to be set up in large towns. He also reported that in accordance with the instructions of the Committee at its meeting on September 12th (SUPPLEMENT, September 21st, p. 334) under this heading, a letter had been addressed to the Local Government Board asking (*a*) whether there was any ground for the fears which had been expressed that the appointment of medical officers of health as chief tuberculosis officers would be regarded as more than a temporary expedient; and (*b*) suggesting that in the cases where it was found necessary to appoint medical officers of health to those posts their duties should be administrative, and that they should be called "Administrative Tuberculosis Officer," or "Chief Administrative Tuberculosis Officer." To this the following reply had been received:

Local Government Board,
Whitehall, S.W.
October 5th, 1912.

Sir,

I am directed by the President of the Local Government Board to advert to your letters of the 16th ultimo and 1st instant and in reply to state that the Board entirely agree with the view expressed in the Report of the Departmental Committee that suitably qualified and experienced men should be selected for the medical appointments at dispensaries and other institutions for the treatment of tuberculosis.

Inasmuch as the schemes for the provision of sanatoria and dispensaries are to be undertaken by the Local Authorities it is essential, both on administrative grounds and also in order to secure the co-ordination of treatment and of preventive measures, that the general supervision and control of the schemes should be in the hands of the Medical Officer of Health. The Board, however, contemplate that the tuberculosis officer of the dispensary or the medical superintendent of the sanatorium or hospital will in clinical matters be allowed independence of action.

It would only be in occasional cases where the Medical Officer of Health has had requisite experience and has sufficient time to enable him to act as head of the dispensary as well as to perform his ordinary duties that he would undertake so to act. If such cases should occur and the Local Authority wish to arrange accordingly the Board do not consider that they could object to the arrangement.

I am, Sir,
Your obedient Servant,
(Signed) F. J. WILLIS,
Assistant Secretary.

It was resolved to send a copy of this letter to the Kent County Provisional Medical Committee, drawing attention to the last paragraph, which suggested that in occasional cases a medical officer of health might be appointed to undertake treatment. It was resolved to inform the Kent County Provisional Medical Committee that the State Sickness Insurance Committee, in view of all the circumstances, recommended the local practitioners to accept the sanatorium scheme of the Kent County Council as now modified.

Essex.

The MEDICAL SECRETARY reported that a conference had been held between the Chairman of the Essex County Insurance Committee, the County Public Health Committee, the Medical Benefit Subcommittee, the County Medical Officer of Health, and representatives of five out of the seven provisional medical committees of the county, when certain modifications of the original scheme were considered and accepted by the representatives of the Provisional Medical Committees. The State Sickness Insurance Committee therefore resolved to approve the medical sanatorium benefit scheme of the Essex County Council as amended.

PUBLIC MEDICAL SERVICE SCHEMES.

With regard to the scheme of the Reading Provisional Medical Committee, which had been under consideration on October 3rd, it was reported that the Reading Committee had withdrawn its proposal with regard to the payment of collectors by commission, but had recorded its opinion that the payment of collectors by commission was in many districts of the Division a necessary method of collecting subscriptions, and begged the State Sickness Insurance Committee to reconsider its decision. The Committee thereupon adopted the following resolution:

That with respect to the question of payment of collectors it be suggested to the Reading Division to consider the advisability in order to encourage the collector, of giving him at the end of each year a gratuity in inverse ratio to the amount of arrears in the collection.

The scheme of the Swansea Division for a public medical service was again considered, but before coming to a decision the Committee instructed the Medical Secretary to obtain further information.

RESIGNATION OF CONTRIBUTORY CONTRACT PRACTICE APPOINTMENTS.

It was reported that the following information had been received in the Central Office as to the sending of resignations of contributory contract practice appointments:

(*a*) That 204 areas out of 232 had sent in 30,159 resignations of appointments [illegible] practitioners.

(*b*) That in the above areas another 445 practitioners holding appointments requiring shorter notice than three months were prepared to send in their resignations later.

(*c*) That in the above areas 354 practitioners are reported as not having resigned their appointments, of which number, however, many had undertaken not to apply for appointments rendered vacant by the resignation of their fellow-practitioners.

(*d*) That no reply had as yet been received from 28 areas.

PROVISIONAL REGULATIONS FOR MEDICAL BENEFIT.

The greater part of the session of the Committee on this day was occupied in the consideration of the Provisional Medical Regulations published in the SUPPLEMENT of October 5th. The Committee had before it a statement drawn up by the Medical Secretary comparing the Provisional Regulations as to medical benefit with the cardinal principles of the Association and with the decisions of the State Sickness Insurance Committee as to matters included in the Regulations. The Committee went through the draft statement paragraph by paragraph, and had not concluded its revision when the hour of adjournment was reached.

Meetings of Branches and Divisions.

BIRMINGHAM BRANCH:

COVENTRY DIVISION.

THE annual dinner of the Coventry Division was held on October 8th. There were present thirty-seven members with their guests, amongst whom were Dr. Nason, President of the Branch, and Dr. Alfred Cox. After dinner the CHAIRMAN (Dr. Hawley) outlined the work that had been done in the past and what remained to be done in the future. Dr. Cox, in replying to the toast of the Association, after giving a review of the present position of affairs, made a strong appeal for unity.

CAMBRIDGE AND HUNTINGDON BRANCH:

ISLE OF ELY DIVISION.

A SPECIAL meeting of this Division was held at the Griffin Hotel, March, on October 1st. Dr. H. C. MEACOCK was in the chair, and seventeen members were present.

Provisional Local Medical Committee.—The resolution of the Provisional Local Medical Committee for the Isle of Ely that it should now be wound up, and that its powers should henceforth be transferred to the Isle of Ely Division of the British Medical Association, was received and approved—the two areas being identical, and with two exceptions the two committees being the same.

Public Medical Service.—The schemes A and B were submitted to the meeting and explained by the CHAIRMAN. After full discussion the principles of scheme A were adopted, and a draft scheme suitable to this district partly evolved. The remainder of this work was left to the next meeting of the Executive Committee.

LANCASHIRE AND CHESHIRE BRANCH:

NORTH MANCHESTER DIVISION.

A MEETING of this Division was held on October 3rd. Dr. MARSHALL was in the chair, and twenty-six members present. It was resolved unanimously that the scheme published in the SUPPLEMENT be rejected as useless to this Division.

Model Ethical Rules.—The Model Ethical Rules were unanimously adopted.

Local Provisional Medical Committee.—The Report of the Local Provisional Medical Committee was received and adopted. It was resolved:

That no contract for attendance upon uninsured persons be entered into by any member of this Division.

Election of Joint Secretary.—Dr. KITCHEN, having notified his approaching departure from the district, Dr. Larkam was unanimously appointed to the vacancy. The CHAIRMAN, in moving a vote of thanks to Dr. Kitchen, expressed the regret felt by every member at his leaving the Division, and the great debt the Division was under for his past services. The vote being heartily accorded in the usual manner, Dr. KITCHEN replied, and the proceedings terminated.

METROPOLITAN COUNTIES BRANCH:

HAMPSTEAD DIVISION.

A MEETING of this Division was held at the Central Library, Finchley Road, on Friday, October 11th. Dr. A. W. K. PICARD was in the chair, and fifteen members were present.

Proposed Meeting of the Profession.—A circular letter from the MEDICAL SECRETARY to honorary secretaries of Divisions and Branches, warning them to make arrangements to hold a meeting of the profession between the dates November 6th and 13th, to consider the report of Council and instruct the Representatives for a Special Representative Meeting on or about November 20th, was read. It was agreed that the arrangements for the meeting be left to the vice-chairman and honorary secretary, with the assistance of Dr. Cunnington (Chairman of the Library Committee).

Annual Representative Meeting.—The REPRESENTATIVE (Mr. E. Arthur Dorrell) reported the action taken by him at the Annual Representative Meeting. A hearty vote of thanks was accorded to him for his services.

Report of Ethical Committee.—The HONORARY SECRETARY read the report of the Ethical Committee in the case of an appointment under the Insurance Act. Dr. OPPENHEIMER moved and Dr. CUNNINGTON seconded:

> That, in the opinion of the meeting, the facts before it do not show that any offence has been committed against the ethical rules of the Division, or against the ordinary accepted rules of the profession.

Whereupon the following amendment was moved by Dr. PRITCHARD, seconded by Dr. FORD ANDERSON:

> That the report be approved, and that the consideration of the matter be adjourned in order that the opinion of the Ethical Committee of the Association may be ascertained on any question of principle involved in the case.

On the amendment being put to the vote it was carried by 10 to 4. The amendment being now put as the substantive motion, the following amendment was moved by Dr. DOBBIE and seconded by Dr. FORD ANDERSON (Dr. GLOVER standing seconder to Dr. PRITCHARD'S substantive motion):

> That the report be not approved, and that a special committee be appointed to reinvestigate the facts of the case.

The amendment was lost by 2 to 6. Thereupon an amendment by Mr. SCRASE:

> That the report be approved, and that the case calls for no further expression of opinion from the meeting.

This was seconded by Dr. CUNNINGTON, and was lost by 3 to 10. The substantive motion:

> That the report be approved, and that the consideration of the matter be adjourned in order that the opinion of the Ethical Committee of the Association may be ascertained on any question of principle involved in the case.

was carried by 11 to 1.

Model Ethical Rules.—The letter from the Central Ethical Committee of September 17th was read, referring to Minute 118 of the Annual Representative Meeting. Thereupon Dr. OPPENHEIMER moved and Mr. SCRASE seconded, and it was carried *nemine contradicente*:

> That the Division adopt the model ethical rules subject to the modifications passed by the Division on January 12th, 1912.

WOOLWICH DIVISION.

A MEETING of this Division was held at the Old Town Hall on Wednesday, September 25th. Dr. COWIE, President, was in the chair. Fifteen members and three visitors were present.

Annual Representative Meeting.—Dr. CHISHOLM WILL gave a brief and interesting summary of the work done at the Annual Representative Meeting held at Liverpool, and was cordially thanked.

Woolwich Tuberculosis Dispensary.—A letter was read from the Secretary of the Woolwich Tuberculosis Dispensary asking for a representative on the committee in place of the late Dr. Williamson, and Drs. Wise and Fuller were appointed. Arising out of a discussion on these appointments, Dr. LINDOW moved, Dr. FULLER seconded, and it was carried:

> That the Secretary be instructed to write to the head office and ask if we can send representatives to the Woolwich Tuberculosis Dispensary, that dispensary being approved society under the Act.

The late Dr. Williamson.—A letter was received from Dr. Moore Smith, on behalf of the family of the late Dr. Williamson, thanking the Association for sympathy and wreath.

Election of Secretaries.—On the proposition of Dr. LINDOW, seconded by Dr. MAIR, Dr. John Clarke was unanimously elected Secretary of the Woolwich Division. Dr. A. Lindow was elected Assistant Secretary. Dr. CLARKE proposed, and the PRESIDENT seconded, a hearty vote of thanks to Dr. Hirsch for acting as temporary Secretary.

Contract Practice Resignations.—The following resolution referred from the Provisional Medical Committee was then discussed:

> To discuss whether these resignations shall apply as laid down by the pledge to State-insured persons only or also to include all contract work.

Dr. CLARKE moved, Dr. MAIR seconded, and it was carried:

> That it should apply to all contract work.

Public Medical Service.—It was decided to have a special meeting to discuss Schemes A and B and any other alternatives.

MIDLAND BRANCH:

BOSTON AND SPALDING DIVISION.

A SPECIAL meeting was held at the White Hart Hotel, Boston, on September 20th. Dr. WHITE was in the chair, and twenty members were present.

Sanatorium Benefit.—The CHAIRMAN read out the scheme of the Kesteven Provisional Medical Committee, which was recommended by the Executive and Provisional Medical Committees with certain additions. After some discussion, Dr. HUSBAND proposed and Dr. COLLINS seconded:

> That this scheme with additions be adopted.

This was carried *nemine contradicente*. The scheme is as follows, the fees being minimum payments:

(*a*) Report, 5s. (whether tuberculosis or not).
(*b*) First attendance, which will entail filling in an additional report, and giving many detailed instructions, 5s.
(*c*) Subsequent visits or consultations at surgery (medicines included), 2s. 6d. each. Night visits between 8 p.m. and 8 a.m., 5s., for calls received during those hours.
(*d*) The injection of vaccine, 2s. 6d. Vaccine to be at the cost of administrative authority.
(*e*) Mileage, 1s. a mile *out* beyond two miles.
(*f*) Quarterly reports, 5s.

The Secretary was instructed to report the above resolution with details of scheme to the Holland, Kesteven, and Lindsey Provisional Insurance Committees.

Public Medical Service.—The SECRETARY read D 5. This was considered, and Dr. MUNRO proposed and Dr. CROMPTON seconded:

> That no action be taken.

An amendment was proposed by Dr. ALLAN and seconded by Dr. BIGGS:

> That the Provisional Medical Committee be asked to consider various schemes of public medical service and report to a future meeting.

The amendment was carried with only two dissentients.

Central Defence Fund.—Dr. SANDALL proposed, and Dr. HUSBAND seconded:

> That every man residing within the Divisional area be asked to guarantee not less than £20.

Carried *nemine contradicente*.

Annual Representative Meeting.—Dr. MASON gave a brief outline of his experiences. He said that although the Representative Meeting decided to work the sanatorium benefit, the majority of the Representatives had no instructions on that matter from their Divisions. Dr. SOUTH moved a sincere vote of thanks to Dr. Mason for his zeal in attending the Representative Meeting, which was unanimously passed. Dr. MASON suitably acknowledged. Dr. Mason was asked to send to the Secretary his account for out-of-pocket expenses.

Tea.—Eight gentlemen had tea in the hotel afterwards.

NORTH OF ENGLAND BRANCH:

STOCKTON DIVISION.

A MEETING of this Division, to which non-members were invited, was held at the Royal Hotel on Thursday evening, October 10th. Sir RUDOLPH SMITH was in the chair, and fifteen were present.

Model Ethical Rules.—The Model Ethical Rules were approved.

Sanatorium Benefits.—The model scheme recommended by the State Sickness Insurance Committee was approved and adopted, with the exception of paragraph 4; "it was referred back until further information arrived on the matter." The feeling of the meeting was that there was a doubt as to its full meaning.

Provisional Medical Regulations.—The CHAIRMAN said that the only practical way to judge the Regulations was by considering how far they satisfied the seven cardinal points of the Association: (1) Free choice of doctor and patient was to a great extent provided for. (2) Adequate representation remained as inadequate as before. (3) Control of friendly societies; control was transferred to local health committees, where the friendly society representatives were in a practical majority. (4) Income limit was left to be fought locally, on committees where medical men were in a hopeless minority. (5) Control of medical men was referred to a "Complaints Committee," half lay and half medical, who reported to the local health committee. (6) Adequate payment. (7) Methods of remuneration, there were several options as to the latter, but under Clause 28 it was stated that the chemist was to be paid first on a schedule basis, then all appliances, etc., then all mileage and temporary resident patients to be deducted (in Germany, he believed, the chemist got 3s. 6d. per head), so it looked as if the doctor may get anything from 2s. 6d. to 4s. per head, even with capitation grant of 7s. 6d. for medical benefits. He pointed out that 3s. 8d. per head was allowed the approved societies for secretarial work, but in all conscience the doctors had their share and more of clerical work allotted to them, as they had to notify the committee and each individual patient on their list any alteration of surgery hours, holidays, etc. The Chairman stated that the Local Provisional Medical Committee, after consideration, had recommended the Division not to accept these Regulations. A discussion followed, all the speakers being strongly against attempting to adopt the Regulations. The following resolution was passed unanimously:

> Seeing that our seven cardinal points, which we still affirm as our minimum, are in no way adequately provided for in these regulations, we decline to accept them as a working basis for the Act.

Public Medical Services.—After much discussion it was agreed to generally that either of the schemes presented by the British Medical Association would entail an enormous amount of expense to collect the money, and, in fact, would possibly break down the scheme. Dr. L. J. BLANDFORD brought forward a scheme as an amendment to the one provisionally adopted by the Division in Scheme A of the British Medical Association:

> That this Division of the British Medical Association invite representatives of approved societies, trade unions, and works' sick clubs to a conference to discuss the question of a public medical service for Stockton, Thornaby, Norton and district.

He suggested that the Division should have some definite scheme ready for the conference, which would meet this Division, or a committee formed from the same, and see if they (the societies) would collect the money, keep the books, and divide the money for the doctors. They would be paid by commission (possibly 10 per cent.), and should have to give a guarantee that they would allow a regular inspection of the books by a medical committee, and give absolute free choice of doctor. They would have no control of the working of the scheme, only the clerical part. The proposal was seconded by Dr. HUNTON, and after much discussion, when the main doubt was expressed as to whether it would mean a drifting of the profession into the hands of the friendly societies, it was carried with one dissentient. It was finally agreed that the scheme remain inoperative until it was seen what the Act offered (referring to the Chancellor's statement, expected by October 14th).

SOUTH-EASTERN BRANCH:

DARTFORD DIVISION.

A WELL-ATTENDED meeting of this Division was held at the Bull Hotel, Dartford, on October 8th. Dr. CHARLES FIRTH presided.

Resignation of Clubs. — The HONORARY SECRETARY announced that fifty-two practitioners had signed resignation forms for 315 clubs, and that these had been forwarded to the proper authorities.

Report of Representative.—The REPRESENTATIVE (Dr. Chisholm Will) gave an account of the work of the Representative Meeting at Liverpool. On the motion of Dr. SKIPWORTH, seconded by Dr. SELLS, a vote of thanks was accorded to Dr. Will for his services.

Model Ethical Rules.—On the motion of the CHAIRMAN, seconded by Dr. SKIPWORTH, it was resolved:

> That the Model Rules be approved and adopted by this Division, and that they be printed and circulated to all members.

Sanatorium Scheme for Kent.—The HONORARY SECRETARY gave an account of the proposed sanatorium scheme for Kent. The CHAIRMAN spoke in approval of the scheme, which was agreed to by the meeting, with the following resolution, proposed by Dr. FARTHING and seconded by Dr. GREENWAY:

> That the county medical officer be urged to appoint the assistants to dispensaries from all the general practitioners willing to serve on a rota, and that part-time district medical officers be eligible for appointment.

Central Defence Fund.—It was decided to urge members to guarantee an average of at least £20 each to the Central Defence Fund.

Public Medical Service.—It was resolved that these schemes, together with the proposed Kent medical scheme, be referred to the Provisional Medical Committee, to report to the next meeting of the Division.

Draft Regulations.—The meeting, while feeling that these regulations were very unsatisfactory, deferred further discussion till after the Report of Council.

Next Meeting.—It was resolved to call a meeting of the Division to be held at Dartford on Tuesday, November 12th.

ISLE OF THANET DIVISION.

A SPECIAL (the fifty-seventh) meeting of this Division was held at Ramsgate on September 20th. There were present twenty-one members and three non-members, all practitioners in Thanet having been invited. Dr. F. E. NICHOL was in the chair.

Public Medical Service.—A minute from a previous meeting was read stating the resolution of the formation of a committee instructed to draw up a scheme for a Public Medical Service in Thanet. Dr. NICHOL, as chairman, proposed that the scheme should be read for the first time; that after certain other business the meeting should read it a second time in committee; and that the meeting should close at 11.30 and adjourn till the scheme was completely considered. Dr. HALSTEAD, Chairman of the Provisional Medical Committee, read a preamble to the scheme explaining the lines on which it had been drawn up, the information which had been obtained for guidance, and earnestly requested the members to discuss and amend it, so that no point should be hidden and no difficulty undetected. Dr. BRUNTON, Honorary Secretary of the Committee, read the scheme through for the first time, making brief comments as he went along. Copies of the scheme had been printed and were lying on the table, and the text was followed by the members present.

Contract Practice Resignations.—Dr. NICHOL explained that it had been decided by all the club doctors that they were willing and ready to send in their resignations for all contract practice, as well as that contract practice which comprised persons insured under the National Insurance Act; that a form was ready for their signatures; that it was hoped that every medical practitioner in Thanet would also sign the form in their support; and that the Public Medical Service should be the only form of contract practice available for those who were affected by the resignations. The following resolution was carried with one dissentient:

> That in the opinion of this meeting the members of the Isle of Thanet Division shall sign the form of resignation of

contributory contract practice whether engaged in such practice or not, and that all medical men practising in the Isle of Thanet, whether members of the British Medical Association or not, shall be urged to sign the same form of resignation.

Forms of resignation were taken round and all the signatures obtained, with the exception of that of Dr. Dundas, who was not in a position to sign, being a medical officer of health and a public servant; and Dr. Storar, who refused.

In the Committee stage of the Public Service Scheme a number of clauses were agreed to without amendment, some with minor verbal alterations, and several were discussed and amended.

The fifty-eighth meeting was held at Ramsgate on September 23rd. Dr. NICHOL was in the chair, and there were present twenty-one members and four non-members.

Public Medical Service.—Dr. HALSTEAD read over again the amendments to the clauses which had been altered at the last meeting. The remaining clauses were read, discussed in detail, and amended, thus completing the second reading of the draft scheme, and it was only left to decide on the scheme at a meeting already arranged for September 27th.

The fifty-ninth meeting of the Division was held at Ramsgate on September 27th. Dr. NICHOL was in the chair, and there were present 36 members and 6 non-members.

Public Medical Service.—Dr. HALSTEAD gave a short report of the preceding meetings, and the reasons that had made it necessary for the Division to form a Public Medical Service. He stated that fifty-four signatures had been obtained and appended to the resignation statement, and that this was adequately sufficient support for the Division's action. He stated that the resignations were going to be sent in to the secretary of each of the individual forty-six clubs, the names of which he read out, and which were confirmed by the members present. He then read, for approval, a covering letter to accompany the resignation forms. Dr. RAVEN proposed the substitution of another letter covering the same ground, and rather more cordial in tone. This was seconded, and carried unanimously. The meeting then approved of a Press Committee, consisting of Drs. Halstead, Nichol, and Raven. The Provisional Medical Committee, with the addition of Dr. Nichol, were appointed to meet representatives of the friendly societies, should occasion arise. The scheme was considered for the third time, clause by clause, printed copies, as amended up to date, being before the members. Several alterations were made, bringing the final discussion of the scheme to an end, and Dr. Halstead was instructed to have it printed. The motion that the scheme should be adopted as finally amended, and, subject to the approval of the State Sickness Insurance Committee of the British Medical Association, was carried with acclamation. A resolution was carried that the Provisional Medical Committee as at present constituted should continue their meetings, and draw up a set of regulations for the working of the scheme; and the meeting guaranteed the committee's expenses up to £20.

Vote of Thanks.—A vote of thanks was passed with applause to Dr. Halstead, and also to the committee and its officers for the work that they had done in connexion with the scheme, and a further vote of thanks was passed to Dr. Nichol for taking the chair at these three meetings.

Association Notices.

NOTICE OF ALTERATION OF BOUNDARIES OF DIVISIONS.

THE following change has been made in accordance with the Regulations of the Association, and takes effect from the date of publication of this notice:

South-West Essex and Mid-Essex Divisions.

That the boundaries of the South-West Essex Division be adjusted so that the Division shall consist of the following nine Urban Districts: Waltham Holy Cross, Chingford, Walthamstow, Loughton, Buckhurst Hill, Epping, Woodford, Wanstead and Leyton; so much of the Rural District of Epping as is made up of the five civil parishes of Epping Upland, North Weald Bassett, Theydon Bois, Theydon Garnon and Chigwell; and Claybury Asylum (in the Urban District of Ilford); and that the area of the Mid-Essex Division be modified accordingly.

Representation in Representative Body.—Unaffected.

COUNCIL MEETING.

POSTPONEMENT TO OCTOBER 31ST.

THE Chairman of Council gives notice that it has been found necessary to postpone the Quarterly Meeting of the Council summoned for Wednesday afternoon, October 30th, until

10 o'clock in the forenoon of Thursday, October 31st.

The object of this postponement is in order that the members of the Council may have as much time as possible to consider the Report of the State Sickness Insurance Committee on the Provisional Regulations for Medical Benefit and other matters with regard to National Insurance, which it is hoped to issue to them at the end of next week.

The meeting will be held in the Council Room, at 429, Strand, London, W.C.

By Order,
GUY ELLISTON,
Financial Secretary and Business Manager.

Oct. 17th, 1912.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: CENTRAL DIVISION.—A special and general meeting of the Division will be held at 3.30 p.m. on Wednesday, October 23rd, at the Medical Institute. Special Business: Mr. Marsh will move: "That until some general scheme of contract or other form of medical service is approved by the Association the members of this Division decline to undertake or conduct any form of contract practice except upon terms approved by this Division." Members are requested to take note that, in order to make this resolution effective and applicable throughout the Division area without recourse to a poll, it is necessary for at least 100 members to be present at the time that the vote is taken. Members are therefore earnestly requested to attend.—ERNEST C. HADLEY and H. HOYLE WHAITE, Honorary Secretaries.

SOUTH MIDLAND BRANCH: BUCKINGHAMSHIRE DIVISION.—A meeting of the Division will be held on Tuesday, October 22nd, at the Red Lion Hotel, High Wycombe, at 2.30 p.m., preceded by a lunch at 1.30 (charge 2s. 6d.). Agenda: (1) Minutes of last meeting. (2) Correspondence. (3) Ethical Rules (SUPPLEMENT, September 21st). (4) Receive report of Dr. Durran (Deputy Representative) of the Annual Meeting at Liverpool. (5) Consider model scheme for treatment of tuberculosis (SUPPLEMENT, October 5th) under National Insurance Act. (6) Consider Public Medical Service scheme (SUPPLEMENT, September 14th). (7) Consider Regulations issued by the Insurance Commissioners. (8) Report of Provisional Local Medical Committee. Members are requested to bring the SUPPLEMENTS with them. —ARTHUR E. LARKING, Honorary Secretary, Buckingham.

SOUTH MIDLAND BRANCH: NORTHAMPTONSHIRE DIVISION.—A meeting of the Division, to which all medical men in the Division, whether members or non-members, are invited, will be held in the Board Room of the Northampton General Hospital, at 2.30 p.m., on Thursday, October 24th. The meeting will be preceded by a luncheon at Franklin's Restaurant, Guildhall Road, at 1.30 p.m., and those wishing to attend it should inform the Honorary Secretary three days beforehand. Agenda: Minutes of previous meeting. Proposed scheme for a Northamptonshire Medical Service, presented by Dr. Dryland. Consideration of Local Medical Services for uninsured persons. Any other business.—P. S. HICHENS, Honorary Secretary, Northampton.

SOUTH-EASTERN BRANCH: BRIGHTON DIVISION.—A special meeting to consider the agenda of the Special Representative Meeting will be held on Thursday, November 7th.—C. H. BENHAM, Honorary Secretary, Brighton.

SOUTH-WESTERN BRANCH.—The autumn intermediate meeting will be held at the Royal Devon and Exeter Hospital, Exeter, on Friday, October 25th, at 3.15 p.m. No special programme will be prepared, but this meeting will be open for a general discussion on the Insurance Act and a Public Medical Service. Tea will be provided at the hospital at 4.30 p.m. The Committee of the Exeter Medical Dinner have much pleasure in inviting members of the South-Western Branch to the annual "Exeter and District" Medical Dinner, which is to be held at the Royal Clarence Hotel on the evening of the Branch meeting at 6.45 for 7 p.m. Dr. G. F. Welsford will be in the chair. Tickets, 10s. 6d. each (of which 7s. 6d. will be returned in the event of inability to attend) can be obtained of the Secretary of the Dinner Committee (R. V. Solly, M.D., 40, Southernhay West, Exter). Any member wishing to stay the night in Exeter is requested to notify the same to the Honorary Secretary, as several Exeter medical men have offered to put guests up for the night.—RUSSELL COOMBE, Honorary Secretary, Exeter.

National Insurance.

IRELAND.

Dublin Friendly Societies' Union.

LAST week a meeting was held in Dublin of representatives of some thirty friendly and insurance societies. It was decided that no society should negotiate with the doctors except through the Friendly Societies' Union. It was also agreed that the public representatives be called upon to have resolutions passed in the Corporation to cease payments of grants to the various hospitals unless they agreed to carry out the same conditions as heretofore in regard to the admission of patients, and that the North and South Dublin Unions be asked to support the resolution to be submitted to them with reference to the sending of dead bodies to the College of Surgeons. The following scheme was afterwards submitted to the committee for consideration at its next meeting:

To form a United Medical Fund, to which each society or branch would contribute that amount which they would pay to the doctors had the old scheme been allowed to continue, so as to provide medical attendance and medicine for member and family as at present. No medical certificates to be demanded for any purpose, either for State or ordinary benefits, if a fee has to be paid to the doctors for them. Medical attendance to be supervised by competent stewards.

Dublin Trades Council.

At the last meeting of the Dublin Trades Council the following resolution was carried, after discussion, by 18 votes to 7:

That this council desire to place on record a vigorous protest against the action of the Medical Association in trying to blackmail approved societies, and force from them exorbitant fees that the funds are entirely inadequate to meet, and in order to frustrate their pernicious designs, we recommend all trade union approved societies to dispense with medical tests, and appoint instead a visiting committee, and on the report of said committee to pay the benefits to insured members.

Mr. James Larkin, who took such a prominent part in the transport strikes last year, opposed the resolution, saying that in his opinion the doctors were only fighting for a living wage, and that the State should provide State medical aid as they had now what was called State insurance.

Hospital Residents and the Insurance Act.

The Insurance Act and the tax which it imposes upon the country was discussed at the last meeting of the New Ross Board of Guardians. This discussion arose out of an application from the intern officers of the workhouse to be exempted from the Act. The clerk said that unless the guardians got exemption from the Commissioners for these officers it would mean an annual payment of £25, while for the last seven years the amount paid during officers' illnesses only came to something less than £7 a year. It was unanimously decided to apply to the Commissioners for the exemption of the officers concerned.

SCOTLAND.

Scottish Medical Insurance Council.

AT a meeting of the Executive of this Council, held in the hall of the Royal Faculty of Physicians and Surgeons, Glasgow, on October 15th, the following resolutions were passed.

In regard to the working of sanatorium benefit in Scotland, it was resolved:

That the Executive of this Council make a strong representation to the Local Government Board for Scotland that the proposal which has been made in some places to appoint as chief tuberculosis officer the medical officer of health is opposed to the interest of tuberculous patients and the community generally, and should not be sanctioned. That the chief tuberculosis officers should be men experienced in [illegible] clinical manifestations of tuberculosis who [illegible] by the profession to act in the position of [illegible] That the Council further insist that patients [illegible] sanatorium benefit at their own homes should have [illegible]

The Executive approve generally of the Model Scheme and [illegible] the State Sickness Insurance Committee of the British Medical Association for the treatment of tuberculosis, and commend it to all the areas.

With reference to the Provisional Regulations issued by the Commissioners for medical benefit, it was resolved:

That the Provisional Regulations are not acceptable to the profession in Scotland. While admitting that they are in the main the logical outcome of the provisions of the Act, they serve to accentuate and render more obvious the difficulties of the medical service proposed under the Act. This Executive Committee further desires strongly to express its regret that no real attempt seems to have been made in them to satisfy the minimum requirements of the profession.

A further resolution was passed that it be a recommendation to the profession in Scotland to have nothing to do with the Insurance Act as at present defined by the Regulations for the administration of medical benefit.

PROVISIONAL MEDICAL COMMITTEES.

EASTBOURNE.

A MEETING was held in the Technical Institute, Eastbourne, on Wednesday, October 2nd. Dr. A. P. SHERWOOD was in the chair, and fifteen members were present.

Contract Practice Resignations.—The HONORARY SECRETARY reported that in accordance with the resolution of the State Sickness Insurance Committee of September 12th he had sent in, on September 18th, 174 resignation forms subscribed by thirty medical practitioners to fifty-five friendly and other sickness benefit societies affected. These returns accounted for every medical practitioner engaged in this form of contract practice in the area.

Communications were read from the secretaries of three friendly societies requesting information as to the future intentions of the profession. The Honorary Secretary was instructed to reply that no definite information could be given at present.

Sanatorium Benefit.—The HONORARY SECRETARY reported action taken since the last meeting, and submitted correspondence with the Sanatorium Subcommittee of the Eastbourne Insurance Committee, the latter authority now agreeing to adopt the scale of minimum payments for domiciliary attendance as demanded by the local profession according to the terms of Minute 207 of the Representative Meeting.

LEWISHAM.

A meeting of this Committee was held on October 3rd to consider the position of local medical practitioners with reference to the treatment of tuberculosis in insured persons.

Dr. A. W. HARRIS (M.O.H. for Lewisham) informed the meeting that the County Committee for London was preparing a scheme which would at first include only domiciliary treatment, but that later a tuberculin dispensary, with a whole-time tuberculosis officer, would be established. Dr. Harris explained that he was present, not in any official capacity, but merely in order to hear the opinions of the local practitioners. He suggested that a panel should be formed consisting of all practitioners who were willing to undertake the treatment; each doctor should treat his own patients, and those patients who had no regular medical attendant should have free choice from the names on the panel.

After an informal discussion, it was agreed that, subject to the approval of the State Sickness Insurance Committee, the suggested panel should be formed of those willing to serve for the following fees:

Report, 5s.
Consultation at home or at surgery (including ordinary medicine if required), 2s. 6d.
All emergency visits, by night or day, 5s.
Injection of tuberculin (tuberculin to be supplied by the authority), 2s. 6d. extra.

HAMPSTEAD.

A meeting was held on Monday, October 7th, at 25, Church Row. Dr. OAKLEY took the chair at the commencement, afterwards Dr. FORD ANDERSON. Eleven members were present.

Communication from Marylebone Provisional Committee.—A communication from the Honorary Secretary of the Marylebone Provisional Medical Committee was read, and with reference to the truth of a rumour contained therein, it was considered that investigations in this district would be difficult, and unlikely to be attended with success.

Contract Practice Resignations.—The HONORARY SECRETARY reported that he had sent in resignations of 25 practitioners to 41 contract practice appointments.

Quex Road Mothers' Meeting Sick Club.—Correspondence with Mrs. Roper, Honorary Secretary of the Quex Road Mothers' Meeting Sick Club, was read, and the Honorary Secretary was instructed to point out to her the effect of the Harmsworth amendment, making it possible for insured persons to be treated by her club, and that Dr. Horden's resignation specifically applied to insured persons.

Child's Hill Dispensary.—Correspondence with regard to the resignation of Dr. A. E. Baron of Platts Lane, of the Child's Hill Dispensary, with the Honorary Secretary of the Finchley Provisional Medical Committee was read. Dr. BARON attended before the committee and explained his position. The Honorary Secretary was instructed to ask the Finchley Committee to apply for the resignation of Dr. Baron of Child's Hill. That being received Dr. A. E. Baron will send in his resignation.

Pledges and Resignations.—The HONORARY SECRETARY reported the results to date of the canvass for pledges and resignations as follows:

Retired	... 21	of whom	17	have signed	pledge
Whole-timers ...	... 20	,,	10	,,	,,
"Home" address	... 24	,,	13	,,	,,
Not in practice ...	... 11	,,	6	,,	,,
Total unaffected	... 76	,,	46	,,	,,
Hospital residents	... 4	,,	3	,,	,,
Honorary staffs ...	... 19	,,	18	,,	,,
*Contract	... 34	,,	27	,,	,,
Remainder ...	... 108	,,	97	,,	,,
Total affected ...	... 165	,,	145	,,	,,
Total	... 241	,,	191	,,	,,

* 25 resignations.

Sanatorium Benefit.—Correspondence with the medical officer of health and the State Sickness Insurance Committee with regard to the scheme for the treatment of tuberculosis in Hampstead and also the salary of a whole-time officer was read. The Model Scheme (D 8) was considered, and it was resolved that the medical officer of health be asked to include in the local scheme paragraphs (*c*) and (*i*) of the model scale of fees. The list of applications of medical practitioners willing to undertake treatment of tuberculosis upon the terms arranged by the Committee was considered. Thereupon Dr. HILLS moved, Dr. OAKLEY seconded, and it was carried unanimously, that the list of names (inserted in the minute book) be approved. The Honorary Secretary was instructed to send the list of names so approved to the medical officer of health, and to intimate to him that a supplementary list will probably be sent upon the Committee receiving further applications.

Public Medical Service.—It was resolved that the consideration of the Public Medical Service schemes be postponed until the next meeting, and that it be the first business upon the agenda paper.

Next Meeting.—It was resolved that the next meeting of the Committee be held on Monday, October 14th, at 3.30 p.m., at 30, Frognal, on the invitation of Dr. MacFadden.

THE LOTHIANS.

Dr. Martine, the Secretary, writes calling attention to an error in the figures relating to the canvass of the profession, and published in the SUPPLEMENT of October 12th.

The number of medical men residing in the area of the Division is 125

The number of those who have signed the pledge is ... 118 (not 79 as stated).

SANATORIUM BENEFIT.

BRISTOL SCHEME FOR PROVISIONAL TREATMENT OF INSURED PERSONS.

THE following scheme for the provisional treatment of insured persons suffering from tuberculosis has been accepted by the Bristol Provisional Medical Committee and the State Sickness Insurance Committee of the British Medical Association and approved by the Commissioners:

1. Form Med. 2 to be properly filled in by the insured person's own doctor, a general practitioner. Fee 5s.

2. The medical officer of health, as temporary tuberculosis officer, will examine these reports and advise the Insurance Committee.

3. The medical officer of health, as temporary tuberculosis officer, shall have power, with the sanction of the Insurance Committee, to authorize consultations at his own discretion, or at the desire of the general practitioner, in cases of clinical difficulty, the consultant to be one of a list of consultants agreed upon between the Insurance Committee and the Bristol Medical Committee. Fee for each consultation, £1 1s.

4. Where dispensary treatment is desired by the general practitioner, and sanctioned by the Insurance Committee on the advice of the tuberculosis officer, such treatment is to be undertaken at the present Voluntary Dispensary, at No. 4, Redcliffe Parade West, subject to satisfactory terms being arranged with the Insurance Committee and approved by the Insurance Commissioners.

5. Where domiciliary treatment is advised by the general practitioner and sanctioned by the Insurance Committee on the advice of the temporary tuberculosis officer, such treatment is to be undertaken by the general practitioner on the tariff of fees prescribed by the British Medical Association. (See Schedule.) In this respect domiciliary treatment means treatment either at the patient's home or at the doctor's consulting room.

6. With regard to the cost of drugs, a patient having domiciliary treatment and taking medicine shall obtain such medicine from any one of a panel of chemists, the panel to be agreed upon between the Insurance Committee and the Bristol Chemists' Association. That the chemists whose names are on the panel shall be prepared to supply cod liver oil and malt preparations at the following rates:

Cod-liver oil	1s. per pint.
Cod-liver oil and malt extract	10d. per lb.
Malt extract	9d. per lb.
Cod-liver oil with creosote ...	7d. per 8 oz. bottle.

And any other medicines at whatever scale of prices shall be ultimately agreed upon with the Commissioners for medicines supplied under Section 15 of the National Health Insurance Act.

The payment to the chemists to be made by the doctors or other persons undertaking the treatment, the latter being reimbursed by the Committee when their account for the treatment given, including necessary medicines, is paid.

7. The general practitioner shall return initial and periodical estimates of the cost of domiciliary treatment to the Insurance Committee, subject to the approval of the temporary tuberculosis officer and to revision by him if necessary.

This scheme is for the provisional treatment of insured persons who require sanatorium benefit, and is of a temporary character only, without prejudice to any arrangement made of a permanent nature for the treatment of insured persons requiring sanatorium benefit.

SCHEDULE.

SCALE OF FEES FIXED BY THE BRITISH MEDICAL ASSOCIATION.

Visit or consultation, 2s. 6d. Report, 5s.
Injection of vaccine, 2s. 6d.

Vaccine treatment only to be given with the approval of the temporary tuberculosis officer, subject to the sanction of the Insurance Committee. Vaccine and drugs to be at the cost of the Insurance Committee.

Not less than every three months the practitioner attending a case shall report fully to the temporary administrative tuberculosis officer, a fee of 5s. for which will be paid.

EDWARD M. DYER,
Chairman Bristol Insurance (Sanatorium Benefit) Subcommittee.

H. F. DEVIS, M.R.C.S.Eng.,
Chairman, Bristol Provisional Medical Committee.

EDWARD F. YOUNG,
Representative of Chemists on Bristol Insurance Committee.

October 10th, 1912.

The above provisional agreement for the administration of sanatorium benefit under the National Health Insurance Act, 1911, has been this 11th day of October, 1912, approved by the National Health Insurance Commissioners (England), to be in force until January 12th, 1913.

SYDNEY C. PAGET,
Clerk to the County Borough of Bristol Insurance Committee.

IT was reported to the meeting of the State Sickness Insurance Committee on October 17th that in 218 areas over 32,589 resignations of contract practice appointments had been sent in by 8,782 doctors. In these same areas 388 doctors will give such shorter notice as is required to take effect on January 15th, 1913, and 371 doctors are reported as not having resigned.

THE TREATMENT OF MINERS.

Dr. Adam Fulton (Old Basford) sends us the following memorandum on the treatment of miners:

I. Miners require 75 per cent. more attendance than ordinary artisans, owing to accidents.
II. This has in the past been met either by
  (1) Accident clubs at the pits, or
  (2) Clubs to provide medical attendance for accidents and sickness of men and families, the single men usually paying the same as the married men and sharing their burden.
III. A large proportion of the men were also in friendly societies, and through them paid an additional sum for medical attendance during sickness.
IV. Under the Insurance Act miners will be able to claim attendance for both sickness and accidents from the local Insurance Committees, in return for their own and their employers' contributions to the approved societies, and they are sure to do so when they become aware of this fact.
V. A portion of the extra work devolving on colliery doctors might be paid for out of the medical fund as extras for fractures and dislocations, but these form only a small percentage of colliery accidents, which consist chiefly of contusions, flesh wounds, and sprains, together with nystagmus.
VI. The local Insurance Committees will be debarred from
  (a) Making an extra levy on miners to meet the much greater cost of the drugs and dressings they require, and from
  (b) Paying an extra amount to the colliery doctors in respect of the greater amount of attendance necessitated.
VII. Thus the extra stress of attending miners will fall on
  (1) The colliery surgeons, who will be only entitled to the same remuneration per head as their more fortunately placed brethren, apart from the extras from fractures.
  (2) The non-colliery doctors in the same insurance area, whose fund for remuneration will be depleted by
    (a) The cost of the dressings and appliances required for colliery accidents, and
    (b) The extra fees for attending dislocations and fractures drawn by colliery surgeons.
VIII. The cost should be borne by either
  (1) The coal industry—
    (a) Men,
    (b) Masters,
    (c) Royalty owners; or
  (2) The State.

The remedy suggested is a State grant to the local Insurance Committees for the treatment of each man or boy working underground, or a definite exclusion of miners' accidents from medical benefit under the Act.

NURSING IN RURAL DISTRICTS.

The following resolutions were adopted at a meeting of the Cottage Nursing Benefit Association (Denison House, Vauxhall Bridge Road, S.W.) on October 3rd:

The Committee of Management of the Cottage Benefit Nursing Association desires to affirm that there should be close association between approved societies and duly recognized nursing associations for work under the National Insurance Act.

The Committee of Management recommends branches of the association only to supply* resident nurses to approved societies and Insurance Committees under the National Insurance Act at a rate that will cover expenses, which they consider will be found to be not less than £1 per week. Nurses should only be allowed to attend cases at the request of a medical man.

The Committee of Management further advises branches of the Association which do not employ* district nurses to decline any subsidy which would involve a guarantee to undertake the nursing of all sick persons. Branches employing district nurses are advised to make the most favourable arrangement possible in their particular locality.

* (a) The [illegible] lives in the house of the patient, and [illegible] borrowing her would be responsible for [illegible], laundry, and travelling expenses in addition to [illegible] charge.
(b) The [illegible] not live in the house of patients, but [illegible]

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor,* British Medical Journal, *429, Strand, London, W.C.*]

The Regulations for Medical Benefits.

Dr. Charles S. Patterson (District Representative, Central Committee, Reading Division Public Medical Service) writes: Are we not forgetting that the idea of compulsory medical benefits for all wage earners originated with Mr. Lloyd George and not with the medical profession?

In accordance with the policy of our leaders and the practically unanimous opinion of the rank and file, we have refused to take service under the Act until our seven points have been granted. In pursuance of this policy we have given up our contract appointments.

In order that the artisans and labourers previously catered for by underpaid contract work should not be unprovided with medical attendance, a public medical service has been suggested and in most Divisions of the Association is being organized.

The weak point of this service is undoubtedly the collection of subscriptions. However, that is not our business. We provide the machinery, and the weekly wage-earning public have to find the money. If they do not pay in advance they get no doctoring. This is what the Government must do if they want our services.

We are not adopting "precipitately" "public medical service" (see Dr. H. H. Mills's letter, page 413).

The Chancellor of the Exchequer by his own act has disorganized all the existing public medical services, and we are endeavouring in our usual philanthropic way to provide a means by which the poorest and neediest of the community shall obtain medical assistance. In the Reading Division we have organized by means of district committees a public medical service which will provide for any labouring man, his wife and children, proper medical attendance on terms for which, if the Chancellor of the Exchequer sees fit to adopt them, he also can obtain medical attendance for his insured persons. If not, they must apply to have the money handed over to them individually and pay the difference or they must come as private patients. The regulations are absurd. As self-respecting practitioners we emphatically refuse to submit our professional conduct to any body the majority of whom are laymen, or let our incomes depend on the way we stint our patients of the proper drugs or the amount of extras we can pile on to deplete our brother practitioner's ordinary accounts.

These regulations prove quite as much as the Act itself that they are framed by men quite out of touch with the profession and certainly out of sympathy with the chief aim of the general practitioner, especially in the country—namely, to do our best for the community and at the same time get enough to live, clothe and educate our families and make some small provision for the time when the grasshopper shall become a burden. Alas! in these days few of us live to need the latter amount.

Dr. W. Elwood (Salford) writes: As a general practitioner I am filled with envy at the optimism with which Dr. Addison is able to regard the mean attempt of the present Government to sweat his professional brethren. There must be something peculiar in the rarefied atmosphere of the Olympian heights where our M.P.'s dwell, or perhaps the explanation lies in the fact that Dr. Addison will not be compelled to earn his living as a general practitioner under the Insurance Act. His bitterest enemy could not wish him a worse fate.

As a member of Parliament Dr. Addison receives £400 per annum. I assume he does not consider he is overpaid. I should like to ask him if he considers £225 per annum is sufficient remuneration for a doctor who undertakes to look after the health of a thousand people? That is the princely sum we are offered by the Act he is so enamoured of. Is that his conception of "a not sum of a sufficient magnitude to provide proper remuneration for medical services"? I can assure him that the general practitioners of this country do not think so.

I should also like to ask him why the Government are

able to pay a capitation fee of 8s. 6d. for medical attention and treatment for postmen who are sound healthy lives, and yet have the audacity to expect us to take all and sundry for a capitation fee of 6s., eightcenpence of which is to go to the chemist?

I should like to impress upon Dr. Addison the fact that he does not represent the opinions of the men whose livings are to taken away, and the value of whose practices is to be destroyed. It would perhaps be as well for him to remember this the next time he feels inclined to rush into print in the press with "a word to general practitioners." In the final paragraph of his letter to the British Medical Journal of October 12th he says: "The drafting of the Regulations was a task of enormous difficulty and complexity." All I can say is that it is a pity so much labour should produce such an abortion.

Dr. E. C. Daniel (Epsom) writes: I think the thanks of the whole profession are due to you for having asked Dr. Addison to give his opinion on the Regulations, for the laboured defence which he makes seems to condemn them more forcibly than any of the straightforward criticisms.

It is good that you have got Dr. Addison to leave generalities, such as we were favoured with in his letter of August, and to come to grips with practical details.

Unless you get a criticism from an abler pen than mine, I should like to draw particular attention to some of the points in his letter.

All, I think, will agree with Dr. Ledward, that the Regulations are in "plain and unmistakable language"; but Dr. Addison says—*Harmsworth Amendment*, second paragraph: "If the Regulation is studied further"; also, under *Remuneration*, third line: "is worthy of very close scrutiny"; and again, *Lay Control*, third line: "but a study of the Regulations will show." Therefore, according to Dr. Addison, the meaning of the Regulations is not what they say, but what may or may not be read into them. Now Dr. Addison, in his attempt to put a favourable complexion on the Regulations, has succeeded in pointing out the defects.

Harmsworth Amendment.—In the third paragraph, under this heading, he says, "those recognized have to give adequate medical treatment." Of course they have, and so have the Commissioners, or the Insurance Committees. They can all do it, provided the conditions of service as well as remuneration are satisfactory; otherwise all fail. So there is no point in Dr. Addison's argument.

Then he adds, "and to give free choice of doctor." This is one of the things he has "read into" the Regulations, for it does not appear in Regulation 16 as one of the conditions of approval.

Remuneration.—Dr. Addison defends making the drug bill a first charge on the fund, on the ground of "economical and efficient administration." That is to say, the doctor must prescribe cheap mixtures and pills, or suffer for it; and that on an offer of remuneration which even Dr. Addison does not call adequate. The public, if they ever consider this question, should note that it is "economical and efficient administration," where there are the best of drugs and best of appliances, and for that matter the best of doctors, which were promised to the insured.

In the next paragraph he speaks of "proper remuneration for medical services." Does he consider 2s. 6d. a visit with medicine, and the other items set out in the British Medical Association scale, to be improper remuneration for this class of work? If not, let him use his influence with the Government to provide a "net sum of sufficient magnitude" to pay these fees.

If he does consider these fees improper, then we know what value to attach to his writings, and to his attempt to lure the profession into the meshes of the Insurance Act.

Under the next heading, "Lay Control," he makes his most serious misstatement:

The Regulation.	Dr. Addison.
(Committee of Complaints) for dealing with any complaint made by an insured person against a practitioner . . . in respect of the discharge by the practitioner of his *professional* duties towards the insured person.	Many medical men object that the Regulations would place the profession under lay control, but a study of the Regulations will show, that in *professional* matters it certainly cannot be so.

I have no doubt that Dr. Addison can make a debating point out of the difference between professional duties and professional matters; but with the man who is being asked to put himself under these Regulations I think the plain words of this Regulation will carry more weight than Dr. Addison's statement that it does not mean what it says.

Later on he gives his opinion that the friendly societies will be in a minority on the committees; but does he expect us to believe that the "industrial insurance societies" will be better friends to the profession than the friendly societies?

Then he states that the men on the committees will know what they want. We can all agree with him in that statement. They will want chiefly to keep down medical expenses, because they know that half the excess (of the cost of medical benefit above the estimate), if it were ever paid, would fall on the rates.

He says: "The medical man is not in any sense the servant of the Insurance Committee." In theory and in law this may be correct, but in practice the Insurance Committee is the body through which all complaints go. They can take his patients away; they can ask to have his name removed from the panel.

Then follows an attempt to prove that there is no lay control because complaints are not inquired into by the Insurance Committee, and that the "Committee of Complaints" sits *in camerâ*, and that when the "Committee of Complaints" reports the Insurance Committee must accept its findings of fact; but the Regulation does not prevent them discussing the case, and they inflict the punishment.

Then he makes much of the "higher tribunal" set up to advise the Commissioners; but note this higher tribunal shall report, "but the report shall contain no recommendation." This makes the Commissioners, with one medical man in a body of five, the final court.

In spite of Dr. Addison's special pleading, I think the average man will agree that if this is not "lay control" it is so close an imitation of it that the medical man who came under it would not know the difference.

Dr. H. Muir Evans (Representative, East Norfolk and North Suffolk Division), writes: I would ask you to allow me space for a few broad considerations of the Provisional Regulations which I would like to put before my fellow practitioners. Like the scare titles outside some churches advertising services for men, I would ask, What are we? Whence do we come? Where are we going to?

The first question may be answered in the words of Sir Thomas Browne. We are "members of one of those three noble professions which all civil commonwealths do honour." "We desire rather to cure the infirmities of man, than our own necessities," "yet we deserve a worthy salary for our well-intended endeavours."

Whence do we come? By a gentle paraphrase of the same writer, I would reply, "There is surely a piece of Divinity in us, something that was before the Act, and owes no homage unto George."

Where are we going to? is a question we must each one answer for himself. Are we going to regard the Provisional Regulations as a regular provision for our daily needs? Are we going to accept that position sketched out by the Regulations which can best be described in the phrase of Hilaire Belloc as the "servile state." Are we going to sacrifice the privileges of ancient guilds, hawk our diplomas granted by honoured universities, and enter into an unequal conflict of local bargaining on wages and wage limits? A committee on which approved friendly societies are in a majority is bad enough, but what shall we say to such a body enforced by Prudential agents with a capital of eighty millions at their back? We must never waver from the position taken up in February and confirmed in July; never enter into any futile negotiations until a definite and satisfactory offer is made embodying our righteous demands, and free from all sham concessions and sham safeguards. A politician is like a pawnbroker: he deals in pledges, and the only way to redeem a pledge is by a pocketful of votes. It is clear we have not the votes; it is also clear we need have no dealing with the politician.

In conclusion, I would urge, as you have already done, that each man should himself study these Regulations, and having done so make up his mind once and for all

time whether this offer of His Majesty's Government is one that any sane man can accept for himself and his profession.

If after a careful study we do not recognize these draft Regulations as daft, I shall have no hope for the sanity of the profession.

Dr. C. H. Phillips (Hanley) writes: In the Supplement to the British Medical Journal of October 12th the many writers on the Insurance Act have been unanimous on the question of pay to the medical men, and I agree with all they have said, but it would be well to study other clauses of the Provisional Regulations, notably the First Schedule, Part I, Clauses 4 and 6.

Clause 4.—This clause wants careful studying. If a medical man wants an evening away from duties, or is suddenly called away, and not able to give the statutory seven days' notice, he is liable to be brought before the committee. Is not this slavery?

Clause 6 also is quite as stringent, and also requires very careful consideration; it clearly means that any medical man on the panel cannot have either assistant or locumtenent, but is held entirely responsible for the attendance upon all upon his list, and if he is ill, or absent from home, he must arrange with some other medical man on the panel to see his patients as his deputy, and at the surgery of the one acting as deputy, and without charge, as it expressly states on behalf of the absent practitioner. This I consider a further bondage and unreasonable. No liberty at all for the medical profession, and no holidays. These Provisional Regulations ought to be applied to all kinds of labour, and it would soon be found that the labouring classes would resent them and strike against any such terms. Imagine a joiner who is ill asking another joiner to do his work on his behalf, or a lawyer or a parson.

"*Persons temporarily resident outside the County.*"

Dr. Robert E. Lord (Colwyn Bay) writes: The Provisional Regulations for medical benefit, apart from their injustice to the profession in general, will inflict particular hardship on those members practising in health resorts.

To these resorts a considerable proportion of the working classes of the country come yearly, and as strangers on a holiday, they, the manual workers and clerks, cheerfully pay a fee of about 5s. to 7s. 6d. for the first attendance, according to the time spent on the case, and about 3s. 6d. later.

By the regulation in Part IV, 44 (5), the practitioner who has consented to attend insured persons from other counties has no choice but to attend any such, however infirm, and apparently for an indefinite period. For this attendance he has no certainty of receiving any payment whatever, as such payment is to be decided by a bargain arrived at between the county the patient comes from and that of the place he goes to, and is apparently to include the provision of medicines and appliances (paragraph 4). As people go to health resorts frequently because of illness, it follows that the deductions for medicines will be much above the average, leaving the attending practitioner with still less pay.

The bargains between the counties will be made on truly business lines, and "without sentiment," as bargainers so often say when they are not prepared to do the fair thing.

After carefully reading the regulations, and considering them as they affect the medical profession, I can only think that they emphasize the later idea of the Insurance Act, that of "buying in the cheapest market," and ignore the idea of "efficiency," which was the inducement dangled before the public at the outset. The two, as applied to professional services, are to my mind incompatible.

Constitution of Insurance Committees.

Dr. Arthur E. Larking (Buckingham) writes: The State Sickness Insurance Committee withhold their approval of Schemes C and D for a Public Medical Service on the ground that they both include the principle of co-operation with insured members. In Scheme C it states that "the societies shall levy" the subscription sufficient to meet the estimated cost, and shall be responsible for any deficit. Scheme D proposes co-operation with "contributors."

It is an extraordinary thing that no scheme mentions co-operation with the local Insurance Committee, which is, in my opinion, the only body we should deal with.

The local Insurance Committee is a very different body from the committee of a friendly society, and although inadequate representation is given to the medical profession, we are far more likely to obtain fair treatment from its members than from any societies or committee of contributors.

Let us consider of whom it is composed. Take a committee of 40 members; of these, 24 represent insured members and 16 other persons. In this county 7 or 8 of the 24 represent the industrial assurance societies, such as the Prudential and the National Approved Society, so that out of the 40 only about 16 represent friendly societies—not half of the total. And it is certain that in the future these will be still further diminished, as friendly societies will grow less and less, owing to their being unable to compete with the others. Already they disagree with the representatives of the industrial assurance companies, and find they are not going to have it all their own way.

Then take the 16 independent members who do not represent insured persons; who are these? Six men are appointed by the county council, and also 2 women. These are, in this county, well-known public men and women, one being the Hon. F. Fremantle, late Conservative candidate. I think we can be assured that they will all act in a fair and reasonable manner.

Next there are 4 doctors, 2 representing practitioners, 1 appointed by the county council and 1 by the Commissioners. Finally, there are 2 men and 2 women appointed by the Commissioners. There is no reason why they also should not be fair-minded persons. So that, out of the total of 40 members, we have 16 friendly society members, 8 industrial assurance society members, 12 presumably independent and impartial members, and finally 4 medical men. Surely this cannot be friendly society control!

As it appears to me impossible for us to work the Act as it now stands in the light of the Regulations, the only solution of the difficulty is the one outlined by me in my letter in the Supplement of August 17th, and that is by an agreement between the local Medical Committee and the local Insurance Committee, in which the former contracts with the latter to provide medical attendance and medicines on the lines of our Public Medical Service, any deficit being made up by a grant from the Treasury and the local council.

No voluntary scheme of medical benefits will succeed, and the only body that can *compel* all insured members to provide for medical attendance is the local Insurance Committee.

But it is to be hoped that the Chancellor will at once bring in an amending Act, and settle the matter once and for all.

The Extent of the Contract for Attendance.

Dr. C. R. Harvey (Bristol) writes: Would it not be very desirable that the extent of a practitioner's liability for attendance under any of the proposed medical services were more definitely defined before contracts are entered upon? Take the case of a patient suffering from an enlarged prostate, where operation is unsuitable or is declined, and catheter life begun. Does it fall to his unfortunate attendant to catheterize him for the rest of his life, if so desired? The patient may reasonably consider that the State have undertaken this duty for him, and may not wish to trouble his relatives or to incur the expense of a nurse. He may even visit amongst his friends to the extent of three miles from the doctor's address, and ask the doctor to follow him. Yet, as neither a local nor a general anaesthetic is, as a rule, required, it would not seem that this duty came under the head of special services; nor, in the absence of definite regulations, could it be objected that it was the duty of a nurse rather than a doctor.

The Income Limit.

Dr. W. Stanley Carpenter (Deptford) writes: In nearly all controversies it is necessary, before an agreement can be arranged, that there should be a certain amount of give and take between the parties at variance.

This axiom still applies to the present deadlock between the Government and the medical profession over the National Insurance Act. The greatest outstanding difficulty appears to me to be the wage limit of £2. Now if the Government will make their concessions on the other five cardinal points, I consider that it will be our duty to give way on this point; and personally I do not think that it is so important as many of the profession apparently do.

If it be granted that some concession is necessary, this is the one to concede, if by doing so we are granted the remaining five points. The profession must bear in mind that the Chancellor is inflexible against this wage limit, and naturally so, for he has promised medical benefit to all those coming under the Act, and it appears to me to be necessary that this should be so, in order to avoid untold complications.

For an income-tax limit we have all the means at hand already established to ascertain a person's pecuniary position, and it will be exceedingly difficult to verify the truth of statements as to income without this official control. The same difficulty occurs to a £2 wage limit, as proposed under the draft of a National Medical Service. The chief defect of such service is that it is voluntary, whereas a compulsory service is quite necessary for the poorer section of the community, such as we have under the National Insurance Act, for if the fees of joining such a service are anything but nominal the majority will stand clear of it altogether, as it will pay them better to consult a cheap dispensary doctor when necessity arises, and this will cause a still greater prevalence of the 6d. and 4d. dispensary.

Again, many men with an income of £3 a week, such as clerks, shop assistants, etc., are really less able to pay ordinary medical charges in doctors' bills than a so-called working man with £2. The former considers himself to belong to a higher social grade, and therefore has more expenses in the form of house rent, clothing, and social amenities, besides which he probably has to travel to work without the advantage of workmen's trams and trains, and the extra expense of lunching in town. It is also my impression that this £150 class form a large percentage of the bad payers, so that it would be well to get them into the fold, where we are sure of our money.

Remember also that a very large proportion of present club patients have wages of slightly over £2 weekly, and it would be rather unfair to exclude these; moreover, this class are only rarely able to pay a doctor's bill of £5 or £6, and, again, the far greater part of insurable persons would not be those earning from £2 to £3.

Bearing in mind also that ordinary general practice has greatly decreased within recent years, and is steadily decreasing owing to the extensive gratuitous medical treatment at hospitals, both general and infectious, school clinics, and institutions for special diseases, and now we are to have our tuberculous patients taken from us, it appears to me that it will be to our advantage to get as many of the lower middle class as possible under the Act.

I am of opinion, therefore, that it will be far better for the profession to do duty under the Act than under any scheme of Public Medical Service we can devise, and that it would be advisable to make the concession over the wage limit for the reasons set forth.

Amount Applicable for Payment of Practitioner (Clause 28).

Dr. Michael Dewar, in a letter published in the Scottish press last Monday, also discusses Clause 28. He writes:

It has been taken for granted all along, for what reason I do not know, that 1s. 6d. would cover the druggist's bill, leaving 4s. 6d. for the doctor. But will it? Looking at the cost of up-to-date medicines, and the cost of appliances in Schedule 2, it is more than probable that the cost will be 2s. to 2s. 6d., and in periods of excessive sickness, 3s. or more. One London doctor goes even further than I do. He estimates that in his area the probable cost of the various and usual medicines, serums and vaccines, trusses, belts, bandages, spinal supports, catheters, splints, dressings, etc., would amount to 4s. 9d., leaving 1s. 3d. for the doctor. This is no fancy or exaggerated picture. There is at present no basis available for making an accurate estimate, but from what I learn in various quarters the cost may be assumed to average 2s. 6d. or more. The profession must understand that this will be a first charge, and will be paid in full, whatever it may be, according to the rates of contract. This will be a terrible inducement to doctors (for they are only human, and have to make a living) to prescribe cheap and simple drugs, and possibly "placebos." Will the public put up with such treatment? I trow not. Were such things were to [illegible] by Mr. Lloyd [illegible] ance and medicines [illegible]

Mileage is also to be deducted from the gross 7s. as a first charge. How will this affect the country doctor? In those districts, and there are many, where 95 per cent. of [illegible]kers will be insured persons, it will spell ruination. According to Clause 46 (1), the prescribed distance before mileage is allowed is three miles, and according to 46 (2), he may, when chosen by a patient ten miles distant, have to make a visit without any mileage allowance, if another practitioner resident [illegible] three miles of the patient is available, as the distance is to be calculated from the patient's house to that of the nearest doctor or vice versa. This is a blow aimed at the principle of free choice of doctor. I am afraid that country practitioners, if they should venture to work under the Act, will be in a perilous position as regards their living. But really, after all, it will not matter a brass farthing, seeing that mileage is not to be an extra, but is to be a first charge on the 6s. Further, it is obvious that under a cast-iron, fixed gross rate of 6s. or 7s. 6d. the net fund must be a varying amount, and will be divided according to the pooled system. Still further, the practitioner is to be paid quarterly, not with the amount he is entitled to for his services, but will be credited with a part payment, while at the end of the year, when the aggregates are summed up, he may either get something or nothing for the last quarter, according as the fund will allow.

Mr. J. Webster Watts, Secretary of the National Medical Union, sends a criticism of the arrangements proposed under Clause 21 with regard to the net fund reached after making the deductions as to drugs and appliances. He writes:

The charge under (*a*) must be a heavy one. The chemists are to charge according to each item (which is right and proper), and it is unlikely that the sum required per head will be less than about 3s. 6d., which is the figure arrived at by comparison with twenty-five years of German experience.

For *mileage* a varying sum must be set aside—a small proportion for a county borough and a large one for a sparsely populated and scattered area.

The charge under (*c*) would depend upon the nature of the population, and would vary considerably.

In addition to these it is clear, he continues, that there would be other charges on the fund for the special services, as defined in Schedule 1, Part II; and for those "beyond the competence of an ordinary practitioner" (Schedule 1, Part II, Section 2). These would include laboratory investigation, for which no other provision has been made.

Deduct the charges for all these items from the agreed capitation fee, and there remains the sum available to pay the doctor. Could any arrangement be more unsound?

Steady in the Ranks.

Dr. C. Courtenay Lord (Gillingham, Kent) writes: In the present crisis in our affairs most of that which has been spoken and written deals with the question of remuneration. This, perhaps, is only natural, as we have, first, to make a living; secondly, to protect ourselves, in the interests of our wives and children, against heavy depreciation in the capital we have invested in our practices.

It might be as well, then, at this juncture to emphasize one or two important considerations which have been occasionally alluded to, and to point out one or two others which, so far as I am aware, have not yet been brought forward.

On the eve of the posting of the resignations comes a last despairing effort on the part of the press to persuade us that everything in the garden will be lovely. Some one behind the scenes has discovered that we are to have 7s. 6d., and that if we do not take it we shall be fools.

Now, it is difficult for us, perhaps, accustomed as we are to present-day contract practice, to see the fallacy of this. We may be inclined to argue, as the club man does to-day and as does the casual observer—we have been getting 4s., we are now to have 7s. 6d. Surely this is splendid! But, no; we must consider carefully what may be on the other side of the medal. We have not seen it, nor shall we be permitted to do so until we have taken the fatal step and our heads are through the noose.

I quite allow that if the club fee for the kind of people we attend now and the kind of attendance that is given to-day were to jump from 4s. to 7s. 6d. it would be quite all right from our point of view. But let us consider some of the hard facts which are sure to be set out on the other side of the medal:

1. Complete loss of independence.
2. Red tape.
3. Enormous increase in work.
4. The loss of the right to dispense.
5. The inability to get rid of our contract patients in long illnesses.

Now if we are forced, or are foolish enough, to accept per capita payment we are bound hand and foot for all time. I maintain that no man or body of men will ever devise safeguards which will enable us to retain a vestige of independence. We must be the slaves day and night of those patients who are on our list. I challenge any one to disprove this.

As regards red tape, we shall become the sport of officials in town whose only occupation is to write badgering letters for useless and unnecessary details of information. I am now engaged in a red-tape tussle with the Government with reference to an account. So far the correspondence has only lasted two months. Apply these methods to half or more of our patients, and ponder carefully whether such a life would be endurable. I need not labour the third heading, increase of work. It should be clear to all; and if it is not, we have Mr. Lloyd George's statement that there will be a heavy increase.

Now, as to the loss of right to dispense. Has any one seriously considered what would be the result of this?

In about six months the country would be papered with prescriptions for every known disease. The result must be an enormous falling off in private patients. Why? Give an insured person a prescription which cures him quickly, he will make use of it for his family and even his friends. It is useless to argue that he cannot understand the prescription. Once out of the consulting-room it matters not whether it is my property, his, or the chemist's: he has got it. It is quite easy for him to copy it or to get it rendered intelligible by a friend who knows a little about drugs. These things are done now, as all well know, and it is not possible to view with equanimity the wholesale multiplication of it. A case recently came under my notice. A patient consulted a specialist, paid a fee of five guineas, and obtained a prescription. Fifteen people had the run of that prescription, and in the end it was offered to a chemist to make what use he could of it.

The last item—a matter of great import—is that unless the hospital question can be put on a satisfactory basis we shall have to attend our contract patients with pneumonia, acute rheumatism, etc., at home. I will undertake to say that up to the present these cases, if on clubs, have always been got rid of by sending them to the nearest hospital. This is a point which has probably not been allowed for in estimating the number of attendances per head to club patients.

In conclusion, I submit that it is foolish to dismiss these objections as bogies conjured up from the imagination. They are very real, and will come prominently before us in the first week of medical benefit. It is manifestly the duty of some one to point them out and to try to ram them home.

In view of these dangerous possibilities, it is all-important that we should stick to our guns. There must be no backsliding, no defections from the ranks, no climbing down. We have fixed our minimum—mark the word—at 8s. 6d., and it will be none too much if we get it. We are being asked to take a leap in the dark, and such a one as has never been proposed to any body of men before.

The splendid response to the call to send in contract resignations must have a tremendous moral effect in the country. If we hold together we are winners all along the line. Remember that if we do not resign our contracts now they automatically cease to exist on January 15th next. We are fighting now for all that is worth fighting for—our professional honour, our independence, our very existence. Let us, then, fight on, keeping always before [illegible]—our duty to the public, our duty to our successors, our duty to ourselves, and our duty to the Central Defence Fund.

Dr. EDWARD MCCULLOCH (Devonport) writes: May I be permitted to express my sympathy with Dr. Lee in that [illegible] embodied in a reply of mine [illegible] a lapse from literary grace in the shape of a word which he could not find in the dictionary? Before I deal with his latest letter it would be well, I think, to clear up the meaning of "grousing" for him.

This colloquialism is usually bracketed with "grumbling" and means pretty much the same thing. An ancient Walker's *Dictionary*, which is the only lexicon I can at the moment lay hands upon, defines the verb "to grumble" as "to murmur with discontent; to growl; to snarl; to make a hoarse rattle." I have the honour to be an ordinary general practitioner myself, moreover one who is dependent on the exercise of his profession for his livelihood, but I think Dr. Lee is in error in supposing that the majority of that class are in agreement with him. On the contrary, I fancy that the majority will be well satisfied to work the sanatorium benefit provided the Association's conditions are fulfilled. The average tuberculous case of the class that will claim sanatorium benefit has not been a very profitable patient in the past, especially when he was the head of the family, and I shrewdly suspect that Dr. Lee has done as much as any of us in the past, in attending such cases without hope of fee or reward.

We have tried to get some into sanatoriums, only to be faced with a scarcity of accommodation for them. Now that, as a result largely of our own agitation on the subject, they are to be made a national charge, in however feeble and tentative a manner the political people may be treating the matter, it would consort ill with the honour of the profession to refuse our help on reasonable terms, merely because we have a quarrel on other grounds with the Government. Besides this, we have the prospect of payment for domiciliary work in cases unsuited for sanatorium treatment, where in times past there was little chance of but the most meagre financial reward.

The first point Dr. Lee wishes me to note seems to amount to an accusation that our representatives arrived at what he is pleased to call their peculiar decision from motives of self-interest and with a direct eye to personal aggrandizement. This is not criticism but a charge of the blackest treachery towards those of their fellows who elected them. I do not think many will take this view of their action, and I am sure that Dr. Lee has failed to realize what his words convey.

Regarding his second point, it appears to me that criticism of actions which have been translated into accomplished facts is a somewhat futile proceeding. Better, having chosen the best men we can find to spare the time and money to act as our representatives, to see that they are adequately instructed as to our wishes, and to trust to their honour to carry out our intentions, and after that to loyally accept the decision of the majority though it may be against our personal inclination to do so. That the recent decision to which Dr. Lee takes such exception finds favour with the most of us is, I think, evidenced by the fact that his letter has elicited so little sympathy.

In conclusion, I am sure that I am voicing the ideas of that majority when I say that we cannot hope to fight against what is detrimental to the interests of any section of the profession unless it be also injurious to the public interest. The fact that the proposals of the Government anent the medical part of their main scheme do so conflict with the public good, together with that unanimity of our profession which Dr. Lee's efforts, if successful, would go far to destroy, constitutes the great strength of our case in fighting against exploitation in the interests of professional politicians.

Vaccination and sanitary work generally are indubitably inimical to the interests of general practitioners, but I presume Dr. Lee would not propose that public vaccinators and medical officers of health should suspend their functions in the interests of the rest of us.

No Compromise!

Dr. W. HENRY HILLYER (late Medical Officer, Foresters, Oddfellows, Hearts of Oak, Shepherds, Gardeners, Rechabites, Equitable, and other friendly societies, East Grinstead) writes: I write to voice the feeling of dismay which, I believe, is widespread, though not yet vocal, at the danger of the Association once more losing touch and sympathy with the rank and file of the profession by reason of its frittering away its energies in the discussion of unessential side-issues.

The great, the incalculable, boon conferred upon the profession by Mr. Lloyd George is the boon of unity.

In the past the profession has had no corporate voice, no collective policy. Each isolated practitioner has hoed his lonely patch, year in and year out, to the best of his ability, relying upon his own strength and cunning to make terms with those who seek to exploit his labour and cheapen the wares he brings to market.

As long as he was dealing only with individuals the contest was not an outrageously unequal one. The terms of the bargain were fairly simple and definite. If the purchaser refused the price the seller declined to deliver the goods. It is true that the simplicity of the transaction was complicated by the intrusion of other than purely commercial considerations. Humanity demanded that the goods should often be delivered to those whom the seller well knew to be unable to pay the full value, and in some cases to pay anything at all, and the demand was met by reductions and remissions of the price.

Thus arose the great system of charitable and semi-charitable treatment which, as long as its purely gratuitous basis was frankly acknowledged on both sides, was the great glory of our profession and our country. The general practitioner might and often did supply to the burnt child of the cottager for half a crown more skill, more thought, more time, more labour than he sold to the cottager's master across the park for a couple of guineas.

One of the special forms of semi-charitable treatment which came into existence during the individualistic era was the club system. Its origin was simple enough, being an arrangement between the village doctor and the village club to give attendance to the members in return for a small weekly contribution. The members of these early clubs were mostly agricultural labourers earning from 7s. to 10s. a week, and the contribution was usually fixed at 1d. per week, which was looked upon as a fair proportion of these wages to be set aside for the doctor.

From this humble beginning has grown up the gigantic system of friendly society practice, under which some four or five million of the working classes, earning wages from 18s. or less to £3 or £4 a week, receive their medical attendance at the old rate which was fixed for the agricultural labourer of 100 years ago.

As time has gone on the direct bargaining between the village doctor and the village club, with its undefined conditions and its recognized charitable basis, has given place to closely-drawn agreements with branches of large centralized bodies of working men. These bodies have come to look upon the amount paid to the club doctor, not as a trifling honorarium, but as actual pay for services rendered. To these wealthy corporations to talk of charity seemed an absurdity and almost an insult. They wished to employ and to pay a doctor who should be their servant. They were willing to pay him what they considered a fair wage, and they had no means of ascertaining what was a fair wage except by finding out what he was willing to accept.

The doctors were beginning to realize the tyranny under which they were working, and even dimly to perceive that the only hope of escaping from it was by combination among themselves. But the habit of long years could not easily be broken, and the feeble efforts of a few far-seeing men were ineffectual to weld the profession into a united body to resist the extortion of the clubs. Then came the thunderbolt of the Insurance Act. It was proposed not only to give the sanction of the Statute Book and the support of the organized machinery of the State to the perpetuation of the club system, but enormously to extend its scope until it embraced practically the whole working-class practice of the country. The last shred of pretence—that the doctors were to give some small portion of their time to attending the poor at semi-charitable rates while they looked for their main source of income to the fees of the well-to-do—was torn away. It was suggested to apply the club system, and something like the club rates of pay, to the bulk of the practice of all but a few general practitioners, and to the whole practice of those practising in purely working-class districts.

At first the British Medical Association, the only organized body which could speak for the profession as a whole, did not realize what was being done, and showed a tendency to coquette with the accursed thing. The conditions of medical practice in this country make it impossible for the average practitioner to bother his head much about medical politics. He has no time for them. The men who take the lead in these matters are more or less men of leisure, emancipated from the fierce struggle of working class practice and knowing little or nothing of the conditions under which their poorer brethren earn their bread. But "the toad beneath the harrow knows," and the official leaders of the profession were very near being swept out of existence by the hurricane of indignation produced by their early apathy. It was only when calm reflection showed that no other leaders were available to take their place that the angry rank and file consented to march on and fight under the banner of the British Medical Association.

But we know that it must be a fight to a finish, and if we are to come out of it alive there must be concentration of thought and effort upon the holding of our position. We have done well up to now in resigning all contract appointments at the old charity rates of pay. Let us stand absolutely firm in the position we have taken up, and refuse to have anything to do with the working of the Act unless the six cardinal points—our minimum demand—are conceded.

Above all things, do not let us be led away into considering any futile schemes of organizing Public Medical Services of our own or any similar nonsense. Every ounce of energy, every minute of time at the disposal of our Provisional Medical Committees and their secretaries will be needed to keep up the organization of resistance to the attack being made upon us. They can spare neither time nor energy for the elaboration of "alternative schemes" to be put in force after the battle is over.

There is absolutely no place for any alternative. The position is a perfectly simple one.

Unless we are guaranteed fair payment we will not accept employment under the Act, but will continue to treat all patients who come to us as private patients exactly as we did before contract practice was invented, charging them such fees as we believe they are in a position to pay. The uninsured will be no worse off than they are now. The insured will at least be able to claim some assistance from the Insurance Commissioners towards paying their doctor's bills. How much that assistance shall amount to, and how it shall be apportioned are questions between the Insurance Commission and the insured persons, and in no way concern us.

A Scheme of Administration.

Dr. George R. Rew (Bedfont, Middlesex) sends the following outline of a scheme which he considers would be satisfactory both to the medical profession and to the insured person:

1. That we accept a capitation fee—for example, 6s. per annum, with or without drugs.
2. For that sum we contract to attend to insured persons during and only at certain hours of the day. The amount of hours to be arranged by the number of insured persons on our books.
3. All night work, visits, and attendances out of hours to be charged to the patient as if the patient was not insured.
4. All friendly societies and post offices who have contributors shall remit to the doctor by January 14th in each year the whole of the contributions that are due to him for that year, together with a list of his subscribers.
5. Persons wishing to change doctors during the year would have to pay another 6s., and get a fresh doctor's card.
6. All insured members to be provided with a card with printed rules.
7. Extras shall be charged for all fractures, operations, and injuries under the Workmen's Compensation Act according to scale.
8. Confinement fees shall be paid by the local Health Committee.
9. All late fees shall be immediately forwarded to the doctor, together with the names of any new members.
10. That doctors can refuse members beyond a certain mileage, or an extra capitation fee charged.
11. That no post office or friendly society shall refuse any local doctor who is willing to attend to insured persons.
12. That these rules shall be made by the Insurance Commissioners, and not left to the local Health Committees.
13 (doubtful rule). Only members earning under £100 per annum to be able to get a doctor's card.

The North Suffolk Public Medical Service.

Dr. Robert R. Rentoul (Liverpool) writes: In the Supplement of September 28th the draft rules of the above are published. May I take objection to some of them?

By Rule 2 it agrees that a day's work shall begin at 9 a.m. and last until 8 p.m. May I suggest that we closely follow the rules of the trade unions, and fix the end of the day at 5.30? In this way we shall ask for as a privilege what the wages paid classes demand as their right. To pay visits at 2s. 6d. at midnight and until 8 p.m. is not a just action, and tends to perpetuate the vilest conditions of nefarious club sweating. Secondly, a very evil rule (*a*) proposes that no medical charge shall be made for more than four children in a family. This is not business, but savours of that putrid thing we term "medical charity." Let us remember that when we are making terms under the Insurance Act we are doing so with a public Government system and not with people of small income. Thirdly, may I suggest that the words "medical attendant" and "medical attendance" be shunned, and that the words "adviser" and "treatment" be substituted? A "medical attendant" is really a male or female nurse.

May I call members' attention to the JOURNAL of June 22nd, 1889, where my public medical service is laid before them? They will there see I fixed 6 p.m. as the end of the working day. Also a scale of surgical and obstetric fees is given.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held on October 10th at Caxton House, Westminster, with Sir FRANCIS H. CHAMPNEYS in the chair.

Doctors Summoned by Midwives.

A letter was considered from a certified midwife practising in Chesterfield, complaining of the issue by the Chesterfield Division of the British Medical Association of a circular with reference to the conditions affecting the practice of midwifery in that town. A letter was considered on the same subject from a medical practitioner in Chesterfield. The Board decided that the reply be: (*a*) That, if the midwife has obeyed the rules of the Board regulating the summoning of medical aid, she has discharged her duties to the patient; (*b*) that the Board had no authority over medical practitioners. The Board also directed that the correspondence be forwarded to the Privy Council.

A letter was considered from the National Insurance Joint Committee, inquiring as to the fee usually payable to a qualified medical practitioner when summoned on the advice of a midwife, and by what authority the fee is paid. The Board directed that the Joint Committee be informed that the Town Councils of Liverpool, Manchester, and Cardiff had made agreements with all the medical men in their districts for a fee of one guinea all round when summoned to a case attended by a midwife, and that elsewhere the fee varied. That the authority by whom the fee is paid is the Local Supervising Authority in Liverpool, Manchester, and Cardiff, and the guardians in some other places.

Maternity Benefit under the National Insurance Act.

A letter was considered from Mrs. M. B. Williamson, Honorary Secretary of the Birkenhead Maternity Hospital, asking for information as to the administration of the maternity benefit under the National Insurance Act. The Board decided that Mrs. Williamson be informed that the question has been before the General Medical Council, which had made representation on the subject to the Government.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In ninety-five of the largest English towns, 8,499 births and 4,629 deaths were registered during the week ending Saturday, October 12th. The annual rate of mortality in these towns, which had risen from 11.[illegible] per 1,000 in the three preceding weeks, further rose to [illegible] in the week under notice. In London last week the death-rate was [illegible] to 15.5 per 1,000, against 12.2, 12.2, and 13.3 in the three preceding weeks. Among the 96 other large towns the death-rate [illegible] from 4.0 in Wokingham and 5 in Wimbledon, 5.8 in [illegible] to 18.7 in Liverpool and in Blackburn, 18.8 [illegible] in Gloucester. Measles caused a death rate of [illegible] Hull, 1.2 in Newcastle-on-Tyne, 1.7 in Tynemouth, [illegible] Liverpool and in Barnsley, 2.3 in Birkenhead, [illegible] and diphtheria of 1.2 in Walthamstow and [illegible] from enteric fever, scarlet fever, [illegible] no marked excess in any of the [illegible] small-pox was recorded during the week [illegible] years of age from diarrhœa and [illegible] in the preceding three weeks, [illegible] in London, 18 in Liverpool, 9 in Birmingham, 8 in Manchester, 5 in Blackburn, and 4 each in Leeds and in Sheffield. The causes of 32, or 0.7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 5 were registered in Liverpool, 4 in Birmingham, and 3 each in Bootle and in Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,775, 1,871, and 1,995 in the three preceding weeks, further rose to 2,085 on Saturday last; 322 new cases were admitted during the week, against 311, 305, and 317 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In eighteen of the largest Scottish towns 1,138 births and 591 deaths were registered during the week ending Saturday, October 12th. The annual rate of mortality in these towns, which had been 13.8, 13.0, and 12.2 in the three preceding weeks, rose to 14.1 per 1,000 in the week under notice, and was 0.4 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 6.5 in Clydebank and 6.8 in Partick to 19.9 in Greenock and 21.4 in Falkirk. The mortality from the principal infectious diseases averaged 1.4 per 1,000, and was highest in Falkirk and Coatbridge. The 231 deaths from all causes registered in Glasgow included 10 from infantile diarrhœal diseases, 3 from whooping-cough, and 3 from diphtheria. Diarrhœal diseases caused 6 deaths in Dundee, 3 in Edinburgh, 3 in Coatbridge, and 2 in Govan; diphtheria, 2 in Dundee and 2 in Greenock; whooping-cough, 2 in Edinburgh and 2 in Aberdeen; and scarlet fever, 2 in Dundee. The 2 fatal cases of small-pox were registered in Kirkcaldy.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 12th, 571 births and 389 deaths were registered in the twenty-two principal urban districts of Ireland as against 677 births and 342 deaths in the preceding week. The annual death-rate in these districts, which had been 14.7, 14.5, and 15.5 per 1,000 in the three preceding weeks, rose to 17.5 per 1,000 in the week under notice, this figure being 3.8 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 19.4 and 18.0 respectively, those in other districts ranging from 4.2 in Lisburn and 4.4 in both Portadown and Newry to 29.1 in Lurgan and 29.8 in Limerick, while Cork stood at 16.3, Londonderry at 12.8, and Waterford at 20.9. The zymotic death-rate in the twenty-two districts averaged 2.0 per 1,000 as against 1.5 in the preceding period.

Naval and Military Appointments.

ARMY MEDICAL SERVICE.

Surgeon-General George D. Bourke, C.B., is placed on retired pay, October 15th, 1912.

Colonel Harold G. Hathaway to be Surgeon-General, vice G. D. Bourke, C.B., October 15th, 1912.

Colonel John R. Dodd, M.B., Half-pay List, retires on retired pay, dated October 12th, 1912.

Royal Army Medical Corps.

Lieutenant-Colonel G. Cree has taken up duty as Assistant Director of Medical Services at Bordon in succession to Colonel C. R. Tyrrell.

Lieutenant-Colonel Reginald J. Windle, M.B., from the Seconded List, is restored to the establishment, vice Lieutenant-Colonel E. H. L. Lynden-Bell, promoted, dated October 1st, 1912.

Lieutenant-Colonel Cecil W. Johnson, M.B., is placed on retired pay, dated October 11th, 1912.

Major J. C. B. Statham has vacated his appointment in the London District, and embarked for Sierra Leone.

Major Robert J. W. Mawhinney to be Lieutenant-Colonel, vice C. W. Johnson, M.B., dated October 11th, 1912.

Major A. D. Jameson has been appointed a Specialist in Dermatology, 1st (Peshawar) Division, with effect from September 1st, 1912.

Major J. Hennessy has been ordered to India.

Major S. de C. O'Grady, from Cairo, has been posted to the London District, with effect from October 1st.

Major J. G. Gill has been appointed Specialist in Electrical Science, Burma Division, vice Major G. B. Riddick.

Captain James B. Clark, M.B., to be Major, October 14th, 1912.

Captain T. B. Unwin has been appointed to the London District for duty.

Captain Roderick McK. Skinner to be Major, dated October 2nd, 1912.

Captain M. P. Leahy has been granted leave for six months out of India.

Captain C. Scaife, from Poona, has been appointed to Belgaum for charge of the Brigade Laboratory.

Captain J. W. Houston, from Poona, has been appointed to Bombay for charge of the Brigade Laboratory at Colaba.

Captain A. W. Sampey, to be in charge of the Brigade Laboratory at Fyzabad, with effect from August 6th, 1912.

The following lieutenants from the seconded list are restored to the establishment, dated October 1st, 1912: Alexander G. Biggam, M.B.; James L. Huggan, M.B.

INDIAN MEDICAL SERVICE.

Colonel W. A. Corkery has retired from the service, with effect from August 25th, 1912.

Colonel R. W. S. Lyons, I.M.S., is appointed A.D.M.S., 3rd (Lahore) Division, vice Colonel W. A. Corkery, I.M.S., retired.

Colonel R. B. Roe, I.M.S., is appointed A.D.M.S., Sirhind and Jullundhur Brigades, vice Colonel R. W. S. Lyons, I.M.S., transferred.

Colonel D. St. J. D. Grant, I.M.S., is appointed A.D.M.S., Karachi Brigade, vice Colonel R. B. Roe, I.M.S., transferred.

Lieutenant-Colonel B. B. Graypoot has been appointed Assistant Director, Medical Services, Derajat and Bannu Brigades.

Lieutenant-Colonel W. D. Sutherland, I.M.S., has been deputed to institute courses of instruction for medical officers in the application of biochemical tests for the origin of blood stains to Indian medico-legal practice.

Major W. H. Tucker has been appointed as Durbar Physician, Travancore, for a period of three years.

The King has approved of the promotion of the following officers, dated July 27th:

Majors to be Lieutenant-Colonels.—PATRICK BALFOUR HAIG, M.B., RALPH HENRY MADDOX, M.B., EDWARD VICTOR HUGO, M.D., F.R.C.S., HARRY GEORGE MELVILLE, M.D., F.R.C.S.E., HERBERT AUSTEN SMITH, M.B., DOUGLAS RICHARD GREER, M.D., GEORGE MCIVER CAMPBELL SMITH, M.B., JOHN GEORGE HULBERT, M.B., FRANCIS EDWARD SWINTON, SIDNEY HARVEY BURNETT, M.B., THOMAS JACKSON, M.B., PULTENEY CHARLES GABBETT, JOHN LEWIS MACRAE, M.B.

Lieutenant to be Captain.—ROBERT INGLIS BINNING, M.B., dated July 31st.

The King has approved of the resignations of the following: Lieutenant-Colonel DOUGLAS RICHARD GREEN, M.D., dated August 1st, 1912. Lieutenant-Colonel EDWARD R. W. C. CARROLL, dated August 25th, 1912. Lieutenant-Colonel CLARENCE E. L. GILBERT, dated September 21st, 1912.

Major W. H. COX, D.S.O., has been appointed Superintendent, Lunatic Asylum, Rangoon, vice Captain Jagoe Shaw, transferred in the same capacity to Yeravda Lunatic Asylum, Poona.

Captain A. J. H. RUSSELL has been posted to the Madras Presidency for temporary civil employment.

Captain F. C. FRASER, I.M.S., is appointed to the substantive medical charge of the 108th Infantry.

Captain S. G. S. HOUGHTON, I.M.S., is appointed to the substantive medical charge of the 38th Dogras.

Captain F. N. STEWART, I.M.S., is appointed to the substantive medical charge of the 74th Punjabis.

Captain E. B. MUNRO, I.M.S., is appointed to the substantive medical charge of the 89th Punjabis.

Captain D. D. KOMAT, I.M.S., is appointed to the substantive medical charge of the 8th Rajputs.

Captain K. S. THAKUR, I.M.S., is appointed a specialist in electrical science, with effect from August 31st, 1912.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

ABERDEEN SCHOOL BOARD.—Dentist. Salary, £200 per annum.

BATH EYE INFIRMARY.—Honorary Surgeon.

BIRKENHEAD BOROUGH HOSPITAL.—(1) Senior House-Surgeon (Male). (2) Junior House-Surgeon (Male). Salary, £100 and £80 per annum respectively.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House-Surgeon. Salary at the rate of £80 per annum, rising to £100, for each period of six months.

BRADFORD ROYAL INFIRMARY.—Male House-Physician. Salary, £100 per annum.

BRISTOL GENERAL HOSPITAL.—(1) First House-Physician. (2) Second House-Physician and Casualty Officer. Salary, £80. (3) Senior House-Surgeon. Salary, £120 per annum.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Junior Resident Medical Officer. Salary, £80 per annum.

BURTON-ON-TRENT INFIRMARY.—House-Surgeon. Salary, £120 per annum.

CARDIFF: KING EDWARD VII HOSPITAL.—House-Surgeon (Male). Honorarium, £30 for six months.

CARDIFF UNION WORKHOUSE.—Assistant Medical Officer. Salary, £150 per annum.

CHARING CROSS HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

CHORLEY: RAWCLIFFE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

COLCHESTER: ESSEX COUNTY HOSPITAL.—House-Surgeon (Male). Salary, £80 per annum.

DEVONPORT: ROYAL ALBERT HOSPITAL.—(1) Assistant House-Surgeon; salary at the rate of £75 per annum. (2) House-Surgeon; salary, £50 for the first six months, £75 for the second six months, increasing to £150 per annum.

DUDLEY: GUEST HOSPITAL.—(1) Senior Resident Medical Officer. (2) Assistant House-Surgeon. Salary, £120 and £100 per annum respectively.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge Road, S.E.—House-Physician. Salary at the rate of £75 per annum.

GLASGOW UNIVERSITY.—Additional Examiners in Materia Medica and Therapeutics, Pathology, Surgery (Systematic and Clinical), and Medicine (Systematic and Clinical).

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—Resident Medical Officer. Salary, £120 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—Junior House-Surgeon. Salary, £80 per annum.

GUILDFORD: ROYAL SURREY COUNTY HOSPITAL.—House-Surgeon (Third). Salary, £75 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Third House-Surgeon (Male). Salary, £80 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

HONG KONG UNIVERSITY.—Professor of Physiology. Salary not less than £600 per annum. £100 granted for passage and outfit.

HULL: ROYAL INFIRMARY.—Assistant House-Surgeon. Salary at the rate of £60 per annum for six months and £80 per annum for twelve months.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL, Church Street, W.—Resident Medical Officer. Salary, £100 per annum.

LEEDS GENERAL INFIRMARY.—(1) Resident Medical Officer at the Ida and Robert Arthington Hospitals; salary, £60 per annum. (2) Resident Obstetric Officer; salary at the rate of £50 per annum. (3) Three House-Surgeons.

LEICESTER ROYAL INFIRMARY.—(1) Second House-Surgeon. (2) Assistant House-Surgeon. (3) Assistant House-Physician. Salary at the rate of £120 per annum for (1) and £80 per annum for (2) and (3).

LONDON COUNTY COUNCIL: SCHOOL CLINIC FOR CAMBERWELL AND BERMONDSEY.—[illegible] Medical Officers for Nose, Throat, and Ear. (3) One for Errors of Refraction. (4) One for X-ray Treatment of Ringworm. (5) One for Minor Ailments. Salary, £50 per annum for one half-day's work a week.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant Resident Medical Officer. Honorarium at the rate of 50 guineas per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £30 per annum.

MAIDSTONE: KENT COUNTY ASYLUM.—Male Fourth Assistant Medical Officer. Salary, £200 per annum.

MANCHESTER CHILDREN'S HOSPITAL.—Assistant Medical Officer for Out-patients' Department. Salary, £25 for six months.

MANSFIELD AND MANSFIELD WOODHOUSE DISTRICT HOSPITAL.—Resident House-Surgeon. Salary, £120 per annum.

MARGATE: ROYAL SEA-BATHING HOSPITAL FOR SURGICAL TUBERCULOSIS.—Resident Surgeon. Salary at the rate of £100 per annum for the first six months, rising to £120 per annum for the last six months.

MIDDLESBROUGH: NORTH RIDING INFIRMARY.—Assistant House-Surgeon. Salary, £75 per annum.

MIDDLESEX COUNTY ASYLUM, near Tooting, S.W.—Junior Assistant Medical Officer.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—(1) House-Surgeon. (2) Casualty Officer. Salary at the rate of £80 and £60 per annum respectively.

NOTTINGHAM GENERAL DISPENSARY (Branch).—Assistant Resident Surgeon (Male). Salary, £170 per annum.

OLDHAM ROYAL INFIRMARY.—Third House-Surgeon. Salary at the rate of £80 per annum.

PARIS: BRITISH HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

POPLAR BOROUGH DISPENSARY FOR THE PREVENTION OF CONSUMPTION, 135, Bow Road, E.—Tuberculosis Officer. Salary, £500 per annum.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham.—(1) Senior House-Physician. (2) Senior House-Surgeon. (3) Junior House-Physician. (4) Junior House-Surgeon. Salary at the rate of £75 per annum for (1) and (2) and £50 per annum for (3) and (4).

PRUDENTIAL ASSURANCE CO., Holborn Bars, E.C.—Medical Officer. Salary, £500 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—Second House-Surgeon. Salary, £80 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—(1) Medical Officer in charge of the Department for X Rays and Electro-therapy; salary, £90 per annum. (2) Dental Surgeon.

ST. BARTHOLOMEW'S HOSPITAL, E.C.—Chief Assistant in Electrical Department.

ST. PAUL'S HOSPITAL FOR SKIN AND GENITO-URINARY DISEASES, Red Lion Square, W.C.—Clinical Assistant.

SALFORD UNION INFIRMARY.—Male Resident Assistant Medical Officer. Salary, £120 per annum.

STAMFORD HILL AND STOKE NEWINGTON DISPENSARY.—Assistant Resident Medical Officer. Salary, £100 per annum.

STOKE-ON-TRENT COUNTY BOROUGH.—Lady Medical Officer. Salary, £250 per annum.

WAKEFIELD GENERAL HOSPITAL.—Second House-Surgeon (Male). Salary, £100 per annum.

WEST AFRICAN MEDICAL STAFF.—Vacant appointments. Salary, £400 per annum, rising to £600.

WEST LONDON HOSPITAL, Hammersmith Road, W.—Surgeon.

WINSLEY SANATORIUM FOR CONSUMPTIVES, near Bath.—Resident Medical Officer. Salary, £300 per annum.

WOLVERHAMPTON: SOUTH STAFFORDSHIRE JOINT SMALL-POX HOSPITAL BOARD.—Resident Medical Officer. Salary at the rate of £200 per annum.

WOLVERHAMPTON UNION.—Assistant Resident Medical Officer of the Workhouse and Medical Officer of Cottage Homes. Salary, £150 per annum.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

BOYD, Sidney, M.S.Lond., F.R.C.S.Eng., Surgeon to In-patients, Belgrave Hospital for Children, S.W.

EDWARDS, D. R., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Corwen District, co. Merioneth.

GOOD, J. E., M.B., C.M.Edin., Medical Officer for Destitute Persons for the District of Yatala South, South Australia.

LEVERTON-SPRY, E., M.R.C.S., L.R.C.P., District Medical Officer of the Helston Union.

MUNDEN, M. M., M.R.C.S., L.R.C.P., District Medical Officer of the Cirencester Union.

ONSLOW-FORD, M., M.R.C.S., L.R.C.P., District Medical Officer of the Wycombe Union.

PLUMMER, A., M.B.Adel., Medical Officer of Health at Carriton, South Australia.

RUSSELL, W. H., M.B., B.S., Medical Officer of Health, Dalrymple, South Australia.

ROBKE, W. W., M.B., Ch.B., Honorary Pathologist and Radiographer to the Leyton, Walthamstow, and Wanstead Children's and General Hospital.

SERJEANT, R., M.R.C.S., L.R.C.P., District Medical Officer of the Brentford Union.

THOMPSON, Charles J., B.Sc., L.M.S.S.A.Lond., reappointed Clinical Assistant to the Birmingham and Midland Hospital for Skin and Urinary Diseases.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

BODY.—On September 26th, at Dowlais House, Middlesbrough, the wife of Thomas M. Body, M.R.C.S., a daughter.

ROBERTS.—On October 12th, at Ravensbourne, Victoria Park, Manchester, the wife of Charles Roberts, M.B., B.S., F.R.C.S. (née Ethel Nicholson), of a son.

TAYLOR.—On the 26th September, at Toungoo, Burma, the wife of W. R. Taylor, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGE.

MITCHELL—COLEMAN.—On August 14th, 1912, at Christ Church, Ballarat, by the Very Rev. Dean Parkyn, Leonard John Cole, of Collins Street, Melbourne, son of J. T. Mitchell, M.D., M.R.C.S., of Ballarat, to Ella, eldest daughter of Mr. John Coleman, of "Brookside," near Ventnor, Isle of Wight.

DEATH.

AXFORD.—At Mount Pleasant Private Hospital, Auckland, on September 3rd, Sidney Bertram Axford, M.R.C.S., L.R.C.P., of Te Aroha, New Zealand, and late of Falmouth, Cornwall, England, aged 50 years.

DIARY FOR THE WEEK.

MONDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 5 p.m.—Mr. S. G. Shattock: Demonstration—Specimens illustrating Diseases of the Genito-urinary Organs.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF MEDICINE, 1, Wimpole Street, W., 5.30 p.m.—Sir John Broadbent, Bart.: Case of Rupture of an Aneurysm of the Aorta into the Right Auricle, with Pleural Effusion requiring Repeated Tapping.
SECTION OF PSYCHIATRY, 1, Wimpole Street, W., 6.30 p.m.—Presidential Address by Sir George H. Savage, M.D.

WEDNESDAY.

HUNTERIAN SOCIETY, London Institution, Finsbury Circus, E.C.—9 p.m., Presidential Address by Mr. A. H. Tubby. 9.15 p.m., Discussion on Intravenous Anaesthesia.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 5.30 p.m.—Mr. J. F. Colyer: Demonstration—John Hunter's Specimens illustrating the Formation and Growth of Teeth.

ROYAL SOCIETY OF MEDICINE:
SECTION OF OPHTHALMOLOGY, 1, Wimpole Street, W., 8.30 p.m.—Inaugural Business Meeting.

FRIDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 5 p.m.—Professor Arthur Keith: Demonstration—Specimens illustrating the result in a case where the condition of Imperforate Anus was Unrelieved; Comparative Anatomy of the Prostate; Sexual Organs of Eunuchs; Undescended Testicles.

ROYAL SOCIETY OF MEDICINE:
SECTION OF BALNEOLOGY AND CLIMATOLOGY, 1, Wimpole Street, W., 5.30 p.m.—Presidential Address by Dr. Percy Lewis: Sepsis and Spa Treatment.
SECTION OF EPIDEMIOLOGY, 1, Wimpole Street, W., 8.30 p.m.—Presidential Address by Dr. W. H. Hamer: The Influence of Migration upon the Phthisis Death-rate.
SECTION OF DISEASES OF CHILDREN, 1, Wimpole Steet, W., 4.30 p.m.—(1) Cases and Specimens. (2) Papers—Dr. E. C. Williams: Notes on a case of Precocious Development in a Boy aged 6 years (with photographs). Dr. Leonard Guthrie: Epidemic Catarrhal Jaundice.

POST-GRADUATE COURSES AND LECTURES.

BROMPTON HOSPITAL FOR CONSUMPTION, S.W.—Wednesday, 4.30 p.m., Some Points in the Etiology of Tuberculosis.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C., Thursday, 4 p.m.—Joint Diseases and their Surgical Treatment.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m., Medical and Surgical Clinics. Monday: 12 noon, Throat, Nose, and Ear; 2.15 p.m., Surgery; 3 p.m., Operations; 3.15 p.m., Medicine; 4.15 p.m., Ear and Throat. Tuesday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Surgery; 3.15 p.m., Medicine; 4.15 p.m., Skin Clinic. Wednesday: 11 a.m., Eye; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Eye Clinic; 4.30 p.m., Surgery. Thursday: 12 noon, Throat, Nose, and Ear; 2 p.m., Operations, Pathological Demonstration; 3.15 p.m., Medicine. Friday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Surgery. Saturday: 10 a.m., Radiography; 11 a.m., Eye. Special Lecture, Thursday, 4.30 p.m., Cancer of the Rectum.

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.—Lectures daily (Saturday excepted) at 12 and 4 p.m. Practical laboratory work daily (Saturday excepted), 10 to 12 a.m. Practical Protozoology, 2 to 3.30 p.m. daily. Advanced Protozoology, 10.30 a.m. to 1 p.m. daily. Medical Clinics, Monday and Thursday at 3 p.m. Operations Friday at 3 p.m.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15 p.m., Some Abdominal Cases.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m., Demonstration of Medical Cases. Friday, 4.30 p.m., The Treatment of Haemorrhoids.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week, at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Medical; Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, Salpingo-oöphoritis. Tuesday, The Diagnosis and Treatment of Strictures of the Oesophagus (Lantern Demonstration). Wednesday, Rest Cures in Theory and Practice. Thursday, Obscure Affections of the Foot.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday, 3.30 p.m., Lumbar Puncture and Examination of Cerebro-spinal Fluid. Friday, 3.30 p.m., Sensory Disturbance in Nervous Disease.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, N.E.—Wednesday, 4 p.m., The more Common Forms of Rupture in Children and their Treatment.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Monday, 4.30 p.m., Physical Examination of the Chest. Wednesday, 4.30 p.m., Morbid Anatomy. Thursday, 4.30 p.m., Modes and Channels of Infection. Friday, 3.30 p.m., Special Clinical Demonstration.

SALFORD ROYAL HOSPITAL.—Tuesday, 4.30 p.m., Demonstration of Orthopaedic Cases.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Demonstration of Minor Operations, 11 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Demonstration of Fractures, etc., 10.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Gynaecological Demonstration, 10 a.m.; Lecture, Neurological Cases, 12.15 p.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Lecture, Practical Medicine, 10.30 a.m.; Lecture, Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. daily.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
	OCTOBER.
22 Tues.	Buckinghamshire Division, High Wycombe, 2.30 p.m. Lunch, 1.30 p.m.
23 Wed.	Joint Arrangements Committee, 11 a.m. London: Finance Committee, 2.30 p.m. Central Division, Medical Institute, Birmingham, 3.30 p.m.
24 Thur.	London: State Sickness Insurance Committee, 10 a.m. Northamptonshire Division, Northampton General Hospital, 2.30 p.m.; Luncheon, 1.30 p.m.
25 Fri.	South-Western Branch, Exeter, 3.15 p.m.; Exeter and District Medical Dinner, 6.45 p.m. for 7 p.m.
31 Thur.	Central Council, London, **10 a.m.**

Date.	Meetings to be Held.
	NOVEMBER.
7 Thur.	Brighton Division, Special Meeting, Lecture Hall, Now Road, 4 p.m.
8 Fri.	Hampstead Division, Finchley Road, 8.15 p.m.
19 Tues.	London: Special Representative Meeting (*provisional date*). Brighton Division, Ordinary Meeting, Lecture Hall, Now Road, 4 p.m.
20 Wed.	London: Special Representative Meeting (*provisional date*).
21 Thur.	Metropolitan Counties Branch Council, 4 p.m.
	DECEMBER.
6 Fri.	Hampstead Division, Finchley Road, 8.15 p.m.
19 Thur.	Metropolitan Counties Branch Council, 4 p.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, OCTOBER 26TH, 1912.

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TERMS AND CONDITIONS.

THE following official minutes of a conference of the Advisory Committee, over which the Chancellor of the Exchequer presided, on October 23rd, have been issued for publication.

The CHANCELLOR OF THE EXCHEQUER: I have come here this morning to lay before the Advisory Committee the intentions of the Government as to medical benefit. I hope you will afterwards, as briefly as possible, express your views. Then in the course of the afternoon I shall have to make a similar announcement in Parliament.

Now that I have explained to you the purpose of the meeting, perhaps you would allow me, before I state what the actual proposals of the Government are, to give you a narrative of the events which have led up to the present proposals; and I shall crave your indulgence in doing so, as it may take a little time; but it is very important that there should be a statement of the actual position before we come to the suggestions which we are going to put before you with a view to dealing with that position. Medical attendance upon the industrial classes is of three or four different characters. There is, first of all, what is known as private practice, where the medical attendant charges fees for attendance, for visits, for consultations, and for medicine. As far as I have been able to gather, that barely applies to one-fourth of the industrial population of this country. I do not bind myself to the actual figure, but, at any rate, it is, comparatively speaking, a minority, and perhaps a small minority, of the industrial population who are doctored on that plan. It is largely confined to certain parts of the country; for instance, I believe there are parts of Lancashire where contract practice is unknown, and where all the doctoring is done upon the principle which I have indicated of charging fees. But as far as the vast majority of the working people of this country are concerned, it was recognized both by them and by the medical profession that private practice with payment of fees for work done in each individual case did not provide an adequate method of dealing with the problem; therefore, the majority of the working classes have up to the present had their doctoring done on contract terms. Now, contract practice is divided into two parts: There is, first of all, the contract practice which the friendly societies in the main have organized, whereby an inclusive fee of anything from 2s. up to 10s. is paid to the doctor for attending to their members. This covers something like four million people, I think. It is very difficult to get the actual figures, but at least it applies to four millions of the employed population of this country. As a rule that does not cover their dependants. In certain cases it does. I am talking of what you really know, but it is necessary that I should go through this in order to lead up to the proposal which I am actually making. Occasionally provision is made for dependants as well by medical institutes, which are organized by friendly societies at places like Luton, Leicester, Wolverhampton, and other places. I am not expressing any opinion, one way or the other, upon that method.

of dealing with the problem at the present moment. I only want to call attention to the fact that four millions of the employed persons of this country are doctored at the present moment on that plan. I think it is generally recognized that the average fee—capitation fee I mean now—sometimes it is high, sometimes it is very low—the average fee, I think, is something like 4s. per member, including drugs, including everything except what are known as major operations and specialist services. Now there is another form of contract practice which is a very popular one in large industrial districts, and that is the works' doctor, where there is a certain sum of money charged, sometimes on a poundage principle, sometimes on a definite scale. It ranges from, I think, 3d. to 6d. a week, paid by each employed person, to get doctoring not merely for himself, but for his family as well. There are no statistics available, I think, which would show clearly and conclusively how many workmen have their medical attendance organized on that principle; but I think we can safely say this—that contract practice in all its forms, the payment either of 4s. for attending the friendly society member, membership of medical benefit societies and medical institutes, subscribing to works' doctors—contract practice in all its forms provides for far more than half the working population of this country. That leaves something like one-fourth for other methods of medical attendance. There are charitable institutions, like hospitals with their out-patient departments, for attending to a good many. There is in the last resort, and only the last resort as far as the working people are concerned, the Poor Law doctor. And I am sorry to say that a very substantial proportion of the working classes of this country (and here we have got the evidence taken by the Poor Law Commissioners to bear out what I say) practically receive no medical attendance at all, certainly not until it is too late to be of the slightest use or value. That is the present position; and I think it will be generally agreed that on the whole it is unsatisfactory, and that it is about time something was done to put it on a firmer, a better organized, and an improved basis; and that is what we propose to attempt to do. Of course, in doing so, we have had to draw upon the experience of the past. It would have been very unwise on our part if we had not. And experience proves this, that up to the present, at any rate, there have been only two successful methods of coping with the problem of disease amongst the working classes—or, rather, I would say with the treatment of disease, not with the problem, because that is a much deeper and more far-reaching question, but with the treatment of disease. The first is the method of what I call insurance. Contract practice is a form of insurance for medical treatment; the works' doctor is a form of insurance; a man pays either his 3d., 4d., or 5d. a week, who may have no family at all, and who may not have any need for a doctor for a good many years to come. So that, as far as the bulk of the working classes are concerned, they have found that under present conditions insurance is the only effective method of dealing with the problem of medical treatment for them. I am therefore bound to take note of that. The only other alternative, of course, is that the State, either by the central Government or the municipality, should undertake medical treatment itself for the working population. Now those are the only two alternatives. In the National Health Insurance Act we have chosen the former; we have chosen the method of insurance for dealing with the question of medical treatment for the working population of this country.

Now the question that we have to consider is how we are to make that effective. The cardinal defect and vice of contract practice up to the present has been—and let us frankly admit it—that in some cases it has been inadequate because it has been underpaid. There are many doctors engaged in contract practice, many of whom I have had the privilege of knowing, who have given the very best service without any regard to the pay which they receive in respect of it—(Hear, hear)—and they have assured me—and they are men whose word I would take without examination—that after they had given the best drugs they had, and the best time and skill at their disposal, there was really nothing left, and that it was really not a contract, but a work of charity as far as they were concerned. Now, let us recognize that fact. Those friendly society leaders and others who were engaged in providing medical service for the working classes no doubt made the best of the means at their disposal; they made the best contracts they could; I think very often they drove hard bargains; at any rate, up to the present all the evidence at my disposal has convinced me that the work has been underpaid, and I think the medical profession will admit that it has been inadequate. That is the natural tendency of low-paid work—it becomes inadequate. That is the fundamental principle which we have accepted, and which is the basis of the proposals which I mean to submit for your consideration to-day.

Now the British Medical Association, in the year 1905, I think it was, examined into the question of contract practice. The revolt of the medical profession against contract practice did not start with the National Insurance Act; it started many years ago; there was a good deal of dissatisfaction. I have no doubt that the National Insurance Act brought it to a point, and I am not sorry for that, although I have been the victim of it. I think it has answered a very useful purpose. It was about time that the medical profession and the working classes should be brought face to face with the inadequacy of that service under present conditions. Well, the British Medical Association instituted an inquiry into the matter, and I have many a time called attention to it. I wish more of those who have been either making pronouncements upon this subject, or offering suggestions, had taken the trouble, which I have, to read the document prepared by the British Medical Association upon that occasion, and the letters which it contained, received from doctors engaged in contract practice in various parts of the country, indicating their views upon the defects and failures of contract practice, and also their suggestions as to the best methods of dealing with it. This is a summary of the replies received by the British Medical Association from a number of doctors engaged in contract practice: 165 practitioners were satisfied with the rate which they had received; 458 considered the rate inadequate; 393 stated the amounts to which the rate should in their opinion be raised. That is very interesting. There were only 393 who indicated the rates which they considered satisfactory; and in view of recent events it is exceedingly interesting to examine the suggestions made by these gentlemen at that moment as to the remuneration which they, with their experience of contract practice, would regard as satisfactory to themselves and to their patients. Now, let us have a look at them. Those who suggested 4s. or under were 31. That indicates that the vast majority of them were opposed to 4s., and considered it utterly inadequate. There were 31 who thought it was fair pay. I want you to bear in mind that these figures include drugs; this is not merely for services, but for services and drugs. Those who suggested 5s. or less were 145; those who suggested between 5s. and 6s. were 52; and those who suggested 6s. were 78. Now mark: Out of the 393 who made practical suggestions as to the amount which they would regard as sufficient, the vast majority were satisfied with 6s. and less; and, as I say, this included drugs. And may I point this out—friendly society practice, as my friendly society comrades here know, included treatment of tuberculosis, and very expensive it was? So that the vast majority of the doctors who sent in suggestions as late as 1905 considered 6s. (and under) adequate pay to cover tuberculosis and every form of ordinary medical treatment. Very well, that is by the way. There were 22 who claimed 8s., 23 who claimed 10s., and there were 29 who claimed amounts ranging between 10s. and 5s. There were very wide suggestions, but out of the total of 393 only 5 claimed over 10s. and 4 claimed over 12s. Now you will see that when the Government suggested 6s., apart from tuberculosis—because we had a special provision for tuberculosis—apart from tuberculosis, it was not really a very mean, meagre suggestion, having regard to the facts as they were known to us at that moment. The vast majority of those who made suggestions—and I want to emphasize this—who made practical suggestions, regarded 6s., and even under 6s., as very adequate payment. (And remember, we were in fact giving more than this, for we were taking tuberculosis out.) That report appeared in the year 1905. Then came the Insurance Bill. The first thing I want you to remember about the Insurance

Bill is this—that it is suggested that we did not consult the medical profession. That is inaccurate. I had three deputations from members of the medical profession before the bill was introduced. This is apart from consultations with individual general practitioners; but there were at least three consultations with bodies of medical men during the two or three months before the bill was finally settled. I do not pretend that I do not know very much more about it now than I did then. It would be idle for me to do so. I have received so many deputations from the British Medical Association since, and I have met so many doctors and have read what they have had to say, and I have had the invaluable assistance of my friends like Dr. Addison and others who know the whole of this question, and, above all, I have had the valuable aid of Sir Clifford Allbutt and of other gentlemen who are still members of the Advisory Committee, that it would be idle for me to say that there is not much I have learnt, and the Government also, as to conditions amongst the industrial population. A man who did not learn from all these things would certainly not be fit to deal with any problem.

Well, now, there are two things that I want to emphasize about the Insurance Bill as it was introduced. First of all, there was no figure fixed in the bill for cost of medical benefit. I pointed this out at the time when I introduced the bill. I certainly pointed it out on the second reading. It is true that in the financial calculations upon which we based our measure we had assumed that 6s. would be the capitation fee, but we had also provided a very considerable margin which could be drawn upon for extras and for other purposes for remunerating the medical profession where they made out a case for increased payment. As I shall point out later on, in course of the proceedings in Parliament, owing to concessions which were forced upon the Government, that margin has to a considerable extent disappeared—not altogether, but at any rate it has gone to such an extent that the Government do not deem it advisable to draw upon it for any further grants that may be made to the medical profession. But at that time a margin was in existence intact, and we had always contemplated that that could be drawn upon for increasing the 6s. where the case could be made out, either locally or nationally, for the medical profession. We had never regarded 6s. as a final figure. Another point that I want to emphasize is this, that in the bill as introduced—and the same thing applies even more to the Act as it has been amended in its passage through Parliament—there is no method of payment prescribed for the medical profession. It is assumed by the doctors that they must necessarily enter into contract terms on the basis of an inclusive fee. There is nothing in the Act of Parliament to say so; and if the doctors in any district and their patients represented on the Insurance Committee in any area come to the conclusion that they prefer some other method of payment, they can make arrangements as they like within the sum available. We have got to fix some limit to the amount available for the medical practitioners in any district, but as to how that money is to be distributed to the doctors and chemists, that is, subject to the consent of the Insurance Commissioners, a matter for arrangement in each individual area.

Now I pass on. The medical profession, after the introduction of the bill, presented a number of demands to us. There are the famous six points. I think I may say with regard to most of them they have already been conceded either in the Act or in the Regulations. Some of them we cannot see our way to concede in any national settlement. For instance, there is the income limit. It would be absolutely impossible for the Government to lay down any universal income limit which would have the effect of excluding large sections of the industrial population from the provision which is made for medical attendance. Supposing you fixed £2: In some districts it would be too high; in other districts it would be much too low. There are large sections of the working classes, especially in prosperous times, who would be cut out altogether. In times of depression a man would be entitled to be treated by his doctor; in times of prosperity he would not. It would be impossible to work it, and as far as the Government is concerned they must absolutely decline to take the responsibility of laying down a national income limit. If the working population and the doctors in any given area like to make arrangements of that kind, they have a perfect right to do so within the terms of the Act, but as far as the country as a whole is concerned, the Government cannot take any responsibility for laying down a principle of that kind.

I will now deal with the demand of the medical profession as far as remuneration is concerned. They demanded 8s. 6d. for their services, apart from drugs and apart from extras. Well, drugs are calculated as costing something like 1s. 6d. The extras demanded by the medical profession would certainly have cost another 2s. at the very least; and unless some system of checking those extras, which I have never been able to devise or discover, be found, it would be much nearer 3s., or even 4s. Thus the demand of the medical profession was equivalent, reduced to figures, to a demand of 13s. per head of the insured population. Well, we had a good deal of negotiation with the representatives of the British Medical Association. We agreed on a good many things, but unfortunately the Association never entrusted sufficient powers to any committee appointed by them to negotiate on the question of remuneration. The committees we met were committees that had no right to reduce by a single penny their demands. It is obviously impossible to negotiate upon those terms. How could you? They have not been in a position to come down by a single sixpence. If they had, there would have been some result from negotiations. But when you are meeting gentlemen who have to go back to some general meeting to be held some weeks hence to report, well, you could not negotiate, and I felt that from the beginning. We agreed, however, that the books of the medical practitioners in, I think, half a dozen representative towns and areas in England and Wales should be submitted for examination—I should have said Scotland, too—should be examined by a gentleman in whose trustworthiness we could both of us confide. We agreed upon Sir William Plender. The practitioners in these towns were advised by the Association to place their books at the disposal of Sir William Plender for the purpose, and the report is a very significant one. The inquiry showed that the cost of visits and consultations both in private and in contract practice, and the supply of drugs, except in Dundee—because there drugs were supplied, I believe, by the chemists; the doctors prescribe but do not dispense—was 4s. 2d. per head of the total population. Now, after making an allowance for drugs in Dundee on the same basis as drugs in the other towns, that would come to 4s. 5d. per head of the population for attendance, for consultations at the surgery, for visits, and for drugs. After making proper allowance for the different kinds of population dealt with—including, as it did, not only those who can be insured persons, but persons of the income-tax-paying class—it is probable that the cost of treating the insured class alone was covered by a sum rather less than 4s. 5d. The services rendered corresponded broadly to those in the Act. But with regard to the figure in the Act an allowance has to be made for two important considerations. First, that, in the past, considerations of poverty and thrift have reduced undesirably the amount of attendance and treatment which the persons in question have obtained. Under the Act more visits and better attendance would be provided. Now that is a very fundamental fact. It means that if attendance in future were to be on the same principle, on the same plan, on the same method, and were only provided to the same extent as they are at the present moment, 4s. 5d. would on that basis provide the same income as at present for the medical profession. But the medical profession have put the following point, and I think it is a good one—that a very large number of people at the present moment have no medical attendance at all. A still larger number of people receive inadequate medical attendance, are not in a position to get anything better, because they cannot pay for it, but they will in future receive regular attendance under the provisions of the Act, and therefore the Plender report is not by itself a sufficient basis for computing the amount which it would be fair to pay the profession under the conditions of the Health Insurance Act.

Well, now, that was the position up to the time when we wrote a letter to the British Medical Association, in the course of which we made it perfectly clear that the

Government were prepared to discuss with them an increase upon the 6s. which was supposed up to that moment to be the basis of the payment for medical attendance under the Act.

We also invited them to appoint a committee which had full authority to negotiate. I think our request was a reasonable one. We said, We are prepared to increase the 6s. grant if you make your case. We are prepared to discuss the increase, but we must have somebody who has got the power to discuss the amount with us. They admitted that the committee appointed by them had not the power, and we invited them to appoint a committee. I am sorry to say their answer was to break off negotiations. I think it was very unfortunate, and I do not wish to make any other comment upon it, except that it strikes me as very unbusinesslike as well. Fortunately, we have very eminent medical men who have remained on our Advisory Committee in spite of very great difficulties, and we owe a great deal to the patriotism and the public spirit they displayed. We consulted them, we have received their advice, and I need hardly tell you that it carried very great weight with the Government. They were gentlemen who knew what was due to their profession, were absolutely loyal to their profession, but they were also men who had shown by the way they had remained members of this committee under very trying circumstances that they had a very keen sense of duty to the community, and therefore we were bound to pay the deepest respect and to give the greatest consideration to the advice which they offered us. Let me say here, the advice which they offered us as a body and individually largely influenced the Government in the decision which they have come to as to the proposals which they will submit to Parliament.

Well, now, the Government has decided to ask Parliament to increase, and substantially increase, the amount available for medical attendance upon conditions which I shall lay down later on, but the most important of which is that there shall be some guarantee and security for an improved medical service for the industrial population of this country. In order to relieve the anxiety of those who have the financial responsibility for the control and management of the approved societies I had better tell them at once that we recognize that the margin which was available for increasing the pay of the medical profession, the margin which we had provided in the figures of the bill, has been encroached upon to such an extent by the proceedings in Parliament that we have not felt justified in breaking into it for a single penny of the increased grants which we now propose shall be available for an improved medical service. Therefore, the Government will submit to the House of Commons a proposal that this grant shall be found out of public funds.

What, then, were the suggestions that came before the Government as to the best method of dealing with the difficulties of the situation, and as to the best method of distributing the amount available for medical attendance? The first one is the one indicated clearly in the Act, that you should invite every doctor in the country to place his name on a panel, and that you should give every employed person a free choice amongst the men who appear on that register. The second method, in the event of the panel failing, was that you should hand over the money for medical attendance to be dispensed by the approved societies. The third method was a method which was very fully discussed at the last meeting of our Advisory Committee, and it found very great favour (if you remember) amongst the members of the Committee—that we should use the money for the purpose of organizing a National Medical Service.

I should like to say a word at this stage upon those three alternatives. As to handing the money over to approved societies, I think, on the whole, although there may be friends of mine who dissent from what I am saying, the general feeling of the Advisory Committee was against that. On the other hand, the majority were in favour of starting a National Medical Service in the event of the panel system failing. Others went beyond that, being in favour of starting from the outset on the principle of establishing a Medical Service; and there is no doubt that during the long time the medical question has been before the public, opinion has grown in favour of organizing a whole-time National Medical Service, and the feeling found remarkable expression, as I have already said, at the last meeting of the Advisory Committee. Well, I must admit that to any social reformer such a project is very alluring. It would be possible, if the amount of the additional grant which the Government propose to make were added to the money already available under the Act, to organize a Service which would have many advantages. In order to form an idea of what a well-organized National Service would be like, in being, let us take a town of 200,000 inhabitants. At the head of the service would be a principal medical officer, who would be responsible for the working of the service, and would be not only a skilled clinician, thoroughly competent to supervise and appreciate the work of his subordinates, but also a highly efficient administrator. Immediately under him would be a staff of skilled specialists, who would help the general practitioners of the service in any cases of difficulty. Then would come the general practitioners of the service, of whom some would be junior practitioners and others senior practitioners of wide experience. These would work on an organized system, proper provision being made for night calls and other emergencies, and they would be assisted by an efficient staff of nurses. Their work would be done under competent supervision, and they would be able promptly to secure skilled assistance in cases of difficulty. Such a service would naturally work in close co-operation with the public health authority and the education authority. It would, for instance, undertake the medical treatment of school children and so facilitate work which is urgently needed in the national interest. In so co-operating with the health work of the local authorities, a National Medical Service would become a potent instrument for the prevention as well as the cure of disease. I may also say, in reply to a resolution which I got from some of my friends here, I do not agree that it would encourage malingering. Quite the reverse; it would discourage malingering, because there would be no inducement for any of the medical practitioners to give a certificate unless there were real need for it. That is not quite the case now. We might as well face the facts. The doctor who refuses certificates is certainly not likely to make himself very popular with those who have a free choice of doctor. That is not the case with a National Medical Service. In that case the responsibility of the doctor would be to the organization that controlled him—to the State—and he would be quite independent; therefore, undoubtedly it would be a system that would make for economy as regards the sickness fund. I do not mean to say that eventually you would not have to pay a great deal more for these doctors in such a Service; because what happens in these cases is that these things develop. But as far as the other benefits are concerned, I am perfectly certain they would be kept much better under control if you had an independent service. I think it well just to point these things out. I only want to show that in the conclusion which the Government have come to, they have not come to it because they in the slightest degree underrate the value of a National Service. If they have come to a different conclusion it is for other reasons which I shall indicate now.

There are undoubted advantages—great public advantages—to be derived from the establishment of a National Service. But we are here to administer an Act of Parliament, and it is an Act of Parliament which was passed a year ago. It is true that it was passed at a time when the attention of the public had not been roused to the importance of considering the question of a national service. The agitation which has occurred since has done a good deal to educate public opinion on that subject; but the public interest had not been excited, the public conscience had not been roused, and at the time the bill was under discussion in Parliament the demand had not arisen for a National Service, and therefore Parliament with absolute unanimity decided in favour of the panel system. Now we are here to administer that Act, and the thing we have to do first, unless that Act is amended, is to set about establishing the panel system. If the panel system were for any reason to fail, then no amendment of the Act of Parliament would be necessary in order to establish a National Service. The

provisions of the National Insurance Act are adequate in that case to enable us to proceed with the establishment of a National Service. May I also point this out before I leave this part of the subject, because it is an important question? A National Service established under the Insurance Act is quite compatible with free choice of doctors, because it means that if you have a number of whole-time doctors, and if any workman did not care to be attended by the whole-time doctors appointed, he could choose his own doctor, and under the Act a contribution would be made for the purpose of assisting him in paying his own doctor; so that to that extent the free choice of doctor would be safeguarded in the case of a National Service. But we are here to administer an Act of Parliament, and we are bound, first of all, to try the panel system.

Well, now, what are the actual proposals of the Government? The first point we had to consider was the position of tuberculosis. During the passage of the bill through the House of Commons an amendment was inserted in it which included domiciliary treatment of consumption in sanatorium benefit. We have come to the conclusion that it would be more satisfactory, in the end more economical, and would conduce to a better working of the sanatorium provisions, if we come to terms with the medical profession upon the basis of an inclusive fee. We do not want any inducement offered to the practitioner, where it is better that a patient should go to an institution, to keep him on his own hands. I do not say that any practitioner would succumb to that temptation, but at the same time I think it better that there should be no conflict between those who will control the institutional treatment and the general practitioner who will be looking after the domiciliary part of the treatment. And for that purpose we thought it very much better that there should be an inclusive fee for all the work which the general practitioner does for tuberculous persons. We propose therefore that, out of the 1s. 3d. which is already provided in the Act, 6d. shall be set aside for paying the general practitioner for all the work he does in reference to the treatment of tuberculosis. It is true that at first this figure may be very much too high, because after all the Act only applies to employed persons, of whom the numbers suffering from tuberculosis will at first be small. I am sorry to say that gradually these numbers will increase, but for the first few years I have no doubt that 6d. is more than adequate. At the same time I hope that this is an arrangement that will last, at any rate, some time.

Now I come to the second question, the question of "extras." This is a question that has troubled us a good deal. We felt that the doctors ought to be paid for extra work, but, on the other hand, it is almost impossible to check a bill for "extras." Who is to do it? It would be to the interest of the approved societies to do it if the money came out of their pockets; but even they could not really do it. It is not to the interest of the patient to do it, because he has got somebody to pay his bill, and he naturally would like to see his doctor done well—out of public funds. Every man wants to be on good terms with his doctor, naturally, for obvious reasons. I do not think inspectors could do it. How could they check every bill for extras, and find out whether the right charge had been made, whether the journeys were there, measure the mileage, and so on?—it could not be done. Therefore, if you are going to give a blank cheque for extras to any profession—I would not trust even the legal profession, and therefore I am really not casting any reflection upon a profession to which I do not belong; I would not trust any profession—if you are going to give a blank cheque to the profession, you must know the limit of your liability, and the doctors must make their own arrangements within the amount that is provided for medical attendance. What we do say is: At the present moment so much is provided for medical attendance; that is inadequate; we have examined the problem, and we think that if we provide so much additional it will be sufficient; but you, the doctors, must somehow make your own arrangements as to how you think that can best be distributed so as to be fair to you, fair to those who do the extra work, and at the same time perfectly fair to the patient. We have therefore decided that the cost of "extras" (I am not speaking of major operations and other specialist services, which, of course, are not included within medical benefit under the Act) must be provided from the fund which we set aside for medical attendance.

Then comes the very difficult question of drugs. Sir W. Plender's report shows that the drug bill of the doctors in the five selected towns was something like 5d. per head. That was simply the cost price of the drugs to the doctor. To that we have to add a reasonable allowance for profit. I do not know what the profit is upon these things, but at any rate the total must have been under 1s., including profit. We propose, on the other hand, that in future there shall be 1s. 6d. set aside for drugs. When you come to drugs there are two opposite dangers. One is that you should fail to have an adequate supply of proper drugs, and up to the present that has been the greatest danger. Many doctors have told me quite frankly that in contract practice they could not afford to supply proper drugs. In some cases drugs are very expensive, and the money payment which was made was quite insufficient to enable them to pay for the more expensive kinds of drugs. At any rate, there was a tendency to keep the drug bill down. That was one tendency; but there is another tendency, and that is a tendency to what I call uneconomical prescribing. Now that the doctors have no responsibility for supplying the drugs, I am just a little afraid that some will run to the other extreme; and that when a patient comes who has not anything particular the matter with him, but who thinks himself very bad, a doctor in order to get rid of him will say, "Now, here, take that to the chemist." There might be a tendency of that sort to run rather into extravagance in the matter of drugs. We have got really to check that side as well. It is a very difficult thing in our arrangements to guard against both these dangers. It presents a very difficult and complex problem. We have got an ingenious, but I think a very practical, suggestion for dealing with it, which I will presently explain.

Those are the three things I want you to bear in mind when I come to the details of finance. The first is that we propose that the treatment of tuberculosis, so far as dealt with by the general practitioner, shall be paid for upon the basis of an inclusive fee. We propose, in the second place, that we should find a fixed amount for doctoring and drugging, and that this should include, as I have already explained, such "extras" as come within medical benefit under the Act. And the third point is, that we have to find some means by which there will be a guarantee at any rate of a sufficient supply of drugs, but not for the extravagant drugging of insured persons.

Now I will tell you what we propose. The present figure, including drugs, is 6s., and, if you include the 6d. for tuberculosis as above explained, it is 6s. 6d. We propose to increase that amount by 2s. 6d. That means 9s. in all for the non-institutional treatment of all diseases amongst the insured population—that is to say, 9s. for each insured person, whether he requires medical attendance or not. How is that to be distributed? That is a very difficult problem. The doctor says, "If I am simply to come in last, as second or third mortgagee, with an unlimited liability in respect of drugs and administration and everything else, I do not know where I am; the first thing I want is to know what is the minimum I am assured of." I think that is a very reasonable view. He also says, "If drugs to an unlimited amount are a first charge on that 9s., then it means that if there is an epidemic in a district and I am worked very hard, the harder I am worked the less I get." That is obviously a very unfair arrangement. That is what we had to deal with, and we felt that, at any rate, there ought to be a figure which, the doctor could feel, provided an assured sum of money for payment for his services. We propose—I do not like to use the word "guarantee," because it has been used in other senses, and it has become a sort of controversial word—that a sum of 7s. is to be assured as the basis of the amount which is to be paid to the doctor for his services. That will include "extras" and tuberculosis. Then there will be 1s. 6d. for the drugs. That brings it up to 8s. 6d. What about the remaining 6d.? I will tell you what we propose to do about the remaining 6d. The doctor is the only person we can trust to check extras; he is the only person we can trust to check drugs. We are going to leave that 6d. there between the doctor and the chemist. It will provide £320,000. That £320,000 will be available

if the drug bill exceeds the 1s. 6d. provided; and where it does not exceed that 1s. 6d., it will be available for the doctor. That is not the case with regard to the 1s. 6d. I want to make it clear, because we have come to the conclusion that, at any rate up to 1s. 6d., there ought to be no inducement to the doctor to cut down the drugs. We want the best drugs available in the market for the treatment of the industrial population of this country, in the interests of the State as well as for humanitarian reasons, and we realize that it will be necessary to have at least 1s. 6d. available for the provision of drugs. Then comes this case. The doctor will say, Supposing there is an epidemic in a given district, and there is an abnormal demand for drugs, it is rather hard on me that that 6d. should be drawn upon just when I am worked harder. I think his case is a good one. We therefore propose to provide a Central Fund to deal with abnormal cases of that kind. If we are satisfied that there has been an epidemic of some kind which has made an abnormal demand for drugs in a given district, we shall make a grant from the Central Fund in respect of the abnormal amount of drugs needed. I ought to make it clear that this is outside the 9s.; it is to be the abnormal drug fund. Perhaps I had better go though the figures again: 7s. for payment of the services of the doctor, to include "extras," and to include tuberculosis; 1s. 6d. to provide drugs; 6d. as the additional sum available for drugs if that 1s. 6d. is exceeded; if it is not exceeded, then that 6d. passes to the doctors' remuneration fund; that comes to 9s. Then, outside that, there will be a central fund for the purpose of meeting cases of epidemics when there is an abnormal demand for drugs.

I have worked out these figures upon the basis, if Sir William Plender will allow me to call them so, of the Plender figures. I have also made investigations of my own in districts which I know, and I have come to the conclusion that this figure represents a very considerable increase in the amount paid to doctors for their services—an enormous increase. Anybody who likes to work it out can do it for himself. If you work it out in the districts where Sir William Plender has made his investigations you will find, if you put it on this 9s. basis, that the increase in the remuneration of doctors will be a very substantial one indeed.

That leads me to the next point. If the remuneration is increased, the service must be improved. Up to the present the doctor has not been adequately paid, and therefore we have had no right or title to expect him to give full service. In a vast number of cases he has given his services for nothing or for payment which was utterly inadequate. There is no man here who does not know doctors who have been attending poor people without any fee or reward at all. I have got three conditions which I am going to lay down as the result of this increased provision. One is that the doctor who acts on the panel shall agree to give, without further charge, those medical certificates which an insured person will require to enable him to get sickness or disablement benefit; the certificate in the first place that he is unfit for work; the certificates, where necessary, that he continues to be unfit for work; and, when he is restored to health, a certificate for the society to this effect. Secondly, we shall also ask that those practitioners who act on the panels will keep simple records of the patients whom they treat, the illnesses from which they suffer, and the attendances given. That is new in respect to the industrial practice of this country. Though we are providing increased remuneration, I frankly admit we are also asking for increased service. We know that doctors dislike book-keeping above all things, but we know also that they desire the advancement of medical knowledge, and we feel confident that they will co-operate with us in this matter. We on our part undertake that the records required shall be of the simplest character that will give the necessary information. Thirdly, and chiefly, the service must be improved in certain definite respects, as compared with what it has been possible to give in the past. It will be the duty of the Commissioners, when setting out the conditions for the new grant and disbursing it to the Insurance Committees, to see that a proper standard is reached and maintained, not merely in respect of the number of visits paid or the number of times a patient is seen at the doctor's surgery, but also in respect of the amount of time and attention given, and also that where necessary the practitioner should resort to those modern means of exact diagnosis the importance of which I am advised is increasingly recognized in the profession.

We think it is better that we should try these arrangements as an experiment, and see how they work. I propose, therefore, that the arrangements which are made on this basis shall be made for a term of years—not too long; and also not too short—otherwise we do not get the requisite experience. It is no use trying a year's experiment—I think you must have at least three—and I suggest, therefore, that the financial arrangements should, for three years, be made on this basis, and that at the end of that period there should be a reconsideration of the whole position. Before I quite leave this part of the subject I ought to mention this: As far as the rural districts are concerned the drug problem does not arise between the doctor and the chemist; in very few of them are there any chemists available, and therefore the doctor will have to provide his own drugs. That means that in the rural districts the whole of the 9s. will be available for paying the doctor, he providing the drugs. It would be quite impossible in some of these areas to compel patients to walk two, three, four, and five miles in order to get to a chemist in a neighbouring town to get a prescription dispensed. Therefore in those cases it will be necessary to make special arrangements whereby the doctors will provide the drugs themselves. In these cases, of course, the whole of the amount set aside will be available for payment to the doctors for drugging as well as doctoring; and of course there is no doubt at all that that to a very large extent will be taken into account when the doctors among themselves come to discuss the question of mileage. The rural doctor will be in a better position than the town doctor as far as the drugs are concerned; on the other hand he will be in a worse position as far as the distances are concerned which he has to travel to see his patients.

I really apologize for taking up your time, but it is very important to put these things quite fully before you; and it is still more important, because unfortunately I shall not be able to put it at this length in my answer in the House of Commons this afternoon, and with your permission I suggest that what I have said in the way of information should be sent out to the press after I have made my announcement in Parliament.

The next step rests with the Insurance Committees. It will be their duty to consider arrangements in their respective districts, and we propose that at the earliest possible moment meetings of the chairmen and of the clerks of the Insurance Committees should be summoned to discuss their arrangements with the Commissioners. Therefore it will be unnecessary for me to go fully into that question at this stage. We submit these proposals to you for your consideration. We think they are fair in the interests of the medical profession. We wish to be fair to that profession; I say so in spite of everything that has fallen in controversy, and I think we are fair—indeed, I venture to say that our proposals are liberal. I do not say that we are proposing anything in the way of remuneration which is beyond their merits or deserts, but we want a good efficient service for the industrial population of this country. We realize that you cannot secure it unless you pay for it, that you cannot secure it unless you pay something that will make the persons upon whom its success primarily depends feel that they are adequately paid for it, and that the services which they render are recognized by the State; we realize that not merely in the interests of humanity but in the interests of the well-being of this country, the adequate and effective treatment of disease, above all the early treatment of disease, and perhaps still more important, the prevention of disease—for it can be prevented, I think, in a very considerable number of cases—all these are of such enormous importance to the well-being of this great community, of which you and I are members, that I make no apology in submitting these proposals to you on behalf of the Government.

Sir Clifford Allbutt.

Sir Clifford Allbutt: Mr. Chancellor, I have a very grateful duty this morning; it is to thank you for the kindly and sympathetic, and, if I may be allowed to say so, extremely lucid and expressive manner in which, this

morning and on all occasions when you have allowed us to meet you, you have put these matters before us. If there should be anything—I do not say that there is—in your speech of this morning which lends itself to argument, I am sure you will understand, and it will be understood by my colleagues, that this is not the time or the place to pursue points which, after all, are matters of secondary importance, or at any rate of secondary consideration this morning. I have, so far as I may, broadly to express simply the impression which your address has made upon me, and I hope I may speak also for my colleagues; I understand my colleagues desire me to express on their behalf their indebtedness to you for the observations you have made, and to go as far as we may in saying that we believe that the statements you have made will prove to be acceptable to the profession at large. You will understand that our numbers on this side of the house are a little depleted; that although we are formally members of the Advisory Committee, it would be very unwise for us on the spur of the moment without full consideration to say anything that might seem, even by our mouths, to commit the profession to an entire and complete acceptance of all that has fallen from you this morning. But I cannot but think, so far as my impressions go, from discussing with my friends and from the general tone of the profession, that we have now before us a scheme which, in my opinion, ought to be acceptable to the members of the profession at large. May I go into a more personal matter? It is this: That I and my friend Professor Woodhead have not, perhaps, a unique, but a very great opportunity of knowing what class of men are going into practice and into what kind of practice; and I think from a few words that have passed, Professor Woodhead and myself believe the proposals you have made this morning will be such as to draw into the profession not necessarily academic experts, but the great bulk of really well trained, scientifically trained men, and that is a point which I am sure has been the chief one in your own mind. You have given us credit all along for not being, as they say, out merely for money. It is not that we are desirous individually, or that my colleagues and the members of the profession are anxious now simply to put money into their own pockets. I must throw considerable responsibility on yourself. You have throughout the debate on the Insurance Bill and in the whole conception of this scheme aroused the profession to see that there is something far more to be done than merely to cope with sickness; it has been just coped with already. Something far more is before us, and you have led us to see that there is a higher ideal, and that we are looking forward now, and have been looking forward, to such proposals being made as shall draw to this great work not merely a contented profession, but an enthusiastic profession; that it shall not merely find daily work for a certain number, and then perhaps drift down to the less well-trained men or those capable of taking less large views of medicine. The crusade against tuberculosis is one of the first of several crusades—there are many other crusades to come. We must bring in this great work of prevention which shall reduce, shall I say, first, the enormous cost—but far more than that, the terrible burden and misery which is produced upon our whole nation and the whole face of the earth, in this climate or the other, by the several terrible plagues—preventable plagues—which afflict mankind. You know the old scheme, merely hand-to-mouth routine of so-called club practice (I use the word for convenience sake), individual contests between individual persons and individual doctors—that is not the idea that you have looked for or we have looked for. We wish to bring into the profession men of trained minds who can deal with preventive medicine in the way it has been dealt with on the Isthmus of Panama, where the plagues of various kinds were so terrible that the work was abandoned in the face of disease; yet now I am given to understand (it may be a little exaggerated) that the Isthmus of Panama is almost a place for people to go to for the sake of their health, and infectious diseases are practically banished from that part of the world.

Now, why should not this be done in England? I admit that the proposals previously made were not such as to draw the best class of men into this work, but I think now there is a considerable hope that you will have a class of men drawn into this particular kind of practice who are most enthusiastically devoted to preventive medicine, as well as, of course, to the mitigation of the sufferings of individuals; and we hope that in the course of half a generation, or even less, the increased terms offered to us to-day may be amply and over and over again saved by the greatly diminished cost of sickness to the community and by the enormous diminution of human misery.

Further Discussion.

[What follows is condensed from the official minutes.]

Mr. Appleton (representative of the General Federation of Trades Unions) said that he regretted that the proposal for a national medical service had been thrown over. He did not think the obstacles were insuperable, and such a service would reduce the difficulties of the trade unions enormously. He did not think that it would lead to malingering. He recognized, however, the difficulties which the Chancellor of the Exchequer had to face, and hoped that the doctors would realize that they had not only been fairly treated, but handsomely treated, in this matter. He did not agree with the Chancellor that the doctors had shown themselves bad trade unionists when they broke off negotiations; he thought his association in future would have to sit at the feet of the British Medical Association and learn lessons from it. He took it for granted that the doctors would see that the drug bill did not exceed 1s. 6d. in the future. He thought the restrictions with regard to the hours and methods of sending for doctors were onerous. Those for whom he spoke were willing that the doctors should be paid a fair price, but he hoped that the Chancellor would meet the trade unions with regard to the Regulations, and enable the Commissioners to make them sensible, reasonable, and workable. While he did not think that the proposals of the Chancellor were the best that could be made, he hoped that no further time would be lost, but that the system would be got to work at once.

Mr. Warren (Vice-President, National Conference of Friendly Societies) said that the group which he represented were not in agreement with Mr. Appleton when he expressed disappointment that a State medical service was not to be set up. He thought the Committee at its last meeting had been prejudiced in the direction of a State medical service because at that meeting the alternative was spoken of as handing over the money to the friendly societies, but this would not have been the case; the moneys would have been handed, not to approved societies, not to friendly societies only, but to all the societies operating in national insurance. That was the suggestion put forward by the representatives of the friendly societies at the last meeting. In their opinion the proposals the Chancellor had just made were such that if the medical profession were not prepared to accept them there was no possibility of ever coming to reasonable terms with them. He was glad that the Chancellor had so resolutely set his face against an income limit. He was not prepared to enter into all the details of the scheme, which would have the very careful consideration of the representatives of the friendly societies, but he considered that they were exceedingly liberal. If, in the long run, the doctors should remain obdurate, then the friendly societies would throw themselves wholeheartedly into finding a way out of the difficulty.

Mr. Thompson (a representative nominated by the Association of Industrial Assurance Companies and Collecting Friendly Societies, and the Prudential Assurance Company) said at the last meeting the organization of a State medical service was put forward as an alternative, but as an alternative only. It was felt that the practical method of dealing with the question was that which had been before the country so long; it would be a mistake to swap horses when crossing the stream. Those who had had experience in getting together the approved societies felt that they had started a machine under conditions of considerable difficulty, and they hoped that the announcement now made would help the machine to run smoothly. He was glad that the societies were not to be strained by the imposition of any further burden upon them. It would obviously be unfair to do so. He did not desire to criticize the manner in which the Government or the doctors had

conducted their negotiations; all that they were anxious for was that the doctors should come in with the real desire to give the best possible service under the Act, and he felt sure that they would come in. It must be a willing service and an improved service, and as the whole objection on the part of the doctors on that head had been that they had been compelled to give an improved service, it was hoped that they would have no difficulty in assenting to this condition.

Mr. WOOLCOCK said: There are one or two things that I want to say, speaking on behalf of my colleagues who represent those interested in drugs. The statement made to-day of course interests us almost as much as, if not more than, my friends on my immediate left. We have in the course of our business to supply a commodity which we in the first place have to pay for, and which then has to be supplied at some small profit afterwards. The position, of course, between ourselves (the chemists) and the doctors is, therefore, as far as that goes, not quite on all-fours because of the initial outlay. With regard to the figures that you have quoted, we notice that there is a provision for an extra 6d. to cover the drug bill, and that that extra 6d. is to cover the drug bill supposing the doctor finds, in giving adequate remedies, that he has to give something which is rather in excess of what has normally been supposed, and which, therefore, cannot be covered by the 1s. 6d. It has always seemed to us that the 1s 6d. would be possibly inadequate. It would certainly be inadequate if there were any idea of what I may call frivolous prescribing, which you, Sir, have referred to, using another word; but with the material interest and material inducement now in front of the doctors and ourselves, controlled by their watchfulness, as you put it, there is a possibility that the sum provided will cover an adequate and sufficient supply of drugs and medicines. But it can only be done with those particular safeguards; in our opinion it cannot be done if there is to be frivolous prescribing; it cannot be done if a more expensive preparation is ordered, where an equally useful preparation from a therapeutic point of view should be given to the patient. Granted those safeguards, and granted the certain provision that there is 2s. if necessary, but that there is the 1s. 6d. in any case, I think it is possible that, with a working together of the doctors and the chemists and our friends on the other side of the room as well (because we need the co-operation of the whole lot), and, in addition to that, with the provision of some sum to form a central fund to cover such emergencies as an epidemic of influenza and so forth—I think under those conditions we may possibly be able to get through.

Mr. BEN TURNER, one of the representatives of the trade unions (General Union of Weavers and Textile Workers), regretted that a State medical service was not to be instituted. He thought that the proposal to fix an income limit should have been abandoned altogether, and not transferred from the Government to the local Insurance Committee. He feared that the 1s. 3d. allowed for sanatorium benefit would hardly stand the deduction of 6d. for domiciliary attendance. He considered that the offer to the doctors was very liberal.

Mr. D. W. EVANS, speaking as a representative of the King Edward VII Welsh Memorial Association, was glad that a difficulty had been removed out of its way. There had been a difficulty with regard to the question of domiciliary treatment, but he believed that it was now removed; he hoped that the Chancellor would not pledge himself to the deduction of 6d. from the 1s. 3d. until the Memorial Association of Wales had had an opportunity of placing its views before him.

Mr. BRACHER (a representative of small friendly societies) said that he was in agreement with Mr. Turner on the subject of the income limit, and also with those who objected to the deduction of 6d. from the sanatorium fund. Speaking as a representative of agricultural employers he had no hesitation in saying that as taxpayers they would strongly object to the proposals.

Mr. SEXTON (representative of the National Union of Dock Labourers) said that while believing that a national medical service was desirable, he thought that to jump to a national medical service, in view of the obstacles in the way, would be a mistake.

Dr. NORMAN WALKER: Sir Clifford Allbutt has spoken for the medical profession, and I think it only right that he should be followed by one other. Sir Clifford is a Yorkshireman and I am a Scotsman, so you will not be surprised that we are both a little cautious in what we may now say. I should like to say that I associate myself with every word he has uttered, and we look to the possibility that this measure, if properly worked, may do a very great deal for the health of the community, and may do a great deal to promote a higher standard of medical work. That it is capable of being so used we are quite convinced, and for that reason we are most anxious that everything should be done to take the profession as a whole along with you. I have to put forward this one suggestion—I am almost sorry to have to make any suggestion—but I think there is one matter which is not a very important concession, but which might be sentimentally important, and that is this, that in the constitution of the Insurance Committee the profession requests that 10 per cent. on those committees might be appointed from the profession. As a matter of fact a committee of eighty has now by the Act six doctors on it; smaller committees have nearer the 10 per cent.; and we think it would not be an unfair thing if we were conceded the other two members to make up the 10 per cent. Then, Sir, I should like to say a word about working cordially with the chemists. I think, if the chemists are properly represented by the gentlemen who are here to-day, there will not be very much difficulty over our work. None of us are anxious to over-drug patients. The conditions in the city from which I come—Edinburgh—were described by the President of the Pharmaceutical Conference recently as ideal, and I do not see why those conditions should not continue. It is quite natural and good that we should have a little check upon each other, right that should be done in a good spirit, and that it will and I hope it will be quite satisfactory.

Sir WILLIAM PLENDER: I have had no instance of any proposals to be put before me until I came here this morning I was quite in ignorance of any proposals which the Chancellor might make on behalf of the Government in regard to medical remuneration, but since June last, when I investigated the accounts in certain selected towns, I have had attention naturally given a good deal of personal consideration formed to this question of remuneration, and I have to the services which the doctors must offer under giving my own opinions about it, having regard for the new regulations. My considered opinion, after due consideration to the many facts which came before me in examining the practitioners' accounts in five selected towns, is this—that the remuneration which is now offered by the Government is a very fair remuneration to the doctors, if not, indeed, generous. I cannot disclose the information which was given to me confidentially by the medical practitioners in those towns, but I can say this most sincerely and completely, that the information derived enables me to say that the offer made by the Government is a fair offer, and an adequate offer, if not, indeed a generous offer.

Miss BONDFIELD (Women's Trade Union League) said that as an advocate of a national medical service she was not discouraged that it was not now to be instituted, because she believed that it would be an inevitable consequence of the present proposals. She desired to put in a word for the midwives, and to have an assurance that their position would be safeguarded. She hoped that the representatives both of the trade unions and friendly societies and of the doctors would now display a deliberate intention, in connexion with the work of local committees, to meet each other half-way, if necessary.

Mr. GROVE (a representative of provident funds at particular works) made an appeal on behalf of non-insurable persons who had been contracted for during many years, but were now for various reasons not brought within the Act. He hoped that something would be done to help them to pay in the additional fees beyond the 4s. which they were paying at the present time.

In reply to a representative from Dublin, who asked whether insured persons in Ireland would benefit as the result of the increased grant, the CHANCELLOR OF THE EXCHEQUER said that there was no medical service in

Ireland, and that pressure had been brought upon him to leave medical service out in that country. The representative said that it was true that insured persons in Ireland would save 4s. 4d. a year, but it was now proposed to give for the 1d. a week an insured person in Great Britain 9s. That was a disparity, and he calculated that the amount due to insured persons in Ireland would be something like £125,000 per annum.

Mr. Hutchinson said that as the extra 2s. 6d. was to come out of the Imperial Exchequer, Ireland would have to contribute its share, and was therefore entitled to get the 2s. 6d.

Mr. Hobson (Sheffield Cutlery Manufacturers) desired strongly to support the doctors. The Chancellor now proposed to deal with the question of the financial arrangements for medical benefit, but nearly all the details would be thrown back on the Insurance Committees to negotiate with the doctors. He agreed with the doctors that if the negotiations were to be at all successful the doctors ought to have very much fuller and more adequate representation on the Insurance Committees. Taking the administration of hospitals and infirmaries, it would be found that the board of management included practically the whole, or the major portion, of the medical staff; the board of governors represented the people who found the money, and where a large portion of that money was found by the working men, their elected representatives were of great assistance because they brought a knowledge of the working classes to the board. He considered that the doctors ought to have a larger representation on the Insurance Committees—that they should have not less than 8, 12, or 16 representatives.

The Chancellor said that that raised a large question which was not strictly relevant to the business before the meeting, although he would not deny that it ought to be discussed.

Sir Matthew Wallace expressed his great satisfaction with the statement, and in general with the details of the proposal. Speaking as a representative of employers in Scotland and as a trustee of the Scottish Rural Workers' Union, which had just enrolled over 60,000 members, he said that these members lived in rural districts at great distances from the residences of doctors, and with the branches of that society the difficulty was not one of getting a panel of doctors, but of getting one to do the work. He foresaw difficulty if the fee was to be inclusive, with no extra charge for mileage. He was not speaking of the Islands and Highlands, but of the South of Scotland. He hoped that the arrangement would be sufficiently elastic so that the small extra sum to be provided would not be confined to epidemics, but would go towards mileage fees.

Mr. Duncan (National Conference of Friendly Societes) did not complain of the amount offered to the doctors, but thought the work thrust upon approved societies was altogether out of proportion to the grant allotted for working expenses. He asked whether it would be possible to subsidize approved societies in regard to members who did not come under the Act but would continue to require medical attendance.

Miss Walker (Dundee) had been asked by representatives of women workers to say that they attached great importance to the free choice of doctor.

The Chancellor of the Exchequer: I think now we can close the discussion. We have had every class of opinion represented in the course of the discussion. I would not expect you to express your views upon details; those will be submitted later on. We must first of all get the conference, which I indicated it was our intention to summon, of the chairmen and secretaries of the committees before we decide upon the details of the method in which we propose that these should work. I do not know that I can usefully add anything to what I said. I am afraid it was at too great length that I spoke at the commencement of the proceedings, but I shall take into account all the very valuable suggestions which have been made by the various speakers. Mr. Grove raised the point to-day, which he raised before, with regard to the old people. I cannot imagine, in a system with a free choice of doctor—I cannot, imagine any doctor beginning his career and getting patients on to his list by striking off all the old people he has already been attending to. I think the mere fact that the provision is made so general should make it well worth a doctor's while to have his name on the panel, which will be a sufficient inducement for any who have got old people on their list to keep them there under the old arrangements. I shall also bear in mind what has been said as to the sanatorium treatment in Wales. As to the suggestion from Ireland, certain proposals have been submitted to me by the Insurance Commission in Ireland. I need hardly assure them that the Irish Commission has not been slow to put in their claim, at any rate for a fair share. I have never seen Ireland remiss in that part of her duty or in any other. I thank Sir Clifford Allbutt for the very valuable contribution which he has made to the discussion, not merely for what he said about the proposals of the Government, but for the concluding part of his observations in the appeal he made for a better service generally in the interests of the community. I was very delighted to hear what fell from the chemists, that in their judgement, given good feeling and co-operation, the amount set aside for them was adequate. I was also glad to hear what was said about administration. All these suggestions are valuable, and I shall take them into account.

A hearty vote of thanks to the Chancellor for his address was carried with applause.

HOSPITAL RESIDENTS AND THE INSURANCE ACT.

The Insurance Commissioners sat at Burlington Gardens, London, on October 22nd, to consider the question whether, under Section 66 of the National Insurance Act, resident medical officers of hospitals and similar institutions are employed under a contract of service bringing them within the provisions of the Act as insured persons.

Mr. F. C. Dickens, who appeared on behalf of the Medical Defence Union, explained that although application was made on behalf of a particular individual—Dr. E. L. Sandiland, until recently resident medical officer to the Mount Vernon Hospital for Consumptives at Northwood—the question to be determined was one that would affect the position of any gentleman holding a position as resident medical officer in a hospital or similar institution. Dr. Sandiland gave up a position bringing in an income of £150, with board and lodging, to accept an appointment at the Mount Vernon Hospital at a salary of £75 a year with board and lodging. His position, as far as the governors of the hospital were concerned (and the position of all other medical gentlemen holding these appointments), was that he could be dismissed by the governors, but that the governors had no control as to the manner in which he did his work. The remuneration accepted by medical men for these positions was not in any way commensurate with the professional value of the services rendered, and in some cases was non-existent. In many cases, as in this one, medical men gave up income for the purpose of obtaining a special training.

Dr. A. G. Bateman, Secretary of the Medical Defence Union, in support of counsel's statement, said that he was conversant with the facts as to the position of resident medical officers of hospitals all over the country. Apart from appointment, dismissal, and payment, the governors of the hospitals had no relations with the officers and no control over their work except in a moral and domestic sense. The duration of the appointments was about six months—sometimes less, but rarely more, because so many men wanted them. If these gentlemen sought positions as assistants to medical men, or as locumtenents, they would receive considerably more remuneration; the minimum for locumtenents was £4 4s. a week.

Mr. Dickens, addressing himself to the legal questions involved, urged that it was never contemplated by the Act that gentlemen in this position were to become employed contributors. The difficulty in bringing them in was in saying who was employer and employed when the employer (so-called) had no control over the work of the employed. Secondly, there was the difficulty of salary or honorarium. It was perfectly clear that these gentlemen were not being paid at all. They were sacrificing income for the purpose of getting a particular training and

fitting themselves for future work. Moreover, the benefits provided by the Act were inapplicable to these gentlemen, as they were entitled to the sickness benefits already. The words of the Act "under any contract of service" had already been construed by the courts in connexion with other legislation, and it had been held in cases in which actions had been brought by patients against governors of hospitals that house-physicians were not the servants of the governors: "they were professional men exercising their ability in their own discretion, but not bound to exercise it in any way according to the directions of the governors of the hospitals." Finally, Mr. Dickens asked the Commissioners, if by any chance they decided again him, not to render it necessary for his clients to go through the procedure provided by the Act, but themselves to state a case to the High Court, as they had done already in instances in which legal difficulty had arisen in administering the Act.

Members of the governing bodies and secretaries of a number of London hospitals spoke in support of counsel's observations.

In concluding the inquiry the Chairman (Mr. Shackleton) said that the Commissioners were considering not an individual case, but the question of a class. They hoped before long to announce a decision on general lines.

PROVISIONAL MEDICAL COMMITTEES.

Brighton.

A largely attended public meeting convened by this Committee was held at Brighton on October 16th. Mr. J. Turton, who was in the chair, said the object of the meeting was to explain the position that the medical profession had taken up with regard to what were termed "medical benefits" under the National Insurance Act. The doctors' standpoint was very simple. It was contained in the proposition that public service to be efficient, to be satisfactory, to those who served and were served, must be properly recognized and adequately remunerated.

Mr. T. Jenner Verrall then addressed the meeting. He began his explanation of the doctors' position by recognizing in the Insurance Act a great social effort intended to do good, whether they approved of the Act or not. Unfortunately a great deal of prominence had been given to it on political lines, apart from the inherent merits of the question, and that they must regret. After giving a brief history of the introduction of the Act, and dealing with the cardinal points of the doctors' claim, the present position, more especially as affected by the recent issue of the regulations of the Act, and, finally, with alternatives that could be selected if the medical profession and the Government failed to come to terms to work the Act as it stood, Mr. Verrall said he believed the Chancellor now regretted that in the initial stages he did not take more of the medical men into his confidence. When the bill was introduced, in what condition did it find the medical profession, whose condition and practice it was so largely to alter? For many years past the medical profession had been under the belief and conviction that the reward in many ways for the money spent in learning the profession, the time given to it afterwards, and the kind of life they had to lead, had not been large enough. That was an important factor. The additions to the *Medical Register* were 1,137 in 1908, 1,143 in 1909, 1,062 in 1910, and 1,042 in 1911, the lowest for twenty-four years. The profession was becoming less popular, and that was not a favourable time to disturb inimically the conditions under which doctors worked. In addition, it was notorious that the work under contract practice had been increasingly unpopular for years past. Yet the effect of the Insurance Act would be to extend the field of contract work enormously, and include in it many of those who had been private patients previously, and had paid satisfactory fees. One of the six cardinal points of the doctors' campaign was that there should be an income limit of £2 a week for those entitled to medical benefit under the Act, those above £2 to be allowed to make their own arrangements with the help of the money they would get under the Act. Then there should be a free choice of doctor by the patient subject to the consent of the doctor to act. They also contended that the medical and maternity benefit should be administered by Insurance Committees and not by friendly societies. They had now been conceded this, but friendly societies had still a very considerable proportion of members on these committees. The method of remuneration adopted by each Insurance Committee should be according to the preference of the medical majority of the district. There should also be adequate medical representation on Insurance Committees, Advisory Committees, and so on—they were claiming a tenth—and in the course of business they demanded that in inquiries into complaints the control of the individual doctors should be placed in the hands of the doctors themselves—that was, they should be judged by their peers. In this campaign the doctors were extremely well organized throughout the country, and he would appeal to any community in approaching the question of the employment of doctors not to deal with individual members of the medical profession behind the backs of the body generally. Throughout the controversy it had been frightfully difficult to get a final answer from the Chancellor and the Commissioners, and that was what irritated the profession. They were left in doubt. Going into figures, Mr. Verrall said that when the Chancellor dangled the tempting morsel of £1,100 a year before them, they could not speak for a time, but when they submitted their own figures the total came out at £617 as gross income. Mr. Verrall gave figures in support of the doctors' claim for 8s. 6d. exclusive of money to be spent on drugs for patients under the Act, and he emphasized the fact that for years the Post Office fees had been 8s. 6d. They were picked people who went out if they reached a certain stage. They would have the weak and infirm among the insured persons, and there would be no going out for them. No solid criticism of the doctors' figures had yet been given; they were irrefutable. It was very unfair that drugs were first to be paid for and then the mileage, the doctor being left to get what he could out of the rest. If 3s. 6d. went for drugs, they would at the most be left with 5s. No settlement would be satisfactory that was not made more or less provisional; it would have to be reconsidered in a few years. As to alternative plans, he did not think a national medical service would be a great success in England.

Dr. Gervis dealt with the medical aspects of the question as they concerned the working man, his contention being that, instead of improving medical treatment for him, it would be worse for him under the Act than he had had before. If this Act were worked by the doctors, it would be the greatest blow to the working man that he had received for generations. He proposed a vote of thanks to Mr. Verrall for his address, and this was seconded by Dr. Gordon Dill, who said their objection to the medical provisions of the Act was not only based upon the professional standpoint or that of the working man, but also upon the greater standpoint of the national health and well-being. He protested against the attitude of the profession being called a doctors' strike. It was a misnomer. They had refused to countenance what many considered to be a gigantic fraud upon the public, but he had never heard of a medical man refusing to work. Act or no Act, reward or no reward, the cry of the suffering would not be made in vain.

In answering a number of questions, the Chairman said that, if no agreement were come to by January 15th, the doctors would give up attending out-patients at the hospitals, with this qualification—they would decline to attend all insured persons except in the case of emergency.

Asked to explain the action of the local medical profession towards the borough medical officer of health, the Chairman said the Special Departmental Committee recommended that the chief tuberculosis officer should be a whole-time officer and nothing else. The medical officer of health of a town of 130,000 inhabitants had quite enough to do without undertaking the enormous new duties thrown on him by the sanatorium clauses of the Act. The town council had in its unwisdom appointed him as chief tuberculosis officer, and the doctors' position was this. They had made representations to the Local Government Board, and awaited their decision. The appointment, which was in direct opposition to the recommendation of the Departmental Committee, was subject to the approval of the Local Government Board. That had not yet been given, and the appointment was, therefore, invalid.

In answer to another question, the Chairman said their Committee was considering the question of forming a public medical service, failing the Government coming to terms with the profession. The public would not be left without a medical service. If the Government were unwise enough to make it impossible for the doctors to join their service, they would form their own under their own conditions.

The vote of thanks to Mr. Verrall, and a similar compliment to the Chairman were accorded by acclamation.

Oxford Division.

A meeting of the Committee was held at the Radcliffe Infirmary, Oxford, on October 17th. Dr. Turrell was in the chair, and fifteen members attended.

Tuberculosis Scheme.

Among the letters of apology for non-attendance was one from Sir William Osler, expressing approval of the suggested tuberculosis scheme.

The report of the Subcommittee appointed at the last meeting was read. This stated that the infirmary staff approved of the appointment of a whole-time tuberculosis officer by a majority of 8 to 4, but that, in the opinion of the Subcommittee, it was not advisable to make use of the out-patient department of the Radcliffe Infirmary for the purpose of tuberculosis dispensary treatment. The report was adopted *nemine contradicente*.

After some introductory remarks by the Chairman, the Committee proceeded to discuss in detail the eighteen clauses of the suggested tuberculosis scheme for the city and county of Oxford. This scheme was applicable to notifiable pulmonary tuberculosis only. The first four clauses were carried *nemine contradicente*. It was agreed that No. 5 should be combined with No. 7, and redrafted by the Secretary, after ascertaining what was meant by the payment of a fee of 5s. for the "continuous record." A rider was proposed by Dr. Coles and seconded by Dr. Mallam:

> That the fees for domiciliary treatment for uninsured persons should not exceed 5s. a week.

This was lost.

Clauses 6 and 8 were carried *nemine contradicente*.

Clause 9.—It was proposed by Dr. Gillett and seconded by Mr. Drew:

> That this be deleted.

This was carried *nemine contradicente*.

Clause 10.—It was agreed that the explanation of the circumstances requiring night or special visits should be given by the practitioner when presenting his quarterly accounts, instead of being given to the tuberculosis officer.

Clauses 11, 12, 13, 14, and 15 were carried *nemine contradicente*.

Clause 16.—The scale of minimum fees as suggested in the Model Scheme was agreed to, with the following exceptions: (1) That 3s. 6d. should be paid for a visit to the patient's house. (2) That 7s. should be paid for a night visit.

Clause 17 was carried *nemine contradicente*.

Clause 18.—This was redrafted to run as follows:

> It shall be the duty of the tuberculosis officer to examine "contacts" not already under medical treatment, and at his discretion to send suspicious cases to the dispensary for continuous observation, till discharged or notified to be tuberculous.

Dr. Hitchings proposed and Mr. Drew seconded the motion:

> That the scheme as amended be adopted.

This was carried *nemine contradicente*.

Boston and Spalding.

Special Meeting.

A special meeting was held on September 20th. Dr. South was in the chair, and ten members were present.

Sanatorium Benefit.—It was proposed by Dr. Sandall and seconded by Dr. F. Walker:

> That the Kesteven scheme of payments be recommended to the general meeting.

This was carried.

Public Medical Service.—After discussion, Dr. White's proposition was agreed to—namely, that the general meeting should refer this matter back to the Provisional Medical Committee, so that the various schemes might be considered and some definite scheme be drawn up for a future general meeting to approve.

Central Defence Fund.—It was agreed to leave this to the general meeting.

The meeting was then adjourned until after the general meeting.

General Meeting.

On resuming, it was decided to appoint a small subcommittee to meet representatives of Kesteven and Lindsey Provisional Medical Committees to endeavour to formulate a Public Medical Service, the main principles of which should be the same, the subcommittee to consist of Drs. South, White, and Wilson.

Willesden.

A meeting was held on October 19th at 35, Mapesbury Road. Dr. Coram James was in the chair, and fourteen members were present.

Reports from Hospital Staffs.—Reports were received from the staffs of the Willesden Cottage Hospital, the Kilburn Provident Institute, and the Kilburn and Maida Vale Dispensary.

Public Medical Service.—In anticipation of the report of the subcommittee on the Public Medical Service, Dr. Smurthwaite moved and Dr. Cooke seconded:

> That, in the opinion of this committee, the consideration of a Public Medical Service be postponed on the ground that contract club practice is inadvisable until the seven cardinal points are granted.

In the discussion which followed it was pointed out that it was impossible to get a scheme into working order by January 15th, in view of the marked divergence of opinion in the profession as to the advisability of representation of the insured on the body working the scheme and as to capitation fees *versus* payment for attendances, and that there was no power to compel the insured to accept the scheme, and that as the Government had destroyed the existing arrangements between doctor and patient, the responsibility rested with them to bring forward a scheme which would be acceptable to the profession, and that the profession should reserve its energy for a united opposition to the present proposals of the Government. This was carried unanimously.

Contract Work and the Uninsured.—Further discussion arose as to the advisability of discontinuing contract work also with the uninsured; this was left, however, to be brought forward at the next general meeting of the district.

Harrow.

A meeting was held on October 15th, Dr. A. H. Williams in the chair, and fifteen members were present.

Resignation of Contract Practice Appointments.—The Honorary Secretary (Dr. C. M. Pennefather) stated that on September 29th he had forwarded the resignations of all contract practice appointments affecting insured persons. The number of appointments so resigned was 177, and the number of practitioners affected was 38. Letters acknowledging receipt of these resignations, and also raising several points requiring an answer, were read, and the Honorary Secretary given instructions as to the answers to be sent. Arising from this correspondence the following resolution was proposed by Dr. Pennefather, seconded by Dr. Lambert, and carried unanimously:

> That the resignations tendered to clubs on September 29th shall hold for all members, whether insured or uninsured persons.

The following rider was proposed by Dr. Hildesheim, seconded by Dr. Hildige, and carried unanimously:

> That such resignations, however, as regards uninsured persons shall not take effect until a scheme for providing

medical attendance as approved by the British Medical Association has been started.

Public Medical Service.—Model A scheme was then considered, and it was decided that the following recommendations of this committee be laid before a meeting of the Division:

Paragraph 4.—Officers and Committee: That the Committee shall consist exclusively of medical practitioners.
Paragraph 14b.—Expulsion of members by action of a Division of the British Medical Association: That this clause be deleted.
Paragraph 17.—Income limit: That the income limit for admission as a subscriber to the service shall in no case exceed £2 per week, and inclusive of all emoluments.
Paragraph 18.—Subscriptions (*a*) for insured persons: That the subscriptions shall be on a flat rate of 2½d. per week.

Owing to the lateness of the hour the meeting then adjourned until Tuesday, October 22nd, when it was decided to complete the consideration of the scheme for the Public Medical Service, and also to consider the model scheme for the treatment of tuberculosis.

Hampstead.

A meeting of this Committee was held on October 14th. Dr. Ford Anderson was in the chair, and fourteen members were present.

Correspondence.—A letter from Dr. Ledward enclosing his public service scheme, and another from Dr. Mulloy were read.

Sanatorium Benefit.—The correspondence on the matter with the State Sickness Insurance Committee and the Medical Officer of Health was read. Whereupon Dr. Picard moved and Dr. Oppenheimer seconded:

That this Committee rescind the list of exemptions to the preliminary list of names willing to undertake sanatorium benefit passed at their last meeting.

Whereupon Mr. Peyton Baly, seconded by Mr. Archer, moved as an amendment:

That this Committee approve the supplementary list, and inform the Medical Officer of Health that the following gentlemen have sent in their names, expressing their willingness to serve.

On being put to the vote the amendment was carried by 8 to 3, and on being put as a substantive motion was carried by 10 votes, no vote being recorded against it. The lists above mentioned are inserted in the minute book. It was agreed that in the event of any further names being sent in, the Honorary Secretary send them forthwith to the Medical Officer of Health. The Honorary Secretary was instructed to write to the Medical Officer of Health to that effect, and to answer his last letter in accordance with the expressed opinion of the Committee.

Public Medical Service.—The Committee then proceeded to consider Schemes A, C, and D. Modifications to each scheme were made reaffirming the modifications to Scheme A passed at the meeting on June 21st (Minute Book, p. 13) where these applied. It was resolved:

That a subcommittee be appointed to consider further Schemes A, C, and D, and to present a report; that the Chairman (Dr. Anderson), Dr. Barnett, Dr. Pritchard, and the Honorary Secretary be appointed to serve upon the subcommittee. That the subcommittee meet at 41, Belsize Park at 4.30 p.m. on October 21st.

Next Meeting.—It was resolved:

That the next meeting of the Committee be held on Monday, October 28th, at 8.30 p.m., at 4, Dennington Park Road, on the invitation of Dr. Rix.

PUBLIC MEDICAL SERVICE.

Deptford.

A meeting of the medical practitioners of the borough of Deptford took place on Tuesday, October 22nd. The meeting was summoned on the initiative of the Greenwich Division for the purpose of completing the formation of the committee for a public medical service. Eight members had been already elected by the Division, and seven others were chosen by the meeting, thus making a complete committee of fifteen. The committee will immediately proceed to take in hand the formation of a public medical service.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor,* British Medical Journal, *429, Strand, London, W.C.*]

Public Medical Service Schemes.

Dr. Napier Jones (Crowthorne, Berks) writes: It has been my privilege during the past two months to share the labours of a subcommittee appointed to frame a Public Medical Service; to discuss the draft scheme at committee, general and local meetings of the profession; and, with the rest of the profession, to read the various proposals put forward in the Journal. I am extraordinarily impressed by the low scale of contributions, or of fees, upon which the working man is to obtain medical attendance, drugs, and dressings.

Thirteen shillings a year is the largest contribution that has been proposed for insured persons, and has to cover the cost of management and collection. This is equivalent to free medical benefit, as it is the sum that is paid by the employer. That the Insurance Commissioners propose to spend part of it on something else is no business of ours. And most Divisions have not the courage to stand out even for this!

For uninsured persons all sorts of figures are being considered; the lowest I have heard of are 4s. 4d. for each child under 16 years of age, and not more than three, or even two, to be paid for.

Then the fees under sanatorium benefit and schemes of payment by attendance compare very ill with the small fees offered by the National Deposit Friendly Society. For instance, under Scheme C, everything but the ordinary visit or consultation with medicine is an extra to be collected from the patient by the doctor, and will involve bookkeeping, rendering, etc., before it will be possible to estimate how much may be written off as bad. Small sums for extras are harder to collect than a decent, round, inclusive fee.

Attention has already been drawn by Dr. Percy Rose to the small fee for a night visit under tuberculosis schemes. Under Scheme C it is 4s. 6d., and more than half of that is problematic! Confinement fees and fees for attending cases of miscarriage are to range from £1 1s. and 10s. 6d. respectively.

Now this is unremunerative; therefore it is charity; and it behoves us to consider whether we are not ourselves committing the very offence with which we charge the Government. At any rate, no one can accuse us of greediness, or of placing too high a value on our services.

But in the public interest we must not frame cheap public medical services for those who can pay remunerative fees: for, if we do, the number of medical practitioners who will go on the panel will be inadequate, and the service will fall into disrepute from scamped work. Therefore I would urge upon those who are engaged in framing public medical service schemes to attempt to deal only with:

1. Insured persons, on a strictly business footing.
2. Families with an income of £1 a week or less on a frankly charitable basis.

I am sure that if we do more we shall court and deserve disaster.

The time has fully come when the public must be taught to realize that, gamble as they may with insurance schemes for sick or accident benefits, the provision of adequate medical attendance is a necessity, and must be paid for first. The game is in our hands. We have merely to go on with our work, and, when they come to us for legal proof, that they have a claim on their clubs or the State for insurance money, take such proportion of that money as we have earned.

A Public Medical Service will not help *us*—it is not intended to. It is intended to help those who help themselves a great deal better than we can—the untaxed, State-aided, vote-holding artisans.

Ordinary private practice is the best, as well as the only solution. That, and a determination not to be charitable at our medical neighbours' expense, and to refer non-payers to the Poor Law.

Do you know the story, Mr. Editor, of the lion who was about to compose himself to sleep and dreams of freedom by the Zambesi when he noticed that his cage door was unfastened? He came out. He had to. But he could not get out of the lion house because the door was shut. So he said, "I have escaped! I must be bold!" and presently, "I must be bold! I have escaped!" and wondered what he ought to do. The other lions told him to wait by the door and pounce on the keeper in the morning. So he waited in the cold all night, shivering, and kept saying to himself, "I have escaped! I must be bold!" In the morning the keeper appeared. "Hullo!" said he, "What are you doing here? Get in, you brute!" And the lion gladly slunk into his cage without more ado. Is the revolt of the profession to end in the same inglorious fashion?

Dr. G. Baynton Forge (West Malling, Kent) writes: The Association's scheme for a public medical service is now before the Divisions, and in spite of strong demand for a *pro rata* system this method is shelved, and there seems every likelihood of a perpetuation and extension of the distasteful contract system. It is impossible to accept the Association's *pro rata* system if accounts are to be met only so far as the pool will go. For this is payment per capita changed only in name. This method of pooling was the threat of Mr. Smith Whitaker to the Maidstone Division, if they presumed to ask the Government for anything of a higher level than ordinary club work. I submitted the Association's scheme of payment for mileage to the local jobmaster and garage proprietor, offering him the whole of the mileage fees in exchange for transit to and from insured persons; he would not entertain the idea for a moment, and was not at all pleased with the free mileage for doctors up to two or three miles; but if free mileage for patients, why not free mileage for the doctors? Mileage to be fair must count from the house at a minimum of 6d. a mile. In my last practice I had a six-mile radius, here it is three miles, but owing to the hilly nature of the district my travelling expenses are the same; yet under both Association and insurance schemes little or no mileage fees will be allowed.

Wherever labour has combined the wages have risen; the agriculturist is the only class without a union, and in consequence his wages have been stationary for years. Our Association is practically a union, but, strangely enough, all its efforts are directed to lowering the wages of the profession. I am well aware the fees proposed are considered minimum, but in actual practice they will be the maximum. A man will be asked definitely will he accept the scale—"Yes" or "No." The fees proposed are much lower than those at present ruling in country districts, and, in addition, mileage is to be curtailed; this will mean a serious loss of income—in some cases positive bankruptcy—with absolute loss of capital value of the practice. A rural population is not going to double itself because of the Insurance Act, and a scale of fees that provides a livelihood in crowded industrial centres means starvation in the country. The scale of the National Deposit Friendly Society is practically the same as the Association's, but with these two important points of difference: First, they pay their accounts in full; secondly, there is no expense or trouble to the profession for collecting.

Over-attendance seems to be the great stumbling-block to the Association with a *pro rata* system, but if the insured pay a small proportion of their accounts to their societies it will be to their interest to keep their bills low. At the same time the contribution should be such that they need not hesitate to send if medical attendance is needed (say, 1d. to 3d. at surgery and 2d. to 6d. at house). The National Deposit have not found it necessary to appoint special committees to investigate the doctor's accounts, nor have they a committee of complaints to meet every two or three weeks with the sole object of stirring up strife between doctors and patients.

The scale of this society is 3s. 2d. a head; raised to 6s. they could easily pay the ordinary fees, which are as follows:

Visit, 2s. 6d.; surgery, 2s., including medicine; medicine only, 2s.; mileage 6d. up to four miles; 1s. a mile after; night calls 7s. 6d.; special calls, 1s.; certificates, 1s.

Let the clubs be asked to meet us on the National Deposit Friendly Society's system, but with payment in full and on a little more liberal scale, as above—a scale they can easily afford without additional expense to their members on account of the extra 2s. 10d. a head received from the Government.

The Provisional Regulations for Medical Benefit.

Dr. W. Coode Adams (Hampstead) writes: May I again crave indulgence in order to arouse the attention of the profession to Part II. Section 14, of the Regulations, in which power is to be given to any insured person to *make their own arrangements for medical benefit*. This right of option is capable, in my opinion, of very mischievous use. For example:

> (*a*) The members of a group of friendly societies in a locality might combine and, making use of this clause, withdraw their names from the "panel" lists, and then proceed, by the well-known methods, to obtain their medical service at the old rates. In other words, a return to the club doctor system.
>
> (*b*) This option, in any case, would be claimed by those who consider themselves above the average in point of health, and their withdrawal will lower the remuneration-rate of the medical men on that panel. If our lists are to contain all the cracked pots and few sound ones, the relationship of fees to work done will wear a very different aspect. This lets in the vice inherent to the provident dispensary system, and, besides, is not true "insurance."

It is claimed for the Insurance Act that it is essentially both "contributory and compulsory," but it would seem that compulsion to contribute is not to include compulsion to pay the insurance doctors.

To my mind, this single proposed Regulation will rob us of everything we have been fighting for and should be stoutly resisted as being most mischievous.

Dr. T. Cuming Askin (Woodbridge, Suffolk) writes: I do hope that the good points of the provisional Regulations will be placed before the profession before the next Representative Meeting, or, rather, before the final meetings of the Divisions. No doubt we shall receive great help from the report of the State Sickness Insurance Committee and the Council's interpretation of it, but this is not sufficient. If any member of the profession has anything to say, *now* is the time; it will be of no use later on. It is easy to be wise after the event. Is it too much to expect some guidance from the General Medical Council, the Royal College of Physicians, the Royal College of Surgeons, and other bodies at the most critical moment of our existence as a profession?

Country and Town Practices.

Dr. Arthur D. Parr-Dudley (East Malling, Kent) writes: I trust you will allow me a short space to reply to your editorial comment on my letter in the Supplement of last week (October 12th), as it is quite obvious you do not appreciate the difficulty.

Let me take the Public Medical Service C as printed in the issue of the same date. It provides 2s. a visit and no mileage within a two mile radius; there is no difference for country practices. Now every doctor's car, or trap or cab in the country, on account of the bad roads, field roads, etc., which he has to traverse, costs him not less than sixpence a mile or part of a mile. If therefore the doctor makes a journey for a single patient approaching the two mile radius—a very common occurrence—he returns home without having made a single farthing for his labour. Moreover, I never visit under 2s. 6d. Some patients pay 3s. 6d. under the 40s. limit. Under this scheme now all the fees are to be reduced to a dead level of 2s. or 2s. 6d. with medicine, and with no possibility of recouping the less remunerative work by the more remunerative. A one mile radius for the country practitioner is a *sine qua non*. Two shillings a visit may reward the town doctor for his services, it cannot possibly do so for the average

country doctor. Therefore, I ask in all sincerity, How does the State Sickness Insurance Committee expect the country doctor to live?

THE CONTINUANCE OF NEGOTIATIONS.

Dr. D. FENTON (Witton, Blackburn) writes: Will you permit me to inform Dr. Gruffydd that I did not "fail to understand" the statement he made in his first letter, although I certainly could not follow the reasoning that led him to his conclusion?

His original statement was: "If 8s. 6d. is a satisfactory fee for a small number of *picked* lives," etc. In his first hypothetical offer he is asked "to attend a small number . . . postal employees who are *average* lives," etc.

Postal employees are generally regarded as "selected," or, as Dr. Gruffydd put it in his first communication, "picked" lives—an expression which is usually understood to mean "better than average." That being so, it is a travesty of fact to classify them as "average" lives.

By substituting the word "picked" for "average" he has completely abandoned his original contention, for "picked lives" and "average lives" are by no means synonymous terms.

PUBLIC MEDICAL SERVICE.

THE "CRITICAL REVIEW" OF DRS. HARFORD AND MILLS.

Dr. J. B. PIKE, Vice-President of the Leicester and Rutland Public Medical Service, sends the following criticism of the "Critical Review," issued as a pamphlet by Drs. Harford and Mills last week, and briefly noticed in the JOURNAL, p. 1069.

1. *Details of Constitution and Management.*

The central idea of the Public Medical Service is to divide the districts into areas, each area being practically autonomous. In this way organization is simple; no Napoleon of finance is required, nothing more than ordinary business ability.

With the complications and anomalies of the Act the medical service has nothing in common. Each subscriber makes an individual contract with the doctor he selects, and his subscriptions can be collected, or paid in quarterly or other instalments by arrangement.

That the State scheme is costly and complicated is no reason for our identifying ourselves with it. The Insurance Committee can make equitable arrangements with the public service for the medical treatment of insured persons. The Insurance Committee is stated to be representative of the insured, the local authorities, and the medical profession. Can the number of members allotted to the profession be considered representative?

The question is not whether the people shall have a voice in the management of the public medical service. They have a voice by free choice of doctor in open competition. They have a voice—the voice—in all but purely professional attendance. Their finance, their sick pay, everything except the control of medical practice, is in their hands.

The question is whether the medical profession is content to take service under a mixed committee of the patients it attends, with no better guarantee of decent treatment than has been given to surgeons of medical aid associations. It is not a matter of 7s. 6d. or 8s. 6d.; it is a matter of freedom or servitude, of individualism or collectivism, of self-respect or ignominious surrender.

2. *Under the Insurance Act Medical Attendance is a Necessity.*

Therefore it is obvious that great numbers of insured people cannot remain outside the public service, and still larger numbers of uninsured persons will be glad to join it. Professional solidarity, if of the Leicester and Rutland type, can defy the competition of the "large number" of men who will be content to break their solemn pledges and exist as living lies.

3. *Canvassing.*

There is no need for canvassing for a medical service. The wage-earners learn quickly enough that attendance can be procured from any chosen doctor on easy terms.

4. *Defaulting Members.*

As to expulsion of defaulting members, I would much rather be judged by my peers than by a packed committee of patients, with a ready made "Complaints Committee" to encourage trivial fault finding.

5. "*Inquisitions.*"

"All these inquisitions" resolve themselves into a statement by the subscriber that he is in good health and has an income not exceeding £2 a week. A false statement will invalidate his benefit. The question of average wages is beside the mark. It is only pertinent as regards the Insurance Act, which has no limit for manual workers.

6. *Payment.*

The payment for a medical service is not in addition to that for insurance, unless Mr. Lloyd George goes back upon his word, and does not find the capitation amount he has promised to each insured person. The cost of a public medical service need not be more than 10 per cent.

The Loughborough service has been running for twenty years with satisfaction to doctors and patients. It includes about one-third of the population. The difficulties imagined by the authors simply do not exist.

There is no reason why every town and country area should not have a similar service, and with a little reasonableness on the part of the Government there is no reason why such services should not work hand in hand with National Insurance.

The arrangements under the Insurance Committees would resemble those for Poor Law officers under boards of guardians. For people who are making provident conditions such arrangements would be unsuitable and irksome. For medical men they would be unendurable.

That the Poor Law Service is "sweated and inadequate" is an exaggeration, and to some extent a libel. Some men are ill-paid, others not, but the assimilation of general practice to the Poor Law model, with the exception of freedom of choice, is eminently undesirable.

If we must have a State medical service, let us go the whole hog, and accept it on whole-time, Civil Service lines. Insurance Committee control means friendly and assurance society control, and if we are wise we shall fight it to the last ditch.

Dr. DAVID ROBERTS (Swadlincote, Burton-on-Trent) sends the following note upon the same pamphlet:

The first criticism of Drs. Mills and Harford is "that in a scheme intended to include many millions of people, the control of the organization is entirely in the hands of the profession. A similar proposal for any other purpose would not be considered for one moment." This, to my mind, Sir, is begging the whole question. The Public Medical Service is a one-sided concession to people who cannot pay ordinary fees. How, then, can there be a valid claim for the beneficiaries to participate in the management? It is absurd on the face of it.

"The aims of the Public Medical Service and the State scheme are not strictly identical, but they are sufficiently alike," etc. They are not at all alike. The State scheme is an insurance with the risks thrown upon the profession; the Public Medical Service is a magnanimous undertaking to provide medical attendance for those who cannot afford to pay the ordinary fees, the profession of its own accord taking all the risks. It is the Government's duty, not the profession's, to provide adequately for the public health, and to supplant the Poor Law with a "practicable alternative." The pamphleteers object to the local Divisions having control of the service. "This arbitrary position is untenable." I would have thought a society, a guild, or a a service *must* control its members. What is there "arbitrary" in it? I fail to see the purpose of their pamphlet. What is wanted, I think, is to establish the Public Medical Service at once and then "full steam ahead."

DR. CHARLES HEATON (Westgate-on-Sea) writes: In common with most practitioners, I have received a "Critical Review" by courtesy of Drs. Harford and Mills. I am sorry to obtain the impression that the authors inspect the proposed Public Medical Service with very hostile eyes, not only because they themselves have worked hard to influence the improvement of the Insurance Act, but because they misunderstand the essential feature of the general medical resentment. We hailed the coming of the Act, but when we realized that its structure was rotten in spite of its high ideal we naturally objected. We would all probably prefer to serve on a well-regulated

State service, but decline to serve on a panel which would be subject to the unreasonable and irksome authority of those who would be our inferiors in a specialized and educated craft. If medical service is not willing and wholehearted, it is better to have none at all, otherwise it will be a fraud on both doctor and patient, just as the greater part of club service has been hitherto—cheap goods, poor quality. I think the authors are under a misapprehension as to the structure of the Public Medical Service. It is not correct that the co-ordination of the whole profession will be centred in the Strand office. Each area will have its own independent service varied according to local requirements, although generally conforming in plan. Political machinery will have nothing to do with, and will have no relation whatever to, the simple medical service, which is but an extension, organized on a wide basis, of the private club, but with free choice of doctor and adequate fees. The people have joined medical clubs readily enough in the past, and will do so again, especially when the service is good. Medical benefit clubs under lay control have been for the most part sweaters, and have not been satisfactory either for the patient or doctor.

In practice, faults (Rule 14) will not be difficult to define when one is judged by one's own profession. Again an inaccuracy; it will *not* be the local Division of the British Medical Association that will have power to dismiss, but the committee elected from the Public Medical Service locally, with right of appeal to the Council of the British Medical Association.

With regard to the income limit, if the weekly adult wage averages under £104 a year, what need is there to fix the limit at £160? It is well known that exceedingly few persons of under £200 pay income tax at all; in practice, £160 means £200, and probably £104 will frequently mean £160. I grant that under the Act the Commissioners "may allow" insured persons to make their own arrangements for medical service, then why is there this difficulty in granting the £104 wage limit as stipulated by the British Medical Association?

I am sorry to see that in the pamphlet our suggestion to extend the service to uninsured persons and women and children is used as an argument for basing upon it the same unjust text upon which the whole scheme of the Act has been built—that is, that what is done as a charity by doctors shall be made as the basis of remuneration by the State: that is the logical deduction.

Clubs have been charity, they were founded as charity, but have been claimed as a business right by club managers, and they received bad goods in consequence, and the same will happen to any State organization which is based upon the same fraud.

Dr. John W. Leitch, M.A., M.B. (Glasgow South), writes: I have received and carefully read the "Critical Review" of the Public Medical Service proposed by the British Medical Association by Mr. Harford and Dr. Mills. Presumably this critique has been sent to all members of the profession in Britain, and any reply to it through the Journal will therefore not reach non-members of the Association. The expense of printing and circulating a pamphlet to some 25,000 practitioners is very considerable, and I therefore only offer a few remarks on the last sentence of their concluding paragraph on page 15. This reads:

> Its (the British Medical Association's) members must shortly decide whether they will accept service under the National Scheme, which, with all its faults, offers the profession greater advantages and security than it has hitherto enjoyed.

Regarded merely as an expression of opinion by two pamphleteers this is an amazing sentence. Most people—certainly most medical practitioners—think that the strenuous opposition of the great majority of the profession has arisen from a well-founded fear that the working of the medical benefit part of the Act as it at present stands would very materially add to the burdens of the profession, and, in fact, reduce any advantages that medical practitioners at present enjoy. But when one learns that the authors of the pamphlet still retain their seats on the Advisory Committee, the effect of any opinions expressed by them requires serious consideration. The only plea that can be urged in defence of medical men remaining members of the Advisory Committee is the fact that by so doing they will be able still to put the views of their fellow practitioners before the other members in matters affecting the administration of medical benefit. If the opinion expressed in the above-quoted sentence is a sample of the views held by the medical men still remaining on the Advisory Committee that Committee is in danger of being seriously misled, with correspondingly serious results to the public as well as to the medical profession.

Dr. J. Abcarius (Burslem) writes: I have read with interest Messrs. Harford and Mills's "Critical Review" on the British Medical Association's public medical scheme; but I must admit that I could not follow the logical deductions of their attempted biting criticism. They start by telling us that, under the said scheme, the control of the whole organization will be in the hands of the profession, and that the people who supply the money ought to have a voice in determining how such money shall be spent. Evidently Messrs. Harford and Mills ignore the difference between a client and a shareholder, or a customer and a partner. Needless to say that a subscriber to the scheme contracts to pay a certain weekly or yearly sum, and gets in exchange medical attendance when needed, and as long as he gets what he has contracted for, what right could he have to know, let alone determine, how his contribution is to be spent? What a strange business world would it be if the subscribers to a paper or the customers of a shop should, under the plea that they are supplying the money, claim an administrative voice in the business? I wonder what would Messrs. Harford and Mills themselves think of a client who, after consulting them and taking his bottle of medicine, would turn round and say: "Before paying my sixpence or half a crown—as the case may be—tell me what are you going to do with it, as I must have a voice in determining how the money must be spent." And yet such are the public rights which we are told the British Medical Association is trying to usurp.

Messrs. Harford and Mills's criticisms of Rule 11 is that any non-member of the public medical scheme can accept whatever rates he chooses, and that no amount of professional solidarity could prevent such a non-member from attending the insured at reduced rates, while under the famous State scheme no such undercutting is possible. I am at a loss to understand how our critics have failed to see that if there is a real professional solidarity, which they assume, all medical men will be members, either active or honorary, and the non-member, that redoubtable scarecrow, who forms the pillar of their argument, will be non-existent. I am assuming, like the writers, the existence of any amount of professional solidarity. Further, whereas under the public medical service, no member is allowed to take any form of contributory practice, the State scheme has reference only to insured persons, with the inevitable result that, as far as the non-insurable are concerned, the same undercutting and club treatment will go on much the same as per old, a state of affairs which can hardly contribute to the dignity of the profession or the welfare of the community.

I utterly fail to follow the criticism of Rule 12. Our critics start by admitting that canvassing and advertising for the Public Medical Service as a corporate body are not forbidden, and in the same breath they add that it is difficult to understand how subscribers could be obtained for the service unless some steps are taken to make it known. How do these two sentences correlate, needs a more ingenious head than mine to grasp.

I need not take up the time of your readers by going over the remaining part of the said leaflet, which, barring a few just remarks, is not that overwhelming piece of evidence intended to convert the whole profession.

I admit the British Medical Association's scheme is not perfect by a good long way, and that one of the very first essential factors to make it workable is a hearty support and a complete unity and soliditary of the profession which Messrs. Harford and Mills would have better helped by displaying their energy in cultivating, instead of trying to sow the seeds of dissension.

*** The authors of the pamphlet to which the above letters refer ask us to give publicity to their emphatic statement that the expense of preparation and circulation has been entirely borne by themselves.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

The ninth meeting of the State Sickness Insurance Committee appointed by the Annual Representative Meeting, 1912, was held on October 17th.

Dr. J. A. Macdonald was in the chair, and the other members present were:—*England and Wales:* Dr. R. M. Beaton (London), Dr. T. M. Carter (Bristol), Dr. Major Greenwood (London), Dr. S. Hodgson (Salford), Miss Frances Ivens, M.S. (Liverpool), Mr. Herbert Jones (Hereford), Dr. Constance E. Long (London), Dr. E. J. Maclean (Cardiff), Dr. James Pearse (Trowbridge), Dr. E. O. Price (Bangor), Dr. Lauriston Shaw (London), Mr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Mr. E. H. Willock (Croydon), Dr. D. G. Thomson (Norwich). *Scotland:* Dr. John Adams (Glasgow), Dr. R. McKenzie Johnston (Edinburgh). *Ex officio:* Sir James Barr (Liverpool), President of the Association; Mr. T. Jenner Verrall (Bath), Chairman of Representative Meetings.

Apologies for absence were read from the Treasurer (Dr. Edwin Rayner) and Dr. J. S. Darling (Lurgan).

Provisional Regulations for Medical Benefit.

As was the case at its previous meeting, a great part of this session of the Committee was occupied by the further consideration of the Provisional Medical Regulations for Medical Benefit (published in the Supplement of October 5th). A draft statement prepared by the Medical Secretary comparing the Provisional Regulations with the cardinal principles of the Association and with the decisions of the State Sickness Insurance Committee as to matters which should be included in the Regulations was considered, amended, and approved as amended for presentation to the Council. An outline scheme showing the procedure which would be followed under the Provisional Regulations if adopted was also considered and approved for submission to the Council as an appendix to the report.

The Committee arranged to consider the Regulations and its report thereon in relation to remuneration at its meeting on October 24th, and the consideration of a motion by Dr. Major Greenwood, seconded by Mr. Turner, declaring the Provisional Regulations for Medical Benefit to be unacceptable by the profession, was postponed.

Conference with Society of Medical Officers of Health.

Resolutions adopted by the Medico-Political Committee on October 9th expressing approval of a suggestion to hold a conference between representatives of the Association and the Society of Medical Officers of Health were considered and approved, and the State Sickness Insurance Committee appointed as its representatives at the conference: Mr. T. Jenner Verrall, Mr. E. B. Turner, Mr. E. H. Willock, Dr. Lauriston Shaw, Dr. T. M. Carter, and Dr. E. J. Maclean.

Treatment of Tuberculosis.

Schemes Approved.

The Chairman reported that he had approved, on behalf of the Committee, schemes for the administration of sanatorium benefit in Staffordshire, Lewisham, and East Suffolk, so far as they conformed to the decisions of the Committee. He also reported that he had approved the scheme of the county of Aberdeen, subject to observations which had been addressed to the Chairman of the Division. The Chairman's action was approved.

A communication was read from the Honorary Secretary of the Manchester and Salford Joint Committee, acting on behalf of the Provisional Medical Committees, stating that the medical officer of health had inquired whether practitioners were at liberty to fill up Form Med. (2), and that the Joint Committee had decided as a provisional arrangement that practitioners should be allowed to fill up this form for a fee of 5s., with a fee of 2s. 6d. for any visit or consultation. It was reported that a reply had been sent approving these provisional arrangements and drawing attention to the fact that the local profession should take care that the other arrangements to be made in the near future were satisfactory, particularly those for dispensary treatment. The State Sickness Insurance Committee approved the reply.

Relation of Medical Officer of Health to the Position of Chief Tuberculosis Officer.

The Committee considered the letter from Dr. W. G. Willoughby, M.O.H. Eastbourne, published in the Journal of October 12th, p. 997, and resolved to refer the communication to the forthcoming conference with representatives of the Society of Medical Officers of Health.

Legality of Confining Dispensaries to Diagnostic and Consultative Work.

A communication was read from the Honorary Secretary of the Leith Provisional Medical Committee and Leith Medical Practitioners' Association, forwarding a memorandum sent by the latter association to the Local Government Board for Scotland, the Scottish Insurance Commissioners, and the Leith Insurance Committee, urging that the services of officers at tuberculosis dispensaries should be confined to diagnostic and consultative work. The Local Government Board for Scotland has returned the following reply to the memorandum:

Local Government Board,
Edinburgh,
October 12th, 1912.

Sir,

Tuberculosis.

I have submitted to the Local Government Board your letter of 28th ultimo, and enclosed memorandum of the Leith Medical Practioners' Association, regarding the administration of sanatorium benefit in Leith, and particularly regarding the point that the duties of a tuberculosis officer and his assistant should be consultative and advisory only.

I am now directed to say, in reply, that, looking to the terms of Section 16 of the National Insurance Act, 1911, and Section 66 of the Public Health (Scotland) Act, 1897, the Board had some doubts as to the powers of a local authority to establish a tuberculosis dispensary where the service would be confined to diagnostic and consultative work, the medical treatment of the individual being excluded.

I am to state, however, that apart altogether from the question of legality, such a proposal is not one that the Board could approve.

I am, Sir,
Your obedient servant,
(Signed) David Brown,
Assistant Secretary.

Dr. Langwill,
4, Hermitage Place, Leith.

The State Sickness Insurance Committee resolved to defer the further consideration of the matter pending the forthcoming conference with representatives of the Society of Medical Officers of Health.

Public Medical Service Schemes.

The Committee considered two public medical service schemes prepared by the Stockport, Macclesfield, and East Cheshire Provisional Medical Committee, to run concurrently in the area, and determined to inform the Committee that the State Sickness Insurance Committee could not approve either scheme pending the discussion by the Representative Body of the principle contained in both—namely, the co-operation with representatives of friendly societies and other lay persons and bodies.

A scheme submitted by the Isle of Thanet Provisional Local Medical Committee was considered and approved, but the Provisional Medical Committee was requested to consider the advisability, in order to encourage the collector, of giving him at the end of each year a gratuity in inverse ratio to the amount of arrears in the collection. The scheme as it stood proposed that the collector should be paid by salary, or by commission, or by both, as might be determined by the medical committee.

Resignation of Contributory Contract Practice Appointments.

It was reported that the following information had been received in the central office as to the sending in of

resignations of contributory contract practice appointments:

(*a*) That 217 areas (out of 232) had sent in 32,579 resignations of appointments held by 8,065 practitioners.

(*b*) That in the above areas 369 practitioners will give such shorter notice as is required to terminate their appointments on January 15th next.

(*c*) That in the above areas 371 practitioners are reported as not having resigned their appointments, of which number, however, many have undertaken not to apply for appointments rendered vacant by the resignation of their fellow practitioners.

It was also reported that in six areas no resignations had yet been sent in, that in five others no information was available, and that in the case of four others the reports were incomplete.

PROVIDENT DISPENSARIES.

It was reported that several communications had been received from medical men and other persons interested in provident dispensaries, and the Committee adopted the following resolution:

That in the opinion of the Committee any arrangements made by medical practitioners with provident dispensaries so far as uninsured persons are concerned should be tentative, pending experience of the effect of the Insurance Act on the institutions.

Hospitals and Asylums.

WEST RIDING PAUPER LUNATIC ASYLUM, WAKEFIELD.

MANY changes occurred in the medical staff of this important asylum during the year 1910, among them being the retirement of Professor Bevan-Lewis, after thirty-five and a half years' service, and the appointment in his place of Dr. Joseph Shaw Bolton as Medical Superintendent and Director.

It is by the latter that the report for 1910 is drawn up. It shows that the total cases under care during the year numbered 2,461, and the average number daily resident was 2,018. During the year 469 were admitted, of whom 432 were direct admissions. Of these direct admissions in 154 the attacks were first attacks within three, and in 58 more within twelve months of admission; in 105 the attacks were not-first attacks within twelve months, as also in 10 more in whom it was not known whether the attacks were first attacks or not; 3 were of unknown duration; and in all the remainder the attacks were of more than twelve months' duration, including 43 congenital cases. The direct admissions were classified according to the forms of mental disorder into: Recent mania 86, recurrent 5; recent melancholia 63, chronic and recurrent 7; senile and secondary dementia 32; general paralysis 54, or 12.5 per cent.; insanity with epilepsy, 24; confusional insanity, 17; stupor, 15; primary dementia and insanity with grosser brain lesions, 8 each; less common forms, 16; and congenital defect, 42.

During the year 166 were discharged as recovered, giving a recovery-rate on the average numbers resident of 38.42 per cent., or of recoveries in and on the direct admissions of 36.57 per cent. Also 43 were discharged as relieved, 12 as not improved, and 1 as not insane. During the year also 202 died, giving a death-rate on the average numbers resident of 10.01 per cent. The deaths were due in 65 to nervous diseases, including 40 deaths from general paralysis; in 44 to diseases of the heart and blood vessels, in 11 to abdominal diseases, in 1 to suicide by hanging, and in the remainder to general diseases, including 42, or 16 per cent. of the total deaths, from tuberculous diseases.

NORFOLK COUNTY ASYLUM.

THE annual report for the year 1910 of Dr. D. G. Thomson, medical superintendent of this asylum, shows that the total cases under care during the year numbered 1,251, and the average number daily resident 1,017. During the year 236 were admitted, of whom 200 were first admissions. Of the total admissions 199 were Norfolk cases, 30 chargeable to Great Yarmouth, 2 were criminal lunatics, and 5 private patients. The decrease in Norfolk cases noted in last year's report was not maintained. The usual table showing the duration of disorder in the patients prior to admission is omitted, but we note that 36, or 18 per cent., had at some previous time been patients in this asylum. The total admissions were classified, according to the forms of mental disorder, into: Recent mania 91, chronic and recurrent 39; recent melancholia 35, chronic and recurrent 8; senile and secondary dementia, 24; general paralysis, 12; insanity with epilepsy, 9; less common forms, 10; and congenital defect, 8. As usual at this asylum, general paralytics and epileptics were few in proportion, the former amounting to only 2.7 per cent. of the admissions.

During the year 66 were discharged as recovered, giving a recovery-rate on the admissions of 30 per cent., or 10 per cent. lower than the previous year; also 17 as relieved, and 17 as not improved. During the year also 117 died, giving a death-rate on the average numbers resident of 11.5 per cent., as compared with 9.03 for the year 1909.

The general health was good thoughout the year, the only zymotic disease being 3 cases of colitis. No fatal casualty occurred, the serious but not fatal casualties numbering 6 during the year. The chief event of the year at this asylum was the opening of the nurses' home. This will not only be of general comfort to the nursing staff, but has left available for patients some 60 beds.

SUFFOLK DISTRICT ASYLUM.

THE annual report of Dr. James R. Whitwell, the medical superintendent of this asylum, shows that the total cases under care during the year numbered 1,094, and the average number daily resident was 822. Since 1907 there has been a steady decline in the average numbers resident from 894 of that year to the present figure. The total number of Suffolk patients at the end of 1910 was 805, and the accommodation of the asylum is for 900 patients.

During the year 189 were admitted, as compared with 218 during the previous year. Of the total admissions 173 were direct and 16 indirect admissions. In 51 the attacks were first attacks within three and in 12 more within twelve months of admission; in 51 not-first attacks within twelve months, as also in 5 more in whom it was not known whether the attacks were first or not; 15 were congenital cases and in the remainder the attacks were of more than twelve months' duration. The direct admissions were classified according to the forms of mental disorder into; Recent mania 52, chronic and recurrent 9; recent melancholia 42, chronic and recurrent 7; senile and secondary dementia 10; delusional insanity 15; insanity with epilepsy 10; general paralysis 3; various less common forms 11, and congenital defect 14.

During the year 44 were discharged as recovered, giving a recovery-rate on the direct admissions of 25.43 per cent., also 33 as relieved and 10 as not improved. During the year 95 died, giving a death-rate on the average number resident of 11.55 per cent.

WILTS COUNTY ASYLUM.

FROM the annual report for the year 1910 of Dr. J. Ireland Bowes, the medical superintendent of this asylum, we see that the total cases under care during the year numbered 1,161, and the average number daily resident 976.9. During the year 173 were admitted, of whom 152 were first admissions. In 72 the attacks were first attacks within three and in 24 more within twelve months of admission; in 31 not-first attacks within twelve months; in 35 the attacks, whether first attacks or not, were of more than twelve months' duration, and in 11 the duration was unknown. The admissions were classified according to the forms of mental disorder into: Recent mania 50, chronic and recurrent 39; recent melancholia 30, chronic and recurrent 15; senile dementia 7; general paralysis 8; insanity with epilepsy 10; less common forms 2, and congenital or infantile defect 12.

During the year 105 died, giving a death-rate on the average number resident of 10.7 per cent. The deaths were due in 20 to nervous diseases, including 10 from general paralysis, in 18 to diseases of the heart and blood vessels, in 2 to bronchitis, in 3 to abdominal diseases, and in the remainder to general diseases, including 16 from senile decay and 26, or 24.7 per cent. of the total deaths, from tuberculous disease. The general health of the inmates and staff was good, the asylum was reasonably free from any epidemic disease, and no serious accident occurred.

BELFAST DISTRICT LUNATIC ASYLUM.

THE annual report for the year 1910 of Dr. William Graham, the medical superintendent of this asylum, shows that the total cases under care numbered 1,497, and the average number daily resident 1,227. During the year 279 were admitted, of whom 230 were first admissions. In 179 the attacks were first attacks within three, and in 20 more within twelve months of admission; in 41 not-first attacks within twelve months, and in the remainder the attacks were either of more than twelve months' duration on admission (26) or of congenital origin (13). The total admissions were classified according to the form of mental disorder into: Recent mania 74, chronic and recurrent 16; recent melancholia 75, chronic and recurrent 13; senile and secondary dementia, 11; general paralysis, 19; insanity with epilepsy, 12; less common forms, 14; and congenital defect, 25.

During the year 109 were discharged as recovered, giving a recovery-rate on the admissions of 39.0 per cent., and also 34 as relieved. During the year 113 died, giving a death-rate on the average number resident of 9.2 per cent. The deaths were due in 66 to nervous diseases, including 22 from general paralysis; in 18 to chest diseases, with only 7 from pulmonary consumption; in 6 to abdominal diseases; and in 23 to general diseases, including 19 from senile decay. Only 6.1 per cent. of the total deaths were thus due to tuberculous disease.

The general health at the new asylum at Purdysburn was everything that could be desired, but at the old asylum in Belfast, where the majority of the patients were detained, they were not so fortunate, enteric fever attacking 7 of the officers, one of them dying.

GLAMORGAN COUNTY ASYLUM, BRIDGEND.

THE annual report for the year 1910 of Dr. D. Finlay, medical superintendent of this asylum, shows that on January 1st, 1910, there were 1,658 patients on the register, and on the last day of the year 1,684. The total cases under care during the year numbered 1,976, and the average number daily resident 1,652.8. During the year 338 were admitted, of whom 330 were direct admissions. In 127 the attacks were first attacks within three, and in 56 more within twelve months of admission; in 47 not-first attacks within twelve months, and in the remainder, the attacks were either of more than twelve months' duration on admission (64) or congenital cases (36). The direct admissions were classified according to the forms of mental disorder into: Recent mania, 116; chronic mania, 22; recent melancholia, 52; chronic melancholia, 5; senile and secondary dementia, 31; general paralysis, 22; insanity with epilepsy, 14; confusional insanity, 12; insanity with grosser brain lesions, 11; delusional insanity, 6; acute delirium, 1; and congenital defect, 36. Both in the comparatively large number of cases of recent origin and the forms of mental disorder in the admission, therefore, Glamorgan Asylum, for 1910 at any rate, compared favourably with many other asylums.

During the year 94 were discharged as recovered, giving a recovery-rate on the admissions of 28.5 per cent., or of recoveries in and on the direct admissions of 28.2 per cent.; also 27 as relieved, and 11 as not improved.

During the year also 160 died, giving a death-rate on the average number resident of 9.7 per cent. The deaths were due in 38 to nervous diseases, including 22 from general paralysis; in 24 to diseases of the heart and blood vessels; in 6 to respiratory diseases; in 12 to abdominal diseases; and in the remainder to various and general diseases, including 16 from senile decay, 14 from lobar pneumonia, and 32, or 20 per cent. of the total deaths, from tuberculous diseases. Influenza was the only zymotic disease present during the year, and otherwise the general health was good. Nine serious, but not fatal, casualties occurred, all accidentally caused.

DOWN DISTRICT LUNATIC ASYLUM, DOWNPATRICK.

THE annual report for the year 1910 of Dr. M. J. Nolan, the medical superintendent of this asylum, shows that on December 31st, 1909, there were 752 patients in residence, and on December 31st, 1910, there were 761. The total cases under care during the year numbered 885, and the average number daily resident 753.

During the year 133 were admitted, of whom 103 were first admissions. As to duration of disorder, in 54 the attacks were first attacks within three, and in 24 more within twelve months of admission; in 30 not-first attacks within twelve months, and in the remainder, the attacks were either of more than twelve months' duration on admission (19) or of congenital origin (6). The total admissions were classified according to the form of mental disorder into: Recent mania 29, chronic and recurrent 13; recent melancholia 51, chronic and recurrent 16; senile dementia, 7; insanity with epilepsy, 6; general paralysis, insanity with grosser brain lesions and not insane, 1 each; and congenital or infantile defect, 6.

During the year also 54 died, all, with one exception, from natural causes. The deaths, which give a death-rate on the average numbers resident of 7.2 per cent., were due in 7 to cerebro-spinal diseases, with only 2 from general paralysis; in 39 to thoracic diseases; in 4 to abdominal diseases; in 3 to general tuberculosis; and in 1 to fracture of femur and ilium present on admission. It will be noted that the deaths from phthisis and general tuberculosis formed no less than 31.4 per cent. of the total deaths. So high a proportion of deaths from tuberculous diseases should strengthen Dr. Nolan's hand in pressing for the erection of verandahs at this asylum. The general health appears to have been good, there having been practical freedom from zymotic disease and no case of dysentery.

JAMES MURRAY'S ROYAL ASYLUM, PERTH.

THE distinctive features of this important "Royal Asylum" are stated to be that it receives no paupers; that ladies are employed as nurses; that it contains a limited number of patients, permitting of individual treatment; and that it is developed as a central hospital for the treatment of acute and difficult cases, with succursal homes for those less seriously affected. The institution comprises the asylum, the adjoining mansion-house of Pitcullen used as a convalescent home, Mount Tabor Cottage, Seven Gables at Elie in Fifeshire, also two new villas at the asylum have been recently erected and also sanatoriums for consumptives. The asylum is one of those useful institutions for private patients, admitting many at reduced fees, and [illegible] who have no pecuniary interest. The [illegible] for the financial year ended March 31st, 1912, shows that, although the sum received for patients' board was £663 less than during the previous year, there was a surplus of revenue over expenditure of £1,019. The ordinary minimum rate of board is £35 per annum, but during the year 30 patients were maintained at rates varying from £30 to £52, in exercise of the [illegible] powers conferred by the charter. The physician-superintendent, Dr. A. R. [illegible] reports that on April 1st, 1910, there were 135 patients on the registers of the asylum, and on March 31st, 1911, there remained 124. Excluding voluntary boarders, however, there were 120 on the asylum books on April 1st, 1910, and 119 on March 31st, 1911. The total cases under care during the year numbered 157, and the average number daily resident 122.17.

During the year 27 were admitted, of whom 21 were first admissions. The average age was rather high (47.9 years), 7 being over 60 years of age. In 7 the attacks were first attacks within three and in 3 more within twelve months of admission; in 11 not-first attacks within twelve months and in 6 of more than twelve months' duration on admission. As to form of mental disorder 6 were cases of recent and 5 of recurrent mania; 9 of recent and 1 of chronic melancholia, 2 of senile dementia, 2 of delusional insanity and single cases of confusional and circular insanity. No general paralytics, epileptics, or defectives were admitted. Concerning the causes of insanity, Dr. Urquhart ventures to say that these, "as discovered on admission, were ascertained more or less precisely in nearly every case." Fourteen were said to be hereditarily disposed to mental derangement, while 8 belonged to families of neuropathic tendencies and near relatives of 2 were markedly alcoholic. Ten had been subjected to mental stress of a severe kind. The causes, Dr. Urquhart says, presented no features of unusual interest. It may be mentioned, however, that alcohol was assigned in only 2 and syphilis in none.

During the year 13 were discharged as recovered, giving a recovery-rate on the admissions of 48.15 per cent.; also 14 as relieved and 2 as not improved. Also during the year 9 died, giving a death-rate on the average numbers resident of 7.37 per cent. All the deaths were from natural causes and all, with one exception, were elderly people. The general health was satisfactory and there were no accidents of a serious character.

STANLEY HALL.

THE report for the year 1910 of this home for the training of imbecile boys is said by Dr. Shaw Bolton to be the best since the opening of the home. The number of school attendances was 13,876, an average of 26 of the 70 inmates, many of whom are crippled or bedridden, attending school daily. Swedish drill, mat-making, and knitting are taught in addition to the usual subjects, and Dr. Shaw Bolton says it is a pleasure to watch the rapid improvement made in individual cases. The results of the segregation of boys at Stanley Hall are said to be particularly striking when contrasted with the state of affairs in institutions where such inmates are scattered throughout the wards.

In the report Dr. Shaw Bolton includes partial analysis of the statistical tables for the year. In accordance with his now well-known views, Dr. Bolton opens by dividing the subjects of mental disease into two groups—aments and dements. He shows that no less than 118 of the total admissions, or 28 per cent., had previously been insane. He points to the large proportion of the admissions with an hereditary history of psychopathies or a personal history of mental instability, and then, turning to the discharges as recovered, that of the 78 males so discharged, 31 were known to have previously suffered from insanity, and that therefore a number of the new male additions to the recovered from his asylum—which number might be anything up to 47 (78—31)—were added to the already great "previously insane" population from Wakefield Asylum. Every member of these 47, he says, was—from the age point of view—capable of propagating the unfit. Also of the total 166 discharged as recovered, no less than 69 had an hereditary history of psychopathy, neuropathy, or alcoholism. Further, 20 had histories of mental instability and 29 of personal alcoholism. Dr. Shaw Bolton then discusses the figures of England and Wales, and without hazarding an approximate estimate, says it is evident that the number of "previously insane" persons in the general population must be very great. He concludes that "The need of some method, *cost what it may*, of preventing the mental deterioration of the race, is thus urgent, since the 'previously insane' are liable not only to propagate their own kind, but also—and this is still more serious—to increase the number of the already dangerous mass of the unemployables, criminals and alcoholics, and the otherwise mentally feeble."

ROXBURGH, BERWICK, AND SELKIRK DISTRICT ASYLUM.

THE annual report for the year ended May 15th, 1911, Dr. J. Carlyle Johnstone, the medical superintendent of this asylum, shows that the total cases under care during the year numbered 380, and the average daily number on the register 320. During the year 61 were admitted, of whom 45 were first admissions. In 23 the attacks were first attacks within three and in 6 more within twelve months of admission; in 18 not-first attacks within twelve months, and the remaining 14 were of more than twelve months' duration, including 1 congenital case. The admissions were classified into: Recent mania 18, chronic and recurrent 5; recent melancholia 24, chronic 1; senile and secondary dementia 2; insanity with epilepsy and delusional insanity 3 each; general paralysis and insanity with grosser brain lesions 2 each; and congenital defect 1. More than half of the admissions suffered from some form of bodily disease requiring treatment, and less than 30 per cent. were in good or average health. During the year 21 were discharged recovered, giving a recovery-rate on the admissions of 34.4 per cent.; 11 as relieved. Also during the year 23 died, giving a death-rate on the average numbers resident of 7.1 per cent. In 8 cases the principal cause was disease of the nervous system (none from general paralysis); in 7 to diseases of heart and blood vessels; in 3 to respiratory diseases; and in 3 to old age. Pulmonary tuberculosis was ascertained to be present in an active form in 4, or 17.4 per cent. of the total deaths. The general health was good throughout the year.

British Medical Association.

SCIENCE COMMITTEE.

At the meeting of the Science Committee on July 13th the reports from the Research scholars and grantees of the Association were received. Those from Dr. William Nicoll, Dr. Ralph St. John Brooks, Dr. Alfred J. Clark (revised), Dr. E. Marshall Cowell, Mr. Ernest W. Hey Groves, and Drs. David Orr and R. G. Rows, are published in the JOURNAL, p. 1097, et seq. In addition, the Committee received the following reports of progress:—

A. E. BOYCOTT, M.A., M.D.

(i) Trypanosome Anæmia.

During an inquiry into the possibility of trypanosome infection producing methæmoglobinæmia, it was noted that nagana infection in rabbits is associated with anæmia, and the features of the blood condition have been further studied in collaboration with Dr. Price Jones. The anæmia is a real anemia (*i.e.*, the blood volume is unaltered), the deficiency in total hæmoglobin varying from one-third to two-thirds. The loss of red cells appears to be brought about by active phagocytosis on the part of the endothelial cells in lymphatic glands; there is abundant deposit of free iron in the liver, spleen, and, sometimes, kidneys. Quantitative chemical analysis shows that the liver contains from twice to five times the normal amount of iron. Histologically, the blood is not infrequently normal in appearance, and signs of active regeneration are never well marked; the colour index remains normal or below normal. This is in marked contrast with the active regeneration, with a high colour index, which follows blood destruction by hæmolytic sera, phenylhydrazine, ricin, etc., in rabbits, and indicates that trypanosome infection exerts a depressing influence on the bone marrow. This is confirmed by direct examination of the marrow, which in some cases is so deficient in response that it cannot be said to exhibit any abnormality in its cellular constitution. Further details are under investigation.

(ii) Experimental Nephritis.

Uranium salts in appropriate doses kill the cells of the convoluted tubules without producing any obvious lesions elsewhere. With a dose of not less than 1½ or 2 mgm. per kilo of body weight given subcutaneously rabbits become anuric and die. The concentration of the blood remains unaltered unless the intake of water is increased, when the blood becomes hydræmic, and a limited degree of œdema may be produced. The exchange of liquid between the blood and tissues in normal and nephritic animals is under investigation.

The functional efficiency of such damaged kidneys has been investigated in collaboration with Dr. J. H. Ryffel. In general, the nephritic kidney produces an abnormally dilute urine, both under natural circumstances and on stimulation with diuretics. It is commonly held that diuretics may be divided into two classes: those, such as salt solutions or Ringer's solution, which cause no increased metabolism of the kidney, and act mechanically on the glomeruli, and those, such as caffeine and its allies, which stimulate the secretory activity of the convoluted tubules with an exalted metabolism. If this is so, it might be expected that in uranium nephritis a stage would occur in which mechanical diuretics would be efficient, while caffeine would have no action. Such, however, does not appear to be the case. In all experiments both classes of diuretics act in the same sense, being either both without result or both effective. The chief differences which have been found in the nephritic as compared with the normal animals are that the urine is, on the whole, more dilute and that the concentration does not vary inversely with the rate of production, as in normal animals. Uranium nephritis is associated with glycosuria in rabbits.

R. A. CHISHOLM, M.A., M.B., B.C.L., M.R.C.P.

The Mechanism of the Production of the Anæmia Associated with the Presence of Transplanted Sarcoma.

The author had previously shown that the presence of transplanted sarcoma in rats often produced an anæmic condition, not infrequently of a profound degree. There were some reasons for thinking that this anæmia bore some relation to the necrosis of the tumour. Experiments have, therefore, been made with sterile extracts of necrotic tumours, but the normal rats treated with such extracts have so far given indecisive results as regards the production of anæmia. To throw light on the question whether the sarcoma anæmia is due to increased destruction of red cells or to defective production, a large number of determinations have been made of the quantity of iron in the liver and spleen, and in some cases in the whole bodies, of normal and sarcomatous rats. The curious result has emerged that rats bearing transplanted sarcomata have less iron in their organs and in their whole bodies than normal rats of corresponding size.

A. R. CUSHNY, M.A., M.D., LL.D.

(1) Research on Pictou Disease of Cattle.

This was undertaken at the request of the Imperial Institute to determine how far the alkaloids of suvecio (?) are responsible for the disease, and the results have shown conclusively that all the symptoms may be reproduced by these alkaloids administered hypodermically or by the mouth. The results were published in abstract in the Proceedings of the Royal Society, and in more detail in the "Journal of Pharmacology and Experimental Therapeutics." Crude preparations of suvecio (?) from Pictou, Canada, where the disease is endemic, failed to induce the disease, but later and unpublished experiments have shown that the alkaloids of the plant grown there have the characteristic action, so that the question of etiology is now complete.

(2) Research on Certain Heart Phenomena.

The effects of stimulation of the ventricle after section of the auriculo-ventricular bundle were examined, and among the results obtained was the demonstration that the spontaneous power of the heart is susceptible to fatigue, and that it differs in character from the electrical excitability. The paper will be published in "Heart" in the near future.

The effect of strophanthin on the conduction and excitability of the heart was also examined, and the results will also appear in "Heart."

RUPERT FARRANT, F.R.C.S., L.R.C.P.

Causation and Cure of Exophthalmic Goitre.

"I propose to publish the first portion of my work during the next few weeks; in the coming year I shall continue my work, and my expenses will far exceed £10, so I hope your Committee will see their way to increase or renew their grant.

DESCRIPTION OF RESEARCH.

The action of thyroid gland and its reaction to disease.

The action shown by experiments of injecting and feeding animals on various thyroid preparations. The reaction proved by histological sections of the thyroid in various conditions and diseases.

These actions and reactions elucidate the various thyroid enlargements."

MARTIN FLACK, M.A., M.B.

During the past year I have been engaged in the following researches conjointly with Dr. Leonard Hill:—

1. *Problems in Ventilation.*—(a) The relative effects of humidity, CO_2, movement of the air, temperature, and light on the growth of young animals.

(b) The possible presence of organic protein poisons in the expired air as tested by anaphylaxis.

In Series (a) young growing animals (guinea-pigs and rats) have been kept under varying conditions of moisture, light, etc., and their growth weights carefully noted.

The cohabiting animals have been injected with the sera of the different kind (rats with guinea-pig sera and *vice versâ*). These results have been negative as regards the presence of poison. Control injections were also made into healthy animals. In Series (a) the results tend to show that light plays an important part in the growth of an animal.

II. *The Co-ordination of the Auricular and Ventricular Beats of the Mammalian Heart.*—Experiments on cats appear to show in many cases that the allorhythmia induced by the ligature or section of the A.-V. bundle is modified by a ligature placed or section made in the region of the A.-V. groove on the external wall of the right ventricles quite remote from the bundle of His. Also this research is incomplete owing to the difficulties of obtaining characteristic graphic records. We are awaiting the completion of the electrocardiographic apparatus here, when it is hoped such records will be obtained.

As this last research could not be completed, some of the money has also been expended upon the following :—

III. *The Relation between Capillary Pressure and Secretion in the Salivary (Submaxillary) Glands.*—It is shown in this research that the circulation through the gland *continues* even when the duct is blocked and the secretory pressure twice as high as the arterial pressure. It is suggested that this is owing to the presence of the strong membranæ proprial, in the which glands limit the expansion of the alveoli, and thus prevent occlusion of the capillaries and allow the cells to carry out the work of secretion.

GORDON W. GOODHART, M.A., M.B., B.C.

Pathogenity and Specific Infectivity of Strains of Gaertner's Bacillus from Different Sources for Different Species of Animals.

The object of this research was to discover whether it is possible to raise the virulence of an organism pathogenic to two different species of animals in such a manner that, if it attacks a mixed community consisting of these two species, it will eventually kill off all the members of the one and leave those of the other.

For this purpose two strains of *Bacillus enteritidis* of Gaertner were taken, whose pathogenicity to rats and guinea-pigs was first determined. Repeated passages of these two strains were made through rats and guinea-pigs (from 30 to 40 in each case). A certain increase in the virulence was thus obtained, but no definite specificity for one or other animal could be proven. It is hoped to continue the investigation by obtaining a greater increase in the virulence by more elaborate methods of passage.

A. M. H. GRAY, M.D., F.R.C.P., F.R.C.S.

Experimental Production of Syphilis in Rabbits.

Up to the present the research undertaken with B.M.A. grant consists of inoculating rabbits with tissues taken from syphilitic patients, mainly primary sores. These have produced the already recognised lesions in rabbits, and our aim has been to obtain a virulent strain by passing through a series of rabbits. Unfortunately, at the time of writing our strain has failed, but we hope shortly to be able to get a new one, and to carry out some experimental work on the nature of the antibodies produced in syphilitic infection. I have had the assistance of Dr. Bayon, of the Lister Institute, in this research.

W. D. HALLIBURTON, M.D., F.R.S.

Functions of Choroid Plexuses and Formation and Fate of Cerebro-spinal Fluid.

Professor Halliburton, working in conjunction with Professor W. E. Dixon, has continued the investigation of the above subject during the past year. They had previously ascertained that an injection of extracts of the choroid plexus was the most efficacious way of promoting an increase in the formation of cerebro-spinal fluid. The chemical nature of the hormone responsible for this action is not yet certain. This and other facts support the hypothesis that the secretion of the fluid is the function of the cutical that covers the plexuses, and that the use of the term "gland" is justified.

Among other points they have worked at during the past year is the sequence of events which follow cerebral compression. They have devised a simple method of compressing the central nervous system *via* the cerebro-spinal fluid, and have found, in confirmation of Horsley's statements, that the respiratory centre is the first to succumb and the last to recover after compression has ceased. They do not regard this effect as secondary to vaso-motor influences as Cushing does.

Another subject which is at present occupying their attention is to determine the destination of the fluid which is continually being secreted. They have discovered by injecting pigments and other easily recognised materials that the lymphatics are not the channels of absorption. The rapid appearance in the blood of the substances injected (often within a few seconds) suggests that they pass straight into the blood stream. Whether this occurs by diffusion, or by means of actual valved orifices in the neighbourhood of the longitudinal sinus is at present uncertain, but is being made the subject of experimental inquiry.

E. L. KENNAWAY, M.B., B.C.L.

Effect of Section of Spinal Cord upon Temperature and Metabolism.

The results of an investigation upon "Metabolism after Section of the Spinal Cord," by E. L. Kennaway and M. S. Pembrey, will be published shortly. Observations upon rabbits showed that after division of the spinal cord in the brachial region there is a considerable loss of tissue, which is rendered evident by a progressive fall in body weight and by an increased excretion of carbon dioxide and nitrogen. It appears that the paraplegic parts are subject to an increased loss of heat, owing to the vasomotor paralysis and to inability to maintain the normal posture of the body. The front portion of the body, which is still in connection with the brain, would then be the seat of more vigorous oxidative processes, whereby the body temperature is maintained very nearly at its normal level. This increased oxidation would account in part for the loss of body substance, and it would seem that the active front part of the body draws upon the paralysed portions for supplies of combustible material. Further experiments will be carried out to investigate the parts played by the increased loss of heat and by the disuse of the voluntary muscles in producing the loss of tissue.

THOMAS LEWIS, M.D., M.R.C.P., D.Sc.

The Mechanism of the Heart-Beat in Health and Disease.

Since I have received the grant from the British Medical Association I have completed three pieces of work.

1. An experimental research into the circulatory changes when the auricles fibrillate. A paper on this subject is now in the press. The main results are as follows :—

> Fibrillation of the auricles leads to a change of arterial pressure; usually there is a fall; the blood pressure may remain stationary; it may rise. The venous pressure moves in the opposite direction to the arterial. The intestinal volume is affected passively. The cardiac output varies in the same direction as the arterial pressure, and accounts for it. It has been shown that the whole of the changes in the circulation are the result of alterations of heart rate.

2. An examination of the hearts of 59 students, electrocardiographically, with the object of determining the several characters of the normal electrocardiogram. The results have been embodied in a paper, which is now being published by the Philosophical Transaction (*sic*) of the Royal Society.

3. An examination of clinical cases of cardiac irregularity. Amongst these a number have been found who presented irregularities of undescribed forms. A report of these cases is now in the press.

Several further pieces of work have been attempted—(a) One, in conjunction with Dr. Mathison, upon the nature of certain forms of electrocardiogram seen in asphyxia; (b) an investigation of the changes in the form of electrocardiogram in aortic regurgitation (experimental). The last two researches have been abandoned for the time being.

M. S. PEMBREY, M.A., M.D.

The results of the joint research on "The Influence of Tetrahydro B-naphthylamine upon the Temperature and Respiratory Exchange," by N. Mutch and M. S. Pembrey, has been published in the "Journal of Physiology," Vol. XLIII., No. 2, October 20th, 1911.

A preliminary communication on the results of the joint research by E. L. Kennaway and M. S. Pembrey in "The Effects of Section of the Spinal Cord upon Temperature and Metabolism" has been given at a meeting of the Physiological Society. The full paper is nearly ready for publication. (More detailed report given by E. L. Kennaway.)

The experiments upon the effects of warm humid atmospheres on man have been criticised in conjunction with J. S. Gallie.

Preliminary communications on the "Influence of Carbon Monoxide and Anæsthetics upon Metabolism," by M. S. Pembrey and J. H. Ryffel, have been given at meetings of the Physiological Society. (See report by J. H. Ryffel.)

J. H. RYFFEL, M.A., B.C., B.Sc.

1. On an expedition to Monte Rosa, organised by J. Barcroft, F.R.S., lactic acid was estimated in the blood and

urine. At an altitude of 10,000 ft. the lactic acid of the blood was not appreciably greater than that at sea-level. There was, however, a definite but small increase in the lactic acid after twenty-four hours at 15,000 ft. The amount of lactic acid in the urine was never appreciably greater than normal. Hence the formation and excretion of lactic acid, which takes place at high altitudes, is not adequate to account for the lowering of alveolar carbon dioxide, and the increase in the acidity of the blood, apart from that due to carbonic acid, which undoubtedly takes place even at 10,000 ft.

2. With N. Mutch, M.B. The composition of the urine during rectal feeding is being investigated. At present it has not been found possible to prevent by giving carbohydrate the appearance of considerable quantities of acetone, diacetic acid, oxybutyric acid, creatine, and ammonia; as much as 0·5 grm. acetone and 2 grm. oxybutyric acid per diem, with an ammonia ratio of 15·5 per cent., have been obtained. Lactic acid in the urine is definitely increased, presumably owing to its formation from carbohydrate by bacteria in the intestine.

3. Work on the effect of diuretics in experimental nephritis with Dr. A. E. Boycott is reported by Dr. Boycott.

4. Work on metabolism during carbon-monoxide poisoning and during anæsthesia with Dr. M. S. Pembrey is reported by Dr. Pembrey.

M. COPLANS, M.D., D.P.H.

Products of Growth of the Tubercle Bacillus.

This research has had for its scope the investigation of the products of growth of the tubercle bacillus, endo- and extra-bacillary, both in vivo and in vitro, with a view to the isolation, if possible, of some non-toxic immune body, and a series of experiments have been conducted in several directions to this end.

Throughout these tests experimental inoculations have been continually made, and the animals used have been limited to guinea-pigs.

Culture fluids of tubercle bacilli have been subjected to adsorption tests, both during and after growth of the organisms, over various reagents and materials, and in particular over animal tissues recently removed from the body, and later the tissue or other adsorbing reagent has been tested, both before and after treatment, with various extracting agents for the presence of immune body and toxin. The supernatant fluid has been similarly tested in a parallel series of experiments.

The adsorbing materials used for this purpose have been (a) several kinds of charcoal—(1) animal, (2) wood, (3) cocoanut; (b) colloidal gold; (c) colloidal arsenic; (d) animal tissues.

In the main it appears, as far as these experiments have been carried, that filtered culture fluids of tubercle bacilli, suitably adsorbed or precipitated, the former by means of the various kinds of animal charcoal or by means of tissues recently removed from the animal body, the latter by means of colloidal gold or colloidal arsenic, are less toxic than filtered cultures not so treated, and that the protection afforded by inoculation into guinea-pigs of the adsorbed or precipitated fluid is higher and of a more permanent character, as manifested against inoculation with lethal doses of filtered fluid not so treated, and against the growth of tubercle bacilli, or against killed tubercle bacilli, than is the case with inoculation into guinea-pigs of filtered cultures not so treated.

The degree of protection afforded in the course of these experiments has never been absolute. On the other hand, many of the protected animals have died for reasons beyond the control of the writer—*e.g.*, epizootic outbreaks affecting all the animals apparently indiscriminately—and the degree of protection afforded is perhaps more than the standard of appraisement—to wit, the duration of life following the inoculations—would allow for.

Broadly, the degree of protection is, in the aggregate, a prolongation of the period of life of from 50 to 100 per cent., following inoculation with fatal doses either of the living or filtered virus, than is the case when preliminary protection with the untreated filtered virus is omitted; and, further, the degree of protection is greater following treatment with filtered toxin suitably treated than with filtered toxin not so treated. Moreover, the toxicity of the treated filtered virus is greatly diminished.

Culture fluids of tubercle bacilli rendered free of bacilli by the usual filtration methods have also been subjected to a second filtration process through layers of freshly prepared gelatinous hydrate of alumina, iron hydrate and gelatinous hydrated silica respectively, and the toxicity of the transuding liquid (or filtrate) has been found greatly diminished if not entirely absent. The protective action of the transudate has, for the present, not been found to be substantial, nor has the toxic substance been isolated from the gelatinous filtering medium.

Further, the comparative electrical reactions—viz., changes in conductivity—in a reacting system formed in vitro, comprising the essential ingredients—tubercle bacilli and their products of activity, normal blood or other body fluid, or the blood and body fluid of the animal or person suffering from tuberculosis—have been under observation and investigation, and, in addition, the phenomena of cataphoresis due to the passage of an electric current through such a reacting system in vitro have been noted.

With regard to the latter phenomena, it is too early yet to pronounce definitely as to the practical outcome of the experiments, but the results are such as to warrant the hope that it may be possible, by means of the simplest of apparatus, to establish the diagnosis of a condition of tuberculosis otherwise in doubt.

The writer does not consider the number of experiments carried out sufficient at present to justify the publication in detail of any portion of the research, save perhaps the principle of the new apparatus and the methods involved in the electrical portion of the investigation.

The writer proposes to continue the experiments.

S. A. KINNIER WILSON, M.D.Edin., M.R.C.P.Lond.

Anatomy and Physiology of the Corpus Striatum.

During the year 1911-12 I continued my research on the anatomy and physiology of the corpus striatum, under the tenure of a grant of the Science Committee of the British Medical Association. The work was done in the Laboratory of Experimental Neurology at University College, under the ægis of Sir Victor Horsley, who kindly performed my operations for me. Some six more monkeys were operated on (macacus, rhesus and the bonnet monkey), and I have now the material from some 25 or 26 monkeys, and three cats, completely worked up, and ere long it will be ready for publication. The whole of the material has been prepared by myself, with drawings and photographs of the preparations.

The special points on which this year's research was concentrated were: (1) the relation of the corpus striatum to the subthalamic region, in particular the corpus luysii and nucleus ruber; and (2) the results, anatomical and physiological, of large lesions of the corpus striatum.

The method employed was that of electrolytic lesions with the instrument of Clarke and Horsley. The animals were killed at varying intervals after the experimental lesion was made, usually from 16 to 21 days after. The brain was immediately transfused with formol-Müller, the lesion photographed, and then the whole brain was cut in serial section from before backwards and prepared by Marchi's method for degenerated nerve fibres.

Dr. Wilson concluded his report by a statement of the expenses incurred and expressed his thanks for the invaluable aid provided by the grant.

A. P. MITCHELL, M.D.

Relative Frequency of the Bovine and Human Types of Tubercle Bacilli in Certain Forms of Human Tuberculosis.

The author reported that he had been engaged in this research work since December 1st, 1910, in the Royal College of Physicians' laboratory, Edinburgh, under the supervision of Dr. James Ritchie. He presented an interim report, but hoped to prepare a full report for publication in a few months.

A. E. BARNES, M.B., M.R.C.P.,
with
W. W. KING, M.B., Ch.B., F.R.C.S.Edin.

The Urinary Changes of Toxic Vomiting in Pregnancy.

Dr. A. E. Barnes, Physician to Out-patients, Royal Infirmary, Sheffield, and Tutor of Clinical Medicine, Sheffield, and Dr. W. W. King, Clinical Pathologist, Royal Infirmary, Sheffield, and Obstetrical Tutor, Sheffield University, submitted a preliminary communication on this subject and are preparing a full report for publication at a later date.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BIRMINGHAM BRANCH:

CENTRAL DIVISION.

AN ordinary general meeting was held in the Medical Institute, Edmund Street, on October 9th. Mr. LUCAS was in the chair, and sixty-six members were present.

Annual Representative Meeting.—Dr. DOUGLAS STANLEY read the Representatives' report, which was approved and adopted unanimously. Dr. T. F. ALLEN proposed and Dr. LYDALL seconded:

That the best thanks of the Division be accorded the Representatives for the able and successful manner in which they carried out the Division's instructions, and for the time and care which they gave to their instructions in the Division's interests.

This was carried with acclamation.

Public Medical Service.—A long discussion took place upon the question of non-insured members of clubs and other forms of contract practice. Mr. MARSH proposed and Dr. ESSLEMONT seconded:

That until some general scheme of contract or other form of medical service is approved by the Association, the members of this Division decline to undertake or conduct any form of contract practice except upon terms approved by the Division.

This motion was approved and the honorary secretaries instructed to call a special meeting of the Division on Wednesday, October 23rd, with the object of getting this resolution adopted, so as to apply throughout the Division area.

Model Ethical Rules.—These rules were adopted by this Division as approved at the Annual Representative Meeting.

DORSET AND WEST HANTS BRANCH.

A SPECIAL general meeting of the Branch was held at the Church House, Wimborne, on Wednesday, October 16th. The PRESIDENT (Mr. F. Winson Ramsay) was in the chair, and thirty-one members signed the attendance register.

Model Ethical Rules.—Dr. LE FLEMING proposed that the Ethical Rules B, published in the JOURNAL of September 21st, be adopted by the Branch. He said that the Bournemouth Division had already adopted the Rules A, and he expected the West Dorset Division would shortly adopt them. The Rules B constituted the Branch Council the first court of appeal from decisions of the Divisions. He pointed out the necessity of having such a code of rules. The penalty for infringement of the rules had been made more severe. Mr. SPOONER seconded the resolution, and it was carried unanimously.

Proposed Alteration of Rule.—The SECRETARY brought forward a resolution passed by the West Dorset Division, which he hoped would be passed. At present the honorary secretaries of the Divisions were liable to be considered ineligible for election on the Branch Council, where their advice and help were most important. He moved, on behalf of the West Dorset Division, to add to Rule 3:

The Honorary Secretaries of the Divisions comprising the Branch.

This was seconded by Dr. SANDERSON-WELLS and carried unanimously. The SECRETARY pointed out an omission in Rule 3; the Association by-laws made the Division Representatives *ex officio* members of the Branch Council. He moved to add to Rule 3:

The members elected to represent on the Representative Body the Divisions comprising the Branch.

This was seconded by Dr. WILLANS and carried unanimously.

The autumn meeting of the Branch was held on the conclusion of the special meeting.

Election of Officers for 1913–14.—The following were elected officers for the ensuing year: *President*, Dr. H. G. Lys (Bournemouth); *Vice-Presidents*, Mr. W. C. Spooner (Blandford) and Mr. F. Belben (Bournemouth); *Honorary Secretary and Treasurer*, Dr. F. Fowler was re-elected.

Annual Meeting of Branch.—It was proposed by Dr. SIMMONS, seconded by Dr. SANDERSON-WELLS, and carried, that the annual meeting be held in Bournemouth in May, 1913.

BOURNEMOUTH DIVISION.

A MEETING of this Division was held on October 2nd at St. Peter's Hall, Bournemouth. Dr. LE FLEMING was in the chair, and thirty-four members and three non-members attended.

Representatives on Branch Council.—On the motion of Dr. TUTHILL, seconded by Dr. DAVIDSON, it was agreed *nemine contradicente*:

That Drs. Alexander and Montgomery be elected to the vacancies on the Branch Council.

Annual Representative Meeting.—Dr. JOHNSON SMYTH gave a report of this meeting at Liverpool. He laid stress on the feeling of resentment which was evident against the Insurance Act, and went fully into details as to the attitude of the Representative Body towards the sanatorium benefit. He also briefly reviewed the reports of the various committees of the Association. On the proposition of the CHAIRMAN, a hearty vote of thanks was accorded to Dr. Smyth for his services.

Insurance Defence Fund.—The HONORARY SECRETARY reported that up to date some £720 had been guaranteed in this Division. There was some discussion as to the best means of obtaining an increase in this amount. Most members were in favour of a personal canvass, and it was finally decided that this could best be arranged by the local Provisional Medical Committee, to whom the matter was referred.

Public Medical Service.—On the motion of the CHAIRMAN, the meeting agreed that the consideration of these schemes be left to the Provisional Medical Committee.

A State Medical Service.—A paper was read on this subject by Dr. J. E. ESSLEMONT. A discussion took place, in which the following took part: Drs. LE FLEMING, WILLANS, VERNON, HUNTER WOODS, and SIMMONS. The majority of the speakers were opposed to such a service on the score that when the stimulus of competition was removed neither private nor institutional work would be as efficiently carried out as at present. Dr. ESSLEMONT replied, and was accorded a hearty vote of thanks for his paper.

DUNDEE BRANCH:

DUNDEE DIVISION.

AN ordinary meeting was held on October 3rd in University College. Dr. C. S. YOUNG was in the chair, and twenty-four were present.

Annual Representative Meeting.—Dr. C. S. YOUNG reported, as Representative of the Division at the Annual Representative Meeting in July. Dr. MACEWAN moved a vote of thanks to Dr. Young for his services.

Provisional Local Medical Committee.—Dr. G. F. WHYTE, Secretary of the Provisional Local Medical Committee, reported on the work done since the Committee was appointed. The number of practitioners who had signed the pledge and those who had decided to relinquish their contract practice was very satisfactory, and the Division could be considered "safe." Information was given regarding the arrangements that had been come to with the sanatorium subcommittee of the local Insurance Committee, and the meeting regarded these as satisfactory.

Central Guarantee Fund.—The question of increasing to £20 the subscription to the Central Guarantee Fund was considered, and on the motion of Dr. MACKIE WHYTE the matter in the meantime was delayed.

EAST ANGLIAN BRANCH:

SOUTH-EAST ESSEX DIVISION.

THE annual general meeting of this Division was held on October 17th at the Victoria Hospital, Southend-on-Sea. Dr. J. B. MAXWELL was in the chair, and sixteen members were present.

Public Medical Service.—Dr. J. B. MAXWELL read the report on a public medical service which had been pre-

pared by the subcommittee of the Provisional Local Medical Committee, and explained that the report was incomplete owing to the uncertainty as to what remuneration would be offered by the Government for the attendance on insured persons, and the difficulty as to what was the exact ruling of the Association concerning the co-operation between medical men and approved societies for purposes of administration. He also pointed out how costly and difficult the administrative work would be if run solely by medical men. After some discussion it was resolved to approve the report, but to refer it back to the subcommittee for completion when further details were obtainable from the Government.

Defence Fund.—The Chairman stated that the local defence fund amounted to over £800, but there were many in the Division who had not yet contributed, and it was resolved to again approach all non-contributors.

Election of Officers.—The election of officers for the ensuing year resulted as follows: *Chairman*, Dr. W. Harmon Morgan; *Vice-Chairman*, Dr. W. F. Adams; *Honorary Secretary and Representative*, Dr. J. F. Walker; *Committee*, Drs. Lewis, Bridger, Silva Jones, Maxwell, Wragg, and Simpson.

Ship Surgeons.—Drs. Hunter and Poole agreed to be the correspondents for ship surgeons in the town.

Practitioners and the Association.—Dr. Gibbons suggested that special efforts should be made to induce all practitioners to join the Association, and it was agreed to forward this recommendation to the Committee.

Votes of Thanks.—The meeting concluded with votes of thanks to Dr. Maxwell and Dr. Walker for their services during the past year.

LANCASHIRE AND CHESHIRE BRANCH:

Manchester (West) Division.

A general meeting was held on Friday, September 20th. Dr. Westwood occupied the chair, and nineteen members were present.

Time of Meetings.—After discussion, it was decided by vote that the meetings of the Divisions should in future be held in the evenings, when possible.

Representatives on Branch Council.—The following were elected unanimously: Dr. Dearden (*ex officio*), Dr. T. Wheeler Hart.

Contract Practice Resignations.—It was unanimously agreed that the secretaries of this Division should meet and arrange with the secretaries of the other local Divisions to send in all resignations before September 29th.

Resignations of Hospital Staffs.—Arising out of the clause in Memorandum D 2, relating to resignations of hospital staffs, and the action taken by the Hulme Dispensary officials in regard to Dr. Brayton, the following resolution was carried unanimously:

> That this Division give moral and financial support to Dr. Brayton.

The following resolution was also carried unanimously:

> That the Joint Committee of Manchester and Salford be requested to draw the attention of members of the staffs of voluntary hospitals to the present situation, and to urge upon them that, in accordance with the terms of their pledge, they should notify the boards of their hospitals that they will be unable to attend insured persons after January 15th, except in cases of emergency.

Sanatorium Benefit.—A resolution was carried in favour of giving to the Joint Committee of the Manchester and Salford Divisions full powers to act for the Divisions in relation to the administration of sanatorium benefit in Manchester, and to deal with all urgent matters arising in connexion with the medical portion of the Insurance Act. An amendment—in favour of giving to the Joint Committee of Manchester and Salford power to co-opt members of the profession representative of those outside the British Medical Association—was lost. The action of the Medical Officer of Health for Manchester and others in relation to sanatorium benefit was discussed.

Notification of Births Act.—The question of the adoption in Manchester of the Early Notification of Births Act was discussed. A policy of "passive resistance" was approved.

METROPOLITAN COUNTIES BRANCH:

City Division.

The inaugural meeting of this session took place at the London Hospital on October 11th, by invitation of Dr. J. H. Sequeira.

Demonstration of Dermatological Cases.—Tea having been served in the Board Room, the following cases from the dermatological department were shown:

(1) A series of cases of lupus erythematosus, illustrating the stages of progress, degrees of severity, and effects of treatment. (2) Cases of congenital and acquired syphilis, showing the greatly increased destruction of tissue. (3) Bazin's disease and others, showing the reaction to Moro's diagnostic test for tubercle. (4) Cases of xanthoma, urticaria pigmentosa, psoriasis after chrysarobin inunction, purpura, seborrhoeic dermatitis—extensive. (5) Keloid of neck from scar resulting from burning of celluloid collar, showing effect of softening by *x* rays. (6) Progressive naevus (infective angioma of Hutchinson). (7) Generalized molluscum fibrosum.

Dr. Sequeira discussed the cases as shown, and replied to many inquiries.

Vote of Thanks.—Upon the conclusion of the demonstration, a vote of thanks, having been proposed in an appropriate speech by Dr. C. F. Hadfield and ably seconded by Dr. Julian Hora, was carried by acclamation. Dr. David Ross (Chairman of the Division), in tendering thanks to Dr. Sequeira, referred to the great appreciation with which the annual visit to the London Hospital is regarded by the Division, and included in the expression of thanks the Hospital Committee for their hospitality, and Dr. Oliver for able assistance in the organization of the demonstration. Dr. Sequeira, in acknowledging the vote of thanks, referred to the personal pleasure these opportunities of meeting the Division afforded him, and on behalf of the House Committee said they were always most willing to extend the invitation, and he hoped the visits would be repeated annually.

A general meeting was held at the Town Hall, Shoreditch, on Wednesday, October 16th, at 4 p.m. Dr. David Ross, Chairman of the Division, took the chair, and thirty-four members were present.

Model Ethical Rules.—A letter was read from Dr. Cox, Medical Secretary, respecting the adoption of model ethical rules. It was referred to the Ethical Committee.

Provisional Medical Committee.—A letter from Dr. Geo. Black, Honorary Secretary of the Provisional Medical Committee of the Tower Hamlets Division, was read. It suggested mutual appointment of deputies to attend meetings and ensure co-action. This was approved and left to be dealt with by the Chairman of the Provisional Medical Committee (Dr. Evan Jones).

Supply of Drugs and Tuberculin under Sanatorium Benefit.—The Honorary Secretary announced that he had received several inquiries as to acceptance of the offer that drugs and tuberculin should be supplied by the practitioner attending cases under sanatorium benefit at a small extra charge, and in reply had advised acceptance provisionally, subject to the approval of the Provisional Medical Committee. This view was supported by the Chairman and Dr. Evan Jones.

Special Representative Meeting.—A letter was read from Dr. Cox (Medical Secretary), advising that the profession should be invited to a meeting to consider the Report of the Council and instruction of Representatives for Special Representative Meeting next month. It was decided that invitations should be issued through the local committees to all medical men in general practice.

Public Medical Service.—The Chairman, having introduced the subject, called upon Dr. Major Greenwood, who, whilst advocating the official schemes A and B, expressed dubiety as to whether the insistence of no representation of the insured persons being allowed was advisable now that conditions had so changed since the scheme was first promulgated. Dr. Evan Jones formally seconded. Dr. Hunt dissented from the creation of a public medical service, and moved an amendment:

> That it is unwise to adopt any scheme whatever managed by the profession.

Dr. Rushbrooke seconded, and declined to approve of either A or B schemes. Dr. S. Wilson supported the

amendment. After discussion generally, the amendment was redrafted:

That the British Medical Association has put forward no scheme which commends itself to the general practitioner.

This being ruled a direct negative, the original resolution, "to approve of the establishment of a public medical service" was put, and was negatived *nemine contradicente*, 34 voting against. Dr. Hunt's motion of which he had given notice was then moved by him

That it is unwise and unfair for any public medical service to be founded in which the insured are not represented on the governing body, etc., or the trustees, by at least a third of the membership of such bodies, and to instruct our Representatives to move accordingly.

This was seconded by Dr. Rushbrooke, and, upon being put after a general discussion, a tie resulted, the voting being 12 on each side. The Chairman declining to give a casting vote, the matter dropped.

Insurance Persons in Clubs and Associations.—Dr. Evan Jones then proposed the following resolution:

That the executive be requested to prepare a scheme for presentation to the next meeting of the Division laying down the conditions and terms on which the profession are prepared to attend clubs and associations of insured persons.

This was seconded by the Honorary Secretary and carried.

Hospitality Fund.—The Honorary Secretary acknowledges donations of 15s. to the Hospitality Fund, and will be pleased to receive annual subscriptions renewable on October 1st.

Harrow Division.

A meeting of this Division, to which every medical practitioner within the area of the Division was invited, was held in the Gayton Rooms, Harrow, on October 10th. Dr. A. H. Williams was in the chair, and twenty-two medical practitioners were present.

Representatives on National Insurance Committee of the Branch.—Dr. A. H. Williams and Dr. J. Davidson were duly proposed, seconded, and elected.

Public Medical Service.—It was proposed by Dr. Muspratt and seconded by Dr. Beatty:

That steps be taken as soon as possible to start a scheme on the lines of a public medical service.

This was carried *nemine contradicente*. After discussion it was decided that the elaboration of the details of this scheme be referred to the Provisional Medical Committee, with instructions to prepare a scheme on the basis of a capitation payment (Model A). After further discussion a vote was taken as to whether the rate of payment should be on the basis of a uniform flat rate, or on a sliding scale. Eight votes were cast in favour of a flat rate, and seven votes in favour of a sliding scale.

Model Ethical Rules.—The model rules for ethical procedure were adopted without modification, and in substitution of the ethical rules in force.

Model Scheme for the Treatment of Tuberculosis.—This was referred to the Provisional Medical Committee, with instructions to deal with it in accordance with Memorandum D 7.

Lambeth Division.

A special meeting of this Division was held at the Surrey Masonic Hall on October 8th. Dr. Capes was in the chair, and forty-three members were present.

Confirmation of Minutes.—The minutes of the previous meeting were read and confirmed.

Branch Insurance Committee.—It was resolved that Messrs. Capes and Clatworthy should serve on the National Insurance Committee of the Branch.

Model Ethical Rules.—Model Rules of Ethical Procedure were then considered. Dr. Norton proposed, Dr. Bott seconded, and it was resolved:

That the Central Ethical Committee be informed that this Division is of the opinion that with regard to the new Model Rules of Ethical Procedure, in the event of a member offending, he should have the right to be represented by counsel in the final court of appeal.

Dr. Parkes Peers proposed, Dr. Moran seconded, and it was resolved:

That the rules be adopted by the Division.

Public Medical Service.—The Model Scheme of a Public Medical Service was then considered, and it was resolved:

That the scheme be not discussed, as it was considered to be unworkable in the neighbourhood.

Annual Representative Meeting.—Dr. Parkes Peers then read his report as Representative at the Annual Meeting at Liverpool. The report was unanimously adopted, and the Representatives were thanked for their services.

Contract Practice and Uninsured Persons.—An informal debate then followed on contract practice as it affected uninsured persons.

South Midland Branch:

Buckinghamshire Division.

A meeting of this Division was held at High Wycombe on October 22nd. Dr. Benson took the chair. The total number present was twenty-nine.

Agenda.—It was proposed that the agenda be altered, and that the Public Medical Service scheme be considered first. The Ethical Rules were passed, and as Dr. Hogarth, the medical officer of health for the county, had sent a telegram regretting his inability to be present, it was resolved to postpone consideration of the Tuberculosis Scheme Model Rules until he could attend.

Annual Representative Meeting.—Dr. Durran gave his report, as Deputy Representative, of the annual meeting at Liverpool, and a hearty vote of thanks was accorded to him.

Public Medical Service.—Dr. Smith Wynne proposed and Dr. Wheeler seconded:

That a general discussion take place on the feasibility of a public medical service scheme and its applicability to this district.

This was carried. Dr. Wheeler stated that the formation of a public medical service was a matter of extreme urgency, and that in any case the medical men there had decided to draw up a scheme and have it ready by December 1st. They had all resigned their clubs and had nothing to take their place. The Regulations were quite impossible to work under. He believed they had been kept waiting and waiting for a definite statement from the Government with the object of driving them into a corner. The time was now getting short. He thought a flat rate was best in Wycombe, and the best way to compel every suitable person to join the scheme was to keep a black list of those who did not pay, and refuse to attend any one unless they paid at the time. They would then soon realize the advisability of joining the service. He proposed:

That the Provisional Local Medical Committee be requested to at once formulate a scheme and submit it to the next meeting of the Division.

Dr. Reynolds, in seconding, said it was incumbent on them to formulate a scheme in case they did not come to an agreement with the Government. Dr. Rose said a "black list" would be a troublesome task for the whole county. He thought that if the Government offered them 8s. 6d. they ought to accept. All voluntary schemes would be a failure—people preferred to spend their money on picture palaces and such like. He thought it was a mistake for the British Medical Association to stand on a pedestal and say, "We refuse to budge from our minimum demands." He thought they should accept 8s. 6d., if offered, and all the Aylesbury doctors thought the same. The Government could find 1,000 men and put them in the thickly populated areas, put part-time men in more scattered districts, and give the money back to others. The profession were formerly never represented on a club committee, but it was on the Local Insurance Committee, and it had more friends than enemies on these committees. The income limit could be fixed in Buckinghamshire, but he was not strongly in favour of it. Dr. Dunbar Dickson elicited from Dr. Rose that, supposing the grant were not 8s. 6d., the local Insurance Committee would make up the balance. The Public Medical Service scheme had many drawbacks. Nobody knew what the cost would be. It would be impossible to work in scattered areas. Dr. Perrin said it would be much better if they could work under the Act, but the Regulations made it impossible. Dr. Benson explained Section 28 of the Regulations, in which it was stated that

the medical men were only to have what remained after the chemists had been paid. Dr. Durran ridiculed the idea of whole-time men, and said it was only a matter of keeping united and they were bound to win. The income limit was the fundamental point to insist on. He himself thought they should refuse to work under the Act even if they had no public medical service, and carry on their practices on private practice lines, and treat the poor, if necessary, for nothing rather than sacrifice their independence. Under the Regulations the profession was treated as worse than fool. A letter was read from Dr. Cox stating that the estimated cost of administering a Public Medical Service scheme was 13 per cent. to 16 per cent. Dr. Wheeler's resolution was carried *nemine contradicente*. Dr. Larking proposed and Dr. Fleck seconded:

> That in the opinion of the Buckinghamshire Division there is no objection to the principle of co-operation with representatives of the local Insurance Committees in the formation of public medical services.

This was carried by 15 votes to 2. Discussing the fees to be charged, Dr. Henderson said it was a mistake to make any difference between insured and uninsured members. It should not be mentioned at all. Their scheme was for all persons. The uninsured did not have deductions made from wages, and so could afford to pay as much as insured. He agreed to a sliding scale, and thought Class A should be treated very leniently.

NORTH OF ENGLAND BRANCH:

Durham Division.

A meeting of all practitioners in the Division was held at the County Hotel, on Friday, October 11th, at 3.30 p.m., Dr. Smith in the chair. Thirteen were present.

Contract Practice Resignations.—The Secretary reported that 10 resignations, involving 6 men, had been received. Of the 26 general practitioners in the Division, 25 had either sent in resignations or held none. After discussion the following resolution, proposed by Dr. Smith, seconded by Dr. Pain, and amendment were put to the meeting:

> That the resignations be held over, and that the Medical Secretary be informed that they are in our Secretary's hands.

It was proposed by Dr. G. Denholm and seconded by Dr. A. Brown:

> That the resignations be sent in forthwith in accordance with the British Medical Association's policy.

The amendment was carried by 7 votes to 5, one member not voting.

NORTH WALES BRANCH.

The annual meeting of this Branch was held at the Masonic Hall, Barmouth, on Tuesday, September 10th, at 2 p.m. Mr. Evan Williams, President, was in the chair, and fifty-eight members were present.

Introduction of the President-elect.—The President introduced the President-elect (Dr. Hugh Jones, Dolgelly), who took the chair, and proposed a vote of thanks to the retiring President for the able manner in which he had filled the chair during the past year. This was seconded by Mr. E. D. Evans and carried unanimously. Mr. Evan Williams suitably acknowledged the thanks of the meeting.

Annual Report of Branch Council.—The Honorary Secretary read the annual report of the Branch Council, which gave a summary of the work done during the year, and congratulated the Branch upon its prosperous condition. References were made to the deaths of Drs. Burlingham, J. T. Jones, Howell White, R. Arthur Prichard, and Mr. James Taylor (Chester). The Council urged upon the members to stand loyally for the principles and demands of the profession at the present critical time, and to demonstrate that loyalty by raising a substantial Guarantee Fund. On the proposal of Dr. John Evans, seconded by Mr. J. W. Rowlands, the report was received and adopted.

Election of Officers.—On the proposal of Mr. J. D. Lloyd, seconded by Mr. Evan Williams, Dr. Enoch Moss of Wrexham was elected President for 1913-14. Dr. Moss thanked the members for the honour they had done him.

The President proposed, Dr. Richard Jones seconded, and it was unanimously carried, that Dr. H. Jones Roberts be re-elected Honorary Secretary.

Election of Branch Council.—The Honorary Secretary reported that the following members had been elected to serve on the Branch Council for the ensuing year: Drs. H. Drinkwater, E. D. Evans, E. Moss, D. Lloyd, John Evans, T. W. Clay, J. R. Prytherch, E. O. Price, J. E. Thomas, Hugh Jones, Richard Jones, and J. W. Rowlands.

Places of Meeting for 1913.—On the proposal of Mr. Price Morris, seconded by Dr. Richard Jones, it was agreed to hold the spring meeting as Rhyl and the annual meeting at Llandudno.

Election of Representative Governors of the King Edward VII National Memorial Association.—Dr. John Evans proposed, Mr. E. D. Evans seconded, and it was agreed that Drs. Enoch Moss and H. Jones Roberts be elected the Representives of the Branch on the Board of Governors of the National Memorial Association.

Election of a Representative on the Court of Governors of the University College of North Wales.—Dr. Richard Jones proposed, Mr. R. H. Mills-Roberts, C.M.G., seconded, and it was agreed that Dr. J. Medwyn Hughes be elected to fill the vacancy caused by the death of Mr. R. Arthur Prichard.

Representation on the Central Council.—Dr. Emyr O. Price proposed, Mr. Livingstone Davies seconded, and it was unanimously resolved to forward the following resolution to the Central Council:

> That this meeting of the North Wales Branch desires to call the attention of the Central Council to the fact that this year, for the first time in its history, the Branch has failed to secure its own representative on the Central Council, and to appeal for such a rearrangement of seats as will enable a Branch covering such a wide and important area to have its own separate representative.

National Insurance Act.—The remainder of the meeting was taken up with a free discussion of the provisions of the Insurance Act and their effect on practice, the following taking part: Drs. E. Moss, E. D. Evans, J. D. Lloyd, J. W. Rowlands, T. H. Jones, John Evans, E. O. Price, Richard Williams, J. H. Morris-Jones, H. R. Griffith, John Jones, T. W. Clay, E. Goody, E. Lloyd Owen, H. W. Fox, S. Edwards-Jones, and the President.

President's Address.—Owing to the time of the meeting having been taken up with the above discussion, the President's address, together with the papers of Drs. E. O. Price and J. Lloyd Roberts (Liverpool) were postponed.

Cases.—Dr. H. Jones Roberts showed after the meeting a case of compound comminuted fracture of the lower jaw, and of reduction of a dislocation of the hip-joint by the open method.

Luncheon.—Prior to the meeting, the members lunched together at the Corsygedol Hotel.

SOUTH-EASTERN BRANCH:

Brighton Division.

An ordinary meeting was held at the New Road Lecture Hall on October 15th. Dr. Ryding Marsh was in the chair, and forty-three members and two visitors were present. Every member of the profession in the Division received an invitation.

Letters.—The Secretary read the correspondence from the Medical Secretary with regard to the new Model Ethical Rules, the date of the Special Representative Meeting, and the model scheme for the treatment of tuberculosis.

Provisional Medical Committee. — The Provisional Medical Committee was reappointed until the date of the Division Meeting to be held in December, 1912. The Chairman of the Provisional Medical Committee, in moving the report of that Committee on the recent appointment of the medical officer of health for Brighton as chief tuberculosis officer, read correspondence with the President of the Local Government Board on the matter. This appointment appears to the Committee not to be in accordance with the evident intentions of the Act and of the Astor report. The matter is still under consideration. The Provisional Medical Committee is considering the question of schemes for public medical service, and the meeting recommended to the Provisional Medical

Committee that it should appoint a small subcommittee to carefully consider all such proposals in detail.

Schools Committee.—The Schools Committee reported that the senior members of hospital staffs of Brighton and Hove have been approached with the request that they will further consider the question of treatment of children suffering from scheduled diseases with a view to excluding such children from treatment at the hospitals. The Brighton Education Committee has advertised for a junior school doctor to combine the duties of inspection and treatment of elementary school children. The Warning Notice in the Journal has been continued, and two intending candidates have definitively withdrawn from the appointment, although the circular informing them of the resolutions of the Division and Minute 97 of the Birmingham meeting has only been sent within the last few days. The scheme of the Hove Education Committee for treatment at a clinic by medical officers appointed part time was approved by the Division, but the deputation, consisting of the Chairman and Secretary of the Schools Committee, with Dr. Benham, was appointed to confer with the Hove Borough Education Committee respecting certain matters of detail.

Organization Committee.—The Organization Committee reported that they would recommend the Division to pass the new model ethical rules without alteration, and that they be placed on the agenda of the annual meeting, together with any suggested alteration in the Division rules that may be suggested.

Ethical Committee.—The consideration of the report of the Ethical Committee was adjourned till the next ordinary meeting of the Division on November 19th.

Special Meeting.—A special meeting of the Division to consider the agenda of the Special Representative Meeting will be held on Thursday, November 7th.

Eastbourne Division.

A meeting was held in the Technical Institute, Eastbourne, on October 2nd. Mr. Astley C. Roberts was in the chair, and twenty members were present.

Medical Treatment of School Children.—The Honorary Secretary reported the steps taken to amend the scheme in accordance with the instructions of previous meeting, and the result of an interview he had with the chief medical officer at the offices of the Board of Education thereon, when it was unanimously resolved to refer further consideration of the matter to the subcommittee.

Public Medical Service.—The revised model public medical service scheme (Supplement, September 14th) was considered. After considering the paragraphs *seriatim* it was duly proposed and unanimously resolved:

That Scheme A be adopted provisionally in so far as it applies to insured persons other than domestic servants, whose admission is reserved for further consideration under a payment per attendance system.

Model Ethical Rules.—The model ethical rules (Supplement, September 21st) were considered. It was proposed and unanimously resolved:

To adopt *en bloc* Rules (A).

To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.

Association Notices.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A list of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

COUNCIL MEETING.

Postponement to October 31st.

The Chairman of Council gives notice that it has been found necessary to postpone the Quarterly Meeting of the Council summoned for Wednesday afternoon, October 30th, until

10 o'clock in the forenoon of Thursday, October 31st.

The object of this postponement is in order that the members of the Council may have as much time as possible to consider the Report of the State Sickness Insurance Committee on the Provisional Regulations for Medical Benefit and other matters with regard to National Insurance, which it is hoped to issue to them at the end of this week.

The meeting will be held in the Council Room, at 429, Strand, London, W.C.

By Order,
Guy Elliston,

Oct. 17th, 1912. *Financial Secretary and Business Manager.*

BRANCH AND DIVISION MEETINGS TO BE HELD.

Birmingham Branch: Coventry Division.—A meeting of this Division will be held at the Coventry and Warwickshire Hospital at 8.30 p.m. on Tuesday, November 5th. (1) To receive communications. (2) To consider the report to be issued November 2nd. (3) To instruct our Representative. (4) Any other business.—Duncan Davidson, Honorary Secretary.

Metropolitan Counties Branch: City Division.—The next meeting of this Division will be held at St. Bartholomew's Hospital (by invitation of the Medical Staff Committee) on Tuesday, November 12th, at 4.30 p.m., when Mr. W. H. H. Jessop and Mr. Holmes Spicer will give a demonstration on cases in the Out-patient (Ophthalmic) Department.—A. G. Southcombe, Honorary Secretary, 83, Sidney Road, Homerton, N.E.

Metropolitan Counties Branch: New Lambeth Division.—A meeting of this Division will be held at the Brixton Town Hall, on Thursday, October 31st, at 4 p.m. Agenda: (1) To adopt model rules for the Division and model rules for ethical procedure; (2) To elect the officers of the New Lambeth Division.—J. H. Clatworthy.

South-Eastern Branch: Brighton Division.—A special meeting to consider the agenda of the Special Representative Meeting will be held on Thursday, November 7th.—C. H. Benham, Honorary Secretary, Brighton.

BRITISH MEDICAL ASSOCIATION LIBRARY.

Books Needed to Complete Series.

The Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Association of Genito-Urinary Surgeons. Transactions. 1906.
American Climatological Transactions. Vols. 1, 4, 5, 6.
American Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.
American Journal of the Medical Sciences. New series, vols. 4, 5, 1842-3; vols. 14, 15, 1847-8; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-5; vol. 59; or any parts of these vols.
American Journal of Ophthalmology. Vols. 1-9.
American Laryngological Association. Transactions. Vols. 1-6, 8-9.
American Medical Association. Transactions, 2, 4, 6, 7, 11, 12, 14, 15, 16, 19, 20, 22, 31, after vol. 33, and the *Journal*, up to 1903 inclusive.
American Medico-Psychological Association. Transactions. Vol. 13, 1906.
American Otological Society. Transactions. Vol. 3, part 2, 1885.
American Public Health Association. Transactions. Any vols.
Analyst. Vols. 1-24.
Annals of Surgery. Vols. 13, 14, 26.

Archiv für Dermatologie und Syphilis. Bd. 24 and 25 (1892 and 1893).
Archives générales de médecine. Third new series 7-8 (1839-40); 4th series, 10-17, 20-25, 1852-55, 1858-64, 1872-1897; 1846-55 inclusive; 1857-64 inclusive; 1871.
Archives of Ophthalmology. Vols. 1-3, 6, 7, 14, 15, 16 and 20.
Archives of Otology. Vols. 1-7, and 20-22.
Archives de Parasitologie. Vols. 1-8.
Archives of Pediatrics. Vols. 1-16.
Asylum Journal of Mental Science. Vol. 1, 1854.
Biochemical Journal. Vols. 1-4.
British Dental Journal. Vols. 1-29.
Biometrika. Vols. 2-6.
British Journal of Dermatology. Vol. 2, part 3.
British Laryngological and Rhinological Association. Transactions 1896-7-8-9.
Caledonian Medical Journal. Vol. 1 prior to 1894.
Canada Medical Journal. Vols. 1-4, 6, and after 8.
Carmichael Essays. Rivington, 1879.
Centralblatt für Augenheilkunde. Hirschberg. All prior to 1891; Index to 1891.
Centralblatt für Bakteriologie. Bound volumes prior to 1899.
Centralblatt für medicinische Wissenschaften. Vols. 1-19.
Centralblatt für Nervenheilkunde. 1878, 1879, 1886, 1889, 1890, 1892, and since 1893.
Congrès Français de Chirurgie. Transactions 1, 2, 3, 6, and 10, and all since 11th.
Congrès Internat. d'Obstétrique et de Gynécologie. 3. Amsterdam, 1899.
Congress für innere Medicin: Verhandlungen. 1-12, and 14, and since 18.
Dermatological Congress. Vienna, 1892.
Dermatologischer Jahresbericht, 1906-1908.
Dermatologische Zeitschrift. Vols. 1-16.
Dublin Quarterly Journal of the Medical Sciences. Vols. 1, 10, 17, 20, 28, and 35-40.
Edinburgh Obstetrical Transactions. Vol. 5.
Glasgow Medical Journal. 1833 and 1853-1868.
Glasgow Pathological Society. Transactions 1 and 2.
Guy's Hospital Gazette. Nos. 1 and 5. 1872.
Indian Medical Gazette. 1868-1884.
Intercolonial Medical Journal, Australasia. Vols. 1-13.
International Congress on Alcohol. Proceedings of First to Eleventh.
International Congress of Genetics. Transactions. (1) London 1899, (2) New York 1902, (3) London 1906.
International Congress of School Hygiene. Transactions of First Congress, Nüremberg.
International Congress of Hygiene. Transactions of Congresses 1-6 and 10-12.
International Medical Congress. Budapest, 1909. Section 4, Part 2; Section 7B, Part 1; Section 15, Part 2.
International Ophthalmological Congress. Transactions of Fifth; New York, 1876.
Jahrbuch für Kinderheilkunde. Bd. 1-9.
Jahresbericht Neurologie und Psychiatrie, 6 and 11-14.
Janus. All vols., 8-15.
Journal of Association of Military Surgeons. Vol. 19, 1906.
Journal of Laryngology. Vols. 1-9.
Journal of Medical Research. Vols. 1-20.
Lakeside Hospital Clinical and Pathological Papers, Series 2.
Lancet, January 2nd, 1858.
Laryngoscope. Vols. 1-20.
Liverpool Medico-Chirurgical Journal. Nos. 15, 16, 28, 29, 35, and 37-54.
London Hospital Gazette. Vols. 1-6.
Medical Officer. Vols 1 and 2.
Montreal Medical Journal. Vols. 1-16.
New York Pathological Society. Proceedings prior to 1888, 1890, 1892-1898, 1901-1904.
New York State Journal of Medicine, 1906.
Ophthalmic Review. January, 1882.
Ophthalmoscope. Vols. 1-8.
Pediatrics, prior to 1902.
Provincial Medical and Surgical Journal. March to September, 1841.
Ramazzini, Diseases of Tradesmen. Translated by James.
Recueil d'ophtalmologie. Prior to 1893.
Revue de gynécologie. 1-16, Pozzi.
Revue générale d'ophtalmologie. Prior to 1893.
Revue neurologique. Prior to 1893 and since that date.
St. Bartholomew's Hospital Gazette. Vols. 1-6.
St. George's Hospital Gazette. Vols. 1-7.
Sanitary Commissioner with the Government of India Reports, 1-24.
Sei-i-kwai Medical Journal. Vols. 1-11.
Semaine Médicale. Prior to 1884. Titles for 1884 and 1895.
South African Medical Journal. February and April, 1895. Titles, Vols. 3 and 4.
St. Mary's Hospital Gazette. Vol. 4.
United States Department of Agriculture, Bureau of Animal Industry. Reports 1-7, 10-14.
United States Hygienic Laboratory Bulletins. Nos. 3, 8, 9, 10, 11, 12, 13, 15, 17, 18, 19, 24, 29, 43.
Virchow's Archiv. Vols. 1-150.
Watt. Bibliographia Britannica, 4 vols. 1824.

Naval and Military Appointments.

ROYAL NAVY MEDICAL SERVICE.

The following appointments have been announced at the Admiralty: Deputy Surgeon-General George Welch to the Admiralty as Deputy Director-General, Medical Department, vice Crowley. Fleet Surgeon Daniel J. P. McNabb to the *President*, additional temporary, for service at the Medical Department, Admiralty, dated October 10th, 1912. Fleet Surgeon Thomas D. Halahan, M.B., F.R.C.S.Edin., to the *Hercules*, and for general staff duties, vice McNabb, dated October 10th, 1912. Fleet Surgeon Henry F. Iliewicz, M.B., to the *Inflexible*, on recommissioning, and *Good Hope* for voyage home on transfer of flag, November 5th, 1912. Fleet Surgeon George T. Collingwood, M.V.O., to the *Inflexible* for general staff duties on transfer of flag. Fleet Surgeon James Lawrence Smith, M.V.O., M.B., to be Deputy Surgeon-General, July 22nd, 1912. Fleet Surgeon Alexander G. Wildey to be Deputy Surgeon-General, October 6th, 1912. Staff Surgeon Augustus J. Laurie to the *Victory*, for R.N. Barracks, vice Ross. Staff Surgeon Gerald Nunn to the *Shearwater*, on recommissioning. Staff Surgeon Nelson J. Roche to Gibraltar for medical charge for voyage out, and *Newcastle* on recommissioning. Staff Surgeon John P. H. Greenhalgh, M.B., to Gibraltar for medical charge for voyage home on *Newcastle* paying off. Staff Surgeon J. G. Wallis, M.B., to the *Thetis*, vice Roche, dated October 23rd, 1912. Staff Surgeon Ewen Cameron, M.B., to Gibraltar for voyage out, and *Espiegle* on recommissioning. Staff Surgeon John Macdonald, M.D., to Gibraltar for voyage home on *Espiegle* paying off. Surgeon John H. B. Martin, M.B., to the *Inflexible* on transfer of flag. Surgeon Horace E. R. Stephens, M.B., to the *Inflexible* on transfer of flag. Surgeon Walter G. Edwards to the *Inflexible* on recommissioning, and *Good Hope* for voyage home on transfer of flag, November 5th, 1912. Surgeon Charles D. Bell, M.B., to the *Virid*, additional for disposal on *Essex* paying off, and *Impregnable* additional for *Powerful*, vice Bainbridge, November 4th, 1912.

Fleet Surgeon Alexander George William Bowen, M.B., has been placed on the retired list, dated October 11th, 1912.

Royal Naval Volunteer Reserve.

Francis H. Watson, M.B., has been appointed Surgeon, dated October 11th.

ARMY MEDICAL SERVICE

Royal Army Medical Corps.

Major H. A. Bray, officer in charge of the Auxiliary Hospital, Woolwich, has been selected for employment with the Egyptian Army.

Major H. H. Norman, from Shwebo, has been appointed to the Herbert Hospital, Woolwich.

The undermentioned Lieutenants are confirmed in their rank: Robert A. Greenwood, Philip N. Button, William F. McLean, M.B., Robert M. Beath, Thomas Walker, William St. L. Dowse, William McN. Walker, M.B., William McK. H. McCullagh, Samuel R. Armstrong, Edward A. Wilson, Treffery O. Thomson, Gerald F. V. Leary, John Campbell.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel W. A. Sykes, D.S.O., M.B., has retired from the service with effect from July 16th, 1912.

Lieutenant-Colonel E. R. Carroll has retired from the service with effect from August 25th, 1912.

Lieutenant-Colonel C. E. L. Gilbert is permitted to retire from the service with effect from September 21st, 1912.

Lieutenant N. S. Cormack is appointed a Specialist in Ophthalmology.

Captain R. W. Willcocks has been confirmed in civil employment in the Madras Presidency.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

Charles G. H. Morse, late Staff Sergeant, University of London Contingent, Officers' Training Corps, to be Lieutenant on probation, dated September 16th, 1912.

TERRITORIAL FORCE.

Royal Army Medical Corps.

First London (City of London) Field Ambulance.—Lieutenant Arthur D. J. B. Williams is seconded under the conditions of paragraph 112 of the Territorial Force Regulations for service under the Colonial Office, dated May 1st, 1912.

Third Northumbrian Field Ambulance.—Lieutenant William A. Thompson to be Captain, dated July 1st, 1912; Lieutenant Mervyn A. Archdale, M.B., to be Captain, dated September 24th, 1912.

First Southern General Hospital.—Lieutenant-Colonel George J. Lloyd, M.B., F.R.C.S., from the permanent personnel, on completion of his period of service in command, to be Lieutenant-Colonel, whose services will be available on mobilization, dated July 1st, 1912. Lieutenant-Colonel Frank Marsh, F.R.C.S., from the list of officers whose services will be available on mobilization, to be Lieutenant-Colonel on the permanent personnel, dated July 1st, 1912.

Fourth Southern General Hospital.—Major William C. Wilson, M.D., resigns his commission, dated January 28th, 1912; William Cheyne Wilson, M.D., to be Captain, dated January 28th, 1912; Captain William Cheyne Wilson, M.D., to be Major, dated January 29th, 1912.

Notts and Derby Mounted Brigade Field Ambulance.—Lieutenant ALEXANDER M. WEBBER, M.B., F.R.C.S., resigns his commission, dated October 12th, 1912.

Third West Riding Field Ambulance.—Major FREDERICK A. HADLEY is seconded under the conditions of paragraph 114 of the Territorial Force Regulations, dated September 6th, 1912.

Second Scottish General Hospital.—Lieutenant-Colonel (Lieutenant-Colonel retired I.M.S.) FRANK W. THOMSON, M.B., on completion of his period of service in command, is retired, and is granted permission to retain his rank and to wear the prescribed uniform, dated October 19th, 1912. Lieutenant-Colonel SIR JOSEPH FAYRER, Bart., M.D., F.R.C.S.E., Reserve of Officers, to be Lieutenant-Colonel, dated October 19th, 1912.

Third Scottish General Hospital.—Lieutenant-Colonel SIR HECTOR C. CAMERON, M.D., to resign his commission, dated October 19th, 1912.

Attached to Units other than Medical Units.—Captain JOHN F. CHRISTIE, M.B., to be Major, dated August 2nd, 1912. Captain JAMES M. DUNCAN, M.B., to be Major, dated July 4th, 1912. Major JOHN O. WILSON, M.D., resigns his commission and is granted permission to retain his rank and wear the prescribed uniform; dated October 12th, 1912. Captain WILLIAM DOIG, M.D., to be Major, dated August 25th, 1912. Lieutenant FRANCIS R. M. HEGGS to be Captain, dated September 1st, 1912. Lieutenant ROBERT RRUCE, M.B., to be Captain, dated September 17th, 1912.

For Attachment to Units other than Medical Units.—Captain HERBERT HUGH B. CUNNINGHAM, M.D., F.R.C.S.I., from the unattached list for the Territorial Force, to be Captain, dated August 3rd, 1912. HASTINGS FOOTMAN EVERETT to be Lieutenant, dated September 17th, 1912.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Army Medical Service have been officially reported to have taken place during September:

		FROM	TO
Lieut.-Col.	J. M. F. Shine, M.D.	Jersey	Belfast.
,,	G. Cree	London	Bordon.
,,	P. C. H. Gordon	Pembroke Dk.	Jersey.
,,	J. J. Gerrard, M.B.	York	West Africa.
,,	J. Donaldson	Murree	Rawal Pindi.
,,	R. J. Windle, M.B.	Royal Hospital, Kilmainham	Dublin.
,,	B. J. Inniss	Belfast	Mauritius.
,,	A. J. Luther	Fermoy	South Africa.
Major	R. J. W. Mawhinny	Athlone	India.
,,	F. W. Begbie	Colchester	India.
,,	T. P. Jones, M.B.	Woolwich	Pembroke Dock.
,,	R. C. Lewis	Pembrey C'mp	Gibraltar.
,,	W. J. Taylor, M.B.	—	Colchester.
,,	T. H. J. C. Goodwin, D.S.O.	Tidworth Park	Devonport.
,,	K. B. Barnett, M.B., F.R.C.S.I.	Hythe	Shorncliffe.
,,	A. C. Fox	Maryboro Heath	Curragh.
,,	St. J. B. Killery	York	India.
,,	J. C. B. Statham	London	West Africa.
,,	A. J. MacDougall, M.B.	Ballykinler	Athlone.
,,	T. H. M. Clarke, C.M.G., D.S.O., M.B.	Salisbury	R. Hospital, Kilmainham.
,,	E. Brodribb	Hythe	Shorncliffe.
,,	S. de C. O'Grady, M.B.	Cairo	Tower of London.
,,	P. H. Collingwood	Devonport	Tregantle.
,,	J. S. Gallie	Tower of London	Caterham.
,,	L. Humphry	Poona	Chatham.
,,	G. G. Delap, D.S.O.	Aldershot	Pretoria.
,,	G. J. Houghton	—	London.
,,	F. S. Walker, F.R.C.S.I.	Cork	Fermoy.
,,	P. S. Lelean, F.R.C.S.	Meerut	Colchester.
,,	L. L. G. Thorpe	Tidworth	Cosham.
Captain	A. W. Gibson	Gibraltar	India.
,,	A. H. McN. Mitchell	Tidworth	Netley.
,,	D. L. Harding, F.R.C.S.I.	Finner Camp	Omagh
,,	R. Storrs	Tidworth	Portsmouth.
,,	R. L. V. Foster, M.B.	,,	Crown Hill.
,,	J. W. S. Seccombe	Crown Hill	Devonport.
,,	H. V. Bagshawe	Aberystwyth Camp	Egypt.
,,	J. G. Bell, M.B.	Kendal Camp	Seaforth.
,,	F. C. Lambert	Liverpool	Pembroke Dock.
,,	R. C. Wilmot	Colchester	Hythe.
,,	G. H. J. Brown, M.B.	Edinburgh	Aberdeen.
,,	D. G. Carmichael, M.B.	,,	Ayr.
,,	F. M. M. Ommanney	R.A.M. Coll.	Chatham.
,,	G. A. Kempthorne	Plymouth	Tregantle.
,,	J. T. McEntire, M.B.	—	W. Africa.
,,	N. E. Dunkerley	Sheffield	Bradford.
,,	J. Fairbairn, M.B.	—	Dublin.
,,	J. H. Douglas, M.D.	Belfast	Enniskillen.
,,	A. L. Otway, M.B.	,,	Londonderry.
,,	C. H. Turner	Dublin	Curragh.
,,	A. A. Meadon	Fermoy	Cahir.
,,	A. S. Arthur, M.B.	Chester	Liverpool.
,,	R. C. Hallowes, M.B.	Belfast	Armagh.
,,	J. H. Campbell, M.B.	Rhayader Camp	Chester.
,,	A. T. Frost, M.B.	Dublin	Galway.
,,	R. G. Meredith, M.B.	Aberystwyth Camp	Lichfield.
,,	R. K. White	Weedon	Aldershot.
,,	E. B. Booth, M.D.	Belfast	Dundalk.
,,	J. A. Anderson, M.B.	Stobs Camp	Edinburgh.
,,	C. G. Browne	Lucknow	S. Command.
,,	W. McConaghy, M.B.	Woolwich	Guildford.
,,	C. J. Wyatt, M.B.	Landguard Fort	Chatham.
,,	M. [illegible]	Weedon	Colchester.
,,	L. S. Smyth, M.D.	Ambala	S. Command.
,,	A. D. O'Carroll, M.B.	Sling Plantation	Bulford.
,,	A. S. Littlejohns	Wynberg	Simonstown.
,,	A. H. Bond	Delhi	Ireland.
,,	E. J. Elliot, M.B.	Kendal	Chester.
Captain	A. D. Fraser, M.B.	Magilligan Camp	Londonderry.
,,	A. C. Elliott M.B.	Campbellpore	Rawal Pindi.
,,	F. M. Hewson	Karachi	Hyderabad.
,,	W. H. S. Burney	Douard	India.
,,	T. B. Nicholls, M.B.	Khartoum	Cairo.
Lieutenant	G. H. Dive	London	Tientsin.
,,	A. G. Jones, M.B.	Tidworth	India.
,,	J. M. Weddell	London	,,
,,	V. P. Hutchinson	Netley	South Africa.
,,	J. T. Simson, M.B.	Aldershot	Egypt Army.
,,	E. T. Gaunt, M.B.	Dover	Malta.
,,	E. L. Fyffe, M.B.	Buttevant	Cork.
,,	G. O. Chambers	Lichfield	Leicester.
,,	L. F. K. Way	Tidworth	S. Africa.
,,	W. S. R. Steven, M.B.	Woolwich	Hounslow.
,,	W. A. Frost, M.B.	Tregantle	Devonport.
,,	W. L. Webster, M.B.	Cork	Kilworth Camp.
,,	H. J. G. Wells, M.B.	,,	Queenstown.
,,	F. S. Tamplin	Larkhill Camp	Sling Plantation Camp.
,,	W. Stewart, M.B.	Colchester	Gt. Yarmouth.
,,	A. S. Heale	Cosham	Malta.

Lieutenant-Colonel W. A. Morris, retired pay, has been placed in the medical charge of troops at Scarborough.

COLONIAL MEDICAL SERVICES.

THE following changes have been notified by the Colonial Office:

WEST AFRICAN MEDICAL STAFF.

New Appointments.—The following gentlemen have been selected for appointment to the staff: E. L. ANDERSON, M.B., Ch.B.Vict., L.S.A. Lond., D.T.M.Liverpool, Southern Nigeria; T. R. SANDEMAN, M.B., Ch.B.Edin., Southern Nigeria; E. F. WARD, M.B., B.Ch., B.A.O. Belfast, Sierra Leone.

Promotions.—W. J. TAYLOR, M.R.C.S.Eng., L.R.C.P.Lond., D.T.M. Liverpool, M.D., C.M.Toronto, Medical Officer, Southern Nigeria, to be a Senior Medical Officer, Northern Nigeria: D. BURROWS, L.R.C.P., L.R.C.S.Edin., L.F.P.S.Glasg., L.M. and S.Hyderabad, Medical Officer, Sierra Leone, to be a Senior Medical Officer, Southern Nigeria.

Retirement.—W. M. GRAHAM, M.B., B.Ch.Dubl., Head of the Medical Research Institute, Lagos, retires on pension.

Resignation.—H. de C. DILLON, M.B., B.Ch., B.A.O.Dubl., L.M. Rotunda, D.T.M.Liverpool.

Death.—E. H. READ, M.R.C.S.Eng., L.R.C.P.Lond., L.S.A.Lond. Senior Medical Officer, Southern Nigeria.

OTHER COLONIES AND PROTECTORATES.

E. GLENNY, F.R.C.S., L.R.C.P.Irel., L.M.Rotunda, has been selected for appointment as a Medical Officer in the Straits Settlements. W. R. W. JAMES, L.R.C.S., L.R.C.P.Edin., L.F.P.S.Glasg., has been selected for appointment as a Medical Officer in the Gilbert and Ellice Islands. A. C. M. MCHATTIE, M.B., Ch.B.Edin., D.P.H.Cantab., has been selected for appointment as Chief Medical Officer, Bahamas. H. R. NEILSON, M.B., Ch.B.Aberd., A. H. OWEN, M.R.C.S.Eng., L.R.C.P. Lond., and B. SPEARMAN, M.B., B.C., D.T.M.and H.Cantab., have been selected for appointment as Temporary Medical Officers in Uganda. C. B. PASLEY, F.R.C.S., L.R.C.P.Irel., and K. SIMPSON, M.B., Ch.B. Edin., have been selected for appointment as Medical Officers in the Federated Malay States. A. D. J. B. WILLIAMS, M.R.C.S.Eng., L.R.C.P. Lond., has been selected for appointment as a Medical Officer in the East Africa Protectorate. H. F. HARDIE, L.D.S.Edin., has been selected for employment as Government Dental Surgeon in West Africa. G. W. ROYLE, L.D.S.Eng., has been selected for employment as Government Dental Surgeon in the Falkland Islands.

Vital Statistics.

VITAL STATISTICS OF LONDON DURING THE THIRD QUARTER OF 1912.

IN the accompanying table will be found summarized the vital statistics of the metropolitan boroughs and of the City of London, based upon the Registrar-General's return for the third quarter of the year. The mortality figures in the table relate to the deaths of persons actually belonging to the several boroughs, and are obtained by distributing the deaths in institutions among the boroughs in which the deceased persons had previously resided. The 27,700 births registered in London were equal to an annual rate of 24.6 per 1,000 of the population, estimated at 4,519,754 persons in the middle of the year; in the corresponding quarters of the three preceding years the rates were 25.6, 25.2, and 24.9 per 1,000 respectively. The lowest birth-rates last quarter were 12.4 in the City of London, 13.4 in the City of Westminster and in Hampstead, 17.5 in Kensington, 18.1 in Chelsea, and 19.0 in Stoke Newington; among the highest rates were 27.7 in Poplar, 28.3 in Lambeth, 30.3 in Shoreditch, 31.2 in Stepney, 31.5 in Bermondsey, and 35.2 in Finsbury.

During last quarter the deaths of 12,973 London residents were registered, equal to an annual rate of 11.5 per 1,000; in the corresponding quarters of the three preceding years the rates were 11.5, 11.1, and 15.5 per 1,000. The death-rates last quarter ranged from 7.1 in Hampstead, 8.4 in Lewisham, 8.9 in Wandsworth, 9.1 in Woolwich, and 9.6 in Paddington to 14.1 in Southwark, 14.2 in Poplar, 15.8 in Bermondsey, 16.6 in Shoreditch, and 16.7 in Finsbury.

The 12,973 deaths from all causes included 29 from enteric fever, 376 from measles, 44 from scarlet fever, 182 from whooping-cough, 107 from diphtheria, and 629 among children under 2 years of age from diarrhœa and enteritis. The mortality from measles was considerably above the average, but from scarlet fever, diphtheria, and whooping-cough it was less than the average; for diarrhœa and enteritis among children under 2 the average mortality is not available for comparison. Enteric fever was proportionately most fatal last quarter in Kensington, Fulham, St. Marylebone, Finsbury, Poplar, and Lewisham; measles in St. Marylebone, Holborn, Finsbury, Poplar, and Bermondsey; scarlet fever in Kensington, Hammersmith, Fulham, Shoreditch, Deptford, and Greenwich; whooping-cough in Hammersmith, Fulham, Chelsea, Holborn, Finsbury, and Shoreditch; and diphtheria in Hammersmith, Shoreditch, Bermondsey, Greenwich, Lewisham, and Woolwich. The mortality from diarrhœa and enteritis among children under 2, measured in proportion to the number of births, was greatest in Paddington, the City of London, Shoreditch, Stepney, Poplar, Southwark, and Bermondsey.

The deaths from phthisis last quarter among London residents

Analysis of the Vital Statistics of the Metropolitan Boroughs and of the City of London after Distribution of Deaths occurring in Public Institutions during the Third Quarter of 1912.

Boroughs.	Estimated Population middle of 1912.	Births.	Deaths.	Annual Rate per 1,000 Living.		Deaths from								Deaths of Children Under 1 Year of Age to 1,000 Registered Births.
				Births.	Deaths.	Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping-cough.	Diphtheria.	Diarrhœa and Enteritis (Under 2 Years).	Phthisis.	
COUNTY OF LONDON	4,519,754	27,700	12,973	24.6	11.5	29	—	376	44	182	107	629	1,333	81
Paddington	142,362	632	310	19.2	9.6	1	—	5	1	3	1	22	25	81
Kensington	171,746	750	451	17.5	10.5	2	—	1	5	4	1	13	48	73
Hammersmith	122,750	718	358	23.5	11.7	—	—	7	2	9	5	12	36	81
Fulham	155,402	1,017	390	26.3	10.1	5	—	6	4	10	2	6	41	65
Chelsea	65,397	295	194	18.1	11.9	—	—	8	1	4	2	2	19	47
City of Westminster ...	157,248	527	407	13.4	10.4	—	—	2	1	4	5	13	46	55
*St. Marylebone ...	116,155	998	304	34.5	10.5	2	—	22	1	5	--	10	35	51
Hampstead	85,966	288	152	13.4	7.1	—	—	3	—	1	3	1	7	49
St. Pancras	216,145	1,277	714	23.7	13.3	2	—	31	—	10	6	9	68	88
Islington	326,398	1,953	995	24.0	12.2	2	—	28	2	11	10	35	90	85
Stoke Newington ...	50,581	239	129	19.0	10.2	—	—	1	—	1	—	1	5	71
*Hackney	222,986	1,353	596	24.3	10.7	—	—	10	3	6	3	26	79	61
*Holborn	48,026	327	165	27.3	13.8	—	—	10	—	3	1	3	23	61
*Finsbury	86,130	755	358	35.2	16.7	1	—	34	1	6	3	14	37	83
City of London ...	18,695	58	55	12.4	11.8	—	—	—	—	--	--	2	8	86
Shoreditch	110,430	833	456	30.3	16.6	1	—	7	2	10	6	46	52	140
Bethnal Green	127,985	854	401	26.8	12.6	—	—	18	—	7	2	23	52	93
*Stepney	277,315	2,155	886	31.2	12.8	1	—	20	3	10	6	80	104	94
Poplar	161,597	1,116	572	27.7	14.2	3	—	40	—	4	3	39	52	120
Southwark	190,017	1,303	670	27.5	14.1	—	—	29	2	5	7	56	73	111
Bermondsey	125,260	985	494	31.5	15.8	1	—	25	—	6	6	45	48	113
*Lambeth	297,550	2,103	843	28.3	11.4	2	—	21	2	7	6	48	83	61
Battersea	167,589	1,036	430	24.8	10.3	—	—	8	2	10	2	22	44	84
Wandsworth	321,881	1,660	711	20.7	8.9	2	—	10	—	14	3	32	61	72
Camberwell	261,591	1,577	721	24.2	11.1	2	—	13	4	15	4	30	78	76
Deptford	109,377	678	296	24.9	10.9	—	—	9	2	2	2	16	34	75
Greenwich	95,994	626	262	26.2	10.9	—	—	2	3	3	4	14	34	70
Lewisham	165,249	853	347	20.7	8.4	2	—	8	2	8	8	7	31	59
Woolwich	121,932	684	276	22.5	9.1	—	—	1	1	4	6	2	21	51

* No correction is made for births in lying-in institutions; the boroughs principally affected are marked thus (*).

numbered 1,333, and were equal to an annual rate of 1.18 per 1,000; in the corresponding quarters of the three preceding years the rates were 1.13, 0.99, and 1.20 per 1,000. The death-rates from this disease last quarter ranged from 0.33 in Hampstead, 0.40 in Stoke Newington, 0.69 in Woolwich, 0.75 in Lewisham, 0.76 in Wandsworth, and 0.89 in Paddington to 1.52 in Southwark, 1.54 in Bermondsey, 1.63 in Bethnal Green, 1.72 in Finsbury and in the City of London, 1.89 in Shoreditch, and 1.92 in Holborn.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 81 per 1,000 last quarter, against 109, 91, and 203 per 1,000 in the corresponding quarter of the three preceding years. Among the lowest rates recorded last quarter were 47 in Chelsea, 49 in Hampstead, 51 in Woolwich, 55 in the City of Westminster, and 59 in Lewisham; while the highest rates were 93 in Bethnal Green, 94 in Stepney, 111 in Southwark, 113 in Bermondsey, 120 in Poplar, and 140 in Shoreditch.

HEALTH OF ENGLISH TOWNS.

In ninety-five of the largest English towns 8,304 births and 4,800 deaths were registered during the week ending Saturday, October 19th. The annual rate of mortality in those towns, which had been 11.9, 12.3, and 13.7 per 1,000 in the three preceding weeks, had further risen to 14.2 per 1,000 in the week under notice. In London last week the death-rate was equal to 16.8 per 1,000, against 12.2, 13.3, and 15.5 in the three preceding cases. No death was recorded in Northampton, while among the other large towns the death-rates last week ranged from 4.9 in Oxford, 5.8 in Gillingham, 6.3 in Ilford, 6.8 in Grimsby, 7.0 in Edmonton, and 7.1 in Swindon, to 17.5 in Hornsey and in Wolverhampton, 17.9 in Sunderland, 18.2 in Liverpool, 19.1 in Bootle, 20.1 in Middlesbrough, and 20.3 in Dudley. Measles caused a death-rate of 1.5 in Middlesbrough, 1.6 in Birkenhead and in West Hartlepool, 1.7 in Wigan and in Rhondda, 2.1 in West Ham, 2.6 in Tynemouth, and 2.7 in Lincoln; and diphtheria of 1.3 in Portsmouth and 1.6 in Barrow-in-Furness. The mortality from enteric fever, scarlet fever, and whooping-cough showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children under 2 years of age from diarrhœa and enteritis, which had been 134, 153, and 129 in the three preceding weeks, fell to 121 last week, and included 37 in London, 15 in Liverpool, 5 in Stoke-on-Trent and in Birmingham, and 4 in Manchester and in Leeds. The causes of 47, or 1.0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 11 were registered in Birmingham, 5 in Liverpool and in South Shields, and 3 in Gateshead. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,871, 1,995, and 2,095 at the end of the three preceding weeks, further rose to 2,217 on Saturday last; 345 new cases were admitted during the week, against 395, 317, and 322 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In eighteen of the largest Scottish towns, 1,110 births and 568 deaths were registered during the week ending Saturday, October 19th. The annual rate of mortality in those towns, which had been 13.0, 12.2, and 14.1 per 1,000 in the three preceding weeks, declined to 13.6 in the week under notice, and was 0.6 per 1,000 below the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 6.5 in Kirkcaldy, 6.9 in Govan, and 8.4 in Partick to 16.8 in Leith, 17.2 in Hamilton, and 18.9 in Dundee. The mortality from the principal infectious diseases averaged 0.8 per 1,000, and was highest in Dundee and Paisley. The 233 deaths from all causes registered in Glasgow included 6 from diphtheria, 4 from diarrhœal diseases, 1 from measles, and 1 from whooping-cough. Two deaths from diphtheria were recorded in Dundee and 2 in Paisley; 2 deaths from whooping-cough in Partick; 2 deaths from enteric fever in Aberdeen; and 4 deaths from infantile diarrhœa in Dundee.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 19th, 600 births and 365 deaths were registered in the twenty-two principal urban districts of Ireland, as against 571 births and 389 deaths in the preceding week. The annual death-rate in these districts, which had been 14.5, 15.5, and 17.5 per 1,000 in the three preceding weeks, fell to 16.5 per 1,000 in the week under notice, this figure being 2.3 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 19.8 and 14.2 respectively, those in other districts ranging from 4.2 in Drogheda and 5.1 in Tralee to 26.2 in Newry, and 35.2 in Limerick, while Cork stood at 16.3, Londonderry at 6.4, and Waterford at 17.1. The zymotic death-rate in the twenty-two districts averaged 1.9 per 1,000, as against 2.0 in the preceding period.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BARNSLEY: BECKETT HOSPITAL AND DISPENSARY.—Second House-Surgeon. Salary, £100 per annum.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham Road, S.W.—Resident Medical Officer (male). Salary at the rate of £60 per annum.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House Surgeon (Male). Salary, £80 per annum.

BIRMINGHAM EDUCATION COMMITTEE.—Dental Surgeon. Salary, £250 per annum.

BIRMINGHAM: ROYAL ORTHOPAEDIC AND SPINAL HOSPITAL.—Honorary Surgeon.

BRIDGE OF WEIR: CONSUMPTION SANATORIUM.—Assistant Resident Medical Officer (lady).

BRISTOL GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer. Salary at the rate of £50 per annum.

CARDIFF: KING EDWARD VII'S HOSPITAL.—House-Surgeon. Honorarium, £30 for six months.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £160 per annum, rising to £180.

CHARING CROSS HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

DERBYSHIRE COUNTY COUNCIL.—Assistant Tuberculosis Officer. Salary, £400 per annum.

DERBYSHIRE: ROYAL INFIRMARY.—House-Surgeon. Salary, £100 per annum.

DEWSBURY UNION.—Lady Assistant Workhouse Medical Officer. Salary, £100 per annum.

DUDLEY: GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, £120 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—Medical Officer for Electrical Department. Salary, £75 per annum.

GORDON HOSPITAL FOR RECTAL DISEASES, Vauxhall Bridge Road, S.W.—House-Surgeon. Salary, £50 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Third House-Surgeon (Male). Salary, £80 per annum.

HARTLEPOOLS HOSPITAL.—House-Surgeon. Salary, £100 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary at the rate of £70 per annum.

HEREFORDSHIRE COUNTY COUNCIL.—Assistant to Medical Officer of Health. Salary, £250 per annum.

HOSPITAL FOR EPILEPSY AND PARALYSIS, Maida Vale, W.—Resident Medical Officer. Salary at the rate of £50 per annum.

ISLE OF MAN ASYLUMS BOARD.—Assistant Medical Officer for the Lunatic Asylum and Home for the Poor. Salary, £170 per annum.

KENSINGTON DISPENSARY AND CHILDREN'S HOSPITAL, Church Street, W.—Resident Medical Officer. Salary, £100 per annum.

KINGSTON-UPON-HULL INCORPORATION FOR THE POOR.—Resident Medical Officer for the Workhouse and Infirmary. Salary, £225 per annum, rising to £250.

LEAMINGTON SPA: WARNEFORD GENERAL HOSPITAL.—House-Physician. Salary, £85 per annum.

LINCOLN: COUNTY HOSPITAL.—Senior Male House-Surgeon. Salary, £125 per annum.

LONDON HOSPITAL, E.—Assistant Obstetric Physician.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Assistant Resident Medical Officer. Honorarium at the rate of 50 guineas per annum.

LOWESTOFT HOSPITAL.—House-Surgeon. Salary, £100 per annum.

MACCLESFIELD GENERAL INFIRMARY.—Junior House-Surgeon. Salary, £80 per annum.

MAIDSTONE: KENT COUNTY ASYLUM.—Male Fourth Assistant Medical Officer. Salary, £200 per annum.

MAIDSTONE: WEST KENT GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £100 per annum.

MANCHESTER CHILDREN'S HOSPITAL.—Assistant Medical Officer. Salary, £25 for six months.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer and Pathologist. Salary, £60 per annum.

MANCHESTER: ST. MARY'S HOSPITALS.—(1) Three Honorary Surgeons. (2) Two Honorary Assistant Surgeons.

NEWARK-ON-TRENT: HOSPITAL AND DISPENSARY.—Resident Medical Officer. Salary, £100 per annum.

NOTTINGHAM GENERAL DISPENSARY (Branch).—Assistant Resident Surgeon (Male). Salary, £170 per annum.

POPLAR BOROUGH DISPENSARY FOR THE PREVENTION OF CONSUMPTION, 135, Bow Road, E.—Tuberculosis Officer. Salary, £500 per annum.

PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N.—(1) Junior House-Physician. (2) Junior House-Surgeon. Salary, £60 per annum each.

RAINHILL: COUNTY ASYLUM.—Assistant Medical Officer. Salary, £150 per annum, rising to £350 according to promotion.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—Assistant Anæsthetist, non-resident. Salary, £50 per annum.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—(1) Medical Officer in charge of the Department for *X* Rays and Electro-therapy; salary, £90 per annum. (2) Dental Surgeon.

SHEFFIELD: CHILDREN'S HOSPITAL.—House-Surgeon for the East End Branch. Salary, £75 per annum.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—Assistant House-Surgeon. Salary, £60 per annum.

SOUTHAMPTON PARISH INFIRMARY.—Resident Assistant Male Medical Officer. Salary, £150 per annum.

STAFFORD: STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer. Salary, £160 per annum, rising to £210.

SURREY COUNTY ASYLUM, Netherne, Merstham.—Junior Second Assistant Medical Officer. Salary, £200 per annum, rising to £300.

SURREY [illegible] HOSPITAL, St. Thomas's Street, S.E.—(1) Obstetric [illegible] im 50 guineas per annum. (2) Surgeon. (3) [illegible] Officer, salary £140 per annum, rising to £150.

THROAT [illegible] CHEST AND EAR, EAR, NOSE AND THROAT INFIRMARY.—House-Surgeon [illegible] annum.

WAKEFIELD [illegible] GENERAL HOSPITAL.—Second House-Surgeon (Male). Salary [illegible] per annum.

WARWICK [illegible] ASYLUM.—Second Assistant Medical Officer. [illegible]

WEST [illegible] MEDICAL STAFF.—Vacant appointments. Salary, [illegible]

WESTERN [illegible] HOSPITAL, Marylebone Road, N.W.—Second House-Surgeon, non-resident. Salary, £40 per annum.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary commencing at £160 per annum.

WORCESTER GENERAL INFIRMARY.—Physician.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Bicester (Oxon); Blyth (Northumberland).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

ANKLESARIA, H. N., F.R.C.S.Ed., Honorary Obstetrician and Gynæcologist to the Parsi General Hospital, Bombay.

ASHBY, Hugh T., B.A., M.B., B.C.Camb., M.R.C.P.Lond., Visiting Physician to the Manchester Children's Hospital, Pendlebury.

BAINBRIDGE, I., M.B., B.S.Durh., District Medical Officer of the East Ward Union.

BANISTER, J. Bright, M.D., B.C.Cantab., Physician to Out-patients, Queen Charlotte's Lying-in Hospital, Marylebone Road, N.W.

BEAZLEY, R. N., M.B.Syd., Resident Medical Officer, St. Vincent's Hospital, Sydney, N.S.W.

BOWEN, O. H., M.R.C.S., L.R.C.P., Fourth Assistant Medical Officer to Claybury Asylum.

BROWN, A. A., M.B.Melb., Medical Superintendent of the Green Vale Sanatorium, Victoria.

CARVER, A. E., M.B., B.C.Cantab., etc., Tuberculosis Officer to the Birmingham General Dispensary.

CHAMBERS, R. W., M.B., B.S.Melb., Junior Resident Medical Officer to the Geelong Hospital, Victoria.

CLARK, Hilda, M.B., B.S Lond., Tuberculosis Officer for the County Borough of Portsmouth.

CLUCAS, Elizabeth, M.B., B.S.Melb., Honorary Physician to Out-patients, Queen Victoria Hospital, Melbourne.

COOKE, R. T., M.R.C.S., L.R.C.P., District Medical Officer of the Isle of Wight Union.

COPE, V. Zachary, M.D., M.S.Lond., F.R.C.S.Eng., Surgeon to the Bolingbroke Hospital, Wandsworth.

CROOKSHANK, F. G., M.D., M.R.C.P., Assistant Physician to the Belgrave Hospital for Children.

CROWE, H. Neville, M.B., Ch.B., M.R.C.S., L.R.C.P., Honorary Surgeon and Surgical Registrar, Ophthalmic Hospital, Worcester.

DAVID, A. S., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Ongar District of Essex.

FENWICK, D. E., M.B., Ch.B., House-Physician to the Hampstead General and North-West London Hospital.

FOX, E. H. B., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Yealmpton District, co. Devon.

GATER, H. J., L.M.S.S.A.Lond., L.M.R.C.P.I., Clinical Assistant to the Evelina Hospital for Children, Southwark, S.E.

GODSON, A. H., M.B., F.R.C.S., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 5, and to be attached more particularly to Oldham County Court.

GRAHAM, G. M., M.B., Ch.B.Edin., Junior Assistant Medical Officer, Stirling District Asylum, Larbert.

GREEN, Edwin Collier, M.R.C.S., L.R.C.P., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 19, with a view to his being employed in all ophthalmic cases arising in the Circuit in which the services of a Medical Referee are required.

HAYWARD, Lionel W., M.B., B.S.Adel., Public Vaccinator at Loxton, South Australia.

HICKS, J. A. Braxton, M.D., B.S.Lond., D.P.H.Camb., Pathologist and Registrar, Queen Charlotte's Lying-in Hospital, Marylebone Road, N.W.

IRWIN, S. T., M.B., M.Ch.Belf., F.R.C.S.Edin., Assistant Surgeon to the Children's Department at the Ulster Hospital for Children and Women, and Assistant to the Professor of Surgery at the Queen's University, Belfast.

JAMES, G. W. B., M.B., Fifth Assistant Medical Officer to Hanwell Asylum.

JEROME, G. P., M.B., District Medical Officer of the Tamworth Union.

LANGTON, P. S. B., M.R.C.S., L.R.C.P., Fifth Assistant Medical Officer to Claybury Asylum.

MACCORMAC, Henry, M.B.Edin., M.R.C.P., Assistant Physician to the Department for Diseases of the Skin at the Middlesex Hospital.

MACNAMARA, J., L.R.C.P.and S.Edin., Certifying Factory Surgeon for the Bellanamagh District, co. Cavan.

MOORE, J. I., F.R.C.S.I., Medical Officer of Health, Department of Public Health, Queensland.

NISBET, G., L.A.H.Dub., District Medical Officer of the Basford Union.

NOONAN, T. P., M.D.Melb., Honorary Physician to the Melbourne Hospital, Victoria.

POYNDER, E. G. T., M.R.C.S., L.R.C.P., Sixth Assistant Medical Officer to Claybury Asylum.

RODGER, M., M.D.Glas., Sixth Assistant Medical Officer of the Horton Asylum, Epsom, vice P. S. Vickerman, M.B., Ch.B.Edin., F.R.C.S.Eng., resigned.

RUSHER, J. G., M.R.C.S.Eng., L.S.A., District and Workhouse Medical Officer of the Porshore Union.

SEALY, A. L. M., M.B., C.M.Aberd., District Medical Officer of the Newton Abbot Union.

SYKES, A. B., M.R.C.S., L.R.C.P., District Medical Officer of the Ormskirk Union.

TEMPLE-SMITH, E. C., D.O.Oxon., M.B., Ch.B., R.U.I., F.R.C.S.E., Honorary Ophthalmic Surgeon to the Liverpool State Hospital and Asylum for the Infirm, Sydney, New South Wales.

VESSELOVSKY, V. C., M.R.C.S., L.R.C.P., House-Surgeon to the Hampstead General and North-West London Hospital.

WILSON, Jas. I., M.D., F.R.C.S.E., Senior Assistant Medical Officer, Hackney Infirmary.

WILSON-SMITH, W. A., M.D.Edin., Certifying Factory Surgeon for the Long Sutton District, co. Lincoln.

Wyard, S., M.B., Fourth Assistant Medical Officer to Hanwell Asylum.

Hampstead General and North-West London Hospital.—The following appointments have been made:

Gynaecologist: Glendining, Bryden, M.B., M.S., F.R.C.S.

Surgeon to Out-Patients: Woodward, Chad, M.B., B.Ch., F.R.C.S.

Resident Casualty Officer: Simmonds, B. Sangster, M.B., B.S., M.R.C.S., L.R.C.P.

Assistant Casualty Officer: Gordon, Ronald G., M.B., Ch.B., B.Sc.

Royal Free Hospital, Gray's Inn Road, W.C.—The following appointments have been made:

House-Physicians: B. Whitehurch Howell, M.R.C.S., L.R.C.P.; Miss H. H. Cuthbert, M.B., B.S.

House-Surgeons: P. W. Ransom, M.R.C.S., L.R.C.P.; Miss F. M. Edmonds, M.B., B.S.

Clinical Assistant, Gynaecological Department: Miss Mary A. Blair, M.D., B.S.

Clinical Assistant to Dr. Phear: Miss Middleton.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

Adam.—On September 24th, at Rhodes, Barkly East, Cape Province, South Africa, the wife of Scott C. Adam, M.B., Ch.B., D.P.H., of a daughter.

Orton.—At Fern Hill, Huyton, near Liverpool, on October 15th, the wife of D. C. Leyland Orton, L.R.C.P. Lond., M.R.C.S., L.D.S.R.C.S.Eng., of Rodney Street, Liverpool, of a daughter.

MARRIAGES.

Ogle-Skan—Reade.—On October 16th, at St. John's, Moston, Manchester, by the Rev. W. Holden, Rector and Rural Dean, assisted by the Rev. A. N. Dixey, Rector of Christ Church, Harpurhey, Henry William Ogle-Skan, M.R.C.S.Eng., L.R.C.P.Lond., to Hilda Theodora, fifth daughter of C. E. Reade, Esq., and Mrs. Reade, of Woodland, Moston, Manchester.

Phillips—Slatter.—On October 12th, at St. Mary's Church, Waterloo Park, Liverpool, by the Rev. S. J. Sykes, B.A., Lionel Lewis Phillips, M.R.C.S., of Redruth, Cornwall, only son of Mr. and Mrs. Walter J. Phillips, late of The Mount, Totnes, Devon, to Hilda May, only daughter of Mr. and Mrs. Edward G. Slatter, of Newstead, Waterloo Park, Liverpool.

Slater—Watts.—On October 10th, 1912, at St. Stephen's Church, Ootacamund, S. India, by the Rev. J. D. Borlase, LL.D., Chaplain, Rev. Arthur R. Slater, of Chickmagalur, Mysore, to Edith W. T. Watts, M.B., B.S.Lond. (By cable.)

Sutherland—Lonsdale.—On October 17th, at St. Mary's, Crumpsall, by the Rev. J. Lightfoot, M.A., assisted by the Rev. G. W. Dickenson, M.A., Vicar of Padgate, Warrington, Robert Wilson Sutherland, M.B., Ch.B., of 1, Palmyra Square, Warrington, second son of George Sutherland, Esq., J.P., of 5, Queen Margaret's Place, Glasgow, to Gladys, elder daughter of Hugh Arthur Ormroyd Lonsdale, of Bury Old Road, Manchester.

DEATH.

Duncan.—On the 18th inst., at a nursing home, Andrew Duncan, M.D., B.S.Lond., F.R.C.P., F.R.C.S., Lieutenant-Colonel, late Indian Medical Service, eldest son of the late James Duncan, M.B.Lond., aged 62.

PUBLISHERS' ANNOUNCEMENTS.

Mr. Heinemann announces the publication of the first five volumes of *The Loeb Classical Library*, a series of Greek and Latin texts, with English translations on the opposite page. The series will be edited by T. E. Page and W. H. D. Rouse, Litt.D., and will include examples not only of the authors of the classical periods of Greek and Latin, but also of the early writers and the later. The series will cover twenty-five centuries of Greek and Latin literature, from the time of Homer to the fall of Constantinople. It is hoped to publish in all twenty volumes before the end of this year. The first ten volumes will be as follows: *The Apostolic Fathers*, Volume I; *The Confessions of St. Augustine*, Volumes I and II; *Euripides*, Volumes I and II; *Philostratus, Apollonius of Tyana*, Volumes I and II; *Propertius*, Volume I; *Terence*, Volumes I and II. Mr. Heinemann will also publish during the next month *The Childhood of Animals*, by Dr. Chalmers Mitchell, and *In the Shadow of the Bush*, by Mr. P. Amaury Talbot, of Nigerian fame.

Messrs. Cassell announce the early publication of the second volume of *Choyce's System of Surgery*. This volume comprises surgical diseases of the breast, tongue, and mouth, gastro-intestinal and genito-urinary tracts, etc.

Messrs. J. and A. Churchill announce the following new works: *Alcoholism: Its Clinical Aspects and Treatment*, by Francis Hare, M.D., Medical Superintendent of the Norwood Sanatorium, Beckenham; *Fatty Foods: Their Practical Examination*, a handbook for the use of analytical and technical chemists, by E. R. Bolton and C. Revis; *The Preparation of Organic Compounds*, by E. de Barry Barnett; *Elementary Clinical Pathology for Nurses*, by Richard Weiss, M.A., Ph.D., F.C.S., with six illustrations.

RECENT PUBLICATIONS.

How to Become a Pharmacist in Great Britain. Edited by John Humphrey. Third year of publication. London: The Pharmaceutical Press. 1912. (Post 8vo, pp. 49. Price 1s. net.)

Gives a full description of the education of a candidate both for the major and minor certificates of the Pharmaceutical Society. Hints on the character of the work required are added, and some information given as to the pharmaceutical scholarships and prizes, and degrees and diplomas in pharmacy granted by other bodies. Books suitable for study are also mentioned.

Traité des maladies de l'enfance. Edited by Professor J. Grancher and Dr. J. Comby. In five 8vo vols., second edition. Paris: Masson et Cie. (Vol. i, Fr. 22; the whole work, Fr. 100.)

The second edition of the treatise on children's diseases edited by Professor J. Grancher and Dr. J. Comby is in course of publication. The new edition will consist of five large volumes. The articles on various diseases (vols. i and ii) are written by the editors and many other well-known clinicians, including Baginsky, Méry, and de Brun. The article on infantile scrofula by Sir Thomas Barlow is of special interest.

The Travellers' Practical Manual of Conversation. Third edition. Revised. London: E. Marlborough and Co. 1912. (Pott 8vo, pp 144. 1s. 6d.)

Contains a number of short English sentences, rather more ably selected than is usual in such publications, translated into their equivalents in French, German, and Italian. There are also some brief instructions regarding the pronunciation of these languages, a short vocabulary of useful words, notes on money, and hints on travelling in general.

The Girls' School Year Book. Seventh year of publication. London: The Year Book Press. 1912. (Cr. 8vo, pp. 537. 3s. 6d. net.)

Gives an account of all public secondary schools for girls, the term "public" representing the existence of a governing body. Particulars as to various professions and occupations for women are given. A useful book to those who have daughters to educate.

Dental State Boards. Questions and Answers. By R. Max Goepp, M.D. Philadelphia and London: W. B. Saunders Company. 1912. (Med. 8vo, pp. 428. 12s. 6d. net.)

A book of the cram-book order, but of an unusually elaborate kind; the questions to which answers are supplied are all duly classified according to the subjects to which they relate. To some extent, therefore, it represents a species of Socratic treatise on physics, chemistry, anatomy, physiology, pathology, bacteriology, materia medica, hygiene, and conservative dentistry. Its author, who is a professor of clinical medicine in Philadelphia, was assisted in preparing the work by several lecturers on dental subjects.

DIARY FOR THE WEEK.

MONDAY.

Medical Society of London, 11, Chandos Street, W., 8.30 p.m.—Communications Relative to Hedonal Anaesthesia: (1) Mr. C. M. Page: In General Surgery. (2) Dr. Z. Mennell: In Surgery, Especially of the Nervous System. (3) Mr. L. E. Barrington-Ward: In Children. (4) Mr. J. F. Dobson: Objections to the Use of Hedonal.

Royal College of Surgeons of England, Lincoln's Inn Fields, W.C., 5 p.m.—Mr. S. G. Shattock: Museum Demonstration. Specimens illustrating Diseases of the Genito-Urinary Organs.

Royal Society of Medicine:

Odontological Section, 1, Wimpole Street, W., 8 p.m.—(1) Presidential Address by P. Sidney Spokes. (2) Paper:—Mr. Thomas G. Read: Bread in Relation to Dental Caries and other Evils. (3) Casual Communications.

WEDNESDAY.

Royal College of Surgeons of England, Lincoln's Inn Fields, W.C., 5.30 p.m.: Mr. J. F. Colyer: Museum Demonstration. John Hunter's Specimens illustrating the Natural History of the Human Teeth.

THURSDAY.

Harveian Society of London, Stafford Rooms, Tichborne Street, Edgware Road, W., 8.30 p.m.—A Discussion on the Preparation of the Patient, Selection of Anaesthetic and Method in Difficult Types of Persons during Abdominal and Pelvic Operations. To be opened by Dr. Dudley Buxton.

ROYAL SOCIETY OF MEDICINE:
SECTION OF NEUROLOGY, 1, Wimpole Street, W., 8.30 p.m. —Presidential Address by Dr. H. H. Tooth, C.M.G.: "Observations upon the Growth and Survival Periods of Cerebral Tumours, Based upon the Records of 500 Cases, with Special Consideration of the Group of the Gliomata" (illustrated by photomicrographs).

FRIDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 5 p.m. — Professor Arthur Keith: Museum Demonstration. Specimens illustrating the Comparative Anatomy of the Caecum and Appendix, of the Gall Bladder, of the Thyroid, and of the Tonsil.

ROYAL SOCIETY OF MEDICINE:
SECTION OF ANAESTHETICS, 1, Wimpole Street, W., 8.30 p.m.—Dr. G. A. Barton: (1) Death during Hedonal Infusion Anaesthesia; (2) Demonstration of Apparatus for Intratracheal Insufflation of Ether. Dr. F. F. W. Silk: Demonstration of Dr. Elsberg's Apparatus. Mr. H. E. G. Boyle and Mr. G. E. Gask: Demonstration of their Apparatus.

SECTION OF LARYNGOLOGY, 1, Wimpole Street, W., 4.30 p.m.—Cases and Specimens.

POST-GRADUATE COURSES AND LECTURES.

BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, S.W. — Wednesday, 4.30 p.m.: Artificial Pneumothorax.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., Hernia.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m., Medical and Surgical Clinics. Monday: 12 noon, Throat, Nose, and Ear; 2.15 p.m., Surgery; 3 p.m., Operations; 3.15 p.m., Medicine, 4.15 p.m., Ear and Throat. Tuesday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Surgery; 3.15 p.m., Medicine; 4.15 p.m., Skin Clinic. Wednesday: 11 a.m., Eye; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Eye Clinic; 4.30 p.m., Surgery. Thursday: 12 noon, Throat, Nose, and Ear; 2 p.m., Operations. Pathological Demonstration: 3.15 p.m., Medicine. Friday; 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Surgery. Saturday: 10 a.m., Radiography; 11 a.m., Eye. Special Lectures on Monday, Tuesday, and Thursday.

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.—Lectures daily (Saturday excepted) at 12 and 4 p.m. Practical laboratory work daily (Saturday excepted), 10 to 12 a.m. Practical Entomology, 2 to 3.30 daily. Special Entomology, 10.30 to 1 p.m. daily. Medical Clinics, Monday and Thursday at 3 p.m. Operations, Friday at 3 p.m.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15 p.m., Tuberculosis of the Spine and Hip.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m., Some Diseases of the Spleen and Lymphatic Glands. Friday, 4.30 p.m., Painless Haematuria.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, Some Skin Diseases and their Treatment: Tuesday, The Rational Treatment of Venereal Diseases; Wednesday, Myopia and its Treatment; Thursday, Uterine Haemorrhage without Obvious Lesion; Friday, Some Special Tests.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday and Friday, 3.30 p.m.: Topographical Diagnosis of Lesions of the Brain Stem. Tuesday, 5 p.m.: Neuro-pathology. Wednesday, 5 p.m.: Clinical Examination of Cases of Diseases of the Nervous System. Thursday, 5 p.m.: Anatomy and Physiology of the Nervous System.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Wednesday, 4.30 p.m.—Opening Address of the Winter Session by Professor Sir Almroth Wright, F.R.S.: Lymph Lavage as a Therapeutic Measure.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, N.E.—Thursday, 4 p.m.; The Duty of the Practitioner in Cases of Ophthalmia Neonatorum.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Tuesday, 6 p.m.: The Rendering (apart from extraction) of an Unclean Mouth Cleanable by the Patient's Daily Attention.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Tuberculin Course: Monday to Friday, 4.30 p.m.: Saturday, 10.30 a.m.

SALFORD ROYAL HOSPITAL.—Tuesday, 4.30 p.m.: The Early Diagnosis of Pulmonary Tuberculosis.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Demonstration of Minor Operations, 11 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Demonstration of Fractures, etc., 10.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m. Thursday: Gynaecological Demonstration, 10a.m.; Lecture, Neurological Cases, 12.15 p.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.: Lecture, Practical Medicine, 10.30 a.m.; Lecture, Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. daily.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		OCTOBER.
25	Fri.	South-Western Branch, Exeter, 3.15 p.m.; Exeter and District Medical Dinner, 6.45 p.m. for 7 p.m.
28	Mon.	Hampstead Provisional Medical Committee, 4, Dennington Park Road, 4 p.m.
29	Tues.	Metropolitan Counties Branch Council, Adjourned Meeting, 4 p.m.
31	Thur.	Central Council, London, **10 a.m.**
		New Lambeth Division, Brixton Town Hall, 4 p.m.
		NOVEMBER.
5	Tues.	Coventry Division, Coventry and Warwickshire Hospital, 8.30 p.m.
7	Thur.	Brighton Division, Special Meeting, Lecture Hall, New Road, 4 p.m.
8	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.

Date.		Meetings to be Held.
		NOVEMBER (*continued*).
12	Tues.	Metropolitan Counties Branch Council, 4 p.m. City Division, St. Bartholomew's Hospital, 4.30 p.m.
14	Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
19	Tues.	London: **Special Representative Meeting** (*provisional date*).
		Brighton Division, Ordinary Meeting, Lecture Hall, New Road, 4 p.m.
20	Wed.	London: **Special Representative Meeting** (*provisional date*).
29	Fri.	Birmingham Branch, Pathological and Clinical Section, Medical Institute, 8 p.m.
		DECEMBER.
6	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.
10	Tues.	Metropolitan Counties Branch Council, 4 p.m.
12	Thur.	Birmingham Branch, Medical Institute, 5.30 p.m.

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SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 2ND, 1912.

SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs. BY ORDER.

CONTENTS:

NATIONAL INSURANCE.

Report of Council to the Divisions and Representative Body.

This document consists of (A) *Report of Action taken by the State Sickness Insurance Committee as reported to the Council;* (B) *Statement comparing the Provisional Regulations as to Medical Benefit with the Cardinal Principles of the Association and with Decisions of the State Sickness Insurance Committee as to matters which should be included in the Regulations; and* (C) *Report on the present position of the Medical Profession in relation to the Act and on Future Action.*

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NATIONAL INSURANCE ACT.

REPORT OF COUNCIL

To the Divisions and Representative Body.

A.—Action taken by the State Sickness Insurance Committee

Appointment of and Reference to State Sickness Insurance Committee.

The State Sickness Insurance Committee was appointed with the following reference by the Annual Representative Meeting, July, 1912:—

Annual Representative Meeting, July, 1912.

Minute 215.—Resolved: That a State Sickness Insurance Committee be appointed by the Representative Body to watch the interests of the profession in relation to the National Insurance Act, and also to report on the whole situation to the Council; that the Council be instructed to report thereon, as soon as possible, to the Divisions and a Special Representative Meeting; and that the Committee consist of (a) twelve members elected by grouped Representatives in the same manner as Members of the Council under By-law 43 (c); (b) the *ex-officio* members; (c) two women medical practitioners to be nominated, one by the Northern Association of Medical Women and one by the Association of Registered Medical Women; and that the Committee be empowered to add to its number not more than six additional members.

Minute 262.—The Chairman announced the result of the election of members of the State Sickness Insurance Committee as follows:—

ENGLAND AND WALES.

North of England Branch North Lancashire and South Westmorland Branch Yorkshire Branch	Mr. D. F. Todd.
Lancashire and Cheshire Branch	Dr. S. Hodgson.
East York and North Lincoln Branch Midland Branch Cambridge and Huntingdon Branch East Anglian Branch South Midland Branch	Dr. D. G. Thomson.
Birmingham Branch Staffordshire Branch North Wales Branch Shropshire and Mid-Wales Branch South Wales and Monmouthshire Branch	Dr. E. O. Price.
Metropolitan Counties Branch: North and East Metropolitan Group: City, Stratford, South-West Essex, North Middlesex, St. Pancras and Islington, and Hampstead Divisions Central Metropolitan Group: Marylebone and Westminster Divisions	Dr. Major Greenwood.
West Metropolitan Group: Richmond, Ealing, Chelsea, Kensington and Watford and Harrow Divisions South Metropolitan Group: Lambeth, Norwood, and Wandsworth Divisions	Mr. E. B. Turner.
Bath and Bristol Branch Gloucestershire Branch West Somerset Branch Worcestershire and Herefordshire Branch Dorset and West Hants Branch South Western Branch	Dr. T. M. Carter.
Oxford and Reading Branch Southern Branch South-Eastern Branch	Mr. E. H. Willcox.

Scotland.

Aberdeen, Northern Counties, Dundee and Perth Branches ... Edinburgh and Fife Branches	Dr. R. McKenzie Johnston.
Glasgow and West of Scotland Branch (4 City Divisions) ... Glasgow and West of Scotland Branch (4 County Divisions) ... Border Counties and Stirling Branches	Dr. J. Adams.

Ireland.

Connaught and South-Eastern of Ireland Branches ... ... Leinster Branch	Prof. A. H. White.
Munster Branch ... ... Ulster Branch	Dr. J. S. Darling.

The following are, under By-law 65, Members *ex officio* :—

Sir James Barr, LL.D., Liverpool (*President*).
Mr. T. Jenner Verrall, Bath (*Chairman of Representative Meetings*).
Dr. J. A. Macdonald, LL.D., Taunton (*Chairman of Council*).
Dr. Edwin Rayner, Stockport (*Treasurer*).

Appointment of Chairman.

1. Dr. J. A. Macdonald, Chairman of Council, was appointed Chairman of the Committee.

Co-option of Members of the Committee.

2. The Committee, in exercise of the powers conferred upon it, co-opted the following Members to the Committee :—

Dr. R. M. Beaton (London).
Mr. Herbert Jones (Hereford), as Representative of the Society of Medical Officers of Health.
Dr. E. J. Maclean (Cardiff).
Dr. James Pearse (Trowbridge).
Dr. Lauriston E. Shaw (London).

Representatives of Registered Medical Women.

3. The Committee received the names of Dr. Constance Long (London), from the Association of Registered Medical Women, and Miss Mary F. Ivens, M.S. (Liverpool), from the Northern Association of Registered Medical Women, as suitable for co-option to the Committee in accordance with the terms of appointment of the Committee. These ladies were appointed.

Attendances of Members of Committee.

4. Up to 24th October, 1912, inclusive, there had been 10 Meetings of the full Committee, and 6 Meetings of Sub-Committees. The following is a list of attendances of Members :—

Name.	Full Committee.		Sub-Committee.	
	Total possible.	Attended.	Total possible.	Attended.
Dr. J. A. Macdonald (Chairman of Council), Chairman ...	10	6	2	—
Sir James Barr (President)	10	6	—	—
Mr. T. Jenner Verrall (Chairman of Representative Meetings)	10	8	—	—
Dr. Edwin Rayner (Treasurer)	10	8	—	—
Dr. J. Adams	10	9	—	—
Dr. R. M. Beaton (co-opted)	9	9	2	2
Dr. T. M. Carter	10	8	—	—
Dr. J. S. Darling	10	4	—	—
Dr. Major Greenwood	10	10	—	—
Dr. S. Hodgson	10	6	4	3
Miss M. F. Ivens	9	8	—	—
Dr. R. McKenzie Johnston	10	8	—	—
Mr. Herbert Jones (co-opted)	5	5	1	1
Dr. Constance Long	8	8	—	—
Dr. E. J. Maclean (co-opted)	9	8	—	—
Dr. J. Pearse (co-opted)	8	6	—	—
Dr. E. O. Price	10	9	—	—
Dr. Lauriston E. Shaw (co-opted)	7	6	2	2
Dr. D. G. Thomson	10	7	—	—
Mr. D. F. Todd	10	10	—	—
Mr. E. B. Turner	10	7	2	2
Prof. A. H. White	10	2	—	—
Mr. E. H. Willock	10	9	4	4

INTIMATION TO CHANCELLOR OF EXCHEQUER OF THE DECISION OF THE ASSOCIATION AS REGARDS NATIONAL INSURANCE ACT.

5. In accordance with the instruction contained in Minute 166 of the Annual Representative Meeting, 1912 (for Minutes of Annual Representative Meeting, *see* Appendix A), the following communication was forwarded to the Chancellor of the Exchequer, of which a formal acknowledgment was received:—

British Medical Association.
Medical Department,
429, Strand,
London, W.C.
August 1st, 1912.

Sir,

I am instructed to forward to you the following resolution passed at the Annual Representative Meeting of the British Medical Association held in Liverpool, July 19th to 24th:—

Resolved: That the British Medical Association regrets that His Majesty's Government has not acceded to the terms upon which alone the cordial co-operation of the medical profession in supplying medical treatment under the National Insurance Act can be obtained, and passes the following Resolution:—

That the Government be informed that the Association adheres to its minimum demands as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer.

I am, Sir,
Your obedient Servant,
(Signed) ALFRED COX,
Medical Secretary.

Rt. Hon. David Lloyd George, M.P.,
Treasury,
Whitehall, S.W.

SANATORIUM BENEFIT.

CARDINAL POINTS.

6. The Committee after careful consideration of the following Minute of the Annual Representative Meeting:—

Minute 232.—Resolved: That the question as to which of the Resolutions of the Representative Body as to Sanatorium Benefit should be regarded as cardinal points, and which should not be so regarded, be left to the Council.

prepared under instruction from the Council and issued on August 1st, 1912, a letter to Divisions, Branches, and Provisional Local Medical Committees upon the general question of Sanatorium Benefit under the National Insurance Act, and intimated which of the decisions of the Representative Body on this matter the Committee considered should be regarded as cardinal points, namely, Minutes 190, 192, 193, 196, 197, 199, 202, 205 and 207, (*see* Appendix A) under any arrangements in connection with the administration of Sanatorium Benefit which affected the profession, and which need not be so regarded, namely, Minutes 194, 195, 198, 201, 203, 204 and 214 (*see* Appendix A.) The Committee also adopted the scale of fees contained in Minute 207 as the minimum scale payable to practitioners in respect of domiciliary attendance. The resolutions of the Representative Body as to Sanatorium Benefit were also forwarded to the President of the Local Government Board, to the Clerks and Medical Officers of Health of County Councils, and to the Town Clerks and Medical Officers of Health of County Borough Councils, for their information.

APPOINTMENTS IN CONNECTION WITH SANATORIUM BENEFIT UNDER THE ACT.

7. The Committee, having regard to the terms of Minute 185 of the Annual Representative Meeting, 1912, namely:—

Resolved: That, with reference to the foregoing Resolution, before any practitioner undertakes any work in connection with the Sanatorium Benefits of the Act, the conditions and duties of such appointment shall be submitted to the Council for its approval,

decided that no advertisement in respect of appointments in connection with Sanatorium Benefit should be accepted for publication in the JOURNAL which was inconsistent with the conditions laid down by the Association, and gave instructions that in all cases where an advertisement was accepted, a full list of the conditions laid down by the Association should be forwarded to the advertiser. The Committee also decided that the word "appointment" in the above resolution, should be understood as meaning any professional work. A notice to the above effect appears each week in a prominent place in the Supplement to the JOURNAL.

RELATION OF THE MEDICAL OFFICER OF HEALTH TO THE CHIEF TUBERCULOSIS OFFICER.

8. Great difficulties have arisen in connection with the relation of the Medical Officer of Health to the Chief Tuberculosis Officer. Minutes 190 and 202 of the Annual Representative Meeting made the following pronouncements on this subject:—

Minute 190.—That the Chief Tuberculosis Officer should be a whole-time officer and confine himself to diagnosis and consultative work. The rest of the staff of the Dispensary should, where possible, be formed of local medical practitioners serving on a rota or otherwise.

Minute 202.—Resolved: That the commencing salaries for whole-time Medical Officers engaged in the Tuberculosis Service should be, for Junior or Assistant Whole-time Medical Officers not less than £300 per annum, and for Senior Whole-time Officers not less than £500 per annum. These salaries in all cases must be exclusive of travelling and other official expenses.

It was soon found, however, that there were areas in which it was impossible to insist upon a strict interpretation of these minutes. The intention of the Astor Report was undoubtedly that in each area a whole-time Officer should be appointed with such special experience, and having such a salary and status, as to enable him to be regarded by the profession in the district as a consultant in the diagnosis and treatment of Tuberculosis. It was brought to the attention of the Committee, however, by many Provisional Medical Committees that there are some insurance areas in the country in which the amount of tuberculosis work is such that the Local Authority would not feel itself justified in employing a special whole-time Officer at the salary of £500 per annum. The obvious remedy for this is the combination of local areas for this purpose so as to provide an amount of work which would justify the appointment of an officer such as was contemplated by the Astor Report, but it is found that local authorities have a strong objection to amalgamation and in any case this could not be brought about rapidly. The Committee therefore found itself obliged to make an exception in some areas and laid down the following rule for its guidance:—

Resolved: That the Tuberculosis Officer should be a whole-time officer and should confine himself to diagnosis and consultative work, but nevertheless the State Sickness Insurance Committee recognises that in certain cases it may be expedient for the Medical Officer of Health to perform the administrative duties of such office until further and better arrangements can be made; and therefore it is inopportune for the Association to insist at the present time on advertisements accepted for insertion in the JOURNAL in all cases implying the appointment of Chief Tuberculosis Officer at a salary of £500.

9. Another difficulty which presented itself was the tendency of Local Authorities to appoint Medical Officers of Health as Chief Tuberculosis Officers, though in most cases avowedly only as a temporary expedient.

10. The following correspondence has taken place between the State Sickness Insurance Committee and the Local Government Board with respect to this question:—

Offices of the British Medical Association,
Medical Department,
429, Strand, London, W.C.
September 16th, 1912.

Sir,

The State Sickness Insurance Committee of the British Medical Association has had many inquiries brought to its notice recently in respect of the position of Medical Officers of Health to the Office of Chief Tuberculosis Officer. In many areas the Medical Officer of Health is being appointed as Chief Tuberculosis Officer, and great anxiety is being exhibited by the profession as to whether such appointments, admittedly only provisional, are likely to be made permanent.

Having in view the paragraph at the foot of the second page of the circular of the Local Government Board of July 6th, 1912, and the definition of the expression "consulting officer" in the General Order on Domiciliary Treatment of Tuberculosis of July 26th, 1912, the Committee is of opinion that it is the intention of your Board that any recognition of Medical Officers of Health as Chief Tuberculosis Officers will be strictly temporary, but my Committee would be glad to have some assurance from the Board on this point. Bearing in mind the whole tenor of the Astor Report and of the various documents since issued by the Insurance Commissioners and by your Board, my Committee is of opinion that the appointment of the Medical Officer of Health to a post which demands special skill and clinical experience can only be looked on as a temporary expedient.

The State Sickness Insurance Committee would suggest for the consideration of the Board that in those cases where for various reasons Chief Tuberculosis Officers of the kind defined in the Astor Report cannot for the present be appointed, and Medical Officers of Health have to take administrative charge of the duties in connection with the treatment of Tuberculosis, they should be confined as far as possible to administrative duties, and should be styled "Administrative Tuberculosis Officers" or "Chief Administrative Tuberculosis Officers."

My Committee ventures to make the above suggestions to the Board because it foresees that any attempt to administer the duties of Chief Tuberculosis Officer except by practitioners with the necessary special clinical experience and skill is fraught with great danger to the success of the attempts being made by the Government to deal with the control of Tuberculosis.

I am, Sir, your obedient Servant,
(Signed) ALFRED COX,
Medical Secretary.

The Right Hon. John Burns, M.P.,
President of the Local Government Board,
Whitehall, S.W.

A formal acknowledgment was received.

A further letter was sent by the Association on October 1st, 1912, asking for the favour of an early reply, and the following letter was received, which was duly acknowledged:—

Local Government Board,
Whitehall, S.W.
October 5th, 1912.

Sir,

I am directed by the President of the Local Government Board to advert to your letters of the 16th ultimo and 1st instant and in reply to state that the Board entirely agree with the view expressed in the Report of the Departmental Committee that suitably qualified and experienced men should be selected for the medical appointments at dispensaries and other institutions for the treatment of tuberculosis.

Inasmuch as the schemes for the provision of sanatoria and dispensaries are to be undertaken by the Local Authorities it is essential, both on administrative grounds and also in order to secure the co-ordination of treatment and of preventive measures, that the general supervision and control of the schemes should be in the hands of the Medical Officer of Health. The Board, however, contemplate that the tuberculosis officer of the dispensary or the medical superintendent of the sanatorium or hospital will in clinical matters be allowed independence of action.

It would only be in occasional cases where the Medical Officer of Health has had requisite experience and has sufficient time to enable him to act as head of the dispensary as well as to perform his ordinary duties that he would undertake so to act. If such cases should occur and the Local Authority wish to arrange accordingly the Board do not consider that they could object to the arrangement.

I am, Sir, your obedient servant,
(Signed) F. J. Willis,
Assistant Secretary.

11. It is evident, therefore, that so far as the Local Government Board is concerned the Medical Officer of Health is to be recognised as the administrative head of the local Tuberculosis Service. The Medical Officer of Health has in many areas done much preliminary work in the framing of the local tuberculosis scheme, and as such a scheme must deal with the preventive side of the question, of which the Medical Officer of Health must inevitably retain control, and as the Local Authority must have some one person to whom it can look as the responsible head of the service, the Medical Officer of Health would naturally be recognised as the administrative head. Whether he should be called the Chief Tuberculosis Officer or have some other title such as was suggested by the Committee to the Local Government Board is a matter which deserves careful consideration. There is great danger, however, if the M.O.H. be called Chief Tuberculosis Officer, of an evasion of the recommendations of the Astor Report and the resolutions of the Representative Meeting by the appointment of some other officer styled Tuberculosis Officer or Tuberculosis Dispensary Officer or Assistant Tuberculosis Officer, at a lower salary than £500, whose duties would be chiefly clinical and who would be expected to be Chief Tuberculosis Officer in everthing but name.

12. The Committee is of opinion that strong representations should be made to the Local Government Board and to the Commissioners to the effect that whatever arrangements are made regarding the administration of tuberculosis schemes, and whatever title is given to the clinical Tuberculosis Officer, the intentions of the Government as regards the treatment of tuberculosis will be frustrated, unless arrangements are made, either by amalgamation of districts or otherwise, whereby an officer of suitable attainments and status and at a salary of not less than £500 per annum is placed at the disposal of the profession in each insurance area.

The Position of Medical Officer of Health as Head of Tuberculosis Dispensary.

13. Another difficulty which is referred to in the above correspondence is the disposition on the part of some local authorities to place the clinical work, both dispensary and domiciliary, under the control of the Medical Officer of Health. There are doubtless occasional instances where the Medical Officer of Health has had the requisite experience to enable him to perform the clinical duties, and to give him a claim to be looked upon as an expert, but these must be exceptional, and instances where in addition to possessing these qualifications the whole-time Medical Officer of Health can give attention to this work while doing full justice to his ordinary duties must be rarer still. The Committee views with great apprehension the making of such appointments. The temptation to do so on the ground of economy will be very attractive to some local authorities, but the Committee believes such a course to be fatal to the success of a really efficient Tuberculosis Service.

14. It is essential for the unity of the Profession that some agreement on these points should be arrived at between the Association as representing the profession as a whole, and Medical Officers of Health, and opportunity will be taken of a conference which is being arranged between representatives of the Association and representatives of the Society of Medical Officers of Health to discuss the matter fully. It is hoped that it will be possible to bring the results of this discussion before the Special Representive Meeting.

Model Scheme for the Treatment of Tuberculosis.

15. The Committee has received many requests for advice with respect to the interpretation of the various decisions of the Representative Body with respect to Sanatorium Benefit, and, finding that many of these decisions required supplementing, issued a Model Scheme for the treatment of cases of Tuberculosis (*see* Appendix B). This Scheme was issued to Divisions, Branches, Provisional Local Medical Committees, Clerks and Medical Officers of County Councils, and Town Clerks and Medical Officers of Health of County Borough Councils.

Schemes for the Administration of Sanatorium Benefit Approved by the State Sickness Insurance Committee on Behalf of the Council.

16. The Council delegated to the State Sickness Insurance Committee, in accordance with the following Minute of the Annual Representative Meeting, 1912, the power of approving Schemes for the administration of Sanatorium Benefit submitted for the approval of the Council:—

Minute 214.—Resolved: That any provisional arrangements for the administration of Sanatorium Benefit be such as are satisfactory to the local Division of the British Medical Association, subject to the approval of the Council.

Up to October 25th, 1912, about 40 Schemes for the administration of Sanatorium Benefit have been thus approved by the Committee so far as they conformed to the decisions of the Committee. Advice has been given to many Honorary Secretaries as regards local schemes, and several schemes have been disapproved. So far as the scale of fees for domiciliary attendance is concerned, the Committee is glad to report that the Provisional Medical Committees have generally been successful in obtaining at least the minimum fees laid down by the Association. As regards the other details of the schemes, such as the appointment of a properly qualified and adequately paid Tuberculosis Officer, and the administration of Tuberculosis Dispensaries, local efforts have not proved so successful, as is shown by the previous sections of this Report.

Capitation Method of Payment for Treatment of Tuberculosis.

17. Several Provisional Medical Committees have applied for approval of their acceptance of a capitation fee in respect of treatment of cases of Tuberculosis; but the Committee acting for the Council, in view of the following Minute of the Annual Representative Meeting, 1912, has in each case refused sanction:—

> *Minute* 205.—Resolved: That the payment to be made to medical practitioners for domiciliary attendance on patients certified to be suffering from tuberculosis shall be on a scale of fees, and not by capitation.

Application of Seven Cardinal Principles to Sanatorium Benefit.

18. The Committee, in response to an application for advice by a Member of the Association, decided that having regard to the decisions of the Annual Representative Meeting, 1912, the cardinal points of the Association concerning Medical Benefit did not apply to Sanatorium Benefit. It will be observed, however, that the decisions of the Annual Representative Meeting as to Sanatorium Benefit cover practically the whole of the original cardinal principles of the Association with the exception of that relating to income limit.

Provision of Medicines.

19. In the absence of any indication by the Annual Representative Meeting, 1912, as to whether medicines should or should not be provided for the fees adopted in respect of domiciliary treatment, the Committee has advised inquirers that the matter is one to be decided locally.

Payment of Staffs of Voluntary Hospitals for treatment of cases of Tuberculosis in connection with Sanatorium Benefit.

20. A question on which no guidance was given by the Annual Representative Meeting and which is becoming of pressing importance is what should be the rate of payment for medical practitioners attached to Voluntary Hospitals in respect of tuberculosis cases sent to those institutions by local authorities. The only resolution of the Representative Body which bears on this question is Minute 194 which is as follows:—

> "That no Tuberculosis Dispensary should be opened or beds be provided for treatment of those in receipt of Sanatorium Benefit at a Voluntary Hospital or Infirmary, except on the condition that the organisation is entirely independent of that of the Voluntary Hospital or Infirmary, the accounts of the departments being kept separate, and that the services of all medical practitioners are paid for."

The Committee has been asked on several occasions to indicate a scale of fees or other method of payment for members of hospital staffs in connection with these cases. The question is an entirely new one, and so involved with important questions of principle that the Committee has been unable to give anything but the most general answer, namely, that the amount of payment must depend largely on local conditions; that the remuneration provisionally fixed should not be less than the minimum scale already laid down for other purposes in Minutes 204 and 207 of the Annual Representative Meeting, 1912, namely, 2s. 6d. per visit, or at a rate of £65 per annum for an attendance of two hours per week. Such fees would, however, be much less than those generally accepted by hospital physicians and surgeons, and the acceptance of any payment at once raises grave questions as to the status of such officers. The Annual Representative Meeting, 1910, instructed the Council to consider and report upon the question of the payment of hospital staffs, but the instruction has not up to the present been carried out, partly because of the pressure of other work and partly because it was seen that the operation of the Insurance Act would put a new aspect on the question. It would seem advisable, therefore, that, until the subject has been fully considered, arrangements entered into for the payment of members of hospital staffs in these cases should be left for local consideration and determination, on the strict understanding that such arrangements are purely provisional, and that the general question in all its bearings should be fully discussed at the Annual Representative Meeting on the report of Council.

Treatment to be Undertaken at Tuberculosis Dispensaries.

21. On many occasions since the Annual Representative Meeting the Committee has had the question raised as to what kind of work is to be carried on at Tuberculosis Dispensaries, and by whom it is to be done. No direct guidance on this question was given by the Representative Meeting. It was apparently contemplated by Minute 190 that the work of the Dispensaries should be confined to diagnosis and consultation which should be done by the whole-time Tuberculosis Officers with the help, where such help is necessary, of local medical practitioners. It is evident from the action of various local authorities that there is no intention to confine the work done at the Dispensaries to consultations and diagnosis. Representations have been made to the Committee to the effect that such a course would be harmful to the tuberculosis service inasmuch as the Tuberculosis Officer in most areas would not find sufficient work of a purely consultative kind to keep him fully employed, and also that his restriction to consultative work would render him less efficient than if he were allowed to take part in actual treatment. It has been reported to the Committee that two Provisional Medical Committees in Scotland have approached the Local Government Board of that country asking the Board to restrict the duties of the Tuberculosis Officer and his assistant to consultations. In reply the following letter has been received, from which it appears that the profession may expect the opposition of the Local Government Board to any attempts to enforce the restriction contained in Minute 188:—

Local Government Board,
Edinburgh,
October 12th, 1912.

Sir,

Tuberculosis.

I have submitted to the Local Government Board your letter of 28th ultimo, and enclosed Memorandum of the Leith Medical Practitioners' Association, regarding the administration of Sanatorium Benefit in Leith, and particularly regarding the point that the duties of a Tuberculosis Officer and his assistant should be consultative and advisory only.

I am now directed to say in reply that, looking to the terms of Section 16 of the National Insurance Act 1911, and Section 66 of the Public Health (Scotland) Act 1897, the Board had some doubts as to the powers of a local Authority to establish a Tuberculosis Dispensary where the service would be confined to diagnostic and consultative work, the medical treatment of the individual being excluded.

I am to state, however, that apart altogether from the question of legality, such a proposal is not one that the Board could approve.

I am, Sir,
Your obedient servant,
(Signed) David Brown,
Assistant Secretary.

Dr. Langwill,
4, Hermitage Place,
Leith.

22. On consideration of this difficulty the Committee passed the following resolution:—

That in the opinion of this Committee, the work of the Tuberculosis Dispensaries should consist of diagnostic, consultative, bacteriological, and statistical work; that treatment should, in general, be carried out at the homes of the patients or in the surgeries of their medical attendants; but that certain special forms of treatment for those cases which are decided in consultation to need such may, with the consent of the general practitioner concerned, be given at the Dispensaries.

It would appear from a consideration of the above circumstances that the restriction of whole-time Tuberculosis Dispensary Officers to diagnostic and consultative work would be difficult to carry out, and the Association may desire to find a method, such as that suggested by the Committee in the above resolution, which, while satisfying the reasonable demands of the local authorities, will preserve for tuberculosis patients the undoubted advantage of remaining under the general treatment of their own private practitioners.

King Edward VII. Welsh National Memorial Association.

23. The late State Sickness Insurance Committee approved action taken in refusing insertion in the Journal of an advertisement tendered in June by the King Edward VII. Welsh National Memorial Association for whole-time physicians for the treatment of tuberculosis, but the advertisement appeared in the lay press, and 13 practitioners were appointed. Two practitioners upon becoming aware of the fact that the advertisement had been refused insertion in the Journal immediately resigned their appointments. The Council at its Meeting at Liverpool on July 26th, 1912, considered a communication from the members of the Representative Body representing Welsh constituencies asking the Council to take into consideration the question of these appointments, and had an interview with Dr. W. E. Thomas (Representative in Representative Meetings for North Glamorgan and Brecknock) and Dr. Marcus Paterson (Medical Director of the Memorial Association), upon the questions of (i.) the conditions of employment of medical practitioners by the Memorial Association, and (ii.) the position of the Memorial Association as regards Sanatorium Benefit under the Insurance Act. Subsequently a copy of the form of agreement to be entered into between the Memorial Association and its medical officers was forwarded and the State Sickness Insurance Committee was asked to receive a deputation.

24. The deputation was received on July 31st, consisting of the Chairman of the Memorial Association (Mr. David Davies, M.P.), the Honorary Secretary (Mr. D. W. Evans), the Medical Director (Dr. Marcus Paterson), and Dr. W. E. Thomas, and such assurances were given of the intentions of the Memorial Association as in the opinion of the Committee warranted the insertion in the Journal of the advertisement of the Association for medical officers. A promise was given by the deputation that if the two practitioners, who out of loyalty to the Association had withdrawn, again applied they would be appointed, and this promise was fulfilled.

25. In the latter part of September the State Sickness Insurance Committee received a communication from the King Edward VII. Welsh National Memorial Association to the effect that that Association was considering the question of domiciliary treatment of tuberculosis and the payment of medical practitioners, and suggesting that the Divisions of the Association in Wales should nominate representatives to discuss these matters with the committee of the Memorial Association, and that any representatives so appointed should be vested with plenary powers, so that any agreement arrived at would form part of the Memorial Association's regulations for its Tuberculosis Officers. The Committee informed all the Divisions in Wales of the above request, and asked each to appoint two representatives to the proposed Conference. The Divisions were informed at the same time that any arrangements made must be strictly in accordance with the principles laid down in the Resolutions of the Annual Representative Meeting, and must be submitted for the approval of the Council.

PUBLIC MEDICAL SERVICES.

Suggested Schemes considered.

26. The Committee, in pursuance of the instructions contained in the following Minutes of the Annual Representative Meeting, namely:—

> *Minute* 225.—Resolved: That the Report of the State Sickness Insurance Committee on the replies of Divisions on the Public Medical Service Schemes be received.
>
> *Minute* 226.—Resolved: That the report be approved and referred to Council for further consideration of all the information relating to Public Medical Services, and report as to the forms which are available for the Divisions. Further, that the Council be given power to approve of schemes which are in agreement with the principles approved by the Association,

considered (in accordance with the authority conferred upon it by the Council on July 26th, 1912) the whole question of Public Medical Service Schemes, and decided that Model Schemes should be issued for the guidance of Divisions of the Association in the formation of such services. In considering this subject, the Committee had before it numerous schemes.

Model Schemes A and B.

27. After consideration of this question, the Committee approved and issued to Divisions and Branches, in the Supplement to the Journal of September 14th, 1912, Model Public Medical Service Schemes A and B. The Schemes were based on similar schemes submitted to the Annual Representative Meeting, 1912, amended in various details so as to make them more applicable to the present state of affairs in connection with the Insurance Act.

Model Schemes C and D.

28. The Committee also had brought to its notice by the Sub-Committee appointed to consider the whole subject, draft Model Schemes C and D. Scheme C provides for the appointment of Trustees by the approved Societies, while D provides for the co-operation of these Societies in the raising of funds. The Committee felt itself unable to sanction these schemes, first, because to make use of the approved Societies in the ways mentioned seemed to open the door to some measure of lay control which could hardly be resisted: secondly, because the idea is foreign to the conception which has governed the Public Medical Service Scheme of the Association from the beginning, namely, that the Service should be entirely in the hands of the profession. Schemes C and D were, however, published in the Supplement to the Journal of October 12th, 1912, for the information of Members of the Association. It is hoped that the principle involved in this new departure will be seriously considered by the Divisions and Representative Body, inasmuch as many Divisions are of opinion that without the co-operation of the insured persons in securing members and collecting the subscriptions a successful Public Medical Service is impossible.

Question of Method of Collection of Subscriptions.

29. In all the Public Medical Service Schemes approved by the Association it has been laid down that the collector of the Service should be paid by salary and not by commission. This precise

was made under legal advice because it is believed that payment by commission must almost inevitably lead to canvassing. If a single doctor in a district were outside the Service the risks would be great, not only of local friction but of a charge of canvassing being made before the General Medical Council. The Committee has therefore refused to sanction any Scheme which allows the payment of collectors by commission, and has suggested, as a possible alternative, that the collector might receive the necessary encouragement by the payment of a gratuity which shall bear an inverse proportion to the amount of arrears of subscriptions. As it is held however by some areas to be impossible to run a successful Service with any restriction on the method of collection, the matter is submitted for the consideration of the Divisions and Representative Body.

ADVISORY AND OTHER ADMINISTRATIVE COMMITTEES.

30. Pursuant to the instructions contained in the following Minute of the Annual Representative Meeting, namely:—

> *Minute* 167.—Resolved: That the Association calls upon all Members of the Association who are members of Advisory Committees in connection with the National Insurance Act, and also on other Medical Members of those Committees who are in sympathy with the policy of the Association, to withdraw from these bodies,

the Committee first requested Members appointed upon the Advisory Committees on the nomination of the Association to resign their positions, and the response was immediate and unanimous. A joint letter of resignation was forwarded, on behalf of these members, to the Commissioners on August 2nd, 1912.

31. The other Medical Members of the Advisory Committees were informed of the action being taken by those nominated by the Association, and that the Association hoped that they would also resign, with the ultimate result that 27 out of the remaining 46 Members resigned their positions on the various Advisory Committees.

32. The following is a complete report as to the position up to and including October 10th, 1912:—

There were 59 medical members of Advisory Committees, 13 of whom were nominated by the British Medical Association.

The whole of the 13 nominees of the Association have resigned their Membership, namely:—

Dr. John Adams (Glasgow).
Dr. R. M. Beaton (London).
Dr. T. H. Carter (Bristol).
Dr. J. S. Darling (Portadown).
Dr. S. Hodgson (Salford).
Dr. J. A. Macdonald (Taunton).
Dr. J. Munro Moir (Inverness).
Mr. J. Neal (London).
Dr. E. O. Price (Bangor).
Mr. D. F. Todd (Sunderland).
Mr. E. B. Turner (London).
Mr. T. Jenner Verrall (Bath).
Dr. A. H. Williams (Harrow).

The following 27 medical members have also resigned their membership:—

Miss A. H. Boyle (Brighton).
Dr. R. C. Buist (Dundee).
Dr. T. B. Costello (Tuam, Co. Galway).
Dr. J. E. P. Davies (Lanelly).
Dr. T. Elliott Dickson (Lochgelly).
Dr. T. Donelly (Dublin).
Sir Frederick Eve (London).
Miss Mary F. Ivens (Liverpool).
Dr. R. McKenzie Johnston (Edinburgh).
Mr. Herbert Jones (Hereford).
Dr. H. A. Latimer (Swansea).
Dr. G. R. Livingston (Dumfries).
Mr. J. E. Lloyd (Chirk).
Dr. Constance Long (London).
Dr. Adam Fulton (Nottingham).
Dr. J. Power (Cahir, Ireland).
Dr. E. J. Maclean (Cardiff).
Dr. W. C. Milward (Cardiff).
Dr. J. E. Moorhouse (Stirling).
Dr. Naunton Morgan (Gilfach Goch).
Dr. J. W. Mulligan (Abersychan).
Miss Mary C. Murdoch (Hull).
Dr. P. T. O'Sullivan (Cork).
Dr. Lauriston E. Shaw (London).
Prof. R. Stockman (Glasgow).
Dr. W. E. Thomas (Ystrad Rhondda).
Miss A. Mercer Watson (Aberdeen)

Of the remaining 19 medical members, the following 18 have intimated that they are unwilling at the present time to resign their membership, namely:—

Sir T. Clifford Allbutt, K.C.B. (Cambridge).
Dr. C. Addison, M.P. (London).
Dr. C. Belcher (Birmingham).
Mr. C. J. Bond (Leicester).
Sir R. J. Collis (London).
Dr. A. Crook (Norwich).
Dr. A. Hamilton (Luton).
Dr. M. St. L. Harford (London).
Dr. J. D. Jenkins (Pentre, Rhondda).
Dr. Hugh Jones (Dolgelly).
Dr. A. Latham (London).
Dr. R. A. Lyster (Winchester).
Dr. H. H. Mills (London).
Sir Shirley Murphy (London),
Dr. G. Reid (Stafford).
Dr. J. Robertson (Birmingham).
Dr. Norman Walker (Edinburgh).
Prof. G. Sims Woodhead (Cambridge).

The remaining member, the Rt. Hon. M. F. Cox (Dublin), has not, as yet, intimated whether he intends to resign or not.

Summary.

No. of Medical Members of Advisory Committees nominated by the Association	13	
No. of other Medical Members...	46	
		59
No. of Association's nominees who have resigned	13	
No. of other Medical Members who have resigned	27	
		40
No. of Medical Members of Advisory Committees who, as far as is known have not resigned their membership		19

Membership of Local Insurance Committees.

33. The Committee, upon consideration of the following Minute of the Annual Representative Meeting and the relation thereto of Minutes 184 and 185:—

Minute 169.—Resolved: That all medical practitioners who have accepted office on any of the provisional Insurance Committees throughout the country be called upon to resign their positions,

instructed the Provisional Medical Committees in a circular letter to ask all medical practitioners who had accepted appointments on Provisional Insurance Committees, in any capacity, to resign their positions. In most cases the call has been made and loyally responded to. The Provisional Medical Committees were advised that if a special committee for the administration of Sanatorium Benefit were set up by the local authority, no objection could be raised to medical practitioners taking part in it, provided that they undertook to resign their membership in the event of Sanatorium Benefit not being administered in accordance with the wishes of the Association.

Position of Members of the Advisory Committees and of Local Insurance Committees who have not resigned their Appointments.

34. The Committee considered the question of the attitude to be adopted with respect to those medical members of Advisory Committees and of Provisional Insurance Committees who have not resigned their appointments in accordance with Minute 169 of the Annual Representative Meeting, 1912, and came to the conclusion that, beyond regretting the false appearance of disunion in the profession occasioned by such action, it was inadvisable for the Association to take further action.

RESIGNATIONS OF CONTRIBUTORY CONTRACT PRACTICE APPOINTMENTS.

35. Acting under the instructions contained in the following Minute of the Annual Representative Meeting concerning the sending in of resignations of contributory contract practice appointments, namely:—

Minute 217.—Resolved: That the resignations of contract practice appointments throughout the United Kingdom should be sent in at the earliest possible date consistent with the conditions of the pledge,

the Committee on September 14th, 1912, instructed the Provisional Medical Committees to send in resignations of contributory contract practice appointments, in so far as they extended to insured persons, on or before September 29th, 1912, with certain reservations as regards appointments in which less notice is required or in which there is no contract with any body representative of the subscribers, and in which therefore a shorter notice would suffice.

36. The Committee is glad to report that the response to this appeal was most satisfactory Up to and including October 30th, 1912, information had been received by the Central Office which showed*:—

(a) that 223 areas out of 232 had sent in 32,874 resignations of appointments held by 8,894 practitioners;

(b) that in the above areas 392 practitioners holding appointments requiring shorter notice than three months, were prepared to send in their resignations later;

(c) that in the above areas 381 practitioners are reported as not having resigned their appointments, of which number, however, many had undertaken not to apply for appointments rendered vacant by the resignation of their fellow practitioners.

In the areas of the following (6) Provisional Medical Committees resignations have not been sent in:—

Paisley.
Barnsley.
Morpeth.
Caithness.
Motherwell (*states that all appointments cease automatically on December 31st, 1912*).
Airdrie (*states that all resignations of Friendly Societies' appointments will be sent in early in December*).

* *The figures given must be taken as approximate only, as for several areas no definite figures are available, statements having been received by the Central Office to the effect that all resignations had been sent in.*

The reports received from the following (2) areas are incomplete and no figures from these areas are included in (a) (b) (c) above :—

Cleveland.
Bishop Auckland.

No report has been received from
Sevenoaks.

APPLICATION OF SUPPLEMENTARY PLEDGE AND FORM OF RESIGNATION TO UNINSURED PERSONS.

37. A great deal of confusion has arisen in various areas as to how far the Pledge and the Form of Resignation are applicable to contributory contract practice appointments which include uninsured persons.

The pledge states :—

. . . . . .

"I, the undersigned, hereby place in the hands of the Secretary of the Provisional Medical Committee of the "area in which I practise, my resignation of all club, Friendly Society, Dispensary and other forms of contributory "contract practice appointments which I hold, in so far as they extend to insured persons, and I authorise him to "send these resignations to the bodies concerned, if and when he is called upon by the State Sickness Insurance "Committee of the British Medical Association to do so,"

. . . . . .

and the Form of Resignation of appointments is as follows :—

"In support of the policy of the British Medical Association I hereby tender my resignation as medical officer "of your Society (or Club) the same to take effect on the 15th January, 1913, as I am unable to continue after that "date the present agreement for giving medical attendance and treatment to persons who will be insured under the "National Insurance Act, and can enter into any new agreement having reference to insured persons only through "the Provisional Local Medical Committee for my district."

38. It will be seen from the above that there is no claim upon any person who has signed the Pledge to resign any appointment which does not include insured persons. In order to resign appointments which include both insured and uninsured it was, however, necessary to terminate the contract as a whole, and this undoubtedly would be the effect of the form of resignation. There is nothing in the Pledge or in the form of resignation to prevent practitioners continuing to attend, or making a new contract to attend, uninsured persons, but the Committee is convinced that the profession is dissatisfied with present arrangements for contract medical attendance on uninsured persons, and that this question must be taken into consideration by the Representative Body, as some decision upon it is being urgently demanded on all sides.

CENTRAL INSURANCE DEFENCE FUND.

39. In accordance with the instruction of the Annual Representative Meeting contained in Minute 221, namely :—

That members of the profession be again urged both from the Central Office and by the officers of Divisions, to guarantee sums of not less than £20 to the Central Fund, so that £250,000 may be guaranteed by the end of September 1912.

the Provisional Medical Committees were urged to do their utmost to bring up the Fund to £250,000 by a guarantee from each member of the profession of £20. A Special Report on this matter is being sent to each Division and Provisional Medical Committee.

FUTURE POSITION OF COLLIERY SURGEONS.

40. It has been brought to the notice of the Committee that the future position of colliery practitioners requires special consideration, not only on account of the fact that the Insurance Act threatens to break up family contract arrangements which are on the whole satisfactory to the holders, but also because of the importance of securing if possible some common action throughout the colliery areas of the country. A conference of representatives of colliery practitioners will be held at Newcastle-on-Tyne on Wednesday, November 6th, 1912, and it is hoped that it will be possible to put before the Special Representative Meeting the findings of this Conference.

LOCUMTENENTS, ASSISTANTS AND HOSPITAL STAFFS AND THE UNDERTAKING AND PLEDGE OF THE ASSOCIATION.

41. The attention of Divisions, Branches, and Provisional Local Medical Committees was drawn to the terms of Minute 218 of the Annual Representative Meeting, 1912. The Committee also brought the matter to the attention of medical agents and others who supply locumtenents and assistants,

and is pleased to be able to report that practically without exception these gentlemen have made it a rule not to supply locumtenents or assistants who have not signed the Undertaking and Pledge of the Association. The Committee is of opinion that the thanks of the Association are due to these gentlemen for their assistance in this matter.

Minute 218.—Resolved: That practitioners in engaging locumtenents or assistants should insist that previous to engagement, they shall have signed both the Undertaking and the Pledge of the Association; and also that members of hospital staffs having influence in the selection of practitioners to fill resident and honorary visiting staff appointments should do what they can to secure that these appointed shall have signed both these documents.

B.—Statement comparing the Provisional Regulations as to Medical Benefit with the Cardinal Principles of the Association and with decisions of the State Sickness Insurance Committee as to matters which should be included in the Regulations.

42. It is proposed in this Section of the Report to examine the Provisional Regulations* of the Commissioners under two aspects, namely:

(I.) How far do they, in conjunction with the Act itself, satisfy the cardinal principles of the Association, and

(II.) How far do they cover the other points† brought before the Commissioners by the Members of the Advisory Committee nominated by the Association?

(I.) HOW FAR DO THE REGULATIONS, IN CONJUNCTION WITH THE ACT, SATISFY THE CARDINAL PRINCIPLES OF THE ASSOCIATION?

43. The cardinal principles were most recently and fully laid before the Commissioners in the following letter sent to the Commissioners by the State Sickness Insurance Committee on February 9th, 1912:—

Offices of the British Medical Association,
429, Strand,
London, W.C.
February 29th, 1912.

Sir,

I am instructed to inform you that at the Special Representative Meeting of the British Medical Association, held at the Guildhall, February 20th-22nd, the following resolution was unanimously passed:—

That this Representative Meeting direct the Council to inform, in plain and unmistakable language, the Commissioners appointed under the Insurance Act, 1911, that unless the minimum demands of the Association be embodied in the Regulations to be issued by the Commissioners, in such a manner as shall be effectual and permanent with a view to having the same embodied in an amending Act, it is the intention of the British Medical Association to call upon all its members and upon all other medical practitioners to decline to form panels or undertake any other medical duties which may be assigned to them under the Act, in conformity with the Undertaking which has already been signed by over 26,000 medical practitioners.

I am to point out to you, that the minimum demands of the Association mentioned in the above resolution comprise:—

1. An income limit of £2 a week for those entitled to medical benefit.

2. Free choice of doctor by patient, subject to consent of doctor to act.

3. Medical and maternity benefits to be administered by Insurance Committees and not by friendly societies. In connection with the question of the method of administration of medical benefit, the Representative Meeting resolved that all questions of professional discipline should be decided exclusively by a body or bodies of medical practitioners, and that the power of considering all complaints against medical practitioners should be vested in the local Medical Committee, with a right of appeal to a central Medical Board to be appointed for that purpose.

4. The method of remuneration of medical practitioners adopted by each Insurance Committee to be according to the preference of the majority of the medical profession of the district of that Committee.

5. Medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service.

After careful consideration the Representative Meeting resolved that the policy of the Association be to claim 8s. 6d. as a minimum capitation fee, not including extras and medicine, for members of approved societies, and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee, with recognition of a £2 maximum income limit.

6. Adequate medical representation among the Insurance Commissioners, in the Central Advisory Committee, and in the Insurance Committees, and statutory recognition of a local Medical Committee representative of the profession in the district of each Insurance Committee.

On behalf of the British Medical Association, I am instructed to lay these important points before you and to inform you that they constitute the irreducible minimum demanded by the Association.

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* *See* Supplement to JOURNAL of October 5th, 1912.

† *See* "B.M.J." Supplement, July 6th, 1912, or pp. 274-284 Annual Representative Meeting Minutes, 1912.

Another subject which received the special attention of the Representative Meeting was the question of dispensing. The Association is of opinion that dispensing, as hitherto, should be done or arranged for by the medical practitioner for his own patients, should be so desire, payment to be made according to the scale of prices fixed by the Insurance Committee in accordance with the terms of the Act.—I am, etc.,

ALFRED COX,
Acting Medical Secretary.

The Secretary,
National Health Insurance Joint Committee,
Buckingham Gate, S.W.

This letter was formally acknowledged.

INCOME LIMIT.

(1) "An income limit of £2 a week for those entitled to Medical Benefit."

44. This point was further elaborated in the document placed before the Commissioners by the Medical Members of the Advisory Committee nominated by the Association, as follows:—

(a) *General Procedure.*]

3. That provision should be made in the Regulations for the following:—

(a) That all or any of the following, namely, the medical practitioner, the insured person, the local Insurance Committee, or the local Medical Committee, shall have the right of challenging the title of any insured person to obtain medical benefit, in the form of medical attendance under any scheme administered by the Insurance Committee, on the ground that his income exceeds a limit fixed by the Insurance Committee.

(b) That the onus of proof that an insured person is entitled to medical benefit, in the form of medical attendance, should rest on the insured person.

(c) That in such cases the Insurance Committee shall require a signed statement from an insured person showing his weekly wage, countersigned by his employer, and also showing his income from other sources, if any.

45. The Regulations give no instructions to Committees with regard to an income limit of general application to all those insured persons on whose behalf the Committee shall make arrangements for medical treatment, as was laid down in Minute 51 A of the Special Representative Meeting, February, 1912. Power is given, however, to each Committee to fix, after consultation with the Local Medical Committee, any income limit it may desire, and to require all those whose incomes exceed such limit to make their own arrangements for obtaining medical treatment. The Regulations require the surrender of the principle of central bargaining, and leave it to the profession in each area to obtain such an income limit as they desire and are strong enough to secure.

46. Regulations 9, 13, and 23 (1), make it clear that an income limit, other than that stated in the Act, may be imposed, and if this is done the administrative details are in the main those formulated by the Association in the document presented to the Advisory Committee.

47. The right of challenge is given to the Local Medical Committee, or, where there is no such Committee, to any practitioner on the panel, and also to any Approved Society or Association of deposit contributors or to any person or firm supplying drugs or appliances (R. 13 (4)).

48. When any local income limit is fixed, the Committee may exempt certain insured persons or classes of insured persons from the obligation to make their own arrangements (R. 13 (1)). This provision for exemption would enable groups of workmen, such as miners, etc., to be dealt with under special arrangements, and it would seem possible under this Regulation to differentiate, as regards income, between married and single men, between persons with families and those without, and to make such other adjustments as may be found necessary owing to the character of the population. On the other hand, it should also be borne in mind that this exemption clause might be operated so widely as to render ineffective the operation of a local income limit.

49. When an insured person is required to make his own arrangements, the Insurance Committee must contribute towards the cost of his medical attendance the sum available for his medical benefit in one of two ways (R. 15). If he enter into a contract to obtain treatment, as for example through a Public Medical Service, the Committee must pay the whole or a part of the sum contracted to be paid by him in obtaining medical treatment. If he make his own arrangements for treatment on the private practice basis, the Committee must pool the individual sums available for the medical benefit of all those persons taking this course and must pay their bills, on a scale of fees to be fixed by the Committee, so far as the pool will allow. It is not clear, however, from the wording of the Regulations that proper safeguards are set up to ensure that the amount paid to these classes of persons on behalf of their medical treatment will reach the doctor.

50. If, notwithstanding the announcement of the income-limit, it is found that an insured person whose income exceeds the limit is taking advantage of the normal arrangements made by the Committee, various bodies and individuals as mentioned in paragraph 48, may dispute the right of such person to obtain treatment in this way. If challenged, the onus of proof is put entirely upon the insured person, who is required within a specified period to satisfy the Committee that his income is below the limit, or,

alternatively, to make his own arrangements. Section 2 (1) of the Model Rules* issued by the Commissioners concerning the conduct of persons in receipt of medical benefit provides for the infliction of a penalty by Insurance Committees upon insured persons for any imposition or attempted imposition in respect of medical benefit.

FREE CHOICE.

(2) "Free Choice of Doctor by Patient subject to consent of Doctor to act."

51. This cardinal principle was further elaborated in the document above referred to† as follows:—

(a) *Publication of right to free choice.*

36. That provision be made in the Regulations whereby, in order to bring to the knowledge of all insured persons their right to free choice of doctor, a notice to this effect shall be hung in conspicuous places in factories, offices, and club rooms, of every approved society, and of any organisation availing itself of Sub-section 15 (4) of the Act.

(b) *Time of exercise of Choice.*

37. That provision be made in the Regulations whereby, in areas where a capitation system of payment of medical practitioners is adopted, free choice of patient by doctor and free choice of doctor by patient may be exercised twice a year, namely, in the months of June and December.

(c) *Right to Refuse to accept person on List.*

38. That the Regulations contain a provision enabling a registered medical practitioner to refuse attendance upon any insured person.

52. In response to the demands of the Association, the right of free choice, which was not contained in the Bill as introduced, was accorded in the Act with the possible exception of the restriction imposed by the Harmsworth amendment. The introduction of that amendment has been held by some to offer an inducement to insured persons to join an approved institution which employs whole-time medical officers. Others are of opinion that however much the profession generally may deplore the existence of such institutions, the fact that an insured person may deliberately select one of them cannot be said to restrict his freedom of choice. At any rate any restrictions of the right of free choice inherent in that amendment are not removed by the Regulations. It should be noted that an "institution" is defined in the Regulations as follows:—

"*Part* I., 2 (1):—'Institution' means a system or institution existing on the 16th December, 1911,§ and providing medical attendance and treatment."

53. The exercise of the right of free choice for the patient is provided for as follows:—

(a) preparation of list showing all practitioners who have signified their desire to undertake treatment (R. 12 (1));

(b) publication of announcement in newspapers as to places where copy of list may be seen, including a statement as to right of insured persons to select a practitioner on panel, or to obtain their treatment in some other manner (R. 17),

(c) duty of patient to present form of application for treatment to practitioner of his choice (R. 18 (1));

(d) duty of practitioner to notify whether he accepts patient or not (R. 18 (2));

(e) furnishing by Insurance Committee to practitioner of a copy of list of patients (R. 18 (4));

(f) right of patient to change his Doctor in the ordinary way at end of year (R. 18 (5)), or at other times by consent of both practitioners concerned (R. 27 (a));

(g) *under payment per attendance system*, right of patient to present a voucher to practitioner of his choice (R. 19 (1));

(h) insured person coming to reside in County during course of year to choose practitioner from list or by presenting voucher (R. 23 (1));

(i) persons coming to reside temporarily in county to have right of selecting any practitioner on list of those who have declared their willingness to attend such persons (Rs. 44 and 45).

54. As regards the approved institutions, the following safeguards as to free choice apply, in addition to such of the above as are applicable:—

* See Supplement to *B. M. J.*, October 5th, 1912, p. 372.
† See footnote to Paragraph 43 (II.)
§ The date of the passing of the Act.

(i) persons who have joined institutions must be allowed to terminate their arrangements with them at certain times without incurring any pecuniary loss or other penalty (R 16 (2) (i) (b));

(ii) person selecting an institution as the method by which he desires to obtain treatment must fill up special form for the purpose, and send it to the institution (R. 20 (1) (b)) ;

(iii) members of institutions wishing to change during currency of list have same facilities for doing so as those who employ doctor on the panel (R. 27).

55. A point of some importance in connection with freedom of choice of doctor by patient is the question of mileage. According to R. 46 (2) no mileage will be paid where the services of a practitioner resident within the prescribed distance from the patient are available. This certainly restricts the free choice of doctor, but as presumably there will be no objection to the patient himself paying mileage it is probable that distance will not restrict free choice any more or any less than it does at present.

56. The right of a doctor to decline to attend a patient is provided for by (a) right of practitioner to reject application of a person to be put on his list (R. 18 (2)); (b) right to decline to continue arrangement at end of year (R. 18 (6)); (c) right to decline voucher of person presenting it under payment per attendance system (R. 19 (1)); (d) power of arranging, during currency of medical list, for transfer of patient to another doctor with the consent of both patient and doctor (R. 27 (a)).

57. The distribution of the patients who have not selected a doctor or who have been refused by the doctor of their choice, is determined by Regulation 18 (3) which is as follows:—

(3) After the date indicated in the announcement, the Committee shall provide for the distribution, amongst practitioners on the panel, and so far as practicable under arrangements made by them, of those insured persons for whose treatment no arrangements have been made.

58. It is to be noted that the provision for transfer of the whole or part of the list of one practitioner to another would meet the case of the sale of a practice (R 27 (d)).

ADMINISTRATION OF MEDICAL BENEFIT.

(3) "Medical Benefit to be administered by Insurance Committees and not by Friendly Societies."

59. This point was granted the Association in the passage of the Bill through Parliament The administration of Medical Benefit is entirely in the hands of the Insurance Committees, but the Association has always contended that the representatives of insured persons still have control in this matter, as they constitute a majority of the members of Insurance Committees. (For present position as regards representation of profession, see Table in par. 79, p. 18).

PROFESSIONAL DISCIPLINE.

"All questions of professional discipline should be decided exclusively by a body or bodies of medical practitioners, and the power of considering all complaints against medical practitioners should be vested in the Local Medical Committees with a right of appeal to a central Medical Board to be appointed for that purpose."

60. While the above demand of the profession has not been completely met, an endeavour has been made to satisfy the desires of the profession while meeting the public demand for some representation of public interests on the tribunals established to hear complaints in which medical practitioners may be involved.

61. So far as purely professional matters are involved, *i.e.*, charges by one medical practitioner against another in matters affecting the efficiency of the service, these must be dealt with by the Local Medical Committee alone without the intervention of the Local Insurance Committee. The Local Medical Committee may apply to the Commissioners to remove the practitioner from the panel or "may take such other action as they may deem proper in the circumstances" (R 49).

62. Charges brought by a patient against a practitioner, or by a practitioner against a patient, must (R. 48) be investigated by a Committee of Complaints composed of:—

(i.) three persons appointed by and from the members of the Committee who represent insured persons;

(ii.) three persons appointed by the Local Medical Committee, or if no Local Medical Committee exists, by the practitioners on the panel;

(iii.) a Chairman selected from those members of the Committee appointed respectively by the Council of the County and by the Commissioners who are neither insured persons nor

practitioners, the selection being made by the six persons appointed as above mentioned, or in default of selection being made by those persons, by the members of the Committee appointed respectively by the Council of the County and by the Commissioners.

63. The procedure laid down for the hearing of complaints is of a nature which by its formality would appear to discourage petty complaints, *e.g.*,

(a) the complaint must be in writing (R. 48 (3));

(b) the proceedings before the Committee of Complaints are private (R. 48 (5));

(c) the Secretary or other officer of the Local Medical Committee may be present and also any other person who may be admitted for the purpose of assisting either party in presenting his case, provided he be neither solicitor nor counsel (R. 48 (5) (d));

(d) The Committee of Complaints presents a written report to the Insurance Committee, (no provision is made to ensure privacy at this stage) and that Committee must accept as conclusive the finding of facts as contained in the Report (R. 48 (7)), the penalty, if any, being adjudged by the Insurance Committee and not, as the Representative Body recommended, by a body of medical practitioners. The penalty may be (a) as far as the practitioner is concerned (1) report to Commissioners (2) transference of patient to another doctor; (b) as far as patient is concerned (1) transference to another doctor (2) fine (3) suspension of medical benefit (Model Rule 2).

64. In addition the Model Rules provide for the penalising of persons who make frivolous or vexatious complaints. The probability of complaints of any kind is lessened by the fact that a change of doctor can be effected with comparative ease, and this provision would naturally be taken advantage of in cases which, without this facility, might well lead to friction or even to formal complaint.

65. The central machinery for enquiry into complaints against doctors on the panel is as follows (R. 51):—

The Joint Committee of the Commissioners appoint 16 medical practitioners as a panel from whom they select two for the purposes of any enquiry. To these two are added by the Commissioners two other persons, one of whom must be a barrister or a solicitor, and these four form the Enquiry Committee. The chairman is chosen by and from the Committee but has no casting vote. In choosing the original sixteen practitioners, who must include in their numbers practitioners having special knowledge of the several branches of medicine and surgery, as well as general practitioners, the Commissioners will consider suggestions from any body which appears to them to be representative of the profession.

66. Either party to the case may be represented by counsel or solicitor or by any member of his family, or by any officer or member of any Society to which the person may belong. This would enable, for example, the British Medical Association, or any of the medical defence societies to assist their members. The Enquiry Committee submits to the Commissioners a report on the facts as established by the evidence and the inferences which the Enquiry Committee may draw therefrom, but no recommendation as to any course of action. The Commissioners apparently decide on the strength of this report whether the practitioner is or is not to be removed from the panel.

67. While the proposed tribunal would appear to offer a measure of security for a fair enquiry, no regulations affecting the position of a doctor on the panel can be satisfactory to the profession which do not provide for a right of appeal to a specially appointed medical tribunal.

METHOD OF REMUNERATION.

(4) "Method of Remuneration of Medical Practitioners adopted by each Insurance Committee to be according to the preference of the majority of the medical profession of the district of that Committee."

68. The method of remuneration is to be determined by the Insurance Committee after consulting the Local Medical Committee (R. 6 (1)). As the amount of money to be distributed to the medical practitioners would be the same whatever the method of remuneration, it seems probable that there would be no objection on the part of the Insurance Committee to adopt the method preferred by the Local Medical Committee. The profession in each area would have the choice of five methods of payment, namely, a pure capitation system, a pure payment per attendance system, and three composite systems (*see* First Schedule to Regulations, Part II.). It is interesting to note that though the maximum amount of money to be distributed among the panel in any area will be the same whatever the method of distribution, the effect of the Regulations is that no part of it can be held in reserve, and that the full amount of the net fund must be divided among the practitioners at the end of each year (R. 30).

AMOUNT OF REMUNERATION.

(5) "Medical remuneration to be what the profession considers adequate, having due regard to the duties to be performed and other conditions of service."

"After careful consideration the Representative Meeting resolved that the policy of the Association be to claim 8s. 6d. as a minimum capitation fee, not including extras and medicine, for members of approved societies, and to claim the recognition of payment per attendance, in which case the fees must be on such a basis as shall be deemed an equivalent by the State Sickness Insurance Committee with recognition of a £2 maximum income limit."

69. The statement* of the Chancellor of the Exchequer on October 23rd, 1912, indicates the terms which are now offered for medical attendance and treatment. These are a total provision for the normal service of 8s. 6d. per insured person, out of which 1s. 6d. is definitely allotted for drugs and appliances, and 6s. 6d. for medical treatment alone, the remaining 6d. being available for drugs when the 1s. 6d. proves insufficient, otherwise being available for medical attendance. To this is to be added another 6d. per head in respect of the treatment of tuberculous insured persons by general practitioners. Upon this point the Chancellor of the Exchequer on October 23rd, 1912, stated as follows:—"7s. for payment of the services of the doctor, to include extras, and to include tuberculosis;" the Chancellor made it perfectly clear that mileage was to be paid for out of this sum. It must be pointed out, however, that the Regulations provisionally issued require considerable alteration in the light of this statement, and the Council is at a disadvantage in not having before it the exact terms of the alterations.

70. As to the duties to be performed by a medical practitioner the Chancellor of the Exchequer in his statement on October 23rd, said:—

> I have got three conditions which I am going to lay down as the result of this increased provision. One is that the doctor who acts on the panel shall agree to give, without further charge, those medical certificates which an insured person will require to enable him to get sickness or disablement benefit; the certificate in the first place that he is unfit for work; the certificates, where necessary, that he continues to be unfit for work; and, when he is restored to health, a certificate for the society to this effect. Secondly, we shall also ask that those practitioners who act on the panels will keep simple records of the patients whom they treat, the illnesses from which they suffer, and the attendances given. That is new in respect to the industrial practice of this country. Though we are providing increased remuneration, I frankly admit we are also asking for increased service. We know that doctors dislike book-keeping above all things, but we know also they desire the advancement of medical knowledge, and we feel confident that they will co-operate with us in this matter. We on our part undertake that the records required shall be of the simplest character that will give the necessary information. Thirdly, and chiefly, the service must be improved in certain definite respects, as compared with what it has been possible to give in the past. It will be the duty of the Commissioners, when setting out the conditions for the new grant and disbursing it to the Insurance Committees, to see that a proper standard is reached and maintained, not merely in respect of the number of visits paid or the number of times a patient is seen at the doctor's surgery, but also in respect of the amount of time and attention given, and also that where necessary the practitioner should resort to those modern means of exact diagnosis the importance of which I am advised is increasingly recognised in the profession.

71. In those cases where, owing to special difficulties of access to a chemist, medicines and appliances are supplied by medical practitioners, the total amount of payment for attendance (ordinary medical attendance and non-institutional tuberculosis attendance), medicines and appliances would be 9s. per head.

72. An "abnormal drug fund" is to be placed at the disposal of the Commissioners from which grants may be made to any district in which, owing to an epidemic, there has been an abnormal demand for drugs. It is not clear from the Chancellor's statement whether this fund is to be applied solely for the provision of extra drugs in these districts, or whether it could be used by the chemists instead of the 6d. per head which is held in suspense in every district and which in a time of epidemic might justly be claimed by the doctors on account of extra work.

73. The State Sickness Insurance Committee, in the document placed before the Commissioners which has been previously referred to, urged that the Insurance Fund and not the individual insured persons should be responsible for the payment of medical practitioners for such extras as form part of medical benefit, and the Committee also laid down a list of services which should be regarded as such extras. These, with the exception of vaccination, tooth extractions, and various forms and certificates (which are not mentioned in the Regulations) are listed as extras in the payment per attendance schemes. In the pure capitation method (First Schedule, Part (II.) (A)) obviously no extras are provided, all services covered by the term "medical attendance and treatment" being included in the capitation rate. The definition of medical treatment contained in the First Schedule, Part I (1) is

> "such treatment as is of a kind which can consistently with the best interests of the patient be properly "undertaken by a practitioner of ordinary professional competence and skill."

It is further laid down in the First Schedule, Part I. (2):—

> "Where the condition of the patient is such as to require services beyond the competence of an ordinary practitioner the practitioner shall advise the patient as to the steps which should be taken in order to obtain such treatment as his condition may require."

74. There will be no payment from the Insurance Fund for extras beyond the amount allotted for medical benefit, though major operations and specialist services are excluded from medical benefit according to the Chancellor's statement.

* See Supplement to Journal of October 26th, 1912.

75. Regulation 28 defines the way in which the total amount available for the cost of medical benefit will be distributed, and as it provided for the deduction of drugs, appliances and mileage from the fixed total amount available it was palpably unfair as it placed the practitioner in the invidious position of having to choose between ordering less drugs and appliances and lessening the amount of his own remuneration. The statement of the Chancellor, referred to in paragraph 70, while removing this grievance, renders it difficult to criticise the remaining provisions of this Regulation until it is seen in its amended form. Supposing the present arrangement to stand as regards mileage and cost of medical benefit of those persons residing temporarily outside the insurance area it may be said that the latter item is mainly a matter of book-keeping, for it is probable that, generally speaking, any amount deducted for this purpose from the local fund in any area would, over a period of years, be balanced by the amounts paid by other Committees in respect of persons temporarily residing out of their areas. A deduction in respect of mileage, if taken from the amount available in each separate area, might obviously be unfair. Rural practitioners in a mixed urban and rural district would absorb much of the fund in mileage, at the expense of the urban practitioner, while in a very scattered district mileage might absorb nearly the whole of the fund.

The payments for mileage should undoubtedly come from some centralised fund.

76. The State Sickness Insurance Committee represented to the Commissioners that deposit contributors should preferably be attended upon a payment per attendance basis, and stated that where a capitation system was preferred, a higher payment would be required for attendance upon this class of insured persons. No discrimination is made in the Regulations as to the *method* of remuneration for attendance upon deposit contributors, but in R. 7 (c) it is laid down that, in the arrangements which must be submitted by the Insurance Committee for the approval of the Commissioners, a special statement should be made as to the *amount* which, in the opinion of the Committee, is properly payable in respect of each deposit contributor for the purpose of the cost of medical benefit.

77. In the document presented to the Commissioners, it was urged that provision should be made in the Regulations to prevent those insured persons who are allowed to make their own arrangements being allowed to do so at lower rates of payment to the medical practitioners concerned than those paid to medical practitioners on the panel. There is no definite provision of this kind in the Regulations. It is provided, in R. 15, that in the case of a person who has contracted to obtain treatment outside the panel for the year there shall be paid to him "by way of contribution to the cost of his treatment" a sum "equal to the amount contracted to be paid by him for that treatment, or, where that amount "exceeds the sum available in respect of his medical benefit for the year, the amount so available." The natural tendency would be for outside contract arrangements to demand the whole of the amount available, but it is by no means clear that this amount would necessarily reach the hands of the doctor. As regards the approved institutions, a safeguard is provided which does not apply to any ordinary contract arrangement outside the Act, for by R.16 (2) (ii.) every institution must, as a condition of approval, from time to time furnish such accounts as the Commissioners or the Committee may require. This provision may be so administered as to meet the demand of the Association that the money paid over to the institutions shall in fact be expended in the provision of medical attendance. It is possible, however, to imagine a case in which the medical officer of an institution would receive less from a given number of patients than a panel practitioner would receive from the same number, the difference being expended in drugs, or in other ways which might be deemed to come within the definition of medical treatment This difference in favour of the "panel" doctor if it were allowed, would however tend to render service under these institutions even less attractive to members of the profession than it is now.

MEDICAL REPRESENTATION.

(6) "Adequate medical representation among the Insurance Commissioners, in the Central Advisory Committee, and in the Insurance Committees, and statutory recognition of a local Medical Committee representative of the profession in the district of each Insurance Committee."

78. Adequate representation among the Insurance Commissioners and in the Advisory Committees was granted during the passage of the Act. Representation on local Insurance Committees has also been granted. At the same time, however, as this latter representation was granted to the profession, increased representation was granted to insured persons, thus nullifying to some extent the advantage gained by the profession. The Association has always contended that the amount of representation of the profession on the Committees is inadequate, and the last demand that was made on this point was that the representation of the profession should be increased at any rate to one-tenth of the Committees of all sizes. The Regulations give no increased representation to the profession. The proportion of practitioners in smaller Committees is, by the terms of the Act, one-tenth, but for larger Committees the obtaining of this proportion depends upon the Commissioners appointing sufficient medical practitioners, in the exercise of the powers conferred by Sub-section 569 (2) (c) of the Act.

79. The following Table shows the present representation of the profession on these Committees.—

	Medical practitioners directly elected.	Appointed by the County or County Borough Council.	Appointed by the Commissioners.	Total.
Committee of 40 to 59 members ...	2	1	1 (at least)	4
Committee of 60 to 79 members ...	2	2	1 (at least)	5
Committee of 80 members ...	2	3	1 (at least)	6

80. Statutory recognition of a Local Medical Committee was obtained by the Association during the passage of the Bill through Parliament, and the Regulations define the status and duties of that Committee.

81. The following is a list of the duties and powers of the Local Medical Committee:—

(i.) It must be consulted as to
(a) conditions of service of practitioners (R. 6 (1));
(b) method and rate of remuneration (R. 6 (1));
(c) mileage (R. 6 (1));
(d) rules with regard to the administration of medical benefit (R. 8) (Model Rules have been published by the Commissioners);
(e) the fixing, varying, or abolition of an income limit (R. 13 (2));
(f) revision of lists of drugs and appliances (R. 40).

(ii.) It has a right of appeal to the Commissioners as to any arrangements submitted by the Insurance Committee for approval (Rs. 7 and 10).

NOTE.—*It is doubtful whether the local Medical Committee could appeal to the Commissioners as regards the Income Limit. The statement as to income limit is to be furnished "for the* information *of the Commissioners," but apparently not for their approval. The local Medical Committee must, however, be consulted by the Committee as above-mentioned, and the Commissioners must consider any representations made by the Local Medical Committee as to any arrangements "submitted" to them.*

(iii.) It has the power to dispute the right of any insured person to receive medical benefit under the arrangements made by the Committee, on the ground of income limit (R. 13 (4)).

(iv.) It appoints three members of the Committee of Complaints (R. 48 (2) (ii)).

(v.) It has a right to be represented at any inquiry before the Committee of Complaints (R. 48 (5) (c)).

(vi.) It has imposed upon it the duty of considering complaints made by one practitioner of the panel against any other practitioner on the panel involving any question of the efficiency of the medical service of insured persons, and may apply to the Commissioners to remove the name of the practitioner against whom complaints are made from the panel, or may take such other action as it may deem proper in the circumstances (R. 49).

(vii.) It may make representations to the Commissioners as to the inclusion or continuance on the list of a chemist or other person whose presence it is deemed will be prejudicial to the efficiency of the service, and on receiving these representations the Commissioners must hold an enquiry (R. 52).

82. The above list of duties and powers shows that under the Regulations the profession is to be asked to undertake very important duties which bear close relation to its interests. Whether the Local Medical Committee is to be of any service in protecting the profession depends, however, upon the real meaning and force of the "consultation" between the Local Medical Committee and the Insurance Committee, and also upon the extent to which the appeal of the local Medical Committee to the Commissioners is likely to have weight.

83. It is to be noted that no indication is given in the Regulations as to how a local Medical Committee is to be constituted in order to become approved, or what arrangements are to be made for its election and re-election, or what is its term of office. These are points of great importance.

DISPENSING.

(7) "The Association is of opinion that dispensing as hitherto, should be done or arranged for by the medical practitioner for his own patients should he so desire, payment to be made according to the scale of prices fixed by the Insurance Committee in accordance with the terms of the Act."

84. The Act made it plain that the normal system of dispensing is to be by chemists, and there is nothing in the Regulations inconsistent with this. Arrangements will only be made with practitioners for the ordinary supply of drugs, in conditions where the Committee is satisfied that an insured person, by reason of distance or inadequacy of means of communication, will have difficulty in obtaining any necessary drugs or appliances from a chemist or other person on the list (R. 35 (2)). Practitioners who feel very strongly upon the question of retaining their right to dispense medicines under similar conditions to those now obtaining, could apparently only succeed in doing so by inducing insured persons to contract out of the panel system. In this case the insured person who is allowed to make his own arrangements could contract to obtain treatment (including medicines and appliances) and receive from the Insurance Committee a sum equal to the amount contracted to be paid by him for treatment, or where that amount exceeds the sum available in respect of his medical benefit for the year, the sum so available. (R. 15).

(II.) HOW FAR DO THE REGULATIONS PROVIDE FOR THE VARIOUS OTHER POINTS PLACED BEFORE THE COMMISSIONERS BY THOSE MEMBERS OF THE ADVISORY COMMITTEE NOMINATED BY THE ASSOCIATION?

Definition of Medical Benefit.

85. The Committee stated its opinion that the term "medical benefit" should be held to mean "ordinary medical treatment and attendance." The following is the definition contained in paragraph 1 of Part I. of the First Schedule to the Regulations:—

> "such treatment as is of a kind which can consistently with the best interests of the patient be properly undertaken by a practitioner of ordinary professional competence and skill."

This definition taken in conjunction with the Chancellor's statement on October 23rd shows that there will be no payment from the Insurance Fund for extras beyond the amount allotted for medical benefit, and that major operations and specialist services are excluded from medical benefit.

Misconduct.

86. The Committee suggested that a Regulation should be framed defining what is meant by the word "misconduct" occurring in Sub-section 14 (4) of the Act. Such definition does not appear in the Regulations, and uncertainty still therefore exists as to what diseases are to render the person liable to be suspended from sickness or disablement benefit, though not from medical benefit.

Dressings.

87. The Committee suggested that the words "drugs, medicines, and appliances" occurring in Sub-section 15 (5) be understood to include dressings. This suggestion has been carried out. The list of appliances given in the Second Schedule to the Regulations includes many of the usual dressings.

Certificates and Reports.

88. The Committee suggested that any report or certificate required, otherwise than as may be necessary for placing an insured person on, or removing him from sickness or disablement benefit, be an extra. No mention is made in any part of the Regulations of any provision for certificates, but the statement made by the Chancellor indicates that the rate of payment offered includes the provision of the certificates mentioned above, as well as the usual certificate for retaining an insured person on the fund, together with such book-keeping as is necessary for purposes of record.

Mileage.

89. According to the recent statement of the Chancellor of the Exchequer (on October 23rd) the cost of mileage in included in the payment for Medical Benefit.

Injuries Covered by Workmen's Compensation Act.

90. The Committee suggested that all injuries and diseases covered by the Workmen's Compensation Act should be extras. Nothing is said in the Regulations on this point, and it would appear, therefore, that the treatment of accidents is left, under the definition of medical benefit, to the discretion of the practitioner, as is the case in connection with most club appointments at present.

Miscarriages and Confinements: Abortions.

91. The Committee suggested to the Commissioners that confinements, miscarriages, and abortions should not be included under the head of medical benefit. Confinements are specifically excluded by paragraph 1 of the First Schedule, that is to say, the practitioner under his agreement with the Insurance Committee is not required to give any attendance in respect of a confinement nor would he, under a payment per attendance system, be entitled to charge for such attendance. Under a pure capitation system it is apparently intended that abortions, in the case of insured persons, shall be included in the ordinary attendance given by the panel, because in the mixed systems and in the pure payment per attendance system, these cases, in so far as not included under Maternity Benefit, are specified as extras.

Term of Agreement for Arrangements for Medical Attendance.

92. The Committee suggested that the Regulations should make provision that the original arrangements agreed upon between the Insurance Committee and the Local Medical Committee shall continue in operation for a period of two years from the date on which the administration of medical benefit comes into operation. The exact duration of the first agreement is not specified in the Regulations, but in R. 10 it is prescribed that any arrangements for medical attendance made by the Committee and approved by the Commissioners shall have effect for such period as may be specified in the approval.

93. The Council is of opinion that any arrangements entered into should not be for a longer period than three years, and that all such arrangements should terminate at the same time. The Representative Body may consider this a matter with respect to which representations should be made to the Insurance Commissioners.

Time of exercise of Choice of Doctor.

94. It was suggested that provision should be made for the exercise of free choice twice a year, namely in June and December. The normal system adopted in the Regulations is yearly exercise of choice, but R. 27 prescribes an arrangement whereby by mutual consent individual changes may take place at any time.

Restrictions on Pharmacists.

95. It was suggested that provision should be made in the Regulations for prohibiting pharmacists from advising or treating patients (except rendering first aid) or repeating a prescription unless endorsed by the prescriber. The Regulations enter into no details on these points beyond Section 2 of the Third Schedule which states that medicines must be supplied on presentation of an order provided by the Committee and signed by a practitioner on the panel, but the Local Medical Committee is given the right to make representations to the Commissioners as to the inclusion in or continuance on the list of a chemist when his presence is considered to be prejudicial to the efficiency of the service. (R. 52).

Medical Inspectors.

96. Certain suggestions were made by the Committee with regard to the qualifications of any Medical Inspectors who might be appointed under the Act, and in order to protect the right of the regular medical attendant to be present at examinations carried out by such inspectors. The Regulations make no mention of such officers.

Local Medical Committee to be consulted as regards Sanatorium Benefit.

97. The Committee suggested that the Regulations should provide that the Local Medical Committee should be consulted on all general questions affecting the administration of Sanatorium Benefit. No mention is made of this subject in the Regulations which deal exclusively with Medical Benefit, but it is to be noted that in the circular of the Commissioners dealing with Sanatorium Benefit sent to Insurance Committees and dated July 26th, 1912, these Committees are recommended to consult Local Medical Committees on these questions, where such Committees exist.

Compensation for Injury to Practice.

98. The Committee brought before the Commissioners the question of compensation in cases where it was possible to prove loss of goodwill in connection with practices, as a consequence of the operation of the Act, but no mention is made of this question in the Regulations.

Outline Scheme of Local Arrangements for Medical Attendance.

99. The Council submits for the convenience of Members in studying the question, a brief outline of the arrangements proposed under the Regulations to be made in each locality for the administration of medical benefit. (*See* Appendix C.)

(C)—Present Position of Medical Profession in relation to the National Insurance Act.

COMPARISON OF BILL AS INTRODUCED INTO PARLIAMENT WITH ACT AND REGULATIONS TAKEN TOGETHER.

100. It now remains for the Divisions and Representative Body to consider the present situation preparatory to coming to the most momentous decision they have ever been called upon to make. The previous examination of the Regulations has indicated to what extent the terms now offered fall short of those demanded by the profession, but we must recall what the profession, through the efforts of the Association, has gained during the fight which began in May, 1911.

Income Limit.

101. The Bill, as introduced, made no provision for an income limit of the kind demanded by the Association. The Act and Regulations make the imposition of such an income limit now possible in the sense indicated by paragraph 45.

Free Choice of Doctor.

102. The Bill did not give free choice of doctor, and, if it had been carried as introduced, the doctors for the insured persons would undoubtedly have been elected by the approved societies as the present Club doctors are. The Act and Regulations, with the possible restriction contained in the Harmsworth amendment, as indicated in paragraph 57, give free choice of doctor.

Administration of Medical Benefit.

103. The Bill gave the administration of medical benefit to the approved societies. The Act and Regulations put the administration in the hands of the Insurance Committees, which, though they contain a majority of representatives of insured persons, also contain a considerable number of members representative of other interests, including the medical profession.

Method of Remuneration.

104. The Bill said nothing as to the method of remuneration. The Act and Regulations leave it to be decided by the Insurance Committee after consultation with the Local Medical Committee.

Amount of Remuneration.

105. The Bill said nothing as to the amount of remuneration, but the actuarial estimates showed that 6s. was to be set aside for the cost of medical attendance, drugs and appliances, and in various speeches made by members of the Government or by others on their behalf, it was stated that in making such an offer the profession was being treated generously. The declaration of the Chancellor of the Exchequer on October 23rd, 1912, increases the amount of 6s. to 8s. 6d., from which a sum of not less than 1s. 6d. and not more than 2s. can be deducted for drugs and appliances.

Representation on Administrative Bodies.

106. The Bill gave no direct representation of the profession on any of the various bodies set up to administer the Act, although the Insurance Commissioners were required to appoint two medical practitioners upon each local Insurance Committee. The Act gives representation of the profession among the Commissioners, on the Advisory Committees, and an increased number on some Insurance Committees.

Local Medical Committees.

107. The Bill made no provision for the institution of any Local Medical Committee specially representative of the medical profession. The Act and Regulations give the profession power to elect a Local Medical Committee in every area, with an extensive range of duties, and the right of being consulted on all questions concerning medical administration, as was demanded at the Special Representative Meeting, June 1st, 1911.

FUTURE ACTION.

108. The question for the Association at the present moment is whether the terms now offered for medical attendance and the conditions of service as defined in the Regulations are, taken as a whole, such as will justify the profession in entering into arrangements with Insurance Committees to undertake the medical treatment of the insured. This manifestly cannot be done without abandoning the idea that there must be no local bargaining, because it is evident from the Regulations that the Commissioners cannot, or will not, fix all the arrangements centrally. The greatest use they will make of their powers in this direction is to insist upon all local arrangements with the medical profession being inoperative without their approval.

109. To arrive at a decision on this matter, it is necessary to consider what are the alternatives before the profession. On the one hand there would be a system which, with all the drawbacks detailed in a previous section of this Report, foremost amongst which is the loss of the independence of private practice in respect of a certain section of insured persons, would, with the possible exception of the Harmsworth Amendment, allow free choice of doctor; would allow such a local income limit as the local Medical Committee desires, and is strong enough, with the support of the Association, to enforce; would give the profession the right to be consulted on all matters relating to medical service, with an appeal to the Commissioners if not satisfied with the local result; would give the profession, if it so desire, in every area a statutorily recognised Committee with important duties and powers; would throw the onus of the administrative work connected with the collection and distribution of the subscriptions of the insured persons on a lay authority; would secure that every insured person, unless allowed or required to make his own arrangements, would be compelled to contribute towards the cost of his medical attendance; and which would secure to the profession throughout the country a payment for medical attendance of 6s. 6d. per insured person.

110. On the other hand, if the profession decline to accept this arrangement it is faced with the following situation:—

(a) The Insurance Committees will attempt to set up a panel in each area, and it is probable that in some areas panels, though inadequate and not representative, would be formed. In such areas the panel would undoubtedly be taken advantage of by a section of the insured. In the opinion of this Council the Act could not be satisfactorily administered on this plan.

(b) The Government would probably attempt, in certain urban districts, to inaugurate a National salaried service, either whole or part time, and the assurance of a fixed salary would undoubtedly attract some members of the profession. Though the Council does not believe that such a service would be attractive either to the profession as a whole or to the majority of the population, it is not unlikely that in some areas it could be established with success, and might prove a dangerous precedent in undermining the system of private practice.

(c) Insurance Committees, where no panel was available, and a salaried service could not be established, would require the insured to make their own arrangements. Where a limited panel was available, the Committee would provide in this way for such of the insured as were willing to accept the panel doctors, and would allow the rest to make their own arrangements. In districts where a panel could not be formed, or was absolutely inadequate for the needs of the district, medical benefit would be suspended. In all these cases there is no guarantee that the money available for medical benefit would find its way into the hands of the doctors. There would be no compulsion on those allowed to make their own arrangements or on those whose medical benefit was suspended to make provision for their medical attendance. The thrifty would do so, while others would as at present, take their chance. During the period of good health no money would accrue to the profession from the latter class; during the period of ill-health, they would probably run up bills which would in a large number of instances not be paid, or they might apply to medical charities. The approved societies would in these districts have a strong temptation to set up institutions with salaried officers and urge their members to obtain their medical attendance in this way.

111. All possible steps have been taken to organise the profession so that in the event of their not agreeing to take part in working the Act, their interests will be as far as possible safeguarded. The Honorary Staffs of many Hospitals, in carrying out the spirit of the Pledge which they have signed, have sent in to their governing bodies an intimation of their intention not to attend insured persons in hospitals, except in cases of emergency. Public Medical Service Schemes have been drawn up, and are in course of adoption in many areas. Central and local Defence Funds have been instituted for use in defending the interests of the profession.

112. The obvious reply of the profession to these modes of attack by the Government, the Insurance Committees, and the approved societies, would be to carry on private practice as heretofore, or to establish a Public Medical Service, and to refuse to attend those who are below the locally demanded income limit, unless they joined the service.

113. In this connection the strong and weak points of the Public Medical Service should be carefully considered. A Public Medical Service entirely under the control of the medical profession could undoubtedly secure free choice of doctor, freedom from friendly society control, a wage limit, and method and amount of remuneration to be as the profession thought fit, subject, of course, as far as the amount is concerned, to the willingness and ability of the patient to pay. Above all, it would secure that independence of the profession which has been the fundamental principle underlying the whole of the fight of the profession against the provisions of the Act. But considered as an alternative to the machinery of the Act for the working of medical benefit, the Public Medical Service has certain disabilities. It has no power of compulsion, it imposes upon the profession at all times a great deal of administrative work, and at the outset a considerable financial responsibility in respect of the necessary clerical, printing and other expenses incidental to the establishment of such a service. Moreover, there is not the same guarantee against members of the profession standing aloof from the service and undertaking contract practice on a lower scale, as would be afforded by the panel system under the Act. The contract under the Act being made on behalf of the insured person, and his contribution being a fixed amount, there is no pecuniary inducement for him to attempt to enter into a contract at a lower figure, if the panel system is in operation, though there would be if medical benefit were suspended and the money were placed at the patient's disposal. Finally, the cost of administration of a Public Medical Service run on the most economical lines, judging by the experience of the various services now at work, would probably not be less than fifteen per cent. of the income.

114. The above facts must be carefully weighed by the profession. If, on their consideration, the profession is of opinion that, though it has not succeeded in getting the full extent of its demands, it has yet succeeded in extracting from the Government terms which render it possible to give the panel system a trial, the following might be laid down as fundamental principles under which alone the trial could be made:—

(a) All agreements to give medical attendance and treatment under the Act should be of a purely provisional character.

(b) No arrangements of the kind should be entered into by any Local Medical Committee until they have been approved by the Council of the Association.

(c) The whole force of the Association, together with all the resources of the Defence Funds, should be placed at the disposal of those areas which fail to secure such terms as they consider to be necessary, and which are approved by the Council of the Association.

(d) Every effort should be made to maintain private practice as heretofore, or, in any area in which the profession desire, to establish a Public Medical Service (i.) to provide for the medical attendance on such of the uninsured as are unable in other ways to pay for their medical attendance; (ii.) to be utilised for the insured persons in every district where the profession is unable to secure proper terms from the local Insurance Committee; and (iii.) to be held in reserve in every area where arrangements made with the Insurance Committees after trial prove to be unsatisfactory to the profession.

115. The Council places this record of the situation before the Divisions and Representative Body for their careful consideration. It will be for these bodies to decide whether they consider that the conditions of service and remuneration under the Act are such as to justify the profession in provisionally accepting service. The Council therefore asks the Divisions to instruct their Representatives whether they desire:

(a) To give service under the Act under the conditions set out in paragraph 114 of this Report, or

(b) to refuse service under the Act.

116. Finally the Council would impress upon every Member of the Association the vital necessity of attending the meeting of the Division called to consider this report. The Honorary Secretaries of Divisions have already been asked to invite the attendance at their meetings of members of the profession who are not members of the Association, though they will have no right to vote in the instruction of Representatives.

117. In addition to the matters dealt with in Section C. of this Report the Council would direct the special attention of the Divisions to paragraphs 12, 20, 21, 22, 28, 29, 38 and 75.

J. A. MACDONALD,
Chairman of Council.

October 31st, 1912.

APPENDIX A.

RESOLUTIONS OF THE ANNUAL REPRESENTATIVE MEETING, 1912.

NATIONAL INSURANCE ACT.

FUTURE ACTION OF ASSOCIATION AS REGARDS NATIONAL INSURANCE ACT.

Minute 166.—Resolved: That the British Medical Association regrets that His Majesty's Government has not acceded to the terms upon which alone the cordial co-operation of the medical profession in supplying medical treatment under the National Insurance Act can be obtained, and passes the following Resolution:—

> That the Government be informed that the Association adheres to its minimum demands as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer.

Withdrawal of Medical Members of Advisory Committees.

Minute 167.—Resolved: That the Association calls upon all Members of the Association who are members of Advisory Committees in connection with the National Insurance Act, and also on other medical members of those Committees who are in sympathy with the policy of the Association, to withdraw from these bodies.

Minute 169.—Resolved: That all medical practitioners who have accepted office on any of the provisional Insurance Committees throughout the country be called upon to resign their positions.

Minute 170.—Resolved: That the foregoing Resolution do not apply to Ireland.

Future Action of Association as regards National Insurance Act.

Minute 184.—Resolved (117 to 22): That the British Medical Association calls on all practitioners to refrain from applying for, or accepting any post or office of any kind in connection with the National Insurance Act (except in regard to Sanatorium Benefit, provided this is carried on in accordance with the wishes of the Association), until such time as the Government has satisfied the Association that its demands will be met.

Minute 185.—Resolved (*nem. con.*): That, with reference to the foregoing resolution, before any practitioner undertakes any work in connection with the Sanatorium Benefits of the Act, the conditions and duties of such appointment shall be submitted to the Council for its approval.

Minute 186.—Resolved: That the foregoing Resolution shall not preclude any Medical Officer of Health from giving advice to public bodies in his official capacity.

Minute 187.—Resolved: That meanwhile all steps be taken to perfect the organisation of the profession, and to increase the Central Insurance Defence Fund.

TUBERCULOSIS DISPENSARY STAFF.

Minute 190.—Resolved: That the Chief Tuberculosis Officer should be a whole-time officer and confine himself to diagnosis and consultative work. The rest of the staff of the Dispensary should, where possible, be formed of local medical practitioners serving on a rota or otherwise.

Qualification for Receipt of Attention at Tuberculosis Dispensaries.

Minute 192.—Resolved: That those requiring attention at the Dispensary should be introduced only on the recommendation of a medical practitioner actually in attendance upon the patient.

Free Choice of Doctor in Domiciliary Attendance.

Minute 193.—Resolved: That there should be free choice of doctor by patient and of patient by doctor in all cases where domiciliary attendance is given.

Separation of Tuberculosis Dispensary Service from that of Medical Charity.

Minute 194.—Resolved: That no Tuberculosis Dispensary should be opened or beds be provided for treatment of those in receipt of Sanatorium Benefit at a Voluntary Hospital or Infirmary, except on the condition that the organisation is entirely independent of that of the Voluntary Hospital or Infirmary, the accounts of the departments being kept separate, and that the services of all medical practitioners are paid for.

PROVISION FOR TREATMENT OF CHILDREN.

Minute 195.—Resolved: That the provision to be made in any district for the treatment of children found to be suffering from tuberculosis should be in accordance with that scheme of the Association for the treatment of school children found defective on medical inspection, which has been approved by the local medical profession.

CONDITIONS OF EMPLOYMENT OF NURSES.

Minute 196.—Resolved: That nurses engaged in giving domiciliary attendance should be subject to the conditions of service approved by the Association for the conduct of nurses engaged by nursing associations in so far as these are applicable.

WHOLE-TIME TUBERCULOSIS OFFICER TO ACT ONLY AS CONSULTANT IN DOMICILIARY ATTENDANCE.

Minute 197.—Resolved: That no whole-time tuberculosis officer, or whole-time assistant, shall give domiciliary attendance, except as a consultant to the practitioner in attendance, and at his request.

REPRESENTATION OF PROFESSION ON COMMITTEES.

Minute 198.—Resolved: That the local medical practitioners should have adequate representation, by means of practitioners elected by a local Medical Committee, on Consultative Committees having control of Dispensaries, and on Voluntary Care Committees.

REPORTS FROM LAY PERSONS.

Minute 199.—Resolved: That the reports to be obtained from Voluntary Care Committees and nurses should be confined to such subjects as are not included amongst the duties of the medical attendant.

Minute 207.—Whereupon an Amendment by Dr. Barrett Heggs (Canterbury and Faversham):—

> That the minimum payments to be made be the following:—
>
> (a) Report, 5s.
>
> (b) Consultation at surgery, 2s. 6d.
>
> (c) Visit, 2s. 6d.
>
> (d) Injection of vaccine, 2s. 6d.; vaccines to be at the cost of administrative authority.

Minute 208.—Resolved: That paragraphs (a), (b) and (c) be approved.

Minute 209.—Whereupon an Amendment by Dr. Buist (Dundee):—

> That paragraph (d) be referred to the Council for consideration.

The Amendment was **carried**.

Minute 210.—On being put as a substantive motion,

Proposed by Dr. Buist (Dundee), and

> Resolved: That the whole question of fees for domiciliary attendance be referred to the Council for consideration.

TREATMENT OF TUBERCULOUS PATIENTS WHO ARE NOT "RECOGNISED" FOR THE PURPOSE OF SANATORIUM BENEFIT.

Minute 201.—Resolved: That a case of tuberculosis diagnosed as such by a practitioner and confirmed by a tuberculosis officer should not be liable to be treated, except in connection with Sanatorium Benefit.

SALARIES OF WHOLE-TIME MEDICAL OFFICERS.

Minute 202.—Resolved: That the commencing salaries for whole-time Medical Officers engaged in the Tuberculosis Service should be, for Junior or Assistant Whole-time Medical Officers not less than £300 per annum, and for Senior Whole-time Officers not less than £500 per annum. These salaries in all cases must be exclusive of travelling and other official expenses.

TENURE OF OFFICE.

Minute 203.—Resolved: That a Medical Officer engaged in the Tuberculosis Service, who, by the terms of his appointment is restricted from engaging in private practice as a medical practitioner, shall not hold office nor be appointed for a limited period only, and shall be removable by the recognised central authority, and not otherwise.

REMUNERATION OF PART-TIME OFFICERS.

Minute 204.—Resolved: That the payment to be received by medical practitioners appointed on a rota, or otherwise, to give medical attendance at the Tuberculosis Dispensary should be at a rate of not less than £65 per annum for an attendance of two hours per week.

REMUNERATION FOR DOMICILIARY ATTENDANCE.

Minute 205.—Resolved: That the payment to be made to medical practitioners for domiciliary attendance on patients certified to be suffering from tuberculosis shall be on a scale of fees, and not by capitation.

Minute 206.—Proposed by the Chairman of the Committee:—

That the minimum payments to be made, for domiciliary attendance, be the following:—

(a) Report, 5s.

(b) Consultation at the surgery, with or without tuberculin injection, 3s. 6d.

(c) Visit at home of patient, with or without tuberculin injection, 5s.

PROVISIONAL ARRANGEMENTS.

Minute 214.—Resolved: That any provisional arrangements for the administration of sanatorium benefit be such as are satisfactory to the local Division of the British Medical Association, subject to the approval of the Council.

STATE SICKNESS INSURANCE COMMITTEE.

Minute 215.—Resolved: That a State Sickness Insurance Committee be appointed by the Representative Body to watch the interests of the profession in relation to the National Insurance Act, and also to report on the whole situation to the Council; that the Council be instructed to report thereon, as soon as possible, to the Divisions and a Special Representative Meeting; and that the Committee consist of (a) twelve members elected by grouped Representatives in the same manner as Members of Council under By-law 43 (c); (b) the *ex-officio* members; (c) two women medical practitioners to be nominated, one by the Northern Association of Medical Women and one by the Association of Registered Medical Women; and that the Committee be empowered to add to its number not more than six additional members.

Statement to the Lay Press.

Minute 216.—Resolved: That a statement explaining the position of the medical profession in relation to the National Insurance Act be issued to the lay press from the Central Office and through the Divisions.

Contract Practice Resignations.

Minute 217.—Resolved: That the resignations of contract practice appointments throughout the United Kingdom should be sent in at the earliest possible date consistent with the conditions of the Pledge.

Locumtenents, Assistants, and Hospital Staffs, and the Undertaking and Pledge of the Association.

Minute 218.—Resolved: That practitioners in engaging locumtenents or assistants should insist that, previous to engagement, they shall have signed both the Undertaking and the Pledge of the Association; and also that members of hospital staffs having influence in the selection of practitioners to fill resident and honorary visiting staff appointments should do what they can to secure that those appointed shall have signed both these documents.

Minute 219.—Resolved: That the Council take steps to ensure that all newly-qualified practitioners before leaving the hospital should be requested to sign the Undertaking and Pledge, and to join the Association.

Minute 220.—Resolved: That it be an instruction to the Council to communicate with the Deans of the Medical Schools requesting them to point out to newly-qualified men the advantages of becoming Members of the British Medical Association, and thereby bring before their notice the present position of the profession and its pledges.

Minute 221.—Resolved: That it be an instruction to the Council to take all such steps as are possible in order to again throw open for competition those whole-time tuberculosis appointments which have been filled under conditions contrary to the policy of the Association.

Minute 222.—Resolved: That it be an instruction to the Council to urge on Divisions, as also on Provisional Local Medical Committees, the desirability of referring to the Central Office for advice and instruction, any offer or communication received from Provisional Insurance or Insurance Committees having reference to schemes for bringing medical or sanatorium benefits into operation.

Maternity Benefit.

Minute 223.—Resolved: That the number of women in receipt of maternity benefit under the National Insurance Act who shall be attended for teaching purposes by any recognised institution possessing a properly-equipped maternity department be no more than is necessary to furnish the actual numbers required in order that the medical students and pupil midwives connected with that institution may obtain certificates.

Minute 224.—Resolved: That, as regards the extern departments, the institutions referred to in the above recommendation should select and recognise local medical practitioners for the practical training of medical students and pupil midwives.

Public Medical Service.

Minute 225.—Resolved: That the Report of the State Sickness Insurance Committee on the replies of Divisions on the Public Medical Service Schemes be received.

Minute 226.—Resolved: That the Report be approved and referred to Council for further consideration of all the information relating to Public Medical Services, and report as to the forms which are available for the Divisions. Further, that the Council be given power to approve of schemes which are in agreement with the principles approved by the Association.

Remainder of Report.

Minute 227.—Resolved: That the remainder of the Report of Council with reference to the National Insurance Act be approved.

Central Insurance Defence Fund.

Minute 228.—Resolved: That members of the profession be again urged, both from the Central Office and by the Officers of Divisions, to guarantee sums of not less than £20 to the Central Fund, so that £250,000 may be guaranteed by the end of September, 1912.

Exemptions under the Act, and "Free Choice of Doctor."

Minute 229.—Resolved: That the following Motion be referred to the Council:—

That in view of the fact that by Schedule I., Part II. (b), of the National Insurance Act, certain local and public authorities, etc., have claimed and obtained exception from Schedule I., Part I. (Employments within the meaning of Part I. of this Act relating to Health Insurance), thereby preventing or rendering it difficult for their employees to exercise the right of "free choice of doctor," steps should be taken by the Association to further safeguard the cardinal principle of "free choice of doctor" in this connection, which under the conditions above alluded to is being seriously imperilled.

Recognition of those who have Resigned Appointments under Welsh National Memorial.

Minute 230.—Resolved: That it be an instruction to the Council to take some action to recognise the loyalty of those medical practitioners who at the request of the British Medical Association have resigned their appointments under the Welsh National Memorial Association.

Minute 231.—Resolved: That this Meeting expresses its appreciation of the action of those members of the profession who have withdrawn applications, or refrained from making them.

Cardinal Points as regards Sanatorium Benefit.

Minute 232.—Resolved: That the question as to which of the Resolutions of the Representative Body as to Sanatorium Benefit should be regarded as cardinal points, and which should not be so regarded, should be left to the Council.

Action in Matters of Urgency.

Minute 233.—Resolved: That pending the first meeting of the State Sickness Insurance Committee, the Chairman of the late Committee (Mr. Verrall) be empowered to act in all urgent matters, including the question of acceptance or refusal of advertisements tendered for insertion in the BRITISH MEDICAL JOURNAL in connection with the National Insurance Act.

APPENDIX B.

MODEL SCHEME FOR TREATMENT OF TUBERCULOSIS.*

STAFF.

1. The chief tuberculosis officer should be a whole-time officer, and should receive not less than £500 per annum.

2. The assistant tuberculosis officers, where such are needed, should be whole-time officers at a salary of not less than £300 per annum.

3. The arrangements for the whole-time staff may need modification temporarily in those administrative areas where the amount of tuberculosis work does not justify the appointment of a chief tuberculosis officer at £500 per annum. In these cases it will not be possible, therefore, to provide the whole-time expert adviser mentioned in the Astor Report until some system of amalgamation of districts is arranged. In the meantime it might be necessary for administrative purposes to appoint the medical officer of health as tuberculosis officer, but he should be appointed for administrative purposes only, with an increase in his salary corresponding to the increase in his duties.

4. Where no chief tuberculosis officer is appointed and the medical officer of health is appointed as administrative tuberculosis officer, one or more consultants might be employed at a proper rate of payment to carry out the non-administrative duties. The need for expert opinion cannot be met by the appointment of an assistant tuberculosis officer, acting under the medical officer of health, as an officer who could be secured at the salary of an assistant would not have the necessary experience to enable him to act as consultant to the district.

PROCEDURE IN PROVIDING TREATMENT.

5. A person applying for treatment must present a statement signed by a medical practitioner as mentioned in form Med. 1 of the Commissioners. For this statement it is suggested that a fee of 1s. should be charged, which should be paid by the patient in the absence of public provision for such payment.

6. When an applicant is given form Med. 2, or its equivalent, he should be referred to his private doctor. If he has no doctor, he should be shown a list of doctors practising in his neighbourhood, and be asked to choose one to whom he should be sent with a letter asking the doctor to examine the applicant and fill up the form. The fee of 5s. for this report will include either a consultation at the doctor's residence or surgery, or, if attendance at the surgery is not possible, a visit to the applicant's home, where such is within two miles of the doctor's residence or surgery.

7. The examination of applicants and filling up of form Med. 2 should not be done by the whole-time tuberculosis staff. The object should be to insist upon every tuberculosis patient having a private doctor who should be encouraged to take a continuous interest in the case.

8. The form of treatment, domiciliary, sanatorium, dispensary or hospital, should then be decided by the chief tuberculosis officer in consultation with the patient's private doctor. Treatment should be carried out where possible by the private doctor, in co-operation with the tuberculosis officer, in all cases except those transferred to sanatoriums or similar institutions, and for all cases so transferred provision should be made whereby on their discharge they are referred to the private doctor with a report of their progress whilst in the institution.

DOMICILIARY TREATMENT.

9. The chief tuberculosis officer should arrange to meet the private doctor in consultation at the first visit after the patient has been ordered domiciliary treatment. At this visit a decision will be arrived at between the two doctors as to the kind of treatment to be carried out and the number of visits likely to be required. At the same time the main details of the "continuous record" (see Schedule to Local Government Board Order, July 26th, 1912) should be filled in. As this consultation will necessarily take up a good deal of time, an extra fee should be paid to the private doctor of not less than 2s. 6d., or a separate fee of not less than 5s. should be paid for the keeping of the "continuous record."

10. According to the Local Government Board Order a report on the condition of the patient will be required not less than every three months. For this report a sum of 5s. should be paid.

11. From time to time the medical practitioner is expected by the Local Government Board Order to inform the medical officer of health of any circumstances known to the medical practitioner which may affect adversely the sanitary conditions under which the patient is living. This seems to be more properly a question of supervision by the sanitary authorities, but if the medical practitioner is to

* Published in Supplement to JOURNAL, October 5th, 1912.

make such reports, as they will probably be of a brief and formal nature, they should be treated as notifications, and paid for at the rate of not less than 1s.

12. Arrangements should be made between the chief tuberculosis officer and the private doctor as to the circumstances in which special or night visits shall be paid, and some method laid down whereby the chief tuberculosis officer will be informed that such visits have been made.

Dispensary Treatment.

13. The work of the tuberculosis dispensary should consist of diagnostic, consultative, bacteriological, and statistical work; treatment should in general be carried out at the homes of the patients or at the surgeries of their private doctors, but certain special forms of treatment for those cases which are decided in consultation to need such, may, with the consent of the general practitioner concerned, be given at the dispensaries.

14. No case should be seen at the dispensary except on the recommendation of a private doctor. This is essential if the ideal is to be realized of securing to every tuberculous patient a private medical attendant, who will thus take a continued and personal interest in the case.

15. All attempts to make tuberculosis dispensaries into institutions merely for the administration of tuberculin should be rigidly discouraged.

16. In large districts where the number of persons requiring special forms of treatment is great, or where the work is heavy, the whole-time staff may need outside help. This help should be given by means of the private practitioners in the area, acting on a rota or otherwise, rather than by additions to the whole-time staff.

Scale of Minimum Fees.

	s.	d.
(*a*) Form Med. (1). . . . (to be paid by the patient unless public provision has been made for it) ...	1	0
(*b*) Form Med. (2). . . . (including consultation at the surgery, or visit if within two miles of the doctor's house; if beyond that distance a mileage fee of not less than 1s. per mile (outwards), or in outlying and sparsely populated districts such sum as is suitable to local circumstances and the local customs of the profession) ...	5	0
(*c*) Extra fee for first visit and consultation with chief tuberculosis officer	2	6
Or, Continuous record	5	0
(*d*) Quarterly reports...	5	0
(*e*) Notification of adverse sanitary circumstances ...	1	0
(*f*) Consultation at doctor's residence or surgery ...	2	6
(*g*) Visit at patient's home	2	6
(*h*) Night visit—that is, visit paid between 8 p.m. and 8 a.m., in response to call within these hours ...	5	0
(*i*) Special visit—that is, visit paid in response to call sent after 10 a.m. and before 8 p.m.	3	6
Note.—Mileage in (*b*) will apply to (*g*), (*h*), and (*i*).		
(*j*) Injection of vaccines ... ... (Vaccines to be provided by local authority.)	2	6

Treatment of Persons not Insured under the National Insurance Act.

The terms and conditions for treatment of uninsured persons, when such is undertaken by the local authority, should be the same, *mutatis mutandis*, as those for treatment of insured persons.

APPENDIX C.

OUTLINE SCHEME OF LOCAL ARRANGEMENTS FOR MEDICAL ATTENDANCE UNDER THE REGULATIONS OF THE COMMISSIONERS.

(A) *Establishment of Agreement between Committee and Practitioners.*

1. Societies furnish Insurance Committee with lists of their members.

2. Committee informs Societies of the amount which they will be expected to provide to pay for medical attendance including drugs and appliances) for their members.

3. Societies and Committee enter into agreement for payment, Commissioners deciding amount if two parties are unable to agree. Agreement to be approved by Commissioners in any case.

4. Committee, after consulting Local Medical Committee, determines conditions of service under which it proposes to invite practitioners to undertake treatment, and embodies these terms in agreements which practitioners must sign. Committee also submits to the Local Medical Committee rules for administration of medical benefit, based on model rules. Agreement and Rules must be approved by Commissioners.

5. Commissioners before approving above arrangements consider any representations made by Local Medical Committee, and when approving the arrangements, specify time during which they shall have effect.

(B) *Offer of Terms to Practitioners.*

6. Committee informs local practitioners (by circular ?) of terms and conditions which it is prepared to offer, and forwards form of acceptance, which must be returned to Committee within specified time (14 or 21 days).

(C) *Preparation of Medical List.*

7. Committee prepares list of practitioners (the "medical list") containing name and address and hours of attendance of each practitioner or firm of practitioners. List remains in force until January 1st following.

(D) *Announcement of Arrangements re Insured.*

8. Committee announces in newspapers the particulars of arrangements made, with statement of places where medical list can be seen and forms of application obtained by insured persons. Announcement must give special prominence to right of insured persons to select from the panel their own doctor or to apply to be allowed to make their own arrangements.

(E) *Selection of Doctor.*

9. If *capitation system is adopted* patient fills up form of application and sends it, before a fixed date, either to practitioner of his choice or to the secretary of the approved institution he has chosen.

10. Practitioner who has received application returns it to Committee within a week stating whether he accepts the person or not. Same rule applies to approved institutions.

11. After time indicated in announcement, Committee proceeds to distribute insured persons who have made no choice, or who have been refused by doctor of their choice, amongst the doctors on panel. Distribution is carried out under arrangements made by doctors on panel

(F) *Lists of Patients.*

12. Committee makes list of persons for whom each practitioner is responsible and sends it to the practitioner concerned.

(G) *Changes in List.*

13. List is revised between November 1st and December 1st of each year, and a patient can only be transferred from one list to another,

(*a*) By patient or doctor giving notice to Committee not later than one month before revision of list.

(*b*) By patient and doctor agreeing to a change, at any time, and arranging with another doctor to take the patient.

(*c*) By patients, in case of death of doctor and transference of practice, the selling of a practice, or the arranging of a partnership, agreeing to be transferred to some other practitioner's list, *e.g.*, to that of the successor in the practice.

(*d*) By patient selecting another doctor in case of removal where the patient is unable to continue with former doctor.

(*e*) By the Committee transferring the patient to another doctor, as the result of an enquiry into a complaint.

(H) *Selection of Doctor and changes in Lists. Payment per attendance system.*

14. *If payment per attendance system is adopted* patient on falling ill presents voucher to any practitioner on the panel, who, if he consents to take the patient, endorses voucher and (if the Committee so require) gives notice to the Committee on a form provided for the purpose. The patient is then, during the currency of the medical list, on the list of that practitioner. A change of doctor can only then occur in the ways specified in 13, After January 1st of the next year the patient may take his voucher to any other doctor on the panel.

(I) *Persons allowed to make their own arrangements.*

15. If any insured person prefers to make his own arrangements he must fill up, before an appointed date, an application to that effect, and the Committee must signify its consent or refusal.

(J) *Changes of residence, etc.*

16. An insured person coming to reside within the county, or a person becoming insured during the currency of the list, upon applying to the Committee is dealt with according to the procedure above set forth, according to whether he wishes to be attended under arrangements made by the Committee, or to make his own arrangements.

17. A doctor commencing practice in a county must be included in the medical list at any time, unless he has previously been removed from the list by the Commissioners.

18. Insured persons changing their address must notify same to their Societies. These changes are notified to the Committee quarterly, and, presumably, by the Committee to the doctors concerned.

19. If an insured person is suspended from medical benefit on account of arrears, his name is notified by the Committee to the practitioner concerned.

(K) *Kind of medical attendance to be provided.*

20. The practitioner must give to the persons on his list attendance at places and hours specified in his agreement, and "such treatment as is of a kind which can consistently with the best interests of the patient be properly undertaken by a practitioner of ordinary professional competence and skill." He is not required to give any attendance in respect of a confinement, nor to any person suffering from tuberculosis, etc., who is recommended for sanatorium benefit. He must visit the patient whose condition so requires it, at any place within the county within a distance of 3 miles by road, or such lesser distance as the Committee may in any particular cases agree. The patient must obey the instructions of his doctor, must not make unreasonable demands upon him, must attend at the surgery of the practitioner when able so to do, must not summon the doctor to attend him between certain hours to be fixed in the local rules, except in serious emergency, and must, if possible, send his call to the doctor before an hour also to be fixed in the Rules.

(L) *Dispensing.*

21. Drugs which are required in emergency, or are ordinarily administered by the practitioner in person will be supplied by the practitioner and paid for by special arrangement. Dispensing will ordinarily be done by a chemist if such is available, on the prescription of the doctor. If, as in a country district, a chemist is not available, arrangements for the dispensing of medicines must be made with medical practitioners.

(M) *Substitutes for practitioner on panel.*

22. If a practitioner is prevented from attending by urgency of other professional duties, absence from home, or other reasonable cause, he must to the best of his ability provide a deputy.

Owing to the space occupied by the Report of Council published in this week's Supplement, it has been found necessary to hold over a number of reports of Divisions and Provisional Committees.

Association Notices.

SPECIAL REPRESENTATIVE MEETING.

Notice is hereby given that, on the requisition of the Council, a Special Representative Meeting of the Association will be held in the Connaught Rooms, Great Queen Street, London, W.C., on Tuesday, November 19th, at 10 a.m., and Wednesday, November 20th, 1912, and the following day, if necessary, for the purpose of receiving and considering a Report prepared by the Council of the Association, in accordance with Minute 215 of the Annual Representative Meeting, held at Liverpool on July 19th, 1912, and following days, and for the purpose of passing resolutions arising therefrom or in reference thereto.

Minute 215 of the Annual Representative Meeting, 1912, referred to in the foregoing Notice, is as follows:

Minute 215.—Resolved: That a State Sickness Insurance Committee be appointed by the Representative Body to watch the interests of the profession in relation to the National Insurance Act, and also to report on the whole situation to the Council; that the Council be instructed to report thereon, as soon as possible, to the Divisions and to a Special Representative Meeting; and that the Committee consist of (*a*) twelve members elected by grouped Representatives in the same manner as Members of Council under By-law 43 (*c*); (*b*) the *ex officio* members; (*c*) two women medical practitioners, to be nominated, one by the Northern Association of Medical Women and one by the Association of Registered Medical Women; and that the Committee be empowered to add to its number not more than six additional members.

The Report of Council referred to is published in this issue of the Supplement to the British Medical Journal.

BY ORDER OF THE CHAIRMAN OF REPRESENTATIVE MEETINGS,

GUY ELLISTON,
Financial Secretary and Business Manager.

ALFRED COX,
Medical Secretary.

October 31st, 1912.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BETHNAL GREEN INFIRMARY.—Assistant Medical Officer. Salary, £100 per annum, rising to £120.

BIRKENHEAD BOROUGH HOSPITAL.—Junior House-Surgeon (Male). Salary, £80 per annum.

BIRMINGHAM AND MIDLAND FREE HOSPITAL FOR SICK CHILDREN.—(1) Resident Medical Officer. (2) Resident Surgical Officer. Salary, £80 per annum each.

BIRMINGHAM EDUCATION COMMITTEE.—Dental Surgeon. Salary, £250 per annum.

BRADFORD CITY COUNCIL.—Non-resident Assistant Medical Officer (Female) to the Infant Consultations. Salary, £250 per annum.

BRIDGE OF WEIR: CONSUMPTION SANATORIUM.—Assistant Resident Medical Officer (lady).

BRISTOL GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £120 per annum.

BURY ST. EDMUNDS: WEST SUFFOLK GENERAL HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

CHESTER COUNTY ASYLUM.—Third Assistant Medical Officer. Salary, £170 per annum.

COLCHESTER: ESSEX COUNTY HOSPITAL.—House-Surgeon (Male). Salary, £80 per annum.

COSSHAM MEMORIAL HOSPITAL, Kingswood.—House-Surgeon (Male). Salary, £50 per annum.

DERBYSHIRE ROYAL INFIRMARY.—House-Surgeon. Salary, £100 per annum.

DEWSBURY UNION.—Lady Assistant Workhouse Medical Officer. Salary, £100 per annum.

DUDLEY: GUEST HOSPITAL.—Senior Resident Medical Officer. Salary, £120 per annum.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—Medical Officer for Electrical Department. Salary, £75 per annum.

HARTLEPOOLS HOSPITAL.—House-Surgeon. Salary, £100 per annum.

HEREFORDSHIRE COUNTY COUNCIL.—Assistant to Medical Officer of Health. Salary, £250 per annum.

KING EDWARD VII WELSH NATIONAL MEMORIAL.—Tuberculosis Physician. Salary, £400 per annum, rising to £500.

LEAMINGTON SPA: WARNEFORD GENERAL HOSPITAL.—House-Physician. Salary, £85 per annum.

LEEDS PUBLIC DISPENSARY.—Honorary Physician.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITALS.—House-Physician. Salary at the rate of £60 per annum.

LIVERPOOL EDUCATION COMMITTEE.—School Medical Officer. Salary, £250 per annum.

LONDON HOSPITAL, E.—Assistant Obstetric Physician.

LOWESTOFT HOSPITAL.—House-Surgeon. Salary, £150 per annum.

MAIDSTONE: KENT COUNTY ASYLUM.—Male Fourth Assistant Medical Officer. Salary, £200 per annum.

MAIDSTONE: WEST KENT GENERAL HOSPITAL.—Senior House-Surgeon. Salary, £100 per annum.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer and Pathologist. Salary, £60 per annum.

MERTHYR TYDFIL EDUCATION COMMITTEE.—Medical Inspector. Salary, £250 per annum, increasing to £350.

MIDDLESEX HOSPITAL, W.—Third Assistant to the Director of the Cancer Research Laboratories. Salary, £150 per annum.

NORTHAMPTON ADMINISTRATIVE COUNTY.—Chief Tuberculosis Medical Officer. Salary, £500 per annum.

NORTHAMPTON GENERAL HOSPITAL.—(1) Physician. (2) House-Surgeon; salary, £90 per annum, increasing to £100.

NORWICH: JENNY LIND INFIRMARY FOR CHILDREN.—Lady Resident Medical Officer. Salary, £50 per annum.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Casualty Officer. Salary, £60 per annum.

NOTTINGHAM CITY ASYLUM.—Junior Assistant Medical Officer. Salary, £200 per annum.

NOTTINGHAM GENERAL DISPENSARY (Branch).—Assistant Resident Surgeon (Male). Salary, £170 per annum.

PRESTWICH UNION.—Second Assistant Medical Officer for the Infirmary. Salary, £120 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—Resident Medical Officer. Salary, £120 per annum.

RAINHILL: COUNTY ASYLUM.—Assistant Medical Officer. Salary, £150 per annum, rising to £350 according to promotion.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—Assistant Anæsthetist, non-resident. Salary, £50 per annum.

ST. MARY'S HOSPITAL, W.—Junior Casualty House-Surgeon. Salary, £100 per annum.

ST. THOMAS'S HOSPITAL, S.E.—(1) Medical Registrar; (2) Surgical Registrar.

SHEFFIELD: CHILDREN'S HOSPITAL.—House-Surgeon for the East End Branch. Salary, £75 per annum.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—Assistant House-Surgeon. Salary, £60 per annum.

SOUTHAMPTON PARISH INFIRMARY.—Resident Assistant Medical Officer. Salary £150 per annum.

STAFFORD: STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer. Salary, £160 per annum, rising to £210.

TRURO: ROYAL CORNWALL INFIRMARY.—House-Surgeon (Male). Salary, £100 per annum.

WARWICK COUNTY ASYLUM.—Second Assistant Medical Officer. Salary, £175 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary at the rate of £80 per annum.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary, £160 per annum.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

DINGLE.—At Sandaman, British North Borneo, on October 24th, the wife of Percival A. Dingle, M.R.C.S.Eng., L.R.C.P.Lond., of a son.

MINETT.—On October 23rd, at 14, Gower Street, W.C., the wife of E. P. Minett, M.D., D.P.H. (née Ethel M. Connan), of a son.

ROBERTSON.—At Dundonnachie, Boksburg, Transvaal, South Africa, on October 24th, the wife of Dr. J. A. Robertson, a daughter. (By cable.)

MARRIAGES.

CANE—GIBBONS.—On October 26th, at St. Nicholas, Blundellsands, Liverpool, H. J. B. Cane, B.A.Cantab., M.R.C.S., L.R.C.P., eldest son of the late Howard Cane, M.D., of Belvedere, Kent, to Gertrude Wynne Gibbons, niece of W. F. Barroll, Esq., of Kingtown, Blundellsands.

SHELDON—KENSINGTON.—On October 24th, at the Church of St. John the Baptist, Thayetmyo, Burma, by the Rev. W. H. Cowper-Johnson, M.A., Chaplain of Thayetmyo, John Henry Sheldon, M.B.Lond., M.R., Ch.B.Vict., Burma Railways, second son of the late John H. Sheldon, of Manchester, and of Mrs. Sheldon, Egerton Road, Withington, to Eleanor Gladys Kensington, M.B., B.S.Lond., younger daughter of Colonel E. Kensington, late Royal Artillery. (By cable.)

DIARY FOR THE WEEK.

MONDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 5 p.m.—Museum Demonstration, Mr. S. G. Shattock: Specimens Illustrating Diseases of Some of the Ductless Glands.

TUESDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W., 5 p.m.—Bradshaw Lecture by Dr. David B. Lees: The Diagnosis and Treatment of Incipient Pulmonary Tuberculosis.

ROYAL SOCIETY OF MEDICINE:
SECTION OF PATHOLOGY, Lister Institute, Chelsea, S.W., 8.30 p.m.—Laboratory Meeting.

WEDNESDAY.

ROYAL COLLEGE OF SURGEONS OF ENGLAND, Lincoln's Inn Fields, W.C., 5.30 p.m.—Museum Demonstration, Mr. J. F. Colyer: Specimens Illustrating Periodontal Disease (Pyorrhoea Alveolaris), as seen in Man, Wild Animals in Captivity, and Domesticated Animals.

ROYAL SOCIETY OF MEDICINE:
SECTION OF OPHTHALMOLOGY, 1, Wimpole Street, W., 8 p.m. Demonstration of Cases and Specimens. 8.30 p.m., Papers:—Mr. E. Nettleship: Choroidal Sarcoma of Unusually Slow Progress. Mr. E. Nettleship and Dr. A. Hugh Thompson: Pedigree of Leber's Disease. Mr. A. W. Ormond: Case of Retino-Choroiditis Juxta-Papillaris. Dr. G. Coats: Blockage of Central Artery of the Retina.

THURSDAY.

NORTH-EAST LONDON CLINICAL SOCIETY, Prince of Wales's Hospital, Tottenham, 4.15 p.m.—Clinical Cases.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W., 5 p.m.—First Fitz Patrick Lecture by Dr. Raymond H. P. Crawfurd: Echoes of Pestilence in Literature and Art.

ROYAL SOCIETY OF MEDICINE:
SECTION OF OBSTETRICS AND GYNAECOLOGY, at 1, Wimpole Street, W., 8 p.m.—(1) Short Communications. (2) Paper—Dr. J. M. Wyatt: Le Fort's Operation for Prolapse: Report of Eight Cases.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
CLINICAL SECTION, at 1, Wimpole Street, W., 8.30 p.m.—Demonstration of Cases.

POST-GRADUATE COURSES AND LECTURES.

BROMPTON HOSPITAL FOR CONSUMPTION, S.W.—Special Course, daily, Diagnosis and Treatment of Pulmonary Tuberculosis, including the Use of Tuberculin.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., Infantile Convulsions.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m., Medical and Surgical Clinics. Monday: 12 noon, Throat, Nose, and Ear; 2.15 p.m., Surgery; 3 p.m., Operations; 3.15 p.m., Medicine, 4.15 p.m., Ear and Throat. Tuesday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Surgery; 3.15 p.m., Medicine; 4.15 p.m., Skin Clinic. Wednesday: 11 a.m., Eye; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Eye Clinic; 4.30 p.m., Surgery. Thursday: 12 noon, Throat, Nose, and Ear: 2 p.m., Operations. Pathological Demonstration; 3.15 p.m., Medicine. Friday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Surgery. Saturday: 10 a.m., Radiography; 11 a.m., Eye. Special Lectures: Thursday, 4.30 p.m., Some Large Abdominal Tumours; Friday, 2.15 p.m., Hodgkin's Disease.

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.—Lectures daily (Saturday excepted) at 12 and 4 p.m. Practical Laboratory work daily (Saturday excepted), 10 to 12 a.m. Practical Entomology, 2 to 3.30 daily. Special Entomology, 10.30 a.m. to 1 p.m. daily. Medical Clinics, Monday and Thursday at 3 p.m. Operations, Friday at 3 p.m.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15 p.m., Common Lesions of the Colon; Diagnosis and Treatment.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m., The Uses of the Clinical Polygraph. Friday, 4.30 p.m., Tumours of the Breast.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Medical; Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follow: Monday, Treatment of Brachial and Sciatic Neuritis; Tuesday, The Germicidal Treatment of Pulmonary Tuberculosis; Wednesday, Peculiarities of Speech as Evidence of Nervous Disease; Thursday, The Causes and Treatment of Fevers.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday and Friday, 3.30 p.m., Clinical Cases, Tuesday, 5 p.m., Neuropathology. Wednesday, 5 p.m., Clinical Examination of Cases of Diseases of the Nervous System. Thursday, 5 p.m., Anatomy and Physiology of the Nervous System.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics: 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Nose, Throat, and Ear; 3 p.m., Demonstration on Clinical and General Pathology. Tuesday, 2.30 p.m., Operations; Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient; 4.30 p.m., Lecture: Tuberculosis of the Pelvic Organs. Wednesday, 2 p.m., Throat Operations; 2.30 p.m., Medical Out-patient; Skin and Eye Clinics: X Rays; 3 p.m., Pathological Demonstration; 5.30 p.m., Eye Operations. Thursday, 2.30 p.m., Gynaecological Operations. Clinics: Medical and Surgical Out-patient; 3 p.m., Medical In-patient. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Surgical, Eye; 3 p.m., Medical In-patient; Pathological Demonstration; 4.30 p.m., Lecture: Ocular Headaches.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, N.E.—Monday, 4 p.m., Demonstration of Cases. Friday, 4 p.m., Vaccine Therapy in Relation to Diseases of Children.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Tuesday, 6 p.m., The Maintenance of a Healthy Mouth in a Clean State.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Monday, 4.30 p.m., Diagnosis of Early Pulmonary Tuberculosis. Tuesday, 4.30 p.m., Surgery of the Thorax. Thursday, 4.30 p.m., The Various Means to be Adopted to Prevent the Spread of Pulmonary Tuberculosis. Friday, 3.30 p.m., Special Clinical Demonstration.

SALFORD ROYAL HOSPITAL.—Tuesday, 4.30 p.m., Tuberculosis of the Kidney.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Demonstration of Minor Operations, 11 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Demonstration of Fractures, etc., 10.30 a.m.; Throat, Nose, and Ear, 2 p.m.: Skin, 2 p.m. Wednesday: Diseases of Children 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m. Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Gynaecological Demonstration, 10 a.m.; Lecture, Neurological Cases, 12.15 p.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Lecture, Practical Medicine, 10.30 a.m.; Lecture, Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.; Special Lectures at 5 p.m. daily.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
	NOVEMBER.
5 Tues.	Coventry Division, Coventry and Warwickshire Hospital, 8.30 p.m.
6 Wed.	Newcastle-on-Tyne, Conference of Representatives of Colliery Surgeons *re* Insurance Act.
7 Thur.	Lambeth Division, Camberwell Town Hall, 4 p.m.
	Brighton Division, Ordinary and Special Meetings, Lecture Hall, New Road, 4 p.m.
8 Fri.	Lincoln Division, Lincoln, 3 p.m.
	Hampstead Division, Central Library, Finchley Road, 8.15 p.m.
11 Mon.	Hampstead Division, Special Meeting, Central Library, Finchley Road, 4.30 p.m.
12 Tues.	London: Conference of Representatives of Association with Representatives of Society of Medical Officers of Health.
	Shropshire and Mid-Wales Branch, Salop Infirmary, 3.30 p.m.
	Metropolitan Counties Branch Council, 4 p.m.
	City Division, St. Bartholomew's Hospital, 4.30 p.m.
14 Thur.	South-West Essex Division, Leyton, 3.30 p.m.
	Birmingham Branch, Medical Institute, 3.30 p.m.
19 Tues.	London: **Special Representative Meeting.**
20 Wed.	London: **Special Representative Meeting.**
	South Middlesex Division, Twickenham, 8.30 p.m.

Printed and Published at the Offices, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT

TO THE

BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 9TH, 1912.

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions, until the subjects have been discussed by the Division to which he belongs. BY ORDER.

National Insurance Scheme.

PROCEEDINGS OF COUNCIL.

DISCUSSION OF REPORT TO THE DIVISIONS AND REPRESENTATIVE BODY.

[THE REPORT AS REVISED BY THE COUNCIL WAS PUBLISHED IN THE SUPPLEMENT OF NOVEMBER 2ND.]

THE quarterly meeting of the Council was held at the House of the Association, 429, Strand, London, at 10 a.m. on Thursday, October 31st.

After confirming the minutes and transacting some formal business, the Council proceeded at once to the consideration of its report to the Divisions and Representative Body on the present position with regard to the Insurance scheme. The procedure followed was to consider, paragraph by paragraph, a draft report from the State Sickness Insurance Committee dealing with (*a*) Report of action taken by the State Sickness Insurance Committee as reported to the Council, (*b*) Statement comparing the Provisional Regulations as to medical benefit with the cardinal principles of the Association and with decisions of the State Sickness Insurance Committee as to matters which should be included in the Regulations, and (*c*) Report on the present position of the medical profession in relation to the Act and on future action.

The consideration of this business was not concluded until 9.45 p.m., when the Council adjourned until 2 p.m. on Wednesday, November 13th; the remainder of the ordinary quarterly business will then be taken.

Present:

Dr. J. A. MACDONALD, LL.D., Taunton, Chairman of Council, in the Chair.
Sir JAMES BARR, M.D., LL.D., Liverpool, President.
Dr. W. AINSLIE HOLLIS, Hove, President-elect.
Mr. T. JENNER VERRALL, Bath, Chairman of Representative Meetings.
Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. JOHN ADAMS, Glasgow.
Dr. J. GRANT ANDREW, Glasgow.
Dr. R. M. BEATON, London.
Surgeon-General P. H. BENSON, I.M.S., Walmer (Indian Branches).
Dr. M. G. BIGGS, London.
Dr. R. C. BUIST, Dundee.
Dr. CHARLES BUTTAR, London.
Professor HENRY CORBY, M.D., Cork.
Dr. J. S. DARLING, Lurgan.
Dr. MICHAEL DEWAR, Edinburgh.
Sir E. J. DOMVILLE, Exeter.
Dr. J. G. DURRAN, Leighton Buzzard.
Dr. A. C. FARQUHARSON, Durham.
Mr. C. E. S. FLEMMING, Bradford-on-Avon.
Mr. T. W. H. GARSTANG, Altrincham.
Dr. JOHN GORDON, Aberdeen.
Surgeon-General J. P. GREANY, I.M.S., Ealing (Indian Medical Services).
Dr. T. D. GREENLEES, London (Cape of Good Hope Branches).
Dr. MAJOR GREENWOOD, London.
Dr. J. R. HAMILTON, Hawick, N.B.
Dr. T. ARTHUR HELME, Manchester.
Mr. R. J. JOHNSTONE, Belfast.
Mr. F. C. LARKIN, Liverpool.
Mr. C. COURTENAY LORD, Gillingham.
Dr. J. LIVINGSTONE LOUDON, Hamilton.
Mr. ALBERT LUCAS, Birmingham.
Dr. EWEN J. MACLEAN, Cardiff.
Dr. H. C. MACTIER, Wolverhampton.
Dr. JAMES METCALFE, Bradford.
Dr. C. H. MILBURN, Hull.
Dr. GEORGE PARKER, Bristol.
Dr. E. S. REYNOLDS, Manchester.
Dr. LAURISTON E. SHAW, London.
Mr. D. F. TODD, Sunderland.
Mr. E. B. TURNER, London.
Dr. W. J. TURRELL, Oxford.
Dr. W. J. TYSON, Folkestone.
Professor A. H. WHITE, Dublin.
Mr. D. J. WILLIAMS, Llanelly.

Letters of apology for non-attendance were read from Dr. David Ewart, Dr. C. G. D. Morier, and Dr. F. J. Smith (The Editor of the *Lancet* was present by permission.)

REPORT OF COUNCIL TO THE DIVISIONS AND REPRESENTATIVE BODY.

THE CHAIRMAN OF COUNCIL, as Chairman of the State Sickness Insurance Committee, moved that the draft report of that Committee be received. This was challenged by Dr. HELME, but carried on a division.

The Council then proceeded to consider the report, paragraph by paragraph.

(A) REPORT OF ACTION TAKEN BY THE STATE SICKNESS INSURANCE COMMITTEE.

This part of the report was discussed at some length, and various emendations were made which were embodied in this part of the report, as published in the SUPPLEMENT of last week.

(B) STATEMENT COMPARING THE PROVISIONAL REGULATIONS AS TO MEDICAL BENEFIT WITH THE CARDINAL PRINCIPLES OF THE ASSOCIATION AND WITH DECISIONS OF THE STATE SICKNESS INSURANCE COMMITTEE AS TO MATTERS WHICH SHOULD BE INCLUDED IN THE REGULATIONS.

Dr. BUTTAR proposed that the Council should proceed at once to consider the suggestions with regard to future action contained in the concluding part (C).

Dr. HELME supported the suggestion, expressing the opinion that the spirit of the report was wrong, and that it would be necessary to contest practically every paragraph in part (B).

After some discussion, Dr. BUTTAR moved that, before discussing parts (B) and (C) of the State Sickness Insurance Committee's report, the Council proceed to consider the following motion:

> Inasmuch as the seven cardinal points remain the minimum demands of the profession, and the determination to obtain these demands centrally still holds, the Council recommends the Divisions to reaffirm their decision not to work under the Act as it stands at present.

The motion was seconded by Mr. TURNER.

The CHAIRMAN OF COUNCIL said the effect of Dr. Buttar's motion was to propose that the consideration of the two parts (B) and (C) of the report be postponed for the consideration of his motion.

It was opposed by Dr. LAURISTON SHAW, and supported by Dr. MAJOR GREENWOOD, Sir JAMES BARR, and Dr. METCALFE.

On a show of hands, 20 voted for and 20 against Dr. Buttar's motion, and the CHAIRMAN OF COUNCIL gave his casting vote against it, observing that the suggested procedure would be inconvenient.

The Council then proceeded to consider part (B).

Income Limit.

With regard to paragraph 45, which originally read—

> It is left for the profession in each area to obtain such an income limit as they desire and are strong enough to secure—

it was objected by Dr. HELME that the words did not adequately bring out the fact that the matter would be left to local bargaining. The Association, he said, had steadily fought for the principle of central solution of the difficulties. After some discussion, Dr. HELME suggested that it should be made plain that the acceptance of the Regulations involved the abandonment of the principle of central bargaining, and the concluding words of paragraph 45 were amended to read as they appear in the report (SUPPLEMENT, p. 478) as follows:

> The Regulations require the surrender of the principle of central bargaining, and leave it to the profession in each area to obtain such an income limit as they desire and are strong enough to secure.

Free Choice of Doctor.

Dr. HELME moved to omit from the second line of paragraph 52 the word "possible."

> The right of free choice . . . was accorded in the Act with the possible exception of the restriction imposed by the Harmsworth amendment.

Dr. MACLEAN said that the point had been very thoroughly discussed by the Committee, and that the majority had been convinced that the Harmsworth amendment was not an absolute exception to freedom of choice of doctor; he urged that the word "possible" should be retained.

Dr. MAJOR GREENWOOD supported Dr. Maclean, and observed that in all cases there was a collective choice as well as an individual choice. In his opinion free choice of doctor under a panel system was open to all the objections made against the Harmsworth amendment.

Dr. BEATON said that the Association had tried to get the amendment defeated both in the House of Commons and in the House of Lords, one of the reasons being that it was held to interfere with the free choice of doctor. Under the Harmsworth amendment the choice was not for a particular doctor, but for an institution.

Dr. A. C. FARQUHARSON moved that the word "possible" be transposed to appear before "restriction" so that the phrase should read —

> With the exception of a possible restriction imposed by the Harmsworth amendment.

This was put to the meeting and lost.

Dr. PARKER urged that the Harmsworth amendment was not the only possible exception.

Finally the motion to omit the word "possible" was rejected, as was also a motion by Mr. Larkin to omit the sentence —

> Others are of opinion that however much the profession generally may deplore the existence of such institutions, the fact that an insured person may deliberately select one of them cannot be said to restrict his freedom of choice.

A discussion arose with regard to paragraph 55, which referred to the degree to which the freedom of choice of doctor by the patient was curtailed by the question of mileage.

Dr. Helme moved the deletion of the last two lines as follows:

But as presumably there will be no objection to the patient himself paying mileage, it is probable that distance will not restrict free choice any more or less than it does at present.

The amendment was lost.'

Dr. Buttar and Dr. Helme objected to the wording of paragraph 57 as originally drafted, and it was modified to the form printed in the Supplement last week (p. 480), paragraph 3 of Provisional Regulation 18 being introduced.

Professional Discipline.

On paragraph 67 Mr. Turner moved to add the words:

That the Council regrets that under the Regulations a privilege heretofore shared by the medical with the clerical and legal professions, that offences outside the scope of common law should be dealt with by purely professional tribunals, is abrogated.

Dr. Lauriston Shaw objected that no profession had ever had the right to demand that arrangements between its employer and itself should be settled by a professional tribunal. In the case of the medical profession the only question for the professional tribunal, the General Medical Council, was that of removal from the *Register*, but the question under discussion was that of removal from the panel.

Dr. Biggs considered that the removal of a man's name from the panel would seriously affect him, and affect him in his better class practice; and Mr. Todd pointed out that the removal would be carried out by a lay body.

Mr. Larkin, while thinking that practically all the members of the Council agreed, or nearly agreed, with Mr. Turner's intention—namely, to ensure that all professional matters should be judged by professional men—did not think that the resolution was the right way to attain the end. He held that the General Medical Council was not a professional tribunal; it was a body constituted by lay authorities to act in the interests of the public, not a body appointed by the profession to look after its interests.

Dr. Maclean, while generally supporting Dr. Shaw's arguments, agreed that it would be a most serious thing for a man to be removed from the panel, but he pointed out that it was a serious thing for a man to be removed from the staff of a hospital, though a hospital was not governed by a body consisting only of medical men.

An amendment by Dr. Helme to add to paragraph 67 the words, "the proposed tribunal does not give security for a fair inquiry" was lost by 18 votes to 17.

Eventually Mr. Turner withdrew his proposal, and on the motion of Mr. Domville the paragraph was redrafted in the form in which it was finally approved as follows:

While the proposed tribunal would appear to offer a measure of security for a fair inquiry, no regulations affecting the position of a doctor on the panel can be satisfactory to the profession which do not provide for a right of appeal to a specially appointed medical tribunal.

Amount of Remuneration.

Paragraph 69 as originally drafted contained a paraphrase of the words of the Chancellor of the Exchequer. On the motion of Dr. Helme, seconded by Dr. Maclean, the Chancellor's words were quoted as in the paragraph published, and words were introduced to the effect that the Chancellor made it clear that mileage was to be paid for out of the sum of 7s.

Paragraph 70 in the original draft also contained a paraphrase of the words of the Chancellor of the Exchequer, and the Council resolved to introduce the quotation printed in the report (p. 482).

Medical Representation.

In the first line of paragraph 81—

The following is a list of the duties and powers of the local Medical Committee—

Dr. Helme objected to the retention of the word "powers," and moved an amendment to that effect, which was lost.

Definition of Medical Benefit.

On paragraph 85 Dr. Reynolds said that he thought it desirable to call attention to the concluding words of the paragraph. They correctly reflected what the Chancellor of the Exchequer said on October 23rd, but that was the first time that the statement had been made, and it was a most important matter from the hospital point of view.

Dr. Helme considered that it was in contradiction to previous statements by the Chancellor, and Mr. Lucas observed that the Chancellor now said that the treatment given under medical benefit should include the employment of all modern methods of diagnosis.

Application to be made for Further Information.

The Chairman of Council said that these points required clearing up. The doubt regarding them illustrated the difficulty under which the State Sickness Insurance Committee had worked owing to the hard and fast line by which it was bound down by the Representative Meeting. There were several points that needed elucidation, and could only be cleared up by the Chancellor or the Commissioners; the Committee had been precluded from getting that information.

Dr. Domville said that he was prepared to move that the Chancellor should be asked for an explanation.

Dr. Helme asked whether such a motion would be in order having regard to the resolution adopted by the Representative Meeting.

The Chairman of Council read the resolution (Minute 166) as follows:

That the British Medical Association regrets that His Majesty's Government has not acceded to the terms upon which alone the cordial co-operation of the medical profession in supplying medical treatment under the National Insurance Act can be obtained, and passes the following resolution:

That the Government be informed that the Association adheres to its minimum demands as formulated in the letter of February 29th, 1912, and since elaborated in interviews with the Chancellor of the Exchequer.

He observed that the Representative Meeting took no further action on the matter, although there was no doubt about what the meaning of the discussion was.

Mr. Todd maintained that the point of the discussion was that, until the Government had submitted its terms, the Association could not approach it. He contended that to a certain extent the terms had now been submitted; the Regulations had also been submitted. He urged that the Council should take steps to obtain explanations from the Government.

The resolution proposed by Mr. Domville was carried as follows:

That the State Sickness Insurance Committee be instructed to take steps to obtain from the Chancellor of the Exchequer or from the Insurance Commissioners an explanation as to any points in the Regulations or in the statement made by the Chancellor which are felt to be necessary, and to obtain a copy of the amended Regulations.

(C) THE PRESENT POSITION OF THE MEDICAL PROFESSION IN RELATION TO THE INSURANCE ACT AND FUTURE ACTION.

The Chairman of Council said that in drawing up this part of its draft report the State Sickness Insurance Committee had endeavoured to contribute an impartial and colourless statement of the position, and in the concluding part had discussed the advisability of sending a definite resolution to the Divisions giving guidance. After full discussion the Committee had come to the conclusion that the only guidance which could be offered was the suggestion embodied in the alternatives shown in paragraph 115—namely, to advise the Divisions to instruct their representatives whether the profession should or should not take service under the Act under the conditions placed before it. It was for the Council now to consider whether after the discussion which had taken place it could put any definite recommendations before the Divisions. In reply to questions he pointed out that part (C) differed from part (B), inasmuch as the former was a comparison of the Provisional Regulations with the cardinal principles and the decisions of the State Sickness Insurance Committee, whereas part (C) showed what had been done since the bill was introduced.

The Council then considered the first part of (C) paragraph by paragraph, and made various emendations.

Future Action.

The concluding section of the report, as to future action, was then considered.

Mr. Todd contended that the Council should not give a lead, since the Representatives were the only persons empowered under the constitution of the Association to decide.

On paragraph 109 as drafted considerable discussion took place with regard to the loss of independence which the majority of speakers anticipated would be the result of accepting the scheme, and eventually words calling attention to this point were introduced into that paragraph.

A motion to delete paragraph 110 was lost, and it was thereupon emended and approved.

On the motion of Mr. Todd, seconded by Mr. Turner, supported by Dr. Reynolds and Dr. Buist and Dr. Helme, a new paragraph (paragraph 111) was inserted.

Paragraphs 112 and 113 were approved, and the Chairman of Council then invited the Council to consider paragraph 115, and appealed to the members of the Council not to let any bias or party feeling influence their decision.

A motion to adjourn for an hour was made and lost.

Mr. Todd moved that the Council send no recommendation to the Divisions, but only the report as approved by the Council, leaving the Divisions to decide. This was seconded by Dr. Dewar and carried, after some further discussion.

A motion to delete paragraph 114 was rejected. Various amendments were then proposed and carried, and paragraph 114 was approved in the form in which it was printed in the Supplement last week (p. 489).

Possible Third Course.

Dr. Beaton considered that the possibility of taking another course should be pointed out, and moved an addition which would have made the concluding part of paragraph 115 read as follows:

> The Council therefore asks the Divisions to instruct their Representatives whether they desire
> (*a*) To give service under the Act under the conditions set out in paragraph 114 of this Report, or
> (*b*) To consider the recent offer made by the Chancellor of the Exchequer, which affords the British Medical Association an opportunity of conferring with him and with the Commissioners as to the points on which the demands of the profession have not yet been met.
> (*c*) To refuse service under the Act.

He pointed out that the Council had already that afternoon come to the conclusion that it would be wise to get all the information it could from the Chancellor of the Exchequer with reference to the Regulations. He had to admit that the Chancellor had opened the door which the Association had banged and barred at Liverpool. The Chancellor had made new proposals, which the Divisions ought to consider.

The Chairman of Council said that he understood Dr. Beaton to mean that the Representative Meeting should give power to the Council to negotiate with the Chancellor of the Exchequer.

Dr. Beaton said that his intention was that the third course outlined in his motion should be referred to the Divisions with the other two, and that the Divisions should instruct their Representatives to accept, confer, or refuse.

Dr. Helme said that he understood that Dr. Beaton's desire was that the Divisions should be advised to instruct their Representatives to do one of three things: (1) To refuse, (2) to accept, or (3) to accept the present position as a basis for further negotiations with the Government.

The Chairman of Representative Meetings (Mr. Verrall) thought that this was not a bad third course provided the Divisions understood what they were doing, but he thought nothing could be clearer than the attitude of the Chancellor. He (Mr. Verrall) would not say that it would be wise to give a dozen men power to decide for the Association, but the attitude of the Chancellor was clear, it was that if it came to be a question of conferring with him, he did not think that any good could result, unless the Association was prepared to send plenipotentiaries—persons nominated by the Association with full power to come to terms.

Dr. Beaton's proposal was seconded by Dr. Buist.

It was opposed by Dr. Lord, supported by Mr. Lucas, and opposed by Dr. Reynolds and Mr. Turner.

Dr. Helme admitted that the alternatives presented, (*a*) and (*b*), were not complete, and was inclined to support Dr. Beaton's proposal from an abstract sense of justice, but also in order to facilitate the business of the Representative Meeting. If the Representative Meeting chose to appoint plenipotentiaries—a committee with full powers—he was prepared to support that proposal.

The motion that the question be now put was carried, whereupon Dr. Beaton's motion was put and declared lost.

Proposed Postal Vote.

The Chairman of Council said that Dr. Dewar had given notice of the following motion:

> That in issuing the report to the Divisions this Council recommends that, after discussion in the meeting, each Division should take a ballot by postal card of its members, and non-members in order to ascertain as nearly as possible the true opinion of the profession.

The Chairman said that the Divisions had no constitutional power to take such a vote.

Dr. Buist pointed out that there was nothing to prevent the Divisions doing it if they liked, but the Chairman of Council replied that it could not be of any effect, and further, that though the Divisions had a right to take such a vote, they could not spend any of the Association's funds upon it.

Application for Information to the Chancellor.

The question as to the best step to take to obtain the information which the Council had resolved should be sought from the Chancellor of the Exchequer was then discussed, and it was finally decided that until such time as the State Sickness Insurance Committee met the Chairman of Council and the Chairman of Representative Meetings with the Medical Secretary should attempt to obtain, by correspondence, information from the Chancellor or the Commissioners, or both, as to the meaning of obscure points in the Regulations.

[The letter forwarded to the Chancellor of the Exchequer in accordance with this decision, together with his reply, is printed below.]

A motion to empower the State Sickness Insurance Committee at, or after, its next meeting (on November 17th) to obtain the information by any means it preferred was lost.

Adjournment.

The Chairman, at 9.45 p.m., adjourned the Council until November 13th.

Some formal business done by the Council at the opening of the proceedings will be reported in a subsequent issue.

[SPECIALLY REFERRED TO DIVISIONS.]

APPLICATION FOR INFORMATION TO THE CHANCELLOR.

Correspondence with the Chancellor of the Exchequer.

November 4th, 1912.

Sir,

The Representative Body of the British Medical Association will meet on November 19th and 20th to discuss a report of the Council of the Association on the present position of the medical profession in relation to the National Insurance Act. An important part of that report is an examination of the Regulations relating to medical benefit, taken in conjunction with your statement made to the Advisory Committee on October 23rd, and in framing this part of the report the Council experienced certain difficulties which it was felt necessary in the interests of useful discussion to have cleared up. I am instructed, therefore, to ask you if you would be good enough to elucidate, so far as may be possible, the points dealt with in this letter, so that the fullest possible information may be in the hands of the members of the Association in discussing the Report of Council.

Increased Service to be Required from Doctors.

The Council notes that in your speech of October 23rd you stated that, while you were providing increased remuneration, you were also asking for increased service, and that it would be the duty of the Insurance Commissioners

to see "that a proper standard is reached and maintained, not merely in respect of the number of visits paid or the number of times a patient is seen at a doctor's surgery, but also in respect of the amount of time and attention given, and also that where necessary the practitioner should resort to those modern means of exact diagnosis . . ." The Council would be glad to have some further information on these points. Your statement would seem to indicate the establishment of inspection of the work of the practitioners on the panel, because without that it is difficult to see how any control could be secured over the standard of attendance. Would you be good enough to inform the Council whether any inspection is contemplated; if so, whether by laymen or medical men, or in what other way it is proposed to test whether a doctor is or is not giving the proper amount and kind of attention to his patients? The Council would also be glad to have some information as to how far it is proposed that practitioners on the panel should resort to the modern methods of exact diagnosis referred to. Such a reference suggests to medical practitioners that they will be expected to perform *x*-ray diagnosis, bacteriological tests, and other tests which it is quite outside the resources of the average practitioner to undertake. Is the Council right in assuming that the practitioner on the panel will be expected either to undertake these methods of diagnosis himself, or to pay for them if he thinks they are necessary and is not prepared to carry them out himself. The Council would also be glad to have some information as to the "simple records" which practitioners on the panel are expected to furnish in regard to the patients whom they treat.

Definition of Medical Benefit.

A careful examination of the definition of medical benefit in the First Schedule, Part I (1) of the Regulations, and of the various statements made by yourself in your speech of October 23rd, leave the Council in considerable doubt as to the real extent of the work to be demanded from the practitioner on the panel. The definition in the Regulations states that it is "such treatment as is of a kind which can consistently, with the best interests of the patient, be properly undertaken by a practitioner of ordinary professional competence and skill." In your speech you specifically excluded "major operations and other specialist services." It would be of great advantage to the Council to have some clear definition of the services which will *not* be required from the practitioners on the panel. If a model form of agreement between a practitioner and the Insurance Committee could be furnished for the information of the profession it would be extremely useful at the present juncture.

I may remind you that the profession, guided by your statement made at the Representative Meeting on June 1st, 1911, has always been under the impression that the fees for payment of consultations with and operations by specialists would be outside the range of the capitation grant, and would be borne by the Society or the Insurance Committee. From your speech on October 23rd it would appear that it is not proposed that the Insurance Fund should be responsible for these services, but that insured persons requiring them must either pay for them out of their own pockets or be referred to medical charities. The Council would be glad to have this important point cleared up.

Amount of Remuneration: Mileage.

Your speech of October 23rd indicates that Regulation 28, to the provisions of which strong exception has been taken by the profession generally, must undergo radical alteration, and it would be of obvious advantage to the profession if it could be placed in possession of the redrafted form of this Regulation at an early date. Particularly is this the case as regards the vexed question of mileage. The Council has been quite unable to gather from the Regulations any clear idea of the proposed method of payment for mileage, and further information on this point, which is a matter of great anxiety to country practitioners, is urgently needed. In your speech of October 23rd you apparently contemplated that in rural districts the practitioners would be partly compensated for mileage by the fact that the dispensing would be handed over to them. But, as pointed out in the letter sent to you by Dr. R. W. Morgan, of Gillingham, Dorset, the great majority of doctors practise in small country towns in which a chemist is available, and therefore most, if not all, of the dispensing would in the ordinary course be done by the chemist. In the opinion of the Council the payments for mileage should undoubtedly come from some centralized fund, as, if a deduction were made in respect of mileage from the amount available in each insurance area, considerable injustice might result. Rural practitioners in a mixed urban and rural district would absorb much of the fund in mileage at the expense of the urban practitioners, while in a very scattered district mileage might absorb nearly the whole of the fund. These difficulties have doubtless not been overlooked by you, and the Council will be glad to know how it is proposed to meet them.

The "Abnormal Drug Fund."

The Council is in some confusion as to the exact meaning of your references to the Central Fund provided to deal with cases in which there is an abnormal demand for drugs. It is not clear whether the Commissioners will be able to make grants from this fund to meet the extra cost of drugs proved to be due to excessive sickness in every case in which they are satisfied that there has been such excessive sickness and that the increase is due to this cause, or whether they would only be able to make such a grant in cases in which the cost of drugs exceeded both the 1s. 6d. and the additional 6d. normally allotted for payment of drugs.

Employment of Assistants.

In paragraph 6, Part 1, of the First Schedule to the Regulations, it is stated that "all treatment shall be given by the practitioner personally except where he is prevented from so doing by urgency of other professional matters, absence from home, or other reasonable cause, and the practitioner will to the best of his ability provide that when he is so precluded from personal attendance some other practitioner will give attendance as his deputy on his behalf. Considerable anxiety has been shown by practitioners in colliery and other industrial districts as to whether this regulation will prevent the use of a qualified assistant in the ordinary way of practice, as without such assistants many such practices could not be carried on. Practitioners employing such an assistant are of opinion that their patients could be trusted to see that the principal did not unduly leave the attendance in the hands of his assistant.

The Proposed Capitation Grant for Non-Institutional Treatment of Tuberculous Insured Persons.

Your statement that of the 1s. 3d. already provided in the Act for sanatorium benefit 6d. is to be set aside for paying for all the work the practitioner does in the treatment of tuberculosis raises an entirely new question on which the Council has felt itself quite unable to give information to the Divisions of the Association. I am instructed to ask if you are in a position to give fuller details as to the proposed grant and especially as to the amount and kind of work which will be expected in return for it. Is the 6d., for example, to include the provision of drugs necessary for tuberculous patients, or will the drugs be paid for out of the 9d. left in the fund for the provision of sanatorium benefit?

As the Divisions of the Association are now considering the instructions to be given to their Representatives, it is of the utmost importance that the information asked for above should be in their possession at the earliest date, and I am to state that it would be of great assistance if your reply were in my hands in time to be considered at a meeting of the State Sickness Insurance Committee on Thursday next, and to be published in the number of the British Medical Journal which goes to press the same night.

I am,
Your obedient Servant,
(Signed) Alfred Cox,
Medical Secretary.

The Right Hon. David Lloyd George, M.P.,
Chancellor of the Exchequer.

REPLY OF CHANCELLOR OF THE EXCHEQUER.

Treasury Chambers, Whitehall, S.W.,
6th November, 1912.

Sir,

I am instructed by the Chancellor of the Exchequer to acknowledge the receipt of your letter of November 4th, 1912, and to reply as follows on the several points upon which the Council of the British Medical Association desire to be informed. The headings of the several paragraphs of this reply will be seen to correspond to those employed in your letter.

"*Increased Services to be Required from Doctors.*"

On the first point raised in your letter, namely, the reference by the Chancellor of the Exchequer in his speech on October 23rd, 1912, to the duty of the Insurance Commissioners to see that a proper standard of attendance and treatment is reached and maintained under the Act, I am to state that the increased service spoken of means an increased service as compared with that which has been obtained under many contract practice systems in the past, or as compared with that which the great majority of the insured, in view of their restricted means, could in the past afford to obtain on private practice lines. The standard of service which it is hoped that the doctors attending insured persons will reach and maintain is that which the best opinion in the profession itself would expect from a general practitioner in his ordinary work. The Government fully recognize that the professional instincts of the majority of medical practitioners will lead them, without further stimulus, to do all that can reasonably be expected of them in the interests of their patients. Since, however, every registered practitioner has a statutory right to take part in the service under the Act, some safeguards must be adopted in respect of those (doubtless few in proportion to the total) who would not of themselves reach the standard required.

As regards methods of securing this object, reliance will be placed primarily on the co-operation of the profession itself, acting particularly through the Local Medical Committees, and before any definite decisions as to machinery are arrived at the Commissioners hope that they will have the advantage of conferring with representatives of the profession. In the meantime, while it is undesirable, pending such conferences, to attempt to indicate precisely what measures will be adopted, I am directed to state that as regards the inspection, which, as indicated in your letter, will be necessary, medical inspectors will be employed.

In the matter of modern methods of exact diagnosis, practitioners on the panel will not be expected themselves to undertake work requiring skill and experience beyond that which the ordinary general practitioner can properly be expected to possess. In this respect the position is the same as in regard to treatment. In cases where methods of investigation beyond the ordinary scope of a general practitioner are necessary, it will not fall within the duty of a practitioner under the terms of his agreement, as set out in the first and second paragraphs in the First Schedule to the Regulations, himself to carry out the investigation, but to advise the patient as to the steps which he should take. The practitioner will be expected to avail himself of all such facilities, in the shape of expert assistance in investigations useful for proper diagnosis and treatment, as are placed at his disposal. In so far as such facilities do not at present exist, it is the hope of the Government that means will be found for encouraging their development and organization in due course.

Records.—The precise form of records has not yet been determined, and the Commissioners will be glad to have the advantage of the assistance of representatives of the profession in deciding how they can be kept in such a form as will entail a minimum of trouble upon the medical practitioner, while furnishing information of value as to the incidence of disease and aiding in the advancement of medical knowledge. In the meantime I am to say that it seems probable that the object might be attained by the keeping of day books in a special form, in which the entries relating to a month's attendance on one patient would be contained in a single line at one opening of the book. These books would be supplied to all practitioners on the panel free of cost.

The particulars which it is considered can usefully be given are name of patient, address, name of society and number, record of visits and other attendances for the month (kept on a system similar to that of the visiting lists used by many practitioners), age, sex, and nature of illness. It is considered that, on grounds of professional secrecy, these records should be confidential and open to inspection only by those officers within whose specific duties it fell to deal with them.

"*Definition of Medical Benefit.*"

With reference to the paragraphs in your letter headed "Definition of Medical Benefit," I am to state that, so far as an indication of the range of services expected of practitioners on the panel can be given in Regulations, it is contained in the first and second paragraphs of the First Schedule, which is intended to serve as the basis for the agreement between the practitioner and the Insurance Committee. These paragraphs have been carefully framed in order to give effect to the requirements of the Act. On practical as well as on technical grounds it appears to the Commissioners preferable that the duties should be defined in such general terms rather than by an attempt to enumerate specific duties which a practitioner would or would not be required to discharge. This, indeed, was the advice which the Commissioners received when this subject was discussed at a meeting of the medical members of the Advisory Committee at which those nominated by the British Medical Association were present, and it was understood that they concurred in recommending the course which has subsequently been adopted in framing the Regulations.

As to the question of consultation with specialists, the passages to which you allude in the Chancellor's speech on June 1st, 1911, and in his speech on October 23rd, 1912, respectively, do not relate to the same matters. Confusion has probably arisen through omission to recognize the distinction between two different kinds of "extra" services, those, namely, which fall within the scope of medical benefit and those which do not. The latter group includes the "specialist services" to which the Chancellor alluded on October 23rd, which, not being rendered by practitioners on the panel, lie outside the scope of the arrangements made by the Insurance Committees. On the other hand, as regards services of a special character which can be rendered by the general practitioner, such, for example, as the performance of certain operations or the administration of an anaesthetic, it has been suggested that the profession would prefer that these should not be covered by any flat capitation rates, but should be paid for by fees over and above such rates. Such a system of remuneration can be provided under the model methods B, C, D, and E, contained in the second part of the First Schedule to the Regulations; and the amount now made available for medical remuneration is calculated on such a basis as to allow sufficient margin for payment of all necessary fees of this character, after providing a reasonable capitation payment to cover visits and consultations which are not of a special character.

"*Amount of Remuneration: Mileage.*"

On the subjects of "amount of remuneration" and "mileage" I am to inform you that (as has already been stated in reply to a question in the House of Commons) Regulation 28 is now being redrafted by the Insurance Commissioners in order to give effect to the decisions of the Government, announced by the Chancellor of the Exchequer on October 23rd, and the necessary consequential changes will be made in other Regulations. The result of these changes, taken with the conditions of the new grant, will be to secure that (including the 6d. derived from the Sanatorium Benefit Fund for domiciliary treatment of tuberculous insured persons) a sum equivalent to 7s. per head of insured persons in Great Britain will be available for the remuneration of medical practitioners on the panel throughout Great Britain, and will be applied solely to medical remuneration, without deductions for drugs, administrative expenses, or any other purpose. On the other hand, *the method of distribution* of this amount among the practitioners throughout Great Britain who attend insured persons is still open for consideration, and the decision will not be finally arrived at without affording sufficient opportunity to the profession of stating its

wishes on this point. Most careful consideration will be given to proposals for this purpose which appear to command the general approval of the profession. It would, for instance, be possible for the Government specifically to allocate a portion of the funds for the purpose of mileage, as suggested by the Council of the British Medical Association in your letter. If it is made clear to the Government that such a course would have the approval of practitioners throughout the kingdom, not only in the rural but also in the urban districts, there would be no difficulty in carrying it into effect. As to the method of payment of any amounts appropriated, either centrally or locally, for mileage, the Commissioners think such payments should take the form of an annual grant to the practitioner concerned, calculated on the basis of the number of patients on his list who reside outside a certain radius, and of the distance of each such patient from the residence of the nearest available doctor. This method appears to the Commissioners to be more equitable, as between the practitioners specially concerned and the rest of the profession, than the payment of a special fee in respect of each visit.

"*Abnormal Drug Fund.*"

In reply to the paragraph of your letter headed "Abnormal Drug Fund," the intention is that the Fund in question shall be available to prevent the 6d. for drugs being drawn upon in cases in which and in so far as the extra demand for drugs is clearly due to abnormal sickness. The Fund, that is to say, must be available, not only in cases where that 6d. has been exhausted in the provision of drugs, but also in cases in which it has not been so exhausted.

"*Employment of Assistants.*"

On the subject of "Employment of Assistants" I am to state that the subject of the limitations, if any, to be placed on the employment of assistants was fully discussed by the medical members of the Advisory Committee in conference with the Commissioners on May 31st, 1912, and it was clear that while all present recognized that the employment, within proper limits, of assistants might in many cases be advantageous to the patients, safeguards were necessary against the excessive substitution of the service of assistants for the personal service that the practitioners on the panel had undertaken to give. It appeared, indeed, to be the general opinion of the medical members of the Committee (including those nominated by the Association) that the excessive use of assistants by practitioners was not only unjust to patients, but was also unfair to other practitioners, and undesirable in the general interest of the medical profession. It is considered that the Regulations, as at present drawn, operating in conjunction with the free choice of doctor by patient, will afford proper latitude in this matter, while tending to check the abuses to which reference has been made.

"*Treatment of Tuberculosis.*"

In reply to your inquiry on the subject of the capitation payment of 6d., in respect of domiciliary treatment of tuberculous insured persons by practitioners who are also giving attendance under the head of medical benefit, I am to state that the amount and kind of attendance will be such as in the best interests of the patient can be given by the practitioner himself. The 6d. from the Sanatorium Benefit Fund will be added to the funds available for the provision of medical attendance and treatment by practitioners on the panel. The 6d. is solely for the remuneration of the doctor, and no deduction will be made from it for provision of drugs or any other purpose.

I am, Sir,

Your obedient Servant,

(Signed) H. P. HAMILTON.

To Alfred Cox, Esq., M.B.,
Medical Secretary of the British Medical Association.

The following letter has also been received from the Chairman of the National Insurance Joint Committee:

National Health Insurance Joint Committee,
Buckingham Gate, London, S.W.,
7th November, 1912.

CERTIFICATES: DEPUTIES.

Sir,

I am desired by Mr. Masterman to state that inquiries have been received by the Chancellor of the Exchequer and by the Insurance Commissioners from a number of medical practitioners which indicate that considerable interest is taken in two points not referred to in the letter addressed by the Council of the British Medical Association to the Chancellor of the Exchequer on November 4th, and replied to by the Chancellor's letter of November 6th. These are, first, as to the requirements in respect of certificates referred to by the Chancellor of the Exchequer in his speech on October 23rd; and, secondly, as to the question whom a practitioner on the panel may depute to act on his behalf in cases in which he is precluded from giving personal attention to insured persons under his care. It appears probable that these questions are of general interest, and it may therefore be useful that you should be informed of the replies that have been given, in order that they may be made generally known.

On the first point the answer is that the certificates which practitioners attending insured persons will be required to furnish, in consideration of the increased remuneration under the new grant which Parliament is to be asked to provide, will include those certificates, and those certificates only, which are required under the rules of approved societies in connexion with the administration of sickness or disablement benefit. They do not include (as has been erroneously suggested in statements which have been made public) certificates required for what may be described generically as "non-Act" purposes.

On the second point, the Regulations put no restriction on the selection by a practitioner of the practitioner who may act as his deputy in giving attendance on his behalf to insured persons under his care to whom he is precluded by any reasonable cause from giving personal attendance. In particular, a partner, locum tenens, or assistant, even though not himself a practitioner on the panel, may act as such deputy in the circumstances described in the Regulations.

Yours faithfully,

J. A. SALTER.

The Medical Secretary,
British Medical Association,
429, Strand, W.C.

GENERAL MEDICAL COUNCIL.

EDUCATION OF MEDICAL STUDENTS IN MIDWIFERY.

LAST June, after a meeting of the National Insurance Committee of the Council, and after a statement made by the President to the Council *in camera*, a Memorandum was forwarded to the Chairman of the National Insurance Joint Committee. The covering letter pointed out that the Council was by the State entrusted with the duty of maintaining the standard of proficiency in respect of midwifery required of candidates for medical qualifications, and with this end in view had made rules regarding the amount and nature of obstetrical training in connexion with recognized lying in hospitals and other maternity institutions, which such candidates should receive. The letter went on to say that the Council was advised that the regulations for the administration of maternity benefit, which the Commissioners were empowered to draft, might have the effect of interfering seriously with the important functions of such hospitals and institutions, but that the Council had formed the opinion that this danger might in a great measure be obviated if the regulations were suitably framed, and that the Memorandum had been drawn up with this object in view. The Memorandum is as follows:

MEMORANDUM.

There is widespread apprehension that the administration of Maternity Benefit under the National Insurance Act may interfere with the efficient teaching of obstetrics, and that in two directions.

I.—*In regard to Women admitted to Maternity Hospitals.*

Some authorities have assumed that women who enter such Hospitals for the purpose of their confinement will *forfeit all right* to Maternity Benefit; that they will therefore cease to seek admission to such institutions; and that the latter will accordingly be no longer able to fulfil their function of training pupils.

After a careful study of the Act (and the Model Rules proposed to be made thereunder), the Committee of the Medical Council think that this assumption is not well founded in law; and they would be glad to have the opinion of the Commissioners on the question whether the following is a correct interpretation of the effect of the Act.

There are four classes of women in respect of whom Maternity Benefit is payable:

(i) Wives (or widows) of insured persons who are not themselves insured.
(ii) Wives (or widows) of insured persons who are themselves insured.
(iii) Wives (or widows) of non-insured persons who are themselves insured.
(iv) Women not wives (or widows) who are themselves insured.

If a member of class (i)—presumably the largest class—enters a Maternity Hospital for the purpose of her confinement, the Maternity Benefit is not to be paid to her husband *during the period when she is in the Hospital*. It may, however, be paid in whole or in part for the maintenance of his dependants, if the Insurance Committee or the Approved Society think fit. It appears reasonable to suppose, then, since the Benefit is intended to cover a period of four weeks after delivery, and since seven days to a fortnight is the usual period of stay in Hospital, that part at least of the Benefit will be available for the maintenance of the woman, and be payable *after she leaves the Hospital*, even if there are no dependants of the husband other than the wife (or widow) and her infant.

Members of class (ii) receive two Benefits—Maternity and Disablement. As dependants are already provided for by the latter Benefit, the privilege in respect of dependants allowed to members of class (i) (if the Insurance Committee or the Approved Society think fit) is withheld; but the Maternity Benefit *may* be paid to the Hospital. It appears reasonable to suppose that, during such portion of the four weeks as a woman is not an inmate of the Hospital, part of the Maternity Benefit may also be applicable for her own maintenance after she leaves the Hospital.

In the case of classes (iii) and (iv), the Maternity Benefit may be administered in whole or in part for the maintenance of dependants, or (if there are no dependants) in whole or in part towards maintenance in Hospital, *provided an agreement has been made* with the Insurance Committee or the Approved Society. It is suggested that such an agreement with Approved Societies and Insured Committees might be of a general nature, and be applicable to all cases belonging to classes (iii) and (iv) admitted to the Hospital.

It thus appears to the Committee of the Medical Council that under the Act there is no insuperable obstacle to the admission of women to a Maternity Hospital without loss of Benefit, provided that suitable regulations are framed or approved by the Commissioners.

II.—*In regard to Women attended through Outdoor Departments.*

The second point of difficulty arises in connexion with the outdoor departments of Maternity Institutions, which enable candidates for admission to the *Medical Register* to complete their obstetrical training by attending some or all of the twenty cases which the Regulations of the General Medical Council require; it also arises in connexion with the arrangements for the training of midwives.

The Act (Section 18) says that women shall have free choice of practitioner or midwife; but it does not specifically lay it down that attendance by one or other of these is a necessary condition for *payment* of Maternity Benefit, though this condition is apparently imposed by the Model Rules, in which reference is made to a certificate from one or other of these.

The Committee of the Medical Council desire to direct the attention of the Commissioners to the great advantages offered to women who in their confinement are attended under the supervision of efficient teaching institutions of the kind in question. Such women are, through the attendance at their homes of a senior student who has already received an important part of his or her obstetrical training, and who visits them under the direction of the medical officer in charge, brought into direct relation with the highest available obstetric skill, and difficulties and dangers can thus be discovered and dealt with as soon as they arise. In many cases also, arrangements are made for the provision of efficient nursing, where it is reported to be necessary.

It is therefore submitted to the Commissioners that in the public interest their regulations should be so framed as to allow the certificate of the responsible official of an outdoor Maternity Institution, concerned with the training of medical students or of pupil midwives, to be recognized as fulfilling the requirements of the Act, in respect of the *payment* of Maternity Benefit.

DONALD MACALISTER,
June 8th, 1912. Chairman.

On September 12th the Privy Council transmitted to the General Medical Council the draft Regulations for the administration of medical benefit in the form in which they were being sent to the Advisory Committee. Subsequently a copy of the draft Model Rules for Insurance Committees was furnished. A meeting of the National Insurance Act Committee of the General Medical Council was held on September 19th, when the following further Memorandum was prepared and directed to be forwarded to the Privy Council for transmission to the Commissioners:

MEMORANDUM.

September 19th, 1912.

The General Medical Council, at its meeting on June 4th, 1912, appointed a Committee "to consider the possible effects of the National Insurance Act on Medical Education and Examination in relation to the efficient practice of Medicine, Surgery, and Midwifery, to make representations thereon to the authorities concerned, and to report from time to time to the Council."

The Committee, on June 18th, 1912, submitted to the Insurance Commissioners a Memorandum dealing with the administration of Maternity Benefit in relation to Maternity Hospitals and Institutions concerned with the training of pupils in Midwifery. The Commissioners have promised to give serious attention to the suggestions of the Memorandum when they come to deal with the subject of Maternity Benefit. The Committee understand that they will have an opportunity of offering observations on the Commissioners' proposals before these are finally adopted.

On September 12th the Lord President of the Privy Council transmitted to the Council copies of the Commissioners' Draft Regulations for the administration of Medical Benefit, with the request that the observations thereon of the Council, or of any Committee of the Council, might be in the hands of the Commissioners by September 19th. The President caused copies to be sent to all members of the Council, and summoned the National Insurance Act Committee to meet on September 19th for the consideration of the draft, and of any communications regarding it that might be forwarded by members of the Council.

The Committee, whose terms of reference are given above, now desire to submit to the Lord President their own observations as to the Draft Regulations. They wish it to be understood that there has been no opportunity to obtain for these observations the official endorsement of the Council, as the next meeting does not take place until November. In so far, however, as the observations relate to matters other than those with which the Committee is empowered to deal, the Committee have been guided by the principles embodied in the Resolutions of the Council on the National Insurance Bill. These have been already communicated to the Lord President, and are within the knowledge of the Commissioners. Copies of the Resolutions, and of the correspondence referring to them, are for the sake of easier reference sent along with this Memorandum.

The Committee have limited their considerations to details in the draft which either concern the special functions of the Council, or have a direct bearing on "efficient practice" in relation to persons entitled to Medical Benefit. They recognize that the system of administration established by the Regulations will have far-reaching effects on the conditions of professional training and professional practice throughout the country. It will be the duty of the Council to take note of these effects, and to direct the Lord President's attention to such of them as it may think to require consideration in the interest of medical education of professional discipline or of the public health. In the meantime the Committee is not authorized to express on behalf of the Council any general opinion on the effect of the Regulations as a whole.

*** *The references are to the numbered paragraphs of the Draft Regulations, No. 33 (6th proof) supplied to the Council.*[1]

Part II.

3 (8). [6 (1), 46 (1)]. *All* Committees should be enjoined to make "mileage" arrangements in respect of the more distant patients of a practitioner. The suggested limit of "three" miles should be reduced to "two."

4 (g), 5 (1), 11 (1)-(4), [10, 16 (1)-(3)].—The Council has repeatedly expressed its strong objection to the conditions of practice incident to certain "Medical Aid Associations," and other "systems or institutions" of a similar nature. The Committee are aware that Section 15 (4) of the Act, notwithstanding the Council's objection, authorizes the Commissioners to approve such of these organizations as existed on December 16th, 1911. The Committee regard it as highly important that the Commissioners should, before granting approval, assure themselves that the methods of any such "system or institution" are not likely to be "prejudicial to the efficiency of the medical service." The Committee would also urge the desirability of including, in paragraph 11 or elsewhere, clauses providing for the withdrawal of the Commissioners' approval from any "system or institution" whose continuance is found after due enquiry to be "prejudicial."

6 (1), (2), [11].—With the object of facilitating the formation of a full panel of practitioners, and so ensuring a freer choice to insured persons, it is desirable that steps should be taken

[1] We have added in square brackets references to the Provisional Regulations as eventually issued and published in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of October 5th.

(*e.g.*, by means of a special circular) to bring the "announcement" to the notice of all the duly qualified practitioners who are known to reside in the district; and further, that the period within which applications to be included in the first list may be made should be "not less than 14 nor more than 21 days." It should also, perhaps, be made explicit in the Regulations that a practitioner may make application to be included in the lists of two or more districts.

12 (lines 8 and 9), [17].—In view of the Council's declarations the Committee regard it as highly undesirable that the published "announcement" should set forth "the names of approved systems or institutions." The names of the practitioners on the medical list are not thus advertised in the newspapers. It should suffice to announce the places where the medical list and the list of approved "systems or institutions," may be seen.

13 (1), [18 (1)].—The "form of application" should make it clear to the applicant that he is entitled to select any medical practitioner on the list.

16 (2), [18 (3)].—An invidious suggestion may be conveyed by the words "the practitioners who have the fewest names on their respective lists." The Committee suggest that this alternative should not appear in the Regulations here or at 25 (5). [19 (5).]

Part III.

25 (1) (a), [33 (1)].—The Medical Acts (1858) and (1862) confer on the General Medical Council the right of preparing and issuing the *British Pharmacopoeia*, which contains the only officially authorized "list of medicines and compounds, and the manner of preparing them." The Committee strongly deprecate the proposal that a "pharmacopoeia to be provided by the Commissioners," other than the *British Pharmacopoeia*, should by Regulation be prescribed for the use of Committees in preparing the "list of the drugs which may be ordinarily supplied to insured persons." It is submitted that a "Schedule" of such drugs, corresponding to the "Schedule of Medical and Surgical Appliances" appended to the Regulations, should be substituted for the "pharmacopoeia" mentioned in the text of this paragraph. Moreover, the Commissioners' "Schedule" of drugs should not include (as in a proof list communicated to the Committee) prescriptions for unofficial Misturae, etc. These prescriptions will inevitably be understood to be recommended, on the authority of the Commissioners, as preferable to others for general use throughout the country. Practitioners who in the exercise of their professional discretion, and in the interest of individual patients, thought it desirable to vary the prescriptions of the Schedule, would be liable to be called in question for incurring additional expense under 29 (3) (4), [39 (3)].

In the preparation of the list of drugs by the Committee under this paragraph, and in its revision under 33 (1), [40 (1)], the Local Medical Committee should be consulted, and words to this effect should be inserted in the Regulations.

40 (1), [48 (1) (3)].—The Regulations should require that the "complaint" (line 3) be made "in writing."

41 [49].—"Questions of professional conduct," without further limitation, would seem to be beyond the purview of Regulations made under the National Insurance Act. The Committee think that a complaint made under this paragraph should not be other than a complaint of "professional conduct alleged to be prejudicial to the efficiency of the medical service" of the district. This limitation would bring the paragraph into better relation with 42 [50].

43 (2), [51 (2)].—In the view of the Committee, who have had regard to previous decisions of the Council in analogous cases, it is not expedient to retain the words "the General Medical Council and" in line 3. It is conceivable that complaints which have come before the Enquiry Committee may also come before the Council in its judicial capacity, and it is obviously undesirable that the latter should undertake to offer suggestions as to the composition of that Committee.

46 (8), [57 (7)].—The Committee are of opinion that a similar provision might with advantage be made to meet similar conditions in England and Wales.

FIRST SCHEDULE.

Part I.

(1) and (2).—These clauses relate to the occurrence among insured patients of conditions requiring "services beyond the competence of an ordinary medical practitioner." In such cases the practitioner is to "advise the patient as to the steps which should be taken." The conditions may be such as to require a grave surgical operation which cannot be undertaken in the patient's home, the trained nursing or special treatment and appliances to be obtained in a hospital or other similar institution, or the services of an expert skilled in some special branch of medicine or surgery. The practitioner may advise accordingly; but the Regulations appear to make no provision for enabling the insured patient to give effect to the advice, in order that he may regain his health and resume his payments to the Insurance Fund.

The Council has more than once expressed its sense of the public importance of this question, and the Committee take the present opportunity of reiterating the opinion that provision should forthwith be made, other than that authorized in Sections 16 and 21 of the Act, for enabling Committees to enter into agreements for the "institutional" treatment of insured persons, in cases not included in within the terms of the ordinary practitioner's agreement.

Part II.

B. (4).—This should read "Surgical operations (if performed by the practitioner himself) requiring local or general anaesthetic." The same change should be made in C. (6), D. (6), and E. (4). [C. (6), D. (4), E. (6).]

DONALD MACALISTER,
Chairman.

On October 9th the Joint Committee of Insurance Commissioners informed the clerk to the Privy Council that the Joint Committee and the Commissioners had not been able to incorporate in the Regulations provision for institutional treatment of the kind suggested in the concluding part of the Memorandum, but that, with this exception, it would be found that all the points of substance raised in the Memorandum had been met in the Regulations as issued.

IRISH MEDICAL GRADUATES' ASSOCIATION.

A LARGE number of members and guests attended the annual dinner at the Hotel Cecil, London, on October 31st of the Irish Medical Schools' and Graduates' Association. The PRESIDENT (Dr. H. Macnaughton-Jones) was in the chair, and the guests included Sir James Barr (President of the British Medical Association) and Lady Barr, Sir F. Champneys (President of the Royal Society of Medicine), Sir Havelock Charles, Surgeon-General Greany, Dr. William Douglas (President-elect), Sir StClair Thomson, Sir Frederick Hewitt, Mr. H. A. Ballance, Dr. J. Esmonde, M.P., and others. The loyal toasts and that of "Our Defenders" having been honoured, Sir R. HAVELOCK CHARLES gave the toast of "The Guests."

Sir JAMES BARR, in responding, alluded to the Insurance Act, which he said was a wretched affair, and nothing he could say about it would be half strong enough. If the doctors were to work the Act there must be certain adjustments. Those men in the profession who were going to work the measure ought to have the principal voice, and he hoped that the decision arrived at by the Representative Meeting would meet with the unanimous approval of the profession. He believed the Act to be a calamity to the country at large. The bill promised an efficient medical service: the method of providing it would afford the very worst medical service that could be given to the public. The wage earners, who formed such a large section of the community, should be better treated, and the medical service afforded them ought to be efficient. Sir James spoke of club practice as a form of charitable work, and referred to the importance of linking up medical benefit with hospital treatment. Medical men could not be expected to do charitable work for the benefit of the Government, neither could hospital surgeons. If medical service was put on a State basis so must be hospital treatment. As to the threat of a public medical service, Sir James pointed out that the Army Medical Service cost about £4 a head for every soldier. The Government might get treatment for the insured at £1 a head, but he did not think it could be done any cheaper. Medical men in positions under the Government in a State medical service would not work the sixteen and eighteen hours a day of the ordinary general practitioner. He hoped the medical profession would study this matter and see what was best—not merely in pounds, shillings, and pence, but in upholding its honour and dignity. Whatever happened to the Act medical men would continue to look after the poor and suffering. The public might rest assured that medical attendance would be as good in the future if the Act went to pieces as it had been in the past. The profession was ready to work in the interests of the public, though it was not very much inclined to do so in the interests of the Government.

Dr. J. ESMONDE, M.P., who also responded, said that the question before the profession now was whether there should be an absolute refusal to treat with the Chancellor. His own view was that an effort should be made to treat with Mr. Lloyd George. He was certain that the Government would have to make some other concessions. It should be distinctly understood that the profession could not allow the privacy of the relations between doctor and patient to be interfered with. The profession should indicate that it was prepared to meet the Government, not for all time, but for a restricted period, in order that the possibility of working the Act might be tested.

The toast of "The Association" was submitted by Sir F. CHAMPNEYS, and that of "The President" by Sir STCLAIR THOMSON.

PUBLIC MEDICAL SERVICES.

A MEETING of members of the Association was held at 429, Strand, on October 31st, to discuss the principles underlying the Public Medical Service schemes C and D[1] in view of the forthcoming Representative Meeting. Thirty-nine members of the profession attended. Dr. Ernest W. Lowry was, on the motion of Dr. LEDWARD, elected to the chair.

Dr. T. BARRETT HEGGS said that it had been decided by the State Sickness Insurance Committee that as schemes C and D involved a new principle, they should be discussed at the Representative Meeting. The Kent County Provisional Medical Committee had all along held the view that it was impracticable at the present time to expect masses of working people to hand over their contributions, whether from the Government or otherwise, to be administered by an entirely medical body without giving the insured persons any voice in the management. It was felt that there must be co-operation with those who paid, and the Kent scheme proposed equal representation of the Medical Committee and the Insurance Committee, and an independent chairman. Many schemes had been discussed, but no reason had been shown for changing this opinion. It was apparent that the working classes would not join any voluntary scheme, and no Government could possibly entertain any compulsory scheme if those people who paid did not have adequate representation. So long as professional matters were solely in the hands of a medical tribunal he thought they were safeguarded. He proposed the following resolution:

> That the necessary steps be taken to place before the Special Representative Meeting to be held in November, with a view to obtaining its approval, the principle of obtaining the co-operation of contributing lay bodies in the administration of any scheme for providing medical benefit proposed by the profession, provided that control of professional matters shall remain with a solely medical tribunal.

Dr. A. E. LARKING, in seconding the resolution, said it was quite impossible for the medical profession to run a public medical service unless it co-operated in an amicable manner with lay bodies representing the insured persons. From Buckingham a resolution had already been sent up to the Representative Meeting to the effect that there was no objection to the principle of co-operating with representatives of insured persons.

Mr. E. H. WILLOCK, in reply to an inquiry, said that the State Sickness Insurance Committee had not given any official recognition to Schemes C and D, but had ultimately agreed to their publication in the SUPPLEMENT. In 1906 the Representative Meeting passed a resolution to to the effect that any public medical service brought forward by the Association should be absolutely free from any control by friendly societies.

Dr. STILLWELL said that since that resolution of the Representative Meeting a new element had arisen. The proposal to co-operate with an associated body of friendly societies and lay people, the representatives of county councils, and other bodies was the new element before the medical profession.

Dr. BERNARD O'CONNOR feared that until the resolution of 1906 had been rescinded any resolution of the kind suggested sent up to the Representative Meeting would be ruled out of order. Any scheme put forward ought to provide for some machinery that would relieve the profession of the arduous, disagreeable, and undignified process of carrying on the business of collecting fees or having paid collectors.

Dr. PANTING said that the words "lay control" seemed to be the great bugbear. The profession should not agree to do anything in the way of collecting the money or working the business, but only the professional part; it should lay down its terms and let the societies, if they accepted them, decide how they were to collect the money. His Division, as far as he could understand, would be willing to co-operate so long as the professional part was retained in the hands of the profession.

Dr. ROWLAND FOTHERGILL said it seemed to him questionable whether the resolution of 1906 would be applicable to the present situation. He thought it would be desirable for the profession to co-operate with hospital authorities.

Dr. BRASSEY BRIERLEY said that as this was the first attempt that had been made to suggest that the industrial classes should have some voice and some control over the money they provided, he should be inclined to support the resolution subject to certain modifications. The profession wanted the tariff fees guaranteed by the Government or by the friendly societies.

The modification suggested by Dr. Brassey Brierley was not accepted by the mover and seconder of the resolution, and on being put to the vote was defeated. The motion, with certain emendations accepted by Dr. Heggs and Dr. Larking, was carried as printed above.

Dr. LEDWARD, in proposing the next resolution, contended that the Commissioners apparently had always assumed that medical attendance provided under the Act must be paid for by capitation or by a fee per attendance from a limited pool, the doctor taking the insurance risk in both cases, and that negotiations had been carried on in the main on that basis. In urging the alternative policy, he pointed out the economy which would result if the insured, through their societies, had a direct interest in the medical fund, as in Schemes C and D, and how the independence of the profession would be maintained, since no individual contract would be necessary under such a system, even though administered by an Insurance Committee.

The resolution having been seconded by Dr. DANIEL, was after emendation adopted as follows, with two dissentients:

> That, in view of the failure of the Government to adequately meet the demands of the British Medical Association on a capitation basis, the necessary steps be taken to bring clearly before the Special Representative Meeting the alternative policy of payment in full for services rendered on a suitable tariff, the risk of insurance to be borne by the Government, the contributing lay bodies, or these conjointly.

On the motion of Dr. ROWLAND FOTHERGILL, seconded by Dr. ROXBURGH, the following committee, together with the Chairman (Dr. Lowry), *ex officio*, was appointed to draft suitable amendments to any resolution put forward in the report of Council, and to submit them to the Divisions as soon as possible: Dr. Daniel, Dr. Rowland Fothergill, Dr. Heggs, Dr. Ledward, Dr. Picton, Dr. Raiment, and Dr. Roxburgh.

Dr. Ledward was appointed convener of the committee.

This committee met subsequently and adopted the following two resolutions, with a view to their being placed on the agenda of the Special Representative Meeting:

> (*a*) That it be an instruction to Council that in any Public Medical Service scheme submitted for approval, the inclusion of the principle of co-operation with contributing lay bodies in the administration shall not be ground for the withholding of such approval, providing that control of purely professional matters remains with the profession.
>
> (*b*) That, in view of the Regulations respecting medical benefit issued by the Commissioners and the recent explanation by the Chancellor of the Exchequer, this Representative Meeting would urge the Divisions seriously to consider again the advisability of adopting a scheme of payment in full for services rendered on a suitable tariff, the risks of insurance to be borne by the Government or contributing lay bodies, or both conjointly.

LEWISHAM.

A meeting of the medical practitioners of Lewisham was held on Thursday, October 31st, at the Co-operative Buildings, Catford. Dr. TOOGOOD was in the chair.

Public Medical Service.—Dr. COMBER proposed and Dr. WILSON seconded:

> That a public medical service be formed for Lewisham.

This was carried. The following officers were elected:

Chairman, Dr. W. Wilson; *Treasurer*, Dr. Grayling; *Secretary*, Dr. Bundey; *Committee*, Drs. Atkinson, Barnett, Bateman, W. H. J. Brown, Cato, Comber, Duncan, F. Hudson Evans, Halliwell, Hemmans, Nowby Smith, and Wheeler-O'Bryen.

Dr. MACNAMARA proposed:

> That the Committee be instructed to draw up a scheme for the treatment of insured and uninsured persons and report to the next meeting.

This was seconded by Dr. Toogood and carried unanimously. Dr. COMBER proposed and Dr. DUNCAN seconded:

> That the Committee shall have power to ask the members for a small subscription to defray initial expenses.

This was carried.

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, October 12th, 1912, p. 385 *et seq.*

PROVISIONAL MEDICAL COMMITTEES.

BRISTOL.

DR. DEVIS, the chairman, has sent us for publication the following report on the present position based on the Chancellor's statement of October 23rd, the regulations of the Insurance Commissioners, and the National Insurance Act:

1. Income limit of not more than £2 per week. Refused by the Chancellor and Parliament on a national basis, but arrangements can be made between the Insurance Committee and the local profession (Regulations 9, 13). Onus of proof of income justly laid on insured person (Regulation 13 (5)).

2. Free choice of doctor by patient and right of refusal of patient by doctor. Conceded in the Act (Sec. 15 (2) (c). Watered down by the distribution of undesirables (d) and uninsurables (e), and practically nullified by the proviso to Sec. 15 (2), which gives the Commissioners power to make any arrangements they like throughout whole areas, and the Harmsworth clause (Sec. 15 (4)), allowing medical attendance and treatment through any system or institution existing on December 16th, 1911. These clauses are made effective by various regulations. Regulation 18 dealing with the free choice of patient and doctor, Regulations 3 and 7 with the distribution of the unattached and undesirables, Regulation 47 with the aged and infirm, and Regulation 16 with institutions. The safeguard of the Harmsworth clause is provided for in the regulations by being inserted among many other important particulars in the published medical list, and is thus brought before the notice of the insured persons. Regulations 27 (b) provides that persons who change their residence within the county may be assigned by the Committee to a doctor on the panel.

Persons coming into one county from another will be entitled to obtain treatment from any one of a list of doctors on the panel who have undertaken the treatment of such persons (Regulation 44 (2), (3), (4)). The doctors who undertake the treatment of such persons will have much extra clerical work, notifying to the Committee, as often as they may require, names, addresses, names of societies, numbers on the books, etc. (Regulation 44 (5)). In case none of the panel are willing to undertake this work these persons will presumably be assigned by the Committee. How will the cost of these patients be estimated? Will it be 7d. per month; say, 3s. 6d. for attending a domestic servant sent home with pneumonia and developing empyema?

3. Friendly society control. Friendly society and insurance company officials will be the dominant power on the Insurance Committees, not only from their number but also from their previous experience of questions dealing with the health of the industrial classes.

The power of the Committees over the panel is enormous. Amongst other powers, they can modify the conditions and methods of remuneration (Regulation 6 (2)); decide the system of remuneration (Regulations 18, 19); determine forms and notices (Regulation 6 (3)); fix an income limit (Regulation 13 (1)); distribute undesirables and aliens (Regulations 18, 27); refuse to allow persons to make their own arrangements for treatment (Regulation 20); determine procedure of Committee of Complaints (Regulation 48 (6)); recommend to the Commissioners the removal of a practitioner from the panel (Regulation 48 (9)).

4. Adequate representation on Committees. Under the Act the representatives of the local profession on the Insurance Committee vary from 2 in 40 to 2 in 80, augmented and swamped by from 2 to 4 medical practitioners appointed by the county or borough council and the Commissioners (Sec. 59).

5. Local Medical Committees, where formed and approved by the Commissioners, shall be consulted by the Committees (Sec. 6a). The Regulations provide that they *shall* be consulted by the Committees with regard to Rules (Regulation 8); income limit (Regulation 13 (2)); conditions of service (Regulation 6); revision of list of drugs (Regulation 40); that they *shall* consider complaints made by one doctor against another (Regulation 49); and appoint 3 members out of 7 on the Committee of Complaints for dealing with charges brought by patient against doctor, or vice versa (Regulation 49).

They *may* make recommendations to the Commissioners with regard to arrangements (Regulation 10); make representations to Commissioners with regard to the conduct of persons supplying drugs or appliances (Regulation 52); dispute the income of an insured person (Regulation 13 (4)); and apply to the Commissioners for the removal of a doctor from the panel (Regulation 49).

6. Disciplinary powers. Purely professional disputes shall by settled by the local Medical Committee.

Charges against doctor by patient are heard by a sub-committee in which laymen are in the majority, and then sent on to the Insurance Committee. If the Insurance Committee, essentially a lay body, and not too friendly to to the profession, consider the charge substantiated, they may recommend to the Commissioners the removal of the doctor from the panel. The Commissioners then appoint a committee of inquiry, consisting of two doctors and two laymen, who shall report as to fact and inference, but with no recommendation as to action. The judge, who has the power of convicting the doctor and ruining him, is the lay body of Commissioners, and from them there is no appeal.

The obnoxious and degrading Section 68 still remains in the Act, under which a lawyer has the power of cancelling a doctor's certificate—again without appeal. According to Section 69, this action on the part of a lawyer, ignorant as to medical matters, may render the doctor liable to three months' imprisonment with hard labour.

7. Method of payment. To be settled by Insurance Committees; not by the local profession as demanded by the Association. This point is not of supreme importance since the amount is fixed, and, therefore, the profession takes the insurance risk in whatever way the payment is made.

8. Adequate remuneration. The Chancellor allots a definite 6s. 6d. per head to the doctor; an extra 6d. for tuberculosis in all its forms, including bones, joints, spine, brain, and peritoneum; also an elastic 6d. which will go to the doctor if he can cut down his drug bill to 1s. 6d., if not, it will go to the chemist; also a definite 1s. 6d. to the chemist for drugs and appliances, making in all 9s. There is also a small central fund for the extra cost of dispensing in times of abnormal sickness.

The Chancellor says his "proposals are liberal." When pointing out the extravagance of our demand for 8s. 6d. exclusive of drugs and extras—such as special and night visits, mileage, anaesthetics, etc., he said this demand would raise the total amount to 13s. He therefore computed the cost of these drugs, appliances, and extras at 4s. 6d. On his own figures, therefore, the 9s. he allots for medical benefit must be reduced by 4s. 6d., giving 4s. 6d. as the capitation fee for the ordinary work, exclusive of drugs, appliances, and extras. Or, to put it another way, putting drugs and appliances out of the question, he reckons the extras at 3s., and he offers us 7s. inclusive—there are no extras. In either case his offer amounts to 4s. or 4s. 6d. for our ordinary work.

The following is some of the work required for the 4s.; it is required by the Regulations, which are only provisional, and which will become far more stringent as soon as our necks are in the noose. We presume the work will be enforced by means of Government Inspectors:

(a) Efficient treatment of men, women, young people over 16, chronics, undesirables, and tuberculous persons.

(b) Constant and frequent attendance on them at their own homes at all hours of day or night. (The appendix dealing with the conduct of patients will not weigh heavily with the lay Insurance Committee.)

(c) Certificates.

(d) Clerical work (Regulation 44 (5), book-keeping, notes, and reports. For examples of the Commissioners' ideas on notes and reports see the forms issued by them in the Regulations for sanatorium benefit. Remember also that the Chancellor has said that he hopes for a full record of the health of the working classes by means of the Act.

(e) Visits up to three miles in every direction.

(f) A higher standard of efficiency than formerly.

(g) Increased attention and time.

(h) Up-to-date treatment and methods; employment of "modern means of exact diagnosis,"—for example, Wassermann reactions, blood counts, etc.

With regard to reports, interesting questions are likely to arise as to professional secrecy, and action for libel. It is evident that, comparing the 4s. or 4s. 6d. offered us as an exclusive rate with the present inclusive 4s., there will be an enormous increase of work and worry. It

must not be forgotten that the present club-rate is really far higher than 4s., since a large number of club patients prefer to employ private doctors, whereas for the Chancellor's 4s. 6d., all who choose the panel doctor will send for him for the slightest ailment.

We cannot agree with the Chancellor that his "proposals are liberal."

Summary.

Income limit refused generally may be fought for locally.

Free choice conceded—except in the case of the unattached, undesirables, aged, infirm, persons changing residence or coming in from another county, whole areas at the will of the Commissioners, hundreds of thousands in institutions, and hundreds of thousands more owing to the strong constant pressure of institution officials.

Friendly society control—exchanged for friendly society plus industrial insurance plus Bumbledom control, with powers infinitely wider and more far-reaching than the old friendly society control, even the power of ruining any doctor who may have incurred their dislike.

Adequate representation on Insurance Committees—impossible under the Act, unless the Commissioners would consent to appoint the nominees of the local Medical Committees under Sec. 59 (2) (*e*).

Local Medical Committees with many duties but no power but that of "strike." They cannot bargain with Insurance Committees on equal grounds. Unlike the societies and county councils they have no power of veto.

Laymen have full disciplinary powers over doctors, and can ruin them without appeal. The only possible check being the fear of the "strike" weapon.

Choice of method of remuneration refused.

Adequate remuneration not conceded. Latest offer little better than old club pay when the new conditions are considered, also the fact that all who pay to a doctor will send for him; that the all include all the bad lives among the insured; that there is no provision for such important extras as anaesthetics, help in operations, fractures, etc.; that the radius of compulsory practice is three miles; that there is no adequate safeguard against vexatious calls; that there will be much clerical work and much correspondence, with reports on all cases; that "modern means of exact diagnosis" are required; and that the Commissioners will take care that we carry out to the letter all that is required of us.

It must be evident to all medical practitioners who have carefully studied the situation that it would be a fatal blunder to take service under such conditions as these for the sake of the extra fees offered us, and that by so doing we should be selling our freedom too dearly. It would be equally fatal to try the experiment for a period, for it will be impossible to retrace the step once taken. We can regard the Chancellor's threats with equanimity, confident of the loyalty of all who have signed the Association pledge.

It was proposed by Dr. Devis, and seconded by Dr. Myles:

> That the report be approved and sent up for publication in the British Medical Journal.

This was carried *nemine contradicente*.

It was proposed by Dr. Bertram Rogers, and seconded by Dr. Logan:

> That after careful consideration of the Chancellor's statement of October 23rd and the provisional regulations of the Insurance Commissioners, taken in conjunction with the medical provisions of the National Insurance Act, the Bristol Provisional Medical Committee considers that to accept the Chancellor's offer and take service under the Act would be to undertake an inefficient service, to sell the freedom and degrade the status of the profession.

This was carried *nemine contradicente*.

Reigate.

A meeting of this Committee was held on October 23rd. Dr. Palmer was in the chair, and twelve members were present.

Surrey County Tuberculosis Scheme.—The Honorary Secretary reported that the Surrey Insurance Committee had sanctioned the following fees for the domiciliary treatment of pulmonary tuberculosis:

- 5s. 0d. for report upon Form Med. 2.
- 2s. 6d. for each visit with ordinary medicines.
- 2s. 0d. for each attendance at surgery with ordinary medicines.
- 2s. 6d. for each injection of tuberculin (the serum to be paid for by the Committee).
- 5s. 0d. for each night visit between 8 p.m. and 8 a.m.
- 5s. 0d. for each quarterly or special medical report.
- 1s. 0d. for each doctor's certificate accompanying Form Med. 1.

(Subject to the approval of the National Health Insurance Commission being obtained).

The scale agreed with that approved by the British Medical Association, with the exception that 2s. instead of 2s. 6d. was allowed for surgery attendance and no mention was made of mileage. It had been suggested to the Insurance Committee that the former might be got over by attending tuberculous patients only in their own homes, and the Insurance Committee left the question of mileage open, because it was thought the matter would settle itself (presumably by the patient choosing a doctor within the radius). No objections were raised to this scale of fees.

Public Medical Service Schemes.—After some discussion on the policy of giving the societies a share in the management of the service the consideration of the schemes was deferred.

Contract Practice Resignations.—The Honorary Secretary reported that he had posted on September 28th 141 resignations of clubs signed by 36 practitioners—namely, all the clubs in the Division. The medical officers of the dispensaries in Reigate and Redhill had given notice that they would not attend insured persons as dispensary patients after January 15th. The Reigate and Redhill Hospital staff and the staffs of the Horley, Crawley, and Dorking hospitals had taken similar steps.

Attendance on Uninsured Persons.—Letters from club secretaries were read inquiring whether uninsured persons would be attended after January 15th on the same terms as before. After discussion Dr. Weir proposed:

> That uninsured persons shall be treated at present contract rates provided that their incomes do not exceed £2 a week. This arrangement to hold good until January 1st, 1914.

The resolution was seconded by Dr. Hewetson and carried unanimously. It was decided to inform the club secretaries that this resolution was subject to the approval of the State Sickness Insurance Committee, but subsequently the Honorary Secretary was instructed to ask the advice of that Committee before replying to the letters.

Interview with Dr. Addison.—Dr. Palmer gave an account of an interview he and Dr. S. A. Clarke had with Dr. Addison at the House of Commons concerning the proposals of the Government for increasing the remuneration for attendance on uninsured persons.

Report of Proceedings.—The Chairman and Honorary Secretary were instructed to prepare a report of the proceedings of this Committee for the meeting of the Division on November 12th.

Provisional Medical Benefit Regulations.—The consideration of these Regulations was deferred until members had more information respecting the Chancellor's new proposals for meeting the views of the profession.

Next Meeting.—The next meeting was fixed for November 9th at 8.45 p.m., at Mr. A. R. Walters's house.

Kent County.

A meeting of this Committee was held at Ashford on October 24th, Dr. W. J. Tyson, Chairman, presiding. Letters from the State Sickness Insurance Committee and the county medical officer were read. After some comment it was resolved that the Kent County Council scheme for sanatorium benefit be accepted.

Day and Place of Meetings.—It was resolved that in future the meetings be held on Wednesday, and at Maidstone, Ashford, and Cannon Street Hotel respectively.

Public Medical Service.—It was resolved, after a long discussion, that Schemes A and B of the British Medical Association should be discussed. It was resolved:

1. That the Public Medical Service Subcommittee should be instructed to put the Kent scheme into workable condition and send their draft to the Divisions by next meeting.
2. That the medical staffs of hospitals send to their boards of management a signed copy of paragraph 3 of the pledge *re* insured persons treated at hospitals.

Dr. Hicks explained at some length the difficulty county medical practitioners experienced as regards mileage, and it was resolved that the subcommittee should carefully consider the question of mileage as regards county practitioners.

Oxford.

The following is the Oxford and County Tuberculosis Scheme, as approved by the Provisional Local Medical Committee at a meeting held on October 17th[1] (applicable to notifiable pulmonary tuberculosis only). Resolved that:

Staff.

(1) A whole-time chief tuberculosis officer shall be appointed at a minimum salary of £500 per annum, exclusive of travelling expenses.

The following shall be the procedure for providing treatment:

(2) A person applying for treatment must present a statement signed by a medical practitioner as mentioned in Form Med. I of the Commissioners.

For this statement a fee of 1s. shall be charged, which shall be paid by the patient in the absence of public provision for such payment.

(3) When an applicant is given Form Med. II. or its equivalent, he shall be referred to his private doctor. If he has no doctor, he shall be shown a list of doctors practising in his neighbourhood, and shall be asked to choose one, to whom he shall be sent with a letter asking the doctor to examine the applicant and fill up his form. The fee of 5s. for this report will include either a consultation at the doctor's residence or surgery, or, if attendance at the surgery is not possible, a visit to the applicant's home, where such is within two miles of the doctor's residence or surgery.

(4) The examination of applicants and the filling up of Form Med. II shall not be done by the whole-time tuberculosis staff. The object shall be to insist upon every tuberculosis patient having a private doctor, who shall be encourged to take a continuous interest in the case.

(5) Treatment shall be carried out when possible by the private doctor in co-operation with the chief tuberculosis officer, in all cases except those transferred to the sanatorium, Radcliffe Infirmary, or similar institutions, and for all cases so transferred provision shall be made whereby on their discharge they are referred to their private doctor with a report of their progress while in the institution.

Domiciliary Treatment.

(6) After the Form Med. II has been filled up, the chief tuberculosis officer shall arrange to meet the private doctor in consultation, and the form of treatment, domiciliary, sanatorium, dispensary, or hospital shall be decided on.

If domiciliary, the two doctors shall consult as to the treatment, and the number of visits likely to be required. At the same time the main details of the "Continuous Record" (see Schedule to Local Government Board Order, July 26th, 1912) should be filled in. As this consultation will necessarily take up a good deal of time, an extra fee shall be paid to the private doctor of not less than 2s. 6d., or a separate fee of not less than 5s. shall be paid for the keeping of the "Continuous Record."

(7) According to the Local Government Board Order a report on the condition of the patient will be required not less than every three months. For this report a sum of 5s. shall be paid.

(8) The medical practitioner shall pay such special or night visits as circumstances shall demand, and in presenting his quarterly accounts shall explain the circumstances necessitating such visits.

Dispensary Treatment.

(9) Treatment shall in general be carried out at the homes of the patients, or at the surgeries of their private doctors. Where, however, special forms of treatment have been decided upon in consultation such treatment with the consent of the general practitioner may be given at the dispensaries.

Diagnostic, consultative, pathological, and statistical work shall be carried on at the dispensaries.

(10) No case of pulmonary tuberculosis shall be seen at a dispensary except on the recommendation of a private doctor.

(11) In the event of the chief tuberculosis officer requiring assistance in the administration of special forms of treatment, such assistance under his directions should as far as possible be furnished by the practitioners in the area affected serving on a rota, rather than by an addition to the whole-time staff.

Hospital Treatment.

(12) In the event of the patient being transferred, as provided for under paragraph 6, to the Radcliffe Infirmary or similar institution not under the control of the tuberculosis officer, the physician or the resident medical officer of such institution shall furnish the tuberculosis officer with such reports as he may require, and for these reports the specified fees shall be paid.

Provision for the Instruction of Medical Students, Nurses, and Others.

(13) That inasmuch as the opportunities which are now afforded in general hospitals to the students of medicine for the observation of the course and treatment of tuberculosis will be greatly diminished by the operation of this scheme, advantage shall be taken of the extended opportunities which will be afforded under the scheme to provide additional instruction at the sanatoria, dispensaries, and similar institutions.

Scale of Minimum Fees.

(14) The scale of minimum fees shall be that specified on p. 75, Supplement, British Medical Journal, October 5th, 1912, with the following exceptions: (1) That while the fee for a consultation at the practitioner's house or surgery should be 2s. 6d., that for a visit to the patient's house should be 3s. 6d. (2) That 7s. be the fee for a night visit.

Treatment of Persons not Insured under the Insurance Act.

(15) The terms and conditions for treatment of uninsured persons when such is undertaken by the local authority, shall be the same, *mutatis mutandis*, as those for treatment of insured persons.

(16) It shall be the duty of the tuberculosis officer to examine "contacts" not already under medical treatment, and at his discretion to send suspicious cases to the dispensary for continuous observation till discharged or notified to be tuberculous.

[1] Supplement, October 26th, p. 443.

Stockport, Macclesfield, and East Cheshire.

At a meeting of this Committee, Dr. Marriott in the chair, the following conclusions were arrived at:

Signature of Pledge and Undertaking: Practically unanimous throughout area.

Central Guarantee Fund: The response has been about the average.

Resignation of Clubs: All clubs have been resigned, *both for uninsured and insured.*

Public Medical Service.

At a Divisional meeting, to which all members of the profession were invited, held on September 17th, it was resolved that a Public Medical Service for this area is desirable, and that its formation should be undertaken. Two schemes capable of being run concurrently have been outlined:

Explanatory Memorandum of Schemes.—General: All funds shall be held by trustees jointly nominated by the insured, the profession, and certain lay authorities. The trustees shall appoint a chartered accountant as their secretary.

Scheme for Payment for Work Done, "Y."

Conditions of Membership: Income limit, £2 to £3 per week irrespective of whether insured or not.

Privileges of Members: Ordinary medical attendance and treatment, including medicines for self *and family*, so far as the family are dependants in the sense defined by the Act, Clause 79. Free choice of doctor subject to the consent of the doctor to act, and to considerations of distance.

Charges of Doctors: Doctors to be paid for work done on a standard tariff—namely, 2s. 6d. per visit, 2s. per consultation, etc.

Doctors to present a weekly statement of attendances in the form of a visiting list to the secretary to the trustees. The trustees to pay them according to these statements once a quarter.

Payments by Members: Each member shall pay in two ways—to a general pooled fund and to a deposit account.

A. *Pooled Fund:* Each member to pay 8s. 6d. per annum to the secretary of his friendly society, who will remit it to the secretary of the trustees. This sum of 8s. 6d. in the case of insured persons is the amount payable by the Commissioners under Clause 15 (2) and (3) of the Act.

B. *Deposit:* Each member to pay, in addition, through his club, at least ½d. per week-day for each £1 a week earned as wages—for example, a man earning £1 a week would pay 3d. a week. Payments to be made on club nights, or through the post. This money to be paid by the club secretaries to the secretary of the trustees, and placed to the credit of the member's own account in the books of the trust. This account to be called the member's deposit.

Each member to be required to bring his deposit up to an amount equal to two average weeks' wages in the course of three years. (Thus a man earning £1 a week would be required to bring his deposit up to £2, and would be given three years to do it in.)

Rebate: Payment of nine-tenths of the two weeks' wages in the first year to be accepted by the trustees as

full payment of deposit. Thus a man earning £1 a week who paid £1 16s. in the first year would have the same privilege as if he paid £2 in three years.

(Mr. Lloyd George suggested that the income arising from the released club reserves might be used towards the provision of medical benefit for women and children. That object would be achieved by simply paying the money into the deposits of members.)

Respective Liability of Deposit and Pool: In paying the doctor's account the trustees shall draw first on the deposit account of the member who (or whose family) has incurred attendance; provided that not more than the amount of two weeks' wages be drawn from this source in any one year, or, if the member had completed his deposit in one year, not more than nine-tenths of that sum. The balance of the account, if any, to be borne by the pooled fund.

Where Illness Occurs before the Deposit is Completed: Under these circumstances, assuming the minimum contributions to have been paid to date, the pool to bear the charges when the incomplete deposit account is exhausted.

If a member fail to pay his minimum contributions, benefit shall cease so soon as the actual sums paid to the deposit shall have been exhausted; provided that the member's society shall be notified and shall have power to make good the deficiency.

Extra Income: Regular extra income, beyond the wages of the head of the family, whether from investments or earnings of wife or children or other members of his household, shall be added to his income in reckoning the amount he must pay to his deposit; provided that the wife of a member who is herself an insured person shall not be required to make any contribution to the pool, but the 8s. 6d. returned to her by the Commissioners shall be available towards her husband's deposit.

Renewal of Deposits: It must be clearly understood that a member who has once made his deposit will not be required to make any further contribution in that respect unless the deposit has been drawn upon to pay for medical attendance.

If the deposit have been drawn upon, the member to bring it up to the full amount by paying at the same rate as before.

Deposits to bear interest at a rate decided by the trustees.

The balance of a member's deposit to be payable to his heirs at his death. If a member leave the country the balance of his deposit to be payable to him.

No member to be liable to pay to his own deposit during his own sickness, but instalments to become due to a depleted deposit if and when the member is at work.

Balance of Pooled Fund: Any balance to be placed to a reserve; or if the reserve in the opinion of the trustees be adequate, to two funds:

1. For providing for higher and special branches of medical examination and treatment.
2. For assisting the formation and maintenance of the deposits of members.

Scheme for Capitation "Z."

Conditions of Membership: Income limit 25s. a week (from all sources).

Privileges of Members: Ordinary medical attendance and treatment, including medicines, for self alone.

Free choice of doctor, subject to consent of doctor to act.

Doctors to be paid 8s. 6d. per head *plus* extras. Payments to be made through the trustees.

A very elaborate and careful examination of Scheme "Y" has been made by an actuary, and he pronounces it sound.

The Committee referred the schemes to the State Sickness Insurance Committee for its ruling, and the decision of the latter was as follows: "It cannot approve either scheme pending discussion by the Representative Body of one of the principles contained therein—namely, co-operation with representatives of friendly societies and other lay persons and bodies. The question is one of such importance, and has been raised from so many quarters, that it must be definitely settled by the only body which can settle a new principle of this kind."

LINDSEY.

A meeting of this Committee was held at Wragby on November 25th. Dr. LOW presided, and fifteen members were present.

Sanatorium Benefit.—The HONORARY SECRETARY read a letter from the Lindsey Insurance Committee, agreeing to fees proposed, namely:

	s.	d.
(*a*) Reports II and IV, *plus* mileage, where necessary	5	0
(*b*) Consultations at surgery, including medicine for one week	5	0
(*c*) Visit and medicine for one week, *plus* mileage of 1s. per mile one way after the first mile from the attendant's surgery ...	5	0
(*d*) Visit and medicine for two days	2	6
(*e*) Consultation and medicine for two days ...	2	6
(*f*) Extra visits, *plus* mileage on above scale	2	6
(*g*) Injection of vaccine (vaccine supplied) ...	2	6
(*h*) Night visits, 8 p.m. to 8 a.m.	Double fees.	

Public Medical Service.—Dr. WITHERS, of Horncastle, proposed, and Dr. DEANE, of Scothorne, seconded:

That the formation of such a service be postponed until after the next meeting of the British Medical Association.

This proposition was carried *nemine contradicente.*

EAST NORFOLK DIVISION.

At a meeting of this Committee it was resolved:

That the members strongly resent the statements contained in the speeches of Sir Clifford Allbutt and Sir Victor Horsley, that the scheme for the provision of medical benefit under the Insurance Act as outlined by the Chancellor on October 23rd ought to be acceptable to the profession at large. They feel that such a statement is entirely unauthorized, that it is prejudicial to the welfare of the profession, and that the decision of the Representative Meeting ought to have been awaited before any statement was made.

HARROW.

The adjourned meeting was held on October 22nd. Dr. A. H. WILLIAMS was in the chair, and eleven members were present.

Public Medical Service.—The consideration of the Model A Scheme was continued, and the following recommendations were agreed to:

Paragraph 18.—Subscriptions (*b*) for uninsured persons:

For the wife of an insured person, a flat rate of	2d. per week
For a single child (under 16 years) of an insured person, a flat rate of	2d. ,,
For two children under 16 years, a payment of	3d. ,,
For three or more children under 16 years, a payment of	4d. ,,
Total for husband, wife, and unlimited number of children, a payment of ...	8½d. ,,

Equals 36s. 10d. per annum.

Footnote *re* Income: That this clause be deleted.

Paragraph 19.—Arrears: A subscriber whose subscriptions are *three* weeks in arrears, etc.

Paragraph 23.—Limitation of Benefits: Minimum fees for special services. The following alterations in the suggested schedule were agreed to:

	£	s.	d.
(*b*) Miscarriages: Insert "not requiring an anaesthetic"	0	10	6
Miscarriage: Insert "requiring an anaesthetic"	1	1	0
(*c*) Vaccinations	0	3	6
(*d*, *e*) Fractures and Dislocations at discretion of medical attendant			
(*g*) Administration of Nitrous Oxide	0	5	0
Administration of other general anaesthetics ...	0	10	6
(*h*) Night visits, that is, visits made between 6 p.m. and 8 a.m., etc.	0	2	6
(*k*) Reports at discretion of medical attendant.			

Paragraph 26.—Distribution of Subscriptions, to read: The Treasurer shall, with the sanction of the Committee, *as soon as possible after* the usual quarter days, after provision, etc.

Paragraph 29.—Collectors: Collectors shall be paid by salary *or* by commission at the discretion of the Committee.

Paragraph 30.—Member's list of Subscribers, to read: The Committee shall supply each member of the service *quarterly* with a List of Subscribers, contracting with him and entitled to his services.

HAMPSTEAD.

A meeting of this Committee was held on Monday, October 28th, at 4, Dennington Park Road. Dr. FORD ANDERSON was in the chair, and fourteen members were present.

Sanatorium Benefit.—Correspondence with the medical officer of health of Hampstead with reference to the sanatorium benefit practitioner's list was read.

Public Medical Service Scheme.—The report of the subcommittee appointed to consider the Schemes A, B, C, and D was read. The report consisted of a separate

scheme drawn up by the subcommittee, which was finally adopted after amending certain details. This scheme (Document P.M.C. 2) to be forwarded by the Honorary Secretary to the State Sickness Insurance Committee.

It was agreed to invite the Hampstead Medical Society to nominate a member, preferably a non-member of the British Medical Association, to fill an existing vacancy on the Committee.

MEETINGS OF THE PROFESSION.

Combined Meeting of Yorkshire Executives.

On Monday afternoon, November 4th, a meeting of the executives of various Yorkshire Divisions was held at the Metropole Hotel, Leeds. The object of the meeting was to discuss the attitude of the profession regarding the recent proposals of the Chancellor and the Regulations of the Insurance Commissioners, in order to secure united action. Nearly a hundred executive members were present, representing the following Divisions: Leeds, Bradford, York, Halifax, Sheffield, Huddersfield, Wakefield and Pontefract. Dr. Gibson, the President of the Yorkshire Branch, was in the chair. Dr. Manknell proposed and Dr. Metcalfe seconded the following resolution to be brought before the Divisions represented at the meeting, with a view to its being afterwards submitted to the Representative Meeting:

> That, in the opinion of this meeting, the Regulations issued by the Insurance Commissioners and the latest proposals of the Chancellor of the Exchequer are unworkable, derogatory to the profession, and a positive danger to the national health. As a consequence, the medical profession declines to undertake service under the Act and Regulations as at present constituted.

The resolution was adopted amid much enthusiasm, all but four of those present voting in favour of it. During the next few days meetings of the Divisions represented at the Leeds meeting will be held, and the above resolution will be proposed. A vote of thanks to the Chairman concluded the meeting.

COLLIERY SURGEONS.

Lancashire.

At a large and representative meeting of Lancashire colliery surgeons held at Wigan on Friday, November 1st, Mr. Mitchell Roocroft presided. The following resolution was passed by 43 votes to 2:

> That accidents and industrial diseases under the Workmen's Compensation Act, 1906, shall not be entitled to medical benefit under the National Insurance Act, 1911.

Dr. Thomas Campbell was appointed a delegate to attend a conference at Newcastle-on-Tyne on November 6th.

A PRIVATE MEETING IN FAVOUR OF NEGOTIATIONS.

The meeting of "members of the medical profession in favour of accepting the terms offered by the Government under the National Insurance Act," to which reference was made last week (p. 1226), was held at the Westminster Palace Hotel on November 5th. We are informed that the chair was taken by Dr. Keay, of Greenwich, that about 170 were present, and that the two following resolutions were adopted—the first was proposed by Dr. Brackenbury and seconded by Dr. Cowie, and the second was proposed by Dr. Boon and seconded by Dr. Salter:

> That this meeting of medical practitioners in London is of opinion that the Provisional Regulations for Medical Benefit, the Model Rules, and the recent statement of the Chancellor of the Exchequer, while not securing to the profession all they might reasonably demand, afford a basis upon which a satisfactory temporary arrangement to co-operate in administering medical benefit might be arrived at; urges their fellow practitioners at the forthcoming Divisional meetings to seek to secure such resolutions as will enable the Representative Meeting to give full powers to the Council of the British Medical Association or its State Sickness Insurance Committee to reopen and complete negotiations to that end.
>
> That this meeting of general practitioners thanks the medical members of the Advisory Committee for their services in securing modifications of the Regulations, and the additional Treasury grant in respect of remuneration, whereby a basis for a satisfactory settlement with regard to administration of medical benefit has been obtained.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor*, British Medical Journal, *429, Strand, London, W.C.*]

The Editor has again this week received a large number of letters on the present position of the profession in regard to the insurance scheme. In the endeavour to give a fair representation of the various views expressed the same course has been pursued as last week—that is to say, the majority of the longer letters have been curtailed, those paragraphs deemed to contain the writer's most important contentions being printed in full.

An Appeal for Negotiation and Acceptance.

Dr. W. J. Durant (Representative of the Gateshead Division of the North of England Branch, The Crossway, Gateshead-on-Tyne) writes:

The situation before us is so critical, the decision so momentous, and the issues so grave, that I feel compelled to make this appeal. The medical men throughout the country must not be guided to their decisions by side-issues, however important. We must face the fact that it will be utterly impossible to continue to practise our profession in the way it is now, except amongst the wealthy class. We must never forget that the Insurance Act is a compulsory one, and that those who remain outside the panel in any industrial district will be ruined. Personally, I would prefer to practise as I now do, rather than under any Government scheme.

An Appeal.

The situation before you is the acceptance or rejection of the Chancellor's speech of October 23rd, 1912, and the Medical Regulations (amended), as a basis for negotiation in order that we may arrive at a compromise and try it for three years. Are the Government offers good enough? My answer is—that it is impossible either for the Government or ourselves to produce figures broad enough and correct enough to estimate the proper remuneration for the services to be rendered under this Act.

There is no doubt in my mind that any scheme that does not ensure the hearty co-operation of the medical profession throughout the country will end in disaster to the very people for whose benefit the Act was designed.

The Chancellor may talk as he likes about a whole-time medical service, handing over the medical benefits to approved societies or to the insured themselves. He now evidently does recognize, both for his own, his party, and the country's sake, that our hearty co-operation must be obtained. You may then say, If this is so, why not carry on the fight and win the whole of the position? If you decide to do so, you will find that the Government offers have reached their breaking point.

Except you instruct your Representatives to vote at their next meeting on November 19th for negotiation on terms offered and ultimate settlement, you will be faced by the most disastrous results. You will see our splendid British Medical Association riven from top to bottom, the men competing with each other for appointments, and a cause totally and utterly lost.

You may say, What about our Public Medical Service schemes? To my mind, it is futile to discuss them. The Commissioners in a few years, with their accumulated funds, could knock the bottom out of any scheme run by ourselves by one of many means, namely, the superior benefits they would then be able to give.

Look at the matter broadly and with a statesmanlike view: don't let small pinpricks, that to you are particularly hurtful, spoil your outlook and judgement.

In what way, then, can we best effect a settlement? By the only business-like way—appoint three or four of our best men and give them power to negotiate and settle with the Government. I would recommend that Dr. J. A. Macdonald (Chairman of Council), Dr. Maclean of Cardiff, Mr. Verrall (Chairman of Representative Meetings), and Mr. E. B. Turner, together with the Medical Secretary, be given such power. They are men of absolute honesty and have the welfare of general practitioners closely at heart, and there is no question that we would be in good hands so far as their intelligence and capacity are concerned. Lest any one may urge that I have been prompted to name the above, I may say the matter is entirely unknown to

them. My only plea is a desire to see my professional brethren make a wise decision, and I feel sure that the above proposition will commend itself to those who really understand our present position. Before I close I wish to draw your attention to a few points.

We ask for the £2 a week limit to be in the Regulations. We shall never get it nationally—it is absurd to ask it. Take one particular effect—if the Representative Body insisted upon it—the whole of the colliery and works doctors would be compelled to refuse or even resign. I have spoken several times on this matter of the income limit at the Representative Meetings. The House of Commons cannot grant it and will not. Better far instruct your Representatives to give up this point and consolidate yourselves on practical issues.

Now as regards the mileage question. In densely populated industrial towns, mileage will not arise. The only point we ought to insist upon is—that free choice of doctor must be allowed for those insured persons who live outside the mileage distance from their chosen doctor, provided such persons pay the mileage themselves. In colliery districts the floating 6d. will cover the mileage, because the insured persons, although often living beyond a three-mile radius, dwell in large clusters, and are therefore more easily seen. In agricultural and moorland districts, where the population is poor, thin and scattered, some extra remuneration will have to be provided or the medical benefits handed over to the insured. Doctors in those localities would otherwise be ruined.

With regard to the enormous addition to our present bookkeeping, if a good settlement is effected, we would submit to it; but what we shall have to face is being asked by the Commissioners to supply reports from time to time on the work done, and for that labour an additional payment must be made.

With the above points before us, we can, I believe, unite in agreeing to give the Act a trial.

Let the Divisions give their Representatives a free hand, so that when the fuller information—which can only be brought before a Representative Meeting—is submitted to them, they may be afforded an opportunity of deciding wisely in the interests of those they represent and their successors.

Continuance of Negotiations.

Mr. RUSSELL COOMBE, Honorary Secretary of the South-Western Branch and Representative of the Exeter Division, writes: Whilst thoroughly congratulating the Council of the Association on the admirable and exhaustive report just issued, one cannot help being struck by the omission in paragraph 115 of a very obvious *via media* between (*a*) and (*b*).

It is undoubtedly the case that a very great step has been made by the Government towards meeting the financial demands of our profession. Would it be right in the face of this advance to adopt (*b*) without making any suggestion of discussing further points at issue which might prove themselves capable of adjustment?

A learned profession would be falling greatly from grace were it to treat remuneration as the only point of real importance to it. It appears to me quite possible that whilst some areas (especially large centres of population) may consider the financial terms worthy of a trial, there may, on the other hand, be many who would on no consideration accept the Regulations which refer to professional discipline, and which are discussed in paragraphs 60 to 67 of the report. Others, again, might hold similarly strong views on other points, and indeed all of us must desire much fuller and more detailed information on the important possibilities arising from the Chancellor's demands for records (which might, if not protested, involve very serious consequences to patients), other extra services, and modern methods of diagnosis.

Should the majority of the Divisions chance to take the view that, given certain amendments to the Regulations, it would be possible for our profession to take work under the Act, might it not be a right and statesmanlike course to intimate to the Commissioners the amendments which the Representative Meeting deem essential, and to give the State Sickness Insurance Committee power to consider and approve or not the wording of any alterations of the Regulations submitted to them by the Commissioners?

The Division I represent has, of course, not yet met; whatever its instructions prove to be it will be my duty to carry them out loyally. I cannot, however, but feel that, on full consideration, it may prove that there is (in view of the advance which has been made) a willingness to make a three years' trial of the Act provided certain alterations in the Regulations can be accepted by the Commissioners.

Dr. A. C. HARTLEY (Bedford) writes: I think we should look the whole matter of national insurance fairly in the face, and realize the full meaning of the terms offered to us. The public, and many in our profession, look too much to the 6s. 6d. or 7s. now offered, which may or may not be acceptable, but it is the very unsatisfactory "conditions of service" and the "rules and regulations" under which medical work will be done that require special scrutiny on our part. Members of the clerical and legal profession are solely regulated by their own profession. As the regulations and proposals of service stand now, the profession would be harnessed with a yoke which would be very irritating and harassing. Let every general practitioner read Dr. W. B. Edwards's letter in the BRITISH MEDICAL JOURNAL of November 2nd, page 1231, and he will realize the position of affairs.

If only 5 per cent. of the insured persons are above the £2 wage limit as stated, why need the Government fear to grant this very important point, especially when all persons over the limit can get grants-in-aid to pay their private fees?

Should the Representative Meeting decide to give the State Sickness Insurance Committee power to negotiate, I beg that the Committee be true to our principles and cardinal points, and see that at least the conditions of service are made bearable, not to onlookers and the heads of our profession, but to the doctors who have got to do all the hard work. Some medical men, who know nothing of the trials and strain of general practice, are making much of the point that the present regulations and scheme are provisional, and will be revised in three years. We have heard of that sort of thing before, and by experience know it is of no value to us. If, as they aver, the Regulations, etc., are only provisional, why not start off, right away, with a few simple regulations and some safeguards to make the conditions of service really agreeable to the doctors, and thereby get a willing, whole-hearted service by the medical profession at once, and then if the doctors fail in their duty, or do not do their work aright, let the Government tighten up the regulations three years hence.

Dr. DAVID ROXBURGH (London, W.) writes: The situation has somewhat changed since the last Representative Meeting. The Chancellor of the Exchequer has found it necessary to recognize that the claims of the profession had behind them not only justice, but a considerably body of public opinion. He has realized that the demands of the doctors are not so unreasonable as he was once advised to believe. And as I understand his speech, he has raised the sum to be paid for medical benefit, including domiciliary treatment of tuberculous patients, to 9s. per insured person. Of this sum he proposes to meet the demands of the profession by guaranteeing them 6s. 6d. per insured person and adding 6d. for tuberculous patients—in all, 7s. I do not believe that under any scheme of public medical service which has so far been put before us can we hope to realize, after paying expenses, a sum equal to 7s. per head of the insured.

Sir, we owe a great debt of gratitude, which I trust will be recognized, to the men who have worked out these schemes. We owe them our thanks for the time and money they have spent, but one and all of them break down on account of the absence of powers to compel insured persons to become members and to the cost of collecting subscriptions.

What we have now to think about are:

(*a*) The total sum we will receive for our services.

(*b*) The conditions of our service.

I do not consider either 7s. or 9s. a sufficient remuneration; but assuming that public opinion considers the offer a fair one, are we justified in urging our fellows to stand out for more if a considerable proportion of loyal members think we should meet the Government as far as money is concerned?

I would urge that we should realize that the Government intend now to pay 9s. for medical benefit. I believe

if we can get that on our own conditions we will have won a great victory.

We have to think in this matter not only of our own difficulties but of the difficulties of the Commissioners. It is most urgent from their point of view that this question shall be settled before January 15th, and I feel that it is so urgent that if we accept the money they have it in their power to give they will agree to whatever reasonable conditions we may lay down.

There is not space to discuss the Regulations the Commissioners have laid down; under them the life of a doctor would be the life of a dog. If we agree to say we will accept 9s. under conditions which we will advise the Commissioners to embody in the Regulations I think each medical man in his own way could make his life livable.

If we are reasonable in drawing up these conditions, the Commissioners will have in return for the money they have got to use a service which will be far better than any they can possibly organize.

The following are some conditions that occur to me as reasonable:

1. That for the sum of 9s. per insured person the profession shall agree to give service under the Act. This sum to include medicines, etc., domiciliary treatment of tuberculosis, mileage, and extras. The last two being arranged for by the Commissioners retaining 1s. per insured person until they are paid for. The extras not to include major operations or expensive appliances. The argument against doctors dispensing their own medicines all vanish from the public point of view with the establishment of free choice of doctor. We must do our best for the patients, or we will not get them.
2. That the Council of the Association issue to each practitioner a form of application for service under the Act, on which shall be printed the terms and conditions on which he offers his services. Practitioners shall be requested not to apply on any other form, and not to agree to any other conditions.
3. That in order to attract as many practitioners as possible to the service the form of application shall have attached to it a schedule on which the practitioner shall be at liberty to make —in the form of requests—what regulations he pleases as to the time he is able to place at the disposal of the insured. If this is very limited he will have the fewer patients, but it may nevertheless be to their best interests to be on his list. Without some such liberty the busiest practitioners will be excluded from the service.
4. That the new courts of law (Committees of Complaint and Enquiry) intended to be set up by the Commissioners must be abolished. It must be laid down that if a practitioner is fit to be on the *Register*, he is fit to attend the insured. The Commissioners, the committees, and the insured must rest content with the discipline the profession receive from public opinion, the common law and the General Medical Council. If experience shows further discipline is required that Council is the proper body to deal with the question.

Dr. F. C. Mears (North Shields) writes: Are we going to refuse the Chancellor's latest offer, or are we going to negotiate, for I presume we all think his suggestions will need some modification? However hostile we may be to the Act, and however much we may disapprove of the way it was forced through Parliament, the fact remains that it is now the law, and will remain so, although various amendments may be introduced by this or some subsequent Government. Are we going to refuse to work it, and dare the Government with their unlimited resources to do their worst? Mr. Lloyd George's latest offer is not generous, but it is a very great improvement on his previous plan. Most men who have experience in contract practice will admit that if he gives up the absurd, expensive, and almost unworkable scheme of dispensing by chemists, that for 9s. a head we can undertake the work. By how much we shall be gainers is uncertain, because we cannot tell to what extent persons suffering from drink or misconduct will avail themselves of the Act. And of course there will be more book work. We ought absolutely to refuse Government inspection, for the simple reason that, with free choice of doctor, insured persons will soon leave a man who is unskilful or inattentive.

The £2 wage limit should be given up. It will start us off with a quarrel with every local Insurance Committee, and the game is not worth the candle. The number of insured persons getting regularly between £2 and £3 per week is comparatively small, and the majority of them will want to pay extra for any attention in the same way as they do at present.

If we refuse to work the Act we know the alternatives, each of which would cause unending worry and loss of income to those who practise among the working classes, but if we give the Act a fair trial for three years we shall then be able to point out to the Government the defects in the Act as far as we are concerned. No doubt in time there will be a National Medical Service to include the whole population. In such a scheme there would be room for every practitioner who cared to join, whereas a whole-time Government service for the persons insured under the Act would only absorb one-third of our members and ruin a large number of the others. Our best thanks are due to members of our committees and others who have spent so much time and trouble in preparing schemes for a medical service under the control of the profession. These schemes look very well on paper, but I am bound to say that after thirty years' experience of the working classes my opinion is they would all fail. The expenses would be nearer 50 per cent. than 15, and without compulsion the bulk of the people would not pay at all, and many of the others irregularly.

Dr. J. Staveley Dick (Representative North Manchester Division) writes: Last February I ventured in your columns to state what appeared to me to be the legitimate aim of the profession—namely, that in each insurance area we should be helped and not hindered in our work by the National Insurance Act.

At present, as far as I can ascertain, it is the feeling that the recent proposals will help us in some areas, or at all events in some districts, and hinder us in others. The solution would appear to lie mainly in the direction of a suitable income limit in each area. If some indication were forthcoming from the highest quarters that in the interest of efficiency local Insurance Committees should carefully and sympathetically consider this aspect of the problem, it might, I think, facilitate a settlement securing the ideal I have suggested. There are matters, however, to which I wish specially to direct attention:

The Court of Complaints.—I hold rather strongly to the view that such a court is superfluous and otherwise seriously objectionable. Private practice among the middle classes is admittedly at present satisfactory enough both to patients and doctors. If practice among insured persons can be put on approximately the same level by the National Insurance Act, then it will have done something quite worth while. Now in ordinary private practice, if a patient is dissatisfied, he can at once change his doctor; if the patient has some really serious ground for complaint, he can bring an action at law. I suggest that instead of setting up a "court of complaints" (which is, I think, more likely to encourage frivolous and vexatious complaints than to do any real good to anybody) greater freedom to change his doctor should be given to insured persons. I have discussed the matter with several of my neighbours, and as far as we can see there is no serious difficulty in the way of granting to insured persons the same freedom which private patients at present enjoy. We think we could arrange among ourselves to grant such freedom even under a capitation system of payment. Such freedom would be appreciated by insured people. It would have this great advantage from our point of view that if we fail to satisfy some patient, the only penalty is that we lose him and, perhaps, his friends —unless, of course, we are guilty of serious negligence. It might, perhaps, be necessary for some tribunal to be constituted to deal with cases of negligence which had been proved in a court of law, but beyond that I fail to see what advantage such a court would be; and it will, if persisted in, certainly be the determining factor with some men in refusing to work the Act on any terms.

Dispensing.—Personally I should be delighted to be done with it, but I find that many men take a different view. If the regulations were a little more elastic, so as to permit men who desire to dispense as heretofore to do so, while offering others the services of a chemist, I think it would be much better. Young men starting practice might reasonably be required to write prescriptions only. It would then be merely a question of time until the policy of the Commissioners in separating the two functions became general. This solution would, at the same time, afford the chemists time to put their house in order —possibly a more important desideratum than some people appear to think.

If the Government could be made to appreciate the fact that the great majority of us are anxious to co-operate cordially in the efficient treatment and prevention of disease, I have little doubt that, in the more friendly atmosphere which would then prevail, an arrangement of these and other matters might be arrived at. The Government would sternly repress revolution in the commonwealth: I suggest that evolution and not revolution should be their aim in adjusting the relations of the profession to present-day requirements of the community.

Dr. J. Fletcher (Fulham) writes: The Chancellor in his last offer has plainly told us that he has reached his financial terminus, and it lies with us to consider whether we can meet him, and give his scheme a trial for a limited time. Neither side is yet in possession of exact data on which a perfect scheme can be formulated, and until those data are forthcoming everything is merely conjectural. The Chancellor asks us to try his scheme for three years, after which time both sides would be in possession of these indispensable details.

I submit that three years is unfair to our side. One year would be quite sufficiently long considering the financial risk we undergo. At the end of the first year, that is, January, 1914, we give the Government notice of our demand for all particulars by March 15th, 1914. These particulars are then to be considered by the whole Association within the next four weeks. We have then two months between this time and the end of June, 1914, for negotiations, to be concluded by agreement if satisfactory, or by refusal to work the Act if not satisfactory. Eighteen months is ample for the Chancellor to obtain particulars, and is the limit which we can afford him in justice to ourselves.

If the sum assigned for the domiciliary treatment of tuberculosis is insufficient (£375,000), we shall receive the Chancellor's approval if we imitate his methods and throw this part of the Act overboard without notice.

As far as the working of the Act is concerned, we can fix our hours for consultation and receipt of messages, messages received after starting out to visit to be treated as special visits and paid for as such; in fact, under the Act we shall be in the position of civil servants, and we must insist on our work being methodically arranged if we are to be able to carry it on.

With regard to venereal diseases, the publication of the diagnosis on the official card will very soon diminish the incidence of this particular class of disease. If a patient wishes for privacy, there is no legal bar to his becoming a private patient, and I think the majority would prefer this course.

Again, as far as regards unreasonable and disagreeable clients, if one is rejected from the list of a particular doctor I am not yet convinced that any other doctor can be forced to accept him if he does not wish to do so. Free choice of doctor is subject to the doctor's consent to accept the patient; to attempt to coerce the doctor would be of doubtful legality. Such items as the Wassermann reaction, giving of salvarsan with its dangers, preparation of autogenous tuberculous vaccines, etc., are obviously included under the head of major operations, and need not be seriously considered as incumbent on the ordinary medical attendant.

The Chancellor has made his final offer, let us in plain and unmistakable language tell him what we are prepared to do for the price, give him reasonable value, and then stick to our part of the bargain.

Dr. John Gruffydd (Bethesda, North Wales) writes: I feel grateful to Dr. Fenton for drawing my attention to an error in my last letter. However, I wish to endorse my original statement which appeared in the Supplement of September 21st (p. 342), and perhaps I can do so, and also make my meaning clearer, by again assuming I was asked to choose one of the following offers:

(*a*) To attend a *small* number—say, ten—postal employees, who are "picked" lives, at a yearly fee of 8s. 6d. each, including medicines; or,

(*b*) To attend a *large* number—say, thirty—"mixed" lives under the Insurance Act for the same fee.

I would choose the latter offer.

The Terms and Conditions now Offered.

Dr. E. C. Daniel (Epsom) writes: The crux of the matter, at the present time, is, "Who is to bear the insurance risk so far as medical benefit is concerned?"

The Chancellor attempted in the first place to put it on the medical profession at 6s. per insured person per annum including drugs and appliances. The medical profession expressed its willingness to take the risk at 8s. 6d. per insured person, excluding drugs and certain extras.

The Chancellor now offers 6s. 6d. (plus a problematical 6d.) excluding drugs and appliances, but including the other extras. These extras are of vital import as safeguards to the time and health of the doctor. Does this 6s. 6d. with the conditions attaching to it cover the insurance risk? The medical profession doubts it. The Chancellor says it does.

That being so, it seems that the way out of the deadlock is obvious.

As Mr. Lloyd George is so confident that he is providing sufficient money for an adequate medical service, it follows that he can take the insurance risk and pay in full by fee on an agreed tariff for the services rendered. The British Medical Association has a tariff, on much the same scale as the National Deposit Friendly Society, which is a working man's organization.

Now, assuming Mr. Lloyd George's calculations to be correct, the only way in which the medical profession could, unfairly, falsify them in practice would be by paying an unnecessary number of visits. This will not happen, because, instead of unwieldy county "panels," the work can be controlled by local medical societies, whose members will be bound to keep their visiting within the necessities of the respective cases.

Mr. Lloyd George invites the profession to accept, for a three years' trial, under the regulations, what he says is an adequate capitation fee. The profession should decline, and invite the Chancellor to show his confidence in his own calculations by paying an honourable and honest profession by fee for actual services rendered.

Dr. B. G. Morison (Highbury, N.) writes: The most recent proposals brought before the profession by the Chancellor of the Exchequer in connexion with the National Insurance Act, though mainly of a monetary character, invite examination of the whole medical position. The payment offered for services under the Act, though below the minimum agreed upon by the British Medical Association, appears at first sight to mark a distinct advance on previous concessions. This impression is to a great extent illusory. It is probable that the ratio between work done and its remuneration would continue under the proposed arrangement to be much the same as formerly existed under the old club system. In some respects the associated conditions would be much less favourable. The payment per capita provided in the new estimate is 8s. 6d., not 9s., as has been erroneously asserted. The differential 6d. is no addition. It represents merely an adjustment to meet the requirements of domiciliary treatment within the scope of sanatorium benefit. It is entirely outside that of medical benefit. It will also, unless (which is at least uncertain) special provision be made, certainly represent a reduction in the fees now being paid for domiciliary treatment. From the 8s. 6d. the amount deducted by the Chancellor for expenditure on drugs is 1s. 6d., and it is stated that certain pharmacists have encouraged him in the belief that this small total is sufficient. There can be no reasonable doubt that dispensing chemists as a body would at least double the sum or go even higher, as their brethren in Germany have done. Possibly in some rural districts with medical dispensing 1s. 6d. might come nearer the mark, but this is doubtful, and there expenses for distance must be greater in proportion than in towns. The Chancellor stipulates for a supply of the best drugs, and he frankly quotes against his arguments the cases of practitioners under the contract system who, being paid 4s. per member inclusive of drugs, found that their profit was extinguished by expenses. These extras, such as fees for special emergencies, night calls, mileage, etc., must reduce still further the crumbling remuneration. In the end the practitioner supplying the best drugs and otherwise consulting his conscience will be rather fortunate if he receives more than an unreduced 4s. per member. There is a fixed inclusive sum provided by the estimate for medical attendance, drugs, and other expenses. It is apt to be assumed that the fee of 6s. 6d. is secured to the practitioner. The Chancellor is careful to state this amount as a proposal. He gives no guarantee. Naturally its payment would be conditioned by the other necessary outlays on treatment. The duties imposed on the practitioner employed under the Act would be proportionately much heavier. He would not deal with the selected lives but with all types of insured persons. It is not improbable that his list of patients would be at least double what it has been under identical conditions hitherto. Clerical work is now for the first time to be introduced, and it is

proposed apparently to make use of some sort of official supervision of treatment and to demand the employment of "modern means of exact diagnosis," which might also read as "the exacting and expensive methods of modern diagnosis."

The Chancellor of the Exchequer is bold enough to state that most of the cardinal points have been conceded—either in the Act or in the Regulations. Can he show a single concession that has not been modified to the disadvantage of the profession?

The late-born condition as to disciplinary measures is for the moment set aside, being still in an uncertain position.

The free choice of doctor has been qualified unfavourably.

The abolition of control by friendly societies is, in effect, a purely nominal provision. By the clause relating to representation on insurance committees practically the whole administration of national health insurance, notwithstanding references to its supervision by the Commissioners, is thrown into the hands of the insured, who will certainly be dominated by the organized societies.

The principle of imposing "any universal income limit"—for example, £2—is refused absolutely. On what grounds? On such as these: That it would work unequally in different districts and under different work and wage conditions, and therefore it would be impossible on a national scale. There is little that is solid in this argument. It is necessary to the success of any scheme that the main lines of its procedure should be clearly laid down. Such a line is the £2 income limit. It has after due consideration of social conditions been drawn by the medical profession in order to make a distinction in respect of medical benefit between those persons who may be supposed to require exceptional pecuniary consideration, and those who should not as a rule require it. The necessity for such a line of delimitation as well as its practical utility may be taken as proved by its long-standing adoption in Germany. The real difficulty in connexion with the recognition of the income limit by the Government was indicated more than a year ago by the Chancellor—namely, that it would be inexpedient on political grounds to bring the matter forward in Parliament. The question is largely one of political necessities, and to these the non-political profession of medicine should not subordinate its conceptions of justice to itself and of its public duty.

Two principal arguments have been adduced in an attempt to justify a policy of surrender:

1. That the proposed arrangement, after being in operation for three years, may be "reconsidered." The word is significant. There is not a hint of arrangement of any sort. There is not even a pledge for reconsideration. Had there been, had we pledges never so strong, our position might not be improved. A pledge by Parliament itself did not save the cardinal point of freedom from friendly societies' control, from practical extinction by a later amendment on representation. On the other hand, it must not be forgotten that it will be a much more difficult matter for the profession, after three years' entanglement in the national insurance scheme, to break away and to maintain its freedom than it is now.

2. That a State Medical Service may be formed to the injury of practitioners. This impossible scheme was believed to have been dropped. Its revival is said to be the result of influence exerted by the lay members of the Advisory Committee. Its plan and methods have been described by the Chancellor with the same picturesque optimism which marks his financial proposition. It is enough to say that no scheme of this kind can hope for permanent success, if indeed for any success worth the name, even by the inferior agency of deserters from a profession justly and strongly opposed to it.

Throughout the whole course of this controversy there have never been wanting some who, at a critical moment, would conjure up a danger in the path whenever the main body of the profession had set out to follow the course which it believed to be the right one. Happily, in spite of these timorous alarmists, it has travelled far and well, but they are still with us, and the State Medical Service is their last and greatest fear. It is really a creature of weakness, and can achieve no substantial effect if we are true to ourselves. Let us therefore be true; let us be free; let go the bribe that is a delusion, and the whole Government scheme as constituted. Let us formulate, with as little elaboration as possible, our own constructive policy upon our cardinal points, and continue to treat our patients of the working classes as we have done hitherto—on agreed conditions fair to them and fair to ourselves. And let us not forget that what we do now concerns not ourselves alone, but the whole future of medical practice in this country.

Dr. J. E. O'Sullivan (Liverpool) writes: At the recent Representative Meeting, held in July, I ventured to predict that the trend of mind which endeavoured, and endeavoured successfully, to exclude sanatorium benefit from the general opposition offered to the medical provisions contained in the Insurance Act, expressed by Minute 78 of the Representative Meeting held in February, and which was clearly set forth in the Medical Secretary's letter to the Commissioners, would indubitably seek, on some future occasion, to weaken our position by bargaining in order to accept terms and conditions lower than we had emphatically asserted constituted our "irreducible minimum." I unhesitatingly allege that the report issued by the Council points in that direction. It does not tend to hearten the profession in the attitude adopted and determined on; is timid, vacillating, and, on the whole, lacking in backbone, though I will admit that it indicates, what should be uppermost in every man's mind, "that acceptance of the Government's offer would mean the surrender of that professional independence which has been the fundamental principle underlying the whole of the fight of the profession against the provision of the Act."

The astute suggestion made by the Chancellor, and echoed by men of the trend of mind I refer to, that we should give his recent offer a trial, is the most sinister example offered to the profession of the tactics existing. Let us once rivet the shackles upon our necks and we may whistle until doomsday for their removal, were we to vary from the position we took up in February, and nothing has occurred to warrant or justify our doing so. I maintain that we would certainly convince the public that such position was, undoubtedly, one of bluff, based upon and influenced by a sordid disposition of bargaining, that the demands formulated did not, in reality, constitute our irreducible minimum, and that we were nothing but a lot of professional hucksters, influenced by expedient and mercenary motives.

We would, indeed, be false to our trust and deservedly be stigmatized as poltroons were we to be deceived by Mr. Lloyd George's recent scheme. We could scarcely call our souls our own under such degrading bureaucratic demands and regulations as he proposes.

The able letters appearing in the Journal this week as to the details and markedly objectionable provisions contained in the Insurance Act as now presented obviate any necessity for my commenting thereon in detail. I will conclude by exhorting the members of the profession at this critical hour to weigh well the consequences of a change of front, in the line of humiliating compromise, of the weakening of the citadel or line of defence by any sentimental feelings, or the exhibition of any tactics which may be interpreted as shifty or time-serving. The task imposed upon them is one of paramount importance; it means, What is the breath of our nostrils, the maintaining of the independence, self-respect, and manhood of our profession in the interest of the public, in the interest of ourselves, and in the interest of those who follow in our footsteps?

Dr. Herbert Carre-Smith (London, W.) writes: There is one point which seems to have been overlooked in many quarters, and that is that in any case some scheme of medical service will have to be found to take in uninsured people who are affected by the resignations of club doctors. Otherwise new clubs will be formed, with all the old objectionable methods, to take in those referred to. The offer of the Chancellor to allow doctors in the country to dispense and give them the 1s. 6d. or 2s., as the case may be, if they will throw in the mileage, is a proposition he does not even suggest to the chemist, that is, to deliver the medicine at long distances for the same remuneration. I trust the profession will pause before accepting any such conditions.

Dr. L. More O'Ferrall (Bristol) writes: I contend that it will be far worse for the general practitioner to risk the establishment of a State-service than to accept the Government's present offer, even though it falls short of what we asked for. If we do not work the Act we shall have a State service started. We are now offered a fair rate of remuneration for the class of patients who will constitute the insured, as any doctor in general and club practice well knows, and there are to my mind no very irksome or objectionable restrictions imposed, as some would have us believe.

To ask that some "simple record" of cases treated should be kept is quite fair and reasonable, and in my own

practice, both for club and private patients, I have always kept such records. It is to the doctor's advantage to keep some record.

Again, the giving of certificates free for the purpose of putting insured persons "on" or "off" the funds is the only rational way of working these matters. It is the way now with most clubs, and it would be manifestly unfair to charge extra every time a certificate was given for the mere purpose of letting the insured claim their insurance dues. All extra certificates would, of course, be charged for.

As regards mileage, country doctors should receive more than their town *confrères*, but we must not forget that the country doctors were there of their own choice before the Act came into operation, and that they could not charge their poorer patients big fees, and ordinary private practice will still have to be continued for those outside the insured, and the ground will therefore have to be covered in any case, both in town or country, as before.

Then, again, there is the Central Fund for special cases.

Moreover, I cannot conceive any real hardship arising in regard to the doctors' position where there is a respectable committee on which there will always be medical representatives, and which will have the advice of a special medical committee in cases where complaints may arise. Any doctor who does his work conscientiously need have no fear of serious complaints—except in extreme cases, which would be fully investigated.

Finally, any doctor could refuse to take certain names on his list each year. In this way frivolous complaints and annoyance could be partly held in check. In any case, the whole scheme is merely put forward tentatively, and we are asked to try it for a period of three years. It is only by actual trial that we can determine the weak points and the points upon which we shall have most difficulty in working.

The essential point now is whether, taken as a whole, the present Government offer is not better monetarily and otherwise than would be the alternative of a State service or letting friendly societies make their own arrangements locally.

Dr. Thomas E. Smurthwaite (Kensal Rise) writes with reference to the observations of the Chancellor of the Exchequer in his speech to the Advisory Committee on October 23rd, 1912, as to the increased work required for the alleged increase of contract price, an increase which Dr. Smurthwaite considers illusory, as follows:

To my mind, it is more important to fight this out to the bitter end and repeat the Liverpool demand, and also to refuse absolutely to make any arrangements with patients. Our only course is to stick tightly to private work and payment thereof for services rendered. It is absolutely nothing to do with us what arrangements the Commissioners make with the insured. Our duty is to charge our ordinary rates, and we expect to be paid, exactly the same as any tradesman does. I sincerely hope the medical profession will stiffen its back and absolutely refuse to be drawn into the nets of the Chancellor of the Exchequer. If once we accept, we shall receive more and more work without extra pay, and to me it seems the ruination of the profession. My last words as a lifelong Liberal is to stand firm and fight to the last; and to those who believe in Darwin's survival of the fittest, it is imperative that we hold our own, as we are masters of the situation; but, if once we submit, we shall inevitably go under, and it will be useless in three years to endeavour to make satisfactory arrangements when our private practices are gone and we are under the thumb of the Chancellor and the Insurance Commissioners.

Dr. J. Kennish (Clapham Park Road, S.W.) writes: Dr. Gilbert E. Cope states (British Medical Journal, November 2nd) that the Wandsworth Division of the British Medical Association had hurriedly met *after* Mr. Lloyd George had made public his statement to the Advisory Committee, and had very precipitately and unfortunately decided to have nothing to do with the Government scheme because all our demands had not been granted.

The Wandsworth Division of the British Medical Association has not held a meeting since the beginning of July. A meeting of the local profession, convened by the Wandsworth Provisional Medical Committee, was held on October 23rd; due notice of this meeting was given, and the resolution in question was handed to me as Honorary Secretary on October 15th.

As Mr. Lloyd George made his statement to the Advisory Committee on October 23rd, it was, of course, impossible for us to know what that statement was at the time of the meeting.

If Dr. Cope would take more pains to see that his statements were accurate before rushing hurriedly, precipitately and unfortunately into print, it would help to complete that union of the profession which we are all so desirous of upholding, and he would have a much better chance of sharing the "cake" of adequate remuneration.

The following was the resolution in question;

> Finding that the provisional Medical Regulations under the Insurance Act contain no guarantee of a fund for the payment of the medical men attending insured persons, and that these regulations ignore the other cardinal points originally formulated, and repeatedly confirmed by the profession, this meeting of the medical practitioners of Balham, Battersea, Clapham, Putney, Streatham, Tooting, and Wandsworth declines to give them further consideration.

Rural Practice.

Dr. D. Clark Laird, member of Glasgow Provisional Local Medical Committee (Milngavie, near Glasgow), writes: On reading the letters in the British Medical Journal of November 2nd in connexion with the Insurance Act, I was struck with the fact that none emanated from north of the Tweed. Lest it be thought that the doctors in Scotland are united and agree to accept Mr. Lloyd George's latest offer, I take the opportunity of pointing out why the doctors in this country district consider it a most unjust proposal, and why we shall object to it.

Here we have a village with four doctors. We find that our society patients, who are selected lives, receive, on the average, 4.5 attendances each per annum. Taking the rate offered at 7s. *per caput*, this works out at a fraction over 1s. 6d. per visit without extras for minor operations, night work, anaesthetics, or mileage. The radius we have to cover is about five miles. The contention from Mr. Lloyd George's point of view is that country doctors will get the extra 2s. by dispensing their own medicines, and so make up for mileage. That does not hold here. There is a chemist in the place who at present dispenses for two of the doctors, the other two dispense their own medicine. Now Mr. Lloyd George, in answer to a letter from Dr. R. W. Morgan, published in the Journal of November 2nd (p. 1234), on precisely this state of matters, gets out of the difficulty this way: The chemist will dispense the medicine for all insured persons who reside within a mile of his place of business; this means that the two doctors who dispense their own medicine will not be permitted to do so for insured persons within the mile radius; beyond the mile radius they can dispense for insured persons, and after deducting the cost of drugs, bottles, and time, will have a meagre sum left to go against mileage. The two doctors who do not dispense at present, in order to get the pittance for mileage will have to set up dispensaries and start a new form of practice altogether. I suppose Mr. Lloyd George intends doctors in country districts to hawk round the medicine themselves or send it by post, otherwise the argument from the point of convenience of the patient is absurd; it is as easy for a person to walk a few miles to a chemist's shop as it is to a doctor's dispensary. As a country doctor I agree absolutely with what Dr. Charles S. Patterson of Hungerford (p. 1230) says. I cannot see why the Chancellor of the Exchequer refused to trust country doctors with a monetary extra for mileage when under his present proposal he distinctly puts temptation in their way. If the country doctor sticks out for mileage it will have to come off the city doctor's 7s. We had better be loyal to each other. We are pledged to a minimum of 8s. 6d. *with extras*. We are offered less than 7s. without extras, and for this we are expected to send in reports about our patients (which is a violation of our oath), to grant certificates, to have no holidays, to provide expensive apparatus for exact diagnosis. Of course, it is only provisional—for three years. What then? If we accept Mr. Lloyd George's offer the public will only

construe our acceptance in one way—"we were out for £ s. d. and have been asking too much."

Dr. J. P. Williams-Freeman (Weyhill, Hants) writes: May I put before my fellow village practitioners the following considerations and particulars as to how the acceptance of the Government's offer would affect my practice? It may help them to estimate how it would affect theirs:

1.—*Income Limit.*

To insist on this would not benefit me at all. My patients are either richer than £160 a year or poorer than £102. I see no reason to doubt that the County Insurance Committee will grant a £2 limit, but it will not affect my practice. A 25s. limit would exclude some persons, but the gain, if any, would not be worth the bad feeling it would create.

2.—*Extras.*

(*a*) *Extra Fees.*—All told do not amount to £10 a year from insurable persons.

(*b*) *Midwifery.*—A few extra guineas will come in, thanks to the maternity grant.

(*c*) *Special Visits.*—We must insist on 2s. 6d. to be paid by the patient, not for the money's sake but as a fine to prevent thoughtless late calls. Without it life in a long-distance practice would become impossible.

(*d*) *Mileage* is vital. In my practice the proportion of out-of-pocket "stable" expenses for insured persons will be £108, which works out at 9.3d. a mile per person beyond the two mile limit, and 16.9d. beyond the three mile limit. To cover time and wear and tear to ourselves in our long cold journeys, we should insist on 1s. or 1s. 6d., according to which distance limit is adopted by the local Insurance Committee.

(*e*) *Drugs and Appliances.*—There are no chemists within reach of my district. The whole of the 9s. would therefore be payable to me.

3.—*Extra Work Required.*

1. *Record.*—I see no reason to suppose these will be a greater nuisance than our present parish books—quite enough, I agree.

2. *Certificates.*—These we already give to clubbers.

3. *Increased Demands.*—I have always found my poor people very considerate to me, and have no reason to think they will suddenly alter.

4.—*The Monetary Effect.*

The effect on my practice I calculate as follows (on three years' average):

Loss.

(*a*) *Private Practice.*		
(1) Loss on servants in richer houses ...	£22	
(2) Loss by private patients becoming insured	91	
(*b*) *Clubs.*		
Number of men and women in my clubs who have now become insured persons—448 at 4s. a head	89	12
Total loss (say)	£206	
Gain.		
1,400 insured persons at 9s.	£630	
Net gain	£424	

The mileage would, of course, come out of the general pool and in a rural county most men will draw upon it. As my practice is more scattered than the average, it would probably raise my total gain to £450 a year. This is not to be lightly refused.

5.—*Local Medical Committee.*

Whether we accept the proposed terms or not, we should insist on general meetings being called to form local Medical Committees.

At present the local Insurance Committee have no medical advice except that of the county medical officer, who may or may not know and represent the interests of general practitioners.

I think we should insist on a plebiscite of general practitioners—men who would join the panels, not Harley Street—being taken to ascertain the "general opinion of the profession" (as I think the pledge put it). We do not all belong to the British Medical Association. We are more often than not prevented from attending Divisional meetings, and, from the nature of things, we cannot be adequately represented at committees and meetings at head quarters. We rural practitioners are a very inarticulate class, and I see no other way than the referendum of getting at the general wishes of the profession. I much doubt if the Representative Meeting reflects it.

Dr. R. W. Morgan (Gillingham, Dorset) writes: I hope all country doctors will have read my letter and the Chancellor of the Exchequer's reply contained in the Journal of November 2nd, page 1233. I also hope that all country medical men will attend the forthcoming meeting of their Division, so as to look after their interests, which are not quite the same as those of their town *confrères*—for example, in the matter of remuneration for "mileage."

It seems to me that every man should carefully read the Report of the Council in the Supplement of November 2nd. I take it that it will be necessary for each Division to pass resolutions on different points raised in the Report, and so instruct its Representative to vote at the Representative Meeting held in London. For instance, the following would appear to me to require attention:

1. *Remuneration.*—If possible, to obtain a further increase. A central mileage fund to be specially insisted upon. I am inclined to think, after reading the Chancellor's letter, that we should get it.

2. *Dispensing.*—Country doctors at least to have the option of dispensing their own medicines.

3. *Representation on the Insurance Committees.*—This should be materially increased, and the Chancellor himself has recently admitted that this is a case for argument.

4. *Professional Discipline.*—No doctor should be removed from the panel without the right of appeal to a specially appointed medical tribunal.

5. *Miscarriages and Abortions.*—These are apparently to be included in the capitation fee. This must be altered.

No doubt there are other points raised in the Council's report, but I think the above are the most important.

I have also read the Council's report on "Future Action," and I cannot help thinking that reading between the lines it means compromise. Finally, I would personally feel inclined to think that the best course of action would now be for each Division to instruct its representative to vote on matters raised in the report of Council, and then perhaps to follow the lead of the Birmingham General Practitioners' Union (see p. 1226 of the Journal, November 2nd) and pass a resolution in order to affect an honourable compromise with the Government, to give full powers to the State Sickness Insurance Committee to reopen and complete negotiations so as to effect an honourable compromise.

A Method of Compromise.

Dr. Henry H. Haward (Northwich) writes: No medical man should attend any working man getting £3 a week at anything like the offered terms. To do so can be nothing else than charity. The better paid workmen expect more frequent visiting, and call for the greater part of the special services, and, moreover, are willing to pay more in order to be included in the insurance service. The poorer ones are satisfied with no more than necessary visits and attendance. Having read the Report of Council, I would like to suggest that the Divisions should agree to give service under the Act with the conditions set out in paragraph 114 of the report, with the following additions to the fundamental principles of that paragraph:

1. All agreements should be of a purely provisional character and be limited to persons receiving less than 25s. per week in wages.

2. All other persons below the agreed income limit should be required to make arrangements through the Insurance Committees on the following terms:

3d. a quarter extra when weekly wages are over	25s.	and under	30s.
6d.	,,	,,	,,	,,	30s.	,,	35s.
9d.	,,	,,	,,	,,	35s.	,,	40s.
1s.	,,	,,	,,	,,	40s.	,,	45s.

and so on up to the agreed income limit.

3. These moneys to be paid into the fund set apart for the payment of special services.

We should thus get paid for these services which, under the offered terms, seems a very remote possibility.

Women and Children.

Dr. James C. Hamilton (Compthall, Polmont) writes: The vast majority of those who are weekly inundating the British Medical Association offices with letters *re* the Insurance Act either forget or ignore the fact that in the meantime the Act for the most part applies only to the man of the house, who troubles us very little. It is an admitted fact that more than three-fourths of our work deals with the women and children.

Safeguards.

Dr. J. H. Keay (Greenwich) writes: When one reads between the lines the impression is made that the State Sickness Insurance Committee do not so much dread the results of local bargaining as many general practitioners. It must surely always have been evident that the same conditions of practice, either under the Act or otherwise, could never be insisted on for all parts of the country. This has always been fully recognized in Germany, where

there are widely different modes of practice in different towns and States. To this the Leipzig Verband, quite as powerful and in many respects, I think, a more practical body than the British Medical Association, has made no objection, and in the local disputes that have arisen they have been highly successful. In the 1,022 conflicts with societies up to May of last year they succeeded in 921, while 90 were still pending. The result would, however, have been entirely different, had they not secured certain safeguards which, so far as I know, have not been discussed by the Advisory or State Insurance Committees. Among these safeguards is one which, in case of dispute, places the onus on the local committee to provide a medical man for every 1,500 or 2,000 of the insured, and if a sufficient number of doctors is not obtained arrangements are made by the supreme authority and medical men without regard to the wishes of the societies. Without this provision medical men would have been powerless in the disputes that have arisen at Leipzig and Cologne, Halle and elsewhere. In the English Act and Regulations we have no mention of any such provision. If a dispute arises it is tacitly assumed that the fault lies with medical men and not with the local committee. It would take too much space to enter fully into the question, but my reason for writing is that it does not yet seem too late to see to it that safeguards, which have acted so well in Germany, should be obtained by ourselves.

"Pool and Deposit System."

Dr. Lionel James Picton (Holmes Chapel, Cheshire) writes: My object in writing is to call attention to the scheme for Public Medical Service (Scheme "Y") in the report of the Provisional Medical Committees of the Stockport, Macclesfield, and East Cheshire Division published in this issue of the Supplement.

This is a scheme of payment for work done, in which the doctors do not bear the insurance risk and in which the societies bear the responsibility and cost of collection. Thus far it resembles Schemes "C" and "D." It differs, however, in two respects:

1. Beyond the 8s. 6d. provided under the Act the club member pays an additional sum, which is placed to his individual credit, and forms the first fund to be drawn on when medical charges have been incurred. Thus there are two classes of funds—the pool formed by the capitation fees, and the individual deposits. A member has to go through his deposit to reach the pool, a process which renders excessive attendance, malingering, and excessive demands for attendance all equally unlikely.
2. The families are included. As in all respects other than paying the bill the relation between doctor and patient is that of private practice, and, further, as the intention is that each attendance shall be paid for at a remunerative if modest rate, there can be no objection to the inclusion of the dependants. There would be no bad debts, and only one account would have to be presented—namely, the weekly return to the secretary or the trustees.

Something of this sort—some widely inclusive arrangement for the families of the insured—will be necessary in many neighbourhoods. The clubs have been given up, so far as insured persons are concerned, and that means, in the language of the circular (D 2) that in some cases the resignations "will probably break up the appointments altogether." Further, in an increasing number of areas, this amongst them, the profession has decided that the resignations of contract appointments shall definitely apply to the whole of the members, the uninsured as well as the insured.

The clubs are asking what is to become of the uninsured. Grown accustomed to the old system, which arose out of their necessities, the classes affected are looking to some arrangement to replace that which has been upset by the passage of the Act.

The Committee of Complaints.

Dr. Adam Fulton (Nottingham) writes: Most of the critics of the Regulations issued by the Insurance Commissioners fasten on the constitution of the "Committee of Complaints" as their most objectionable feature. It seems to be generally overlooked that the duties of this Committee are twofold: First, to hear complaints brought by insured persons against doctors, and, secondly, to hear complaints brought by doctors against insured persons.

If the medical profession demand that complaints against them shall be heard in the first instance by a purely medical committee, they cannot resist a demand from the insured persons that complaints brought by doctors against them shall in like manner be heard by a committee composed exclusively of insured persons.

Surely three from each side, with a neutral chairman, is a perfectly fair arrangement under the circumstances.

Remuneration.

Dr. W. B. Bennett (Aigburth, Liverpool), in a letter criticizing the comparison drawn by Dr. Gilbert E. Cope (p. 1229) with the Post Office capitation fee of 8s. 6d., writes: Has Dr. Cope ever seen the memorandum submitted last spring to the Chancellor by the State Sickness Insurance Committee,[1] in which the reasons for our demands were clearly set forth, which the Chancellor has been careful never to criticize?

The difference between the Post Office service and that required under the Act is there proved to be very great, and all in favour of the former. As a Postal medical officer I can truthfully say that, offered the same payment for the same services, I would willingly work under the Act.

The differences in favour of the Post Office service are briefly:

All officials are carefully examined before admission, for which examination the medical officer is paid 10s.; all carious teeth have to be removed and, if necessary, dentures fitted. Under the Act, no examination and no payment. Superannuation at 60—after which age most men require far more "doctoring"—hence no enlarged prostates or other results of old age; superannuation at any age, if considered by the medical officer as not likely to be again fit for service; hence no chronic invalids. No free choice of doctor, so that a considerable number—calculated at 20 per cent.—on the capitation list consult a private doctor. This brings the fee up to at least 10s.

Yet, for perhaps double the work, Dr. Cope thinks 9s.—out of which the druggist and instrument maker take 2s.—better pay.

Dr. A. Gross (Clapham) writes: I am of opinion we should reject Mr. Lloyd George's latest offer with the contempt it deserves. The remuneration ought not to tempt us although we are offered an extra 2s. 6d. We have extra services thrust on us, some of which are so humiliating that no medical man with any respect for himself or his profession can possibly accept,

We shall be worse off than with the 4s. now paid by the clubs; under the insurance scheme, with free choice of doctors, there will be considerably more work to do, as in the case of clubs at least 25 per cent. of the members do not employ their club doctor. In clubs we have picked lives; under the Insurance Bill we have sick lives, chronics, no extras for syphilis, gonorrhœa, or drunkards. In clubs there are no women; under the Insurance Act we have to attend them. There is at least three times as much attendance required for women as compared with men.

In clubs there are no reports to be made, no clerical work; under the Insurance Bill we have both. Further, we have to sacrifice our independence and lose good fees from patients if we do not have the income limit of £2 per week; and what I consider the greatest disaster of all is that in the case of discipline, etc., we are at the mercy of laymen. Above all, we must see that our judges shall be some medical body. We must stick to our cardinal points. They are our minimum, not a maximum; we must not budge.

I hope there will be none of the hocus-pocusing at our next Representative Meeting as there was on the last occasion over the sanatorium benefit. This is a question that affects the general practitioner, and I trust we are not going to let ourselves be led astray by men like Sir Clifford Allbutt and Dr. Maclean, who have not at heart the welfare of the general practitioner, but who desire to have this bill worked by us for reasons best known to themselves.

The Present Crisis and Professional Union.

Dr. Lauriston E. Shaw (London, W.) writes: I have ventured on many occasions during the last ten years to draw attention to the need and advantages of professional unity. The Council, in its recent report to the Association, naturally refers more than once to the influence which our

[1] British Medical Journal, March 2nd, 1912, p. 510.

power of union may have upon certain aspects of the present critical position. It was outside the scope of the report to consider the effect which certain aspects of the crisis may have upon our professional union. I am confident that I am taking no biassed view of the situation when I assert that this feature of the case is of even more ultimate importance to our profession than the exact terms and conditions of service obtainable at the moment under the Insurance Act. Personally, I believe that the terms and conditions, although capable of considerable improvement, are such as to justify medical practitioners in giving them a trial, and I am convinced that this belief is so widely held that a decision summarily to reject the offered terms would have a disastrous effect upon our solidarity. So many practitioners have in the past obtained a large part of their incomes from badly paid appointments in industrial practice that it is impossible to expect them to refuse terms which they honestly regard as being a considerable improvement both as regards remuneration and conditions of service. A provisional acceptance followed by a scrupulous protection of our common interests through the organization of the British Medical Association must have a most salutary effect in strengthening the machinery of our professional union. The declaration of a boycott of the panels might break, not the Act nor the Government, but our own machine. We should then destroy in advance our only means of protection in the stern struggle which in any case is before us, and for years to come we should be at the mercy of every combined force that desired to exploit our services for its own advantage. We must maintain and strengthen our splendid Association. With this intact we can together meet and overcome all difficulties.

The Report of Council, October 31st, 1912.

Dr. E. Rowland Fothergill (Brighton) writes: On perusal of this report, issued at the most important crisis in the affairs of medicine that has occurred in the United Kingdom, it is noticeable that there are several misstatements of fact:

Page 481, paragraph 66, states that at an inquiry "either party to the case may be represented by counsel," etc. The regulations say "*with the consent of the Inquiry Committee,*" which puts a very different complexion on the situation, as medical men have full reason to appreciate.

Page 483, paragraph 77, states that in the regulations there is no definite provision to prevent insured persons making arrangements at lower rates of payment outside the State medical service than those made by that service. This is hardly correct, for on reading Regulation 15, paragraph beginning "provided that," it is seen that by indirect control an insured person who makes cheap arrangements, obtaining cheap treatment, and therefore suffers in health and becomes a burden on the sick fund, can be induced to come into the State medical service by being deprived of the money equivalent. Incidentally, it should be noticed this is also a means by which the public medical services of the Association can be justly or unjustly controlled by an unsympathetic body.

Page 485, paragraph 84, states that arrangements will only be made with doctors for the ordinary supply of drugs and dressings . . . "by reason of distance or inadequacy of means of communication." This is not quite correct, for Regulation 35 distinctly contemplates permanent arrangements with a doctor for the supply of drugs and dressings to be "administered" by himself, or where, through any early closing arrangement, the chemist's shop may not be available. No reference is made to this fact in that paragraph.

Page 487, paragraph 105, states that "the actuarial estimates showed that 6s. was to be set aside for the cost of medical attendance, drugs, and appliances." Reference to these estimates showed that this amount was also to cover administration of medical benefits for insured persons by the Insurance Committee, another very important way in which the net amount available for the doctor would be appreciably lessened. The same error also appears on page 493, Appendix C 2, as shown on reference to Regulation 4 (2).

Page 494, paragraph 14, states that if payment per attendance is adopted patients, *on falling ill*, present voucher to any practitioner. This is obviously absurd in its limitations of the interpretation of Regulation 19 (1), as is shown by the fact that if an insured person cannot find a doctor willing to attend him the Committee has to find him one. This lengthy procedure is not possible "on falling ill." The insured person can book his doctor *in advance* under either system of payment on producing the authorized voucher.

Page 494, paragraph 18, states that "insured persons changing their address must notify same to their societies." That is correct if they are members of a society. If they are not they have to notify to the Insurance Committee. The report overlooks this class of insured persons.

Page 494, paragraph 20, states that a doctor "is not required to give any attendance . . . to any person suffering from tuberculosis, etc., who is recommended for sanatorium benefit." This is not absolutely correct, nor do the Regulations Schedule, Part 1 (1), say so. Sanatoriums cannot be built in a week, nor must an insured person be neglected meanwhile. Until the Insurance Committee issues a certificate "entitling" him to sanatorium treatment (see schedule) the doctor on whose list he is can be compelled as part of his contract to continue his attendance, even if the recommendation has been sent in some months. This is borne out by Part II of Schedule I, where under Schemes B, C, and D such attendance will become an extra, payable under the contract, whilst under Scheme A the doctor obtains no additional payment.

On page 494, paragraph 21, it states that drugs, etc., given by a doctor in emergency, etc., will be paid for by special arrangement. This might be taken to mean that there is a special fund for such purpose. But this is not so; it all has to come out of the 2s. a head allocated for drugs. The chemists and doctors will be both claiming on this amount.

One notices that the report contains no mention of action taken to safeguard the interests of medicine in the Mercantile Marine Medical Service for possibly over one million insured persons; in the private medical clubs, possible through contracting out of the Act referred to in resolution 229 of last July; nor of what has been done with the instruction in the second half of minute 218, having reference to hospital residents; or as to maternity benefit regulations. Also some memorandum with recommendations is required on the reopening of the whole question of the tuberculosis medical service—which was being developed on lines satisfactory to all—by the statements that doctors are now to be offered only 6d. a head on insured persons on their lists, and that payment for the domiciliary treatment of non-insured persons is at present illegal.

Possibly the supplementary report promised will include these subjects.

The Circular of the Remaining Medical Members of the Advisory Committee.

The document to which the letters printed below refer was accompanied by a letter dated October 31st. The letter suggested that the authors of the document did not wish to give advice, but merely to point out that final judgement on the Government's offer should be reached only after calm and deliberate consideration of the relative importance of all the facts concerned. The letter bore seventeen signatures—that is, the names of all the medical men who have remained members of the Advisory Committee.

The document itself relates almost solely to three points, described as vital:

1. *The amount to be paid per head of the insured class for medical and sanatorium benefits and the amount of money available from maternity benefit.*

In relation to this point stress is laid upon two considerations: (*a*) Women receiving maternity benefit must be attended either by a registered medical man or by a qualified midwife, and when a medical man is summoned to assist a midwife his fee is to be paid out of the maternity fund (which, it is stated, will reach a total of £1,412,000). (*b*) One of the chief difficulties of contract practice hitherto has been the tendency of the public to demand medicines rather than advice, but, while it is to the real interest of medicine that this should be checked, it is not fair either to the public or the profession that the doctor's remuneration should be involved in the question to the extent originally intended.

The document continues:

To meet this objection it has now been arranged that the doctor shall be certain of obtaining a minimum of 7s. from medical and sanatorium benefit per head of the insured. A minimum of 1s. 6d. is to be allocated for drugs and appliances. This leaves a further 6d. available from the 9s. If the cost of drugs and appliances, apart from special causes such as epidemics, is above 1s. 6d. per head, it will be a first charge on the contingent fund formed from this 6d. If the cost of drugs, etc., is not above 1s. 6d., the remaining 6d. will be paid to the

doctor. If the contingent fund is partly encroached upon, the remainder will be paid to the doctor. An "additional drug fund," over and above the 9s. referred to, is to be provided by the Treasury to meet special charges for drugs in times of epidemics.

The financial considerations are summed up as follows:

Each medical man on the panel will receive £350 for every 1,000 insured persons on his list, in addition to what he may obtain from maternity benefit. He may also reckon on obtaining a certain amount in an average year from the contingent fund of 6d. per insured person set aside to meet extra cost in the matter of drugs. The cost of the drugs used will be largely under his own control, and he will be in a position to do justice to his patients in this matter without making inroads on the sum set aside for professional purposes.

2. *The probable action of the Government in the event of the refusal of the profession to work the Act.*

On this point it is indicated that the medical profession must accept it as a fact that it is the fixed intention of the Government to meet its pledges to insured persons by the use of the money and administrative machinery at its command, and it is stated that the proposal to hand the money to the approved societies having been dropped by the Government owing to "the almost unanimous vote of the lay members of the Advisory Committee against it," the remaining alternative is the establishment of a State service.

The reference to this part of the matter concludes as follows:

The proceedings of the Joint Advisory Committee revealed a body of opinion favourable to the scheme of a State service outlined in the statement of the Chancellor on October 23rd. It has, however, been foreseen since the time of the debates on the Insurance Bill that the sudden establishment of a State service would inflict great hardship on some thousands of medical practitioners. The Government accordingly decided that the scheme of the Act should, in the first place, be offered to the profession. Before the profession decides to refuse to work the Act it should consider whether it is in a position to render the establishment of an efficient State service impossible.

3. *The Provisional Character of the Regulations.*

In this connexion it is suggested that at present neither side can claim that its arguments are based on proved facts, while by working the Act for a few years absolutely reliable data could be obtained. The Government is definitely pledged "to reconsider the whole question in all its aspects at the end of three years in the light of ascertained facts."

Income Limit.

The only other point considered is the stipulation for a £2 a week income limit, which does not "touch professional interests so closely." In this connexion it is suggested that a uniform wage limit throughout the country is impossible, and that the profession should consider whether this stipulation has not been sufficiently met by its reference to local Insurance Committees. Not more than 5 per cent. of the insured, it is claimed, are persons drawing more than £2 a week throughout the year, and these are usually men in the best form of employment and in such a state of health that they are fairly continuously at work. As for those who, in the course of time, may come to earn large incomes and yet claim medical attendance as insured persons, no regulation has so far been framed to deal with the question, and the Government is pledged to reconsider the whole situation before any case of the kind can possibly arise. The earliest date at which any such case can arise is put down as January, 1917, but no explanation of the reason of its selection is afforded.

We are asked to state that the expense of printing and circulating this document has been defrayed by the medical men who have remained members of the Advisory Committee.

Dr. P. Broome Giles, C.B., Colonel A.M.S. (T.F.), writes: Like the Act, this pamphlet and covering letter are characterized more by the precipitancy of its authors to be heard than upon the weight of evidence or facts in favour of the medical profession. How cool reflection and the weighing of facts in the past has abundantly proved the folly associated with the precipitancy of the Committee, is evident from the admissions in the pamphlet.

The proceedings of the Joint Advisory Committee revealed a body of opinion favourable to the scheme of a State service outlined in the statements of the Chancellor on October 23rd. It has, however, been foreseen since the time of the debates on the Insurance Bill that the sudden establishment of a State service would inflict great hardship on some thousands of the medical profession.

It is quite evident the ideas of the authors of the pamphlet are precipitate, not sustained by fact, and if adopted certain to inflict great hardship on some thousands of the medical profession. If accepted the medical profession will be placed exactly in the position of sparrows, who may be caught by chaff under a riddle during a hard winter. There is not a single grain of profit to be seen, and the birds are risking their very existence on the chance of finding a feeble sustenance.

The idea of the fees being augmented in three years is absurd. The treatment meted out to the medical profession during the whole of the negotiations places that vision out of court. All commodities of living have risen so much in price the last year that the profession would be justified in asking 10s. per cent. more than they consented to accept.

We are united, we have been flouted, we have the whip hand; let us use it and stick to our terms.

Mr. Frederick W. Style (South Brent) writes: In the pamphlet issued by the medical members of the Advisory Committee the question is treated solely from the financial point of view, Surely there is another side which ought not to be ignored. Are our self-respect and liberty of no importance? Are they not as vital as the three "vital points" of the pamphlet? In a colliery practice, a patient once said to his doctor, "You're nowt but my servant." The man, I think, unconsciously emphasized the fact that there are different kinds of service. One does not object to being a servant in the polite sense of the word, but we all ought strongly to object to being one of the other sort, and this, I think, is what we shall be if we accept service under the proposed regulations. It is all very well to say, "Try it for a year or two, and then if we are not satisfied we can get matters altered." Doubless the fly, when entering the spider's web, thinks it can easily get out again. But it cannot. Neither shall we. Mr. Lloyd George is not a fool.

Dr. R. G. McGowan (Manchester) sends the following criticisms of the pamphlet:

Vital Point (2) should read: "The action of the profession in the event of the Government attempting to apply medical benefit in any manner contrary to the wishes of the profession." The probable action of the Government is a thing so elusive as to be not worth consideration; but our own action is a thing we can definitely determine.

"*The fee of the practitioner is to be paid out of the Maternity Benefit.*" May I ask by whom? And what guarantee is there that he will get it? Also, if the attendance necessitates a fee of £2 2s. as an instrumental delivery with the aid of a second doctor may very well do, where is the fee to come from?

"*To deal on an organized plan with the treatment of disease.*" Can a system that makes no allowance for specialist or hospital treatment be called an "organized plan"? The only organization so far is that of fixed payment to reputable practitioners for an absolutely unknown quantity of work.

"*Check upon indiscriminate use of drugs.*" The only possible check is to educate the people who take drugs, or to penalize their want of discrimination by making them pay for it. Why a doctor's remuneration should be involved because he finds it impossible to force his more enlightened views upon the public at large is difficult to see.

"*The doctor shall be certain of receiving a minimum fee.*" What is the authority for this statement? The Chancellor's speech stated that 9s. was the total amount (except for special epidemics). If the cost of drugs for ordinary use should amount to 3s. 6d., where does the extra money come from if not from the "minimum" of 7s.? Whence are got the figures to permit the statements that "he may reckon on a certain amount in an average year from the contingent fund" and "the cost of the drugs used will be largely under his control, and he will be in a position to do justice to his patients without making inroads on the 7s.," if the further statement that "neither we nor the Government are able to claim that our arguments are based on fact" is true?

A State Medical Service is, to any one acquainted with the class for whom it is proposed and with the profession, so ridiculous as to make it a matter for wonder that seventeen medical men can unite in presenting it as a possibility. Also, the number of medical men available for the service is quite insufficient, unless the service of those who consider their word of honour worthless are to be utilized; and if the seventeen doctors suggest that the Insurance Committee will use such material, it is a matter for surprise that those doctors still remain on the Advisory Committee.

"*A uniform income limit is impossible.*" If a uniform maximum income limit is impossible, how is it that such a limit is, to all intents and purposes, now fixed in the Act?"

"*Those whose earnings average more than £2 a week are fairly continuously at work.*" That does not prevent them requiring

medical attendance; there is more work done now for club patients who do not declare on the sick funds than for those who do.

"*Provisional character of regulation.*" If the justice of the case is at present an unknown quantity, why should the profession incur the risk of accepting the whole amount of any injustice that may occur? Does the chance of taking the whole profit if the injustice happens to fall upon the Government's shoulders pay for that risk? And if it does, is the profession as a whole in such a financial position as to afford such a gamble? If the Government wants to make the experiment, and also wants, as stated, to give fair payment for medical attendance, why not pay accounts for attendance given insured persons as ordinary patients on an agreed tariff for a sufficient period to ascertain the required facts? The Government is surely in a better position to take financial risks than we are; and as a matter of ordinary principle, the public, through the Government, have no more right to demand financial sacrifice from the profession as such than the profession has to demand exorbitant payment for its service.

"*Reconsider the whole question.*" What Government will be in existence in three years' time? Can this Government bind any future one? This statement is valueless unless incorporated in the Act.

The pamphlet contains no reference to the "improved service" demanded, nor to the "simple reports," and until those statements are fully defined, no offer that the Government has made, or can make, can possibly be worth the consideration of sensible—and busy—men.

Dr. J. B. PIKE (Loughborough) writes: The statement of the pamphlet is skilfully drawn up with the express object of causing disunion in our ranks. It is short and sweet. The bitter is not to be taken before the meal, but is reserved as a digestive. The statement is a disingenuous *suppressio veri*.

> A lie that is all a lie may be met and fought outright,
> But a lie that is half a lie is a harder matter to fight.

Nothing is said of the humiliating position under lay control; nothing of the inclusion of all extras, excepting major operations and special work; nothing of the proposal that the country doctor shall pay for his often long and arduous journeys by his profit from dispensing drugs; nothing of the serious inroads upon the private practice which for most of us has been our means of living; nothing of the records to be kept and the red tape which will bind us in its coils; nothing but what Mr. Mantalini called the "dem'd total" of nine bright silver shillings, subject to certain deductions. Is this an honest method of presenting a scheme in which the very life of the profession is involved?

The men who have chosen to remain upon the Government's Committee in opposition to the wish of their colleagues as expressed by the Association should not descend to *ex parte* pamphleteering.

At the least we might expect all the cards to be on the table. Our adhesion to the scheme is requested under a threat. If we do not come in a State service will be formed. This is the pistol that is held at our heads. I think it is loaded with blank cartridge. A State service, competent and fully equipped, would involve enormous expense, and if established would leave us more chance of private practice than the transforming of the whole of the lower middle class into one huge club, perpetuating all the old abuses, and making honest and satisfactory work increasingly difficult. . . .

Let all the self-respecting men in the profession refuse to touch the thing unless full professional freedom and medical control in medical work are assured; let them refuse to sell their birthright for a capitation fee, whatever its amount. That is the only safe attitude until the Government concedes to the Medical Committees statutory powers with regard to contract practice in their areas or consents to act in concert with our arrangements for public medical service.

Dr. G. H. NORRIS (Gateshead) writes: I notice in the pamphlet that each medical man on the panel will receive £350 for every 1,000 insured persons on his list. Now, I live in a working-class town, and work hard all the year round—in fact at times I have more than I can do. I send out my bills twice a year, and I have never yet sent out more than about 300 bi-annually, yet I can make an income of over £1,000 a year. If I had to attend three times the number of patients for a sum equal to about one-third of what I now make, not only could I not do it, but it would be "rottenly" done, and white slavery for the doctor.

Dr. R. MCIVER PATON (Streatham, S.W.) writes: It would be interesting to learn on what grounds the medical gentlemen who still remain on the Advisory Committee, in their recently issued pamphlet, exclude from their list of what they consider vital points the liberty and honour of the medical profession. Is this one of those subsidiary points which they mention, or is it a point which they consider advisable to keep in the background at present?

TUBERCULOSIS SCHEME.

EXTENSION OF SANATORIUM BENEFIT TO DEPENDANTS.

THE following circular letter has been issued to clerks to insurance committees by the National Health Insurance Commission for England:

Sir,

I am directed by the National Health Insurance Commission (England) to refer to the provisions of Section 17 of the National Insurance Act, which empowers an Insurance Committee, if it thinks fit, to extend sanatorium benefit to the dependants of the insured persons resident in their area, or to any class of such dependants.

It appeared to the Commissioners that during the first few weeks of the operation of the Act it would be prudent for Insurance Committees to consider only the case of insured persons.

The committees have, however, now had sufficient experience, in many cases, of the working of the provisional arrangements with regard to sanatorium benefit to be able to estimate the extent of their liabilities for the number of insured persons who may be expected to apply for treatment during the period of the existing provisional arrangements. Some committees may find that, after full provision has been made for present and future applications from insured persons, their estimate for the period covered by the provisional arrangements discloses a surplus. When this is the case the Commissioners are of opinion that the Committee might properly consider the extension of the benefit to the dependants or to some class of the dependants of insured persons.

Before passing a resolution extending the benefit the Committee will, of course, satisfy themselves by a careful estimate that a surplus may be expected in respect of the period covered by the provisional arrangements.

Since the Committee will not be in a position to estimate their liabilities in respect of insured persons under a permanent scheme until that scheme is finally approved, they will recognize the desirability that any resolution extending benefit to dependants or any class of dependants should be limited to the period during which the provisional arrangement is in force.

If your Committee decide to make a provisional extension of sanatorium benefit in the manner described, it will of course be necessary to consider, at the same time, whether any modification is required in the existing provisional arrangements for the treatment of insured persons alone, as approved by this Commission; and the Commissioners will be glad if you will forward to them the terms of any resolution upon the subject.

I am, Sir,
Your obedient servant,
CLAUD SCHUSTER.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

MATTERS REFERRED TO DIVISIONS.

AGENDA

OF

SPECIAL REPRESENTATIVE MEETING

TO BE HELD ON

TUESDAY, NOVEMBER 19th, at 10 a.m., and WEDNESDAY, NOVEMBER 20th, 1912,

and, if necessary, the following day, in the

CONNAUGHT ROOMS,

GREAT QUEEN STREET, LONDON, W.C.

Notice Convening Meeting.

1. Read: Notice convening Meeting, namely:

Notice is hereby given that, on the requisition of the Council, a Special Representative Meeting of the Association will be held in the Connaught Rooms, Great Queen Street, London, W.C., on Tuesday, November 19th, at 10 a.m., and on Wednesday, November 20th, 1912, and the following day if necessary, for the purpose of receiving and considering a Report prepared by the Council of the Association, in accordance with Minute 215 of the Annual Representative Meeting held at Liverpool on July 19th, 1912, and following days, and for the purpose of passing resolutions arising therefrom or in reference thereto.

Minute 215 of the Annual Representative Meeting, 1912, referred to in the foregoing Notice, is as follows:

Minute 215.—Resolved: That a State Sickness Insurance Committee be appointed by the Representative Body to watch the interests of the profession in relation to the National Insurance Act, and also to report on the whole situation to the Council; that the Council be instructed to report thereon, as soon as possible, to the Divisions and to a Special Representative Meeting; and that the Committee consist of (*a*) twelve members elected by grouped Representatives in the same manner as members of Council under By-law 43 (*c*); (*b*) the *ex officio* members; (*c*) two women medical practitioners to be nominated, one by the Northern Association of Medical Women and one by the Association of Registered Medical Women; and that the Committee be empowered to add to its number not more than six additional members.

2. **Motion:** That the Notice convening the Meeting be entered on the Minutes.

Reception of Notice of Appointment of Substitutes.

3. Receive: Notice of Appointment of Substitutes for Representatives:

Motion: That the Notice of Appointment of Substitutes for Representatives be entered on the Minutes.

Apologies for Absence.

4. Receive: Intimations of apology for absence.

Order of Business.

5. **Motion:** That the remaining business of the Meeting be considered in the order decided upon by the Agenda Committee of the Representative Body.

National Insurance Act.

6. **Motion:** That the Report of Council prepared pursuant to Minute 215 of the Annual Representative Meeting, 1912 (see Item 1 above), be received.

7. Receive: Correspondence between the Council of the Association and the Chancellor of the Exchequer and Commissioners.

8. Receive: Report of proceedings of Conference of Colliery Surgeons, held at Newcastle-on-Tyne on November 6th, 1912.

9. Receive: Report of proceedings of Conference of representatives of the Association with representatives of the Society of Medical Officers of Health, held on November 12th, 1912.

10. Consider: Motions and Amendments in reference to the Report of Council.

11. **Motion:** That the remainder of the Report of the Council be approved.

12. Any other competent business.

Confirmation of Minutes.

13. **Motion:** That the Minutes of the Meeting be confirmed for presentation to the Council.

T. JENNER VERRALL,
Chairman of Representative Meetings.

November 6th, 1912.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BATH AND BRISTOL BRANCH:

BATH DIVISION.

A GENERAL meeting of this Division was held on October 28th.

The Division and the Royal United Hospital, Bath.—The SECRETARY read a copy of a letter sent by the honorary staff to the Board of Management of the Royal United Hospital, Bath, pointing out:

1. That tuberculous persons being now entitled to claim treatment at the expense of the State are not suitable persons to receive treatment at a voluntary hospital such as the Royal United Hospital.
2. That it is the intention of the staff to refer such patients in future to their own doctor or to the parish doctor.
3. That in future the honorary staff will expect to receive remuneration for such cases, including surgical forms of tuberculosis, as are referred back by their doctors to the hospital for institutional treatment.

It was suggested: (1) That the Board of Management should make arrangements with the local Insurance Committee to obtain payment for the treatment of such cases. (2) That separate accounts be kept for all cases under tuberculosis benefit which are treated at the hospital.

BIRMINGHAM BRANCH:

CENTRAL DIVISION.

A GENERAL and special meeting of this Division was held at the Medical Institute on October 23rd. Dr. C. E. PURSLOW, Vice-Chairman, was in the chair, and 102 members were present.

Contract Practice.—Mr. MARSH proposed and Dr. OAKES seconded:

That until some general scheme of contract or other form of medical service is approved by the Association the members of this Division decline, after January 15th, 1913, to undertake or conduct any form of contract practice for non-insured persons, except upon such terms as shall be approved by this Division.

This resolution was carried *nemine contradicente*, and therefore becomes the effective policy of this Division, and is applicable throughout the area of this Division. The attention of members of the Central Division is therefore particularly directed to this most important resolution.

Public Medical Service Schemes.—Discussion of these schemes was again deferred.

METROPOLITAN COUNTIES BRANCH:

LEWISHAM DIVISION.

THE inaugural meeting of this Division was held at the Bromley Co-operative Rooms on October 25th. Dr. C. COMBER presided. There were thirty members present.

Election of Officers.—The following officers were elected: *Chairman*, F. S. Toogood, M.D.; *Vice-Chairman*, C. T. Comber, M.D.; *Honorary Secretary and Treasurer*, H. M. Bundey, M.B.; *Representative in Representative Meetings*, J. J. Macnamara: *Representative on Branch Council*, F. G. Larkin; *Executive Committee*—Blackheath: F. J. Bateman, M.D.; Catford: T. W. Atkinson, M.B.; Forest Hill: A. Grayling, M.B.; Lee: R. B. Duncan, M.D.; Lewisham: L. F. Hemmans, M.B.; Sydenham: J. Wheeler-O'Bryen, M.D.; *Ethical Committee* (as above); *Representatives on Branch Insurance Committee*, F. S. Barnet, W. Wilson, M.D.

Model Rules.—At this meeting the Model Rules of Organization and the Model Ethical Rules (including Rule Z) were adopted.

South-West Essex Division.

The inaugural meeting for the Division for the 1912–13 session was held at the Woodford Hospital on Thursday, October 24th, at 4 p.m.; Dr. Panting presided, and fourteen members were present.

Letters.—Letters from the Central Ethical Committee, the Medical Secretary, the Medical Defence Union, the Council of the Branch, Drs. Harding Tompkins and White were read.

Sanatorium Benefit.—The Secretary reported the result of the negotiations which had taken place between the Provisional Local Medical Committee and the central authorities of the county with regard to sanatorium benefit. The terms and conditions agreed upon were read through by the Secretary, as was also a letter from the County Medical Officer relating to the agreement. The Secretary called the attention of the meeting to the special and important services to the Division which had been given by Drs. Butler-Harris and Dykes in connexion with this matter.

Representatives on Branch National Insurance Committee.—The letter from the Branch Council referred to the election of two members to the Branch National Insurance Committee. It was proposed by Dr. Warner and seconded by Dr. Dykes:

> That the present Representatives on the Committee be reappointed.

This was carried unanimously.

Paper, etc.—A paper, entitled "Some Medical Aspects of Oliver Wendell Holmes," was given by Dr. Warner and was much appreciated. Some notes upon a case of "chyluria" of non-parasitic origin were read by Dr. Rorke. A short discussion followed, in which Drs. Shadwell and Panting took part.

Vote of Thanks.—A vote of thanks to Drs. Warner and Rorke was proposed by Dr. Coutts and seconded by Dr. Denning. This was carried unanimously.

Willesden Division.

A meeting of the Division was held at the Wesleyan Hall, Tavistock Road, Harlesden, on October 31st, at 4 p.m. Dr. Coram James was in the chair. Twenty-three members and one visitor were present.

Place and Time of Ordinary Meeting.—The recommendation of the committee that the ordinary meetings should be held on the fourth Thursday of each month up to May (except in December, when it should be the third Thursday), and that the meetings should be held at the Huddlestone Hall, Willesden Green, from 4 to 6 p.m., was adopted. It was also agreed that no scientific meetings should be held this session, and that non-members of the Association should be invited to attend the meetings.

Public Medical Service.—The report of the Provisional Medical Committee on a public medical service was given by Dr. Macevoy, who proposed, on behalf of the Committee:

> That the consideration of a public medical service be postponed on the ground that contract club practice of any description is inadvisable until the seven cardinal points are granted.

Dr. Smurthwaite seconded, and it was carried unanimously.

Club Resignations.—Dr. Skene proposed:

> That the resignations tendered to clubs on September 29th shall hold for all members whether insured or uninsured persons.

He suggested the following reasons why the resolution should be supported: (1) A considerable number of practitioners having totally resigned all contract practice appointments, in justice to them common action should be taken by all practitioners. (2) As the Government are converting many private patients into contract patients, a counter move to convert contract patients into private patients is desirable. (3) To preserve consistency in our refusal to work the National Insurance Act for a miserable pittance. (4) Because the *personnel* of club members will be considerably altered by the operation of the Act, young adults being taken away and the aged and children being left. (5) To prevent misunderstanding by the public as to what the services of a doctor are really worth. (6) Because of the gross abuse of the clubs. (7) Because the private patient suffers on account of the time taken up in attending to the trivial complaints and imaginary ills of fanciful club patients. Further, it was pointed out that there was nothing inconsistent in the terms of the resolution if in place of the present contract system they set up a frankly benevolent service for the really poor without conditions or contract, but in which the doctor should have the absolute choice of patient until such time as the Government took these within the sweep of the national service. Dr. Smurthwaite seconded. With the addition of the words "that the Division recommend" at the beginning of the resolution, it was carried unanimously.

National Insurance Committee of Metropolitan Counties Branch.—Drs. Macevoy and Skene were elected to serve on the National Insurance Committee of the Metropolitan Counties Branch.

Shropshire and Mid-Wales Branch.

The thirty-seventh annual general meeting of this Branch was held at the Salop Infirmary on October 29th. Dr. Exham took the chair and forty-nine members were present.

Installation of New President.—After the minutes of the previous meeting had been read and confirmed, Dr. Exham vacated the chair, and Dr. H. Willoughby Gardner took it and delivered his presidential address, entitled "The Modern Treatment of Pulmonary Tuberculosis."

South Midland Branch.

The autumnal meeting of this Branch was held at the General Hospital, Northampton, on Thursday, October 10th, under the presidency of Dr. J. C. Baker (Aylesbury). There were twenty-four members present.

New Members.—The President announced the election by Branch Council of the following new members:

A. A. Stewart, M.B., Regent Square, Northampton; C. J. Harmer, M.R.C.S., Luton; E. Kennedy, L.R.C.S.I., Luton; H. O'Meara, M.B., Luton; Adam Hamilton, M.B., Luton; G. Mack, M.B., Kettering; T. Lewis, M.R.C.S., Luton; and H. Spurway, M.R.C.S., Sandy, Beds.

Northamptonshire Division.

A meeting of this Division was held at the Northampton General Hospital on October 24th. Dr. Baxter was in the chair, and there were present fifty-four members and three non-members.

The late Dr. Burt.—The Chairman then proposed a vote of condolence to the relatives of the late Dr. Burt, which was passed, all the members standing.

County Medical Service for Insured Persons.—On behalf of the County Provisional Committee, Dr. Dryland then introduced a scheme for a medical service for insured persons in the county, and moved that it be received from the chair. The report was then received and its clauses considered seriatim. After various small amendments the scheme was passed unanimously.

Guarantee Fund.—It was agreed that a 5 per cent. call should be made on all guarantors.

Notice of Motion.—Dr. Greenfield gave notice to rescind a motion of June 21st to the effect that the scale for uninsured persons should be left to the Local Provisional Committees.

Votes of Thanks.—On the proposition of Dr. Bull a vote of thanks was passed to Dr. Baxter for presiding and to Dr. Dryland for all the trouble he had taken in drawing up the scheme.

YORKSHIRE BRANCH.

A meeting of the Yorkshire Branch was held at the Grand Hotel, Scarborough, on Saturday, October 26th.

New Members.—Thirteen new members were elected.

Sanatorium Subcommittee.—Dr. Cuff reported on the meetings of the North Riding Sanatorium Subcommittee. The meeting adopted all the suggestions, and thanked Dr. Cuff for all the trouble he had taken.

Ethical Rules.—The Ethical Rules for Branches, as published in the Supplement, September 21st, were adopted.

Dinner.—Twenty members, including ladies, dined at the Grand Hotel after the meeting.

To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.

Association Notices.

ADJOURNED COUNCIL MEETING.

The adjourned meeting of the Council will be held at 2 o'clock in the afternoon of Wednesday, November 13th, in the Council Room at 429, Strand, London, W.C.

By Order,

Guy Elliston,

Nov. 7th, 1912. *Financial Secretary and Business Manager.*

BRANCH AND DIVISION MEETINGS TO BE HELD.

Aberdeen Branch.—A special meeting of the Aberdeen Division, to which all members of the medical profession within the area of the Division are invited, will be held in the Medico-Chirurgical Society's Rooms, 29, King Street, Aberdeen, on Tuesday, November 12th, at 3.15 p.m. Business (very important): (1) Consideration of the future action of the Association in regard to medical benefit under the National Insurance Act. (2) Instruction to Representative to the forthcoming Representative Meeting on November 19th and 20th.—Thos. Fraser, F. K. Smith, Honorary Secretaries.

Birmingham Branch: Central Division.—A special and ordinary meeting of this Division will be held at the Temperance Hall, Temple Street, on Tuesday, November 12th, at 5.30 p.m. Non-members of the Association practising within the area of the Division are cordially invited to attend this important meeting. Special business: To remove the Division's ban from two practitioners in Coventry. Ordinary business: Minutes. To instruct Representatives for the Special Representative Meeting. Any other business.—Ernest C. Hadley, H. Hoyle Whaite, Honorary Secretaries.

Lancashire and Cheshire Branch: Altrincham Division.—A special meeting will be held on Thursday, November 14th, at 4.30 p.m., at the Board Room of the Altrincham Hospital. 4.15 p.m., tea; 4.30, meeting; 7 p.m., dinner at the Brooklands Hotel (R.S.V.P.). Agenda: (1) Report of Council to the Divisions and Representative Body (instructions to be given to Representative). (2) Election of three members willing to serve on the proposed Administrative County Medical Committee. (3) Correspondence—(*a*) Central Defence Fund; (*b*) election of Representative. (4) Report of Representative. (5) Any other urgent business.—H. G. Cooper, Honorary Secretary.

Lancashire and Cheshire Branch: Liverpool Division.—A special meeting, to which all medical practitioners residing in the Division will be invited, will be held on Tuesday, November 12th, at 3.30 p.m., at the Medical Institution, to consider report of Council to Divisions and Representative Body (see Supplement, British Medical Journal, November 2nd).—Francis W. Bailey, Honorary Secretary, Liverpool.

Metropolitan Counties Branch: City Division.—A special general meeting of the Division will be held at the Town Hall, Hackney, this day, Friday, November 8th, at 4 p.m.: (*a*) To consider the recommendation of the Ethical Committee regarding the adoption of the Model Ethical Rules (Supplements, September 21st and 28th). (*b*) To consider the report of the Executive Committee upon the scheme to continue attendance upon clubs. (*c*) To consider the report of the Council on National Insurance Act regulations (Supplement, November 2nd). (*d*) To consider schemes for a Public Medical Service other than Schemes A and B (Supplement, October 12th). (*e*) Instruction of Representatives.—A. G. Southcombe, Honorary Secretary.

Metropolitan Counties Branch: City Division.—The next meeting of this Division will be held at St. Bartholomew's Hospital (by invitation of the Medical Staff Committee) on Tuesday, November 12th, at 4.30 p.m., when Mr. W. H. H. Jessop and Mr. Holmes Spicer will give a demonstration on cases in the Out-patient (Ophthalmic) Department.—A. G. Southcombe, Honorary Secretary, 83, Sidney Road, Homerton, N.E.

Metropolitan Counties Branch: East Hertfordshire Division.—A meeting of this Division will be held at 3 p.m. on Wednesday, November 13th, at the Shire Hall, Hertford, to consider the report of Council on the present position in relation to the Insurance Act, and to instruct the Representative thereon. The Council wishes to impress on every member of the Association the vital necessity of attending this meeting in view of the Special Representative Meeting to be held on November 19th and 20th, when the Association will decide whether to accept or refuse service under the Act. Agenda: (1) Confirm minutes. (2) Correspondence. (3) Receive report of Executive in reference to sanatorium benefit. (4) Receive report of Executive in reference to Public Medical Service schemes. (5) Consider report of Council and instruct Representative thereon. (6) Any other business. Members are requested to bring to the meeting the British Medical Journal Supplement of November 2nd. All practitioners resident within this area are invited.—H. D. Ledward, Honorary Secretary.

Metropolitan Counties Branch: Marylebone Division.—A general meeting of the Division will be held at the Rooms of the Medical Society of London, 11, Chandos Street, W., on Wednesday, November 13th, at 5 o'clock p.m., or at the close of the meeting of the medical profession resident in Marylebone which has been summoned for 4 p.m. Agenda: (1) Minutes (British Medical Journal Supplement, July 27th). (2) Questions. (3) Letters. (4) Report of proceedings at the Annual Representative Meeting held at Liverpool. (5) Report of Council (British Medical Journal Supplement, November 2nd). (6) Instructions to Representatives to the Special Representative Meeting—(*a*) to give service under the Act under the conditions set out in Paragraph 114 of the Report of Council, dated October 31st, and published in the Supplement of November 2nd; (*b*) to refuse service under the Act. (7) To elect a Deputy Representative. (8) Any other business.—Francis W. Goodbody, Honorary Secretary.

Metropolitan Counties Branch: South-West Essex Division.—A special meeting of the Division will be held in the Wesleyan Church Schoolroom, High Road, Leyton (corner of James Lane), nearest station, Leyton, M.R., on Thursday, November 14th, at 3.30 p.m., for the purpose of adopting the Model Ethical Rules (published in the Supplement to the Journal, September 21st), in substitution for the existing Ethical Rules of the Division. Agenda: (1) The rules will be taken as read. (2) Any amendments will be considered. (3) The rules (as amended if necessary) will be adopted. Any member wishing to move an amendment must send notice in writing to the Secretary at least three days before the meeting and enclose a copy of the proposed amendment. At the conclusion of this meeting, which is expected to take less than half an hour, a general meeting of the profession will be held to consider the Report of the Council upon the present position with regard to the Insurance Act.—A. Pottinger Eldred, Honorary Secretary.

Metropolitan Counties Branch: Westminster Division.—There will be a meeting of this Division on Tuesday, November 12th, at 9 p.m., in St James's Vestry Hall, Piccadilly. Business: (1) Minutes. (2) Correspondence. (3) Consideration of the report of Council (vide Supplement of the British Medical Journal, November 2nd) on the National Insurance Act. (4) Any other urgent business. All members of the profession resident within the Division are cordially invited to be present.—W. A. Milligan, Honorary Secretary.

North of England Branch: Newcastle-upon-Tyne Division.—A meeting of this Division will be held at the Royal Victoria Infirmary, Newcastle-upon-Tyne, on Tuesday, November 12th, at 8.30 p.m. Agenda: (1) Minutes. (2) Presentation of report from the deputation who were instructed to wait upon the Local Insurance Committee *re* domiciliary treatment of tuberculosis. (3) To discuss the report of Council (see British Medical Journal Supplement of November 2nd), and to instruct our Representative at the forthcoming Representative Meeting. (4) Any other competent business. All medical men resident in the Newcastle-upon-Tyne Division area, whether members or non-members of the British Medical Association, are invited to attend. Members are requested to bring the British Medical Journal Supplement of November 2nd to the meeting.—R. J. Willan, F.R.C.S., Honorary Secretary.

Shropshire and Mid-Wales Branch.—There will be a special meeting of this Branch, to which all practitioners in the district are invited, on Tuesday, November 12th, at 3.30, at the Salop Infirmary, to consider the report of the Council on the present position as regards the National Insurance Act, and

to instruct the Representative of the Branch for the Special Representative Meeting.—R. H. Urwick, Honorary Secretary.

South-Eastern Branch: Chichester and Worthing Division.—A meeting of all medical men resident in this district will be held at the Hospital, Worthing, on Tuesday, November 12th, at 3.15 p.m. Business: (1) National Insurance Act; instructions to Representative. (2) Report *re* tuberculosis fees. (3) Adoption of Ethical Rules (published in the Supplement, British Medical Journal, September 21st). (4) To discuss the question of contract practice of persons not included by the Insurance Act by members of this Division, and to decide the minimum rate at which members of this Division shall undertake such contract practice.—A. Densham, A. S. Morton Palmer, Honorary Secretaries.

South-Eastern Branch: Dartford Division.—A most important meeting of this Division will be held at the Bull Hotel, Dartford, on Tuesday, November 12th, at 3 p.m. All medical practitioners are cordially invited. Members are requested to bring their copies of the British Medical Journal Supplements to the meeting. Agenda: (1) Minutes of last meeting. (2) Correspondence. (3) Public Medical Services (British Medical Journal Supplements, September 14th to October 5th). (4) Draft Regulations (British Medical Journal Supplement, October 12th). (5) Report of Council (British Medical Journal Supplement, November 2nd). (6) Paper on Enucleation of Tonsils, by J. F. O'Malley, Esq., F.R.C.S., of St. Bartholomew's Hospital.—H. Chisholm Will, Honorary Secretary, Oak Tree Lodge, Sidcup.

South Midland Branch: Buckinghamshire Division.—A most important meeting of the Division, to which every medical man residing in the area is invited, will be held at the Royal Bucks Hospital on Tuesday, November 12th, at 2.30 p.m. The annual dinner will be held after the meeting at the Crown Hotel at 6 p.m., provided that at least a dozen signify their intention (before Saturday, November 9th) of being present (charge 3s. 6d.). Note.—The members of the Provisional Local Medical Committee will meet on the same day at 2 p.m.—A. E. Larking, Honorary Secretary.

Southern Branch.—A special meeting of this Branch will be held at the South-Western Hotel, Southampton, on Wednesday, November 27th, at 3 p.m., the business of which will be to adopt (on the recommendation of the Branch Council) the Model Ethical Rules of the Association. Members are referred to the Supplement of the Journal of September 21st, also to the note of corrections on p. 350 of the Supplement of September 28th. After the transaction of the above business the meeting will resolve itself into the half-yearly general meeting of the Branch, when papers will be read and cases of clinical interest, microscopical specimens, etc., will be shown. To facilitate the preparation of the agenda it is requested that members who desire to read papers or show cases, etc., will communicate early with the Honorary Secretary, James Green, Brandon House, Mile End, Portsmouth.

South Midland Branch: Northamptonshire Division.—A meeting of the Division will be held on Tuesday, November 12th, in the Board Room of the Northampton General Hospital at 2.30 p.m. All medical practitioners in the district are invited. The meeting is a most important one, and all should make an effort to attend. The meeting will be preceded by a luncheon at Franklin's Restaurant at 1.30 p.m. Those wishing to lunch should kindly inform the Honorary Secretary two days beforehand. Agenda of meeting: Minutes of preceding meeting. Consideration of the Government's offer of terms in connexion with the National Insurance Bill. Any other business.—P. S. Hichens, 47, Sheep Street, Northampton, Honorary Secretary.

West Somerset Branch.—The autumn general meeting will be held at the Taunton and Somerset Hospital on Friday, November 15th, at 3.30 p.m. Dr. Stewart will take the chair. Agenda: Minutes of last meeting. To elect a President for 1913. To discuss the report of the National Insurance Committee on the Regulation for the National Insurance Act, and Mr. Lloyd George's scale of fees, as per Supplement, November 2nd, and give instructions to Dr. Macdonald in view of the meeting of Representatives to be held on November 19th. Dr. Bird will move the following resolutions: (1) That the Government's latest offer be accepted as a basis for further negotiation. (2) That a committee be appointed at the following meeting of Representatives to reopen negotiations with the Government with power to arrange terms. Other business. *Re* sanatorium benefits, members are requested not to sign Form H until the regulations thereon have been settled with the Somerset County Council. P.S.—In consequence of the parliamentary bye-election at Taunton the annual dinner is postponed.—C. Farrant, Honorary Secretary.

Worcestershire and Herefordshire Branch: Hereford Division.—A meeting of the Division will be held on Wednesday, November 13th, at 3.30 p.m., in St. Peter's Church House, Hereford, at which the Representative will be instructed for the Representative Meeting.—Arthur Wood, Honorary Secretary, Bodenham Road, Hereford.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In ninety-five of the largest English towns 8,206 births and 4,517 deaths were registered during the week ending Saturday, October 26th. The annual rate of mortality in these towns, which had been 12.3, 13.7, and 14.2 per 1,000 in the three preceding weeks, declined to 13.4 per 1,000 in the week under notice. In London last week the death-rate was equal to 14.1 per 1,000, against 13.3, 15.5, and 16.8 in the three previous weeks. Among the ninety-four other large towns the death-rates ranged from 4.9 in Gillingham, 5.2 in Blackpool, 6.4 in Wimbledon, 6.9 in Acton and in Ilford, 7.2 in Enfield, and 7.3 in Hornsey to 17.5 in Liverpool, 18.5 in Sunderland, 18.6 in Preston, 18.8 in Salford, 22.7 in Tynemouth, and 24.0 in Middlesbrough. Measles caused a death-rate of 2.0 in Liverpool and in Barnsley, 2.3 in West Ham, 2.9 in Middlesbrough, and 7.0 in Tynemouth; scarlet fever of 1.5 in Middlesbrough; and diphtheria of 1.1 in Stoke-on-Trent. The mortality from enteric fever and whooping-cough showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children (under 2 years of age) from diarrhoea and enteritis, which had been 153, 129, and 121 in the preceding three weeks, further fell to 103 last week, and included 24 in London, 13 in Liverpool, 8 in Manchester, 7 in Birmingham, 4 in Bolton, and 4 in Salford. The causes of 35, or 0.8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 10 were registered in Birmingham, 5 in Liverpool, 3 in Preston, and 2 each in Stoke-on-Trent, Rochdale, and Sunderland. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 1,995, 2,095, and 2,217 at the end of the three preceding weeks, had further risen to 2,258 on Saturday October 26th; 283 new cases were admitted during the week, against 317, 322, and 345 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In eighteen of the largest Scottish towns 1,097 births and 603 deaths were registered during the week ending Saturday, October 26th. The annual rate of mortality in these towns, which had been 12.2, 14.1, and 13.6 per 1,000 in the three preceding weeks, rose to 14.4 in the week under notice, and was 1.0 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns last week the death-rates ranged from 6.5 in Clydebank, 7.6 in Partick, and 8.8 in Motherwell to 19.3 in Dundee, 20.2 in Perth, and 21.3 in Greenock. The mortality from the principal infectious diseases averaged 1.0 per 1,000, and was highest in Aberdeen and Hamilton. The 246 deaths from all causes registered in Glasgow included 7 from whooping-cough, 6 from infantile diarrhoeal diseases, 5 from diphtheria, and 1 from scarlet fever. Three deaths from diphtheria were recorded in Aberdeen and 2 in Edinburgh; 3 deaths from infantile diarrhoea in Dundee, and 2 in Govan; and 3 deaths from small-pox in Kirkcaldy.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, October 26th, 574 births and 393 deaths were registered in the twenty-two principal urban districts of Ireland, as against 600 births and 365 deaths in the preceding week. The annual death-rate in these districts, which had been 15.5, 17.6, and 16.5 per 1,000 in the three preceding weeks, rose to 17.8 per 1,000 in the week under notice, this figure being 4.4 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 18.3 and 16.8 respectively, those in other districts ranging from 3.9 in Galway and 6.4 in Queenstown to 35.2 in Limerick and 35.8 in Clonmel, while Cork stood at 23.1, Londonderry at 14.0, and Waterford at 26.6. The zymotic death-rate in the twenty-two districts averaged 1.8 per 1,000 as against 1.9 in the preceding period.

ENGLISH URBAN MORTALITY IN THE THIRD QUARTER OF 1912.

[Specially Reported for the "British Medical Journal."]

In the accompanying table will be found summarized the vital statistics of ninety-five of the largest English towns, based upon the Registrar-General's weekly returns for the third quarter of the year. The 109,010 births registered in these towns during the quarter under notice corresponded to an annual rate of 24.8 per 1,000 of the population, estimated at 17,639,881 persons in the middle of the year. In London the birth-rate last quarter was 24.6 per 1,000, while among the other towns it ranged from 15.2 in Southport, 14.2 in Hastings, 14.4 in Hornsey, 15.0 in Bournemouth, 15.9 in Bath, 16.6 in Blackpool, and 17.1 in Eastbourne, to 30.0 in Middlesbrough, 30.7 in Bootle, 30.8 in Sunderland, 31.6 in Stoke-on-Trent, 32.0 in St. Helens, and 33.3 in Rhondda.

The 50,070 deaths registered in these towns last quarter were equal to a rate of 11.4 per 1,000; in London the death-rate was equal to 11.5 per 1,000; while among the other towns the lowest rates were 5.8 in Ilford, 6.7 in Gillingham, 7.0 in Hornsey, 7.5 in Southend, 7.8 in Ealing, and 7.9 in Acton and in Bournemouth; and the highest rates were 14.0 in Tynemouth, 14.1 in Bootle and in Rotherham, 14.3 in Wigan, 16.2 in Liverpool, and 17.1 in Middlesbrough.

The 50,070 deaths from all causes included 2 from small-pox, 156 from enteric fever, 1,458 from measles, 275 from scarlet fever, 712 from whooping-cough, 445 from diphtheria, and 2,032 (among children under 2 years of age) from diarrhoea and enteritis. Of the 2 fatal cases of small-pox, 1 belonged to Bristol and 1 to Huddersfield. The 156 deaths from enteric fever were equal to a rate of 0.04 per 1,000; in London the death-rate from this disease was 0.03 per 1,000, while among the other towns the rates ranged upwards to 0.11 in Warrington, 0.12 in Barrow-in-Furness, in Halifax, and in Bradford, 0.14 in Portsmouth, 0.15 in York and in Rhondda, and 0.22 in Wigan. The 1,458 fatal cases of measles corresponded to an annual rate of 0.33 per 1,000; in London the death-rate from measles was also 0.33 per 1,000, while in the other towns the rates ranged upwards to 0.60 in Tynemouth, 0.62 in Stockport, 0.82 in Hull, 1.30 in Liverpool, 1.47 in Bootle, 1.53 in Gateshead, 1.77 in Rotherham, 1.94 in Merthyr Tydfil, and 4.14 in Middlesbrough. The 275 deaths from scarlet fever were equal to an annual rate of 0.06 per 1,000; in London this disease caused a death-rate of 0.04 per 1,000, while among the other large towns the rates ranged upwards to 0.15 in Dewsbury and in Aberdare, 0.16 in Halifax, 0.17 in Stoke-on-Trent, 0.19 in Birmingham, 0.22 in Warrington and in Rochdale, 0.23 in Barnsley, 0.26 in Middlesbrough, and 0.31 in Preston. The 712 fatal

Analysis of the Vital Statistics of Ninety-five of the Largest English Towns during the Third Quarter of 1912.

Towns.	Estimated Population middle of 1912.	Births.	Deaths.	Annual rate per 1,000 Living.		Deaths from							Deaths of Children under 1 year of age to 1,000 Births.	Rate per Cent. of Uncertified Deaths.
				Births.	Deaths.	Enteric Fever.	Small-pox.	Measles.	Scarlet Fever.	Whooping-cough.	Diphtheria.	Diarrhœa and Enteritis (under 2 years of age).		
95 Towns	17,639,881	109,010	50,070	24.8	11.4	156	2	1,458	275	712	445	2,032	86	0.8
London	4,519,754	27,700	12,972	24.6	11.5	29	—	376	44	182	107	629	81	0.1
Croydon	174,273	976	406	22.5	9.3	1	—	10	—	4	7	25	79	—
Wimbledon	56,729	267	129	18.9	9.1	—	—	—	—	3	1	11	79	—
Ealing	64,955	359	127	22.2	7.8	1	—	1	1	2	—	1	58	—
Acton	60,113	367	119	24.5	7.9	—	—	—	—	1	1	5	44	0.8
Willesden	159,432	972	324	24.5	8.2	2	—	6	—	4	3	5	61	0.9
Hornsey	86,252	310	120	14.4	7.0	—	—	2	—	1	1	4	42	—
Tottenham	142,015	957	294	27.0	8.3	1	—	1	1	2	3	12	55	—
Edmonton	67,167	468	145	27.9	8.7	—	—	—	—	2	2	6	77	—
Enfield	58,139	346	150	23.9	10.3	—	—	2	—	6	2	6	87	—
West Ham	291,900	2,116	853	29.1	11.7	7	—	16	7	17	7	56	101	0.3
East Ham	138,450	889	280	25.8	8.1	2	—	2	—	5	2	12	62	—
Leyton	128,155	733	270	22.9	8.5	2	—	1	1	10	4	9	71	—
Walthamstow	128,480	769	266	24.0	8.3	1	—	8	—	5	5	10	59	—
Ilford	83,080	419	121	20.2	5.8	—	—	—	—	2	—	1	43	—
Gillingham	53,511	316	90	23.7	6.7	—	—	—	—	—	2	1	41	4.4
Hastings	60,565	214	171	14.2	11.3	—	—	—	—	—	—	1	70	—
Eastbourne	53,730	229	116	17.1	8.7	—	—	—	—	—	4	1	70	—
Brighton	132,265	620	359	18.8	10.9	—	—	3	4	—	—	7	79	—
Portsmouth	236,731	1,403	645	23.8	10.9	8	—	3	8	5	25	20	68	0.6
Bournemouth	81,178	394	159	15.0	7.9	—	—	—	2	—	1	—	36	—
Southampton	120,891	736	313	24.4	10.4	3	—	4	1	2	4	10	69	0.3
Reading	88,603	439	188	19.9	8.5	1	—	—	—	—	2	8	71	1.6
Oxford	53,540	261	117	19.6	8.8	—	—	—	1	1	—	1	57	—
Northampton	90,467	505	203	22.4	9.0	1	—	—	1	—	1	4	48	—
Cambridge	56,522	273	161	19.4	11.4	—	—	2	—	4	15	1	51	—
Southend-on-Sea	67,196	350	125	20.9	7.5	—	—	2	1	—	—	3	60	5.6
Ipswich	74,899	436	235	23.3	12.6	—	—	2	—	10	6	6	96	—
Great Yarmouth	56,513	364	153	25.8	10.9	—	—	—	—	2	1	3	58	0.7
Norwich	122,479	685	296	22.4	9.7	1	—	—	3	1	6	16	96	0.7
Swindon	51,512	302	111	23.5	8.6	—	—	2	1	1	1	5	83	—
Plymouth	112,612	602	351	21.4	12.5	2	—	2	—	4	—	16	103	—
Devonport	83,167	504	175	24.3	8.4	2	—	7	—	4	2	4	67	—
Bath	69,599	275	163	15.9	9.4	—	—	—	1	2	—	4	55	1.2
Bristol	359,432	1,933	949	21.6	10.6	1	1	11	1	14	11	25	80	—
Gloucester	50,310	291	130	23.2	10.4	—	—	—	—	—	1	3	79	1.5
Stoke-on-Trent	237,159	1,868	797	31.6	13.5	5	—	9	10	10	7	42	117	2.0
Wolverhampton	95,479	590	273	24.8	11.5	1	—	—	2	8	4	8	58	—
Walsall	92,868	645	280	27.9	12.1	—	—	1	—	—	—	26	124	—
West Bromwich	68,750	505	188	29.5	11.0	1	—	—	1	8	1	10	101	1.1
Dudley	51,390	316	143	24.7	11.2	—	—	—	—	1	—	2	98	2.8
Birmingham	850,947	5,577	2,344	26.3	11.0	3	—	80	41	26	22	85	92	3.2
Smethwick	72,833	466	176	25.7	9.7	—	—	1	2	1	—	2	92	—
Coventry	111,166	759	253	27.4	9.1	—	—	4	2	2	5	4	62	0.4
Leicester	229,294	1,303	611	22.8	10.7	3	—	24	2	1	2	19	81	0.7
Lincoln	58,411	323	161	22.2	11.1	—	—	—	—	3	1	2	80	3.1
Grimsby	76,185	524	206	27.6	10.8	—	—	—	1	23	2	7	97	1.9
Nottingham	262,574	1,505	758	23.0	11.6	2	—	18	7	13	5	26	101	0.1
Derby	127,544	742	332	23.9	10.7	—	—	3	1	3	5	9	69	—
Stockport	110,781	613	352	22.2	12.7	—	—	17	2	6	2	14	96	0.3
Birkenhead	133,427	920	394	27.7	11.8	1	—	13	4	7	2	27	99	0.8
Wallasey	81,805	431	182	21.1	8.9	1	—	—	—	1	1	1	79	—
Liverpool	752,021	5,529	3,033	29.5	16.2	5	—	243	19	75	14	187	119	2.1
Bootle	71,153	546	251	30.8	14.1	—	—	26	1	5	2	13	90	3.2
St. Helens	98,159	784	257	32.0	10.5	1	—	3	3	3	3	15	105	2.7
Southport	70,444	231	152	13.2	8.7	—	—	2	—	1	—	2	35	2.6
Wigan	90,042	580	320	25.8	14.3	5	—	2	1	3	2	22	166	—
Warrington	73,215	498	200	27.3	11.0	2	—	2	4	—	1	6	60	3.5
Bolton	182,524	1,054	459	23.2	10.1	1	—	1	2	2	2	14	83	0.2
Bury	59,106	314	177	21.3	12.0	1	—	4	—	2	—	7	92	2.8
Manchester	725,551	4,625	2,240	25.6	12.4	8	—	28	10	33	17	96	93	0.3
Salford	232,734	1,496	691	25.8	11.9	2	—	6	1	17	4	33	108	0.3
Oldham	148,839	835	461	22.5	12.4	—	—	1	2	7	2	10	69	—
Rochdale	92,529	449	296	19.5	12.8	2	—	11	5	2	3	5	87	2.0
Burnley	108,012	620	300	23.0	11.1	1	—	4	1	11	3	15	124	1.0
Blackburn	133,560	698	388	21.0	11.7	2	—	13	—	6	3	12	109	3.6
Preston	117,631	647	365	22.1	12.4	3	—	1	9	5	8	10	93	4.4
Blackpool	59,851	247	189	16.6	12.7	—	—	—	1	2	—	2	109	4.8
Barrow-in-Furness	61,589	453	191	28.1	11.9	2	—	1	—	5	4	8	102	1.0
Huddersfield	109,513	540	292	19.8	10.7	—	1	6	3	—	—	4	69	0.3
Halifax	101,101	448	293	17.8	11.6	3	—	5	4	1	2	1	74	0.7
Bradford	289,609	1,462	877	20.2	12.1	9	—	1	3	5	13	9	90	0.3
Leeds	447,746	2,476	1,363	22.2	12.2	3	—	49	9	10	17	55	104	0.1
Dewsbury	53,630	309	150	23.1	11.2	—	—	6	2	—	2	2	65	—
Wakefield	51,912	262	149	20.2	11.5	—	—	7	—	4	—	3	92	0.7
Barnsley	51,876	358	155	27.7	12.0	—	—	7	3	2	1	8	101	—
Sheffield	466,408	3,090	1,315	26.6	11.3	3	—	15	7	11	8	53	85	0.7
Rotherham	65,560	457	221	28.8	14.1	—	—	28	2	4	2	6	94	0.9
York	82,860	486	210	23.5	10.2	3	—	—	1	—	5	11	74	—
Hull	282,988	1,985	866	28.1	12.3	4	—	58	—	9	4	51	87	0.7
Middlesbrough	106,950	797	451	30.0	17.1	1	—	110	7	2	4	11	122	0.4
Darlington	57,104	409	199	28.7	9.8	—	—	3	2	1	—	2	59	3.6
Tynemouth	52,244	380	161	29.2	12.4	1	—	—	—	3	—	9	68	1.9
West Hartlepool	64,995	460	185	28.8	11.6	1	—	2	—	—	2	3	74	1.1
Sunderland	151,852	1,167	507	30.8	13.4	—	—	21	—	8	3	12	102	2.0
Rhondda	109,678	814	347	29.8	12.7	—	—	7	2	11	—	6	93	7.8
Cardiff	187,848	793	405	27.0	13.8	—	—	45	1	8	3	14	79	4.4
Newcastle-on-Tyne	280,196	1,729	785	25.8	11.7	2	—	3	7	14	4	20	99	—
Tynemouth	80,805	441	208	29.8	14.0	—	—	9	—	5	—	9	101	2.4
Newport (Mon.)	85,866	601	184	28.1	8.6	—	—	6	1	—	2	6	63	1.6
Cardiff	180,633	1,144	472	24.9	10.3	3	—	13	2	3	10	21	71	—
Rhondda	137,302	1,311	387	33.3	9.8	6	—	22	4	6	3	18	92	0.8
Merthyr Tydfil	82,508	569	257	27.6	12.5	—	—	40	1	8	2	6	83	0.4
Aberdare	51,819	346	132	26.8	11.0	—	—	4	2	1	—	1	78	—
Swansea	117,328	790	309	27.0	10.6	—	—	12	—	2	4	19	87	0.3

cases of whooping-cough were equal to an annual rate of 0.16 per 1,000, which was also the death-rate from the same cause in London; among the other large towns the highest rates recorded were 0.39 in Merthyr Tydfil, 0.40 in Liverpool, 0.41 in Enfield and in Burnley, 0.47 in West Bromwich, 0.51 in South Shields, 0.54 in Ipswich, and 1.21 in Grimsby. The 445 deaths from diphtheria corresponded to a rate of 0.10 per 1,000; in London the death-rate from this disease was equal to 0.09 per 1,000, while among the other large towns the rates ranged upwards to 0.22 in Rhondda, 0.24 in York, 0.25 in Barrow-in-Furness, 0.27 in Preston, 0.30 in Eastbourne, 0.32 in Ipswich, 0.42 in Portsmouth, and 1.06 in Cambridge. The fatal cases of diarrhœa and enteritis among children under 2 years of age numbered 2,032, and were in the proportion of 18.6 per 1,000 to the births registered during the quarter; in London the proportion was 22.7 per 1,000, while in the other towns it ranged upwards to 26.6 in Plymouth, 29.4 in Birkenhead, 34.2 in Liverpool, 37.9 in Wigan, 40.3 in Walsall, and 41.2 in Wimbledon.

Infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 86 per 1,000; in London the rate was 81 per 1,000, while it ranged from 35 in Southport, 36 in Bournemouth, 41 in Gillingham, 42 in Hornsey, 43 in Ilford, 44 in Acton, 48 in Northampton, and 51 in Cambridge, to 108 in Salford, 109 in Blackburn and in Blackpool, 117 in Stoke-on-Trent, 119 in Liverpool, 122 in Middlesbrough, 124 in Walsall and in Burnley, and 166 in Wigan.

The causes of 421, or 0.8 per cent., of the deaths registered in the ninety-five towns last quarter were not certified, either by a registered medical practitioner or by a coroner. In thirty-six of the towns the causes of all the deaths were duly certified; among the other towns the highest proportions per cent. of uncertified deaths were 4.4 in Gillingham, in Preston, and in Gateshead, 4.8 in Blackpool, 5.6 in Southend, and 7.8 in South Shields.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

ALL SAINTS' HOSPITAL FOR OUT-PATIENTS, Buxton Street, E.—Vacancy on Honorary Staff.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham Road, S.W.—Resident Medical Officer (Male). Salary at the rate of £60 per annum.

BETHNAL GREEN INFIRMARY, Cambridge Heath.—Assistant Medical Officer. Salary, £100 per annum, increasing to £120.

BIRMINGHAM GENERAL HOSPITAL.—Resident Medical Officer. Salary, £100 per annum.

BODMIN: CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer and Pathologist. Salary, £150 per annum.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Resident Medical Officer. Salary, £130 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Salary at the rate of £70 per annum.

CHELTENHAM GENERAL HOSPITAL.—House-Surgeon (Male). Salary, £100 per annum.

CHESTER COUNTY ASYLUM.—Third Assistant Medical Officer. Salary, £170 per annum.

DURHAM COUNTY ASYLUM.—School Medical Inspector (Male). Salary, £300 per annum.

EASTBOURNE: PRINCESS ALICE MEMORIAL HOSPITAL.—Honorary Radiologist.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—House-Surgeon. Salary at the rate of £40 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Third House-Surgeon (Male). Salary, £80 per annum.

HARTLEPOOLS HOSPITAL.—House-Surgeon. Salary, £100 per annum.

KING EDWARD VII WELSH NATIONAL MEMORIAL.—Tuberculosis Physician. Salary £400 per annum, rising to £500.

LEAMINGTON: WARNEFORD GENERAL HOSPITAL.—House-Physician. Salary, £85 per annum.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary, £100 per annum.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITALS.—House-Physician. Salary at the rate of £60 per annum.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Male Resident House-Surgeon. Salary, £120 per annum.

MAIDSTONE: KENT COUNTY ASYLUM.—Male Fourth Assistant Medical Officer. Salary, £200 to £220 per annum.

NEWCASTLE-UPON-TYNE CORPORATION.—Medical Officer of Health and Medical Superintendent of the City Hospitals for Infectious Diseases. Salary, £700 per annum, increasing to £1,000.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary, £160 per annum, increasing to £180.

NORTHAMPTON ADMINISTRATIVE COUNTY.—Chief Tuberculosis Medical Officer. Salary, £500 per annum.

NORTHAMPTON GENERAL HOSPITAL.—House-Surgeon. Salary, £90 per annum, increasing to £100.

NORWICH: JENNY LIND INFIRMARY FOR CHILDREN.—Lady Resident Medical Officer. Salary, £50 per annum.

NORWICH: NORFOLK AND NORWICH HOSPITAL.—Casualty Officer. Salary, £60 per annum.

NOTTINGHAM CITY ASYLUM.—Junior Assistant Medical Officer. Salary, £200 per annum.

PLYMOUTH PUBLIC DISPENSARY.—(1) Honorary Physician; (2) Physician's Assistant in the Charitable Department; salary, £90 per annum.

PRESTON ROYAL INFIRMARY.—(1) Senior House-Surgeon; (2) Junior House-Surgeon. Salary, £80 and £60 per annum respectively.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone Road, N.W.—Resident Medical Officer for Out-patient Department. Salary at the rate of £60 per annum.

ST. GEORGE'S IN THE EAST.—Parish Medical Officer for the Schools at Upton Park. Salary, £100 per annum.

ST. PETER'S HOSPITAL FOR STONE, ETC., Henrietta Street, W.C.—Junior House-Surgeon. Salary at the rate of £50 per annum.

SHEFFIELD: JESSOP HOSPITAL FOR WOMEN.—Assistant House-Surgeon. Salary, £60 per annum.

STAFFORD: STAFFORDSHIRE COUNTY ASYLUM.—Assistant Medical Officer (Male). Salary, £160 per annum, rising to £210.

STAMFORD HILL AND STOKE NEWINGTON DISPENSARY.—Assistant Resident Medical Officer. Salary, £120 per annum.

STOKE-ON-TRENT: INFECTIOUS DISEASES HOSPITAL, Bucknall.—Resident Lady Assistant Medical Officer. Salary, £100 per annum.

WESTMINSTER GENERAL DISPENSARY, Gerrard Street, Soho, W.—Honorary Physician.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary at the rate of £80 per annum.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary, £160 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointment: March (Cambridge).

APPOINTMENTS.

BROWN, A. C., M.D., District Medical Officer of the Newton Abbot Union.

COWEN, T. P., M.D.Lond., Medical Superintendent of the Rainhill Asylum, Lancashire.

DENNE, F. Vincent, M.D.Brux., M.R.C.S.Eng., L.R.C.P.Lond., L.S.A.Lond., L.D.S.Eng., Dental Surgeon to L.C.C. Clinic at the St. Marylebone General Dispensary.

EDMONSTON, C. G., M.B., Ch.B.Edin., Certifying Factory Surgeon for the Swanscombe District, co. Kent.

FORSTER, W. R., M.B., District Medical Officer of the Dore Union.

KEANE, Frank E., M.D., Honorary Physician to Out-patients at St. Vincent's Hospital, Melbourne.

MATTHEWS, C. T., M.B., District Medical Officer of the Wetherby Union.

NEWMAN, F. A., M.B., Ch.B.Melb., Honorary Oculist to the Melbourne Benevolent Society.

O'SULLIVAN, D., M.B., Certifying Surgeon for the Dingle District, co. Kerry.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

MARRIAGE.

MONAHAN—McDOUGALL.—On October 9th, at Ikkadu, Tiruvallur, Chingleput Dist., S. India, by Rev. J. E. Neill, B.A., Charles Henry Monahan, M.A., of the Wesleyan Mission, Tiruvallur, to Olive McDougall, M.D., B.S., second daughter of the late Alderman Alexander McDougall, of Manchester.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Discussion on Respiratory Neuroses, to be introduced by Dr. Samuel West, followed by Sir David Ferrier, F.R.S., Dr. Risien Russell, and others.

TUESDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W., 5 p.m.—Second FitzPatrick Lecture by Dr. Raymond H. P. Crawfurd: Echoes of Pestilence in Literature and Art.

ROYAL SOCIETY OF MEDICINE:

SECTION OF SURGERY, 1, Wimpole Street, W., 5.30 p.m.—Discussion on Sarcomata and Myelomata of the Long Bones, to be opened by Sir Alfred Pearce Gould (Clinical Diagnosis), Sir John Bland-Sutton (Pathology), Mr. Gask (Prognosis), Mr. A. Reid (X-ray Appearances), and Sir Frederic Eve (Treatment).

WEDNESDAY.

HUNTERIAN SOCIETY, Westminster Hospital, 4 p.m.—Clinical afternoon. Demonstration of Cases and Clinical and Pathological Methods.

UNITED SERVICE MEDICAL SOCIETY, Royal Army Medical College, Grosvenor Road, S.W., 5 p.m.—Paper: Colonel Bruce Skinner, A.M.S., "The Crux of the Medical Problem in the Field."

THURSDAY.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W., 5 p.m.—Third FitzPatrick Lecture by Dr. Raymond H. P. Crawfurd: Echoes of Pestilence in Literature and Art.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF OTOLOGY, 1, Wimpole Street, W., 5 p.m.—Cases and Specimens.

SECTION OF ELECTRO-THERAPEUTICS, 1, Wimpole Street, W., 8.30 p.m.—Address: Professor Jellinek (Vienna) on Electro-Pathology, illustrated by the cinematograph.

POST-GRADUATE COURSES AND LECTURES.

BROMPTON HOSPITAL FOR CONSUMPTION, S.W.—Special Course daily. Diagnosis and Treatment of Pulmonary Tuberculosis, including the Use of Tuberculin.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., Some Unusual Cases of Jaundice.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.—Daily arrangements; Out-patient Demonstration, 10 a.m., Medical and Surgical Clinics. Monday: 12 noon, Throat, Nose, and Ear; 2.15 p.m., Surgery; 3 p.m., Operations; 3.15 p.m., Medicine, 4.15 p.m., Ear and Throat. Tuesday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Surgery; 3.15 p.m., Medicine; 4.15 p.m., Skin Clinic. Wednesday: 11 a.m., Eye; 2 p.m., Operations; 2.15 p.m., Medicine: 3.15 p.m., Eye Clinic; 4.30 p.m., Surgery. Thursday: 12 noon, Throat, Nose, and Ear; 2 p.m., Operations. Pathological Demonstration; 3.15 p.m., Medicine. Friday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Surgery. Saturday: 10 a.m., Radiography; 11 a.m., Eye. Special Lectures on Tuesday, 4.30 p.m.; Wednesday, 2.15 p.m.; and Thursday, 4.30 p.m.

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.—Lectures daily (Saturday excepted) at 12 and 4 p.m. Practical laboratory work daily (Saturdays excepted), 10 to 12 a.m. Practical Protozoology, 2 to 3.30 p.m. daily. Advanced Protozoology, 10.30 a.m. to 1 p.m. daily. Medical Clinics, Tuesday and Thursday at 3 p.m. Operations, Friday 3 p.m.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15 p.m., Some Cases of Gastric Disease.

MANCHESTER ROYAL INFIRMARY.—Post-Graduate Demonstration, Tuesday, 4.30 p.m., Demonstration of Cases of Pulmonary Tuberculosis. Friday, 4.30 p.m., Demonstration of Surgical Cases.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Eye. Lectures at 5.15 p.m. each day will be given as follow: Monday, The Selection of Cases for Sanatorium Treatment; Tuesday, Chronic Constipation and the Question of Operative Treatment; Wednesday, Some Points in the Diagnosis and Treatment of Malignant Tumours of Bone; Thursday, Clinical Sphygmometry; Recent Views and Methods.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Friday, 3.30 p.m., Clinical Cases.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics: 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Nose, Throat, and Ear; 3 p.m., Demonstration on Clinical and General Pathology. Tuesday, 2.30 p.m., Operations; Clinics; Surgical, Gynaecological; 3.30 p.m., Medical In-patient; 4.30 p.m.; Special Demonstration of Selected Skin Cases. Wednesday, 2 p.m., Throat Operations; 2.30 p.m., Medical Out-patient; Skin and Eye Clinics; X rays; 3 p.m., Pathological Demonstration; 5.30 p.m., Eye Operations. Thursday, 2 30 p.m., Gynaecological Operations; Clinics: Medical and Surgical Out-patient; 3 p.m., Medical In-patient; 4.30 p.m., Special Demonstration of Selected Medical Cases. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Surgical, Eye; 3 p.m., Medical In-patient; Pathological Demonstration.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, N.E.—Tuesday, 4 p.m. Chronic Surgical Tuberculous Affections.

ROYAL DENTAL HOSPITAL, Leicester Square, W.C.—Tuesday, 6 p.m., The Use and Abuse of Gauze or Wool Dressings in the Treatment of Wounds of the Mouth.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Monday, 4.30 p.m. Pulmonary Tuberculosis in Relation to Life Insurance. Tuesday, 4.30 p.m., General Treatment of Pulmonary Tuberculosis. Thursday, 4.30 p.m., Diagnosis and Treatment of Pulmonary Tuberculosis in Childhood. Friday, 3.30 p.m., Special Clinical Demonstration.

SALFORD ROYAL HOSPITAL.—Tuesday, 4.30 p.m., Chorea and Anaemia.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, 2 p.m.; X Rays, 2 p.m.: and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m; Demonstration of Minor Operations, 11 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Demonstration of Fractures, etc., 10.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Gynaecological Demonstration, 10 a.m.; Lecture, Neurological Cases, 12.15 p.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Lecture, Practical Medicine, 10.30 a.m.; Lecture, Clinical Pathology, 12.15 p m.; Throat, Nose, and Ear, 2 p m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. daily.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
	NOVEMBER.
8 Fri.	City Division, Town Hall, Hackney, 4 p.m.
	Hampstead Division, Central Library, Finchley Road, 8.15 p.m.
	Lincoln Division, Lincoln, 3 p.m.
11 Mon.	Hampstead Division, Special Meeting, Central Library, Finchley Road, 4.30 p.m.
12 Tues.	London: Conference of Representatives of Association with Representatives of Society of Medical Officers of Health.
	Aberdeen Branch, Aberdeen, 3.15 p.m.
	Buckinghamshire Division, Royal Bucks Hospital, 2.30 p.m.; Dinner, 6 p.m.
	Central Division, Birmingham, 3.30 p.m.
	Chichester and Worthing Division, Worthing, 3.15 p.m.
	City Division, St. Bartholomew's Hospital, 4.30 p.m.
	Dartford Division, Dartford, 3 p.m.
	Liverpool Division, Medical Institution, 3.30 p.m.
	Metropolitan Counties Branch Council, 4 p.m.
	Newcastle-on-Tyne Division, Newcastle-on-Tyne, 8.30 p.m.
	North Midland South Connaught Divisions, Tuam, 12 noon.
	Northamptonshire Division, Northampton General Hospital, 2.30 p.m.; Luncheon, 1.30 p.m.
	Shropshire and Mid-Wales Branch, Salop Infirmary, 3.30 p.m.
	Westminster Division, St. James's Vestry Hall, 9 p.m.

Date.	Meetings to be Held.
	NOVEMBER (*continued*).
13 Wed.	London: Central Council, Adjourned Meeting **2 p.m.**
	East Hertfordshire Division, Hertford, 3 p.m.
	Fife Branch, Kirkcaldy, 3 p.m.
	Hereford Division, Hereford, 3.30 p.m.
	Marylebone Division, 11, Chandos Street, W., 5 p.m.
14 Thur.	Altrincham Division, Altrincham, 4.30 p.m.
	Birmingham Branch, Medical Institute, 3.30 p.m.
	South-Eastern Counties Division (Edinburgh Branch), St. Boswells, 3 p.m.
	South-West Essex Division, Leyton, 3.30 p.m.
15 Fri.	West Somerset Branch, Taunton and Somerset Hospital, 3.30 p.m.
19 Tues.	London: **Special Representative Meeting, 10 a.m.,** Connaught Rooms, Great Queen Street, W.C.
20 Wed.	London: **Special Representative Meeting,** Connaught Rooms, Great Queen Street, W.C.
	South Middlesex Division, Twickenham, 8.30 p.m.
27 Wed.	Southern Branch, Southampton, 3 p.m.
28 Thur.	South-West Essex Division, Livingstone College, 4 p.m.
29 Fri.	Birmingham Branch, Pathological and Clinical Section, Medical Institute, 8 p.m.

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Meetings of Branches and Divisions.

ABERDEEN BRANCH:

ABERDEEN DIVISION.

A MEETING of the Aberdeen Division to consider the report of the Council was held in the Medico-Chirurgical Society's Hall, Aberdeen, on November 12th. Dr. THOMAS MILNE, President, occupied the chair, and over one hundred practitioners were present.

The Chancellor's Proposals.—The following resolution was put to the meeting and carried unanimously:

> That after full consideration of the Draft Regulations and the latest proposals of the Chancellor of the Exchequer as contained in his speeches and letters, this Division is of opinion that the medical profession must refuse service under the Act, and holds that negotiations can only be resumed when satisfactory assurances have been received in regard to the following points: (1) Mileage; (2) constitution and powers of the Complaints Committee; (3) abandonment of medical inspection.

Appointments under Insurance Commissioners.—The Division unanimously reaffirmed its resolution with regard to Drs. Cullen and Currie, who accepted appointments at the hands of the Scottish Insurance Commissioners.

BATH AND BRISTOL BRANCH:

BRISTOL DIVISION.

A SPECIAL meeting of this Division was held at Bristol University on November 11th, Dr. JAMES YOUNG in the chair. Invitations had been sent to all practitioners in the area and over 180 were present.

The Chancellor's Proposals.—Various resolutions were passed by the meeting for placing upon the agenda of the Representative Meeting, referring to appeal from Insurance Commissioners, powers of local Medical Committee, right of dispensing, and protection for bona fide certificates, all carried unanimously. The following resolution was also carried unanimously:

> That while regarding the Chancellor's proposals of October 23rd as showing some desire to settlement as regards payment, we consider that the terms of service are of far greater importance, and refuse to take service under the Act unless and until the conditions are so modified as to meet our requirements, which are essential if an effective medical service is to be provided for the beneficiaries under the Act.

The question was then put to the meeting in case of an unqualified Yes or No being demanded at the Representative Meeting. The answer was a unanimous No.

TROWBRIDGE DIVISION.

A MEETING of this Division was held at the Town Hall, Trowbridge, on November 12th, at 3.15 p.m., Dr. SHORLAND (Westbury) in the chair. Twenty-four members were present, and one non-member.

National Insurance.—A protracted discussion took place on the report of Council on the national insurance scheme. Finally, a resolution was moved by Dr. DUPONT, seconded by Dr. ADYE, and carried unanimously:

> That we authorize our Representative to support the opening of negotiations with the object of securing such amendment of the Regulations as may make them acceptable to the profession.

In the event of such resolution not being passed by the Representative Meeting, and a direct vote being taken as between (*a*) and (*b*), the meeting voted on these alternatives as follows: For (*a*) 15, for (*b*) 5, not voting 4.

BIRMINGHAM BRANCH:

CENTRAL DIVISION.

Instructions to Representatives.—At a meeting of the Central and Walsall constituency, held on November 12th, the following resolutions were passed as instructions to Representatives:

That this constituency rejects Mr. Lloyd George's latest offer, and reaffirms its adhesion to the six cardinal points, and refuses to take part in working medical benefit under the National Insurance Act until the six cardinal points are conceded.

The meeting agreed that this was essentially Council's recommendation (5), and agreed that Representatives, if prevented from moving this motion, should support (5).

That until some general scheme of contract or other form of medical service is approved by the Association, the members of the British Medical Association decline, after January 15th, 1913, to undertake or conduct any form of contract practice for non-insured persons, except upon such terms as shall be approved by the Council of the Association.

COVENTRY DIVISION.

A MEETING of this Division was held at the hospital on November 5th. Dr. HAWLEY was in the chair, and thirty-five members were present.

Insurance Act.—After discussion as to whether this Division should or should not accept service under the Insurance Act, it was decided:

That this Division refuse service under the Act.

During the debate it became evident that the conditions of service were considered unsatisfactory, and the following rider was added and carried unanimously as a substantative motion:

If the regulations concerning mileage extras and record-keeping are modified to meet the demands of the profession, this Division would accept the financial offer of the Government.

Defence Fund.—Nineteen members signified their intention of increasing their guarantees to the Defence Fund.

DUDLEY DIVISION.

A MEETING of this Division was held in the Council Chamber, Town Hall, Dudley, on October 31st. Dr. W. KIRKPATRICK was in the chair, and forty-five members and one visitor were present. All practitioners resident in the Division—members and non-members—had been invited.

The late Dr. Arnold Thompson.—On the proposition of the CHAIRMAN, a vote of sympathy with the relatives of the late Dr. Arnold J. Thompson was passed.

Payment of Expenses of Representative.—The CHAIRMAN read a letter from Dr. C. L. Hawkins, Secretary of the Bromsgrove Division, suggesting that the two Divisions should conjointly pay the hotel and other expenses incurred by the Representative in attending the Annual and Special Representative Meetings since the introduction of the National Insurance Bill. It was decided that each practitioner should pay 3s.

Central Defence Fund.—The SECRETARY gave the particulars of the Central Defence (Guarantee) Fund for the Division up to present date. The total amount promised is £951 1s.; forty-five practitioners have guaranteed £20 each, three £10, three £5, one £3, one £2, and one £1 1s.; £55 9s. of this sum had actually been paid.

Club Resignations.—The SECRETARY also reported that on September 29th he had sent in 615 club resignations, received from forty-three practitioners. Two had sent their forms in through the Secretary of the South Staffordshire Division at Wolverhampton, while those belonging to four had not been received.

Insurance Act.—The meeting then considered the National Health Insurance (Medical Benefit) Regulations, 1912, issued by the Commissioners on October 1st, and the speech of the Chancellor of the Exchequer to the Advisory Committee on Wednesday, October 23rd offering new terms to the profession. A long discussion took place, in which part was taken by the CHAIRMAN, Drs. WHITCOMBE, JOHNSON, MASON, DUDLEY, MESSITER, WILKINSON, J. G. BEASLEY, A. FREER, MCMILLAN, GIFFORD, HIGGS, TIBBETTS, and the SECRETARY. Dr. MITCHELL moved and Dr. J. G. BEASLEY seconded a proposition:

That this Division approves of the panel system.

This was put to the meeting and carried unanimously.

Dr. GIFFORD proposed and Dr. MCMILLAN seconded a proposition:

That this Division accepts the offer of 9s. per insured person, the dispensing to be done by the medical practitioner.

Dr. TIBBETTS proposed and Dr. MCQUEEN seconded an amendment:

That we accept the offer of 7s. or more per insured person exclusive of dispensing.

The amendment was put and it was carried with two dissentients. The amendment was then put as the substantive resolution and carried unanimously. The questions of the income limit and dispensing were discussed. Dr. WILKINSON moved and Dr. HIGGS seconded a resolution:

That this meeting is of opinion that the dispensing would best be done by the medical profession.

On being put this resolution was carried unanimously.

Instructions to Representative.—Instructions were given to the Representative to vote at the Special Representative Meeting, to be held in London on November 19th and 20th, in accordance with these resolutions; on other matters it was arranged that he should have a free hand.

WARWICK AND LEAMINGTON DIVISION.

AT a meeting of the practitioners resident in this district, at which thirty-eight were present, it was resolved with one dissentient:

That service should be given provisionally under the Insurance Bill on condition that certain extras, such as mileage and tuberculosis, should receive additional remuneration.

CAMBRIDGE AND HUNTINGDON BRANCH.

A MEETING of this Branch was held at the University Arms Hotel, Cambridge, on November 8th. Dr. TYLER, President, was in the chair, and 120 members and others present.

The Chancellor's Proposals.—The meeting was held for the purpose of considering the Chancellor's latest proposals. The following resolutions were carried:

A. That in the opinion of this meeting the medical profession should refuse any financial offer under the National Insurance Act until the conditions of service are made compatible with the best interests of the insured and of the profession.

That this meeting considers that the conditions of service laid down in the Regulations issued by the Insurance Commissioners, notwithstanding the fresh conditions foreshadowed by Mr. Lloyd George in his speech on October 23rd, are intolerable to medical men, and would destroy the independence of the medical profession.

B. That the members of the Cambridge and Huntingdon Branch of the British Medical Association are willing to accept service under the National Insurance Act under the conditions set out in paragraph 114 of the Report of Council to the Divisions and Representative Body, provided that the following services or conditions are scheduled in the Regulations as not being included in the capitation fee of 6s. 6d.:

I. (*a*) Mileage beyond a two-mile radius.
(*b*) Operations requiring general anaesthesia.
(*c*) Administration of general anaesthetics.
(*d*) Fractures and dislocations.
(*e*) Miscarriages and abortions.
(*f*) Diseases the result of personal misconduct.
(*g*) Night visits and special visits.
(*h*) Special eye work and refractions.
(*i*) Dental work.

II. Any practitioner on the panel shall have the right, if he is prepared to certify that a case demands it, to obtain the services of a specialist, at the patient's home or at an institution, to advise as to the further treatment under the care of the doctor or as to transfer to an accredited institution.

III. In each area or group of areas facilities for:
(*a*) *X*-ray work and treatment.
(*b*) Microscopic examinations, cultures, serums, etc.
(*c*) Chemical analyses.

IV. No insured person shall be entitled to receive *medical benefit* when that person's income exceeds the £3 limit.

C. Any medical man on a panel shall, in return for 2s. per annum for each insured person on his list, have the option of providing for all such insured persons all medicines and dressings necessary for their treatment; but in return for this payment he shall not be bound to provide the following:

Surgical appliances; serums; oxygen; bottles, jars, etc.

D. That a flat rate be adopted for payment of mileage over a two-mile radius.
E. That an endeavour be made to induce the Insurance Commissioners to consider the Isle of Ely and Fen districts generally as "abnormal places" for the purpose of assessing mileage under the Act.

Isle of Ely Division.

A special meeting of this Division was held at the Griffin Hotel, March, on November 5th. Dr. H. C. Meacock presided.

The Chancellor's Proposals. — The Government's proposals were considered. The following resolutions were passed unanimously:

1. That in the opinion of this meeting the medical profession should refuse any financial offer under the National Insurance Act until the conditions of service are made compatible with the best interests and honourable position of the profession.
   That this meeting considers the conditions of service laid down in the Regulations issued by the Insurance Commissioners are intolerable to any self-respecting medical man, and would for ever destroy the independence of the medical profession.
2. That the British Medical Association be requested to reopen negotiations with the Government with the object of securing the six cardinal points.
3. That the Isle of Ely Division are willing to accept a capitation grant of 8s. 6d. clear per insured person, exclusive of tuberculosis and sanatorium benefit.
   That, in return for this 8s. 6d., ordinary medical and surgical treatment and attendance within a radius of two miles will be given, together with the provision of drugs and dressings.
   Such treatment shall, however, *not* include the following:
   Attendance beyond a two-mile radius, confinements, miscarriages, abortions, vaccinations, fractures, dislocations, consultations, anaesthetics, night calls, special certificates other than those to obtain sickness benefit under the Act.
   Reports, medical attendance in consequence of personal misconduct.
   Illness arising from confinements or miscarriages within one month.
   Operations requiring local and general anaesthetics and operative dentistry.
   Cod-liver oil, linseed meal, serums, vaccines, oxygen, surgical appliances, bottles, jars.
   Special examinations—that is, refractions, *x* ray, and bacteriological.
   Examinations, court attendances, etc., under the common law or Workmen's Compensation Act, Employers' Liability, and other statutes.

These terms are subject to the following conditions:

That the Medical Committees have the power to fix the income limit for their own districts in consultations with the local Health Committees.
That adequate provision be made for mileage over two miles, special visits, and night calls.
That no detailed notes of cases be required of the practitioners.
That no Government or lay inspectors be recognized.
That if these extras are not paid for by the Government they shall be recoverable from the insured person.

DORSET AND WEST HANTS BRANCH:

West Dorset Division.

A meeting was held at Dorchester on November 12th, Dr. W. C. Spooner in the chair. There were present fifty-one members, the largest meeting ever held in this Division.

The Chancellor's Proposals.—The following resolution was carried by 43 to 8:

That this meeting is of opinion that the terms now granted are totally inadequate; that the Government has not met the profession on the subject of free choice of doctor, adequate representation or remuneration; but that, as the Government has shown some willingness to meet the profession, it is willing to authorize the State Sickness Insurance Committee to negotiate with the Government, such negotiations to be based upon the different resolutions sent up by the Divisions at the coming Representative Meeting in London.

The following other resolutions were passed:

1. That it is absolutely essential that we have the option of doing our own dispensing.
2. That, if we receive the whole 9s., we will drop the question of mileage.
3. That half the local Insurance Committee be representatives of the medical profession.
4. We object most strongly to inspectors.
5. Abortions and miscarriages must come under the maternity benefit.
6. We object to keeping medical records.
7. No medical attendance for illness due to drunkenness or venereal disease.
8. We are prepared to attend old club people over 70 at the at the same rate as formerly.

EAST ANGLIAN BRANCH:

Mid-Essex Division.

The Chancellor's Proposals.—The following resolutions were carried at a meeting of medical men in the Mid-Essex Division, held at Chelmsford on November 7th:

1. That this meeting refuses to give service under the Act as it stands at present.
2. That this meeting is in favour of reopening negotiations with the Government, using the last offer of the Chancellor as a basis for, if possible, arriving at a settlement; and that our Representative be instructed to vote accordingly.
3. That this meeting supports any scheme that may be brought forward for a Public Medical Service in which the approved societies and the profession are called to a conference to discuss the matter, and that any local Division may proceed in this direction.

Norwich Division.

The Chancellor's Proposals.—The following resolution was adopted at a meeting of this Division:

That the recent offer of the Chancellor of the Exchequer affords the British Medical Association an opportunity of conferring with him and with the Commissioners as to the points on which the demands of the profession have not yet been met.

West Suffolk Division.

A very largely attended meeting of this Division, at which were present other practitioners in the area, was held in Bury St. Edmunds on November 7th.

Insurance Act: Report of Council.—The following resolutions were adopted:

1. That the members of this Division, while appreciating the fact that the Chancellor has partially conceded certain of the demands of the profession, feel that the concessions are insufficient, and the Regulations imposed so unsatisfactory, as to render it impossible for them to take service under the Act, but consider that the Chancellor has so far conceded their demands that the time has now arrived to reopen negotiations.
2. That the question of a Public Medical Service be shelved altogether, any such scheme being, in the opinion of the Division, unworkable.
3. That this Division requests the Council of the Association to take steps to expel from the Association those members who remained on the Advisory Committee in defiance of the terms of their pledge.
4. That in the event of the Council of the British Medical Association being authorized by the Representative Meeting to reopen negotiations with the Chancellor, our Representative be instructed to urge for special consideration of the following points:
   1. Representation on all committees.
   2. Mileage.
   3. Definition of extras and special treatment.
   4. Advisability of any doctor being allowed to dispense.
   5. Clerical work under the Act.
   6. Inspection under the Act.

EDINBURGH BRANCH:

Edinburgh and Leith Division.

The Chancellor's Proposals.—At a very largely attended meeting, held on November 12th, to which all local practitioners had been invited, the following resolution was unanimously and enthusiastically adopted:

After consideration of the Chancellor's statement along with the Provisional Regulations for Medical Benefit, the Division instruct their Representatives to vote "to refuse service under the Act until the irreducible minimum demands of the Association are granted."

GLASGOW AND WEST OF SCOTLAND BRANCH:

Glasgow Eastern Division.

The Chancellor's Proposals.—The following resolutions were adopted at a meeting of the Division for submission to the Representative Meeting:

1. That negotiations with the Government in the National Insurance Act be resumed.
2. In the event of negotiations being reopened—
   (*a*) That the Council be instructed to convey to the Commissioners the opinion of this meeting, that there is too much indirect and too little direct representation on

the local Insurance Committees, and that the British Medical Association must regard as unsatisfactory a medical representation which is not directly responsible to the profession.

(*b*) That it be an instruction to the Council to endeavour to have the Regulations so amended that under no circumstances will it be possible for the Commissioners to remove a registered medical practitioner from the panel.

(*c*) That it be an instruction to the Council to endeavour to have the Regulations so amended that all procedure relating to complaints may be carried out in the strictest privacy.

3. In the event of it being decided not to give service under the Act—

That this Representative Meeting requests the Council to take a postal vote of the whole profession in England, Scotland, and Wales to decide whether they will work or refuse to work the Act under the conditions offered.

LANCASHIRE AND CHESHIRE BRANCH:

BOLTON DIVISION.

The Chancellor's Proposals.—At a meeting of the medical practitioners of Bolton and district held on November 12th, at which sixty of the members of the profession were present, the following resolution was passed, with one dissentient:

That in the opinion of this meeting the conditions of service laid down in the Regulations issued by the Insurance Commissioners are intolerable, notwithstanding the new proposals foreshadowed by Mr. Lloyd George in his speech on October 23rd, and would destroy for ever the independence of the medical profession; therefore, any financial offer under the National Insurance Act should be refused until the conditions of service are made compatible with the best interests and honourable position of the profession.

BURNLEY DIVISION.

Insurance Act Regulations.—At a meeting of this Division held at the Exchange Hotel, Burnley, at which upwards of sixty members of the profession were present, the following resolution was adopted:

That in the opinion of this meeting the conditions of service laid down in the Regulations issued by the Insurance Commissioners are intolerable, notwithstanding the new proposals foreshadowed by Mr. Lloyd George in his speech on October 23rd, and would destroy for ever the independence of the medical profession; therefore, any financial offer under the National Insurance Act should be refused until the conditions of service are made compatible with the best interests and honourable position of the profession.

Another resolution passed unanimously refused service under the Act and the present Regulations.

Instructions to Representative.—The Division also refused to instruct their Representative to consider the recent offer made by the Chancellor of the Exchequer, as affording the British Medical Association an opportunity of conferring with him and with the Commissioners as to the points on which the demands of the profession have not yet been met. The Division also resolved to adhere to the policy of the Association that payment for domiciliary attendance under the sanatorium benefit should be per attendance, and not under capitation, as recently suggested by the Chancellor of the Exchequer.

CHESTER AND CREWE DIVISION.

Insurance Act Regulations.—The following resolution was passed unanimously at a meeting of the Division on November 8th:

That this meeting considers that the conditions of service laid down in the Regulations issued by the Insurance Commissioners are intolerable to any self-respecting medical man, and would destroy for ever the independence of the medical profession; we therefore decline to take service under the present Regulations.

LIVERPOOL DIVISION.

A MEETING of this Division was held on November 12th at the Medical Institution. Dr. N. P. MARSH, Chairman, presided. Both members and non-members of the Association were present. The meeting was large, and representative of the medical profession in Liverpool and district.

Report of Council.—The Report of Council, as published in the JOURNAL for November 2nd, was to be considered, and as Clause 115, relating to service under the National Insurance Act was the most important matter in that report, the Division took it first into discussion. Dr. O'SULLIVAN proposed the following resolution, which was seconded by Mr. DAMER HARRISSON:

That it is the opinion of the members of the Liverpool Division assembled in general meeting that the acceptance of the financial offer made recently to the profession by the Chancellor of the Exchequer would not be consistent with the irreducible minimum sum demanded by the Association, and is associated with regulations inimical to the self-respect and independence of the profession; that the main cardinal points required have not been granted; that the said offer should be declined, and that this meeting should instruct the Representatives of the Division at the forthcoming Representative Meeting to oppose the acceptance of any such offer.

Speeches were made in support of this by Drs. BARNES, J. WALKER, NEVINS, UTTING, and SHAW. Dr. HARVEY proposed as an amendment:

That negotiations be reopened with the Government subject to the following conditions:

(i) That the financial terms offered by the Government be provisionally accepted provided always that there be a specific guarantee that 7s. per insured person for "ordinary" medical attendance, exclusive of medicine, be paid to the doctor *without further deductions*, for each insured person on his list, and 9s. to include drugs where the doctor is allowed to dispense his own medicines.

(ii) That such modifications be made in the Regulations as will make it quite clear that consultations, all surgical operations, except minor surgical operations, all *x*-ray work and ophthalmic work are outside the contract, and laboratory work.

(iii) That a considerable increase of medical representation on the local Insurance Committees be granted.

(iv) That the demand for "returns" of patients treated be withdrawn.

(v) That the terms and conditions of contract be reconsidered at the end of *two* years.

(vi) That the proposed inspection of medical services be withdrawn.

This was seconded by Dr. MCFEELEY. The amendment was opposed by Drs. SHAW and R. T. BAILEY, who drew attention to Leaflet 15 issued by the Insurance Commissioners with regard to their being no income limit for voluntary contributors. Other members having taken part in the discussion, Dr. Harvey's amendment was lost by a large majority. Dr. O'Sullivan's motion then being put to the meeting, it was carried by a large majority, and it was unanimously agreed that the Representatives be instructed to vote for refusal for service under the Act.

MANCHESTER (CENTRAL) DIVISION.

A MEETING of this Division was held at Manchester on November 12th, non-members having been also invited. Dr. BURY was in the chair, and twenty-nine were present.

Provisional Local Medical Committee.—On the proposition of Dr. FERGUSON, seconded by Dr. DONALD, it was resolved unanimously:

That the names of the Chairman (Dr. Bury), the Honorary Secretary (Dr. Tylecote), and Dr. T. A. Helme be forwarded to the Branch Council as suggested representatives on the proposed Administrative County Medical Committee.

Expenses of Representatives.—On the proposition of Dr. DONALD, seconded by Dr. ARNOLD JONES, it was resolved *nemine contradicente:*

That the expenses of Representatives, members of Council, and members of committees appointed from members of the Lancashire and Cheshire Branch should be met by a general voluntary levy on all members of the Branch; and, further, that the rate of payment be one guinea per day.

Sanatorium Benefit.—On the proposition of Dr. HELME, seconded by the CHAIRMAN, it was resolved unanimously:

That Dr. J. Ferguson and Dr. Tylecote be the Representatives of this Division on the Special Subcommittee of the Joint Committee of Manchester and Salford, which is to be formed of representatives of hospitals and of Divisions to act as an advisory committee to the Sanatory Committee in the matter of sanatorium benefit.

Report of Council.—The Report of Council *re* position *re* National Insurance Act was considered, and on the proposition of Dr. T. A. HELME, seconded by Dr. DONALD and supported by Dr. REYNOLDS, it was resolved unanimously to instruct the Representative as follows:

To vote for (*b*) and against (*a*), that is, to vote for refusing service under the Act, and to vote against giving service under the Act under the conditions set out in Paragraph 114 of the Report.

On the proposition of Dr. TYLECOTE, seconded by Dr. MURRAY, the Representative was further instructed as regards the rest of the report to use his own discretion, voting for what he knows to be the wishes of the Division.

The Regulations.—On the proposition of Dr. REYNOLDS, seconded by Dr. FERGUSON, it was resolved unanimously:

That the following resolution be entered as a notice of motion on the agenda of the Special Representative Meeting, and moved by our Representative, Dr. T. A. Helme:

"That in the opinion of the Representative Meeting the conditions of service laid down in the Regulations issued by the Insurance Commissioners are intolerable—notwithstanding the new proposals foreshadowed by Mr. Lloyd George in his speech on October 23rd—and would destroy the independence of the medical profession. Therefore any financial offer under the National Insurance Act should be refused until the conditions of service are made compatible with the best interests and honourable position of the profession."

Public Medical Service Schemes.—A motion that the Representative take no part in any discussion on Public Medical Service schemes having been lost by 8 to 10, it was resolved, on the proposition of Dr. HELME, seconded by Dr. TYLECOTE:

That our Representative be instructed to support the resolutions (*a*) and (*b*) of the Committee of which Dr. Ledward is Honorary Secretary when they are brought forward at the Representative Meeting.

MANCHESTER (NORTH) DIVISION.

A MEETING of the whole profession in the area of this Division was held on November 8th, Dr. FRASER in the chair. Sixty-two medical men were present.

Correspondence. — Correspondence from the Branch Council was read and dealt with as follows: (1) Regarding appointment of Provisional Local Medical Committee for county. Agreed to and referred to Provisional Local Medical Committee of Division. (2) Regarding voluntary levy to pay expenses of Representative, etc. Agreed to.

New Ethical Rules.—Resolutions under new ethical rules were unanimously adopted as under:

1. That in the opinion of this Division no contract should be made for medical attendance upon insured or uninsured persons at any lower rate than—
   (*a*) 8s. 6d. per head per annum exclusive of medicines, appliances, and extras, or
   (*b*) A scale of payment per attendance to be approved by the Division.
2. That no member of the Division shall enter into any contract for medical attendance upon insured or uninsured persons except on such terms as are approved by the Division, and then only through the Provisional Local Medical Committee.

Early Notification of Births Act.—The Early Notification of Births Act was considered but no resolution adopted.

Report of Council.—The following resolutions were adopted and instructions given to the Representative accordingly:

1. That, with all the information before us contained in the Regulations and the Chancellor's latest speech, we adhere to the seven cardinal points without modification.

Unanimous.

2. That this Division refuses to work the Act under the Regulations.

Unanimous.

3. That negotiations must not be reopened till the seven cardinal points are conceded.

This was carried by 50 votes to 12.

Public Medical Service.—Resolutions connected with the Public Medical Service, Scheme D, communicated by Dr. LEDWARD, were approved, and the Representative instructed to vote in favour of them.

Resolutions to be Submitted to Representative Meeting.

The following resolutions have been adopted for submission to the Representative Meeting:

1. That in the light of information available at present the seven cardinal points must be adhered to.
2. That this meeting refuses to work the Act under the Regulations.
3. That negotiations must not be reopened till the seven cardinal points are conceded.
4. That it be an instruction to Council that in any Public Medical Service scheme submitted for approval the inclusion of the principle of co-operation with contributing lay bodies in the administration shall not be ground for the withholding of such approval providing that control of purely professional matters remains with the profession.
5. That in view of the Regulations respecting medical benefit issued by the Commissioners and the recent explanation of the Chancellor of the Exchequer, this Representative Meeting would urge the Divisions seriously to consider again the advisability of adopting a scheme of payment in full for services rendered on a suitable tariff, the risks of insurance to be borne by the Government or contributing lay bodies or both conjointly.

MANCHESTER (SOUTH) DIVISION.

AT a general meeting of this Division held on November 12th, under the presidency of Dr. EDLIN, forty-seven members were present.

The report of the Council on the Insurance Act, the recent statement by the Chancellor, and the Regulations were not criticized in detail, but the Division proceeded at once to the discussion of par. 115 (SUPPLEMENT, BRITISH MEDICAL JOURNAL, November 2nd, p. 489). The CHAIRMAN brought forward the following resolution:

That this Division instructs its Representative to vote in favour of giving service under the Act under the conditions set out in par. 114 of this report.

Drs. WEBB, STOCKS, COTTERILL, HOPKINSON, SARJANT, and BARR spoke to the resolution. Whereupon Dr. SALTER proposed, and Dr. HOLT seconded, the following amendment:

That (*a*) in the opinion of this meeting of the Manchester (South) Division of the British Medical Association the medical profession should refuse any financial offer under the National Insurance Act until the conditions of service are made compatible with the best interests and honourable position of the profession; and (*b*) that this meeting considers the conditions of service laid down in the Regulations issued by the Insurance Commissioners intolerable to any self-respecting medical man, and calculated to destroy for ever the independence of the profession.

The amendment on being put was carried with 4 dissentients, and as a substantive motion with 1 dissentient. The CHAIRMAN then put (*b*) of paragraph 115:

To instruct the Representative to vote against accepting service under the Act.

This was carried with 4 dissentients.

The meeting was absolutely opposed to negotiation by plenipotentiaries.

PRESTON DIVISION.

A MEETING of the members of the medical profession in this Division was held on November 12th. Dr. R. C. BROWN, President, was in the chair, and 73 out of a possible 113 were present.

Report of Council.—The HONORARY SECRETARY read the Council's report, Part C, and the alternative suggestions therein contained. Dr. RIGG advocated firmness, and said that they had put before the Chancellor their absolutely irreducible minimum, and that nothing had happened since July last to cause them to reduce their demands. Dr. LEIGHTON, of Chorley, moved that the offer of the Chancellor be rejected. This was seconded by Dr. SHARPLES and supported by Dr. HADFIELD. Dr. D. W. BROWN, while in agreement with the previous speakers, suggested that it might be advisable to confer with the Chancellor. This was seconded by Dr. FRASER. Dr. PIMLEY drew the attention of the meeting to the fact that the Chancellor would not confer unless their representatives were able to make final arrangements. Drs. MOONEY, RAYNER, SELLERS, and LEA spoke supporting the original resolution. Dr. BROWN'S addition to the resolution, "to confer," was put and four voted for it. The original resolution was then put and carried unanimously with great enthusiasm.

Provisional Local Medical Committee.—Dr. Petyt, of Longton, Dr. Lea, of Chorley, and Dr. Pimley, of Fulwood, were elected to represent the Preston Division on the County Medical Committee (Provisional).

Expenses of Representatives.—It was decided to agree to the resolution passed by the Lancashire and Cheshire Branch that Representatives and members of Council be paid their expenses up to one guinea a day by a voluntary levy on members of the Branch.

Vote of Thanks.—Dr. MOONEY moved a vote of thanks to the Chairman, which was received with acclaim and suitably responded to.

SALFORD DIVISION.

THE Division has instructed its Representative to move the following resolutions at the forthcoming Representative Meeting:

1. That we refuse service under the Act unless and until the Regulations and terms of service are altered to our satisfaction.

2. That special visits and night visits be not included in medical benefit, but should be paid for by the assured, and that any resolutions contrary to the spirit of this resolution be rescinded.
3. That all industrial accidents and diseases shall not be included in medical benefit.
4. That abortions, miscarriages, and diseases due to misconduct be excluded from medical benefit.
5. That the Government be urged to establish a central fund for mileage, not as a deduction from the capitation fee.
6. That either patient or doctor can change at any time.
7. That the cost of modern methods of diagnosis, where such methods entail extra expense, come from the patient, and not from the capitation fee.
8. That the Representative Meeting deeply resents the disloyalty of those members of the Advisory Committee who, disregarding the call of the Association to resign, remained on the Advisory Committee.
9. That no disciplinary regulations be accepted which do not provide for a final appeal to a specially appointed medical tribunal.

METROPOLITAN COUNTIES BRANCH:

CITY DIVISION.

THE most largely attended meeting yet held by the Division took place on November 8th at the Town Hall, Hackney. Nearly a hundred medical men attended, invitations having been sent to the profession throughout the district.

Model Ethical Rules.—The model ethical rules were proposed and adopted.

Insurance Act.—The CHAIRMAN (Dr. David Ross) called upon Dr. MAJOR GREENWOOD, who gave a lucid and exhaustive summary of the present position, the true inwardness of the Chancellor's latest offer, and the report of the Council. After discussion, Clause 115, Sec. (*b*), was put—namely, to refuse service under the Act. This was carried unanimously. In the event of the Representative Meeting passing an adverse decision to this and recommending Clause 115 A, the following riders were approved as instructions to Representatives:

1. That all tuberculosis work shall be kept entirely separate from medical benefit, and shall be paid for on the principle of payment for work done and under no circumstances by capitation.
2. (*a*) That the Regulations shall be remodelled so that all matters of discipline affecting the profession shall be decided by the profession.
   (*b*) Also all complaints against a medical man.
   (*c*) The method of calculating the numbers attended altered and made equitable.
   (*d*) That the amount of payment to the doctor be fixed at whatever it may be, and otherwise made to harmonize with the demands of the profession.
3. That no medical man who has remained on the Advisory Committee in opposition to the wishes of the British Medical Association shall be given any position of authority over medical men.
4. That the 1906 resolution, that no representation of lay persons be allowed on the management of a Public Medical Service, be rescinded.
5. That the dispensing of medicines be retained by the practitioner if he so desires.
6. That the chief tuberculosis officer should not be the whole-time M.O.H.
7. That simple records, certificates, and other reports required by the Commissioners should be clearly defined before work under the Act is commenced, and that the Commissioners shall undertake not to subsequently extend the scope of these requirements without adequate payment.
8. That any medical man may employ a locum tenens during holidays, illness, or temporary absences, and that he may also employ a qualified assistant.
9. That doctors be requested not to consent to serve on any panel until the differences between the Commissioners and the profession are settled as a whole.
10. That the resolutions passed at this meeting be the instructions to the Representatives at the next meeting of the Representative Body.
11. That the Chairman and Secretary be authorized to issue a brief notice to the press of the decisions arrived at by this meeting, and that future policy as to communication to the press be referred to the Executive for consideration and report.

Dr. Evan Jones's Scheme for Attendance upon Clubs.

It was resolved:

That it is the opinion of the City Division that at present our only duty consists of naming conditions and terms upon which we are prepared to attend clubs and societies, and the Division has provisionally decided to adopt the following scheme, subject to the consent of the Association, if the Representative Meeting decides to refuse service under the Act:

Conditions and Terms on which the Medical Profession in the Division will attend Clubs and Societies.

1. Free choice of doctor by the insured or club patient and of patient by doctor.
2. An income limit of £2 a week and a radius of two miles.
3. All arrangements to be made through the local Medical Provisional Committees.
4. A list of doctors willing to act to be drawn up for each borough council area.
5. That the doctors will accept all patients they are now attending upon contract terms upon their future list without examination if the patients so desire, but any new cases applying to go on any doctor's list shall be examined. (This is subject to the £2 limit.)
6. The arrangements made between committees and clubs shall be terminable by not less than three months' notice on either side.
7. Any complaints to be made to the secretary of the Divisional Provisional Committee, which undertakes to deal with them in a fair spirit.
8. The remuneration shall be (*a*) a capitation payment for ordinary attendance as given in the past of 9s. (or 9s. 6d.), including medicine and dressings, such capitation fee shall not include the items mentioned in Clause 23 of Service A (see SUPPLEMENT of September 14th, 1912) and the fees therein mentioned shall be payable in addition; or (*b*) payment for work done in accordance with the scale in Scheme B, Clause 24, and the extras as stated in Clause 23.
9. Each society shall supply at the commencement of each quarter a list in duplicate of the members it wishes each doctor to attend, and this list can be corrected on the first day of each of the succeeding two months; and at the end of the quarter the amount due to the doctors shall be paid to the treasurer of the local Medical Provisional Committee, together with any fees due for extras, an account for which shall be rendered monthly or quarterly as arranged.

EALING DIVISION.

AT the meeting of this Division on November 13th, attended by fifty-two members, a resolution was unanimously adopted instructing the Representative of the Division to record his vote at the Representative Meeting for an absolute refusal to work the Act until the whole of the cardinal points are conceded in the regulations.

EAST HERTFORDSHIRE DIVISION.

A MEETING of this Division, to which all practitioners resident within the area were invited, was held at the Shire Hall, Hertford, on November 13th. Dr. A. J. BOYD was in the chair, and thirty-three members and four non-members were present.

The following resolutions were passed:

That in the opinion of this Division the financial provision contained in the latest offer of the Chancellor of the Exchequer is inadequate and cannot be accepted.

That this Division instructs its Representative to support and if necessary to move:

That this Representative Meeting direct the Council to inform the Commissioners that the Association, whilst adhering to its minimum demands as formulated in the letter of February 29th, 1912, is prepared to appoint representatives with power to negotiate on the basis of payment in full for services rendered under a system in which the medical practitioner is not required to undertake the risks of insurance.

FINCHLEY AND HENDON DIVISION.

AT a meeting of this Division on November 8th, to which all practitioners in the area were invited, the following resolution was passed unanimously:

That in the opinion of this meeting the Regulations issued by the Insurance Commissioners and the latest proposals of the Chancellor of the Exchequer, although they afford an opportunity for further negotiations, are such that the medical profession should decline to take service under the Act and Regulations as at present constituted.

GREENWICH AND DEPTFORD DIVISION.

AT the inaugural meeting of this Division the following resolution was unanimously adopted:

That this meeting of the Greenwich and Deptford Division is of opinion that negotiations should again be opened and conducted with the Government, with a view of obtaining further concessions, namely:

1. Dispensings or drugs to be supplied by the practitioner for his own patients.
2. Remuneration of 9s. per head per insured person.
3. Regulations of the Commissioners to be framed so as to allow individual members of the profession to work the Act without any sacrifice of self-respect.

Hampstead Division.

A meeting of this Division was held on November 8th at the Central Library, Finchley Road. Mr. E. E. Ware was in the chair, and seventeen members and visitors were present.

Correspondence.—Correspondence with the Medical Secretary with reference to the adoption of model ethical rules was read. Also a communication from the Central Organization Committee enclosing proposed list of constituencies for the year 1913–14.

Public Medical Service.—A communication was read from the Honorary Secretaries of the Branch enclosing recommendations to Divisions to form a Public Medical Service forthwith. This was referred to the Provisional Medical Committee.

Special Representative Meeting.—Letters were read from the Medical Secretary with reference to the Special Representative Meeting on November 19th and 20th. It was decided that the appointment of Deputy Representative be considered at the special meeting of the Division on Monday, November 11th.

Various Communications.—A letter from the news editor, *Morning Post*, was read, and thereupon Dr. Glover moved, Dr. Pritchard seconded, and it was carried unanimously:

That the decision of the special meeting next Monday be sent for publication to the *Morning Post* and to the Central News Agency or to the Press Association.

Communications have been received from the City Division and from Dr. Ledward upon public medical service schemes, and were referred to the Provisional Medical Committee.

There were also received (1) a circular letter and pamphlet from the remaining members of the Advisory Committee, (2) a statement from Dr. E. R. Fothergill, (3) a circular letter and criticism from the National Medical Union, and (4) a report from the Bristol Provisional Medical Committee, all having reference to the regulations for medical benefit and the new proposals from the Government.

Paper.—Mr. D'Arcy Power read a very interesting paper upon recent progress in connexion with syphilis. After a general discussion and reply by Mr. Power, a very hearty vote of thanks was accorded to him.

The meeting terminated at 9.45 p.m.

A special meeting of the Hampstead Division was held on Monday, November 11th, at 4.30 p.m., at the Central Library, Finchley Road. Mr. E. E. Ware was in the chair. Non-members of the Association had been invited to attend, and over forty-eight practitioners attended.

Correspondence.—The Honorary Secretary read a letter from Dr. Winslow Hall giving notice of motion; and from the Medical Secretary a confidential communication upon the condition of the Central Defence Fund.

Central Defence Fund.—Mr. Oppenheimer moved, and Dr. Coode Adams seconded:

That the Representative be instructed to move that this Representative Meeting instructs the Council to separate the administration from the compensation fund.

This was carried by 21 votes to 2.

Report of Council.—Upon the motion from the Chair, it was agreed to consider parts B and C of the Council's report before part A.

Deputy Representative.—Dr. Oakley was first proposed as Deputy Representative at the Representative Meeting, but withdrew in favour of Mr. Ware, who consented to act.

Instruction to Representative.—Dr. Winslow Hall moved and Dr. Dewar seconded:

That the Hampstead Division desires to give service under the Act under the conditions set out in paragraph 114 of the Council's Report.

The motion was lost by 6 votes to 38. Dr. Major Greenwood attended and spoke against the motion. A motion:

That the Representative be given a free hand,

was moved by Dr. Oppenheimer and seconded by Dr. Sharman, whereupon an amendment by Dr. Baron, seconded by Dr. Pritchard—

That the Representative be instructed to refuse service under the Act as it stands—

was carried by 29 to 9. Upon the amendment becoming the substantive motion, Dr. Oppenheimer moved an amendment, which was seconded by Dr. Pidcock:

That the motion read "to refuse service under the Act under the conditions set out in paragraph 114 of the Council's report."

The amendment was lost by 16 to 19. The substantive motion was carried by 32 to 4. Dr. Ford Anderson moved and Mr. Dorrell seconded:

That after careful consideration of the Chancellor's statement of October 23rd and the provisional regulations of the Insurance Commissioners, taken in conjunction with the medical provisions of the National Insurance Act, the Hampstead Division considers that to accept the Chancellor's offer and take service under the Act would be to undertake an inefficient service, to sell the freedom and degrade the status of the profession.

This was put to the whole meeting and carried with only four dissentients. Upon Part A of the Council's Report, Dr. Pritchard moved and Dr. Barnett seconded:

That the Representative be given a free hand with regard to any question that may arise.

This was carried *nemine contradicente*.

Harrow Division.

A meeting of this Division, to which every practitioner within the area of the Division was invited, was held in the Gayton Rooms, Harrow, on November 7th. Dr. Williams was in the chair, and thirty-six practitioners were present.

Report of Council.

The paragraphs to which the attention of Divisions was in particular drawn were considered and the Representative instructed thereon.

The Chairman opened the discussion on the present position of the medical profession in relation to the National Insurance Act, analysing the new offer made by Mr. Lloyd George in his speech on October 23rd.

After discussion, in which many members took part, resolution (*a*) of the Council was put from the Chair. The following amendment was then proposed by Dr. Pennefather and seconded by Dr. Locke:

That our Representative be instructed to support a resolution to reopen negotiations with the Commissioners, on the distinct understanding that the capitation fee now offered shall only entitle the insured person to ordinary medical and surgical treatment similar to that given in the past on contract practice rates, and to the necessary certificates entitling him to claim sick benefit under the Act.

On a vote being taken, this was declared to be a tie, 16 votes being cast either way; the Chairman gave his casting vote in favour of the amendment, which was therefore carried.

Whereupon the following amendment was proposed by Mr. Armit and seconded by Dr. Hildesheim:

To reopen negotiations with the Commissioners with a view to obtaining further concessions.

This was lost by a large majority.

The original amendment was then put as a substantive amendment and carried *nemine contradicente*.

The following resolution was proposed by Dr. Pennefather and seconded by Dr. Churchill:

That our Representative be instructed to support a resolution to refuse service under the Act, on the conditions and terms as defined in the Regulations and by the Chancellor of the Exchequer in his speech on October 23rd, 1912.

This was carried by 32 votes to 2.

The Representative was further authorized to vote for the resolution before the Representative Meeting most nearly corresponding to the wishes expressed at this meeting of the Division, should the above resolutions be lost, or other resolutions expressing a similar opinion be carried previously.

Special Committee for Administration of Medical Benefit.—Dr. Williams proposed, Dr. Pennefather seconded, and it was carried:

That the Council be instructed to press for an amendment to the Act, so that the decision of those questions on which the local Medical Committee are to be consulted as provided in Regulations R 6 (1), R 8, R 13 (2), and R 40, shall not be left to the local Insurance Committees, but shall be decided by a Special Committee. The composition and mode of election of this Special Committee to be similar to the composition and mode of election of the Committee of Complaints, R 48 (2).

Dispensing.—Dr. Williams proposed, Dr. Churchill seconded, and it was carried:

That the Council be instructed to press that dispensing should be done or arranged for by the medical practitioner for his own patients should he so desire.

Report of Proceedings to Lay Press.—Dr. GODDARD proposed, Dr. CHURCHILL seconded, and it was carried:

That a copy of the Chairman's opening speech be sent to the lay press.

After discussion it was resolved that no report of the remainder of the business and resolutions carried should be furnished to the press.

OLD LAMBETH DIVISION.

A MEETING was held at the Camberwell Town Hall on November 7th. Dr. CAPES was in the chair; 140 members and 23 visitors were present.

Insurance Act: Report of Council.—The object of the meeting was to consider the Report of the Council and to instruct the Representatives how to vote at the Representative Meeting to be held on November 19th. After a few opening remarks the CHAIRMAN called upon the Honorary Secretary to read the correspondence which passed between the State Sickness Insurance Committee and the Chancellor of the Exchequer as regards the Regulations relating to medical benefit taken in conjunction with the statement of the Chancellor made to the Advisory Committee, as published in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL of November 9th. Dr. RICHMOND then proposed and Dr. DENNING seconded:

That the Representatives be instructed to vote for giving service under the Act under the conditions set out in paragraph 114 of the Report of Council.

Dr. PARTRIDGE proposed the following amendment:

That the Representatives vote for refusing work under the Act.

Dr. MACKEITH seconded. Messrs. COWIE, NORTON, PRESTON LEWIS, FRASER, DUNCAN SMYTH, and WARD spoke against the amendment. On being put to the vote, the amendment was declared lost. Dr. BATTEN then proposed as an amendment:

That we instruct our Representatives to vote for accepting service under the Act, if after further negotiations the Association obtain in the main their demands made on the six cardinal points.

Dr. ESLER seconded; and on being put to the vote the amendment was declared carried, and again as a substantive motion.

Vote of Thanks.—The meeting terminated with a hearty vote of thanks to the Borough Council for the use of the Town Hall.

MARYLEBONE DIVISION.

A MEETING of the Marylebone Division was held on November 13th, when Mr. CHARLES RYALL moved and Dr. F. J. SMITH seconded:

To instruct the Representatives to refuse service under the Act.

Dr. LAURISTON SHAW moved and Dr. C. O. HAWTHORNE seconded:

That the Representatives be instructed to move:
That the Special Representative Meeting do appoint five members with authority to endeavour to come to final terms with the Government and the Commissioners as to remuneration and regulations, and, if terms are agreed, they be immediately reported to the local Medical Committees with an intimation that any committee entering into an agreement with an Insurance Committee should make such terms the basis of negotiations, and should submit the actual terms of local agreement to the Council of the Association before final ratification.

The amendment was lost. The proposer and seconder accepted the proposal of Mr. BISHOP HARMAN that the words "on terms as at present offered" should be added, and the following motion was carried by 53 votes to 5:

To instruct the Representatives to refuse service under the Act on terms as at present offered.

NORTH MIDDLESEX DIVISION.

THE following resolution has been adopted:

That the Representative Body be instructed to appoint a small committee with plenary powers to reopen negotiations with the Chancellor of the Exchequer to secure juster terms in respect of the conditions of service under the Insurance Act having regard to the remuneration offered.

ST. PANCRAS AND ISLINGTON DIVISION.

A MEETING was held at the Midland Grand Hotel, King's Cross, on November 8th.

Work of State Sickness Insurance Committee and Council.—The CHAIRMAN (Dr. R. M. Beaton) gave an outline of the work accomplished by the State Sickness Insurance Committee and the Council since the Representative Meeting in Liverpool. The result of their very arduous work was summarized. He also called attention to the Council's report and the duty of the Divisions to accept or reject the Government proposals in their latest form. He suggested that the discussion of the Public Medical Service question, adjourned from the last meeting, should again stand over, and that the Provisional Medical Committee should deal thoroughly with the matter and report to the Division.

This course was approved.

Council's Report.

Dr. B. G. MORISON moved the adoption of the alternative (*b*) in Section 115 of the Council's Report—that is, rejection of the proposals. Now if ever they should be decided, and countenance no middle course. They had seven well-considered cardinal points, which they had declared to constitute an irreducible minimum, and these for the most part had not been conceded, as was shown by a detailed examination. The Chancellor's offers were only propositions whose fulfilment could not be guaranteed. The Government might not be in office for the fair reconsideration in three years' time, which had been promised.

Dr. GLAISTER formally seconded.

Dr. SHOYER held that to give up the cardinal points would be to betray many men who entirely objected to contract practice, and who agreed to the British Medical Association policy on condition that their points should be insisted upon.

Dr. TURNER spoke strongly in favour of maintaining professional freedom.

Dr. MALCOLM suggested a strengthening of the resolution, which was agreed to.

Dr. SHERRY thought the terms suggested, though not satisfactory, were certainly improved, and favoured a middle course.

Dr. CONSTANCE LONG sounded a note of warning. She drew attention to the extremely unsatisfactory nature of the sanatorium benefit proposals, but felt that the decision now in issue was a most serious one, and was grateful to Dr. Sherry for voicing the opinion of the minority.

Dr. MITCHINSON recalled concerted action taken by medical students many years ago for the improvement of the status of naval surgeons, and crowned with success, as a happy augury of what might be accomplished by an organized profession such as they were to-day.

Dr. WICKHAM favoured a middle course.

Dr. MORLEY thought the present offer, considered as a whole, was in no sense an improvement. He suggested an improved wording of the motion, and his suggestion was adopted by the mover and seconder.

The CHAIRMAN, in summing up the discussion, said that, on the ground of completeness, it might have been wiser for the Council to have given the Representative Meeting an opportunity of considering the advisability of a middle course. The Council, however, thought otherwise, and sent down the alternatives (*a*) to accept service, (*b*) to reject. After serious consideration he had come to the conclusion that the recent offer of the Chancellor did not improve matters financially and that the Regulations imposed several impossible conditions. He therefore advised the Division to vote for the rejection of the new proposals of the Government. Drs. Major Greenwood and Evan Jones, as visitors from the City Division, were then invited to address the meeting.

Dr. MAJOR GREENWOOD said that his message from the City was "Reject." The terms offered were better than those of the Insurance Bill as first introduced, thanks to the British Medical Association, but they were in no degree improved since the Representative Meeting at Liverpool.

Dr. EVAN JONES said that the latest offer was an actual loss. He did not fear the threat of a State Medical Service. Apart from the expense, it was inconceivable to any one who had watched the response to the request for club

resignations that a sufficient number of men to work such a service would go back upon their pledge. Their only duty now was to refuse the offer.

Dr. Lynch spoke in favour of Dr. Sherry's amendment, which was then put. The amendment was an instruction to reopen negotiations with the Government with a view to a settlement, and 14 voted for it, 84 against. There were also 4 non-members of the Division in favour of the amendment.

The motion was then put, and carried by a large majority. It stated:

That in the opinion of this meeting the Regulations issued by the Insurance Commissioners, and the latest proposals of the Chancellor of the Exchequer, are unworkable, derogatory to the profession, and a danger to the public health. As a consequence, the medical profession declines to undertake service under the Act and the Regulations as at present constituted.

Election of Representative.—A hearty vote of thanks to Dr. Griffith, who had moved into the Marylebone Division, was passed, and Dr. Alexander Brown was unanimously elected to act as Representative of the Division in his stead.

Dr. Griffith moved that the Representative be given authority to bring forward, in the unfortunate event of Recommendation (*a*) being carried at the Representative Meeting, such amendments as might seem to them desirable to modify its effect. This was agreed to.

The Chairman asked the approval of the meeting for two other motions to the Representative Meeting—one dealing with a public propaganda, and the other opposing the appointment of inspectors—and this was given.

Vote of Thanks.—A vote of thanks to the Chairman terminated the proceedings.

Westminster Division.

A meeting of the Westminster Division was held on November 12th, Dr. Archer in the chair.

There was a very large attendance of members and non-members, the meeting being a record one in the annals of the Division. Dr. Haslip proposed as an amendment to alternative (*b*) of paragraph 115 of the Report of Council that a basis for negotiation with the Commissioners be found. This was seconded by Dr. Hilliard, but after some discussion was withdrawn. Dr. Dauber then proposed that the profession refuse to work the Act; this was seconded by Dr. O'Connor. After some discussion Dr. Cope proposed as an amendment that "negotiations be continued"; this was seconded by Dr. Kennard. After discussion it was put to the meeting and 9 voted for it.

The motion was then put, and 52 voted for it and 8 against it. The motion was declared carried.

Willesden Division.

A special meeting of the Division was held at the Huddleston Hall, Willesden Green, on November 7th. Dr. Coram James took the chair, and thirty-nine members and eight non-members were present.

Report of Council: Instructions to Representative.—The Representative was instructed to support the sense of paragraphs 12 and 20 of the Report of the Council. Paragraph 115 was then discussed. Dr. Carson Smyth proposed and Dr. Smurthwaite seconded:

That this Division refuse to work the Act under the terms stated by Mr. Lloyd George in his speech to the Commissioners on October 23rd.

An amendment was proposed by Dr. Skene and seconded by Dr. Lock:

That our Representative be instructed that if, in the opinion of the Representative Meeting, the organization of the profession be sufficiently strong, we then refuse to work the Act.

After some discussion the amendment was, with the permission of the meeting, withdrawn. Dr. Armitage proposed and Dr. Smurthwaite seconded:

That the following words be added to the original resolution: "And will so refuse until the seven cardinal points are granted."

This was carried *nemine contradicente*. Dr. Crone proposed and Dr. Anderson Smith seconded an amendment to leave out all words after "Division" and add:

Resolves to give service under the Act under the conditions set out in paragraph 114 of the Report.

After discussion this was withdrawn. The original resolution as amended was then put to the meeting and carried by 32 votes to 2, the result being received with applause. Dr. Soden proposed and Dr. Armitage seconded:

That our Representative be instructed that this Division refuse to work the tuberculosis benefit on the 6d. capitation basis.

This was carried unanimously. Dr. Soden proposed and Dr. Stocker seconded:

That in the event of the recommendation of some form of public medical service the profession will welcome the co-operation of the approved societies consistent with the seven cardinal points.

This was carried by 19 votes to 2. On other points not discussed the Representative was instructed to vote in accordance with the general trend of opinion of the Division as evidenced in the discussions which had taken place.

MIDLAND BRANCH:

Boston and Spalding Division.

A special meeting was held at the White Hart Hotel, Boston, on November 8th. Dr. White presided, and thirty-one members and one non-member were present.

Insurance Act: The Chancellor's Offer.—The Chairman reviewed briefly the offer and its bearing on the medical part of the National Insurance Act. He thought it extremely difficult to work any wage limit, and was in favour of accepting the offer if certain extras could be excluded from the capitation fee. After a lengthy discussion, in which Drs. South, Munro, Wallace, Jacobsen, Power, Miller, Sweeten, Collins, Gilpin, Wrinch, and the Secretary took part, Dr. Mason proposed and Dr. R. Tuxford seconded:

That the six cardinal points (including 8s. 6d. a head without drugs and extras) be insisted upon, and negotiations be resumed with the Government.

Dr. South proposed and Dr. Benson seconded:

That the offer of 7s. a head be accepted with extras—wage limit £2.

The extras demanded are miscarriages and abortions, night calls 8 p.m. to 8 a.m., mileage 1s. a mile *out* beyond three miles, modern methods of diagnosis requiring specialists' apparatus, vaccines and serum, operations requiring general anaesthetics, administration of general anaesthetics. Fifteen voted for Dr. South's amendment and sixteen for Dr. Mason's resolution. The Division of opinion being so equal, the Secretary read out the resolutions adopted by the Isle of Ely Division, and Dr. Collins proposed, and Dr. Rendall seconded, that No. 1 and 2 be passed. They read as follows:

1. (*a*) That the medical profession do refuse any financial offer under the National Insurance Act until the conditions of service are made compatible with the best interests and the honourable position of the profession.
   (*b*) That the conditions of the service laid down in the Regulations issued by the Commissioners are intolerable to any self-respecting medical men, and would destroy the independence of the profession.
2. That this meeting is agreed in suggesting that the British Medical Association should reopen negotiations with the Government with a view to obtaining the six cardinal points.

This was carried unanimously.

A report of the meeting with the Representatives from Kesteven was read, showing great unanimity of opinion in all matters relating to the attitude to be adopted to the National Insurance Act.

Formation of Division for the Kesteven Area.—The Secretary read a letter from the Medical Secretary which said that the Organization Committee would not oppose its formation so long as it was desired by the men residing in the Kesteven Division, and that the area conformed to one of the "insurance" areas. This being the case, the Secretary proposed and Dr. Miller seconded:

That the Boston and Spalding Division put no obstacle in the way of the formation of a Kesteven Division of the British Medical Association.

Dr. Gilpin spoke in support of it. The resolution was carried *nemine contradicente*.

Delegates on Holland Insurance Subcommittee (Sanatorium Benefit).—The Secretary explained the necessity for appointing Drs. Husband and White before a general meeting, so that the Insurance Subcommittee could proceed with its work. Dr. Miller proposed and Dr. Collins seconded that this be confirmed. This was carried *nemine contradicente.*

Scheme for Administration of Sanatorium Benefit in Holland Division.—This was read by the Secretary, who reported that it had received the approval of the Medical Secretary. It was unanimously passed.

Provisional Medical Committee for Holland, Kesteven, and Lindsey.—Those for Kesteven and Lindsey being already appointed, it only remained to elect one for Holland. The Secretary pointed out that this closed the existence of a Provisional Medical Committee for the whole Division, it having been agreed in Committee that this course was wisest and best for dealing with the Insurance Committees. The following Committee was then elected: Dr. South (Chairman), Dr. White (Vice-Chairman), Dr. Wilson (Secretary), Drs. Barrett, Mason, Pilcher, W. A. Smith, R. Tuxford, Witham, and Wrinch, with power to add to their number.

Fees for Juvenile Clubs.—Dr. Collins gave notice of a resolution he should move at the next meeting with reference to the fees to be demanded from juvenile clubs.

Tea. — Nineteen gentlemen had tea in the hotel afterwards.

Derbyshire Division.

A special general meeting of the Division was held at the Derbyshire Royal Infirmary on November 8th. Mr. E. Collier Green was in the chair, and there was a very representative meeting of over seventy members and non-members.

Model Ethical Rules.—The Model Ethical Rules for a Division not in itself a Branch were proposed and adopted.

Report of Council.—The Report of Council and the alternatives (*a*) and (*b*) with which the report concluded were then fully considered. It was proposed by Dr. Macdonald (Crich) and seconded by Dr. Sims (Derby):

> That negotiations be entered into with the Government on the basis of the statement of the Chancellor of the Exchequer on October 23rd, provided that (1) the conditions in paragraph 114 of the Council's report be carried out; (2) the right of dispensing by the doctors, when desired, be conceded; and (3) the records asked for be simple and brief.

Dr. Roberts (Swadlincote) proposed and Dr. Vaudrey (Derby) seconded:

> That service under the Act should still be refused.

On the suggestion of Dr. Dawson (Derby) the amendment was altered to read:

> That this meeting considers that the conditions of service laid down in the Regulations issued by the Insurance Commissioners, notwithstanding the fresh conditions foreshadowed by Mr. Lloyd George in his speech of October 23rd, are not acceptable to the medical profession, and would destroy for ever its independence.

There followed a full and free discussion of the question, the trend of the discussion showing, first, that the meeting objected to the Regulations as understood at present; secondly that, given acceptable Regulations, the question of the remuneration should not now prevent doctors from accepting service under the Act. The amendment was then put, and rejected by a majority. It was then pointed out by the Chairman that, for the information of the Representative, it was advisable to take a vote on the two alternatives (*a*) and (*b*). This was done, and the first one (*a*) was passed with some dissentients.

The late Dr. Pope.—Before the meeting separated, a sincere vote of condolence with Mrs. Pope, of Leicester, was passed by all present standing. Dr. Pope had acted for a long time as representative of the Midland Branch on the Council of the Association, and had whole-heartedly devoted his energies and much of his time to furthering the interests of the Association and the medical profession.

Nottingham Division.

A meeting of the Nottingham Division, to which all practitioners in the city and county were invited, was held on November 12th. Dr. F. H. Jacob presided, and over 150 practitioners were present. After a statement by the Chairman on the position under the Act, Dr. J. H. Johnston moved the following resolution, which was seconded by Dr. Stallard:

> That this meeting is unable to accept the latest offer of the Chancellor of the Exchequer, because it fails to concede the six cardinal points and imposes intolerable conditions on the profession.

Dr. T. Davies Pryce moved the following amendment, which was seconded by Dr. E. Snell:

> That the members of the Nottingham Division of the British Medical Association accept service under the National Insurance Act in accordance with the terms offered by the Chancellor of the Exchequer, provided the following modifications and conditions be centrally granted:
>
> 1. An absolute guarantee of remuneration at a minimum rate of 7s. per head, exclusive of medicines.
> 2. Strict regulations as to late calls and night visits; the right of the practitioner to charge a small fee in such cases.
> 3. An extra fee to be forthcoming when the distance exceeds three miles.
> 4. No medical or lay inspection can be accepted other than an annual or biannual one for the purpose of obtaining statistical information.
> 5. The records of cases to be of the simplest possible form.
> 6. The right of an appeal in the law courts against any decision of the Insurance Commissioners which involves the loss of position on the panel.
> 7. That the following services shall not be included in the capitation grant of 7s.
>
> (*a*) Administration of general anaesthetics.
> (*b*) Attendance upon abortions, miscarriages, and venereal diseases.
> (*c*) The supply of serums, antitoxin, tuberculin, and other special preparations.
> (*d*) The employment of diagnostic methods, such as *x* rays, Widal and Wassermann reactions.

A discussion followed, in which the following took part: Drs. Montague, P. E. Tresidder, Blurton, Kinmont, Houfton, Ringrose, J. H. Thompson, Hunter, Kirkwood, Fulton, and Mr. K. Black. Dr. Mutch moved as an amendment:

> That the profession approve of negotiations being resumed,

and suggested that it be left in the hands of the Council of the Association to negotiate concerning the conditions of service. Dr. Blurton seconded the amendment, which was put and carried. Dr. Christie Reid moved and Dr. Hunter seconded the following, which was carried unanimously:

> That the profession refuse to serve under the Act on the present conditions offered by the Chancellor of the Exchequer.

NORTH OF ENGLAND BRANCH:

Darlington Division.

A meeting of the medical men practising in the Northallerton and Wensleydale districts of this Division was held at Northallerton on Monday, November 11th, seventeen being present.

Insurance Act and Regulations.—After a full discussion of the terms and conditions of the Insurance Act and the Regulations, the following resolution was passed by 16 votes to 1:

> In the opinion of this meeting the Regulations of the Commissioners and the latest proposals of the Chancellor of the Exchequer are unworkable and most derogatory to the medical profession. In consequence we decline to undertake any service under the Insurance Act and the Regulations as they stand at present.

Gateshead and Consett Division.

This Division has instructed its Representative to move at the Representative Meeting as follows:

1. That this Representative Meeting, though realizing that the cardinal points of the British Medical Association have only in part been granted, is of opinion that the terms now offered in the Regulations, the speech of the Chancellor of the Exchequer, and his subsequent letter, form a basis for negotiation, and that this meeting therefore elects a State Sickness Insurance Committee with general powers and a small Special Committee with full powers, the latter committee to meet the Government or the Commissioners and negotiate a settlement.
2. That this Representative Meeting of the British Medical Association instructs the special committee for negotiations to impress upon the Government and Commissioners the necessity of creating a central mileage fund to provide, by grants or otherwise, adequate remuneration for doctors

giving medical attendance to injured persons outside an agreed upon radius in thinly populated and scattered districts; this mileage fund to be separate from and over and above the remuneration already offered.

NEWCASTLE-UPON-TYNE DIVISION.

A MEETING of the Newcastle-upon-Tyne Division was held at the Royal Victoria Infirmary, Newcastle-upon-Tyne, on November 12th, at 8.30 p.m. Dr. ANDREW SMITH, senior, was in the chair, and there were ninety-nine members of the profession present. The following resolutions were carried:

Report of Council:

That it be an instruction to our Representatives that they be empowered to continue negotiations *re* National Insurance Act.

Carried by 45 to 16.

That we instruct our Representatives not to press the national wage limit, while reserving the point for negotiation if necessary.

Carried by 40 to 20.

That the medical benefits to be rendered for the capitation fee of 7s. offered by the Chancellor be confined to the ordinary attendance during the usual hours of a day service, and that all extras, such as mileage, anaesthetics, night visits, and operations, be recoverable from the patient.

Carried, only 1 voting against.

Professional Discipline:

That no doctor can be put off the panel so long as his name is on the *Medical Register*.

Carried by 22 to 16.

That the Representatives be empowered to propose the formation of a committee with full powers to negotiate with the Chancellor and the Commissioners.

Carried by 15 votes to 8.

NORTH LANCASHIRE AND SOUTH WESTMORLAND BRANCH:

FURNESS DIVISION.

A LARGELY-ATTENDED and enthusiastic meeting was held on November 12th. Dr. SANSOM was in the chair.

Resignation of Honorary Secretary.—The SECRETARY (Dr. Livingston) resigned, as he had been appointed co-Secretary of the Branch. The meeting appointed Dr. Thomson as co-Secretary with Dr. Livingston till the annual meeting.

Letter from Medical Secretary.—A letter from Dr. Cox to the Secretary, indicating the lines on which the Government might go if they refused service, was read at the commencement of the meeting.

Report of Council.—Dr. SANSOM, in opening the discussion, said they were now to decide what they were going to do, with a knowledge of the weaknesses that might exist and the power behind the Government. There was no doubt that the terms at present could not be accepted without modification, even if they admitted that in some industrial centres like Barrow the Act might be worked with profit. A long discussion followed, members being all agreed that the conditions were not such as we could accept. Dr. JOHNSTON proposed and Dr. CALLAGHAN seconded the Manchester resolution, which is as follows:

That in the opinion of this meeting the conditions of service laid down in the Regulations issued by the Insurance Commissioners are intolerable, notwithstanding the new proposals foreshadowed by Mr. Lloyd George in his speech on October 23rd, and would destroy for ever the independence of the medical profession. Therefore any financial offer made under the National Insurance Act should be refused until the conditions of service are made compatible with the best interests and honourable position of the medical profession.

Dr. COOK proposed and Dr. CARMICHAEL seconded the following amendment:

To consider the recent offer made by the Chancellor of the Exchequer, which affords the British Medical Association an opportunity of conferring with him and with the Commissioners as to the points on which the demands of the profession have not yet been met. (SUPPLEMENT, November 9th, p. 500.)

This amendment was lost.

Instruction to the Representative.—The SECRETARY (Dr. Livingston) then proposed, and Dr. BOWMAN seconded, the following resolution, which was carried:

To refuse service under the Act as it stands at present; but we give our Representative power to vote for negotiation, if at the Representative Meeting he considers that negotiation is desirable.

The Representative was so instructed. This was the finding of the meeting. It was felt that though they would refuse service, Dr. Daniel (Representative) should be allowed discretionary powers, should he find that it was in our interests to negotiate; but the feeling was that negotiations should not go beyond a strictly limited point. In the discussion Dr. DANIEL reviewed the situation, and intimated that he would prefer to have a certain amount of freedom. Dr. THOMPSON was strong in favour of Dr. Johnston's resolution. Dr. JOHNSTON was emphatic in condemning the conditions of service. The majority of those present spoke.

Tuberculosis Treatment.—The local Committee having declined the offer made by the Provisional Medical Subcommittee, it was decided not to work at the British Medical Association minimum rate.

NORTH WALES BRANCH:

DENBIGH AND FLINT DIVISION.

AT a meeting of the medical practitioners residing within the area of the Division, held at Chester on November 8th, the following resolution was passed:

That we agree to give service under the Act under the conditions set out in paragraph 114 of the report of Council, and that the Representative of the Division be so instructed.

Thirty-three voted in favour of the resolution out of an attendance of 43.

SOUTH CARNARVON AND MERIONETH DIVISION.

AT a special meeting of this Division, held at Portmadoc on November 12th, at which thirty-five members were present, it was unanimously resolved to adopt alternative (*a*) as set out in paragraph 114 of the report of Council, and to express willingness to make a trial of the Act provided alterations in the Regulations be granted so as to make dispensing by medical men optional, and also that some further readjustment in regard to mileage be granted.

OXFORD AND READING BRANCH:

MAIDENHEAD DIVISION.

A MEETING of this Division was held, on the invitation of the Windsor Medical Society, at the Guildhall, Windsor, on November 7th. Dr. G. E. MOORE (Maidenhead) was in the chair. The meeting was the largest and most representative ever held in the Division, forty-three members of the profession being present.

Election of Officers.—On the motion of Dr. DICKSON, seconded by Dr. MONTGOMERY, Dr. G. E. Moore was unanimously re-elected Chairman of the Division; and on the motion of Dr. MUNRO, seconded by the CHAIRMAN, Dr. Elgood was elected Vice-chairman. *Executive Committee.*—The Executive Committee was re-elected, with the addition of Dr. Nicholson (Egham) and Dr. Hodgson (Chertsey). The CHAIRMAN, in thanking the Honorary Secretary for his services in organizing the Division, moved his re-election. This was seconded by the VICE-CHAIRMAN and carried unanimously.

Model Ethical Rules.—The Model Ethical Rules, on the motion of Dr. DICKSON (Marlow), seconded by Dr. WHITTING (Maidenhead) were approved.

Annual Representative Meeting.—Dr. MACLEOD MUNRO then gave his report on the annual meeting at Liverpool as Representative for the Division.

Insurance Act.—The Regulations of the Commissioners, with the recent concessions of the Government, and the report of Council on these, were then discussed. Dr. DICKSON moved and Dr. MEGGS seconded:

That this Division agrees to give service under the Insurance Act under the conditions set out in the report of Council.

The conditions referred to are those set forth in paragraph 114 of the report. There was a full and animated discussion which went to show that the meeting, while in the main regarding the altered conditions of service as acceptable provisionally, was not altogether satisfied with the requirements of the Chancellor as to "improved conditions of service." The HONORARY SECRETARY explained some of these points as far as possible in the circumstances, and

the original motion was carried by 40 votes to 2. The following provisos were adopted as points of negotiation to be pressed for by the State Sickness Insurance Committee:

(*a*) That the extras should be scheduled and strictly limited.
(*b*) That the State Sickness Insurance Committee continue negotiations with the Chancellor of the Exchequer with a view to making the 3rd (third) of the new conditions of service more acceptable to the profession.

Dinner.—The members afterwards dined with the Windsor Medical Society.

SHROPSHIRE AND MID-WALES BRANCH.

A meeting of the medical men in the area of the Shropshire and Mid-Wales Branch was held in Shrewsbury on Tuesday, November 12th. The President (Dr. Gardner) was in the chair, and eighty-two medical men were present.

The Chancellor's Proposals.—The following resolutions were carried unanimously:

1. That the medical practitioners residing in this area, specially summoned to consider the latest proposals of Chancellor of the Exchequer for acceptance by the medical profession under the National Insurance Act, whilst emphasizing their desire to assist generally the industrial classes, regret that they cannot accept the proposed terms, because they do not satisfy the demands of the profession as made and reiterated from time to time by the British Medical Association.
2. That in the opinion of this meeting the medical profession should refuse any financial offer under the National Insurance Act until the conditions of service are made compatible with the best interests and honourable position of the profession and the welfare of the public.

The following resolution was lost (only seven medical men voting for it):

That the Council is recommended to re-enter into negotiation with the Government on the basis of the latest proposals.

SOUTH-EASTERN BRANCH:

Ashford Division.

A meeting of this Division was held at Ashford on November 5th. Mr. Hick was in the chair, and thirteen other members were present.

Insurance Act.—The report of the Council on the National Insurance Act was read and fully discussed. Mr. Wickham proposed and Mr. Mossop seconded:

That this Division instruct its Representative to vote for the profession declining to work the Act.

This was carried, 9 voting for and none against.

Kent County Provisional Committee.—The scheme of the Kent County Provisional Committee was considered and discussed, and several suggested alterations were made.

Brighton Division.

A special meeting to which all practitioners were invited was held at the Lecture Hall, New Road, on November 7th; Dr. Ryding Marsh in the chair. Eighty members and ten visitors were present.

Report of Council.—A lively discussion took place upon the report of the Council with reference to the new proposals of the Chancellor of the Exchequer. A resolution by Dr. Parry to accept service under the Act under the conditions set out in paragraph 114 was lost, only five members voting in favour of it; whereupon Dr. Fothergill proposed the following amendment, which was carried with two dissentients, and became the substantive motion:

That in the opinion of the Brighton Division it is impossible to advise the medical profession to work the Act under the conditions outlined in the Chancellor of the Exchequer's recent speech, and recommend:

That the Government be informed that the British Medical Association, having considered the latest statement of the Government, formulates its demands as follows, under which, if granted, it will endeavour to induce the medical profession to take service under the National Insurance Act:

(1) That the income limit in any district shall be that which is mutually determined upon between the Provisional Insurance Committee and the Provisional Local Medical Committee. Should these bodies be unable to agree, the income limit shall be such as is determined on as between the Conjoint Committee of Commissioners and the Council of the British Medical Association.

(2) Free choice of doctor by patient, subject to consent of doctor to act.

(3) Medical benefits to be administered by Insurance Committee, on which the local medical profession is represented by not less than one-tenth.

(4) All inquiries into questions of professional discipline to be conducted as arranged for in the regulations, but *in camerâ*, both parties having a legal right to be represented, as is allowed in Regulation 51 (5), but without the consent of any body or person having to be obtained.

(5) The method of remuneration of a medical practitioner to be adopted by each Insurance Committee to be in accordance with the preference of that practitioner.

(6) The guaranteed medical remuneration of a practitioner for ordinary domiciliary attendance without medicine to be in no case less than 8s. 6d. per insured person per annum, if payment by capitation is made; or not less than 2s. 6d. per day visit or consultation if payment by attendance is made. Extras and fees for same in each insurance area to be those determined on between the Conjoint Committee of Commissioners and the Council of the Association, who shall also decide what body or person is to be responsible for the payment.

That providing the medical practitioner notifies his intention in advance to the Insurance Committee of a district in which he practises, he shall be entitled to charge the insured person certain extra fees as agreed upon between himself and the insured person.

(7) That the conditions of service and the steps to be taken to prevent abuse be such as are determined on between the Conjoint Committee of Commissioners and the Council of the Association.

(8) That the Council of the Association be invited to nominate at least twelve registered medical practitioners to the Advisory Committee after the negotiations have been satisfactorily concluded.

Further amendments by Dr. Eves and Dr. Broadbent to enter into negotiations on other terms were lost; also an amendment by Dr. Burchell to refuse service under the Act in the terms of Minute 166 of the Annual Representative Meeting. The meeting was adjourned to Monday, November 11th, to consider the remainder of the report of the Provisional Medical Committee on the Council's Report.

The following resolutions were subsequently adopted:

That in view of the latest statement of the Chancellor of the Exchequer, that the cost of domiciliary treatment shall be limited to a payment of 6d. per insured person on each doctor's list, the Representative Meeting is of opinion that the State Sickness Insurance Committee should prepare a memorandum on the position created and report with recommendations to the Representative meeting.

That the Association adheres to its resolutions of the Annual Representative Meeting, 1912, with reference to sanatorium benefit, and cannot agree to the proposal to undertake the domiciliary attendance of persons entitled to treatment by tuberculosis medical service on a capitation basis; and that the payment of such services should not be considered as in any way a part of the payment for service under the medical benefit.

That where the medical officer of health is appointed administrative tuberculosis officer, his title should be "Medical Administrator under the Tuberculosis Service."

That the Council be instructed to urge that in all cases the provision of drugs shall be considered an extra beyond the payment for domiciliary attendance by the tuberculosis service, and that a regulation shall be drafted accordingly.

That it be an instruction to the Council to consider and report at an early date upon the question of the payment of the medical staffs of voluntary hospitals for the treatment of patients under the tuberculosis medical service.

That whilst considering the above reference, the Council also consider the desirability of the staffs of hospitals and other consultants arranging to give consulting services at the homes of insured persons on the introduction of the medical attendant, for an agreed annual honorarium to be paid by the approved society or other body.

That treatment at a dispensary contemplated in resolution of the Committee therein recited may be given by the tuberculosis officer.

(*a*) That it be an instruction to the Council that in any Public Medical Service scheme submitted for approval the inclusion of the principle of co-operation with competing lay bodies in the administration shall not be ground for the withholding of such approval, providing that the control of purely professional matters remains with the profession.

(*b*) That in view of the Regulations respecting medical benefit issued by the Commissioners and the recent explanation of the Chancellor of the Exchequer, this Representative Meeting would urge the Divisions seriously to consider again the advisability of adopting a scheme of payment in full for services rendered on a suitable tariff,

the risks of insurance to be borne by the Government or contributing lay bodies, or both conjointly.

That any gratuity promised to a collector as contemplated in paragraph 9 should not bear any relation to the amount of subscriptions collected by him.

That a vote of thanks be given to the medical members of the Advisory Committee who have shown their loyalty to the Association and the profession by resigning their membership in accordance with the decision of the Representative Meeting.

That the conduct of the medical members who have not resigned is reprehensible, has misled the public, and should be brought before the Ethical Committees of the Divisions in which they reside.

That providing no new arrangements for medical attendance on previous terms to non-insured persons extend beyond March 25th, 1913, the Representative Meeting instructs the Council to approve such arrangements.

That the Representative Meeting is of opinion that local bargaining may be allowed providing that in accordance with Minute 53 of the Special Representative Meeting of November 14th, 1911, no local agreement shall be concluded without the consent of the Council of the Association, and consent shall only be given when all schemes throughout the country have been arranged with the approval of the local profession and the Council.

That the Association requests to be allowed to submit to the Joint Committee of the Commissioners the names of suitable practitioners to be placed on the panel for the Central Inquiry Committee. That the nominations be 8 from England, 4 from Scotland, 2 from Wales, and 2 from Ireland. That the office be held only for a term of years.

That the Council takes steps to insure the deletion, Regulation 51 (5), of the words "with the consent of the Inquiry Committee."

Resolutions on presentation of report of the Council:

That the Representative Body should not discuss the report of the Council on the National Insurance Act until the medical services required as foreshadowed by the Chancellor of the Exchequer have been put in a definite form in Regulations and considered in detail by the Divisions.

That, unless the proposal in Regulation 28 to postpone the payment of the medical man until the cost of drugs, mileage, etc., has been met out of a limited fund is entirely withdrawn, no scheme for attendance under the Act can be considered.

That the Council be instructed to reaffirm the demand of the Association of a representation of not less than one-tenth on the local Insurance Committee.

That the Council be instructed to press for the following alterations in Regulation 87:

That the word "approval" be substituted for the word "information."

That the Council should be instructed to ask that a Regulation be drafted as to the manner in which a local Medical Committee must be constituted in order to become approved.

That a definite sum per insured person on the doctor's list be paid him annually, in order to provide for emergency drugs and dressings.

That the original arrangements agreed upon between the Insurance Committee and the local Medical Committee shall continue in operation for a period of two years from the date upon which the administration of medical benefit comes into operation, and that it shall be ensured that the Regulations issued shall be operated only during the same period.

That the Medical Secretary be instructed to submit to this Representative Meeting a report on the organization by the medical profession of Public Medical Service schemes showing the following particulars in detail: (*a*) Each Insurance Committee area; (*b*) Has any Public Medical Service been adopted there? (*c*) Name of scheme adopted; (*d*) Number of insured and uninsured persons it provides for; (*e*) Number of medical practitioners in area affected; (*f*) If no scheme has been adopted, in one under consideration? (*g*) Total number of donations and subscriptions to defence fund, with number of subscribers and donors.

CANTERBURY AND FAVERSHAM DIVISION.

AT a meeting of this Division on November 7th the following resolutions were directed to be proposed at the Representative Meeting:

1. Amendment to Recommendation (*a*) of the Council in the Council's Report on the National Insurance Act, namely:

   That the profession give service under the Act, provided

   (1) Control in professional matters be finally with a solely medical tribunal.

   (2) The right of every medical man to dispense medicines for insured persons be conceded.

   (3) (*a*) 6s. per head be assured for medical benefit, exclusive of mileage, extras, and drugs; (*b*) mileage and extras be provided for independently of payment for ordinary medical attendance and treatment.
2. That it be an instruction to the Council, in the event of the profession refusing to work the National Insurance Act, to take the necessary steps to form a central "compensation fund" for the payment solely of compensation to practitioners who suffer financially owing to their loyalty to the Association.

CHICHESTER AND WORTHING AND HORSHAM DIVISIONS.

A COMBINED meeting of the Chichester and Worthing with the Horsham Division was held on November 12th at the Hospital, Worthing. All medical men resident in the district were invited to be present and the attendance numbered fifty-two. Dr. W. H. SIMPSON was in the chair.

The Chancellor's Proposals.—The following resolutions were passed:

1. That this meeting of the members of the medical profession in West Sussex, while recognizing the desire of the Chancellor of the Exchequer to come to terms with the profession, regrets that the Chancellor has not seen his way to grant the terms on which alone they believe they can satisfactorily discharge the duties required of them under the Insurance Act, and is convinced that the conditions laid down in the Chancellor's latest offer make it impossible to entertain his proposals.
2. To refuse service under that portion of the National Insurance Act relating to medical and maternity benefit unless and until the whole of the seven cardinal points of the British Medical Association with the single exception of the central fixation of a universal income limit, be secured by Act of Parliament.
3. That no contract practice of uninsured persons be accepted by members of this Division at a less rate than approved of by the Central Council.

CROYDON DIVISION.

A MEETING of this Division was held at the Greyhound Hotel on November 12th. Dr. WAYTE was in the chair. All members of the profession residing in the Division were invited, and 106 attended.

Report of Council: Instructions to Representative.

The Report of Council was considered, particularly those paragraphs mentioned in paragraph 117. Nos. 12, 20, 21, 22, 29, 38, and 75 were agreed to.

Paragraph 28.—The following suggested resolutions for the Special Representative Meeting were carried:

1. That it be an instruction to the Council that in any public medical scheme submitted for approval the inclusion of the principle of co-operation of contributing lay bodies in the administration shall not be a ground for withholding such approval, providing that the control of purely professional matters shall remain in the hands of the profession.
2. That in view of the Regulations respecting medical benefit issued by the Commissioners and the recent explanation of the Chancellor of the Exchequer, this Representative Meeting urges on the Divisions seriously to consider the advisability of adopting the system of payment in full for services rendered on a suitable tariff, the risk of insurance to be borne by the Government or contributing lay bodies, or both jointly.

Income Limit (p. 478).—Dr. SWAYNE proposed, and Dr. FOWLER seconded, and it was carried:

That in the event of the Association being desirous of re-opening negotiations upon the provisions of the National Insurance Act—

(*a*) The universal application of the £2 limit be not regarded as essential, provided the Association is satisfied that the other demands have been met.

(*b*) The exclusion from medical benefit of those insured persons who have become entitled thereto by reason that they have entered into insurance five years, and whose income has come to exceed £160 per annum, be made absolute.

Paragraph 115. Dr. DANIEL proposed, and Dr. FOWLER seconded:

That this meeting support B., to refuse service under the Act.

This was carried by 76 to 5, only members of the Association voting.

Dr. DANIEL proposed, and Dr. GRIPPER seconded, and it was carried:

That it be an instruction to Council to inform the Commissioners that the Association is prepared to appoint representatives with power to negotiate on the basis of payment in full for services rendered under a system in which the medical practitioner is not required to undertake the risks of insurance.

Dr. FOWLER proposed, Dr. DUKES seconded, and it was carried:

This Division gives our Representative a free hand in the choice of plenipotentiaries, if the Representative Meeting decides to appoint them.

Dartford Division.

A meeting of this Division was held at the Bull Hotel, Dartford, on Tuesday, November 12th. Dr. Charles Firth presided.

Report of Council.—On the motion of Dr. Chisholm Will, seconded by Dr. Murison, it was unanimously resolved:

That this Division refuse service under he Act, even with the recent offer made by the Chancellor of the Exchequer.

On the motion of Dr. Will, seconded by Dr. Crombie, it was resolved:

That in the opinion of this Division the Association should appoint a committee to reopen negotiations with the Chancellor.

On the motion of Dr. Farthing, seconded by Dr. Skipworth, it was unanimously resolved:

That this Division is willing to accept a capitation grant of 8s. 6d. with drugs, exclusive of extras and mileage, and that the tuberculosis treatment be carried on on the lines formerly proposed, and not by a general capitation grant.

A discussion took place on the demands which the Association should make, and it was felt that the right to dispense for one's own patients should be insisted on, and also the abolition of the proposed inspectors and book-keeping.

Public Medical Service Schemes.—After discussion, it was resolved to form a Public Medical Service for Dartford, and that it be referred to the Provisional Medical Committee to consider the schemes and report thereon.

Paper.—A paper entitled, "Enucleation of Tonsils and Adenoids under Gas Anaesthesia," was read by Mr. J. F. O'Malley, F.R.C.S., Aural Surgeon to the Evelina Hospital, and was greatly appreciated by those present.

Vote of Thanks.—A hearty vote of thanks was accorded to Mr. O'Malley for his interesting paper.

Guildford Division.

A meeting of medical practitioners resident in the area of the Guildford Division was held on November 8th at Guildford. Dr. Kingsford (Chairman of the Division) presided, and there were fifty-four present.

Report of Council.—After some formal business the Chairman introduced, in a lucid speech, the subject of the future action of the profession in view of the Chancellor's recent offer and the Report of Council thereon. A discussion followed, and it was proposed and unanimously resolved:

That the recommendation of the Provisional Medical Committee, that the medical practitioners in the area of the Guildford Division refuse to take service under the Act, be adopted.

Reigate Division.

Treatment of Defective Children.

A meeting, convened by the Reigate Division, of representatives of the several Divisions in Surrey, to consider a scheme of the Education Committee of the Surrey County Council for the treatment of school children found on inspection to be defective, and to discuss what steps (if any) should be taken to oppose such scheme, was held at Laker's Hotel, Redhill, on November 4th. The following were present: Mr. A. R. Walters and Dr. Thornton (Reigate), Dr. Curtis and Dr. Palmer (Redhill), Dr. S. M. Mackenzie (Dorking), Dr. Mitchell (Guildford), Dr. Cressy (Wallington), Dr. Cowie (Wimbledon), and Dr. Goodman (Kingston).

Apologies for absence were received from Dr. Munro (Maidenhead), Dr. Hugo (Purley), Dr. Gay (Putney), Dr. Carver (Surbiton), Dr. Verdon-Roe (Wandsworth), and Dr. Clarke (Horley).

Mr. Walters was elected to the chair, and gave a brief summary of the scheme, pointing out the chief points upon which opposition could be taken. He was informed that a scheme for treatment by general practitioners on the panel system would be favourably considered by the Board of Education, but in the absence of such a whole-time service would undoubtedly be established.

Dr. Mitchell gave an outline of the scheme at work in the borough of Guildford based on the panel system, and after a discussion in which all those present took part it was decided to forward the following resolutions to every member of the Surrey County Council, and to representatives of the Divisions in Surrey not present at this meeting. It was also urged that every member able to influence members of the county council should do so to the same effect.

The following resolutions were passed unanimously:

1. This meeting agrees that the percentage of cases untreated is unsatisfactory, and points out that this is largely due to the fact that there is no organized system of treatment in operation.
2. That before a whole-time medical service is established the local practitioners should be given an opportunity of carrying out the work.
3. That the treatment of defective school children can be advantageously and efficiently carried out by the local practitioners, acting as part-time medical officers to the proposed clinics, of the areas in which they reside.
4. The medical practitioners of Surrey are prepared to form a committee to co-operate with the Surrey County Council to discuss a modification of the scheme at present under consideration.

It was also proposed that a standing medical committee should be formed, to represent the whole of Surrey, to consider all matters affecting the interests of the medical profession in the county. This was unanimously approved.

Sevenoaks Division.

A general meeting of this Division was held at the Council Chamber, Tonbridge Castle, on October 31st. Dr. J. Newton, President, was in the chair, and fourteen members were present.

Pledges.—The Honorary Secretary announced that of the 38 members in the Division, 29 were in active practice, and of these all had sent in the pledges, which had been sent out as recommended.

Provisional Medical Committee.—Drs. Maude and Walker, members of the Kent County Provisional Medical Committee, reported upon the work done by the Committee.

Contract Practice.—It was agreed that a note be sent to all members of the Division asking them to give a definite answer to the following statement of opinion:

That this meeting is of opinion that it is desirable that all members of the Division should resign all contract practice for attendance upon persons not included in the Insurance Act within the area of the Division.

SOUTHERN BRANCH:

Isle of Wight Division.

A largely attended meeting of the Isle of Wight Division was held in Sandown on November 12th, to discuss the attitude of the profession regarding the recent proposals of the Chancellor of the Exchequer and the Report of the Council thereon.

After considerable discussion, the Representative was instructed to vote for refusal of service under the Act.

Salisbury Division.

A meeting of this Division was held at the Infirmary, Salisbury, on November 8th. Dr. L. D. Saunders was in the chair, and thirty-four members and three non-members were present.

Public Medical Service.—Arising out of the minutes of the last meeting the Honorary Secretaries stated that the scheme for Public Medical Service for the Division had been submitted to the head office and approved; with regard to the Subdivisions the Salisbury rules had been approved, the Warminster and Andover Subdivision rules were still under discussion.

Provisional Local Medical Committee.—A letter from the Branch Secretary was read asking for appointment of five representatives from the Division to serve on the Provisional Local Medical Committee for the County of Southampton. The following were elected: Drs. Williams-Freeman (Weyhill), D. O'C. Finigan (Fordingbridge), Farr (Andover), Hobbs (Broughton); non-member, Dr. Gillett (Andover).

Report of Council.—It was proposed by Mr. J. O. March and seconded by Dr. Fison:

That service under the Act should be refused.

The resolution was supported by Drs. Blackmore, Rake, Luckham, and Kempe. Dr. Gould proposed a resolution as follows:

That the meeting of the Salisbury Division considers the terms suggested by the Government opens a way for an honourable compromise; and considers it advisable for the Representative Meeting to give full powers to the State Sickness Insurance Committee to reopen and complete negotiations, in order that the medical benefits may come into force on January 15th, 1913.

Also that this meeting is of opinion that dispensing, as hitherto, should be done by or arranged for the medical practitioner for his own patients should he so desire, payment to be made according to the scale of prices fixed by the Insurance Committee in accordance with the terms of this Act.

This was seconded by Mr. ENSOR. Drs. RUTTER, HARRIS, STRATON, WILLIAMS-FREEMAN, WILLCOX, and FINIGAN supported the resolution. On a vote being taken there voted for the resolution 24, against 6. Dr. Gould's resolution was declared carried as an instruction to the Representative.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

NORTH GLAMORGAN AND BRECKNOCK DIVISION.

A MEETING of the North Glamorgan and Brecknock Division was held at Pontypridd on November 12th, when fifty-five members and non-members were present. Dr. T. R. LLEWELLYN took the chair. The Recommendations of the Council were considered, and after a long discussion the CHAIRMAN put Recommendation "*a*" to the meeting. Only four members voted in favour of it. Recommendation "*b*" was then put, and carried. On the motion of Dr. W. E. THOMAS, seconded by Dr. T. J. WEBSTER, the following addendum to Recommendation "*b*" was carried:

That the following words be added to Recommendation "*b*": "Until the Regulations and conditions of service are such as will be acceptable to the British Medical Association.

The Representative of the Division was then definitely instructed to vote against Recommendation "*a*," and failing the adoption of the above addendum, to vote for Recommendation "*b*."

SOUTH MIDLAND BRANCH:

BUCKINGHAMSHIRE DIVISION.

AT a meeting held at Aylesbury on November 12th, when forty-five medical men were present, the following resolutions were adopted:

1. That it be an instruction to Council that in any Public Medical Service scheme submitted for approval the inclusion of the principle of co-operation with contributory lay bodies in the administration shall not be ground for the withholding of such approval providing that control of purely professional matters remains with the profession.
2. The Bucks Division objects entirely to Section 48 in the Regulations dealing with Committees of Complaints.
3. The Bucks Division records its opinion that no scheme of remuneration will be permanently satisfactory which does not allow payment for mileage and extras over and above the 7s.
4. That the Bucks Division proposes that the Representative Meeting accept the latest proposals of the Government as the basis for a compromise, and appoint a small number of its members to negotiate with the Commissioners, with power to make final terms on behalf of the profession.

NORTHAMPTONSHIRE DIVISION.

AT a general meeting of this Division, held at Northampton on November 12th, the following resolution was adopted:

That the terms offered by the Government on October 23rd last be a basis of settlement, and that the Representative Body appoint a committee with plenary powers to negotiate as to those points on which the demands of the Association have not yet been met.

STIRLING BRANCH.

AT a meeting of this Branch on November 12th the Representative was instructed to vote for alternative (*a*) in paragraph 115 of the Council's Report. He was also instructed to propose the following motion:

That a committee be appointed by the Representative Meeting to negotiate with the Chancellor of the Exchequer, with powers to come to a decision upon such points as extras, mileage, etc.

YORKSHIRE BRANCH:

HALIFAX DIVISION.

A MEETING of this Division was held at the Imperial Café on November 11th. The chair was taken by Dr. J. CROSSLEY WRIGHT, and fifty-four other members were present.

National Insurance Act.—After a vigorous discussion, in which many members took part, the following resolution, proposed by Dr. DENNING and seconded by Dr. MARSDEN, was carried unanimously:

That in the opinion of this meeting any financial offer under the National Insurance Act should be refused until the conditions of service are made compatible with the best interests and honourable position of the profession, as in our opinion the conditions now offered are intolerable to any self-respecting medical practitioner, and would destroy for ever the independence of the medical profession.

On the motion of Dr. PRIESTLEY LEECH, seconded by Dr. DENNING, the following resolution was carried *nemine contradicente*:

That this meeting of the Halifax Division of the British Medical Association requests the Representative Meeting to inform the Chancellor of the Exchequer that the British Medical Association reaffirms its adhesion to the six cardinal points with the exception of the income limit, which it is willing to waive if the remuneration and other conditions are in accordance with the other cardinal points.

The Secretary was instructed to have this resolution placed on the agenda paper for the Special Representative Meeting on November 19th and 20th. On the motion of Dr. BRANSON, seconded by Dr. MARSDEN, the following resolution was carried, and ordered to be placed on the agenda of the Special Representative Meeting:

That this meeting instructs our Representative to urge the right of the medical attendant to dispense medicines to his own patients under the Insurance Act.

On the motion of Dr. HUGHES, seconded by Dr. FRY, it was resolved:

That our Representative be instructed not to object to the keeping of notes about insured persons, nor to the proposed inspection thereof.

On the motion of Dr. PRIESTLEY LEECH, seconded by Dr. GILL, the following resolution was carried *nemine contradicente*:

That in case the Special Representative Meeting decides to modify the third cardinal point, as regards the power of local Medical Committees to consider all complaints against medical practitioners, we instruct our Representative to urge that all such complaints be first considered by the local Medical Committee, and that, in case of a disagreement between that Committee and the local Insurance Committee, there be an appeal to a mixed lay and medical committee with an independent chairman.

Position of Hospitals under the Act.—On the motion of Dr. HUNT, seconded by Dr. STEELE, the following resolutions were carried unanimously:

That the members of the Halifax Division of the British Medical Association give their hearty support to the staffs of the Royal Halifax Infirmary and Halifax Eye and Ear Hospital in their refusal to attend insured persons, except in cases of emergency (medical or surgical) and of major operations.

Also that our Representative be instructed to bring before the Special Representative Meeting the unfairness of expecting any further treatment of insured persons in hospitals such as these, where the staff is composed largely of general practitioners.

Sanatorium Benefit.—The SECRETARY read some correspondence which had passed between the school medical officer of the Halifax Education Committee and himself. The school medical officer is acting as assistant tuberculosis officer to the Halifax Health Committee, and the scheme for administering sanatorium benefit in Halifax is strongly disapproved of by this Division. As the school medical officer is a member of this Division of the British Medical Association, the Secretary was instructed, on the motion of Dr. STRICKLAND, seconded by Dr. DRURY, to invite the school medical officer to meet the Executive Committee of this Division and explain his position.

Lectures to Midwives and Ambulance Lectures.—Some members desired information as to the fees and other conditions to be insisted on before giving lectures to midwives or ambulance lectures. The Secretary was instructed to ascertain the ruling of the Representative Meeting on these points.

HUDDERSFIELD DIVISION.

A SPECIAL meeting of this Division was held at the Huddersfield Royal Infirmary on November 12th, Dr. IRVING in the chair. There were between fifty and sixty members present.

National Insurance Act.—The CHAIRMAN then gave a summary of the present position of the profession in relation to the National Insurance Act. Dr. MARSHALL moved:

> That in the opinion of this meeting the Regulations issued by the Insurance Commissioners, and the latest proposals of the Chancellor of the Exchequer, are unworkable, derogatory to the profession, and a positive danger to the national health; as a consequence the medical profession decline to take service under the Act as at present constituted.

This was seconded by Dr. ROBERT TROTTER, supported by Drs. TANSLEY and MOORE, and carried unanimously. Dr. CHAMBERS proposed:

> That we, the members of the Huddersfield Division, instruct our Representative to definitely refuse service under the Act at the Special Representative Meeting to be held in London on November 19th and 20th, and on no account to reopen negotiations.

This was seconded by Dr. TROTTER and carried unanimously. Dr. WILLIAMS moved:

> That this meeting of the Huddersfield Division of the British Medical Association strongly condemns the action of the medical members of the Advisory Committee in connexion with the National Insurance Act in remaining on that Committee, and strongly resents their impertinent interference in that they, for the most part not general practitioners, should issue their prejudiced, biassed, and presumptuous statement to the general practitioners of England; and further, that this meeting deeply deplores that the political zeal or self-interest of these medical members of the Advisory Committee should blind them to the honour, dignity, and exalted traditions of the medical profession.

This was seconded by Dr. MARSHALL, supported by Dr. TROTTER, and carried unanimously.

Votes of Thanks.—Dr. S. G. MOORE proposed:

> That a special vote of thanks be accorded to Dr. Robert Trotter for his exceptional and brilliant services in connexion with the campaign against the National Insurance Act.

This was seconded by Dr. TANSLEY, supported by Dr. WILLIAMS, and carried by acclamation. Dr. RHODES then proposed a vote of thanks to the Chairman (Dr. Irving) for his unwearying services in the chair. This was seconded by Dr. EDINGTON and carried by acclamation.

WAKEFIELD, PONTEFRACT, AND CASTLEFORD DIVISION.

At the meeting of this Division held on November 12th the Representative was instructed to move the following resolution at the Special Representative Meeting:

> That this meeting, whilst recognizing that the Chancellor's latest offer, so far as remuneration is concerned, may form a basis for negotiation, feels that the requirements of the Regulations issued by the Insurance Commissioners are such as to render service wellnigh impossible. It therefore instructs the Council to endeavour to reopen negotiations with the Government with a view to such amendments being made in the Regulations as to make it possible for the profession to take service under the Act.

YORK DIVISION.

At a meeting of the Division on November 12th, at which sixty members were present, the following resolution was passed unanimously:

> That in the opinion of this meeting the Regulations issued by the Insurance Commissioners and the latest proposals of the Chancellor of the Exchequer are unworkable, derogatory to the profession, and a positive danger to national health.
>
> As a consequence, the medical profession in the York Division declines to undertake service under the terms and conditions as at present proposed by the Government.

The Representative of the Division was instructed to vote for a term of two years, and not three, as the term for which any arrangements for medical attendance should be made; to vote for central negotiations, and not local; and, if the Representative Meeting decided that negotiations should proceed, to vote for the principles of trial contained in paragraph 114 of the Council's report.

SPECIAL REPRESENTATIVE MEETING.

THE following notifications of the decisions of Divisions with regard to the report of Council to the Divisions and Representative Meeting on the present position of the profession as to the Insurance Scheme were received too late to be inserted in their proper places.

BATH AND BRISTOL BRANCH:

BATH DIVISION.

AT a meeting of this Division held on November 12th its Representative was instructed to bring the following resolution before the Special Representative Meeting on November 19th:

> That while regarding the Chancellor's proposals of October 23rd as offering a possible basis for settlement as regards payment, we consider that the conditions of service are of far greater importance, and refuse to take service under the Act unless and until the conditions are so modified as to meet our requirements, these conditions being such as are essential if an effective medical service is to be provided for the beneficiaries under the Act.
>
> That the Representative Meeting is hereby requested to declare the following conditions indispensable to the cordial co-operation of the profession:
>
> 1. That the constitution, mode of election, term of office, duties and powers, of the local Medical Committees be clearly defined.
> 2. That Insurance Committees, in determining the terms and conditions under which practitioners are to be asked to undertake treatment, shall in all respects include an income limit, be required to obtain the explicit approval of the Commissioners.
> 3. That in cases where the advice of local Medical Committees is overruled or ignored by an Insurance Committee the arrangements made by the latter shall not be sanctioned by the Commissioners until an opportunity has been given to the Medical Committee to explain and justify its view.
> 4. That the modifications of the conditions and terms of service contemplated in Rule 6 (2) shall not include any right on the part of Insurance Committees to employ whole-time salaried officers to attend insured persons.
> 5. That there be a right of appeal to a specially appointed medical tribunal on the part of medical men serving on the panels against whom complaints may be made.
> 6. That a definite guarantee be afforded that the medical inspectors appointed be such as shall command the confidence of the profession, and that in the event of examination of insured person by any such inspector, the regular medical attendant shall have the right to be present.

BIRMINGHAM BRANCH:

WEST BROMWICH DIVISION.

THE following resolutions have been adopted by this Division for submission to the Special Representative Meeting:

1. That five cardinal points be adhered to, but that No. 1 (income limit) be given up.
2. That the right of the profession to dispense medicines be insisted on and made permissible.
3. That the system of note-taking suggested by the Chancellor be abolished.
4. That while certificates under the Act be given free, anything in the nature of a report be paid for.
5. That the capitation fee of 8s. 6d. be free of all deductions, and that the extras, as mentioned by the Chancellor, be paid for out of a separate fund.
6. That a small fee be paid for night visits by the patient.

BORDER COUNTIES BRANCH:

SCOTTISH DIVISION.

AT a meeting of this Division, held at Castle Douglas on November 12th, the following resolution was carried:

> That the State Sickness Insurance Committee again confer with the Chancellor of the Exchequer in order to settle satisfactorily the question of mileage and the six cardinal points.

DUNDEE BRANCH:

DUNDEE DIVISION.

THIS Division at a meeting on November 12th instructed its Representative to make the following motion at the Special Representative Meeting:

> To consider the recent offer made by the Chancellor of the Exchequer, which affords the British Medical Association an opportunity of conferring with him and the Commissioners as to the points on which the demands of the profession have not yet been met

EAST ANGLIAN BRANCH:

South Suffolk Division.

At the meeting of this Division held on November 13th its Representative was instructed to make the following motions at the Representative Meeting:

1. That notwithstanding the fact that the terms now offered under the National Insurance Act do not concede the six cardinal points demanded by the British Medical Association, this meeting is of opinion that they are such as permit of a renewal of negotiations with a view to a settlement under which an attempt to work the Act may be made.
2. That the State Sickness Insurance Committee or other specially appointed committee be authorized to effect such a settlement.
3. That such a settlement be only of a temporary character, for at most a period of three years, as suggested by Mr. Lloyd George.
4. That in addition to the capitation fee definite allowance be made for mileage beyond an agreed distance, for the administration of general anaesthetics and for operations requiring general anaesthetics, and that bacteriological and *x*-ray examinations and the provision of serums and oxygen be specially provided for and not be included in any capitation fee.
5. That the medical men attached to the service be paid by the insured persons for confinements and miscarriages, for dental extractions, and a small fee for attendance and visits between the hours of 8 p.m. and 8 a.m., such small fee being intended to act as a deterrent from unnecessary night calls.

EAST YORK AND NORTH LINCOLN BRANCH:

North Lincolnshire Division.

A largely attended meeting of this Division was held at the Grimsby Hospital on November 12th. Every practitioner within the area of the Division was invited. The chair was taken by Dr. Bruce until the arrival of Dr. Miller, Chairman of the Division.

Contract Practice and Uninsured Persons.—The Secretary read a letter which he had been instructed to send to the Medical Secretary asking for the reasons why the Division's motion with reference to contract practice in the case of non-insured persons had been ruled out of order at the last Representative Meeting. The Medical Secretary's reply was read, and it was proposed by Dr. Morley and seconded by Dr. Spring:

> That the Medical Secretary's letter sheds no further light on the subject, and that we disapprove of the reply in that it is no reply at all, but we take this letter as a guarantee that the matter will be threshed out at the forthcoming Representative Meeting, the results of the postponement of the matter having been deplorable.

This was carried unanimously. Dr. Behrendt proposed and Dr. Booth-Milner seconded:

> That no contract practice within the area of the Division be taken outside the Act pending a settlement with the Government as to insured persons.

An amendment proposed by Dr. Swindells and seconded by Dr. Burnett—

> That no contract practice outside the Act be taken within the area of the Division, for the next year at least—

was carried by a large majority, both as an amendment and as a substantive resolution.

Report of Council.—After a prolonged discussion on the Council's Report on the Regulations issued by the Insurance Commissioners, the Division's Representative was instructed to vote on the following lines: It was proposed by Dr. Escombe and seconded by Dr. G. O. McKane:

> That we refuse service under the Act under the existing terms and conditions of service.

This was carried unanimously. It was proposed by Dr. Morley and seconded by Dr. Behrendt:

> That the recent offer made by the Chancellor of the Exchequer be considered, as it affords the British Medical Association an opportunity of conferring with him and with the Commissioners as to the points on which the demands of the profession have not yet been met.

This was carried unanimously. It was proposed by Dr. Bruce and seconded by Dr. Chapman:

> That any committee appointed to confer be instructed to refer to the Divisions before closing.

An amendment proposed by Dr. Rotherham and seconded by Dr. Grierson—

> That the committee go with minimum demands and power to settle—

was lost and the resolution carried. A proposal by Dr. Booth-Milner—

> That it shall be optional for the doctor to dispense—

was carried unanimously.

Guarantee Fund.—On the motion of Dr. Miller (Chairman) seconded by Dr. Grierson (Secretary), it was resolved to ask each member to increase his guarantee by £10, on condition that the Central Fund reached £250,000, and to transfer the whole of the local fund to the Central Fund, less 10s for local expenses.

FIFE BRANCH.

The following resolution has been adopted by the Fife Branch, and has instructed its Representative at the Special Representative Meeting to move as follows:

> That, after full consideration of the draft Regulations and the latest proposals of the Chancellor of the Exchequer, as contained in his speeches and letters, the Representatives are of the opinion that the medical profession must refuse service under the Act until satisfactory assurances have been received in regard to the following points, amongst others: (1) Mileage; (2) constitution and powers of Committee of Complaints; (3) reconsideration of question of medical inspection and records; and that negotiations be continued with these objects.

LANCASHIRE AND CHESHIRE BRANCH:

Birkenhead Division.

At a meeting of this Division on November 13th the Representative was instructed to make the following motion at the Representative Meeting:

> That whilst the amount allocated by the Government as remuneration to medical practitioners under the National Insurance Act falls short of that to which the profession is justly entitled for the services demanded, and whilst the solidarity of the profession is such as to render it almost certain that continued refusal to work the Act could be successfully maintained, nevertheless, inasmuch as such refusal would result in hardships and suffering to large numbers of the industrial and poorer classes of this country, this Representative Meeting recommends that practitioners should express their willingness to serve under the Act, provided that the following demands are conceded and the Regulations amended accordingly.
>
> 1. All arrangements to give medical attendance and treatment under the Act must be of a provisional character, and terminate automatically at the expiration of three years, when the whole question of the relations of the profession to the Act must be capable of discussion.
> 2. All agreements entered into by local Medical Committees shall not be finally concluded until they have received the approval of the Council of the Association.
> 3. All practitioners serving upon the panel to be given liberty to dispense medicines, etc., to insured persons, and to be paid at the same rates as those applicable to the dispensing by chemists on the panel.
> 4. There shall be no inspection of professional work by Government officials, medical or otherwise; the maintenance of the standard of attendance shall be left to the honour of the profession and the surveillance of the local Medical Committees.
> 5. There shall be no records required to be kept by practitioners serving under the Act other than such records as are usually and ordinarily kept by practitioners at present.
> 6. A Central Fund shall be established by the Government from moneys outside those available for practitioners on the panel, from which grants, or payments, shall be made for mileage.
> 7. Medical representation on local Insurance Committees must be increased to at least one-tenth of committees of all sizes.

Oldham Division.

At a meeting of this Division held on November 12th the Representative was instructed to move the following resolution at the Special Representative Meeting:

> That inasmuch as the statement made by the Chancellor of the Exchequer on October 23rd has demonstrated that the amount originally available for medical benefit under the National Insurance Act was inadequate and the conditions unsatisfactory, and that the opposition of the medical profession was therefore justified, the British Medical Association appoint a committee to negotiate with the Chancellor of the Exchequer for the purpose of obtaining terms and conditions of service which will be in accordance with the wishes of the profession as expressed by a Representative Meeting.

Rochdale Division.

A meeting of the Rochdale Division, to which all the medical men in the area were invited, was held on

November 12th, under the presidency of Dr. LORD. The following resolution was adopted:

That in the opinion of this meeting the medical profession should refuse any financial offer under the National Insurance Act until the conditions of service are made compatible with the best interests and honourable position of the profession and insured persons, and that it be an instruction to our Representative to vote that negotiations be opened with the Government to improve the regulations.

Twenty-five members and 5 non-members voted in favour, and 1 member and 2 non-members against.

WEST LANCASHIRE DIVISION.

AT the meeting of this Division on November 10th the following resolutions were adopted:

1. That it be an instruction to the State Sickness Insurance Committee to inform the Chancellor of the Exchequer and the Insurance Commissioners:
   That, in the opinion of the British Medical Association, the conditions of service laid down in the Regulations issued by the Insurance Commissioners are intolerable, notwithstanding the new proposal foreshadowed by Mr. Lloyd George in his speech on October 23rd, and would destroy for ever the independence of the medical profession. Therefore any financial offer under the National Insurance Act should be refused until the conditions of service are made compatible with the best interest of the honourable position of the profession, which can only be secured by the granting of the cardinal points laid down by the British Medical Association.
2. That the State Sickness Insurance Committee be re-instructed not to open negotiations with the Chancellor of the Exchequer or the Insurance Commissioners; but if negotiations be reopened no committee shall have power to make any definite arrangements without first submitting the same to the Divisions.
3. That Minute 205 of the Annual Representative Meeting of July last be strictly adhered to.

The Representative was also directed to move or to support a motion refusing service under the Act.

METROPOLITAN COUNTIES BRANCH:

CHELSEA DIVISION.

AT the meeting of this Division held on November 13th the following resolution was passed:

That the Chelsea Division of the British Medical Association instructs its Representative to propose at the Representative Meeting to be held on November 19th (or, if already proposed, to second and support) the following resolution:
That the British Medical Association refuses to accept any service whatsoever under the National Insurance Act in view of the fact that the six cardinal points have only been partly conceded, and that fresh work and responsibilities have been imposed without adequate remuneration or protection.

KENSINGTON DIVISION.

AT a meeting of this Division on November 13th the following resolution was adopted for submission to the Special Representative Meeting:

Inasmuch as the seven cardinal points remain the minimum demands of the profession and inasmuch as the determination to obtain these demands centrally still holds, the Representative Body should reaffirm its decision not to work the Act as it stands at present.

NORTH MIDDLESEX DIVISION.

THE Division has instructed its Representative to make the following motion at the Representative Meeting:

That the Council be instructed to insist upon a definition of the hours during which Insurance Act work shall be done, and shall suggest the hours from 8 a.m. to 8 p.m., and that night work shall be paid for by the patient, with the exception of maternity benefit.

WANDSWORTH DIVISION.

AT the meeting of this Division on November 13th the following resolution was adopted by 116 to 8:

The Wandsworth Division, seeing that in its opinion there has been no improvement in the position of the profession with regard to medical benefit since the Representative Meeting at Liverpool last July, and that with regard to the other points claimed by the profession nothing more has been conceded, that the financial gain set out in the recent offer of the Chancellor of the Exchequer is more or less illusory, and that the substitution of an additional capitation payment of 6d. for the treatment of tuberculosis cannot be commended, recommends the profession to decline the latest offer of the Chancellor, and refuse to work the medical benefit on the suggested terms.

WIMBLEDON DIVISION.

AT the meeting of this Division held on November 12th the following resolution was adopted by a large majority:

That the British Medical Association be instructed to reopen negotiations with the Government on the question of remuneration, but that the conditions of service be not agreed to under any circumstances whatever.

NORTH OF ENGLAND BRANCH:

SUNDERLAND DIVISION.

A MEETING of the Sunderland Division was held at the Royal Infirmary, Sunderland, on November 12th. In the absence of the Chairman Dr. MIDDLEMASS presided. Forty-nine members were present.

The report of the Council and later statement of the Chancellor of the Exchequer were fully discussed, and the following resolution was passed:

A. That this Division instruct its Representative to vote that negotiations be at once reopened with the Chancellor of the Exchequer, and that the Division considers it advisable to work the National Insurance Act, subject to such alterations of the Regulations as will meet the following:
   1. This Division reaffirms the original recommendations of the Association that two miles be the limit beyond which practitioners shall not be asked to treat persons for the capitation fee.
   2. In the opinion of this Division it would be inadvisable to permit of any deductions from the proposed capitation grant of the Government for mileage in rural areas, or where required, as suggested by the Chancellor of the Exchequer.
   3. That Regulation 28 be redrafted to be in keeping with the statement of the Chancellor of the Exchequer to the Advisory Committee of October 23rd, 1912.
   4. That this Division reaffirms the recommendation of the British Medical Association that it be optional for any practitioner to do his own dispensing to insured persons under the Act.
   5. That until such time as the Government has clearly and definitely defined what is meant by ordinary medical attendance, it would be inadvisable for the profession to undertake any work under the Act.
   6. That the profession adheres to the list of extras as drawn up by the British Medical Association and submitted to the Insurance Commissioners.
   7. As the Chancellor of the Exchequer has stated that it is impossible for the Government to find finance for such extras, that the practitioners who undertake duties under the Act be permitted to make charges for such extras to insured persons.
   8. That the Regulations shall provide for arrangements to be made whereby each Post Office contributor shall be supplied with a card containing the panel of the district, so that each contributor can communicate his or her choice direct to the Insurance Committee, and that the insured persons who have not selected a doctor be distributed equally among the doctors of the panel by the local Medical Committee.
   9. That the Committee of Complaints shall report their recommendation to the Insurance Committee, and that Committee shall accept their report as conclusive.
   10. That the final court of appeal for removing a practitioner from the panel shall be composed entirely of medical men with legal advisers.
   11. That before accepting service under the Act the report mentioned by the Chancellor of the Exchequer shall be submitted to and approved by the British Medical Association.
   12. That the 6d. to be paid for sanatorium benefit shall be for insured persons only, and shall not include dependants, and shall be for domiciliary treatment only.
   13. That the nature and extent of the inspection suggested shall be clearly defined.
   14. That any arrangements made with the profession for service under the Act shall be for no longer period than three years.

B. That the recent statement made by the Chancellor of the Exchequer and the Regulations as submitted by the Insurance Commissioners permit of negotiations being opened up in conformity with the resolutions herewith submitted, and that a Committee be appointed to negotiate on these lines.

A resolution—

That the Representative be instructed to vote that the Council of the Association be empowered to negotiate with the Chancellor of the Exchequer with plenary powers—

was defeated.

NORTHERN COUNTIES OF SCOTLAND BRANCH:

BANFF, ELGIN, AND NAIRN DIVISION.

AT the meeting of this Division, held in Elgin on November 12th, the Representative was instructed to move the following resolution at the Special Representative Meeting:

That the Special Representative Meeting remits to a committee, on which country practitioners shall be adequately represented, with powers to negotiate further with the Chancellor, particularly with regard to the Regulations.

The points which the Division desired should be made special subjects for negotiation were: (1) That mileage should be paid from a central fund, exclusive of the 7s.; (2) that certain extras should also be paid for from a central fund, including abortions, minor operations, fractures, and assistance (as, for instance, anaesthetics).

NORTH WALES BRANCH:

Denbigh and Flint Division.

The following resolution was adopted at a meeting of this Division on November 8th:

That in the opinion of this Division extra terms must be granted for the following: Mileage, special visits, and major operations, and that the practitioner has the option of retaining dispensing in all cases.

North Carnarvonshire and Anglesey Division.

At the meeting of this Division held at Bangor on November 12th the following resolution was carried—26 to 5:

That this meeting, while prepared to accept the financial terms as offered by the Chancellor of the Exchequer, is of opinion that there are many points in the Provisional Regulations which require amendment, and which ought to be discussed at a conference between the State Sickness Insurance Committee and the Commissioners.

OXFORD AND READING BRANCH:

Reading Division.

At a meeting of this Division the Representative was instructed to move as follows:

That the British Medical Association abides by the minimum demands embodied in the six cardinal points of the Association and contained in the letter of the Medical Secretary to the Insurance Commissioners dated February 29th, 1912.

That this Representative Body views with the strongest distrust the position and utterance of the medical members remaining on the Advisory Committee who have been in conference with the Chancellor of the Exchequer, and entirely repudiates their authority to speak in the name of the profession at large.

PERTHSHIRE BRANCH.

At the meeting of the Perthshire Branch held at the Perth Infirmary on November 12th the following resolution was passed unanimously:

That this meeting of the Perthshire Branch of the British Medical Association instructs its Representative to vote refusing to work the medical benefits of the Insurance Act unless the eight cardinal principles are conceded.

SOUTH-EASTERN BRANCH:

Croydon Division.

At the meeting of this Division held on November 12th the Representative was instructed to move at the Representative Meeting as follows:

1. That it be an instruction to the Council that in any Public Medical Service scheme submitted for approval the inclusion of the principle of co-operation of contributing lay bodies in the administration shall not be a ground for withholding such approval, providing that the control of purely professional matters shall remain in the hands of the profession.
2. That in view of the regulations respecting medical benefit issued by the Commissioners and the Chancellor's recent explanatory statement, this Representative Meeting urges on the Divisions seriously to consider the advisability of adopting the system of payment in full for services rendered on a standard tariff, the risk of insurance to be borne by the Government, the contributing lay bodies, or these jointly.
3. That it be an instruction to the Council to inform the Commissioners that the Association is prepared to appoint representatives with power to negotiate on the basis of payment in full for services rendered under a system in which the medical practitioner is not required to undertake the risk of insurance.
4. That in the event of the Association being desirous of re-opening negotiations upon the provision of the National Insurance Act—
   (*a*) The universal application of the £2 wage limit be not regarded as essential, provided the Association is satisfied that the other demands have been met.
   (*b*) The exclusion from medical benefit of those insured persons who have become entitled thereto by reason that they have entered into insurance five years, and whose income has come to exceed £160 per annum, be made absolute.

SOUTHERN BRANCH:

Salisbury Division.

At a meeting of this Division, held on November 8th, the following resolution was adopted:

That the meeting of the Salisbury Division considers the terms suggested by the Government opens a way for an honourable compromise; and considers it advisable for the Representative Meeting to give full powers to the State Sickness Insurance Committee to reopen and complete negotiations, in order that the medical benefits may come into force on January 15th, 1913. Also that this meeting is of opinion that dispensing, as hitherto, should be done by or arranged for the medical practitioner for his own patients should he so desire, payment to be made according to the scale of prices fixed by the Insurance Committee in accordance with the terms of the Act.

SOUTH MIDLAND BRANCH:

Bedfordshire Division.

At the meeting of this Division the following resolutions were adopted for submission to the Special Representative Meeting:

That the Association is willing to appoint a committee of its members with plenipotentiary powers to negotiate with the Chancellor of the Exchequer and the Commissioners as to the points on which the demands of the profession have not yet been met, and as to the final form of the Regulations for medical benefit, provided:

1. That the sum of 7s. per head of insured persons in Great Britain (including the 6d. derived from the sanatorium benefit fund for domiciliary treatment of tuberculous insured persons) be a fixed minimum not subject to any deductions whatsoever.
2. That a further sum of 2s. 6d. per head of insured persons in Great Britain be provided for extras, including mileage but not including drugs and appliances.
3. That no records be kept other than a counterfoil of each certificate given to an insured person to enable him to claim sickness or disablement benefit, or to continue the same, or that he is able to resume work, as described by the Chancellor of the Exchequer in his statement of October 23rd, 1912.
4. That the final form of the regulations for medical benefit be decided by negotiation between the Commissioners and plenipotentiary representatives of the medical profession.

SOUTH WALES AND MONMOUTHSHIRE BRANCH

Monmouthshire Division.

A special meeting of this Division was held on November 13th, when the Representative was instructed to propose at the Special Representative Meeting:

That the Council or State Sickness Insurance Committee be instructed to open negotiations with the Government, with plenary powers, to come to a settlement or to refuse to come to terms.

Swansea Division.

At the meeting of this Division the Representative was instructed to bring forward the following motions at the Special Representative Meeting:

That this meeting is of opinion that the Association should refuse to sanction any scheme of Public Medical Service which admits the possibility of lay control.

That this meeting is of opinion that a previous resolution already carried and confirmed in February, to the effect that no sectional settlements should be made, should again be brought to the notice of the Divisions.

SOUTH-WESTERN BRANCH:

East Cornwall Division.

At the meeting of this Division on November 12th its Representative was instructed to move the following at the Special Representative Meeting:

1. That in the opinion of this meeting the medical profession should refuse any financial offer under the Insurance Act until the conditions of service are made compatible with

the best interests and honourable position of the profession, and that this meeting considers that the conditions of service laid down in the Regulations issued by the Insurance Commissioners, and the fresh conditions proposed by the Chancellor of the Exchequer in his statement of October 23rd, are intolerable to any self-respecting medical man, and would destroy for ever the independence of the medical profession.

2. That the State Sickness Insurance Committee insist that a definite fund for mileage be provided by the Commissioners before any further negotiations take place between them and the medical profession with regard to the working of the Act. That such should undoubtedly come from some centralized fund, and that such payments should take the form of an annual grant to the practitioner concerned, calculated on the basis of the number of patients on his list who reside outside a one-mile radius from his house. That in calculating such a grant a basis of 1s. a mile be the minimum limit of mileage fee.
3. That the Representative Meeting consider the recent offers made by the Chancellor of the Exchequer, which afford the British Medical Association an opportunity of conferring with him and with the Commissioners as to the points on which the demands of the profession have not been met.

Plymouth Division.

The following resolution of this Division has been adopted for submission to the Special Representative Meeting:

That in the opinion of this Division the time has come when the Council of the Association should put forward in the leading journals of the kingdom a concise statement as to the objections of the profession to the medical provisions of the National Insurance Act, especially making it clear that the question is not merely one of finance.

STAFFORDSHIRE BRANCH:

Mid Staffordshire Division.

At a general meeting of the Division held on November 13th, its Representative was instructed to move the following resolutions at the forthcoming Representative Meeting.

1. That the Representative Meeting appoint a Committee to consider the recent offer of the Chancellor of the Exchequer which affords the British Medical Association an opportunity of conferring with him and with the Commissioners as to the points on which the demands of the profession have not yet been met and that such Committee have plenary powers to negotiate and to bring about a settlement.
2. That in any terms of settlement that are proposed, industrial illness and accidents which are covered by the Workmen's Compensation Acts shall be regarded as outside the scope of medical benefit.

ULSTER BRANCH:

Ballymoney, North Antrim, and South Derry Division.

At a meeting of this Division on November 7th the following resolution was adopted:

That if medical benefits were extended to Ireland we would be disposed to give sympathetic consideration to the latest proposals of the Chancellor, Mr. Lloyd George, provided that satisfactory replies were received to the inquiries to be made as to the many points which require to be cleared up.

Belfast Division.

This Division has adoption the following resolutions:

1. That, until medical benefit is extended to Ireland, payment for domiciliary attendance should be on a scale of fees for work done.
2. That this Division wishes it made clear that the 6d. per head, promised by the Chancellor for payment of domiciliary attendance, will be available for this purpose in Ireland as in England.
3. That in order that sanatorium benefit should be carried out effectually in Ireland, it is essential that the local Medical Committee should be recognized and consulted by the local Insurance Committee, and that this Division instruct its Representative accordingly.
4. That we refuse acceptance of service under the Act on the proposed terms.
5. That we condemn the action of those doctors on the Advisory Committee, and of those on the local Insurance Committees not nominated by the profession, who retained their seats after being called upon by the Association to resign, as disloyal to the profession and disloyal in the profession, and lose of *esprit de corps*.

WORCESTERSHIRE AND HEREFORDSHIRE BRANCH:

Worcester Division.

The following resolutions have been adopted by the Worcester Division:

General Resolution.

That whilst forming a basis for negotiations the offer of Mr. Lloyd George be not accepted in its entirety, and that the State Sickness Insurance Committee be empowered to negotiate with the Government with a view to securing improved conditions for the profession.

Suggested Lines for Negotiation.

1. The medical profession should be allowed to dispense medicine should they so desire.
2. That we refuse to keep the records suggested by Mr. Lloyd George until the profession have the opportunity of seeing and approving of the forms suggested.
3. That extra mileage fees be paid to the profession for patients who reside more than two miles away. This fee to be over and above the capitation fee mentioned by Mr. Lloyd George to the Advisory Committee on October 23rd.
4. That the local Insurance Committees be compelled to permit insured persons whose incomes is over 30s. per week to make their own arrangements for medical attendance, and that in such case the capitation fee payable for such persons shall be paid annually into a fund to assist in payment of the doctor's bill.
5. That the number of persons for whom the capitation fee is payable shall be ascertained by taking the number of persons on a doctor's list at the commencement of each quarter, and that in the case of a person placed on the list during such quarter a pro rata proportion of such capitation fee shall be paid.
6. That medical representation on local Insurance Committee be ten per cent.
7. That tuberculosis cases should not be treated under the contract as suggested by Mr. Lloyd George in his speech to the Advisory Committee on October 23rd.
8. That the State Sickness Insurance Committee be empowered to negotiate on the wage limit, but that it shall not exceed the income-tax limit.

YORKSHIRE BRANCH:

Bradford Division.

At a meeting of the Bradford Division, held on November 11th, the following resolutions were adopted:

1. That in the opinion of this Representative Meeting the Regulations issued by the Insurance Commissioners, and the latest proposals of the Chancellor of the Exchequer, are unworkable, derogatory to the profession, and a positive danger to national health; as a consequence, the medical profession declines to undertake service under the Act and Regulations as at present constituted.
2. That this meeting of the Bradford Division instructs its Representative to affirm the original terms of the Association of February 29th, 1912.

East Riding Division.

At the meeting of this Division held on November 13th the following resolutions were passed unanimously:

1. That the Chancellor's statement of October 23rd be accepted as a basis for opening negotiations.
2. That the first cardinal point relating to income limit be not pressed for centrally, but be left to be obtained locally, as stated in the Act.
3. That the Regulations as to professional discipline be accepted, but in the case of complaints against the doctor there should be a right of appeal to a specially appointed medical tribunal.
4. That mileage should be an extra on any capitation fee over a two mile radius from the doctor's residence, at the rate of 1s. a mile.
5. That night visits between 8 p.m. and 8 a.m., and special visits between 10 a.m. and 8 p.m., be extras.
6. That the list of extras as laid out in the Supplement of October 5th, p. 371, and also "modern means of exact diagnosis," be pressed for, and that the remuneration be left for the State Sickness Insurance Committee to arrange.
7. That the necessity of keeping records in every case be deleted.
8. That all certificates and reports outside insurance certificates be paid for.

Scarborough Division.

At a meeting of the Scarborough Division on November 7th, the following resolution was passed:

That this meeting declines to accept the terms offered under the Insurance Act except as relating to the treatment of tuberculous patients, but negotiations should be resumed if opportunity arises.

National Insurance.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

The eleventh meeting of the State Sickness Insurance Committee appointed by the Annual Representative Meeting, 1912, was held on November 7th.

Mr. T. Jenner Verrall, Chairman of Representative Meetings, was in the chair, in the absence of Dr. Macdonald, and the other members present were:—*England and Wales:* Dr. R. M. Beaton (London), Dr. T. M. Carter (Bristol), Dr. Major Greenwood (London), Miss Frances Ivens, M.S. (Liverpool), Dr. Constance E. Long (London), Dr. E. J. Maclean (Cardiff), Dr. James Pearse (Trowbridge), Dr. E. O. Price (Bangor), Dr. Lauriston Shaw (London), Mr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Mr. E. H. Willock (Croydon). *Scotland:* Dr. John Adams (Glasgow), Dr. R. McKenzie Johnston (Edinburgh). *Ireland:* Dr. J. S. Darling (Lurgan). *Ex officio:* Dr. Edwin Rayner (Treasurer).

Apologies for absence were read from the Chairman of the Committee, Dr. J. A. Macdonald; the President (Sir James Barr), and Dr. D. G. Thomson (Norwich).

Lists of Practitioners in each Insurance Area.

The following resolution from the Bath and Bristol Branch was received:

> That members of each local Provisional Medical Committee whose residence for practice so qualifies them be grouped with similarly qualified members of adjoining local Provisional Medical Committees to form committees corresponding in area with the areas of the local Insurance Committees, and that these members be permitted to retain their seats on the local Provisional Medical Committee to which they were first elected.

The Medical Secretary asked for instructions as to the preparations of lists of medical practitioners in each insurance area. He thought that such lists might be required by the profession whether it was decided to work under the Act or not. The Committee resolved to instruct the Medical Secretary to prepare lists of medical practitioners in each insurance area.

Correspondence with the Chancellor of the Exchequer and the Joint Committee of Insurance Commissioners.

The letter of inquiry addressed by the Chairman of Council and the Chairman of Representative Meetings and the Medical Secretary to the Chancellor of the Exchequer, in accordance with the resolution of the Council of October 31st, was read, together with his reply, and also the letter from the Chairman of the Joint Committee of Insurance Commissioners with regard to two points not mentioned in the reply of the Chancellor of the Exchequer. These letters were published in the Supplement of November 9th, pages 500–503, and will be laid before the Special Representative Meeting.

Conference of Colliery Surgeons.

The minutes of the conference of colliery surgeons, held at Newcastle-on-Tyne on November 6th, were presented by the chairman, Mr. Todd. The Committee approved the minutes, and resolved to report them to the Special Representative Meeting.

Treatment of Tuberculosis.

It was reported that since the last meeting the Chairman had considered the following schemes for the administration of sanatorium benefit, and had, on behalf of the Committee, signified approval so far as they conformed to the decision of the Committee: Devonport, Liverpool, Lincolnshire (Holland).

The Committee also approved of the scheme for sanatorium benefit in Salford, which had been approved by the local Provisional Medical Committee.

Two other schemes were considered, and decisions deferred in order that further information might be obtained.

Public Medical Service Schemes.

It was reported that the Chairman had since the last meeting of the Committee approved on its behalf of the Isle of Wight Public Medical Service scheme so far as it conformed to the decisions of the Committee, and the Chairman's action was approved.

The Committee approved the scheme for Great Yarmouth, submitted by the East Norfolk Local Provisional Medical Committee.

Schemes for Lincolnshire (Kesteven) and for the County of Kent were considered, but the Committee resolved not to express an opinion until the principles involved had been considered by the Special Representative Meeting. The scheme for Reading was deferred in order that further information might be obtained.

Advisory Committees.

A communication was received from the Right Hon. M. F. Cox., M.D. (Dublin), stating that he was unable to agree to the Committee's request to resign his membership on the Advisory Committee, and giving his reasons.

Capitation Payment for Domiciliary Treatment of Tuberculosis.

It was resolved to hold a further meeting of the Committee on November 14th for the consideration of the offer of the Chancellor of the Exchequer of a capitation fee of 6d. for the domiciliary treatment of cases of tuberculosis. The Chairman and Medical Secretary were requested to prepare a report on the question for the consideration of the Committee at this meeting.

CONFERENCE OF COLLIERY SURGEONS.

The conference of representatives of colliery surgeons arranged by the State Sickness Insurance Committee of the British Medical Association was held at Newcastle-on-Tyne on November 6th.

The following representatives were present:

Northumberland and Durham.—Dr. L. G. Dillon (Seaham Harbour), Dr. D. A. R. Farquharson (Washington, co. Durham), Dr. L. Fraser (North Shields), Mr. D. F. Todd (Sunderland).

Scotland.—Dr. W. Craig (Cowdenbeath), Dr. C. Crawford (Hamilton), Dr. D. E. Dickson (Lochgelly), Dr. A. M. Easterbrook (Gorebridge), Dr. J. Fotheringham (Motherwell), Dr. John J. Joss (Denny).

Cumberland.—Dr. F. W. Proud (Maryport).

Yorkshire.—Dr. J. H. Battersby (Doncaster), Dr. R. Castle (Darfield).

Wales.—Dr. W. Bickerton Edwards (Seven Sisters, Neath), Dr. J. D. Lloyd (Chirk), Dr. E. V. Pegge (Briton Ferry), Dr. W. E. Thomas (Ystrad Rhondda).

Lancashire.—Dr. Campbell (Wigan).

Midlands.—Dr. Duncan (Chesterfield), Dr. E. H. Houfton (Mansfield), Dr. F. Wolverson (Walsall Wood).

Dr. J. Cromie (Blyth) was unable to attend owing to indisposition.

Mr. D. F. Todd was elected chairman of the conference.

It was reported that some of the colliery surgeons in Monmouthshire disagreed with the instructions given to the Representatives from South Wales, and had requested Drs. Verity and Haslett to attend to lay their views before the conference. These two gentlemen were invited to be present and to speak, but not to vote.

Contracting Out.

The conference considered the following resolution of the last conference held in London on November 8th, 1911:

> That this meeting is not in favour of contracting out of the Insurance Bill for the provision of medical benefit.

It was decided to rescind this resolution and to adopt the following:

> That the question of contracting out or not under the Act be decided by the vote of the majority of colliery and works surgeons in each area as defined by the Branch Councils, and that such decision be binding on all practitioners in such areas.

MINIMUM CAPITATION FEE.

The following resolutions were adopted:

That this conference is of opinion that the minimum capitation fee for insured persons should be 8s. 6d., or such other terms as are accepted by the British Medical Association.

That in those areas where it is found possible to arrange for medical attendance on the families of insured persons the amount of remuneration be fixed on a basis of 8s. 6d. per person per annum, or such figures as may be accepted by the British Medical Association.

MINIMUM RATES OF PAYMENT.

The following resolutions as to the minumum rates of payment, in addition to the amount received from the Insurance Committee, were adopted:

That the minimum rate of payment for colliery contract practice, in addition to the amount received from the Insurance Committee for each insured worker, should be 9d. per fortnight per worker with dependants, and in those areas where a flat rate is desired, the minumum rate be 2¼d. per week per worker, in both cases inclusive of medicines.

That, as an alternative method, there might be a payment of not less than 2d. in the £ of wages from each worker, *plus* the amount received from the Insurance Committee on behalf of each insured worker.

That this conference agrees with the suggestion that arrangements should be made whereby midwifery fees and other extra fees might be collected by instalments at the works office.

That the principle that all payments be made where possible through the works office be adopted throughout the kingdom.

PAYMENT FOR COLLIERY CONTRACT PRACTICE.

The present arrangements as regards payment for colliery contract practice throughout Great Britain were considered, together with suggestions as to alterations. The following resolution was adopted *nemine contradicente*:

That colliery and works contract practice in Wales be remunerated by a minimum deduction of 3d. in the pound of wages, the service to include medicines and dressings ordered by the medical practitioner, but to exclude major operations, midwifery, abortions, miscarriages, and vaccinations; the minimum fee for midwifery being one guinea, for abortions and miscarriages 10s. 6d., and for vaccinations 3s. 6d.

SCOTLAND.

The following resolution, received from the Scottish Medical Insurance Council, acting on behalf of the Scottish colliery and works surgeons, was approved:

(*a*) That there be one national policy for Scotland.
(*b*) That, in regard to the soundest system to be adopted, the following alternatives are recommended:
  (i) In cases of *contracting out*:
    3½d. per week without medicine, or
    4½d. per week including medicine.
  (ii) In cases of *not contracting out*:
    Capitation fee *plus*
    2d. per week without medicine, or
    2½d. per week including medicine.
(*c*) That the system be not applied to individuals outwith collieries and public works, or at any rate where compulsory deductions cannot be made.
(*d*) That all payments be made through the works offices where possible.
(*e*) That the policy adopted be negotiated only through the recognized associations of masters, men, and doctors.

[A letter on behalf of the Colliery and Public Works Surgeons Committee on the Scottish Medical Insurance Council was issued on November 11th, signed by Alex. M. Easterbrook, chairman, Dr Elliott Dickson, member of committee, and D. L. Eadie, secretary. The letter reported the above resolution, and pointed out that, in considering it, it was essential to keep in view and appreciate fully that in future (1) there must be free choice of doctor; and (2) that considerable extra work will be demanded, as definitely stated by the Chancellor. The question of not contracting out, it is pointed out, is subject to the decision of the Representative Meeting of the British Medical Association. The letter concludes as follows:

A serious difficulty is foreseen with regard to *contracting out*, in respect that each insured person must individually indicate on his card by what method he prefers to take his medical benefit, for example, panel, recognized system, etc.

Arising out of the Newcastle Conference it would appear that the poundage system (3d. per £1 of wages inclusive of medicine) as obtains in Wales presents advantages both to workmen and doctors, and gets over certain difficulties such as income limit, etc.

Your Committee is at present taking steps to approach the various recognized associations with a view to discussing the future arrangements for medical attendance.

We are instructed to suggest that local meetings of colliery and public works surgeons should be held, or that this circular should be discussed at the forthcoming Divisional meetings, and, if necessary, your Representative on this Committee will give any further information desired.]

ADJUSTMENT OF CONTRACTS.

It was resolved:

That no practitioner enter into any individual contract for medical attendance except through a local Medical Committee acting for an agreed area.

ACCIDENTS AND INDUSTRIAL DISEASES.

It was resolved as follows:

That in those areas where the custom has been to provide separately for treatment of accidents and industrial diseases the custom be continued for the future, if possible.

DISPENSING.

It was resolved unanimously:

That in those colliery areas where it has been the custom for the doctors to do their own dispensing efforts be made to enable them to continue doing so under the Act.

ARREARS.

It was resolved unanimously:

That in future it be the policy of colliery and works surgeons to make a demand through the recognized associations of doctors, owners, and workmen for all arrears of payment for medical attendance, due to strikes or stoppages; and that where the system of poundage is in operation the average wage of the last three months be taken as a basis.

NEGOTIATIONS.

It was resolved to recommend the State Sickness Insurance Committee that in the event of any representations being made to the Chancellor of the Exchequer or the Insurance Commissioners, the special claims and difficulties of colliery surgeons be stated by representatives elected by the conference, and the following representatives were thereupon elected:

Mr. D. F. Todd.	Dr. R. F. Castle.
Dr. W. E. Thomas.	Dr. A. Smith.
Dr. A. M. Easterbrook.	Dr. A. T. Campbell.

VOTE OF THANKS.

A hearty vote of thanks was accorded to Mr. D. F. Todd for his conduct in the chair.

The Chairman very hospitably entertained all those present at luncheon.

IRELAND.

AN UNVERIFIED STORY.

LAST week an article appeared in the London *Standard*—it was reproduced in the Dublin press—stating that Dr. Thomas J. Kelly (President of the Irish Medical Association) had visited London, and had carried through certain negotiations with Mr. John Burns, Mr. Lloyd George, Mr. John Redmond, and other members of Parliament, as the result of which it was decided to refer the terms agreed upon to a Select Committee of the House of Commons. It was stated also that Dr. Kelly, before accepting the terms on behalf of the association he represented, obtained their official concurrence by telephone direct from Ireland to the House of Commons. We need not reproduce the terms because the whole story appears to be apocryphal. Dr. Kelly, the secretary of the Irish Medical Association, has stated that no such negotiations were authorized by the Conjoint Committee. Dr. Kelly is not the president of the Irish Medical Association, and had no authority to enter into any negotiations with members of Parliament or others from the association. He has written to the press to say that he never in his life met Mr. John Burns, Mr. Lloyd George, Mr. Redmond, or any of the other members of Parliament mentioned, and never

made or suggested any agreement with them. The Irish press has also been officially informed that neither the Chancellor of the Exchequer nor the Irish Insurance Commissioners have any knowledge of these negotiations. All matters connected with the Insurance Act are referred to the Conjoint Committee, which is the body elected as representative of the entire medical profession in Ireland.

JOINT COMMITTEE OF COLLEGES AND UNIVERSITIES IN ENGLAND.

At a meeting of the Joint Committee of the Royal Colleges of Physicians and Surgeons, the Society of Apothecaries, and the Medical Faculties of the Universities of England, held at the Royal College of Physicians on Wednesday, November 13th, the following resolutions were passed:

1. That in the opinion of this committee the conditions set up by the Provisional Regulations of the Insurance Commissioners, dated October 1st, 1912, are of such a nature as to interfere injuriously with the rights and proper independence of the medical profession and with efficiency in the treatment of insured persons.
2. That medical practitioners, in matters concerning their professional conduct, ought not to be tried before a tribunal that is not professional, the decisions of which may have the most serious effect on their reputation and practice.
3. Seeing that the carrying out of the Provisional Regulations is left largely in the hands of the local Insurance Committees, it would be unwise to agree to accept them (even if otherwise satisfactory) so long as the insured persons are represented upon these Committees by an overwhelming majority.
4. That attention should be called to the advisability of establishing tuberculosis centres in connexion with those hospitals to which medical schools are attached.

MEETINGS OF THE PROFESSION.

Manchester.

On Saturday last, November 9th, a mass meeting of the medical profession, organized by the National Medical Union, was held at the Midland Hotel, Manchester. Accompanying the invitation to the meeting was a circular stating that the object of the National Medical Union was to strengthen the hands of the British Medical Association in its insistence on the cardinal points, and that the Union is not prepared to compromise on any of the original demands; the full granting of them is the only condition upon which its members are willing to work the Act. A pamphlet was also sent to every practitioner containing a detailed criticism of the medical regulations and expressing the opinion that "the regulations bring out the objectionable features of the Act into higher relief, and a unanimous and firm refusal to form panels is the only tenable position which the profession can take up."

At the meeting on Saturday Mr. G. A. Wright, Consulting Surgeon to the Manchester Royal Infirmary, presided, and there was a fair attendance. A number of letters of apology for absence were read, one being from Sir James Barr expressing pleasure at the stand which Manchester was making. After some introductory remarks by the Chairman, in which he expressed the hope that the profession would have nothing to do with the Government proposals, Mr. E. B. Turner, of London, moved the following resolution:

> That in the opinion of this meeting the conditions of service laid down in the regulations issued by the Insurance Commissioners are intolerable, notwithstanding the new proposals foreshadowed by Mr. Lloyd George in his speech on October 23rd, and would destroy for ever the independence of the medical profession. Therefore, any financial offer under the National Insurance Act should be refused until the conditions of service are made compatible with the best interests and honourable position of the profession.

This was seconded by Dr. T. Wheeler Hart, one of the honorary secretaries of the National Medical Union, and supported by Drs. Reynolds and Murray, of Manchester, Dr. Trotter (Huddersfield), and Dr. Mannix (Lancaster), and was carried unanimously.

Mr. F. H. Westmacott, of Manchester, then moved the following:

> That the members of the British Medical Association present undertake to attend their Divisional meetings and instruct their Representatives that any failure on the part of the Representative Meeting to give effect to the original demands of the profession, formulated by the British Medical Association and re-confirmed at this meeting, will inevitably result in independent action being taken.

This was seconded by Dr. Lowe, of Crewe, and supported by Drs. Russell (Edinburgh), Campbell (Wigan), O'Connor (Oswestry), and O'Sullivan (Liverpool). Dr. Ratcliff-Gaylard, of Birkenhead, in urging that some resolution should have been moved that would allow of a *via media* so as to leave the Representatives at liberty to vote for negotiations being reopened, was subjected to considerable interruption, and had difficulty in getting a hearing, and the resolution was carried with only a few dissentients.

Rossendale.

At a meeting of the Rossendale Medical Society, held on November 6th at Rawtenstall, the following resolution was passed unanimously:

> That this meeting of the Rossendale Medical Society agree that we shall accept the full capitation grant, provided that we retain the dispensing, and that the conditions of service are made compatible with the best interests and honourable position of the profession and insured persons.

Dr. J. R. Hamilton, convener of the Rural Subcommittee of the Scottish Medical Insurance Committee, desires to thank those members who replied to the questions he addressed to them recently on behalf of the subcommittee.

CORRESPONDENCE.

The Terms and Conditions now Offered.

Dr. J. Charles (Stanley, S.O., co. Durham) writes: The dispute between the profession and the Government respecting the medical service under the Insurance Act must end soon. The profession is sick of it, Parliament is weary of it, and the public have had their fill of it.

The continuance by the profession of a policy of destructive criticism will produce no tangible result, and the persistence in an attitude of unbending dictation will alienate Parliament and the public alike.

Let the profession finally come to an agreement with the Government through an executive invested with plenary powers, and let a settlement be arranged based on a compromise between the terms and conditions now offered and those that we desire. Afterwards, by loyal service under the Act, let us endeavour to make it a success and evolve a better state of things for the profession in the future.

What stands in the way? Up to 85 per cent. of the whole the demands of the profession have been conceded. Is it worth while wrangling further over what remains unsettled?

With certain unimportant reservations to meet the wants of existing institutions, which the profession itself has helped to establish, the great principle of "free choice of doctor" is confirmed by the Act, and remuneration is offered which guarantees an income of from £200 to £300 a year—an income not subject to deductions or fluctuations through diminished work—to the great majority of the working-class practitioners in the country, and that for service given to the healthiest section of their *clientèle* only.

The £2 wage limit is not worth squabbling over; it will make no material difference one way or other to the income of the average practitioner in a working-class community, and to insist upon it would inflict on the public such a system of inquisitorial inquiry as would produce widespread resentment against the profession.

The administrative and disciplinary machinery of the Act as it affects the profession may not be perfect or perhaps fair to the profession, but, on the other hand, the objections to it are for the most part conjectural, probably greatly imaginary. At any rate, they cannot be substantiated till the machinery has been tried, and are not of such vital importance as to justify a refusal to work the Act.

It is significant to find in the present crisis that the

practitioners in this county who are accustomed to a system of collective practice and payment by an "inclusive per capita fee for whole services levied on all adult workers" are almost unanimous in their acceptance of the medical service of the Insurance Act. The work required does not trouble them, as they have experienced it in the past, and know that it is not unreasonable; they are not disturbed in their minds about the "lay control" and "Government supervision," and they smile at the mention of that formidable looking, but really harmless little watch-dog, the "Committee of Complaints," that will be set to keep the peace.

Having some experience of such like committees and lodges in their practices in the past they do not regard them with dread or misgiving, and they feel sure they will make very little difference in the general working of their practices.

It should not be forgotten that one effect of the acceptance of service under the Insurance Act will be to distribute the work of general practice more evenly and equitably than in the past, to lessen hospital abuse, and to strike off part at least of the burden of "charitable service" that has oppressed the profession for generations.

What is wanted now is for the profession to cease contending, wrangling, and hair-splitting over the trivial and non-essential, and to come to a decision on the main issue. If the scheme of the Insurance Act, as now emended and improved, is to be preferred to either of the two alternatives, a Public Medical Service or a State Medical Service—and viewed from the standpoint of the general practitioner it is infinitely superior to both—then let us meet the Government, through an authorized and trusted Executive, in a reasonable spirit, point out what is unfair to the profession and inimical to the successful working of a medical service in the Regulations, and there is no reason to doubt that a settlement satisfactory to both sides will be brought about.

Dr. W. Gifford Nash (Bedford) writes: The more one studies the Provisional Regulations the more convinced one becomes of the impossibility of working the Act.

Mr. Lloyd George professes to have raised the capitation fee to 7s., including 6d. per head for the domiciliary treatment of tuberculosis, without any deductions for drugs, administrative expenses, or for any other purposes. Mileage, however, is included in the 7s. if the rural and urban practitioners agree, which means that the urban doctors would get less than 7s., and the rural doctors more. There will be no allowance for extras, which Mr. Lloyd George values at from 2s. to 4s. a head.

It seems impossible that medical men will agree to these terms when we consider what is expected of them in the way of work.

I will consider this under seven headings:

1. *Loss of Freedom.*—Medical inspectors will be employed. Doctors will be liable to dismissal from the panel, and therefore to ruin.

2. *Loss of Private Patients.*—Many patients who have previously paid fees will now become insured persons.

3. *Free Medical Certificates.*—These will be the certificate that the insured person is unfit for work, the certificates that he continues unfit for work, and the certificate when he is restored to health.

4. *Records of Patients Treated and Visits Paid.*—Under the Act Mr. Lloyd George states that "more visits and better attendance would be provided." This is to be carried out in the following way: "Daybooks will be provided in which the following particulars will be entered: Name of patient, address, name of society and number, record of visits and other attendances, age, sex, and nature of illness" (Supplement, November 9th, p. 502). The practitioner will have to carry about with him certificate forms, prescription forms, and special forms for drugs not included in the list.

5. *Proper Amount of Time and Attention to be Given and Modern Methods of Exact Diagnosis to be Used.*—Mr. Lloyd George, in his statement of October 23rd, stated:

> It will be the duty of the Commissioners to see that a proper standard is reached and maintained, not merely in respect of the number of visits paid or the number of times a patient is seen at the doctor's surgery, but also in respect of the amount of time and attention given, and also that where necessary the practitioner should resort to those modern means of exact diagnosis the importance of which I am advised is increasingly recognized in the profession.

6. *Detailed Quarterly Accounts.*—Regulation 31 says that every practitioner on the panel shall furnish to the Committee a quarterly account in a form approved by the Committee containing such particulars as may be necessary for calculating the amount of remuneration payable to him by the Committee, and also

> before payment of the balance the Committee shall submit all accounts to a committee appointed by the practitioners on the panel, which shall have power to reduce or disallow any item of any account.

Let us consider what this means.

The members of this medical committee, already bored to death by making out their own detailed quarterly accounts, will have to go through numberless items in their professional rivals' accounts to find out whether they are overcharging.

I cannot imagine any one consenting to act on such a committee.

7. *Attendance on Insurance Committees, Medical Committees, and Complaints Committee.*—Insurance Committees will probably meet once a month, at a time convenient to themselves; Medical Committees will have to meet equally often, and no one knows how often the Complaints Committee will meet.

Is it likely that hard-worked medical men on the panel will be able to give up time to attend all these committee meetings?

If they do not attend regularly, then the admitted under-representation of medical men on these committees will be exaggerated.

When one considers all these new duties thrust on medical men against their will, one cannot but feel that the capitation sum offered is absurdly inadequate.

Apparently, medical men cannot be trusted to dispense proper drugs or to do their work without inspection, but one does not hear of any proposed inspection of the chemists or analysis of their drugs.

It is to be hoped that every medical man will carefully study the Regulations before he consents to part with his freedom.

Dr. Cooke (Wigan), who considers that the profession is now either on the point of coming to some arrangement or at the parting of the ways, suggests that the profession should set out in explicit language what it considers essential under existing conditions. While he agrees with those who hold that the profession cannot accept the present offers, he considers that it has not indicated with sufficient clearness the terms it is prepared to accept. Writing as a practitioner of thirty years' standing, engaged largely in contract work as well as in private practice, he submits the following suggestions, premising that he considers that the amount set aside by the Chancellor would, with very little help, cover the requirements.

1. That the right to dispense medicines for our patients shall be a *sine quâ non*.

Reasons:

(*a*) Economy.
(*b*) In the best interests of the patient.
(*c*) In the interest of the practitioners.
(*d*) The practitioner is responsible for quality of drugs.

The Chancellor has been badly advised as to the dispensing of medicines by practitioners. He seems to have been imbued with the idea that, from the practitioner's point of view, anything was good enough for the club patient, and in some cases, I regret to say, this may have had some foundation, but I protest it is a gross libel on the great majority. I would like to ask, Will the men who dispense indifferent medicines give better thought-out prescriptions? I think not, especially when they see that latest glittering "tanner" dangling before them. If this last offer of the Chancellor's is not an inducement to invite shoddy prescriptions, I don't know what is. This I say with no disrespect to the Chancellor; he is acting on advice, which advice is bad.

It will be a misfortune for the country when it becomes deluged with prescriptions; no amount of supervision can prevent their indiscriminate abuse, and instead of being a nation of beer drinkers or tea imbibers, both bad, we shall go one still worse and become a nation of physic swallowers. The drug habit is already sufficiently

alarming, and we should pause before countenancing measures likely to add to this pernicious tendency.

In country and scattered districts the difficulty of getting at the chemist will be a source of confusion and dangerous delay. Practical medical men fully realize the many advantages to the patient when, in urgent cases, additions or alterations in the treatment can be made with a minimum loss of time.

2. That the full capitation fee of 9s. be handed over to the profession, which shall be an inclusive fee with the following exceptions:

(*a*) Bacteriological and similar examinations.
(*b*) Consultations, which shall be paid for by the patient, if able, and if not, then by the Commissioners according to their discretion.
(*c*) Any illness through attacks of specific disease, or any illness or injury brought on by the patient's own folly, and which precludes his right to sick pay.

3. That duly qualified assistants be recognized as before, because—

(*a*) It is necessary, especially in country districts, in the interests of both patient and doctor, to have a second help.
(*b*) In emergencies.
(*c*) In temporary absence or indisposition of principal.
(*d*) To assist in the extra clerical work which will be imposed by the Act.
(*e*) As a means of newly qualified men obtaining experience in general practice.

4. That the Regulations issued by the Commissioners be revised and made more in conformity with the wishes of the profession.

5. That in dangerous or hazardous occupations treatment be paid for as heretofore, outside ordinary sickness and domestic accidents.

Accident clubs and societies have been long in existence all over the country, and these have been treated and dealt with, and special payment been made by them apart from any sickness fund—it is only reasonable to suppose that they would be quite willing to continue these arrangements out of their own funds.

6. That mileage be computed from the residence of the nearest practitioner, and to be at the capitation rate of 1s. per mile, after the first mile.

This would not affect the total amount set aside by the Chancellor, but would come out of the 9s. capitation fee.

Now, as nine-tenths of the total insured persons live within a mile of some medical man, and of the one-tenth outside the one-mile radius a large proportion would come within the two-mile radius, it will be seen that a very small deduction from the 9s. would pay for the mileage; so that under one mile the capitation would be 8s. 6d. or 8s. 9d. The small deduction mentioned would amply provide for mileage.

7. Operations and administration of anaesthetics to be arranged for on a similar basis to that allowed by the Poor Law. Any operation following a trade accident would be provided for as at present, under the accident capitation fee without extra charge.

8. Provided the foregoing are accepted, together with better representation of the profession on the various committees, the wage limit to be the present income-tax amount.

In conclusion I would like to point out that, although we would be quite prepared to keep the books suggested by the Chancellor free of access at all reasonable times to a medical inspector, there would be little need of inspectors or plaints committees if the medical man feels he is being well paid. The fact that all patients have free choice of doctor will speedily find out and penalize the neglectful practitioner. The fact that panels will be open to all duly qualified medical men will dispel any undue employment of assistants.

So that we see the only financial liability devolving on the Chancellor, outside the amount already promised, would be:

1. Bacteriological examinations of the sputum in tuberculosis, the blood in typhoid, throat membrane in diphtheria, and one or two others.
2. Consultations in a few cases too poor to be paid for by the patient, and which would have to be determined by the Commissioners.
3. Those operations (which would be very few) outside trade accidents.
4. The administration of anaesthetics.

The whole would not, I dare guarantee, amount to more than 1d. per head per annum of the total insured persons.

Dr. H. Reynolds Brown (Maldon) writes: Many branches of the Association throughout the country are passing resolutions declining to accept the Chancellor's latest offer under the Insurance Act.

Do we all realize that such a refusal amounts to a challenge to the Government to follow the other course that has been threatened, and appoint whole-time medical officers?

That the Government, if met with a blank refusal, will revise its terms financially, or to any large extent in other respects, is merely a vain hope. The opinion of politicians on both sides of the House, and of the bulk of the laity outside, seems to be that the terms already offered are generous. So that little if any support can be expected by us from public opinion.

The number of insured is about fourteen millions. It may be anticipated that the average number that can be attended by one whole-time man will be about 2,500. The number of men required will thus be about 5,600. At 7s. per insured person the average sum available for each medical officer will be £875.

What number of medical men will fail to resist such an offer, say, in the form of a salary of £600 a year rising to £800, the balance available being held over for a pension? He must be very sanguine who can believe that one thousand of such men could not be found. The first step, then, would be to settle these thousand officers in industrial districts. In a few months a considerable number of struggling doctors in these districts would find themselves confronted with the alternative of applying for such posts themselves, or—starvation. One may confidently predict that, if this takes place, five years or less will see the Insurance Act fully provided with whole-time medical officers. Are we prepared to face this prospect? If we are, let us go on as we are doing. If not, we must change our tactics. But do not let us live in a fool's paradise, believing that our position is impregnable.

Our fundamental fallacy is that most of us imagine that the Chancellor of the Exchequer is reluctant to follow such a course. For my part I strongly suspect that he is anxious to adopt it, if he can do so with popular approval. And we are doing our best to manufacture such popular approval for him.

It seems to me that there is one way, and one only, left by which we can build up an enlightened public opinion favourable to our demands. Let us accept the offer tentatively for three years. Let us all insist (as we can) on payment for work done, and not by capitation. The amount payable for each service will be governed by the capitation grant available for each district. If the work turns out to be as heavy as we have good ground for believing that it will, the public and the Government cannot fail to be impressed by the miserably inadequate scale of fees that we earn. We shall then be in a position to demand our due.

Dr. D. V. Haig (Honorary Secretary and Representative, Darlington Division) writes: I am struck by the feebleness of the reasons advanced by those who write in favour of our accepting the cunning offer of the Chancellor. In February last the famous "unmistakable language" resolution was carried by 159 votes to 3. This resolution stated that we absolutely declined to accept any work under the Act until our minimum demands were effectually secured. No man claims that they have been granted, much less secured. Yet there appear to be many who now advocate an entire abandonment of our position. Their reasons may be summed up in one word—"Funk." Afraid of public opinion, afraid of the working men, afraid of blacklegs, afraid of a whole-time service. Not one man gives as his reason that we asked more than is right and just, or more than we deserve. The only other reason given is that under the Act we should get more than we now do under existing club rates. This argument is so ridiculous that it is hardly worth refuting. It will not bear examination, even by those who have done a proportion of club work up to now. And what weight can it have for those of us—a goodly number—who have no clubs at all, and do not want any? If we accept the terms now offered we will find in three years' time that we have fastened the chains of State contract work on to our shoulders for the rest of our lives. United we stand, divided we fall. The Chancellor knows that, hence his offer of a concession, more apparent than real, which he hopes—I am afraid with a good chance of success—will

tempt the faint-hearted ones to break the hitherto splendid unity of our profession.

Mr. H. J. Gater (Peckham) writes: There are two matters which I think we should be most insistent in demanding under the Insurance Act:

1. *The Right to do our own Dispensing.*

This is a right which we obtained on qualifying, and which I, for one, refuse to give up. I earned it (it was not given to me) and I defy any man, or combination of men, to deprive me of that right. I am surprised that the Royal Colleges and the Apothecaries' Society have not been more insistent on this matter. If we are going to create a precedent in this, in the course of time we shall forfeit our diplomas.

2. *The Absolute Refusal to Attend upon Patients Suffering from Diseases due to Misconduct (Alcoholism, Syphilis, Gonorrhoea).*

Fancy being called up at 2 a.m. on a cold winter's night to attend a drunken scoundrel in delirium tremens, or treating gonorrhoea cases by irrigation! Who's going to pay for the irrigation apparatus? Modern methods are demanded, and the above diseases were never treated under the old clubs, or dilating your strictures (due to an old gonorrhoea) by a Kollman's dilator.

It is all very well for Mr. Lloyd George and people of his kidney to lay the stress on modern methods, who do not know what they are talking about.

Modern methods means modern prices, or is it another name for rare and refreshing fruit?

Dr. J. R. R. Trist (St. Columb, Cornwall) writes: The Chancellor's reply (Supplement, November 9th, p. 502) suggests comments as follows:

1. *Increased Services, etc.*—We know that inadequate fees are only profitably accepted by those who render inadequate services. Those of us who refuse to add to our income thus because we refuse to render inadequate service must welcome action tending to the honour of the profession and the welfare of the people.

2. *Definition of Medical Benefit.*—Satisfactory, provided that we can agree what is "a reasonable capitation fee to cover visits and consultations which are not of a special character."

3. *Amount of Remuneration: Mileage.*—Let us decide (after considering extras as in paragraph 2 and mileage) what is "a reasonable capitation fee," etc., and ask the Government to *guarantee* (1) the capitation fee, (2) extras, (3) mileage, and leave actuarial questions to them. They can carry over annual surplus or deficit to be dealt with in the Budget.

4. *Abnormal Drug Fund.*—Suggests no comment.

5. *Employment of Assistants.*—We know that the honour of the profession and the welfare of the people is not always best served by the profuse employment of assistants—often a commercialization of medicine. The interests of the profession as such and of the Government are one in this matter; details should be sealed by co-operative consideration by Representatives.

6. *Treatment of tuberculosis* suggests no comment.

The principles involved in paragraphs 1 and 3 are what the welfare of our profession demands. Let us appoint those with power to negotiate with the Government, to assure them of our aims, and to point out that only adequate remuneration will result in:

1. Removal of temptation to give inadequate service—*Liberty.*
2. Adequate service for the poor wage-earner equally with the capitalist—*Equality.*
3. A cordial relationship between the working classes and their chosen doctor—*Fraternity.*

I shall, of course, hold it my duty to obey my Division (which has not yet voted on the Report of Council), but these are my views.

Dr. J. A. Magee (Sheffield) writes: I am of opinion that the financial part of the Act should be accepted. If we do this, no one can accuse us of mercenary objection to the Act.

If we accept the remuneration offered, we can, I believe, have the other objectionable parts altered to suit our wishes. We have said that our objection was not altogether a monetary one. Let us prove our contention now, and in three years, if the amount is not enough, agitate for an increase.

Mr. G. W. Harvey Bird, M.B., B.C.Camb., and Mr. Penrose Williams, F.R.C.S.Edin. (Bridgwater), write: There are three alternatives open to the profession with regard to the Chancellor's latest offer: To accept, to refuse, to negotiate. The last being, in our view, the proper course, we intend proposing the following resolutions at the meeting of the West Somerset Branch on November 15th, and, as that date is so close to the Representative Meeting, should be glad of the opportunity of placing them before other members:

1. That the Government's latest offer be accepted as a basis for further negotiations.
2. That a committee be appointed at the forthcoming Representative Meeting to reopen negotiations with the Government, with power to arrange terms.
3. That in view of the fact that practical pathology now has a place of definite and increasing importance in everyday pratice, it is essential that arrangements should be made for providing the practitioner with this assistance, both as regards diagnosis and treatment.
4. That the following points be taken as a minimam basis for negotiation:
   - i. *Practical Pathology.*—(*a*) To be recognized as necessary; (*b*) to be excluded from practitioners' liability.
   - ii. *Dispensing* to be retained by practitioner.
   - iii. *Tuberculosis* to be excluded from inclusive fee, as originally arranged, and attendance on such optional (see below).
   - iv. *Income Limit.*—Demand for universal £2 limit to be dropped, and left for local arrangement, but the £160 limit to be absolute both for present and future, so that any person reaching this income goes off medical list.
   - v. *Post Office Contributors.*—A special rate (see below).
   - vi. *Regulations.*—(*a*) Objectionable features of lay control to be deleted; (*b*) to expressly exclude from the contract special work, such as major operations, anaesthetics, consultations, refractions, *x*-ray work, bacteriology, etc.
   - vii. *Capitation Fee.*—Ten shillings: nine shillings to go to the practitioner without any deductions. One shilling to go to a central medical fund, from which grants shall be made for mileage, pathology, attendance on Post Office contributors, and for tuberculosis, and excess drugs, etc., in experiments. Arrangements for distribution of this fund to be entirely in the hands of the profession.

It may be pointed out that in exchange for an additional shilling the Government would be relieved of:

1. Further argument *re* income limit.
2. The necessity for making special arrangements for attendance on Post Office contributors.
3. The provision of a central fund for excessive expenditure in epidemics, as already promised by the Chancellor.

Mr. Stanley Yeoman, M.B.Cantab. (Prestwich, Manchester), writes: I am sure that the profession is united in believing that under the present Regulations the National Insurance Act is unworkable, and also that it is divided on the point as to whether negotiations should be reopened. May I call the attention of those who are of opinion that negotiations should be reopened to the six cardinal points once again, as being fixed by the Association as the irreducible minimum? On the strength of that resolution, I, along with others, joined the Association. If now we are told that they were never intended as an irreducible minimum, but simply as a pious expression of what we might get, then I am afraid that I have joined under a misapprehension, and that instead of a straightforward game, we have been playing a game of bluff, which, if continued, will make the pledges that we have signed so much waste paper. This position would, indeed, be intolerable, as it would result in every man for himself and the devil take the weakest. This will be a creditable ending, indeed, to the Association, if it determines to reopen negotiations before the six cardinal points have been granted by law. Now, as to the advisability of reopening negotiations, I still believe that the profession have determined to have the six cardinal points granted, and that it is with that object that some wish negotiations to be resumed. Now, this is my point: that in the past, while negotiations were going on, we gained nothing; when we broke off negotiations, then we gained (perhaps) some advantage. This, I think, should teach us this

lesson, that nothing less than an ultimatum (and one we are prepared to follow to the end) will win our just fight. This ultimatum has been given, and to that we shall stick if we intend to uphold the honour of our profession. Without the honour, what will be the temptation for the next generation to join the profession? Certainly not the chance that they will ever make a fortune, however hard they strive.

Dr. CHARLES S. PATTERSON (Medical Officer, Lambourn Branch, Great Western Railway Provident) writes: In view of what has already taken place, can the Representative Body in any way reduce the terms stated in the Secretary's letter to the Chancellor to be the irreducible minimum?

On this statement 8,000 odd of practitioners holding contract appointments sent in our resignations. By what line of reasoning can the Council invite the Representative Body to consider any reduction until they have obtained the written consent of each of these contract holders? It is to be remembered even by our leaders that the general practitioners of Great Britain are not bound to supply medical attendance to insured persons on January 15th, 1913. The Chancellor of the Exchequer is so bound. He has collected the money and must supply the goods. Unfortunately he sold before he had made his contract to purchase.

Now with the assistance of sundry specialists, professors, medical officers of health, etc., who will not themselves work the Act, an endeavour is being made to cajole or frighten the general practitioners into taking over the liability under what we know to be absurd and degrading regulations at starvation wages. The medical bigwigs must think us fools. The Representatives fixed the minimum terms as irreducible. On this we sent in our resignations. Now, no one—not even the gods in Olympus, the Council—can go back on those terms without the consent of each contract doctor.

As I personally obtained the resignations of fourteen brother practitioners holding forty-six contract appointments, naturally my responsibility is great. One man told me on Thursday last that he had given up over £55 a year on the basis of the minimum terms, and would consider any reduction would absolve from his pledge.

Rural.

Mr. R. GILLESPIE SMITH (Wrangle, Boston, Lincs.), writes: As another village practitioner I should like to endorse Dr. Williams-Freeman's opinion on having a plebiscite of general practitioners—but I doubt whether we should vote alike, as I am afraid I have not his optimism to arrive at such a favourable conclusion in estimating the effect of the Act on my practice. I hope both he and Dr. O'Ferrall, who says, "We are now offered a fair rate of remuneration," have read Dr. B. G. Morison's letter in the same issue of the SUPPLEMENT. They can hardly realize that the sum to be put away for the medical benefit of each insured person (9s., including drugs, dressings, and appliances, or 7s. without these) does not mean that it will be the actual capitation fee we shall receive for each patient. Whatever else will come out of it, we are definitely told that two things will: (1) Fees will be deducted for "services of a special character which can be rendered by the general practitioner." (2) Mileage—whichever way it is agreed upon to pay for it. Consequently, both the above, at any rate, will materially help to make the capitation fee fall below the sum for medical benefit. I also wonder if they realize that we shall not be treating picked lives as formerly; that women to a large extent come in; that venereal diseases, alcoholism, miscarriages and abortions are included; that more time for clerical work will be necessary, and that the Chancellor says he wants an adequate service. If Dr. O'Ferrall thinks we are being offered a fair remuneration I do not agree with him, nor do I agree with Dr. Lauriston Shaw, "That the new terms justify us in giving them a trial."

As Dr. Style says, there is another aspect of the question besides the financial one; and besides what he says, we must note the loss of dispensing, the obligation to attend, the inadequate representation we are given, and the formation of the Committee of Complaints. There will also sure to be more legal worries, as the Act will clash with the Workmen's Compensation Act.

If any one is justified in giving the new terms a trial, I submit it is those members of the Advisory Committee who, "after anxious consideration," deemed it their duty to remain in office. Let them all go either into a working-class practice in a town or into a large country practice for six months and work the Act, and then let us know how they like it.

THE POSITION OF THE PROFESSION TO-MORROW UNDER THE ACT AND OTHERWISE.

Dr. EVAN JONES (London) writes: It is time the profession carefully weighs the position it finds itself in on the eve of what must be a momentous and final decision with regard to the Insurance Act, and what its prospects are if it consents to work the Act, and also if it does not.

In the event of the Representative Meeting deciding to work the Act—under the Regulations as they are or as they may be modified—what will be the position of the general practitioner next year?

1. *Wage Limit.*—With regard to this we shall be fighting in small sections against Insurance Committees packed by the friendly societies, who are determined above all things not to have a wage limit at all. The result must be a deadlock unless we give way or hang together in a solid phalanx.

2. *The free choice of doctor* means now not what it did when the bill was before the Commons, and in country districts it clearly will mean the nearest doctor, or the insured must pay the extra mileage himself, and in urban districts it may be partly wiped out by the Harmsworth amendment.

3. Administration of medical benefit by the Insurance Committees is absolutely nullified by the provisions of the Act placing representatives of friendly societies in an overwhelming majority on such bodies as to enable them to impose their will.

4. *Professional discipline* will have passed into the hands of laymen. This one feature of the Act has done more to cement the unity of the profession—and, indeed, to create it—than any other single point. The profession from the first resolutely set its face against this, and the fact that it is laboured in the Regulations is in itself sufficient reason absolutely to refuse to have anything to do with the Act. A premium is placed on complaints, as by this means a dissatisfied member may be able to change his doctor.

5. *Method of Remuneration.*—This cardinal point becomes absolutely inoperative, as the amount *per capitam* that can be spent is the same in all districts, whether the patient resides sixteen yards or sixteen miles from his doctor.

6. *Adequate remuneration*, having regard to the duties and conditions of service, the minimum capitation to be 8s. 6d., with extras and subject to income limit.

This requires careful consideration in order to find out approximately what is really offered in money and what service is asked for in return. The Chancellor, in reply to Lord Helmsley, stated in clear terms that the figures he gave were inclusive of everything, and it appears that the only possible provision beyond them is for extra drugs during epidemics. Not a word as to extra fees for the doctors during such times; probably he—the doctor—is not considered worthy of discussion in such a case.

Tuberculosis.

We are to do all work in connexion with tuberculosis in future on a capitation basis of 6d. per insured person, and apparently this is to be made a condition of arrangement for medical benefit. It is important to bring home to the general practitioner the significance of this, and I will do so by illustration, thus:

In one practice where 1,750 club members are now attended by two practitioners, the income on the scale laid down by the British Medical Association would be at least £240 per annum; but, taking it that a maximum of 25 per cent. of cases would be away at any one time, then the net income would be £180 a year, whereas at 6d. per head it will be £43 15s., a difference of £136 5s.

The extra remuneration now offered (2s.) will add to the income (supposing we are paid the whole of it, which I will show presently is impossible) the sum of £175; but, after deducting the reduction on tuberculosis, this amounts to a possible maximum of £38 15s.

Approximate Amount likely to Reach the Doctor.

The total maximum available is 6s. 6d.; I take no account of the 6d. bribe to try and get the doctors to starve their patients of medicine, and it is certain that they will never consent for a trifling extra to be guilty of any such action; it can be taken for granted that all the 2s. will be spent in drugs, appliances, dressings, bandages, etc., and that it will not be enough, and the only sum worth taking any account of is the 6s. 6d. Notwithstanding the Chancellor's statement—which, on the face of it, appears to the public to be the sum the doctor receives net for each patient—it is clearly not what is intended, and when the new Regulations appear the following changes must come in front of the doctor's claim:

1. Forms of certificates.
2. Forms of continuous record.
3. Mileage.
4. Cost of providing medical attendance for insured persons while away from home.
5. Cost of the modern methods of accurate diagnosis. If this means anything it means fees for blood cultures, blood counts, examination of serous fluids, *x*-ray examinations, and a host of other things which the general practitioner finds it impossible to do personally if he wants time to earn a living.

What will be the total of these charges? Will 1s., or even 1s. 6d., cover them? I question it very much.

It may be said that (4) will be balanced by each district drawing fees from others to compensate for what they lose, but it is necessary to point out that we are not deducted anything at present from our capitation fees.

The only other fee to consider is the 6d. for tuberculosis work, but this is also inclusive, and after drugs, hypodermic drugs, cod-liver oil, malt, tuberculin, etc., are paid for, how much will be left for the doctor? Will there be 2d.? In poor districts there will be nothing, I fear.

Services to be Rendered.

What are we called upon to do for this remuneration?

To give ordinary medical attendance as we are now doing, *plus*—

1. Free certificates.
2. Keeping records of all patients and everything we do for them, and the necessary consequence of this, if they are to be of any use to the authorities, must be the supplying of duplicates and constantly being inspected. This undermines the whole basis of the relations of doctor and patients as hitherto understood.
3. Extra services as shown above to be provided out of the district fund.
4. All diseases due to the patient's own misconduct are to be attended free—drunkenness, venereal disease, etc.
5. All chronic cases now rejected by the friendly societies must be attended at the same rate as healthy lives.
6. Frivolous calls, night or day, by any patient on our list will have to be attended to unless the doctors wish to be hauled up continually before that monstrous twentieth century Star Chamber, the Complaints Committee.
7. Aged persons, after ceasing to be insured persons, must be attended without extra fee.
8. The doctor is denied the right of employing an assistant, or even a locumtenent in his absence.
9. Whether he can call his soul his own is not stated in the Regulations, but his holidays and night's rest will in future be curtailed or entirely abolished.
10. Under sanatorium benefit he is called upon to make early diagnosis, and examine contacts, and give unlimited service.

It is hoped the Divisions will carefully consider these matters before instructing their Representatives, and I trust they will be instructed to vote against service under the Act; but if such a calamity occurred that by a majority the Representative Meeting decided to work under the Act, such conditions should be laid down that would ensure the Regulations being entirely remodelled, as many obnoxious clauses could be expunged or altered without contravening the provisions of the Act itself; and, above all, it should be insisted on, as a cardinal point on which we will under no circumstances give way, that sanatorium benefit must be kept separate from medical benefit, and must be paid for on the British Medical Association scale and not by capitation.

If the Representative Meeting adopts Subclause 114 (*b*), and refuses to work under the Act, I maintain it is no part of the duty of the profession to provide any public medical service, and our whole duty consists in stating the conditions and terms upon which we are prepared to give attendance on clubs and societies.

The threat of a State service I regard as a convenient bogey to trot out when it is thought it can influence waverers. I fear it not. The cost would be enormous; to sketch a few items:

1. The provision of thousands of houses.
2. Adapting them.
3. Maintaining them—cleaning, heating, lighting.
4. Furnishing them for the practice and for the medical officers.
5. Equipment of instruments, etc.
6. Salaries.

The claims put forward by the profession are modest indeed, compared with the cost of a State service, and, even if it did succeed in starting such service, the Government would be bound to make the conditions approximate to those under which other civil servants worked, and the many thousands of medical men required would undoubtedly improve the position and status of those remaining outside the service.

In the present momentous crisis it is imperative that the profession should act as one concerted whole, and whatever decision is arrived at by the Representative Meeting, unity is more essential to us now than ever before, and to secure continued unity of the profession a clear and strong lead is necessary.

The Necessity of an Income Limit.

Voluntary Contributors.

Dr. Reginald Threlfall Bailey (Liverpool) writes: Will you allow me to point out to those gentlemen who imagine that there is something for them under the Insurance Act to remember that, whatever income limit, if any, may be authorized for employed contributors, there is no income limit for voluntary contributors, who may be the whole nation? In order to prove this to them, I extract from the National Health Insurance Commission's Official Explanatory Leaflet No. 15 (this leaflet was sent out by the Insurance Commissioners) the following:

> In order to become voluntary contributors persons must be under 65 years of age and—
> (1) must be earning their own living;
> (2) their income from all sources must not be more than £160 a year, UNLESS they have previously been insured under the Act for at least five years whether as employed or as voluntary contributors.
> Once having become voluntary contributors, and having completed five years of insurance, they may continue to be voluntary contributors *whatever their income and whether they are earning their own living or not.*

As every person who starts earning a living does so at an income less than £160 a year, it is obvious that in a short time the whole nation can and will come under the Act: we must prevent this. Unless we now insist on our seven cardinal points being our irreducible minimum, private practice in any shape or form is doomed, and the freedom and honour of our profession gone. The mass meeting of medical men at Manchester on November 9th, and the splendid meeting under the auspices of the British Medical Association held in Liverpool on November 12th, unanimously resolved to refuse service under the Act and to insist on the seven cardinal points as the medical profession's irreducible minimum, and this must be the resolution of the Representative Meeting next week.

An Appeal for Negotiation and Acceptance.

Dr. Major Greenwood (London, N.E.) writes: With your permission I should like to say a few words on the letter of Dr. W. J. Durant under the above heading.

In the first place I must take an exception to part of the heading. It should read an "appeal for acceptance." At the present late hour it must be evident to all that the Chancellor has said his last word. It is now only open for the profession either to accept or reject his terms. If the latter course is taken, he may possibly say something else; if the former, it is difficult to see why he should. An acceptance coupled with terms is practically equivalent to a rejection, and would only be a kind of sugaring the pill that the profession is asked to swallow. If a plenipotentiary committee is appointed to make the best terms possible with the Chancellor without reference to another Representative Meeting, he has only to sit tight and the game is in his own hands.

If I regarded as "pinpricks" the objections to the proposed latest scheme of Mr. Lloyd George, I should be quite of Dr. Durant's opinion in this matter. I will even go farther, and agree with him on the whole question, but with the following proviso. All the terrible consequences so vividly portrayed by his facile pen will undoubtedly happen on rejection of the Chancellor's terms if—

1. There has been no real meaning in the almost universal repudiation of the medical part of the Act, since it was first introduced into the House of Commons, if it has been throughout mere "bluff," for the purpose of getting the best terms under the circumstances.

2. If the apparent union of the profession in the matter has been merely make-believe, and on being told by the Government that what it considers vital for the good of the profession and the public cannot be had, it is prepared to surrender and apologize meekly for being so troublesome.

3. If the profession has not learnt the alphabet of true trade unionism, and does not understand that it must be prepared to suffer—perhaps largely individually—to gain its legitimate ends; in other words, if it does not honestly believe that its ends are worth fighting for, unless it can be done without the risk of loss to individuals.

4. If it is now prepared to climb down and admit that three-fourths of the work of its Representatives at the last four Representative Meetings have been wasted, and the practical good obtained therefrom is a negligible quantity.

If these four hypotheses are admitted, I am ready to rank myself among Dr. Durant's most sincere supporters.

Dr. E. Rowland Fothergill (Brighton) writes: Your correspondent who in your last issue ventures an appeal to the profession "to give us a trial," fails to advance any logical reasons for so doing.

The offer of the Government does not come up in financial value to the level of an average club practice of 4s. a member per annum; the professional status of the medical officers of such a service would probably be considerably less; and in the next generation their scientific capabilities a negligible quantity.

Has your correspondent ever considered the possibility that acceptance of the present outlined service would prove a ready means for the introduction of a State Medical Service after three years, and that such a service might not "provide against loss of health nor be a prevention and cure of sickness?"

He makes the appeal one expects to receive just before a Representative Meeting, that the Representatives be given a free hand. Such an appeal can only be justified on the assumption that medical practitioners are incapable of thinking logically for themselves, and that their elected representatives will be squeezable when submitted next week to speeches more noticeable for their eloquence than their statesmanlike grasp of facts and realization of the probable consequences attendant on any decision come to.

The Present Crisis and Professional Union.

Dr. R. C. Buist (Dundee) writes: As I cannot attend both this week's Council meeting and the Representative Meeting, I wish to endorse the representations which Dr. Lauriston Shaw has made as to the danger of smashing the machinery of the Association on which the profession has been and must still be dependent. The most serious danger arises from the tendency of some to adopt an attitude "We won't and you shan't" with regard to the Insurance Act, which finds expression in recurrent dogmatic assertion "that we are united and need not budge," and "that we have stated our minimum terms and they have not been granted." This attitude is based on obliviousness of the fact that our union was established for our defence against the conditions originally proposed for the insurance service, and not for attack upon the Insurance Act as a measure of social policy, and cannot be maintained when a large section of the profession feels that it no longer needs defensive measures. When that time has arrived the Association can only be kept together by mutual recognition of the local right of each Division to take such action as it feels best suited to its needs without prejudice to the right of any other to act differently. That time seems now to have arrived. The insurance authorities have defined the range of work asked for, and have made an estimate of the approximate cost of this work which differs widely from the original estimate. The new estimate is regarded by many members of the profession as so far reasonable that, though it does not reach the estimate—also reasonable—made by the Association, acceptance of the new terms would be preferable to facing the competition of a salaried service. To this view public opinion, as evidenced by the bulk of the press, gives its approval.

We must accept the present position as being in its main lines that on which the profession must give its final decision. Adjustment in detail is inevitable, but the general outline of the conditions of work and the financial estimate must be either accepted or rejected now. The alternative to acceptance is the offer to the profession in each locality to form a panel, or ultimately the competition of a salaried service. In these circumstances it is certain that in many areas the formation of panels will be considered preferable to the competition of a salaried service, and that the invitation will be accepted. The Association has no machinery by which such areas can be coerced, and so long as the freedom of those areas which do not fear defection or the competition of the salaried service is conserved, any attempt at coercion would be futile. The only safety for the Association lies in full recognition of the fact that each Division is constitutionally an autonomous unit entitled to regulate the conditions of professional employment in its own area.

One other point must be referred to. The campaign of the Association has put obedience to its recommendations in competition with the interest which many of us feel as citizens in the social purposes of the Insurance Act. On that recommendation we have withheld our co-operation in the administrative work of the system. In the new position created by the issue of the Regulations and the Chancellor's statement this sacrifice is no longer warranted, and, so far as I am personally concerned, I would rather abandon the administrative responsibilities with which for eighteen years the Association has entrusted me than postpone further duties which I recognize as a citizen.

Dr. Bertram W. Bond (Godalming) writes: The letter of Dr. Lauriston E. Shaw in your issue of November 9th, pleading for unity of the profession in making an abject surrender is curious reading, since it is written by a member of the Council elected to lead and fight our battles in this professional crisis.

The rank and file of the profession have hitherto supported the British Medical Association nobly. Pledges and undertakings have been freely given, in some cases even to signing away almost the whole of one's small income. Implicit trust has been given to the leaders, and when the strong letter of February 29th was sent to the Commissioners, including such terms as "in plain and unmistakable language," "minimum demands," and, again, "irreducible minimum demanded," the members felt that the battle was going strong, and that the profession was at any rate strongly entrenched, and ready to stand a siege.

The Council's report of November 2nd came as a thunderbolt. Are we on the eve of a medical Majuba? It seems incredible, if Dr. Shaw's letter did not emphasize it, that the Council are about to gulp down their minimum demands, cast aside their seven cardinal points, and tamely surrender the profession to a condition of slavery.

And why this sudden change of front? Is it because they have been deceived by the shameful bit of bluff of the Chancellor into thinking that his later offer is an improvement on the first?

Is our splendid Association to be maintained and strengthened by the weak policy of capitulation, as suggested by our leaders? There is nothing more likely to break up the British Medical Association than Dr. Shaw's letter.

The rank and file expect to be led against the foe by strong leaders, confident in the righteousness of their cause, and are willing to put up with all the trials of a hard campaign to fight for the honour and liberty of the profession. Dr. Shaw suggests that we should run away but remain united, so as to fight another day. If this is the policy of all our leaders, then, indeed, the British Medical Association is doomed to a split, which will not be patched up a second time.

Proposed Plebiscite.

Dr. Wilson Tyson (Lowestoft) writes: It appears to be necessary to look back at the terms of the original "undertaking" which has been signed by over 25,000 members of the profession: in the terms of this undertaking appears the following:

I will not enter into any agreement for giving medical attendance and treatment to persons insured under the bill, excepting such as shall be satisfactory to the medical profession and in accordance with the declared policy of the British Medical Association.

The declared policy of the Association was to insist on the six cardinal points, or to have nothing to do with the working of the Act. This latest offer of Mr. Lloyd George does not give us one of our six points, unless so hedged around with impossible conditions as to be absolutely worthless; therefore, to be consistent, the Council should advise men to have nothing to do with this latest offer.

In pursuance of this policy men have been asked to take the risk of resigning their clubs, and have nobly responded. This has offended the friendly society officials, and "Brother" Bailey has shown his teeth a little prematurely, and has given us a timely warning of what we may expect if we should ever fall into the hands of local Insurance Committees composed of a majority of members who are directly or indirectly connected with friendly societies.

It could easily be ascertained by a sort of referendum if men are still prepared to adhere to the original six points in the light of this latest offer, and if they will reaffirm the undertaking, then it is the duty of the Council of the Association to advise the profession to resist to the very last ditch. The Association can then whole-heartedly concentrate its energies on the working of a Public Medical Service, and if it is thought advisable the Ledward modification would give us a much better life than service under the present Regulations of the Commissioners.

Dr. F. A. L. Burges (Birmingham) writes: At this critical crisis in the history of the profession the full opinion of the profession should be known. I am willing to abide loyally by the majority, but under the present method of instructing our Representatives I am not at all satisfied we are getting the opinion of the majority. At the Birmingham meeting Instruction B was carried by 3 to 2 in a meeting of just under 200. I am informed that there are 500 members of the Association in this Division, so here, in a large centre like Birmingham, we have no less than 300 not voting at all. I believe, if the Representative Meeting and the Council fail to agree it is possible by the Regulations of the Association to take a postal vote of the whole of the members. Surely, Sir, this is the time for taking such a vote. Whether the Representative Meeting on November 19th and 20th decides on Instruction A or B I maintain before the final decision is arrived at it is the duty of the Association to take a postal vote of all its members.

Dr. B. W. Hogarth (Morecambe) writes: At our Divisional meeting on November 12th we duly voted not to accept service under the Act, not to negotiate, and to insist upon the cardinal points. I think it most unfortunate that we had not more scope for our resolutions. The fight for some time now has been waged on one cardinal point only, although, of course, all are insisted on. The Chancellor, the public, and the press, and, I am sure, a great many of our own members, think that this cardinal point is the main one—that is, adequate remuneration defined by a Representative Meeting as 8s. 6d. a head with certain extras.

Now, I should have liked the Divisions to have expressed an opinion as to whether the present financial offer should be accepted if the other conditions were made acceptable. Of course the financial part cannot be completely divorced from the question of what we are expected to do for it. Still I think that we might have indicated to the Chancellor that we would require him to find no more money provided the conditions of employment were otherwise agreeable, and make this a basis of negotiation. As it is, we bluntly refuse to work the Act, without showing in any way how near or how far we are from a settlement. We can hardly go on saying, "We have laid down our minimum demands. You know them, and until you are prepared to concede all in their entirety we have nothing to negotiate about."

Whatever it is with us, with the Chancellor it is mainly a question of money; and if we could only say to him, "We shall require you to find no more money," I feel pretty sure he would soon find a way to an agreement.

I would, of course, stand out for all we have demanded to the last and smallest item, if I were certain that our organization was welded so firmly that it would stand the strain that this would put upon it. But I fancy that if a ballot were taken of all the members, a large number—perhaps not a majority, but still a large number—would regard the financial offer as satisfactory, especially if they were given the whole of the 9s. and allowed to do their own dispensing, finding their own drugs.

Duties of Local Medical Committees.

Dr. George Parker (Bristol) writes: It seems to me that many of the difficulties between the Chancellor and ourselves might be lessened if he saw his way to grant to the local Medical Committees an equitable power of bargaining with the Insurance Committees. In other words, if in matters respecting the purchase of medical services, no arrangement could be made by the Insurance Committee before it had come to an agreement with the local Medical Committee, reasonable settlements would be made in most cases.

It would be so much to the interest of both sides to come to an agreement that they would rarely fail to do so. Occasionally an arbitrator might be appealed to, but it would be the exception. We do not want to control all the work of the Insurance Committee, much of it does not concern us, but where we are arranging to sell our services, there we need to be in a position of perfect equality if we are to make a fair deal. This equality is granted to the other bodies with whom the Insurance Committee treats—namely, the approved societies and the county councils. It is therefore directed to enter into "agreements" or make "arrangements" with each of them, but only to "consult" the Medical Committee, which is a powerless dummy, *vox et praeterea nihil*. No such plan would give us the advantage of central negotiations, but if local bargaining is to take place, it can only be satisfactory if this equality is first obtained.

Dr. W. G. Dickinson (Portishead) writes: The third alternative proposed by Dr. Beaton and defeated in the Council would appeal to many who are by no means enamoured of the latest provisions for medical benefit outlined by the Chancellor. It is clear that as regards finance this is the last offer of the Government, and we must either take it or leave it. The main objection of the profession is clearly now to the conditions of service, and on this point there is room for material concessions which would not cost the Chancellor a penny. I should strongly urge the strengthening of the "duties and powers" of the local Medical Committees enumerated in Section 81 of the Council's report. At present these are merely consultative, whereas these committees should have the entire settlement and control of all matters concerning the local profession, including income limit, mileage, method and rate of remuneration, and the granting to practitioners of the right to dispense their own medicines. The Chancellor refused to settle most of these matters centrally; he must agree now to their being settled locally, and by those most nearly concerned, or see his Act fall to pieces. No one knows better than Mr. Lloyd George that a National Medical Service would prove a miserable fiasco.

The Circular of the Remaining Medical Members of the Advisory Committee.

Dr. A. W. Harvey (Winkleigh, N. Devon) writes: A letter marked "Urgent," and purporting to come "From the medical members of the Advisory Committee (Insurance Act)," has reached me, offering advice as to my attitude with regard to the Act.

Without going into the points raised in this communication, I should like to protest in the strongest possible manner against an attempt to sow dissension in the ranks of the Association at a time when of all things unity is essential to success. That seventeen prominent medical men can be found ready to jeopardize that essential unity "in such a crisis" is sufficiently regrettable, but that these same gentlemen should, in their public capacity, engage in

a private attempt to influence individual opinion is, to my mind, a gross misuse of their position.

I would point out to them that *all* "the facts" are before the British Medical Association, and are receiving the "anxious consideration" of that body—a body fully as capable of "calm and deliberate" thought as the "medical members of the Advisory Committee" can be.

ATTENDANCE AT THE REPRESENTATIVE MEETING.

Dr. T. CUMING ASKIN, Representative of the South Suffolk Division, in view of the great gravity of the issues involved, appeals to all Representatives to consider it a paramount duty to remain until the close of the Representative Meeting next week. Though the meeting is summoned for November 19th and 20th he does not think it certain that it will conclude on the second day.

Association Notices.

ELECTION OF CENTRAL COUNCIL, 1912–1913.

NOTICE is hereby given that nominations for a candidate for the election as a Member of Council, vice Dr. Pope, deceased, by the East York and North Lincoln and Midland Branches for the year 1912–13, must be forwarded to reach the Financial Secretary and Business Manager, at the Office of the Association, not later than Saturday, November 30th, 1912. Each nomination must be on the prescribed form, copies of which will be furnished by the Financial Secretary and Business Manager upon application.

Separate forms have been prepared:

(A) For a nomination by a Division, and

(B) For a nomination by any three Members of a Branch respectively.

Those applying are requested to state for which purpose the form is desired.

An announcement of the Nominations received will be made in the JOURNAL of December 7th, 1912.

Election will be by voting papers. These papers will contain the names of all duly nominated candidates, and will be issued from the Central Office on Saturday, December 21st, and will be returnable not later than Saturday, December 28th.

The result of the election of a member to the Central Council will be published in the JOURNAL of January 4th, 1913.

By Order of the Council,
GUY ELLISTON,
Financial Secretary and Business Manager.

November 16th, 1912.

BRANCH AND DIVISION MEETINGS TO BE HELD.

GLOUCESTERSHIRE BRANCH.—The first meeting of the Branch will be held at the Royal Infirmary, Gloucester, on Thursday, November 21st, at 7 p.m. Agenda:—(1) Minutes of last meeting. (2) Election of two Representatives for Representative Meetings, 1913-14. (3) Dr. R. Macartney's Presidential Address: Some Incidents in a Thirty Years' Experience of Contract Practice. There will be a dinner at the Wellington Hotel, at 9 p.m. Tickets 3s. 6d. each, exclusive of wine.—D. E. FINLAY, Honorary Secretary.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—The annual dinner of the Division will take place in the Douglas Hotel, Galashiels, on the evening of Friday, December 6th, at 6.30 o'clock. Chairman, Dr. Muir. Tickets, 5s.—M. J. OLIVER, Honorary Secretary, St. Boswells.

SOUTHERN BRANCH.—A special meeting of this Branch will be held at the South-Western Hotel, Southampton, on Wednesday, November 27th, at 3 p.m., the business of which will be to adopt (on the recommendation of the Branch Council) the Model Ethical Rules of the Association. Members are referred to the SUPPLEMENT of the JOURNAL of September 21st, also to the note of corrections on p. 350 of the SUPPLEMENT of September 28th. After the transaction of the above business the meeting will resolve itself into the half-yearly general meeting of the Branch, when papers will be read and cases of clinical interest, microscopical specimens, etc., will be shown. To facilitate the preparation of the agenda it is requested that members who desire to read papers or show cases, etc., will communicate early with the Honorary Secretary, JAMES GREEN, Brandon House, Mile End, Portsmouth.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BODMIN: CORNWALL COUNTY ASYLUM.—Third Assistant Medical Officer and Pathologist. Salary, £150 per annum.

BRIGHTON, HOVE, AND PRESTON DISPENSARY.—Resident Medical Officer. Salary, £130 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Salary at the rate of £70 per annum.

CARDIFF: KING EDWARD VII'S HOSPITAL.—Senior Resident Medical Officer. Salary, £120 per annum.

CARMARTHENSHIRE INFIRMARY.—Resident Medical Officer. Salary, £100 per annum.

CENTRAL LONDON SICK ASYLUM DISTRICT.—Assistant Medical Officer at the Hendon Asylum. Salary, £120 per annum, rising to £150.

CENTRAL LONDON THROAT AND EAR HOSPITAL, Gray's Inn Road, W.C.—Registrars.

COVENTRY EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £300 per annum, rising to £350.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Physician to Out-patients.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Third House-Surgeon (Male). Salary, £80 per annum.

HAMPSTEAD GENERAL AND NORTH-WEST LONDON HOSPITAL.—Pathologist. Salary, £100 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum.

KING EDWARD VII WELSH NATIONAL MEMORIAL.—Tuberculosis Physician. Salary, £400 per annum, rising to £500.

KING'S COLLEGE, W.C.—Senior Demonstrator and Lecturer in Anatomy.

KING'S COLLEGE HOSPITAL, W.C.—Sambrooke Surgical Registrar.

KINGSTON UNION.—Junior Assistant Resident Medical Officer at the Infirmary and Workhouse. Salary, £2 10s. per week.

LEAMINGTON: WARNEFORD, LEAMINGTON AND SOUTH WARWICKSHIRE GENERAL HOSPITAL.—Honorary Medical Officer.

LONDON LOCK HOSPITAL.—Pathologist.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Surgical Registrar. Honorarium at the rate of 40 guineas per annum.

LONDON UNIVERSITY.—Examinerships: A. Higher Examinations for Medical Degrees: (1) Four in Medicine: (2) Four in Surgery; (3) Two in Forensic Medicine and Hygiene; (4) Two in State Medicine. B. First Examination and Second Examination. Part I for Medical Degrees—(5) Two in General Biology; (6) Two in Chemistry; (7) Two in Physics. C. Second Examination. Part II for Medical Degrees—(8) Two in Anatomy; (9) Two in Pharmacology; (10) Two in Physiology.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY.—Male Resident House-Surgeon. Salary, £120 per annum.

MAIDSTONE: KENT COUNTY ASYLUM.—Male Fourth Assistant Medical Officer. Salary, £200 to £220 per annum.

MANCHESTER CORPORATION.—First Assistant Medical Officer at the Monsall Fever Hospital. Salary, £200 per annum.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—House-Physician. Salary, £75 per annum.

NEWCASTLE-UPON-TYNE CORPORATION.—Medical Officer of Health and Medical Superintendent of the City Hospitals for Infectious Diseases. Salary, £700 per annum, increasing to £1,000.

NEWCASTLE-ON-TYNE DISPENSARY.—Visiting Medical Assistant. Salary, £160 per annum, increasing to £180.

PRESTON: COUNTY ASYLUM, Whittingham.—Assistant Medical Officer. Salary, £150 per annum, rising to £250.

PRESTON ROYAL INFIRMARY.—(1) Senior House-Surgeon; (2) Junior House-Surgeon. Salary, £80 and £60 per annum respectively.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William Street, W.C.—Clinical Assistants.

ST. PETER'S HOSPITAL FOR STONE, Etc., Henriotta Street, W.C.—Junior House-Surgeon. Salary at the rate of £50 per annum.

SINGAPORE MUNICIPALITY.—(1) Bacteriologist. Salary, $5,160, rising to $6,000; (2) Second Assistant Health Officer. Salary, $4,200, rising to $4,800.

SOMERSET AND BATH ASYLUM, Wells.—Second Assistant Medical Officer (Male). Salary, £135 per annum, rising to £155.

STOCKPORT INFIRMARY.—Junior House-Surgeon (Male). Salary, £80 per annum.

TOXTETH PARK TOWNSHIP.—Assistant Resident Male Medical Officer of the Workhouse and Infirmary. Salary, £125 per annum.

WAKEFIELD GENERAL HOSPITAL.—Second House-Surgeon. Salary, £100 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—House-Physician. Appointment for six months.

WESTMINSTER GENERAL DISPENSARY, Gerrard Street, Soho, W.—Honorary Physician.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary at the rate of £80 per annum.

WORCESTER: COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary commencing at £160 per annum.

WREXHAM INFIRMARY.—Resident Medical Officer. Salary, £120 per annum.

MEDICAL REFEREE.—The Home Secretary announces the vacancy of Medical Referee under the Workmen's Compensation Act, 1906, for Birmingham County Court.

APPOINTMENTS.

THORBURN, William, F.R.C.S., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 5, and to be attached more particularly to Oldham County Court.

UNIVERSITY COLLEGE HOSPITAL.—The following appointments have been made:

Casualty Surgical Officer: L. S. B. Tasker, M.B., B.S.

Casualty Medical Officers: W. B. Sanders, M.R.C.S., L.R.C.P.; A. Wilson, M.R.C.S., L.R.C.P.

Assistant to Ear and Throat Department: C. Banting, M.D., B.S., F.R.C.S.

House-Physicians: J. W. Tonks, B.A., M.R.C.S., L.R.C.P.; M. M. Khan, M.R.C.S., L.R.C.P.; G. B. King, M.R.C.S., L.R.C.P.

House-Surgeons: R. H. Liscombe, M.R.C.S., L.R.C.P.; T. C. Graves, M.B., B.S., B.Sc., M.R.C.S., L.R.C.P.

Obstetric Assistant: G. W. Johnson, M.A., M.B., B.Ch.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

SLADE.—On November 7th, at Chernocke House, Fleet, Hants, the wife of John Godfrey Slade, M.A., M.D., B.C.Cantab., etc., of a son.

MARRIAGES.

GILCHRIST—MARKS.—On November 7th, at St. Mary's, Primrose Hill, N.W., by the Rev. T. W. Wright, James C. Gilchrist, M.D., Cardiff, eldest son of the late Dr. Gilchrist, late of the Crichton Royal Institution, Dumfries, to Emmeline, younger daughter of the late Alfred Marks, Esq., formerly London manager of the London City and Midland Bank, Ltd., and Mrs. Marks, Adelaide Road, Hampstead.

ILOTT—SATTERTHWAITE.—On October 12th, at the Parish Church, Bromley, Kent, Cyril H. T. Ilott, M.A., M.B., B.C.Cantab., M.R.C.S., L.R.C.P., only son of H. J. Ilott, Esq., M.D., of Bromley, to Lucy Annette, elder daughter of Colonel E. Satterthwaite, C.B., and Mrs. Satterthwaite, of Bromley, Kent.

DIARY FOR THE WEEK.

TUESDAY.

CHELSEA CLINICAL SOCIETY, Club Room, St. George's Hospital Medical School, 8.30 p.m.—Papers:—Dr. Leonard Colebrook: Pneumothorax Treatment of Phthisis (with exhibition of *x*-ray charts and apparatus). Dr. David Walsh: Diseases of the Skin in relation to Cardiovascular Disturbances.

LONDON DERMATOLOGICAL SOCIETY, St. John's Hospital, 49, Leicester Square, W.C.—Agenda: 4.30 p.m., Cases and Specimens. 5.15 p.m., Discussion on Anomalies of Pigmentation, to be opened by the President, followed by Dr. J. L. Bunch (Etiology), Dr. W. Griffith (Pathology), and Dr. W. Knowsley Sibley (Treatment).

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W., 5 p.m.—Third FitzPatrick Lecture by Dr. Raymond E. P. Crawfurd; Echoes of Pestilence in Literature and Art.

ROYAL SOCIETY OF MEDICINE:

SECTION OF PATHOLOGY, 1, Wimpole Street, W., 8.30 p.m.—Dr. H. Charlton Bastian, F.R.S.: Remarks on Further Experiments concerning the Origin of Life. Dr. W. S. Lazarus Barlow: Effect of Radium on Muscle Nerve Preparations. Mr. J. E. R. McDonagh and Dr. B. G. Klein: Some Points concerning the Vaccine Treatment of Gonorrhœa and Regulation thereof by the Complement-Fixation Test.

SECTION OF SURGERY, 1, Wimpole Street, W., 5.30 p.m.—Resumed Discussion on Sarcomata and Myelomata of the Long Bones.

SECTION OF THERAPEUTICS AND PHARMACOLOGY, 1, Wimpole Street, W., 4.30 p.m.—Dr. A. E. Boycott and Dr. J. F. Ryffel: The Excretion of Chlorides in Normal and Nephritic Rabbits. Dr. Douglas Cow: The Action of some Diuretics. Dr. R. G. Markham: The Absorption of Arsenic from the Skin.

WEDNESDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF THE HISTORY OF MEDICINE, 1, Wimpole Street, W., 5 p.m.—(1) Election of Officers and Council. (2) Papers:—Sir William Osler, Bart., F.R.S.: A Down Survey Manuscript of Sir William Petty. Dr. Raymond Crawfurd: Contributions from the History of Medicine to the Problem of the Transmission of Typhus. Mr. D'Arcy Power: A Note on Two Medical Portraits of the Sixteenth and Seventeenth Centuries. Dr. Michael Foster: Exhibition of Two Italian Diplomas of the Seventeenth Century. An exhibition of pictures showing the evolution of the microscope will be on view.

THURSDAY.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—Papers:—Dr. A. M. Gossage: Heredity. Mr. W. H. Clayton Greene: Some Bacterial Infections of the Urinary Tract.

ROYAL COLLEGE OF PHYSICIANS OF LONDON, Pall Mall East, S.W., 5 p.m.—Horace Dobell Lecture by Dr. Charles J. Martin: Insect Porters of Bacterial Infection.

ROYAL SOCIETY OF MEDICINE:

SECTION OF DERMATOLOGY, 1, Wimpole Street, W., 5 p.m.—Cases and Specimens. 8.30 p.m.—Discussion on Erythema Multiforme; to be opened by Dr. H. G. Adamson.

SECTION OF NEUROLOGY, 1, Wimpole Street, W., 8 p.m.—Clinical Meeting.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF EPIDEMIOLOGY, 1, Wimpole Street, W., 8.30 p.m.—Papers:—Dr. R. J. Ewart: The Influence of Parental and Grandparental Age on the Susceptibility of Offspring to the Zymotic Diseases. Dr. F. G. Crookshank: Note on some Recent Theories of Tuberculosis and their Possible Significance.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN, 1, Wimpole Street, W., 4.30 p.m.—(1) Cases and Specimens. (2) Paper—Dr. Leonard Guthrie: Epidemic Catarrhal Jaundice.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		NOVEMBER.
15	Fri.	West Somerset Branch, Taunton and Somerset Hospital, 3.30 p.m.
19	Tues.	London: **Special Representative Meeting, 10 a.m.**, Connaught Rooms, Great Queen Street, W.C.
20	Wed.	London: **Special Representative Meeting**, Connaught Rooms, Great Queen Street, W.C.
		Richmond Division, Richmond, 8.30 p.m.
21	Thur.	Gloucestershire Branch, Gloucester, 7 p.m.; Dinner, 9 p.m.
		South Middlesex Division, Twickenham, 8.30 p.m.
27	Wed.	Southern Branch, Southampton, 3 p.m.
28	Thur.	South-West Essex Division, Livingstone College, 4 p.m.
29	Fri.	Birmingham Branch, Pathological and Clinical Section, Medical Institute, 8 p.m.

Date.		Meetings to be Held.
		DECEMBER.
6	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.
		South-Eastern Counties Division (Edinburgh Branch), Annual Dinner, Galashiels, 6.30 p.m.
10	Tues.	London: Metropolitan Counties Branch Council, 4 p.m.
12	Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
		South-West Essex Division, Walthamstow Hospital, 4 p.m.
18	Wed.	Richmond Division, Richmond, 8.30 p.m.
		South Middlesex Division, Twickenham, 8.30 p.m.
		JANUARY, 1913.
9	Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
14	Tues.	London: Metropolitan Counties Branch, 4 p.m.
17	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.

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TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 23RD, 1912.

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SPECIAL REPRESENTATIVE MEETING.

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SPECIAL REPRESENTATIVE MEETING.

TUESDAY AND WEDNESDAY, NOVEMBER 19TH AND 20TH, 1912.

Tuesday, November 19th.

THE Special Representative Meeting convened on the requisition of the Council for the consideration of the report prepared by the Council in accordance with Minute 215 of the Annual Representative Meeting held at Liverpool in July last, was opened at the Connaught Rooms, Great Queen Street, London, on November 19th, when Mr. T. Jenner Verrall took the chair at 10 a.m.

The notice convening the meeting was read and ordered to be entered on the minutes, as was the notice of appointment of substitutes for Representatives.

The CHAIRMAN OF REPRESENTATIVE MEETINGS opened the proceedings with a sympathetic reference to the late Dr. Pope of Leicester, who, in addition to having long been a member of Council, had served at Representative Meetings since their beginning.

Sir JAMES BARR, the President of the Association, on taking a seat on the platform was received with applause.

Order of Business.

The Chairman of Representative Meetings appealed to Representatives, in the interests of economy of time, to make their remarks as brief as possible, and to avoid reiteration of arguments. To obtain a valid decision a majority of not less than two-thirds was necessary, and whilst he did not suggest that any Representative should vary his opinions for any reason other than those which appeared to him good, yet it would be a very regrettable thing if the meeting terminated without a definite result being arrived at. The integrity of the Association as a deliberative and fighting machine had to be maintained, because whatever views might prevail, it would be realized that some such organization as the British Medical Association was absolutely essential if satisfaction were to be obtained in whole or in part in controversies which would arise in the future. The Chairman of Representative Meetings moved:—

> That the remaining business of the meeting be considered in the order recommended by the Agenda Committee of the Representative Body.

He outlined the suggestions made by the Agenda Committee as to the order in which the business should be taken, and the motions on the agenda paper upon which various points could be most conveniently raised.

Dr. Helme (Manchester Central) emphasized the importance which attached to the method of procedure adopted. On an occasion so momentous and historic it might affect very seriously the influence members of the Association would have upon their fellow countrymen.

Dr. J. P. Lowson (N. Middlesex) moved an amendment:

> That the Representative Meeting shall not discuss the Report of Council until it has decided by vote whether service shall be accepted or not under the conditions laid down by the Regulations and explained by the Chancellor of the Exchequer.

He said the meeting had to decide whether it should give service under the Act under the conditions already laid down, whether it should refuse service, or whether it should negotiate. He proposed that it should begin by affirming its refusal to work under the Act under the conditions as they were known at present. (Applause.) It could then go on to say that it did not unconditionally refuse, and could make suggestions.

Dr. Helme (Manchester Central) thought the amendment better calculated to put a straight issue before the Representative Meeting than the recommendations of the Agenda Committee.

Dr. Fuller (North Middlesex) took it for granted that the profession would not work the Act under the present conditions and regulations. By the amendment it had an opportunity of saying so; at the same time the amendment did not bar the way to further negotiations.

The amendment was then carried by a large majority, and agreed to as a substantive motion.

NATIONAL INSURANCE ACT.

Reception of Documents.

The report of the Council prepared pursuant to Minute 215 of the Annual Representative Meeting, 1912,[1] was received together with the correspondence between the Council and the Chancellor of the Exchequer and the Commissioners.[2]

The report of the proceedings of the conference of colliery surgeons[3] held at Newcastle-on-Tyne on November 6th, 1912, and the report of the proceedings of representatives of the Association with representatives of the Society of Medical Officers of Health held on November 12th[4] were received.

A report of the State Sickness Insurance Committee on the proposed method of payment for domiciliary attendance on tuberculous insured persons by a capitation fee, and a report of the present position of the Central Defence Fund in each Division, both circulated at the meeting, were also received.

[1] Supplement to the British Medical Journal, November 2nd, p. 433.
[2] Ibid., November 9th, p. 500.
[3] Ibid., November 16th, p. 549.
[4] Ibid., November 23rd, p. 594.

REFUSAL OF PRESENT CONDITIONS OF SERVICE.

Discussion then took place as to which motion on the agenda paper would best express the decision of the meeting in adopting the amendment moved by Dr. Lowson, that a vote be taken on the question of acceptance or otherwise of the present conditions. Ultimately the following, by the Bradford Division, was taken as the basis for discussion:

> That, in the opinion of this Representative Meeting, the Regulations issued by the Insurance Commissioners and the latest proposals of the Chancellor of the Exchequer are unworkable, derogatory to the profession, and a positive danger to national health. As a consequence, the medical profession declines to undertake service under the Act and Regulations as at present constituted.

Dr. James Metcalfe (Bradford), in moving the resolution, said that his Division had come to the conclusion that the present terms were infinitely worse than they were before. (Applause.) The half-crown offered by the Chancellor had been more than counterbalanced by numberless regulations taking away points like mileage, certificates, and extras, which the profession would have had under the first offer made. Many of the regulations would not only be irksome but would be actually derogatory to the profession, and would injure medical men in the eyes of their patients. If they were to submit to the Regulations and conditions of service as propounded by the Chancellor they would lead a dog's life. The Regulation as to entering the details of attendance on patients in a book, which should be inspected at various intervals he looked upon as a direct interference between doctor and patient, which should not be permitted under any circumstances. Medical men should stand firm, and if they did so the Government was bound to come to them. On the other hand, if there was dissension in their ranks they were lost.

Dr. C. G. Meade (Scarborough, York) supported the motion, which, if it were passed, would not tie the hands of anybody.

Dr. J. W. Bone (Bedford) moved that the words, "a positive danger to national health" be deleted. This was seconded by Dr. T. B. Heggs (Canterbury and Faversham), who said the cause of the profession was sound enough; there was no necessity to resort to exaggeration. Dr. Metcalfe agreed to withdraw the phrase.

Dr. W. J. Durant (Consett, Gateshead) supported the resolution.

"*Unworkable and Derogatory*" or "*Unsatisfactory.*"

Dr. E. J. Maclean (Council) moved to substitute the word "unsatisfactory" for the phrase "unworkable and derogatory to the profession" in the resolution as already amended. He urged that if the meeting worded its resolutions in an unnecessarily provocative manner it would very much prejudice the atmosphere in which negotiations would be carried on, and he was sure the meeting would decide to negotiate. Many members had expressed the feeling that if the profession remained firm in adhering to its cardinal points and declined to negotiate it would bring the Government to its knees. This was a position of serious peril and disaster for the Association to take up. ("Why?") It suggested that the profession had all the cards in its hands; but this was not the case. The position was such that the profession could not take up an implacable attitude. If it did so, it would be courting disaster. It was absolutely impossible to take up the attitude that the profession would not consider the matter unless it obtained all the cardinal points. The Government had definitely said that it could not and would not consider what the profession called its minimum demands. If that position was adhered to it meant that the Association was calling upon the men not to accept any service at all under the Act. With regard to the question of the alternative of a public medical service, could the profession hope to gather by that means anything equal to the remuneration offered by the Government?

Dr. L. W. Dryland (Northamptonshire) seconded the amendment.

Dr. Evan Jones (City of London) said that the men who had given up their club practices loyally and had

signed the pledge were not likely to go back upon that pledge. As to the wording of the resolution, surely the Regulations were derogatory to the profession? The profession had been warned that under the Act it would be inspected; medical men would be bound to disclose what their patients were suffering from and the treatment adopted. That was not in accordance with the principles of the medical profession since the time of Hippocrates, some 2,300 years ago, and was not in accord with the Hippocratic oath. It was also the first time in history that medical men were to be judged, in the case of a complaint, by a committee composed of a majority of lay people. The only duty of the profession was to name the terms and conditions under which it was prepared to attend assured persons, clubs, or societies. It was not called upon to formulate any scheme; there was no time to negotiate nor to formulate any scheme between now and January 15th next.

Dr. J. H. Keay (Greenwich and Deptford) supported Dr. Maclean's amendment. Concessions obtained thus far had been gained by a moderate and reasonable attitude. Nothing was to be gained by strong language, which would tend to alienate the sympathies of the country. He was sure that the terms offered were the only terms that could be got from the present Government, and if they were likely to get better terms from another Government they would have heard of it before now.

Dr. Dryland (Northamptonshire) thought the terms of the Bradford motion were too strong. Sooner or later the profession would have to negotiate with the Government, and if it approached the Government in terms almost rude the results would be unfortunate for the profession and for the country. In a town of 200,000 inhabitants there would be 66,000 insured persons; the amount available for medical benefit would be about £30,000, and such a town could easily be worked by twenty-five men, each receiving £1,000 a year, leaving a balance of £5,000 for drugs and appliances. He had been instructed by his Division to move an amendment by way of compromise, but, in the event of that amendment not passing, he had been instructed to vote straight that the meeting accepts the conditions now offered. His Division considered that an entirely different set of conditions existed now to those that existed at the time the pledge was given.

Mr. E. B. Turner (Kensington) hoped the meeting would vote decisively against Dr. Maclean's amendment and pass the motion as it stood. The words of the motion were not rude; they were simply a distinct and decisive statement of fact. The Regulations were unworkable. Even those men who took the most favourable view of them could not say exactly how they would work. That the Regulations were derogatory to the profession went, he thought, without saying. The profession was condemned to local bargaining in each district with a committee principally composed of representatives of working men. The Regulations had been formulated with the idea of splitting up the profession, so that if a sufficient number of men could be found who were willing to break their pledge those men could be moved about and planted in different districts throughout the country. He could quite conceive that the profession might consider a compromise with regard to money, but he absolutely refused to believe that any of the 27,000 men were going back on their pledges. (Applause.) The difference between the British Medical Association and a trade union was that the Association was a body of educated scientific gentlemen, and to such men a pledge meant something; they did not take it lightly, or break it unless compelled by irresistible force. Mr. Dryland had spoken of 66,000 insured persons being treated by 25 doctors. Each doctor would have 2,640 patients, and, allowing an average of 10 visits, 26,400 attendances would have to be given per year. It was quite impossible to do the work properly in those circumstances. He was sorry that the words "and a positive danger to public health" had been deleted. He was sure the Regulations as they stood would be detrimental to the public health. The money offered by Mr. Lloyd George left no fund whatever for any specialist services or major operations. If a doctor on the panel was going to perform an operation, and required an anaesthetic, he would have to pay for it himself, or do without it, or put it to the patient that he would have to find his own anaesthetist, and the patient would say, "No; I have contracted for free medical attendance, and that is part of it." He was quite sure that under the Act the medical profession would deteriorate as a science and art. Men of ambition, brains, and ability would not enter it unless they had private resources and became specialists, or unless they had an hereditary opening into a family practice. It would result in getting second-rate men, and the position of the profession in this country, which was at the present moment superior to that which was held in any other nation in medical work and in science, would sink.

Dr. Pearse (Trowbridge) supported Dr. Maclean's amendment. The meeting had not decided whether it would enter into negotiations with the Government, and by standing to the original motion the Representatives would be prejudicing their position. He criticized Mr. Turner's estimate of the work which would be required to be done by medical men under the Act, and pointed out that ten, the estimated number of visits, was double the figure given at the last Representative Meeting.

Dr. Grant Andrew (Council) supported the amendment. It was necessary for the Association to appreciate its weakness as well as its strength. He regretted to say that in Glasgow and West of Scotland, if the meeting decided not to work the Act, medical men would form a panel under the Act. Years ago, in spite of the warning notice in the Journal, thirty medical men applied for twenty positions offered by the school authorities in Scotland.

Dr. Major Greenwood (City, Metropolitan) hoped the meeting would not whittle down the motion. Although Dr. Maclean's amendment, looked at from certain points of view, was not very dissimilar to the motion, the meeting had to decide under what conditions the service could be made workable. At the Representative Meeting in London a resolution was passed in favour of addressing the Government in "plain and unmistakable language." If "unworkable" was to give place to "unsatisfactory," the spirit of that resolution would not be maintained. As to concessions that were obtained at the beginning, what had been gained was purely illusory, and most of them would have been gained under any circumstances. The present was the time to speak in plain and unmistakable language.

Dr. Harrison Butler (Coventry, Nuneaton, and Tamworth) said his instructions were against accepting the Act as it stood, but his Division desired him to support any reasonable means for making the Act more workable. He strongly supported Dr. Maclean's amendment. Moderation must be the keynote of the action at the present moment. He had evidence that a practitioner engaged wholly or mainly in club practice would gain pecuniarily under the terms now offered. At the same time, some of those engaged in such practice believed that the Regulations made were unworkable. He was satisfied that if the door was banged in the face of fresh proposals means would be found in his Division for making a beginning in working the Act. A large number of country doctors in his own Division and neighbouring Divisions with which he was acquainted were in favour of working the Act. The matter had to be faced as things now stood.

Dr. E. S. Reynolds (Council) thought the time had come for plain speaking. Milk-and-water resolutions would be the ruin of the British Medical Association. The majority would say that the Regulations were unworkable, and that they were derogatory to the profession. The new conditions were only promises and not embodied in an Act of Parliament, and they might cease to be on the table of the House of Commons at any time.

Dr. Harding (Hereford Division) said he represented a constituency composed practically altogether of rural practioners. The resolution arrived at in his district was sent, not only to every member of the British Medical Association, but to every medical man in the county and the surrounding ones, and every recipient had acquiesced in it. The resolution was stronger, if possible, than the one before the meeting. Those who directed their attention mainly to the financial prospects did not realize what an intense feeling there was in the profession, in the rural districts especially, on other questions than that of finance. One and all said: "Give us what you like; it is not the first time you have asked us to do work for nothing, but the conditions of service laid down burn into our very souls,

and we will do our best to avoid them." The Chancellor of the Exchequer should understand that as a body the medical profession was absolutely united in its determination not to work the Act as it stood.

Dr. W. E. Thomas (North Glamorgan and Brecknock) believed that the Regulations were unworkable and derogatory to the interests of the profession; but it was not wise to emphasize that, because in the end the profession would have to proceed to negotiate, and it was not advisable to use any strong language.

Dr. Staveley Dick (Manchester North) supported the original motion. The Chancellor seemed to think that because he was offering a large sum he was entitled to buy the profession body and soul. That position must be strongly resisted. It was the duty of the Government to see that the standard of medical education was maintained, and that the emoluments of the profession were such as would attract the proper type of men to the profession, and to assume that the medical profession, as composed of gentlemen, would do its duty. (Loud applause.)

Mr. Whaite (Birmingham Central and Walsall) hoped the original resolution would be carried, though he was aware that there were some doctors ready in various parts of the country to work the Act. The wording of the resolution was not offensive. The conditions were bad, and even waverers did not say that the conditions were satisfactory; the fact was that the waverers were panic-stricken. They should stand on the ground that the conditions were so unworkable and so degrading that they could not be accepted. (Applause.)

The Chairman of Council opposed Dr. Maclean's amendment. He considered that it would be a mistaken policy. The resolution of the Bradford Division, as amended, was not too strong, and he did not think that the Government or the Commissioners deserved any special consideration from the profession. (Loud applause.)

The amendment was lost by a large majority.

Resolution Carried by an Overwhelming Majority.

Mr. T. Campbell (Leigh and Wigan), resuming the discussion of the original motion, expressed the opinion that the position of the profession had not advanced one degree since its six cardinal points were first formulated; it had rather receded, because, substituted for the six cardinal points, it had got the obnoxious Regulations and the offer of 7s. from the Chancellor. The profession in the past had done much for the sake of charity, and it was prepared to do still more rather than accept service under degrading conditions. The offer of 7s. was undoubtedly an advance, but for that very reason the conflict had become more difficult and more complicated, since in many districts the terms now offered were considered satisfactory.

The motion was then carried by an overwhelming majority.

Question of Procedure.

Replying to Dr. Haslip (Westminster), who said that his Division was very strongly against the Association approaching the Government with a view to negotiations.

The Chairman said that the Association could either hold its hand and sit still, having told the Government by the resolution just passed that the proposals were thoroughly unsatisfactory and unworkable, or the Association could go to the Government by means of a Committee with or without plenary powers.

Dr. Helme (Manchester Central) was of opinion that there was a third course. The Association, whilst agreeing that there was a basis on which a settlement might be achieved, could frame certain decisions which would be the basis upon which to meet the Government, and those decisions could be sent to the Government in writing.

[illegible] that the Representative Meeting should go into committee at this stage was not carried.

PROPOSED CONFERENCE WITH THE CHANCELLOR AND THE COMMISSIONERS.

After some discussion it was resolved that the meeting should proceed to consider the motion of which the Norwich Division had given notice. It was moved by Dr. S. H. Long, as follows:

> That the recent offer of the Chancellor of the Exchequer affords the British Medical Association an opportunity of conferring with him and with the Commissioners as to the points on which the demands of the profession have not yet been met.

Possibility of Settlement.

Dr. Beaton (St. Pancras and Islington) moved as an amendment to leave out the words "as to" and to insert "with a view to a settlement of," so that the motion should read as follows:

> That the recent offer of the Chancellor of the Exchequer affords the British Medical Association an opportunity of conferring with him and with the Commissioners, with a view to the settlement of the points on which the demands of the profession have not yet been met.

Dr. Beaton remarked that the only object the Association could have in meeting the Chancellor was with a view to settlement. The Chancellor had said, quite correctly, that there was no use sending up to him men who could not take 6d. or a penny off the sum; it was no use sending men tied hand and foot to the six cardinal points; they must have power to do something if they were to meet him. Was the meeting ready to give plenary powers to a number of men? ("No.") That was one of the points to be considered. Was the meeting willing to say that half a dozen or a dozen men were trusted so much, and that it had such complete confidence in them, that it could authorize them to go to the Chancellor and come to the best terms possible without being hanged when they came back? ("No.") Was the meeting going to declare publicly the things it wanted? ("Yes.") Was there any use in negotiating when the Chancellor already knew the bedrock price? Surely it would be nonsense. If it did not give plenary powers the meeting must decide on some other way. If the meeting began discussing terms and came to certain conclusions, then, in his opinion, any negotiation with the Chancellor would result in absolute failure. There was another way. The meeting could appoint a certain number of men to confer with the Chancellor, and another number of men could be given power to tell these men what they were to say to the Chancellor. The machinery looked rather cumbersome, but he did not know of any other way. If the meeting rejected his first and second suggestions, let there be a deputation and a committee; let the deputation and committee confer as to terms, and let the deputation go to the Chancellor without having publicly declared that upon which they were to confer.

Dr. A. Brown (St. Pancras and Islington) seconded the motion.

The meeting adjourned for lunch at 2 p.m., and resumed at 2.45 p.m.

Dr. Hawkyard (Leeds) said that in his district, where there was a population of 80,000, with thirty-four medical men, a resolution asking for negotiations to be brought to a successful conclusion if possible was adopted unanimously. From the figures of his own practice he came to the conclusion that if the 7s. offered by the Chancellor of the Exchequer was a clear 7s. it was not unreasonable. He thought the time had come when the profession might abandon to some extent the cardinal points. ("No.") As regards the wage limit, they were fighting for something that really did not matter. A list published by the Leeds Trades Council mentioned fifty employments, in which in February last there was only one whose members were getting more than 40s. a week. The only people in Leeds getting 40s. a week or more were the boilermakers, pattern-makers, and moulders. His experience was that the men getting more than that rarely went to the doctor. They occupied responsible positions, and could not afford to be ill. It was the man with a low wage who was always ill or pretending to be ill, and bothered the doctor. With reference to representation on the Insurance Committees, four, five, or six good speakers were better than thirty who never spoke. As to inspection, no Government would pay for work done without having some record of it, and as a taxpayer he would object to any such plan. If the profession was taking money from the Government there must be some kind of inspection.

Dr. Cuming Askin (South Suffolk) understood the last speaker to have said that the views expressed by him did not represent the views of the medical profession in his district.

Dr. Hawkyard (Leeds) said he was there to vote against the amendment, but surely he could express his personal views in favour of it.

Dr. Cuming Askin thought the meeting would be in a very false position if a Representative expressed views contrary to the feeling of the medical profession in that particular district.

The Chairman of Representative Meetings thought it difficult to do anything but leave the matter to the discretion of the speaker. If a Representative's personal views did not coincide with those of his Division he would probably explain that he differed. Standing Order 39 (4) left the matter in no doubt.

Arguments For and Against Opening Negotiations.

Dr. T. D. Price (Nottingham) said that his Division, whilst deciding it could not accept the present terms, also decided that it would be right to negotiate or confer with the Chancellor. The members were of opinion that just and honourable conditions would be possible of attainment by the adoption of a middle course. Two sections of the profession were differently affected. The general practitioner whose contract practice was nil, or incidental, would probably suffer. On the other hand, a doctor whose practice was almost wholly of a contract nature would have his financial position improved something like 50 per cent. How long would the contract doctor resist the temptation to go on the panel? The difficulty was how to reconcile these two differing interests and yet maintain the unity of the profession. There was only one way, namely, by conferring with the Chancellor, by defining the terms of service very definitely, and by making some of them absolute and leaving others to the discretion of the negotiating committee.

Dr. E. S. Reynolds (Council) urged that the argument, that if negotiations were not continued there would be a large number of resignations from the Association, cut both ways. It might as well be argued that if negotiations were not broken off there would also be a large number of resignations. Mr. Lloyd George had been kind enough to define what he meant by negotiation, as would be seen from his speech. He said that it had not been possible to negotiate with the committees of the British Medical Association because those committees had no power to reduce their demands by a single penny. That was Mr. Lloyd George's idea of negotiation, and it was a most illuminating definition; he refused to confer unless a body with plenary powers were appointed. That was outside the Articles of Association of the British Medical Association. He sincerely trusted the Association would not be the party to reopen negotiations. Having told the Government the resolution adopted earlier that day, the Association should then wait as it waited in July to see what the Government would do to settle this most difficult question.

Dr. Locke (Hastings) had been instructed strongly to object to negotiations except on the lines suggested by the last speaker. The difficulty was that the negotiations would have to be carried on with a man who knew nothing whatever about general practice. With 1,000 patients at 7s. a head, if 5 per cent. were ill and 95 per cent. in good health, there would be 50 patients to attend in a good time and in a bad time 100 patients. No man could attend to that number of patients in addition to his private practice and do the work properly. For that reason he was sorry that the words "danger to national health" were struck out of one of the first motions. He was strongly opposed to negotiation, but if negotiations were to be opened they should be conducted on the lines most beneficial to the medical profession.

Dr. Buttar (Council) thought the meeting was asked to reverse a vote passed at the Representative Meeting in July last, and asked what had arisen to suggest that the resolution passed in July should now be reversed. Only one thing could justify that—so-called increase of remuneration—but that was coupled with a demand for extra services. Were they willing to sacrifice the freedom, not only of themselves, but of all future generations of medical practitioners, and to give medical treatment under a service subject to a large amount of lay and State control? There was no evidence so far to show that regulations could be secured which maintained the freedom of the profession, so that to negotiate for retention of freedom would be only a waste of time. The Act would be in force in two months' time, and that time should be devoted to preparing to face the position created by the decision of the profession not to work under the Act.

Dr. Courtenay Lord (Rochester and Chatham) said he represented a dockyard constituency in which every man who held contract practice was against working the Act under present conditions, and he had been instructed to oppose anything which savoured of reopening negotiations. Two men in the Division had been doing contract work at a halfpenny a week, and they had been glad to resign from what they considered absolute bondage. On the question of 7s., a great many men had been misled by the unfortunate statement made by the men who remained on the Advisory Board contrary to the wishes of the Association. No words that he could utter would be strong enough to express adequately his condemnation of their conduct.

Dr. Napier Jones (Reading) said he had been instructed to express strong disapproval of any form of negotiation. He would give three reasons for this: the first was that there was nothing to negotiate about; the second was the difficulty of appointing negotiators; and the third was that there was no one to negotiate with, since the Chancellor of the Exchequer, it was said, had spoken his last word.

Mr. C. E. Flemming (Council) wished to remind the meeting of some of the risks the profession would run if it absolutely refused to negotiate. It ran the risk of throwing away everything it had gained. It was suggested that the profession should so act because it had not gained as complete a victory as it hoped for. However, the profession had gained recognition on administrative bodies and free choice of doctor, a right to collective bargaining, and a certain amount of direct representation—none of these points were in the bill when it was introduced; Medical Committees and, recently, an increase in remuneration had also been obtained. When the profession might be able to reap the fruits of a long fight, was it suddenly to change the plan of campaign? In the event of a conference, the medical profession would go into it with all the prestige of the victory it had won with regard to many concessions. The members of the profession would go with the reputation of representing a strong union—so strong that it was the envy of every other union in the country.

Mr. H. F. Devis (Bristol) said his instructions were to vote for refusing service under the Act in the present conditions, but his Division was also prepared to consider negotiations so long as negotiations did not mean bargaining. It was willing to recast the minimum demands and present them as recast to the Government as an ultimatum and to appoint a new State Sickness Insurance Committee to watch. He would not vote for the appointment of any Committee to negotiate and more especially for giving such a Committee plenary powers. He was one of some thousands throughout the country who either had no contract practice at all or very little. He regarded it as more or less derogatory for a medical man to sell his services at a flat rate. He had been through his books carefully, and he found that one-third of his patients were of the insured class. The whole of that number would be swept into approved societies where they would have no free choice of doctor. The safeguard introduced into the Harmsworth amendment with regard to free choice of doctor was not worth anything when handled by officials of approved institutes and insurance societies. The profession stood to lose much more than income. It stood to lose its independence and standing in the country.

Dr. Maclean (Council) thought that a proper understanding should be arrived at as to what was meant by "negotiation." He held the view that to go to the Government in any hope of realizing their minimum demand would be misleading. They must take the more common-sense view that where there were two sides to a question a settlement must be found in some way between them. The position taken up by those who opposed negotiation in effect amounted to saying: "Here we stand; these are our minimum demands; you, the Government, must come to us on your knees." It had been suggested that the Government would hold its hand until the profession chose to modify its position. That was not his view. In his opinion, the Government and the Commissioners would go right on, and within the next two or three weeks the individual practitioners in this country would have issued to them invitations to work on the panel

If the Regulations were carefully studied it would be found that the views of the Association, as expressed in Minute 198 of the Annual Meeting at Birmingham, were practically represented in the Regulations in the paragraph defining the constitution of the Committee of Complaints. There were points to be gained by negotiation. Further representation could be got upon the Insurance Committees; the provision whereby insured persons for five years could go right on as recipients of medical benefit could be amended; the point with regard to the setting up of a central fund in respect of mileage could be settled; and points as to the cost of drugs, the form of the reports, and what was meant by inspection could be adjusted. The meeting must realize the Government as a definite opposing force. The Government could dispose of the money in whatever way it liked; it could set up a national medical service. The meeting had also to realize the power of the minority which would work the Act. That minority was infinitely more powerful than the minority which would not work the Act. He was convinced that the offer now made by the Government was one that many men could not resist, and the position must be recognized and dealt with by the Association.

Dr. BICKERTON EDWARDS (Swansea) said that as a defender of the Government Dr. Maclean was unsurpassable. He (the speaker) represented a working class practice, and had been instructed to vote against negotiation. Some speakers had made a very great point that there would be a split in the camp, and the meeting was asked to remember the disloyal members who would break away. Were not the loyal members to be thought of? Would it not be far more serious if the latter broke away? In his opinion the medical profession held the trump card, because when the Act came into force on January 15th next it could not be worked without the doctors.

ADVANTAGES AND DISADVANTAGES OF A CONFERENCE.

Dr. T. B. HEGGS (Canterbury and Faversham) said the majority of the medical men in his Division considered it highly desirable that there should be a conference between the British Medical Association and the Chancellor. They were against accepting the present terms, but it was considered that the wisest course was to negotiate. The Division was not prepared to stand by the original demands, but was very anxious to get a satisfactory settlement. Public opinion, which the profession had carried with it so far, had to be regarded, and it would be considered a very high-handed action for the Association to refuse to meet the Chancellor to discuss matters. The layman expected the medical profession to discuss the matter. If a proper basis for discussion were agreed upon there would be no difficulty in justifying the minimum demands, but possibly the medical men of the country might feel they could concede something. The alternative was an opportunist policy of seeing what could be got. The Chancellor knew there would be considerable wavering in the country and that there were many men who wanted to get rid of the worry and anxiety of the Act, and who would be glad to work it on anything like reasonable terms. He was convinced that if on January 15th the Chancellor attempted to work the Act there would be sufficient men in some parts of the country to work the Act in weak areas, and in strong areas whole-time officers would be appointed. The result would be chaos for the profession and its unity would be spoilt. Men in his Division said that the new offer was better than the old. He would not suggest that anybody should be given power to negotiate, but he thought it better to reconsider the minimum demands, and if it were possible to form a fresh basis, and to say to the Chancellor, "In view of your further offer and our further information we will work the Act on such and such terms."

Dr. HASLIP (Westminster) opposed the motion and the amendment. It was far better to work for the lower sum and be independent than work with a higher rate of remuneration and be dependent on lay committees. The Council's report failed to show the great difference between a voluntary system of insurance and a medical service. To take the question of removing a name from the panel—for what reason could any doctor's name be removed? If a man was unfit to be on the panel he was unfit to be on the *Medical Register*. If there were to be negotiations it must clearly be understood what was being negotiated. He had listened to Dr. Maclean with disappointment. If negotiations were continued let the Association send men with stiff backs, who knew what was wanted, and let their terms be just.

Dr. MEADE (Scarborough, York) thought that nothing was to be gained by shutting one's mind to facts. It seemed to him necessary to negotiate; the whole of England looked to the profession to settle something, and if it did not settle something, the question would be settled for it. The profession was willing to give up certain points, and if the remuneration was made large enough and the Regulations were altered, the Act could be worked.

Dr. C. P. LANKESTER (Guildford) mentioned that his Division had not changed its instructions to its Representative during the last year. There had been nothing to justify a change. The power of the Government had been mentioned, but the power of the medical profession must be remembered, and he believed that by January 15th the Government would find that it had met its match.

Dr. J. PEARSE (Trowbridge) said he found it very difficult to differ from those who opposed negotiations, because he could not but admire the sincerity and conviction with which they supported their views. At the same time he thought the policy of refusing negotiations extremely unwise, and in the speeches of those who advocated it he failed to hear any constructive alternative. Even if the profession was able to develop a public medical service it would get no better terms than were now offered. A large section of the public would rejoice if the profession refused to negotiate with the Government. A great mass of public opinion desired the institution of a national public service. It had been said that the Regulations as amended did not please the Association, but how could they be satisfactory when the Association deliberately refused to take any part or lot in amending them? He hoped that attitude would be reconsidered.

Mr. TODD (Sunderland) appealed to the meeting to consider very carefully the amendment proposed by Dr. Beaton. On the outcome of the proceedings depended the wrecking of the profession or putting it on such a firm position that it could defy the Government. In a fight of two years the profession had gained some points, but not the vital ones. The vital points were wrapped up in the Regulations. If the profession would use discretion and judgement it could get these altered to meet its approval. He begged members to choose a middle course that would bind the extremes of the profession together, so that it might present a united front. He suggested that a committee should be appointed to negotiate, but that it should not have plenary powers. If that committee after negotiation did not secure the just demands of the profession, then medical men were in an invulnerable position, because they could say to the country that they had approached the Government and had made reasonable demands, but had been turned away.

OBJECTION TO A COMMITTEE WITH PLENARY POWERS.

Dr. H. H. WHAITE (Birmingham) asked if it was a fact that Mr. Lloyd George or the Government had said that they refused to meet anybody but plenipotentiaries.

The CHAIRMAN said Mr. Lloyd George had stated distinctly that if negotiations were to be resumed somebody must be given power to settle the matter with him.

Mr. E. B. TURNER (Kensington) pointed out that little time remained for negotiations. It was evidently the strong opinion of the meeting that no plenipotentiary power should be given. The Chancellor was in a very difficult position. He had promoted the Act without consulting the medical profession. He wished to stage the play of *Hamlet*, and he had got as far as the dress rehearsal before he knew whether the actor who was going to play Hamlet would have anything to do with it. At present the Chancellor was altering details so that every essential would be altered. Dr. Pearse had drawn a wrong inference when he said that on the Advisory Committee the profession had no part or lot in the drafting of the Regulations. The State Sickness Insurance Committee had impressed on the Commissioners regulations which would meet every point before the members of the Advisory Committee resigned. He spoke under a great sense of responsibility, because he would not be

affected by the Act, and he would not have spoken as he had but for the fact that he had behind him the unanimous vote of one of the biggest Divisions of the Association, and that unanimous vote had been given by the men who held club practices.

Dr. DURANT (Consett, Gateshead), though strongly opposed to the Act, felt that unless the profession agreed to negotiate it would be ruined. Some of those who spoke against negotiation did not, he thought, look at the matter from a statesmanlike point of view. Whatever was decided, whether to refuse or to negotiate, those he represented would stand by the majority, but unless a compromise was arrived at he foresaw certain ruin for the Association.

Dr. WALLACE HENRY (Leicester and Rutland) said he and his colleague had been sent by an overwhelming majority of practitioners in Leicester to vote against negotiations, because they considered that the negotiations for the past eighteen months had had very little result. It had been said the wage limit had been to a large extent conceded, and the wage limit was a cardinal point so far as Leicester was concerned. But assuming that the limit had been granted, the Committee had power to transfer persons from its scope, and the result was that the concession granted with one hand was taken away with the other. Eighteen months ago the medical profession was told that in each area it would have the right to decide whether remuneration should be by capitation or for work done. That was taken away by the Regulations under which the Insurance Committee was required to consult the Medical Committee as to how the medical men would like to be paid, and, after having consulted the Medical Committee, the Insurance Committee could then do as it liked. They had been told that it would be possible for an individual insured person, if he wished to make arrangements with his doctor, to receive money in aid. That right had been taken away by the Regulations. He had to make an application to the Insurance Committee, and the Insurance Committee had the right of saying Yes or No as to whether the insured person was to be the recipient of a grant in aid. That was of the most vital importance to those areas where an attempt was to be made to work a public medical service. The Insurance Committee, if it were opposed to the public medical service, might attempt to coerce people into whatever scheme of attendance it liked and prevent them contracting out and joining the service which they wished to join. It had been said that freedom from friendly society control had been granted. That was technically correct, but, as a matter of fact, what was given with the one hand had been taken away with the other, because three-fifths of the members of the Insurance Committees were by the Act representatives of the insured persons, and, as was very well known, insured persons to a very large extent were now members of friendly societies. A good deal had been said about what had been gained by the recognition of Medical Committees, but they had no statutory powers except that of making representations and being consulted. As regards the question of finance, it was very doubtful whether anything had been gained by the Chancellor's last offer, taking it in conjunction with the conditions put forward. His Division was strongly of opinion that the present offer, *plus* reports and *plus* inspection, was infinitely worse than the original plan.

The CHAIRMAN OF COUNCIL said that he had had definite instructions from his Division by a practically unanimous vote of the biggest meeting it had ever held to vote for resuming conference with the Government authorities, and gaining further concessions from them if possible. If the Representative Meeting definitely decided not to go one single iota from their six cardinal points, then there was no necessity, so far as he could see, for resumption of negotiations. But he gathered there was now a distinctly different opinion from that which prevailed at the meeting in July. Several speakers had distinctly expressed the opinion, which had been received with approval, that the remuneration was not the most important point, and that the serious point to consider was the conditions of service under the Act. He thought the profession distinctly had the power to get some amelioration of the conditions of service under the Act. Whether the Association decided to approach the Government or decided to wait and ask the Government to approach it was not the material point. The Act must come into force on January 15th next, and the Government was quite as anxious as the medical profession to come to terms in order to put the Act into action under the most favourable conditions. Assuming there was that power of getting some improvement in the conditions of service, was it not foolish, for the sake of possible sentiment, not to take the chance of getting it? If the Association went to the Government and asked for these ameliorated conditions of service but failed to get them, would not the Association be in a far better position than at present? Mr. Wallace Henry had stated that the conditions of service had been made worse by the Regulations, and that provisions had been put in the Regulations which took away what had been granted before. That was really a strong argument in favour of negotiation, because there had been no negotiation since the Regulations were issued. Was it not possible, if some means were found for negotiating with the Government, that those Regulations would be altered?

Dr. J. ADAMS (Glasgow Central) said his Division had not changed its opinion throughout the campaign against the Insurance Act, and the gist of the instructions he had received had always been that the Association should keep in touch with the Government. He could not help thinking that the Act would alter for the better the character of the medical attendance carried on by those doctors who properly conducted their work.

Dr. J. W. SMITH (Hexham and Newcastle-upon-Tyne) said he was in the peculiar position of having different instructions from each of his Divisions. The Hexham Division instructed him to vote for sticking to the cardinal points, which, of course, meant no negotiation. On the other hand, the Newcastle-upon-Tyne Division had instructed him to do all he could in favour of negotiations. The members of the latter Division had instructed him to vote for accepting the rate of 7s. on certain conditions—namely, that there should be special provision made for extras, night duties, mileage, anaesthetics, operations, and so forth. He would urge with all the strength he could that they should carry the resolution to renew the negotiations with the Government, and that they should negotiate for the special extras he had mentioned. Another strong point of the Newcastle Division was that medical men should have the option to dispense their own medicines.

Reply.

Dr. BEATON, in reply, said that the amendment proposed that the Association should confer with the Chancellor and with the Commissioners with a view to settlement of the points on which the demands of the profession had not yet been met. Somehow or other the question of money had taken a place that it ought not to have taken with the public, and, he feared, with the profession. There were some things that were higher than money—namely, freedom to do their work in their own way.

Dr. Beaton's amendment was then put to the vote, 107 voting in favour, and 84 against. The amendment was therefore carried.

SUGGESTED INVITATION TO THE GOVERNMENT TO MAKE FURTHER PROPOSALS.

When it was put as a substantive motion, Dr. HARDING (Hereford Division) moved the following amendment:

> That this Representative Meeting instructs the Council to forward to the Chancellor of the Exchequer a copy of the resolution passed this morning by an overwhelming majority and to inform him that any further proposals of the Government for meeting the grave objections of the profession shall receive the most careful consideration of the British Medical Association.

It was quite obvious that there was a general feeling that negotiations should be entered into, but if the Association made the first move it might appear as if it were retreating from an untenable position. That was not the case. He did not believe in the bogey of whole-timers. He did not think it was possible to work three-tenths of the insurance areas in the country on any system of whole-timers. Public opinion was not against the medical profession, but was against those who forced the profession into the position in which it had been placed. Were they to bind themselves absolutely for three years to all the conditions? If the Government cared to ask the Association to

consider reasonable and fair amendments then by all means let the conference be held, but to say blindly to the Chancellor that the Association was prepared to negotiate would be to give the case away.

Dr. HELME (Manchester Central) said he represented a Division which had never refused to work the Act under regulations and conditions consistent with the honour of the profession. His Division were strongly opposed to any resumption of negotiations in the way of directly approaching the Chancellor through a committee with plenary powers. The alternative which appealed to him personally was to fix terms firmly, and stick to them, conscious in the integrity and justice of their position, and let it be known throughout the country what the conditions were. They were asked because a certain number of men would not take part in their decision to throw their principles to the wind and capitulate. He personally would rather sink defeated absolutely than give way under such terms. The proposed amendment, he felt, was a *via media* on which all might unite.

Dr. MILBURN (Council) said he considered the Chancellor had changed the basis altogether by his last offer and by his letters. That, he thought, opened a way for the profession to say that there were certain things it expected, and certain things it did not propose to do.

Dr. MAJOR GREENWOOD (City, Metropolitan) hoped the proposed amendment would be accepted by the meeting, because it was a bridge by which all could go safely over. No one objected to negotiation, but if the Association were to go directly to the Chancellor it would be going against the resolution passed at the Liverpool meeting when it was determined to break off negotiations. On the other hand, the Association was quite prepared to hear and consider any proposal the Chancellor might have to make.

After some further discussion as to the effect of the amendment,

Dr. KEAY (Greenwich and Deptford) said he had been instructed to press for a reopening of negotiations with the Government. He thought it incumbent upon the profession to have some truly constructed system.

Mr. LUCAS (Birmingham Central and Walsall) emphasized the fact that the public was not correctly informed on the points with regard to which the profession was chiefly dissatisfied; the chief objection was to the conditions of service rather than the remuneration.

Dr. FARQUHARSON (Bishop Auckland and Durham) asked whether the amendment was not a direct negative in the sense that the issue in intent, if not in words, was "Yes" or "No" as regards the question of conference.

The CHAIRMAN said he had ruled that it was an amendment.

Dr. FARQUHARSON remarked that in that case the words "careful consideration" must be regarded as a verbal equivalent because of the word "conference."

The CHAIRMAN OF REPRESENTATIVE MEETINGS said he had given his decision.

Dr. W. DUNCAN (Derby) said that the Representative Meeting last July had decided it would not negotiate with the Government, and now it was asked to say to the Government, "If you have anything to say to us we will listen to you," when only two months remained before medical benefit came into force. That was not the proper way to treat the Government. There was only one way of carrying on a rebellion successfully. Either there must be a monopoly that nobody could take away or the public must be convinced. It was plain that the conditions now offered were better. Public opinion was not now with the profession, and if the meeting broke up without coming to any definite decision, but simply sent an insulting message to the Chancellor the end would be near. He came from a constituency in the Midlands that had been classed as dangerous, but as to the guarantee fund his Division headed the list for England. Every man in the Division was pledged, and every one had sent in his resignation. If the profession slammed the door in the face of the Chancellor he would not come to it but would go to individuals, and each would get an invitation to go on the panel within three days.

Dr. MACLEAN (Council) said that the amendment before the meeting would really have the effect that the original motion as passed and amended would be nullified. He advised the meeting to vote against the amendment for that reason, because it had carried the motion in its amended form by 107 votes to 84. It was, of course subject to further amendment.

Dr. G. E. HALSTEAD. (Isle of Thanet) said that the Association had been conferring from January to July and had got nothing by it. What, then, was the use of negotiating any further? Under a public medical service the profession would have the freedom which it could not get under the Chancellor's Act.

The CHAIRMAN pointed out, having regard to the importance of the matter (although it was only a question of procedure, considering the very small amount of time available between now and January), that the motion became practically a question affecting the policy of the Association, and therefore it required a two-thirds majority.

In reply to a question whether the resolution passed at Liverpool to cease negotiations with the Government did not still hold good, the CHAIRMAN said that as fresh conditions were offered it was open to the meeting to take any line it chose. He then proceeded to put the amendment, when, on a motion by Dr. EVAN JONES (City), supported by twenty-seven Representatives, it was decided to take a card vote.

REPORT OF COUNCIL.

Tuberculosis Officers.

The CHAIRMAN OF COUNCIL (Dr. J. A. Macdonald) presented the report of Council on National Insurance (see SUPPLEMENT, November 2nd, 1912), and referred to an important point raised by paragraph 11. The Astor report, the Government, and the Association were all strongly in favour of tuberculosis benefits being administered by the general practitioners of the country. In order to bring those benefits into force it was necessary to get a scheme of some kind through the various areas, and the medical officers of the various counties had been instructed to draft such a scheme. The point that had arisen was the position of the medical officers of health in regard to the administration of tuberculosis benefit. The Association's suggestion was that there should be for each area a chief tuberculosis officer at a salary of not less than £500 a year; that he should have assistants through the various districts attending at the dispensaries, who should be also whole-time men, whose salary should be not less than £300 a year. An attempt was, however, being made by the medical officers of health of various counties and areas to run the scheme on a different basis; to get their assistant school medical officers and district medical officers of health to do the work, and practically leave the general practitioner out altogether. The difficulty was to get at any real idea of the position of the medical officers of health under the scheme. Being under the Local Government Board they were supposed to have the administration of this matter, the payment being made by the Insurance Committees and the County Council; that introduced a great difficulty in management. The impression, when the matter was first started, was that the appointment of the medical officers of health to be tuberculosis officers was to be temporary only in order to bring the thing into working order, but it had been found on communicating with the Local Government Board that that was not the case. (See correspondence, BRITISH MEDICAL JOURNAL SUPPLEMENT, November 2nd, 1912, p. 469). It was now obvious that whereas at first it was understood that the Local Government Board would not allow the medical officer of health to take up this position, now it seemed to be the Board's intention that the medical officer of health should be the permanent holder of the position.

Dr. BENHAM (Brighton) moved as an amendment to par. 11:

> That where the medical officer of health is appointed administrative tuberculosis officer, his title should be "medical administrator under the tuberculosis service."

He said the question was one which had become very acute in Brighton owing to the fact that the Town Council had appointed the medical officer of health to be chief tuberculosis officer, and it was understood that he was to have an assistant at £250 or £300 a year to actually do the work. The attitude taken was that whilst the Brighton Division was willing that the medical officer of health should act temporarily and provisionally as administrative officer for sanatorium benefit, yet that he should not receive the permanent appointment of chief

tuberculosis officer. It was thought that the medical officer of health had a great deal of work, and very important work, and it was not worthy of a great tuberculosis service that he should be tuberculosis officer. It was thought that it would lead to his delegating the work to junior men fresh from hospital who would be in consultation with older men of far more experience in order to decide whether or not a patient was tuberculous, and whether he was a suitable case for treatment.

Dr. Dearden (Manchester West) thought "administrative tuberculosis officer" was admittedly the title of a tuberculosis officer acting as administrator.

Dr. Benham thought it a great advantage to have a clear definition that his duties were to be entirely administrative, and that the medical officer of health was not to be asked to treat cases.

Dr. Crowe (Worcester) inquired whether it was to be understood that a medical officer of health who had been a part-time medical officer, and had been made a whole-time medical officer and taken the title of chief tuberculosis officer should undertake the treatment of tuberculosis.

Dr. Thornley (Bolton) said that in Bolton there was a population of 180,000, and it was agreed that the medical officer of health should become the chief tuberculosis officer. The medical officer himself stated that the general practitioner would get the treatment of tuberculosis cases, and he would simply undertake the administration. If the appointment of another man were pressed for, it meant that the general practitioner would have nothing to do with tuberculosis except notification.

Mr. Herbert Jones (Council) said that the medical officers of health did not wish to do any clinical work, but there were very exceptional cases where it might be desirable that the medical officer of health should be the tuberculosis officer. If the title of administrative tuberculosis officer were altered to meet the requirements of the Brighton Division, it would be at once admitting that the medical officer of health should do clinical work.

The amendment of the Brighton Division was lost.

Mr. Evan Jones (City) moved an amendment:

That the chief tuberculosis officer should not be the whole-time medical officer of health.

His Division was of opinion that the medical officer of health was not the proper man to assist in the treatment and diagnosis of tuberculosis.

Dr. Kerr (Edinburgh) seconded. He thought that a medical officer of health could not be expected to have that up-to-date knowledge of tuberculosis treatment such as a medical man should have in the best interests of the patient.

The Chairman of Council supported the amendment. He mentioned that in Somerset there were two areas, part belonging to the Bath and Bristol Branch and part to West Somerset. The committees of these two areas adopted a common scheme which was practically the one adopted by the State Sickness Insurance Committee. A subcommittee met the County Council, but the interview terminated abruptly because the County Council stated that it would run the business itself. The Division then wrote to the chief medical officer, who stated that the County Council reserved to itself the right to say to what extent in individual cases of tuberculosis the treatment should be in the hands of its own officers, and that it could not agree to have it limited in the cases specified in the scheme of the British Medical Association, but that at the same time it would endeavour to interfere as little as possible with cases already under the care of general practitioners. The only way the Division could see of meeting the difficulty was by suggesting that the members should not sign Form 2, and members were circularized to that effect. The Division hoped to convince the County Council of Somerset that it was opposing the opinion of the whole medical profession of the country, and that it would find a difficulty in administering tuberculosis benefits.

Dr. Heggs (Canterbury and Faversham) thought that medical officers of health themselves would support the present proposal that no medical officer of health should undertake the clinical work, and that he should only be an administrative tuberculosis officer.

Dr. Freere (Winchester) mentioned that the Representative of the Division for whom he was acting was a medical officer of health, and that he had proposed to put before the County Council a scheme whereby three school medical officers should be appointed in addition to the existing three to work the schools and tuberculosis clinics in the county. The local Provisional Medical Committee could not approve of this scheme, as it did not provide a sufficiently responsible and experienced tuberculosis officer in whom the members of the profession in the area could have confidence.

Dr. A. Drury (Halifax, Yorks) said it had been suggested that the medical officers of health were with the Association on the matter, but he had reason to believe that this was not everywhere the case.

Mr. Garstang (Altrincham) said there were certain points on which the interests and duties of the medical officers of health seemed to be becoming more or less opposed to the interests of the general practitioner, and many hard things had been said of medical officers at Representative Meetings which they resented. It had appeared to many of them who were serving on committees of the Council that unless something were done soon to put an end to this regrettable state of affairs there was a risk that a very serious rupture might occur between the Association as a whole and that part of it which was composed of medical officers of health. In order to avoid this a conference was arranged between representatives of the Association and representatives of the Society of Medical Officers of Health to discuss in a friendly manner all the points likely to cause friction. At that conference the principle was accepted that no resolution which might be passed could be held as binding upon either of the parent associations, at all events until it had been submitted to them in proper form. The President of the Society of Medical Officers of Health had stated that medical officers had no desire whatever to take the clinical and medical work out of the hands of the general practitioner.

Mr. Herbert Jones (Council) moved the insertion of the words "except in special circumstances," on the ground that medical officers of health could not accept the motion of the City Division as it stood. If it adopted a too peremptory attitude the Association would find itself opposed not only by medical officers of health but by the Local Government Board for England and Wales and the Local Government Board for Scotland.

Mr. Domville (Council) seconded the amendment. It had to be recognized that at this crisis local bodies had been forced to employ their medical officers of health for consultative purposes in consequence of the Association's unwillingness to form Provisional Committees in various localities; in addition local bodies had been accustomed to have their medical officers of health at their elbow to consult, and therefore it was only natural that they should appoint them to the position of chief tuberculosis officer. The medical officers of health who met the Association in consultation the other day were, he thought, genuine in their desire that they should not undertake any treatment at all, but that all treatment except such as was carried on at the dispensary under their supervision should always be done in co-operation with the general practitioner, if not by the general practitioner himself. At the same time, it was made clear that there was no difficulty whatever in the necessary inspection, as to the existence of contacts, being carried out by sanitary inspectors.

[The proposed additional words were accepted by the mover.]

Dr. Bowie (Edinburgh) thought it was unfortunate that the term "chief tuberculosis officer" was used, because the medical officer of health was the chief tuberculosis officer, tuberculosis being an infectious disease. "Expert adviser" would be a better term. In Edinburgh a whole-time officer at £500 a year was of no use. They wanted something better. The scheme suggested at the local Insurance Committee was that they should have a consultant to act as expert adviser to the local Insurance Committee, and that consultant should not be a whole-time medical officer, but should simply take on the expert work as part of his ordinary duties.

The Chairman of Council considered the proposal made by Mr. Domville with regard to contacts very dangerous. Surely it was not going to be admitted that the sanitary officer was to go to the place where a case of tuberculosis occurred, and that he should be the man

to decide what a contact was. The only person that could possibly decide that was the general medical practitioner.

Mr. DOMVILLE (Council), in explanation, said that in a case of infectious disease coming from a particular school it was the ordinary practice for the medical officer of health or one of his assistants to go and ascertain how many children had been in contact with that particular case and then to refer to the general practitioner in attendance. He did not suggest for a moment that the sanitary inspector or anybody else was going to visit another man's patients and ascertain whether they had the disease. There were certain cases, however, in workshops, for instance, where it was necessary to ascertain the conditions under which the work was carried on.

Dr. SCOTT WILLIAMSON (Bristol) suggested the insertion of the following words: "Except in such circumstances as the Council of the British Medical Association may define"; otherwise it would be left to the medical officer of health himself to decide what were the special circumstances.

The PRESIDENT (Sir James Barr) said he looked upon the part of the Act dealing with sanatorium benefit as the greatest farce of all. The amount of money available for the treatment of consumptives was extremely small, and if there was to be a large number of special tuberculosis officers there would be practically nothing left for the general practitioner. Only 1s. 3d. per head was allowed for sanatorium benefit, and it required 8,000 insured persons to pay £500 a year to one tuberculosis officer. That being the case, what was the position of the patient? Each general practitioner who intended working the Act would expect to get 1,000 insured persons, and the only money set aside for tuberculosis treatment of those 1,000 insured persons was £62 10s. Supposing 1 per cent. of those 1,000 patients was affected with tuberculosis, that would mean that only a sum of £6 5s. would be allowed for the treatment of each individual during the year. That included the medical officer of health, the chief tuberculosis officer, the general practitioner for domiciliary treatment, cod-liver oil, tuberculin, and sanatorium treatment for the patient. How that was all to come out of £6 5s. a year was a puzzle. The suggestion that tuberculous individuals were to be treated for that sum was a farce; twice as much money would not be sufficient. In Liverpool the town would have to supplement the sum allowed to an enormous extent, because, in place of 1s. 3d. per insured person, there would have to be a sum of 2s. or 3s., if the patients were to be properly treated. Therefore the greater the number of chief tuberculosis officers appointed in connexion with the administration of sanatorium benefit, the less there would be left for the doctors.

The amendment was carried with the insertion of the word "very" before "special circumstances."

The meeting adjourned at 9 p.m.

Wednesday, November 20th.

The proceedings were resumed on Wednesday, November 20th at 9.30 a.m., Mr. T. JENNER VERRALL (Chairman of Representative Meetings) in the chair. The minutes of the previous day's proceedings were corrected and confirmed.

INVITATION TO THE GOVERNMENT TO MAKE FURTHER PROPOSALS.

The result of the card vote on the amendment proposed by Mr. R. Harding (Hereford), seconded by Dr. Helme, was announced as follows:

Ayes	9,292
Noes	9,269
Majority in favour	23

At a later stage, in response to an inquiry, the CHAIRMAN announced that the voting on the card vote the previous evening, if taken on constituencies alone, would have resulted in Ayes 100, Noes, 101.

GENERAL REVIEW OF THE SITUATION.

STATEMENT BY THE CHAIRMAN.

The CHAIRMAN OF REPRESENTATIVE MEETINGS said it would be remembered that he had forecasted the extreme probability that some such result as this would be reached; there had been evidence in the course of the discussions and votes at an early stage of the proceedings of a very definite cleavage of the meeting into two almost equal parts. He had reason to think, from a study of the votes, records, and reports from the Divisions, that the cleavage indicated by the vote was not unfairly indicative of what was occurring throughout the Association at the present time. Assuming that to be so, were they not faced with the extreme improbability, not to say impossibility, of arriving at a two-thirds majority on any line of action hitherto proposed? He did not say that with an idea of persuading one side or the other to give way, but he put the fact before the meeting as a piece of evidence, and suggested that it probably meant the impossibility of getting a real definite mandate on any line actually proposed at the present moment which should be held to be morally and fairly binding upon the Association. He had from the beginning of the meeting felt that the possibility of such an *impasse* was a grave danger to the Association. Of course, to speak of dangers was to run the risk of creating the very thing to be avoided; therefore he did not wish deliberately or rashly to raise a bogey or to suggest that the natural and logical consequences of such a state of things would be what was commonly called a "cave" or secession from the Association. It was to be hoped, whatever decision was arrived at—if among the various possibilities a decision was arrived at—that the Association would recognize that its future existence depended upon there not being a "cave" or secession, and would at any rate keep its head and make no rash movement in one direction or the other. Whatever party, anxious to secure beyond all question its own view of the situation, might be dissatisfied, he trusted that that party would not meet the situation by a rash secession or protest. Mr. Turner had asked him what would be the result if the meeting arrived at no decision, and what would be the status of decisions arrived at at the previous meetings, especially the Liverpool meeting. Upon that he (Mr. Verrall) was not in any hurry to pronounce an opinion, nor did he feel certain that anybody but a lawyer would be competent to pass an opinion carrying legal weight. But he thought they all had the right of, and capability for, passing an opinion upon a moral factor of the situation, at any rate. He suggested from that aspect of the question, leaving the legal point for the moment and dealing with the moral position only, that it was perfectly obvious that the condition of things upon which the Association had to judge was so materially and completely altered by various proposals (the Provisional Regulations, the increased offer, and the expected consequential amendment of the Regulations, the sanatorium benefit, the sixpence, and the alteration of various arrangements), that it would be quite impossible morally to hold the Association tightly to the absolutely definite, hard-and-fast decision of a few months ago. The risk would be run of splitting up the Association. That was the risk it was essential to avoid. If nothing were carried in the way of a decision of the Association which would be a reliable and satisfactory guide for future procedure, the Association was faced with the position that the Divisions would be more or less at liberty — more rather than less — to take each its own line. He thought that morally they would undoubtedly be so entitled. He suspected they would be legally so entitled; but upon that he offered no decided opinion, not being competent to do so. The situation would be extremely dangerous. The public would expect the Association at such a crisis to be capable of arriving at some common ground—something in the way, probably of a compromise—which would prevent the Divisions having, at any rate, the moral right, and possibly the legal right, to take any such independent action as he had suggested. If that were so, what was to be done? No doubt further amendments would be moved to the motion of the previous day, which had become the substantive motion before the meeting. It would be for him, according to the best of his ability, to decide whether those

amendments were competent amendments. He hoped an amendment would be forthcoming which would enable what was desirable to be done—namely, to arrive at some common ground which would be the Association's real decision. Assuming, for argument's sake, that the meeting desired to find such a modification of the position as it now stood, the amendment of the previous day having been carried and having become a substantive motion, he did not think it surpassed the wit of man to devise something which would afford a way out of what undoubtedly would be a dangerous *impasse*. The position was that by preferring, even though it was only by a small majority, the amendment to the Norwich motion, the meeting had shown that in its opinion immediate negotiations on the basis of the offer made by the Chancellor were not advisable, and that the recent offer of the Chancellor did not afford an immediate opportunity, without restrictions or conditions, of going to him and talking over the situation, much less appointing a committee with plenary powers. He suggested that it would be possible to appoint a committee to report to the Council as to the terms it was finally able to secure, and that this should be done in the following way: that the meeting should not send a committee to confer now with the Chancellor with indefinite conditions, but that it should take care to establish a series of conditions which should limit any further conference with the Chancellor. He further suggested that the first part of the amendment should be retained, which meant that the meeting would report to the Chancellor what had been carried on the previous day by an overwhelming majority, from which he would see what the temper of the meeting was. Further, the Committee should convey to the Chancellor a series of points previously laid down by the Representative Meeting, on which the Association was very anxious, and which must be the basis of any conference with him. Any body which represented the Association should be guided in its discussion with the Chancellor by the points arrived at, and should tell the Chancellor that these were the points on which there was a very strong feeling. Of course, this assumed that Mr. Lloyd George would be willing to meet representatives of the Association on these terms. The Committee should report to the Council what were the terms it had been able to secure, and thereupon the Council should report immediately to the Divisions on the situation raised and the terms offered, and ask them to meet and take a vote of all present. He suggested that this course might be followed in order to save, if possible, the necessity of immediately calling another Representative Meeting. His suggestion was that the Council should report on the situation, when it was finally clear, to the Divisions, and ask them to take a vote of all present. Finally, his suggestion on this point was that when all those in favour of accepting the terms offered, and all those against it had given their vote, that the vote should be decisive. He was not wishing to dictate to members in any way. He was merely putting the present position before them for their careful consideration. He made the suggestions as a way out of the difficulty, and as the father of the Council and as their Chairman he sincerely thanked them for enabling him to do what he conceived to be his duty. (Loud applause.)

The Deputy Chairman.

Mr. E. B. Turner (Kensington), the Deputy Chairman, said he spoke with a feeling of terrible responsibility. From watching the trend of the meeting it was apparent that whatever decision might be arrived at the voting was going to be very close. It was of the most momentous importance that the Association should remain as it was—united. (Applause.) Every one who had listened to the extremely able and interesting debate of the day before must have been struck by the profound differences of opinion manifested by Representatives from various parts of the country. On the one hand there was Dr. Pearse, representing a rural district, giving one opinion, and Mr. Harding, representing another rural district, giving an entirely opposite opinion; Dr. Duncan of Derby, representing an industrial Midland constituency, giving one opinion, and Dr. Courtenay Lord and the men in other industrial Divisions giving an exactly opposite view. It was evident that under those circumstances a *modus vivendi* must be found. Had the majority, whichever way it might have gone, been a large one, he would have appealed to those who were beaten that they should take their beating like sportsmen; but when the majority was only 23 on a vote which had sorted out very nearly the whole of the members of the Association in the country, the minority could not be called upon to subordinate its views to such a small majority. Therefore the meeting must come to some decision which would carry the weight of the Association. It had been evident to him, after some nine months' service on the State Sickness Insurance Committees, that there was rather a tendency for gentlemen to think in their own districts. He had noticed that many gentlemen were inclined to look upon the Act and the results of it as it would affect their districts particularly, and not as it would affect the whole of the profession. That attitude should now be absolutely dropped. He was quite certain that if some course such as that outlined by the Chairman was followed, the minority would join with the majority. He had not had the advantage of seeing any of his colleagues in his Division, but he could undertake to say that they would on a vote like this subordinate their opinion to that of the majority for the abiding welfare of the profession. If every Division could be persuaded to poll its full numbers when the matter had been brought to a needle point, then he would call upon every individual to subordinate self, and to maintain unity for the good and honour of the profession. (Loud applause.)

COMMUNICATION TO THE CHANCELLOR OF THE EXCHEQUER.

It was moved by Mr. Todd (Sunderland), seconded by Mr. Hoyle Whaite (Birmingham):

> That this Representative Meeting instructs the Council to forward to the Chancellor of the Exchequer a copy of the resolution passed yesterday by an overwhelming majority, and to draw his attention to the points on which it would be possible for a conference between himself and representatives of the Association to take place; and that this meeting now proceeds to draw up what it believes to be the reasonable demands of the profession, to be laid before the Chancellor by a committee to be elected by the Representative Meeting for the purpose, such a committee to report to the Council the result of the conference, the Council thereupon to report the whole matter to the Divisions, who would be requested to call meetings immediately to vote as to whether the final terms suggested should be accepted or not, the votes of all present and voting to be recorded, and the combined record of all such votes for or against acceptance to be decisive.

Dr. George Elliott (Belfast) asked that all changes in the Act should be made to apply to Ireland as to England.

The Chairman suggested that Dr. Elliott should move that as a rider.

Dr. Haslip (Westminster) inquired whether the Association would be acting constitutionally in adopting the latter part of the motion.

The Chairman thought that the Representative Body had power to direct this particular method of settling the present difficulty to be taken. In further reply to Dr. Haslip the Chairman said that it would be in order to move that a postal referendum be taken of every member of the Association.

After further discussion, the Chairman said that the position of business was that the amendment which had been carried by the card vote had become a substantive motion, and Mr. Todd's motion would be taken as an amendment to the substantive motion.

Mr. Todd, speaking in support of the amendment, said he was sure every one recognized the vital issue before the meeting, especially since the figures on the card vote had been announced, and also the figures as to the voting of the constituencies, which showed how near was the division which had taken place. It was true that in the history of the fight in connexion with the bill, and since it became an Act, the profession had been at times very near a schism, but never had it been nearer that than at the present time. Therefore, it behoved them as loyal members of the profession to devise some means by which the cohesion and unity of the profession could be assured so that a wedge should not be driven into the profession—a wedge which might throw it into the hands of the enemy. Differences of opinion were manifested, though each side was trying loyally to maintain unity. Each man saw

clearly how the Act would affect his own locality; those who had been studying how the Act would affect localities, from their inquiries and the statistics obtained, knew that in some parts of the country the Act would be beneficial, and in others would be the very opposite. How were these factors to be reconciled? It was necessary to find some way, and he submitted that the motion was capable of being made elastic so as to bring within its circle all the views of every Representative of the Association. If no way out was found, there would be schism and cleavage in the ranks. It was impossible to achieve a two-thirds majority on the lines of the proposal submitted to the meeting on the previous day. It could not be made the policy of the Association nor binding on the Divisions. Consequently, to persist in that direction would lead to dissension. Divisions would look at the matter from their own point of view, and the profession would be attacked in units and not as a collective body. Members would have been prepared to support the Association and the majority loyally had a majority been obtained on the previous day either on the motion or the amendment. The greatest good of the greatest number and the welfare of the profession in general must be the principal consideration. Great and powerful as the Association was, there was still without its ranks unfortunately a certain number of men upon whom a resolution of the Association was not binding, and especially would not be binding in the altered conditions and circumstances since February and July last.

It was agreed to consider the motion in two parts, the first part to end with the words "the reasonable demands of the profession, to be laid before the Chancellor by a committee to be elected by the Representative Meeting for the purpose."

Mr. H. H. Whaite (Birmingham Central) said that his Division adhered to the original cardinal points, but it was evident from what had occurred that the meeting was running a great risk of arriving at an absolute deadlock. Whatever happened he did not think there would be an absolute cleavage. There were Divisions in favour of refusing to work the Act, others in favour of negotiations, and, he believed, a very small minority prepared to work the Act as it stood if nothing better could be got. His colleagues felt that they could accept a compromise. The profession was united on the essential fact that it would not work the Act as it stood at present. (Applause.) The resolution went on to say that the meeting was ready to appoint a committee to confer. The meeting did not want to appoint plenipotentiaries. The committee must confer with the Chancellor upon the points not yet settled, because the profession still recognized the original demands as the basis upon which it had to work. Secondly, the meeting would instruct the committee to present to the Chancellor what it now felt to be the reasonable demands of the profession. Those demands should be drawn up at the meeting. He felt very strongly that the meeting was capable of dealing with this; and there was hardly a man present who had not instructions on the various points from his Division.

Dr. R. M. Beaton (St. Pancras and Islington) remarked that the profession was not going to its funeral—on that day, at any rate. The resolution passed the day before by an overwhelming majority declared that the profession under the present circumstances would not work the Act. (Applause.) He had instructions from his Division to bring up a middle course, which he was sorry to say had been refused by the Council. As he understood the present proposal, the meeting was to draw up a list of points on which it was agreed, and with which they hoped to get the Chancellor to agree. He did not believe that a meeting of 200 men was the best possible place for doing that. He proposed that a small committee should be appointed to go into the matter, and that that committee should make a report to the meeting. He agreed that, whether the resolution was for or against the supporters of any particular view, those defeated should loyally submit to the majority.

Dr. T. R. Waltenberg (Manchester, Salford) thought that a time had come when standing on its dignity might be fatal to the Association and to the profession. Though he should still prefer to be firm, yet he thought the profession would not lose its dignity or any advantage by showing a conciliatory spirit. It did not matter whether it was prepared to stick to the six cardinal points or whether it modified its demands so long as the spirit of those demands was retained. If the Association showed any want of unity, there would not only be a cleavage but the common cause would be destroyed.

Dr. Helme (Manchester Central) remarked that the position would have been more difficult had the voting not been so close. The nearness of the division, to his mind, was an unanswerable argument to make both sides come together. It did not follow that, because a man said "No," that he was going to desert his fellows.

The first part of the resolution was then carried in the following terms:

That this Representative Meeting instructs the Council to forward to the Chancellor of the Exchequer a copy of the resolution passed yesterday by an overwhelming majority, and to draw his attention to the points on which it would be possible for a conference between himself and representatives of the Association to take place, and that this meeting do now proceed to draw up what it believes to be the reasonable demands of the profession, to be laid before the Chancellor by a committee to be elected by the Representative Body for the purpose.

ARRANGEMENTS IN VIEW OF A CONFERENCE.

Appointment of Special Committee.

For the election of the committee various suggestions were made—that the members be drawn from, and representative of, all classes of practice; that the election be by the proportional system; that a Representative from each area be appointed; and that the committee consist of three only.

Ultimately the meeting adopted a series of resolutions. The first was:

That a State Sickness Insurance Committee be appointed by the Representative Body to watch the interests of the profession in relation to the National Insurance Act and to report on the situation to the Council; that the Committee consist of twelve members elected by Grouped Representatives in the same manner as members of Council under By-law 43; the *ex officio* members; and two women medical practitioners, to be nominated, one by the Northern Association of Medical Women and one by the Association of Registered Medical Women.

The meeting further agreed:

That to the State Sickness Insurance Committee be entrusted the duty of arranging conferences with the Chancellor.

As to the actual interview with the Chancellor the meeting decided:

That the committee to confer with the Chancellor shall be appointed for this special purpose by this meeting and shall consist of five members.

It was then proposed and carried by acclamation:

That the five members be—
The Chairman of Representative Meetings (Mr. Verrall),
The Chairman of Council (Dr. Macdonald),
The Deputy Chairman of Representative Meetings (Mr. E. B. Turner),
Dr. R. M. Beaton (London),
Dr. Helme (Manchester).

It was also agreed:

That should any one of the five gentlemen selected not be elected on the State Sickness Insurance Committee he should be added.

That there be one member of the State Sickness Insurance Committee representing the medical officers of health, with power to vote.

That the deputation to the Chancellor should have the assistance of a legal gentleman.

METHOD OF OBTAINING THE OPINION OF DIVISIONS.

The second part of the original resolution as to the method of taking the opinion of the Divisions on the results of the conference with the Chancellor was then discussed, and finally the whole resolution was carried as follows:

That this Representative Meeting instructs the Council to forward to the Chancellor of the Exchequer a copy of the resolution passed yesterday by an overwhelming majority, and to draw his attention to the points on which it would be possible for a conference between himself and representatives of the Association to take place, and that this meeting now proceeds to draw up what it believes to be the reasonable demands of the profession, to be laid before the Chancellor by a committee to be elected by the Representative Body for the purpose. The State Sickness Insurance Committee, which will be immediately elected, is to be entrusted with the duty of arranging the conference, and will receive the report of the Special Committee elected to confer with the Chancellor. On

receiving the report of the interview with the Chancellor, the State Sickness Insurance Committee will report to the Council the result of the conference. Should there be any modification of the conditions now offered the Council will thereupon report the whole matter to the Divisions of the United Kingdom, who will be requested to call meetings of all members of the profession resident in the divisional area to vote as to whether the final terms suggested shall be accepted or not. The votes of all present and voting to be recorded in two classes, those of members of the Association and non-members of the Association respectively, and the combined record of all such votes of members of the Association for or against to be decisive, the votes of non-members to be recorded for our general information.

[The meeting adjourned for lunch.]

INSTRUCTIONS TO THE SPECIAL AND STATE SICKNESS INSURANCE COMMITTEES.

The Representations to the Chancellor.

Following the midday adjournment the Representative Meeting proceeded to consider in detail the instructions under which the Special Committee of five and the State Sickness Insurance Committee should act.

This business was concluded about 9.30 p.m.

The Chairman suggested that, owing to the lateness of the hour, the meeting for the remainder of the session should devote attention to certain urgent matters, and the following business arising out of the Report of Council was dealt with:

CONTRACT ATTENDANCE ON UNINSURED PERSONS.

Mr. H. H. Whaite (Birmingham Central) moved:

That until some general scheme of contract or other form of medical service is approved by the Association, the members of the British Medical Association decline, after January 15th, 1913, to undertake or conduct any form of contract practice for non-insured persons, except upon such terms as shall be approved by the Council of the Association.

The Chairman of Council said on this subject he would read from the report of the Council as to the form of resignation of contract with regard to uninsured persons:

It will be seen from the above that there is no claim upon any person who has signed the pledge to resign any appointment which does not include insured persons. In order to resign appointments which include both insured and uninsured it was, however, necessary to terminate the contract as a whole, and this undoubtedly would be the effect of the form of resignation. There is nothing in the pledge or in the form of resignation to prevent practitioners continuing to attend, or making a new contract to attend, uninsured persons, but the committee is convinced that the profession is dissatisfied with present arrangements for contract medical attendance on uninsured persons, and that this question must be taken into consideration by the Representative Body, as some decision upon it is being urgently demanded on all sides.

Mr. H. H. Whaite said if some such resolution as that he had proposed were not passed, juvenile societies would spring up all over the country and doctors would undertake to do the work for those societies. This would lead to a great amount of undercutting.

Dr. Rotherham moved as an amendment:

That no uninsured person, whether man, woman, or child, shall be treated at contract rates on terms less than agreed upon under the Insurance Act.

This was seconded by Dr. Fuller. It was opposed by Dr. Walker (Mid-Essex), and supported by Dr. Macevoy (Willesden).

Conference of Colliery Surgeons.

Mr. Todd (Sunderland) pointed out that the meeting had before it some valuable information on this subject in the report of the colliery surgeons' conference (see Supplement, November 16th, p. 549). He moved:

That the meeting receive the report of the conference of colliery surgeons held at Newcastle in November last.

It was a digest of the work of a conference representing over 2,000 members of the British Medical Association engaged in that class of practice. If the meeting were to lay down a hard and fast rule such as that now before it an embargo would be put upon a certain class of practice throughout the country. In certain areas a very low class of contract practice was carried on, and what was now suggested would lift that class of practice to a higher plane.

The meeting agreed to receive the report.

The Chairman of Council thought Dr. Whaite's proposal was a most sensible one. Was it not better to leave it to the Council when they would have more time during the next six weeks to consider it than to settle it in the few minutes at disposal now?

Dr. Benham (Brighton) moved as an amendment:

That "March 25th, 1913," be substituted for "January 15th, 1913."

Friendly societies were bringing pressure on medical men to say what they were going to do, and the terms that would be approved by the Council of the Association could not yet be stated.

Mr. Hoyle Whaite (Birmingham Central) and Dr. Durant (Consett and Gateshead) opposed the alteration of date.

Dr. Fletcher (Chelsea) said that his Division was absolutely pledged to consider this question, in the interests of the men who had thrown up contract practice, on the first Tuesday in December. The Division had agreed to give those men an answer, and it hoped that the answer would be satisfactory to the Council of the British Medical Association. The Division was proposing that the total sum should not exceed 26s. per annum for all dependants.

Dr. Duncan (Derby) thought they could trust the Divisions for one quarter. The negotiations with the Chancellor might not be over by January 15th, and were they to keep the men, women, and children waiting until January 15th before they could say whether they would take them on or not?

[With the consent of the meeting Dr. Rotherham withdrew his amendment as to the terms of treatment of uninsured persons.]

Mr. Todd (Sunderland) asked what was the position of the report of colliery surgeons. It had been submitted to the State Sickness Insurance Committee and approved by it, and he strongly urged the meeting to adopt it. (Hear, hear.)

The Chairman of Representative Meetings thought the meeting could not pass the whole of the report without altering the number of the members who had been appointed to meet the Chancellor.

Mr. Todd (Sunderland) thought that in the past the colliery surgeons had been misrepresented. The Chancellor of the Exchequer, at the meeting on the Thames Embankment, had said that colliery surgeons would receive careful consideration from him. If the Chancellor was still of that mind, he thought the Association should be in a position to go before him and put the case of the colliery surgeons. None of those selected could properly put the case of the colliery surgeon.

Dr. Douglas (Maidstone) moved and Dr. Easterbrook (Lothians) seconded:

That one colliery surgeon be added to the five members chosen to wait upon the Chancellor.

The motion was lost by 71 votes to 60.

Dr. L. J. Picton (Stockport) desired that the motion by the Birmingham (Central) Division should include a reference to the Conjoint Committee in Ireland, so that the motion would read "upon such terms as shall be approved by the Council of the Association in Great Britain and in Ireland by the Conjoint Committee."

This was agreed to.

The Chairman of Representative Meetings, dealing with the matter as a substantive motion, said there was only one amendment—namely, that "January 15th, 1913," should be altered to "March 25th, 1913."

Dr. Benham, in support, said the matter was one of organization. If January 15th, 1913, was the date, medical men would be rushed into making arrangements which might be unsatisfactory, whereas, if they had till March 25th to make arrangements, it was hoped to improve the conditions of practice amongst uninsured persons as well as insured. He wished to alter the wording of the amendment as follows:

That providing no new arrangements for medical attendance on previous terms to non-insured persons extend beyond March 25th, 1913.

The CHAIRMAN OF COUNCIL thought it would be very difficult to get a considered scheme suitable for all uninsured persons before March 25th. Any arrangements made for uninsured persons before March 25th should be provisional up to that date, and after that date they should require to be affirmed by the Association.

Dr. EDWARDS (Swansea) thought that by extending the time to March 25th the meeting would relinquish the strongest lever it had for dealing with the Chancellor.

Dr. DURANT asked as a matter of information how many people the proposal was likely to affect in contrast with the number of people affected in colliery areas.

Dr. BENHAM pointed out that it affected all non-insured persons, with the exception of those in the colliery areas.

The CHAIRMAN OF COUNCIL thought it must be understood it would affect about three times as many persons in every area as the insured persons.

Mr. WHAITE (Birmingham Central) was prepared to accept the Chairman of Council's suggestion.

Dr. ELLIOTT (Belfast) asked whether the meeting could be assured that the suggestion with regard to colliery surgeons would be approved before January 15th. On the instructions of the Association contracts were terminating on January 15th, and it would be a very serious matter unless there was an arrangement after that date.

The proposal to alter the date from January 15th, 1913, to March 25th, 1913, was agreed to.

The CHAIRMAN OF REPRESENTATIVE MEETINGS put it that the report of the colliery surgeons as to their scheme for treating people in their areas be approved.

This was agreed to.

Simultaneous Action.

The question was raised by the Swansea Division whether Minute 53 of the Special Representative Meeting held in November, 1911, as follows, was still binding:

> Resolved: That in order to prevent sectional defeats of the profession through terms having to be arranged locally between local Insurance Committees and the profession, the Council be instructed to take such steps as are necessary with a view to securing—
>
> (*a*) That the local Medical Committees throughout the country be kept in touch with one another through the central office of the Association; and (*b*) That no arrangements for attendance on insured persons be completed anywhere until the Association is assured by reports from the local Medical Committees that terms in conformity with the policy of the Association in detail have been agreed upon everywhere.

Dr. W. B. EDWARDS (Swansea) explained that his Division wanted to avoid sectional arrangements until the Association had come to definite conclusions.

Mr. LARKIN said that the very instant the profession accepted any terms the minute would become necessary. When arrangements were begun they wanted one section not to conclude its arrangements before the others.

On the suggestion of the CHAIRMAN OF REPRESENTATIVE MEETINGS a motion on the subject was put and agreed to in the following form:

> That the Council be instructed to take such steps with a view to securing that the local Medical Committees throughout the country be kept in touch with one another through the central office of the Association, and that no arrangements for attendance on insured persons be completed anywhere until the Association is assured by reports from the local Medical Committees that terms in conformity with the policy of the Association in detail had been agreed upon everywhere.

PUBLIC MEDICAL SERVICES.

Co-operation with Lay Bodies.

Dr. DOUGLAS (Maidstone) moved:

> That it be an instruction to Council that in any public medical service scheme submitted for approval the inclusion of the principle of co-operation with contributing lay bodies in the administration shall not be ground for the withholding of such approval, providing that control of purely professional matters remains with the profession.

Dr. C. G. MEADE (Scarborough, York) seconded, and the motion was carried by a large majority.

Method of Collecting Contributions.

The CHAIRMAN OF COUNCIL said that great difficulty had arisen in various public medical service schemes put forward because the principle had been laid down that no collector should be employed on commission. He therefore moved to reaffirm the principle that collectors be paid by salary and not by commission.

Dr. NAPIER JONES said that if canvassers were to be employed, his Division contended that they should be remunerated in a business-like way.

The motion was agreed to.

REMAINDER OF REPORT AND AGENDA.

The CHAIRMAN OF COUNCIL moved, and it was carried, that the remainder of the report of Council be approved.

The CHAIRMAN OF COUNCIL moved, and it was carried, that the remainder of the agenda of the Representative Meeting which had not been dealt with be referred to the Council to deal with.

STATE SICKNESS INSURANCE COMMITTEE.

The CHAIRMAN announced that the following had been elected to the new State Sickness Insurance Committee:

England and Wales.	
North of England, North Lancashire and South Westmorland, and Yorkshire Branches.	Mr. D. F. TODD.
Lancashire and Cheshire Branch.	Dr. T. A. HELME.
East York and North Lincoln, Midland, Cambridge and Huntingdon, East Anglian, and South Midland Branches.	Dr. D. G. THOMSON.
Birmingham, Staffordshire, North Wales, Shropshire and Mid-Wales, and South Wales and Monmouthshire Branches.	Dr. E. O. PRICE.
Metropolitan Counties Branch: North and East, and Central Metropolitan Groups of Divisions.	Dr. R. M. BEATON.
West and South Metropolitan Groups of Divisions.	Mr. E. B. TURNER.
Bath and Bristol, Gloucestershire, West Somerset, Worcestershire and Herefordshire, Dorset and West Hants, and South-Western Branches.	Dr. T. M. CARTER.
Oxford and Reading, Southern and South-Eastern Branches.	Mr. E. H. WILLOCK.
Scotland.	
Aberdeen, Northern Counties, Dundee and Perth, and Edinburgh and Fife Branches.	Dr. R. MCKENZIE JOHNSTON.
Glasgow and West of Scotland, and Border Counties and Stirling Branches.	Dr. J. ADAMS.
Ireland.	
Connaught and South-Eastern of Ireland and Leinster Branches.	Dr. T. B. COSTELLO.
Munster and Ulster Branches ...	Dr. J. S. DARLING.

MINUTES.

The minutes of the day's proceedings were then confirmed.

VOTE OF THANKS TO MR. VERRALL.

The CHAIRMAN OF COUNCIL moved:

> That the best thanks of the Meeting be given to Mr. Verrall.

(The proposition was received with great applause, the Representatives rising in their seats and according Mr. Verrall musical honours.) When quiet had been restored, Dr. Macdonald said he had never known a more difficult meeting of the Representative Body. It had been a terrible strain on the Chairman, and he was sure the meeting would appreciate as keenly as he did the way Mr. Verrall had carried out his duties.

Mr. LARKIN seconded, and remarked that Mr. Verrall had fully justified the high opinion held of his abilities when he was appointed to the position of Chairman.

The resolution was carried by acclamation, and Mr. Verrall in reply said that the approval of the meeting was abundant recompense for whatever he had been able to do.

The proceedings terminated a few minutes after midnight.

TUBERCULOSIS SCHEMES.

CONFERENCE
OF
REPRESENTATIVES OF THE BRITISH MEDICAL ASSOCIATION
AND
REPRESENTATIVES OF THE SOCIETY OF MEDICAL OFFICERS OF HEALTH.

In accordance with arrangements made by the State Sickness Insurance Committee, a conference was held at the house of the British Medical Association on Tuesday, November 12th, between Representatives of the Association and of the Society of Medical Officers of Health.

The Representatives of the British Medical Association were: Mr. T. W. H. Garstang (Altrincham), Dr. R. M. Beaton (London), Dr. T. M. Carter (Bristol), Mr. E. J. Domville (Exeter), Dr. A. C. Farquharson (Spennymoor), Mr. C. E. S. Flemming (Bradford-on-Avon), Dr. T. Barrett Heggs (Sittingbourne), Dr. L. E. Shaw (London), Mr. E. B. Turner (London), Mr. T. Jenner Verrall (Bath), Dr. A. H. Williams (Harrow), Dr. F. E. Wynne (Leigh).

The Representatives of the Society of Medical Officers of Health were Dr. T. Ridley Bailey (Bilston), Mr. T. W. N. Barlow (Wallasey), Dr. G. F. Buchan (Willesden), Dr. W. Butler (London), Dr. R. Dudfield (Paddington), Dr. D. Forbes (Brighton), Mr. A. W. Harris (Lewisham), Dr. A. Bostock Hill (Warwickshire), Dr. E. W. Hope (Liverpool), Mr. H. Jones (Hereford), Dr. S. C. Lawrence (Tottenham), Dr. A. E. Porter (Reigate).

Mr. T. W. H. Garstang was called to the chair, and apologies for absence were read from Dr. C. Courtenay Lord, Mr. D. F. Todd, Mr. E. H. Willock, Dr. E. J. Maclean, Dr. Hugh Stott, and Dr. Lockhart Stephens.

It was resolved that there should be no voting on motions at the Conference, but that an attempt should be made to state findings which, while not binding on the societies represented, might be taken as expressing the opinions of those present.

Administration of Tuberculosis Schemes.

Relation of the Medical Officer of Health to the General Practitioner.

The subject of the relation of the medical officer of health to the general practitioner in connexion with the administration of tuberculosis, was raised by the question, What should be the position of the medical officer of health as the superintendent of an isolation hospital when cases of tuberculosis were admitted to the wards? There was a general consensus of opinion that the position of the medical superintendent of an isolation hospital was not changed with regard to the cases under his care by the fact that those cases, or some of them, were tuberculous.

Examination of Contacts.

The next question considered was whether the medical officer of health should personally or by deputy visit cases which had been notified as tuberculous for the purpose of the clinical examination of contacts, or should the discovery of contacts be left to the private practitioner? There was a general consensus of opinion that, so far as compatible with Articles VIII and IX of the Local Government Board's General Order on Notification and Treatment of Tuberculosis of November 15th, 1911, the clinical examination of contacts for tuberculosis should be left to private practitioners.

Treatment.

With regard to the question whether the medical officer of health should engage in the work of treatment in connexion with tuberculosis, and, if so, to what extent, there was a consensus of opinion that it was undesirable, except in special circumstances, that medical officers of health should engage in clinical treatment in connexion with tuberculosis.

Tuberculosis Dispensaries.

The next question considered was whether the tuberculosis officer should confine himself to diagnostic, consultative, bacteriological, and statistical work, together with special forms of treatment of those cases decided, in consultation with the general practitioner concerned, to need such treatment. The following resolution of the executive of the Society of Medical Officers of Health was reported:

> That this society cannot agree with any resolution which will totally debar tuberculosis officers from treating patients at dispensaries.

The conference, after discussion, agreed that the word "consultative" should be accepted as meaning "treatment in co-operation with the general practitioner concerned."

On the question whether patients not under the care of any private practitioner should be treated at the dispensary there was a consensus of opinion that no case should be seen at a tuberculosis dispensary except on the recommendation of a doctor. The representatives of the Society of Medical Officers of Health stated that they were anxious that as many of the cases as possible seen at the dispensary should be sent by private practitioners, but pointed out the necessity of making provision at the dispensary for the tuberculous patients who were not able to pay for their treatment, and for whom no provision was otherwise made either by the Insurance Committee or by other local authority, and who might therefore, in the interest of public health, be recommended to the dispensary by the medical officer of health.

Medical Officer of Health and Tuberculosis Officer.

On the question whether the office of chief tuberculosis officer and medical officer of health should permanently be held by the same person there was a consensus of opinion that this question has already been settled by the Local Government Board's Order of July 26th, 1912, and by the reply of the Board dated October 5th, 1912, to the letter of the Association dated September 16th, 1912.

Tuberculosis Officers.

The representatives of the Society of Medical Officers of Health expressed their entire agreement with the policy of the Association that the minimum salary of a tuberculosis officer who is a chief clinical officer should be £500 per annum.

Proposed Further Conference.

The general question of the extent to which whole-time officers should be allowed or encouraged to undertake medical or surgical treatment was postponed to a further conference.

IRELAND.

Meeting of the Advisory Committee.

A meeting of the Advisory Committee to the National Health Insurance Commission (Ireland) was held recently in Dublin; the proceedings were private, but the following report was furnished to the press.

The Chairman said the first matter for consideration was what equivalent grant Ireland was entitled to in view of the extra grant which was to be given in Great Britain. The second question was whether medical benefits should be extended to Ireland. It was probable that before the question was decided that a committee would be appointed to consider and report on the whole matter.

The Right Hon. M. F. Cox (Medical Member) said he could think of no argument which should deprive Ireland of medical benefits which would be good for the other countries. It would be most desirable that women and children should be included in Ireland, even if it were not so in England.

Mr. J. D. Nugent (Ancient Order of Hibernians) said they could not offhand ask the insured persons in Ireland to increase their contributions by 1½d.; they could not ask the employer and the employee to pay their proportion, because the insured person in Ireland was paying to-day through the public rates; £194,153 was paid for medical treatment in Ireland to-day, and out of that 5 per cent. was paid by the State. Practically every insured person was at present entitled to medical treatment and drugs free. For over two-thirds of the people there was no doctor but the dispensary doctor. He thought the difficulty could be got over if the Insurance Commissioners would take the matter up and go into it with Mr. Lloyd George and substitute the insured person's card for the dispensary tickets.

Mr. M. A. Ennis (County Councils Association) opposed the idea of extending the medical benefits to Ireland so long as the present dispensary system continued. His hope had been that immediately after the passing of the

Government of Ireland Bill into law the Irish Parliament, or, if the bill failed to pass, the Imperial Parliament, would pass a comprehensive scheme effecting vital changes in the Poor Law system in Ireland, largely on the lines recommended by the Poor Law Commission.

Resolutions were adopted recommending that the equivalent of the additional grant to be given in Great Britain should be placed at the disposal of the Irish Commission, that full medical benefit should be extended to Ireland, and that the Government should be asked to appoint a committee to report on the subject.

PROVISION OF NOURISHMENT FOR CONSUMPTIVES.

In connexion with the domiciliary treatment of consumptives under the sanatorium benefits of the Insurance Act, a deputation waited on the Irish Insurance Commissioners last week. It was pointed out that the Act would be useless, as far as combating tuberculosis was concerned, unless the Dublin Insurance Committee had power to give nourishment. The Chief Commissioner stated that the difficulty was that it might lead to abuse if the Committee had the power to give nourishment, but if the Committee could arrange with the Dublin Corporation, or some such body, to give the domiciliary treatment, including nourishment, he thought it probable that such a scheme would be approved of. He thought the corporation had that power under the Act, but that was, of course, a legal question. Asked whether the Insurance Committee could not make grants to institutions that would feed patients, he said he thought it had that power, but the Commissioners were advised that there should be no separation of treatment—that is to say, that the same body should supply doctors, nurses, drugs, and nourishment.

THE ADVISORY COMMITTEE.

SIR JOHN COLLIE announces that in view of the decision of the Representative Meeting, he has handed in his resignation as a member of the Advisory Committee to which he was nominated by the Government. He considers that he could render no further service to the profession, and that his continued presence on the Committee would be open to misconstruction.

RESIDENT MEDICAL OFFICERS OF HOSPITALS.

APPLICATION having been made to the Insurance Commissioners for the determination of the question whether resident medical officers employed by hospital authorities to render professional services in a hospital are required to be insured under Part I of the National Insurance Act, a public hearing was held on October 22nd, and the Commissioners have given the following decision:

That resident medical officers at hospitals employed under the conditions referred to at the hearing on the 22nd October, 1912, are not employed under a contract of service within the meaning of the National Insurance Act, and are accordingly not required to be insured thereunder, even if their rate of remuneration does not exceed in value £160 a year.

SOCIETY OF APOTHECARIES OF LONDON.

THE Parliamentary Committee of the Society has adopted the following resolutions in reference to the National Insurance Act:

1. That in the opinion of this committee the conditions set up by the Provisional Regulations of the Insurance Commissioners, dated October 1st, 1912, are of such a nature as to interfere injuriously with the rights and proper independence of the medical profession and with efficiency in the treatment of insured persons.
2. That medical practitioners, in matters concerning their professional conduct, ought not to be tried before a tribunal that is not professional, the decisions of which may have the most serious effect on their reputation and practice.
3. Seeing that the carrying out of the Provisional Regulations is left largely in the hands of the local Insurance Committees, it would be unwise to agree to accept them (even if otherwise satisfactory) so long as the insured persons are represented upon these committees by an overwhelming majority.
4. That attention should be called to the advisability of establishing tuberculosis centres in connexion with those hospitals to which medical schools are attached.
5. That further efforts should be made to maintain the right of the medical practitioner to dispense his own medicines to insured persons under the Act.

"IMPERIAL MEDICAL REFORM UNION."

WE are informed that at a meeting of the Executive Committee of the Imperial Medical Reform Union, held on November 7th, it was unanimously resolved:

That the Executive Committee of the Imperial Medical Reform Union consider that the members of the profession can be recommended to accept service under the Insurance Act on the following conditions:

1. That payment be made for actual services rendered and medicines supplied.
2. That the income limit of 40s. a week be observed.
3. That the conditions of service be compatible with the honourable traditions and practice of the profession; and
4. That the whole question of remuneration be reconsidered at the end of three years.

CHEMISTS AND THE ACT.

A CORRESPONDENT in the *Manchester Guardian* recently stated that chemists are evincing no desire to be the suppliers of medicines and appliances under the Insurance Act and that great inconvenience will arise to insured persons, seeing that though chemists are practically exempted from the Shop Hours Act, they have decided to close their establishments with other traders. In reply to these statements Mr. W. G. Hughes, the Honorary Secretary of the Manchester Pharmaceutical Association, writes that the chemists are not only desirous of supplying medicines and appliances under the Act, but that they will take every care that no obstacles are placed in the way of insured persons obtaining medicines at all times, as before the passing of the Shop Hours Act.

Association Notices.

NOTICE OF THE FORMATION OF A NEW BRANCH OF THE ASSOCIATION.

THE following change has been made in accordance with the Articles and By-laws of the Association, and takes effect from the date of publication of this notice:

East Africa and Uganda Branch.

That a Branch of the Association be formed, to be designated the East Africa and Uganda Branch, and composed of the members of the Association resident within the area of the British East Africa and Uganda Protectorates.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BATH AND BRISTOL BRANCH.—The second ordinary meeting of the session will be held at the Museum, Bath, on Wednesday, November 27th, at 8 p.m., Dr. Roxburgh, President, in the chair. Agenda: Dr. Waterhouse will show a specimen containing *Cysticerci cellulosae*. The following communications are expected:—(1) Dr. R. Waterhouse: Aleukaemic leukaemia. (2) Dr. W. P. Kennedy: Some phases of fatigue. (3) Mr. C. E. S. Flemming: Acute oedema of the lung. (4) Dr. T. Wood Locket: A few notes on the value of horse serum in general practice.—W. E. BEAUMONT and NEWMAN NEILD, Honorary Secretaries.

EDINBURGH BRANCH: SOUTH-EASTERN COUNTIES DIVISION.—The annual dinner of the Division will take place in the Douglas Hotel, Galashiels, on the evening of Friday, December 6th, at 6.30 o'clock. Chairman, Dr. Muir. Tickets, 5s.—M. J. OLIVER, Honorary Secretary, St. Boswells.

SOUTHERN BRANCH.—A special meeting of this Branch will be held at the South-Western Hotel, Southampton, on Wednesday, November 27th, at 3 p.m., the business of which will be to adopt (on the recommendation of the Branch Council) the Model Ethical Rules of the Association. Members are referred to the SUPPLEMENT of the JOURNAL of September 21st, also to the note of corrections on p. 350 of the SUPPLEMENT of September 28th. After the transaction of the above business the meeting will resolve itself into the half-yearly general meeting of the Branch, when papers will be read and cases of clinical interest, microscopical specimens, etc., will be shown. To facilitate the preparation of the agenda it is requested that members who desire to read papers or show cases, etc., will communicate early with the Honorary Secretary, JAMES GREEN, Brandon House, Mile End, Portsmouth.

Meetings of Branches and Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

DUNDEE BRANCH.

A MEETING of the Branch was held on November 12th in University College. Dr. W. E. FOGGIE, Vice-President, was in the chair, and fourteen were present.

Rules of Ethical Procedure.—The Rules and Rules of Ethical Procedure, as amended by the Central Organization Committee, were adopted.

DUNDEE DIVISION.

A MEETING of the Division was held at the close of the Branch Meeting. Dr. C. S. YOUNG was in the chair, and forty-five were present.

Rules of Ethical Procedure.—The Rules and Rules of Ethical Procedure, as amended by the Central Organization Committee, were adopted.

The Insurance Act.—Proposed by Dr. KERR:

(*a*) To give service under the Act.

Proposed by Dr. TULLOCH:

(*b*) To refuse service under the Act.

Proposed by Dr. ROGERS:

(*c*) Dr. Beaton's motion in Council.

On voting (*a*) was carried against (*b*), and on (*a*) being placed alongside (*c*), (*c*) was carried, and also as a substantive motion as follows:

> To consider the recent offer of the Chancellor of the Exchequer, which affords the British Medical Association an opportunity of conferring with him and with the Commissioners as to the points on which the demands of the profession have not yet been met.

Instructions to Representative.—In instructing the Representative how to vote, the following resolutions were carried:

> That such a conference shall have no power to come to terms without reference to the Divisions.
> That no mileage be deducted for a central fund from medical remuneration.
> That no central deduction be made from the amount allotted for medical remuneration.

FORFARSHIRE DIVISION.

An ordinary meeting of this Division was held in Arbroath on November 14th. Dr. J. D. DEWAR was in the chair, and twenty-seven practitioners were present.

Model Rules.—The model rules for a Division not itself a Branch, and the rules for ethical procedure, as modified by the Central Organization Committee, were adopted.

Instructions to Representative.—Thereafter it was unanimously agreed:

> That this meeting is of opinion that the conditions of service laid down in the Provisional (Medical Benefit) Regulations and in the Chancellor of the Exchequer's statement of October 23rd, 1912, are not acceptable to the members of this Division, but that they form a suitable basis for negotiation; that it resolves to instruct its Representative to the Representative Meeting to support a motion in favour of arranging a conference for the discussion and adjustment of the differences between the Government and the profession; and, further, in the event of the motion to confer being lost, it desires the Representative to vote for the rejection of the "latest offer."

EAST ANGLIAN BRANCH:

WEST NORFOLK DIVISION.

A SPECIAL meeting of this Division was held on November 11th.

The following resolutions were passed unanimously:

Insurance Act.

(*a*) That this meeting refuses service under the National Insurance Act on the conditions at present offered.

(*b*) That this meeting strongly resents the speeches of Sir Clifford Allbutt and Sir Victor Horsley that the scheme for the provision of medical benefit under the Insurance Act, as outlined by the Chancellor on October 23rd, ought to be accepted by the profession at large. They feel that such a statement is entirely unauthorized; that it is prejudicial to the welfare of the profession; and that the decision of the Representative Meeting ought to have been awaited before any statement was made.

(*c*) That under sanatorium benefit, no part-time medical officer of health shall interfere with or advise upon the treatment of any patient who is under the care of another practitioner.

Election of Deputy Representative.—Dr. Thomas was elected to attend the Representative Meeting as deputy for Dr. Steele.

EDINBURGH BRANCH:

SOUTH-EASTERN COUNTIES DIVISION.

A MEETING of this Division was held at Newtown St. Boswells on Thursday, November 14th. The meeting was a large one in view of the prevailing influenza, almost 50 per cent. of the practitioners in four counties being present.

The Chancellor's Proposals.—The following resolution, moved by Dr. MARSHALL, was carried *nemine contradicente*:

> That in the opinion of this meeting the medical profession should refuse any financial offer under the National Insurance Act until the conditions of service are made compatible with the best interests and honourable position of the profession; and that this meeting considers that the conditions of service laid down in the regulations issued by the Insurance Commissioners, notwithstanding the fresh conditions foreshadowed by Mr. Lloyd George in his speech on October 23rd, are intolerable to any self-respecting medical man, would destroy for ever the independence of the medical profession, and are contrary to the public interest.

Instructions to Representative.—Dr. M. J. OLIVER (seconded by Dr. MARSHALL) proposed:

> That the Division instructs its Representative to oppose all motions at the coming Representative Meeting tending towards the operation of the National Insurance Act under the conditions now proposed, and to oppose all motions tending towards the initiation of fresh negotiations with the Government by plenipotentiaries of the profession, and to support action tending towards a refusal by the Association to work under the Act until radically altered, so as to conform to the views of the profession.

Dr. W. DOIG moved an amendment to the effect that the Representative be empowered to support any motion leading to the opening up of negotiations with the Government. The resolution was carried by a large majority, four members voting in favour of the amendment. Four members unable to attend wrote in support of the action adopted by the meeting.

GLASGOW AND WEST OF SCOTLAND BRANCH:

DUMBARTONSHIRE AND ARGYLLSHIRE DIVISION.

A MEETING of this Division was held in Clydebank on November 12th. Dr. JAMES WILSON presided, and twenty-one members and one non-member were present. Five members sent apologies for absence.

Red Cross Society.—The SECRETARY read a letter from the Dumbartonshire branch of the Scottish Red Cross Society asking what were the lowest fees that would be accepted for first aid or home nursing lectures. He had replied quoting the Division's repeated resolutions that one guinea per lecture must be paid. The Secretary's action was unanimously approved. In this connexion two members reported success in obtaining the terms demanded.

Reports from Provisional Medical Committees.

Argyllshire.—Fifty-two practitioners out of fifty-seven had signed the complementary pledge: the remainder were expected to be loyal; resignations of all contract practice had been received.

Dumbarton (Burgh and County) and Clydebank (Burgh).—Thirty-three practitioners sent in 154 resignations; one refused, but will not take any action in opposition.

Central Defence Fund.—The state of the fund, so far as this Division is concerned, is as follows: Guarantee £359, remitted to London £55, number of supporters 50 (46 members, 4 non-members), approximate members actually practising in Division 91. Considerable discussion took place. Vigorous emphasis was laid on the unfairness of practitioners reaping the benefit of the British Medical Association organization (carried on at great expense), and so profiting by their fellow practitioners' sense of duty, yet failing to give financial support. The

Secretary was instructed to canvass those who had not yet supported the fund.

Instructions to Representative.—After discussion of the Council's report it was agreed unanimously:

That the Representative support resumption of negotiations with the Government and the appointment of a committee with full powers to negotiate. Failing approval of these he should support the giving of service under the Act on the conditions in paragraph 115, support demand for a centralized fund to pay for mileage (over and above the amount at present offered), that he should support demand for increased representation on local Insurance Committees, and for a right of appeal to a special medical tribunal where a practitioner was dissatisfied with decision of a committee or Commissioners affecting him professionally. It was also resolved that all contract practice should be undertaken at rates not less than the rates accepted under the Insurance Act.

Medical Service in the Highlands and Islands.—It was agreed to direct the attention of the Branch Council to the forthcoming report of the committee investigating the conditions of medical service in the Highlands and Islands, and request that, in the interest of practitioners in the areas concerned, any scheme proposed be carefully considered.

Glasgow Central Division.

The National Insurance Act.

The members of the above Division met in the Faculty Hall, St. Vincent Street, on November 12th, Dr. R. Jardine in the chair.

Instructions to Representative.—After discussion the following motion was unanimously adopted:

That we instruct our Representative to vote for giving service under the Act under the conditions set out in paragraph 114 of the report of the Council.

It was further agreed:

In the event of this motion not being carried at the Representative Meeting of the Association, that we instruct our Representative to vote for the appointment of a committee with full powers to negotiate with the Government.

Glasgow North-Western Division.

A meeting of this Division was held on November 12th. Dr. A. T. Campbell presided, and there were forty-three members and seventeen non-members present, being a record attendance.

Report of Council.

The Chairman invited those present to express their opinions. He directed attention particularly to those paragraphs mentioned in paragraph 117.

Paragraphs 10–14: It was agreed to make a representation to the town council on the subject.

Paragraph 20: It was resolved that the members of hospital staffs should be paid for the treatment of those in receipt of sanatorium benefit.

Paragraph 22: It was resolved to support the report of the Committee.

Paragraph 28: After some discussion Dr. Laird proposed and Dr. Hay seconded:

That the Insurance Committee should undertake the management of the Public Medical Service.

Dr. Todd suggested, while approving the principle, the Representative should be instructed not to vote against it. An amendment was proposed by Dr. Lindsay and seconded by Dr. R. Dickson, to which Dr. Todd agreed:

That we admit the principle of lay co-operation in the management of the Public Medical Service.

On a division, 23 voted for the amendment and 7 for the motion, which was lost.

Paragraph 29 was approved.

Paragraph 38: On the motion of Dr. Lindsay, seconded by Dr. Horne, it was resolved to give no instructions to the Representative.

Paragraph 75: The general opinion of the meeting after discussion, during which several motions were proposed, was that there should be a centralized fund, which should not be deducted from the capitation fee of 7s. for every insured person on the list.

Paragraph 103: The representation of the profession on the Insurance Committees was not considered satisfactory.

Paragraph 114: Dr. Lindsay proposed:

That, in the opinion of the meeting, the offer of the Chancellor of the Exchequer should not be accepted, inasmuch as it does not guarantee to the individual practitioner a minimum capitation fee.

He stated, in a lucid address, the reasons which induced him to express this opinion. Dr. J. Ritchie seconded the motion. Dr. Horne proposed the following amendment, which was not seconded:

That we accept the offer of the Chancellor of the Exchequer to give service under the Act.

Dr. Reid supported Dr. Lindsay's motion, pointing out the impracticable character of the regulations for dispensing. Dr. Todd thought that to refuse service under the Act would raise differences in the profession that would destroy its present unity. He proposed that the Representative be instructed to support a motion for negotiating with the Government. Dr. Gibson Graham pleaded for a stand being made for the minimum terms to which the profession had agreed. After Dr. Dickson had supported the acceptance of the offer, Dr. Girdwood proposed and Dr. Primrose seconded:

That we approve of giving service under the Act under the conditions set out in paragraph 114 of the Council's Report.

The result of the vote was as follows: For Dr. Lindsay's motion, 21; for Dr. Girdwood's amendment, 36; members of the Association in favour of accepting service, 24; against accepting service, 16.

Gloucestershire Branch.

At a general meeting, held at the General Hospital, Cheltenham, on October 17th, the President in the chair, Dr. Collins showed a microscopic specimen of *Egg of jigger flea*. Mr. V. E. Fisher read a paper entitled, *A Review of the Treatment of Syphilis*. A discussion followed, in which the President, Dr. Finlay, Mr. Braine-Hartnell, Mr. Cuthbert, Mr. Holmes, Dr. Collins, Dr. Conder, Dr. Hebblethwaite, Dr. Pike, and Dr. Affleck took part, and Mr. Fisher replied.

Dinner.—Eighteen sat down to dinner at the Cosy Corner after the meeting, when a vote of condolence to Dr. R. Macartney on his recent bereavement was proposed by the President and carried.

A special meeting was held at the General Hospital, Cheltenham, on October 25th, the President being in the chair and thirty-seven members present.

Sanatorium Benefit.—Dr. Caster explained the position in regard to fees for sanatorium benefit, and pointed out that Gloucester City Health Committee refused the 2s. 6d. for tuberculin injection, and could not agree to a three years' contract. It was proposed by Dr. Macartney and seconded by Dr. Goss:

That the fees offered by the city be accepted.

A discussion followed, in which Drs. Waddy, Buckell, Pruen, Johns, Mellish, Conder, Holmes, Coode, and Tait took part. The resolution was passed.

Provisional Medical Committee.—The meeting endorsed the action of the Secretary in obtaining representatives on the Provisional Medical Committee from those areas of Gloucestershire which lay outside the area of the Branch, namely, Thornbury and Chipping Sodbury districts, in area of Bristol Division.

A special meeting, to which non-members were invited, was held at the Royal Infirmary, Gloucester, on November 12th. The President was in the chair, and over one hundred medical men were present.

The Insurance Act.—Dr. Dighton mentioned that an informal meeting of the Cheltenham doctors holding club appointments had been held, in which they had come to the conclusion that, owing to the increased offer on the part of the Government, negotiations might be reopened. It was proposed by Dr. Macartney and seconded by Dr. Mellish:

That we should not give service under the Act under present conditions.

Mr. Howell, Mr. Buckell, Dr. Goss, and Dr. B. Davies spoke on the resolution, which was put to the meeting and carried. Dr. Soutar's amendment, seconded by Mr. Howell,

That we should work the Act if certain other conditions are granted,

was discussed by Dr. Bell and others, but was lost on being put to the meeting.

Instructions to Representative.—Dr. Macartney proposed and Dr Mellish seconded:

That our Representative should be instructed to vote at Representative Meeting for reopening negotiations on the basis of six cardinal points.

Dr. Waddy, Dr. Bell, Dr. Grey, Dr. Soutar, Mr. Buckell, Dr. McQuaide, Dr. Hope, Dr. Scott, and others spoke on the resolution, which was carried. Dr. Campbell proposed and Dr. Bell seconded:

That the members of the Gloucestershire Branch of the British Medical Association consider that the terms now offered by the Government for medical benefits under the Insurance Act are such as can be so modified by consultation with the Government as to render them acceptable to the profession, and accordingly instruct their Representative to the Special Representative Meeting to be held on November 20th to propose (or support) a resolution that a small number of general practitioners representing the various interests concerned be chosen, with plenipotentiary powers, to confer with a representative of the Government with a view to a modification of the terms with regard to mileage or any other matters of detail, and to arrive at a settlement.

This was put to the meeting and lost.

LANCASHIRE AND CHESHIRE BRANCH:

Blackburn Division.

A meeting of this Division was held on October 17th at the Old Bull Hotel, Blackburn. Dr. Cran was in the chair.

Model Ethical Rules.—It was moved, seconded, and resolved that the model Ethical Rules be adopted.

Tuberculous Patients.—It was moved, seconded, and resolved that Dr. Greenwood's arrangement with reference to tuberculous patients be adopted, and that the fees be those given in the model scheme of the British Medical Association for treatment of tuberculosis.

Public Medical Service Schemes.—It was moved, seconded, and resolved:

That papers relating to the two Public Medical Service schemes lie on the table and be discussed at some future date.

Guarantee Fund.—Dr. Keighley read a letter from Dr. Cox with reference to the increase of the Guarantee Fund to £20 per head, and it was moved, seconded, and resolved:

That until other Divisions come up to the Blackburn Division no steps be taken, and that the Secretary write to Dr. Cox to this effect.

Vote of Thanks.—It was moved, seconded, and resolved:

That a vote of thanks be given to Dr. Greenwood for coming to the meeting and going over with the members the steps to be taken in connexion with tuberculosis in the Burgh of Blackburn.

A meeting of the Division was held at the Old Bull Hotel, Blackburn, on November 11th, Dr. Cran in the chair.

Insurance Act.—It was moved by Dr. Mitchell, seconded by Dr. Greeves, and resolved unanimously:

That we refuse service under the Act, and that this notice be sent to the press.

Guarantee Fund.—It was moved, seconded, and resolved that Dr. Craig should vote that the members of this Division are willing, if the necessity arises, to come up to the £20 per member guarantee, provided the other Divisions will do likewise.

Club Practice.—It was moved, seconded, and resolved that it be left to Dr. Craig's discretion how he should vote with respect to club practice in certain districts.

Expenses of Representatives.—It was moved, seconded, and resolved that the expenses of Representatives, members of Council, and members of committees appointed from members of the Lancashire and Cheshire Branch should be met by a general voluntary levy on all members of the Branch, and, further, that the payment be two guineas per day.

Blackpool Division.

A meeting of this Division, to which every practitioner within the area of the Division was invited to attend, was held in Blackpool on November 13th. Dr. T. Fisher was in the chair, and thirty-one practitioners were present.

Expenses of Representatives.—It was decided to agree to the resolution of the Lancashire and Cheshire Branch that the expenses of Representatives should be met by a general voluntary levy on all members of the Branch, and, further, that the rate of payment should be one guinea per day.

Report of Council.—The following resolutions were passed unanimously:

1. That we instruct the Representative that we will have nothing to do with the Act as it at present stands.
2. That the Representative vote against the reopening of negotiations.
3. That the Representative be given a free hand with regard to any questions that may arise.

Medical Members of Advisory Committee.—The following resolution was also carried unanimously:

That the Blackpool Division deplores the attitude adopted by the members of the medical profession who still remain on the Advisory Committee.

Manchester (South) Division.

A general meeting of this Division was held on November 12th. Dr. Edlin presided, and there was a record attendance of members, forty-seven being present.

Correspondence.—Letters were read from Dr. Garstang, Dr. J. Brown, Mr. Larkin (Honorary Secretary, Lancashire and Cheshire Branch, Honorary Secretary Manchester (North) Division), and from Dr. Cox in reference to the Central Defence Fund.

Public Medical Services: Subcommittee's Report.—The Secretary intimated that the Subcommittee had met twice, October 8th and 29th, and then read the finding of the Committee. This report was read and approved.

Future Contracts for Medical Attendance.—The Committee recommended to the Division the adoption of the following resolution:

That no contract appointments shall be undertaken for medical attendance on (1) insured nor on (2) uninsured persons, except in accordance with the policy of the British Medical Association and approved of by the Division through the Provisional Local Medical Committee.

This was carried *nemine contradicente.*

METROPOLITAN COUNTIES BRANCH:

Camberwell Division.

The inaugural meeting was held at the Surrey Masonic Hall on November 14th. Thirty-three members and three visitors were present. Dr. Capes was elected temporary Chairman.

Model Organization Rules.—The model organization rules were considered, and were suitably altered and were adopted as the rules of the Division, subject to the approval of the Central Organization Committee.

Election of Officers.—The following gentlemen were elected the officers of the Division: *Chairman*, R. Capes; *Vice-Chairman*, G. B. Batten, M.D.; *Honorary Secretary and Treasurer*, J. H. Clatworthy, M.D.; *Representative on the Branch Council*, E. T. Hollings; *Executive Committee*, B. A. Richmond, M.D., W. T. Partridge, H. G. Clitherow, E. Archer Wood, W. Cooper Keates, R. Tilbury, and H. Shapter Robinson.

Ethical Rules.—The ethical rules as published in the British Medical Journal Supplement of September 21st were adopted as the ethical rules of the Division, subject to the approval of the Central Organization Committee.

Branch Insurance Committee.—Messrs. V. A. Jaynes and F. C. Langford were appointed on the above committee to represent the Division.

Greenwich and Deptford Division.

Election of Officers.—At the inaugural meeting of this Division the following were elected officers and executive committee: *Chairman*, J. P. Purvis; *Vice-Chairman*, R. D. Muir, M.D.; *Honorary Secretary and Treasurer*, W. H. Payne, M.D.; *Representative at Representative Meeting*, J. H. Keay, M.D.; *Representatives on Branch Council*, J. H. Keay, M.D., and C. G. Gooding, M.B.; *Representatives on the Insurance Committee of Branch*, C. G. Gooding, M.B., and C. J. Parke; *Executive Committee*, E. G. Annis, A. E. Crabbe, C. G. Gooding,

C. W. Hogarth, J. H. Keay, H. S. Knight, W. H. Reed, C. J. Parke, C. G. Wallis, and J. P. Walsh.

Model Rules.—The model rules and ethical rules, including Rule Z, were adopted.

Lewisham Division.

A meeting was held at the Co-operative Rooms, Brownhill Road, to which every practitioner within the area was invited. Dr. Toogood, Chairman of the Division, presided, and fifty-two were present.

Regulations.—The following resolutions were proposed:

1. That the Lewisham Division of the British Medical Association consider that the Provisional Regulations of the Insurance Commissioners, as they at present stand, are antagonistic to the proper rights and independence of the medical profession, and they therefore direct their Representative to vote against Subsection A of paragraph 115.

   That the following words be added to Recommendation B:

   "Until the regulations and conditions of service are such as will be acceptable to the British Medical Association."

In view of the fact that practitioners were present who were non-members of the British Medical Association, the Chairman ruled that a vote of the members should first be taken, then that a complementary vote of the visitors should follow. In both cases the resolution was carried unanimously.

2. Provided that the sum specified be definitely allocated to the doctors, that the Act be so amended as to restore to them their right to provide medicine for their own patients, and that the Regulations of the Insurance Commissioners be so framed as to allow the individual members of the profession to work the Act without any sacrifice of self-respect, recognizing that in his latest proposals the Chancellor of the Exchequer exhibits a desire to meet the wishes of the profession, this meeting decides, in return, so far to modify its demands as to include in the capitation grant of 9s. (nine shillings) fixed by the Chancellor, drugs and ordinary extras, including domiciliary attendance of tuberculous patients.

This resolution was also carried unanimously.

Marylebone Division.

A general meeting was held at 11, Chandos Street, W., on November 13th, at 5 p.m., Mr. Atwood Thorne, Chairman of the Division, in the chair. Eighty-seven members and nine guests were present.

Annual Representative Meeting.—The Secretary read a brief report of the proceedings at Liverpool in July, stating what had occurred about the various instructions that had been given to the Representatives of the Division and of their action in respect to the Insurance Act. The report was adopted.

Votes of Thanks.—A vote of thanks was passed to the Representatives and a special vote of thanks to (1) Dr. Dyke Acland for his speech on sanatorium benefit, (2) to Dr. Newton Pitt for his action *re* trades unionism.

Instructions to Representatives.—Mr. Charles Ryall moved and Dr. F. J. Smith seconded:

> To instruct the Representatives to refuse service under the Act.

After an animated discussion, in which Dr. Gordon Holmes, Sir Victor Horsley, Mr. Bishop Harman, Dr. Montgomery Smith, Mr. McAdam Eccles, Dr. D. Roxburgh, Dr. Davis, and Dr. Hawthorne took part, the following amendment was moved by Dr. Lauriston Shaw and seconded by Dr. Hawthorne:

> That the Representatives be instructed to move:
>
> That the Special Representative Meeting do appoint five members with authority to endeavour to come to final terms with the Government and the Commissioners as to remuneration and regulations, and if terms are agreed they be immediately reported to the local Medical Committees, with an intimation that any Committee entering into an agreement with an Insurance Committee should make such terms the basis of negotiations, and should submit the actual terms of the local agreement to the Council of the Association before final ratification.

After considerable discussion, in which Mr. C. Ryall, Dr. A. Evans, Dr. Poynton, Dr. Spurgin, Dr. Camac Wilkinson, Dr. Perner, and Dr. F. J. Smith took part, the amendment was lost by a very large majority. Mr. Bishop Harman moved that the words—

> On terms as at present offered

should be added to Mr. Ryall's motion. This was accepted by the proposer and seconder. The motion then stood:

> To instruct the Representatives to refuse service under the Act on terms as at present offered.

This was carried by 53 votes to 5.

Appointment of a Deputy Representative.—Mr. V. Warren Low was appointed a Deputy Representative in place of Mr. S. Maynard Smith. The Chairman was empowered to appoint any further deputies that might be required.

South-West Essex Division.

A meeting of this Division, to which all medical practitioners residing within its area were invited, was held in the Wesleyan Church Schoolroom, Leyton High Road, on November 14th.

Report of Council.—The meeting was held for the purpose of considering the report of the Council on the present position of the profession with regard to the Insurance Act. Dr. Panting presided. Eighty-three practitioners were present. The order of the agenda paper was varied, and the report of the Council was taken first. The Chairman asked the Secretary to propose the recommendation of the Provisional Medical Committee, which was that the Committee recommend the Division to support the "A" recommendation of the Central Council. The Secretary, who was constantly interrupted, proposed the recommendation of the Provisional Medical Committee; this was seconded by Dr. Challis. An amendment was moved by Dr. Butler Harris:

> That service under the Act be accepted at a capitation fee of 8s. 6d. per insured person, provided that—
>
> 1. Dispensing is not taken out of the doctor's hands.
> 2. Medical inspectors are not created.
> 3. No courts of complaint are instituted.
> 4. Treatment of tuberculosis is carried out according to the scheme agreed between the county authorities and the medical profession in Essex.
> 5. The 8s. 6d. to include dispensing, and such extras as are usually performed by a general practitioner in his contract practice. Other extras to be paid for out of the Chancellor's new Emergency Fund.
> 6. Mileage to be an extra, paid for out of a central fund.
> 7. The number of medical representatives be increased from five to ten on the Essex Insurance Committee.
> 8. The income limit be £160 from all sources per annum.

This was seconded by Dr. Jekyll, and the following took part in the discussion: Drs. Argles, Jekyll, Scott, Harding Tomkins, and Clarence Wright. The amendment was lost by a large majority.

Instruction to Representative.—The recommendation of the Committee then came again before the meeting, and an amendment was moved by Dr. Price:

> That in the opinion of this meeting the Government offer affords a basis for further negotiations, and that our Representative be instructed to support or propose a motion for giving the Council or State Sickness Committee power to reopen negotiations with the Government.

This was seconded by Dr. Warner. This amendment was also lost by a large majority. The original recommendation of the Provisional Local Medical Committee was then put to the meeting; this was lost by a large majority. Dr. Scott then proposed the following resolutions:

1. That as the cardinal points have not been incorporated in the Act or in the Regulations, this Division of the British Medical Association adheres loyally to its solemn pledge not to accept service under the Act.

This was seconded by Dr. Margaret Rorke; it was put to the meeting almost without discussion and was carried by a large majority.

2. That our Representative be instructed to use his best endeavour to secure that neither the Council nor any section or subcommittee of the British Medical Association reopen negotiations with Mr. Lloyd George or with the Insurance Commissioners until or unless the six cardinal points are to the satisfaction of the Representative Meeting embodied in an amending Act.

This was seconded by Dr. Margaret Rorke, and the sense of the whole meeting concerning this resolution was taken first, and it was carried by a huge majority. A second vote consisting only of members was taken, when the resolution was carried by 41 to 8.

Public Medical Service.—The Chairman asked the members to remain for the purpose of considering the draft

form of Public Medical Service which had been circulated to every practitioner, but those present decided that it would be better to call another meeting for this purpose.

West Hertfordshire Division.

A meeting of this Division, to which all practitioners in the area of the Division were invited, was held at the Town Hall, St. Albans, on November 12th. Dr. Leslie Bates presided, and there were about sixty members of the profession present.

Sanatorium Benefit.—The scale of fees recommended by the Executive Committee was approved.

Tuberculosis Officer.—It was resolved:

That as the advertisement of the County Council inviting applications for the post of tuberculosis officer stipulated certain duties which the British Medical Association consider contrary to the best interests of all concerned, this meeting of West Herts practitioners trusts that the County Council will therefore not ask their tuberculosis officer to undertake these duties.

Attendance on County Police.—Attention was drawn to a circular issued by the Chief Constable offering an inclusive fee of 8s. 6d. per head for attendance upon members of the police force. It was resolved:

That the matter be referred to the combined Subcommittee of the two Divisions in the county to consider and settle.

Defence Fund.—A letter from the Medical Secretary was read, and it was resolved that every practitioner in the area of the Division who has not already guaranteed at least £10 be asked to do so.

National Insurance Act.—The following resolutions were passed:

That the members of the British Medical Association invite non-members to record their votes, and agree to accept the opinion of the majority as the opinion of the Division.

That this Division refuses to give service under the Act under the present Regulations.

That inasmuch as the terms of the Government open a way for a compromise, it is advisable for the Representative Meeting to give full powers to a specially appointed Committee to reopen negotiations and to complete them, provided that there is some alteration concerning the hours of service, and the duties, and the keeping of records, as recently outlined by the Chancellor of the Exchequer, and to settle the terms of remuneration for medical service, etc., in accordance with the following points:

1. That the Chancellor be given to understand that the profession intend to insist on the £2 wage limit in their negotiations with the local Insurance Committees, subject to the decision of the local Medical Committees.
2. That there shall be a minimum amount of clerical work entailed upon the profession.
3. That power to negotiate with local Committees be distinctly understood to be subject to the consent of the Central Office of the British Medical Association.
4. That the power of investigating all complaints against medical practitioners be vested in the Medical Committees.
5. That a definite understanding be reached as to what is to be understood as "adequate treatment" under the Act.
6. That the right to dispense and to employ assistants be supported.
7. That no lay inspectors of professional details be appointed, and that the duties of medical inspectors be carefully defined.
8. That the profession shall receive the whole amount to which it is entitled as remuneration for professional services, notwithstanding the amount that has been set for this purpose by the Government.
9. That the method and terms of remuneration for attendance upon those who are temporarily away from their own doctors be clearly defined.
10. That a clear definition be given as to what is to be understood as an "epidemic" in relation to the special provision of drugs, etc.

Uninsured.—If the recent offers of the Chancellor are accepted, this district shall at once take steps to arrange and adopt a scale of fees for uninsured, and the terms shall be submitted to the West Herts Executive Committee for approval.

Public Medical Service.—That the final details of the Public Medical Service scheme be proceeded with in readiness for January 15th prox. if found necessary by the refusal of the Insurance Commissioners to concede the reasonable demands of the British Medical Association.

That this Division wishes to put on record its high appreciation of the painstaking and careful work of the Council and the State Sickness Insurance Committee in connexion with the National Insurance Act.

That the thanks of this meeting be accorded the Mayor of St. Albans for the use of his parlour.

Midland Branch:

Chesterfield Division.

A meeting of this Division was held at the Board-room, Chesterfield Hospital (by kindness of the board) on Wednesday, October 30th. Dr. A. Green was in the chair, and thirty members were present.

Ethical Rules.—The ethical rules for Divisions, as set out in the Supplement of September 21st, were discussed. It was resolved, on the proposition of Dr. Duncan, seconded by Dr. A. Court:

That these rules be approved and accepted by the Division.

Chesterfield and North Derbyshire Hospital and Medical Aids.—Mr. F. Marriott moved:

That in the opinion of this meeting the honorary staff of the Chesterfield and North Derbyshire Hospital should be asked to refuse to attend at the hospital, either as in or out patients, after January 15th, 1913, or earlier if occasion arises, the patients of (*a*) doctors of medical aid associations, or (*b*) doctors who refuse to act in accordance with the rules of the British Medical Association, and with the rules of the Public Medical Service to be established in the district and supported by almost all the practitioners in the area, subject to such course of action being approved by the British Medical Association.

Mr. E. G. Leary seconded. The motion was carried. It was agreed that the Executive should proceed forthwith to obtain the approval of the State Sickness Insurance Committee.

Public Medical Service.—The scheme for public medical service as drawn up by the subcommittee and circulated amongst all the practitioners within the area was submitted to the meeting. The Chairman explained that the scheme was intended to apply to uninsured persons and their dependants whether terms under the National Insurance Act were agreed or not; and that if terms under the Act were not agreed, then the scheme was intended to apply to insured persons also. To test the feeling of the meeting the Chairman put the following questions to the vote:

(*a*) Was the rate stated in the scheme too low? Six voted in the affirmative.
(*b*) Was the rate too high? Eight voted in the affirmative.
(*c*) Was the rate about right? Eleven voted in the affirmative.

Mr. F. Marriott moved:

That the minimum fee for families, exclusive of insured persons, be 26s. per annum.

Dr. J. G. Shea seconded. Dr. George Booth moved as an amendment:

That the consideration of the scheme be deferred until after the decision of the Conference at Newcastle had been received.

Dr. G. H. West-Jones seconded. Dr. A. Court moved as an amendment:

That the fixing of the rate for colliery field clubs for wives and families of insured persons be deferred until after the Newcastle meeting.

Dr. R. G. Chase seconded. Dr. Booth's amendment was withdrawn. Dr. Court's amendment was put and carried. Dr. J. A. Magee said he had no colliery clubs, and attended the wives and families as private patients, and inquired if he could continue to do so. The Chairman stated that the answer was in the affirmative. The scale for families not connected with colliery or work clubs was then considered. Mr. H. B. Fletcher moved:

That the scale be 8s. 6d. for men and 8s. 6d. for women, or the fee for each which may ultimately be agreed upon under the Act; and 4s. 6d. for the first child and 4s. 6d. for second and all other children.

Dr. G. Booth seconded. Dr. W. Duncan moved as an amendment:

That where the husband is an insured person the third child (if any) be taken at 4s. 6d.

Dr. J. G. Shea seconded. Mr. F. Marriott moved as an amendment:

That in cases where there are no children the fee for the wife be the statutory fee for insured persons (if agreed); and that if there are children the fee for wife and children be the inclusive fee of 17s. 6d.

Mr. E. G. Leary seconded. Dr. Duncan's amendment was withdrawn. Mr. Marriott's amendment was put and lost (11 voting for and 12 against). Mr. Fletcher's amend-

ment was put and carried *nemine contradicente*. Dr. A. Court moved:

That the income limit be as set out in the scheme—namely, £160, or local option.

Dr. Booth seconded. This was carried. For confinements and miscarriages it was resolved that the fee be £1 1s. For vaccinations and fractures and dislocations, Mr. Marriott moved that the fee be the present Poor Law fee. This was seconded and carried. The following further fees were unanimously agreed without formal resolutions:

Consultations: Fee to practitioner in attendance, 5s.
Anaesthetic: Minimum, 10s. 6d.
Night visits, 2s. 6d.
Special visits, 1s.
Duplicate certificates, 6d.
Dentistry, 1s.

The remaining items set out in the scheme as extras were unanimously agreed to—namely:

Medical attendance for illness arising from confinements, etc.
Other than own patients, misconduct, intemperance, etc.
Cod-liver oil, linseed meal, leeches, serum, oxygen, vaccines, bacteriological examinations, *x*-ray examinations, electrical treatment.

Mileage.—2s. 6d. per annum per mile out per household over two miles from the doctor's residence.

Open Door.—All contract work to be on the "open door" principle.

Conference of Colliery Surgeons to be held at Newcastle-on-Tyne on November 6th, 1912.—The Chairman read a letter from head quarters whereby the Division was invited to appoint one of the three representatives from the Midlands. Dr. Court moved that Dr. Duncan be the representative, and that in the event of his being unable to attend the conference a deputy be appointed. Dr. Geo. Booth seconded, and suggested that Dr. Court should undertake to attend if Dr. Duncan were unable to be present. Dr. Court agreed. This was carried unanimously.

Leicester and Rutland Division.

A meeting of the Division was held at the Temperance Hall, Leicester, on November 13th. Dr. Gibbons was in the chair, and 129 members were present.

Sanatorium Benefit.—The Secretary reported on the conference with the medical officers for the county and borough with reference to the administration of sanatorium benefit.

Death of Dr. Pope.—The following resolution was proposed from the Chair and carried unanimously:

That this meeting desires to place on record its deep sense of the loss sustained by the Division in the death of Dr. F. M. Pope, who for many years rendered devoted and valuable services to the British Medical Association; that the members desire to express to the family of their late colleague and friend their deep sympathy in the loss it has sustained.

Vacancy on the Council.—Proposed from the Chair and carried unanimously:

That Dr. R. Wallace Henry be nominated by the Division as a candidate for the vacancy on the Council.

Coventry Division.—A communication from the Coventry Division with reference to further resignations from the Coventry Dispensary was referred to.

National Insurance Act.—Apologies for absence and letters from those unable to be present, expressing their views upon the situation, were received from Drs. Noble, Glover, Anderson, Austin-Smith, Keal, Clifton, Waite, Garrett, Higgs, and West. The following resolution was proposed by Dr. Holyoak and seconded by Dr. Johnston:

That, in the opinion of this meeting, the Regulations issued by the Insurance Commissioners and the latest proposals of the Chancellor of the Exchequer are unworkable, derogatory to the profession, and a positive danger to the national health; and therefore this meeting instructs its Representative to vote against giving service under the Act.

Whereupon the following amendment was proposed by Dr. Tibbles and seconded by Dr. Fagge:

That the recent declaration of the Chancellor of the Exchequer affords a fair basis for negotiation, and that it be a recommendation to the Council to appoint a strong committee with power to arrange the best possible terms on matters not yet conceded to the profession.

After a discussion, in which Drs. Ellison, Pike, Cohens, Stracey, Sevestre, Henry, Mason, Duke, and Keeling took part, the amendment was defeated, 21 voting in favour thereof, 108 against, and 1 neutral. The original resolution was carried, 115 voting in favour thereof, 13 against, and 2 neutral. Dr. Lilley having spoken, the meeting terminated.

NORTHERN COUNTIES OF SCOTLAND BRANCH:

Inverness-shire Division.

A meeting of this Division was held at the Northern Infirmary, Inverness, on November 15th. Dr. James Murray was in the chair. Present: Drs. Lindsay, Ardersier; Macdonald and Leach, Beauly; Gillies, Luke, MacDonald, M.O.H., Hunter, Mitchell, Kerr, Moir, MacFadyen, jun., and J. W. Mackenzie (Honorary Secretary); and Kelly and H. S. MacDonald (non-members).

The Insurance Act.—The following points were discussed:

1. Regulations for medical benefit (see Supplement to Journal of October 5th).
2. Report of Council concerning the position of the medical profession in relation to the National Insurance Act (see Supplement of November 2nd).
3. Statement of Chancellor of Exchequer as to the proposed increase of medical remuneration (see Supplement of October 26th).
4. Public Medical Service schemes (see Supplements of September 14th and October 12th).

After a full discussion of all these matters, Dr. J. Munro Moir proposed and Mr. James Luke seconded the following resolutions:

1. That, until satisfactory arrangements are made with the medical profession, more particularly with regard to mileage, medical inspection of books and records, and constitution of penal committees, the Inverness-shire Division of the British Medical Association refuse to accept service under the Act.
2. That the Branch Representative be empowered to vote for any motion which may lead to negotiations being resumed with the Chancellor of the Exchequer on the above-mentioned points.

These were carried unanimously. Dr. Leach proposed and Dr. Moir seconded:

3. That resolutions Nos. 167 and 169 of the Annual Representative Meeting, Liverpool, 1912, regarding the constitution of Insurance District Committees, should be rescinded and medical men be allowed to accept nomination as members of these committees.

This was also carried unanimously.

As regards the medical service schemes (vide Supplements, September 14th and October 12th) the meeting was unanimously of opinion that they were impracticable in the North of Scotland, and recommended that they be not gone on with.

NORTH OF ENGLAND BRANCH:

Darlington Division.

A meeting of this Division was held at Darlington, on November 15th, to give instructions to the Representative for the Special Representative Meeting. Twenty-three members and one non-member were present.

The Insurance Act.—The Honorary Secretary reported that at a meeting of the Northallerton and Wensleydale members of this Division, on November 11th, a resolution requesting the Representative to vote against the acceptance of any service under the Insurance Act was unanimously carried, sixteen being present. The Honorary Secretary also reported that he had received eighteen letters of apology for absence, giving the views of the writers; sixteen were for refusal, one for negotiation, and one for acceptance. After many gentlemen had expressed their views the following resolution was proposed, seconded, and carried *nemine contradicente*, 22 voting for it, 2 abstaining:

The members of this Division, having carefully considered the latest proposals of the Chancellor and the Regulations of the Commissioners, see no reason to alter their already expressed determination not to give any service under the Insurance Act until the demands of the profession have been satisfactorily conceded. As this has not been done they instruct their Representative to vote for Recommendation (*b*) in the Report of the Council, namely, "to refuse service under the Act."

Defence Fund.—Dr. Pearson made an appeal for more hearty support for the Insurance Defence Fund. Several of those present signed forms of guarantee then and there, and several others promised to do so.

Newcastle-on-Tyne Division.

A meeting of the Newcastle-on-Tyne Division was held at the Royal Victoria Infirmary, Newcastle-on-Tyne, on November 12th. Dr. Andrew Smith, sen., was in the chair, and there were ninety-nine members of the profession present.

Domiciliary Treatment of Tuberculosis.—The following scale of fees provisionally arranged (for insured persons only) by a deputation at an interview with the Newcastle-on-Tyne Insurance Committee was agreed to, subject to confirmation by head quarters:

	s.	d.
1. Form Med. 1. No charge to be made either to the committee or to the patient, it being understood that, wherever practicable, Form Med. 2 would be sent to the medical practitioner consulted with regard to Form Med. 1.		
2. Form Med. 2	5	0
3. Extra fee for consultation with chief tuberculosis officer (or medical adviser)	2	6
4. Quarterly reports (subject to the reports being of brief character not exceeding four headings) ...	2	6
5. Notification of adverse sanitary circumstances. To be furnished without fee when really necessary, provided forms be supplied by committee (provisional arrangement for one year).		
6. Consultation at doctor's residence or surgery ...	2	6
7. Visit at patient's house	2	6
8. Night visit (between 10 p.m. and 8 a.m.), in response to calls within these hours	5	0
9. Special visit in response to call sent in after 10 a.m. and before 10 p.m.	3	6
10. Injection of vaccines	2	6
11. Allowance of 1s. per dose of tuberculin (medical practitioner to provide).		

OXFORD AND READING BRANCH:

Oxford Division.

A special general meeting of this Division was held in the large lecture room of the Science Museums, Oxford, on November 12th. Sir William Osler presided as chairman, and eighty members were present. Non-members were also invited.

The Insurance Act.—Dr. Turrell (Member of Central Council) made a statement reviewing the present position with reference to the Insurance Act; he showed how far the Government had met the cardinal demands of the Association, and criticized the alternative schemes open to the profession if they failed to accept service under the Act. He thought there was a probability of obtaining some further concessions. A general discussion then took place, in which the following gentlemen took part: Dr. Bloxsome, Mr. Counsell, Dr. Hitchings, Dr. Jones, Dr. Higgs, Dr. Brunyate, Dr. Duigan, Dr. Boissier, Dr. Yelf, Dr. King-Turner, and Dr. Parsons. The subjects of mileage, payment for extras, and medical inspection were those that were chiefly dealt with, and with reference to the latter, Mr. Counsell, who acts as medical officer to the Oxford Post Office, gave his experience of what was meant by medical inspection. The following resolution was proposed by Dr. Rivers-Willson:

> That this meeting is of opinion that no financial proposals for working the medical benefit under the Insurance Act should be considered until the conditions of service are such as can be accepted without hesitation by an honourable and independent profession.

This was seconded by Dr. Kennard. Dr. Yelf proposed as an amendment:

> That this meeting agrees to give provisional service under the Act under the conditions and safeguards set forth in paragraph 114 of the Council's Report.

This was seconded by Dr. Gillett and carried by 31 to 24—majority 7. It was then put as a substantive motion; it was carried by a majority of 7.

Instruction to Representative.—It was proposed by Dr. Gillett and seconded by Dr. Duigan:

> That it be an instruction to our Representative that the abolition of inspectorship and the payment of fees for mileage and special services and night work be specially insisted on.

This was carried *nemine contradicente*.

SOUTH-EASTERN BRANCH:

Brighton Division.

The adjourned special meeting to consider the Insurance Act was held at the New Road Lecture Hall on November 11th, Dr. Ryding Marsh in the chair. Thirty-two members and two visitors were present.

Report of Provisional Medical Committee.—The Report of the Provisional Medical Committee on the Report of the Council was received and discussed in detail. The following resolutions are the most important which were passed:

1. That the Association adheres to its resolution of the Annual Representative Meeting, 1912, with reference to sanatorium benefit, and cannot agree to the proposals to undertake the domiciliary attendance of persons entitled to treatment by tuberculosis medical service on a capitation basis; and that the payment of such services should not be considered as in any way a part of the payment for service under the medical benefit.
2. (*a*) That it be an instruction to the Council that in any public medical service scheme submitted for approval the inclusion of the principle of co-operation with contributing lay bodies in the administration shall not be ground for the withholding of such approval providing that the control of purely professional matters remains with the profession.
   (*b*) That in view of the Regulations respecting medical benefit issued by the Commissioners, and the recent explanation of the Chancellor of the Exchequer, this Representative Meeting would urge the Division seriously to consider again the desirability of adopting a scheme of payment in full for services rendered on a suitable tariff, the risks of insurance to be borne by the Government or contributing lay bodies, or both conjointly.
3. That a vote of thanks be given to the medical members of the Advisory Committee who have shown their loyalty to the Association and the profession by resigning their membership in accordance with the decision of the Representative Meeting.
4. That the conduct of the medical members who have not resigned is reprehensible, has misled the public, and should be brought before the Ethical Committees of the Divisions in which they reside.
5. That the original arrangements agreed upon between the Insurance Committee and the local Medical Committee shall continue in operation for a period of two years from the date upon which the administration of medical benefit comes into operation, and that it shall be ensured that the Regulations issued shall be operative only during the same period.

Chichester and Worthing and Horsham Divisions.

At the combined meeting held on November 12th, the following business, in addition to that contained in the report published in the Supplement of November 16th, was transacted:

Ethical Rules.—The Ethical Rules, as published in the Supplement of September 21st, were adopted.

Tuberculosis Scheme.—The provisional scheme for tuberculosis fees, arranged with the West Sussex Insurance Committee, was adopted. The following are the details of the scheme:

Until the permanent scheme for dealing with tuberculosis comes into operation the scale of fees given hereunder will be paid for attendance on cases of pulmonary tuberculosis amongst insured persons recommended for treatment.

	s.	d.	
For attendance at patient's home	3	6	
For attendance at doctor's surgery ...	2	6	
These fees to include medicine for three days.			
Medicine without professional advice, if further supply is required	1	6	
Special drugs, such as cod-liver oil, vaccines, etc.	extra		
Bacteriological examinations if required by tuberculosis officer	4	6	
Mileage—Visits over one mile and under three from doctor's residence	1	6	extra
Mileage—Visits over three miles and under five from doctor's residence	4	0	extra
Mileage—Visits over five miles per mile	1	0	extra
Sunday visits at the rate of one visit and a half			
Night visits (8 p.m. to 8 a.m.), at the rate of two visits			
Reports—Medical examination report (Form Med. 2)	5	0	
Reports—Quarterly or special reports (See Art. 2 (5) L.G.B. Order)	5	0	

The Insurance Committee are informed that they are not empowered to pay a fee for the Certificate on Form Med. 1.

Folkestone, Dover, and Ashford Divisions.

A meeting of these Divisions was held at Wampach's Hotel on November 13th. There were forty-five present, Dr. Barrett in the chair.

The Chancellor's Proposals.—The following resolution was proposed by Dr. HOWDEN, seconded by Dr. BAIRD, and carried *nemine contradicente*:

That this meeting of the Folkestone, Dover, and Ashford Divisions express their regret that Mr. Lloyd George had not seen his way to grant terms on which alone the doctors could satisfactorily discharge the duties required under the Act, and declared themselves convinced that the conditions laid down in his latest offer made it impossible to entertain the proposal.

Instruction to Representative.—It was also agreed unanimously that the Representative be instructed to vote against plenipotentiaries being sent by the British Medical Association to confer with the Chancellor.

HASTINGS DIVISION.

A SPECIAL and urgent meeting, to which all registered medical practitioners were invited, was held at the Eversfield Hotel on November 14th at 4.30 p.m. Dr. WILLS took the chair, and fifty-one were present.

The late Dr. Bagshawe.—Before the meeting was opened Mr. OTHO TRAVERS proposed and Dr. BATTERHAM seconded that a vote of condolence be pased on the death of Dr. Bagshawe. This was passed with all the company present standing.

Model Ethical Rules.—These rules, as approved by the Representative Meeting, were passed unanimously.

Central Defence Fund.—A letter was read by the SECRETARY from the Medical Secretary of the British Medical Association *re* the Central Insurance Defence Fund. The Secretary suggested that further individual efforts be made to obtain extra support to the fund.

Report of Council.—The two alternatives were briefly spoken of by the CHAIRMAN. Mr. DAUNT proposed:

That this Division refuse service under the Act.

He spoke eloquently in stating his objections to the conditions of the proposed service, regulations, and the remuneration offered. He said that he would have nothing to do with it. Mr. FARNFIELD seconded the resolution, and spoke strongly in favour of not accepting the offer and the conditions of service. Dr. G. V. HEWLAND spoke in support of the motion, and quoted the resolutions passed on November 13th by the Conjoint Committees of the Colleges, etc. He also referred to Sir James Barr's address at the Cecil Hotel, on October 31st, on the threatened national public medical service, as to its great cost, and the difficulty to get medical men to work sixteen to eighteen hours daily. Dr. H. GABB expressed ably and fully his objections to the Act, and strongly supported resistance to it. Drs. ALLFORD, FRASER, WILLS, LOCKE, GRANDY, and BATTERHAM all spoke in favour of the resolution. Dr. MURDOCH proposed as an amendment:

That service be given under the Act under the conditions set out in paragraph 114 of the report.

This was seconded by Dr. SKYRME. The amendment being put to the meeting, it was lost by a large majority. The original motion was then put, and carried by 40 to 1.

Instructions to Representative.—Dr. CAMERON TAYLOR proposed and Mr. LIGAT seconded:

That our Representative be instructed to support any motion that may be brought up at the meeting to the effect that the Council be free to meet the Government again with a view to pressing home our minimum demands.

This was put and lost.

ROCHESTER AND CHATHAM DIVISION.

A LARGELY attended meeting of this Division was held at St. Bartholomew's Hospital, Rochester, on November 15th.

Instructions to Representative.—The Representative was instructed by the meeting, with only two dissentients, to vote against taking service on the terms of the Chancellor's latest offer. He was also instructed to vote against the re-opening of negotiations.

SOUTH MIDLAND BRANCH.

NORTHAMPTONSHIRE DIVISION.

A MEETING of this Division was held in the Board-room of the Northampton General Hospital on November 12th. Dr. BAXTER was in the chair, and sixty-eight members and visitors were present.

The Chancellor's Proposals.—A letter was read from Dr. Clement Dukes advising the trial for three years of the Chancellor's new proposals, and from Dr. Mackenzie in favour of them also; from Dr. Gaines and Dr. Nourse were read letters advising their rejection. On the proposition of Dr. HICHENS, seconded by Dr. CHURCHOUSE, the following proposition was carried to be submitted to the Representative Meeting:

That it be an instruction to Council that in any Public Medical Service scheme submitted for approval, the principle of co-operation with contributing lay bodies in the administration shall not be ground for the withholding of such approval, providing that control of purely professional matters remains with the profession.

Instructions to Representative.—Dr. BAXTER opened the discussion as to the acceptance of the Chancellor's most recent offer, and strongly urged that the Representative should not be exactly bound down as to how he should act. Dr. Baxter further pointed out that although the British Medical Association only offered two alternatives, there was yet a third associated with the name of Dr. Beaton which might be considered. Dr. COOKE then proposed and Dr. ROUGHTON seconded the following proposition:

That the terms offered by the Government on October 3rd last be a basis of settlement, and that the Representative Body appoint a committee with plenary power to negotiate as to the points on which the demands of the Association have not yet been met.

Dr. ROUGHTON and Dr. TOLPUTT supported the resolution, and Dr. CRAWFORD also spoke. Dr. TERRY, seconded by Dr. BENSLEY, proposed as an amendment:

That we refuse to serve under the Act as it now stands, and that we instruct our delegate to vote at the Representative Meeting in accordance therewith.

Dr. TOLPUTT, Dr. DRYLAND, and Dr. BAXTER all spoke strongly against the amendment, and advocated the middle course of the original resolution. The amendment was then put and lost, only four voting for it. Dr. ROBB expressed himself as satisfied with the terms now offered, and proposed as an amendment:

That we accept the terms as offered.

This was seconded by Dr. OWEN, but was lost by a large majority. Dr. Cooke's original proposition was then put and carried, only one voting against it. On the proposition of Dr. TOLPUTT, seconded by Dr. GREENFIELD, it was agreed that in the event of Dr. Cooke's resolution being rejected by the Representative Meeting, the Representatives should support the following resolution in the report:

To give services under the Act under the conditions set out in paragraph 114 of this report (November 2nd, 1912).

The meeting then terminated.

SOUTH-WESTERN BRANCH.

EXETER DIVISION.

A MEETING of this Division was held at the Exeter Hospital on November 7th. All medical men in the Division were invited to the meeting. Mr. E. J. DOMVILLE was in the chair, and sixty-nine members and one non-member were present.

Report of Council.—There was considerable discussion on the Report of Council, in which Drs. GORDON, ASH, SHIRLEY PERKINS, G. G. GIDLEY, and others took part. Dr. GORDON proposed and Dr. SHIRLEY PERKINS seconded that it was futile to continue the discussion seriatim of the paragraphs of the report, and that the meeting proceed to paragraph 115, as to whether they should give or refuse service under the Act. This was carried by a large majority. Dr. WELSFORD then proposed and Dr. AYSHFORD seconded that they refuse service under the Act, and the following resolution was carried by 62 to 7:

That this meeting is of opinion that nothing has occurred to alter the position the Association has taken up not to serve under the Act, being of opinion that the six cardinal points have not been granted.

STAFFORDSHIRE BRANCH.

MID-STAFFORDSHIRE DIVISION.

A GENERAL meeting of this Division was held at the Trent Valley Hotel, Lichfield, on November 13th. Dr. COOKSON presided, and there were forty-four members present.

The Chancellor's Proposals.—The CHAIRMAN introduced the subject, pointing out that the latest offers of the Chancellor of the Exchequer might be considered from the financial side in regard to the conditions of service apart from remuneration, and that these two might be considered separately with advantage; that there were three courses open to the meeting—namely, acceptance, rejection, and continuance of negotiation; and that, in the event of rejection, members must be prepared to guarantee up to £20 a head. Dr. ROWLAND proposed and Mr. MILLER seconded:

That the Division refuse to accept service under the existing Act, and subject to the regulations and conditions as known to us at present.

Dr. HOMAN and Dr. GETTINGS supported, the latter speaking on the unsatisfactory manner in which mileage was dealt with. Dr. LOWE (Dr. THOMPSON seconding) moved the negative, and Drs. BULL, DIXON, and HOLTON continued the discussion. On the question being put, Dr. Rowland's motion was carried by 39 votes to 3.

Instructions to Representative.—Dr. HODDER proposed and Dr. NOCK seconded:

That the Representative Meeting appoint a committee to consider the recent offer made by the Chancellor, which affords the Association an opportunity for conferring with him and with the Commissioners as to the points on which the demands of the profession have not been met, and that such committee have plenary powers to negotiate and bring about a settlement.

After a discussion, in which it appeared that the present objections to the Government scheme were more to the conditions of service than to the remuneration last offered, this motion was carried unanimously. Dr. GETTINGS proposed, Dr. ROWLAND seconded, and it was resolved:

That in any settlement industrial accidents and diseases covered by the Workmen's Compensation Acts be considered as outside the scope of medical benefit under the Act.

The Representative of the Division was instructed to propose these two resolutions at the forthcoming Representative Meeting.

Inspection of Practices under Regulations.—It was proposed by Dr. HOMAN, seconded by Dr. MILLER, and resolved:

That the profession oppose the inspection of practices as foreshadowed in the Regulations and the speeches of Mr. Lloyd George.

Dispensing by Doctors.—It was proposed by Dr. HOLTON, seconded by Dr. CHAPMAN, and resolved:

That no settlement will be satisfactory that does not allow of dispensing for insured persons being done by the doctor if he wishes.

Model Ethical Rules.—It was proposed by the CHAIRMAN, seconded by Dr. FREER, and resolved:

That the Division adopt the Model Rules governing procedure for a Division in ethical matters, as approved by Annual Representative Meeting, 1912.

Vote of Thanks.—A vote of thanks to the Chairman closed the meeting.

YORKSHIRE BRANCH:

WAKEFIELD, PONTEFRACT, AND CASTLEFORD DIVISION.

A SPECIAL meeting of the profession in this Division was held at the Clayton Hospital, Wakefield, on November 12th. It was the largest meeting of the kind ever held in the Division, and was presided over by the Divisional Chairman, Dr. J. W. WALKER (Wakefield), and attended by doctors from Wakefield, Pontefract, Castleford, Featherstone, Normanton, Goole, Doncaster, and surrounding districts.

Insurance Act.—The object of the meeting was to consider the Report of Council on the Insurance Act and to instruct the Representative thereon for the forthcoming Representative Meeting in London. The following resolution, which was passed by a large majority (of 74 to 3) at a meeting of the Executive Committees of the Divisions of the Yorkshire Branch held at Leeds a week previously, was read to the meeting as an indication of the prevailing opinion of doctors throughout the county:

That in the opinion of this meeting the Regulations issued by the Insurance Commissioners and the latest proposals of the Chancellor of the Exchequer are unworkable, derogatory to the profession, and a positive danger to national health. As a consequence the medical profession should decline to undertake service under the Act and Regulations as at present constituted.

Instructions to Representatives.—The Chancellor's most recent proposals and the Regulations were discussed, and the following resolution was proposed by Dr. EARDLEY (Goole):

That this Division, whilst recognizing that the Chancellor's latest offer, so far as remuneration is concerned, may form a basis for negotiation, feels that the requirements of the Regulations issued by the Commissioners are such as to render service wellnigh impossible. At the same time it instructs its Representative to vote in favour of such motions at the Representative Meeting in London as are calculated to reopen negotiations with the Government, and trusts that such amendments of the Regulations will be introduced as to make it possible for the profession to take service under the Act.

In proposing this resolution, Dr. Eardley said that whatever was said or done in the matter of the Insurance Act, they were all agreed that unity of the profession was the essential point. There were differences of opinion on detail, but all were agreed that the conditions of service imposed by the Regulations, etc., were not all that could be desired, or all that the profession might reasonably demand. He hoped they were all of one determination, that, whatever happened, they would hold together. The resolution was seconded by Dr. H. J. CLARKE (Doncaster), supported by Drs. CHRISTY WILSON (Doncaster), STEVEN (Featherstone), WARD (Brotherton), MAY (Wakefield), ERSKINE (Goole), O'DONNELL (Goole), HILLMAN (Castleford), SELBY (Doncaster), and others, including the CHAIRMAN, who said the Regulations as at present constituted were simply intolerable; and it was carried by a large majority.

CONNAUGHT BRANCH:

NORTH, MID, AND SOUTH CONNAUGHT DIVISIONS.

A SPECIAL general meeting of the North, Mid, and South Connaught Divisions of the Connaught Branch, and all members of the profession within the area of the Branch, was held at Guy's Hotel, Tuam, on November 12th. Dr. D. CROWLEY, President-elect, was in the chair. Letters of apology for non-attendance were read from many members promising support.

Report of Council.—The Report of Council was considered. It was unanimously resolved:

That negotiations with the Chancellor of the Exchequer on the basis of his offer of October 23rd should be resumed, and that a committee should be appointed, one-half of whom should be members of Council, with plenipotentiary powers to make a final settlement with the Chancellor. This resolution to be subject to alteration by the Conjoint Committee of Ireland at its meeting on November 16th.

Guardians and Fees.—The following resolution was passed:

That it having been brought to the notice of the meeting that a board of guardians has fixed a scale of fees for attendance on private cases, the meeting considers such action detrimental to the best interests of the public and the profession.

Central Defence Fund.—It was unanimously resolved that all present should guarantee £5 to the Central Defence Fund of the British Medical Association, with an immediate payment of £1 on demand, and that the profession in Connaught be advised to do the same, and that a circular to this effect be issued.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

British Medical Association.

SOUTH AFRICAN COMMITTEE.

A MEETING of the South African Committee, British Medical Association, was held at Pietermaritzburg on July 30th, 1912, when there were present: Sir KENDAL FRANKS (President), Dr. J. Hyslop, Dr. A. D. Pringle (for Dr. Strapp), and Dr. Campbell Watt (Honorary Secretary.

Order of Nurses.

The meeting considered the draft rules applicable to nurses of the King Edward Memorial Order of Nurses, at the request of the Committee of the Order. In introducing the subject the PRESIDENT said that no matter whether medical men were all agreed on it or not, it was advisable that the South African Committee should in the interests both of medical practitioners and nurses agree to the request of the Committee of the Order and revise the draft rules, as the Order was about to be established.

The meeting had before it for its guidance the model rules for inclusion in the rules of nursing associations, recommended by the Annual Representative Meeting of the British Medical Association (1910) and several letters from absent members of the Committee.

Practically all the provisions of the model rules were incorporated, thereby more clearly defining, *inter alia*, the relations in which a nurse stands to the medical practitioner.

Medical Legislation—Public Health.

The meeting confirmed the action of the President in having, at the request of Dr. Macaulay, M.L.A., forwarded to the latter a letter suggesting that the Government should appoint a commission during the recess to take evidence and report upon public health matters with a view to legislation on the lines approved by the profession.

Relations of Committee.

A letter from the Medical Secretary of the Association was read conveying the approval of the Council of the amendments to the regulations of this committee. The HONORARY SECRETARY stated that the Regulations would now be printed and distributed to the members of the Association in South Africa.

Circulars to South African Practitioners.

The drafts of the circulars to members and non-members of the Association were approved of.

Membership of Association.

The HONORARY SECRETARY drew attention to the correspondence he had had with the Medical Secretary of the Association regarding certain classes of practitioners registered in the empire who were not eligible for membership of the Association; these were:

1. Holders of British diplomas not registered in the United Kingdom, and
2. Holders of foreign diplomas not registered or registrable in the United Kingdom,

If they resided outside the area of a Branch not in the United Kingdom.

The Medical Secretary stated that the reading of the constitution advanced by the Honorary Secretary of this committee was correct; and that it lay with any Branch to move an alteration of the constitution so as to make these two classes of practitioners eligible.

Regulations of Congresses.

The HONORARY SECRETARY reported that, as directed by the committee, the Natal members were about to draft a new constitution of the Medical Congress on the lines approved by the congress held in Johannesburg this year.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments have been notified by the Admiralty: Deputy Surgeon-General W. W. PRYN to Gibraltar Hospital, vice Welch, October 28th, 1912. Deputy Surgeon-General J. L. SMITH, M.V.O., M.B., to Chatham Hospital, vice Pryn, October 28th, 1912. Fleet Surgeon D. J. P. MCNABB to the Medical Department, Admiralty, vice Deputy Surgeon-General Smith, October 28th, 1912. Fleet Surgeon C. H. J. ROBINSON to the *Dartmouth*, vice Cameron, October 21st, 1912. Fleet Surgeon A. X. LAVERTINE to the *Aboukir*, and for group of ships of Third Fleet, October 22nd, 1912. Fleet Surgeon HERBERT W. G. DOYNE to the *Albemarle* and for general staff duties on commissioning. Fleet Surgeon JOHN A. L. CAMPBELL to the *Lancaster* on recommissioning, November 5th, 1912. Fleet Surgeon MONTAGUE H. KNAPP to the *President*, additional to be lent to Greenwich Hospital School and College, November 7th, 1912. Fleet Surgeon ROBERT D. JAMESON to the *Indus*, vice Rock, November 17th, 1912. Fleet Surgeon CECIL R. ROCK to the *Achilles*, vice Fasken, November 17th, 1912. Fleet Surgeon HUBERT HOLYOAKE has been placed on the retired list at his own request, November 9th, 1912. Fleet Surgeon HAROLD P. JONES to the *Conqueror* on commissioning. Staff Surgeon PIERCE L. CROSBIE to the *Vivid* additional for *Conqueror* for trials and *Conqueror* on commissioning, November 14th, 1912. Staff Surgeon MALCOLM CAMERON, M.B., to the *Formidable*, vice Jones, on the *Conqueror* commissioning. Staff Surgeon WALTER K. HOPKINS to the *King George V* temporarily on commissioning, November 16th, 1912. Staff Surgeon R. H. ATKINS, M.B., to the *King George V* temporarily on commissioning, November 16th, 1912. Staff Surgeon F. C. B. GITTINGS, M.D., to the *Apollo*, vice Vaudin, November 14th, 1912. Staff Surgeon W. L. HAWKINS to the *Pegasus* on recommissioning, December 10th, 1912. Staff Surgeon A. F. FLEMING to the *Victory* additional for disposal, December 7th, 1912, and to the Royal Marine Division, Portsmouth, vice Hawkins, December 10th, 1912. Staff Surgeon S. ROACH to the *Royal Arthur*, vice Lavertine, October 22nd, 1912. Staff Surgeon HENRY HUNT to the *Vengeance*, on recommissioning. Staff Surgeon A. MCCLOY, M.B., to the *Victory*, additional, for disposal, October 26th, 1912. Staff Surgeon A. D. SPALDING to the *Agamemnon*, vice Surgeon Searle, October 27th, 1912. Staff Surgeon FRANCIS BOLSTER, M.B., to the *Carnarvon*, vice Campbell, November 5th, 1912. Staff Surgeon T. H. VICKERS to *Blanche* on recommissioning, November 19th, 1912. Surgeon J. R. A. CLARK-HALL to the *Pembroke*, additional, for disposal, October 26th, 1912. Surgeon F. C. SEARLE, M.B., to the *Vernon*, vice Cameron, October 27th, 1912. Surgeon C. M. R. THATCHER, M.B., to the *Vivid*, additional, for disposal on the *Endeavour* being laid up. Surgeon E. MONON-BROWNE to the *Aboukir*, and for group of ships of Third Fleet, October 24th, 1912. Surgeon FREDERICK G. GOBLE to Hong Kong Hospital, vice Schofield, November 1st, 1912. Surgeon SIDNEY W. GRIMWADE to the *Albemarle* on commissioning. Surgeon SAMUEL L. MCBEAN, M.B., has been allowed to withdraw from the Service with a gratuity, November 4th, 1912. Surgeon JOSEPH GLAISTER, M.B., has been allowed to withdraw from the Service with a gratuity. Surgeon JAMES L. BARFORD to be lent to the *Monarch* temporarily, November 11th, 1912. Surgeon LEONARD WARREN, M.B., to the *Halcyon* for *Leda* on recommissioning, November 10th, 1912. Surgeon M. M. MELROSE to the *Princess Royal* on commissioning, November 14th, 1912.

The following Staff Surgeons have been promoted to Fleet Surgeons, dated November 10th, 1912: ARTHUR R. H. SKEY, M.B., PERCIVAL E. NIX, M.B., EDWYN R. GRAZEBROOK, RICHARD W. STANISTREET, LOUIS E. DARTNELL, F. H. NIMMO, WILLIAM JACKSON, M.B., GEORGE GIBSON.

The following Acting Surgeons have been confirmed in the rank of Surgeon, dated April 3rd, 1912: RICHARD M. R. THURSFIELD, LOVEL MOSS, JOSEPH O'FLYNN, M.B., JAMES P. SHORTEN, ALFRED R. PRICE, M.B., GORDON V. HOBBS, FRANCIS J. D. TWIGG, M.B., GORDON E. D. ELLIS, FRANCIS J. BURKE, M.D.

ROYAL NAVY VOLUNTEER RESERVE.

Surgeon WILLIAM B. BETENSON has been promoted to Staff Surgeon, April 13th, 1912.

Surgeon ARTHUR DOUGLAS COWBURN to be Staff Surgeon, October 28th, 1912.

ARMY MEDICAL SERVICE.

COLONEL ROBERT I. D. HACKETT, M.D., is placed on retired pay, November 13th, 1912.

Brevet Colonel R. H. FIRTH, from the R.A.M.C., to be Colonel, vice R. I. D. Hackett, November 13th, 1912.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL E. A. BURNSIDE has been appointed to command the Station Hospital at Secunderabad.

Lieutenant-Colonel A. DODD has retired after completing twenty-eight and a-half years' service.

Major H. A. BRANSBURY has been transferred from Station Hospital, Ahmednagar, to the Station Hospital, Belgaum.

Major H. K. PALMER, on arrival at Aden, was appointed Medical Officer of the Section Hospital, Officiating Medical Officer of the 18th Infantry, and Staff Surgeon at Crater.

Major HENRY P. JOHNSON, M.D., retires on retired pay, dated November 9th, 1912.

Major B. F. WINGATE has been appointed to command the Station Hospital at Bellary.

Major GEORGE A. T. BRAY to be Lieutenant-Colonel, vice R. H. Firth, November 13th, 1912.

Major A. W. N. BOWEN has been appointed to the command of the Station Hospital, Kirkee.

Major W. E. HARDY has left for duty in India.

Captains to be Majors dated October 29th, 1912: MERVYN W. FALKNER, RICHARD N. WOODLEY, EDWARD E. PARRIS, M.B., REGINALD V. COWEY, FREDERICK E. ROWAN-ROBINSON, M.B., JOHN S. BOSTOCK, M.B., ARTHUR H. MCN. MITCHELL.

Captain A. DAWSON has been appointed Staff Surgeon, Steamer Point, Aden, and to Medical Charge of the 23rd (Fortress) Company, 3rd Sappers and Miners.

Captain A. H. JACOB has been posted to Dublin for duty from November 22nd.

Captain C. RYLEY has been posted to Bermuda.

Captain M. D. AHERN has been posted to Bermuda.

Captains to be Majors, dated November 14th, 1912: WALTER J. WATKINS, HENRY F. SHEA, M.B., FREDERICK A. STEPHENS, EDGAR F. Q. L'ESTRANGE, THOMAS B. UNWIN, M.B.

Captain F. FORTESCUE assumed medical charge of the 62nd Punjabis of the Cantonment Hospital, Benares, on September 28th.

Captain H. L. HOWELL to be in charge of the Brigade Laboratory at Ahmednagar with effect from September 10th, 1912.

Lieutenant T. E. OSMOND has joined the London District for duty.

INDIAN MEDICAL SERVICE.

COLONEL A. O. EVANS has been selected to officiate as Inspector-General of Civil Hospitals, Burma, on the departure on leave in November, 1912, of Colonel H. St. C. Carruthers.

Colonel R. ROBERTSON will officiate in the vacancy caused by the appointment of Colonel A. O. Evans to Burma.

Lieutenant-Colonels C. R. M. GREEN and E. A. W. HALL have been promoted to the list of advanced Lieutenant-Colonels in the vacancies caused by the retirement of Lieutenant-Colonels W. A. Sykes and E. R. W. C. Carroll.

Lieutenant-Colonel G. S. THOMSON has been promoted to the list of advanced Lieutenant-Colonels in the vacancy caused by the promotion of Lieutenant-Colonel B. B. GRAYFOOT to the rank of Colonel.

Major JAY GOULD has been placed on deputation in the office of the Director-General, Indian Medical Service.

Captain D. HERON has been detailed for duty at Seistan under the Foreign Department.

Captain A. N. THOMAS, I.M.S., is appointed to the substantive medical charge of the 105th Mahratta Light Infantry.

Captain J. B. LAPSLEY, I.M.S., is appointed to the substantive medical charge of the 26th Punjabis.

Captain RODERICK DEAR MACGREGOR has retired, dated October 28th, 1912.

Captain W. E. BRIERLEY has been placed on deputation as Medical Attendant to the Maharaja of Datia during his shooting trip in Uganda.

Captain F. C. FRASER on return from furlough will be posted to the Madras Presidency for temporary civil employment.

Captain R. S. KENNEDY has been detailed for duty with the Abor Survey Party.

Lieutenant SURESWAR SARKAR has been promoted to Captain, dated June 4th, 1912.

Lieutenant G. TATE, I.M.S., is appointed a Specialist in Midwifery and Diseases of Women and Children.

Lieutenant G. V. MACDONALD has been detailed for duty with the Mishmi Column.

VOLUNTEER CORPS.

Bihar Light Horse.—Surgeon-Major E. HINDMARSH, V.D., to be Surgeon-Lieutenant-Colonel, dated May 16th, 1912.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned to be Lieutenants on probation: MALCOLMSON K. NELSON, October 15th, 1912; Cadet Colour-Sergeant SAMUEL WRIGHT from the Belfast University Contingent, Officers' Training Corps, October 17th, 1912; Cadet Colour-Sergeant FREDERICK JEFFERSON, from the Belfast University Contingent, Officers' Training Corps, October 17th, 1912; ROBERT DUNLOP GOLDIE, M.B., October 17th, 1912; Lieutenant EDMUND T. H. LEA is confirmed in his rank.

HENRY BRICEPARKER to be Lieutenant on probation, October 11th, 1912.

Cadet WILLIAM C. DAVIDSON, from the Glasgow University Contingent Officers' Training Corps, to be Lieutenant on probation, October 22nd, 1912.

OFFICERS' TRAINING CORPS.

Royal College of Surgeons in Ireland Contingent, Senior Division Officers' Training Corps.—Lieutenant JOHN CAMPBELL, M.B., R.A.M.C., special reserve, is appointed to serve with the contingent, dated October 30th.

TERRITORIAL FORCE.

ROYAL ARMY MEDICAL CORPS.

MAJORS to be Lieutenant-Colonels, dated November 16th, 1912: Sir WILLIAM W. CHEYNE, Bart., C.B., NORMAN DALTON, M.D., GEORGE R. TURNER, F.R.C.S.

Captains to be Majors, dated November 16th, 1912: WALTER G. SPENCER, M.B., F.R.C.S., WILLIAM A. TURNER, M.D., ALBERT CARLESS, M.B., F.R.C.S., JAMES GALLOWAY, M.D., F.R.C.S.

Second South-Western Mounted Brigade Field Ambulance.—Lieutenant JOHN R. BENSON, F.R.C.S., to be Captain, October 1st, 1912.

Second Home Counties Field Ambulance.—Lieutenant GEORGE T. WILLAN, to be Captain, October 3rd, 1912.

Third East Lancashire Field Ambulance.—Captain WILFRED M. STEINTHAL, to be Major, September 14th, 1912.

Third North Midland Field Ambulance.—JOSEPH C. HARRIS, to be Lieutenant, October 1st, 1912.

First Welsh Field Ambulance.—Lieutenant PATRICK J. MCGINN, to be Captain, July 21st, 1912.

Third Scottish General Hospital.—The announcement of Lieutenant-Colonel Sir HECTOR C. CAMERON'S resignation should read as follows: "Lieutenant-Colonel Sir Hector C. Cameron, M.D., resigns his commission, October 19th, 1912," and not, as stated in the *Gazette* of October 18th, "to resign his commission."

London Mounted Brigade Field Ambulance.—Lieutenant HUGH S. BEADLES, M.B., to be Captain, dated September 5th, 1912.

Fourth London Field Ambulance.—Lieutenant WILLIAM COWIE, M.B., to be Captain, dated October 7th, 1912.

Second London Sanitary Company.—Lieutenant ARTHUR J. MARTIN, M.B., to be Captain, dated October 26th, 1912.

North Midland Mounted Brigade Field Ambulance.—Lieutenant ARTHUR C. GOODWIN, M.B., F.R.C.S., to be Captain, dated August 22nd, 1912.

First London (City of London) Field Ambulance.—ERIC GERALD GAUNTLETT, M.B., F.R.C.S., to be Lieutenant, dated October 28th, 1912.

Second London (City of London) Field Ambulance.—Lieutenant REGINALD E. BICKERTON, M.B., to be Captain, dated October 13th, 1912.

Second North Midland Field Ambulance.—ALFRED CHARLES FOSTER TURNER, M.B., to be Lieutenant, dated October 20th, 1912.

Fourth London General Hospital.—Lieutenant-Colonel ALBERT R. BARROW, M.B., F.R.C.S., resigns his commission, dated November 16th, 1912.

Fourth Scottish General Hospital.—Major ARCHIBALD YOUNG, from the 1st Lowland Field Ambulance, R.A.M.C., to be Major, whose services will be available on mobilization, dated September 24th, 1912.

Second Wessex Field Ambulance.—Lieutenant WM. BLACKWOOD, M.B., to be Captain, dated [illegible] 1912.

Fifth Southern General Hospital.—Captain JOHN W. G. KEALY resigns his commission, September 13th, 1912.

Attached for Duty other than Medical Units.—Lieutenant GEORGE E. J. A. [illegible], M.D., to be Captain, April 8th, 1912; Lieutenant CHARLES H. ALLEN, M.B., F.R.C.S.Edin., to be Captain, May 17th, 1911; Lieutenant [illegible] L. A. [illegible], F.R.C.S., to be Captain, August 17th, 1912; Lieutenant PERCY C. P. INGRAM, M.B., to be Captain, September 30th, 1912; Lieutenant [illegible] W. HUGHES, M.D., to be Captain, October 1st, 1912; Lieutenant KENNETH S. STOBIE, M.B., to be Captain, dated September 6th, 1912; Captain WILLIAM A. TAYLOR, M.B., to be Major, dated October [illegible], 1912; Lieutenant DONALD S. SUTHERLAND, M.D., to be Captain, dated September 30th, 1912; WILLIAM TYLER GARDINER, M.B., to be Lieutenant, dated October 24th, 1912; Major CECIL E. STEPHENS, M.D., resigns his commission and is granted permission to retain his rank and to wear the prescribed uniform, dated November 16th, 1912; JAMES FENTON, M.B., to be Lieutenant, September 30th, 1912; [illegible] CHARLES [illegible], M.D., to be Lieutenant, September 30th, 1912; THOMAS W. M. HARNEIS, to be Lieutenant, October 17th, 1912; Lieutenant JAMES P. WILSON, M.B., resigns his commission, November 13th, 1912.

CHANGES OF STATION.

THE following changes of station amongst the officers of the Army Medical Service have been officially reported to have taken place during October:

	FROM	TO
Colonel H. O. Trevor	Belfast ...	Cork.
Lieut.-Col. G. G. Adams	Colaba ...	Secunderabad.
,, T. Daly	Peshawar ...	Chester.
,, R. W. Wright	Fyzabad ...	Mhow.
,, R. J. Windle, M.B. ...	Dublin ...	India.
,, E. A. Burnside ...	Bangalore ...	Secunderabad.
,, W. W. O. Beveridge, D.S.O., M.B.	London Dist.	R.A.M. Coll.
Major F. W. Hardy, M.B.	Colchester ...	India.
,, W. E. Hardy	Caterham ...	...
,, S. F. St. D. Green, M.D. ...	Aldershot ...	...
,, W. P. Gwynn	Rangoon ...	Shwebo.
,, S. O. Hall	Fermoy ...	India.
,, H. H. Norman, M.B.	Shwebo ...	Woolwich.
,, A. M. MacLaughlin, M.B. ...	Edinburgh ...	India.
,, B. F. Wingate	Wellington ...	Bellary.
,, A. D. Jameson	Chakrata ...	Peshawar.
,, C. H. Furnivall	Ziarat ...	Quetta.
,, J. S. Bostock, M.B. ...	Ranikhet ...	Meerut.
Captain A. W. Sampey	Naini Tal ...	Fyzabad.
,, H. V. Bagshawe ...	Aberystwyth Camp	Cairo.
,, A. E. B. Wood, M.B. ...	—	N. China.
,, C. W. Holden	Tientsin ...	R.A.M. Coll.
,, G. W. G. Hughes	Strensall ...	,, ,,
,, J. E. Powell	Alderney ...	,, ,,
,, O. Iovers, M.B.	Dublin ...	,, ,,
,, M. C. Wetherell, M.D. ...	Kildare ...	,, ,,
,, A. A. Meaden	Cahir ...	,, ,,
,, J. H. Campbell, M.B. ...	Chester ...	,, ,,
,, H. C. Sidgwick, M.B. ...	Woolwich ...	,, ,,
,, G. R. Painton	—	E. Command.
,, N. Low	Belfast ...	R.A.M. Coll.
,, A. N. Fraser, M.B.	London ...	Singapore
,, R. H. L. Cordner	Upavon ...	R.A.M. Coll.
,, K. A. C. Doig	Dover ...	Alderney.
,, P. A. Lloyd Jones, M.B. ...	Aldershot ...	London.
,, G. B. F. Churchill ...	Moiktila ...	S. Command.
,, C. J. Coppinger, M.B. ...	Limerick ...	R.A.M. Coll.
,, R. G. Meredith, M.B. ...	Lichfield ...	R.A.M. Coll.
,, F. E. Roberts	Edinburgh ...	... ...
,, T. H. Gibbon, M.D. ...	Canterbury ...	
,, J. E. Hoar	Dundalk ...	
,, H. O. M. Beadnell	Trawsfynydd	
,, E. G. R. Lithgow	Cosham ...	Upavon.
,, C. W. O'Brien	Kilbride ...	R.A.M. Coll.
,, G. G. Tabuteau	Dublin ...	... ...
,, J. M. B. Rahilly, M.B. ...	Woolwich ...	... ...
,, R. E. Humfrey, M.B. ...	Curragh ...	... ...
,, W. G. Maydon, M.B. ...	Aberdeen ...	... ...
,, G. Ormrod, M.B.	Holywood ...	... ...
,, H. G. Sherren	Bordon ...	... ...
,, R. P. Lewis	Aldershot ...	... ...
,, J. H. Graham, M.B. ...	Ballincollig ...	... ...
,, W. Benson, M.B.	Dublin ...	... ...
,, G. E. Ferguson	Wool Camp ...	... ...
,, C. E. W. S. Fawcett, M.B. ...	[illegible] ...	... ...
,, T. Scatchard	Ad[illegible] Camp	... ...
,, V. H. Symons	[illegible] ...	... ...
,, R. A. Bryden	Hounslow ...	... ...
,, E. L. Moss	[illegible] ...	... ...
,, M. J. Cromie	Glen Imaal ...	...
,, E. T. Potts, M.D.	Dublin ...	... ...
,, G. W. W. Ware, M.B. ...	Cosham ...	... ...
,, W. C. Nimmo	Chatham ...	... ...
,, M. Keane	Colchester ...	...
,, C. F. White, M.B.	[illegible] ...	... ...
,, F. C. Sampson, M.B.	Barry Camp ...	... ...
,, T. S. Blackwell	Athlone ...	... ...
,, P. J. Marett	Gravesend ...	... ...
,, A. D. O'Carroll, M.B.	Bulford ...	... ...
,, W. Egan, M.B.	Mandalay ...	Irish Comm'd.
,, E. M. O'Neill, M.B.	Jhansi ...	... ...
,, G. B. Edwards	Bulford ...	R.A.M. Coll.
,, W. C. Smales	Poona ...	,, ,,
,, A. H. Bond	Delhi ...	Cork.
,, T. C. C. Leslie	Youghal ...	R.A.M. Coll.
,, A. C. Vidal	Bloemfontein ...	Wynberg.
,, J. A. H. Sim, M.B.	Buddon ...	R.A.M. Coll.
,, W. J. E. Bell, M.B.	Cosham ...	... ...
,, J. J. O'Keeffe, M.B.	Rurki ...	... ...
,, A. H. Jacob	Rawal Pindi ...	Irish Comm'd.
,, A. D. Fraser, M.B.	Londonderry ...	R.A.M. Coll.
,, H. G. Gibson	Malta ...	Irish Comm'd.
,, H. M. J. Perry	Woolwich ...	R.A.M. Coll.
,, L. A. A. Andrews	Belfast ...	... ...
,, V. T. Carruthers, M.B., F.R.C.S.Edin.	Queenstown ...	... ...

		FROM	TO
Captain	G. F. Dawson, M.B.	Agra	Meerut.
,,	B. A. Odlum	Bloemfontein	Simonstown.
,,	A. C. H. Suhr, M.B.	Malta	Straits Settlements.
,,	C. M. Rigby	Jubbulpore	Bombay.
,,	A. E. G. Fraser	Khartoum	Cairo.
,,	W. J. Tobin	Bellary	Bangalore.
,,	J. A. Clark, M.B.	Cairo	Khartoum.
Lieutenant	A. S. Cane	London	India.
,,	P. C. Field	Cairo	Alexandria.
,,	E. L. Fyffe, M.B.	Cork	India.
,,	R. F. Bridges, M.B.	Dover	,,
,,	H. G. Monteith	Aldershot	Hong Kong.
,,	J. K. Gaunt, M.B.	Fermoy	Malta.
,,	T. C. R. Archer	Lydd	S. China.

Vital Statistics.

EPIDEMIC MORTALITY IN LONDON.

[SPECIALLY REPORTED FOR THE "BRITISH MEDICAL JOURNAL."]

THE accompanying diagram shows the prevalence of the principal epidemic diseases during the third quarter of the year. The fluctuations of each disease and its relative fatality, compared with the average in the corresponding periods of recent years, can thus be readily seen, except in the diarrhoea and enteritis among children under 2 years of age, for which the average mortality is not available.

Enteric Fever.—The fatal cases of enteric fever, which had been 57, 31, and 27 in the three preceding quarters, were 29 last quarter, being 12 below the corrected average in the corresponding period of the five preceding years. This disease showed the highest proportional mortality in Kensington, Fulham, St Marylebone, Poplar, and Lewisham. The number of enteric fever patients under treatment in the Metropolitan Asylums Hospitals, which had been 76, 52, and 32 at the end of the three preceding quarters, had risen again to 49 at the end of last quarter; 93 new cases were admitted during the quarter, being equal to the number admitted during the previous quarter.

Small-pox.—No death from small-pox was registered last quarter, and no case of this disease was under treatment in the Metropolitan Asylums Hospitals at the end of the quarter.

Measles.—The deaths from measles, which had been 140, 202, and 433 in the three preceding quarters, declined again last quarter to 376, but were 94 in excess of the average number in the corresponding period of the five preceding years. This disease was proportionally most fatal last quarter in St. Marylebone, Holborn, Finsbury, Poplar, Bermondsey.

Scarlet Fever.—The fatal cases of scarlet fever, which had been 45, 23, and 42, in the three preceding quarters were 44 last quarter, and were equal only to one-half the corrected average number. Among the several boroughs the disease was proportionally most fatal in Kensington, Hammersmith, Fulham, Shoreditch, Deptford, and Greenwich. The Metropolitan Asylums Hospitals contained 1,845 scarlet fever patients at the end of last quarter, against 1,879, 1,295, and 1,380, at the end of the three preceding quarters; 2,856 new cases were admitted during the quarter, against 2,638, 2,051, and 2,039 in the three preceding quarters.

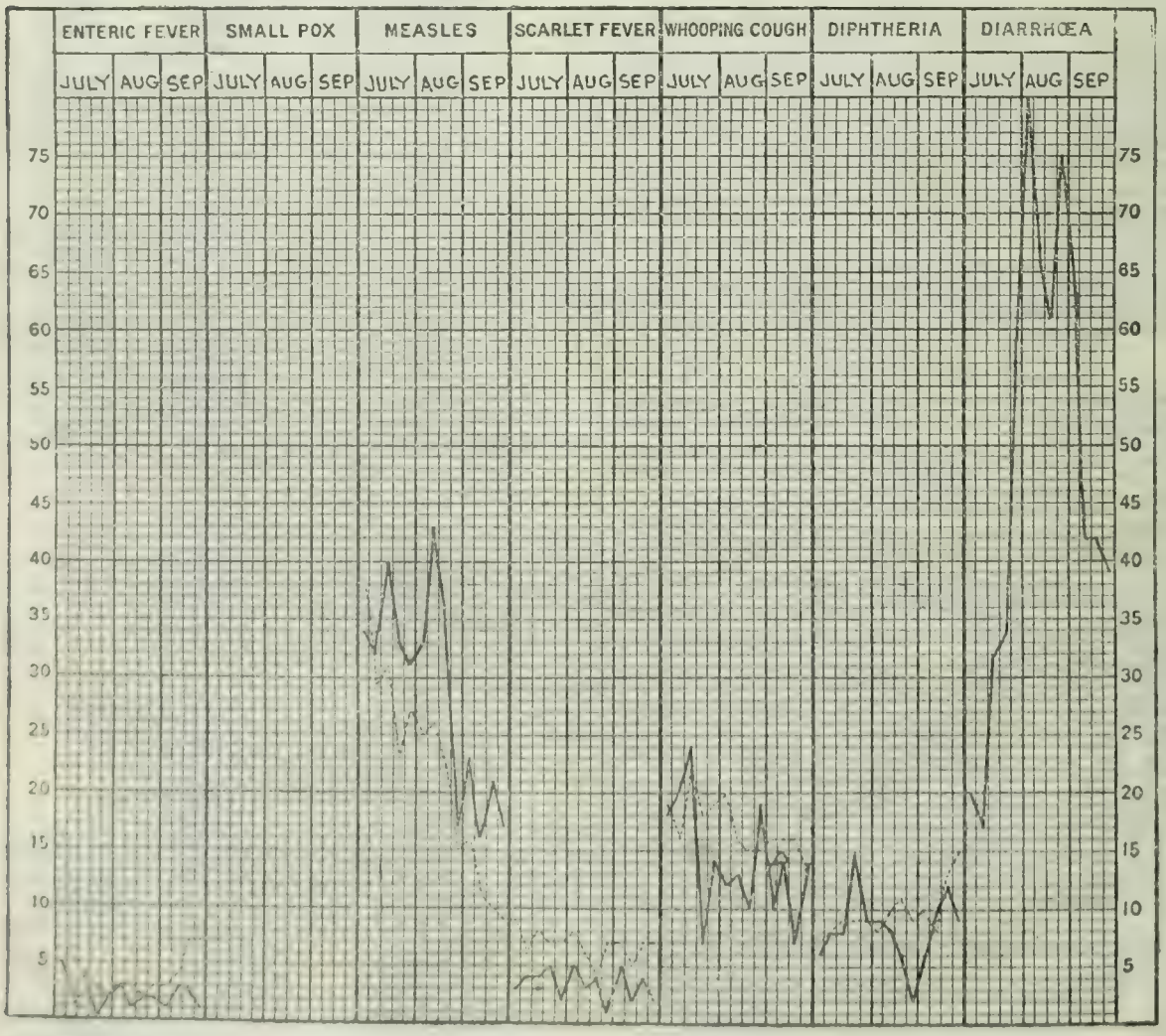
Whooping-cough.—The deaths from whooping-cough, which had been 89, 283, and 354 in the three preceding quarters, declined again last quarter to 182, and were 39 below the corrected average number. The highest death-rates from this disease last quarter were recorded in Hammersmith, Fulham, Chelsea, Holborn, Finsbury, and Shoreditch.

Diphtheria.—The fatal cases of diphtheria, which had been 190, 133, and 99 in the three preceding quarters, rose again last quarter to 108, but were 18 below the corrected average number. The greatest proportional mortality from this disease last quarter was recorded in Hammersmith, Shoreditch, Bermondsey, Greenwich, Lewisham, and Woolwich. The number of diphtheria patients in the Metropolitan Asylums Hospitals, which had been 1,294, 1,045, and 877 at the end of the three preceding quarters, had risen again to 941 at the end of last quarter; 1,513 new cases were admitted during the quarter, against 2,142, 1,706, and 1,440 in the three preceding quarters.

Diarrhoea.—The 629 deaths under this heading are those attributed to diarrhoea and enteritis among children under 2 years of age; measured in proportion to the births registered during the quarter the mortality from this cause was greatest in the City of London, Shoreditch, Stepney, Poplar, Southwark, and Bermondsey.

In conclusion, it may be stated that the aggregate mortality last quarter from these epidemic diseases, excluding diarrhoea, was 3.8 per cent. below the average

DEATHS FROM EPIDEMIC DISEASES IN LONDON DURING THE THIRD QUARTER OF 1912.



Note.—The black lines show the *recorded* number of deaths from each disease during each week of the quarter. The dotted lines show the *average* number of deaths in the corresponding weeks of the five preceding years, 1907-11. Under the heading "Diarrhoea" are given the deaths from diarrhoea and enteritis among children under 2 years of age; the corrected average number of these deaths is not available.

HEALTH OF ENGLISH TOWNS.

In ninety-five of the largest English towns 8,736 births and 4,748 deaths were registered during the week ending Saturday, November 2nd. The annual rate of mortality in these towns, which had been 13.7, 14.2, and 13.3 per 1,000 in the three preceding weeks, rose to 14.0 per 1,000 in the week under notice. In London the death-rate was equal to 14.1, against 15.5, 16.8, and 14.1 per 1,000 in the three previous weeks. Among the ninety-four other large towns the death-rates in the week under notice ranged from 3.0 in Newport (Mon.), 6.4 in Wimbledon, 7.0 in Blackpool, 7.1 in Swindon, 7.3 in Barrow-in-Furness, and 8.0 in Derby, and 19.4 in Dewsbury, 19.6 in Liverpool, 20.1 in Barnsley, 22.0 in Middlesbrough, 22.7 in Bootle, and 23.8 in South Shields. Measles caused a death-rate of 1.9 in Birmingham and in Liverpool, 2.0 in Rhondda, 2.1 in West Ham, 2.2 in Swansea, 2.3 in Newcastle-on-Tyne, 2.4 in Middlesbrough, 2.7 in St. Helens, 2.9 in Bootle, 3.3 in West Hartlepool, and 3.5 in Tynemouth. The mortality from the remaining infective diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children (under 2 years of age) from diarrhoea and enteritis, which had been 129, 121, and 105 in the three preceding weeks, were 107 in the week under notice, and included 28 in London, 11 in Birmingham, 10 in Liverpool, and 8 in Manchester. The causes of 39, or 0.8 per cent. of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 7 were registered in Liverpool, 6 in Birmingham, 3 in St. Helens, and 2 each in Stoke-on-Trent, Coventry, Sheffield, Hull, and South Shields. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,095, 2,217, and 2,258 at the end of the three preceding weeks, had further risen to 2,278 on Saturday, November 2nd; 278 new cases were admitted during the week, against 322, 345, and 283 in the three preceding weeks.

In ninety-five of the largest English towns 8,926 births and 4,999 deaths were registered during the week ending Saturday, November 9th. The annual rate of mortality in these towns, which had been 14.2, 15.3, and 14.0 per 1,000 in the three preceding weeks, rose to 14.8 per 1,000 in the week under notice. In London the death-rate was equal to 14.4 per 1,000, against 16.8, 14.1, and 14.1 in the three previous weeks. Among the ninety-four other large towns the death-rates ranged from 3.2 in Bournemouth, 7.4 in Southport, 7.5 in Ilford, 7.8 in Edmonton, 7.9 in Newport (Mon.), and 8.0 in Barnsley to 20.4 in Gateshead, 20.6 in Liverpool, 20.7 in Hastings, 21.0 in Middlesbrough, 22.0 in Rochdale, and 25.2 in South Shields. Measles caused a death-rate of 2.4 in Liverpool, 2.5 in Wallasey, 2.7 in Leicester and in Birkenhead, 3.6 in Lincoln, 3.8 in West Ham and in Coventry, and 3.9 in Middlesbrough, and diphtheria of 1.3 in Norwich, 1.6 in Barrow-in-Furness, and 1.9 in Coventry. The mortality from the remaining infectious diseases showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children under 2 years of age from diarrhoea and enteritis, which had been 121, 105, and 107 in the three preceding weeks, fell to 82 in the week under notice, and included 16 in London, 11 in Liverpool, 9 in Birmingham, 7 in Manchester, and 4 in Sheffield. The causes of 48, or 1.0 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number, 6 were registered in Birmingham, 6 in Liverpool, 6 in Gateshead, and 3 in Manchester. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospital and the London Fever Hospital, which had been 2,217, 2,258, and 2,278 in the three preceding weeks, further rose to 2,349 on Saturday last; 326 new cases were admitted during the week, against 345, 283, and 278 in the three previous weeks.

In ninety-five of the largest English towns 8,138 births and 4,761 deaths were registered during the week ending Saturday, November 16th. The annual rate of mortality in these towns, which had been 13.3, 14.0, and 14.8 per 1,000 in the three preceding weeks, fell to 14.1 per 1,000 in the week under notice. In London last week the death-rate was equal to 14.4, against 14.1, 14.1, and 14.4 per 1,000 in the three previous weeks. Among the ninety-four other large towns the death-rates last week ranged from 5.0 in Ilford, 5.5 in Wimbledon, 5.8 in Eastbourne, 6.9 in Acton, 7.1 in Swindon, and 7.4 in Cambridge to 19.8 in Newcastle-on-Tyne, 20.2 in Merthyr Tydfil, 21.9 in South Shields, 22.2 in West Ham, 22.3 in Lincoln, and 23.1 in Aberdare. Measles caused a death-rate of 2.7 in Birmingham and in St. Helens, 2.9 in Middlesbrough, 3.3 in South Shields and in Newcastle-on-Tyne, 3.6 in Lincoln, 3.9 in West Ham, 4.0 in Sunderland, in Tees and in Preston, and 4.1 in West Hartlepool; whooping-cough of 3.7 in Cambridge; and diphtheria of 1.1 in Portsmouth. The mortality from scarlet fever and enteric fever showed no marked excess in any of the large towns. A fatal case of small-pox was registered in Wolverhampton, but not one in any other of the ninety-five towns. The deaths of children (under 2 years of age) from diarrhoea and enteritis, which had been 133, 107, and 82 in the three preceding weeks, were 85 last week, and included [illegible], 7 in Liverpool, 5 in Nottingham, and 4 in [illegible], in Stoke-on-Trent, in Manchester, and in Sheffield. The causes of 40, or 0.8 per cent. of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 11 were registered in Birmingham, 3 in Liverpool, 3 in St. Helens, 3 in Gateshead, and 2 each in Southend-on-Sea, Bury, and Manchester. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,258, 2,279, and 2,350 at the end of the three preceding weeks, had declined to 2,335 on Saturday last; 254 new cases were admitted during the week, against 283, 279, and 326 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In eighteen of the largest Scottish towns 1,079 births and 675 deaths were registered during the week ending Saturday, November 2nd. The annual rate of mortality in these towns, which had been 14.1, 13.6, and 14.4 per 1,000 in the three preceding weeks, rose to 16.1 in the week under notice, and was 2.1 per 1,000 in excess of the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rates in the week under notice ranged from 7.9 in Hamilton, 9.0 in Clydebank, and 9.8 in Govan to 17.5 in Glasgow, 17.9 in Greenock, and 22.7 in Dundee. The mortality from the principal infectious diseases averaged 1.1 per 1,000, and was highest in Kilmarnock and Motherwell. The 264 deaths from all causes registered in Glasgow included 7 from whooping-cough, 6 from infantile diarrhoeal diseases, 4 from diphtheria, 1 from measles, and 1 from scarlet fever. Two deaths from whooping-cough were recorded in Paisley and 2 in Hamilton, and 3 deaths from infantile diarrhoeal diseases in Dundee and 2 in Kilmarnock.

In eighteen of the largest Scottish towns 1,065 births and 616 deaths were registered during the week ending Saturday, November 9th. The annual rate of mortality in these towns, which had been 13.6, 14.4, and 16.1 per 1,000 in the three preceding weeks, declined to 15.4 in the week under notice, but was 0.6 per 1,000 above the rate recorded in the ninety-five large English towns. Among the several Scottish towns the death-rate in the week under notice ranged from 6.5 in Motherwell, 8.4 in Partick, and 10.7 in Falkirk to 18.0 in Kilmarnock, 19.5 in Dundee, and 23.3 in Kirkcaldy. The mortality from the principal infectious diseases averaged 1.0 per 1,000, and was highest in Falkirk and Coatbridge. The 232 deaths from all causes registered in Glasgow included 3 from measles, 3 from infantile diarrhoeal diseases, 2 from whooping-cough, 2 from diphtheria, and 1 from scarlet fever. Two deaths from whooping-cough were recorded in Leith, 3 from enteric fever in Aberdeen, and 2 from small-pox in Kirkcaldy.

In eighteen of the largest Scottish towns 1,055 births and 583 deaths were registered during the week ending Saturday, November 16th. The annual rate of mortality in these towns, which had been 14.4, 16.1, and 15.4 per 1,000 in the three preceding weeks, rose to 16.3 in the week under notice, and was 2.2 per 1,000 above the rate in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 5.9 in Coatbridge, 10.3 in Clydebank, and 10.6 in Hamilton to 17.8 in Aberdeen, 19.9 in Greenock, and 22.7 in Dundee. The mortality from the principal infective diseases averaged 0.9 per 1,000, and was highest in Greenock and Govan. The 265 deaths from all causes registered in Glasgow included 5 from diphtheria, 5 from infantile diarrhoeal diseases, 3 from whooping-cough, 2 from scarlet fever, and 1 from enteric fever. Two deaths from whooping-cough were recorded in Edinburgh, 2 in Aberdeen, and 2 in Govan, and 3 deaths from enteric fever in Aberdeen and 2 in Greenock.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, November 2nd, 539 births and 406 deaths were registered in the twenty-two principal urban districts of Ireland, as against 574 births and 393 deaths in the preceding week. The annual death-rate in these districts, which had been 17.6, 16.5, and 17.8 per 1,000 in the three preceding weeks, rose to 18.3 per 1,000 in the week under notice, this figure being 4.3 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 18.5 and 16.8 respectively, those in other districts ranging from 4.2 in Lisburn and 4.5 in Wexford to 37.4 in Lurgan and 47.4 in Limerick, while Cork stood at 17.0, Londonderry at 20.4, and Waterford at 15.2. The zymotic death-rate in the twenty-two districts averaged 2.9 per 1,000, as against 1.8 in the preceding period.

During the week ending Saturday, November 9th, 569 births and 396 deaths were registered in the twenty-two principal urban districts of Ireland, as against 539 births and 406 deaths in the preceding week. The annual death-rate in these districts, which had been 16.5, 17.8, and 18.3 per 1,000 in the three preceding weeks, fell to 17.9 per 1,000 in the week under notice, this figure being 3.1 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 18.0 and 16.8 respectively, those in other districts ranging from 5.0 in Kilkenny and 5.1 in Clonmel to 33.4 in Drogheda and 35.7 in Dundalk; while Cork stood at 15.6, Londonderry at 16.6, Limerick at 28.4, and Waterford at 13.3. The zymotic death-rate in the twenty-two districts averaged 1.8 per 1,000, as against 2.9 in the preceding period.

During the week ending Saturday, November 16th, 536 births and 377 deaths were registered in the twenty-two principal urban districts of Ireland, as against 569 births and 396 deaths in the preceding week. The annual death-rate in these districts, which had been 17.8, 18.3, and 17.9 per 1,000 in the three preceding weeks, fell to 17.0 per 1,000 in the week under notice, this figure being 2.9 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 18.7 and 16.1 respectively, those in other districts ranging from 4.2 in Drogheda and 4.6 in Ballymena to 30.6 in Clonmel and 35.2 in Limerick, while Cork stood at 15.6, Londonderry at 10.2, and Waterford at 19.0. The zymotic death-rate in the twenty-two districts averaged 1.9 per 1,000, as against 1.8 in the preceding period.

Hospitals and Asylums.

THE GENERAL HOSPITAL, BIRMINGHAM.

The statistical report for 1911 shows that the number of in-patients was 5,252, and the out-patients 78,561. The medical in-patients numbered 1,529, and of these 1,173 were discharged, 225 died, 11 brought in dead, and 120 transferred to the Jaffray Branch Hospital. Of the diseases which most frequently occurred, there were 32 cases of enteric fever of whom 4 died, 53 of pneumonia with 10 deaths, 64 of acute rheumatism with 3 deaths, 43 cases of chorea, 53 of bronchopneumonia with 10 deaths, 31 of empyema with 5 deaths, 67 of gastric ulcer with 4 deaths. During the epidemic of acute anterior poliomyelitis there were 10 admitted to the hospital as in-patients.

The surgical in-patients numbered 3,140, and of these 2,608 were discharged, 294 died, 14 were brought in dead, and 224 were transferred to the Jaffray Branch Hospital. There were 385 cases of appendicitis, and of these 31 were in the acute stage, and no deaths occurred; 120 were catarrhal and recurrent, with no deaths; 234 were with abscess, with 31 deaths.

In the gynaecological department 288 patients were treated, and of these 252 were cured, 15 relieved, 6 unrelieved, 10 died, 2 transferred to surgical or medical wards, and 3 went out against advice.

There were 212 cases of carcinoma treated in the hospital during 1911, and of these the organs affected were as follows: Lips 4, tonsils 2, mouth 15, tongue 9, parotid 1, oesophagus 19, stomach 25, colon 20, rectum 22, anus 1, peritoneum 3, liver 13, pancreas 2, bladder 10, prostate 5, penis 2, scrotum 1, breast 41, thyroid 1, uterus 12, ovaries 2, clitoris 1, vagina 1.

The different inhalation anaesthetics administered alone, in mixture, or in sequence were: Ether, 187; ethyl chloride and ether, 318; E_2C and ether, 93; N_2O and ether, 3; chloroform, 694; E_2C, 951; ethyl chloride, ether, and E_2C, 142; ethyl chloride, ether, and chloroform, 254; ethyl chloride, 528; N_2O, 384. Spinal injection was used in 4 cases, local anaesthesia in 126 cases. There were four fatalities during anaesthesia:

(1) male, 31 years, died during the administration of chloroform for a proposed operation for periostitis of femur and necrosis of radius; (2) female, 16 years, died under chloroform for the removal of tuberculous glands of neck; (3) male, 35 years, died under chloroform administered for suturing a cut throat; (4) female, 37 years, died under E_2C, administered for a coeliotomy for the relief of general peritonitis. The last two patients were in a moribund condition before the commencement of the administration.

In the *x*-ray and light department the number of radiographs was 1,610; 86 examinations were made after the administration of food containing bismuth. There were 230 patients treated, and of these 125 cases of ringworm were successfully treated. Carbonic dioxide snow was applied to 16 patients. There were 180 photographs taken and 1,830 prints supplied, including radiographs.

In the dental department the total number of patients treated was 409.

At the Jaffray Branch Hospital 344 patients were treated, and of these 192 were cured, 51 much relieved, 12 relieved, 15 died, 22 transferred to the General Hospital, and 52 remained in hospital at the end of the year.

NORTH INFIRMARY, CORK.

THE annual meeting of the supporters of the North Charitable Infirmary, Cork, was held on May 4th. The Lord Mayor presided. The honorary secretary read the annual report, which showed that 1,309 intern patients occupied beds, of which 341 were medical cases and 968 surgical. Of these, 1,171 cases were either cured or relieved; the death-roll registered 79. The daily average number of beds occupied was 80, though at one period of the year there were as many as 109 patients in the house. The attendances at the extern departments, medical, surgical and special, were very numerous, and the accidents attended by day and night exceeded the average of previous years. The treasurer announced that the year had begun with a balance against them of £127 13s. 3d., and they finished up with a debtor balance of £159 6s. 2d. During the year a new ophthalmic department had been started, and a new pathologist had been appointed; in the *x*-ray department the latest and most improved appliances had been installed.

SEAFORTH SANATORIUM, ROSS-SHIRE.

DR. MACLEAN, Resident Medical Officer of the Seaforth Sanatorium, Conon Bridge, Ross-shire—an institution founded and maintained by Colonel and Mrs. Stewart-Mackenzie of Seaforth—in his annual report says: "During the year 1910-1911 we received into the institution 53 cases, and discharged 43. There were no deaths. Of these 43 cases there were 12 who were very much worse on discharge than on admission. Of the remaining number 12 might be described as cured or arrested, while the remainder were much improved. Of the 43, 15 could be described as in an early stage of the disease. All the others had gross cavities, and 8 of them had both lungs considerably destroyed and were in a very advanced stage of the disease. The average residence of discharged patients was 15.3 weeks. The total occupation of beds in terms of 16 beds was 80.3 per cent. At present, and for some time back, the controversy about the treatment and care of phthisis has been so keen, so bitter, and finally so personal, that common decency suspends judgement, but regarding sanatorium treatment one fact seems to stand out unmistakably clear—namely, that to get really good results, fair to the method and profitable to the patients—it is absolutely needful that the cases should be very early and in addition carefully selected as to type, meaning that even a case in an early stage may have such a low resisting power or such a virulent type of infection as in our present state of knowledge, to make anything impossible but a rapid course terminating fatally. Although this is quite a recognized part of medical knowledge, we in common with other similar institutions have to again and constantly complain of the type of case sent us. The managers have at last decided to stick strictly to the conditions of the schedule, and to carry out as far as possible the purpose of the foundation, which is for the treatment of early cases, or such as show reasonable grounds for expecting a recovery sufficient to enable them to earn their livelihood. Patients who are found not to conform to the conditions of the schedule of admission shall be refused treatment."

STIRLING DISTRICT ASYLUM.

THE annual report for the year ending May 14th, 1911, of Dr. R. B. Campbell, the Medical Superintendent of this asylum, which serves the counties of Stirling, Dumbarton, Linlithgow, and Clackmannan, shows that the total cases under care during the year numbered 936, and the average number daily resident was 75[illegible].

During the year 219 were admitted, of whom 171 were first and 48 not-first admissions. In 99 the attacks were first attacks within [illegible] and in 31 more within twelve months of admission; in 52 not-first attacks within twelve months; in 4 the duration was unknown, and in the remainder, including 10 congenital cases, the attacks were of more than twelve months' duration. Only 8 per cent. of the admissions were in average health. The total admissions were classified according to the forms of mental disorder into: Simple and acute mania, 70; simple and acute melancholia, 51 (no cases of chronic mania or melancholia admitted); secondary, senile, and organic dementia, 24; general paralysis, 14; confusional insanity, 19; delusional insanity, 24; acute delirious insanity, 8; primary dementia, 1; and congenital defect, 8. During the year 75 were discharged as recovered, giving a recovery-rate on the admissions of 34.2 per cent., and 50 as relieved, of whom 32 were quiet and harmless patients who were either handed over to the care of their relatives or boarded out in suitable homes. Also during the year 75 died, giving a death-rate on the average number resident of 8.1 per cent. The deaths were due in 25 to nervous diseases, including 11 from general paralysis; in 37 to chest diseases, including 15 from heart disease and 10 from pulmonary consumption; in 9 to abdominal diseases; and in 5 to general diseases, including 2 from general tuberculosis. The deaths from tuberculous disease thus formed 15.5 per cent. of the total deaths. The general health was satisfactory during the year, and no epidemic disease occurred.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

AUSTRALIA: ROYAL AUSTRALIAN NAVY.—Two vacancies for Surgeons.

AYR DISTRICT ASYLUM.—Junior Assistant Physician (male). Salary, £140 per annum.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Honorarium at the rate of 52 guineas per annum.

BIRMINGHAM CITY MENTAL HOSPITAL.—Assistant Medical Officer. Salary, £150 per annum, rising to £200.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer. Salary at the rate of £50 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Salary at the rate of £70 per annum.

CARDIFF: KING EDWARD VII'S HOSPITAL.—(1) Senior Resident Medical Officer. Salary, £120 per annum. (2) Honorary Assistant Anæsthetist.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £150 per annum.

CARMARTHEN: JOINT COUNTIES ASYLUM.—Second Assistant Medical Officer. Salary, £160 per annum, rising to £180.

CENTRAL LONDON SICK ASYLUM DISTRICT.—Assistant Medical Officer at the Hendon Asylum. Salary, £120 per annum, rising to £150.

DUBLIN: ROYAL CITY OF DUBLIN HOSPITAL.—Ophthalmic Surgeon.

DUMFRIES: CRICHTON ROYAL INSTITUTION.—Second Assistant Physician. Salary, £200 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer (Male) to the Casualty Department, and House-Physician. Salary at the rate of £100 and £75 per annum respectively.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—Physician to Out-patients.

FIFE AND KINROSS EDUCATION COMMITTEE.—Assistant School Medical Officer (Male). Salary, £250 per annum, rising to £300.

GLASGOW MATERNITY AND WOMEN'S HOSPITAL.—(1) Two Out-door House-Surgeons at the Hospital. (2) One Out-door House-Surgeon at the West End Branch.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway Road, N.—House-Physician. Salary at the rate of £40 per annum.

GUY'S HOSPITAL MEDICAL SCHOOL.—Gordon Lecturer on Pathology. Salary, £600 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum.

ITALIAN HOSPITAL, Queen Square, W.C.—House-Surgeon. Salary at the rate of £60 per annum.

KING'S COLLEGE, W.C.—Senior Demonstrator and Lecturer in Anatomy.

KINGSTON UNION.—Junior Assistant Resident Medical Officer to the Infirmary and Workhouse. Salary, £2 10s. per week.

LEWES VICTORIA HOSPITAL AND DISPENSARY.—Resident Medical Officer. Salary, £120 per annum.

LINCOLN COUNTY HOSPITAL.—Junior Male House-Surgeon. Salary at the rate of £100 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Surgical Registrar. Honorarium at the rate of 40 guineas per annum.

LONDON UNIVERSITY.—Examinerships: A. Higher Examinations for Medical Degrees; (1) Four in Medicine; (2) Four in Surgery; (3) Two in Forensic Medicine and Hygiene; (4) Two in State Medicine. B. First Examination and Second Examination. Part I for Medical Degrees. (5) Two in General Biology; (6) Two in Chemistry; (7) Two in Physics. C. Second Examination. Part II for Medical Degrees. (8) Two in Anatomy; (9) Two in Pharmacology; (10) Two in Physiology.

LOUGHBOROUGH AND DISTRICT GENERAL HOSPITAL AND DISPENSARY. Male Resident House-Surgeon. Salary, £120 per annum.

LOWESTOFT HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

MAIDSTONE: KENT COUNTY ASYLUM.—Male Fourth Assistant Medical Officer. Salary, £200 to £220 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN. Honorary Assistant-Surgeon for Women.

MEDICAL MISSION HOSPITAL, Plaistow, E.—Junior Resident Medical Officer for Dispensary.

MIDDLESEX HOSPITAL, W.—Lecturer on Pharmacology.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—House-Physician. Salary, £75 per annum.

NEWARK-ON-TRENT HOSPITAL AND DISPENSARY.—Resident Medical Officer. Salary, £100 per annum.

NORFOLK EDUCATION COMMITTEE.—Assistant Medical Officer. Salary, £250 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £100 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Physician. Salary at the rate of £75 per annum.

PRESTON: COUNTY ASYLUM, Whittingham.—Assistant Medical Officer. Salary, £150 per annum, rising to £250.

ROYAL EAR HOSPITAL, Soho, W.—Honorary Assistant Anaesthetist.

SOMERSET AND BATH ASYLUM, Wells.—Second Assistant Medical Officer (Male). Salary, £135 per annum, rising to £155.

STOCKPORT INFIRMARY.—Junior House-Surgeon (Male). Salary, £80 per annum.

STANNINGTON SANATORIUM FOR CONSUMPTIVE CHILDREN.—Resident Bacteriologist (lady). Salary, £100 per annum.

UNIVERSITY COLLEGE HOSPITAL, Gower Street, W.C.—Obstetric Registrar.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House-Surgeon. Salary, £75 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician. Appointment for six months. (2) Dermatologist.

WESTMINSTER HOSPITAL, Broad Sanctuary, S.W.—Fourth Assistant Physician.

WESTMINSTER HOSPITAL MEDICAL SCHOOL, Caxton Street, S.W.—Lecturer on Tropical Diseases.

WESTON-SUPER-MARE HOSPITAL.—House-Surgeon. Salary, £100 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Nottingham North (Nottingham), Spalding (Lincolnshire).

MEDICAL REFEREE.—The Home Secretary announces a vacancy as Medical Referee under the Workmen's Compensation Act, 1906, for Llanfyllin and Welshpool County Courts.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

BREBNER, C. S., M.D.Edin., Medical Officer of Health to the Chiswick Urban District Council.

BROWN, R. C., F.R.C.S., Surgeon to In-patients at the Alfred Hospital, Melbourne.

CONNOLLY, V. L., M.B., B.Ch., Sixth Assistant Medical Officer of the Colney Hatch Asylum, vice H. C. Waldo, M.R.C.S., L.R.C.P., resigned.

CRAMB, Rutherford, M.B.Glasg., School Medical Inspector, County of Essex.

CRIBB, H. G., M.R.C.S., L.R.C.P., Medical Superintendent of the Sedgefield Asylum, co. Durham.

DAVIES, G. Meredith, M.B., B.S.Lond., Resident Medical Officer at British Lying-in Hospital, Endell Street, W.C.

EGAN, John, L.R.C.P. and S.I., Senior Resident Medical Officer to the Guest Hospital, Dudley.

HOLLOW, J. T., M.B., Medical Superintendent at the Hospital for Insane, Beechworth, Victoria, vice A. W. Philpott, M.D.

LEIGH, J. Dickinson, M.D., F.R.C.S., D.P.H., Medical Officer of Health and School Medical Officer (whole time) for the Borough of Hartlepool.

MAY, Otto, M.D.Cantab., M.R.C.P., Permanent Medical Officer to the Prudential Assurance Company.

MACPHERSON, D. A., M.R.C.P. and S.Edin., Fifth Assistant Medical Officer of the Long Grove Asylum of the London County Council.

MURPHY, C. F., L.R.C.P. and S.I., District Medical Officer of the Axminster Union.

PHILPOTT, A. W., M.D., Medical Superintendent at the Hospital for Insane, Ararat, vice Dr. Mullen.

SALTER, A. G., M.B., Honorary Physician to the Brisbane Industrial Home, Queensland.

SHAW, A. F. Bernard, B.A., M.B., D.P.H., Assistant Medical Officer of Health and Assistant School Medical Officer, City and Port of Cardiff.

SUTHERLAND, R., M.B., Ch.B.Vict., District Medical Officer of the Chard Union.

WARRINGTON, W. B., M.D., F.R.C.P., External Examiner in Medicine in the University of London.

WILLS, H. W., M.B., B.Sc.Lond., Sixth Assistant Medical Officer of the Long Grove Asylum of the London County Council.

YEARNSHAW, H., M.B., C.M.Glas., District Medical Officer of the Salford Union.

EDINBURGH ROYAL INFIRMARY.—The following appointments have been made:—

Supervisors of the Administration of Anaesthetics: F. D. Cairns, M.B., Ch.B., to Dr. A. H. F. Barbour; Fergus Armstrong, M.B., Ch.B., to Mr. Brewis.

Non-Resident House-Surgeon: John Jamieson, M.B., Ch.B., to Dr. Malcolm Farquharson.

Clinical Assistants: F. E. Reynolds, M.B., Ch.B., to Dr. W. T. Ritchie, M.W.R., and J. Donaldson Saner, M.B., C.M., to Dr. W. G. Sym.

MANCHESTER ROYAL INFIRMARY.—The following appointments have been made:—

Surgical Registrar: E. E. Hughes, F.R.C.S.Eng.

Resident Medical Officer, Barnes Convalescent Home: G. B. Warburton, F.R.C.S.Eng.

Medical Officer at the Central Branch: James M. Scott, M.A., M.B., Ch.B.Glasg.

Assistant Medical Officer, Barnes Convalescent Home, Cheadle: Samuel Rutherford, M.B., Ch.B.Glas.

Resident Surgical Officer, Manchester Royal Infirmary: Howard Buck, F.R.C.S.Eng. (reappointment).

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be remitted in Post Office Orders or Stamps with the request that the notice may appear in the current issue. We must receive announcements not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

DAVIDSON.—On November 13th, the wife of Dr. Duncan Davidson, M.D., 15, Priory Row, Coventry, of a daughter.

GAUNTLETT.—On November 17th, at Bloxham, Oxon., the wife of Harry Leon Gauntlett, M.R.C.S., L.R.C.P., A.K.C., of a daughter.

WARING.—On October 28th, at Alverstoke, Hants, the wife of Major A. H. Waring, R.A.M.C., of a son.

MARRIAGE.

ETTERY—TAYLOR.—On October 26th, at St. George's, Bloomsbury, W., Henry George Ellery, L.R.C.P., son of the late Henry James Ellery, M.D., Axminster, Devon, to Mary H. Taylor, widow of the late William Taylor, Esq., Haulog, St. Vincent Road, Westcliff-on-Sea.

DEATHS.

BARRITT.—On November 13th, at 15, High Street, Spalding, Gilbert Lacy Barritt, M.R.C.S., L.R.C.P., third son of the late John Barritt, and grandson of the late Gilbert Lacy, of Lacy House, Eastwood, Todmorden, Yorkshire.

BLICK.—On November 16th, at 169, Perry Vale, Forest Hill, London, Graham T. B. Blick, J.P., M.D., M.R.C.S.Eng., L.R.C.P.Lond., L.S.A., of Broome, West Australia, age 44, son of the late Thomas E. Blick, M.R.C.S.Eng., L.S.A., of Islip, Oxfordshire. Funeral on November 21st at Golder's Green.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. CASSELL AND COMPANY announce the publication of the third edition of Dr. Comyns Berkeley's *Handbook for Midwives and Maternity Nurses*. In addition to being carefully revised, two new appendices on venereal disease and Caesarean section have been added.

Messrs. Baillière, Tindall and Cox announce the publication of a second edition of the English translation of Dieulafoy's *Textbook of Medicine*. The whole work has been thoroughly revised. The fifteenth French edition of the *Manuel de Pathologie Interne* was first translated into English and published in June, 1910, and the publishers found it necessary to reprint no less than three times within a period of eleven months. With the publication of this second edition a total of 17,000 copies will have been issued. The same publishers also announce a translation from the German of Professor Schmieden's well-known *Course of Operative Surgery*, translated and edited by Dr. Arthur Turnbull, Demonstrator of Anatomy at the University of Glasgow. It is copiously illustrated.

Mr. Heinemann announces the publication of a volume entitled *The Positive Evolution of Religion*, in which Mr. Frederic Harrison has summed up his many years' study in philosophy; a work by M. Augustin Filon on *The Prince Imperial*, based on material chiefly furnished him by the Empress Eugénie; Sir Arthur Pinero's *Preserving Mr. Panmure* and three of Mr. Maugham's best-known comedies, *Mrs. Dot*, *Penelope*, and *The Explorer* (it may be of interest to remind our readers that Mr. Maugham is a member of the medical profession); Professor Maspero's book on *Egypt*, Mrs. Strong's work on *Rome*, and M. Dieulafoy's *Spain* (volumes of the series *Ars Una, Species Mille*); *All the Tales from Shakespeare*, with reproductions of the paintings of the great masters. The new volume of the Modern Criminal Science Series announced for publication this autumn is a translation of Gabriel Tarde's *Penal Philosophy*. Mr. Heinemann also announces the publication of a book of travel entitled *In the Shadow of the Bush*. The author is Mr. P. Amoury Talbot, who has recently carried out explorations in Northern Nigeria, traversing the country between the bend of the Cross River and the German Cameroons on behalf of the British Government. He has also collected much detail about the natives, and discovered many new species of flowers.

Messrs. Jack, of Edinburgh, announce the issue this week of a fourth dozen of "The People's Books." Among the subjects treated are *Hypnotism*, by Dr. A. M. Hutchison; *The Baby, a Mother's Book by a Mother*, by a University Woman; *Motherhood, a Wife's Handbook*, by Dr. H. S. Davidson; and *The Training of the Child*, by G. Spiller.

Messrs. J. and A. Churchill will shortly publish a new work by Mr. A. Hopewell-Smith, entitled, *An Introduction to Dental Anatomy and Physiology, Descriptive and Applied*, which is intended as a textbook on the subject primarily for students and practitioners of dental surgery. The volume contains 340 entirely new and original illustrations, including a frontispiece in photogravure and five full-page plates.

RECENT PUBLICATIONS.

Materia Medica and Pharmacy. By Reginald R. Bennett, B.Sc.Lond. Second edition. London: H. K. Lewis. 1912. (Pott 8vo, pp. 247. 4s. 6d. net.)

The author, who is a teacher of pharmacy at University College Hospital, deals with his subject purely from the point of view of the needs of those preparing for the examinations of London University and the Royal Colleges in pharmacology. The matter is well arranged.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W., 8 p.m.—Clinical Evening.

ROYAL SOCIETY OF MEDICINE:
SECTION OF ODONTOLOGY, 1, Wimpole Street, W., 8 p.m.—Discussion on Orthodontics in Modern Practice, to be opened by Mr. J. H. Badcock.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF MEDICINE, 1, Wimpole Street, W., 5.30 p.m.—Papers:—(1) Dr. Sidney Phillips: Case of Fatal Acute Ulceration Limited to the Small Intestine. (2) Dr. C. E. Lea: Four Cases of Auricular Tachycardia.

WEDNESDAY.

HUNTERIAN SOCIETY, London Institution, Finsbury Circus, E.C., 9 p.m.—Dr. W. M. Ettles, Special Lantern Demonstration of Diseases of the Eye, at which all members of the medical profession are invited to attend.

POST-GRADUATE COURSES AND LECTURES.

BROMPTON CONSUMPTION HOSPITAL, Wednesday, 4.30 p.m.—Demonstration of Cases.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m., The Thymus Gland.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics, Monday: 12 noon, Throat, Nose, and Ear; 2.15 p.m., Surgery; 3 p.m., Operations; 3.15 p.m., Medicine; 4.15 p.m., Ear and Throat. Tuesday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Surgery; 3.15 p.m., Medicine; 4.15 p.m., Skin Clinic. Wednesday: 11 a.m., Eye; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Eye Clinic; 4.30 p.m., Surgery. Thursday: 12 noon, Throat, Nose, and Ear; 2 p.m., Operations, Pathological Demonstration; 3.15 p.m., Medicine. Friday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Surgery. Saturday: 10 a.m., Radiography; 11 a.m., Eye. Special Lectures on Tuesday and Thursday, 4.30 p.m.

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.—Lectures daily (Saturday excepted), at 12 and 4 p.m. Practical Laboratory work daily (Saturday excepted), 10 to 12 a.m. Practical Helminthology, 2 to 3.30 p.m. daily. Medical Clinics, Monday and Thursday, at 3 p.m. Operations, Friday, at 3 p.m.

MANCHESTER: ANCOATS HOSPITAL, Thursday, 4.15 p.m.—Post-Graduate Clinic: Demonstration of Cases by the Honorary Medical and Surgical Staff.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m., Salvarsan in Syphilis and Parasyphilis. Friday, 4.30 p.m., Modern Methods in the Treatment of Tuberculosis of the Spine and Joints.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following Clinical Demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Surgical; Friday, Ear, Nose, and Throat. Lectures at 5.15 p.m. each day will be given as follows: Monday, Points in Everyday Practice; Tuesday, Modern Methods in the Diagnosis of Phthisis; Wednesday, Certain Points in the Treatment of Common Nervous Diseases; Thursday, Diseases of the Optic Thalamus; Friday, Cerebro-spinal Fluid.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday and Friday, 3.30 p.m., Disease of the Pituitary Body.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics: 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Nose, Throat, and Ear; 3 p.m., Demonstration on Clinical and General Pathology. Tuesday, 2.30 p.m., Operations; Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient; 4.30 p.m., Lecture: Prognosis in Pulmonary Tuberculosis. Wednesday, 2 p.m., Throat Operations; 2.30 p.m., Medical Out-patient; Skin and Eye Clinics: *X* Rays; 3 p.m., Pathological Demonstration; 5.30 p.m., Eye Operations. Thursday, 2.30 p.m., Gynaecological Operations; Clinics: Medical and Surgical Out-patient; 3 p.m., Medical In-patient; 4.30 p.m., Lecture: Tuberculous Bone and Joint Lesions, their Diagnosis and Treatment. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Surgical, Eye; 3 p.m., Medical In-patient; Pathological Demonstration.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, N.E.—Wednesday, 4 p.m., Treatment of Some Common Skin Disorders.

ROYAL DENTAL HOSPITAL, Leicester Square, W.—Tuesday, 6 p.m., Malocclusion of the Deciduous Dentition.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Monday, 4.30 p.m., Laryngeal Tuberculosis; Tuesday, 4.30 p.m., Complications of Pulmonary Tuberculosis; Thursday, 4.30 p.m., Prognosis in Pulmonary Tuberculosis; Friday, 3.30 p.m., Special Clinical Demonstration.

SALFORD ROYAL HOSPITAL.—Tuesday, 4.30 p.m., Surgical Treatment of Diseases of the Stomach.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays, and Operations, 2 p.m. daily. Monday, Gynaecology, 10 a.m.; Demonstration of Minor Operations, 11 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday, Gynaecological Operations, 10 a.m.; Demonstration of Fractures, etc., 10.30 a.m.; Surgical Registrar, 11.30 a.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Medical Registrar, 10.30 a.m.; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Gynaecological Demonstration, 10 a.m.; Lecture, Neurological Cases, 12.15 p.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Lecture, Practical Medicine, 10.30 a.m.; Lecture, Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.; Surgical Registrar, 10.30 a.m. Special Lectures at 5 p.m. daily.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		NOVEMBER.
27	Wed.	Bath and Bristol Branch, Bath, 8 p.m.
		Southern Branch, Southampton, 3 p.m.
28	Thur.	London: State Sickness Insurance Committee, 10 a.m.
		South-West Essex Division, Livingstone College, 4 p.m.
29	Fri.	Birmingham Branch, Pathological and Clinical Section, Medical Institute, 8 p.m.
		DECEMBER.
6	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.
		South-Eastern Counties Division (Edinburgh Branch), Annual Dinner, Galashiels, 6.30 p.m.
10	Tues.	London: Metropolitan Counties Branch Council, 4 p.m.
12	Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
		South-West Essex Division, Walthamstow Hospital, 4 p.m.
18	Wed.	Richmond Division, Richmond, 8.30 p.m.
		South Middlesex Division, Twickenham, 8.30 p.m.

Date.		Meetings to be Held.
		JANUARY, 1913.
7	Tues.	London: Public Health Committee, 3.30 p.m.
8	Wed.	London: Medico-Political Committee, 2 p.m.
9	Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
14	Tues.	London: Metropolitan Counties Branch, 4 p.m.
15	Wed.	London: Hospitals Committee, 2.30 p.m.
17	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.
22	Wed.	Richmond Division, Richmond, 8.30 p.m.
		South Middlesex Division, Twickenham, 8.30 p.m.
29	Wed.	London: Central Council.
31	Fri.	Birmingham Branch, Pathological and Clinical Section, Medical Institute, 8 p.m.
		FEBRUARY.
11	Tues.	South-West Essex Division, Whipps Cross Infirmary, 4 p.m.
13	Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
14	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, NOVEMBER 30TH, 1912.

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NATIONAL INSURANCE ACT.

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THE LATEST PROPOSALS OF THE GOVERNMENT.

The State Sickness Insurance Committee of the British Medical Association hereby informs every member of the medical profession that it expects to be in a position to publish the revised and final terms of the Government in the "British Medical Journal" next week (December 7th).

All Divisions in the United Kingdom will then be called upon to hold meetings at which every member will be required to vote on the question whether he will or will not accept the revised terms and conditions.

The State Sickness Insurance Committee points out that, in the meantime, it is imperative that no negotiations or arrangements of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession with local Insurance Committees, or otherwise.

Members of the profession who are not members of the Association will be invited to attend the meetings of the Divisions and to express their opinions.

Association Intelligence.

PROCEEDINGS OF COUNCIL.

October 31st, 1912.

As already reported, a meeting of the Council was held at 429, Strand, London, W.C., on Thursday, October 31st, 1912, at 10 a.m.

Present.

Dr. J. A. MACDONALD, LL.D., Taunton, Chairman of Council, in the Chair.

Sir JAMES BARR, M.D., LL.D., Liverpool, President.

Dr. W. AINSLIE HOLLIS, Hove, President-elect.

Mr. T. JENNER VERRALL, Bath, Chairman of Representative Meetings.

Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. JOHN ADAMS, Glasgow
Dr. J. GRANT ANDREW, Glasgow
Dr. R. M. BEATON, London
Surgeon-General P. H. BENSON, I.M.S., Walmer (Indian Branches).
Dr. M. G. BIGGS, London
Dr. R. C. BUIST, Dundee
Dr. CHARLES BUTTAR, London
Professor HENRY CORBY, M.D., Cork
Dr. J. S. DARLING, Lurgan
Dr. MICHAEL DEWAR, Edinburgh
Mr. E. J. DOMVILLE, Exeter
Dr. J. G. DURRAN, Leighton Buzzard
Dr. A. C. FARQUHARSON, Durham
Mr. C. E. S. FLEMMING, Bradford-on-Avon
Mr. T. W. H. GARSTANG, Altrincham
Dr. JOHN GORDON, Aberdeen
Surgeon-General J. P. GREANY, I.M.S., Ealing (Indian Medical Services).
Dr. T. D. GREENLEES, London (Cape of Good Hope Branches)
Dr. MAJOR GREENWOOD, London
Dr. J. R. HAMILTON, Hawick, N.B.
Dr. T. ARTHUR HELME, Manchester
Mr. R. J. JOHNSTONE, Belfast
Mr. F. C. LARKIN, Liverpool
Mr. C. COURTENAY LORD, Gillingham
Dr. J. LIVINGSTONE LOUDON, Hamilton
Mr. ALBERT LUCAS, Birmingham
Dr. EWEN J. MACLEAN, Cardiff
Dr. H. C. MACTIER, Wolverhampton
Dr. JAMES METCALFE, Bradford
Dr. C. H. MILBURN, Hull
Dr. GEORGE PARKER, Bristol
Dr. E. S. REYNOLDS, Manchester
Dr. LAURISTON E. SHAW, London
Mr. D. F. TODD, Sunderland
Mr. E. B. TURNER, London
Dr. W. J. TURRELL, Oxford
Dr. W. J. TYSON, Folkestone
Professor A. H. WHITE, Dublin
Mr. D. J. WILLIAMS, Llanelly

Letters of apology for non-attendance were read from Dr. David Ewart, Dr. C. G. D. Morier, and Dr. F. J. Smith.

NEW MEMBER OF CENTRAL COUNCIL.

The CHAIRMAN OF COUNCIL reported the election of Dr. R. B. Mahon, of Ballinrobe, co. Mayo, as a Representative of the South-Eastern of Ireland and Connaught group of Branches.

RESIGNATION OF THE PAST-PRESIDENT.

The CHAIRMAN OF COUNCIL reported that Professor Saundby, the Past-President, had felt it necessary to resign his membership of the Association owing to his connexion with the General Medical Council. It was resolved:

That the Council learns of Professor Saundby's decision with regret, and desires to congratulate him upon the way he occupied the position of President during his year of office, and to place on record its sincere appreciation of the great services he has rendered to the Association.

DEATH OF DR. POPE.

The CHAIRMAN reported the death of Dr. F. M. Pope, a member of the Central Council. The Chairman and Mr. VERRALL (Chairman of Representative Meetings) made sympathetic references to Dr. Pope's long service on the Council and to his keen interest in all the work of the Association. It was resolved:

That the Chairman be empowered to forward a letter of condolence to the family of the late Dr. Pope.

DEATH OF DR. MORIARTY.

The CHAIRMAN reported the death of Dr. T. B. Moriarty, a former member of the Central Council, and on the motion of Professor CORBY, seconded by the PRESIDENT, it was resolved:

That the Chairman be empowered to forward a letter of condolence to the family of the late Dr. Moriarty.

INTERNATIONAL CONGRESS ON DISEASES OF OCCUPATION.

An invitation to the Association to appoint representatives to attend the third International Congress on Diseases of Occupation, to be held in Vienna in the autumn of 1914, was received, and Dr. C. H. MILBURN was appointed a representative.

NATIONAL INSURANCE ACT.

Subsequently the Council passed to the consideration of the National Insurance Act, as was reported in the SUPPLEMENT of November 9th. The Council adjourned at 9.30 p.m. until November 13th.

Adjourned Meeting, November 13th.

The adjourned meeting of the Council was held at 429, Strand, London, W.C., on Wednesday, November 13th, at 2 p.m.

Present.

Dr. J. A. MACDONALD, LL.D., Taunton, Chairman of Council, in the Chair.

Sir JAMES BARR, M.D., LL.D., Liverpool, President.

Dr. W. AINSLIE HOLLIS, Hove, President-elect.

Mr. T. JENNER VERRALL, Bath, Chairman of Representative Meetings.

Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. J. GRANT ANDREW, Glasgow
Dr. R. M. BEATON, London
Dr. M. G. BIGGS, London
Dr. R. C. BUIST, Dundee
Dr. MICHAEL DEWAR, Edinburgh
Mr. E. J. DOMVILLE, Exeter
Dr. DAVID EWART, Chichester (New Zealand Branch)
Dr. A. C. FARQUHARSON, Durham
Mr. C. E. S. FLEMMING, Bradford-on-Avon
Mr. T. W. H. GARSTANG, Altrincham
Surgeon-General J. P. GREANY, I.M.S., Ealing (Indian Medical Services)
Dr. T. D. GREENLEES, London (Cape of Good Hope Branches)
Dr. MAJOR GREENWOOD, London
Dr. J. R. HAMILTON, Hawick, N.B.
Mr. R. J. JOHNSTONE, Belfast
Mr. F. C. LARKIN, Liverpool
Mr. C. COURTENAY LORD, Gillingham
Dr. J. LIVINGSTONE LOUDON, Hamilton
Mr. ALBERT LUCAS, Birmingham
Dr. H. C. MACTIER, Wolverhampton
Dr. JAMES METCALFE, Bradford
Dr. GEORGE PARKER, Bristol
Dr. LAURISTON E. SHAW, London
Dr. F. J. SMITH, London
Mr. D. F. TODD, Sunderland
Mr. E. B. TURNER, London
Dr. W. J. TURRELL, Oxford
Mr. D. J. WILLIAMS, Llanelly

Letters of apology for non-attendance were read from Dr. John Adams, Surgeon-General Benson, I.M.S., Inspector-General Bentham, R.N., Dr. C. Buttar, Dr. J. S. Darling, Dr. T. A. Helme, Dr. Ewen J. Maclean, Dr. E. S. Reynolds, Dr. W. J. Tyson, and Professor A. H. White.

Purity of Water Supplies.

The following resolution, passed in the State Medicine Section of the Annual Meeting at Liverpool, 1912, was referred to the Public Health Committee.

That this conjoint meeting of the Section of State Medicine and Bacteriology unanimously desires strongly to urge that no opinion as to the quality of a water for dietetic purposes should be arrived at on bacteriological evidence without a local and topographical investigation of the sources of that supply made by a competent observer.

FINANCE COMMITTEE.

The minutes of the meeting of the Finance Committee on October 23rd were received.

Printed Matter.

The Finance Committee had, with the view of endeavouring to curtail the expenditure under this head, taken into consideration the large amount of printing which it had been found necessary to issue to the Association, and had appointed a special subcommittee, consisting of the Treasurer, Dr. Buttar, Dr. Lauriston Shaw, Dr. F. J. Smith, and Mr. D. F. Todd, to consider the matter and report.

National Insurance Act.

The TREASURER submitted the following statement showing approximately the special expenditure incurred down to September 30th last, in connexion with the work the Association had had to undertake owing to the introduction and the passing into law of the National Insurance Act.

Receipts.

		£	s.	d.
1911.	By Grant from Insurance Defence Fund ...	6,445	9	3
1912.				
July.	,, Grant from Insurance Defence Fund ...	3,054	10	9
Oct.	,, Grant from Insurance Defence Fund ...	4,000	0	0
		£13,500	0	0

Expenditure.

1911.	Expenditure during 1911, *vide* A.R.M. Minutes 1911. p. 102	8,065	0	0
1912.	Railway fares, State Sickness Insurance Committee	1,545	0	0
	State Sickness Insurance Committee — Printings	647	0	0
	Addressing, hire of typewriting machines, Parliamentary papers, etc.	57	0	0
	Dr. Renshaw, for information *re* Germany ...	15	0	0
	Dispatching parcels of pledges to Divisions ...	12	0	0
	Provisional Medical Committees' Expenditure	312	0	0
	Special Representative Meeting, February— Printings	460	0	0
	Do. ——— Railway fares	407	0	0
	Do. ——— Hire of hall, etc.	100	0	0
	Scottish Committee, special grant	250	0	0
	Irish Committee	45	0	0
	Legal charges	100	0	0
	Special Council Meetings, January and February—Railway fares	150	0	0
	Do. ——— Printings	5	0	0
	Lists of non-members	300	0	0
	Additional cost of producing JOURNAL and SUPPLEMENT	900	0	0
	Salaries and wages	300	0	0
	Postages	100	0	0
	Stationery	100	0	0
	Estimated expenditure to October, 1912 ...	£13,870	0	0

[Since these figures were prepared considerable additional outlay has been incurred, more especially in connexion with the Special Representative Meeting which met on November 19th and 20th.]

Proposed Increase of Subscriptions.

The possibility of increasing the annual subscription to the British Medical Association was brought up at the Annual Representative Meeting at Liverpool and referred to the Council. The Council in turn had referred the matter to the Finance Committee, which after a preliminary discussion had appointed a special Subcommittee, consisting of the Treasurer, the Chairman of Representative Meetings, the Chairman of the Organization Committee (Mr. Larkin), Dr. Buttar, and Dr. F. J. Smith, to consider this reference from the Representative Meeting.

Accounts.

The Council approved the accounts for the quarter ending September 30th, amounting to £23,590 17s. 5d., and authorized the Treasurer to pay those outstanding.

JOURNAL COMMITTEE.

The CHAIRMAN (Dr. R. C. Buist) presented the quarterly report of the Committee. The report stated that the Committee had considered various advertisements offered for insertion in the JOURNAL, and had declined those considered unsuitable.

Discussions and Papers in Sections.

Arising out of a paragraph in the report received by the Committee from the Editor, the Committee recommended that the attention of officers of Sections at the Annual Meeting should be called to the following points:

(1) When more than one person is invited to take part in opening a discussion, the principle of asking each one of them to deal with some definite part of the subject, which has been carried out in some of the sections, might be more generally observed. It sometimes happens that each of those contributing to the introduction covers more or less the same ground. (2) It might again be suggested to the introducer that he should set out clearly the points upon which in his judgement a discussion will be most profitable, and those who take part in the discussion, either by the contribution of written papers, or otherwise, might be requested, both in the circulars issued beforehand by the officers of the sections, and by the chairman, to direct their attention mainly to those points. (3) The rule that papers should not be accepted by title only, and that, save under exceptional circumstances, the author should attend to read his paper might be more strictly enforced.

Secret Remedies.

The CHAIRMAN reported that an application had been received by cable from the Government of the Commonwealth of Australia for permission to reprint as a Parliamentary paper the books *Secret Remedies* and *More Secret Remedies*. The Council agreed to give its sanction provided the source of publication was duly acknowledged.

ORGANIZATION COMMITTEE.

The quarterly report of the Committee was received.

Proposed New Company.

The CHAIRMAN (Mr. Larkin) made a statement with regard to the proposal, which had been long under the consideration of the Committee, that a new company should be formed with extended powers. At its meeting in April, 1912, the Committee had appointed the Chairman of the Committee, the Chairman of Representative Meetings, the Chairman of Council, and the Medical Secretary as representatives of the Association to interview the Comptroller of the Companies Department of the Board of Trade. The interview took place on May 1st, and had reference in particular to the following addition which the Board of Trade suggested should be made to Clause 3 (g) of the draft memorandum of the new Company.

Provided that the Association shall not support with its funds or endeavour to impose on or procure to be observed by its members or others any regulation, restriction, or condition which, if an object of the Association, would make it a Trade Union.

At the interview the Comptroller said that he could not see his way to recommend that the above addition should not be insisted upon, and pointed out that even if it were not inserted in the Memorandum the Association would nevertheless be subject to its provisions. At its meeting in June the Committee instructed the Solicitor to obtain the assistance of counsel, in order to furnish the Committee with (i) a statement of the powers which would be vested in the Association under the proposed new Memorandum, as amended, as compared with the powers under the present Memorandum of Association, (ii) an estimate of the probable cost of winding up the present Company and forming a new Company, (iii) an opinion as to whether it would be possible for the present Company to acquire power to borrow money otherwise than by winding up the present Company and forming a new Company.

Counsel's opinion was as follows:

OPINION.

1. If the New Company were registered with a Memorandum of Association in the form which has now been approved by the Board of Trade, certain definite powers not possessed by the existing Company would be acquired. These are:

Power to promote and oppose legislation affecting the public health or the profession.

Power to take part in certain legal proceedings affecting the profession.

Power to establish, endow and manage benevolent funds (with the restriction that no grant may be made directly to a member of the Association, a member may if indigent be benfited indirectly by a grant to his relatives or dependents).

Power to borrow and mortgage

In addition clear powers would be obtained and all doubts removed as to certain other matters which probably come within the scope of the objects of the existing Company, but are not clearly provided for in the existing Memorandum. These are:

Power to provide libraries and places for social intercourse.

Power to undertake trusts for the benefit of the profession.

General powers of management of and dealing with property.

2. A fee of £20 would be paid on the registration of the new Company (Companies (Consolidation) Act, 1908, First Schedule, Table B).

The Stamp Duty on the transfer of the Property from the old to the new Company, would, if exacted, be very heavy. £1 per cent. on the value of the property transferred. See Finance (1909–10) Act, 1910, ss. 73, 74.

But in the case of a reconstruction of a Company where the members of the old and the new Company are the same and there is no alteration of their rights, it has been the practice of the Inland Revenue Authorities not to exact the ad valorem duty and to require only the deed stamp of 10s. to be affixed to the instrument.

But this practice may have been altered since the enactment of s. 74 of the Act of 1910 above referred to. Probably the Inland Revenue Authorities would answer a question as to what their practice now is or as to what Stamp Duty would be required in the circumstances of the present case.

The Duty if payable would be so heavy that the matter ought not to be left in doubt until after irrevocable steps have been taken as to winding up.

3. Power to borrow on mortgage or otherwise could be obtained by the existing Company (without winding up) by a Special Resolution altering the Memorandum in this sense and confirmed by the Court on Petition (Companies (Consolidation) Act, 1908, s. 9.).

If this is contemplated the consent of the Board of Trade should be obtained. The Board are not likely to object since they have allowed the desired power in the Draft Memorandum of the new Company.

I presume that there are no creditors who would object, and if this be so I see no reason why the Court should not allow the alteration.

(Signed) T. R. COLQUHOUN DILL,
Lincoln's Inn,
11th July, 1912.

As the question of costs was left unsettled in the above opinion, the following information was obtained from the Solicitor to the Board of Inland Revenue.

The agreement for transfer by the old Association of all the real and personal estate of the old Association would be chargeable for duty as a Conveyance in Sale on the amount of the liabilities of the old Association, which liabilities would be taken over by the new Association, and would form the principal consideration for the transfer of the property to the new Association.

Therefore the duty would be at the rate of £1 for every £100 of the liabilities of the old Association.

The same rate of duty would also be payable on the amount of the costs of carrying out the entire arrangement, because the agreement by the new Association to pay such costs would form part of the consideration for the transfer of the property. This would only be a small sum.

In addition, there would be a very small sum for duty payable in respect of other covenants in the transfer which probably would not exceed £2 or £3.

After further consultation with the Solicitor, the Committee arrived at the following conclusion:

(1) That the winding-up of the present Company and the formation of a new Company would necessitate the expenditure of approximately £400 to £600.

(2) That the extension of the present Memorandum of Association to enable the Association to borrow money on mortgage or otherwise, including submission of the proposed alteration to the Board of Trade, and an application to the High Court, entailing the attendance of counsel, would necessitate the expenditure of approximately £100.

(3) That the most urgent and important power sought by the Association was power to borrow money.

(4) That the additional powers obtainable by the formation of a new Company were not commensurate with the additional expense involved.

The Committee therefore advised the Council to make the following recommendations to the Representative Body:

(i) That the Association do not proceed further at present with the proposed formation of a new Company.
(ii) That the Council be instructed to take the necessary steps to obtain an extension of the Memorandum of the present Company to include the power of borrowing money on mortgage or otherwise.

In making these recommendations the Committee realized that they would, if approved by the Council, give rise to feelings of disappointment that the long and expensive work done by the Association in connexion with this matter had had so little result. Especially might this be the case in the Overseas Branches which had been more particularly anxious to obtain certain new powers. It was now evident, however, that these powers (promotion of candidatures for Parliament, provision of medical benevolence directly for the members of the Association, and individual medical defence) could not be obtained through any new Company which should effectively retain the identity of the present Association. The powers which could be obtained in this way were all, with the exception of (*a*) the establishment of a medical benevolent fund, and (*b*) the borrowing of money, powers which were already exercised by the Association. In view of the fact that the Overseas Branches would in any case probably prefer to start separate benevolent funds of their own, which they could do at present under a trust, and that the power of borrowing money could be obtained by the cheaper method of application to the High Court, the Committee had recommended this plan in preference to going on with the new Company.

The Council resolved to make the recommendations proposed by the Committee to the Representative Meeting.

Personal Expenses of Representatives.

The CHAIRMAN OF THE COMMITTEE reported that it had considered the resolution of the Annual Representative Meeting, 1912, postponing the question of the payment of the personal expenses of the Representatives at meetings of the Representative Body for twelve months on account of the heavy expenditure caused by the National Insurance Act.

The Council accepted the advice of the Committee that the following recommendation should be made to the Representative Body:

That having regard to the existing state of the finances of the Association, the time is still inopportune for acceding to the proposal that the out-of-pocket expenses of Representatives at Representative Meetings other than their travelling expenses as at present, should be paid out of the funds of the Association.

The Council resolved to forward a communication to the Divisions calling attention to the following resolution of the Annual Representative Meeting, 1912:

That in the meantime the Council point out to each Division the possibility of opening a special fund, which can be supported by practitioners resident in the area, and out of which such expenses of the Representatives as the Division may determine could be paid.

Grouping of Branches not in the United Kingdom.

At the Annual Representative Meeting, 1912, Dr. J. H. Sanders, representing the Hong Kong and China Branch, brought forward a motion setting out that the grouping of the Hong Kong and China Branch with various Branches in India, Burma, Ceylon, and Malaya for the purpose of electing one member of the Council did not give that Branch adequate representation, and suggesting that one member of the Council should be allotted to the Hong Kong and China Branch together with the Malaya Branch, and another member of Council to the Branches in India, Burma, and Ceylon, which had interests more or less in common. He further suggested that in the event of this proposal being approved the member of Council should be elected alternately by the Hong Kong and China Branch and by the Malaya Branch. The Representative Meeting had referred the proposal to the Council, which had instructed the Organization Committee to make a report.

The Committee now presented a scheme for the grouping of Branches outside the United Kingdom in which one member of Council was allotted to the Hong Kong and China and the Malaya Branches acting together, and one for

the Branches in India, Burma, and Ceylon. It recommended that the Hong Kong and China Branch should be informed that there was no objection to a voluntary arrangement being made between that Branch and the Malaya Branch, whereby the member of Council representing those Branches should be elected from each Branch alternately. The recommendation was adopted by the Council.

Alteration in Constituencies.

At the Annual Representative Meeting, 1912, a resolution was adopted instructing the Council to take into consideration the question of fixing a date after which alterations of constituencies shall not be effective as regards election of Representatives for that year's Representative Meetings.

In respect of this the Council, on the recommendation of the Committee, adopted the following Standing Order:

In forming constituencies in accordance with By-law 30, the Council shall have regard only to the Divisions as they existed at the time of the making up of the current Annual List. Any changes that may occur or be made in the Divisions subsequent to the formation of the Annual List which, in the opinion of the Council, will necessitate alteration in the constituencies, shall not be acted upon until the next succeeding Annual List is prepared.

The Council shall publish, either with the Annual List or as soon as may be after its publication, a list of constituencies, and this list shall remain in force until the publication of the next Annual List.

Transfer of Members.

The question of the transfer of members from one Division to another had been raised at the Representative Meeting, 1911, and it was suggested that such transfers should only be sanctioned if applied for in writing by the Secretary of the Division the member was leaving. The Committee had communicated with the Branches outside the United Kingdom and made the following recommendation, which was adopted by the Council:

That it be reported to the Representative Body that in the opinion of the Council, having regard to all the circumstances, it is not desirable that the Regulations of the Association should be amended so as to provide that no member of the Association be allowed to transfer from one Division to another unless such transfer is applied for in writing by the Secretary of the Division he is leaving.

Conference of Secretaries.

The CHAIRMAN OF THE COMMITTEE stated that it desired to point out to the Council that the Conference of Secretaries held at Liverpool on July 22nd, 1912, had appointed a committee, and expressed the fear that there was a risk of the work of this committee overlapping the work of the standing committees of the Association. In past years the arrangements made for the Conference of Secretaries by the Organization Committee had prevented overlapping.

The subject thus raised led to a general discussion, and a motion to the effect that the Council regretted that it could not approve of the action of the Conference of Secretaries in appointing a separate committee without an invitation from the Council was negatived, as was also a proposal to refer the matter back to the Organization Committee. Finally, the Council adopted the following recommendation:

That it be an instruction to the Organization Committee to appoint a Conference of Secretaries Subcommittee for the year 1912-13, such subcommittee to include the nine members appointed by the Conference of Secretaries, and that in future the Conference of Secretaries be invited to appoint four members of the Conference of Secretaries Subcommittee of the Organization Committee.

Grouping of Divisions.

On the recommendation of the Committee, the Council adopted the following resolutions:

That the Divisions in the United Kingdom be provisionally grouped by the Council into constituencies for the election of Representatives for the year 1913-14 as in the year 1912-13, with such modifications thereof as have been already approved, provided that if any proposals for alteration of constituencies be received on or before November 30th the constituencies affected by such proposals shall be reconsidered at the January Meeting of the Council.

That each Division outside the United Kingdom existing at the time of the passing of this resolution which has an honorary secretary and the necessary organization be granted separate representation in the Representative Body for the year 1913-14.

East Africa and Uganda Branch.

The CHAIRMAN OF THE COMMITTEE reported that an application had been received from members of the profession in East Africa and Uganda for the formation of a new Branch for the British East Africa and Uganda Protectorates. The Committee reported that the area thus delimited was not included in any existing Branch, and recommended that the application should be approved. The Council adopted a resolution sanctioning the formation of such a Branch.

Attendance of Representatives.

The Committee reported that it had before it a proposal of the Marylebone Division for the alteration of its rules—providing (1) that any Representative who had failed to attend the Representative Meeting, either personally or by authorized Deputy, should be ineligible for re-election for one year, and (2), that any member who had served as such Representative for five years consecutively should be ineligible for re-election for one year. The Committee pointed out that the rule raised two new points: (*a*) Whether a Division could be given the right to restrict the eligibility of a member for office as Representative, no such restriction appearing in the by-laws, and (*b*), whether it was proper that a Representative should be made responsible for the failure of a Deputy not appointed by him but by the Division to attend a Representative Meeting.

The Council came to the conclusion that for the reasons indicated in (*a*) and (*b*) it could not approve the proposed new rule.

Subcommittees.

The CHAIRMAN reported that the Committee had appointed the following subcommittees:

Grants Subcommittee.—To supervise the analysis of Branch and Division reports.

Organization of Medical Students Subcommittee.—To deal with all matters affecting the organization of medical students.

Regulations and Standing Orders Subcommittee.—To consider questions of the alteration of the Articles of Association and By-laws, and of Standing Orders of the Representative Body and of the Council referred to the Organization Committee.

ARRANGEMENTS COMMITTEE: BRIGHTON MEETING, 1913.

The report of the Arrangements Committee for the Annual Meeting at Brighton next year was presented by the CHAIRMAN OF COUNCIL, and the recommendation that there should be fifteen Sections was approved. The list of these Sections with their officers, and further particulars with regard to the addresses in Medicine and Surgery and the popular address, will be published next week.

After a proposal that the Conference of Secretaries should be held after the Representative Meeting had been rejected, it was resolved that the conference should be held on Thursday, July 17th, at 3 p.m.

CENTRAL ETHICAL COMMITTEE.

The CHAIRMAN (Dr. Lauriston Shaw) presented the quarterly report of the Committee, and the Council considered and dealt with a case of expulsion.

Warning Notices in regard to Ship Surgeoncies.

The Council authorized the Committee, upon the application of the Chairman of the Standing Ships Surgeons Subcommittee of the Medico-Political Committee, to accept for insertion warning notices with regard to ship surgeoncies.

National Institute of Health.

The Committee reported that it had received a request from the Directing Superintendent of the National Institute of Health and Physical Culture to appoint two or three qualified medical men to serve on the executive of the institute. The Committee reported that it had replied that, while recognizing the advantages of an institution formed and controlled in the manner proposed, it regretted that it could not recommend the Association to nominate medical men to serve on the executive.

MEDICO-POLITICAL COMMITTEE.

The Committee was authorized to invite the Chairman of the Public Health Committee to attend its meetings.

Public Health Questions at Municipal Elections.

The CHAIRMAN (Mr. C. E. S. Flemming) presented a memorandum embodying questions affecting public health and the medical profession suitable for submission to candidates at county, county borough, municipal borough, and district council elections. The memorandum was approved for issue to the Divisions as and when necessary.

Indecent Advertisements.

The Committee reported that it had received a communication from the Home Secretary in reply to the memorandum sent to him in accordance with the instructions of the Council on January 21st concerning the amendment of the Indecent Advertisements Act and the sale of preventives of conception, etc. The Home Secretary's reply was to the effect that he was fully alive to the importance of the subject, that it was dealt with in a bill which he had caused to be drafted, but that no opportunity had been found for enacting the bill last session. The Committee reported that it understood that no bill dealing with the subject would be introduced into Parliament pending the publication of the report of the Parliamentary Committee on Proprietary Medicines, since the Committee was to some extent dealing with the question.

PUBLIC HEALTH COMMITTEE.

The quarterly report of this Committee was presented by the CHAIRMAN (Mr. Domville).

Combined Appointments of Medical Officer of Health and School Medical Officer.

The Committee stated that the Association had made no declaration of policy with regard to the salary suitable for the combined post of medical officer of health and school medical officer. The Committee had come to the opinion that the time had come when such a decision should be reached. The Council adopted the following resolution:—

> That it be recommended to the Representative Body that in no case where a less salary than £400 per annum is offered for a combined whole-time appointment as medical officer of health and school medical officer should the advertisement be accepted for insertion in the JOURNAL.

Defence of Vaccination.

The CHAIRMAN OF THE COMMITTEE stated that it had again appointed a subcommittee, consisting of Mr. E. J. Domville (Exeter), Dr. A. C. Farquharson (Spennymoor), Dr. T. B. Heggs (Sittingbourne), Mr. C. C. Lord (Gillingham), Dr. R. A. Lyster (Winchester), Dr. F. E. Wynne (Wigan), and Dr. A. Drury (Halifax), with power to co-opt not more than two other members, for the purpose of taking any necessary action in the defence of vaccination. Dr. Drury had been appointed Honorary Secretary of the Subcommittee, and had been authorized to conduct all necessary correspondence, submitting a report thereon to each quarterly meeting of the Public Health Committee.

It had been ascertained that the relatives of the late Dr. F. T. Bond would be glad that the British Medical Association should continue the work of the late Dr. Bond and of the Jenner Society, and had offered the pamphlets and other documentary evidence in defence of vaccination belonging to the Jenner Society to Dr. Drury. On the advice of the Committee the Council adopted the following resolution:

> That arrangements be made for a room, or part of a room in the offices of the Association, to be styled the Jenner Room, to be used for housing the vaccination literature and pamphlets of the Jenner Society.

The Definition of Official Duties.

The Committee had noted, for its guidance in the future, the decisions of the Association contained in Minutes 236 and 241 of the Annual Representative Meeting, 1912, having reference (1) to the definition of the term "official duties" occurring in Minute 234 of the Annual Representative Meeting, 1909, and (2) salaries of whole-time medical officers of health.

M.O.H. Superannuation Bill.

The Committee had taken steps to approach a member of Parliament with a view to introducing into Parliament as early as possible the Medical Officers of Health Superannuation Bill of the Association. It had also approved the formation of a joint subcommittee of representatives of the Committee, the Society of Medical Officers of Health and of the Royal Sanitary Institute, to take steps to press forward the bill in Parliament.

HOSPITALS COMMITTEE.

The report of the Hospitals Committee was presented by the CHAIRMAN (Mr. R. J. Johnstone). It stated that the Committee had in March, 1911, submitted to the Committee appointed by the King Edward VII Hospital Fund for London to inquire into hospital out-patient departments, a memorandum as to the abuse of those departments of voluntary hospitals in London. Oral evidence had been given before the Committee by the Chairman of Council, by Mr. Hugh R. Ker, then Chairman of the Committee, by Dr. Lauriston Shaw, and by the then Medical Secretary. A memorandum of the evidence had been laid before the Annual Representative Meeting of 1911. Since then the Committee of Enquiry of the King's Fund had made a report, and the Hospitals Committee reported to the Council that the King's Fund Committee had to a large extent adopted the views of the Association as to the proper scope and method of management of hospital out-patient departments. Its conclusions were strongly in favour of the development of the out-patient departments on consultative lines, and in favour of restricted admission to these departments. It had not adopted the view of the Association that the only means of admission, except in emergency cases, should be the recommendation of a private practitioner, though agreeing that co-operation between the private practitioner and the out-patient departments should be encouraged. Another conclusion of the inquiry was in favour of an extensive development of the almoner system.

The Council adopted resolutions expressing its appreciation of the recognition by the Committee of Enquiry of the King Edward's Fund of the principles of the Association with regard to out-patient departments so far as that recognition went, and the hope that the Council of the Fund would take steps to secure the adoption of those principles by hospitals to the funds of which it contributed. It was also resolved that the report of the King's Fund Committee and of the memorandum of evidence of the Association should be published in the JOURNAL.

Payment of Hospital Staffs.

The Committee reported that it had appointed, jointly with the Medico-Political Committee, a subcommittee to deal with the matter of the payment of hospital staffs.

NAVAL AND MILITARY COMMITTEE.

The quarterly report of the Committee was presented by its CHAIRMAN (Surgeon-General J. P. Greany, I.M.S.).

Fees Payable by Natives to Officers, I.M.S.

The report recalled that the Order No. 607, July 1st, 1907, Home Department, India, restricted the fees payable by natives to officers of the Indian Medical Service; that representations for the amendment of the Order were, with the approval of the Council, made to the Secretary of State for India; that, as a result of such representations, proposals for the amendment of Order No. 607 were submitted by the Secretary of State for India for the consideration of the Association; that various suggestions for the amendment thereof were made by the Association; that shortly afterwards the amended Order (No. 100, February 2nd, 1911) was issued by the Government of India, but contained certain ambiguities, concerning which fresh representations were made to the Secretary of State for India.

The Committee now had the pleasure to report that the third Order (No. 1192, December 20th, 1911, Home Department, India) had been issued by the Government of India embodying all the suggestions of the Association as to the amendment of Order No. 100.

The Committee recommended the Council to approve the Order 1192. This was done, and the Council resolved to send a communication to the Secretary of State for India acknowledging his courtesy in forwarding to the Association a copy of the recent Order, and informing him of the appreciation of the Council that the suggestions of the Association with regard to this matter had been so fully met by the Government of India.

COLONIAL COMMITTEE.

Title of the Committee.

The quarterly report of the Committee, presented by its Chairman (Dr. T. D. Greenlees), asked the Council, in view of the nomenclature now used in imperial matters, to recommend to the Representative Body that steps be taken to alter the title of the Committee to that of the Dominions Committee, and to instruct the Council to carry out the necessary alterations in the by-laws. This was agreed to.

FRACTURES COMMITTEE.

The final report of the Fractures Committee was received and directed to be published in the Journal.

The reference of the Committee was discharged, and the Council adopted a resolution of thanks to the members of the Committee and to the members of the hospital staffs and others who had assisted by giving information.

SCOTTISH COMMITTEE.

The quarterly report of the Scottish Committee was presented by the Chairman (Dr. M. Dewar). It was stated that Dr. G. R. Livingston (Dumfries) had been appointed Honorary Secretary for the ensuing session.

Medical Treatment of Defective School Children.

The Committee had caused a communication to be forwarded to the Divisions and Branches in Scotland drawing their attention to the fact that they should, having regard to the grants for the medical treatment of school children which were being made to the various School Boards, use every endeavour to secure that such treatment was carried out in accordance with the declared policy of the Association—namely, by general practitioners either by means of part-time appointments or by the establishment of a rota, and not by whole-time medical officers.

Medical Officers of Health and Sanatorium Benefit.

The Committee had had under its consideration the question of the position of Medical Officers of Health in connexion with the administration of Sanatorium Benefit under the National Insurance Act, and had issued a communication to the Scottish Branches and Divisions advising them that, without interfering with the administrative work of Medical Officers of Health, it was essential for the successful organization of the tuberculosis service that the Chief Tuberculosis Officer should be independent of the Public Health Department.

Scottish Medical Insurance Council.

It was reported that Dr. J. Grant Andrew had been appointed a representative of the Committee upon the Executive Committee of the Scottish Medical Insurance Council. The Committee had received and approved a statement of receipts and expenditure of the Scottish Medical Insurance Council, and had made representations to that Council to the effect that the first class railway fares should be paid to members of the Executive Committee of that Council who had to travel considerable distances to attend its meetings.

SCIENCE COMMITTEE.

The quarterly report stated that Dr. F. J. Smith had been elected Chairman.

Research Scholarships.

Dr. Frank Cook having vacated one of the research scholarships on being awarded a research scholarship by the Board of Agriculture, the Committee reported that it had appointed Miss Emily H. Morris, M.D., of Cambridge, to be a research scholar for a period of one year.

The Committee had received an application from Dr. A. J. Clark, research scholar appointed in July, for permission to proceed with the work he proposed to carry out, although he had been appointed assistant in pharmacology at University College at a salary of £150. Dr. Clark stated that he had been assured that he would have full opportunity for research. The Committee expressed the opinion that the course suggested did not contravene the regulations governing the award of scholarships, and permission had been granted to Dr. Clark to proceed with the work under the Association's scholarship.

Stewart Prize.

On the recommendation of the Committee it was resolved to award the Stewart Prize in 1913. The prize is awarded in recognition of important work already done, or of researches instituted and promising good results, regarding the origin, spread, and prevention of epidemic disease, with a view to encourage the continuance of such researches. The prize was last awarded in 1910.

Library.

The Committee stated that it had received the following report for the last six months from the Librarian, and had appointed the Treasurer, Professor W. E. Dixon, F.R.S., Dr. C. J. Martin, F.R.S., and the Editor to be the standing Library Subcommittee.

Librarian's Report.

There had been 2,480 attendances at the library, as compared with 2,260 for the corresponding period of 1911.

The volumes added to the library included new books, new editions, some older volumes, and a considerable number of current reports and society transactions. Among the new books were:

Sir Henry Butlin, *Lectures on Unicellula Cancri*; Begg, *On the Spine*; Chapin and Pisek, *Diseases of Infants and Children*; Jackson Clarke, *The Cause of Cancer*; Dickey, *Applied Anatomy of the Lungs and Pleural Membranes*; Ehrlich-Hata, *Experimental Chemotherapy of Spirilloses*; Ehrlich-McDonagh, *606 in Theory and Practice*; Gerhartz, *Die Registrierung des Herzschalles*; Von Hansemann, *Ueber das konditionale Denken in der Medizin*; Herringham, *Kidney Diseases*; Lindsay Johnson, *Atlas of the Fundus Oculi*; Lockwood, *Clinical Surgery*; Mendel und Tobias, *Tabes der Frauen*; Mark, *On Acromegaly*; Marshall, *Midwifery*; Parker, *Diseases of the Eye*; Parsons, *Practical Anatomy*, vols. i and ii; Paterson, *Auto-Inoculation in Pulmonary Tuberculosis*; Pickerell, *The Prevention of Dental Caries*; Scheuer, *Behandlung der Hautkrankheiten*; Shenton, *Bone Disease and its Detection by X Rays*; Sir E. Thorpe, *Dictionary of Applied Chemistry*, vols. i and ii; and Wechselmann, *Salvarsan*.

New editions have been received of: Berkart, *Bronchial Asthma*; Blumfeld, *Anaesthetics*; Cooper, *Sexual Disabilities of Man*; Dorland, *Illustrated Medical Dictionary*; Dornblüth, *Die Arzneimittel in der heutigen Medizin*; Fellner, *Therapie der Wiener Spezialärzte*; Fuchs, *Ophthalmology*; *Gray's Anatomy*; Hart and Barbour, *Gynaecology*; Kocher, *Operative Surgery*; Sir John Moore, *Meteorology*; Taylor, *Practice of Medicine*; Treves and Keith, *Surgical Applied Anatomy*; Whitla, *Dictionary of Treatment*; and Woodhead, *Practical Pathology*. In addition, 278 *Thèses de Paris* have been received, concluding the series for the session 1911-12, which number 462. There has also been recently added to the library a most useful index to the *thèses* of all the French Universities, entitled *Catalogue des thèses et écrits académiques, 1884–1909*, 5 vols. Sir James Barr has kindly presented a number of volumes of the *Liverpool Medico-Chirurgical Journal*, which, with the exception of one number (vol. ii), completes the file of that journal in the library. The list also includes a copy of *Harvey's Anatomical Exercitations concerning the Generation of Living Creatures*, to which are added *Particular Discourses of Births and of Conceptions*, first edition, with portrait, 1653, presented by the Rev. G. H. R. Fletcher, M.R.C.S., of Balham. Of this volume it is said that only 150 copies were printed, and that of these 115 were destroyed by fire—the matter was referred to in the British Medical Journal, November 10th, 1900, page 1419, and in one of Quaritch's catalogues of valuable books. Reports have been received during the past six months from medical officers of health from 419 localities for the year 1911, making a total of 757 of this series, while other reports and society transactions had been received to the number of about 150.

About 180 volumes, belonging to her late father, have been received from Miss Charlewood Turner; they consist chiefly of society transactions, and have been added to the list of duplicate volumes. A list of duplicate volumes was sent by request to the Gibraltar Branch, and 62 volumes were sent out as the result of a selection made therefrom. Two hundred and seventeen volumes had been had out on loan, as compared with 139 for the corresponding period of 1911, making in all a total of nearly 1,000 volumes lent to members.

Therapeutic Subcommittee.

In accordance with the instructions of the Council the Committee had appointed a standing Therapeutic Subcommittee, to promote, supervise, or direct research in pharmacology and therapeutics. The members of the Subcommittee are: Professor A. R. Cushny, F.R.S., Professor W. E. Dixon, F.R.S., Professor Greenish, Professor C. R. Marshall, Dr. C. J. Martin, F.R.S., Professor Ralph Stockman, and Professor R. B. Wild.

ANNUAL MEETING, LIVERPOOL, 1912.

The Council adopted resolutions of thanks to the many persons and institutions which had given assistance and hospitality on the occasion of the 80th Annual Meeting of the British Medical Association at Liverpool last July.

Election of Members.

Eleven candidates, whose names will be published shortly, were duly elected members of the British Medical Association.

SPECIAL MEETING OF COUNCIL.

Immediately after the conclusion of the Special Representative Meeting at 12.15 a.m. on Thursday, November 21st, a special meeting of the Council was held, when the following were present:

Dr. J. A. Macdonald, LL.D., Taunton, Chairman of Council, in the Chair.

Mr. J. Jenner Verrall, Bath, Chairman of Representative Meetings.

Dr. John Adams, Glasgow
Dr. R. M. Beaton, London
Surgeon-General P. H. Benson, I.M.S., Walmer (Indian Branches)
Dr. M. G. Biggs, London
Dr. Charles Buttar, London
Dr. Michael Dewar, Edinburgh
Mr. E. J. Domville, Exeter
Dr. J. G. Durran, Leighton Buzzard
Dr. A. C. Farquharson, Durham
Dr. John Gordon, Aberdeen
Dr. T. Arthur Helme, Manchester
Mr. F. C. Larkin, Liverpool
Mr. C. Courtenay Lord, Gillingham
Mr. Albert Lucas, Birmingham
Dr. Ewen J. Maclean, Cardiff
Dr. H. C. Mactier, Wolverhampton
Dr. James Metcalfe, Bradford
Dr. C. H. Milburn, Hull
Dr. E. S. Reynolds, Manchester
Dr. Lauriston Shaw, London
Mr. D. F. Todd, Sunderland
Mr. E. B. Turner, London
Mr. D. J. Williams, Llanelly

Apologies for absence were received from the President, the President-elect, the Treasurer, Dr. Buist, Professor Corby, Surgeon-General Greany, Dr. Greenlees, Dr. Tyson, and Professor White.

Minutes of the Special Representative Meeting.

The Chairman of Council presented the minutes of the Special Representative Meeting held on November 19th and 20th, and explained that it was necessary for the Council to consider the decisions of the Special Representative Meeting in case the Council might desire to exercise its power of taking a referendum.

The minutes of the Special Representative Meeting were, on the motion of the Chairman of Council, approved and referred to the State Sickness Insurance Committee.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* Journal.]

BORDER COUNTIES BRANCH:

English Division.

A large and enthusiastic meeting of the practitioners resident in the Cumberland insurance area was held in the County Hotel, Carlisle, on November 15th. Dr. Fisher (Whitehaven) presided. Over seventy medical men were present, this being the largest meeting yet held in this area.

The Chancellor's Proposals.—Dr. Bowser moved the following resolutions, and Dr. Proud (Maryport), seconded:

That this meeting of medical men resident in Cumberland is of opinion:

1. That the proposals made on behalf of the Government by the Chancellor of the Exchequer in his speech to the Advisory Committee on October 23rd last do not provide a satisfactory basis of agreement for service under the National Insurance Act.

2. That the Provisional Regulations for Medical Benefit issued by the Joint Committee of Insurance Commissioners on October 1st last impose conditions of service that are inconsistent with the independence of the medical profession and with efficiency in the treatment of insured persons.

3. That the medical profession should, therefore, steadfastly maintain its refusal to accept service under the Act until such amendments have been made in the Act or Regulations as will secure the just and reasonable demands of the profession.

The following amendment was proposed by Dr. Graham (Carlisle) and seconded by Dr. Adam (Carlisle):

That this meeting decides to accept provisionally the latest proposals of the Chancellor of the Exchequer, subject to the amendment of certain details of services; and, further, to instruct the Representative at the forthcoming Representative Meeting to support or initiate such negotiations as may be taken to secure a favourable solution of the points at issue.

Only 11 voted for the amendment; Dr. Bowser's motion was put to the meeting, and carried enthusiastically, only 11 voting against it.

Instruction of Representative.—The members of the Division unanimously instructed their Representative to vote in support of a motion to refuse service under the Act at the Representative Meeting, November 19th and 20th.

CAPE OF GOOD HOPE—EASTERN PROVINCE BRANCH.

An ordinary meeting of this Branch was held on October 18th at Grahamstown. Dr. E. G. Dru Drury was in the chair, and five members and one honorary member were present.

Dr. Saunders's Work.—The following resolution was unanimously adopted:

That this Branch, the Eastern Province Branch of the British Medical Association, desires to place on record their sense of the value of Dr. Saunders's efforts to improve the public health of Grahamstown, and of the thorough way in which he has carried out the extremely onerous duties imposed upon him by the Municipal Council, and deplores the loss to the city his resignation entails.

A copy of this resolution to be supplied to Dr. Saunders.

Dental Congress.—At Mr. Collis's suggestion the following resolution was unanimously adopted:

That the Dental Society of South Africa be invited to hold their Dental Congress in this city next year, to run concurrently with the South African Medical Congress.

Mr. Collis kindly consented to take the preliminary steps.

EAST ANGLIAN BRANCH:

North Suffolk Division.

A meeting of this Division was held at the Lowestoft Hospital on November 12th. Twenty-two members were present, including Dr. Potts, who was chosen as Deputy Representative for the meeting in London on November 19th.

Report of Council.—The Report of Council to the Divisions was considered, and it was first of all decided to refuse service under the Act as it stands; next, it was decided not to give service under the Act under the conditions set out in paragraph 114 of the report.

Instruction to Representative.—Finally it was agreed:

That it be an instruction to the Representative to vote for negotiating with the Chancellor if such a course be necessary to avoid a split in the Association, but that the following six points must be amongst the minimum demands:

1. That a minimum of 6s. 6d. per annum be allowed *without deduction* in respect of each insured person.

2. That extras or an equivalent in increased capitation be allowed.

3. Mileage shall be an extra.

4. Absolute free choice of doctor.

5. A real and unqualified total income limit of £160 a year.

6. Freedom from lay control.

That the Representative be also instructed to vote in favour of the maintenance of the right of the practitioner to dispense.

GLASGOW AND WEST OF SCOTLAND BRANCH:

LANARKSHIRE DIVISION.

A MEETING of this Division was held at Glasgow on November 15th. Fifty-one members and twelve non-members were present. Dr. BRUCE GOFF (Bothwell), Chairman of the Division, presided.

Instructions to Representative.

After some introductory remarks by the CHAIRMAN, Dr. W. C. MACPHERSON moved the following resolution, which was seconded by Dr. FOTHERINGHAM:

> That our Representative be asked to vote for, and if necessary, to speak for, a reopening of negotiations with Government upon the basis of the Chancellor's last offer.

Dr. T. DUNCAN NEWBIGGING moved as an amendment:

> That having stated our reasoned, reasonable, and minimum demands, and after due consideration pledged ourselves thereto, we see no occasion to depart from that pledge.

This was seconded by Dr. ALAN RAMSAY. On this amendment being put to the meeting it was declared by the CHAIRMAN lost, whereupon Dr. Macpherson's resolution was put to the meeting, when forty-five members voted for it and five against it; therefore, this resolution became the instruction of the meeting to their Representative. In addition to the forty-five members who voted for the motion, six non-members also supported it.

Thereafter the meeting proceeded to discuss several points in regard to which there was considerable variety of opinion, these points relating chiefly to: (*a*) Mileage: (*b*) increased representation of medical men on Insurance Committees; (*c*) inspection; (*d*) discipline.

In regard to mileage, Drs. BARR, NEWBIGGING, W. G. MACPHERSON, and WATT spoke, advocating that mileage should come out of a central fund. Dr. Watt also pointed out that there was an injustice in mileage starting at three miles—it should start from the doctor's house.

Inspection was unfavourably commented on by all the members who spoke, and, in regard to discipline, it was felt that such cases should only be dealt with by a medical body. In regard to all these matters which were discussed at the meeting, Dr. FOTHERINGHAM moved and Dr. ROBERT ROBERTSON seconded:

> That our Representative support any motion to appoint a Special Committee of Representatives with powers to negotiate with Mr. Lloyd George on the basis of remuneration mentioned in his latest statements, the following points in the Regulations to be amended—namely, mileage, discipline, inspection, increased representation of medical men on Insurance Committees.

This motion was put to the meeting and carried by 42 votes against 17. Dr. BARR had previously suggested an amendment, but did not press it.

LANCASHIRE AND CHESHIRE BRANCH:

BURY DIVISION.

A MEETING was held on November 12th, in the Derby Hotel, Bury. Dr. BAIRD occupied the chair, and about fifty members and non-members were present.

Provisional Medical Committee's Report.—The report stated that since the last meeting of the Division the committee had met twice. The question of sanatorium benefit had been discussed. The scale of fees for the domiciliary treatment of tuberculosis provisionally arranged with the Bury Insurance Committee had been approved by the Commissioners, and the scheme was now working smoothly so far as was known to the Committee. Another matter discussed was the tuberculosis schemes of local authorities. A subcommittee was appointed, and it was unanimously decided to send to the Bury Corporation a protest against the proposed appointment of the medical officer of health as chief tuberculosis officer, with an explanation of the position, and a request for an interview. No reply had been received. With regard to the payment for emergency calls, the clerks of the various authorities had been written to as directed by the Division, and the Bury Rural Council had intimated its consent to pay the fees suggested—namely, 5s. for a day call, and 7s. 6d. for a night call when summoned by a police official. With regard to the salaries of Poor Law medical officers, the Committee requested all officers to keep a record of work done, with a view to an adjustment of the salaries. In regard to the Central Defence Fund, up to the present the guarantees amounted to £371, and subscriptions and donations £50 11s. Fifty members represented the list. On the subject of Public Medical Service schemes, the Committee had unanimously come to the conclusion that none of the recognized schemes published by the Association would be suitable for the Division, and did not recommend the establishment of such a service. All resignations of contributory contract appointments were sent in on September 30th.

Instructions to Representative.—Dr. VINE moved and Dr. SMITH seconded:

> That we should refuse service under the Act.

A prolonged discussion ensued, and a vote was taken by poll; 22 voted for the motion and 13 against. Several declined to vote. It was proposed by Dr. COOK to add:

> Until the conditions of service are made compatible with the best interests and honourable position of the profession.

This was carried unanimously.

An adjourned meeting was held on November 17th in the Derby Hotel. Dr. BAIRD occupied the chair, and forty-five members were present.

The Chancellor's Proposals.—The following motions were carried:

1. That the Chancellor's proposals be taken as a basis of negotiation.
2. That the Representative use all his endeavours to secure that dispensing should be retained by medical men.
3. That a committee with plenary powers be appointed to meet the Chancellor.
4. That if possible Sir Robert Finlay should be a member of the committee.
5. That the medical benefits to be rendered for the capitation fee be confined to the usual hours of a day service, and that all extras be recoverable from a central fund or from the patient.
6. That the Complaints Committee should be abolished.
7. That inspection of medical men should not be permitted.
8. That there should be no removal from the panel without the right of appeal to the General Medical Council.

MANCHESTER (WEST) DIVISION.

A MEETING of this Division was held at Old Trafford on November 10th. Nearly forty medical men were in attendance, including a few non-members. Dr. WESTWOOD occupied the chair.

Contract Practice.—The South Manchester resolution *re* contract practice was adopted unanimously.

Sanatorium Benefit.—Drs. PROWSE and SCANLON were unanimously elected to act on an Advisory Committee which is being formed in connexion with the working of sanatorium benefit in Manchester.

Report of Council.—The Report of Council on the National Insurance Act was discussed and the following resolutions were carried by large majorities:

1. That in the opinion of this meeting the conditions of service laid down in the Regulations issued by the Insurance Commissioners are intolerable, notwithstanding the new proposals foreshadowed by Mr. Lloyd George in his speech on October 23rd, and would destroy for ever the independence of the medical profession; therefore, any financial offer under the National Insurance Act should be refused until the conditions of service are made compatible with the best interests and honourable position of the profession, which can only be secured by the granting of the cardinal points laid down by the British Medical Association.
2. That it be an instruction to our Representative to vote and if necessary speak against any motion for reopening negotiations with the Chancellor of the Exchequer; but that if negotiations be reopened, no committee shall have power to make any definite arrangements without first submitting the same to the Divisions.
3. That Minute 205 of the Annual Representative Meeting of July last be strictly adhered to.
4. It was unanimously decided not to accept service under the National Insurance Act.

Instructions to Representative.—These resolutions were embodied in instructions to the Representative of this Division, and a small subcommittee was appointed to confer with him before the Representative Meeting on November 19th and 20th.

METROPOLITAN COUNTIES BRANCH:

STRATFORD DIVISION.

A MEETING of this Division (including the Tower Hamlets Division) was held at the Stratford Town Hall on November 14th. An invitation to the meeting was accorded to all medical men within the areas of the above-named Divisions. Dr. SANDERS occupied the chair, supported in the vice-chair by Dr. D. L. THOMAS, Chairman of the Tower Hamlets Division. One hundred and sixty gentlemen were present.

Instructions to Representatives.

The object of the meeting was to instruct the Representatives as to their action at the Representative Meeting to be held on November 19th in accordance with the request contained in the report of the Council published in the SUPPLEMENT of November 2nd, 1912.

Dr. PERCY ROSE proposed:

That we refuse to take service under the National Insurance Act.

This was seconded by Dr. BLACK.

Dr. HARRY ROBERTS moved as an amendment:

That provided the conditions of service be so amended as to be satisfactory to the British Medical Association we accept service under the Act.

This was seconded by Dr. CLARK (Poplar).

Drs. BATESON, TOMKIN, GALLIE, KENNEDY, GREENWOOD, CARDALE, EADY, TOLAND, YOUNG, and STEEN joined in the discussion.

On being put to a Divisional vote, 20 voted for the amendment and 100 against, and it was declared to be lost.

Dr. KENNEDY proposed:

That the Representative be given a free hand to accept the finance and reject the regulations, and failing such opportunity to reject all.

The amendment was ruled out of order.

Dr. CARDALE proposed as an amendment:

That the Representative be instructed to vote to give service under the Act under the conditions set out in paragraph 114 of the Report of the Council.

Dr. BERNSTEIN seconded.

Drs. GREENWOOD, EADY, SCOTT, ROSE, and GRANT joined in the discussion, and Dr. BERNSTEIN announced that he seconded under a misapprehension and withdrew. There being then no amendment before the meeting, and numerous cries of "vote," the original resolution was put:

1. To members of the British Medical Association, when 115 voted for and 10 against.

2. To non-members of the British Medical Association, when 21 voted for and 8 against.

The resolution was declared to be carried.

NORTHERN COUNTIES OF SCOTLAND BRANCH:

CAITHNESS AND SUTHERLAND DIVISION.

A MEETING of the Division was held in the Lawson Memorial Hospital, Golspie, on November 9th, Dr. SIMPSON in the chair, and eight other members were present.

Contract Appointments.—After the usual formal business, Dr. DICK explained the position of the Caithness medical men with regard to the resignation of contract appointments. The resignations of all such appointments were in his hands as Secretary of the Local Medical Committee, but in two cases the parish practices were held on the contract system. It would not be fair to enforce the resignation of these, nor would it be just to the other practitioners if they were left alone. Dr. Dick had been in communication with the head office on the subject, but matters remained in that position at present. Dr. Dick's explanation was considered satisfactory. It was not easy to see what else could be done.

The Chancellor's Proposals.—The chief business before the meeting was to consider whether the new conditions of medical service as laid down in the Regulations of the Commissioners and in the recent speeches of the Chancellor of the Exchequer, are such as to warrant the medical profession accepting service under the National Insurance Act. Dr. ASHER moved:

That the Representative to the Representative Meeting be informed that in the opinion of this Division the new conditions of medical service under the National Insurance Act are such as to warrant the medical profession undertaking service under the Act provisionally; and that the Representative be instructed to insist on the extreme importance of having some special grant, in addition to the capitation allowance, set apart for travelling expenses in sparsely populated districts such as Caithness and Sutherland.

This was seconded by Dr. MACLACHLAN, and, after an expression of opinion from each of the members present, there being no amendment, the motion was carried unanimously.

OXFORD AND READING BRANCH:

READING DIVISION.

A SPECIAL meeting of this Division was held in the Library of the Royal Berkshire Hospital on November 15th. Dr. ABRAM, Vice-Chairman of the Division, was in the chair, and fifty-three members and six non-members were present.

Bateman Fund.—The CHAIRMAN stated that £80 had been collected towards the Bateman Fund, and appealed for further subscriptions, as many men had not yet subscribed.

Inspection and Treatment of School Children.—The SECRETARY then announced that the Education Committee of the borough of Reading proposed to appoint a whole-time medical officer to inspect and treat school children. He stated that this was opposed to the ruling of the British Medical Association, and must not be allowed, in the interests of the general practitioner, to take place. Mr. J. H. WALTERS explained the scope of the clinic, and the CHAIRMAN explained what steps, the matter being of some urgency, the Executive had taken to approach the Education Committee on this matter. A resolution suggesting the appointment of part-time officers from amongst the practitioners of the town had been sent in a letter by the Chairman to the Clerk of the Education Committee, who had replied inviting a deputation from the Division to meet that Committee at their next meeting. The meeting then resolved:

That this meeting strongly disapproves of the appointment of a whole-time officer in connexion with the Reading School Clinic, and empowers the Reading members of the Executive Committee of the Division to deal with the whole matter.

Medical Members of Advisory Committee.—Dr. ABRAM then proposed and Mr. WALTERS seconded:

That this Division views with the strongest distrust the position and utterances of the medical members remaining upon the Advisory Committee who have been in conference with the Chancellor of the Exchequer, and entirely repudiates their authority to speak in the name of the profession at large.

This was passed unanimously. Dr. C. S. PATTERSON, of Lambourne, in proposing

That the British Medical Association should adhere to their minimum terms as fully set forth in a letter sent by Dr. Alfred COX to the Chancellor of the Exchequer on February 29th ult., and decline to accept service under the Act until these are conceded,

made it quite clear that so far the Government had by no means granted the minimum terms of the profession, and he urged with great force the necessity of standing out for these. Mr. WALTERS seconded the motion, and after Dr. G. C. TAYLOR had spoken, it was carried unanimously. An amendment to the motion to the effect that the Association should negotiate with the Government *re* the income limit and remuneration, proposed by Mr. W. H. JOY and seconded by Mr. G. C. B. HAWES, was the cause of considerable discussion, but was withdrawn before the original motion was put to the meeting.

Dispensing for Insured Persons.—It was then resolved:

That the British Medical Association should insist that dispensing for insured persons should be done or arranged for by the medical practitioners should they so desire, and that the amounts allowed under the Act for this purpose should be credited to the practitioners in addition to the capitation fee.

The Regulations.—The following resolution, entered on the agenda for the Representative Meeting, was proposed by Mr. P. N. JONES, and was carried with four dissentients:

That in view of the Regulations respecting medical benefit issued by the Commissioners, and the recent explanation of the Chancellor of the Exchequer, this Representative Meeting would urge the Divisions seriously to consider again the advisability of adopting a scheme of payment in full for services rendered on a suitable tariff, the risks of the insurance to be borne by the Government or contributing lay bodies or both conjointly.

In answer to the question raised as to whether the pool created would be adequate, it was stated that as neither the public nor the Government could complain of a 2s. 6d. or 2s. fee for each attendance being unreasonable, in the event of a deficit the profession would have an indisputable claim to a further grant from either or both parties, whereas the public were now disposed to regard the present offer of 7s. as very handsome remuneration indeed compared with the old rate of 4s. or 5s. per head.

Representative on Council.—Dr. W. TURRELL, representative of the Division on the Central Council, was then introduced, and in a short speech expressed the hope that any matters which Reading wished the Council to specially consider would be communicated to him, and he would give them his best consideration.

Guarantee Fund.—It was then proposed:

That the members of this Division be asked to increase their guarantees to not less than £20 per head.

The motion was not voted upon, but it was evident that should necessity arise the guarantees would be forthcoming.

Letter from Insurance Committee.—The CHAIRMAN then read a letter from the Secretary of the Insurance Committee, inviting the Division to confer with them on the matter of providing ordinary medical attendance for insured persons. The following resolution, proposed by Mr. HOWSE, seconded by Dr. COLEMAN, was passed unanimously, and the Secretary was instructed to send it in a letter to the Insurance Committee:

That the Clerk to the Insurance Committee be informed that under existing circumstances the Reading Division of the British Medical Association are unable to meet the Insurance Committee in conference, such course being prohibited by the Council of the Association.

SOUTH-EASTERN BRANCH:

REIGATE DIVISION.

THE autumn meeting of this Division was held on November 12th at the White Hart, Reigate. Mr. A. R. WALTERS was in the chair, and thirty-three members were present.

Resignation of Honorary Treasurer and Secretary.—The CHAIRMAN announced the resignation of the Honorary Treasurer and Secretary (Dr. Ogle), and proposed a vote of thanks, and that the following resolution should be entered on the minutes:

That the Reigate Division of the South-Eastern Branch of the British Medical Association accept Dr. Ogle's resignation with the deepest regret, and wish to record in these minutes their great appreciation of the services he has rendered them.

The resolution was carried unanimously. Dr. Gayner was then elected Honorary Treasurer and Secretary.

Annual Representative Meeting.—Dr. PALMER gave an account of the Annual Representative Meeting at Liverpool, and was accorded a hearty vote of thanks for his services.

Provisional Medical Committee.—The HONORARY SECRETARY read the report of the Provisional Medical Committee, each paragraph being discussed separately:—Paragraph 1: The position of uninsured persons in clubs after January 14th led to much discussion. The resolution of the Provisional Medical Committee—

That they should be attended until January 1st, 1914, at the old ratio if their income did not exceed £2 a week—

was not adopted, and finally Dr. Palmer was instructed to vote as he thought best. Paragraph 2: The result of the guarantee canvass (£1,113) was considered very satisfactory. Paragraph 3: The Surrey County Tuberculosis Scheme was rejected on the advice of the State Sickness Insurance Committee. Paragraph 4: The principles underlying the Public Medical Service Schemes C and D were approved, and Dr. Palmer was instructed to support Resolution (*a*):

(*a*) That it be an instruction to Council that in any Public Medical Service scheme submitted for approval the inclusion of the principle of co-operation with contributing lay bodies in the administration shall not be ground for the withholding of such approval, providing that control of purely professional matters remains with the profession.

(*b*) That in view of the regulations respecting medical benefit issued by the Commissioners and the recent explanation by the Chancellor of the Exchequer, this Representative Meeting would urge the Divisions seriously to consider again the advisability of adopting a scheme of payment in full for services rendered on a suitable tariff, the risks of insurance to be borne by the Government or contributing lay bodies, or both conjointly.

In the latter the principle of payment for work done to apply only to the particular schemes, and not generally. Paragraphs 5, 6, and 7 led to prolonged discussion, the general feeling being strongly against the Chancellor's proposals. Finally, Dr. Palmer was instructed to vote (*a*) for reopening negotiations with the Government in the hope of getting better terms as regards extras; and, if this were not carried at the Special Representative Meeting, (*b*) for refusing service (unanimous).

Ethical Rules.—The ethical rules (BRITISH MEDICAL JOURNAL SUPPLEMENT, September 21st) were unanimously adopted for the Division.

Surrey Education Committee and Treatment of School Children.—The CHAIRMAN gave an account of the steps that had been taken to oppose the scheme of the Surrey Education Committee to institute a whole-time medical service for the treatment of school children found to be defective on inspection—namely, by calling a meeting of medical men from all parts of Surrey, drafting the following resolutions—

1. This meeting agrees that the percentage of cases treated is unsatisfactory, and points out that this is largely due to the fact that there is no organized system of treatment in operation.
2. That before a whole-time medical service is established the local practitioners should be given an opportunity of carrying out the work.
3. That the treatment of defective school children can be advantageously and efficiently carried out by the local practitioners acting as part-time medical officers to the proposed clinics of the areas in which they reside.
4. The medical practitioners of Surrey are prepared to form a committee to co-operate with the Surrey County Council to discuss a modification of the scheme at present under consideration.

—and sending them to every member of the Surrey County Council; by bringing personal influence to bear on individual members of the County Council to delay the approval by the County Council of the scheme; and by pressing on the formation of a Surrey County Medical Committee to formulate a scheme on the panel system, and confer with the county authorities on this and kindred subjects.

Proposed Changes in Area of Division.—A letter from the Secretary of the South-Eastern Branch Organization Committee was read, asking the Division to consider the following proposed changes in the area of the Reigate Division—namely:

(*a*) The transference to Tunbridge Wells of that part of Sussex east of a line drawn between Three Bridges and Crawley.
(*b*) The transference to Horsham of that part of Sussex west of a line drawn between Three Bridges and Crawley.
(*c*) The transference to Reigate from Tunbridge Wells of Lingfield and Dorman's Park.

As regards (*a*), Mr. ESCHWEGE, speaking for himself and his partners, said that they wished to work with East Grinstead. (*b*) Dr. MATTHEWS, speaking for Crawley practitioners, said that they would be sorry to be dissociated from the Reigate Division. (*c*) Dr. S. A. CLARKE stated that Dr. Austen, of Lingfield, would approve of this change.

District Insurance Committee Areas.—Dr. OGLE informed the meeting that the clerk to the Surrey County Insurance Committee had written to him that the areas for which District Insurance Committees are to be established in the county had not been settled because the Insurance Commissioners had not issued the long-promised regulations dealing with the subject. The meeting then unanimously decided to defer the approval of the alterations until the areas of the District Insurance Committees had been settled.

Expenses of Representative.—The meeting unanimously sanctioned the levy of 7s. 6d. per member to form a fund

to defray the personal expenses of the Representative of the Division when attending Representative Meetings in 1912.

Vote of Thanks.—The meeting terminated with a hearty vote of thanks to the Chairman.

Dinner.—After the meeting seventeen members dined together. Mr. Sewill, in returning thanks for the toast of "The Association," gave an account of his experiences in bringing evidence relating to the advertising of quack medicines before the Committee, and expressed the opinion that no legislation to control the sale would result from the Committee, because the power of the newspaper proprietors was too great.

Presentation to Dr. Ogle.—Dr. Hewetson, on behalf of the Division, then presented an inscribed silver salver to the retiring Secretary, Dr. Ogle. Dr. Hewetson spoke of the great value to the Division, during the last six years, of the Secretary's hard work and keenness for the welfare of the Association. Dr. Ogle's health was drunk with enthusiasm.

To ensure the insertion of notices in this column they must be received at the Central Offices of the Association not later than the first post on Tuesday.

Association Notices.

SPECIAL MEETING OF COUNCIL.

A special meeting of the Council will be held at 2 o'clock in the afternoon of Wednesday, December 4th next, to consider the Report of the State Sickness Insurance Committee and other competent business.

By Order,
Guy Elliston,
Financial Secretary and Business Manager.

Nov. 27th, 1912.

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A list of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

BRANCH AND DIVISION MEETINGS TO BE HELD.

Edinburgh Branch: South-Eastern Counties Division.—The annual dinner of the Division will take place in the Douglas Hotel, Galashiels, on the evening of Friday, December 6th, at 6.30 o'clock. Chairman, Dr. Muir. Tickets, 5s.—M. J. Oliver, Honorary Secretary, St. Boswells.

Metropolitan Counties Branch: City Division.—A meeting of medical practitioners of the City Division of the British Medical Association, to consider the present position of the profession regarding the National Insurance Act, and to elect six practitioners to serve upon a medical committee representing the insurance area of the London County Council, will be held at the Hackney Town Hall, Mare Street, N.E. (near Hackney Station, N.L.Ry.), this day (Friday, November 29th), at 4 p.m. This invitation has been sent to all practitioners within the area of the Division, which comprises the City and the five boroughs of Bethnal Green, Finsbury, Hackney, Shoreditch, and Stoke Newington. Dr. David Ross, Chairman of the Division, will preside.—A. G. Southcombe, Honorary Secretary. To Members of the City Division.—A special general meeting will be held on or after December 3rd, if the interview with the Chancellor results in further negotiations and fresh offers or conditions being submitted to the consideration of the Division. Date, time, and place will be notified as early as possible. This notice is requisite to comply with the seven days' notice required for such meeting.—A. G. Southcombe, Honorary Secretary.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1912.

Tuesday, November 26th, 1912.

Sir Donald MacAlister, K.C.B., President, in the Chair.

The ninety-sixth session of the General Council of Medical Education and Registration began at the offices of the Council, 299, Oxford Street, on Tuesday, November 26th, 1912.

New Members.

The following new members were introduced:

Mr. Wilks, M.B., representative of the Society of Apothecaries of London, by Dr. Norman Moore.

John Christie McVail, M.D., as Crown nominee for Scotland, by Dr. Knox.

President's Address.

The President then delivered his address:

Changes in the Council.

Gentlemen,—It falls to me once more to record changes in the membership of the Council. During the summer we lost by death our colleague, Mr. Arthur Trehern Norton, C.B., who since February, 1910, had represented the Society of Apothecaries of London. Though his period of office was short, it was long enough to procure him the regard of the Council, which did not fail to appreciate his diligent attention to business, and his soldierly courtesy of bearing. In his place we welcome Mr. George Wilks, formerly Master of the Apothecaries' Society.

On Saturday we received from the Privy Council an official notification of the appointment by His Majesty of Dr. J. C. McVail as the Crown member for Scotland, in the room of his brother, Sir David C. McVail, whose fourth term of office has just expired. Sir David first joined the Council twenty-six years ago, when the Medical Act of 1886 became law. It is well known that he took an active part in shaping that measure, which modified in many respects the powers of the Council as regards medical education and registration, and in some degree also the relations of the Council both to the profession and to the public. His interest in the administration of the Act was always keen, and no suggestion which appeared to be at variance with its tenor could hope to escape his vigilance. As a member of the Executive Committee, of the Committees on the Pharmacopœia, on Public Health, and on the National Insurance Act, and latterly as Chairman of the Examination Committee, he continued to the end of his service to make his influence felt in many departments of our public work. The distinguished mark of Royal favour recently conferred upon him was cordially welcomed by the Council as a fitting recognition of his strenuous endeavours on its behalf over a period of years longer than can now be reckoned by any of its members. Those who, like myself, have been the longest associated with him will be the first to miss the stimulus of his trenchant criticism.

In Dr. John McVail we acquire a member of high eminence and wide experience in relation to departments of the public medical service of which from time to time the Council has of necessity to take cognizance. To his knowledge of general practice he has added an expert acquaintance on the professional side with sanitation, with the Poor Laws, with State medicine and medical jurisprudence; and, lastly, with the still unsolved problems of National Insurance and the prevention of tuberculosis. It cannot be otherwise than advantageous to the Council to have at command in these, as it has in other departments, such as dentistry, public health, and midwifery, the counsel and co-operation of members occupying positions of acknowledged authority in their several specialities. As Vice-Chairman of the National Insurance Commission for Scotland, Dr. McVail will have it in his power to make contributions of value to the Council's discussion of a new and extremely important branch of State medicine. Our chief need for some time to come will be authoritative

information regarding the policy and practice of the National Insurance administration, especially in its relation to professional training and efficiency. For that information we shall look with confidence to the new Crown member for Scotland.

The Council will learn with regret of the death of Dr. Cocking, of Sheffield, who represented the University of that city from 1905 to 1911. The published tributes to his character and services have amply confirmed the impression left upon the Council by his memory.

Medical and Dental Legislation under Home Rule.

In accordance with the resolution of the Council, passed *nemine contradicente* on June 4th, I communicated to the Lord President your desire that steps should be taken to procure the insertion, in the Government of Ireland Bill, of provisions reserving to the Imperial Parliament the control of legislation relating to the Medical and Dentists Acts.

At the request of the Government I prepared a memorandum setting forth the general grounds on which the Council's resolution was commended to the favourable consideration of Parliament. This memorandum has been circulated, and will be brought before you in due course, in order that, if you think fit, it may be entered in the minutes. There is reason to believe that it has been considered by the Cabinet; but no communication from the Lord President on the subject has yet been received. Notices by private members, proposing amendments to the Government of Ireland Bill in the general sense of your resolution, have appeared on the Order paper of the House of Commons; but under the procedure adopted by the House they have not come up for discussion. The importance of the subject, especially in its bearing on the continued validity, for registration purposes, of qualifications granted in Ireland, appears to have impressed itself on non-official members of Parliament, and there is some ground for the expectation that, during the stage of "report," an opportunity will be found for its consideration.

National Insurance: The Provisional Regulations.

The National Insurance Act, and the rules and regulations proposed to be made thereunder, have received the careful attention of your Special Committee. The results of their action have been communicated to members, and will be laid before you in the form of a Report. Through the Privy Council, an early draft of the Provisional Regulations for medical benefit was submitted for criticism by the Committee in September last. The Committee's terms of reference appeared at first sight to limit its consideration to the effects of the Provisional Regulations "on medical education and examination in relation to the efficient practice of medicine"; but the members deemed it their duty to direct the Commissioners' attention to various other points concerning which on previous occasions the Council had formulated resolutions. In particular, the Committee reiterated the opinion of the Council to the effect that, in the absence of any sufficient provision for the "institutional" treatment of insured persons, the existing facilities for the study of clinical medicine, surgery, and midwifery might be seriously endangered; and that the efficiency of medical education, and consequently of medical practice among all sections of the public, might thereby be impaired.

The Insurance Commissioners have informed the Lord President that the Committee's suggestions were found to be exceedingly useful and valuable; and that, apart from the question of hospital facilities, which the Commissioners appear to regard as outside the present Act, effect was given to these suggestions in the Provisional Regulations as issued.

It is understood that the Regulations are still subject to modification, and that negotiations to this end are now in progress. On your behalf I have asked the Lord President to procure for the Committee an opportunity of considering any such modifications before they are finally approved. I venture, moreover, to suggest the expediency of widening the reference of last June, so as explicitly to authorize the Committee to make representations, and to report, on any matter arising out of the Act which touches the Council's functions.

Procedure in the Election of Direct Representatives.

In response to suggestions from the Council, the Lord President has prepared and introduced into the House of Lords a bill for amending in a few particulars Section 8 of the Medical Act, 1886. This section governs the dates prescribed under the regulations for the election of Direct Representatives to the Council. If carried into law, the amendments will enable the Privy Council to lay down new regulations, which will have the effect of securing that general elections shall be held at regular intervals of five years, even though a casual vacancy should from time to time render necessary a by-election in the interval. Again, by increasing the period between the issue of the returning officer's precept and an election, time will be given to ascertain whether the election is to be contested or not. If it should prove to be uncontested, it will be possible to avoid the expense of preparing voting papers and the like. The ultimate result of the changes proposed should be a considerable saving in respect of election expenses, which, under the present regulations, owing to a number of unforeseen circumstances, have of late years amounted to a large and needless tax on the Council's funds. The bill provides that the tenure of office of the present Representatives shall extend to the end of 1916, in order that the next five years' period shall begin on the first day of January, 1917. The special thanks of the Council are due to the Lord President for his effective assistance in furthering this simple but necessary administrative reform.

Dominion Medical Council: Canada.

It is with much satisfaction that I report the completion in Canada of the legislation necessary to provide for the establishment of a federal Medical Council and a uniform system of registration for the Dominion. To bring this about ten or twelve special Acts of Legislature have been required at the instance of the central and the provincial governments. The organization of the first Dominion Medical Council has been entrusted to the Secretary of State at Ottawa, who is himself a medical man. At his request our Registrar has forwarded to the new body for its guidance a set of the Council's publications, forms, regulations, etc. Dr. T. G. Roddick, of Montreal, to whose patient labours is due the achievement of Canadian interprovincial reciprocity through Dominion registration, has kindly promised to keep the Council informed of the future progress of the scheme.

Legal Decisions under the Medical and Dentists Acts.

I have also to report the completion by Mr. Harper, Solicitor to the Council, of an important volume containing an account of all the cases dealt with by the higher courts of law, in which questions of the interpretation of the Medical and Dentists Acts have been raised. Mr. Harper has been able to add considerably to the reports collected in the small book of "cases" which has hitherto been at the disposal of members; and he has greatly enhanced the usefulness of the new work by admirable introductions, digests, and appendices. As the functions and procedure of the Council as a court of discipline are governed not only by the letter of the statutes, but also by the judicial construction placed thereon, Mr. Harper's work should prove of great value to the profession and the public, as well as to the Council itself. The Executive Committee accordingly propose that the book should be published through the usual channels, in order that it may be accessible to all whom it concerns. The Committee have, in your name, conveyed to Mr. Harper a proper acknowledgement of the pains and skill he has devoted to the compilation.

Certificates of Indian Candidates.

By your instructions the recent report on Indian candidates for professional examination in this country was sent to all qualifying bodies and medical schools. The report embodied suggestions made by the India Office regarding methods for the attestation of certificates of medical study and examination in India, and invited observations on it from the authorities concerned. The absence of any objection to the suggestions thus made justifies the belief that they have been found satisfactory, and that they constitute an acceptable improvement on the

existing practice of the examining boards and professional schools.

Recognized Preliminary Examinations.

The Education Committee has made considerable progress with the revision of the list of recognized preliminary examinations held outside the United Kingdom, regarding which it has been in correspondence with the various educational authorities of the empire. By next session the Committee will be able to place before the Council the results of the inquiry, with a view to the publication of a new list, which will come into operation at the beginning of 1914.

Revision of the "British Pharmacopoeia."

The Pharmacopoeia Committee has, with the help of its editors, been engaged in preparing for press the draft of four large sections of the text of the revised *Pharmacopoeia*. It is hoped that the first proofs may be ready for submission to the Committee early in the new year, and that thereafter the work that still remains to be done will be rapidly advanced. The Committees of Reference in Chemistry and in Botany have rendered valuable service, in supplement of the labours of the Committee of Reference in Pharmacy.

The Medical and Dentists Registers.

The Treasurers and the Registrar have instituted an inquiry into the existing methods of preparing and printing the matter contained in the *Medical Register* and the *Dentists Register*, with a view to its clearer and more convenient presentation. It appears probable that, by improved arrangements between the office and the printers and publishers, an appreciable saving of expense may be effected, and a wider circulation may be obtained for the official volumes. In the existing state of the Council's finances it is very desirable that economy should be practised in every branch of its work, and particularly in cases where, as here, there is a prospect of greater efficiency and convenience.

Penal Cases.

Much of your time this session will be occupied with the consideration of penal charges. Apart from those in which at the last sitting judgement was postponed, the cases to be dealt with arise from the conviction in courts of law of registered practitioners found guilty of various offences. It falls to the Council to decide whether or not, regard being had to the gravity of the charges proved in other courts, it will direct the erasure from the *Register* of the practitioners' names.

In this connexion it is proper to record that the Home Secretary has now, at the request of the Penal Cases Committee, issued instructions to the police authorities throughout England to notify the Council of all cases in which medical or dental practitioners are convicted, whether of indictable or of other offences. Such notifications have for some years been regularly received from Scotland and Ireland; in future the English practice will be assimilated to the Scottish and Irish practice. It is not unlikely that, in consequence of the amended instructions, the Penal Cases Committee will be called upon to consider a larger proportion of cases from England than has hitherto been officially brought to its notice.

Alleged Personation.

Lastly, I must call your attention to a special inquiry to be held on Thursday, for which there is no strict precedent on the medical side of our proceedings. In this case there is no "accused practitioner," as the inquiry relates to the continued appearance in the *Medical Register* of the name of a practitioner alleged to have died abroad some years ago. It is further alleged that some one, who is unqualified and therefore not subject to your jurisdiction, has been personating the deceased practitioner and practising medicine under his registered name and qualifications. If these allegations are proved, the entry in the *Register* must be erased by your direction; and the charge of personation will then have to be investigated by the criminal authorities. The Judicial Assessor and the Solicitor to the Council have made themselves acquainted with the legal aspects of the case, and will be prepared, as always, to offer such professional advice as may be necessary for your guidance in the inquiry.

Vote of Thanks.

On the motion of Dr. Little, seconded by Dr. Norman Moore, a hearty vote of thanks was accorded the President for his valuable and lucid address, and it was ordered to appear on the minutes.

Service Examinations.

The Council having first resolved to adjourn at 4 p.m., to enable certain committees to complete their reports, received and directed to be acknowledged with thanks three returns relating to competitions for admission to the medical departments of the Royal Navy, India, and the Royal Army Medical Corps. The competition for the medical department of the Royal Navy commenced on September 30th; the others took place in July.

For the Naval Medical Service there were seventeen entrants for fifteen vacancies, but five of the entrants did not attend, and two were rejected as the result of the examination, so that only ten were accepted. The first place was taken by a graduate of the University of Dublin, the next two by holders of the diplomas of the English Colleges, and the fourth by a Licentiate of the Society of Apothecaries of London. Four candidates held the diplomas of the Conjoint Board in Ireland, of whom two were rejected, and two others, though accepted, were noted one as spelling badly, and the other as spelling badly and illiterate. In both cases the preliminary examination in Arts passed by them was the matriculation examination of the Royal University of Ireland.

For the Royal Army Medical Corps there were 42 entrants for 30 vacancies, but 7 failed to appear, 3 qualified but were not successful, and 2 were rejected. The candidate first on the list held a London University degree alone, the second the diplomas of the English Colleges and a London University degree, the third the diplomas of the English Colleges alone, the fourth an Edinburgh degree alone, the fifth a Durham degree alone, the sixth and seventh were holders of the diplomas of the English Colleges alone, the eighth a degree of the University of Dublin alone, the ninth the diplomas of the Irish Conjoint Board alone, and the tenth a degree of the University of Edinburgh. Of the two rejected candidates, one held the diplomas of the English Colleges alone, and the other those of the Conjoint Board of Scotland alone.

For the Indian Medical Service there were 12 vacancies and 29 candidates, of whom 13 qualified but were not successful, and 4 were rejected (1 in pathology and bacteriology, 1 in this subject and general knowledge, and 2 in general knowledge alone). The first and third places were taken by graduates of the University of Edinburgh, and the second by a graduate of Cambridge. Of the other successful candidates, 4 held the diplomas of the English Colleges and Cambridge degrees, 1 the diploma of the English Colleges and a London degree, 1 a London degree alone, 1 a London degree and the L.S.A., 1 the Scottish Conjoint diplomas, together with a licence in medicine and surgery of the University of Bombay, and 1 the diplomas of the English Colleges alone.

Executive Committee.

Dr. Norman Walker was elected Scottish Member of the Executive Committee.

Medical and Dental Legislation under Home Rule.

The following Memorandum drawn up by the President with regard to the Government of Ireland Bill was received and entered on the minutes:

Memorandum.

On June 4th, 1912, the following resolution was adopted *nemine contradicente* by the General Medical Council:

> That in the opinion of the Council it is important in the public interest that a uniform standard of medical and dental education and registration should be maintained in Great Britain and Ireland, and that accordingly steps should be taken to procure the insertion in the Government of Ireland Bill of provisions reserving to the Imperial Parliament the control of legislation relating to the Medical and Dentists Acts; and that the President be requested to communicate this resolution to the Lord President of the Privy Council.

This resolution is commended to the favourable consideration of His Majesty's Government on the following grounds:

1. By the Medical Act, 1858, the "General Council of Medical Education and Registration of the United

Kingdom" was established, and Branch Councils for England, Scotland, and Ireland were directed to be formed out of the General Council.

2. By the Act of 1858 and subsequent amending Acts the Council is constituted (*a*) of members from each of the universities and medical corporations; (*b*) of members directly elected by medical practitioners; and (*c*) of members appointed by His Majesty in Council—the members in each of these groups being representative of each division of the United Kingdom.

3. By the same Acts the Council is directed to establish a *Medical Register*, containing the names of practitioners who have obtained recognized qualifications in England, Scotland, or Ireland (or, under special conditions, in other countries, British or foreign); and every person whose name is on the *Register* is thereby entitled to practise in any part of the United Kingdom. Moreover, no person who is not so registered may hold any medical appointment in the naval, military, or merchant service, in any public hospital or other like institution, in any friendly society, or as medical officer of health.

4. It is the duty of the Medical Council, subject under certain conditions to the direction of the Privy Council, to secure by inspection of examinations and otherwise the maintenance of such a standard of proficiency in candidates for qualification as will guarantee their possession of the knowledge and skill requisite for efficient practice.

5. His Majesty in Council may apply the relevant parts of the Medical Acts to any British possession or to any foreign country which affords to registered practitioners of the United Kingdom such privileges of practising within its territories as His Majesty deems just; and thereupon the duly recognized diplomas and degrees of such British possession or foreign country become registrable qualifications in the United Kingdom, and their holders are admitted reciprocally to the like privileges.

6. By successive stages, extending over many years, the Medical Council has brought about the establishment of such reciprocal relations between the United Kingdom and most of the dominions of the Crown in which medical diplomas are conferred (for example, the States of Australia, New Zealand, India, Ceylon, Malta, and three Provinces of Canada); and also between the United Kingdom and Italy and Japan. In virtue of recent Federal legislation in Canada, adopted by the provinces severally, a Dominion Medical Register is to be established for the first time since confederation took place; and it has thus become practicable to apply the Medical Acts to Canada as a whole. When this step is taken, registration in the *Medical Register* of the United Kingdom will in effect confer a prima facie title to practise throughout His Majesty's Empire, as well as in Italy, and in Japan.

7. By the Dentists Act, 1878, and subsequent amendments, a similar system of central registration and control has been established with respect to the profession of dentistry and dental surgery.

8. By the Medical and Dentists Acts the Council is constituted a tribunal of professional discipline, having jurisdiction over all qualified medical and dental practitioners whose names are on its *Registers*, whether in the Home, the Colonial, or the Foreign List. Its judicial decisions have invariably been sustained on appeal to the Superior Courts of Judicature, and it is frequently called on by British authorities abroad to advise or to take action with regard to complaints of professional misconduct alleged against registered practitioners resident in various parts of the Empire.

9. By the Medical Acts, 1858 and 1862, the Medical Council is directed to prepare and publish from time to time the *British Pharmacopœia*, which is intended to supersede the different *Pharmacopœias* formerly in use in England, Scotland, and Ireland, and which is by statute deemed to be substituted for these several *Pharmacopœias*; and any Act of Parliament, Order in Council, or custom relating to any of the latter is by statute deemed to refer to the *British Pharmacopœia*.

10. By Acts of legislature in the self-governing dominions and by orders and ordinances in the Crown colonies and protectorates, the special powers of the Medical Council of the United Kingdom in respect of medical and dental education and registration, and of the *British Pharmacopœia*, have in certain important particulars received legal recognition and ratification for local purposes throughout the greater part of the empire.

11. From the foregoing it will appear that the Medical Council, as it has been established and augmented under Acts of the Imperial Parliament, is an organization whose functions are not and cannot be limited to England, Scotland, or Ireland separately, or even to the United Kingdom as a whole. These functions have necessarily and beneficially been extended to other parts of the Empire and to foreign countries.

It is accordingly submitted that legislation dealing with the Council's constitution and duties, and with the powers which it exercises subject to the review and direction of the Privy Council, is a matter of imperial concern, and should be reserved to the Imperial Parliament.

NATIONAL INSURANCE ACT.

The report of the National Insurance Act Committee as to the representations sent to the National Health Insurance Joint Committee on (1) the possible effect of the Act on the education of students in midwifery, (2) the Draft Regulations for the administration of medical benefit, was received and entered on the minutes.[1]

Payment of Medical Men called in to Assist Midwives.

The report of the Executive Committee on correspondence received from the Central Midwives Board was directed to be entered on the minutes. The Committee recommended the General Medical Council to transmit to the Privy Council an expression of its strong disapproval of Clause 2 of the "Conditions affecting the practice of Midwifery in the Borough of Chesterfield," contained in a circular issued to midwives in the district on behalf of the Chesterfield Division of the British Medical Association. The clause read as follows:

2. Doctors will not attend emergency notes from midwives requiring medical help, unless the patient has previously retained a doctor in case his services are required.

Dr. Norman Moore moved, and Sir Henry Morris seconded, that the recommendation of the Executive Committee be adopted.

Sir Francis Champneys observed that medical practitioners had to attend these cases very often without remuneration, but that was not the fault of the Council or the Midwives Board. It was due to an omission in the Act. Representation was made at the time requesting that a clause providing for the payment of practitioners for work done should be inserted, and similar requests had been made since from time to time by the Central Midwives Board. In one case recently before that Board no less than nine medical men were applied to for assistance in a case of emergency, but none of them would go. That, of course, was a state of things which ought not to occur. He thought the resolution which had been proposed was the correct one on this occasion.

The President desired to mention one or two points which induced the Committee to make the recommendation before the Council. When the bill was in progress and since it had become law it was the Council's consistent policy, by suggesting amendments in the bill and amendments in the Rules made under it, to secure in all cases of emergency, abnormality, or danger to the mother or child that the midwife should not take the sole responsibility of the case, but should call in a registered medical practitioner. Its insistence on this had been successful, because both in the Act and in the Rules made under it by the Midwives Board such a provision was contained, and the Council had since called the attention of the authorities to the fact that, although practitioners thus called in might attend a patient in emergency, no clear provision was made for remuneration. The Council had made a representation, and a successful one, to the effect that in the Insurance Act, under Maternity Benefit, provision should be made for payment of the doctor in such a case as was being discussed. Therefore the action of the Council had been consistent in endeavouring to secure that medical assistance should be available and that the medical man should be remunerated.

Dr. Norman Walker thought it ought to be made clear that the action referred to was only that of a Division of the British Medical Association and not the general policy of the Association itself.

Dr. Latimer agreed, and urged that the Council should again point out that the existing arrangements for the payment of medical men called in by midwives were not satisfactory.

[1] Supplement to the British Medical Journal, November 9th, 1912, p. 505.

Mr. T. Jenner Verrall expressed no opinion on the Chesterfield resolution, but thought that it should be known that the Council's inability to obtain proper payment was provocative of this sort of thing.

The President believed he was right in stating that under the Insurance Act maternity benefit was available for the payment of the practitioner.

Dr. Macdonald pointed out that that was limited to the wife of an insured person.

Dr. Norman Moore hoped no rider of the kind suggested would be added to the report of the Executive Committee.

Sir John Moore pointed out that the motion proposed only dealt with a special Division of the British Medical Association, and expressed no opinion with regard to the general policy of the Association.

The President observed that if the resolution of the Committee were adopted he would see that in the letter sent to the Privy Council the exact definition of the body in question was clearly set out.

The recommendation was then put and carried.

Executive Committee.

The Council went into *camerâ* to consider a report of the Executive Committee, and strangers were directed to withdraw; on readmission,

The President announced that the Registrar had been directed to restore the name of David Thomas Jones to the *Medical Register*, and Thomas Wafer Byrne to the *Dentists Register*. Also that Dr. Norman Walker had been elected a member of the Executive Committee.

The Council then adjourned.

CENTRAL MIDWIVES BOARD.

A meeting of the Central Midwives Board was held on November 21st at Caxton House, Westminster, with Sir Francis H. Champneys in the chair.

A False Reference.

A letter was considered from the secretary of a training centre for midwives reporting that a false reference from a matron of a maternity home had been given by a certified midwife with the view of obtaining a position at a hospital. The Board decided to lay the facts before the local police, and that, failing action by them, the matter be laid before the Public Prosecutor, and that, failing action by him, the matter be referred to the Penal Cases Committee.

Definition of Practice of Midwifery.

A letter was considered from Dr. J. C. Heaven, Acting Inspector of Midwives for Bristol, inquiring whether an uncertified woman practising as a midwife, who makes no special charge for her services, but accepts whatever her patient likes to give her, is practising as a midwife for gain, and consequently within the terms of Section 1 (2) of the Midwives Act, 1902. The Board decided that the answer be that the question raised had not yet been settled in law, and that the only way to settle it was by instituting a prosecution under the Act, Section 1 (2).

Prosecuting Uncertified Women.

A letter was considered from the clerk of the Middlesex County Council as to the difficulty of prosecuting uncertified women under Section 1 (2) of the Midwives Act, 1902, for practising as midwives. A letter was also considered from Dr. J. R. Kaye, county medical officer for the West Riding, on the same subject. The Board decided to send a copy of the correspondence to the Privy Council.

BRITISH MEDICAL ASSOCIATION LIBRARY.

Books Needed to Complete Series.

The Librarian will be glad to receive any of the following volumes, which are needed to complete series in the Library:

American Association of Genito-Urinary Surgeons. [illegible]

American Climatological Transactions. Vols. 1, 4, 5, 6.

American Dermatological Association Transactions. Vols. 5, 7, 8, 11, and 29.

American Journal of the Medical Sciences. New series, vols. 4, 5, 1842-3; vols. 14, 15, 1847-8; vols. 18-30, 1850; vol. 33, 1857; vol. 46, 1864-5; vol. 59; or any parts of these vols.

American Journal of Ophthalmology. Vols. 1-9.

American Laryngological Association. Transactions. Vols. 1-6, 8-9.

American Medical Association. Transactions, 2, 4, 6, 7, 11, 12, 14, 15, 16, 19, 20, 22, 31, after vol. 33, and the *Journal*, up to 1903 inclusive.

American Medico-Psychological Association. Transactions. Vol. 13, 1906.

American Otological Society. Transactions. Vol. 3, part 2, 1883.

American Public Health Association. Transactions. Any vols.

Analyst. Vols. 1-24.

Annals of Surgery. Vols. 13, 14, 26.

Archiv für Dermatologie und Syphilis. Bd. 24 and 25 (1892 and 1893).

Archives générales de médecine. Third new series 7-8 (1839-40); 4th series, 10-17, 20-25, 1852-55, 1858-64, 1872-1897; 1846-55 inclusive; 1857-64 inclusive; 1871.

Archives of Ophthalmology. Vols. 1-3, 6, 7, 14, 15, 16 and 20.

Archives of Otology. Vols. 1-7, and 20-22.

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National Insurance.

IRELAND.

Tuberculosis Schemes.

Hospital and Institutional Treatment.

The confusion in Ireland caused by the National Insurance Act becomes worse confounded every day. The number of committees and subcommittees formed throughout the country is now so large that it has become a practical impossibility for the average medical man to understand or remember what the function of each is intended to be. The part of the Act that at present is of chief importance to Ireland is sanatorium benefit. This is understood to mean any form of treatment of a tuberculous patient in an institution, or in certain cases in his own home. The general hospitals of Belfast, Cork, and Dublin have been asked if they will admit insured patients for sanatorium benefits, and, if so, on what terms. It appears that the Belfast hospitals refused to have anything to do with these patients until an agreement had been come to between the medical profession in England and Mr. Lloyd George. In Cork it is reported that the committees of management of the hospitals agreed to accept such patients, but the medical staffs have refused to treat them as they were not first consulted in the matter. In Dublin practically nothing has been done yet. One hospital, it is said, has made arrangements for taking in a small number of these patients. As a considerable number of the patients in the Dublin general hospitals are cases of tuberculous disease, some from the locality, but many from the country, and the majority of these belong to the class who would be entitled to sanatorium benefit as insured persons or their dependants, this is a very important question. The Conjoint Committee of the British Medical Association and Irish Medical Association has made certain recommendations regarding the admission of these patients by the general hospitals; one is that a minimum of 5s. a week should be paid to the member of the staff under whose care the patient is, and that a fee of half a guinea should be charged for any report or certificate required by the insurance authorities. The Standing Committee of the Dublin clinical hospitals is now taking the matter in hand, and it is probable that the Dublin hospitals will accept these recommendations of the Conjoint Committee. The feeling of exasperation caused by the Act throughout the country among the public as well as the medical profession is increasing. A few days ago a county councillor was summoned for refusing to stamp the cards of his employees. He said he did so as a protest against the Act; and as the magistrates were unable to agree to the fine, the case was adjourned. The action of the Insurance Commissioners in overlooking some of the names sent forward to them by the local Medical Committees and substituting other doctors as members of the local Insurance Committees has been the cause of much suspicion and friction throughout the country. In some cases the medical men appointed by the Commissioners but not nominated by the profession have resigned, but in other cases they have not. All the medical officers of the various friendly societies have sent in notices to resign their appointments on January 1st next, and the societies, who at first treated the matter with contempt and the profession with abuse, are now becoming seriously alarmed and are trying to persuade the doctors to make some temporary arrangement to continue the care of their sick members.

First Tuberculosis Dispensary.

The Central Tuberculosis Dispensary for county Meath has been opened on the site lately secured on the Navan Workhouse grounds from the Navan Board of Guardians. The dispensary is under the charge of Dr. Warren, and is the first of its kind opened in Ireland under the new Insurance Act.

Dublin.

A meeting of the Dublin Division of the Leinster Branch of the British Medical Association was held on November 14th in the Royal College of Physicians in Kildare Street, Dublin. There was a large and representative attendance, and the latest proposals of the Chancellor of the Exchequer *re* the demands of the profession were considered, and the following resolution was adopted:

> That this Division is of opinion that the concessions granted, though considerable, are not yet such as to justify the medical profession in accepting service under the Act as it now stands.

The general opinion in Dublin at present appears to be that, though Mr. Lloyd George has gone a certain distance to meet the demands of the profession with regard to remuneration for medical benefits under the Act, his promises even on this point are somewhat vague, and that the other items of the minimum demands of the profession have been either ignored or refused. Consequently it is thought that the doctors of the United Kingdom should maintain their resolution to refuse to work the medical benefits of the Act until this irreducible minimum has been granted. Of course the profession in Ireland has not at present the same personal interest in this matter as their colleagues in Great Britain. Ireland is exempt from medical benefits, but it is quite possible that before long Ireland also may be included in this part of the Act. The present view then is that the whole profession should continue to be united, and oppose the Act until its demands, as originally formulated, have been granted.

SCOTLAND.

The Chairman of the Scottish Insurance Commissioners and the Doctors.

Dr. William Russell (Chairman, Scottish Medical Insurance Council, Edinburgh) writes: Some of my professional brethren have communicated with me regarding the statement made by the Chairman of the Scottish Insurance Commissioners to the effect that sufficient doctors would be found in Scotland to work the Act, whether approaching negotiations were successful or not, and have asked what basis there is for the statement. As the question has been widely asked, I should be obliged if you can favour me with space to deal with it.

In the first place, it is to be noted that the Chairman's statement was so guarded that it might have been left unsaid had there been no desire on the speaker's part to influence the more timid amongst the doctors. The accuracy of his forecast was conditional on his information being reliable, and he is not confident on that point. His information, such as it is, can have come only from persons who have been regarded by the profession as disloyal. With them the wish is probably father to the thought.

Apart, however, from the character of the Chairman's channels of information there is his opinion that the number will be "sufficient." This is a very vague assertion, for what might be regarded as "sufficient" by the Chairman might be not so regarded by the general public, who are entitled to receive medical benefit under the Act, and to have a reasonable choice of doctor.

But the question can be reduced to figures. There are roughly 4,000 doctors in Scotland, which gives one doctor to about every 1,200 of the entire population. In the same proportion the 1,500,000 insured persons will require 1,250 doctors. It may be that 1,250 Scottish doctors will break away from their solemn pledges because they think they are to get 7s. per head for every insured person put on their visiting list by the local Insurance Committee. I still, however, hold to a higher estimate of my brethren, and when it is realized that the 7s. is a myth, even those who are most desirous to accept the Chancellor's terms may reconsider their position. I certainly have no information that would lead me to believe that a third of the doctors in Scotland are prepared to accept the Regulations recently issued because an additional 2s. has been promised by the Treasury on conditions, one of which is that the Commissioners are to see that *proper time and attention* are given by the doctor to the insured persons! Think of the Commissioners as having the determining voice in such arrangements for Scotland! As for the Treasury

grant, it is not in the Act; it would have to be budgeted for annually, and a vote in the Commons would annul it any year, and the extra 2s. would disappear.

If our brethren in populous and poor localities are really led away by the promise of 7s., they must be a source of increasing amazement to the astute Chancellor, and of despair to many of their own best friends. To begin with, the 6d. from the sanatorium benefit money may be regarded as already gone, for the local Insurance Committees are up in arms about it, and the Chairman of the Commission seems to have accepted the view that Mr. Lloyd George's words were merely a suggestion. This brings the sum down to 6s. 6d. This 6s. 6d. is available for paying the doctors for medical attendance, for night and emergency calls, for setting fractures, reducing dislocations, administering anaesthetics, and many other services, and for *mileage*. The Chancellor never suggested that the doctors in populous centres, with thousands of insured persons within half a mile, were to get 6s. 6d. per head; he, indeed, definitely indicated that the distribution of the available money was a difficult matter.

With regard to distribution, and leaving out of account other extras, take mileage alone—for the *country doctor* cannot look at any proposal which does not allow for mileage—there are, roughly, 3,000 country doctors in Scotland; for, even excluding Edinburgh, Glasgow, Dundee, and Aberdeen, every town doctor has a fringe of country practice. If 1s. only is taken off for mileage from the 6s. 6d., it will only allow on an average £25 per annum to each country doctor for travelling expenses. This sum, which is quite inadequate, reduces the capitation allowance to 5s. 6d. Further, is the country doctor to get no special payment for a night visit ten miles away, and to be treated as the Dundee doctor, let us say, who pays a night visit in the next street?

When the question of distribution arises the doctors in populous places will find that the additional 2s. has disappeared and the 6s. 6d. come down to 4s. 6d., which they have already declared to be insufficient.

I refer only to this aspect of the present struggle, as it was the extra 2s. which seemed to have reopened the closed book. The chain has been regilded, the hook has had an extra worm put on it. Surely the medical profession in Scotland will see that the bait is not even a real worm, but a phantom. The deeper and truer reason of the opposition by the doctors to the medical aspects of the Insurance Act has its foundation in the conviction that the Act means the degradation and servitude of a section of the profession.

THE SPECIAL REPRESENTATIVE MEETING.

TUBERCULOSIS OFFICERS.

DR. DUNCAN FORBES (M.O.H., Brighton) writes: At the Special Representative Meeting Dr. Benham (Brighton) said that "the Brighton Town Council had appointed the medical officer of health to be chief tuberculosis officer, and it was understood that he was to have an assistant at £250 or £300 a year to actually do the work." May I point out that the proposal which has been and is being considered by the Sanitary Committee is to appoint an assistant tuberculosis officer, who will be clinically independent, to act as dispensary officer and supervisor of domiciliary treatment? It is possible that the salary may be £400, rising to £500, but it certainly will not be on the basis Dr. Benham stated.

A CONSTITUTIONAL POINT.

DR. MAJOR GREENWOOD (City, Metropolitan) writes: In the report of the recent Representative Meeting that is published in the SUPPLEMENT of last week no mention appears of the fact that I contended that the reference to the Divisions of the final decision of the Association whether to work the Act or not was against the articles of the Association, and challenged its legality.

DR. E. ROWLAND FOTHERGILL (Brighton) also writes to criticize the action of the Representative Meeting and its Chairman. He hopes that the Council will decide to call the Representative Body together once more in order to consider the new problems in a constitutional manner, and believes that if the Council decides in a contrary sense at least seven Divisions will be found willing to use their powers under By-law 36 (1) to requisition the Council to call such a meeting.

DR. HENRY G. DIXON, City Road, E.C., also writes to protest against any change of policy unless carried out in strict conformity with the constitution.

A CORRECTION.

The remarks of Dr. J. Adams, as given in the SUPPLEMENT of November 23rd, p. 567, second column, were incorrectly reported. Dr. Adams concluded his observations by saying that he could not conceive that the application of the Insurance Act would in any way alter the character of medical attendance or the methods by which medical men carried on their work. He did not think that inspection could have any fears for men who conducted their work properly.

THE ADVISORY COMMITTEE.

WE have received the following letter from Dr. Arthur Latham:

38, Portland Place, W.,
November 21st, 1912.

Sir,

The numerous letters I have received from members of the medical profession and the announcement of Sir John Collie's resignation make it necessary for me to explain my attitude towards the Advisory Committee of the National Health Insurance Act. I did not respond to the request of the British Medical Association that I should resign for two reasons: The Association had accepted sanatorium benefit and I was placed on the Committee chiefly for the purpose of advising with regard to the Regulations of that benefit. Further, I thought it my duty to remain on the Committee so long as there appeared to be any hope of the Chancellor of the Exchequer coming to some arrangement which would satisfy the legitimate and reasonable demands of the profession.

In view of the terms of the British Medical Association's resolution of November 20th, which is now before the Chancellor, and which does not preclude the possibility of a settlement, I feel it to be my duty to continue to serve on the Committee until the Association finds that it is unable to obtain satisfaction for what it authoritatively defines as the reasonable demands of the profession.

I am, Sir,
Yours, etc.,
ARTHUR LATHAM.

PROVISIONAL MEDICAL COMMITTEES.

HAMPSTEAD PROVISIONAL MEDICAL COMMITTEE.

A MEETING of the Committee was held on November 22nd. Dr. FORD ANDERSON was in the chair, and sixteen members were present.

Local Medical Committees.—Letters from the Medical Secretary numbered (D. 15), (D. 16), (D. 17), relating to the immediate formation of local Medical Committees in all insurance areas, were read. The HONORARY SECRETARY reported what had been done at the meeting of the National Insurance Committee of the Metropolitan Branch Council the day before. It was thereupon resolved to call a meeting of the profession in the borough to elect three representatives upon the local Medical Committee for the County of London Insurance Area; that the meeting be held on Friday, December 6th, at 8.45 p.m., at the Central Library, that the Chairman and Secretary convene the meeting, and that nominations be asked for to be sent in to the Secretary not later than the first post on Wednesday, December 4th. It was also resolved that the following motion be placed upon the agenda paper for the meeting:

> That one of the members elected on the Committee shall be a non-member of the British Medical Association.

The Committee then nominated Dr. Ford Anderson, Dr. E. L. Pritchard, and Mr. S. L. Archer (non-member). Should a voting paper be necessary, it was decided to state against the name of a candidate whether he was or was not a member of the Association. The Hampstead Medical Society having nominated Dr. Van Praagh for the

vacancy on this Committee, Dr. Oppenheimer moved and Dr. Pritchard seconded that he be elected as a member of this Committee.

Fees for Attendance on Uninsured.—Dr. Picard referred to a letter from the Metropolitan Provident Medical Association having reference to the fees for the attendance upon the uninsured, and in view of the fact that the Special Representative Meeting had not given a decided opinion on the matter, and had postponed the date for making final arrangements until March 25th, he was asked to do the best he could.

Dental Service.—Mr. Peyton Baly reported that at a meeting of a Special Committee of the Representative Board of the British Dental Association it was decided that a dental service should be organized, and that benefits be limited to persons in receipt of medical benefit under the Act, persons whose incomes are within those acceptable to the medical profession, and children of the above who have left school.

MEETINGS OF THE PROFESSION.

Godalming and District.

At a meeting of the Godalming and District Medical Society held on November 19th the following resolution was carried unanimously:

> That this meeting of the Godalming and District Medical Society is of opinion that the latest offer of the Chancellor of the Exchequer is no improvement on the former terms of remuneration; that the conditions of service as set out in the recently published regulations of the Insurance Commissioners are degrading and intolerable; and that, if accepted, there would result a medical service ruinous to the prestige of the profession and damaging to the health of the community.

CORRESPONDENCE.

[*It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor*, British Medical Journal, *429, Strand, London, W.C.*]

Freedom of the Profession.

Dr. Chas. Buttar (Metropolitan Counties Branch) writes: Even at this late hour may I appeal to medical practitioners to ask themselves if it is really necessary to place the profession in the clutches of the State, and to "work the Act"?

I presume that the idea underlying the Insurance Act is that the lower classes obtain insufficient medical attendance, that treatment by hospitals and clubs has broken down, and that the health of the community is a national concern. Now conditions can be improved only by increasing the number of practitioners available; and it is only by increasing the pecuniary results that the career of medicine can be made more attractive. Is there any reason why a State service should be necessary to achieve this end—State service meaning the service that will be required under the Insurance Act? I venture to assert that the portion of the community attended at present under the conditions of private practice is quite well served, and would not be benefited by changing to a service under State control.

What is the difference, then, between ordinary private practice on the upper and middle classes and the practice applicable to the lower classes? Simply that the conditions in the latter, except for charity, necessitate insurance terms; that is, that the many have to pay for the troubles and diseases of the few.

It is unnecessary to go into the reasons for the collapse of the 4s. a head club insurance, or to discuss the justification for State compulsion in thrift. The issue with which I wish to deal is whether, under the conditions established by the Insurance Act, there is any real need that a considerable portion of the medical profession should lose its freedom and become a medical service under a large measure of State and lay control. In the hurry of the introduction of the Act this issue was lost sight of, and medical men, anxious to free themselves from the control of the friendly societies, received the Act as if it was a necessity of existence, and proceeded to enunciate the cardinal points, in the hope that the conditions might be made tolerable.

After eighteen months no improvement of these conditions has taken place, except in the matter of remuneration, and at the recent Representative Meeting it was decided by an overwhelming majority that this increased remuneration was an insufficient price to receive for throwing up the other conditions demanded.

After this excellent decision, the Representatives decided to continue to toy with the State service idea, and, in deference to public opinion, to reopen negotiations. But, instead of merely appointing a committee, and leaving it to see what could be done with the original cardinal points, the rest of the day was wasted, as it seems to me, in trying to find out wherein those cardinal points could be modified. In my humble opinion, the time might have been used to better advantage in testing the various proposals that have been made for dealing with the deadlock that may arise next January.

At the beginning of next year a number of people who have been attended hitherto on the insurance principle will find that their doctors have resigned their appointments. At the same time, they may discover that Mr. Lloyd George has not been able to fill the places left vacant by these resignations. These people will look to their societies to provide medical attendance, and the executive bodies of some of these societies are so frightened already with the prospect that they are asking the Chancellor to hand over the 9s. a head to them, so that they may make their own arrangements for their members. Nothing could be better, provided that Mr. Lloyd George insists that medical attendance must be forthcoming in return for the 9s. The societies will be compelled to approach the Provisional Medical Committees, which will express their willingness to give treatment on the terms of the cardinal points, with especial stress on the abolition of friendly society control. It will be pointed out that the free choice of doctor renders complaints absolutely unnecessary; that for the first time the lower classes will be almost in the position of private patients; and that as the medical profession becomes a more lucrative calling the attendance given will improve year by year.

So far this plan has been developed only by the City Division; but I cannot help feeling that, if explained in other areas, it will meet with a large measure of support. The effort required to force the plan upon the approved societies is well worth the trouble, for the medical profession will remain free and untrammelled by the fetters of State control. And I cannot see that the effort is likely to be one whit greater than would be involved in extorting reluctant concessions locally from Insurance Committees.

I venture, therefore, to hope that the profession will spare some attention for such a scheme, in the interests of what I believe to be the sacred cause of freedom.

Existing Contract Practice.

Dr. John Drew Moir (Plymouth) sends the following table, with the appended observations:

	Rate.	Wage Limit.	Free Choice for Doctor and Patient.
Post Office... ...	8s. 6d. with medicine	None	None.
Army	8s. 6d. with medicine	None	None.
Friendly societies	4s. with medicine	None	None.
Insurance Act ...	9s. with medicine; 7s. without medicine	£160 limit, and perhaps lower through local committees	Yes.

Elected Medical Representatives.

Post Office	None.
Army	None.
Friendly societies	None.
Insurance Act	Yes.

Under the Insurance Act one has an absolute right to refuse any patient. If a doctor chooses to take impaired lives, patients at a long distance, or unreasonable ones, that is his own look-out.

If we refuse generally to work under the Act, are we not simply playing into the hands of the committees of the different societies, who will be only too pleased, as they say, to make their own arrangements?

Dr. Percy Rose (Barking, E.) writes: There are many of us whose objection to the National Insurance scheme is not confined to dissatisfaction with the Regulations, but they are of opinion that the medical provisions of the Act itself are unworkable and will fail to provide an efficient service. To those of that opinion alterations of the Regulations and conferences for that purpose are mere waste of time.

Discussion has been going on for the last eighteen months, and during that time mistakes have been made on both sides. Decisions have been arrived at, particularly in the earlier days, which now appear unwise and unsatisfactory.

If we now inform the Government that we decline with regret to accept service under the Act, such refusal should enable us to start with a clean sheet in fulfilling our pledge of June, 1911, that we would co-operate with the Government in establishing an efficient medical service.

Mileage.

Dr. Thomas Reid (Lochmaben), in a letter on the subject of mileage puts forward the following suggestion, which he had submitted to the Scottish Division of the Border Counties Branch:

Let each area of panels have a fixed centre, and let these areas be extended in mile circles, and let a rate be fixed (or each subscriber in the different circles. What this should be would be a question for actuaries, but there is one very important point in this arrangement which should not be lost sight of—the doctor always, or nearly always, resides in the village or country town, or in the most populous part of his district, so that the greatest number of his patients would be in the first or second circle, and that these numbers would decrease as the mileage increased from his residence, and again in the cities and populous places almost all the patients would be within the two-mile area, so that if a very little were taken off the fixed grant for the first area, a sufficient sum would be got to pay for the higher fees for the smaller numbers living in the more distant areas. This might not just be sufficient to meet these charges, but it would go a very long way in doing so.

As an example, which is subject to adjustment, I would suggest the following scale:

For all insured in the first or one mile circle, 6s. 6d.
For all insured in the second or two mile circle, 7s.
For all insured in the third or three mile circle, 8s.
For all insured in the fourth or four mile circle, 9s.
For all insured in the fifth or five mile circle, 10s.

For those living in more distant areas a special provision would have to be made, and which might include the highlands and islands of Scotland.

After all the insured living in the two mile area were provided for, the Chancellor would still have 6d. per head of insured (and that from the great numbers, as I have shown, who reside in the first one mile circle) to pay the extra demands for the more distant circles. In cities there could be several centres from which these circles were drawn, and each doctor on the panel would select which centre he elected to take service under. Where there were two towns or centres near each other—say, A and B, at a distance from each other of four miles—then the two miles circle of each would meet and include all the insured of these two places; but these circles could be continued out in the other directions until they met or intersected the circles of the other centres, so that a doctor's practice, instead of being a circle, in many cases would be an elliptic.

Dispensing.

Dr. M. Tylor (Wisbech) writes: To country practitioners this is a most important question. It is quite true that many doctors who now dispense their own medicines would gladly give it up if they could see their way to doing so, but as that would also mean giving up a portion of their income they still continue to dispense. If the Act referred only to persons who were formerly club patients there would not be so much hardship in the refusal to allow the doctor to provide the medicine, but, as a great many who were formerly private patients and who paid for their medicines will become insured persons, it is obvious that the value of a dispensing practice and the income derived from it will be less under the Act than before it, assuming that the income from attendance upon persons who have become insured remains the same. This provision of the Act relating to dispensing will not affect the value of non-dispensing practices (most town practices come under this head) or of country practices in districts where there is no chemist available, but must affect adversely the practices of those country doctors (and these are in the majority) who live in small towns where there are chemists also.

There are probably very few non-dispensing doctors who would wish to provide medicine for insured persons under the Act, but surely it would only be common justice to allow to those practices in which dispensing is at present carried on the right to continue to do so. This would not interfere in any way with the present position of chemists. It may be desirable that doctors should not make a practice of dispensing, but it is also very desirable that chemists should not make a practice of prescribing. There is no provision in the Act as to compensation for the decreased value of practices in consequence of this provision of the Act; there is no safeguard against the use of doctors' prescriptions by the chemists to the detriment of a doctor's practice. Therefore it is the duty of the profession to insist on the retention of their undoubted rights.

Sickness Rates in Germany.

Dr. E. A. C. Baylor (Ash, via Canterbury) desires to draw the attention of those members of the profession who cling to the belief that their work will be but little, if at all, increased under the National Insurance Act, to the remarkable statistics, in Mr. I. G. Gibbon's work on *Medical Benefit* in Germany and Denmark. A notice of the book appeared in the British Medical Journal of October 26th, p. 1151. The statistics were supplied to the author by one of the Dusseldorf societies, and include the returns of 28 German towns.

From these, Dr. Baylor writes, it is learnt that during 1910 in several instances the percentage of employed who were on sickness benefit was over 60 per cent., and that the average rate of sickness for twenty-five towns was over 44 per cent. of the insured. I have excluded three towns where the returns were not complete. Furthermore, we discover that the duration of each sick member's illness averaged 21.7 days. These figures prove how utterly fallacious are the anticipations of Mr. Lloyd George regarding the work which the profession will have to do under the Act.

To add to the joy of their work we find that the German doctors have been engaged in 1,022 conflicts with the societies, a reassuring prospect for us here in England. And finally we discover that whereas many German States issued tariffs of fees for medical services, the doctors urge that they should be paid at the minimum rates provided in these tariffs, as they found in practice that they received from the societies less than 62 per cent. of what they would have received under the tariff.

Hospitals and Asylums.

Glasgow Royal Mental Hospital.

The annual report for the year 1911 of the Glasgow Royal Asylum or Mental Hospital contains an account of the last annual meeting. Sir Thomas Mason (Chairman of the General Board of Lunacy for Scotland), who presided, at the end of his interesting historical review of this asylum now reserved for private patients mentioned that during 1911 about £2,000 was spent in supplementing the board of many patients, as many as 150 being able to pay only £40 a year or less.

The Physician-Superintendent, Dr. Landel Rose Oswald, in his annual report, shows that on January 1st, 1911, there were 444 patients in residence, and on the last day of the year 445. The total cases under care during the year numbered 559, and the average daily number resident was 445. During the year 115 were admitted, of whom 88 were first and 27 not-first admissions. Of the total admissions, in 25 the attacks were first attacks within three, and in 21 more within twelve months of admission; in 15 not first attacks within twelve months, and in the remaining 54 the attacks—including 1 congenital case—were of more than twelve months' duration on admission. From the point of view of duration of disorder, therefore, the admissions were not of a favourable character. As a matter of fact

only 5, Dr. Oswald says, of those who had been ill more than twelve months recovered during the year under review; whereas, of the 38 recoveries 16 were cases of less than three months' duration on admission.

Turning to the forms of mental disorder, the admissions were classified into: Acute mania 6, mania 16; acute melancholia 18, melancholia 31; secondary dementia, 13; delusional insanity, 8; alcoholic insanity, 7; adolescent insanity, 5; general paralysis, 10; recurrent insanity, 5; psychasthenia, 3; and stupor, acquired epilepsy, and congenital defect, 1 each. As to causation, alcohol was assigned in 9, abuse of drugs in 2, syphilis in 10, and other toxins (influenza, fevers, etc.) in 6; critical periods in 24; bodily ill-health in 9; bodily trauma in 5; and mental stress in 7. Previous attacks had occurred in 15, and, Dr. Oswald says, an inherited brain instability was present in 60 of the admissions. During the year 38 were discharged as recovered, giving a recovery-rate on the admissions of 33.4 per cent.; also 30 as relieved and 21 as not improved. During the year also 25 died, giving a death-rate on the average number daily resident of 5.0 per cent. The deaths were due in 11 to cerebro-spinal diseases, including 4 from general paralysis; in 7 to chest diseases, with none to pulmonary tuberculosis; in 4 to abdominal diseases; and in 3 to senile decay.

The general health was good throughout the year, and the asylum, whose directors pursue an enlightened policy with regard to scientific research, is maintained in a high state of all-round efficiency.

GOVAN DISTRICT ASYLUM, HAWKHEAD, PAISLEY.

In his annual report for the year ending May 14th, 1911, Dr. W. R. Watson, the Medical Superintendent of this asylum, shows that the total cases under care during the year numbered 893, and the average number daily resident 474.2. During the year 255 were admitted, of whom 207 were first admissions. Of the total admissions, Dr. Watson says, 57 per cent. were in an unsatisfactory state of health. As in former years Dr. Watson furnishes, in addition to the usual tables classifying the admissions according to the forms of mental disorder, etc., two tables showing for each of the patients admitted and discharged during the year who were suffering from first attacks, their age, date of admission, civil state, form of mental disorder, date of discharge, result (whether recovered or died, etc.), and the associated or etiological factors. Also each of these tables is followed by an interesting appendix showing the subsequent history of each patient admitted with first attacks from May 15th, 1904, up to May 14th, 1910, and who were discharged from or who died in the asylum during the year under review. These tables would well repay careful analysis. During the year 87 were discharged as recovered, giving a recovery-rate on the admissions of 34.1 per cent., 32 as relieved, and 31 as not improved. Also 82 died, giving a death-rate on the average number resident of 9.1 per cent., as compared with the average for the institution of 7.7 per cent. In his report upon this institution Dr. John Macpherson, Commissioner in Lunacy, said that it was the large number discharged from this asylum as unrecovered which called for special consideration. It has been one of the chief features of the Scottish lunacy system that, with necessary exceptions, only those patients who required special care were continuously detained in asylums. Recently there has been evidence of some decline in the discharge of unrecovered patients, and the vigorous resuscitation of the practice in this asylum, Dr. Macpherson says, is therefore all the more cordially welcomed.

COUNTY BOROUGH OF WEST HAM ASYLUM.

The annual report for 1910 of Dr. David Hunter, the Medical Superintendent of West Ham Asylum, contains, as in previous years, interesting comparative tables. These show this year that West Ham lunacy is again increasing, and also, as in former years, that the ratio of pauper insane to general population is in excess of that obtaining in the country in general—35.13 per 10,000 in 1910 as compared with 33.20 for England and Wales. The total cases under care at the asylum during the year numbered 1,132, and the average number daily resident was 889. During the year 248 were admitted, of whom 228 were direct admissions. In 77 the attacks were first attacks within three, and in 26 more within twelve, months of admission; in 32 not-first attacks within twelve months; in 42 the duration was unknown; and in the remainder the attacks were of more than twelve months' duration, including 21 congenital cases. The direct admissions were classified according to the forms of mental disorder into: Recent mania 24, chronic and recurrent 18, recent melancholia 42, chronic and recurrent 20, senile and secondary dementia 22, general paralysis 29, or over 12 per cent., primary dementia 16, delusional insanity 13, stupor 7, confusional insanity 6, insanity with epilepsy and insanity with grosser brain lesions 5 each, and congenital defect 21. During the year 66 were discharged as recovered, giving a recovery-rate on the direct admissions of 28.94 per cent., or of recoveries in and on the direct admissions of 25.87 per cent., also 60 as relieved and 42 as not improved. During the year also 83 died, giving a death-rate on the average number resident of 9.38 per cent. The deaths were due in 35 to nervous diseases, including 25 from general paralysis; in 4 to diseases of the heart and blood vessels, in 2 to respiratory diseases, in 1 to volvulus, in 22 to senile decay, and in 19 to general diseases, including 11 or 13.2 per cent. of the total deaths from tuberculous diseases. The general health was good throughout the year, though there was a small epidemic of dysentery during the autumn months.

Vital Statistics.

THE REGISTRAR-GENERAL'S QUARTERLY RETURN.

[Specially Reported for the "British Medical Journal."]

The Registrar-General has just issued his return relating to the births and deaths in the third quarter of the year, and to the marriages during the three months ending June last. The marriage-rate during that period was equal to 16.3 per 1,000, or 0.1 per 1,000 less than the average rate in the corresponding quarters of the ten preceding years.

The 219,310 births registered in England and Wales last quarter were equal to an annual rate of 25.8 per 1,000 of the population, estimated at 36,539,636 persons in the middle of the year; this rate is the lowest recorded in the third quarter of any year since civil registration was established, and is 3.1 per 1,000 lower than the mean rate for the corresponding quarter of the ten years 1902-11. The birth-rates in the several counties last quarter ranged from 17.9 in Sussex, 18.7 in Somerset, 18.9 in Hereford, 19.1 in Dorset, and 19.2 in Berks, Oxford, and Devon to 26.9 in Warwick and in Northumberland, 27.4 in Stafford, 28.1 in Carmarthen, 29.1 in Glamorgan, 29.3 in Monmouth, and 30.6 in Durham. In ninety-five of the largest towns, including London, the birth-rate averaged 24.8 per 1,000, and ranged from 13.2 in Southport, 14.2 in Hastings, 14.4 in Hornsey, and 15.0 in Bournemouth to 30.8 in Bootle and in Sunderland, 31.6 in Stoke-on-Trent, 32.0 in St. Helens, and 33.3 in Rhondda; in London the birth-rate was 24.6 per 1,000.

The excess of births over deaths last quarter was 117,635, against 124,054, 122,997, and 81,618 in the third quarters of the three preceding years. From a return issued by the Board of Trade it appears that the passenger movement between the United Kingdom and places outside Europe resulted in a net balance outward of 83,6[illegible] British passengers and of 29,448 foreigners. Between the United Kingdom and the Continent of Europe there was an inward balance of 33,254 foreigners and an outward balance of 74 British passengers; thus the balance on the aggregate passenger movement was 79,904 outward.

The 101,675 deaths registered in England and Wales during the quarter under notice were equal to an annual rate of 11.0 per 1,000; this is the lowest death-rate recorded in the third quarter of any year, and is 2.6 per 1,000 below the mean rate in the corresponding period of the ten years 1902-11. The death-rates in the several counties last quarter ranged from 8.1 in Middlesex, 8.8 in Hertford, 9.0 in Surrey, 9.2 in Essex, 9.4 in Buckingham, and 9.5 in Bedford to 12.0 in Durham and in Northumberland, 12.6 in Cumberland, 12.7 in Lancashire, and 12.8 in the North Riding of Yorkshire. In ninety-five of the largest towns the corrected death-rate averaged 12.1 per 1,000, and in 146 smaller towns 10.7 per 1,000. The crude death-rates in the ninety-five towns ranged from 5.8 in Ilford, 6.7 in Gillingham, 7.0 in Hornsey, 7.5 in Southend-on-Sea, 7.8 in Ealing, and 7.9 in Acton and in Bournemouth to 14.0 in Tynemouth, 14.1 in Rotherham and in Bootle, 14.3 in Wigan, 16.2 in Liverpool, and 17.1 in Middlesbrough; the death-rate in London was 11.5 per 1,000.

The 101,675 deaths from all causes last quarter included 8,312 which were referred to the principal infectious diseases; of these, 357 were attributed to enteric fever, 2 to small-pox, 2,228 to measles, 439 to scarlet fever, 1,435 to whooping-cough, 814 to diphtheria, and 3,057 to diarrhoea and enteritis among children under 2 years of age. The mortality from measles was above the average; but that from each of the other diseases, except diarrhoea, was below the average: for diarrhoea among children under 2 the average mortality is not available.

The rate of infant mortality, measured by the proportion of deaths among children under 1 year of age to registered births, was equal to 79 per 1,000, and was as much as 61 per 1,000 less than the average rate in the corresponding quarters of the ten preceding years. Among the several counties the rates of infant mortality ranged from 44 in Dorsetshire, 46 in Hertfordshire, 52 in Oxfordshire, 54 in Somersetshire, and 55 in Wiltshire and Shropshire to 88 in Northumberland, 89 in Durham and Warwick, 91 in North Riding of Yorkshire, and 99 in Lancashire. In the ninety-five large towns the rate of infantile mortality averaged 86 per 1,000, and ranged from 35 in Southport, 36 in Bournemouth, 41 in Gillingham, 42 in Hornsey, 43 in Ilford, and 44 in Acton to 122 in Middlesbrough, 124 in Burnley and in Walsall, and 165 in Wigan; in London the rate was 81 per 1,000.

The death-rate among persons aged 1 to 65 years was equal to 6.4 per 1,000 of the population at this group of ages. In the ninety-five large towns the death-rate at these ages averaged 6.8 per 1,000, and ranged from 3.4 in Ilford, 3.9 in Reading and in Hornsey, 4.0 in Bournemouth, and 4.3 in Southend to 9.0 in Bootle, 9.4 in Gateshead, 9.8 in Rotherham, 10.4 in Liverpool, and 12.1 in Middlesbrough.

Among persons aged 65 years and upwards the death-rate was 69.8 per 1,000; the rate in the ninety-five large towns averaged 75.3 per 1,000, and ranged from 47.8 in Ealing, 48.6 in Coventry, and 49.3 in Ilford to 104.0 in South Shields, 104.4 in Barrow-in-Furness, 106.7 in West Hartlepool, and 110.2 in Bootle.

The mean temperature of the air last quarter was below the average, and the amount of bright sunshine was very deficient. The rainfall was everywhere in excess of the average, the difference amounting to 67 per cent. in the Eastern counties, which experienced the wettest third quarter since the year 1879.

HEALTH OF ENGLISH TOWNS.

In ninety-five of the largest English towns 8,185 births and 5,091 deaths were registered during the week ending Saturday, November 23rd. The annual rate of mortality in these towns, which had been 14.0, 14.8, and 14.1 per 1,000 in the three preceding weeks, rose to 15.0 per 1,000 in the week under notice. In London last week the death-rate was equal to 15.6, against 14.1, 14.4, and 14.4 per 1,000 in the three previous weeks. Among the ninety-four other large towns the death-rates last week ranged from 5.6 in Ilford, 5.8 in Dewsbury, 6.1 in Blackpool, 7.1 in Derby, 7.2 in Ealing and in Enfield, and 7.3 in Leyton to 21.3 in Liverpool, 21.4 in West Ham, 21.5 in Middlesbrough, 22.0 in Stockton-on-Tees, 22.2 in Preston, and 26.4 in Bootle. Measles caused a death-rate of 2.9 in Northampton, in Birmingham, in Middlesbrough, and in Newcastle-on-Tyne, 3.3 in Coventry, 3.8 in East Ham, 4.1 in West Hartlepool, 5.1 in Bootle, and 6.6 in West Ham, and diphtheria of 1.3 in Devonport and in Preston. The mortality from enteric fever, scarlet fever, and whooping-cough showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The deaths of children under 2 years of age from diarrhoea and enteritis, which had been 107, 82, and 85 in the three preceding weeks, were 86 last week, and included 27 in London, 8 in Liverpool, 6 in Manchester, and 4 in Birmingham. The causes of 34, or 0.7 per cent., of the total deaths, were not certified either by a registered medical

practitioner or by a coroner after inquest; of this number 8 were registered in Birmingham, 5 in Liverpool, 2 in Stoke-on-Trent, 2 in Bootle, and 2 in South Shields. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,279, 2,350, and 2,335 at the end of the three preceding weeks, were 2,336 on Saturday last; 296 new cases were admitted during the week, against 279, 326, and 254 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In eighteen of the largest Scottish towns 1,040 births and 753 deaths were registered during the week ending Saturday, November 23rd. The annual rate of mortality in these towns, which had been 16.1, 15.4, and 16.3 per 1,000 in the three preceding weeks, rose to 18.0 in the week under notice, and was 3.0 per 1,000 above the rate in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 10.0 in Motherwell, 10.6 in Hamilton, and 12.4 in Ayr to 20.1 in Paisley, 22.5 in Kilmarnock, and 25.1 in Leith. The mortality from the principal infectious diseases averaged 1.1 per 1,000, and was highest in Paisley and Leith. The 298 deaths from all causes registered in Glasgow included 10 from whooping-cough, 6 from diphtheria, 5 from infantile diarrhoea and enteritis, 3 from scarlet fever, and 1 from measles. Two deaths from small-pox were recorded in Kirkcaldy, and 2 deaths of children from diarrhoeal diseases in Dundee.

HEALTH OF IRISH TOWNS.

During the week ending Saturday, November 23rd, 532 births and 409 deaths were registered in the twenty-two principal urban districts of Ireland, as against 536 births and 377 deaths in the preceding weeks. The annual death-rate in these districts, which had been 18.3, 17.9, and 17.0 per 1,000 in the three preceding weeks, rose to 18.5 per 1,000 in the week under notice, this figure being 3.5 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 20.2 and 18.4 respectively, those in other districts ranging from 4.7 in Sligo, and 7.9 in Galway to 28.4 in Armagh, and 42.0 in Limerick, while Cork stood at 12.9, Londonderry at 16.6, and Waterford at 17.1. The zymotic death-rate in the twenty-two districts averaged 2.1 per 1,000, as against 1.9 in the preceding period.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

SURGEON-GENERAL CHRISTOPHER PEARSON, M.D., has been appointed Honorary Physician to His Majesty, vice Inspector-General of Hospitals and Fleets Sir Herbert M. Ellis, K.C.B., F.R.C.S., deceased.

Deputy Surgeon-General FREDERICK J. LILLY has been placed on the retired list at his own request, with the rank of Surgeon-General, November 15th, 1912. He has the following special service to his credit: The Yonni Expedition of 1887, and the Vitu Expedition, 1893. All the more important engagements in Natal during the South African war of 1899-1900 and the Gambia Expedition of 1901. He was mentioned in dispatches on each of the three latter occasions, and holds the General African medal with two clasps, Vitu and Gambia, and the Queen's South African medal with two clasps. He was especially promoted Fleet Surgeon in 1900 (subsequently antedated to 1896), and attained his present rank in 1907.

The following appointments have been notified by the Admiralty: Fleet Surgeon EDWARD R. D. FASKEN has been placed on the retired list, November 17th, 1912; Fleet Surgeon CECIL H. ROCK to the *New Zealand*, on completing; Fleet Surgeon EDMUND CORCORAN to the *Indus*, vice Rock; Staff Surgeon J. STODDART, M.B., to the *King Alfred*, temporarily; Staff Surgeon GEORGE D. WALSH lent to the *Minerva*, temporarily; Staff Surgeon THOMAS D. LIDDLE, M.B., to the *Vivid*, additional, for disposal to the *Dublin* on commissioning; Staff Surgeon ALEXANDER MCCLOY, M.B., to the *Victory*, additional, for the *Southampton*, and the *Southampton* on commissioning; Staff Surgeon ROBERT HUGHES to the *President*, additional, for Deptford Victualling Yard, temporarily, during absence of Fleet Surgeon Harper, December 5th, 1912; Surgeon R. A. CLARK HALL JAMES to the *Victory*, additional, for the *New Zealand*, and the *New Zealand* on commissioning; Surgeon JOHN P. BERRY, M.B., to the *Antrim* on completing, December 3rd, 1912; Surgeon CHARLES R. WORTHINGTON has been allowed to withdraw from the service, November 21st.

The following Surgeons have been promoted to the rank of Staff Surgeon, November 21st: L. F. COPE, H. B. HILL, M.B., H. M. BRAITHWAITE, M.D., D. G. ADDISON-SCOTT, M.D., L. C. HUNT, A. S. BRADLEY, M.B., P. M. RIVAZ, M.B., J. R. A. CLARK-HALL, H. COOPER, J. MCA. HOLMES, M.B., E. D. RUTHERFORD, M.B., R. WILLAN, A. O. HOOPER, M.B., R. H. MCGIFFIN, M.B., P. D. MCIVER CAMPBELL, C. D. BELL.

ARMY MEDICAL SERVICE.

COLONEL ROBERT I. D. HACKETT, M.D., retires on retired pay, instead of as notified in the *Gazette* of November 12th.

Lieutenant-Colonel GEORGE E. HALE, D.S.O., retires on retired pay, dated November 23rd, 1912.

ROYAL ARMY MEDICAL CORPS.

Brevet Colonel CHARLES H. MELVILLE, M.B., from the supernumerary list is restored to the establishment vice Lieutenant-Colonel W. W. O. Beveridge, D.S.O., M.B., supernumerary, November 1st, 1912.

INDIAN MEDICAL SERVICE.

COLONEL W. A. CORRERY retired from the service with effect from August 25th, 1912, and not from August 25th, 1912, as previously stated.

Colonel B. B. CHAYPOOT was promoted to his present rank with effect from August 25th, 1912, vice Colonel Corkery, retired.

The promotions of the undermentioned officers to their present rank are antedated as indicated: Major GEORGE MCPHERSON, M.D., F.R.C.S., from January 28th, 1910, to July 28th, 1909; Captain RICHARD EDWARD FLOWERDEW, M.B., from March 26th, 1912, to January 30th, 1912; Captain BERKELEY GALE, M.B., from January 31st, 1912, to January 30th, 1912.

INDIAN SUBORDINATE MEDICAL DEPARTMENT.

Senior Assistant Surgeons with Honorary Rank of Lieutenant to be Senior Assistant Surgeons with Honorary Rank of Captain, September 23rd, 1912.—JOSEPH LEE, RICHARD SHARPLES, MICHAEL COURTNEY, JOHN CHARLES GILLMON, RICHARD THOMAS MURPHY.

To be Senior Assistant Surgeon with the Honorary Rank of Lieutenant, September 23rd, 1912.—First Class Assistant Surgeon ERNEST ARMIN C. GRIFFITHS.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT JOHN R. HAYMAN is confirmed in his rank.

Cadet Sergeant W. TYRELL, from the Belfast University Contingent, Officers' Training Corps, to be Lieutenant on probation, October 18th, 1912.

TERRITORIAL FORCE.

Second North Midland Field Ambulance.—Lieutenant ALBERT J. RIDDETT to be Captain, October 29th, 1912.

First Scottish General Hospital.—Captain JAMES SMART, M.B., from the 2nd Highland Field Ambulance, to be Captain, October 15th, 1912. Lieutenant-Colonel GEORGE M. EDMOND, M.D., resigns his commission, November 23rd, 1912.

Attached to Units other than Medical Units.—Lieutenant WILLIAM J. HOYTEN, to be Captain, October 21st, 1912. Captain GEORGE F. WHYTE, M.B., to be Major, November 7th, 1912. Captain FREDERICK S. EDWARDS, F.R.C.S., resigns his commission, November 23rd, 1912. Lieutenant CLARENCE I. ELLIS, M.D., to be Captain, September 30th, 1912 (corrected notice). The commission of Lieutenant PAUL J. O'SULLIVAN is cancelled, his present address being unknown, November 23rd, 1912.

For Attachment to Units other than Medical Units.—ANDREW BAXTER, M.D., to be Lieutenant, October 7th, 1912.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BARNET: CLARE HALL SANATORIUM, South Mimms.—Assistant Resident Medical Officer. Salary commencing at £120 per annum.

BIRKENHEAD UNION.—Junior Resident Assistant Medical Officer (Female) for the Infirmary and Sanatorium. Salary commencing at £110 per annum.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES.—Clinical Assistant. Honorarium at the rate of 52 guineas per annum.

BIRMINGHAM CITY.—Resident Medical Officer at the Salterley Grange Sanatorium for Consumption, near Cheltenham. Salary, £300 per annum.

BOURNEMOUTH: ROYAL NATIONAL SANATORIUM FOR CONSUMPTION AND DISEASES OF THE CHEST.—Resident Medical Officer. Salary, £12 a month.

BRAINTREE.—Medical Officer of Health for the United Districts of Braintree (Urban and Rural), Dunmow (Rural), and Halstead (Urban and Rural). Salary, £500 per annum.

BRIGHTON: ROYAL SUSSEX COUNTY HOSPITAL.—Assistant House-Surgeon (Male). Salary, £80 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £150 per annum.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—Clinical Assistant in the Out-patient Department.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—Junior House-Surgeon. Salary, £90 per annum, rising to £100.

DUMFRIES: CRICHTON ROYAL INSTITUTION.—Second Assistant Physician. Salary, £200 per annum.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Medical Officer (Male) to the Casualty Department, and House-Physician. Salary at the rate of £100 and £75 per annum respectively.

HALIFAX: ROYAL HALIFAX INFIRMARY.—Third House-Surgeon. Salary, £80 per annum.

HAMPSTEAD BOROUGH.—Tuberculosis Medical Officer. Salary commencing at £400 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum.

HEREFORD COUNTY AND CITY ASYLUM.—Assistant Medical Officer (Male). Salary, £150 per annum, rising to £170.

HEREFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary at the rate of £120 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Surgeon. Salary, £30 for six months, and £2 10s. washing allowance.

IPSWICH: EAST SUFFOLK HOSPITAL.—House-Physician (Male). Salary, £80 per annum.

ITALIAN HOSPITAL, Queen Square, W.C.—House-Surgeon. Salary £60 per annum.

LEEDS HOSPITAL FOR WOMEN AND CHILDREN. House-Surgeon. Salary at the rate of £50 per annum.

LEICESTERSHIRE AND RUTLAND ASYLUM.—Male Junior Assistant Medical Officer. Salary, £150 per annum, increasing to £180.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Resident Medical Officer. Salary, £200 per annum.

LONDON UNIVERSITY. Examinerships: A, Higher Examinations for Medical Degrees: (1) Four in Medicine; (2) Four in Surgery; (3) Two in Forensic Medicine and Hygiene; (4) Two in State Medicine. B, First Examination and Second Examination. Part I for Medical Degrees (5) Two in General Biology; (6) Two in Chemistry; (7) Two in Physics. C, Second Examination. Part II for Medical Degrees (8) Two in Anatomy; (9) Two in Pharmacology; (10) Two in Physiology.

LOWESTOFT HOSPITAL.—House-Surgeon. Salary at the rate of £100 per annum.

MAIDSTONE: KENT COUNTY ASYLUM. Male Fourth Assistant Medical Officer. Salary, £200 to £220 per annum.

MANCHESTER: HULME DISPENSARY.—House-Surgeon. Salary, £160 per annum.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN.—Honorary Assistant Surgeon for Women.

MANCHESTER ROYAL INFIRMARY.—Resident Medical Officer. Salary, £150 per annum.

MEDICAL MISSION HOSPITAL, Plaistow, E.—Junior Resident Medical Officer for Dispensary.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Hampstead.—House-Physician. Salary, £75 per annum.

NORFOLK EDUCATION COMMITTEE.—Assistant Medical Officer. Salary, £250 per annum.

NORWOOD SCHOOL TREATMENT CENTRE.—(1) Anaesthetists. (2) Medical Officers for: (*a*) Nose, Throat, and Ear; (*b*) Errors of Refraction; (*c*) *X*-ray Treatment of Ringworm; (*d*) Treatment of Minor Ailments. Salary at the rate of £50 per annum.

NOTTINGHAM GENERAL HOSPITAL.—Assistant House-Surgeon. Salary, £100 per annum.

PLYMOUTH: SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House-Physician. Salary at the rate of £75 per annum.

ROCHDALE INFIRMARY.—Junior House-Surgeon (Male). Salary, £80 per annum, rising to £90.

ROMSLEY HILL SANATORIUM FOR CONSUMPTIVES, near Birmingham.—Medical Superintendent. Salary commencing at £350 per annum.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.—Milroy Lecturer for 1914.

ROYAL EAR HOSPITAL, Soho, W.—(1) Honorary Assistant Anaesthetist. (2) House-Surgeon; honorarium, £40 per annum.

ROYAL EYE HOSPITAL, Southwark, S.E.—Junior House-Surgeon. Salary at the rate of £50 per annum.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—Surgical Registrar (Female).

ROYAL NATIONAL ORTHOPOEDIC HOSPITAL, Great Portland Street, W.—Honorary Anaesthetists.

SEAMEN'S HOSPITAL SOCIETY.—Medical Registrar at the Dreadnought Hospital, Greenwich. Honorarium, £100 per annum.

SOMERSET AND BATH ASYLUM, Wells.—Second Assistant Medical Officer (Male). Salary, £135 per annum, rising to £155.

UNIVERSITY COLLEGE HOSPITAL, Gower Street, W.C.—Obstetric Registrar.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House-Surgeon and Anaesthetist. Salary, £75 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—(1) House-Physician; appointment for six months. (2) Dermatologist.

WESTMINSTER HOSPITAL MEDICAL SCHOOL, Caxton Street, S.W.—Lecturer on Tropical Diseases.

WISBECH: NORTH CAMBRIDGESHIRE HOSPITAL.—Resident Medical Officer. Salary, £150 per annum.

WORCESTER COUNTY AND CITY ASYLUM, Powick.—Junior Assistant Medical Officer. Salary commencing at £160 per annum.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

BURNE, T. W. H., M.B., B.S., reappointed House-Surgeon to St. Bartholomew's Hospital, Rochester.

CANDLER, A. L., M.B., B.S., F.R.C.S., Medical Officer to the Exeter Dispensary.

CLATWORTHY, H., M.R.C.S., L.S.A., Honorary Medical Officer, Granville Cottage Hospital, Auburn, New South Wales.

CROWE, H. Neville, M.B., Ch.B., M.R.C.S., L.R.C.P., Honorary Physician to the General Infirmary, Worcester.

DAVIDSON, Andrew, M.D., M.S.Aberd., Official Visitor to the Hospitals for the Insane at Callan Park and Gladesville and the licensed house for the Insane, Cook's River, New South Wales, vice James C. Cox.

DICKSON, Arnott, M.D., F.R.C.S.Edin., D.P.H., Assistant Tuberculosis Officer to the County Council of Fife.

DUNDON, E., L.R.C.P. and S.Ire., Certifying Factory Surgeon for the Borris District, co. Carlow.

EVISON, F. A., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the March District, co. Cambridge.

FOX, W. T. B., M.B., C.M.Edin., Certifying Factory Surgeon for the Blyth District, co. Northumberland.

GRAHAM, T. O., M.D., Assistant to the Throat, Nose, and Ear Department of the Royal City of Dublin Hospital.

GREER, M., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Corris District, co. Merioneth.

HICKMAN, Herbert V., M.B.Lond., M.R.C.S., L.R.C.P., Honorary Anaesthetist to the Leyton, Walthamstow, and Wanstead Children's and General Hospital.

JEFFREY, George R., M.D., F.R.C.P.Ed., F.R.S.Ed., Physician Superintendent Bootham Park Private Mental Hospital, York.

LEA-WILSON, B. H. C., M.R.C.S., L.R.C.P., District Medical Officer of the Gainsborough Union.

LEE, D. Chisholm, M.B.Edin., Assistant Medical Officer to the Warneford Mental Hospital, Oxford.

LONG, H. B., M.R.C.S., L.R.C.P., Certifying Factory Surgeon for the Bicester District, co. Oxford.

MACLURE, Alfred F., M.D.Melb., F.R.C.S.Eng., Honorary Assistant Out-patient Surgeon to the Alfred Hospital, Melbourne.

MASEFIELD, W. G., M.R.C.S., L.R.C.P., District Medical Officer of the Stone Union.

MILLER, B. C., M.B.Syd., Ordinary Medical Officer, Granville Cottage Hospital, Auburn, New South Wales.

MOLLISON, C. H., M.D., Clinical Pathologist, Women's Hospital, Melbourne.

MORTON, Hugh, M.D.Glas., Extra Honorary Physician at the Dispensary, Royal Hospital for Sick Children, Glasgow.

PARROTT, J. N., M.R.C.S., L.R.C.P., District Medical Officer of the Uxbridge Union.

PERRINS, Herbert W., F.R.C.S.Eng., D.P.H.Lond., Pathologist and Bacteriologist to the Hampstead General and North-West London Hospital.

REEVES, T. C., M.R.C.S., L.R.C.P., District Medical Officer of the Eastbourne Union.

SANSOM, H. A., M.D.Lond., District Medical Officer for the Metropolitan Water Board in the Willesden and Shoot-up-Hill Division of the Western District, vice F. E. Scrase, F.R.C.S.

SHACKLETON, W., M.B., District Medical Officer of the Billericay Union.

SPROTT, Gregory, M.D.Glas., Honorary Medical Officer of the Hobart General Hospital, Tasmania.

WATERHOUSE, W. S., M.B., Assistant Medical Officer of the Workhouse of the Ecclesall Bierlow Union.

WATT, John A., M.B., Ch.B., D.P.H.Aberd., Assistant County Medical Officer and Tuberculosis Officer to the Derbyshire County Council.

WATT, J. L., M.B., Medical Referee under the Workmen's Compensation Act, 1906, for County Court Circuit No. 58, and to be attached more particularly to Tavistock and Okehampton County Court, vice A. E. M. Woolf, resigned.

UNIVERSITY COLLEGE HOSPITAL.—The following appointments have been made:—

Assistant Physician: T. Lewis, M.D., D.Sc., M.R.C.P.

Registrar of Anaesthetics: C. W. Morris, M.R.C.S., L.R.C.P.

Clinical Assistant to Ear and Throat Department: F. J. Cleminson, M.C., F.R.C.S.

Clinical Assistant to Skin Department: H. Samuel, M.R.C.S., L.R.C.P.

House-Surgeon: L. A. Dingley, M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

BLACKETT.—On November 20th, at Audley, Newcastle, Staffs, to Dr. and Mrs. Blackett, a son.

DEATH.

TAYLER.—On November 23rd, George Christopher Tayler, M.D.Lond., at his residence, Lovemead House, Trowbridge, Wilts, after a few hours of suffering, aged 67.

RECENT PUBLICATIONS.

Massage and the Original Swedish Movements. By Kurre W. Ostrom. Seventh edition, revised and enlarged. London: H. K. Lewis. 1912. (Crown 8vo, pp. 216, figs. 115. 3s. 6d. net.)

A volume giving the gist of the author's lectures on the subject of remedial massage before the students (medical and nursing) of some half-dozen different schools in Philadelphia. The descriptions, though brief, are very clear and practically every recognized movement would seem to be illustrated.

Practical Chemistry, including Simple Volumetric Analyses and Toxicology. By P. A. Ellis Richards, F.I.C. Second edition. London: Baillière, Tindall and Cox. 1912. (Cr. 8vo, pp. 160. 3s. 6d.)

A laboratory handbook containing accounts of the reactions of most metals and acids, and the commoner organic substances, together with schemes of work for detecting the constituents of solutions. The author is accustomed both to teaching and examining students, and the special requirements of candidates at the first examination for medical degrees of the University of London and the corresponding examination of the Conjoint Board are kept in view throughout.

Diagnose und Therapie der inneren Krankheiten. By Dr. Georg Kühnemann. Berlin: J. Springer. 1911. (Cr. 8vo, pp. 337. Bound 6s.)

A compact textbook dealing with symptomatology, differential diagnosis, and general lines of treatment of the majority of diseases of each set of organs, as well as of infective fevers, intoxications, etc. Its object is to provide a summary for the use of practitioners who have not time to study the larger textbooks.

DIARY FOR THE WEEK.

MONDAY.

RÖNTGEN SOCIETY, Cancer Hospital, Fulham Road, 8.15 p.m.—Exploration of the new Electrical and Radio-Therapeutic Department and its annexes.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF PATHOLOGY, National Hospital, Queen Square, W.C., 8.30 p.m.—Laboratory Meeting.

WEDNESDAY.

Royal Society of Medicine:
Section of Ophthalmology, 8.30 p.m.—Discussion on the Physiology of the Intraocular Pressure, to be opened by Dr. Leonard Hill, F.R.S., and Professor Starling, F.R.S.

THURSDAY.

North-East London Clinical Society, Prince of Wales's Hospital, Tottenham, 4.15 p.m.—Clinical Meeting.

Royal College of Surgeons of England, Lincoln's Inn Fields, W.C., 5 p.m.—Bradshaw Lecture by C. Mansell Moullin, F.R.C.S.: The Biology of Tumours.

Royal Society of London:
Section of Obstetrics and Gynaecology, 8 p.m.—(1) Demonstration of Specimens. (2) Short Communication:—Dr. Florence Willey: Case of Hydrocephalus Complicated by Eclampsia, Fibroids, and a Contraction Ring. (3) Paper:—Dr. Clifford White: The Contraction Ring as a cause of Dystocia, with description of specimen removed during labour.

FRIDAY.

Royal Society of Medicine:
Section of Anaesthetics, 1, Wimpole Street, W., 8.30 p.m.—Paper:—Mrs. Dickinson Berry: Notes on Anaesthetics in America, with special reference to the practice at the Mayo Clinic.
Section of Laryngology, 1, Wimpole Street, W., 4.30 p.m.—Demonstration of Cases, Specimens, and Instruments.

POST-GRADUATE COURSES AND LECTURES.

Brompton Hospital for Consumption, S.W., 4.30 p.m.—The Clinical Diagnosis of Occult Pulmonary Tuberculosis by means of Tuberculin.

Hospital for Sick Children, Great Ormond Street, W.C., Thursday, 4 p.m.—Prevention of Defective Vision.

London School of Clinical Medicine, Dreadnought Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics. Monday: 12 noon, Throat, Nose, and Ear; 2.15 p.m., Surgery; 3 p.m., Operations; 3.15 p.m., Medicine; 4.15 p.m., Ear and Throat. Tuesday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Surgery; 3.15 p.m., Medicine; 4.15 p.m., Skin Clinic. Wednesday: 11 a.m., Eye; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Eye Clinic; 4.30 p.m., Surgery. Thursday: 12 noon, Throat, Nose, and Ear; 2 p.m., Operations, Pathological Demonstration; 3.15 p.m., Medicine. Friday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Surgery. Saturday: 10 a.m., Radiography; 11 a.m., Eye. Special Lectures on Wednesday and Thursday at 4.30 p.m. and on Friday at 3.15 p.m.

London School of Tropical Medicine, Royal Albert Dock, E.—Lectures daily (Saturday excepted) at 12 noon and 4 p.m. Practical Laboratory work daily (Saturday excepted), 10 a.m. to 12 noon. Practical Helminthology, 2 to 3.30 p.m. daily. Medical Clinics, Monday and Thursday at 3 p.m. Operations, Friday at 3 p.m.

Manchester: Ancoats Hospital Post-Graduate Clinic, Thursday, 4.15 p.m.—Some Causes of Undergrowth in Children.

Manchester Royal Infirmary.—Tuesday, 4.30 p.m., Gynaecological Cases. Friday, 4.30 p.m., Inguinal and Umbilical Hernia in Infants.

Medical Graduates' College and Polyclinic, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week at 4 p.m. each day: Monday, Skin; Tuesday, Medical; Wednesday, Surgical; Thursday, Medical; Friday, Eye. Lectures at 5 15 p.m. each day will be given as follows: Monday, Regarding Drainage after Laparotomy for Inflammatory Conditions; Tuesday, Gastric Atony and Neurasthenia; Wednesday, Obstetric Emergencies; Thursday, The Diagnosis of Mental Defect.

National Hospital for the Paralysed and Epileptic, Queen Square, W.C.—Tuesday, 3.30 p.m.: Clinical cases. Friday, 3.30 p.m.: Ocular Paralysis.

North-East London Post-Graduate College, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics: 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Nose, Throat, and Ear; 3 p.m., Demonstration on Clinical and General Pathology. Tuesday, 2.30 p.m., Operations; Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient. Wednesday, 2 p.m., Throat Operations; 2.30 p.m., Medical Out-patient; Skin and Eye Clinics: X rays; 3 p.m., Pathological Demonstration; 5.30 p.m., Eye Operations; 4.30 p.m., Lecture: Tuberculosis of the Larynx. Thursday, 2.30 p.m., Gynaecological Operations. Clinics: Medical and Surgical Out-patient; 3 p.m., Medical In-patient. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Surgical, Eye; 3 p.m., Medical In-patient; Pathological Demonstration; 4.30 p.m., Lecture: Hilus versus Apical Tuberculosis.

Queen's Hospital for Children, Hackney Road, N.E., Wednesday, 4 p.m.—Mental Deficiency in Children.

Royal Hospital for Diseases of the Chest, City Road, E.C.—Monday, 4.30 p.m.: Pulmonary Tuberculosis in Relation to Public Health. Tuesday, 4.30 p.m.: The Differential Diagnosis of Pulmonary Tuberculosis. Thursday, 4.30 p.m.: The Diagnosis of Pulmonary Tuberculosis by the Roentgen Rays. Friday, 3.30 p.m.: Special Clinical Demonstration.

Salford Royal Hospital, Tuesday, 4.30 p.m.—Points in the Treatment of Heart Disease.

West London Post-Graduate College, Hammersmith Road, W.—Medical and Surgical Clinics, X Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Demonstration of Minor Operations, 11 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Demonstration of Fractures, etc., 12 noon; Throat, Nose, and Ear, 2 p.m.: Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.: Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Gynaecological Demonstration, 10.30 a.m.; Lecture on Neurological Cases, 12.15 p.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Lecture on Practical Medicine, 10.30 a.m.; Lecture on Clinical Pathology, 12.15 p.m.: Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m. Special Lectures at 5 p.m. daily except Wednesday and Saturday.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		NOVEMBER.
29	Fri.	Birmingham Branch, Pathological and Clinical Section, Medical Institute, 8 p.m.
		City Division, Hackney Town Hall, 4 p.m.
		DECEMBER.
4	Wed.	London: **Special Meeting of the Central Council, 2 p.m.**
6	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.
		South-Eastern Counties Division (Edinburgh Branch), Annual Dinner, Galashiels, 6.30 p.m.
10	Tues.	London: Metropolitan Counties Branch Council, 4 p.m.
12	Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
		South-West Essex Division, Walthamstow Hospital, 4 p.m.
18	Wed.	Richmond Division, Richmond, 8.30 p.m.
		South Middlesex Division, Twickenham, 8.30 p.m.

Date.		Meetings to be Held.
		JANUARY, 1913.
1	Wed.	Subscriptions to the British Medical Association for 1913 become due.
3	Fri.	London: Central Ethical Committee, 2 p.m.
4	Sat.	London: Science Committee, 11 a.m.
7	Tues.	London: Public Health Committee, 3.30 p.m.
8	Wed.	London: Medico-Political Committee, 2 p.m.
9	Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
14	Tues.	London: Metropolitan Counties Branch, 4 p.m.
		London: Organization Committee, 2.15 p.m.
15	Wed.	London: Hospitals Committee, 2.30 p.m.
17	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.
22	Wed.	Richmond Division, Richmond, 8.30 p.m.
		South Middlesex Division, Twickenham, 8.30 p.m.
29	Wed.	London: Central Council.
31	Fri.	Birmingham Branch, Pathological and Clinical Section, Medical Institute, 8 p.m.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 7TH [illegible]

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SPECIAL NOTICE TO MEMBERS.

Every member is requested to preserve this "Supplement," which contains matters specially referred to Divisions until the subjects have been discussed by the Division to which he belongs. BY ORDER.

National Insurance.

British Medical Association.

REPORT OF THE COUNCIL TO THE DIVISIONS.

On the Interviews between the Special Committee appointed by the Special Representative Meeting and the Chancellor of the Exchequer, and on the Memorandum as to Medical Benefit forwarded as a Result of these Interviews.

INTRODUCTORY.

THE Special Committee appointed by the Special Representative Meeting on November 20th, in accordance with its instructions (see Appendix), met immediately after the conclusion of the Representative Meeting of November 20th, and instructed the following letter to be sent to the Chancellor of the Exchequer:

Offices of the British Medical Association,
Medical Department,
429, Strand, London, W.C.,
November 21st, 1912.

SIR,

I am instructed to forward to you the following Resolution of the Representative Body of the Association, passed by an overwhelming majority at its Meeting on the 19th instant, and to draw your attention to the points on which the Meeting thought it possible that a conference might take place between yourself and representatives of the Association:

That, in the opinion of this Representative Meeting, the Regulations issued by the Insurance Commissioners and the latest proposals of the Chancellor of the Exchequer are unworkable, and derogatory to the profession. As a consequence, the medical profession declines to undertake service under the Act and Regulations as at present constituted.

The points as to which it was ascertained that the Association attaches great importance in connexion with the administration of Medical Benefit under the National Insurance Act were, stated briefly, the following, and the Representative Body appointed a Special Committee of five to lay them in detail before you should you think it desirable to afford an opportunity for so doing:

Amount and method of remuneration.
Income limit.
Medical discipline and complaints against practitioners on panel.
Dispensing.
Medical representation on Insurance Committees.
Approved institutions.
Extras and mileage.
Records and reports.
Inspection.
Method of dealing with deposit contributors.
Method of dealing with sick persons temporarily away from home.
Method of payment for domiciliary attendance on tuberculous insured persons.
Sanatorium benefit arrangements in Ireland.

[illegible]

The Special Committee above referred to consists of:

Mr. T. Jenner Verrall, Bath, Chairman of Representative Meetings.
Dr. J. A. Macdonald, LL.D., Taunton, Chairman of the Council of the Association.
Mr. E. B. Turner, London, Deputy Chairman of Representative Meetings.
Dr. R. M. Beaton, London.
Dr. T. Arthur Helme, Manchester.

I am,
Your obedient servant,
(Signed) ALFRED COX.
Medical Secretary.

The Right Hon. David Lloyd George, M.P.,
Chancellor of the Exchequer,
The Treasury, Whitehall, S.W.

To this a reply was received stating that the Chancellor would be willing to meet the Committee, and suggesting Monday, November 25th, as the most convenient time. The Committee, accompanied by the Medical Secretary, met the Chancellor, Mr. Masterman, and many of the Commissioners at 11 a.m. on that day, and submitted the various points which the Representative Meeting desired to have brought to the notice of the Government. The interview terminated about 2 p.m. In the afternoon the Committee met the Chairman (Sir Robert Morant) and several other members (chiefly medical) of the Joint Committee of the Commissioners, and went into further details respecting several of the points. A draft statement giving the decision of the Chancellor on most of the points reached the Committee about half-past four in the afternoon of Tuesday, November 26th, and after consideration of this draft the Committee met the Chancellor, who was again accompanied by Mr. Masterman and many of the Commissioners, at his room in the House of Commons at 6 p.m. The Committee submitted their criticisms of the draft in an interview which lasted about an hour and a half. Proofs of the final document, entitled *Memorandum as to Medical Benefit*, were received and considered by the State Sickness Insurance Committee on Thursday, November 28th.

The following are the points which were placed before the Chancellor of the Exchequer, and they are stated, as far as possible, under the same headings and in the same order as the paragraphs of the *Memorandum as to Medical Benefit*.

I.—Duties of Medical Practitioners on the Panel.

1. The Chancellor was asked to state definitely the extent of the medical attendance and treatment which insured persons would have a right to expect under the Act, and if it were found to be impossible to enumerate the services to be expected, the Committee asked that a statement should be made as to those services which insured persons could *not* expect.

See paragraphs 1 to 6 of the Memorandum, in which the Chancellor replies fully on this question. The reply still leaves somewhat indefinite the actual nature and extent of the medical attendance required. It, however, clearly shows that most of what the Association classified as extras—for example, special and night visits, administration of anaesthetics, etc. are included in the duties to be performed by the practitioner. The practitioner must, for example, administer the anaesthetic or provide the anaesthetist at his own expense. On the other hand, most of the modern methods of diagnosis and treatment—for example, x rays, serum treatment—are excluded from medical benefit, and must be paid for from some other source. Note the new Court of Referees to be set up for deciding doubtful cases.

II. Remuneration for Medical Benefit.

2. The opinion of the Association that its demand of 8s. 6d. per head of the insured persons exclusive of medicines and extras was a reasonable one was again pressed upon the Chancellor, and he was reminded that the arguments of the Association substantiating this demand, presented to him in July last, had never yet been met.

See paragraphs 7 to 10 of Memorandum. In answer to this point the Chancellor stated definitely that it was impossible for him to find any more money for medical attendance, beyond the small special fund for mileage referred to in paragraph 28 of the Memorandum.

III.—Extras.

3. In connexion with the question as to the exact definition of medical benefit, the Chancellor was informed that the Association was strongly of opinion that the following items should be paid for out of a separate fund provided by the Government, or, failing this, by the patient, but in any case not out of the 6s. 6d. now offered by the Government:

Operations.
See paragraphs 3, 4, and 11 of the Memorandum.

Fractures and dislocations.
See paragraph 11 of Memorandum.

Special and night visits.
See paragraphs 11 and 23 of Memorandum.

NOTE.—The Chancellor was informed that the Association would prefer that these visits should be paid for by the patient, not as a means of increasing the remuneration of the doctor, but as a check upon calls of this kind.

The only provision for penalizing insured persons for abuse in this connexion, apart from the natural restraint imposed by free choice of doctor by patient and patient by doctor, is the infliction of fines to be exercised by the Insurance Committees upon the complaint of a practitioner.

Accidents and industrial diseases which are covered by the Workmen's Compensation Act to be regarded as outside the scope of medical benefit. Associations of workmen which at present make a special contract for attendance on these diseases and accidents to be allowed to continue such arrangements.
See paragraphs 20 and 21 of Memorandum.

Miscarriages and abortions.
See paragraph 19 of Memorandum.

Illness resulting from personal misconduct.
See paragraph 19 of Memorandum.

Bacteriological and special examinations, serum-therapy, and *x*-ray work.
See paragraph 6 of Memorandum.

Administration of an anaesthetic.
See paragraphs 11 and 16 of Memorandum.

Assistance to or consultation with another practitioner on the panel.
See paragraph 17 of Memorandum.

From paragraphs 11 to 16 of the Memorandum it will be seen that in cases where the payment of the practitioner is on the pure capitation system each practitioner will receive 6s. 6d. per annum for a full year's liability for attendance on each of the insured persons on his list, subject to a deduction (if any) in respect of mileage, to be determined by the Insurance Committee after consultation with the local Medical Committee, and subject to appeal to the Insurance Commissioners, and this payment will cover all the services included in medical benefit. If one of his patients leaves the district for a time and transfers his name to a doctor in another district a deduction will be made from the 6s. 6d. of the first doctor, equivalent to the amount of time during which he is not liable to be called upon to attend the patient.

Under the other systems of payment it is evident that every practitioner cannot count with certainty upon receiving the 6s. 6d. Some practitioners may receive more, some less.

IV. Medical Benefit for Insured Persons Changing their Place of Residence.

4. The Committee suggested that insured persons temporarily absent from their own area who are on holiday might pay for their own medical attendance, and, if this

were not feasible, that the method of payment for this class of persons, and for all those absent from home for any reason, should be per attendance and not by capitation.

5. The Committee pressed for further information as to the way in which it was proposed to provide for persons temporarily absent from home, as to whether any calculation had been made as to the probable amount of the deduction from the capitation fee to meet this expense, and as to how far such a deduction in any single area was likely to be balanced by payments from other areas.

See paragraphs 24–26 of Memorandum.

The Special Committee was informed that the information asked for in paragraph 5 was not available, and in fact could not be obtained until the system was in operation.

V.—Mileage.

6. The Chancellor was informed of the strong feeling of dissatisfaction in the profession at the fact that payment for mileage is expected to come out of the money allotted for medical attendance. It was pointed out to him that though the question of mileage did not affect a large number of the medical profession it was a very serious matter to those whom it did concern. Figures were given to the Chancellor which showed that the problem of the sparsely populated areas is not confined only to the Highlands and Islands of Scotland. The Chancellor was urged to institute a central fund quite apart from the provision for medical attendance and treatment, out of which mileage should be paid, and to allow the mileage to be counted from a distance of two miles from the nearest practitioner, and not three as fixed in the Regulations.

7. The Chancellor was also asked to state whether, if a patient chose to have a doctor on the panel who resided more than three miles from him, the patient would be able to have that doctor if he cared to pay the mileage himself.

See paragraphs 27 and 28 of Memorandum.

It will be noted that a small special fund will be provided to make increased provision for exceptionally sparsely populated areas and those in which there are special difficulties of access. It may be pointed out that the Medical Committee cannot decide the system of payment, that the decision rests with the Insurance Committee after consultation with the Local Medical Committee, and the Insurance Committee may set aside from the 6s. 6d. enough to pay mileage and pay the doctors upon the panel pro rata with what is left.

VI.—Records and Reports.

8. The Committee informed the Chancellor that the profession was anxious to know the extent of the clerical work which would be expected from practitioners on the panel, and would like to have some assurance as to the bearing these records and reports would have on the duty of secrecy as regards the ailments of patients.

See paragraphs 29–31 of Memorandum and the copy of the specimen page of the record book received (see appendix to Memorandum).

VII.—Inspection.

9. Strong representations were made against any inspection of the work of practitioners on the panel, especially if this meant that the inspector could in any way come between the doctor and his patient. The Chancellor was asked to state whether it was the intention of the Commissioners to employ inspectors, and, if so, the nature of their work.

See paragraphs 32–34 of Memorandum. It is impossible to state what inspection will mean. It may or may not be irksome. Attention is specially drawn to the first sentence of paragraph 33 of the Memorandum. The deputation pressed for, but could not obtain, any explanation of what is meant by the words "report upon the general arrangements made by each Insurance Committee."

VIII.—Investigation of [illegible] and Removal from Panel.

10. The Committee expressed the strong objection of the profession to the Committee of Complaints, and urged that such a Committee was not necessary, in view of the provision in the Regulations permitting of change of doctor when the parties concerned were dissatisfied. It was urged that this provision would automatically dispose of all minor complaints, and that cases of malpraxis would be dealt with by courts of law as at present. It was explained that it was desired to approximate the practice of the panel doctors as far as possible to private practice. The Committee submitted that in case of repeated complaints, or some complaint which, though grave, did not amount to malpraxis, and which seemed to show the undesirability of a practitioner remaining on a panel, the matter should be considered by the approved society concerned, and if it believed there was a *prima facie* case it should refer the case to the Commissioners, giving at the same time notice of the complaint to the Medical Committee. If the Commissioners, on consideration of the case, came to the conclusion that there was a *prima facie* case for the Committee of Inquiry, they should refer the matter to that Committee. The Committee submitted, in the alternative, that if the Committee of Complaints could not be abolished it should be made purely medical. It was pointed out to the Chancellor that the name of the Committee was offensive to a large body of the profession as it seemed almost to invite complaints, and it was suggested that if the Committee were retained its name should be altered, and the title "Medical Service Committee" was suggested.

11. It was urged that the Committee of Inquiry should be a purely medical body, with a legal assessor, and in support of this the precedent of the General Medical Council was quoted. The request was made that the decision of this body should be final, and should not be open to revision by the Commissioners.

See paragraphs 35–39 of the Memorandum.

The Committee on being informed that if the Committee of Complaints were dropped all complaints must go in the first instance to the Insurance Committee, told the Chancellor that if this were so they believed the profession would rather retain the Committee of Complaints, as being the less of two evils. The name of the Committee is altered as requested. It will be noted that the Chancellor agrees that the Committee of Inquiry shall be a tribunal consisting of members of the profession with one lawyer. The Chancellor informed the Committee that it was not possible under the terms of the Act for the actual removal from the panel to be made by any Body but the Insurance Commissioners.

IX.—Income Limit.

12. The Committee stated that Regulation 9 prescribes that the statement as to income limit is to be forwarded by the Insurance Committee to the Commissioners for their information and not for their approval, and urged that the income limit should be subject to the approval of the Commissioners in the same way as the other items of the arrangements between the Insurance Committee and the Local Medical Committee.

See paragraph 40 of Memorandum, in which this is declared to be impossible under the Act.

Mode of Applying Income Limit.

13. The Committee stated that the Representative Meeting desired to abolish the right of the Insurance Committee given under Regulation 13 (1) to exempt persons or classes of persons from the operation of the income limit.

See paragraph 41, in which the reasons for not granting the request are stated.

Voluntary Contributors.

14. The Committee expressed the insuperable objection of the profession to attending, on the terms offered under the Act, persons who might be quite well-to-do, merely because they have been insured persons for a period of

five years or upwards, and have thus acquired the right to medical benefit.

See paragraph 42, in which the Chancellor expresses his agreement and promises amendment of Act.

Method of Estimating Amount of Income.

15. In estimating the amount of income, it was suggested that the income *from all sources* must be taken into account, and objection was taken to the adoption, for the purposes of the Act, of the method of estimating the income of farmers used for income tax purposes.

See paragraph 43 of Memorandum.

X.—Right of Insured Person to make his own Arrangements.

16. The Committee pressed that it should be made perfectly clear that any insured person who wished to make his own arrangements should have the right to do so whether an income limit is fixed for that area or not.

See paragraph 41 of Memorandum.

XI.—Dispensing.

17. The Committee strongly urged that it should be optional for practitioners to do their own dispensing for insured persons, and the inconvenience was pointed out of the proposed method of dispensing through a chemist for the insured person while the dispensing for the dependants was still done by the doctor. The inconvenience arising in rural and some colliery areas was particularly emphasized.

See paragraph 45 of Memorandum, in which it is declared impossible under the Act to grant this. It should be noted that a concession is made as regards certain rural areas, but there is no definition of "rural area."

XII.—Approved Systems and Institutions.

18. The Chancellor was informed that the Association and the profession generally viewed these institutions with the greatest distrust and disapproval, and were anxious to know how far the provisions of the Act would allow branches of institutions to be set up. It was pointed out that there were already indications that it was proposed to set up new institutions under the pretence of being branches of institutions which were in existence on December 16th, 1911. The Committee pressed for information as to the kind of particulars which the Commissioners would be likely to require under Section 16 (2) of the Act, before approving an institution. The Committee also inquired whether it would be possible that the whole 9s. provided for medical benefit could be handed over to an institution supplying medical attendance and medicine and the institution be allowed to devote the whole sum to medical attendance and medicine without any division into an amount for medical attendance and treatment and an amount for provision of drugs. It was pointed out that if this were allowed it would give the institution an unfair advantage over the normal panel system, inasmuch as in a large institution the drugs bought and supplied upon a practically wholesale scale could probably be provided for 9d. or 10d., and the remaining money could be used to pay the doctor a salary which would more than equal the 6s. 6d. or 7s. a head paid to the panel doctor. This, it was pointed out, would be unfair competition, which would tend to bolster up institutions to which the strongest objection is held by the majority of the profession, mainly because the employed doctors are put under lay control of the worst type. It was suggested that the money allowed to the approved institutions for medical attendance should be the same as was allowed to the panel doctor for that purpose, and that for drugs no more should be allowed than the accounts of the institution showed was spent for drugs. The Chancellor was asked whether, in electing to have his medical attendance through an approved institution, the insured person selected the institution or the doctor. He was also informed of the apprehensions of the profession that the canvassing which was already being done by institutions which hoped to be approved would seriously undermine the free choice of doctor which was granted under the Act.

See paragraphs 46–49 of the Memorandum.

XIII.—Deposit Contributors and Method of Remuneration.

19. The Committee urged that deposit contributors should be paid for at higher rates than the members of approved societies, and on a system of payment per attendance, and not by capitation. It was also urged that the members of approved societies who have not been medically examined should be paid for at the same rate and in the same way as deposit contributors.

See paragraphs 50–51 of the Memorandum, in which the Chancellor gives his reasons for declining to accede to the proposal. It is to be noted that the 6s. 6d. offered is a flat rate to include all lives, both good and bad.

20. It was requested that the method of remuneration should be decided finally by the Local Medical Committee, and not left for the decision of the Insurance Committee after consultation with the Local Medical Committee.

See paragraph 18 of Memorandum, in which this suggestion is declared to be precluded by the Act.

21. The Chancellor was asked whether his statement that "if there is a balance then the workman himself will have to pay that" in the following extract from his Opera House speech (February 12th, 1912) still held good, and if so whether it would be provided for in the Regulations:

> The third objection of the doctors, as I pointed out, was that in some districts there is no contract practice at all, and those doctors vow that they will never submit to it. Under the Act they need have no contract practice at all in these districts. What will happen? The money which is set aside for the doctors will be paid into the general pool of that area. The doctors will attend to their patients on exactly the same terms as of old, and they will send in their bills as against that general pool, as far as it goes. If there is a balance, then the workman himself will have to pay that. Is that clear? Of course, the local medical men must form some sort of committee to prevent one doctor taking advantage of the rest. Otherwise the doctor might—I would not say that there is a doctor in this country who would be capable of such a thing—send in a bill which was twice the length it ought to be in order to get full pay from the medical pool. There must be some committee to control the arrangements of that kind. Let me assure you that no doctor is forced to take contract practice under this Act. No patient is forced to take a doctor on contract unless he wishes it.

At the interview the Chancellor made it quite clear that the method of payment foreshadowed in the Opera House speech could not be adopted, and a further explanation is given in paragraph 22 of the Memorandum.

XIV. Payment for Sanatorium Benefit.

22. The Chancellor was informed that the profession was not convinced as to the desirability of his suggested method of payment for domiciliary attendance under sanatorium benefit, but he was requested to state explicitly that if the capitation fee were accepted it should be for domiciliary treatment of insured persons only, and should not include any attendance on their dependants.

See paragraph 55 of the Memorandum.

XV. Medical Representation on Insurance Committees.

23. The Chancellor was informed that the profession was desirous of having greater representation on the Insurance Committees, by means of direct representatives, if possible, but, if this were not possible without an amending Act, the Association again urged its request for a representation of at least 10 per cent. on the Insurance Committees, which could be given by the Commissioners using the powers conferred on them by Clause 59 (2) of the Act.

See paragraph 56 of the Memorandum, in which the concession asked for is granted.

XVI.—IRELAND.

24. The attention of the Chancellor was drawn to the following Minute of the Special Representative Meeting in regard to the arrangements to be made for medical and sanatorium benefit in Ireland:

Minute 24.—Resolved: That until medical benefit is extended to Ireland, payment for domiciliary attendance, reports, certificates, and other services should be on a scale of fees for work done.

That it should be made clear that the sixpence per head promised by the Chancellor for payment of domiciliary attendance will be available for this purpose in Ireland and in England.

That in order that sanatorium benefit should be carried out effectually in Ireland, it is essential that the Local Medical Committee should be recognized and consulted by the Local Insurance Committee.

No mention of this point is made in the Memorandum, and the attention of the Commissioners was drawn to the omission. The following reply on the subject was subsequently received:

The questions as to Ireland were not discussed with the Chancellor of the Exchequer by the deputation in their interviews on November 25th and 26th. The Chancellor, therefore, is unable to give any answer upon them. He considers that the most convenient course in these circumstances would be for the British Medical Association to arrange for representatives of the medical profession in Ireland to confer with the Irish Insurance Commissioners upon them.

RECOMMENDATION OF THE COUNCIL AS TO THE PROCEDURE TO BE ADOPTED AT THE MEETINGS OF DIVISIONS AT WHICH THE VOTE OF THE PROFESSION IS TAKEN.

25. A letter has already been forwarded to the Secretaries of Divisions advising them that the Report of Council will appear in the SUPPLEMENT of December 7th, and stating that the Council asks that the returns from all Divisions shall be delivered at the Central Office not later than Monday, December 16th. In view of representations which have been made that as much time as possible should be given to the consideration of this important matter, the Council has decided that the **latest date for the returns shall be Wednesday, December 18th.**

26. The counting of the votes will be commenced at 10 a.m. on Thursday, December 19th.

QUESTION TO BE PLACED BEFORE EACH DIVISION.

27. As it is most important that the returns sent in should be based upon the same question the Council requests that the question to be submitted at each Divisional meeting in order to elicit a direct vote for or against by those present, be as follows:

Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

APPRECIATION OF THE WORK OF THE SPECIAL COMMITTEE.

28. The Council desires to place on record its appreciation of the way in which the Special Committee has performed its most onerous and responsible duty. The Council believes that this feeling of gratitude will be shared by the profession generally.

APPENDIX.

THE Special Representative Meeting of November 19th and 20th passed the following resolutions:

50. That this Representative Meeting instructs the Council to forward to the Chancellor of the Exchequer a copy of the resolution passed yesterday by an overwhelming majority, and to draw his attention to the points on which it would be possible for a conference between himself and representatives of the Association to take place, and that this meeting do now proceed to draw up what it believes to be the reasonable demands of the profession, to be laid before the Chancellor by a Committee to be elected by the Representative Body for the purpose.
56. That to the State Sickness Insurance Committee be entrusted the duty of making arrangements for any conference or conferences with the Chancellor of the Exchequer.
57. That the Committee to confer with the Chancellor of the Exchequer shall be appointed for this special purpose by this meeting, and shall consist of five members.
58. That such five members be the Chairman of Representative Meetings, the Chairman of Council, Dr. R. M. Beaton, Dr. T. A. Helme, and Mr. E. B. Turner.
64. That this Representative Meeting instructs the Council to forward to the Chancellor of the Exchequer a copy of the Resolution passed yesterday by an overwhelming majority, and to draw his attention to the points on which it would be possible for a Conference between himself and representatives of the Association to take place, and that this meeting do now proceed to draw up what it believes to be the reasonable demands of the profession, to be laid before the Chancellor by a Committee to be elected by the Representative Body for the purpose. That the State Sickness Insurance Committee shall be entrusted with the arrangements for the Conference, and that the Special Committee named above to confer with the Chancellor shall report to the State Sickness Insurance Committee. That the State Sickness Insurance Committee on receiving the report of the interview with the Chancellor of the Exchequer shall report to the Council the result of the Conference; should there be any modifications of the conditions now offered, the Council shall thereupon report the whole matter to the Divisions in the United Kingdom, who would be instructed to call Divisional Meetings immediately (to which all members of the profession resident in the Divisional area would be invited) to vote as to whether the final terms suggested should be accepted or not, the votes of all present and voting to be recorded in two classes, those of Members of the Association and non-members respectively, and the combined record of all such votes of Members of the Association for or against acceptance to be decisive, the votes given by non-members of the Association being recorded for our general information.

CONFERENCE WITH THE CHANCELLOR OF THE EXCHEQUER.

MEMORANDUM AS TO MEDICAL BENEFIT, FURNISHED TO THE BRITISH MEDICAL ASSOCIATION BY THE CHANCELLOR OF THE EXCHEQUER.

A DEPUTATION from the British Medical Association waited upon the Chancellor of the Exchequer on the 25th and 26th instant Nov. , with a view to submitting for the consideration of His Majesty's Government a number of points in connexion with the administration of medical benefit under the National Insurance Act.

The questions raised were fully discussed with the members of the Deputation, and have received the most careful consideration of the Government. The following statement is intended to indicate as clearly as possible the questions under discussion and the decision of the Government in respect to each of them.

I.—DUTIES OF MEDICAL PRACTITIONERS ON THE PANEL.

1. The Deputation indicated the desire of members of the medical profession that they should have the clearest possible explanation of the scope of those professional services which insured persons, whom it would be their duty to attend and treat under agreements with Insurance Committees, might call upon them to render in pursuance of such agreements.

2. Under Section 15 of the Act, every Insurance Committee must adopt such system for the provision of medical attendance and treatment as shall secure that every insured person is entitled to select his doctor (subject to that doctor's consent) from a panel to which every practitioner has a statutory right to belong. The

insured person cannot demand from any member of the panel thus constituted services beyond those which every member of that panel may reasonably be expected to give. Every practitioner acting on a panel will be required to enter into an agreement with the Insurance Committee, containing the provisions stated in the First Schedule to the Regulations. It is there laid down that the treatment which the practitioner, by entering into the agreement, undertakes to give to insured persons under his care shall be that which can, consistently with the best interests of the patient, properly be undertaken by practitioners of ordinary professional competence and skill. This does not mean what can be expected from the individual practitioner who happens to be treating any particular case, but what can ordinarily be expected from a member of the group to which that practitioner belongs.

3. It is believed that this definition will enable practitioners on the panels at once to decide, in the enormous majority of cases, whether any particular service which they are asked to render falls within the scope of those which they have undertaken by their agreement with the Committee. The practitioner would obviously not consider it to the interest of the patient that an operation requiring special surgical skill should be undertaken (unless as a matter of urgency) by a practitioner who does not possess that skill, his professional duty to his patient will preclude him in such a case from undertaking the operation, and it therefore would not be incumbent upon him under his agreement. On the other hand, circumstances arise in which, in ordinary practice, it would be the duty of a general practitioner to his patient to perform an operation, on account of the urgency of the case, rather than incur the risk of possible injury to the patient, through delay or through removal, which might be entailed in obtaining the assistance of a person of special skill. If such an emergency occurs in the case of an insured person, and if the practitioner responsible for the care of that patient decides that it is his duty to his patient, in view of the urgency of the case, to operate, the operation in that case would fall within the services which he has undertaken to render under his agreement with the Insurance Committee.

4. Another case that appears to present doubt to some practitioners is that in which the practitioner on the panel has acquired special skill in some branch of medicine or surgery, and is treating a case requiring, for example, an operation which in virtue of his special skill he is competent to perform, but which a practitioner not possessed of such special skill could not (except in emergency) properly undertake. In such case the performance of the operation by the practitioner on the panel would not (except in emergency) be part of the duties which he had entered into agreement with the Insurance Committee to perform, and the insured person could not require him to perform it as part of that person's medical benefit.

5. Although it is believed, as above stated, that but few cases will arise in which, in practice, members of the profession acting on the panels will have difficulty in deciding whether any given service which they are asked to render falls within those undertaken under their agreement with the Committee, it is recognized that such cases will occasionally arise. In order to arrive at an easy and summary manner of deciding any such case it is proposed that any medical practitioner on the panel should refer the case to the Local Medical Committee, and that that Committee or the Insurance Committee should, if they think it desirable, refer the matter for decision by a Court of Referees to be set up for the purpose by the Government. These would be appointed from among members of the medical and legal profession by the Insurance Commission.

6. The following examples may be given not as an exhaustive catalogue, but as illustrative of the principle stated. Xray diagnosis and pathological or bacteriological investigations would not be services included in medical benefit. Major operations are also excluded (except in the circumstances of urgency above mentioned), and as an indication of what is intended by the term "major operations" there may be instanced trephining, laparotomy, operative treatment of fractures, amputations of limbs, and any operation requiring the assistance, in the operation, of an additional medical practitioner besides the operator and the anaesthetist.

II.—Remuneration for Medical Benefit.

7. The total amount available in any year for the remuneration of medical practitioners on the panels, in consideration of every kind of service rendered by them under their agreement with the Insurance Committee for medical benefit, is 6s. 6d. (with a possible addition to be mentioned) per head of all the insured persons who elect to obtain their attendance and treatment from practitioners on the panel; that is to say, there will be in any area a fund equal to an aggregate sum of at least 6s. 6d. per head of all the insured persons who have elected to be attended by practitioners on the panel, which will be applied solely to the remuneration of the practitioners on the panel.

8. In addition, in every case in which the total amount required for the provision of drugs and appliances is less than 2s. per head of insured persons attended by practitioners on the panel, the amount saved in this respect (up to a total not exceeding 6d. per head) will be added to the fund applied to the remuneration of practitioners on the panel.

9. Further, a sum equal to 6d. per head of insured persons on the lists of the practitioners on the panel will be distributed among these practitioners in respect of the domiciliary treatment of insured persons suffering from tuberculosis. This amount will be provided from the sanatorium benefit fund.

10. The whole of the fund described above will be distributed in each year (according to the method of distribution adopted in each area) among the practitioners on the panel for that area. No deduction will be made from it in respect of the cost of drugs and appliances or administrative expenses or any other purpose. On the other hand, this amount will cover the payment for every kind of service (as described above) which any practitioner on the panel is under obligation, by his agreement with the Insurance Committee, to render to insured persons under his care.

Extras.

11. Of the services to be rendered by the practitioners on the panel as medical benefit, some have been from time to time distinguished as "extras." This term is used in the Regulations and here to connote services which, although within the competence of an ordinary practitioner, differ somewhat in their character from ordinary visits and surgery attendances. Examples are: such operations as the general practitioner can reasonably be expected to perform, the administration of anaesthetics for the purpose of such operations, the setting of fractures, and also visits, such as night visits and special visits, which entail extra trouble. A list of special services of this kind was given in the schedules to the Provisional Regulations issued on October 1st. The Chancellor of the Exchequer explained, in his statement to the Advisory Committee on October 25rd, that the additional sum which the Government had decided to ask Parliament to provide was so calculated as to afford, when added to the amount available for medical remuneration under the Act, a sum which the Government considered would provide sufficient remuneration for all ordinary attendances, and also for all "extras" the cost of which can properly be defrayed from the funds available for the provision of medical benefit.

Payment for "Extras."

12. The question how these "extras" are to be paid for is a question of the method adopted for distributing among the practitioners on the panel in each area the aggregate amount available for medical remuneration in that area. Three main methods have been suggested. The first is that of capitation, pure and simple. That is to say, each practitioner on the panel, in an area in which this system is adopted, would receive himself the entire amount available for medical remuneration in respect of all insured persons for the time being on his list, and would accept, in consideration of that amount, the full liability of providing for those persons the medical services of every kind (within the limits explained above) to which they are entitled as medical benefit.

13. The second method is that of capitation for ordinary visits and surgery attendances, with payment by fees in respect of extra services. In any district in which this

system is adopted, an agreed portion of the total amount available for medical remuneration would be set aside at the commencement of each year, to provide the pool out of which fees for extras would be paid, and this amount would be distributed among the practitioners rendering those services according to such scale as might be agreed upon for the purpose, within the limit of the money in the pool. The remainder of the amount available for medical remuneration, being the consideration for ordinary services rendered, would be divided among the practitioners on the panel in proportion to the number of persons on their lists.

14. The third method is that of simple payment per attendance, under which practitioners on the panel will receive fees in respect of each attendance made or other service rendered within the limits of the aggregate amount available in that area for medical remuneration.

15. Examples may be taken to illustrate the different working of these several methods of remuneration. If an operation were required which it was within the competence of an ordinary practitioner to perform, it would be equally the duty of a practitioner on the panel, whatever method of remuneration had been adopted in the district, to perform that operation under his agreement with the Insurance Committee. If the method were payment per attendance, he would receive a fee in accordance with the arrangements locally adopted, the fee being derived under the second method from the pool for extras, and under the third method from the general pool. If, on the other hand, he had entered into an agreement on the basis of a simple capitation payment, no special fee would be payable.

16. If, again, the administration of an anaesthetic (where needed for an operation which is itself within medical benefit) were necessary, the fee of the anaesthetist would be paid, under the second or third method, out of the pool. But under a simple capitation method the practitioner would have received in his capitation payment an amount calculated to cover the risk of this necessity, and would consequently make his own arrangement for the provision of the anaesthetist in such a case without further remuneration.

Second Opinions.

17. In view of the fact that the Act gives to the insured person the right to receive treatment from the one practitioner whom he chooses from the panel, any further advice which may be desired by the patient must be arranged for outside medical benefit.

Agreement as to Method of Remuneration to be adopted in any Area.

18. Under the Regulations any one of the main methods of remuneration above outlined (or a modification of any one) may be adopted in the area of any Insurance Committee, or different methods may be adopted in different parts of a county. The Act precludes any arrangement whereby the decision as to the method should rest solely with the Local Medical Committee. It will be a matter for agreement, if possible, between the Local Insurance Committee and the Local Medical Committee, and if they cannot agree, for a decision by the Commission. But, naturally, the matter is one in which both the Insurance Committees and the Commissioners will desire to give the fullest consideration to the views of the medical profession as represented by the Local Medical Committee of each area.

Special Questions as to "Extras."

19. The Deputation desired that explanations should be given as to certain special cases of "extras." The first of these was the treatment of abortions and miscarriages (coming before the seventh month of pregnancy) and of disease due to personal misconduct. It would be the duty of a practitioner on the panel to treat these, when occurring among the insured persons on his list, in so far as the treatment of them falls within the scope of a practitioner of ordinary competence and skill.

20. Treatment of accidents and industrial diseases in respect of which compensation is being received under the Workmen's Compensation Act will also be the duty of a practitioner on the panel, in so far as they can be treated properly by a practitioner of ordinary competence and skill.

Position of Persons Insured in Special Accident Funds.

21. In connexion with the subject of "extras," the Deputation inquired as to the position, in respect of medical benefit, of insured persons who have already made special provision, through Accident Funds in connexion with works or through organizations such as the [illegible] and Cheshire Miners Permanent Relief Society, for the provision of treatment for accidents and industrial diseases. It was pointed out that, under such arrangements, treatment was often given which was beyond the range of that required from the practitioner on the panel. A continuance of arrangements of this kind is specially provided for in Section 15 (4) of the Act, under which such Funds may be approved as systems or institutions, and insured persons who are entitled to receive attendance and treatment under such arrangements may elect to continue to receive it as part of their medical benefit, a contribution being made from the Medical Benefit Fund towards the cost of medical attendance and treatment so obtained. Or such arrangements may be continued by those insured persons who apply to be allowed to make their own arrangements under Section 15 (3), a contribution from the Medical Benefit Fund being made by the Insurance Committee to the cost.

Possibility of charging Insured Persons for Medical Attendance.

22. The Deputation brought to the notice of the Chancellor of the Exchequer a passage from his speech of February 12th, 1912, on the subject of medical benefit. It appeared that they, or some members of the profession, had inferred from that passage that it would be possible to establish a system under which the practitioners on the panel, in cases in which the doctors charged fees in any period in excess of the amount available for medical remuneration, would be able to recover from the patients the balance of the fees beyond what was available from the medical benefit fund. The Chancellor of the Exchequer was not referring, however, in the passage in question (as is shown by the context) to the cases of insured persons who obtain their treatment under the arrangements made by Insurance Committees, but to those who "make their own arrangements" under Section 15 (3) of the Act. It is not possible under the Act for practitioners on the panels to make such an arrangement as this in respect of insured persons whom they attend under their agreement with the Committee. The new grant which Parliament is to be asked to make towards the cost of medical benefit is intended to enable every Insurance Committee to secure that there shall be in its area sufficient practitioners (whether acting on panels or employed under some alternative system) to attend insured persons in consideration solely of the remuneration provided by the Committee, the insured persons themselves being liable to no further charge for the services included in medical benefit as explained above. But it will still remain possible for any insured person, who so desires, to make his "own arrangements" with an individual practitioner (whether on the panel or not) on terms under which he will be liable to pay to the doctor such amount, if any, as the doctor charges for attendance and treatment (apart from drugs), during the year, beyond the amount available from the medical benefit fund.

III.—Unreasonable Demands by Insured Persons.

23. The Deputation represented that practitioners should be allowed to make a small charge to insured persons in respect of night visits and special visits, less with the object of increasing the doctor's remuneration, than of providing a deterrent against unreasonable demands. It would be impossible under the Act to require an insured person to make any additional payment for these services. The point is proposed to be met, however, by rules made by the Insurance Committees under which they will have power to fine insured persons, or in the case of repeated offences to suspend them from medical benefit, if they make unreasonable demands upon the professional services of the doctors attending them. The Commissioners propose to issue to Insurance Committees a set of model rules for the administration of medical benefit which make provision for this point.

IV.—MEDICAL BENEFIT FOR INSURED PERSONS CHANGING THEIR PLACE OF RESIDENCE.

24. It appears to have been recognized already to some extent by the medical profession that the question of the payment for the medical attendance of persons who migrate from one area to another is virtually only one of a bookkeeping adjustment between the practitioners of the different areas concerned, effected through the medium of the Insurance Committees. Where the changes are only from one place to another within the same Committee's area, the adjustments will be made by that Committee between the practitioners on the panels of the different places affected. So far as insured persons are concerned, the object to be aimed at is to make reasonably sure that each insured person on changing his abode is able to obtain a doctor at the new place of abode without undue difficulty or delay. So far as the profession is concerned, the object must be to secure that those members of the profession who are under liability to provide attendance at any time shall receive the appropriate remuneration in respect of such attendance, whether such remuneration be calculated on the capitation, or on the payment per attendance, basis.

25. The system proposed is that the insured persons who are to receive medical benefit will have the duty of notifying upon their arrival, to the Insurance Committee of the place to which they go, the fact that they desire to be able to obtain medical benefit there. Upon such notification being received the name of the person will be placed automatically on the list of the Committee into whose area he has gone, and the Committee will place him upon the list of some doctor chosen by him, or, in default of choice, will assign him to some doctor on the panel in exactly the same manner as the ordinary allocation of the insured persons resident in the area is made. There will follow an adjustment of account between the two Committees and a corresponding adjustment of the amount appropriated to remuneration of the practitioners in the two areas—each doctor (on the capitation system) taking the risk for the portion of the year during which the person is on his list, and receiving proportionate payment. This operation can take place as often as any person migrates from one area to another.

26. It is an essential feature of the system proposed that (whether the change be from the area of one Committee to that of another, or from one place to another within the area of the same Committee) no person should remain upon the lists of two doctors at the same time.

V.—MILEAGE.

27. Mileage has been included by the British Medical Association among items referred to as "extras." In the Regulations power is given to an Insurance Committee to provide for special payment being made, from the funds available for medical remuneration, in consideration of attendance and treatment given to patients who reside at such a distance from the doctor as to entail special loss of time and expense in visiting them. The question whether any and if so what provision should be made in this respect would be a matter for decision within the area in the same manner as any other question of the method of distribution of medical remuneration.

28. The Deputation inquired whether the Government could make additional financial provision for payment of mileage over and above the amount of 6s. 6d. at present available. After careful consideration, the Government are of opinion that in ordinary rural districts, taking into consideration the fact that the dispensing will usually be done by the doctors, who will, therefore, receive the profit from the provision of drugs in addition to their ordinary medical remuneration, the amount already available is sufficient to provide adequate remuneration. They recognize, however, that in some parts of the country which are exceptionally sparsely populated, and in which there are special difficulties of access (such as mountainous districts, moorlands, and fens), the practitioners would be placed at a special disadvantage. They have, therefore, decided to ask Parliament to provide a small special fund to be applied by the Commissioners in making increased provision for such areas. Mileage would not in any case, be paid from the medical benefit fund in cases where an insured person wishes to be attended by a practitioner living at a distance, if one residing nearer was available. But there is nothing to prevent the insured person from making an arrangement himself with the more distant practitioner if he specially desired his services, and the practitioner is willing.

VI.—RECORDS AND REPORTS.

29. The profession have shown themselves unduly apprehensive of the amount and character of the clerical work which practitioners on the panel will be required to undertake. As already stated by the Chancellor of the Exchequer in his letter to the British Medical Association, what is wanted is only such a day-to-day record as will furnish information of value as to the incidence of disease. Such records can be kept in a form which will entail very little trouble upon the medical practitioner, as appears from the draft form of day-book which has been shown to the Deputation.

30. The entries will include name and address of patients, record (in abbreviated form) of number of attendances, age, sex, occupation, and nature of illness. Each leaf will be perforated so that the part containing the name and address of the patient, and the attendances, will be sent to the Insurance Committee, while the part containing the nature of illness and certain other particulars (but not anything by which the patient can be identified) will be used for statistical purposes only. Thus, secrecy will be secured, and any danger of breach of professional confidence entirely avoided. Provision will be made to enable the doctor to retain in the book (which is in his sole custody) a carbon duplicate of all the entries. The books will be furnished free of charge by the Commissioners to practitioners on the panel.

31. At present it is not known that any records, reports, or returns beyond the simple record above indicated will be required, but it cannot be said definitely that circumstances may not arise in which the profession may themselves recognize the desirability of collecting from practitioners on the panel further information as to the incidence of disease. The Government undertake, however, that during the period of three years, for which, as announced by the Chancellor of the Exchequer, it is proposed that the financial provision now made shall continue, no Insurance Committee shall require from practitioners on the panel information beyond that already specified, without the consent of the Local Medical Committee.

VII.—INSPECTION.

32. The Government do not contemplate, as appears to have been feared by many members of the profession, that there should be any routine inspection of the medical practitioner's diagnosis and treatment. Still less do they intend, or have they intended, that practitioners should, as has been stated, be "shadowed in their visits to their patients."

33. It is contemplated that Medical Officers of the Commission will be required from time to time to report upon the general arrangements made by each Insurance Committee, in order to enable the Commissioners to satisfy themselves that the conditions of the new Exchequer grant are being complied with. It will also be necessary to obtain reports upon the arrangements made by approved systems or institutions, and upon the contract arrangements entered into by insured persons making their own arrangements in accordance with Section 15 (3) of the Act, in order to ascertain that the conditions of approval, or the terms of the contract (as the case may be) are being carried out, and that continuance of contributions from the Medical Benefit Fund to the cost of attendance and treatment obtained under such arrangements is justified.

34. The inquiries necessary in connexion with such "inspection" would not include any criticism of the treatment given by a doctor to an individual patient, nor would it mean any interference between doctor and patient.

VIII.—INVESTIGATION OF COMPLAINTS AND REMOVAL FROM PANEL.

35. Questions were raised by the Deputation as to the procedure proposed in the Regulations for dealing with complaints in which medical practitioners on the panel

and insured persons were concerned, and also as [illegible] the procedure in cases of removal from the panel.

Complaints.

36. On the first subject the Deputation were understood to urge that the Regulations should be so amended that a complaint against a doctor should not be investigated by any body not purely medical in its composition. Exception was taken on this ground, not only to the Committee of Complaints proposed to be set up under the Regulations, but also to consideration of such matters by the Insurance Committee.

37. No regulations could be so framed as to exclude the Insurance Committee from any power of considering any complaint by an insured person against a practitioner on the panel. The Insurance Committee have no power under the Act to remove a practitioner from the panel, or, under the Act and the Regulations, to take any action (if they considered a complaint substantiated) beyond transferring the patient to the care of another practitioner on the panel, or referring the matter for the consideration of the Insurance Commissioners. The provision as to the Committee of Complaints was inserted in the Regulations with a view to the protection of practitioners on the panel, by securing that a complaint should not be considered by the Insurance Committee until it had been sifted in private session by a body in which the medical profession and the insured were equally represented.

38. In view of this explanation it was gathered from the Deputation in their second interview with the Chancellor of the Exchequer that in their opinion the profession would probably prefer a procedure of the kind indicated in the Regulations rather than that the matter should be left entirely to the Insurance Committee without some preliminary investigation by a body on which the profession are specially represented. The Deputation were understood to consider, however, that the duties of the proposed Committees might with advantage be somewhat widened, and the title altered, accordingly, to "Medical Service Sub-Committee." In view of these representations, the provisions as to the Committee will be retained, subject to the changes desired; and if it should appear later to be the general wish of the profession that these provisions should be deleted from the Regulations this will be done.

Removal from Panel.

39. As to the procedure in cases of suggested removal of a practitioner from the panel, the Act does not allow the Commissioners to divest themselves of the responsibility of deciding the question, or to transfer this responsibility to any other body than themselves, as the Deputation appeared to desire. The Government are prepared, however, to meet the profession with regard to the composition of a Committee of Inquiry, whose advice the Commissioners must, under the Regulations, have before them, before dealing with such complaints against practitioners as come to the Commissioners. The Regulations will be amended so as to set up a tribunal for this purpose consisting of members of the medical profession with one lawyer.

IX.—INCOME LIMIT.

Decision as to Fixing Income Limit.

40. The Deputation desired that power should be given to a Local Medical Committee to appeal to the Insurance Commissioners where an Insurance Committee refuse to fix an income limit. This is impossible under the Act, which places the discretion in this matter entirely in the hands of the Insurance Committee, and their decision is not subject to review by the Commissioners.

Mode of Applying Income Limit.

41. The Deputation indicated that the profession are in doubt as to the effect of the provision in Regulation 13, under which an Insurance Committee, in fixing an income limit, may "exempt" a class of insured persons from the operation of the limit. The effect of this provision is to enable an Insurance Committee to fix an income limit as regards any class of insured persons with regard to whom they may consider it equitable, while exempting from the [illegible] it would operate harshly. For instance, the Committee might fix an income limit of a certain amount, which would apply to certain classes such [illegible] men, but from which manual workers would be exempted. If a limit were so fixed, the farmers and tradesmen would be required to make their own arrangements for obtaining medical attendance, and a contribution would be made by the Committee towards the cost of the attendance which they so obtained.

Voluntary Contributors.

42. Another point raised by the Deputation had reference to the position of those who, having been insured for five years, may under the Act remain in [illegible] contributors, even though their income [illegible] annum. The Chancellor of the Exchequer indicated in June last that the Government would be prepared [illegible] sympathetic consideration to the representation of the medical profession that this case required special treatment as regards the right to receive [illegible] the arrangements made by [illegible]. The question cannot arise definitely until 1917, and the Government will include a provision dealing with it in the first amending Bill which they bring forward.

Method of Estimating Amount of Income.

43. The Deputation asked that in estimating the amount of income for the purposes of income limit, the income from all sources should be taken into account, and that the method of estimating the income of farmers for income tax purposes should not be used for this purpose. As already pointed out, the question of whether an income limit shall be fixed in any area, and, if so, what that income limit shall be, is a matter for the Insurance Committee, from whose decision there is no appeal. It is also a matter for the Insurance Committee to decide how the income is to be ascertained. The Government have no reason to suppose that the method adopted for income-tax purposes is suitable, or would be likely to be adopted, for the purpose of the income limit, if any, fixed by the Insurance Committee under the Act.

X.—RIGHT OF INSURED PERSON TO MAKE HIS OWN ARRANGEMENTS.

44. The Deputation pressed that an insured person should have the right to make his own arrangements for medical attendance in an area, whether an income limit were fixed for that area or not. The Act gives to the Insurance Committee power to decide whether they will allow insured persons to make their own arrangements. This power can be exercised by the Insurance Committee whether they have fixed an income limit or not, and has no reference to the question of whether an income limit prevails in the area.

XI.—DISPENSING.

45. The Act precludes the Commissioners from giving dispensing generally to the doctors on the panel.

The Government are, however, prepared to arrange that a doctor on the panel may dispense drugs and medicines for insured persons in cases in which the patient resides in a rural area, and is more than a mile from a chemist on the panel.

XII.—APPROVED SYSTEMS AND [illegible]

46. The questions raised by the Deputation related to (i) the position of branches newly established by existing institutions; (ii) the safeguards against the diversion of contributions received [illegible] funds to purposes other than the provision of medical attendance and treatment, or cost of drugs and appliances; and (iii) the free choice of doctor by patient as affected by the recognition of systems and institutions.

47. With regard to the first point, special consideration will be given, before approving, under Section 15 (4), any branch not itself existing at the time of the passing of the Act, of any system or institution which existed at that time.

48. As to the second point, the contribution from the Medical Benefit Funds to the funds of a system or institu-

tion in respect of medical attendance and treatment and provision of drugs supplied to an insured person (as, or as part of, his medical benefit), is a contribution to the cost actually incurred, and must be so applied that it cannot be diverted to other purposes. Contributions towards the cost of medical attendance and treatment will be distinct from contributions towards the cost of drugs and appliances, and contributions under each head must be applied accordingly.

49. As to the third point, the free choice of doctor by an insured person is fully secured in the case of a system or institution, because (*a*) it rests entirely with him to decide whether he will obtain medical attendance and treatment through that institution, rather than from a doctor on the panel or under any other arrangements made by himself; and (*b*) he retains complete freedom to terminate at the end of any year the arrangements under which he obtained his medical benefit from the institution. By selecting the institution he declares his desire to be attended by the doctor or doctors of that institution, for the time being appointed under its rules to give attendance and treatment to the members of the institution.

XIII.—Deposit Contributors.

50. The Deputation suggested that arrangements should be made whereby attendance should not be given to deposit contributors, and to persons who have been admitted to approved societies without medical examination, at the same rate as to those who have been admitted to societies after examination.

51. So far as deposit contributors are concerned, the anticipations as to the nature of this class have been falsified. Deposit contributors will be fewer in number than was anticipated, and, instead of consisting of bad lives, are found by experience to include a very large proportion of persons of the best type of life insured under the Act. The vast majority of insured persons have already joined approved societies, and the residue have for the most part refrained from joining from reasons which have nothing to do with their state of health.

52. As to the persons admitted without medical examination to societies, they constitute such an overwhelming majority of all the persons who have been so admitted (probably 80 per cent.) that it would be impossible to make any discrimination in respect of them.

53. The whole of the persons falling within either category are persons who are subject to the test of being in work at the time of admission, and the great bulk of them are the ordinary lives of the community.

54. It would be impracticable to provide, as appears to be suggested by the Deputation, that medical practitioners should be remunerated in respect of either of these classes of insured persons, taken as a whole, upon different terms from those applicable to the insured generally.

XIV.—Payment for Sanatorium Benefit.

55. The Deputation were anxious that it should be made clear that the 6d. drawn from the sanatorium benefit fund to defray the expense of the domiciliary treatment of insured persons suffering from tuberculosis would be paid in respect of attendance upon insured persons only, and would not include any obligation to treat their dependants. This has throughout been the intention of the Government, as already stated by Mr. Masterman in the House of Commons.

XV.—Medical Representation on Insurance Committees.

56. The Deputation asked that the medical members of each Insurance Committee should constitute not less than one-tenth of the whole Committee. The Government accede to this request. The Insurance Commissioners will include among those members of each Committee whom they appoint such number of medical members in each case as, together with the members appointed by the profession and by the local authorities, will make the total number of medical members at least one-tenth of the whole Committee. In making these appointments, they will consider any names suggested by the Local Medical Committee of the area.

RECORDS AND REPORTS.

The following is the form of the Day Book. It is printed across a large double foolscap page. (It has been reduced for reproduction here.) On each page there is room for twenty-five names. The page is to be perforated along the line A A.

SPECIMEN OF DAY BOOK (REDUCED). [Form Med. 14.

Month of ..... 1913.

Name and Address. Society and Number.	Particulars of Patient's	Month of 1913.																													Attendances.												Total No. of a. & v.	Age and Sex.	Occupation.	Nature of illness (to be filled in upon conclusion of treatment) or reference to re-entry.
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	*a.*	*v.*	*sv.*	*nv.*	*op.*	*an.*	*fr.*	*ds.*						

REGULATIONS FOR MEDICAL BENEFIT.

Text of the Revised Regulations,

MADE BY THE JOINT COMMITTEE ACTING JOINTLY WITH THE INSURANCE COMMISSIONERS AND THE WELSH INSURANCE COMMISSIONERS AS TO THE ADMINISTRATION OF MEDICAL BENEFIT.

ARRANGEMENT OF REGULATIONS.

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The Joint Committee of the several bodies of Insurance Commissioners appointed for the purpose of Part I of the National Insurance Act, 1911, acting jointly with the Insurance Commissioners and the Welsh Insurance Commissioners, in pursuance of the powers conferred on them by the said Act and by paragraphs 7 and 16 of the National Insurance (Joint Committee) Regulations, 1912, hereby make the following Regulations:

PART I.

GENERAL.

Short Title.

1. These Regulations may be cited as the National Health Insurance (Administration of Medical Benefit) Regulations, 1912.

Interpretation.

2. (1.) In these Regulations, unless the context otherwise requires:—

"The Act" means the National Insurance Act, 1911.

"The Commissioners" means the Insurance Commissioners or, where by virtue of the National Insurance (Joint Committee) Regulations, 1912, any power is exercisable by the Joint Committee or by the Joint Committee acting jointly with the Commissioners, means the Joint Committee, or the Joint Committee acting jointly with the Commissioners, as the case may require.

"Committee" means the Insurance Committee for any County or County Borough.

"County" includes County Borough.

"Society" means an Approved Society, and includes the Navy and Army Insurance Fund.

"Member" means a member of a Society who is an insured person under the Act entitled to medical benefit.

"Insured Person" means an insured person under the Act entitled to medical benefit.

"Practitioner" means a duly qualified medical practitioner, and, where the Regulations refer to a practitioner attending an insured person, includes a practitioner attending the insured person in lieu of the practitioner in accordance with the terms of the latter's agreement with the Committee.

"Chemist" means any person, firm, or body corporate entitled to carry on the business of a chemist or druggist under the provisions of the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908.

"Treatment" means medical attendance and treatment of insured persons.

"Drugs" includes medicines.

"Local Medical Committee" means a Local Medical Committee formed for any County and recognized by the Commissioners under Section 62 of the Act, and any references to a Local Medical Committee shall have effect only where a Local Medical Committee has been so formed and recognized.

"Institution" means any system or institution existing on the 16th December, 1911, and providing medical attendance and treatment.

"Year" means "medical year."

"Medical year" means the period ending on the 14th day of January, 1914, and any successive similar period fixed by the Commissioners for the purpose.

(2.) The Interpretation Act, 1889, applies to the interpretation of these Regulations as it applies to the interpretation of an Act of Parliament.

PART II.

Provision of Medical Attendance and Treatment.

Duty of Committee to make Arrangements.

3.—Every Committee shall as soon as may be make arrangements for securing the treatment of insured persons resident in the County by such practitioners as are willing to undertake the treatment, and shall submit those arrangements for the approval of the Commissioners.

Power to make Provisional Arrangements.

4.—Notwithstanding anything contained in these Regulations, in the event of any difficulty arising in completing or bringing into operation any arrangements proposed to be adopted by the Committee, the Committee may, subject to the approval of the Commissioners, make provisional arrangements to extend over a period of three months or such further period as the circumstances of the case may require and where any such provisional arrangements are made any of the provisions of these Regulations shall have effect subject to such modifications and conditions as the Commissioners may approve.

Negotiations with Societies.

5.—(1.) Every Society having members resident in any County shall as soon as may be supply to the Committee a list showing the name of every member so resident, specifying the full postal address of the usual residence of the member.

(2.) The Committee shall cause to be furnished to each Society supplying a list of members, and to every other Society which in the belief of the Committee has members resident in the County, a statement of the amount estimated to be necessary in respect of the cost of the medical benefit of the members of that society and of the administration of that benefit, and the Committee and the Society shall enter into an agreement accordingly, but any agreement so made shall have effect only if and so far as the arrangements made by the Committee in accordance with the Act and these Regulations are approved by the Commissioners.

(3.) Where the Commissioners are satisfied, upon such evidence as they think sufficient, that the Committee and any Society are unable to enter into any agreement as aforesaid, the Commissioners shall determine the amount to be paid by the Society to the Committee in such manner as they think fit, after a consideration of any representations made by either party.

List of Deposit Contributors.

6. The Committee shall cause to be prepared as soon as may be a list showing in respect of each deposit contributor in the County, his name and the full postal address of his usual residence.

Conditions of Service of Practitioners.

7. (1.) With a view to making arrangements with practitioners for the purpose of administering medical benefit, the Committee shall, after consulting the Local Medical Committee, determine the conditions of service upon which it is proposed to invite practitioners to undertake treatment, and the method and rate of remuneration for that treatment, and shall embody particulars of those conditions in a draft agreement.

(2.) Every such draft agreement shall include the conditions specified in Part I. of the First Schedule to these Regulations, and one of the methods of remuneration specified in Part II. of that Schedule, provided that the Committee may, if they think fit, subject to the approval of the Commissioners, make any modifications in any of those conditions and methods of remuneration, whether in the case of any one or more practitioners, or combine any of the methods of remuneration and, where payment is to be made to the practitioner out of the proceeds of any Parliamentary grant, shall include such conditions as are necessary to be complied with as conditions of that grant.

(3.) The Committee shall determine the form and manner in which notice of the terms and conditions including the method and rate of remuneration offered by the Committee is to be given to practitioners, and the form and manner in which a practitioner may intimate his acceptance of those terms and conditions and his desire to be included in the list of practitioners undertaking treatment, which practitioners are in these Regulations collectively referred to as "the panel."

Submission of Arrangements.

8.—As soon as the Committee have determined the matters specified in the last preceding Regulation, they shall submit for the approval of the Commissioners the arrangements proposed to be made accordingly, and in particular:

(*a*) the draft agreements with practitioners determined by the Committee;

(*b*) the form and manner of notification to, and acceptance by, practitioners of the terms and conditions of service;

(*c*) the agreements proposed to be entered into with Societies, showing separately the amounts proposed to be paid in respect of the cost of medical benefit and the administration thereof;

(*d*) in respect of any Society with which no agreement has been entered into, the amount proposed by the Committee as sufficient, and the amount, if any, offered by the Society;

(*e*) the amount which, in the opinion of the Committee, is properly payable in respect of each deposit contributor for the purposes of the cost of his medical benefit;

(*f*) the method proposed to be adopted by the Committee for the distribution amongst, and assignment to, the practitioners on the panel, of the insured persons who have failed to select a practitioner, or who have been refused by the practitioner whom they have selected;

(*g*) the arrangements proposed to be made by the Committee in respect of persons entitled under Section 15 (2) (*a*) of the Act to the provision of medical attendance and treatment, on the same terms as to remuneration as those arranged with respect to insured persons.

Preparation and Submission of Rules.

9. The Committee shall, after consultation with the Local Medical Committee, prepare Rules to be submitted for the approval of the Commissioners, with regard to the administration of medical benefit by the Committee in accordance with Section 14 of the Act, and shall submit them for the approval of the Commissioners.

Income Limit.

10.—The Committee shall furnish for the information of the Commissioners a statement of the income limit, if any, proposed to be fixed by the Committee under these Regulations.

Approval by Commissioners.

11.—Before approving any arrangements submitted to them in accordance with these Regulations, the Commissioners shall consider any representations made to them by the Local Medical Committee, and, subject to any alterations made in pursuance of the requirements of the Commissioners, any arrangements so made by the Committee and approved by the Commissioners shall have effect for such period as may be specified in the approval.

Invitation to Practitioners.

12. The Committee shall, as soon as the Commissioners have notified their approval of the arrangements submitted by the Committee and their decision in respect of any questions arising in relation thereto, give notice, in the form and manner approved in accordance with these Regulations, of the terms and conditions upon which practitioners are invited to undertake treatment, and of the form and manner in which acceptance may be notified, and the notice shall specify a period, not being less than 14 or more than 21 days, within which a practitioner is entitled to make application to be included in the list first to be issued of practitioners on the panel.

Preparation of Medical List.

13.—(1.) After the expiration of the period specified in the notice, the Committee shall prepare a list of the medical

practitioners who have signified their desire to undertake treatment.

(2.) Each list so prepared (in these Regulations referred to as "the medical list,") shall contain, in addition to the names of practitioners—

(*a*) the private address, and the address of any surgery, dispensary, or other place, at which any practitioner undertakes to attend for the purpose of treating insured persons;

(*b*) particulars of the days and hours at which he undertakes to be in attendance at each place; and

(*c*) where two or more practitioners practising in partnership have signified their desire to undertake treatment, the name of the firm or partnership;

and may, if the Committee think fit, be so arranged as to show the area in the County in which each practitioner undertakes treatment, and the medical list shall have effect for the year for which it is prepared.

(3.) The Committee shall fix by its rules, and give public notice of, a date, not being earlier than the 1st November or later than the 1st December in any year, for revision of the medical list, which date is in these Regulations referred to as "the date of revision."

Power to Require or Allow Persons to Make their Own Arrangements for Treatment.

14.—(1.) The Committee may fix an income limit for the purpose of the administration of medical benefit, and may require any persons whose income exceeds that limit, in lieu of receiving medical benefit under the arrangements to be made by the Committee under these Regulations, to make their own arrangements for receiving treatment (including medicines and appliances), provided that, in fixing that limit, the Committee may exempt from the necessity of making their own arrangements any insured persons who ought in the opinion of the Committee to be exempted whether by reason of the occupation or method of remuneration of the class to which they belong or of their circumstances or residence or otherwise.

(2.) The Committee before fixing, varying, or abolishing an income limit, shall give public notice of their intention so to do and shall consult the Local Medical Committee, and shall consider representations made to them by any Society, or association of deposit contributors, having members resident in the County.

(3.) An insured person, whose income exceeds the income limit and who is not exempted by the Committee, shall not be entitled to receive medical benefit under the arrangements made by the Committee.

(4.) Any Society or association of deposit contributors, having members resident in the County, or the Local Medical Committee, or, where no Local Medical Committee exists, any practitioner on the panel, or any chemist or other person, firm or body corporate undertaking the supply of drugs or appliances under these Regulations may at any time, by notice in writing to the Committee, dispute the right of any insured person to receive medical benefit under the arrangements made by the Committee, on the ground that the income of that person exceeds the income limit and that he is not entitled to be exempted.

(5.) Upon receipt of any such notice the Committee may, if it appears to them that the income of that person exceeds the income limit, and that he is not entitled to be exempted, give notice in writing to that person that, unless, within a period specified in the notice, he shows that his income does not exceed that limit or that he is entitled to be exempted, the Committee will require him to make his own arrangements for receiving treatment (including medicines and appliances), and if, within the said period, the insured person fails to show that his income does not exceed that limit or that he is entitled to be exempted, the Committee shall require him to make his own arrangements.

(6.) Any decision of the Committee to fix, vary, or abolish an income limit shall only take effect from the commencement of the year.

(7.) The Committee may allow any insured persons resident in the County, whether individually or collectively, in lieu of receiving medical benefit under the arrangements made by the Committee, to make their own arrangements for receiving treatment (including medicines and appliances).

(8.) Where the Committee are of opinion upon such evidence as they think sufficient that the arrangements made by any person who has been required or allowed to make his own arrangements under this Regulation are satisfactory—that is to say, such as to secure treatment (including medicines and appliances) not inferior in nature, quality, or extent to that provided under the arrangements made by the Committee and to comply in other respects with any conditions which by reason of any scheme for the distribution of Parliamentary grant must be complied with in the case of treatment provided otherwise, there shall be made towards the cost of that treatment such a contribution calculated and paid in such a manner as hereinafter in these Regulations provided, and where the Committee are of opinion that the arrangements so made are not satisfactory or, upon any representation by a Society, that the treatment is not such as will adequately protect the funds of the Society, they shall either withhold the contribution or may make such a deduction therefrom as they may in any case determine.

Approval of Institutions.

15. (1.) The Board of Management or other governing authority of, or person administering, any institution may apply to the Committee to approve the institution for the purposes of Section 15 (4) of the Act.

(2.) Upon any such application being made the Committee shall send to the Commissioners such particulars of the institution as the Commissioners may require, and shall state whether the Committee propose to approve that institution and the reasons for the course of action proposed to be adopted, and, if the Committee and the Commissioners approve the institution, it shall be approved for the purposes of the Section aforesaid for the period specified in the approval:

Provided that

i. no institution shall be approved unless the Commissioners are satisfied that—

(*a*) the treatment given by the institution is adequate, and

(*b*) every insured person obtaining treatment thereunder is entitled to determine his arrangement with that institution, upon giving reasonable notice of his intention so to do at the expiration of the currency of the medical list, without thereby incurring any pecuniary loss or other penalty; and

ii. every institution shall as a condition of approval from time to time furnish such accounts and returns as the Commissioners, or the Committee with the consent of the Commissioners, may require.

iii. every institution shall be conducted in such a manner as to comply with any conditions as to the nature, quality, and extent of the treatment provided which by reason of any scheme for the distribution of a Parliamentary grant must be complied with in the case of treatment provided otherwise than through the institution as a condition of the payment of that grant.

(3.) The Committee may contribute, towards the expenses of the treatment furnished by any approved institution to an insured person who elects to obtain treatment through it, an amount calculated and paid in such manner as is hereinafter in these Regulations provided.

Publication of Medical List.

16. Where the Commissioners have approved the arrangements made by the Committee in pursuance of these Regulations, the Committee shall as soon as may be publish in any one or more newspapers circulating in the County an announcement containing particulars of the arrangements made by the Committee, including a statement of the places where a copy of the medical list and of a list of approved institutions may be seen, and forms of application obtained, by insured persons, a statement as to the income limit, if any, and any other particulars which the Committee think proper, including such particulars as are necessary to bring to the notice of insured persons

their right to select a practitioner on the panel and their rights with respect to obtaining treatment in some other manner.

Distribution under Capitation System.

17.—Where a Committee have adopted for the remuneration of practitioners on the panel a system of payment either in whole or in part by capitation, the following provisions shall have effect:

(1.) Every insured person shall, if he desires and is entitled to select a practitioner on the panel, fill up the appropriate form of application, and send or present it to the practitioner by whom he desires to be attended before a date indicated in the announcement referred to in the last preceding Regulation.

(2.) Where an application has been received by a practitioner, that practitioner shall within one week notify to the Committee the acceptance or rejection of that application on the appropriate place on the form of application, and in the case of rejection the Committee shall as soon as may be thereafter notify the rejection to the applicant.

(3.) After the date indicated in the announcement the Committee shall provide for the distribution, amongst practitioners on the panel and so far as practicable under arrangements made by them, of those insured persons for whose treatment no arrangements have been made.

(4.) The Committee shall prepare a list of those persons who have been accepted by, or assigned to, each practitioner on the panel, and shall furnish to each practitioner a copy of the list of persons for whose treatment he is responsible, and each list shall, subject as provided in these Regulations, have effect until the commencement of the year succeeding that for which it is prepared.

(5.) Before giving treatment to any insured person on his list a practitioner shall be entitled to require the production by that person of such voucher or other document as the Commissioners may approve for the purpose.

(6.) Any insured person who desires to be attended by a practitioner other than the practitioner who attended him in the previous year, shall make application to the Committee not later than one month before the date of revision, and any insured person not making such an application shall be deemed to have selected the practitioner from whom he was entitled to receive treatment in the previous year.

(7.) A practitioner desiring to discontinue treatment of an insured person shall give to the Committee notice to that effect not later than one month before the date of revision, and any practitioner not giving notice to the Committee before that date shall be deemed to have undertaken treatment of the insured persons attended by him in the previous year other than those who desire to be attended by another practitioner or who adopt some other arrangement for obtaining treatment or who by reason of death, removal or some other cause are no longer included in his list.

(8.) With regard to any person making application to be attended by another practitioner and any person whom a practitioner has refused to continue to treat the Committee shall so far as may be adopt the procedure above-mentioned for his selection of or assignment to a practitioner on the panel.

(9.) As soon as may be after the date of revision the Committee shall issue to each practitioner on the panel a copy of the revised list of the insured persons for whose treatment that practitioner is responsible.

Distribution under System of Payment by Attendance.

18. Where a Committee have adopted a method of payment by attendance, the following provisions shall have effect:

(1.) An insured person who is not required or does not desire to make his own arrangements for obtaining treatment, and does not desire to obtain treatment through an approved institution as his medical benefit shall be entitled on presentation to a practitioner on the panel of such voucher or other document as the Commissioners may approve for the purpose, to obtain treatment from that practitioner subject to the consent of the practitioner, who shall signify his consent by endorsing the voucher or other document in such manner as the Commissioners shall prescribe.

(2.) Every practitioner shall, upon his acceptance of an insured person for treatment give notice to the Committee upon a form to be provided by the Committee for the purpose.

(3.) An insured person who has selected and been accepted by a practitioner in the manner above mentioned shall be deemed to have selected that practitioner, and shall be entitled, upon production to the practitioner if he so requires of the said voucher or other document, to treatment from him, during the year, and shall not during the year be entitled, while in the area within which that practitioner has agreed to attend him, to obtain treatment from any other practitioner on the panel as part of his medical benefit.

(4.) Any insured person who has selected a practitioner shall be entitled at any time after the expiration of the year, on production of the voucher or other document as aforesaid, to obtain treatment from that practitioner or from any other practitioner on the panel who is willing to accept him, and shall, upon the endorsement by the practitioner of his voucher or other document, be deemed to have selected and been accepted by that practitioner for the currency of the revised medical list.

(5.) Where any insured person gives notice to the Committee that he is unable to obtain treatment from a practitioner on the panel the Committee shall provide for his assignment to a practitioner on the panel so far as practicable under arrangements made by practitioners on the panel.

Choice of Methods of Obtaining Treatment.

19.—(1.) Every insured person shall before the date indicated in the announcement made by the Committee in accordance with the requirements of these Regulations—

(*a*) if he is required, or desires, to make his own arrangements for obtaining treatment, including medicines and appliances, fill up the appropriate form and send it to the Committee;

(*b*) if he desires, and is entitled, to obtain treatment, including medicines and appliances, through an approved institution, fill up the appropriate form and send or present it to the institution.

(2.) The Committee shall notify to any insured person applying to be allowed to make his own arrangements their consent or refusal as the case may be.

(3.) Where an application has been received by an approved institution, that institution shall within one week notify the acceptance or rejection of the application to the Committee on the appropriate place on the form of application, and in the case of rejection the Committee shall as soon as may be thereafter notify that rejection to the applicant.

Preparation of Lists.

20. (1.) The Committee shall prepare a list of those persons who have been accepted by each approved institution and a list of persons required or allowed to make their own arrangements for obtaining treatment, and shall furnish each approved institution with a copy of its appropriate list.

(2.) Any list so prepared shall, subject as provided in these Regulations, have effect until the commencement of the medical year succeeding that for which it is prepared.

Revision of Lists.

21.—(1.) Any insured person who desires to obtain treatment by any of the methods referred to in these Regulations, other than that which he adopted in the previous year, shall make application to the Committee not later than one month before the date of revision, and any insured person not making such an application shall be deemed to have applied to obtain treatment in the same manner as in the previous year.

(2.) Any practitioner desiring to withdraw from the panel shall give to the Committee notice to that effect not later than one month before the date of revision and his name shall thereupon be removed from the medical list.

(3.) With regard to any person making application to obtain treatment by any method other than that which he adopted in the previous year, the Committee shall so far as may be adopt the procedure provided by these Regulations for enabling an insured person to select his method of treatment.

Insured Person Applying during Year.

22. Where an insured person who has elected to receive treatment under the arrangements made by the Committee with practitioners on the panel changes his residence to the area of another Committee, he shall upon arriving in that area give notice to the last-mentioned Committee, and thereupon that Committee shall make arrangements whereby he can receive treatment including drugs and appliances in their area, and such adjustment shall be made between the two Committees as is equitable in the circumstances, regard being had to the proportion of the year spent by the insured person in the area of each of the Committees respectively, and the arrangements made by each of the Committees with the practitioners on the panel in their respective areas shall be so adjusted as to conform with the adjustments so made.

Practitioner Applying during Year.

23.—(1.) If a practitioner, other than a practitioner whose name has been removed from the medical list in force in the area of any Committee in the United Kingdom by the Commissioners, makes application to the Committee during the year, the Committee shall include him in the medical list.

(2.) The name of any practitioner who dies during the year or is directed to be removed therefrom by the Commissioners shall thereupon be removed from the medical list, and, in the case of any practitioner who by reason of a change of residence is unable to attend insured persons within the area for which he undertook to give treatment, the necessary alteration shall be made in the medical list.

(3.) A copy of the medical list revised up to date shall be kept available for the inspection of any person at the office of the Committee and at such other places as the Committee may think fit.

Notice of Changes in Lists.

24.—(1.) Where a deposit contributor changes his residence he shall notify the full postal address of his new residence to the Commissioners.

(2.) Where a member of a Society changes his residence he shall notify the full postal address of his new residence to the Society.

(3.) Every Society shall four times in every year on days appointed by the Commissioners for the purpose notify the names and the numbers in the Society or branch of those members who have in the preceding three months changed their places of residence, together with the full postal addresses of their former and new places of residence, to the Committees of the Counties in which they have respectively taken up their residence, and in the case of a change of residence from one County to another, the last-mentioned Committees shall as soon as may be notify the name of the member and of his Society or branch and his number in the Society or branch to the Committee of the County of his former place of residence.

(4.) Every Society having members in the County shall immediately after the dates above-mentioned notify to the Committee the names and numbers in the Society or branch of those of its members who have during the last preceding three months died or ceased to be insured persons or members of the Society, and of persons resident in the County who have been admitted as members.

(5.) Where an insured person who is entitled to obtain treatment from a practitioner on the panel or approved institution has died or ceased to be an insured person or to reside in the County, the Committee shall give notice to that practitioner or institution in a form to be provided for the purpose, and the list of the practitioner or institution shall be amended accordingly.

Notice of Suspension of Medical Benefit of Insured Person.

25. Where the medical benefit of a member of a Society is suspended by reason of his contributions being in arrear, or of marriage, the Society shall give notice to the Committee of the County in which that person resides, and the Committee shall, in the case of suspension of the medical benefit of an insured person entitled to obtain treatment from a practitioner on the panel or through an approved institution, give notice to that practitioner or institution, and the list of the practitioner or institution shall be amended accordingly.

Changes during Year.

26.—During the year an insured person may be transferred from one practitioner on the panel to another, or from an approved institution to a practitioner on the panel, in the following circumstances, and under the following conditions:—

(*a*) an insured person and the practitioner responsible for his treatment may by consent arrange for the transfer of the insured person to any other practitioner on the panel who is willing to accept the insured person:

(*b*) where an insured person entitled to receive treatment from a practitioner on the panel is by reason of a change of residence no longer able to obtain that treatment, he may give notice to the Committee, who shall make arrangements so far as may be similar to those prescribed by these Regulations for his selection of or assignment to a practitioner on the panel;

(*c*) where the Committee after inquiry into a question arising between an insured person and the practitioner attending him, consider it desirable that an insured person should be transferred, the Committee may arrange with another practitioner on the panel to undertake the treatment of that person;

(*d*) where the name of a practitioner has been removed from the medical list or where a practitioner has ceased to practise within the area within which he has undertaken treatment he or his legal personal representative, as the case may be, may notify to the insured persons concerned that he has made arrangements with another practitioner on the panel to undertake the treatment of those persons and subject to their consent may transfer them to that other practitioner, and if any insured person is unwilling to be so transferred he shall give notice to the Committee who shall make arrangements so far as may be similar to those prescribed by these Regulations for his selection of or assignment to another practitioner;

(*e*) subject as aforesaid the provisions of these Regulations relating to insured persons coming to reside within the County during the year shall apply to insured persons who were attended by a practitioner whose name has been removed from the medical list or who has ceased to practise within the area within which he has undertaken treatment and to insured persons who were obtaining treatment through an approved institution which has ceased to be approved.

Provided that, where an insured person has been transferred by consent, the practitioner to whom he has been transferred shall within seven days of the transfer give notice thereof to the Committee on the form to be provided by the Committee for that purpose, and the notice shall be signed by the insured person and both the practitioners concerned or, in the event of the death or total incapacity of a practitioner, by the insured person and the practitioner to whom he is transferred.

PART III.

PROVISION OF DRUGS AND APPLIANCES.

Prescribed Appliances.

27. The medical and surgical appliances to be provided as part of medical benefit shall be the appliances mentioned in the Second Schedule to these Regulations.

Prices of Drugs and Appliances.

28. (1.) With a view to making arrangements for the supply of drugs and appliances the Committee shall

(*a*) prepare a list of the prices upon which the sums to be paid for the drugs ordinarily supplied and for the prescribed appliances are to be calculated (in these Regulations referred to as "the Drug Tariff"); and

(*b*) determine the conditions upon which it is proposed to invite chemists and other persons, firms, or bodies corporate (all of whom are in

these Regulations included in the expression "chemists or other persons") to undertake the supply of drugs or appliances or both.

(2.) The Committee shall embody the Drug Tariff and the conditions and method in which payment for drugs not included in the Drug Tariff is to be calculated in draft agreements which shall include the terms and conditions specified in the Third Schedule to these Regulations, with the necessary modifications in the case of a person undertaking to supply drugs or appliances only, or not entitled to dispense medicines, and with such other modifications as the Committee may, subject to the approval of the Commissioners, think fit.

Conditions of Dispensing Medicines.

29.—The Committee shall determine the form and manner in which notice is to be given to chemists and other persons desiring to supply drugs or appliances or both, and the form in which any such chemist or other person may intimate his acceptance of those terms and conditions (other than a medical practitioner with whom an arrangement for the supply of drugs and appliances has been made by the Committee in accordance with these Regulations), and that notice shall state that no person shall be entitled to dispense medicines for insured persons under the arrangements made with chemists and other persons by the Committee other than a chemist who undertakes that all medicines supplied by him to insured persons under the arrangements made by the Committee shall be dispensed either by or under the direct supervision of a registered pharmacist or by a person who, for three years immediately prior to the 16th December, 1911, has acted as a dispenser to a practitioner or a public institution.

Arrangements for Supply by Practitioners of Drugs and Appliances.

30.—(1.) Where an insured person is resident in a rural area at a distance of more than one mile from the place of business of a chemist who is on the list, or where the Committee are satisfied that an insured person by reason of distance or inadequacy of means of communication will have difficulty in obtaining any necessary drugs or appliances from a chemist or other person on the list the Committee may, and shall, if the practitioner so desires, make arrangements for the supply to that person by the practitioner attending him of such drugs or appliances as would otherwise under these Regulations have been supplied by a chemist or other person on the list, and any question arising under this Regulation shall be referred to the Commissioners, whose decision shall be final.

(2.) The Committee may make arrangements for the supply by practitioners on the panel of all or any of the following:

(*a*) drugs which are necessarily or ordinarily administered by a practitioner in person; and

(*b*) drugs and appliances required for immediate administration or application, or required for use before a supply can conveniently be obtained otherwise under these Regulations.

Submission of Arrangements.

31. (1.) The Committee shall as soon as may be submit for the approval of the Commissioners the arrangements proposed to be made by the Committee for the supply of drugs and appliances and in particular

(*a*) the draft agreements determined by the Committee;

(*b*) the form and manner of notification to, and acceptance by, chemists and other persons of the terms and conditions upon which persons shall undertake the supply of drugs or appliances or both; and

(*c*) the arrangements made by the Committee for the supply by practitioners on the panel of drugs and appliances.

(2.) Subject to any alterations made in pursuance of the requirements of the Commissioners, any arrangements so made by the Committee and approved by the Commissioners shall have effect for such period as may be specified in the approval.

Notice to Persons Desirous of Undertaking Supply.

32.—The Committee shall, as soon as the Commissioners have notified their approval of the arrangements made by the Committee, give notice, in the form and manner approved in accordance with the last preceding Regulation, of the terms and conditions upon which persons shall undertake the supply of drugs or appliances or both, and of the form and manner in which acceptance may be notified, and that notice shall specify a period, not being less than 14 or more than 21 days, within which a chemist or other person is entitled to make application to be included in the list first to be issued.

List of Persons Undertaking Supply.

33.—(1.) After the expiration of the period specified in the notice the Committee shall prepare a list of the names and addresses of the chemists and other persons who have signified their acceptance, indicating whether they have undertaken to supply drugs or appliances or both, and distinguishing those who are entitled to dispense medicines.

(2.) The list shall, subject as provided in these Regulations, have effect for the year for which it is prepared.

(3.) A copy of the list shall be sent to every practitioner on the panel, and shall be available for the inspection of insured persons at the office of the Committee and in such other way as the Committee may think fit.

(4.) The Committee shall supply to every chemist or other person included in the list a copy of the medical list and every chemist or other person shall exhibit at his place of business a notice in the form prescribed in the Fourth Schedule to these Regulations indicating that he has undertaken to supply drugs or appliances or both, as the case may be, under the arrangements made by the Committee.

Right of Insured Persons to Obtain Drugs and Appliances.

34.—(1.) Every insured person obtaining medical benefit under the arrangements made by the Committee shall be entitled to obtain as part of his medical benefit such drugs and prescribed appliances as may be ordered for him by the practitioner attending him from any chemist or other person whose name is on the list and who is entitled and has undertaken to supply those drugs or appliances.

(2.) An insured person shall not be entitled to obtain any appliance from a chemist or other person on the list if the Committee have made provision for lending that appliance and have given notice to the practitioners on the panel and the chemists and other persons on the list that the appliance is obtainable from the Committee.

Revision of Prices of Drugs and Appliances.

35. (1.) The Committee shall not later than two months before the date of revision in every year, after consultation with the Local Medical Committee, submit for the approval of the Commissioners a statement of any alterations which the Committee may desire to make in the Drug Tariff, and where the Commissioners have prescribed any further appliances of the prices which the Committee are prepared to pay for those appliances.

(2.) The Commissioners shall, subject to the alterations, if any, which they may require to be made by the Committee, approve the statement.

(3.) The Committee shall as soon as may be after such approval send a copy of the statement to every chemist or other person included in the list and to every practitioner on the panel.

Right to Discontinue Supply.

36. (1.) Any chemist or other person desiring to have his name removed from the list shall give notice in writing of his desire to the Committee not later than one month after the issue to him of the statement of alterations made by the Committee or where no statement has been issued not later than one month before the date of revision, and thereupon his name shall be removed from the list.

(2.) Any chemist or other person not giving such notice to the Committee shall be deemed to have undertaken to supply drugs or appliances or both upon the same terms as in the previous year, subject to such modifications as are mentioned in the statement of alterations, if any, issued to him by the Committee.

Inclusion in Revised List.

37. (1.) Any chemist or other person may make application to the Committee in any year not later than one month before the date of revision to be included in the revised list and shall thereupon unless he has previously been excluded from the list by the Commissioners be included in the revised list.

(2.) As soon as may be after the date of revision the Committee shall prepare a revised list, and a copy thereof shall be sent to every practitioner on the panel and shall be available for the inspection of insured persons at the office of the Committee, and in such other way as the Committee may think fit.

Inclusion during Year.

38. (1.) Where a chemist or other person commences to carry on business in the County during the year and desires to undertake the supply of drugs or appliances or both under the arrangements made by the Committee he shall upon application to the Committee be entitled forthwith to be included in the list.

(2.) Where upon the death of a chemist included in the list the business is carried on in accordance with the provisions of the Pharmacy Act, 1868, as amended by the Poisons and Pharmacy Act, 1908, by his legal personal representative or the trustee of his estate, that legal personal representative or trustee shall be deemed to be a person included in the list so long as the business is carried on by him in accordance with the provisions of those Acts.

PART IV.

FINANCIAL.

Panel Fund.

39. All moneys available to the Committee for the purposes of the treatment under arrangements made by the Committee with practitioners on the panel of insured persons (in these Regulations referred to as "persons on panel-lists") obtaining treatment from those practitioners (including any Parliamentary grant or portion of a Parliamentary grant paid or to be paid to the Committee in respect of the treatment of those persons for that year) shall be credited to, and all payments to practitioners on the panel in respect of the treatment of insured persons by them shall be charged to a fund to be established by the Committee (in these Regulations referred to as the "Panel Fund") and there shall be paid accordingly to each practitioner on the panel, out of the Panel Fund, amounts calculated in accordance with the method of remuneration adopted by the Committee.

Calculation of Remuneration under Single System.

40. (1.) Where the Committee have adopted a capitation system of payment, they shall credit to each practitioner on the panel, in respect of each of the persons included in his list, an amount (in these Regulations referred to as a "capitation fee") calculated in accordance with the rate contained in the practitioner's agreement with the Committee.

(2.) Where the Committee have adopted a system of payment by attendance, they shall credit to each practitioner on the panel, in respect of each service rendered by him an amount (in these Regulations referred to as an "attendance fee"), calculated in accordance with the rate contained in his agreement with the Committee.

(3.) The Committee shall ascertain the aggregate amounts so credited to the practitioner, and the aggregate amounts so credited to all practitioners on the panel, and shall pay to each practitioner an amount bearing the same proportion to the sum credited to him as the amount in the Panel Fund available for the purpose, after deducting any sum set apart for mileage in accordance with these Regulations, bears to the aggregate amounts so credited to all the practitioners.

Calculation of Remuneration under Combined System.

41. Where the Committee have adopted a method of remuneration which combines a capitation system with a system of payment by attendance (the capitation fees or the attendance fees, as the case may be, being payable in priority), the Committee shall pay to each practitioner out of the Panel Fund the fees credited to him which are of the balance of the Panel Fund, in respect of other fees credited to him, an amount bearing the same proportion to those fees as the balance of the Panel Fund available for the purpose bears to the aggregate amounts of such other fees credited to all the practitioners on the panel.

Practitioner's Accounts to be Rendered Quarterly.

42. (1.) Every practitioner on the panel shall on dates to be appointed by the Commissioners furnish to the Committee quarterly accounts in a form provided by the Committee, containing such particulars as may be necessary for calculating the amount of remuneration payable to him by the Committee.

(2.) As soon as may be after the receipt of an account the Committee shall pay to the practitioner such sum as may be agreed between the Committee and the practitioners on the panel in advance of the amount due to him, and shall pay the balance of the amount so due as soon as may be after the expiration of the year, but before payment of the balance the Committee shall submit all accounts to a committee appointed by the practitioners on the panel which committee shall have power to reduce or disallow any item of any account submitted to them.

Drug Fund.

43. (1.) All moneys in the hands of the Committee for the purpose of defraying the cost of drugs and appliances supplied to persons on panel-lists (including any Parliamentary grant or portion of a Parliamentary grant paid to the Committee in respect of those persons for that purpose) shall be paid into, and all payments to chemists and other persons supplying drugs or appliances in respect of that supply shall be made out of, a fund to be established by the Committee (in these Regulations referred to as the "Drug Fund") and there shall be paid out of that fund to each chemist or other person supplying drugs or appliances an amount calculated in accordance with these Regulations.

(2.) The Committee shall credit to each chemist or other person supplying drugs or appliances in respect of that supply a sum calculated in accordance with the Drug Tariff, or in the case of drugs not included in that tariff, an amount calculated in accordance with the method adopted by the Committee for the purpose, and shall pay to each person an amount bearing the same proportion to the sum credited to him as the amount in the Drug Fund bears to the aggregate amounts so credited to all those persons.

Accounts of Drugs to be Rendered Quarterly.

44. (1.) Every chemist or other person on the list shall furnish to the Committee on dates to be appointed by the Commissioners quarterly accounts in a form provided by the Committee, containing particulars of drugs and appliances supplied by him to insured persons.

(2.) As soon as may be after the receipt of an account the Committee shall pay to the chemist or other person furnishing the account such sum as may be agreed between the Committee and any committee representative of chemists and other persons undertaking the supply of drugs and appliances (in these Regulations referred to as "the Pharmaceutical Committee") in advance of the amount due to him, and shall pay the balance of the amount so due as soon as may be after the expiration of the year, but before payment of the balance the Committee shall submit all accounts to the Pharmaceutical Committee which shall have power to reduce or disallow any item of any account submitted to them.

Allocation of Funds.

45. For the purpose of determining the amounts in the hands of the Committee which are contributed to the Panel Fund and to the Drug Fund respectively the following provisions shall apply:

(1.) The Committee shall ascertain the amount available for the medical benefit of persons on panel-lists including in that amount any Parliamentary grant or portion of a Parliamentary grant paid or to be paid to them for that purpose and shall carry the sum so ascertained, as to thirteen seventeenths thereof to the credit of

thereof to the credit of the Drug Fund; and as to one-seventeenth thereof to the credit of the fund to be called "The Drug Suspense Fund" and to be dealt with as hereinafter in these Regulations provided.

(2.) If and in so far as in any year the amount to the credit of the Drug Fund is less than the aggregate amounts credited to chemists and other persons supplying drugs and appliances the excess amount required shall, so far as that excess is not met from moneys provided by Parliament or from any other source, be paid out of the Drug Suspense Fund to the credit of the Drug Fund and shall be applied accordingly.

(3.) If in any year the amount to the credit of the Drug Fund exceeds the aggregate amounts so credited to chemists and other persons that excess shall be carried forward to the credit of the Drug Fund in the succeeding year.

(4.) Any sum remaining to the credit of the Drug Suspense Fund at the close of any year shall be treated as moneys in the hands of the Committee for the purpose of the treatment of persons on panel-lists for that year and carried accordingly to the credit of the Panel Fund for that year.

Excessive Ordering of Drugs.

46.—(1.) Where it appears to the Local Medical Committee that the drugs or appliances ordered for insured persons by any practitioner or practitioners on the panel are by reason of their character or of the amount so ordered such as to be in excess of what may reasonably be required for the adequate treatment of those persons, the Local Medical Committee may, and if any representations to that effect are made to them by the Pharmaceutical Committee, shall, make an investigation into the circumstances of the case, whether in respect of the drugs and appliances ordered by an individual practitioner or generally as to the orders given for drugs and appliances by practitioners in the County.

(2.) The Local Medical Committee shall, after hearing the Pharmaceutical Committee and any practitioner concerned, make a report to the Committee, and if, after considering the report, the Committee are of opinion that an excessive demand upon the Drug Fund has arisen owing to orders given by a practitioner which are extravagant either in character or in quantity they may, if they think fit, make such deduction from the amount payable to that practitioner out of the Panel Fund as is appropriate in the circumstances and shall make such adjustments as are necessary accordingly between the Panel Fund and the Drug Fund.

Capitation Fee for Supply of Drugs by Practitioner.

47. Where the Committee have adopted a capitation system of payment of practitioners and have made arrangements with a practitioner for the supply by him of all drugs and prescribed appliances requisite for the treatment of an insured person the Committee may instead of paying the price of drugs and appliances actually supplied pay to the practitioner as a capitation fee a sum, payable out of the Drug Fund, representing three-seventeenths of the amount available for the medical benefit of that person together with any sum which may be payable in that year from the Drug Suspense Fund to the Drug Fund in respect of each person on a panel-list.

Institutions Fund.

48. (1.) All moneys available to the Committee for the purposes of the medical benefit of insured persons who obtain treatment through an approved institution (including any Parliamentary grant or portion of a Parliamentary grant paid or to be paid to the Committee in respect of the medical benefit of those persons) shall be carried to the credit of a fund to be called the Institutions Fund.

(2.) The Committee may contribute towards the expenses of the treatment furnished by any approved institution to insured persons obtaining treatment through it an amount not exceeding the aggregate amount standing to the credit of the Institutions Fund available for the medical benefit of those persons: Provided that as a condition of any such payment the Committee shall be satisfied that accounts are kept by the institution showing separately the amounts expended by them in respect of treatment and of the supply of medicines and appliances respectively, and no payment shall be made by the Committee in respect of the treatment of insured persons receiving treatment through an approved institution in excess of fourteen-seventeenths of the aggregate amount available for the medical benefit of those persons, nor in respect of the medicines and appliances supplied to those persons in excess of four-seventeenths of that amount.

(3.) Any sum standing to the credit of the Institutions Fund at the end of any year shall be carried to the credit of the Institutions Fund for the succeeding year.

Special Arrangements Funds.

49.—(1.) All moneys available to the Committee for the purposes of insured persons who are required or allowed to make their own arrangements for obtaining treatment (including medicines and appliances) shall be carried to a fund to be called the Special Arrangements Fund.

(2.) There shall be paid to every insured person required or allowed to make his own arrangements by way of contribution to the cost of his treatment (including medicines and appliances) an amount equal to that expended by him in obtaining treatment, medicine and appliances: Provided that

(*a*) in the case of a person who has contracted to obtain treatment (including medicines and appliances) for the year, the sum so to be paid shall be a sum equal to the amount contracted to be paid by him or a sum equal to the aggregate amount standing to the credit of the fund divided by the number of persons making their own arrangements whichever is the less: and

(*b*) in the case of any other person required or allowed to make his own arrangements the sum expended shall be deemed to be a sum calculated in accordance with a scale of fees fixed by the Committee, and where the aggregate amount so expended exceeds the amount available in the fund the amount contributed in the case of each such person shall be reduced proportionately; and

(*c*) it shall be a condition of any payment that the medicines and appliances supplied to any person required or allowed to make his own arrangements shall be supplied otherwise than by or at the profit of the practitioner who is attending him (except where the circumstances of the insured person are such that the practitioner would, if he were attending that person under the arrangements made by the Committee, be entitled under his contract with the Committee to supply medicines and appliances to that person) and of the total fund not more than thirteen-seventeenths (or, if the Commissioners so allow, fourteen-seventeenths) shall be deemed to be available for the purpose of defraying the cost of medical treatment and not more than four-seventeenths for the purpose of defraying the cost of medicines and prescribed appliances.

(3.) In calculating the amount available in respect of the medical benefit of any person required or allowed to make his own arrangements, account shall be taken of any Parliamentary grant or portion of a Parliamentary grant which may be made to the Committee for the purpose of medical benefit as well as of the sums otherwise available to the Committee for that purpose.

(4.) Any sum standing to the credit of the Special Arrangements Fund at the close of any year shall be carried forward to the credit of that Fund for the succeeding year, so however that in the expenditure of the money to the credit of the Special Arrangements Fund in that year regard shall be had to whether any sum so carried forward has arisen from moneys which under this Regulation were applicable to treatment or to the provision of medicines and prescribed appliances and that the sum so carried forward shall be applicable accordingly.

PART V.
SPECIAL PROVISIONS.

Mileage.

50.—The Committee may if they think fit make arrangements for a payment to practitioners on the panel in respect of mileage—that is to say, their obligation to attend insured persons resident beyond such distance from the residence of the practitioner, as the Committee having regard to the special difficulties of access to the residence of the insured person may in any case agree with the practitioner.

Old and Disabled Members of Friendly Societies.

51.—(1.) Any person who was on the 16th December, 1911, and still is, a member of a friendly society which or a separate section of which is an Approved Society and who is not entitled to medical benefit under the Act by reason either that he was on the 15th July, 1912, of the age of 65 or upwards, or that being subject to permanent disablement at that date he is not qualified to become an insured person, or the secretary or other officer of the Society of which he is a member on his behalf may give notice to the Committee that the member desires to obtain medical attendance and treatment under arrangements made by the Committee and that the Society undertakes to pay in respect of the medical attendance and treatment of the member the sum prescribed in this Regulation, and where the notice is given personally it shall be countersigned by the secretary or other officer of the Society.

(2.) The Committee shall furnish to each such member such voucher or other document as may be approved by the Commissioners, and it shall be a condition of every agreement between the Committee and a practitioner on the panel that he shall attend and treat any person presenting such voucher or other document at a rate of remuneration not exceeding the amount which would be available for the medical treatment (not including drugs and appliances) of that member if he were an insured person: Provided that no practitioner shall be under any obligation to attend and treat a number of such members greater than a number bearing the same proportion to the insured persons on his list as the total number of such members obtaining treatment under arrangements made by the Committee bears to the total number of persons on panel lists.

Medical Service Sub-Committee.

52.—(1.) Every Committee shall constitute a special Sub-Committee (in these Regulations referred to as the "Medical Service Sub-Committee") for dealing with any question arising between an insured person and a practitioner attending him under the arrangements made by the Committee in respect of the treatment rendered by the practitioner or the conduct of the insured person while receiving that treatment and every question so arising shall stand referred to that Sub-Committee and the Committee may, if they think fit, refer to that Sub-Committee any other question arising with reference to the administration by them of medical benefit.

(2.) The Medical Service Sub-Committee shall be constituted in the following manner:—

(i.) three persons shall be appointed by and from the members of the Committee who represent insured persons;

(ii.) three persons shall be appointed by the Local Medical Committee, or if no Local Medical Committee exists, by the practitioners on the panel;

(iii.) a Chairman shall be selected from those members of the Committee appointed respectively by the Council of the County and by the Commissioners who are neither insured persons nor practitioners, and the selection shall be made by the six persons appointed as above-mentioned, or in default of selection being made by those persons, by the members of the Committee appointed respectively by the Council of the County and by the Commissioners;

provided that if in the opinion of the Chairman any member of the Medical Service Sub-Committee is interested or in the case of a practitioner is partner or assistant to a practitioner interested in the case of any person who is a member of the Committee but another member shall be appointed in the manner aforesaid by the persons by whom that member was appointed.

(3.) Where any question which under these Regulations is to stand referred to the Medical Service Subcommittee arises, the person desiring to have the question considered shall state in writing the substance of the matter and shall forward the statement to the Clerk of the Committee.

(4.) The proceedings before the Medical Service Sub-Committee shall be private, and no person shall be admitted to those proceedings except—

(*a*) the person raising the question and the person with respect to whom the question arises;

(*b*) the secretary or other officer of the Society, if any, to which the insured person belongs;

(*c*) the secretary or other officer of the Local Medical Committee;

(*d*) such other person, not being counsel or a solicitor or other paid advocate, as the Medical Service Sub-Committee may upon the application of either party admit by reason of the fact that his attendance is required for the purposes of the proceedings or to assist either party in the presentation of his case; and

(*e*) such officers and servants of the Committee as they may appoint for the purpose.

(5.) The quorum of the Medical Service Sub-Committee, their term of office and the procedure with regard to the hearing of the question, the nature of the evidence admitted and otherwise shall be such as may be fixed by the Committee subject to the approval of the Commissioners.

(6.) The Medical Service Sub-Committee shall draw up a report stating such relevant facts as appear to them to be established by the evidence placed before them, together with a recommendation as to the action, if any, which should be taken, and shall present the report to the Committee and the Committee shall accept as conclusive any finding of fact contained in the report.

(7.) Where the question at issue relates to the conduct of an insured person and the allegation made is in the opinion of the Committee substantiated, the Committee may, if the practitioner so desires, make arrangements for the transfer of the insured person in accordance with the provisions of these Regulations and may deal with him under the rules of the Committee relating to fines and to suspension of medical benefit.

(8.) Where the question at issue relates to the treatment given by a practitioner and the allegation made is in the opinion of the Committee substantiated, the Committee may, if the insured person so desires, make arrangements for his transfer in accordance with the provisions of these Regulations, and may, if in the opinion of the Committee the continuance of the practitioner on the panel will be prejudicial to the efficiency of the medical service, make representations to that effect to the Commissioners.

Duty of Local Medical Committee to Consider Complaints.

53.—It shall be the duty of the Local Medical Committee to consider any complaint made by a practitioner on the panel against any other practitioner on the panel involving any question of the efficiency of the medical service of insured persons, and the Local Medical Committee may apply to the Commissioners to remove the name of the practitioner against whom complaint is made from the panel or may take such other action as they may deem proper in the circumstances.

Enquiry as to Practitioner.

54.—(1.) If any representations are made to the Commissioners by a Committee or a Local Medical Committee that the continuance of a practitioner on the panel will be prejudicial to the efficiency of the medical service of insured persons, the Commissioners shall, and if any similar representations are made by any other body or any person, may, if they think fit, hold an enquiry in the manner hereinafter provided.

(2.) For the purpose of each enquiry the Commissioners shall constitute an enquiry committee (in these Regulations referred to as the Enquiry Committee) which shall be

shall be a barrister-at-law or solicitor in actual practice and if any body of practitioners has been established for the purpose by the Joint Committee the two practitioners so appointed shall be selected from that body.

(3.) The Enquiry Committee shall appoint one of its members to be chairman, but the chairman shall not have a casting vote.

(4.) Either party may appear in person, or, with the consent of the Enquiry Committee,—

(*a*) by counsel or by solicitor;

(*b*) by any member of his family;

(*c*) in the case of a company or corporation, by any director or officer of the company or corporation; or

(*d*) by any officer or member of any society or other body of persons of which the person in question is a member or with which he is connected.

(5.) The Enquiry Committee shall take into consideration in addition to oral evidence such written evidence as they may in each case think fit, and may, if they think fit, require any statement to be verified by a statutory declaration, and the procedure of the Enquiry Committee shall be such as they may with the approval of the Commissioners think fit.

(6.) Upon the determination of the hearing, the Enquiry Committee shall as soon as may be draw up a report or reports stating such relevant facts as appear to them to be established by the evidence, and the inferences, if any, which in the opinion of the Enquiry Committee may properly be drawn from those facts.

Decision as to Range of Medical Services.

55.—(1.) If, in the course of the attendance upon an insured person of a practitioner on the panel under an agreement made between him and an Insurance Committee under these Regulations, the practitioner is of opinion that a question arises or may arise as to whether an operation or other service is comprised in the treatment which he has by the agreement undertaken to give, that question shall be referred by the practitioner to the Local Medical Committee, and, if the Local Medical Committee and the Insurance Committee fail to come to an agreement, the matter shall be submitted for decision to Referees established under these Regulations in such summary manner as, subject to any rules made by the Commissioners in that behalf, may be directed by the Commissioners; and the decision of those Referees, given after hearing such parties and taking such evidence, if any, as they think just, shall be final, and the Referees in giving any such decision shall state whether in arriving at their decision they have had regard to any custom or practice of the medical profession which is peculiar to the area in which the question arose.

(2) For the purpose of giving effect to these Regulations the Commissioners shall, upon any such question arising, nominate as Referees two medical practitioners (who shall be chosen from any panel of practitioners set up by the Joint Committee for the purpose, or if no such panel exists from among medical practitioners in actual practice in Great Britain) and one barrister or solicitor in actual practice.

(3) The Referees may decide any question coming before them by a majority, but, subject as aforesaid, their procedure shall be such as they may from time to time determine.

Enquiry as to Persons Supplying Drugs or Appliances.

56. (1) If any representations are made to the Commissioners by a Committee or a Local Medical Committee that the inclusion or continuance on the list of a chemist or other person will be prejudicial to the efficiency of the [illegible] Society, the Commissioners shall, and if any [illegible] representations are made by any other body or [illegible] may, if they think fit, hold an enquiry in the [illegible] hereinafter provided.

For the purpose of each enquiry held in accordance [illegible] provisions of this Regulation the Commissioners [illegible] a committee which shall be composed of two persons, who (if any panel has been set up by the Joint Committee for that purpose) shall be chosen from that panel, and of a barrister-at-law or solicitor in actual

(3.) The procedure, powers and duties of the Committee shall be similar to those of the Enquiry Committee.

Approval of Forms by Commissioners.

57.—All forms required by these Regulations to be provided by a Committee shall be submitted by that Committee for the approval of the Commissioners.

Seamen's National Insurance Society.

58.—These Regulations shall only apply to members of the Seamen's National Insurance Society where that Society has agreed with a Committee for the administration by the Committee of medical benefit to individual members of the Society.

District Committees.

59.—Where, in pursuance of any Regulations made by the Commissioners under Sub-section (4) of Section 59 of the Act, any powers or duties of the Committee under these Regulations are conferred upon a District Committee, these Regulations shall have effect so far as those powers and duties are concerned, and subject to any modifications made by those Regulations as if the District Committee were in these Regulations substituted for the Committee.

Application to Wales.

60.—These Regulations in their application to Wales shall be subject to the following modifications—

(1.) "The Commissioners" means the Welsh Insurance Commissioners, or where by virtue of the National Insurance (Joint Committee) Regulations, 1912, any power is exercisable by the Joint Committee or by the Joint Committee acting jointly with the Welsh Insurance Commissioners means the Joint Committee or the Joint Committee acting jointly with the Welsh Insurance Commissioners as the case may require.

(2.) References to the National Health Insurance (Collection of Contributions) Regulations, 1912, shall be construed as references to the National Health Insurance (Collection of Contributions) Regulations (Wales), 1912.

Regulations Subject to Powers Reserved to Commissioners.

61. These Regulations shall have effect subject to the exercise by the Commissioners of the powers reserved to them by the proviso to subsection (2) of Section 15 of the Act.

THE FIRST SCHEDULE.

Part I.

Conditions of Service for Practitioners.

1. The National Insurance Act, 1911, and the Regulations made by the Commissioners and in force for the time being in the County are incorporated with and form part of these conditions of service and this agreement shall cease to have effect in the event of the Commissioners exercising any of the powers conferred on them by the proviso to subsection (2) of Section 15 of the Act and in the event of conflict between this agreement and the Regulations, the latter shall prevail.

2. The practitioner shall give to all persons who are for the time being entitled to obtain treatment from him (all or any of whom are hereinafter referred to as the "patients" or "patient" as the case may be) such treatment as is of a kind which can consistently with the best interests of the patient be properly undertaken by a general practitioner of ordinary professional competence and skill: Provided that the practitioner shall not, by virtue of this agreement, be required to give, nor entitled under this agreement, to make any charge for treatment to any person in respect of a confinement (that is to say, labour resulting in the issue of a living child or labour after twenty-eight weeks of pregnancy resulting in the issue of a child whether alive or dead), nor to any person suffering from tuberculosis or any other disease the

torium benefit, in so far as that person has been recommended for and is entitled to obtain that treatment as part of his sanatorium benefit.

3. Where the condition of the patient is such as to require services beyond the competence of an ordinary practitioner the practitioner shall advise the patient as to the steps which should be taken in order to obtain such treatment as his condition may require.

4. The practitioner shall visit at the place of residence for the time being of the patient, or at any other place within the county within a distance of miles by road from the residence of the practitioner where the patient may be for the time being, any patient whose condition so requires.

5. The practitioner shall attend and treat at the places specified for the purpose, and on such days and at such hours as are so specified, any patient who attends there for that purpose: Provided that if at any time the practitioner decides to alter the places, days or hours of his attendance, or any of them, he shall give not less than 7 days' notice in writing to the Committee and to each of the insured persons for the time being entitled to obtain treatment from him.

6. The practitioner shall order in the form provided by the Committee for the purpose such drugs and prescribed appliances as are requisite for the treatment of any patient other than those which the practitioner may be under arrangement himself to supply: Provided that if the practitioner orders any drug not included in the list from time to time supplied by the Committee to the practitioner, he shall give such orders on special forms for those purposes provided by the Committee.

7. All treatment shall be given by the practitioner personally, except where he is prevented from so doing by urgency of other professional duties, absence from home, or other reasonable cause, and the practitioner will to the best of his ability provide that when he is so precluded from personal attendance some other practitioner will give attendance as his deputy on his behalf: Provided that where treatment is given by a deputy the deputy shall be entitled to treat patients at places other than those specified in the practitioner's agreement with the Committee.

8. The practitioner shall keep such simple records of the diseases of his patients and of his treatment of them as may be required as conditions of the payment of any Parliamentary Grant, and such further records as may at any time hereafter be agreed between the Committee and the Local Medical Committee.

[*Note.*—These particulars will be contained in a Schedule to the agreement.]

Part II.

Methods of Remuneration of Practitioners undertaking Treatment.

A.—*Capitation System.*

The rate of shillings a quarter of the year as fixed by the Commissioners for the purpose in respect of each person included in the list of the practitioner, the number of those persons during any quarter to be ascertained by adding the number of persons included at the close of that quarter to the number of persons included at the commencement of the quarter and dividing the total by two.

[*Note.*—An adjustment will be required in the case of a practitioner being placed on the panel after the commencement of any quarter.]

B.—*Capitation System plus Payment for Special Services.*

In priority, the rate of shillings a quarter of the year as fixed by the Commissioners for the purpose in respect of each person included in the list of the practitioner, the number of those persons during any quarter to be ascertained by adding the number of persons included at the close of that quarter to the number of persons included at the commencement of the quarter and dividing the total by two.

[*Note.*—An adjustment will be required in the case of a practitioner being placed on the panel after the commencement of any quarter.]

Other rates for all or any of the following services:

	£	s.	d.
(1) Special visit, *i.e.*, visit paid by the patient's desire on the same day as a call received after a.m., or on Sunday			
(2) Night visit, *i.e.*, visit paid between the hours of 8 p.m. and 8 a.m. in response to a call received between those hours			
(3) Surgical operation requiring local or general anaesthetic, or treatment of abortion or miscarriage in so far as not included in maternity benefit			
(4) Setting of fracture			
(5) Reduction of dislocation			
(6) Administration of general anaesthetic for the purposes of any operation included in medical benefit			
(7) Treatment of tuberculosis in so far as the patient is not entitled to obtain such treatment as part of sanatorium benefit			
(*a*) per visit			
(*b*) per attendance at practitioner's residence, surgery, or dispensary			
(8) Mileage			

C.—*Capitation System plus Payment for Services.*

In priority, the rate of shillings a quarter of the year as fixed by the Commissioners for the purpose in respect of each person included in the list of the practitioner, the number of those persons during any quarter to be ascertained by adding the number of persons included at the close of that quarter to the number of persons included at the commencement of the quarter and dividing the total by two.

[*Note.*—An adjustment will be required in the case of a practitioner being placed on the panel after the commencement of any quarter.]

Other rates for the following services:

	£	s.	d.
(1) Visit to the patient's residence			
(2) Attendance on the patient at the practitioner's residence, surgery, or dispensary			
(3) Special visit, *i.e.*, visit paid by the patient's desire on the same day as a call received after a.m., or on Sunday			
(4) Night visit, *i.e.*, visit made between the hours of 8 p.m. and 8 a.m. in response to a call received between those hours.			
(5) Surgical operation requiring local or general anaesthetic, or treatment of abortion or miscarriage in so far as not included in maternity benefit			
(6) Setting of fracture			
(7) Reduction of dislocation			
(8) Administration of general anaesthetic for the purposes of any operation included in medical benefit			
(9) Treatment of tuberculosis in so far as the patient is not entitled to obtain such treatment as part of sanatorium benefit.			
(*a*) per visit			
(*b*) per attendance at practitioner's residence, surgery, or dispensary.			
(10) Mileage			

D. *Payment for Special Services plus Capitation System.*

In priority, rates for all or any of the following services:

	£	s.	d.
(1) Special visit, *i.e.*, visit paid by the patient's desire on the same day as a call received after a.m., or on Sunday			
(2) Night visit, *i.e.*, visit made between the hours of 8 p.m. and 8 a.m. in response to a call received between those hours			
(3) Surgical operation requiring local or general anaesthetic, or treatment of abortion or miscarriage in so far as not included in maternity benefit			
(4) Setting of fracture			
(5) Reduction of dislocation			

[a] The words in square brackets are to be omitted in any agreement entered into with a practitioner, if by that agreement the practitioner undertakes to give, in addition to medical treatment under these Regulations, domiciliary treatment to persons recommended for

	£ s. d.
(6) Administration of general anaesthetic for the purposes of any operation included in medical benefit	
(7) Treatment of tuberculosis in so far as the patient is not entitled to receive such treatment as part of sanatorium benefit	
(*a*) per visit	
(*b*) per attendance at the practitioner's residence, surgery or dispensary	
(8) Mileage	

A further rate of shillings a quarter of the year as fixed by the Commissioners for the purpose in respect of each person included in the list of the practitioner, the number of those persons during any quarter to be ascertained by adding the number of persons included at the close of that quarter to the number of persons included at the commencement of the quarter and dividing the total by two.

[*Note.*—An adjustment will be required in the case of a practitioner being placed on the panel after the commencement of any quarter.]

E.—*Payment by Attendance.*

Rates for the following services:

	£ s. d.
(1) Visit to the patient's residence	
(2) Attendance on the patient at the practitioner's residence, surgery, or dispensary	
(3) Special visit, *i.e.*, visit paid by the patient's desire on the same day as a call received after a.m., or on Sunday	
(4) Night visit, *i.e.*, visit made between the hours of 8 p.m. and 8 a.m. in response to a call received between those hours	
(5) Surgical operation requiring local or general anaesthetic, or treatment of abortion or miscarriage in so far as not included in maternity benefit	
(6) Setting of fracture	
(7) Reduction of dislocation	
(8) Administration of general anaesthetic for the purposes of any operation included in medical benefit	
(9) Treatment of tuberculosis in so far as the patient is not entitled to obtain such treatment as part of sanatorium benefit	
(*a*) per visit	
(*b*) per attendance at practitioner's residence, surgery, or dispensary	
(10) Mileage	

THE SECOND SCHEDULE.

List of Appliances.

Bandages:
Calico, bleached.
Calico, unbleached.
Crepe.
Domette.
Flannel.
India-rubber.
Muslin.
Plaster of Paris.
Open weave.

Gauzes:
Unmedicated.
Boric.
Carbolic.
Cyanide.
Sal-alembroth.
Sublimate.

Lint:
Unmedicated.
Iodo-
Carbolic.

Wools:
Cotton.
Wood.

Oiled silk.
Oiled paper.
Gutta percha tissue.
Adhesive plaster.
Ice-bags.
Splints.

Catheters:
Gum-elastic.
Soft rubber.

THE THIRD SCHEDULE.

Conditions of Agreement for Supply of Drugs and Appliances by Chemist.

1. The National Insurance Act, 1911, and the Regulations made by the Commissioners and in force for the time being in the County are incorporated with and form part of these conditions, and this agreement shall cease to have effect in the event of the Commissioners exercising any of the powers conferred on them by the proviso (i) to subsection (5) of Section 15 of the Act or suspending medical benefit and in the event of conflict between this agreement and the Regulations the latter should prevail.

2. The chemist will be prepared to supply, and so far as practicable will keep in stock, the drugs and medical and surgical appliances specified for the purpose.

3. The chemist will, with reasonable promptness, supply to any person presenting an order for drugs or appliances in a form provided by the Committee for the purpose, and signed by any practitioner on the panel or his deputy, such drugs or appliances as are so ordered.

4. All drugs and appliances shall be of good quality, and shall be supplied at a price covering the cost of retailing and dispensing, and calculated by reference to the prices specified for the purpose, and in the case of substances to which Section 5 of the Poisons and Pharmacy Act, 1908, relate, the provision of proper bottles and other vessels, and any drug, the price of which is not so specified, shall be supplied by the chemist at a price to be agreed with the Committee or in default of agreement to be determined by the Commissioners.

[*Note.*—These particulars will be contained in a Schedule to the agreement.]

5. The dispensing of medicines shall be performed either by or under the direct supervision of a registered pharmacist or by a person who for three years immediately prior to the 16th December, 1911, has acted as a dispenser to a practitioner or a public institution.

6. All drugs and appliances shall be supplied free of charge to the person presenting such order.

THE FOURTH SCHEDULE.

Form of Notice to be Exhibited by Persons undertaking the Supply of Drugs or Appliances or Both.

National Insurance Act.

(Name of Person or Firm contracting.)

Under contract with the Insurance Committee for the County or County Borough of .....

To dispense medicines.
To supply drugs.
To supply drugs (except scheduled poisons).
To supply appliances.

CIRCULARS FROM THE INSURANCE COMMISSIONERS TO INSURANCE COMMITTEES.

I.C.

MEMORANDUM BY THE INSURANCE COMMISSIONERS.

ADMINISTRATION OF MEDICAL BENEFIT.

1. The object of this Memorandum is to summarise the result of the discussions at the recent conferences with the Chairmen and Clerks of Insurance Committees, and to indicate the practical steps which the Commissioners suggest should be taken by Insurance Committees, with the object of bringing into operation by January 15th next the provisions of the National Insurance Act relating to medical benefit.

2. The Regulations as to the administration of Medical Benefit have been modified, and copies of the revised Regulations are enclosed herewith. Suggested forms of agreement with medical practitioners and other documents relating to medical benefit are also enclosed.

3. The Commissioners' suggestions with regard to Agreements between Committees and Approved Societies as to the sums to be paid by the latter for the cost of medical benefit and of its administration are dealt with in a separate letter which has already been issued.

4. With regard to the arrangements with medical practitioners and the general administrative machinery of medical benefit, it was agreed at the conferences above referred to that, at the outset, in view of the difficulty of obtaining an accurate register of insured persons in sufficient time, some provisional arrangements would be necessary. Such provisional arrangements, it was pointed out, could be brought into operation without prejudice to the character of any permanent arrangements which might be decided upon by Committees as the result of further negotiations or consideration, and could remain in force for a limited period, subject to extension in the event of the Committee not being in a position to establish their permanent arrangements at the close of the first period.

PROVISIONAL ADMINISTRATIVE MACHINERY.

Medical Tickets.

5. It appears to the Commissioners unsafe to assume that the Index Register now in course of compilation will, as a rule, be sufficiently complete or accurate by January 15th next to enable Committees to rely upon it, either for the purpose of making provision for persons entitled to medical benefit, or for verifying the title of applicants for the benefit. The Commissioners have, therefore, arranged for the issue to persons entitled to benefit of a voucher, or Medical Ticket (specimens of which are enclosed herewith) having a currency to April 30th next. These Tickets will be distributed to the members of Societies through the Societies themselves, and to Deposit Contributors by the Commission direct; and by January 15th, every person entitled to medical benefit should be in possession of one of these tickets.

Leaflets.

6. With this Ticket, every person entitled to medical benefit will receive a leaflet (specimens of which are also enclosed) explaining briefly the object of the Ticket, and the steps to be taken by him to obtain information as to the arrangements in force in his locality for the provision of the benefit. The effect of this leaflet, as will be seen, is to direct the insured person who requires any information which he cannot obtain from the local branch or official of his Approved Society, either to a Notice to be exhibited in the Post Office nearest to his address, or to the nearest Officer of Customs and Excise, the Commissioners having been enabled, by the courtesy of the Postmaster-General and the Board of Customs and Excise, to secure the co-operation of their respective departments in the manner indicated. The arrangements made by the Committee must therefore be such as will enable them to prepare these Notices before the 15th January next.

Procedure.

7. In view of the limited time available [illegible] ns that machinery must be devised to ensure that the necessary negotiations with doctors and chemists will not be protracted and that the procedure generally should be as simple and expeditious as possible.

8. *Valuable time will be saved if the procedure indicated below is followed. Further, if the Insurance Committee agree to adopt the model forms and agreements [illegible] herewith it will not be necessary for them to subm[illegible] proposed arrangements to the Commissioners for formal approval before putting them into operation.*

ARRANGEMENTS WITH MEDICAL PRACTITIONERS.

9. The procedure proposed is as follows. On or about the 12th instant the Committee should issue to each practitioner upon the medical register practising in their area a circular letter of invitation in the form enclosed with this Memorandum, accompanied by the alternative forms of Agreement also enclosed. This communication should be in the hands of each practitioner in the area on or about the 14th instant. Simultaneously with the issue of this invitation a press announcement should be made calling attention thereto and inviting persons interested to apply for copies.

10. In order to assist Committees, the Insurance Commissioners have arranged to supply each Committee with a list, complete in so far as the Commissioners are able to ascertain, of the qualified medical practitioners resident in their area. The Commissioners will also furnish Committees with a sufficient supply of copies of the circular letter of invitation and alternative Agreements, for dispatch to the medical practitioners in each Committee area, together with a supply of Envelopes bearing the printed address of the Clerk to each Committee. The letters of invitation will require the signature of the Clerk to the Committee.

11. That letter of invitation, it will be noticed, fixes December 31st as the latest date for the acceptance by practitioners of the Committee's offer, allowing a period of two and a half weeks for consideration. It also invites practitioners to confer with the Committees during that period either in person or through any organization by which they may desire to be represented, with a view to negotiation upon such matters as are not by the nature of the Committee's provisional arrangements outside the range of negotiation.

[illegible] CONDITIONS OF SERVICE.

12. The conditions of service upon which practitioners should be invited to undertake the treatment of insured persons are set out in the forms of Agreement, and it will be unnecessary for the Committee to consider this subject before issuing their invitations to the practitioners.

REMUNERATION.

13. The amount available for remuneration, upon which the Committee's offer should be based, is, as stated in the circular letter of invitation:

(*a*) A sum of 6s. 6d. per head per annum in respect of every insured person entitled to obtain medical attendance from a practitioner on the panel.

(*b*) In every year in which the total amount required for the provision of drugs and appliances is less than 2s. per head of insured persons entitled to obtain medical attendance from practitioners on the panel, a sum representing the amount unexpended in this respect up to a total of and not exceeding 6d. per head.

(*c*) A sum equal to 6d. per annum per head of all insured persons entitled to obtain medical attendance from practitioners on the panel in respect of the domiciliary treatment of insured persons suffering from tuberculosis: the total fund consisting of the aggregate of these sums to be distributed among practitioners on the panel in accordance with the method of remuneration adopted in the area.

Alternative Methods of Remuneration.

14. It will be seen that alternative methods of medical remuneration are suggested in the letter of invitation. In view of the limited time available no arrangements which involve the allocation of insured persons to the care of individual practitioners prior to the 15th January next can be relied upon to be complete by that date. Hence, it is essential that, whatever arrangements are adopted, they should be such as will afford reasonable certainty that every insured person entitled to medical benefit will obtain treatment from any doctor on the panel to whom he presents his medical ticket; and for the provisional period the method of remuneration adopted must be framed with this object in view. On the basis of payment by attendance this necessary condition is secured. The capitation basis, however, involves certain difficulties in this connexion; but in an area in which a capitation system is on other grounds preferred, it would be possible for the Committee to overcome these difficulties by undertaking, in consideration of practitioners agreeing to place on their lists all who apply to them, to assign to each practitioner the residue of insured persons who make no application in proportion to the number of persons who have already been accepted by him. For the provisional period therefore it will probably be found essential that the method of remuneration offered should be either on the basis of payment by attendance or on a capitation basis modified in accordance with the foregoing suggestions, so as to secure that any insured person falling ill before he has been entered on the list of a medical practitioner may obtain treatment.

15. The method of remuneration to be adopted in any Committee area is a question which the Committee should not attempt to decide until they have ascertained the views of the medical practitioners. It is very desirable that, if possible, the Committee should agree to adopt the method which is found to be acceptable to the majority of those medical practitioners in their area who indicate willingness to act on the panel.

It will of course be understood that the method of remuneration adopted for the provisional period need not necessarily be continued after the expiry of that period, and that if either the Committee or the practitioners so desire negotiations as to the permanent method can be set on foot at any time which permits of their completion before the end of the provisional period.

NEGOTIATIONS WITH MEDICAL PRACTITIONERS.

16. In any area in which a Local Medical Committee has not yet been formed, or if formed has not yet been formally recognized, it appears to the Commissioners that the Insurance Committee might properly enter into negotiations with any Committee to whom the practitioners have delegated this duty. The Insurance Committee should, of course, also give weight to the views of individual practitioners who prefer not to be represented by any Committee; but it will obviously be more convenient if negotiations can be conducted with a Committee which is representative of the majority of practitioners who contemplate accepting the Insurance Committee's invitation.

ARRANGEMENTS FOR THE SUPPLY OF DRUGS AND APPLIANCES.

17. Insurance Committees are required by the Regulations to determine the conditions upon which it is proposed to invite chemists and other persons to undertake the supply of drugs and appliances. The Commissioners have prepared a Model Form of Notice to persons desirous of undertaking the supply of drugs and appliances, and also a form of Acceptance and Agreement. If the Committee adopt the model forms, no further approval by the Commissioners will be required in respect of them.

18. Insurance Committees are also required to prepare a list of the prices on the basis of which payments are to be made for the drugs ordinarily supplied to insured persons and for the prescribed appliances. On this point the Insurance Committee should at once consult any Committee which may have been formed in the County or County Borough representing persons supplying drugs and appliances. It will probably be found that the local pharmaceutical committee will be prepared with a list of drugs and prices which might form the basis of negotiations. It will, however, be apparent that the tariff adopted will be a matter in which the medical practitioners have an interest as well as the pharmacists and the Insurance Committee, and the list of drugs and prices should therefore be a matter for negotiation between the three parties mentioned.

DEPOSIT CONTRIBUTORS.

19. With regard to the charges for the medical benefit of Deposit Contributors, the Commissioners consider that these should be the same as those payable in respect of members of Approved Societies, and that accordingly a sum of 6s. should be fixed under Section 42 (*d*) of the Act as the amount payable in respect of each Deposit Contributor for the purposes of the cost of medical benefit out of his contributions. The cost of the administration of medical benefit for Deposit Contributors is included in the sum to be prescribed by the Commissioners for administration of benefits for that class of insured persons under Section 42 (*c*) of the Act, and the Commissioners propose to prescribe 1s. 9d. under this head.

PERSONS REFERRED TO IN SECTION 15 (2) (*e*) OF THE ACT.

20. The provisional agreement with the doctors should include an agreement to take persons mentioned in Section 15 (2) (*e*) of the Act on the same terms of remuneration as insured persons as provided in the Regulations, which are incorporated in the Forms of Agreement.

PUBLICATION OF LISTS OF PRACTITIONERS AND CHEMISTS.

21. Immediately upon the conclusion of the negotiations (which should be brought to a close at the earliest possible date) the Committee should re-issue to all practitioners the form of Agreement adopted in its final shape as settled, in respect of those points awaiting decision, in consequence of the negotiations. As suggested above, the 31st December should be fixed as the date before which the acceptances should be received; and the lists first to be issued should be closed on that date. Practitioners will not, of course, be precluded from coming on the panel at a later date, but they would not be entitled to have their names placed on the first lists issued.

22. By the 1st January the Agreements, executed by way of acceptance, will have been received from those practitioners who desire to enter into contract with the Committee; and every Insurance Committee must on or before 1st January report to the Commissioners the steps which they have adopted and the result of their negotiations with medical practitioners and with persons supplying drugs and appliances. Where the number of doctors and the number of chemists who have been accepted is adequate, the Commissioners will at once signify their approval of the lists.

23. As soon as the lists are approved, they must be printed, together with instructions to insured persons, and given to the local branches and officers of Approved Societies for distribution among insured persons, and at the same time to the local Post Offices and the local officers of Customs and Excise. The Commissioners will in due course supply each Committee with a list of the Post Offices in their area, and other information with regard to the procedure in this connexion.

INCOME LIMIT.

24. The Committee are required to inform the Commission whether they propose to fix an income limit above which insured persons will be required to make their own arrangements for medical attendance and treatment, and to furnish particulars of any income limit proposed to be fixed.

APPROVAL OF INSTITUTIONS UNDER SECTION 15 (4).

25. The Committee have already received copies of a Model Form on which systems or institutions may apply for approval under Section 15 (4), and such applications should be forwarded to the Commission so soon as a decision is reached by the Committee. A Model Form of Notice of selection of an approved Institution will be furnished later.

PERSONS REQUIRED OR ALLOWED TO MAKE THEIR OWN ARRANGEMENTS.

26. Model Forms of Notice by and to persons required or allowed to make their own arrangements for medical attendance and treatment will also be furnished.

TIME TABLE.

27. It will be seen that if the Insurance Committee proceed on the lines above suggested, the various stages will have to be completed on or before the dates mentioned in the following Time Table:

Date of this Circular Letter	December 6th.
Receipt of invitation, etc., by practitioners and by persons supplying drugs and appliances	December 14th.
A period of two and a half weeks for negotiation, concluding with the date fixed as the last day for receipt of acceptances, namely ..	December 31st.
Report by Committees to Commissioners	January 1st.
Leaving an interval of two weeks for the printing and supply to local offices of Societies, to Post Offices, and to Officers of Customs and Excise of the lists of practitioners and pharmacists and the necessary notices to insured persons ..	January 15th.

CIRCULAR LETTER OF INVITATION

FROM AN INSURANCE COMMITTEE TO EACH MEDICAL PRACTITIONER IN ITS AREA.

Sir,

The Insurance Committee are required under the National Insurance Act and the Regulations made by the Insurance Commissioners to make arrangements with medical practitioners for securing the treatment of insured persons; and they are accordingly inviting all medical practitioners within their area to confer with them, either personally or through some representative committee, as to the nature of the arrangements to be adopted.

If you are willing to enter into negotiations with a view to acting on the panel of this Committee's area, I am to request you to notify the fact to me. An addressed envelope is enclosed for reply.

Conditions of Service.

The conditions of service upon which practitioners are invited to undertake the treatment of insured persons are set out in the alternative forms of agreement enclosed herewith.

Remuneration.

The total sum available for the remuneration of practitioners in the area is made up of the following sums:

(*a*) A sum of 6s. 6d. per head per annum in respect of every insured person entitled to obtain medical attendance from a practitioner on the panel;

(*b*) In every area in which the total amount required for the provision of drugs and appliances is less than 2s. per head of insured persons entitled to obtain medical attendance from practitioners on the panel, a sum representing the amount unexpended up to a total of, and not exceeding, 6d. per head;

(*c*) A sum equal to 6d. per head per annum of all insured persons entitled to obtain medical attendance from practitioners on the panel, in respect of the domiciliary treatment of insured persons suffering from tuberculosis.

The total fund consisting of the aggregate of the sums above mentioned will be distributed among practitioners on the panel in accordance with the method of remuneration adopted in the area.

Method of Remuneration.

The alternative forms of agreement which are enclosed are framed on a capitation basis and on an attendance basis respectively. The selection of one of these alternatives will be a matter for negotiation between the Local Medical Committee, or, if no such Committee exists, the medical practitioners coming on the panel and the

Provisional Arrangements.

The arrangements which the Insurance Committee propose to discuss with the medical practitioners may be distinguished as follows:

(*a*) provisional arrangements to come into operation on 15th January next;

(*b*) subsequent arrangements, the settlement of which may require further consideration.

It is proposed to postpone the consideration of the subsequent arrangements for the immediate present, and to proceed at once with the establishment of provisional arrangements, which, subject to extension by consent, will be limited to the period ending on the 14th April, 1913.

The necessity for adopting provisional arrangements arises from the fact that the Register of insured persons in the Committee's area is not yet complete, and that the arrangements must therefore be such as will not require that the allocation of insured persons to the care of individual practitioners should be completed by the 15th January next. In the absence of a complete register, arrangements have been made for providing each insured person entitled to medical benefit with a medical ticket as evidence of his being so entitled, and the arrangements must be so framed as to secure that any insured person presenting his ticket to a practitioner on the panel may be reasonably certain of obtaining the necessary treatment.

The method of remuneration adopted must be framed with a similar object in view.

Publication of Panel List.

As the first lists of practitioners on the panels must be issued for the assistance of insured persons in selecting their doctors during the first week of January, the name of any practitioner whose acceptance is received later than the 31st December cannot appear on those first lists. Hence it will be necessary that the negotiations mentioned above, so far as they relate to the provisional period, should be concluded in sufficient time to allow the Form of Agreement finally adopted by the Committee to be re-issued to you in a complete form, and to permit of its execution and return not later than the 31st December by those practitioners who desire their names to appear in that list.

I am, Sir,

Your obedient Servant,

NATIONAL INSURANCE ACT, 1911.

AGREEMENT BETWEEN MEDICAL PRACTITIONER AND INSURANCE COMMITTEE FOR THE PERIOD ENDING 14TH APRIL, 1913.

PAYMENT BY CAPITATION.

To the INSURANCE COMMITTEE.

of _____

(hereinafter called the "Practitioner") hereby agrees to undertake the medical attendance and treatment of insured persons upon the terms and conditions mentioned below, and desires his name to be included in the medical list under the headings of the following areas: –

TERMS AND CONDITIONS OF SERVICE.

1. The National Insurance Act, 1911, and the National Health Insurance (Administration of Medical Benefit) Regulations, 1912 (hereinafter called "the Regulations"), or other Regulations for the administration of Medical Benefit made by the Commissioners and in force for the time being in the area of the said Insurance Committee (hereinafter called "the Committee") are incorporated with and form part of these conditions of service, and this agreement shall cease to have effect in the event of the Commissioners [illegible]

on them by the proviso to Subsection (2) of Section 15 of the said Act.

2. The Practitioner shall give to all persons who are for the time being entitled to obtain treatment from him (all or any of whom are hereinafter referred to as the "patients" or "patient" as the case may be) such treatment as is of a kind which can consistently with the best interests of the patient be properly undertaken by a general practitioner of ordinary professional competence and skill: Provided that the Practitioner shall not by virtue of this agreement be required to give, nor entitled under this agreement to make any charge for treatment to any person in respect of a confinement, that is to say, labour resulting in the issue of a living child, or labour after 28 weeks of pregnancy resulting in the issue of a child whether alive or dead.

3. The persons entitled to obtain treatment from the practitioner under this agreement are those persons who have applied to and been accepted by him under the provisions of the Regulations and such other persons as have been assigned to him under those provisions:

Provided that the Committee shall not assign any person to any practitioner resident more than miles from the residence of that person if any other practitioner on the panel resides at a less distance from that residence, except with the consent of the first mentioned practitioner.

4. Where the condition of the patient is such as to require services beyond the competence of an ordinary practitioner, the Practitioner shall advise the patient as to the steps which should be taken in order to obtain such treatment as his condition may require.

5. The Practitioner shall visit at the place of residence for the time being of the patient, or at any other place within the county within a distance of miles by road from the residence of the Practitioner where the patient may be for the time being, any patient whose condition so requires.

6. The Practitioner shall attend and treat at the places, on the days, and at the hours mentioned in the First Schedule hereto, any patient who attends there for that purpose: Provided that if at any time the Practitioner decides to alter the places, days, or hours of his attendance, or any of them, he shall give not less than seven days' notice in writing to the Committee and to each of the insured persons for the time being entitled to obtain treatment from him.

7. The Practitioner shall keep simple records of the diseases of the patients attended by him and of his treatment of them in the form set out in the Second Schedule hereto, and such further records as may at any time hereafter be agreed between the Committee and the Local Medical Committee, and shall, at the request of any patient, furnish such certificates as are required to be furnished by that person in connexion with any claim for sickness or disablement benefit made by him in pursuance of the rules of the Society of which he is a member, or of the Committee as the case may be, and the services rendered by the Practitioner shall be of such a kind as to comply with the conditions set out in the Third Schedule hereto (or any such modifications of those conditions as do not impose an additional burden on the Practitioner) being conditions [illegible] the nature and quality of treatment which must be complied with by reason of any scheme for the distribution of a Parliamentary grant.

8. The Practitioner shall immediately after the 14th April, 1913, and the expiration of such subsequent periods as may be agreed, furnish an account on the form provided for the purpose by the Committee.

9. All treatment shall be given by the Practitioner personally, except where he is prevented from so doing by urgency of other professional duties, absence from home, or other reasonable cause, and the Practitioner will to the best of his ability provide that when he is so precluded from personal attendance some other practitioner will give attendance as his deputy on his behalf: Provided that where treatment is given by a deputy, the deputy shall be entitled to treat patients at places other than those mentioned in the First Schedule hereto.

[illegible] The Regulations require that [illegible] by the Committee should be [illegible] so far as practicable under [illegible] agreements made [illegible] panel."

10. The remuneration of the Practitioner for the treatment of patients during the period ending 14th April, 1913, shall be calculated in accordance with the Regulations on the basis of the rate contained in the Fourth Schedule hereto, and thereafter as may be agreed.

11. The Practitioner shall order in the form provided by the Committee for the purpose such drugs and prescribed appliances as are requisite for the treatment of any patient other than those which the Practitioner may under this agreement, or any agreement hereafter to be made with the Committee himself supply: Provided that if the Practitioner orders any drug not included in the list from time to time supplied to him by the Committee, he shall give such order on a special form provided by the Committee for that purpose.

12. (i) The Practitioner shall himself supply to a patient where requisite drugs which are necessarily or ordinarily administered by a practitioner in person, and drugs and appliances required for immediate administration or application, or required for use before a supply can conveniently be obtained otherwise under the Regulations.

(ii) The Practitioner shall furnish, together with the accounts for treatment above-mentioned, accounts for the drugs and appliances so supplied by him, and payment shall be made therefor at the same rate as that agreed to be paid by the Committee to chemists and other persons supplying drugs and appliances.

13. This agreement shall continue in force and have effect until the 14th April, 1913, or such later date as may hereafter be agreed.

14. Except where the context otherwise requires, words and expressions used herein shall have the same meaning as in the Regulations.

Signature of Practitioner*.....

Qualifications.....

Date.....

* This Agreement should be signed by the Practitioner over a sixpenny stamp.

[The First and Second Schedules to the agreement for payment by capitation are identical with the First and Second Schedules of the agreement for payment by attendance, save that in the concluding note the words "and total the various services under the heads shown in the column of account" are omitted.

THE THIRD SCHEDULE.

The conditions of any grant to any Insurance Committee will require that records shall be kept of the diseases of the insured persons in the area and of their treatment in such form as is required by the Commissioners,* and that such certificates shall be furnished to every insured person as are required to be furnished by that person in connexion with any claim for sickness or disablement benefit made by him in pursuance of the rules of the Society of which he is a member or of the Committee as the case may be, and that the general arrangements made by the Committee shall be such as to secure to insured persons a standard of treatment satisfactory to the Commissioners, and that the domiciliary treatment of insured persons recommended for sanatorium benefit shall be undertaken by the practitioners by whom they are attended, and that for that purpose those practitioners shall receive remuneration out of a fund equivalent to a sum of 6d. per annum in respect of each person entitled to receive treatment from them.

* NOTE.—The form is that set out in the Second Schedule to this agreement.

THE FOURTH SCHEDULE.

SCALE FOR CALCULATING REMUNERATION.

The rate upon which remuneration shall be calculated shall be a rate of a quarter, that is to say, the period ending on the 14th April, 1913, and such corresponding rates for other periods as may be subsequently agreed, in respect of each person included in the list of

the Practitioner, the number of those persons to be ascertained in respect of the quarter ending 14th April, 1913, by taking the number of persons included at the close of that quarter, and in respect of any subsequent quarter as may be hereafter agreed.

NATIONAL INSURANCE ACT, 1911.

AGREEMENT BETWEEN MEDICAL PRACTITIONER AND INSURANCE COMMITTEE FOR THE PERIOD ENDING 14TH APRIL, 1913.

PAYMENT BY ATTENDANCE.

To the INSURANCE COMMITTEE.

hereinafter called the "Practitioner") hereby agrees to undertake the medical attendance and treatment of insured persons upon the terms and conditions mentioned below, and desires his name to be included in the medical list under the headings of the appropriate areas:—

TERMS AND CONDITIONS OF SERVICE.

1. The National Insurance Act, 1911, and the National Health Insurance (Administration of Medical Benefit) Regulations, 1912 (hereinafter called "the Regulations") or other Regulations for the administration of Medical Benefit made by the Commissioners and in force for the time being in the area of the said Insurance Committee (hereinafter called "the Committee") are incorporated with and form part of these conditions of service, and this agreement shall cease to have effect in the event of the Commissioners exercising any of the powers conferred on them by the proviso to subsection (2) of Section 15 of the said Act.

2. The Practitioner shall give to all persons who are for the time being entitled to obtain treatment from him (all or any of whom are hereinafter referred to as the "patients" or "patient" as the case may be) such treatment as is of a kind which can consistently with the best interests of the patient be properly undertaken by a general practitioner of ordinary professional competence and skill: Provided that the Practitioner shall not, by virtue of this agreement be required to give, nor entitled under this agreement to make any charge for treatment to any person in respect of a confinement, that is to say, labour resulting in the issue of a living child, or labour after 28 weeks of pregnancy resulting in the issue of a child whether alive or dead.

3. The persons entitled to obtain treatment from the practitioner under this agreement are those persons who have applied to and been accepted by him under the provisions of the Regulations and such other persons as have been assigned to him under those provisions:—

Provided that the Committee shall not assign any person to any practitioner resident more than miles from the residence of that person if any other practitioner on the panel resides at a less distance from that residence, except with the consent of the first mentioned practitioner.

4. Where the condition of the patient is such as to require services beyond the competence of an ordinary practitioner the Practitioner shall advise the patient as to the steps which should be taken in order to obtain such treatment as his condition may require.

5. The Practitioner shall visit at the place of residence for the time being of the patient, or at any other place within the county within a distance of miles by road from the residence of the Practitioner where the patient may be for the time being, any patient whose condition so requires.

6. The Practitioner shall attend and treat at the places, on the days and at the hours mentioned in the First Schedule hereto, any patient who attends there for that purpose: Provided that if at any time the Practitioner decides to alter the places, days or hours of his attendance, or any of them, he shall give not less than notice in writing to the Committee and to each of the insured persons for the time being entitled to obtain treatment from him.

7. The Practitioner shall keep simple records of the diseases of the patients attended by him and of his treatment of them in the form set out in the Second Schedule hereto, and such further records as may at any time hereafter be agreed between the Committee and the Local Medical Committee, and shall, at the request of any patient, furnish such certificates as are required to be furnished by that person in connexion with any claim for sickness or disablement benefit made by him in pursuance of the rules of the Society of which he is a member, or of the Committee as the case may be, and the services rendered by the Practitioner shall be of such a kind as to comply with the conditions set out in Third Schedule hereto (or any such modifications of those conditions as do not impose an additional burden on the practitioner) [illegible] conditions respecting the nature and quality of treatment which must be complied with by reason of any scheme for the distribution of a Parliamentary Grant.

8. The Practitioner shall immediately after the 14th April, 1913, and the expiration of such subsequent periods as may be agreed, furnish an account on the form provided for the purpose by the Committee.

9. All treatment shall be given by the Practitioner personally, except where he is prevented from so doing by urgency of other professional duties, absence from home, or other reasonable cause, and the Practitioner will to the best of his ability provide that when he is so precluded from personal attendance some other practitioner will give attendance as his deputy on his behalf: Provided that that where treatment is given by a deputy the deputy shall be entitled to treat patients at places other than those mentioned in the First Schedule hereto.

10. The remuneration of the Practitioner for the treatment of patients during the period ending 14th April, 1913, shall be calculated in accordance with the Regulations upon the basis of the scale contained in the Fourth Schedule hereto, and thereafter as may be agreed.

11. The Practitioner shall order in the form provided by the Committee for the purpose such drugs and prescribed appliances as are requisite for the treatment of any patient other than those which the Practitioner may under this agreement or any agreement hereafter to be made with the Committee himself supply: Provided that if the Practitioner order any drug not included in the list from time to time supplied to him by the Committee he shall give such order on a special form provided by the Committee for that purpose.

12. (i) The Practitioner shall himself supply to a patient where requisite drugs which are necessarily or ordinarily administered by a practitioner in person, and drugs and appliances required for immediate administration or application, or required for use before a supply can conveniently be obtained otherwise under the Regulations.

(ii) The Practitioner shall furnish, together with the accounts for treatment above-mentioned accounts for the drugs and appliances so supplied by him, and payment shall be made therefor at the same rate as that agreed to be paid by the Committee to chemists and other persons supplying drugs and appliances.

13. This agreement shall continue in force and have effect until the 14th April, 1913, or such later date as may hereafter be agreed.

14. Except where the context otherwise requires, words and expressions used herein shall have the same meaning as in the Regulations.

Signature of Practitioner*.....

Qualifications.....

Date.....

* This agreement should be signed by the Practitioner over a sixpenny stamp.

† NOTE. The Regulations require that persons assigned to practitioners by the Committee should be [illegible] as far as practicable under arrangements made by practitioners on the panel."

THE FIRST SCHEDULE.

DAYS AND HOURS OF ATTENDANCE AT EACH PLACE.

DAYS OF ATTENDANCE.

THE SECOND SCHEDULE.

Particulars of Patient:

Name and Address

Society and Number

Month of 1913

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Account for month of ..... 1913.

	s.	v.	sr.	in.	op.	an.	fr.	ds.

Month of ..... 1913.

Total No. of a. & v.	Age and Sex.	Occupation.	Nature of illness to be entered on conclusion of treatment, or reference to re-entry.
	Age		
	Sex		

TABLE OF SYMBOLS.

s. Surgery Attendance. *v.* Visit. *sr.* Special Visit. *in.* Night Visit. *op.* Operation, or case of Abortion or Miscarriage. *an.* Anaesthetic. *fr.* Fracture. *ds.* Dislocation.

The Practitioner should enter the appropriate symbol under the date on which the service was rendered, and total the various services under the heads shown in the Column of Account, entering also the other particulars for which the spaces in the form provide.

THE THIRD SCHEDULE.

The conditions of any grant to any Insurance Committee will require that records shall be kept of the diseases of the insured persons in the area and of their treatment in such form as is required by the Commissioners,* and that such certificates shall be furnished to every insured person as are required to be furnished by that person in connexion with any claim for sickness or disablement benefit made by him in pursuance of the rules of the Society of which he is a member or of the Committee as the case may be, and that the general arrangements made by the Committee shall be such as to secure to insured persons a standard of treatment satisfactory to the Commissioners, and that the domiciliary treatment of insured persons recommended for sanatorium benefit shall be undertaken by the practitioners by whom they are attended, and that for that purpose those practitioners shall receive remuneration out of a fund equivalent to a sum of 6d. per annum in respect of each person entitled to receive treatment from them.

*Note.—This form is set out in the Second Schedule to this agreement.

THE FOURTH SCHEDULE.

Scale for calculating Remuneration

The Rates upon which remuneration shall be calculated shall be, in respect of the following services:—

	s. d.
(1) Attendance on the patient at the practitioner's residence, surgery, or dispensary	
(2) Visit to the patient's residence	
(3) Special visit, *i.e.*, visit paid by the patient's desire on the same day as a call received after a.m., or on Sunday ..	
(4) Night visit, *i.e.*, visit made between the hours of 8 p.m. and 8 a.m. in response to a call received between those hours ..	
(5) Surgical operation requiring local or general anaesthetic, or case of abortion or miscarriage	
(6) Administration of general anaesthetic ..	
(7) Setting of fracture	
(8) Reduction of dislocation	

THE INSURANCE ACT IN PARLIAMENT.

Mileage.

Sir Henry Craik asked, on December 2nd, whether the amount for medical relief allotted to each locality would be based upon the number of insured persons in that locality; and, if so, whether an additional amount would be allotted in the case of rural localities where the amount of travelling expenses involved in such medical relief must necessarily exceed that which would be incurred in urban districts. Mr. Masterman said that the answer to the first part of the question was in the affirmative. The creation of a small special fund for mileage in districts exceptionally sparsely populated was under consideration; but no additional amount would be allotted for mileage in ordinary rural areas, and if a special fund were considered desirable for this purpose it must be formed by an Insurance Committee from the general amount available for medical remuneration within its area.

Sir Henry Craik inquired if he was to understand that the mileage allowance would be completely separate from the remuneration for professional services. Mr. Masterman replied that it might be or it might not be. The remuneration might be inclusive of mileage, or it might be that a separate sum would be set apart for mileage. It was within the discretion of the Insurance Committee, acting in consultation with the Local Medical Committee.

Mr. C. Bathurst asked if rural areas would not suffer as compared with urban areas. Mr. Masterman, in reply, said that there would be compensations in the rural districts, where the doctors would be doing their own dispensing and getting the profits on the dispensing, and if the health in the rural areas was much better they would have less work to do.

Sir Henry Craik further asked whether that was merely a casual and not a uniform system. Mr. Masterman replied in the negative, and said that it rested in the discretion of the local committee.

Medical and Sanatorium Benefits.

Sir J. D. Rees asked, on December 2nd, whether the compulsory collections under the National Insurance Act were to be continued, notwithstanding the inability of the Government to provide medical or sanatorium benefits. Mr. Masterman replied that he knew of no reason why contributions should not be continued and benefits forthcoming as provided by the Act.

Major Hope asked the Secretary to the Treasury, on December 2nd, whether, as 6d. out of the 1s. 3d. available annually for sanatorium benefit, in respect of each insured person under Clause 16 (2) (a) of the National Insurance Act was to be set aside for payment of medical practitioners, local authorities would contribute towards maintenance of sanatoriums and dispensaries one-fourth of the original or of the reduced sum. Mr. Masterman said that local authorities did not contribute any part of the 1s. 3d. per head referred to in the question, nor was it proposed that the contributions of local authorities should bear any fixed proportion to that sum, or to the part of it devoted to the cost of treatment in sanatoriums or dispensaries.

Major Hope asked if it was not the case that the Chancellor of the Exchequer wrote on August 1st that local authorities were prepared to pay 25 per cent. of the scheme if the remuneration were provided from other sources, and further added: "The Government are prepared to go a long way towards meeting your request," and did not that imply an agreement? Mr. Mastermann replied that the letter referred to the provision of sanatorium benefit for uninsured persons, and had nothing to do with the present question.

Sanatorium Treatment.

Sir Reginald Pole-Carew asked the President of the Local Government Board, on December 3rd, how many counties or county boroughs had not yet submitted to the Local Government Board complete schemes for detecting and treating tuberculosis; and how many complete schemes which had been submitted had not yet been approved by the Board. Mr. Burns said that some sixty councils of counties and county boroughs had not yet submitted complete schemes, but forty-six of those councils had submitted schemes of a partial or temporary character. Of the sixty complete schemes which had been submitted, twenty-seven had not yet been approved by the Board, but in these cases the Board was in communication with the councils, either with a view to obtaining further information or the reconsideration of some feature of the scheme.

Mr. Wright asked how many beds would be required in the near future for the United Kingdom in sanatoriums; and how many beds he anticipated would be needed, exclusive of Poor Law beds, in hospitals for the treatment of consumptives. Mr. Burns could not do more at present than refer to the estimates given in the Interim Report of the Departmental Committee on Tuberculosis. Mr. Wright inquired if the Local Government Board was still of opinion that in the near future 18,000 beds would be required in sanatoriums and in other institutions. Mr. Burns replied that that was not the Board's opinion. Mr. Wright asked if it was not the opinion expressed in the Local Government Board's Circular of May 14th? Mr. Burns replied in the negative, and said that an estimate was formed by the Astor Committee that 9,000 sanatorium beds would be required for the United Kingdom.

Mr. Wright asked how many of the schemes by county and town councils for providing sanatorium benefit and treatment of consumptives, wholly or partly approved by his Board, were based upon the assumption that in addition to the Hobhouse grant there would be available 1s. 3d. per annum per head of assured persons. Mr. Burns replied that it was impossible to say what assumptions had been entertained by each local authority that had considered a scheme of institutional treatment, but it might be supposed that local authorities were alive to the situation.

Tuberculosis Schemes.

In reply to a question by Mr. Astor, on November 27th, Mr. Burns said that the following councils of counties and county boroughs had submitted schemes for dealing with tuberculosis, the general lines of which the Board approved:

County Councils.—Cornwall, Cumberland, Derbyshire, Dorsetshire, Durham, Essex, Gloucestershire, Kent, Leicestershire, Holland (parts of), Kesteven (parts of), Lind[illegible], Middlesex, Somerset, Surrey, Worcestershire, Yorks (West Riding).

County Borough Councils.—Birkenhead, Birmingham, Bradford, Brighton, Chester, Derby, Eastbourne, Ipswich, St. Helens, Sheffield, Stockport, [illegible] Wallasey, Worcester, York.

Mr. Astor asked the President of the Local Government Board, on November 28th, how many beds would be required in the near future in sanatoriums, and also how many beds would be required, in addition to Poor Law beds, in hospitals, for the treatment of consumption in England and Wales. Mr. Burns replied that certain figures were given in the Interim Report of the Departmental Committee on Tuberculosis, but for reasons which were indicated in that report the question did not admit of an exact answer.

Mr. Wright asked the President of the Local Government Board whether a joint scheme for providing sanatorium benefit in the county and boroughs of Derbyshire, Derby, and Sheffield by means *inter alia* of a central and branch sanatorium and dispensaries had been finally approved by the Local Government Board; and, if so, whether the three authorities concerned had in consequence of the reduction of the 1s. 3d. originally proposed for sanatorium benefit to 9d., and, it followed of the funds now available for this purpose, decided to abandon their scheme. Mr. Burns said that the schemes of the Derbyshire County Council and Sheffield Town Council included the provision of a joint sanatorium, and he understood that the town council of Derby was prepared to contract for beds at such a sanatorium. The Local Government Board approved these proposals, and he was not aware that any of the authorities had decided to abandon them.

Tuberculosis Grants.

The Chancellor of the Exchequer, in a reply to Mr. Touche, on December 3rd, said that the sum of £1,500,000 voted under the Finance Act, 1911, for the provision of or making grants in aid to sanatoriums and other institutions for the treatment of tuberculosis was a grant towards capital expenditure, not in aid of maintenance. The conditions under which patients would be admitted to sanatoriums provided by the London County Council would be primarily a matter for that authority subject to any conditions required by the Local Government Board when the grant was made, and also as regards insured persons to any arrangements made with the Insurance Committees.

Tuberculous Uninsured.

Sir Henry Craik asked the President of the Local Government Board, on December 2nd, if he would state what number of local authorities had taken advantage of the offer of the Chancellor of the Exchequer by which additional assistance was given to authorities who provided sanatorium benefit for other than insured persons; whether the local authority in London had made arrangements accordingly; and, if not, what means were open for securing sanatorium benefit in London for other than insured persons. Mr. Burns replied that local authorities generally, in preparing their schemes, had made provision for the treatment of non-insured persons suffering from tuberculosis, as well as for insured persons. Fifteen dis[illegible] in the metropolis had been provisionally approved by the Local Government Board, at which treatment might be obtained by persons whether insured or not insured, and arrangements were in progress for the provision of sanatorium accommodation.

Sir Henry Craik asked if Mr. Burns was aware that in the East End of London there were several children for whom no sanatorium provision had been made by the local authority. Mr. Burns said he should be happy to hear of such cases, and to inform the Me[illegible] Asylums Board as to the necessity of dealing w[illegible] cases at once.

Men Discharged from the Royal Navy.

In reply to Mr. Mildmay, Dr. Macnamara stated, on November 28th, that no men requiring active surgical treatment were discharged from the Royal Navy except at their own request. It was the desire of the Admiralty that any man suffering from tuberculosis should be placed in communication with the sanatorium authorities im[illegible] on discharge from hospital, and the question of how effect could be given to this desire was at present engaging attention.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

A MEETING of the State Sickness Insurance Committee appointed by the Special Representative Meeting on November 21st was held at the house of the Association, 429, Strand, on Thursday, November 28th.

The Committee consists of twelve members elected by grouped Branches and Divisions in the United Kingdom as reported in the SUPPLEMENT of November 23rd, p. 574, together with the *ex officio* members, the President, Chairman of Council, Chairman of Representative Meetings, and the Treasurer, with representatives of the Association of Registered Medical Women, the Northern Association of Registered Medical Women, and the Society of Medical Officers of Health.

Present: *England and Wales:* Dr. R. M. Beaton (London), Dr. T. M. Carter (Bristol), Dr. T. A. Helme (Manchester), Dr. E. O. Price (Bangor), Dr. D. G. Thomson (Thorpe, Norwich), Mr. D. F. Todd (Sunderland), Mr. E. B. Turner (London), Mr. E. H. Willock (Croydon). *Scotland:* Dr. John Adams (Glasgow), Dr. R. McKenzie Johnston (Edinburgh). *Ireland:* Dr. T. B. Costello (Tuam), Dr. J. S. Darling (Lurgan). *Ex officio:* Dr. J. A. Macdonald (Chairman of Council), Mr. T. Jenner Verrall (Chairman of Representative Meetings), Dr. Edwin Rayner (Stockport), together with Miss Mary F. Ivens, M.S. (Northern Association of Registered Medical Women), Dr. Constance E. Long (Association of Registered Medical Women), and Dr. Herbert Jones (Society of Medical Officers of Health).

A letter of apology for non-attendance was read from the President, Sir James Barr.

CHAIRMAN.

DR. J. A. MACDONALD, Chairman of the Council, was appointed Chairman of the Committee.

PROVISIONAL ARRANGEMENTS FOR MEDICAL BENEFIT.

A correspondence raising the question whether members of the profession in any locality should enter into provisional arrangements with local Insurance Committees for the administration of medical benefit was considered. The Committee, being of opinion that this was highly undesirable, directed the insertion of the notice which appeared on the first page of the SUPPLEMENT of November 30th, to the effect that, pending the result of the meetings of the Divisions throughout the United Kingdom, it was imperative that no negotiations or arrangement of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession, with local Insurance Committees or otherwise.

CONFERENCE WITH THE CHANCELLOR OF THE EXCHEQUER.

A report was placed before the Committee indicating the points which had been placed by the special committee of five members elected by the Special Representative Meeting before the Chancellor of the Exchequer. A memorandum by the Chancellor of the Exchequer in reply was also submitted to the meeting, and is published in the report of the Council (see p.).

The CHAIRMAN OF COUNCIL reported that he had convened a meeting of Council on December 4th for the purpose of considering the report which should be made to the Divisions. Whereupon the Committee proceeded to draft a report for submission to the Council.

The Committee resolved to obtain counsel's opinion as to whether it was not possible under the Act for the Commissioners to make a regulation whereby a private practitioner should be allowed to make a charge to insured persons in respect of special and night visits by way of providing a deterrent against unreasonable claims upon a practitioner's time.

RESOLUTION OF SYMPATHY FROM DURBAN.

[illegible] read from the President of the Durban Division intimating the Division's sympathy with the Home members in their Insurance Act campaign, and stating that a fund had been opened for subscriptions to the Central Insurance Defence Fund. The Committee directed that an expression of thanks should be transmitted to the Division.

TREATMENT OF TUBERCULOSIS.

The CHAIRMAN reported that schemes for the administration of sanatorium benefit in the county borough of Northampton and in Oldham had been received, and, as they conformed to the decisions of the Committee, had been approved by him on its behalf.

It was reported that the sanatorium benefit scheme for Essex which had been approved by the Committee had not been approved by the Insurance Commissioners, who had suggested various alterations. The Committee expressed its disagreement with the suggested amendments of the Insurance Commissioners, and advised the Divisions and Local Provisional Medical Committees to take action accordingly.

PUBLIC MEDICAL SERVICE SCHEMES.

The public medical service schemes for Deptford and for Stockport, Macclesfield, and East Cheshire were approved subject to the provision that payment of a collector should not be by commission.

CORRESPONDENCE.

[It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor, BRITISH MEDICAL JOURNAL, *429, Strand, London, W.C.]*

THE SPECIAL REPRESENTATIVE MEETING THIS MONTH.

DR. CHAS. E. S. FLEMMING (Bradford-on-Avon) writes: The Representative Meeting on November 20th decided to take the opinion of the Association as to the refusal or acceptance of the Act by a vote of its members in the Divisions. Without doubt it was the intention of the meeting that the result of this vote should be considered the decision of the Association. Now, however, it has been decided that such a vote cannot be a binding and legal decision of the Association unless it is confirmed by a two-thirds majority of a Representative Meeting. And a Representative Meeting is to be held on December 21st. Unless this meeting decides by a two-thirds majority to accept or to refuse the Act its decision will be useless.

To prevent such an *impasse* and to enable the meeting to give effect to the evident desire of the meeting of November 20th I would appeal to the Divisions to instruct their Representatives to vote not for or against acceptance of the Act, but in accordance with the result of the aggregate vote which is to be taken before the 18th inst.

RURAL PRACTICE.

DR. FRANK BROADBENT (North Collingham, Newark) writes: I am a country practitioner of nearly thirty years' standing, and my father and grandfather were country practitioners, so I claim to have some knowledge of the business part of the profession. The greatest bugbear of our calling is that we deal in a necessity, and the consequence is that we have to give our services and take our chance of getting paid. The labouring and servant classes are the greatest offenders in this respect: they are giving up joining clubs and are constantly on the move. Under the Insurance Act we shall get paid something for this class, and half a loaf is better than no bread. At the present time the respectable workers are paying us about an average of 4s. 6d. a head without mileage. The improvident workers, who are becoming a larger and larger class, pay nothing. We are now offered practically 8s. 6d. a head for both classes, and I for one wish to accept it.

A PLAIN STATEMENT TO THE PUBLIC.

DR. W. GORDON (Exeter) writes: Almost every day fresh evidence comes to me of the serious injury inflicted on our cause by the want of a widely circulated plain statement to the public of our reasons for resisting the injurious proposals hitherto made to us. Not only does

it prejudice our case directly by allowing an adverse public opinion to grow up—the natural product of unanswered misrepresentation—but it indirectly endangers our own *morale* through the depressing influence of such a public opinion. A clear, concise *précis* of our reasons, handed to the editor of every important newspaper in the country, *by a deputation of his own medical acquaintances*, asking for a favourable leading article, could not fail to render yeoman service just now.

The Special Meeting of the Council.

Dr. Ernest S. Reynolds (Manchester, December 3rd) writes: I feel it my duty to express to my constituents of the Lancashire and Cheshire Branch my deep regret that it will be impossible for me to attend the important meeting of the Council to-morrow (December 4th), as on that day I have, as President of the Manchester Medical Society, had an engagement arranged many months ago to entertain Professor Sir William Osler and preside at the meeting in the evening at which he is to address the society.

Existing Contract Practice.

Dr. Alfred H. Williams (Harrow) writes: I have been interested in Dr. Moir's letter on this subject in the Supplement of November 30th. It is remarkable that at this stage in the proceedings any medical man could have been found who would put so many errors and fallacies into so small a compass. But in case there may be others whose ideas may be equally vague, I think these errors ought to be pointed out.

Dr. Moir's table consists of four lines only:

1. *The Post Office.*—He is wrong in stating that there is no wage limit. To my knowledge there has been a wage limit for those entitled to free medical service for twenty years at least. He also omits to call attention to the fact that this service only caters for exceptionally well-picked lives, and that even then medical attendance ceases on the officer becoming permanently invalided or on his reaching the age of 60.
2. *The Army.*—He again states that there is no wage limit. I admit that I have had no experience of treating soldiers at 8s. 6d. per head. But I was under the impression that their lordly wages did not reach more than a few shillings a week. They also are carefully picked men in the prime of life.
3. *The Friendly Societies.*—He again omits to mention that their members are selected lives. If he wished to make his contrast particularly marked why did not he note the friendly society work at 2s. 6d. per capita.
4. *The Insurance Act.*—He states that this gives a limit of £160. He seems to be ignorant of the fact that in the Act the rigid limit of £160 for income from all sources is for voluntary contributors only; that for the compulsorily insured, unless we can persuade the Insurance Committees to do what Parliament and the Commissioners have refused) the £160 applies only to wages earned, and takes no notice of any other private sources of income, and that for manual workers there is no income limit at all. He further states that the doctor will have the absolute right to refuse any patients he does not wish to attend. He overlooks the fact that the insured persons who are refused by all the doctors in the district will have to be attended by some one, and will probably be apportioned to the medical men on the panel in proportion to the number of insured persons whom they have undertaken to treat.

I do not wish these remarks to prejudice in any way the question of the acceptance or refusal of the latest terms that are to be offered to us. When these are before us they will have to be carefully considered on their merits by the medical men throughout the country.

Dr. C. Courtenay Lord (Gillingham) writes: The letter of Dr. Moir in the Supplement of November 30th goes to show how widespread is the idea that the Chancellor's latest offer means a clear 7s. for every insured person on the doctor's list. I did my best to point out this fallacy at the Representative Meeting on November 20th, but my remarks on the subject were not reported. What I tried to make clear was that this 7s. is a "basis of payment" and not a capitation fee, and it is important in the highest degree that this very real difference should be appreciated before it is too late, otherwise those who had their visual acuity obscured by the glitter of a fictitious florin are destined to have a rude awakening in the near future. I do sincerely trust that these remarks of mine will help to drive home the facts which are so clearly stated in Dr. William Russell's admirable letter, also in your last issue.

Insured Persons making their Own Arrangements.

Dr. A. W. Cooke (Northampton) writes: All, or nearly all, writers and speakers ignore what to my mind is the most important clause of the Insurance Act: I mean the clause allowing insured persons to make their own arrangements for medical attendance. The reasons why in the past the club member felt compelled to call in the club doctor were (1) cheapness and the knowledge that for the 4s. he was paying the club patient was getting a fairly efficient service; (2) the driving power of that despotic body, the club committee. Under the Insurance Act neither of these forces will be at work, and it will be interesting to see what the friendly society members will do. They have been promised free choice of doctor, but they can only get this by contracting out under paragraph 14 of the Regulations. I believe that when they realize this they will do it on a large scale. If so, the questions of dispensing and of lay control will settle themselves. That such a service would be quite as efficient as service under the panel system there can be no doubt, and the Government, unless they aim at the enslavement of the medical profession, would have no reason to object.

Medical Services in Respect of Sickness Benefit.

Dr. Donald F. Shearer (Exeter) writes: To qualify for sickness benefit under the Insurance Act the insured is compelled to produce certificates of ill health and of recovery, which can only be given by a doctor in attendance on him.

On the average there are annually over 50 cases of illness among 100 insured, each case extending to 19 days. On the first, ninth, fifteenth, and nineteenth days a medical certificate must be forthcoming, and in consequence an attendance by the doctor. It follows then that, at the usual artisan fees of 2s. 6d. per attendance and 1s. for a certificate, "sickness benefit" makes it obligatory on the insured to obtain medical service to the value of 7s. a head a year.

"Medical benefit" includes the following services, which the doctor is obliged to give, but for which no payment is to be made to him:

1. Attendance on illness more frequently than once a week.
2. Attendance on invalids more frequently than once a quarter.
3. Attendance on illness of less duration than four days.
4. Attendance on non-incapacitating illness—for example, anaemia, dyspepsia, and catarrhs, etc.
5. Extra services—for example, night visits, mileage, anaesthetics, and minor operations, etc.

I would advise the members of the medical profession to consider this point carefully; they can compel the Government or the Insurance Committees to pay adequately for the services which are required by the "sickness benefit," and they can refuse absolutely to give the other services gratuitously. Thanks to the "sickness benefit" the profession has the whip hand, and it has only itself to blame if it fails to come out top dog.

No Politics!

Dr. J. Owen Jones (Holywell, North Wales) writes: Allow me to warn my fellow practitioners against being misled by such men as Sir James Barr, whose chief object is to wreck the Insurance Act, simply because Mr. Lloyd George—a Radical and a Welshman—has to do with it. Mr. Lloyd George's ambition is to help his fellow human beings—to strengthen the weak, help the poor, and succour the sick, not to strike a man when he is down. It is a pity we could not hear the same testimony to Sir James Barr and his friends. It seems that Sir James Barr's ambition is to destroy the lives of his fellow human beings, according to his speech at the Liverpool Caledonian dinner last Saturday evening, when he advocated more *Dreadnoughts* instead of the Insurance Act. To speak as he did at a non-party, non-political meeting will not improve matters between the public and the medical profession. Indeed, such a speech is not worthy of the President of the British Medical Association, and his speech at the meeting of the British Medical Association at Liverpool last July was more suitable for a Primrose Dame League meeting than the President of the British Medical Association's speech to the members of an honourable profession.

The Eighty-First Annual Meeting

of the

BRITISH MEDICAL ASSOCIATION,

BRIGHTON,

July 22nd to 25th, 1913.

PROGRAMME OF BUSINESS.

President: Sir James Barr, M.D., LL.D., F.R.C.P., Consulting Physician, Royal Infirmary, Liverpool.

President-elect: William Ainslie Hollis, M.A., M.D., F.R.C.P., Consulting Physician, Sussex County Hospital, Brighton.

Chairman of Representative Meetings: Thomas Jenner Verrall, M.R.C.S., L.R.C.P., Consulting Surgeon, Sussex County Hospital, Brighton.

Chairman of Council: James Alexander Macdonald, M.D., LL.D., M.Ch., R.U.I., Honorary Physician, Taunton and Somerset Hospital, Taunton.

Treasurer: Edwin Rayner, M.D.Lond., B.A., F.R.C.S. Eng., Consulting Surgeon, Stockport Infirmary, Stockport.

The Eighty-first Annual Meeting of the British Medical Association will be held in Brighton in July, 1913. The President's Address will be delivered on Tuesday, July 22nd, and the Sections will meet on the three following days. The Annual Representative Meeting will begin on Friday, July 18th, at 10 a.m.

The Address in Medicine will be delivered by Professor George R. Murray, M.D., F.R.C.P., Physician, Royal Infirmary, Manchester, on Wednesday, July 23rd.

The Address in Surgery will be delivered by Sir Berkeley Moynihan, F.R.C.S., Surgeon to the Leeds General Infirmary; Professor of Clinical Surgery, University of Leeds, on Thursday, July 24th.

The Popular Lecture will be delivered by Edward Johnson Spitta, L.R.C.P.Lond., M.R.C.S.Eng., Hove, Brighton, on the evening of Friday, July 25th.

THE SECTIONS.

The scientific business of the meeting will be conducted in fifteen Sections, which will meet on Wednesday, July 23rd, Thursday, July 24th, and Friday, July 25th.

The President, Vice-Presidents, and Honorary Secretaries of each Section constitute a Committee of Reference for that Section, and have the power of inviting, accepting, or declining papers, and of arranging the order in which accepted papers shall be read. Communications should be addressed to one

A paper read in the Section must not exceed fifteen minutes, and no subsequent speech must exceed ten minutes.

Papers read are the property of the British Medical Association, and cannot be published elsewhere than in the British Medical Journal *without special permission.*

The following Sections have been authorized by the Council:

BACTERIOLOGY AND PATHOLOGY.

President: John William Henry Eyre, M.D., M.S., [illegible]

Vice-Presidents: George Morgan, F.R.C.S.Edin., Brighton; Myer Coplans, M.D., Leeds; Professor [illegible] I.D., F.R.C.P.I., Dublin.

[illegible] Hugh Miller Galt, M.B., F.R.C.S., Sussex County Hospital, Brighton; John Athelstan Braxton Hicks, M.D., 78, Queen Anne Street, London, W.: Charles Hy. Benham, M.D., M.R.C.P., 27, Sackville Road, Hove.

DERMATOLOGY.

President: James Harry Sequeira, M.D., F.R.C.P., London.

Vice-Presidents: Arnold Winkelried Williams, M.B., Brighton; Frank Hugh Barendt, M.D., F.R.C.S., Liverpool; William Griffith, M.B., M.R.C.P., London.

Honorary Secretaries: Arthur Mantell Daldy, M.D., F.R.C.S., 17, Palmeira Square, Hove; Frederick Gardiner, M.D., F.R.C.S.Edin., 60, George Square, Edinburgh.

DISEASES OF CHILDREN, INCLUDING ORTHOPAEDICS.

President: George Fred. Still, M.D., F.R.C.P., London.

Vice-Presidents: Wayland Charles Chaffey, M.D., Hove; Leonard Arthur Parry, M.D., F.R.C.S., Hove; Arthur Francis Voelcker, M.D., F.R.C.P., London; Paul Norman Blake Odgers, F.R.C.S., Northampton.

Honorary Secretaries: Arthur Geoffrey Bate, M.B., F.R.C.S.Ed., 8, Palmeira Avenue Mansions, Hove; Albert Ernest Naish, M.B., M.R.C.P., 5, Clarkehouse Road, Sheffield.

ELECTRO-THERAPEUTICS.

President: William Deane Butcher, M.R.C.S., London.

Vice-Presidents: Charles Frederick Bailey, M.D., M.R.C.P., Brighton; Arthur Frederick Hertz, M.D., F.R.C.P., London; William Ironside Bruce, M.D., London.

Honorary Secretaries: William Barrington Prowse, M.R.C.S., 31, Vernon Terrace, Brighton; Laurence Eliot Creasy, M.R.C.S., 36, Weymouth Street, London, W.

GYNAECOLOGY AND OBSTETRICS.

President: Robert Sanderson, M.B., Hove.

Vice-Presidents: Constance E. Long, M.D., London; Theodore Hy. Ionides, M.B., F.R.C.S., Hove; Robert James Johnstone, M.B., F.R.C.S., Belfast; Professor Benjamin Philp Watson, Toronto.

Honorary Secretaries: Louisa Martindale, M.B., B.S., 10, Marlborough Place, Brighton; Wm. Ritchie, M.B., 10, St. James Terrace, Glasgow; Victor Bonney, M.S., F.R.C.S., 29, Devonshire Place, London, W.

LARYNGOLOGY, RHINOLOGY, AND OTOLOGY.

President: Arthur Jaffray Hutchison, M.B., Brighton.

Vice-Presidents: Harold Shuttleworth Barwell, F.R.C.S., London; Claude Edward Woakes, London.

Honorary Secretaries: Alfred John Martineau, F.R.C.S.Edin., 22, Cambridge Road, Hove; Wm. Smith Syme, M.D., 10, India Street, Glasgow; Edward David Darelan Davis, F.R.C.S., 81, Harley Street, London, W.

MEDICAL SOCIOLOGY.

President: Reginald John Ryle, M.D., Brighton.

Vice-Presidents: George Ernest Haslip, M.D., London; Lauriston E. Shaw, M.D., F.R.C.P., London; Henry Gervis, M.B., J.P., Brighton.

Honorary Secretaries: Ernest Rowland Fothergill, M.B., 38, Dyke Road, Brighton; Hugh Devonport Ledward, M.B., 123, Norton Way, Letchworth, Herts.

MEDICINE.

President: EDMUND HOBHOUSE, M.D., F.R.C.P., Hove.

Vice-Presidents: JOHN FREDERICK GORDON DILL, M.D., M.R.C.P., Hove; ROBERT HUTCHISON, M.D., F.R.C.P., London; WALTER BROADBENT, M.D., M.R.C.P., Hove; ARTHUR PHILIP BEDDARD, M.D., F.R.C.P., London.

Honorary Secretaries: DONALD HALL, M.D., M.R.C.P., 29, Brunswick Square, Hove; THOMAS FRASER, M.B., 45, Elmbank Terrace, Aberdeen; WALTER LANGDON BROWN, M.D., F.R.C.P., 60, Welbeck Street, London, W.

NAVY AND ARMY, AND AMBULANCE.

President: Colonel JAMES TURTON, V.D., F.R.C.S., late Assistant Director of Medical Service, T.F., Brighton.

Vice-Presidents: Lieutenant-Colonel CHARLES JOHN JACOMB-HOOD, M.R.C.S., R.A.M.C.T.F., Brighton; Deputy-Surgeon-General PATRICK BRODIE HANDYSIDE, M.B., R.N., Plymouth; Major EDGAR MONTAGUE PILCHER, D.S.O., R.A.M.C., London; Colonel CHARLES HENRY MILBURN, V.D., M.B., M.S., Hull.

Honorary Secretaries: Lieutenant JOHN ROBERT STEINHAEUSER, M.D., T.F., St. Andrew's Place, Lewes; Captain JAMES AUGUSTUS ROOTH, M.R.C.S., R.A.M.C.T.F., 1, Goldsmid Road, Brighton.

NEUROLOGY AND PSYCHOLOGICAL MEDICINE.

President: JAMES TAYLOR, M.D., F.R.C.P., London.

Vice-Presidents: ASHLEY WATSON MACKINTOSH, M.D., Aberdeen; WM. HY. BUTTER STODDART, M.D., F.R.C.P., London; HELEN BOYLE, M.D., Hove.

Honorary Secretaries: JOSEPH LOUGHEED BASKIN, M.D., New Church Road, Hove; THOMAS GRAINGER STEWART, M.B., 54, Queen Anne Street, London, W.

OPHTHALMOLOGY.

President: THOMAS HERBERT BICKERTON, M.R.C.S., Liverpool.

Vice-Presidents: HY. HERBERT TAYLOR, F.R.C.S., Hove; WM. WATSON GRIFFIN, F.R.C.S., Hove; ARTHUR NICHOLSON, M.B., Hove; JOHN HERBERT PARSONS, F.R.C.S., London.

Hon. Secretaries: WILLIAM BAIR INGLIS POLLOCK, M.D., 276, Bath Street, Charing Cross, Glasgow; WILLIAM HERBERT BRAILEY, M.D., 21, Lansdown Place, Hove.

PHARMACOLOGY, THERAPEUTICS, AND DIETETICS.

President: WM. HALE WHITE, M.D., F.R.C.P., London.

Vice-Presidents: JOHN CALDWELL UTHOFF, M.D., Hove; HAROLD BATTY SHAW, M.D., F.R.C.P., London; HECTOR CHARLES CAMERON, M.D., M.R.C.P., London.

Honorary Secretaries: DOUGLAS V. COW, M.D., The Bridge House, Great Shelford, Cambridge; ERNEST RIVAZ HUNT, M.D., 3, Goldsmid Road, Brighton.

STATE MEDICINE.

President: EDWARD WILLIAM HOPE, M.D., D.Sc., Liverpool.

Vice-Presidents: AUGUSTINE GRIFFITH, M.D., Hove; GEORGE VERE BENSON, M.R.C.S., Lewes; WILLIAM ARTHUR BOND, M.D., M.O.H., London.

Honorary Secretaries: GERALD WILLIAM STONE, M.R.C.S., L.R.C.P., Cumnor, Dyke Road, Brighton; THOS. BARRETT HEGGS, M.D., Town Hall, Sittingbourne.

SURGERY.

President: WILLIAM THELWALL THOMAS, F.R.C.S., Liverpool.

Vice-Presidents: REGINALD FRANCIS JOWERS, F.R.C.S., Hove; WILLIAM TAYLOR, F.R.C.S.I., Dublin; STANLEY BOYD, F.R.C.S., London; JOHN WILLIAM BATTERHAM, F.R.C.S., St. Leonard's-on-Sea; WILLOUGHBY FURNER, F.R.C.S., Hove.

Honorary Secretaries: HUGH NETHERSOLE FLETCHER, F.R.C.S.Ed., 100, Lansdowne Place, Hove; CUTHBERT SIDNEY WALLACE, F.R.C.S., 26, Upper Wimpole Street, London, W.; FREDERICK KEILLER SMITH, M.B., 207, Great Western Road, Aberdeen.

TROPICAL MEDICINE.

President: Lieutenant-Colonel Sir WILLIAM LEISHMAN, M.B., F.R.S., R.A.M.C., London.

Vice-Presidents: EDWARD BOOG IRWIN SCOTT, M.D., Hove; Professor WILLIAM JOHN RITCHIE SIMPSON, C.M.G., M.D., F.R.C.P., London; Major LEONARD ROGERS, I.M.S., F.R.C.P., F.R.C.S., Calcutta.

Honorary Secretary: ELIOT CURWEN, M.A., M.B., B.C., 1, St. Aubyn's, Hove.

Honorary Local Secretaries—

LEONARD ARTHUR PARRY, M.D., F.R.C.S., 14, North Street, Brighton.

CHARLES HY. BENHAM, M.D., 27, Sackville Road, Hove.

PROVISIONAL PROGRAMME.

The following is the provisional time table for the Brighton meeting:

THURSDAY, JULY 17TH, 1913.
3 P.M.—Secretaries' Conference and Dinner.

FRIDAY, JULY 18TH.
10 A.M. Annual Representative Meeting.

SATURDAY, JULY 19TH.
9.30 A.M.—Representative Meeting.

MONDAY, JULY 21ST.
9.30 A.M. —Council Meeting.
10 A.M. —Representative Meeting.

TUESDAY, JULY 22ND.
9.30 A.M. Representative Meeting.
2 P.M. —Annual General Meeting.
8.30 P.M. —Adjourned General Meeting, President's Address.

WEDNESDAY, JULY 23RD.
9 A.M. —Council Meeting.
10 A.M. to 1 P.M. —Sectional Meetings.
12.30 P.M. —Address in Medicine.
3 P.M. Religious Services.

THURSDAY, JULY 24TH.
10 A.M. to 1 P.M. Sectional Meetings.
12.30 P.M. —Address in Surgery.
7.30 P.M. Annual Dinner.

FRIDAY, JULY 25TH.
9 A.M. —Council Meeting.
10 A.M. to 1 P.M. —Sectional Meetings.
8 P.M. —Popular Lecture.

SATURDAY, JULY 26TH.
Excursions.

Association Notices.

SPECIAL REPRESENTATIVE MEETING.

NOTICE is hereby given that, on the requisition of the Council, a Special Representative Meeting of the Association will be held in the Memorial Hall, Farringdon Street (adjoining Ludgate Circus), London, on Saturday, December 21st, 1912, at 10 a.m., and Monday, December 23rd, if necessary, for the purpose of considering the final offer of the Government as to service under the National Insurance Act, and any other relevant business.

The Report of the Council on the latest proposals of the Chancellor of the Exchequer, on behalf of the Government, is published in this issue of the SUPPLEMENT to the BRITISH MEDICAL JOURNAL.

By order of the Chairman of Representative Meetings,

GUY ELLISTON,
Financial Secretary and Business Manager.

ALFRED COX,
Medical Secretary.

Dec. 5th, 1912.

SPECIAL MEETING OF COUNCIL.

A SPECIAL Meeting of the Representative Body has been summoned to meet in London on Saturday, December 21st next.

Under the Regulations the Council must meet to consider the decisions arrived at by that Meeting, and notice is hereby given that a Meeting of Council will be held immediately upon the conclusion of the business of the Special Representative Meeting.

By Order,

GUY ELLISTON,
Financial Secretary and Business Manager.

Dec. 5th, 1913.

ELECTION OF CENTRAL COUNCIL, 1912-13.

East York and North Lincoln, and Midland Branches.

ONLY one nomination having been received for the above constituency, namely:

ROBERT WALLACE HENRY, M.D., 6, Market Street, Leicester,

the said Dr. Wallace Henry is declared duly elected a member of the Central Council, 1912–13.

BY ORDER OF THE COUNCIL,

GUY ELLISTON,
Financial Secretary and Business Manager.

December 7th, 1912.

NOTICE OF THE FORMATION OF A NEW DIVISION: ALTERATION OF BOUNDARIES OF EXISTING DIVISIONS.

THE following changes have been made in accordance with the Regulations of the Association, and take effect from the date of publication of this notice:

1. *Formation of a new Rotherham Division.*

That a new Division of the Association be formed, to be known as the Rotherham Division, of area coterminous with the area of the County Borough of Rotherham, and that the area of the existing Sheffield Division be modified accordingly. The new Division shall form part of the Yorkshire Branch.

Representation in Representative Body.—It is proposed that the new Division shall be grouped with the Sheffield Division.

2. *North Middlesex and Hendon and Finchley Divisions.*

That the Friern Barnet Urban District be transferred from the area of the North Middlesex to that of the Hendon and Finchley Division, the two Divisions as from this date to be constituted as follows:

(*a*) *North Middlesex Division.*—To consist of the Municipal Borough of Hornsey; the Urban Districts of Edmonton, Enfield, Southgate, Tottenham and Wood Green; and the Rural District of South Mimms.

(*b*) *Hendon and Finchley Division.*—To consist of the Finchley, Friern Barnet and Hendon Urban Districts.

Representation in Representative Body.—Unaffected.

3. *East and West Hertfordshire Divisions.*

That the common boundary between the East and West Hertfordshire Divisions be adjusted so as to coincide with the line of boundary between the Hitchin, Welwyn and Hatfield Rural Districts on the north-east, and the St. Albans and Barnet Rural Districts on the south-west, the two Divisions as from this date to be constituted as follows:

(*a*) *East Hertfordshire.*—To consist of the Municipal Borough of Hertford; the Urban Districts of Baldock, Bishop Stortford, Cheshunt, Hitchin, Hoddesdon, Royston, Sawbridgeworth, Stevenage and Ware; and the Rural Districts of Ashwell, Buntingford, Hadham, Hatfield, Hertford, Hitchin, Ware and Welwyn.

(*b*) *West Hertfordshire.*—To consist of the Municipal Boroughs of Hemel Hempstead and St. Albans; the Urban Districts of Barnet, East Barnet Valley, Bushey, Great Berkhampstead, Harpenden, Rickmansworth, Tring and Watford; and the Rural Districts of Barnet, Berkhampstead, Hemel Hempstead, St. Albans and Watford.

Representation in Representative Body.—Unaffected.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY DIVISION.—A special meeting of the Coventry Division of the British Medical [illegible] be held at the Coventry Hospital on Tuesday, [illegible] at 8.30 p.m. (1) To consider the report of the Ethical Committee on the medical officers of the Coventry Provident Dispensary, and action to be taken under Rule 7. [illegible]ions of the Committee on the payment of fees for treatment for tuberculosis. (5) *In re* Medical Committee of Local Insurance Committee. (4) Communications from head quarters.

A meeting of the medical profession will be held at 9 p.m. on Tuesday, December 10th, at the Coventry and Warwickshire Hospital, to vote upon the acceptance or otherwise of the new terms of the Insurance Act, to be published on December 7th. Agenda: (1) To vote upon the new terms of the Insurance Act (to be published in the JOURNAL on December 7th). (2) To receive the report of our Representative.—DUNCAN DAVIDSON. Honorary Secretary.

GLOUCESTERSHIRE BRANCH.—An important meeting of the medical men in the area of the Gloucestershire Branch will be held at the Royal Infirmary, Gloucester, on Thursday, December 12th, at 4 p.m. Agenda: (1) To consider revised and final plan of Government as regards the National Insurance Act (SUPPLEMENT, BRITISH MEDICAL JOURNAL, December 7th). (2) Procedure for electing Medical Committees for city and county areas. (3) To consider scheme of Medical Committee for treatment of uninsured persons. (4) Any other business.—D. E. FINLAY, Honorary Secretary.

LANCASHIRE AND CHESHIRE BRANCH: LIVERPOOL DIVISION.—A meeting of this Division and the medical practitioners resident in the Divisional area will be held at the Medical Institution, Liverpool, on Friday, December 13th, 1912, at 3.30 o'clock in the afternoon. Amongst other business to be announced later, the latest proposals of the Government will be considered in reference to the Insurance Act, and a vote will be taken thereon as regards action.—FRANCIS W. BAILEY, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CAMBERWELL DIVISION.—A meeting of all medical men resident in the area of the Camberwell Division (that is, in the boroughs of Bermondsey and Camberwell) will be held at the Camberwell Town Hall, on Thursday, December 12th, at 4 p.m. Agenda: (*a*) To elect three members of the profession resident in the area of the Camberwell Division to serve on the Medical Insurance Committee for the area of the County of London; one member being elected for Bermondsey and two members for Camberwell. The Executive Committee of the Camberwell Division recommend the following names for election: (1) For Bermondsey, Messrs. Jaynes and Richmond. (2) For Camberwell, Messrs. Capes, Herbert Clitherow, Couper Cripps, and Shapter Robinson. The Honorary Secretary will receive further nominations before or at the meeting, and the election will, if necessary, be by ballot. (*b*) To elect a provisional Medical Committee for the area of the Camberwell Division. It is proposed that the size of the Committee should be on a basis of 10 per cent. of the number of medical men in the area, which would give a Committee 20 in number, 5 being elected for Bermondsey, and 15 for Camberwell. The Executive Committee of the Camberwell Division recommend the following names for election: (1) For Bermondsey, Messrs. Richmond, Hollings, Jaynes, Dyson, and Marshall. (2) For Camberwell, Messrs. Capes, Helen Gordon Clarke, Clatworthy, Herbert Clitherow, Cooper Keates, Partridge, Shapter Robinson, Batten, Tilbury, Archer Wood, Michael, Stone, Heald, Sharman, and Kirton. Further nominations will be received by the Honorary Secretary before and at the meeting, and the election will, if necessary, be by ballot. (*c*) The vote of the meeting will then be taken as to whether each member will or will not accept the revised terms and conditions of the Government under the National Insurance Act, which will be printed in the BRITISH MEDICAL JOURNAL SUPPLEMENT of December 7th, 1912. The votes of members and non-members of the Association will be recorded.—J. H. CLATWORTHY, Honorary Secretary, 145, Denmark Hill, S.E.

METROPOLITAN COUNTIES BRANCH: EAST HERTFORDSHIRE DIVISION.—A meeting of this Division will be held at 3 p.m. on Wednesday, December 11th, at the Shire Hall, Hertford, to consider the Report of Council on the final proposals of the Chancellor of the Exchequer, and to take the vote thereon. All practitioners resident in the area are invited to be present.—H. D. LEDWARD, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: LAMBETH DIVISION.—A meeting will be held, by courtesy of the authorities, at Bethlem Royal Hospital, on Tuesday, December 10th, at 3.45 p.m., at which all practitioners residing in Lambeth and Southwark are earnestly requested to be present. Every doctor will be asked to *vote*, whether a member of the Association or not, after a short discussion, on the following essential propositions: (1) His personal preference in the great question of accepting or refusing service under the National Insurance Act. (2) In the election of Medical Committees (limited to twenty in each) for the boroughs of Lambeth and Southwark. Practitioners in each borough will please *vote only for their appropriate Committee*. (3) In the election of four representatives of the profession resident in the area of the Division on the London County (Statutory) Medical Committee.—D. J. MUNRO, Honorary Secretary, 169, Brixton Hill, S.W.

METROPOLITAN COUNTIES BRANCH: MARYLEBONE DIVISION.—A general meeting of the Division will be held at the rooms of the Royal Society of Medicine, Wimpole Street, W., on Wednesday, December 11th, at 5 p.m. All members of the

profession residing in Marylebone, including non-members of the Association, are requested to attend, as their votes will be counted and recorded, in order to arrive at the aggregate of votes in the United Kingdom, in support of, or against, the working of the Insurance Act. Agenda: (1) Minutes (BRITISH MEDICAL JOURNAL SUPPLEMENT, November 23rd, 1912). (2) Letters. (3) Questions (of which due notice must be given). (4) Report of the Special Representative Meeting. (5) Consideration of the Report of Council (BRITISH MEDICAL JOURNAL SUPPLEMENT, December 7th, 1912). (6) Election of five representatives to serve on a "Medical Committee for the County of London Insurance Area," which Committee can, if necessary, act as the "Local Statutory Medical Committee," (Section 62, National Insurance Act). (7) Any other business.—FRANCIS W. GOODBODY, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: SOUTH-WEST ESSEX DIVISION.—A meeting of this Division will be held on Thursday, December 12th, at 4 p.m., at the Walthamstow Hospital. Agenda: (1) Minutes. (2) Correspondence. (3) Paper: Some Points in the Treatment of *Inter-partum* Haemorrhage, by C. Hubert Roberts, M.D., F.R.C.P., Physician to Queen Charlotte's Hospital. (4) Any other business.

A special meeting, to which all practitioners residing within its area are invited, will be held in the Wesleyan Church Schoolroom (corner of James's Lane; nearest station, Leyton, M.R.), on Friday, December 13th, at 4 p.m. Proceedings will commence at 4 p.m. sharp. Agenda: (1) Minutes. (2) Correspondence. (3) To consider the latest proposals of the Government as regards regulations and remuneration under the Insurance Act in so far as they relate to medical practitioners. (4) To take a recorded vote of all those present as to whether they are willing or not willing to accept service under the Act upon these terms. (5) To elect representatives upon the County Medical Committee, which is to replace all the Provisional Medical Committees in the county. (6) To raise more funds for the expenses of the campaign. (7) To consider the Public Medical Service, adjourned from last meeting. A. POTTINGER ELDRED, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: WESTMINSTER DIVISION.—A meeting will be held at the St. James's Vestry Hall at 9 p.m. on Thursday, December 12th, for the purposes of considering the Report of the Council of the Association to the Divisions in regard to the result of the interviews between the delegates of the State Sickness Insurance Committee and the Chancellor of the Exchequer. All medical practitioners residing in the area are invited to attend.

SOUTH-EASTERN BRANCH: CROYDON DIVISION.—A meeting of this Division will be held at the Greyhound Hotel, Croydon, on Tuesday, December 10th, at 3.30 p.m. Agenda: (1) Minutes. (2) Correspondence. (3) Report of Representative at Representative Meeting. (4) To consider the report of Council dealing with the result of the interviews of the delegates with the Chancellor of the Exchequer, and the revised regulations. (5) To vote as to whether service should be accepted under the Act, or not accepted. (6) Other business. It is of vital importance that every practitioner should attend the meeting. The voting of members and non-members will be taken separately. Votes throughout the country will be taken, and the total, for or against the service, will be final. E. H. WILLCOX, C. G. C. SCUDAMORE, Honorary Secretaries.

SOUTH-EASTERN BRANCH: DARTFORD DIVISION. A most important meeting of the Division will be held at the Bull Hotel, Dartford, on Tuesday, December 10th, at 5 p.m. Every medical man residing in the Division should make a very special effort to attend. Agenda: To consider the report on the revised terms and conditions offered by the Chancellor of the Exchequer. H. CHISHOLM WILL, Honorary Secretary, Sidcup.

SOUTH MIDLAND BRANCH: BUCKINGHAMSHIRE DIVISION. A meeting of the profession resident in the area of the Division will be held on Tuesday, December 10th, 1912, at the Royal Bucks Hospital at 2.15 p.m., to take the voting for and against the Insurance Act on the amended terms. The Public Medical Service scheme drawn up by the committee on the basis of Scheme A will also be submitted for approval and other important matters will be discussed. A. E. LARKIN, Honorary Secretary, Buckingham.

SOUTH MIDLAND BRANCH: NORTHAMPTONSHIRE DIVISION.—A meeting of the Division will be held in the board-room of the Northampton General Hospital at 2.30 on Thursday, December 12th. The meeting will be preceded by a luncheon at Franklin's Restaurant, Guildhall Road, at 1.30. Those wishing to attend the luncheon should inform the Honorary Secretary at least three days beforehand. Agenda: Minutes of preceding meeting. Report of Representative Meeting (Dr. Dryland). Consideration of Council's Report (BRITISH MEDICAL JOURNAL, December 7th) on the most recent proposals of the Chancellor of the Exchequer. Approval of schemes of the Local Provisional Committee for the treatment of uninsured persons. The meeting is a very important one, and all medical men in the Division are invited to attend. [illegible] assured.—PEVERELL S. HIGGENS, Honorary Secretary, 47, Sheep Street, Northampton.

WEST SOMERSET BRANCH.—Dr. Balfour Stewart will preside over a special general meeting, to be held at the Taunton and Somerset Hospital, on Tuesday, December 10th, at 4 p.m., to decide whether the latest proposals re medical benefits under the National Insurance Act, as per SUPPLEMENT, BRITISH MEDICAL JOURNAL, December 7th, be acceptable or not. Non-members are cordially invited to attend.—CHAS. FARRANT, Hon. Sec.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

In ninety-seven of the largest English towns 7,535 births [illegible] were registered during the week ending Saturday, November 30th. The annual rate of mortality in these towns, which had been 14.8, 14.1, and 15.0 per 1,000 in the three preceding weeks, [illegible] 1,609 in the week under notice. In London last week [illegible] equal to 14.5, against 14.4, 13.4, and 15.6 [illegible]. Among the ninety-four other large towns the death-rates last week ranged from 5.4 in Hornsey and in Enfield, 5.5 in Wimbledon, 6.0 in Barnsley, 8.3 in Wallasey, and 8.5 in Edmonton and [illegible] 20.1 in Middlebrough, 20.2 in West Ham, 23.5 in Liverpool, 24.8 in St. Helens, 25.7 in South Shields, and 28.2 in Aberdare. Measles caused a death-rate of 3.2 in St. Helens and in Barrow-in-Furness, 3.3 in West Hartlepool, 3.4 in West Ham, 3.9 in Newcastle-on-Tyne, 4.4 in Preston, and 4.9 in Middlesbrough; scarlet fever of 3.0 in Aberdare; and whooping-cough of 1.1 in Stoke-on-Trent and 1.8 in Lincoln. The mortality from enteric fever and diphtheria showed no marked excess in any of the large towns and no fatal case of small-pox was registered during the week. The deaths of children under 2 years of age from diarrhœa and enteritis, which had been 82, 85, and 85 in the three preceding weeks, fell to 72 last week, and included 18 in London, 6 in Liverpool, 4 in Manchester, and 3 each in Sheffield, in Hull, and in Rhondda. The causes of 42, or 0.9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 13 were registered in Birmingham, 4 in Gateshead, 3 in Stoke-on-Trent, 3 in Blackburn, and 2 in Liverpool. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,350, 2,335, and 2,336 at the end of the three preceding weeks, has fallen to 2,279 on Saturday last; 270 new cases were admitted during the week, against 326, 254, and 296 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

In eighteen of the largest Scottish towns 985 births and 715 deaths were registered during the week ending Saturday, November 30th. The annual rate of mortality in these towns, which had been 15.4, 16.3, and 18.0 per 1,000 in the three preceding weeks, declined to 17.1 in the week under notice, but was 2.6 per 1,000 above the rate in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 6.5 in Kirkcaldy, 9.3 in Hamilton, and 10.3 in Clydebank, to 19.9 in Greenock, 20.5 in Glasgow, and 21.3 in Coatbridge. The mortality from the principal infectious diseases averaged 0.9 per 1,000, and was highest in Motherwell and Perth. The 308 deaths from all causes registered in Glasgow included 5 from whooping-cough, 5 from diphtheria, 4 from infantile diarrhœal diseases, 3 from measles, and 1 from scarlet fever. Two deaths from diphtheria were recorded in Perth, and 2 from infantile diarrhœal diseases in Dundee, and 2 in Aberdeen.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following appointments have been notified by the Admiralty:—Staff Surgeon HUGH L. NOAKES to the *Chatham* on [illegible] December 3rd, 1912; Staff Surgeon NORMAN S. MEIKLEJOHN to the *Impregnable*, vice Chilcott, November 28th, 1912; Staff Surgeon ROBERT R. PATTESON has been placed on the Emergency List; Surgeon J. M. HAYES to the *Excellent*, vice Norris, December 3rd, 1912; Surgeon CHARLES M. R. PEACHEY, M.B., to the *Venus*, vice Hayes, December 3rd, 1912; Surgeon FREDERICK G. HITCH, M.B., to the *Pembroke*, additional, for disposal, December 7th, 1912; Surgeon HOWARD C. DEVAS to the *Racer*, additional, for Osborne College, vice Burdett, November 28th, 1912; Surgeon WILLIAM D. CHILCOTT to [illegible] vice Devas, November 28th, 1912; Surgeon JOHN H. BURDETT to the *Neptune*, vice Meiklejohn, November 28th, 1912; Surgeons RICHARD R. M. TUCKSFIELD, LOVELL MOSS, M.B., and JAMES P. SHORTEN to the *Victory*, additional, for disposal, December 9th, 1912; Surgeons JOSEPH A. O'FLYNN, M.B., ALFRED R. PRICE, M.B., and GORDON V. HOBBS to the *Urid*, additional, for disposal, December 9th, 1912; Surgeons FRANCIS J. D. TWIGG, M.B., GORDON E. D. ELLIS, and FRANCIS J. BURKE, M.B., to the *Pembroke*, additional, for disposal, December 9th, 1912.

ROYAL NAVAL VOLUNTEER RESERVE.

WILFRID H. BLEADEN, M.B., B.S., has been appointed Surgeon unattached.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT-COLONEL J. FALLON has been appointed to the command of the Station Hospital, Lahore cantonment.

Lieutenant-Colonel T. DALY has been appointed Senior Medical Officer, North-Western Coast Defence.

TERRITORIAL FORCE.

Third South Midland Field Ambulance.—Lieutenant CHARLES F. WALTERS, F.R.C.S., resigns his commission, November [illegible] 1912.

Second Wessex Field Ambulance.—Lieutenant [illegible] P. [illegible] COMBE to be Captain, October 27th, 1912.

GENERAL COUNCIL

OF

MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1912.

Sir DONALD MACALISTER, K.C.B., President, in the Chair.

NATIONAL INSURANCE.

Sir CLIFFORD ALLBUTT moved:

> That the Insurance Act Committee be instructed to consider, in the interests of medical education, the means and arrangements under the Act for providing those aids to diagnosis, treatment and research which modern pathology has made available, and be authorized to make representations on these and any other matters arising out of the Act to the authorities concerned.

He did not propose at this preliminary stage, when it was merely a question of asking the Council to commit certain matters to an existing Committee, to enter upon anything like a detailed discussion of the substance of the matters with which the motion had to deal. The Committee might bring forward a report at the next meeting of the Council, and upon such report the Council might decide to take, or not to take, action. Meanwhile, however, the matter was exceedingly urgent. Seeing that the Insurance Act was to come into operation in a few weeks, it was important that the Committee should be invested by the Council now with certain not inconsiderable powers to approach the authorities on matters concerned, and to offer to them some such opinions or advice as might perchance be expressed or endorsed by the Council that day. The reasons for the appointment of the Committee were these. First of all the matter was very pressing. He might be allowed to say, without fear of misunderstanding, that the country generally had entered upon the Insurance Act without realizing as a country, although individuals no doubt were realizing it, the very big business that was being taken in hand. At the end of last year he had approached the Commissioners from this point of view. He had impressed upon them how vast and costly this campaign against disease would be if carried through on a scale adequate to the prevention and diminution of disease. He need not labour this point; it was only too well known. Shrewd clinical observation aided by batteries of drugs, however valuable in combating individual cases, was not the way to abate or abolish the great plagues afflicting mankind. The "crusade" against tuberculosis was ably conceived, but there were many other "crusades" to be organized on the same principle. He might point out, for instance, rheumatic fever—a terribly crippling disease, blighting many young and promising lives; against this, against diphtheria, and many another plague which was undermining public health generation after generation a general attack must be made all along the line in the same way as against tuberculosis. The method of campaign might be divided into two classes. The method he himself had urged very strongly in the *Times* early in 1912 depended upon a systematic development of the clinical and pathological laboratories of existing medical institutions and linking up with them of special departments of hospitals. He had some reason to hope that early next year a small expert committee might be appointed by the Government to go into this question very fully, and to inquire how existing institutions or new institutions might be developed for the purpose of research, as well as for assistance to urban and rural medical men, and how they might be linked up with ready opportunities of consultation with consultants working along special lines. He was not yet aware that the Government or the Commissioners had decided on such a course, but supposing such a committee to be appointed, and to be appointed soon, it seemed to be of the greatest importance that the Council, from the point of view of medical education, should be in a position to approach such a committee, and to speak with authority as to the kind of plan which the Council would consider best adapted for the interests of medical education. He had said these schemes might be placed in two classes; the first, that which he had indicated, he might call the provincial scheme. The other schemes which might find advocates, though not, he believed, in medical or even in general scientific circles, might be concentrated upon one central medical institute, which should be the only resort of all the medical men, so far as he knew, both of England and Scotland, or perhaps upon two large central bureaux at most, say in London and Edinburgh.

Sir CHRISTOPHER NIXON: What about Ireland?

Sir CLIFFORD ALLBUTT said that the conditions of Ireland under the Act were somewhat different, and he had better keep to Great Britain for the present. His own opinion—if his own opinion might be expressed at present—was strongly in favour of developing those many institutions which already existed, whether in universities or also in independent medical institutes. He would develop, for instance, the already existing laboratory assistance in Aberdeen, St. Andrews, Glasgow, Edinburgh, Newcastle, Leeds, Sheffield, Liverpool, Manchester, Bristol, Oxford, Cambridge, London, and so on: all the local pathological and clinical laboratories which were working already for the development of medicine along scientific lines. It would be necessary, no doubt, in some districts where there was not even a university college, to establish such institutions. Such an institute might be necessary perhaps, say, in such large centres as Norwich and Exeter, where probably some laboratories existed already in the hospitals. Such institutes would be not merely to provide reports on specimens for medical men, but also for that medical research without which such reports would soon become stale. And now, especially as regards the question of medical education: If there were one large central institute in London for this work, or any large part of it, as for tuberculosis, it appeared to him probable that such an institute would gradually become a mere manufactory for clinical reports: efficient enough in its way, perhaps, but it would tend to harden into a bureau, to begin to revolve about its own centre, and become unprogressive, or at least inelastic. In any case he thought it would be entirely out of the reach of the general practitioners throughout England as a means of education, and would get out of touch with them. It would lack the stimulus of emulation, and the interest of variety. On the other hand, if they were provided with many local institutions of the kind he had indicated, they could see what an enormous educational influence each of these might have in its surrounding district. There would be an honourable emulation between one institution and another, and the great stimulus of professors and other workers at the various universities and institutes meeting together in conference, and this educational machinery would not only instruct the student, but carry forward the education of the senior men already in practice—an invaluable influence. Local practitioners would be in touch, often in personal touch, with the pathologists, and draw from them not only immediate aid, but an inspiration and a familiarity with the scope and powers of modern medicine. It appeared to him, therefore, from the point of view of the education of the provincial practitioners, to be of the greatest possible importance that these local centres should be adopted for the purpose of clinical aid and assistance. His desire, then, was to see, not one central manufactory for official replies daily distributed in answer to particular questions, but a work of a missionary, as well as of an informal kind, in many centres over England and Scotland, which would have an inspiriting influence in the districts not only over young students, who more especially were their concern, but over younger and maturer practitioners. By such example many a doctor in town or country would be encouraged to begin or to continue researches at home. He thought he had said sufficient to indicate very good reasons why this inquiry should be remitted to the existing Committee, and that some not inconsiderable powers should be given to that Committee, in case of urgency, to meet the authorities in matters of such vital importance to the profession, lest in their silence any step should be taken which would tend to petrify, or at any rate withdraw, from the general interests of the profession in town and country the advantages of example and interest in their own work and its development along the new lines of national "mobilization against disease."

Dr. Langley Browne had great pleasure in seconding the motion because, in his opinion, the Council was interested not only in the education of a medical man at the time he got on the *Register*, but in the continuance of education during the whole of professional life. For instance, the compulsory notification of phthisis imposed additional duties on medical men, and it was only fair in the interest of himself and of the individual who was to be stamped with the brand of disease that the medical man should have the most easy means of verifying his diagnosis. Arrangement could be made by the councils of counties and county boroughs that any additional help a medical practitioner wanted in that way he could have at no expense to himself.

Dr. Norman Moore would agree with the motion if after the word "representation" in the fifth line the words "to the authorities concerned" were inserted and the words at the end of the word "Act" deleted and the words "which come within the functions of the Council" substituted.

Sir Clifford Allbutt, with the consent of his seconder, accepted the suggested alteration.

Sir Thomas Fraser cordially agreed with the observations of Sir Clifford Allbutt. One difficulty he had felt was whether the changes or arrangements proposed to be made were to apply specially to the Insurance Act, but he gathered that Sir Clifford Allbutt was advocating a much larger thing—namely, the advancement of medicine in other and different ways. With that object he entirely agreed, but the great question was where the money was to come from. Was is it to come from the Government? If the Council could exercise influence in that direction and success were to be attained, then the profession would be greatly indebted to it for the part it had taken.

Dr. Norman Moore, while doubting whether the matter was really part of the work of the Council at all, thought that the modification of the motion which had been accepted limited it sufficiently to prevent harm being done.

Mr. Tomes observed that Sir Clifford Allbutt's speech seemed to assume almost as an axiom that the mechanism of the Insurance Act was, if not the only way, at least the preferable way to advance the study of medicine and research in this country.

Sir Christopher Nixon strongly objected to the policy of centralization which Sir Clifford Allbutt largely advocated in his speech.

Sir Clifford Allbutt dissented.

Sir Christopher Nixon was glad that was not so. He did not think, on the whole, that the medical profession would get very much aid or encouragement from the State. The only aid it could give was money, and it was very chary in giving it. It could be claimed for all great universities throughout the country that they were most keen in trying to elevate every form of education entrusted to their care, including medical education; they had ample means, and he was sure they would use them in the direction of promoting research work, and especially in providing aids in the diagnosis and treatment of disease. With regard to the Insurance Act, and especially sanatorium treatment, he had expressed the opinion more than once that a great deal of money would be wasted on that treatment that could be applied with far greater utility in other directions. He did not oppose sanatorium treatment, but it should be instituted tentatively with a careful estimation of the results that were to be attained by it.

The President, as Chairman of the Committee, said the Insurance Act was framed without the Council having an opportunity of seeing it beforehand, and it appeared that the effect the bill might have on medical education, owing to the hospitals being ignored, was overlooked. The Council had intervened and pointed that out, and it was still told the question of hospitals was outside the Act. In the Act as it stood there was provision for a certain sum of money to be set aside for research with a view to diagnosis and treatment. It was possible that the best intentioned Government in the world might use that money for setting up something as a research institute which might be detrimental to medical education. He took it that wrapped up in this motion there was a suggestion to the Insurance Act Committee of the Council to see that nothing was done detrimental to the medical education in the best sense by the expenditure in an unwise way of that research contribution. If that was what was meant, [illegible] quite possible that the Committee might before next May have something to say to the authorities concerned, to warn them that any proposed application of this research fund in a particular direction might or might not be disadvantageous to medical education. It would be competent for the Council to speak on that. What further development might arise could not be foreseen. The Committee should have powers to make representations in the meantime, if it found the research grant was being applied in a wrong direction. If that were the case, he thought the National Insurance Act Committee might be entrusted with that power: but it ought not to go further, and advocate the establishment of a central institute—it was merely a watching Committee.

Dr. Saundby thought that if the Committee had not got this additional power, it ought to possess it.

The President observed that some members of the Committee doubted whether it had power to go into questions of institutional treatment; but no harm would be done by the Committee making representations on anything it thought fit.

Dr. Little was particularly interested in this matter, because he had for thirty years had the honour of being consultant at the midwifery hospital in Dublin, and there was a great fear that the hospital, which was now doing a good work with an enormous number of students, would be strangled by the fact that women would get maternity benefit if they were confined in their own house, but not if they went to the hospitals. That was more or less a bribe to them to stay out of the hospitals, and therefore in that way there would be no means of teaching the students or midwives. The risk might be overrated, but there would be danger of doing contributory harm in this respect. He hoped that the matter would come within the purview of the Committee to consider whether some change might not be made in the Act.

The President said that the Committee had already reported on the subject.

Dr. Macdonald's difficulty was that the motion would give the Committee power to deal with a matter that did not exist, because from what he knew of the Insurance Act at the present time outside the subject of sanatorium benefit there was no scheme and no regulations of any sort with regard to modern methods of diagnosis and treatment, except that it imposed on medical practitioners who took up this work the necessity of using all modern methods of diagnosis and treatment. Therefore the motion asked the Council to deal with a thing that was non-existent.

Sir Clifford Allbutt, in reply, said that all the members of the Council were quite clear that wherever the money was to come from, it certainly was not to come out of the practitioner's pocket or remuneration. The Government contemplated, he hoped, some large and costly machinery for pathological work, and although it might not be the Council's business to advise them in detail how this was to be done, it was certainly its business to see that steps were not taken prematurely, lest they should find themselves committed, even informally, to certain arrangements which would interfere very much with the education both of the senior and the junior members of the profession, and go further, and suggest the sort of line on which they were all agreed the progress of scientific medicine must take.

The resolution as modified was then put, and carried *nemine contradicente*.

The Apothecaries' Hall, Dublin.

Sir Charles Ball moved, and it was resolved:

That the report of the Examination Committee on the final examinations of the Apothecaries' Hall, Dublin, held in July and November, 1912, together with the reports of the assistant examiners in surgery thereon, should be received and entered on the minutes.

Sir Charles Ball moved:

That the assistant examiners be requested to report for the future upon the examinations in pharmacy and medical jurisprudence conducted by the Apothecaries' Hall of Ireland.

The Examination Committee had considered this question in response to the report of the assistant examiners. Speaking of an examination in practical pharmacy and

another in medical jurisprudence and hygiene, the examiners said: "These branches of the examination we did not attend, considering them to be outside our province. Should the President and Council desire our attendance at these sections of the examination in future, we place ourselves entirely at their disposal." The Examination Committee thought that as these were portions of the Final Examination, it was desirable that the Council should have information with regard to them, and that it would be well to ask the assistant examiners to attend and report in future on that portion of the examination.

The President raised the question of the legality of the proposed action under Section 5 of the Medical Act, 1886.

Dr. Adye-Curran considered that in this instance the Chairman of the Examination Committee had not been satisfied with confining himself, as chairman of the committee, to the legality of the question, but wanted the Council to go beyond it. Another point was that it seemed absurd to ask the assistant examiners, who were probably surgeons, to examine and report as to practical pharmacy.

Sir John Moore inquired whether the marks assigned to papers in pharmacy were added to those secured in medicine.

Dr. Adye-Curran replied that the reason why pharmacy formed part of the examination of the Apothecaries' Hall was that it had always considered that any man who obtained the diploma of the Apothecaries' Hall, Ireland, should be entirely conversant with pharmacy in every point. All qualified men who went to Apothecaries' Hall were examined in pharmacy, and that was the reason why it was included.

After some further discussion Sir Charles Ball, with the consent of his seconder and the Council, withdrew the recommendation, and the report was then agreed to.

Sir Charles Ball informed the Council that with regard to a motion referred to his committee, the Examination Committee, last session, moved by Mr. Tomes, seconded by Sir John Moore, it had been found impossible to furnish a report to the Council at that session. It was hoped to report on the matter at the next session.

Dr. Adye-Curran moved that the reports of the Examination Committee on the Final Examinations of the Apothecaries' Hall, Dublin, be as a temporary measure allowed to fall into abeyance. It was a great expense to have the reports printed, and he thought the Council might trust the Apothecaries' Hall to act honourably.

Dr. Latimer considered it unnecessary that the reports should be printed. He suggested that they should be kept in the office; they would then be open for inspection. If Dr. Adye-Curran moved a specific resolution he would have great pleasure in seconding it.

The President said that the Council had held hitherto that it was an instruction from the Privy Council to see that Section 5 (2) of the Medical Act of 1886 was enforced with regard to the Apothecaries' Hall, Dublin. The question had come specially before the Council, which had exercised its power by requesting the examiners, who had to be appointed by the Council, to report on the subjects of medicine and midwifery. Dr. Adye-Curran's suggestion seemed to be that they should be asked from time to time to report.

Dr. Adye-Curran dissented, saying that his suggestion was that they should continue to report, but that the report should be kept in the office, and not published. He moved: "That the report upon the Apothecaries' Hall, Ireland, be discontinued until such time as the Council may direct."

Sir Henry Morris thought there was something invidious in making a report upon one body only, and asked whether the time had not come when some change might be made in the system. He asked also, Was there any reason why the Council should not inspect bodies from time to time without giving notice? He (the speaker) strongly supported the motion of Dr. Adye-Curran.

Dr. Mackay moved as an amendment that the matter be referred to the Examination Committee.

Dr. Norman Walker seconded.

Sir Charles Ball considered that there was a good deal of very important information to be extracted from the reports, and that it would be unwise for the Council permanently to discontinue their publication. He would therefore strongly support the amendment.

The President thought the question was well worth considering, but that it should be done deliberately. The Committee should be asked to consider all the *pros* and *cons*.

Sir Henry Morris asked whether Dr. Adye-Curran would not withdraw his motion and let the amendment pass, so that the matter could stand over till the Examination Committee had reported on it.

Dr. Adye-Curran agreed, and said that the Apothecaries' Hall would willingly agree to Sir Henry Morris's suggestion that its examinations should be inspected without notice.

The amendment to refer the matter to the Examination Committee for consideration and report to the Council at its next meeting was carried.

Interpretation of Regulations as to D.P.H.

On the motion of Sir John Moore the report of the Public Health Committee on certain correspondence relating to the new regulations for the Diploma in Public Health was received and entered on the minutes. The Committee expressed the hope that in all cases of doubt as to the meaning and bearing of the regulations for the Diploma in Public Health, the licensing bodies would consult the Committee.

On the motion of Sir Thomas Fraser, seconded by Dr. Mackay, the following nominations from the Scottish Branch Council were approved:

Examination Committee.—Dr. Norman Walker.
Public Health Committee.—Dr. McVail.
National Insurance Act Committee.—Dr. Cash.

Pharmacopœia Committee.

The report of the Pharmacopœia Committee was received and entered on the minutes and approved. It stated that the stock in hand of copies of the *Pharmacopœia* of 1898 was small, and that it might be necessary to print a small additional impression before the new *Pharmacopœia* was ready for publication. Four important sections of the draft text of the new work had been prepared by the editors, and were in course of revision by the Committee, with the assistance of the several Committees of Reference. It was hoped that these sections, and others, would be ready for the printers early in the new year, and that the correction of the proofs would thenceforward be rapidly proceeded with. The Committee recommended that Dr. Cash, now an additional member, be appointed an ordinary member of the Committee, in the place of Sir David McVail.

The Education Committee.

An interim report by the Education Committee was received and entered on the minutes.

The Committee reported, with reference to the proposals for raising the standard of the preliminary examination in general knowledge, that they were engaged in conferring with Indian and Colonial examining bodies, that they now proposed to consult the Government and university bodies of the United Kingdom, and that they intended to report to the Council on the whole subject at the session of May, 1913.

Students Registration Committee.

The report of the Students Registration Committee on exceptional cases, and on the approval of certain recognized teaching institutions, was received and entered on the minutes.

(To be continued.)

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A list of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application

BIRKENHEAD UNION. Junior Resident Assistant Medical Officer (Female) for the Infirmary and Sanatorium. Salary commencing at £110 per annum.

BIRMINGHAM CITY. Resident Medical Officer at the Selly Grange Sanatorium for Consumption, near Cheltenham. Salary, £300 per annum.

BIRMINGHAM: CITY MENTAL HOSPITAL.—Assistant Medical Officer. Salary, £150 rising to £200.

BIRMINGHAM GENERAL HOSPITAL. Resident Surgical Officer. Salary, £100 per annum.

BIRMINGHAM UNIVERSITY. Lecturer in Physiological Department. Stipend, £200 per annum.

BRADFORD POOR LAW UNION. Assistant Resident Medical Officer for the Hospital and Workhouse. Salary, £130 per annum.

BRISTOL ROYAL INFIRMARY. Resident Casualty Officer. Salary at the rate of £50 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL. Two Resident Medical Officers. Salary, £90 per annum.

CARLISLE NON-PROVIDENT DISPENSARY. Resident Medical Officer. Salary, £150 per annum.

CARMARTHEN: JOINT COUNTIES ASYLUM. Second Assistant Medical Officer. Salary, £160 per annum, rising to £180.

COLCHESTER: ESSEX COUNTY HOSPITAL. House-Physician. Salary, £80 per annum.

CORNWALL COUNTY ASYLUM, Bodmin.—Third Assistant Medical Officer and Pathologist. Salary, £160 per annum.

CORNWALL COUNTY COUNCIL, Bodmin.—Tuberculosis Medical Officer. Salary, £500 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—Junior House-Surgeon. Salary, £90 per annum, rising to £1 0.

GARTLOCH MENTAL HOSPITAL, near Glasgow.—Junior Assistant Medical Officer. Salary, £150 per annum.

GENERAL LYING-IN HOSPITAL, York Road, S.E. Resident Medical Officer. Salary at the rate of £50 per annum.

HALIFAX: ROYAL HALIFAX INFIRMARY. Third House-Surgeon. Salary, £80 per annum.

HASTINGS: EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary, £70 per annum.

HEREFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary at the rate of £120 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Surgeon. Salary, £30 for six months, and £2 10s. washing allowance.

LEEDS HOSPITAL FOR WOMEN AND CHILDREN. House-Surgeon. Salary at the rate of £50 per annum.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—Resident Medical Officer. Salary, £200 per annum.

LONDON UNIVERSITY.—Examinerships: A. Higher Examinations for Medical Degrees; (1) Four in Medicine; (2) Four in Surgery; (3) Two in Forensic Medicine and Hygiene; (4) Two in State Medicine. B. First Examination and Second Examination. Part I for Medical Degrees (5) Two in General Biology; (6) Two in Chemistry; (7) Two in Physics. C. Second Examination. Part II for Medical Degrees (8) Two in Anatomy; (9) Two in Pharmacology; (10) Two in Physiology.

MANCHESTER: HULME DISPENSARY.—House-Surgeon. Salary, £160 per annum.

MANCHESTER TOWNSHIP.—Junior Resident Assistant Medical Officer at the Workhouse. Salary, £110 per annum.

MIDDLESBROUGH EDUCATION COMMITTEE. Assistant School Medical Officer. Salary, £300 per annum.

MIDDLESEX COUNTY ASYLUM, Wandsworth.—Third Assistant Medical Officer. Salary, £200 per annum.

MIDDLESEX COUNTY COUNCIL.—Assistant County Medical Officer of Health. Salary, £350 per annum, rising to £500.

NORTHWICH RURAL AND NORTHWICH, MIDDLEWICH, AND WINSFORD URBAN HOSPITAL COMMITTEE.—Non-resident Medical Officer for the Isolation Hospitals. Salary, £150 per annum.

PRESTON: COUNTY ASYLUM, Whittingham. Assistant Medical Officer. Salary, £150 per annum, increasing to £200.

ROCHDALE INFIRMARY.—Junior House-Surgeon (Male). Salary, £80 per annum, rising to £90.

ROMSLEY HILL SANATORIUM FOR CONSUMPTIVES, near Birmingham. Medical Superintendent. Salary commencing at £350 per annum.

ST. BARTHOLOMEW'S HOSPITAL, E.C.—Surgeon.

SEAMEN'S HOSPITAL SOCIETY. Medical Registrar at the Dreadnought Hospital, Greenwich. Honorarium, £100 per annum.

SHEFFIELD ROYAL INFIRMARY. (1) Honorary Physician. (2) Honorary Assistant Surgeon. (3) House-Surgeon; salary £40 per annum.

SOMERSET AND BATH ASYLUM, Wells.—Second Assistant Medical Officer (Male). Salary, £135 per annum, rising to £155.

STAMFORD HILL AND STOKE NEWINGTON DISPENSARY.—Assistant or Second Resident Medical Officer. Salary, £120 per annum.

SWANSEA GENERAL AND EYE HOSPITAL. (1) Three House-Surgeons; (2) House-Physician. Salary, £75 per annum each.

TUNBRIDGE WELLS GENERAL HOSPITAL. House-Physician (male). Salary, £100 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House-Surgeon and Anæsthetist. Salary, £75 per annum.

WEST LONDON HOSPITAL, Hammersmith Road, W.—Dermatologist.

WINCHESTER: ROYAL HAMPSHIRE COUNTY HOSPITAL.—House-Physician (male). Salary, £80 per annum.

WREXHAM INFIRMARY. House-Surgeon. Salary, £120 per annum.

YORKSHIRE: WEST RIDING COUNTY COUNCIL.—Tuberculosis Officers. Salary [illegible]

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Caldbeck (Cumberland), Hor-monden (Kent).

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

LAURIE, L., M.D., Medical Officer of Workhouse and Scattered Homes, Medical Officer and Public Vaccinator of the Herne District of the Bleau Union.

NIALL, Eugene M., M.D.Lond., B.S., Honorary Physician to the Westminster General Dispensary.

RAY, J. H., M.B., Ch.M.Viet., F.R.C.S.Eng., Medical Referee under the Workmen's Compensation Act for County Court Circuit No. 5 (Manchester County Court), vice Dr. G. A. Wright, resigned.

STONE, F., M.B., B.S.Melb., Resident Medical Officer, Lady Lamington Hospital, Brisbane, vice Dr. Sweet, resigned.

VINING, C. Wilfred, M.D., B.S., M.R.C.P.Lond., D.P.H., Honorary Physician to the Leeds Public Dispensary.

WATKINS, A. M., M.B.Melb., Honorary Medical Officer, Wonthaggi Hospital, Victoria, vice Dr. R. H. Lewis, resigned.

WILSON, P. R. L., L.R.C.P., M.R.C.S., House-Surgeon, Bolingbroke Hospital, Wandsworth Common, S.W.

MANCHESTER ROYAL INFIRMARY. The following appointments have been made:

Assistant Surgical Officer: W. H. Hey, F.R.C.S.Eng. (reappointment).

Accident Room House-Surgeon: John Gow, M.B., Ch.B.Viet. (reappointment).

Director of the Cancer Research Laboratory: Dr. W. J. Reid.

House Physicians: A. G. Wilkinson, M.B., Ch.B.Viet., T. H. Oliver, B.A.Cantab., M.B., Ch.B.Viet., H. B. Willis, L.M.S.S.A. Lond.

Senior House-Surgeons: N. Duggan, M.B., Ch.B.Viet., N. Matthews, M.B., Ch.B.Viet.

Junior House-Surgeons: R. P. Stewart, M.B., Ch.B.Viet., M.R.C.S., L.R.C.P., K. D. Bean, M.B., Ch.B.Viet.

House-Surgeon to Special Departments: F. S. Bedale, M.A. Cantab., M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTHS.

MCCLINTOCK.—On November 28th, at Grove House, Church Stretton, Shropshire, the wife of John McClintock, L.R.C.P. and L.R.C.S.E., of a daughter.

MALLESON.—On November 27th, 1912, at 30, Thurlow Road, Hampstead, to Mr. and Mrs. Herbert Malleson, a daughter.

WOODFORD.—On December 1st, at Holcnstowe, Abingdon, to the wife of E. V. Russell Woodford, L.R.C.P.Lond., M.R.C.S., a son.

MARRIAGES.

BROADBENT—STANLEY.—On November 30th, at the Wesleyan Church, Bexhill, Reginald Broadbent, M.D., of Muswell Hill, N., to Annette Stanley, late of Nuneaton.

LISTER—ROBINSON.—On the 4th inst., at John Street Congregational Church, Wakefield, by the Rev. John E. Wakerley, of London, assisted by the Rev. D. G. Truss, T. E. Lister, M.B., Ch.B., Sandal, Wakefield, to Mabel, only daughter of Mr. and Mrs. Perkin Robinson, Cleckheaton, Sandal. At home, Spring Bank House, Sandal, January 20th to 24th.

DEATHS.

EVANS.—On November 29th, suddenly, at Broomfield, Crosby Road North, Waterloo, Lancs., John Henry Evans, M.R.C.P., in his 73rd year.

MALABRE.—On October 4th, at "Liscard," Richmond, Jamaica, Philip Oscar Malabre, M.B., C.M.Edin., Government Medical Officer, Belfield District, in his 42nd year.

MAYSTON.—On November 21st, at "Bloxydge," Park Crescent, Erith, Elizabeth Martha, wife of Robert W. Mayston, M.D.Lond., aged 56 years.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W. 8.30 p.m.—Discussion on Intestinal Stasis, to be introduced by Mr. W. Arbuthnot Lane.

TUESDAY.

ROYAL SOCIETY OF MEDICINE:

SECTION OF PSYCHIATRY, Bethlem Royal Hospital, S.E., 4.30 p.m. Demonstration of Cases.

SECTION OF SURGERY, 1, Wimpole Street, W., 5.30 p.m.—Papers:—Mr. Lawrie McGavin: The Results of Filigree Implantation in the Radical Cure of Hernia. Dr. Arthur F. Hertz: The Cause and Treatment of Certain After effects of Gastro-enterostomy.

WEDNESDAY.

HUNTERIAN SOCIETY, St. Bartholomew's Hospital, 9 p.m.—Clinical and Pathological Evening.

UNITED SERVICES MEDICAL SOCIETY, Royal Naval Medical School, Greenwich, 5 p.m.—Fleet Surgeon Munday, R.N.: Persian Gulf Experiences.

THURSDAY.

HARVEIAN SOCIETY OF LONDON, Stafford Rooms, Titchborne Street, Edgware Road, W., 8.30 p.m.—Paper: Mr. C. W. M. Hope: Pus in the Nose.

ROYAL SOCIETY OF MEDICINE:

SECTION OF BALNEOLOGY AND CLIMATOLOGY, 1, Wimpole Street, W., 5.30 p.m.—Paper:—Dr. William Bain (Harrogate): The Medical Treatment of Gall Stone Disease.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:

CLINICAL SECTION, 1, Wimpole Street, W., 8.30 p.m.—(1) Demonstration of Cases and Specimens; (2) Paper:—Mr. T. H. Kellock: Pneumonotomy.

SECTION FOR THE STUDY OF DISEASE IN CHILDREN, 1, Wimpole Street, W., 4.30 p.m.—Discussion on the Treatment of Heart Disease in Children, opened by Dr. Edmund Cautley and Dr. James Mackenzie.

POST-GRADUATE COURSES AND LECTURES.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—Thursday, 4 p.m.: Demonstration of Selected Medical Cases.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.—Daily arrangements: Out-patient Demonstrations, 10 a.m.: Medical and Surgical Clinics. Monday: 12 noon, Throat, Nose, and Ear; 2.15 p.m., Surgery; 3 p.m., Operations; 3.15 p.m., Medicine; 4.15 p.m., Ear and Throat. Tuesday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Surgery; 3.15 p.m., Medicine; 4.15 p.m., Skin Clinic. Wednesday: 11 a.m., Eye; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Eye Clinic; 4.30 p.m., Surgery. Thursday: 12 noon, Throat, Nose, and Ear; 2 p.m., Operations, Pathological Demonstration; 3.15 p.m., Medicine. Friday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Surgery. Saturday: 10 a.m., Radiography; 11 a.m., Eye. Special Lectures on Tuesday, at 4.30 p.m., and Thursday, at 3.15 p.m., and at 4.30 p.m.

LONDON SCHOOL OF TROPICAL MEDICINE, Royal Albert Dock, E.—Lectures daily (Saturday excepted), at 12 and 4 p.m. Practical Laboratory Work daily (Saturday excepted), 10 to 12 a.m. Medical Clinics, Monday and Thursday, at 3 p.m. Operations, Friday, at 3 p.m.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15 p.m.: Differential Diagnosis of Movable Kidney and its Treatment.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m.: Gynaecological Cases. Friday, 4.30 p.m.: Some Common Forms of Nasal Obstruction.

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies Street, W.C.—The following clinical demonstrations have been arranged for next week, at 4 p.m. each day: Monday, Skin. Tuesday, Medical. Wednesday, Surgical. Thursday, Surgical. Friday, Ear, Nose, and Throat. Lectures, at 5.15 p.m. each day, will be given as follow: Monday, Pneumonia and Emphysema in Children. Tuesday, Artificial Pneumothorax. Wednesday, Minor Gynaecological Operations. Thursday, The Early Recognition of Pulmonary Tuberculosis. Friday, Blood Pictures.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Tuesday and Friday, 3.30 p.m.: Clinical Cases.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics: 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Nose, Throat, and Ear; 3 p.m., Demonstration on Clinical and General Pathology. Tuesday, 2.30 p.m., Operations; Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient; 4.30 p.m., Lecture: Tuberculosis of the Urinary Tract. Wednesday, 2 p.m., Throat Operations; 2.30 p.m., Medical Out-patient; Skin and Eye Clinics; *X* Rays; 3 p.m., Pathological Demonstration; 5.30 p.m., Eye Operations. Thursday, 2.30 p.m., Gynaecological Operations. Clinics: Medical and Surgical Out-patient; 3 p.m., Medical In-patient; 4.30 p.m., Lecture: Diagnosis by Bismuth *X* Rays. Friday, 2.30 p.m., Operations: Clinics: Medical Out-patient, Surgical, Eye; 3 p.m., Medical In-patient; Pathological Demonstration.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, N.E.—Tuesday, 4 p.m.: Treatment of Club-foot.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Monday, 4.30 p.m.: The Sanatorium. Tuesday, 4.30 p.m.: Examination of Sputum; Estimation of Opsonic Index and Preparation of Vaccines. Thursday, 4.30 p.m.: The Teeth in Relation to Pulmonary Tuberculosis. Friday, 3.30 p.m.: Clinical Demonstration.

SALFORD ROYAL HOSPITAL.—Tuesday, 4.30 p.m.: Differences of Appendicitis in Children and Adults.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays, and Operations, 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Demonstration of Minor Operations, 11 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Demonstration of Fractures, etc., 12 noon; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Demonstration of Abdominal Diagnosis, 12 noon; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Gynaecological Demonstration, 10.30 a.m.; Lecture: Neurological Cases, 12.15 p.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Lecture: Practical Medicine, 10.30 a.m.; Lecture: Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.; Demonstration of Abdominal Diagnosis, 12 noon. Special Lectures at 5 p.m. daily.

DIARY OF THE ASSOCIATION.

Date.	Meetings to be Held.
	DECEMBER.
6 Fri.	Hampstead Division, Finchley Road, 8.15 p.m.
	South-Eastern Counties Division (Edinburgh Branch), Annual Dinner, Galashiels, 6.30 p.m.
10 Tues.	London: Metropolitan Counties Branch Council, 4 p.m.
	Buckinghamshire Division, Royal Bucks Hospital, 2.15 p.m.
	Coventry Division, Coventry Hospital, 8.30 p.m. Meeting of the Profession, 9 p.m.
	Croydon Division, Croydon, 3.30 p.m.
	Dartford Division, Dartford, 3 p.m.
	Lambeth Division, Bethlem Royal Hospital, 3.45 p.m.
	West Somerset Branch, Taunton and Somerset Hospital, 4 p.m.
11 Wed.	East Hertfordshire Division, Hertford, 3 p.m.
	Marylebone Division, Rooms of Royal Society of Medicine, 5 p.m.

Date.	Meetings to be Held.
	DECEMBER *(continued)*.
12 Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
	Camberwell Division, Camberwell Town Hall, 4 p.m.
	Gloucestershire Branch, Gloucester, 4 p.m.
	Northamptonshire Division, Northampton General Hospital, 2.30 p.m.; Luncheon, 1.20 p.m.
	South-West Essex Division, Walthamstow Hospital, 4 p.m.
	Westminster Division, St. James's Vestry Hall, 9 p.m.
13 Fri.	Liverpool Division, Medical Institution, 3.30 p.m.
	South West Essex Division, Wesleyan Church Schoolroom, 4 p.m.
18 Wed.	Richmond Division, Richmond, 8.30 p.m.
	South Middlesex Division, Twickenham, 8.30 p.m.
21 Sat.	**Special Representative Meeting, 10 a.m.**
	SPECIAL MEETING OF CENTRAL COUNCIL *immediately afterwards.*

at their Offices, No. 429, Strand, in the Parish of St. Martin-in-the-Fields, in the County of Middlesex.

SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 14TH, 1912.

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NOTICE TO THE PROFESSION.

NATIONAL INSURANCE ACT.

THE LATEST PROPOSALS OF THE GOVERNMENT.

A Special Representative Meeting will be held in London on Saturday, December 21st, to receive the report of the results of the vote of the profession now being taken in Division meetings, and to consider the future action of the Association.

The Council points out that, pending the decision of the Special Representative Meeting and the publication of instructions issued under its authority, it is imperative that no negotiations or arrangements of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession with local Insurance Committees, or otherwise.

National Insurance.

STATE SICKNESS INSURANCE COMMITTEE.

COMPARISON OF NEW REGULATIONS WITH PROVISIONAL REGULATIONS.

THE State Sickness Insurance Committee met on December 12th, and among other business considered the terms of the new Regulations for medical benefit.

The following comparison of the new with the provisional Regulations is issued by the Committee for the information of members.

Provisional Arrangements.

Regulation 4 is new, and gives power to Insurance Committees to make provisional arrangements.

Conditions of Service.

Regulation 7 (1) (corresponds to Provisional Regulation 6 (1)) omits any statement as to rate of payment for mileage from matters to be determined by Insurance Committee.

In **7** (2) there first appears mention of the money derived from the parliamentary grant which, as shown by this and subsequent Regulations, is apparently to be used as a means of giving preferential treatment to systems of attendance which are under the direct control of the Insurance Committees and Commissioners.

Submission of Arrangements.

Regulation 8 omits (from amongst the matters specified in Provisional Regulation 7 (*g*) as those arrangements between Insurance Committees and doctors which must be submitted to the Commissioners for approval) the method proposed by the Committee for administering medical benefit of insured persons temporarily absent from, or temporarily resident in, the county.

Power to Require or Allow Persons to Make their Own Arrangements.

Regulation 14 states that in fixing an income limit the Committee may exempt from the necessity of making their own arrangement "any insured persons," etc., but *omits* "or class of insured persons" (contained in Provisional Regulation 13), and goes on to define these persons as those who ought to be exempted "by reason of the occupation or method of remuneration of the class to which they belong or of their circumstances or residence or otherwise." Previously, in Provisional Regulation 13 (1), the reasons were "residence in any specified area" "or other circumstances."

Regulation 14 (8) is partly new, and again introduces the question of conditions under which any parliamentary grant is distributed. It gives the Committee power to discriminate between the various kinds of outside arrangements of which insured persons may take advantage, and to withhold or reduce any contribution accordingly. This section should be compared with Provisional Regulation 15.

Approval of Institutions.

Regulation 15 should be compared with Provisional Regulation 16. Section (2) (iii) introduces the question of the distribution of any parliamentary grant into the consideration of the conditions under which an institution can be approved. Any conditions applying to the distribution of such a grant in connexion with the treatment supplied by an Insurance Committee must apply equally to an approved institution.

15 (3) is also changed consequentially on the financial arrangements of the Insurance Committees now being dealt with in entirely new Regulations 48 and 49.

Distribution under Capitation System.

Regulation 17 (2) states that in case of rejection of a patient by a practitioner the Committee shall, as soon as may be, notify the applicant. This is new and would seem to be provided in order that the applicant might make a second choice. Nothing, however, is said as to this, and in the "Explanatory Statement as to Medical Benefit" issued to all practitioners by the Commissioners, paragraph 10, lines 4 and 5, it is stated that "those who are refused by the doctors to whom they *first* apply will be distributed."

It has been generally understood that an insured person could proceed to select another doctor if he were not accepted by the first. No provision for this was, however, specifically made in the Provisional Regulations.

Regulation 17 (5) is new, and entitles the practitioner to demand from the insured person before treating him, some voucher or other document. This voucher was only required previously in cases where a payment per attendance system was adopted.

Choice of Method of Attendance.

Regulation 19 (3) makes it incumbent on the Insurance Committee to so inform any person who has been rejected by an institution. This was not previously the case.

Insured Person Applying during Year.

Regulation 22 imposes upon the insured person removing from the area of one Committee to that of another the duty of notifying the change to the latter. This Regulation specifies that adjustments shall be made between the practitioner on whose list the patient was formerly, and the practitioner on whose list he is placed after the change, regard being had to the proportion of the year spent by the insured person in the area of each of the Committees respectively.

In this connexion Provisional Regulation 44 should be noted. That Regulation went into much greater detail than the present Regulation in regard to persons temporarily resident outside the county.

Particular attention is drawn to Sections (2) and (3) of Provisional Regulation 44, where it was provided that a special list should be formed of those practitioners who were willing to attend insured persons temporarily resident within a county. Nothing is said in New Regulation 22 as to the *kind of arrangements* which are to be made for dealing with this class of insured persons. Apparently they could be distributed among the doctors in the panel or any other arrangement could be adopted which was locally agreed to.

Practitioner Applying during Year.

Regulation 23 (1).—It is to be noted that the new Regulation is so worded as to make clear that a practitioner who has been removed by the Commissioners from the panel of any area is ineligible for the panel in any other area.

Regulation 24 (5) provides that notification shall be sent by the Committee to the practitioners and approved institutions as to any persons on their lists who have ceased to be insured persons or who have died. This is new.

Drugs and Appliances.

Regulation 27 and **Second Schedule.**—It is to be noted that the following articles have been added to the appliances provided under the head of "Prescribed Appliances":

(*a*) Open-wove bandages.

(*b*) Oiled paper.

Regulation 30 is new and takes the place of Provisional Regulation 35 (2). It specifies that, where in a rural area an insured person resides more than a mile from a chemist on the list or where the Committee is satisfied that an insured person, by reason of distance or inadequacy of means of communication, will have difficulty in obtaining drugs or appliances from a chemist, arrangements may, and if the practitioner so desires shall, be made by the Committee, for the supply of drugs or appliances by the practitioner. Any question arising under this Regulation is to be decided by the Commissioners.

Regulation 34 omits the reference to the arrangement to be made as regards drugs not included in the Drug Tariff, which was contained in the corresponding Provisional Regulation 39 (3). This subject is now briefly mentioned in Regulation 43 (2).

FINANCIAL.

Panel Fund.

Regulation 39 is entirely new and should be compared with Provisional Regulation 28. It constitutes in each insurance area a Panel Fund for the payment of all panel practitioners. The fund is made up of (*a*) the amounts received from the approved societies in the area, and (*b*) the portion, allocated to that area, of any parliamentary grant made in respect of the treatment of insured persons. In Regulations 43, 48, and 49 similar funds, known as the Drug Fund, the Institutions Fund, and the Special Arrangements Fund, are instituted.

Calculation of Remuneration under Single System.

Regulation 40 practically corresponds with Provisional Regulation 29, with the exception that at the end of 40 (3) the words "after deducting any sum set apart for mileage in accordance with these Regulations" are inserted. This is doubtless introduced in order to prevent any doubt as to where payment for mileage is to come from.

Drug Fund.

Regulation 43 constitutes a separate fund out of which payments for drugs and appliances are to be made.

43 (2) apparently contemplates that if the amount due for drugs is greater than the total amount available in the Drug Fund the chemists' bills would be discounted. This must, however, be read with Regulation 45 (2) dealing with the Drug Suspense Fund. Reading this latter Regulation alone, it would seem that the possibility of the total amount of the drug bills exceeding the amount in the combined Drug and Drug Suspense Funds is not contemplated.

Allocation of Funds.

Regulation 45 (1) deals with the allocation of the total amount available for the Committee, to the Panel Fund, Drug Fund, and Drug Suspense Fund respectively.

Regulation 45 (2) specifies that when the amount due for drugs is greater than the amount in the Drug Fund, the balance is to be paid (if not otherwise provided by Parliament or from any other source—an allusion to the Epidemic Drugs Fund of which a promise has been given) out of the Drug Suspense Fund—that is, the "floating sixpence."

Regulation 45 (3) provides that if the total amount spent on drugs, etc., is less than the amount to the credit of the Drug Fund, the balance is to be carried forward to the credit of that fund.

Regulation 45 (4) provides that any money remaining to the credit of the Drug Suspense Fund at the end of the year is to be carried to the credit of the Panel Fund for that year.

Excessive Ordering of Drugs.

Regulation 46.—This is new, being necessitated by the recent extra provision for drugs (the "floating sixpence"), and it places the duty upon the Local Medical Committee of investigating cases in which unnecessary drugs or drugs of too expensive a nature have been ordered. The Local Medical Committee may, after enquiry, report to the Insurance Committee, which may make appropriate deductions from the amounts payable to the offending practitioner.

Payment of Practitioners who Supply Drugs and Appliances.

Regulation 47 is new. It provides that *where the Committee have adopted a capitation system* and have arranged with a practitioner to supply drugs and appliances, they may pay the practitioner by a capitation fee instead of on a scale of fees. The total amount available for this purpose would be three-seventeenths of the amount available for medical benefit (that is, 1s. 6d.) *plus* any sum payable for that year out of the Drugs Suspense Account.

Institutions Fund.

Regulations 48.—See under notes on Regulation 39. This Regulation provides for the establishment of a separate fund for the payment for medical attendance and treatment of persons who take their medical benefit through approved institutions. The total amount available is the money provided by the approved societies on behalf of those insured persons who elect to receive their medical benefit through these institutions, together with any moneys derived from any parliamentary grant.

The accounts kept by the institution must show separately the amounts expended on treatment and on drugs and appliances respectively, and the amounts payable by the Committee cannot exceed for treatment fourteen-seventeenths of the amount available for medical benefit (7s.), and for provision of drugs and appliances four-seventeenths of that amount (2s.)

Sums standing to the account of this fund at the end of the year are to be carried forward to its credit.

Special Arrangements Fund.

Regulation 49 is new. It provides for the institution of a fund out of which the payments shall be made to those insured persons who make their own arrangements.

This Regulation provides ((2) (*c*)) that the medicines and appliances supplied to the person making his own arrangements shall not be supplied by or at the profit of the practitioner in attendance, unless the practitioner would, had he been on the panel, have been allowed to supply medicines and appliances. It thus appears that, except in these special circumstances, it will not be possible for insured persons to make their own arrangements with a practitioner for treatment and supply of drugs. That is to say, there will be no opportunity for a practitioner not on the panel to make arrangements more favourable to himself than could be made by a practitioner on the panel.

Mileage.

Regulation 50 must be compared with Provisional Regulation 46, from which it differs considerably. The question of mileage is now apparently left entirely for local arrangement, the stipulation as to the prescribed distance of three miles from the nearest practitioner on the panel is dropped, and nothing is said as to method of payment. This Regulation should be read with 40 (3).

Old and Disabled Members of Friendly Societies.

Regulation 51 should be compared with Provisional Regulation 47, from which it differs in the following particulars:

(*a*) The members of this class are to be provided with a voucher entitling them to treatment on its presentation to a doctor on the panel.

(*b*) It is to be a condition of service on the panel that this class shall be attended at a rate not exceeding that paid for insured persons.

(*c*) No practitioner is to be under obligation to attend more of this class than a number in proportion to the total number of his panel patients.

Medical Service Subcommittee.

Regulation 52 is to be compared with Provisional Regulation 48, from which it differs as follows:

(*a*) The name is changed from "Committee of Complaints" to "Medical Service Subcommittee."

(*b*) Whereas the duty of the old Committee was "to consider any complaints" arising between practitioners and patients, it is now to deal "with any question arising between an insured person and the practitioner attending him," and the Insurance Committee may, if they think fit, now refer to it "any other question arising with reference to the administration by them of medical benefit."

Inquiry as to Practitioner.

Regulation 54 should be compared with Provisional Regulations 50 and 51, from which it differs as follows:

(*a*) There is now no panel of sixteen practitioners from which the Inquiry Committee is to be in part constituted. The Inquiry Committee now consists of two practitioners and one barrister or solicitor. It may still be the intention of the Commissioners to constitute a panel (see Section 2), but this is not definitely stated. No promise is given, as in the Provisional Regulation (51 (2)), that in establishing such a panel (if any) the Commissioners will consider suggestions from any body representative of the medical profession.

(*b*) The Inquiry Committee, in the Provisional Regulation, was forbidden to include in its report any recommendation as to course of action. This is not mentioned in the new Regulation.

Decision as to Range of Medical Services.

Regulation 55 is new, and is necessitated by the statement made in the recent Memorandum as to Medical Benefit in regard to medical services under the Act. If a practitioner is in doubt as to whether an operation or other service is comprised within the terms of his agreement, he may refer the point to the Local Medical Committee. The decision of the Local Medical Committee is apparently to be reported to the Insurance Committee, and, if the two Committees fail to agree, the matter is to be submitted to a body of Referees set up by the Commissioners. The decision of the Referees, after a hearing, is to be final, and the Referees, in giving their decision, must state whether, in arriving at it, they have had regard to any custom or practice of the profession which is peculiar to the area in which the question arose.

Two Referees are to be chosen for the purpose of each inquiry, from a panel set up by the Commissioners, or, failing the formation of such a panel, from among the practitioners in actual practice in Great Britain, together with one barrister or solicitor in actual practice.

Inquiry as to Persons supplying Drugs or Appliances.

Regulation 56 should be compared with Provisional Regulations 52 and 53; there are changes which bring this inquiry into line with the Inquiry as to a practitioner.

Application as to Scotland.

Provisional Regulation 57, dealing with the application of those Regulations to Scotland, is omitted in the New Regulations, which apparently only apply to England and Wales.

FIRST SCHEDULE, PART I.

Paragraph 1 in New Regulations corresponds to 7 in the Provisional Regulations, and is practically unaltered.

Paragraph 2 includes a definition of a confinement which was not given in the Provisional Schedule. This paragraph also includes a stipulation as to an agreement to undertake domiciliary treatment to persons recommended for sanatorium benefit. It would appear that practitioners might decline to undertake this part of the work on a contract while undertaking to contract to give ordinary medical attendance and treatment.

Paragraph 4.—The limit of distance within which the practitioner must attend the persons on his list is left blank, instead of being, as in Paragraph 3 of the Provisional Regulations, three miles.

Paragraph 8, referring to the records of disease, is new, and embodies also the promise given in the recent Memorandum as to Medical Benefit, that no further records should be required except after agreement between the Committee and the Local Medical Committee.

THE EXPLANATORY STATEMENT BY THE INSURANCE COMMISSIONERS.

AN *Explanatory Statement as to Medical Benefit as Affecting Medical Practitioners* was issued by the Insurance Commissioners at the end of last week to medical practitioners in England, Wales, and Scotland, and is now presumably in the hands of each and all of them.

PROVISIONAL ARRANGEMENTS.

The concluding paragraphs of the explanatory statement deal with the provisional arrangements which it is proposed to bring into force for the period from January 15th to April [illegible] 1913, but the advice tendered by the Insurance Commissioners to Insurance Committees is more fully stated in the circular Memorandum (131) issued to Insurance Committees last week, and published in the SUPPLEMENT, December 7th, p. 639.

AS TO INSURED PERSONS.

The Commissioners in this circular Memorandum state that it will be unsafe for Insurance Committees to assume that the Index Register of insured persons now in course of compilation will, as a rule, be sufficiently complete or accurate by January 15th next to enable Insurance Committees to rely upon it either for the purpose of making provision for persons entitled to medical benefit, or for verifying the title of applicants for the benefit. The Commissioners therefore propose that there shall be issued to persons entitled to medical benefit a voucher or medical ticket having currency to April 30th, 1913. These tickets will be distributed to the members of societies through the societies, and to deposit contributors by the Commission direct.

The ticket is printed on a thin strawberry-coloured card and is in the following terms:

[*Obverse.*]

NATIONAL HEALTH INSURANCE.
MEDICAL TICKET.
Not Transferable.

This ticket is to be used only for the purpose of obtaining medical benefit for the person to whom it is issued. If any other person uses or attempts to use it for the purpose of obtaining benefit for himself he is liable to penalties under the Act.

Write here your name and the exact address where you are now living. .....

Society and Branch .....

Contributor's Number.....

This ticket can only be used from January 15th to April 30th, 1913.

[*Reverse.*]

NOTICE.—You must produce this ticket in order to obtain medical benefit. If you obtain your treatment from a doctor on the list published by the Insurance Committee, you must show this ticket to him, but must keep it in your own possession.

A list of doctors may be seen at the Post Office nearest to your address; and any information required can be obtained from the local Officer of Customs and Excise, whose address can be ascertained by inquiry at your nearest Post Office.

Signature of Doctor accepting for treatment:

If you obtain your treatment from an Approved Institution you must give this ticket to the institution.

If you are arranging with the Insurance Committee to obtain your treatment from a doctor not on the list, and wish to claim a contribution towards the cost of the treatment, you must send this ticket to the Insurance Committee.

The ticket is to be accompanied by the following leaflet:

NATIONAL HEALTH INSURANCE COMMISSION.
MEDICAL BENEFIT.
Arrangements During First Quarter of 1913.

1. In order to obtain Medical Benefit you will need a *Medical Ticket.* If you do not receive one with this leaflet apply at once to your Society or Branch. The ticket must bear your name and address, the name of your Society and Branch, and your

number in the Society or Branch. The Medical Ticket should be carefully kept, and is only valid until the 30th April, 1913.

2. *You can obtain information as to how to get Medicines by consulting the Notice which will be exhibited in the [illegible] nearest to your address, or by applying to the Local Officer of Customs and Excise, whose address can be found by enquiry at your nearest Post Office.*

3. If you apply for treatment to any Doctor mentioned in the Notice, you must at the same time show your Medical Ticket.

AS TO MEDICAL PRACTITIONERS.

Insurance Committees are to issue to every practitioner in their respective areas during this week the circular letter of invitation which was printed in the SUPPLEMENT, December 7th, p. 641. In that letter practitioners are invited to signify their acceptance of the invitation to join the panel of the area not later than December 31st. It would be at any subsequent time possible for a doctor to indicate his willingness to act on the panel, but the names of doctors who do not indicate this intention before December 31st will not be included in the first list.

Notice by the British Medical Association to the Profession.

In this connexion attention must be drawn to the notice issued by the Council, and printed on the first page of this issue of the SUPPLEMENT. The Council points out that, pending the decision of the Special Representative Meeting and the publication of instructions issued under its authority, it is imperative that no negotiations or arrangements of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession, with Local Insurance Committees, or otherwise.

Special Representative Meeting.

The Special Representative Meeting has been summoned to meet in London on Saturday, December 21st. The votes given at the Divisional meetings will be counted and the aggregates ascertained on Thursday, December 19th. The result will be reported to the Special Representative Meeting, which will then have the opportunity of considering and as far as possible deciding the course of action which the Association shall take in the future.

Persons who make their own Arrangements.

We have received a letter from Dr. Major Greenwood (London) directing attention to the paragraphs which appear under this head, section 7, of the explanatory statement. They throw, he thinks, new light on the bearing of Dr. Addison's amendment (see Insurance Act, Section 15 (3)). He writes:

It will there be seen that those who "make their own arrangements" have practically the whole of that portion of their medical benefit due for drugs confiscated. That is to say, whatever use is made of the 1s. 6d., or 2s. (nearly one-third of the whole of the said benefit), it will in no instance profit them personally unless they employ a private doctor entitled to supply medicines, if on the panel. If the private doctor they employ is not one of the few who are entitled to supply medicines, supposing he were on the panel, no part of the charges made for medicines can be defrayed out of the allowance made to the patient for his medical attendance. If regarded closely, this is a very important matter. The great majority of the practitioners in England and Wales at the present time always themselves supply medicines to their patients, and it goes without saying that a certain proportion of the charges to their private patients represents the cost of the same.

This must now be defrayed by the patient at his own cost, although he and his employer are compulsorily taxed to meet this expense. Apart from the obvious inequity of the arrangement, other injustices are perpetrated. Many of the practitioners such insured persons might select might conceivedly not be on the panel at all, and an invidious distinction is drawn between non-panel doctors in rural and other areas where, if on the panel, charges for drugs would be legitimate, and those resident in districts where the same charges are not permissive. In other words, an unfair competition might be engendered, as it would be possible for the former to attract insured persons as private patients by making a reduction in their fees, which would be recouped by the privilege possessed of drawing on the drug portion of the medical benefit of their insured patients.

Again, it must not be forgotten that a considerable portion of the medical profession possess absolute rights at the present time to charge for medicines, notably all those licensed by the Apothecaries' Society. These rights have been in effect altogether swept away with regard to attendance on a large section of the community without any compensation. It has, further, been brought about, not by clear and distinct legislative enactment, on the ground that such a privilege is subversive of the general interest, but by a paltry side-issue, inserted in the Regulation of an Act of Parliament, which, construed literally, gives no indication of any intention to take away these ancient rights of the profession.

Dr. THOMAS M. CARTER (Bristol) writes: The revised Regulations strike a deadly blow at "contracting out," and yet, as Dr. A. W. Cooke points out in your issue of December 7th, it is by enforcing this plan on the insured persons that the medical profession can give a thoroughly efficient service and yet retain its freedom.

That essential freedom it can never have with panels of doctors bound by individual agreements with Insurance Committees. Terms and conditions should be made by the accredited representatives of the organized local profession dealing with the Insurance Committee in each locality. The Act permits this to be done; the present Regulations do not.

If the profession will give a definite vote against acceptance of service under the Act and *present Regulations*, there is still time for us to secure our freedom from a cramping servitude, and yet be in a position to afford an immediate efficient service to the insured.

A vote for service can effect no alteration in regulations. An overwhelming vote against service will make every Insurance Committee attentive to the arguments of the organized local profession. The Commissioners must listen to the appeal from the Committee that its area has secured an efficient service on certain terms and conditions, and if these are reasonable, the line of least resistance will be for the Commissioners to accept them, at least for the provisional period. This accomplished, it remains for us to secure the position afterwards. Stong local organization, with legal powers, is the immediate need of the profession.

Dr. G. A. WYON (Bow, E.) writes: It cannot be too clearly grasped by bodies of doctors considering the formation of public medical service schemes for insured persons who may "contract out" of the Act, that under the new Regulation 49, (2) (c) "It shall be a condition of any payment that the medicines and appliances supplied to any person required or allowed to make his own arrangements shall be supplied *otherwise than by or at the profit of the practitioner who is attending him*"; that is to say, except in remote country districts, it will be illegal for a doctor to dispense even for persons who contract out. Hence one powerful argument for refusing service under the Act is irretrievably lost—the argument that we could retain dispensing by inducing insured persons to join a public medical service. Such a person will now have to first of all *understand* and then *voluntarily take three distinct steps*: (1) Get leave from his Committee to make his own arrangements; (2) join a public service; (3) arrange with a chemist. It seems quixotic to hope that many will do this.

PROS AND CONS.

PRO.

AN appeal issued on November 26th by the Honorary Secretary of the Provisional Medical Committee for Westminster and Holborn contained the following passage:

1. That the number of practitioners in the country willing to work the Act on [illegible]

2. That it is consequently only on matters of detail as to the best method of carrying on a campaign of resistance that differences exist.

3. That both the personnel of the Council and the procedure adopted at the last two Representative Meetings have changed so much for the better as to ensure a fair and proper consideration of every interest involved.

I may add that so far as my information goes all the men in this Division have resigned their contract club appointments, although the adoption of this course has involved in some cases a loss of some 50 per cent. of their incomes. I need not labour the point. These men cannot be allowed to suffer for their loyalty.

Stimulated by what they regard as the inaccuracies in this appeal, a circular signed with the names of twenty medical men resident in various parts of London, and bearing date December 5th, has been issued from 39, Victoria Street, S.W., summoning a meeting to be held at the Holborn Restaurant on the afternoon of Friday this week (December 13th). The circular convening the meeting contains the following sentences:

In connexion with the forthcoming critical decision which has to be made concerning the acceptance or rejection of the proposals of the Government as set out in the memorandum of the Chancellor of the Exchequer to the British Medical Association, we, as general medical practitioners who will be vitally affected, appeal to our brethren in the profession whose practices are not concerned to leave the decision as far as possible to those of us who are going to do the work. We believe that we are quite able to safeguard the dignity of the profession, our own interests, and those of the general public.

After careful inquiry we find that large numbers of medical practitioners throughout the country will not be affected by the Act, this applies to at least a third of the medical men in the London area alone, and the same is true of many of the officers of the British Medical Association.

The signatories believe that they have the support of large numbers of medical practitioners throughout the country in saying that the terms offered by the Government are such that it is their duty, both to themselves and to the public, to accept service under the Act. They have therefore decided to take the initiative in forming an Association of those medical practitioners who take the same view. They do not do so out of any disloyalty to the British Medical Association, but for the protection of their own interests.

The circular continues:

The object of the association will be to promote and safeguard the interests of practitioners engaged in work under the Insurance Act. In the near future many problems affecting the relationship between doctors on the panel and Insurance Committees will arise. The method of payment may be given as an instance which shows the importance of insisting that the men who work the Act should have the deciding voice on that matter. Another important point is the question of forming a medical pension fund (a subject which is receiving very careful attention from an actuarial adviser), and this obviously is only a matter for those directly interested.

We have received from Dr. A. S. Downton, of Crouch End, N., a letter stating that his name appears among the signatories of the circular owing to a misunderstanding. He adds:

I had previously been asked whether I would care to attend a meeting which was being arranged of practitioners in favour of working the Act and consented to do so, and also to distribute tickets among other medical men in my district. I am not in sympathy with the terms of the circular, and at once wrote requesting that my name should be deleted. I have received an intimation that this shall be done, and regretting the mistake.

With regard to the reference to the proposal contained in the circular to form a medical pension fund, we have received the following letter from Dr. H. H. Mills (Kensington):

The approaching formation of the medical panels seems an opportune moment to consider the establishment of a medical pension fund. The matter has been carefully considered, and with the assistance of Mr. George Hardy, the well-known actuary, a preliminary scheme is now suggested for the consideration of those members of the profession who decide to take service under the National Insurance Act. My proposal is that a small proportion of the capitation fee (if that system of payment is chosen), or a definite sum per quarter as the individual medical men may decide, should be set aside to establish a fund which could be used either for insurance or pension. It may be mentioned that 6d. per annum per head of the insured population would produce a premium income of more than £300,000 a year. Hence, if any considerable proportion of the doctors upon the panels become contributors, a premium income would be secured sufficient to give stability to the fund (if managed independently), or to induce the offer of attractive terms from any of the leading Insurance Companies.

The details of any scheme and the arrangements necessary to make it effective will of course require careful consideration; but from the calculations already made I believe that such a scheme will be very advantageous to the profession. As a concrete example of what could be done I am advised that an annual payment of £20—representing 6d. per head for 800 insured persons, payable between the ages of 25 and 65, would probably provide a pension for the doctor of about £180 a year at the age of 65, or a capital sum of about £1,700, with the alternative, in the event of death before that age, of a payment to his heirs of £400 *plus* the return of any premiums paid in excess of that sum.

In the event of the scheme being widely supported, and with a view to reducing the working expenses to a minimum and thus proportionately increasing the benefits obtainable, the Insurance Commissioners might perhaps be induced to sanction proper arrangements under which the co-operation of the Insurance Committees may be secured in collecting the premiums at their source.

The circular has received a good deal of publicity in the press, and Dr. Cox, the Medical Secretary of the British Medical Association, has traversed some of the statements contained therein. Commenting on the statement that at least one-third of the medical men in the London area will not be affected by the Act, he observed that it was doubtful whether the proportion was so large, and that in any case the Act must before long affect every member of the profession, though perhaps not all directly at present. Since every member will before long be affected directly or indirectly, the Association had asked for the votes of all. He pointed out that the question put by the Council to the Divisions is not whether a practitioner will serve personally, but what, in his opinion, will be the effect of the proposal on the profession generally. With regard to the statement as to the officers of the British Medical Association, he said that if the practitioners who signed the circular "are using the term technically, four out of our five officers are or have been general practitioners. If they mean to include the members of Council, and the Secretaries and Chairmen of the Divisions, I can say with full knowledge that the large majority of them will be immediately affected by the Act."

He also pointed out with reference to the sentence appealing to members whose practices are not concerned to leave the decision as far as possible to the general practitioners who are going to do the work, that the signatories appeared to have overlooked the fact that every member of the profession is invited to the meetings where the decision is to be taken, and continues: "If as the signatories of the circular seem to think, the general practitioner, if left alone, would vote for acceptance, all they have to do is to go to the meetings and say so. They can easily carry the day if the statement is correct, and they had no need to form a new association with the risk of bringing disunion into the profession."

Dr. Charles F. Knight, of Edinburgh, who recently advertised for a large number of motor cars, has written to the *Edinburgh Evening News* protesting that it is superfluous now to found another medical association in rivalry with the "National Insurance Medical Association" he established last year.

Con.

Dr. T. Arthur Helme has issued in the form of a letter to the members of the Lancashire and Cheshire Branch of the British Medical Association an appeal to the profession. In a series of paragraphs he discusses the remuneration, the services required under the Act, and the conditions of service, and appends a short summary of the result of the conference, enumerating the points upon which the Chancellor has made concessions, and those which he has refused. Dr. Helme concludes his circular as follows:

You are now asked to vote whether the Association should refuse to accept the terms or not. This decision will affect for good or ill the status of the profession; it may secure the independence of the individual practitioner, or rivet upon him the shackles of contract practice on derogatory terms.

Before recording your vote I would urge every one to judge the question not only from the point of view of individual interest, but with full and responsible sense that the future of medicine and the well-being of the public are in your hands.

If we stand united, we must obtain our just and reasonable demands. There has been of late a determined effort from some channel to influence the more timid members to capitulate on the ground that there exists a number of men who are prepared to break the pledge and do what they themselves desire irrespective of the decision of the Association. Whether that be true or not I urge you to be strong, and as an

Association let us record our true opinion of what we judge to be right. By this vote we shall know the true position of the profession (if all will vote), and at the Representative Meeting of December 21st we shall be able to determine officially what policy must be adopted. There is no need to be hurried into a wrong position; we have kept right so far, let us keep our heads and give a calm and reasoned decision on the merits of the case, prepared to deal with the policy of future action when that is known.

I trust the Association will once again reaffirm its vote that the British Medical Association stands for a free and honourable profession; but however the vote may go our difficulties are capable of solution if only we remain united and each support the whole.

Dr. C. Buttar, one of the Representatives of the Metropolitan Counties Branch on the Central Council, has also issued a circular in the form of a table setting out the cardinal points, the present position, the additional conditions imposed, and a list of modifications obtained by the special committee of five. This also, we believe, has been issued to all members of the profession.

PRO.

An appeal to their fellow practitioners signed by 26 general practitioners and bearing date, Birmingham, December 9th, has been issued, and is probably in the hands of all practitioners. The circular contains paragraphs on the terms, the estimates in which appear to agree with those expressed by Dr. Addison in his address in Birmingham reported below. The circular intimates the concessions recently obtained, and the appeal is generally in favour of the Act. It is pointed out that the records required are simple, and provide for medical confidence being preserved. The circular also contains the following paragraphs:—

Refusal of Terms.—Should we now finally reject the Government terms we need expect no more offers. There will be formed, as soon as possible, a whole-time service in selected towns first. Doctors are now available for this commencement. In this city, at any rate, the general practitioner will be out in the cold. We lose our £350 or more per year from the insured. We shall have no chance of gaining this here, whatever is done elsewhere. In other districts a panel system will be tried, and those who apply first will, no doubt, get the majority of members. Further, in the unlikely event of these failing the Government may hand over the medical benefits to the approved societies who are clamouring for them.

Present Practice.—Many would prefer to leave things as they are, but this is not possible; the Act has come to stay, and no political party will repeal it.

Less Sickness.—The sickness-rate in the country is gradually going down, and the Act will certainly diminish it further. This means loss to us in private practice, but a decided gain under a contract.

Amount of Work.—An average list for this district would be 1,000, yielding £350 per annum; this is for workers, a doctor need not take more than he wants, but it is well known by those engaged in contract practice that a considerably larger number than this can be efficiently attended, even including children and old people, in addition to a large private practice.

Conclusion.

For these reasons (although at the end of three years we may wish to make certain alterations in the conditions of service), we shall do well to give the Act a trial rather than to face the inevitable results of a flat refusal. We appeal to our fellow practitioners to consider carefully the above statement, and particularly to those consultants, public officials, and men in good class practice who will be affected by the Act but slightly or not at all, and to remember that by insisting on a blank refusal they will inflict upon many of their struggling colleagues in many cases heavy loss or actual ruin.

The Act will be worked with or without the approval of the British Medical Association. Note that there are ten thousand practitioners in Great Britain who are not members of the Association, the great bulk of whom have signed no pledge. The Act is not in danger, but the Association is in imminent danger; if there is a majority for refusal there will be a distinct cleavage in the profession, the power of our Association will be wrecked, and all the good work it has done in the last few years will be brought to nought.

IRELAND.

DUBLIN LOCAL MEDICAL COMMITTEE.

CORRESPONDENCE has passed between the Honorary Secretary of the Dublin County Borough Local Medical Committee and the Right Hon. Michael Francis Cox, a medical member of the Advisory Committee for Ireland, with reference to certain opinions alleged to have been expressed by him at a meeting of the Advisory Committee on October 30th. These opinions were understood to be unfavourable to the medical profession in Dublin, and, judging from subsequent speeches, it was considered that this view seemed to have been taken by some of the lay members of the Committee. Dr. Cox has explained that his words were misconstrued. He remained a member of the Advisory Committee in the hope that he might thus be of more use to his profession and the people, and also for political reasons. He advocated the extension of medical benefits to Ireland, and the inclusion of the families of the insured, but had said nothing about the terms on which this should be done. The medical profession had been accused at the meeting of behaving in a harsh and threatening manner towards the friendly societies, but his hand and tongue and pen were clean in this matter, and he now indignantly denies that he intended to imply that the same was not true of the rest of the profession. The suggestion of a conference between the friendly societies and the medical committee was willingly accepted by the latter, a fact which showed that the accusation was far from the truth.

The following resolution was passed unanimously at the last meeting of the Local Medical Committee:

> That the Honorary Secretary be requested to draw the attention of medical men in the county borough who have signed the undertaking to the fact that the terms of the undertaking pledge them not to accept any appointments for societies except through the Local Medical Committee, whether remuneration be by capitation, by fee, or by salary.

WOMEN'S NATIONAL HEALTH ASSOCIATION.

The fifth annual meeting of the Central Dublin branch of the Women's National Health Association was held in the theatre of the Royal Dublin Society on November 29th. The Countess of Aberdeen, who presided, said that as the result of interviews with the Insurance Commissioners it was decided that the best way to ensure the useful working of the sanatorium benefit was to form care committees in the various counties which should be as representative as possible, the branches of the Women's National Health Association to form the nucleus of the movement. As regards the domiciliary treatment, the legal opinion had been given that extra nourishment for the curative treatment of a patient might well be given under the advice of a tuberculosis officer. Such treatment could only be given by an organization which could supply doctors and nurses as well as all the treatment, inasmuch as through the Collier Dispensary the Women's National Health Association was in a position to supply those requirements in Dublin and Meath. Dr. Crowe, Medical Superintendent of the Collier Dispensary, read his annual report, which stated that 1,176 cases had been dealt with, and 7,555 visits had been paid during the year.

The following resolution was adopted:

> That the branches of the Women's National Health Association in the City and County of Dublin do request the Lord Mayor of Dublin and the Chairman of the Dublin County Council to call a meeting to consider the formation of voluntary care committees, representative of all forms of charitable work, to act in conjunction with the official committees under the Dublin County Borough Council, and the Dublin County Council, administering sanatorium benefit and treatment for tuberculosis under the Insurance Act of 1911, and the Tuberculosis Act (Ireland) of 1908.

COUNTY COUNCILS AND TUBERCULOSIS SCHEMES.

It appears that the Meath County Council decided some time ago to contribute £100 to the Women's National Health Association towards the cost of erection and equipment of a tuberculosis dispensary for the county. The Local Government Board has, however, informed the Council that it has received legal advice to the effect that there is no power conferred by the National Insurance Act of 1911 enabling the County Council to contribute anything towards such a scheme. A resolution was passed that the Local Government Board should be informed that though it had so far done nothing, the County Council was not to be taken as refusing to exercise its functions under the Act.

The County Council of Roscommon has adopted an insurance scheme offering full benefits and the security of the rates to all members. A provisional committee has been formed, and the temporary secretary is engaged in enrolling members. The county has been canvassed for some time past by paid organizers. The Council has

taken sixteen beds in Peamount Sanatorium. It has advertised for a site for a tuberculosis dispensary, and has appointed Dr. Robert McDonnell medical superintendent. The South Tipperary County Council has decided to enter into an agreement with the Women's National Health Association for the purchase of eighteen permanent beds in Peamount Sanatorium, at a cost of £70 a bed. Lady Aberdeen, as President of the Women's National Health Association, has sent out a notice to the county councils, saying that the Association is anxious to make arrangements for the appointment of permanent committees of management of Peamount and Rossclare Sanatoriums, and suggesting that each council should appoint a representative. Many of the county councils have complied with the request and appointed a representative, but with the provision that he was to have no power to commit the councils to any expenditure whatever.

The Kerry County Council elected Dr. Maurice Quinlan unanimously as medical superintendent of tuberculosis dispensaries at a salary of £500 per annum and £150 expenses. At the same meeting three nurses were also appointed under the scheme.

The Limerick County Council has recently appointed Dr. D. J. Hurley of Newcastle West tuberculosis medical officer for the county at a salary of £500 per annum, with an allowance of £100 for travelling expenses.

At the last meeting of the Dublin County Council a report was received from a special committee on a tuberculosis scheme for the county under the Insurance Act. It recommended the appointment of a medical officer at a salary of £500 a year with £100 for travelling expenses, the provision of a tuberculous dispensary, and that the Meath Hospital authorities should be approached with a view to giving a site to the council for the proposed dispensary. It was stated that there would be about 41,000 insured persons in the county, and that at the present moment something like 3,720 of these were suffering from tuberculosis.

Meeting of Cork Medical Men.

At a largely attended meeting of doctors in Cork recently, the following resolutions were passed:

1. That we wish to place on record our approval of the extension of medical benefits to Ireland, provided that the existing rights of Poor Law medical officers be protected.
2. That we agree to accept the offer of the Insurance Commissioners, in cases of domiciliary treatment of cases of tuberculosis, of 2s. 6d. per visit, plus 1s. per mile one way, outside the first mile, provided the fee of 10s. be paid for the initial examination and report, as has already been agreed to by the County Insurance Committee and the Insurance Commissioners at their meeting of October 24th, 1912.
3. That we call on the Irish Medical Association to support the clause which is proposed to be introduced into the Home Rule Bill on behalf of the Poor Law officers of Ireland, dealing with the superannuation of such officers.

Friendly Societies and Medical Benefit.

The Executive Committee of the Union Friendly Society, which claims to represent 10,000 insured persons, at a meeting in Dublin last week passed a resolution expressing the opinion that the reinstatement of medical benefit to Ireland was essential for the proper administration of the Insurance Act.

MEETINGS OF THE PROFESSION.

Birmingham.

Address by Dr. Addison.

A meeting attended by about 200 members of the medical profession was held at Birmingham on December 9th to hear an address by Dr. Christopher Addison, M.P. Dr. Featherstone, who was in the chair, said that the meeting had been called with the object of clearing up doubtful points before the final decision of the Divisions in Birmingham was reached.

Dr. Addison said that he would deal with the points raised by the special committee of five which had an interview with the Chancellor of the Exchequer. With regard to the definition of the duties of the medical practitioner in respect to medical benefit, Dr. Addison said that only a general definition was possible or advisable. Were a list of duties drawn up it would not be in existence a week before it was found to be defective, and an Insurance Committee presented with a claim for extra work would be certain to rule it out if it were not specifically mentioned in the list. If the Local Medical Committee failed to agree with the Insurance Committee as to whether any particular service was or was not within the competence of a "practitioner of ordinary competence and skill" a court of referees consisting of two medical practitioners and one lawyer had been set up to which the matter could be referred. The amount provided for the remuneration of doctors in respect of medical benefit would not be subject to any deduction; the sum of 6s. 6d. was allowed for medical services and 1s. 6d. to cover what was expected fairly to be required for the cost of drugs. That was to say with the additional 6d. for attendance on cases of tuberculosis there was a sum of 7s. a head in all which must without deduction be applied to the payment for professional services. With regard to tuberculosis he said that it was estimated that six insured persons per thousand would be suffering from tuberculosis—that meant for the treatment of those six persons the sum of £25 per year was set apart, and the cost of drugs would not fall upon the medical man. That worked out at an average of 2s. 6d. for 34 visits in the year, which was estimated to be a fair allowance to each such tuberculous person. In a town 2,000 insured persons would yield for professional services, without deduction, £700 a year as a minimum and £750 as a maximum, and in country districts, where the patient lived more than a mile from the nearest chemist, the practitioner would do his own dispensing, and in that case the sum available would be at the rate of 9s. a head, so that 2,000 persons in such a country district would yield £900. The Regulations afforded ample protection against vexatious calls by patients; they laid it down that surgery hours must be observed, and that a visit must be requested within proper hours. If a practitioner found a patient a source of annoyance he could at the end of any year decline to attend him any longer. If a doctor contracted to give attendance on an inclusive capitation rate pure and simple, he would himself have to arrange to obtain the assistance of an anaesthetist where necessary, but if for the proper performance of an operation an assistant was required, that operation did not fall within the scope of medical benefit. If the work required to be performed were outside the competence of the ordinary practitioner the responsibility for providing it would not fall upon him. If a reduced capitation fee with a reserve fund for extras were the system adopted, it would be easy to arrange for payment for an anaesthetist, for mileage, and for other services which had been enumerated by the British Medical Association as extras. The inspection contemplated would not involve any interference between doctor and patient. The contract into which the doctor was asked to enter was a free one. The medical man could be dismissed only by the patient, and the doctor was at liberty to give up the patient if he so desired at the end of the year. The Local Insurance Committee could not engage the doctors nor dismiss them; it did not determine their rate of pay, inasmuch as this had been practically settled by the Chancellor in his Memorandum. Who, then, could say that a body that did not engage them controlled them? Complaints would have to be in writing, and they would be sifted by a special committee sitting in private. The desire, Dr. Addison continued, was to do away with systems of cheap doctoring. A large number of institutions existed only because they could make a profit out of the doctors, and institutions of that sloppy character would not be approved; it was necessary that the treatment should be efficient, and that no profit should be made out of the doctors, and on such terms it would be difficult for any undesirable organization to continue to exist. In conclusion, he said he believed that the Act provided a system which would enable the medical profession to say good-bye to all those conditions which had attached to the so-called club practice in times past. There would be no bad debts. Some of them, he said, who had been associated with working out the details involved in this Act had incurred a great deal of opprobrium, but he felt sure that, whatever may have been their shortcomings, those who had

call out abuse to them in so generous a measure were not o be regarded as fit custodians of the dignity and honour f their profession.

A number of questions were subsequently asked. In eply to one of which Dr. Addison said, that he had taken he number of 2,000 insured persons for an individual ractitioner merely as a convenient total, the actual num-er would depend upon the man. A doctor could not be ompelled to take more than the number of insured persons e wished; he might, as for instance, decline to take more han 500 instead of 2,000.

In reply to another question he said that the Government vas providing a special contingent emergency drug fund, nd in the case of excessive illness in a district, as for nstance an epidemic of influenza, this fund could be drawn pon.

In reply to another question, he said he considered that he Government sought to provide proper payment to nedical men for services rendered, and that there should e no incentive to make a profit out of drugs. As to the ledge given by the Government to amend the Act, he aid that such a pledge would be binding on any Govern-nent in office at the time. As to diseases due to personal nisconduct, he said that it was desirable to get such eople better, and that they should be treated as well as ossible. The question for medical men to decide was: Is he remuneration to be paid to medical men under the nedical benefit a fair sum for attending such people vithout extra charge? In reply to another question, he aid that the proposal of allowing free choice of doctor nore than once a year was a question which should be onsidered.

At the conclusion of the meeting a vote of thanks, pro-osed by Dr. QUIRKE and seconded by Dr. WOLVERSON, was arried.

DEPTFORD.

At a meeting of the practitioners of Deptford the ollowing were elected as the Permanent Medical Com-nittee: Dr. C. J. Parke, Chairman; Dr. W. H. Payne, Honorary Secretary; Drs. Alice M. Wood, Rosa Ford. V. S. Carpenter, J. B. C. Blatchley, A. E. Crabbe, G. V. M. Gideon, C. G. Gooding, C. P. Handson, A. Kirby, J. Round. V. Scott, C. G. Wallis, and J. P. Walsh, J.P.

PROVISIONAL MEDICAL COMMITTEES.

Hampstead.

A MEETING of the profession in the area of the borough of Hampstead was held on December 6th at the Central Library, Finchley Road, when twenty-three practitioners were present. In the absence of the Chairman (Dr. Ford Anderson) and of the Vice-Chairman (Dr. Oakley), it was moved by Dr. PICARD, seconded by Mr. SCRASE, and carried unanimously that Mr. Ware take the chair.

Local Medical Committee for the County of London.—The election of three representatives for Hampstead was discussed. The following nominations had been received: Drs. Ford Anderson, S. L. Archer, G. P. Coldstream, E. W. Cunnington, A. W. George, E. L. Pritchard, and H. Sharman. Drs. Coldstream and Sharman withdrew their names. It was moved from the chair, and carried, that one of the members elected shall be a non-member of the British Medical Association. Thereupon Mr. S. L. Archer, being the only non-member of the Association nominated, was declared elected. A ballot was then taken for the remaining two vacancies, and Mr. Scrase and Dr. Winslow Hall were appointed scrutineers. On the votes being counted the CHAIRMAN declared Dr. E. L. Pritchard and Dr. Ford Anderson elected. The numbers were: Pritchard, 19; Anderson, 15; George, 9; and Cunnington, 3.

THE INSURANCE ACT IN PARLIAMENT.

Recent Proposals of the Government.

ON December 5th Mr. Lloyd George laid on the table of the House of Commons the Memorandum he had forwarded to the British Medical Association with the other papers on the subject published in the SUPPLEMENT last week, including the revised medical benefit regulations.

Attendances on Patients.

Mr. Bird asked the Chancellor of the Exchequer on December 11th whether the amount of personal time and attention which could be given by a fully qualified doctor who contracted to attend 1,000 patients under the National Insurance Act would be sufficient to comply with the regulations under the Act, seeing that such doctor would have to make on an average sixty attendances a day, or giving an average of less than five minutes to each patient after allowing for time taken in travelling; and whether any limit was to be put on the number of patients which a doctor could be allowed to contract to attend. Mr. Masterman said that care would be taken to ensure that doctors did not contract to give attendance to a greater number of insured persons than was consistent with the interests of those persons. No doctor would contract to attend 1,000 patients. The contract would be to give such attendance as might be needed by any of the insured persons on the doctor's list. The number of persons on that list might be 1,000 or some other number, but the majority of them would not require medical attendance at all during any given year. This correction in the basis of calculation alone would have the effect of multiplying by several times any estimate of remuneration available, or dividing similarly any estimate of work required. Even with this allowance, however, he was unable to follow the hon. member's figures as to attendances, which were not implied by any provision of the regulations, and appeared to be wildly in excess of estimates advanced even by critics of the Act. According to the experience of contract practice in the past, a doctor with 1,000 persons on his list (in respect of whom he would be receiving £350 to £400 per annum) would be required to give about twelve attendances a day, including both visits at the patient's home and consultations at the surgery. Sir P. Magnus asked whether the facts mentioned did not refer to selected lives under the Insurance Act. Mr. Masterman replied that he did not think so. The lives would be about the same as the 14,000,000 insured under the Act. Mr. Lawson asked whether the figures given were not founded on the experience of the friendly societies. Mr. Masterman replied not entirely. They were founded on the general report dealing with the contract practice as a whole. The Marquis of Tullibardine asked if the reply did not mean that the majority of people were to get no benefit from the Insurance Act. Mr. Masterman said he could not follow the noble lord's method of reasoning.

Dates of Payment.

Sir John Jardine asked on December 5th whether under the present proposals for medical remuneration, under the National Insurance Act, doctors would have to wait until after the end of each quarter before they were paid in respect of that quarter, or whether he could arrange for advance payments to be made? Mr. Masterman replied that although the exact sums to be paid in respect of any quarter could, of course, only be determined after the end of that quarter, arrangements would be made whereby it would be possible for doctors on the panel to receive payments in advance based on the numbers of insured persons on their lists at the beginning of the quarter.

Number of Insured Persons.

Mr. Leach asked on December 9th for the number of insured persons who were now members of approved societies; how many of them were women; and how many persons were now receiving the benefit of treatment in sanatoriums. Mr. Masterman replied that the exact figures as to the number of male and female members of approved societies could not be given until the first quarter's cards had all been scheduled, and this process would still require some time to complete. A return from the Insurance Committees as to the number of persons who had already received sanatorium benefit was being prepared.

Medical Benefit and Industrial Workers' Association.

Mr. Duncan Millar asked the Secretary to the Treasury, on December 9th, whether his attention had been directed to the formation of workers' associations in connexion with collieries and other large industrial works on the lines of the existing works' doctor system in order to provide medical attendance for dependants along with medical attendance to insured contributors under the National Insurance Act; and whether, as the matter was one closely affecting the administration of the medical benefit

under the National Insurance Act, he would see that every assistance was given by the Insurance Commissioners in the formation of such associations and in securing their recognition by the Insurance Committees as providing proper medical attendance and treatment under Sub-sections (3) and (4) of Section 15 of the National Insurance Act? Mr. Masterman answered the first part of the question in the affirmative, and said that the attention of Insurance Committees had been called to the necessity for making provision for such cases, and model forms of application for approval had been issued.

Discharges from Naval Hospital.

Mr. Mildmay asked the First Lord of the Admiralty, on December 9th, whether he would consider the advisability of altering the practice whereby men, unlikely to be fit for future service, were discharged from the Royal naval hospitals while still in immediate need of hospital treatment? Dr. Macnamara, who replied, said that the practice of the Admiralty in regard to men invalided out of the navy had been not to discharge them from hospital, except at their own request, until quite fit to travel to their homes. As a result of the passing of the Insurance Act, the sailor was entitled to sanatorium benefit if discharged suffering from tubercle. As already stated, it was certainly the desire of the Admiralty that such a man should, before being discharged from a naval hospital, be placed in communication with the Local Insurance Committee with a view to sanatorium treatment; and the question of how effect could best be given to this was now engaging attention.

Insured Persons Transferred from England to Ireland.

Captain Craig asked, on December 9th, if under the National Insurance Act an insured person coming from England to Ireland, after paying the higher contribution, and taken ill, being debarred from medical benefit, must forfeit to the State the whole of the accumulated difference between the higher rate paid by him in England and the lower rate payable in Ireland, though he might have contributed for months or years at the higher rate? Mr. Masterman said that if an English insured person moved his residence to Ireland there was no such "accumulated difference" as was suggested between the higher rate he had been paying in England and the lower rate which he would at once begin to pay in Ireland. While in England he would have been insured for medical benefit and that insurance was fully equivalent in actuarial value to the extra 1½d. a week which he had been paying.

Sum Received from Insured Persons in Ireland.

In reply to Mr. Fell on December 9th, Mr. Masterman said that the comparative smallness of the receipts from contributions under the National Insurance Act in Ireland was partly due to the fact that the contributions were smaller, in the absence of provision for medical benefit, and partly to the fact that the proportion of persons working on their own account and therefore not liable to compulsory insurance to the total population was much higher than in Great Britain. The contributions paid in Ireland would be kept distinct from those paid in England, Scotland, and Wales, and applied only to benefits for insured persons in Ireland. The sanatorium benefits for insured persons would, under the circumstances, be possible for Ireland. The extension of sanatorium benefit to dependants, if it took place, would be governed by the provisions of Section 17 of the Act. The fact that a smaller number of persons were insured relatively to the population than in Scotland and Wales did not mean that the money available for sanatorium benefit for each of those persons was less.

Institutional Treatment.

Sir Hildred Carlile asked the Chancellor of the Exchequer on December 9th (1) whether any estimate had been made, and, if so, what, of the number of beds that would be required for the institutional treatment of patients who could not be adequately treated in their own homes under the National Insurance Act; and whether in that case he would lay the figures before the House, and, in addition, give any estimates which had been compiled showing the average cost of this branch of the work per thousand patients which might be thrown on the revenues of the Local Health Committees; and (2) if how, under the National Insurance Act, major operations were to be provided for; and whether the Health Committees would in all cases have power to incur whatever expense might be necessary in arranging for these; whether in that case the patient would have any freedom of choice as to the operating surgeon; and whether the Local Health Committees would be bound to accept the advice of the particular medical man and have recourse to the services of the operator he recommended? Mr. Masterman said that medical benefit under the Act, as had been frequently defined, included that service which could ordinarily be given by general practitioners who come on to the panel. He knew of no reason why the present treatment of the working people in hospitals and other similar institutions should be disturbed by the National Insurance Act. If as a result of experience the voluntary hospitals found that they required State grants for the treatment of insured persons, the whole question of State control would necessarily be raised; and at present this was not contemplated under the Act. The other parts of the two questions therefore did not arise.

Sanatorium Treatment.

Mr. Wright asked the Chancellor of the Exchequer, on December 4th, from what source the cost of treatment in the county of Derbyshire of an estimated number of 266 fresh cases of consumptives a year, who would be insured persons or their dependants, amounting to £26,600 in the first year and £53,200 in subsequent years, would be derived; if, under the National Insurance Act, a consumptive would be kept for two years under the best conditions that the latest scientific inventions could discover at a cost of £200; and, under that Act, the amount available for sanatorium treatment in that county was, in the event of the doctors accepting his recent offer, only £6,570, and in the event of their refusal, £10,950. Mr. Masterman, who replied, said that the estimated number of insured persons in the administrative county of Derbyshire was 167,400. According to the report of the Departmental Committee on Tuberculosis [Cd. 6164], the number of sanatorium beds required for that number of persons, taking into account the average stay in the institution, would be between thirty-three and thirty-four. The number of hospital beds required would probably be the same. Taking the average cost of a bed at as much as 35s. a week, the amount required for the treatment of insured persons would be about £6,100 per annum, leaving an ample margin for emergencies. If sanatorium treatment was extended to the dependants of the insured and other non-insured persons, additional sums might be made available for the purpose.

Earl of Kerry asked Mr. Masterman if he was aware that the figure given in the question of £200 was taken direct from a speech delivered the other day by the Chancellor of the Exchequer, and also that the other figures were those of the Derbyshire Insurance Committee. Mr. Masterman replied in the negative, and added that he did not think that the Chancellor of the Exchequer ever said that every sanatorium patient would require £200 spent upon him. He gave an example in which the medical treatment required would cost that sum, and he said the sum would be forthcoming. It was not estimated by the Astor Committee, which was a committee of experts, that £200 would be required to cure every sanatorium patient.

Mr. Rupert Gwynne asked if the House was to understand that the example of the Chancellor of the Exchequer gave was not an average case, but an exaggerated one? Mr. Masterman said that it was a case that came before an Insurance Committee and was recommended for treatment.

Mr. Masterman stated, on December 5th, in reply to a question by Mr. Lane-Fox, that a blacksmith or any other insured person suffering from tuberculosis could be recommended by the Insurance Committee for sanatorium treatment, the cost of which might involve an expenditure reaching £200, even though the amount of contributions paid by or in respect of an insured person before the date of illness did not exceed 4s. 8d. Mr. Lane-Fox inquired if that was a case which could honestly be put as a typical case under the Insurance Act. Mr. Masterman said that it was a case which actually occurred, and it was a very remarkable one. Mr. Lane-Fox asked if it was a fair case to be quoted as typical or was it exceptional.

Mr. Masterman replied that it was a true case and a perfectly fair one, and he had no means for suggesting that it was a unique case. The recommendation for sanatorium benefit would continue so long as the patient would receive the benefit from the sanatorium. Mr. Jonathan Samuel asked if it was possible under the Insurance Act for an insured person—say, aged 21—after being insured for two years, and having paid £1 14s. 8d. in premium, to draw in benefit £617 10s. Mr. Masterman replied in the affirmative, and said that was one of the beneficent results of national insurance.

Women's National Health Sanatoriums in Ireland.

On December 10th, in reply to Mr. Swift MacNeill, Mr. Masterman said that he was informed that 138 patients had been recommended by Local Insurance Committees in Ireland for treatment under the National Insurance Act in sanatoriums managed by the Women's National Health Association. In addition 26 patients had been recommended for domiciliary and dispensary treatment under the Samaritan Committee of the association; of these 164 persons 145 had received, or were now receiving, treatment.

Sanatoriums in Ireland.

In reply to Mr. Swift MacNeill, on December 5th, Mr. Russell said that he was informed by the honorary secretary of the Women's National Health Association, that the counties in Ireland which had intimated their intention of availing themselves of accommodation, either on a temporary or permanent basis of the Peamount, Rossclare, or Allan Ryan Sanatoriums, under the control of the association were: Armagh, Carlow, Cavan, Clare, Donegal, Dublin, Fermanagh, Kerry, Kildare, Kilkenny, King's County, Leitrim, Limerick, Londonderry, Louth, Meath, Monaghan, Roscommon, Tipperary North, Tipperary South, Tyrone, Waterford, Westmeath, and the county boroughs of Dublin, Limerick, and Londonderry.

SCHEMES FOR INSTITUTIONAL TREATMENT OF TUBERCULOSIS.

CIRCULAR LETTER FROM THE LOCAL GOVERNMENT BOARD IN ENGLAND.

THE following circular letter, bearing date December 6th, 1912, has been addressed to the councils of counties and county boroughs (England) by the Local Government Board:—

Sir,

I am directed by the Local Government Board to state that they have received a large number of communications from local authorities who are engaged in the organization of schemes for the institutional treatment of tuberculosis. The Board think it may be convenient that they should offer some further observations on the subject, supplementing what has been stated in their circular letter of May 14th last.[1]

As they have already indicated, the unit for each scheme could be the county or the county borough, or combinations of these areas. Complete schemes will comprise two forms of institution, the dispensary and the sanatorium, the latter term being here used to cover various forms of residential institution. In some cases combinations may be desirable for the provision of sanatoriums alone, the constituent authorities each providing dispensaries and beds for purposes of observation and education and for advanced cases. The Board look to the councils of counties and county boroughs or combinations of these bodies to formulate complete schemes, even though parts of such schemes may, in some instances, be carried out by voluntary agencies, such as hospital or dispensary authorities.

The organization of schemes must be undertaken as part of the public health administration of the area to which they relate, and the medical officer of health should be the chief executive and organizing officer. Where schemes relate to more than one county or county borough, it will be for the councils concerned to arrange who should act as the chief executive officer.

[1] BRITISH MEDICAL JOURNAL, May 18th, 1912, p. 1157.

The Dispensary.

The Board are advised that a very large proportion of cases suffering from tuberculosis at any one time can be properly treated at an efficient dispensary, and they would urge the council to proceed at once with the organization of a dispensary system for their area. The head of a dispensary must be a medical practitioner specially trained in the diagnosis and treatment of tuberculosis, whose services will be available both for treating cases at the dispensary and as a consultant. He should also be prepared to act as medical adviser to the Insurance Committee for purposes of sanatorium benefit, on terms to be agreed on between the council and the Insurance Committee, and he should not be engaged in private general practice. Occasionally the medical officer of health may have had the requisite special training, and may also have sufficient time to enable him to act as head of the dispensary in addition to performing his ordinary duties.

The selection of cases for other forms of treatment should usually depend on the advice of the chief dispensary officer, and he should work in close co-operation with the medical superintendents of sanatoriums and other residential institutions to which patients may be drafted. It will frequently be desirable that he should consult with the medical officer of health of the sanitary district in selecting cases for treatment in residential institutions, for the selection may often depend on the conditions under which the patient is living, and in regard to these the medical officer of health may possess information which is not possessed by the dispensary officer. At the dispensary itself some of the more modern methods of treatment can be given under proper supervision and control. It is desirable that observation beds should be available for use in connexion with a dispensary, though the beds need not be in the dispensary itself.

As a general rule the medical assistants of a dispensary should not be engaged in private general practice, though in many instances their whole time will not be required for dispensary work, and in such cases the office might be combined with other public medical appointments, such as medical officer of health, assistant school medical officer, public vaccinator, police surgeon, etc., when these are held by men not engaged in private practice.

Care should be taken to select situations for the dispensaries which are easily accessible. In counties more numerous branches will generally be necessary than in towns, and the Board have no doubt that the councils of urban and rural districts and of parishes will be willing to allow any suitable accommodation which they may possess to be utilized on certain days for the purpose of branch institutions. In some cases it will be found that the same building would afford accommodation for a school clinic and a dispensary.

In many cases a dispensary provided by a county borough council can conveniently serve adjoining areas in the county by agreement with the county council, and such an arrangement will often be desirable and economical.

The arrangements made for the examination and treatment of patients at the dispensary should be such as will preclude any unnecessary waiting on the part of the patients, and as far as practicable each patient should be instructed to attend at the dispensary at a specified time, and should be seen at that time. Non-insured persons would usually be referred to the dispensary by their own doctor or by the medical officer of health. The procedure in regard to insured persons will be in accordance with the arrangements made with the Insurance Committee.

It is not contemplated, nor is it in the Board's view desirable, that the dispensary officer or any member of the dispensary staff should undertake ordinary domiciliary treatment. As a general rule, should any domiciliary treatment be required by patients who are attending a dispensary for treatment, or by other persons, it should be carried out by general practitioners, but the services of the dispensary staff should be available in emergencies, and for purposes of consultation.

In the case of insured persons, the cost of domiciliary treatment will be paid out of the funds of the Insurance Committee; in other cases by the patient or some one acting on his behalf.

The Board's order of July 26th last[2] prescribes regula-

[2] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, August 3rd, 1912, p. 200.

tions which are to be observed in connexion with the domiciliary treatment of insured persons. The Board think it desirable to point out that these regulations apply only to the treatment of patients who are being treated in their own homes, and have no application to the treatment which is being given at the dispensary.

Shelters and other articles which could be suitably used by the patient in his own home should be lent out for the use of patients when required. These articles should usually be lent out from the dispensary.

The Sanatorium (including Hospitals and other Residential Institutions).

The sanatorium, which is intended for the treatment of early cases requiring a prolonged stay, should usually contain not less than 100 beds, as recommended in Section 23 of the interim report of the Departmental Committee on Tuberculosis. Beds for advanced cases, for educational treatment, and for purposes of observation should as far as practicable be arranged for in existing institutions.

Preventive Measures.

The Board wish to emphasize the fact that it is the duty of the medical officer of health of the sanitary district, upon the receipt of a notification under the tuberculosis regulations, either himself, or through an officer acting under his instructions, to make such enquiries and take such steps as may appear to him necessary or desirable for preventing the spread of infection and for removing conditions favourable to infection. These inquiries will necessarily include investigation into sources of infection, search for contacts, and inquiry into housing conditions.

Where the population served by a dispensary is not sufficient to require that the staff of the dispensary should devote the whole of their time to the work of the dispensary, one or more of the officers of the dispensary may properly undertake, under the direction of the medical officer of health of the sanitary district, the duties in question.

In counties where it is desired than an officer of the dispensary should perform these duties, an arrangement should be made between the county council and the district council, under which this officer would act, for the purpose of the regulations, as an officer of the district council under the instructions of their medical officer of health. In the Board's view this combination of offices has much to recommend it.

Whether this arrangement is made or not, if at any time the officers of the dispensary should have reason to think that the home conditions of any patient are detrimental to health, they should at once report the matter to the medical officer of health.

Finance.

As regards capital expenditure, the Board indicated in their Circular of May 14th last the amounts of the grants which they are prepared to make.

Consideration has since been given to the arrangements to be made in regard to the distribution of the maximum grant for treating non-insured persons, as well as the dependants of insured persons, which was announced in the letter addressed by the Chancellor of the Exchequer to Mr. Henry Hobhouse, representing the County Councils Association, on July 31st last. A copy of this letter is appended.

The scheme proposed as regards this grant will work out as follows:

The National Insurance Act requires Insurance Committees to make arrangements for insured persons to receive treatment, and empowers them to extend their arrangements so as to include also the dependants, or any class of dependants, of insured persons. The Act also provides that any estimated excess of expenditure over income may be met as to half by the local authority and as to the other half from the Exchequer in cases where the expenditure has been sanctioned by the local authority and the Treasury. It has now been decided that the Exchequer will definitely pay half of the deficiency in all cases where the local authority has accepted the like

It has, however, been represented that it would be a great advantage in the interests of the community as a whole if schemes could be undertaken which would cover not only insured persons and their dependants (who together form the great bulk of the population), but also those who fall within neither category. The Government are willing, therefore, that in this case also the Exchequer should, under the conditions described below, bear half of any deficiency.

The National Insurance Act requires that Insurance Committees should be primarily responsible for seeing that insured persons, and any class of the dependants of insured persons to whom they have extended sanatorium benefit, receive the appropriate treatment, and this responsibility necessarily remains under the system now proposed.

Subject, however, to this responsibility, it is competent to the Insurance Committees to enter into arrangements with the Local Authorities for providing institutional treatment and to pay over the sums available under the Act for the purposes of such treatment.

In order to secure compliance with the terms of the Act and at the same time to arrive at a complete scheme for the treatment of tuberculosis generally, it will be desirable that the Insurance Committees should extend sanatorium benefit in so far as institutional treatment is concerned to the dependants of insured persons and should arrange, subject to the consent of the Insurance Commissioners, to pay over to the Local Authorities the sums available for institutional treatment, the latter being responsible for such treatment of all classes whether insured or dependants of the insured or non-insured.

Where arrangements on these lines are made with the Insurance Committees and approved by the Insurance Commission the general treatment of tuberculosis will be secured, and it will be possible for the Board to make grants in aid of the total cost of the complete schemes. The intention is that the amount of the annual grant should be one-half of the total net cost incurred, within reasonable limits, by or on behalf of a county or county borough council, or combinations of these bodies, in the treatment in dispensaries, sanatoriums, and hospitals which form parts of a scheme approved by the Board for the general treatment of tuberculosis in the area, of all persons, whether insured persons, dependants of insured persons, or persons who are neither themselves insured persons nor their dependants, after deducting the amounts received from Insurance Committees out of the moneys available under the National Insurance Act for sanatorium benefit, and any sums received in respect of the treatment of non-insured persons or otherwise.

The local authority and the Exchequer would thus each be responsible for one-half of the net deficiency on the whole scheme.

Any sum voted next year for this service would be available for grants in respect of expenditure incurred in 1912–13 as well as the prospective expenditure of 1913–14.

Some time must elapse in many areas before a complete scheme of institutional treatment can be provided, and in some instances sanatoriums will be provided for a larger area than dispensaries and hospitals.

I am to request that the Board may be furnished on the accompanying forms with such particulars as it may be possible to give in regard to any expenditure incurred and estimated to be incurred by the council in carrying out a scheme for the treatment of tuberculosis during the current year and next year. Any additional remuneration which the council may decide to award to the medical officer of health should be included in their estimate of expenditure. Forms are also enclosed on which the main particulars of each scheme should be set out. Three copies of each form are enclosed; two copies of each should be filled up and returned to the Board by the end of this month.

Where any parts of a scheme are to be carried out by a voluntary association by arrangement with the council, the contributions of the council towards the expenditure of the voluntary association should be included in the council's estimate.

Additional copies of the forms will be forwarded on application.

I am, Sir,

Your obedient servant,

H. C. Monro, Secretary.

The Clerk of the Council,

or

The Town Clerk.

COPY OF THE LETTER OF THE CHANCELLOR OF THE EXCHEQUER TO MR. HENRY HOBHOUSE.

Dear Mr. Hobhouse,—The President of the Local Government Board and I have considered the representations which were submitted to us yesterday on behalf of the County Councils Association with reference to the financial arrangements for defraying the cost of schemes for treatment of tuberculosis.

As regards capital expenditure, the Government have provided a sum of £1,500,000 to aid the provision of sanatoria and other institutions, and in their circular letter of the 14th of May last the Local Government Board announced that, subject to certain limitations, they would provide three-fifths of the outlay on sanatoria and four-fifths of the outlay on dispensaries out of this fund. We understand that local authorities are satisfied with these arrangements and that their main anxiety is in regard to the annual cost of maintenance. I gathered that local authorities are prepared to bear 25 per cent. of the annual cost of schemes, if the remainder were provided from other sources; and that their request is that this should be paid to them direct by the Local Government Board. We have submitted your views to our colleagues, and the Government are prepared to go a long way towards meeting your requests.

Before setting out what further arrangements the Government are prepared to make it may be well to recapitulate the present position. Under the Insurance Act an annual sum of about one million is provided for the treatment of insured persons. While the Bill was passing through Parliament provisions were inserted for extending sanatorium benefit to dependants of insured, and in view of this the Government consented to bear one-half of any deficit in regard to sanatorium benefit where local authorities undertook the other half. It is now urged that schemes for the treatment of tuberculosis should relate to the whole community, and that generally they should be organised and carried out by the councils of counties and county boroughs. This extension involves additional outlay, and in view of this the Government have decided to place at the disposal of the Local Government Boards of the three kingdoms annually a sum of money which will represent approximately half the total estimated cost of treating the non-insured persons as well as the dependants of insured persons. This money will be distributed by the Local Government Boards, in pursuance of regulations to be made by those Departments, to local authorities which undertake schemes, to be approved by the Departments, for the general treatment of tuberculosis in their areas; and provision will be made accordingly for these grants in the Estimates of the three departments.

As regards the cost of treating insured persons, the sum already provided under the Insurance Act, which, as I have already stated, is about one million pounds, can only pass to local authorities in pursuance of agreements made between them and Insurance Committees. But I have no doubt that Insurance Committees generally will be anxious to deal with the local authority of their area, and the association may rest assured that the Government will do all in their power to secure this.

I should like to take this opportunity of expressing my great appreciation of the way in which county councils and county borough councils have taken up this important work, and I feel sure that, in view of the additional grants I have herein described, they will proceed without delay to formulate and carry out their schemes.

Yours sincerely,

31st July, 1912. D. LLOYD GEORGE.

TREATMENT OF PULMONARY TUBERCULOSIS IN LONDON.

A JOINT meeting of the medical staffs of the London Chest Hospitals was held at the house of the Royal Society of Medicine on December 10th, 1912, when the following resolutions were adopted:

1. That whatever arrangements be made by the hospitals for consumption and other diseases of the chest, to enable them to co-operate in dealing with tuberculous cases under the Insurance Act, it is most desirable that for the present such provision as already exists for tuberculous cases of all grades, and of different social groups, be fully maintained.
2. That each special hospital for diseases of the chest should be the central tuberculosis authority in its own area.
3. That all tuberculosis departments or dispensaries in such an area should be co-ordinated with this central authority.
4. That it is desirable that all medical matters relating to the conduct of a tuberculosis dispensary established by a chest hospital should be under the undivided control of the hospital authorities.
5. That each special chest hospital as a central authority should be a centre for the training of tuberculosis officers, and for post-graduate instruction in tuberculosis.
6. That the formation of a tuberculosis department in connexion with each general hospital, with or without an associated dispensary area, is necessary for the adequate practical training of the undergraduate student.
7. That the principle of remuneration for all medical services rendered under the provisions of the Insurance Act in regard to tuberculosis be recognized by the management of each chest hospital.
8. That a standing committee representative of the medical staffs of the London Chest Hospitals be constituted to deal with matters of common interest as they arise.

CORRESPONDENCE.

EXISTING CONTRACT PRACTICE.

DR. W. B. BENNETT (Aigburth, Liverpool) writes: Dr. J. D. Moir's table in the SUPPLEMENT of November 30th, p. 611, is inaccurate and incomplete. He there states that in the postal medical service there is no wage limit. There *is* a wage limit of £150, except in London, where it is £160. Moreover, the £160 limit under the Act is not enforced in the case of manual workers or those who have been voluntarily insured for five years.

To complete his table Dr. Moir should have added another column, showing that, of the four services, the Act alone does not require medical examination on admission. Our "absolute right" to refuse any insured person is extremely doubtful, as, by Regulation 18 (3) and (7), patients who have made no arrangements, or "when a practitioner *has refused to continue to treat*, will be distributed by the local committee amongst practitioners on the panel.

THE BEARING OF THE INCOME LIMIT ON THE DECISION.

DR. G. C. GARRATT (Chichester) writes: The Government has spoken its last word. It is open to question whether by exercise of more tact we should have gained more. Regrets are, however, idle; it is infinitely more important to remember that the supreme question which governs all others remains unsettled, and may yet, if only we remain united, be decided in our favour. I allude, of course, to the limit of wage. Let me show how important it is.

First, as a matter of principle, if once we concede that persons quite able, and hitherto willing without Government assistance, to pay ordinary fees, do so no more, how long shall we be able to refuse similar privileges to others not assisted and equally or more necessitous? The evil will spread by competition amongst ourselves, and soon private practice will, for a large proportion of our number, become impossible.

Next, most objections to the Act will be modified, if not removed, by a proper limit of wages; thus:

1. *Duties.*—It is obvious that the lower the limit the fewer and less exacting the beneficiaries.
2. *Extras.*—With such limit beneficiaries cannot have acute serious illnesses, difficult fractures, or any but small operation cases treated at home; they cannot afford a nurse, and their homes are unsuitable. On the other hand, they will be fit cases for hospital, and will be treated there.
3. *Unreasonable Demands.*—The fewer the insured and the more independent the doctor the easier to prevent these.
4. *Mileage.*—The more private patients, who pay mileage, retained the less important this question.
5. *Complaints.*—These will also be reduced. Few genuinely poor would bring any but a very sound complaint before an educated committee on which doctors are represented.
6. *Right to Make Own Arrangements Voluntarily.*—This becomes less important the lower the wage; more must do so compulsorily.
7. *Approved Institutions* have always owed their dangerous properties largely to the presence therein of persons whom a sound wage limit would exclude.
8. *Representation on Insurance Committees.*—If the representation of the insured are private patients of the doctors, and a proper limit should often secure this, their desire to quarrel with their doctor will be considerably modified.

I would therefore most earnestly beg that the answer given by every doctor as to whether or no he will go on a panel be everywhere the same. "*I cannot say until I know the wage limit in my district.*" This answer will surely be both reasonable and strictly legal, and if we remain united, and nowhere form panels until everywhere this fundamental question is decided to the satisfaction of all, I truly believe that all reasonable objections to the Act will be met, and we can remain as united in peaceful service as we have been in strenuous opposition. Conversely, if we fail to get justice in this matter—and it is one upon which we should have public support—it will not be too late to strike.

A TRIAL DESIRABLE.

DR. A. W. BURRELL (Fareham, Hants) writes: The revised Regulations are now in the hands of all practitioners. They are conciliatory in tone, and it is to be hoped the Commissioners propose to interpret them fairly. It seems to me that the profession might agree to give the Act a trial, provided that Mr. Lloyd George passes immediately a short amending Act to (1) exclude from medical

benefit the five year volunteers; (2) allow us to dispense at 1s. 6d., the Commissioners to retain the balance of 6d. for anaesthetics and surgical appliances.

It should be made clear that we wish to control the dispensing in the interests of the public. Any one acquainted with the working classes can tell how they treasure a prescription and have it made up on their own diagnosis, often with disastrous results.

PENSIONS?

Dr. E. GORDON HULL (Streatham) writes: When the Act comes into force next January, if we consent to serve, we shall, *ipso facto*, become a branch of the Civil Service. Now every other civil servant upon the attainment of a fixed age, or if incapacitated during employment, becomes entitled to a pension. The risks run by medical men are out of all proportion to those incurred in any other branch of the Civil Service. A way out of the present deadlock might be found by the guarantee of a pension, graduated according to age and time of service, to those accepting service under the Act. We might then be induced to waive some of our less important cardinal points. The cost to the Government would not be great (very few medical men attain to great age) and a full pension, say, of £250 at the age of 65, with possibly a proportionately lesser amount for those broken down in the exercise of their profession at an earlier age, would be not only an inducement to serve, but would be nothing less than our right.

THE INSURANCE RISK.

Dr. H. B. LUARD (Osmotherley, Northallerton) writes: Whatever decision our Association may come to, it is absolutely certain that a very large number of us are determined not to take upon our shoulders the insurance risk, now legally falling upon the Government by Act of Parliament.

Government can theoretically get over this difficulty by a State whole time medical service covering the whole three kingdoms; but practically this is impossible for many years to come, for lack of the huge army of whole-timers required: and it cannot even be justly applied piecemeal as a temporary expedient, as it would deprive beneficiaries of their statutory right of free choice of doctor.

Those of us who refuse the insurance risk do so in the only logical or possible way, by only accepting payment per attendance—that is, for services rendered. The already agreed tuberculosis agreements form a precedent for this procedure, and it is based upon the firmly established custom of the profession and of the public. The overwhelming recommendation of this principle is that on it a system can be easily devised, which entirely preserves the traditional and essential freedom of both doctor and patient. This freedom implies that, after all, both doctors and beneficiaries in the main will act honestly and work together for the common good, as they have done in their private relations for generations past. The vast bulk of doctors do not pay unnecessary visits, and give their best skill, because the freedom of practice on both sides makes it to their interest to do so, or else lose their patients. The check on unnecessary calls or malingering on the part of the beneficiaries can only be found in making a portion of every attendance chargeable in cash down to the beneficiaries, which I believe to be inevitable and salutary in all ways.

Seeing that the only alternative is to impose the crushing burden of insurance risks upon the doctor's shoulders—a burden which the community could easily bear, by State subsidy combined with local, public, and individual private charity—an additional advantage of settlement on these lines is that the whole of the galling and impossible red-tape rules and requirements, which, to my mind, constitute the most noxious elements in the bargains offered us, will be swept away. That some personal inspection may be desirable by the State, under the principles which I have outlined, I do not deny. But the personal inspection of experts is, after all, an infinitely superior weapon of efficiency to many millions of written returns, which experience in bureaucracies, such as the Indian Government and the army, prove to be mainly waste paper.

DISPENSING.

Colonel P. BROOME GILES, C.B., A.M.S., T.F. (Bletchley), writes: Earlier in the negotiation an attempt to cajole was made; we were told that if the Act was oppressive it could be amended in three years. At the last moment we are told with brutal frankness "the Act does not permit."

The future of the Act is in the hands of the medical profession; if we hold out as a united profession we must win; on the other hand, should we be divided we lose not only now but for ever.

After thirty years' experience in a country practice, I am certain the medical man must do his dispensing, and must be paid mileage in addition to a per capita allowance.

"NO POLITICS."

Sir JAMES BARR (Liverpool) writes: In reply to the tirade against myself in the SUPPLEMENT of the BRITISH MEDICAL JOURNAL of December 7th by Dr. J. Owen Jones of Holywell, he may be quite incapable of acquiring the habit of speaking the truth, but I have good reason to complain that you, who have had considerable experience in libel actions, should publish statements which you must know are absolutely false. It is very noticeable that in the discussions over the Insurance Act it is only the followers of Lloyd George, who are steeped in politics—men who want to work the Act—that accuse the opponents of the Act of being actuated by political motives. He states that "my chief object is to wreck the Insurance Act simply because Mr. Lloyd George—a Radical and a Welshman—has to do with it." There is not the shadow of foundation for such an assertion. In fact, I was in favour of the bill for a week or ten days after its introduction, because I was misled by the glowing statements of Mr. Lloyd George that it was going to be on preventive lines. But as soon as I saw the bill, I am pleased to say that I was among the first to see its defects, and that it would be a very injurious and retrograde step so far as the interests of the public were concerned. When I was sent up on a deputation to interview some members of Parliament on the bill, I made it quite plain that I was in favour of ending the bill, as it was impossible to mend it. If the bill had been piloted by Mr. Bonar Law or by Mr. Austen Chamberlain I would have been much more strongly against it than I am now, because I should have expected more intelligence.

"Mr. Lloyd George's ambition is to help his fellow human beings—to strengthen the weak, help the poor, and succour the sick." I think we have often heard something like this from Mr. Lloyd George, so Dr. Owen Jones might have tried something original. How is this to be accomplished by the Act? Ten shillings a week for a man and a family will not go far to strengthen any one. The *very poor* and helpless Post Office contributors are those who will get no benefit out of the Act. The sick will be succoured by the worst medical service that the country can provide. It has never troubled me in the least as to whether Dr. Owen Jones gets 2s. 6d. or 6s. 6d. for each insured person under his care—in fact, his very existence is to me a matter of the utmost indifference, but I have always been anxious that the wage earners—the most important class in the community—should receive proper care and medical attention when ill. I contend that such care and attention cannot be had for the money offered. This is most lamentable when we know that over five millions sterling are going to be spent next year in administrative expenses. If these five millions, instead of being wasted on useless unproductive labour, had been handed over to the charities of this country an enormous amount of good might have been done. Sir Benjamin Johnson, the ex-leader of the Liberal party in Liverpool, a man whom I much admire personally and also as an honest employer of labour, has got a sick benefit society in connexion with his works. Every employee who subscribes 4d. a week gets 24s. a week when ill; what will such a one say when under this Act he only gets 10s.? Sir Benjamin Johnson does not employ Sir Robert Morant and his satellites to manage his sick benefit society.

"Sir James Barr's ambition is to destroy the lives of his fellow human beings." I can scarcely think that Dr. Owen Jones is such a fool as he appears; I prefer to call him a prevaricator. About the only life to which I would express any indifference is that of Dr. J. Owen Jones. The life of the nation is to me a matter of far greater importance than his livelihood.

The best burglary insurance policy which this nation could effect would be to spend an additional 30 millions on the navy, and 10 millions on the territorial forces yearly. This would not cost a single life, might save hundreds of

thousands of lives, and preserve the nation from ruin. It would also raise up a manly, fearless, independent, and self-reliant race; it would settle the unemployment question, and, unlike the Insurance Act, would be a true Health Act. It would render this so-called Health Insurance Act—which is a travesty on the truth—quite unnecessary. Possibly it might throw Dr. J. Owen Jones out of employment, but the nation would have to try and survive that. Our profession certainly could do without him.

Mr. Lloyd George is to me merely a name; it is not he, but his works, that trouble me. If I have any personal antipathy to the man, it is entirely acquired from my Welsh friends who know him, and know of him. The worst opinion which I have had comes from Criccieth, where, I presume, he is fairly well known.

THE PSYCHOLOGICAL ASPECT OF THE INSURANCE SCHEME.

Dr. E. NEWLYN SMITH (Willesden) writes: The relation between patient and doctor—to whatever class the former may belong—is much more than the relation between a sick person and one possessing the knowledge to diagnose his disease and the power to administer the appropriate drug, important as this knowledge and this power obviously are.

There is a further relation involved, and it is the ability on the part of the doctor to understand his patient's personality and idiosyncrasies, and to win his confidence not only as a doctor but as a human being who sympathizes with him in his sickness and exerts himself to aid him in every possible way, and not merely to cure, if possible, his ailment, but to teach him how to regulate his life so that his illnesses may be fewer and his value to the nation thereby greater.

Now these considerations apply with as much force to the class insured under the National Health Insurance Act as to the wealthy and the leisured. To the former class belongs the vast army of men and women workers, such as school teachers, clerks, telegraphists, typists, etc., amongst whom there is an appalling increase of nervous affections of all kinds, drug habits, and the like, which cripple their activities as workers, render miserable their own lives and the lives of their friends, and lead too often to complete nervous breakdown and probably in many instances to insanity. How, then, at the present time, when increasing attention is being paid both by the public and the medical profession to the psychical side of disease and of treatment, are such cases to be dealt with under Mr. Lloyd George's latest scheme?

These are not the cases of those who can afford to seek advice from specialists working on psychological lines; they are the everyday cases of the general practitioner—cases which a rapidly growing section of that body is learning to treat with greater and greater success. How, then, is the need of these cases to be met? By the establishment of a system of inspection, lest by any chance the potent pill and the miracle-working mixture should have been omitted in favour of the only treatment which, so far as we yet know, can in any way benefit these cases—treatment by mental means, persuasion, suggestion, and the like.

It will, of course, be answered that medical inspectors are to be appointed. So far, so good; but I put it to any sufferer from functional nervous disease, drug habit, or what not, would he or she summon up courage to face the ordeal, always a severe one, of unburdening the mind to a trusted medical adviser, with the knowledge that that adviser works always under the eye of a State-appointed inspector, albeit a medical man, who may or may not have devoted attention to these cases, and may or may not still rely on the virtues of this or that chemical nostrum to "minister to a mind" disquieted though not "diseased." And whether the disease be of this character or not, if it be but the simplest case of dyspepsia, we have surely learnt by now that even here the confidence of the patient on the one hand and the personal influence of the doctor on the other play at least as important a part as the drugs prescribed. But here comes in the criticism, however friendly, of a third person—the medical inspector—who may or may not be in agreement with the lines adopted by the practitioner. Surely, Sir, the "unseemly wrangling round the sick bed," of which we have heard so much, will not be provoked by the medical attendant, nor will it conduce to the peace of mind, let alone the recovery, of the patient.

Association Intelligence.

SPECIAL MEETING OF COUNCIL.

A SPECIAL meeting of the Council was held at 429, Strand, London, W.C., on Wednesday, December 4th, 1912.

Present.

Dr. J. A. MACDONALD, LL.D., Taunton, Chairman of Council, in the Chair.

Sir JAMES BARR, M.D., LL.D., Liverpool, President.

Dr. W. AINSLIE HOLLIS, Hove, President-elect.

Mr. T. JENNER VERRALL, Bath, Chairman of Representative Meetings.

Dr. EDWIN RAYNER, Stockport, Treasurer.

Dr. JOHN ADAMS, Glasgow
Dr. J. GRANT ANDREW, Glasgow
Dr. R. M. BEATON, London
Dr. M. G. BIGGS, London
Dr. R. C. BUIST, Dundee
Dr. CHARLES BUTTAR, London
Dr. J. S. DARLING, Lurgan
Dr. MICHAEL DEWAR, Edinburgh
Mr. E. J. DOMVILLE, Exeter
Dr. J. G. DURRAN, Leighton Buzzard
Dr. A. C. FARQUHARSON, Durham
Mr. C. E. S. FLEMMING, Bradford-on-Avon
Mr. T. W. H. GARSTANG, Altrincham
Dr. JOHN GORDON, Aberdeen
Surgeon-General J. P. GREANY, I.M.S., Ealing (Indian Medical Services)
Dr. T. D. GREENLEES, London (Cape of Good Hope Branches)
Dr. MAJOR GREENWOOD, London
Dr. J. R. HAMILTON, Hawick, N.B.
Dr. T. ARTHUR HELME, Manchester
Mr. F. C. LARKIN, Liverpool
Mr. C. COURTENAY LORD, Gillingham
Dr. J. LIVINGSTONE LOUDON, Hamilton
Mr. ALBERT LUCAS, Birmingham
Dr. EWEN J. MACLEAN, Cardiff
Dr. JAMES METCALFE, Bradford
Dr. C. H. MILBURN, Hull
Dr. C. G. D. MORIER, London (Victoria, South and West Australian Branches)
Dr. GEORGE PARKER, Bristol
Dr. LAURISTON E. SHAW, London
Dr. FRED. J. SMITH, London
Mr. D. F. TODD, Sunderland
Mr. E. B. TURNER, London
Dr. W. J. TURRELL, Oxford
Dr. W. J. TYSON, Folkestone
Mr. D. J. WILLIAMS, Llanelly

Letters of apology for non-attendance were read from Inspector-General Bentham, R.N., Professor Corby, Mr. R. J. Johnstone, Dr. H. C. Mactier, Dr. R. B. Mahon, and Dr. E. S. Reynolds.

REPORT TO THE DIVISIONS.

The Council had before it a report of the State Sickness Insurance Committee on the interviews between the Special Committee appointed at the Special Representative Meeting and the Chancellor of the Exchequer, and on the Memorandum as to medical benefit forwarded by the Chancellor of the Exchequer as the result of these interviews.

The greater part of the time of the Council, which sat from 2 p.m. until after midnight, was occupied in the consideration and emendation of this report, which formed the basis of the report issued by the Council to the Divisions and published in the SUPPLEMENT of December 7th, p. 617 et seq.

On the motion for the reception of the report Dr. HELME referred to the motions on the Agenda Paper of the Special Representative Meeting, which at the conclusion of the meeting on November 20th had been handed over to the Council for consideration, and in particular to a motion by the Bath Division, which was as follows:

> That in order to safeguard the interests of the medical profession in connexion with the treatment of insured persons, it is advisable to establish "Medical Trusts" corresponding to the areas of the Insurance Act, on the lines laid down in the scheme submitted to this and other Divisions by Mr. A. L. Forrester, H.M. Coroner for North Wilts.

The CHAIRMAN said that the motion was among those referred to the State Sickness Insurance Committee, which, however, had not yet found an opportunity of dealing with it.

VOTING IN THE DIVISIONS—SPECIAL REPRESENTATIVE MEETING.

The CHAIRMAN observed that there was a notice on the agenda by Dr. Major Greenwood (quoted below), and that

he had obtained the opinion of counsel (Mr. Colquhoun Dill) on the point.

The case submitted to Mr. Colquhoun Dill was read later, but is introduced here for convenience.

The letters of the Medical Secretary, instructing the Solicitor to take Mr. Dill's opinion, quoted the resolution of the Representative Meeting on November 20th, directing the vote of the Divisions to be taken (SUPPLEMENT, November 23rd, p. 571) and continued, as follows:

This resolution, you will see, instructs the Council to take a vote of the Divisions in a certain way, and declares that the combined record thus obtained shall be decisive. The question was raised at the time as to whether the Representative Meeting had power to do this, considering that Article 32 lays down the course of procedure for taking a Referendum. The Chairman ruled that Article 29 gives the general control and direction of the policy of the Association to the Representative Body, and that therefore the Representative Body was within its rights in deciding to take a vote of the Divisions in this manner, and that this was not intended to be the taking of a Referendum, but the creation of a precedent. The resolution was passed practically unanimously, and therefore is, in the opinion of the Chairman of Representative Meetings and Chairman of Council, a "decision of the Association" in accordance with the terms of Article 31 (1). The question has now been raised by the following notice of motion Dr. Major Greenwood for the Meeting of Council:

> That no decision binding on the British Medical Association can be given by the Divisions locally, except in the case of a Referendum under Article 32. To give validity to such a decision of the Divisions the said decision must be endorsed at a Representative Meeting by a two-thirds majority of those voting.

whether it is within the competence of the Representative Body to order such a vote to be taken. Will you obtain the opinion of Mr. Dill as to

(i) Whether a decision binding on the Association can be given through a vote taken in this way; and

(ii) Whether it will be necessary, in order to give validity to a decision of the Divisions taken in this way, that it should be endorsed at a Representative Meeting by a two-thirds majority of those voting?

The following further question was also asked:

Should it be decided that the vote in Divisions taken in the manner laid down by Minute 64 of the Representative Meeting does not constitute a decision of the Association in terms of Article 31 (1), and the Divisions have therefore to exercise their freedom of judgement, may it be assumed that, in taking a vote in the manner suggested to them by the Representative Meeting, they do tacitly decide to abide by the result, whether or no they commence their proceedings by passing a resolution that they are prepared to do so?

Mr. Dill's opinion was as follows:

In my opinion, a decision given by a majority of the votes of members voting at Division Meetings held as suggested in the resolution of November 20th last would not be binding on the Association. Notwithstanding the wording of that resolution a decision so given could not properly be treated as a decision of the Association under Article 31 (1). It is not competent for the Representative Body to delegate its powers of giving binding decisions to the Divisions in the United Kingdom or even to the Divisions generally. A Referendum under Article 32 is, of course, a different matter.

I see no objection to the Representative Body taking the opinion of the Divisions on a matter such as the present, and that opinion, if expressed by a substantial majority, would properly carry weight in the deliberations of the Representative Body.

I think the decision of the majority at the Division Meetings could be reversed by a resolution of the Representative Body carried by a two-thirds majority under Article 31 (1) and that a Division would not be bound thereby.

In my opinion a Division would not by holding a meeting in accordance with the instructions of the Council bind itself to abide by the decision of the majority of the votes taken at all the Division Meetings.

(Signed) T. R. COLQUHOUN DILL.

Lincoln's Inn,
4th December, 1912.

Dr. GREENWOOD thereupon offered to withdraw his motion.

Mr. LARKIN said he thought that the Representative Meeting quite understood the position, and did not suppose that the vote in the Divisions would constitute a binding decision of the Association.

The CHAIRMAN OF REPRESENTATIVE MEETINGS said he had pointed out to the Meeting that a vote of the Divisions could not be a binding decision of the Association in the terms of Article 31 (1). It had been suggested as a possible way of avoiding another Representative Meeting—not that it would have a legal, but that it would have a moral, force. It was of extreme importance that the final result of the efforts of the Association should not be to leave it to every Division, and perhaps every medical man, to go his own way regardless of what his neighbours thought. He hoped that the effect of the vote in the Divisions would be that every member would be guided by the general preponderating vote of his fellows. The vote on the point in the Representative Meeting was almost unanimous.

In reply to Dr. F. J. SMITH, the CHAIRMAN OF COUNCIL said that no binding decision of the Association could be obtained without another Representative Meeting; it could only then be obtained if there were a two-thirds majority.

Mr. DOMVILLE called attention to the fact that the taking of the vote in the Divisions would have the advantage that non-members of the Association would be asked to attend the meetings, and would be able to record their opinions.

It was resolved to postpone the decision as to the calling of a Special Representative Meeting until the text of the Council's Report to the Divisions had been settled.

REVISION OF THE REPORT.

The Council then proceeded to consider and revise the report to the Divisions drafted by the State Sickness Insurance Committee paragraph by paragraph. On the paragraph dealing with extras (Paragraph III, SUPPLEMENT, December 7th, p. 618) the CHAIRMAN said that it had been suggested at the interview that a medical man should be at liberty to charge a small fee for special and night visits to act as a check upon unreasonable calls. The Chancellor of the Exchequer had said that the opinion of his legal advisers was that this could not be done under the Act, and the Chancellor though recognizing that there was considerable force in the suggestion had accepted the opinion of his legal advisers. In order to meet the point, the Commissioners proposed that Insurance Committees should have power to impose fines. In the State Sickness Insurance Committee it had been suggested that the Association should obtain counsel's opinion on the point whether it was in fact impossible under the Act to impose any further payment on insured persons for the purpose indicated. After discussion it was resolved by 19 to 12 to take counsel's opinion on the point, and it was further resolved that the counsel to be consulted should be Sir Robert Finlay, K.C., M.P.

PROPOSAL THAT THE COUNCIL SHOULD EXPRESS AN OPINION.

Dr. BUTTAR moved:

> That the Council express to the Divisions the opinion that the small concessions and explanations given by the Chancellor do not justify any alteration in the decision of the Representative Meeting that the Regulations under the Insurance Act are "unworkable and derogatory to the profession."

This was seconded by Dr. METCALFE, and a prolonged debate took place. The motion was supported by Mr. GARSTANG, Dr. MAJOR GREENWOOD, Dr. DEWAR, Dr. F. J. SMITH and Dr. GORDON, and was opposed by Dr. MACLEAN, Mr. DOMVILLE, Dr. BUIST and Dr. DURRAN.

Dr. LAURISTON SHAW moved as an amendment:

> That the Council do not express any opinion or forward any recommendation to the Divisions, but adopt the report of the State Sickness Insurance Committee as amended by this Council, and forward it to the Divisions in conformity with the instructions of the Special Representative Meeting.

He argued that in this way the Council was carrying out the obvious wish of the Representative Meeting.

The amendment was seconded by Dr. ADAMS, and supported by the CHAIRMAN OF REPRESENTATIVE MEETINGS, Mr. TODD, and Mr. FLEMMING; it was opposed by Dr. HELME and Dr. BUTTAR. When about to be put it was decided, on the motion of Dr. BUIST, that the names be taken, and the result of the division was as follows:

FOR.	AGAINST.
Chairman of Council.	The President.
President-elect.	Biggs, Dr. M. G.
Chairman of Representative Meetings.	Buttar, Dr. Charles.
	Dewar, Dr. Michael.
Adams, Dr. John.	Garstang, Mr. T. W. H.
Andrew, Dr. Grant.	Gordon, Dr. John.
Beaton, Dr. R. M.	Greenwood, Dr. Major.
Buist, Dr. R. C.	Helme, Dr. T. Arthur.
Darling, Dr. J. Singleton.	Larkin, Mr. F. Charles.
Domville, Mr. E. J.	Lord, Mr. C. Courtenay.
Durran, Dr. J. G.	Metcalfe, Dr. James.
Farquharson, Dr. A. C.	Parker, Dr. George.
Flemming, Mr. C. E. S.	Smith, Dr. F. J.
Hamilton, Dr. J. R.	Turner, Mr. E. B.
Loudon, Dr. J. Livingstone.	Tyson, Dr. W. J.
Lucas, Mr. Albert.	Williams, Mr. D. J.
Maclean, Dr. Ewen J.	
Shaw, Dr. Lauriston E.	DID NOT VOTE.
Todd, Mr. D. F.	Greenlees, Mr. T. D.
Turrell, Dr. W. J.	Morier, Dr. C. G. D.

The amendment was then adopted as a substantive motion.

VOTE OF THANKS TO THE SPECIAL COMMITTEE.

On the motion of the PRESIDENT (Sir James Barr), seconded by Dr. LAURISTON SHAW, a hearty vote of thanks was accorded to the Chairman of Council, the Chairman of Representative Meetings, the Deputy Chairman of Representative Meetings, Dr. Beaton, and Dr. Helme, for the time and trouble they devoted to the conferences with the Chancellor of the Exchequer.

PROPOSED SUMMARY.

Dr. BUTTAR moved:

That the Council append to the Report a very brief and concise resumé of the actual concessions and statements made by the Chancellor to the Special Committee, side by side with the original demands of the profession, for easy comparison.

The extreme difficulty of making any such summary was pointed out, and Dr. BUTTAR offered to withdraw his motion, but this was objected to, and the motion was then put to the meeting and declared to be lost.

DATE FOR RETURN OF VOTES AND OF SPECIAL REPRESENTATIVE MEETING.

It was decided that the results of the votes of Divisions should be received at the central office of the Association not later than Wednesday, December 18th, and that the Representative Meeting should take place on Saturday, December 21st. The proposal of the State Sickness Insurance Committee that the Divisions should be asked to take the vote by ballot was not accepted after it had been pointed out that it was within the competence of the Divisions to take the vote by that method.

THE QUESTION TO BE SUBMITTED.

On the motion of Dr. LAURISTON SHAW, it was decided that the question to be placed before each Division should be as follows:

Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

(See SUPPLEMENT, December 7th, p. 621.)

LIBRARY OF THE BRITISH MEDICAL ASSOCIATION.

A LIST of periodical publications, official reports, and Blue Books in the Library of the British Medical Association available for issue to members on loan has been printed, and copies can be obtained free on application to the Librarian, at the house of the Association, 429, Strand, W.C. The regulations governing the loan of these publications are stated in the introduction to the list.

The Library is open for consultation from 10 a.m. till 5 p.m. (on Saturdays till 2 p.m.).

Meetings of Branches and Divisions.

[The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the JOURNAL.*]*

BIRMINGHAM BRANCH:

CENTRAL DIVISION.

AN ordinary meeting of this Division was held at the Medical Institute, Edmund Street, Birmingham, on Wednesday, November 27th, at 3.30 p.m. Mr. LUCAS was in the chair, and ninety-five members were present.

Public Medical Service.—The following resolution was passed *nemine contradicente*:

That this Division approve provisionally (that is, until March 25th, 1913) the Public Medical Service scheme of South-West Birmingham for non-insured persons.

The following were appointed a committee of twelve to arrange for a Public Medical Service for Greater Birmingham: Mr. F. Marsh, Drs. E. Osborne, O. Trumper, E. Wilkinson (Bordesley), J. H. Sproat, T. H. Gibbs, T. Salt, B. Dale (Dudley Road), J. A. Williams (Sparkhill), W. McCall, F. Lilley, E. C. Hadley.

New Hospital for Nervous Diseases.—The following resolution was passed:

That this Division disapproves of the foundation of a new hospital for nervous diseases, as no evidence has been brought forward of the need of such an institution.

DORSET AND WEST HANTS BRANCH:

WEST DORSET DIVISION.

A MEETING of this Division was held on December 10th at Dorchester, Dr. SPOONER in the chair. Fifty-one members and fourteen non-members were present—sixty-five in all, by far the largest meeting ever held in this Division.

Service Under the Act.—It was unanimously resolved that this meeting pledges itself to be bound by the decision of the British Medical Association in the matter of service under the National Insurance Act. The result of the voting was as follows:

In favour of refusal—		Against refusal—	
Members	28	Members	17
Non-members ...	10	Non-members ...	2
	38		19

Six members and two non-members did not vote.

EAST ANGLIAN BRANCH:

NORTH-EAST ESSEX DIVISION.

Insurance Act.—At a meeting of this Division held on December 10th it was decided to answer the question of the Council in the affirmative:

Members voting "Yes" ...	30	"No" ...	5
Non-members voting "Yes"	5	"No" ...	1

NORTH-WEST ESSEX DIVISION.

A MEETING of this Division was held at the Railway Hotel, Bishop's Stortford, on December 11th. Dr. F. N. DAY was called to chair, and thirteen members and two non-members were present. There was also one visitor (a member of the Oxford Division).

The Proposals of the Government.—On the submission of the Council's question:

Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

the vote was as follows: In favour: Members, 13 (1 by proxy); non-members, 2 (1 by proxy); visitor, 1 (unable to vote in his own Division). One member, while dissenting, did not vote.

Committee to Confer with Approved Societies.—It was then resolved that a committee of seven be elected to confer with the secretaries of approved societies, and if possible to sketch out a scheme whereby the insured might receive medical benefit from the doctors who had refused to work under the Act—such scheme to be submitted to

the Division at a subsequent meeting. The following were then appointed to serve on the committee: J. P. Atkinson, junior, J. A. Browne, F. N. Day, A. L. Homes, F. F. C. Jagger, J. A. T. White, and T. S. Wright.

County Medical Committee.—Drs. J. P. Atkinson, junior and J. A. T. White were appointed representatives of the Division to serve on the County Medical Committee.

WEST SUFFOLK DIVISION.

A MEETING of this Division was held in the Angel Hotel, Bury St. Edmunds, on December 10th. There was a very large attendance of members and non-members.

The Government's Proposals.—The following resolution *re* National Insurance Act was unanimously agreed to:

That the British Medical Association call upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government.

EDINBURGH BRANCH:

SOUTH-EASTERN COUNTIES DIVISION.

THE annual dinner of this Division took place at the Douglas Hotel, Galashiels, on the evening of December 6th. Dr. J. S. MUIR (Selkirk), Chairman, presiding. The company included Drs. Young, McMillan, Tyrrell, Stevenson, S. G. Davidson, Evans, Dixon, Fairfax, Somerville, MacRobert, Cullen, Doig, Johnstone, Oliver, and six guests.

The CHAIRMAN made an interesting statement as to the proceedings of the Representative Body and his actions as Representative of the Division.

The customary toasts were duly honoured, and the proceedings were enlivened by numerous songs and recitations.

GLOUCESTERSHIRE BRANCH.

THE first general meeting, Session 1912–13, was held at the Royal Infirmary, Gloucester, on November 21st, at 7 p.m., Mr. G. A. PEAKE in the chair, and thirty-three members were present.

Election of Representatives.—Dr. Carter (Cheltenham) and Dr. Finlay (Gloucester) were elected Representatives at Representative Meetings, 1913–14.

Presentation to Honorary Secretary.—After speeches by Dr. CARTER, Dr. ELLIS, Dr. ANCRUM, and Dr. DYKES BOWER, Mr. PEAKE, on behalf of the Branch, presented the Secretary (Dr. Finlay) with a silver tea and coffee service with salver and cheque, in recognition of his services to the Branch as Secretary and Representative. The SECRETARY gratefully acknowledged their kind expressions and gifts.

Installation of New President.—Mr. G. A. PEAKE then vacated the chair and Dr. R. MACARTNEY (Cinderford) gave his presidential address, entitled "Some Incidents in a Thirty Years' Experience of Contract Practice." A vote of thanks was proposed by Dr. DAVIES (Stroud), seconded by Dr. SOUTAR, and carried. Dr. MACARTNEY replied.

METROPOLITAN COUNTIES BRANCH:

HAMPSTEAD DIVISION.

A MEETING of this Division was held on Friday, December 6th, at 8.15 p.m., at the Central Library, Finchley Road. Mr. E. E. WARE was in the chair, and eighteen members were present.

Loyal Robert Dansie Lodge.—Correspondence between the Honorary Secretary and the Secretary of the Loyal Robert Dansie Lodge, M.U., was read, and it was resolved that the reply of the Honorary Secretary be confirmed (Spofforth *v.* Loyal Robert Dansie Lodge).

Medical Books at Central Library.—The HONORARY SECRETARY reported that he had received a request from the Librarian that, owing to increased space being required, the books forming a medical library be removed. It was proposed by Dr. PRITCHARD and seconded by Dr. MACFADDEN, and resolved:

That Dr. Cunnington and Dr. Winslow Hall inspect the books with power to take action in the matter.

Representative Meeting.—The report of the Representative to Special Representative Meeting was received.

KENSINGTON DIVISION.

A MEETING was held at Kensington Town Hall on December 9th, Mr. E. B. TURNER, F.R.C.S., in the chair. Two hundred and sixty-nine medical practitioners were present.

Statutory Insurance Committee of the Association.—The following gentlemen were elected by ballot to serve on the London Statutory Insurance Committee of the British Medical Association: Messrs. E. B. Turner, P. C. Raiment, M. M. Townsend, Charles Buttar, and S. H. Greene.

Metropolitan Counties Branch Insurance Committee.—The following members were elected to serve on the Metropolitan Counties Branch Insurance Committee; Drs. Charles Buttar and Ernest Travers.

Insurance Act.—The following resolution was put from the chair, and carried with three dissentients:

That this meeting of medical men practising in the Kensington Division of the British Medical Association pledges itself individually and collectively to abide by the line of policy decided on by the Association.

The Vote.—The CHAIRMAN then moved the question:

Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

Drs. ALEXANDER ELLIOT, HERBERT TANNER, BURNHILL, WRIGHT, RAIMENT, CULVER JAMES, KINGDON, and BUTTAR spoke in favour of the refusal. Drs. ATTERIDGE, MCNAMARA, and BECKITT OVERY spoke in favour of acceptance. A vote was taken at 5.30 with the following result;

In favour of refusal—		Against refusal—	
Members ...	... 206	Members ...	... 14
Non-members	... 45	Non-members	... 4
	251		18

The Representatives were instructed accordingly.

Deputy Representatives.—Drs. Herbert Tanner and Crawford Thomson were appointed Deputy Representatives for the Representative Meeting on December 21st.

LEWISHAM DIVISION.

AN open meeting of the practitioners of the Lewisham Division was held at the Co-operative Hall, Catford, on December 6th. Dr. COMBER presided, and there were thirty-six present.

National Insurance Committee.—The following were elected to act on the National Insurance Committee (Section 62, National Insurance Act) for the Lewisham Division of the insurance area of the county of London: Drs. S. Barnett, T. Halliwell, and W. Wilson.

MARYLEBONE DIVISION.

A MEETING of this Division was held on December 11th.

The Proposals of the Government.—Dr. F. J. SMITH moved, and Dr. DAVID ROXBURGH seconded:

That this Marylebone Division is in favour of the Association calling on the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government.

The voting was as follows:

For the resolution—		Against—	
Members ...	... 179	Members ...	... 11
Non-members	... 37	Non-member	... 1
	216		12

TOWER HAMLETS DIVISION.

A MEETING of the practitioners in the area of this Division was held on December 11th in the Limehouse Vestry Hall. Owing to the absence of Dr. Thomas, the Chairman, through illness, Dr. GOODMAN, the Vice-Chairman, occupied the chair. Forty-six members of the Association and twenty-six non-members were present.

The Proposals of the Government.—The question as to refusal to work the Insurance Act was put from the chair, and an interesting discussion ensued in which Drs. OXLEY (Stepney), CARDALE, GRANT, YOUNG, MICHAEL, MAJOR GREENWOOD, TOLAND, OXLEY (Poplar), GARMAN, WILLIAMS, MORRIS, and ROBERTS took part. It was proposed that the voting be by ballot, and not by show of hands. This was

defeated, and on the question being put to the vote the following was the result:

Members:			
For refusal to work the Act	...	30	
For accepting the Act ...	...	16	
Non-Members:			
For refusal to work the Act	...	13	
For accepting the Act ...	...	10	
Total for refusing ...	...		43
Total for accepting ...	...		26
Majortiy for refusing ...	...		17

Thereafter, on the proposition of Dr. CLARKE, seconded by Dr. TOLAND, the following was carried *nemine contradicente*:

That the practitioners of the Tower Hamlets arrange to provide an efficient medical service for those insured under the Health Insurance Act.

The Pledge.—Dr. CARDALE then proposed:

That the document issued to general practitioners from 39, Victoria Street, on December 5th, in which it is stated that the British Medical Association pledge is no longer binding on those practitioners who signed it, is deserving of the severest censure, and that this mass meeting considers that all men of honour should keep their pledge until released from it by the British Medical Association.

This was seconded by Dr. HASTINGS, and carried unanimously.

MIDLAND BRANCH:

CHESTERFIELD DIVISION.

A MEETING of the Division, to which all practitioners within the area of the Division were invited, was held in the Board Room, Chesterfield Hospital, on November 26th. Dr. ALBERT GREEN, Chairman of the Division, presided; eighteen practitioners were present.

Public Medical Service.—Draft rules were submitted. Discussion was deferred to the next meeting, when answers to specific questions submitted with the notice convening the meeting would be considered.

Colliery Surgeons.—In accordance with the recommendations of the Conference of Colliery Surgeons, that contract appointments be dealt with through a committee instead of individually, the following temporary committee was appointed: Drs. S. O. Bingham, W. Stratton, A. Court, and W. Duncan. To this committee was entrusted the drawing up of an explanatory circular to be issued to the club officials and secretaries, and also a circular to the practitioners.

NORTH OF ENGLAND BRANCH:

NEWCASTLE-UPON TYNE DIVISION.

A MEETING of this Division was held at the Royal Victoria Infirmary, Newcastle-on-Tyne, on November 27th, 1912. Dr. A. SMITH, sen., was in the chair. All practitioners residing in Newcastle-on-Tyne Division area, whether they were members or non-members, were invited to attend.

Fees for Domiciliary Treatment of Tuberculosis.—Arising out of the minutes, the HONORARY SECRETARY announced that head quarters had refused to sanction two items in the scale of fees for domiciliary treatment of tuberculosis. They consider that as no difficulty had been met with in other areas in obtaining a fee of 5s. for the quarterly report, the Newcastle-on-Tyne doctors should not be content with the half-crown which they had provisionally agreed to accept. They also consider that 1s. per dose for tuberculin is inadequate. Mr. WILLAN announced that he had written to the local Insurance Committee on the points, and that an answer is to be forthcoming shortly.

Special Representative Meeting.—In the absence, through illness, of the Senior Representative, Dr. J. W. Smith, sen., Dr. BOLAM presented the report of the Representative at the Special Representative Meeting in London, for which he was accorded a hearty vote of thanks. The SECRETARY was instructed to write to Dr. J. W. Smith, sen., informing him of the sincere regret of the meeting that his inability to attend the meeting was due to illness.

Pension for Medical Officers of National Insurance Act.—Dr. W. H. SPURGIN proposed, and Dr. HUDSON seconded:

That in the opinion of the members of the Newcastle-on-Tyne Division a pension upon a Government scale for the medical officers of the National Insurance Act is highly desirable and necessary.

This was carried unanimously.

Local Medical Committee.—A long discussion took place as to the formation of a local medical committee for the County Borough of Newcastle-on-Tyne as requested in a circular from headquarters. Dr. A. CAMPBELL proposed, and Dr. DAGGER seconded:

That we now proceed to elect a County Borough Newcastle-on-Tyne Local Medical Committee.

For the resolution, 14; against, 18. The resolution was therefore lost. Dr. RUXTON proposed, and Dr. DON seconded:

That the members of the old Newcastle-on Tyne Provisional Local Medical Committee practising in the County Borough of Newcastle-on-Tyne, constitute a County Borough Newcastle-on-Tyne Local Medical Committee until such time as the profession decides its action in relation to the National Insurance Act; that all members with two or under attendances be replaced by others to be now elected.

This was carried without opposition. The names of the gentlemen elected were: H. B. Angus, R. A. Bolam, A. C. Burnell, A. Campbell, R. Dagger, J. Don, J. T. Dunlop, Geo. Foggin, W. S. Fraser, A. H. Hobbs, Jas. Hudson, T. C. Hunter, J. MacRae, J. S. McCracken, W. G. Richardson, F. Russell, H. L. Rutter, W. L. Ruxton, R. W. Simpson, Ethel Williams, R. J. Willan.

Newcastle-on-Tyne Education Committee.—The HONORARY SECRETARY read a letter from the Secretary of the Newcastle-on-Tyne Education Committee, who expressed a wish for a meeting between representatives of the medical profession practising in Newcastle-on-Tyne and the Education Committee, to discuss their proposal to include in their next year's estimates the sum of £1,200 (exclusive of charges for administration), to provide for medical inspection and treatment of school children. It was pointed out that the sum referred to included salaries provided for at present, and that there was roughly only an increase of £250 on the previous year's estimates. After a long discussion, the following resolution was proposed by Dr. PRATT, seconded by Dr. FARQUHARSON:

That a deputation wait upon the Education Committee and explain that the medical men are opposed to the establishment of a school clinic unless such clinic be under the control of the general practitioners, and that such deputation do not to exceed four medical men.

This was carried without opposition. The gentlemen selected for the deputation were: Drs. Don, Farquharson, Gowans, McCracken, with Dr. A. Smith, sen., and Mr. R. J. Willan, *ex officio*.

Rule as to Nomination of Officers.—With regard to the new rule which head quarters requested us to amend, Dr. BOLAM proposed, and Mr. R. J. WILLAN seconded:

That nominations for all officers shall be sent in writing to the Honorary Secretary not later than April 7th in each year; that these nominations, where consented to, shall be printed in the circular convening the annual meeting.

Also:

That this rule form a separate paragraph at the end of Rule 7.

A MEETING of the local profession, under the auspices of this Division, was held at the Royal Victoria Infirmary, Newcastle-on-Tyne, on December 10th. Dr. ANDREW SMITH, sen., presided over an audience of about 140 medical men, which included both members and non-members.

The Government's Proposals.—The matter of accepting the Government's proposals or not was put to the vote with the following result:

	Members.	Non-Members.	Total.
In favour of working the Act ...	47 ...	6 ...	53
Against working the Act... ...	51 ...	8 ...	59
Majority against working the Act			6

A large number present did not record their votes, which was by ballot.

SUNDERLAND DIVISION.

A MEETING of the Division, called to consider the last report of the Council, was held at the Royal Infirmary,

Sunderland, on Tuesday, December 10th. Fifty members were present. The attendance would have been larger had it not been for the restricted train service due to the railway strike. In the absence of the Chairman and Vice-Chairman, Dr. Dillon was voted to the chair.

The Government Proposals.—After a lengthy discussion, in which Drs. Modlin, Robertson, Squair, Norman, Quigley, H. Ross, Wallace, Blair, Dix, Rowstrop, and Todd took part, a vote was taken as follow:

Members in favour of refusal to work... ...	34
Members against refusal to work	8
Non-members in favour of refusal to work ...	1
Non-members against refusal to work ...	2

SOUTH-EASTERN BRANCH.

Brighton Division.

The Vote.—A meeting of medical practitioners resident in the Brighton Division was held in the Oddfellows' Hall on December 10th. Dr. Ryding Marsh was in the chair. There were present 121 members of the Association and 19 non-members. The question submitted by the Council to the Division was discussed, with the following result:

In favour of refusal—		Against refusal—	
Members	103	Members	18
Non-members ...	18	Non-members ...	1
	121		19

Croydon Division.

A general meeting of this Division was held at Croydon on December 10th, Dr. Gripper in the chair.

The Pledge.—Dr. Howard proposed, Dr. Bligh seconded, and it was carried:

> That in the opinion of this meeting no new conditions have been created in the term of services under the Insurance Act which can in any way release the practitioners who have signed the undertaking and supplementary pledge from the obligations they incurred thereby.

The Vote.—The resolution contained in the Supplement of December 6th, paragraph 27—

> Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?—

was then considered. Dr. Braddon proposed, Dr. Nicholls seconded, and it was carried:

> That the vote be taken by roll call; and that a postal vote be taken by those not present.

Dr. Wales proposed and Dr. Genge seconded:

> That paragraph 27 be answered in the affirmative.

This was carried by 118 votes to 1 of members, and 16 votes to 0 of non-members.

Rochester and Chatham Division.

A meeting of this Division was held at Rochester on December 10th. Non-members were invited and attended the meeting.

Vote of Thanks.—A vote of thanks to the members of late State Sickness Insurance Committee and to the members of the recent deputation to the Chancellor was carried with acclamation.

Report of Council.—Discussion on the Council's report then took place. The voting was as follows:

In favour of refusal—		Against refusal—	
Members	31	Members	11
Non-members ...	4	Non-members ...	1
	35		12

SOUTHERN BRANCH.

Special Meeting.

A special meeting of the members of the Branch was held at the South-Western Hotel, Southampton, on November 27th. Dr. F. W. Jollye (Alresford), the President, occupied the chair, and twenty-one other members were present.

Model Ethical Rules.—On the motion of the President, seconded by Mr. J. F. Briscoe (Alton), a resolution declaring the Branch's approval of the Model Ethical Rules of the Association, and its decision to adopt them at the earliest legal opportunity, was carried unanimously

General Meeting.

The meeting then became general.

Correspondence.—The Honorary Secretary then announced that he had received a letter from Mr. Straton (Wilton), acknowledging the Branch's vote of thanks for his services as member of the Council of the Association; also a letter of thanks from the Secretary of the Medical Benevolent College for the Branch's subscription to that institution.

Insurance Act.—The report as to the organization of the Branch in reference to the Insurance Act had been sent to the Press Association, and to the newspapers published in the Divisions of the Branch.

Golf Competition Cup.—Mr. C. P. Childe (Southsea), the immediate ex-President, then presented a valuable silver cup which he intended for a golf competition. He said that on mature consideration he had decided that the competition should not be one of teams chosen to represent each Division, as he had at first intended, but that it should be open to any member of the Branch to compete for it and to hold it for a year. A committee consisting of ten members was appointed to draw up the regulations for the competition.

Proposed Rearrangement of Branches.—Dr. MacKeith (Southampton) next advocated the rearrangement of the Divisions of the Branch, but no resolution was come to.

Death Certification.—Mr. Briscoe (Alton) brought forward the subject of death certification, particularly as concerning the inmates of asylums, though it was of importance also to the general practitioner, and especially to the statistician. Although it was not always easy to write by form or order an accurate pathological determination of death, it was desirable that the certificate should state accurately the primary cause of the train of events leading to death, whether or not confirmed by a *post-mortem* examination. This primary cause might be variable, since senility was at one time a primary cause of death, whilst at another it was a contributory or secondary cause due to an attack of pneumonia or a strangulated hernia. He thought the new form of certification, as brought before the Psychological Association by Dr. S. Coupland, opened up an avenue of clearness to the scientific investigator, namely, that the primary cause of death should always be filled in with the name of the disease which commenced the train of events leading to death, and that a terminal condition of death should not be entered as a secondary cause. He would like to mention that ordinary insanity was invariably a secondary or contributory cause of death, and when such a patient dies, say from pneumonia, pneumonia was the primary cause of death, and the ordinary insanity the secondary cause. Dr. Monnington (Laverstock) supported Mr. Briscoe's views, and Dr. MacKeith suggesting that the matter was too difficult and important for an off-hand decision to be come to, the matter was postponed for a future meeting to consider.

SOUTH WALES AND MONMOUTHSHIRE BRANCH.

Cardiff Division.

A meeting of this Division was held on December 11th; 144 members and 15 non-members were present.

Report of Representatives.—The Representatives presented a report on the November meeting.

The Government's Proposals.—On the question presented by the Council to the Divisions the voting was as follows:

Members in favour of refusal of service ...	112
Members against	32
Non-members in favour	14
Non-members against	1

The minority, twenty of whom are colliery surgeons, expressed their intention of carrying out loyally the policy of the majority of the Association, whatever it might be.

Hospital Staffs and the Act.—It was resolved:

> That the Council be requested to arrange for concerted action on the part of the hospital staffs throughout the kingdom.

Deputy Representative.—Dr. Maclean again expressed his unwillingness to serve as Representative at the

forthcoming meeting, and Dr. Courtenay Milward was appointed as his deputy.

ULSTER BRANCH.

THE autumn meeting of the Branch was held in the Medical Institute, Belfast, on November 21st, Dr. J. G. COOKE (Londonderry), President of the Branch, taking the chair.

Installation of President.—Dr. JOHN CAMPBELL (Belfast) was then installed as President for the ensuing year, and on his motion a cordial vote of thanks was passed by acclamation to the retiring President, Dr. J. G. Cooke.

Report of Council.—The report of Council showed that two meetings had been held since the annual meeting. The Council had appointed a committee of their number to co-operate with similar committees appointed by the Ulster Medical Society and Belfast Medical Guild to determine the fees which should be charged in Ulster for examination in cases of life insurance. Seventeen new members had been elected to the Branch.

President's Address.—The PRESIDENT delivered a very valuable and interesting address on the surgical treatment of uterine displacements, with lantern demonstration from slides prepared by Dr. William R. Mackenzie. Dr. WILLIAM CALWELL proposed a vote of thanks to the President for his address. This was seconded by Dr. TAYLOR (Tandragee), and passed by acclamation.

Atypical Exophthalmic Goitre.—Dr. H. L. MCKISACK read a paper on atypical exophthalmic goitre, illustrated by tabulated records of 23 cases. The paper was very favourably criticized by Drs. SHAW, LINDSAY, CALWELL, and HADDEN.

Gall-bladder Surgery.—Mr. FULLERTON read notes on two cases, one of a gall stone impacted in the ampulla of Vater, successfully treated by the transduodenal operation; and the other of a case of gangrenous gall bladder, successfully treated by cholecystectomy. The cases were criticized by Drs. COOKE and MOORE.

Model Ethical Rules.—The meeting adopted the Model Ethical Rules for a Branch of more than one Division, as sanctioned at the Liverpool meeting, and published in the SUPPLEMENT of September 21st, 1912.

Alteration of Boundaries of Divisions.—The HONORARY SECRETARY moved, on behalf of the Branch Council, that the Divisions consider the question of altering their boundaries to correspond to National Insurance areas and report to the Branch Council. This was passed unanimously.

By the kindness of the President-elect tea was served to members before the meeting.

Association Notices.

SPECIAL REPRESENTATIVE MEETING.

NOTICE is hereby given that, on the requisition of the Council, a Special Representative Meeting of the Association will be held in the Memorial Hall, Farringdon Street (adjoining Ludgate Circus), London, on Saturday, December 21st, 1912, at 10 a.m., and Monday, December 23rd, if necessary, for the purpose of considering the final offer of the Government as to service under the National Insurance Act, and any other relevant business.

The Report of the Council on the latest proposals of the Chancellor of the Exchequer, on behalf of the Government, was published in the SUPPLEMENT dated December 7th.

By order of the Chairman of Representative Meetings,

GUY ELLISTON,
Financial Secretary and Business Manager.

ALFRED COX,
Dec. 5th, 1912. *Medical Secretary.*

SPECIAL MEETING OF COUNCIL.

A SPECIAL MEETING of the Representative Body has been summoned to meet in London on Saturday, December 21st next.

Under the Regulations the Council must meet to consider the decisions arrived at by that Meeting, and notice is hereby given that a Meeting of Council will be held immediately upon the conclusion of the business of the Special Representative Meeting.

By Order,

GUY ELLISTON,
Dec. 5th, 1912. *Financial Secretary and Business Manager.*

NOTICE OF THE FORMATION OF A NEW BRANCH OF THE ASSOCIATION.

THE following change has been made in accordance with the Articles and By-laws of the Association, and takes effect from the date of publication of this notice:

Rhodesian Branch.

That a new Branch of the Association be formed, to consist of Northern and Southern Rhodesia, and to be known as the Rhodesian Branch.

Representation in Representative Body.—Under By-law 17 of the Association it will rest with the Branch to determine by its rules the number and area of the Divisions of the Branch. It is provisionally proposed to form three Divisions, for the areas of Matabeleland, Mashonaland, and Northern Rhodesia respectively. Each of these Divisions, if formed and possessed of the necessary organization, would, on the existing basis of representation as laid down by the Council, be qualified to receive independent representation in the Representative Body, each to return one Representative.

BRANCH AND DIVISION MEETINGS TO BE HELD.

BIRMINGHAM BRANCH: COVENTRY AND NUNEATON AND TAMWORTH DIVISIONS.—A meeting of the constituency will be held on Friday, December 20th, at the Newdigate Arms, Nuneaton, at 4.15 p.m., to instruct the Representative.—A. A. WOODS, D. DAVIDSON, Honorary Secretaries.

LANCASHIRE AND CHESHIRE BRANCH.—A meeting of the Branch Organization and Finance Committee will be held on Wednesday, December 18th, at 3 p.m. A meeting of the Branch Council will take place at 4 p.m. in the Liverpool Medical Institution.—F. C. LARKIN, Honorary Secretary, 54, Rodney Street, Liverpool.

LANCASHIRE AND CHESHIRE BRANCH: LIVERPOOL DIVISION.—A meeting of this Division and the medical practitioners resident in the Divisional area will be held at the Medical Institution, Liverpool, on Friday, December 13th, 1912, at 3.30 o'clock in the afternoon. Amongst other business to be announced later, the latest proposals of the Government will be considered in reference to the Insurance Act, and a vote will be taken thereon as regards action.—FRANCIS W. BAILEY, Honorary Secretary.

METROPOLITAN COUNTIES BRANCH: CITY DIVISION.—A special general meeting of the Division, to which all practitioners within the area are invited, will be held this day, Friday, December 13th, at 4 p.m., in the Council Chamber of the Shoreditch Town Hall, Old Street, E.C. (adjoining Shoreditch Station, N.L.Ry.), to consider the latest proposals as to regulations for and remuneration of the profession under the Insurance Act. A recorded vote will be taken of those present as to acceptance or rejection of service under the Act. Non-members of the Association are especially desired to attend upon this occasion, and their decision by voting will be separately recorded. Notices of Motion: (By Dr. Major Greenwood): "That this Division requests the Council to call a special Representative Meeting to consider (1) the revised and final terms of the Government as they appear in the SUPPLEMENT to the BRITISH MEDICAL JOURNAL of December 7th; as also (2) any resolution having reference to the National Insurance Act submitted by a Division or its Representative after considering these terms." (By Dr. Evan Jones): "That the meeting proceeds to fix its terms and conditions for attending non-insured persons (and in the event of the profession deciding not to work the Act for attending insured persons)." Members are requested to bring with them the SUPPLEMENT for November 16th (p. 534) and December 7th, and also the draft scheme recently circulated.—A. G. SOUTHCOMBE, Honorary Secretary, Homerton, N.E.

METROPOLITAN COUNTIES BRANCH: OLD LAMBETH DIVISION.—A meeting will be held at the Camberwell Town Hall on Thursday, December 19th, at 4 p.m. Agenda: (1) To receive the report of the Representatives at the previous Representative Meeting. (2) To instruct the Representatives how to vote at the Representative Meeting on Saturday, December 21st.—J. H. CLATWORTHY, Honorary Secretary, 145, Denmark Hill, S.E.

METROPOLITAN COUNTIES BRANCH: SOUTH-WEST ESSEX DIVISION.—A special meeting [illegible] within its area are invited [illegible] Schoolroom (corner of James Lane; [illegible]

M.R.), on Friday, December 13th, at 4 p.m. Proceedings will commence at 4 p.m. sharp. Agenda: (1) Minutes. (2) Correspondence. (3) To consider the latest proposals of the Government as regards regulations and remuneration under the Insurance Act in so far as they relate to medical practitioners. (4) To take a recorded vote of all those present as to whether they are willing or not willing to accept service under the Act upon these terms. (5) To elect representatives upon the County Medical Committee, which is to replace all the Provisional Medical Committees in the county. (6) To raise more funds for the expenses of the campaign. (7) To consider the Public Medical Service, adjourned from last meeting.—A. POTTINGER ELDRED, Honorary Secretary.

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.—A special meeting of this Division will be held at the Carlton Hotel, The Parade, Broadstairs, to-day (Friday), December 13th, at 3.45 p.m., Dr. Biddle in the chair. Agenda: (1) To consider the latest offer of the Government for the medical working of the National Insurance Act (see SUPPLEMENT of BRITISH MEDICAL JOURNAL, December 7th) and to take a vote for or against acceptance thereof. (It is believed that similar meetings are to be held in all Divisions, and that the decision of the majority of the profession will determine the policy of the Association.) (2) To consider the adoption of a revised set of rules for the Division. (The Executive Committee recommends their adoption, as they are almost identical with those which have been in force for the last ten years.) (3) Any other business. Tea will be served during the meeting. All medical practitioners in Thanet are invited to this meeting.—HUGH M. RAVEN, Honorary Divisional Secretary, Broadstairs.

Naval and Military Appointments.

ROYAL NAVAL MEDICAL SERVICE.

THE following notices of retirement and appointments have been notified by the Admiralty: Fleet Surgeon FREDERICK D. LUMLEY has at his own request been placed on the retired list, December 5th, 1912; Surgeon HORACE B. HILL, M.B., to the *Victory*, additional for disposal, January 13th, 1913; Surgeon MARTIN H. LONGFORD to the *Inflexible*, vice Stephens, December 5th, 1912; Surgeon ERNEST ST. G. GOODWIN, M.B., to the *Hampshire*, vice Fairley, December 5th, 1912; Surgeon ERNEST MACEWAN to the *Victory* for disposal, December 8th, and to the *Racer*, additional for Osborne College, and for physical training duties, vice Hill, January 13th, 1913; Surgeon ROBERT M. RIOGALL to the *Halcyon*, additional for the *Spanker*, vice Langford, December 5th, 1912; Surgeon GUY T. VERRY to the *Victory*, additional for disposal, December 8th, 1912.

ROYAL NAVAL VOLUNTEER RESERVE.

Surgeon W. G. BARRAS, M.D., promoted to the rank of Staff Surgeon with seniority of November 10th, 1912.

ARMY MEDICAL SERVICE.

ROYAL ARMY MEDICAL CORPS.

MAJOR BERNARD FORDE, M.B., to be Lieutenant-Colonel, vice G. E. Hale, D.S.O., retired, November 23rd, 1912.

Major W. B. WINKFIELD has been transferred from the Lahore Division to the Burma Division.

Major S. W. SWEETNAM assumed command of the Station Hospital, Aden, on October 14th.

Major F. J. C. HEFFERNAN has been appointed Staff Surgeon at Mhow.

Major D. J. COLLINS, Sanitary Officer Dublin District, has been ordered to India.

Major M. P. CORKERY, from Nasirabad, has been appointed to Cork.

Major E. P. HEWETT has been granted six months' leave out of India.

Captains to be Majors.—ARTHUR W. GIBSON, ROCHFORD N. HUNT, M.B., HENRY E. J. A. HOWLEY, RALPH F. M. FAWCETT, and JOHN L. JONES.

Captain G. R. PAINTON has been appointed to the Eastern Command for duty at the expiration of his West African leave.

Captain A. C. ELLIOTT has been granted six months' general leave.

Captain P. SAMPSON has been appointed to the Irish Command at Dublin.

Captain E. G. R. LITHGOW has been appointed Medical Officer of the Central Flying School, Royal Flying Corps, Upavon.

[redacted] C. H. H. HAROLD is leaving the London District for service in India.

Lieutenant THOMAS E. ORMUND is confirmed in his rank.

SPECIAL RESERVE OF OFFICERS.

ROYAL ARMY MEDICAL CORPS.

LIEUTENANT ROBERT GREEN is confirmed in his rank.

Lieutenant ARTHUR J. B. BROWN is confirmed in his rank.

Cadet ALEXANDER DECIMUS D'AVRAY, from the University of London Contingent, Officers' Training Corps, to be Lieutenant (on probation), November 5th, 1912.

INDIAN MEDICAL SERVICE.

CAPTAIN F. F. S. [redacted], is appointed a Specialist in Ophthalmology, with effect from October 24th, 1912.

TERRITORIAL FORCE.

Third East Anglian Field Ambulance.—WILLIAM BRANDER, M.D., to be Lieutenant, October 22nd, 1912.

Highland Field Ambulance.—Captain LEWIS D. CRUICKSHANK, M[redacted] ber 4th, 1912.

[redacted] Captain LEONARD R. TOSSWILL resigns his commission, December 4th, 1912.

[redacted] *General Hospital.*—Lieutenant WILLIAM I. CUMBERLEDGE, from the Second North Midland Field Ambulance, to be Captain [redacted] services will be available on mobilization, December 4th, 1912.

First London (City of London) Sanitary Company.—Captain ARTHUR R. OWST resigns his commission, December 4th, 1912.

Attached to Units other than Medical Units.—Major JOHN ROWAN, M.B., resigns his commission, and is granted permission to retain his rank and to wear the prescribed uniform, December 4th, 1912. Lieutenant PERCIVAL T. RUTHERFORD resigns his commission, December 4th, 1912.

Vital Statistics.

HEALTH OF ENGLISH TOWNS.

IN ninety-five of the largest English towns 8,568 births and 5,568 deaths were registered during the week ending Saturday, December 7th. The annual rate of mortality in these towns, which had been 14.1, 15.0, and 14.5 per 1,000 in the three preceding weeks, rose to 16.5 per 1,000 in the week under notice. In London last week the death-rate was equal to 17.2 per 1,000, against 14.4, 15.6, and 14.5 in the three preceding weeks. Among the ninety-four other large towns the death-rates last week ranged from 7.5 in Stockport, 8.0 in Ealing, 8.1 in Croydon, 8.2 in Willesden, 8.3 in Wimbledon, and 8.7 in Acton to 25.9 in Lincoln, 26.2 in Tynemouth, 26.8 in Great Yarmouth, 26.9 in Stockton-on-Tees, 27.7 in West Hartlepool, and 29.3 in Bootle. Measles caused a death-rate of 3.1 in Edmonton, 3.3 in Newcastle-on-Tyne, 3.7 in Bath, 3.8 in South Shields, 4.4 in Preston, 4.5 in Lincoln, 4.8 in Barrow-in-Furness, 5.0 in West Ham, 5.1 in Bootle, 7.0 in Stockton-on-Tees, and 8.1 in West Hartlepool; whooping-cough of 1.1 in East Ham, 1.3 in Rhondda, and 1.8 in Stoke-on-Trent and in Lincoln; and diphtheria of 1.3 in Preston. The mortality from enteric fever and scarlet fever showed no marked excess in any of the large towns, and no fatal case of small-pox was registered during the week. The causes of 63, or 1.1 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; of this number 14 were registered in Birmingham, 10 in Liverpool, 5 in Gateshead, 4 in South Shields, and 3 in London. The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had been 2,335, 2,336, and 2,279 at the end of the three preceding weeks, had further fallen to 2,266 on Saturday last; 285 new cases were admitted during the week, against 254, 296, and 271 in the three preceding weeks.

HEALTH OF SCOTTISH TOWNS.

IN eighteen of the largest Scottish towns 1,103 births and 921 deaths were registered during the week ending Saturday, December 7th. The annual rate of mortality in these towns, which had been 16.3, 18.0, and 17.1 per 1,000 in the three preceding weeks, rose to 22.0 in the week under notice, and was 5.5 per 1,000 above the rate in the ninety-five large English towns. Among the several Scottish towns the death-rates last week ranged from 7.8 in Ayr, 14.2 in Clydebank, and 15.0 in Govan and in Motherwell to 22.7 in Paisley and in Greenock, 23.8 in Hamilton, and 27.2 in Glasgow. The mortality from the principal infectious diseases averaged 1.3 per 1,000, and was highest in Kilmarnock and Motherwell. The 409 deaths from all causes registered in Glasgow included 11 from whooping-cough, 6 from diphtheria, 2 from measles, 2 from scarlet fever, 2 from infantile diarrhoea, and 1 from enteric fever. Five deaths from measles were recorded in Motherwell, 2 from whooping-cough in Greenock, and 6 from infantile diarrhoeal diseases in Aberdeen.

HEALTH OF IRISH TOWNS.

DURING the week ending Saturday, November 30th, 498 births and 437 deaths were registered in the twenty-two principal urban districts of Ireland, as against 532 births and 409 deaths in the preceding period. The annual death-rate in these districts, which had been 17.9, 17.0, and 18.5 per 1,000 in the three preceding weeks, rose to 19 7 per 1,000 in the week under notice, this figure being 5.2 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 18.9 and 18.5 respectively, those in other districts ranging from 6.4 in Queenstown and 8.4 in Lisburn to 35.4 in Armagh and 55.6 in Dundalk, while Cork stood at 18.4, Londonderry at 19.1, Limerick at 27.1, and Waterford at 32.3. The zymotic death-rate in the twenty-two districts averaged 2.3 per 1,000, as against 2.1 in the preceding week.

During the week ending Saturday, December 7th, 551 births and 485 deaths were registered in the twenty-two principal urban districts of Ireland, as against 498 births and 437 deaths in the preceding period. The annual death-rate in these districts, which had been 17.0, 18.5, and 19.7 per 1,000 in the three preceding weeks, rose to 22.0 per 1,000 in the week under notice, this figure being 5.5 per 1,000 higher than the mean average death-rate in the ninety-five English towns for the corresponding period. The figures in Dublin and Belfast were 21.7 and 23.5 respectively, those in other districts ranging from 9.3 in Sligo and 12.5 in Drogheda to 35.4 in Galway and 43.7 in Dundalk, while Cork stood at 21.8, Londonderry at 17.9, Limerick at 31.1, and Waterford at 13.3. The zymotic death-rate in the twenty-two districts averaged 2.3 per 1,000, or the same as in the preceding week.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BATH: ROYAL MINERAL WATER HOSPITAL.—Four Honorary Physicians.

BATH: ROYAL UNITED HOSPITAL.—House-Surgeon. Salary, £80 per annum.

BIRMINGHAM: CITY MENTAL HOSPITAL.—Assistant Medical Officer. Salary, £150, rising to £200.

BIRMINGHAM GENERAL HOSPITAL.—(1) Resident Pathologist. (2) House-Surgeon to Special Departments. Salary at the rate of £50 per annum each.

BIRMINGHAM: QUEEN'S HOSPITAL.—House-Physician. Salary at the rate of £50 per annum.

BIRMINGHAM UNIVERSITY.—Lecturer in Physiological Department. Stipend, £200 per annum.

BOURNEMOUTH: ROYAL VICTORIA AND WEST HANTS HOSPITAL.—House-Surgeon. Salary, £80 per annum, rising to £100.

BRISTOL ROYAL INFIRMARY.—(1) Resident Casualty Officer. Salary at the rate of £50 per annum. (2) Honorary Dental Anaesthetist. (3) Dental House-Surgeon; salary, £100 per annum.

CAMBERWELL: PARISH OF ST. GILES.—Resident Medical Officer at the Workhouse. Salary, £200 per annum and lunacy fees.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Salary at the rate of £70 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—Two Resident Medical Officers. Salary, £90 per annum.

CAPETOWN: SOMERSET HOSPITAL.—Assistant Medical Officer. Salary, £200 per annum.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary, £150 per annum.

CORNWALL COUNTY ASYLUM, Bodmin.—Third Assistant Medical Officer and Pathologist. Salary, £160 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—Junior House-Surgeon. Salary, £90 per annum, rising to £100.

DEVON COUNTY COUNCIL.—Tuberculosis Medical Officer. Salary, £500 per annum.

DURHAM COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £150 per annum, rising to £180.

DURHAM COUNTY COUNCIL.—School Medical Inspector. Salary, £300 per annum.

ECCLES AND PATRICROFT HOSPITAL.—House-Surgeon. Salary, £70 per annum.

EDINBURGH HOSPITAL FOR WOMEN AND CHILDREN.—(1) Honorary Assistant Surgeon. (2) Honorary Dental Surgeon. (3) Medical Woman to act as Junior Resident; honorarium £18 per annum.

EDINBURGH: THE HOSPICE.—Medical Woman as Resident. Honorarium, £25 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark, S.E.—(1) Medical Radiographer; honorarium at the rate of £75 per annum. (2) Ten Clinical Assistants.

GORDON HOSPITAL FOR RECTAL DISEASES, Vauxhall Bridge Road, S.W.—House-Surgeon. Honorarium, £25 for six months.

HEREFORD COUNTY AND CITY ASYLUM.—Assistant Medical Officer (Male). Salary, £150 per annum, increasing to £180.

HEREFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary at the rate of £120 per annum.

HOSPITAL FOR SICK CHILDREN, Great Ormond Street, W.C.—House-Surgeon. Salary, £50 for six months, and £2 10s. washing allowance.

INFANTS' HOSPITAL, Vincent Square, S.W.—Assistant Physician.

JAFFRAY BRANCH OF THE GENERAL HOSPITAL, Gravelly Hill.—Resident Medical and Surgical Officer. Salary, £150 per annum.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, New Cavendish Street, W.—Fourth Assistant Pathologist (Male). Salary, £170 per annum, rising to £400.

LANCASHIRE COUNTY COUNCIL, Preston.—Tuberculosis Officer. Salary, £500 per annum.

LIVERPOOL EYE AND EAR INFIRMARY.—House-Surgeon. Salary at the rate of £80 per annum.

MANCHESTER: HULME DISPENSARY.—House-Surgeon. Salary, £160 per annum.

MIDDLESBROUGH EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary, £300 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—(1) House-Surgeon. (2) House-Physician. Salary at the rate of £80 per annum.

READING: ROYAL BERKSHIRE HOSPITAL.—Honorary Physician.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Assistant Surgeon.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—(1) Senior Resident Medical Officer. (2) Junior Resident Medical Officer. Salary at the rate of £70 and £50 per annum respectively.

SALISBURY INFIRMARY.—Assistant House-Surgeon. Salary, £50 per annum.

SHEFFIELD ROYAL INFIRMARY.—(1) Honorary Physician. (2) Honorary Assistant Surgeon. (3) House-Surgeon; salary, £80 per annum.

SOMERSET AND BATH ASYLUM, Wells.—Second Assistant Medical Officer (Male). Salary, £135 per annum, rising to £155.

SOUTH AFRICA UNION.—Four Medical Officers for lunatic and leper asylum service. Salary, £280, rising annually by £20 to £360 *plus* quarters and local allowance.

SUNDERLAND: MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House-Surgeon. Salary, £100 per annum.

SWANSEA GENERAL AND EYE HOSPITAL.—(1) Three House-Surgeons. (2) House-Physicians. Salary, £75 per annum each.

SWANSEA UNION.—Assistant Medical Officer for Workhouse. Salary about £235 per annum.

TUNBRIDGE WELLS GENERAL HOSPITAL.—House-Physician (Male). Salary, £100 per annum.

VICTORIA CENTRAL HOSPITAL AND WALLASEY DISPENSARY.—House-Surgeon. Salary, £100 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House-Surgeon and Anaesthetist. Salary, £75 per annum.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House-Surgeon or House-Physician. Salary, £100 per annum.

WINCHESTER: ROYAL HAMPSHIRE COUNTY HOSPITAL.—House-Physician (Male). Salary, £80 per annum.

WREXHAM INFIRMARY.—House-Surgeon. Salary, £120 per annum.

CERTIFYING FACTORY SURGEONS.—The Chief Inspector of Factories announces the following vacant appointments: Anstruther (Fife), Athy (co. Kildare), Medbourne (Leicester), Widnes (Lancs.).

WORKMEN'S COMPENSATION ACT, 1906.—The Home Secretary announces a vacancy in the appointment of Medical Referee under the Workmen's Compensation Act, 1906, for the Glossop County Court.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

BOYD, Sidney, M.S.Lond., F.R.C.S.Eng., Lecturer on Applied Anatomy, King's College (University of London).

COOLEY, P. G., M.B., Ch.M.Sydney, Honorary Assistant Surgeon for Diseases of the Ear, Nose, and Throat to the Hospital and Asylum for Infirm at Rookwood, New South Wales.

DOUGLAS, G. A. C., M.B.Melb., Resident Medical Officer, Brisbane General Hospital.

EVERIDGE, J., F.R.C.S., Sambrooke Surgical Registrar at King's College Hospital.

FERGUSON, E. W., M.B., Ch.M.Sydney, Assistant Medical Officer to the Lunacy Department, New South Wales.

FRESHWATER, Douglas H., M.A., B.C., M.D., Physician to the Western Skin Hospital.

GREER, M., L.R.C.P.Lond., District Medical Officer of the Dolgelly Union.

HAWKES, Mary Coghill, M.D., Superintendent of the Physical Exercise and Massage Department at the Royal Free Hospital, Gray's Inn Road, W.C.

HUNT, Miss M., M.D.Lond., D.P.H., Junior Clinical Assistant to the Gynaecological Department, Royal Free Hospital, Gray's Inn Road, W.C.

KAUNTZE, W. H., M.B., Ch.B.Vict.Manch., Assistant Medical Officer of the Salford Union Infirmary.

KERR, Harold, M.D.Edin., D.P.H.Camb., Medical Officer of Health for Newcastle-upon-Tyne, vice Dr. Henry E. Armstrong, resigned.

MATHEWSON, H., M.B., Medical Officer of the Norwich Parish Workhouse.

MURRAY, T., L.R.C.P.and S.I., Assistant Medical Officer to the Leicester Parish Infirmary.

ROBERTS, O. W., M.R.C.S., L.R.C.P., Medical Officer of the Mary Place Workhouse of the Parish of Kensington.

SANGER, F., M.R.C.S., L.R.C.P., District Medical Officer of the Cirencester Union.

SANSOM, H. A., M.D., District Medical Officer of the Hampstead Parish.

THORP, H., M.B., Ch.B.Vict., District and Workhouse Medical Officer and Medical Officer of the Children's Home of the Todmorden Union.

TONKINSON, A. J., M.B., B.S.Lond., Assistant Medical Officer of the St. John's Hill Infirmary of the Wandsworth Union.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

ROSEWARNE.—On December 9th, at 16, St. Stephen's Road, Bow, E., to the wife of D. D. Rosewarne, L.R.C.P., M.R.C.S., a daughter.

MARRIAGE.

BLAXLAND—ANDREWS.—On November 6th, at Colney Church, by the Rev. Temple Brown, Rector, assisted by the Rev. Cuthbert Blaxland, uncle of the bridegroom, A. Jasper Blaxland, M.S.Lond., F.R.C.S., of 29, Surrey Street, Norwich, son of Mr. and Mrs. Blaxland, of Bournemouth, to Marion Andrews, daughter of the late Mr. W. Andrews, of Chediston, Suffolk, and of Mrs. Andrews, of Colney, Norwich.

RECENT PUBLICATIONS.

Kurzgefasste Anleitung zu den wichtigeren hygienischen Untersuchungen. By Professor Dr. Bernhard Fischer. Second edition. Berlin: Aug. Hirschwald. 1912. (Post 8vo, pp. 280. 5s. 6d.)

Contains brief accounts of the chief physical, chemical, bacteriological, protozoological, and serological work required by public health students and medical officers. A handy little volume of reference, containing a large amount of valuable information.

Le Laboratoire du praticien. By Dr. Paul Gastou. Illustrated by Louis Niclet. In three parts. First fasciculus. Paris: A. Poinat. 1912. (Imp. 8vo, pp. 48; plates 18. Fr. 3.)

The first part of a clinical laboratory guide book for practitioners; the author, with the assistance of his artist, discusses and illustrates the investigation by means of the microscope and otherwise of pathological conditions of the hair, skin and nails, and cutaneous system. Colour tests and ultra-microscope examinations are also considered. The illustrations are very good.

Atlas typischer Röntgenbilder vom normalen Menschen. By Professor Rudolf Grashey. Second edition. Munich: J. F. Lehmann. 1912. (Double post 8vo, pp. 226; 207 plates and [illegible])

A second edition of a useful atlas devoted to radiography and its technique, each point being fully described and well illustrated. The normal appearances of *x*-ray photographs are depicted, and the types and limitations of variations duly indicated. The radiographs are extremely clear, and should serve as a valuable guide to the radiographer in dealing with disease and abnormalities.

PUBLISHERS' ANNOUNCEMENTS.

MESSRS. J. AND A. CHURCHILL announce the publication of the following new works and new editions: *A History of Chemistry*, by the late James Campbell Brown, D.Sc.Lond., LL.D.Aberd., Professor of Chemistry at Liverpool University; *Notes on Chemical Research*, by W. P. Dreaper, F.I.C., F.C.S. (the first of a series of textbooks of chemical research and engineering, just about to be published); *A Textbook of Anatomy for Nurses*, by Elizabeth R. Bundy, M.D., Member of the Medical Staff of the Women's Hospital, Philadelphia (second edition); *Who's Who in Science (International) 1913*, edited by H. H. Stephenson, containing biographies of the leaders in the various sciences, including anatomy, anthropology, bacteriology, medicine, pathology, pharmacology, physiology, psychology, surgery. The work also contains a comprehensive list of the world's universities, a classified index, and a list of the scientific societies throughout the world.

DIARY FOR THE WEEK.

MONDAY.

MEDICAL SOCIETY OF LONDON, 11, Chandos Street, Cavendish Square, W., 8.30 p.m.—Continuation of Discussion of Interstitial Stasis by Sir Bertrand Dawson, Dr. James Mackenzie, and others.

UNITED SERVICES MEDICAL SOCIETY, Royal Army Medical College, Grosvenor Road, S.W., 9.30 p.m.—Paper: Surgeon-General G. J. H. Evatt, C.B., "Florence Nightingale."

TUESDAY.

CHELSEA CLINICAL SOCIETY, St. George's Hospital, Medical School, 8 p.m.—Demonstration of Cases and Specimens.

LONDON DERMATOLOGICAL SOCIETY, 49, Leicester Square, W.C.—4.30 p.m., Cases and Specimens. 5 p.m., Adjourned discussion on "Anomalies of Pigmentation."

THURSDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF DERMATOLOGY, 1, Wimpole Street, W., 5 p.m.—Demonstration of Cases and Specimens.

FRIDAY.

ROYAL SOCIETY OF MEDICINE:
SECTION OF ELECTRO-THERAPEUTICS, at the Middlesex Hospital, W., 8.30 p.m.—Short Papers and Demonstration of Cases.

SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos Street, W., 8.30 p.m.—Papers:—Dr. A. Castellani: (1) Vaccination with Live Vaccines (Attenuated) in Typhoid, Paratyphoid, and Cholera. (2) Various Fungi Producing Disease in the Tropics.

POST-GRADUATE COURSES AND LECTURES.

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.—Daily arrangements: Out-patient Demonstration, 10 a.m.; Medical and Surgical Clinics. Monday: 12 noon, Throat, Nose, and Ear; 2.15 p.m., Surgery; 3 p.m., Operations; 3.15 p.m., Medicine; 4.15 p.m., Ear and Throat. Tuesday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Surgery; 3.15 p.m., Medicine; 4.15 p.m., Skin Clinic. Wednesday: 11 a.m., Eye; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Eye Clinic; 4.30 p.m., Surgery. Thursday: 12 noon, Throat, Nose, and Ear; 2 p.m., Operations, Pathological Demonstration; 3.15 p.m., Medicine. Friday: 12 noon, Skin; 2 p.m., Operations; 2.15 p.m., Medicine; 3.15 p.m., Surgery. Saturday: 10 a.m., Radiography; 11 a.m., Eye. Special Lecture on Thursday at 4.30 p.m.

MANCHESTER: ANCOATS HOSPITAL POST-GRADUATE CLINIC.—Thursday, 4.15 p.m.: Some Medical Cases.

MANCHESTER ROYAL INFIRMARY.—Tuesday, 4.30 p.m.: Demonstration of Cases illustrating Diseases of the Eye.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.—Monday, Clinics: 10 a.m., Surgical Out-patient; 2.30 p.m., Medical Out-patient, Nose, Throat, and Ear; 3 p.m., Demonstration on Clinical and General Pathology. Tuesday, 2.30 p.m., Operations; Clinics: Surgical, Gynaecological; 3.30 p.m., Medical In-patient; 4.30 p.m., Lecture-Demonstration: The Diagnosis of Early Pulmonary Tuberculosis. Wednesday, 2 p.m., Throat Operations; 2.30 p.m., Medical Out-patient; Skin and Eye Clinics; *X* Rays; 3 p.m., Pathological Demonstration; 5.30 p.m., Eye Operations. Thursday, 2.30 p.m., Gynaecological Operations; Clinics: Medical and Surgical Out-patient; 3 p.m., Medical In-patient; 4.30 p.m., Lecture-Demonstration: Tuberculins. Friday, 2.30 p.m., Operations; Clinics: Medical Out-patient, Surgical, Eye; 3 p.m., Medical In-patient; Pathological Demonstration.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, N.E.—Wednesday, 4 p.m.: Defective Teeth in Hospital Children.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City Road, E.C.—Monday, 4.30 p.m.: The Tuberculosis Dispensary as a Fighting Unit in the Campaign against Tuberculosis. Tuesday, 4.30 p.m.: The Formation, Constitution, and Management of the Tuberculosis Dispensary. Thursday, 4.30 p.m.: Anaesthesia in Diseases of the Chest. Friday, 3.30 p.m.: Clinical Demonstration.

SALFORD ROYAL HOSPITAL.—Tuesday, 4.30 p.m.: Acute Anterior Poliomyelitis.

WEST LONDON POST-GRADUATE COLLEGE, Hammersmith Road, W.—Medical and Surgical Clinics, *X* Rays, and Operations 2 p.m. daily. Monday: Gynaecology, 10 a.m.; Demonstration of Minor Operations, 11 a.m.; Pathological Demonstration, 12 noon; Eye, 2 p.m. Tuesday: Gynaecological Operations, 10 a.m.; Surgical Registrar, 10.30 a.m.; Demonstration of Fractures, etc., 12 noon; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Wednesday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Medical Registrar, 10.30 a.m.; Abdominal Diagnosis, 12 noon; Eye, 2 p.m.; Gynaecology, 2 p.m. Thursday: Gynaecological Demonstration, 10.30 a.m.; Lecture, Neurological Cases, 12.15 p.m.; Eye, 2 p.m.; Orthopaedics, 2 p.m. Friday: Gynaecological Operations, 10 a.m.; Lecture, Practical Medicine, 10.30 a.m.; Lecture, Clinical Pathology, 12.15 p.m.; Throat, Nose, and Ear, 2 p.m.; Skin, 2 p.m. Saturday: Diseases of Children, 10 a.m.; Throat, Nose, and Ear Operations, 10 a.m.; Eye, 10 a.m.; Surgical Registrar, 10.30 a.m.; Abdominal Diagnosis, 12 noon. Special Lectures at 5 p.m. daily.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		DECEMBER.
13	Fri.	City Division, Shoreditch Town Hall, 4 p.m. Isle of Thanet Division, Broadstairs, 3.45 p.m. Liverpool Division, Medical Institution, 3.30 p.m. South-West Essex Division, Wesleyan Church Schoolroom, 4 p.m.
18	Wed.	Lancashire and Cheshire Branch, Branch Organization and Finance Committee, 3 p.m.; Branch Council, 4 p.m., Liverpool Medical Institution. Richmond Division, Richmond, 8.30 p.m. South Middlesex Division, Twickenham, 8.30 p.m.
19	Thur.	Old Lambeth Division, Camberwell Town Hall, 4 p.m.
20	Fri.	Coventry and Nuneaton and Tamworth Divisions, Nuneaton, 4.15 p.m.
21	Sat.	London: **Special Representative Meeting, 10 a.m.**, Memorial Hall, Farringdon Street (*adjoins Ludgate Circus*). SPECIAL MEETING OF CENTRAL COUNCIL *immediately afterwards.*

Date.		Meetings to be Held.
		JANUARY, 1913.
1	Wed.	Subscriptions to the British Medical Association for 1913 become due.
3	Fri.	London: Central Ethical Committee, 2 p.m.
4	Sat.	London: Science Committee, 11 a.m.
7	Tues.	London: Public Health Committee, 3.30 p.m.
8	Wed.	London: Medico-Political Committee, 2 p.m.
9	Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
14	Tues.	London: Metropolitan Counties Branch, 4 p.m. London: Organization Committee, 2.15 p.m.
15	Wed.	London: Hospitals Committee, 2.30 p.m.
17	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.
22	Wed.	Richmond Division, Richmond, 8.30 p.m. South Middlesex Division, Twickenham, 8.30 p.m.
29	Wed.	London: Central Council.
31	Fri.	Birmingham Branch, Pathological and Clinical Section, Medical Institute, 8 p.m.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 21ST, 1912.

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NOTICE TO THE PROFESSION.

NATIONAL INSURANCE ACT.

THE LATEST PROPOSALS OF THE GOVERNMENT.

The Council points out that, pending the decision of the Special Representative Meeting and the publication of instructions issued under its authority, it is imperative that no negotiations or arrangements of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession with local Insurance Committees, or otherwise.

A Special Representative Meeting is being held in London this day, Saturday, December 21st, to receive the report of the results of the vote of the profession in Division meetings, and to consider the future action of the Association.

THE following is the text of the undertaking signed by 27,400 medical practitioners in the United Kingdom, and of the pledge complementary to the undertaking:

UNDERTAKING.

"*I, the undersigned, hereby undertake that in the event of the National Insurance Bill becoming "law, I will not enter into any agreement for giving medical attendance and treatment to persons "insured under the Bill, excepting such as shall be satisfactory to the medical profession and in "accordance with the declared policy of the British Medical Association; and that I will enter "into such agreement only through a local Medical Committee, representative of the medical "profession in the district in which I practise, and will not enter into any individual or "separate agreement with any approved Society or other body for the treatment of such persons.*"

PLEDGE COMPLEMENTARY TO THE UNDERTAKING.

In view of the possibility of Medical Benefit under the National Insurance Act being suspended or of an attempt being made to administer it through the approved Societies or in other way contrary to the wishes of the profession, I make the following declaration:—

I, the undersigned, hereby place in the hands of the Secretary of the Provisional Medical Committee of the area in which I practise, my resignation of all club, Friendly Society, Dispensary, and other forms of contributory contract practice appointments which I hold, in so far as they extend to insured persons, and I authorize him to send these resignations to the bodies concerned, if and when he is called upon by the State Sickness Insurance Committee of the British Medical Association to do so.

I undertake not to accept any such appointment so resigned; and that I will only accept appointments dealing with insured persons with the consent of the State Sickness Insurance Committee, given through the Provisional Medical Committee, and on conditions which shall allow of free choice of doctor by patient and of patient by doctor.

*After that portion of the National Insurance Act, referring to medical benefit, comes into operation, and until the terms and conditions of administering Medical Benefit under the National Insurance Act have been approved by the profession, (1) I will not, except in cases of urgent necessity, render professional service to an insured person through the service of any voluntary medical charity, (2) I will not co-operate with any member of the profession who is under contract to render service to insured persons upon terms which are not approved by the profession.

* *This paragraph does not refer to the administration of Sanatorium Benefit.*

THE VOTING AT DIVISIONAL MEETINGS.

THE result of the voting at the Divisional meetings and the number of votes at each meeting, distinguishing those of members of the Association from those of non-members, will be reported to the Representative Meeting on Saturday, December 21st.

The following list is published in anticipation of the formal presentation of the result to the Representative Meeting, and is subject to final revision, but will probably prove to be approximately correct.

The vote was taken on the following question:

> Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

Branches and Divisions.	Members Present.	Result of Voting.			
		Members.		Non-Members.	
		For	Against	For	Against
ABERDEEN BRANCH:					
Aberdeen	112	77	30	13	4
Orkney	8	3	5	5	1
Shetland	—	—	—	—	—
BATH AND BRISTOL BRANCH:					
Bath	95	89	6	7	5
Bristol	?	248	0	75	3
Trowbridge	34	21	13	1	0
BIRMINGHAM BRANCH:					
Birmingham Central	?	136	117	9	18
Bromsgrove	15	7	8	0	0
Coventry	34	30	2	1	0
Dudley	39	16	23	3	4
Nuneaton and Tamworth	17	17	0	2	0
Walsall	16	5	11	0	1
Warwick and Leamington	36	27	6	1	3
West Bromwich ...	26	10	16	1	2
BORDER COUNTIES BRANCH:					
English	44	40	4	11	6
Scottish	48	38	7	12	0
CAMBRIDGE AND HUNTINGDON BRANCH:					
Cambridge and Huntingdon	80	67	11	12	2
Isle of Ely	16	16	0	2	0
CONNAUGHT BRANCH:					
Mid Connaught ...					
North Connaught ...	?	15	1	3	1
South Connaught ...					
DORSET AND WEST HANTS BRANCH:					
Bournemouth ...	94	41	38	10	7
West Dorset ...	51	28	17	10	2
DUNDEE BRANCH:					
Dundee	38	12	26	6	2
Forfarshire	20	9	9	3	2
E. ANGLIAN BRANCH:					
North-East Essex ...	48	30	5	5	1
North-West Essex ...	—	—	—	—	—
Mid Essex	26	20	6	14	2
South Essex ...	55	51	4	19	2

Branches and Divisions.	Members Present.	Result of Voting.			
		Members.		Non-Members.	
		For	Against	For	Against
Norwich	35	18	9	2	2
Mid Norfolk ...	41	33	5	3	0
West Norfolk ...	28	16	12	1	1
East Norfolk ...	19	18	0	7	0
North Suffolk ...	29	25	4	3	0
West Suffolk ...	27	27	0	3	0
South Suffolk ...	52	34	14	6	0
E. YORK AND N. LINCOLN BRANCH:					
East York	110	74	36	9	2
North Lincoln ...	47	39	8	6	5
EDINBURGH BRANCH:					
Edinburgh & Leith	140	138	2	23	1
The Lothians ...	45	44	1	3	0
South-Eastern Counties	40	36	3	0	0
FIFE BRANCH:					
Fife	65	40	25	6	2
GLASGOW AND W. OF SCOTLAND BRANCH:					
Ayrshire	53	24	29	7	16
Dumbartonshire and Argyllshire	25	9	16	1	1
Glasgow Central ...	36	7	27	1	6
Glasgow Eastern ...	69	59	5	3	3
Glasgow North-Western	49	29	17	4	13
Glasgow Southern	63	47	12	13	9
Lanarkshire ...	63	28	33	8	13
Renfrewshire ...	49	24	23	3	4
GLOUCESTERSHIRE BRANCH:					
Gloucestershire ...	?	95	2	8	1
LANCASHIRE AND CHESHIRE BRANCH:					
Altrincham	56	49	7	0	0
Ashton-under-Lyne	47	46	1	5	0
Birkenhead	82	75	7	16	1
Blackburn	100	99	0	13	1
Blackpool	44	44	0	16	0
Bolton	59	57	2	13	2
Burnley	70	66	4	4	2
Bury	44	37	6	7	1
Chester and Crewe ...	70	68	0	5	2
Glossop	8	8	0	4	0
Isle of Man	—	—	—	—	—
Leigh	24	24	0	2	0

Branches and Divisions.	Members Present.	Result of Voting. Members. For	Members. Against	Non-Members. For	Non-Members. Against
Liverpool	253	243	10	64	8
Manchester Central	50	50	0	10	0
Manchester North ...	65	63	2	8	0
Manchester, Salford	?	82	3	12	0
Manchester South...	72	67	4	6	1
Manchester West ...	66	66	0	8	0
Oldham	65	63	2	20	0
Preston	62	62	0	11	0
Rochdale	36	31	4	20	0
*St. Helens	—	—	—	—	—
Southport	51	50	0	10	0
Stockport, Macclesfield, & E. Cheshire	66	66	0	10	0
Warrington	29	17	11	0	4
Wigan	—	—	—	—	—
LEINSTER BRANCH:					
Dublin	43	41	1	35	9
East Leinster ...	29	29	0	13	0
Mid Leinster ...	—	—	—	—	—
North Leinster ...	—	—	—	—	—
North-West Leinster	—	—	—	—	—
South-East Leinster	—	—	—	—	—
METROPOLITAN COUNTIES BRANCH:					
Camberwell... ...	71	41	22	13	17
Chelsea	70	54	9	22	5
City	110	111	7	15	1
Ealing	65	65	0	24	0
East Herts	44	44	0	7	1
Greenwich	55	36	15	11	4
Hampstead	62	56	5	13	0
Harrow	40	35	4	4	0
Hendon & Finchley..	29	25	4	8	1
Kensington	220	206	14	45	4
Kingston	47	46	0	8	0
Lambeth	121	80	41	27	15
Lewisham	55	51	4	14	3
Marylebone... ...	198	179	11	37	1
North Middlesex ...	139	88	12	9	2
Richmond	24	24	0	6	0
St. Pancras and Islington	?	124	10	31	4
South Middlesex ...	40	20	12	10	2
South-West Essex...	78	57	20	17	5
Stratford	98	81	14	25	9
Tower Hamlets ...	46	30	16	13	10
Wandsworth ...	†	117	12	26	2
West Herts... ...	56	56	0	19	0
Westminster ...	74	67	7	31	3
Willesden	55	51	4	13	2
Wimbledon	21	19	2	9	2
Woolwich	34	33	0	4	0
MIDLAND BRANCH:					
Boston and Spalding	35	33	2	8	0
Chesterfield... ...	47	32	13	6	1
Derby	79	18	61	7	14
Leicester & Rutland	?	158	12	13	4
Lincoln	52	29	22	7	11
Nottingham... ...	140	82	58	10	6
MUNSTER BRANCH:					
North Munster ...	—	—	—	—	—
South Munster ...	—	—	—	—	—
West Munster ...	—	—	—	—	—
NORTH OF ENGLAND BRANCH:					
Bishop Auckland ...	27	18	9	3	1
Blyth	12	4	8	1	2
Cleveland	44	33	8	4	2
Consett	—	—	—	—	—
Darlington	36	33	3	4	0
Durham	19	5	12	4	1
Gateshead	44	4	40	2	3
Hartlepools	26	18	8	4	0
Hexham	16	13	3	0	0
Morpeth	16	16	0	5	1
Newcastle-on-Tyne..	?	51	47	8	6
N. Northumberland..	16	11	5	3	0
South Shields ...	29	27	2	0	5
Stockton	?	25	0	5	0
Sunderland	47	34	8	1	2
Tyneside	37	30	2	3	0
NORTHERN COUNTIES OF SCOTLAND BRANCH:					
Banff, Elgin, and Nairn	33	20	13	1	2
Inverness	15	15	0	1	0
Ross and Cromarty..	7	7	0	0	0
‡Sutherland and Caithness	—	—	—	—	—
N. LANCASHIRE AND S. WESTMORLAND BRANCH:					
Furness	37	37	0	10	0
Kendal	15	15	0	6	0
Lancaster	37	34	3	7	0
NORTH WALES BRANCH:					
Denbigh and Flint...	49	28	20	5	1
North Carnarvon and Anglesey	55	30	25	3	4
South Carnarvon and Merioneth	34	16	18	1	2
OXFORD AND READING BRANCH:					
Maidenhead... ...	29	10	19	5	5
Oxford	101	89	0	9	0
Reading	81	80	0	8	0
PERTH BRANCH:					
Perth...	42	35	6	3	0
SHROPSHIRE AND MID WALES BRANCH:					
Shropshire and Mid Wales	82	81	1	11	2
SOUTH-EASTERN BRANCH:					
Ashford	22	22	0	2	0
Brighton	121	103	18	18	1
Bromley	40	40	0	8	0
Canterbury and Faversham	25	25	0	8	0
Chichester and Worthing	56	54	2	9	1
Croydon	140	118	1	16	0
Dartford	40	39	1	9	0
Dover	30	30	0	4	1
Eastbourne	37	34	1	3	0
Folkestone	11	11	0	5	0
Guildford	52	51	1	6	1
Hastings	52	48	4	12	1
Horsham	—	—	—	—	—
Isle of Thanet ...	31	28	3	4	1
Maidstone	34	34	0	6	0
Reigate	47	44	0	5	0
Rochester and Chatham	42	31	11	4	1

* Return irregular; reserved by scrutineers.
† Attendance Book not properly signed.
‡ No meeting possible; postal vote taken, but disallowed by scrutineers.

Branches and Divisions.	Members Present.	Result of Voting. Members. For	Members. Against	Non-Members. For	Non-Members. Against
Sevenoaks	—	—	—	—	—
Tunbridge Wells ...	47	43	0	8	0
SOUTH-EASTERN OF IRELAND BRANCH:*					
Carlow	—	—	—	—	—
Kilkenny	—	—	—	—	—
Waterford	—	—	—	—	—
SOUTHERN BRANCH:					
Guernsey and Alderney	13	13	0	2	0
Isle of Wight ...	39	35	4	5	0
Jersey	8	7	0	0	0
Portsmouth	91	77	6	12	1
Salisbury	41	29	11	2	0
Southampton ...	64	50	11	10	9
Winchester	51	51	0	10	0
SOUTH MIDLAND BRANCH:					
Bedford	48	40	8	8	0
Buckinghamshire ...	42	17	23	2	2
Northamptonshire...	81	43	33	5	1
SOUTH WALES AND MONMOUTHSHIRE BRANCH:					
Cardiff	144	112	32	14	1
Monmouthshire ...	94	43	45	5	9
North Glamorgan and Brecknock	66	62	4	5	0
South-West Wales...	55	38	17	8	3
Swansea	83	59	24	3	2
SOUTH-WESTERN BRANCH:					
Barnstaple	35	34	1	2	0
East Cornwall ...	52	47	5	11	0
Exeter	87	74	12	8	0
Plymouth	72	65	14	19	3
Torquay	42	38	4	8	1
West Cornwall ...	66	52	14	6	0
STAFFORDSHIRE BRANCH:					
Mid-Staffordshire ...	58	28	28	2	0
North Staffordshire	98	61	37	3	0
South Staffordshire	57	46	10	7	5
STIRLING BRANCH:					
Stirling	53	24	28	0	1
ULSTER BRANCH:					
Ballymoney, North Antrim, and South Derry	10	10	0	2	0
Belfast	135	130	5	34	5
Derry	15	15	0	6	0
Enniskillen	—	—	—	—	—
Monaghan & Cavan...	—	—	—	—	—
Omagh	—	—	—	—	—
Portadown and West Down	41	14	25	1	7
W. SOMERSET BRANCH:					
West Somerset ...	52	27	15	0	1
WORCESTERSHIRE AND HEREFORDSHIRE BRANCH:					
Hereford	56	35	21	4	0
Worcester	46	41	1	4	0

* Did not vote; see p. 707.

Branches and Divisions.	Members Present.	Result of Voting. Members. For	Members. Against	Non-Members. For	Non-Members. Against
YORKSHIRE BRANCH:					
Barnsley	?	36	16	2	3
Bradford	133	123	10	30	7
Halifax	57	54	3	8	0
Harrogate	39	37	2	2	0
Huddersfield ...	55	55	0	9	0
Leeds	132	119	13	73	12
Rotherham	22	22	0	6	0
Scarborough ...	36	29	6	9	2
Sheffield	165	145	17	30	3
Wakefield, Pontefract, and Castleford	45	30	15	12	4
York	61	60	1	22	0
	Totals...	9,331	1,963	1,888	445

CORRESPONDENCE.

[It is particularly requested that communications intended for publication should be written on one side of the paper only, and should be addressed to the Editor, BRITISH MEDICAL JOURNAL, 429, Strand, London, W.C.]

THE UNDERTAKING AND PLEDGE.

THE CHAIRMAN OF REPRESENTATIVE MEETING (Mr. T. Jenner Verrall) writes:

I learn that some misunderstanding exists as to certain remarks of mine addressed to the recent Special Representative Meeting.

I am supposed to have held that the pledges and undertakings, which were so universally signed, are no longer binding.

This I did not say, nor is it my opinion. It does, not a little, surprise me that any misconception should have arisen, for, in fact, I made no reference either to the pledge or the undertaking.

The report of my remarks, which appeared in the SUPPLEMENT of the JOURNAL of November 23rd, shows that my theme was simply the need for unity among us. To maintain this, I should place the greatest possible value on the integrity of these undertakings.

Lest I should unwittingly pass from one error only to be landed in a second, I would add that I regret the necessity of making any statement on this matter.

My official position gives me no greater right than that possessed by every member of the profession to form his own opinion on the point.

Further, I consider it well that a Chairman should, so far as possible, keep his personal opinions in the background, except when they concern the management of business. But *ex cathedrâ* utterances are apt to have, or to be given, a certain weight, and I think it right to clear away any incorrect impressions.

The following letter has, by direction of the State Sickness Insurance Committee, been addressed by the Medical Secretary to members of the profession who are not members of the Association; it is published here for the information of members also.

INVITATION FROM INSURANCE COMMITTEES.

Appeal for United Action.

DEAR SIR,

I am instructed by the State Sickness Insurance Committee of the British Medical Association to bring to

the notice of those practitioners who are not members of the Association the notice which has been appearing prominently in the last few issues of the BRITISH MEDICAL JOURNAL. The notice is as follows:

A Special Representative Meeting will be held in London on Saturday, December 21st, to receive the report of the results of the vote of the profession now being taken in Division meetings, and to consider the future action of the Association.

The Council points out that, pending the decision of the Special Representative Meeting, and the publication of instructions issued under its authority, it is imperative that no negotiations or arrangements of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession with Local Insurance Committees or otherwise.

Nothing has been more gratifying than the loyal way in which the profession, members and non-members of the Association alike, have stood together in their resistance to the unfair conditions sought to be imposed upon them by the National Insurance Act, and the Committee would urge that this loyalty and solidarity, which has so impressed the public, should be maintained in face of the invitation to form panels which are now being issued to all practitioners by the various Insurance Committees. You will be told that it is necessary that you should apply within a very short time, otherwise your name will not appear in the first list of doctors, which must be issued during the first week of January, but it is hoped that members of the profession will decline to be hustled into any premature decision. The Association is now engaged in taking the opinion of the profession at meetings throughout the country. On December 21st the Representative Meeting will have the result reported to it, and will consider the whole situation. Practitioners in the meantime should decline in any way to anticipate the decision of that meeting. I may remind you that 27,400 practitioners in this country have signed the following Undertaking:

I, the undersigned, hereby undertake that in the event of the National Insurance Bill becoming law, I will not enter into any agreement for giving medical attendance and treatment to persons insured under the Bill, excepting such as shall be satisfactory to the medical profession and in accordance with the declared policy of the British Medical Association; and that I will enter into such agreement only through a Local Medical Committee, representative of the medical profession in the district in which I practise, and will not enter into any individual or separate agreement with any Approved Society or other body for the treatment of such persons.

Those who have signed the above are in honour bound not to take individual action in this matter, and the British Medical Association appeals with confidence to every member of the profession to give an example to the country of their determination in face of a crisis which involves the future of the whole of the profession. No more striking proof of this could be given than a general refusal to answer the invitation of the Insurance Committees until the organized body which represents the profession has formally come to a decision as to the line to be pursued.

It must be remembered that if the profession continues to exhibit the same solidarity and determination for the next few weeks as it has during the past eighteen months, the conditions of medical practice under the Insurance Act lie not with the Government, the Insurance Commissioners, or the Insurance Committees, but with the medical profession itself.

I am, yours faithfully,

ALFRED COX,
Medical Secretary.

429, Strand, London,
13th December, 1912.

PRO PATRIA.

Dr. W. GORDON (Exeter) writes: If Dr. Lauriston Shaw's speech in Saturday's *Times* is correctly reported he has not enhanced his reputation. As to any suggestion to the effect that, in resisting the National Insurance Act proposals as they stand, the medical profession is ignoring the public interest, the reply is simple.

1. The ultimate interests of the medical profession and the public are identical, so that the profession cannot be injured without the public suffering.

2. No intellectual industry can escape injury when placed under the control of inferior intelligences. The majorities on the Local Insurance Committees, who, by the Act are given control over what will soon be the bulk of the medical practice in this country, consist of men who have not the necessary education to safely exercise such control—belong, in fact, to the very class whose incapacity for the purpose has been already proved to the hilt.

3. Therefore the medical profession, recognizing the obviously vast and growing national importance of its work and the equally obvious unfitness of such authorities to exercise control over it, cannot do otherwise than determine to resist provisions so clearly injurious to the national health.

It is to draw the profession from this impregnable position that the Chancellor has proposed his three years' trial period. Having sacrificed our principles we should, in three years' time, have to face the huge vested interests created with purely monetary demands. *Facilis descensus Averni*, etc.

THE PLEDGE OF HONOUR.

Mr. CHARLES P. CHILDE, F.R.C.S. (Chairman of Provisional Medical Committee, Portsmouth), writes: I read in the *Times* to-day of the meeting of consenting practitioners held at the Holborn Restaurant last night, under the chairmanship of Dr. Lauriston Shaw. The latter is reported to have said:

He felt it his duty to say that if the Representative Meeting on Saturday next resolved as a binding decision of the Association to call upon all members of the profession to refuse to enter into any agreement with Insurance Committees, the moment would have arrived when large numbers of men would feel compelled to consider whether it was possible for them to sacrifice what they conceived to be the wide interests of the community to the narrow and selfish interests of their profession.

Now, Sir, I ask for information. Do not these words from a member of the Council carry a direct invitation to gentlemen to break their word of honour? The pledge distinctly binds every man who signed it not to co-operate in any way in the working of the Act until the terms approved by the British Medical Association have been complied with, and every man who has signed the pledge and does so deliberately breaks his word of honour.

Also I note in the first page of the SUPPLEMENT of December 14th:

The Council points out that, pending the decision of the Special Representative Meeting and the publication of instructions issued under its authority, it is imperative that no negotiations or arrangements of any kind, temporary or otherwise, should be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession with Local Insurance Committees, or otherwise.

Surely this word "imperative" falls far short of the actual position. Surely it should have been clearly stated by the Council that any man who has signed the pledge and does so is deliberately breaking his word of honour. If the votes at the Representative Meeting show the requisite majority in favour of accepting the conditions of the Government, those who are opposed to this policy will, of course, fall loyally into line with the majority and cease resistance to it. If the vote goes the other way, it is equally binding on the minority to fall into line with the majority. Gentlemen have now only to abide by their pledges of honour solemnly given. They cover the entire situation. What are we to think of the Commissioners who, knowing as they must know (for have we not our own Smith Whitaker amongst them?) these pledges that have been signed, have deliberately issued invitations to an honourable profession to break them?

Dr. J. S. BELL (Lockerbie, N.B.) writes: In an address by Dr. Lauriston Shaw to the Dartford Division on May 15th, reported in the SUPPLEMENT of May 18th, occurs the following passage:

I am indeed amazed at the profession's moderation. It is one of the difficulties of our position that we have throughout our negotiations in these matters put forward our claims with such strict moderation that those who have been in the habit of dealing with ordinary commercial bargainers have failed to recognize that there is no margin of excessive demand which can be abated during the process of negotiation. Certainly there is no such margin in this 2d. a week, and the suggestion that the profession may be prepared to compromise on the question of payment will be found to be entirely unjustified. Any hint on the part of our negotiators that a less sum than this *minimum demand* might be accepted by the profession *would instantly be repudiated throughout the country.* The profession is determined that so far as the subsidized insured person is concerned, the curse of underpaid contract practice—for which there will no longer be any excuse—shall cease. [*The italics are mine.*]

No new demands have been made by the British Medical Association since these words were spoken by Dr. Shaw. No new situation has arisen out of the pretended offer of a million and a half by Mr. George as a concession to the profession. The capitation fee was raised from 4s. 6d. to 6s. 6d., but at the same time, mileage, night visits, and all other extras were absolutely cut off, so that the apparently new offer was in reality worse than the original one, especially to country practitioners. In any case it falls 2s. short, with all extras excluded, of our cardinal point of 8s. 6d. with extras, which Dr. Shaw says *is an amazing moderate demand*. At a meeting of the so-called "National Insurance Practitioners' Asssociation" on December 13th, as reported in the *Scotsman* of December 14th, Dr. Shaw is reported to have said:

> I feel it my duty to say that if the Representative Meeting on Saturday next resolves as binding the decision of the Association to call upon all members of the profession to refuse to enter into any agreement with the Insurance Committees, the moment will have arrived when large numbers of men will feel compelled to consider whether it is possible for them to sacrifice that which they conceive to be the wide interests of the community *to the narrow and selfish interests of their profession*.

If Dr. Shaw admits that he is correctly reported, then I have no hesitation in saying that he has made a dastardly slander on the profession, and also on himself, and he is unworthy to sit upon the Council of the Association. He has further, in a most cowardly and contemptible manner, at the eleventh hour, gone behind the backs of his colleagues on the Council, and attempted to break up the organization of the British Medical Association by attending an association composed of the satellites of Mr. George, and slandering his brethren for the simple crime of adhering to their cardinal points which were arrived at by the Representative Meeting in February last after prolonged and careful consideration, and endorsed by the Council, of which Dr. Shaw is a member. These cardinal points Dr. Shaw characterized as "the amazingly moderate demands," and "that any compromise on those demands was entirely unjustified." I ask my fellow members of the Association to read the whole of Dr. Shaw's address, and I shall leave them to decide whether my criticism is justified or not.

Mr. FRANCIS HEATHERBY, M.B., B.S.Lond., F.R.C.S.Eng. (Cheshire), writes: As one of the rank and file I am wondering how many more men there are on our Council of the same type as Dr. Lauriston Shaw. That the majority at their late meeting conscientiously thought that we required no lead nor advice may be the case.

But when one of them is found directly afterwards actively engaged in promoting disloyalty to the Association, things begin to wear an ugly look. When it is remembered that Dr. Shaw is the Chairman of our Ethical Committee it only shows how blindly we have chosen our leaders in the past.

It seems to me that all over the country attempts are now being made to get us to repudiate our pledges. Sometimes the advice to do so is open and unashamed, more often it is in the form of a letter under a pseudonym to the leading local newspaper.

Their stock argument is that the Regulations have been so altered since we signed our pledges that those of us with even the most punctilious sense of honour need have no scruples about repudiating them.

This is not so. Our pledges were given before any regulations appeared at all. Our pledges are simply that we will not, individually, accept service or negotiate about accepting service under the Act, until we collectively, as represented by the Association, are satisfied that we can undertake to promise an efficient service under honourable conditions. Our pledges are, in their very nature, independent of our individual opinions of the Act.

Although our pledges were not written over a sixpenny stamp I believe that for the vast majority of men they will prove to be binding, for every man as he signed his name could say to himself, "There! My word is my bond." The men I pity are those who are listening to our tempters.

The man who can with equanimity contemplate serving under an Act which swarms with such humiliations as the liability of being reported by the chemist for prescribing too expensive drugs is a man with the instincts of a slave.

As for the 8s. 6d. which so many are mentally multiplying by a thousand and licking their lips in anticipation, you have but to take your eyes off it momentarily whilst you look up the deductions to which it is liable, and each time you turn back to it you will see the figures jumping down by shillings and sixpences, like an inverted taximeter, until if you go far enough you will have 3s. 6d. left.

I think we may say that a man who goes over to the enemy for a will-o'-the-wisp of this kind and the companionship of the dregs of the profession will not be missed. These disloyalists, in trying to stampede us, have pointed to the non-members as an unknown and dangerous quantity. If they ever have been, they are so no longer, and I think they may take pride, and we also can take pride, in their unanimity and loyalty.

Nor is this surprising when we consider that many of them are not members simply because of their doubts about the leaders of the British Medical Association.

We want leaders who will give us a lead—who can not only write inspiring addresses like that by Dr. Shaw which appeared in the SUPPLEMENT of May 28th, but men of character who can be depended upon to retain their convictions for a longer period than six months.

As regards the Defence Fund, give us a strong lead, and you need have no fear that the money will not be forthcoming.

Dr. A. W. S. CURTIS (Burwash, Sussex) writes: It would be a great help to me and others if you would make an authoritative statement as to the pledge we ALL took not to work the Insurance Act without the approval of the Association. I have seen it stated, and also had it said to me in conversation, that the pledge is now no longer binding, because of the altered terms now offered. I have always replied that the Association has not relieved men from their pledge, and that it must still be binding to all men of honour. Am I right? I do not know how such an impression has got abroad, except by the reading of such speeches as that delivered by Dr. Lauriston Shaw the other day at the Holborn Restaurant, in which he is also reported to have said that the reason the vote for not working the Act was so large was due to the "psychology of the crowd"—an insulting statement, and also a disquietening one to the large bulk of the profession, showing, as it does, how little Dr. Shaw, a member of the Council of the British Medical Association, appreciates the feelings of the majority.

Dr. W. EARDLEY, Honorary Secretary of the Wakefield, Pontefract, and Castleford Division, has addressed the following letter to the Secretary of the National Insurance Practitioners' Association:

(Copy.)

50, Burlington Crescent,
Goole.
December 6th, 1912.

To the Secretary,
National Insurance Practitioners' Association,
39, Victoria Street, S.W.

Dear Sir,

I have received a communication to-day—an unsigned circular, requesting a reply to you on enclosed postcard and intimating that tickets for your meeting at Holborn Restaurant on the 13th instant can be obtained from any of a given list of doctors. I am not a man who likes to indulge in strong language, but I only hope the communication will receive at the hands of the profession the the reception that it deserves.

In the first place, it is *premature*. Good taste, if not honesty, might have delayed its issue at least till to-morrow, when the profession is to learn through the BRITISH MEDICAL JOURNAL what are the results of the recent interviews between the five representatives of the doctors and the Chancellor of the Exchequer, and we are to receive the Council's report thereon, with a view to taking a vote of the profession at our Divisional meetings next week as to the course to be adopted by the profession as a whole.

The mere issue of a circular by or to the Westminster Provisional Medical Committee may or may not be an excuse for making a counterblast if you and your friends wish to do so, but it affords no justification whatever for circularizing the profession on a matter which is still *sub judice*.

I write as a general practitioner, whose practice will be enormously affected by the Act; that is, as a man

whose livelihood is at stake, and who is therefore "vitally affected." But I am also one of that large body of some 27,000 medical men, the vast majority of the profession (to which body I presume you and your friends also belong, otherwise you must be regarded as enemies of the profession) who deliberately pledged themselves over a year ago, in the words of the undertaking, not to enter into any agreement for giving medical attendance and treatment to insured persons "excepting such as shall be satisfactory to the medical profession and in accordance with the declared policy of the British Medical Association," and to enter into such agreement "only through a Local Medical Committee, representative of the medical profession of the district in which I practice." The undertaking said "in the event of the Insurance Bill becoming law"; but said nothing about "new conditions" (which are bound to arise) making the undertaking "no longer binding." As an honourable man I am bound by my undertaking; and the majority of our profession are honourable men.

It seems to me, the all-important point just now is, not to try to find out how many men are prepared to go on the panels, but to do our best to maintain the unity of the profession. We may well await the verdict of the profession as a whole, which is to be obtained next week by means of the votes at the Divisional meetings throughout the kingdom; I think that to force the matter, as your circular attempts to do, is an unjustifiable proceeding which cannot possibly recommend itself to the profession.

To quote and emphasize, as the circular does, an isolated remark of the Chairman of Representative Meetings, without due regard to its immediate context, presumably for the purpose of serving your own aims, is in the last degree unfair, to say the least of it. Mr. Verrall was speaking of the decisions of the previous Representative Meeting (Liverpool, July)—"the decision of a few months ago"; he was not questioning the binding nature of the original undertaking. What he did lay the greatest stress on was the paramount need to avoid a secession or split in the Association and profession, to find common ground, to preserve unity. After all, we must all be agreed that unity of the profession is the one essential point—the one thing that really matters; and the only way to maintain this just now is to remain absolutely loyal to the British Medical Association, the one body within the profession that can do any good for the profession as a whole in relation with the Government and the Act.

When you subtly suggest disloyalty to the Association or the profession I am sure you make a great mistake; and the suggestion, if not dishonourable and positively contemptible, is, at any rate, calculated to do nothing but harm, especially at this present juncture, when so much depends on cohesion and loyalty within the profession.

If I lived in London, I would certainly attend your meeting on the 13th; I apprehend, however, it is to be a "packed meeting," and therefore of little use.

Yours faithfully,
WILLIAM EARDLEY.

Dr. W. HOLDER (Hull) writes: No thinking member of our beloved profession can contemplate what the resolution of the Association just submitted means—namely, a "final" rupture between the bulk of the medical profession and the State, on the subject of the National Insurance statute—with satisfaction.

Thousands relying on the sagacity and power of the executive authorities of our Association to make the most favourable terms obtainable, have resigned clubs bringing them in a large part of their yearly income, and have offended their private patients attached to those clubs' members. Others have refused to take honourable advisory positions offered to them on Insurance Committees, State and civic, where they could have influenced the controlling of managers of the medical part of the Act. Many, but not all, have put themselves under bonds and pledges not to act or accept benefits under the Act unless the Association is satisfied. *Cui bono?* To none—only an admission of failure on the part of the generals and leaders of the Association, who have advised a policy of negation.

Those of us who wish to keep our bonds demand on December 21st satisfaction from the leaders who have brought us to this pass. Are we still to be bound further as parties to an impossible contract?

Since that bond was signed things have happened. We are not to have 9d. for 4d., but we are to have 6s. 6d., or 7s., or 7s. 6d., instead of 4s. 6d. Nothing very derogatory in this. In the country, 9s. instead of 4s. 6d. We—nay, I must say they, for I have no clubs—are to be freed from the bondage of club officials. The concessions that one-tenth on the Insurance Committees shall be doctors was granted. Frivolous or unnecessary calls are open to fines or suspension from benefits for those making such. We can charge per capita by fees or other combinations. Where are the derogations? What did we expect? More? and, if we did want more, was it the way to get it by sending advisers to seek concessions from the arbitrator whom they had insulted publicly a few days before?

A few more reasonable concessions can be obtained if we send a deputation from those willing—it may be not wishful, but willing—to work the Act for three years. To them the Chancellor would listen rather than to those who have displaced and disparaged his medical advisers—men who have been wishful in the interests of the medical profession to find a *modus vivendi*, and who tried more to help than they tried to thwart a statute passed by both sides of the House.

If something more than negation is not offered on December 21st, I predict a blow to our Association the end and disaster of which no reasonable member desires to contemplate. I know I express the opinion of many who feel they have too long been content to be misled.

Dr. FRANK BROADBENT (North Collingham, Newark) writes: Surely the fresh offer of the Chancellor of the Exchequer releases us from our pledge to the British Medical Association. If it does not, I call it a case of tyranny and an unconscionable bargain, and I think my opinion will be that of most of the country practitioners who are interested in the Insurance Act.

Dr. T. W. H. GARSTANG, Representative and member of Council (Altrincham), writes: There is only one attitude possible to-day for the loyal member—to abide by the decision of the majority. That pledge I have given, and will keep.

I enter a protest against the conduct of those members who are proclaiming that under certain circumstances they will set the majority (of two-thirds or upwards) at defiance.

Such language is disloyal to-day, and consequent action will be traitorous to-morrow. I can find no milder words to fit the case.

THE LOYAL MINORITY.

Dr. J. A. BENSON (Green Hammerton, York) writes: If the Council desired, as I believe they did desire, a true individual vote of the profession as to whether we should or should not accept service under the Insurance Act as it now stands, with the latest revisions of Regulations and concessions and promises by the Government, the voting could only be truly recorded by a referendum or ballot. And if either of these methods had been adopted, and preferably the former, the present small minority would have swelled into a very large minority, and possibly even a majority for working the Act. Many practitioners, in favour of coming to terms with the Government, and satisfied that the Government scheme is much better than any public medical service scheme, more workable and more remunerative on account of the expenses of collecting, and there being no compulsion as to contributing, and knowing by experience that the wage earner is seldom ill, and when ill wants to return to work as soon as possible, and rarely requires extras—these practitioners have shown great apathy in not attending the meetings of Divisions, and when present have not shown the courage of their convictions. On the other hand, those who are the most bitterly opposed to the Act have led and carried the Divisional meetings by their enthusiasm and by the wording of strong resolutions appealing for the unity of the profession, which we all desire. Many practitioners voted for these resolutions and voted against acceptance in order to maintain that unity, although personally they wished to work the Act, knowing their incomes would be increased by the Act, and hoping by unity to obtain even better terms and more concessions from the Government.

Many Divisions have not voted their full strength, and the early majorities which were printed in the press influenced the succeeding voting of Divisions to a much

larger extent than we ever experience in general parliamentary elections, for the same reasons of unity which the whole profession desires. When the Representatives meet I hope they will remember that they also represent the minority as well as the majority, and that they represent that large body of practitioners whose private practices are wrapt up amongst their contract work, which brings with it so much private work, and the loss of which contract work will bring with it the loss of private work, which loss will be indirect and impossible to prove for compensation. We must be loyal, we must stick to our pledges, but there should be no dog-in-the-manger work on the part of a majority of the profession who dislike contract work, and are prejudiced against the Act. It is only just that the loyal minority—those who have given up so much, and those who want the Act worked, which includes very many who have voted against it in their desire for unity—should be carefully considered.

Before the profession and public are plunged into bitterness and strife and chaos I hope there will be some arbitration and that both sides will be broad-minded. The right to dispense should be conceded to all doctors, and for the good of the public. In my experience the income limit is not important and can be left to committees. Mileage should be covered by the capitation fee, otherwise the Government cannot tell what amount it is voting. The method of pooling money in areas and deducting extras from it is unfair to individual doctors. If due notice is given of transference of insured persons from one panel to another, however brief and temporary, and the doctor to whose list they are transferred is paid —whether they take ill or not—then it does not matter whether he receives 2d. capitation or 3s. capitation; he will not lose by it, and will often be introduced by it to private work. All insured persons on a doctor's list will bring and introduce private work.

A CRITICAL POSITION. IS THERE A VIA MEDIA?

Mr. F. MARSH (Chairman, Local Provisional Committee, Birmingham) writes: Before embarking on an endeavour to obtain satisfactory conditions of service for the profession under the National Insurance Act, the Association, to make sure of its ground, asked for pledges of support from its members and the profession. Relying on the numbers received and on the good faith of the signatories, the Association took up a position from which it ought not to recede. Moreover, a very considerable amount of money and a vast amount of time and trouble has been expended by the Association and by individual members all over the country. It is difficult to believe that now some signatories even contemplate the dishonourable course of violating their pledge, the more so as it is a question of honour rather than legality.

The Present Position is a Critical One.

A majority of the Association—probably considerably greater than the necessary two-thirds, judging from the published returns from the Divisions—will at the forthcoming meeting of the Representatives on December 21st decide against service under the Act upon the present terms and conditions.

A minority have expressed their intention, in spite of their pledge, to accept service on the present terms, and this minority in some districts may be sufficiently large to compel the majority in self-defence to also join the panel. This defiance of the essential principle of trade unionism—the loyal acceptance of the decision of the majority by the minority—must result in a rupture which will effectually prevent any combined action by the profession in the near future. Now combined action will be especially needed during the first few months of the administration of the new Act, and by those who are now about to make it impossible.

Can a "Via Media" be found?

To save the situation, it is incumbent for the Representative Meeting, if it decides against service under the present conditions, to formulate the terms it deems necessary for the Association to the acceptance of service by the profession. In my opinion, for the sake of unity it might compromise by concentrating on two points, which might well be agreed to by both sides.

1. The reconstitution of the Local Insurance Committees in such a way that they could be relied upon to do justice between the profession on the one hand and the insured on the other. A fair basis would be the contributory one. In each unit of ten there should be—

4	representatives	of	insured persons
3	,,	,,	employers
2	,,	,,	the State
1	,,	,,	the medical profession

The representatives of the employers and the State must not be beneficiaries, nor in their employ.

With a committee so constituted the profession might rely that fair consideration would be given to the question of the income limit, the treatment of contracting-out persons by practitioners not on the panel, the various administrative regulations and rules, and especially the approving of institutions under the Act—a question which has not received the attention it merits from the profession, and which is going to be a very serious one in some localities.

2. The payment of a small fee by the patient for out-of-hours or night calls, to prevent both unreasonable and vexatious calls and to check valetudinarianism, which has increased so alarmingly in Germany under the insurance system. Instead of payment a definite statutory fine for such calls might be inflicted by the Local Insurance Committee, the fines to go either to a pool or to the doctor, who might be empowered to remit it if the call was a justifiable one.

The Association should inform the Government of this decision, and if an undertaking is given by the Government to bring in a short amending Act early next session to concede these points, the Association should on its part advise its members to accept service, on the understanding that all arrangements are provisional and subject to revision by the Local Insurance Committees when reconstituted under the Amending Act.

Surely the minority would agree to unite with the majority in urging these two extremely reasonable demands, and if they are rejected to loyally stand by the Association in its refusal to accept service.

If only union is maintained all reasonable demands must be conceded, and it is surely worth some sacrifice on both sides to obtain it.

DR. GEORGE CRICHTON (London) writes: A printed circular has been sent to me, signed by Dr. Charles Buttar. It is worthy of consideration, not only as the personal opinions of a member of the Central Council, but inasmuch as it represents correctly and concisely the present standpoint of an extreme and a numerous section of the Association.

As to the several items, the "seven points" so-called, the *first* is the wage limit. That was settled twelve months ago, and it is of no use bringing out a dead rat.

The *second* and *third* are granted. The extra point, 3A, refers to professional discipline. But the Act does not concern itself with professional discipline generally, which is exclusively the province of the General Medical Council, but refers to complaints or misunderstandings between doctor and patient. No preliminary inquiry can be fairer than before a committee of three of the insured and three of the doctors. It may be worth noting that there is a fresh scheme of ethical procedure under the consideration of the Association. The present rules have been condemned for many years, and the careless inattention to strict procedure is such as to destroy confidence in the judicial capacity of medical men.

Points 4 and 5 deal with remuneration. The fourth point is "the majority in the district," and the fifth is "what the profession" (where?) "considers adequate." When Mr. Lloyd George brought in the bill the amount regarded as "adequate" was 4s. or less, and in some cases 5s. and 6s. 6d. in every case including medicines. (In a few provident dispensaries the patient pays a penny for every supply of medicine.)

Unless the quantity or the conditions of work are greatly increased—and this was not contemplated, and is not the case—there was no obvious cause for increased pay. Correctly speaking, 8s. 6d. could not be called a "point," for it has magnitude and varies according to surrounding conditions. It was doubtless correct to ask for increased pay, but there was nothing to explain why this particular figure was right. The Chancellor went half-way, and the offer should have been at once closed with. It is not

'derogatory to the profession" to ask for 100 per cent. more wages and to accept 50 per cent. increase.

6. Adequate medical representation. This is a curious "point," when, after a few weeks' work, two-thirds of the Advisory Committee played truant and stayed away altogether, leaving the work to the others. The note on this "point" is "partly granted." How can anything be "partly adequate"? Here I would ask if there is any "adequate" representation of the minority who wish the Act carried through on any committee in their own neighbourhood; or any representation at all on the so-called Representative Body of the Association?

The writer of the circular goes on: "Surrendering freedom of medical profession for a State-controlled service." It was the outcry of the Association mainly which forced the Chancellor of the Exchequer to promise another million to put into the pockets of the doctors, and in demanding and in accepting State pay the "profession" have put our necks under the yoke. You cannot receive State pay without a certain amount of State control. This is light at present, but we know whom we have to thank for it. *These*, who talk of "surrendering freedom"!

There is not very much in the arguments of the circular, but it is just as well that the die-hards have put them in print. We shall see in two or three years' time, when conditions have changed, what things will conveniently be forgotten, and by what excuses they will cling to office, and to their holiday pay and play at the annual meeting.

Dr. VICTOR J. BATTESON (London, E.) writes: At this hour of crisis all should ask, "What is the alternative and what the end?" Even if its decision result in chaos, none may forget that the Cabinet, representing the nation, has necessarily at this time the last word.

There appear to be three practicable courses open to the Commissioners—the panel system, a State service, and administration by friendly societies and insurance companies acting as trusts.

Sickness trusts would reduce both doctor and patient to servility, and reinstate the evils of the club system in intenser form. It is possible, however, that in an emergency the Commissioners might be tempted to try a method even worse because less alterable. Some blend of sickness trust and State service might be set going, and this would tend to have the evils of the trust system without the excellencies of State service.

The panel system is at least a better expedient than any compromise with the trust method. The panel encourages a sympathetic relation between doctor and patient; it has a co-operative basis; it gives the doctor safeguards and leaves him relatively free. The panel system, again, does lend itself to unlimited modification in harmony with professional ideals. It would surely be sounder policy to accept it for temporary use rather than risk the establishment of institutes managed by commercially-minded trusts.

If provisionally accepted, in what way could the panel system be changed into an efficient domestic health service? Progressive practitioners have long wished for some form of local clinic and discussed its possibilities. Dr. T. D. Lister has set forth in the *Lancet* of December 7th, 1912, a detailed scheme by which this could be brought about under the Insurance Act.

Completely equipped clinics in each district, staffed by the local profession taking serial duty, would seem a straightforward, convenient, and economic means of dealing with ill health among crowded populations. It would give a fuller and more varied service to the people. The doctor would have assistance, be relieved of business anxieties, and be able to live in a quiet and clean house without the inconvenience of a dispensary and general waiting room.

Such adult clinics or health centres could be inaugurated even at this late hour if the support of the British Medical Association be assured. If funds be needed for buildings, furnishing, and attendance the cost would not be so great as that of a full State service, and it would seem the duty as well as the pleasure of the Cabinet to provide the means.

There are indications that a courageous forward policy of this kind would find many-sided support. The people, now better educated, are taking a keener and more intelligent interest in their personal affairs, and especially in matters of health. In each of the three political parties there is an influential body of opinion which is looking to public health as a primary means of reinforcing the national life. The Government itself is committed to health insurance as its chief contribution toward social reform. Its credit will largely depend on its success or failure in this direction. Finally, in the medical profession, a consciousness of a new *raison d'être* is growing. It directs its attention more and more to the prevention of disease and attempts to keep people well. It is recognized that no longer is it permissible to think only of treatment by drugs, but that a study of personality, work, and environment is essential.

Such a campaign for complete provision against sickness on true public lines can only be successful if doctors co-operate and their position be assured. Among working people particularly, only by some system of local clinics can the local doctors come together and help one another effectively to deal with the causes of ill-health.

If in the health centre we can not only deal more quickly and thoroughly with disease but teach the people how to keep well, the public will not grudge the expense, cost what it may.

Shall we not be most true to ourselves and our healing art if we co-operate with the people and their authorities, leaving outstanding questions to be solved by the sense of fairness in the nation?

Dr. DIGBY F. B. COTES (Burton-on-Trent) writes: May I be allowed to point out one fact of vital importance—namely, if the Representative Meeting of the Association decides that the working of the Act would be prejudicial to the interests of the profession (and therefore of the public also) it follows as a necessary corollary that the Association must, at the same time, formulate some *alternative scheme of work*, because the profession has actually resigned all its contract appointments and is now looking forward to total loss of revenue from these sources, with nothing else in view except the deluding bait of the Chancellor?

Some workable scheme must be brought forward by the Association which will enable its members and the profession generally to earn a livelihood without being hampered by lay control, etc. May I therefore call the attention of the profession to the fact that whilst some districts are thickly populated with insured persons other neighbourhoods contain very few? This being so, surely the wisest course to adopt would be as follows:

1. In districts where there are very many insured persons the doctors should give their services under the Act, for these districts alone would tempt whole-time medical officers.

2. In other districts, where the number of insured persons is small, doctors should not serve under the Act, for these areas could hardly tempt outsiders.

3. Contributions should be levied in those districts where the Act is worked towards compensating the doctors practising where it is not worked.

4. This system should be continued until the just demands of the profession are granted.

Dr. T. RIDLEY BAILEY (Bilston) writes: In the event of the Association deciding not to take service under the Revised Regulations of the Insurance Commissioners, the Representative Meeting should take prompt steps to inform the Government that the members would be prepared to accept the present financial offer for ordinary treatment, visits, and surgery attendances upon insured persons not assessed to income tax, if the provision for extra mileage were extended to all country districts, and the following were not included in "medical benefit":

1. Abortions and miscarriages, as well as confinements—these have always been outside the contract system even of friendly societies.

2. Operations and serious accidents (for which institutional treatment sooner or later will have to be provided), and accidents and disease covered by the Workmen's Compensation Act, and diseases due to personal misconduct. These latter disqualify for sick pay, and should equally disqualify for medical treatment under the Act.

3. The administration of anaesthetics, like consultation with another practitioner, should in common fairness "be arranged for outside medical benefit."

These exceptions need not necessarily be paid for by the Insurance Committees—in many cases the patients could and would pay as hitherto—but the right of the practitioner to charge reasonable fees for them should be admitted. He would still be burdened with such extra services as special visits and night visits and the keeping of records, together with diminished remuneration from the loss of dispensing and the temporary removal of insured persons to other districts, with subjection to the Medical Service Subcommittee and the Inquiry Committee, etc.

The Chancellor has started, to use his own words, "a new stage in the organization of the resources of the State for the welfare of the least as of the greatest of its members," and he can achieve this object only with the loyal and ungrudging co-operation of the profession, and this, I believe, could be secured if the above were promptly acted upon.

The Voting at Divisional Meetings.

Dr. Francis Villy (Keighley) writes: May I be allowed to call attention to a very serious matter? In the Bradford Division the recent vote was taken by signature, separate papers being used for the Ayes and the Noes. When I approached the paper assigned to those who are willing to accept the Act I was surrounded by a group (including at least two members of the Executive) who mildly tried to hustle me away, pouring all sorts of arguments into my ears. When I took up the pen to sign my arm was seized with the obvious intention of inducing me not to do so. I do not say that what can be called physical compulsion was used or intended, but clearly the influence exercised was quite unwarrantable and would have prevented many a voter from recording his conscientious conviction. A friend was definitely warned, "Do you realize that it will be a very serious matter for you to sign your name here?"

Clearly a vote taken under such conditions has no meaning. One is interested to know in how many Divisions such methods were adopted. Casuists might argue that no allegiance of any sort is due to a body which adopts them. I would suggest that an apology is indicated at the very least.

Dr. John T. Tibbles (Melton Mowbray) writes: The vote whether or not we should refuse to work under the Insurance Act is supposed to have been taken by ballot. If, in all the Divisions of the British Medical Association, the taking of the vote has been on the lines adopted at the meeting of the Leicester and Rutland Division, it would be unfair to call it a vote by ballot, and not very wise to esteem it as a record of the real opinion of those present and voting.

The members at the meeting were invited to come down to the platform, and each was given a card on which to express his opinion, "I am" or "I am not" in favour of, etc., and each member was, by an officer of the Division, told and shown how he should mark his card—which words he should pencil out. Needless to say, the instruction was to cross off the latter line.

I admit the question for decision might have been put in a very much simpler form, but it should at least have been left to individual initiative to give an unbiassed vote on the card.

Dr. J. Dewar (Hampstead) writes: The opinion has been growing upon me that the large majorities that are being returned are not so much due to the defects of the Insurance Act, as of its author. That this opinion is not altogether imaginary, I had an ocular demonstration yesterday at the Hampstead Divisional Meeting which I attended. After two strong letters against working the Act were read by the Secretary, the Chairman read a very long printed circular from Manchester, which was filled with all the stale oft-refuted arguments that have been bandied about during the whole of this year. In that circular the agonies were piled on in no measured degree, and in no measured terms. After this was finished, I suggested to the Chairman that there was another side to the picture, and asked him to read the circular letter from Birmingham. This he testily refused on the ground that he had no *official* knowledge of such a letter. After some haggling he did say I could bring it up later on. But the very next thing he ruled that voting should take place at 5.30 (it was then 5), and then got the meeting to agree that no one be allowed to speak more than 5 minutes. This, of course, shut out the possibility of my reading the Birmingham manifesto. Now as that circular letter put the other side very clearly, very moderately, very pleadingly, I contend that under the circumstances I had a right to read it. I protest most strongly against the biassed ruling of the Chairman, that only half an hour should have been allowed for the most important discussion that has ever been brought before a medical audience, to say nothing of the fact that he and the Secretary took just half an hour to read their communications.

It was quite obvious to every one what the driving force at the Hampstead meeting was. There was *nothing* good in the Act nor in its author; everything that the Chancellor had done to improve it had only made it worse; when any one said anything against the Act or its author it was cheered, anything in their favour was jeered. One instance: There was present a German doctor who made a speech in favour, and said he had twelve years' experience of the working of the German Insurance Act, and that although at first there had been opposition, now nearly all the doctors were very thankful for the improved conditions the Act had brought about, especially in industrial centres. While he was speaking I could feel that the atmosphere was becoming charged, but there was only one slight explosion. One gentleman—I mean member—threw a most insulting remark across the room at him which nearly caused a scene.

A year ago, when I signed the pledge and got others to do so: it was done because of the defects in the Act and not because of the defects of its author. But if the attitude of the Hampstead Division is a common one, then I repudiate the pledge, as it was distinctly understood that political considerations were to be entirely excluded, and I shall be prepared to do all I can to work the Act.

The Act is not perfect, nor has any alternative that has been suggested perfect, or likely to be. We may be losing 1s. of what we considered a reasonable demand, but any alternative scheme either of the Government or of our own will cause a loss of 2s. or 3s.; and by dropping the 1s. we will prove to Parliament and the public that we are not out on the game of grab. If at the end of the three years we find that 7s. or 7s. 6d. does not pay us, then with facts to go on we can go with a good conscience to Parliament and ask for more. With one or two concessions which the Chancellor should be asked to make, the other five points have been practically conceded; I refer to special and night visits, illness from misconduct, and mileage for our country brethren. The public ought to pay small fees for these. This would be only just and reasonable, and if granted would remove much irritation and opposition. If we accept service we have to sign a contract; I suggest that to this contract we add, "subject to the right to charge the insured small fees for special and night visits, illness from misconduct, and mileage." I do not think the Commissioners would reject our services if we did this.

Dr. B. G. Morison (Islington) writes: Both at the meeting of consenting practitioners in the Holborn Restaurant on December 13th, and in a section of the press, statements have been made to the effect that intimidation has been practised on members of the profession in order to maintain its resistance to the National Insurance Act. I for one would be very slow to accept this testimony, and I feel convinced that the statements above mentioned are inaccurate. Certainly they have no foundation in the general practice of Divisions of the British Medical Association. That to which I belong has been remarkably free from anything of this kind. It has also been, from the outset, one of the steadiest in opposition to the Act. At its general meeting on December 13th every speaker in favour of acceptance of the terms and conditions now offered by the Government (which were most unpopular, and were decisively rejected) received a fair hearing. One, who spoke at length, also read through the tract recently issued from Birmingham. This production abounds in misstatements and assumptions, and was not in favour with the meeting. Yet neither the speaker nor his text excited any hostility. Indeed, he received exceptional consideration. All present

voted freely as they pleased. The result has been a practical acceptance by the minority of the decision of the majority. At the Holborn meeting of consenters any attempt at a difference of opinion was sternly repressed.

Intimidation is not much in favour with medical men. It is a weak weapon when its object is possessed of intelligence and education. For this reason practitioners in controversy prefer to rely upon the power of reasonable argument and a common reference to those honourable traditions which they have inherited, and to leave to authorities not of their profession the methods of steam-roller logic.

THE RESIDUE OF INSURED PERSONS.

Dr. CLEMENT WHITE (Rochester) writes: "To him that hath shall be given" is apparently the principle underlying the suggestion of the Insurance Commissioners to Insurance Committees in Memo. 131 (I.C.), par. 14, quoted in SUPPLEMENT to the BRITISH MEDICAL JOURNAL, December 7th, p. 640, that "in consideration of practitioners agreeing to place on their lists all who apply to them," the Committee should "assign to each practitioner the residue of insured persons who make no application in proportion to the number of persons who have already been accepted by him." "Proportion" presumably means "direct proportion." Take three doctors, A., B., and C. Suppose two insured persons apply to A., one to B., and none to C., and that their residue is 1,500, then A. will have 1,002 patients, B. 501, and C. none.

Is this suggestion a deliberate detail in the attempt to "jump" the profession as a body, and to induce individual practitioners to form panels with all speed, or is it only a proof that the latest memorandum of the Insurance Commissioners is as ill-considered as the Insurance Act itself? It certainly is an inducement to the waverer to go on the panel at once in spite of pledges and further a temptation to advertise the fact and canvass for patients.

SCHEME FOR PAYMENT FOR WORK DONE.

Dr. ROBERT BRADLEY (Bentham, Lancaster) writes: I beg to submit a rough outline of a scheme which, if somewhat elaborated, would meet most of the difficulties now presenting themselves and prove acceptable to every one concerned:

A Scheme for Medical Relief by Payment for Work done.

This should be administered by the Insurance Committee, with the help of the Local Medical Committee, by whom a tariff of charges should be made out and by whom a list of doctors on the panel should be furnished to each insured person. Where an insured person required medical aid, application should be made to a clergyman, a parish councillor, or an overseer, a list of whom should likewise be given to each insured person. Those on the list should be provided with books of forms or orders having counterfoils. On application being made, the question should be asked, Is the patient confined to bed? If so, an order for the doctor to visit the patient once a day for a week should be given; if not in bed, but confined to the house, an order for a visit every other day for a week. If not confined to the house, an order for two consultations at the doctor's surgery should suffice. Visitors should be appointed, as in the case of friendly societies, to see that the patient kept within bounds. At the end of every month every doctor would send his orders up to the Insurance Committee, having just put down on them the fee he is entitled to according to the agreed scale. In the case of extra duties or night visits being needed, a separate detailed account should be rendered. The doctor would keep the counterfoils for reference. Proposed tariff:

Visits paid between 10 a.m. and 6 p.m., if within a mile..	2s. 6d.
Visits paid between 8 a.m. and 10 a.m., and 6 p.m. and 10 p.m.	3s. 6d.
Night visits, if under one mile..	5s. 0d.

One shilling a mile extra for every mile or part of a mile beyond the first mile.

All ordinary necessary medicine included in the above charges.

Consultation, with medicine, 2s. 6d.

Repeat medicine without consultation, 1s.

The advantage of the above would be simplicity and economy of working. Unnecessary visiting would be checked. The patient could select any doctor he chose for that particular illness or accident without being bound to have him for a whole year. Moreover, when the patient went away for a change or into another district there would be no difficulty: he would only have to select another doctor on the panel; indeed, it is doubtful if it would be necessary to form any panel at all, as almost any doctor would take the order. The wage-limit bugbear would no longer exist. The mileage question would be settled—no book-keeping by the doctor would be needed, as he would file his counterfoil and the order sent up to the Committee would furnish them with all necessary particulars. The objectionable club system would be abolished and every insured person would enjoy the privileges of a private patient. There would be no need for inspection, drug list, or any obstruse calculations relating thereto. The doctor who would supply such drugs as he ordinarily supplies to his patients would retain his right to dispense if he cared to do so, and if he did not he could easily make an arrangement with a chemist as heretofore. I feel confident that if the whole 8s. 6d. allowed under the Act were pooled, it would more than suffice to pay for all attendance under the above scheme, and that a not inconsiderable surplus would remain for distribution as a bonus amongst the doctors; if not the doctors' bills would be discounted. I do not think that would ever happen except in severe epidemics, when the fund provided by the Act for the purpose could be utilized to meet any deficiency. If this scheme were not deemed suitable for all districts, it might at least be tried in some localities where it appeared to suit the requirements.

Dr. S. C. HOUNSFIELD (Stowmarket) writes to express the opinion that payment for work done on a fair tariff of fees would afford a way out of the present difficulty and place the doctoring of the insured and others on a better footing, as follows:

Advantages of the Scheme.

1. The cost would almost certainly be less to the State. For example, take the cost of medical attendance of the National Deposit Friendly Society and compare it with the low but more expensive capitation fees of other friendly societies; this is entirely due to the unnecessary and trivial work called for by members of the latter (and even then the doctors are far better paid in the former case). The State should devise some means of protecting itself from over-attendance; probably the only satisfactory way of doing this is *to make the insured pay some fraction of the bill*, either directly or by some deposit or bonus system (refer to Scheme Y, Oxford meeting, in SUPPLEMENT, November 9th). This would act as a wholesome *deterrent* to the insured: also, the patient himself is the only one who can check the doctor's bill.

2. The insured would get more efficient medical attendance (at any rate it would be given more cheerfully). Doctors capable of attending to most of the extras would be *encouraged* to settle in poorer country districts more than they are at present.

3. *Free choice* of medical man would be absolute; if a medical man charged higher rates than the tariff, the insured would have to pay the extra: if a medical man paid too many visits, insured would have his remedy in changing his medical man: if insured should choose a medical man outside the radius for which mileage is arranged in the tariff, he would pay the extra mileage himself.

4. *Panel* of medical men probably quite unnecessary, but *possibly* advisable, though only *possible* if a low wage limit is conceded to such panel.

5. *Wage limit* unnecessary if medical man can charge higher fees when he likes, always bearing in mind that the insured pays anything above the tariff.

6. *Medical men free*, and bound to be satisfied if paid for what they do. They would have more time to attend to serious cases. They can only object to keeping the accounts which they now do for private patients. The only others who can object (and one hopes there are none) are those who are expecting to get by a capitation scheme much more than they earn.

7. *Insured free* to live where they choose, and change their medical man according to the existing simple rules of professional etiquette.

8. *State free* to introduce such a scheme without bargaining with the medical profession.

9. No need for endless committees.

In fact, all the advantages of private practice which approaches the ideal.

Parish cases, very poor, and probably *other exceptional cases* in distressing circumstances, could be paid for under the same system, though a panel of medical men would probably be necessary for such cases.

Medical inspectors *could* only be required for such cases, but surely would not be necessary.

In addition to this, medical men will always in the future as in the past be found willing and anxious to give medical attendance on a charitable basis to the needy ones, especially if they are not insured.

The State or the Medical Council should at the same time discourage medical men from charging *lower* fees than the State tariff, and thus prevent cheap, and consequently inefficient, medical attendance, also the evils connected with undercutting.

Scheme for a National Medical Service.

Dr. Lawrence Barnett (Hampstead) writes: Now the time has arrived for action it is the opinion of many practitioners that a scheme of medical service, national in character, should be placed before the profession for consideration, as schemes for different areas do not provide for the retention of the insured outside the Act under "own arrangements" in any public medical service.

The one considered by the Hampstead Provisional Committee, and sent to the late State Insurance Committee, provides for migration and freedom from arrears, thus keeping the insured person within the service permanently. The following is a short outline:

Financial.

	Per Annum.
½d. Per week per contributor for drugs, etc.	= 2s. and 2d.
2d. Per week per contributor for ordinary treatment (inclusive of amount from available medical benefit fund)	= 8s. and 8d.
¼d. Per week per contributor funded for migration (to pay practitioners called in to attend them)	= 1s. and 1d
¼d. Per week per contributor handed to trustees towards the cost of collecting the difference between 3d. and the amount available from the medical benefit fund	= 6½d.
½d. Per week per contributor to maintain the contributors on benefit in service during sickness (1 in 8) ...	= 6½d.
Totals 3d. Per week per contributor ...	...12s. 1d. and 11d.

Elevenpence is reserved for the expenses of working the medical side. Other clauses are:

1. Loading impaired lives by joint committee.

2. Entry of existing contract patients for six months under doctor whose resignation has been sent in by the local Secretary of the Association, thus minimizing the Guarantee Fund of the Association. These can be organized under new Regulations 14 (7) by means of the retiring secretaries of the societies at once.

3. Three committees—medical, joint, committees of insured persons. It will be noted that where numbers of insured are large the expense, migratory, and collecting funds are correspondingly large, and with small numbers of insured and less migration, the funds may be used for other purposes at the discretion of the Medical Committee.

Note.—In any scheme drugs will have to be left out of consideration—this does not alter the finance of this scheme, neither does the refusal to grant the Exchequer grant in aid.

No Politics.

Dr. Charles A. Brigstocke (Haverfordwest) writes: Since you have permitted a letter by Dr. J. Owen Jones (Holywell) attacking Sir James Barr to appear in the Journal of December 7th, I must assert my right as an old member of the Association to reply to Dr. Jones's letter.

Dr. Jones has made his letter a vehicle for a display of very bitter political animus against Sir James Barr under the cloak of ordinary comment. Dr. Jones is perfectly welcome to fall down and worship any fetish he may care to set up, but many of us would require something more than what Carlyle would have called "a little tin demigod on wheels" before we should do so.

Sir James Barr has rendered great service to humanity by his eminent position in the medical profession, while Mr. Lloyd George has simply set class against class and man against his fellow man.

Dr. James C. Hamilton (Polmont, N.B.) writes: It is really very amusing to read Sir James Barr on political motives in connexion with the Insurance Act. Personally I can see a certain amount of good and a considerable amount of evil in the views of both of the great political parties, and I strongly deprecate a medical man taking up a militant attitude in matters political, whichever side he adopts. Political doctors are to my mind almost as abhorrent as political parsons.

Now it is the opinion of many medical men that the uncompromising attitude and political bias shown from the first towards this Act by our President for the year have had no small share in our failure to secure better terms for the profession. Cabinet Ministers, after all, are only human, be they Liberal or Conservative, and it is most unfortunate that in this most critical year for us all we could not have had a President with a more open mind and a more conciliatory tone. Of Sir James Barr's opening attack in his letter on yourself and his personal insinuations against a leading political opponent I shall say nothing, and I have no doubt Dr. Owen Jones is quite able to deal with the petty and sneering references to himself. I must say that the general tone of Sir James Barr's letter surprised me greatly, and has gone a long way to dispel what professional admiration I had for him and his work.

PROVISIONAL MEDICAL COMMITTEES.

South-West Essex.

The seventh meeting of the Committee was held on November 21st, at four o'clock, at the Wesleyan Church Schoolroom, Leyton High Road. Twenty-one members were present, and Dr. Panting presided.

Local Medical Committee.—It was proposed by Dr. Noble and seconded by Dr. Challis that the Secretary should communicate with the secretaries of other Provisional Medical Committees in the county of Essex with a view to calling a meeting of the chairmen and secretaries of these committees to consider the best method of electing a Local Medical Committee for the county of Essex. This was carried unanimously.

Resignation of Secretary.—The Chairman then read a letter from the Secretary in which he tendered his resignation. After considerable discussion it was proposed by the Chairman:

> That this Committee wishes to express its great appreciation of Dr. Eldred's past services, and to put on record its confidence in his loyalty to the Association, and begs of him to withdraw his resignation.

This was seconded by Dr. Tomkins and carried unanimously. The Secretary, in reply, intimated his willingness under the circumstances to withdraw his resignation.

Politics at Medical Meetings.—It was proposed by Dr. Challis and seconded by Dr. Jones:

> That any doctor at any meeting introducing into his speech an attack on either political party or any member of either political party shall be *at once* ruled out of order, and shall not be allowed to speak again at such meeting.

An amendment was moved by Dr. Noble and seconded by Dr. Berrill:

> That the Chairman exercise his discretion.

The amendment was carried without dissent.

MEETINGS OF THE PROFESSION.

Isle of Wight.

At a meeting of the medical profession in the Isle of Wight, held on December 11th, at which 44 were present, a vote was taken as to acceptance or refusal of the latest Government offer under the Insurance Act. There were 40 against acceptance, 4 for acceptance.

MEETING OF MEDICAL MEN WILLING TO WORK THE ACT.

THE NATIONAL INSURANCE PRACTITIONERS' ASSOCIATION FORMED.

A MEETING of medical practitioners willing to accept service under the National Insurance Act was held at the Holborn Restaurant, London, on December 13th, when it was decided to form an organization, to be called the National Insurance Practitioners' Association. Those present numbered about 300 or 400. Dr. LAURISTON SHAW was elected to the chair, although there were one or two protests that the chairman of such a meeting should be a medical man in general practice and one concerned with club work.

Dr. H. H. MILLS, as one of the conveners of the meeting, read letters approving the objects of the meeting from Dr. Maclean (Cardiff), Dr. Ward Cousins (ex-president of the British Medical Association), Dr. Buist (Dundee), Dr. Keay (Greenwich), Mr. C. J. Bond (Leicester), and from a member of the Council of the British Medical Association who wished his communication to be regarded as private. Dr. Mills concluded by remarking that any present who were not in sympathy with the objects of the meeting were to be regarded as guests, and should not intervene in the proceedings. This brought a protest from a member of the audience, who said he was not in agreement with the views of the executive of the proposed association.

A proposal to exclude the representatives of the press was lost by a large majority.

In reply to an inquiry as to the position of those who had signed the British Medical Association pledge, the CHAIRMAN said the question of taking service under the Act would be decided by the Representative Meeting. When that decision had been given, it would be time for every member to give his own personal decision.

Dr. LAURISTON SHAW, in an opening address, said that when he was invited to preside over the meeting he had to consider his position as one of the four members of the Council of the British Medical Association appointed by the Representative Meeting, and it did not take him long to decide that it was his duty to accept the invitation. The interval between the publication of the final offer and the date of the Representative Meeting to make a final decision was exactly a fortnight. In this short period it was of the utmost importance to secure the fullest expression of opinion upon the final terms by all classes of the profession, especially those engaged in industrial practice in the great cities. There was no section of the doctors engaged in practice in industrial districts whose voices should be more clearly heard than those who desired opportunities of serving under the Act—those who felt that their self-interest, no less than their duty, called them to work the Act and to endeavour to secure the best terms they could from the Insurance Committees. Those members of the profession who recognized in the Insurance Act a great, vital, and good principle, and had had faith that it would be possible to obtain fair terms under the Act, had remained silent throughout the controversy during this year, because their outspoken appreciation would have handicapped the profession in securing the better terms that had been secured. The chaotic conditions under which medical treatment was afforded to the poorer classes in this country had been properly described as a disgrace to civilization; nearly everybody believed that a system of insurance was the most satisfactory solution of this difficult problem. The profession was now offered terms under a national system of insurance which he believed were remunerative and honourable. He was convinced that no class of practice among the people now to be insured had obtained in the past so high a rate of remuneration as would be obtained under the Act, and that the conditions of service were such as need not cause the slightest anxiety to an honest practitioner who desired to give faithful service to his patient. Dr. Shaw referred to the memorandum of the Birmingham general practitioners, which, he said, showed in a most concise manner the satisfactory terms the profession would be actually able to obtain under the Act. He attributed the fact that so large a number of men were voting against acceptance of the terms to the "psychology of the crowd" and to the curious attitude of mind into which men lapsed in moments of panic or great excitement. At such times they were influenced by motives which in quieter times, and individually, would not influence them at all. Even if the "crowd" were right, even if there were dangers to the profession in accepting service under the Act, if their remuneration for a time were a little restricted, and the conditions were not as free as some thought they ought to be, he believed, nevertheless, that it was the duty of the profession to give the Act an honest and serious trial. Thus only could the medical profession maintain its reputation for altruism and for disinterested service in the public welfare. Against the possible risks to themselves—he did not think they were many—must be balanced the undoubted hardships which would come to thousands of the poorer classes who had been accustomed in the past to rely on some form of contract practice, and whose contracts had now been withdrawn. Whenever there was a contest between a section of the community and the community as a whole, that struggle was guided by certain general principles which were as certain of effect whether the section of the community concerned were coal miners or general practitioners. The power of a small section by its unity to coerce the whole community was limited by the necessary opposition between the larger and smaller patriotism, between the interests of a class and the interests of humanity. Speaking deliberately, and with a full sense of responsibility as a member of the Council of the British Medical Association, and owning an almost passionate regard for the principle of professional union and for their beloved Association, he felt it a duty to say that if the Representative Meeting resolved, as a binding decision of the Association, to call upon all members of the profession to refuse to enter into any agreement with the Local Insurance Committees, the moment would have arrived when many members of the profession would feel compelled to consider whether it was possible for them to sacrifice that which they conceived to be the wider interests of the community to the more narrow and selfish interests of their profession.

Dr. ROBERT DONELLAN moved:

> That an association for the promotion of the interests of those medical practitioners who desire to render service under the Insurance Act be formed.

He congratulated the promoters on the success of the meeting from the point of view of numbers. Dr. Donellan declared that the opposition to the Act was composed of men who either had no direct interest in the class of practice affected or men whose political feelings had run riot. Further negotiation was useless; the Act was overloaded financially already. The profession should signify to the Government its willingness to work the Act for twelve months. By that time such a mass of evidence would have been accumulated that, if amendment of the conditions were necessary, no Government would be able to resist the demand of the profession. The promoters of the new association did not propose to leave the British Medical Association, because there were many questions outside national insurance on which they needed the protection of the Association; but until the British Medical Association changed its line of action on this particular question a new association would be necessary to represent their views.

Dr. J. G. COWIE seconded. He thought it was very sad that men should have to be protected against their own Association, and expressed the view that when the British Medical Association broke off negotiations, such an organization as now proposed was necessary, and would have been very urgently required had not the men on the Advisory Committee bravely stuck to their posts. The public was getting absolutely sick of the squabbling of the doctors, and if the profession were not careful it would find itself in the position of a shuttlecock between a determined Government, an angry public, and a defiant Association.

Dr. CHRISTOPHER ADDISON, M.P., said the question at issue was more than the well-being of a Government or an association; it was the well-being for the next generation of the medical profession and all that that implied in relation to the health of the people. He was glad that an opportunity had been given for those who wished to render

service under the Act to express their opinions, for those of the contrary way of thinking had had nearly the whole platform to themselves thus far. It was exceedingly desirable that no fissure should take place in the Association, because if the Act were to work smoothly an organization would be necessary to approach those in control of the machinery. It was unchallengeable that a fair examination showed the remuneration now offered to be a distinct advance on what was received at present from attendance upon the same class of people. As to the Regulations, it was remarkable that the ground of opposition scarcely remained the same from one week to another. Since the cardinal points were promulgated all kinds of other issues had arisen. However, it was clear that the patient was free to choose his medical man, and the medical man was free to accept or refuse the patient. The medical man could not be dismissed or engaged by the Insurance Committee; having put his name on the list, if he desired to do so, he could only be dismissed by the patient, and that was a condition now obtaining in private practice. In view of this, to say that the system was under lay control was playing with words. The conditions of remuneration were practically settled in the offer now before the profession, and it was not open to the Insurance Committees to depart from them in any material degree. Further, it was now definitely stated that there would be no inspection whatever of the clinical practice of the medical man. Dr. Addison discussed in some detail the forms to be used and the method of recording particulars of cases in support of his argument that there was no foundation for the suggestion that an onerous amount of bookkeeping would be required or that professional secrets would be disclosed. The arrangements for dealing with complaints were based on a suggestion of Dr. Helme, of Manchester, and were devised as much in the interests of the doctor as of the insured. Discussing the alternatives before the profession, Dr. Addison said that in order to work the Act in face of a medical boycott the Government must proceed in one of two directions, either by encouraging the approved societies to engage medical men or by engaging medical men itself. He had no doubt the Government could get the men. The position of the individual doctor would then be either to wait and see a whole-time man placed in competition with himself, or to be put back in the morass of club practice from which many hoped the Act would be the means of rescuing the profession. Endeavours to use the Act to this end had been made in the face of a good deal more abuse than many in the room were aware of. No Government could afford to have a medical service which did not attract good men, and if the present conditions did not have that effect the profession might rest assured that they would be amended. It would be a disgrace to the profession if, with conditions and terms of remuneration anything like fair, they were deliberately, either by boycott, misrepresentation, or pressure, to force a large number of medical men into miseries which could be avoided. He was sure of this—the Government would stand by the men on the panel, and would not displace them to make room for any other form of service which might be established in consequence of an insufficient number going on the panel. He hoped that before long the association now being formed would be within the British Medical Association.

Dr. G. T. Johnston (Hove) wished to move an amendment. He described the proceedings as a stampede.

On this a motion that the question be now put was carried, and Dr. Johnston continuing to insist on his right to move an amendment, considerable uproar ensued. When quiet was restored the motion that the association be formed was carried, with eight dissentients.

Dr. A. Salter (Bermondsey) moved a resolution that the name of the association be the National Insurance Practitioners' Association. He declared that though at present those who wished to work the Act might be in a minority, in a few weeks they would be in a majority. In Bermondsey it was calculated that under the final terms offered by the Government every man in practice, including assistants, would receive not less than £510 per annum from insured persons alone. Men in that district derived at least two-thirds of their practices from attending women and children, and the average income now was not anything like £500 a year from all sources. Almost every practitioner in Bermondsey had announced his intention of working the Act. In Battersea the figures as to income were even more satisfactory; indeed, he thought that in the future the most lucrative practices would be those in industrial rather than in well-to-do districts. He was willing to go to any lengths in support of the British Medical Association in its endeavours to get better terms, but he was not prepared to belong to a suicide club, nor would he allow his professional instincts or his livelihood to be used as pawns in a dirty political game. Dr. Salter quoted from letters he had received in order to show that some at least of those who were opposed to working the Act were mainly animated by political motives. He also declared that individual medical men needed protection against the terrorism exercised in the last few months. Mr. E. B. Turner, Deputy-Chairman of Representative Meetings, had stated that a strong boycott would be organized against all doctors who worked the Act. If the majority on the British Medical Association were going to deal with those who worked the Act on those lines, he said "Come on." (A voice: "Why wash dirty linen in public?") Dr. Salter retorted that he objected to this sort of tyranny, and he was going to drag it out into the daylight.

Dr. A. H. Gerrard seconded, and the resolution was carried.

On the proposition of Dr. H. H. Mills, seconded by Dr. J. E. Boon, the annual subscription to the Association was fixed at 10s. 6d.

A provisional executive committee was appointed and empowered to deal with business arising before the first annual meeting. Dr. Cowie and Dr. Orchard were elected provisional secretaries, and Dr. H. H. Mills treasurer.

In the course of a general discussion Dr. Bernard Roth intimated that, having been threatened by men in Marylebone on account of his attitude towards the Act, he would subscribe twenty guineas a year towards the new association as a protest.

Dr. Winter said she had always been in favour of the Act. Although the profession had not been generously treated the terms offered were very fair, and better than many of their brothers now obtained. She was sorry to say that attempts had been made to intimidate her.

Dr. J. H. Taylor (Salford) said he had come from the head quarters of the National Medical Union to make a public protest against the system of terrorism now being exercised in Manchester and Lancashire generally. Attempts had been made to injure him in his character and his practice. It was not the fact that Manchester was almost unanimously against working the Act. He was an ardent admirer of the work of the British Medical Association, but if they were to be terrorized because they were in a minority and held down to a pledge given under totally different conditions, and in spite of the fact that they were now firmly convinced that it was to their own and the public interest to work the Act, he for one would have to reconsider his position as a member of the British Medical Association. The Representative Meeting, if it was wise, would not use coercion, but at least give local option, which was one way out of the difficulty. Then there would be some chance of a united profession, but if there was any attempt to boycott members who worked the Act, there would be a revolt.

The following resolutions were also carried by the meeting:

> That the Insurance Commissioners should not recognize as "representative" a Local Medical Committee which does not include a reasonable proportion of those practitioners who have intimated their willingness to act on the panels.
>
> That the question of an insurance and pension scheme be referred to the executive for further information.

A member of the audience suggested that, "as the policy of the new association would not be advocated by the Journal of the British Medical Association," the meeting should take steps to form a new journal.

At the suggestion of the Chairman, the question of the practicability of establishing a journal as proposed was referred to the executive committee.

The proceedings terminated with a vote of thanks to Dr. Lauriston Shaw and Dr. Taylor.

PROPOSAL AS TO PENSION.

Dr. H. H. MILLS, Honorary Treasurer of the recently-formed National Insurance Practitioners' Union, writes from 39, Victoria Street, S.W., to transmit certain provisional details of the possibilities of the pension and insurance schemes mentioned in his letter published last week, p. 662. The table has been drawn up by the actuary of the new association, Mr. George Hardy, ex-President of the Society of Actuaries and Chairman of the Advisory Board of Actuaries to the Insurance Commissioners.

SUGGESTED PENSION AND INSURANCE SCHEME FOR PRACTITIONERS UNDER THE NATIONAL INSURANCE ACT.

(The figures are approximate only.)

TABLE A.—PENSION AGE 65.

Annual Premium of £20 (paid quarterly in advance).

Age at Entry.	Sum paid on Death before 65.	Annuity at 65.	Alternative sum in cash at 65.
25	£400	£186	£1,780
30	*plus* any premiums	138	1,320
35	paid in beyond that	100	960
40	sum.	68	640

TABLE B.—PENSION AGE 60.

Annual Premium of £20 (paid quarterly in advance).

Age at Entry.	Sum payable on Death before 60.	Annuity at 60.	Alternative Sum in Cash at 60.
25	£400	£114	£1,290
30	*plus* any premiums	84	950
35	paid in beyond that	60	680
40	sum.	40	450

N.B.—A reservation of 6d. per head insured per annum for 800 persons = £20.

VOLUNTARY HOSPITALS.

THE CHANCELLOR OF THE EXCHEQUER ON LONDON HOSPITALS WITH MEDICAL SCHOOLS.

AN interview took place on December 17th between the chairmen of some of the larger London hospitals having medical schools and the Chancellor of the Exchequer.

The official report of the proceedings is as follows: Various points were discussed regarding the effect of the Insurance Act in relation to voluntary hospitals. The Chancellor explained that the main work of the hospitals not touched by the Act, inasmuch as the treatment afforded to insured persons under the Act is such treatment as can properly be given by a general practitioner of ordinary competence and skill, whereas this is just the kind of treatment that a hospital does not exist to give. Thus insured persons need as much as ever the aid of hospitals is in order to obtain the treatment that is given in the in-patient departments and to a substantial extent that given in the out-patient departments (for example, all that for which special medical or surgical skill is required.) Thus hospitals would only be carrying out their proper duty in continuing to give this treatment. Those subscriptions, donations, and legacies, on which the hospitals have depended would be needed as much as hitherto, and they would have the same claim on the support of the benevolent. The Chancellor said that the question of hospitals had been by no means overlooked in planning the Government insurance scheme, but that it had been deemed wiser to endeavour to avoid any steps that would imperil the voluntary nature of the great hospitals of this country. This could not have been avoided if hospital work had been brought into the scheme of the Act, since a subsidy from public funds would necessarily be followed by some degree of public control. He understood that the hospital authorities were greatly desirous of continuing the voluntary system unimpaired; and, if the position of things under the Act regarding hospitals is properly understood, it will be seen that no fears need be entertained on this score from the Act.

Certain special points were also submitted for the Chancellor's consideration regarding the effect of the Act upon the financial position of the hospitals, to which he promised consideration.

The Chairmen of Hospitals present were: Charing Cross Hospital, Mr. Robert Duff; Guy's Hospital, Lord Goschen; King's College Hospital, the Hon. W. F. D. Smith; London Hospital, the Hon. Sydney Holland; Middlesex Hospital, Prince Alexander of Teck; Royal Free Hospital, the Earl of Sandwich; St. Bartholomew's Hospital, Lord Sandhurst; St. George's Hospital, Mr. William West; St. Mary's Hospital, Mr. Austen Leigh; St. Thomas's Hospital, Mr. Wainwright; University Hospital, Captain the Hon. E. Dawson; Westminster Hospital, Sir John Wolfe Barry.

DRUGS AND APPLIANCES.

THE National Health Insurance Commission for England has issued a memorandum (132 I. C.) suggesting to Insurance Committees a convenient procedure to be adopted by them in making arrangements with chemists and others for the supply of drugs and appliances to insured persons entitled to medical benefit. Attached to the memorandum is a form of notice to persons desirous of undertaking the supply of drugs and appliances and draft forms of acceptance (*a*) by persons undertaking to supply drugs and appliances, and (*b*) by persons undertaking to supply drugs (other than scheduled poisons and medicines which require to be dispensed) and appliances. The Committee must give notice to the persons concerned of its willingness to negotiate on the subject of list of drugs and prices, and any conditions of service not beyond the range of negotiation, and may enter into negotiations with a representative association of local pharmacists. The Committee is instructed that the Local Medical Committee or any representative body of practitioners with whom, in the absence of a Local Medical Committee, it is at the time negotiating, should be invited to take part in the conference. If an Insurance Committee adopts the procedure and model forms now issued, it will not be necessary for it to obtain the Commissioner's approval.

THE INSURANCE ACT IN PARLIAMENT.

Medical Benefit.

MR. INGLEBY asked the Secretary to the Treasury on December 12th if he would state what benefits approved societies would have obtained in return for the 2d. per member proposed to be charged for the expenses of administration of medical benefit up to January 14th, 1913; and whether, in the event of the societies accepting the proposed agreement, it was intended that the two-ninths contributed by the State should be paid to their credit in reduction of the 6s. and 1½d. paid by each member, respectively, for medical benefit and the expenses of its administration. Mr. Masterman replied that Section 15 (6) of the National Insurance Act required societies to pay to Insurance Committees such sums as might be agreed or in default of agreement might be determined by the Commissioners in respect not only of medical benefit, but also of its administration, and the sum of 2d. per member had been suggested as a reasonable sum for the period up to January 14th, 1913, in view of the heavy administrative duties which fell on Insurance Committees before that date. Two-ninths of the sum referred to in the case of men, and one-fourth in the case of women, would, as provided by the Act, be paid by the State, the society only paying the remainder.

Mr. Ingleby asked whether 2d. per member did not amount to something like £50,000, and why so large a sum was voted for administrative services which did not yet exist. Mr. Masterman said he thought the most heavy task the Insurance Committees would have during the whole course of their existence would be performed in these six months.

Sir Hildred Carlile asked the Chancellor of the Exchequer, on December 16th, whether, in view of the fact that the doctors in nearly all parts of the country were now expressing their views on the proposals for medical benefit under the National Insurance Act, he would feel able to make a full and general statement as the policy to

be followed by the Insurance Commissioners, so as to allay the anxiety of the contributors who were anticipating the receipt of medical treatment under the Act on and from January 15th next. Mr. Lloyd George said that, pending information from the Insurance Committees as to progress in formation of the panels under Section 5 of the Act, it would be premature to make any statement of the kind suggested.

Mr. Fred. Hall on the same day asked what amount was now available for the granting of medical benefit under the National Insurance Act? Mr. Masterman, in reply, referred to the answer given to Sir Philip Magnus on October 23rd (British Medical Journal, October 26th, 1912, p. 1158), and to the Paper Cd. 6520, laid on the table on December 5th, which contained full information on the subject. Mr. Hall inquired if final arrangements had been made with the doctors? If not, how could the right hon. gentleman say what amount would be available for medical benefit? Mr. Masterman replied that that had nothing to do with the question.

On the following day Mr. Hall asked whether any agreement with the medical profession as to medical benefit had been arrived at, and if not whether the bringing in of that part of the Act into force would be postponed? Mr. Lloyd George replied that as it was open to any practitioner who desired to have his name placed upon the first panel lists to send in his name at any time up to December 31st next, it would be undesirable to make any statement before that date. Mr. Hall inquired if 80 per cent. of doctors had declared against serving and only 20 per cent. had agreed to serve under the altered regulations? Mr. Lloyd George said that so far as he could see not half the medical profession had voted upon the subject.

Friendly Societies and Medical Fees.

Mr. Goldstone asked the Secretary to the Treasury, on December 16th, whether he was aware of the fear which existed in the minds of those responsible for the management of friendly societies that the medical fees paid in respect of their old uninsured members were likely to be increased considerably as a direct result of the administration of the Insurance Act; and whether, in the event of such fees being so increased by members of the medical profession, he would consider the possibility of making an equivalent grant to friendly societies to balance the additional expenditure in which they might be involved as a result of increased fees. Mr. Masterman replied in the negative, and said he knew of no reason to suppose that medical practitioners would raise their present fees for attending their old patients who were uninsured members of friendly societies simply because, owing to the Insurance Act, they would receive higher fees than they had hitherto received for attending other members of those societies.

London Hospitals.

Mr. Fred. Hall asked the Chancellor of the Exchequer, on December 16th, whether the hospitals of London, or any of them, had informed him that they would not treat insured persons, except in urgent cases, until the just requests of the medical profession in regard to services rendered under the National Insurance Act had been met? Mr. Lloyd George said that the answer was in the negative.

Sanatoriums.

Sir Clement Kinloch-Cooke asked the President of the Local Government Board on December 11th what steps were being taken to carry into operation the Chancellor of the Exchequer's statement that the Government were finding one and a half millions by the National Insurance Act to build sanatoriums throughout the country. Mr. Burns said that the councils of counties and of county boroughs had been asked to prepare schemes for the provision of sanatoriums and other institutions for the treatment of persons suffering from tuberculosis. He had urged local authorities to utilize existing accommodation as far as this could properly be done, and to supplement this where necessary.

Mr. Wright asked on what basis of beds to population the councils of counties and county boroughs were invited by the Local Government Board to draw up schemes for dealing with consumptives in sanatoriums and in other residential institutions respectively; and (2) whether the Local Government Board still estimated, as expressed in its official circular of May 14th, that in the immediate future some 9,000 beds in sanatoriums, being one bed per 5,000 of the population, and some 9,000 beds in other residential institutions, being one bed per 5,000 of the population, should be provided for the treatment of consumptives in the United Kingdom. Mr. Burns replied that for the purpose of the preparation of schemes the Local Government Board had suggested that local authorities should take as a guide the figures suggested by the Departmental Committee. It was not, however, suggested that in each area any particular number of new beds should be provided. The amount of new accommodation which was required in any particular case must necessarily depend on the amount of existing accommodation which could properly be utilized, and on other factors.

Sanatorium Benefit.

On December 12th, in reply to Mr. Lane-Fox, Mr. Masterman said that of the 140 persons who down to November 20th had applied in the West Riding for sanatorium benefit under the Insurance Act, 82 had been recommended as eligible and were receiving treatment from the insurance funds. He gave a list of the public and private institutions in which they were being treated. Mr. Lane-Fox asked if in the eleven months ending last November there were 3,271 cases notified, and that last year 1,376 deaths occurred from phthisis in the West Riding? Mr. Masterman said that that was not in the least incompatible with his answer. The Insurance Committees had only to deal with tuberculosis benefit in respect of persons who applied for benefit. So far as he could see the West Riding was adequately dealing with that benefit. Mr. Cathcart Wason inquired if it was possible to give patients sanatorium benefit in their own gardens without putting up large buildings? Mr. Masterman replied he knew that was recommended by a great many experts, and he daresay it was one of the methods which would be considered.

In reply to a further question asked by Mr. Lane-Fox on December 13th, Mr. Masterman said that the 82 cases referred to as receiving sanatorium benefit in the area of the West Riding Insurance Committee were given the treatment recommended after medical examination as appropriate to the respective cases. In 34 of these cases the treatment was domiciliary, and in 3 through a dispensary; while the remaining 45 were sent to residential institutions. Cases in which individuals received benefits that were very costly in comparison with any payments they themselves had made were normal accompaniments of such an insurance scheme as that of the National Insurance Act, in which large numbers of persons were united in order to guarantee each and all against what might be a very heavy risk for some of them.

Sanatorium Grants for Ireland.

On December 16th in reply to Mr. T. M. Healy, Mr. Birrell said that neither the Finance Act nor the Insurance Act required the Local Government Board to allocate the capital moneys amongst the various local areas on a basis of population. The Irish Local Government Board had, however, as far as possible, adopted that principle for the distribution of the grant between county and county. The English and Scottish Boards had not finally determined the conditions upon which the grant would be distributed, and so far they had not made any grants to any institution. No county council was asked or expected to surrender any part of its share of the grant, and it was agreed between the Local Government Board, the Treasury, and the Insurance Commissioners that the amount advanced to the Women's National Health Association would be debited, as far as possible, to the share of those counties for whom the Association made provision, as explained in his answer to the previous question asked by the hon. member on October 17th (British Medical Journal, October 26th, 1912, p. 1159).

Women's National Health Association, Ireland.

On December 12th, in reply to Sir John Lonsdale, Mr. Birrell said that he understood that the representatives of the Women's National Health Association in Ireland who had attended at the meetings of local authorities had done so by arrangement with or invitation from those bodies, and that the representatives were appointed by the association and paid out of its funds when their services were not gratuitous.

SCOTLAND.

COUNTRY PRACTICE IN SPARSELY-POPULATED DISTRICTS.

THE following letter has been received:

54, George Square, Edinburgh,
December 16th, 1912.

Sir,

We are instructed by the Rural Subcommittee of the Scottish Medical Insurance Council to submit for benefit of the public the following detailed statement of the conditions of medical practice in various Scottish country districts. These details have been furnished by medical practitioners practising within these districts, and although all to whom inquiry cards were forwarded have not returned these, still the numbers that have been returned give sufficient and exact evidence of the conditions of practice which unquestionably prevail.

From this evidence it will, we think, be perfectly clear that the provision made or promised by the Government is totally inadequate for the remuneration of the work that has to be done, and which falls to the lot of one of the hardest worked classes of medical men in the kingdom—the country practitioner. We are therefore unable to believe that the facts of their case have been clearly or accurately brought within the knowledge of the Government or of those responsible for the regulations under which the Insurance Act is intended to be worked. And we believe that men who are so vitally affected by conditions of work which are injurious to them financially are absolutely justified in declining the terms offered to them. It is in order to justify our belief that we now submit the following statement of facts in regard to the counties in which our inquiry has been made:

1. *Berwickshire.*—This county is partly agricultural, but much of it consists of moorland and hills; the roads are circuitous, many parts are sparsely populated, and houses are difficult of access. There are 124 houses to which access is not obtainable either by motor or other conveyance, and there are 50 insured persons resident over ten miles from the nearest doctor.

2. *Dumfriesshire.*—This is a county both agricultural and pastoral, with a considerable number of villages and small towns. A large part of it is moorland and hilly, with corresponding difficulty of access to houses. The roads on the whole are fairly good, but one large area in the south-east is entirely pastoral, having only very small cultivated spots, and is very sparsely populated. One practitioner is widely separated from any other, and the population of his area is 441. In the whole county there are 259 houses having no driving or motoring road to them, and 234 insured persons residing more than ten miles from the nearest practitioner.

3. *Kirkcudbrightshire.*—Much of this county is hilly and pastoral. There are 267 houses difficult of access, and 150 insured persons more than ten miles distant from the nearest practitioner.

4. *Lanarkshire.*—Only in South Lanarkshire are there difficulties, but there they are extreme. In one practice alone there are 60 houses difficult of access, and 45 insured persons beyond the ten-mile limit. In another practice the corresponding numbers are 25 and 30. In this county there are districts as bad as many parts of the Highlands.

5. *Midlothian, and the Adjoining County of Haddington.*—In these there are comparatively few (38) houses difficult of access, and in Haddington itself there are 20 insured persons beyond the 10-mile limit. We have no returns under this head from Midlothian.

6. *Peebles-shire.*—This is largely a moorland and hilly county, but the main road running through the county town is good. The manufacturing centres of Innerleithen and Walkerburn are not far distant from Peebles. There are 73 houses which are only approachable on foot, but the great number of insured persons beyond the 10-mile limit has not been obtained. It is known, however, that there are a considerable number.

7. *Roxburghshire.*—A large part of this county is pastoral and sparsely populated, and the distances involved in medical practice are great. There are returns of 231 houses that can only be reached on foot. There are 305 insured persons beyond 10 miles from the nearest doctor, and many of them are much further distant than this.

8. *Selkirkshire.*—A large pastoral and hilly county; there are 41 houses which can only be reached on foot, and there are 146 insured persons living more than 10 miles from the nearest doctor. As in Roxburghshire, many of these live at a very much greater distance, some of them 25 miles away. The roads in many parts are bad and unsuitable for driving or motoring.

9. *Wigtonshire.*—The conditions here are similar to those in Kirkcudbrightshire. There are 236 houses difficult of access, and some as far distant as 5 or 6 miles from a decent road. There are 140 insured persons beyond the 10-mile limit. In such counties as Stirling, North Ayrshire, Renfrewshire, Fifeshire, and Linlithgow the difficulties of access are much fewer than elsewhere, and do not call for detailed notice. The returns from Aberdeen, Elgin, Forfar, Nairn, and Perth are so incomplete that no general conclusions can be founded upon them.

This, then, is our statement of facts. It will thus be clearly seen that any practitioner, who is at the call of people living in these very inaccessible districts, and who may require frequent visits, involving the loss of many hours, will be miserably remunerated by a capitation fee of 8s. 6d. from which medicines, dressings, cost of locomotion and other extras fall to be deducted.

J. R. HAMILTON, M.D.,
Convener.

D. L. EADIE,
Secretary.

ADDRESS BY THE COLLEGES.

The following address to the medical profession in Scotland has been received through the Clerk of the Royal College of Surgeons of Edinburgh:

To the Medical Profession in Scotland.

Edinburgh,
December 16th, 1912.

The Royal College of Physicians of Edinburgh, the Royal College of Surgeons of Edinburgh, and the Royal Faculty of Physicians and Surgeons of Glasgow desire to remind the profession in Scotland of the reasons which led them to co-operate in the institution of the Scottish Medical Insurance Council.

The main reason was an earnest desire to help the profession to maintain its independence.

They further wished to help the profession in its endeavour to obtain such modifications of the medical provisions of the National Health Insurance Act as would make these provisions consistent with the best traditions and ideals of the profession, and thus safeguard the interests of the public.

The proposed modifications known as the "seven cardinal principles" were adopted as the *irreducible demands* of the profession.

The chief aim of these was to maintain and extend the freedom of the profession from lay control in the conduct of its professional duties. This was the reason for seeking adequate representation on the Commissions and Committees appointed under the Act, for demanding statutory recognition in each Insurance Area of a Medical Committee with *more than a merely advisory status*, and for having disciplinary powers vested in that Committee, with powers of appeal to a properly constituted medical body.

Neither in the Act itself nor in the Provisional Regulations issued by the Commission have these demands been fully conceded.

The controlling body in all matters in every area continues to be the Local Insurance Committee composed to the extent of not less than three-fifths of representatives of insured persons. Apart from the representation on these Committees—which amounts to only one in ten—the profession has no *statutory power*. The Local Medical Committee has no executive rights; it is only consultative. The profession can withstand unwise or arbitrary action on the part of the Insurance Committees only by appeal to the Commissioners or by combination and co-operation amongst themselves.

The profession has clung to the generous view that the Government would agree to their demands when the reasonableness of their claims was pressed. The power of the Local Insurance Committee is, however, so firmly welded into the Act that nothing but an amending Act would place the medical provisions on a satisfactory basis.

If members of the profession in Scotland are satisfied with such minor concessions as have been promised, and if they are prepared to accept service under Local Insurance Committees on the terms indicated, the Royal Colleges and the Royal Faculty, while not attempting to dissuade them, cannot be parties to an agreement which is derogatory to the status of the profession. In the view of the Colleges and the Faculty, the Act will perpetuate and extend some of the worst features of club practice.

The Royal Colleges and the Royal Faculty are assured that many practitioners throughout Scotland believe with them that the Act is still derogatory to the profession, and they wish it to be understood that the profession, in

adhering to that view, may count on their sympathy and support.

J. J. Graham Brown,
President, Royal College of Physicians of Edinburgh.
F. M. Caird,
President, Royal College of Surgeons of Edinburgh.
J. A. Adams,
President, Royal Faculty of Physicians and Surgeons of Glasgow.

THE INSURANCE SCHEME.

STATE SICKNESS INSURANCE COMMITTEE.

A meeting of the State Sickness Insurance Committee appointed by the Special Representative Meeting on November 20th was held at the house of the Association, 429, Strand, on Thursday, December 12th, Dr. J. A. Macdonald in the chair. The members present were: *England and Wales:* Dr. R. M. Beaton (London), Dr. T. M. Carter (Bristol), Dr. T. A. Helme (Manchester), Miss Frances Ivens M.S. (Liverpool), Dr. Constance E. Long (London), Mr. Herbert Jones (Hereford), Dr. E. O. Price (Bangor), Dr. D. G. Thomson (Thorpe, Norwich), Mr. E. B. Turner (London), Mr. E. H. Willock (Croydon). *Scotland:* Dr. J. Adams (Glasgow). *Ex officio:* Mr. T. Jenner Verrall (Chairman of Representative Meetings) Bath.

Minutes.

On the motion of the Chairman to confirm the minutes of the meeting of November 28th, Dr. Helme said that he had understood that of the motions referred by the Representative Body to the Council and by the Council to the Committee, that by the Bath Division, having reference to a proposed medical trust, was to be brought before the Council at its meeting on December 4th. This had not been done. He also questioned the accuracy of certain other minutes. After discussion the minutes were confirmed, Dr. Helme dissenting.

Apologies for Absence.

Letters of apology for non-attendance were read from the President (Sir James Barr), the Treasurer (Dr. Edwin Rayner), Dr. T. B. Costello, Dr. J. Singleton Darling, Dr. R. McKenzie Johnston, and Mr. D. F. Todd.

Panels not to be Formed in Existing Conditions.

Communications were received from the City Division expressing the opinion that medical practitioners should be requested not to consent to go on any panel until the differences between the Commissioners and the profession were settled as a whole; and from the Southampton Division forwarding a copy of a circular issued by the Local Provisional Medical Committee to all practitioners in its area asking them not to enter into negotiations or arrangements with Insurance Committees pending the Special Representative Meeting on December 21st.

The Chairman reported that a notice to the effect suggested by the Southampton Division was appearing in the Supplement of December 14th. It was resolved that a communication on the same lines should be issued immediately to all non-members of the Association (see page 584), and that a somewhat similar notice should be issued to the lay press with a request for publication.

Action of the Divisions should the Association decide not to Work the Act.

A communication was read from the Honorary Secretary of the East Herts Division, Dr. Ledward, forwarding an outline of a policy he was recommending his Division to adopt in the event of it being decided to refuse to work the Act, and asking whether the suggestion would receive the approval of the Association. It was reported that since this letter had been received, the East Herts Division had decided to submit the scheme to the forthcoming Representative Meeting. The Committee adopted the following resolution:

That Dr. Ledward be informed that pending the decision of the forthcoming Special Representative Meeting upon the suggestion put forward by his Division, the Committee is unable to give any official approval to the scheme suggested in his letter; and that action in this connexion by his Division should not go beyond the making of unofficial inquiries of the Insurance Committee or Approved Societies, or both.

Comparison of the Provisional and Revised Medical Regulations.

A statement comparing the new Medical Regulations with the Provisional Medical Regulations was amended, and directed to be issued to members of the Representative Body and published in the Supplement to the Journal of December 14th.

Compensation.

Communications were received with regard to certain cases in which it was asked that compensation should be paid from the Central Insurance Defence Fund to medical practitioners resigning their appointments. The Committee resolved to inform the Finance Committee that it was of opinion that the time had now arrived, or would very shortly arrive, when grants out of the Central Insurance Defence Fund would have to be made to medical practitioners who had suffered loss owing to their loyalty to the medical profession in connexion with the Insurance Act campaign.

Canvassing by Medical Institutes.

Communications were received showing that canvassing was going on in certain districts in favour of friendly society medical aid institutes. It was resolved to call the attention of the Insurance Commissioners to the issue of the circulars in question, and to obtain their opinion as to the propriety of such issue.

Accident Club.

In connection with an inquiry as to the position of medical officers of accident clubs in relation to the pledge, the Committee expressed the opinion that as accidents come under medical benefit of the Act, the appointment in question should, under the terms of the pledge, be resigned, but that the inquirers be informed that if the subscribers could be induced to make a special subscription for the purposes of securing attendance on all accidents, the appointment could be continued.

Public Medical Services.

The Chairman reported that since the last meeting of the Committee he had approved the medical service schemes for Winchester and Portsmouth, with the exception of a provision providing for affiliation to the Association and the payment of an affiliation fee for advice and supervision. The action of the Chairman was approved.

The public medical service scheme for Chesterfield was approved, with the exception of a provision as to income limit.

Proposed Medical Trust Scheme.

The Committee then considered the following motion by the Bath Division, referred to the Council by the Representative Body and by the Council to the Committee:

That in order to safeguard the interests of the medical profession in connexion with the treatment of insured persons, it is advisable to establish "medical trusts" corresponding to the areas of the Insurance Act, on the lines laid down in the scheme submitted to this and other Divisions by Mr. A. L. Forrester, H.M. Coroner for N. Wilts.

A communication was read from the Honorary Secretary of the Bath Division, Dr. F. G. Thomson, forwarding the scheme drawn up by Mr. A. L. Forrester for uniting the profession and freeing it from the interference and control of the approved societies, together with counsel's opinion thereon.

At a later stage in the meeting Mr. Forrester, and later Mr. Oswald Hempson, the solicitor, attended, and gave explanations. The Committee gave instructions that Mr. Hempson and the Medical Secretary should confer with Mr. Forrester and obtain the opinion of Mr. Colquhoun Dill, and report to the next meeting of the Committee, which was fixed for Tuesday, December 17th.

The State Sickness Insurance Committee met again on December 17th, when it had before it a draft memorandum on Mr. Forrester's scheme, together with observations by Mr. Forrester on the memorandum. Mr. T. R. Colquhoun Dill, barrister, with Mr. O. Hempson, solicitor, subsequently had a conference with the Committee, during part of which Mr. Forrester was present. Mr. Dill undertook to prepare a written opinion, which, together with the memorandum of the State Sickness Insurance Committee, will be placed before the Special Representative Meeting on December 21st.

Meetings of Branches and Divisions.

[*The proceedings of the Divisions and Branches of the Association relating to Scientific and Clinical Medicine, when reported by the Honorary Secretaries, are published in the body of the* JOURNAL.]

BIRMINGHAM BRANCH:

CENTRAL DIVISION.

A SPECIAL meeting of this Division was held at the Temperance Hall, Temple Street, on December 11th. The meeting was called also as a constituency meeting of the Central and Walsall Divisions to instruct Representatives for the Special Representative Meeting. Non-members of the Association residing or practising within the area of Greater Birmingham were also invited. Mr. LUCAS was in the chair; 277 members of the Association and 36 non-members were present.

Dr. KIRBY proposed, Mr. JORDAN LLOYD seconded, and it was carried:

> That it is undesirable that any account of a meeting of the Central Division should be communicated to the lay press, except by one of the Honorary Secretaries, whose copy shall have first been authorized by the Chairman and one other member of the Executive Committee.

Referendum.—After discussion as to what answer should be given to the question:

> Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon terms and conditions now finally offered by the Government?

the vote was taken by voting papers, members and non-members being taken separately. The result was as follows:

Yes (refusal)	136	Yes	9
No (acceptance)	117	No	18
	members.		non-members.

Majority of 19 members for refusal; majority of 10 on combined result of members and non-members.

Instructions to Representatives.—Mr. MARSH proposed and Dr. HALLWRIGHT seconded:

> That the Representative be instructed to vote at the Special Representative Meeting on December 21st according to the aggregate vote of members and non-members recorded throughout the country.

That is, to support the ultimate majority. This was carried by a large majority.

Public Medical Service Scheme.—The Public Medical Service scheme drawn up by a Public Medical Service Committee was provisionally approved as submitted.

DORSET AND WEST HANTS BRANCH:

BOURNEMOUTH DIVISION.

A SPECIAL meeting of the Division, to which all practitioners in the area of the Division had been invited, was held on December 13th at Trinity Hall, Bournemouth. The chair was taken by Dr. E. K. LE FLEMING. Ninety-four members and thirty-five non-members were present.

The Proposals of the Government.—The question submitted by the Council for acceptance or refusal of the Government's latest proposals was put from the chair. A long discussion followed, in which Drs. HAYLOCK, GOTT, FISKE, BELBEN, HUMPHRY DAVY, and GRANGE spoke in favour of refusal, and Drs. HARTFORD, MAHOMED, SPINKS, WILLANS, C. BRANSON, and MONTGOMERY in favour of accepting the present terms. The vote was taken by ballot, with the following result:

For refusal—		For acceptance—	
Members	41	Members	38
Non-members ...	19	Non-members ...	7
	60		45

Fifteen members and nine non-members did not vote.

Instruction to the Representative.—Dr. JOHNSON SMYTH, Representative, was instructed accordingly.

EAST ANGLIAN BRANCH:

SOUTH-EAST ESSEX DIVISION.

A MEETING of general practitioners of South Essex, Dr. HARMON MORGAN in the chair, was held at Southend on December 10th to consider whether the profession should accept service under the National Insurance Act, and other business.

Alteration of Boundary.—The meeting unanimously agreed that the boundary of the South Essex Division should be altered so as to correspond with the boundary between the Rural District of Orsett and the Rural District of Romford.

Sanatorium Benefit.—The HONORARY SECRETARY announced that the Executive Committee of the Division had decided to call upon all medical men in the area to refuse to treat as insured persons all insured persons who claimed sanatorium benefit under the Insurance Act. The reasons for this were, first, that the Insurance Commissioners had altered the scheme of the Essex County Council which had been approved by the Council of the British Medical Association, notably by allowing the county tuberculosis officer to visit notified cases of tuberculosis among the insured without a previous consultation with the general practitioner; and, secondly, that the Essex County Insurance Committee had seen fit to disallow the 2s. 6d. fee for injection of tuberculin. These changes had not received the sanction of the Council of the Association, who therefore had requested that the action indicated above should be taken.

The Proposals of the Government.—The meeting, which was absolutely representative of the scattered area of South Essex, was very emphatic in its condemnation of the Insurance Act and Regulations, and the resolution in favour of refusing service was carried by the following overwhelming majority:

Members in favour of refusing service ...	51
Members against refusing service	4
Non-members in favour of refusing service ...	19
Non-members against refusing service ...	2
Total (members and non-members) in favour of refusing service	70
Total (members and non-members) against refusing service	6

SOUTH SUFFOLK DIVISION.

A MEETING of this Division was held on December 11th.

The Proposals of the Government.—The following resolutions were carried:

1. That this Division of the Association is in favour of the Association calling upon the profession to refuse to enter into agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government.
2. That the members and non-members in this Division, having all signed an undertaking not to accept service until terms satisfactory to the profession have been obtained, be urged to abide by their pledge and not to offer to serve on the panel until this Division by a vote at a subsequent meeting shall signify its consent.

Medical Committee for East Suffolk Insurance Area.—The North and South Suffolk Divisions elected the following as a Medical Committee for the Insurance Area of East Suffolk for a period of twelve months, and with power to add to their number: Drs. Askin, Barnes, Everett, Gross, Havell, Hillier, Jeaffreson, Ranson, Richardson, Sleigh, Redpath, Hunter, and Sylvester, these representing South Suffolk; and Drs. Evans, Helsham, Ransome, Taylor, Tyson, Wood-Hill, and Hart Smith representing North Suffolk; total committee, 20.

Committee for Ipswich Insurance Area.—The following were elected members of the Committee for the Ipswich Insurance Area: Drs. Brogden, Eades, Gutch, Hetherington, Hossack, Hoyland, Hill, Staddon, Francis Ward, Fowler Ward, and Young.

EDINBURGH BRANCH:

SOUTH-EASTERN COUNTIES DIVISION.

A SPECIAL meeting of the Division, to which all non-members within the area of the Division were invited, was held in the Baillie Memorial Hall at Newtown St. Boswells on December 11th, the chair being taken by Dr. J. S. MUIR, Chairman of the Division. Forty members were present, and twelve apologies for absence were received, thus accounting for fifty-two of the sixty-one members of the Division. Of the five non-members resident within the Divisional area none were present. Of those who sent apologies, seven intimated that they were in favour of refusal of the terms at present offered by the Government.

The Proposals of the Government.—After a full discussion it was decided to take a vote by card, and the CHAIRMAN put the resolution recommended by the Council before the meeting, as follows:

Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon terms and conditions now finally offered by the Government?

Dr. W. L. CULLEN, seconded by Dr. P. C. MACROBERT, moved that the Association do not give service, and Dr. DOIG, seconded by Dr. BARRIE, moved that the Association should give service. On the amendment being put to the meeting, it was supported by 3 votes as against 36 in favour of refusal. On being put as a substantive motion, the motion was carried *nemine contradicente*.

GLASGOW AND WEST OF SCOTLAND BRANCH:

GLASGOW NORTH-WESTERN DIVISION.

A SPECIAL meeting of registered practitioners residing in the area of this Division was held in the Burgh Hall, Hillhead, on December 10th, Dr. A. T. CAMPBELL presiding. Forty-nine members and seventeen non-members were present.

Special Representative Meeting.—The CHAIRMAN submitted his report as Representative to the Special Representative Meeting held on November 19th and 20th.

The Proposals of the Government.—The CHAIRMAN then directed the attention of the meeting to the Report of Council to the Division with reference to the recent negotiations of the Representative Committee with the Chancellor of the Exchequer, and invited discussion of the question contained in paragraph xxvii:

Are you in favour of the Association calling on the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions finally offered by the Government?

Dr. JAMES TODD moved and Dr. HORNE seconded:

That the Report of Council be received and the answer of the meeting to paragraph xxvii be in the negative.

Dr. J. LINDSAY moved an amendment "That the question be answered in the affirmative," and this was seconded by Dr. D. C. LAIRD.

Both proposals were discussed by Drs. LANGMUIR, ADAMSON, J. REID, A. MACPHEE, J. GRACIE, J. MCCOLL, BAIRD, HORNE, and J. G. GRAHAM, and afterwards a vote was taken by show of hands. The result was as follows:

Members:	
For the amendment in favour of refusal ...	29
For the motion against refusal	17
Non-Members:	
For the amendment in favour of refusal ...	4
For the motion against refusal	13
Majority in favour of refusal	—3

Local Medical Committee.—The formation of a Medical Committee was then considered, and on the motion of Dr. SNODGRASS, seconded by Dr. PATERSON, it was resolved to appoint representative members, Dr. J. WYLIE suggesting the number should be 25, that is to say, 1 in 20 of the registered practitioners in the Division. Thereafter Dr. FORTUNE proposed, and Dr. WARD seconded, "That those members of the Provisional Committee who are eligible and willing to serve be re-elected," which was carried *nemine contradicente*. In room of Dr. McGregor Robertson, who had resigned, and Drs. J. Wylie and Laird, who were now outside the insurance area, the following were appointed, namely, Drs. Mabel Jones, A. Dickson, and E. Langmuir.

LANCASHIRE AND CHESHIRE BRANCH:

BLACKPOOL DIVISION.

A LARGELY attended meeting of the medical practitioners resident in the Blackpool Division was held in Blackpool on December 11th. Every practitioner present—61—voted in favour of refusing service under the National Insurance Act.

The Proposals of the Government.—The following resolutions were passed unanimously:

(1) That we refuse service under the Act on the conditions offered by the Government.

(2) That it is imperative that no negotiations or arrangements of any kind, temporary or otherwise, be entered into by any Division or Provisional Medical Committee, or by any individual member of the profession, with Local Insurance Committees or otherwise, before the result of the deliberations of the Representative Body at its special meeting on December 21st, 1912, be formally announced.

(3) That under no circumstances do we make contract terms for medical attendance on uninsured persons after January 15th, 1913.

MANCHESTER (NORTH) DIVISION.

A MEETING of this Division was held on December 12th. Dr. FRASER was in the chair, and sixty-nine members and eight non-members were present.

The Proposals of the Government.—Dr. FRASER introduced the Report of Council, and it was decided to take the vote on the question contained therein at once, and by show of hands.

Result of vote: 63 members Aye; 2 No.
8 non-members Aye; 0 No.

Four members came late, and their votes were not recorded; 4 communicated inability to attend; and these 8 all desired to vote in the affirmative. The total vote of this district was therefore 79 Ayes, 2 Noes.

Instructions to Representative.—On the question of instructions to Representative, the following resolution was proposed:

That the British Medical Association shall resist to the utmost of its ability the imposition of the present terms by Insurance Committees on the profession in each area; but in the event of a considerable minority of the Divisions being desirous of negotiating with their Insurance Committees, such Divisions shall, if a two-thirds majority has been obtained in their areas, be entitled to do so, on the condition that the ultimate terms be submitted to the Council for approval. It shall be left to the Representative Meeting to define the term "considerable minority" in the foregoing resolution.

This resolution, with an amendment deferring its consideration for a week, was lost.

Warning from Provisional Medical Committee.—The CHAIRMAN read a resolution of the Provisional Medical Committee warning medical men not to reply to invitations from the Local Insurance Committee; and mentioned the Representatives fund, to which each member was asked to subscribe £1 1s.

ROCHDALE DIVISION.

A MEETING of the medical men practising in the area of the Rochdale Division was held at the Wellington Hotel, Rochdale, on December 12th. Dr. LORD presided, and fifty-four were present.

The Proposals of the Government.—The CHAIRMAN introduced the question submitted to the Divisions for their opinion by the Council of the Association:

Are you in favour of the Association calling upon the profession not to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

Dr. CHADWICK moved and Dr. STANWELL seconded that the answer of the meeting be in the affirmative. After considerable discussion a vote was taken, with the following result:

Members. ...	...	Yes, 31	...	No, 4
Non-members	...	Yes, 20	...	No, 0

Domiciliary Treatment under Sanatorium Benefit.—A letter was read from the Clerk to the Rochdale Insurance Committee asking that a deputation of that Committee be received in reference to domiciliary treatment under sanatorium benefit. The matter was left in the hands of the Medical Committee for the Borough of Rochdale, the following being appointed to constitute such committee, on the motion of Dr. WALKER, seconded by Dr. GRANT: Drs. Bateman, Cox, Kerr, Brentnall, Jefferson, Lord, Melvin, Rodley, and Stanwell. These names are those of the members of the Provisional Committee for the area of the Rochdale Division who are resident in the borough of Rochdale.

SOUTHPORT DIVISION.

A MEETING of this Division, to which all members of the profession residing in its area were invited, was held in the Masonic Room of the Victoria Hotel. Dr. MEWBURN BROWN was in the chair, and sixty-one practitioners were present.

Deputy Representative.—The SECRETARY reported that Dr. Littler had been selected by the method arranged

as Deputy Representative, and had attended the Representative Meeting.

The Proposals of the Government.—Dr. LITTLER gave a summary of some of the chief business of the Representative Meeting, opening a discussion on the answer to be given to the Association's question:

> Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

There were several speakers, but not one of them spoke in favour of accepting service. The vote was taken by papers signed by the voters stating whether they were members of the Association or not, and whether they were in favour of their Representative voting for refusal or acceptance of service. The result was that 50 members and 10 non-members voted—60 for refusing service, none in favour of accepting. One member of the Association present did not vote.

Instruction to Representative.—A resolution was then submitted:

> That if at the Representative Meeting there is a majority on either side not amounting to a two-thirds majority, our Representative should finally vote with the majority so as to obtain if possible a two-thirds majority.

A long and lively discussion followed, and the resolution was eventually carried by a large majority.

Rechabites not affected by the Act.—A letter was read from the Secretary of a Rechabite Club asking the decision of the local medical profession with regard to juvenile and adult members of the Rechabites who are not affected by the Insurance Act. The Secretary was instructed to reply that the resignations applied to all members of societies under contract practice, but that no definite reply as to the attitude of the profession could be given until after the decision of the Representative Meeting; also that a meeting of the Local Medical Committee would be held on December 17th, when the position of the doctors as to contract practice would be considered.

Proposed Meeting with Southport Insurance Committee.—Dr. WEAVER, M.O.H., and Councillor Dr. LIMONT informed the meeting that a letter was being sent to the Division asking for a meeting with the Southport Insurance Committee. The Secretary was instructed to reply that no meeting could be arranged until the Division had been able to consider the decision of the Association at the forthcoming Representative Meeting. A meeting of the Division for this purpose was fixed for December 27th.

Local Medical Committee.—Letters from the Secretary of the Branch Council and from the Medical Secretary respecting the formation of a Local Medical Committee were read. It was explained that there would probably be a meeting of the Branch Council on December 18th, when Dr. Edmondson, Dr. H. B. Wickham, and Dr. A. B. Sykes would probably be elected to a County Committee embracing the area of the Division outside the boundaries of the borough.

It was decided to form a Medical Committee for the borough, and the following were elected: Drs. Bentall, Mewburn Brown, Lawson Cairns, De Courcy, Dall, Edmiston, Harker, Harris, Henderson, Lewis, Limont, Littler, Penrose, Pridie, Mackay, Mulholland, and Reid.

Local Medical Service.—In the course of the discussion on the vote to be given at the Representative Meeting, it was urged by some speakers that in case of refusal to work the Act, the formation of a Local Medical Service, which had been negatived at a previous meeting of the Division on a report from a special committee, should be reconsidered, and the CHAIRMAN gave an assurance that this question should be considered by the Medical Committee.

Expenses of Representative.—The following resolution was carried unanimously:

> That the expenses of Representatives, members of Council, and members of committees appointed from members of the Lancashire and Cheshire Branch should be met by a general voluntary levy on all members of the Branch.

Model Rules.—A resolution—

> That the Division adopts the model rules for ethical procedure as approved by the Representative Body, in substitution for the rules now in use by the Division—

was carried unanimously.

METROPOLITAN COUNTIES BRANCH:

CAMBERWELL DIVISION.

A MEETING of all medical men resident in the area of this Division was held at the Camberwell Town Hall on December 12th. Dr. CAPES was in the chair, and 71 members and 32 non-members were present.

Medical Insurance Committee. — Messrs. Capes, Clitherow, and Jaynes were elected as the Representatives of the Division on the Medical Insurance Committee for the London County area.

Provisional Insurance Committee. — A Provisional Medical Committee for the Camberwell area was elected as follows: Drs. Richmond, Hollings, Jaynes, Dyson, Marshall (for Bermondsey); Messrs. Batten, Capes, Clatworthy, H. G. Clarke, Clitherow, Heald, Keates, Kirton, Michael Partridge, Shapter Robinson, Stone, Sharman, Tilbury, and Archer Wood (Camberwell).

The Proposals of the Government.—The vote of the meeting was then taken on the point—

> Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

The result was as follows:

Members.			*Non-members.*		
Ayes ...	...	41	Ayes ...	...	13
Noes ...	...	22	Noes ...	...	17

HAMPSTEAD DIVISION.

A SPECIAL meeting of this Division, to which all practitioners were invited, was held on December 13th, at the Central Library, Finchley Road. Mr. E. E. WARE was in the chair, and 62 members and 13 non-members were present.

Letters of regret for inability to attend were read from Drs. L. G. Glover, H. T. Scott, Glass, Linnell, Albert Wilson, Mary Acworth, Satow, N. Macdonald, and Adam Cowes; all expressed themselves in favour of the Association calling upon the profession to refuse to give service under the Act.

Correspondence.—A letter from the Gillingham doctors, stating their reasons for not accepting service, was read, and also a communication from Dr. T. A. Helme criticizing and summarizing the present position. Communication D22 from the Medical Secretary was read upon the method of voting and the necessity of instructing the representative.

The Proposals of the Government.—The CHAIRMAN called upon Dr. JESSOP to move his motion, seconded by Dr. OAKLEY:

> That the report of the Council be discussed until 5.30 p.m., at which time the motion shall be put.

Upon this being carried the CHAIRMAN moved:

> That every speaker be limited to five minutes, unless the meeting allows an exception.

Upon this being carried the CHAIRMAN called upon Dr. WINSLOW HALL to move his motion:

> That there be taken a preliminary vote, limited to those who have been, or intend to be, engaged in contract practice.

On this being seconded by Dr. CLAUDE TAYLOR, and put, it was lost by an overwhelming majority, only 4 voting in favour. Dr. WINSLOW HALL then moved:

> That the Hampstead Division is not in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government.

This being seconded by Dr. CLAUDE TAYLOR, it was discussed by Drs. ARCHER, DEWAR, MARSDEN, COLN, PRITCHARD, and MACNAUGHTON JONES, and at 5.30 p.m. was put to the meeting and lost by 69 votes to 5; 5 members voting in favour of the motion with no non-members, and 56 members voting against with 13 non-members.

Instructions to Representatives. — Thereupon Dr. PRITCHARD moved and Dr. ANDERSON seconded:

> That this meeting instructs the Representative to the Special Representative Meeting to move the following resolution:
>
> That, in the event of the Association refusing to give service under the Act upon the terms and conditions now finally offered by the Government, this Representative

Meeting proceed at once definitely to formulate the policy of the Association as to the treatment of insured persons.

This was carried unanimously.

Thereupon Dr. BARNETT moved and Dr. FORD ANDERSON seconded:

That, whether the majority of the members of the Association refuse to give service under the Act or not, this Representative Meeting instructs the Council to take immediate steps to form a National Medical Service on the lines of the scheme of the Hampstead Provisional Medical Committee.

After some discussion this was withdrawn.

HARROW DIVISION.

A MEETING, to which every practitioner within the area of the Division was invited, was held in the Gayton Rooms, Harrow, on December 12th. Dr. A. H. WILLIAMS was in the chair, and forty members and five non-members of the Association were present.

Local Medical Committee.—The following practitioners were unanimously elected Representatives on the Local Medical Committee for the Insurance area of the County of Middlesex: Drs. A. H. Williams (Harrow), R. P. N. Bluett (Wealdstone), J. Davidson (Uxbridge), H. L. Hatch (Pinner).

The Proposals of the Government.—The CHAIRMAN explained on what points concessions had been obtained from the Chancellor, and on what points concessions had been refused. After discussion, a card vote was taken, with the following result:

Members of Association in favour of refusing service	35
Non-members in favour of refusing service ...	4
Members of Association in favour of accepting service	4
Non-members in favour of accepting service ...	0

One member and one non-member did not vote. The four members voting in favour of accepting service gave a definite statement that although they voted in this way, nevertheless were determined to abide by their pledge.

Letter from County of Middlesex Insurance Committee.—A letter from the County of Middlesex Insurance Committee was read by the HONORARY SECRETARY, asking which method of payment would be preferred by members of the Division, in the event of the Association entering into the provisional agreement. After discussion the following resolution, proposed by Dr. HILDESHEIM and seconded by Dr. BLUETT, was carried:

That the Honorary Secretary be instructed to acknowledge receipt of the letter, and to inform the Chairman of the Middlesex Insurance Committee that, according to instructions received from the British Medical Association, this Division cannot enter into any negotiations respecting medical benefit.

Circular to Practitioners Resident within the Area of the Divisions.—Dr. WILLIAMS proposed, Dr. PENNEFATHER seconded, and it was carried:

That a letter be forwarded to every medical practitioner resident within the Division, giving the result of the voting on the final terms of the Government, and urging that, pending the decision of the meeting of the Representative Body, every practitioner should refuse to accept the invitation to serve on the panels.

Resolution of South-Western Branch.—It was decided to support this resolution, namely:

That in the event of a decision of the Association being come to refusing to undertake work under the National Insurance Act, the Representative Body shall, as the next item of their business, proceed to take the necessary steps for the immediate issue of a statement to the public of the reasons for the above-mentioned decision.

Public Medical Service.—A scheme on the principles of a Public Medical Service for providing medical treatment in the event of the Association refusing to undertake work under the National Insurance Act, was shortly explained by Dr. WILLIAMS. After discussion, this was referred to the Provisional Medical Committee for elaboration. The Committee was given instructions to proceed with this at the earliest opportunity, and to forward details of the completed scheme to every practitioner within the Division, prior to being discussed at a Special Meeting to be summoned for the purpose of considering such a scheme.

EAST HERTFORDSHIRE DIVISION.

A MEETING of this Division was held at the Shire Hall, Hertford, on December 11th, to which all members of the profession resident within the area were invited. Dr. BOYD presided, and forty-four members with eight non-members were present—by far the largest meeting ever held in the Division.

The Vote.—The meeting decided to take the vote on the question submitted by the Council by roll call; the result was as follows:

	Members.	*Non-members.*	*Totals.*
Ayes ...	44 ...	7 ...	51
Noes ...	0 ...	1 ...	1

(The one dissentient is retired, and has never been in general practice.)

Instructions to Representative.—The Representative was instructed to vote "Aye" to the question of Council at the Representative Meeting, whatever the decision arrived at on the aggregate vote might be.

Medical Committee for County.—A new executive to the Provisional Medical Committee, fifteen in number, was then elected with the object that this Committee should form, with a similar number from the area of the West Herts Division, a Medical Committee representative of the county.

Future Action.—The following resolutions were also adopted, and the Secretary instructed to submit them for the agenda of the Special Representative Meeting:

1. (*a*) That in view of the recommendation of the Commissioners to Insurance Committees to enter into such temporary arrangements with medical practitioners up to 14th April, 1913, "as will afford reasonable certainty that every insured person entitled to medical benefit will obtain treatment from any doctor on the panel," this Representative Meeting, although refusing to give service upon the terms and conditions now offered, would approve a Division agreeing to temporary arrangements to attend insured persons, if payment in full for services rendered on a suitable tariff were guaranteed by or through the Insurance Committee.

   (*b*) But in case the above temporary arrangements should not prove acceptable or practicable this Representative Meeting would approve the following procedure being adopted:

   That the Provisional Local Medical Committee at once inform each approved society in the county that if it will obtain the consent of the Insurance Committee for its members to "make their own arrangements" (under Reg. 14 (7)) the Medical Committee is prepared to treat with the society for the provision of medical attendance upon the members on the following basis:

   A. *The Medical Committee agrees:*
      (i) To guarantee medical attendance for members of the Society to be paid for in accordance with a standard tariff.
      (ii) To provide the Society with a list of doctors willing to give such attendance.
      (iii) To exercise control over the doctors on the list in order to check (a) excessive attendance, and (b) malingering.

   B. *The Society agrees:*
      (i) To allow their members to consult any practitioner on the list.
      (ii) To guarantee payment to the practitioner of any balance of his account which is not met out of the pool administered by the Insurance Committee.

2. That medical practitioners be allowed to accept seats on Insurance Committees in order to safeguard the interests of the profession in the administration of the funds placed at the disposal of such committees for the purposes of medical benefit.

WEST HERTS DIVISION.

A MEETING of this Division was held at the Abbey Rooms, St. Albans, Dr. LESLIE BATES in the chair, and there were seventy-five members of the profession present.

National Insurance Act.—Dr. WELLS proposed, Dr. CLEVELAND seconded, and it was carried:

That at this meeting the minority should agree with the majority, making the vote unanimous on the question of working the Act, which is now before us.

It was proposed by Dr. CLEVELAND, seconded by Dr. HOBBS, and lost:

That a roll call be taken on this vote.

The following resolution was then put and carried by show of hands:

That this Division is in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act

upon the terms and conditions now finally offered by the Government,

was then discussed very fully, and carried unanimously, all present voting for it, that is, 56 members of the Association and 19 non-members. Dr. C. H. HALL proposed, Dr. FISHER seconded, and it was lost:

In case of there being a majority at the Representative Meeting in favour of acceptance of the Government's proposals, shown by the combined votes of the profession, that our Representative be instructed to vote in favour of acceptance.

Dr. FRANCIS SMITH proposed, Dr. HALL seconded, and it carried:

That it be an instruction to our Representative that, in the event of the working of the Act as it stands being declined, he move that a conference be held between Representatives of the British Medical Association and of the friendly societies and other provident medical organizations with a view to formulating a scheme for giving medical benefit to insured and other persons.

Dr. HALL proposed, Dr. FISHER seconded, and it was carried:

That if at the Representative Meeting it is evident that further negotiations with the Government are possible, our Representative be instructed to vote for a continuation of negotiations.

It was proposed by Dr. CHEESE, seconded by Dr. S. CLARKE, and carried:

That this Division views with great disfavour the attempt on behalf of certain medical men to form an Association of Practitioners to work the Act.

It was proposed by the East Herts Division and not adopted:

That medical practitioners be allowed to accept seats on Insurance Committees in order to safeguard the interests of the profession in the administration of the funds placed at the disposal of such committees for the purposes of medical benefit.

It was proposed by the East Herts Division and adopted:

That in view of the recommendation of the Commissioners to the Insurance Committees to enter into such temporary arrangements with medical practitioners up to April 14th as will "afford reasonable certainty that every insured person entitled to medical benefit will obtain treatment from any doctor on the panel," this Representative Meeting, although refusing to give service upon the terms and conditions now offered, would approve a Division agreeing to attend insured persons if payment in full for service rendered on a suitable tariff were guaranteed by or through an Insurance Committee.

Several questions relating to the Act were then asked and replies given by the SECRETARY.

Attendance on the Police.—The SECRETARY OF THE PROVISIONAL MEDICAL COMMITTEE reported that in consequence of the representations made by the Committee the Chief Constable had reconsidered the terms he proposed for attendance on the police and had arranged they themselves should no longer be contributors, and that he offered 10s. per head per annum for each member of the force; that these terms had been submitted to the central office and approved, and that consequently those members to whom the appointments had been offered could now accept them, and that he had written to that effect to the Chief Constable.

Appointment of Medical Committee to the County.—The CHAIRMAN proposed, the SECRETARY seconded, and it was carried:

That a Medical Committee be formed and that it consist of fifteen members—six from St. Albans, six from Watford, and three from Barnet.

Dr. BONTOR proposed, Dr. HALL seconded, and it was carried:

That this committee have power to co-opt not more than two lady members residing in the Division.

The vote was taken by ballot, Drs. Clarke and Bontor being appointed scrutineers and the following were elected: Drs. Berry, Bontor, Cleveland, Cheese, Evill, Edwards, H. Fisher, F. C. Fothergill, Hatrick, Kinloch, Shackleton, Smith, G. Francis Smythe, Stewart, Wells.

KINGSTON-ON-THAMES.

A MEETING of this Division was held on December 13th to vote upon service under the Act.

The Vote.—The voting was as follows:

For refusal—			For accepting—		
Members ...	...	46	Members ...	...	0
Non-members	...	8	Non-members	...	0

One member and one non-member did not vote.

LEWISHAM DIVISION.

A MEETING of this Division was held at Catford on Thursday, December 12th. Dr. T. COMBER presided. There were seventy-two present, including seventeen non-members.

The Proposals of the Government.—The voting for the resolution at the Council was as under:

For refusal—			Against refusal—		
Members ...	...	51	Members ...	...	4
Non-members	...	14	Non-members	...	3
		65			7

Majority for refusal, 58.

(NEW) LAMBETH DIVISION.

A SPECIAL general meeting of this Division was held at Bethlem Hospital on December 12th, Dr. FRASER in the chair. The book was signed by one hundred and twenty-one members and thirty-seven non-members.

The Proposals of the Government.—After a spirited discussion, in which Drs. FRASER, WALLACE-SMITH, BRERNER-SCOTT, HICKLEY, PARTRIDGE, MACKEITH, EVERARD, OLDFIELD, CARRUTHERS, and GANDY took part, the vote was taken by means of question-slips, and resulted as follows

	For Service.		Against Service
Members present...	... 41	...	80
Members' proxies	... 0	...	4
Non-members present	... 15	...	27
Non-members' proxies	... 0	...	4
	56		115

Local Medical Committees.—The meeting elected the subjoined Local Medical Committees:—For Lambeth: Drs. W. Atkinson, R. Brookes, T. Brown, Mildred Burgess, Carruthers, Cobbledick, Duke, Durno, Farman, Fraser, Hickley, Moon, Munro, Pywell, W. J. Robertson, Rusby, Sangster, G. B. Scott, H. Taylor, and Winterbotham. For Southwark: Drs. J. F. Williams, Harvey Norton, F. W. Smith, Berkley, Larkin, Elwin, Parkes, Peers, Moore, Gibson-Bott, Matcham, MacKeith, F. O. Stoker, Herrington, D. F. Bennett, Denning, Porter-Smith, S. S. Brook, Saint-Cedd, Moran, and Read. Representatives elected on the London County Medical Committee: Drs. D. H. Fraser, J. MacKeith, A. M. Hickley, and A. Matcham.

Organization Rules.—The Organization Rules as amended were approved.

MARYLEBONE DIVISION.

A GENERAL meeting was held at the Rooms of the Royal Society of Medicine, which were kindly lent by the Council, on December 11th. Mr. ATWOOD THORNE, Chairman of the Division, was in the chair. One hundred and ninety-eight members and fifty-one non-members were present.

Special Representative Meeting.—The SECRETARY stated that the Representatives had voted in accordance with their instructions—except one Representative, who was unavoidably absent from one division.

Report of Council.—Dr. PEACHEY asked whether the votes of non-members would be recorded on this occasion, and what influence they would have in deciding the question. Dr. F. J. SMITH replied that they would be taken into consideration at the Special Representative Meeting on December 21st. Dr. F. J. SMITH moved:

That this Marylebone Division is in favour of the Association calling on the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government.

Dr. DAVID ROXBURGH seconded; Dr. LAURISTON SHAW, Mr. HARRISON CRIPPS, Dr. PEACHEY, Dr. BYRNE, Mr. H. J. PATERSON, Mr. CHARLES RYALL, and Dr. EDDOWES took

part in the discussion. The motion was then put to the meeting, and the voting was as follows:

For the resolution—		Against the resolution—	
Members	179	Members	11
Non-members ...	37	Non-members ...	1
	216		12

The Chairman announced the numbers, and declared the resolution carried, after Mr. B. Roth had objected to the manner in which the vote had been taken.

Medical Committee for County of London Insurance Area.—Dr. David Roxburgh proposed, and Dr. Holmes seconded the election of Dr. Gordon Lane, Mr. Warren Low, Dr. Montgomery-Smith, Dr. Ward Ramsay, and Dr. Percy Spurgeon. This was carried.

Election of Deputy Representative.—Dr. Gordon Holmes proposed, and Dr. Gordon Lane seconded, that Mr. Warren Low be appointed Deputy Representative in place of Mr. Maynard Smith. This was carried. The Secretary proposed, and Dr. Willcox seconded, that the Chairman be empowered to appoint any further Deputy Representatives that might be required. Carried.

Instructions to Representatives.—Dr. F. J. Smith proposed, and Dr. David Roxburgh seconded:

> That the Representatives be left a free hand, subject to the general tenor of what had happened at the meeting.

This was carried.

Vote of Thanks.—Dr. Gordon Lane proposed, and Dr. Gordon Holmes seconded:

> That a very hearty vote of thanks be accorded to the Council of the Royal Society of Medicine for kindly placing the room at the disposal of the Division.

This was carried unanimously.

North Middlesex Division.

A meeting of medical practitioners residing in the North Middlesex Division was held on December 10th, Dr. Richmond Bryce in the chair. Over 100 members were present.

Middlesex Medical Committee.—The representatives of the various wards on the Middlesex Medical Committee were elected as follows:—*Hornsey:* Drs. Fuller and Brackenbury. *Tottenham:* Drs. Barnes and Plaister. *Edmonton:* Drs. Burton and Shaw. *Enfield:* Drs. Tresilian and Distin. *Wood Green:* Drs. Wood and Porter. *Southgate and South Mimms:* Dr. Grant.

The Proposals of the Government.—After much discussion the following resolution was carried by a majority of 97 votes to 12:

> That this meeting is in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government.

South-West Essex Division.

A meeting of this Division was held on November 28th, 1912, at Livingstone College, Knotts Green, Leyton, by the kind invitation of Dr. C. Harford. Sixteen practitioners were present, and Dr. Panting presided.

Lantern Demonstration.—A lantern demonstration entitled the "Physiology and Pathology of the Motor Functions of the Stomach" was given by Dr. A. Hertz. A discussion followed, in which Drs. Tomkins, F. Collins, Margaret Rorke, and Wigram took part.

Votes of Thanks.—A vote of thanks to Dr. Hertz was proposed by Dr. Warner and seconded by Dr. F. Collins, and carried with acclamation. Dr. Hertz thanked the meeting, and promised to come again soon and give another demonstration. A vote of thanks to Dr. Harford for entertaining the members was proposed by the Chairman and carried unanimously. The meeting then ended.

Model Ethical Rules.—A special meeting of the Division was held on Thursday, November 14th, in the Wesleyan Church Schoolroom, Leyton High Road, for the purpose of adopting the Model Ethical Rules, published in the Journal of September 21st. Twelve members were present, and Dr. Panting presided. The Model Rules were taken as read; no amendments were proposed and the rules were adopted unanimously.

Stratford Division.

A mass meeting of the medical men in the Stratford and Tower Hamlets Divisions was held on December 13th in the Council Chamber, Town Hall, Stratford, E. Dr. Sanders presided over a large meeting, 178 medical men being present.

Essex Medical Committee.—Drs. Brews, Drake, Dunlop, Mitchell, and Steen were appointed as members of the Essex Medical Committee representing that part of the Stratford Division outside the area of the County Borough of West Ham.

The Proposals of the Government.—The Stratford Division then proceeded to record its vote as to working the Insurance Act, after many speeches had been delivered, with the following result:

81 members and 25 non-members voted in favour of refusal.

14 members and 9 non-members voted against refusal.

Eight medical men unable to be present wrote asking their votes to be taken by proxy, all in favour of refusal, but this was unconstitutional.

Insurance Practitioners' Association.—A resolution condemnatory of the action of Dr. Lauriston Shaw in presiding at a meeting of the Insurance Practitioners' Association was passed, with one dissentient.

Deputy Representative.—Dr. Challans being unable to attend the Representative Meeting on December 21st, Mr. Couzens was elected Deputy.

MIDLAND BRANCH:

Boston and Spalding Division.

A special meeting was held at the White Hart Hotel on December 11th; Dr. White was in the chair, and thirty-five members and nine non-members were present.

Regrets at Non-attendance were received from many members and non-members. Four of these wrote in favour of working the Act and seven against.

The late Dr. Lacy Barritt, of Spalding.—The Chairman proposed and Dr. Allan seconded:

> That a sincere vote of condolence be sent to the representatives of the late Dr. Lacy Barritt in the irreparable loss they had sustained.

This was passed unanimously, all standing. Dr. Barritt was a loyal supporter of the policy of the Association.

The Proposals of the Government.—The Chairman introduced the subject. After considerable discussion, Dr. South proposed and Dr. Jacobsen seconded that the following question be put:

> Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

As an amendment Dr. Galletly proposed, and Dr. Benson seconded:

> That we agree to work the Act.

The voting was as follows: For the amendment, 2; against 41. The question was answered as follows:

Yes—		No—	
Members	33	Members	2
Non-members ...	8	Non-members ...	0
	41		2

Local Medical Committee.—It was resolved that the Provisional Medical Committee of the Holland Division be the Local Medical Committee for that area, with power to add to their number. The following gentlemen, therefore, form the Committee: Dr. South (chair), Dr. White (vice-chairman), Dr. Wilson (secretary), Drs. Mason, Pilcher, W. H. Smith, R. Tuxford, Witham, and Wrinch.

Fees for Clubs.—The question of fees for clubs in the event of refusal by the Association to work under the National Insurance Act was discussed. With this was taken Dr. Collins's notice with regard to fees to be charged to juvenile clubs. Dr. McNabb proposed, and Dr. Jacobsen seconded, that the following scheme be submitted to the central office:

> That male members of clubs be charged 8s. 6d. a head, with extras for: Mileage (1s. a mile *out* over three miles); diseases due to misconduct; operations outside hospitals; anæsthetics outside hospitals; fractures, dislocations, consultations.

Wage limit to be £2; no consideration to be shown to old members. Examination before admission.

The above terms to apply to members elected before July 15th, 1912, and who had been medically examined before admission.

"No women to be attended under contract practice."

This was carried by a large majority,

Juvenile Clubs.—Dr. ALLAN proposed, and Dr. MILLER seconded, that the same terms apply to juvenile clubs (ages 5 to 16), the capitation fee to be 5s. Carried.

Central Defence Fund.—The CHAIRMAN called attention to the need for supporting this fund.

CHESTERFIELD DIVISION.

A MEETING of this Division, to which all the practitioners in the area of the Division were invited, was held at the Board Room, Chesterfield Hospital, on December 12th. Dr. ALBERT GREEN was in the chair, and fifty-six other practitioners were present.

County Medical Committee.—Dr. DUNCAN reported as to election of County Medical Committee, and stated that the Chesterfield Division had obtained its full proportion on the Committee. The following members of the Chesterfield Division were elected members of that Committee: Drs. A. Green, H. B. Fletcher, J. Court, A. Court, H. Tomlin, G. H. West-Jones, F. Marriott, and T. Corkery.

The Proposals of the Government.—The CHAIRMAN explained the method of voting, and a discussion ensued as to what form the answer to the question submitted by the Council's report should take—whether "Yes" or "No" or "Accept" or "Refuse." Dr. E. H. HOUFTON, one of the representatives of the Nottingham Division to the Representative Meeting, was in attendance by invitation, and gave his reasons why he felt impelled to vote in favour of rejecting the offer. Dr. DUNCAN referred to the vagueness of the question submitted, and to the confusion of answers likely to result from the form in which it was put. Dr. WARTERS said the question put at Derby was:

Are you in favour of enforcing the pledge or not?

Dr. HOUFTON said that if the conditions of the offer were felt to be unsatisfactory the vote should be accordingly, and that the real point was: Who was going on the panel? If one were not prepared to fulfil the conditions then one should vote against and adhere to the pledge. Dr. BRIERLEY moved that there be two votes:

1. Whether the conditions of the offer were deemed to be satisfactory or not.
2. Whether or not the Association should call for the profession to refuse to enter into any agreement with Local Insurance Committees to accept service under the Act upon the terms and conditions offered by the Government.

Dr. DUNCAN seconded the motion, which was carried unanimously. Dr. Brierley's first question was put and answered by show of hands unanimously in the negative. The voting on the Council's question was then taken by cards, and resulted as follows:

Yes—		No—	
Members	32	Members	13
Non-members ...	6	Non-member ...	1

Pledge re Panel.—It was resolved unanimously that every practitioner present pledge himself not to put his name on the panel before the next local meeting, which would be held at the Board Room, Chesterfield Hospital, on December 23rd, at 3 p.m., to which each practitioner within the area of the Division be requested to bring or send his papers. The Honorary Secretary was instructed to obtain the signature of all absent practitioners within the Division in approval of this resolution.

Holmewood Colliery Field Club.—A letter from Dr. W. H. Lee was read with regard to temporary terms entered into by the surgeons to the club on November 28th. Dr. STRATTON produced and read the correspondence on the matter. Dr. HOUFTON, in reply, stated that none of the Field Clubs in the Mansfield District had accepted the offer of temporary terms of 13s. Dr. MARRIOTT reminded the meeting that temporary terms were deprecated and were only to be entered into when other terms were out of the question. The CHAIRMAN said temporary terms were possible until March 31st. Dr. DUNCAN, as one of the Holmewood surgeons, maintained that he had not broken faith, but had acted in accordance with the resolution passed. It was resolved unanimously on the proposition of Dr. MARRIOTT, seconded by Dr. LEE:

That no temporary terms be entered into from this date, and that all outstanding offers of temporary terms be specifically withdrawn.

Dr. HOUFTON said he would undertake so far as he could that this resolution should be observed at Mansfield. Dr. A. M. PALMER said he had a temporary offer outstanding with the Sheepbridge Company and would withdraw it if Dr. W. K. Taylor would also withdraw it. Dr. Duncan, as honorary secretary, was instructed to interview Dr. Taylor. Dr. SHEA moved and Dr. MARRIOTT seconded a vote of confidence in Dr. Duncan, and of approval of what he had done. Dr. LEE supported the motion, which was carried unanimously. Dr. DUNCAN replied, and thanked the meeting.

Public Medical Service.—Explanation was given by Dr. CHASE that there was no truth in the report that Greswell was not ripe for the foundation of a public medical service and that a surgeon there had made permanent terms with a field club at 13s. The surgeon concerned formally denied that there was any truth in the report, and his word was accepted. Dr. G. H. WEST-JONES stated that he had been asked to accept certain old men *en bloc* at less than 8s. 8d., and that, if not accepted, they would have to be attended "on the parish," and the surgeons would get no fee. Dr. R. M. MCCREA said he was in the same position, but would rather attend them on the parish and get no fee than make an exception. Dr. G. BOOTH said he had similar people, and they might be able to pay 1d. a week. The CHAIRMAN said he did not think any difference should be made. They should either pay full terms or nothing at all. It was resolved that no difference should be made. It was resolved, on the proposition of Dr. A. COURT, seconded by Dr. DUNCAN:

That the duties of the Appointments Committee be delegated to the Committee of each subdivision of the service.

It was resolved, on the proposition of Dr. DUNCAN, seconded by Dr. CHASE:

That either Mansfield or Chesterfield take in Shirebrook or such portion thereof as each may find convenient for the working of the service.

It was resolved, on the proposition of Dr. COURT, seconded by Dr. DUNCAN:

That an allowance of 10 per cent. or thereabouts be made to such friendly societies as would collect the contributions to the service: provided that this allowance be made in such a manner as would not offend against the rule against commissions.

Circular to Absent Practitioners.—The Honorary Secretary was instructed to issue a circular to the practitioners who were not present at the meeting informing them of the resolutions passed.

OXFORD AND READING BRANCH:

OXFORD DIVISION.

A SPECIAL general meeting of this Division was held on December 12th in the lecture theatre of the Pathological Museum, Oxford. Sir WILLIAM OSLER presided, and 109 members and non-members were present.

Medical Committees.—The meeting then proceeded to elect Medical Committees to correspond with the insurance areas of the borough and county of Oxford. Twelve members were elected to serve on the Borough Committee and twenty-one on the County Committee. The following are the members of these several Committees: *Oxford Borough Medical Committee:* Sir Wm. Osler (as Chairman of Division for the year), Dr. Ormerod (medical officer of health), Dr. Mallam and Mr. Dodds-Parker (Infirmary staff), Dr. Turrell (member of Council), Dr. Duigan (Secretary of Division), Mr. Drew (Representative of Division), and Drs. Gillett (Assistant Secretary), H. Thompson, Higgs, J. Wood, and Maude. *Oxford County Medical Committee:* Drs. Boissier, Routh, Penrose, Prichard, Meikle, and Venning or Jones (Banbury District), Drs. O'Kelly and Croly (Chipping Norton and Charlby District), Drs. Cheatle, Wood, and Harvey (Burford and Witney District), Dr. Caudwell (Woodstock District), Dr. Long (Bicester District), Dr. Hebb (Islip District), Dr. Hitchings (Headington District), Dr. H. Freeborn (Clifton Hampden District), Dr. Barns (Wheatley

District), Dr. Summerhayes (Thame District), Dr. Hawkesworth (Watlington District), and Drs. Susmann and Pooley (Henley District).

Special Representative Meeting.—The Divisional Representative (Mr. Drew) gave his report of the last Representative Meeting, which was accepted *nemine contradicente*.

The Proposals of the Government.—Dr. Turrell, Member of Council, reviewed the present position of the Association with reference to the latest proposals of the Government, and pointed out that the negotiations with the Chancellor had led to no concessions of vital importance. He concluded with some explanatory statements concerning the Council's report. In answer to some remarks of Dr. Collier, the Secretary (Dr. Duigan) informed the meeting that he was officially advised that all members of the profession should record their vote at the meeting. Dr. Horatio Jones (Deddington) emphasized the importance of presenting a united front against working the Act. Dr. R. E. Yelf (Moreton-in-Marsh) maintained that there were good reasons for accepting the terms. The subsequent speakers (Dr. Dewhurst, Dr. Susmann, Dr. Higgs, Dr. Boissier, Dr. Hebb, Dr. Brooks, Dr. Summerhayes, and Dr. King Turner) were all against the acceptance of the terms. Finally a spirited appeal for united action was made by Dr. Patterson, of the Reading Division. The Chairman then put the official question to the meeting:

> Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act on the terms and conditions now finally offered by the Government?

Members voting "Yes"	... 89	"No"	... 0
Non-members voting "Yes"	... 9	"No"	... 0

Six or seven members and non-members abstained from voting. The Representative was instructed accordingly.

Guarantee Fund.—Dr. Collier suggested that the Guarantee Fund Committee should meet and take steps to increase the fund.

Resolutions.—The following resolution was proposed by Dr. Duigan (Secretary), seconded by Dr. Higgs, and carried *nemine contradicente*:

> That the policy decided upon by a two-thirds majority of the votes given by the Divisions be regarded as binding on the members of the profession of this area, collectively and individually.

Dr. H. Jones proposed the following two resolutions:

> (1) That no member of this Division undertake any contract work at less rates than those provided for attendance on insured persons.
> (2) That in the case of insured persons whose income exceeds £160 per annum, such persons shall not be accepted as contract patients at a less rate than £1 1s. per head per annum.

The resolutions were seconded by Dr. Wylie. After some discussion Dr. Jones agreed to withdraw his resolutions until the next meeting of the Division.

Clinical Meeting.—It was proposed by Dr. Turrell and seconded by Dr. Duigan:

> That there be a clinical meeting of the Division held next January or February.

This was carried *nemine contradicente*.

SHROPSHIRE AND MID-WALES BRANCH.

A special meeting of the Branch, to which all medical practitioners in the district were invited, was held at the Salop Infirmary on December 10th. Dr. Gardner was in the chair, and 95 medical men were present.

The Proposals of the Government.—After a short discussion voting took place on the question submitted to the Branches by the Council. The result of the voting was:

Ayes—members, 81; non-members, 11.
Noes—members, 1; non-members, 2.

The following resolution was afterwards carried:

> That in the opinion of the Shropshire and Mid-Wales Branch of the British Medical Association, the result of the conference with the Chancellor of the Exchequer is most unsatisfactory, and the conditions remain unworkable and derogatory to the profession and fatal to an efficient medical service; therefore it urges all practitioners to refuse to enter into agreements with the Local Insurance Committees on those lines.

Formation of Local Committee.—A local committee for the County of Shropshire was afterwards elected, and the following resolution passed:

> That the Provisional Medical Committee be requested to consider the question as to what terms should be accepted from the clubs for non-State-insured members, and to report to the next meeting of the Branch on December 31st.

SOUTH-EASTERN BRANCH;

Canterbury and Faversham Division.

A meeting of this Division, to which all the medical men in the area were invited, was held on December 12th, at the Kent and Canterbury Hospital, Canterbury, Dr. E. C. Fenoulhet, of Herne Bay, presiding.

Proposals of the Government.—The Report of Council was discussed, and the vote taken in accordance with the British Medical Association instructions. The vote proved unanimous in favour of the Association calling upon the profession to refuse to give service under the Act upon the present terms.

Kent Public Medical Service.—On the proposition of Dr. Alexander, seconded by Dr. Frank Wacher, the Public Medical Service as amended was approved.

Kent Medical Committee.—The election of the members of the Provisional Medical Committee of the County of Kent to be the members of the permanent Medical Committee for one year was confirmed.

Invitations from Insurance Committee.—Dr. Evers proposed and Dr. Frank Wacher seconded, and it was carried unanimously:

> That the Honorary Secretary be instructed to request every medical man in the area to refrain from replying to the invitation of the East Kent Insurance Committee to go upon the panel until a meeting of the profession in each local area has been held; such meetings to be held as soon as possible after the Representative Meeting in London.

International Congress of Medicine.—A letter from the Reception Committee was received, stating that an excursion will be made by a section of the congress to Canterbury in August next, and suggesting that the Division of the British Medical Association may wish to assist in entertaining the foreign and other guests. The matter was referred to the next meeting of the Division.

Chichester, Worthing, and Horsham Divisions.

A combined meeting of the Chichester, Worthing, and Horsham Divisions was held at the Hospital, Worthing, on December 13th. Sixty-three members and three non-members were present.

The Proposals of the Government.—The following resolution was passed:

> That this meeting of the medical practitioners of the Chichester, Worthing, and Horsham Divisions is in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government.

The result of the voting was as follows:

For the resolution—		Against—	
Members ...	54	Members ...	9
Non-members ...	2	Non-member ...	1
	56		10

Eastbourne Division.

A meeting was held at the Royal Lounge Rooms, Eastbourne, on December 13th. Mr. A. C. Roberts was in the chair, and thirty-seven members and ten non-members were present.

The Proposals of the Government.—After a very short discussion, the Chairman submitted the question:

> Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

The following was the result of the voting:

In favour of refusal—		Against refusal—	
Members ...	34	Members ...	1
Non-members ...	8	Non-members ...	0
	42		1

Medical Committee for County Borough of Eastbourne National Health Insurance Area.—The following fifteen practitioners were unanimously elected: Drs. J. H. Ewart, A. C. Gurney, H. Habgood, C. O'Brien Harding, A. Harper, C. W. Holme, R. Howie, B. J. Macaulay, M. V. McKechnie, W. J. C. Merry, T. Pettey, A. C. Roberts, A. P. Sherwood, Wm. Muir Smith, R. T. Wallace.

HASTINGS DIVISION.

A SPECIAL and urgent meeting, to which all registered practitioners were invited, was held at the Eversfield Hotel on December 12th. The CHAIRMAN (Dr. Wills) presided, and sixty-eight attended.

The Proposals of the Government.—The SECRETARY then read the letter from the Medical Secretary as to the methods and procedure of voting *re* the National Insurance Act. The CHAIRMAN then explained that he would put the question *re* the Council's report from the chair, and not take motions or amendments. The Chairman called upon Dr. LOCKE, the Representative, to say what took place at the last Representative Meeting (November), and he did so briefly. Dr. MURDOCH then spoke in favour of accepting service. Dr. CONDON TAYLOR also spoke at some length in favour of accepting service. During Dr. Taylor's speech Mr. OTTO TRAVERS suggested "that the question be now put," and the CHAIRMAN then asked Dr. Taylor to sit down. The question was then put, and the members and non-members voted separately:

Members in favour of refusal	...	48
Members in favour of accepting	...	4
Non-members in favour of refusal	...	12
Non-members in favour of accepting		1
Total (refusal)	... ...	60
Total (accept)	...	5

The result was received with loud cheering.

Public Medical Service.—The question of a public medical service was then fully discussed.

Local Medical Committee.—The following were formed into a committee for the Hastings (Borough) Insurance area, with power to add to their numbers: Drs. Locke (Chairman), Stanley, Johnston, Grandy, Daunt, Waugh, Fraser, Otto Travers, Allford, G. V. Howland (Honorary Secretary).

REIGATE DIVISION.

A MEETING of members and non-members of the Association was held at Laker's Hotel, Red Hill, on December 12th. Forty-seven members and five non-members were present. The chair was taken by Mr. A. R. WALTERS.

Letter from Dr. Courtenay Lord.—A letter was read from Dr. Courtenay Lord (Gillingham), pointing out that the 7s. set aside for medical benefit is a "basis of payment" and not a capitation fee; that it will be difficult to obtain an income limit; that if a medical man lives within a mile of a chemist he will not be allowed to dispense; that there will be no special fund for mileage except in very exceptional districts, and that inspection and notes required from practitioners will not be of a troublesome character.

The Proposals of the Government.—The CHAIRMAN addressed the meeting, placing before them the present position of affairs. Dr. PALMER gave an account of the proceedings at the last Representative Meeting. Various speakers followed, the feeling being very strongly against accepting service under the Act. The meeting then voted upon the following question:

> Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

The following was the result of the voting:

Members of the Association:				
For the motion	...	...	...	44
Against	...	...	...	0
Non-members:				
For the motion	...	...	...	5
Against	...	...	...	0

Public Medical Services.—Mr. WALTERS then gave an outline of the various schemes for payment in a public medical service if the profession consent to work the Act. It was proposed by Dr. CORNISH, seconded by Dr. CRICHTON, and carried:

> That payment by capitation be adopted.

Resolution of East Hertfordshire Division.—A letter was read from Dr. LEDWARD covering a resolution of the East Hertfordshire Division with reference to future action if the present terms and conditions are refused. On the motion of Dr. PALMER it was left to the Surrey County Medical Committee to decide as to the form which a public medical service shall take in the event of the Act not being worked.

SOUTH-EASTERN OF IRELAND BRANCH.

A SPECIAL meeting was held in the Victoria Hotel, Kilkenny, on December 13th. All practitioners within the area of the Branch were invited to attend. Dr. MORRISSEY was in the chair, and thirteen were present, all members of the British Medical Association.

The Proposals of the Government.—The meeting was summoned to consider the final proposals of the Government as regards regulations and remuneration under the Insurance Act, and to take a recorded vote of all present as to whether they are willing or not willing to accept service under the Act upon these terms. It was proposed by Dr. WALSH, seconded by Dr. JELLETT:

> That as medical benefits do not extend to Ireland we do not think we ought to vote on this question.

The following amendment was proposed by Dr. MORRISSEY, seconded by Dr. MARY STRANGMAN:

> That the terms offered by the Government be not accepted.

On the amendment being put to the meeting it was defeated by 11 votes to 2. The original resolution was then put to the meeting and carried.

The following resolution was proposed by Dr. WALSH, seconded by Dr. JAMES, and carried:

> That although we do not see our way to vote on this question, we wish to convey to the British Medical Association our determination to give all the support we can in carrying out whatever decision may be arrived at by the Representative Meeting.

SOUTH MIDLAND BRANCH:

BEDFORDSHIRE DIVISION.

A MEETING of this Division was held at the Bedford County Hospital on December 12th, under the chairmanship of Dr. HOLMES. Fifty-three practitioners were present.

Ethical Rules.—The Ethical Rules formulated by the Association were adopted.

The Proposals of the Government.—The meeting then proceeded to discuss the latest or final offer of the Chancellor of the Exchequer with regard to the Insurance Act. A vigorous discussion took place in which the following members took part: Drs. WAUGH, WILLMER PHILLIPS, STANBURY-PHILLIPS, BONE, KILHAM ROBERTS, ROSS, COLLINS, PARBURY, WINCKWORTH, W. G. NASH, AMBLER, L. G. NASH, and HOLMES. The result of voting was as follows: Members refusing to work the Act 40, 8 consenting; non-members, 8 refusing, 0 consenting.

Election of Committee of Practitioners.—The meeting then adjourned, and on reassembling proceeded to elect a committee of practitioners in the county, which coincides with an insurance area. It was resolved that twenty-five members be elected:—Seven for Bedford: Drs. Pollard, Stanbury-Phillips, Cleaton Roberts, W. A. Sharpin, S. J. Ross, A. F. Goldsmith, A. C. Hartley (proposed by Dr. W. G. NASH, seconded by Dr. G. H. GOLDSMITH). Seven from Luton: Drs. Bone, Seymour Lloyd, O'Meara, Hamilton, Robertson, Rose, Verdon (proposed by Dr. S. J. Ross, seconded by Dr. D. POLLARD). Eleven from rural districts: Dr. Dixon, Butters, Winckworth, Garner, Holmes, Waugh, Kilham Roberts, Durran, Rollings, Parbury, Street (proposed by Dr. BONE, seconded by Dr. HAMILTON). Proposed by Dr. W. G. NASH, seconded by Dr. H. D. POLLARD, that the Committee should have power to co-opt up to the number of 3.

BUCKINGHAMSHIRE DIVISION.

A MEETING of this Division was held on December 10th at the Royal Bucks Hospital, Aylesbury. There was an attendance of 46 medical men, of whom 4 were non-members. Dr. BENSON, Chairman of the Division, presided

The Proposals of the Government.

It was decided to vote by ballot papers at 3.30 o'clock.

The CHAIRMAN spoke on the present position of the question of giving service under the Act or refusing to do so, deprecating the political aspect the press were giving to the matter. He took each of the cardinal points and remarked as to how far they had been granted. He himself thought they ought to accept the offer now and give it a trial.

Dr. WHEELER asked whether it was a fact that the Chairman of the Representative Meeting had said that in view of the changed conditions the pledge signed by medical men did not hold good. It was pointed out that nothing of this kind had been said, and that the pledge was binding on all honourable men. He also asked whether, in the event of the profession refusing to work the Act, the offer of the extra £1,500,000 still held good.

Dr. LARKING stated that Sir R. Morant had been asked this question and had replied that this increased offer was dependent on the increased service asked for, and that if the Act were not worked in accordance with the latest Regulations it was doubtful if more than 6s. would be given. In answer to another question it was stated that if the requisite two-thirds majority were not obtained in favour of refusing service the profession must consent to work the Act.

Dr. DURRAN said that the Representatives would feel morally bound to accept the result of the voting in the Divisions.

Dr. WHEELER stated that the friendly societies of Wycombe were considering whether they should start a service of their own and employ four whole-time men. They could afford to pay each of them £425 a year and allow them private practice as well.

Dr. ROSE thought that majorities should not coerce minorities, and that the present offer was much better than the conditions existing hitherto. He referred to the Defence Fund as quite inadequate, and said that if they did not accept it would alienate public sympathy.

Dr. DURRAN made a powerful speech which was received with much applause. He pointed out some of the bad points in the Act, and deprecated the manifesto that had been issued by the twenty practitioners in London. The men who would suffer were the men who now got their living by contract work, and the Defence Fund would compensate them. He had strongly deprecated at the Council meetings that the Council should give any lead. Let each man decide for himself.

Dr. E. O. TURNER spoke in favour of working the Act, and said that in practice the questions of extras and mileage were not of much importance.

Dr. HENDERSON pointed out that they were bound in urgent cases, if they worked the Act, to provide the anæsthetist and any other help that was necessary at their own expense.

Dr. REYNOLDS said they had been met to some extent, and Mr. Lloyd George had given them a good deal of consideration. He strongly advised them to give the Act a trial.

Dr. LARKING said that if the profession refused the present offer general practitioners would receive such a blow that they would never recover. Under the Act they had such a strong position that they could obtain, with their Medical Committee and their representation on Insurance Committees, anything they wanted. If they refused, nothing but trouble and anxiety was before them; it would lead to a split in the profession, and anything was better than that. The Plender report showed that only 4s. 2d. was got from each person, whereas they would, under the Act, get 6s. 6d. The revised Regulations were a great improvement on the first. He believed that if the profession worked the Act provisionally on a payment per attendance basis it would soon be known whether their claim for better remuneration was just or not, and he felt confident that increased pay would be granted from the Treasury and the ratepayers. The votes were then taken, Drs. Bradbrook and Long being the scrutineers; 19 voted in favour of refusal and 25 against. The following resolution was passed to instruct the Representative how to vote:

> That the Representative be instructed to vote for and support the working of the Act as it stands and as far as possible under the conditions laid down in paragraph 114 of the Report of the Council in November last; also that, in the event of an unforeseen difficulty, he be instructed to use his discretion as far as possible in accordance with the decision of this meeting.

It was decided that every medical man should have his attention drawn to the imperative necessity of no notice being taken of any offers until after the Representative Meeting.

Public Medical Service.—The scheme for a Public Medical Service on the lines of Scheme A was approved.

Branch Surgeries.—It was decided at the next meeting to discuss the question of the establishment of branch surgeries.

Rules of the Division.—It was decided that a copy of the rules of the Division and the various resolutions passed at various times dealing with matters of importance to practitioners in the Division be printed and sent to each member.

NORTHAMPTONSHIRE DIVISION.

A MEETING was held in the Board Room of the Northampton General Hospital at 2.30 on December 12th. Dr. BAXTER was in the chair, and eighty-one members and seven non-members were present.

Special Representative Meeting.—Dr. DRYLAND gave a short report of the Representative Meeting, and said that the principle of co-operation with a lay committee had been adopted, and that the Committee of Complaints had been eliminated. Dr. BAXTER proposed from the chair a hearty vote of thanks to Dr. Dryland for his services, which was accorded with acclamation.

The Proposals of the Government.—Dr. BAXTER then made a brief statement on the object of the meeting. Dr. TERRY and Dr. BUSZARD spoke strongly against working the Act. Dr. TOLPUTT spoke strongly in favour of working the Act, and Dr. DRYLAND gave figures to show that the remuneration, at any rate, was now satisfactory. Dr. WROUGHTON also spoke in favour of the Act. Dr. O'RAFFERTY then proposed and Dr. GABB seconded that the question be now put. The CHAIRMAN then put the resolution to the meeting:

> Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

The result of the voting was as follows:

Number of members in Division, 122; members present, 81.

Number of non-members in Division areas, 49; non-members present, 7.

In favour of refusal—		Against refusal—	
Members	43	Members	33
Non-members ...	5	Non-members ...	1
	48		34

Not voting, 6.

Pledge to Support Policy of Association.—Dr. LINNELL proposed and Dr. BULL seconded:

> That this meeting pledges itself to support the policy of the British Medical Association to be defined by it at the meeting of the Representative Body in London on December 21st.

In favour of resolution, 70; against resolution, 7; not voting, 8. Dr. BEATTY, seconded by Dr. ROBB, proposed:

> That local Divisional areas in favour of working the Act be permitted to do so.

This was lost by a large majority.

East Hertfordshire Division Scheme.—The scheme of the East Hertfordshire Division was then read out by the SECRETARY, but was neither supported nor rejected.

Uninsured Persons.—Dr. BAXTER then proposed from the Chair the minimum scheme for uninsured persons in the county. This was passed.

County Medical Committee.—It was also carried that the County Medical Committee should be represented from the Subdivisions in a proportion of 1 in 10 of their members residing in those areas.

SOUTH WALES AND MONMOUTHSHIRE BRANCH:

MONMOUTHSHIRE DIVISION.

A SPECIAL meeting of this Division was held in the Westgate Hotel, Newport, on December 13th, to consider the

Report of Council on the final proposals of the Chancellor of the Exchequer, and to take a vote as to their acceptance or rejection. The CHAIRMAN (Sir Garrod Thomas) presided. Ninety-four members and fourteen non-members were present.

The Proposals of the Government.—After discussion by Drs. HUGHES, MARSH, LLOYD, GREGG, H. T. EVANS, J. W. MULLIGAN, W. D. STEEL, O'SULLIVAN (Cwm), HAMILTON, E. M. GRIFFITHS, ELWORTHY, A. E. JONES, RYAN, BARNARD, GREER, PRICE, and COOK, a vote was taken on the question submitted by the Council, and the result was declared by the CHAIRMAN to be:

For refusing service, members 43; non-members 5.
Against refusing service, members 45; non-members 9.

Instructions to Representative.—It was decided *nemine contradicente* to instruct the Representative to place the position of the colliery surgeons in the district before the Representative Meeting, and to fall in with any action to be taken in accordance with the decision of a two-thirds majority of the meeting.

SOUTH-WESTERN BRANCH:

EXETER DIVISION.

A MEETING was held at the Exeter Hospital on December 11th. Mr. E. J. DOMVILLE was in the chair, and there were eighty-seven members and ten non-members present.

Ethical Rules.—On the proposition of Mr. RUSSELL COOMBE, seconded by Dr. FORTESCUE SAYRES, the rules governing procedure in ethical matters of a Division, not a Branch, as finally approved by Council, were adopted.

The Proposals of the Government.—The meeting next considered the Report of Council upon the revised and final terms of the Government. Mr. DOMVILLE introduced the subject, and pointed out to the meeting that at the Representative Meeting it was apparent that there was a cleavage in the Association (the Representatives being nearly equally divided) as to whether they would or would not consent to take service under the Act. Mr. RUSSELL COOMBE pointed out that the Representative Meeting had passed a resolution by an overwhelming majority refusing to accept service under the Regulations at that time put forward, and emphasized the fact that the even voting was on the question of refusing or reopening negotiations under the Chancellor. He then gave a summary of the latest concessions made by the Government. Dr. WELSFORD moved and Dr. AYSHFORD seconded:

> That we refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government.

Drs. ADKINS, BRASH, and SHIRLEY PERKINS spoke in favour of refusal, Drs. CLAYTON JONES and VLIELAND in favour of accepting the latest offer, and Dr. SAYRES spoke as to the attitude of the Representatives at the last Representative Meeting. The meeting then voted by a roll-call:

For refusal—		For acceptance—	
Members	74	Members	12
Non-members ...	8		

Rates for Old Members of Clubs.—The meeting next discussed what rate should be charged for old members of clubs above the age of 65. The following resolution was passed:

> That the rate per capita for old members of the clubs above the age of 65 should be 8s. 6d. per annum, inclusive of drugs, with a wage limit of 30s. per week.

Proposed Statement of Public Medical Service.—Mr. RUSSELL COOMBE (seconded by Dr. HUDSON) proposed that the following resolution be moved on behalf of the Division at the forthcoming Representative Meeting:

> That, in the event of a decision of the Association being come to refusing to undertake work under the National Insurance Act, the Representative Body shall, as the next item of their business, proceed to take the necessary steps for the immediate issue of a statement to the public of the reasons for the afore-mentioned decision.

The following rider was proposed by Dr. GORDON and accepted by Mr. RUSSELL COOMBE:

> That this statement shall be handed to the editor of every important lay paper in Great Britain by a deputation of local medical men.

The resolution, with the rider added, was passed unanimously.

PLYMOUTH DIVISION.

A MEETING was held at Goodbody's Café, Plymouth, on December 10th. Dr. R. JAQUES (Plymouth) in the chair. All medical practitioners were invited to be present, whether members or not.

Special Representative Meeting.—The first business was to hear a report by Dr. NOY SCOTT (Plympton) on the Representative Meeting held in London on November 19th and 20th.

The Proposals of the Government.—The question sent from the central office to be submitted to all the Divisions in the country was as follows:

> Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

There was comparatively little discussion. One or two important points, however, were raised. One gentleman, who occupies a prominent position in the profession locally, wondered if it would be fair on his part to give a vote which might have the effect of subsequently interfering with the financial position of some of his brethren, but it was urged that the rank and file were looking to their leaders for guidance, and expected to receive their assistance at all times.

The procedure of voting by papers, each doctor to place his signature on the paper, was adopted, and on an explanation being asked for it was stated that the suggestion came from head quarters. It was thought by some that a show of hands would suffice, but after some expressions of opinion (during which an allegation of political bias raised not a little dissent) it was decided to proceed by ballot. An answer to the question in the affirmative meant that the doctors declined the terms.

The voting was as follows:

For refusal—		Against refusal—	
Members	65	Members	14
Non-members ...	19	Non-members ...	3
	84		17

This gave a majority of 67 against the Chancellor's proposals.

WEST SOMERSET BRANCH.

A SPECIAL general meeting was held at the Taunton and Somerset Hospital on December 10th. Dr. BALFOUR STEWART was in the chair, and 52 members and 1 non-member were present.

The Proposals of the Government.—The meeting decided to refuse to work the Act under the present terms, by 27 votes to 15.

YORKSHIRE BRANCH:

BRADFORD DIVISION.

A MEETING was held at the Great Northern Victoria Hotel, Bradford, on December 13th. All practitioners resident within the area had been invited to the meeting, and the result was the largest meeting of the profession which has ever been held within the city. The CHAIRMAN (Dr. Manknell) presided.

The Proposals of the Government.—The question submitted by the Council to the Divisions was considered, with the following result:

In favour of refusal:		Against refusal:	
Members	123	Members	10
Non-members ...	30	Non-members ...	7
	153		17

The voting was by written vote.

Instruction of Representatives.—The Representatives were duly instructed for the forthcoming meeting, and certain resolutions were ordered to be placed in the name of the Division on the agenda of that meeting.

Dinner to the Chairman and Secretaries.—On the proposition of Dr. J. J. BELL, seconded by Dr. BRONNER, the Division decided to entertain the Chairman (Dr. Manknell), the Secretaries (Dr. J. B. Dunlop and Dr. Wherry Willson), the Secretary of the Provisional Committee (Dr. J. F. Allan), and the Representative (Dr. Metcalfe) to a complimentary dinner in January next, in appreciation of their labours during the past twelve months.

Halifax Division.

A meeting of this Division was held at the Imperial Café, George's Square, Halifax, on December 11th. The chair was taken by Dr. J. Crossley Wright, and fifty-six other members and eight non-members were present.

The Proposals of the Government.—The resolution recommended by the Council and printed on page 621 of the Supplement to the British Medical Journal of December 7th was put to the meeting. On the motion of Dr. Drury, seconded by Dr. J. Oakley, it was decided that the voting be by card, and that each voter write his name on his card. The result of the voting was as follows:

In favour of refusal to work the Act: Members 54, non-members 8.

Against refusal to work the Act: Members 3, non-members, 0.

Instructions to Representative.—On a further appeal by the Representative (Dr. Drury) that his instructions be unanimous, the proposal that he be instructed to vote against working the Act was carried *nemine contradicente.*

Future Action.—Dr. Priestley Leech opened the discussion as to the action to be taken in the immediate future. On the motion of Dr. Priestley Leech, seconded by Dr. R. N. Denning, the following resolution was carried unanimously:

That this meeting of the Halifax Division of the British Medical Association refuses to form a Local Medical Committee under the Insurance Act. That the Provisional Medical Committee remain as at present constituted. That each member of the profession in the Division be asked to pledge himself not to accept any service under the Act, or under friendly or approved societies, and that he refers any offer to the Honorary Secretary of the Provisional Medical Committee. That it be an instruction to the Provisional Medical Committee to draw up a scheme for attendance on insured persons and members of approved societies in case the Association refuses to work the Act.

Lectures to Certified Midwives.—The Secretary then read a letter he had received from the Medical Secretary advising that no arrangements be made for lectures to certified midwives until the matter had been discussed by the Medico-Political Committee.

Wakefield, Pontefract, and Castleford Division.

A special meeting of this Division, to which every member of the profession residing within the area of the Division was invited, was held at the Clayton Hospital, Wakefield, on December 13th, Dr. J. W. Walker (Wakefield) in the chair. It was hoped that Dr. T. A. Helme (of Manchester) would be present to address the meeting, but he was unable to come.

Statement re Fund for Payment of Representative.—Dr. Steven read his statement, showing that the sum received to date was £32 0s. 6d. Every doctor in the Division who had not already done so was invited to make his contribution of 10s. to this fund for the current year.

The Proposals of the Government.—The Secretary read to the meeting the resolution which was passed unanimously at the meeting of the combined executives of the Yorkshire Branch at Leeds a few days ago, as follows:

That this meeting of Executives of Divisions of the Yorkshire Branch, having carefully considered the replies of the Chancellor of the Exchequer to the deputation appointed to confer with him by the recent Representative Meeting, approves of the following resolutions:

(*a*) That it does not consider that the replies of the Chancellor remove the strong objections to the Regulations and conditions of service determined on by the last Representative Meeting as "unworkable and derogatory to the profession."

(*b*) That its opinion is that the conclusions of that Representative Meeting were, and still remain after the latest concessions, reasonable and warranted.

(*c*) That it recommends the Division to reject the proposals and to adhere to their previous decisions to decline service under the Act.

The Chairman said they must remain loyal to the Association and the signed undertaking. The following question was submitted to the meeting:

Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with the Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

After full discussion, the voting resulted as follows: *Against* service, members 30; non-members, 12. *For* service, members 15; non-members, 4. Total against, 42; for, 19.

BATH AND BRISTOL BRANCH:

Bristol Division.

The voting of the Bristol Division was held on December 16th, with the following result:

Members—			Non-members—		
Ayes	248		Ayes	75	
Noes	0		Noes	3	

METROPOLITAN COUNTIES BRANCH:

Chelsea Division.

A meeting was held at the Fulham Town Hall on December 16th, to which all practitioners in the district were invited. Dr. Young was in the chair and ninety-nine were present.

The Pledge.

The following resolution was moved by Dr. Millar and seconded by Dr. Fletcher:

That those present at this meeting of medical men resident and practising in the metropolitan boroughs of Chelsea and Fulham hereby pledge themselves individually not to place their names on the panel of any Local Insurance Committee until such time as the Council of the British Medical Association authorizes them to do so.

Dr. Tonkin supported.

Dr. M. J. Williams said: This was a momentous question, and he was not going to pledge himself not to go on the panel. The medical practitioners of Fulham had not, in his opinion, considered the consequences to themselves. It was most important that a panel should be formed to avoid the introduction of whole-time medical officers into the district. The question arose, How many could work the area? In Norwich the club, worked comfortably by three whole-time men, had 11,000 members. Taking it that there were 45,000 insured persons in Fulham, the whole could be served by twelve whole-timers, which would give £1,000 a year to each and carry forward £3,000 yearly for pensions. Could those who would on an average each lose £300 a year by such an arrangement afford it? He could not. Even if twenty whole-timers were wanted, the salary would be £750 a year. If an advertisement appeared in the *Times* on New Year's Day saying that the Treasury required fifteen medical men at £1,000 per annum to work Fulham, they would all be candidates. ("No, no.") Well, there were plenty as good as any there that would, and yet they refused to form a panel to save themselves. He declined to make a compact with them to commit suicide.

Dr. J. H. McBurney said: Fulham doctors had roughly 3,000 patients each, of whom one-third were insured, and for whom each man was guaranteed £350 per annum. Surely it was only right to assume that they must be getting more than this rate for the remaining two-thirds, which contained the wives and children (among whom lay three-fourths of their work) of the working class and all the better class. It also included all midwifery cases, operations, inquests, general insurance work, and yet, in spite of all these advantages, he was confident they got no such figure as 7s. per head per annum. Supposing Fulham doctors got this capitation (now offered by the Government for one-third of the population) fee from all Fulham residents. The income of every medical man in Fulham would be well over £1,000 per annum, whereas he was confident at the present moment it would not work out at more than £500. What would happen in case the British Medical Association decided not to work the Act? It would be worked partly by men on the panel, partly by younger men appointed by the Government (whole time or otherwise), and partly by the insured being allowed (*pro tem.*) to go to whatever doctor they wished, and have their bills paid by the Local Insurance Committee. What would become of the market value of practices in the meantime? Would any man buy a practice and pay for it when he could have one for nothing from the Government? Certainly not. The Covenant was signed for getting better terms. Those better terms they had got, and it was the duty of the British Medical Association to allow its members to accept those terms.

Dr. W. T. BARKER claimed that non-members of the British Medical Association who had handed in their resignations of club appointments could not be expected to abide by their pledges as the Association recorded their votes for reference only.

The CHAIRMAN could not accept this statement.

Dr. O'SULLIVAN took exception to the way in which the meeting was being conducted, and maintained that they had come to this meeting in order to record their votes as to accepting service under the Act. He thought it would go without saying that every man would stick to his pledge.

Dr. ORR asked the Secretary to read the Undertaking and the Pledge, which was done.

Dr. GALLARD, in supporting the resolution, said that it would be a most unjust thing if the officers of the Division who had canvassed members in order to get their signatures to the pledge, which they in honour felt compelled to adhere to, were to be penalized through other men putting their names on the panels without informing them, and thereby taking their patients. The resolution was carried by an overwhelming majority.

The Proposals of the Government.—A discussion then ensued on the following question:

Are you in favour of the Association calling upon the profession to refuse to enter into any agreement with Local Insurance Committees to give service under the Act upon the terms and conditions now finally offered by the Government?

Dr. W. LEE made an eloquent and stirring appeal to his fellow practitioners to refuse to be bound by the shackles of any Governmental machine. Let them preserve their independence, even if they had to suffer financially, as previous speakers said they would do. He trusted that all of them would be true to themselves and to one another.

Dr. T. J. TONKIN said he was afraid the time had come to agree, provisionally at least, with the Government. During the past month the centre of gravity of the situation had entirely changed. A month ago, before the last conference with the Chancellor, the question was "Can we get more?" He meant something more nearly approaching what they regarded as their just demands. To-day the problem before them was no longer that; it was "Can we fight further without risk of damaging our Association?" If they as an Association persisted in a rigid nonconformist attitude a large section would break away and nullify the resistance of the rest. Those whose position was strong might be inclined to say, "Let them"; but there was a large number of men who could not afford to let them, who would be greatly injured if they let them, and who were already in fear when they thought of what might happen if they stood to their pledges. He did not know what they had in their war chest—the guarantee fund—but he was sure it was out of power to protect these men against loss. Whether they had the moral right to ask these men to bear the strain without being able to compensate them was beside the mark; *they* would settle the *practical* question by breaking away, and they would carry others with them; there would be a stampede, and they would only have themselves to thank for it. He did not care how the numbers went in the votings now, it was *not* how they went *now*, it was how they would go on December 31st. The decision to act or not to act—that was the vote and the only vote that concerned him. From the point of view of their interest, was it wise to persist in a course that would split their ranks? From the point of view of the public interest, was it politic to take a line that would result in the attendance of insured persons devolving on one class of practitioner only? Was it not better for them now to make such concessions as would enable them to act as a whole, and then when they had reunited their ranks and reorganized their forces, should they find the conditions of service not to their interest or to the interest of the public, to attempt as a whole and from within to secure their betterment? Any policy that had as a result the disruption of the Association would be an unfortunate one. He was not fighting the Chancellor's battle; he was merely indicating how he thought the forces at their disposal might, under existing conditions, be employed to the best advantage. As regards his personal position, he stood by his pledge. Whatever he might think of the policy of the Association, past and present, he would abide by what he had signed, so long as a majority of his immediate fellow signatories did so, but adhesion to the pledge was no reason why he should not express his opinions. It was a grave decision they had to come to that afternoon, but the issue seemed to him a clear one. Those who thought that the danger of a stampede was overrated would vote for further resistance; those who felt that the danger was a real and urgent one would vote for accepting service. One other point he should like to touch on. Some people supposed that the Act was tottering on its last legs and only needed a good push to topple it over; they argued that the profession should give it that push by abstaining to serve. The situation, stated in its simplest terms, was this: Either the Act would stand or it would not. If it stood, and if he were right in his view that enough men would break away to work it, then their official abstention would not affect it. If it fell it necessarily followed that it must fall from some inherent defect outside their sphere of influence. He thought the Act would stand or fall on its finance; but that did not concern them. Where they came in was this: If they refused service under the Act and it fell, the Chancellor would blame them for its destruction; whereas if they went in he would be robbed of that explanation of his failure.

Dr. BUTLER remarked that the previous speaker reminded him of the Duke of Plaza Toro, who led his regiment from behind because he found it less exciting. He urged them to adopt a more pugnacious attitude, knowing that their cause was just. He had been in practice in Fulham for twenty-five years, and even if the prosperity which some previous speakers had said might be obtained by working the Act was at all likely to be realized, he would prefer to retain his freedom and go on as he was.

Dr. SATCHELL mentioned his experience in relation to a society, the members of which (154 men) he contracted to attend at 5s. per head per annum. He found that the actual number of attendances, including visits and consultations, which he had given during the current year worked out at 816—that is, 11d. per attendance. Under the Act, therefore, it would be 1s. 4½d. He intended to vote for a refusal of service.

Drs. DEWAR, DAVIES, and WHITELEY were in favour of accepting service.

Dr. WELLS spoke against it.

It was decided on a show of hands to take the vote by roll call.

The numbers were as follows:

In the affirmative (against service), members, 54; non-members, 22. Total, 76.

In the negative (for service), members, 9; non-members, 5. Total, 14.

Nine did not vote.

Medical Committee for County of London Insurance Area.—The following names were proposed as representatives on the Medical Committee for the County of London Insurance Area: Drs. W. S. Lee, E. W. Lewis, T. J. Tonkin, M. J. Williams, and J. Young. On a ballot, Drs. Lee, Lewis, and Young were elected.

Contract Practice for Uninsured Persons.—The terms and conditions on which contract practice shall be provided for uninsured persons in the Boroughs of Chelsea and Fulham were considered. Those submitted by the Local Provisional Committee were discussed seriatim, and after modification were adopted. The Secretary was instructed to send copies thereof to the various societies.

NORTHERN COUNTIES OF SCOTLAND BRANCH.

BANFF, ELGIN, AND NAIRN DIVISION.

A MEETING of this Division was held in Elgin on December 12th, Dr. DUGUID, sen., in the chair. Thirty-three members and three non-members were present (thirty-six in all), by far the largest meeting yet held in the Division.

The Proposals of the Government.—On the submission of the Council's question the vote was as follows:

In favour—		Against—	
Members	20	Members	13
Non-member ...	1	Non-members ...	2
	21		15

The motion in favour of refusal was thus carried, and the Representative was instructed to vote accordingly at the forthcoming Special Representative Meeting.

SOUTH-EASTERN BRANCH:
BRIGHTON DIVISION.

Special Representative Meeting.—It was decided that the following is to be proposed in the event of the Representative Meeting deciding to refuse service under the Act:

That each Local Medical Committee be instructed to communicate without delay with the Local Insurance Committee in each district, intimating the willingness of the medical profession to give service temporarily to persons whose income does not exceed £2 a week from all sources, under a scheme of payment by attendance, the fees being guaranteed by the Local Insurance Committee. The fees for attendance to be on a schedule drawn up by each Local Medical Committee, subject to the approval of the Council of the Association.

Note.—For an Urban district such as the County Borough of Brighton, the following scale is suggested:

	s.	d.
Visit	2	0
Visit and medicine	2	6
Attendance at surgery	1	6
do. with medicine	2	0
Repeat medicine for two days	1	0
Special visit (messages received after 10 a.m.)	3	0
do. do. with medicine	3	6
Night visit	4	0
do. with medicine	5	0

Major operations, anaesthetics, miscarriages, mileage, etc., on a scale to be further agreed upon.

Association Notices.

SPECIAL REPRESENTATIVE MEETING.

NOTICE is hereby given that, on the requisition of the Council, a Special Representative Meeting of the Association will be held in the Memorial Hall, Farringdon Street (adjoining Ludgate Circus), London, on Saturday, December 21st, 1912, at 10 a.m., and Monday, December 23rd, if necessary, for the purpose of considering the final offer of the Government as to service under the National Insurance Act, and any other relevant business.

The Report of the Council on the latest proposals of the Chancellor of the Exchequer, on behalf of the Government, was published in the SUPPLEMENT dated December 7th.

By order of the Chairman of Representative Meetings,

GUY ELLISTON,
Financial Secretary and Business Manager.
ALFRED COX,
Medical Secretary.

Dec. 5th, 1912.

SPECIAL MEETING OF COUNCIL.

A SPECIAL MEETING of the Representative Body has been summoned to meet in London on Saturday, December 21st next.

Under the Regulations the Council must meet to consider the decisions arrived at by that Meeting, and notice is hereby given that a Meeting of Council will be held immediately upon the conclusion of the business of the Special Representative Meeting.

By Order,

GUY ELLISTON,
Financial Secretary and Business Manager.

Dec. 5th, 1912.

BRANCH AND DIVISION MEETINGS TO BE HELD.

NORTH OF ENGLAND BRANCH: NEWCASTLE-UPON-TYNE DIVISION.—A meeting of this Division will be held at the Royal Victoria Infirmary, Newcastle-upon-Tyne, on Friday, December 27th, at 4.30 p.m., to receive a report from the Representatives on the Representative Meeting.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BETHNAL GREEN INFIRMARY, Cambridge Heath, E.—Assistant Medical Officer. Salary, £100 per annum, rising to £120.

BIRMINGHAM: CITY MENTAL HOSPITAL.—Assistant Medical Officer. Salary, £150, rising to £200.

BIRMINGHAM AND MIDLAND EYE HOSPITAL. Third House-Surgeon. Salary, £75 per annum.

BRISTOL ROYAL INFIRMARY. Resident Casualty Officer. Salary at the rate of £70 per annum.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CANCER HOSPITAL, Fulham Road, S.W.—House-Surgeon. Salary at the rate of £70 per annum.

CARNARVONSHIRE AND ANGLESEY INFIRMARY, Bangor.—House-Surgeon. Salary, £100 per annum.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—Junior House-Surgeon. Salary, £90 per annum, rising to £100.

DENBIGH: NORTH WALES COUNTIES ASYLUM. — Junior Assistant Medical Officer (Male). Salary, £150 per annum.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer. Salary at the rate of £60 per annum.

DERBYSHIRE ROYAL INFIRMARY.—(1) House-Surgeon. (2) House-Physician. (3) Assistant House-Surgeon. Salary, £100 per annum each.

FERMANAGH COUNTY HOSPITAL, Enniskillen.—House-Surgeon (Male). Salary, £72 per annum.

GILLINGHAM EDUCATION COMMITTEE.—School Dentist. Payment at the rate of £1 per half day.

GUY'S HOSPITAL, S.E.—(1) Douglas Demonstratorship of Pathology. Salary, £300 per annum. (2) Executive Officer to assist in the supervision and administration of the Dental Department. Salary, £200 per annum, rising to £300.

HASTINGS: EAST SUSSEX HOSPITAL.—(1) Honorary Physician. (2) Assistant Physician.

ISLE OF WIGHT UNION.—Medical Officer for the Whippingham District and Public Vaccinator for the district of Newport and North Arreton respectively. Salary for Medical Officer, £60 per annum. Public Vaccinator fees about £20 yearly.

LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, New Cavendish Street, W.—Fourth Assistant Pathologist (Male). Salary, £170 per annum, rising to £400.

LANCASHIRE COUNTY COUNCIL, Preston.—Tuberculosis Officer. Salary, £500 per annum.

LANCASTER COUNTY ASYLUM.—Assistant Medical Officer (Male). Salary, £150 per annum, increasing to £250.

LINCOLN MENTAL HOSPITAL.—Assistant Medical Officer (Male). Salary, £150 per annum.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—House-Physician. Salary at the rate of £90 per annum.

LIVERPOOL EYE AND EAR INFIRMARY.—House-Surgeon. Salary at the rate of £80 per apnum.

LIVERPOOL: SOUTHERN HOSPITAL.—(1) Honorary Assistant Surgeon. (2) Honorary Consulting Gynaecologist.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—(1) Honorary Ophthalmic Surgeon. (2) Third Anaesthetist; honorarium, 15 guineas per annum.

METROPOLITAN EAR, NOSE, AND THROAT HOSPITAL, Fitzroy Square, W.—Pathologist and Bacteriologist (honorary).

MILLER GENERAL HOSPITAL, Greenwich Road. S.E.—Radiographer.

NEWCASTLE-UPON-TYNE: CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Male Medical Assistant. Salary, £125 per annum, rising to £150.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary at the rate of £100 per annum.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon (Male). Salary, £170 per annum.

QUEEN'S HOSPITAL FOR CHILDREN, Hackney Road, E.—Clinical Assistant.

RENFREW COUNTY COMMITTEE ON SECONDARY EDUCATION.—School Medical Officer. Salary, £300 per annum, increasing to £350.

ROYAL LONDON OPHTHALMIC HOSPITAL, City Road, E.C.—Assistant Surgeon.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN, S.E.—(1) Senior Resident Medical Officer. (2) Junior Resident Medical Officer. Salary at the rate of £70 and £50 per annum respectively.

ST. BARTHOLOMEW'S HOSPITAL, E.C.—Lecturer on Pharmacology and Therapeutics.

ST. HELENS COUNTY BOROUGH.—Assistant Medical Officer of Health. Salary, £250 per annum.

ST. THOMAS'S HOSPITAL, S.E.—Medical Officer in Charge of Tuberculosis Department.

SALISBURY INFIRMAAY.—Assistant House-Surgeon. Salary, £50 per annum.

SHEFFIELD ROYAL INFIRMARY.—House-Surgeon. Salary, £80 per annum.

SINGAPORE MEDICAL SCHOOL.—King Edward Professorship of Physiology. Salary, £700 per annum.

SOMERSET AND BATH ASYLUM, Wells. — Second Assistant Medical Officer (Male). Salary, £135 per annum, rising to £155.

SOUTH AFRICA UNION.—Four Medical Officers for lunatic and leper asylum service. Salary, £280, rising annually by £20 to £360 *plus* quarters and local allowance.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY.—Pathologist (non-resident). Salary, £200 per annum.

SUNDERLAND: MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House-Surgeon. Salary, £100 per annum.

WAKEFIELD: WEST RIDING ASYLUM.—Assistant Medical Officer (Male). Salary, £140 per annum, rising to £160 and on promotion to £300.

WANDSWORTH BOROUGH.—Tuberculosis Medical Officer. Salary, £500 per annum.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House Surgeon and Anaesthetist. Salary, £75 per annum.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE, Hammersmith Road, W.—Clinical Assistants.

WESTMINSTER HOSPITAL MEDICAL SCHOOL, S.W.—Lecturer on Tropical Diseases.

WIDNES BOROUGH.—Medical Officer of Health and School Medical Officer. Salary, £400 per annum.

WIGAN: ROYAL ALBERT EDWARD INFIRMARY AND DISPENSARY.—Junior House-Surgeon or House-Physician. Salary, £100 per annum.

WINCHESTER: ROYAL HAMPSHIRE COUNTY HOSPITAL.—House-Physician (Male). Salary, £80 per annum.

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SUPPLEMENT
TO THE
BRITISH MEDICAL JOURNAL.

LONDON: SATURDAY, DECEMBER 28TH, 1912.

BRITISH MEDICAL ASSOCIATION.

NATIONAL INSURANCE ACT.

The following circular has been issued, in accordance with the instructions of the Representative Meeting on December 23rd, to all members of the medical profession in the United Kingdom.

APPEAL TO THE PROFESSION.

THE Representative Meeting has decided by 182 votes to 21 not to work the Act on the terms offered by the Government.

The meeting considers it prejudicial to the interests of the profession that practitioners should apply for service under the Insurance Committees and the Regulations now issued.

The Association therefore calls upon all practitioners to refrain from placing their names on any panel under Government control, or to accept any whole-time office.

It has been decided to leave the Local Medical Committees free, and to suggest to them to lay their terms and arrangements before the insured or their representatives, and to offer them a list of practitioners willing to attend their members on terms arranged by the Local Medical Committees with the approval of the Association.

The terms must include the following:

(*a*) Free choice of doctor by patient and patient by doctor.

(*b*) Financial arrangements to be fixed by the Local Medical Committee on a minimum contract basis of 8s. 6d. per annum per member inclusive of medicines, or 2s. 6d. per visit.

(*c*) Income limit to be arranged locally.

The above does not apply to the treatment of tuberculous persons, the arrangements for which, made by the Insurance Commissioners, have been accepted by the British Medical Association.

If any local arrangement has been made, it is to be continued if it is satisfactory to the majority of the practitioners and has the approval of the British Medical Association.

If no satisfactory arrangement has been made, you are requested to forward at once to the Secretary of your Local Medical Committee the enclosed form of application to have your name placed on the list of practitioners who are willing to attend insured persons on the terms to be arranged by your Local Medical Committee.

You are requested not to apply to the Insurance Committee for service under the Act, and, if you have already applied, to withdraw your application.

The solicitor of the Association is of opinion that those who have signed a provisional agreement are at liberty to withdraw therefrom. The provisional agreement, in his opinion, is not a legal binding agreement to attend and treat insured persons which would be enforced by the courts, but merely a form of agreement specifying the terms and conditions upon which such services shall be rendered, if rendered at all.

You are authorized to inform any of your patients, and the secretaries of clubs, that you are willing to attend them on terms to be arranged by your Local Medical Committee and the representatives of the insured.

The desire is that you shall keep all your old patients who wish to be attended by you.

Pending final arrangements by the Association and the Local Medical Committees you are advised to continue to treat insured persons on the terms above indicated.

You are warned not to make any terms individually but only agree to those approved by your Local Medical Committee with the consent of the British Medical Association.

December 23rd, 1912. 429, Strand, London, W.C.

NOTICE TO LOCAL MEDICAL COMMITTEE.

To the Secretary of the *Local Medical Committee.*

I beg to give notice that I desire my name to be placed on the list of practitioners who are willing to attend insured persons on the terms and conditions to be arranged by the Local Medical Committee.

(Signed)

December , 1912. Address

NOTICE TO INSURANCE COMMITTEE OF WITHDRAWAL.

To the Insurance Committee of

On the day of December, 1912, I signed a provisional agreement to attend and treat insured persons upon the terms and conditions therein set out.

I hereby give you notice that it is not now my intention to attend and treat insured persons upon the said terms and conditions, and therefore withdraw from the provisional agreement signed on the above date.

(Signed)

December , 1912. Address

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SPECIAL REPRESENTATIVE MEETING.

SATURDAY AND MONDAY, DECEMBER 21ST AND 23RD, 1912.

Saturday, December 21st.

THE Special Representative Meeting to consider the final offer of the Government as to service under the National Insurance Act was held at the Memorial Hall, Farringdon Street, London, E.C., on Saturday, December 21st. The chair was taken by Mr. T. JENNER VERRALL, the Chairman of Representative Meetings, at 10 a.m.

The notice convening the meeting was read, and the notice of appointment of substitutes for Representatives was received.

THE POSITION OF SUBSTITUTES.

Dr. MARTIN (Cardiff) said that in his Division considerable dissatisfaction had been caused by a Representative nominating a substitute, and he was desired by the Chairman of his Division to obtain a ruling on the point whether, when the Rules were formed, it was intended that a Representative who was a member of Council should take advantage of that fact and nominate a substitute to attend the Representative Meeting. He considered that to be an abuse of the Rules. He referred to the Division of Cardiff, where, although Dr. Maclean was the Representative of the Division, yet on two occasions a deputy had been appointed.

The CHAIRMAN explained that the intention of the Rules was that when a Representative was unable or unwilling to attend, a substitute should be appointed so as not to disfranchise the constituency. Whilst it was possible for a Representative to appoint a deputy every time, obviously if that became a universal practice it would lead to an alteration of the law; but he could not

see in the present case that the law had been broken, and therefore the matter must be left as it stood at the moment.

Dr. O'SULLIVAN (Liverpool) thought it the universal practice when a Representative could not attend to inform the Secretary of the Division, and the appointment of a deputy was left in the hands of the Chairman and Secretary of that Division. It would be invidious to give a Representative the power of appointing his deputy. A deputy might be nominated who was not representative of the Division.

The CHAIRMAN pointed out that there was no universal practice with regard to the appointment of deputies; it was left to be settled by the local rules.

Dr. MACLEAN (Council), as a matter of personal explanation, said that Dr. O'Sullivan was under a misapprehension, and Dr. Martin had misunderstood the case when he said that he (Dr. Maclean) had nominated his deputy. The Division had selected Dr. Milward as Deputy Representative.

Dr. MARTIN explained that he intended no personal reflection on Dr. Maclean whatever.

APOLOGIES FOR ABSENCE.

Apologies for absence were received from Dr. R. H. Martin (South Australia), Dr. E. Thomson (Ireland), Dr. C. R. Harrison (South India and Madras), Dr. Buist (Dundee), Inspector-General Bentham, R.N., Dr. Harris, and Dr. Meoghan.

ORDER OF BUSINESS.

The CHAIRMAN OF REPRESENTATIVE MEETINGS moved:

That the report of the Agenda Committee on the method of dealing with the agenda of the meeting be received.

In answer to the request of Dr. REYNOLDS (Council) and Dr. HELME (Council) as to the members of the Agenda Committee who were present when the Committee agreed upon its recommendations, the CHAIRMAN OF REPRESENTATIVE MEETINGS said that they were: The Chairman of Representative Meetings, the Chairman of Council, Dr. Maclean, and Dr. Lauriston Shaw. ("Oh, oh.")

It was agreed that the report of the Agenda Committee be received.

Report of the Agenda Committee.

The CHAIRMAN explained that the Agenda Commiteet advised the meeting to consider first a motion by Bradforo that the Divisions be advised to reject the proposals of the Government and to adhere to their previous decisions td decline service under the Act. To this a motion by Derby that service be accepted under protest for the period to April 14th, 1913, would be a competent amendment. By this means the views of the Representatives of both schools of thought could be properly placed before the meeting.

Dr. HELME urged that the question whether the conditions of service had, since the interview with the Chancellor, been rendered satisfactory or not, should first be considered. Then would come the decision whether the profession would decline to work the Act, and following that would come the consideration of future action. Otherwise the opportunity of the meeting giving an emphatic declaration to the public that the present terms were derogatory would be lost. Whatever the action of the meeting might be—whether the Association held out the olive branch, as some wished, to the minority, or strong action was taken—the bounden duty of the Association was to express an emphatic opinion so that the public might know what the British Medical Association stood for. Dr. Helme urged that a motion by Bradford declaring the conditions to be still "unworkable, and derogatory to the profession" should be taken first. He moved an amendment to this effect.

Dr. MACLEAN called attention to the word "unworkable" in the motion by the Bradford Division, which he suggested would defeat what he understood to be Dr. Helme's object, which was to have a full and fair debate as to whether the Act could be worked.

Dr. O'SULLIVAN (Liverpool) said the motion meant that the Act as it at present stood was unworkable. If the Act were so improved that it would meet the requirements of the Association it was obvious to any one that it could be worked.

Dr. DRYLAND (Northampton) said the members of the meeting could not possibly vote for a resolution which said in black and white that the Act was unworkable, when there were a large number of men throughout the country who were agreed that they could work the Act.

The CHAIRMAN, on behalf of the Agenda Committee, accepted Dr. Helme's amendment, which was carried.

NATIONAL INSURANCE ACT.

RECEPTION OF DOCUMENTS.

The following documents were received:

The Report of Council, prepared pursuant to Minute 64 of the Special Representative Meeting, 1912 (November) (SUPPLEMENT, December 7th); a comparison by the State Sickness Insurance Committee of New Regulations with Provisional Regulations (SUPPLEMENT, December 14th); a report of the State Sickness Insurance Committee on motions on the Agenda of the Special Representative Meeting, November 19th and 20th, 1912, but not discussed, referred by that meeting to the Council and by the Council to the Committee; report by the State Sickness Insurance Committee on the Medical Trust Scheme of Mr. A. L. Forrester; and an Opinion of Mr. Danckwerts, K.C., on the question whether, as is stated in paragraph 23 of the Memorandum of the Chancellor of the Exchequer as to medical benefit (SUPPLEMENT, December 7th), it would be impossible under the Act to require an insured person to make an additional payment for night and special visits.

The returns of voting of Divisions on the question of acceptance or refusal of the final terms offered by the Government were circulated among the meeting.

REPORT OF COUNCIL.

Dr. MACDONALD (Chairman of Council) moved that the meeting approve the Report of the Council (SUPPLEMENT, December 7th). There were no recommendations in the report; it was merely a statement as to what had been done in regard to the interview with the Chancellor of the Exchequer. The deputation did not get very much, but in the report it had stated as plainly as it could the result of the interview. The report was received.

REAFFIRMATION OF RESOLUTION OF NOVEMBER.

Dr. METCALFE (Bradford) moved:

That this Representative Body, having carefully considered the replies of the Chancellor of the Exchequer to the deputation appointed at the recent Representative Meeting to confer with him, is of opinion:

(*a*) That it does not consider that the replies of the Chancellor remove the strong objections to the Regulations and conditions of service determined on by the last Representative Meeting as "unworkable and derogatory to the profession."

(*b*) That its opinion is that the conclusions of that Representative Meeting were, and still remain after the latest concessions, reasonable and warranted.

He said at the last meeting he had moved a resolution to reject the conditions of service proposed under the Act as unworkable and derogatory to the profession, but it was considered that the Government should have every possible chance to fall into line with the views of the profession. Consequently a deputation was appointed to confer with the Chancellor of the Exchequer to see whether the conditions demanded by the profession could be obtained. Hardly anything worth consideration had been secured. The profession had been granted merely a small increase in the representation on the Insurance Committees—one-tenth—but this representation would be of very heterogeneous character. In many cases the medical man chosen would not represent the local practitioners at all, and it was to be feared he would not consider their interests. Consequently that increase in local representation was not of much importance. A small fund had been granted for mileage in sparsely populated and scattered parts of the country, but it would not apply to the ordinary rural districts in England and Scotland: it would apply only to the wild districts in the Highlands and Islands of Scotland, and perhaps Devonshire and other places where there were vast moors. On the question of dispensing in rural areas, it was stated that the doctors could dispense the medicines if the patient were more than a mile from the local chemist. It would be acknowledged that what had been granted was a mere bagatelle when compared with the demands made at the last Representative Meeting. Their position remained exactly as it was,

and the Act was still unworkable and derogatory to the profession. It would be seen how unworkable it was when it was considered that within the scope of medical service practically everything that could be carried on in the practice of medicine, except a few extra matters, had to be carried out by the doctor out of the small capitation allowance allocated to him by the Government. No provision was made for an anaesthetist when a doctor had to perform a major operation. He would either have to perform the operation single-handed, administering the anaesthetic himself—which was a dangerous thing to the person involved—or else he would have to pay for the anaesthetist out of his own pocket. The profession would be ruined at this juncture if its members did not stick together. If they did that they would win their terms. The only persons who were endangering the profession were those who were prepared to run away in face of the enemy. The bulk of the practitioners in the North of England who had to earn their living would lose at least one-fourth of their incomes. He appealed to them to stick to their pledges. Let them be united and show a bold front to the enemy; if they did this they would inevitably win the battle.

Dr. BRADBROOK (Buckingham) proposed, and Dr. DRYLAND (Northants) seconded, the following amendment:

> That the words "as unworkable and derogatory to the profession" be deleted.

Dr. Bradbrook said that it could not be denied that whatever action the meeting took there would be a minority who would go on the panels, and retention of the words would prejudice the position.

Dr. O'SULLIVAN (Liverpool) opposed the amendment. Plain English was necessary on this occasion. They all knew that "unworkable and derogatory" meant "unworkable and derogatory under the present regulations and conditions."

Dr. JOHNSON SMYTH (Bournemouth) thought the words should be retained. The profession should let the public know that the terms and conditions under which the Act was proposed to be worked were unworkable and derogatory to the profession.

Dr. MEADE (Scarborough) strongly supported the Bradford motion. The crux of the matter was whether the regulations and conditions of service were derogatory to the profession or not. If they were just and honourable, then the profession should work the Act, but if not, they should have nothing to do with it. He claimed that they were derogatory to the profession. What were their duties under the Act? Suppose a man went away for a week's holiday and developed pneumonia; a doctor was called in, and he had to attend the patient perhaps several times a day for a week. What was he paid for that? Three half-pence. (Laughter.) It was not a laughing matter; it was a crying disgrace. Was that not derogatory to the profession? What were they to do for their capitation fee? The sum of 6s. 6d. had been offered by the Chancellor of the Exchequer. That might sound satisfactory, but what about mileage? "Oh," said the Chancellor, "that is simple enough. You shall be paid for mileage; it is not fair that a man should work for nothing." The profession said, "How is it to be done?" He replied, "Instead of taking 6s. 6d. capitation fee you must only take 3s. 6d., and pool the rest and share it out. In that way you will get paid your mileage." (Laughter.) The doctors replied: "But supposing there is not enough? Here is Dr. So-and-so. He has travelled thousands of miles." "Oh,' said the Chancellor, "we cannot help that; you must arrange it between yourselves." The Chancellor was treating them like a pack of hounds and throwing a bone to them for which they must fight among themselves. Again, the town man would have to pay mileage for the country man. The Chancellor was robbing Peter to pay Paul. That was, he contended, derogatory to the profession. What were their duties under the Act? The answer was the ordinary work of a general practitioner. If they wanted an anaesthetist, they must call him in and pay him out of their own pocket. What would be the result? A man would hesitate as to whether he ought to examine a patient under an anaesthetic or not. A doctor was only human, and he would be influenced by the thought of having to pay the anaesthetist's fee out of his own pocket. That was not fair to the insured person. They were not supposed to do major operations. But the Chancellor had said that, supposing a man had the skill he would be able to do operations, and would be paid for it. Out of what? Out of the little pool.

In response to several inquiries, the CHAIRMAN said that the meeting should know exactly what it was committing itself to by the motion of the Bradford Division, in order to be quite sure whether or not by passing it the meeting would immediately decide on the question whether to accept or decline service. The motion adopted at the last Representative Meeting (No. 22) was as follows:

> That in the opinion of this Representative Meeting the Regulations issued by the Insurance Commissioners and the latest proposals of the Chancellor of the Exchequer are unworkable, and derogatory to the profession. As a consequence, the medical profession declined to undertake service under the Act and Regulations as at present constituted.

He was of opinion that as alterations had been made in the Regulations since that resolution was adopted the meeting would not actually bind itself by passing the motion now before it. The meeting might, if it chose, decide, in one way or another—to work the Act even if the motion before it were passed; and, on the other hand, it might equally choose absolutely not to work the Act.

Dr. CARTER (Bristol) wished to know whether, if the meeting reiterated the resolution adopted by the last Representative Meeting, the words "at present" in that resolution would apply to the meeting then taking place.

The CHAIRMAN thought the point very important; he was disposed to think that the present date would be meant.

The CHAIRMAN OF COUNCIL appealed to the meeting not to take a decision on such a technical point as that now raised, as a clearer issue could be got on another resolution.

Dr. METCALFE trusted the meeting would not vote for the amendment. It was of paramount importance that the position of the British Medical Association should be restated as clearly as it could be. He hoped the meeting would stick to its former position and adopt the motion as it appeared on the agenda.

Dr. DURANT (Consett and Gateshead), who was subjected to considerable interruption during his speech, said there was an appreciable number of men who considered the Act could be worked. In the North, and in many parts of the country, enough men in many areas were going on the panels whether the meeting decided against it or not. He was desirous merely of stating definite facts. In Northumberland and Durham there was a strong feeling in favour of working the Act, not because it was believed that the conditions of service were good, but because it was a question of accepting a certain situation. The question to be asked was: If the Association fought and failed—and he was absolutely sure it would fail—("No, no," and uproar)—would the condition of medical men nationally be better or worse than the condition if they accepted service? That was the crux of the whole business. His contention was that if they fought and failed, the men who accepted service would be infinitely better off. He asked what facts were available to show that they would not fail. (A Voice: "Unity.") What was to be said with regard to unity when 15,000 men in the profession had never given a pennypiece to the Central or Local Defence Funds? What was the good of asking those men to fight when they did not consider the fight worth a subscription? He instanced cases of men who would be giving up incomes, who had said they were quite prepared to do that and sign the pledge, providing that the profession generally would indemnify them. Those men now said that, since they were not to be indemnified, they did not consider they were pledged.

Dr. MACLEAN asked for the Chairman's ruling whether, if the amendment were not passed, the meeting would be committed to the statement that the Act was unworkable, and therefore not to be worked.

The CHAIRMAN replied in the negative. If the amendment were not passed it would still be open to those who thought the word "unworkable" raised an absurd position to move that the word be omitted.

The amendment to omit the words "unworkable and derogatory" was put to the meeting and lost by 122 to 62.

The CHAIRMAN strongly advised the meeting to do one of two things—either decide that to say that the Act was unworkable was only a pious opinion, and then go on to the resolution that the Association decline service, or to decide to omit the word "unworkable." He would put it to the meeting that even if the word "unworkable" were left in the resolution it should be as an expression of opinion and not bind it absolutely.

Dr. DURANT (Consett and Gateshead) was not sure whether the profession in the country would not take it as a definite opinion if the word were retained.

The CHAIRMAN said he was desirous that there should be no misunderstanding throughout the country as to what the meeting was doing. He strongly advised the alteration of the resolution so as to exclude all possibility of doubt.

Dr. WEBB (East Cornwall) suggested that the words should run: "In the best interests of the public and the profession it is unworkable," and this was accepted, so that Clause (*a*) of the motion would read as follows:

> That it does not consider that the replies of the Chancellor remove the strong objections to the regulations and conditions of service determined on by the last Representative Meeting as being in the best interests of the public unworkable and derogatory to the profession.

Mr. E. B. TURNER (Deputy-Chairman of Representative Meetings) wished to put before the meeting some of the alterations in the regulations which had rendered it necessary to hold it. Had there been no alteration at all or no concession there need have been no meeting, and the resolution of the last Special Representative Meeting would have stood as the considered policy of the Association. Although the deputation had not brought back much in the way of concession, it had made absolutely plain what the position of the profession would be if the Act came into working. Every point had been laid before the Chancellor, and the deputation had enforced every requisition to the best of its ability. With regard to the income limit, for example, the Chancellor was perfectly plain that the Government would not fix a statutory income limit all over the kingdom. The Chancellor had been asked whether he would allow an appeal from the local Committee to the Commissioners, or whether the words "for the information of the Commissioners" were put in to give the Commissioners the final word in the matter. To that an unmistakable answer had been given, which was that the whole matter was to be left to the Insurance Committees, and everything would be fought out locally in each district. The deputation had been given to understand that there was not any chance of their getting any income limit whatever in districts where there were highly paid artisans; but the Chancellor said they might get it in some districts in respect of farmers and tradesmen. In his speech at the Opera House the Chancellor said the money might be paid into a pool, the doctors' bills paid, and anything over would have to be paid by the workmen. At the interviews the deputation had with the Chancellor Dr. Macdonald pressed that point upon him very closely, but no answer was forthcoming at the time; but the memorandum set the matter at rest in a sense which stultified the Opera House speech. It was made absolutely clear by the Chancellor that the whole of the control of the service was to be vested in the Insurance Committees. That brought up the question of discipline, and it appeared that the Government was willing, and indeed anxious, if the change would meet the wish of the profession, to do away with the Committee of Complaints; but in that case it was emphatically stated by the Government that every case would go to the Local Insurance Committee as a court of first instance. The deputation, thinking that would mean jumping out of the frying-pan into the fire, did not accept it. The Chancellor had made it clear that inspection was not to be of a clinical nature, that the inspector was not to interfere between doctor and patient. They accepted that assurance and were thankful to get it. With regard to the question of the medical institute also, the Chancellor was perfectly plain. The deputation pointed out to the Chancellor that those institutions were bad, that the treatment was bad, and that they curtailed free choice of doctor. They were given to understand that if the profession were good the Chancellor would be good also, and that if it worked the Act the Commissioners would look very severely on any extension of these institutions; but if the profession did not work the Act then the Commissioners would take the opposite view, and one of their chief means of fighting the profession would be to extend these institutions all over the country as much as possible. The Chancellor also gave them to understand that everything the profession did was to be done locally with the Insurance Committees. There was to be no Committee acting centrally. The bargaining was to be done entirely in each area between the Local Medical Committee and the Local Insurance Committee. The Chancellor had made it perfectly plain and unmistakable that the Government had now arrived at the limit of concession, both with regard to the regulations and money. It was a question of take it or leave it. There was nothing more to be got out of the Chancellor unless everything he had said was to be considered of no avail. Speaking as a member of the State Sickness Insurance Committee, he felt that the conditions the deputation had gained were by no means sufficient to remove the strong objections felt by the Representative Meeting to the regulations before the small concessions and changes were made, and he would therefore vote willingly and whole-heartedly for the motion by Bradford.

Dr. PARKER (Bristol) thought that there was a determination on the part of the Government to prevent the medical profession making a free and open contract with the Insurance Committees. The insured persons had practically formed themselves into a great trust by means of approved societies, but the Government was determined to refuse to allow the medical profession to discuss matters centrally and on equitable terms. He felt sure that if the Government had not taken up this position, much of the trouble between it and the profession might have been saved.

The CHAIRMAN put the motion in the following form:

> That this Representative Body, having carefully considered the replies of the Chancellor of the Exchequer to the deputation appointed at the recent Representative Meeting to confer with him, is of opinion that they do not remove the strong objections to the regulations and conditions of service determined on by the last Representative Meeting, but confirm the then expressed opinion that such are, in the best interests of the public and profession, unworkable and derogatory.

This resolution was carried with one or two dissentients, and also as a substantive resolution.

Subclause (*b*) of the motion by Bradford was dropped.

STATE OF ORGANIZATION OF THE PROFESSION.

Discussion then took place at some length on the question whether the following motions printed in the Agenda paper in the name of the Derby Division should be received:

> That a report be presented to the meeting, so far as details are available, of the prospects of the formation of panels, in each Insurance Committee area, in case the Association declines to work the Act, and what means are in possession of the profession in each case for successfully maintaining their position in resistance to the satisfactory working of the Act.
>
> That a return be presented to the meeting of the number of Divisions where Public Service schemes have been approved, in case the Association declines to work the Insurance Act.

Dr. HELME suggested that the motion by Derby involved the answer to the very question that the meeting had assembled to decide.

Dr. EVAN JONES (City) thought that if the meeting allowed Derby to put forward information it must in fairness allow the Representative of every Division in the kingdom to do the same. The information obtained in response to the suggestion of Derby could be given in the course of the further discussion.

Mr. DORRELL (Hampstead) said that the Representative Meeting had been called for the purpose of hearing information from Divisions, and not from individuals who had sent personal communications to the offices of the Association.

The CHAIRMAN thought it would be wise for the meeting to have the information even if it discounted the whole directly it was received. In the interests of the meeting as a deliberative body the information asked for by Derby might be allowed to be given.

The CHAIRMAN, in reply to Dr. HELME, said there was no

report in the ordinary sense of the word, but if the meeting desired it information would be given from documents which had been sent in by bodies of men representing certain classes of practice in different parts of the country.

Dr. REYNOLDS (Council) thought the proposal was a dangerous method of getting information. Although he did not suggest that it had happened here, yet biassed reports might be sent in.

The proposal of the Agenda Committee that Derby be allowed to move for these documents was carried: For, 98; against, 82.

Dr. DUNCAN (Derby), in moving the motion, desired first of all to repudiate any suggestion that there had been underhand proceedings in connexion with the matter.

Dr. REYNOLDS explained that he had been careful to say that he was not taking sides, and he was sure no one would imagine he suggested that the reports had been got up for any special purpose. What he said was that it might be a very dangerous precedent as a matter of principle, because it was possible that a cabal might get up such a report.

Dr. DUNCAN accepted the explanation, and desired to say at once that there had been nothing in the way of a cabal at all. He had not thought there was a possibility of a meeting of business-like men adopting the policy of burying their heads in the sand when there were things to see and things to read, and he had penned the resolutions himself without consulting anybody at all. He had been actuated by the view that the central office would be much more likely to receive information than any private individual, and he was anxious that before the meeting came to the momentous decision it must come to that all information should be on the table.

In reply to an inquiry whether the motion was one of a Division or a representative personally, the CHAIRMAN, after consultation with Dr. Duncan, explained that the motions before the meeting had never actually been passed in words by the Derby Division, but the Division had passed a resolution placing itself in the hands of its Representatives, and considered that it lay with them to bring forward motions on behalf of their Division.

It was agreed that the motion by Derby be allowed to come before the meeting.

Dr. DAY opposed the motion by Derby on the ground that it was unlikely that satisfactory information could so be obtained. Whatever information might be forthcoming would not accurately represent the state of affairs in the country.

Dr. MACNAMARA also pointed out that any information obtained under the resolution must be incomplete.

Mr. LANKESTER (Guildford) said that it would be useless for the meeting to be informed of the conditions in a small part of the country. What was wanted was complete information. He opposed the motion.

Dr. SMITH (Newcastle) spoke in favour of the resolution. He and his colleagues had been sent with a free hand. Although they had a slight majority against the working of the Act, they had been authorized to vote in accord with any additional information received at the meeting. He considered that the meeting could not have too much information as to what the Divisions thought.

Dr. HASLIP (Westminster) opposed the motion. Every Representative should give his experience. He thought the conduct of the business so far had been merely to put off the crucial question.

Dr. EVAN JONES (City) said if there were a desire to bring information of this kind forward it should have been brought before the Divisions before the vote was taken. The meeting should at once come to the main issue as to acceptance or refusal of service.

Dr. HELME said he had received numbers of letters from Divisions that were waiting for the decision of the meeting, when they would take the necessary steps. He was hoping that later in the day some constructive measure would be placed at the disposal of every Division.

The CHAIRMAN put to the meeting the question whether whatever information was available should be produced, and it was answered in the negative by the vote of the meeting.

Dr. DUNCAN (Derby) then moved:

That a return be presented to the meeting of the number of Divisions where Public Service schemes have been approved, in case the Association declines to work the Insurance Act.

This proposal was rejected.

ACCEPTANCE OR REJECTION.

Dr. MANKNELL (Bradford) moved:

That the Representative Body advises the Divisions to reject the proposals of the Government and to adhere to their previous decisions to decline service under the Act.

He said that most of the representatives had definite and distinct instructions how to deal with the question of whether the profession should work the Act or not. It was not more than a month since the Representative Meeting had declared that the Association should not consent to work the Act and Regulations as then constituted. Since then the conferences with the Chancellor of the Exchequer had taken place, and they had been told that certain concessions had been made; but these were absolutely negligible. The profession had never been treated seriously by the Chancellor, who had assumed that he had the whip hand, and could drive its members into the pen he had provided for them. The profession had declined to be driven. The Chancellor had slammed the door in their faces. Mileage had been left for the profession to settle amongst themselves. He had been told recently by a pharmacist in Leeds that if doctors undertook dispensing they would be placing themselves under the heel of the weights and measures inspector, and also would come under the Food and Drugs Act. He contended that this should not be accepted. The profession should stand upon its charter rights. The 10 per cent. representation promised was in reality illusory, because the additional members would not be appointed by the profession.

The meeting then adjourned for luncheon.

AMENDMENT.

Dr. TODD (Council) moved the following amendment:

That in view of the smallness of the vote in the Divisions and of the fact that many members of the profession, including some of the most loyal, are in grave danger of ruin if forbidden to go on the panels, this Representative Meeting, while still of opinion that the conditions of service are not satisfactory, agrees that Local Medical Committees be empowered to make arrangements for service on the panels subject to the approval of the Council of the Association.

That the Government be requested to give an assurance that at the end of a year's trial of the Act full consideration will be given by some impartial committee, preferably a Select Committee of the House of Commons, to the representations of the Association, regarding any defects which are proved to exist in the medical arrangements.

Dr. Todd said that, in speaking with many Representatives attending this meeting, he was struck with amazement to hear the variety of opinions expressed. The issue to be decided would either make or mar the profession. The last Representative Meeting referred to the Divisions a very important question and a vote had been taken upon it in Divisional meetings. He had learnt in many areas the profession did not know what it was voting for. (Cries of dissent.) He feared that the meeting was now about to do what their opponents accused them of—intimidation. He denied that the profession had been guilty of intimidation. They were a body of gentlemen and did not require to use intimidation nor threats nor idle jeers; they were a level-headed body of men who knew their wants and requirements. The question which was passed and sent out to the Divisions was very wonderfully worded; it was very comprehensive, and might be read in more than one way; and, as a matter of fact, it had been read in different ways. There were 33,000 men on the *Medical Register*, and the Association had received over 27,000 pledges. He was one of those who thought the pledge was still binding. Out of those 27,000 only about half had voted on the resolution sent out. If upon such a momentous question, upon which hung the whole future of the profession, a 50 per cent. vote was considered enough, all he could say was that he was not satisfied. The same sort of thing had happened with regard to the

Guarantee Fund. Only about 14,000 members of the profession, including non-members of the Association, had subscribed to it. If the Association had had such a reply to the Guarantee Fund as it should have had, it could have afforded to snap its fingers at any Government. But the meeting must look facts in the face. The Association had at present bona fide applications from men who wanted the guarantee made good to them. Was the Association in a position to do that? In his opinion it was not. There was in certain areas throughout the country a very low class of practice, and no matter how bad were the terms offered by the Government, they were infinitely superior to those under which these men had been working. Those men were prepared to work the Act because they get such an increase in pay that they could not afford to refuse the enhanced offer. There were also colliery areas throughout the country where men had carried on successfully contract practice, and they also had agreed to work the Act as they would be getting an increased payment for similar services.

Dr. MEADE (Scarborough) intervening said: "What about the pledge?"

Dr. TODD (Council) said that the pledge still held good in his opinion. The idea of the pledge was to bring the uninsured person up to the level of the insured person. What had they been fighting for all these years since the report on contract practice was made to the Association? They were trying to secure that the medical profession should be the dominant power and not laymen. He submitted that the amendment was a means of showing the world that the profession was at one and was fighting for a principle. A way out of the difficulty must be found otherwise the ranks would be split.

Dr. DUNCAN (Derby) in seconding, asked the meeting to realize that the answer it gave to the motion was one which would have a historical value.

Dr. HASLIP (Westminster) trusted that the meeting would adopt a distinct negative to the proposition submitted by Dr. Todd. They were now at close quarters and must put their back to the wall. The meetings recently held had been the largest ever held under the new constitution. They had been attended by at least 50 per cent. of the members. The reason why the Guarantee Fund was so small was because there had been a want of trust in the personnel of the Council, which he was afraid had been justified when the late Chairman of Representative Meetings went out of his way to bless a new society, and the Chairman of the Ethical Committee took the chair at its first meeting. Why did not the Council send a straightforward statement to every Division and say, "It is no good your fighting; you are done"—then men would have known where they were; but when Representatives who came with instructions from their Divisions what to do were told, "If you do this you will make a great mistake," he would have none of it.

Dr. J. G. DURRAN (Buckinghamshire) said that it was very easy to talk largely and loudly about unity; such remarks always received applause, but he wanted to remind the meeting that it was face to face with a very grave issue. In his Division not only were men prepared to go on the panels, but, as in other Divisions, pledged members of the Association had actually placed their names on the panels. It might be a shame, but it was a very serious matter to him and to his colleagues in his neighbourhood. He thought the question ought to be faced in a broader way. If there were counties or areas who regarded themselves as strong enough to resist, those who remained outside would be completely damned by men going on the panels. The Association ought to show consideration to its members placed in such a position. The pledge had been given with a definite purpose, and no doubt the profession had gained a great deal through the pledge and the Association unity, but the fact had now become apparent that their union was no longer maintained at the level of a few months previously. That was the fact, and it was no use running away from it. Whether they liked it or not, the Act was going to be worked in a great many areas independently of the Association. Many of its members were deliberately stating that they did not regard the pledge as binding. For himself he did not agree with that; he regarded the pledge as binding. It had been taken voluntarily, and was binding until the Central Body released those who had taken it. The Association had the power of release, and all the motion by Dr. Todd required was that they should be allowed to judge for themselves in various areas what the position of affairs was. The Act had been spoken of as being derogatory to the profession; but any man would rather do a derogatory act, as long as it was not dishonest, than let his family starve. Unless a sensible decision were come to the Association would be split from end to end, and all power of improving the conditions of employment under the Act in the future would be lost, whereas by giving a certain liberty in local areas unity would be maintained; if the working of the Act proved burdensome or a grievance, the Association would still maintain power to secure a remedy.

Dr. BUTTAR opposed the amendment for the reason that he had opposed many similar amendments, which was that he believed it to be based entirely on an insinuation that somehow or other the Act must be worked. He always thought that men who proposed such amendments were almost certainly themselves secretly in favour of working the Act. They had tried by side issues to lead the Association on to believe that it was so weak and the circumstances so distressing that it would be bound in the end to work the Insurance Act. The broad issue at the bottom of that was very plainly revealed to him—although he knew it before—when he had the good fortune the other day to attend a meeting of the National Insurance Practitioners' Association. (Laughter.) At that meeting the chair was taken by a gentleman whose views he was almost certain were pure Socialism. He was supported on the left hand side by a socialistic member of Parliament, and on the right hand side there was a gentleman in a red tie who was the Socialist candidate for one of the London boroughs. The fact of the matter was that they had been invited by the Act to walk into a socialist trap baited with baits of various kinds. The vast majority of the Representatives had come up instructed by their Divisions as to the way they should vote, and if that were so they would reject the amendment because there was far more important business to do, and that was to consider what they were going to do on January 15th.

Mr. W. J. GREER (Monmouthshire) urged the acceptance of the amendment for the reason that, whatever the result arrived at by the meeting, there was going to be a very large number of the medical men who would work the Act. A body of colliery surgeons had passed a resolution to the effect "That, in the event of the British Medical Association refusing permission to work the National Insurance Act, we reluctantly feel that doing so is our best policy, considering the manner in which we are threatened with salaried schemes." That resolution was passed by fifteen colliery surgeons in one valley. In another valley a similar resolution had been passed, and in the town of Newport a meeting was to be held on December 22nd to settle who should go on the panel. In one colliery district the Miners' Federation was threatening a doctor who had been in practice for twenty years that they would abandon the poundage system and pay him on a salaried system, which would result in a serious reduction in his income. He was entirely in the hands of the Insurance Committee, who would invoke the Harmsworth amendment. In the same district there was a man ready to take on the work, and that man was, he believed, a member of the British Medical Association. For an appointment advertised there were twenty-four applicants. In one Monmouthshire valley there were fifty applicants for a similar position, and yet it was said there were no men to work the Act. The terms of such schemes were infinitely worse than anything offered by the Act. Therefore he asked the Association to allow local option, so as to give the Divisions an opportunity of doing the best they could. Unless men were released from the pledges, they would release themselves.

In reply to a question as to the power of the Association over a Division which decided to disregard a decision of the Representative Meeting,

The CHAIRMAN said that although action of various kinds had been taken as a consequence of the decisions of the Association and men had been expelled because they disregarded the decision, yet nowhere was there to be found a declaration of the penalties to follow the breaking of a decision of the Association, and the words "decision

of the Association" remained uninterpreted except so far as action and custom had interpreted them.

Mr. Turner (Deputy Chairman of Representative Meetings) remarked that if the proposal were carried the Council would delegate its powers to the State Sickness Insurance Committee. The Representative Meeting had passed a resolution with four dissentients that the conditions at present were practically unworkable and derogatory and bad for the public. How could the State Sickness Insurance Committee approve arrangements which the Representative Meeting regarded as derogatory and unworkable? Was the Council to say, "Yes, you may work it in this Division, but only on such and such terms," and the Government and the Insurance Commissioners would not consent to those terms? Local option meant that if certain Divisions were allowed to work the Act, and other Divisions decided they would not, there would be a large influx of "blacklegs" (as he now called them deliberately) into Divisions where the men were refusing to work the Act. If they were to be beaten on the Act, let them "cave in" on a straight vote. If they were to fight, let them fight on and not try to get round the corner by such an amendment, which was simply offering their throat with a collar on to the butcher.

Dr. Whaite (Birmingham Central) said he came from what was regarded as an infected area. He was very reluctant to say what he had to say, but he felt he would not be fully discharging his duty as a Representative unless he gave expression to the views of his Division. To himself the pledge was a sacred bond and something which he could not break, whatever the cost be, until absolved from it. He hoped that some alternative policy would be found and thought the amendment afforded that. He had some serious facts to lay before them; he wanted them to realize what was happening in various parts of the country. At least thirty men were at this moment on the Birmingham panel with their agreements already signed and stamped. No one deplored the fact more than he did himself. It was reported further that the whole of the men in Wednesbury were on the panel, the men of Dudley, the men of Smethwick, and the men of West Bromwich. Not only would these men he had referred to resign from the Association, but many others on the other side would resign in disgust and would join something more in the nature of a trade union. He would give all he possessed if he could see the integrity of the profession maintained. If Dr. Todd could import into his motion some such phrase as that where a district was unanimously in favour of going on the panel, much as he deplored that decision, he would vote for the amendment, for the reason that if they were not allowed to go on the men would take French leave. He hoped some better way out of it would be found.

Dr. Helme said he had listened with the deepest interest and sympathy to the remarks of the last speaker, and he believed what he had stated to be the absolute fact, but the arguments in favour of local option might be called arguments of expediency. The cry had been, "Sink your principles for the sake of expediency." He did not care for expediency. If they were to be beaten, let them be beaten as an Association and go down with their principles. Taking the other side of the picture, why was there all this fearfulness? Why were men going on the panel? Because they were afraid they were going to be driven on it against their will. There was no satisfactory alternative placed before them. There was solid ground for assuring the meeting that some alternative could be offered which would give all that the Act gave them and rid them of all the obnoxious regulations. With the aid of the friendly societies, they could get suitable conditions with absolutely no lay control. It was their duty to reject the amendment unanimously.

Dr. Evan Jones (City) said there was such a thing as government by minority, and a very bad government it was. Was there any reason why the majority, who wished to stick loyally to their pledge of honour, should go back on that pledge simply because a few medical men in different parts of the country had gone on the panel? Was it any reason that they should break their pledge of honour because the Chairman of their Ethical Committee took the chair at a blacklegs' meeting? The amendment before the meeting was nothing but a tortuous way round of trying to get away from the direct issue on which they had to vote. The time had come when they should take a straight vote on it and instantly turn their attention to what they were going to put before the medical profession to be ready for the fray on January 15th. This had been delayed too long. Half of what was heard of men going on the panel was not true. The Secretary of the Provisional Committee for the City Division and he were urgently requested to go to Bethnal Green to a meeting of the Medical Union, because there were rumours that certain men were going on the panel. What happened? Out of twenty-six men at Bethnal Green twenty-two attended the meeting, and every one signed a paper to the effect that he had no intention of going on the panel or accepting a full-time appointment. Subsequently it was ascertained that there was only one out of the whole twenty-six about whom there was any doubt. The same kind of thing happened in Finsbury, and every member of the Finsbury Medical Society present signed a paper to the effect that they were not going on the panel and were not going to accept service.

Dr. Maclean said he regarded the position of the Association as very critical. If a boycotting resolution were passed at that meeting there would nevertheless be a very large proportion of the men on the panels. On the lines of the present amendment could the Association be kept intact? If the acceptance of service on the panel or otherwise could be made subject to the local machinery then the position of the Association would be saved, and they would to all intents and purposes remain a united body for that large part of the fight which still remains, because they were only now entering on the engagement. If their ranks were to become dismembered in the first encounter the result could only be one of disaster to the Association.

Dr. Long (Hastings) said that in his Division the men who went on the panel would lose by it, and if a resolution were passed to-day that, in the opinion of the profession generally, they should all go on the panel, their honour would be very seriously tried, because they would have to hesitate before they obeyed. Any one who was sent to the seaside would have to be attended by the men on the panel at Hastings for 1½d. a week, that 1½d. a week being deducted from the remuneration of members in other districts. He thought the profession was in a strong position, and there was no need to give way on the score of policy. At Hastings the profession had already provided an alternative to the Act.

The amendment was put to the meeting and lost, and the debate on the main question of acceptance or rejection was resumed.

Resumed Debate.

Dr. Sorley (Sheffield) said, in reference to the smallness of the vote of the Divisions, that at the recent meeting in Sheffield from 266 members 200 pledges were received. Strong opinions were expressed at that meeting with regard to taking service under the Act. Was he to go back to his Division and tell the members that the Representative Meeting had passed a resolution to work the Act in some side fashion? Assuming the question of local option had been carried, what guarantee had they in Sheffield, who were determined not to form panels, that some neighbouring constituency which agreed to form panels would not invade them and take the positions which they were refusing to take? That was a great danger that had to be faced. In Sheffield the men who at the present moment were going to join the panels were not only few, but of very little importance, and there was very little to fear from them. He felt sure that similar conditions must exist in other constituencies. A great deal had been said with regard to dissension in the Association, but how could they expect anything else, when those who ought to be the strongest of their leaders had taken part in the formation of a body for the avowed object of splitting up the Association? The discussion had not produced anything new. It was known from the first that men would go on the panels, and that opposition would be encountered; the position had not changed in any degree. After all these months were they to give up and say, "We are now meeting the opposition which we knew we were going to encounter; let us give up and serve on the panels." The fight was not merely for shillings and pence; it was for great principles in which not only the welfare of the patient but the

dignity of the profession and their own professional honour were at stake.

Dr. T. J. MACNAMARA (Greenwich) hoped that every member of the Association would do what in duty he was bound to do and what in honour he was pledged to do—namely, abide by the decision of the majority. He spoke somewhat doubtfully, for some of those from whom they expected better light and guidance seemed to have a code of ethics that did not quite fit in with that of the ordinary man. Twenty-five years ago he witnessed the great struggles of the dockers on the water-side. They fought to a finish and won. They did not allow interlopers to interfere in their counsels. For three weeks he himself practically starved by attending to those dockers. What he did for them he was prepared to do for his own profession. If they could have put a little bit of backbone into the jellyfish who had managed to wriggle themselves into the British Medical Association and on to the Council they would not have been there now.

Dr. MARK TAYLOR (West Cornwall) thought that those who had taken up such a strong attitude must consider the case of those who represented constituencies that were divided. He was practically surrounded by a ringed fence of men who were willing to go on the panels, and unless he went on the panel he would lose at least one-half—possibly two-thirds—of his practice. Of what use would the defence fund be in making that up? The defence fund was a sham, and that was the reason why the profession was in such a bad position now. He asked those members who were in strong districts to consider those who were in districts such as his. They felt that their pledge was binding, but if they abided by their pledge they would starve, and no preparation had been made to prevent that. He had no option but to recall his pledge. He had been the Secretary of a Division for ten years, and had worked extremely hard, and it was a hard position to be in. A great many of the speeches they had heard were absolute "bunkum." They must bring in some scheme that would enable those who were in tight places to get out of them and run the meeting on business lines, instead of having to listen to twaddle. Unless they did form such a scheme he was sure the Association would become hopelessly split.

Dr. MACDONALD (Chairman of Council) said he addressed the meeting with possibly the greatest sense of responsibility he had ever felt since he had held an official position in the Association, because he thought the most critical point in its history had been reached. Whatever action was taken, it would be very difficult for those in official positions to carry it out to the best advantage to the Association. He had instructions to vote for the motion, but he invited the meeting to take note of what Dr. Mark Taylor had said; a similar state of things had arisen in his own Division. Men had said they were going on the panel, and what was to become of the loyal men who were left in the lurch? What alternative was to be proposed to get such men out of that position? He had seen none yet. Twelve years had been spent in rebuilding the Association so that it should be in a strong position, and he put it to the meeting without fear of contradiction that there were few bodies in the country which could have held the Government as the Association had during the past year. How long was it going to take to develop another body if this one was not strong enough? Men should not spend time criticizing those who had done the work in past years, but should put themselves into their positions and see what it meant. Few members had any conception of the work that had been done.

Dr. LEIGH DAY (North-East Essex) had the greatest sympathy for those gentlemen who it was said would starve if the meeting carried the matter with a strong hand; but out of the total number who took the trouble to vote on this important question there was 2,400 in favour out of a profession numbering 36,000. What was the percentage of that number who had voted in that sense because they were in risk of starving? Doubts had been cast upon the Guarantee Fund; it had been said it was not worth anything. As secretary of his Division, he knew a little about that matter, and why it had been badly supported. It was because the Council had not at one time possessed the confidence of the members of the Association. With regard to the talk about intimidation, he said that at the meeting of his Division certain members were present who were understood to be in favour of continuing negotiations, but none of them, although repeatedly urged to do so, would get up and speak in favour of it. That was not intimidation. As to the gentlemen in colliery practice, they had been told that they would get more money for the same services. This he entirely refused to believe, or that any conditions of service could possibly be worse than those imposed by the present Insurance Regulations.

Dr. CASTLE (Doncaster) said it should be noted that most of the colliery surgeons spoke to a certain extent not in favour of going on the funds, but of being absolved from their pledges. They wanted to see whether they might not be able to contract out in some way, and so hold their practice and not work the Act; but this had not been found feasible, and many of them had gone on the panel. There were 2,000 colliery surgeons, and if the principle of forming panels were accepted by their patients they would lose the whole of their income. Was the Association prepared to provide an adequate guarantee? If not, what was the position of the colliery surgeons? Could they be expected to stand firm and starve?

Dr. DEVIS (Bristol), whilst agreeing with most of what the Chairman of Council had said, made the reservation that there was something greater at stake than even the British Medical Association—namely, the profession itself. If the profession went down and was degraded, as it certainly would be if it worked under the Act, then the Association would likewise be dragged down. Dealing with the question of the small number of votes recorded, he said that it must be remembered that they were taken throughout the country during the course of a few hours; the voting should be compared with the great number of pledges that had been given. In his own Division 323 votes had been recorded against working the Act; the three country practitioners in one little town who had voted in favour of the Act had telegraphed to say that, although they had so voted, yet they would loyally abide by the decision of the majority. Of the 80 members whose names appeared on the list of his Division who had not voted, 3 were dead, 2 were consultants, 1 was a dentist, 16 had gone away, 20 had retired, and 14 were whole-time officers. That left only 24 throughout the whole district, extending over some fifty miles, who had not voted, and of that number six were known to be absolutely loyal, which left only 18 out of the whole number unaccounted for.

Dr. O'SULLIVAN said that while it might be true that consistency was the virtue of fools, yet three weeks ago the Association had decided upon a certain line of action, and it would be stultifying itself before the public if that were altered. Nothing of serious moment had taken place which would justify such a course. Liverpool at one time was not supposed to be very sound; it contained about 500 or 600 practitioners, but he had had it on excellent authority that in respect of the invitation issued by the Insurance Committee to go on the panel, up to the previous Wednesday only four men had come forward. He asked, Were the majority to have no rights? Was not the great mass of the profession throughout the country to be considered? Had the profession not constantly given in? Did it not four weeks ago, for the sake of unity, decide to do what he considered at the time a most impolitic thing, namely, send a deputation to the Chancellor of the Exchequer.

Dr. WEBB (East Cornwall) said he believed that there was in his Division a very big majority in favour of not working the Act. Coming as he did from a seaport town, he would be starved if the Act were worked. One half of his income was derived from people coming to the town as visitors, and if he were on the panel he stood the chance of losing at least one half of his income. He reiterated that the whole of Cornwall was almost solid against working the Act.

Dr. MOWLEM (Newcastle) said that when the vote was taken at the Newcastle Division 53 voted for accepting service and 59 against; in the case of the Hexham Division 13 voted against accepting service, while 33 were prepared to accept service. This was no time for thrusting the views of the majority upon the minority; the matter was too serious and the risks too great. In his Division there were men in general practice of all types dealing with club practice and colliery work, and there-

fore there were many men who felt that they had much to gain by serving under the Act, while on the other hand there were many who felt that they would be undertaking great risks by doing so. He had been given an absolutely free hand, and had been instructed to gain information as to what was happening in the rest of the country. Men in their position had not been afforded all the information they would have been glad to have had, and there had been imported into the proceedings a good deal of personal rancour against certain officers of the Association that could well have been dispensed with. He did not approve of much that had been done by the officers, but there was not time to fight that out. In Newcastle-on-Tyne there were something like 80,000 insured persons, and probably in the profession there were 200 members; of these 100 would go on the panel, as their class of practice permitted it. At the Liverpool meeting the promise had been made that the Guarantee Fund would be adequately supported. That promise had not been fulfilled. Some way of helping those men who were prepared to be loyal to the Association must be found. There were three years to go through before any Government, whether Liberal or Conservative, would act in any way, and during that time medical men should keep alive and strong the British Medical Association—the only machine that could possibly do the work.

Mr. E. B. TURNER (Council) said that no doubt there were men who would go on the panel. There was, first of all, the unpledged man who did not belong to the Association. He had a perfect right to go on the panel if he chose, and committed thereby no breach of honour. Then there was the unpledged member of the Association. He also was not acting dishonourably if he went on, but the question of his remaining a member of the Association would be a matter for him and for them. It was a very different thing when they came to the man who had pledged himself. He had pledged himself with his eyes open, and that pledge was just as strong and binding as ever it was. The fact that they had 27,400 men behind them had actuated him as well as other members of the Association in the line they had taken. He should not have taken such a strong line as he had if he had not known that there were those members behind him. The Government was absolutely cynical about the quality of men who would serve. The only question with the Government was to get numbers. It was feverishly anxious that men should go on the panels. In the only Division where the vote was taken thoroughly and effectually, namely, in Bristol, the result was striking. In most places the poll was taken at a fixed time, and busy men had not been able to attend. In his own Division there were 200 or more members who did not vote, and he found out that it was for three reasons, the first and most prominent being that they could not get there because they were otherwise engaged. The second was, they trusted the officers of the Division and their Representatives. The third reason was that a great number of them were not affected by the Act, and they declined to vote because they thought that the men who should decide it should be the men who were affected. If the profession decided to fight, the Kensington Division would do its best to see that there was the requisite ammunition in the form of a guarantee fund.

At the suggestion of Dr. R. M. BEATON (St. Pancras and Islington), the motion was put in the following slightly amended form:

> That the Representative Body rejects the proposals of the Government, and adheres to its previous decision to decline service under the Act.

On a request for a roll call,

Dr. ROXBURGH (Marylebone) said there were a number of members who had a free hand in voting, and he would suggest that in order to give them a guide a show of hands should be taken first.

The CHAIRMAN said he could not possibly accede to this, as it would be taking two votes on the same thing.

Dr. HASLIP (Westminster) said that the fact that the result of the voting of the Divisions showed that there were 176 Divisions against and 24 in favour of the Act; that might be of assistance to those members who were seeking a guide as to how they should vote.

The CHAIRMAN announced the result of the roll call as follows: Ayes 182, Noes 21, not voting 1.

The announcement was received with loud and prolonged applause.

THE FUTURE POLICY OF THE ASSOCIATION.

The CHAIRMAN said it was now the duty of the meeting to provide all localities with guidance as to what they were to do in the course of the next month, since it had refused members of the Association permission to go on the panels.

Dr. DEARDEN (Manchester, West) moved the following motion, which was agreed to forthwith:

> That it be an instruction to the Council to call upon all members of the profession to loyally adhere to their undertakings and pledges.

Dr. LEDWARD (East Herts) moved:

> That medical practitioners be allowed to accept seats on Insurance Committees, in order to safeguard the interests of the profession in the administration of the funds placed at the disposal of such committees for the purposes of medical benefit.

His Division put this motion forward because although the Association had decided to ask its members not to go on the panel, others might be tempted to do so. The profession ought to be represented on the Insurance Committees in order, if necessary, to prevent arrangements being made with blacklegs and to point out to the lay members of those committees the undesirable results which would ensue and the unsatisfactory attendance insured persons would receive. If panels were not formed the Commissioners might exercise the powers given to them under the proviso to Section 15 (2) of the Act, and make other arrangements. In country areas it was impossible to start a whole-time service; at the same time the Commissioners were most anxious that every insured person should receive medical attendance, if necessary, on January 15th; consequently, it was quite possible that other arrangements might be made by the Insurance Committees which would fit in with the ideas of the profession. If persons were allowed to make their own arrangements the scale of fees would be fixed by the Insurance Committee. In binding itself not to give any service under the Act, he thought the Association did not include service on the Insurance Committees.

Dr. FULLER (North Middlesex), in seconding, said the profession must have information of some sort, and it wanted to obtain this at first hand.

Dr. NAPIER JONES (Reading), in supporting, exhibited a bill that had been displayed in his Division as follows: "Insured persons may apply to the Insurance Committee to make their own arrangements and go to their own doctor. See Section 49, Revised Regulations, National Health Insurance Act, 1912." Before a committee exercised its right of giving a person power to make his own arrangements it had to satisfy itself that those arrangements would be adequate; consequently, if the profession were represented on the Insurance Committee it would be able to assure the Insurance Committee that that arrangement would be adequate.

The proposal was supported by Dr. HALSTEAD (Isle of Thanet) and Dr. DUNCAN (Derby).

Dr. HELME dissented. To act upon Insurance Committees would be to reverse the position hitherto assumed, and would be interpreted by the public as a tacit approval of the Regulations and machinery of the Act.

Dr. GRAINGER (Glasgow, Eastern) had been instructed to vote in favour of refusing to work under the Insurance Act, and it was upon the question of representation that the vote turned at the last meeting in his Division. The Division had felt that it was imperative it should secure every administrative post that was open to the profession, and that by refusing to do so it would be simply stultifying itself. But when it became known that the increased representation on the Local Committee was not really a medical representation, but merely a representation for the Commissioners, the opinion of the Division had been turned, and for the first time in the history of these negotiations it had resolved to refuse to work the Act.

In reply to a question by Dr. BIGGS (Council) as to whether the meeting could allow medical practitioners to accept seats on Insurance Committees, having regard to

Minute 184 of the Annual Representative Meeting, 1912, as follows:

> That the British Medical Association calls on all practitioners to refrain from applying for or accepting any post or office of any kind in connexion with the National Insurance Act (except in regard to sanatorium benefit, provided this is carried on in accordance with the wishes of the Association) until such time as the Government has satisfied the Association that its demands will be met,

the CHAIRMAN ruled that the Association could not allow medical practitioners so to act, inasmuch as the demands of the Association had not been met.

The following proposal by Derby,

> That, in view of the very considerable differences in wage and economic conditions throughout the country, the fixing of an income limit be left to the profession in each insurance area,

was withdrawn, the mover, Dr. DUNCAN, saying that in his view, as panels were not to be formed, Local Medical Committees had no standing, and the meeting could not give them any standing.

Dr. HELME suggested that matters of small detail appearing on the agenda could be properly filled in after the meeting had decided on the broad principles.

The CHAIRMAN called attention to the following motions:

Proposed by Dr. WHAITE and seconded by Dr. METCALFE:

> That the Association advises the profession to express its willingness to treat insured persons on condition that such persons avail themselves of their privilege of demanding to be allowed to make their own arrangements. That each insured person have free choice of doctor and that the minimum basis of remuneration on any contract treatment undertaken be 8s. 6d. per annum inclusive of drugs. That the contract be made between the insured or their representatives and a committee of local doctors, and that all other details of treatment be left to the local doctors in the area affected, and that this arrangement be carried on until the profession adopt some uniform scheme.

Proposed by Dr. F. J. SMITH, and seconded by Dr. BUTTAR:

> That as an alternative to going on the panel under the Act and Regulations, this Representative Meeting approves generally of the schemes known respectively as (1) the City Scheme, (2) the Letchworth Model, (3) the scheme of the National Medical Union, (4) the Kent County Scheme, (5) any other schemes that have been already approved by the State Sickness Insurance Committee with modifications necessary for local wants, which modifications must be submitted to the Council.

The CHAIRMAN suggested that in preference to selecting schemes from which localities might choose, the meeting should go into each scheme and try and select one.

Dr. HELME (Council) said that the two motions were not antagonistic. Dr. Whaite's dealt with a great principle, namely, that the Association recognized the advisability of Local Medical Committees dealing directly with the approved societies instead of with the Government. Dr. Smith's resolution dealt with detailed schemes which were not at all antagonistic, and they would be sent down, he hoped, with the approval of the meeting, to all the Divisions, so that the Divisions should have the opportunity of deciding upon a great alternative plan, namely, that the profession should deal directly with the approved society, a plan which he thought offered a solution of the difficulty.

Dr. DUNCAN (Derby) pointed out that, even if the privilege of contracting out were granted, any doctor who made a contract with any such person was under the Committee.

Dr. E. O. PRICE (Bangor) asked if it was contemplated in Dr. Whaite's scheme to imply that there was a legal obligation to attend. Was there any difference in that respect between his plan and the Government plan? Was it likely that money would be paid to the insured person on account of his medical benefits without a medical record being kept? He also asked whether there would be any medical inspection under the system?

Dr. WHAITE (Birmingham) wished to impress on the meeting the absolute necessity of arriving at some policy, because, as every one knew, many members in the country were waiting to know what policy the Association was going to offer as an alternative to going on the panel. His scheme did not in any form attempt to work the Act. He suggested that it should be published to the country that the profession was prepared to treat any insured person who came with 8s. 6d. in his hand, as a minimum basis of contract treatment, or in accordance with the local tariff adopted by some local area. If they did that the whole country would at once realize the position. The friendly societies would be with them. He believed that some of the large friendly societies had been making offers on those lines to doctors locally. The scheme in his motion provided for absolute free choice of doctor. If any doctor put his name upon the list it would be possible for any insured person so desiring to go on his books. The profession was not concerned to consider anybody who would not come in, nor was it concerned with how mileage was to be provided. If an insured person wanted a doctor to go too far he would not go. The same applied to extras, and each local area would be allowed to draw up, with the consent of the British Medical Association, its own ideas of a scheme in that respect. By the scheme they did not commit themselves to do extras for a capitation fee of 8s. 6d. That became a matter of private negotiation between the doctor and the patient, subject to the approval of the local area affected. As for any trouble from the Commissioners, the Insurance Committees, or inspectors, the doctor would tell them to go away. The profession was not drawing up an Insurance Act; it had a commodity to sell, and would say, "This is our price." He thought that in the past the Association had made a fatal mistake by keeping things too secret. Any scheme adopted should be published broadcast over the country.

Mr. SCOTT WILLIAMSON (Bristol) asked that the following motion by Bristol should be taken with Dr. Whaite's motion:

> (*a*) That Provisional Committees be urged to open negotiations with approved societies for the provision of medical attendance and treatment for insured persons under Regulation 14, 7 of the Revised Regulations, which allows "persons resident in the county, whether individually or collectively, in lieu of receiving medical benefit under the arrangements made by the Committee, to make their own arrangements for receiving treatment (including medicines and appliances)."
>
> (*b*) That any scheme drawn up with the above object must be based on the following principles:—
>
> (i) Free choice of doctor, subject to his consent to act.
>
> (ii) Absolute control of Medical Committees in all professional affairs.
>
> (iii) Control of interests of insured persons by joint committee, consisting of equal number of representatives of approved societies and the local medical profession.
>
> (iv) Right of doctor to dispense.
>
> (v) Payment of all medical fees to Medical Committees as trustees of the local profession.
>
> (vi) Rate of payment to be 8s. 6d. per head.
>
> (vii) All contracts to be made by Medical Committees, not by individual practitioners.

It was proposed by Mr. LARKIN (Liverpool), seconded by Dr. DOUGLAS (Birmingham Central):

> That Dr. Whaite's motion be taken for discussion.

The CHAIRMAN, in reply to Dr. CASTLE (Barnsley) said that even if permission were given to insured persons to make their own arrangements it would not be possible under the Regulations for doctors to dispense.

Dr. MACNAMARA (Greenwich) said the object of Dr. Whaite's motion was to show the public on what conditions the profession was prepared to work.

The motion that Dr. Whaite's motion be taken was agreed to.

Dr. METCALFE (Bradford), speaking as seconder, said the profession must have some alternative policy to put before the public. The simplest method was for the insured persons to make their own arrangements through Local Insurance Committees. It had been said that the Local Insurance Committee might not give permission, but that if the profession could bring sufficient pressure to bear on the Local Insurance Committee, and if no men were prepared to go on the panels, the committees could be compelled to make some arrangements to carry out the work. He did not anticipate that in strong areas there would be any great difficulty in getting the Insurance Committees to allocate this money to the insured persons.

The CHAIRMAN said that Dr. Benham had an amendment to the second part of Dr. Whaite's proposal to the effect that the basis of remuneration should be on the

scale of fees drawn up by each Local Medical Committee.

Dr. WHAITE did not intend to exclude local tariffs.

Dr. HEGGS (Canterbury) suggested the words "or on such tariffs as are approved by the Council of the Association."

Dr. BENHAM (Brighton) said his proposal was made in the interest of simplicity. The profession had to go before the public and show that its demands were just and reasonable. The public did not understand the capitation fee of 8s. 6d., but if the profession said its various services were worth such and such fees the public would understand.

The CHAIRMAN observed that the meeting had already laid down that the method of remuneration should be what the local area desired, and the only question was between approval by the Local Medical Committee or approval by the Council.

Dr. HELME (Council) thought any scheme should be subject to the approval of the Council.

Dr. MACDONALD (Chairman of Council) said difficulty arose as to different charges in different parts of the country. Some common ground upon which to go to the public must be found.

Dr. A. M. EASTERBROOK (Lothians) suggested that the addition of the words "or on such tariffs as are approved by the British Medical Association" would cover the whole.

Dr. MACDONALD said that if any contribution were obtained from the Insurance Commissioners it would be the same amount in each case, so why should not the charge be on the same basis all over the country?

Dr. T. M. CARTER (Bristol) thought the question was whether there should be fixed a contract basis of so much a week to cover everything, or a scale of fees which the patients had to meet somehow or other. If the latter was intended, he did not know how it was to be levied.

Dr. WHAITE said the resolution was drawn up with the intention of avoiding expenditure of time in the discussion of details; the amendment proposed that all the details of the scheme and the tariffs should be left to the local areas.

Dr. L. J. PICTON (Stockport, Macclesfield, and East Cheshire) observed that details were sometimes more vital than the main scheme. If the income limit were left out of consideration and a capitation fee of 8s. 6d. laid down, that would be a breach of the cardinal points.

The meeting then adjourned for dinner.

Evening Session.

The CHAIRMAN prefaced the evening debate by pointing out that the motion before the meeting had been selected by way of getting a general pronouncement under which the Association would be prepared to work, as distinguished from going on the panel. The motion included certain essential things and left the adjustment of details to particular localities.

Dr. PEARSE said that since the last Representative Meeting he had waited for the militant section to propose a constructive policy, and now he was told that the motion before the meeting was the alternative plan. He had to confess to a sense of profound disappointment that that was to be the great plan to be taken down to the Divisions, as an alternative to the Insurance Act. He had been sent by his Division against his own opinions to record a vote against the working of the Act, which he had duly recorded. When he went down to his Division he would be asked what was offered instead, and he would have to say it was the proposition before the meeting. What was that offer and what did it give more than the Insurance Act offered? (Loud cries of "Freedom," "Independence.") That was the answer he had proposed to give himself. The two points which the proposition gave as distinct from the Insurance Act were freedom from lay control and the right to dispense. Neither of those points was among the six original cardinal points of the Association. It was on the six cardinal points and the understanding that the Association would do its best to attain them that 27,000 men signed the pledge. The question as to a constructive policy should have been considered before the negative policy of refusing to work the Insurance Act was adopted. What did the proposed policy demand? It demanded, at any rate, a certain degree of co-operation with the friendly societies. He remembered at the first Representative Meeting after the Insurance Bill was introduced the rapturous applause with which any sentiment of hostility to the friendly societies was received. Now they were turning to co-operate with approved societies as an alternative of escape from the situation created by the Insurance Act. It was said they were fighting for freedom from friendly society control. The point he had insisted on all through was that the battle was not at an end, but only beginning. Men came to him and asked him what they were going to do, and he had to say, "You are to go on fighting." Fighting for what? The only point they were fighting for now was the question of freedom. That sentiment was rapturously applauded. He wondered if it had been thoroughly considered that the question of the demand for complete freedom from lay control involved a demand that the State should never take cognizance of domiciliary medical treatment of the poorer classes of the community. But State money could not be received without some measure of State control. They had already committed themselves to the principle that any system of State insurance should comprise a system of medical benefits. There could not be any measure of State sickness insurance without some degree of lay control. Those who had taken a moderate line in the matter had been called "traitors" and "satellites of the Chancellor." He yielded to none—his past actions showed it—in his devotion to the profession. He had worked in this matter for the sake of the profession, and in the insurance question especially for the "under-dog" of the profession. If the Representative Body committed the profession to an uncompromising hostility to the Insurance Act, and all it had to offer as an alternative was the proposition before the meeting, it was being deluded, and Nemesis was sure.

Dr. DUNCAN (Derby) asked if the names of the practitioners under the scheme would be published broadcast.

Dr. WHAITE (Birmingham) said the scheme was to be published broadcast but not the names of the doctors.

Dr. F. J. SMITH (Council) said Dr. Pearse had indulged in reminiscences, but he thought they should come down to practical details. He had a similar suggestion to Dr. Whaite's, which was that, as an alternative to going on the panel, the meeting approved generally of various schemes. He hoped that that meeting would not attempt to thresh out the details of any scheme, but would pass Dr. Whaite's motion as it stood.

Dr. WALLACE HENRY (Leicester) supported Dr. Whaite's amendment. He believed that encouraging people to make their own arrangements was likely to be the salvation of the profession. The question arose whether people would make their own arrangements, and whether the friendly societies would give any assistance in this matter? If the profession provided a good public medical service, the people would come in. At Leicester they provided not only medical attendance, but they had throat and ear, eye, dental, and pathological departments. Surgeons were there prepared to do operations for those who joined the medical service at a lower rate than others. They had put the case clearly to them, and the friendly societies were convinced that they would get better service if they came in. He did not take such a despondent view as Dr. Pearse. During the past six months the whole of the medical men in his part of the country had fallen into line on the medical service question, which he believed would prove the salvation of the profession.

Dr. BENHAM (Brighton) then moved as an amendment:

> That after the words "free choice of doctor" the motion should run as follows: "And that where a capitation system is adopted the minimum be 8s. 6d. per annum, inclusive of drugs, and that where a system of payment by attendance is adopted such system should be on the scale of fees drawn up by the Committee, subject to the approval of the Council of the Association: that the minimum be 2s. per visit without medicine, or 2s. 6d. with medicine."

He said the principle was that the practitioner should not bear the insurance risk.

Dr. LEDWARD (East Herts) seconded.

Dr. LANKESTER (Guildford) said that in Guildford there was a tariff of 2s. 6d. with or without medicine. He thought it a mistake to offer 2s. without medicine. If something like this were offered quickly all medical men would rally to it; they would be willing to keep off the panels, if only they could see that there was an alternative.

Dr. HELME said that one of the largest societies in the

kingdom, namely, the Manchester Unity, had already decided to levy 8s. 8d. on its non-insured members and guaranteed medical attendance at a fee of 2s. 6d. per visit.

Dr. BENHAM (Brighton) proposed to substitute the following:

> That for insured persons the minimum fee per visit be on a tariff based on 2s. 6d. per visit.

Dr. WHAITE (Birmingham) accepted the substitution. In further reply to Dr. JOHNSON SMYTH as to how deposit contributors would be dealt with, he said that if a man was a hopeless chronic the doctor would simply say he could not treat him on those terms. Other questions of income limit, dispensing, etc., should be left to local areas.

Dr. BOWIE suggested 7s. as the capitation fee to be charged in Scotland, where the custom was not to dispense medicine.

Dr. WHAITE, in reply to Dr. MEADE, said that tuberculosis was not meant to be included in the 8s. 6d., and should be dealt with in a separate motion.

Dr. MACDONALD pointed out that the Representative Meeting had already laid down a scale for the treatment of tuberculosis, excluding it from the capitation fee.

Dr. GRAINGER (Glasgow, Eastern) moved that the words "or their representatives" be left out of the motion, because those words would include friendly societies. His Division refused to treat with friendly societies and would infinitely prefer to treat with the Government. It was willing to treat with the insured person individually, but in no case with the friendly societies.

The amendment was lost.

Dr. FARQUHARSON (Council) requested a reply from the Solicitor to the following question: Can any contractual relations exist between an insured person and a doctor for medical treatment which are not conditional to and dependent upon the Act and Regulations?

The SOLICITOR replied that he was unable to see how, under the Regulations as at present drawn, it was possible for the Committee and the Commissioners to divest themselves of the control of funds which were paid to them for the purposes of the Act.

After some further discussion the motion as finally amended was then put to the meeting as follows:

> That the Association advises the profession to express its willingness to treat insured persons on condition that each insured person has free choice of doctor, subject to the consent of the doctor to act; that where a capitation system is adopted, the basis of renumeration shall be a minimum of 8s. 6d. per annum inclusive of drugs; that where a system of payment by attendance is adopted, such payment shall be on a scale of fees to be drawn up by the Local Medical Committee, subject to the approval of the Council of the Association, the minimum fee per visit being 2s. 6d.; that the general arrangements be made between the insured or their representatives and the committee of local doctors, and that all other details be left to the doctors of the local areas affected; that this arrangement be carried on till such time as the profession adopt some uniform scheme. That the arrangement of the minimum basis of remuneration is not considered to include the treatment of tuberculosis.

The resolution was put and carried.

Dr. BOWIE (Edinburgh and Leith) moved, and Dr. EASTERBROOK (Lothians) seconded, the following rider:

> That in those areas where practitioners do not wish to dispense the capitation fee should be a minimum of 7s.

Dr. W. R. DUGUID (Banff) said that the matter should be left as it stood, with discretion to the Local Committee, and that the limit of 7s. should not be fixed.

The rider was lost.

INCOME LIMIT.

The following motion by the Derby Division was adopted:

> That, in view of the very considerable differences in wage and economic conditions throughout the country, the fixing of an income limit be left to the profession in each insurance area.

ACTION OF HOSPITAL STAFFS.

Dr. COURTENAY MILWARD (Cardiff) moved the following resolution:

> That the Council be requested to arrange for concerted action on the part of the hospital staffs throughout the kingdom.

Dr. BUTTAR (Council), in moving an amendment, quoted the following statement which had been put out by St. Bartholomew's Hospital, London. [The scheme is printed below as an appendix to the resolution ultimately adopted.]

Dr. HARRISON BUTLER (Coventry) thought the question required very careful consideration. To retain public opinion on the side of the profession the patients must not suffer, and it was necessary to have a clear definition of the class of case that would be refused. He instanced the eye department of the hospitals at Coventry and Leamington. Generally speaking, general practitioners did not undertake eye treatment, and there was no provision in the Act for any such treatment.

Dr. BOWIE said that in Edinburgh it was considered that any case admitted to a hospital was practically *ipso facto* an urgent case. All cases requiring operation, or medical cases which could not be treated in the patient's home, were emergency cases. Out-patients had to bring a letter from their own doctor.

Dr. CAMPBELL (Leigh and Wigan) informed the meeting that at the voluntary hospital with which he was connected, out of an income of £19,000, £14,500 was subscribed by working people.

Dr. BENHAM (Brighton) mentioned a rule adopted at the Brighton hospital which stated that insured persons were not entitled to receive treatment except in cases of emergency, but that the committee might from time to time make such exceptions as seemed desirable.

Dr. DUNCAN (Derby) moved:

> That this meeting calls upon all hospital staffs throughout the kingdom to take such action as may be necessary in accordance with the wishes of the Local Medical Committee in that area.

Dr. E. HOUFTON (Nottingham) seconded, but the amendment was not pressed.

The CHAIRMAN, after some further discussion, put the motion as follows, and it was carried:

> That this meeting approve the following scheme adopted by St. Bartholomew's Hospital with regard to persons presenting themselves for treatment at the hospital after January 15th, 1913, and that the Council be requested to make arrangements for obtaining the approval of such scheme by all hospital staffs and committees throughout the country.

St. Bartholomew's Hospital.

Resolutions adopted with regard to persons presenting themselves at the hospital for treatment after January 15th, 1913.

1. That all persons coming to the hospital (except in cases of urgent illness) should be asked by a lay official of the hospital whether they are insured.
2. That each insured person should be referred to a medical officer of the hospital to decide whether his or her ailment be urgent or not.
3. That in the case of an insured person with an ailment or accident which can be treated by a general practitioner of ordinary competence, such insured person should be told by a medical officer of the hospital that he or she must obtain treatment by a medical practitioner outside the hospital.
4. That the treatment of the really necessitous poor remain as at present. (An efficient inquiry department will be required for the purpose of investigation.)
5. That notices be posted in prominent positions in the hospital in the following or similar terms, namely:
   (*a*) On and after January 15th, 1913, all persons applying for treatment will be required to state whether they are insured persons or not.
   (*b*) Insured persons with small ailments will not be treated at the hospital.

DISCIPLINARY ACTION OF ASSOCIATION.

Dr. GARNER (Preston) moved:

> That the Representative Meeting determine the line of action to be taken with regard to those members of the medical profession who take service under the Insurance Act, thereby acting to the injury of the profession both as individuals and as a whole.

In reply to Dr. MACLEAN, the CHAIRMAN OF REPRESENTATIVE MEETINGS said that the action of the Representative Meeting in this respect would be subject to the autonomy of the Divisions.

The motion was put to the meeting and lost.

ADVISORY COMMITTEES.

Dr. GARSTANG moved, on behalf of the Altrincham Division:

> That members of the Association now serving on Advisory Committees be required to resign from such committees forthwith.

This was agreed to.

The Chairman ruled that, having regard to the vote which had been taken, the following motion by the Altrincham Division—

> That any member of the Association disobeying such requisition be expelled from the Association

—fell to the ground.

Insurance Committee Circular.

Dr. T. Campbell (Wigan and Leigh) moved, and Dr. Brown (Bacup) seconded:

> That it be an instruction to the Council to ask all the members of the profession to hand in the circulars issued by the Commissioners inviting acceptance of service under the Act to the Secretaries of the Divisions not later than December 29th.

Dr. Maclean pointed out that this would not carry out the policy of the Association and would involve unnecessary expense, and a motion to proceed to the next business was carried.

The Guarantee Fund.

The Chairman stated in reply to a question that money had been given or promised to the Guarantee Fund for the purposes of compensating members for loss and also for meeting expenses in opposing the Act, and had been applied to both purposes.

Dr. Macdonald (Chairman of Council) complained of the inadequate response to the appeal for the Guarantee Fund. Only 13,000 members of the Association or the profession had guaranteed or offered a single penny in order to enable this campaign to be carried on. He thought a call should be made, but that it should be as small as possible in order that they might reach those men who had not responded before.

The Chairman, dealing with the original intention with regard to the Guarantee Fund, called attention to the following note which appeared on the guarantee form:

> In the opinion of the Council a wide response to the call for the first instalment will obviate further calls for *administrative* purposes. Calls for *compensation* purpose will, if required, probably be made at intervals of not less than three months, to the amount of 20 per cent. of the original guarantee on each occasion.

When the Council drew up that form and expressed an opinion that a wide response to the first call would obviate a further call for administrative purposes, it did not know that only a comparatively unsatisfactory number would give a guarantee. If a large proportion of the 27,400 practitioners who signed the pledge had guaranteed and paid £1, obviously there would have been something like £25,000 for administrative purposes. There had been, however, only a limited response, and consequently the hope that the response to the call for the first instalment would be sufficient for administrative purposes was not fulfilled. A wide response to the fund would have obviated further calls for administrative purposes.

Dr. Meade (Scarborough) urged the desirability of encouraging guarantees of small sums.

The meeting adjourned at midnight until 9.30 a.m. on Monday, December 23rd.

Monday, December 23rd.

The proceedings of the Special Representative Meeting were resumed on Monday, December 23rd, at 9.30 a.m., Mr. T. Jenner Verrall again occupying the chair.

Resignation of Dr. Lauriston Shaw.

Before proceeding with the business the Chairman announced that the Chairman of Council had received the resignation of a member of Council elected by the Representative Body, and that arrangements had been made by which nominations could be made at once and the vacancy filled that day.

A Representative inquired the name of the member of Council.

The Chairman said it was Dr. Lauriston Shaw.

Dr. A. G. D. Bennett (East Leinster) inquired whether it was necessary for the resignation to be accepted by that meeting.

The Chairman said the Chairman of Council could accept the resignation of any member of Council.

Dr. Bickerton Edwards (Swansea) suggested that resignation of a position on the Council did not mean resignation of membership of the Association, and the Chairman acquiesced.

Confirmation of Minutes.

The minutes of Saturday's proceedings were read, amended, and confirmed.

Central Insurance Defence Fund.

On the discussion of this question being resumed,

Dr. Newton Pitt (Marylebone) moved that a call be made of 20 per cent. of each guarantee, inclusive of what had been already paid.

Dr. John Brown (Rochdale) said the profession was within sight of victory if the cause were properly supported by the members.

Dr. Napier Jones (Reading) urged that the Association should take a stronger line of action with regard to the Guarantee Fund. It would be much better to ask every member of the profession to pay at once £1.

Dr. Douglas (Maidstone) suggested that the matter be referred to the Council.

The motion to make a call of 20 per cent. of each guarantee was lost.

The following amendment was moved by Dr. Johnson Smyth (Bournemouth), and seconded by Dr. O'Sullivan (Liverpool):

> That 20 per cent. of the unpaid balance of the fund already guaranteed be called up, and that a direct appeal be made to those who have not subscribed to forthwith do so in a generous manner.

Dr. Sorley (Sheffield), in supporting, said that Sheffield had been accused to a certain extent of disloyalty, but he would point out that at first the guarantee was asked for in very dubious terms, and it was understood that the fund would be earmarked for local purposes. In Sheffield the subscription to the local fund amounted to £5,000 or £6,000.

The amendment was lost.

After some further discussion Dr. Goodbody (Marylebone) moved and Mr. Warren Low (Marylebone) seconded:

> That the question of the amount of the guarantee to be called up be left to the Council, and that the Divisions be again urged to support the Central Guarantee Fund especially by obtaining fresh guarantors.

Dr. Haslip (Westminster) agreed that it was better to leave the matter to the Council, and said it was the duty of the Representatives to obtain fresh guarantors.

The Chairman of Council thought the only practical way of dealing with the matter was to refer it to the Council, who had more knowledge on the subject than any one. An appeal by individual interviews to obtain fresh guarantors would be the most effectual proceeding.

The motion was carried.

Dr. Beaton (Council) moved and Dr. Mactier (South Staffordshire) seconded:

> That the Representative Meeting instructs the Council to place the raising, management, and distribution of the Central Defence Fund under the control of the State Sickness Insurance Committee, granting to the committee such assistance from the business staff of the Association as it may require.

Dr. Macdonald (Chairman of Council) explained that the Council of the Association held the fund as trustee; its administration could only be handed over to a committee as a matter of convenience.

The motion was carried.

Dr. Draper (Huddersfield) moved, and Dr. Meade (Scarborough) seconded, a proposal that every member of the profession in the British Isles be requested to subscribe £1 in January, 1913, towards the cost of the campaign, apart from the guarantee fund.

The motion was carried.

On the proposition of Dr. Bickerton Edwards (Swansea), seconded by Dr. Benham (Brighton), it was agreed to extend the invitation to subscribe to the profession in the Colonies.

A motion by Dr. Tennyson Smith (Bromley), requesting Representatives to give this most important matter their personal attention, was carried without debate.

The CHAIRMAN, in reply to a question, said that in cases where a subscription was tendered from an outside source from motives of sympathy with the profession, and without any ulterior motive of advantage to the tenderer, it might be accepted.

APPEAL TO THE PROFESSION.

A suspension of standing orders was agreed to in order that Mr. E. B. TURNER (Council) might bring forward a proposal to issue at once to every practitioner an appeal to accept the alternative policy which had been passed at the meeting on Saturday, with instructions as to how he should proceed to act. Mr. Turner read a draft of the appeal he proposed.

It was decided, on the motion of the CHAIRMAN, to send the appeal to all members of the profession.

Dr. YULE (Forfarshire) asked the Chairman what policy should be adopted by a Division (1) which has a deeply rooted aversion to entering into any scheme of contract practice arranged directly with a friendly society, or (2) in which no member was willing to undertake the organization and administration of such a scheme.

The CHAIRMAN, in reply to the first part of the question, said the scheme offered the alternative of entering into arrangements with insured persons or with their representatives. Where they did not desire a friendly society to take part in the bargain their pourparlers would be with the individual and not with the friendly society. As to the second part of the question, he could not conceive of a single place where no member could be found willing to undertake administrative work.

Dr. DURANT (Consett and Gateshead) asked the following three questions:

1. Inasmuch as the £2 a week income limit is by minute of the British Medical Association its declared policy, will medical practitioners who have made arrangements for the treatment of insured persons without the inclusion of this cardinal point in such arrangements be breaking their pledge?
2. Has this Representative Meeting, by approving the arrangements in this meeting's minutes made for controlling the treatment of insured persons, altered the conditions of the hospital staff pledge?
3. Inasmuch as the cardinal point, "freedom from friendly society control," is by the minutes of this British Medical Association its declared policy, will medical practitioners entering into arrangements whereby any such control exists be breaking their pledges?

The CHAIRMAN, in answer, said that the first question was covered by the resolution passed on Saturday, that the fixing of an income limit be left to the profession in each area. As to the second question, the minute approving the scheme of St. Bartholomew's Hospital was not a substitute for the hospital staff pledge. He did not think the hospital staff pledge had been altered. The third question he preferred to leave to the State Sickness Insurance Committee. Its decision would be published in the JOURNAL. The Chairman added that nothing done on Saturday or on that day would absolve any member from the honourable position he had taken up with regard to the pledge.

PAYMENT FOR UNINSURED PERSONS.

Dr. ROTHERHAM (North Lincoln) moved:

That it is desirable that this meeting fix a minimum sum for contract attendance on uninsured persons.

He desired a ruling from the Representative Body as to what should be charged for adult members and juvenile members of approved societies. These societies were making a great point with regard to juveniles, and trying to get in as many as possible. At present juveniles were being taken on at an exceedingly low rate of 1s. 9d., 2s., or 2s. 6d. He would like the Representative Body to say they should not be taken at less than 4s. 6d. or 5s., and as soon as juveniles reached the age of 16 they should be transferred to the section of insured persons. Further, there ought to be free choice of doctor for juvenile members and a definite sum fixed for attending them until they became insured persons.

Dr. HARRISON BUTLER (Coventry), in seconding, said that in Coventry arrangements had been entered into tentatively with the friendly societies for 2d. a week, which was practically 8s. 6d., and for uninsured persons at 1d. a week, including children.

Dr. L. J. PICTON (Macclesfield and Stockport) called the attention of the meeting to the decision arrived at at the last Representative Meeting:

That, until some general scheme of contract or other form of medical service is approved by the Association, the members of the British Medical Association decline, after January 15th, 1913, to undertake or conduct any form of contract practice for non-insured persons, except upon such terms as shall be approved by the Council of the Association.

It seemed that the Division which the last speaker represented had been acting *ultra vires* altogether in the proposals he had mentioned. He thought the matter could be left to the State Sickness Insurance Committee, and the Local Medical Committees could send up any proposals to that body in accordance with the terms of the minute.

Dr. LEIGH DAY (North-East Essex) said that his Division had found it impossible to come to a uniform decision. Wages varied in districts, and if one district wished to fix a limit not agreed to in other districts, the people in those other districts would come under the Poor Law. The only way to deal with the matter was to leave it to the Divisions.

Dr. DANIEL (Croydon) called the attention of the meeting to what had been done by the Representative Meeting in the summer. The schemes submitted contained carefully thought out methods and scales of payment. There were four schemes before them, with detailed methods of remuneration. Surely it was possible in the various Divisions to find something which would suit each locality.

The motion was lost.

Dr. METCALFE, on behalf of the Representative of the Exeter Division, moved that a statement of reasons for the decision of the Association as to service under the Insurance Act be issued to the press. He said the Association had too long hidden its light under a bushel; it ought long ago to have given more details to the public.

In reply to Dr. BEATON, the CHAIRMAN said the State Sickness Insurance Committee had not overlooked a motion on the matter moved by the St. Pancras and Islington Division at the last Representative Meeting.

The motion was agreed to, with the addition that it be left to the Chairman of Council, the Chairman of Representative Meetings and the Deputy Chairman, to issue a memorandum to the press.

THE POSITION OF DR. LAURISTON SHAW.

The meeting then proceeded to the consideration of a motion on the agenda by Dr. Buttar with regard to the position of Dr. Lauriston Shaw.

The CHAIRMAN said he desired to state that Dr. Lauriston Shaw, having resigned his membership of the Council, was no longer a member of the meeting, but he was present as a member of the Association. If after hearing Dr. Buttar the meeting desired to hear Dr. Shaw, although he had no *locus standi* as a member of the meeting, Dr. Lauriston Shaw was willing and, in fact, desired, to make a statement on the subject.

Dr. BUTTAR (Council) moved:

That the Chairman of the Central Ethical Committee be asked to explain his position as Chairman of the National Insurance Practitioners' Association, and to show how the holding of the two offices can be reconciled.

Dr. Buttar said he regretted very much having to make this proposal. He had hoped that he could have avoided the position owing to the fact that the late Chairman of the Central Ethical Committee had resigned his position on the Council of the Association. No man ought to be condemned unheard, and that was his reason for putting the motion on the agenda paper. He had been present at the meeting at the Holborn Restaurant, and he had never seen a more pitiful sight than that of the Chairman of the Ethical Committee presiding at a meeting at which it was openly avowed that the pledges of honour given by gentlemen would have no binding effect on the members of the profession. It was a matter that he thought needed explanation. Personally, he would be only too pleased if it were possible for Dr. Lauriston Shaw to reconsider his position, and he only hoped that that gentleman and his followers could see their way to return to the fold.

Dr. BENHAM (Brighton) seconded the motion, which was unanimously agreed to.

Dr. LAURISTON SHAW regretted that he had not had an opportunity of making a personal explanation earlier. No action that he had ever taken had

caused him more regret than having to sever his connexion with the honourable post he had been allowed to fill. He was not going to ride away on mere technicalities, but, as a matter of fact, he was not the Chairman of the National Insurance Practitioners' Association. He had no connexion whatever with it. Nothing had touched him more than the kind letters he had received from many of the members of the Representative Meeting, who obviously regretted his action, and he hoped they might be taken as an augury of the conditions on which they were going to carry on the great fight before them. He recognized that it was not so much the belief that he was the Chairman of the National Insurance Practitioners' Association which was resented as the fact that he had been present at the meeting and taken an active part in it. He had now to announce that while formerly he was a contingent rebel consorting with contingent rebels, he was now in active rebellion. It had been suggested that before proclaiming his attitude he should have waited until the close of the Representative Meeting, but that he did not consider would have been an honest course. So soon as the Representative Meeting passed the motion at that meeting refusing service under the Act it was his duty, with all the power he possessed, to resist it. He thought that was the most honourable course to pursue. He did not want to be a rebel. He longed still to be a member of the Association, taking an active part in its work. He hoped that the warm relations that had existed between him and the members of the Association would not be broken by the unfortunate position in which he had been placed.

Dr. O'Sullivan (Liverpool) moved the suspension of Standing Orders in order that the statement made by Dr. Lauriston Shaw might be discussed.

Dr. Hamilton (Council) moved that the meeting proceed to the next business.

Dr. Reynolds (Council) seconded, and it was agreed to.

Other Resignations.

The Chairman of Council, in reply to a question, said that unfortunately there had been two more resignations of members of the Council, namely, Dr. Buist and Dr. Farquharson.

The Chairman moved that the Standing Orders be suspended in any way necessary to allow of a second member of the four members of Council elected under By-law 43 being elected instead of only one, and this was approved.

[The voting for the election of two members of the Central Council to fill the vacancies caused by the resignation of Dr. Lauriston Shaw and Dr. R. C. Buist resulted in the election of Mr. E. H. Willock (Croydon) and Dr. Evan Jones (London).]

The Position of Dr. Maclean.

Dr. Douglas (Maidstone) moved:

> That, whereas Dr. Maclean's speech and actions are such that he represents neither his own constituency nor the general body of practitioners, this Division calls upon him to resign his seat on the Council of the Association, and to test his position by offering himself for re-election by the Representative Body.

He explained that the motion was not a personal one, but that of the Maidstone Division, and therefore he could not withdraw it, nor did he suppose Dr. Maclean would desire that he should do so. Every man had a right conscientiously to hold opinions he believed, and it was only because Dr. Maclean was on the Council as representing the Representative Body, which held different opinions from his own, that the Maidstone Division thought he was not a suitable Representative. There was the further unfortunate fact that Dr. Maclean's name had been associated with the meeting at the Holborn Restaurant, which was held without waiting to know the decision of the Association. Since that meeting had been held a communication had been addressed to Mr. Lloyd George asking that special facilities should be granted to those who worked the Act with regard to going on the panel and going from one place to another, and also filling up whole-time offices. If that was not an attempt at bribery he did not know how it was to be characterized. He hoped Dr. Maclean would be able to dissociate himself from the action of that meeting.

The Chairman suggested that before voting on the motion the meeting should hear Dr. Maclean.

Dr. Maclean said he much appreciated the kindly manner in which Dr. Douglas had moved the proposition. He had specifically stated to the Representative Meeting, when such was the case, that he did not represent his own constituency. On this occasion the Cardiff Division was represented by two very old friends of his, Dr. Martin and Dr. Milward. As regards the statement that he did not represent the general body of practitioners in the country, he was sure Dr. Douglas would allow him to say that that—for the moment, at all events—was an assumption. The proof of whether it were true or not lay in the next few months. As to the request to resign his seat on the Council and to test the matter by offering himself for re-election, he said, "No." He would not ask his friends, of whom he felt sure there were a large number in the meeting, to lend themselves to such a proceeding in the circumstances. As he was now speaking to his constituents he would say that his line in the present great issue was perfectly understood at the time when he was elected by the Representative Meeting at Liverpool, at the head of the poll of four candidates. It was a consolation to him that for a long time there could have been no mistake as to his convictions, and he had not hesitated to state them on every possible occasion. He thought the occasion warranted his claiming not only persistency but consistency in the matter. Whilst he did not propose to act in the sense suggested by the motion, he wished to state to his constituents that it was his unalterable intention at the immediately succeeding meeting of the Council to hand in his resignation from that body. He did that because in his view it was a body committed to a policy which was going to be disastrous to the Association. He was quite prepared to believe that that would not be agreed to by every one present. He thought the Council, as the executive body of the Association, was committed to a policy which would be disastrous to many thousands of members of the profession, and which there was no defence fund to avert or amend. Furthermore, the Council was, by the decision of the Representative Meeting, committed to the enforcement of undertakings and pledges under circumstances now altered by the decision of the Association, and so altered as to render that enforcement—and he said it advisedly—wholly unwarranted. Those were his main reasons for taking the action of which he now gave notice to his constituents. His last word was that he asked them to believe that it was an action which gave him very great pain, but in the present crisis he took this course because it was founded upon the deepest convictions. He thanked the Chairman of Representative Meetings, the Chairman of Council, and his colleagues upon the Council, for all the kindness he had received at their hands, and he hoped and believed that the action he was now taking would not cost him a single friendship in the Association. (Applause.)

At the conclusion of Dr. Maclean's remarks an appeal was made to Dr. Douglas to withdraw the motion.

Dr. Douglas (Maidstone) felt that he was not justified in so doing, but suggested that someone should move that the meeting proceed to the next business. This was moved by Dr. Haslip (Westminster) and seconded by Dr. Brown (Rochdale), and agreed to.

Hospitals and the Treatment of Insured Persons.

Dr. Buttar (Council) moved (for the sake of clearing up any ambiguity), and Dr. Muir (South-Eastern Counties) seconded, that the approval of the scheme adopted by St. Bartholomew's Hospital with regard to the treatment of insured persons should not be taken to override the terms of the pledge which made "urgent necessity" the sole condition under which an insured person could obtain through a voluntary medical charity the professional services of practitioners who had signed the pledge. The words "really necessitous poor" should be deemed to exclude insured persons, except Post Office contributors who, having used all their deposits, could not obtain adequate medical treatment elsewhere.

Dr. Haslip (Westminster) moved that a communication be sent informing the governing body of St. Bartholomew's

Hospital that the meeting had endorsed the scheme which it had drawn up, and that the meeting thanked it for giving the profession a lead in the matter.

Dr. DURANT (Consett and Gateshead) suggested that the motion moved by Dr. Buttar should be added for the information of St. Bartholomew's Hospital.

The CHAIRMAN put the motion in that form and it was agreed to.

SUBJECTS REFERRED TO COUNCIL BY THE LAST REPRESENTATIVE MEETING.

Dr. MACDONALD (Chairman of Council) submitted the report of the State Sickness Insurance Committee on items of the agenda of the Special Representative Meeting, November, 1912, the subjects of which were not dealt with at that meeting, referred to the Council to deal with, and referred by the Council to the State Sickness Insurance Committee. The report was printed in the SUPPLEMENT for December 14th, 1912. With regard to the matter of medical trusts, the Committee, Dr. Macdonald said, had issued a special report, the purport of which was that the Association should proceed no further with the matter.

The report was approved.

VOTE OF THANKS TO DR. MACDONALD.

Dr. REYNOLDS (Council) proposed:

That this Representative Meeting cordially thanks Dr. Macdonald, Chairman of Council, for his untiring work and devotion on behalf of the British Medical Association.

The motion was received with acclamation.

Dr. REYNOLDS said Dr. Macdonald possessed that curious mixture which was to be found in Irishmen—namely, severity, geniality, and absolute fairness. He would pay him the compliment of saying that he did not think a soul in that room knew exactly what Dr. Macdonald's views were on the National Insurance Act.

Mr. E. B. TURNER (Council), in seconding, said he met Dr. Macdonald nearly forty years ago in a scrimmage, and never came up against him again until, as a new member, he met him on the State Sickness Insurance Committee. The impression that Dr. Macdonald had made on him in the scrimmage forty years ago had been intensified by what he had come to know of him since.

The motion having been carried by acclamation,

Dr. MACDONALD returned thanks. He admitted that the work during the past year had been a considerable strain on him, but if he could do anything for the benefit of the British Medical Association, in which he took almost a fatherly interest, he was happy. If it had not been for the organization of the Association as it existed at the present day the profession would have been in the most parlous state, for its members would have had to carry on practice in the country under most impossible conditions. If it were true that, acting as the Chairman of the Executive Body, he had been able to disguise what his real feelings were with regard to the Act, that was the greatest compliment that could have been paid to him, because it would have been utterly wrong for him in his position to take any definite line in forcing his own opinions. It was his duty to see fair play, and to see that justice was done between the members of the Council and the Association. This had been his endeavour, and if he had been successful and they were pleased with what he had done, he was more than rewarded.

VOTES OF THANKS TO THOSE WHO HAVE RESIGNED APPOINTMENTS.

Dr. NEWTON PITT moved, and it was agreed:

That the best thanks of this meeting be given to those members who had resigned their appointments at the request of the Association.

LOYAL MEMBERS.

Dr. EVAN JONES (Wandsworth) said he had sent in the following motion:

That it be an instruction for the Divisional Secretaries to supply a list of the loyal members to the hospitals.

It had been pointed out to him that the hospital authorities would like to know who were the loyal practitioners.

In reply to a question, the CHAIRMAN OF COUNCIL said there had been a suggestion that the meeting should pass a resolution to the effect that members should have no social or professional intercourse with any man who went on the panel. This would be a distinct instigation to a conspiracy to boycott. The suggestion that the secretaries should send to the hospitals the names of the loyal members would be going very near the border line of libel.

Mr. TURNER remarked that the names of the disloyal practitioners would be placarded in every post-office.

The minutes were then read, amended, and confirmed.

VOTE OF THANKS TO THE CHAIRMAN.

Dr. BIGGS (Council), moving a vote of thanks to the Chairman of Representative Meetings, said every one would agree that Mr. Verrall had performed his duties in the chair with the utmost impartiality and in a very kindly way. He did not think any Representative present could say he had not been able to bring forward any motion. There would be a general agreement in hoping that he would not be called upon to preside at another Representative Meeting until July. At this time of the year it was only proper to offer him the compliments of the season.

Dr. BENHAM (Brighton) seconded, and said the profession in Brighton would be very glad to have the opportunity of welcoming Mr. Verrall to that town next year. He believed Mr. Verrall was the first Secretary of the Brighton Division, and as its present Secretary Dr. Benham said he was delighted to have the opportunity of seconding the vote of thanks.

Dr. MACDONALD (Chairman of Council), in putting the motion to the meeting, said that those present could know only a little of the work done by Mr. Verrall in connexion with the Representative Meeting and in the central office.

The motion was carried with much enthusiasm, all the Representatives rising in their places.

The CHAIRMAN, who was received with loud applause, said that as long as he felt absolutely certain, as up to then he had, that his most stringent and sometimes, perhaps, not very palatable decisions were accepted as being given with the fullest intention of impartiality and fairness, he would have the greatest pleasure in occupying the position of Chairman. (Loud applause.)

VOTE OF THANKS TO THE STAFF.

Mr. TURNER moved a vote of thanks to the staff and clerical staff.

Dr. MACDONALD, in seconding, said that he knew more of the work done by the staff than probably any one else. Mere payment would not compensate them. They worked with all their heart, and their soul was in the work just as much as any Representative. (Loud applause.)

The MEDICAL SECRETARY, responding, said that what the Chairman of Council had said about their hearts being in their work was not too much. If in what he said to some of the Representatives he had seemed too pessimistic, it must be remembered that at head quarters reports were received from everywhere, some of which might be a little overdrawn, and therefore that there was perhaps a possibility of overrating the difficulties. He could not look at the situation as an ordinary paid official. He had been in the work for so long, as a secretary, a Representative, and now as a paid official, that it was in his very blood and bone. He was exceedingly obliged, on behalf of his colleagues and himself, for the vote. (Applause.)

The proceedings then terminated.

THE INSURANCE ACT IN PARLIAMENT.

Medical Benefit.

MR. HICKS-BEACH asked the Chancellor of the Exchequer, on December 18th, whether the Insurance Commissioners had issued a memorandum, dated December 6th, to Local Insurance Committees[1] requiring them to issue on December 12th letters of invitation to medical practitioners asking them to enter into provisional arrangements for providing medical benefit to insured persons, and requiring the answer of the medical practitioners to be returned by December 31st; what reason was there for supposing that Local Insurance Committees would complete in nineteen days negotiations which he himself had

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, December 7th, 1912, p. 639.

failed to carry out in nineteen months or more, and what powers the Insurance Committees had for granting better terms to the doctors than had already been offered by the Treasury? Mr. Lloyd George said that the answer to the first part of the question was in the affirmative. The negotiations which had already taken place had so narrowed the issue that, as pointed out in the memorandum referred to, there was now no need for protracted negotiations between the doctors and the Insurance Committees.

Mr. Hicks Beach asked for an answer to the latter part of the question. Mr. Lloyd George replied that the alternatives had been very fully set forth in the memorandum. He could not enter fully into them now, but there would be an opportunity to raise the question on the motion for adjournment on Friday, December 20th. He understood that the question would probably be raised then, and he would be able to state more fully what the proposals were.

Mr. Hicks Beach inquired if it was the intention of the Government that Insurance Committees should partially pay for these medical benefits out of the rates? Mr. Lloyd George said that he was not sure that they could pay for them out of the rates. In any event, there was no suggestion of the kind. And it would be quite unnecessary, because the money provided by the Government was ample.

Mr. Pointer asked if it was the fact that Insurance Committees were empowered to offer better terms than the right hon. gentleman had already offered? Mr. Lloyd George answered that they could only offer within the money placed at their disposal by the Government.

On December 19th Sir Philip Magnus asked the Chancellor of the Exchequer whether, in the event of the doctors refusing to accept service under the National Insurance Act on the terms recently offered to them, the Government intended, as the only alternative open to them, to propose a great extension of the system by which the societies employ their own doctors or a whole-time State service. Mr. Masterman replied that, until information had been obtained from the Insurance Committees as to the further progress in the formation of panels under Section 15 of the Act, it would be premature to make any statement of the kind suggested. Mr. Lloyd George also stated that, as practitioners who desired to have their names placed upon the first panel lists might make application up to December 31st, it would be premature to make any statement of the kind suggested.

Mr. Bird asked the Chancellor of the Exchequer, on December 19th, (1) what was the maximum number of insured persons per annum one doctor would be allowed to contract to attend under the National Insurance Act; and how many attendances a day in the winter months that number of persons might be expected to call upon the said doctor to make; and (2) what precautions were to be taken to ensure that no doctor, for the sake of gain, might contract, under the National Insurance Act, for a greater number of insured persons than he could efficiently attend, in the winter as well as the summer months, and with whom would be vested the power of dealing with such cases. Mr. Masterman, in reply, said that it would be impracticable to fix such a maximum number as was suggested, as the number for whom a doctor could properly be responsible must necessarily vary according to the circumstances of each particular case. It would, however, be the duty of the Insurance Committee in each district to see that the arrangements were such as to secure that the insured persons in their district would receive adequate medical attendance and treatment.

On December 18th Mr. Harry Lawson asked whether the case of the young blacksmith, quoted by the Chancellor of the Exchequer in his speech at the Music Hall, Aberdeen, on November 29th, is that of an out-patient of the London Hospital, admitted on October 16th, on the recommendation of Dr. Smith; whether he was suffering from tuberculous disease of the spine; whether the house-surgeon suggested to him that he should claim his benefit under the National Insurance Act, and a form was duly filled in and sent to the Middlesex Insurance Committee on October 29th; whether the committee professed itself unable to deal with the case, and asked the hospital to retain the case for three weeks; if, when he made the statement, the Middlesex Committee had done and stated it could do nothing for this tuberculous case or any surgical case of tuberculosis; whether the hospital, at the request of the hon. member for Hoxton, kept the man for a period of forty-eight hours, and then until December 7th, and afterwards sent him to its own convalescent home at Felixstowe as a matter of charity; how, under these circumstances, this patient can be said to have received any benefit under the National Insurance Act; and whether any provision was being or had been made for him except the voluntary relief afforded by the London Hospital for a short period of time. Mr. Lloyd George: The answer to the first two parts of the question is in the affirmative. The patient applied to the Middlesex Insurance Committee for sanatorium benefit on December 5th. The Insurance Committee did not state that it could not deal with this tuberculous case or other surgical cases of tuberculosis; but informed the hospital that it was endeavouring to make arrangements for him to be transferred to a suitable institution. The Committee accepted the treatment of the case, although informed that the disease might require two years' treatment for complete cure, and he was sent to a convalescent home at Felixstowe on December 7th. The statement that his treatment there was a matter of charity was untrue; the Insurance Committee was paying for it from the funds available under the National Insurance Act.

Mr. Harry Lawson: Is the right hon. gentleman aware that the rate which is being paid is a charity rate arranged for the nurses of the London Hospital, and that the cost of the upkeep of the patient at the Felixstowe Home, which is the convalescent home for the London Hospital, would be at least the 35s. allowed by the Insurance Commissioners, according to their last memorandum. Mr. Lloyd George: The Insurance Committee is paying the fees asked for. If 35s. had been demanded, 35s. would have been paid. As a matter of fact, 35s. was being paid for every other patient, and, if necessary, even more than that would have been paid.

Mr. Harry Lawson: Am I to understand that the London Hospital would be entitled to the 35s., and not the charity rate which was now being paid? Mr. Lloyd George: Certainly; if the hospital said that it required a higher fee, I have not the slightest doubt that the Committee would pay whatever fee is fair in the circumstances. Of course, if they discriminated against insurance patients, that would be another element in the case.

Dr. Addison said the statements made in the question, as far as they concerned him, were entirely inaccurate. The Speaker said that if at the end of questions the hon. member wished to make any personal explanation he was sure the House would be glad to hear him.

Mr. Fred Hall asked the Prime Minister whether his attention had been called to the fact that the difficulty in coming to a settlement with the doctors under the National Insurance Act had been their lack of confidence in the intentions of those with whom they had negotiated; if, in view of the deadlock which now existed, he would have a statement issued containing the notes of the various conferences which had taken place on the matter, and of all the correspondence; and give an indication of the Government's proposals to meet adequately the first claims of insured persons on January 15th. The Prime Minister: The answer to the first part of the question is in the negative. As regards the second part, I would refer the hon. member to the various statements which have been made to the House and the documents which have been laid on the table, especially Cd. Papers 6305,[1] 6328, and 6520. These contain, I think, all matters of importance referred to in the question, except, perhaps, a further explanatory statement which has since been sent to every medical practitioner in Great Britain. With regard to the last part of the question, I would refer the hon. member to the answer given by the Chancellor of the Exchequer to the hon. member for St. Albans Division on December 16th.

State Medical Service.

Mr. Fred Hall asked the Secretary to the Treasury, on December 18th, how the cost of a State medical service for the working of the National Insurance Act would compare with that involved in the latest proposals made to the doctors by the Government; if any Supplemental Estimate would be required in the event of such a service

[1] SUPPLEMENT, BRITISH MEDICAL JOURNAL, July 13th, 1912, p. 89.

being established; and how long a time would be required for its organization. Mr. Masterman said that the cost of such a service was estimated to be substantially less, and the efficiency probably much greater. The answer to the second part was in the affirmative. The organization of such a service could be effected gradually, a beginning being made at once in those areas where it was most needed; no definite date could therefore be given either for its commencement or its completion.

Sick Benefit and Medical Certificates.

Mr. Fred Hall asked the Secretary to the Treasury, on December 18th, if a person claiming sick benefit under the National Insurance Act would have to produce a medical certificate; if so, who would pay for the cost of the same; and what arrangements would be made for these to be obtained in the event of an agreement not being arrived at with the medical profession? Mr. Masterman said that a medical certificate was not required by the Act as a condition of receiving sickness or disablement benefit. It rested with the approved society to determine whether such a certificate should be required, or what other evidence they would accept.

Mileage.

Mr. Duncan Millar asked the Chancellor of the Exchequer on December 18th whether he would consider the advisability of providing a further sum, beyond the amount already promised to meet the case of doctors whose patients resided in sparsely populated districts, to cover mileage in all country districts; and whether, in the event of no additional sum being at present available to meet such mileage charges, he would consider the allocation of 1d. of the amount per head payable in respect of medical attendance for each insured contributor under the National Insurance Act for that purpose? Mr. Lloyd George said that the exact amount allocated for this purpose could not be definitely stated until estimates had been received from the Insurance Committees in these particular districts. Full details were given in the Memorandum of Statements as to the administration of medical benefit and correspondence thereon between the Chancellor of the Exchequer and the British Medical Association,[1] laid on the table on December 5th (Cd. 6520), and if they were not as there stated sufficiently clear, he would be glad to discuss the matter further with the representatives of the districts concerned. As regards the second part of the question, it had been pointed out in the Memorandum that there was no reason why arrangements should not be made in any area whereby a special fund for mileage could be formed from the general amount available for medical remuneration in the area.

Mr. Duncan Millar asked the Secretary to the Treasury on December 19th to state the amount which would be made available to cover mileage in connexion with the administration of medical benefit under the National Insurance Act in country districts; and on what principle the fund would be allocated among the various districts. Mr. Masterman said he had nothing to add to the answer the Chancellor of the Exchequer gave on December 18th.

Terms of Draft Agreements.

Sir Hildred Carlile asked the Chancellor of the Exchequer whether the agreements now being and about to be submitted to the medical men willing to come on the panel had been drafted on legal advice, and, if so, by whom; whether a standardized form was being adopted; and, if not, whether he would consider the propriety of this being done. Mr. Masterman answered that alternative forms of agreement were drafted by the Insurance Commission after taking the necessary advice, and sent as model forms to the Insurance Committees.

Alleged Intimidation.

Mr. MacCallum Scott asked the Chancellor of the Exchequer whether his attention had been drawn to the fact that threats were being issued against medical men who were asserting their right to go on the panels established under the National Insurance Act; and whether the Government was prepared to give their support to such practitioners who were declining to participate in a boycott of the medical service required under the Act. Mr. Lloyd George, in reply, said he had received a number of communications asserting that threats were being used, and he was inquiring into the matter. The Government would feel bound to use all means at its disposal for the protection of any practitioners who might be molested from any quarter merely because they were engaged in discharging duties connected with the public health, undertaken by them under the provisions of an Act of Parliament.

Sanatorium Treatment in Ireland.

In reply to Sir John Lonsdale, on December 19th, the Chief Secretary for Ireland said that the following counties had sent applications to the Local Government Board for the provision of accommodation in the sanatoriums of the Women's National Health Association, namely: Carlow, Cavan, Donegal, Fermanagh, Kerry, Kildare, Kilkenny, King's County, Leitrim, Louth, Meath, Monaghan, Roscommon, Tipperary (South Riding), and Westmeath. The list given in answer to a previous question included the counties where Insurance Committees had arranged with the association for the treatment of patients at the sanatoriums. When patients were sent by Insurance Committees without any arrangements having been made by the respective county councils, their maintenance would be paid for by the Committees, and unless a permanent allocation of accommodation was made, no adjustment of the capital sum available for distribution would be required.

Sir J. Lonsdale asked if it was open to an Irish county council to make a bargain with one of the old-established sanatoriums without incurring any liability beyond the sum arranged for maintenance? Mr. Birrell said that the answer was in the affirmative, provided that the sanatorium had not received, and did not receive, any assistance out of the capital grant under the Finance Act, 1911, in respect of the accommodation in question.

[1] SUPPLEMENT to the BRITISH MEDICAL JOURNAL, October 26th, p. 435; November 9th, p. 500; December 7th, p. 621.

CORRESPONDENCE.

HOSPITALS AND THE TREATMENT OF INSURED PERSONS.

MR. H. A. BALLANCE (Norwich) writes: The Association having rejected the proposals of the Government and declined service under the National Insurance Act upon the terms and conditions finally offered, the position of the honorary medical staffs of the voluntary hospitals throughout the country, in view of the pledges signed by them, becomes of immense importance.

The constitution of the Association allows it to speak more authoritatively than any other body in the name of the profession, and after eighteen months of the most careful deliberation it has by an overwhelming vote decided against service under the Act. In the words of the pledge, therefore, it cannot be said that "the terms and conditions of administering medical benefit under the National Insurance Act have been approved by the profession." This is the sole condition which determines whether the pledge, so far as it refers to the honorary medical staffs of hospitals, shall become effective and whether action shall be taken in accordance with its terms. It matters not one bit whether the offer of the Government has changed since the pledge was signed; the validity of the pledge is not affected by varying conditions of service contained in provisional or revised Regulations, and the Representative Body is the only authority which can release members from the pledge which they have signed.

It is now possible for the honorary medical staffs of our voluntary charities immensely to help their colleagues, the general practitioners. I take it for granted that no physician or surgeon to a voluntary hospital signed this pledge to the effect that he would "not, except in cases of urgent necessity, render professional service to an insured person through the service of any voluntary medical charity," without realizing that such action on his part might mean the resignation of or dismissal from his hospital post; otherwise the pledge is meaningless.

Medical benefit becomes due on January 15th, and it will, I submit, be incumbent upon any honorary officer of a voluntary hospital after that date to cause inquiries to be made of any person who is within the age limits specified in the Act and who is under his care at such a hospital, but is not a case of urgent necessity, whether he or she is an insured person, and if such be the case to refuse treatment.

I am aware of the fact that attempts have been made in certain quarters to whittle down the effect of the pledge so far as it affects hospital staffs, and that a sort of official sanction to this attempt has been given, to the effect that all in-patients should be considered cases of "urgent necessity." An illustration of what is meant is easily given. An insured person with an uncomplicated hernia, not strangulated, applies for treatment at a voluntary hospital. In my view no elastic rendering of the terms of the pledge could permit such a person to be taken in for an operation for radical cure. I trust that no attempt of this kind will be made at this most critical time, but that the pledge will be interpreted strictly according to its wording.

So far as the committees of management of voluntary hospitals are concerned, it may be perfectly right for them to accept from the Chancellor his interpretation of the Act when he says that insured persons will still need as much in-patient treatment as heretofore, and "to a substantial extent" treatment in the out-patient department. Such acceptance cannot be expected from the profession. The profession cannot forget that under the Act it is the duty of Insurance Committees, in the first instance, to make arrangements, with the approval of the Insurance Commissioners, and to adopt a system, that of the panel of practitioners, which will secure "adequate medical attendance" to insured persons. It is true that the Commissioners may, if they wish, upset the panel system, and it is perhaps unfortunate for them that the word "adequate" was ever inserted in Section 15. The words "adequate medical attendance," when considered in relation to the Regulations, demonstrate how little the Government is disposed to give to insured persons the benefits set out in the Act. If "adequate medical attendance" is to be provided under the panel system and the Commissioners choose to make arrangements other than those of panels, they should in justice to insured persons and in keeping with the principles of insurance be prepared to give to them at least an equivalent for such "adequate medical attendance." What is the place of a voluntary charity in a national system of insurance against "loss of health and the prevention and cure of sickness"? I cannot see that it has any place at all.

The staffs of voluntary hospitals have now an opportunity before them of influencing public opinion and of profoundly affecting the present situation in the interests of general practitioners, many of whom have risked so much, but the action to be taken must be definite and begun without any delay.

THE PLEDGE OF HONOUR.

Dr. W. BURROUGH COSENS (Dorchester) writes: As one of the minority who thinks we should work under the Act, and who voted at the last meeting in favour of doing so, I am equally convinced that as honourable men we are bound by our pledge to abide by the decision of our Representative Meeting—the voice of the two-thirds majority. A post-card referendum would, I feel sure, give a different complexion to the recent personal vote.

THE VOTING AT DIVISIONAL MEETINGS.

Dr. WILFRID E. GIBBONS (Leicester) writes: As Chairman of the Leicester and Rutland Division I take the strongest exception to the misstatements and insinuations contained in a letter by Dr. John T. Tibbles (Melton Mowbray) in your last issue.

The facts are so misinterpreted as to be peculiarly mischievous. The ballot-box was on the platform in order that I might satisfy myself—and I hoped all the members—that the voting was fair. The assistant secretary handed a card to each member in turn, who passed alone through a narrow gangway to the ballot-box.

I am able to certify as the result of having personally supervised the ballot that each member was able to mark his card and place it in the box without any person seeing the face of the card. A member—not an officer—took it upon himself to call attention to the wording on the card, but this could in no way interfere with the secrecy of the vote.

Dr. Tibbles's attitude is that of a man who loses a game but does not know how to take his defeat like a sportsman.

Mr. E. ARTHUR DORRELL Honorary Secretary Hampstead Division) writes: The main fact in Dr. Dewar's letter is that because he was not allowed time to read a circular from Birmingham, posted to every medical man, at the special meeting of the Hampstead Division on December 13th, he intends to dishonour his pledges and become the champion of the "author of the Insurance Act." Having stood forth thus heroically he proceeds to make a suggestion upon the right to charge small fees to insured persons for certain extras—a suggestion which his much-abused Chancellor has stated in the latest memorandum, in reply to the deputation, to be opposed to the intention of the Act, and cannot be permitted. He cannot have it both ways: he must either be against the Act or work it as he finds it.

With regard to his complaint that the Chairman and Secretary read strongly worded letters and circulars in favour of refusing to work the Act, and none against, I wish to point out that there were none to read that had been received by me as Secretary of the Division.

Had the Birmingham circular been read, then also Dr. Buttar's must have been also, as both were sent to each individual medical man, and were not addressed to me as Secretary.

Those letters and circulars that were read at the meeting had not been received, to my knowledge, by others present than myself.

Dr. Dewar has no ground for complaint; he got his full five minutes' freedom of speech, and he used it.

THE VOTING AT DIVISIONAL MEETINGS.

In the table showing the result of the voting in the Divisions published last week, the figures for the Hereford and Worcester Divisions were transposed, and those for the Munster Branch were not included. They should read as follows:

Branches and Divisions.	Members Present.	Result of Voting.			
		Members.		Non-Members.	
		For	Against	For	Against
WORCESTERSHIRE AND HEREFORDSHIRE BRANCH:					
Hereford	46	41	1	4	0
Worcester...	56	35	1	4	0
MUNSTER BRANCH: North Munster, South Munster, West Munster	—	43	5	47	9

There was no separate return for the Horsham Division of the South-Eastern Branch, the votes being included under Chichester and Worthing.

Association Notices.

BRANCH AND DIVISION MEETINGS TO BE HELD

SOUTH-EASTERN BRANCH: ISLE OF THANET DIVISION.—A special meeting of this Division will be held at the Victoria Hotel, Hardres Street, Ramsgate, on Saturday evening, December 28th, at 8.30 p.m. Agenda: (1) To decide on any action to be taken by the Division in consideration of the result of the recent meeting of Representatives. (2) Any other business. *All* medical practitioners in Thanet are invited to this meeting.—HUGH M. RAVEN, Honorary Divisional Secretary, Broadstairs.

SOUTH MIDLAND BRANCH: NORTHAMPTONSHIRE DIVISION.—A meeting of this Division will be held on Saturday, December 28th, in the Board Room of the Northampton General Hospital, at 3.15 p.m. Agenda: Minutes of preceding meeting. Representative's report of Representative Meeting; consideration of action to be taken in the event of a number of medical men deciding to join the panel. Election of Medical Committees and Representatives on County and Borough Insurance Committees. Any other business.—PEVERELL S. HICHENS, Honorary Secretary.

GENERAL COUNCIL
OF
MEDICAL EDUCATION AND REGISTRATION.

WINTER SESSION, 1912.

Sir DONALD MACALISTER, K.C.B., President, in the Chair.

MEDICAL DISCIPLINARY CASES.

Employment of Unqualified Assistant.

MR. BODKIN attended as Legal Assessor; Mr. Harper attended as Solicitor to the Council.

On November 27th the Council considered the case of Darabshaw Fardoonji Sanjana, formerly registered as of the Hampden Residential Club, Phoenix Street, London, N.W., but now as of Sanjan House, Lawrence Street, Kelty, Fife, L.R.C.P.Edin., L.R.C.S.Edin., L.F.P.S.Glasg. 1901.

Dr. Alfred Cox, Medical Secretary, with Dr. Lauriston Shaw, Chairman of the Central Ethical Committee, appeared for the complainants, the British Medical Association; Mr. Macbeth appeared for Mr. Sanjana. The complainants being the British Medical Association, members of the Council who were also members of the Association withdrew during the deliberations of the Council on the case.

Mr. HARPER, Solicitor to the Council, recalled that Mr. Sanjana had apppeared before the Council in June, and that at the conclusion of the proceedings on June 7th, 1912, the following decision of the Council was announced by the President:

Mr. Sanjana: I have to inform you that the Council have deliberated on your case, and have found that certain of the facts alleged against you in the notice of inquiry have been proved to their satisfaction, and in particular that you have:

1. Knowingly authorized or allowed D. Drysdale at various times while in your employment at Kelty, Fife, as your assistant, to attend patients, and on a number of Saturday afternoons to finish your rounds and attend the surgery during your absence on such afternoons in Edinburgh; and that you have—

2. Knowingly authorized or allowed the said D. Drysdale to attend and examine certain patients for you, and to sign for you medical certificates of various kinds.

The Council take a serious view of the particular facts thus found to be proved against you; but in order to give you an opportunity of showing that your professional conduct is henceforth to be without reproach, they have postponed judgement on the facts as found until the November Session of the Council. At that Session you will be required to attend, and you shall then produce evidence regarding your professional conduct, testified to by medical practitioners and other persons of position who may be acquainted with your practice and conduct in the interval.

Mr. Harper said that he had given Dr. Sanjana notice that according to the new Standing Orders any further facts or evidence must be lodged within seventeen days before the date fixed for the resumed hearing. This had not been done. He (Mr. Harper), thinking it was the result of an oversight, had communicated with the respondent's advisers, and had ascertained that they had not appreciated the fact of the change. Further declarations had been lodged which could, under the circumstances, only be referred to by leave of the Council, which he understood would be given. The representatives of the British Medical Association had seen those documents, and had informed him (Mr. Harper) that they did not propose to lodge anything on their own account.

Mr. MACBETH expressed his regret for not having observed that the Standing Orders had been changed, and asked, as it was not an omission on the part of Mr. Sanjana, but of his agent, that the documents might be read.

The Council gave permission to read the documents.

Mr. MACBETH hoped the Council would appreciate the fact that he was unable to produce evidence as to Mr. Sanjana's professional behaviour owing to the fact that there were only two doctors in the district in which Mr. Sanjana practised, and he was not on good terms with them. As a matter of fact there had been litigation between them which had not tended to good feeling. He therefore tendered to the Council declarations as to his character from Mr. James Terris, J.P. (Factor to Sir James Adam, Bart.), Kelty, in the county of Fife; Mr. Archibald Adam, J.P., Robertson Terrace, Fife; and the Rev. Alexander Shaw Adamson Bishop, minister of the Moray United Free Church, Kelty, Fife, which he hoped would satisfy the Council.

Mr. SANJANA was called, and gave the Council his assurance that he would employ no assistant other than a duly qualified man.

Dr. Cox called no evidence, and simply desired to say that he hoped the Council would not, without very serious consideration, consent to accept merely lay evidence as to a medical man's professional conduct. In answer to the President, Dr. Cox said he had no evidence of Mr. Sanjana having acted unprofessionally since the last hearing.

Strangers and parties were directed to withdraw; on readmission, the PRESIDENT announced the decision of the Council as follows:

Mr. Sanjana, I have to inform you that the Council has not seen fit to direct the Registrar to erase your name from the *Medical Register*.

Alleged Assistance of Unregistered Dentist.

The Council proceeded, on November 27th, to consider the case of Mr. John Jeeves, registered as of 163, Cemetery Road, Sheffield, M.R.C.S.Eng. 1889, L.R.C.P. Lond. 1889, who had been summoned to appear before the Council on the following charge:

That you have on numerous occasions knowingly and wilfully assisted a certain person not registered as a dentist, namely, Leo Patrick Barry, of 402, London Road, Sheffield, in performing operations in dental surgery by administering anaesthetics on his behalf to persons coming to him for treatment, and particularly to one George Johnstone, in February, 1912. And that in relation thereto you have been guilty of infamous conduct in a professional respect.

The complainants were the British Dental Association.

At the conclusion of the proceedings on June 7th, 1912, the following decision of the Council was announced by the President:

Mr. Jeeves, I have to inform you that the Council have found that the facts alleged against you have been proved to their satisfaction. The Council are of opinion that it is the duty of a registered medical practitioner to ascertain that an operator is a duly registered medical practitioner or dentist before administering anaesthetics for him. The Council take a very grave view of the action of practitioners who administer anaesthetics for unregistered persons. They have, however, postponed judgement on your case till the November Session, when you will be required to produce evidence, satisfactory to the Council, as to your professional conduct in the interval.

The SOLICITOR stated the facts of the case.

Mr. Jeeves appeared in person. Mr. R. W. Turner, counsel, instructed by Messrs. Bowman and Curtis Hayward, appeared for the British Dental Association.

Mr. JEEVES read several testimonials as to his good professional conduct during the past six months. In answer to the CHAIRMAN, he said that he had not assisted any unqualified person in the interval and undertook not to do so in future. In answer to Mr. TURNER, he said that he would in future satisfy himself that a dentist was qualified by reference to the *Dentists Register*.

Mr. TURNER did not desire to add anything, but left the matter entirely in the Council's hands.

Strangers and parties were directed to withdraw; on readmission, the PRESIDENT announced the decision of the Council as follows:

Mr. Jeeves, I have to inform you that the Council has not seen fit to direct the Registrar to erase your name from the *Medical Register*.

Convictions for Felony.

Alfred Arthur Austin, registered as of 86, Sherlock Street, Birmingham, L.A.H.Dub., L.R.C.S.I. 1887, having been convicted at the Birmingham Assizes of feloniously killing and slaying a woman and sentenced to seven years' penal servitude, his name was directed to be erased from the *Medical Register*.

William Arnold Thomson, registered as of Castle Hill, Maidenhead, L., L.M. 1869, K.Q.C.P.Irel., L. 1869, F. 1874, R.C.S.Irel., having been convicted at the Central Criminal Court of feloniously and unlawfully using an instrument with intent to procure miscarriage, and having been sentenced to three years' penal servitude, his name was directed to be erased from the *Medical Register*.

George Bell Todd, registered as of 40, Lansdowne Crescent, Glasgow, M.B., M.S.Glasg. 1884, having been convicted in the High Court of Justiciary on four charges of procuring abortion (to which charges he pleaded guilty),

and having been sentenced to seven years' penal servitude, his name was directed to be erased from the *Medical Register*.

Charles Ernest Turner, registered as of 186, Camberwell Road, S.E., M.R.C.S., L.R.C.P. 1898, having been convicted at the Central Criminal Court of feloniously using an instrument with intent to procure miscarriage, and sentenced to six months' imprisonment with hard labour, his name was directed to be erased from the *Medical Register*.

Misdemeanour.

Herbert Alfred De Pinna, registered as of 20, Grosvenor Street, W., M.R.C.S.Eng., L.R.C.P.Lond., 1905, was summoned to appear before the Council on the ground that he had been convicted at the Chertsey Petty Sessions of a misdemeanour and sentenced to six weeks' imprisonment in the second division, which sentence on appeal to the Surrey Quarter Sessions was altered to a fine of £50. Mr. De Pinna was represented by Mr. Elvy Robb, solicitor, who addressed the Council on behalf of Mr. De Pinna, who was abroad at the time that the summons was issued. Mr. Robb asked that the case might be adjourned for six months in order that he might bring forward evidence as to Mr. De Pinna's state of mind at the time the offence was committed, and as to his general health. Mr. Robb answered questions put to him by the Legal Assessor and tendered certificates as to character. The Council found the conviction for misdemeanour to have been proved, but postponed judgement until the next session of the Council in May.

Alleged Personation.

It was reported to the Council that on November 15th, 1912, the Solicitor to the Council had caused to be delivered to the person now or lately carrying on practice as a legally qualified medical practitioner in the name of Richard Henry Barber, L.R.C.P. and S.Ed., L.F.P.S.G., of 69, Victoria Road, New Brighton, a notification that the Richard Henry Barber registered on November 1st, 1888, as L.R.C.P.Ed., L.R.C.S.Ed., L.F.P.S.G. was deceased, and stating that the General Medical Council would on November 28th proceed to ascertain whether the said entry had been incorrectly made or fraudulently caused to be made in the *Medical Register* and should be erased.

Dr. Bateman appeared for the Medical Defence Union, which had brought the case to the attention of the Council.

The President stated that there was no accused practitioner in the case; it was an inquiry as to the accuracy of the entry in the *Medical Register* of the name of Dr. R. H. Barber.

Dr. Bateman said Richard Henry Barber took the Scottish Triple qualification in 1888. For some two or three years afterwards Mr. Barber practised in Newcastle, Gateshead, and the neighbourhood. In August, 1890, for family reasons he went to Oregon, U.S.A., where he commenced to practise as a medical man. On the outbreak of the Philippine war he received a commission in the National Guard, and proceeded to Manila, where he remained till the conclusion of hostilities, when he returned and resumed his practice. On December 2nd, 1904, he received a call to a patient twenty miles away. The road led across a creek and a wide river, over which there was a ferry. It appeared probable that Dr. Barber in the darkness failed to observe the creek, and when he reached the river supposed it to be the creek. The horse swam the river, but next day Dr. Barber's body was found on the bank. It was identified at the inquest on December 3rd, 1904, by Mr. Alexander Patterson as that of Dr. R. H. Barber, and also by a number of his brother officers. Nobody in America seemed to have thought it necessary to give notice to the Registrar of the General Medical Council, and the entry remained as of Marquam Building, Portland, Oregon, U.S.A., until 1907, when a letter was received by the Council's Registrar purporting to come from Dr. R. H. Barber, requesting an alteration of the address from Portland, Oregon, to 35, Tunnel Road, Liverpool. Dr. Bateman put in the declaration of Dr. H. Bond for the purpose of showing that since 1904 someone had been practising at various addresses in the name of Dr. R. H. Barber.

Mrs. Barber (examined by Dr. Bateman) said she was the widow of the late R. H. Barber. She was a medical practitioner, and had practised in Oregon since 1903. In September she received information regarding the personation of her late husband by someone, and, acting on advice, came to England. She arrived in Liverpool on Friday, and on Monday went to an office there where a man who purported to be "R. H. Barber" was pointed out to her, whom she failed to identify as anybody she knew. She then identified a number of documents and a photograph of her husband, and confirmed the facts stated by Dr. Bateman in his opening.

By the Legal Assessor: She identified the writing on an application for registration as that of her late husband. The writing on applications dated November, 1906, and March, 1912, for the continued registration of Richard Henry Barber was not that of her late husband.

Strangers and the parties were directed to withdraw; on readmission,

The President announced the decision of the Council as follows:

Dr. Bateman, it having been established as a fact that the person originally registered as Richard Henry Barber is deceased, the Council has directed the Registrar to delete from the *Medical Register* the entry of the name and qualifications of Richard Henry Barber.

Further, the Council desires me to express its thanks to you personally for the trouble which you have taken in the matter, and to the Medical Defence Union for bringing the information and for the manner in which the facts have been placed before the Council. It moreover desires me to express its thanks to Mrs. Barber for attending to assist it in furthering the ends of justice.

Dental Disciplinary Cases.

The Case of William John Watson.

At a meeting of the Council on June 5th, 1912, the report of the Dental Committee on this case was referred back for further inquiry. The Dental Committee now reported that on November 25th, the complainants, the British Dental Association, represented by Mr. R. W. Turner, counsel, instructed by Messrs. Bowman and Curtis-Hayward, solicitors, attended before the Committee, but, as previously intimated to the Solicitor to the Council, tendered no further evidence. The said William John Watson did not attend, having intimated by letter to the solicitor, dated November 14th, 1912, that he left himself unreservedly in the hands of the Committee. The said William John Watson had previously in correspondence with the Registrar submitted a revised form of a small card which in the opinion of the Committee was not open to objection, and he had intimated that he adhered to his undertaking not to advertise directly or indirectly in the future, and that the card would only be used when asked for by his patients in his consulting-room as hitherto.

After considering the matter *in camera*, the President announced that the Council did not see fit to direct the erasure of the name of William John Watson from the *Dentists Register*.

The Case of George William Thomas Arrowsmith.

A report from the Dental Committee was read on the case of George William Thomas Arrowsmith, registered in the *Dentists Register* as in practice before July 22nd, 1878; his address in the *Register* for the current year was Whitstable, Kent. The facts charged against him were that, being a registered dentist, he had permitted an unqualified person named F. J. Oaten to practise in his name or in partnership with or as assistant to him as a dentist at Westcliff House, Oxford Street, Whitstable, and that he had thereby enabled him to practise as if he were qualified. The Committee found the facts proved as charged. Mr. Arrowsmith did not attend before the Dental Committee nor before the Council.

The Council having considered the case *in camera*, directed the Registrar to erase the name of George William Thomas Arrowsmith from the *Dentists Register*.

The Case of Alfred James Futcher.

The Dental Committee presented a report on the case of Alfred James Futcher, registered as in practice before July 22nd, 1878; his address in the current *Register* was 26, Pretoria Road, Southsea. The Committee reported that he had been convicted on October 10th, 1912, at the Portsmouth Quarter Sessions, and had been sentenced to nine months' imprisonment in the second division for obtaining goods with intent to defraud.

The Council, after considering the case *in camera*, directed his name to be erased from the *Dentists Register*.

The Case of Alexander Watson.

The Dental Committee presented a report on the case of Alexander Watson, registered in the *Dentists Register* as L.D.S., F.P.S.Glasg. His address was given in the *Register* as 31, Rosslyn Avenue, Rutherglen, Glasgow. He had been convicted of indecent exposure; the respondent had informed the Committee that he was at the time suffering from inflammation of the bladder, and wholly denied wilful exposure. The Committee was of opinion that the case was one which, from the trivial nature of the offence, and from the circumstances under which it was committed, did not call for erasure from the *Register*. Mr. WATSON repeated to the Council the statement as to his physical condition, and the Council resolved that it would not direct his name to be erased from the *Dentists Register*.

CENTRAL MIDWIVES BOARD.

A SPECIAL meeting of the Central Midwives Board was held on December 18th at Caxton House, Westminster, with Sir FRANCIS H. CHAMPNEYS in the chair.

Midwives Struck Off the Roll.

The Board considered the following charges, amongst others, against the midwives whose names are given below, and ordered them to be struck off the roll:

Jane Brook, that being called to a confinement, she did not take with her the bag of appliances required by Rule E 2, she did not adopt the antiseptic precautions required by Rules E 3 and 7, she did not take the pulse or temperature of the patient as required by Rule E 13, and that she did not keep a register of cases as required by Rule E 23.

Elizabeth Calcroft, that she did not take and record the pulse of her patients, as required by Rule E 13, that she did not correctly record the temperature of her patients, and that being in attendance as a midwife at a confinement she did not take with her to the case either of the appliances for giving enemata or vaginal injections.

Sarah Carr, that she was not scrupulously clean in her person, as required by Rule E 1, that she was not able to take a pulse, and could not make use of a clinical thermometer, and was in consequence unable to take the temperature of her patients, as required by Rule E 13.

Mary Jane Dearden, that, being in attendance as a midwife at a confinement, the patient suffering from rigors with raised temperature, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 20 (4), and she omitted to take the temperature of the patient at each visit, as required by Rule E 13.

Fanny Emery, that she was not scrupulously clean, as required by Rule E 1, that her equipment and appliances were defective, and that she did not keep her register of cases, as required by Rule E 23.

Annie Griffiths, that, being in attendance as a midwife at a confinement, the patient suffering from dangerous weakness, and her relatives having suggested that a doctor was required, she resisted their wishes, informing them that it was not necessary, she neglected to take the patient's temperature with regularity, and failed to record it on any occasion, as required by Rule E 13, and she failed to attend to the comfort and cleanliness of the patient as required by Rule E 11.

Mary Ann Hammond, that being in attendance as a midwife at a confinement, a registered medical practitioner having been sent for, she failed to notify the fact to the local supervising authority, as required by Rule E 21 (1), and she failed to wash or cleanse the patient after the day of the confinement, as required by Rule E 11.

Sarah Linton, that she habitually neglected to notify the local supervising authority in cases where the rules required her to do so, and that she was not familiar with the rules of the Board relating to the conditions under which it was her duty to send for medical assistance.

Annie Mason, that she was not clean, as required by Rule E 1, that she did not possess the appliances and antiseptics required by Rule E 2, and that she was unable to make use of a clinical thermometer, and consequently could not take the temperature of her patients, as required by Rule E 13.

Anne Rumble, that being in attendance as a midwife at a confinement, the placenta and membranes not having been expelled within two hours of the birth of the child, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 20 (3), and a registered medical practitioner having been sent for she failed to notify the local supervising authority thereof, as required by Rule [illegible].

[illegible]*ca Webb*, that being in attendance as a midwife at a confinement, the baby suffering from inflammation of and discharge from both eyes, she did not explain that the case was one in which the attendance of a registered medical practitioner was required, nor did she hand to the husband or the nearest relative or friend present the form of sending for medical help, properly filled up and signed by her, in order that this might be immediately forwarded to the medical practitioner, as required by Rule E 20 (5), and she failed to take and record the temperature of the patent, as required by [illegible] E 13.

Midwife Cautioned.

Mary Ann Exley was cautioned after charges against her had been considered.

Vacancies and Appointments.

VACANCIES.

WARNING NOTICE.—Attention is called to a Notice (see Index to Advertisements—Warning Notice) appearing in our advertisement columns, giving particulars of vacancies as to which inquiries should be made before application.

BATH: ROYAL UNITED HOSPITAL.—House-Surgeon. Salary, £80 per annum.

BIRMINGHAM: CITY MENTAL HOSPITAL.—Assistant Medical Officer. Salary, £150, rising to £200.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Third House-Surgeon. Salary, £75 per annum.

BLACKBURN COUNTY BOROUGH.—Male School Medical Inspector and Assistant to the Medical Officer of Health. Salary, £250 per annum.

BRISTOL ROYAL INFIRMARY.—Resident Casualty Officer. Salary at the rate of £50 per annum.

BUXTON: DEVONSHIRE HOSPITAL.—Assistant House-Physician. Salary, £100 per annum.

CANTERBURY: KENT AND CANTERBURY HOSPITAL.—Resident Medical Officer. Salary, £90 per annum.

CAPE TOWN: SOUTH AFRICAN COLLEGE.—Lecturer in Anatomy. Salary, £300 per annum.

CATERHAM ASYLUM.—Male Third Assistant Medical Officer. Salary, £150 per annum, increasing to £170.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—Junior House-Surgeon. Salary, £90 per annum, rising to £100.

DERBYSHIRE HOSPITAL FOR SICK CHILDREN.—Resident Medical Officer. Salary at the rate of £60 per annum.

DURHAM COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary, £150 per annum, increasing to £180.

FERMANAGH COUNTY HOSPITAL, Enniskillen.—House-Surgeon (Male). Salary, £72 per annum.

GLASGOW PARISH COUNCIL.—Resident Junior Male Assistant Medical Officer for the Western Hospital. Salary, £100 per annum.

GUY'S HOSPITAL.—Douglas Demonstratorship of Pathology. Salary, £300 per annum.

HULL: ROYAL INFIRMARY.—Casualty House-Surgeon. Salary at the rate of £60 per annum for six months, or £80 for twelve months.

LANCASTER EDUCATION COMMITTEE, Preston.—School Medical Inspector. Salary £250 per annum, rising to £400.

LEICESTERSHIRE AND RUTLAND ASYLUM.—Male Junior Assistant Medical Officer. Salary, £150 per annum, increasing to £180.

LINCOLN MENTAL HOSPITAL.—Assistant Medical Officer (Male). Salary, £150 per annum.

LIVERPOOL: DAVID LEWIS NORTHERN HOSPITAL.—House-Physician. Salary at the rate of £90 per annum.

LIVERPOOL: SOUTHERN HOSPITAL.—(1) Honorary Assistant Surgeon. (2) Honorary Consulting Gynæcologist.

LONDON TEMPERANCE HOSPITAL, Hampstead Road, N.W.—(1) Assistant House-Surgeon. (2) Pathologist and Bacteriologist. Honorarium at the rate of 100 and 50 guineas per annum respectively.

MANCHESTER: ANCOATS HOSPITAL.—Assistant House-Surgeon. Salary, £70 per annum.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—(1) Honorary Ophthalmic Surgeon. (2) Third Anæsthetist; honorarium, 16 guineas per annum.

MANSFIELD AND MANSFIELD WOODHOUSE DISTRICT HOSPITAL. Resident House-Surgeon. Salary, £120 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen Square, W.C.—Senior House-Physician. Salary, £50 per annum.

NEWCASTLE-UPON-TYNE: CITY HOSPITAL FOR INFECTIOUS DISEASES.—Resident Male Medical Assistant. Salary, £125 per annum, rising to £150.

NOTTINGHAM CHILDREN'S HOSPITAL.—Lady House-Surgeon. Salary at the rate of £100 per annum.

NOTTINGHAM GENERAL DISPENSARY.—Assistant Resident Surgeon (Male). Salary, £170 per annum.

POPLAR AND STEPNEY SICK ASYLUM DISTRICT, Bromley.—Third Assistant Medical Officer. Salary, £120 per annum.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer. Salary at the rate of £50 per annum, rising to £60 on appointment as senior.

RENFREW COUNTY COMMITTEE ON SECONDARY EDUCATION.—School Medical Officer. Salary, £300 per annum, increasing to £350.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—Junior Obstetric Assistant.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL.—Junior Resident House-Surgeon. Salary at the rate of £80 per annum.

ST. HELENS COUNTY BOROUGH.—Assistant Medical Officer of Health. Salary, £250 per annum.

ST. PAUL'S HOSPITAL, Red Lion Square, W.C.—Honorary Surgeon to Out-patients.

SOMERSET AND BATH HOSPITAL, Wells.—Second Assistant Medical Officer (Male). Salary, £135 per annum, rising to £155.

STOKE-ON-TRENT: NORTH STAFFORDSHIRE INFIRMARY.—Pathologist (non-resident). Salary, £200 per annum.

SUNDERLAND: MONKWEARMOUTH AND SOUTHWICK HOSPITAL.—House-Surgeon. Salary, £100 per annum.

THROAT HOSPITAL, Golden Square, W.—Resident House-Surgeon. Salary, £75 per annum.

UNIVERSITY COLLEGE HOSPITAL, Gower Street, W.C.—Physician in Charge of Out-patient Department for Mental Diseases.

WEST BROMWICH AND DISTRICT HOSPITAL.—Assistant Resident House-Surgeon and Anaesthetist. Salary, £75 per annum.

WIDNES BOROUGH.—Medical Officer of Health and School Medical Officer. Salary, £400 per annum.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House-Surgeon. Salary at the rate of £80 per annum.

This list of vacancies is compiled from our advertisement columns, where full particulars will be found. To ensure notice in this column advertisements must be received not later than the first post on Wednesday morning.

APPOINTMENTS.

ANDERSON, A. G., M.B.Syd., Honorary Medical Officer to the Goondiwindi Border Hospital, Queensland.

ARMSTRONG, W. G., M.B.Syd., Medical Officer of Health, Department of Public Health, New South Wales.

BALL, W. Girling, F.R.C.S., Surgeon to the City of London Truss Society for the Treatment of Hernia.

BOTT, S., M.R.C.S., L.R.C.P., Medical Officer of the Caistor Union Workhouse.

CLEGG, Sydney James, M.B., Ch.B., D.P.H.Manchester, Assistant Medical Officer to the City and County of Newcastle-upon-Tyne.

CONNOLLY, W. J., M.B.Syd., Junior Assistant Medical Officer, Lunacy Department, New South Wales.

COULBY, G. A., M.A., M.D., B.C.Cantab., Assistant Physician to the Nottingham Children's Hospital.

CROSSMAN, F. W., M.B., District Medical Officer of the Chipping Sodbury Union.

DICE, R., M.B., Ch.M.Syd., Medical Officer of Health, Department of Public Health, New South Wales.

FOX, E. H. B., M.R.C.S., L.R.C.P., District Medical Officer of the Plympton St. Mary Union.

HARTHAN, G. E., M.B., B.C.Camb., Workhouse and District Medical Officer of the Cottage Homes of the Evesham Union.

HILLS, William E., M.R.C.S.Eng., L.R.C.P.Lond., Honorary Anaesthetist, Prince of Wales's General Hospital, Tottenham, vice F. Trowby, resigned.

JONES, W. Howard, M.R.C.S., L.R.C.P., Honorary Anaesthetist to the Royal National Orthopaedic Hospital and Honorary Assistant Anaesthetist to the Royal Ear Hospital.

PRIOR, J., M.R.C.S., L.R.C.P., Medical Officer of the Dewsbury Union Workhouse.

PURVIS, Geo. Carrington, M.D., B.Sc.Edin., Medical Officer of Health for Grahamstown, Cape Colony.

SHARP, Alexander D., F.R.C.S.Edin., Honorary Laryngologist to the Leeds Tuberculosis Association.

TURRELL, W. J., M.D., B.Ch.Oxon., Honorary Physician in Charge of the Electro-Therapeutic Department at the Radcliffe Infirmary and County Hospital, Oxford.

WHITEHEAD, A. E., L.R.C.P. and S.Edin., District and Workhouse Medical Officer of the Bridlington Union.

ROYAL FREE HOSPITAL, Gray's Inn Road, W.C.—The following appointments have been made:—
Surgical Registrar: Miss Davies-Colley, F.R.C.S.
Medical Registrar: Miss Fraser, M.D.
Clinical Assistant to the Throat, Nose, and Ear Department: Miss Bentham.
Second Clinical Assistant to the Throat, Nose, and Ear Department: Miss Kann, M.B., B.S.
Clinical Assistant to Mr. Legg: Miss Kann, M.B., B.S.
Clinical Assistant to Dr. Phear: Miss Turner, M.B., B.S.
Clinical Assistant to Mr. Evans: Miss Turner, M.B., B.S.
Clinical Assistant to Dr. Langmead: Miss Sara O'Flynn.
Second Clinical Assistant to the Gynaecological Department: Miss Sara O'Flynn.

TUBERCULIN DISPENSARY, Kennington Road, S.E.—The following appointments have been made:—
Honorary Laryngologist: John MacKeith, M.B., C.M.Glasg.
Honorary Assistant Physicians: A. D. Sewell Cooke, M.B., Ch.B.Edin.; J. N. Griffiths, M.B., Ch.M., D.P.H.; F. Silva Jones, M.B., B.S.Durh., M.R.C.S., L.R.C.P.; Miss Annie McCall, M.D., L.R.C.P.Irel.; John MacKeith, M.B., C.M.Glasg.; H. C. Manning, M.R.C.S.Eng., L.R.C.P.Lond., D.P.H.Camb.; Vivian Orr, M.B., B.S., M.R.C.S., L.R.C.P.; L. Rose, M.A.St.And., M.D.Edin.; John F. Walker, M.B.Lond., M.R.C.S., L.R.C.P.; J. Home Wilson, M.D.Aberd., M.B., Ch.B., L.M.Dub.

WARNEFORD GENERAL HOSPITAL, Leamington.—The following appointments have been made:—
Honorary Pathologist: Ivy E. Haslam, M.D., B.S., M.R.C.P. Lond.
Honorary Surgeon for Diseases of the Ear, Nose, and Throat: Fredk. Sydenham, M.D., D.P.H., F.R.C.S.Edin.
House-Physician: Wm. T. Dobson, M.R.C.S., L.R.C.P.

BIRTHS, MARRIAGES, AND DEATHS.

The charge for inserting announcements of Births, Marriages, and Deaths is 3s. 6d., which sum should be forwarded in Post Office Orders or Stamps with the notice not later than Wednesday morning in order to ensure insertion in the current issue.

BIRTH.

SPONG.—On December 18th, at Hawthorn Cottage, Bromley, Kent, the wife of Ambrose Spong, M.D., F.R.C.S.Eng., of a daughter.

MARRIAGE.

CARSON—WILLIS.—On the 19th December, at All Saints, Harston, Cambridgeshire, Herbert William Carson, F.R.C.S., of 111, Harley Street, son of James Hamilton Carson, Esq., to Mary, daughter of Duncan Willis, Esq., of Wallasey, Cheshire. Manchester papers please copy.

DIARY OF THE ASSOCIATION.

Date.		Meetings to be Held.
		DECEMBER.
27	Fri.	Newcastle-upon-Tyne Division, Royal Victoria Infirmary, 4.30 p.m.
28	Sat.	Isle of Thanet Division, Ramsgate, 8.30 p.m.
		Northamptonshire Division, Northampton General Hospital, 3.15 p.m.
		JANUARY, 1913.
1	Wed.	Subscriptions to the British Medical Association for 1913 become due (also to Central Defence Fund).
3	Fri.	London: Central Ethical Committee, 2 p.m.
4	Sat.	London: Science Committee, 11 a.m.
7	Tues.	London: Public Health Committee, 3.30 p.m.
8	Wed.	London: Medico-Political Committee, 2 p.m.
9	Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
10	Fri.	London: Journal Committee, 2 p.m.
14	Tues.	London: Metropolitan Counties Branch, 4 p.m.
		London: Organization Committee, 2.15 p.m.
15	Wed.	London: Hospitals Committee, 2.30 p.m.
17	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.

Date.		Meetings to be Held.
		JANUARY (*continued*).
22	Wed.	Richmond Division, Richmond, 8.30 p.m.
		South Middlesex Division, Twickenham, 8.30 p.m.
29	Wed.	London: Central Council.
31	Fri.	Birmingham Branch, Pathological and Clinical Section, Medical Institute, 8 p.m.
		FEBRUARY.
11	Tues.	London: Metropolitan Counties Branch, 4 p.m.
		South-West Essex Division, Whipps Cross Infirmary, 4 p.m.
13	Thur.	Birmingham Branch, Medical Institute, 3.30 p.m.
14	Fri.	Hampstead Division, Finchley Road, 8.15 p.m.
19	Wed.	Richmond Division, Richmond, 8.30 p.m.
		South Middlesex Division, Twickenham, 8.30 p.m.
28	Fri.	Birmingham Branch, Pathological and Clinical Section, Medical Institute, 8 p.m.

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